THIS FILM MAY NOT BE USED TO REPRODUCE ADDITIONAL FILM COPIES

Use of this film in reproduction is limited to individual page reprints when occasional demands require paper copies for use and study.

Micro Photo Inc.

GAZETTE

UNITED STATES PATENT OFFICE

VOL 127

MARCH - APRIL

1907

MICRO PHOTO INC.
CLEVELAND, OHIO

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

VOLUME CXXVII.

MARCH 5 TO APRIL 30, INCLUSIVE.

1907.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1907.

CONTENTS.

ERRATA FOR VOLUME CXXVII OF THE OFFICIAL GAZETTE.

ANNOUNCEMENTS—VOLUME CXXVII.

DISCLAIMERS—VOLUME CXXVII.

TEXT OF THE OFFICIAL GAZETTE, MARCH 5 TO APRIL 30, 1907.

INDEX TO THE DECISIONS OF THE COMMISSIONER OF PATENTS AND OF THE UNITED STATES COURTS IN PATENT CASES.

DIGEST OF DECISIONS OF THE COMMISSIONER OF PATENTS AND OF THE UNITED STATES COURTS IN PATENT CASES.

INDEX OF PATENTS AND PATENTEES FOR THE MONTHS OF MARCH AND APRIL, 1907.

ERRATA.

845,841, page 55, in heading, assignment, name of assignee, for the compound word "Auto-Manuel" read *Auto-Manual.*

846,453, page 406, fourteenth claim, lines 2–3, and fifteenth claim, lines 2–3, for the word "contact" read *contract.*

846,499, page 429, in heading, assignment, name of first-mentioned assignee, for "George C. Crafts" read *George E. Crafts.*

847,636, page 1036, eighth claim, line 5, for the word "parts" read *ports.*

847,951, page 1191, in heading, assignment, name of assignee, for "H. B. Barber" read *Mrs. H. B. Barbee.*

848,196, page 1341, first claim, line 3, for the word "releasing" read *locking.*

848,259, page 1371, in the drawing, for reference-numerals "6" read *8*, for "7" read *10*, for "8" read *13*, or "8′" read *17*, for "9" read *14*, for "9′" read *18*, for "10" read *15*, and for "11" read *16;* strike out the numerals "13" and "14;" connect the numeral "12" to the elliptical opening; insert the numeral 7 to indicate the common bottom, *9* the common top, and *5* and *6* the opposite curved pipes.

848,813, page 1695, thirty-second claim, line 5, for the word "then" read *subsequently*, and thirty-eighth claim, line 3, for the word "construction" read *connection.*

849,390, page 2019, fifth claim, line 8, for the compound word "outwardly-beat" read *outwardly-bent.*

849,773, page 2200, in heading, assignment, residence of assignees, for "Pittsburg, Pa." read *Pittston, Pa.*

849,920, page 2271, in heading, assignment, name of assignee, for "Wellman-Seaver-Morgan" read *Wellman-Seaver-Morgan Company.*

850,371, page 2524, in heading, assignment, name of assignee, for "William A. Tooper, Jr." read *William A. Tooker, Jr.*

850,868, page 2769, in heading, assignment, after residence of assignee, insert *Charles E. Wild and George Weinhagen, executors of said Herman Segnitz, deceased.*

851,063, page 2899, in heading, assignment, name of assignee, for "The Malleable Castings Company" read *The National Malleable Castings Company.*

851,423, page 3083, in heading, after residence of patentee, insert *assignor to R. Wedekind & Co., Uerdingen-on-the-Rhine, Germany.*

851,484, page 3108, sixth claim, line 6, strike out the words "one of said members" and insert before the word "extending," same line.

62,980, (Trade-Mark,) page 2809, strike out all after number and insert CANCELED.

VOL. 127.

ANNOUNCEMENTS—VOL. CXXVII.

	Page,
APPLICATIONS—	
Condition of pending	2, 398, 854, 1260, 1584, 1998, 2490, 2829, 3222
ATTORNEYS—	
Order—Disbarring William L. De Lacey	1583
John Kinahan	2398
John A. Miller	1583
Edgar A. Nickels	1582
Reuben G. Orwig	1583
Abram C. Reck	1583
John M. Scoville	1583
John S. Walton	1583
CHANGES IN CLASSIFICATION—	1997
Order 1708	2821
Order 1713 (Trade-Marks)	397
CORRESPONDENCE WITH THE PATENT OFFICE	853, 2821
DISCLAIMERS	
INTERFERENCE NOTICES—	
Brookmire & Company, James H	1259, 1996, 2398, 2399, 3220, 3221
Empire Soap Company	2398, 2820, 3220, 3646
Hardgrove & Company	3222
Lamb, Jeptha J., and James H. Patton	1583, 2396, 2820, 3220, 3646
McClave, James M	396, 398, 854
Sedziak, Francis	1
Six Dykstra, James J	396, 852, 1258, 1582, 1584
Smith, Fred W	2398, 2820, 2822, 3646
Speer & Sons, Alexander	2
Whitman & Welch	396, 852, 1258, 1582, 1996
Whitney & Company, F. G	396
Wilson-Cass Company	1, 397, 853, 1260, 1996, 1998
PATENT, TRADE-MARK, AND COPYRIGHT LAWS—	
Extension of to Canal Zone	2397
RENEWAL OF FORFEITED CASES	2821
RULES OF PRACTICE—	
Amendment of Rule 203	2400
SERVICE OF NOTICE—	
Order 1706	2396
TRADE-MARK LAW—	
Amendment of sections 5 and 6, Trade-Mark Act	1582
TRADE-MARK RULES—	
Amendments to Rules 19, 61, 56, and 69	2819

DISCLAIMERS.

	Page,
Frank C. Anderson	2821
Joseph Schneible	853

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

MARCH—APRIL, 1907.

Patents Nos. 845,736 to 846,439.

THE OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 127—No. 1. TUESDAY, MARCH 5, 1907. PRICE—$5 per year.

CONTENTS.

	Page.
ISSUE OF MARCH 5, 1907	1
INTERFERENCE NOTICES	1
APPLICATIONS UNDER EXAMINATION	2
INTERFERENCE NOTICE	2
PATENTS GRANTED	3
REISSUES	367
DESIGNS	367
TRADE-MARKS—REGISTRATION APPLIED FOR	369
TRADE-MARKS—REGISTERED	385
LABELS	390
PRINTS	390
COMMISSIONER'S DECISIONS—	
A. A. Rosenbush & Company *v.* The Rose Shoe Manufacturing Company	391
Funke *v.* Baldwin	392
DECISIONS OF THE U. S. COURTS—	
In re American Circular Loom Company	393
The Rose Shoe Manufacturing Company *v.* A. A. Rosenbush & Co.	394
INTERFERENCE NOTICES	396

ISSUE OF MARCH 5, 1907.

Patents	704—No.	845,736 to No.	846,439, inclusive.
Designs	5—No.	38,469 to No.	38,473, inclusive.
Trade-Marks	177—No.	61,037 to No.	61,213, inclusive.
Labels	7—No.	13,385 to No.	13,391, inclusive.
Prints	4—No.	1,914 to No.	1,917, inclusive.
Reissues	1—No.	12,614.	
Total issue	898		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	2	.....	New Hampshire	3	.....
Alaska, District of	.....	.....	New Jersey	28	12
Arizona Territory	1	.....	New Mexico Ter'y	1	.....
Arkansas	3	.....	New York	102	40
California	26	1	North Carolina	2	.....
Colorado	8	.....	North Dakota	3	.....
Connecticut	17	6	Ohio	52	20
Delaware	.....	.....	Oklahoma Ter'y	4	1
District of Columbia	4	.....	Oregon	2	.....
Florida	3	1	Pennsylvania	62	26
Georgia	4	2	Philippine Islands	.....	.....
Hawaii Territory	.....	.....	Porto Rico	.....	.....
Illinois	80	8	Rhode Island	6	.....
Indian Territory	2	.....	South Carolina	5	1
Indiana	23	3	South Dakota	1	.....
Iowa	13	.....	Tennessee	7	12
Kansas	11	1	Texas	10	4
Kentucky	9	1	Utah	1	1
Louisiana	3	2	Vermont	1	.....
Maine	3	.....	Virginia	5	3
Maryland	6	5	Washington	2	2
Massachusetts	30	5	West Virginia	6	.....
Michigan	23	3	Wisconsin	13	1
Minnesota	15	1	Wyoming	1	.....
Mississippi	3	.....	U. S. Army	.....	.....
Missouri	33	7	U. S. Navy	.....	.....
Montana	2	.....			
Nebraska	7	.....	Total to citizens of the United States	649	169
Nevada	1	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Natal	.....	.....
Austria-Hungary	2	.....	Netherlands	.....	.....
Belgium	2	.....	Newfoundland	1	.....
Brazil	.....	.....	New South Wales	.....	.....
British West Indies	.....	.....	New Zealand	2	.....
Canada	8	.....	Norway	.....	.....
Cape Colony	.....	.....	Persia	.....	.....
Chile	.....	.....	Queensland	.....	.....
China	.....	.....	Roumania	.....	.....
Costa Rica	.....	.....	Russia	.....	.....
Cuba	.....	.....	Scotland	1	.....
Denmark	1	.....	South Australia	.....	.....
Ecuador	.....	.....	Spain	1	.....
England	24	1	Sweden	1	.....
France	12	1	Switzerland	1	10
Germany	.....	6	Transvaal, South Africa	3	.....
Haiti	.....	.....	Victoria	1	.....
Ireland	.....	1	Western Australia	.....	.....
Italy	.....	.....			
Japan	.....	.....	Total to citizens of foreign countries	60	19
Java	.....	.....			
Mexico	.....	.....			

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 23, 1907.

Wilson-Cass Company, its assigns or representatives, take notice:

An interference has been declared by this Office between an application of Frank Fuller, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to the Wilson-Cass Company, of Philadelphia, Pa. The notice of declaration mailed by the Patent Office in the usual manner to the said Wilson-Cass Company has been returned by the Post-Office Department undelivered, and the attorney of record for said company is dead.

Notice is therefore hereby given to the said Wilson-Cass Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., January 22, 1907.

Francis Sedziak, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application for patent filed by Joseph M. Boenbury, of Decatur, Ill., and an application for patent filed by Francis Sedziak, of St. Louis, Mo. It appears from the record of the case that the present address of the said Francis Sedziak is unknown, and it has been impossible to notify him of the interference.

Notice is therefore hereby given to the said Francis Sedziak, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business February 26, 1907.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Feb. 18	Feb. 20	59
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Feb. 14	Jan. 28	252
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	Feb. 14	Jan. 28	148
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Feb. 13	Feb. 5	231
303	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Feb. 13	Jan. 29	148
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Feb. 13	Jan. 26	244
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	Feb. 12	Jan. 29	205
327	XVIII. Steam-Engineering, etc ...	Feb. 12	Jan. 28	147
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Feb. 12	Jan. 26	121
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Feb. 12	Jan. 25	222
109	XVI. Telegraphy and Telephony..	Feb. 11	Feb. 1	120
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Feb. 11	Jan. 30	277
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Feb. 11	Jan. 26	105
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Feb. 9	Jan. 31	188
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Feb. 8	Jan. 28	332
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Feb. 7	Jan. 25	236
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Feb. 7	Jan. 24	405
167	V. Bookbinding, Harvesters, Jewelry, and Music.	Feb. 6	Jan. 24	241
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Feb. 5	Feb. 1	218
122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Feb. 4	Jan. 29	338
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Feb. 4	Jan. 29	304
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Feb. 4	Jan. 23	230
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Feb. 4	Jan. 21	188
307	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	Feb. 4	Jan. 16	206

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Wood-working.	Feb. 1	Jan. 24	202
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Jan. 31	Jan. 12	276
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Jan. 29	Jan. 28	215
142	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sewerage.	Jan. 28	Jan. 31	335
382	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	Jan. 28	Jan. 28	373
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Jan. 28	Jan. 28	491
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Jan. 28	Jan. 26	330
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Jan. 26	Jan. 10	284
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Jan. 25	Jan. 17	294
332	X. Carriages and Wagons.....	Jan. 24	Jan. 28	425
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making, etc.	Jan. 24	Jan. 26	280
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	Jan. 23	Jan. 24	280
343	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Jan. 21	Jan. 23	650
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Jan. 21	Jan. 19	249
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Jan. 21	Jan. 16	398

Total number of applications awaiting action 10,26

Room No.				
159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	Feb. 23	Feb. 20	22
	Designs	Feb. 18	Feb. 14	3
	Labels and Prints	.....	.....	..

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., January 22, 1907.

Alexander Speer & Sons, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Star Manufacturing Company, of Carpentersville, Ill., for registration of a trade-mark and a trade-mark registered to Alexander Speer & Sons, of Pittsburg, Pa. It has been found impossible to locate the said Alexander Speer & Sons, and their attorneys of record are dead.

Notice is therefore hereby given to Alexander Speer & Sons, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

P. I. ALLEN, *Commissioner.*

PATENTS

GRANTED MARCH 5, 1907.

845,736. COMBINED AIR-BRAKE-SETTING DEVICE AND ALARM. ROBERT E. ADREON, St. Louis, Mo. Filed Nov. 30, 1906. Serial No. 345,593.

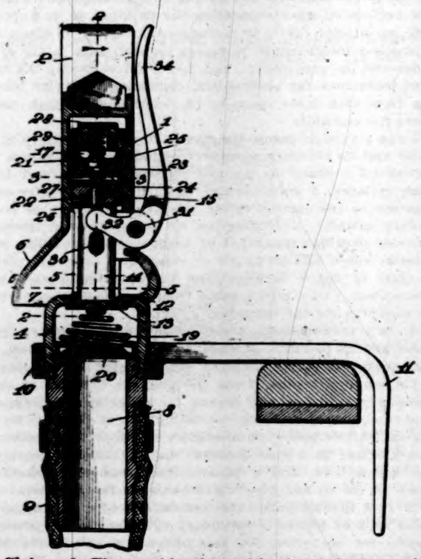

Claim.—1. The combination with an air-brake train-line, of a valve-housing connected to the train-line, a whistle, means whereby communication is maintained between the valve-housing and the whistle, a valve arranged for operation in the housing, and normally closed by the train-line air-pressure, and a second valve normally held to its seat by the train-line pressure for closing the communication from the valve-housing to the whistle.

2. The combination with an air-brake train-line, of a valve-housing connected to the train-line, a whistle, a connection between the valve-housing and the whistle, a valve operating in the housing and normally held closed by the train-line air-pressure, means carried by said valve for normally closing communication through the connection between the valve-housing and the whistle, and means whereby the valve and the communication-closing means are operated.

3. The combination with an air-brake train-line, of a valve-housing connected to the train-line, a whistle, a connection between the valve-housing and the whistle, a valve operating in the housing and normally held closed by the train-line air-pressure, means carried by said valve and normally held closed by the train-line air-pressure, for closing communication through the connection between the valve-housing and the whistle, and means whereby the valve and the communication-closing means are independently operated.

4. The combination with an air-brake train-line, of a valve-housing connected to the train-line, a whistle, a connection between the valve-housing and the whistle, a valve operating in the housing, and normally held closed by the train-line air-pressure, a second valve operating in the first-mentioned valve and normally seated by the train-line air-pressure, for preventing the passage of said train-line pressure to the whistle, and means whereby both valves are independently operated.

5. The combination with an air-brake train-line, of a valve-housing connected to said train-line, a whistle integral with said valve-housing, a brake-valve arranged for operation in the valve-housing and normally closed by the train-line air-pressure, there being a chamber formed in the top of said valve, there being passages formed through said valve whereby the train-line pressure is maintained within the chamber in the upper end of the brake-valve, and a second valve operating in the first-mentioned valve for controlling the passage of the train-line pressure through the chamber in the brake-valve to the whistle, and means whereby said valves are independently operated.

6. In a device of the class described, a valve-housing, a whistle-housing, a brake-valve operating in the valve-housing, a whistle-valve operating in the brake-valve, means whereby both of the valves are normally maintained upon their respective seats, and means whereby both valves are independently operated.

7. In a device of the class described, a valve-housing adapted to be connected to an air-brake train-line, a whistle-housing, a brake-valve operating in the valve-housing, a whistle-valve operating in the brake-valve, which valves are maintained on their respective seats by the air-pressure in the train-line, and which whistle-valve controls the passage of air to the whistle, and means whereby both valves are directly engaged and moved in opposite directions to be unseated.

8. In a device of the class described, a valve-housing adapted to be connected to an air-brake train-line and provided with an inlet-opening and an exhaust-cavity, a whistle-housing carried by the valve-housing, a valve operating in the valve-housing and normally closing the inlet in said housing, a whistle-valve for controlling the passage of air to the whistle-housing, means whereby both of said valves are normally maintained upon their respective seats, and means whereby said valves are independently operated.

845,737. NOSE-GUARD FOR EYEGLASSES. LEO F. ADT, Troy, N. Y. Filed Mar. 6, 1905. Serial No. 248,429.

Claim.—1. In eyeglasses, the combination with the lenses having the attaching devices thereon, and a bridge connecting them, of nose-guards each comprising a lower nose-engaging portion, and an upper or holding nose-engaging portion embodying a coil arranged in rear of the lenses.

2. In eyeglasses, the combination with the lenses having the attaching devices thereon, and a bridge, of nose-guards each comprising a lower nose-engaging portion, and a supplemental nose-engaging portion embodying a rearwardly-extending shank formed into a vertical coil, the free end of the coil extending upwardly and provided with a nose-engaging surface.

3. In eyeglasses, the combination with the lenses having the attaching devices thereon, and a bridge connecting them, of nose-guards each composed of a single piece of flat material and embodying a lower nose-engaging portion, and a supplemental holding portion comprising a rearwardly-extending shank bent edgewise into a coil and having an upwardly-extending nose-engaging pad.

4. In eyeglasses, the combination with the lenses having the attaching devices thereon, and a bridge connecting them, of nose-guards each composed of a single piece of flat material and embodying a downwardly-extending arm arranged below the attaching devices, and a rearwardly-extending shank bent edgewise of the material to form vertical coils arranged in rear of the attaching devices and having its free end extended upwardly and provided with a nose-engaging pad.

5. In eyeglasses, the combination with the lenses having the attaching devices thereon, and a bridge connecting them, of nose-guards each composed of a single piece of resilient material embodying an arm extending downwardly from the attaching device, and a shank forming a continuation of the said arm extending rearwardly from the top of the attaching device, said shank being formed into a coil provided with the nose-engaging portion.

6. In eyeglasses, the combination with the lenses having the attaching devices thereon, and a bridge connecting them, of nose-guards each embodying a lower nose-engaging portion connected to the attaching devices, and upper nose-engaging portions each comprising a rearwardly-extending shank bent downwardly, forwardly and upwardly to form a coil provided with a nose-pad on its free end.

7. In eyeglasses, the combination with the lenses, and a bridge connecting them, of nose-guards composed of resilient material each embodying a main nose-engaging portion, and an additional yieldingly-pressed holding portion connected to the mounting by a coil adapted to permit relative inward and outward movement of the nose-engaging portion.

8. In eyeglasses, the combination with the lenses, and a bridge connecting them, of nose-guards composed of flat, resilient material each embodying a main nose-engaging portion, and an additional nose-engaging portion having a yielding coil connecting it to the mounting, said coil being formed by bending the flat material edgewise.

9. In eyeglasses, the combination with the lenses, and a suitable bridge connecting them, of nose-guards composed of flat resilient material each embodying a lower or main nose-engaging portion, and a supplemental or upper nose-engaging pad, and a coil connecting said pad and the body of the guard formed by bending the flat material edgewise in a plane transverse of the plane of the lenses to permit the pad to move in a direction inward and outward to accommodate itself to the wearer's nose.

845,738. VACUUM-PUMP. LOUIS R. ALBERGER, Greenwich, Conn., assignor to Alberger Condenser Company, New York, N. Y., a Corporation of New York. Filed Apr. 5, 1902. Serial No. 101,524.

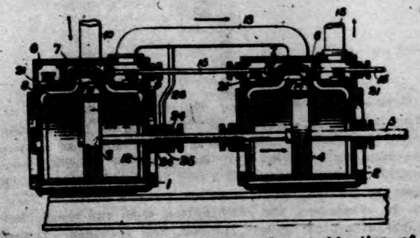

Claim.—1. In a vacuum-pump, the combination of a primary cylinder and its piston, a secondary cylinder and its piston, a piston-rod common to the two pistons, a valve-chest for each cylinder, a suction-valve in each chest, a valve-rod common to the suction-valves, a suction-pipe leading from the primary cylinder to the secondary cylinder, and means for reducing air leakage into the primary cylinder, consisting of a stuffing-box on the piston-rod, said box having an interior space between its packings, said space containing air or vapor at a pressure intermediate in degree between that in the cylinder and the atmosphere, and a pipe leading from said interior space to the suction-pipe which connects the cylinders.

2. In a vacuum-pump, the combination of a primary cylinder and its piston, a secondary cylinder and its piston, a piston-rod common to the two pistons, a valve-chest for each cylinder, a slide-valve in each chest, a valve-rod common to the slide-valves, and means for reducing air leakage into the primary cylinder, consisting of a stuffing-box on the piston-rod, said box having two packings and a hollow perforated spool separating the packings so as to provide an interior cavity or recess containing air or vapor at a pressure intermediate in degree between that in the cylinder and the atmosphere, and means for removing the air that leaks into the stuffing-box, consisting of a pipe leading from said inner space to the suction-pipe which connects the cylinders.

3. In a vacuum-pump, the combination of a primary cylinder and its piston, a secondary cylinder and its piston, a piston-rod common to the two pistons, a valve-chest for each cylinder, a suction-valve in each chest, a valve-rod common to the suction-valves, a suction-pipe for the secondary cylinder, a stuffing-box on the piston-rod having suitable packings separated by a spool-piece providing an interior space containing air or vapor at a pressure intermediate in degree between that in the cylinder and the atmosphere, and a pipe leading from the spool-piece to the suction-pipe for the secondary cylinder.

4. In a vacuum-pump, the combination of a primary cylinder and its piston, a secondary cylinder and its piston, a valve-chest for each cylinder, a suction-valve in each chest, a suction-pipe leading from the primary cylinder to the secondary cylinder, and means for reducing air leakage into the primary cylinder, consisting of a stuffing-box having an interior space containing air or vapor at a pressure intermediate in degree between that in the cylinder and the atmosphere, and a pipe leading from said interior space to the suction-pipe which connects the cylinders.

5. In a vacuum-pump, the combination of a primary cylinder and its piston, a secondary cylinder and its piston, means for operating the two pistons, a valve-chest for each cylinder, a suction-valve in each chest, means for operating the suction-valves, a suction-pipe leading from the primary cylinder to the secondary cylinder, and means for reducing air leakage into the primary cylinder, consisting of a stuffing-box on the piston-rod, said box having an interior space containing air or vapor at a pressure intermediate in degree between that in the cylinder and the atmosphere, and means providing a passage between said interior space and the suction-pipe which connects the cylinders.

6. In a vacuum-pump, the combination of a primary cylinder and its piston, a piston-rod for said piston, and means for reducing air leakage into the said cylinder, consisting of a stuffing-box having an interior space containing air or vapor at a pressure intermediate in degree between that in the cylinder and the atmosphere, and means for removing the air from the stuffing-box, consisting in a secondary cylinder in communication with the said stuffing-box.

7. In a vacuum-pump, the combination of a primary cylinder, its piston, and a piston-rod for said piston, means for reducing air leakage into the primary cylinder consisting of a box on the piston-rod, the said box having an interior space containing air or vapor at a pressure intermediate in degree between that in the cylinder and the atmosphere, a secondary cylinder, its piston and piston-rod, a suction-pipe leading from the primary cylinder to the secondary cylinder, and means providing a passage from the box to said suction-pipe.

8. In a vacuum-pump, the combination of a primary cylinder its piston and piston-rod, means for reducing air leakage into the primary cylinder consisting of a stuffing-box for the piston-rod, said box containing air or vapor at a pressure intermediate in degree between that in the cylinder and the atmosphere, a secondary cylinder, a suction-pipe therefor, and a pipe leading from said stuffing-box to said suction-pipe of the secondary cylinder.

9. In a vacuum-pump, the combination of a primary cylinder, its piston and piston-rod, means for reducing air leakage into the primary cylinder consisting of a stuffing-box for the piston-rod, said box having an interior space containing air or vapor at a pressure intermediate in degree between that in the cylinder and the atmosphere, a secondary cylinder, its piston and piston-rod, a suction-pipe leading to said secondary cylinder, and a pipe leading from the interior space of the stuffing-box to the suction-pipe of the secondary cylinder, all arranged and operated substantially as set forth.

845,739. DISPLAY-RACK. LOUIS A. ALSON, Watervalley, Miss. Filed Apr. 30, 1906. Serial No. 314,382.

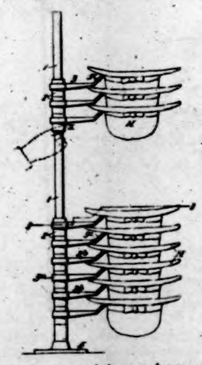

Claim.—1. A rack comprising a base, a rod projecting upwardly therefrom, a series of tubular sleeves freely slidable on the rod, said rod and said sleeves having means to prevent turning of the sleeves on the rod, arms removably mounted on said sleeves and movable therewith and terminating in hat-receiving loops substantially as shown and described.

2. A rack comprising a base, a rod projecting upwardly therefrom, a series of tubular sleeves slidably mounted on the rod, said sleeves and said rod having coöperating flattened portions, an arm for each sleeve, said arms each having a hat-receiving loop at one end and a loop or eye portion at the other end to receive one of said sleeves, means for locking each arm on its sleeve, all being arranged substantially as shown and described.

3. A rack comprising a base, a rod projecting upwardly therefrom, a series of tubular sleeves slidably mounted on the rod, said sleeves and said rod having coöperating flattened portions, an arm for each sleeve, said arms each having a hat-receiving loop at one end and a loop or eye portion at the other end to receive one of said sleeves, means for locking each arm on its sleeve, each arm having its sleeve-receiving loop provided with a flattened portion to coöperate with the flattened portion of its sleeve, substantially as shown and described.

845,740. COMMUTATOR-BRUSH FOR DYNAMO-ELECTRIC MACHINES. ROBERT N. BAYLIS, Englewood, N. J. Filed Apr. 10, 1905. Serial No. 254,634.

Claim.—1. In a device of the character described, a brush having a perforation extending laterally through the same, a flexible conductor of braided wire having a continuous tubular end arranged to be inserted within the said passage from one side, and a pin-like expander or spreader arranged to be inserted into said passage from the opposite side and into the open end of the tubular portion of said conductor to hold the same in intimate and uniform contact against the wall of the perforation.

2. In a device of the character described, a brush having a perforation extending laterally through the same, a flexible conductor of braided wire having a continuous tubular end arranged to be inserted within the said passage from one side, and a pin-like expander or spreader arranged to be inserted into said passage from the opposite side and into the open end of the tubular portion of said conductor to hold the same in intimate and uniform contact against the wall of the perforation, and a clearance-space at one side of the brush arranged to receive the projecting portion of the conductor.

3. In a device of the character described, a brush having a perforation extending through the same, a flexible conductor of braided wire having a continuous tubular end arranged to be inserted within said passage, and a pin-like expander or spreader arranged to be inserted into said tubular portion to expand the same and to force it into intimate and uniform contact against the wall of the perforation and entirely around said pin.

4. In a device of the character described, a brush having a hole extending into the same, a flexible conductor of braided wire having a continuous tubular end arranged to be inserted within said hole, and a pin-like expander or spreader arranged to be inserted into said tubular portion to expand the same and force it into intimate and uniform contact against the wall of the hole and entirely around said expander.

845,741. MECHANISM FOR FINISHING SCREW-THREADING DIES. EDWARD E. BECK, Chicago, Ill., assignor to The Nye Tool and Machine Works, a Corporation of Illinois. Filed Sept. 16, 1905. Serial No. 278,722.

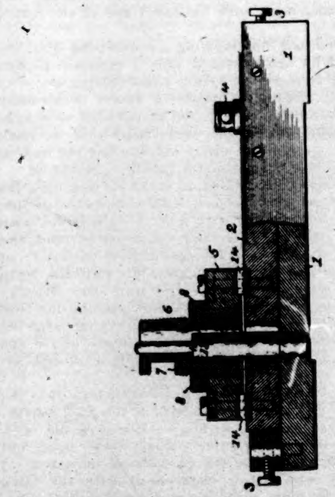

Claim.—1. In a mechanism for finishing screw-cutting dies, an arbor formed with a threaded periphery for holding engagement with the interior thread of a screw-cutting die, with a tubular bore adapted to receive a rotary cutter-head, and with an opening in its side for an outward movement of the cutter-head relative to the arbor into cutting engagement with the teeth of the die.

2. In a mechanism for finishing screw-cutting dies, the

combination of an arbor formed with a threaded periphery for holding engagement with the interior thread of a screw-cutting die, with a tubular bore adapted to receive a rotary cutter-head, and with an opening in its side for an outward movement of the cutter-head relative to the arbor into cutting engagement with the teeth of the die, and means for effecting a tilting adjustment of said arbor in relation to the axis of rotation of said cutter-head.

3. In a mechanism for finishing screw-cutting dies, the combination of an arbor formed with a threaded periphery for holding engagement with the interior thread of a screw-cutting die, with a tubular bore adapted to receive a rotary cutter-head, and with an opening in its side for an outward movement of the cutter-head relative to the arbor into cutting engagement with the teeth of the die, a carriage for said arbor, a stationary slideway for said carriage, means for imparting movement to said carriage, and means for effecting a tilting adjustment of the arbor upon said carriage.

4. In a mechanism for finishing screw-cutting dies, the combination of an arbor formed with a threaded periphery for holding engagement with a screw-cutting die, with a tubular bore adapted to receive a rotary cutter-head, and with an opening in its side for an outward movement of the cutter-head into cutting engagement with the teeth of the die, a base-plate carrying said arbor, a carriage for said base-plate and arbor, a stationary slideway for said carriage, means for imparting movement to said carriage, and means for effecting a tilting adjustment of said base-plate and arbor upon the carriage, the same comprising rockers seated centrally between the base-plate and carriage and side screws connecting the base-plate and carriage together.

5. In a mechanism for finishing screw-cutting dies, the combination of an arbor formed with a threaded periphery for holding engagement with a screw-cutting die, with a tubular bore adapted to receive a rotary cutter-head, and with an opening in its side for an outward movement of the cutter-head into cutting engagement with the teeth of the die, a carriage for said arbor, a stationary slideway for said carriage, means for imparting movement to said carriage, and a steady-pin mounted on the slideway and adapted for engagement with the lower end of the rotary cutter-head.

6. In a mechanism for finishing screw-cutting dies, the combination of an arbor formed with a threaded periphery for holding engagement with a screw-cutting die, with a tubular bore adapted to receive a rotary cutter-head, and with an opening in its side for an outward movement of the cutter-head into cutting engagement with the teeth of the die, and a removable collar surrounding the base of the arbor to form an abutment for the die operated on.

7. In a mechanism for finishing screw-cutting dies, the combination of an arbor formed with a threaded periphery for holding engagement with a screw-cutting die, with a tubular bore adapted to receive a rotary cutter-head, and with an opening in its side for an outward movement of the cutter-head into cutting engagement with the teeth of the die, a carriage for said arbor, a stationary slideway for said carriage, a removable collar surrounding the base of the arbor to form an abutment for the die operated on, means for imparting movement to said carriage, and means for imparting a tilting adjustment of the arbor on said carriage.

8. In a mechanism for finishing screw-cutting dies, the combination of an arbor formed with a threaded periphery for holding engagement with a screw-cutting die, with a tubular bore adapted to receive a rotary cutter-head, and with an opening in its side for an outward movement of the cutter-head into cutting engagement with the teeth of the die, a base-plate carrying said arbor, a removable collar surrounding the base of the arbor to form an abutment for the die operated on, a carriage for said base-plate and arbor, a stationary slideway for said carriage, means for imparting movement to said carriage and means for effecting a tilting adjustment of said base and arbor upon the carriage, the same comprising rockers seated centrally between the base-plate and carriage and side screws connecting the base-plate and carriage together.

845,742. UMBRELLA-ROD. LOUIS BERGER, New York, N. Y. Filed Nov. 3, 1905. Serial No. 285,783.

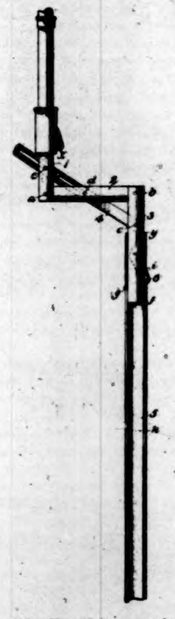

Claim.—1. An umbrella-stick comprising three members jointed together, and provided with slots, the slots in the two upper members piercing the stick, a brace member pivoted to the lower of said members adapted to lie within said slots and having guide-slots, pins in the two upper members at the point where said slots pierce the members, said pins passing through the corresponding guide-slots and resting against their lower ends when the joints are flexed to support the parts in their flexed condition.

2. An umbrella-stick comprising a tube having three slots, an inner member consisting of three parts jointed together, and sliding within said tube, a brace member lying in slots in said jointed parts and adapted to support said jointed members, one at right angles to the lower part and the third parallel thereto and offset therefrom, a pin in the lower jointed part projecting through one of said slots and sliding therein; a spring-pressed lug in said lower jointed part and coacting with the other two slots to sustain said inner member in an elevated or depressed position.

3. An umbrella-stick comprising a tube, an inner member projecting from said tube and adapted to slide therein, and consisting of three parts pivoted together, a brace member lying in slots within said jointed members and piercing two of said jointed parts, a pivot attaching one end of said brace member to one of the pivoted parts, pins piercing the other two jointed parts and working in guide-slots in said brace member, and a spring-pressed lug in the lower jointed part adapted to engage slots in said tube and to retain said inner member in an elevated or depressed position.

845,743. SAFETY KEY-RING SNAP. ALFRED C. BINDNER, St. Louis, Mo., assignor, by mesne assignments, of one-half to W. L. Schafer, St. Louis, Mo. Filed Oct. 23, 1906. Serial No. 340,222.

Claim.—A device of the class described, comprising a plate, one end of which is bent downwardly to form an inverted-U-shaped hook, there being a transverse rib formed on the downwardly-bent end, which rib projects toward the body of the plate, a U-shaped hook formed integral with the lower end of the plate, the upper edge of the free arm of the last-mentioned hook being beveled, and a spring-actuated tongue hinged to the front side of the upper portion of the plate, the lower end of which tongue is beveled and normally engages against the beveled edge on the free upper end of the arm of the U-shaped hook.

845,744. MACHINE FOR CLEANSING FILTER-BEDS. HIRAM W. BLAISDELL, Los Angeles, Cal. Filed Oct. 31, 1903. Serial No. 179,396.

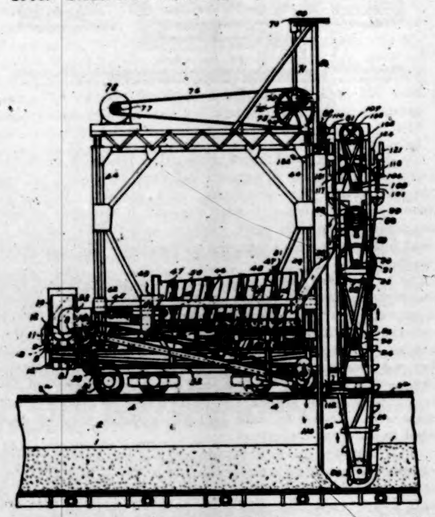

Claim.—1. A machine provided with a movable elevator, scraping means associated therewith, a cleansing device receiving the material raised by the elevator, means for conveying a fluid into and from said cleansing device, a conveyer receiving the cleansed material from said device and returning the same to the place from which the material was originally taken and means for operating the parts.

2. A machine provided with an elevator constructed to travel horizontally, scraping means associated therewith, a rotary cleaning device receiving the material raised by the elevator, means for conveying a fluid into and from said cleansing device, a conveyer taking the cleansed material from said device and returning the same to the place from which the material was originally taken and means for operating the parts.

3. A machine provided with an elevator constructed to travel back and forth, scraping means associated therewith, a cleaning device means for introducing thereinto the material raised by the elevator, means for conveying a fluid into and from said cleansing device, a conveyer taking the cleansed material from said device and returning the same to the place from which the material was originally taken and means for operating the parts.

4. A machine provided with an elevator constructed to move horizontally and vertically, means for so moving said elevator, scraping means associated therewith, a washing device receiving the material from said elevator, means for conveying a fluid into and from said cleansing device, a conveyer taking the cleansed material from said device and returning the same to the place of deposit and means for operating said device and conveyer.

5. A machine provided with a traveling structure, an elevator supported therefrom constructed to travel horizontally and vertically, scraping means associated therewith, a cylindrical cleaning device receiving the material raised by said elevator, means for conveying a fluid into and from said cleansing device, a conveyer taking the cleansed material from said device, and returning the same to the place of deposit; and means for progressing said structure and for actuating said parts.

6. A machine provided with a traveling structure, a movable elevator supported therefrom, scraping means associated therewith, a cleaning device upon said structure receiving the material raised by said elevator, means for conveying a fluid into and from said cleansing device, a conveyer taking the cleansed material from the device and returning the same to the place from whence it came, means for progressing said structure and mechanism for operating said parts.

7. A machine provided with a traveling structure, an elevator supported therefrom, scraping means associated therewith, a rotary cleansing device receiving the material raised by said elevator, means for conveying a fluid into and from said cleansing device, means receiving the cleansed material from said device and returning the same to the place from whence it came and mechanism for progressing said structure and for operating said parts.

8. A machine provided with an elevator, scraping means associated therewith, a rotary cleansing device receiving the material raised by the elevator, means for conveying a fluid into and from said cleansing device, means receiving the cleansed material and returning the same to the place of deposit and mechanism for actuating the parts.

9. A machine provided with an elevator, scraping means associated therewith, an agitating device receiving the material from said elevator, means for conveying a fluid into and from said device, a conveyer taking the cleansed material from said device and returning the same to the place of deposit and mechanism for operating the parts.

10. A machine provided with an elevator, a shield to separate the cleansed from the impure material, means for cleansing the material raised by the elevator and for returning the same to the opposite side of said shield from which it was taken and mechanism for operating the parts.

11. A machine provided with an elevator, a shield for separating the material, a rotary cleansing device receiving the material raised by the elevator, means for transporting the cleaned material, and means for distributing the cleansed material.

12. A machine provided with an elevator constructed to move horizontally and vertically, a shield movable vertically with said elevator and means for returning to the other side of said shield the material raised by said elevator and mechanism for actuating the parts.

13. A machine provided with an elevator, a cleaning device receiving material therefrom, a conveyer taking the cleaned material from said device, a main conveyer to transport the material discharged thereupon by said conveyer and mechanism for operating the parts.

14. A filter-bed provided with walls or inclosures, liquid-conduits, a traveling structure having a cleaning device, means for transporting the fluid from one of said conduits into said device and for transporting the fluid from said device into the other conduit and mechanism for actuating the parts.

15. A filter-bed provided with walls or inclosures containing liquid-conduits, a traveling structure carrying a cleansing device, means for carrying the fluid from one of said conduits into said device and therefrom into the other conduit, and means for operating the parts.

16. A filter-bed provided with walls or inclosures, liquid-conduits, a traveling structure carrying a cleansing device, means for raising material from the filter-bed to said cleansing device, means for carrying the fluid from one of said conduits into said cleansing device and for conveying the fluid from said cleansing device to the other conduit and means for operating the parts.

17. A filter-bed provided with walls or inclosures, liquid-conduits, a traveling structure carrying a cleansing device, means for raising material from the filter-bed to the cleansing device, means for depositing the cleansed material from the cleansing device onto the filter-bed, means for carrying the fluid from one of said conduits to said cleansing device, means for conveying the fluid from the cleansing device to the other conduit and means for operating the parts.

18. A filter-bed provided with walls or inclosures, liquid-conduits, a traveling structure supporting a cleaning device, mechanism for delivering material to said device, means for conveying the cleansed material from said device, devices for distributing the cleansed material over the filter-bed, instrumentalities for conveying the fluid from one conduit to said cleaning device and means for conveying the fluid from said cleaning device to the other conduit and mechanism for actuating the parts.

19. A filter-bed provided with walls or inclosures, liquid-conduits, a traveling structure supporting a cleaning device, a device for separating the cleaned from the uncleaned material, means for delivering the uncleaned material to said cleaning device, mechanism for depositing the cleansed material upon the filter-bed, instrumentalities for conveying the fluid from one conduit to said cleaning device, means for conveying the fluid from said cleaning device to the other conduit and mechanism for actuating the parts.

20. A machine provided with means for scraping material from an exposed surface, means for elevating said material, an apparatus receiving the material elevated by said means, means in connection with said apparatus for cleansing said material, means for conveying fluid to and from said cleansing means, instrumentalities for returning the material so elevated and mechanism for actuating the parts.

21. A machine provided with means for scraping filtering material from an exposed surface, means for elevating said material, means for transporting the material so elevated, a device for returning said material and mechanism for operating the parts.

22. A machine provided with means for scraping material from an exposed surface, means movable transversely of the machine constructed to elevate said material, a device for receiving the material elevated by said means and mechanism for imparting a transverse travel to said means.

23. A machine constructed to travel over the material operated upon, means constructed to travel back and forth in front of said machine and elevate the dry material, a device for receiving the material elevated by said means and mechanism for operating the parts.

845,745. TRANSFER MECHANISM. HIRAM W. BLAISDELL, Los Angeles, Cal. Filed Sept. 8, 1904. Serial No. 223,780.

Claim.—1. A transfer mechanism comprising a track, a vehicle adapted to run on said track, an incomplete track on a plane beneath said first-mentioned track and means carried by said vehicle to complete said incomplete track.

2. A transfer mechanism comprising a track, a vehicle adapted to run on said track, an incomplete track on a plane beneath said first-mentioned track and extending at an angle thereto and means carried by said vehicle to complete said incomplete track.

3. A transfer mechanism comprising a track, a vehicle adapted to run on said track, an incomplete track on a plane different from the plane of the first-mentioned track and means carried by said vehicle to complete said incomplete track.

4. A transfer mechanism comprising a track, a vehicle adapted to run on said track, an incomplete track on a plane different from the plane of the first-mentioned track and extending at an angle to said track and means carried by said vehicle to complete said incomplete track.

5. A transfer mechanism comprising a main support, an incomplete track beneath said support, a movable member supported from said main support and means carried by said movable member to complete said incomplete track.

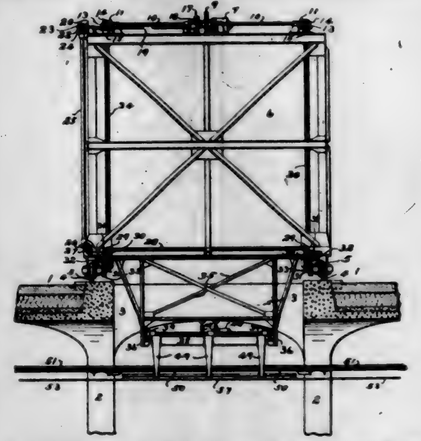

6. A transfer mechanism comprising tracks, a main support, wheels on said support adapted to travel on said tracks, means for propelling said support, incomplete tracks or ways beneath said support, a movable member supported from said main support and tracks carried by said movable member adapted to complete said incomplete tracks.

7. A transfer mechanism comprising a traveling main support, incomplete tracks or ways beneath said support, a movable member carried by said main support, tracks carried by said movable member to complete the incomplete tracks, means for raising and lowering said movable member, a transfer member adapted to travel on said completed tracks and track-sections on said transfer member adapted to complete other tracks, the parts being so arranged that apparatus carried by said transfer member may be operated in different directions.

8. A transfer mechanism adapted for use with a covered chamber comprising a main support adapted to travel over the cover of said chamber, a movable member carried by said support and adapted to be lowered through an opening in said cover into said chamber and to be raised therefrom, incomplete tracks within said chamber and track-sections carried by said movable member adapted to complete said incomplete tracks.

9. A transfer mechanism adapted for use with a covered chamber comprising a main support adapted to travel over the cover of said chamber, a movable member carried by said main support and adapted to be lowered through an opening in said cover into said chamber and to be raised therefrom, incomplete tracks within said chamber, track-sections carried by said movable member adapted to complete said incomplete tracks and a transfer member adapted to travel on the tracks so completed.

10. A transfer mechanism adapted for use with a covered chamber comprising a main support adapted to travel over the cover of said chamber, a movable member carried by said main support and adapted to be lowered through an opening in said cover into said chamber and to be raised therefrom, incomplete tracks within said chamber, track-sections carried by said movable member adapted to complete said incomplete tracks, a transfer member adapted to travel on the tracks so completed, other incomplete tracks within said chamber and track-sections carried by said transfer member adapted to complete said last-named incomplete tracks, the parts being so arranged that apparatus supported by said transfer member can operate within said chamber in different directions.

11. The combination with a covered chamber, an opening through said cover into said chamber, tracks upon said cover and a plurality of incomplete tracks within said chamber extending at an angle to each other, of a transfer mechanism comprising a main support adapted to travel on the first-mentioned tracks, means for effecting said travel of said main support, a movable member, means for effecting the elevation and depression thereof, track-sections carried by said movable member adapted to complete one set of said incomplete tracks, a transfer member adapted to travel on the tracks so completed and track-sections on said transfer member adapted to complete the other set of said incomplete tracks, the parts being so arranged that apparatus supported by said transfer member may travel on the tracks thus completed.

12. The combination of a covered filter, an opening through said cover into said filter and tracks upon said cover, of a main support constructed to travel on said tracks, means for effecting said travel of said main support, a movable member, screws supporting said movable member in said main support adapted to raise said member into said support and to lower the same through said opening into said filter, means for operating said screws, tracks within said filter running longitudinally thereof and extending to the edges of the opening through the filter-cover, track-sections carried by said movable member adapted to complete the longitudinal tracks across said opening, a transfer member adapted to travel on said tracks so completed, tracks within said filter running transversely thereof and extending to the edges of said opening through the filter-cover and track-sections carried by said transfer member adapted to complete said transverse tracks the parts being so arranged that apparatus supported by said transfer member is capable of transverse and longitudinal movement within said filter.

13. The combination with a covered chamber having an opening through the cover thereof and tracks within said chamber beneath said cover, of a transfer mechanism adapted to carry an apparatus to said opening, means for lowering said apparatus into said chamber and means for effecting the movement of said apparatus within said chamber on said tracks.

14. A transfer mechanism for covered filters comprising a main support, a movable member adapted to be lowered and raised through an opening in the cover of said filter and a transfer member adapted to support an apparatus for operating upon the filter-bed.

15. A transfer mechanism for covered filters comprising a main support, a movable member, means for lowering and raising the latter through an opening in the filter-cover, incomplete tracks beneath the filter-cover, track-sections carried by said movable member adapted to complete said incomplete tracks, other tracks beneath said filter-cover and a transfer member adapted to travel on one of the sets of tracks beneath said cover.

16. The combination of a covered filter, exterior tracks on said cover, incomplete longitudinal and transverse tracks within said cover, a crane adapted to travel on said exterior tracks, a hanger-frame movably mounted in said crane, means for lowering said hanger-frame through an opening in the filter-cover and for raising the same within said crane, track-sections on said frame adapted to complete the incomplete longitudinal tracks, a transfer-table adapted to travel on said completed tracks and track-sections carried by said transfer-table adapted to complete said incomplete transverse tracks and to support an apparatus to operate upon the filter-bed.

17. The combination with a covered filter, of exterior tracks on the cover of said filter and a transfer mechanism comprising a main support adapted to travel on said exterior tracks, means for effecting said travel, a movable member, means connecting said movable member and said support whereby said movable member may be lowered through an opening in the filter-cover and raised within said main support, incomplete longitudinal and transverse tracks beneath said cover, track-sections carried by said movable member adapted to complete said longitudinal tracks, a transfer member adapted to travel on the track so completed and track-sections carried by said transfer member adapted to complete said transverse tracks, the parts being so arranged that apparatus supported by said transfer member is capable of either longitudinal or transverse movement on the tracks within said filter.

18. A transfer mechanism adapted for use with a plurality of covered filter-beds, tracks on the covers of said filter-beds, means adapted to travel from one filter-bed to another on said tracks and adapted to be lowered through an opening in the covers of said filters and to be raised therefrom and apparatus arranged to operate within said filters and carried by said last-mentioned means.

19. In a covered filter the combination of a crane adapted to be moved over the cover, a hanger-frame supported from said crane and adapted to be raised and lowered thereby, a transfer-table carried by said hanger-frame and tracks beneath the cover adapted to receive the transfer-table.

20. The combination with a covered filter having an opening thereinto, of a track adjacent to said opening, a vehicle adapted to run on said track, an incomplete track on a plane different from the plane of the first-mentioned track and means carried by said vehicle to complete said incomplete track.

21. The combination with a covered filter comprising a plurality of bays extending at an angle to each other and having an opening into one of said bays, of a track adjacent to said opening and extending down one of said bays, a vehicle adapted to run on said track, incomplete tracks on a plane different from the plane of the first-mentioned track and extending down the bays running at an angle to the last-mentioned bay and means carried by said vehicle to complete said incomplete tracks.

845,746. MACHINE FOR CLEANING COVERED FILTERS. HIRAM W. BLAISDELL, Los Angeles, Cal. Filed Nov. 16, 1904. Serial No. 233,003.

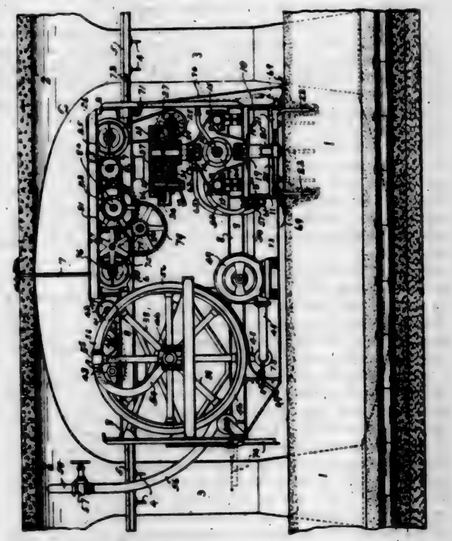

Claim.—1. A machine constructed to operate upon covered filter-beds provided with means for cleaning the material thereof, instrumentalities for supporting the machine beneath the filter-cover and mechanism for progressing and for operating the same.

2. A machine constructed to clean covered filter-beds provided with means adapted to clean the material thereof without removing the same, instrumentalities for supporting the machine above the filter-bed but beneath the filter-cover and mechanism for progressing and for operating the same.

3. A machine constructed to operate upon covered fil-

ter-beds provided with means for cleaning the material operated upon, means for supporting said machine above the filter-bed but beneath the filter-cover, instrumentalities for permitting the travel of the machine on said supporting means throughout the entire area of the filter-bed and mechanism for operating the same.

4. A machine constructed to operate upon covered filter-beds provided with means for operating upon the material thereof, instrumentalities for supporting the machine, mechanism for progressing and for operating the same and means for operating on material beyond the line of progression of the machine.

5. A machine for cleaning covered filters provided with means for treating the material thereof, instrumentalities for supporting the machine, mechanism for progressing and for operating the machine and devices constructed to be extended and retracted to clean the surface of the filter-bed between the obstructions thereof.

6. A machine for obstructed filter-beds provided with means for operating upon the material thereof, instrumentalities whereon the machine travels, mechanism for progressing and for operating the machine and devices constructed to be automatically extended and retracted to operate upon the surface of the filter-bed between and around obstructions.

7. A machine for cleaning obstructed filter-beds provided with operating devices, instrumentalities for effecting the travel of the machine and for operating the same and means for forcing said devices into and out of mesh to decrease and increase the area operated upon by the machine.

8. A machine for cleaning obstructed filter-beds provided with operating devices, instrumentalities for effecting the travel of the machine and for operating the same and means operated by the travel of the machine to retract and extend said devices to diminish and increase the area operated upon by the machine.

9. A machine for operating upon filters, having obstructions or a covering, provided with cleaning devices, means for imparting a rotary motion thereto, instrumentalities for effecting the travel of the machine and means for automatically throwing said devices into and out of mesh to decrease or enlarge the surface operated upon by the machine.

10. A machine for obstructed or covered filters provided with cleaning devices having radial arms, means for imparting a rotary motion to said devices, mechanism for forcing said devices into and out of mesh to decrease or enlarge the area operated upon, means for supporting the machine and mechanism for effecting the travel of the machine.

11. A machine for covered or obstructed filters provided with cleaning devices having radial arms and depending fingers, means for forcing fluid therethrough, mechanism for revolving said devices, instrumentalities for effecting the travel of the machine and means for expanding or retracting said devices.

12. A machine for cleaning obstructed filter-beds provided with cleaning devices having radial arms and depending fingers, means for forcing liquid therethrough during the travel of the machine, means for projecting some of said cleaning devices beyond the line of progression of the machine and mechanism for operating said devices.

13. A machine for operating upon obstructed filter-beds provided with a plurality of cleaning devices having tubular arms carrying depending fingers, means for supplying fluid to said devices, means for projecting some of said cleaning devices beyond the line of progression of the machine mechanism for operating the parts and instrumentalities for withdrawing the foul fluid.

14. A machine for operating upon obstructed filter-beds provided with cleaning devices, a double reel each portion carrying a separate hose, one set of hose being connected with said devices and with a source of supply and the other set being connected with said devices and with stationary outlet connections, whereby fluid is supplied to and drawn from said devices during the travel of the machine and means for operating the parts.

15. A machine for operating upon filter-beds provided with extensible and retractable cleaning devices, flexible connections between said devices and a source of fluid-supply outside the filter and between said devices and a stationary connection, whereby fluid is supplied to and withdrawn from said devices during the travel of the machine and mechanism for operating the parts.

16. A machine provided with cleaning devices having inlet and outlet connections, a reel carrying separate sets of flexible tubing communicating respectively with the source of fluid-supply and with an outlet connection and with the inlet and outlet connections of said devices and means for operating the parts.

17. A machine for obstructed filters provided with guide-rods, yokes slidable thereon, cleaning devices carried by said yoke, hydraulic cylinders having pistons connected with said yokes and means for operating said pistons to separate or contract said devices and mechanism for operating the machine.

18. A machine for obstructed filters provided with guide-rods, yokes slidable thereon, cleaning devices revolubly mounted in said yoke, means for expanding or contracting said devices, mechanism for rotating said device and instrumentalities for operating the machine.

19. A machine for obstructed filters provided with extensible and retractable cleaning devices having inlet and outlet connections, laterals communicating with said connections, a flexible tubing connected with a source of fluid-supply outside the filter and with the lateral communicating with said inlet connection, flexible tubing connecting with an outlet pipe or conduit, a pump in communication with the last-mentioned tubing and with the other lateral whereby the foul fluid can be drawn off from said device.

20. The combination with a covered filter having longitudinal and transverse supporting-tracks of a machine constructed to travel on said tracks, mechanism for propelling the machine, cleaning devices rotatably and slidably mounted in the machine, means for operating said devices, and instrumentalities for supplying and withdrawing fluid from said devices during the operation of the machine.

21. The combination with a covered filter having longitudinal and transverse tracks of a machine having supporting-wheels constructed to travel on said tracks, reels operated from said wheels, flexible tubing thereon, cleaning devices receiving fluid through one set of said tubing and discharging fluid through the other set of the same and means for operating the parts.

22. The combination with a covered filter having supporting-tracks of a machine constructed to travel thereon provided with slidable and rotatable cleaning devices having inlet and outlet connections and carrying hollow radial arms having depending tubular fingers, a reel carrying flexible tubing connected with the source of fluid-supply and with said inlet connection, whereby fluid is supplied to said fingers, other flexible tubing upon said wheel, a pump connected with the last-mentioned tubing and with said outlet connection, devices for forcing said cleaning devices into and out of mesh and instrumentalities for operating the parts.

23. A filter-cleaning device provided with a tubular shaft having inlet-ports, a bearing for said shaft having inlet and outlet passages the former communicating with said ports, tubular radial arms upon said shaft and means for introducing and withdrawing the fluid through said ports.

24. A filter-cleaning device provided with a tubular shaft having ports, a bearing for said shaft having an inlet-passage communicating with said port and having an outlet-passage, induction and eduction connections respectively for said passages tubular radial arms connected with said shafts carrying tubular fingers and means for operating the parts.

25. The combination of a covered filter-bed having supporting-tracks beneath the cover, a mechanism constructed to travel on said tracks, means for propelling said machine, cleansing devices and means for operating said devices.

26. The combination of a covered filter-bed having supporting-tracks beneath the cover, a cleansing device, a flexible-hose connection between said device and a fluid-supply, a flexible-hose-discharge connection from said device and means for operating the parts.

27. The combination with a covered filter-bed having supporting-tracks beneath the cover, a cleansing device constructed to travel on said tracks, and electrical means for operating said device.

28. The combination of a covered filter-bed having supporting-tracks beneath the cover, a mechanism constructed to travel on said tracks, devices for propelling the mechanism, a cleansing device, and electrical means for operating the devices.

845,747. CALCULATING-MACHINE. WALTER R. BONHAM, Chicago, Ill., assignor of two-fifths to A. J. Schram, Lake Geneva, Wis. Filed Nov. 20, 1905. Serial No. 288,113.

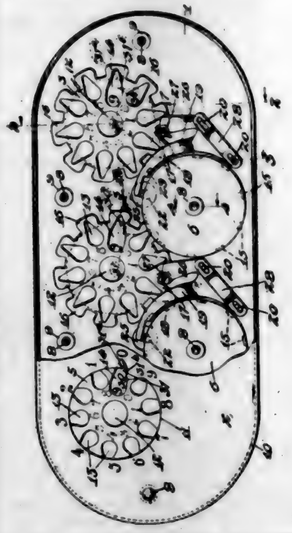

Claim.—1. In a calculating-machine, the combination of two sets of digits or characters of different numerical values bearing a fixed relation to each other and being reversely arranged, and means whereby the numbers in both sets are indicated and all the numbers in one set are simultaneously visible and those of the other set are only progressively visible.

2. In a calculating-machine, the combination of two sets of characters of different numerical values progressing arithmetically reversely of each other, one set being fixed with relation to the other and permanently visible, and a movable indicator whereby the characters of the other set are only progressively visible, and the characters in either set may be indicated.

3. In a calculating-machine, the combination of two sets of characters of different numerical values progressing arithmetically reversely of each other, and an indicator having apertures corresponding in number to the characters of one set, one of said apertures being elongated and through which the characters of the other set are progressively visible.

4. In a calculating-machine, the combination of two sets of characters of different numerical values progressing arithmetically reversely of each other, and a movable indicator having apertures corresponding in number to the characters of one set, one of said apertures being arranged to progressively expose the characters of the other set.

5. In a calculating-machine, the combination of two sets of characters of different numerical values progressing arithmetically reversely of each other in concentric circles, an indicator arranged over one set of said characters and having an aperture through which said characters are successively visible, and a series of additional apertures, one of said apertures being disposed adjacent each of the first set of characters.

6. In a calculating-machine, the combination of two sets of characters of different numerical values progressing arithmetically in opposite direction and in concentric circles, one set being fixed with relation to the other, a rotary indicator arranged over one set of said characters and having an aperture through which the characters of said set are successively visible, a series of additional apertures adjacent the characters of the other set, and a stop projecting across the line of the said circular series of apertures for arresting the movement of the turning implement when placed in one of the said series of apertures.

7. In a calculating-machine, the combination of two rotary indicating members each having peripheral teeth and apertures formed therein, and constituting indicating-apertures, characters of different numerical values arranged in a circular series opposite said apertures respectively, a carrier-gear having teeth meshing with the said teeth on one of said rotary members for imparting motion to the latter, fingers on said rotary indicators projecting beyond the teeth thereof, the teeth on said gear being arranged within the sweep of the said finger on one of said indicators, a second gear having teeth arranged within the sweep of the latter said finger, and a third rotary indicator member having teeth engaging the teeth of said second gear.

8. In a calculating-machine having a path of movement for an operating means, the combination of a plurality of rotary indicators, a carrier for imparting the movement of one of said indicators to the other, a stop across said path of movement, and means adjacent the stop for causing a retrograde motion of the indicators.

9. In a calculating-machine having a path of movement for an operating means, the combination of a rotary indicator, a retaining-pawl, means carried by the indicator and with which the pawl coöperates, a stop arranged in the path of said movement and so disposed as to cause the indicator to travel slightly beyond the point at which the pawl engages one of the coöperating means, and means for transmitting a retrograde motion to the indicator for seating the pawl.

10. In a calculating-machine having a path of movement for an operating means, the combination of a rotary indicator, provided with peripheral teeth, a retaining-pawl adapted to engage the teeth, a stop arranged within said path of movement, said stop being so disposed as to cause the teeth to be moved slightly beyond the point at which the pawl engages therewith, and having a slot adjacent thereto into which the operating means is deflected to cause the teeth to be moved backward against the pawl.

11. In a calculating-machine having a path of movement for an operating means, the combination of a rotary indicator provided with a series of apertures and peripheral teeth, a retaining-pawl adapted to engage the teeth, a stop within said path of movement disposed to cause one of the teeth to travel slightly beyond the point of its engagement with the pawl, and a rearwardly-disposed slot adjacent the stop and into which the operating means is deflected, the end of said slot being so disposed as to transmit a retrograde movement to the disk to cause the tooth to engage the pawl.

12. In a calculating-machine, the combination of a plurality of rotary indicators, a carrier for imparting the movement of one of said indicators to the other, a stop normally out of the plane of movement of the carrier, and means for engaging and moving said stop into engagement with the carrier when the indicator is operated.

13. In a calculating-machine, the combination of a plurality of rotary indicators, a carrier for imparting the movement of one of said indicators to the other, a stop normally out of the plane of movement of the carrier, and a projection carried by the indicator adapted to engage the carrier and stop to rotate the former and to move the latter into engagement therewith.

14. In a calculating-machine, the combination of a plu-

rality of rotary indicators, a carrier for imparting motion from one of said indicators to the other, and provided with a plurality of depending teeth, a stop provided with a depending portion and a radial extending lip, and a projection carried by the indicator adapted to rotate the carrier and engage the projection on the stop for moving the lip into the path of movement of the carrier-teeth.

845,748. FASTENING DEVICE. JOHN W. BOSCHE, Buffalo, N. Y., assignor of one-half to Irving F. Cragin, Buffalo, N. Y. Filed Sept. 25, 1906. Serial No. 336,116.

Claim.—1. In a fastening device, the combination with a hook member made of wire bent to form a shank and a loop or head, of an eye member made of wire bent to form a loop having an elongated eye through which said head is adapted to be inserted, and opposing spring-ribs forming between them a groove having a restricted mouth within which groove the wire of said head or loop is locked when said parts are in their fastened relation.

2. In a fastening device, the combination with a hook member made of a single piece of wire bent to form a shank and a loop or head, of an eye member made of a single piece of wire bent to form a loop having an elongated eye through which said head is adapted to be inserted, and a pair of opposing resilient ribs on each half of the eye member, said ribs having overhanging heads and each pair forming between them a groove with a restricted mouth within which the wire of said head or loop is adapted to be snapped and held securely locked.

3. In a fastening device, the combination with a hook member made of a single piece of wire bent to form a shank and a loop or head, of an eye member made of a single piece of wire bent to form a loop having an elongated eye through which said head is adapted to be inserted, a pair of opposing resilient ribs on the upper surface of each half of the eye member, said ribs having overhanging heads and each pair forming between them a groove with a restricted mouth opening upward, within which groove the wire of said head or loop is adapted to be snapped and held securely locked, and an arch at the front end of the loop, forming a channel for receiving the shank of the hook member.

845,749. COMBINED GAS SEAL AND REGULATOR. CHARLES W. BRADLEY, Chicago, Ill., assignor to John Williamson, Chicago, Ill. Filed Feb. 12, 1906. Serial No. 300,710.

Claim.—1. A combined gas seal and regulator consisting of upper and lower sections, each hollowed out to form upper and lower chambers, a transversely-extending channel in the bottom of the lower chamber, a cross-wall in the channel forming a seal-chamber closed at its top, a mercury-cup screw-threaded into the seal-chamber and having mercury therein, a pipe leading from the lower chamber and having its lower end entered into the mercury, a blow-off pipe leading from the seal-chamber, supply and discharge pipes communicating with the lower chamber, a diaphragm between the upper and lower chambers, and valve mechanism controlled by the movements of the diaphragm for regulating the inflow of gas from the intake-pipe, substantially as described.

2. A combined gas seal and regulator consisting of upper and lower sections, each hollowed out to form upper and lower chambers, a transversely-extending channel in the bottom of the lower chamber, a cross-wall in the channel forming a seal-chamber closed at its top, a mercury-cup screw-threaded into the seal-chamber and having mercury therein, a pipe leading from the lower chamber and having its lower end entered into the mercury, a blow-off pipe leading from the seal-chamber into discharge-pipes communicating with the lower chamber, a diaphragm between the upper and lower chambers, valve mechanism controlled by the movements of the diaphragm for regulating the inflow of gas from the intake-pipe, and a breathing-hole leading from the upper chamber to the blow-off pipe, substantially as described.

3. A combined gas seal and regulator consisting of upper and lower sections substantially circular in shape hollowed out to form upper and lower chambers, a cross-channel in the lower chamber, a diaphragm between the upper and lower chambers, inlet and discharge pipes communicating with the lower chamber, a valve controlling the flow of gas from the inlet-pipe, a lever actuated by the diaphragm for moving the valve, a mercury-cup, a closed seal-chamber, a pipe leading from the lower chamber into the mercury-cup, and a blow-off pipe leading from the seal-chamber, substantially as described.

4. A combined gas seal and regulator consisting of upper and lower sections substantially circular in shape hollowed out to form upper and lower chambers, a cross-channel in the lower chamber, a diaphragm between the upper and lower chambers, inlet and discharge pipes communicating with the lower chamber, a valve controlling the flow of gas from the inlet-pipe, a lever actuated by the diaphragm for moving the valve, a mercury-cup, a closed seal-chamber, a pipe leading from the lower chamber into the mercury-cup, a blow-off pipe leading from the seal-chamber, and a breathing-passage leading from the upper chamber, to the blow-off pipe, substantially as described.

845,750. VESTIBULE-CAR PLATFORM. CHARLES W. BREMKEN, Chicago, Ill., assignor to Launcelot A. Harkness, Chicago, Ill. Filed Feb. 15, 1906. Serial No. 301,130.

Claim.—1. In a device of the class described, the combination with a car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of means coöperating with the trap-door to raise it automatically, a latch for holding it down, a releasing-handle for the latch located and exposed only at a point high enough to prevent its being accidentally operated by contact with the body of an adult, and connections inaccessible from within the car between the handle and the latch.

2. In a device of the class described, the combination with a car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of means coöperating with the trap-door to raise it automatically, a latch for holding it down, a releasing-handle for the latch located on the pilaster adjacent the exit to the next car and exposed only at a point high enough to prevent its being accidentally operated by contact with the body of an adult, and connections inaccessible from within the car between the handle and the latch.

3. In a device of the class described, the combination with the car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of means coöperating with the trap-door to raise it automatically, a latch for holding it down, a releasing-handle for the latch located at a point high enough to prevent its being accidentally operated by contact with the body of an adult, and connections between the handle and the latch, consisting of the link connected to the handle and inclosed within the framework of the car and extending down to a point beneath the platform, the bell-crank lever to which it is connected, a second bell-crank lever, a link connecting the two bell-cranks, and a third link connecting the second bell-crank and the latch.

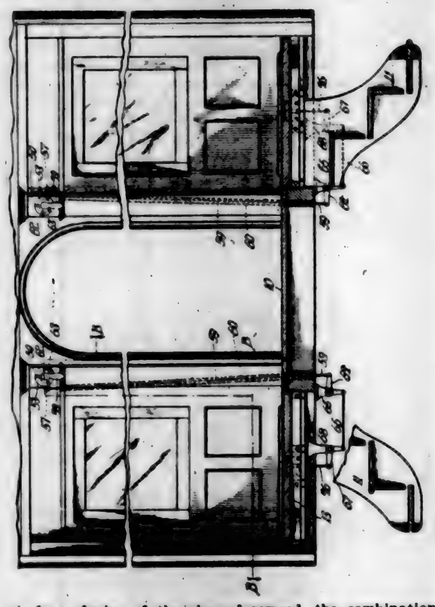

4. In a device of the class described, the combination with the car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of means coöperating with the trap-door to raise it automatically, a latch for holding it down, a releasing-handle for the latch located at a point high enough to prevent its being accidentally operated by contact with the body of an adult, and connections between the handle and the latch, including a link inclosed within the frame of the car and extending down to the level of the latch.

5. In a device of the class described, the combination with the car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of means coöperating with the trap-door to raise it automatically, a latch for holding it down, a releasing-handle for the latch located at a point above the trap-door and projecting downward to the outside of the frame of the car, the arm connected to the handle and rotating therewith inside the frame of the car, and a link extending downward within the car and ultimately connected to the latch.

6. In a device of the class described, the combination with the car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of means coöperating with the trap-door to raise it automatically, a latch holding it down, a releasing-handle for the latch extending downward and journaled to rotate upon a horizontal axis, a squared shaft carried by the handle, an arm having a square aperture through which the squared shaft passes within the framework of the car, and a link extending from the arm downward through the framework of the car and ultimately connected with the latch.

7. In a device of the class described, the combination with the car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of means coöperating with the trap-door to raise it automatically, a latch for holding it down, releasing means for the latch, and mechanism connected with said releasing means for positively starting the door in its upward movement, consisting of a bell-crank rocked by the releasing means, one arm of which operates the latch and the other arm of which engages the under side of the door adjacent the latch to lift it when the latch has been moved far enough to release it.

8. In a device of the class described, the combination with the car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of means coöperating with the trap-door to raise it automatically, a latch for holding it down, a releasing-handle for the latch, a three-armed bell-crank pivoted adjacent the latch, one arm of which engages and operates the latch and another arm of which engages the under side of the door adjacent the latch to lift it when the latch has been moved far enough to release the door, and connections between the third arm of the bell-crank and the releasing-handle.

9. In a device of the class described, the combination with the car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of a helically-coiled torsion-spring located along the axis of the pivot of the door and acting directly thereon to raise it when it is released, a latch for holding the dobr down, a releasing-handle for the latch, connections between the handle and the latch, and means for adjusting the tension of the spring.

10. In a device of the class described, the combination with the car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of a helically-coiled torsion-spring located along the axis of the pivot of the door and acting directly thereon to raise it when it is released, a latch for holding the door down, a releasing-handle for the latch, connections between the handle and the latch, means for increasing the tension of the spring step by step, and means for releasing its tension entirely.

11. In a device of the class described, the combination with the car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of the rod upon which the door is pivoted, the spring surrounding the rod and engaged thereby at one end, and by the door at the other end, the ratchet-disk on the rod, a dog coöperating therewith permitting its movement in one direction only, means for turning the rod, a latch for holding the door down, and releasing means for the latch.

12. In a device of the class described, the combination with the car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of the rod upon which the door is pivoted, the collar located upon the rod provided with the peripheral apertures and a lug to engage the spring, the spring surrounding the rod and engaged by the lug at one end and by the door at the other, the ratchet-disk on the rod, a dog coöperating therewith permitting its movement in one direction only, means for turning the rod, a latch for holding the door down, and releasing means for the latch.

13. In a device of the class described, the combination with the car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of the rod journaled in bearings secured to the car-body, the casing U-shaped in cross-section forming the pivot side of the door, the spring within the casing surrounding the rod and engaged by the rod at one end and by the door and casing at the other, a ratchet-disk on the rod, a dog coöperating therewith permitting its movement in one direction only, means for turning the rod, a latch for holding the door down, and releasing means for the latch.

14. In a device of the class described, the combination with the car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of the casing U-

shaped in cross-section secured on and forming the pivot edge of the door, a rod upon which the casing is pivoted, mounted in bearings carried by the car-body, the collar secured on the rod provided with the apertures and a lug to engage a spring, the spring surrounding the rod and engaged by the lug at one end and by the door and casing at the other end, the ratchet-disk on the rod, a dog coöperating therewith, the portion of the collar carrying the apertures projecting through a recess in the casing, a latch for holding the door down, and releasing means for the latch.

15. In a device of the class described, the combination with the car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of the rod upon which the door is pivoted, a collar provided with apertures and two lugs to engage ends of the springs on either side of the apertures, and adapted to be secured near the middle of the rod, the springs surrounding the rod and engaged by the lugs on the collar at one end and by the door at the other end, the ratchet-disk on the rod, a dog coöperating therewith, a latch for holding the door down, and releasing means for the latch.

16. In a device of the class described, the combination with the car-body having the vestibule-platform, the steps, and the trap-door pivotally secured to the car-body so as to cover or expose the steps as desired, of the rod upon which the door is pivoted, the spring surrounding the rod and engaged thereby at one end and by the door at the other end, the ratchet-disk upon the rod, a dog coöperating therewith, having an aperture therein, means for turning the rod, an aperture in the casing adjacent the dog to give access thereto, a latch for holding the door down, and releasing means for the latch.

845,751. METHOD OF FORMING COVERS FOR SHEET-METAL CANS. JULIUS BRENZINGER, Mount Vernon, N. Y., assignor to The Max Ams Machine Company, Mount Vernon, N. Y., a Corporation of New York. Filed Mar. 3, 1906. Serial No. 303,960.

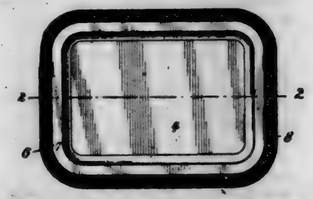

Claim.—The method of forming a cover for sheet-metal cans, which consists in forming a circumferential gutter on said cover, flowing a lining composition into the gutter so as to completely fill the same, and evaporating said composition to form a lining-skin within the gutter, substantially as specified.

845,752. TANK-CAR. THOMAS R. BROWN, New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Dec. 1, 1906. Serial No. 345,857.

Claim.—1. In a tank-car, the combination with a tank, of a longitudinal sill in the form of a girder arranged partly within the tank; substantially as described.

2. In a tank-car, the combination with a tank, of a longitudinal sill in the form of a girder arranged partially outside the tank; substantially as described.

3. In a tank-car, the combination with a tank, of a longitudinal sill having compression and tension flanges, the compression-flange being located inside the tank, and the tension-flange being arranged outside said tank; substantially as described.

4. In a tank-car, the combination with a tank, of a longitudinal sill which extends through the bottom of the tank; substantially as described.

5. In a tank-car, a tank, and a longitudinal sill connecting the bolsters beneath the tank, and having its upper edge located within the tank; substantially as described.

6. In a tank-car, tank-sheets flanged at their adjacent edges, and a longitudinal sill interposed between and riveted to said flanges; substantially as described.

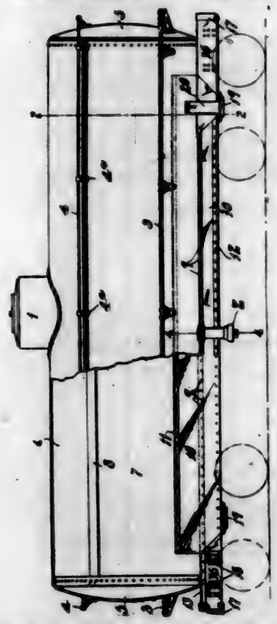

7. In a tank-car, tank-sheets flanged at their adjacent edges, and a longitudinal sill comprising a web portion which is interposed between and riveted to said flanges, said sill also having compression and tension flanges; substantially as described.

8. In a tank-car, body-bolsters, tank-sheets flanged outwardly at their adjacent edges, and a longitudinal sill which connects the body-bolsters interposed between and riveted to said flanges; substantially as described.

9. In a tank-car, a tank, and an I-shaped longitudinal sill connecting the bolsters beneath the tank, and having its upper edge located within the tank; substantially as described.

10. In a tank-car, a tank comprising a plurality of curved sheets, the adjacent edges of which are flanged outwardly and secured together, body-bolsters arranged under said tank, a longitudinal sill connecting the body-bolsters, and draft-sills secured to said body-bolsters; substantially as described.

11. A tank-car in which the tank structure is reinforced by a longitudinal tank-brace arranged above the center of the tank, and a longitudinal sill secured to the bottom of the tank; substantially as described.

12. A tank-car, a tank comprising a pluraltiy of tank-sheets which are flanged at their adjacent edges, and tank-braces arranged between and extending beyond said flanges; substantially as described.

13. In a tank-car, a tank comprising a plurality of sheets which extend from end to end of the car, the longitudinal edges of said sheets being flanged outwardly, and tank-braces arranged between and extending beyond said flanges; substantially as described.

14. In a tank-car, a plurality of tank-sheets flanged at their adjacent edges, and tank-braces which extend into the tank arranged between and secured to said flanges; substantially as described.

15. In a tank-car, a tank which is reinforced by one or more longitudinal braces arranged above the center of the tank and secured thereto between the tank-sheets; substantially as described.

16. In a tank-car, a tank which is reinforced by one or more interiorly-arranged braces located above the center of the tank and extending from end to end thereof; substantially as described.

17. In a tank-car, tank-sheets provided with flanges which extend below the tank, and a longitudinal sill secured to said flanges; substantially as described.

18. In a tank-car, tank-sheets provided with flanges which extend below the tank, and a draft-sill secured to said flanges; substantially as described.

19. A tank-car having longitudinal flanges, and supporting-brackets secured to said flanges; substantially as described.

845,753. PLOTTING INSTRUMENT. EDWARD L. CAMPBELL, Kings Mountain, N. C. Filed Aug. 13, 1906. Serial No. 330,458.

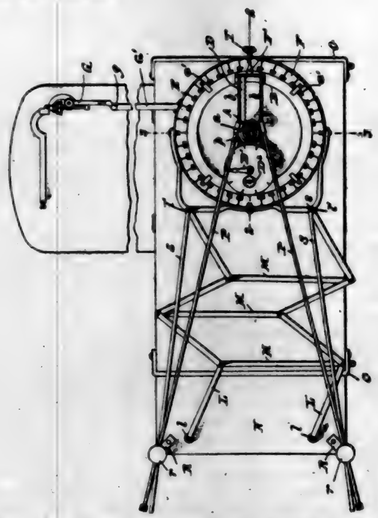

Claim.—1. In an instrument for plotting from previously-determined surveyors' courses of the metes and bounds of the area to be plotted, the combination with the guide-frame and style-carrier connected by right-line guides for relative movement in a right line each adapted to be held in fixed position and forming a guide for the other and adjustable together angularly around a style held by the carrier, of a graduated circular scale and pointer for determining the angular adjustments and a style held by the carrier and movable therewith to form the plot-lines.

2. In a plotting instrument, the combination with the guide-frame and style-carrier connected together and held against relative angular movement by right-line guides, said style-carrier and frame each occupying a fixed position to form a right-line guide for the other and bodily adjustable in unison angularly around a center formed by a style held by the carrier, of a graduated circle and pointer associated with said frame and carrier for determining the angular adjustment, a planimeter connected with the guide-frame to be moved thereby in forming a plot for determining the area plotted and a style held by and movable with the carrier to form the plot.

3. In a plotting instrument the combination with a guide-frame and style-carrier having a fixed angular relation to each other and connected for relative but corresponding successive movements in a right line, each occupying a fixed position to form a right-line guide for the other and a style for forming the lines of the plot held by the carrier and normally forming a center about which the frame and carrier are together angularly adjustable, of a scale for indicating the extent of the right-line movement and a circular scale and pointer associated with said frame and carrier for determining the angular adjustment of the frame and carrier.

4. In a plotting instrument, the combination with a guide-frame and a style-carrier having a fixed angular relation to each other each movable, but occupying a fixed position to form a right-line guide for the other whereby they may successively make similar bodily movements corresponding to the lines of the plot, of a graduated scale and pointer for indicating the extent of such relative movement and a graduated circular scale and pointer associated with the instrument for determining the angular position of the guide-frame and style-carrier, whereby the direction of the line to be traced by the style may be preliminarily determined and made to accord with the direction of a previously-surveyed line.

5. In a plotting instrument the combination with the carrying-frame, the guide-frame angularly adjustable therein and a graduated scale and pointer for indicating the angular adjustment, of a style-carrier connected with the guide-frame by a right-line guide whereby they may have a relative movement in a right line to each travel in lines corresponding to the lines of the plot and means whereby each may be held in fixed position to serve as a guide for the other in its right-line movements.

6. In a plotting instrument the combination with the carrying-frame, the guide-frame angularly adjustable therein and a graduated scale and pointer for indicating the angular adjustment, of a style-carrier connected with the guide-frame by a right-line guide whereby they may have a relative movement in a right line, said style-carrier having an opening for the style located at the axis of the angular adjustment when the parts are in normal position and means whereby either the guide-frame or style-carrier may be held in fixed position to serve as a guide for the other in its right-line movements.

7. In a plotting instrument, the combination with the carrying-frame, means whereby it may be held against angular movement, a guide-frame angularly adjustable in said carrying-frame and a graduated scale and pointer for indicating the angular adjustment, of a style-carrier connected with the guide-frame and held against angular movement with relation thereto by a right-line guide and having a style-opening movable with the carrier radially from the axis of angular adjustment, means whereby it may be held to form a guide for the guide and carrying frames in their bodily right-line movements and a graduated scale and pointer for indicating the relative bodily movement of the parts.

8. In a plotting instrument, the combination with the carrying-frame, means whereby it may be held against angular movement, a guide-frame angularly adjustable in said carrying-frame and a graduated scale and pointer for indicating the angular adjustment, of a style-carrier connected with the guide-frame by a right-line guide and having a style-receiving opening at the axis of the said angular adjustment when the parts are in normal position, means whereby the style-carrier may be held to form a guide for the carrying and guide frames in their bodily right-line movements, and a graduated scale and pointer for indicating such bodily movements.

9. In a plotting instrument the combination of a movable carrying-frame having a circular opening therein, a circular guide-frame mounted and movable angularly in said opening, a circular graduated scale and pointer for indicating such angular movement, right-line-guiding means fixed on said guide-frame, a style-carrier guided thereby and having a style-receiving opening located at the axis of angular movement when the parts are in normal position and movable radially from said position when the style-carrier is moved on the guide-frame.

10. In a plotting instrument the combination of a carrying-frame means for holding the same against angular movement, a guide-frame angularly adjustable in said carrying-frame, means for indicating its angular adjust-

ment, a style-carrier movable bodily in a right line in said guide-frame, a graduated scale and pointer for indicating its right-line movement and means for locking said style-carrier in fixed position with relation to the supporting-base, whereby when the style-carrier is free it may be moved in a right line on the guide-frame and when locked the carrying-frame together with the guide-frame may be moved in a right line on the style-carrier.

11. In a plotting instrument, the combination of a carrying-frame means for holding the same against angular movement, a guide-frame angularly adjustable in said carrying-frame, means for indicating its angular adjustment, a style-carrier movable bodily in a right line in said guide-frame, a graduated scale and pointer for indicating its right-line movement and means for locking said style-carrier in fixed position and for locking the guide-frame against angular adjustment, whereby the style-carrier may serve as a right-line guide for the carrying and guide frames.

12. In a plotting instrument the combination of a bodily-movable carrying-frame, means for restraining said frame against angular movement, a circular guide-frame mounted to move angularly in said carrying-frame, means to indicate the angular movement and a style-carrier mounted on and guided to move in a right line by said guide-frame and having a style-opening normally coincident with the axis of the guide-frame.

13. In a plotting instrument, the combination of a bodily-movable carrying-frame, means for restraining said frame against angular movement, a planimeter connected with the carrying-frame, a guide-frame mounted to move angularly in said carrying-frame, means to indicate the angular movement, a style-carrier mounted on and guided to move in a right line by said guide-frame and having a style-opening normally coincident with the axis of the guide-frame and a graduated scale and pointer for indicating the extent of such right-line movement.

14. In a plotting instrument the combination of a bodily-movable carrying-frame, means for restraining said frame against angular movement, a planimeter connected with the frame, a guide-frame mounted to move angularly in said carrying-frame, means to indicate the angular movement, a style-carrier mounted on and guided to move in a right line by the guide-frame, means to indicate the extent of right-line movement and means for locking the style-carrier whereby when locked it will form a right-line guide for the two frames.

15. In a plotting instrument, the combination of a bodily-movable carrying-frame, means for restraining said frame against angular movement, a planimeter connected with the frame, a guide-frame mounted to move angularly in said carrying-frame, a graduated scale to indicate the angular movement, a carrier having a style-opening normally at the axis of the angular movement and mounted on and guided to move in a right line by the guide-frame, means to indicate the extent of the right-line movement, and means for locking the style against movement whereby it will form a guide for the frames.

16. In a plotting instrument, the combination with a scribe-guide and means for determining the angle and extent of the movements of the scribe which forms the plot, of a planimeter connected to said instrument and guided thereby during the formation of a plot to trace a figure coextensive with the plotted figure, for determining the area of the formed plot at the time it is formed.

17. In a plotting instrument, the combination with a planimeter for determining area of a plot, of a frame with which said planimeter is connected, a scribe-guiding means angularly adjustable in said frame said scribe right-line-guiding means also forming a guiding means for the frame to which the planimeter is connected, whereby the frame may be caused to follow in succession the movements of the scribe in forming the plot for determining the area of the plot at the time it is formed.

18. In a plotting instrument the combination with the carrying-frame, an angularly-adjustable guide-frame thereon and a style-carrier movable bodily in a right line on the guide-frame, of locking means for the carrier-frame and style-carrier embodying devices whereby when either one is unlocked the other will be locked by a continued movement of the devices.

19. In a plotting instrument, the combination of the carrying-frame, parallel links for restraining it against angular movement, an angularly-adjustable guide-frame on the carrier-frame, and style-carrier movable bodily in a right line on the guide-frame and a locking means for holding the style-carrier during the angular adjustment of the guide-frame and bodily movement of both the carrying and guide frames.

845,754. LAMP-SOCKET. CHARLES A. CHASE, Chicago, Ill. Filed Dec. 29, 1906. Serial No. 349,087.

Claim.—1. A supporting-body having a perforation, in combination with a lamp-receptacle comprising a back section of insulating material lying against one side of the supporting-body, an internally and externally screw-threaded socket secured to the back section, a front section of insulating material having an internal thread so as to screw onto the end of the socket and against such supporting-body, and a flange on the front section lying between the socket and the material of the supporting-body.

2. A supporting-body having a perforation, in combination with a lamp-receptacle comprising a back section of insulating material lying against one side of the supporting-body, an internally and externally screw-threaded socket secured to the back section, a front section of insulating material having an insulating-thread so as to screw onto the end of the socket and against such supporting-body, the back section being recessed, and a flange on the front section lying between the socket and the material of the supporting-body and extending into the recess in the back section.

3. A supporting-body having a perforation, in combination with a lamp-receptacle comprising a back section of insulating material lying wholly on one side of the supporting-body and against the same, a socket secured to the back section, a front section of insulating material having a part lying against the front side of the supporting-body, and a flange extending between the supporting-body and the socket.

4. A supporting-body having a perforation, in combination with a lamp-receptacle comprising a back section of insulating material lying wholly on one side of the supporting-body and against the same, said back section being recessed centrally, a socket secured within the recess so as to form an annular channel, a front section of insulating material having a part lying against the front side of the supporting-body, and a flange extending into the channel between the supporting-body and the socket.

845,755. TEMPERING-BATH FOR STEEL. JAMES CHURCHWARD, New York, N. Y. Filed Sept. 18, 1906. Serial No. 335,153.

Claim.—1. A quenching-bath for steel, containing mercury and a fatty substance.

2. A quenching-bath for steel, containing mercury, linseed-oil, and a phenol, the mercury being at the bottom of the bath.

3. A quenching-bath for steel containing mercury, linseed-oil, and carbolic acid, the mercury being at the bottom of the bath.

4. A quenching-bath for steel, containing a phenol-bath having at its bottom a mixture of mercury with a fatty substance.

845,756. SELF-HARDENING ALLOY OF IRON AND STEEL. JAMES CHURCHWARD, New York, N. Y. Filed Nov. 1, 1906. Serial No. 341,556.

Claim.—1. An alloy containing the following metals in about the proportions given, namely: steel, which contains from 0.2 to 0.6 per cent. of carbon, from ninety to ninety-five parts; nickel, from one to 3.5 parts; chromium, from 0.5 to two parts; manganese, from 0.15 to 0.7 parts, and vanadium, from 0.05 to 0.25 parts.

2. An alloy containing the following metals in about the proportions given, namely: steel, having in it 0.6 per cent. of carbon, 94.6 parts; nickel, three parts; chromium, 1.5 parts; manganese, 0.25 parts; tungsten, 0.05 parts, and vanadium, 0.15 parts.

845,757. SELF-HARDENING ALLOY OF STEEL. JAMES CHURCHWARD, New York, N. Y. Filed Dec. 14, 1906. Serial No. 347,820.

Claim.—1. An alloy containing the following metals in about the proportions given, namely: steel, which contains from 0.2 to 0.6 per cent. of carbon, from ninety to ninety-five parts; nickel, from one to 3.5 parts; chromium, from 0.5 to two parts; manganese, from 0.15 to 0.7 parts; tungsten, from 0.15 to 0.50 parts, and vanadium, from 0.05 to 0.25 parts.

2. An alloy containing the following metals in about the proportions given, namely: steel, having in it 0.6 per cent. of carbon, 94.6 parts; nickel, three parts; chromium, 1.5 parts; manganese, 0.25 parts; tungsten, .05 parts, and vanadium, 0.15 parts.

845,758. STEAM-SEPARATOR. GEORGE CLARK, Chicago, Ill. Filed Sept. 21, 1905. Serial No. 279,407.

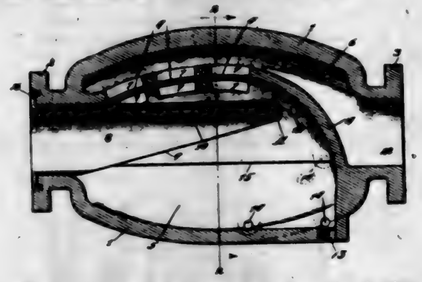

Claim.—1. A separator consisting of a casing having a receiving-chamber and an outlet-chamber communicating therewith through passages, and a reaction-tube extending into the receiving-chamber and opening obliquely into the latter away from said passages, the extended wall of said tube serving as a baffle-plate for said passages, substantially as described.

2. A separator consisting of a casing having a receiving-chamber and an outlet-chamber communicating therewith through passages, a baffle-plate within the receiving-chamber opposite the passages and between them and the inlet-opening of the separator, said baffle-plate being in the form of a tube through which the steam enters the receiving-chamber and being cut obliquely to communicate with said chamber, its oblique opening facing that side of the receiving-chamber remote from the communicating passages, substantially as described.

3. A separator consisting of a casing having a receiving-chamber, and a crescent-shaped outlet-chamber, separated from said receiving-chamber through an arched partition, and communicating therewith through passages in said partition, a reaction-tube extending into the receiving-chamber and opening obliquely into the latter away from said passages, the extended wall of said tube serving as a baffle-plate for the passages between its receiving and outlet chambers, substantially as described.

4. A separator consisting of a casing having a receiving-chamber and a crescent-shaped outlet-chamber communicating therewith through passages, and a reaction-tube extending into the receiving-chamber opening obliquely into the latter away from said passages, the extended wall of said tube serving as a baffle-plate for the passages between its receiving and outlet chambers, and the extremity of said tube being flanged inwardly toward the open side of the tube, substantially as described.

5. A separator consisting of a casing having a receiving-chamber and outlet-passages leading therefrom, a baffle-plate within the receiving-chamber opposite said outlet-passages and between them and the steam-inlet of said chamber, said baffle-plate being of tubular form and opening obliquely into said chamber with its oblique opening facing away from the outlet-passages, substantially as described.

6. A separator consisting of a casing having a receiving-chamber and outlet-passages leading therefrom, a baffle-plate within the receiving-chamber opposite said outlet-passages and between them and the steam-inlet of said chamber, said baffle-plate being of tubular form and opening obliquely into said chamber with its oblique opening facing away from the outlet-passages, and lateral ribs in said receiving-chamber, substantially as described.

7. A separator consisting of a casing substantially circular in cross-section and having an inlet at one end and an outlet at the opposite end and an arched partition-wall within the casing, this arched wall being connected along its lower edges to the respective side walls of the casing to thereby form a crescent-shaped chamber and also being provided with perforations toward its rear portion, and an inlet-tube extending into the casing below the arched wall and to a point beyond the perforations therein.

8. A separator consisting of a casing having an inlet at one end and an outlet at its other end and a perforated arched partition-wall which converts the upper part of the casing into an outlet-chamber, and an inlet-tube extending into the chamber to a point beyond the perforations and arranged to discharge the steam toward the bottom of the casing.

845,759. SAND-CAP FOR WHEEL-HUBS. HARRY C. CLAY, Columbus, Ind., assignor to Reeves & Company, Columbus, Ind., a Corporation of Indiana. Filed Aug. 6, 1906. Serial No. 329,474.

Claim.—1. The combination, with a rotatable wheel having an axial annular flange, of a non-rotating member entering said annulus, said member having a surface inclined to the axis of the wheel with its upper end lying within the annulus and its lower end extending beyond the annulus and undercut to form a liquid-shedding edge.

2. The combination, with an axle and a wheel journaled thereon, of an annular flange carried by said wheel and a flange carried by the axle and lying within said annulus, said flange being of less axial width at its upper end than at a point nearer the horizontal middle of the axle, the dimension at the said last-mentioned point being greater than the width of the annulus carried by the wheel.

3. The combination, with an axle and a wheel journaled thereon, of an annular flange carried by said wheel, and a flange carried by the axle and lying within said annulus, said flange being of less axial width at its upper end than the annulus and than at a point nearer the horizontal middle of the axle, the dimension at the last-mentioned point being greater than the width of the an-

nulus carried by the wheel, and flange at said last-mentioned dimension being suddenly reduced in its axial dimension and undercut to form a water-shedding edge.

4. The combination, with an axle and a wheel journaled thereon, of an annular flange carried by said wheel, a flange carried by the axle and lying within said annulus, said flange being of less axial width at its upper end than the annulus and than at a point nearer the horizontal middle of the axle, the dimension at the said last-mentioned point being greater than the width of annulus carried by the wheel, an annular flange carried by the outer end of the wheel, a cap secured to the projecting end of the axle beyond the wheel, and a flange carried by said cap and lying within said last-mentioned annulus, said cap-flange having a width at its upper end less than the width of the annulus carried by the wheel and a width nearer its horizontal middle greater than the width of the flange carried by the wheel.

5. The combination, with an axle and a wheel journaled thereon, of an annular flange carried by said wheel, a flange carried by the axle and lying within said annulus, said flange being of less axial width at its upper end than the annulus and than at a point nearer the horizontal middle of the axle, the dimension at the said last-mentioned point being greater than the width of annulus carried by the wheel, and the said flange carried by the cap being suddenly reduced in its last-mentioned axial dimension and undercut to form a water-shedding edge.

845,760. METALLIC BARREL. CHARLES L. COFFIN, Nacoochie, Ga., assignor to Electric Metal Working Company, Detroit, Mich., a Corporation of Michigan. Filed Apr. 2, 1906. Serial No. 309,561.

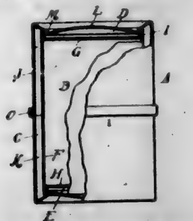

Claim.—1. A metallic barrel consisting of two closed shells arranged one within the other, one being formed of oppositely-disposed drawn headed sections, and annular spacing-flanges upon the heads or ends of the complementary shell with which the drawn sections engage.

2. A metallic barrel comprising an outer inclosing casing composed of two drawn headed sections formed each with a spacing-flange, and an inner closed shell engaging the flanges.

3. A metallic barrel consisting of an outer shell or casing composed of two drawn headed sections, the heads being oppositely disposed and formed each with an annular spacing-flange, and an inner closed shell engaging and held against relative movement by the head-flanges.

4. A metallic barrel comprising complementary inclosing casings arranged one within the other, one being formed of oppositely-disposed drawn headed sections, and spacing-flanges upon the heads of one of the casings engaging the ends or heads of the complementary casing.

845,761. METHOD OF TREATING SHEETS OF PAPER TO INCREASE THEIR FLEXIBILITY. ROLLA L. CRAIN, Ottawa, Ontario, Canada. Filed Oct. 3, 1906. Serial No. 337,316.

Claim.—1. The herein-described method of forming a flexible band across a sheet of paper which consists in operating on the paper with a set of dies to produce a series of corrugations, protruding from one side thereof, then operating on the paper with a second set of dies which exactly reverse each individual corrugation formed by the first set, whereby the paper forming the corrugation on one side will now be stretched to form the corrugation on the opposite side substantially as described.

2. The herein-described method of treating a sheet of paper to increase its flexibility which consists in forming a corrugation in the paper on one side, then reversing the corrugation so that it protrudes from the opposite side and then removing the corrugations and smoothing the paper substantially as described.

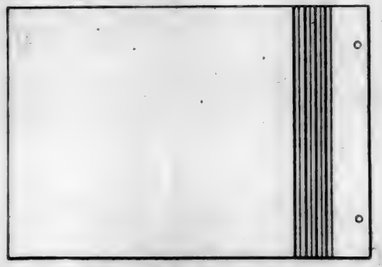

3. The herein-described method of treating a sheet of paper to increase its flexibility which consists in forming a series of parallel corrugations in the paper on one side thereof, then reversing the series of corrugations so that each corrugation protrudes from the opposite side to which it previously did and then removing the corrugations and smoothing the paper substantially as described.

4. The herein-described method of treating a sheet of paper to increase its flexibility which consists in stamping a portion thereof outwardly from one side thereof; then stamping said portion to protrude from the opposite side substantially as described.

5. The herein-described method of treating a sheet of paper to increase its flexibility which consists in stamping a portion thereof outwardly from one side thereof; then stamping said portion to protrude from the opposite side and then smoothing the paper and causing the stamped portion to again lie flat with the remainder of the sheet substantially as described.

845,762. TURBINE-MUFFLER. CECIL R. CRARY, St. Clair, Mich. Filed Mar. 29, 1906. Serial No. 308,767.

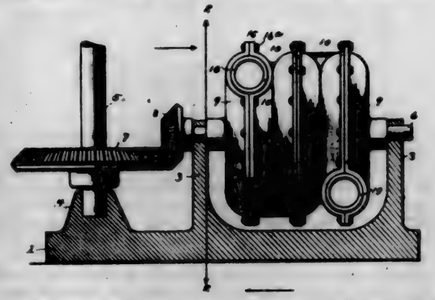

Claim.—1. In a muffler a stationary casing comprising a plurality of connected sections, a shaft extending through said sections, pistons carried by said shaft and revolving between the opposing sections, the outermost sections being provided respectively with inlet and outlet ports, and the intermediate sections being provided with openings therethrough arranged in non-alined relation throughout the series.

2. In a muffler a stationary casing comprising a plurality of sections, arranged in transverse alinement and in confronting relation, a shaft extending through said sections, said sections being severally formed with annular grooves, the outer sections being provided respectively, with inlet and outlet ports and the intermediate sections being formed with openings therethrough, arranged in staggered relation throughout the series and pistons carried by said shaft and occupying and traveling in the space between said grooves.

3. In a muffler a stationary casing comprising a plurality of sections, arranged in horizontal alinement and severally in confronting relation with the adjacent sections, a revolving shaft extending transversely through said sections, means for operating said shaft from the shaft of an engine, one of the outer sections, being formed with an inlet-port, leading from the exhaust mechanism of an engine and the other of the outer sections being formed with an outlet-port, the intermediate sections being severally provided with openings arranged in staggered relation throughout the series and affording communication therebetween, and pistons carried by said shaft and occupying the spaces between the several sections in their confronting relation.

4. In a muffler a base, a stationary casing supported thereon, and comprising a plurality of transversely non-alined sections, arranged severally in confronting relation with the adjacent section, a shaft extending transversely through said sections and journaled in said base, the end sections of said casing being provided respectively with inlet and outlet ports and the intermediate sections of said casings being formed with openings therethrough, arranged in staggered relation and affording communication therebetween and pistons occupying the space between said sections.

5. In a turbine-muffler a casing comprising a plurality of independent sections arranged in transverse alinement and severally in confronting relation in adjacent pairs, said sections being united to one another and coöperating in confronting pairs to form independent turbine-cylinders, a shaft extending transversely through said sections, the end turbine-cylinders constituted by the adjacent end pair of sections being respectively provided with inlet and outlet ports, the intermediate sections of the series being severally formed with openings extending therethrough and affording communication therebetween, said openings being arranged in staggered relation throughout the series, and pistons carried by said shaft and occupying and revolubly traveling in the space between the confronting sections.

845,763. REINFORCED CONCRETE CONSTRUCTION. WILLIAM CURLETT, San Francisco, Cal. Filed Oct. 29, 1906. Serial No. 341,087.

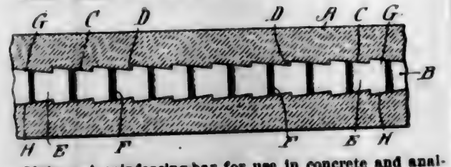

Claim.—A reinforcing-bar for use in concrete and analogous constructions, having at opposite sides shoulders D disposed at right angles to its length and walls C which extend between the shoulders D and each converge in one direction from one shoulder D to the next adjoining shoulder D, and also having at its other sides adjacent to those first-mentioned, shoulders F disposed at right angles to its length and walls E which extend between the shoulders F and each converge in the opposite direction, with reference to the walls C, from one shoulder F to the next adjoining shoulder F.

845,764. MACHINE FOR SLITTING SHEET METAL. LEWIS E. CURTIS, Chicago, Ill., assignor to Oscar Bradford, Chicago, Ill., and William L. Caldwell, New York, N. Y. Filed Sept. 23, 1901. Serial No. 76,221.

Claim.—1. In a machine of the class described, the combination with a frame, of a plurality of pairs of coacting rolls journaled thereon, means arranged on said rolls equidistant apart and adapted to cut a sheet of metal into a plurality of short slits arranged staggering with each other and a uniform distance apart, each of said pairs of rolls forming half of said slits.

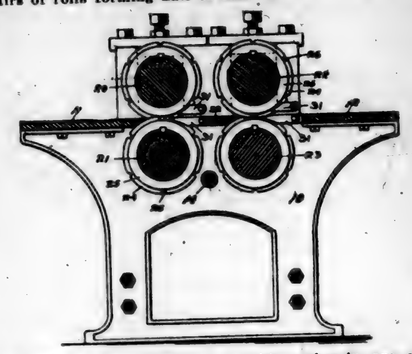

2. The sheet-metal-slitting machine wherein are combined two pairs of slitting-rolls arranged one in advance of the other, said rolls being adapted to slit the sheet without bending the metal, and each roll being provided with a series of cutters extending the entire width of the sheet, and each pair of rolls forming slits in rows alternating with the slits formed by the cutters of the other pair.

3. The sheet-metal-slitting machine wherein are combined two pairs of slitting-rolls, one pair in advance of the other pair, and both provided with notched cutters extending the entire width of the sheet, and so arranged that the rows of slits formed by one pair alternate with the rows formed by the other pair, and so the slits in the different rows break joints, said cutters being also adapted to slit the sheet without bending the metal.

4. The sheet-metal-slitting machine wherein are combined two pairs of slitting-rolls arranged one pair in advance of the other, and both provided with notched cutters whose thickness equals the width of two strands of the slitted sheet, said cutters being arranged so the rows of slits cut by one pair of rolls alternate with the rows of slits cut by the other pair, and being adapted to cut the sheet without bending the metal.

845,765. AUTOMATIC MAIL AND PARCEL DELIVERY APPARATUS. ZADOC P. DEDERICK, Sherman, Tex. Filed Dec. 6, 1906. Serial No. 346,559.

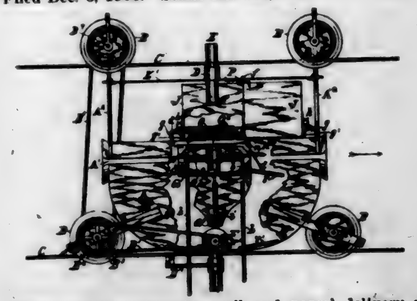

Claim.—1. An automatic mail and parcel delivery apparatus comprising a car A, wires C C for carrying the same, a mail-receptacle J carried by the car, lid K' for supporting the upper portion thereof, spring P for revolving the receptacles, latch g and catch g' for retaining the receptacles after each successive movement, in combination with mail-boxes G situated along the mail route, the spring-catch N thereon, the raised members o within and the doors at either end of mail-box, all arranged substan-

tially as shown and described and operating simultaneously.

2. An automatic mail and parcel delivery apparatus comprising a car for carrying the several packages of mail to be received or delivered, a mail-receptacle carried upon said car, means for supporting and actuating said receptacle, a series of metal sheets for carrying and separating the mail-packages, means for drawing the sheets in an intermittent manner for dropping the mail for delivery held between them, and other means for releasing the sheets and depositing them at the bottom of car, whereby they are returned to the post-office to be again thus employed.

3. An automatic mail and parcel delivery apparatus comprising a car for carrying receptacles containing mail to be distributed, metal sheets within such receptacles by which mail for the different mail-boxes are separated, such sheets adapted to deliver their mail in successive order and means for withdrawing the sheets at the proper time, in combination with mail-boxes placed along the route, and means on the car for removing mail from the said boxes simultaneously with the drawing of the sheets and depositing the mail thus removed within the mail-car, substantially as shown and described.

4. An automatic mail and parcel delivery apparatus comprising a receptacle having compartments for containing the mail to be distributed, the same carried by a car arranged to receive mail from boxes along the route, a series of metal sheets adapted to be placed within the compartments of such receptacles for separating and delivering the mail in successive order, means for withdrawing the sheets from said compartments and dropping the mail upon a shelf within the mail-car, whence it is deposited alternately within a series of mail-boxes along the route, from which, at the same time mail is received from the said mail-boxes in successive order as they are reached, dropped therefrom into the mail-car and carried to the post-office for forwarding.

5. An automatic mail and parcel delivery apparatus comprising car A for carrying the mail to be distributed and collected, deeply-grooved wheels B mounted on said car, an electric motor F located centrally within same, a sprocket-pinion F' secured to motor-shaft, a link belt B' extending from said pinion to sprocket-wheel B^2 secured to grooved-wheel shaft B^3, a similar sprocket-wheel B^4 secured to opposite end of shaft B^3 around which passes link belt B^5 to and around sprocket-wheel B^6 attached to upper grooved-wheel shaft B^7 enabling the motor, when started to revolve the two grooved wheels thus connected and propel the car along supporting-wires C for the purposes set forth and described.

6. An automatic mail and parcel delivery apparatus comprising a car A, a receptacle J carried thereby for containing the mail for delivery, the metal sheets O provided therefor, the downwardly projection O' and tongue O^2 formed on one end of each of these sheets enabling them to be drawn from the receptacle, and a shelf H centrally located within body of car, in combination with a series of mail-boxes G carried by poles at the roadside for holding mail to be collected or delivered by said car, these boxes being constructed with circular bottom, a slot at one side extending from end to end, a spring-catch N for engaging the sheets O, and doors at each end for closing same, all as herein set forth.

7. In a mail delivery and receiving apparatus, poles set at intervals adapted to carry two overhead wires arranged at suitable distances apart, one above the other, a car adapted to travel thereon, a mail-carrying member on the car arranged for delivery of mail-packages, a means for removing mail from mail-boxes placed at intervals along the route, and likewise depositing any mail for said boxes within them while successively passing through body of car, suitable doors at each end of mail-boxes that will be simultaneously opened and closed by the passage of the car, substantially as described.

8. In a mail delivery and receiving apparatus, a car carrying mail-receptacles, overhead wires upon which the car travels, suitable brackets for the support of said wires, said brackets secured to pipe posts firmly embedded in the ground, depending guide-rods for the mail-box provided therefor, a suitable cord extending upward from mail-box, over pulley near top of post, thence downward within said post and attached to a weight for retaining said box adjacent to the bracket Q where it is in position to receive or discharge its mail, and a similar cord B^8 passing downward from mail-box to a point within easy reach from the ground, all as and for the purpose specified.

845,766. SUPPLY SYSTEM FOR LOCOMOTIVES. ARTHUR P. DODGE, New York, N. Y. Filed May 10, 1904. Serial No. 207,208.

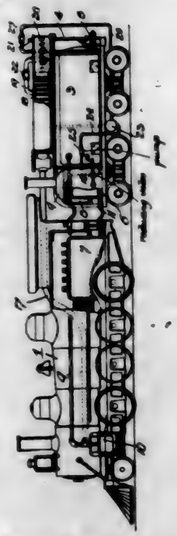

Claim.—1. In combination with a locomotive-boiler, fire-box and engine-cylinders, with the ordinary steam-supply connection thereto, a supplemental boiler with pipe connections leading direct to the engine-cylinders, said supplemental boiler and connections comprising means for supplying steam to the cylinders independent of the main boiler, substantially as described.

2. In combination with a locomotive having the ordinary cylinders and steam-supply connections, an independent detached fire-box separate from the locomotive, a water-heating chamber in connection with the said fire-box, and pipe connections from said chamber leading directly to the steam-chest of the engine-cylinder, said water-heating chamber and pipe connections forming means for supplying steam to the cylinders independent of the main boiler, substantially as described.

3. In combination with a locomotive, a supplemental boiler, a fire-box independent of the locomotive, a water-chamber to be heated by the fire-box, steam-pipe connections between the supplemental boiler and the said water-chamber and pipe connections from the water-chamber to the locomotive, the said water-chamber being thus interposed between the supplemental boiler and the locomotive, substantially as described.

4. In combination with a locomotive, a supplemental boiler, a fire-box independent of the locomotive, a water-chamber to be heated by the fire-box, water-pipe connections between the supplemental boiler and the said water-chamber, and pipe connections from the water-chamber to the locomotive, the said water-chamber being thus interposed between the supplemental boiler and the locomotive, substantially as described.

5. In combination, the steam-chest, the fire-box independent of the locomotive, the water-chamber in connection with the fire-box, a supplemental boiler, pipe connections between the supplemental boiler and the water-chamber and between the water-chamber and the steam-chest, with branch connections and valves 11, 12 and 13 whereby the steam may pass directly from the supplemental boiler to the steam-chest, or from the supplemental boiler to the water-heating chamber and thence to the steam-chest or from the water-chamber alone, substantially as described.

6. In combination, a boiler, the steam-chest, a connection from the boiler to the steam-chest, a water-chamber interposed in said connection a second connection between the boiler and the water-chamber and a pressure-reducing valve in said connection, substantially as described.

7. In combination, the steam-chest, a boiler, a water-heating chamber, a steam and a water pipe connection between the boiler and the chamber the said water-pipe having a reducing-valve therein, a pipe connecting the water-heating chamber with the steam-chest and a reducing-valve in said connection, substantially as described.

8. In combination, the main boiler, connected to the engine-cylinders, the supplemental boiler, a pipe H connecting them below the water-line and a steam-pipe leading from the supplemental boiler direct to the engine-cylinders, substantially as described.

9. In combination, the main boiler, a supplemental boiler, a pipe H connecting the main and supplemental boiler, a chamber having a steam and a water pipe connection with the supplemental boiler, a furnace for heating the chamber and a steam-pipe connecting the chamber with the engine-cylinder, substantially as described.

10. In combination, with the main boiler, a supplemental boiler, means whereby the latter may be charged with water and steam under high heat and pressure, a water-heating chamber connected with the supplemental boiler and with the engine-cylinders, and an independent fire-box for the water-heating chamber substantially as described.

845,767. AUTOMATIC WINDOW. THOMAS I. DUFFY, Chicago, Ill., assignor to Voigtmann & Company, Chicago, Ill., a Copartnership. Filed Apr. 24, 1906. Serial No. 313,490.

Claim.—1. In a window, the combination of a window-frame, a sash-frame pivotally mounted therein to oscillate on a transverse axis located between the ends of the sash, stops mounted upon the window-frame at each side of the sash and adapted to enter stop-grooves in the latter, upwardly and inwardly inclined parallel links pivotally supporting each of said stops upon the window-frame, and means for simultaneously lifting the stops to effect their withdrawal from the sash.

2. In a window, the combination of a window-frame, a sash-frame pivotally mounted therein to oscillate on a transverse axis located between the ends of the sash, stops mounted upon the window-frame at each side of the sash and adapted to enter stop-grooves in the latter, upwardly and inwardly inclined parallel links pivotally supporting each of said stops upon the window-frame, and means for simultaneously lifting the stops to effect their withdrawal from the sash, said means comprising a horisontal bar extending between and operatively connected with the corresponding ends of the side stops and a lever operatively engaging said bar.

3. In a window, the combination of a window-frame provided in its inner vertical sides with stop-grooves, a sash-frame pivotally mounted therein and provided in its outer lateral sides with stop-grooves adapted to register with the corresponding grooves of the frame, parallel links at each side of the window pivotally mounted to oscillate in planes parallel with the stop-grooves of the frame and inclined upwardly and inwardly from their pivotal points of attachment to the frame, side stops supported by the sets of parallel links at each side, an upper transverse stop having sliding engagement with the upper end of each side stop and adapted to enter a stop-groove in the upper side of the sash-frame, and an actuating mechanism for positively lifting said upper stop and connected side stops.

4. In a window, the combination of a window-frame and a sash-frame pivotally mounted therein upon a transverse axis, said window-frame being provided in its inner perimeter surrounding the sash-frame at each side of the latter and across the upper end thereof with stop-grooves and the sash-frame being provided with corresponding stop-grooves adapted to register with those of the window-frame when the sash is in closed position, stops shiftably mounted in each of said several grooves of the window-frame, a pair of parallel links pivotally connected with each side stop-groove and also pivotally connected with the window-frame at points laterally remote from the stops, operative connections between the upper ends of the side stops and the corresponding ends of the upper transverse stop, said connections comprising guide-openings in the side stops and extensions of the upper stop sliding endwise within said guide-openings, and means for shifting said upper stop bodily into and out of engagement with the groove of the sash-frame.

5. In a sheet-metal window, the combination of a hollow window-frame having its inner perimeter at each side and across the upper end formed with a stop-groove, the sides whereof are parallel with the plane of the window, divided link-brackets seated in each side of the window-frame in register with the stop-grooves thereof, the sides of said brackets extending laterally outward from the inner perimeter of the window beyond the lateral bottoms of the stop-grooves, parallel links pivotally mounted in the laterally outer portions of said brackets and extending obliquely upwardly and inwardly from their points of pivotal attachment, a side stop pivotally connected with the inner and upper ends of the links at each side of the window, an upper transverse stop movably mounted in the upper frame member of the window, sliding connections between the respective ends of said upper stop and the corresponding side stop, means for lifting said upper stop member bodily and thereby retracting the side stops, and means controlled by the pivoted sash for holding the several stops retracted so long as the sash is in open or partially-open position.

6. In a window, the combination of a window-frame, a sash-frame pivotally mounted therein to oscillate on a transverse axis located intermediate the height of the sash, said sash being provided with lateral stop-grooves and a stop-groove across its upper end, stops mounted upon the window at each side of the sash, and a third

stop mounted upon the window-frame and extending across the upper end of the sash, means guiding said lateral stops to move in a bodily downward and inward direction whereby they are caused to enter the sash as they descend and retract from the sash as they ascend, and interconnections between the upper ends of the lateral stops and the corresponding ends of the upper stop whereby they are all retracted simultaneously.

7. In a sheet-metal window, the combination of a hollow window-frame having its inner perimeter at each side of the sash-opening formed with a stop-groove, the sides whereof are parallel with the plane of the window, a U-shaped bracket seated in the stop-groove at each side of the window having its terminal arms or ends turned oppositely outward and resting against the face of the window-frame, and means uniting said outturned ends rigidly with the frame.

8. In a window, the combination of a window-frame provided in its inner vertical sides with stop-grooves, a sash-frame provided with grooves adapted to register with corresponding grooves of the frame, and stops seated in said grooves, each stop being formed of sheet metal folded upon itself along a longitudinal line to form a double-thick stop, and stop-supports movably supporting said stops for lateral shifting movement, each support having its stop-engaging end inserted and secured between the two sides of the folded stop.

9. In a window, the combination of a window-frame provided in its inner vertical sides with stop-grooves, a sash-frame provided with grooves adapted to register with corresponding grooves of the frame, stops seated in said grooves, each stop being formed of sheet metal folded upon itself along a longitudinal line to form a double-thick stop, and a pair of supporting-links pivotally connected with each stop and with the window-frame, said links having their stop-engaging ends inserted between the two sides of the folded stop, substantially as described.

10. In a window, the combination of a window-frame provided in its inner perimeter with stop-grooves, a sash-frame pivotally mounted therein provided in its outer margin with stop-grooves adapted to register with corresponding grooves of the frame, and stops operatively mounted in said members, each stop being formed of a strip of sheet metal folded upon itself along a longitudinally-extended line to form a rounded edge, and the stop-groove of that member receiving said rounded edge being correspondingly rounded at its bottom, substantially as described.

11. In a window, the combination of a window-frame provided in its inner vertical sides and across its top with stop-grooves, a sash-frame pivotally mounted therein and provided in its outer lateral margins and across its top with stop-grooves and adapted to register with corresponding grooves of the frame, stops operatively mounted in the respective stop-grooves of the window-frame; means guiding the lateral stops to move in a bodily downward and inward direction, and interconnections between the upper ends of the lateral stops and the ends of the upper stop comprising transverse socket-openings in the lateral stops, and socket-engaging extensions upon the upper stop engaging said sockets.

12. In a window, the combination of a window-frame provided in its inner vertical sides and across its top with stop-grooves, a sash-frame pivotally mounted therein and provided in its outer lateral margins and across its top with stop-grooves and adapted to register with corresponding grooves of the frame, stops operatively mounted in the respective stop-grooves of the window-frame, means guiding the lateral stops to move in a bodily downward and inward direction, interconnections between the upper ends of the lateral stops and the ends of the upper stop comprising transverse socket-openings in the lateral stops, socket-engaging extensions upon the upper stop engaging said sockets, and means for operating said stops comprising a lever pivotally mounted between its ends upon the upper rail of the sash and extending within the sash and underlying the upper stop, the stop-engaging end of said lever being inclined to form a cam-like surface adapted to bodily pass into and out of engagement with the stop.

13. In a window, the combination of a window-frame, a sash-frame pivotally mounted therein to oscillate on a transverse axis located between the ends of the sash and provided with lateral stop-grooves, stops mounted upon the window-frame at each side of the sash, means guiding said stops to move bodily in an inclined downward and inward direction, means upon the sash-frame operating to hold said stops retracted against their tendency to descend while the sash is open, and a retaining device automatically releasable by heat, for holding said sash in open position.

14. In a window, the combination of a window-frame, a sash-frame bodily mounted therein to oscillate on a transverse axis located intermediate the height of the sash, said sash-frame being provided across its top with a stop-groove and the window-frame also provided with a stop-groove adapted to register with that of the sash when the latter is in closed position, a stop mounted to rise and fall bodily within said grooves, and a leverage mechanism arranged to retract said stop and release the sash.

845,768. FLESHING AND SLATING MACHINE. JAMES DUNN, Philadelphia, Pa., assignor to McNeely Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Mar. 25, 1905. Serial No. 251,989.

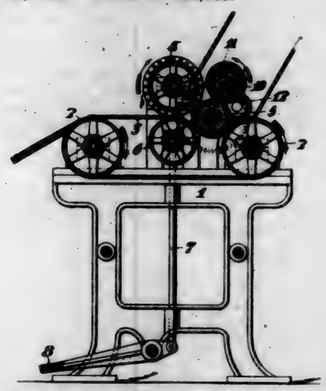

Claim.—In a machine of the character described, the combination of the main roll; the grip-roll; an endless band in contact with both; and a stripping device for stripping the skins from the grip-roll, interposed in position to afford a barrier which prevents the hand of the workman from being placed in proximity to the point where the adjacent surfaces of the main roll and the grip-roll turn in together.

845,769. HOPPLE. LOUIS B. ENGELHART, St. Louis, Mo. Filed Jan. 8, 1906. Serial No. 295,080.

Claim.—1. A hopple comprising a band arranged to be secured to the fore leg of an animal, and a stout elongated member swingingly connected thereto, said member being long enough to strike the opposite fore leg of said animal when swung horizontally and being short enough to avoid interference with the hind feet of said animal when moving at a walk, substantially as and for the purpose set forth.

2. A hopple comprising a band adapted to be fastened to a fore leg of an animal, a stout elongated member relatively narrower at its middle part and of increasing thickness toward its free end, and means connecting said band and said member to permit said member to swing in all directions, said member being of such length as to strike the opposite fore leg when swung laterally and being short enough to avoid interference with the hind feet when the animal is walking, substantially as and for the purpose set forth.

3. A hopple comprising a band adapted to be fastened to the fore leg of an animal, a stout elongated member of greater thickness and weight at its outer end, and a ring-and-loop connection between said band and said member,

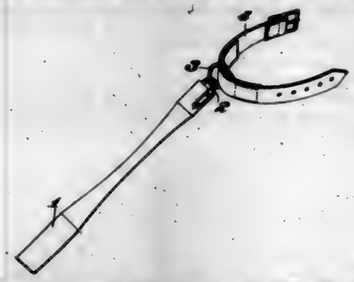

said member being of such length as to strike the opposite fore leg when swung laterally and being short enough to avoid interference with the hind feet when the animal is walking.

845,770. JACK-SCREW. WALTER FERRIS and SVANTE R. W. BAGER, South Milwaukee, Wis., assignors to The Bucyrus Company, South Milwaukee, Wis., a Corporation of Wisconsin. Filed Mar. 26, 1906. Serial No. 308,126.

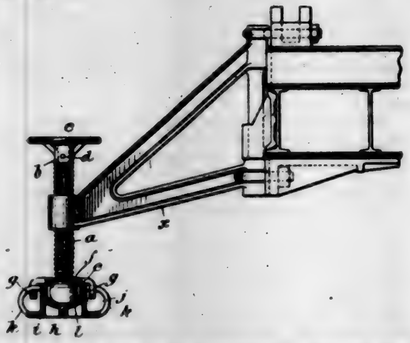

Claim.—1. A jack-screw, comprising a threaded shank, a reduced neck, a handpiece removably mounted on said neck, and an enlarged foot or bearing on the end opposite the handpiece.

2. A jack-screw, comprising a threaded shank, an enlarged foot or bearing on the end thereof, a bearing-plate coöperating with said foot or bearing, and coöperating means on the shank and plate to removably secure said plate to the shank.

3. A jack-screw, comprising a threaded shank, a yoke having oppositely-disposed hooks thereon loosely mounted on said shank, and a bearing-plate having projections thereon to engage the yoke-hooks and support the plate from the shank when the latter is retracted.

4. A jack-screw, comprising a threaded shank, a yoke loosely mounted on said shank and having engaging members thereon, and a bearing-plate having coöperating members thereon to engage the yoke members and support the plate from the shank when the latter is lifted.

5. A jack-screw, comprising a threaded shank, a yoke having oppositey-disposed hooks thereon loosely mounted on said shank, and a bearing-plate having lateral bails or handles to engage the hooks and support the plate from the shank when the latter is retracted.

6. A jack-screw, comprising a threaded shank, an enlarged foot or bearing at one end thereof, a yoke loosely surrounding the shank above said foot and having oppositely-projecting hooks thereon, and a bearing-plate coöperating with said foot or bearing, said plate having lateral bails or handles to engage the hooks and support the plate from the shank when the latter is retracted.

7. A jack-screw, comprising a threaded shank, a handpiece removably secured to one end thereof, an enlarged foot or bearing at the opposite end of said shank, a yoke having oppositely-disposed hooks on said shank above the foot or base, a socketed bearing-plate coöperating with said foot or bearing, and lateral bails or handles on said plate coöperating with the said hooks to support the plate.

845,771. POT OR PAN LIFTER. ELMER L. FISK, Hallstead, Pa. Filed Apr. 12, 1906. Serial No. 311,354.

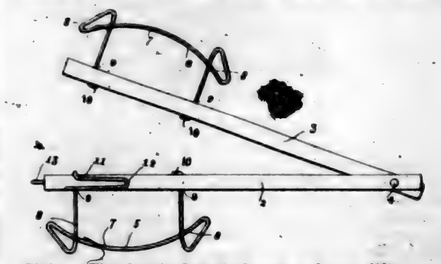

Claim.—The herein-described pot and pan lifter comprising the pair of pivotally-connected hand-levers, and the jaws attached to the free ends of the said levers, each of the said jaws being made from a single piece of wire bent to form the intermediate curved gripping portion, the reversely-bent portions at the ends of the gripping portion, and the supporting and spacing parallel arms at an angle to and extending from the inner ends of said reversely-bent portions and extending through openings in and attached to the hand-levers, the outer arm of one of said jaws being extended upwardly from said hand-lever and bent reversely to form a hook disposed parallel with the said hand-lever, for the purpose specified.

845,772. WINDOW-SASH LOCK. MELVIN H. GABA, Dayton, Ohio. Filed July 25, 1906. Serial No. 327,604.

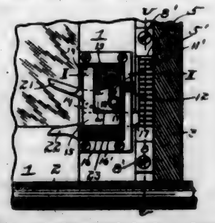

Claim.—1. In a window-sash lock, a frame supporting a toothed block carried upon the window-sash, a stationary inclined bar inclosing said toothed block, a stationary toothed bar with which the toothed block is made to engage by the inclined bar when the sash is moved upwardly, and a cam-latch engaging said frame to move the toothed block downwardly and laterally simultaneously to effect a disengagement between said toothed block and said toothed bar in lowering the window-sash.

2. In a window-sash lock, a slidable frame carrying a wedge-shape toothed block, and guide-pins projected from said frame, a latch engaging said frame to move it downwardly, means for maintaining the frame and toothed block in their upper positions when released by the latch, a bolt projecting from said latch, an inclined bar upon the window-sash engaging the smooth surface of the toothed block, a toothed bar on the window-frame engaging the toothed block, and means on the window-frame to interlock with the bolt on the latch.

3. In a window-sash lock, a slidable frame, a block sup-

ported thereon having teeth on one side and a smooth surface on the other, a cam-latch adapted to move said frame and block downwardly and laterally simultaneously, an incline bar secured to the window-sash and inclosing said block, and a stationary toothed bar fixed to the window-frame and adapted to engage with the teeth on the block when said block is moved upwardly against the inclined bar.

845,773. DRILL-CHUCK. LEWIS T. GAUSS, Rochester, N. Y. Filed Apr. 13, 1906. Serial No. 311,437.

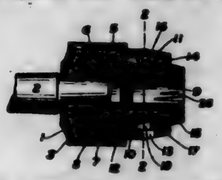

Claim.—1. In a drill-chuck, a body having a series of converging grooves, a series of jaws having screw-threads, a screw-threaded part having threads for engaging the threads of said jaws whereby the jaws may be moved longitudinally in said grooves, and a rotatable cam-ring held on said body and having internal cams for engaging the backs of said jaws.

2. In a drill-chuck, a conical body having a series of external converging grooves, a series of jaws in said grooves having screw-threads on the outer side thereof, a screw-threaded ring fitting outside said body and having internal threads for engaging the threads of said jaws whereby the jaws may be moved longitudinally in said grooves, and a rotatable cam-ring held on the smaller end of said body and having internal cams for engaging the backs of said jaws.

3. In a drill-chuck, a conical body having a series of external converging grooves and a series of sockets therein, a series of jaws in said grooves having screw-threads on the outer side thereof, a screw-threaded ring fitting outside said body and having internal threads for engaging the threads of said jaws whereby the jaws may be moved longitudinally in said grooves, a rotatable cam-ring held on the smaller end of said body and having internal cams for engaging the backs of said jaws and having one or more perforations through said cam-ring, whereby a key is adapted to rest in the said sockets and to engage the said cam-ring for moving the latter.

4. In a drill-chuck, a body having a series of conically-converging grooves, a series of jaws longitudinally movable in said grooves, means for moving said jaws longitudinally in said grooves, and a rotatable cam-ring held on the end of said body and having internal cams for engaging the backs of said jaws.

5. In a drill-chuck, a conical body having a series of external converging grooves, a series of jaws in said grooves having screw-threads on the outer side thereof, a screw-threaded ring fitting outside said body and having internal threads for engaging the threads of said jaws whereby the jaws may be moved longitudinally in said grooves, a rotatable cam-ring held on the smaller end of said body and having internal cams for engaging the backs of said jaws and a flange, and a collar overlapping said flange and held on said body.

6. In a drill-chuck, a conical body having a series of external converging grooves and a series of sockets therein, a series of jaws in said grooves having screw-threads on the outer side thereof, a screw-threaded ring fitting outside said body and having internal threads for engaging the threads of said jaws whereby the jaws may be moved longitudinally in said grooves, a rotatable cam-ring held on the smaller end of said body and having internal cams for engaging the backs of said jaws and a flange and having also one or more sockets, a collar overlapping said flange and held on said body whereby a key may be inserted into a socket in the body and may engage a socket in said cam-ring for rotating the ring.

7. In a drill-chuck, a body having a series of converging grooves, a series of jaws having screw-threads, a screw-threaded part having threads for engaging the threads in said jaws whereby the jaws may be moved longitudinally in said grooves, and supplementary means carried by said chuck for engaging the backs of said jaws and forcing them toward the axis of the chuck.

845,774. AUTOMATIC TIME LIGHTING DEVICE. WILLIAM M. GINN, Plymouth, Miss. Filed July 5, 1906. Serial No. 324,878.

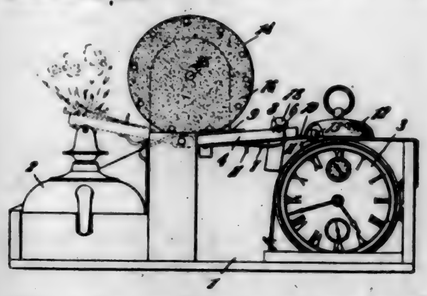

Claim.—1. An automatic time lighting device consisting of a casing, an alarm-clock located thereon, a lighting-fixture located in proximity thereto, a spring-actuated arm pivoted to the casing, a trip attached to the arm and located in the path of the hammer of the clock, a spring-rod attached to the arm and having a hooked end adapted to retain a match, and a scratching-surface located upon the casing.

2. An automatic time lighting device consisting of an alarm-clock and a lighting-fixture, an arm pivotally supported and having means for retaining a match, a trip attached to the arm and adapted to engage the clock, a rotatable disk located between the clock and the fixture and having a scratching-surface and being slidably mounted upon its support.

3. An automatic time lighting device consisting of an alarm-clock and a lighting-fixture, a swinging arm pivoted between the clock and the fixture and having means for retaining a match, a trip carried by the arm and adapted to engage the clock, a disk located between the clock and the fixture, said disk having a scratching-surface, a pin passing through said disk and loosely supporting the same, a spring bearing against said disk and maintaining the same normally toward said arm.

4. An automatic time lighting device consisting of an alarm-clock and a lighting-fixture, a swinging arm pivotally supported between the clock and the fixture, said arm having a transversely-extending groove adapted to hold a match, a spring-rod having a hooked end located over said groove, a scratching-surface located between the clock and the fixture and a trip attached to the arm and adapted to engage the clock.

845,775. STAMPING-MACHINE. CHARLES W. GRAY, Chattanooga, Tenn. Filed Feb. 27, 1906. Renewed Dec. 3, 1906. Serial No. 346,165.

Claim.—1. An envelop sealing and stamping machine including a foundation-plate, a sealing-plate movable toward and from the said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, and an operating-plunger including in its formation a contractible section, one section of the plunger operating the stamping-plate and the other section of the plunger operating the sealing-plate.

2. An envelop sealing and stamping machine including a foundation-plate, a sealing-plate movable toward and from the said foundation-plate, a stamping-plate movable

toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, and an operating-plunger including in its formation a contractible section, one section of the plunger operating the stamping-plate and the other section of the plunger operating the sealing-plate, the stamping-plate having separable engagement with the section of the plunger operating the same to cause its movement subsequent to the movement of the sealing-plate as the envelop is being stamped and sealed.

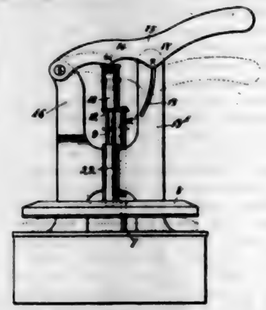

3. An envelop sealing and stamping machine including a foundation-plate, a sealing-plate movable toward and from the said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, and an operating-plunger including in its formation a contractible section in the form of a spring, one section of the plunger operating the stamping-plate and the other section of the plunger operating the sealing-plate.

4. An envelop sealing and stamping machine including a foundation-plate, a sealing-plate movable toward and from the said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, and an operating-plunger including in its formation a contractible section in the form of a spring, one section of the plunger operating the stamping-plate and the other section of the plunger operating the sealing-plate, the stamping-plate having separable engagement with the section of the plunger operating the same to cause its movement subsequent to the movement of the sealing-plate as the envelop is being stamped and sealed.

5. An envelop sealing and stamping machine including a foundation-plate, a sealing-plate movable toward and from the said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, and an operating-plunger including in its formation a contractible section in the form of a coiled spring, one section of the plunger operating the stamping-plate and the other section of the plunger operating the sealing-plate.

6. An envelop sealing and stamping machine including a foundation-plate, a sealing-plate movable toward and from the said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, and an operating-plunger including in its formation a contractible section in the form of a coiled spring, one section of the plunger operating the stamping-plate and the other section of the plunger operating the sealing-plate, the stamping-plate having separable engagement with the section of the plunger operating the same to cause its movement subsequent to the movement of the sealing-plate as the envelop is being stamped and sealed.

7. A stamp-applying machine including a foundation-plate having an opening therein, a movable plate in said opening constituting, with the walls of the opening, a stamp-magazine, a plate above said foundation-plate for pressing the envelop toward the movable plate constituting a part of the magazine, and a gutter near the opening in the said foundation-plate for receiving water, to prevent its access to the stamps in the magazine.

8. An envelop sealing and stamping machine including a foundation-plate, a sealing-plate movable toward and from the said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, and an actuating element including in its formation a contractible section, one section of the actuating element operating the stamping-plate and the other section of the actuating element operating the sealing-plate.

9. An envelop sealing and stamping machine including a foundation-plate, a sealing-plate movable toward and from the said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, and an actuating element including in its formation a contractible section, one section of the actuating element operating the stamping-plate and the other section of the actuating element operating the sealing-plate, the stamping-plate having separable engagement with the section of the actuating element operating the same to cause its movement subsequent to the movement of the sealing-plate as the envelop is being stamped and sealed.

10. An envelop sealing and stamping machine including a foundation-plate, a sealing-plate movable toward and from the said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, and an actuating element including in its formation a contractible section in the form of a spring, one section of the actuating element operating the stamping-plate and the other section of the actuating element operating the sealing-plate.

11. An envelop sealing and stamping machine including a foundation-plate, a sealing-plate movable toward and from the said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, and an actuating element including in its formation a contractible section in the form of a spring, one section of the actuating element operating the stamping-plate and the other section of the actuating element operating the sealing-plate, the stamping-plate having separable engagement with the section of the actuating element operating the same to cause its movement subsequent to the movement of the sealing-plate as the envelop is being stamped and sealed.

12. An envelop sealing and stamping machine including a foundation-plate, a sealing-plate movable toward and from the said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, and an actuating element including in its formation a contractible secton in the form of a coiled spring, one section of the actuating element operating the stamping-plate and the other section of the actuating element operating the sealing-plate.

13. An envelop sealing and stamping machine including a foundation-plate, a sealing-plate movable toward and from the said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates

on the other side, and an actuating element including in its formation a contractible section in the form of a coiled spring, one section of the actuating element operating the stamping-plate and the other section of the actuating element operating the sealing-plate, the stamping-plate having separable engagement with the section of the actuating element operating the same to cause its movement subsequent to the movement of the sealing-plate as the envelop is being stamped and sealed.

845,776. STAMPING-MACHINE. CHARLES W. GRAY, Chattanooga, Tenn. Filed Nov. 13, 1905. Serial No. 287,043.

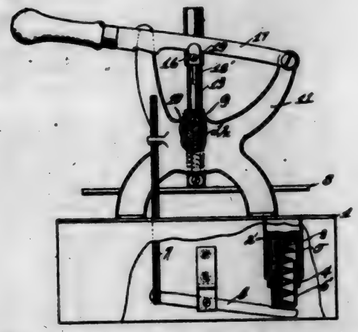

Claim.—1. An envelop sealing and stamping machine, including a foundation-plate, a sealing-plate movable toward and from said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, a plunger connected with the sealing-plate and including a spring in its formation, an operating-lever engaging the plunger, and mechanism whereby the stamping-plate may be actuated by said operating-lever, the spring-section of the plunger permitting continuation of the operation of the lever to effect movement of the stamping-plate subsequent to a movement of the sealing-plate.

2. An envelop sealing and stamping machine, including a foundation-plate, a sealing-plate movable toward and from said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, a plunger connected with the sealing-plate and including a spring in its formation, an operating-lever engaging the plunger, and mechanism whereby the stamping-plate may be actuated by said operating-lever, the spring-section of the plunger permitting continuation of the operation of the lever to effect movement of the stamping-plate subsequent to a movement of the sealing-plate, the mechanism that affords the connection between said operating-lever and the stamping-plate permitting separable driving connection between the operating-lever and the stamping-plate.

3. An envelop sealing and stamping machine, including a foundation-plate, a sealing-plate movable toward and from said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, a plunger connected with the sealing-plate and including a spring in its formation, an operating-lever engaging the plunger, mechanism whereby the stamping-plate may be actuated by said operating-lever, the spring-section of the plunger permitting continuation of the operation of the lever to effect movement of the stamping-plate subsequent to a movement of the sealing-plate, said mechanism including a pin disposed in the plane of movement of the lever, a rocking lever engaging the pin, and a spring affording connection between the stamping-plate and the rocking lever.

4. An envelop sealing and stamping machine, including a foundation-plate, a sealing-plate movable toward and from said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, a plunger connected with the sealing-plate and including a spring in its formation, an operating-lever engaging the plunger, mechanism whereby the stamping-plate may be actuated by said operating-lever, the spring-section of the plunger permitting continuation of the operation of the lever to effect movement of the stamping-plate subsequent to a movement of the sealing-plate, the mechanism that affords the connection between said operating-lever and the stamping-plate permitting separable driving connection between the operating-lever and the stamping-plate, said mechanism including a pin disposed in the plane of movement of the lever, a rocking lever engaging the pin, and a spring affording connection between the stamping-plate and the rocking lever.

5. An envelop sealing and stamping machine, including a foundation-plate, a sealing-plate movable toward and from said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, a plunger connected with the sealing-plate and including a spring in its formation, an operating-lever engaging the plunger, mechanism whereby the stamping-plate may be actuated by said operating-lever, the spring-section of the plunger permitting continuation of the operation of the lever to effect movement of the stamping-plate subsequent to a movement of the sealing-plate, and a spring effecting the elevation of the sealing-plate when the lever is relieved of operating influence.

6. An envelop sealing and stamping machine, including a foundation-plate, a sealing-plate movable toward and from said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, a plunger connected with the sealing-plate and including a spring in its formation, an operating-lever engaging the plunger, mechanism whereby the stamping-plate may be actuated by said operating-lever, the spring-section of the plunger permitting continuation of the operation of the lever to effect movement of the stamping-plate subsequent to a movement of the sealing-plate, the mechanism that affords the connection between said operating-lever and the stamping-plate permitting separable driving connection between the operating-lever and the stamping-plate, and a spring effecting the elevation of the sealing-plate when the lever is relieved of operating influence.

7. An envelop sealing and stamping machine, including a foundation-plate, a sealing-plate movable toward and from said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, a plunger connected with the sealing-plate and including a spring in its formation, an operating-lever engaging the plunger, mechanism whereby the stamping-plate may be actuated by said operating-lever, the spring-section of the plunger permitting continuation of the operation of the lever to effect movement of the stamping-plate subsequent to a movement of the sealing-plate, said mechanism including a pin disposed in the plane of movement of the lever, a rocking lever engaging the pin, a spring affording connection between the stamping-plate and the rocking lever, and a spring effecting the elevation of the sealing-plate when the lever is relieved of operating influence.

8. An envelop sealing and stamping machine, including a foundation-plate, a sealing-plate movable toward and from said foundation-plate, a stamping-plate movable toward and from the sealing-plate, the envelop to be sealed and stamped being interposed between the sealing-plate on one side and the foundation and stamping plates on the other side, a plunger connected with the sealing-plate and including a spring in its formation, an operating-lever engaging the plunger, mechanism whereby the stamping-plate may be actuated by said operating-lever, the spring-section of the plunger permitting continuation of the operation of the lever to effect movement of the stamping-plate subsequent to a movement of the sealing-plate, the mechanism that affords the connection between said operating-lever and the stamping-plate permitting separable driving connection between the operating-lever and the stamping-plate, said mechanism including a pin disposed in the plane of movement of the lever, a rocking lever engaging the pin, and a spring affording connection between the stamping-plate and the rocking lever, and a spring effecting the elevation of the sealing-plate when the lever is relieved of operating influence.

845,777. MILK-BOTTLE PROTECTOR. JOSEPH GROSSMAN, Chicago, Ill. Filed Oct. 27, 1906. Serial No. 340,860.

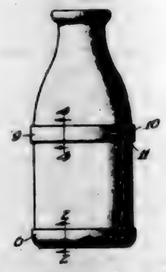

Claim.—1. The combination of a bottle having a groove therein, and a protector of resilient material having a projection on its inner surface adapted to fit into said groove for retaining the protector in position upon the bottle.

2. In combination, a bottle having an annular groove near the bottom thereof, an annular protector of resilient material adapted to surround the bottle at the groove therein and having a projection adapted to enter said groove, said protector extending below the bottom of the bottle, for the purpose described.

3. In combination, a bottle having approximately cylindrical sides and having annular grooves at points near the bottom and top of its cylindrical portion, and protectors of resilient material, said protectors having annular ridges on their inner surfaces for entering the grooves in the bottle, substantially in the manner and for the purpose specified.

845,778. BALL-BEARING. AUGUST C. HACHFIELD, Milwaukee, Wis. Filed Aug. 29, 1904. Serial No. 222,499.

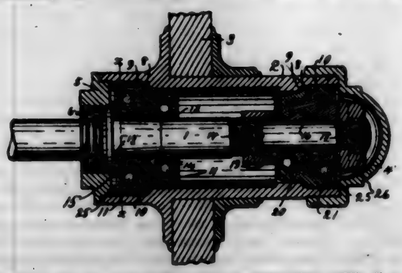

Claim.—1. In a bearing, the combination with the opposing concentric walls of a bearing-shaft and box, of a plurality of sets of concentric sleeves interposed between said walls; and balls arranged between the outer end portions of each set of sleeves in a plurality of sets; one of the sleeves in each set being arranged in central rocker-bearing contact with one of said walls between the planes of the sets of balls, and having its end portions out of contact therewith in the lines of ball-pressure and in the planes of the sets of balls; said rocker-bearing sleeves being free to tilt longitudinally and said balls being sufficiently loose to permit a slight tilting movement.

2. In a bearing, the combination with the opposing concentric walls of a bearing-shaft and box, of a plurality of sets of concentric sleeves interposed between said walls; and balls arranged between the sleeves of each set in a plurality of sets and in contact with bearing-surfaces on the respective sleeves; one of the sleeves of each set being arranged in central rocker-bearing contact with one of said walls between the planes of the sets of balls, and having its end portions out of contact therewith, in the lines of ball-pressure and in the planes of the sets of balls; said rocker-bearing sleeves being free to tilt longitudinally and said balls being sufficiently loose to permit a slight tilting movement.

3. In a bearing, the combination with a bearing-shaft and box, of a plurality of sets of concentric bearing-sleeves, interposed between the shaft and box; the outer sleeve of each set being arranged in central rocker-bearing contact with the box, and the inner sleeve of each set being provided with race-channels concentric with the outer end portions of the outer sleeve; balls mounted in said race-channels and loosely supporting the outer sleeve in planes cutting such sleeves on both sides of the rocker-bearing points; said sleeves being out of contact with the box in such planes, and in the lines of ball-pressure.

4. In a bearing, the combination with a bearing-shaft and box, of a plurality of sets of concentric bearing-sleeves interposed between the shaft and box; balls arranged between said sleeves in a plurality of sets, with the balls of one set in each set of sleeves traversing a path of greater diameter than those of the other set; one sleeve in each set being arranged in central contact with the box, between the planes of the sets of balls and out of contact therewith in the end portions.

5. In a bearing, a bearing-shaft; an inclosing box therefor, provided with interior shoulders; a pair of bearing-sleeves, each adapted to be longitudinally inserted in the end of the box, and centrally fitted to the side face of one of the shoulders, with ends diverging from the box at each side of the shoulder; each of said sleeves being provided with a conical inner surface; and a set of balls inclosed by each end portion of each sleeve; said balls and sleeve being so arranged that the lines of pressure between the inner and outer contact-points, will, if extended, cut those portions of the sleeves which are out of contact with the inclosing box.

6. In a bearing, a bearing-shaft; an inclosing box therefor, provided with an inwardly-projecting shoulder near each end, having a rounded face on the side toward the adjacent end of the box; a bearing-sleeve in each end portion of the box having a central portion in contact with the rounded face of the corresponding shoulder; and a set of balls inclosed by each end portion of each bearing-sleeve.

7. In a bearing, the combination with the opposing concentric walls of a bearing-shaft and box; of a pair of sleeves interposed between said walls; balls arranged between said sleeves in a plurality of sets; one of said sleeves being arranged in substantially central contact with one of said walls between the planes of the sets of balls and having its end portion out of contact with said walls; one of said sleeves being provided with a conical inner surface crossing the planes of both sets of balls, contacting with the balls in planes of pressure which cut through the end portions of the sleeve and the spaces between such sleeve and the wall with which it is in central contact; the other of said sleeves being provided with race-channels, each arranged for a two-point contact with the balls of the corresponding set.

8. In a bearing, the combination with the opposing concentric walls of a bearing-shaft and box, of two sets of sleeves interposed between said walls, with one sleeve in each set having a conically-tapered bearing-surface crossing the planes of both sets of balls; and another sleeve in each set being provided with ball-race channels; and a set of balls at different distances from the axial central line mounted in each of said race-channels and interposed between the sleeves.

845,779. BOTTLE-FILLING MACHINE. MARK HAMBURGER, Baltimore, Md., assignor of one-fourth to Philip Hamburger, Jr., and one-fourth to Harry Hamburger, Baltimore, Md. Filed Sept. 27, 1906. Serial No. 336,501.

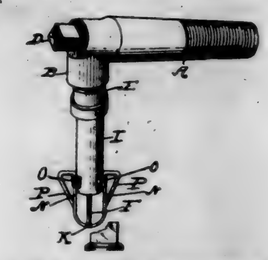

Claim.—1. In a bottle-filling apparatus, a suitable tube in communication with a barrel, a valve-seat therein, a valve contacting with the seat, a valve-stem projecting through the end of the tube, means for holding the valve seated, the said valve-stem having a notch in its lower end, a yoke consisting of a looped portion lying in the notch of the valve-stem, the said yoke having parallel portions on the outside of the tube, guides on the tube in which the parallel portions of the yoke are slidable, the said yoke having outwardly-bent portions embracing the guides, the said outwardly-bent portions of the yoke having extensions converging toward the bottom of the yoke and contacting therewith and adapted to be engaged by the receptacle to be filled.

2. In a bottle-filling apparatus, a tube in communication with a barrel, a valve-seat therein, a valve contacting with the seat, a valve-stem projecting through the end of the tube, means for holding the valve seated, a yoke consisting of a looped portion contacting with the valve-stem, said yoke having parallel portions on the outside of the tube, loops on the tube forming guides in which the parallel portions of the yokes are slidable, the said yoke having outwardly-bent portions embracing the guides, the said outwardly-bent portions of the yoke having extensions converging toward the bottom of the yoke and contacting therewith and adapted to be engaged by the receptacle to be filled.

3. In a bottle-filling apparatus, a tube, a valve-seat therein, a valve contacting with the seat, a valve-stem projecting through the end of the tube, loops on the exterior of the tube, and a yoke slidable in said loops contacting with the stem, said yoke being provided with inclined portions to contact with the receptacle to be filled.

845,780. LOCOMOTIVE JOURNAL-BOX. GEORGE J. HATZ, Bloomington, Ill. Filed Apr. 24, 1905. Serial No. 257,200.

Claim.—1. In a journal-box of the class described, the combination of a main box-casting, a removable oil-cellar provided with upwardly-extending end and side walls, intermediate partitions extending longitudinally of the oil-cellar forming side oil-catching chambers and a central waste-holding chamber, a perforated plate in the waste-chamber upon which waste or similar material may be laid, means for pressing said plate upwardly, and a swinging retaining-block with upwardly-extending flange-lips at its forward end only for removably holding the oil-cellar in position, substantially as described.

2. In mechanisms of the class described, the combination of an inverted-U-shaped main box-casting, a removable oil-cellar provided with upwardly-extending outer walls inserted between the downwardly-extending portions of the main box-casting, comb-shaped partitions longitudinally arranged in said oil-cellar so as to form side oil-catching chambers and a central waste-chamber, means for yieldingly holding any waste therein against the lower part of the axle-journal, a swinging oil-retaining block pivotally mounted in the main box-casting between the lower ends of the downwardly-extending side portions and provided with upwardly-extending lips at its forward portion only to prevent the removal of the oil-cellar when the parts are in operative position, a pintle passed through the rear ends of the retainer-block and the main box-casting and forming the pivotal connection therebetween, and a second bolt passed through the forward ends of said parts to support the said parts in operative position, substantially as described.

3. In mechanisms of the class described, the combination of an inverted-U-shaped main box-casting, a removable oil-cellar provided with upwardly-extending end and side walls and inserted between the downwardly-extending portions of the main-box casting, a swinging retaining-block for removably holding the oil-cellar in position and provided with upwardly-extending lip portions at its front end only to prevent the withdrawal of the same when the parts are in operative position, and a liner plate or plates inserted between the pivoted retaining-block and the removable oil-cellar, substantially as described.

845,781. FASTENER FOR TRUNKS OR THE LIKE. EUGENE W. HAWLEY, Milwaukee, Wis. Filed Feb. 10, 1906. Serial No. 300,427.

Claim.—1. A fastener comprising bolt and hasp members, a lug on the bolt member, a spring-controlled hasp in pivotal connection with the hasp member adapted to engage the lug, a spring-controlled bolt carried by the bolt member for engagement with the hasp, whereby said hasp is locked between said lug and bolt, and a gripping-rib extending from the spring-controlled bolt.

2. A fastener comprising bolt and hasp members, a hand-grip projecting from the upper portion of the bolt member, a lug projecting from the lower portion of said member, a spring-controlled sliding bolt carried by said bolt member between the hand-grip and lug thereof, a gripping-rib projecting from the sliding bolt adjacent to said hand-grip, and a spring-controlled hasp carried by the hasp member for locking engagement between the bolt and lug of the aforesaid bolt member.

3. A fastener comprising bolt and hasp members, a hand-grip projecting from the upper portion of the bolt member and a lug projecting from the lower portion thereof, a sliding spring-controlled bolt carried by said bolt member, a gripping-rib extending from the top of the bolt, and a spring-controlled hasp in connection with the hasp member for engagement with the lug of the bolt member and lip of said bolt.

4. A fastener comprising a member having a hasp-keeper and a sliding spring-controlled bolt provided with a gripping device, and another member having a spring-controlled swing-hasp normally held by the bolt, in engagement with the keeper member, retraction of said bolt by its gripping device being the initial result of an operation tending to move the bolt member away from the hasp member of the fastener.

845,782. SAFETY-RAZOR. WILLIAM C. HEIMERDINGER, Louisville, Ky. Filed Jan. 18, 1905. Serial No. 241,661.

Claim.—1. A safety-razor comprising a holder, guards projecting laterally in opposite directions from one end of said holder, a separate blade disposed on each guard fulcrums on the guards for said blades, a single plate bearing on both of said blades, and means for adjusting said plate relatively to the guards, to change the angle of the blades relatively to the guards.

2. A safety-razor comprising a holder, rigid guards projecting laterally in opposite directions from one end of said holder and a spring-plate having portions projecting over the respective guards for clamping a separate blade on each guard, two blades fulcrumed under said spring-plate on the rigid guards.

3. A safety-razor comprising a holder, rigid guards projecting in opposite directions from one end of said holder, a spring-plate having portions projecting over said guards for clamping a separate blade on each guard, two blades fulcrumed on said guards, under the spring-plate and means carried by the holder and connected with the center of said spring-plate for adjusting the latter.

4. In a safety-razor, the combination of a guard having a flat face and a fulcrum, a rigid blade thereagainst, and means for holding the blade against the flat face or tilted on said fulcrum away from the same.

5. In a safety-razor, the combination of a rigid guard having two members projecting in opposite directions, two independent blades to bear against the respective members of said rigid guard, said members of the rigid guard having fulcrums for the blades and a spring backing-plate clamping the blades against the respective members of the guard and the fulcrums thereon.

6. In a safety-razor, the combination of a rigid guard having flat faces adjacent to its fingers and walls or shoulders at the inner ends of said flat faces, blades on said flat faces projecting over the walls or shoulders, and means for tilting said blades on the walls or shoulders.

7. In a safety-razor, the combination with a guard and blades fulcrumed on said guard, of a spring backing-plate constructed to clamp the blades against the guard, a rod secured to the backing-plate and projecting through the guard, and means for moving the backing-plate and guard toward or away from each other, to cause the blades to turn on their fulcrums.

8. In a safety-razor, the combination with a sleeve having an angular bore, and a guard thereon, of a backing-plate, an angular rod secured to the backing-plate and projecting through the annular bore of the sleeve, a holding-sleeve having angular openings to receive the rod, a nut screwed onto the end of the rod, cylindrical shanks on the above-mentioned sleeves, and an adjusting-sleeve mounted to turn on said shanks and having stepped cam engagement with one of them.

9. In a safety-razor, the combination with a spring-clamp for the razor-blade, a handle connected with the clamp, and means for adjusting the spring-clamp and a step-by-step adjusting mechanism for said means.

845,783. SAFETY-RAZOR. WILLIAM C. HEIMERDINGER, Louisville, Ky. Filed Jan. 18, 1905. Serial No. 241,662.

Claim.—1. A blade for a safety-razor having a flat bearing-face on one side and the other side having inclined faces terminating at the edges of the blade, in combination with a yielding guard to receive the side of the blade having the inclined faces, and an adjustable backing-plate to bear against the flat face of the blade.

2. A blade for a safety-razor thickest at its center, and having two inclined faces on one side tapering from the center of the blade to the edges thereof, the other side of said blade having a flat bearing-face, in combination with a yielding guard to receive the side of the blade having the inclined faces and an adjustable backing-plate to bear against the flat face of the blade.

3. In a safety-razor, the combination of a rigid backing-plate, a flexible guard and a blade held between and by said rigid backing-plate and flexible guard, said blade having two beveled faces on one side and a flat face on the other side.

4. In a safety-razor, the combination of a rigid backing-plate, a blade having a flat face against the backing-plate, a flexible guard, and said blade having a fulcrum on which the gurd is movable.

5. In a safety-razor, the combination of a clamp for razor-blades, comprising a rigid backing-plate and a flexible and elastic guard and a razor-blade located between

said backing-plate and guard and having a fulcrum on the latter.

6. In a safety-razor, the combination of a double guard having thin portions to give flexibility and elasticity thereto, a rigid double backing-plate, and blades securely clamped between the guard and backing-plate, said blades having fulcrum on said guard.

7. The combination with a sleeve and a guard thereon, of a backing-plate, an angular rod secured to the backing and projecting through the guard-sleeve, a holding-sleeve having angular openings to receive the rod, a nut screwed onto the rod against said sleeve, and an adjusting-sleeve having screw-threaded engagement with the holding-sleeve, and bearing at its other end against the guard-sleeve.

845,784. SAFETY-RAZOR. WILLIAM C. HEIMERDINGER, Louisville, Ky. Filed Oct. 8, 1906. Serial No. 337,978.

Claim.—1. In a razor, the combination with a guard and a backing, of a stud on the backing to enter an opening in the guard said stud having a slot therein, and a locking device constructed to pass through said slot and lock the parts together.

2. In a razor, the combination with a guard and a backing, of a stud on the backing to enter an opening in the guard said stud having a transverse slot between its ends, and a sliding locking plate or bar constructed to pass through the transverse slot in the stud and lock the parts together.

3. In a razor, the combination with a handle having a slot therein, a guard secured thereon, a backing, and a slotted stud on the backing to enter the handle, of a sliding locking-plate in the slotted handle and a tongue on the locking-plate to enter the slotted stud and lock the parts together.

4. In a razor, the combination with a slotted guide-block, and a guard secured thereon and having an opening alining with an opening in the guide-block, of a backing, a slotted stud thereon to enter the openings in the guard and guide-block, a slide in the slotted guide-block, and a tongue on said slide to enter the slotted stud and secure the parts together.

5. In a razor, the combination with a handle, a slotted guide-block fixed to one end of the handle, a cross-head on the block, and a guard secured to the cross-head and having a central opening alining with openings in the cross-head and guide-block, of a backing, a central stud on the backing to enter the openings in the guard, cross-head and guide-block, and having a slot therein, a sliding plate in the slotted block having a slot to receive the stud, and a tongue on the plate to enter the slot in the stud when the plate is slid longitudinally, and lock the parts together.

6. In a razor, the combination with a handle, of a slotted guide-block thereon, a slotted cross-head on the block, a guard, screws projected through the guard and into threaded openings in the slotted portions of the cross-head, a backing, a stud on the backing to enter openings in the guard, cross-head and guide-block, and having a slot therein, a sliding plate in the guide-block and cross-head having a slot to receive the stud when the plate is in one extreme position, a tongue on the plate to enter the slot in the stud and lock the parts together when the plate is in its other extreme position, and shoulders on the plate to engage the screws and limit the movement of the plate in both directions.

7. In a razor, the combination with a handle, a guard thereon, of a collar centrally on the guard and alining with openings in the guard and handle, pins or lugs in the collar, a backing, a central stud on the backing to enter the collar and handle, said stud having longitudinal grooves to receive the lugs or pins in the collar and guide the backing into place and said stud also having a slot or opening, and a locking device in the handle to enter the slot in the stud and secure the parts together.

8. In a razor, the combination with a handle, of a guard secured to the handle and having a central opening alining with an opening in the handle, a collar around the opening in the guard, screws at opposite sides of the collar securing the guard to the handle and having heads or enlarged ends above the guard, blades having notches in their edges to receive the collar and screw-heads to position the blade on the guard, a backing, a stud thereon to enter the collar and handle, and a locking device in the handle to engage the stud and secure the parts together.

9. In a razor, the combination with a guard, of two flanges at each end of the guard, the flanges of each pair spaced apart to form notches, a plurality of enlargements on the guard, a blade having notches to receive the enlargements, lugs at the ends of the blades to pass through the notches between the flanges at the ends of the guard, and a backing to clamp the blade against the guard.

10. In a razor the combination with a rigid guard and fingers projecting from an edge of said guard and disposed at an angle thereto, of a blade having a pivotal bearing on the guard at the juncture of the fingers therewith, a backing, and means for operating the backing to turn the blade on its pivotal bearing and clamp it in position.

845,785. BIRD-CAGE. ANDREW B. HENDRYX, New Haven, Conn., assignor to The Andrew B. Hendryx Co., New Haven, Conn., a Corporation. Filed Nov. 12, 1906. Serial No. 343,020.

Claim.—1. In a bird-cage, the combination with a cage proper, a pan to which the cage is attached, combined with a spherical wire base formed with an annular ring for engagement with said pan, and means for detachably connecting the base with the pan, substantially as described.

2. The herein-described bird-cage comprising a spherical cage-body, a pan to which the body is attached, said pan formed on its under face with downwardly-opening sockets, combined with a spherical wire base having an annular ring adapted to enter said sockets, and means for detachably securing the base to the pan, substantially as described.

845,786. DEVICE FOR FORMING AND HOLDING SAND CORES. BENJIMAN F. HOBART, Watertown, N. Y., assignor of one-half to Thomas F. Hobart, Watertown, N. Y. Filed Sept. 19, 1906. Serial No. 335,267.

Claim.—1. A core-supporting device comprising a hollow bar having vent-openings and an open end, sand-supporting bodies, means for supporting said bodies from said bar and adjusting them radially with respect thereto.

2. A core-supporting device comprising a hollow bar having an open end and formed with vent-openings and with transverse alining openings, screw-bolts having their threaded ends passed through said transverse alining openings, nuts upon said screw-bolts on opposite sides of said bar whereby said bolts may be adjusted radially, and sand-holding bodies detachably connected to the outer ends of said screw-bolts, substantially as shown and described.

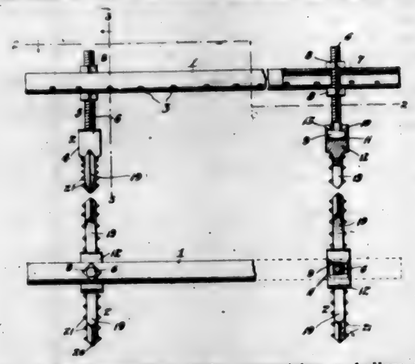

3. A core-supporting device comprising a hollow bar having open ends and formed with vent-openings and transverse alining openings, screw-bolts having their threaded ends passed through said transverse alining openings, the heads of said bolts being wedge shape, nuts upon said screw-bolts on opposite sides of said bar, and sand-holding bodies formed with wedge-shape openings to receive the heads of said bolts, substantially as shown and described.

845,787. METALLIC REINFORCEMENT IN CONCRETE STRUCTURAL WORK. CARL HORIX, Cleveland, Ohio. Filed Jan. 22, 1906. Serial No. 297,191.

Claim.—1. As a new article of manufacture, a reinforcement for columns, fence-posts and the like, substantially V-shaped in cross-section and having two base-strands and a single centrally-disposed intermediate strand, all of said strands constructed of a plurality of wires twisted together, and side wires bent into a series of V-shaped formations and interwoven with both the said base-strands and the said intermediate strands, and said side wires crossing each other at approximately right angles in the said intermediate strand and running alternately through the said base-strands.

2. A reinforcement for fence-posts and the like formed of wire and having two base-strands and a centrally-disposed intermediate strand, and wire sides for said reinforcement bent into a series of V-shaped formations running with said sides and crossing each other from one side to the other at right angles in the intermediate strand and interlocked therewith and with said base-strands, said reinforcement being V-shaped in cross-section.

845,788. CURTAIN-FIXTURE. IRVING L. HOTALING, Riverton, N. J., assignor to The Curtain Supply Company, Newark, N. J., a Corporation of New Jersey. Filed Feb. 10, 1906. Serial No. 300,488.

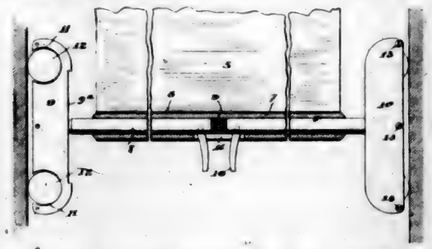

Claim.—1. A curtain-fixture comprising a curtain-stick, a spring-pressed rod carried thereby, a head carried by said rod consisting of a block or base provided with pockets or seats adapted to confine the rollers peripherally, and complemental side plates attached to said block and forming the side walls of said pockets, and rollers mounted in said pockets, substantially as described.

2. A curtain-fixture comprising a curtain-stick, a spring-pressed rod carried thereby, a head carried by said rod consisting of a block or base provided with roller-pockets of a circumferential extent exceeding one-half the circumference of the rollers and adapted to loosely confine the latter peripherally, and complemental side plates attached to said block and forming side walls of said pockets, and rollers mounted in said pockets, substantially as described.

845,789. STEAM-HEATING APPARATUS. WILLIAM P. HUSSEY, Indianapolis, Ind., assignor to The Standard Dry Kiln Company, Indianapolis, Ind., a Corporation of Indiana. Filed July 5, 1906. Serial No. 324,749.

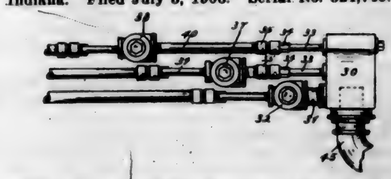

Claim.—1. In a heating apparatus, a plurality of superimposed series of heating-pipes, each series of pipes being shorter than the next lower series of pipes, a main header at each end of the apparatus, a subordinate header at each end of each series of pipes, and a communicating connection between the main header and each subordinate header at each end of the apparatus.

2. In a heating apparatus, a plurality of superimposed series of heating-pipes, each series of pipes being shorter than the next lower series of pipes, a main header at each end of the apparatus, a subordinate header at each end of each series of pipes, a communicating connection between

the main header and each subordinate header at each end of the apparatus, and independent means in each of said communicating connections for controlling the admission of steam to each series of pipes.

3. In a heating apparatus, a plurality of superimposed series of heating-pipes parallel with each other, each upper series of pipes being shorter than the next lower series of pipes, a main header at each end of the apparatus, a subordinate header at each end of each series of pipes, a centrally-located pipe leading from each subordinate header to the corresponding main header, and valves in all but one of said centrally-located pipes at the steam-inlet end of the apparatus.

4. In a heating apparatus, a plurality of superimposed series of heating-pipes parallel with each other, each upper series being shorter than the next lower series of pipes, a main header at each end of the apparatus, a subordinate header at each end of each series of pipes, a centrally-located pipe leading from each subordinate header to the corresponding main header, and expansion-joint connections between the main and the subordinate outlet-headers.

845,790. METHOD OF TREATING PROTEIDS. MONE R. ISAACS, Philadelphia, Pa. Filed Apr. 25, 1906. Serial No. 313,658.

Claim.—1. A composition of matter comprising a proteid, lime, and a fluorid.

2. A composition of matter comprising a proteid, lime, and from about two to ten per cent. of a fluorid.

3. A composition of matter comprising substantially one hundred parts of casein, five to twenty parts of lime and two to twelve parts of a fluorid.

4. A composition of matter comprising casein, lime, and a fluorid.

5. A composition of matter comprising casein, lime, and sodium fluorid.

6. A composition of matter comprising casein, lime, fluorid and water.

7. A composition of matter comprising casein, lime, sodium fluorid and water.

8. A composition of matter comprising substantially one hundred parts of casein, five to twenty parts of lime, and two to twelve parts of sodium fluorid.

845,791. ADHESIVE COMPOUND, GLUE, &c. MONE R. ISAACS, Philadelphia, Pa. Filed Oct. 24, 1906. Serial No. 340,275.

Claim.—1. A composition of matter, consisting of a proteid, a solvent therefor, a silicate and a fluorid.

2. A composition of matter, consisting of a proteid, an alkaline solvent therefor, a silicate and a fluorid.

3. A composition of matter, consisting of a proteid, a solvent therefor, an alkaline silicate and a fluorid.

4. A composition of matter, consisting of a proteid, a solvent therefor, a silicate and an alkaline fluorid.

5. A composition of matter, consisting of a proteid, a solvent therefor, an alkaline silicate and an alkaline fluorid.

6. A composition of matter, consisting of a proteid, an alkaline solvent therefor, an alkaline silicate, and an alkaline fluorid.

7. An adhesive compound, glue or sizing, consisting of a proteid, an alkaline solvent therefor, sodium silicate and sodium fluorid.

8. An adhesive compound, glue or sizing, consisting of casein, a solvent therefor, a silicate and a fluorid.

9. An adhesive compound, glue or sizing, consisting of casein, an alkaline solvent therefor, a silicate and a fluorid.

11. An adhesive compound, glue or sizing, consisting of a casein, an alkaline solvent therefor, an alkaline silicate and an alkaline fluorid.

11. An adhesive compound, glue or sizing, consisting of casein, an alkaline solvent therefor, sodium silicate and a sodium fluorid.

12. An adhesive compound, glue or sizing, consisting of casein one hundred parts, an alkaline solvent therefor five to fifteen parts, sodium silicate two to fifteen parts and sodium fluorid two to ten parts.

13. An adhesive compound, glue or sizing, consisting of a proteid, an alkaline silicate and an alkaline fluorid.

14. An adhesive compound, glue or sizing, consisting of a proteid, sodium silicate and sodium fluorid.

15. An adhesive compound, glue or sizing, consisting of casein, an alkaline silicate and an alkaline fluorid.

16. An adhesive compound, glue or sizing, consisting of casein, sodium silicate and a fluorid.

17. An adhesive compound, glue or sizing, consisting of casein, a silicate and sodium fluorid.

18. An adhesive compound, glue or sizing, consisting of casein, sodium silicate and sodium fluorid.

19. A composition of matter consisting of casein one hundred parts, a solvent for the casein five to fifteen parts, sodium fluorid two to ten parts, and sodium silicate two to fifteen parts.

20. An adhesive compound, glue or sizing, consisting of proteid, alkaline silicate, sodium fluorid and water.

21. An adhesive compound of glue or sizing, consisting of casein, a silicate, sodium fluorid and water.

22. An adhesive compound of glue or sizing consisting of casein, sodium silicate, sodium fluorid and water.

845,792. KNIFE. LUTHER E. JENKINS, Cecilian, Ky. Filed Dec. 3, 1906. Serial No. 346,090.

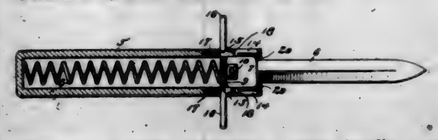

Claim.—1. A knife comprising a hollow handle, a retractile blade, and foldable hand-guards extensible by the blade when it is projected from the handle.

2. A knife comprising a hollow handle, a retractile blade, foldable hand-guards extensible by the blade when it is projected from the handle, and means for folding the hand-guards when the blade is retracted.

3. A knife comprising a hollow handle, a retractile blade, and foldable hand-guards having projections at one end extending into the path of the blade when the hand-guards are folded.

4. A knife comprising a hollow handle recessed on opposite sides, a retractile blade, and foldable hand-guards pivoted in the recesses, and having projections at one end extending into the path of the blade when the hand-guards are folded.

5. A knife comprising a hollow handle recessed on opposite sides, a rectractile blade having a sliding block at its inner end, foldable hand-guards pivoted in the recesses, and having projections at one end extending into the path of the block when the hand-guards are in folded position, and a closing-spring for the hand-guards.

845,793. STAIN AND FILLER. THOMAS J. KELLY, Marietta, Ohio. Filed Dec. 8, 1906. Serial No. 346,895.

Claim.—1. A composition of matter forming a stain and filler, comprising water, alcohol, glycerin, silex and a gum.

2. A composition of matter forming a stain and filler, comprising water, alcohol, glycerin, silex, a gum, and suitable coloring-matter.

3. The combination, in a stain and filler for woods, of water, alcohol, glycerin, silex, and a gum in substantially the following proportions, viz: four and one-half pints water, one-half pint alcohol, one and one-half pints glycerin, five pounds silex, and one-half ounce of a gum.

4. A composition of matter comprising water, alcohol, glycerin, silex, and a gum in substantially the proportions of four and one-half pints water, one-half pint alcohol, one and one-half pints glycerin, five pounds silex, one-half ounce of a gum, and coloring-matter by which the same is given the desired tint.

845,794. MOWING-MACHINE. SAMUEL V. KENNEDY and CHARLES S. SHARP, Auburn, N. Y., assignors, by mesne assignments, to International Harvester Company, a Corporation of New Jersey. Filed Oct. 8, 1904. Serial No. 227,699.

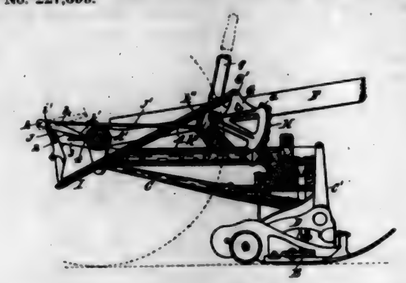

Claim.—1. In a mower, the combination of the frame, the cutting apparatus, a lifting-lever pivoted on the frame and free to oscillate in the operation of the machine, a chain connecting the lever with the cutting apparatus, a counterbalance-spring reacting between the lever and the frame, a stop on the frame in rear of the lever, a dog to engage the stop, and a connection between the dog and the lever, whereby when the lever is moved forward of its normal position the dog engages the stop and holds the lever forward with the chain slack and the spring inoperative, the connection permitting the lever to move rearward of said normal position without operating the dog.

2. In a mower, the combination of the frame, the cutting apparatus, a quadrant chain-connected to the cutting apparatus, a lifting-lever secured to the quadrant, a counterbalance-spring reacting between the quadrant and the frame, an arm pivoted on the frame in rear of the lever, a pivoted dog carried by the arm, a link connecting the arm with the quadrant so that the arm is moved rearward when the lever is moved forward, and a stop on the frame to be engaged by the dog when the lever is moved forward of its normal position, whereby the lever is held in such forward position with the chain slack and the spring inoperative.

3. In a mower, the combination of the frame, the cutting apparatus, a quadrant pivoted on the frame and free to oscillate in the operation of the machine, a lifting-lever secured to the quadrant, a chain connecting the quadrant with the cutting apparatus, a counterbalance-spring reacting between the quadrant and the frame, an arm pivoted on the frame in rear of the lever, a stop on the frame in front of the arm, a dog on the arm to engage the stop, and a connection between the quadrant and the arm which moves the arm rearward when the lever is moved forward of its normal position, but which permits the lever to move rearward of its normal position without operating the dog.

4. In a mower, the combination of the frame, the cutting apparatus, a quadrant chain-connected to the cutting apparatus and having an arm g' projecting above its pivot, and an arm h' depending below its pivot, a lifting-lever secured to the quadrant, a counterbalance-spring reacting between the quadrant and the frame, an arm pivoted on the frame in rear of the axle, a dog carried by the arm, a link connecting the pivoted arm with the depending arm of the quadrant, a slot in said depending arm in which the front end of the link plays, and a stop on the frame to be engaged by the dog when the pivoted arm is moved rearward, whereby when the lever is moved forward of its normal position the pivoted arm moves rearward and the dog engages the stop, but when the lever is moved rearward of its normal position the link-and-slot connection between the dog-carrying arm and the quadrant permits the latter to move without operating the dog.

5. In a mower, the combination of the frame, the cutting apparatus, the pivoted lever G chain-connected to the cutting apparatus, and having an arm h' depending below its pivot, said arm having a slot h'', a bracket 3 projecting from the frame in rear of the axle, an arm J pivoted to the bracket, a gravitating dog h carried by the arm J, and a link f' connecting the arm with the slot in the depending arm of the lever G.

6. In a mower, the combination of the frame, the cutting apparatus, and having the arm h' depending below its pivot, a bracket 3 projecting from the frame in rear of the axle, a ledge 4 on the frame in rear of the axle, an arm J pivoted to the bracket, a gravitating dog h carried by the arm and having a rearward extension k, and a link f' connecting the pivoted arm J with the slot h'' in the depending arm of the quadrant G.

845,795. UPPER TUMBLER FOR DREDGES AND THE LIKE. SAMUEL L. G KNOX, Milwaukee, Wis., assignor to The Bucyrus Company, South Milwaukee, Wis., a Corporation of Wisconsin. Filed Mar. 26, 1906. Serial No. 308,147.

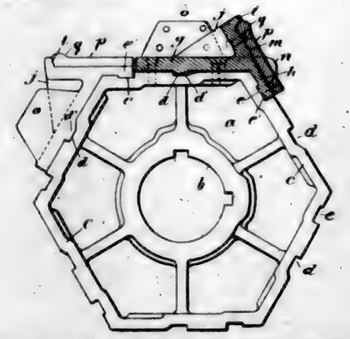

Claim.—1. A tumbler for bucket-chains, comprising a polygonal drum, a wear-plate on each face to engage the bucket-chain, and a transverse shouldered engagement between the wear-plates and the drum-faces to resist the tangential strain of the chain.

2. A tumbler for bucket-chains, comprising a polygonal drum, and wear-plates on the drum-faces, said wear-plates and drum-faces having shouldered engagements to resist tangential strains on said wear-plates.

3. A tumbler for bucket-chains, comprising a polygonal drum, each drum-face overhanging at one end the next adjacent drum-face, a wear-plate on each face, and a shouldered engagement between each wear-plate and the corresponding drum-face.

4. A tumbler for bucket-chains, comprising a polygonal drum, each drum-face overhanging at one end the next adjacent drum-face, a wear-plate on each face, and a shoulder or lug on the drum-face engaging the wear-plate to support said wear-plate against tangential strain.

5. A tumbler for bucket-chains, comprising a polygonal drum, each drum-face overhanging at one end the next adjacent drum-face, a wear-plate on each face, and a shoulder or lug on the edge of the overhanging portion of each drum-face to engage the end of the corresponding wear-plate and support said wear-plate against tangential strain.

6. A tumbler for bucket-chains, comprising a polygonal drum, cushion-plates coöperating with said drum and each engaging adjacent faces of said drum, and tongue-and-groove connections between each cushion-plate and the adjacent drum-faces.

7. A tumbler for bucket-chains, comprising a polygonal drum, cushion-plates coöperating with said drum and each engaging adjacent faces of said drum, and transverse tongue-and-groove connections between each cushion-plate and the adjacent drum-faces.

8. A tumbler for bucket-chains, comprising a polygonal drum, cushion-plates coöperating with said drum and each having angularly-disposed base portions engaging adjacent

faces of the drum, and tongue-and-groove connections between each cushion-plate and the adjacent engaging faces of the drum.

9. A tumbler for bucket-chains, comprising a polygonal drum, cushion-plates coöperating with said drum and each having angularly-disposed base portions engaging adjacent faces of the drum and a bearing-face forming an extension of the drum-face and overhanging the next adjacent drum-face, and tongue-and-groove connections between the faces of the drum and the base portions of the cushion-plates ahead of the bearing-faces.

10. A tumbler for bucket-chains, comprising a polygonal drum, cushion-plates coöperating with the drum, each of said cushion-plates having angularly-disposed portions engaging adjacent drum-faces and a bearing portion forming an extension of the drum-face and overhanging the next adjacent drum-face, a tongue-and-groove connection between each drum-face and the portion of the corresponding cushion-plate in advance of the bearing portion thereof, and a wear-plate secured to the bearing-face of the cushion-plate.

11. A tumbler for bucket-chains, comprising a polygonal drum, cushion-plates coöperating with the drum, each of said cushion-plates having angularly-disposed portions engaging adjacent drum-faces and a bearing portion forming an extension of the drum-face and overhanging the next adjacent drum-face, tongue-and-groove connections between each cushion-plate and the adjacent engaging faces of the drum, and a wear-plate secured to the bearing-face of the cushion-plate.

12. A tumbler for bucket-chains, comprising a polygonal drum, cushion-plates coöperating with the drum, each of said cushion-plates having angularly-disposed portions engaging adjacent drum-faces and a bearing portion forming an extension of the drum-face and overhanging the next adjacent drum-face, a wear-plate secured to the bearing-face of the cushion-plate, and a shouldered engagement between each wear-plate and the corresponding cushion-plate.

13. A tumbler for bucket-chains, comprising a polygonal drum, cushion-plates coöperating with the drum, each of said cushion-plates having angularly-disposed portions engaging adjacent drum-faces and a bearing portion forming an extension of the drum-face and overhanging the next adjacent drum-face, a wear-plate secured to the bearing-face of the cushion-plate, and a shoulder or lug on the cushion-plate engaging the wear-plate.

14. A tumbler for bucket-chains, comprising a polygonal drum, cushion-plates, coöperating with the drum, each of said cushion-plates having angularly-disposed portions engaging adjacent drum-faces and a bearing portion forming an extension of the drum-face and overhanging the next adjacent drum-face, a wear-plate secured to the bearing-face of the cushion-plate, and a transverse shoulder or lug on the rear edge of the cushion-plate, against which the plate abuts.

845,796. MULTIPLEX TELEPHONY. JACOB W. LATTIG, Wyncote, and CHARLES L. GOODRUM, Philadelphia, Pa. Filed Mar. 3, 1904. Serial No. 196,279.

Claim.—1. In a system for the transmission of electrical currents having different characteristics, a wire-circuit composed of two conductors adapted to convey current through its component conductors serially, and a second or phantom circuit composed in part of said first-named circuit with its conductors in parallel and in part of a separate return-conductor, connected to both conductors of the first circuit by a branch-wire bridged across the same, together with an electromagnetic coil and a condenser included in said branch and so connected as to impede the passage of either alternating or direct currents through said branch serially, substantially as described.

2. In a system for the transmission of electrical currents having different characteristics, a metallic circuit adapted to transmit currents over its conductors serially, and a second or phantom circuit composed in part of the conductors of the first circuit in parallel and in part of a separate return, a branch or bridge connected across the metallic circuit, an impedance-coil having its windings included serially in said branch and their middle point connected to the return-conductor, together with a condenser included in series with the coil in said branch, whereby the passage of either direct or alternating current through said branch from one side of the metallic circuit to the other is impeded, substantially as described.

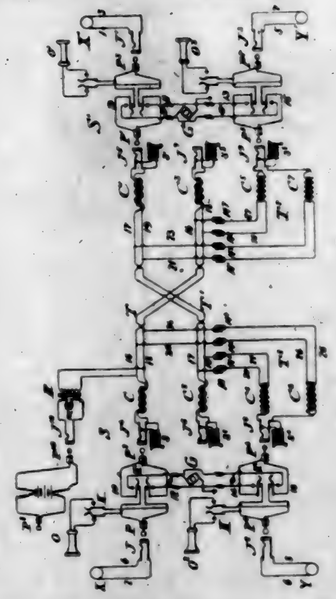

3. In a duplex system of transmission, the combination of the following instrumentalities: two metallic all-wire circuits, each adapted for transmission over its own constituent conductors in series, bridges across each of the metallic circuits, each bridge containing a double differentially-wound coil, a pair of condensers in each bridge, one on each side of the coil, connections between the middle points of the windings of the corresponding coils appertaining to the two metallic circuits, and means to include talking or signaling apparatus in said connection, whereby in addition to the two metallic circuits a third or phantom circuit is produced, substantially as described.

4. In a telephone system, two metallic circuits as T and T', each terminating in a connective device, bridges across each of said circuits, a double and differentially-wound coil in each bridge, connections from the middle points of each corresponding pair of coils, as C^4 and C^5, to a third connective device, a pair of condensers in each bridge, one on each side of each coil, and means to bring talking and signaling apparatus into operative connection with said connective devices, substantially as described.

5. In a telephone system, line-circuits, double-wound coils having their respective windings included in said circuits, and means interpolated in the windings of each coil to increase the self-inductance of the coil and the circuit, substantially as described.

6. In a telephone system, a metallic circuit, a differential or neutral coil having its windings included therein, together with an auxiliary coil possessing considerable self-inductance connected to the first or neutral coil, substantially as described.

7. In a telephone system, a metallic circuit, a differential or neutral coil having its windings included therein, an auxiliary coil possessing considerable self-inductance connected to the first or neutral coil, and means for arbitrarily determining the coefficient of self-induction of said auxiliary coil at will, substantially as described.

8. In a duplex telephone system, two circuits, a bridge across each circuit, condensers in said bridges, a ringing circuit, means for connecting the same to the first-named circuits, and means in said ringing circuit to smooth down or modify the character of the ringing current to avoid very sharp or abrupt changes therein, substantially as described.

9. In a telephone system, a metallic circuit, a differential or neutral coil having its windings included therein, an auxiliary coil possessing considerable self-inductance connected to the first or neutral coil, and means to determine the number of active turns in said auxiliary coil, substantially as described.

845,797. PRINTING-PRESS. JAMES E. LEE, Grand Haven, Mich. Filed Nov. 24, 1905. Serial No. 288,041.

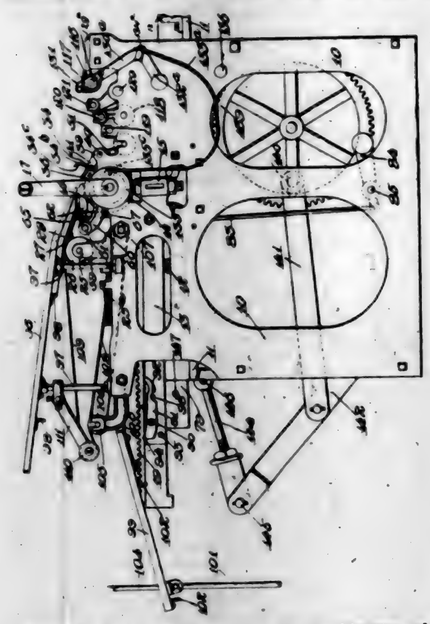

Claim.—1. In a printing-press, the combination of a movable type-bed, a rotary platen, a feeding-blanket frictionally driven with the platen, means for also positively driving the blanket with the platen, and means for throwing the positive means out of action.

2. In a printing-press, the combination of a movable type-bed, a rotary platen, a feeding-blanket frictionally driven with the platen, means also positively driving the blanket with the platen, and means operatively related to the bed for throwing the positive driving means out of action.

3. In a printing-press, the combination of a movable type-bed, a rotary platen, a feeding-blanket movable in one direction only, frictionally engaging said platen and driven thereby, and means adapted to engage the blanket to cause an independent rotation of the platen in relation to the blanket.

4. In a printing-press, the combination of a movable type-bed, a rotary platen, a feeding-blanket frictionally engaging said platen, a plurality of independent yielding locks engaging said blanket to arrest the movement thereof, and means for simultaneously releasing said locks.

5. In a printing-press, the combination of a movable type-bed, a rotary platen, a feeding-belt driven by said platen, a projection carried by the blanket, a plurality of independently-movable latches adapted to engage the projection for arresting the movement of the belt, and means for simultaneously disengaging said latches and the projection.

6. In a printing-press, the combination of a movable type-bed, a rotary platen, a feeding-belt operated by said platen, a plurality of projections carried by the belt, a plurality of yielding latches located in the path of movement of and adapted to independently engage the projections, and means for simultaneously moving the latches out of engagement with the projections.

7. In a printing-press, the combination of a reciprocating type-bed, a rotary platen, a feeding-blanket, frictionally engaging said platen, a lock engaging said blanket to intermittently overcome the motion caused by the frictional contact of said blanket and platen to permit an independent rotation of said platen in either direction with respect to the blanket.

8. In a printing-press, the combination of a reciprocating type-bed, a reversible rotary platen, an endless feeding-blanket surrounding and frictionally engaging said platen, and movable only in one direction, and means for holding said blanket during a reverse rotary motion of the platen.

9. In a printing-press, the combination of a reciprocating type-bed, a rotary platen, a feeding-blanket engaging and driven by said platen and movable only in one direction, a gripper carried by one end of the blanket, means for opening said gripper, and means for interrupting the movement of the blanket.

10. In a printing-press, the combination of a reciprocating type-bed, a rotary platen, a feeding-blanket engaging and driven by said platen in one direction only, a spring-controlled gripper carried by the blanket, means for opening said gripper, and a lock engaging the blanket to permit an independent rotation of the platen in relation thereto.

11. In a printing-press, the combination of a reciprocating type-bed, a rotary platen, a feeding-blanket engaging and driven by said platen, a gripper carried by the blanket, a latch engaging said blanket to permit the platen to rotate independently of said blanket, and means for releasing said blanket, to permit a further movement thereof by said platen.

12. In a printing-press, the combination of a reciprocating type-bed, a rotary platen, a feeding-blanket frictionally driven by said platen, a gripper carried by the blanket, and having a projection thereon, a yielding latch adapted to engage the projection to produce an interval of rest to the blanket while said platen is rotating, and means for disengaging the latch, to permit a further movement of the blanket by the platen.

13. In a printing-press, the combination of a reciprocating type-bed, a rotary platen, a feeding-blanket driven by said platen, a locking device engaging the blanket to cause an interval of rest thereof in relation to the movement of the platen, and means moving in unison with the platen for releasing the locking device, to permit the blanket to move with the platen.

14. In a printing-press, the combination of a reciprocating type-bed, a rotary platen, a feeding-blanket driven by said platen, a locking device engaging the blanket to cause an interval of rest thereof in relation to the platen, a depending arm carried by the locking device, a pivoted latch carried by the bed, said latch being adapted to be engaged by the arm when the bed is moving in one direction and to engage and rock the arm on the return of the bed, for releasing the locking device to permit the blanket to move with the platen.

15. In a printing-press, the combination of a reciprocating type-bed, a rotary platen, a feeding-blanket driven by the platen, a gripper carried by the blanket, a locking device engaging the blanket to cause an interval of rest thereof in relation to the movement of the platen, means for opening the gripper, means carried by the type-bed for operating the gripper-opener, and means also carried by the type-bed for releasing the blanket-locking device.

16. In a printing-press, the combination of a reciprocating type-bed, a rotary platen, a feeding-blanket frictionally driven by said platen, a gripper carried by the

blanket, means for opening said gripper, a spring-latch engaging said blanket to produce an interval of rest thereof, means for positively engaging the latch to release the blanket, and means carried by the type-bed for engaging and moving the latch-operating means.

17. In a printing-press, the combination of a reciprocating type-bed, a rotary platen, a feeding-blanket frictionally driven thereby, a gripper carried by the blanket, an arm carried by the gripper, a pivoted lever provided with a lateral projection normally standing in the path of movement of the arm, means carried by the type-bed adapted to engage the lever to move the projection out of the path of movement of the gripper-arm to permit said gripper to close, and means for intermittently locking and releasing the blanket.

18. In a printing-press, the combination of a movable type-bed, a rotary platen, a feeding-belt frictionally engaging the platen, and means carried by the platen to positively engage the belt for initially moving the same.

19. In a printing-press, the combination of a movable type-bed, a rotary platen, a feeding-belt frictionally engaging the platen, means for locking and releasing the belt, and means carried by the platen to positively engage the belt for initially moving the same.

20. In a printing-press, the combination of a movable type-bed, a rotary platen, a feeding-belt frictionally engaging the platen, means for locking and releasing said belt to cause an interval of rest thereof, a projection carried by the belt, and a yielding dog carried by the platen, said dog being adapted to engage the projection for initially moving the belt when the latter is released.

21. In a printing-press, the combination of a movable type-bed, a rotary platen, a feeding-belt frictionally driven thereby, means engaging said belt to cause an interval of rest thereof, a projection carried by the belt, a yielding dog carried by the platen, adapted to engage the projection, for initially moving the belt, and a safety device adapted to prevent the engagement of the dog with the projection on the belt.

22. In a printing-press, the combination of a reciprocating type-bed, a rotary platen, a feeding-belt frictionally driven by the platen, means for locking said belt to cause an interval of rest thereof, a yielding dog carried by the platen and adapted to extend within the path of movement of the dog, to be engaged thereby for initially moving the belt, a safety device, and means controlled by the movement of the type-bed for operating the safety device to depress the dog to prevent its engagement with the projection when the belt is locked.

23. In a printing-press, the combination of a reciprocating type-bed, a rotary platen, a feeding-belt frictionally driven by the platen, means for locking and releasing said belt, a yielding dog carried by the platen, a projection carried by the belt and adapted to extend within the path of movement of the dog, a pivoted arm adjacent to and concentric with the path of movement of the dog, means for moving said arm out of engagement therewith, and means connected to the arm and engaged by the type-bed for causing said arm to engage and depress the dog.

24. In a printing-press, the combination of a reciprocating type-bed, a rotary platen, a feeding-belt driven by said platen, means for locking and releasing said belt, a yielding dog carried by the platen, a projection carried by the belt and adapted to stand within the path of movement of the dog, a pivoted arm adjacent to and concentric with the path of movement of the dog, a bar connected to the arm, a spring engaging said bar for holding the arm elevated, a projection carried by the bar, and means carried by the type-bed and adapted to engage the projection for lowering the arm to depress the dog and prevent the same from engaging the projection on the belt when the latter is locked.

25. In a printing-press, the combination of a movable type-bed, a rotary platen, a feeding-belt engaging the platen and driven thereby, a gripper carried by the belt, and means for locking and releasing said belt at such intervals in respect to the movement of the type-bed, that the paper carried thereby will directly register with the type when brought into contact therewith.

845,798. GAME APPARATUS. ANTON A. LEHR, Boston, Mass. Filed Dec. 24, 1906. Serial No. 349,296.

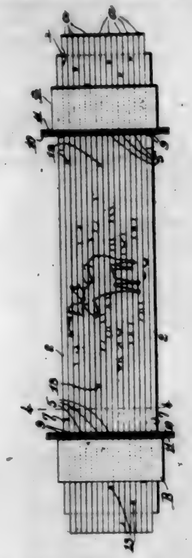

Claim.—1. In a game apparatus, a series of longitudinally and independently movable members arranged side by side in parallelism and having a plurality of outline designs thereon, an indicator for each design, on each member, and means to effect proper positioning of the indicators of a kind, to thereby so locate the said members as to display in completed form only the design corresponding to such indicators.

2. In a game apparatus, a series of longitudinally and independently movable members arranged in juxtaposition side by side and having a plurality of designs thereon, and an indicator for each design, on each member, whereby when the members are moved to bring the indicators of a kind into predetermined position the design corresponding to such indicators will be displayed in complete form.

3. In a game apparatus, a series of longitudinally and independently movable members arranged in juxtaposition side by side and having flat upper faces lying in the same plane, presenting a display-surface upon which are made of a plurality of designs, an indicator for each design, on each member, the indicators of one group being distinguished from the indicators of another group, and means whereby, when indicators of a group are alined, the corresponding members may be moved longitudinally in unison.

4. In a game apparatus, a flat base having parallel side flanges, a series of elongated, narrow and longitudinally-movable members arranged side by side upon the base between the flanges thereof, the upper, flat faces of the members lying in the same plane and having a plurality of designs thereupon, groups of indicators on said members, each group corresponding to a design and being distinguished from the indicators of the other groups, and means to retain in alined position the indicators of a group.

5. In a game apparatus, a flat base having parallel side flanges, a series of elongated, narrow and longitudinally-movable members arranged side by side upon the base between the flanges thereof, the upper, flat faces of the members lying in the same plane and having a plurality of designs thereupon, groups of indicators on said members, each group corresponding to a design and being distinguished from the indicators of the other groups, a slide movable longitudinally on the base, and means carried by the slide to retain in alined position indicators of a given group.

6. In a game apparatus, a flat base having parallel side flanges, a series of longitudinally and independently movable members arranged in juxtaposition side by side upon the base between the flanges and having their upper faces lying in the same plane, to present a display-surface having a plurality of designs thereon, said members being divided into two subseries, the members of one alternating with those of the other subseries, an indicator for each design, on each member, the indicators of one group being distinguished from those of other groups, two slides movable longitudinally on the base, and means on each slide to engage the indicators of a selected group on one of the subseries and maintain said indicators alined, whereby relative movement of the slides will effect corresponding movement of the respective members, to position the same to complete the design corresponding to the selected group of indicators.

845,799. HANGER FOR PIPES AND CONDUITS. JOHN C. LINDNER, Jr., Buffalo, N. Y., assignor of one-half to James D. Robertson, Buffalo, N. Y. Filed Mar. 21, 1906. Serial No. 307,288.

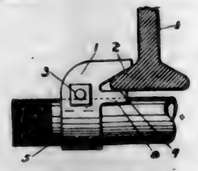

Claim.—1. In devices designed as hangers for supporting pipes, conduits and the like, a horseshoe-shaped hanger, having its extremities perforated for the reception of a clamping-bolt and provided at their extremities with flat lateral projections adapted to support the hanger and its weight, and so constructed as to present for contact with the supporting-beam, only the edge portions of the flat surface substantially as shown and described and for the purposes set forth.

2. In conduit-supporting devices, a hanger having a body portion with extremities designed for the reception of a clamping device and flat supporting projections extending laterally from the extremities and so constructed as to present for contact with the supporting-beam only the edge portion of the projection substantially as shown and for the purpose set forth.

845,800. JOURNAL-BOX LID. ARTHUR LIPSCHUTZ, St. Louis, Mo. Filed Nov. 27, 1905. Serial No. 289,170.

Claim.—1. A journal-box lid provided with a hood, a leaf-spring secured to the inside of the lid below the lower end of said hood and projecting into the same, said hood having a wall, formed integral therewith which forms a closure for a portion of the hood and is imperforate above the point where the spring is secured to the lid, said wall extending below the point where the spring is secured to the lid; substantially as described.

2. A journal-box lid provided with a hood, an inwardly-extending wall closing a portion of the hood and terminating below the lower end of the hood, a flat spring interposed between the wall and the inside of the lid, and a fastening device passing through the lid, the spring and the wall at a point below the lower end of the hood, said wall being imperforate above said fastening device; substantially as described.

3. A journal-box lid provided with a hood, and a flat spring secured to the inside of the lid below the lower end of said hood, said lid comprising an inwardly-extending wall which partially closes the hood and terminates below the point where the spring is secured to the lid, said wall being imperforate above the point where the spring is secured to the lid; substantially as described.

4. In combination with a journal-box, a hinged lid covering the mouth of said box and provided with a hood, and a flat spring secured to the inside of the lid and extending into said hood, said lid having a wall partly closing said hood and extending below the point where the spring is secured to the lid, which wall is imperforate above the point where the spring is secured to the lid; substantially as described.

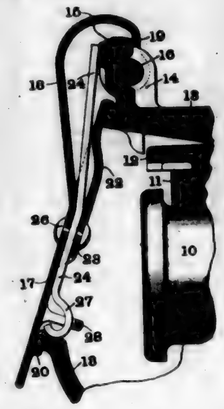

5. In combination with a journal-box, a hinged lid covering the mouth of said box and provided with a hood, a flat spring secured to the inside of the lid and extending into said hood, said lid being provided at its upper edge with a flange for embracing a portion of the journal-box, and with a portion acting as a closure for the hood and extending below the point where the spring is secured to the lid, said portion being imperforate above the point where the spring is secured to the lid; substantially as described.

6. In combination with a journal-box, a hinged lid provided with a hood, and a leaf-spring riveted to the inside of the lid below the lower end of the hood which forms a cover for the spring, said lid being provided with an integral wall which partly closes the hood and is curved toward the inside of the journal-box out of the path of the spring, said wall being imperforate above the point where the spring is secured to the lid and terminating below the point where the spring is connected to the lid; substantially as described.

845,801. SUSPENDERS. SOLOMON H. LOOBYE, Washington, D. C. Filed May 14, 1906. Serial No. 316,819.

Claim.—1. In suspenders of the type described, shoulder-straps, evener-cord loops connected thereto, rear button-tabs, evener-cord loops carried thereby, a back-strap also having evener-cord loops, and an endless evener-cord passing through all of said loops and slidable throughout its entire length.

2. In suspenders of the type described, a back-strap, an evener-cord, a bar or plate carried by the back-strap, eyes pivoted to said bar or plate and having slots eccentric to their centers of movement, and evener-cord loops extending through said slots.

3. In suspenders, a shoulder-strap having recessed ends arranged to form two spaced end loops, a bar extending therethrough, and having turned or hooked ends, and a loop connection carried by the bar at a point between said end loops, and retained by said loops in a central position.

4. In suspenders of the type described, a single-piece stamped-metal eye having a pivot-receiving opening, a cord-receiving loop and a curved loop-receiving slot.

845,801.

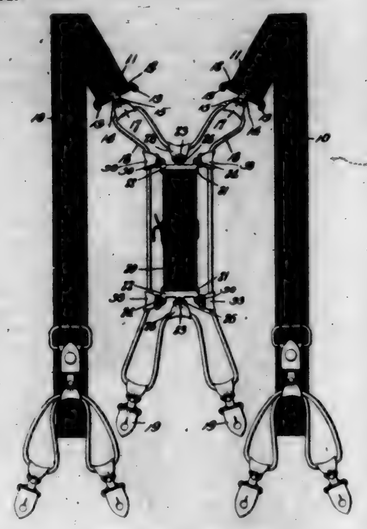

845,802. POLE-TIP. LEO J. LUCEY, Broken Bow, Nebr. Filed May 21, 1906. Serial No. 318,001.

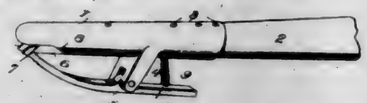

Claim.—In a device of the character described, the combination of a pole, a sleeve slipped over the extremity of the pole, said sleeve having the forward portion of the lower side thereof cut away and being provided at an intermediate point with a pair of spaced downwardly-projecting lugs, a lever pivotally mounted at an intermediate point between the lugs, the forward end of the lever extending upwardly into engagement with the sleeve and being provided with a rearwardly-extending arm which normally lies within the before-mentioned cut-away portion in the forward end of the sleeve, a rod rigidly connected to the sleeve and passing loosely through an opening in the opposite end of the lever, and a spring held in position by the rod and interposed between the sleeve and the lever.

845,803. STEP-HANGER. ARTHUR N. MANROSS, New Britain, Conn., assignor to Corbin Motor Vehicle Corporation, New Britain, Conn., a Corporation of Connecticut. Filed Nov. 22, 1906. Serial No. 344,558.

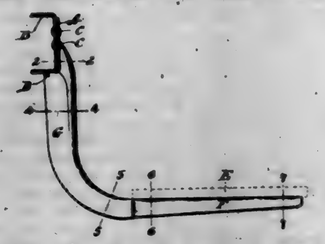

Claim.—1. A step-hanger comprising a body portion arched in cross-section forming oppositely-arranged strengthening-webs, the lower part of said body being curved outwardly into a substantially horizontal plane to provide a step-support, a head portion at the upper end of said body portion arranged to be secured to a main support and a rearwardly-extending bearing-shoulder below said head.

2. A step-hanger or bracket comprising a main body portion arched in cross-section to form oppositely-arranged strengthening and reinforcing webs, said body portion being gradually curved out toward the lower end into a horizontal plane to provide a step-support, said webs being spaced apart at the step-supporting portion a greater distance than at the body portion, and a head at the upper end of said body portion arranged to be secured to a main support and oppositely-arranged bearing-shoulders just below and to the rear of said head portion.

3. A bracket or step-hanger comprising a main body portion arched in cross-section to form two oppositely-arranged reinforcing-webs, a head portion at the upper end of said body portion arranged to be secured to the side face of a suitable support, shoulders on said body portion arranged to bear against the under side of said support, said body portion having an outward projection or extension near its lower end to act as a step-support.

4. In a step-hanger or bracket a body portion comprising a depending part gradually curved outwardly to form a substantially horizontal step-support, said body and step-support being arched or channeled throughout to form oppositely-arranged reinforcing-webs, a head portion at the upper end of the body arranged to be secured to a suitable main support and two oppositely-arranged bearing-shoulders just below and projecting to the rear of said head.

5. In a step-hanger or bracket a body portion comprising a depending part gradually curved outwardly to form a substantially horizontal step-support, said body and step-support being arched or channeled throughout to form oppositely-arranged reinforcing-webs, a head portion at the upper end of the body arranged to be secured to a suitable support, the rearwardly-projecting shoulders on said body arranged to take a bearing against the under side of said support.

845,804. RESERVOIR. MYRON A. MARTIN, Chicago, Ill. Filed July 11, 1904. Serial No. 216,090.

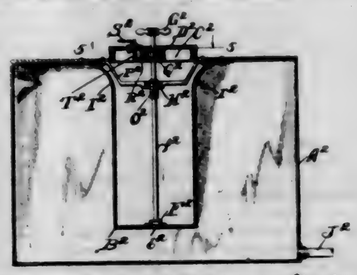

Claim.—1. A fuel-tank divided into two chambers by a partition and communicating with each other at different levels, a filling-inlet closure for said tank, a fuel-outlet from the one compartment permitting a normal flow of fluid therefrom, means to control the lower communication and means coacting with said controlling means and with the inlet-closure whereby the closure cannot be removed to refill until the flow between the two compartments is cut off.

2. Means for storing a primary and a secondary supply of fuel, an outlet connection from said storing means normally permitting the primary supply of fuel to flow freely, means whereby the secondary supply of fuel can be fed through the outlet, an intake-opening through which additional fuel is supplied provided with a closure and locking means for securing the closure and the parts in position to feed from the secondary supply of fuel, and means for restoring the parts to their normal position when the locking means for securing the parts in position to feed from the secondary supply of fuel is unlocked and disengaged from the inlet-closure.

3. Means for storing a primary and a secondary supply of fuel, an outlet connection with the said storing means normally permitting the primary supply of fuel to flow freely, an intake-opening through which additional fuel is supplied provided with a closure, means whereby the secondary supply of fuel can be fed through the outlet and locking mechanism for securing the parts in position to feed from the secondary supply of fuel, said locking means engaging with the inlet-closure when the parts are locked in position to feed the secondary supply of fuel.

4. Means for storing and feeding liquid fuel, comprising means for storing a primary and a reserve supply of fuel, means which normally permit the primary supply of fuel to flow freely, means under manual control whereby the reserve supply of fuel can be fed through the normal supply means and locking means therefor, an intake-opening through which additional fuel is supplied provided with a stopper so located as to be engaged by the locking means when the manual means is locked to feed the reserve supply and to be out of engagement therewith when the manual means is in its normal position.

845,805. FISHING-REEL. AUGUST F. MEISSELBACH, Newark, N. J., assignor to A. F. Meisselbach & Brother, Newark, N. J., a Corporation of New Jersey. Filed Aug. 30, 1906. Serial No. 332,564.

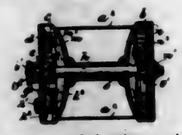

Claim.—1. A fishing-reel having a tubular frame provided with expanded head-rings.

2. A fishing-reel having a tubular frame provided with integral expanded head-rings and a head-plate integral with one of said expanded head-rings.

3. A fishing-reel having a tubular frame provided with expanded head-rings, a head-plate and a reel-plate, said parts being integral with said frame.

4. A fishing-reel having a tubular frame, expanded head-rings at each end of said frame, a head-plate integral with one of said head-rings and a separate head-plate removably secured to the other head-ring.

5. A fishing-reel comprising a frame, head-plates secured to said frame, bearings in said head-plates, a spool inclosed in said frame and journaled in said bearings, a click-wheel secured to the spindle of said spool, a slidingly-pivoted click mounted upon the adjacent head-plate and a pair of differential springs mounted in said head-plate to bear upon said click.

6. A fishing-reel provided with a head-plate, a bearing in said head-plate, a spool journaled in said bearing, a click-wheel secured to the spindle of said spool, a pivoted click slidingly mounted in said head-plate for engagement with said click-wheel and differential springs secured to said head-plate to bear upon the opposite sides of said click.

7. The combination in a fishing-reel, of a head-plate, a pivoted click slidingly mounted therein, a differential springs secured to said head-plate to bear upon opposite sides of said click.

8. In a fishing-reel, the combination of a head-plate with a spool-bearing therein, said bearing comprising an internally-threaded bushing centrally secured to said head-plate, a bearing-plug screwed into said bushing, said bearing-plug being provided with a cup-shaped tension-guard at its outer end, a series of slits in said guard, whereby said guard is made to grip the exterior surface of said bushing.

9. A tension-bearing for fishing-reels, comprising a cylindrical internally-threaded bushing, a bearing-plug screwed into said bushing, a slit cup-shaped head secured to said plug, the sleeve portion of said head adapted to frictionally engage the exterior surface of said bushing.

10. A head-plate fastening for fishing-reels, comprising a head-plate and a head-ring designed to fit one within the other, a pair of open slots diametrically located in one of said parts, said slots being countersunk at their inner ends, a pair of screws diametrically located upon the other part, the heads of said screws being conical on their under sides and adapted to fit the countersunk portions of said slots.

11. A head-plate fastening for fishing-reels, comprising a head-plate member and a head-ring member, a series of open-ended slots diametrically located in pairs upon one of said members and countersunk at their inner ends, a pair of screws having the under sides of their heads conical and diametrically located in the other member and adapted to fit said countersunk slots.

12. A tension-bearing for fishing-reels, comprising a cylindrical interiorly-threaded bushing, a plug screwed into said bushing, a cylindrical spindle bearing in said plug, a knurled cap secured to the head of said plug, a slitted sleeve upon said cap adapted to frictionally engage the exterior of said bushing.

13. A fishing-reel comprising a reel-frame, composed of a head-plate and a drawn tubular body integral with said head-plate, and a second head-plate detachably secured to the open end of said body, a spool mounted in bearings carried by said heads respectively and operating mechanism secured to one of said heads.

14. A fishing-reel comprising a reel-frame, composed of a head-plate and a drawn tubular body integral with said head-plate, and a second head-plate detachably secured to the open end of said body, a spool mounted in bearings carried by said heads respectively and operating mechanism secured to said second or detachable head.

845,806. HEADING-MACHINE. ERNEST C. MEYER, Cleveland, Ohio, assignor to The Champion Machinery Company, Cleveland, Ohio, a Corporation of Ohio. Filed Oct. 23, 1905. Serial No. 283,994.

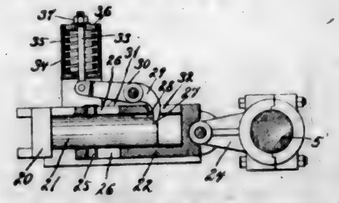

Claim.—1. The combination of a reciprocating slide, a head having a shank longitudinally movable within the slide and formed with a longitudinal rabbet upon one side, a hooked arm engaging a shoulder at the end of the shank with its end and from the concave side to be forced into the rabbet under excessive longitudinal strain, and a spring connected to the hooked arm to hold the same into engagement with the shoulder and rabbet.

2. The combination of a reciprocating slide, a head having a shank longitudinally movable within the slide and formed with a shoulder at its inner end and a longitudinal rabbet from the shoulder, a latch-lever pivoted in the slide and having a hooked arm engaging the shoulder from its concave side, and a spring connected to the other arm of the lever to force the hook down to its engagement.

3. The combination of a reciprocating slide formed with a longitudinal bore having opposed longitudinal slots, a head having a shank slidable in the bore of the slide and formed with a small rabbet at its rear end forming a shoulder and a long rabbet above said shoulder forming another shoulder, a bolt through the shank and sliding in the slots in the slide, a latch-lever pivoted on the slide and having a hooked arm engaging the rear shoulder of the shank, a housing upon the slide, a coiled spring in said housing, a follower bearing against said spring, and

a rod pivoted to the long arm of the latch-lever and axially passing through the housing, spring and follower and provided with a nut upon its threaded end bearing against the follower.

845,807. WATER-SEPARATOR. HENRY G. MILLER, Cleveland, Ohio, assignor to Loew Supply & Manufacturing Company, Cleveland, Ohio, a Corporation of New Jersey. Filed Feb. 27, 1905. Serial No. 247,438.

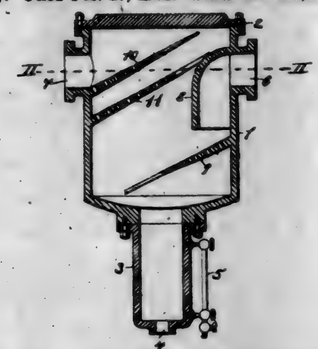

Claim.—In a water-separator, the combination with a casing having a reservoir at its bottom with a water-outlet and having a downwardly-extending steam-inlet in one side near its closed top and a diametrically-opposed steam-outlet, of a perforated baffle-plate arranged beneath the inlet and inclined toward the bottom of the casing and an opposed perforated baffle-plate above the latter plate and beneath the outlet and inclined toward the top of the casing.

845,808. CORN-PLANTER. THOMAS A. MCKEE, Peoria, Ill., assignor of one-fourth to Frank M. Nichols and one-fourth to Frank H. Lowe, Peoria, Ill. Filed Feb. 27, 1905. Serial No. 247,637.

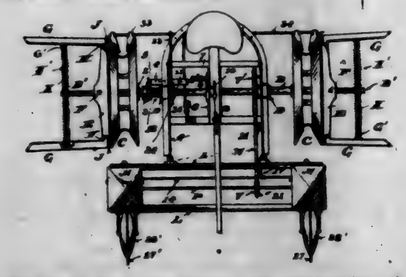

Claim.—1. In a corn-planter, the combination of the planter-frame and its seed-dropping mechanism comprising the seedboxes and seed-tubes thereunder, a removable rotary cup-shaped member partially within each box and each seeding-tube and removable therefrom at the side of the planter, the axle and carrying-wheels, the latter being free to turn on the axle, said axle being free to turn in its bearing on the frame, means for operating the seeding devices from said axle when the latter turns, clutch mechanism for locking one of the wheels to the axle consisting of a toothed member on the wheel-hub, a member on the axle and adapted to shift along the same and also to turn therewith and adapted also to engage the wheel-hub member, a member for operating the shiftable member, a foot-lever connected with said operating member, a spring for holding the clutch member in engagement with the toothed member, the foot-lever adapted for locking the clutch members apart against the pressure of the spring when not planting corn substantially as set forth.

2. In a corn-planter, the combination of the frame, an axle carried thereby and free to turn in its bearings on said frame for the purposes set forth, carrying-wheels loosely mounted to revolve on the axle, a clutch mechanism for locking the wheel and axle together, a lever for controlling such mechanism for the locking operation, by foot-pressure, a spring for holding the clutch mechanism in engagement, the said lever adapted for holding the clutch member in an inoperative position against the pressure of the spring for the purposes explained, seedboxes and runner-shanks on the frame, a revoluble shaft for operating the dropping mechanism within the boxes, a valve in the shank for pocketing the seed within the latter, a rock-shaft for opening and closing said valve, a lever on the rock-shaft for oscillating the said rock-shaft, a sprocket-chain for turning the revoluble shaft which operates the seeding mechanism, the same being driven from the planter-axle, and a series of members carried by said shaft for moving the said lever at regular intervals substantially as set forth.

3. In a corn-planter the combination of the planter-frame having the axle, wheels and seed-dropping mechanism, a marking device on each end of the axle comprising a cross-arm secured to the axle at right angles thereto, an arm pivoted to each end of the cross-arm, each arm being substantially parallel to the axle, and spring interposed between the arms and exerting pressure directly thereagainst in a direction at right angles to their lengths for holding them normally outward for the purposes stated, said arms being limited in the extent of outward movement due to said springs.

4. In a corn-planter the combination of the planter-frame having the wheels and revoluble axle, the wheels also revoluble on said axle, marking devices secured to the axle, seedboxes and runner-shanks carried on the frame, changeable and revoluble seeding devices within the boxes, a valve in each shank for catching the seed as it is delivered from the seedboxes, a shaft for operating the said revoluble seeding devices and to which the latter are removably secured, a sprocket-wheel on the planter-axle, a sprocket-wheel on the said shaft, a sprocket-chain on the two sprockets for driving the shaft from the axle, a rock-shaft adjacent to the sprocket-chain for operating the valves in the shanks from said chain, a series of projections on the chain, a lever on the said rock-shaft with which the said projections engage for the purposes set forth, foot-lever mechanism for connecting the axle from the wheels to stop the revolution of the shaft and consequent dropping of seed, a hand-lever for rocking the axle independent of the wheels and frame for changing the position of the markers for the purposes explained, and a trip device pivoted on the rock-shaft for permitting the projections on the chain to pass said lever in a backward direction without moving the rock-shaft, while permitting the rocking of the axle in the desired direction all for the purposes set forth.

5. In a corn-planter the combination of the seedbox and the shank upon which it is mounted, the seedbox having a circular recess at one side but closed at the other side, the recess being partially within each of the members described, a rim formed integrally with the seedbox and extending into the recess and creating an annular space between the wall of the recess and itself as shown, a removable seed-cup within the recess the same having a perforated rim, said rim adapted for entering the annular space the said integral rim being inclosed thereby, the cup being partially within the box and partially within the shank, its upper-rim surface being exposed in the seedbox, the vertical closed side of the cup being substantially flush with the outside surface of the shank, a driving-shaft for the cup the same extending centrally therethrough and to which the cup is removably but positively secured to be positively driven thereby, a spring cut-off member within the seedbox for the purposes explained, and a seed-ejecting spring within the seed-cup and secured to the stationary rim for entering the perforations in the rim of the cup for positively ejecting the seed from said cup.

6. In a corn-planter the combination of the seedbox and the shank upon which it is mounted, the seedbox having a circular recess at one side but closed at the other side, the recess being partially within each of the members described, a rim formed integrally with the seedbox and extending into the recess and creating an annular space between the wall of the recess and itself as shown, a removable seed-cup within the recess the same having a perforated rim, said rim adapted for entering the annular space, the said integral rim being inclosed thereby, the cup being partially within the box and partially within the shank, its upper-rim surface being exposed in the seedbox, the vertical closed side of the cup being substantially flush with the outside surface of the shank, a driving-shaft for the cup the same extending centrally therethrough, a collar affixed to the shaft within the recess against which the cup bears, the end of the shaft outside the collar having screw-threads, and a nut adapted to screw thereon against the said cup to positively hold it in place, a spring cut-off device within the seedbox to engage with the seed-cup for the purposes explained, and a seed-ejecting spring within the seed-cup and secured to the stationary rim for entering the perforations in the rim of the cup for positively ejecting the seed from said cup.

7. In a corn-planter, the combination of the seedbox M and shank N, there being a single circular recess in the outside wall of the box and shank the said recess being partially in each member described, a single seed-cup O having an annular rim, provided with the perforations O^3, adapted to enter the said recess, a stationary rim R integral with the seedbox and concentric with and arranged within the cup O when the latter is in working position within its said recess, the upper portion of the cup being exposed within the seedbox M for receiving seed in perforations O^3, a spring cut-off Q for engaging with the rim of the cup within the seedbox as described, a spring seed-ejecting member T within the seed-cup and affixed to the stationary rim R, a driving-shaft P central of the recess, a collar P' thereon against which the cup is secured in a positive manner and a threaded nut O adapted to run upon the end of the shaft to secure said cup in position and also for permitting its removal in the manner described and shown.

8. A furrow-opener comprising the circular double convexed metal body 28' and revoluble in a vertical plane, the axis on which it revolves passing through the centers of the convexed surfaces, the flat annular rim 27 surrounding the periphery of the body at its longest circumference, said rim extending from said body substantially a distance equal to one-third the length of the radius of said body, said body suddenly receding from the rim as shown, the seedbox-shank N immediately and curved forward and extending partially beneath the said furrow-opener and partially conforming to the circular form of the latter, and a furrow-closing device rearward of and secured to the shank consisting of the pair of opposite curved plates 29 separated at the bottom, the forward, downward and outwardly curved extensions 30 and the rearward and upwardly curved rear extremities of said plates approaching one another, and the supporting member 31 to which such rear ends are attached.

9. In a corn-planter, the axle thereof and a marker carried at each end thereof comprising a cross-arm thereon adjacent to the wheel and corresponding in length to substantially the diameter of the wheel, an arm at each end of the cross-arm, the same being pivoted thereto, the pivots of each arm being removed from the axis thereof inward toward the axle substantially as shown to limit the outward movement of the arm, and springs interposed between the pivoted arms for exerting pressure directly against and at right angles to the length of the same.

10. In a corn-planter, the axle thereof and a marker carried at each end thereof comprising a cross-arm thereon adjacent to the wheel and corresponding in length to substantially the diameter of the wheel, an arm at each end of the cross-arm, the same being pivoted thereto, the pivots of each arm being removed from the axis thereof inward toward the axle substantially as shown to limit the outward movement of the arm, the extensions B' projecting from the wheel substantially parallel with the pivoted arms, and spiral spring positioned between the extensions and each said arm and maintaining a yielding pressure upon the latter directly at right angles to their lengths.

11. In a corn-planter the seedbox, a cross-frame for supporting it, the shank upon which the box and frame are supported, the frame lying between the two, a circular recess in the outer side of the box and shank, half of said recess being within the box and the other half within the shank substantially as shown, the opposite side of the box and shank being closed, a rim formed substantially in the arc of a circle and arranged within the recess concentric with and smaller than the recess, a seed-cup entered into the recess and closely fitting the rim, there being a series of seed-receiving holes in the rim of the cup, the outer surface of the cup being substantially flush with the wall of the shank and revoluble within the latter and the seedbox, a cut-off member within the seedbox beneath which the holes of the seed-cup pass for the purposes set forth, seed-ejecting means in the lower portion of the rim, and a shaft positioned centrally within the recess on which the seed-cup is positively but removably secured.

845,809. HEELPIECE. BENJAMIN NATHAN and HYMAN COHEN, New York, N. Y., assignors to The Nathan Anklet Support Company, New York, N. Y., a Corporation of New York. Filed Mar. 6, 1906. Serial No. 304,490.

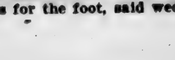

Claim.—1. A device of the kind described, comprising a body member and a filling member, said filling member adapted to form a support for the foot and hingedly connected at one side with the body member and adapted to be turned relatively to the body member to either side of the center thereof.

2. A device of the kind described, comprising a plurality of layers arranged to form a pocket between them, and a filling member adapted to form a support for the foot, said filling member arranged in said pocket and hingedly connected with one of said layers and adapted to be turned pivotally in said pocket to one or the other side thereof.

3. A device of the kind described, comprising a body member and a plurality of wedges adapted to form supports for the foot and connected with the body member, said wedges being movable to one or the other side relatively to each other and to the body member.

4. A device of the kind described, comprising a body member, a plurality of wedges adapted to form supports for the foot and movable relatively to each other and to the body member and a leveling means for the wedges.

5. A device of the kind described, comprising a body member and a plurality of wedges adapted to form supports for the foot, said wedges being pivotally connected with the body member along their adjacent edges and adapted to be turned pivotally relatively to the body member and each other so as to be superimposed or to lie side by side.

6. A device of the kind described, comprising a body member, a plurality of wedges adapted to form supports for the foot, said wedges being pivotally connected with the body member along their adjacent edges and adapted to be turned pivotally relatively to the body member and each other so as to be superimposed or to lie side by side, and a leveling means adapted to said wedges.

7. A device of the kind described, comprising a plurality of layers arranged to form a pocket between them, and a plurality of wedges mounted in said pocket and adapted to form supports for the foot, said wedges being hingedly connected with one of said layers at their adjacent edges and adapted to be turned relatively in said pocket to one or the other side thereof.

8. A device of the kind described, comprising a plurality of layers arranged to form a pocket between them, a plurality of wedges mounted in said pocket and adapted to form supports for the foot, said wedges being hingedly

connected with one of said layers at their adjacent edges and adapted to be turned relatively, in said pocket, to one or the other side thereof, and a leveling means adapted to said wedges.

9. A device of the kind described, having a pocket provided with two wedges, each of which has its thin edge at the middle and its thick edge at the side of the sole and provided with a common strip of material to which said wedges are secured.

10. A device of the kind described, having a pocket provided with two wedges, each of which has its thin edge at the middle and its thick edge at the side of the sole and provided with a common strip of material to which said wedges are secured, and which strip is fastened to the lower layer of the sole to form a hinge on which the wedges may turn.

11. A device of the kind described, having a pocket provided with two wedges, each of which has its thin edge at the middle and its thick edge at the side of the sole and provided with a common strip of material to which said wedges are secured and with a flat band under which such strip is adapted to pass.

12. A device of the kind described, having a pocket provided with two wedges, each of which has its thin edge at the middle and its thick edge at the side of the sole, and which thin edges are joined together and detachably secured in place by a flat band.

13. A device of the kind described, comprising a positioning layer and a cushioning layer between which is placed a wedge having its thin edge near the center line of the sole and its thick edge at the side.

14. A device of the kind described, comprising a positioning layer and a cushioning layer between which is placed a wedge having its thin edge near the center line of the sole and its thick edge at the side and provided with a leveling-piece.

15. A device of the kind described, comprising a positioning layer and a cushioning layer between which are placed two wedges having their thin edges joined at the center and provided with a leveling-piece under each wedge.

16. A device of the kind described, comprising a positioning layer and a cushioning layer between which are paced a plurality of wedges in pairs, each having their thin edges at the center and their thick edges near the side of the sole.

17. A device of the kind described, comprising a positioning layer and a cushioning layer between which are placed a plurality of wedges in pairs each having their thin edges at the center and their thick edges near the side of the sole, and each of which wedges are rotatable around its thin edge as a hinge.

18. A device of the kind described, comprising a positioning layer and a cushioning layer between which are placed a plurality of wedges in pairs, each having their thin edges at the center and their thick edges near the side of the sole, the lowermost pair being permanently secured and the upper pair detachably secured in position.

19. A device of the kind described, comprising a positioning layer and a cushioning layer between which are placed a plurality of wedges in pairs, each having their thin edges at the center and their thick edges near the side of the sole, a leveling-piece being provided under the lowermost pair of wedges.

845,810. LOOM FOR WEAVING CHENILLE OR PILE FABRICS. THOMAS F. NAYLOR, Kidderminster, and OSCAR S. HALL, Bury, England. Filed June 26, 1905. Serial No. 267,082.

Claim.—1. In a power-loom for weaving chenille-pile carpets, the combination with mechanism for stopping the loom with the heald-staves and the reed open, of independent mechanism for laying a pick of chenille in the shed and actuating setting-jaws to set the chenille in its correct position prior to restarting the mechanism for weaving the ground fabric, all substantially as herein set forth.

2. In combination, a chenille-pile carrier, a chenille-can supported by the carrier, means for traveling and guiding the carrier from side to side of the loom and mechanism consisting of levers and of cams secured upon separate shafts for raising and drawing down and tappets on an

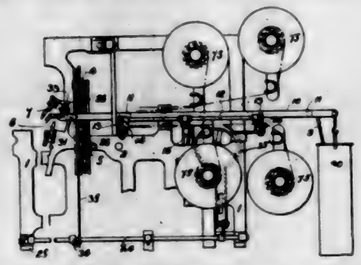

independent shaft for closing, turning and opening a pair of jaws for setting each chenille-weft in the shed, all substantially as herein set forth.

845,811. GAME. FREDERICK M. OSGOOD, Manchester, N. H. Filed Mar. 26, 1906. Serial No. 308,009.

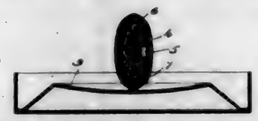

Claim.—1. In a game apparatus, a suitably-graduated base, having a concaved depression formed therein and a prolate ellipsoid spinning-top adapted to be spun in said depression, said top having its opposite ends indicated by distinguishing-marks, whereby the ends may be selectively used as indices to coöperate with the aforesaid graduations.

2. In a game apparatus, a suitably-graduated base having a concaved depression formed therein and a prolate ellipsoid spinning-top adapted to be spun in said depression, said top having its opposite ends of equal weight, said ends being indicated by distinguishing-marks whereby the ends may be selectively used as indices to coöperate with the aforesaid graduations.

845,812. LOSS-PREVENTING DEVICE. ALMA PAYTON, Sylvester, Ga. Filed Mar. 21, 1906. Serial No. 307,171.

Claim.—As an article of manufacture, a device of the character described comprising a front plate concave at its back and having an inturned edge, a back plate secured in said inturned edge of the front plate and having an upright slot in the upper portion and also having a lug fixed to and extending rearward from its lower portion and terminating in a fork, a leaf-spring arranged and movable between the front plate and the back plate, and a pin having a leg extending forward at a right angle from its upper end; the said lug being pivoted and movable in the slot of the back plate and having flat faces at right angles to each other at its forward end and upper edge arranged to engage the leaf-spring alternately for the purposes set forth.

845,813. SUBMARINE STRUCTURE. MAX E. PESTER, Glen Cove, N. Y. Filed Dec. 7, 1906. Serial No. 346,759.

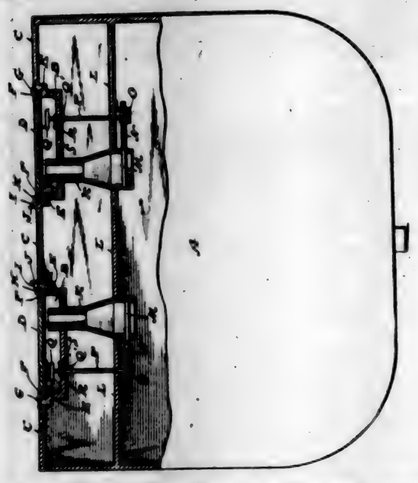

Claim.—1. In a structure of the class stated, recesses made in the outer surface thereof, water-tight lids adapted to close the outer side of the recesses, a pair of tubes extending from the interior of the structure to and into the recesses, means whereby pipes or hose may be connected with the outer ends of the tubes within the recesses, gates constructed and arranged to open and to close the tubes and means located within the recesses for actuating the gates.

2. In a structure of the class stated, recesses made in the outer surface thereof, water-tight lids adapted to close the outer side of the recesses, a pair of tubes extending from the interior of the structure to and into the recesses, means whereby pipes or hose may be connected with the outer ends of the tubes within the recesses, gates constructed and arranged to open and close the tubes, means located within the recesses for actuating the gates and means to lock the gates in their open and closed positions.

845,814. GEAR-CASE FOR MOTOR-VEHICLES, &c. OTTO PFÄNDER, Brüssels, Belgium. Filed Sept. 15, 1905. Renewed Jan. 31, 1907. Serial No. 355,137.

Claim.—1. A casing for transmission devices comprising in combination, an axle, a driving-shaft, a spacing or tension rod revolubly mounted on said axle and provided with an annular case-bearing shoulder concentric with said axle, the opposite end of said rod being revolubly mounted on said shaft and provided with an annular case-bearing shoulder, and a casing mounted on said shoulders.

2. A casing for transmission devices comprising in combination, an axle, a driving-shaft, a spacing or tension rod revolubly mounted on said axle and provided with an annular shoulder concentric with the axle, the opposite end of said rod carrying a revolubly-mounted member eccentrically apertured and adapted to receive the driving-shaft and also provided with an annular shoulder concentric with said member, a casing mounted on said shoulders and adapted to close said device, and means for effecting adjustment of the revolnble member.

3. A device of the class described comprising in combination an axle, a driving-shaft, spacing or tension means for said shaft and axle, and a casing mounted on said tension means.

4. A device of the class described comprising in combination an axle, a driving-shaft, spacing or tension means for said shaft and axle having case-bearing shoulders, and a casing mounted on said shoulders.

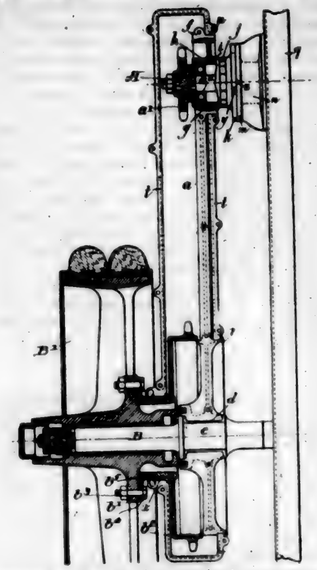

5. A device of the class described comprising in combination an axle, a driving-shaft, spacing or tension means for said shaft and axle, said means comprising a revoluble adjusting member, said tension means having case-bearing shoulders, and a casing for said shoulders.

845,815. LOCK FOR SAVINGS-BANKS. OTTO PFLEGER, New York, N. Y., assignor to W. F. Burns Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 20, 1905. Serial No. 288,246.

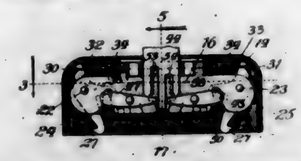

Claim.—1. In a savings-bank, the combination of a receptacle; a cover therefor; a pair of latch-dogs pivotally mounted in one of said members; a single spring mechanism engaging both of said latch-dogs, adapted to normally hold said dogs in detachable engagement with the opposite member; a pivoted supplemental lever engaging each of said latch-dogs; and a key-insertible from outside the device adapted to engage said supplemental levers to move said latch-dogs out of engagement with the second member.

2. In a savings-bank, the combination with a receptacle and a cover therefor, of a latch-dog pivoted in one of said members; mechanism for normally holding said latch-dog in detachable engagement with the other member; a supplemental lever engaging said latch-dog; supplemental latch mechanism normally locking said supplemental lever, and mechanism insertible from outside the bank to release said latch and engage said supplemental lever to move it in such a way that it moves said latch-dog out of engagement with the second member.

3. In a saving-bank, the combination of a receptacle; a cover therefor; a pair of latch-dogs pivotally mounted in one of said members; a single spring mechanism en-

gaging both of said latch-dogs, adapted to normally hold said dogs in detachable engagement with the opposite members; a pivoted supplemental lever engaging each of said latch-dogs; supplemental latch mechanism normally locking said supplemental levers, and a key insertible from outside the device adapted to release said latch and engage said supplemental levers to move said latch-dogs out of engagement with the second member.

4. In a savings-bank, the combination of a receptacle, a cover therefor, a coin-slot in one of said members, a frame mounted in the member in which the coin-slot is located composed of spaced plates located on opposite sides of said coin-slot as described, a pair of latch-dogs pivotally mounted between said frame-plates adapted to normally detachably engage the opposite member of the receptacle, means for holding said dogs in such engagement, a pair of supplemental levers pivoted to the outside of one of said frame-plates, a pin on each supplemental lever passing through an opening in the frame-plate engaging the adjacent latch-dog, and a key insertible through an independent slot in the receptacle engaging said supplemental levers to release said latch-dogs as described.

845,816. CENTRIPETAL-CENTRIFUGAL PUMP AND CONDENSER. ROSCOE S. PRINDLE, New York, N. Y., assignor of one-half to Charles H. Tompkins and Vincent C. Tompkins, New York, N. Y. Filed Mar. 5, 1902. Serial No. 96,826.

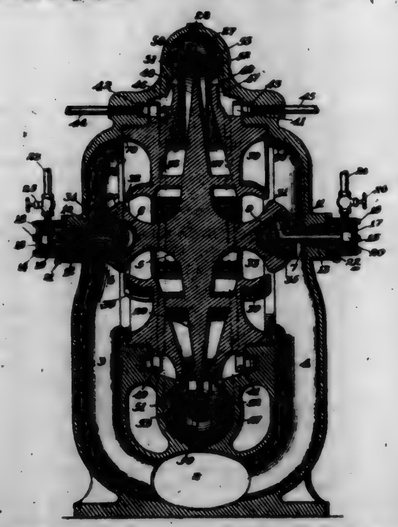

Claim.—1. The combination of a casing having an extension thereon acting as a discharge-chamber, said casing having an inlet-opening for gas and liquid, and a rotor or runner in said casing, acting to force said gas or liquid into said extension, said rotor being provided with means for drawing in fluid centripetally and discharging it centrifugally, substantially as described.

2. The combination of a casing having an extension thereon in the form of a volute which acts as a discharge-chamber, said casing having an inlet-opening for gas and liquid, and a rotor or runner in said casing acting to force said gas and liquid into said extension, said rotor being provided with means for drawing in fluid centripetally and discharging it centrifugally, substantially as described.

3. The combination of a casing having a volute extension thereon acting as a discharge-chamber, said casing having an inlet-opening for gas and liquid, a fluid-supported rotor or runner in said casing, acting to force said gas and liquid into said extension, and means for driving said rotor, substantially as described.

4. The combination of a casing having a volute extension thereon acting as a discharge-chamber, said casing having an inlet-opening for gas and liquid, a fluid-supported rotor or runner in said casing acting to force said gas and liquid into said extension, said rotor being provided with means for drawing in fluid centripetally and discharging it centrifugally, and means for driving said rotor, substantially as described.

5. The combination of a casing having a volute extension thereon acting as a discharge-chamber, said casing having openings for the admission of exhaust-steam, a rotor or runner therein, said rotor being provided with means for drawing in fluid centripetally and discharging it centrifugally, and said casing being provided with means for admitting fluid thereto, substantially as described.

6. The combination of a casing having an extension thereon acting as a discharge-chamber, a rotor or runner therein, means for supporting said rotor or runner entirely out of contact with said casing, said rotor or runner being provided with means for drawing in fluid centripetally and discharging it centrifugally and said casing being provided with inlets for liquid and gas, substantially as described.

7. The combination of a casing provided with an extension acting as a discharge-chamber, and a combined rotor or runner and turbine-wheel therein, said rotor being provided with means for drawing in fluid centripetally and discharging it centrifugally and said casing being provided with two sets of openings, one for gas and the other for liquid, substantially as described.

8. The combination of a stationary casing provided with a volute extension acting as a discharge-chamber, a revoluble combined runner or rotor and turbine-wheel in said casing, said rotor being provided with means for drawing in fluid centripetally and discharging it centrifugally, said casing being provided with two sets of openings, one for gas and the other for liquid, and means for automatically balancing said rotor and taking its weight off from its supports when in operation, substantially as described.

9. The combination of a casing provided with a volute extension, a combined rotor and turbine-wheel in said casing, fluid supporting-bearings on which said rotor is mounted, and means for automatically balancing said combined rotor and turbine when in operation, substantially as described.

10. The combination of a casing having steam-inlets and a volute extension serving as a discharge-chamber, a combined rotor and turbine-wheel supported in said casing, bearings for supporting said rotor and wheel when at rest, means for forcing fluid in through said bearings during the operation, and an adjustable ring centrally surrounding said combined rotor and turbine-wheel, whereby the latter is automatically balanced when in operation, substantially as described.

11. The combination of a casing having inlets for liquid and gas and a volute extension acting as a discharge-chamber, a combined rotor and turbine-wheel located in said casing and having recessed portions and a thin central edge, an adjustable ring surrounding said edge, and perforated bearings having spherical ends, said ends entering into the recesses in said combined rotor and wheel, substantially as described.

12. The combination of a casing provided with inlets for liquid and gas and with a volute extension acting as a discharge-chamber, a combined rotor and turbine-wheel located in said casing and provided with spherical-shaped cavities on opposite sides and with vanes for the liquid and the gas to impinge against, an adjustable circular ring centrally surrounding said rotor and wheel, and perforated bearings having spherical ends, which ends enter into the spherical recesses in said combined rotor and wheel, substantially as described.

845,817. TENTERING-MACHINE. HOWARD L. QUICK, New York, N. Y. Filed June 20, 1905. Serial No. 266,179.

Claim.—1. In a tentering-machine having endless moving chains carrying cloth-clamps, frames supporting the chains, and means for reciprocating them and moving them toward each other, means for driving the chains consisting essentially of a shaft having a movement of rotation and one of horizontal oscillation around a pivotal point, two vertical bevel gear-wheels on said shaft on opposite sides of its pivotal point, facing in the same direction on the shaft, and gearing on each frame engaged and actuated by the said vertical gears, for securing uniformity in the movement of the chains.

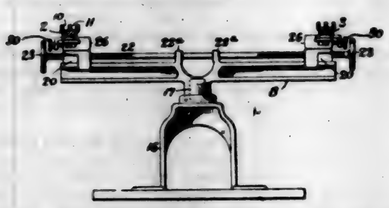

2. In a tentering-machine having endless chains carrying cloth-clamps, frames supporting the chains, and means for reciprocating them and moving them laterally toward each other, means for driving the chains, consisting essentially of a shaft having a rotary movement and also one of horizontal oscillation around a pivot, a bevel-gear on the shaft at one side of the pivot, a bevel-gear driving it of equal size, two bevel gear-wheels on the shaft on opposite sides of the pivotal point, of equal size and facing in the same direction on the shaft, a horizontal gear of equal size arranged to engage each of the aforesaid two gears, and means whereby each of said horizontal gears communicates motion to its respective chain.

3. In a tentering-machine having endless chains at the sides thereof carrying cloth-clamps, frames supporting the chains, and means for simultaneously reciprocating said frames and moving them bodily toward each other, of means for driving the chains comprising essentially a shaft having a movement of rotation and one of horizontal oscillation around a pivotal point, means for rotating the shaft, two vertical bevel-gears of equal size facing in the same direction on the shaft near opposite ends thereof so as to perform precisely the same work, horizontal bevel-gears arranged and driven by said two gears, a gearing whereby one of said horizontal gears communicates motion to one of the chains, and another gearing whereby the other horizontal gear communicates motion to the other chain, all arranged so that the two chains may move in the same direction.

4. In a tentering-machine having endless chains carrying cloth-clamps, means for driving the chains consisting essentially of a shaft having a movement of rotation and also one of horizontal oscillation on a pivotal point, vertical bevel gear-wheels on said shaft on opposite sides of its pivotal point, said gear-wheels being placed on the shaft facing in the same direction, and intermediate connections between said vertical gear-wheels and the chains whereby the latter are actuated with a uniform movement.

5. In a tentering-machine having endless chains carrying cloth-clamps, the combination with the chains, of means for driving them consisting essentially of a shaft having a movement of rotation and one of horizontal oscillation on a pivotal point, two vertical bevel gear-wheels on said shaft on opposite sides of the pivotal point, said gear-wheels being placed facing in the same direction on the shaft and being of equal size, a drive-gear also on said shaft between the pivotal point and one of the aforesaid gears, mechanism for imparting motion to said drive-gear, and intervening mechanism between the aforesaid vertical gear-wheels and the chains whereby the movement of the gear-wheels is imparted to the chains and secures uniformity in the movement of the latter.

6. In a tentering-machine having lateral endless chains carrying cloth-clamps, frames supporting the chains, which frames are reciprocated and oscillated simultaneously, pivots on which the oscillations take place, said pivots being supported on adjustable blocks, means for adjusting the blocks on opposite sides relatively to each other, and means for adjusting the clamping-points of the cloth-clamps relatively to the said pivots on which the oscillatory action occurs in order that a proper stretching of the threads of the cloth may take place during the oscillation.

7. In a tentering-machine having endless chains carrying cloth-clamps, and frames supporting said chains, said frames having guides or ways and a separating-partition, in which guides the chains move, means for imparting a reciprocatory movement to said frames as well as a movement thereof bodily toward each other, said means consisting essentially of horizontal bars, central pivots for supporting them and pivotal connections between the outer ends of the bars and the said frames, said latter pivotal connections including adjustable blocks with means for adjusting the blocks relatively to each other, and means for adjusting the clamping-points of the cloth relatively to the pivots of the last-mentioned pivotal connections.

8. In a tentering-machine having endless chains carrying cloth-clamps, and frames supporting said chains, means for imparting a reciprocatory movement to said frames as well as a movement bodily toward each other, said means including bars or rods, pivots therefor, adjustable blocks thereon carrying pivots, means for adjusting said blocks relatively to each other, and means carrying the chain-supporting frames, which means are adjustable for the purpose of regulating the position of the clamping-points of the cloth relatively to the last-mentioned pivots of the movable blocks, in order that a proper stretching of the threads of the cloth may take place.

9. In a tentering-machine having endless moving chains carrying cloth-clamps, and frames supporting the chains, which frames are reciprocated and oscillated simultaneously, means for performing the reciprocation and oscillation and at the same time allowing of an adjustment of the parts, consisting essentially of vibratory cross-pieces which extend between the two sides of the machine, pivots near the ends of these cross-pieces on which pivots the oscillations occur, adjustable blocks supporting the pivots, plates through which the pivots pass, slides in said plates connected to the frames, and an adjusting-screw in the slides for shifting them with relation to adjacent pivots and thus adjusting the clamping-points of the cloth relatively to said pivots on which the oscillatory action occurs in order that a proper stretching of the threads of the cloth may take place during the oscillation.

10. In a tentering-machine having endless chains carrying cloth-clamps, frames supporting said chains, said frames having guides or ways, and a separating-partition, in which guides the chains move, means for imparting a reciprocatory movement to said frames as well as a bodily movement toward each other, said means consisting essentially of a vibratory shaft having a central pivot on which the vibration takes place, and means for adjusting the frames relatively to each other, consisting essentially of blocks, and a screw-rod connecting said blocks, and means for adjusting the frames relatively to the pivots on which the oscillatory action occurs, said pivots being supported in said blocks, and said means consisting essentially of devices connected to the frames and provided with screw-rods for changing the position of the clamping-points of the cloth-clamps relatively to the pivots.

11. In a tentering-machine having endless moving chains carrying cloth-clamps, and frames supporting the chains, means for reciprocating them and moving them bodily toward each other, consisting essentially of pivoted cross-pieces, and adjustable means on said cross-pieces having pivots near the ends forming a part of the rotary connection between the cross-pieces and the chain-carrying frames, and means for driving the chains consisting essentially of a shaft having a movement of rotation and one of horizontal oscillation on a pivotal point, two vertical bevel gear-wheels facing in the same direction on said shaft on opposite sides of the pivotal point, and gearing connections between said gear-wheels and the chains, for securing uniformity in the movement of the latter.

12. In a tentering-machine having endless chains carrying cloth-clamps, and frames supporting the chains, means

for reciprocating them, and moving them laterally toward each other, consisting essentially of a series of cross-bars, central pivots on which said cross-bars move, pivotal supporting means at the ends of the cross-bars between them and the chain-carrying frames, said means including pivots, and being adjustable relatively to each other, and means for permitting adjustment between the cloth-clamps and the pivots.

845,818. TEMPORARY BINDER. HENRY J. REUTER, St. Louis, Mo. Filed Oct. 12, 1906. Serial No. 338,617.

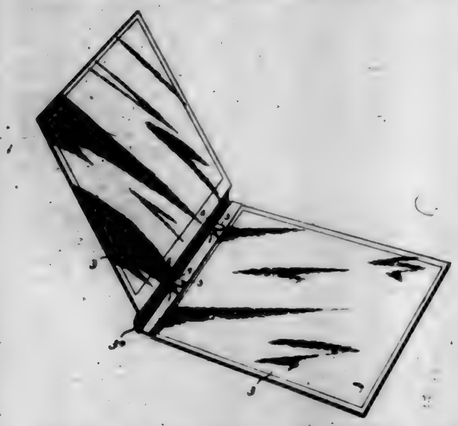

Claim.—1. A temporary binder comprising a base-plate having leaf-holding spindles projecting upwardly therefrom, clamping members coöperating with each spindle and consisting of flat pieces of spring metal that are connected to the base-plate and extend over said spindles, said clamping members being provided with openings through which the spindles project, and shoulders on said spindles under which said clamping members extend; substantially as described.

2. A temporary binder comprising a base-plate carrying upwardly-projecting leaf-holding spindles that are provided at their upper ends with shoulders, and U-shaped spring-metal clamping members connected to said base-plate and provided with openings through which said spindles project, the edges of said openings extending underneath the shoulders on the spindles; substantially as described.

3. A temporary binder comprising a base-plate carrying upwardly-projecting leaf-holding spindles provided at their upper ends with notches, a spring-metal U-shaped clamping member coöperating with each spindle and having its lower leg connected to the base-plate, the upper leg of said member being provided with an opening through which the spindle projects, and an upwardly-extending lip on said upper leg which projects into a recess formed in the spindle when the clamping member is in operative position; substantially as described.

4. A temporary binder comprising cover-boards connected together by a flexible back, a base-plate connected to one of said cover-boards, upwardly-projecting leaf-holding spindles extending through said plate and provided at their upper ends with notches, U-shaped clamping members coöperating with each spindle and being formed from flat pieces of spring metal, the lower leg of each of said members being connected to the base-plate by means of the spindle with which it coöperates, and the upper leg of said member being provided with an opening through which the spindle extends, and an upwardly-projecting lip on said leg which extends into a recess in the spindle; substantially as described.

845,819. TREATMENT OF ALLOYS TO ALTER THEIR COMPOSITION. ISAIAH L. ROBERTS, New York, N. Y., assignor of one-half to James Turner Morehead, New York, N. Y. Filed July 23, 1904. Serial No. 217,797.

Claim.—1. The method of varying the composition of a metallic alloy or mixture, which consists in treating the same in the molten state with a flux composed of fluorids and containing a compound of a metal less basic than the element to be removed from the alloy or mixture, as set forth.

2. The method of varying the composition of a metallic alloy or mixture, which consists in treating the same in the molten state with a flux composed of salts of sodium and calcium and containing a compound of a metal less basic than the element to be removed from the alloy or mixture, as set forth.

3. The method of varying the composition of a metallic alloy or mixture, which consists in treating the same in the molten state with a flux composed of fluorids of sodium and calcium and containing a compound of a metal less basic than the element to be removed from the alloy or mixture, as set forth.

4. The method of removing a metal from an alloy or mixture and substituting another and less basic metal therefor, which consists in reducing the alloy or mixture to the molten state, and treating the same with a compound of the metal to be substituted, in a flux composed of salts of sodium and calcium as set forth.

5. The method of making an alloy of aluminium and magnesium, which consists in treating, with a flux containing a salt of magnesium, a molten mixture of aluminium and a substance more basic than magnesium, as set forth.

6. The method of making an alloy of aluminium and magnesium, which consists in treating a molten mixture of aluminium and sodium with a flux containing a salt of magnesium, as set forth.

7. The method of making an alloy of aluminium and magnesium, which consists in treating a molten mixture of aluminium and sodium with a flux containing magnesium fluorid, as set forth.

845,820. ODOMETER. JOHN D. ROBERTS, Oakmont, Pa. Filed May 22, 1906. Serial No. 318,161.

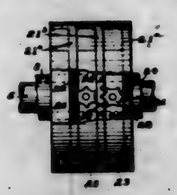

Claim.—In an odometer, the combination with a case having a sleeve fixed therein and a shaft projecting therefrom, of a plurality of register-disks mounted on said sleeve and each provided with a circumferential laterally-projecting flange to provide a circumferential surface for register-numerals, radial teeth on one face of said disks, a smooth surface with a single tooth and an indentation on either side of said tooth on the opposite face of said disks, a fixed collar on said sleeve between adjacent disks, a star-wheel on said collar at right angles to said disks and having some of its teeth meshing with the teeth of one disk while its opposite teeth normally bear against the smooth surface of the complementary disk, said star-wheel being free to turn only when engaged by the single tooth on said complementary disk and in mesh with the aforesaid indentations, a train of gears connecting one of said cylinders with said shaft, and a jointed rocker-arm on said shaft to transmit motion in one direction only, substantially as and for the purposes set forth.

845,821. DISPLAY-RACK. FRANK RUDY, Paola, Kans. Filed Mar. 2, 1906. Serial No. 303,870.

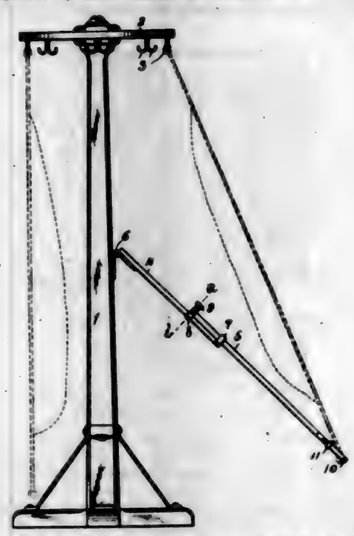

Claim.—1. In a display-rack for hammocks and similar articles, the combination with a vertical standard, of a rotary member mounted on the upper end of the standard and provided with means for engaging and supporting the upper ends of one or more hammocks, a device comprising two members longitudinally adjustable one on the other, one of said two members being connected to said standard, and the other of said two members having means for engaging the lower end of one of the hammocks supported on said rotary member, and means for releasably locking the said two members together.

2. In a display-rack for hammocks and similar articles, the combination with a vertical standard, of a member rotatively mounted on the standard and provided with means for engaging and supporting the upper ends of one or more hammocks, a device comprising two bars slidably mounted lengthwise one on the other, one of said bars being hinged to the standard, the other bar having means for engaging one end of a hammock supported at its other end upon said rotary member, and means for releasably locking the bars together in the position to which they may be adjusted relative to each other.

3. In a display-rack for hammocks and similar articles, the combination with a vertical standard, of a rotary member having means for engaging and supporting the upper ends of one or more hammocks and mounted upon the upper end of said standard, of two bars longitudinally slidable one on the other, one bar having one end hinged to the standard the other bar having at its outer end two resilient arms normally separated for gripping between them one end of a hammock, means for releasably holding said resilient arms closed, and means for releasably locking the two bars together in the position to which they may be adjusted relative to each other.

845,822. HEAD-REST FOR CHAIRS. DAVID SARASON, Berlin, Germany. Filed Feb. 15, 1905. Serial No. 245,805.

Claim.—A pad for the head-rests of chairs or the like, comprising a plurality of superposed sheets of paper, having oppositely-disposed perforations near the ends thereof, the respective perforations at each end, registering, whereby a pad having oppositely-disposed openings is formed, and attaching means extending through the openings in said pad and holding said sheets together, said attaching means also extending from one opening to another, whereby the pad is adapted to be attached to the head-rest.

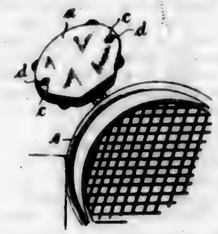

845,823. NAIL-HOLDING ATTACHMENT FOR DRIVING-TOOLS. BENJAMIN F. SCHMIDT, Modesto, Cal. Filed Feb. 27, 1906. Serial No. 303,261.

Claim.—A hammer having a plate rigidly secured to the same, a second plate pivotally mounted on said first-named plate, and adapted to revolve thereon and having V-shaped openings at each end thereof for holding nails of varying sizes, and lugs mounted on said revolving plate, adapted to engage recesses in said rigid plate, substantially as described.

845,824. OVAL COMPASSES. CARL SCHREIBER, Chicago, Ill., assignor of one-half to John Bitzer, Chicago, Ill. Filed July 21, 1906. Serial No. 327,192.

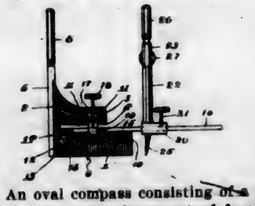

Claim.—1. An oval compass consisting of a slotted base or support, an upper and a lower set of focal guide-rods extending in transverse relation to one another, a laterally-extending arm adapted to swing between the guide-rods and provided with a sliding focal connection for each of the guide-rods, and an inscribing instrument carried by the swinging arm, substantially as described.

2. An oval compass consisting of a slotted base or support, an upper focal guideway extending across the support above the slot therein, a lower focal guideway extending across the support below the slot therein and in transverse relation to the upper guideway, an arm adapted to swing within the slot in the base-support and between the upper and lower focal guideways, sliding focal connections between the swinging arm and each of the guideways, and an inscribing instrument carried by the arm, substantially as described.

3. An oval compass consisting of a slotted base-support with pins for holding it stationary, an upper focal guideway consisting of parallel rods extending across the support above the slot therein, a lower focal guideway consisting of parallel rods extending across the support below the slot therein, an arm adapted to swing within the slot in the base, a pair of focal wheels pivoted to the arm and adapted to travel between the rods forming the upper and lower focal guideways, and an inscribing instrument carried by the arm, substantially as described.

4. An oval compass consisting of a slotted base-sup-

port with pins for holding it stationary, an upper focal guideway consisting of parallel rods extending across the support above the slot therein, a lower focal guideway consisting of parallel rods extending across the support below the slot therein, an arm adapted to swing within the slot in the base, a pair of focal wheels pivoted to the arm, one of the wheels being adjustable upon the arm, and adapted to travel between the rods forming the upper and lower focal guideways, and an inscribing instrument carried by the arm, substantially as described.

5. An oval compass consisting of a circular base slotted around a portion of its periphery, an upper focal guideway extending transversely of the base above the slot, a lower focal guideway at right angles to the upper guideway and extending transversely of the base below the slot, an arm adapted to swing within the slot and having at its inner end a focal wheel pivoted in fixed position and adapted to travel within the lower guideway, a socket slidably and adjustably mounted on the swinging arm, an upper focal wheel pivoted to the socket and movable within the upper focal guideway, and an inscribing instrument carried by the arm, substantially as described.

845,825. ARTICLE OF MANUFACTURE. JOSEPH A. SHINN, Pittsburg, Pa., assignor to Fireproof Materials Company, a Corporation of New York. Filed Apr. 9, 1906. Serial No. 310,761. (Specimens.)

Claim.—1. The herein-described composition consisting of anthracite-coal ashes about ninety-two parts and lime eight parts set by moist heat as described.

2. The herein-described composition consisting of anthracite-coal ashes and a binding material of lime set by steam heat under a pressure of upward of one hundred pounds per square inch as set forth.

3. The herein-described composition produced by mixing anthracite-coal ashes in granular form with lime in proportion, ashes from eighty-five to ninety-five per cent. and lime from fifteen to five per cent. respectively, the said lime and ashes being first formed by pressure after being slightly moistened to hold the ingredients together and afterward subjected to the action of steam heat as described.

845,826. SPRING-WHEEL. EDWARD B. SIMS, Western, Nebr. Filed Apr. 21, 1906. Serial No. 313,064.

Claim.—1. In a vehicle-wheel, the combination of a rim, a tire encircling the rim and spaced therefrom, pairs of headed studs applied to one of said parts, a plurality of springs each having at one end a pair of keyhole-slots arranged relatively at a right angle and adapted to make detachable connection with a pair of studs, and means for detachably connecting the opposite ends of the springs to the other pair.

2. In a vehicle-wheel, the combination of a rim, pairs of headed studs applied thereto, a tire encircling the rim and spaced therefrom and provided at intervals in its length with pairs of ears, curved springs having their outer ends bent into approximately cylindrical form and having a pair of keyhole-slots at their inner ends, the slots of each pair having a right-angular arrangement and adapted to coöperate with a pair of headed fasteners, and means for pivotally and detachably connecting the outer ends of the springs to the said ears.

845,827. FLUID-ACTUATED REGULATED CUSHIONED HOIST. GEORGE F. STEEDMAN, St. Louis, Mo. Filed Dec. 4, 1905. Serial No. 290,181.

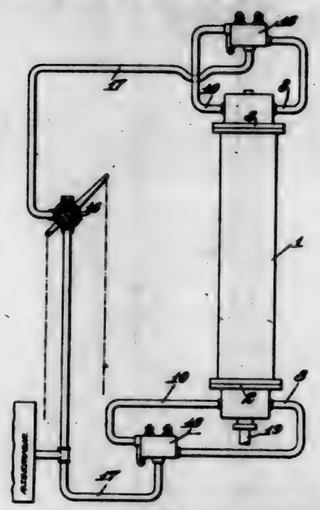

Claim.—1. In a device of the class described, the combination with a cylinder, of interchangeable cylinder-heads carried thereby, each cylinder-head having a central opening, inlet and outlet openings in the cylinder-heads, a piston in the cylinder, a piston-stem projecting through one of the central openings, a plug in the other cylinder-opening, and means carried by the piston for cutting off communication between the outlet-openings and the cylinder; substantially as described.

2. In a device of the class described, the combination with a cylinder provided with heads having inlet and outlet openings, flanges formed integral with the respective heads of the cylinder and forming socket-seats which communicate with the exhaust-openings in the heads of the cylinder, said flanges being spaced away from the side walls of the cylinder, a piston in the cylinder, and hollow cut-offs carried by the piston and having openings in the walls thereof and insertible in the socket-seats whereby communication between the socket-seats and cylinder may be had only through the walls of the cut-off; substantially as described.

3. In a device of the class described, the combination with a cylinder having inlet-openings, a hollow member at each end of the cylinder and communicating with an exhaust-opening in the end of the cylinder and spaced away from the side walls of the cylinder, a piston, concentric cut-offs carried by the piston and movable thereby into said hollow members whereby communication may be cut off between the exhaust and the cylinder; substantially as described.

4. A device of the class described, comprising a cylinder having inlet and outlet openings, a source of supply, tubes connected to the source of supply and to the inlet-openings, a piston operating in the cylinder, and an exhaust cut-off carried by the piston, in combination with means for controlling the admission and exhaust of the motive fluid to and from the cylinder; substantially as described.

845,828. FURNACE. HENRY STRAND, Cleveland, Ohio. Filed Mar. 16, 1906. Serial No. 306,381.

Claim.—1. In an air-heater, in combination, a jacket, a top plate thereon having a register therein, an air-chamber under the top-plate, having double spaced walls and air-inlet openings therethrough, a burner in the lower part of the jacket, passages extending from said burner within the jacket and to an escape-flue, and air-passages extending upwardly from the lower part of the jacket to the said air-chamber and adjacent to the aforesaid passages.

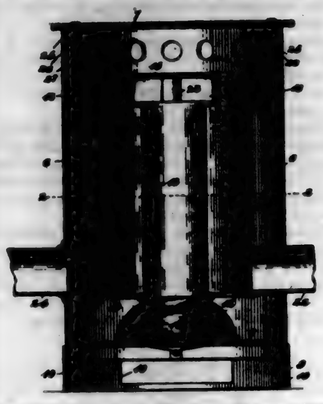

2. In an air-heater, in combination, an outer jacket having a register-plate on the top thereof, a burner in the lower end of the jacket, a horizontal partition extending across the jacket under the register-plate and forming an air-chamber, cold-air inlets to said chamber through the jacket, and means to supply heated air to the said chamber.

845,829. SHELF-DOOR. FREDERICK C. TACKE, St. Louis, Mo. Filed Dec. 18, 1906. Serial No. 348,489.

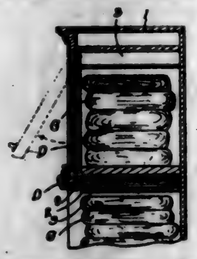

Claim.—1. In combination with a shelf-compartment having terminal partitions or walls, a receptacle surmounting the compartment above the shelf, studs projecting from the partition-walls into the receptacle, and a door having terminal channels for receiving the studs and limiting-blocks at the ends of the channels, substantially as set forth.

2. In combination with a shelf-compartment having terminal partitions or walls, a receptacle surmounting the compartment above the shelf, plates secured at the outer ends of the inner faces of the partitions opposite the receptacle aforesaid, studs projecting from the plates, a door, channels having reinforcing channel-bars at opposite ends of the door for receiving the studs of the plates aforesaid, terminal limiting-blocks mounted in the channel-bars, and buffers secured to the inner faces of the blocks, the parts operating substantially as, and for the purpose set forth.

845,830. APPARATUS FOR TAPPING MAINS. WALTER H. VAN WINKLE, Newark, N. J. Filed Oct. 30, 1905. Serial No. 284,942.

Claim.—In an apparatus for tapping mains, the combination with the coupling, and parts connected thereto, of a drill-shaft, drill, and an annular saw, a frame for supporting the same, an internal-combustion engine mounted upon the frame, gears between the engine and shaft for rotating the latter, and a connection between the coupling

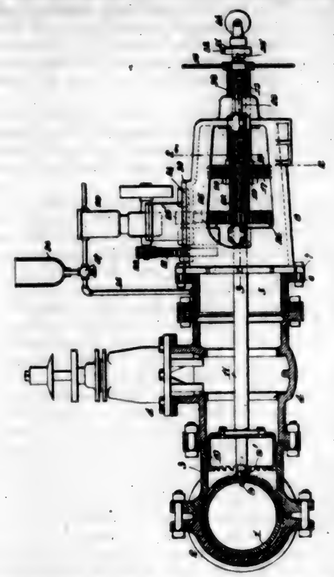

and water-jacket of the engine, to admit water after the saw has been brought into action.

845,831. MOTOR-CONTROLLER. THOMAS S. WATSON, Milwaukee, Wis. Filed July 12, 1906. Serial No. 325,847.

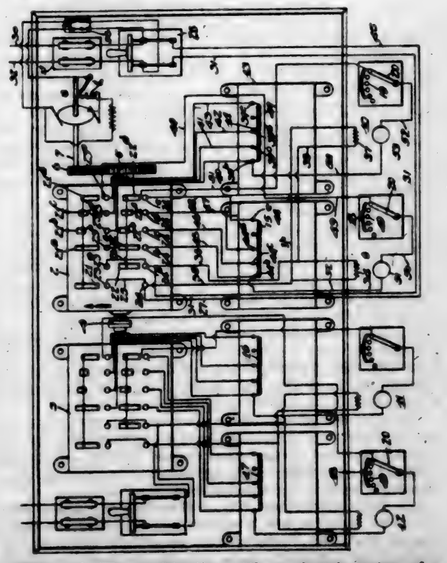

Claim.—1. The combination with an electric motor, of a controller therefor for intermittently changing the direction of current in one of the elements of said motor, and

means independent of said motor for operating said controller continuously.

2. The combination with an electric motor, of an automatic controller operated independently of said motor for intermittently changing the direction of current through one element thereof, resistance in circuit with said motor arranged to be inserted and gradually cut out upon each reversal of the motor.

3. The combination with an electric motor, of an automatic controller therefor for intermittently changing the direction of operation of the same, and a starting-box for said motor operative independently of said reversing-controller.

4. The combination with a motor, of a controller therefor for intermittently changing the direction of operation thereof, suitable resistance in the motor-circuit arranged to be inserted and gradually cut out upon each change of direction of operation, and a starting-box for said motor operative independently of said controller.

5. The combination with a plurality of electric motors, of a continuously-operated common controller therefor for intermittently changing the direction of current in one of the elements of said motors, and means independent of said motors for operating said controller.

6. The combination with a plurality of electric motors, of a continuously-operated common controller for intermittently changing the direction of current through one element of said motors, and a resistance in circuit with each of said motors arranged to be inserted and gradually cut out upon each change of direction of operation thereof.

7. The combination with a plurality of electric motors, of a common controller therefor for intermittently changing the direction of operation of the same, and a starting-box for each of said motors operative independently of said controller and of the starting-box for the other motor.

8. The combination with a plurality of motors, of a common controller therefor for intermittently changing the direction of operation thereof, resistance in each of said motor-circuits arranged to be inserted and gradually cut out upon each change of direction of operation of the motors, and a starting-box for each of said motors operative independently of said controller and independently of the starting-box of the other motor.

9. The combination with a plurality of electric motors, of a common controller for intermittently changing the direction of current through one element thereof, resistance in circuit with each of said motors arranged to be inserted and gradually cut out upon each change of direction of operation of the motors, and means independent of said motors for continuously operating said controller.

10. The combination with a plurality of electric motors, of a common controller therefor for intermittently changing the direction of current in one element of said motors, and an electric motor for operating said controller continuously.

11. The combination with a plurality of electric motors, of a single drum-controller therefor, and a resistance arranged in circuit with each of said motors, said controller being arranged to alternately change the direction of current in one of the elements of said motors, and upon each change of direction of current to insert and gradually cut out the resistance from the circuit of said motors.

12. The combination with a plurality of motors arranged in groups, a controller for each of said groups for intermittently changing the direction of current in one element of the motors, and a common means independent of the motors for operating all of said controllers.

13. The combination with a plurality of electric motors, of a common controller therefor for intermittently changing the direction of operation of said motors, an electric motor for operating said controller continuously, and means for varying the speed of said motor.

14. The combination with a plurality of motors, of a controller therefor for intermittently changing the direction of operation of said motors, an electric motor for operating said controller, and a variable resistance in circuit with said motor.

15. The combination with an electric motor, of an automatically-operated rotating drum-controller having contacts thereon for intermittently changing the direction of current in one of the elements of the motor, and means independent of said motor for rotating said controller.

16. The combination with a motor, of resistance in circuit therewith, a rotating drum-controller for intermittently changing the direction of current through one element of said motor and for inserting and gradually cutting out said resistance upon each reversal of the motor, and a motor independent of the first-mentioned motor for rotating said controller.

17. The combination with a plurality of electric motors, of a common rotating drum-controller therefor having contacts therein arranged to intermittently change the direction of current in one of the elements of said motor and a motor independent of said first-mentioned motor for continuously operating said controller.

18. The combination with a plurality of electric motors, of a resistance in circuit with each of said motors, a common rotating drum-controller for intermittently changing the direction of current of said motors and for inserting and gradually cutting out said resistance upon each change of direction of operation of the motors.

845,832. HAY AND GRAIN RACK. AMOS WEAVER, Keota, Iowa. Filed Mar. 31, 1906. Serial No. 309,134.

Claim.—1. In a device of the class described, a body having cross-bars and longitudinal strips supported thereon, staples having limbs extending through the longitudinal strips at the side of the body straddling the cross-bars and clipped upon the latter, side members having stakes abutting at their ends upon the horizontal strips above the cross-bars, inturned hooks on the inner faces of the members arranged to engage the said staples by an upward and outward movement, staples connected with the longitudinal strips at the ends thereof and having horizontal portions projecting over the said ends, end members having stakes adapted to abut at their lower extremities upon the longitudinal strips above the cross-bars at the ends of the body, outturned hooks secured upon the outer faces of the stakes of the end members and adapted to engage the last-mentioned staples by an upward and inward movement, and means carried by the end members for connecting the side members thereto.

2. In a device of the class described, a body having cross-bars and longitudinal strips, side members connected hingedly and detachably with the body said side members being adapted to swing in an inward direction and having stakes adapted to abut upon the longitudinal strips of the body above the cross-bars, and end members connected hingedly and detachably with the body said end members being adapted to swing in an outward direction and having stakes adapted to abut upon the longitudinal strips upon the cross-bars of the body, and said end members being adapted to abut exteriorly upon the front and rear edges of the side members; and means for detachably connecting the end members with the side members, and means comprising hasps rigidly mounted on the end members, staples on the side members and arranged to engage the hasps by an outward movement of the side members, and keys associated with the staples for securing the hasps thereto.

845,833. DRIER. JACOB WHITE, Cleveland, Ohio. Filed Apr. 30, 1906. Serial No. 314,333.

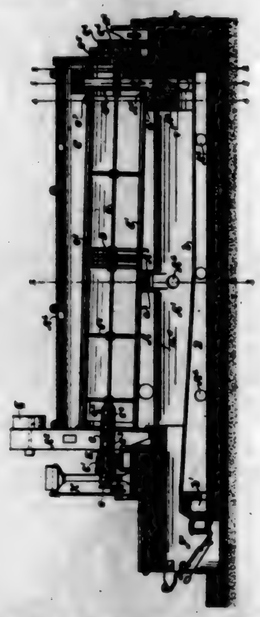

Claim.—1. In a drying apparatus, the combination of a combustion-chamber; a conduit for conducting the gases of combustion formed in two sections one above the other; a drying-chamber associated with one of said sections, but cut off from communication with both of the latter; and an air-conduit associated with the other of said sections and communicating with the interior of said drying-chamber.

In a drying apparatus, the combination of a combustion-chamber; a conduit for conducting the gases of combustion formed in two sections one above the other; a drying-chamber associated with the upper of said sections, but cut off from communication with both of the latter; and an air-conduit lying below the lower section of said gas-conduit and forming one of the walls of the latter, said air-conduit communicating with the interior of said drying-chamber.

3. In a drying apparatus, the combination of a combustion-chamber at one end of the apparatus; a conduit for conducting the gases of combustion extending from the combustion-chamber to the opposite end of said apparatus; an air-chamber disposed below said conduit and having one of its walls forming one of the walls of said conduit throughout the length of the latter, whereby said air may become heated by the gases of combustion; and a drying-chamber connected with said air-chamber and cut off from communication with said conduit.

4. In a drying apparatus, the combination of a combustion-chamber; a conduit comprising two parts one above the other for conducting the gases of combustion; an air-chamber passing beneath the lower portion of said conduit so as to permit the air therein to be heated by the gases of combustion; a drying-chamber associated with the upper portion of said conduit; and separate independent upright flues connecting such upper and lower conduit portions and said air and drying chambers respectively.

5. In a drying apparatus, the combination of a combustion-chamber; a conduit for conducting the gases of combustion formed in two sections one above the other; a drying-chamber located in such upper section; and an air-conduit in proximity to said gas-conduit, whereby air passing therethrough may be heated by the gases of combustion, such air-conduit communicating with the interior of such drying-chamber, and the latter being cut off from communication with said gas-conduit.

6. In a drying apparatus, the combination of a combustion-chamber at one end of the apparatus; a conduit comprising two parts, one above the other, for conducting the gases of combustion; an air-chamber having one wall forming one of the walls of said conduit throughout the length of said lower portion of the latter; and a drying-chamber in said upper portion connected with said air-chamber, its interior having no communication with said upper portion of the conduit.

7. In a drying apparatus, the combination of a combustion-chamber; a conduit comprising two parts, one above the other, for conducting the gases of combustion; an air-chamber passing beneath the lower portion of said conduit so as to permit the air therein to be heated by the gases of combustion; a drying-chamber located in the upper portion of said conduit; and separate independent upright flues connecting such upper and lower conduit portions and said air and drying chambers respectively, whereby the heated air may be caused to pass inside and through the combustion-gases which are outside and around said drying-chamber.

8. In a drying apparatus, the combination of a drying-chamber; an air-chamber for supplying heated air; a conduit for conducting gases of combustion and adapted to heat the air in such air-chamber, a flue connecting said air-chamber and the interior of the drying-chamber at one end of the latter; a flue connecting said conduit with the space around the drying-chamber, said drying-chamber end being inclosed so as to cut off communication of its interior from the said conduit; and a trough for receiving the contents of the drying-chamber, such trough forming a part of the means for inclosing said drying-chamber end.

845,834. MACHINE FOR CHARGING AND DRAWING GAS-RETORTS. JOHN WEST, West Didsbury, England. Filed Aug. 18, 1902. Serial No. 120,133.

Claim.—1. A combined charging and drawing machine, comprising a frame, a trackway or guide-frame adjustable up and down to different desired heights on the main frame, to position it opposite the retort to be charged, a charging-scoop adapted to travel to and fro on said adjustable trackway, another trackway-frame adjustable up and down to different desired heights on the main frame aforesaid to position it opposite the retort to be drawn, a rake adapted to travel to and fro on said last-mentioned adjustable trackway, means for traveling the scoop to and fro on its trackway, means for traveling the rake to and fro on its trackway, and a single operating means carried by the main frame of the machine for adjusting the respective trackways up and down to desired positions opposite the retorts.

2. A combined charging and drawing machine comprising a frame, a trackway or guide-frame adjustable up and down to different desired heights on the main frame to position it opposite the retort to be charged, a charging-scoop adapted to travel to and fro on said adjustable

trackway, another trackway-frame adjustable up and down to different desired heights on the main frame aforesaid to position it opposite the retort to be drawn, a rake adapted to travel to and fro on said last-mentioned adjustable trackway, means for traveling the scoop to and fro on its trackway, means for traveling the rake to and fro on its trackway, and a single operating means for adjusting the respective trackways simultaneously up and down on the main frame to thereby position the scoop and the rake carried by said trackways at the same height for operation in the retorts.

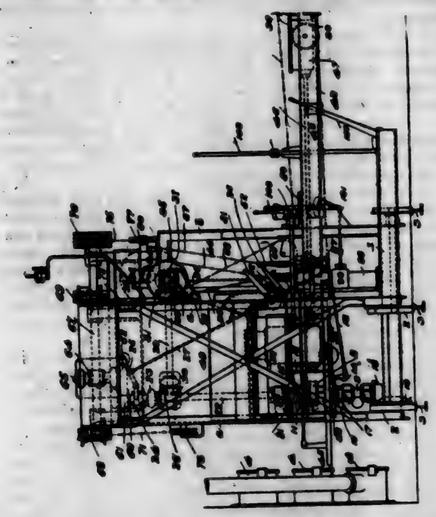

3. In a machine of the class described, the combination with a main frame or carriage, of a motor carried thereby, said motor having a power-shaft, propelling traction-wheels for the main frame, an operating-shaft, clutch mechanism for coupling the power-shaft of the motor either to the propelling-wheels or to the operating-shaft at will, charging mechanism, hoisting means driven by said operating-shaft for adjusting the charging mechanism to different heights to operate in retorts of different heights, means for operating the charging mechanism to charge the retort, drawing mechanism adjustable to different heights to operate in retorts of different heights, hoisting mechanism driven by said operating-shaft for raising and lowering the drawing mechanism at the same time with the charging mechanism, and means for coupling or uncoupling the operating-shaft to the charging and drawing mechanisms.

4. In a machine of the class described, the combination with the machine-frame, of charging mechanism and drawing mechanism both carried by said frame and both adapted for positioning at different heights to operate in retorts at different heights, drum-and-cable hoisting mechanism mounted on the same machine-frame aforesaid for raising and lowering the charging and drawing mechanisms simultaneously and equally, and means for operating said drum-and-cable hoisting mechanism from a single source of power to raise or lower said charging and drawing mechanisms simultaneously and equally.

5. In a machine of the class described, the combination with the machine-frame, of charging and drawing mechanism both carried by said frame and both adapted for positioning at different heights to operate in retorts at different heights, hoisting-drums mounted on the same machine-frame aforesaid, independent cables winding on said drums and connected, respectively, to the charging and drawing mechanisms, and means for driving said drums simultaneously from a single source of power to raise and lower the charging and drawing mechanisms simultaneously and equally.

6. In a machine of the class described, a machine-frame, a device for manipulating the material, said device being adapted for positioning at different heights to operate in retorts at different heights, a hoisting-drum, a cable operated by said drum for raising and lowering the material-manipulating device, and independent means for taking up a desired length of the cable without necessitating operation of the hoisting-drum.

7. In a machine of the class described, a machine-frame, a device for manipulating the material, said device being adapted for positioning at different heights to operate in retorts at different heights, a hoisting-drum, a cable operated by said drum for raising and lowering the material-manipulating device, a pulley to which the cable is fastened, and means for operating and locking the pulley at will to take up a desired length of the cable without necessitating operation of the hoisting-drum.

8. In a machine of the class described, the combination with a machine-frame, of a charging device, hoisting-drums and cables for raising and lowering said charging device to different heights to position it opposite the desired retort, independent drum-and-cable means for operating the charging device back and forth to charge the retort, a motor, an operating-shaft turned by said motor, and clutch mechanism for coupling either the hoisting-drums to the operating-shaft or coupling the charging-mechanism-operating drum to the operating-shaft.

9. In a machine of the class described, the combination with a machine-frame, of independent charging and drawing devices, drum-and-cable means for raising and lowering the charging and drawing devices to position them at the desired heights for operation in the retorts, independent drum-and-cable mechanism for operating the charging device back and forth, independent drum-and-cable mechanism for operating the drawing device back and forth, independent means for operating the drum-and-cable means of the drawing device, a motor, an operating-shaft turned by said motor, and clutch mechanism for coupling either the charging-device-operating drum to the operating-shaft or for coupling the hoisting-drums of both the charging and drawing devices to said operating-shaft.

845,835. GAS-REGULATOR FOR DENTAL VULCANIZERS. ELMER E. WIGHTMAN, Chicago, Ill. Filed June 7, 1905. Serial No. 264,110.

Claim.—1. A gas-regulator, comprising a casing having an inlet and an outlet passage, a Bourdon tube and valve controlling one of said passages, a shaft connected to said tube, adapted, through its radial position, to vary the resistance of said tube, and extending, transversely of the plane in which the tube is curved, to the outside of the casing, said shaft having a conical shoulder inside of the casing, and said casing having on the inside an oppositely-formed seat for receiving said shoulder, a dial surrounding the shaft on the outside of the casing, and a wedge engaging the shaft, acting transversely thereof, and bearing upon the outside of the casing, adapted to draw the conical part of the shaft against its seat so as to prevent rotation, and adapted, in connection with said dial, to indicate the pressure at which said tube will operate said valve.

2. A regulator of the class described, comprising a casing having inlet and outlet passages, a valve controlling one of said passages, the walls of said casing being substantially gas-tight, a curved tube mounted within the casing, being secured thereto at one end and having its other end connected with said valve, a pipe for supplying said tube with fluid under pressure, said tube being of elliptical cross-section and adapted to tend to straighten under the pressure of said fluid, and being so connected with said valve, that pressure on said fluid causes the end of said tube to close said valve, a shaft connected to said tube, extending to the outside of the casing, and adapted through rotation to vary the resistance of said tube to said pressure, said shaft having a shoulder bearing against the inside of the wall of said casing and a wedge acting transversely of the shaft between the outer part of said shaft and the wall of said casing for drawing said shoulder against said wall to fix said shaft in different positions to which it is rotated, and a dial on the outer face of said wall adapted, in connection with said wedge, to indicate the pressure at which said tube will operate said valve.

3. A regulator of the class described, comprising a casing having inlet and outlet passages a valve controlling one of said passages, a curved tube mounted within the casing, being secured thereto at one end and having its other end connected with said valve, a pipe for supplying said tube with fluid under pressure, said tube being adapted to tend to straighten under the pressure of said fluid, a shaft connected to said tube, extending to the outside of the casing, and adapted through rotation to vary the resistance of said tube to said pressure, said shaft having a shoulder bearing against the wall of said casing, and a wedge acting transversely of the shaft between the outer part of said shaft and the wall of said casing for drawing said shoulder against said wall to fix said shaft in different positions to which it is rotated.

4. A regulator of the class described, comprising a casing having inlet and outlet passages a valve controlling one of said passages, a curved tube mounted within the casing, being secured thereto at one end and having its other end connected with said valve, a pipe for supplying said tube with fluid under pressure, said tube being adapted to tend to straighten under the pressure of said fluid, a shaft connected to said tube, extending to the outside of the casing, and adapted through rotation to vary the resistance of said tube to said pressure, said shaft having a shoulder bearing against the wall of said casing, said wall having on its outer face a dial surrounding said shaft, and a pointer connected to the outer part of said shaft, extending transversely thereof, and adapted to draw said shoulder against said wall to prevent the rotation of the shaft.

845,836. ELECTRIC IGNITER. JOHN D. WILMOT, Denver, Colo. Filed Aug. 29, 1906. Serial No. 332,490.

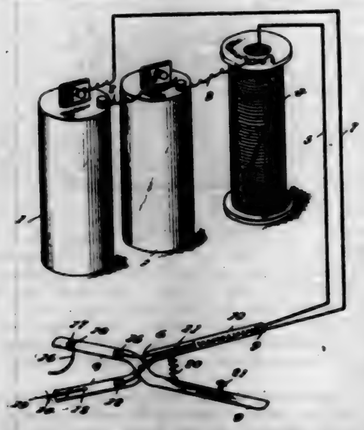

Claim.—1. In an electric igniter, a pair of crossed, hand-levers of non-conducting material, pivotally connected intermediate their ends and formed at their short ends with opposing jaws, one of the latter having a longitudinal slot or notch in its outer end, and the other having a recess or cavity in its inner face, a transverse pin arranged in said cavity, a coil-spring upon said pin and having one of its ends projecting out of the cavity and curved to provide an electrical contact, and a metal plate secured in said slot in the other of said jaws and projecting beyond said jaw to provide an electrical contact-point adapted to be engaged by the curved, projecting end of said spring when said jaws are opened and closed.

2. In an electric igniter, a pair of crossed, hand-levers of non-conducting material, pivotally connected intermediate their ends and formed at their short ends with opposing jaws, one of the latter having a longitudinal slot or notch in its outer end and the other having a recess or cavity in its inner face, a transverse pin arranged in said cavity, a coil-spring upon said pin and having one of its ends projecting out of the cavity and curved to provide an electrical contact, a metal plate secured in said slot in the other of said jaws and projecting beyond said jaw to provide an electrical contact-point adapted to be engaged by the curved, projecting end of said spring when said jaws are opened and closed, binding-posts upon said jaws and electrically connected with said spring and said plate, electric-circuit conductors connected to said binding-posts and arranged upon the exterior of one of said levers, and a covering of non-conducting material surrounding the handle portion of the last-mentioned lever and said conductors to retain the latter upon said lever, substantially as shown and described.

3. In an electric igniter, a pair of crossed, hand-levers of non-conducting material, pivotally connected intermediate their ends and formed at their short ends with opposing jaws, one of the latter having a longitudinal slot or notch in its outer end and the other having a recess or cavity in its inner face, a transverse pin arranged in said cavity, a coil-spring upon said pin and having one of its ends projecting out of the cavity and curved to provide an electrical contact, electric-circuit conductors electrically connected to said spring and said plate, said conductors being arranged upon the exterior of one of said levers, a covering of non-conducting material surrounding the handle portion of the last-mentioned lever and said conductors for retaining the latter upon said lever, a spring for forcing said jaws apart, and an adjustable stop carried by one of said levers and adapted to engage the other for limiting the closing movement of said jaws, substantially as shown and described.

4. In an electric igniter, a pair of crossed, hand-levers of non-conducting material, pivotally connected intermediate their ends and formed at their short ends with opposing jaws, coacting electrical contacts upon said jaws, electric-circuit conductors electrically connected to said contacts, said conductors being arranged upon the exterior of one of said levers, a covering of non-conducting material surrounding the handle portion of the last-mentioned lever and said conductors for retaining the latter upon said lever, a coil-spring arranged between said levers for forcing them apart, and a set-screw carried by one of said levers and adapted to engage the other to provide an adjustable stop for limiting the closing movement of said jaws, substantially as shown and described.

5. In an electric igniter, the combination with an electric battery and a solenoid, of a sparking device comprising a pair of crossed, hand-levers of non-conducting material, pivoted intermediate their ends and formed at their short ends with opposing jaws, one of the latter having a longitudinal slot in its outer end and the other having a recess or cavity in its inner face, a tsansverse pin extending through said cavity or recess, a coil-spring surrounding said pin and having a curved end projecting out of said cavity to provide an electrical contact, a metal plate secured in said slot in the other of said jaws and formed with a projecting point to provide an electrical contact to coact with the curved end of said spring, binding-posts projecting laterally from the sides of said jaws and electrically connected with said spring and said plate, and electrical connections between said battery, said solenoid, and said binding-posts, substantially as shown and described.

845,837. NEWSPAPER-ASSEMBLING MACHINE. WALTER E. WINES, Minneapolis, Minn. Filed June 1, 1905. Serial No. 263,283.

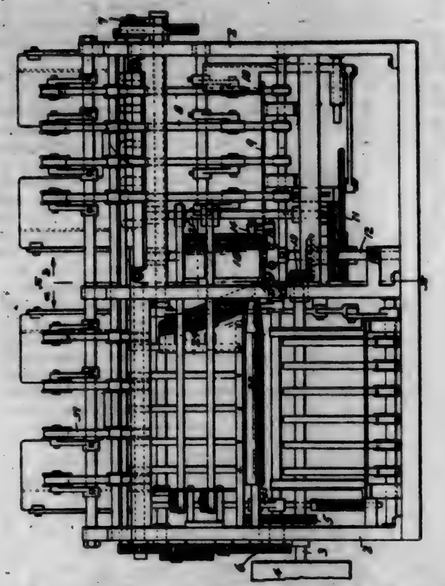

Claim.—1. The combination, with means for feeding a folded newspaper part or section in a vertical position with the fold at the bottom, of means for bending or buckling the fold upward to separate the sides thereof, substantially as described.

2. The combination, with means for feeding a newspaper part or section in a vertical position with its folded edge at the bottom, of an antifriction-wheel arranged to engage said fold and spread or separate the sides thereof, substantially as described.

3. The combination, with means for feeding a folded newspaper-section, of means arranged to engage said folded edge and bend or buckle the same to separate the sides of the fold, substantially as described.

4. The combination, with means for feeding a folded newspaper part or section, of an antifriction-wheel arranged to engage said folded edge and separate the sides of the fold, substantially as described.

5. The combination, with means for advancing a folded newspaper part or section on edge with its fold at the bottom, of feed-wheels, feed-rolls arranged to receive the paper from said wheels, and a bending or buckling means operating near said rolls to open the fold in the paper.

6. The combination, with the feed-rolls, of means arranged to engage the lower folded edge of a newspaper part or section passing between said rolls and separate the sides thereof, substantially as described.

7. The combination, with the feed-rolls, of means arranged to engage the lower folded edge of a newspaper part or section passing between said rolls and separate the sides of the fold, and a spreader device having a nose adapted to pass between said sides, substantially as described.

8. The combination, with the feed-rolls and a spreader device, of feed-tapes provided in connection with said rolls and spreader, and means operating between said rolls and spreader device to engage the folded edge of a newspaper part or section passing between said rolls and separate the sides of the fold, substantially as described.

9. The combination, with the feed-rolls, of means for advancing a folded newspaper part or section in a vertical position with the fold at the bottom, a stop-plate on which the section is supported, an antifriction-wheel mounted to project above the level of said plate and engage said lower folded edge of the section and open the same, substantially as described.

10. The combination, with the feed-rolls, of a stop-plate, means for pushing a folded newspaper part or section into said rolls over said plate, an antifriction-wheel mounted to project above said plate and contact with the lower folded edge of the paper to bend or buckle the same, and a spreader device having a nose to pass between the sides of the fold when opened by said buckling device, substantially as described.

845,838. BASE-BALL GAME-BOARD. CHARLES H. WOLFF, Philadelphia, Pa. Filed June 1, 1904. Serial No. 210,646.

Claim.—A game-board comprising a base-board provided with figures of individuals positioned as in a game of base-ball, and a cavity or depression adjacent to the hand of each of the several individual figures, a series of balls to fit in said cavities, and a propelling-ball to dislodge the positioned balls from their cavities, substantially as described.

845,839. SIDE BEARING FOR CARS. WILLIAM W. WOOLL, Marine City, Mich. Filed Oct. 13, 1906. Serial No. 338,736.

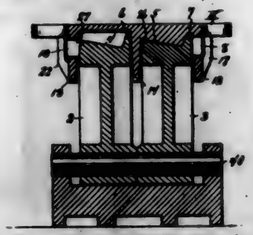

Claim.—1. In a side bearing for cars, in combination with a bearing-plate provided with races, segments pivoted to the truck and adapted to travel in said races, means whereby each segment bears during one part of the swing of the plate thereover, and means whereby they are supported without bearing during another portion of the swing of the plate thereover, substantially as described.

2. In a side bearing for railroad-cars, in combination with a bearing-plate provided with curved races, a pair of segments supported by the truck, there being bearing engagement-surfaces between the segments and the bearing-plate, the said bearing-surfaces overlapping at the central point, whereby when the car and the truck-axle are at right angles to the car-axis, both segments are in

bearing, and whereby the plate is thrown out of bearing connection with one segment and retained in bearing connection with the other segment, as the car swings, substantially as described.

3. In a side bearing for cars, in combination with a pair of swinging bearing-segments, a plate provided with curved races in which the segments engage, and interlocking means between the plate and the segments, whereby either segment when thrown out of bearing engagement is held in position to resume bearing engagement, substantially as described.

4. A bearing-plate for side bearings for cars, provided with curved races, each of which has a bearing portion, a supporting-segment adapted to engage thereagainst, and a portion adapted to swing over said segment without bearing thereon, substantially as described.

845,840. BURIAL-ROBE. WILLIAM J. WORDEN, New York, N. Y. Filed Dec. 22, 1906. Serial No. 349,070.

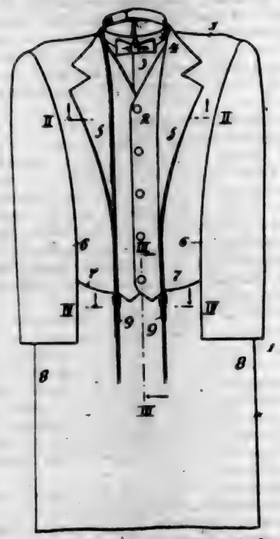

Claim.—1. A burial-robe comprising a body open at the back throughout its length and open at its front from its upper end to an intermediate point in its length and having a coat-collar, lapels and sleeves, a false waistcoat arranged within and between the lapel portions of the coat, a skirt secured to the lower end of the coat portion and under the lower end of the waistcoat, whereby the lower edge of the waistcoat is extended over and lies on the outer side of the skirt.

2. A burial-robe comprising a body open at the back throughout its length and open at its front from its upper end to an intermediate point in its length and having a coat-collar, lapels and sleeves, a false waistcoat arranged within and between the lapel portion of the coat, a skirt secured to the lower end of the coat portion and under the lower end of the waistcoat, whereby the lower edge of the waistcoat will extend over and lie on the outer side of the skirt, a portion of the skirt near its upper end being folded to simulate continuations of the front edges of the coat.

845,841. PRESSURE-REGULATOR BELLOWS. PHILIP WURST, Jr., Philadelphia, Pa., assignor to The Auto-Manuel Piano Action Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Nov. 7, 1904. Serial No. 231,706.

Claim.—1. A pneumatic-pressure-regulating bellows, comprising opposed leaves one of which is movable relatively to the other, and provided with a port, and a collapsible diaphragm connecting said leaves, said diaphragm being free to close over said port and thereby vary the effective area of said port.

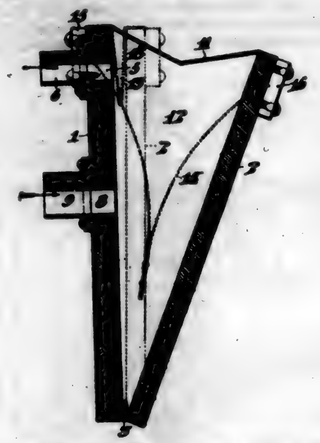

2. A pneumatic-pressure-regulating bellows, comprising opposed leaves one of which is movable relatively to the other, and provided with a port in one of said leaves; a collapsible diaphragm connecting said leaves, said diaphragm being arranged to vary the effective area of said port in accordance with the position of said leaves; and, a spring tending to separate said leaves, substantially as set forth.

3. A pneumatic-pressure-regulating bellows, comprising opposed leaves, one of which is movable relatively to the other, provided with a port leading to an exhauster and a port leading to a pneumatic valve-chamber; and, a collapsible diaphragm connecting said leaves, said diaphragm being arranged to vary the effective area of one of said ports, substantially as set forth.

4. A pneumatic-pressure-regulating bellows, comprising opposed leaves one of which is movable relatively to the other, and provided with a port; and a collapsible diaphragm connecting said leaves and forming one wall of the bellows inclosure, said diaphragm being free to close over said port and thereby vary the effective area of said port in accordance with the position of said leaves, substantially as set forth.

5. A pneumatic-pressure-regulating bellows, comprising a stationary and a movable leaf and provided with a port; and a collapsible diaphragm, said port being in such relation to the diaphragm that the motion of the latter incident to its collapse causes a portion of the diaphragm to obstruct the port and vary its effective area.

845,842. PNEUMATIC WHEEL. WILLIAM L. BARNARD, St. Louis, Mo. Filed Nov. 28, 1905. Serial No. 289,529.

Claim.—1. A pneumatic wheel, constructed with a pair of disks rigidly fixed together, there being an annular space formed between the outer edges of the disks, a ring arranged to slide in the annular space between the outer edges of the disks, a felly integral with the ring, a tire carried by the felly, there being grooves formed in the outer faces of the felly and there being grooves formed in the outer faces of the disks, inflatable flexible sections arranged on each side of the disk and felly in such a manner as that portions of said flexible sections occupy the grooves in the disk and felly, and retaining-rings clamped upon the disks and felly over the edges of the inflatable sections; substantially as specified.

2. A pneumatic wheel, constructed with a pair of disks rigidly fixed together, there being an annular space formed between the outer edges of the disks, a ring arranged to

slide in the annular space between the outer edges of the disks, the interior diameter of which ring is less than the exterior diameter of the disks, a felly integral with the ring, a tire carried by the felly, there being grooves formed in the outer faces of the felly and there being grooves formed in the outer faces of the disks, inflatable flexible sections arranged on each side of the disk and

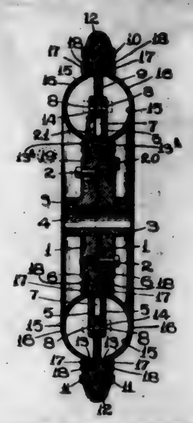

felly in such a manner as that portions of said flexible sections occupy the grooves in the disk and felly, retaining-rings clamped upon the disks and felly over the edges of the inflatable sections, and means whereby air under pressure is delivered through the disks between the inflatable sections; substantially as specified.

845,843. SAW-FILING MACHINE. JOHN M. BEAVER, Fort Worth, Tex. Filed Apr. 18, 1906. Serial No. 312,456.

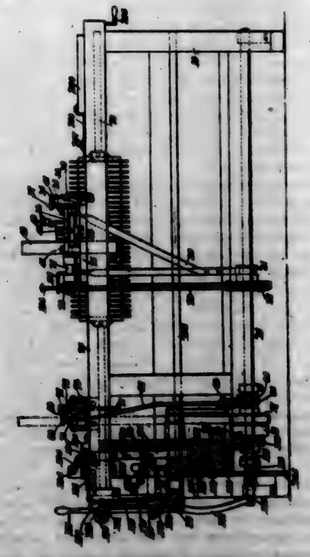

Claim.—1. In a gin-saw-filing machine, a frame, a mandrel arranged for the support of a plurality of saws, a movable frame carrying said mandrel, means for rotating the mandrel step by step, a carriage mounted on the frame, a filing mechanism on the carriage, an operating mechanism common to the mandrel, carriage and saw-filing mechanism, and connections between the common operating means and the mandrel, carriage and saw-filing mechanism, timed to automatically operate at the completion of each rotative movement of the mandrel to move the latter out of engagement with the files, to then shift the carriage to bring the files into alinement with the next saw and then return the mandrel to bring the saws into engagement with the files.

2. In mechanism of the class described, a saw-support, a pivotally-mounted platform, a reciprocatory plate carried by the platform, a block pivoted to said plate, file-carrying arms projecting from the block, a spring tending to prevent oscillatory movement of the block, and means for depressing the platform and holding the files in engagement with the teeth of the saw.

3. In mechanism of the class described, the combination with a saw-support, of a pivotally-mounted reciprocatory file-carrying member supported thereby, a bracket at one side of the platform, a slotted yoke adjustably secured to the bracket and provided with parallel horizontal arms disposed above and below said platform, a guide-rod extending between said arms and passing through the opening in the platform, a spring arranged between the upper arm and the top of the platform and tending to depress the platform.

4. In mechanism of the class described, the combination with a mandrel arranged for the support of a plurality of saws, of a frame, a carriage movable lengthwise of the frame, a filing mechanism supported by the carriage, means operable at the end of each complete rotative movement of the mandrel for shifting the carriage to present the filing mechanism into alinement with the next saw, a driving member, and means under the control of the revoluble mandrel for alternately connecting said driving member to the saw-filing mechanism and the carriage-shifting mechanism.

5. In mechanism of the class described, the combination with a mandrel arranged for the support of a plurality of saws, of a frame, a carriage movable lengthwise of the frame, a saw-filing mechanism supported by the carriage, a driving-belt, belt-pulleys, one operatively connected to the saw-filing mechanism, and the other to the carriage-shifting mechanism, and means operable at the end of each complete rotation of the mandrel for shifting the belt from the filing-mechanism-operating pulley to the carriage-shift-driving pulley.

6. In mechanism of the class described, a mandrel arranged for the support of a plurality of saws, a frame, a carriage movable lengthwise of the frame, a filing mechanism supported by the carriage, a driving-belt, a pair of pulleys, one connected to the saw-filing mechanism, and the other to the carriage-shifting mechanism, and a belt-shifter for automatically moving the belt to the pulley of the carriage-shifting mechanism at the completion of each rotation of the mandrel, and for returning the belt to the pulley of the filing mechanism after the carriage has been shifted.

7. In mechanism of the class described, the combination with a mandrel arranged for the support of a plurality of saws, of a frame, a carriage slidably mounted on the frame, a filing mechanism supported by the carriage, a carriage-feed bar, means for locking the carriage and bar to move the carriage in one direction, and for disconnecting them to move the bar alone in the other direction, and means for reciprocating said bar at the completion of each rotation of the mandrel.

8. In mechanism of the class described, a mandrel for the support of a plurality of saws, a frame, a slidable carriage thereon, a filing mechanism supported by the carriage, a perforated bar for feeding the carriage, a rock-shaft, an arm projecting therefrom, a pin under the control of the arm and serving to lock the carriage to said bar, and means operating at the end of each rotative movement of the mandrel for releasing the pin, moving the bar in one direction, then allowing the pin to again move to locking position and finally moving the bar in the other direction when the carriage is locked thereto.

9. In mechanism of the class described, the combination with a frame, and saw-filing carriage, of a perforated bracket on said carriage, a perforated feed-bar, a spring-pressed pin arranged to lock the bracket to the bar, said bar being provided at one end with an elongated slot, a rocker-arm extending through the slot and having a cam-shaped extension at its upper end, a rock-shaft, a cam carried thereby and disposed in the path of movement of such cam-shaped extension, a pin-engaging arm projecting from the rock-shaft, and means for actuating said rocker-arm at predetermined intervals to effect unlocking of the carriage and reciprocatory movement of the perforated bar to advance said carriage.

10. In mechanism of the class described, the combination with a file-carriage, of a feeding mechanism therefor comprising a longitudinally-movable bar, means for locking the carriage thereto, said bar having at one end an elongated slot, a block, means for adjusting the block over one end of the slot to alter the effective length thereon, a rocker-arm operating in the slot to effect reciprocatory movement of the bar, a rock-shaft, means at one end of the rock-shaft for releasing the carriage from the bar, and a cam disposed at the opposite end of the shaft and actuated by said rocker-arm.

11. In mechanism of the class described, a saw-mandrel, a frame, a carriage slidably mounted on the frame, a carriage-feeding mechanism including a reciprocatory bar, means for locking and releasing the carriage and bar, a rock-shaft, a rocker-arm projecting therefrom and engaging said bar, a second rocker-arm projecting from the shaft, a lever connected to said second rocker-arm, and a revoluble cam for engaging the rocker-arm and transmitting movement to the rock-shaft.

12. In mechanism of the class described, the combination with a frame, of a carriage mounted thereon, means for moving the carriage lengthwise of the frame, a saw-filing mechanism on the carriage, a pivoted frame, a saw-supporting mandrel on the pivoted frame, a driving-belt, a pair of pulleys with which said belt may be connected, one of the pulleys being connected to the saw-filing mechanism, a pinion, a clutch for connecting the pinion to the second pulley to drive the pinion, a gear-wheel with which said pulley intermeshes, a series of cams carried by the gear-wheel and lever systems in the paths of the cams arranged to transmit movement to the carriage, the pivoted frame, and to effect the shifting of the belt from the pinion-driving pulley and the pulley of the filing mechanism.

13. In mechanism of the class described, the combination with a frame, of a carriage mounted thereon, means for moving the carriage, a saw-filing mechanism on said carriage, a pivoted frame, a saw-supporting mandrel on said pivoted frame, a belt-shifting bar, a driving-belt, a pair of pulleys with which the belt may engage, one of said pulleys being connected to the saw-filing mechanism, a pinion, a clutch for connecting the pinion to the second pulley to drive the pinion, a gear-wheel with which said pinion intermeshes, a plurality of cams carried by the gear-wheel and lever systems in the paths of the cams arranged to transmit movement to the pivoted frame, the carriage and the belt-shifter bar, and a stop carried by said bar and movable thereby into the path of the gear-wheel to arrest the movement of the latter.

14. In mechanism of the class described, the combination with a frame, of a carriage movable thereon, a saw-filing mechanism mounted on the carriage, a pivoted frame, a saw-supporting mandrel on the pivoted frame, a belt-shifter bar, means for locking the same in one position, a spring tending to move the shifter-bar from its locked position, a driving-belt, a pair of pulleys, one of which is connected to the saw-filing mechanism, a pinion, a clutch for connecting the same to the second pulley to drive the pinion, a gear with which said pinion intermeshes, a plurality of cams carried by the gear and lever systems in the paths of the cams arranged to operate the pivoted frame, the carriage and the shifter-bar, and a yieldably-mounted cam carried by the saw-mandrel and serving to move the shifter-bar to release position.

15. In mechanism of the class described, the combination with a saw-support, of a frame, a carriage movable thereon, an operating means for the carriage, including a clutch, and an automatic throw-off or stopping device comprising a perforated or recessed bar in the path of movement of the carriage, and arranged to receive an adjustable stop member with which said carriage may engage, and a connection between the bar and clutch whereby the movement of the bar will unclutch the operating means from the carriage.

845,844. INTERCHANGEABLE VEHICLE-BODY. WALTER N. BESCHER, Chicago, Ill. Filed Mar. 1, 1906. Serial No. 303,738.

Claim.—1. In a vehicle the combination with a permanent lower body having an integral front seat, and a rear portion having a door-opening therein, of an upper body removably secured thereto having an integral seat and a door closing the door-opening in said lower body.

2. In a vehicle the combination with a permanent lower body having an integral front seat, and a rear portion having door-openings in its sides, of an upper body removably secured thereto having doors hinged to its side walls that close the door-openings in the lower body.

3. In a vehicle the combination with a permanent lower body having a front seat made integral therewith, and a door-opening in the rear portion thereof, of a roofed upper body removably secured thereto having a door-opening and having a door hinged thereto for closing the door-opening therein and the door-opening of the lower body.

4. In a vehicle the combination with a permanent lower body having a front seat made integral therewith, and door-openings in the side walls of the rear portion thereof, of a roofed upper body removably secured thereto having door-openings in its side walls back of said front seat, and doors hinged to said last-mentioned side walls for closing both the door-openings therein and the door-opening in the lower body.

5. In a vehicle the combination with a permanent lower body having a front seat made integral therewith, and door-openings in the side walls of the rear portion thereof, of a roofed upper body removably secured thereto having door-openings in its side walls back of said front seat, doors hinged to said last-mentioned side walls for closing both the door-openings therein and the door-opening in the lower body, and a rear seat for said upper body.

6. In a vehicle the combination with a permanent lower body having a front seat made integral therewith, having a transverse wall in the same plane as the back of said front seat the ends of which terminate in corner-posts, of an upper part consisting of a roof overhanging said front seat and having a transverse wall in substantially the same plane as the back of said front seat, the ends of which terminate in vertical corner-posts that rest upon the corner-posts of the transverse wall of the lower body and a seat integral with said upper part, and means for securing said posts together.

7. In a vehicle the combination with a permanent lower body having a front seat made integral therewith and having a portion extending to the rear of said seat the side walls of which have door-openings therein and to the rear of said door-openings have their upper edges inturned, of an upper body consisting of a roof overhanging said

front seat, door-openings in its side walls in the rear of said front seat, doors hinged thereto closing both the door-openings therein and the door-openings in the lower body, and a seat connecting the lower edges of the side walls at the rear of the door-opening.

8. In a vehicle the combination with a permanent lower body having a front seat made integral therewith, having a transverse wall in the same plane as the back of said seat, the ends of which terminate in corner-posts, and having a portion extending to the rear of said front seat the side walls of which have door-openings, and to the rear of said door-openings have their upper edges inturned, of an upper body consisting of a roof overhanging said front seat, having a transverse wall in substantially the same plane as the back of said front seat, the ends of which terminate in vertical corner-posts that are removably secured to the corner-posts of the lower body, said upper body having door-openings in its side walls in the rear of said front seat of the doors hinged thereto closing both said door-openings therein and the door-openings in the lower body, and a seat connecting the lower edges of said side walls at the rear of the door-opening and resting and removably secured upon the inturned upper edges of the side walls of the rear portion of the lower body.

9. In a vehicle the combination with a permanent lower body comprising a dashboard, a front seat made integral therewith, and a portion extending to the rear of said seat, of an upper body removably secured thereto and consisting of a roof, a drop-frame secured to the forward end thereof, the lower edges of which are removably secured to said dashboard, a seat within said upper body, and a transverse wall depending from the roof the lower edges of which are removably secured to the transverse structure of the lower body in about the plane of the back of the front seat.

10. In a vehicle the combination with a permanent lower body comprising a dashboard, a front seat made integral therewith, a portion extending to the rear of said seat the side walls of which have door-openings therein, of an upper body consisting of a roof, a drop-frame depending from the front end thereof the lower portion of which is removably secured to the dashboard, a transverse wall depending from the roof in about the plane of the back of the front seat, the lower portion of which is removably secured to the structure of the lower body adjacent to said front seat, and comprising side walls having door-openings which together with the rear end wall rest upon and are removably secured to the upper edges of the side and end walls of the lower body, and doors hinged to the side walls of the upper body for closing both the door-openings therein and in said lower body.

845,845. PUZZLE. ALBERT D. BENNETT, Cleveland, Ohio. Filed May 18, 1906. Serial No. 317,551.

Claim.—1. A puzzle comprising a base, a series of fixed pins rising therefrom, and a series of perforated movable pieces adapted to be selectively mounted on said pins.

2. A puzzle comprising a base, a series of fixed pins rising therefrom, and a series of movable pieces representing a dismembered figure inside of the casing, and adapted to be selectively mounted on said pins to form a complete figure.

3. A puzzle comprising a casing having a transparent cover, a series of fixed pins rising from the floor of the casing, and a series of movable pieces inside the casing, and adapted to be selectively mounted on said pins.

845,846. TOY. ALBERT D. BENNETT, Cleveland, Ohio. Filed May 29, 1906. Serial No. 319,396.

Claim.—A toy comprising a rod having a spiral groove therein and a runner thereon comprising a piece of wire bent to form a spiral fitting in the groove and having oppositely-extending ends with figures thereon, the width of the groove being decidedly greater than the width of the wire, so that the initial movement of the runner is a drop from one side of the groove to the other, substantially as described.

845,847. TOBACCO-PIPE. GEORGE BOSTON, Chicago, Ill. Filed Nov. 8, 1906. Serial No. 341,873.

Claim.—An attachment for a tobacco-pipe, consisting of a perforated disk having a slotted shank member secured thereto, and a sliding shank member having a tongue at its lower end which extends through the slot, and a hook at its upper end adapted to engage over the rim of the bowl of the pipe.

845,848. ELECTRICAL SWITCH. ERNEST W. BRACKETT, Elyria, Ohio, assignor to The Dean Electric Company, Elyria, Ohio, a Corporation of Ohio. Filed Mar. 31, 1904. Serial No. 200,900.

Claim.—1. In an electrical switch, the combination with a frame, an operating-lever pivoted thereon, a flange formed thereon, a metal block removably carried upon said flange, contact-springs removably mounted upon said block, whereby the block and springs may be removed together or separately, and an operating connection between the lever and springs.

2. An electrical switch comprising a frame, a pivot-post thereon, a lever mounted upon said pivot-post, an independent base carried by said frame above the pivot-post, a group of contact-springs secured together and mounted upon said base, an operating connection between the lever and the springs, and an operating-spring secured to the frame and extending around the lever to engage the same forward of the pivot-post.

3. An electrical switch comprising the following instrumentalities: a frame, a flange carried thereby, contact-springs carried by said flange, a pivot-post on the frame, an operating-lever having a notch in its under side and adapted to engage said pivot-post, an extension on said lever adapted to form an operating connection with the contact-springs, means for limiting the movement of the lever, and a spring carried by said flange and extending into engagement with the notch of the lever so as to normally hold the forward end thereof in raised position.

4. A telephone switch-hook for wall sets comprising a frame having a front plate at right angles to the body of the frame, contact-springs mounted upon the frame, an operating-lever passing through an aperture in said front plate and pivoted on the side of the frame, with an operating connection for said contact-springs, means for normally holding the lever in raised position, and an escutcheon-plate for the front plate, all parts of the switch being of smaller dimensions laterally than said escutcheon.

5. In a telephone switch-hook, the combination of a frame having an apertured integral front plate, a switch-hook pivoted on the frame and projecting through the front plate, a flange on the frame, switch-springs removably secured to said flange, a notched rearward extension on said switch-hook adapted to form an operating connection between the same and the springs, and an actuating-spring carried by said flange and engaging the switch-hook on its under side forward of its pivotal point so as to normally hold the switch-hook in raised position.

6. In a telephone-switch, the combination with a frame having an apertured front plate, a pivot-post on said frame, a flange carried by said frame, contact-springs supported by said flange, an operating-lever extending through the aperture in the front plate, lying between the springs and the frame in engagement with the pivot-post, and having an operating connection with the springs, together with means carried by the flange for holding the forward end of said lever in raised position.

845,849. PUMP. FRANK BURNS, Westfield, N. Y. Original application filed Feb. 8, 1902, Serial No. 93,210. Divided and this application filed Dec. 15, 1902. Serial No. 135,300.

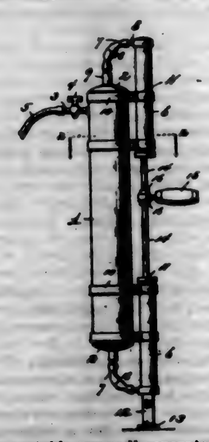

Claim.—1. A portable manually-operated pump comprising a vertically-disposed and elongated storage-tank, pump-cylinders arranged one at or near each end of the storage-tank and overlapping and fastened laterally to one side of said tank and communicating therewith, one of said cylinders forming a support for the tank and the other cylinder, an operating-rod common to the pistons of both pump-cylinders, and an operating-handle on said rod.

2. A portable manually-operated pump comprising a vertically-disposed and elongated storage-tank, pump-cylinders arranged one at or near each end of said tank and overlapping and fastened laterally to one side thereof and communicating therewith, a supporting-stirrup secured to the bottom of the lower pump-cylinder and forming a support for the pump as a whole, an operating-rod common to the pistons of both pump-cylinders, and an operating-handle on said rod.

3. A portable manually-operated pump comprising a vertically-disposed pump-cylinder, a supporting-stirrup therefor, a storage-tank secured to one side of said pump-cylinder and extending upward above the same, a second pump-cylinder arranged above the first pump-cylinder in line therewith and secured to the storage-tank, a sectional rod connecting the pistons of both cylinders, and an operating-handle provided with a coupling or union by which the sections of said rod are secured together for simultaneous operation.

845,850. MOTOR-CAR. HOWARD O. CARTER, Detroit, Mich. Filed Dec. 10, 1906. Serial No. 347,218.

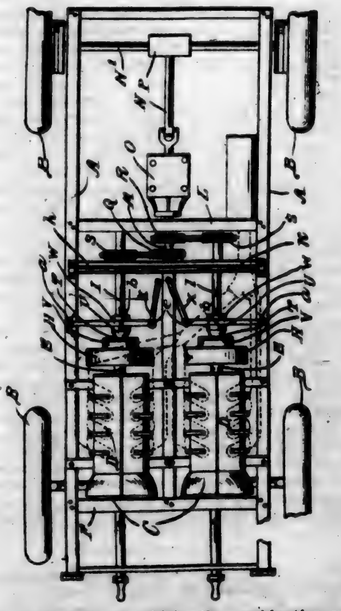

Claim.—1. In a motor-vehicle, the combination with a vehicle-frame, of two motors disposed at the front thereof at either side of the longitudinal center, a pair of longitudinal shafts driven directly by said motors, intermediate shafts located in rear of and in axial alinement with said first-named shafts, a driving-shaft disposed centrally and longitudinally at the rear of the frame, permanent gear connection between the intermediate shafts and the driving-shaft, and means for throwing either or both of the intermediate shafts into operative connection with the motor-shafts.

2. In a motor-vehicle, the combination with a vehicle-frame, of two motors disposed at the front thereof at either side of the longitudinal center, a pair of longitudinal motor-shafts, intermediate shafts located in rear of and in alinement with said motor-shafts, a central longitudinal driving-shaft at the rear of the frame, gearing be-

tween the intermediate shafts and the driving-shaft, means for coupling either or both the intermediate shafts with the motor-shafts, and means for simultaneously uncoupling both intermediate shafts.

3. In a motor-vehicle, the combination with a vehicle-frame, of two motors disposed at the front thereof at either side of the longitudinal center, a pair of longitudinal motor-shafts, intermediate shafts located in alinement with said motor-shafts, a central longitudinal driving-shaft at the rear of the frame, gearing between the intermediate shafts and the driving-shaft, a clutch between each motor-shaft and the corresponding intermediate shaft, a pair of foot-levers operable independently to throw said clutches into operative position, and a foot-lever depressible to effect the reverse operation of both the other levers.

4. In a motor-vehicle, the combination with a vehicle-frame, of two motors disposed at the front thereof at either side of the longitudinal center, a pair of longitudinal motor-shafts, intermediate shafts located in alinement with said motor-shafts, a central longitudinal driving-shaft at the rear of the frame, gearing between the intermediate shafts and the driving-shaft, a clutch between each motor-shaft and the corresponding intermediate shaft, a transverse rod a pair of spaced rock-sleeves thereon, each carrying a foot-lever and a crank-arm, a rock-sleeve mounted on the rod intermediate the other two sleeves and carrying a foot-lever adapted to be depressed reversely from the other two foot-levers and provided with a transverse member designed to engage operatively with said other two levers, and connections between the crank-arms and the clutches.

5. In a motor-vehicle, the combination with a vehicle-frame, of two engines disposed at the front thereof at either side of the longitudinal center, a pair of longitudinal crank-shafts, intermediate shafts located in alinement with said crank-shafts, a central longitudinal driving-shaft located at the rear of the frame and centrally and longitudinally thereof, gearing between the intermediate shafts and the driving-shaft, fly-wheels and female cone-clutch members carried by the rear ends of the crank-shafts, male cone-clutch members slidable on the front ends of the intermediate shafts, and means for throwing either or both male clutch members into engagement with the female members.

6. In a motor-vehicle, the combination with a vehicle-frame provided with cross-pieces, of two engines disposed at the front of the frame at either side of the longitudinal center, a pair of longitudinal crank-shafts journaled in cross-pieces of the frame, intermediate shafts located in alinement with said crank-shafts and journaled in adjacent cross-pieces of the frame, a driving-shaft disposed centrally and longitudinally at the rear of the frame and having a forward section journaled in said adjacent cross-pieces, gearing connecting the intermediate shafts and driving-shafts between said cross-pieces, and means for coupling the intermediate shafts and the crank-shafts.

845,851. APPARATUS FOR DISINTEGRATING SOFT MIDDLINGS. JOHN M. CASE, Louisville, Ky., assignor to The J. M. Case Mill Mfg. Co., Louisville, Ky., a Corporation of Kentucky. Filed Aug. 23, 1905. Serial No. 275,466.

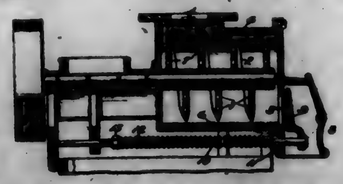

Claim.—1. In a soft-middlings disintegrator, the combination with a cylinder, of a continuous scroll or spiral rotatably mounted within the cylinder, spaced from the walls of the cylinder at its periphery, and having openings through which the material may escape backward, and an outlet for the cylinder arranged wholly at one side of the axis of said scroll or spiral.

2. In a soft-middlings disintegrator, the combination with a cylinder, of a continuous scroll or spiral rotatably mounted within the cylinder, spaced from the walls of the cylinder at its periphery, and having openings through which the material may escape backward, and a yielding discharge for the cylinder at one end of the scroll or spiral.

3. In a soft-middlings disintegrator, the combination with a cylinder of a continuous scroll or spiral, rotatably mounted within the cylinder, spaced from the walls of the cylinder at its periphery and having openings through which the material may escape, and means retarding the discharge from the cylinder.

845,852. AIR-RELIEF VALVE FOR RADIATORS. DENNIS D. CASEY, Springfield, Mass. Filed Oct. 5, 1905. Serial No. 281,426.

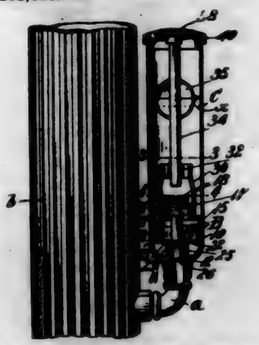

Claim.—1. In a relief-valve for a radiator, a chambered casing, having an inlet-passage, to be in connection with the interior of the radiator, and said passage leading to within a lower portion of the chamber, and having an outlet-passage leading from an upper portion of such chamber, a valve comprising a stem and a disk below the upper end of the stem, the upper end of the stem being normally in open relation to the said outlet and adapted to close the same, and the disk gravitatively closed against the mouth of said inlet-passage, and said disk being constructed to permit, when raised from said mouth, restricted quantities of fluid to pass from below to above said disk, a reservoir into which said outlet leads having a normally open outlet-port at an upper portion thereof, and a float-valve in said reservoir, operable, by a water accumulation into the reservoir to close said outlet-port.

2. In a relief-valve for a radiator, a chambered casing having an inlet-passage, to be in connection with the interior of the radiator, and leading to within a lower portion of the chamber in said casing, and having an outlet-passage, leading from an upper portion thereof, a valve comprising a stem, and a disk below the upper end of the stem, the stem being normally in open relation to the said outlet and adapted to close the same, and the disk gravitatively closed against the mouth of said inlet-passage, and said disk being constructed to permit, when raised from said mouth, restricted quantities of fluid to pass from below to above said disk, a reservoir into which said outlet leads having a normally open outlet-port at its upper portion, and a float-valve in said reservoir comprising a stem, constituting the valve proper, and the float, supported at an intermediate part of the stem, and operable, by a sufficient water accumulation in said reservoir to close said outlet-port thereof.

3. In an air-relief valve for a radiator, a chambered casing comprising a lower section having a central vertical passage therein and having a chambered enlargement at its upper portion and an upper section screw-engaged with the lower section, and constituting the upper closing portion for the casing-chamber, and having at the upper portion thereof a downwardly-opening valve-seat and one or more outlet-passages in connection therewith, an automatically-operating air-valve consisting of a stem or stud having a thin circular flange or disk between the ends of said stem, said disk approximately fitting the wall of said chamber enlargement and having a recess in its edge, the stem being hollow partially of its length and open from its lower end, having a sidewise-opening port below the disk, leading from the downwardly-opening passage therein, and having an external flange or bead at the lower portion thereof, and the upper extremity of said stem constituting a valve in normally open relation to the valve-seat in said upper casing-section.

4. In an air-relief valve for a radiator, in combination a chambered casing comprising a lower section having a central vertical passage therein and having a chambered enlargement at its upper portion, and an upper section screw-engaged with the lower section, and constituting the upper closing portion for said casing-chamber, and having at the upper portion thereof a downwardly-opening valve-seat and one or more radial passages in connection therewith, an automatically-operating air-valve consisting of a stem or stud having a thin circular flange or disk between the ends of said stem, said disk approximately fitting the wall of said chamber enlargement and having a recess in its edge, the stem being hollow and open from its lower end, having a sidewise-opening port below the disk, leading from the downwardly-opening passage therein, and having an external flange or bead at the lower portion thereof, the upper extremity of said stem constituting a valve in normally open relation to the valve-seat in said upper casing-section, a third section of annular form, the lower portion of which screw-engages the upper portion of said upper casing-section, and having a centrally-located guide, a tubular reservoir screw-engaged with said upper casing-section, having a substantially-closed top constructed with a downwardly-opening valve-seat at the central portion of such top, and having a port leading from said valve-seat to the exterior of the reservoir, and a vertical stem centrally arranged in said reservoir having its lower portion engaged and vertically movable in said guide, having at an intermediate part thereof a float, and its upper end form constructed to a valve, for coaction with said valve-seat in the top of the reservoir.

5. In a relief-valve for a radiator, a chambered casing to be connected with a radiator, having an inlet-passage terminating in an upstanding hollow, upwardly-opening, hub-like part in the lower portion of the casing-chamber, and having an outlet-passage leading from an upper portion of said chamber, and terminating in a downwardly-open valve-seat, a valve comprising a disk to gravitatively seat on the upper end of said upwardly-open part, and having a recess therethrough, an axial tubular stem portion below the disk, downwardly opening, having at its lower extremity an annular enlargement fitting in the vertical opening in said hub-like part, and having a sidewise-opening port below the disk, and said valve also comprising an upstanding stem portion adapted for a normally open relation to said downwardly-open valve-seat, and on the upward movement of the valve to close the same, and a reservoir above and supported by said casing-section and into which said outlet-passage leads.

845,853. PROCESS OF SEPARATING GOLD FROM SILVER AND OTHER METALS. DONALD CLARK, Bairnsdale, Victoria, Australia. Filed Feb. 23, 1905. Serial No. 247,017.

Claim.—1. The process herein described of separating gold from silver and other metals and metallic substances with which it is commonly associated in residuum slimes recovered from prior treatment of crude ores or metals which consists: first, in subjecting such slimes to the action of dilute hydrochloric acid until the compounds of calcium readily soluble in such acid are dissolved and removing the same by a water wash; secondly, subjecting such slimes to the action of dilute sulfuric acid until the coarse particles if any of the metals soluble in dilute sulfuric acid are dissolved and in removing the clear liquid containing the sulfate but not necessarily washing them all out; thirdly, drying such slimes with the addition of sulfuric acid and a soluble sulfate and heating the caked product; fourthly, applying to the caked product a pyrosulfate of the alkalies and heating until the base metals and silver are transformed to sulfates; fifthly, subjecting the fused mass to a water wash to remove sodium salts and the silver if in small proportions, or the silver sulfate has been decomposed by heat; sixthly, removing silver sulfates if present in large quantities by means of sulfuric acid that the gold may be readily removed and collected by amalgamation.

2. In the process herein described of separating gold from silver and other metals and metallic substances with which it is commonly associated in residuum slimes recovered from prior treatment of crude ores which consists in subjecting said residuum slimes to the action of sulfuric acid and a soluble sulfate and heating the product so as to cake the same and afterward subjecting the product to the action of niter cake and heating the same so as to form sulfates of the base metals and silver, afterward washing out such sulfates leaving the silver and insoluble gold readily recoverable substantially as hereinbefore described.

845,854. MANUFACTURE OF ALUMINA AND ALKALI COMPOUNDS OF SULFUR. ADOLF CLEMM, Mannheim, Germany. Filed Apr. 5, 1906. Serial No. 310,099.

Claim.—1. In the process of manufacturing alumina and alkali thiosulfate, a step which consists in mixing aluminiferous material with quantities of alkali sulfate and carbon which are multiples of those theoretically required to form an alkali aluminate and calcining the mixture, substantially as and for the purpose set forth.

2. The process of manufacturing alumina and alkali thiosulfate which consists of mixing aluminiferous material with quantities of alkali sulfate and carbon which are multiples of those theoretically required to form an alkali aluminate and calcining the mixture, lixiviating the calcined mass and treating the solution with sulfurous acid, substantially as and for the purpose set forth.

3. The process of manufacturing alumina and thiosulfate, which consists in mixing aluminiferous material with quantities of alkali sulfate and carbon which are multiples of those theoretically required to form an alkali aluminate, calcining the mixture, lixiviating the calcined mass, treating the solution with sulfurous acid, treating the insoluble residues of lixiviation by oxidising agents, treating the products of oxidation with water, concentrating the solution thus obtained and allowing the thiosulfate contained therein to crystallize out as and for the purpose set forth.

845,855. REINFORCED CONCRETE DAM. HOWARD L. COBURN, Boston, Mass. Filed May 2, 1906. Serial No. 314,847.

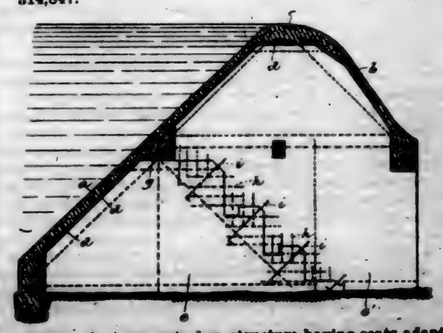

Claim.—1. A concrete-dam structure having seats adapted to support a concrete-dam extension, projecting more-

bers adapted to enter said extension, and a temporary structure forming a part of the dam and protecting the said projecting members, the said temporary structure being detachable from the concrete structure.

2. A concrete dam comprising a deck, buttresses supporting the deck, the deck and buttresses having seats adapted to support concrete extensions, and extension-engaging members projecting from the seats on the buttresses.

3. A concrete dam comprising a deck, buttresses supporting the deck, the said deck and buttresses having seats adapted to engage concrete extensions, and a temporary apron detachably secured to the buttresses and covering the seats thereon.

4. A concrete dam comprising a deck, buttresses supporting the deck and provided with seats adapted to engage concrete-buttress extensions, and tie-rods embedded in the buttresses and projecting from said seats to enter the buttress extensions.

5. A concrete dam comprising a deck, buttresses supporting the deck and provided with seats adapted to engage concrete-buttress extensions, tie-rods embedded in the buttresses and projecting therefrom to enter the said buttress extensions, and a temporary apron detachably secured to the buttresses and covering the projecting rods.

6. A concrete dam comprising a deck, buttresses supporting the deck, and provided with alternating projections and recesses, the sides of which constitute seats adapted to engage concrete-buttress extensions, and tie-rods embedded in the buttresses and projecting from said seats to enter the said extensions.

7. A concrete dam comprising a deck, buttresses supporting the deck, and provided with buttress-extension seats and with apron-seats, bolts embedded in the buttresses and projecting from the apron-seats, and a temporary apron having supporting-beams engaged with said bolts.

8. A concrete dam comprising a deck having at its upper edge a lip or flange forming a seat for a deck extension, buttresses supporting the deck and having buttress-extension seats and temporary apron-seats, and a temporary apron supported by said apron-seats and inclined downwardly from the said deck-extension seat.

845,856. METHOD OF AND APPARATUS FOR BRAKING VEHICLES. GEORGE H. CONDICT, Plainfield, N. J. Filed May 9, 1906. Serial No. 315,973.

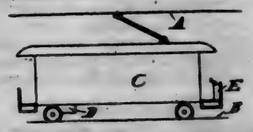

Claim.—1. The method of braking a vehicle driven by an electric motor, which consists in using the motor as a braking-generator driven by the momentum of the vehicle, and maintaining in the motor during the braking operation a commutating-field independent of the main field.

2. The method of braking a vehicle driven by an electric motor, which consists in using the motor as a braking-generator driven by the momentum of the vehicle and creating by the current so generated a commutating-field independent of the main field.

3. The method of braking a vehicle driven by an electric motor which consists in using the current generated in the motor when it is driven by the momentum of the vehicle to create a compensating current in the armature-coils undergoing commutation, and to energize a magnetic brake on the vehicle.

4. The combination with a vehicle, of a motor having a main field, means for converting said motor into a braking-generator, and means for maintaining in the motor during the braking operation a commutating-field independent of the main field.

5. The combination with a vehicle, of a motor having a main field, a magnetic brake having an energizing-coil, and means for connecting the energizing-coil of the brake in circuit with the armature of the motor, and for maintaining in the motor a commutating-field independent of the main field, when the motor is driven by the momentum of the vehicle.

6. The combination with a vehicle, of a motor having a main field, a commutating-field independent of the main field, and energizing-coils for said fields, and a controller adapted to close the armature-circuit of the motor through the said energizing-coils.

7. The combination with a vehicle, of a motor having a main field, a commutating-field independent of the main field, and energizing-coils for said fields, a magnetic brake having energizing-coils, and a controller adapted to close the armature-circuit of the motor through all of said energizing-coils.

8. The combination with a vehicle, of a motor having a main field, a commutating-field independent of the main field, and energizing-coils for said fields, and a controller adapted to connect the main-field energizing-coils with a source of current-supply and to close the armature-circuit of the motor through the energizing-coils of the commutating-field.

9. The combination with a vehicle, of a motor having a main field, a commutating-field independent of the main field, and energizing-coils for said fields, and a controller adapted to connect the main-field energizing-coils with a source of current-supply and to close the armature-circuit of the motor through the energizing-coils of the commutating-field, and by a further movement to disconnect the main-field energizing-coils from the supply-circuit and to include them in the armature-circuit.

10. The combination with a vehicle of a motor having a main field, a commutating-field independent of the main field, and energizing-coils for said fields, a magnetic brake having energizing-coils, and a controller adapted to connect the main-field energizing-coils with a source of current-supply and to close the armature-circuit of the motor through the energizing-coils of the commutating-field and of the magnetic brake, and by a further movement to disconnect the main-field energizing-coils from the supply-circuit and include them in the armature-circuit.

11. The combination with a vehicle, of a plurality of motors having main fields, commutating-fields independent of the main fields, and energizing-coils for said fields, a magnetic brake having energizing-coils, a suitable resistance, and a controller adapted to connect the main-field energizing-coils of the motors in series with one another and with the resistance across supply-mains leading from a source of current-supply, to close the armature-circuit through the energizing-coils of the commutating-fields and of the magnetic brake, and by a further movement to disconnect the main-field energizing-coils and the resistance from the supply-mains and include them in the armature-circuit, and by further movements to gradually remove the resistance from the armature-circuit, substantially as described.

845,857. STAPLE-PULLER AND FENCE-MAKER'S TOOL. HERBERT COTTRELL, Newark, N. J., assignor to The Irvington Manufacturing Company, Irvington, N. J. Filed Dec. 16, 1906. Serial No. 188,406.

Claim.—1. In an implement of the class described, comprising handle members of identical shape pivoted together to form gripping-jaws; said jaws provided with a tapered wedge projection and a recessed flat abutment arranged in the arc of their faces, and adapted to register one with the other; substantially as described, and as and for the purposes set forth.

2. In an implement of the class described, handle members of identical shape, pivoted together to form gripping-jaws; each jaw having its face arched both laterally and longitudinally, and each provided with a wedge projection extended from one side of its face, and a flat recessed abutment upon the other side of its face; both arranged so that the wedge-points thereof register with and are adapted to be received within the recesses of the flat abutments, in the act of closing the jaws; substantially as described and for the purposes set forth.

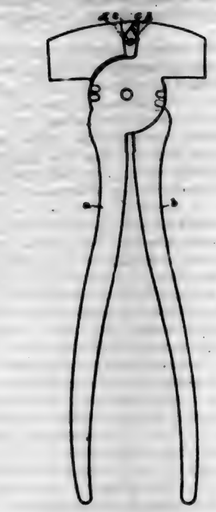

845,858. COMBINED SOUNDER AND RESONATOR. STEWART F. COX, Sallisaw, Ind. Ter. Filed Apr. 10, 1906. Serial No. 310,959.

Claim.—1. In a device of the character described, the combination of a resonator-box, a bracket mounted thereupon and provided with an aperture, an electromagnet disposed within said box and provided with a threaded stem protruding from said resonator-box and extending through said bracket, a revoluble nut mounted upon said threaded stem, an armature-lever provided with an armature disposed adjacent to said magnet, and means for limiting the play of said armature-lever.

2. In a device of the character described, the combination of a resonator-box provided with a partition, an electromagnet mounted within said resonator-box and provided with cores extending through said partition, a permanent magnet mounted within said resonator-box and provided with poles secured to said partition so as to support said permanent magnet, an armature disposed adjacent to said poles of said electromagnet, and means for causing movement of said armature to produce sounds.

3. A device of the character described, comprising a resonator-box provided with a partition, a bracket mounted upon said partition, a screw connected with said bracket and extending through said partition for the purpose of forming a limiting-stop, an armature-lever for striking said screw, and an electromagnet for actuating said armature-lever.

845,859. VALVE. HENRY C. CRONEMEYER, McKeesport, Pa. Filed Aug. 23, 1906. Serial No. 331,702.

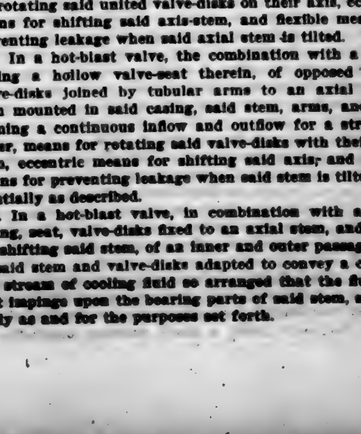

Claim.—1. A valve consisting of a casing having a valve-seat attached thereto, a valve-disk attached to a pivotal stem, and means for shifting the axis of said valve-disk.

2. A valve consisting of a casing having a valve-seat attached thereto, a valve-disk rigidly connected with a valve-stem, means for shifting the axis of the valve-stem, and means for rotating the valve-stem and its connected valve-disk.

3. A valve consisting of a casing having a removable valve-seat therein, valve-disks attached by arms to an axial stem, means for rotating said stem, and means for shifting the axis of the valve-disks.

4. A valve consisting of a casing having a removable valve-seat therein, valve-disks rigidly attached to an axial stem, means for rotating said disks on their axis, and eccentric means for shifting the axis of the valve-disks.

5. In a valve, the combination with a casing having a detachable valve-seat therein, of a pair of valve-disks fixed radially upon an axial stem, means for moving said disks on their common axis, and auxiliary means for shifting the path of movement of said disks.

6. In a valve, the combination with a casing having a detachable valve-seat therein, of opposed valve-disks joined by arms to an axial stem mounted in said casing, means for rotating said united valve-disks on their axis, eccentric means for shifting said axis-stem, and flexible means for preventing leakage when said axial stem is tilted.

7. In a hot-blast valve, the combination with a casing having a hollow valve-seat therein, of opposed hollow valve-disks joined by tubular arms to an axial hollow stem mounted in said casing, said stem, arms, and disks forming a continuous inflow and outflow for a stream of water, means for rotating said valve-disks with their axial stem, eccentric means for shifting said axis, and flexible means for preventing leakage when said stem is tilted, substantially as described.

8. In a hot-blast valve, in combination with a valve-casing, seat, valve-disks fixed to an axial stem, and means for shifting said stem, of an inner and outer passage within said stem and valve-disks adapted to convey a continuous stream of cooling fluid so arranged that the fluid will first impinge upon the bearing parts of said stem, substantially as and for the purposes set forth.

845,860. VOTING-MACHINE. WILLIAM H. DANA, Dayton, Ohio, assignor to Leopold Rauh, Dayton, Ohio. Filed May 6, 1903. Serial No. 155,898.

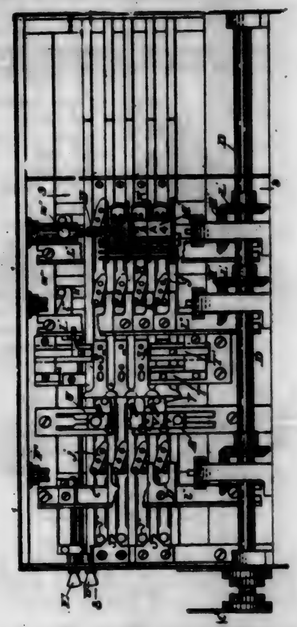

Claim.—1. In a voting-machine, a series of key-plates one for each ticket, elongated slots therein, with key-levers mounted in said slots, said key-levers having enlarged button-like heads to cover the slots in the plate in any position of the key-levers, substantially as described.

2. In a voting-machine, a series of key-plates, one for each ticket, with key-levers mounted in slots therein, grooves in the rear face of the key-plates, with bars on the key-levers riding in said grooves to guide the key-levers, an interlocking device to prevent simultaneous operation of more than the predetermined number of key-levers, and means for connecting the key-levers to said interlocking device to permit shifting thereof without disconnection, substantially as described.

3. In a voting-machine, a plurality of voting-keys, with individual counting devices for each key, and a rotatable register-frame upon which the individual counters are mounted, with means for rotating the register-frame to cause all operated voting-keys to actuate their respective counters, substantially as described.

4. In a voting-machine, a plurality of voting-keys and a rotatable cylindrical frame, with partitions for dividing same into unit-frames corresponding to the number of voting-keys for each ticket, a set of counters, with means for operating same, mounted in each unit-frame, and means for rotating the entire register-frame to cause all operated keys to actuate their respective counters, substantially as described.

5. In a voting-machine, a plurality of voting-keys and a rotatable register-frame, a shaft longitudinally supported in said frame, with sets of counting-disks strung on said shaft, the sets separated from each other and forming individual counters for their respective voting-keys, and means for rotating the register-frame to cause all operated keys to actuate their respective counters, substantially as described.

6. In a voting-machine, a plurality of voting-keys and a rotatable cylindrical frame, with partitions for dividing same into unit-frames, corresponding to the number of voting-keys for each ticket, a shaft running longitudinally through said register-frame, with sets of counters strung on said shaft, one set for each unit-frame, and means for rotating the register-frame to cause all operated keys to actuate their respective counters, substantially as described.

7. In a voting-machine, a plurality of voting-keys arranged in a row and a rotatable register-frame, a shaft mounted in said frame with sets of counting-disks strung on said shaft so as to turn loosely thereon in one direction, the said sets of counters separated from each other and forming individual counters for their respective voting-levers and means for rotating the register-frame to cause all operated keys to actuate their respective counters, and an individual clutch interposed between each counting-disk and the supporting-shaft to couple same to the shaft when turned in an opposite direction, whereby all the counters for the row of voting-levers may be simultaneously reset to zero, substantially as described.

8. In a voting-machine, a plurality of voting-keys arranged in a row, a register-frame with central shaft by which said frame is rotated, a second shaft in said frame parallel to the central shaft, with sets of counting-disks strung on said second shaft and separated from each other to form individual counters for their respective voting-levers, actuating devices for the counters strung on the central shaft, one for each individual set of counters, and means for rotating said register-frame to cause all operated voting-levers to operate their respective counter-actuating devices, substantially as described.

9. In a voting-machine, a plurality of voting-keys arranged in a row, a register-frame with central shaft by which said frame is rotated, a second shaft in said frame parallel to the central shaft with sets of counting-disks strung on said second shaft and separated from each other to form individual counters for their respective voting-levers, pawl-carriers one for each individual set of counters strung on the central shaft with pawls thereon, one for each carrier, to engage said counters, with intermediate mechanism interposed between the pawl-carriers and voting-levers normally inoperative but arranged to be set by the operation of the key-levers, and means for rotating the register-frame to cause said intermediate mechanism set by the operation of the key-levers to actuate their respective pawl-carriers to register the key movements, substantially as described.

10. In a voting-machine, a cylindrical frame with counting mechanisms mounted thereon, and means for rotating said frame to actuate the counters, said cylindrical frame having hub portions at each end and means for removably securing said hubs to said rotatable mechanism, whereby the frame and counting mechanism may be readily removed from the machine, substantially as described.

11. In a voting-machine, a cylindrical frame, with counting mechanisms mounted thereon, shaft and gearing for rotating said frame, hub portions at each end of said frame, with tongue-and-groove connection at one end and collar and set-screw connection at the other with said rotating shaft, whereby the rotatable frame may be readily connected to and disconnected from said gear-driven shaft, substantially as described.

12. In a voting-machine, a cylindrical register-frame for holding the counting mechanisms, said frame consisting of end disks and central shaft with intermediate disk plates strung on said shaft, each intermediate disk provided with lugs to fit into the adjoining disk and subdivide the main frame into unit-frames, substantially as described.

13. In a voting-machine, a plurality of key-levers, with individual counting devices for each lever, and a rotatable register-frame upon which the individual counters are mounted, an operating-lever outside the voting-machine, and connecting mechanism intermediate said lever and register-frame, whereby the movement of the booth-lever will rotate said register-frame to cause all operated key-levers to actuate their respective counters, substantially as described.

14. In a voting-machine, a plurality of voting-levers with individual counting devices for each key-lever, and a rotatable register-frame upon which the individual counters are mounted, said register-frame carrying cam-plates one for each individual counting device, with means for rotating said register-frame to cause all operated key-levers to actuate their respective counters and to contact with said cam-plates to be returned to their normal position, substantially as described.

15. In a voting-machine, a plurality of key-levers, with individual counting devices for each lever, and a rotatable register-frame upon which the individual counters are mounted, a booth within which the voting-machine is mounted, a lever closing the entrance to said booth, and connecting mechanism intermediate said lever and register-frame, whereby the movement of the booth-lever will rotate said register-frame to cause all operated key-levers to actuate their respective counters, substantially as described.

16. In a voting-machine, a plurality of voting-levers, with individual counting devices for each key-lever, and a rotatable register-frame upon which the individual counters are mounted said register-frame carrying cam-plates one for each individual counting device, a booth within which the voting-machine is mounted, a lever closing the entrance to said booth, and connecting mechanism intermediate said lever and register-frame, whereby the movement of the booth-lever will rotate said register-frame to cause all operated key-levers to actuate their respective counters, substantially as described.

17. In a voting-machine, a plurality of key-levers, with individual counting devices for each key-lever, and a rotatable register-frame upon which the individual counters are mounted, said register-frame carrying cam-plates one for each key-lever, an operating-lever outside the voting-machine and connecting mechanism intermediate said lever and register-frame, said cam-plates normally in the pathway of said key-levers to lock same from operation when said operating-lever is in one position, but removed therefrom by the rotation of the register-frame when the lever is operated to permit operation of the key-levers, substantially as described.

18. In a voting-machine, a plurality of key-levers, with individual counting devices for each key-lever, and a rotatable register-frame, upon which the individual counters are mounted, said register-frame carrying cam-plates, one for each key-lever, a booth within which the voting-machine is mounted, a lever closing the entrance to said booth and connecting mechanism intermediate said lever and register-frame, said cam-plates normally in the pathway of said key-levers, to lock same from operation when the operating-lever is raised to open the booth and when lowered to close the booth said cam-plates being removed to permit operation of the key-levers, substantially as described.

19. In a voting-machine, a plurality of key-levers, with individual counting devices for each key, a rotatable register-frame upon which the individual counters are mounted, said frame carrying plates to block the movement of the keys, and means for rotating said frame to release the keys for operation, substantially as described.

20. In a voting-machine, a plurality of key-levers, with individual counting devices for each key, a rotatable register-frame upon which the individual counters are mounted, said frame carrying cam-plates to return to their normal position all operated keys and to block the movement of all the keys, with means for rotating said frame in both directions to release the keys for operation when rotated in one direction and to return all operated keys and block the movement of all keys when rotated in the opposite direction, substantially as described.

21. In a voting-machine, a plurality of voting-levers, with individual counting devices for each key-lever, and a rotatable register-frame upon which the individual counters are mounted, said register-frame carrying cam-plates to return to their normal position all operated keys and to block the movement of all the keys, and an operating-lever outside the voting-machine, and connecting mechanism for rotating said frame in both directions to release the keys for operation when rotated in one direction and to return all operated keys and block the movement of all keys when rotated in the opposite direction, substantially as described.

845,861. RECLINING-CHAIR. WARREN W. EDWARDS, Jefferson City, Mo. Filed June 7, 1905. Serial No. 264,177.

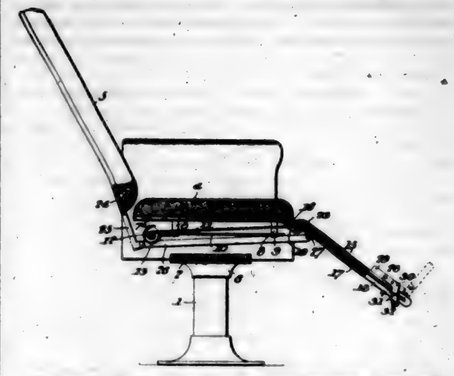

Claim.—1. In a chair, the combination with a seat, of a pivoted leg-rest, a spring-drawn curtain folded upon the rest, and cushioning elements disposed between the folds of the curtain.

2. In a chair the combination with a seat and a leg-rest pivotally connected thereto; of a foot-rest slidably mounted upon the leg-rest, spring-actuated means for exerting a continuous pull upon the foot-rest and for holding the leg-rest normally in a predetermined position, and means carried by the foot-rest for locking it against movement.

3. In a chair the combination with a seat; of a leg-rest pivotally connected thereto, a spring-drawn curtain connected to the seat and extending longitudinally of the leg-rest, said curtain normally holding the leg-rest in a predetermined position, and a foot-rest pivotally connected to one end of and movable with the curtain.

4. In a chair the combination with a seat; of a leg-rest pivotally connected thereto, a spring-drawn curtain connected to the seat and extending longitudinally of the leg-rest, said curtain normally holding the leg-rest in a predetermined position, a foot-rest pivotally connected to one end of and movable with the curtain, and holding means carried by the foot-rest for binding upon the leg-rest.

5. In a chair the combination with a seat, a back pivoted adjacent thereto, and a depending extension upon the back; of a leg-rest pivoted to the chair, a pivotal connection between the extension and the leg-rest, said connection engaging the leg-rest below the pivot thereof, a spring-drawn curtain disposed beneath the seat and bearing upon one end of the leg-rest below the pivot thereof, said curtain extending longitudinally of the leg-rest, and means for holding one end of the curtain in a predetermined position upon the leg-rest, said curtain automatically holding the back and leg-rest in a predetermined position.

6. In a chair the combination with a seat, a back pivoted adjacent thereto, and a depending extension upon the back; of a leg-rest pivoted to the chair, a pivotal connection between the extension and the leg-rest, said connection engaging the leg-rest below the pivot thereof, a spring-drawn curtain disposed beneath the seat and bearing upon one end of the leg-rest below the pivot thereof, said curtain extending longitudinally of the leg-rest, a foot-rest secured to one end of the curtain, and means for holding the foot-rest and the curtain in a predetermined position upon the leg-rest, said curtain normally holding the back and foot-rest in a predetermined position.

7. In a chair the combination with a seat, a back pivoted adjacent thereto, and a depending extension upon the back; of a leg-rest pivoted to the chair, a pivotal connection between the extension and the leg-rest, said connection engaging the leg-rest below the pivot thereof, a spring-drawn curtain disposed beneath the seat and bearing upon one end of the leg-rest below the pivot thereof, said curtain

extending longitudinally of the leg-rest, a foot-rest pivotally connected to one end of the curtain and slidably mounted on the leg-rest, means movable with the foot-rest for engaging the leg-rest to hold the foot-rest and curtain against movement in one direction, said curtain normally holding the leg-rest and back in a predetermined position.

845,862. CHIMNEY-COWL. EDGAR S. EGY, Storm Lake, Iowa. Filed Mar. 14, 1906. Serial No. 306,066.

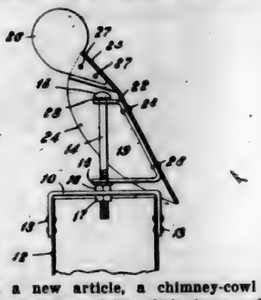

Claim.—1. As a new article, a chimney-cowl formed from a sheet of metal pressed into dish shape and with a portion at one side crimped to form a socket having spaced parallel sides, a vane having an extension bearing in said socket, and fastening means extending through the sides of said socket and also through the vane extension disposed between them.

2. In a device of the class described, a base formed from a bar adapted to be bent at the ends for bearing over a smoke-stack, a standard supported upon said base, a bracket formed from a bar bent at an angle thereto near one end and bent at an angle thereto at a greater distance from the other end and bearing at said bent ends over said standard, a cowl formed from a sheet of metal bent into dishing shape, means for attaching said cowl to the intermediate angular portion of said bracket, and a vane attached to said cowl.

845,863. FLUSH HINGE. JOHN ERICKSON, Sheyenne, N. Dak. Filed July 2, 1906. Serial No. 324,419.

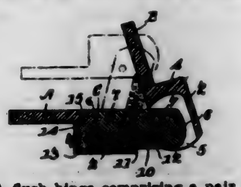

Claim.—1. A flush hinge comprising a pair of members, a link pivotally connected with both of said members, and a coil-spring connected with said link and one of said members.

2. A flush hinge comprising a pair of members, a link pivotally connected with both of said members and having an open-ended recess therein, and a spring mounted in said recess and connected with one of said members.

3. A flush hinge comprising a pair of members each having a casing, a link pivotally mounted at its ends within said casings, and a spring connected at one end with said link and at the other end with one of said casings.

4. A flush hinge comprising a pair of members each having a casing, formed with an open outer end, a closed rounded inner end and an open top, one casing having a perforation in its inner end, a link fitting at its opposite ends into said casings and being flush with the open tops thereof, said link being pivotally connected with said casings and having rounded ends concentric with its pivot-points and adapted to coöperate with the rounded ends of the casings, said link having in its bottom an open-ended slot, a spring secured in said slot and extending through the perforation in the end of one of the casings, and a plate fitted against the end of the last-mentioned casing and extending between the coils of the spring.

5. A flush hinge comprising a pair of members each having a casing, formed with an open outer end, a closed rounded inner end and an open top, one casing having a perforation in its inner end, a link fitting at its opposite ends into said casings and being flush with the open tops thereof, said link being pivotally connected with said casings and having rounded ends concentric with its pivot-points and adapted to coöperate with the rounded ends of the casings, said link having in its bottom an open-ended slot, a spring secured in said slot and extending through the perforation in the end of one of the casings, and a plate fitted against the end of the last-mentioned casing and extending between the coils of the spring, one of said casings having a concave portion at its outer end and the other casing having a convex portion at its outer end, the concave and convexed portions being eccentric to the pivot at one end of said link.

845,864. CAMERA. CHARLES I. FLORY, Kahoka, Mo. Filed Sept. 6, 1906. Serial No. 333,496.

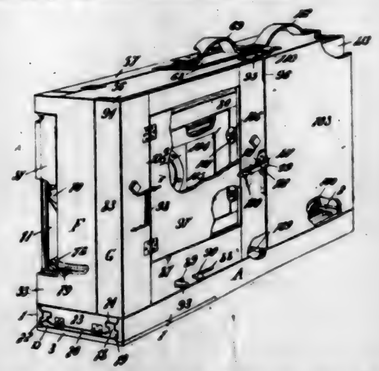

Claim.—1. In a camera the combination with a bed; of a camera-box pivotally and slidably mounted upon the bed, said box adapted to assume a position in alinement with or at right angles to the longitudinal axis of the bed.

2. In a camera the combination with a bed; of a sectional camera-box rotatably mounted upon the bed, said sections being adjustable from or toward each other longitudinally of the bed and adapted to assume a position in alinement with, or at right angles to the longitudinal axis of the bed.

3. In a camera the combination with a bed; of a camera-box rotatably mounted upon the bed and adapted to assume a position in the same plane therewith or at right angles thereto, said box consisting of separate sections, and means for independently adjusting the sections from or toward each other.

4. In a camera the combination with a bed; of a camera-box rotatably mounted upon the bed and adapted to assume a position in the same plane therewith or at right angles thereto, said box consisting of separate sections, means for independently adjusting the sections from or toward each other, and a bellows connecting the sections.

5. In a camera the combination with a bed; of a camera-box mounted to rotate upon the bed, said box consisting of separate sections adapted to assume a position in alinement with, or at right angles to the longitudinal axis of the bed, means upon each section for locking it at a predetermined angle to the bed, and a bellows connecting the sections.

6. In a camera the combination with a bed; of a camera-box rotatably mounted upon the bed and consisting of separable sections adapted to assume a position in alinement

with, or at right angles to the longitudinal axis of the bed, a bellows connecting the sections, and means for automatically locking said sections at predetermined angles to the bed.

7. In a camera the combination with a bed; of a camera-box rotatably mounted upon the bed and consisting of separable sections adapted to assume a position in alinement with, or at right angles to the longitudinal axis of the bed, a bellows connecting the sections, means for automatically locking said sections at predetermined angles to the bed, and manually-operated means for securing said sections at predetermined angles to the bed.

8. In a camera the combination with a bed; of a camera-box rotatably and slidably mounted upon the bed, said box consisting of separable sections independently movable and adapted to assume a position in alinement with, or at right angles to the longitudinal axis of the bed, and a bellows connecting the sections and adapted to be inclosed thereby.

9. A camera comprising a bed, a camera-box rotatably and slidably mounted thereon, said box consisting of separable sections independently movable longitudinally of the bed and adapted to assume a position in alinement with or at right angles to the longitudinal axis of the bed, a bellows connecting and adapted to be inclosed by the sections of the box, one of said box-sections having a continuously-exposed face, and a closure therefor.

10. A camera comprising a bed, a camera-box rotatably and slidably mounted thereon, said box consisting of separable sections independently movable longitudinally of the bed, a bellows connecting and adapted to be inclosed by the sections of the box, one of said box-sections having a continuously-exposed face, a closure for said face, a lock therefor, and means for automatically opening the closure when released from the lock.

11. In a camera the combination with a bed; of a rotatable camera-box slidably mounted upon the bed, said box consisting of separable independently-movable sections, and adapted to be disposed above and in alinement with or at an angle to the bed, a closure for one of the box-sections, a lock therefor, and a receptacle detachably mounted upon the bed and adapted to hold the lock in engagement with the closure.

12. In a camera the combination with a bed; of a camera-box rotatably mounted upon and adapted to move longitudinally of the bed, said box consisting of separable sections and adapted to lie in the same plane with or at an angle to the bed, a receptacle detachably mounted upon the bed, a closure upon one face of the camera, means for automatically opening the same, and a bolt for holding said closure when shut, said bolt being retained in locking position by the receptacle.

13. In a camera the combination with a bed, and a separable camera-box pivotally mounted upon the bed and adapted to lie in the same plane therewith; of a receptacle detachably mounted upon the bed, a closure upon one face of the camera-box, a lock for holding the closure when shut, and means for automatically releasing said lock from the closure, said lock being normally held in engagement with the closure by the receptacle.

14. In a camera the combination with a bed, and rails independently movable upon the bed and adapted to coöperate to form a circle; of a box-section mounted to travel upon each rail, said sections when together being simultaneously rotatable upon both rails and constituting a camera-box, and a bellows connecting the sections of the box.

15. In a camera the combination with a bed; of a sectional circular rail supported thereby, the sections of said rail being separable, a sectional camera-box mounted to rotate upon the circular rail, each rail-section constituting a support and guide for each box-section when spaced apart, and a bellows connecting the box-sections.

16. In a camera the combination with a bed; of a sectional box pivotally mounted upon the bed, and a bellows connecting and adapted to be inclosed by the sections of the box, said box being movable into position either in alinement with or at an angle to the bed.

17. In a camera the combination with a sectional extensible bed; of a sectional camera-box pivotally mounted upon two sections of the bed, said sections being independently movable with the bed-sections and adapted when together to rotate about a common center.

18. In a camera the combination with a sectional extensible bed; of a sectional circular rail, the sections of said rail being connected to separate sections of the bed, and a sectional camera-box mounted to rotate upon the circular rail, the sections of said box being adapted to be engaged solely by, and movable with the rail-sections.

19. In a camera the combination with a sectional longitudinally-extensible bed; of a sectional circular rail secured upon the bed, the sections of said rail being secured to separate sections of the bed, and a sectional camera-box engaging and rotatable upon the circular rail, said box being adapted to assume positions in the same plane with the bed and at right angles thereto, the sections of said box being separately supported by, and independently movable with, the rail-sections when at right angles to the bed.

20. In a camera the combination with a sectional extensible bed; of tables carried by separate sections of the bed, semicircular rails thereon, said rails and tables being adapted to be brought together to form a circular rail, a box-section pivotally connected to one of the tables, a second box-section, rails thereon slidably engaging the rails on the other table, and means for locking the box-sections in desired positions upon the rails.

21. In a camera the combination with a sectional extensible bed; of tables carried by separate sections of the bed, semicircular rails thereon, said rails and tables being adapted to be brought together to form a circular rail, a box-section pivotally connected to one of the tables, a second box-section, rails thereon slidably engaging the rail on the other table, means upon each box-section for automatically locking said section in a predetermined position upon its rail, and manually-operated means for locking each box-section in a predetermined position.

22. In a camera the combination with a bed; of a camera-box-supporting device comprising separable tables, one of said tables having a recess, a tongue upon the other table adapted to be seated within the recess, oppositely-disposed curved rails upon the tables adapted to coöperate to form a circular rail, and a curved rail concentric with said rail and disposed upon the tongue.

23. In a camera the combination with a bed; of a camera-box-supporting device comprising separable tables, one of said tables having a recess, a tongue upon the other table adapted to be seated within the recess, oppositely-disposed curved rails upon the tables adapted to coöperate to form a circular rail, a curved rail concentric with said rail and disposed upon the tongue, and a camera-box section movably engaging the rail on the recessed table, said section having a recess therein, a second camera-section, a tongue extending therefrom and adapted to be seated in the recessed section, and rails upon said second section and its tongue for engaging the corresponding rails on the table thereunder.

24. In a camera a bed comprising a main section, an intermediate section slidably mounted therein and adapted to extend therebeyond, an end section slidably connected to the intermediate section and adapted to extend therebeyond, and a sectional camera-box, one section of said box being connected to the main section of the bed and the other section of said box being connected to the end section of the bed said box-sections when together being rotatable about a common center.

25. In a camera a bed comprising a main section, an intermediate section slidably mounted therein and adapted to extend therebeyond, an end section slidably connected to the intermediate section and adapted to extend therebeyond, and a sectional camera-box, one section of said box being connected to the main section of the bed and the other section of said box being connected to the end section of the bed, said box-sections when to gether being rotatable about a common center.

26. In a camera a bed comprising a main section, an intermediate section slidably mounted therein and adapted to extend therebeyond, an end section slidably connected to the intermediate section and adapted to extend there-

beyond, a sectional camera-box, one section of said box being adjustably connected to the main section of the bed and the other section of said box being adjustably connected to the end section of the bed, said box-sections when together being rotatable about a common center.

27. In a camera a bed comprising a main section, a guide-strip adjustably connected thereto, and disposed longitudinally therein, an intermediate section adjustably connected to the main section, means for actuating the intermediate section, an end section slidably connected to the intermediate section, and means for securing the sections in adjusted positions.

28. In a camera a bed comprising a main section, an intermediate section and an end section telescopically connected, means for adjusting the intermediate section longitudinally, means for locking the sections in adjusted positions, a guide-strip adjustably connected to and extending longitudinally of the main section of the bed, and a sectional camera-box, one section of said box being adjustably mounted on the guide-strip and the other section connected to the end section of the bed.

29. In a camera a bed comprising a main section, an intermediate section and an end section telescopically connected, means for adjusting the intermediate section longitudinally, means for locking the sections in adjusted positions, a guide-strip adjustably connected to and extending longitudinally of the main section of the bed, and a sectional camera-box, one section of said box being pivotally and slidably connected to the guide-strip and the other section of said box being pivotally mounted upon the end section of the bed.

30. In a camera a bed comprising a main section, an intermediate section and an end section telescopically connected, means for adjusting the intermediate section longitudinally, means for locking the sections in adjusted positions, a guide-strip adjustably connected to and extending longitudinally of the main section of the bed, and a sectional camera-box, one section of said box being adjustably mounted on the guide-strip and the other section connected to the end section of the bed, and a stop adjustably connected to the end section of the bed and adapted to project into the path of one of the box-sections.

31. In a camera the combination with a bed; of a box comprising separable front and rear sections, and a bellows connecting said sections and adapted to be entirely inclosed thereby, said sections when together being rotatable about a common center.

32. In a camera a box comprising a front and a rear section, said sections being separable, a bellows connecting the sections, a closure for the front section, and a reversible lens-box detachably mounted within the front section and in rear of the closure.

33. In a camera the combination with a bed; of a sectional camera-box rotatably mounted upon the bed; said sections being separable when disposed at an angle to the bed, a plate-receptacle detachaby mounted upon the bed, said receptacle and box being normally disposed above and in alinement with the bed, and a handle upon the box and extending over the receptacle.

34. In a camera the combination with a bed; of a sectional camera-box rotatably mounted upon the bed, said sections being separable when disposed at an angle to the bed, a plate-receptacle detachably mounted upon the bed, means upon said receptacle for detachably engaging the box, and a handle upon the box, said box and receptacle being normally disposed above and in alinement with the bed.

35. In a camera the combination with a bed; of a sectional camera-box rotatably mounted upon the bed, said sections being separable when disposed at an angle to the bed, a plate-receptacle detachably mounted upon the bed, means upon said receptacle for detachably engaging the box, a handle upon the box, said box and receptacle being normally disposed above and in alinement with the bed, a closure upon the box, and a lock therefor, said lock adapted to be held in engagement with the closure by the receptacle.

36. In a camera the combination with a bed, a table adjustably mounted thereon, curved concentric rails upon the table, a camera-box, and rails upon said box engaging the rails on the table, said rails on the box being detachable from the table-rails when moved a predetermined distance thereon.

37. In a camera the combination with a bed comprising adjustably-connected sections; of a table, E, adjustably connected to one of said sections, a table, D, rigidly connected to another section, curved rails secured upon the tables, and box-sections rotatably mounted upon the respective rails, said sections being detachable from the rails when rotated a predetermined distance thereon.

38. A camera comprising a bed; a box movably mounted thereon, a closure connected to the box, a lock for securing it in closed position, and a receptacle detachably mounted upon the bed and adapted to hold the lock in engagement with the closure.

39. In a camera, the combination with a bed; of a camera-box upon the bed, a closure connected to the box, means for automatically opening said closure, a lock for the closure, and a receptacle detachably mounted upon the bed and adapted to hold the lock in engagement with the closure.

40. In a camera, the combination with a bed; of a box mounted thereon, a receptacle detachably mounted on the bed, a closure upon one face of the box, means for automatically opening the same, and a bolt for holding the closure when shut, said bolt being retained in locked position by the receptacle.

41. In a camera, the combination with a bed, of a sectional circular rail, said sections being separable, and a sectional camera-box mounted to rotate upon the rail and movable with the respective sections.

42. In a camera, the combination with a box; of a closure upon said box, and a reversible lens-box detachably mounted within the camera-box and in rear of the closure.

845,865. COIN-FREED APPARATUS FOR REGISTERING LETTERS AND THE LIKE. ANTON FODOR and AUREL BÜKY, Budapest, Austria-Hungary. Filed June 24, 1905. Serial No. 266,847.

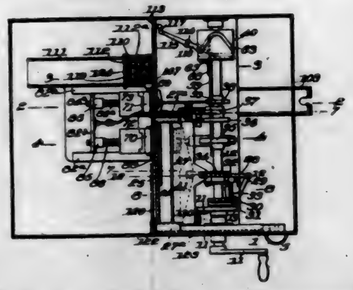

Claim.—1. In combination, a stamping-receptacle for mail-matter provided with stamping and presser-plate openings, stamping mechanism for said receptacle, means for operating said mechanism, a presser-plate adapted for holding said mail-matter in a stamping position, a rod for said presser-plate, a locking-follower for said rod, a presser-plunger operatively connected with said rod and follower, said plunger being provided with a locking member adapted to coöperate with said follower, a spring normally retaining said locking member and follower in locking positions, a bearing-block guiding said plunger, a spring normally holding said plunger in a retracted position, a cam-shaft, a plunger-cam therefor operatively connected with said plunger, and a locking-bar adapted to be locked and released by said locking member and follower, said means being controlled by said locking-bar and held in an inoperative position when said bar is locked and restored to an operative position when said bar is released.

2. In combination, a stamping-receptacle for mail-matter provided with stamping and presser-plate openings, stamping mechanism for said receptacle, means for operating said mechanism, receipt-feeding mechanism, means for operating said feeding mechanism, a presser-plate for holding said mail-matter in a stamping position, a rod for said presser-plate, a locking-follower for said rod, a presser-plunger operatively connected with said rod and follower, said plunger being provided with a locking member adapted to coöperate with said follower, a spring normally retaining said locking member and follower in locking positions, a bearing-block guiding said plunger, a spring normally holding said plunger in a retracted position, a cam-shaft, a plunger-cam therefor operatively connected with said plunger, and a locking-bar adapted to be locked and released by said locking-plunger and follower, both of said operating means being controlled by said locking-bar and held in inoperative positions when said bar is locked and restored to operative positions when said bar is released.

3. In combination, a stamping-receptacle for mail-matter, stamping mechanism for said receptacle, means for operating said mechanism, a presser-plate adapted to hold said mail-matter in a stamping position, a locking-follower for said presser-plate, a presser-plunger operatively connected with said plate, said plunger being provided with a locking member adapted to coöperate with said follower, a bearing-block guiding said plunger, a cam-shaft, a plunger-cam therefor operatively connected with said plunger, and a locking-bar adapted to be locked and released by said locking member and follower, said operating means being controlled by said locking-bar and held in an inoperative position when said bar is locked and restored to an operative position when said bar is released.

4. In combination, a stamp-receptacle for mail-matter, stamping mechanism for said receptacle, means for operating said mechanism, receipt-feeding mechanism, means for operating said mechanism, a presser-plate adapted to hold said mail-matter in a stamping position, a locking-follower for said presser-plate, a presser-plunger operatively connected with said plate, said plunger being provided with a locking member adapted to coöperate with said follower, a bearing-block guiding said plunger, a cam-shaft, a plunger-cam therefor operatively connected with said plunger, and a locking-bar adapted to be locked and released by said locking member and follower, both of said means being controlled by said locking-bar and held in an inoperative position when said bar is locked and restored to an operative position when said bar is released.

5. In combination, a stamping-receptacle for mail-matter, stamping mechanism for said receptacle, means for operating said mechanism, a presser-plate adapted to hold said mail-matter in a stamping position, a locking-follower for said presser-plate, a presser-plunger operatively connected with said plate, said plunger being provided with a locking member adapted to coöperate with said follower, means for operating said plunger, and a locking-bar adapted to be locked and released by said locking member and follower, said stamp-operating means being controlled by said locking-bar and held in an inoperative position when said bar is locked and restored to an operative position when said bar is released.

6. In combination, a stamping-receptacle for mail-matter, stamping mechanism for said receptacle, means for operating the same, receipt-feeding mechanism, means for operating the same, a presser-plate adapted to hold said mail-matter in a stamping position, a locking-follower for said presser-plate, a presser-plunger operatively connected with said plate, said plunger being provided with a locking member adapted to coöperate with said follower, means for operating said plunger, and a locking-bar adapted to be locked and released by said locking member and follower, both of said stamp and receipt operating means being controlled by said locking-bar and held in inoperative positions when said bar is locked and restored to operative positions when said bar is released.

7. In combination, a stamping-receptacle for mail-matter, stamping mechanism for said receptacle, means for operating said mechanism, a presser member for holding said mail-matter in a stamping position, a locking-follower for said presser member, a presser-plunger operatively connected with said presser member, said presser member being provided with a locking member adapted to coöperate with said follower, and a locking element adapted to be locked and released by said locking member and follower, said means being held in an inoperative position when said element is locked and restored to an operative position when said element is released.

8. In combination, stamping mechanism for mail-matter, a combined presser and locking mechanism adapted to hold said mail-matter in stamping positions, a locking element adapted to be locked and released by said locking mechanism, and means for operating said stamping mechanism, said means being held in an inoperative position by said locking element when locked and restored to an operative position by said element when the same is released.

9. In combination, a receptacle for mail-matter provided with receiving and discharge openings, receiving and discharging closures for said openings, a main operating device adapted to be locked at the completion of each operation, and mechanisms associated with said main operating device and said closures for opening and closing the same during a single operation of said main operating device.

10. In combination, a receptacle for mail-matter provided with a receiving-opening, a closure therefor, an oscillating spindle connected with said closure and provided with a lug, a spring engaging said lug and normally acting through said spindle to open said closure, a cam-shaft, a restoring-cam therefor, and locking mechanism for said cam-shaft adapted to operate said spindle and closure.

11. In combination, a receptacle for mail-matter provided with a receiving-opening, a closure therefor, a main operating device, locking mechanism for said main operating device, and means associated with said closure and locking mechanism for closing said receptacle when said main operating device is locked.

12. In combination, a receptacle for mail-matter provided with a receiving-opening, a closure therefor, an oscillating spindle for operating said closure, a main operating-shaft, and locking mechanism therefor coöperating with said spindle to close said receptacle.

13. In combination, a receptacle for mail-matter provided with a receiving-opening, a closure for said opening, an oscillating spindle connected with said closure, means engaging said spindle to normally open said closure, a cam-shaft, locking mechanism therefor operatively related with said spindle, and a cam for said shaft operating said locking mechanism.

14. In combination, a main operating cam-shaft, a slotted locking-disk therefor, a locking-plunger adapted to enter said slot and lock said disk, a spring normally holding said plunger in an unlocking position, means holding said plunger in a locking position, and a cam for said shaft operatively related with said plunger to restore the same from an unlocking to a locking position.

15. In combination, a main operating cam-shaft, a locking element therefor, locking mechanism adapted to coöperate with said element, yieldingly-acting means for normally holding said mechanism in an unlocking position, means for holding said mechanism in a locked position, and means associated with said shaft for restoring said mechanism from an unlocking to a locking position.

16. In combination, a stamping-receptacle for mail-matter, a spring adapted to thrust said matter into a stamping position, a rock-shaft for said spring, a main operating cam-shaft, a cam for said shaft, and levers connected with said rock-shaft and adapted to be operated by said cam.

17. In combination, a stamping-receptacle for mail-matter, a spring adapted to thrust said mail-matter into a stamping position, a main operating device, and means associating said spring with said main operating device whereby said spring is engaged with and withdrawn from said mail-matter.

18. In combination, stamping mechanism, a main operating cam-shaft, a cam for said shaft, a bell-crank lever operated by said cam and connected with said stamping mechanism to operate the same in one direction, a restoring-cam for said shaft, and a restoring-lever operated by said restoring-cam and coöperating with said bell-crank

lever to operate said stamping mechanism in a reverse direction.

19. In combination, a slidably-mounted stamping mechanism, a bell-crank lever connected therewith and provided with a movable cam-lever, a cam-shaft provided with a cam adapted to engage said cam-lever and move said stamping mechanism into a stamping position, means engaging said cam-lever and serving to normally hold the same in an inoperative position and serving upon compliance with predetermined conditions to throw the same into an operative position.

20. In combination, a slidably-mounted stamping mechanism, a bell-crank lever connected therewith and provided with a movable cam-lever, a cam-shaft provided with a cam adapted to engage said cam-lever and move said stamping mechanism into a stamping position, means engaging said cam-lever and serving to normally hold the same in an inoperative position and serving upon compliance with predetermined conditions to throw the same into an operative position, a second cam for said shaft, and a restoring-lever coöperating with said second cam and said bell-crank lever.

21. In combination, receipt-stamping mechanism, a trough for the receipts, means for advancing said receipts in said trough, means for feeding said receipts singularly into a stamping position, a main operating device for operating said means, and locking mechanism controlling said means and normally holding the same in an inoperative position and serving upon compliance with predetermined conditions to restore said means to an operative position with respect to said main operating device.

22. In combination, receipt-stamping mechanism, a trough for the receipts, means for advancing said receipts in said trough, means for preventing the starting of operation of the machine, a catch holding said means in an inoperative position, said receipt-advancing means serving to coöperate with said catch to throw said means in an operative position to prevent starting of operation of the machine.

23. In combination, a trough for receipts, a follower advancing said receipts to a feeding position, means for preventing the starting of the machine, and a catch normally holding said means in an inoperative position, said follower serving to coöperate with said catch to throw said means into an operative position.

24. In combination, receipt-stamping device, a trough for said receipts, a follower for said trough advancing said receipts to a feeding position, a slide engaging said receipts singly and advancing the same to a printing position, means for operating said slide, a main operating device, and locking mechanism normally holding said slide-operating means in an inoperative position and serving upon compliance with predetermined conditions to restore said means to an operative position with respect to said main operating device.

25. In combination, receipt-stamping mechanism, a receipt-trough, means for advancing said receipts in said trough to a feeding position, a slide advancing said receipts singly to a printing position, a lever for operating said slide provided with a cam-engaging lever, a cam for operating said lever, and a locking bar normally supporting said cam-engaging lever in an inoperative position and serving upon compliance with predetermined conditions to restore said lever to an operative position with respect to said cam.

26. In combination, a main operating device, a receptacle for mail adapted to be stamped provided with receiving and discharging openings, closures for said openings connected with said main operating device, yieldingly-acting means for said receptacle advancing the mail-matter to a stamping position, said means being operated by said main operating device, presser mechanism engaging and holding said mail-matter in a stamping position and actuated by said main operating device, a locking device associated with said presser mechanism, a combined mail and receipt stamping mechanism actuated by said main operating device, inking devices for said stamping mechanism operated by said main operating device, and means for advancing receipts to a stamping position, said means being actuated by said main operating device, said locking device coöperating with said stamping and receipt-feed-operating means and serving to normally maintain the same inoperative and upon compliance with predetermined conditions to render said stamping and feeding mechanism operative.

845,866. COMBINATION DOOR KNOB AND BELL. JULIUS T. FORRSTER, Chicago, Ill., assignor to Christian N. MICHELS, Chicago, Ill. Filed Apr. 10, 1906. Serial No. 310,950.

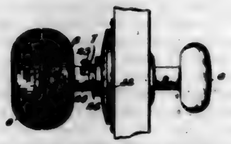

Claim.—In a device of the kind stated, the combination of a spindle having a fast knob on one end and a loose bell-knob on the other, the bell-knob having a tubular shank fitted loosely over the spindle and pivoted with a slot having a notch in the edge thereof, and the spindle having a pin projecting into the slot and adapted to engage in the notch, a spring bearing upon the shank and tending to engage the pin in the notch, to cause the spindle and sleeve to turn together, and means to prevent such engagement.

845,867. STALK-CUTTER. EZRA A. FRANTS, Weatherford, Tex. Filed Mar 23, 1906. Serial No. 307,735.

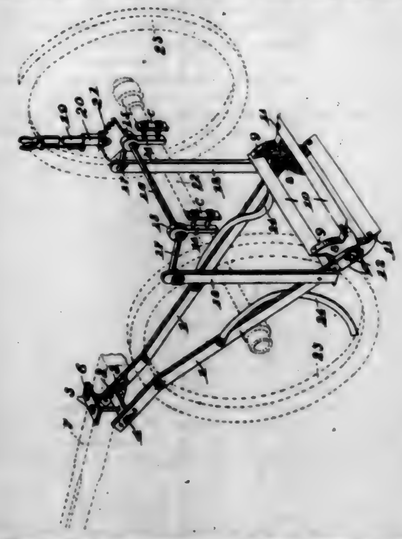

Claim.—1. A tongue-engaging clip, a frame pivotally connected therewith, a stalk-cutting drum journaled in said frame, a pair of axle-engaging clips, a rock-shaft journaled in said clips and having cranks, links connecting said cranks with the pivoted frame, and means for manipulating the rock-shaft and for securing it at various adjustments.

2. A clip including a plate having dowaturned portions, a frame including side members pivoted upon said portions, a pair of clips including plates having transversely-apertured heads, a rock-shaft supported for oscillation in said heads and having cranks, links connecting said cranks with the side members of the pivoted frame, and a stalk-cutting drum supported for rotation in the frame.

3. The combination with a wheeled carrying-truck having a draft-tongue, of a stalk-cutting appliance including a frame pivotally connected with the draft-tongue, a stalk-cutting drum supported for rotation in said frame, a pair of clips secured upon the axle of the truck, a rock-shaft supported for oscillation in said clips and having cranks, links connecting the cranks with the pivoted frame, a rack-segment upon one of the clips, and an adjusting-lever secured upon the rock-shaft and having a stop member engaging the rack-segment.

845,868. PROCESS OF TREATING SULFID ORES. OTOKAR FRONEK, Cleveland, Ohio, assignor to The General Laboratory Company, a Corporation of Ohio. Filed Apr. 6, 1906. Serial No. 310,231.

Claim.—1. The process of treating sulfid ores containing zinc which consists in subjecting them to a chloridising agent in presence of a molten bath containing zinc chlorid and sodium chlorid in approximately molecular proportions, substantially as described.

2. The process of treating sulfid ores which consists in adding to the ore a chlorid of an alkali metal, introducing the mixture into a bath containing molten chlorids, and subjecting it therein to a chloridising agent, substantially as described.

3. The process of treating sulfid ores containing zinc which consists in adding sodium chloride to the ore, introducing the mixture into a bath containing chlorids of zinc and sodium, and subjecting it therein to a chloridising agent, substantially as described.

845,869. DOOR AND WINDOW SCREEN. ALBERT M. GIFFORD, Mancelona, Mich. Filed May 7, 1906. Serial No. 315,573.

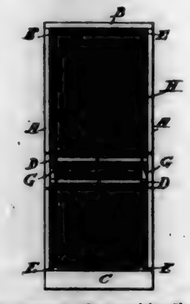

Claim.—1. In a screen, the combination with a substantially rectangular frame, the sides of which are each composed of front and rear sections, and a channel-shaped metal strip embedded between said sections and extending intermittently around said frame; of a butterfly-brace the free edges of the wings of which are embedded in an inner angle of said frame.

2. In a screen, the combination with a substantially rectangular frame, the sides of which are each composed of front and rear sections, and a channel-shaped metal strip embedded between said sections and extending intermittently around said frame; of a butterfly-brace comprising two flat metal wings connected along one side thereof, the free edges of said wings being embedded in the inner angle of said frame.

3. In a screen, the combination with a substantially rectangular frame, the sides of which are each composed of front and rear sections; and a channel-shaped metal strip embedded between said sections and extending intermittently around said frame; of a butterfly-brace comprising two flat metal wings connected along one side thereof by a narrow web of metal integral therewith, the free edges of said wings being embedded in the inner angle of said frame.

4. In a screen, the combination with a substantially rectangular frame, the sides of which are each composed of front and rear sections and a channel-shaped metal strip embedded between said sections and extending intermittently around said frame; of a butterfly-brace comprising two corresponding flat metal wings connected along one side thereof, the free edges of said wings being embedded in the inner angle of said frame.

5. In a screen, the combination with a substantially rectangular frame, the sides of which are each composed of front and rear sections and a channel-shaped metal strip embedded between said sections and extending intermittently around said frame; of a butterfly-brace comprising two corresponding triangular-shaped flat metal wings connected along one side thereof, the free edges of said wings being embedded in the inner angle of said frame.

6. In a screen, the combination with a substantially rectangular frame, the sides of which are each composed of front and rear sections, and a channel-shaped metal strip embedded between said sections and extending intermittently around said frame; of a butterfly-brace comprising two corresponding flat metal wings connected along one side thereof by a narrow web of metal integral therewith, the free edges of said wings being embedded in the inner angle of said frame.

7. In a screen, the combination with a substantially rectangular frame, the sides of which are each composed of front and rear sections, and a channel-shaped metal strip embedded between said sections and extending intermittently around said frame; of a butterfly-brace comprising two corresponding triangular-shaped flat metal wings connected along one side thereof by a narrow web integral therewith, the free edges of said wings being embedded in the inner angle of said frame.

8. In a screen, the combination with a substantially rectangular frame, the sides of which are each composed of front and rear sections having longitudinal grooves in the inner angles of the rear sections thereof; of butterfly-braces each comprising two flat metal wings the edge of one of said wings being inserted in said groove and the edge of the other wing secured between the front and rear sections; and a channel-shaped metal strip embedded in said frame and extending intermittently around the frame between said sections.

9. In a screen, the combination with a substantially rectangular frame, the sides of which are each composed of front and rear sections having longitudinal grooves in the inner angles of the rear sections thereof; of butterfly-braces each comprising two flat metal wings connected along one side thereof, the edge of one of said wings being inserted in said groove and the edge of the other wing secured between the front and rear sections; and a channel-shaped metal strip embedded in said frame and extending intermittently around the frame between said sections.

10. In a screen, the combination with a substantially rectangular frame, the sides of which are each composed of front and rear sections having longitudinal grooves in the inner angles of the rear sections thereof; of butterfly-braces each comprising two flat metal wings connected along one side thereof by a narrow web of metal integral therewith, the edge of one of said wings being inserted in said groove and the edge of the other wing secured between the front and rear sections; and a channel-shaped metal strip embedded in said frame and extending intermittently around the frame between said sections.

11. In a screen, the combination with a substantially rectangular frame, the sides of which are each composed of front and rear sections having longitudinal grooves in the inner angles of the rear sections thereof; of butterfly-braces each comprising two corresponding flat metal wings connected along one side thereof, the edge of one of said wings being inserted in said groove and the edge of the other wing secured between the front and rear sections; and a channel-shaped metal strip embedded in said frame and extending intermittently around the frame between said sections.

12. In a screen, the combination with a substantially rectangular frame, the sides of which are each composed of front and rear sections having longitudinal grooves in the inner angles of the rear sections thereof; of butterfly-braces each comprising two corresponding triangular-shaped flat metal wings connected along one side thereof,

the edge of one of said wings being inserted in said groove and the edge of the other wing secured between the front and rear sections; and a channel-shaped metal strip embedded in the frame and extending intermittently around the frame between said sections.

13. In a screen, the combination with a substantially rectangular frame, the sides of which are each composed of front and rear sections having longitudinal grooves in the inner angles of the rear sections thereof; of butterfly-braces each comprising two corresponding flat metal wings connected along one side thereof by a narrow web of metal integral therewith the edge of one of said wings being inserted in said groove and the edge of the other wing secured between the front and rear sections; and a channel-shaped metal strip embedded in said frame and extending intermittently around the frame between said sections.

14. In a screen, the combination with a substantially rectangular frame and transverse center rails each consisting of a front and a rear section having longitudinal grooves cut in said rear sections adjacent to the meeting-point between said frame and center rails, of a brace having the edge of one of its members inserted in said grooves and the opposite member secured between said front and rear sections, and a channel-shaped metal strip embedded in said frame and extending around the same between said sections.

15. In a screen, the combination with a substantially rectangular frame and transverse center rails each consisting of a front and a rear section having longitudinal grooves cut in said rear sections adjacent to the meeting-point between said frame and center rails, of a brace comprising two corresponding rectangular wings one of said wings being inserted partly into said grooves and the other wing secured between said front and rear sections, and a channel-shaped metal strip embedded in said frame and extending around the same between said sections.

16. In a screen, the combination with a substantially rectangular frame and transverse center rails each consisting of a front and a rear section having longitudinal grooves cut in said rear sections adjacent to the meeting-point between said frame and center rails, of a brace comprising two corresponding rectangular wings connected along one side by a narrow web of metal integral therewith, one of said wings being inserted partly into said grooves and the other wing secured between said front and rear sections, and a channel-shaped metal strip embedded in said frame and extending around the same between said sections.

845,870. CLEANING AND SEPARATING MACHINE. AXEL T. HEDFELDT, Chicago, Ill., assignor to Hedfeldt Company, a Corporation of Illinois. Filed Nov. 28, 1904. Serial No. 234,479.

Claim.—1. In a device for cleaning and sorting granular materials, the combination of a relatively narrow chute curved or bowed from the vertical, having a series of inclined inwardly-projecting screens along the under side thereof, discharge-apertures associated with such screens, means for introducing the material to be sorted into the chute at its lower end, and a device for discharging a blast of air into such chute through its lower end.

2. In a machine for sorting and cleaning granular materials, the combination of a curved air-chute, the upper wall of which forms an uninterrupted continuously-curved surface, means for discharging a blast of air upward into the chute at its lower end, a device for introducing the material to be sorted at the lower end of the chute, a series of discharge-apertures therealong and on each side thereof perforated portions of the under wall of the chute so conformed as to jut in toward the center of the chute and thereby obstruct the falling material and conduct the same to the apertures.

3. In a device for cleaning and sorting granular materials, the combination of a relatively narrow chute curved or bowed from the vertical having a series of inclined inwardly-projecting members along the under side of the curved part thereof, discharge-apertures associated with such members, means for introducing the material to be sorted into the chute at its lower end, and a device for discharging a blast of air into such chute at the lower end thereof.

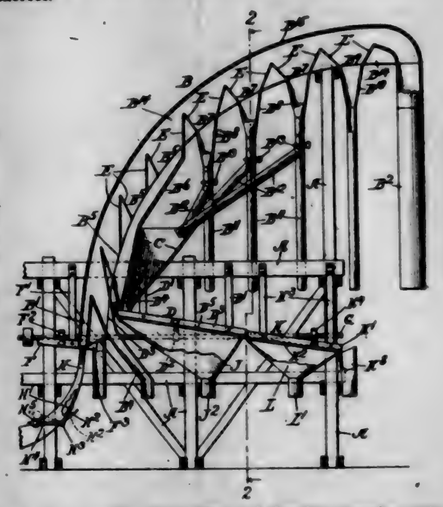

4. In a machine for sorting and cleaning granular material, an air-chute comprising an upwardly and outwardly curved wall forming an uninterrupted continuously-curved surface in combination with a device for discharging a blast of air along such surface from the lower end of the chute, a series of discharge devices under such curved wall for discharging the material from the chute and means for introducing the material to be sorted into such chute so as to be carried upward by such air-blast.

5. In a machine for sorting and cleaning granular material, an air-chute comprising an upwardly and outwardly curved wall forming an uninterrupted continuously-curved surface and a lower wall beneath such curved surface having a series of inward projections and apertures between such projections, in combination with a device for generating a draft of air along such surface, and means for introducing the material to be sorted into such chute so as to be carried upward by such air-blast.

6. In a machine for sorting and cleaning granular material, the combination of a relatively narrow and extended inclined air-chute having its upper wall curved so as to form a continuous uninterrupted bowed surface and its lower wall interrupted by inward projections and discharge-apertures, a device for discharging a blast of air through such chute from the lower end thereof, and means for introducing the material to be sorted into such chute so as to be carried upward by the air-blast.

7. In a machine for sorting and cleaning granular material, the combination of a continuously-curved relatively narrow air-chute, having discharge-apertures along its under side, with means for disposing the material to be treated in a relatively thin layer transverse to the axis of the chute so as to be carried therethrough, and an air-blast device discharging through such layer of material and into such air-chute.

8. In a machine for sorting and cleaning granular materials, the combination of a curved or bowed chute having discharge-apertures along its under side, with an air-blast device discharging through the chute from the lower end, and means for disposing the material to be treated above such air-blast device and in a relatively thin layer transverse to the direction of the air-blast.

9. In a machine for sorting and cleaning granular materials, the combination of an air-chute comprising a curved or bowed wall, with a device for generating a draft of air along the under or concave side of such bowed wall, means for disposing the material so as to be carried upward by such draft of air, and a series of discharge devices located under said bowed wall and adapted to receive the material as the draft along said wall becomes diminished.

10. In a device for sorting and separating materials, the combination of a bowed or curved wall, means for disposing the material to be treated near to said wall, an air-blast device adapted to discharge through the material so as to carry it upward along and against said wall, and means for collecting said material at different points along and under the wall.

11. In a device for sorting and separating materials, the combination of a bowed or curved wall, means for disposing the material in a relatively thin sheet or film near to said wall, an air-blast device adapted to discharge through the material so as to carry it upward along and against said wall, and means for collecting said material at different points along and under the wall.

845,871. FRICTION-PULLEY. HERMAN HESS. Indianapolis, Ind. Filed June 15, 1906. Serial No. 321,788.

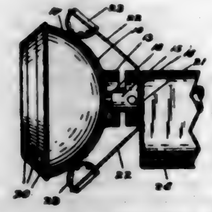

Claim.—1. The combination, with a shaft, of a friction-pulley sleeved thereon and axially movable thereon, a rotative connection between the pulley and the shaft, and a pair of weighted spring-fingers having a sliding engagement with said pulley and adapted to urge the same axially on the shaft.

2. The combination, with a shaft, of a friction-pulley sleeved thereon and axially movable thereon, a rotative connection between the pulley and the shaft, a perforated plate sleeved upon the shaft and carrying a pair of oppositely-extending spring-fingers, means for holding the plate against axial displacement on the shaft, and a pair of weights carried one by each of said spring-fingers and having a sliding engagement with the pulley to urge the same axially on the shaft.

845,872. BRICK-MACHINE. HOWARD L. HIX, Frankfort, Ind. Filed Sept. 8, 1906. Serial No. 333,789.

Claim.—1. In a clay-cutter, the combination, with a receiver for a clay column, of cutting mechanism comprising a main rotatable body rotating in a plane fixed relative to the line of movement of the clay column, a cutter carried by said rotatable body, supporting means for said cutter permitting movement thereof longitudinally of the clay column, and means for positively moving said means in synchronism with the travel of the clay column during its traverse through cutting position, a driving connection between the cutting mechanism consisting in part of an initial member engaged by the clay column near its initial end, a source of supplemental power, driving connections between said supplemental power and the cutting mechanism, a governor automatically preventing the application of an excess of supplemental power, and a pair of frictionally-engaging members forming a part of the driving connection between the cutting mechanism and the initial member engaged by the clay column.

2. In a clay-cutter, the combination, with a receiver for the clay column, of a rotatable ring encircling said receiver and mounted to rotate in a fixed plane relative to the line of movement of the clay column, a cutter-wire, axially-movable slides for supporting the ends of said wire, and means for automatically shifting said slides to carry the cutter-wire in the direction of movement of the clay column.

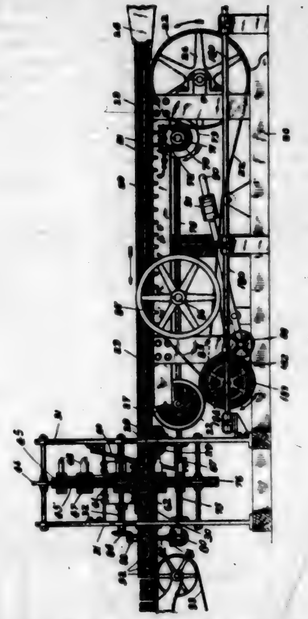

3. In a clay-cutter, the combination, with a receiver for the clay column, of a rotatable ring encircling said receiver and mounted to rotate in a fixed plane relative to the line of movement of the clay column, a cutter-wire, axially-movable slides for supporting the ends of said wire, means for automatically shifting said slides to carry the cutter-wire in the direction of movement of the clay column, and means for holding said wire under tension.

4. In a clay-cutter, the combination, with a receiver for the clay column, of a rotatable ring encircling said receiver and mounted to rotate in a fixed plane relative to the line of movement of the clay column, a cutter-wire axially-movable slides for supporting the ends of said wire, means for automatically shifting said slides to carry the cutter-wire in the direction of movement of the clay column, a spring connected to one end of said cutter-wire for holding the same under tension, and means for adjusting the tension of said spring.

5. In a clay-cutter, the combination, with a receiver for the clay column, of a rotatable ring encircling said receiver and mounted to rotate in a fixed plane relative to the line of movement of the clay column, a cutter-wire, axially-movable slides for supporting the ends of said wire, means for automatically shifting said slides to carry the cutter-wire in the direction of movement of the clay column, a spring connected to one end of said cutter-wire, a casing for said spring, a rotatable adjusting member for said casing, and an eccentric pivotal connection between said adjusting member and casing.

6. In a clay-cutter, the combination, with a fixed receiver for a clay column, of a ring encircling said receiver, a slide carried by said ring and movable axially thereof, means for yieldingly urging said slide in one direction, a deflector for engaging said slide as it is revolved with the ring and shifting the same in the opposite direction, a rotatable drum arranged at the axis of the ring, a slide carried by said drum and axially movable thereof, a cam for shifting said slide axially as it is revolved with the drum, a cutter-wire having an end attached to each of the aforesaid slides, and means for simultaneously rotating the drum and ring at the same speed.

7. In a clay-cutter, the combination, with a fixed receiver for a clay column, of a ring encircling said receiver, a slide carried by said ring and movable axially thereof, means for yieldingly urging said slide in one direction, a deflector for engaging said slide as it is revolved with the ring and shifting the same in the opposite direction, a rotatable drum arranged at the axis of the ring, a slide carried by said drum and axially movable thereof, a cam for shifting said slide axially as it is revolved with the drum, a cutter-wire having an end attached to each of the aforesaid slides, means for simultaneously rotating the drum and ring at the same speed, and tension means carried by one of said slides and forming the connection for the adjacent end of the cutter-wire.

8. In a clay-cutter, the combination, of a column receiver and cutting mechanism, of a wheel of considerable diameter adapted to receive a clay column at a point adjacent its forming end, a smaller wheel frictionally engaging said first-mentioned wheel, a driving-train between said smaller wheel and the cutting mechanism, an externally-driven driver, and a frictional connection between said external driver, the cutting mechanism, and the said smaller wheel.

845,873. HARVESTER. EDWARD A. JOHNSTON, Sterling, Ill. Filed Aug. 17, 1906. Serial No. 331,024.

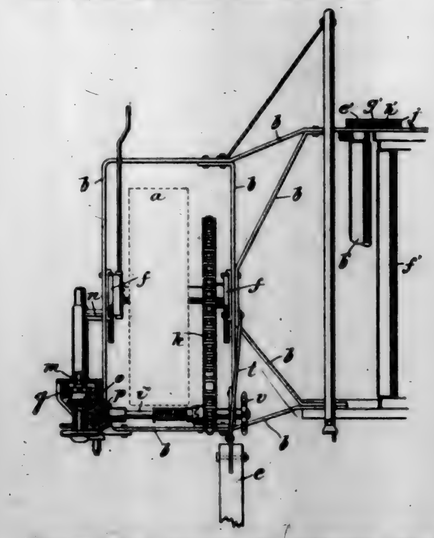

Claim.—1. In a harvester, the combination with the platform-rolls and the rolls of the upper and lower elevator-canvases, of gears on the front ends of the rolls of the lower elevator-canvas, a shaft journaled lengthwise along the front end of the elevator and geared to said gears, a gear on the rear end of the inner platform-roll, a gear on the corresponding end of the lower elevator-roll, an idler interposed between said two last-mentioned gears, a gear on the front end of the upper elevator-roll, and a gear on the corresponding end of the adjacent lower elevator-roll intermeshing with said upper elevator-roll gear.

2. In a harvester, the combination with the elevator having upper and lower canvases and the rolls thereof, of gears on the front ends of the lower canvas-rolls, a shaft lengthwise of the elevator and journaled at the front side thereof, gears on opposite ends of the shaft meshing with the gears of the lower canvas-rolls, and intermeshing gears on the front ends of the upper rolls of the two elevator-canvases, whereby the rear side of the elevator at its upper end is left open and unobstructed with gearing.

3. In a harvester, the combination with the elevator having upper and lower canvases and the rolls thereof, of gears on the front ends of its upper and lower rolls, a diagonal shaft lengthwise the elevator and journaled at the front side thereof, said shaft having gears at its opposite ends meshing with the gears of the canvas-rolls, a short shaft journaled in bearings about midway of the height of the elevator, a driven sleeve mounted on the short shaft, and gearing between the sleeve and the diagonal shaft.

4. In a harvester, the combination with the main wheel and cutting apparatus, of a sprocket-gear on the wheel, a counter-shaft in front of the wheel having a sprocket-pinion on its inner end, a chain for driving the counter-shaft from the sprocket-gear on the wheel, a crank-shaft geared to the outer end of the counter-shaft and extending rearward therefrom, and a pitman connecting the crank-shaft and the cutter-bar, said pitman operating in a plane in front of the counter-shaft and substantially parallel therewith.

5. In a harvester, the combination with the cutting apparatus, the platform and elevator canvases, the reel, and the binder, of a sprocket-gear on the main wheel, a counter-shaft journaled in front of the wheel, a crank-shaft geared to the counter-shaft and extending rearwardly therefrom, a pitman connecting the wrist of the crank-shaft with the cutter-bar, a sprocket-pinion on the grain end of the counter-shaft and connections therefrom for driving the reel, the platform and the elevator canvases, a sprocket-pinion on the crank-shaft and connections therefrom for driving the binder, a second sprocket-pinion on the counter-shaft, and a chain from the sprocket-gear on the main wheel to said second sprocket-pinion on the counter-shaft.

6. In a harvester, the combination with the platform and elevator canvases, and the binder, of a sprocket-gear on the inner side of the main wheel, a counter-shaft journaled in front of the wheel and having a sprocket-pinion, a chain from the sprocket-gear on the main wheel to the sprocket-pinion on the counter-shaft, a second sprocket-pinion on the grain end of the counter-shaft and connections for driving the reel, the platform and the elevator-rolls, a crank-shaft intergeared with the outer end of the counter-shaft and extending rearward therefrom, and a sprocket-pinion on the crank-shaft with connection for driving the binder.

7. In a harvester, the combination with the elevator having upper and lower convases and rolls, of a sprocket-gear on the inner side of the main wheel, a counter-shaft journaled in front of the wheel, a sprocket-pinion on the counter-shaft, a chain from the sprocket-gear on the main wheel to the sprocket-pinion on the counter-shaft, gears on the front ends of the rolls of the lower elevator-canvas, a diagonal shaft lengthwise of the elevator and journaled at the front side thereof, said shaft having gears at its opposite ends meshing with the gears on said lower canvas-rolls, a short shaft journaled in bearings about midway the height of the elevator, a driven sleeve mounted on the short shaft, gearing between the sleeve and the diagonal shaft, a sprocket-pinion on the grain end of the counter-shaft, a sprocket-pinion on the short elevated shaft, and a chain from the pinion on the end of the counter-shaft to the pinion on the short-shaft.

845,874. COUPLING APPARATUS FOR FLUID-PRESSURE BRAKE MECHANISMS. GEORGE E. KELLY and GEORGE F. ROYER, Wilkes-Barre, Pa., assignors, by direct and mesne assignments to The Kelly-Arnold Manufacturing Company, Wilkes-Barre, Pa., a Corporation of Pennsylvania. Filed May 1, 1906. Serial No. 314,705.

Claim.—1. The combination with two railway-cars provided with fluid-pressure brake devices, and a draft-coupling connecting the cars, of a brake-pipe coupling comprising a section connected with each car and having therein a passage forming part of the brake system, a rotary valve adapted to open said passage to the atmosphere, means on each brake-coupler section for actuating the rotary valve of the other section when the cars are accidentally separated, and means for rendering the aforesaid means inoperative when the draft-coupling is intentionally opened.

2. The combination with two railway-cars provided with fluid-pressure brake devices, and a draft-coupling connecting the cars, of a brake-coupling comprising a section connected with each car and having therein a passage forming part of the brake system, a rotary valve adapted to open said passage to the atmosphere, an arm pivotally mounted on each section and adapted to actuate the rotary valve of the other section to open said passage to the atmosphere when the cars are accidentally separated, and means for rocking said arms to inoperative position when the draft-coupling is intentionally opened.

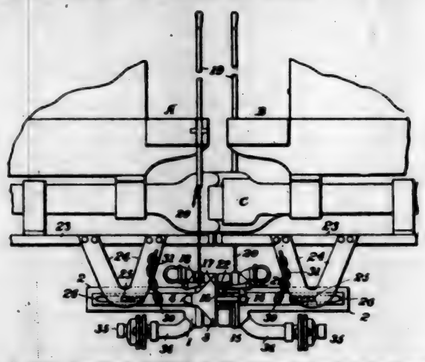

3. The herein-described fluid-pressure brake-pipe coupling, consisting of two similar sections each comprising a head having therein a passage adapted to form part of the brake-fluid conduit, a valve adapted to open said passage to the atmosphere, and a pivotally-mounted device adapted to engage the operating device of the aforesaid valve of the other coupler-section.

4. The herein-described fluid-pressure brake-pipe coupling consisting of two similar sections each comprising a head having therein a passage adapted to form part of the brake-fluid conduit, a rotary valve mounted in a duct extending from said passage to the atmosphere and provided with a laterally-projecting arm, and means adapted to engage said arm on the aforesaid valve of the other coupler-section.

5. The combination with a railway-car, of a fluid-pressure brake-coupling section consisting of a head having suitable passages formed therein and a tubular stem connected with said head at one end, a coiled spring arranged within said stem, and a bar or plate supported from the car and extending through slots in the sides of said stem, and across the end of the spring therein.

6. The combination with a railway-car, of a fluid-pressure brake-coupling section consisting of a head having suitable passages formed therein and a stem connected with said head at one end, a yoke having a swivel connection with the car and having its arm connected to said stem to permit the latter to move longitudinally, and a coiled spring arranged between the head of the coupler-section and a bar or plate connected with the lower ends of the yoke-arms.

7. The combination with a railway-car, of a fluid-pressure brake-coupling section consisting of a head having suitable passages formed therein and a tubular stem connected with said head at one end, a yoke having a swivel connection with the car and having its arms connected to said stem to permit the latter to move longitudinally, and a coiled spring arranged within said stem and bearing against the head of the coupler-section and a bar or plate connecting the arms of the yoke.

8. The herein-described coupling for fluid-pressure brake apparatus comprising two similar sections each having therein a passage adapted to form part of the train-pipe and provided with a lateral outlet, a valve arranged to close said outlet, a rock-shaft mounted on each section of the coupler, an arm extending from each shaft and adapted to actuate the aforesaid valve of the other coupler-section, a trip-arm carried by said shaft and adapted to engage the valve-actuating arm of the other coupler-section, and means for rocking either of said shafts.

9. The herein-described coupling for fluid-pressure brake apparatus comprising two similar sections each having therein a passage adapted to form part of the train-pipe and provided with a lateral outlet, a valve arranged in a passage or duct connecting said outlet with the atmosphere and provided with a lateral-projecting arm, a hook pivotally mounted on each coupler-section and adapted to engage the arm of said valve on the other section, a pivotally-mounted trip carried by each section and adapted to engage said hook on the other section, and means whereby when either hook is moved out of engagement with the valve controlled thereby, the trip-arm on the same coupler-section as said hook will disengage the hook of the other section from its valve, substantially as described.

845,875. INSTRUMENT FOR SURVEYING BORE-HOLES. PERCY E. LEWIS, Johannesburg, Transvaal, assignor of one-fourth to Luther Cyril Franck, Johannesburg, Transvaal. Filed June 21, 1905. Serial No. 266,339.

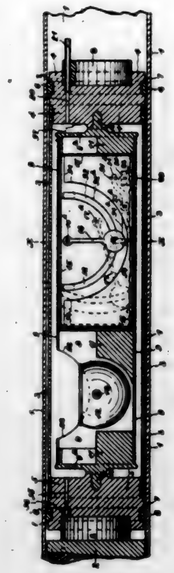

Claim.—1. In an instrument for surveying bore-holes, the combination of an indicator, a casing inclosing the same, means for fixing the indicator and means for changing the pressure of the air or gas in the casing to actuate the means for fixing the indicator.

2. In an instrument for surveying bore-holes, the combination with the indicators of a casing inclosing the same means for fixing the indicators and means for reducing the pressure of the air or gas in said casing to actuate the first-mentioned means by the internal pressure.

3. In an instrument for surveying bore-holes the combination with a compass or magnetic needle of means for fixing the same said means being actuated through the medium of a gaseous fluid substantially as described.

4. In an instrument for surveying bore-holes, the combination with a magnetic needle and a plummet, of means for fixing said magnetic needle and plummet in the positions they assume at the point to be surveyed and means for operating the first-mentioned means by a gaseous fluid, substantially as described.

5. In an instrument for surveying bore-holes the combination of a compass comprising a compass-box and magnetic needle, means for fixing said magnetic needle and the compass-box in the positions they assume at the point to be surveyed and means for operating the first-mentioned means by a gaseous fluid, substantially as described.

6. In an instrument for surveying bore-holes the combination with a compass-box, a magnetic needle and a pin supporting the same, of a distensible diaphragm which when distended fixes the magnetic needle and means for distending the diaphragm by fluid-pressure.

7. In an instrument for surveying bore-holes the combination of a compass-box, a pin yieldingly supporting a magnetic needle, a magnetic needle, a distensible diaphragm above said needle which when distended depresses the needle and fixes it, substantially as described.

8. In an instrument for surveying bore-holes, the combination of a compass-box, a pin yieldingly supporting a magnetic needle, a magnetic needle, a distensible diaphragm above said needle, a ring or washer of resilient material below the needle onto which the needle is depressed and held when the diaphragm is distended, and means for retaining the needle in position when it is forced onto its seat on the resilient ring or washer through the medium of a compressed gaseous fluid, substantially as described.

9. In an instrument for surveying bore-holes, the combination of a compass-box and magnetic needle therein, means for yieldingly supporting said magnetic needle, a distensible diaphragm above said needle, a ring or washer of resilient material below the needle onto which the needle is depressed and held when the diaphragm is distended, and means consisting of spring-catches which engage the needle and serve to secure it in position when it is forced onto the ring or washer through the medium of compressed air or other gaseous fluid, substantially as described.

10. In an instrument for surveying bore-holes, the combination of a compass-box and magnetic needle therein constructed with a central boss, a pin which forms a support for the magnetic needle located in a hole and formed with a bead fitting a recess in the under side of the box which serves as a stop for the pin when moved in an upward direction, a disk fixed to the pin inside the box, a spring located between said disk and the inside of the box which serves to keep the pin in its normal position, a plate fitted inside the box, a ring or washer of resilient material secured on the top of said plate beneath the magnetic needle, a plurality of spring-catches fitted to the bottom of the box on the inside adapted to secure the magnetic needle when it is pressed onto the resilient rubber ring or washer, another plate closing the box above the needle formed with a central aperture above said boss of the magnetic needle, and a distensible diaphragm secured to the plate over the aperture which is adapted when distended through the medium of compressed air or other gaseous fluid to engage the boss of the magnetic needle to force the needle onto the rubber ring or washer, substantially as described.

11. In an instrument for surveying bore-holes, the combination of a compass-box and magnetic needle therein, constructed with a central boss and with a groove in said boss on the under side, a pin forming a pivot for said magnetic needle, said pivot-pin located in a hole in the bottom of the compass-box and formed with a head adapted to reciprocate in a recess, a plug closing said recess, a disk or plate attached to the upper end of the pin inside the compass-box, a spring interposed between said plate and the top of the compass-box on the inside, a plate or disk formed with an open center, arranged inside the box, a ring or nut securing said plate in position, a ring or washer of resilient material above said plate and beneath the magnetic needle, another plate or disk formed with a hole at the center fixed in the box above the magnetic needle, a ring or nut for securing said plate or disk, an india-rubber disk fixed to the top plate above the central aperture which is adapted when distended through said aperture to engage the top of the boss of the magnetic needle to force it onto its seat on the rubber ring or washer, and a plurality of spring-catches fixed to the bottom of the box on the inside adapted to engage the groove in the under side of the boss when the magnetic needle is forced onto the resilient ring or washer through the medium of compressed air or other gaseous fluid, substantially as described.

12. In an instrument for surveying bore-holes, the combination with a plummet of a spring medium and means actuated by compressed air or other gaseous fluid for releasing said spring medium to fix the plummet in the position it assumes in the bore-hole at the point to be surveyed, substantially as described.

13. In an instrument for surveying bore-holes, the combination of a plummet, a spring adapted when released to fix said plummet in the bore-hole at the point to be surveyed, a piston actuated by compressed air or gaseous fluid which operates means for releasing said spring, substantially as described.

14. In an instrument for surveying bore-holes, the combination of a plummet, a spring, a catch-lever serving to maintain said spring in its inoperative position, a cylinder, a piston located in said cylinder, said piston serving to operate the catch-lever to release the spring when actuated by compressed air or other gaseous fluid, substantially as described.

15. In an instrument for surveying bore-holes, the combination of a plummet, a U-spring located at the back of said plummet, a catch-lever which engages said spring and maintains it in its inoperative position, a cylinder, a piston therein, said piston actuating the catch-lever to disengage the U-spring when compressed air or other gaseous fluid is admitted to the cylinder, substantially as described.

16. In an instrument for surveying bore-holes, the combination of a casing, a plummet pivotally supported therein, a U-spring located at the rear of the plummet, fitted with a strip of resilient material and constructed with a projection, a plate located in front of the plummet fitted with a strip of resilient material against which the plummet is secured by means of the spring when the latter is released, a catch-lever which by engaging the projection serves to maintain the spring in its inoperative position, a cylinder, a piston therein connected to the catch-lever for operating the lever to release the spring when compressed air or other gaseous fluid is admitted to the cylinder, substantially as described.

17. In an instrument for surveying bore-holes, the combination with a compass-box of a vertical ring encircling said box, and means operated by gaseous-fluid pressure for fixing the compass-box in the position it assumes at the point to be surveyed.

18. In an instrument for surveying bore-holes, the combination with the compass-box of a vertical ring encircling said box, means operated by gaseous-fluid pressure for fixing the compass-box through the medium of said ring in the position it assumes at the point to be surveyed, a magnetic needle located in said box, and means for simultaneously fixing said magnetic needle.

19. In an instrument for surveying bore-holes, the combination with the compass-box and magnetic needle of a vertical ring encircling said box, means operated by gaseous-fluid pressure for fixing the magnetic needle and compass-box in the positions they assume at the point to be surveyed.

20. In an instrument for surveying bore-holes, the combination with the compass-box and magnetic needle of a vertical ring encircling said box, means operated by gaseous-fluid pressure for fixing the magnetic needle and compass-box in the positions they assume at the point to be surveyed, and means for controlling the gaseous-fluid pressure.

21. In an instrument for surveying bore-holes, the combination with the compass of a vertical ring encircling the same, a spring adapted to come into engagement with the vertical ring to fix the compass, and means actuated by gaseous-fluid pressure for releasing said spring to fix the compass.

22. In an instrument for surveying bore-holes, the combination with the compass of a vertical ring encircling the same, a spring adapted to come into engagement with the vertical ring, a catch-lever engaging said spring and means for operating said catch-lever to release the spring to fix the compass by fluid-pressure.

23. In an instrument for surveying bore-holes, the combination with the compass of a vertical ring encircling the same, a spring adapted to come into engagement with the vertical ring, a catch-lever engaging said spring, and a piston for operating said catch-lever to release the spring to fix the compass by fluid-pressure.

24. In an instrument for surveying bore-holes, the combination with a revoluble casing, of a compass pivotally supported in said revoluble casing, a vertical ring encircling said compass, a spring adapted to come into engagement with the vertical ring, a catch-lever engaging said spring, and a piston actuated by fluid-pressure for operating said catch-lever to release the spring to fix the compass.

25. In an instrument for surveying bore-holes, the combination with an outer casing of an inner revoluble casing, a compass pivotally supported in said revoluble casing, a vertical ring encircling said compass, a spring adapted to come into engagement with the vertical ring, a pad of resilient material fixed to said spring, a catch-lever engaging said spring, and a piston actuated by fluid-pressure for operating said catch-lever to release the spring to fix the compass.

26. In an instrument for surveying bore-holes, the combination with an outer casing of a revoluble inner casing, a frame, a compass pivotally carried by said frame, a vertical ring encircling said compass, a spring and pad carried by the frame and adapted to come into engagement with the vertical ring, a catch-lever fixed to the frame and adapted to engage said spring, a piston actuated by fluid-pressure for operating said catch-lever to release the spring to fix the compass.

27. In an instrument for surveying bore-holes, the combination with an outer casing, of plugs fitted in the ends of said casing for closing the same, a revoluble inner casing pivotally supported in said plugs, a frame carried by said inner portion, a compass pivotally carried by said frame, means for fixing the magnetic needle of said compass through the medium of gaseous-fluid pressure, a vertical ring encircling said compass, a spring and pad carried by the frame and adapted to come into engagement with the vertical ring, a catch-lever fixed to the frame and adapted to engage said spring, a piston located in the frame and projecting into a recess in one end of the revoluble inner case, a hole placing the interior of the outer casing in communication with the back of the piston for actuating it by fluid-pressure to release the spring to fix the compass, substantially as described.

28. In an instrument for surveying bore-holes, the combination with an outer casing, of plugs fitted in the ends of said casing for closing the same, holes formed in one of said plugs for admitting the gaseous fluid to said casing, a revoluble inner casing pivotally supported in said plugs, a frame carried by said inner casing, means for retaining said frame in position, a compass pivotally carried by said frame, means for fixing the magnetic needle of said compass through the medium of the gaseous fluid admitted to the casing, a vertical ring encircling said compass, a spring and pad carried by the frame and adapted to come into engagement with the vertical ring, a catch-lever fixed to the frame and adapted to engage said spring, a piston located in the frame and projecting into a recess in one end of the revoluble inner casing, a hole placing the interior of the outer casing in communication with the recess at the back of the piston for actuating it by fluid-pressure to release the spring to fix the compass, and means for admitting gaseous fluid to the interior of the casing when the instrument is lowered into position at the point to be surveyed, substantially as described.

29. An instrument for surveying bore-holes comprising an outer protecting-casing, an outer casing for the instrument proper, plugs closing the ends of said outer casing, pads of resilient material fitted in the ends of said casing and with packing-rings for steadying said casing in its protecting-casing said plugs being also formed with holes communicating with the interior of said casing and a plug for closing one of said holes, an inner revoluble portion supported in the plugs in the ends of the outer casing on the inside, a frame carried by said inner casing, means for retaining said frame in position therein, a compass pivotally carried by said frame, means for fixing the magnetic needle of said compass through the medium of the gaseous fluid admitted to the casing, said means consisting of a valve located in said compass-box, a piece surrounding and forming a chamber round said valve and a distensible diaphragm forming the top of said chamber which when distended fixes the magnetic needle, a vertical ring encircling said compass, a spring and pad carried by the frame and adapted to come into engagement with the vertical ring, a catch-lever fixed to the frame and adapted to engage said spring, a piston located in the frame and projecting into a recess in one end of the revoluble inner casing, a hole placing the interior of the outer casing in communication with the recess at the back of the piston for actuating it by fluid-pressure to release the spring to fix the compass, and means located in the protecting-casing for admitting gaseous fluid from said protecting-casing to the outer casing of the instrument through the hole in the plug, substantially as described.

30. An instrument for surveying bore-holes comprising an outer protecting-casing, an outer casing for the instrument proper, plugs closing the ends of said outer casing, pads of resilient material fitted in the ends of said casing and with packing-rings for steadying said casing in its protecting-casing, said plugs being also formed with holes communicating with the interior of said casing and a plug for closing one of said holes, an inner revoluble portion supported in the plugs in the ends of the outer casing on the inside, a frame carried by said inner casing, means for retaining said frame in position therein, a compass pivotally carried by said frame, means for fixing the magnetic needle of said compass through the medium of the gaseous fluid admitted to the casing, said means consisting of a valve located in said compass-box, a piece surrounding and forming a chamber round said valve and a distensible diaphragm forming the top of said chamber which when distended fixes the magnetic needle, a vertical ring encircling said compass, a spring and pad carried by the frame and adapted to come into engagement with the vertical ring, a catch-lever fixed to the frame and adapted to engage said spring, a piston located in the frame and projecting into a recess in one end of the revoluble inner casing, a hole placing the interior of the outer casing in communication with the recess at the back of the piston for actuating it by fluid-pressure to release the spring to fix the compass, and means located in the protecting-casing for admitting gaseous fluid from said protecting-casing to the outer casing of the instrument through the hole in the plug, substantially as described.

31. An instrument for surveying bore-holes comprising an outer protecting-casing, an outer casing for the instrument proper, plugs closing the ends of said outer casing, pads of resilient material fitted in the ends of said casing and with packing-rings for steadying said casing in its protecting-casing said plugs being also formed with holes communicating with the interior said casing and the plug for closing one of said holes, an inner revoluble portion supported in the plugs in the ends of the outer casing on the inside, a frame carried by said inner casing, means for retaining said frame in position therein, a compass pivotally carried by said frame, means for fixing the magnetic needle of said compass through the medium of the gaseous fluid admitted to the casing, said means consisting of a pin yieldingly supporting the magnetic needle, and a distensible diaphragm above the disk, which when distended causes the needle to be fixed, and spring-catches for fixing the needle, a vertical ring encircling said compass, a spring and pad carried by the frame and adapted to come into engagement with the vertical ring, a catch-lever fixed to the frame and adapted to engage said spring, a piston located in the frame and projecting into a recess in one end of the revoluble inner casing, a hole placing the interior of the outer casing in communication with the recess at the back of the piston for actuating it by fluid-pressure to release the spring to fix the compass, and means located in the protecting-casing for admitting gaseous fluid from said protecting-casing to the outer casing of the instrument through the hole in the plug, substantially as described.

32. In instruments for surveying bore-holes, the combination of an outer protecting-casing for carrying the in-

strument, which serves as the storage for a compressed gaseous fluid, an outer casing for the instrument proper, plugs fitted in the ends of said casing formed with a hole placing said outer casing in communication with the protective casing, an inner revoluble casing, a compass carried by said revoluble casing and a plummet carried by said revoluble casing, and means located in the protecting-casing adapted to be operated to allow the compressed gaseous fluid to pass from said casing into the casing of the instrument, and means actuated by said fluid for fixing the magnetic needle and plummet in the positions they assume at the point to be surveyed, substantially as described.

33. In instruments for surveying bore-holes, the combination of an outer protective casing for carrying the instrument, which serves as the storage for a compressed gaseous fluid, an outer casing for the instrument proper, plugs fitted in the ends of said casing formed with a hole placing said outer casing in communication with the protective casing, an inner revoluble casing, a compass carried by said revoluble casing, means for fixing the magnetic needle of said compass by fluid-pressure consiting of a valve located inside the compass-box, a piece surrounding and forming a chamber round said valve and a distensible diaphragm forming the top of said chamber which when distended fixes the magnetic needle, a plummet carried by said revoluble casing, means for fixing said plummet by fluid-pressure consisting of a spring, a lever engaging said spring and a piston actuating said lever to disengage the spring, and means located in the protective casing adapted to be operated to allow the compressed gaseous fluid to pass from said casing into the casing of the instrument, substantially as described.

34. In instruments for surveying bore-holes, the combination of an outer protecting-casing for carrying the instrument, which serves as the storage for a compressed gaseous fluid, an outer casing for the instrument proper, plugs fitted in the ends of said casing formed with a hole placing said outer casing in communication with the protective casing, an inner revoluble casing, a compass carried by said revoluble casing, means for fixing the magnetic needle of said compass by fluid-pressure consisting of a pin yieldingly supporting the magnetic needle, and a distensible diaphragm above the needle, which when distended causes the needle to be fixed, and spring-catches for fixing the needle, a plummet carried by said revoluble casing, means for fixing said plummet by fluid-pressure consisting of a spring, a lever engaging said spring and a piston actuating said lever to discharge the spring, and means located in the protective casing adapted to be operated to allow the compressed gaseous fluid to pass from said casing into the casing of the instrument, substantially as described.

35. In an instrument for surveying bore-holes, the combination of a protecting-casing providing storage for a quantity of compressed gaseous fluid, an outer casing for the instrument proper adapted to be placed in communication with the protecting-casing, a valve for controlling the admission of the fluid to the instrument, an electromagnet actuating said valve and an electric cable for passing a current of electricity through said electromagnet to allow of the fluid being passed into the casing of the instrument at any desired point in the bore-hole for fixing the compass and plummet, substantially as described.

36. In an instrument for surveying bore-holes, the combination of a protecting-casing providing storage for a quantity of compressed gaseous fluid, an outer casing for the instrument proper formed with a hole in one end thereof, a pipe located in said hole, a valve fitted in the other end of said pipe, an electromagnet in the protecting-casing adapted to raise the valve to admit the fluid to the instrument-casing, an electric cable for passing a current of electricity through the electromagnet to actuate the valve, substantially as described.

37. In an instrument for surveying bore-holes, the combination of a protecting-casing providing storage for a quantity of compressed gaseous fluid, a valve to said casing through which said casing may be charged with said gaseous fluid under pressure, a plurality of instruments having outer casings which are made intercommunicating and with inner revoluble casings carrying compasses and plummets, a pipe located in said protective casing through which the fluid is admitted to the instruments, a valve fitted in the upper end of said pipe, an electromagnet in the protective casing adapted to raise the valve to admit the fluid to the casings of the instruments, and an electric cable for passing a current of electricity through the electromagnet to actuate the valve, substantially as described.

845,876. HOOD FOR STACKERS. ABRAHAM LUKE, Elkhart, Ind. Filed May 17, 1905. Serial No. 260,907.

Claim.—1. A hood for stackers comprising a body portion having an opening therein, an apron movably secured to the body portion and extending partially across the opening, a bill movably connected to the body portion and constituting a continuation thereof, means connecting the bill and apron and means for adjusting the bill and apron to increase or decrease the size of the opening.

2. A hood for stackers comprising a body portion having an opening therein, an apron pivotally secured near the rear edge of the opening and extending partially thereacross, there being cheeks carried by the apron, the outer end of the apron being open and means for adjusting the apron to increase or decrease the discharge-opening.

3. A hood for stackers comprising a body portion having an opening formed therein, an apron pivotally secured near the rear edge of the opening and extending partially thereacross, there being cheeks of gradually-increasing height located along each side of the apron, the outer end of the apron being open, the cheeks overlapping the sides of the body portion when the apron is in raised position, and means for raising and lowering the apron to decrease or increase the size of the discharge-opening.

4. The combination, in a hood, with a body portion having an opening therein, of a bill pivotally secured to the body portion, guide-bars carried by the one, guides mounted on the other and receiving the bars, and means for raising and lowering the bill relative to the body portion.

5. The combination, in a hood, with a body portion, of a bill pivotally secured thereto, angular guides carried by the bill, guide-bars secured to the body portion, the guides taking behind the bars, the ends of the guides engaging the ends of the bars to limit the movement of the bill in one direction, and means for opening and closing the bill.

6. The combination, in a hood, with a body portion having a discharge-opening, of a bill movably secured to the body portion at one end of the opening, an apron movably secured to the body portion at the other end of the opening, the apron extending across the opening and partly the length thereof, means connecting the bill and apron, means normally tending to raise the bill and simultaneously therewith to lower the apron, and a flexible connection fastened to one of the movable members for lowering the bill and raising the apron.

7. The combination, with a conveyer-tube, of a hood having a discharge-opening, means for adjustably constricting the opening, adjustable means for directing the material issuing from the discharge-opening, a track carried by the conveyer-tube, one end of the hood telescoping within the adjacent end of the tube, antifriction means carried by the hood and engaging the track and means secured to the hood for rotating the same in either direction on the tube.

8. A hood comprising a body portion having a discharge-opening, a movable extension secured thereto, means for raising and lowering the extension, an apron movably secured to the hood, means connecting the apron and extension whereby a movement of the extension will operate the apron and means on the extension and on the apron for confining the material issuing from the hood against lateral spreading.

845,877. CHAIN-MAKING MACHINE. HENRY LYSHOLM, Woodbury, N. J. Filed Sept. 11, 1905. Serial No. 277,817.

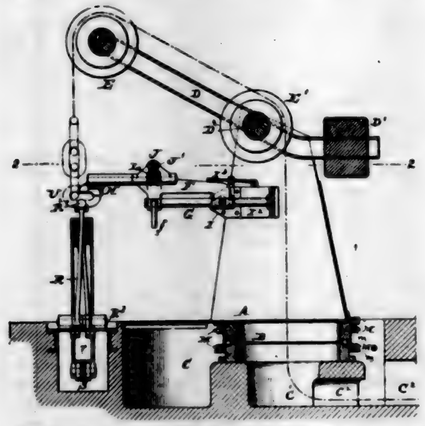

Claim.—1. In a chain-making machine, the combination of welding devices, a link-carrying clamp constructed to hold the link positively while being welded, conveying means for conveying the clamp to and from the welding devices whereby a link may be transferred into welding position, and means supported by the carrying means constructed that the clamp is supported so as to be capable of being rocked and reciprocated relatively to both the welding devices and conveying means during the welding operation.

2. In a chain-making machine, the combination of welding devices, a link-carrying clamp constructed to hold the link positively while being welded, conveying means for conveying the clamp to and from the welding devices whereby a link may be transferred into welding position, power devices for actuating the carrying means, means to lock the conveying means against movement when the clamp is in position to coöperate with the welding devices, and means supported by the carrying means constructed that the clamp is supported so as to be capable of being rocked and reciprocated relatively to both the welding devices and conveying means during the welding operation.

3. In a chain-making machine, the combination of a welding device having one or more reciprocating hammers, a link-carrying clamp, means for conveying the link-carrying clamp laterally to or from the welding devices, means to enable the clamp to be rocked and reciprocated relatively to the conveying means and welding devices, and power devices for moving the means for conveying the clamp laterally to or from the welding devices as required consisting of a turn-table, oppositely-moving cable-sections passing about the turn-table, and independent gripping devices for connecting the turn-table with either one of the cable-sections.

4. In a chain-making machine, the combination of welding devices, a link-supporting clamp, conveying means for conveying the link-supporting clamp laterally to or from the welding devices consisting of a pivoted frame revolving on a turn-table, and guiding means on the conveying means constructed to have rocking and rectilinear motions relative to the conveying devices whereby the link-clamp carried thereby may be freely reciprocated and rocked relatively to the welding devices.

5. In a chain-making machine, the combination of welding devices, a link-supporting clamp, conveying means for conveying the link-supporting clamp laterally to or from the welding devices consisting of a pivoted frame revolving on a turn-table, locking means for locking the pivoted frame in position in front of the welding devices, and guiding means on the conveying means constructed to have rocking and rectilinear motions relative to the conveying devices whereby the link-clamp carried thereby may be freely reciprocated and rocked relatively to the welding devices.

6. In a chain-making machine, the combination of suitable welding devices, a guide in line with the welding devices a frame supported by the guide and constructed and adapted to have a reciprocatable movement upon the guide to or from the welding devices, and link-supporting gripping-jaws carried by the reciprocatable frame and arranged to one side of the guide and welding devices the said jaw being constructed to hold one portion of the link and be reciprocated past the welding devices without contact therewith during the welding operation on the other portion of the link.

7. In a chain-making machine, the combination of suitable welding-dies, with a guide in line with the welding-dies, a frame supported by the guide and constructed and adapted to have a reciprocating movement upon the guide to or from the welding-dies, link-supporting gripping-jaws carried by the reciprocatable frame and arranged to one side of the axis of the guide and the welding-dies, the said jaws being constructed to hold one portion of the link and be reciprocated past the welding-dies during the welding operation on the other portion of the link, and power devices carried by the reciprocating frame for opening and closing the gripping-jaws and positively holding them in closed position when closed.

8. In a chain-making machine, the combination of a welding-hammer, a guide-shaft G, a frame F adapted to reciprocate and rock upon said guide-shaft, and gripping-jaws H carried by the frame F and located out of alinement with the guide-shaft G so as to bring the portion of the link which is required to be welded in alinement with the axis of the guide-shaft G whereby the link may be reciprocated and rocked without abnormally changing its position relatively to the welding-hammer.

9. In a chain-making machine, the combination of a welding-hammer, a guide-shaft G, a frame F adapted to reciprocate and rock upon the said guide-shaft and having a lateral extension F', a guide-plate having an enlarged or elliptical guide-groove I' in which the lateral extension is guided and by which the movement of the frame F is limited, and gripping-jaws H carried by the frame F and located out of alinement with the guide-shaft G so as to bring the portion of the link which is required to be welded in alinement with the axis of the guide-shaft G whereby the link may be reciprocated and rocked without abnormally changing its position relatively to the welding-hammer.

10. In a chain-making machine, the combination of a welding-hammer, a guide-shaft G, a frame F adapted to reciprocate and rock upon said shaft and having a lateral extension F', a removable guide-plate having an enlarged or elliptical guide-groove I' in which the lateral extension is guided and by which the movement of the frame F is limited, a lock to lock the extension in the groove I', and a guide-frame having a longitudinal groove I^2 in alinement with and opening into the groove I'.

11. In a chain-making machine, the combination of welding-dies, link-supporting gripping-jaws for holding the link in position between the dies during the welding operation arranged to one side of the jaws, a guide arranged in line with the operating parts of the welding-dies, and supporting devices for the gripping-jaws consisting of a frame journaled upon the guide and constructed to have a rocking motion thereon and also a rectilinear reciprocatable movement thereon and formed with a lateral part extending to and carrying the gripping-jaws whereby the said gripping-jaws may without contact with the dies

move the portion of the link to be welded between the dies with a rotary and reciprocatable rectilinear motion during the welding operation.

12. In a chain-making machine, the combination of welding-dies, a fixed guide in line with the dies, gripping-jaws for grasping a portion of the link to be welded arranged close to the dies and to one side of them and of the axis of the fixed guide, a frame guided upon the fixed guide so as to have rotatable motion about said guide and carrying the gripping-jaws so that they have rotatable motion about the dies, and power devices carried by the frame for closing and holding the jaws tightly upon the link.

13. In a chain-making machine, the combination of welding-dies, a turn-table to one side of the welding-dies, means on the turn-table for holding a link to be welded, means on the turn-table for guiding the chain upward from the welding-dies then transversely and downward through the turn-table, and a laterally-extending tunnel from beneath the turn-table through which to withdraw the chain as it is formed without interfering with the movements of the turn-table.

14. In a chain-making machine, the combination of welding-dies, a fixed guide in line with the dies, gripping-jaws for grasping a portion of the link to be welded arranged close to the dies and to one side of them and the axis of the fixed guide, a frame guided upon the fixed guide so as to have reciprocatable motion upon and rotatable motion about said guide and carrying the gripping-jaws so that they have rotatable motion about the dies and reciprocatable motion with respect thereto, and power devices carried by the frame for closing and holding the jaws tightly upon the link.

845,878. EMERY GRINDING-MACHINE. MIKE MACHACEK, New Prague, Minn. Filed Apr. 26, 1906. Serial No. 313,783.

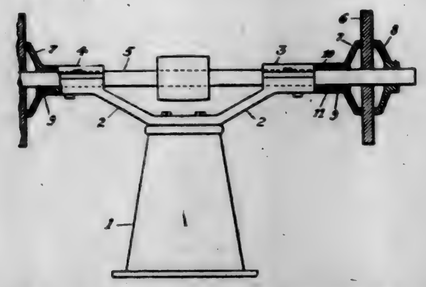

Claim.—1. In a machine of the class described, the combination with the mandrel, of a slip-collar thereon, a fixed abutment, and a spring for exerting pressure against such collar and abutment, for the purpose set forth.

2. In a machine of the class described, the combination with one of the members of the wheel-clamp, of a slip-collar and a spring exerting pressure against such clamp member and slip-collar, for the purpose set forth.

3. In a machine of the class described, the combination with the mandrel, its journal-box, and a member of the wheel-clamp, of an intervening slip-collar and spring, for the purpose set forth.

4. In a machine of the class described, the combination with the mandrel, its journal-box, a loose collar adjacent to the box, and a member of the wheel-clamp, of a slip-collar interposed between the latter and the loose collar, for the purpose set forth.

5. In a machine of the class described, having a single mandrel and two grinding-wheels, and journal-boxes intermediate the wheels, of loose collars adjacent to the outer edges of the boxes, and a slip-collar and coil-spring interposed between one of said loose collars and the adjacent wheel-clamp, substantially as set forth.

845,879. CLUTCH. WILLIAM R. MAY, Newton, Mass. Original application filed Jan. 27, 1906, Serial No. 298,212. Divided and this application filed Apr. 20, 1906. Serial No. 312,826.

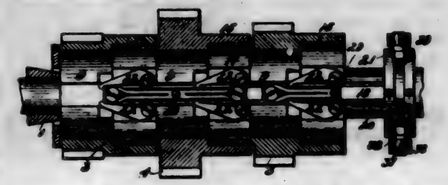

Claim.—1. In combination with a shaft and a wheel loosely mounted thereon, a clutch intermediate the wheel and shaft, an actuator movable in the direction of the length of the shaft, a lever pivoted adjacent thereto, and an adjustable lateral projection on the actuator arranged to engage said lever and move the same to cause connection of the clutch with the wheel.

2. The combination of a shaft, a wheel loosely mounted thereon, a clutch member intermediate the wheel and shaft, an actuator movable in the direction of the length of the shaft, a lever pivoted adjacent thereto having an angular projection engaging the clutch member and movable to press against the same on a line non-radial to the pivot, and a lateral projection on the actuator arranged to engage said lever when the actuator is moved and force the projection of the lever against the clutch to thereby cause connection of the same with the wheel.

3. The combination of a shaft, a wheel loosely mounted thereon and provided with a lateral recess, a clutch member secured to the shaft and having an arm within said recess adapted to be moved into engagement with the wall thereof, a lever pivoted to the body of the clutch and bearing against the arm thereof on a line passing outside of its pivot, and an actuator movable into contact with the lever to thereby force the same against the clutch-arm, and the latter against the wheel.

4. The combination of a shaft, a wheel loosely mounted thereon and provided with a lateral recess, a clutch member secured to the shaft and having an arm within said recess adapted to be moved into engagement with the wall thereof, a lever pivoted to the body of the clutch and bearing against the arm thereof, and an actuator movable lengthwise of the shaft and provided with a lateral protuberance having inclined sides adapted to move past and come into contact with the lever from either direction to thereby force the same against the clutch-arm, and the latter against the wheel.

5. The combination of a shaft, a wheel loosely mounted thereon and provided with a lateral recess, a clutch secured to the shaft and having an arm within said recess adapted to be moved into engagement with the wall thereof, a lever pivoted to the body of the clutch and bearing against the arm thereof, an actuator movable lengthwise of the shaft and provided with a lateral protuberance having inclined sides adapted to come into contact with the lever to thereby force the same against the clutch-arm, and the latter against the wheel, and means for varying the lateral extent of said protuberance, whereby the engaging pressure between the clutch-arm and wheel may be varied.

6. The combination of a shaft, a wheel loosely mounted thereon and formed with a lateral recess, a clutch having a hub secured to the shaft and arms extending on both sides thereof within the recess and adapted to engage the wall thereof, levers pivoted to the hub between the ends of the clutch-arms, each formed with an angular projecting portion engaging one of the arms, and an actuator between said levers movable lengthwise, carrying wedge members adapted to engage said levers and force them apart, to thereby expand the clutch-arms into engagement with the wheel.

7. The combination of a shaft, a wheel loosely mounted thereon and formed with a lateral recess, a clutch having a hub secured to the shaft and arms extending on both

sides thereof within the recess and adapted to engage the wall thereof, levers pivoted to the hub between the ends of the clutch-arms, each formed with an angular projecting portion engaging one of the arms, an actuator between said levers movable lengthwise carrying wedge members adapted to engage said levers and force them apart, to thereby expand the clutch-arms into engagement with the wheel, a collar movable longitudinally on the shaft to which said actuator is connected, and means for moving said collar.

8. In a clutch, an adjustable clutch-actuating wedge member consisting of a bar having on opposite sides inclined faces and divided longitudinally, and means for separating the divided sides.

9. In a clutch, a clutch-actuator consisting of a motor-bar and a wedge-bar secured thereto having separated, inclined sides resiliently joined together and movable apart.

10. In a clutch, a clutch-actuator consisting of a motor-bar, a wedge-bar secured thereto having separated, inclined sides resiliently joined together and movable apart, and a screw threaded into the motor-bar between the separable sides of the wedge-bar adapted to adjust the amount of separation thereof.

11. In a clutch, a clutch-actuator consisting of a motor-bar, a wedge-bar secured thereto and partially divided longitudinally, having inclined faces on the outer sides of the divided portion, and a screw threaded into the motor-bar between said inclined faces for separating the same.

12. In a clutch, a clutch-actuating wedge consisting of a bar divided through a part of its length having wedge-faces on the outer sides of the separated portions and divergent faces on the adjacent inner sides of said portions.

845,880. GUARD OR GATE FOR STREET-CARS, &c. GEORGE A. METCALF, Malden, Mass. Filed Aug. 28, 1906. Serial No. 332,368.

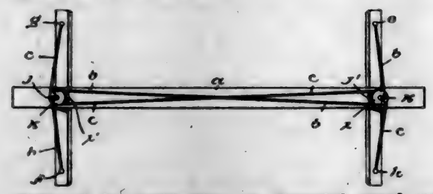

Claim.—1. In combination, an elongated guard and guard-supporting means, comprising a pair of independent cords, vertically-immovable supports therefor on the car, and cord-engaging members on the guard, the cords extending from said supports to the guard, said means having provisions for transmitting from end to end of the guard, movement imparted to either end, and for equalizing the height of the ends of the guard under all adjustments of which it is capable.

2. In combination, an elongated guard, and guard-supporting means, comprising a pair of independent cords, supports therefor, and cord-engaging members on the guard, the cords having supporting-bights which prevent independent downward movement of the ends of the guard, and holding-down bights which prevent independent upward movement of said ends.

3. In combination, an elongated guard, a pair of cords supporting the same, and supports for said cords, each cord being attached at one end to a support above one end of the guard, and at the other end to a support below the opposite end of the guard, and cord guiding and deflecting members on the guard, whereby the central portions of the cords are caused to extend lengthwise of the guard.

4. In combination, an elongated guard, supporting means comprising flexible cords engaged with the guard, and supports for said cords, the said means having provisions for equalizing the height of the ends of the guard, and means for locking the guard in a raised position, said means being adapted to be rendered inoperative by an endwise movement of the guard.

5. In combination, an elongated guard, supporting means comprising flexible cords engaged with the guard, and supports for said cords, the said means having provisions for equalizing the height of the ends of the guard, and a locking member adapted to engage the guard, the latter being longitudinally movable to disengage it from the catch.

6. In combination, an elongated guard, supporting means comprising flexible cords engaged with the guard, and supports for said cords, the said means having provisions for equalizing the height of the ends of the guard, a locking member adapted to engage the guard, and means for yieldingly holding the guard in engagement with said member.

845,881. SHEARS. JOSEPH G. MONCUS, Crowell, Tex. Filed Jan. 9, 1906. Serial No. 295,280.

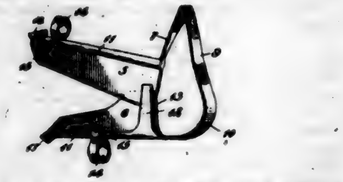

Claim.—1. An implement of the kind stated comprising a pair of blades, and a spring connecting the blades, said spring being extended angularly and in the same direction from the rear ends of the opposite blades and united at an acute angle offset from the blades.

2. An implement of the kind stated, comprising a pair of blades, and a bowed spring connecting the rear ends of the blades and offset angularly from the back of both blades in substantially the same direction.

845,882. FARE-REGISTER. OTTO N. MOORE, Indianapolis, Ind. Filed May 24, 1905. Serial No. 262,008.

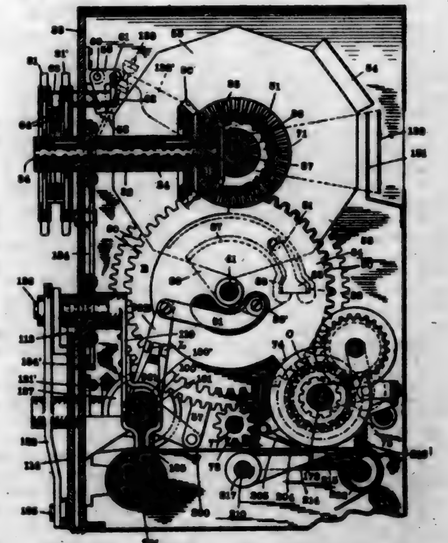

Claim.—1. In a fare-register, a registering mechanism for registering amounts less than one dollar, a registering mechanism for registering amounts of one dollar and over, a pair of independent actuators one for each of said registering mechanisms, transferring means between the first-

mentioned register and the second register, a single means for setting each of said actuators independently, and means for driving the actuators to actuate the registering mechanisms.

2. In a fare-register, a totalizer, a pair of independent setting means, one for predetermining amounts to be registered which are subdivisions of a unit and the other for predetermining amounts to be registered which are multiples of the unit, and intermediate connecting mechanism between said setting means and the totalizer for actuating the totalizer in accordance with the positions of the two setting means.

3. In a fare-register, the combination, with a totalizer consisting of a units portion and a multi-units portion with transferring mechanism therebetween, of an actuator for the units portion, and another independent actuator for the multi-units portion, and a single means for independently predetermining the actuating effect of each of said actuators upon its respective portion of the totalizer.

4. In a fare-register, the combination, with a totalizer consisting of a units portion and a multi-units portion with transferring mechanism therebetween, of an actuator for the units portion, and another independent actuator for the multi-units portion, and means for independently predetermining the actuating effect of each of said actuators upon its respective portion of the totalizer.

5. In a fare-register, a cash-fare totalizer, a ticket-fare totalizer, means for predetermining the amount of a fare to be registered, and means for selecting either of said totalizers and actuating the same in accordance with the setting of the predetermining means.

6. In a fare-register, the combination with a pair of totalizers each consisting of a units portion and a multi-units portion with transferring mechanism therebetween, of a pair of actuators for the units portions of the two totalizers, another independent pair of actuators for the multi-units portions of the pair of totalizers, a single means for independently setting each pair of actuators, and means for connecting one totalizer or the other with its actuators, and advancing the selected totalizer in accordance with its actuator setting.

7. In a fare-register, the combination with a pair of totalizers each consisting of a units portion and a multi-units portion with transferring mechanism therebetween, of a pair of actuators for the units portions of the two totalizers, another independent pair of actuators for the multi-units portions of the pair of totalizers, means for independently setting each pair of actuators, and means for connecting one totalizer or the other with its actuators and advancing the selected totalizer in accordance with its actuator setting.

8. In a fare-register, the combination with a totalizer consisting of a units portion and a multi-units portion with transferring mechanism therebetween, of an actuator for the units portion, another actuator for the multi-units portion, a single means for independently predetermining the actuating effect of each of said actuators upon its respective portion of the totalizer, a pair of fare-indicators corresponding to the portions of the totalizer, and intermediate connections between said single predetermining means and said fare-indicators for producing an indication of a fare to be registered.

9. In a fare-register, the combination with a totalizer consisting of a units portion and a multi-units portion with transferring mechanism therebetween, of an actuator for the units portion, another actuator for the multi-units portion, means for independently predetermining the actuating effect of each of said actuators upon its respective portion of the totalizer, a pair of fare-indicators corresponding to the portions of the totalizer, and intermediate connections between said predetermining means and said fare-indicators for producing an indication of a fare to be registered.

10. In a fare-register, the combination with a totalizer consisting of a units portion and a multi-units portion with transferring mechanism therebetween, of an actuator for the units portion, another actuator for the multi-units portion, a single means for independently predetermining the actuating effect of each of said actuators upon its respective portion of the totalizer, a pair of fare-indicators corresponding to the portions of the totalizer, intermediate connections between said single predetermining means and said fare-indicators for producing an indication of a fare to be registered, and means for exposing the fare indication subsequent to the actuation of the totalizer.

11. In a fare-register, the combination with a totalizer consisting of a units portion and a multi-units portion with transferring mechanism therebetween, of an actuator for the units portion, another actuator for the multi-units portion, means for independently predetermining the actuating effect of each of said actuators upon its respective portion of the totalizer, a pair of fare-indicators corresponding to the portions of the totalizer, intermediate connections between said predetermining means and said fare-indicators for producing an indication of a fare to be registered, and means for exposing the fare indication subsequent to the actuation of the totalizer.

12. In a fare-register, the combination with a totalizer, of means for indicating any desired fare within predetermined limits, said indicating means consisting of two portions, one for indicating dollars and the other for indicating fractions of dollars, means for actuating said indicator, and means for advancing the totalizer in accordance with the indication of the indicator.

13. In a fare-register, the combination with two independent totalizers, of an indicator capable of indicating any desired fares within predetermined limits, said indicator consisting of two portions one for indicating dollars and the other for indicating fractions of dollars, means for actuating said indicator, and a selecting means for actuating one or the other of said totalizers in accordance with the indicator actuation.

14. In a fare-register, the combination with a totalizer consisting of a units portion and a multi-units portion, of an actuator for the units portion, another actuator for the multi-units portion, an indicator having two portions corresponding with the portions of the totalizer, means for exposing said indicator only upon the actuation of the totalizer, a setting-indicator for indicating the position of the units-actuator, a second setting-indicator for indicating the position of the multi-units actuator, means for setting said several indicators and actuators, and means for actuating the actuators to advance the totalizer in accordance with the setting of the indicators.

15. In a fare-register, the combination with a totalizer consisting of a units portion and a multi-units portion, of an actuator for the units portion, another actuator for the multi-units portion, an indicator having two portions corresponding with the portions of the totalizer, means for exposing said indicator only upon the actuation of the totalizer, a setting-indicator for indicating the positions of the units-actuator and the multi-units actuator, means for setting said indicator and actuators, and a single means for actuating the actuators to advance the totalizer in accordance with the setting of the indicator.

16. A register-actuator comprising a pivoted disk carrying a concentric flange terminating at one end in a pawl-receiving pocket and a pawl-engaging shoulder, a second pivoted element having a concentric pawl-engaging portion terminating at one end in a pawl-receiving pocket and a pawl-engaging shoulder, and a pivoted pawl-carrying element carrying a pawl arranged between the first two elements with a free end adapted to be forced into either pocket by the pawl-engaging surface of the opposing element.

17. A register-actuator comprising a pivoted disk carrying a concentric flange terminating at one end in a pawl-receiving pocket, a second pivoted element having a concentric pawl-engaging portion terminating at one end in a pawl-receiving pocket and a pawl-engaging shoulder, and a pivoted pawl-carrying element carrying a pawl arranged between the first two elements with a free end adapted to be forced into either pocket.

18. A register-actuator comprising two movable elements having parallel detent-engaging portions each terminating in a detent-receiving pocket, and a detent-carrying element carrying a detent arranged between said two elements and having a portion adapted to be engaged by the detent-engaging surfaces and forced by either into the pocket of the other.

19. A register-actuator comprising two movable elements having parallel detent-engaging portions each terminating in a detent-receiving pocket, and a detent-carrying element carrying a detent arranged between said two elements and having a portion held by either into the pocket of the other.

20. A register-actuator comprising a shaft, a setting element mounted on said shaft and carrying a flange which is concentric with the shaft and terminate in a pawl-receiving pocket, a second element mounted on the shaft and having a periphery which is parallel with the flange of the other element and terminate in a pawl-receiving pocket, a register-actuating element also mounted on the shaft and carrying a pawl adapted to be engaged by the concentric portions of either of the first-mentioned elements and forced thereby into the pocket of the other element, and means for swinging the second element.

21. A register-actuator comprising a shaft, a setting element mounted on said shaft and carrying a flange which is concentric with the shaft and terminate in a pawl-receiving pocket, a second element mounted on the shaft and having a periphery which is parallel with the flange of the other element and terminate in a pawl-receiving pocket, a register-actuating element also mounted on the shaft and carrying a pawl adapted to be engaged by the concentric portions of either of the first-mentioned elements and held thereby into the pocket of the other element, and means for swinging the second element.

22. In a fare-register, the combination with two totalizers, of an actuator for each of said totalizers, a selector member capable of engaging either of said actuators, a reciprocating plate, intermediate connections between said plate and the selector for shifting the selector into engagement with either of said actuators by opposite movement of the plate from medial position, and means for driving the selector through the same actuating movement for either movement of the plate, said means consisting of a shaft connected to the selector, a two-armed lever carried by said shaft and having its ends extended in opposite directions from the shaft, and means carried by the plate for engaging one arm of the lever in one direction and the other arm of the lever in the opposite direction.

23. In a fare-register, the combination with two totalizers of an actuator for each of said totalizers, a selector member capable of engaging either of said actuators, means for shifting said selector into engagement with either of the totalizers, means for driving said selector through its actuating movement in either of its positions, an operating element operable in opposite directions from a medial position, and intermediate connections between said operating element and the selector-driving means for moving said driving means in the same direction upon movement of the operating member in either direction from its medial position.

24. In a fare-register, the combination with fare-registering mechanism, of a passenger-counter, an intermediate separable connection between said fare-register and the passenger-counter whereby the passenger-counter may either be automatically operated or remain inoperative during operation of the register dependent upon the condition of said separable connection.

25. In a fare-register, the combination with fare-registering mechanism, of a passenger-counter, an actuator therefor, means for independently actuating the passenger-counter and operating means dependent in its operation upon the operation of the registering mechanism, and means for connecting or disconnecting said operating means with the passenger-counter actuator.

845,882. TEMPORARY BINDER. LUCENA M. MORRAW, Waterbury, Conn. Filed Dec. 3, 1902. Serial No. 133,659.

Claim.—1. The wall-file consisting of the ring having a movable section, and the holder comprising a shank for attachment to the wall, and two jaws projected in opposite directions from the shank and formed to embrace the ring at two different points.

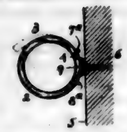

2. The wall-file consisting of the ring having swinging section 3 and the holder comprising a shank for attachment to the wall, and two jaws projected in opposite directions from the shank and formed to embrace the ring at two different points, one jaw having an open hook bent backwardly to receive and support the weight of the ring, and the other jaw provided with two lips to clasp the ring at opposite sides, whereby the weight of the ring and its load are supported by the hook upon the upper jaw, independently of the lips upon the lower jaw.

3. The wall-file consisting of a ring having a movable section, and the holder comprising a shank for attachment to the wall, the head of the shank being formed to embrace two parallel wires, and two jaws formed of a single wire folded to bring the two parts through the head of the shank, and the two jaws being projected in opposite directions from the shank and formed to embrace the ring at two different points, substantially as herein set forth.

845,884. TRAVELING CARRIER. DAVID M. MOTHERWELL, Chicago, Ill., assignor to The Whitman & Barnes Manufacturing Co., Akron, Ohio, a Corporation of Ohio. Filed Apr. 23, 1906. Serial No. 313,248.

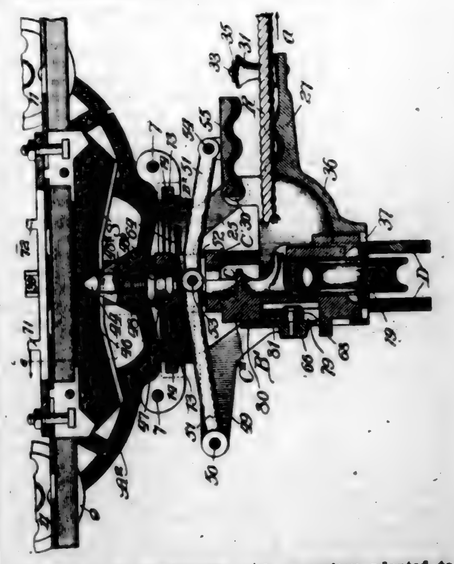

Claim.—1. In combination with a carriage adapted to travel on a horizontal overhead way, a dog adapted to move in vertical guides in said carriage, a stop on said way having inclined surfaces adapted alternately to raise said dog and to permit it to drop, an outer frame suspended from and swiveled to said carriage, an inner frame swiveled to said dog and adapted to turn with said outer frame, a clamp comprising a stationary member rigidly supported on said outer frame, a movable member pivoted to one end of a lever, a lever pivotally attached intermediate of its ends within said inner frame, fulcrumed at one end to said outer frame and attached at

the other to said movable clamp member, dog and lever adapted alternately to engage said inner frame and hold it in elevated position and to release it to fall within said outer frame to lock said clamp, and means for attaching a load to said inner frame, for the purposes described.

2. In a carrier adapted to be drawn along an overhead way, an outer frame, an inner frame vertically movable therein, a lever pivoted at one end to said outer frame at the other to the movable member of a rope-clamp and intermediate thereof to said inner frame, said lever extending in the direction of draft of said carrier and being adapted to support said inner frame in lowered position, a rope-clamp comprising a rigid member secured to said outer frame and a movable member pivoted to said lever and adapted to move with said inner frame, and rope-supporting pulleys mounted upon said inner frame, to turn in planes at approximately right angles to the direction of draft of said carrier.

3. In combination with a truck-carriage adapted to travel on a horizontal overhead way, a dog adapted to move in vertical guides in said carriage and elevate an inner frame, a stop on said way adapted alternately to raise and drop said dog, an outer frame swiveled to said truck-carriage, an inner frame swiveled to said dog and adapted to turn with said outer frame, a rope-clamp comprising a stationary member rigidly supported on said outer frame, and a movable member pivoted to one end of a lever, a lever attached intermediate of its ends to said inner frame, fulcrumed at one end to said outer frame and pivoted at the other to said movable clamp member, a crank member adapted to hold said inner frame in elevated position, a trip-lever and link adapted to rock said crank member and drop said frame, and a collar, embracing said dog, having a lever secured thereto pivoted to the outer frame and linked to said trip-lever and adapted to operate the same to rock said crank member when said dog and inner frame are raised by said stop.

4. In a carrier adapted to travel upon an overhead way, a truck-carriage, an outer frame, an inner frame therein carrying supporting-pulleys, a clamp comprising a rigid member upon said outer frame and a movable member secured to one end of a lever, a lever pivoted at one end to said outer frame and to said inner frame intermediate of its ends, a crank member adapted to support said inner frame in elevated position, a tripping-lever and link adapted to operate said crank member to alternately drop said inner frame into lowered position and support it in elevated position, a vertical movable dog swiveled to said inner frame, a collar embracing said dog having a lever end pivoted to said outer frame and a link connection with said tripping-lever, whereby elevating said dog lifts said inner frame and throws said crank member in position to support it and operation of said tripping-lever rocks said crank member from beneath said inner frame, substantially as described.

5. In a hay-carrier adapted to travel on an overhead way, supporting-pulleys and a rope-clamp on said carrier, a rope and pulley-block, said clamp projecting in the direction of draft of said carrier and said supporting-pulleys being set to turn at approximately right angles thereto, tripping mechanism adapted to be operated by contact with said pulley-block for locking said clamp, a tripping device on said way adapted to operate said tripping mechanism to lock said clamp independently of said pulley-block and means for unlocking said clamp, substantially as described.

6. In a hay-carrier, an outer frame, an inner frame vertically movable therein, a trip-lever operated by impact from below the carrier, a collar embracing a tripping-dog and having a lever end pivoted to said outer frame and link connections to said trip-lever, a tripping device adapted to operate said trip-lever from above through said lever end and link connections, a vertically-movable dog swiveled to said inner frame and adapted, when raised, to draw up said inner frame, a link from said trip-lever to a crank member, and a crank member adapted to be alternately reached by said trip-lever beneath said inner frame to support the same and sway from it to allow said inner frame to drop, whereby said inner frame may be dropped by impact from below the carrier or by said tripping devices, and lifted and locked in elevated position by raising said dog.

7. In combination with a track having a stop thereon adapted to engage and lift the tripping-dog of a hay-carrier, a hay-carrier on said track having an outer frame and an inner load-supporting frame vertically movable therein, a tripping-dog vertically movable in said outer frame and swiveled to said inner frame, a trip-lever D operable by impact from below the carrier, a link L secured to one end of said lever D and to the free end of a crank member, a crank member pivoted on said outer frame in position to be swung alternately under said inner frame to support the same, or away from it to permit it to drop, and a collar about said dog having a lever end pivoted on said outer frame and linked to the free end of the lever D, adapted to rock said crank member when said dog and inner frame are raised by engagement with said stop.

845,885. STEAM-GENERATOR. JOSEPH A. MUMFORD, Roslyn, N. Y., and DAVID W. ROSS, Amherst, Nova Scotia, Canada. Filed May 22, 1906. Serial No. 318,194.

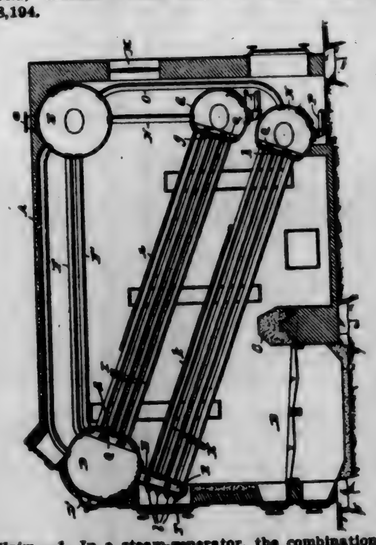

Claim.—1. In a steam-generator, the combination with the two independent banks of inclined water-tubes located one above the other, a drum at the upper forward ends of said banks of tubes and with which they both communicate and separate drums at the lower rear ends of said tubes, each bank being in communication with its own separate drum whereby each bank is free to expand and contract independently of the other, of an upper rear drum located approximately over the said lower rear drums, independent circulating-tubes connecting said lower rear drums and the upper drum whereby they may expand and contract independently, and circulating-tubes connecting the rear and forward upper drums said last-mentioned tubes being independent of both the banks of tubes and vertically-arranged circulating-tubes and the whole arrangement being such that longitudinal expansion and contraction of any set of tubes is not resisted by the longitudinal resistance of any other set of tubes.

2. In a steam-generator, the combination with a bank of tubes, the several tubes being staggered with relation to each other and a water-chamber into which said tubes enter, of a sinuous stay secured to the inner face of said water-chamber between the entrance-openings of the tubes; substantially as described.

3. In a steam-generator, the combination with a bank of tubes, the several tubes of said bank being staggered with relation to each other, of a water-chamber into which the ends of said tubes enter and a flanged sinuous stay secured to the inner face of said chamber between the entrance-openings of the tubes; substantially as described.

4. In a steam-generator, a bank of tubes wherein the several tubes are staggered with relation to each other, of a water-chamber into which the ends of said tubes enter and a sinuous stay secured to the inner face of said chamber between the entrance-openings of the tubes and oppositely-projecting sectional flanges on said stay for securing the same in position between the tube-openings; substantially as described.

5. In a steam-generator, a bank of tubes wherein the tubes are staggered with relation to each other, a water-chamber into which the ends of said tubes enter and a sinuous stay passing between the entrance ends of said tubes and having sectional flanges, said flange-sections being staggered in accordance with the arrangement of the tubes, for securing the stay in position between the tube-openings; substantially as described.

6. In a steam-generator, the combination with a bank of tubes, wherein the tubes are staggered with relation to each other, of a drum having a flat face into which the ends of said tubes are entered and a separate sinuous stay secured to the inner side of said flat face between the entrance-openings of the tubes; substantially as described.

7. In a steam-generator, the combination with a bank of tubes wherein the tubes are staggered with relation to each other, of a drum having a flat face into which the ends of said tubes are entered and a sinuous stay secured in position against the inner side of said flat face, said stay having oppositely-projecting sectional flanges for securing it in position; substantially as described.

8. In a steam-generator, the combination with a bank of tubes wherein the tubes are staggered with relation to each other, of a flat-faced header into one face of which said tubes are entered hand-holes in the other face of said header opposite the tube-entrances and separate sinuous stays uniting the flat faces of the header intermediate the tubes; substantially as described.

9. In a steam-generator, the combination with a bank of tubes wherein the tubes are staggered with relation to each other, of a header having flat faces into one of which the ends of said tubes are entered, hand-holes in the other face of said header opposite the tube-entrances and flanged sinuous stays uniting the flat faces of said header intermediate the tube-entrances and hand-holes; substantially as described.

10. In a steam-generator, the combination with a bank of tubes wherein the tubes are staggered with relation to each other, of a flat-faced header into one face of which the ends of said tubes are entered, hand-holes in the other of said faces opposite the tube-entrances and sinuous stays having oppositely-projecting sectional flanges united to the opposite faces of the header intermediate the hand-holes and tube-entrances; substantially as described.

845,886. STREET OR STATION INDICATOR. CHARLES A. MEYERS, Niagara Falls, N. Y. Filed Dec. 21, 1905. Serial No. 292,759.

Claim.—1. In a device of the character described, the combination of an indicating-apron having rows of apertures adjacent to its edges, driving-rollers having radially-arranged projections to enter said apertures, friction-rollers for retaining said apron upon said driving-rollers, drive-shafts, gears upon the latter, pinions slidably mounted upon the shafts of said driving-rollers but keyed to rotate therewith and adapted to be moved in and out of mesh with the gears on the drive-shafts, ratchet-wheels upon said drive-shafts, levers, yielding means to move said levers in one direction, spring-pawls carried by said levers and engaged with said ratchet-wheels, and electro-magnets for actuating said levers in the reverse direction.

2. In a device of the character described, the combination of an indicating-apron, a driving-roller therefor, a drive-shaft, a gear upon said drive-shaft, a pinion upon the shaft of said roller mounted to slide thereon and to rotate therewith, a sleeve upon said pinion, a latch-lever

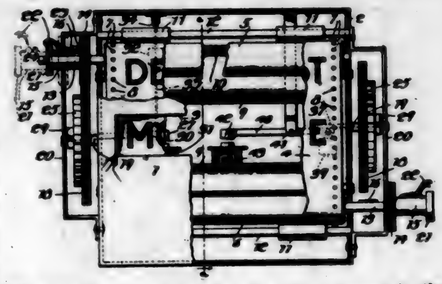

upon said sleeve and adapted to enter a groove in the shaft of said roller, substantially as shown and described.

845,887. DISPLAY OUTFIT. SAMUEL NEWMAN, Cincinnati, Ohio. Filed May 27, 1905. Serial No. 262,578.

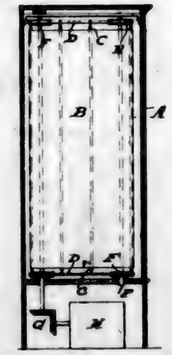

Claim.—In a display device, the combination of an upright front containing an exhibiting-space through which fabric supported back of it may be seen, the outline of this exhibiting-space being arranged to represent a human figure, an endless carrier upon which this fabric is held, upright rods around which this endless carrier is passed and whereby it is sustained in upright position, two endless sprocket-chains between which these rods are carried, sprocket-wheels around which these chains pass each in a horizontal plane and one below the other, upright shafts upon which these sprocket-wheels are mounted and means to rotate one of these shafts.

845,888. HOT-AIR FURNACE. PRESTON E. ODELL, Zion City, Ill. Filed Nov. 9, 1905. Serial No. 286,623.

Claim.—1. A furnace consisting of a fire-box having an escape-flue, a shell constituting a hot-air chamber enveloping said fire-box, a flue carried by said shell and which detachably engages the fire-box flue.

2. A furnace consisting of a fire-box, a shell constituting a hot-air chamber enveloping said fire-box, said shaft adapted to be detached from said fire-box, a heating-drum attached to and located in the shell, a flue attached to and located in the shell and attaching with said heating-drum and adapted to engage the fire-box flue.

3. A furnace consisting of a fire-box, a shell constituting a hot-air chamber enveloping said fire-box, said shell adapted to be detached from said fire-box, a heating-drum attached to and located in the shell, a flue attached to and located in the shell attaching with said heating-drum at two altitudes, a damper located in said flue between

the points of attachment with the drum, said flue adapted to engage and disengage the fire-box flue.

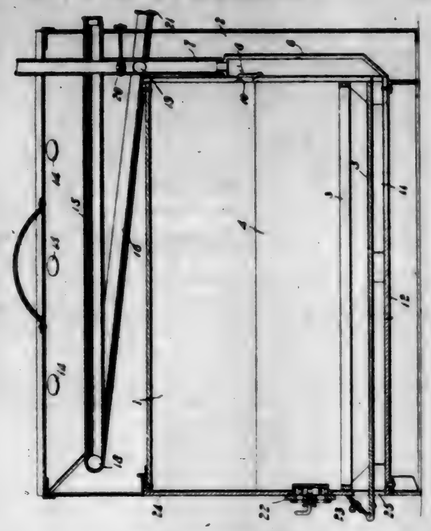

845,889. ERASER. GEORGE W. PARK, Denver, Colo. Filed May 11, 1905. Serial No. 259,914.

Claim.—1. A protecting-cover for a fountain-pen open at both ends and having one end externally and internally screw-threaded, said cover having an internally-screw-threaded cap screwing on the said cover, an externally-screw-threaded plug screwing into the cover and having a recess in each end, said plug being of even diameter throughout and having its screw-thread extending throughout its length, a block of rubber in one recess of the plug, and a blade tapering to a point and having a shank fitting in the other recess of said plug, the base of the blade being approximately of a width equal to the diameter of the plug.

2. A protecting-cover for a fountain-pen open at both ends and having one end internally screw-threaded, an externally-screw-threaded plug screwing into the cover and having a recess in each end, said plug being of even diameter throughout and having its screw thread extending the length thereof, a block of rubber in one recess of the plug, and a blade tapering to a point and having a shank fitting in the other recess of the said plug, the base of the blade being of a width approximately equal to the diameter of the plug.

3. As a new article of manufacture a protecting-cover for a fountain-pen, comprising an open-ended shell having one end reduced and internally screw-threaded at said reduced end, a removable cap fitting on the reduced end of the shell, and an exteriorly-screw-threaded plug screwing into the shell and provided with a block of rubber in one end and a blade in the other end.

845,890. ELECTRICALLY-DRIVEN STEP-BY-STEP MACHINE. ARTHUR F. POOLE, Wheeling, W. Va. Filed Oct. 22, 1902. Serial No. 128,358.

Claim.—1. An electrically-driven step-by-step machine, comprising an electromagnet, a neutral armature and a polarized armature, both of said armatures arranged to be actuated by said electromagnet, as set forth.

2. An electrically-driven step-by-step machine, comprising an electromagnet, a neutral armature arranged to be actuated thereby, and a polarised armature within the field of force of said electromagnet, as set forth.

3. An electrically-driven step-by-step machine, comprising an electromagnet, a neutral armature arranged to be actuated thereby, a polarised armature within the field of force of said electromagnet, and means operating in conjunction with said polarised armature for arresting the mechanism at a predetermined point, as set forth.

4. A secondary electric clock comprising a clock-train, an electromagnet, a neutral armature arranged to be actuated thereby, a polarised armature within the field of force of said electromagnet, and means operating in conjunction with said polarised armature for arresting the clock-train at a predetermined point, as set forth.

5. A secondary electric clock comprising a clock-train and time-indicating hands an electromagnet, neutral armature arranged to be actuated thereby, a polarised armature within the field of force of said electromagnet, and means operating in conjunction with said polarised armature for arresting the clock-train when the minute-hand is in its uppermost position, as set forth.

6. An electrically-driven step-by-step machine, comprising a framework, an electromagnet having a yoke and pole-pieces, said yoke and pole-pieces constituting the pillars of the framework, a movable armature, a train, and means whereby said train is advanced by the movement of said armature, as set forth.

7. An electrically-driven step-by-step machine, comprising an electromagnet, pole-pieces and yoke therefor, an armature pivoted between said pole-pieces, a permanent magnet attached to said yoke, a train, and means whereby said train is advanced by the movement of said armature, as set forth.

8. An electrically-driven step-by-step machine, comprising an electromagnet, pole-pieces and yoke therefor, an armature pivoted between said pole-pieces, a pawl pivoted to said armature and a permanent magnet attached to said yoke, as set forth.

9. In an electrically-driven step-by-step machine, an electromagnet having front and back frames, a rock-shaft supported thereby, and a polarised armature and a detent carried by said rock-shaft, whereby the position of the detent is controlled by the direction of the current through the electromagnet, as set forth.

10. In an electrically-driven step-by-step machine, front and back frames, a rock-shaft of non-magnetic material supported thereby, and a polarised armature carried by said rock-shaft, as set forth.

11. In an electrically-driven step-by-step machine, an electromagnet for operating the same, a polarised armature, and a detent operating in conjunction therewith to arrest the mechanism, as set forth.

12. An electrically-driven step-by-step machine, comprising an electromagnet having a yoke and a permanent magnet attached thereto, a neutral armature and a polarised armature, both of said armatures arranged to be actuated by said electromagnet, as set forth.

13. An electrically-driven step-by-step machine, comprising an electromagnet having a yoke and a permanent magnet attached thereto, an armature arranged to be actuated by said electromagnet, and a polarised armature within the field of force of said electromagnet, as set forth.

14. An electrically-driven step-by-step machine, comprising an electromagnet having a yoke and a permanent magnet attached thereto, an armature arranged to be actuated by said electromagnet, a polarised armature within the field of force of said electromagnet, and means operating in conjunction with said polarised armature for arresting the mechanism at a predetermined point, as set forth.

15. An electrically-driven step-by-step machine, comprising a driving-electromagnet having a yoke and a permanent magnet attached thereto, a polarised armature, and a detent operating in conjunction therewith to arrest the mechanism, as set forth.

16. An electrically-driven step-by-step machine, comprising an electromagnet, a moving armature, a pawl pivoted to said armature and arranged to advance the mechanism upon the return movement of said armature and a polarised armature in the same field of force as said moving armature, as set forth.

17. An electrically-driven step-by-step machine, comprising an electromagnet, a moving armature therefor, a driving-wheel, means for actuating said driving-wheel upon the return stroke of said armature and a polarised armature in the same field of force as said moving armature, as set forth.

18. In combination, a secondary electric clock, a circuit therefor and an electric bell included in said circuit, the magnets of said bell being so adjusted as to be unaffected by the normal currents operating the clock, as set forth.

19. A secondary electric clock having one element adapted to be operated by a normal current, a second element adapted to be operated on the reversal of the current, and a third element adapted to be operated by an augmented current, all of said elements being included in a single electric circuit, as set forth.

845,891. STABLE IMPLEMENT. GEORGE S. PRESCOTT, New London, N. H. Filed Oct. 15, 1906. Serial No. 338,887.

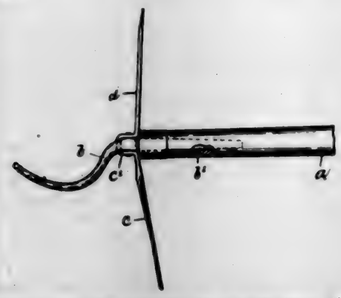

Claim.—As a new article of manufacture, the herein-described stable implement consisting of a handle, a forwardly-extended fork having a tang adapted to be driven into the handle, a hoe-blade and a cleaning-point extended in opposite ways having an intermediate bent portion which embraces the head of the fork and is adapted to be secured thereto, the tines of the fork being extended upward in a direction away from the hoe-blade substantially as described.

845,892. COMBINED WATER AND CHEMICAL SPRINKLING SYSTEM. STEPHEN C. RADFORD, Oshkosh, Wis. Filed July 23, 1906. Serial No. 327,303.

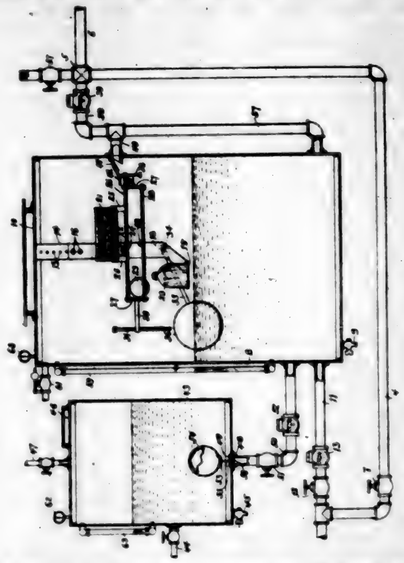

Claim.—1. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the column of water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure above the column of water, an outlet-pipe leading from said tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the extinguishing agent to sprinkle and discharge from the piping, when a fire occurs, a branch pipe leading from the outlet-pipe and through the side of the tank, a valve at the inner open end of the branch pipe, means for normally holding said valve at an open position, means, when a fire occurs, for chemically charging the water in the tank, and means, when the water is so charged, for automatically closing the valve and thereby causing the pressure of the generated gas to force the chemically-charged water from the tank and through the outlet-pipe thereof and into the system of piping and out of the discharge-openings of said piping.

2. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the column of water, an inlet-pipe leading into the tank for conducting water into said tank, which water is normally maintained at a certain level by the excess pressure above the column of water, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, when a fire occurs, a branch pipe leading from the outlet-pipe and through the side of the tank, a pivoted valve at the inner open end of the branch pipe, a tiltably-carried contact normally engaging the valve in a manner to hold said valve open, means, when a fire occurs, for chemically charging the water in the tank, and a float-ball adapted, when the system of piping is opened up by the heat generated from a fire and the air-pressure on the water is thereby relieved, to be raised by the then inflowing water, and when so raised to operate upon the tiltable contact and thereby remove said contact from engagement with the valve and permit a closing of said valve.

3. In a sprinkler system, the combination of a chemical-

tank having a column of water therein and an air-filled space above the column of water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure above the column of water, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from said piping, when a fire occurs, a branch pipe leading from the outlet-pipe and through the side of the tank, a pivoted valve at the inner open end of the branch pipe, a tiltably-carried and adjustable contact normally engaging the valve in a manner to hold said valve open, means, when a fire occurs, for chemically charging the water in the tank, and a float-ball adapted, when the system of piping is opened up by the heat generated from a fire and the air-pressure on the water is thereby relieved, to be raised by the then inflowing water, and when so raised to operate upon the contact and thereby remove said contact from engagement with the valve and permit a closing of said valve.

4. In a sprinkler system, the combination of a chemical-tank, having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excessive pressure above the column of water, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner open end of the branch pipe, means for normally holding this valve at an open position, a tiltable runway in the tank having a weighted ball therein adapted to roll from one end of the runway to the opposite end thereof, when said runway is tilted, a float-ball adapted, when the system of piping is opened up by the heat generated from a fire and air-pressure on the water is thereby relieved, to be raised by the then inflowing water, and when so raised to act upon and tilt one end of the runway so as to cause the ball to roll toward the opposite end thereof and thereby complete said tilting, a fragile chemical-receptacle supported in the tank and adapted to be struck and broken, when the runway is so tilted, and thereby charge the water with the chemical, and means, when the water is so charged, for automatically closing the valve and thereby causing the pressure of the generated gas to force the water from the tank.

5. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure above the column of water, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner open end of the branch pipe, means for normally holding said valve at an open position, a tiltable runway in the tank and having a weighted ball therein adapted to roll from one end of the runway to the other, when said runway is tilted, an arm extending from the runway and carrying a contact, a float-ball adapted, when the system of piping is opened up by the heat generated from a fire and air-pressure on the water is thereby relieved, to be raised by the then inflowing water, and when so raised to act upon the contact-arm and tilt one end of the runway so as to cause the ball to roll toward the opposite end thereof and thereby complete said tilting, a fragile chemical-receptacle supported in the tank and adapted to be struck and broken when the runway is so tilted, and thereby charge the water with the chemical, and means, when the water is so charged, for automatically closing the valve and thereby causing the pressure of the generated gas to force the chemically-impregnated water from the tank.

6. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure above the column of water, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner open end of the branch pipe, means for normally holding said valve at an open position, a tiltable runway in the tank having a weighted ball therein adapted to roll from one end of the runway to the other, when said runway is tilted, an arm extending from the runway and carrying an adjustable contact, a float-ball adapted, when the system of piping is opened up by the heat generated from a fire and air-pressure on the water is thereby relieved, to be raised by the then inflowing water, and when so raised to act upon the contact-arm and tilt one end of the runway so as to cause the ball to roll toward the opposite end thereof and thereby complete said tilting, a fragile chemical-receptacle supported in the tank and adapted to be struck and broken when the runway is so tilted and thereby charge the water with the chemical, and means, when the water is so charged, for automatically closing the valve and thereby causing the pressure of the generated gas to force the chemically-impregnated water from the tank.

7. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure above the column of water, an outlet-pipe leading from the lower portion of the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner open end of the branch pipe, means for normally holding said valve at an open position, a tiltable runway in the tank having a weighted ball therein adapted to roll from one end of the runway to the opposite end thereof, when said runway is tilted, a chemical-receptacle carried by and tiltable with the runway, a float-ball adapted, when the system of piping is opened up by the heat generated from a fire and air-pressure on the water thereby relieved, to be raised by the then inflowing water, and when so raised to act upon and tilt one end of the runway so as to cause the ball to roll toward the opposite end thereof and thereby complete said tilting and cause the dumping of the chemical contents of the receptacle into the water, and means, when the water is so charged with the chemical, for automatically closing the valve and thereby causing the pressure of the generated gas to force the chemically-charged water from the tank and through the system of piping and out of the discharge-openings of said piping.

8. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure above the column of water, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner open end of the branch pipe, means for normally holding said valve at an open position, a tiltable runway in the tank having a weighted ball therein adapted to roll from one end of the runway to the opposite end thereof, when said runway is tilted, a chemical-receptacle carried by and tiltable with the runway, a float-ball adapted, when the system of piping is opened by

the heat generated from a fire and air-pressure on the water thereby relieved, to be raised by the then inflowing water, and when so raised to act upon and tilt one end of the runway so as to cause the ball to roll toward the opposite end thereof and thereby complete said tilting and dump the chemical contents of the receptacle, a fragile receptacle for chemicals supported in the tank, and adapted to be struck and broken when the runway is so tilted, and thereby charge the water with the chemical contents thereof, and means, when the water is so charged with the chemicals, for automatically closing the valve and thereby cause the pressure of the generated gas to force the chemically-impregnated water from the tank and through the system of piping and out of the discharge-openings of said piping.

9. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure above the column of water, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner open end of said branch pipe, means for normally holding said valve at an open position, a tiltable chemical-agent-carrying frame, means, when a fire occurs and the system of piping is opened up by the generated heat, for automatically tilting the frame and dumping the chemicals into the water, and means, when the water is thus chemically charged for automatically closing the valve and thereby causing the pressure of the generated gas to force the water from the tank and through the outlet-pipe and into the system of piping and out of the discharge-openings of said piping.

10. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank which water is normally maintained at a certain level by the excess pressure thereabove, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner open end of said branch pipe, means for normally holding the valve at an open position, a tiltable chemical-agent-carrying frame, a float-ball adapted, when the system is opened up by the heat generated from a fire and air-pressure on the water thereby relieved, to be raised by the then inflowing water, and when so raised to act on the tiltable frame and dump the chemicals into the water, and means, when the water is so charged with chemicals, for automatically closing the valve and thereby causing the pressure on the generated gas to force the chemically-charged water from the tank and through the outlet-pipe into the system of piping, and out of the discharge openings of said piping.

11. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure thereabove, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet and extending through the side of the tank, a valve pivoted at the inner open end of said branch pipe, a tiltable chemical-agent-carrying frame, said frame having a contact-arm normally engaging the valve and holding said valve at an open position, and means, when a fire occurs and the system of piping is opened up by the generated heat, for automatically tilting the frame and dumping the chemical into the water, the said tilting of the frame also withdrawing the contact-arm from engagement with the valve and permitting the closing of said valve, and thereby causing the pressure of the generated gas to force the chemically-charged water from the tank and through the outlet-pipe thereof and out of the discharge-openings of the system of piping.

12. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by excess pressure thereabove, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve pivoted at the inner open end of said branch pipe, a tiltable chemical-agent-carrying frame, said frame having a contact-arm engaging the valve and normally holding said valve in an open position, and a float-ball adapted, when the system of piping is opened up by the heat generated from a fire and air-pressure on the water thereby relieved, to be raised by the then inflowing water, and when so arranged to act upon and tilt one end of the tiltable frame and thereby discharge the chemicals carried by the frame, and at the same time withdraw the contact-arm from engagement with the valve and allow said valve to automatically close, and thereby cause the pressure of the generated gas to force the chemically-charged water from the tank and through the outlet-pipe thereof, and through the system of piping and out of the discharge-openings of said piping.

13. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure thereabove, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner open end of said branch pipe, means for normally holding the valve at an open position, means, when a fire occurs, for chemically charging the water in the tank, means, when the water is so charged, for automatically closing the valve and thereby causing the pressure of the generated gas to force the chemically-charged water from the tank and through the outlet-pipe thereof and into the system of piping and out of the discharge-openings of said piping, an auxiliary tank, means for admitting a column of water therein, and for admitting a pressure agent above the column of water, and a pipe connecting the auxiliary tank with the chemical-tank.

14. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure thereabove, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner open end of said branch pipe, means for normally holding the valve at an open position, means, when a fire occurs, for chemically charging the water in the tank, means, when the water is so charged, for automatically closing the valve and thereby causing the pressure of the generated gas to force the water from the tank and through the outlet-pipe thereof and into the system of piping and out of the discharge-openings of said piping, an auxiliary tank having a discharge-opening in its lower portion, means for admitting a column of water into the auxiliary tank, and for admitting a pressure agent above the column of water in said tank, a float-ball within the

auxiliary tank and carrying a valve adapted to close the discharge-opening, when the water in the auxiliary tank lowers, and a pipe connecting the auxiliary tank with the chemical-tank.

15. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure thereabove, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner open end of said branch pipe, means for normally holding the valve at an open position, means, when a fire occurs, for chemically charging the water in the tank, means, when the water is so charged, for automatically closing the valve and thereby causing the pressure of the generated gas to force the chemically-charged water from the tank and through the outlet-pipe thereof and into the system of piping and out of the discharge-openings of said piping, an auxiliary tank, means for admitting a column of water in said tank and a pressure agent above the column of water, and a valve-controlled pipe connecting the auxiliary tank with the chemical-tank.

16. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure thereabove, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner end of said branch pipe, means for normally holding the valve at an open position, means, when a fire occurs, for chemically charging the water in the tank, means, when the water is so charged, for automatically closing the valve and thereby causing the pressure of the generated gas to force the chemically-charged water from the tank and through the outlet-pipe thereof and into the system of piping and out of the discharge-openings of the piping, a water-pipe leading from a source of supply and with which the water-inlet pipe of the chemical-tank is connected, said pipe leading from the source of supply extending to and connecting with the system of piping.

17. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure thereabove, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner end of said branch pipe, means for normally holding the valve at an open position, means, when a fire occurs, for chemically charging the water in the tank, means, when the water is so charged, for automatically closing the valve and thereby causing the pressure of the generated gas to force the chemically-charged water from the tank and through the outlet-pipe thereof and into the system of piping and out of the discharge-openings of the piping, a water-pipe leading from a source of supply and with which the water-inlet pipe of the chemical-tank is connected, said pipe leading from the source of supply extending to and connecting with the system of piping, a valve in said pipe leading from the source of water-supply, and a valve in the water-pipe leading to the chemical-tank, said valves adapting the two systems to be used simultaneously, or independently of each other.

18. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the lower portion of the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure above the column of water, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner open end of said branch pipe, means for normally holding the valve at an open position, a tiltable chemical agent-carrying frame, means, when a fire occurs, and the system of piping is opened up by the generated heat, for automatically tilting the frame and dumping the chemicals into the water, means, when the water is so charged, for automatically closing the valve and thereby causing the pressure of the generated gas to force the water from the tank and through the outlet-pipe and into the system of piping, and out of the discharge-openings of said piping, a main water-pipe leading from a source of supply, and with which main pipe the inlet-pipe of the chemical-tank is connected, said main pipe extending to and connecting with the system of piping.

19. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure thereabove, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner open end of said branch pipe, means for normally holding the valve at an open position, a tiltable chemical-agent-carrying frame, a float-ball adapted, when the system of piping is opened up by the heat generated from a fire, and the air-pressure on the water thereby relieved, to be raised by the then inflowing water, and when so raised to act on the tiltable frame and dump the chemicals into the water, means, when the water is so charged with chemicals, for automatically closing the valve and thereby causing the pressure of the generated gas to force the chemically-charged water from the tank and through the outlet-pipe and into the system of piping and out of the discharge-openings of said piping, a main water-pipe leading from a source of supply, and with which main pipe the inlet-pipe of the chemical-tank is connected, said main pipe extending to and connecting with the system of piping.

20. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure thereabove, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner open end of said branch pipe, means for normally holding the valve at an open position, means, when a fire occurs, for chemically charging the water in the tank, means, when the water is so charged, for automatically closing the valve and thereby causing the pressure of the generated gas to force the chemically-charged water from the tank and through the outlet-pipe thereof and into the system of piping, and out of the discharge-openings of said piping, an auxiliary tank, means for admitting a column of water therein and a pressure agent above the column of water, a pipe connecting the auxiliary tank with the chemical-tank, a main water-pipe leading from a source of supply, and with which main pipe the inlet-pipe of the chemical-tank is connected, said main pipe extending to and connected with the system of piping.

21. In a sprinkler system, the combination of a chemical-tank having a column of water therein and an air-filled space above the water, an inlet-pipe leading into the tank for conducting the water into said tank, which water is normally maintained at a certain level by the excess pressure thereabove, a water-gage on the tank indicating the level of water therein, an outlet-pipe leading from the tank, a system of piping with which the outlet-pipe connects, heat-operated means for causing the piping to open up and thereby permit the extinguishing agent to sprinkle and discharge from the piping, a branch pipe leading from the outlet-pipe and extending through the side of the tank, a valve at the inner open end of said branch pipe, means for normally holding the valve in an open position, means, when a fire occurs, for chemically charging the water in a tank, means, when the water is so charged, for automatically closing the valve and thereby causing the pressure of the generated gas to force the chemically-charged water from the tank and through the outlet-pipe thereof and into the system of piping, and out of the discharge-openings of said piping, a pressure-indicator communicating with the tank, a safety-valve, leading from the tank, an auxiliary tank, means for admitting a column of water therein and a pressure agent above the column of water, a water-gage on the auxiliary tank, a pressure-gage on the auxiliary tank, a pipe connecting the auxiliary tank with the chemical-tank, a main water-pipe leading from a source of supply, and with which main pipe the inlet-pipe of the chemical-tank is connected, said main pipe extending to and connected with the system of piping.

845,893. ADVERTISING DEVICE. JAMES E. RAINWATER, Georgetown, S. C. Filed Oct. 6, 1906. Serial No. 337,764.

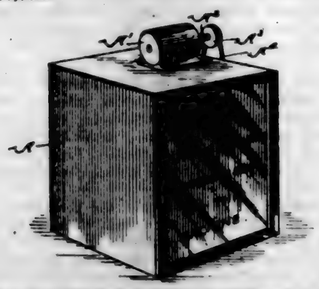

Claim.—An advertising device, comprising a casing, a plurality of rollers therein, a sheet adapted to travel over said rollers, a gear-wheel provided with a continuous internal gear and a mutilated external gear, a pinion meshing with the external gear, a sprocket-wheel adapted to drive said sheet and meshing with the mutilated gear, and means for continuously rotating the pinion.

845,894. THERMOSTAT. HENRY E. REEVE, New York, N. Y., assignor to Automatic Fire Alarm Company, New York, N. Y., a Corporation of New York. Filed Feb. 2, 1906. Serial No. 299,100.

Claim.—1. In a thermostatic device, a casing, terminal plates contained therein, means connected thereto for automatically effecting the circuit upon change of temperature, and a chamber adjacent the terminal plates to which the leading-in wires pass, and insulating material filling and closing said chamber.

2. In a thermostatic device, a casing, automatic short-circuiting mechanism contained therein, a chamber having entrance-passages for the leading-in wires, cups surrounding the passages, and insulating material contained within said cups and said chamber.

3. A thermostatic device comprising a casing, automatic short-circuiting mechanism contained therein, a metallic disk centered in said casing, insulating-disks on each side thereof, two terminal plates mounted above one disk, and two plates for the short-circuiting mechanism mounted below the other disk, rivets connecting the respective plates, conducting-wires attached to the terminal plates, and means for sealing the ends of said wires into said casing and preventing the entrance of moisture.

4. In a thermostatic device, a casing, a metallic disk, a pair of terminal plates, a pair of supporting-plates, a compound bar having one end secured to one supporting-plate, an adjusting-contact carried by the other supporting-plate adjacent the opposite end of said bar, means for connecting corresponding terminal and supporting plates, and means for insulating said terminal and supporting plates from said metallic disk and from said casing.

5. A thermostatic device comprising a casing, an insulating-disk centered and supported by the bottom of the casing, an automatic circuit-closing mechanism supported above said disk, terminal plates, electrical means of connection between said plates and said circuit-closing device, and insulating material for sealing in said terminal plates to prevent the entrance of moisture.

6. In a thermostat, a metallic disk, an insulating-disk on each side thereof, four plates, two situated beyond each disk, rivets for securing said plates and disks together and forming a rigid body, means for automatically effecting the current through said plates upon changes of temperature and an imperforate casing surrounding and inclosing said parts.

7. A thermostat comprising a casing having top and bottom portions, a metallic disk, two supporting-plates, rigidly secured to but insulated from said disk, a curved bar carried by one plate and susceptible to changes of temperature, a stationary contact carried by the other plate and disks of insulating material spacing said metallic disks and said plates from the top and bottom portions of the casing, and means for centering the parts in said casing.

8. A thermostat comprising a metallic disk, a pair of terminal plates arranged on one side thereof but insulated therefrom, a pair of supporting-plates, corresponding to said terminal plates, arranged on the other side of said disk but insulated therefrom, means for securing the corresponding terminals and supporting-plates to said disk and electrically connecting them to each other, and parts carried by said supporting-plates adapted to change the conditions in an electric circuit upon change in thermal conditions.

9. A thermostat comprising a rigid disk, a pair of terminal plates arranged on one side thereof, a pair of supporting-plates arranged on the other side, rivets securing said plates to each other and to said disk and a thermal alarm device carried by said supporting-plates.

845,895. MUSIC-LEAF TURNER. GIUSEPPE REGONDI, New Brighton, N. Y. Filed Mar. 8, 1906. Serial No. 304,978.

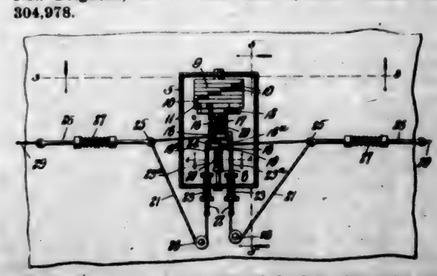

Claim.—1. The combination with leaf-turning arms and a rotatable drum causing the rotation of said arms, of a

pair of toothed wheels rotating with said drum, a dog for rotating each toothed wheel, a pair of treadles, and connection from each treadle to one dog to cause the rotation of the drum, and to the other dog to throw it out of engagement with its toothed wheel, the connection being such that each treadle rotates a different dog.

2. The combination with leaf-turning arms, and a rotatable drum for causing the swinging of said arms, of a pair of toothed wheels rotating with said drum, a pair of hinged and swinging dogs, each adapted to engage a toothed wheel, a pair of devices under control of an operator, and connection from each device to one dog to swing it and to the other dog to move it on its hinge out of engagement with its toothed wheel, the connection being such that each device swings a different dog.

3. The combination with leaf-turning arms, of a rotatable drum connected with said arms, a pair of dogs controlling said drum, a pair of slides, connection from each slide to one dog for rotating the drum and to the other dog to throw it to an inoperative position, the connection of each slide being such that each slide rotates a different dog, and means for moving the slides.

4. The combination with leaf-turning arms, of a rotatable drum connected with said arms, a pair of toothed wheels turning with said drum, a pair of swinging arms loosely journaled on the shaft of the drum, a pair of dogs each hinged to one of the swinging arms, and adapted to engage one of the toothed wheels, a pair of devices under control of an operator, and connection from each device to one of the swinging arms to cause the dog and the drum to rotate and to the dog on the other arm to throw it out of engagement with its toothed wheel, the connections being such that each device swings a different arm and throws a different dog out of engagement.

5. The combination with the leaf-turning arms, of a rotatable drum connected with said arms, a pair of toothed wheels turning with said drum, a pair of swinging arms loosely journaled on the shaft of the drum, a pair of dogs each hinged to one of the swinging arms and adapted to engage one of the toothed wheels, a pair of slides under control of an operator, a pair of devices each arranged to engage one of the pivoted dogs, and a pair of cables each connected at one end to a swinging arm, loosely connected between its ends to a slide and connected at its other end to the device arranged to engage the other dog, each cable connecting the slides and the dogs so that each slide swings a different arm and operates a different dog on its hinge.

6. The combination with leaf-turning arms, of a rotatable drum connected with said arms, a pair of toothed wheels turning with said drum, a pair of swinging arms loosely journaled on the shaft of the drum, a pair of springs each tending to move one arm in one direction, a pair of L-shaped dogs, each pivoted to one of the swinging arms at one end and engaging a toothed wheel at its other end, a pair of slides each having a portion disposed over one of the dogs, a pair of springs holding said slides away from the dogs, a pair of cables each connected at its ends to the swinging arm of one dog and the slide of the other dog, and a pair of slides under the control of an operator, each connected to a cable intermediate its ends, so that each of said last-named slides swings a different arm and operates a different first-named slide disposed over a dog.

7. The combination with leaf-turning arms, of a rotatable drum causing the operation of said arms, a pair of dogs controlling the rotation of the drum, a pair of devices under the control of an operator and connections from each device to one dog to cause it to rotate the drum, and to the other dog to make it inoperative, the connections being such that each device rotates the drum by a different dog.

8. The combination with leaf-turning arms, of a rotatable drum causing the operation of said arms, a pair of rotatable dogs controlling the rotation of the drum, a pair of slides under the control of an operator, and a pair of cables each connecting one dog and one slide to cause the rotation of the drum, and the other dog and the same slide to make said dog inoperative, the cables being so connected that each device rotates the drum by a different dog.

845,896. SPEED-VARYING MECHANISM. GUSTAV T. RENNERFELT, Scranton, Pa., assignor to Walter H. Foster, New York, N. Y. Filed June 8, 1905. Serial No. 264,241.

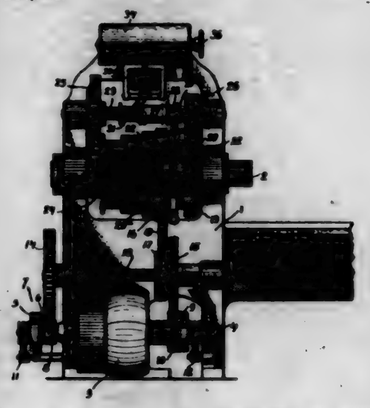

Claim.—1. In speed-varying mechanism, the combination of an electric motor, a spindle to be driven at selective rates of speed, an intermediate transmission device, a direct connection between said intermediate transmission device and said spindle, a controller serving to give the motor a plurality of speeds, a first transmitting device connecting said motor and said intermediate transmission device, a second transmitting device for connecting said motor with said intermediate transmission device at a different speed ratio from the first, the relative speed ratios of said transmitting devices being such as to give a progression in spindle speeds of a value approximate to a geometrical ratio, and means actuated by said controller for bringing said transmitting devices into action alternatively.

2. In speed-varying mechanism, the combination of an electromotor, a spindle to be driven thereby at selective speeds, a shaft intermediate the motor and the spindle, a plurality of gear-trains for transmitting motion from the motor to the shaft, a connection from said shaft to said spindle for impelling the latter at a determined relative ratio of speed, clutches in the gear-trains for rendering said trains alternatively active, a controller, and connections between the controller and the motor and the clutches.

3. In speed-varying mechanism, the combination of an electromotor, a spindle to be driven thereby at selective speeds, a shaft intermediate the motor and the spindle, a plurality of gear-trains for transmitting motion from the motor to the shaft, a connection from said shaft to said spindle for impelling the latter at a determined relative ratio of speed, another connection from said shaft to said spindle for impelling the latter at a lower relative speed ratio, means controlled by an electromagnet for rendering either of said connections effective, clutches in the gear-trains for rendering said trains alternatively active, a controller, and connections between the controller and the motor, clutches and the electromagnet.

4. In speed-varying mechanism, the combination, substantially as set forth, of a spindle, a driving device therefor, a train for transmitting motion from the driving device to the spindle, a clutch in said train, mechanism connected with the spindle for moving the clutch, an electromagnet, means for controlling the magnet, and connections between said mechanism and the armature of the magnet for throwing said mechanism into action.

5. In speed-varying mechanism, the combination, substantially as set forth, of a spindle, a driving device therefor, a train for transmitting motion from the driving device to the spindle, a clutch in said train, a rotary sliding member turning with the spindle and connected with said clutch and having an exterior thread, an electromagnet, means for controlling the magnet, a disengageable nut element for said thread, and a connection between said nut element and the armature of the magnet.

6. In speed-varying mechanism, the combination, substantially as set forth, of an electric motor, a spindle to be driven thereby at selective speeds, a plurality of pinions loose on the armature-shaft of the motor, diverse-ratio gear-trains connecting the pinions with the spindle, a magnetic clutch at each pinion for locking the pinions alternatively to the armature-shaft, and means for electrically controlling said motor and clutches.

7. In speed-varying mechanism, the combination, substantially as set forth, of a spindle, driving means therefor, a transmitting-train connecting the driving means with the spindle, a tooth-clutch interposed in said train, means for throwing the clutch while one of its members is in motion, and a spring interposed in the train at the clutch to receive the driving strain as the clutch is thrown.

8. In speed-varying mechanism, the combination, substantially as set forth, of a spindle, an electric motor for driving the same, a plurality of diverse-ratio gear-trains connecting the spindle with the motor, magnetic clutches in said trains, toothed clutches in said trains, power-transmitting springs in the trains at the toothed clutches, and means for controlling the clutches.

9. The combination of an electric motor, a gear loose on each end of the motor-armature shaft, means for connecting said gears with said shaft selectively, a counter-shaft, two gears thereon, each engaging one of the gears first mentioned, a spindle, a driven member driven from said counter-shaft, means for connecting said driven member directly with said spindle, and reduction-gearing intermediate said member and said spindle.

10. The combination of an electric motor, a gear loose on each end of the motor-armature shaft, means for connecting said gears with said shaft selectively, a counter-shaft, two gears thereon, each engaging one of the gears first mentioned, a spindle, a driven member driven from said counter-shaft, means for connecting said driven member directly with said spindle, reduction-gearing intermediate said member and said spindle, and magnetically-controlled means for connecting said driven member and said spindle through said reduction-gearing.

11. The combination of the motor, the plurality of primary gear ratios, the spindle, the direct-drive connection from the primary gearing to the spindle, and the magnetically-controlled reduction-gearing, substantially as described.

845,897. BRIDGE AND BRIDGE GUARD OR RAILING. SAMUEL RICHARDSON, Tulare, Cal. Filed Aug. 29, 1906. Serial No. 332,532.

Claim.—1. In a bridge, the combination with fixed supports and a floor secured thereon; of side panels movably connected to the floor, and means for holding the side panels in upright positions.

2. The combination with a bridge; of side panels movably connected thereto, means for holding said panels in upright positions, and means for holding the panels in lowered, laterally-extended positions.

3. The combination with a bridge and laterally-extending arms thereon; of side panels movably connected to the bridge and adapted to rest upon the arms, and means for holding the panels in raised positions.

4. The combination with a bridge having laterally-extending arms; of side panels hinged to the bridge and adapted to be supported in lowered positions by the arms, and means engaging the panels and arms for holding the panels in upright positions.

5. The combination with a bridge having laterally-extending arms; of side panels hinged to the bridge and adapted when lowered to rest upon the arms, and hooked rods connected to the panels and detachably secured to the arms to hold the panels in upright positions.

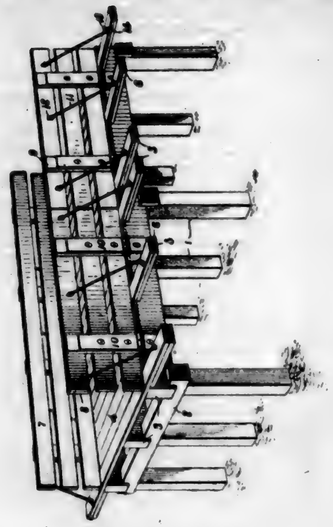

845,898. MINING-DRILL. JASPER N. RICKLES, Altoona, Ala. Filed May 5, 1906. Serial No. 315,443.

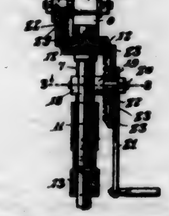

Claim.—1. In a drill of the character described, the combination with a supporting-frame, of a shaft journaled therein, said frame having a longitudinally-disposed slot at one side of the shaft, a bracket slidable on the frame and extending over the shaft, fastening means for the bracket passing through the slot, a gear mounted on the shaft, and a gear mounted on the bracket intermeshing with the gear of the shaft.

2. In a drill of the character described, the combination with a supporting-frame having longitudinally-disposed slots, of a driven shaft journaled in the frame, one of the slots being disposed in substantial alinement with the shaft, the other being located longitudinally of the other, devices longitudinally adjustable in the slots, relatively adjustable intermeshing gearing carried by the devices and shaft, and tool-holding means mounted on the shaft.

3. In a drill of the character described, the combination with a supporting-frame, of a shaft journaled in the frame, said frame having a slot disposed alongside the

shaft, a bracket longitudinally adjustable on the frame, means for holding the bracket against movement, said means being located in the slot, a handle-crank mounted on the bracket, another handle-crank having an adjustable mounting on the supporting-frame in substantial alinement with the shaft, intermeshing gearing carried by the handle-cranks and shaft, and tool-holding means mounted on the shaft.

4. In a drill of the character described, the combination with a supporting-frame having a presser-head at one end and provided with longitudinally-disposed slots, of a driven shaft mounted longitudinally in the frame, said shaft having an oppositely-beveled gear-wheel and a bit-socket, one of the slots being disposed in line with the shaft, the other being located at one side of the same, studs longitudinally adjustable in the slots, clamps for holding the studs against movement in said slots, handle-cranks mounted on the studs and located on opposite sides of the gear-wheel, and gear-wheels carried by the handle-cranks, and each having a plurality of annular sets of teeth, either of which are movable into mesh with the gear-wheel of the shaft upon the adjustment of the studs.

845,899. COMBINATION CALIPER-GAGE. BERNARD J. ROEHM, Cincinnati, Ohio, assignor of one-half to James Mulligan, Cincinnati, Ohio. Filed Apr. 30, 1906. Serial No. 314,516.

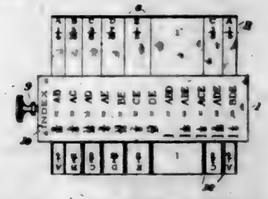

Claim.—1. In combination caliper-gages, a slotted case having a dovetail in one end, a spring-bearing in said dovetail adapted to normally project beyond the inner surface of said end, a thumb-screw adapted to engage the end of said case and said spring-bearing respectively, and a plurality of gages adapted to be inserted in said slotted case and be held transversely therein by said spring-bearing and thumb-screw respectively.

2. In combination caliper-gages, a slotted case, gages in said case adapted to measure external and internal dimensions, means for holding said gages in said case, an index upon each gage adapted to indicate its dimensions and an index upon said case adapted to indicate the dimensions of the gages in different combinations.

3. In combination caliper-gages, a slotted case, gages in said case adapted to measure external and internal dimensions, means for holding said gages in adjusted positions in said case, an index upon each gage adapted to indicate its dimensions, an index upon said case adapted to indicate the dimensions of gages in different combinations and a micrometer attachment adapted to be held in said slotted case to increase the variations in measurements.

4. In combination caliper-gages, a slotted case, gages in said case adapted to measure external and internal dimensions, means for holding said gages in adjusted position in said case and a micrometer attachment adapted to be held in said case to increase the variations in measurements.

5. In combination caliper-gages, a slotted case having a dovetail in one end, a spring-bearing in said dovetail adapted to normally project beyond the inner surface of said end and a plurality of gages adapted to be inserted in said slotted case and be held transversely therein by said spring-bearing.

845,900. TROLLEY-WHEEL AND HARP. EDWARD S. ROLAND, Cleveland, Ohio. Filed Oct. 19, 1905. Serial No. 283,450.

Claim.—1. A trolley-wheel having a central current-conducting member, separate side members between which said central member is mounted, separate bushings for said side members terminating at said central member, a current-conducting shaft having separate bearing-rings within said bushings, and a harp adapted to support said shaft and wheel.

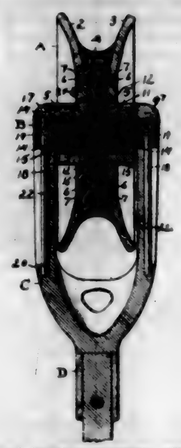

2. A trolley-wheel having separate sides and a bushing within each side, a shaft for said wheel having separate bearing-rings over which said bushings are sleeved, a current-conducting contact member for said wheel and shaft between said sides and a conductor within the same adapted to contact with said shaft and said contact member at different points about the shaft, and a support for said shaft and wheel.

3. The combination of a trolley-wheel comprising a central member and separable side members, with a shaft having bearing-bushings for the said side members, a contact-spring for said central member and said shaft, and a harp adapted to support said shaft and wheel.

4. The combination of a trolley-wheel comprising a central member and separable side members, with a shaft and separate steel bushing members for said shaft and said side wheel members, a contact member for said central wheel member and said shaft, a harp adapted to support said shaft and wheel, and locking members between said shaft and harp.

5. The combination of a trolley-wheel comprising a central member having side locking projections and side members having openings adapted to receive said locking projections, in combination with a shaft and harp adapted to support said wheel, and a spring within said central member constructed to contact therewith and with said shaft at different radial positions at intervals about the shaft.

6. A trolley-wheel comprising a central ring member and side disk members having steel bushings, in combination with a shaft having separated steel bearing-rings with a contact portion between them, a contact-spring engaged with said central member and said shaft-contact portion, and a harp adapted to support said shaft and having removable locking-wires at each side adapted to engage with the ends of said shaft.

845,901. FASTENING OF BLADES IN TURBINES. RICHARD SCHULZ, Berlin, Germany. Filed Jan. 26, 1906. Serial No. 298,036.

Claim.—1. A fastening for blades and spacing-pieces for the blades, comprising an annular undercut groove in the element of a turbine, and the blade having a suitable continuous opening through and within the body of the root, the body of the metal of said blade being expanded into the undercut of the groove, substantially as described.

2. A fastening for blades and spacing-pieces for the blades, comprising an annular undercut groove in the element of a turbine, and the member to be secured therein having a circular opening therein lying within the groove, the metal adjacent to said opening being expanded into the undercut of the groove, substantially as described.

3. In a fastening for blades and spacing-pieces for the blades, the combination with the element of a turbine, having an annular undercut groove therein, of the spacing-piece or blade-root in said groove having openings therethrough, the body of the metal surrounding the openings being expanded into the undercuts of said groove, and a pin of suitable profile driven into the openings, substantially as described.

4. In a fastening for blades and spacing-pieces for the blades, the combination with an element of a turbine, having an annular groove therein, of blades and spacing-pieces having an opening therethrough lying within the groove, said opening larger at one face than at the other, and the smaller end of the opening surrounded by a boss entering the larger end of the opening of the next adjacent part, said boss expanded into the larger end of the next adjacent opening, substantially as described.

5. In a fastening for blades and spacing-pieces of blades, the combination with an element of a turbine having an annular undercut groove therein, of the blades and spacing-pieces having an opening therethrough lying within the groove and larger at one end than at the other, a boss around the smaller end of the opening entering the larger end of the next adjacent part, said boss expanded into the larger end of the opening and the body of the part adjacent the opening forced into the undercut of the groove, substantially as described.

6. The combination with a turbine element having an annular undercut groove; of members to be secured therein having holes formed partially through them, and perforated when in juxtaposition, the fin or boss being expanded into the hole of the next adjacent member and the body of metal surrounding the hole being expanded into the undercut of the grooves.

845,902. DISK HARROW. CHARLES S. SHARP, Auburn, N. Y., assignor to International Harvester Company, a Corporation of New Jersey. Filed Nov. 26, 1906. Serial No. 345,247.

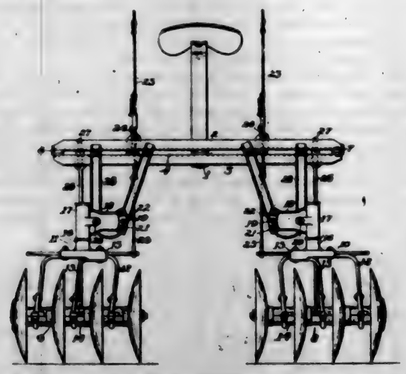

Claim.—1. A disk harrow comprising, in combination, a draft-frame substantially rectangular in form comprising front and rear members, independent disk gangs, suitable frames in which said disk gangs are mounted, means for connecting said gang-frames with the rear members of said draft-frame, said means comprising vertically-arranged stems secured to said gang-frames, sleeves in which said stems are journaled, laterally-extending arms integral with said sleeves, means for securing said arms to the rear members of said draft-frames, comprising extension-brackets adapted to be secured at their upper and lower ends respectively to the rear members of said draft-frame, and said arms.

2. A disk harrow comprising, in combination, a draft-frame substantially rectangular in form comprising front and rear members, independent disk gangs, suitable frames in which said disk gangs are mounted, means for connecting said gang-frames with the rear members of said draft-frame, said means comprising vertically-arranged stems secured to said gang-frames, sleeves in which said stems are journaled, laterally-extending arms integral with said sleeves, means for securing said arms to the rear members of said draft-frames, comprising U-shaped extension-brackets adapted to be secured at their upper ends to the rear members of said draft-frame, and have their lower ends adjustably secured to said arms.

845,903. DUPLEX DUMPING AND SHAKING GRATE. PEARL L. SHAW, Detroit, Mich. Filed Feb. 23, 1905. Serial No. 246,881.

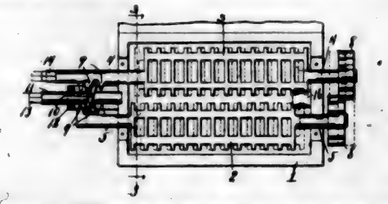

Claim.—1. Grate-bars having end shafts upon which they are mounted to oscillate and to reciprocate longitudinally, means connecting said shafts to cause said bars to oscillate in unison, and means engaging the opposite ends of the shafts of said bars to impart to the bars a reciprocatory movement.

2. Grate-bars having shafts upon which they are journaled to oscillate and to reciprocate longitudinally, gears connecting said bars to cause them to oscillate in unison, and means independent of said gears for imparting a rectilinear reciprocation to said bars in opposite directions.

3. The combination with a fire-pot, of the grate-bars mounted on shafts journaled therein to oscillate and to reciprocate, means connecting the shafts of said bars at one end to cause them to oscillate in unison, a short shaft supported between the ends only of the shafts of said bars, carrying a disk obliquely mounted thereon, there being upon the shafts of said bars projections between which the opposed edges of said disk lie, whereby rotation of said centrally-disposed shaft will cause said bars to reciprocate.

4. The combination with a fire-pot, of the grate-bars having shafts at their ends which project through the end walls of the fire-box and upon which the bars are journaled to oscillate and to reciprocate longitudinally, meshing gears upon the shafts of said bars at one end exterior to the fire-pot, whereby said bars are coupled to oscillate in unison, a shaft supported between the shafts of the bars at the opposite end of the fire-box and exterior thereto, an oblique disk upon said centrally-disposed shaft, the shafts of the grate-bars having projecting lugs thereon between which the said disk engages, whereby the rotation of said centrally-disposed shaft will cause the grate-bars to reciprocate.

845,904. WEFT-REPLENISHING LOOM. HARRY W. SMITH, North Grafton, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Sept. 12, 1901. Serial No. 75,136.

Claim.—1. In a loom, a shuttle adapted to contain a supply of filling, a feeler adapted to feel for the filling in the shuttle, the wall of the shuttle and the feeler being provided the one with a magnetic and the other with a

magnetised body, and filling-replenishing means operable upon the movement of the feeler into abnormal position.

2. In a loom, a shuttle adapted to contain a supply of filling, a feeler adapted to feel for the filling in the shuttle, and yieldingly held in normal position, the exterior surface of the wall of the shuttle and the feeler being provided the one with a magnetic and the other with a magnetised body, and filling-replenishing means operable upon the movement of the feeler into abnormal position.

3. In a loom, a shuttle adapted to contain a supply of filling, a calipering-feeler yieldingly supported in normal position, one having an exposed magnetic and the other an exposed magnetised body, the body carried by the shuttle being on the wall thereof and filling replenishing or supplying means operable upon movement of the feeler into abnormal position due to the coöperation of the said exposed magnetic and magnetised bodies.

4. In a filling-replenishing loom, a shuttle adapted to contain a supply of filling, a calipering-feeler yieldingly supported upon the framework of the loom adjacent one end of the lay, said shuttle and feeler having at all times, the one an exposed magnetic and the other an exposed magnetised body and filling-replenishing means operable upon movement of the feeler into abnormal position due to the coöperation of the exposed magnetic and magnetised bodies.

5. In a loom provided with filling-replenishing mechanism, a shuttle adapted to contain a supply of filling, means to control the operation of said mechanism, means including a yieldingly-mounted calipering-feeler adapted to be moved by the filling in the shuttle, and two continually-exposed metallic bodies carried by the feeder and the wall of the shuttle respectively, one of said bodies being magnetic and the other magnetised, filling-induced movement of the feeler preventing magneto-motive coöperation of said metallic bodies until the filling becomes nearly exhausted, coöperation of said bodies being then permitted to effect movement of the feeler and operation of the said controlling means.

6. In a filling-replenishing loom, a shuttle to contain filling, and a feeler, said shuttle having an opening for the entrance of said feeler and one having a magnetic and the other a magnetised body, the body carried by the shuttle being on the wall thereof, a calibrating-gage carried by said feeler to determine by the exhaustion of the filling to a predetermined point when said magnetic and magnetised bodies shall be engaged to put said feeler in its abnormal position, and filling-supplying means operative after the feeler has been put into its abnormal position to supply fresh filling to the loom.

7. In a filling-replenishing loom, a shuttle to contain filling, and a feeler, one having a magnetic and the other a magnetised body, the body carried by the shuttle being on the wall thereof, an adjustable calibrating-gage carried by said feeler to determine by the exhaustion of the filling to a predetermined point when said magnetic and magnetised bodies shall be engaged to put said feeler, in its abnormal position, and filling-supplying means operative after the feeler has been put into its abnormal position to supply fresh filling to the loom.

8. In a filling-replenishing loom, a shuttle having a hole in its side, a filling-carrier in said shuttle, a magnetic body attached to said shuttle near said hole, a feeler-magnet having an attached calibrating-gage to meet the filling on said carrier and prevent the engagement of said feeler-magnet and said body until after the filling has been unwound to a predetermined extent at which time the calibrating-gage enters the shuttle far enough to permit the feeler-magnet to engage said magnetic body and be moved thereby into its abnormal position.

9. In a loom, a shuttle provided with a hole at one side, and a feeler, said shuttle and feeler having one a magnetic and the other a magnetised body, the body carried by the shuttle being on the wall thereof, a filling-carrier adapted to receive upon it a tube containing filling, a calibrating-gage connected with said feeler and capable of entering farther and farther into the shuttle as the filling is unwound from said tube, the feeler meeting the body connected with said shuttle when the filling has been exhausted from said tube to a predetermined extent and putting said feeler into its abnormal position, and filling-changing means set in operation by putting said feeler in its abnormal position to supply fresh filling to the shuttle.

10. A lay having a shuttle-box, a shuttle in said box containing filling, a feeler to contact with the filling, and means to cause the shuttle-body, prior to full exhaustion of the filling, to engage and move said feeler with it in the movement of the lay and shuttle away from the fell.

11. In a loom, a shuttle, and a movable feeler, one having a magnetic and the other a magnetised body, a filling-carrier, a lay to move said shuttle toward and from the fell, and means to sustain said feeler, the absence of the filling from the filling-carrier to a predetermined extent causing said magnetic and magnetised bodies to be coupled and move said feeler with the shuttle and lay as they move backwardly from the fell.

12. A loom-shuttle comprising a body having in one of its walls a hole, and a connected metallic plate connected to a wall of the shuttle on the exterior surface thereof to act as the armature for a magnet.

13. A loom-shuttle comprising a body open at its top and bottom and having spring-arms to embrace and hold frictionally the head of the filling-carrier, the side wall of said shuttle having a connected metallic plate constituting the armature of a magnet.

14. In a loom, a lay having a shuttle-box; a shuttle provided with a metallic body attached to a wall thereof, a filling-carrier in said shuttle, a magnetised feeler, means to sustain said feeler, a gage adapted to meet the filling on said filling-carrier at a movement of the lay toward the fell and thereby prevent the contact of said magnetised feeler with the metallic body of the shuttle, the absence of filling from the filling-carrier to a predetermined point permitting said magnetised feeler to be coupled with the metallic body of the shuttle and to be moved backwardly therewith when the lay completes its backward stroke from the fell.

15. In a loom, a shuttle, a feeler, one having a magnetic and the other a magnetised body, a filling-carrier in said shuttle, a lay having a shuttle-box to receive said shuttle, means to move said lay toward and from the fell, a gage controlled by said feeler and adapted to be struck by the filling and moved with the lay toward the fell, the exhaustion of the filling from the filling-carrier to a predetermined point enabling the gage to enter the shuttle for a distance sufficient to couple said magnetic and magnetised bodies and effect the movement of said feeler backwardly with the lay away from the fell.

16. In a loom, a shuttle-box, and a shuttle, each provided with a hole, a feeler to contact with the filling in the shuttle, an armature and a magnet one of which is carried by the feeler and the other by the wall of the shuttle-body.

17. In a filling-replenishing loom, a lay having a shuttle-box open at one side, a shuttle coacting with said box and provided with an opening at one side, and a metallic body attached to the side of the shuttle adjacent said hole.

845,905. PERCUSSIVE HAND-TOOL. HARRY B. STOCKS and JOHN R. WEBB, Jr., Manchester, England, assignors to The Climax Patents Limited, Manchester, England. Filed Sept. 28, 1906. Serial No. 336,582.

Claim.—1. In percussive hand-tools, power-hammers and similar tools in which a piston or tup is reciprocated to and fro within a cylinder, inlet-ports conducting two continuous streams of air, one under high pressure for the blow stroke and one under low pressure for the return stroke, in combination with a distribution-valve having two unequal areas, the small area being constantly acted upon by air under pressure and the large area being intermittently acted upon by air under pressure substantially as described.

2. In percussive hand-tools, power-hammers and similar tools in which a piston or tup is reciprocated to and fro within a cylinder, inlet-ports conducting two continuous streams of air under pressure, one under high pressure for the blow stroke and one under low pressure for the return stroke, in combination with a distribution-valve having two unequal areas, the small area being constantly acted upon by air under pressure and the large area being intermittently acted upon by air under pressure, with means for cutting off admission of air under high pressure when the piston has made but a portion of its stroke substantially as described.

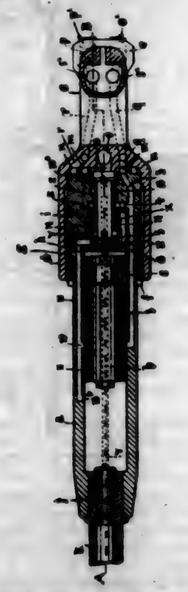

3. In a percussive hand-tool, power-hammer or similar tool, a cylinder, a piston slidable within such cylinder, inlet-ports for two continuous streams of air under different pressures, a valve-box, a hollow distribution-valve of unequal diameters slidable in such valve-box formed with exhaust-passages, unequal areas formed on such valve to form differential pressure areas, ports to conduct constantly air under pressure to the smaller pressure area of the valve, ports governed by the piston to conduct intermittently air under pressure to the larger area of the valve, an exhaust-port to atmosphere, ports formed in the cylinder communicating with the distribution-valve and valve-box, substantially as described.

4. In a percussive hand-tool or the like, a cylinder, a piston slidable within such cylinder, inlet-ports for two continuous streams of air under different pressures, a valve-box, a hollow distribution-valve of unequal diameters slidable therein formed with exhaust-passages, unequal areas formed on such valve to form differential pressure areas, ports to conduct constantly air under pressure to the smaller area of the valve, ports governed by the piston to conduct intermittently air under pressure to the larger area of the valve, an expansion-valve slidable in the valve-box, ports to conduct air under low pressure constantly to one area of the expansion-valve, ports governed by the piston to conduct air under high pressure intermittently to the other area of the expansion-valve, an exhaust-port to atmosphere, ports formed in the cylinder communicating with the valves, and valve-box, substantially as described.

5. A power-hammer consisting of a cylinder, means for carrying a tool in the mouth of the cylinder, a piston slidable in the cylinder, a recess formed in the rear end of such piston, a handle secured to the cylinder, a valve-box within such handle, a disk secured between the cylinder end and the valve-box, a hollow distribution-valve of unequal diameters slidable within the valve-box, exhaust-passages in such valve and an annular recess, unequal areas on the valve to form two differential pressure areas, an exhaust-passage communicating with the hollow distribution-valve and to atmosphere, inlet-ports in the handle for two continuous streams of air under high and low pressure, throttle-valves governing such inlets and means for operating the throttle-valves, ports to conduct constantly air under high pressure to the smaller area of the distribution-valve to actuate the valve in one direction, ports governed by the distribution-valve to conduct air under high pressure behind the piston for the blow stroke, ports governed by the distribution-valve to exhaust air in front of the piston to atmosphere, ports governed by the piston to conduct air under high pressure at the end of the blow stroke around the annular recess in the rear of the piston to the larger area of the distribution-valve to actuate the valve in the contrary direction, ports governed by the distribution-valve to conduct air under low pressure in front of the piston for the return stroke, ports governed by the distribution-valve to exhaust air behind the piston to atmosphere, and ports governed by the piston to exhaust air under pressure acting on the larger area of the distribution-valve, at the end of the return stroke substantially as described.

6. A power-hammer consisting of a cylinder, means for carrying a tool in the mouth of the cylinder, a piston slidable in the cylinder, a recess formed in the rear end of such piston, a handle secured to the cylinder, a valve-box within such handle, a disk secured between the cylinder end and the valve-box, a hollow distribution-valve of unequal diameters slidable within the valve-box, exhaust-passages in such valve, and an annular recess, unequal areas on the valve to form two differential pressure areas, an exhaust-passage communicating with the hollow distribution-valve and to atmosphere, inlet-ports in the handle for two continuous streams of air under high and low pressure, throttle-valves, governing such inlets and means for operating the throttle-valves, ports to conduct constantly air under high pressure to the smaller area of the distribution-valve to actuate the valve in one direction, an expansion-valve slidable in the valve-box, equal pressure areas at each end of such expansion-valve, ports to conduct constantly air under low pressure to the rear of such expansion-valve, ports governed by the distribution-valve to conduct air under high pressure behind the piston for the blow stroke, ports governed by the piston to conduct air under high pressure admitted behind the piston to the front pressure area of the expansion-valve to move the valve backward and cut off the admission of air under high pressure behind the piston when the piston has made but a portion of the blow stroke, ports governed by the distribution-valve to exhaust air under pressure in front of the piston to atmosphere, ports governed by piston to admit air under high pressure around the recess in the rear of the piston to the larger area of the distribution-valve to slide the valve backward, ports governed by the distribution-valve to admit air under low pressure to the front of the piston for the return stroke, ports governed by the distribution-valve to exhaust air behind the piston to atmosphere, and ports governed by piston to exhaust air under pressure acting on the larger area of the distribution-valve, and on the front area of the expansion-valve at the end of the return stroke, substantially as described.

845,906. GUIDING AND SUPPORTING MECHANISM FOR CANOPY-STANDARDS. PHILIP F. SWART, Brockport, N. Y. Filed Apr. 1, 1905. Renewed July 26, 1906. Serial No. 327,964.

Claim.—1. As a means for guiding supporting and locking a slidable and swinging standard, a supporting-frame, a tubiform guide, a closed slot in the wall of such guide having a transverse extension, a stud on such standard for engaging such slot, such supporting-frame coöperating

with the transverse extension in such slot and the stud on such standard to lock such standard in its vertical position, such standard slidable through a suitable opening therefor in such frame in alinement with such tubiform guide and the wall of such guide carrying such slot extending through such opening in such supporting-frame.

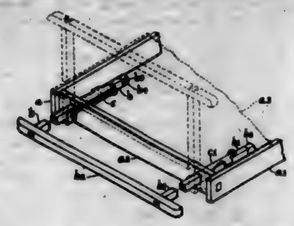

2. As a means for guiding supporting and locking a slidable and swinging standard, a tubiform guide, a closed slot in the wall of such guide having a transverse extension, a support for such guide, a stud on such standard for engaging such slot, means coöperating with the transverse extension in such slot and the stud on such standard to lock such standard in its vertical position, such standard slidable through a suitable opening therefor in such frame in alinement with such tubiform guide.

3. As a means for guiding supporting and locking a slidable and swinging standard, a supporting-frame, a tubiform guide, a closed slot in the wall of such guide having a transverse extension, a stud on such standard for engaging such slot, such supporting-frame coöperating with the transverse extension in such slot and the stud on such standard to lock such standard in its vertical position, such standard slidable through a suitable opening therefor in such frame in alinement with such tubiform guide and the wall of such guide carrying such slot extending through such opening in such supporting-frame, such stud on such standard arranged to pass out of engagement with such slot when such standard is moved to its inmost horisontal position.

4. As a means for guiding supporting and locking a slidable and swinging standard, a tubiform guide, a closed slot in the wall of such guide having a transverse extension, a support for such guide, a stud on such standard for engaging such slot, means coöperating with the transverse extension in such slot and the stud on such standard to lock such standard in its vertical position, such standard slidable through a suitable opening therefor in such frame in alinement with such tubiform guide, such stud on such standard arranged to pass out of engagement with such slot when such standard is moved to its inmost horisontal position.

845,907. SHEET-FEEDING DEVICE. EMIL TYDEN, Hastings, Mich. Filed June 8, 1905. Serial No. 264,217.

Claim.—1. In a machine for the purpose indicated, in combination with a fixed table, a vertically-movable platen for supporting a pile of blanks at the end of the fixed table; means for lifting the platen; vertical guides between which it is lifted; dogs on said guides adapted to engage under the edges of the pile of blanks and to yield back to permit the pile to pass them, and means on the fixed table for advancing a pile of blanks on the platen below the level at which the dogs thus engage.

2. In a machine for the purpose indicated, in combination with a vertically-movable platen for carrying a pile of blanks; supports at the sides of the pile and dogs on said supports adapted to engage under the pile at a distance above the lower limit of the movement of the platen; a fixed table adjacent to one edge of the platen at said lower limit, and means mounted on said fixed table for moving the pile from the latter onto the platen when it is at said lower limit.

3. In a machine for the purpose indicated, in combination with a vertically-movable platen for carrying a pile of blanks, means for lifting it to feed the blanks upward; means for engaging under the lower edges of the pile when it is thus lifted; means for permitting the platen to be lowered away from the pile when the latter is thus engaged; a fixed table adjacent to one edge of the platen at the lower limit of the latter, and means on said fixed table for advancing the pile of blanks therefrom onto the platen under the elevated pile.

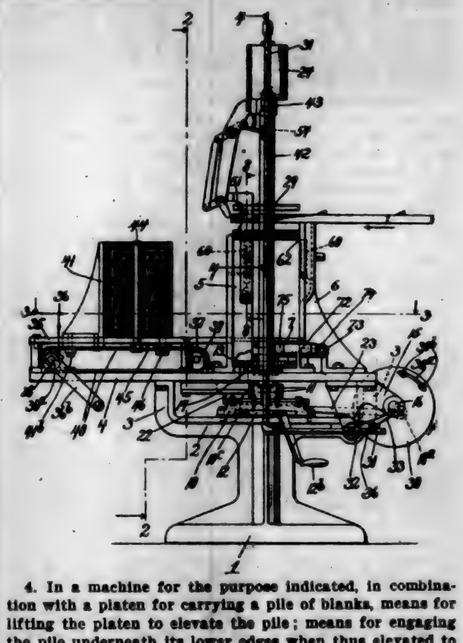

4. In a machine for the purpose indicated, in combination with a platen for carrying a pile of blanks, means for lifting the platen to elevate the pile; means for engaging the pile underneath its lower edges when thus elevated to uphold it independently of the platen; a fixed table adjacent to one edge of the platen at depressed or lowered position, and means mounted on the table for moving the pile of blanks therefrom onto the platen underneath the elevated pile.

5. In a machine for the purpose indicated, in combination with a platen for carrying a pile of blanks; a screw-shaft or standard for said platen; a divided nut coöperating with the screw-shaft for upward movement of the latter; means for rotating one of said coöperating elements to elevate the shaft and the platen; means for spreading the divided nut to permit the shaft and platen to descend; guides between which the platen moves vertically; dogs mounted on said guides adapted to engage the pile of blanks under its edges at elevated position; a table adjacent to the platen at lowered position, and means for moving the pile of blanks from the table onto the platen.

6. In a machine for the purpose indicated, in combination with means for supporting and elevating a pile of blanks; means for engaging underneath the edges of the pile when it is elevated for supporting it independently of the elevating means; means for permitting the elevating means to be withdrawn downward, and means for advancing a new pile laterally onto the elevating means under the elevated pile.

7. In a machine for the purpose indicated, in combination with means for supporting and elevating a pile of blanks, means for engaging the pile underneath its lower edges when the bottom thereof is elevated to a determined level, adapted, when thus engaged to support it independently of the elevating means and without further elevation; means adapted to be advanced against the top of the pile for encountering and engaging the top blank having a range of operative position for such action which extends from a limited distance above said determined level down to the same; means for permitting the support to descend after such engagement of the pile, and means for advancing a new pile laterally onto the lower support.

8. In a machine for the purpose indicated, in combination with a platen for supporting and elevating a pile of blanks, means for lifting the platen to elevate the pile; vertical guides on three sides of the path of ascent of the platen for guiding and restraining the pile in three directions; dogs mounted on said vertical guides adapted to protrude into the path of the pile for engaging underneath the three bottom edges of the same; means for permitting the platen to descend after the pile is lodged on said dogs; a fixed table adjacent to the fourth side of the platen at the lowered position of the latter; means on said table for moving the pile therefrom across said fourth side of the platen onto the latter, and guards overhanging the path of the pile in such movement located as low as the bottom of the pile supported by said dogs for removing from the laterally-advancing pile any blanks above that level while it is being advanced onto the platen.

9. In a machine for the purpose indicated, in combination with a platen for supporting and elevating a pile of blanks, and means for lifting it to elevate such pile; vertical guides between which the platen moves adjustable toward and from the same to restrain the pile within the limits of the dimensions of the blanks; dogs mounted on said guides adapted to engage underneath the pile of blanks when lifted to certain elevated position; a fixed table adjacent to one side of the platen at lowered position of the latter; a vertically-extended follower mounted and provided with a longitudinal guideway on said fixed table; a propelling-chain and sprocket-wheels about which the same is carried attached to said follower; means for rotating one of the sprocket-wheels to propel the chain and follower for advancing a pile of blanks from said fixed table onto the platen.

10. In a machine for the purpose indicated, in combination with a support for blanks having a threaded stem, a standard into which said stem telescopes; a divided nut for engaging the stem; means for rotating one of said two parts to raise the support, and means for operating the nut to release the stem, the cavity of the standard in which the stem telescopes being closed at the bottom for imprisoning the air therein under the stem to cushion the stem in its descent.

11. In a machine for the purpose indicated, in combination with a support for blanks comprising a stem and disengageable means for engaging the stem to raise the support and means for disengaging the stem to permit the stem and support to descend, the standard having a vertical bore in which the stem telescopes, said bore being substantially closed at the end to imprison the air to cushion the descending stem.

12. In a machine for the purpose indicated, in combination with a support for blanks, a standard in which it is mounted and disengageable means for feeding the support upward; means for effecting such disengagement to permit the support to descend; a rock-shaft mounted on the standard having a lever-arm protruding under the support, and means for rocking the shaft to cause said lever-arm to lift the support when disengaged from the upward-feeding means.

13. In a machine for the purpose indicated, in combination with a support for blanks having a threaded stem, a standard in which the stem is mounted; a divided nut for engaging the threaded stem; means for rotating one of the engaging elements to raise the support; means for opening and closing the nut, and means mounted on the standard for operating on the support to lift it a short distance from its lowermost position, the means for closing the divided nut being adapted to be operated while the support is thus lifted.

845,908. POCKET SAVINGS-BANK. EDWIN VAUGHN, Chicago, Ill., assignor to W. F. Burns Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 23, 1906. Serial No. 302,463.

Claim.—1. In a savings-bank in combination with the body and cover portion therefor, there being a coin-slot in the cover portion, and a chute leading inwardly from the coin-slot into the interior of the bank; a pivoted latch-dog mounted inside the cover portion outside of the coin-chute, normally locking upon the interior of the body portion of the bank, there being openings in the wall of the coin-chute adjacent to the latch-dog through which a portion of a key inserted in the coin-chute and then moved approximately perpendicularly to the wall of the chute may pass to unlock the latch-dog.

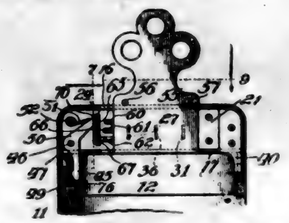

2. In a savings-bank in combination with the body and cover portion therefor, there being a coin-slot in the cover portion, and a chute leading inwardly from the coin-slot into the interior of the bank, a pivoted latch-dog mounted inside the cover portion outside of the coin-chute normally locking upon the interior of the body portion of the bank, there being openings in the wall of the coin-chute adjacent to the latch-dog through which a portion of a key inserted in the coin-chute and then moved approximately perpendicularly to the wall of the chute may pass to unlock the latch-dog, and a guard lip or plate normally spring-pressed into a position in which it closes said openings in the chute-wall, adapted to be moved out of the way of said key when acting as described.

3. In a savings-bank in combination with the body and cover portion therefor there being a coin-slot in the cover portion and a chute leading inwardly from the coin-slot into the interior of the bank; a pivoted latch-dog mounted inside the cover portion outside of the coin-chute spring-pressed into locking engagement with a tooth upon the interior of the body portion of the bank, there being openings in the wall of the coin-chute adjacent to the latch-dog through which a portion of a key inserted in the coin-chute and then moved approximately perpendicularly to the wall of the chute may pass to unlock the latch-dog.

4. In a savings-bank in combination with the body and cover portion therefor there being a coin-slot in the cover portion and a chute leading inwardly from the coin-slot into the interior of the bank; a pivoted latch-dog mounted inside the cover portion outside of the coin-chute and spring-pressed into locking engagement with a tooth upon the interior of the body portion of the bank, there being openings in the wall of the coin-chute adjacent to the latch-dog through which a portion of a key inserted in the coin-chute and then moved approximately perpendicularly to the wall of the chute may pass to unlock the latch-dog, and a guard lip or plate normally spring-pressed into a position in which it closes said openings in the chute-wall, adapted to be moved out of the way of said key when acting as described.

5. In a savings-bank in combination with a wall of the bank having a coin-slot therein, a coin-chute leading inwardly from said chute, a spring-plate mounted adjacent to said chute and having an angular-edged tooth entering a slot in said plate to obstruct the chute, a supplemental spring-plate attached to said first plate near said first tooth and another angular tooth upon said second spring-plate entering said chute and obstructing the same in another place on the same side of the chute from that obstructed by said first tooth.

6. In a savings-bank in combination with one of the walls of the bank having a coin-slot therein and a coin-chute leading inwardly therefrom, two obstructing teeth entering one side of said coin-chute and mechanism for independently spring-pressing each of said teeth into the path of travel of a coin passing through the slot, the spring-pressing mechanism of one of said teeth being car-

ried by the spring-pressing mechanism of the other of said teeth.

845,909. LOCK AND LATCH MECHANISM. HENRY G. VOIGHT, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Mar. 23, 1906. Serial No. 307,641.

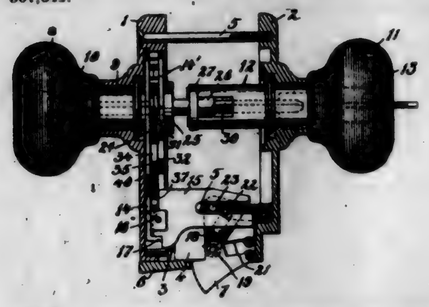

Claim.—1. In a lock and latch mechanism, side plates, a latch-bolt carried by one side plate, a latch-slide carried by the other side plate, operative means of connection between said slide and bolt, a knob carried by each side plate, a lock in each knob, independent means of connection between the knobs and said slide, a dogging device for said slide and independent means of connection between said locks and said dogging device.

2. In a latch mechanism, plates adapted to the opposite sides of a door, a knob carried by each plate, a latch-slide carried by one plate, a latch-bolt carried by the other plate, adjustable means of connection between said slide and said bolt, a shank extending from each of said knobs, a roll-back for each shank for coöperating with said latch-slide, one of said roll-backs having a flattened extension fitting in a corresponding slot in its knob-shank, and a binding-ring for the end of said slotted shank.

3. In a lock and latch mechanism, a pair of side plates, a knob carried by each plate, a lock in each knob, a latch-bolt, a latch-slide, a dogging device for said slide, independent roll-backs for said knobs for engaging said slide and independent roll-backs for said locks for operating said dogging device.

4. In a lock and latch mechanism, a latch-bolt, a latch-slide, an extension pivoted thereto, means of connection between said extension and said bolt, a dogging-lever adapted to simultaneously block said slide against retraction and said extension from tilting on its pivot.

5. In a lock and latch mechanism, a latch-bolt, a latch-slide, means of connection between said slide and bolt, a pair of knobs, means of connection between said knobs and said slide, a dogging-lever for said slide, lock mechanism carried by each knob and independent means of connection between said lock mechanisms and said dogging-lever.

6. In a lock and latch mechanism, a pair of escutcheon-plates, a bolt, a latch-slide, dogging mechanism, a pair of knobs, roll-backs for each knob, a lock carried by each knob, a roll-back for each lock, and an internal cover-plate carried by one of said escutcheon-plates for holding one of said roll-backs against the next adjacent roll-back.

7. In a lock and latch mechanism, side plates adapted to the opposite sides of a door, a latch-plate, a latch-slide, an extension pivoted thereto, means of connection between said extension and said plate, and means for simultaneously dogging said slide and said extension.

8. In a latch mechanism, a pair of side plates, knobs carried thereby, a latch-slide carried by one side plate, means of connection between said knob and said latch-slide, a latch-bolt carried by the other side plate, a latch-tail pivotally connected to said latch-bolt, a stationary pin acting in a slot in said latch-tail to limit the inward and outward movement of said latch-bolt.

9. In a latch mechanism, a pair of side plates, knobs carried thereby, a latch-slide, means of connection between said knobs and said slide, a pivoted extension carried by said latch-slide having a slot in its outer end, a pivoted latch-bolt, a latch-tail pivoted thereto, a guide for said latch-tail and a projection from said latch-tail engaging in the slot in said slide extension.

10. In a lock and latch mechanism, a bolt, a pair of knobs, operative means of connection between said knobs and said bolt, dogging mechanism, a lock mounted in each knob, and operative means of connection between said locks and said dogging mechanism, including independent roll-backs and a yielding tumbler normally engaging said roll-backs.

845,910. ROAD CONSTRUCTION. CHARLES P. WALTER, Harrisburg, Pa. Filed Nov. 7, 1906. Serial No. 342,381.

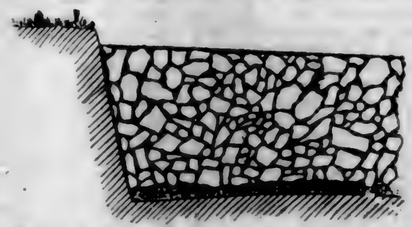

Claim.—1. The herein-described method of manufacturing road-beds, said method consisting in placing a layer of dry grouting material on the ground, then adding a layer of broken stone, and then pouring a thin watery grout through the layer of broken stone to fill the interstices of the latter, and to hydrate the layer of dry grouting material.

2. The herein-described method of constructing a road-bed, said method consisting in first placing a layer of dry grouting material on the ground, then adding a layer of broken stone, then pouring in a thin watery grout, and at the same time adding finely-crushed stone or gravel, the dry grouting material being hydrated partly by moisture from the ground, and partly by the excess of water in the poured grout.

843,911. MAIL-MARKING MACHINE. HENRY E. WAITE, Newton, Mass. Filed Apr. 2, 1906. Serial No. 309,313.

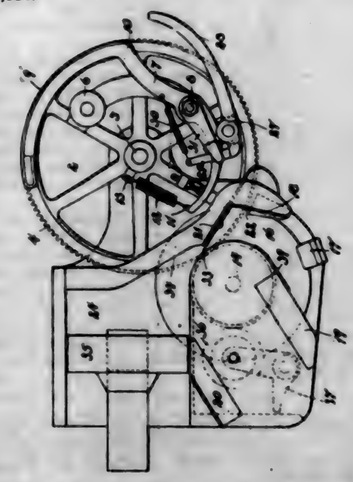

Claim.—1. A mail-marking device, comprising marking and impression members forming a printing-couple, a timing-stop substantially tangential to the impression member, and feeding means movable with the marking member to bring a letter perpendicularly toward the impression member and frictionally hold it against said stop.

2. A mail-marking device, comprising marking and impression members forming a printing-couple, a timing-stop, and a feeding-support adapted to have mail-matter deposited thereon and movable with the marking member to feed such matter to said stop, said feeding-support being adapted also to pack together letters which have been passed through the printing-couple.

3. A mail-marking device, comprising marking and impression members forming a printing-couple, a stationary timing-stop, and a rotary feeding-table arranged to support mail-matter deposited thereon and movable simultaneously with the marking member to feed the mail-matter up to said stop.

4. A mail-marking device, comprising marking and impression members forming a printing-couple, a timing-stop, and a horizontal annular plate or flange connected to the marking member to turn therewith, adapted to support mail-matter deposited thereon, and constituting a feeding-table for carrying the mail-matter to the timing-stop.

5. In a mail-marking machine, a rotary marking member, fixed guides forming a letter-channel around the marking member, a rotary feeding-table forming the movable bottom of the letter-channel below the operating-surface of the marking member, and an impression member.

6. In a mail-marking machine a rotary marking member, fixed guides forming a letter-channel around the marking member, a rotary feeding-table forming the movable bottom of the letter-channel below the operating-surface of the marking member, and an impression member, the fixed guides being formed with an angular recess, forming a timing-stop.

7. In a mail-marking machine, a rotary marking member, fixed guides forming a letter-channel around the marking member, having an angular recess, a rotary feeding-table forming the movable bottom of the letter-channel below the operating-surface of the marking member, and an impression member, and the impression member having an operating-surface traveling through the angular recess in the fixed guides.

8. A mail-marking device, comprising marking and impression members forming a printing-couple, a guide for letters to be marked having a stop to arrest the forward edge of a letter within the path of movement of the impression member, and an abutment on the impression member adapted to engage a letter arrested by said stop and swing the same into contact with the marking member.

9. A mail-marking machine comprising a printing member, an impression member having an impression-surface and a feeding and gripping shoulder, and a fixed stop adapted to arrest the forward edge of a letter within the path of movement of said shoulder; said stop extending substantially parallel with said path of movement, whereby the shoulder is adapted to deflect and swing the letter to the printing member.

10. A mail-marking machine comprising a printing member, an impression member having an impression-surface and a feeding and gripping shoulder, a fixed stop adapted to arrest the forward edge of a letter within the path of movement of said shoulder; said stop extending substantially parallel with said path of movement, whereby the shoulder is adapted to deflect and carry the letter to the printing member, and a traveling guide moving with the impression member in advance of said shoulder.

11. In a mail-marking machine having rotary marking and impression members to constitute a printing-couple, a fixed stop adjacent the impression member adapted to arrest and retain a letter with its forward end lying in the path of the impression member, and a feeding device supporting the letter by its lower edge and presenting a light friction for retaining the letters against the timing-stop, the impression member being arranged to deflect the letter against the printing member and then to coöperate with said printing member in gripping and carrying the letter through the printing-couple.

12. In a mail-marking machine, an impression member having an impression-surface, and a packer mounted on and carried by the impression member, adapted to be projected beyond the path of movement of the impression-surface to move away therefrom letters which have been marked.

13. In a mail-marking machine, an impression member having an impression-surface, and a guiding and packing member carried by the impression member adapted to be held in substantial coincidence with the path of movement of the latter before engagement of a letter to be marked, and provisions for outwardly projecting said guiding and packing member to crowd previously-marked letters away from the impression member.

14. A mail-marking machine comprising a marking member, an impression member having an impression-surface, a packer carried by the impression member, means tending to project the same beyond the line of the impression member, and fixed means for restraining the packer until it has passed the marking member, whereby said packer is caused to act as a traveling guide for letters to be marked.

15. A mail-marking machine comprising a marking member, an impression member having an impression-surface, for engaging and holding letters against the marking member, fixed guides forming a letter-path between themselves and the marking member and being out of line to form an angle in such path located so as to arrest a letter with its edge in the way of said impression member, to be engaged thereby, and a traveling guide carried by the impression member adapted to form a prolongation of the fixed guide before the impression member engages the letter.

16. A mail-marking machine comprising a marking member, a rotary impression member, a packer mounted on and movable with the latter, a spring tending to project the packer beyond the circumference of the impression-surface, and a stationary retaining-abutment adjacent the marking member, arranged to retract and hold the packer within the continuation of the impression-surface while the packer is passing the marking member, and to permit outward movement of the packer to push away letters that have been marked.

17. In a mail-marking machine, printing and impression members constituting a printing-couple, a rotary table traveling with the printing member adapted to feed forward letters placed thereon, a stop arranged parallel to the path of movement of the impression member for arresting letters, the impression member being arranged to engage the projecting end of a letter, move it toward and hold it against the printing member and discharge the letter, and the rotary feeding-table being adapted to carry the rear end of the discharged letter against a pack of previously-marked letters.

845,912. TROLLEY-SWITCH. BENJAMIN G. WATKINS, Nehawka, Nebr., assignor of one-third to Julian A. Pollard, Jr., Nehawka, Nebr. Filed Apr. 26, 1906. Serial No. 313,815.

Claim.—1. In combination with a straight track having a cut-out part, and a siding disposed adjacent thereto, a pivoted member disposed in said cut-out part and resting upon the lower portion thereof said pivoted member having a straight track-section on one side and a curved track-section on its opposite side, a lever having a pair of arms, an abutment on said member to be engaged by one of said arms, and a connection between said abutment and said lever.

2. In combination with a track having a cut-out part, and a siding related thereto, a member disposed in said cut-out part and having a straight track-section and a curved track-section, a pivoted lever having a pair of divergent arms to engage opposite sides of said member; and a flexible connection between said lever and said member.

3. In combination with a track and a siding disposed adjacent thereto, a pivoted member supported from the track and having a straight track-section and a curved track-section, a pivoted lever having a chain connected to

one end and a chain connected to the opposite end and to the said member.

4. In combination with a track having a cut-out portion, and a siding disposed adjacent thereto, a pivoted member disposed in said cut-out portion and having a straight track-section on one side and a curved track-section on its opposite side, a pivoted lever, stops to restrict the movement of said lever, a pair of diverging arms carried on the front end of the lever, a pocket carried by said member to receive one of said arms and having a part thereof to be engaged by said arm, and a flexible conection secured at one end in said pocket and having a part thereof engaging the opposite arm of said lever.

5. In combination with a track having a cut-out portion, and a siding disposed adjacent thereto, a pivoted member disposed in said cut-out portion and having a straight track-section on one side and a curved track-section on the opposite side, a pivoted lever having a pair of arms, one of said arms being for engagement with one side face of said member and the other arm being for engagement with the opposite side face thereof.

6. In combination with a track having a cut-out portion, and a siding disposed adjacent thereto, a pivoted member disposed in said cut-out portion and having a straight track-section on one side thereof and a curved track-section on the opposite side thereof, a pivoted lever having a pair of arms located at one end thereof to engage opposite side faces of said member, and a flexible connection between said lever and said member.

7. In combination with a track having a cut-out portion, and a siding disposed adjacent thereto, a pivoted member arranged in said cut-out portion and having a straight track-section on one side thereof and a curved track-section on the opposite side thereof, one side of said member having a right-angular abutment, a pivoted lever having a pair of arms at one end thereof, one of said arms being for engagement with said abutment, and the other arm being for engagement with the side face of said member opposite to the side of said member having said abutment, and a flexible connection secured to said abutment and to said last-named arm.

845,913. RECLINING-CHAIR. ORLA H. WATKINS, Ames, Iowa. Filed Oct. 1, 1906. Serial No. 336,848.

Claim.—1. A chair-frame formed with slotted side bars, slide-bars mounted thereon, curved levers pivoted at their forward ends on said side bars, levers pivoted intermediate of their ends on the rear ends of the first levers and extending through slots in the side bars, trunnions on said second levers engaging notches in said slide-bars, a back detachably engaging said second levers, and a seat-frame mounted on said slide-bars.

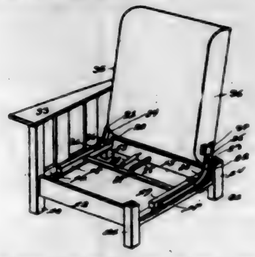

2. A chair-frame formed with slotted side bars, slide-bars mounted thereon, curved levers pivoted at their forward ends on said side bars, said levers adapted to move laterally in said slotted bars, second levers pivoted to the rear ends of the first levers and extending through slots in the side bars, trunnions on the second levers engaging in notches in the rear ends of said slide-bars, a back, clips on said back detachably engaging the upper end portions of the second levers, a seat-frame on the slide-bars, and a spring connecting the slide-bars and chair-frame.

845,914. DOOR-HANGER. GUSTAVUS WIDEMAN, Aurora, Ill., assignor to The Richards Manufacturing Company, Aurora, Ill., a Corporation of Illinois. Filed Jan. 30, 1905. Renewed Oct. 4, 1906. Serial No. 337,479.

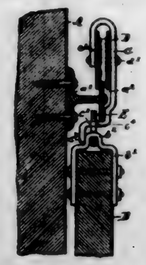

Claim.—1. In combination with a supporting-track, a wheel-carrying hanger-arm having its lower portion extending at an angle to its main portion, and terminating in a downwardly-extending portion, a door-supporting strap, a link connecting said hanger-arm and door-strap and constructed to form a guard for the purpose specified.

2. In combination with a supporting-track, a door-hanger comprising a wheel-carrying hanger-arm, having a horizontal portion at its lower end, a door-supporting strap, and a link hung on said horizontal portion of the hanger-arm connecting said arm and strap and constructed to form a guard for the purpose specified.

3. In combination with a supporting-track, a door-hanger comprising a wheel-carrying arm, bent inwardly near its lower end as shown, and also bent to form a horizontal portion at its lower end, a door-supporting strap, and a link hung on said horizontal portion of the hanger-arm, loosely connecting said arm and strap and having a portion extending upwardly on the inner side of the track for the purpose set forth.

4. In a door-hanger, a wheel-carrying hanger-arm having its lower portion extending inwardly at right angles to its upper portion and having its lower end bent downwardly, a door-supporting strap having an extension thereon, and a link loosely and detachably connecting said hanger-arm and door-strap.

5. In a door-hanger, a wheel-carrying hanger-arm, a door-supporting strap, said arm and strap having abutting portions whereby the swinging of the strap in one direction will be checked, and a link connecting said arm and strap.

6. In combination with a supporting-track, a door-hanger comprising a wheel-carrying hanger-arm, a door-supporting strap hung on said hanger-arm out of alinement with the hanger-wheel, and a link connecting said arm and strap and forming a guard to hold the hanger-arm in vertical position.

7. In a door-hanger, a wheel-carrying hanger-arm, and a door-supporting strap, a link connecting said arm and strap, and having a slot therethrough, one portion of which is of greater length than the other.

8. In a door-hanger, a wheel-carrying hanger-arm having its lower portion extending inwardly at an angle to its main portion and notched in its edges, a link arranged on said hanger-arm and engaging its notches, and a door-supporting strap connected with said link.

9. In a door-hanger, a wheel-carrying hanger-arm and a door-supporting strap, a link connecting said arm and strap, and formed with a longitudinal slot therethrough and having an extension at its upper edge.

10. In a door-hanger, a wheel-carrying hanger-arm, consisting of a single piece of metal bent at its upper portion to form a wheel-housing and at its lower portion bent inwardly and downwardly to lie near a hanger-track, then bent to form a horisontal portion, and having its end bent downwardly at right angles to such horisontal portion.

845,915. SATCHEL-LATCH. JOSEPH H. WIEDNER, Chicago, Ill., assignor to George Lans & Company, a Corporation of Illinois. Filed Dec. 29, 1906. Serial No. 350,038.

Claim.—1. A satchel-latch comprising, in combination, a casing having a hasp-receiving aperture, a spring-advanced reciprocating plate within the casing having a tongue normally crossing the aperture of the casing, and a hook pivoted within the casing having its head located below the casing-aperture and its free end projecting downwardly through the bottom of the casing.

2. A satchel-latch comprising, in combination, a casing having a hasp-receiving aperture, a spring-advanced reciprocating plate within the casing having a tongue normally crossing the aperture of the casing, a hook pivoted within the casing having its head located below the casing-aperture and its free end projecting downwardly through the bottom of the casing, and a spring for raising the head of the hook into the path of the tongue.

845,916. ADJUSTABLE HEAD-REST FOR COOLING-BOARDS. ALEXANDER N. WIAN, Americus, Kans. Filed May 17, 1906. Serial No. 317,396.

Claim.—1. In combination, a head-frame, a link pivotally connected to its upper end and curving downwardly and forwardly therefrom, a link pivotally connected to its forward end and curving downwardly and rearwardly and intersecting the aforesaid link, a supporting-post, and means carried at its upper end for clamping the intersected links at their point of intersection to the upper end of the supporting member, the links being adjustable independently, substantially as described.

2. The combination of a base, provided with a post, a clamping device carried at the upper end of said post, intersecting supporting-links slotted longitudinally and adapted to be adjusted independently and clamped at their point of intersection intermediate their ends to the top of said post, and a head-frame supported on the upper ends of said links and having pivotal connection therewith.

845,917. SHELF-SUPPORTING BRACKET. JOSHUA J. WORLEY and WILLIAM J. THOMAS, Sterrett, Ind. Ter. Filed July 19, 1906. Serial No. 326,822.

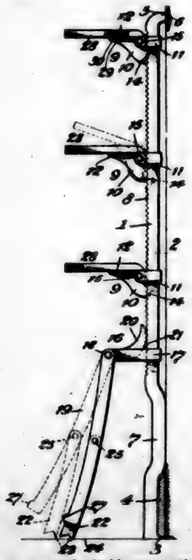

Claim.—1. An improved shelf-supporting bracket of the class described, comprising main bars adapted to occupy an upright position with relation to a wall or surface and having bearing means engaging said surface, adjustable shelf-supporting members slidable upon said bars, means for retaining said shelf-supporting members in fixed position, and lever-braces having a bearing operation upon said bars at the lower portion thereof, said braces having locking means adapted to engage the floor, substantially as and for the purpose set forth.

2. An improved shelf-supporting bracket of the class described, comprising main bars adapted to occupy an upright position with relation to a wall or surface said bars having bearing means engaging said surface and having a rack at their front edges, shelf-supporting members each pivotally carried upon a slidable sleeve embracing one of said bars said shelf-supporting members each having a rack edge engaging the rack edge of one of the bars, and lever-braces each pivotally carried upon a sleeve slidably mounted upon one of the bars and each embodying a cam engaging the rack edge of one of the bars and locking means adapted to engage the floor, substantially as and for the purpose set forth.

3. An improved shelf-supporting bracket of the class described, comprising main bars adapted to occupy an upright position with relation to a wall or surface and having projecting extensions at their rear edges adapted to engage said surface and having a rack at their front

edges, shelf-supporting members each embodying a sleeve slidable upon one of said bars and a body portion pivoted to said sleeve and having a rack at its inner edge, and lever-braces each embodying a sleeve slidable upon one of said bars, a gravity-cam pivotally carried by said sleeve and having a rack edge, and a lever pivoted to said sleeve and carrying a pivoted fulcrum-bar adapted to engage the floor, substantially as and for the purpose set forth.

4. An improved shelf-supporting bracket of the class described, comprising a main bar adapted to occupy an upright position with relation to a wall or surface, an adjustable brace for forcing said bar to a bearing contact or engagement with said surface, and shelf-supporting members carried by said bar, substantially as and for the purpose set forth.

5. An improved shelf-supporting bracket of the class described, comprising a main bar adapted to occupy an upright position with relation to a wall or surface, an adjustable brace for forcing said bar to a bearing contact or engagement with said surface, said brace having locking means adapted to bear against the floor, and shelf-supporting members carried by said bar above the brace, substantially as and for the purpose set forth.

6. An improved shelf-supporting bracket of the class described, comprising a main bar adapted to occupy an upright position with relation to a wall or surface and having shelf-supporting means and a rack at its front edge; and a brace embodying a member slidable upon said bar, a cam pivotally carried by said slidable member and having a rack edge, a lever pivoted to said sliding member, and a fulcrum-bar pivoted to the lever and adapted to engage the floor, substantially as and for the purpose set forth.

7. An improved shelf-supporting bracket of the class described, comprising a main bar adapted to occupy an upright position with relation to a wall or surface and having a rack at its front edge; shelf-supporting members embodying a member slidable upon said bar, and a member having right-angular surfaces one of which forms an engaging rack, said member being pivotally connected to said sliding member at the vertex of the angle formed by said surfaces; and means for forcing and retaining said main bar to a bearing contact or engagement with the wall or surface; substantially as and for the purpose set forth.

8. An improved shelf-supporting bracket of the class described, comprising a main bar adapted to occupy an upright position with relation to a wall or surface and having means for maintaining a bearing contact or engagement with said surface, an adjustable brace device having means for a bearing contact or engagement with the floor and bearing against said main bar to force and maintain the same in bearing contact or engagement with the wall or surface, and adjustable shelf-supporting means carried by said bar, substantially as and for the purpose set forth.

845,918. EMERGENCY SHUT-OFF FOR SPRINKLER-HEADS. EDGAR ABBOTT, Boston, Mass. Filed Oct 2, 1905. Serial No. 280,917.

Claim.—1. An emergency shut-off for sprinkler-heads of the character described comprising a handle member to engage the abutment; a valve member directly connected to the handle member but movable relatively to it; and means mounted on one of said members and movable into engagement with the other of said members for locking them when in position against relative movement.

2. An emergency shut-off for sprinkler-heads comprising a handle member, a valve member comprising a rod pivoted to said handle member, and a valve adjustable on said rod, and a device carried by said pivoted rod and movable into engagement with said handle member to lock the said rod from turning on its pivot, substantially as described.

3. An emergency shut-off for sprinkler-heads comprising a handle member adapted to engage the abutment of the sprinkler-head, a valve member comprising a threaded rod pivoted to the handle member, and a valve having screw-threads to engage said thread-rod, and a nut in threaded engagement with said rod between said valve and said handle, said nut engaging said handle when the said rod is to be locked against turning on its pivot, substantially as described.

4. An emergency shut-off for sprinkler-heads of the character described comprising a handle member to engage the abutment, a valve member pivoted to said handle member, and means mounted on the valve member and movable into engagement with the handle member for locking the valve member from turning on its pivot.

5. An emergency shut-off for sprinkler-heads comprising a handle member, a valve member comprising a rod pivoted to said handle member, and a device carried by said pivoted rod and movable into engagement with said handle member to lock the said rod from turning on its pivot, substantially as described.

845,919. SAND-BLAST APPARATUS. EDWARD A. ARCOUET, Chicago, Ill. Filed Mar. 22, 1906. Serial No. 307,337.

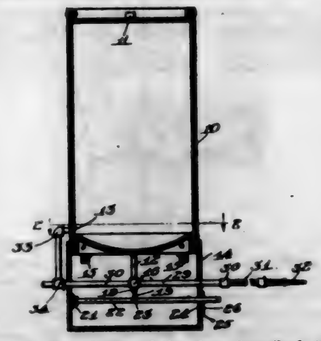

Claim.—1. In a device of the class described, the combination of a closed tank, a support for the tank, an air-pipe, an outlet-pipe leading from the tank and communicating with the air-pipe, a valve adapted to close the end of the outlet-pipe, a lever pivoted to the support, a pivotal connection between the lever and valve, a rack on the support adapted to be engaged by the lever for securing the valve in position, and a connection leading from the pipe and opening into the tank.

2. In a device of the class described, the combination of a closed tank, a support for the tank, an air-pipe, provided with a nozzle on one end, an outlet-pipe depending from the bottom of the tank and communicating with the air-pipe, a valve adapted to close the end of the outlet-pipe, a lever pivoted by one end to the support, a pivotal connection between the lever and valve, a rack secured to the support and adapted to be engaged by the lever for holding the valve in position, and a connection leading from the air-pipe and communicating with the tank adjacent the bottom thereof.

3. In a device of the class described, the combination of a tank, a support upon which the tank is adapted to rest, an outlet-pipe depending from the bottom of the tank, a coupling secured to the free end of the pipe and provided with an opening in the bottom thereof opposite the pipe, a removable bushing within the opening, a valve-rod passing through the bushing, a valve on the rod adapted to be inserted in the coupling through the opening and to be seated against the end of the pipe and within the coupling, a lever pivoted to the support, a pivotal connection between the valve-stem and lever, an air-pipe comprising sections secured to the sides of the coupling to form a continuous passage therethrough, and a connection between the air-pipe and tank, said lever being adapted to adjust the position of the valve.

845,920. OPERATING MECHANISM FOR DUMPING-CARS. HERMAN F. BALL, New York, N. Y. Filed Oct. 8, 1906. Serial No. 338,071.

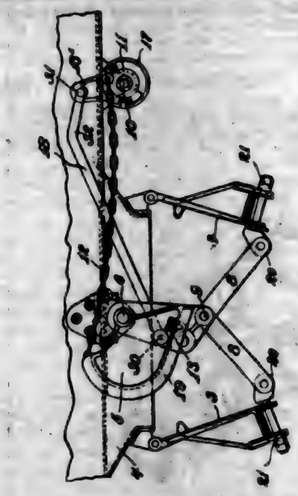

Claim.—1. In combination, a gravity opening door, an operating shaft, an operative connection between the shaft and door, means independent of the operative connection for holding the door closed, and means operable by the shaft to release such holding means after the operative connection has been moved to a position to allow the door to open.

2. In combination, a gravity opening door, an operating shaft, a flexible operative connection between the shaft and door, means independent of the flexible connection for holding the door closed, and means operable by the shaft to release the holding means when the flexible connection has been unwound from the shaft sufficiently to allow the door to open.

3. In combination, a gravity opening door, an operating shaft, an operative connection between the shaft and door, means independent of the operative connection for holding the door closed, and means operable by the shaft to move such holding means to securing position after the door is closed.

4. In combination, a gravity opening door, an operating shaft, an operative connection between the shaft and door, means independent of the operative connection for holding the door closed, and means operable by the shaft to move such holding means to securing position when the shaft is rotated in one direction and to release such holding means when the shaft is reversely rotated.

5. In combination, a pair of swinging gravity opening doors, links and a rotatable member secured thereto for closing the doors, a rotatable operating shaft, a flexible connection between the member and the shaft, an independent connection extending from the member to a position adjacent the shaft for holding the door closed, and means connected to the shaft whereby such independent connection is released on the rotation of the shaft after such reverse movement has unwound the flexible connection.

6. In combination, a pair of swinging gravity opening doors, links and a rotatable member secured thereto for closing the doors, a rotatable operating shaft, a flexible connection between the member and the shaft, an independent connection extending from the member to a position adjacent the shaft for holding the door closed, and means connected to the shaft whereby such independent connection is brought into operation when the doors are closed and whereby such independent connection is released on the reverse rotation of the shaft after such reverse movement has unwound the flexible connection.

7. In combination, a swinging gravity opening door, a rotatable member secured thereto for closing the door, a rotatable operating shaft, a flexible connection between the member and shaft, a link connected to the member and extending to a position adjacent the shaft, and a slip connection between the link and shaft whereby the link is moved to a locking position during the latter part of the rotation of the shaft.

8. In combination, a swinging gravity opening door, a rotatable member secured thereto for closing the door, a rotatable operating shaft, a flexible connection between the member and the shaft, a link connected to the member and extending to a position adjacent the shaft and a collar connected to the link and having a slip connection on the shaft whereby the link is moved to a locking position during the latter part of the forward rotation of the shaft and whereby the flexible connection is unwound from the shaft during its reverse rotation before the link is moved from its locking position.

9. The combination with a gravity opening door, drum and flexible operating means, of a locking means and a slip connection between the drum and locking means, whereby the locking means is moved to holding position during the latter part of the forward movement of the drum and is moved to unlocked position during the latter part of the reverse movement of the drum.

10. The combination with a gravity opening door, drum and flexible operating means, of a locking means and a slip connection between the drum and locking means comprising a locking member and a collar having a lug, together with a coöperating lug operable by the drum whereby the locking means is moved to holding position during the latter part of the forward movement of the drum and is moved to unlocked position during the latter part of the reverse movement of the drum.

11. The combination with a gravity opening door, drum and flexible operating means, of a locking means and slip connection between the drum and locking means comprising a lug on the drum, a locking member, a collar connected thereto and provided with a lug, and an interposed loose second collar provided with lugs on opposite sides for coöperating with the other lugs whereby the locking means is moved to holding position during the latter part of the forward movement of the drum and is moved to unlocked position during the latter part of the reverse movement of the drum.

12. The combination with a gravity opening door, drum and flexible operating means, of a locking means and slip connection between the drum and locking means comprising a lug on the drum, a rigid locking member, a collar secured to the locking member and provided with a lug, and a plurality of loose collars having lugs interposed between the drum and the first collar whereby a slip connection is secured and the rigid locking member is moved to holding position during the latter part of the forward rotation of the drum and is moved to unlocked position during the latter part of the reverse rotation of the drum.

845,921. ANIMAL-TRAP. JOSEPH C. BARKER, Oblong, Ill. Filed May 21, 1906. Serial No. 318,022.

Claim.—1. A trap comprising a casing, a partition dividing the casing into two compartments one of which has communication with the entrance while the opposite compartment communicates with the outlet, said partition being formed by a plate which is movably mounted so as to close the entrance, and a treadle which is adapted to throw the plate around so as to close the entrance and open a passage between the two compartments after the animal has entered the trap.

2. A trap comprising a casing, a partition dividing the casing into two compartments one of which has communication with the entrance while the opposite compartment communicates with the outlet, said partition being formed by a plate which is movably mounted so as to close the entrance, and by a treadle which is adapted to throw the plate around so as to close the entrance and open a passage between the two compartments after the animal has entered the trap, and a gate closing the outlet and adapted to reset the trap after the passage of the animal therethrough.

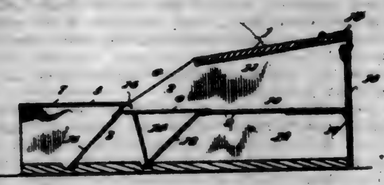

3. A trap comprising a casing, a partition dividing the casing into two compartments one of which has communication with the entrance while the opposite compartment communicates with the outlet, said partition being formed of a plate which is pivotally mounted so as to close the entrance, and also out of one arm of a treadle which is pivotally mounted at an intermediate point, a link member connecting the opposite arm of the treadle to the plate whereby the treadle will operate to swing the plate around so as to close the entrance and form a passage between the two compartments after the animal has entered the trap, and means whereby the trap will be automatically reset when the animal passes through the outlet.

4. A trap comprising a casing, a partition dividing the casing into two compartments one of which has communication with the entrance while the opposite compartment communicates with the outlet, said partition being formed of a plate which is pivotally mounted so as to close the entrance, and also out of one arm of a treadle which is pivotally mounted at an intermediate point, a link member connecting the opposite arm of the treadle to the plate whereby the treadle will operate to swing the plate around so as to close the entrance and form a passage between the two compartments after the animal has entered the trap, an outwardly-swinging gate closing the outlet, and an arm projecting from the gate and adapted to engage with the plate so as to automatically reset the trap when the gate is opened.

5. A trap comprising a casing having an entrance and an outlet, a plate pivotally mounted between the sides of the casing so as to swing around and close the entrance, a treadle pivotally mounted at an intermediate point between the sides of the casing and comprising two arms one of which normally engages with the bottom of the casing while the opposite arm in conjunction with the before-mentioned plate normally forms a partition which divides the trap into two compartments one of which communicates with the outlet while the opposite compartment communicates with the entrance, means whereby the plate will be swung around so as to close the entrance and form a passage between the two compartments when the treadle is forced down by the weight of the animal, a gate closing the outlet, and an arm projecting from the gate and adapted to engage with the plate so as to reset the trap when the gate is opened.

6. A trap comprising a casing, a partition dividing the casing into two compartments one of which has communication with the entrance while the opposite compartment communicates with the outlet, said partition being formed out of a plate which is pivotally mounted so as to swing around and close the entrance, and also out of one arm of a treadle which is pivotally mounted at an intermediate point between the sides of the casing, a half-arm at the rear end of the trap which is adapted to engage with one arm of the treadle to hold the treadle in a set position, and connecting means between the opposite arm of the treadle and the before-mentioned plate whereby the treadle will swing around so as to lower the animal out of reach of the bait and cause the before-mentioned plate to close the entrance when the trap is sprung.

7. A trap comprising a casing, a partition dividing the casing into two compartments one of which has communication with the entrance, while the opposite compartment communicates with the outlet, said partition being formed by a plate which is movably mounted so as to close the entrance, and by a treadle which is adapted to throw the plate around so as to close the entrance and open a passage between the two compartments for the animal as it enters the trap, and means whereby the trap will be reset when the animal passes through the outlet.

845,922. FREQUENCY AND VOLT INDICATOR. JOSHUA F. BECOLE, St. Louis, Mo., assignor to Wagner Electric Manufacturing Company, St. Louis, Mo., a Corporation of Missouri. Filed Aug. 31, 1906. Serial No. 332,802.

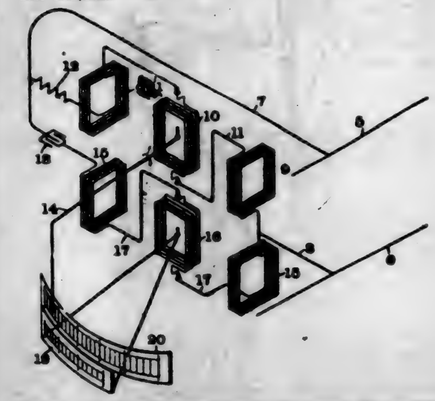

Claim.—1. In a frequency and volt meter, the combination with a pair of coöperating indicating devices, of means for moving one of said indicating devices proportionally to the voltage and frequency of the current to be measured, means for moving the other of said indicating devices proportionally to the voltage of the current to be measured, and a third indicating device coöperating with one of said first-named indicating devices.

2. In a frequency and volt meter, the combination with a pair of movable coils, of a pair of indicating devices cooperating to indicate frequency, one of said indicating devices being controlled by each coil, a third indicating device coöperating with one of said first-named indicating devices to indicate voltage, and means in series with one of said coils for varying the current with the frequency.

3. In a frequency and volt meter, the combination with a pair of movable coils, of a pair of indicating devices cooperating to indicate frequency, one of said indicating devices being controlled by each coil, a third indicating device coöperating with one of said first-named indicating devices to indicate voltage, and a condenser in series with one of said coils.

4. In a frequency and volt meter, the combination with a pair of movable coils, of a pair of indicating devices cooperating to indicate frequency, one of said indicating devices being controlled by each coil, a stationary indicating device coöperating with one of said first-named indicating devices to indicate voltage, and means in series with one of said coils for varying the current with the frequency.

5. In a frequency and volt meter, the combination with a pair of movable coils, of a pair of indicating devices cooperating to indicate frequency, one of said indicating devices being controlled by each coil, a stationary indicating device coöperating with one of said first-named indicating devices to indicate voltage, means in series with one of said coils for varying the current with frequency, and a resistance in series with the other of said coils.

6. In a frequency and volt meter, the combination with a pair of movable coils, of a pair of indicating devices cooperating to indicate frequency, one of said indicating devices being controlled by each coil, a third indicating device coöperating with one of said first-named indicating devices to indicate voltage, means in series with one of said coils for varying the current with the frequency, and a resistance in series with the other of said coils.

7. In a frequency and volt meter, the combination with a pair of movable coils, of a pair of indicating devices cooperating to indicate frequency, one of said indicating devices being controlled by each coil, a third indicating device coöperating with one of said first-named indicating devices to indicate voltage, a condenser in series with one of said coils, and a resistance in series with the other of said coils.

8. In a frequency and volt meter, the combination with a pair of movable coils, of a pair of indicating devices cooperating to indicate frequency, one of said indicating devices being controlled by each coil, a stationary indicating device coöperating with one of said first-named indicating devices to indicate voltage, means in series with one of said coils for varying the current with frequency, and a resistance in series with the other of said coils.

9. In a frequency and volt meter, the combination with a pair of movable coils, of a pair of indicating devices cooperating to indicate frequency, one of said indicating devices being controlled by each coil, a stationary indicating device coöperating with one of said first-named indicating devices to indicate voltage, a condenser in series with one of said coils, and a resistance in series with the other of said coils.

10. In a frequency and volt meter, the combination with a movable coil, of a movable scale controlled thereby, means in series with said coil for varying the current with the frequency, a stationary scale, a second movable coil, and a pointer controlled by said latter coil and coöperating with said movable scale to indicate frequency and with said stationary scale to indicate voltage.

11. In a frequency and volt meter, the combination with a movable coil, of a movable scale controlled thereby, a condenser in series with said coil, a stationary scale, a second movable coil, and a pointer controlled by said latter coil and coöperating with said movable scale to indicate frequency and with said stationary scale to indicate voltage.

12. In a frequency and volt meter, the combination with a movable coil, of a movable scale controlled thereby, means in series with said coil for varying the current with the frequency, a stationary scale, a second movable coil, a resistance in series with said latter coil and a pointer controlled by said second coil and coöperating with said movable scale to indicate frequency and with said stationary scale to indicate voltage.

13. In a frequency and volt meter, the combination with a movable coil, of a movable scale controlled thereby, a condenser in series with said coil, a stationary scale, a second movable coil, a resistance in series with said coil, and a pointer controlled by said second coil and coöperating with said movable scale to indicate frequency and with said stationary scale to indicate voltage.

845,923. CHECK, DRAFT, AND SIMILAR INSTRUMENT. MICHAEL BERARDINI, New York, N. Y. Filed Mar. 21, 1906. Serial No. 307,148.

Claim.—1. A pad for drafts and other commercial instruments, consisting of a plurality of sheets one of which is wider than the others which are secured to said wide sheet at a distance from one of its edges, such other, narrower sheets comprising a sheet having consecutively-numbered draft-forms, and an additional sheet having consecutively-numbered portions, the wider sheet also having consecutively-numbered portions, and the registering or superposed portions of all the sheets being subdivided alike into spaces adapted to receive corresponding entries.

2. A pad for drafts and other commercial instruments, consisting of a wide sheet, another sheet narrower than the first-named sheet and superposed on a portion thereof, and a further sheet of substantially the same width as the second-named sheet but of smaller height, all of said

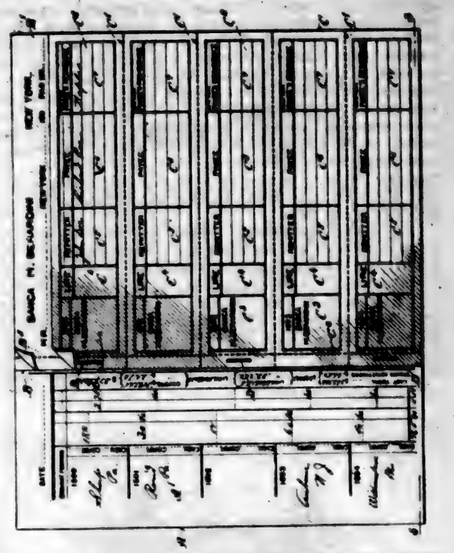

sheets being secured together and the superposed portions of all the sheets being subdivided in a like manner so as to receive identical entries in corresponding places by the use of interposed sheets of carbon-paper.

845,924. WRENCH. WILLIAM C. BLEE, Santa Ana, Cal. Filed Oct. 25, 1906. Serial No. 340,586.

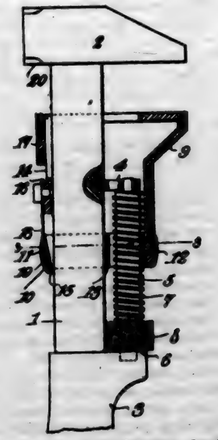

Claim.—1. A wrench comprising a fixed jaw mounted upon a stock, a movable jaw mounted upon the stock, means for retaining said movable jaw in fixed position upon the stock, a slide having a wedge-shaped end, the wedge end of which retains the movable jaw in engagement with the retaining means, said slide having its opposite end flush with the work-facing surface of the movable jaw when the latter is in engagement with the retaining means and maintaining the engagement of such part, the

last said end of the slide lying between the work-facing surfaces of the jaws when the movable jaw is out of engagement with the retaining means.

2. A wrench comprising a fixed jaw mounted upon a stock, a movable jaw, mounted upon the stock, means for retaining said movable jaw in fixed position upon the stock, said movable jaw having at its end a band which receives the stock the opening of which is of greater dimension than that of the stock, a slide operated against the edge of the stock and between the stock and the movable jaw and having an end which normally retains the wall of the band in contact with the opposite edge of the stock, said slide having its end flush with the work-facing surface of the movable jaw when the latter is in engagement with the retaining means and maintaining the engagement of such parts and a spring mounted upon the slide and having a bowed portion which receives one of the sides of the band.

3. A wrench comprising a fixed jaw mounted upon a stock, a movable jaw mounted upon the stock, means for holding the movable jaw in a fixed position with relation to the stock, the said means comprising a shaft provided with a spiral gear which engages a similar gear provided upon the movable jaw, a slide located against the edge of the stock and between the stock and the movable jaw, said slide having its end flush with the work-facing surface of the movable jaw when the latter is in engagement with the retaining means.

845,925. SECTIONAL CEMENT RAILROAD-TIE. LOUIS BLESSING, Jackson, Mich. Filed Jan. 10, 1906. Serial No. 295,386.

Claim.—1. In a flexible cement-block tie or sleeper, of the combination with the cement blocks, of the straps placed, one on each side of the cement blocks, journaled on the bolts coupling the two cement blocks together allowing them to have yielding action as shown, and for the purpose specified.

2. In a sectional cement-block tie or sleeper, for railroad, having holes centrally in said cement blocks, the metal clamps inserted in said holes and gripping the cement block at or near the bottom, and gripping the flanges of the rails at the top, the wood keys inserted in the cement blocks in the holes behind the metal clamps as shown, and for the purpose specified.

845,926. PLANT FOR STORING BALED COTTON. DANIEL BRECK, St. Louis, Mo. Filed Dec. 31, 1906. Serial No. 350,271.

Claim.—1. A plant for storing baled cotton comprising a receiving-station and a shipping-station, a plurality of warehouses located some distance from the receiving-station and arranged in rows with their rear doors facing each other, an inbound trolley system for conveying the cotton from the receiving-station past the front doors of the warehouses and consisting of tracks on which trolleys travel, and an outbound trolley system for conveying the cotton from the rear doors of the warehouses to the shipping-station; substantially as described.

2. In a plant for storing baled cotton, a receiving-station, a shipping-station, a plurality of warehouses arranged in rows, and trolley systems in which the trolleys are operated by gravity for conveying the cotton from the receiving-station to the warehouses and from the warehouses to the shipping-station; substantially as described.

3. In a plant for storing and compressing cotton, a receiving-station, a shipping-station, a plurality of warehouses arranged in rows with their rear doors facing each other, a compress located at one end of said rows, an inclined trolley-track extending from the receiving-station past the front doors of said warehouses, and an inclined trolley-track extending past the rear doors of the warehouses to the compress and to the shipping-station; substantially as described.

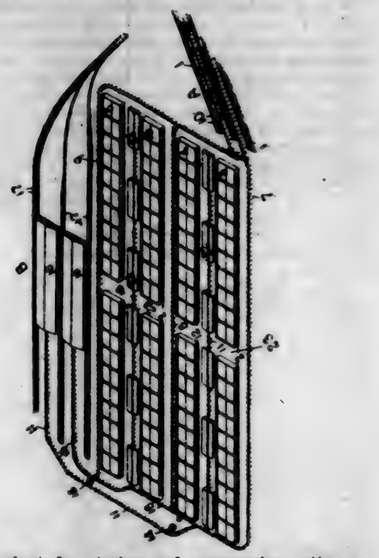

4. In a plant for storing and compressing cotton, a receiving-station consisting of a plurality of platforms alongside of which railroad-tracks extend, a shipping-station consisting of a plurality of platforms having railroad-tracks extending alongside of same, warehouses arranged in pairs of rows with their rear doors facing each other, compresses located at one end of said rows, a plurality of inclined trolley-tracks extending from the receiving-station past the front doors of the warehouses in each row, a plurality of inclined trolley-tracks extending past the doors of the warehouses in each row, past the compresses and to the shipping-station, and oppositely-inclined trolley-tracks on which the trolleys are returned to their starting-points; substantially as described.

845,927. SHADE-CLOTH WITH IDENTIFICATION-MARK THEREON. CHARLES W. BRENEMAN, Cincinnati, Ohio. Filed June 11, 1906. Serial No. 321,191.

Claim.—Shade-cloth consisting of white muslin the opposite sides of which are coated with coloring-matter, and identifying-name formed of letters pricked through the shade-cloth disclosing the white edges of the intermediate uncolored muslin, whereby the identifying-name is displayed by letters formed of a series of white dots visible through the colored surface of the shade-cloth.

845,928. BOOT CLEANING AND POLISHING OUTFIT. ARTHUR J. BROOKS, Manchester, England. Filed June 11, 1906. Serial No. 321,252.

Claim.—The combination, with a handle provided with a guide, of a shaft journaled in the said handle and provided with a rectangular portion, a block secured on the said shaft and having a plurality of polishing devices, and a locking-plate slidable in the said guide and provided with a jaw for engaging with the said rectangular portion of the shaft.

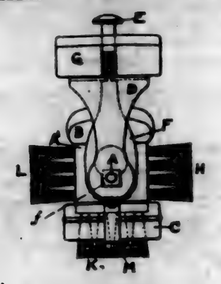

845,929. FILTER AND DISTILLER. NICOLAS BROONO-IPPOLITO, Allegheny, Pa. Filed Dec. 29, 1906. Serial No. 349,942.

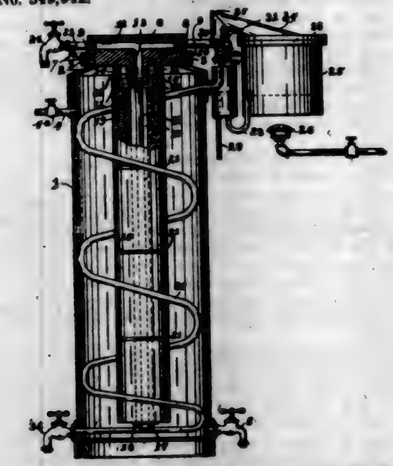

Claim.—1. In the character of apparatus described, a filter, a distiller adjacent thereto, means for supplying the product of said filter to said distiller and means contained within said filter for condensing and cooling the product of said distiller.

2. In the character of apparatus described, a casing, filtering means contained within said casing, a water-supply connected with said casing, a distiller adjacent to said casing, means for supplying the product of said filtering means to said distiller and a condensing-coil within said casing connected with said distiller.

3. In the character of apparatus described, a casing, filtering means contained in said casing, a water-supply connected with said casing, a distiller, means for automatically supplying the product of said filtering means to said distiller and a condensing-coil connected with said distiller and surrounding said filtering means within said casing.

4. In the character of apparatus described, a casing, filtering means contained in said casing, a water-supply connected with said casing, a distiller, means for automatically maintaining a proper supply of filtered water from said filtering means in said distiller and a condensing-coil within said casing and connected to said distiller.

5. In the character of apparatus described, a casing, a cover secured to said casing, a projection rigid with said cover and depending within said casing, filtering means attached to said cover, a passage carried by said cover, a second passage through said projection and communicating with said first passage, a compartment surrounding said projection, a port connecting said compartment with said second passage and means whereby the product of said filtering means is forced into said compartment.

845,930. NUT-LOCK. THOMAS E. CURD, Morley, Mo., assignor of one-fourth to Benjamin F. Earles, Morley, Mo. Filed Dec. 13, 1906. Serial No. 347,729.

Claim.—In a nut-lock, the combination with a bolt having a longitudinal groove, and a nut having a transverse opening, of a key consisting of a body portion extending through the opening of the nut and having its inner end arranged in the groove of the bolt, and a substantially U-shaped loop having inner and outer sides and a connecting outer portion, the outer side of the loop being connected with the outer end of the said body portion and the inner side of the loop being arranged in the groove of the bolt and fitting against the said body portion of the key, whereby the loop is adapted to engage the bolt and also retain the key in engagement with the same.

845,931. KEYLESS LOCK. JOHN W. DAVENPORT, Richmond, Ind. Filed Sept. 19, 1906. Serial No. 335,193.

Claim.—1. A keyless lock comprising a casing, means for securing the casing in operative position, a permutation mechanism contained in the casing, a knob located outside the casing for operating the permutation mechanism, means for determining the operation of said knob, a locking-plate inside the casing adapted to be either secured or freed by the permutation mechanism, a spring for retaining said locking-plate in normal position, and a push-button located outside the casing for moving said locking-plate out of its normal position after being freed by the permutation mechanism, all substantially as shown and described and for the purposes set forth.

2. A permutation-lock comprising in combination, a casing having an exposed front plate containing a dial, means for securing the casing in position, a movable locking member extending upward inside the casing, a permanent locking member extending down into the casing adapted to interlock with the first-named locking member, a horizontally-movable plate carrying said upwardly-extending locking member, a push-button located outside the face of the casing and adapted to move said locking-plate inward, a spring adapted to normally retain the locking-plate outward and the locking members in engagement with each other, teeth formed on one end of the locking-plate adapted to be moved into and out of said indentations of the disks, means for spacing the disks apart, a knob outside the face of front plate and secured to one of said disks, a plate carrying a marker and secured to said knob and in contact with said dial, and means for bringing the indentations of the disks into alinement with each other and with the teeth of the locking-plate by the revolution of said knob, all substantially as shown and described.

3. In a keyless lock, the combination with the case, a locking-plate, means outside the case for sliding the locking-plate in one direction, a spring inside the case for returning the locking-plate to its normal position, a fixed shaft inside the case, disks mounted on said shaft and each having an indentation in its periphery, collars secured to said shaft for separating said disks, forks extending out from one end of the locking-plate and normally resting

between said disks and adapted to enter said indentations of the disks when said locking-plate is pressed in against the resiliency of said spring, means for rotating said disks together and for allowing each to make a revolution without actuating the others, and means for changing the relative revolutions of the disks, all substantially as shown and described.

4. A lock comprising a suitable casing, a dial formed on the face of the casing, a knob and pointer operative concentrically over said dial, a movable locking member extending upwardly inside the casing, a relatively permanent locking member extending downwardly into the casing and adapted to interlock with the first-named locking member, a horizontally-slidable plate carrying said upwardly-extending locking member, a push-button located outside the face of the casing and adapted to move said locking-plate inward, a spring for returning the locking-plate to its normal position when said push-button is released, a shaft operative within the casing and carried with said knob and pointer, a series of disks revolubly mounted on said shaft with one of said disks continuously carried with the shaft, collars secured to said shaft and spacing said disks some distance apart, pins secured in the opposing faces of said disks to provide means whereby the indentations of the disks may be brought into alinement with each other by the rotation of said knob, teeth formed in one end of the locking-plate adapted to be moved into said indentations of the disks when said indentations are in alinement and to rest between the disks when said indentations are out of alinement, all substantially as shown and described.

845,932. AUTOMATIC GREASE-CUP. THOMAS L. DEER, Reading, Pa. Filed Nov. 12, 1906. Serial No. 342,941.

Claim.—1. In a grease-cup for lubricating purposes, a body having a central opening in its bottom, a removable screw-threaded stem loosely fitting in said opening, said stem having a square head, a circular collar at the base of said head adapted to bear against the inside of the bottom of said body and a central tapered opening, substantially as described.

2. In a grease-cup for lubricating purposes, a body having a central opening at its bottom, a removable screw-threaded stem loosely fitting in said opening, said stem having a square head, a circular collar and a central tapered opening, a removable cover for said body having a central, internally-screw-threaded opening, a hollow adjusting-screw located in said opening, a jam-nut for setting said screw, a plunger-rod passing loosely through said screw, a piston on the lower end of said rod and a coiled spring interposed between said piston and the end of said adjusting-screw.

845,982. CAR CONSTRUCTION. EDMAN I. DODDS, Pullman, Ill., assignor to The Pullman Company, Chicago, Ill., a Corporation of Illinois. Filed May 3, 1905. Serial No. 258,577.

Claim.—1. In a railway-car having one or more center sills, the combination of one or more dumping-doors on each side of said center sills, separable hinge mechanisms supporting each of said doors on both of its longitudinal edges whereby either edge may be dropped, each of said hinge mechanisms comprising a hinge member carried by the door, an oscillatory hinge-rod, a hinge member for said rod pivotally engaging said first-named hinge member, and means for actuating said hinge-rod, and means for actuating said doors, substantially as described.

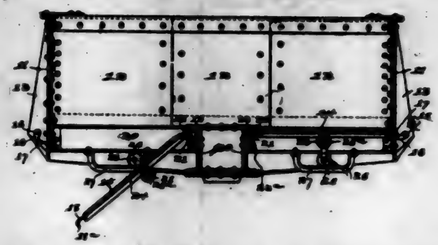

2. In a railway-car having one or more center sills, the combination of one or more dumping-doors on each side of said center sills, separable hinge mechanisms supporting each door on both of its longitudinal edges whereby either edge may be dropped, each of said hinge mechanisms comprising a hinge-arm carried by the door, an oscillatory hinge-rod extending longitudinally of the car-body, a hinge-arm carried by said rod, means pivotally connecting said hinge-arms, and means for actuating said hinge-rod, and means for actuating said doors, substantially as described.

3. In a railway-car having one or more center sills, the combination of one or more dumping-doors on each side of said center sills, separable hinge mechanisms supporting each of said doors on both its inner and outer edges, each of said hinge mechanisms comprising a hinge-arm carried by the door having a bent end, an oscillatory hinge-rod extending longitudinally of the car, a hinge-arm carried by said rod and having a pintle engaging the bent end of said first-named hinge-arm, and means for actuating said hinge-rod, and means for actuating said doors, substantially as described.

4. In a railway-car having one or more center sills, the combination of one or more dumping-doors on each side of said center sills, separable hinge mechanisms supporting each of said doors on both its inner and outer longitudinal edges whereby either edge may be dropped, each of said hinge mechanisms comprising a hinge member carried by the door, an oscillatory hinge-rod, a hinge member on said rod pivotally and separably engaging said first-named hinge member, and means for actuating said hinge-rod, a detent device for retaining said hinge-rod in a position to hold the door closed, and means for actuating said doors, substantially as described.

5. The combination with a car-body having a dumping floor-section, of separable hinge mechanisms supporting said floor-section on both of its longitudinal edges whereby either edge may be dropped, said mechanism comprising a hinge member carried by the floor-section, an oscillatory rod, a hinge member on said rod pivotally and separably engaging said first-named hinge member, means for actuating said hinge-rod, an operating-shaft having an offset portion carrying a roller, and a wear-strip on the under side of said floor-section engaged by said roller, said wear-strip constituting an integral connection between said hinge members carried by said floor-section, substantially as described.

6. In a railway-car, the combination of a car-body, center sills, one or more dumping-doors on each side of said center sills and forming therewith a substantially level or flush bottom for said car-body, separable hinge mechanisms supporting each of said doors on both of its longitudinal edges whereby either edge may be dropped, each of said hinge mechanisms comprising a hinge member carried by the door, an oscillatory hinge-rod, a hinge member on said rod pivotally engaging said first-named hinge member, and means for actuating said hinge-rod, and means for operating said doors to open and close the same, substantially as described.

845,934. TRANSVERSE UNDERFRAME STRUCTURE FOR CARS. EDMAN I. DODDS, Pullman, Ill., assignor to The Pullman Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 18, 1905. Serial No. 278,934.

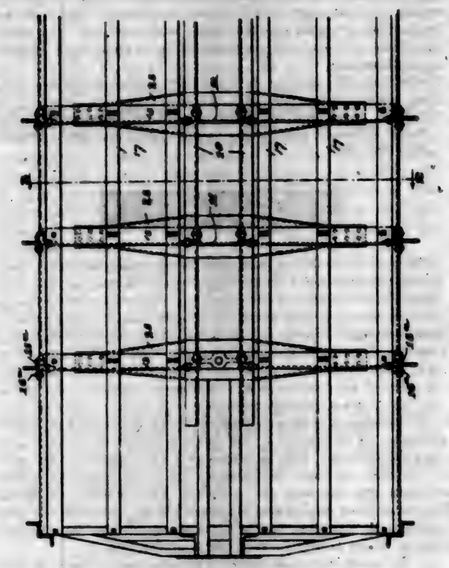

Claim.—1. In a construction of the character described, the combination of center sills, transverse beams, a spacing member secured to said center sills, and a plate having horizontal central and end portions and inclined intermediate portions, the center horizontal portion being secured to said spacing member, and the end horizontal portions being secured to said transverse beams, substantially as described.

2. In a construction of the character described, the combination of center sills, transverse beams, a spacing member secured to said center sills, and a plate having horizontal central and end portions and inclined intermediate portions, the center portion being secured to said spacing member and the end portions being secured to said transverse beams, said plate having flanges along the side edges of its horizontal end and inclined intermediate portions, substantially as described.

3. In a construction of the character described, the combination of center sills, transverse beams, a spacing member secured to said center sills, and a plate widest at its central part and tapered toward its ends, said plate having horizontal central and end portions and inclined intermediate portions, the central portion being secured to said spacing member and the end portions being secured to said transverse beams, substantially as described.

4. In a construction of the character described, the combination of flanged center sills, flanged transverse beams, a spacing member having flanges on its opposite edges, one of said flanges of said spacing member being secured to the flanges of said center sills, and a plate widest at its central portion and tapered toward its ends having horizontal central and end portions and inclined intermediate portions, said central portion being secured to the other flange of said spacing member, said end portions being secured to the flanges of said transverse beams, said plate having integral uniform flanges along the side edges of its horizontal end portions and integral tapered flanges along the side edges of its intermediate inclined portions, substantially as described.

845,935. COMBINATION CURTAIN AND SHADE FIXTURE. MARTIN O. DOLSON and MINOR MOXLEY, Los Angeles, Cal. Filed Aug. 15, 1906. Serial No. 330,670.

Claim.—1. A fixture comprising a foot, an arm extending therefrom with means for supporting the shade-roller, a head on the arm and having a notch, an extension comprising two heads each with a notch and having a leg with a notch in its lower end and having a locking-lug adapted to enter the notch in the first head, the first head having a locking-lug adapted to enter the notch in said leg.

2. In a combination-fixture, an arm, interchangeable supporting elements adapted to be supported by the arm, said elements having coöperative locking means consisting of lugs and notches, and a shell adapted to receive the end of a curtain-pole, said shell being provided with a locking element adapted to coöperate with the locking means of the other supporting devices.

3. A fixture comprising a foot, an arm extending therefrom with means for supporting a shade-roller, an extension, a crutch, and coöperative locking means on said arm, extension, and crutch whereby the extension may be detachably fastened to the arm and the crutch detachably fastened to the extension, or the crutch detachably fastened to the arm in place of the extension.

4. A fixture comprising a foot, an arm extending therefrom with means for supporting a shade-roller, an offset extension, a crutch, and coöperative locking means on said arm, extension, and crutch whereby the extension may be detachably fastened to the arm and the crutch detachably fastened to the extension, or the crutch detachably fastened to the arm in place of the extension.

5. A fixture comprising a foot, an arm extending therefrom with means for supporting a shade-roller, an extension with three or more locking means, a curtain-rod support, said arm and rod-support having locking means coöperative with that of the extension whereby the extension may be placed on the arm and a plurality of rod-supports may be placed either on said extension or on said arm in lieu of said extension after the extension is removed from the arm.

6. A fixture comprising a foot, an arm extending therefrom with means for supporting a shade-roller, an extension with three or more coöperative locking means, a curtain-rod support, said arm and rod-support having locking means coöperative with that of the extension whereby the extension may be placed on the arm and a plurality of rod-supports may be placed either on said extension or on said arm in lieu of said extension after the extension is removed, said extension being offset to place one of its fastening means in one plane, and other of its fastening means in another plane.

7. A fixture comprising a foot, an arm extending therefrom with means for supporting a shade-roller, an extension with at least three coöperative locking means, a crutch adapted to support a pole, and a shell adapted to receive the end of a solid rod or to enter the end of a hollow rod, said crutch and shell having locking means coöperative with those of the extension, whereby the arm may support the extension and the extension may support the crutch or shell or both, or the arm may support the crutch or shell.

8. A fixture comprising a foot, an arm extending therefrom with means for supporting a shade-roller, an extension with at least three coöperative locking means, a crutch adapted to support a pole, and a shell adapted to receive the end of a solid rod or to enter the end of a hol-

low rod, said crutch and shell having locking means cooperative with those of the extension, whereby the arm may support the extension and the extension may support the crutch or shell or both, or the arm may support the crutch or shell, said extension being offset to enable the use of a curtain rod or pole longer than the shade-roller.

9. A fixture comprising a foot, an arm extending therefrom with means for supporting a shade-roller, an extension, a crutch, and cooperative locking means on said arm, extension, and crutch whereby the extension may be detachably fastened to the arm and the crutch detachably fastened to the extension, or the crutch detachably fastened to the arm in place of the extension, said locking means comprising lugs cooperative with notches on the respective members each member having a notch and a lug, the lug of a member being adapted to enter the notch of another member.

845,936. MEANS FOR GRIPPING AND LIFTING PIPES AND OTHER CYLINDRICAL OBJECTS. ALFRED J. EDWARDS, Auckland, New Zealand. Filed Dec. 29, 1906. Serial No. 349,960.

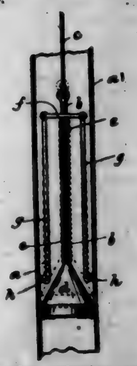

Claim.—In means for gripping and lifting pipes and other cylindrical objects, in combination, a vertically-suspended rod, a weight with a cone-shaped top upon the lower end of the rod, a helical spring surrounding the rod and resting at its lower end upon the weight, a cross-piece loosely mounted upon the rod and supported upon the upper end of the spring, and bars pivotally dependent from the cross-piece provided with outwardly-turned hooks on their lower ends, and normally depending a slight distance above the cone-surface of the weight, substantially as specified.

845,937. STEERING AND PROPELLING MECHANISM FOR BOATS. WILLIAM H. FAHRNEY, Chicago, Ill. Filed Sept. 29, 1906. Serial No. 336,768.

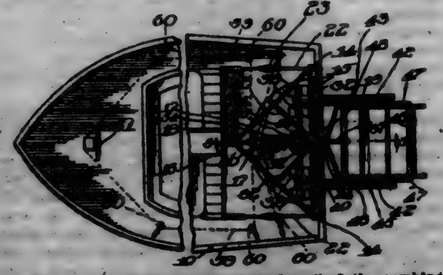

Claim.—In a device of the class described the combination of a turn-table, comprising a standard, a substantially semicircular supporting-platform secured to said standard intermediate the ends of the latter, said standard being located adjacent the straight edge of the platform, supports and braces for the platform, uprights secured to and projecting above the platform, arms secured to the upper ends of the uprights and the standard above the platform, braces for said arms, said standard being pivotally supported by its ends, a propeller pivotally supported by the platform, an arm secured to the standard and projecting beyond the straight edge of the platform, and hoisting mechanism secured to the said arm and the propeller-frame for varying the position of the latter with respect to the platform.

845,938. CONCRETE METAL CONSTRUCTION. EDWARD FLAD, St. Louis, Mo. Filed Dec. 31, 1904. Serial No. 239,180.

Claim.—1. In a concrete and metal construction, a body of concrete having a metal bar embedded therein and provided with a spiral projection or projections, the bearing-surfaces of said projection or projections forming with a plane at right angles to the axis of the bar an angle not greater than the angle of repose between the bar and concrete, said projection or projections also forming an effective part of said bar to resist tensile or compressive strain.

2. In a concrete and metal construction, a body of concrete having embedded therein a metal bar provided with a plurality of projections, the bearing-surfaces of said projections forming, with a plane at right angles to the axis of the bar, an angle not greater than the angle of repose between the bar and the concrete, said projections being narrower than the spaces between them, and said bar and projections together having substantially the same cross-section at all points in the length of the bar.

3. In a concrete and metal construction, a body of concrete having a metal bar embedded therein, said bar being provided with a spirally-arranged projection or projections, the bearing-surfaces of which form with a plane at right angles to the axis of the bar an angle not greater than the angle of repose, said projection or projections being arranged to be cut by all planes perpendicular to the axis of the bar.

4. In a concrete and metal construction, a body of concrete having a metal bar embedded therein, said bar being provided with a spirally-arranged projection or projections, the bearing-surfaces of which form with a plane at right angles to the axis of the bar an angle not greater than the angle of repose, said bar and projection or projections having together substantially the same cross-section at all points in the length of the bar.

5. In a concrete and metal construction, a body of concrete having a metal bar embedded therein, said bar being provided with projections arranged in the form of a double spiral, the bearing-surfaces of said projections forming with a plane at right angles to the axis of the bar an angle not greater than the angle of repose, said projections being arranged to be cut by all planes perpendicular to the axis of the bar.

6. In a concrete and metal construction, a body of concrete having a metal bar embedded therein, said bar being provided with projections arranged in the form of a double spiral, the bearing-surfaces of said projections forming with a plane at right angles to the axis of the bar an angle not greater than the angle of repose, said bar and projections together having substantially the same cross-section at all points in the length of the bar.

7. In a concrete and metal construction, a body of concrete having a metal bar embedded therein, said bar being provided with projections arranged in two diametrically opposite sets to form a double spiral, the bearing-surfaces of said projections forming with a plane at right angles to the axis of the bar an angle not greater than the angle of repose.

8. In a concrete and metal construction, a body of concrete having a metal bar embedded therein, said bar being curvilinear in cross-section and being provided with a projection or projections, the bearing-surfaces of which form with a plane at right angles to the axis of the bar an angle not greater than the angle of repose, said projection or projections being arranged to be cut by all planes perpendicular to the axis of the bar.

9. In a concrete and metal construction, a body of concrete having a metal bar embedded therein, said bar being circular in cross-section, and being provided with a projection or projections the bearing-surfaces of which form with a plane at right angles to the axis of the bar an angle not greater than the angle of repose, said projection or projections being arranged to be cut by all planes perpendicular to the axis of the bar.

10. In a concrete and metal construction, a body of concrete having a metal bar embedded therein, said bar being curvilinear in cross-section, and being provided with a spiral projection or projections, the bearing-surfaces of said projection or projections forming with a plane at right angles to the axis of the bar an angle not greater than the angle of repose.

11. In a concrete and metal construction, a body of concrete having a metal bar embedded therein, said bar being circular in cross-section, and being provided with a spiral projection or projections, the bearing-surfaces of said projection or projections forming with a plane at right angles to the axis of the bar an angle not greater than the angle of repose.

845,939. BURNISHING-MACHINE FOR IMITATION-STITCH IMPRESSIONS OR INDENTATIONS. LOUIS W. G. FLYNT, Rochester, N. Y., assignor to Quentin W. Booth and Irving E. Booth, Rochester, N. Y. Filed Nov. 2, 1904. Serial No. 231,133.

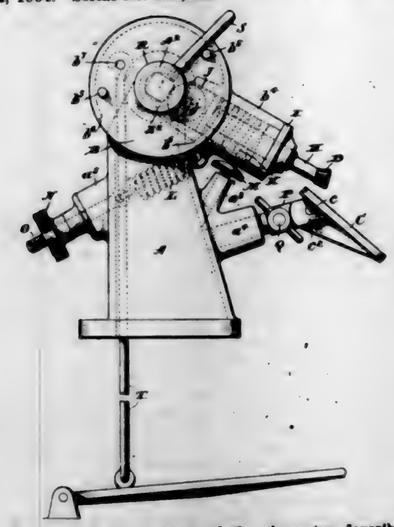

Claim.—1. In a machine of the character described, a burnishing-tool having an engaging surface formed to engage stitch impressions on the edges of shoe-soles, said engaging surface being rounded at a point adjacent the end of the tool to present a smooth corner to the impression being treated, and means for imparting repeated polishing movements to said tool while in uninterrupted contact with said impression.

2. In a machine of the character described, a burnishing-tool having an edge formed to engage stitch impressions on the edges of shoe-soles, said edge having a rounded end, and means for imparting a rapid longitudinally-reciprocating movement to said tool.

3. In a machine of the character described, a rotatable burnishing-tool having an edge formed to engage stitch impressions on the edges of shoe-soles, said edge having a rounded end, and means for imparting a rapid longitudinally-reciprocating movement to said tool.

4. In a machine of the character described, a burnishing-tool formed to engage stitch impressions on the edges of shoe-soles, and instrumentalities whereby said tool may simultaneously rotate and axially reciprocate.

5. In a machine of the character described, a tool comprising a rotatable wheel having a ribbed periphery, and means for rapidly reciprocating the same longitudinally of said peripheral ribs to impart to the same a burnishing action.

6. In a machine of the character described, a tool having a ribbed periphery and rounded end, and means whereby the same may reciprocate longitudinally of said peripheral ribs including a shaft on which the tool is rotatably mounted.

7. A fluted tool for burnishing stitch impressions having its flutes rounded at one end, and means whereby said tool may be reciprocated in a direction longitudinally of its flutes.

8. In a machine of the character described, a burnishing-tool formed to engage indentations arranged transversely at the edges of the stock, and means for imparting rapid polishing movements to said tool in a direction substantially lengthwise of the indentations.

9. A frusto-conical burnishing-tool for stitch impressions fluted on its tapered surface, and having the ends of its flutes at the larger end of the tool rounded, and means whereby said tool may be reciprocated in a direction longitudinally of its flutes.

10. A support, a fluted burnishing-tool free to revolve about the axis of its support, in combination with instrumentalities for axially reciprocating said tool.

11. In a machine of the character described, a burnishing-tool, a reciprocating shaft therefor, and means whereby the tool may rotate on said shaft, the axis of the tool being at an angle to the longitudinal axis of the shaft.

12. In a machine of the character described, a burnishing-tool, a shaft for reciprocating the same, and means for mounting the tool on the shaft whereby the tool is bodily at an angle to the longitudinal axis of the shaft but with its operating-surface substantially parallel therewith.

13. In a machine of the character described, a burnishing-tool formed to engage imitation-stitch impressions, means for imparting rapid polishing movements to the tool while in uninterrupted engagement with an impression whereby such impression may be finished prior to the treatment of a succeeding impression, and means for maintaining the engagement between said impression and tool during such polishing movements.

14. In a machine of the character described, a rotatable burnishing-tool formed to engage stitch impressions, on the edges of shoe-soles, means for axially reciprocating the same, and means for yieldably holding the tool in engagement with an impression whereby such impression may be finished prior to the treatment of a succeeding impression.

15. In a machine of the character described, a reciprocating shaft, a burnishing-tool free to revolve thereon, said tool being formed to engage stitch impressions on the edges of shoe-soles, a work-table, means tending to hold the tool toward the table, and means for moving the tool away from the tables against the action of said holding means, the line of reciprocation of the shaft being axially thereof.

16. In a machine of the character described, a rotatable burnishing-tool, formed to engage stitch impressions on the edges of shoe-soles, a reciprocating shaft carrying said tool, a work-table, means tending to maintain the tool and table in relatively close operative relation, and means for effecting a separation thereof, the line of reciprocation of the shaft being axially thereof.

17. A burnishing-tool, a reciprocating shaft on which the same is free to revolve in a direction transverse to the plane of reciprocation of said shaft, means for reciprocating the shaft, a work-table, and means for adjusting the angle of the table in relation to the tool.

18. In a machine of the character described, a reciprocating shaft, a burnishing-tool pivotally supported on said

shaft to turn in a direction transverse to the plane of reciprocation of said shaft, means for reciprocating the shaft, a work-table, means for adjusting the angle of said work-table, and means for yieldably holding the tool toward the work-table, said tool being positioned at an angle to the line of reciprocation of its shaft.

19. In combination, a supporting-shaft, a tool formed for leather-working, loosely mounted on said shaft whereby it is free to revolve about said shaft, and means including said shaft for rapidly reciprocating said tool axially to impart to the same a burnishing action.

20. In a machine of the character described, a reciprocating shaft, a burnishing-tool pivotally supported on said shaft to turn in a direction transverse to the line of reciprocation of said shaft, means for reciprocating the shaft, a work-table, and means for adjusting the angular relation of the table and tool.

21. In a machine of the character described, a reciprocating shaft, a pivoted burnishing-tool operatively associated therewith to turn in a direction transverse to the line of reciprocation of the shaft, means for reciprocating the shaft, a work-table, and means for adjusting the angular relation of the table and tool, said tool being positioned at an angle to the line of reciprocation of its shaft.

22. In a machine of the character described, a reciprocating shaft, a burnishing-tool carried thereby having an edge disposed longitudinally of said shaft and formed to engage stitch impressions on the edges of shoe-soles, means for axially reciprocating the shaft, a work-table, and means for adjusting the angular relation of the table and tool.

23. In a machine of the character described, a reciprocating shaft, a burnishing-tool carried thereby having an edge disposed longitudinally of said shaft and formed to engage stitch impressions on the edges of shoe-soles, means whereby said tool may rotate, means for axially reciprocating the shaft, a work-table, and means for adjusting the angular relation of the table and tool.

24. In a machine of the character described, a reciprocating shaft, a burnishing-tool carried thereby having an edge disposed longitudinally of said shaft and formed to engage stitch impressions on the edges of shoe-soles, means whereby said tool may rotate, means for axially reciprocating the shaft, a work-table, and means for adjusting the angular relation of the table and tool, said tool being positioned bodily at an angle to the line of reciprocation of the shaft but with its operating edge substantially parallel therewith.

25. In a machine of the character described, a burnishing-tool having a surface shaped to engage stitch impressions on the edges of shoe-soles, means for supporting said tool whereby the same may rotate, and means for imparting a rapid polishing movement to said tool approximately lengthwise of its engaging surface.

26. A burnisher comprising a tool formed to engage stitch impressions on the soles of shoes, and means for reciprocating said tool in a direction longitudinally of said impressions.

27. A burnisher comprising a tool formed to engage imitation-stitch impressions on the soles of shoes, means for reciprocating said tool in a direction longitudinally of said impressions, and means permitting the tool to shift by progressive movements from engagement with a burnished impression to the next adjoining unburnished impression.

28. In a machine of the character described, a rotatable burnishing-tool formed to engage stitch impressions on the edges of shoe-soles, means for reciprocating the tool longitudinally of said impressions, and means for holding the tool in engagement with the work.

29. In a machine of the character described, a burnishing-tool formed for engagement with stitch impressions on the edges of shoe-soles, means for imparting a rapid polishing movement to said tool longitudinally of said impressions, and means whereby the tool is held in engagement with the work.

30. In a machine of the character described, a burnishing-tool formed to engage stitch impressions on the edges of shoe-soles, means for imparting a rapid polishing movement to said tool, and means for holding the tool in operative engagement with each impression to permit complete burnishing thereof previous to the shifting of the tool to an adjoining impression.

31. In combination with a tool formed for leather-working a shaft therefor, a rotatable operating-shaft, a cam on said last-mentioned shaft with which the end of the tool-shaft is arranged to engage to actuate the tool, means for normally preserving the contact therebetween, and means for destroying said contact to prevent actuation of the tool including a shiftable member adapted to be interposed between said end of the tool-shaft and the cam on the operating-shaft.

32. In combination with a tool formed for leather-working, a shaft therefor, a rotatable operating-shaft, a cam on said last-mentioned shaft with which the end of the tool-shaft is arranged to engage to actuate the tool, means for normally preserving the contact therebetween, and means for destroying said contact to prevent actuation of the tool including a shiftable member sleeved on the operating-shaft adapted to be interposed between said end of the tool-shaft and the cam on the operating-shaft.

33. In combination with a tool formed for leather-working a shaft therefor, a rotatable operating-shaft, a cam on said last-mentioned shaft with which the end of the tool-shaft is arranged to engage to actuate the tool, said end comprising a part rounded in the direction of rotation of the operating-shaft, means for normally preserving the contact between said end and the cam, and means for destroying said contact to prevent actuation of the tool including a rotatable member sleeved on the operating-shaft adapted to be interposed between the end of the tool-shaft and the cam on the operating-shaft, said rotatable member having an open portion into which the end of the tool-shaft projects when the same is in engagement with the cam.

34. In combination with a tool formed for leather-working, a shaft therefor, a rotatable operating-shaft, a cam on said last-mentioned shaft with which the end of the tool-shaft is arranged to engage to actuate the tool, said end comprising a roller mounted to rotate in the direction of rotation of the operating-shaft, means for normally preserving the contact between said roller and the cam, and means for destroying said contact to prevent actuation of the tool including a rotatable member sleeved on the operating-shaft adapted to be interposed between the roller of the tool-shaft and the cam on the operating-shaft, said rotatable member having an open portion into which the roller of the tool-shaft projects when the same is in engagement with the cam.

35. In combination with a ribbed tool formed for leather-working, means for imparting to said tool while in contact with the stock and without shifting the tool from its initial position of engagement with said stock a succession of rapid reciprocations in line with its rib.

36. In a machine of the character described, means for burnishing impressions on the edges of shoe-soles including a tool having a part formed to enter and engage a surface of an impression, and means for actuating said tool while uninterruptedly occupying a position within the same impression to cause the tool to repeatedly rub said surface.

37. In a machine of the character described, means for finishing and burnishing the walls of impressions on the edges of shoe-soles including a tool having a part formed to enter and engage a surface of an impression, and means for actuating said tool to impart to the same repeated wiping actions over said surface of the impression.

38. A machine of the character described, having in combination, a work-support, an indenting-tool, means for vibrating the tool while in contact with the work lengthwise of the indentations made by the tool, and means for adjusting the tool to change the angle of movement of the tool with relation to the adjacent surface of the work-support, substantially as described.

39. A machine of the character described, having in combination, a work-support, an indenting-wheel mounted to rotate freely, and means for moving the wheel while in contact with the work lengthwise of the indentations made by the wheel, substantially as described.

845,940. CHURN. HARLAND GARBUTT, Seamer, England. Filed Dec. 3, 1906. Serial No. 346,142.

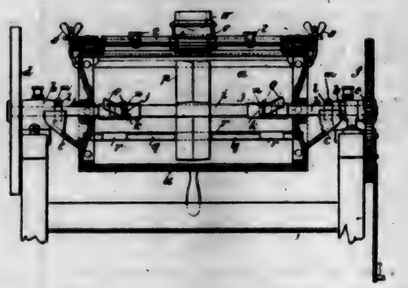

Claim.—In a churn, a barrel, a shaft passing through the barrel and made in three parts, the outer parts being capable of sliding in their bearings and releasing the central part, and dashers carried by the shaft.

845,941. FLY-ESCAPEMENT FOR WINDOW AND DOOR SCREENS. JOHN A. GEE, Cripple Creek, Colo. Filed Sept. 13, 1906. Serial No. 334,529.

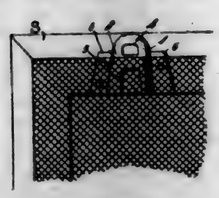

Claim.—1. As a new article of manufacture, an attachment for screen-doors comprising an upwardly-tapering, bulged body portion having its upper end closed and the lower end open and the sides provided with laterally-extending perforated flanges, said flanges being in a plane even with the inner edges of the body and the body being provided with an opening near its closed end and having its lower edges cut away nearly up to said opening.

2. In combination with a screen-door, a fly-escapement secured to the top bar thereof, said escapement comprising a bulged body portion having its upper end closed and its lower end open, and the sides provided with perforated flanges which extend laterally in a plane even with the inner edges of the body and are secured to said frame, the body being provided with an opening near its closed end and the lower edge being cut away nearly up to said opening, and the screen material covering the cut-away portion of said body, whereby the insect in passing through the attachment will be compelled to pass from the opening in the top of the body down between the body and the frame.

845,942. MORTAR-MIXER. LOUIS D. GENTELES, Portis, Kans., assignor to Crescent Mfgr. Co., Kansas City, Mo. Filed Dec. 15, 1906. Serial No. 291,887.

Claim.—In a mixing-machine, the combination of a cylinder having arms projecting at opposite sides from the head end thereof, a shaft extending lengthwise within the cylinder and having paddles, a drive-shaft geared to said shaft and extending horizontally across the head of the cylinder and to which the arms are pivotally connected, and means to raise or lower the other end of the cylinder.

845,942.

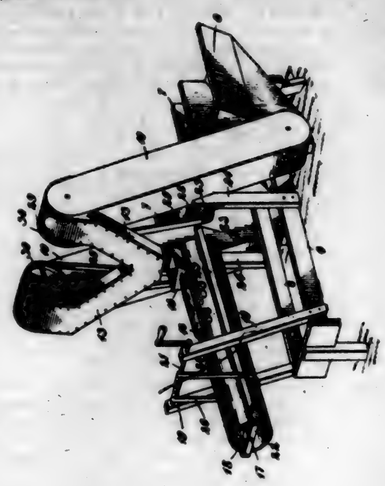

845,943. GARMENT-SUPPORTER. HARRY E. GIFFORD, New Bedford, Mass. Filed Aug. 24, 1905. Serial No. 275,546.

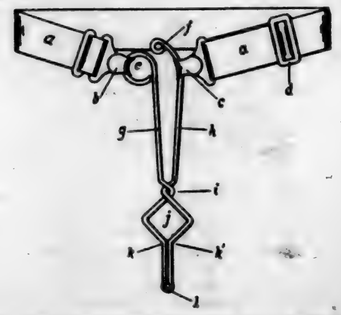

Claim.—In a hose-supporter made of a single piece of spring-wire, the combination with a reactionary loop formed by bending said wire, a depending grip at one angle of said loop having parallel walls, two arms formed in the opposite angle of said loop by twisting said arms whereby the grip in the pendant may be increased or diminished by spreading or closing said arms, and a non-elastic band, substantially as described.

845,944. CUSPIDOR. DAVID S. GREEN, St. Louis, Mo. Filed Dec. 15, 1906. Serial No. 348,022.

Claim.—1. In combination with a floor provided with an opening, a lid hinged thereto above the opening, a bent lever pivoted on supports beneath the floor at a point intermediate its length and carrying a cuspidor on one arm thereof, a connection between the lid and lever, a lug depending from the opposite arm of the lever, a bar projecting from said lug, an arm secured to the bar, a link passing upward through the floor and pivotally coupled to the arm, and means for controlling the link from a point above the floor, the parts operating substantially as set forth.

2. In combination with a car-floor provided with an opening, a lid hinged thereto above the opening, a bent lever pivoted on supports beneath the floor to move about an intermediate axis; a cuspidor on one arm of the lever positioned beneath the opening to move upward through the

same, a spring connecting said arm to the lid, a lug depending from the end of the opposite arm of the lever, a rigid horizontal bar secured to the lug, an arm rigidly extending from the bar, a link extending through the car-floor and pivotally connected at its lower end to the adjacent end of the arm, a spring-arm secured to the arm of the lever car-

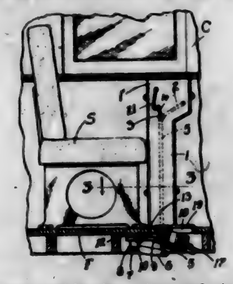

rying the cuspidor and having a free end yieldingly bearing against the car-floor, a buffer at the end of the opposite arm of the lever, a lever pivoted above the car-floor and coupled to the upper end of the link, and a latch for securing the link in an elevated position, the parts operating substantially as, and for the purpose set forth.

845,945. MACHINE FOR MAKING ARTIFICIAL-STONE BLOCKS. VICTOR W. GRUMMAN, Zanesville, Ohio. Filed May 10, 1906. Serial No. 316,173.

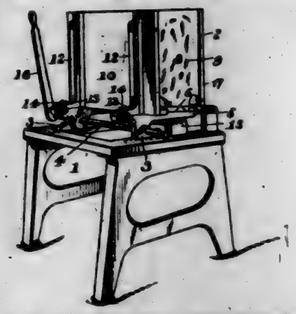

Claim.—1. In a machine of the character described, the combination of a supporting-stand having a stationary vertical plate forming one side of a mold and provided with stop-flanges at its ends, a shaft mounted in bearings on said frame, bracket-arms on said shaft, a bottom mold-plate on said arms, end plates hinged to the ends of said bottom plate, a pallet-board supported on said bracket-arms to form the side of the mold opposite the stationary plate, supporting means for said pallet-board, means to adjustably connect said supporting means with said bracket-arms, means to operate said bracket-arms and the pallet-board, bottom plate and end plate carried thereby, and means independent of the said shaft to support the bottom plate when in operative position.

2. In a machine of the character described, the combination with a supporting stand or frame having a stationary plate arranged thereon to form one side of a mold, of a shaft pivotally mounted in bearings on said frame, bracket-arms secured on said shaft, a bottom mold-plate arranged on said arms, end plates hingedly connected to the end of said bottom plate, a pallet-board supported on said bracket-arms to form the side of the mold opposite the stationary plate on said frame, supporting-bars to hold said pallet-board in place, means to adjustably connect said supporting-bars with said bracket-arms, a lever connected to said shaft whereby the bracket-arms and the parts of the mold carried thereby may be tilted into and out of an operative position, and a cross-bar arranged on said stand to support said bracket-arms when the mold is in a closed or operative position, substantially as described.

845,946. JUG-TOP. JAMES F. HAFFEY, Tiffin, Ohio, assignor to Charles S. Baron, Tiffin, Ohio. Filed Mar. 24, 1905. Serial No. 251,872.

Claim.—1. The combination with the neck of a jug, of a sheet-metal jug-top provided with a collar and a rim, a depending internal sheet-metal cylinder extending flush with said jug-neck throughout the extent of said cylinder, and a sheet-metal member adapted to secure said cylinder, collar, and rim together.

2. In a jug-top, the combination with its collar and rim, of a depending internal cylinder substantially concentric with the collar throughout its length, and a separate member adapted to secure said cylinder, collar, and rim together.

3. In a jug-top the combination with annularly-flanged collar and rim, of a depending skirt and a separate member for uniting said skirt to the collar and rim flanges.

4. In a jug-top the combination with annularly-flanged collar and rim, of a depending skirt and a separate crimped member adapted to unite said skirt to said collar and rim flanges.

5. The combination with a jug-top, of an internal depending skirt a spout adapted to be secured to the top and means upon the spout for securing said skirt to the top.

6. In a jug-top the combination with annularly-flanged collar and rim, of a depending skirt provided with a flange, a lip-piece adapted to engage and hold said flange and means for securing said lip to the collar and rim flanges.

7. In a jug-top the combination with annularly-flanged united collar and rim, of a depending skirt provided with a flange, a lip-piece provided with a skirt and means of engaging said flange of the depending skirt, and a crimp formed in the skirt of the lip about the collar and rim flanges.

8. In a jug-top the combination with annularly-flanged united collar and rim, of a depending skirt provided with a flange, a lip-piece provided with a skirt and means of engaging said flange of the depending skirt, and a crimp formed in the skirt of the lip about the collar and rim flanges, the flange of the depending skirt being cut away to accommodate the crimp of the lip-piece.

845,947. BOTTLE-CARRIER. CHARLES B. HALL, Chicago, Ill. Filed Oct. 31, 1904. Serial No. 230,670.

Claim.—1. A bottle-carrier having wires forming its sides and ends, top and bottom border-wires to which the side and end wires are attached, upper and lower intermediate border-wires attached to the sides and ends, longitudinal and transverse wires attached to the upper intermediate border-wire to form partitions for the bodies of the bottles, and a bottle-support consisting of diagonally-arranged crossing wires attached to the lower intermediate border-wire and providing openings for the bottle-necks smaller than and in register with the openings formed by the partitions for the bodies of the bottles.

2. A bottle-carrier having wire sides and ends, top and bottom border-wires attached to the sides and ends, upper and lower intermediate border-wires attached to the sides and ends, a bottle-support consisting of crossing wires attached to the lower intermediate border-wire and providing openings for the bottle-necks, crossing wires attached to the upper intermediate border-wire and providing relatively larger openings than and registering with the support-openings, and corner-webs attached to the carrier.

845,948. SOLDERING COMPOUND. RAYMOND A. HALL, Dayton, Ohio. Filed Nov. 22, 1906. Serial No. 344,629.

Claim.—The herein-described soldering compound, consisting of stearic acid, mutton-tallow, lard and paraffin-wax, substantially in the proportions specified.

845,949. STEERING-GEAR. FRANK Y. HARRISON, Detroit, Mich. Filed Jan. 11, 1906. Serial No. 295,519.

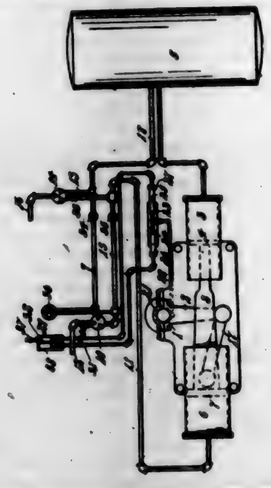

Claim.—1. In combination with a rudder-post and tiller therefor, a pair of cylinders of different cross-area acting in opposition the one to the other, the smaller of said cylinders being in constant connection with a source of fluid-pressure, and the larger of said cylinders being in controlled communication with the same source of fluid-pressure, substantially as described.

2. In combination with a rudder-post and tiller therefor, a pair of cylinders in opposed relation, one of said cylinders being connected to the tiller-post by a link, a source of fluid-pressure in constant communication with one of said cylinders, a valved communication between the same source of fluid-pressure and the other of said cylinders, and an indicator actuated by the rudder-post, substantially as described.

3. In combination with a rudder-post provided with a tiller, a pair of cylinders one on each side of said post in axial alinement the one with the other, means connecting said tiller and the piston of one of the cylinders, a rigid connecting-bar from the piston of one cylinder to that of the other, a supply-tank from which actuating fluid is continuously fed to one of said cylinders, a system of pipes leading from said tank to the other of said cylinders, and means located at a plurality of points along said pipes by the use of any one of which the flow of actuating fluid therethrough may be controlled, substantially as described.

845,950. MEANS FOR STORING AND DISPENSING SHEET FABRIC. JAMES E. HART, Edgefield, S. C. Filed Nov. 27, 1905. Serial No. 289,319.

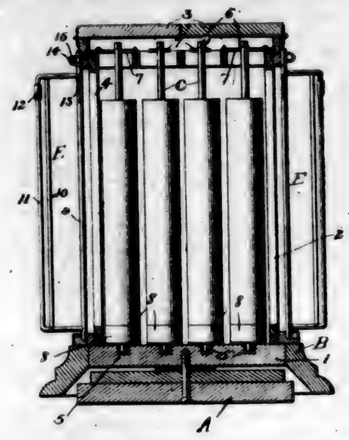

Claim.—1. In a display-stand for fabric rolls, a supporting-casing having fixed bearings in its lower portion and movable bearings in its upper portion, a series of roll-containing spindles vertically mounted in said bearings, and a series of vertically-mounted rotatory frames attached to said casing and coöperating with said spindles to hold the ends of the fabric rolls in exposed relation.

2. In a display-stand for fabric rolls, a supporting-casing having fixed bearings in its lower portion and movable bearings in its upper portion, a series of roll-containing spindles vertically mounted in said bearings, and a series of vertically-mounted rotatory frames attached to said casing and coöperating with said spindles to hold the ends of the fabric rolls in exposed relation, each of said frames comprising two parallel rods through which the fabric is drawn.

3. In a display-stand for fabric rolls, a supporting-casing, a series of roll-containing spindles vertically mounted therein, a series of vertically-mounted rotatory frames attached to said casing and coöperating with said spindles to hold the ends of the fabric rolls in exposed relation, each of said frames comprising two parallel rods through which the fabric is drawn, and a member for pivotally supporting said rods at a distance from the casing, and means common to all the frames on each side of the casing for securing said frames in position.

4. In a display-stand for fabric rolls, a supporting-casing, a series of roll-containing spindles vertically mounted therein, a series of vertically-mounted rotatory frames attached to said casing and coöperating with said spindles to hold the ends of the fabric rolls in exposed relation, each of said frames comprising two parallel rods through which the fabric is drawn, and a bar journaled in the casing and connected to said parallel rods, and means common to all the frames on each side of the casing for securing said frames in position.

5. In a display-stand for fabric rolls, a supporting-casing, a series of roll-containing spindles vertically mounted therein, a series of vertically-mounted rotatory frames removably attached to said casing and coöperating with said spindles to hold the ends of the fabric rolls in exposed relation, and means common to all the frames on each side of the casing for securing said frames in position.

6. In a display-stand for fabric rolls, a supporting-casing, a series of roll-containing spindles vertically mounted therein, a series of vertically-mounted rotatory frames attached to said casing and coöperating with said spindles to hold the ends of the fabric rolls in exposed relation, means common to all the frames on each side of the casing for securing said frames in position and means on each

frame for supporting a measuring device parallel with the fabric.

7. In a display-stand for fabric rolls, a supporting-casing, a series of vertical roll-containing spindles in said casing, means for removably journaling said spindles therein, a series of vertical-mounted rotatory frames attached to said casing and coöperating with said spindles to hold the ends of the fabric rolls in exposed relation, and means common to all the frames on each side of the casing for securing said frames in position.

8. In a display-stand for fabric rolls, a supporting-casing, a series of roll-containing spindles in said casing, a fixed journal-bearing and a pivoted journal-bearing for each of said spindles, located at the bottom and top of said casing respectively, whereby the spindles may be separately removed, a series of vertically-mounted rotatory frames attached to said casing and coöperating with said spindles to hold the ends of the fabric rolls in exposed relation, and means common to all the frames on each side of the casing for securing said frame in position.

845,951. WATCHMAN'S CLOCK. OTTO E. HAUSBURG, New York, N. Y. Filed Apr. 17, 1903. Serial No. 153,055.

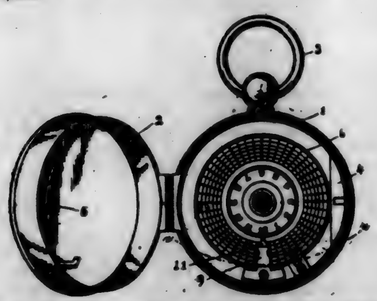

Claim.—1. In a recording device for watchmen's clocks, the combination of a rotary key-cylinder having a key-slot along one side and a plurality of radial slots across its inner end, a spring-catch capable of seating in any one of said radial slots, a continually-rotating record-dial holder, recorders for making a record upon said dial, and a key turning with said cylinder and for first releasing said catch and then, while maintaining said catch released, operating said recorders.

2. In a recording device for watchmen's clocks, the combination of a rotary key-cylinder having a key-slot along one side and two radial slots at right angles to each other across its inner end, one of said radial slots registering with said key-slot, a spring-catch capable of seating in either of said radial slots, a continually-rotating record-dial holder, recorders for making a record upon said dial, and a key turning with said cylinder and for first releasing said catch and then, while maintaining said catch released, operating said recorders.

3. In a recording device for watchmen's clocks, the combination of a rotary key-cylinder having a key-slot along one side and two radial slots at right angles to each other across its inner end, one of said radial slots registering with said key-slot, a spring-catch capable of seating in either of said radial slots, said catch consisting of a flat spring bent at right angles at one end, a continually-rotating record-dial holder, recorders for making a record upon said dial, and a key turning with said cylinder and for first releasing said catch and then, while maintaining said catch released, operating said recorders.

4. In a recording device for watchmen's clocks, the combination of a rotary key-cylinder having a key-slot along one side and a plurality of radial slots across its inner end, one of said radial slots registering with said key-slot, a spring snap-catch capable of seating in any one of said radial slots, a key fitting into said key-slot, said catch being in the path of the inner end of said key and held out of said radial slots thereby when said key is fully inserted into said slot, a continually-rotating record-dial holder, and recorders for making a record upon said dial, said recorders being operated by said key.

5. In a recording device for watchmen's clocks, the combination of a rotary key-cylinder having a key-slot along one side, a plurality of radial slots across its inner end, one of said radial slots registering with said key-slot, and said key-cylinder also having reduced end portions forming journals, a block having a bearing for the outer reduced portion of said key-cylinder, a plate having an opening receiving the reduced and slotted inner end of said key-cylinder, said plate having two notches located at diametrically opposite points in the edge of said opening, a flat spring having one of its ends bent at right angles and attached by its other end to said plate, said bent end being wider than the reduced slotted end of said key-cylinder and normally seating in said notches and in one of said radial slots, a continually-rotating record-dial holder, and recorders for making a record upon said dial, said recorders being operated by said key.

6. In a recording device for watchmen's clocks, the combination of a rotary key-cylinder having reduced end portions forming journals, a key-slot along one side and a plurality of radial slots across its inner end, one of said radial slots registering with said key-slot, a block having a hole forming a bearing for the outer reduced portion of said cylinder, said block having a key-slot opening into said hole and normally registering with said first-named key-slot, a plate having an opening receiving the reduced and slotted inner end of said cylinder, a rotary key fitting into said key-slots, two shoulders on said key for guiding said key between said block and said plate, a spring-catch for normally seating in one of said radial slots, said catch being in the path of said key and released by the inward movement thereof, a continually-rotating record-dial holder, and recorders for making a record upon said dial, said recorders being operated by said key.

7. A recording device for watchmen's clocks consisting of the combination of a base, a plate fixed to said base at right angles thereto, a support fixed to said base parallel to said plate, a pivot-pin extending between said support and said plate, a plurality of levers arranged side by side and pivoted at one end on said pivot-pin, a stylus projecting at right angles from each lever and extending through an opening in said base, a pointed cam projecting from the opposite side of each lever, a stop-pin extending between said support and said plate in the paths of said levers on the side next to said cams, a curved plate-spring attached by one end to said base and bearing at its other end against said levers on their sides next to said base, a rotary key-cylinder having a key-slot along one side, a plurality of radial slots across its inner end, one of said radial slots registering with said key-slot, and said key-cylinder also having reduced end portions forming journals, a block fixed to said base and having a bearing for the outer reduced portion of said cylinder, said plate having an opening receiving the reduced and slotted inner end of said cylinder, said plate also having two notches located at diametrically opposite points in the edge of said opening, a flat spring attached by one of its ends to said plate, and a right-angular bent portion at the other end of said spring, said bent portion being wider than the reduced slotted end of said cylinder and normally seating in said notches and in one of said radial slots.

8. A recording device for watchmen's clocks consisting of the combination of a base, a plate fixed to said base at right angles thereto, a support fixed to said base parallel to said plate, a pivot-pin extending between said support and said plate, a plurality of levers arranged side by side and pivoted at one end on said pivot-pin, a stylus projecting at right angles from each lever and extending through an opening in said base, a pointed cam projecting from the opposite side of each lever, a stop-pin extending between said support and said plate in the paths of said levers on the side next to said cams, a curved plate-spring attached by one end to said base and bearing at its other end against said levers on their sides next to said base, a rotary key-

cylinder having reduced end portions forming journals, a key-slot along one side and a plurality of radial slots across its inner end, one of said radial slots registering with said key-slot, a block fixed on said base and having a hole forming a bearing for the outer reduced portion of said cylinder, said block having a key-slot opening into said hole and normally registering with said first-named key-slot, said plate having an opening receiving the reduced and slotted inner end of said cylinder, two oppositely-facing shoulders on said key, said shoulders when said key is revolved being guided between said block and said plate, a wing on said key, a part of the path of said wing being occupied by one of said cams, and a spring-catch normally seating in one of said radial slots, said catch being in the path of said key and released by the inward movement thereof.

9. A recording device for watchmen's clocks consisting of the combination of a base, a plate fixed to said base at right angles thereto, a support fixed to said base parallel to said plate, a pivot-pin extending between said support and said plate, a plurality of levers arranged side by side and pivoted at one end on said pivot-pin, a stylus pivoted on each of the said levers and normally projecting at right angles therefrom, a stylus-point carried by each of said styluses, a lug projecting from each of said styluses radial to its pivot, a shoulder on each of the said levers in the path of said lug, a spring attached to each of the said levers by one of its ends and bearing at its other end against said lug opposite to said shoulder, a stop-pin extending between said support and said plate in the paths of said levers on the side next to said cams, a curved plate-spring secured by one end to said base and bearing at its other end against said levers on their sides next to said base, and a rotary key-cylinder having a key-slot along one side, a plurality of radial slots registering with said key-slot, and said key-cylinder also having reduced end portions forming journals, a block fixed to said base and having a bearing for the outer reduced portion of said cylinder, said plate having an opening receiving the reduced and slotted inner end of said cylinder, said plate also having two notches located at diametrically opposite points in the edge of said opening, a flat spring attached by one of its ends to said plate, and a right-angular bent portion at the other end of said spring, said bent portion being wider than the reduced slotted end of said cylinder and normally seating in said notches and in one of said radial slots.

10. A recording device for watchmen's clocks consisting of a base, a plate fixed to said base at right angles thereto, a support fixed to said base parallel to said plate, a pivot-pin extending between said support and said plate, a plurality of levers arranged side by side and pivoted at one end on said pivot-pin, a stylus pivoted on each of the said levers and normally projecting at right angles therefrom, a stylus-point carried by each of said styluses, a lug projecting from each of said styluses radial to its pivot, a shoulder on each of the said levers in the path of said lug, a spring attached to each of the said levers by one of its ends and bearing at its other end against said lug opposite to said shoulder, a stop-pin extending between said support and said plate in the paths of said levers on the side next to said cams, a curved plate-spring secured by one end to said base and bearing at its other end against said levers on their sides next to said base, a rotary key-cylinder having reduced end portions forming journals, a key-slot along one side and a plurality of radial slots across its inner end, one of said radial slots registering with said key-slot, a block fixed on said base and having a hole forming a bearing for the outer reduced portion of said cylinder, said block having a key-slot opening into said hole and normally registering with said first-named key-slot, said plate having an opening receiving the reduced and slotted inner end of said cylinder, two oppositely-facing shoulders on said key, said shoulders when said key is revolved being guided between said block and said plate, a wing on said key, a part of the path of said wing being occupied by one of said cams and a spring-catch normally seating in one of said radial slots, said catch being in the path of said key and released by the inward movement thereof.

11. A recording device for watchmen's clocks consisting of the combination of a base, a plate fixed to said base at right angles thereto, a support fixed to said base parallel to said plate, a pivot-pin extending between said support and said plate, a plurality of levers arranged side by side and pivoted at one end on said pivot-pin, a stylus pivoted on each of the said levers and normally projecting at right angles therefrom, a stylus-point carried by each of said styluses; a lug projecting from each of said styluses radial to its pivot, a shoulder on each of the said levers in the path of said lug, a spring attached to each of the said levers by one of its ends and bearing at its other end against said lug opposite to said shoulder, a pointed cam projecting from each of the said levers in a direction opposite to said stylus-point, a stop-pin extending between said support and said plate in the paths of said levers on the side next to said cams, a curved plate-spring secured by one end to said base and bearing at its other end against said levers on their sides next to said base, a rotary key-cylinder having reduced end portions forming journals, a key-slot along one side and a plurality of radial slots across its inner end, one of said radial slots registering with said key-slot, a block fixed on said base and having a hole forming a bearing for the outer reduced portion of said cylinder, said block having a key-slot opening into said hole and normally registering with said first-named key-slot, said plate having an opening receiving the reduced and slotted inner end of said cylinder, two oppositely-facing shoulders on said key, said shoulders when said key is revolved being guided between said block and said plate, a wing on said key, a part of the path of said wing being occupied by one of said cams and a spring-catch normally seating in one of said radial slots, said catch being in the path of said key and released by the inward movement thereof.

12. A recording device for watchmen's clocks consisting of the combination of a base, a plate fixed to said base at right angles thereto, a support fixed to said base parallel to said plate, a pivot-pin extending between said support and said plate, a plurality of levers arranged side by side and pivoted at one end on said pivot-pin, a stylus pivoted on each of the said levers and normally projecting at right angles therefrom, a stylus-point carried by each of said styluses, a lug projecting from each of said styluses radial to its pivot, a shoulder on each of the said levers in the path of said lug, a spring attached to each of the said levers by one of its ends and bearing at its other end against said lug opposite to said shoulder, a stop-pin extending between said support and said plate in the paths of said levers on the side next to said cams, a curved plate-spring secured by one end to said base and bearing at its other end against said levers on their sides next to said base, a rotary key-cylinder having reduced end portions forming journals, a key-slot along one side and a plurality of radial slots across its inner end, one of said radial slots registering with said key-slot, a block fixed on said base and having a hole forming a bearing for the outer reduced portion of said cylinder, said block having a key-slot opening into said hole and normally registering with said first-named key-slot, said plate having an opening receiving the reduced and slotted inner end of said cylinder, two oppositely-facing shoulders on said key, said shoulders when said key is revolved being guided between said block and said plate, a wing on said key, a part of the path of said wing being occupied by one of said cams and a spring-catch normally seating in one of said radial slots, said catch being in the path of said key and released by the inward movement thereof.

13. A recording device for watchmen's clocks consisting of the combination of a base, a plate fixed to said base at right angles thereto, a support fixed to said base parallel to said plate, a pivot-pin extending between said support and said plate, a plurality of levers arranged side by side and pivoted at one end on said pivot-pin, a stylus pivoted on each of the said levers and normally projecting at right angles therefrom, a stylus-point carried by each of said styluses, a lug projecting from each of said styluses radial to its pivot, a shoulder on each of the said levers in the path of said lug, a spring attached to each of the said levers by one of its ends and bearing at its other end

against said lug opposite to said shoulder, a stop-pin extending between said support and said plate in the paths of said levers on the side next to said cams, a curved plate-spring secured by one end to said base and bearing at its other end against said levers on their sides next to said base, a rotary key-cylinder having reduced end portions forming journals, a key-slot along one side and a plurality of radial slots across its inner end, one of said radial slots registering with said key-slot, a block fixed on said base and having a hole forming a bearing for the outer reduced portion of said cylinder, said block having a key-slot opening into said hole and normally registering with said first-named key-slot, said plate having an opening receiving the reduced and slotted inner end of said cylinder, two oppositely-facing shoulders on said key, said shoulders when said key is revolved being guided between said block and said plate, a wing on said key, one of said cams being in the path of said wing and depressed thereby when said key is revolved, a flat spring attached by one of its ends to said plate, a right-angular bent portion at the other end of said last-named spring, said bent portion being wider than the reduced slotted end of said cylinder and normally seating in said notches and in one of said radial slots, said bent portion being in the path of said key and pushed out of said notches and slots by the inward movement thereof, a record-dial, said dial being in the path of movement of said stylus-points, a grooved backing-block on the opposite side of said dial from said stylus-points and a time-movement for revolving said dial.

14. In a recording device for watchmen's clocks, the combination of a rotary key-cylinder having a key-slot along one side, means normally holding said key-cylinder from turning in either direction, a key fitting into said key-slot, for releasing said means at a predetermined location in said slot, said means being in the path of the inner end of said key, a plurality of levers pivoted at one end, the axes of the said pivots and that of the said key-cylinder being substantially parallel, a stylus projecting from one side of each lever on the side thereof opposite to said key-cylinder, a stop common to all of the levers and located on the same side thereof as the key-cylinder, and a spring normally holding all of said levers against said stop, the said key having a wing a part of whose path is occupied by one of said levers, said means again becoming operative at various points in the revolution of said cylinder to lock the same should said key be partly withdrawn, and said levers preventing said key from being removed should said cylinder become locked at the recording position, said catch being releasable by the center of the inner end of the key.

15. In a recording device for watchmen's clocks, the combination of a rotary key-cylinder having a key-slot along one side, a key fitting in said slot, a spring snap-catch in the path of said key and normally preventing said key-cylinder from turning in either direction, said catch being released by the inner end of said key when said key is pushed completely in, a plurality of levers pivoted at one end, the axes of the said pivots and that of the said key-cylinder being substantially parallel, a stylus projecting from one side of each lever on the side thereof opposite to said key-cylinder, a stop common to all of the levers and located on the same side thereof as the key-cylinder, and a spring normally holding all of said levers against said stop, the said key having a wing a part of whose path is occupied by one of said levers, said catch again becoming operative at various points in the revolution of said cylinder to prevent the same from turning should said key be partly withdrawn, and portions of said levers being in the path of and engaging the wing of said key for preventing the removal of said key from the clock should said cylinder become locked at the recording position, said catch being releasable by the center of the inner end of the key.

16. In a watchman's clock, the combination of a rotary key-cylinder, keys which fit into said cylinder and revolve therewith, means for normally preventing said cylinder from turning, said means being released only by the inner end of a fully-inserted key, and a plurality of recording members, each one of said members occupying a part of the circular path of some one of said keys, said means again becoming operative at various points in the revolution of said cylinder to prevent the same from turning should said key be partly withdrawn, and portions of said members being in the path of and engaged by the wing of said key for preventing the removal of said key from the clock when said cylinder becomes locked at the recording position.

17. In a recording device for watchmen's clocks, the combination of a rotary key-cylinder having a slot across its inner end, means normally seating in said slot to prevent said cylinder from rotating, keys which fit into and revolve with said cylinder, said means being located in the path of the inner end of any one of said keys and released thereby when said key is fully inserted into said cylinder, and a plurality of recording-levers, each one of said levers occupying a part of the circular path of some one of said keys, said means again becoming operative at various points in the revolution of said cylinder to prevent the same from turning should said key be partly withdrawn, and portions of said members being in the path of and engaged by the wing of said key for preventing the removal of said key from the clock when said cylinder becomes locked at the recording position.

18. In a watchman's clock, a recording-key, means for fixedly locking the recording-key at recording position unless said key be fully inserted.

19. In a watchman's clock, a snap-catch for preventing the recording-key from being revolved away from the recording position except said key be fully inserted.

20. In a watchman's clock, the combination of a recording-key means for preventing the recording-key from being revolved away from the recording position unless said key be fully inserted, and means for preventing said key from being moved longitudinally when said key is at the recording position.

21. In a watchman's clock, the combination of a plurality of recorders, revoluble keys for respectively operating the recorders, the recorders adjacent to the one being operated lying in the path of a portion of the key in a longitudinal direction to the key when the key is at recording position, for preventing the key at such time from being moved longitudinally, and means for preventing any one of said keys from being revolved away from the recording position unless said key be fully inserted.

22. In a watchman's clock, the combination of a revoluble key-cylinder, a plurality of recorders, keys revolving with said cylinder for respectively operating the recorders, a portion of any key engaging with said recorders to lock said key against longitudinal movement at the recording position, and means for locking said key-cylinder against rotation at the recording position of any key unless said key be fully inserted.

23. In a watchman's clock, the combination of a revoluble key-cylinder, a key revolving with said cylinder, and means for locking said cylinder against rotation at a plurality of points of rotation unless said key be kept fully inserted.

845,952. DRILL OR BIT ROTATING MECHANISM FOR ROCK-DRILLING MACHINES OR ENGINES. HENRY HELLMAN and LEWIS C. BAYLES, Johannesburg, Transvaal. Original application filed July 12, 1905, Serial No. 269,408. Divided and this application filed June 12, 1906. Serial No. 321,328.

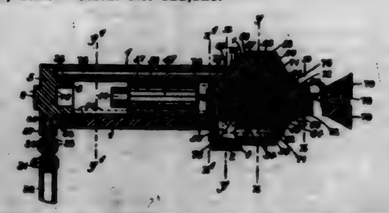

Claim.—1. In a drilling or boring machine or engine, a power-cylinder, percussive apparatus within said cylinder, a drill or bit located at the forward end of said cylinder, a motor also located at the forward end of said cylinder, means for engaging said motor with said drill or bit, and means whereby the motor controls the distribution of actuating fluid in the power-cylinder.

2. In a drilling or boring machine or engine, a power-cylinder, percussive apparatus in said cylinder, a drill or bit located at the forward end of said cylinder, an oscillation-motor and means whereby the motor controls the distribution of the actuating fluid in the power-cylinder, and said motor comprising a hollow toothed wheel having a driving engagement with the drill or bit which passes therethrough.

3. In a drilling or boring machine or engine, a power-cylinder, percussive apparatus within said cylinder, a drill or bit located at the forward end of said cylinder, an oscillation-motor also located at the forward end of said cylinder, and means whereby the motor controls the distribution of the actuating fluid in the power-cylinder, and said motor comprising a hollow toothed wheel having a driving engagement with the cylinder or bit which passes therethrough.

4. In a drilling or boring machine or engine, a power-cylinder, percussive apparatus within said cylinder, a drill or bit located at the forward end of said cylinder, a motor also located at the forward end of said cylinder, means for engaging said motor with said drill or bit, means whereby the motor controls the distribution of the actuating fluid in the power-cylinder, and a cap which houses in said motor and surrounds said drill or bit.

5. In a drilling or boring machine or engine, a power-cylinder, percussive apparatus therein, a drill or bit located at the forward end of the cylinder, an oscillation-motor also located at the forward end of the cylinder and directly engaging said drill or bit, and said cylinder having ports, and means whereby said ports are opened and closed by the motor, for supplying power medium to the percussive apparatus.

6. In a drilling or boring machine or engine, a power-cylinder, a percussive apparatus in said power-cylinder, a motor located at the forward end of said cylinder which serves for distributing the motive fluid in the power-cylinder, said motor comprising a valve having a projection working in a recess to which operating fluid is admitted alternately to either side of said projection to reverse the valve, a cylindrical piece located at the center of the valve and formed with a hole and with circumferential ratchet-teeth, a pawl carried by said valve and in engagement with the ratchet-teeth and a plunger and spring for maintaining said pawl in gear with said teeth, and a drill or bit also located at the forward end of the cylinder and having a portion of its shank passing into and loosely and non-rotatably engaging the hole in the cylinder-piece aforesaid.

7. In a drilling or boring machine or engine, in combination a power-cylinder, a reciprocating percussive member therein, a drill or bit loosely positioned at the forward end of said cylinder, said bit adapted to receive the impacts of the reciprocating member and formed with a portion of its shank of square or polygonal external section, a ratchet-wheel surrounding said shank and shaped to fit the square or polygonal section, a valve located round said ratchet-wheel which controls the distribution of the actuating fluid in the power-cylinder and a pawl carried by the valve engaging the teeth of the ratchet-wheel, which when the valve is moved in one direction rotates the ratchet-wheel and drill-steel part of a revolution and is free to move independently of the drill-steel in the reverse direction.

8. In a drilling or boring machine or engine, in combination, a power-cylinder, a percussive apparatus in said power-cylinder, said cylinder being constructed with a main inlet and distributing-ports communicating with either end, a valve located in said cylinder which controls the admission and exhaustion of the actuating fluid to and from said distributing-ports, a ratchet-wheel located inside the valve, a spring-controlled pawl engaging the teeth of the ratchet-wheel, a drill or bit loosely positioned in the forward end of the cylinder projecting through the center of the ratchet-wheel and made of polygonal transverse section corresponding to the hole in the ratchet-wheel so that when the ratchet-wheel is rotated in one direction by means of the valve the drill or bit is rotated part of a revolution while no movement of the drill or steel ensues when the valve rotates in the opposite direction, the power-cylinder being constructed with ports controlled by the reciprocating percussive member which alternately admit the actuating fluid to reverse the valve, substantially as described.

9. In a drilling or boring machine or engine, in combination, a power-cylinder, a percussive apparatus in said power-cylinder, said cylinder being constructed with a main supply-port and with ports communicating with either end of said cylinder for conducting the actuating fluid to either side of the percussive reciprocating member and with ports, communicating with the cylinder, controlled by the percussive member, said latter ports communicating with a recess in which the valve is located, a valve for controlling the distribution of the actuating fluid located at the forward end of said cylinder, said valve being constructed with a projection working in a recess to which the fluid is admitted alternately to either side of said projection to reverse the valve, a cylindrical piece formed with a hole of polygonal transverse section and with ratchet-teeth on its circumference, a pawl carried by the valve in gear with said ratchet-teeth, and a drill-steel loosely positioned at the forward end of the cylinder constructed with a portion of polygonal transverse section corresponding to and fitting the hole in the ratchet-wheel.

10. In a drilling or boring machine or engine, in combination, a power-cylinder constructed with an enlarged front portion and with an inlet and main supply-port for the actuating fluid and with distributing-ports communicating with either end of the cylinder for conducting the actuating fluid to opposite ends of the percussive reciprocating member and with valve-reversing ports communicating with the cylinder controlled by the percussive member, said latter ports communicating with a recess at the front of the cylinder in which the valve is located, a reciprocating percussive member in the cylinder constructed with a rearward extension, a valve located at the forward end of the cylinder which valve controls the distribution of the actuating fluid, said valve being constructed with a projection working in a recess to which the fluid is admitted alternately to either side of said projection to reverse the valve, a cylindrical piece located in the center of the valve and formed with a hole of polygonal transverse section and with circumferential ratchet-teeth, a pawl located in a recess in the valve in engagement with the ratchet-teeth and a plunger and spring for maintaining said pawl in gear with the ratchet-teeth, and a drill or bit loosely positioned at the forward end of the cylinder formed with a portion of its shank of polygonal transverse section fitting the correspondingly-shaped hole in the ratchet-wheel so that when the valve is moved in one direction it imparts rotary motion to the ratchet-wheel and drill or steel and is free to move in the reverse direction.

11. In a drilling or boring machine or engine, in combination, a power-cylinder constructed with an enlarged front portion and with an inlet and main supply-port for the actuating fluid and with distributing-ports communicating with either end of the cylinder for conducting the actuating fluid to opposite ends of the percussive reciprocating member and with valve-reversing ports communicating with the cylinder controlled by the percussive member, said latter ports communicating with a recess at the front of the cylinder in which the valve is located, a reciprocating percussive member in the cylinder constructed with a rearward extension, a valve located at the forward end of the cylinder which valve controls the distribution of the actuating fluid, said valve being constructed with a projection working in a recess to which the fluid is admitted alternately to either side of said projection to reverse the valve, a cylindrical piece located in the center of the valve and formed with a hole of polygonal transverse section and with circumferential ratchet-teeth, a pawl located in a recess in the valve in engagement with the

ratchet-teeth and a plunger and spring for maintaining said pawl in gear with the ratchet-teeth, and a drill or bit loosely positioned at the forward end of the cylinder formed with a portion of its shank of polygonal transverse section fitting the correspondingly-shaped hole in the ratchet-wheel so that when the valve is moved in one direction it imparts rotary motion to the ratchet-wheel and drill or steel and is free to move in the reverse direction, a cover fixed at the rear end of the power-cylinder, a valve connected to the cylinder-cover, said valve communicating with a liquid-supply on the one side and on the other side with a space at the rear of the power-cylinder, the cylinder being constructed with a longitudinal port communicating at one end with said recess and at the other end with a recess formed between the inner end of the drill-steel and the bore of the cylinder, the drill-steel having a longitudinal port and transverse ports placing the surrounding recess in communication with said longitudinal port for conducting liquid to the cutting end of the drill, the longitudinal port in the drill-steel opening to the forward end of the cylinder to allow a quantity of the actuating fluid to pass to the cutting end along with the liquid, and means for forming an air buffer or cushion between the impact-piece and the cylinder-cover, substantially as described.

12. In a drilling or boring machine or engine, a power-cylinder, percussive apparatus therein, a drill or bit located at the forward end of the cylinder, an oscillating motor also located at the forward end of the cylinder and directly engaging said drill or bit, said cylinder having ports opened and closed by the motor for supplying power medium to the percussive apparatus, and ports opened and closed by the percussive apparatus for supplying power medium to the motor.

845,953. DRIVE-HEAD FOR WELL-PIPES. SAMUEL S. HITCHCOCK, Indianapolis, Ind. Filed Feb. 26, 1906. Serial No. 302,998.

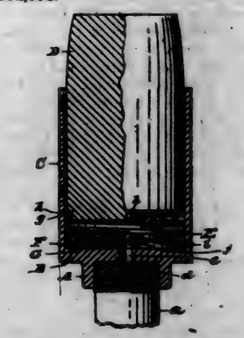

Claim.—1. A block-holder for well-pipes comprising a threaded cap part having a slot in the wall thereof interrupting the continuity of the threads thereof, and a collar part having connection with the cap part.

2. A block-holder for well-pipes formed with a cap part having a top part provided on the top thereof with a cushion, and a cylindrical collar part on the cap part extending about the cushion, the collar part having an appreciably greater length than diameter for holding a relatively long and narrow block upright on the cushion.

3. A block-holder for well-pipes formed with a threaded cap part having a top part and a circular-flange part, all integral, the flange part extending outwardly beyond the side wall of the cap part, and a cylindrical collar part having an appreciably greater dimension on its longitudinal axis than the diameter thereof.

4. A drive-head for well-pipes comprising a block having a neck and a shoulder, a spring coiled about the neck and seated against the shoulder, a threaded pipe-cap provided with a socket inclosing the spring and parts of the block, and a cushion-filler in the socket opposite the block and encircled by the spring, the spring being seated on the bottom of the socket.

5. A block-holder for well-pipes formed with a threaded cap part having a perforation in the top thereof and with facets on the exterior thereof, and a collar part attached to the cap part and having an appreciably greater diameter than that of the cap part.

6. A block-holder for well-pipes formed with a threaded cap part having external facets and a slot in the wall thereof interrupting the continuity of the threads thereof, and a collar part attached to the cap part.

7. A drive-head for well-pipes comprising a block provided with a coiled spring at an end thereof, a cushion-filler opposed to the end of the block guided by the spring, and a holder for the block, the filler and the spring.

8. A drive-head comprising a block having a neck and a shoulder, a spring coiled about the neck and seated against the shoulder, and a threaded pipe-cap provided with a socket inclosing the spring and parts of the block, the spring being seated on the bottom of the socket.

9. A drive-head comprising a perforated threaded pipe-cap provided with a socket having a cushion thereon having an opening opposite the perforation of the cap, and a block seated on the cushion in the socket.

10. A drive-head for well-pipes comprising a threaded pipe-cap provided with a socket, a cylindrical block having a relatively greater length than diameter, and a cushion in the socket between the cap and the block.

845,954. SPLITTING-MACHINE. EDWIN A. HILDRETH, Harvard, Mass. Filed Nov. 5, 1906. Serial No. 342,029.

Claim.—1. In a splitting-machine, the combination with a main frame provided with rigid, vertical, metal guide-rods, of an ax-carrier having an extension to support and maintain the ax in a path of movement at right angles to the plane of the guide-rods, detachable, two-part non-metallic guide members rigidly attached to the ax-carrier at its upper and lower ends and vertically slidable on the guide-rods, and means to vertically reciprocate the ax-carrier and the attached guide members, said means being pivotally connected with the ax-carrier between the upper and lower guide members and independent of the ax.

2. In a splitting-machine, the combination with a main frame provided with rigid, vertical guide-rods, of a heavy metallic ax-carrier, an extension thereon provided with an ax-seat movable in a path at right angles to the plane of the guide-rods, upper and lower guide members extended laterally from and rigidly attached to the ax-carrier, embracing and vertically slidable on the guide-rods, and means to vertically reciprocate the ax-carrier and attached guide members, connected with the ax-carrier independently of the ax-seat.

3. In a splitting-machine, the combination with a main frame provided with rigid, vertical guide-rods, of a heavy metallic ax-carrier, a depending V-shaped extension thereon to support and maintain the ax in operative position, laterally-extended detachable non-metallic guide-boxes rigidly attached to the ax-carrier at its upper and lower ends, said guide-boxes embracing and vertically slidable on the guide-rods, and means to reciprocate the ax-carrier and its attached guide-boxes.

4. In a splitting-machine, the main frame provided with a shaft-bearing, a driving-shaft rotatable therein, vertical guide-rods rigidly secured at their upper ends to the shaft-bearing and at their lower ends secured to the frame, a metallic ax-carrier, laterally-extended, separable wooden guide-boxes rigidly secured to the ax-carrier at its upper and lower ends and embracing the guide-rods, pivoted to the latter between the upper and lower guide-boxes, to slide vertically thereon, an ax-supporting extension depending from and integral with the ax-carrier, and a connection between the driving-shaft and the ax-carrier, to vertically reciprocate the latter.

5. In a splitting-machine, in combination, the main frame provided with a bearing-box for the driving-shaft of the machine, vertical guide-rods extended through and rigidly fastened to said bearing-box and at their lower ends secured to the main frame, guide-boxes vertically slidable on the guide-rods, a vertically-reciprocating ax-carrier rigidly and detachably connected at its upper and lower ends with said boxes, and an extension on and integral with the ax-carrier to support and maintain the ax in a path of movement at right angles to the plane of the guide-rods.

845,955. CORN-SHOCK LOADER AND UNLOADER. FRANK JOHNSON, Fredericksburg, Mo. Filed Apr. 23, 1906. Serial No. 313,291.

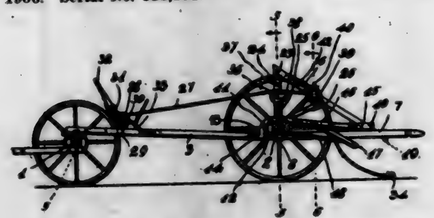

Claim.—1. In a shock-lifter, a swinging compression-frame having gathering-arms, a tongue extending from said frame between said arms, an upright portion upon said frame, guide devices adjustably mounted upon the upright portion of said frame, and a flexible connection engaged with said guide devices and adapted to be passed about the shock.

2. In a shock-lifter, a swinging compression-frame having gathering-arms and a tongue disposed between said arms, and downwardly and outwardly projecting deflector-arms 17.

3. In a shock-lifter, a swinging compression-frame comprising the axle 2, the tongue 7, the cross-bar 10 having gathering-arms 15, the deflector-arms 17, the upright 24, the inclined bar 23, and means for clamping a shock upon the bars 10 and 23, substantially as described.

4. In a shock-loader, the combination with the sills 3 of a swinging compression-frame comprising the axle 2, the tongue 7, the cross-bar 10, the brace-bars 11, 12 having spaced ends 13, and the pivots 14 passed through the latter and said sills, substantially as described.

845,956. FREQUENCY-INDICATOR. ALEXANDER S. LANGSDORF, St. Louis, Mo., assignor to Wagner Electric Manufacturing Company, St. Louis, Mo., a Corporation of Missouri. Filed Sept. 6, 1906. Serial No. 333,473.

Claim.—1. In a frequency-meter, the combination with a pair of coöperative indicating devices, of means for moving one of said indicating devices proportional to the voltage and frequency of the current to be measured, and moving the other of said indicating devices proportional to the voltage of the current to be measured.

2. In a frequency-meter, the combination with a pair of independently-movable coils, of a pair of indicating devices coöperating to indicate the frequency, one of said devices being controlled by each coil, and means in series with one of said coils for varying the current with the frequency.

3. In a frequency-meter, the combination with a pair of independently-movable coils, of a pair of indicating devices coöperating to indicate the frequency, one of said devices being controlled by each coil, and a condenser in series with one of said coils.

4. In a frequency-meter, the combination with a pair of independently-movable coils arranged in multiple circuit, of a pair of indicating devices coöperating to indicate the frequency, one of said devices being controlled by each coil, means in series with one of said coils for varying the current with the frequency.

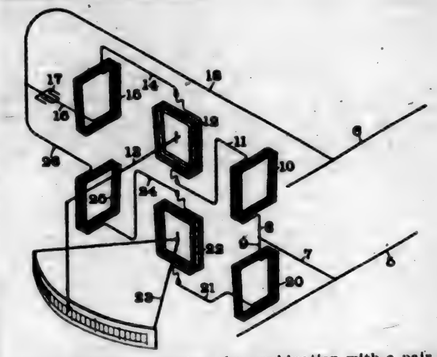

5. In a frequency-meter, the combination with a pair of independently-movable coils arranged in multiple circuit, of a pair of indicating devices coöperating to indicate the frequency, one of said devices being controlled by each coil, and a condenser in series with one of said coils.

6. In a frequency-meter, the combination with a pair of independently-movable coils, of a pair of indicating devices coöperating to indicate the frequency, one of said indicating devices being carried by each coil, and means in series with one of said coils for varying the current with the frequency.

7. In a frequency-meter, the combination with a pair of independently-movable coils, of a pair of indicating devices coöperating to indicate the frequency, one of said indicating devices being carried by each coil, and a condenser in series with one of said coils.

8. In a frequency-meter, the combination with a pair of independently-movable coils arranged in multiple circuit, of a pair of indicating devices coöperating to indicate the frequency, one of said indicating devices being carried by each coil, and means in series with one of said coils for varying the current with the frequency.

9. In a frequency-meter, the combination with a pair of independently-movable coils arranged in multiple circuit, of a pair of indicating devices coöperating to indicate the frequency, one of said indicating devices being carried by each coil, and a condenser in series with one of said coils.

10. In a frequency-meter, the combination with a pair of independently-movable coils, of a scale carried by one of said coils, a pointer carried by the other of said coils and coöperating with said scale to indicate the frequency, and means in series with one of said coils for varying the current with the frequency.

11. In a frequency-meter, the combination with a pair of independently-movable coils, of a scale carried by one of said coils, a pointer carried by the other of said coils and coöperating with said scale to indicate the frequency, and a condenser in series with one of said coils.

12. In a frequency-meter, the combination with a pair of independently-movable coils in multiple circuit, of a scale carried by one of said coils, a pointer carried by the other of said coils and coöperating with said scale to indicate the frequency, and means in series with one of said coils for varying the current with the frequency.

13. In a frequency-meter, the combination with a pair of independently-movable coils in multiple circuit, of a scale carried by one of said coils, a pointer carried by the other of said coils and coöperating with said scale to indicate the frequency, and a condenser in series with one of said coils.

14. In a frequency-meter, the combination with a pair of independently-movable coils, of a field-coil in series with each of said movable coils, pair of indicating devices coöperating to indicate the frequency, one of said indicat-

ing devices being controlled by each movable coil, and means in series with one of said movable coils for varying the current with the frequency.

15. In a frequency-meter, the combination with a pair of independently-movable coils, a field-coil in series with each of said movable coils, a pair of indicating devices cooperating to indicate the frequency, one of said indicating devices being controlled by each movable coil, and a condenser in series with one of said movable coils.

16. In a frequency-meter, the combination with a pair of independently-movable coils arranged in multiple circuit, of a field-coil in series with each of said movable coils, a pair of indicating devices coöperating to indicate the frequency, one of said indicating devices being controlled by each movable coil, and means in series with one of said movable coils for varying the current with the frequency.

17. In a frequency-meter, the combination with a pair of independently-movable coils arranged in multiple circuit, a field-coil in series with each of said movable coils, a pair of indicating devices coöperating to indicate the frequency, one of said indicating devices being controlled by each movable coil, and a condenser in series with one of said movable coils.

845,957. CORN-HUSKING MACHINE. JOSEPH H. LEIDEL, Dresbach, Minn. Filed Dec. 29, 1905. Serial No. 293,812.

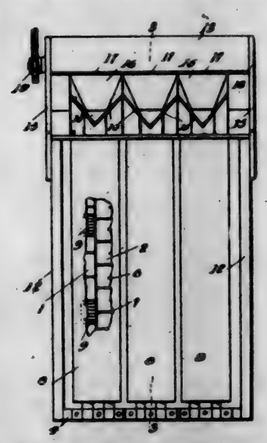

Claim.—1. In corn-husking mechanism, the combination of complemental husking elements, and means arranged in the path of the ears and adapted to temporarily remove the ears during their travel from the action of one of the husking elements to admit of the other husking element turning the ears to bring a new portion thereof in position for the action of the husking elements during the remainder of the travel of said ears thereover.

2. In husking mechanism, the combination of complemental husking elements, and a lifter arranged in the path of the ears to effect temporary disengagement thereof from one of the husking elements, said lifter being corrugated or roughened to prevent a too rapid movement of the ears thereover.

3. The combination of a pair of husking-rolls, and a lifter arranged to extend over the inner upper portion of one of said husking-rolls and in close proximity thereto to effect temporary disengagement of the ears therefrom and to permit turning of said ears by the companion husking-roll, substantially as and for the purpose specified.

4. In combination, husking mechanism, guide means for directing the ears to the husking mechanism, and a spur located in advance of the receiving end of the guide means to prevent the ears entering the husking mechanism crosswise.

5. In combination, corn-husking mechanism, and a guide comprising upwardly and forwardly diverged members to insure endwise entrance of the ears to said husking mechanism.

6. In combination, a husking mechanism, a hopper comprising inwardly or downwardly sloped or inclined walls, an inclined feed-board, a spur at the lower edge of said feed-board and in line with the space formed between the husking elements, and a guide between the hopper and husking mechanism comprising upwardly and forwardly diverged members.

7. In combination, husking mechanism embodying cooperating husking-rollers, and a lifter arranged in the path of movement of the ears to effect temporary disengagement thereof from one of the husking-rollers to permit the other roller to effect turning of said ears, said lifter comprising a curved plate arranged over and concentric with one of the rollers, as specified.

845,958. CORN-PICKER. JOSEPH H. LEIDEL, Dresbach, Minn. Filed Feb. 17, 1906. Serial No. 301,705.

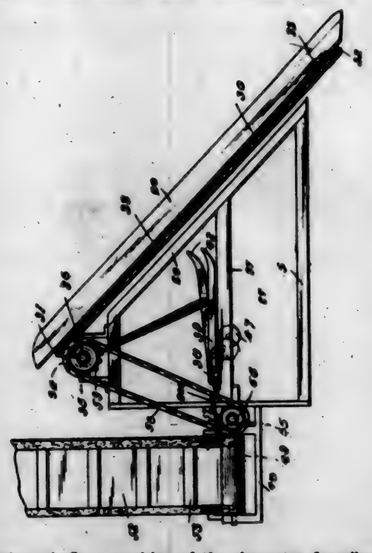

Claim.—1. In a machine of the character described, the combination of a plurality of ear-snapping fingers arranged side by side and each mounted to vibrate in a vertical plane, yokes connecting every other finger in pairs, and means for imparting a vibratory movement to each pair of fingers.

2. In a machine of the character described, the combination of a plurality of ear-snapping fingers arranged side by side and each mounted to vibrate in a vertical plane, yokes connecting every other finger in pairs, the yokes extending underneath the fingers, an actuating-shaft, means for operating the same, said shaft being provided with eccentrics and a pitman connected to each eccentric, each pitman being also operatively connected to one finger of each pair.

3. In a machine of the character described, the combination of a series of ear-snapping fingers arranged side by side and each mounted to vibrate in a vertical plane, transverse yoke members extending underneath said fingers each member being connected at its ends to the alternate fingers in the series, an actuating-shaft, means for operating the same, said shaft being provided with eccentrics, and pivotally-inclined pitmans operatively connected to the said eccentrics, each pitman being connected to the outermost finger of the series.

4. In a machine of the character described, the combination of a series of vibrating ear-snapping fingers mounted to vibrate in vertical planes and pivoted at their inner ends a rigid connection between each finger and the second finger from it in the series, said rigid connection being located in advance of the pivotal points of the said fingers, and means for imparting a vibratory movement to said fingers.

5. In a machine of the character described, the combination of a guideway for the stalks, an idle shaft secured at the rear of the guideway and extending transversely thereof, a series of ear-snapping fingers provided at one end with apertured ears by which they are mounted on said shaft to freely vibrate in vertical planes, said fingers being arranged in pairs connected together, alternate fingers constituting the two members of the same pair, yoke members 44 constituting the means for connecting said fingers together in pairs, an actuating-shaft 36 means for rotating said shaft, said shaft being provided with two eccentrics arranged to operate alternately, and downwardly-diverging pitmans operatively connected to said eccentrics, each pitman being connected at one end to the outermost finger of a pair of fingers.

6. A corn-harvesting machine comprising a framework, ground or traveling wheels mounted in said framework and provided with tubular axles, a shaft inclosed by said axles and operatively connected to said frame, two sprocket-wheels secured respectively to the two tubular axles, a counter-shaft 77 operatively connected to said sprocket-wheels, a shaft 36 having a driven connection with the shaft 77 and provided with eccentrics and a sprocket-wheel 59, a stalk-receiving guideway, endless guiding devices mounted to move therein, means whereby said devices will be driven from the shaft 36, ear-snapping fingers having a pitman connection with the eccentrics of the shaft 36, a conveyer with means to receive the ears from the ear-snapping fingers and arranged to be driven from the sprocket-wheel 59 of the shaft 36, husking mechanism, conveying mechanism arranged to receive the husked corn from the husking mechanism, and an operative connection between said husking mechanism and last-named conveyer and the shaft 77.

7. A corn-harvesting machine, comprising a framework, ground or traveling wheels mounted therein and provided with independently-rotatable axles, a sprocket-wheel secured to each of said axles, a counter-shaft 77 in the rear of said axles and provided with two sprocket-wheels operatively connected to the sprocket-wheels of the axles respectively, one-way clutches for connecting the sprocket-wheels of the shafts 77 with the sprocket-wheels of the axles when moving in one direction, husking mechanism embodying a drive-shaft, a conveyer arranged to receive the husked corn from the husking mechanism and also embodying a drive-shaft both the said drive-shafts being provided with sprocket-wheels, a shaft 73 operatively connected to the shaft 77 at one end of the latter and provided with a sprocket-wheel 72, a chain extending around the sprocket-wheel 72 and around the sprocket-wheels of the drive-shafts of the husking mechanism and the said conveyer, a sprocket-wheel 82 on the opposite end of the shaft 77, a counter-shaft 36 provided at one end with a sprocket-wheel and a one-way clutch, the sprocket-wheel being operatively connected to the sprocket-wheel 82, said shaft 36 being provided with eccentrics and at its outer end with another sprocket-wheel, stalk-feeding mechanism, means for actuating the same, a conveyer at the rear end of the machine in the rear of the feeding devices an operative connection between said conveyer and the sprocket-wheel at the outer end of the shaft 36, the conveyer being arranged to feed the ears to the husking mechanism, and vertically-vibrating snapping-fingers having an operative connection with the eccentrics of the shafts 36 as and for the purpose set forth.

845,959. BRUSH-MAKING MACHINE. WILLIAM G. LIEBIG, Detroit, Mich. Filed Oct. 28, 1905. Serial No. 284,788.

Claim.—1. In a brush-making machine, in combination with a receptacle for brush-tuft material, an oscillating tuft gatherer and carrier engaging with its edge against said material, there being a notch in said edge wherein a tuft is held during a portion of each oscillation, means for causing the release of the tuft therefrom at its intended point of delivery, means for locating thereover a staple in position to be driven, and means for thereafter engaging the staple and tuft and forcing the same free from said staple-locating means and into the brush-back, substantially as described.

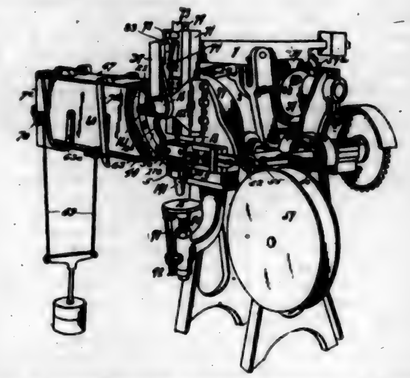

2. In a brush-making machine, a receptacle for brush-tuft material provided with a follower adapted to force bristles toward the open end of the receptacle, an oscillating notched tuft gatherer and carrier constantly engaging the mass of bristles with some portion of its periphery, and means for effecting the regular closure and opening of the notch and for causing the gatherer and carrier to oscillate across the receptacle, substantially as described.

3. In a brush-making machine, a tuft gatherer and carrier having in combination a pivoted arm, a wrist-pin-carrying plate carried by said arm, and having both an oscillating and a sliding movement with respect to said arm, one of said parts being provided with a notch which the other parts opens and closes, and reciprocating actuating means engaged by said wrist-pin, substantially as described.

4. A tuft gatherer and carrier for a brush-making machine having in combination a pivotally-supported arm having an indented periphery, some portion of which is adapted to be in constant engagement with a mass of bristles, a supplemental piece adjustably fixed to said arm and forming with the adjacent portion thereof a tuft-holding notch, and a plate slidably attached to one face of said arm and adapted to close said notch during a certain period in each oscillation, said plate having a bristle-engaging notch in its periphery, substantially as described.

5. In a brush-making machine, in combination with an oscillating gatherer and carrier having two parts, one being supported by the other and being slidable with respect thereto, driving means engaging one of said parts, and a movable abutment engaging the other of said parts, adapted to cause relative movement of the two parts, substantially as described.

6. In a brush-making machine, in combination, an oscillating gatherer and carrier having two slidably-connected parts, a reciprocating hammer-driver having means thereon to engage one of said parts, a reciprocating actuator engaged by the second of said parts, a cam provided with a yielding guide whereby an irregular motion is communicated to parts in contact therewith, and a pivoted lever engaging said cam with one end and said reciprocating actuator with the other end, substantially as described.

7. In combination with an oscillating gatherer and carrier of a brush-making machine, a cam provided with a yielding guide adapted to impart a faltering motion as the carrier reaches its lowermost point of travel whereby the commencement of its positive upward movement is momentarily deferred, and interconnecting mechanism between the gatherer and the cam, substantially as described.

8. In a brush-making machine, in combination, a driver for driving a staple with a tuft of bristles therein, and a tuft-gatherer adapted to gather a tuft and deposit the same under the staple, a portion of said gatherer being formed as a staple-guide, substantially as described.

9. In a tuft-gatherer for brush-making machines, in combination with a pivoted gatherer having a notched periphery adapted to engage a mass of bristles and to select and remove therein a tuft of bristles at each oscillation, a reciprocating actuator for said arm, a cam having a yielding guide adapted to impart a faltering motion, and a pivoted lever whereby the actuation imparted by the cam is communicated to said reciprocating member, substantially as described.

10. In a tuft-gatherer for brush-making machines, in combination with a pivoted arm having a tuft-carrying notch in its periphery, one side of the engaging portion of said notch being formed by the body portion of said arm, a supplemental piece adjustably fixed to said arm and adapted to be moved substantially parallel with the adjacent toe portion thereof, one end face of said piece forming the other side of said notch, and means carried by said arm whereby the notch is opened and closed, substantially as described.

11. In a tuft-gatherer for brush-making machines, in combination with a pivoted arm provided with a tuft-carrying notch, a plate slidably carried thereby and provided with a feed-notch, and separate means for adjusting the size of each of said notches, substantially as described.

12. In a tuft-gatherer for brush-making machines, in combination with a pivoted arm, a plate slidably connected thereto and provided with a grooved terminal adapted to serve as a staple-guide, the arm and the plate each having a tuft-receiving notch in its periphery, substantially as described.

13. In a tuft-gatherer for brush-making machines, in combination with a pivoted carrier, a toe-piece adjustably connected thereto and forming with the body of the carrier a notch adjustable as to width, substantially as described.

14. In a brush-making machine, in combination with means for pressing forward a mass of bristles, a pivoted arm having a notched engaging periphery adapted to oscillate transversely of the same, a plate having a notched periphery slidably connected thereto, said plate being adapted to confine within the notch in the arm a tuft of bristles taken from the mass and to arrange the bristles remaining in the mass for subsequent removals by engagement thereagainst of its notched periphery, means adapted to forcibly engage said pivoted arm to cause the release of the tuft at a predetermined point, means for placing over said tuft at the time of its release a staple in position to be driven, and means for thereafter driving both the staple and the tuft into the brush-back, substantially as described.

15. In a brush-making machine, in combination with means for forcing thereagainst a mass of bristles, a bristle-carrier having a notched periphery arranged to engage against said mass and remove a tuft therefrom at each oscillation thereof, means for causing said carrier to release said tuft at the end of each stroke, means for locating a staple over said tuft at the moment of release thereof, and means for subsequently forcing said tuft and staple into the brush-back, substantially as described.

16. In a brush-making machine, in combination with means for feeding forward a mass of bristles, a pivoted arm having a curved periphery with tuft-carrying notches adapted to engage thereagainst, a plate slidably secured to one side of said arm and adapted to be slid to a position of closure with respect to one of said notches, means for oscillating the plate and thereby the arm, and means for causing said plate to move from its position of closure at a predetermined point in each oscillation, substantially as described.

17. In a brush-making machine, in combination with a carrier for removing tufts from a mass of bristles, actuating means therefor, and means for engaging the carrier at the end of each stroke for accomplishing the ejection of the tuft at the point of its union with its holding-staple, substantially as described.

18. In a brush-making machine, a tuft gatherer and carrier comprising a pivoted arm having a curved periphery with a tuft-receiving notch near one end and a clearance-notch near the opposite end thereof, and a plate slidably connected therewith provided with a peripheral bristle-arranging notch, said plate being adapted to serve as a closure to the tuft-engaging notch in the arm when its bristle-arranging notch is opposite the clearance-notch, substantially as described.

19. In a brush-making machine, in combination with means for feeding a staple forward in position to be driven, an oscillatory notched tuft gatherer and carrier adapted to have some portion of its periphery in constant engagement against a supply of bristles and to select therefrom at each oscillation a tuft of determinate size, means for actuating the gatherer and carrier to locate the tuft at its point of intended deposit between the depending portions of the staple, and a reciprocating slide adapted to forcibly engage a portion of the tuft gatherer and carried to accomplish the release of the tuft therefrom and to thereafter drive the staple and tuft into the brush-back, substantially as described.

20. In a brush-making machine, the combination of means for feeding forward a mass of bristles in bulk, and a notched oscillating carrier having some portion of its periphery in constant engagement therewith, the notched portion being adapted to select a predetermined quantity from the mass of bristles at each oscillation and to deposit the same at their intended point of delivery at a later phase of its oscillation, a portion of said carrier being fashioned to automatically close the notched portion, and to be withdrawn from its position of closure at certain points in each cycle of operation of the carrier, substantially as described.

845,960. CARLINE FOR RAILWAY-CARS. CHARLES A. LINDSTRÖM, Allegheny, Pa., assignor to Pressed Steel Car Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Aug. 1, 1905. Serial No. 272,142.

Claim.—1. A carline of trough shape in cross-section, having at the end portions laterally-extending flanges and a narrowed middle portion, the middle portion being cut away and the flanged portions bent downwardly to embrace the side plates.

2. A carline of trough shape in cross-section, with its vertical members flanged outwardly in a horizontal plane at their end portions to form side-plate bearings, the web member at the end portions being narrowed and terminating short of the ends of the flanges, the latter being bent vertically downward to fit against the outer faces of the car side plates; substantially as described.

845,961. CARLINE FOR RAILWAY-CARS. CHARLES A. LINDSTRÖM, Allegheny, Pa., assignor to Pressed Steel Car Company, McKees Rocks, Pa., a Corporation of New Jersey. Filed Dec. 8, 1905. Serial No. 290,884.

Claim.—1. A carline having its end portions bent or curved upwardly and thence outwardly to rest on the side plates; substantially as described.

2. A carline having its end portions bent or curved upwardly and thence extending outwardly and downwardly to rest on the side plates; substantially as described.

3. A carline having its end portion curved or bent upwardly and thence outwardly, the end having a downturned portion arranged to embrace the outer face of the side plate; substantially as described.

4. A carline of trough shape in cross-section having its end portions bent or curved upwardly and thence extending outwardly, the flange portions of the shape having lateral lips which are bent downwardly at the ends to embrace the side plates; substantially as described.

5. In car construction a metal carline and purlins resting on its intermediate portion, the end portion of the carline being bent or curved upwardly and thence extending outwardly and downwardly in substantially the top plane of the purlin and resting on the car side; substantially as described.

6. A carline of trough shape in cross-section, having its end portions bent or curved upwardly, and thence outwardly, and also having outwardly-bent lips at the lower edge portions of its webs or flanges; substantially as described.

845,962. LAMP-GLOBE. GEORGE A. MACBETH and HENRY A. SCHNELBACH, Pittsburg, Pa., assignors to Macbeth-Evans Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Aug. 23, 1906. Serial No. 331,759.

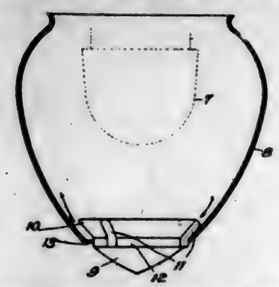

Claim.—1. The combination with a lamp-globe having an opening in the bottom, of a combined shield and ventilator comprising a cone with a flange extending into the globe and its point extending through the opening, said shield being provided with inclined ribs adapted to engage the globe and space the shield therefrom.

2. The combination of a glass lamp-globe having a plain opening in its bottom, a transparent shield and ventilating-disk placed in the opening to catch detritus from the lamp, said disk continuing the outline of the globe and having a flaring upper end substantially parallel with the surface of the globe and having integral ribs thereon to space it from the globe, substantially as described.

3. The combination with a reflecting lamp-globe having an open bottom, of a transparent lens-valve placed in and covering the bottom opening of the globe and having means for allowing ventilation, substantially as described.

4. The combination with a lamp-globe having an opening in the bottom, of a lens adapted to hang through said opening, and provided with means on the lens to center and support it on but space it from the globe, whereby ventilating-openings are provided around the circumference of said lens, substantially as described.

845,963. LAMP. CHARLES C. MALTON, Worcester, Mass. Filed July 3, 1905. Serial No. 268,050.

Claim.—1. In a lamp of the class described, the combination with two or more burners having mantles thereon, and a supply-pipe extending between the burners, of a globe or shade inclosing the mantles and having openings or perforations through the body thereof, a holding rim or collar for said shade and a disk or plate within said rim and so placed as to exclude air from the lower open end of said shade.

2. In a lamp of the class described, the combination with two or more burners having mantles thereon, and a supply-pipe extending between the burners, of a globe or shade inclosing the mantles and having openings or perforations through the body thereof, a holding rim or collar for said shade, said rim being adapted to receive within its upper end the lower end of the said shade, whereby said shade is supported, a metallic disk through which the aforesaid burners and supply-pipe pass, said disk being supported within said holding-rim below the lower end of the said globe and in such position as to exclude air from the open lower end of the said shade.

3. In a lamp of the class described, the combination with two or more burners having mantles thereon, and a supply-pipe extending between the burners, of a globe or shade inclosing the mantles and having perforations or openings through the body thereof in substantially the same plane as the lower ends of the mantles, a holding-rim adapted to support the said shade, a suitable frame for supporting said rim, and a disk mounted within said holding-rim, and at a point below the open end of said globe in such position as to prevent air from entering the lower open end of the

said globe, said disk having openings therethrough adapted for the insertion of the aforesaid burner and supply-pipes.

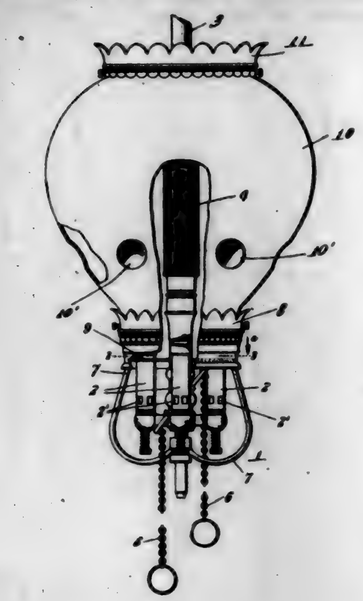

845,964. GARBAGE-RECEPTACLE. CHARLES C. MITTENDORF, St. Louis, Mo. Filed Aug. 16, 1906. Serial No. 330,864.

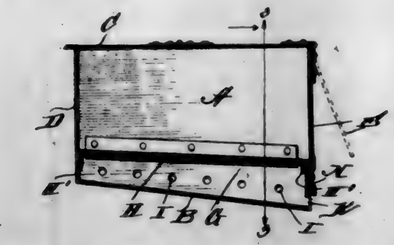

Claim.—1. A garbage-receptacle provided with a hinged lid, one end of the receptacle having laterally-projecting flanges adapted to be held against the face of a fence, in an opening in which the receptacle is designed to be held, a hinged door mounted at the flanged end of the receptacle, bracket members fixed to the inner surfaces of the side walls of the receptacle, a tray supported upon said bracket members and having angled ends extending beyond the ends of the bracket members and adapted to bear against the ends of the receptacle, as set forth.

2. A garbage-receptacle provided with a hinged lid, one end of the receptacle having laterally-projecting flanges adapted to be held against the face of a fence, in an opening in which the receptacle is designed to be held, a hinged door mounted at the flanged end of the receptacle, bracket members fixed to the inner surfaces of the side walls of the receptacle, a tray supported upon said bracket members and having angled ends extending beyond the ends of the bracket members and adapted to bear against the ends of the receptacle, the bottom of the receptacle being inclined and terminating at its lower end in an opening in the end of the receptacle beneath the hinged door, as set forth.

845,965. PUMP. JAMES P. MONTGOMERY, Wichita, Kans., assignor of forty-nine one-hundredths to G. L. Edwards, Wichita, Kans. Filed July 19, 1905. Serial No. 270,362.

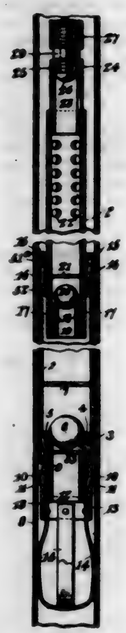

Claim.—1. The combination with a pump having a pump-rod, of a well or casing spaced from the pump-rod, a tube extending upward from the well or casing, a supporting-bar extending from the pump to the tube, a fulcrum mounted on the supporting-bar, a lever connected to the pump-rod and secured at an intermediate point to the fulcrum, a weight operating in the said well or casing, and connecting means extending through the tube from the weight to the lever.

2. In a pump of the class described, the combination of a pump-casing provided with a bracket having an extended portion forming a shoulder, a pump-rod, a supporting-bar secured to the bracket and supported by the shoulder thereof, a fulcrum-bar mounted on the supporting-bar, a counterbalancing-lever mounted at an intermediate point on the fulcrum-bar and connected at one arm with the pump-rod, and a weight connected to the other arm of the lever.

3. In a pump of the class described, the combination of a pump-casing provided with a bracket, a pump-rod, a supporting-bar secured at one end to and supported by the bracket, a fulcrum adjustably mounted on the supporting-bar, a lever mounted at an intermediate point on the fulcrum and connected at one arm with the pump-rod, a tube connected with the outer portion of the supporting-bar, a weight, and means extending through the tube for connecting the weight with the lever.

4. In a pump of the class described, the combination with a well tube or casing, a pump-cylinder having a valve, a hollow piston operating in the pump-cylinder and also provided with a valve and having a water-outlet above the cylinder, a pump-rod connected with the hollow piston and spaced from the well tube or casing, said pump-rod being closed at the lower end and being of uniform diameter with the piston, and means for operating the pump-rod.

5. In a pump of the class described, the combination of a well tube or casing, a pump-cylinder secured within the well tube or casing and having a valve, a hollow piston operating in the pump-cylinder and provided with a valve and also having a water-outlet above the cylinder, a pump-rod of uniform diameter with the hollow piston and connected therewith, said pump-rod being closed to the passage of water, and means for operating the latter.

845,966. TRUCK. JOHN H. MORRIS, Maquoketa, Iowa. Filed Jan. 10, 1906. Serial No. 295,499.

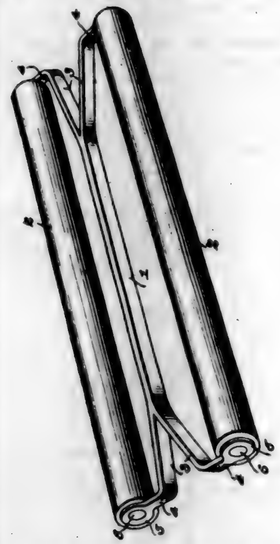

Claim.—A truck comprising a central bar having each end divided longitudinally to form terminal diverging arms, the outer ends of which are bent at right angles to the axis of the bar to form eyes, and rollers disposed at opposite sides of the bar and provided with terminal pintles rotatably mounted in said eyes.

845,967. AMUSEMENT DEVICE. ISIDOR S. MOSCOVITZ, New York, N. Y. Filed July 6, 1906. Serial No. 324,952.

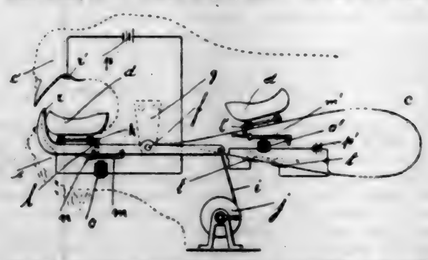

Claim.—1. An amusement device, comprising an artificial hollow head of a wild animal, the jaws of which are capable of being opened and closed, a railway-track on the inside of the lower jaw of said animal beginning at the back of the lower teeth and being extended rearward, and cars adapted to run upon said track and to carry passengers, the ingress to the cars being through the mouth of the animal when the jaws are opened and the egress at the rear of the head, substantially as set forth.

2. An amusement device, comprising an artificial hollow head of a wild animal the lower jaw of which is capable of being opened and closed, a railway-track on the inside of the lower jaw beginning at the back of the lower teeth, said track being extended rearward and curved downward, sideward and upward and returned into itself in form of a loop, and cars adapted to run upon said track and to carry passengers, substantially as set forth.

3. An amusement device, comprising an artificial hollow head of a wild animal, the lower jaw of which is pivoted so as to be capable of being closed and opened, means to operate said lower jaw, a railway-track on the inside of the lower jaw, said railway-track being extended rearward, cars running upon said track, means to arrest the car at the starting-point and means to automatically release the car upon the closure of the lower jaw, substantially as set forth.

4. An amusement device, comprising an artificial hollow head of a wild animal, the lower jaw of which is capable of turning to allow the opening and closing of the mouth, a railway-track on the inside of the lower jaw beginning at the back of the lower teeth, said track being extended rearward and formed to a loop to allow the cars to return into their starting position, means to arrest the car at the starting-point, means to automatically start the car upon the closure of the lower jaw, and means to arrest the returning car before the outgoing car has passed the crossing of the track, substantially as set forth.

845,968. COFFEE-POT. HORACE M. MURRAY, Seligman, Mo. Filed Nov. 3, 1906. Serial No. 341,908.

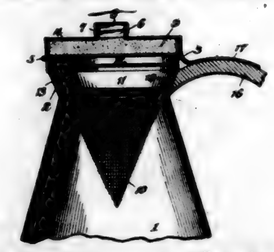

Claim.—1. The combination of a coffee-pot provided with a neck consisting of upper and lower portions, the lower portion having inclined sides and forming a seat and the upper portion provided with vertical sides, a straining-receptacle having an inclined portion to fit the seat, and a lid supported by the vertical portion of the neck.

2. The combination of a coffee-pot provided with a neck consisting of a tapered lower portion and a cylindrical upper portion, a straining-receptacle provided with a tapered ring or band arranged on the tapered portion of the neck, and a hollow cylindrical lid supported by the cylindrical portion of the neck.

3. The combination of a coffee-pot having a handle at the back, a lid hinged at the front to the coffee-pot, and an arm extending from the back of the lid and lying upon the top of the handle when the lid is closed.

4. The combination of a coffee-pot provided with a neck consisting of a lower portion having inclined sides forming a seat, and an upper portion provided with vertical sides, a conical straining-receptacle fitting the inclined sides of the lower portion of the neck and supported by the said seat, a transverse handle extending across the top of the straining-receptacle and having its terminals connected to the sides of the same, and a lid located above the said handle and supported by the vertical sides of the upper portion of the neck.

845,969. ROAD-GRADER. ALEXANDER W. MCBLAIN, Killduff, Iowa. Filed June 18, 1906. Serial No. 322,633.

Claim.—1. In a road-grader, a frame, a cutter supported beneath the frame and comprising a flat blade arranged substantially horizontal and inclined obliquely relative to a fore-and-aft line through the frame and a scraper fixed to the frame in the rear of the blade.

2. In a road-grader, a frame, a cutter supported beneath the frame and comprising a flat blade arranged substantially horizontal and inclined obliquely relative to a fore-and-aft line through the frame and a scraper fixed

to the frame in the rear of the blade, said scraper also inclined obliquely relative to a fore-and-aft line with its forward end in the rear of the rear end of the blade and its body portion extended obliquely in an opposite direction from the blade.

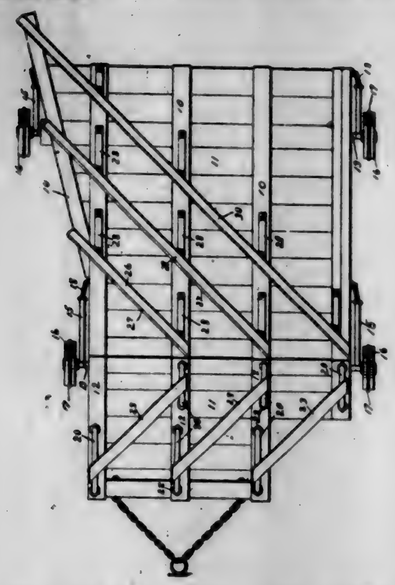

3. In a road-grader, a frame, a cutter supported beneath the frame and comprising a flat blade arranged substantially horizontal and inclined obliquely relative to a fore-and-aft line through the frame, a scraper fixed to the frame in the rear of the blade and supporting-wheels for the frame having annular ribs to prevent lateral movement.

4. In a road-grader, a frame, a cutter supported beneath the frame and comprising a flat blade arranged substantially horizontal and inclined obliquely relative to a fore-and-aft line through the frame, a scraper fixed to the frame in the rear of the blade and a number of supporting-wheels independently adjustable on the frame.

5. In a road-grader, a frame, a cutter supported beneath the frame and comprising a flat blade arranged substantially horizontal and inclined obliquely relative to a fore-and-aft line through the frame, a scraper fixed to the frame in the rear of the blade and two supporting-wheels on each side of the frame, a lever for supporting each wheel projected above the frame, a chain attached to the top of each lever and a hook attached to the frame to adjustably engage and hold each chain.

6. A road-grader, comprising a frame, a number of short cutting-blades arranged in parallel planes at the forward end of the frame and standing obliquely relative to a fore-and-aft line through the frame, the said blades being substantially horizontal, a corresponding number of scrapers supported by the frame arranged in parallel planes and extending obliquely relative to a fore-and-aft line in an opposite direction from the blades, each scraper having a portion of its length arranged in the rear of one of the blades and all of the scrapers having their rear ends at the same side of the frame.

7. A road-grader, comprising a frame, a number of short cutting-blades arranged in parallel planes at the forward end of the frame and standing obliquely relative to a fore-and-aft line through the frame, the said blades being substantially horizontal, a corresponding number of scrapers supported by the frame arranged in parallel planes and extending obliquely relative to a fore-and-aft line in an opposite direction from the blades, each scraper having a portion of its length arranged in the rear of one of the blades, all of the scrapers having their rear ends at the same side of the frame and supporting-wheels for the frame having annular ribs to prevent lateral movement.

8. A road-grader, comprising a frame, a number of short cutting-blades arranged in parallel planes at the forward end of the frame and standing obliquely relative to a fore-and-aft line through the frame, the said blades being substantially horizontal, a corresponding number of scrapers supported by the frame arranged in parallel planes and extending obliquely relative to a fore-and-aft line in an opposite direction from the blades, each scraper having a portion of its length arranged in the rear of one of the blades, all of the scrapers having their rear ends at the same side of the frame and a number of supporting-wheels independently adjustable on the frame.

845,970. COMBINED COCK AND SUPPORT FOR CLUSTER GAS-BURNER. JOHN W. MCKNIGHT, Hanover, Pa., assignor to Hanover Gas Regenerating Company, a Corporation of Pennsylvania. Filed Aug. 13, 1904. Serial No. 220,627.

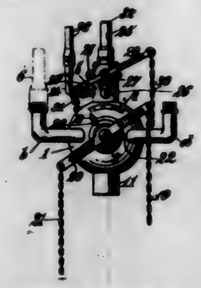

Claim.—1. A combined cock and support for a cluster of burners comprising a body supporting a series of burner-supporting arms and formed with an inlet for gas and ports leading to the series of arms, and a controlling-plug fitting in said body and formed on its exterior with a central passage-way to communicate with the gas-inlet and having passage-ways leading therefrom to each of said ports, said passage-ways being formed so that by turning the plug they will be consecutively moved out of communication with said ports to cut off in succession the supply of gas thereto, in combination with the pilot-burner provided with a controlling-valve for igniting the cluster of burners therefrom, and a Bunsen burner for igniting the gas issuing from the pilot-burner, substantially as described.

2. A combined cock and support for a cluster of burners comprising a body supporting a series of burner-supporting arms and formed with an inlet for gas and ports leading to the series of arms, and a controlling-plug fitting in said body and formed on its exterior with a central passage-way to communicate with the gas-inlet and having passage-ways leading therefrom to each of said ports, said passage-ways being formed and so located in relation to the ports leading to the several burners that by turning the plug the burners will be extinguished in consecutive alternation from opposite sides of a line drawn centrally through the body-support whereby when any two burners are lighted they will be burners opposite to each other and on opposite sides of said line, in combination with a pilot-burner provided with a controlling-valve for igniting the cluster of burners, and a Bunsen burner for igniting the gas issuing from the pilot-burner, substantially as described.

3. A combined cock and support for a cluster of burners comprising a body supporting a series of burner-supporting arms and formed with an inlet for gas and ports leading to the series of arms, and a controlling-plug fitting in said body and formed with a central passage-way to communicate with the gas-inlet and having passage-ways leading therefrom to each of said ports, said passage-ways being formed so that by turning the plug they will be moved out of communication with said ports to cut off the supply of gas thereto, in combination with the pilot-burner provided with a controlling-valve for igniting the cluster of burners therefrom, and a Bunsen burner for igniting the gas issuing from the pilot-burner, substantially as described.

845,971. HINGE. GEORGE L. NOE and CHARLES S. WEILAND, Elko, Nev. Filed Dec. 14, 1905. Serial No. 291,754.

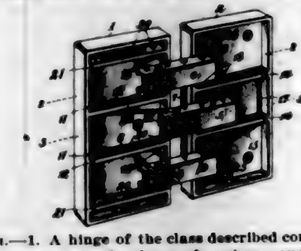

Claim.—1. A hinge of the class described comprising two leaves arranged in the form of casings, and connecting means interlocked with the leaves when the hinge is closed, whereby the leaves are positively held against lateral movement on each other, said connecting means being carried out of such interlocked relation by the opening movement of the leaves.

2. A hinge of the class described comprising two leaves arranged in the form of casings, and connecting means housed within the leaves and interlocked therewith when the hinge is closed, whereby the leaves are held against lateral movement on each other, said connecting means being carried out of such interlocked relation by the opening movement of the leaves.

3. A hinge of the class described comprising leaves provided with projecting lugs, and connecting means arranged to interlock with the lugs when the hinge is closed and carried out of engagement with the lugs when the hinge is opened.

4. A hinge of the class described comprising two leaves, floating connecting members, a pintle carried by the connecting members and located at an intermediate point on each member, and links to support the said connecting members located at opposite sides of the pintle and connecting the said members and the leaves.

5. A hinge of the class described comprising two leaves, floating connecting members, a pintle carried by the connecting members and located at an intermediate point on each member, and reversely-arranged long and short links connecting the said members and the leaves.

6. A hinge of the class described comprising a pair of leaves, intermediate and outer floating connecting members, a pintle carried by the said connecting members, oppositely-disposed long links connecting one end of the intermediate connecting member with one of the leaves and the opposite ends of the outer members with the other leaf, and the reversely-arranged short links connecting the other ends of the members with the leaves.

7. A hinge of the class described comprising a pair of leaves, intermediate and outer floating connecting members, a pintle carried by the said connecting members, long oppositely-arranged U-shaped links connecting the said connecting members with the leaves, and short U-shaped links also connecting the said connecting members with the leaves.

8. A hinge of the class described comprising a pair of leaves arranged in the form of casings and having transverse webs or flanges provided with bearings, floating connecting members, a pintle carried by the said connecting members, and reversely-arranged long and short links connecting the said connecting members with the leaves and arranged in bearings of the members and having pivots arranged in the bearings of the webs or flanges.

9. A hinge of the class described comprising two leaves, a pintle, floating connecting members provided with eccentrically-arranged eyes receiving the pintle, said connecting members being composed of reversely-arranged long and short arms, and links connecting both of the arms of each of the said members with the leaves.

10. A hinge of the class described comprising two leaves, a pintle, floating connecting members provided with eccentrically-arranged eyes receiving the pintle, said members being composed of reversely-arranged long and short arms, and reversely-arranged long and short links connecting both of the arms of each of the said members with the leaves.

11. A hinge of the class described comprising two leaves, a pintle, floating connecting members provided with eccentrically-arranged eyes receiving the pintle, said connecting members being composed of reversely-arranged long and short arms, reversely-arranged long and short links connecting both the arms of each of the said members with the leaves, and means for interlocking the short arms of the connecting members with the leaves.

12. A hinge of the class described comprising two leaves, a pintle, floating connecting members provided with eccentrically-arranged eyes receiving the pintle, said connecting members being composed of reversely-arranged long and short arms, reversely-arranged long and short links connecting the arms of the said members with the leaves, and lugs projecting from the leaves and arranged to interlock with the arms of the connecting members.

13. A hinge of the class described comprising two leaves, oscillatory floating connecting members, a pintle carried by the floating connecting members, and means for connecting the floating connecting members with the leaves, said connecting members being movable into and out of engagement with the leaves and interlocked with the latter when the hinge is closed.

845,972. LEAD, SLUG, RULE, AND FURNITURE CASE. WEBB M. OUNGST, St. Louis, Mo. Filed Jan. 19, 1906. Serial No. 296,761.

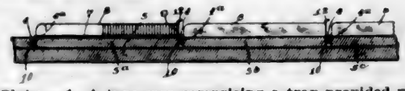

Claim.—1. A type-case comprising a tray provided with a smooth even bottom provided with grooves whereby longitudinally-extending shoulders are formed in said bottom, in combination with a plurality of type-boxes, each provided with means for detachably engaging one of said shoulders whereby the transverse position of said type-boxes are determined in said tray.

2. In a device of the kind described, a sheet-metal type-box having a flat bottom inclosed on three sides, a downwardly-projecting part upon said bottom near said open side and a curved projection at the top of the side opposite said opening.

3. In a device of the kind described, a sheet-metal type-box having a flat bottom inclosed on three sides, said bottom being extended at said open side and bent downward, and the side opposite said opening being extended and bent outward.

845,973. ROTARY ENGINE. WILLIAM A. C. PAPE, Los Angeles, Cal. Filed Dec. 15, 1906. Serial No. 347,934.

Claim.—1. A rotary engine comprising a reciprocating annular non-rotatable abutment provided with edges or ends formed by undulating curves composed of an even number of alternating right and left sections of a helix or variations of the same, the curved faces running in

opposite directions, that is, a right helical section on one end of the abutment being oppositely disposed to a left helical section on the opposite end; a shaft on which said abutment is longitudinally movable; and wings on either side of said abutment having the edges or faces thereof of a configuration to fit the faces of the abutment, said wings being secured to the shaft in position to permit chambers to be formed on both sides of the abutment and having a plurality of channels therein; and a casing surrounding said abutment and wings provided with channels and ports arranged to alternately throw pressure into the chambers on one side of the abutment and to exhaust from the chambers on the other side of the abutment, and then to reverse the pressure and exhaust.

2. A rotary engine, comprising a reciprocating annular non-rotatable abutment provided with edges or ends formed by undulating curves composed of an even number of alternating right and left sections of a helix or variations of the same, a right section being opposed by a left section; a shaft on which said abutment is longitudinally movable; wings on either side of said abutment having the edges or faces of a configuration to fit the faces of the abutment, said wings being secured to the shaft in position to form chambers on both sides of the abutment and having a plurality of channels therein; a casing surrounding said abutment and wings provided with channels and ports arranged to alternately throw pressure into the chambers on one side of the abutment and to throw the chambers on the other side of the abutment to exhaust, then to reverse the pressure and exhaust; and means to vary the length of time that said chambers are thrown to pressure or exhaust.

3. A rotary engine, composed of a high-pressure and a low-pressure unit, each unit comprising a reciprocating annular non-rotatable abutment provided with edges or ends formed by undulating curves composed of an even number of alternating right and left sections of a helix or variations of the same, a right section being opposed by a left section; wings on either side of said abutment having the edges or faces thereof of a configuration to fit the faces of the abutment; a shaft running through said wings and abutment, said wings having a plurality of channels therein and being secured to the shaft in position to form chambers on both sides of the abutment; and a casing surrounding said abutments and wings provided with channels and ports arranged to alternately throw pressure into the chambers on one side of the abutment and to exhaust from the chambers on the other side of the abutment and then to reverse the pressure and exhaust, the exhaust from the high-pressure unit being connected to pressure side of the low-pressure unit.

845,974. OUTLET-BOX, ELECTRIC CONDUCTOR. RAYMOND S. PARSONS, East Hampton, N. Y. Filed Nov. 12, 1906. Serial No. 343,128.

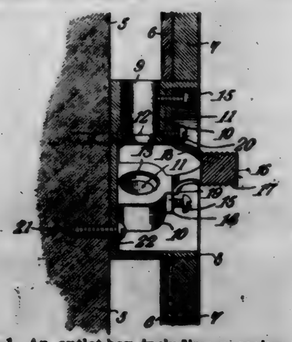

Claim.—1. An outlet-box including a casing having an opening formed therein, a wire-receiving member disposed entirely within the casing at said opening and provided with a stop-shoulder, and means piercing the walls of said member and engaging the wire for clamping the latter within said member.

2. An outlet-box including a casing having an opening formed therein, a tubular wire-receiving member disposed entirely within the casing at said opening, and having its inner end curved or rounded and its interior walls provided with a stop-shoulder, and means for clamping the wire within the tubular member.

3. An outlet-box including a casing having an opening formed in the walls thereof, a tubular wire-receiving member disposed at said opening, a supporting member rigidly secured to said wire-receiving member, and means carried by the wire-receiving member and adapted to engage the wire for preventing accidental displacement of the same.

4. An outlet-box including a casing provided with a plurality of openings, tubular wire-receiving members formed integral with the casing and extending inwardly from the latter at said openings, and means piercing the walls of the members and engaging the wires for locking the same against accidental displacement.

5. An outlet-box including a casing having its side walls provided with a plurality of openings, tubular wire-receiving members disposed at said openings and each having one terminal thereof curved or rounded and its interior walls provided with a stop-shoulder, a supporting member having radiating arms for attachment to the tubular members, and means piercing the tubular members and engaging the wires for locking the same within said members.

6. An outlet-box including a casing having one end thereof open and its side walls provided with a plurality of openings, tubular wire-receiving members disposed at said openings and each having one end thereof curved or rounded and its interior walls provided with an annular stop-shoulder, there being a flattened portion formed on each member, a supporting member having one end thereof threaded and its opposite end provided with radiating arms having laterally-perforated extensions bearing against the flattened portions of the tubular members, fastening devices passing through the perforations in the extensions and engaging the tubular members, and clamping-screws threaded in the walls of the tubular members and adapted to engage the wires for locking said wires in engagement with the tubular members.

845,975. COMBINED COUPLING-PIN AND COMPOUND-TOOL. JOHN PATTERSON, Flesher, Mont. Filed Oct. 4, 1905. Serial No. 281,329.

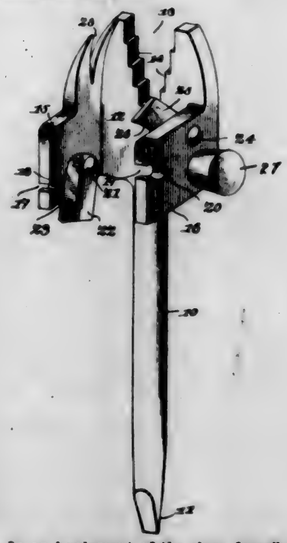

Claim.—In an implement of the class described the combination with a shank having a head at one end thereof, and parallel wings extending from the head, each of said heads having a wire-receiving recess with a contracted throat; of oppositely-disposed blades pivotally mounted upon the wings and adapted to swing across one end of each recess, and a wire-engaging claw upon one of the wings.

845,976. COTTON-SEPARATOR. WARREN A. PATTERSON, St. Louis, Mo., assignor to American Cotton Separator Company, St. Louis, Mo., a Corporation of Oklahoma. Filed Dec. 26, 1905. Serial No. 293,333.

Claim.—1. A cotton-separator comprising a casing, means for delivering an air-blast to feed a mass of cotton-bolls into said casing, means for agitating and beating said bolls, a rotating member for engaging the cotton, a stationary baffle for engaging the bolls to strip them from the cotton, means for removing the cotton from said rotating member, and means for conveying the empty bolls through a discharge-opening in the casing, the air-blast operating to carry the cotton through a second discharge-opening in the casing; substantially as described.

2. A cotton-separator comprising a casing, means for delivering an air-blast to feed a mass of cotton-bolls into said casing, means for agitating and beating said bolls, a baffle, a rotating member for engaging the cotton and carrying the bolls into engagement with said baffle to strip said bolls from the cotton, a rotating brush for removing the cotton from said rotating member, and means for conveying the empty bolls out of the casing, the air-blast operating to carry the cotton from said casing; substantially as described.

3. In a cotton-separator, a casing provided with a stationary baffle, a rotating member provided with teeth for engaging the cotton to carry the bolls into engagement with the baffle to strip the bolls from the cotton, a rotating brush arranged adjacent the top of said rotating member to remove the cotton therefrom, and a shield arranged between said brush and the top of the casing; substantially as described.

4. In a cotton-separator, a rotating member provided with teeth for engaging the cotton, and an adjustably-mounted coöperating baffle extending transversely of said member and disposed at an angle to the axis of said member for stripping the bolls from the cotton; substantially as described.

5. In a cotton-separator, a plurality of rotating members provided with teeth for engaging the cotton, a plurality of rotating brushes coöperating with said members to remove the cotton therefrom, and a baffle located between said members and disposed at an angle to the axes thereof to strip the bolls from the cotton; substantially as described.

6. In a cotton-separator, a rotating member comprising end frames, transversely-extending bars connected to said frames, and bands connected to said bars and provided with forwardly-projecting teeth; substantially as described.

7. In a cotton-separator, a rotating member comprising skeleton end frames, a tube-like casing secured to said frames, transversely-extending bars secured to said frames outside of said casing, and a plurality of circular bands connected to said bars, said bands being provided with flat teeth which project forwardly in the direction of rotation of said member; substantially as described.

8. In a cotton-separator, a casing, a plurality of rotating members mounted in said casing and having teeth for engaging the cotton, and a baffle located between said members for stripping the bolls from the cotton, said baffle extending the full width of the casing and being adjustably secured to the side walls thereof; substantially as described.

9. In a cotton-separator, a casing, means for delivering an air-blast to feed a mass of bolls into said casing, means in said casing for separating the cotton from the bolls, an endless belt for carrying away the empty bolls, and a box-like structure acting as a track for said belt to travel on and extending the full width of said casing to divide it into two chambers, and means carried by the end walls of the casing and coöperating with said box-like structure to prevent the air-blast from passing from one chamber into the other; substantially as described.

10. In a cotton-separator, a casing, means mounted in said casing for separating cotton from the bolls in which the cotton is incased, means for introducing a blast of air into said casing, an endless conveyer located in said casing for carrying away the empty bolls, a partition on which said conveyer travels, and means for varying the position of said partition relatively to the top of the casing; substantially as described.

11. In a cotton-separator, a casing, means mounted in said casing for separating cotton from the bolls in which the cotton is incased, a driven shaft 33 mounted in said casing and provided with a roller for driving an endless conveyer which carries away the empty bolls, a box-like structure fulcrumed on the shaft 33 and consisting of side plates and a track for the conveyer, an idler carried by the free ends of said side plates, and an adjustable rock-shaft mounted in the casing of the machine and provided with means for engaging the box-like structure and moving it to vary the distance between the conveyer and the separating means; substantially as described.

12. A cotton-separator comprising a casing provided with a movable top, a partition for dividing said casing into an upper and lower chamber, means in said upper chamber for separating cotton from the bolls in which the cotton is incased, a conveyer for carrying the empty bolls from the upper chamber into the lower chamber, means for moving the top of the casing to vary the space above the cotton-separating means, and means for adjusting the partition to vary the space below said cotton-separating means and the conveyer; substantially as described.

13. A cotton-separator comprising a casing, a rotating member mounted in said casing for carrying cotton to the upper portion of the casing, means for delivering an air-blast into the casing below the axis of said rotating member for feeding cotton to said member, means for confining said air-blast below said axis, and means for permitting a portion of said blast to intermittently pass to the upper portion of the casing to carry the cotton out of the machine; substantially as described.

14. A cotton-separator comprising a casing, a plurality of toothed rotating members mounted in said casing for carrying cotton to the upper portion of the casing, means

for removing the cotton from said members, means for delivering an air-blast into the casing below the axes of said members, means for preventing the air-blast from rising to the upper portion of the casing and thus cause it to pass under all of said members, and means for permitting some of the air-blast to intermittently pass to the upper portion of the cylinder to carry the cotton out of the machine; substantially as described.

15. A cotton-separator comprising a casing, a cylinder mounted in said casing and consisting of an interior casing, cotton-engaging means spaced away from said interior casing and constructed to permit air to pass therethrough, means for delivering an air-blast into the casing below the axis of said cylinder, a baffle coöperating with said cylinder to form a passage-way through which the air-blast can pass, and means carried by the interior casing of the cylinder for intermittently closing said passage-way; substantially as described.

16. A cotton-separator comprising a casing, rotating members mounted in said casing for carrying cotton toward the top of the casing, means for delivering an air-blast into one end of said casing below said rotating members, means for preventing the air from rushing to the top of the casing and thus cause it to pass below all of said rotating members, means located between said rotating members for permitting some of the air to intermittently pass to the top of the casing to carry the cotton out of the casing, and means for varying the size of the space in which the air is confined; substantially as described.

845,977. TRUCK. EDGAR PECKHAM, Kingston, N. Y. Filed July 29, 1904. Serial No. 218,638.

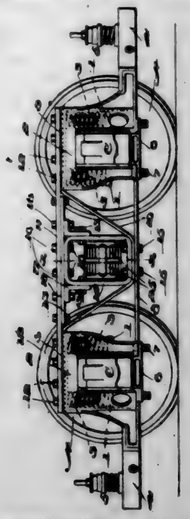

Claim.—1. In combination, a side frame comprising upper and lower members and stiffening means interposed therebetween, pedestals secured to the upper and lower members of said side frame and adapted to support the same and receive the entire load therefrom, a plurality of axles, saddles upon said axles, and means whereby each pedestal is supported upon a saddle upon the corresponding axle.

2. In combination, a side frame comprising upper and lower members and stiffening means interposed therebetween and secured to each of the same, a pedestal secured to said side frame, an axle-box, a saddle upon said axle-box, chambers in said pedestal, and springs adapted to fit in said chambers and rest upon said saddle upon either side of said axle-box.

3. In combination, a side frame comprising upper and lower members and stiffening means interposed therebetween and secured to each of the same, pedestals secured to said side frame and adapted to support the same and receive the entire load therefrom, a plurality of axles, saddles upon said axles, chambers in said pedestals, and springs in said chambers whereby each pedestal is supported upon a saddle upon the corresponding axle.

4. In combination, a bolster comprising an upper and a lower member and spacing-blocks mounted between said members, said upper member being horizontal and said lower member extending under said spacing-blocks and upwardly on either side thereof, projecting shoulders upon said lower member against which the ends of said upper member are adapted to abut, a truck-frame, means whereby the load upon said bolster is transmitted to said frame, a plurality of axles, and means whereby the load upon said frame is transmitted to each of said axles in four substantially equal components.

5. In combination, a bolster comprising an upper and a lower member and spacing-blocks between said members, said upper member being straight and said lower member extending under said spacing-blocks and inclined upwardly on either side thereof and provided with integral shoulders against which the ends of said upper member are adapted to abut, a truck-frame, means whereby the load upon said bolster is transmitted to said truck-frame, a plurality of axles, pedestals upon said axles, and means whereby the entire load upon said truck-frame is transmitted through said pedestals to said axles in four substantially equal components.

6. In combination, a bolster comprising an upper and a lower member and spacing-blocks between said members, said upper member being straight and said lower member extending under said spacing-blocks and upwardly on either side thereof and provided with integral shoulders aginst which the ends of said upper member are adapted to abut, pedestals, means whereby the load upon said bolster is transmitted to said pedestals, axle-boxes, saddles on said axle-boxes, chambers in said pedestals, and springs adapted to fit in said chambers and rest upon said saddles on either side of said axle-boxes.

7. In combination, a bolster comprising an upper and a lower member and spacing-blocks between said members, said upper member being straight and said lower member extending under said spacing-boxes and upwardly on either side thereof and provided with integral shoulders against which the ends of said upper member are adapted to abut, a truck-frame, means whereby the load upon said bolster is transmitted to said truck-frame, pedestals secured to said frame and adapted to support the same and receive the entire load therefrom, a plurality of axles, chambers in said pedestals, springs in said chambers, and means whereby each pedestal is supported upon either side of the corresponding axle.

8. In combination, a bolster, springs upon which said bolster is supported, transoms, links supporting said springs upon said transoms, side bars to which said transoms are secured, pedestals, tie-bars connecting said pedestals, stiffening members extending over said pedestals, and secured to said side bars and abutting against said tie-bars, rectangular members interposed between said stiffening members and said side bars and secured to said transoms, and axles upon which said pedestals are mounted, said parts being so constructed and related as to transmit the entire load upon said bolster to said axles through said pedestals.

9. In combination, a side bar, a plurality of transoms and an integral plate secured to said side bar and projecting beyond the inner edge thereof and having further projections adapted to be secured to said transoms.

10. In combination, a side bar, a plurality of transoms, and an integral plate secured to the lower surface of said side bar and having projections adapted to be secured to said transoms.

11. In combination, a bolster, springs upon which said bolster is supported, transoms, a spring-plank of substantially I cross-section, links supporting said spring-plank upon said transoms, side bars to which said transoms are secured, pedestals, and axles upon which said pedestals are mounted, said parts being so constructed and related as to transmit the entire load upon said bolsters to said axles through said pedestals.

12. In a truck, a pedestal, the inner leg of which is hollow and is provided with openings upon two opposite sides and the outer leg of which is hollow and is provided with an opening upon the side toward said inner leg and closed upon the opposite side.

13. In a truck, a pedestal of flanged construction, the inner leg of which is comprised of two substantially parallel members connected at their lower portions and the outer leg of which is hollow and is inclosed upon three sides.

14. In combination, a bolster, springs upon which said bolster is supported; transoms, links supporting said springs upon said transoms, side bars to which said transoms are secured, pedestals, tie-bars connecting said pedestals, stiffening members between said tie-bars and said side bars and connected with the transoms, axles, and springs mounted upon said axles and positioned within and adapted to support said pedestals, said parts being so constructed and related as to transmit the entire load upon said bolster to said axles through said last-mentioned springs.

15. In a truck, in combination, a side frame comprising upper and lower members and stiffening means interposed therebetween and secured to each of the same, a plurality of transoms, and an integral plate secured to said side frame and having projections one of which is secured to each of said transoms.

16. In a truck, in combination, a side frame comprising upper and lower members, and stiffening means interposed therebetween and secured to each of the same, a plurality of transoms, and an integral plate secured to the lower surface of said upper member and having projections one of which is secured to each of said transoms.

17. In a truck, in combination, a side frame comprising an upper and a lower member and an intermediate member secured at each end to said upper member and extending downwardly from each end and secured adjacent its central portion to said lower member, a plurality of transoms, and an integral plate secured to said upper member and having projections one of which is secured to each of said transoms.

18. In a truck, in combination, an upper side member, a lower side member, an intermediate member interposed between the same and secured at each end to said upper side member and extending downwardly from each end portion to said lower side member, a plurality of transoms, a plate secured to the lower surface of the upper side member and having projections secured to said transoms, and a member interposed between said transoms, said plate and the lower portion of said intermediate member and secured to each of the same.

19. In a truck, in combination, an upper side member, a lower side member, an intermediate member secured adjacent each end to said upper side member and having a depending portion secured to said lower side member, a plurality of transoms secured to said upper side member, and a member interposed between said transoms, said upper side member, and the depending portion of said lower side member and secured to each of the same.

20. In a truck, in combination, an upper side member, a lower side member, an intermediate member secured adjacent each end to said upper side member and having a depending portion secured to said lower side member, a plate secured underneath said upper member, a plurality of transoms secured to said plate and to said upper side member, and a substantially rectangular member interposed between said transoms, said plate, and the depending portion which is secured to said lower side member and secured to each of the same.

21. In a truck, in combination, a side bar, a stiffening member having its ends secured to said side bar, pedestals secured to the ends of said stiffening member and said side bar, a tie-bar connecting said pedestals and secured to the central portion of said stiffening member, a plate secured underneath said side bar, transoms secured to said plate and to said side bar, and a member interposed between and secured to said transoms, said plate, and the depending portion of said stiffening member.

22. In a truck, in combination, a side bar, a stiffening member having its ends secured to said side bar, pedestals secured to the ends of said stiffening member and said side bar, a tie-bar connecting said pedestals and secured to the central portion of said stiffening member, a plate secured underneath said side bar, transoms secured to said plate, a member interposed between and secured to said transoms, side bar, and the depending portion of said stiffening member, springs housed within said pedestals, axles, and means upon said axles supporting the entire load upon said transoms through said springs.

23. In a truck, in combination, a side bar, a stiffening member having its ends secured to said side bar, pedestals secured to said stiffening member and said side bar, a tie-bar connecting said pedestals and secured to said stiffening member adjacent the central portion thereof, transoms, an integral plate secured to said side bar having projections each of which is secured to one of said transoms, and a member interposed between and secured to said transoms, said side bar, and the central portion of said stiffening member.

24. In a truck, in combination, a side bar, a stiffening member having its ends secured to said side bar, pedestals secured to said stiffening member and said side bar, a tie-bar connecting said pedestals and secured to said stiffening member adjacent the central portion thereof, transoms, a plate secured to said side bar having projections secured to said transoms, a member interposed between and secured to said transoms, said side bar, and the central portion of said stiffening member, springs housed within said pedestals, axles, and saddles upon said axles adapted to support the entire load upon said transoms through said springs.

25. In a truck, in combination, a side bar, a plurality of transoms, a plate secured to said side bar and adapted to be secured to both of said transoms, a tie-bar, a rectangular stiffening member connected therewith and also connected with said plate, and stiffening means connected with said tie-bar and interposed between the same and said rectangular member, said stiffening means being directly secured to said side bar.

26. In a truck, in combination, a side frame comprising upper and lower members and stiffening means interposed therebetween and secured to each of the same, a plate upon said upper member, a rectangular supporting member seated upon said stiffening means and connected with said plate, and a plurality of transoms connected with said plate and with said upper member and also with said rectangular supporting member.

845,978. SCREW-DRIVER ATTACHMENT. FRANCIS D. RAPPELEE, Green Bay, Wis. Filed Dec. 7, 1906. Serial No. 346,777.

Claim.—1. In a device of the class described, the combination of a blade having a longitudinal slot, a helical com-

pression-spring therein, a sleeve movable on the blade and arranged to form a housing for the spring, a cross-piece at one end of the sleeve which extends through the slot and bears against one end of the spring, leaf-springs disposed on opposite sides of the blade and connected with the sleeve and means on the free ends of the springs having opposed gripping-faces diverging outwardly to form a mouth.

2. In a device of the class described, the combination of a blade having a longitudinal slot, a helical compression-spring therein, a sleeve on the blade forming a housing for the spring, a cross-piece attached to the sleeve and extending through the slot at one end of the spring, a pair of parallel members connected with the sleeve and extending beyond the point of the blade, and screw-holding means on the ends of said members.

3. In a device of the class described, the combination of a blade, a pair of jaws, and means for movably mounting the jaws on the blade, each jaw comprising a strip of spring metal convexedly bent inwardly and backwardly at its end to form a gripping means.

4. In a device of the class described, the combination of a blade, a pair of jaws movable thereon, and elastic means for normally holding the jaws extended beyond the point of the blade, the said jaws comprising strips of spring metal having their ends bent backwardly and curved toward each other to form gripping-faces for holding a screw.

5. In a device of the class described, the combination of a blade, a sleeve thereon, a spring in the sleeve for yieldingly holding the latter in position on the blade, and a pair of jaws attached to the sleeve, said jaws comprising strips of spring metal having a tension normally holding the jaws together, the outer ends of the strips being bowed and bent backwardly and provided with openings at the middle of the bowed portions for gripping the shank of the screw.

845,979. NECKBAND-HOLDER. CHRISTINA W. RICHERT, Buffalo, N. Y. Filed Nov. 1, 1905. Serial No. 285,422.

Claim.—1. A neckband-holder comprising a bar, a spur arranged at the end of the bar and having a pointed outer end, and a bow-shaped guard arranged with its central part along the side of the point of the spur, substantially as set forth.

2. A neckband-holder comprising a bar having a laterally-projecting arm at its end, a spur arranged adjacent to the end of said bar and having a pointed outer end and provided at its inner end with an arm which projects laterally in a direction opposite to the arm of said bar, the inner ends of said arms being opposite each other but unconnected, and a bow-shaped guard connected at its ends with the outer ends of said arms and having its central part arranged adjacent to the pointed end of said spur, substantially as set forth.

3. A neckband-holder comprising a longitudinal bar provided at opposite ends with laterally-projecting arms, longitudinal spurs arranged adjacent to the ends of said bar and each having a pointed outer end and an arm at its inner end which projects laterally in a direction opposite to the adjacent arm of said bar, the inner ends of the corresponding bar-arm and bow-arm being opposite each other but unconnected, and bow-shaped guards each of which is connected at its ends with the outer ends of the arms of one spur and the adjacent end of the bar and having its central part arranged adjacent to the pointed end of the adjacent spur, substantially as set forth.

4. A neckband-holder comprising a longitudinal bar provided at opposite ends with laterally-projecting arms and at its central part with oppositely-projecting loops which form a spring, longitudinal spurs arranged adjacent to the ends of said bar and each having a pointed outer end and an arm at its inner end which projects laterally in a direction opposite to the adjacent arm of said bar, and bow-shaped guards each of which is connected at its ends with the outer ends of the arms of one spur and the adjacent end of the bar and having its central part arranged adjacent to the pointed end of the adjacent spur, substantially as set forth.

845,980. STEAM-TURBINE. RICHARD SCHULS, Berlin, Germany. Filed Feb. 26, 1906. Serial No. 303,049.

Claim.—1. In a multistage turbine the combination with the high-pressure stages, having wheels which are supplied with motive fluid partially around their circumference; of nozzles to supply motive fluid thereto in which the greater part of the energy is converted into velocity, a main turbine connected to the high-pressure stages, means to supply motive fluid to any one of the turbines and means to permit the decreasing of the number of high-pressure stages supplied with motive fluid to increase the power developed.

2. In a turbine, the combination with a plurality of shafts, of a main turbine in each shaft, high-pressure stages on each shaft having wheels which are supplied with motive fluid partially around their circumference, nozzles to supply motive fluid thereto in which the greater part of the energy is converted into velocity, means to supply motive fluid to any one of the stages and to the main turbines, whereby the supply to any of the stages may be stopped and said supply directed to any lower stage or main turbine to develop greater power and conversely.

3. In a turbine, the combination with main turbines of high-pressure stages connected thereto, said stages having wheels which are supplied with motive fluid partially around their circumference, means to control and vary the area so supplied around the circumference, nozzles to supply motive fluid thereto in which energy of the motive fluid is converted into velocity, means to supply motive fluid to any one of the stages and main turbines, whereby the number of stages through which the motive fluid passes before entering the main turbines can be decreased at will to correspondingly increase the power, and conversely.

4. In a turbine, the combination with main turbines and means to discharge motive fluid around the entire periphery of the wheels of said turbines; of high-pressure stages connected to the main turbines having wheels that are supplied with motive fluid partially around their circumference, nozzles to supply motive fluid to the several stages in which part of the energy of the motive fluid is converted into velocity and means to supply motive fluid to the nozzle of any of the stages, whereby the number of stages through which said motive fluid passes before entering the main turbines can be decreased at will to correspondingly increase the power developed, and conversely.

5. In a turbine, the combination with a main turbine and means to discharge motive fluid around the entire periphery of the wheels of said turbines; of a number of high-pressure stages connected to the main turbine and having wheels that are supplied with motive fluid partially around their circumference, nozzles to supply motive fluid to the several stages in which energy of the fluid is converted into velocity, means to control and vary the area of impact of the motive fluid on the wheels of the stages and thereby control the expansion in the nozzles, and means to supply any one of the stages or the main turbine with motive fluid, whereby by decreasing the number of stages through which the steam passes the power will be correspondingly decreased, and conversely.

6. In a turbine, the combination with main turbines and means to discharge motive fluid around their entire periphery; of a number of high-pressure stages connected to the main turbines and having wheels that are supplied with motive fluid partially around their circumference, nozzles to supply motive fluid to the several stages in which energy of the motive fluid is converted into velocity, means to control the degree of energy converted into velocity and means to supply the main turbines and the stages with motive fluid in quantities decreasing from the lowest to the highest stage.

845,981. NURSING-BOTTLE. HAROLD D. SINGER, Omaha, Nebr. Filed Feb. 23, 1906. Serial No. 302,457.

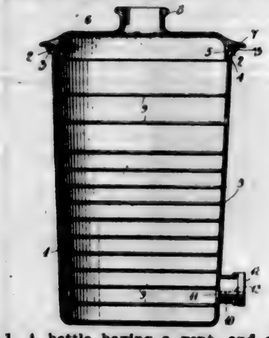

Claim.—1. A bottle having a vent, and a stopper for said vent, said stopper having an opening extending therethrough, a diaphragm at a point between the ends of said opening and the stopper, and a rubber film closing said openings of the stopper and diaphragm and having a pinhole, substantially as described.

2. A nursing-bottle provided with a neck or rim near the lower end thereof, an opening in the wall of the bottle-body within said rim, in combination with a cork or stopper having an opening therethrough and adapted to be adjusted to register with the opening in the bottle-body, and an alarm or sounding device in the cork or stopper, substantially as described.

3. A nursing-bottle provided with a neck or rim, an opening in the bottle near one side of said rim, a cork or stopper adapted to fit within the rim, said cork or stopper having a metal diaphragm therein provided with a perforation, said cork provided with a perforation registering with the perforation in the diaphragm, a rubber film closing said opening in the cork and diaphragm and provided with an air-duct or pin-hole for admitting air, and sounding an alarm when the bottle is empty, substantially as described.

845,982. FEED-BOX. ROBERT S. SMITH, Alva, Okla. Filed Dec. 20, 1906. Serial No. 348,800.

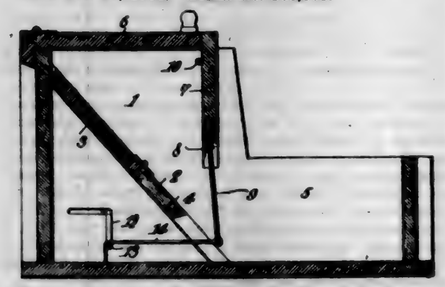

Claim.—1. A feed-box comprising a hopper having an inclined bottom, said hopper having a vertically-adjustable side, a flap hinged to the lower edge of the said adjustable side and means for limiting the swinging movement of the flap.

2. A feed-box comprising a hopper having an inclined bottom and a vertically-adjustable side, a flap hinged to the lower edge of said adjustable side and having limited swinging movement, a means for regulating the extent of such swinging movement.

3. A feed-box comprising a hopper having an inclined bottom and a vertically-adjustable side, a flap hinged to the lower edge of said bottom, a shaft journaled in the sides of the box and having an exteriorly-located handle and a link connecting said shaft with said flap.

4. A feed-box comprising a hopper having an inclined bottom composed of sections hinged together, a hinged flap supported opposite said inclined bottom and having limited swinging movement and means for regulating the extent of the swing of the flap, said means being housed in the space below the inclined bottom of the hopper.

845,983. AUTOMOBILE. EDWARD TEMPLE, Springfield, Ohio, assignor of one-half to Harry G. Redmond, Redmonds Mills, Ohio. Filed Feb. 15, 1906. Serial No. 301,125.

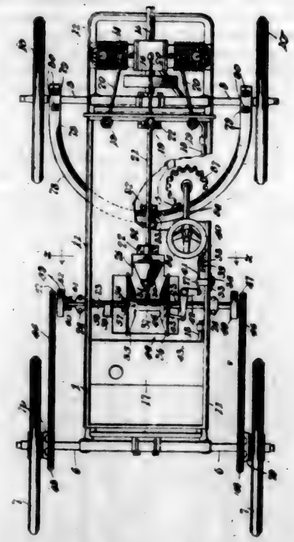

Claim.—1. In combination with the body and running-gear of a road-wagon or similar vehicle, a strengthening and supporting frame adapted for connection to the body of the vehicle, a motor supported on said frame, a longitudinally-extending shaft driven by said motor, a transverse shaft provided with clutch-connected sprocket-wheels at its ends, other sprocket-wheels adapted for connection to the rear wheels of the running-gear, sprocket-chains connecting said sprocket-wheels, and controlling-gearing connecting said shafts, substantially as described.

2. In combination with the body and running-gear of a road-wagon or similar vehicle, a strengthening and supporting frame adapted for connection to the body of the vehicle, a motor supported on said frame, a longitudinally-extending shaft driven by said motor, a transverse shaft provided with clutch-connected sprocket-wheels at its ends; other sprocket-wheels adapted for connection to the rear wheels of the running-gear, sprocket-chains connecting said sprocket-wheels, and controlling-gearing connecting said shafts, said controlling-gearing comprising a friction-pinion rotating with and movable lengthwise of the longitudinal shaft, two oppositely-arranged friction-disks rotating with and movable longitudinally on the transverse shaft, and means for shifting said pinion and disks, substantially as described.

3. In combination with the body and running-gear of a road-wagon or similar vehicle, a strengthening and sup-

porting frame adapted for connection to the body of the vehicle, a motor supported on said frame, a longitudinally-extending shaft driven by said motor, a transverse shaft provided with clutch-connected sprocket-wheels at its ends, other sprocket-wheels adapted for connection to the rear wheels of the running-gear, sprocket-chains connecting said sprocket-wheels, controlling-gearing connecting said shafts, and steering mechanism comprising a curved rack adapted for attachment to the front axle, and a steering-shaft provided with a pinion to mesh with said rack, substantially as described.

4. In a vehicle of the character described, the combination, with the box-body, of a strengthening and supporting frame consisting of an angle-bar bent to form parallel portions fitting and secured to the lower side edges of the body and having an extension projecting in front of said body to form a support for the motor said extension being in a plane lower than the main portion of said supporting-frame, substantially as described.

5. In a vehicle of the character described, the combination, with the box-body, of a strengthening and supporting frame consisting of an angle-bar bent to form parallel portions fitting and secured to the lower side edges of the body and having an extension projecting in front of said body and bent downwardly and then outwardly to form a support for the motor, said forwardly-extending portion being depressed, substantially as described.

845,984. AUTOMATIC SELLING AND DELIVERING APPARATUS. LARS O. T. THOMPSON, Stockholm, Sweden, assignor to Carl Fehr Josef Johnsson, Stockholm, Sweden. Filed Sept. 4, 1906. Serial No. 333,191.

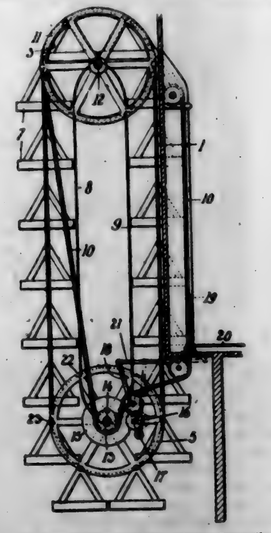

Claim.—1. In apparatus of the class described, a casing having an opening, a door for closing said opening, an endless carrier having compartments or shelves movable into alinement with the opening, and a door-controlling means operable by movement of the carrier and arranged to transmit opening movement of the door only when a compartment or shelf is opposite the opening and to close the door and hold it in the closed position when a compartment or shelf is not opposite the opening.

2. In apparatus of the class described, a casing having an opening, an endless carrier including flexible members and compartments or shelves supported thereby, guiding-wheels for said flexible members, a shaft carrying said guiding-wheel, an auxiliary wheel carried by the shaft, and a flexible operating member extending around said auxiliary wheel and partly outside the casing to permit manual operation of the endless carrier.

3. In apparatus of the class described, a casing having an opening, a door for closing the opening, a pair of shafts mounted within the casing, guiding-wheels on said shaft, endless flexible members extending around the guiding-wheels, compartments or shelves hung from said flexible members, and a door-controlling member carried by one of the shafts and bearing a fixed relation with the compartments or shelves, whereby opening movement of the door is prevented save when one of the compartments or shelves is opposite the opening.

4. In apparatus of the class described, a casing having an opening, a door for closing the opening, a pair of shafts arranged within the casing, grooved guiding-wheels carried by the shafts, endless flexible members extending around said guiding-wheels, compartments or shelves hung on the flexible members, auxiliary wheels on said shafts, and an operating-band extending around the auxiliary wheels and partly outside the casing to permit manual operation of the device.

5. In apparatus of the class described, the combination with a casing having an opening, of a door for closing said opening, a pair of shafts arranged within the casing, guiding-wheels on said shafts, endless flexible members extending around said guiding-wheel, compartments or shelves hung on the flexible members, a pair of auxiliary wheels carried by the shafts, one of said wheels having a circumference bearing a fixed relation to the distance between the adjacent compartments or shelves, an endless band surrounding the auxiliary wheels and extending partly outside the casing, a door-controlling disk secured to one of the shafts and having a notched periphery, a pivoted lever operatively connected to the door, and a roller carried by said lever and arranged to enter the notch of the disk.

845,985. DANCING TOY. HARRY W. THORNTON, Winona, Minn., assignor to Edward L. Wallwork and George R. Thornton, Chicago, Ill. Filed Aug. 6, 1906. Serial No. 329,450.

Claim.—1. In a dancing toy, the combination with a vibratory platform, of a figure consisting of a body portion, upper leg members pivoted to the body portion to swing backwardly and forwardly, lower leg members pivoted to the upper leg members, the pivots connecting the said members being arranged transversely of the figure, and the said members being provided with abutting faces engaging each other when the leg members are in substantial alinement and limiting the forward swing of the lower members, and feet provided with openings to receive the lower member and pivoted to the same, the rear walls of the openings being arranged to engage the lower members for limiting the downward swing of the feet, and a handle-rod connected with the figure.

2. In a dancing toy, the combination with a vibratory platform, of a figure consisting of a body portion, upper leg members pivoted to the body portion to swing backwardly and forwardly, lower leg members pivoted to the upper leg members, the pivots connecting such members being arranged transversely, and the said members being provided with means for limiting the forward swing or movement of the members on each other at the knee-joint when the said members are in substantial alinement, and feet pivoted to the lower members and provided with means for engaging the same to limit the downward swing of the feet and to permit an upward swing of the same in excess of the downward swing, and a handle connected with the figure.

845,986. OPERATING MECHANISM FOR ADVERTISING DEVICES. FRANK M. WADSWORTH and JAMES P. APPLEBY, Minneapolis, Minn. Filed June 27, 1904. Serial No. 214,280.

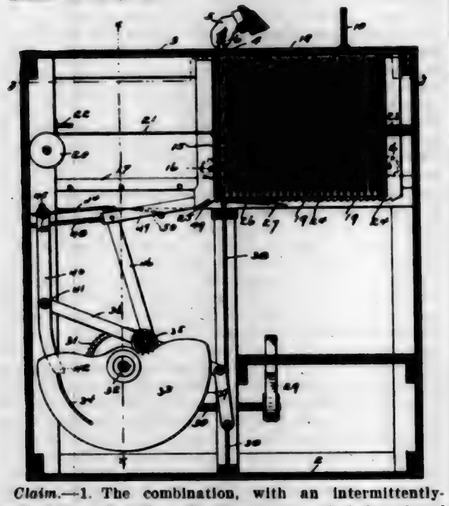

Claim.—1. The combination, with an intermittently-moving magazine adapted to contain a series of cards, of mechanism for moving said magazine step by step in one direction, mechanism for automatically releasing said magazine, and mechanism for returning said magazine to its normal position.

2. The combination, with a box or casing having a slot in its walls, of an intermittently-moving magazine arranged within said box and adapted to contain a series of cards, mechanism for moving said magazine step by step in one direction and projecting a card during each stationary period through said slot, and mechanism for automatically tripping said moving means when the last card has been displayed, substantially as described.

3. The combination, with a suitable casing having a slot or opening, of an intermittently-moving magazine arranged within said casing, cards provided within said magazine, mechanism for projecting said cards, one at a time, through said slot, and a mechanical hand device arranged to engage the upper edge of the card as it is projected through said slot, for the purpose specified.

4. The combination, with a casing having a slot or opening, of a magazine arranged within said casing and adapted to contain a series of cards, mechanism for intermittently moving said magazine, a pivoted mechanical hand provided over said slot, and a plunger arranged to engage said cards successively to project them through said slot and lift said pivoted hand, substantially as described.

5. The combination, with a casing, of a magazine adapted to contain a series of cards, means for moving said magazine step by step in one direction, means for projecting the cards one at a time, and means for automatically releasing said magazine to allow it to return to its normal position, substantially as described.

6. The combination, with a magazine adapted to contain a series of cards, of a ratchet mechanism for moving said magazine step by step in one direction, means for projecting the cards one at a time from said magazine, and means for automatically tripping said ratchet mechanism to allow said magazine to return to its normal position.

7. The combination, with an intermittently-moving magazine adapted to contain a series of cards, of a mechanism arranged to move said magazine step by step in one direction, a spring device placed under tension by such movement to return said magazine to its initial position when released, means for projecting the cards one at a time from said magazine, and revolving cams arranged to engage and operate said moving mechanism and said card-projecting means, substantially as described.

8. The combination, with a box or casing having a slot in its wall, of a magazine having an open top arranged within said casing beneath said slot, mechanism for moving said magazine step by step beneath said slot, its movement being so timed that during its stationary periods a card will be opposite said slot, means for automatically tripping said moving means a plunger operating through the bottom of said magazine to engage and project a card through said slot during such stationary periods, and mechanism for successively actuating said moving means and said card-operating means, substantially as described.

9. The combination, with a magazine and a series of display-cards therein, of a spring mechanism arranged to draw said magazine to the limit of its movement in one direction, mechanism for moving said magazine step by step in the other direction, mechanism for projecting the cards one at a time during the intervals between the movement of said magazine, and means for automatically tripping said mechanism when the last card has been displayed to allow said magazine to return to its initial position.

10. The combination, with a spring-retracted reciprocating magazine adapted to contain a series of cards and provided with ratchet-teeth 24 and 25, of a catch 26, pivoted arms 47 having a rod 49 yieldingly held in engagement with said teeth, means for operating said arms, dogs 51 pivoted on said arms and engaging stops 52, and flanges 50' provided in the path of said dogs, substantially as described.

11. In a machine of the class described, the combination, with a plunger, of a cam having a rib, lever 36 pivotally connected with said plunger and having an antifriction-bearing on said cam, spring-retracted arms provided near said cam, a lever 40 pivoted at a point intermediate to its ends and having one end connected to said arms and its opposite end in the path of said rib.

12. The combination, with a magazine adapted to contain a series of cards, of means for moving said magazine step by step in one direction, means for projecting the cards one at a time, a motor connected with said moving means, and means for automatically releasing said magazine from said moving means to allow it to return to its normal position whereby the reciprocation of said magazine will be continuous, substantially as described.

845,987. APPARATUS FOR GRINDING AND POLISHING. FRANK L. O. WADSWORTH, Morgantown, W. Va., assignor to Pressed Prism Plate Glass Company, New York, N. Y., a Corporation of West Virginia. Filed June 24, 1905. Serial No. 266,696.

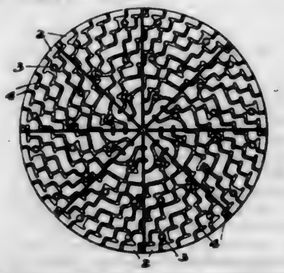

Claim.—1. In a glass-grinding apparatus, a disk having shoes of sector or wedge shape form, radiating from the

center of the disk and provided with grooves which extend continuously from one radial edge of the shoe to the opposite radial edge; substantially as described.

2. A grinding-disk having shoes formed with grooves therein, portions of said grooves being approximately radial, and other portions thereof being approximately circumferential in direction; substantially as described.

3. A grinding-disk having shoes with zigzag or sinuous grooves extending continuously from one radial edge of the shoes to the other; substantially as described.

4. A grinding-disk having a series of separated sector-shaped shoes formed with zigzag grooves extending from one radial edge of the shoe to the opposite radial edge; substantially as described.

5. A grinding-shoe having therein a plurality of zigzag grooves, portions of which extend in substantially radial directions, and other portions of which extend in substantially circumferential directions; substantially as described.

845,988. CAN-BODY-SIDE-SEAMING MACHINE. HARRY C. H. WALSH, Chicago, Ill., assignor to Consolidated Press and Tool Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 12, 1904. Serial No. 224,176.

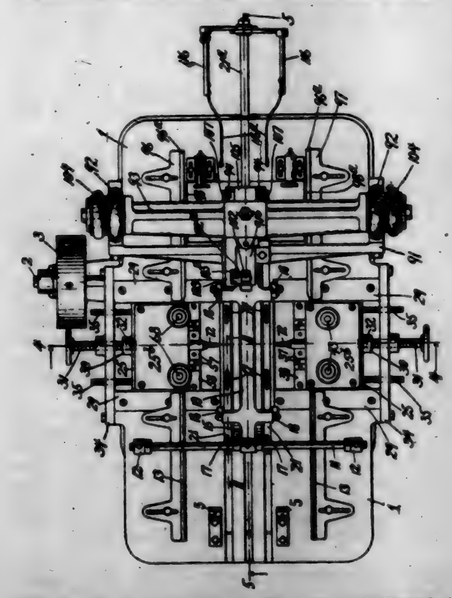

Claim.—1. In a machine for the purpose indicated, in combination with a supporting-frame comprising a table on which the blanks are lodged and advanced; two parallel shafts having equal rotary speed extending transverse to the path of advance; feeding devices and edge-flanging mechanisms actuated by one of said shafts and folding and seam-clenching mechanisms actuated by the other shaft.

2. In a machine for the purpose indicated, in combination with a table on which the blanks are lodged and advanced, flanging mechanisms mounted in the table at opposite sides of the path of the blank; a feeding device comprising parallel bars guided for longitudinal reciprocation in the table and having spring-actuated feeding-teeth at intervals in their length corresponding to the longitudinal space allotted to the flanging devices, and means for reciprocating such bars with a stroke equal to said intervals; a presser overhanging the table between the flanging devices, and detent devices carried by the presser for engaging the upper surface of the blank to prevent its retraction.

3. In a machine for the purpose indicated, in combination with a table on which the blanks are lodged and advanced; feed-bars reciprocating longitudinally in the table and having spring-actuated teeth protruding upward to engage and feed the blanks; an elastically-operating presser overhanging the table; flanging devices mounted in the table at opposite sides of the path of the blank and of the presser comprising a fixed upper frame, and a flexible shoe carried by the frame and facing downward for resting upon the blanks; springs interposed between the frame and shoe and detent devices carried by the presser for engaging the upper surface of the blank to prevent retraction of the latter.

4. In a machine for the purpose indicated, in combination with a supporting-frame comprising a table on which the blanks are lodged and advanced; a feeding mechanism for advancing the blanks; a flanging mechanism comprising a carrier mounted and guided for adjustment transversely to the path of movement of the blanks; mechanism mounted on the carrier for flanging the blank; a shaft on the frame journaled parallel to the movement of adjustment of the carrier having an eccentric extended longitudinally on the shaft, and an element driven by said eccentric for operating the mechanism on the carrier adapted to be moved longitudinally along the eccentric without change of its driving relation thereto, and means for giving the carrier its transverse movement of adjustment with respect to the path of the blanks.

5. In a machine for the purpose indicated, in combination with a frame along which the blanks are advanced; feeding mechanism for advancing the blanks; flanging mechanism comprising carriers mounted upon opposite sides of the path of the blanks, such carriers being movable transversely to such path; means for actuating and guiding them in such transverse movement; actuating devices for said flanging mechanism consisting of eccentrics elongated transversely of the path of the blanks; a shaft by which the eccentrics are rotated, and coöperating connections to the flanging mechanisms respectively from the respective eccentrics slidable longitudinally of the latter.

6. In a machine for the purpose indicated, in combination with a supporting-frame comprising the table on which the blanks are advanced; a flanging mechanism comprising a carrier mounted in the frame and flanging devices mounted in the carrier, such flanging devices comprising a clamping-jaw pivoted on the carrier; a plunger mounted in the carrier for vertical reciprocation; a flanging-rocker and a chair on which it is mounted for its rocking movement, such chair being spring-supported on the plunger; means for stopping the movement of the chair relatively to the carrier in the direction of thrust of the spring which supports the chair, whereby the spring yields during the further movement of the plunger after the chair is thus stopped, the plunger having means engaging the flanging-rocker aside from its fulcrum to rock it about its fulcrum during such further movement of the plunger.

7. In a machine for the purpose indicated, in combination with a supporting-frame comprising a table on which the blanks are advanced, such table having at its lateral edges lower jaws for gripping the blank; flanging mechanisms mounted on the frame at opposite sides of the path of the blank, each comprising a carrier supported on the frame, and flanging devices mounted in the carrier, said devices comprising an upper jaw for gripping the blank pivoted to the carrier; a plunger mounted for reciprocation in the carrier having means for actuating the upper jaw to clamp it toward the lower jaw on the table; a flange-folding device; a support for the same yieldingly mounted on the plunger; a stop on the carrier for the yielding action of said supporting device and means on the plunger engaging said flange-folding device for actuation during the movement of the plunger after the supporting device is stopped.

8. In a machine for the purpose indicated, in combination with the supporting-frame comprising a table on which the blanks are advanced, said table having at its lateral edges fixed jaws for gripping the blanks back of their edges; flanging mechanisms supported on the frame comprising each a carrier mounted on the frame; upper gripping-jaws fulcrumed on such carrier; an element reciprocating vertically in the carrier; a flange-folding device which is carried by such reciprocating element, the means for carrying it comprising two parts mounted on the reciprocating element, one fixed with respect to said element and the other having yielding movement vertically with respect thereto; means for stopping such yielding movement on the carrier after predetermined limit, the flange-folding device having pivotal connection with its said two carrying parts, respectively, at lines at different distances from the vertical plane of the edge to be folded.

9. In a machine for the purpose indicated, in combination with the supporting-frame comprising a table on which the blanks are advanced; a flanging mechanism supported on the frame comprising a carrier which is rigid with the frame; a plunger mounted for vertical reciprocation in the carrier; the table having a fixed lower jaw; an upper jaw fulcrumed on the carrier, one of said jaws being recessed to form a laterally-protruding lip whose surface opposite the gripping-face makes an acute angle with said face; a flange-folding device mounted in the carrier adapted to engage the protruding marginal portion of the blank to fold the same about such protruding lip, and means carried by the plunger for actuating said device in the reciprocation of the plunger.

10. A machine for the purpose indicated, in combination with a supporting-frame comprising a table on which the blanks are advanced; a flange-forming mechanism having its support fixed with respect to the table comprising a carrier mounted on the table; an upper jaw fulcrumed on the carrier, the table having its lateral marginal portion constituting a lower jaw, one of said jaws having a protruding lip whose surface opposite the gripping-face makes an acute angle to said face; a plunger mounted on the carrier, and means for reciprocating it; a flange-folding device having two pivotal supports on the plunger, one fixed and the other yielding with respect thereto, and means on the carrier for stopping the yielding movement while the other movement continues, the folding device having an edge or face which in the movement resulting from such stoppage is rocked against said surface of the protruding lip.

11. In a machine for the purpose indicated, in combination with the supporting-frame comprising a table on which the blanks are advanced; flanging mechanisms supported on the frame at opposite sides of the path of the blank, each comprising a carrier mounted rigidly with respect to the table, said table having at its lateral margins rigid under jaws for gripping the blanks; upper jaws fulcrumed to the carriers respectively; a plunger mounted in each carrier and means for reciprocating the plungers vertically adapted to cause their simultaneous movements to be in opposite directions, said plungers having means which simultaneously by their said opposite movements clamp the upper jaws to the table-jaws; flange-folding devices carried by the plungers respectively, each of said folding devices having two pivotal connections, one fixed with respect to the plunger and the other yielding vertically with respect thereto, the yielding support on one of the carriers being adapted to yield downward with respect to the plunger and the other being adapted to yield upward with respect thereto; stop devices on the carriers respectively for limiting said yielding movement in said opposite directions; the upper jaw of the flanging mechanism comprising the downwardly-yielding folder-support and the lower jaw of the opposite flanging mechanism having a protruding lip over which the flange may be folded at an acute angle to the clamping-face of the jaws, and the folder being adapted in the rocking movement consequent upon the stopping of one of its supports to rock over onto such lip for so folding the flange.

12. In a machine for the purpose indicated, in combination with a supporting-frame comprising the table on which the blanks are advanced, said table having at its lateral margins lower jaws for gripping the blanks; flanging mechanisms at opposite sides of the table comprising each a carrier; upper gripping-jaws fulcrumed on the respective carriers overhanging the table-jaws, the fulcrums being above and outward from the outer edges of the lower jaws, the upper jaws being adapted to grip by swinging downward and outward to the lower jaws (whereby they tend to move outwardly on the surface of the blank in coming to clamping position); plungers mounted in the carriers for vertical reciprocation; means for reciprocating the plungers adapted to make their opposite movements simultaneous, said plungers having means for encountering the jaws in one of their said opposite simultaneous movements to give the jaws simultaneously such outward clamping movement.

13. In a machine for the purpose indicated, in combination with the means for supporting and advancing the blanks, a cross-head overhanging the path of the blanks; a horn about which the blanks may be folded carried by the cross-head; a slide-head having slide-supports outside the path of the blanks and extending across said path overhanging the horn, the horn consisting of a plurality of parts and adapted to be expanded by spreading such parts, the means for expanding the horn comprising a stem which protrudes through the forward end of the horn, a lever fulcrumed on the cross-head and engaging the stem, and the cam-plate, 103, carried by the slide-head and engaging the lever.

14. In a machine for the purpose indicated, in combination with a horn about which the blank may be folded having a fixed member and a member adjustable relatively thereto for expanding the horn; a reciprocating seam-clenching device; means for actuating said adjustable member comprising an element connected therewith mounted on the fixed member and protruding from one end thereof; a cam carried by the reciprocating clenching device; a lever having its fulcrum fixed with respect to the horn engaged by the cam and connected to said protruding element, and means for adjusting it at its connection with said element.

845,989. DOOR-HANGER. GUSTAVUS WIDEMAN, Aurora, Ill., assignor to The Richards Manufacturing Company, Aurora, Ill. Filed Aug. 18, 1905. Serial No. 274,769.

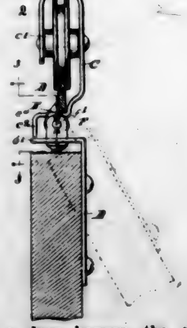

Claim.—1. In a door-hanger, the combination of a wheel-carrying frame, a door-supporting strap, and means connecting said strap and frame, said means comprising two members hingedly connected, one of said members being rigidly connected with the door-strap, and the other member being detachably connected with the wheel-frame and constructed to form a track-guide.

2. In a door-hanger, the combination of a wheel-carrying frame, a door-supporting strap, and means connecting said strap and frame, said means comprising two members hingedly connected, one of said members being detachably connected with the door-strap, and the other member being connected with the wheel-frame, and constructed to form a track-guide.

3. In a door-hanger, the combination of a wheel-carrying frame, a door-supporting strap and means connecting said strap and frame, said means comprising two members hingedly connected, one of said members being adjustably connected with the door-strap, and the other member being

detachably connected with the wheel-frame and constructed to form a track-guide.

4. In a door-hanger, the combination of a wheel-carrying frame, a door-supporting strap and means connecting said strap and frame, said means comprising a member detachably and adjustably mounted on the door-strap, a member detachably mounted on the wheel-frame and constructed to form a track-guide, and means detachably connecting said members.

5. In a door-hanger, the combination of a wheel-carrying frame, a door-supporting strap and means connecting said frame and strap, said means comprising a member rigidly, adjustably and detachably connected with the door-strap, and a member detachably connected with the wheel-frame and constructed to form a track-guide, and detachable means pivotally connecting said members together.

6. In a door-hanger, the combination of a wheel-carrying frame, a door-supporting strap, and means connecting said frame and strap, said means comprising a bent metal strap detachably and adjustably mounted on said door-strap, a bar detachably mounted on the wheel-frame and constructed to form a track-guide, and a pin detachably connecting said bar with said bent strap.

7. In a door-hanger, a wheel-carrying frame, a door-supporting strap, and means connecting said strap and frame, said means consisting of a strap detachably connected with the door-strap and having upwardly-bent ends, a bar arranged between the ends of said strap and having a flat face adapted to lie parallel with the hanger-track, and a pin connecting said strap and bar.

8. In a door-hanger, a door-strap adapted to be secured to a door and having a horizontal portion adapted to overlie the top of a door, said horizontal portion having slots formed therein, a strap detachably connected with said door-strap and adjustably fitting said slots, a wheel-carrying frame, and means pivotally connecting said frame with said strap.

9. In a door-hanger, the combination of a wheel-carrying-frame having a horizontal foot with notches in its edges, a bar arranged on said foot and having portions engaging said notches, said bar constructed to form a track-guide, a door-supporting strap having parallel slots, a metal strap having upturned ends pivotally connected with said bar, said straps adjustably arranged in said slots, and means detachably connecting said metal strap with said door-strap.

845,990. FEEDING DEVICE FOR CONCRETE-MIXERS. RAY WILCOX, Detroit, Mich., assignor of one-half to Charles R. Wallace, Jackson, Mich. Filed Jan. 8, 1906. Serial No. 295,063.

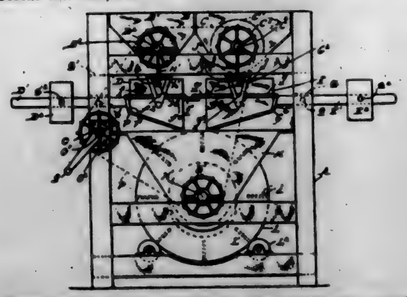

Claim.—1. In a cement-mixer, the combination with a cement-hopper, a sand-hopper, and feed mechanisms for said hoppers, of a mixing-receptacle, tiltingly-balanced weighing-buckets for said hoppers intermediate said hoppers and said receptacle, means operated by the tilting of said buckets for automatically stopping said feed mechanisms, means operated by the tilting of one bucket for emptying both buckets and means operating on the emptying of said buckets for returning them to their original positions.

2. In a cement-mixer, the combination with a cement-hopper, a sand-hopper, feeding means for each of said hoppers, and a mixing-receptacle, of a tilting weighing-bucket for each hopper intermediate said hoppers and said receptacle, means whereby a predetermined weight of material in one of said buckets will cause a tilting thereof, and connections whereby said tilting will stop the feed to said buckets, means whereby a predetermined weight of material in the second bucket will tilt the bucket and stop the feed thereto, and means operated by the tilting of said second bucket for emptying both buckets.

3. In a cement-mixer, the combination with a pair of weighing-buckets, a mixing-receptacle into which said buckets are adapted to empty, hoppers for said buckets, and feeding means for each hopper each adapted to feed into one of said buckets, break-joint toggle-lever connections for holding said buckets in their normal positions, connecting means whereby a predetermined weight of material in one of said buckets will permit a slight tilting thereof, connections whereby said slight tilting will cut off the feed to said buckets, means whereby a predetermined weight of material in said second bucket will cut off the feed thereto, and means for emptying both buckets operated by the tilting of said second bucket.

4. In a cement-mixer, the combination with cement and sand hoppers, feeding means therein and a mixing-receptacle, of buckets intermediate said hoppers and receptacle, of supporting means for said buckets permitting the tilting of the buckets by the deposit of a predetermined weight of material therein, means operated by the tilting of said buckets for cutting off said feeding means, hinged bottoms for said buckets, means operated by the tilting of one of said buckets for swinging said bottoms on their hinges, and means for returning said bottoms to their normal positions.

5. In a cement-mixer the combination with a plurality of hoppers, a bucket for each hopper, means for feeding materials from said hoppers into said buckets and a mixing-receptacle into which said buckets are adapted to empty, of supporting means for said buckets permitting a tilting of each bucket on the deposit of a predetermined weight of material therein, means operated by said tilting for cutting off the feed to said bucket and means operated by the tilting of one bucket for emptying all the buckets, for the purpose described.

6. In a cement-mixer, the combination with a plurality of buckets, means for feeding materials thereto and a mixing-receptacle into which said buckets are adapted to empty, of supporting means for said buckets permitting a predetermined weight of material in each bucket to tilt said bucket, means operated by the tilting of each bucket to cut off the feed thereto, means operated by the tilting of the last bucket for emptying all the buckets and means for returning the empty buckets to their normal position and restarting the feed thereto, for the purpose described.

7. In a cement-mixer, the combination with a plurality of hoppers and means for feeding materials therefrom, of a tiltingly-balanced weighing-bucket for each hopper, a mixing-receptacle for receiving the materials from said buckets and means operated by the tilting of one bucket for emptying both buckets, substantially as described.

845,991. ALARM-SIGNAL. ROBERT J. ZORGE, Chicago, Ill., assignor to Zorge Safety Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 28, 1906. Serial No. 303,487.

Claim.—1. The combination of a torpedo-carrier, a spring-held striker adapted to be struck by a train, means connected with said striker for actuating said carrier, an electromagnet controlling said means, and an electric circuit controlling said magnet.

2. The combination of a rotary torpedo-carrier equipped with a ratchet-wheel, a striker equipped with a pawl, a magnet controlling said pawl, a main circuit controlling said magnet, an auxiliary magnet controlling said pawl, and an auxiliary circuit controlled by said first-named magnet.

3. The combination of a rotary torpedo-carrier equipped with a plurality of contact members, a ratchet-wheel, a striker, equipped with a pawl, an electromagnet controlling said pawl, a main electric circuit controlling said magnet, an auxiliary electromagnet controlling said pawl, an auxiliary electric circuit controlling said auxiliary magnet and controlled by said first-named magnet, and a contact member connected with said auxiliary circuit and coacting with the contact members of said rotary carrier.

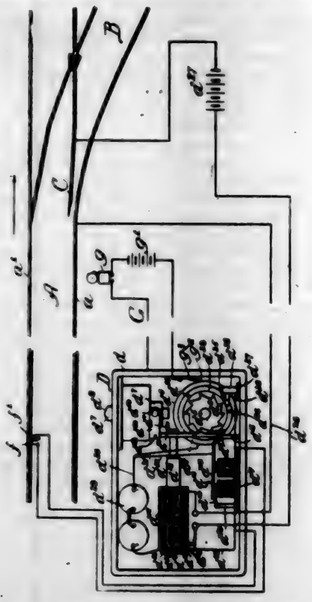

4. The combination of a rotary torpedo-carrier equipped with a plurality of contact members, a stationary contact member coacting therewith, a pawl serving to actuate said rotary carrier, a main electromagnet controlling said pawl, a main electric circuit controlling said magnet, and an auxiliary magnet controlling said pawl and having a controlling-circuit controlled by said first-named magnet, said auxiliary circuit being closed by the movement of the rotary carrier and having means for maintaining a closed circuit after the contact with the carrier has been broken.

5. The combination with a railway-track, of means of the character set forth, comprising a torpedo-carrier, a main electric circuit controlling said carrier, a switch-point controlling said circuit, an auxiliary circuit controlled by said carrier and by the main circuit, and train-controlled means controlling said auxiliary circuit.

6. The combination with a railway-track having a movable switch-point, of a device for the purpose set forth, comprising a torpedo-carrier, a striker, actuating means moving with the striker, a main electric circuit controlled from the switch-point and having a magnet controlling said actuating means, an auxiliary electric circuit controlled by said magnet and by said carrier, said auxiliary circuit having a magnet controlling said actuating means, and a branch auxiliary circuit equipped with means whereby it may be closed by a train to short-circuit the auxiliary magnet, for the purpose set forth.

7. The combination with a railway-track having a movable switch-point, of a device for the purpose set forth, comprising a movable torpedo-carrier, train-actuated means for actuating the torpedo-carrier, and an electric circuit controlled by the switch-point and controlling the actuating means of the torpedo-carrier.

8. In a device for the purpose set forth, the combination of a rotary carrier equipped with means for holding a plurality of torpedoes, an electric circuit controlling said carrier, and an electric circuit provided with means for giving notice when the carrier requires recharging.

845,992. FEEDING DEVICE FOR BALL-MILLS. MAX F. ABBÉ, New York, N. Y. Filed Sept. 21, 1906. Serial No. 335,556.

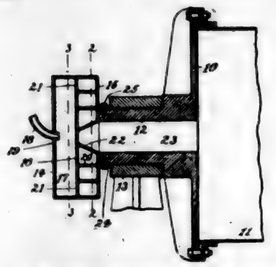

Claim.—1. A ball-mill having a hollow trunnion, combined with an exterior cylindrical casing composed of a perforated outer wall, an inner wall, an intermediate perforated partition, a feed-chamber between outer wall and partition, a spiral conveyer between partition and inner wall, said conveyer having a flaring central convolute that opens directly into the outer end of the hollow trunnion, and means for coupling the casing to said trunnion, substantially as specified.

2. A ball-mill having a hollow trunnion, combined with an exterior cylindrical casing composed of a perforated outer wall, an inner wall, an intermediate perforated partition, a feed-chamber between outer wall and partition, a spiral conveyer between partition and inner wall, an annular flange on the inner wall that projects over said trunnion, and means for securing said flange to said trunnion, substantially as specified.

3. A ball-mill having a hollow trunnion, combined with an exterior cylindrical casing fast on the outer end of the trunnion, and a spiral conveyer carried by the casing and having convolutes of gradually-decreasing diameter, the central convolute of said conveyer communicating directly with the outer end of the trunnion, substantially as specified.

4. A ball-mill having a hollow trunnion, combined with an exterior cylindrical casing fast on the outer end of the trunnion and composed of a perforated outer wall, an inner wall, an intermediate perforated partition, a feed-chamber between outer wall and partition, and a spiral conveyer between partition and inner wall, said conveyer having convolutes of gradually-decreasing diameter, the central convolute of said conveyer communicating directly with the outer end of the trunnion, substantially as specified.

845,993. KETTLE FOR BOILING WATER. HENRY APPLEBY, London, and ALFRED A. GARDNER, Hanwell, England. Filed Aug. 27, 1906. Serial No. 332,093.

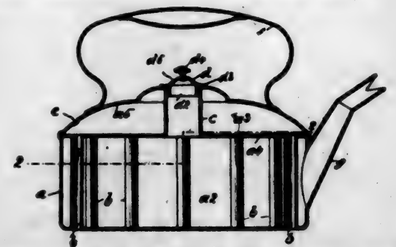

Claim.—1. A kettle provided with a bottom chamber and a top chamber and a permanent cover, the said chambers being separated by a horizontal partition, the top chamber being provided centrally with a tube which ex-

tends therethrough and into the bottom chamber and through the top of the top chamber, the bottom chamber being provided with flues which extend therethrough and into the top chamber, and the bottom chamber being also provided with a discharge-spout.

2. A kettle provided with a bottom chamber and a top chamber, said kettle being provided with a permanent cover, and the said chambers being separated by a horizontal partition, the top chamber being provided centrally with a tube which extends therethrough and into the bottom chamber and through the top of the top chamber and is provided with a closing-cap having a vent, the bottom chamber being provided with flues which extend therethrough and into the top chamber, the bottom chamber being also provided with a discharge-spout and the top chamber with a vent, and the top of the kettle being provided with a handle.

845,994. SAFETY DEVICE FOR FIREARMS. FRANK A. BECKWITH, Evanston, Wyo., assignor of one-half to Thomas W. Jones, Salt Lake City, Utah. Filed Dec. 10, 1906. Serial No. 347,180.

Claim.—1. In a firearm, the combination with a hammer, of means adapted to be manually moved into position to lock and unlock the hammer when it is half-cocked.

2. In a firearm, the combination with a hammer, of means adapted to be manually operated to lock and unlock the hammer when it is either full or half cocked.

3. In a firearm of the class in which the hammer is located centrally of the upper tang, of a slide mounted on the under side of said tang and provided with a part adapted for engagement with the hammer, said slide being manually operable to engage the hammer and lock and unlock the same.

4. In a firearm of the class in which the hammer is located centrally of the upper tang, of a slide mounted on the under side of said tang adjacent the side of the hammer, a projection on the slide, said hammer being provided with a slot so located on the side of the hammer that said slide may be manually operated when the hammer is half-cocked to lock said hammer by causing said projection to engage said slot.

5. In a firearm of the class in which the hammer is located centrally of the upper tang, of a slide mounted on the under side of said tang adjacent the side of the hammer, a projection on the slide, said hammer being provided with a slot so located on the side of the hammer that said slide may be manually operated when the hammer is full-cocked to lock said hammer by causing said projection to engage said slot.

6. In a firearm of the class in which the hammer is located centrally of the upper tang, of a slide mounted on the under side of said tang adjacent the side of the hammer, a projection on the slide, said hammer being provided with two slots so located on the side of the hammer that said slide may be manually operated when the hammer is half-cocked or full-cocked to lock said hammer by causing said projection to engage one or the other of said slots.

7. In a firearm, the combination with a hammer, of means adapted to be manually moved into position to lock the hammer in a position slightly past its full-cocked position.

8. In a firearm of the class in which the hammer is located centrally of the upper tang, of a slide mounted on the under side of said tang adjacent the side of the hammer, a projection on the slide, said hammer being provided with a slot so located on the side of the hammer that said slide may be manually operated when said hammer is held slightly beyond the full-cocked position, to lock said hammer by causing said projection to engage said slot.

845,995. ELECTRICAL MEASURING INSTRUMENT. ADELBERT O. BENECKE, Newark, N. J., assignor to American Instrument Company, a Corporation of New Jersey. Filed Nov. 28, 1905. Serial No. 289,406.

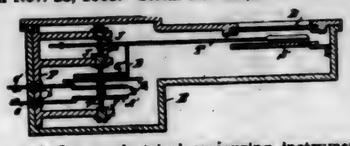

Claim.—1. In an electrical measuring instrument, the combination of two shafts in alinement, a spiral strip composed of two metals having different coefficients of expansion, secured to each of said shafts, means for passing an electrical current through one of said spirals to cause the same to be deflected and thereby rotate said shaft, means for transmitting such motion to the other shaft through the spiral strip secured thereto, and means for measuring the degree of such rotation.

2. In an electrical measuring instrument, the combination of a frame, a shaft mounted in said frame, a pair of spirals secured to said shaft, said spirals being composed of two different metals having different coefficients of expansion, means for passing an electric current through said spirals and thereby produce a change in temperature therein and a consequent rotation of said shaft, a second shaft in alinement with the first-named shaft, means for measuring the degree of such rotation, and means mounted upon said second shaft for counteracting such changes of temperature in said spirals as are due to the surrounding atmosphere.

3. In an electrical measuring instrument, the combination of a frame provided with two shafts in alinement, an index secured to one of said shafts, spirals composed of different metals having different coefficients of expansion, said spirals being coiled in opposite directions around said shafts respectively, whereby changes in surrounding temperature will cause the deflection of one spiral to compensate for the deflection of the other, and means for directing an electric current through one of said spirals, to cause a relative change of temperature therein, and thereby produce a relative deflection of the other spiral, and means for measuring the degree of such deflection.

845,996. SHUNT FOR ELECTRICAL MEASURING INSTRUMENTS. ADELBERT O. BENECKE, Newark, N. J., assignor to American Instrument Company, a Corporation of New Jersey. Filed Dec. 9, 1905. Serial No. 291,073.

Claim.—1. In a shunt for electrical measuring instruments, two overlapping blocks or masses of conducting material, a plate of resistance material located between the overlapping portions of said blocks and connected thereto.

2. In a shunt, a pair of overlapping shunt-terminals composed of masses of conducting material, a conducting-plate of high-resistance material lying between and insulated from the overlapping portions of said terminals, and connected to said terminals.

3. In a shunt, a pair of overlapping shunt-terminals, composed of relatively large masses of conducting material, a conducting-plate of high-resistance material lying between the overlapping portions of said terminals, insulating material separating said plate from said overlapping portions, the ends of said plate being in electrical connection respectively with said shunt-terminals.

4. In a shunt, a pair of overlapping shunt-terminals composed of relatively large masses of conducting material, two or more high-resistance conductors, connected with said terminals, said conductors lying between and insulated from said overlapping portions.

5. A shunt composed of two separate series of overlapping bars forming the shunt-terminals, a series of high-resistance conductors connected respectively to each of said shunt-terminals, and lying between their overlapping portions insulating materials separating said plates from the overlapping portions of said terminals.

6. In a shunt for electrical measuring instruments, two overlapping blocks or masses of conducting material, a plate of resistance material located between the overlapping portions of said blocks and connected thereto, and means for rigidly securing said parts together.

7. In a shunt for electrical measuring instruments, a pair of overlapping shunt-terminals composed of masses of conducting material, a conducting-plate of high-resistance material lying between and insulated from the overlapping portions of said terminals and connected to said terminals, and means for securing said overlapping portions together.

8. In a shunt for electrical measuring instruments, a pair of overlapping shunt-terminals composed of relatively large masses of conducting material, a conducting-plate of high-resistance material lying between the overlapping portions of said terminals, insulating material separating said plate from said overlapping portions, the ends of said plate being in electrical connection respectively with said shunt-terminals and means for securing said terminals in relatively fixed position.

9. In a shunt for electrical measuring instruments, a pair of overlapping shunt-terminals composed of relatively large masses of conducting material, two or more high-resistance conductors connected with said terminals, said conductors lying between and insulated from said overlapping portions, and means for securing said terminals in relatively fixed position.

10. A shunt for electrical measuring instruments composed of two separate series of overlapping bars forming the shunt-terminals, a series of high-resistance conductors connected respectively to each of said shunt-terminals and lying between their overlapping portions, insulating material separating said plates from the overlapping portions of said terminals, and means for securing said terminals in relatively fixed position.

845,997. ELECTRICAL RESISTANCE. ADELBERT O. BENECKE, Newark, N. J., assignor to The American Instrument Company, Newark, N. J., a Corporation of New Jersey. Filed June 1, 1906. Serial No. 319,697.

Claim.—1. An electrical resistance device, consisting of two blocks of metal of high specific conductivity, and a conductor of high specific resistance and short length connecting said blocks of metal, the free length of said conductor being such that the heat generated therein by the passage of a current therethrough, is conducted to and absorbed by said blocks of metal as rapidly as such heat is generated, whereby said conductor will not be overheated.

2. An electrical resistance device, consisting of a short conductor of high specific resistance, connecting two masses or blocks of metal of high sepecific conductivity, the free length of said conductor being such that the heat generated by the passage of an electric current therethrough will be absorbed by said blocks of metal as rapidly as generated, whereby said conductor will not become overheated.

3. An electrical resistance device, comprising two blocks or masses of metal of high specific conductivity separated by a short space, a conductor of high specific resistance connected to said blocks and spanning said space, the length of said conductor being such that the heat generated by the passage of a current therethrough, is conducted to and absorbed by said blocks or masses of metal as rapidly as generated, whereby said conductor will not become overheated.

4. A resistance device for electric circuit, comprising two blocks or masses of metal of high specific conductivity, and a conductor of high specific resistance connecting said blocks or masses of metal, said conductor being of such small cross-section as to produce the desired resistance within such a short length thereof, that the heat generated by the passage of an electric current therethrough will be conducted to and absorbed by the said blocks or masses of metal as rapidly as generated, whereby said conductor will not become overheated.

5. An electrical resistance device, consisting of two blocks of metal of high specific conductivity, and a conductor of high specific resistance and short length connecting said blocks of metal, the free length of said conductor being such that the heat generated therein by the passage of a current therethrough, is conducted to and absorbed by said blocks of metal as rapidly as generated, whereby said conductor will not be overheated, and a fireproof insulating material inclosing the free surface of said conductor.

6. An electrical resistance device, consisting of a short conductor of high specific resistance, connecting two masses or blocks of metal of high specific conductivity, the free length of said conductor being such that the heat generated by the passage of an electric current therethrough will be absorbed by said blocks of metal as rapidly as generated, whereby said conductor will not be overheated, and a fireproof insulating material inclosing the free surface of said conductor.

7. An electrical resistance device, comprising two blocks or masses of metal of high specific conductivity separated by a short space, a conductor of high specific resistance connected to said blocks and spanning said space, the length of said conductor being such that the heat generated by the passage of a current therethrough, is conducted to and absorbed by said blocks or masses of metal as rapidly as generated, whereby said conductor will not be overheated, and a fireproof insulating material inclosing the free surface of said conductor.

8. A resistance device for electric circuits, comprising two blocks or masses of metal of high specific conductivity, and a conductor of high specific resistance connecting said blocks or masses of metal, said conductor being of such small cross-section as to produce the desired resistance within such a short length thereof, that the heat generated by the passage of an electric current therethrough will be conducted to and absorbed by the said blocks or masses of metal as rapidly as generated, whereby said conductor will not become overheated, and a fireproof insulating material inclosing the free surface of said conductor.

9. An electrical resistance device, consisting of two blocks of metal of high specific conductivity, and a conductor of high specific resistance and short length connecting said blocks of metal, the free length of said conductor being such that the heat generated therein by the passage of a current therethrough, is conducted to and absorbed by said blocks of metal as rapidly as generated, whereby said conductor will not be overheated, and means for connecting up said resistance device in an electric circuit.

10. An electrical resistance device, consisting of two blocks of metal of high specific conductivity, and a conductor of high specific resistance and short length connecting said blocks of metal, the free length of said conductor being such that the heat generated therein by the passage of a current therethrough, is conducted to and absorbed by said blocks of metal as rapidly as generated, whereby said conductor will not be overheated, and a shunt-circuit leading around said conductor.

11. An electrical resistance device, consisting of a short conductor of high specific resistance, connecting two masses or blocks of metal of high specific conductivity, the free length of said conductor being such that the heat generated by the passage of an electric current therethrough will be absorbed by said blocks of metal as rapidly as gener-

ated, whereby said conductor will not be overheated, a shunt-circuit leading around said conductor and means for connecting up said resistance device in an electric circuit.

12. An electrical resistance device, comprising two blocks or masses of metal of high specific conductivity located in close proximity to each other and a conductor of high specific resistance and short length having its ends embedded into said blocks of metal respectively, thereby leaving a short free length of conductor between said blocks of metal.

13. An electrical resistance device, comprising two massive terminals, composed of blocks of metal of high specific conductivity located in close proximity, and a conductor of high specific resistance having its ends embedded into said blocks of metal respectively, to leave a short free length of metal between said terminals.

14. An electrical resistance device, consisting of two blocks of metal of high specific conductivity and a high-resistance conductor connecting said blocks of metal, said conductor being of such short free length that the heat generated therein by the passage of a current therethrough is absorbed and dissipated by said blocks of metal as rapidly as generated.

845,998. PICCOLO OR OTHER MUSICAL INSTRUMENT. HARRY BERNARD, Fort Sheridan, Ill., assignor of one-half to Thomas W. Thorne, Chicago, Ill. Filed July 22, 1905. Serial No. 270,868.

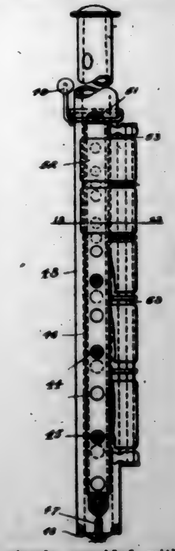

Claim.—1. A piccolo provided with lateral holes arranged longitudinally of the piccolo, and a perforated slide having holes therein so spaced that in one position a predetermined number of holes are in register with a corresponding number of holes in the instrument and in another position the remaining holes of the slide are in register with the remaining holes of the instrument, and means for rapidly operating said slide in the regular operation of the instrument.

2. A musical instrument provided with lateral tone-regulating holes arranged in one line, and means comprising a perforated slide having holes to register, at times, with the alternate holes of the instrument while the remaining holes are covered, means for operating said slide, and a plurality of keys, each key being adapted to cover a plurality of adjacent holes of the instrument.

3. A musical instrument provided with lateral holes, and a perforated slide with as many holes as in said instrument, but so spaced that in one position half of the holes are in register alternately and in another position the other half, a spring for holding said slide in normal position, a lever for reciprocating said slide to its adjusted position, and a plurality of pivoted keys, each key being adapted to cover two holes of the instrument, and means for holding each key in normally raised position.

4. A musical instrument provided with a plurality of tone-regulating holes for notes of different pitch, and means for simultaneously opening or closing sets of alternate holes in the regular operation of the instrument, and keys each adapted to cover two or more of the holes of the instrument.

5. A musical instrument provided with a plurality of holes for tones of different pitch, and means for simultaneously opening or closing sets of alternate holes, and keys, each key being adapted to cover two or more of the holes in the instrument.

845,999. SHIRT. LEWIS BERNSTEIN, Grafton, W. Va. Filed Dec. 18, 1906. Serial No. 348,424.

Claim.—1. A shirt having a skirt fashioned with plackets in its front portion forward of the usual side seams, said shirt having a vertical series of ventilating-openings proximate to each of said side seams, and short trousers-supporters concealed on the inside of the shirt and having means detachably engaging said openings to adjust the vertical point of attachment of the supporters, said supporters having their ends adapted to pass through said plackets and to attach to the front and side buttons of the waistband of trousers.

2. A shirt having a skirt fashioned with plackets in its front portion forward of the usual side seams, said plackets extending to and through the lower edge of the skirt, facing-strips secured to the edges of the plackets and arranged in overlapping planes, short trousers-supporters attached to the inside of the shirt and having ends adapted to be passed through the plackets and to attach to the front and sides of the trousers-waistband, said facing-strips being provided with vertical rows of openings whereby the vertical height of the point of attachment of the supporters to the shirt may be varied.

3. A garment of the character described fashioned with slits in its front portion forward of the usual side seams, facing-strips secured to the edges of the slitted portions and arranged to overlap, one of said strips of each slitted portion being vertically extended beyond the other strip and provided with adjusting eyelets, buttons having shanks adapted to be passed through said eyelets to inside the garment, and garment-supporters detachably connected to the shanks of the buttons and having attaching ends to be extended through the slits of the said front portion and to attach to the waistband of trousers, said facing-strips serving to conceal said attaching ends from the outside.

4. A shirt having slits in the front portion of its skirt extending to and through the lower edge thereof, said skirt having adjusting-holes arranged substantially in vertical order and forming ventilating-openings for said shirt, in combination with fasteners engageable with said holes and extending to the interior of the shirt, and garment-supporters normally concealed beneath the shirt and having means for detachably engaging said fasteners, said supporters having their lower or free ends adapted to be passed into the slits and to attach to the front and side buttons of trousers.

5. A shirt having the skirt of its back portion vertically slitted in the center, facing-strips secured to the edges of the slitted portion and arranged to overlap each other, one of said strips being extended up along the back to a point above the slit, said extended portion being provided with adjusting-eyelets arranged in vertical order, fasteners adapted to engage said eyelets and to extend to the inside of the shirt, and garment-supporters normally concealed beneath the shirt and having means for detachably engaging the inner ends of the fasteners, said supporters having free ends adapted to be passed into the slit and to attach to the rear buttons on the waistband of trousers.

6. A shirt having slits in the front portion of its skirt and a slit in the vertical central portion of its back, said shirt having adjusting-holes arranged in vertical order substantially in line above each of said slits, buttons having shanks adapted to pass through any of said holes to the inside of the shirt, short garment-supporters having means whereby their upper ends detachably engage with said shanks, and having lower ends capable of divergence and to be passed into said slits and to attach to the waistband of trousers.

846,000. AUTOMATIC LATHE FOR WORKING PIPES OR BARS. ARTHUR H. BLACKBURN, Matteawan, N. Y. Filed Dec. 23, 1903. Serial No. 186,290.

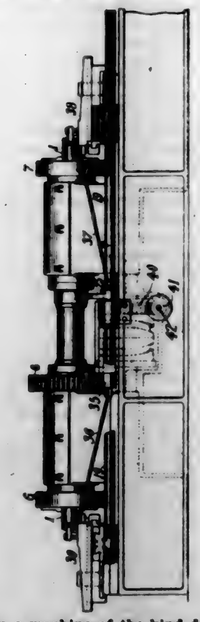

Claim.—1. In a machine of the kind described, the combination with means for holding a pipe with the end thereof exposed, and means for rotating the said pipe-holding means, of tool-carriers arranged adjacent to the positions occupied by the exposed ends of the pipe and adapted to be reciprocated longitudinally thereof, a cam-shaft parallel with the said pipe-holding means, cam devices on the shaft, located between the ends of the pipe-holding means, said cam devices having a pair of peripheral cam-grooves, cross-heads adjacent to the cam devices, having studs engaging the peripheral grooves therein, and links connecting the cross-heads with the respective tool-carriers, whereby the rotation of the cam devices will reciprocate the tool-carriers, substantially as described and for the purposes set forth.

2. In a machine of the kind described, the combination with means for holding a pipe with the ends thereof exposed, and means for rotating the said pipe-holding means, of a rock-shaft on each side of the pipe-holding means and parallel therewith, tool-carriers mounted to reciprocate on one of the rock-shafts and located adjacent to the positions occupied by the exposed ends of the pipe, a cam-shaft parallel with the rock-shafts, cam devices on the cam-shaft, located between the ends of the pipe-holding means, having both peripheral and face cam-grooves, cross-heads adjacent to the cam devices and having studs engaging the said peripheral grooves, links connecting the cross-heads with the reciprocating tool-carriers, a second pair of tool-carriers mounted on the other rock-shaft adjacent to the exposed ends of the pipe, and means actuated by the face-grooves on the cam devices for rocking both shafts toward and away from the pipe ends, as set forth.

3. In a machine of the kind described, the combination with means for holding a pipe with the ends thereof exposed, and means for rotating the said pipe-holding means, of a rock-shaft on each side of the pipe-holding means and parallel therewith, tool-carriers mounted to reciprocate on one of the rock-shafts and located adjacent to the exposed ends of the pipe, a cam-shaft parallel with the rock-shafts, cam devices on the cam-shaft, located between the ends of the pipe-holding means, having peripheral and face cam-grooves, cross-heads adjacent to the cam devices and having studs engaging the peripheral grooves, links connecting the cross-heads with the reciprocating tool-carriers, a second pair of tool-carriers mounted on the other rock-shaft adjacent to the exposed ends of the pipe, and arms rigidly mounted on the rock-shafts and having studs engaging the face-grooves on the cam devices, as set forth.

846,001. METAL TRUSS TELEGRAPH-POLE. LOUIS BLESSING, Jackson, Mich. Filed Dec. 30, 1905. Serial No. 293,929.

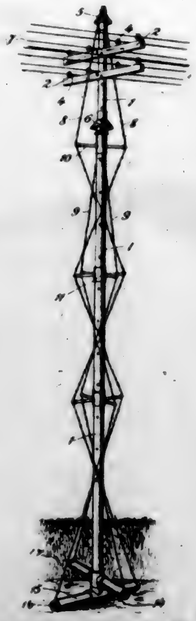

Claim.—1. In a hollow metal pole, the combination of the conical-shaped wood, 5, forced into the upper end of

the pole, reinforcing-pipes, 14, a series of wires, 8, 8, secured to said conical-shaped wood, and continuing downward over the guides to form continuous zigzag trusses secured at the lower reinforcing-pipes, 14, as shown, and for the purpose specified.

2. In a hollow metal pipe the combination of the conical-shaped wood, 6, forced into the upper, and lower section of the pipe, the lower series of wires, 9, 9, secured to the conical-shaped wood, 6, said lower series of wires continuing downward over the guides to form continuous zigzag trusses, and secured to the lower reinforcing-pipes 15, as shown, and for the purpose specified.

3. The combination of a hollow metal pole, cross-anchorage pipes, 14, to which said hollow metal pole is secured, said cross-pipes carrying reinforcing-pipes and truss-wires secured to said reinforcing-pipes which latter are adapted to hold the metal pole fastened to the ground, as set forth.

846,002. TRIPLICATE MANIFOLDING SALES-BOOK. EDWARD K. BOTTLE, New York, N. Y., assignor to The Carter-Crume Company, Limited, Niagara Falls, N. Y., a Corporation of Canada. Filed Apr. 14, 1904. Serial No. 203,153.

Claim.—1. In a device of the class described, in combination, a rigid back, a pad positioned thereon and secured thereto at one end thereof, a second pad comprising a plurality of leaves, each of which is folded upon itself, a flexible connection between the lower end of said back and the upper end of said second pad, said connection passing between said pads and a double-faced transfer-sheet secured to said second pad.

2. In a device of the class described, in combination, a rigid back, a pad positioned thereon, a second pad comprising a plurality of leaves each of which is folded upon itself, a flexible connection secured flat against the lower end of said back and extending between the said pads to the upper end of said second-mentioned pad and a double-faced transfer-sheet secured to said second-mentioned pad.

3. In a device of the class described, in combination, a pad, a rigid back upon which said pad is positioned said back projecting below said pad and being secured thereto at the upper end thereof, a second pad comprising a plurality of leaves each of which is folded upon itself, a flexible connection secured flat against the projecting lower end of said back and passing between said pads and secured to the upper end of said second-mentioned pad, and a double-faced transfer-sheet secured to said second-mentioned pad, said first-mentioned pad in normal position projecting above the end of said second-mentioned pad.

846,003. BRUSH. THOMAS BRANTLEY, Albany, Ga. Filed Oct. 11, 1906. Serial No. 338,404.

Claim.—1. The combination of a brush-bar having a body portion or web formed with a series of receiving-holes open at the side and a flanged portion formed with holes closed at the side and communicating with the holes in the body portion, and tufts of bristles closely fitting the walls of said holes and secured therein.

2. The combination of a brush-bar having a body portion or web formed with a series of tuft-receiving holes open at the side and a flanged portion formed with holes closed at the side and communicating with the holes in the body portion and tufts of bristles having ferrules fitting said holes in the web and flanged portions and secured therein.

3. The combination of a brush-bar having a body portion or web formed with tuft-receiving holes open at the side and a flanged portion formed with holes closed at the side and communicating with the holes in the body portion, ferrules containing tufts and fitting said holes which are compressed and flattened at the side.

4. The combination of a brush-bar, a compressed ferrule having a conical end provided with a tuft of bristles in the ferrule and a hole at the conical end, a cord engaging the tuft and passing through the hole and which is gripped by the walls of the hole, substantially as described.

5. The combination of a brush-bar having a body portion or web formed with tuft-receiving holes open at the side and a flanged portion formed with holes closed at the side and which communicate with the holes in the body portion, ferrules fitting in said holes in the flanged and body portion of the bar and which are flattened and compressed to produce a smooth finish flush with the sides of the body portion of the bar and to cause the ferrule to fit tightly the walls of the holes in the bar, and tufts of bristles held by the ferrules.

846,004. EXPLOSIVE-ENGINE. CHARLES H. BROOKS, Detroit, Mich., assignor to The Brooks Motor Company, Detroit, Mich., a Corporation of Michigan. Filed Aug. 7, 1905. Serial No. 272,951.

Claim.—1. In a multicylinder-engine having a series of pairs of cylinders, the combination therewith of an air-tight crank-case to which the cylinders are secured in communication therewith; a crank-shaft in said crank-case provided with cranks; pistons in said cylinders connected in pairs to said cranks, the pistons of each pair moving simultaneously in the same direction; a wall dividing the crank-case into separate crank-chambers with each of which two cylinders containing a pair of pistons communicate; means for admitting explosive charges compressed in each chamber into one of the cylinders in communication therewith, and means for controlling the exhaust from the cylinders.

2. In an explosive-engine, the combination of a series of cylinders arranged in pairs, an air-tight crank-case to which the cylinders are secured in communication therewith, a partition-wall in said crank-case dividing the same into crank-chambers into each of which a pair of cylinders opens, a crank-shaft in the crank-case having cranks, pistons in each pair of cylinders connected to the cranks to move simultaneously in the same direction, inlet-valves in the heads of the pistons, exhaust-valves in the heads of the cylinders, and means for operating the exhaust-valves in timed relation to the movement of the pistons.

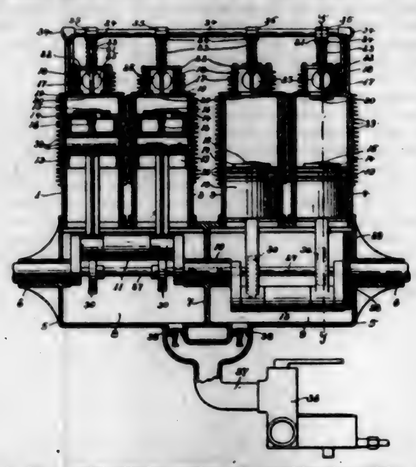

3. In a multicylinder-engine, the combination with a series of pairs of vertical cylinders having open lower ends, of an air-tight crank-case to which the open ends of the cylinders are secured, a partition-wall dividing the crank-case into separate crank-chambers with each of which a pair of cylinders communicate, a crank-shaft, pistons in the two cylinders opening into each chamber connected to the crank-shaft to move simultaneously in the same direction, valves in the heads of the pistons to permit the explosive charges from the chambers to pass upward through the pistons into the cylinders, exhaust-valves in the heads of the cylinders, a cam-shaft, gears for transmitting motion from the crank-shaft to the cam-shaft, cams on the cam-shaft, and means operated by said cams for opening the exhaust-valves in timed relation to the movement of the pistons.

4. In an explosive-engine, the combination of four or more vertical cylinders arranged in pairs and having open lower ends, an air-tight crank-case formed with separate crank-chambers each in free communication with one pair of cylinders, a horizontal crank-shaft having a crank in each chamber, pistons in each pair of cylinders connected to the crank in the chamber to move simultaneously in the same direction, a valve to admit explosive charges to each chamber, a valve in the head of each piston to permit the charges to pass into the cylinder above the pistons, an exhaust-valve in the upper end of each cylinder and means for opening said valves.

846,005. COMPENSATING DIRECT-ACTING ENGINE. WILLIAM C. BROWN, Prescott, Ontario, Canada, assignor to Henry R. Worthington, New York, N. Y., a Corporation of New Jersey. Filed Sept. 7, 1904. Serial No. 223,576.

Claim.—1. The combination with a direct-acting engine, of one or more compensating cylinders and pistons acting in opposition to the engine-piston during the first part of the stroke and in conjunction therewith during the last part of its stroke, means for applying motor fluid in opposition to the working pressure for adjusting the compensating-cylinder pressure, and means controlled by the length of the engine-stroke for varying the relative working and opposing pressures to vary the compensating-cylinder pressure.

2. The combination with a direct-acting engine, of one or more compensating cylinders and pistons acting in opposition to the engine-piston during the first part of the stroke and in conjunction therewith during the last part of its stroke, and means controlled by the length of the engine-stroke for admitting fluid to the compensating system in opposition to the working pressure to vary the compensating-cylinder pressure.

3. The combination with a direct-acting engine, of one or more compensating cylinders and pistons acting in opposition to the engine-piston during the first part of the stroke and in conjunction therewith during the last part of its stroke, means controlled by the length of the engine-stroke for admitting fluid to the compensating system at each stroke of the engine of normal or greater length, and an outlet from the system for the constant escape of fluid from the compensating system.

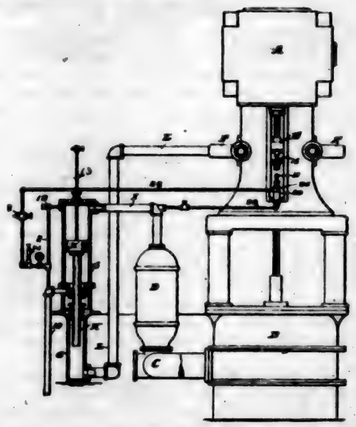

4. The combination with a direct-acting engine, of one or more compensating cylinders and pistons acting in opposition to the engine-piston during the first part of the stroke and in conjunction therewith during the last part of its stroke, means controlled by the length of the engine-stroke for admitting fluid to the compensating system in opposition to the working pressure at each stroke of the engine of normal or greater length, and an outlet from the system for the escape of fluid to lessen the opposition to the working pressure.

5. The combination with a direct-acting engine, of one or more compensating cylinders and pistons acting in opposition to the engine-piston during the first part of the stroke and in conjunction therewith during the last part of its stroke, an accumulator through which said compensating cylinder derives its pressure, and means controlled by the length of the engine-stroke for admitting fluid to said accumulator in opposition to the working pressure to vary the compensating-cylinder pressure.

6. The combination with a direct-acting engine, of one or more compensating cylinders and pistons acting in opposition to the engine-piston during the first part of the stroke and in conjunction therewith during the last part of its stroke, an accumulator through which said compensating cylinder derives its pressure, a pipe for admitting fluid to said accumulator in opposition to the working pressure, an outlet permitting a constant escape of fluid from the back-pressure system, and a valve opened by the main piston on each stroke of normal or full length for admitting air to the back-pressure system.

7. The combination with a direct-acting engine, of one or more compensating cylinders and pistons acting in opposition to the engine-piston during the first part of the stroke and in conjunction therewith during the last part of its stroke, an accumulator through which said compensating cylinder derives its pressure, a pipe for admitting fluid to said accumulator in opposition to the working pressure, an outlet permitting a constant escape of fluid from the back-pressure system, a tappet moving with the engine-piston, and a valve engaged by said tappet on each stroke of normal or full length to open the valve for the admission of air to the back-pressure system.

8. The combination with a direct-acting pumping-engine and its air-chamber on the force-main, of one or more compensating cylinders and pistons acting in opposition to the engine-piston during the first part of the stroke and in conjunction therewith during the last part of its stroke, an accumulator through which said compensating cylinder derives its pressure from the air-chamber, a pipe for admitting fluid to said accumulator in opposition to the working pressure, an outlet permitting a constant escape of fluid from the back-pressure system, a tappet moving with the engine-piston, and a valve engaged by said tappet on each stroke of normal or full length to open the valve for the admission of air to the back-pressure system.

9. The combination with a direct-acting engine and its compensating cylinder or cylinders and accumulator, of pipe 23 connecting the back-pressure side of the accumulator-piston with a source of pressure fluid, and a valve controlling said pipe and controlled by the length of stroke of the engine-piston.

10. The combination with a direct-acting engine and its compensating cylinder or cylinders and accumulator, of pipe 23 connecting the back-pressure side of the accumulator-piston with a source of pressure fluid, an adjustable outlet permitting a constant escape of fluid from said pipe, a valve controlling said pipe, and adjustable means moving with the engine-piston for admitting fluid through said pipe at each normal or longer stroke of the piston.

11. The combination with a direct-acting engine and its compensating system, of a valve for admitting fluid to the compensating system to vary the compensating pressure, and means moving with the engine-piston for actuating said valve.

12. The combination with a direct-acting engine and its compensating system, of an outlet permitting the constant escape of fluid from the compensating system, a valve for admitting fluid to the compensating system to vary the compensating pressure, and means moving with the engine-piston for opening said valve for the admission of fluid.

13. The combination with a direct-acting engine, of a compensating piston acting in opposition to the movement of the engine-piston during one part of the stroke and in conjunction therewith during another part of the stroke, means for applying motor fluid in opposition to the working pressure for adjusting the compensating-cylinder pressure, and means controlled by the length of the engine-stroke for transferring fluid from the working-pressure fluid to the fluid opposing the working pressure to vary the compensating-cylinder pressure.

14. The combination with a direct-acting engine, of a compensating cylinder having a piston acting in opposition to the movement of the engine-piston during one part of the stroke and in conjunction therewith during another part of the stroke, means controlled by the length of the engine-stroke for transferring fluid from the working-pressure fluid to a supply of fluid working in opposition to the working pressure at each stroke of the engine of uniform or greater length, and an outlet from the system for the escape of fluid to lessen the opposition to the working pressure.

846,006. RULER. MILTON D. BRYSON, Los Angeles, Cal. Filed Dec. 29, 1905. Serial No. 293,772.

Claim.—1. In a ruler, consisting of an oblong rectangular transparent strip, beveled at its upper and lower edges and provided with longitudinal parallel lines equidistances apart; vertical lines, running across the entire width of the ruler at right angles with said parallel lines, and dividing the ruler into inches; vertical lines, dividing said inches into eighths of inches, the lower edge of said ruler having the second inch divided into halves, its third inch into thirds, the fourth inch into fourths, and so on, the twelfth inch into twelfths, and straight slanting lines, extending from the intersection of said vertical inch-lines with the second longitudinal line from the upper edge of the ruler to the last fractional division-lines at the lower edge of the ruler, substantially as shown and described and for the purposes set forth.

2. As an article of manufacture, a ruler consisting of an oblong rectangular transparent strip beveled at its upper and lower edges and provided with longitudinal parallel lines equidistances apart, vertical lines, running across the entire width of the ruler at right angles with said parallel lines, dividing the ruler into inches, vertical lines dividing said inch-lines into eighths of inches, vertical lines, on the lower edge of the ruler, dividing each inch into fractional parts corresponding with the number of the inch; a longitudinal transparent extension, extending from the upper face of said ruler near its upper edge and running its entire length, straight slanting lines, extending from the intersection of said vertical inch-lines with the second longitudinal line from the upper edge of the ruler to the last fractional division-lines at the lower edge of the ruler, all lines and markations being indented in the under face of the ruler; opaque material, partly filling all lines and markations, and a transparent film, filling up all of said lines and markations, substantially as shown and described and for the purposes set forth.

3. In a ruler, consisting of an oblong rectangular transparent strip, beveled at its upper and lower edges, having indented in its lower face and at its center a protractor and provided with longitudinal parallel lines equidistances apart, vertical lines running across the entire width of the ruler at right angles to said parallel lines, dividing the ruler into inches; vertical lines, dividing said inches into eighths of inches, the lower edge of said ruler having the second inch divided into halves, its third into thirds, its fourth inch into fourths and so on, the twelfth inch into twelfths, and straight slanting lines, extending from the intersection of said vertical inch-lines with the second longitudinal line from the upper edge of the ruler to the last fractional division-lines of the lower edge of the ruler, substantially as shown and described and for the purposes set forth.

846,007. MOLD. WILLIAM B. BUSSARD, Huntington, Ind., assignor of one-half to William F. Stuver, Huntington, Ind. Filed Nov. 2, 1906. Serial No. 341,778.

Claim.—In a casket-mold, a frame on the inside of the mold for forming the top edge of the casket, said frame comprising separable side and end bars, staples extending from the side bars, straps extending from the end bars and having openings to receive the staples, and locking means entering the staples.

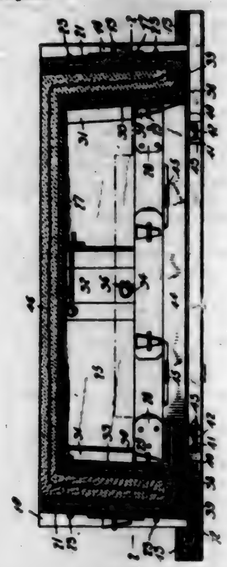

846,008. LINE-HOLDER. JENS M. CLAUSEN, Hopkins, Minn., assignor, by direct and mesne assignments, of one-fourth to Hans Nelson, one-eighth to Elmer F. Coddington, and one-eighth to William L. Feudner, Hopkins, Minn. Filed June 16, 1906. Serial No. 322,111.

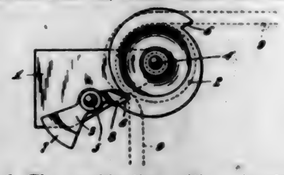

Claim.—1. The combination with a bracket 1, of a sheave 2 journaled to said bracket and provided with an eccentric flange terminating in a lock-shoulder 6, and a lock-dog 3 pivoted to said bracket and having a line-engaging end arranged to press the line against said sheave and to be engaged and released by the eccentric flange of said sheave, and to be engaged and pressed against the line by said shoulder 6, substantially as described.

2. The combination with a bracket 1, of a sheave 2 journaled to said bracket and provided with eccentric flanges terminating in lock-shoulders 6, and a gravity-actuated dog 3 pivoted to said bracket and having a forked end, and arranged to press the rope against said sheave and to be engaged and released by the eccentric flanges of said sheave, and to be engaged or pressed against the rope or line by said shoulders 6, substantially as described.

846,009. TOY ANIMAL. LUCIUS E. COLEMAN and WILLIAM H. SPAKE, Anaheim, Cal.; said Coleman assignor to said Spake. Filed Oct. 9, 1906. Serial No. 338,178.

Claim.—1. A toy comprising a figure, a concentrically-journaled wheel supporting the forward portion of the figure, an eccentrically-journaled wheel supporting the rear portion of the figure and means for trundling the figure.

2. A toy comprising a figure having a longitudinally-curved base, a wheel concentrically journaled and supporting the forward portion of the figure, a wheel eccentrically journaled and supporting the rear portion of the figure and means for trundling the figure.

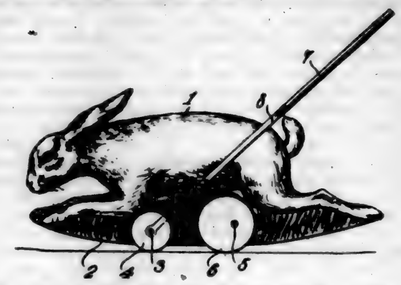

3. A toy comprising a figure, a concentrically-journaled wheel supporting the forward end of the figure, an eccentrically-journaled wheel supporting the rear portion of the figure and a push-rod pivotally attached to the figure in alinement with the center of the concentrically-journaled wheel.

846,010. COOKING VESSEL. MARY J. CORBELL, Murfreesboro, Ark. Filed Aug. 24, 1906. Serial No. 331,935.

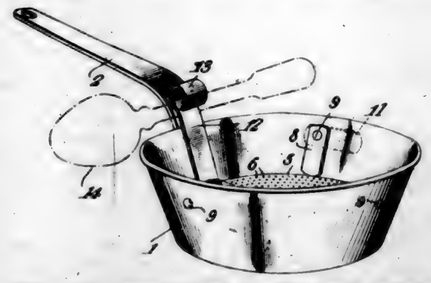

Claim.—The combination of a cooking vessel provided with a handle extending laterally therefrom, a false bottom in the vessel, means on the vessel for removably holding the false bottom in place, and a handle secured at one end to the said bottom and extending upwardly out of the vessel and shaped to be adapted to project over a portion of the vessel-handle to permit a spoon to be inserted and held between the two handles.

846,011. MACHINE FOR FORMING FLEXIBLE BANDS ACROSS SHEETS OF PAPER. ROLLA L. CRAIN, Ottawa, Ontario, Canada. Filed Oct. 8, 1906. Serial No. 338,032.

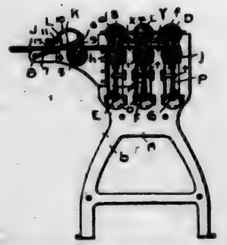

Claim.—1. An improved machine for forming flexible bands across sheets of paper consisting of means for producing corrugations on one part only of a sheet of paper combined with means for exactly reversing each individual

corrugation whereby the part forming the corrugations on one side will be stretched to form the corrugation on the opposite side as and for the purpose specified.

2. An improved machine for forming flexible bands across sheets of paper consisting of means for producing corrugations on one part only of a sheet of paper combined with means for exactly reversing each individual corrugation whereby the part forming the corrugation on one side will be stretched to form the corrugations on the opposite side and means for flattening the corrugations as and for the purpose specified.

3. In a machine for forming flexible bands across sheets of paper the combination of two pairs of corrugating-rollers having corrugating means on a part only of their periphery, whereby the sheets of paper passing through will be corrugated along certain given portions only, the rollers being so disposed relative to each other that the corrugating means on the second roller will exactly reverse each individual corrugation formed by the first pair of rollers as and for the purpose specified.

4. In a machine for forming flexible bands across sheets of paper the combination of two pairs of corrugating-rollers having corrugating means on a part only of their periphery, whereby the sheets of paper passing through will be corrugated along certain given portions only, the rollers being so disposed relative to each other that the corrugating means on the second roller will exactly reverse individual corrugation formed by the first pair of rollers, each individual corrugation formed by the first pair of rollers, and flattening-rollers operating to smooth the paper after the second corrugating-rollers have operated thereon as and for the purpose specified.

5. In a machine for the purpose specified the combination with the two pairs of corrugating-rollers of which the second pair is adapted to reverse the corrugations formed by the first of means for feeding the paper sheet by sheet to the rollers as and for the purpose specified.

6. In a machine for the purpose specified the combination with two pairs of corrugating-rollers having the corrugations in the second set reversed to those of the first, of means for moving the rollers of each set closer together during certain parts of their revolution as and for the purpose specified.

7. In a machine for the purpose specified the combination with the two sets of corrugating-rollers having the corrugations in each set reversed, of slidable blocks secured to pintles on the end of one roller of each set and means for intermittently moving the said bearing-blocks closer to the opposite roller as and for the purpose specified.

8. In a machine for the purpose specified the combination with the two sets of corrugating-rollers having the corrugations in each set reversed, of slidable blocks secured to pintles on the end of one roller of each set and cam-operated means for intermittently moving the said bearing-blocks closer to the opposite roller as and for the purpose specified.

9. In a machine for the purpose specified the combination of three sets of rollers and means for successively moving the rollers of each pair closer together as and for the purpose specified.

10. In a machine for the purpose specified the combination with three sets of rollers of cam-operating means for successively moving the rollers of each pair closer together as and for the purpose specified.

11. In a machine for the purpose specified the combination with the three sets of rollers of bearing-blocks secured to the lower rollers of each pair, means for slidably supporting the same, a plurality of cams and connecting means extending between the cams and the bearing-blocks whereby the same are intermittently raised and lowered as and for the purpose specified.

12. In a machine for the purpose specified the combination with a pair of rollers having a series of grooves formed in a portion of the periphery of one roller and a series of ribs in a portion of the periphery of the other roller adapted to extend into said grooves when the rollers are rotated in opposite directions, of a second pair of rollers provided with like grooves and ribs but having the rollers therein oppositely placed, and means for rotating the rollers as and for the purpose specified.

13. In a machine for the purpose specified the combination with a pair of rollers having a series of grooves formed in a portion of the periphery of one roller and a series of ribs in a portion of the periphery of the other roller adapted to extend into said grooves when the rollers are rotated in opposite directions, of a second pair of rollers provided with like grooves and ribs but having the rollers therein oppositely placed, means for rotating the rollers, and means for moving the rollers of each pair closer together during the parts of the revolution when the ribs on one roller are opposite the grooves of the other as and for the purpose specified.

14. In a machine for the purpose specified the combination with a pair of rollers having one roller provided with a series of grooves on a portion of the periphery thereof and the other roller with a series of ribs adapted to extend into said grooves when the rollers are rotated in opposite directions of a second set of rollers having grooves in one roller and ribs in the opposite roller oppositely placed to the first-mentioned rollers, the second set of rollers being placed such a distance apart that the corrugating means will operate to reverse the corrugations formed by the first rollers and means for rotating the rollers as and for the purpose specified.

15. In a machine for the purpose specified the combination with a set of rollers having corrugating means formed on a portion of their peripheries of a second set of rollers, having corrugating means also formed on their peripheries but reversed in direction to the corrugating means on the first-mentioned rollers, the second set of rollers being placed such a distance from the first set that the corrugating means will operate to reverse the corrugations formed by the first set of rollers and means for rotating both sets of rollers as and for the purpose specified.

16. An improved machine for the purpose specified having two pairs of corrugating-rollers, the second rollers being adapted to produce a corrugation reversed in direction to the first, the corrugating means of each set of rollers only being thrown into operation when the rollers are moved closer together as and for the purpose specified.

17. An improved machine for forming flexible bands across sheets of paper consisting of two pairs of rollers having longitudinal corrugating-ribs and grooves formed on portions only of their peripheries whereby a portion only of the paper passing therethrough will be corrugated and having the same parts of the peripheries contacting and operating to feed the paper from the rollers, the two sets of rollers being placed such a distance apart that the second set will exactly reverse the corrugations formed by the first as and for the purpose specified.

18. In a machine for the purpose specified the combination with the two sets of corrugating-rollers, the second set being adapted to produce a corrugation reversed in direction to the first, of means for moving the rollers of each set closer together during certain portions of their revolution and means for adjusting the distance the said rollers are moved as and for the purpose specified.

19. In a machine for the purpose specified the combination with the two sets of corrugating-rollers having the lower rollers of each set movable, of means for intermittently moving the lower rollers closer to the upper ones and means for adjusting the distance the said lower rollers are moved as and for the purpose specified.

20. In a machine for the purpose specified the combination with the two sets of corrugating-rollers having one movable roller in each set, of means for intermittently moving the movable rollers closer to the fixed rollers as and for the purpose specified.

21. In a machine for the purpose specified the combination with the two sets of corrugating-rollers having one movable roller in each set, of means for intermittently moving the movable rollers closer to the fixed rollers and means for independently adjusting the intermittent movement of the movable rollers as and for the purpose specified.

22. In a machine for the purpose specified the combination with the two pairs of corrugating-rollers having one movable roller in each pair, of bearing-blocks journaling the movable rollers, means for slidably supporting the same, a standard having an externally-screw-threaded top, a nut screwed on said top and extending outwardly therefrom and abutting the bearing-blocks, means for locking said nut in position, and means for intermittently raising and lowering the standard as and for the purpose specified.

23. In a machine for the purpose specified the combination with the two pairs of corrugating-rollers having one movable roller in each pair, of bearing-blocks journaling the movable rollers, means for slidably supporting the same, a standard having an externally-screw-threaded top, a nut screwed on said top extending outwardly therefrom and abutting the bearing-blocks, means for locking said nut in position, a cam, and a roller secured to the bottom of the standard adapted to bear on the cam as and for the purpose specified.

24. An improved machine for forming flexible bands across sheets of paper comprising two pairs of corrugating-rollers, of which the second set is adapted to reverse the corrugations formed by the first, and means for holding the sheets of paper exactly in position while the second pair of rollers are operating on them whereby the corrugations formed by the first set, will be exactly reversed as and for the purpose specified.

25. An improved machine for forming flexible bands across sheets of paper consisting of means for producing a corrugated band across the sheet of paper in which the corrugation extends, longitudinally of the band, combined with means for exactly reversing each individual corrugation whereby the part forming the corrugation on one side will be stretched to form the corrugation on the opposite side, as and for the purpose specified.

846,012. BOOK-HOLDER FOR ADDING-MACHINES. ZARDIA CRAIN, Murphysboro, Ill., assignor of one-fourth to Daniel Bower and one-fourth to A. J. Woodard, Murphysboro, Ill. Filed June 23, 1906. Serial No. 323,092.

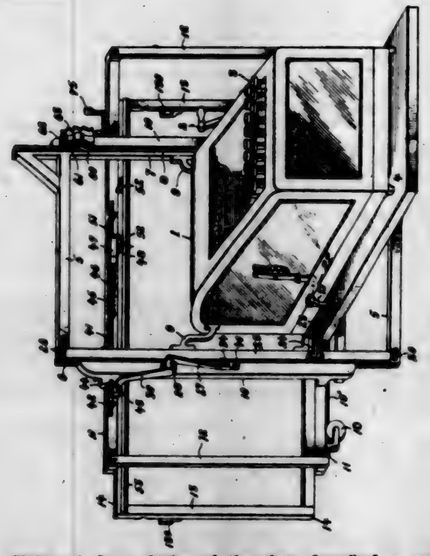

Claim.—1. In a device of the class described, a vertically-disposed carriage, means for effecting a travel thereof in a horizontal plane, and means automatically operated in the horizontal travel of the carriage for controlling the travel thereof in a vertical plane.

2. In a device of the class described, a vertically-disposed carriage, means for effecting a travel thereof in a horizontal plane, a plurality of devices upon the carriage for controlling a travel thereof in a vertical plane during its horizontal travel, and a book-holder mounted in said carriage.

3. In a device of the class described, fixed standards, a carriage-frame mounted to travel vertically thereon, a carriage mounted to travel horizontally on said frame, means upon the frame to control said horizontal travel, and connections from an auxiliary machine disposed upon the standards in the path of travel of the controlling means upon said frame.

4. In a device of the class described, fixed standards, a carriage-frame mounted to travel vertically thereon, a carriage mounted to travel horizontally on said frame, means upon the frame to control said horizontal travel, connections from an auxiliary machine disposed upon the standards in the path of travel of the controlling means upon said frame, means upon one standard to control the vertical travel of the frame thereon, and means upon the carriage for automatically operating said vertical controlling means in the horizontal travel of the carriage.

5. In a device of the class described, a vertically-disposed carriage, means for effecting a travel thereof in a horizontal plane, means for effecting a travel of said carriage in a vertical plane, and a book-holder frame pivotally mounted at the lower portion of said carriage to open in a horizontal plane, and means upon the carriage to retain the holder-frame in vertical position.

6. In a device of the class described, a vertically-disposed carriage, means for effecting a travel thereof in a horizontal plane, means for effecting a travel thereof in a vertical plane, a book-holder frame pivotally mounted at the lower portion of said carriage to open into a horizontal plane, and a tension-arm upon the carriage provided with a spring for automatically retaining said holder in vertical position.

7. In a device of the class described, a vertically-disposed carriage, a book-holder pivotally mounted in said carriage, a tension-arm provided with a spring for automatically retaining said holder in a vertical position, and a locking-latch carried by said holder to engage said arm and retain the holder in a horizontal position.

8. In a device of the class described, a vertically-disposed carriage, a book-holder pivotally mounted in said carriage, a tension-arm provided with a spring for automatically retaining said holder in a vertical position, a locking-latch carried by said holder to engage said arm and retain the holder in a horizontal position, back boards mounted in said holder, and spring-actuated levers carried by the holder to retain said boards under tension.

9. In a device of the class described, a vertically-disposed carriage mounted for travel in both vertical and horizontal planes, means for controlling said travel in a horizontal plane, an escapement mechanism for controlling said travel in a vertical plane, means upon the carriage for automatically actuating said escapement mechanism, a printing mechanism, and means actuated therefrom for controlling the horizontal travel of said carriage.

10. In a device of the class described, a vertically-disposed carriage, means for effecting a travel thereof in a horizontal plane, means for controlling a travel thereof in a vertical plane, and means upon the carriage to automatically actuate the vertical feed thereof.

11. In a device of the class described, fixed standards, a carriage-frame mounted to travel vertically thereon, and a carriage mounted to travel horizontally in said frame.

12. In a device of the class described, fixed standards, a carriage-frame mounted to travel vertically thereon, a carriage mounted to travel horizontally in said frame, a rack upon one of said standards, a pinion upon said frame engaging the same, an escapement mechanism controlling said pinion, and means disposed upon said carriage to operate said escapement.

13. In a device of the class described, standards, a carriage-frame mounted to travel vertically thereon, a carriage mounted to travel horizontally in said frame, a rack upon one of said standards, a pinion engaging the same, an escapement mechanism controlling said pinion,

a trip-lever carried by said escapement, and a stop upon the carriage to engage said lever.

14. In a device of the class described, standards, a carriage-frame mounted to travel vertically thereon, a carriage mounted to travel horizontally in said frame, a rack upon one of said standards, a pinion engaging the same, an escapement mechanism controlling said pinion, a trip-lever carried by said escapement, and a pivotally-mounted stop upon said carriage adapted to be thrown into or out of the path of said trip-lever.

15. In a device of the class described, standards, a carriage-frame mounted to travel vertically thereon, a carriage mounted to travel horizontally in said frame, a rack upon one of said standards, a pinion engaging the same, an escapement mechanism controlling said pinion, a trip-lever carried by said escapement, a pivotally-mounted stop upon said carriage adapted to be thrown into or out of the path of said trip-lever, and means to engage and retain said stop out of operative position.

16. In a device of the class described, standards, a carriage-frame mounted to travel vertically thereon, a carriage mounted to travel horizontally in said frame, a rack upon one of said standards, a pinion engaging the same, an escapement mechanism controlling said pinion, a trip-lever carried by said escapement, a pivotally-mounted stop upon said carriage adapted to be thrown into or out of the path of said trip-lever, means to engage and retain said stop out of operative position, a column-stop upon said carriage, and a coöperating dog mechanism carried by the frame to engage said stop.

17. In a device of the class described, a carriage-frame, a carriage mounted to travel therein, a plurality of column-stops adjustably supported upon said carriage, a dog mechanism mounted upon said frame and provided with a yieldingly-mounted dog and rigid dog in parallel planes to coöperate with said stops, and means to oscillate said mechanism.

18. In a device of the class described, a standard, a vertically-disposed carriage-frame thereon, a carriage mounted to travel in said frame, a plurality of column-stops adjustably supported upon said carriage, a dog mechanism mounted upon the frame and provided with a plurality of dogs in different planes to coöperate with said stops, a rock-lever mounted upon the frame to oscillate said dog mechanism, and means upon said standard to engage the lower end of said lever at any point in the frame travel.

19. In a device of the class described, a vertically-disposed carriage-frame, a carriage mounted to travel therein, a plurality of column-stops adjustably supported upon said carriage, a dog mechanism mounted upon the frame and provided with a plurality of dogs in different planes to coöperate with said stops, a rock-lever mounted upon the frame to oscillate said dog mechanism, a pivotally-mounted bar carried by a fixed member, and a pawl carried by the lower end of said lever to engage said bar.

20. In a device of the class described, a vertically-disposed carriage-frame, a carriage mounted to travel therein, a plurality of column-stops adjustably supported upon said carriage, a dog mechanism mounted upon the frame and provided with a plurality of dogs in different planes to coöperate with said stops, a rock-lever mounted upon the frame to oscillate said dog mechanism, a pivotally-mounted bar carried by a fixed member, a pawl carried by the lower end of said lever to engage said bar, and means to limit the travel of the lower end of said lever.

21. In a device of the class described, a vertically-disposed carriage-frame, a carriage mounted to travel therein, a plurality of column-stops adjustably supported upon said carriage, a dog mechanism mounted upon the frame and provided with a plurality of dogs in different planes to coöperate with said stops, a rock-lever mounted upon the frame to oscillate said dog mechanism, a pivotally-mounted bar carried by a fixed member, a pawl carried by the lower end of said lever to engage said bar, a slotted plate carried by said lever, and a headed stop-pin extended through said plate to limit the travel thereof.

22. In a device of the class described, a carriage-frame, a carriage mounted to travel therein, a plurality of column-stops carried by said carriage, a casing pivotally mounted upon the frame, a dog pivoted within said casing and projected therefrom under spring tension, a secondary dog disposed at one side of said casing and means for normally retaining said tension-dog in alinement with said stops.

23. In a device of the class described, a carriage-frame, a carriage mounted to travel therein, a plurality of column-stops carried by said carriage, a casing pivotally mounted upon the frame, a dog pivoted within said casing and projected therefrom under spring tension, a secondary dog disposed at one side of said casing, a spring disposed between said casing and the frame, a reciprocatory rod upon which said casing is mounted, and a cushioning-spring for said rod.

24. In a device of the class described, a carriage provided with a column-stop, an oscillating dog mechanism to coöperate therewith, an actuating-lever for said mechanism provided with a bearing portion intermediate of its ends, a casing provided at the lower end of said lever, a spring-pressed pawl pivotally mounted in said casing and provided with an inclined outer face, and means to engage said pawl to actuate said lever.

25. In a device of the class described, a carriage provided with a column-stop, an oscillating dog mechanism to coöperate therewith, an actuating-lever for said mechanism provided with a bearing portion intermediate of its ends, a casing provided at the lower end of said lever, a spring-pressed pawl pivotally mounted in said casing and provided with an inclined outer face, a longitudinally-extending bar pivoted at one side, and an operating-arm extending from said bar.

26. In a device of the class described, a carriage, a standard provided with a rack, a vertically-movable frame thereon, a pinion carried by said frame to engage said rack, a gear carried by said frame to engage said pinion, an escapement-wheel mounted upon the shaft of said gear, and a dog mechanism to coöperate with said escapement.

27. In a device of the class described, a carriage, a vertically-movable frame therefor, a standard provided with a rack, a pinion carried by the frame to engage said rack, a gear carried by said frame to engage said pinion, an escapement-wheel mounted upon the shaft of said gear, a dog mechanism to coöperate with said escapement, a trip-lever disposed upon one end of the shaft of said dog mechanism, and a hand-lever carried by the opposite end thereof.

28. In a device of the class described, a carriage, a vertically-movable frame therefor, a standard provided with a rack, a pinion carried by the frame to engage said rack, a gear carried by said frame to engage said pinion, an escapement-wheel mounted upon the shaft of said gear, a dog mechanism to coöperate with said escapement, a trip-lever disposed upon one end of the shaft of said dog mechanism, a hand-lever carried by the opposite end thereof, a lever carrying said pinion at its lower end, and a tension-spring engaging the upper end of said lever to retain said pinion in mesh with its rack.

29. In a device of the class described, a vertically-movable frame, a carriage supported thereby, means for controlling the movement of said frame, a trip-lever for operating said means, a pivotally-mounted stop upon the carriage to engage said lever, and a lug adapted to be thrown into or out of operative relation with the lower end of said stop.

30. In a device of the class described, a vertically-movable frame, a carriage supported thereby, means for controlling the movement of said frame, a trip-lever for operating said means, a pivotally-mounted stop upon the carriage to engage said lever, a lug adapted to be thrown into or out of operative relation with the lower end of said stop, and a pivoted arm mounted at one side of said lug and adapted to be interposed between the same and said stop to retain the latter in horizontal position out of the path of the trip-lever.

31. In a device of the class described, a carriage-frame, a vertically-disposed carriage traveling therein and provided with a pivoted removable book-holder, and supporting-brackets for the book-holder pivots carried at the lower portion of said carriage.

32. In a device of the class described, a vertically-disposed carriage, a book-holder frame pivotally mounted at the lower edge thereof to lie in a horizontal plane when opened, and independent platens pivotally mounted in said frame at the pivoted edge thereof so as to swing into a vertical plane when the holder is open.

33. In a device of the class described, a carriage, a book-holder mounted therein, platens pivoted upon said book-holder, back boards mounted on said holder for movement in parallelism thereto and spring-arms carried by the holder and bearing against said boards.

34. In a device of the class described, a carriage, a book-holder pivotally mounted therein, a tension-arm pivoted below the pivot of the carriage, a rod carried by said holder, a sleeve slidingly mounted on said rod and pivotally connected to said arm, a tension-spring disposed upon the rod to contact with said sleeve and means on said holder to engage said sleeve.

35. In a device of the class described, a carriage, a book-holder pivotally mounted therein, a tension-arm pivoted below the pivot of the carriage, a rod carried by said holder, a sleeve pivotally connected to said arm, a tension-spring disposed upon the rod to contact with said sleeve, a locking-latch pivoted upon the holder, a tooth upon said sleeve to engage the latch, and means for operating said latch.

36. In a device of the class described, a carriage, a book-holder pivotally mounted therein, a tension-arm pivoted below the pivot of the carriage, a rod carried by said holder, a sleeve pivotally connected to said arm, a tension-spring disposed upon the rod to contact with said sleeve, a locking-latch pivoted upon the holder, a tooth upon said sleeve to engage the latch, a pivoted operating-handle at the free edge of said holder, and a rod from said handle to said latch.

37. In a device of the class described, a carriage, a book-holder pivotally mounted therein, a tension-arm pivoted below the pivot of the carriage, a rod carried by said holder, a sleeve pivotally connected to said arm, a tension-spring disposed upon the rod to contact with said sleeve, and a stop-face carried by said tension-arm and adapted to engage a fixed member of the machine when the book-holder is in lowered position.

38. In a device of the class described, a carriage, a holder-frame pivotally mounted thereon, parallel platens pivotally mounted in said holder upon a rod extended parallel to the pivots of the holder, and a casing pivoted upon the holder-frame to embrace the same.

39. In a device of the class described, a vertically-disposed carriage, a book-holder frame pivotally mounted at the lower edge thereof to lie in a horizontal plane when opened, a pivoting-rod carried by said frame at the pivoted edge thereof, and separated independent platens mounted upon said rod at opposite sides of the center of the frame.

40. In a device of the class described, a carriage, a frame pivotally mounted therein on a pivoting-rod at one side of said frame, and independent platens pivoted upon said frame at opposite sides of the center of said frame said platens tapering inward in their cross-section.

41. In a device of the class described, a carriage, a frame pivotally mounted therein at one side thereof, independent platens pivoted upon said frame at opposite sides of the center of the frame said platens tapering inward in their cross-section, and a casing mounted upon the pivots of the platens beyond said frame.

42. In a device of the class described, a book-holder comprising a frame, back boards disposed within said holder, crossed levers pivotally connected to said boards and holder at opposite ends thereof, means for permitting the travel of the pivot at one end of said levers, oppositely-disposed spring-actuated arms carried by the holder and adapted to engage said boards and means for adjusting the tension of said arms.

43. In a device of the class described, a book-holder comprising a frame, back boards disposed within said holder, an arm carried by the frame to engage said boards, a rod upon which said arm is pivoted, and a tension-spring surrounding said arm and engaging the frame and arm.

44. In a device of the class described, a vertically-disposed carriage-frame, a carriage mounted to travel horizontally therein, a book-holder pivoted within said carriage to swing into a horizontal plane at the rear thereof, and means to control the travel of said carriage.

45. In a device of the class described, a vertically-disposed carriage-frame, a carriage mounted to travel horizontally therein, a book-holder pivoted to swing in said carriage toward the rear thereof, brackets for the book-holder pivots having elongated open-ended slots therein, means for controlling the travel of said carriage horizontally, standards upon which said frame is adapted to travel vertically, and means for controlling the downward travel of the frame upon said standards.

46. In a device of the class described, a vertically-disposed carriage-frame, a carriage mounted to travel horizontally therein, a book-holder pivoted to swing in said carriage toward the rear thereof, means for controlling the travel of said carriage horizontally, standards upon which said frame is adapted to travel vertically, means for feeding said frame downward upon the standards, and means disposed upon the carriage for engaging and automatically actuating said downward feed.

47. In a device of the class described, a vertically-disposed carriage, means for effecting a horizontal travel thereof, and a book-supporting device mounted upon said carriage comprising opposite boards having spring tension-arms normally bearing thereon to present the book in printing position.

846,013. COMPUTING-MEASURE. MARTIN E. CUMMINGS, Greeley, Colo., assignor to The Cummings Manufacturing Company, Greeley, Colo. Filed Jan. 6, 1906. Serial No. 294,959.

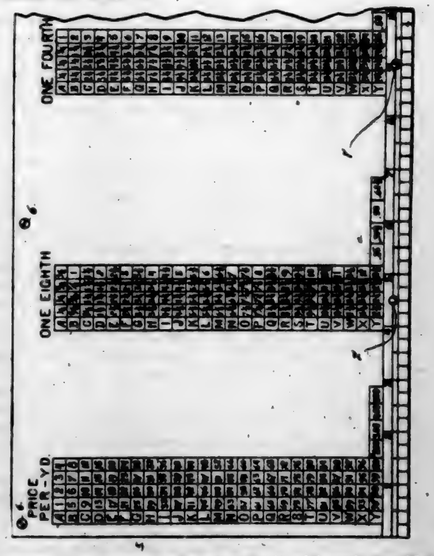

Claim.—1. A device of a given unit of length provided with price-sections, each containing a series of spaces arranged in horizontal and vertical columns, the horizontal columns being indexed for ready reference, one section being a price-per-unit section and the others being designated to indicate fractional units, the spaces adjacent the index-column of the price-per-unit section, containing the different prices for the unit of length of a piece of goods, and the corresponding spaces of each fractional unit-section having indicated therein the cost of a piece of goods of the length corresponding with the title of the fractional unit-section at the price set forth in the corresponding spaces of the price-per-unit section.

2. A computing-measure comprising a device of a given unit of length having its base graduated and provided with figures to indicate subdivisions of the linear unit, the said device being provided with a number of sections, each section being divided into spaces arranged in horizontal and vertical columns, the spaces of one section having placed therein figures to indicate various prices of articles of the unit of length; while the spaces of the other sections have placed therein figures to indicate the cost of goods of different fractional units of length estimated at the price set forth in the corresponding spaces of the price-per-unit section.

3. A computing-measure comprising a device of a given unit of length, the said device being provided with sections each divided into spaces arranged in columns perpendicular to each other, one section being a price-per-unit section, and the other sections being price-per-fractional-unit sections, the price-per-unit section having indicated in its spaces different prices for goods of a length equal to the unit of the measure; while the spaces of the other sections have indicated therein the price of different fractions of the unit estimated at the prices set forth in the corresponding spaces of the price-per-unit section.

4. A computing-measure comprising a device one yard in length and provided with sections each divided into spaces arranged in columns perpendicular to each other, the spaces of one section indicating in consecutive order a series of numbers indicating different prices per yard; while the spaces of the other sections indicate the cost of different fractions of a yard estimated at the price specified in the corresponding spaces of the price-per-yard section.

5. A computing yard-measure comprising a device a yard in length having its base suitably graduated to indicate fractions of a yard and having different sections divided into spaces, one section being suitably located and having in it spaces figures arranged in consecutive order to indicate the cost of goods at various prices per yard; the other sections being designated on the measure by titles to indicate different fractions of a yard and located on the measure adjacent the corresponding fractional marks, the spaces of the fractional yard-sections containing figures indicating the cost of the different fractions of a yard of goods estimated at the price found in the corresponding spaces of the price-per-yard section.

6. A computing yard-measure provided with sections divided into spaces arranged in horizontal and vertical columns, one section being located at the left-hand extremity of the measure and being designated "Price per yard," the horizontal columns or rows of spaces being designated by the letters of the alphabet arranged in their proper order, the various spaces of this section containing figures to indicate different prices per yard; the other sections being designated "One-eighth," "One-third," "One-half," "Two-thirds" and "Three-fourths," respectively and properly located on the measure to indicate the various yard-fractions indicated by their titles, the said fractional yard-sections being divided into spaces to correspond with the spaces of the price-per-yard section and correspondingly indexed, the spaces of the fractional yard-sections containing figures to indicate the cost of the different fractions of a yard estimated at the price set forth in the corresponding spaces of the price-per-yard section.

846,014. MULTI-INDORSEMENT-RESTRICTING DEVICE FOR VOTING-MACHINES. WILLARD M. DELAVAN, Pittsfield, Mass., assignor to Triumph Voting Machine Company, Pittsfield, Mass., a Corporation of New Jersey. Filed Oct. 15, 1906. Serial No. 338,907.

Claim.—1. In a voting-machine, the combination with voting members and a flexible member engaged thereby, of rocker-arms carried by the voting members, pins on the rocker-arms, and an auxiliary flexible member passing under one pin and over the other on each rocker-arm, substantially as described, for the purpose specified.

2. In a voting-machine, the combination with voting members and a flexible member engaged thereby, of rocker-arms carried by the voting members, pins on the rocker-arms, an auxiliary flexible member passing under one pin and over the other on each rocker-arm, and means for adjusting said flexible member to produce sufficient slack therein to just permit the operation of one voting member in a line, so that when a second voting member in that line is operated the vote cast by the operation of the first voting member will be unvoted.

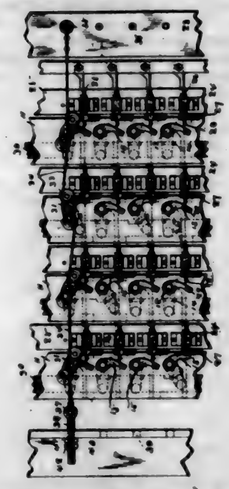

3. In a voting-machine, the combination with voting members, and a flexible member engaged thereby, of rocker-arms carried by the voting members, pins on the rocker-arms, an auxiliary flexible member passing under one pin and over the other on each rocker-arm, and detachable and adjustable means for securing the ends of said auxiliary flexible member.

4. In a voting-machine, the combination with voting members and a flexible member engaged thereby, of rocker-arms carried by the voting members, pins on the rocker-arms, an auxiliary flexible member passing under one pin and over the other on each rocker-arm, a removable pin to which one end of said auxiliary flexible member is connected and a removable screw with an adjusting-nut to which the other end of said flexible member is connected.

846,015. GRATE. JOHN DEMAREST, Binghamton, N. Y. Filed Feb. 4, 1905. Serial No. 244,143.

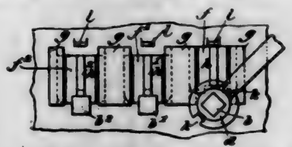

Claim.—1. The combination with a rocking grate member having a shank of angular cross-section, of a gravity-actuated sliding plate mounted vertically above the shank and having a notch in its lower end normally to embrace the shank and hold the grate member in given position and also having a vertically-arranged outwardly-projecting rib the lower portion of which is undercut to form a shoulder, and a shaker having a flange to coöperate with said sliding plate to move it out of engagement with the shank and maintain engagement with the shoulder to prevent removal of the shaker.

2. The combination with a rocking grate member having a shank of angular cross-section, of a gravity-actuated sliding plate mounted vertically above the shank and having a notch in its lower end normally to embrace the shank and to hold the grate member in given position and also having a vertically-arranged outwardly-projecting rib the lower portion of which is undercut to form a shoulder, and a shaker having a notched flange adapted to engage the sliding plate and lift it out of engagement with the shank and to be engaged by the shoulder of said plate while the grate member is being rocked, the notches in the flange adapted to be registered with said rib to permit the withdrawal of the shaker only when the grate member is horizontal.

3. The combination with a rocking grate member having a shank of angular cross-section, of a gravity-actuated sliding plate mounted vertically above the shank and having a notch in its lower end normally to embrace the shank and to hold the grate member in given position and also having a vertically-arranged outwardly-projecting rib the lower portion of which is undercut, and a shaker having a notched flange adapted to engage the sliding plate and lift it out of engagement with the shank and to be engaged by said plate while the grate member is being rocked and until the notch in the flange is alined with the rib on the plate, at which time the shaker may be removed and the plate will again and by gravity engage and lock the grate member in given position.

846,016. FRUIT-JAR WRENCH. JOSEPH L. DE STEIGER, La Salle, Ill. Filed May 3, 1906. Serial No. 315,055.

Claim.—1. A fruit-jar wrench comprising a handle, semicircular clamping-jaws arranged at the forward end of the handle, means adjustably connecting the forward ends of said jaws, and a presser carried by and depending from the handle and arranged to bear on the edge of a jar-cover.

2. A fruit-jar wrench comprising a handle and semicircular clamping-jaws at the forward end of the handle; the handle being formed by bending a strap of metal into loop shape and the clamping-jaws being formed by the end portion of said strap of metal, means adjustably connecting the forward ends of the clamping-jaws, and a presser secured between the portions of the handle and arranged to bear on the edge of a jar-cover.

3. A fruit-jar wrench comprising a handle and semicircular clamping-jaws at the forward end of the handle; the handle being formed by bending a strap of metal into loop shape and the clamping-jaws being formed by the end portions of said strap of metal and being provided at their forward ends with lugs one of which has a plain and the other a threaded aperture, a screw connecting said lugs, and a presser having a hanger secured between the portions of the handle, and a roller mounted in said hanger and arranged to bear on the edge of a jar-cover.

846,017. ROTARY ENGINE. STEPHEN H. DRAPER, Granger, N. Y., assignor of one-sixth to Samuel Allen and Samuel E. Allen, Dansville, N. Y., jointly, and five-eighteenths to Charles Ricker and five-eighteenths to William S. Mills, Hume, N. Y. Filed May 5, 1906. Serial No. 315,313.

Claim.—1. The combination in a rotary engine of a casing formed with exhaust-ports; a rotary piston-carrier provided with a piston-head; a rotary reaction-wheel provided with a plurality of reaction-arms; and an annular disk which is provided with exhaust-ports and in the central opening in which said reaction-wheel has a bearing, said exhaust-ports registering with the exhaust-ports in said casing.

2. The combination in a rotary engine of a casing formed with a plurality of sets of exhaust-ports; a piston-carrier provided with a piston-head; a rotary reaction-wheel provided with a plurality of reaction-arms; an annular disk which is provided with a set of exhaust-ports and in the central opening in which said reaction-wheel has a bearing; and means for swinging said disk to bring its exhaust-ports into register with either one of the sets of exhaust-ports in said casing.

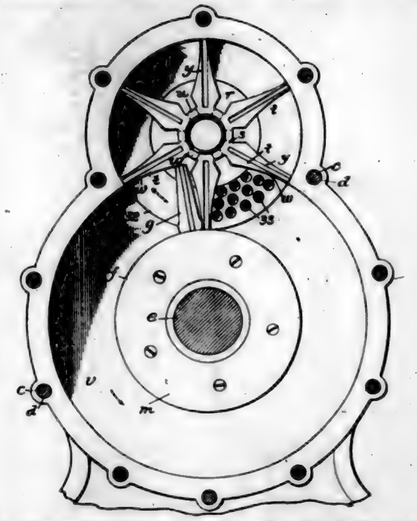

3. The combination in a rotary engine of a casing; a rotary piston-carrier provided with a piston-head; a rotary reaction-wheel provided with a plurality of reaction-arms; a hollow shaft upon which said reaction-wheel is mounted, said shaft being formed with inlet-ports; a tubular liner mounted within said hollow shaft and provided with inlet-ports, said liner serving as a conduit for the working fluid and being rotatably mounted in said casing; a tubular cut-off box mounted over the inlet-ports in said liner and operating to close the same and thereby to allow the fluid to act expansively; mechanism driven by said piston-carrier for operating said cut-off box; and a reversing-lever attached to said liner for rotating the same to reverse the direction of motion of said piston-carrier.

4. The combination in a rotary engine of a rotary piston-carrier provided with a piston-head; a rotary reaction-wheel provided with a plurality of reaction-arms; and means for giving said reaction-wheel a step-by-step movement, said means comprising a shaft upon which said reaction-wheel is mounted; a toothed disk mounted on said shaft; a pawl-carrying arm; a pawl mounted in said arm; and mechanism for oscillating said pawl-carrying arm to cause said pawl to engage with and disengage from the teeth of said disk.

5. The combination in a rotary engine of a rotary piston-carrier provided with a piston-head; a rotary reaction-wheel provided with a plurality of reaction-arms; means for giving said reaction-wheel a step-by-step movement, said means comprising a shaft upon which said reaction-wheel is mounted; a toothed disk mounted on said shaft; a pawl-carrying arm; a pawl pivotally mounted in said arm; mechanism for oscillating said pawl-carrying arm to cause said pawl to engage with and disengage from the teeth of said disk; and means for tripping said pawl to reverse the direction of rotation of said reaction-wheel.

6. The combination in a rotary engine of a rotary piston-carrier provided with a piston-head; a rotary reaction-wheel provided with a plurality of reaction-arms; means for giving said reaction-wheel a step-by-step movement; a valve controlling the admission of the working fluid; a

valve controlling the exhaust of the working fluid; a reversing-lever; and mechanism which connects said lever and said valves and means, whereby the direction of rotation of said piston-carrier and reaction-wheel is changed by a single throw of said lever.

846,018. CONTROLLING DEVICE FOR GAS-GENERATORS. FRITZ DÜBB, Karlsruhe, Germany. Filed Mar. 26, 1906. Serial No. 308,149.

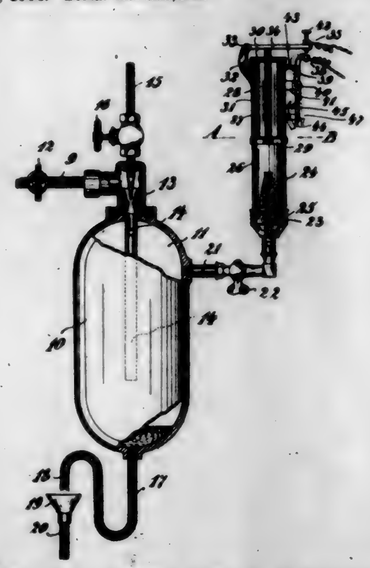

Claim.—1. A controlling device on gas-generators for recognising the quality of the gas, consisting of an incandescent light connected with the gas-pipe, a pipe connecting the incandescent light with the gas-pipe, into which there is inserted a chamber provided with means for pressing the gas into the chamber, a metal bar arranged above the incandescent light, and means for transmitting the expansion of the said metal bar to a contact device in circuit with an electric bell, located at any desired point, substantially as set forth.

2. A controlling device on gas-generators for recognising the quality of the gas, consisting of an incandescent light connected with the gas-pipe, into which there is inserted a chamber provided at the end where the gas enters with a suction-socket for drawing in the gas, a metal bar arranged above the incandescent light, and means for transmitting the expansion of the said metal bar to a contact device in circuit with an electric bell, located at any desired point, substantially as set forth.

3. A controlling device on gas-generators for recognising the quality of the gas, consisting of an incandescent light connected with the gas-pipe, into which there is inserted a chamber provided at the end where the gas enters with a suction-socket for drawing in the gas, into which opens a pipe for conveying water under pressure into it, a pipe connecting the socket with the lower part of the chamber, a metal bar arranged above the incandescent light, and means for transmitting the expansion of the said metal bar to a contact device in circuit with an electric bell, located at any desired point, substantially as set forth.

4. A controlling device on gas-generators for recognising the quality of the gas, consisting of an incandescent light connected with the gas-pipe, into which there is inserted a chamber provided at the end where the gas enters with a suction-socket for drawing in the gas, into which opens a pipe for conveying water under pressure into it, a pipe connecting the socket with the lower part of the chamber, an outlet-pipe, bent to form a siphon, and connected with the bottom of the chamber, a metal bar arranged above the incandescent light, and means for transmitting the expansion of the said metal bar to a contact device in circuit with an electric bell, located at any desired point, substantially as and for the purpose set forth.

846,019. STRIKING-BAG APPARATUS. JOHN F. EMBS, Altoona, Pa. Filed July 13, 1906. Serial No. 326,040.

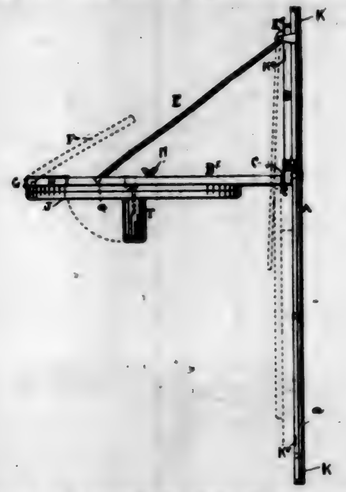

Claim.—1. In a striking-bag apparatus, the combination of a fixed vertical frame, a slidable vertical frame mounted thereon, a bag-supporting frame pivoted at its rear end to said sliding frame, and means for sustaining said bag-supporting frame in a substantially horizontal position.

2. In a striking-bag apparatus, the combination of a fixed vertical frame, a slidable vertical frame mounted thereon, a bag-supporting frame pivoted at its rear end to the lower portion of said sliding frame, and a bail above said bag-supporting frame and releasably connected at its lower end thereto and at its upper end pivoted to the sliding frame.

3. In a striking-bag apparatus, the combination of a fixed vertical frame consisting of a pair of upright strips and transverse connecting members, a slidable vertical frame mounted thereon and consisting of a pair of upright strips movably supported on the front faces of said other strips and transverse connecting members, a pair of strips hinged at their rear ends to the lower front faces of said sliding strips, a ring secured to the lower faces of said hinged strips, a bag-suspending cross-piece secured to and extending between the hinged strips, and a brace releasably connected at its lower end to the hinged strips and pivoted at its upper end to the upper portion of the sliding frame.

4. In a striking-bag apparatus, the combination of a fixed vertical frame, a slidable vertical frame mounted thereon, a bail pivoted at its upper end to the upper portion of the sliding frame, a bag-supporting frame pivoted at its rear end for downward swinging to said sliding frame and grooved for the reception of the lower end of the bail, and a hinged keeper arranged to overlie the lower end of said bail and to retain the same in the grooved portion of the bag-supporting frame.

5. In a striking-bag apparatus, the combination of a fixed vertical frame, a slidable vertical frame mounted thereon, a bag-supporting frame pivoted at its rear end to said sliding frame and including a bag abutment-ring and a transverse cross-piece disposed diametrically of said ring and hinged at its forward edge to the bag-supporting frame for downward swinging, a bag-suspending post depending from said cross-piece, and a bar hinged at one end to the bag-supporting frame and constructed at the opposite end to sustain said cross-piece in position.

6. In a striking-bag apparatus, the combination of a suitable support, a bag-supporting frame pivoted at its rear end to said support for downward swinging, a bag abutment-ring secured to the lower face of the bag-supporting frame, a bag-suspending cross-piece pivoted for downward swinging at its front edge to the lower side of the bag-supporting frame and extending transversely diametrically of the ring, a bail pivoted at its upper end to said suitable support, the upper surface of the bag-supporting frame being socketed for the reception of the lower end of the bail, and a bar hinged at its outer end for upward swinging to the most advanced portion of the periphery of the ring and extending rearward and overlying the cross-piece and the lower end of the bail and securing said members in position.

7. In a striking-bag apparatus, the combination of a fixed vertical frame, consisting of upright strips and transverse connecting members, a sliding vertical frame consisting of upright strips and transverse connecting members, yokes secured to the strips of the sliding frame and slidably engaging said other strips, clamp-plates spaced from said yokes and embracing opposite sides of both sets of strips and also slidably engaging the strips of the fixed frame, and clamp-bolts passing through said plates and the strips of the sliding frame to prevent relative vertical movement of the strips.

8. In a striking-bag apparatus, the combination of a fixed vertical frame consisting of upright strips and transverse connecting members, a sliding vertical frame consisting of upright strips and transverse connecting members, yokes secured to the strips of the sliding frame and slidably engaging said other strips, clamp members constructed to clamp said frames together against relative vertical movement, a bag-supporting frame hinged at its rear end to said sliding frame, and a bail consisting of a lower transverse portion releasably connected to the bag-supporting frame and upward-extending arms having hooks at their rear ends pivotally engaging said yokes.

846,020. SHOE-CLEANER. SAMUEL FELD, New York, N. Y. Filed Nov. 20, 1906. Serial No. 344,199.

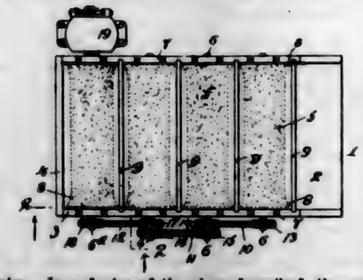

Claim.—In a device of the class described, the combination of a tray, a series of revoluble brushes journaled to the tray, the brushes having longer bristles at each end than near the middle, and a series of bars fixed to the tray between and below the upper plane of the brushes, and means for rotating said brushes.

846,021. BOX-LID HOLDER. JOSEPH C. FELDMAN, Chicago, Ill., assignor to M. E. Nathan. Filed Mar. 15, 1906. Serial No. 306,208.

Claim.—A holder for box-lids comprising a plate having a slot in its lower edge adapted to receive the wall of the box, the rear portion of the plate being offset laterally at the slot, to rest upon the edge of the end of the box and to stand beyond the end of the box-lid and having a series of notches at different angles, and a clip embracing the edge of the lid and slidable in or out thereon and having a projection engageable with one of the notches.

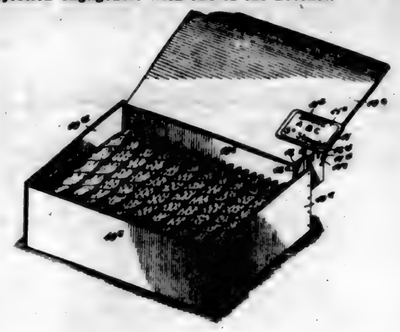

846,022. BRACKET. ANTHONY A. FICENER, Mansfield, Ohio, assignor to The Barnes Manufacturing Company, Mansfield, Ohio. Filed Jan. 10, 1906. Serial No. 295,387.

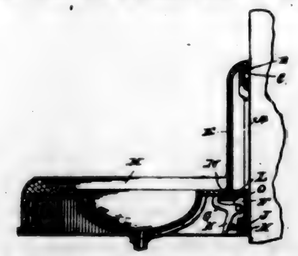

Claim.—1. A wall-bracket comprising a frame having pockets formed in the upper edge thereof and a horizontally-projecting lateral flange near its lower edge, and a spring-pressed catch-lever pivotally mounted in the lower side of the frame beneath said flange.

2. In combination a lavatory having depending lugs formed on the upper edge thereof and a retaining-lug formed on the lower edge thereof, a wall-bracket having pockets formed in its upper edge adapted to be engaged by the depending lugs of the lavatory and a flange to be engaged by the retaining-lug of the lavatory, and a catch-lever carried by the bracket and adapted to engage the retaining-lug of the lavatory.

3. In combination a wall-bracket comprising a frame having pockets formed in the upper edge thereof and a lateral flange near its lower edge, and a securing-lever pivotally mounted in the lower edge of the frame, a lavatory having lugs engaging the pockets of the frame, and a retaining-lug adapted to abut against the flange and be engaged by the securing-lever.

4. The combination with a wall-bracket comprising a frame having pockets formed in its upper edge, a catch-lever mounted in the lower edge of the frame and a flange above said lever, of a lavatory having lugs to engage the pockets in the frame, and a flange to be engaged by the catch-lever, said flange on the lavatory, engaging the lower face of the flange on the frame.

846,023. GARMENT-HANGER. CHARLES H. GAGE, New York, N. Y. Filed Mar. 15, 1906. Serial No. 306,123.

Claim.—1. A garment-hanger comprising a single rod and two members adjustable thereon and with relation to each other, each member consisting of a single piece of wire having one end formed into a coil slidable on said rod and the other end formed into a broad, yielding, outwardly, and downwardly extending loop located beneath said rod.

2. A garment-hanger comprising a rod of substantial

diameter, projecting knobs carried by the opposite ends thereof and adjustable clamping and supporting members, each of said members consisting of a single piece of wire

having one end coiled around said rod and having the other end formed into a supporting member.

846,024. SOUND-BOX FOR TALKING-MACHINES. EDWARD D. GLEASON, Philadelphia, Pa., assignor, by mesne assignments, to Victor Talking Machine Company, Camden, N. J., a Corporation of New Jersey. Filed July 26, 1902. Serial No. 117,134.

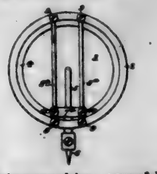

Claim.—1. A talking-machine sound-box having a diaphragm and a casing therefor, a stylus-lever having an integral portion bent at an angle to the remainder and bearing directly upon said diaphragm, with a resilient bar extending substantially parallel to the diaphragm and forming an elastic connection between said stylus-lever and the side of the diaphragm-casing opposite that beyond which the said lever projects, said connection extending from its point of attachment to the stylus-lever in a direction opposite thereto and imparting resiliency to said lever, substantially as described.

2. A talking-machine sound-box having a diaphragm and a casing therefor, a stylus-lever bearing upon the diaphragm, a resilient bar extending substantially parallel to the diaphragm and crossing the diaphragm-casing in the same direction as said stylus-lever, said bar providing a mounting for the lever, substantially as described.

3. A talking-machine sound-box having a diaphragm, a casing therefor, one or more elastic bars extending across said casing beyond the diaphragm, and a stylus-lever adjustably mounted upon said bar or bars, substantially as specified.

4. A sound-box provided with a diaphragm and with a stylus-lever projecting from one side thereof, a tensioning device for said stylus-lever parallel with said diaphragm and extending from said stylus-lever to the side of the casing opposite that from which the lever extends, the tension of said device being exerted to prevent lateral movement of said lever.

846,025. SIGHT ATTACHMENT FOR TYPE-WRITERS. JAMES B. HAMMOND, New York, N. Y. Filed Mar. 10, 1906. Serial No. 305,393.

Claim.—1. In combination in a type-writer of the class described, a shuttle, a movable ribbon-guide, a ribbon-shield and means for raising and lowering the guide and shield automatically as the keys are operated to expose the printing to view, said ribbon-shield being movable independently of the guide, substantially as described.

2. In a type-writer of the class described, a shuttle, a ribbon-guide, a ribbon-shield carried independently of the guide, means for raising and lowering the ribbon-guide as the keys are struck, the said ribbon-guide in turn causing the upward and downward movement of the ribbon-shield, substantially as described.

3. In combination, in a type-writer of the class described, a shuttle, a ribbon-guide movable substantially in a vertical plane and comprising pivoted arms, a ribbon-shield, a pivoted support therefor, said support resting upon a part of the pivoted arms of the guide and means for raising and lowering the guide-arms as the keys are operated, substantially as described.

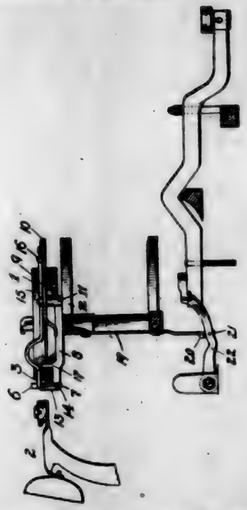

4. In combination a type-writer of the class described, a shuttle, a ribbon-guide including pivoted arms, a ribbon-shield, pivoted supporting means therefor resting on a part of the pivoted guide-arms, vertically-movable rods for raising the pivoted supporting-arms and the space-frame for operating the rods, substantially as described.

5. In combination in a type-writer, a ribbon-guide, a ribbon-shield, a movable support therefor, means for raising the ribbon guide and shield as the keys are struck and a catch for holding the movable support down, substantially as described.

846,026. POLYCHROME-RIBBON ATTACHMENT FOR TYPE-WRITERS. JOHN A. RUFFIN, New York, N. Y., assignor to The Hammond Typewriter Company, New York, N. Y. Filed June 29, 1906. Serial No. 324,051.

Claim.—1. In combination in a type-writer with the shuttle and hammer, a ribbon-shield, a ribbon-guide and means for adjusting and holding the same vertically to various positions to bring differently-colored sections of the ribbon into use, substantially as described.

2. In combination, a ribbon-shield having a plurality of openings one above the other, a ribbon-guide and means for adjusting the shield and guide to different positions vertically to bring differently-colored sections of the ribbon into use, substantially as described.

3. In combination, a ribbon-shield, a movable support therefor, a ribbon-guide and means whereby the ribbon-guide is moved by the movement of the shield-support, said support and guide being separable from each other substantially as described.

4. In combination, in a polychrome-ribbon attachment, a ribbon-shield, a frame carrying the ribbon-shield, ribbon-guide means and a catch for holding the shield-frame in an elevated position with means for imparting the movement of the said shield-frame to the guide means, substantially as described.

5. In a polychrome-ribbon attachment for type-writers, a ribbon-shield having a plurality of openings one above the other, a frame pivotally supported and carrying the said ribbon-shield, ribbon-guiding means with supports

therefor, and means for transmitting the movement of the shield-frame to the guide means, substantially as described.

6. In combination the ribbon-shield, the frame pivotally supported, means for tilting the frame on its pivot, a catch for holding the frame in elevated position, said frame falling when released from said catch and ribbon-guide means to move with the ribbon-shield frame, substantially as described.

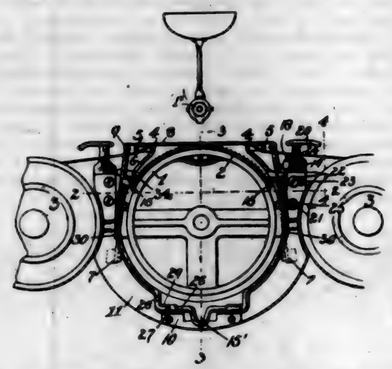

7. In combination a ribbon-shield, a frame pivotally supported and carrying the same, means for tilting the frame, a catch to engage the frame when elevated, the said frame dropping by gravity when the catch is swung aside, a ribbon-guide means moving with the said frame, substantially as described.

8. In combination, the ribbon-shield, a frame carrying the same, guide means having a connection with the shield-frame, means whereby the shield and guide means may be adjusted to bring differently-colored portions of the ribbon into use, the said shield-frame being adapted to be disengaged from the guide means to be elevated independently thereof, substantially as described.

9. In combination a ribbon-shield, a frame supporting the same, a catch for holding the frame in elevated position, guide means for the ribbon having a portion to engage the ribbon-shield frame, the said frame being adapted to be sprung aside to be disengaged from the guide means, substantially as described.

10. In combination a ribbon-shield frame pivotally supported, a ribbon-shield, guide means for the ribbon engaging a part of the ribbon-shield frame, the said ribbon-shield frame being adapted to be disengaged from the guide means and tilted upwardly on its pivot and means for holding the ribbon-shield frame in its tilted position, substantially as described.

11. In combination a ribbon-shield, a frame pivotally supported, a pivot-bearing for the said frame having a notch or slot therein, guide means engaging the ribbon-shield frame, said ribbon-shield frame being detachable from the guide means by pressing it aside and being sustained in elevated position by moving its pivot portion in the slotted bearing, substantially as described.

12. In combination in a type-writer, a frame pivotally supported, a pivot-bearing therefor and means whereby the frame is held in a tilted position by pressing the said frame laterally, substantially as described.

13. In combination a ribbon-shield, a frame carrying the same movably supported, catch means to engage under the frame, the said catch being carried by the sliding guide-support, a ribbon-guide and means for connecting the ribbon-guide with the ribbon-shield arm, substantially as described.

846,027. TYPE-WRITER. JAMES B. HAMMOND, New York, N. Y. Filed Oct. 21, 1904. Serial No. 229,442.

Claim.—1. In a type-writer of the class employing a shuttle, and an anvil, and in combination with an anvil and shuttle of enlarged size, a ribbon-movement including ribbon-spools arranged at the sides of the anvil and turning upon horizontal axes, said spools revolving in planes substantially tangential to the anvil substantially as described.

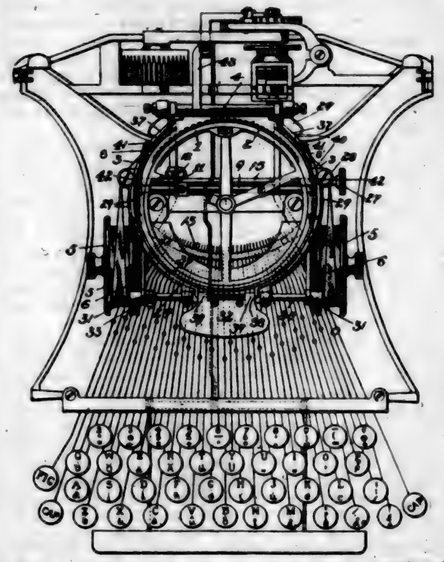

2. In combination, in a type-writer with the anvil and shuttle, a ribbon-movement including ribbon-spools at the side of the anvil turning about horizontal axes, said axes being coincident, and said spools turning in planes substantially tangential to the anvil, substantially as described.

3. In combination, shuttle means, ribbon-spools arranged on horizontal axis adjacent to shuttle means and turning in planes substantially tangential to the anvil and means for directing the ribbon first vertically from the spools, then rearwardly and then horizontally in rear of the shuttle means, substantially as described.

4. In combination, with printing mechanism, ribbon-spools arranged on horizontal axis adjacent thereto, and a frame inclosing the printing mechanism at the front and pivoted at its front end and partially embracing the printing mechanism at the rear for guiding the ribbon.

5. In combination with printing mechanism including a shuttle, a ribbon-movement including ribbon-spools and ribbon-shield, a loop closed at its front end pivoted at its front end and carrying the ribbon-shield, means for operating the ribbon-spools and means at the front end for lifting the loop to raise the ribbon-shield and ribbon, substantially as described.

6. In combination, with the shuttle and its anvil, a pivoted member partly embracing the same, and a sight attachment including guiding means for the ribbon movable in respect to the pivoted member, said attachment being carried by the said plate.

7. In combination with the shuttle, an anvil, a pivoted member partly embracing the same, a ribbon-shield, means carrying the same and pivotally supported on the pivoted member, and means for lifting the shield-carrying means and constituting a sight attachment, substantially as described.

8. In combination with the shuttle, an anvil, a pivoted member partly embracing the same, a loop pivoted to the member at the front end thereof, a shield carried by the said loop, means for directing the ribbon to the shield and means for raising and lowering the loop.

9. In combination, with the printing mechanism, a ribbon guide or shield to hold the ribbon with its flat side in

a vertical plane, a movable support therefor to move the shield and ribbon vertically, a ribbon-spool, a ratchet-wheel, a pawl and an arm carrying the said pawl and adapted to operate the movable support of the ribbon-shield, substantially as described.

10. In combination with printing mechanism, a ribbon guide or shield, a movable support therefor, a ribbon-spool arranged with its axis horizontally to turn in a plane tangential to the anvil, a pawl for turning the ribbon-spool and an arm carrying the said pawl and independent of the shield-support, said arm acting upon the ribbon-shield support to move the same, substantially as described.

11. In combination, with printing mechanism including a shuttle and an anvil, ribbon-spools arranged on horizontal axis on opposite sides of the machine and turning in planes substantially tangential to the anvil, a rock-shaft extending transversely of the machine and beneath the anvil arms on the said rock-shaft, pawls carried by the arms for engaging the toothed wheels, detents and means for controlling the position of the detents and pawls at opposite sides of the machine including a second rock-shaft extending parallel with that first mentioned and also beneath the anvil, substantially as described.

12. In combination with printing mechanism, a ribbon-movement having means for raising and lowering the ribbon and constituting the sight attachment, a universal frame, the keys for operating the same, connections from the sight attachment to the universal frame, carriage-space mechanism operated from the said universal frame, a space-key and connections between the said space-key and the escapement mechanism independent of the universal spacing-frame, substantially as described.

13. In combination with a ribbon-spool, a toothed wheel a pin upon which the said parts turn, and a friction device comprising a conically-shaped spring arranged to press upon the interior of the hub of the spool, and a nut for pressing the same against said hub, said nut being supported on the axis or pin, substantially as described.

14. In combination with the shuttle and anvil, a pivoted member carrying a guide for the ribbon, a pivoted ribbon-shield support movable independently of the said member and also movable with said member, and means for automatically moving the ribbon-shield support as the keys are operated, substantially as described.

15. In combination in a machine of the class described, the anvil, a ribbon-shield, a pivoted support therefor, a member pivotally supported and when raised serving to raise also the pivoted support of the ribbon-shield, and means for automatically moving the shield and ribbon as the keys are struck, substantially as described.

846,028. BOOT MACHINERY. WILLIAM HEATON, Leicester, England. Filed Sept. 30, 1905. Serial No. 280,854.

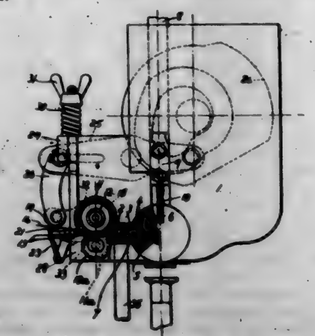

Claim.—1. In a nailing-machine for simultaneously inserting a group of nails into the stock, the combination of a plurality of drivers, a stationary guide and rotary cutter-block provided with a plurality of passages therein, pairs of feed-rollers to intermittently and independently feed a plurality of lengths of wire to the cutter-block, pawls and ratchet-wheels to independently rotate said feed-rollers, a rotatable cam-plate, and a hand-lever to partly rotate said cam-plate to vary the engagement of one of said pawls with its ratchet-wheel to vary one or more of the lengths of wire fed to the cutter-block, substantially as described.

2. A nailing-machine for inserting a plurality of nails in a boot sole or heel, comprising in combination a vertically-reciprocating driver-bar, a plurality of interchangeable drivers in said bar, a rotary cutter-block, an interchangeable throat therein provided with a plurality of passages, an interchangeable stationary guide having passages to correspond with said throat, pairs of feed-rollers to intermittently feed a plurality of lengths of wire to the cutter-block, pawls and ratchet-wheels to rotate said feed-rollers, and a rotatable cam-plate to vary the amount of movement imparted to one pair of the feed-rollers, substantially as described.

846,029. MOVABLE-POINT CROSSING. WILLIAM M. HENDERSON, High Spire, Pa., assignor to The Pennsylvania Steel Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed June 26, 1906. Serial No. 323,424.

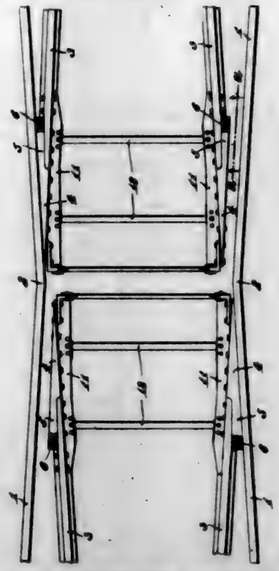

Claim.—1. In a movable-point crossing, the combination, with the knuckle-forming track-rail, of the movable-point rails, terminating some distance on each side of the "knuckle;" the hard-metal point-forming piece, whose upper surface is in the same plane as the said point-rail, said point-forming piece having the rearward extension adjacent the outer edge of the head of the point-rail; together with means for securing said point-rail and hard-metal point-forming piece together, substantially as set forth.

2. In a movable-point crossing, the combination, with the knuckle-forming track-rail, of the movable-point rails, terminating some distance on each side of the "knuckle;" the hard-metal point-forming piece whose upper surface is in the same plane as the said point-rail, said point-forming piece having the rearward extension adjacent the outer edge of the head of the point-rail, and whose free rear end is downwardly beveled; together with means for securing said point-rail and hard-metal point-forming piece together, substantially as set forth.

3. In a movable-point crossing, the combination, with the knuckle-forming track-rail, of the movable-point rails, terminating some distance on each side of the "knuckle;" the hard-metal point-forming piece whose upper surface is in the same plane as the said point-rail, said point-forming piece having the rearward extension adjacent the outer edge of the head of the point-rail, and having also a web portion, together with the strap-piece extending the length of the point-forming piece, its forward portion lying against the web of the latter, and its rear portion against the web of the point-rail; together with the bolts securing said point-forming piece, point-rail, and strap, together, substantially as set forth.

4. In a movable-point crossing, the combination, with the knuckle-forming track-rail, of the movable-point rails, terminating some distance on each side of the "knuckle;" the hard-metal point-forming piece, whose upper surface is in the same plane as the said point-rail, said point-forming piece having the rearward extension adjacent the outer edge of the head of the point-rail, and having also a web portion together with the strap-piece extending the length of the point-forming piece, its forward portion lying against the web of the latter, and its rear portion against the web of the point-rail; the foot extension of said strap-piece; together with the bolts securing said point-forming piece, point-rail, and strap together, substantially as set forth.

846,030. INSTRUMENT-TRAY. WILLIAM G. HULLHORST, Toledo, Ohio, assignor to The Ransom & Randolph Company, Toledo, Ohio, a Corporation of Ohio. Filed Jan. 13, 1906. Serial No. 295,866.

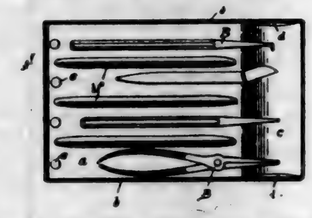

Claim.—1. A sterilizing utensil for surgical and the like instruments consisting of a broad shallow oblong tray having a portion of its bottom adjacent one edge bulged downward to form an external protuberance and an internal trough-like depression extending parallel to said edge, and having the remainder of its bottom constituted as an expanded instrument-receiving region provided with drainage-openings adjacent its edge remote from said depression, said edge and protuberance constituting the supporting means for the tray and bearing such relative relation that the instrument-receiving region is inclined downward from said depression toward said drainage-openings.

2. A sterilizing utensil for surgical and like instruments consisting of a broad shallow oblong tray having a small portion of its bottom severed at opposed edges from the remainder of the tray and bulged downward between said severed edges to leave drainage and circulation openings and also to constitute an external supporting-protuberance and an internal depression.

846,031. PROCESS OF CONVERTING IRON CASTINGS INTO STEEL OR MALLEABLE IRON. MARY A. HUNTER, Philadelphia, Pa. Filed Mar. 28, 1906. Serial No. 308,576.

Claim.—The mode herein described of converting cast-iron into steel or malleable iron consisting in heating the iron in a closed chamber, to a point slightly short of the melting-point of the iron; then introducing into the chamber sulfuric acid unmixed with any other reducing agent and continuing the heating, effecting the decomposition of the sulfuric acid and enabling the oxygen therein to act on the iron substantially as described.

846,032. LIQUID-DISTRIBUTER. ALFRED KELLER, St. Croix, Switzerland, assignor to Louis Philippe Mermod, Gustave Alfred Mermod, and Leon Marcel Mermod, copartners trading as Mermod Frères, St. Croix, Switzerland. Filed Apr. 11, 1906. Serial No. 311,110.

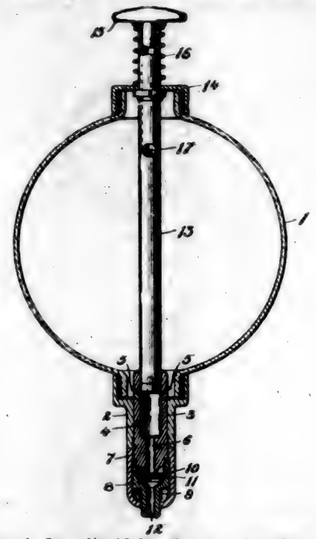

Claim.—1. In a liquid-distributer, a liquid-receptacle, a cylinder having a normally open inlet in communication with said receptacle, a normally closed outlet, a plunger in said cylinder arranged to cut off said inlet when advanced, a valve at the outlet, a yielding nozzle supporting said valve, a liquid-passage through said nozzle and beyond the valve, and means to yieldingly move said nozzle toward said cylinder-outlet to close said valve against the same.

2. In a device of the character described, a cylinder, a plunger therein, a normally open inlet therein, an outlet, a valve for normally closing the same, a spring-pressed yielding nozzle supporting said valve, a discharge-passage through said nozzle, and means of communication through said nozzle and around said valve and leading to said nozzle-outlet when said plunger is depressed.

3. In a liquid-distributer, a cylinder having an inlet and an outlet, a vertically-movable valve for said outlet comprising a supporting member having an outlet, a spider in said support, and a valve-plate carried by said spider.

4. In a device of the character described, a cylinder having an inlet and an outlet passage therein, a movable valve for said outlet comprising a combined movable valve-supporting member and discharge-nozzle, means in said nozzle for carrying said valve and a passage through said nozzle and around the valve therein to afford communication with the outlet, a casing surrounding said nozzle except at the end and a spring in the casing to move the nozzle to close the valve.

5. In a device of the character described, a piston-cylinder an inlet, an outlet, a valve for said outlet, a combined yielding valve-support and discharge-nozzle and a communicating passage leading from the valve proper to said nozzle-outlet, a spring surrounding said nozzle for moving it in a direction to cause the valve to close the outlet in the piston-cylinder.

846,033. CYCLE. WILLIAM C. KIDNEY, New York, N. Y. Filed Feb. 21, 1906. Serial No. 302,295.

Claim.—1. In a cycle, a wheeled frame having means for sustaining the rider in a prone position, said means comprising the pedal-cranks and handle members, the latter being disposed in the alinement with the body of the rider and the pedal-cranks.

2. In a cycle, a wheel-mounted frame, means for sustaining the body of the rider in a fully-extended position at a forwardly-inclined angle relatively to the frame, in such position whereby the pedal-action and the handle-bar pressure of the rider are in straight alinement with the rider's body, as set forth.

3. In a bicycle, a frame constructed to sustain the rider prone with the body fully extended, a pedal-actuated mechanism connected with the drive-wheel and a steering-head having its handles disposed in alinement with the body and the pedal thrust of the rider, as set forth.

4. In a bicycle, a frame for supporting the rider in a prone position, a pedal-actuated means for propelling the machine and handle members, the said handle members and the propelling means being in straight alinement with the body of the rider when in a prone position.

5. In a bicycle-frame, means for supporting the rider's body forwardly inclined to the horizontal, said means including handles and pedal members located in alinement with the rider's body when in a prone position.

6. In a bicycle having pedal-actuated gearing for propelling the machine, and handle-bars located relatively to the pedals whereby to sustain the body of the rider fully extended in a forwardly-inclined position.

7. In a bicycle, a frame having a steering-head at one end, a pedal-actuated means for propelling at the other end and means intermediate the steering-head and the pedal means for sustaining the body in a fully-extended prone position.

8. In a bicycle, a frame having a steering-head at one end, a crank-axle mechanism at the other end, and means intermediate said steering-head and crank-axle mechanism for sustaining the body of the rider at a forwardly-inclined position, said means including a vertically-adjustable rest for the chest portion of the body.

9. A bicycle, a frame having a crank-axle bearing at one end, a steering-head at the other end, an inclined rod that joins the steering-head and the crank-axle bearing, and means on said rod for sustaining the body of the rider in a fully-extended position, for the purposes described.

10. In a bicycle, a frame constructed to sustain the rider in a prone position, and having the handle-bars and the pedals in alinement with the extended body of the rider and having members against which the shoulders of the rider can bear, for the purposes described.

846,034. GREASE-EXTRACTOR. TIMOTHY J. KIELEY and FREDERICK T. MUELLER, New York, N. Y. Filed Sept. 28, 1905. Serial No. 280,431.

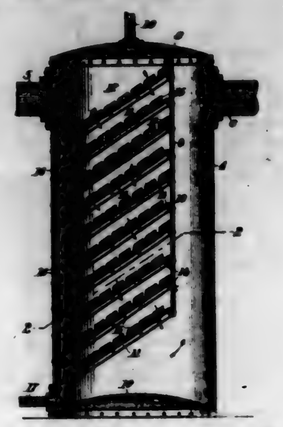

Claim.—In a device of the character described, the combination with a tank provided near its upper end with inlet and outlet ports for exhaust-steam, and at its lower end with an outlet-pipe for matters extracted from said exhaust-steam, of a division-plate secured at its upper end to the top of the tank and at its lower end to a slanting perforated plate dividing said tank into two compartments, and a series of slanting perforated plates secured to said tank and division-plate, said perforated plates being arranged in vertical series and all slanting in the same direction, the perforations in said slanting plates being surrounded by upwardly-extending flanges, and each of said slanting plates having an opening through it at its lowest point and proximate to the wall of the tank whereby the separated grease will be delivered from one plate to another and finally will be delivered beneath the lowermost plate in the vicinity of the final outlet, substantially as described.

846,035. RECOVERY OF AMMONIA FROM GAS. HEINRICH KOPPERS, Essen-on-the-Ruhr, Germany. Filed Sept. 2, 1905. Serial No. 276,906.

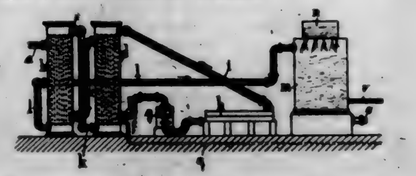

Claim.—The process of obtaining ammonia and tar from gas which consists in cooling the gas to form cooled gas and a condensate, separating the tar from the cooled gas, superheating the gas freed from tar, washing the gas with acid to form a liquor, and mixing said liquor in a saturation-bath with the waste vapors obtained by treating the condensate with lime and steam, substantially as specified.

846,036. DEVICE FOR DISINTEGRATING ORE IN CARS. JOSEPH A. LAWLER, Braddock, Pa. Filed Nov. 22, 1906. Serial No. 344,634.

Claim.—1. The combination with a hopper-bottom car, of a removable heater therein, and means for connecting said heater up to a steam or like supply.

2. The combination with a hopper-bottom car, of a removable heater contained therein, pipes leading therefrom to the several hoppers, and means for connecting said heater up to a steam or like supply.

3. The combination with a hopper-bottom car, of a removable heater contained therein, means for connecting said heater up to a steam or like supply, and means for conveying heat therefrom to the several hoppers.

4. The combination with a hopper-bottom car, of a cross-support therein, a removable heater resting on said cross-support, and means for connecting said heater up to a steam or like supply.

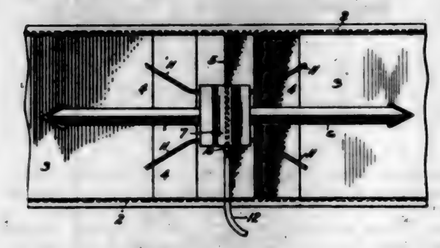

5. The combination with a hopper-bottom car, of a cross-support therein, a removable heater straddling said support and means for connecting said heater up to a steam or like supply.

6. The combination with a hopper-bottom car, of a cross-support with slanting sides, a removable heater engaging said support and conforming substantially thereto, and means for connecting said heater up to a steam or like supply.

7. The combination with a hopper-bottom car, of a cross-support therein, a removable hollow casting straddling said support, and means for connecting said casting up to a steam or like supply.

8. The combination with a hopper-bottom car, of a support therein, a removable heater on said support, a pipe extending up from said heater, means for connecting said pipe to a steam-supply, and means for conveying heat from said heater down into the several hoppers.

846,037. ROTARY EXPLOSION-MOTOR. CHARLES A. LITTLEFIELD, New Bedford, Mass., assignor to George Otis Draper, Hopedale, Mass. Filed Oct. 8, 1904. Serial No. 227,628.

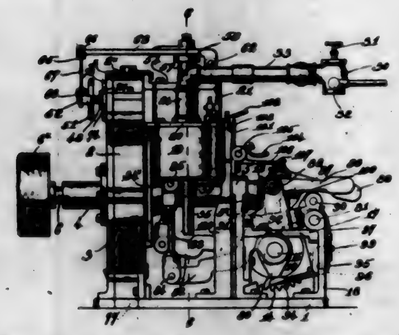

Claim.—1. In a rotary motor, an annularly-chambered casing, a rotatable member therein having peripheral and radial impact-vanes movable in the annular chamber, a tubular reversing device having a peripheral outlet, a combustion-chamber communicating with one end of said device, two induction-ports in the casing radial to said reversing device and governed by the outlet therein, to direct motive fluid against one or the other face of the impact-vanes, and an intermittingly-oscillating, tubular valve mounted concentric with and within the reversing device and having two outlet-ports, one or the other operating, according to the position of the reversing device, to govern admission of motive fluid to the active induction-port.

2. In a rotary explosion-motor, a rotatable member having circularly-arranged impact-vanes, a casing within which said member rotates, said casing having an induction-port, a combustion-chamber, means to introduce thereinto charges of compressed explosive material to be ignited, an oscillating valve to govern the communication between said chamber and the port, and means to operate the valve, to permit the burnt products of combustion of a charge to pass through said port during the compression of the next charge, the valve being opened wide upon the ignition thereof, and nearly closing the port during the compression of a charge.

3. In a rotary explosion-motor, a rotatable main shaft, a compression-cylinder and its piston, a rocking lever operatively connected therewith to reciprocate the same, a cam rotated by said shaft and adapted to coöperate with and rock said lever, and manually-controlled means mounted on and supported wholly by the lever to throw the cam and lever out of coöperative action.

4. In a rotary explosion-motor, a rotatable main shaft, a compression-cylinder and its piston, a rocking lever operatively connected therewith to reciprocate the same, a follower carried by and also movable relatively to said lever, and manually-controlled means to prevent relative movement of the follower and maintain it in the path of the cam, whereby the latter rocks the lever, release of the follower permitting its movement by the cam relatively to the lever.

5. In an explosion-motor, a compression-cylinder, a piston adapted to reciprocate therein, a rotating actuator, and connections between it and the piston to move the latter on the compression-stroke to a fixed point and to vary automatically the starting-point of the stroke in accordance with the speed of the motor, said connection including a cam which imparts both strokes to the piston.

6. In an explosion-motor, a compression-cylinder, a piston adapted to reciprocate therein, a rotating actuator, a rocking lever having a rigid follower, and a yielding follower, to be alternately engaged by the actuator, to rock the lever, the actuator operating through the rigid follower to impart the compression-stroke of the piston, and operating through the yielding follower to retract the piston to a varying extent in accordance with the speed of the motor.

846,038. WHEEL-BRAKE FOR VEHICLES. DAVID T. LOHNES, Omaha, Nebr. Filed Nov. 9, 1905. Serial No. 286,553.

Claim.—1. The combination, with the front axle, the slotted hounds and the slidably-mounted tongue between the slotted hounds, of a transversely-mounted sustaining-bar upon said slotted hounds; a link extending on each side of and substantially parallel with said front axle, each of said links being angularly bent to form end cranks and to form a central crank-lever; an angularly-formed shoe-support on each of said end cranks; a vertically-disposed lever upon said sustaining-rod having an upper end pivotally mounted upon said slidably-mounted tongue; links placed end to end each having an outer end connected with one of said central crank-levers their inner ends being connected with the lower end of said vertically-disposed lever; brake-shoes mounted upon said angularly-formed shoe-supports, and a transversely-disposed tongue-rod on said slidably-mounted tongue and seated within the slots of the hounds.

2. The combination with the front axle, the slotted hounds and the slidably-mounted tongue between the slotted hounds, of a transversely-mounted sustaining-bar upon said slotted hounds; a link extending on each side of and substantially parallel with said front axle, each of said links being angularly bent to form end cranks and to

form a central crank-lever; an angularly-formed shoe-support on each of said end cranks; a vertically-disposed lever upon said sustaining-bar having an upper end pivotally mounted upon said slidably-mounted tongue; links placed end to end each having an outer end connected with one of said central crank-levers their inner ends being connected with the lower end of said vertically-disposed lever; brake-shoes having concave contact-surfaces and curved head-surfaces and mounted eccentrically upon said angularly-formed shoe-supports; a transversely-disposed tongue-rod on said slidably-mounted tongue and seated within the slots of said hounds.

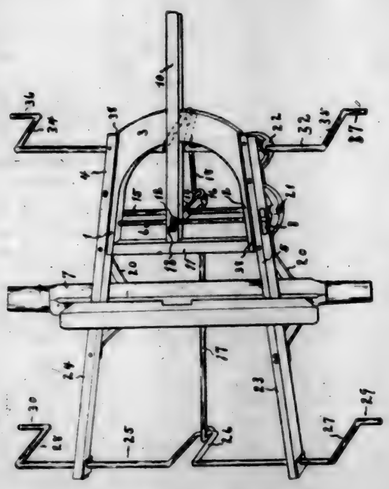

3. A wheel-brake for vehicles, in combination, comprising a front axle, slotted front hounds connected by a sustaining-bar extending substantially parallel with said axle; an apertured tongue slidably mounted between said hounds, a tongue-rod passing transversely through the aperture of said tongue and having outer ends seated within the slots of the hounds, a link extending on each side of and substantially parallel with said front axle, each of said links being angularly bent to form end cranks and to form a U-shaped lever at its center; angularly-disposed shoe-supports formed on said end cranks of said links; a vertically-disposed lever mounted upon the sustaining-bar having an upper end pivotally mounted upon the tongue-rod within the aperture of said tongue; links placed end to end each having an outer end connected with one of said U-shaped levers their inner ends being connected with the lower end of said vertically-disposed lever; and brake-shoes mounted upon said angularly-disposed shoe-supports.

4. A wheel-brake for vehicles, in combination, comprising a front axle, slotted front hounds connected by a sustaining-bar extending substantially parallel with said axle; an apertured tongue slidably mounted between said hounds, a tongue-rod passing transversely through the aperture of said tongue and having outer ends seated within the slots of the hounds; a link extending on each side of and substantially parallel with said front axle, each of said links being angularly bent to form end cranks and to form a U-shaped lever at its center; angularly-disposed shoe-supports formed on said end cranks of said links; a vertically-disposed lever mounted upon the sustaining-bar of said hounds having an upper end pivotally mounted upon the tongue-rod within the aperture of said tongue; links placed end to end each having an outer end connected with one of said U-shaped levers their inner ends being connected with the lower end of said vertically-disposed lever; brake-shoes having concavedly-formed contact-surfaces and curved head-surfaces and mounted eccentrically upon said angularly-disposed shoe-supports.

846,039. LUG-STRAP HOLDER FOR LOOMS. ENOCH H. MAJOR, Nashua, N. H., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Aug. 16, 1906. Serial No. 330,790.

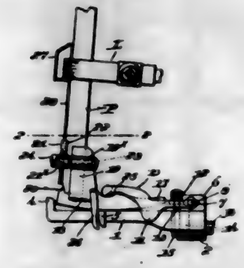

Claim.—1. A loom picker-stick, its shoe, a clamp to detachably and rigidly connect the stick and shoe, and a lug-strap holder operatively held by the clamp.

2. A picker-stick, a lug-strap holder having a strap-receiving loop and a resilient, elongated shank, and means to frictionally engage and clamp the latter on the picker-stick.

3. A picker-stick, a loop-like lug-strap holder having a thin flat shank adapted to bear against the edge of the stick, and a clamp to frictionally engage and retain the shank in position upon the stick.

4. A picker-stick, an adjustable lug-strap holder, a shoe, and common means to rigidly connect the shoe and holder with the stick by frictional engagement.

5. A picker-stick, a lug-strap holder having an elongated depending and flat shank, and a friction-clamp to adjustably clamp the lower end of the shank upon the picker-stick, the shank being interposed between the clamp and the picker-stick.

6. A lug-strap holder for picker-sticks, composed of sheet metal bent to present at one end a strap-receiving loop and having an elongated shank, and means to clamp the extremity of the shank upon the picker-stick.

7. A resilient sheet-metal lug-strap holder having a strap-engaging portion and an elongated flat extension adapted to rest against the edge of and be fixedly clamped upon the picker-stick, and means to clamp the extremity of the shank thereupon.

8. A picker-stick, a shoe therefor having an upright seat to receive the end of the stick, and constituting one member of a clamp, a coöperating, relatively movable member to bear against the stick, a lug-strap holder held in adjusted position by the relatively movable clamp member, and means to compress the clamp members upon the stick.

846,040. CYLINDER OF PRINTING-PRESSES. GEORGE W. MARCORD, Barnes, London, England. Filed Dec. 18, 1906. Serial No. 348,483.

Claim.—A covering for impression-cylinders consisting of superposed layers of leather-cloth, rubber, wool, leather-cloth, and cotton substantially as described.

846,041. STEAM-VALVE. FOSTER M. METCALF, Battle Creek, Mich., assignor to American Steam Pump Company, Battle Creek, Mich. Filed Dec. 6, 1906. Serial No. 346,683.

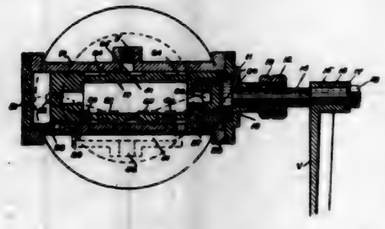

Claim.—An auxiliary steam-chest arranged to mount on the end of a main steam-chest, and provided with suitable ports and passages, a hollow cylindrical auxiliary valve fitted to operate within the same having a central depression and two outer end depressions, a live-steam port leading from the central depression to the interior, live-steam ports leading from the interior near each end of the valve, exhaust-grooves to act in conjunction with the same, and end recesses to loosely receive projecting pins on the enlarged end of the valve-stem, and a rock-lever keyed pendent to the outer extremity of same.

846,042. HOISTING AND CONVEYING APPARATUS. THOMAS S. MILLER, South Orange, and JOSEPH H. DICKINSON, Montclair, N. J. Filed May 12, 1905. Serial No. 260,185.

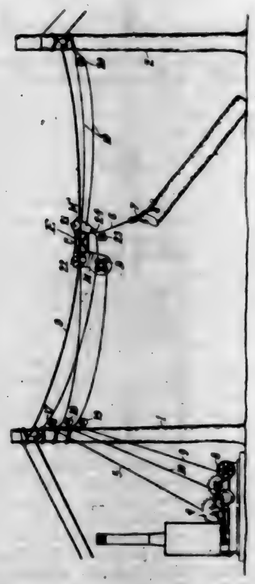

Claim.—1. In a hauling apparatus in combination two stationary drums, a cable or trackway, a duplex carriage thereon, a rigid frame connecting the parts of the carriage, a rope-drum mounted on one part of the carriage and driven from the stationary drums, and a pilot-sheave mounted on the other part of the carriage.

2. In a hauling apparatus, in combination a cable or trackway, a duplex carriage consisting of separate members, with a rigid frame connection between the same, a stationary drum mounted outside the carriage, a rope-drum mounted on one of said members and driven from the stationary drum and a pilot-sheave on the other of said members.

3. In a hauling apparatus in combination a cable or trackway, a duplex carriage comprising separate members, a frame rigidly connecting the two parts of the carriage, a rope-drum mounted on one of said carriage members, a pilot-sheave carried by the other of said members and means outside the carriage for driving said rope-drum in opposite directions.

4. In a hauling apparatus a duplex carriage comprising separate members, one of said members having a rope-drum provided with a plurality of drum-barrels of different diameters, the second member being spaced apart from the drum-carrying member, a swiveled pilot-sheave carried by the second member, and a rigid connection between said members.

5. In a hauling apparatus a duplex carriage comprising a member having a plurality of drum-barrels of different sizes, a second member separated from the first-mentioned member, a rigid connection between said members comprising a frame formed of a plurality of longitudinal bars, secured to the sides of the carriage members and strengthening-braces connecting said longitudinal bars, and a rope support carried by the carriage.

6. In a hauling apparatus in combination a duplex carriage comprising two members spaced apart, a frame rigidly connecting said members, a relatively large cable-wheel carried by each of said members, and adapted to rest upon the main cable of the apparatus, a traveling drum for said carriage, a rope connecting said drum with the object to be hauled, a pilot-sheave for the carriage for said rope and means for propelling the drum in opposite directions.

7. The combination of two carriage members spaced apart, a frame rigidly connecting said members, a rope-drum carried by one of said members, two ropes for driving said drum in opposite directions, two stationary drums for actuating said ropes respectively, and a swinging sheave secured to the second of the carriage members.

8. A duplex carriage comprising two members spaced apart, a rigid connection between said members comprising a frame formed of a plurality of longitudinal bars secured at their end portions to the sides of the carriage members, strengthening-braces extending between and secured to the longitudinal bars and traction-wheels carried by the carriage members.

9. The combination of two carriage members spaced apart, a frame rigidly connecting said carriage members, a traveling drum on one of said members, a hauling-rope operated by said drum, a pilot-sheave for said rope, two ropes having their tail ends at said drum, and two stationary drums with which the head ends of said rope are connected.

10. The combination of two carriage members spaced apart, a frame rigidly connecting said members, two traveling drum parts connected in axial alinement, two stationary drums, a rope connecting each of said stationary drums with one of said traveling drum parts, whereby said drum may be turned in opposite directions, a hauling-rope operated by said traveling drum, and a pilot-sheave for said last-named rope.

11. The combination with two carriage members spaced apart, a frame rigidly connecting said members, three traveling drum parts connected in axial alinement, two stationary drums, a rope connecting each of said stationary drums with one of said drum parts, whereby said drum may be turned in opposite directions, a rope connected with said third drum part for connection with an object to be hauled, and a pilot-sheave for said last-named rope.

846,043. MEANS FOR FORMING ANNOUNCEMENTS ON GLASS WINDOWS AND OTHER PLANE SURFACES. ERNEST G. MITCHELL, Bowden, England. Filed Apr. 21, 1906. Serial No. 313,026.

Claim.—1. In means for forming announcements on glass windows and other plane surfaces, letters adapted to form the announcement, and small strips or spacing-pieces connected to the same, said strips or spacing-pieces being of such a size as to indicate the exact rectangle occupied by the letter and half the spacing between the letters, and an adhesive layer on the back of said letters.

2. In means for forming announcements on glass windows and other plane surfaces, letters adapted to form the announcement, and small strips or spacing-pieces connected to the same, said strips or spacing-pieces being of such a size as to indicate the exact rectangle occupied by the letter and half the spacing between the letters, an adhesive layer on the back of said letters, and a resist on the back of said strips.

3. In means for forming announcements on glass windows and other plane surfaces, letters adapted to form the announcement, and small strips or spacing-pieces connected to the same, said strips or spacing-pieces being of such a size as to indicate the exact rectangle occupied by the letter and half the spacing between the letters, said strips having weakened lines so as to be easily removed.

4. In means for forming announcements on glass windows and other plane surfaces, letters adapted to form the announcement, and small strips or spacing-pieces connected to the same, said strips or spacing-pieces being of such a size as to indicate the exact rectangle occupied by the letter and half the spacing between the letters, said strips having weakened lines so as to be easily removed, adhesive means on the back of said letters and strips, and a resist on said strips.

5. In means for forming announcements on glass windows and other plane surfaces, letters adapted to form the announcement, and small strips or spacing-pieces connected to the same, said strips or spacing-pieces being of such a size as to indicate the exact rectangle occupied by the letter and half the spacing between the letters, in combination with spacing-strips for use where wider spacing is required, an adhesive layer on the back of said letters and spacing-pieces, and a resist on said spacing-pieces.

846,044. DRY-KILN. LA FAYETTE MOORE, Jacksonville, Fla., assignor to L. Moore Dry Kiln Company, Jacksonville, Fla. Filed Oct. 4, 1906. Serial No. 337,466.

Claim.—1. The combination with a post or column, of a cap having lugs, and stay-rods adjustably connected to the lugs.

2. The combination with a post or column for a trestle and a removable cap, of stay-rods, means for the adjustment of the stay-rods, and means for the support of a rail.

3. A trestle for kilns and the like, comprising a plurality of posts, caps secured thereto and stay-rods extending from one cap to another whereby to afford lateral support for bracing the posts.

4. The combination with a foundation and superstructure, of posts or columns, caps thereon and stay-rods extending radially in four directions from each cap, the outer ends of the outside stay-rods secured to the superstructure.

846,044.

846,045. EQUALIZING DEVICE FOR DIRECT-ACTING ENGINES. OTTO H. MUELLER, Berlin, Germany, assignor to Henry R. Worthington, New York, N. Y., a Corporation of New Jersey. Filed Oct. 16, 1903. Serial No. 177,281.

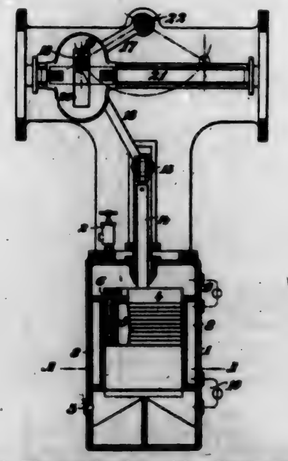

Claim.—1. The combination, with a direct-acting engine, of a compensating cylinder having a piston which acts in opposition to the movement of the piston of the engine during the first part of the stroke and in conjunction therewith during the latter part of the stroke, and means for introducing a pressure fluid to both sides of the compensator-piston and for varying the pressures on opposite sides automatically as the stroke of the main engine varies.

2. The combination, with a direct-acting engine, of a compensating cylinder having a piston which acts in opposition to the movement of the piston of the engine during one part of the stroke and in conjunction therewith during another part of the stroke, the motor fluid being continually admitted to the working side of the compensator-piston, and means for admitting the motor fluid intermittently to the opposite side of the compensator-piston.

3. The combination with a direct-acting engine, of a compensating cylinder having a piston which acts in opposition to the movement of the piston of the engine during one part of the stroke and in conjunction therewith during another part of the stroke, the motor fluid being continually admitted to the working side of the compensator-piston, and means for admitting the motor fluid to the opposite side of said compensator-piston intermittently and in quantities automatically controlled by the length of stroke.

4. The combination with a direct-acting engine, of a compensating cylinder having a piston which acts in opposition to the movement of the engine-piston during one part of the stroke and in conjunction therewith during another part of the stroke, and means controlled by the length of the engine-stroke for transferring fluid from the working side of the compensating piston to the opposite side to vary the compensating-cylinder pressure.

5. The combination with a direct-acting engine, of a compensating cylinder having a piston which acts in opposition to the movement of the engine-piston during one part of the stroke and in conjunction therewith during another part of the stroke, means for constantly admitting fluid on the working side of the compensating piston, and means controlled by the length of the engine-stroke for transferring fluid from the working side of the compensating piston to the opposite side to vary the compensating-cylinder pressure.

6. The combination with a direct-acting engine, of a compensating cylinder having a piston which acts in opposition to the movement of the engine-piston during one part of the stroke and in conjunction therewith during another part of the stroke, means controlled by the length of the engine-stroke for transferring fluid from the working side of the compensating piston to the opposite side to vary the compensating-cylinder pressure, and an adjustable relief-valve on the back-pressure side of the compensating piston.

7. The combination with a direct-acting engine, of a compensating cylinder having a piston which acts in opposition to the movement of the engine-piston during one part of the stroke and in conjunction therewith during another part of the stroke, a port opened by the compensating piston to transfer more or less fluid from the working side of the compensating piston to the opposite side in accordance with the length of the engine-stroke, and an adjustable relief-valve on the back-pressure side of the compensating piston.

8. The combination with a direct-acting engine, of a compensating piston acting in opposition to the movement of the engine-piston during one part of the stroke and in conjunction therewith during another part of the stroke, means for applying motor fluid in opposition to the working pressure for adjusting the compensating-cylinder pressure, and means controlled by the length of the engine-stroke for transferring fluid from the working side of the compensating piston to the opposite side to vary the compensating-cylinder pressure.

9. The combination with a direct-acting engine, of a compensating cylinder having a piston acting in opposition to the movement of the engine-piston during one part of the stroke and in conjunction therewith during another part of the stroke, means controlled by the length of the engine-stroke for transferring fluid from the working side of the compensating-piston to the opposite side at each stroke of the engine of uniform or greater length, and an outlet from the system for the escape of fluid to lessen the opposition to the working pressure.

10. The combination, with a direct-acting engine, of a compensating cylinder having a piston which acts in opposition to the movement of the piston of the engine during one part of the stroke and in conjunction therewith during another part of the stroke, the motor fluid being continually admitted to the working side of the compensator-piston, means provided for by-passing the motor fluid to the opposite side of said compensator-piston at a predetermined length of the stroke, means for regulating and relieving the pressure on the opposite side of the compensator-piston and means for regulating the ratio of expansion and compression of the motor fluid on both sides of the compensator-piston.

11. The combination, with a direct-acting engine, of a compensating cylinder having a piston which acts in opposition to the movement of the piston of the engine during one part of the stroke and in conjunction therewith during another part of the stroke, the motor fluid being continually admitted to the working side of the compensator-piston only, said compensator-piston having a port, one end of which is constantly open to the working side while the other end remains covered by the inner surface of the compensating cylinder during the greatest part of the stroke and is only laid open if it passes the upper edge of the cylinder-bore, thus putting the two sides of the piston in communication when the stroke attains a predetermined length.

12. The combination, with a direct-acting engine, of a compensating cylinder having a piston which acts in opposition to the movement of the piston of the engine during one part of the stroke and in conjunction therewith during another part of the stroke, the motor fluid being continually admitted to the working side of the compensator-piston only, means provided for by-passing the motor fluid to the opposite side of said compensator-piston at a predetermined length of the stroke, the upper or counter acting side of said compensator-cylinder being fitted with a relief-valve the load of which as well as its lift being made adjustable by hand.

13. The combination, with a direct-acting engine, of a compensating cylinder having a piston which acts in opposition to the movement of the piston of the engine during one part of the stroke and in conjunction therewith during another part of the stroke, the motor fluid being continually admitted to the working side of the compensator-piston, means provided for by-passing the motor fluid to the opposite side of said compensator-piston at a predetermined length of the stroke, and means for regulating and relieving the pressure on the opposite side of the compensator-piston, said compensator-cylinder being fitted with chambers, which may be connected by suitably-arranged valves with the working or the opposite side of the cylinder.

846,046. BAKING-OVEN. JOHN D. NASMITH, Toronto, Ontario, Canada. Filed Dec. 17, 1903. Serial No. 185,582.

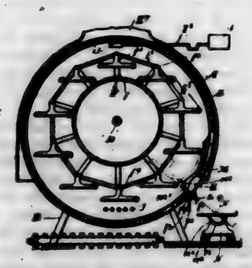

Claim.—1. In a baking-oven of the reel-type, a cylindrical casing, suitably supported, and provided with an orifice or mouth for feeding and discharging the products near the bottom of the casing and in the periphery thereof, whereby a maximum amount of heat is preserved in the oven, a door, and means for moving the door eccentrically to the cylindrical portion of the casing containing such door, so as to close the orifice in the periphery of the casing, as specified.

2. In an oven of the reel type, the combination with the casing and feed and discharge orifice, of a door for the same balanced so as to remain in an open or closed position and so arranged that it will move in an arc

eccentric to the casing, so as to close and open the orifice, as specified.

3. In an oven of the reel type, the combination with the cylindrical casing having a feed and discharge orifice, and the shaft, of rotatable baking-shelves suitably carried by the shaft, rollers on the ends of each of said baking-shelves adjacent the outer edge thereof, arms provided with notched lower ends, and pivoted at their upper ends, in the interior of the ends of the casing above the orifice therein, and means for throwing such arms inwardly into the path of the shelves, as specified.

4. In an oven of the reel type, the combination with the cylindrical casing having a feed and discharge orifice, and the shaft, of rotatable baking-shelves suitably carried by the shaft, arms pivoted at their upper ends in the interior of the ends of the casing above the orifice therein, and moving parallel with the end walls, a cross-plate pivotally connected to the lower ends of the arms, and means for throwing the plate inwardly, as specified.

5. In an oven of the reel type, the combination with the cylindrical casing having a feed and discharge orifice and the shaft, of rotatable baking-shelves suitably carried by the shaft, arms pivoted at their upper ends in the interior of the ends of the casing, a plate pivotally connected to the lower ends of the arms, racks formed at the bottom of the plate and pinions suitably operated and meshing with such racks, as specified.

6. In an oven of the reel type, the combination with the cylindrical casing having a discharge-orifice and the shaft, of baking-shelves suitably carried by the shaft, a movable plate extending from the lower side of the orifice at an inclination outwardly, and a tiltable receiving-tray located beneath the plate and so pivoted that when tilted the planes of the tray and plate are coincident as specified.

7. In an oven of the reel type, the combination with the cylindrical casing having a discharge-orifice and the shaft, of baking-shelves suitably carried by the shaft, a movable plate extending from the lower side of the orifice at an inclination outwardly, a tiltable receiving-tray located beneath the plate and provided with arc-shaped ends, rollers journaled in suitable bearings on which the arc-shaped ends are supported, and a supporting-truck for the tray, as specified.

8. In an oven of the reel type, a cylindrical casing forming the baking-chamber and provided with an orifice in the periphery thereof near the bottom and which the front portion of the casing of the oven overhangs, means for supporting the casing above the floor, so as to leave a clear space underneath the oven, whereby the baked products discharged from the orifice may be removed rearwardly underneath the oven away from the unbaked products brought to the orifice to refill the shelves, and a hood enveloping the whole upper surface down to the level of the orifice and spaced from the casing to form a flue to carry away the steam of the baked products, and gases from the whole oven, as specified.

9. In an oven of the reel type, a cylindrical casing forming the baking-chamber and provided with an orifice in the periphery thereof near the bottom and which the portion of the casing of the oven at the front overhangs, means for supporting the casing above the floor, so as to leave a clear space underneath the oven, a receiving means for the baked products in proximity to the orifice and a supplemental receiving means located in a space underneath the oven to carry the baked products to the rear of the oven clear of the unbaked products brought to the oven-mouth to refill the shelves, and a hood enveloping the whole upper surface down to the level of the opening and spaced from the casing to form a flue to carry away the steam of the baked products, and gases from the whole oven, as specified.

10. In an oven of the reel type, a cylindrical casing forming the baking-chamber and provided with orifice in the periphery thereof near the bottom and which the portion of the casing of the oven at the front overhangs, means for supporting the casing above the floor, so as to leave a clear space underneath the oven, a tiltable receiving-tray designed to be thrown to incline downwardly and outwardly to receive the products from the oven and have its inclination reversed to discharge the products of the oven underneath the casing and an endless belt designed to receive such baked products and carry them to the rear of the oven clear of the unbaked products brought to refill the shelves and a hood enveloping the whole upper surface down to the level of the opening and spaced from the casing to form a flue to carry away the steam of the baked products, and gases from the whole oven, as specified.

11. In an oven of the reel type, a cylindrical casing forming the baking-chamber and having an opening near the bottom and a hood enveloping its whole upper surface down to the opening, spaced from the casing, and provided with front and rear bottom openings, and an exit-flue at the top of the hood to carry off the steam of the baked products, and gases from the whole oven, as specified.

12. In an oven of the reel type, the combination with the cylindrical casing forming a baking-chamber, of ribs forming a frame for supporting the casing at the inside and forming pockets at the outside, and the heat-non-conducting material secured in and filling the pockets between the ribs so as to entirely cover the interior casing as specified.

13. In an oven of the reel type, a cylindrical casing provided with end walls, standards or pedestals, and brackets supported on top of the standards or pedestals, and interior plates secured to the inside of the walls, and bolts securing such plates to the brackets extending through the walls, as specified.

846,047. TOP-SPINNING PISTOL. SAMUEL B. NEWMAN, Cleveland, Ohio, assignor to The Ideal Novelty Manufacturing Co., Cleveland, Ohio, a Corporation. Filed Jan. 8, 1906. Serial No. 295,010.

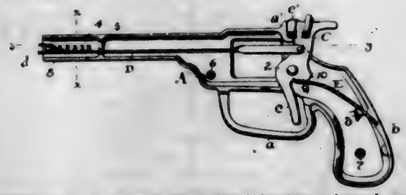

Claim.—1. A top-spinning pistol having a barrel and a rack at one side in the mussle thereof and an open slot lengthwise in the bottom of the muzzle, in combination with a dart having a head in said muzzle constructed to engage a top therewith, and a spring-pressed trigger to which said dart is attached at its rear end.

2. A top-spinning pistol formed in two halves longitudinally, in combination with a trigger, a firing-dart pivoted to said trigger at one end and having a divided head supported centrally in the muzzle thereof at its other end, a rack in said muzzle opposite said head and a spring to actuate said trigger and give an actuating movement to the parts.

3. A top-spinning pistol having a barrel with rack-teeth in one side of the mussle thereof and a lengthwise slot in the bottom of the muzzle at right angles to said rack, a firing-bar supported centrally in said barrel and having a divided head with recesses in its ends, in combination with a top having a spindle engaged through said slot in said recesses and a pinion on said spindle engaged with said rack, and means to give a firing impulse to said bar.

846,048. FILLING-REPLENISHING LOOM. JONAS NORTHROP, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed June 4, 1906. Serial No. 320,019.

Claim.—1. In an organized loom, in combination, automatic filling-replenishing mechanism, a filling-detector to effect the actuation thereof, upon detection of filling absence, take-up mechanism, a second filling-detector to arrest the operation of the take-up mechanism upon detection of filling absence by said second detector, and means to maintain the take-up mechanism inoperative until presence of filling is again indicated by the second detector.

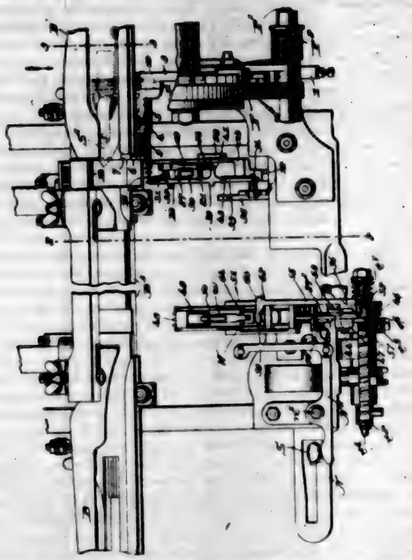

2. In an organized loom, in combination, mechanism to replenish automatically the running filling, a filling-detector adjacent said mechanism and solely controlling the same to effect filling replenishment on the pick upon which the detector detects filling failure, take-up mechanism, a second filling-detector, and controlling connections between it and the take-up mechanism, to arrest the operation thereof, upon detection of filling failure by the second detector, and to cause the take-up mechanism to resume its operation, when presence of filling is again detected by the same detector.

3. In a loom, two filling-forks, take-up mechanism, filling-replenishing mechanism, actuating means for the latter, controlled by one only of said forks, and means controlled by the other fork only to arrest take-up upon detection of filling failure by such fork, said means including a device to maintain the take-up mechanism inoperative until such fork again detects presence of filling.

4. In an organized loom provided with mechanism to replenish automatically the running filling, the following instrumentalities in combination, take-up mechanism including a clutch, two filling-detectors, one of which, upon detection of filling failure, effects the actuation of the replenishing mechanism, and controlling connections between the clutch and the other detector, to release the clutch and arrest take-up when said latter detector detects filling absence and to render the clutch operative thereby to effect resumption of take-up when such detector again detects presence of filling.

5. In an organized loom provided with mechanism to replenish automatically the running filling, the following instrumentalities in combination, take-up mechanism, including a clutch, two filling-detectors, one of which, upon detection of filling absence, effects the actuation of the replenishing mechanism on the pick on which such absence is detected, and clutch-actuating means governed by the other detector, to render the clutch inoperative upon detection of filling absence by such detector and thereafter render the clutch operative when presence of filling is again detected by the said detector.

6. A loom having, in combination, filling-replenishing mechanism at one side, a filling-fork at the same side, means to effect the actuation of said mechanism on the pick on which the said fork detects filling failure, a second filling-fork at the other side of the loom, said forks detecting on alternate picks, and take-up mechanism stopped by or through detection of filling failure by the second fork and thereafter started by detection of filling presence by said second fork.

7. In a loom provided with a shuttle adapted to contain a supply of filling, and mechanism to provide the shuttle with a fresh supply of filling, in combination, two filling-forks, at opposite sides of the loom and detecting on alternate picks, actuation of said mechanism being effected on the detecting pick by or through detection, by the adjacent fork, of filling failure as the shuttle moves toward the replenishing mechanism, means to withdraw such fork from the shuttle-path and also prevent filling-failure indication thereby on the intervening picks, and take-up mechanism the operation of which is controlled wholly by the other of the two filling-forks.

8. In a loom, two filling-forks, take-up mechanism, filling-replenishing mechanism, actuating means for the latter controlled by one of said forks, means to positively tilt the latter upon the operation of the replenishing mechanism, to clear the outgoing replenished shuttle and prevent indication of filling failure on that pick, and means controlled by the other fork to arrest take-up upon detection of filling failure by such fork and to cause resumption of take-up when presence of filling is again detected by the last-named fork.

9. In a loom, in combination, mechanism to replenish filling in the running shuttle, two filling-detectors located at opposite sides of the loom, controlling connections between one only of said detectors and said mechanism to effect actuation of the latter upon detection of filling absence by the former, take-up mechanism, and connections between the same and the other detector only, to arrest the operation of said mechanism upon detection of filling absence by its controlling-detector and to maintain such arrest until filling presence is again detected by such detector.

10. In a loom, in combination, two filling-detectors, mechanism the actuation of which is effected by or through one of said detectors, to automatically replenish the running filling on the pick on which non-continuity of filling is detected by such detector, take-up mechanism, and means to arrest the operation thereof from detection of filling failure by the other of said detectors until the latter again detects the presence of filling.

11. In a loom, a shuttle adapted to contain a supply of filling, a detector to indicate non-continuity of the filling on alternate picks, mechanism actuated by or through such indication of the detector to provide automatically, the shuttle with fresh filling on the indicating pick, a second detector to indicate non-continuity of filling on the intervening picks, and take-up mechanism the operation of which is arrested upon such indication of the second detector and resumed when such detector again detects continuity of filling.

12. In a loom provided with filling-replenishing mechanism, a shuttle adapted to contain a supply of filling, and take-up mechanism, in combination, a filling-fork to indicate filling failure on each pick toward the replenishing mechanism, means whereby such indication affects automatically the actuation of such mechanism on the same pick, a second filling-fork to indicate filling failure on each pick away from the replenishing mechanism, and controlling connections between the second fork and the take-up mechanism, to arrest the operation of the latter when and while filling failure is indicated by the second fork.

13. In a loom provided with filling-replenishing mechanism, a shuttle adapted to contain a supply of filling, and take-up mechanism, in combination, a filling-fork to indicate filling failure on each pick toward the replenishing mechanism, means whereby such indication affects automatically the actuation of such mechanism on the same pick, a second filling-fork to indicate filling failure on each pick away from the replenishing mechanism, controlling connections between the second fork and the

take-up mechanism, to arrest the operation of the latter when and while filling failure is indicated by the second fork, a shipper, and means to release the same when said second fork has indicated filling failure a predetermined number of times successively.

14. In a loom, an instrumentality to lay the filling, means to intermittently engage intact filling and to detect non-continuity of the latter, a fixed support for said means, mechanism the actuation of which is effected by or through said means, to automatically provide said instrumentality with fresh filling on the pick on which non-continuity is detected, and means to coöperate directly with and withhold the detecting means from the path of the filling-laying instrumentality on the return pick thereof.

15. In a loom, an instrumentality to lay the filling, means to intermittently engage intact filling and to detect non-continuity of the latter, a stationary support for said means, mechanism the actuation of which is effected by or through said means, to automatically provide said instrumentality with fresh filling on the pick on which non-continuity is detected, means to prevent engagement of the detecting means and the filling-laying instrumentality on the return pick thereof, and other means operative on such return pick to prevent actuation of the filling-supplying mechanism.

16. In a loom, a shuttle to contain a supply of filling, a tilting fork to detect non-continuity of filling on alternate picks, a stationary support on which said fork is fulcrumed, mechanism actuated by or through non-tilting of the fork to automatically provide the shuttle with a fresh supply of filling on the same pick as that on which non-continuity of filling is detected, and means to tilt the fork out of the path of the shuttle on the return or non-detecting pick.

17. In a loom, in combination, a shuttle to contain a supply of filling, a fork adapted to be tilted by the filling when the latter is intact, a fixed support on which the fork is fulcrumed, filling-replenishing mechanism operated by or through non-tilting of the fork, on the pick on which non-continuity of the filling is detected, to provide the shuttle with fresh filling, means to tilt the fork out of the shuttle-path on the return-pick, and a device to prevent the return of the fork to detecting position until after such return pick has been completed.

18. In a loom, a shuttle to contain a supply of filling, mechanism located at one side of the loom to automatically provide the shuttle with a fresh supply of filling, a filling-fork at the same side of the loom, to indicate filling failure, means whereby indicatory action of said detector on the pick of the shuttle toward said mechanism effects actuation of the latter to change the shuttle-filling on the indicated pick, means to positively tilt the fork out of the shuttle-path on the return pick and maintain it tilted until the next pick of the shuttle toward the replenishing side of the loom, and a vibrating actuator for said means.

19. In a loom, a shuttle to contain a supply of filling, mechanism located at one side of the loom to automatically provide the shuttle with a fresh supply of filling, a filling-fork at the same side of the loom, to indicate filling failure, means whereby indicatory action of said detector on the pick of the shuttle toward said mechanism effects actuation of the latter to change the shuttle-filling on the indicated pick, means to positively tilt the fork out of the shuttle-path on the return pick and maintain it tilted until the next pick of the shuttle toward the replenishing side of the loom, and a device to deaden or reduce vibration of the fork when the latter is freed from the control of said tilting means.

20. In a loom, a shuttle to contain a supply of filling, a filling-fork to indicate filling failure, mechanism controlled and actuated by or through indicating action of said detector to automatically provide the shuttle with a fresh supply of filling on the pick on which such indicating action occurs, a second filling-fork, take-up mechanism the operation whereof is arrested by or through filling-failure indication of such fork, said forks detecting on alternate picks, and means to prevent indication of filling absence by the first-named fork on the detecting pick of the other fork.

21. In a loom, a lay, a shuttle to contain a supply of filling, replenishing mechanism, a normally inoperative actuator therefor, movable with the lay, a tilting detector to indicate failure of filling when laid toward the replenishing mechanism, said actuator being controlled and rendered operative by or through indicating action of the detector, to effect the actuation of the replenishing mechanism, by the forward beat of the lay, on the detecting pick, and means to positively tilt the detector and maintain it tilted on the return pick, to enable the said detector to clear the shuttle and also to prevent actuation of the replenishing mechanism on such return pick.

22. In a loom, a lay, a shuttle to contain a supply of filling, replenishing mechanism, a normally inoperative actuator therefor, movable with the lay, a tilting detector to indicate failure of filling when laid toward the replenishing mechanism, a controller for said actuator, locked in active position by or through the detector when filling absence is indicated thereby, to cause the actuator to effect the actuation of the replenishing mechanism as the lay beats up on the detecting pick, tilting of the detector releasing the controller and permitting it to remain inactive with respect to the actuator, and means to positively tilt the detector on the return pick of the shuttle, to clear the latter and also to prevent filling-replenishing action on such return pick.

23. In a loom, a lay, a shuttle to contain a supply of filling, replenishing mechanism, a normally inoperative actuator therefor, movable with the lay, a tilting detector to indicate failure of filling when laid toward the replenishing mechanism, a controller for said actuator, locked in active position by or through the detector when filling absence is indicated thereby, to cause the actuator to effect the actuation of the replenishing mechanism as the lay beats up on the detecting pick, tilting of the detector releasing the controller and permitting it to remain inactive with respect to the actuator, and a vibrating member acting on the non-detecting picks to tilt the detector out of the shuttle-path and move into inoperative position said controller, the said member permitting the detector to return to detecting position, and the controller into position to be locked, prior to forward movement of the lay to the detecting-point on each detecting pick.

24. In a loom, a lay, a shuttle to contain a supply of filling, replenishing mechanism, a normally inoperative actuator therefor, movable with the lay, a tilting fork to detect failure of filling when laid toward the replenishing mechanism, a fixed support on which the fork is fulcrumed, a controller for said actuator, fulcrumed on the support and locked in active position by the fork when the latter is not tilted, to cause the actuator to effect the actuation of the replenishing mechanism on the detecting pick, tilting of the fork releasing the controller and permitting it to rock freely with respect to the actuator, and means independent of the filling to tilt the fork out of the shuttle-path on the return pick of the shuttle, to also release the controller and prevent filling-replenishing action on such return pick, said means acting upon the controller thereafter to retard its return to active position until it is time for the fork to return to detecting position.

25. In a loom, a lay, a shuttle to contain a supply of filling, replenishing mechanism, a normally inoperative actuator therefor, movable with the lay, a tilting fork to detect failure of filling when laid toward the replenishing mechanism, a locking extension on the fork, a fixed support for the latter, a controller fulcrumed on the support, provided with a foot to set the actuator and with a shoulder to be engaged by the locking extension when the fork is not tilted, whereby the actuator effects the actuation of the replenishing mechanism as the lay beats up on the detecting pick, tilting of the fork unlocking the controller and permitting it to rock freely with respect to the actuator, and means to positively tilt the fork on the return pick, to thereby clear the shuttle, said means also preventing coöperation of the locking extension and the shoulder of the controller until after the shuttle has started on the next detecting pick.

26. In a loom, a lay, a shuttle to contain a supply of filling, filling-replenishing mechanism, a normally inoperative actuating-bunter therefor movable with and also relatively to the lay, a filling-fork adapted to be tilted by intact filling when laid toward the replenishing mechanism, means to operatively position the bunter by or through indication of filling failure by the fork, to actuate the replenishing mechanism on the forward beat of the lay immediately succeeding such indication, and means independent of the filling to tilt the fork on the intervening or return picks, engagement of the shuttle by the fork on a detecting pick tilting the fork and thereby causing the latter to act as a shuttle-feeler and prevent filling replenishment.

27. In a loom, a shuttle to contain a supply of filling, filling replenishing mechanism at one side of the loom, a filling-fork adapted to be tilted by intact filling when laid toward the replenishing mechanism, a support on which the fork is fulcrumed, a depending, swinging guard on the support to prevent the filling from passing under the fork, means operative by or through detection of filling failure by said fork to effect the actuation of the replenishing mechanism on the pick on which such failure is detected, and means to tilt the fork independently of the filling on the return, or non-detecting picks, to prevent actuation of the replenishing mechanism.

28. In a loom, a lay, a shuttle to contain a supply of filling, filling-replenishing mechanism at one side of the loom, an actuating-bunter therefor carried by the lay and movable relatively thereto, a tilting filling-fork to indicate the condition of filling on each pick of the shuttle toward the replenishing mechanism, means to operatively position the bunter on the forward beat of the lay upon such picks, if the fork is not tilted, to effect filling replenishment on the same pick, and a vibrating member to tilt the fork before the shuttle begins its return pick and to thereafter positively insure return of the fork to detecting position before the lay reaches the detecting-point on the next forward beat.

29. In a loom, a shuttle to contain a supply of filling, filling-replenishing mechanism at one side of the loom, a filling-fork at the same side, adapted to be tilted by intact filling on each pick of the shuttle toward the replenishing mechanism, means to positively tilt the fork on each intervening pick, and means rendered operative by or through detection of filling failure by said fork to cause the actuation of the replenishing mechanism on the pick on which failure is detected, engagement of the fork with the shuttle when improperly boxed on a detecting pick tilting the fork and thereby preventing actuation of the replenishing mechanism.

30. In an organized loom provided with filling-replenishing mechanism, in combination, two filling-forks to detect filling failure on alternate picks, take-up mechanism the operation of which is arrested by or through detection of filling failure by one of the forks, means to positively tilt the other fork on the detecting pick of the said take-up-controlling fork, and means to cause the actuation of the replenishing mechanism by or through detection of filling failure by the fork which is positively tilted on its non-detecting pick.

31. In a loom provided with filling-replenishing mechanism a filling-fork adapted to act as a shuttle-feeler to prevent replenishment of filling when the shuttle is improperly boxed.

32. In a loom provided with filling-replenishing mechanism, at one side thereof, a filling-fork to control the operation of said mechanism and located at the same side of the loom, and a stationary support on which the fork is mounted.

33. In a loom provided with filling-replenishing mechanism, at one side thereof, a filling-fork to control the operation of said mechanism, and means to tilt and maintain said fork inoperative during the pick of the shuttle from the replenishing side of the loom.

34. In a loom provided with filling-replenishing mechanism, at one side thereof, a filling-fork adjacent said mechanism, to effect actuation of the latter on the pick on which the fork detects filling failure, and means to tilt the fork positively immediately following replenishment, whereby the fresh filling is permitted to be laid under and back of the tilted fork.

846,040. CORN PICKER AND HUSKER. CHARLES PEARSON, Chicago, Ill., assignor to International Harvester Company, a Corporation of New Jersey. Filed Jan. 5, 1907. Serial No. 350,866.

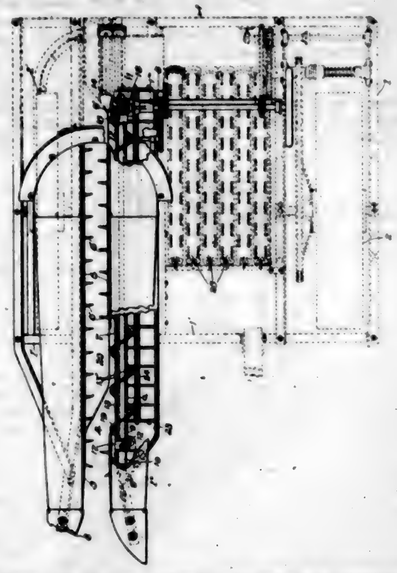

Claim.—1. In a corn picker and husker, in combination, a snapping-roll, a helical stalk-advancing screw surrounding said roll and arranged to rotate in a path beyond the periphery thereof, and a fixed abutment located adjacent to said roll and screw and in a position to coöperate therewith.

2. In a corn picker and husker, in combination, a snapping-roll, a fixed abutment arranged parallel therewith and at a slight distance therefrom, said roll and abutment thus forming a stalk passage-way, and a helical stalk-advancing screw surrounding said snapping-roll and operating to advance the stalks through said passage-way.

3. In a corn picker and husker, in combination, a snapping-roll consisting of a square shaft having two oppositely-disposed angle-bars arranged to form four radially-projecting blades, a helical stalk-advancing screw surrounding said roll and arranged to rotate in a path beyond the periphery thereof, and a fixed abutment located adjacent to said roll and screw and in a position to coöperate therewith.

4. In a corn picker and husker, in combination, a snapping-roll, a fixed abutment arranged parallel therewith and at a slight distance therefrom, said roll and abutment thus forming a stalk passage-way, and a helical stalk-advancing screw surrounding said snapping-roll and operating to advance the stalks through the passage-way, said screw being formed of a square rod, with one of the sides thereof constituting the abutment-engaging surface.

5. In a corn picker and husker, in combination, a snapping-roll, a helical stalk-advancing screw supported on and surrounding said roll and arranged to rotate oppositely with respect to the direction of rotation thereof, and a fixed abutment located adjacent to said roll and screw and in a position to coöperate therewith.

6. In a corn picker and husker, in combination, a snapping-roll comprising a square shaft having its ends round, collars fixed thereto and near the ends thereof, and oppositely and longitudinally disposed angle-bars secured to said shaft and collars and arranged to form four radially-projecting blades, a bevel-pinion fixed to the upper end of said square shaft, an opposing flanged bevel-pinion loosely mounted also on the upper end of the square shaft, a

driving-pinion meshing with the before-mentioned pinions and imparting motion thereto in opposite directions, a loose collar on the lower end of the square shaft, a helical stalk-advancing screw surrounding the snapping-roll, said screw fixed at its upper end to the said flanged bevel-pinion and below to the said loose collar, and a fixed abutment located adjacent to said roll and screw and in a position to coöperate therewith.

846,050. MINER'S SAFETY-LAMP. EMIL PIEPENBRING, Dortmund, Germany. Filed June 22, 1905. Serial No. 266,380.

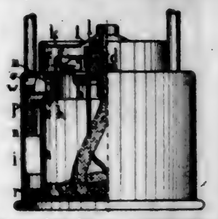

Claim.—1. In a safety-lamp, a reservoir, a main burner, an auxiliary burner and an igniter mounted upon the reservoir, combined with a casing adapted to be rotated and reciprocated on the reservoir, an ignition-strip, and means intermediate reservoir and casing for drawing said strip across the igniter, substantially as specified.

2. In a safety-lamp, a reservoir, a main burner, an auxiliary burner and an igniter mounted upon the reservoir, combined with a casing adapted to be rotated and reciprocated on the reservoir, a ring inclosed within the casing and loosely mounted upon the reservoir, an ignition-strip secured to the ring, and a friction-plate on the casing adapted to engage the ring, substantially as specified.

3. In a safety-lamp, an open reservoir, a top plate carried thereby, a main burner and an auxiliary burner secured to the plate, a ring rotatable on the reservoir, and an ignition-strip secured to the ring, combined with a casing adapted to be rotated and reciprocated on the reservoir, a perforated cover secured to the casing, a spring intermediate plate and cover, and a friction-plate on the casing adapted to engage the ring, substantially as specified.

4. In a safety-lamp, a stepped reservoir, a main burner, an auxiliary burner, an igniter and studs secured to the reservoir, a flanged rotatable ring engaging the reservoir-step, an ignition-strip secured to the ring, combined with a casing rotatable on the reservoir, a cam secured to the casing and engaged by the studs, and a friction-plate on the casing adapted to engage the ring, substantially as specified.

846,051. BOILER-CLEANER. JAMES A. RAY, Wichita, Kans. Filed May 20, 1903. Renewed Aug. 9, 1906. Serial No. 329,917.

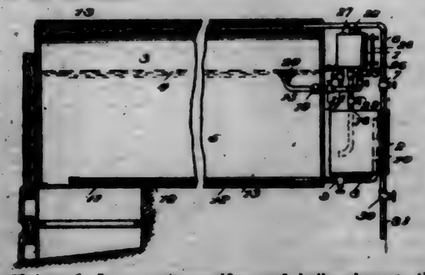

Claim.—1. In a water-purifier and boiler-cleaner, the combination, of a drum, valved pipes connecting said drum with the water-space of the boiler to effect circulation of the water from the boiler through the drum, a pipe connected with the upper portion of the boiler extending into the drum to any point, but preferably within a short distance of the center thereof and terminating in a lateral extension located in said drum, and a pipe connected with the lower portion of the boiler extending upward into the drum to within a short distance of the top thereof, substantially as set forth.

2. In an automatic water-purifier and boiler-cleaner, the combination, of a drum, valved connections between the upper and lower portions of said drum and the upper and lower portions of the water-space of the boiler or steam-generator to which the attachment may be fitted, a tank located above the drum and adapted to contain a chemical reagent, a valve connection between the upper portion of said tank and the steam-space of the boiler, and a valve connection between said tank and the pipe connecting the upper portion of the drum with the upper portion of the boiler, substantially as set forth.

3. In an automatic water-purifier and boiler-cleaner, the combination, of a drum, valved connections between the upper and lower portions of the drum and corresponding members of the water-space of the boiler, a tank located above the drum and adapted to contain a chemical reagent, a perforated pipe extended through said tank, a valved connection between the upper end of said perforated pipe and the steam-space of the boiler, and a valved connection between the lower end of said perforated pipe and the connection between the upper portions of the drum and water-space of the boiler, substantially as described.

846,052. SMOKE-CLEANER AND CINDER-CATCHER AS APPLIED TO LOCOMOTIVES. JOHN ROSSMA, Baltimore, Md., assignor, by direct and mesne assignments, to The National Smoke Cleansing Company, a Corporation of Delaware. Filed Mar. 14, 1906. Serial No. 305,953.

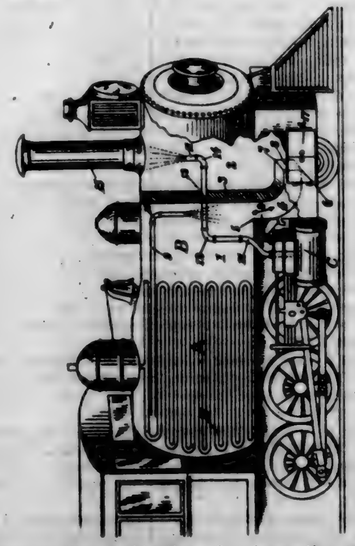

Claim.—1. The combination of a locomotive substantially as hereinbefore described comprising a boiler and a smoke-chamber, of a partition separating the chamber into two compartments and forming a flue connecting the compartments so formed, whereby the smoke upon entering the first compartment is retained therein for the purpose of being acted upon by the live steam from the jet therein contained, of a steam-pipe leading from the boiler and provided on the free end thereof with said jet and discharging live steam into the first compartment for the purpose of partially washing out the carbon and other visible matter in the smoke and for directing the smoke through the flue so formed by the partition and into the second compartment, of an exhaust-steam pipe connecting with the cylinders on the locomotive and provided with a jet on the free end thereof and discharging within the second compartment and above the point where the flue enters thereinto for the purpose of washing out the heavy carbon and other visible matter in the smoke and whereby they are precipitated into the bottom of the compartment, of a stack on the top of the chamber and opening within the second compartment through which the gases are emitted, being so directed by the steam-jet therein contained for the purpose as herein set forth.

2. The combination of a locomotive substantially as hereinbefore described, comprising a smoke-chamber, of a partition separating the chamber into two compartments and forming a flue connecting the compartments so formed whereby the smoke upon entering the first compartment is temporarily retained therein for the purpose of being acted upon by the live steam from the jet therein contained, of a steam-pipe leading from the boiler and provided on the free end thereof with said jet and discharging live steam into the first compartment for the purpose of partially washing out the carbon and other visible matter in the smoke and for directing the smoke through the flue so formed by the partition and into the second compartment, of an exhaust-steam pipe connected with the cylinders on the locomotive and provided with a jet on the free end thereof and discharging within the second compartment and above the point where the flue enters thereinto for the purpose of washing out the heavy carbon and other visible matter in the smoke and whereby the carbon and other visible matter is precipitated into the bottom of the compartment of a stack on the top of the chamber and opening within the second compartment through which the gases are emitted, of an outlet-pipe located a sufficient distance above the bottom of the first compartment for draining off the excess of water formed by the condensing of the steam therein, of doors located in the side near the bottom of the second compartment through which the debris may be removed for the purpose as herein set forth.

846,053. LINOTYPE-MACHINE. JOHN R. ROGERS, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Aug. 17, 1906. Serial No. 330,985.

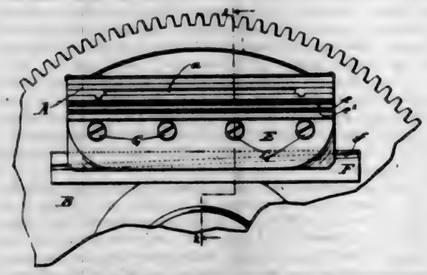

Claim.—1. In a linotype-machine, and in combination with a slotted mold, a matrix-alining plate movable toward and from the mold-slot, and means for positively moving said plate and securing it in its different positions.

2. In a linotype-machine, the combination of a slotted mold-body, a matrix-alining plate movably secured to the mold parallel with the slot, means for moving said plate toward and from the slot, and distinct means for securing the plate in any desired position.

3. In combination with a slotted mold-body, a matrix-alining plate movable toward and from the slot, and a slide having an inclined bearing-surface for the purpose of adjusting said plate.

4. In combination with a slotted mold-body, a matrix-alining plate, the adjusting-slide connected therewith by an inclined sliding joint.

5. The combination of a slotted mold-body, the matrix-alining plate E, a slide F for adjusting said plate and binding-screws, substantially as shown.

6. In a linotype-machine, the combination of a slotted mold, coöperating matrices containing each two independent characters, an alining-plate E movably attached to the mold and provided with two grooves or shoulders *e*, *e'*, means for moving the plate toward and from the slot and maintaining its parallelism therewith, and means for holding the plate in its different positions; whereby either character of the matrices may be held in different relations to the mold-slot.

846,054. LINOTYPE-MACHINE. JOHN R. ROGERS, New York, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Sept. 24, 1906. Serial No. 335,960.

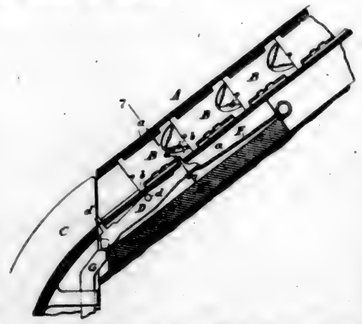

Claim.—1. In a linotype-machine, the combination of a magazine, shouldered matrices, and escapement-levers having a length between its shoulders greater than the length of the matrices.

2. In a linotype-machine, the channeled magazine, in combination with shouldered matrices, and escapement-levers each arranged to engage alternately the rear ear and the forward end of the outgoing matrix.

3. In a linotype-machine, the combination of a magazine and matrices, with escapements, each having its front and rear ends arranged to engage respectively with the front and rear ends of the outgoing matrices.

4. In a linotype-machine, the magazine having longitudinal channels to guide the matrices, and a continuous transverse slot in the under side to admit the escapements, in combination with the escapement-support seated wholly on the outside of the magazine, and the pivoted escapements having their upper ends or shoulders projected into and adapted to fill the slot in the magazine.

5. In a linotype-machine, the longitudinally-channeled magazine having a transverse slot therein, in combination with a series of pivoted one-piece escapements, each having the lower end adapted to engage the matrices at the extremity of the magazine, and the upper end adapted to enter and fit the transverse slot.

6. In a linotype-machine, an oscillating escapement arranged to engage at its front and rear ends successively with the front and rear end of each passing matrix.

7. In a linotype-machine, the combination of series of matrices and an escapement adapted to engage at its lower end with the forward end of one matrix, and at the same time extend at its opposite end beyond said matrix in position to engage a following matrix.

8. In a linotype-machine, a magazine provided with longitudinal channels of varying widths, and with a transverse slot, in combination with a series of escapement-levers of uniform width arranged to act at one end through said slot; whereby the escapements of uniform thicknesses are adapted to control matrices of different thicknesses.

9. In combination with a magazine having longitudinal

channels, and a transverse slot intersecting said channels, a series of escapement-levers of uniform thickness, and a support E with longitudinal grooves to receive the escapements; whereby the escapements are kept in proper operative relations to the longitudinal channels.

846,055. LINOTYPE-MACHINE. JOHN R. ROGERS, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Oct. 27, 1906. Serial No. 340,838.

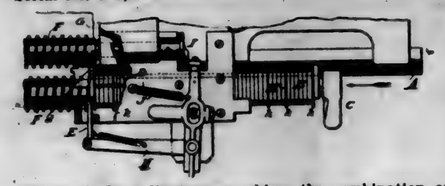

Claim.—1. In a linotype-machine, the combination of matrices, coöperating hair-spaces adapted to project beyond the matrices, and a lifting-finger having distinct shoulders to lift the matrices and the hair-spaces respectively.

2. In a linotype-machine, the combination of the matrices, the hair-spaces modified in marginal form to distinguish them from the matrices, and a separating device having distinct surfaces to engage the spaces and the matrices respectively.

3. In combination with the matrices, the lifting-finger having a shoulder to lift the matrices and hair-spaces, said finger recessed to receive the projections on the hair-spaces and limit their advance over the shoulder; whereby the hair-spaces are held in position to prevent the engagement of the shoulder with the following matrix.

4. A hair-space for use in a Mergenthaler linotype-machine, having a marginal form and size corresponding to that of the ordinary matrices, but extended at the lower end to project below the matrices.

5. A hair-space for a linotype-machine, having the usual form of linotype-matrices with ears at the upper and lower ends, and with projections *k*, *k*, extending below the lower ears.

846,056. AXLE-LUBRICATING MECHANISM. HUGH W. SANFORD, Knoxville, Tenn. Filed Jan. 3, 1907. Serial No. 350,644.

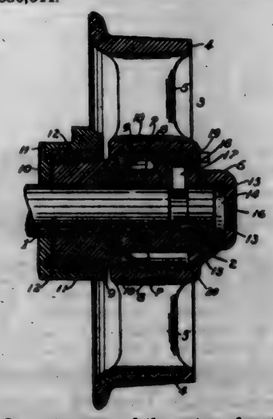

Claim.—In a structure of the nature described, an axle having an annular locking-groove and a bearing-face at each side of said groove, a wheel having a hub presenting a bearing-face to said axle at each side of said locking-groove and having between its ends a reservoir communicating with the bore of the hub rearward of said locking-groove, and said hub extending around and over the end of said axle a short distance away from said end to form a passage, 14, and having a port opening into said passage, and having a duct forming communication between said passage and said reservoir, whereby provision is made for supplying oil to the faces of the axle at each side of the locking-groove, and locking means entering said locking-groove and engaging said hub, substantially as described.

846,057. APPARATUS FOR FEEDING AND DELIVERING GLASS. JOHN SCHIBS, Anderson, Ind. Filed Mar. 19, 1906. Serial No. 306,826.

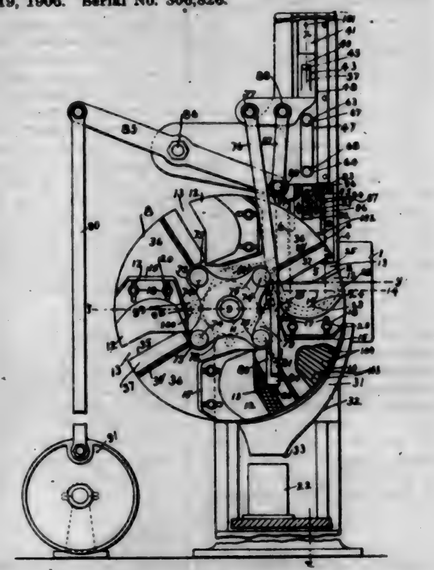

Claim.—1. In apparatus for feeding glass, the combination of a molten-glass chamber having a mouth, a molten-glass receptacle having a retaining-wall for molten glass as high as the level of glass in said chamber and a bottom extending below the level of glass in said chamber and movable downwardly from said mouth, and severing means for the molten glass.

2. In apparatus for feeding glass, the combination of a molten-glass chamber having a mouth and a molten-glass receptacle having an inclined bottom movable downwardly from said mouth, the incline of said bottom changing during said downward movement, and severing means for the molten glass.

3. In apparatus for feeding glass, the combination of a molten-glass chamber having a mouth, a molten-glass receptacle having a bottom movable downwardly from said mouth, said receptacle having an open side at which said mouth is located, and means for severing the molten glass in said receptacle from the molten glass in said chamber.

4. In apparatus of the class described, the combination with a molten-glass chamber and a movable glass-receptacle, said chamber having a mouth and said receptacle having an open side adapted to register with said mouth and a retaining-wall for the molten glass as high as the molten glass in said chamber, of a knife at said mouth forming a gate for the molten glass in said chamber, and means for intermittently moving said receptacle and knife.

5. In apparatus for feeding glass, the combination of a molten-glass chamber having a mouth, a molten-glass receptacle at said mouth into which the molten glass from said chamber flows by gravity, said receptacle having a retaining-wall for the molten glass as high as the level of glass in said chamber, said receptacle being movable with relation to said chamber, and means acting between said receptacle and chamber for severing said molten glass.

6. In apparatus for feeding glass, the combination of a molten-glass chamber having a mouth, a molten-glass receptacle for receiving the flow of molten glass from said chamber, said chamber having walls as high as the level of molten glass in said chamber for limiting said flow and means for moving said receptacle with relation to said chamber.

7. In apparatus of the class described, the combination with a molten-glass chamber, a carrier, receptacles on said carrier, said carrier having openings at said receptacles adapted to respectively register with the mouth of said chamber the respective receptacles at said mouth having retaining-walls for the molten glass as high as the level of molten glass in said chamber, and a severing device at said mouth, the advancing walls of said openings each having a cutting edge at said severing device.

8. In apparatus of the class described, the combination with a molten-glass chamber and a movable glass-receptacle, of a carrier on which said receptacle is mounted, said carrier provided with a cutting edge for severing the molten glass in said receptacle from the molten glass in said chamber, said receptacle having an inlet for the molten glass from said chamber at one face thereof and a discharge-opening for the severed glass at another face thereof, substantially as described.

9. In apparatus of the class described, the combination with a molten-glass chamber and a movable glass-receptacle, of a carrier on which said receptacle is mounted, said carrier provided with a cutting edge for severing the molten glass in said receptacle from the molten glass in said chamber, said carrier acting as a gate for the mouth of said chamber and said receptacle having an inlet for the molten glass from said chamber at one face thereof and a discharge-opening for the severed glass at another face thereof, substantially as described.

10. In apparatus of the class described, the combination of a molten-glass chamber having a mouth, a carrier, receptacles mounted on said carrier, slots in said carrier at said receptacles, said carrier provided with cutting edges at said slots for severing the molten glass in the receptacle being charged from the molten glass in said chamber, and each of said receptacles having an inlet for the molten glass from said chamber at one face thereof and a discharge-opening for the severed glass at another face thereof, substantially as described.

11. In apparatus of the class described, the combination of a molten-glass chamber having a mouth, a revoluble carrier, said carrier having slots therein and webs between said slots, molten-glass receptacles mounted on said carrier at said slots, and means for imparting intermittent revoluble motion to said carrier for causing said respective receptacles and slots to register with said mouth, said carrier provided with cutting edges at said respective slots for severing the molten glass in the receptacle being charged from the molten glass in said chamber, and said webs respectively acting as gates for said mouth.

12. In apparatus for feeding glass, the combination of a molten-glass chamber having a mouth, a molten-glass receptacle, means for severing the molten glass in said receptacle into a blank, said receptacle having an inlet for the molten glass arranged to register with said mouth at one face thereof and a discharge-opening for the severed blank at another face thereof, and means for discharging the severed blank from said receptacle with a rolling motion.

13. In a device of the character described, the combination of a molten-glass chamber having a mouth, a glass-receptacle comprising walls, one of which walls has movement with relation to the other of said walls for imparting rolling movement to the glass blank in said receptacle.

14. In a device of the character described, the combination of a molten-glass chamber having a mouth, a glass-receptacle comprising walls, one of which has movement with relation to the other for imparting rolling movement to the glass blank in said receptacle, the other of said walls having a roughened surface for aiding said movement.

15. In an apparatus of the class described, the combination with a molten-glass chamber having a mouth, a severing device at said mouth, a glass-receptacle having walls, one of said walls having movement with relation to the other, and the other of said walls provided with grooves for imparting rolling movement to the glass blank in said receptacle.

16. In apparatus for feeding glass, the combination with a molten-glass chamber having a mouth, a molten-glass receptacle and a forming device, of means for severing the molten glass in said receptacle into a blank, said receptacle having an inlet for the molten glass arranged to register with said mouth at one face thereof and a discharge-opening for the severed blank at another face thereof, and a chute between said receptacle and forming device for imparting rolling motion to said blank by surface contact of said blank with said chute, substantially as described.

17. In apparatus of the class described, the combination of a molten-glass chamber having a mouth, a revoluble carrier, said carrier having slots therein and webs between said slots, molten-glass receptacles mounted on said carrier at said slots, means for imparting intermittent revoluble motion to said carrier for causing said respective receptacles and slots to register with said mouth, said carrier provided with cutting edges at said respective slots for severing the molten glass in said respective receptacles from the molten glass in said chamber, said webs respectively acting as gates for said mouth, and a chute at said carrier for receiving the severed glass from said respective receptacles.

18. In apparatus of the class described, the combination of a molten-glass chamber having a mouth, a revoluble carrier, said carrier having slots therein and webs between said slots, molten-glass receptacles mounted on said carrier at said slots, means for imparting intermittent revoluble motion to said carrier for causing said respective receptacles and slots to register with said mouth, said carrier provided with cutting edges at said respective slots for severing the molten glass in said respective receptacles from the molten glass in said chamber, said webs respectively acting as gates for said mouth, and a slanting chute adjacent said carrier for receiving the molten glass from said respective receptacles and imparting rolling motion thereto.

19. In apparatus of the class described, the combination of a molten-glass chamber having a mouth, a revoluble carrier, said carrier having slots therein and webs between said slots, molten-glass receptacles mounted on said carrier at said slots, means for imparting intermittent revoluble motion to said carrier for causing said respective receptacles and slots to register with said mouth, said carrier provided with cutting edges at said respective slots for severing the molten glass in said respective receptacles from the molten glass in said chamber, said webs respectively acting as gates for said mouth, a forming device, and a chute at said carrier between the charged receptacle and the forming device for receiving the severed molten glass from said receptacle, and constructed and arranged for imparting rolling motion to said severed blank between said mouth and forming device.

20. In a device of the character described, the combination of a molten-glass chamber having a mouth, an open-sided glass-receptacle, the open side of said receptacle registering with said mouth for receiving glass therethrough, means for severing said received molten glass, a wall with relation to which said receptacle has movement at said open side for permitting contact by said severed glass with said wall, and means for imparting said movement.

21. In apparatus for feeding glass, the combination of a molten-glass chamber having a mouth, a molten-glass receptacle at said mouth, and severing means for said molten glass, with means for adjusting said receptacle with relation to said mouth for adjusting the receiving

capacity of said receptacle, and means for imparting movement to said receptacle with relation to said mouth.

22. In apparatus for feeding glass, the combination of a molten-glass chamber having a mouth, a movable molten-glass receptacle at said mouth, severing means for molten glass at said mouth, and means for adjusting said receptacle for varying its receiving capacity, the walls of said receptacle extending as high as the glass-level in said chamber for preventing overflow of molten glass at said receptacle.

23. In apparatus for feeding glass, the combination of a glass-receptacle, a carrier, said carrier having a slanting face along which said receptacle is adjustable and said receptacle having a sloping bottom merging into said slanting face, substantially as described.

24. In a machine of the character described, the combination with a molten-glass chamber having a mouth, an intermittently-rotating carrier having slots adapted to register with said mouth, receptacles on said carrier at said slots, severing means for molten glass at said mouth, and means for intermittently operating said severing means and carrier with relation to each other.

25. In a glass feeding and delivering machine, the combination with a chamber having a mouth extending below the glass-level in said chamber, a knife at said mouth for severing blanks of molten glass from the molten glass in said chamber and acting as a gate for the molten glass in said chamber, an intermittently-rotating carrier, receptacles thereon, said carrier having openings therein at said receptacles registering with said mouth at the positions of rest of said carrier, said carrier arranged up and down for having movement in front of said mouth, and means operating said severing means and carrier intermittently.

26. In a glass feeding and delivering machine, the combination with a molten-glass chamber, a housing in front of the same and having a mouth extending below the level of glass in said chamber, a knife having sliding connection with said housing and acting as a gate for the molten glass in said chamber, an intermittently-rotating carrier having substantially horisontal rotary axis, receptacles for molten glass on said carrier arranged to be brought intermittently to positions of rest in front of said mouth for receiving the molten glass from said chamber, and means for intermittently rotating said carrier for discharging the severed glass from said respective receptacles.

27. In a glass feeding and delivering machine, the combination with a molten-glass chamber, a housing in front of the same and having a mouth extending below the level of glass in said chamber, a knife having sliding connection with said housing and acting as a gate for the molten glass in said chamber, an intermittently-rotating carrier having substantially horisontal rotary axis, receptacles for molten glass on said carrier arranged to be intermittently brought to positions of rest in front of said mouth for receiving the molten glass from said chamber, and means for intermittently rotating said carrier for discharging severed glass from said respective receptacles, said housing having a facing forming a side for said discharging-receptacle.

28. In a glass feeding and delivering machine, the combination with a molten-glass chamber, a housing in front of the same and having a mouth extending below the level of glass in said chamber, a knife having sliding connection with said housing and acting as a gate for the molten glass in said chamber, an intermittently-rotating carrier having substantially horisontal rotary axis, receptacles for molten glass on said carrier arranged to be intermittently brought to positions of rest in front of said mouth for being charged with the molten glass from said chamber, and means for intermittently rotating said carrier for discharging severed glass from said charged receptacle, said housing having a ribbed facing forming a wall for said charged receptacle with relation to which the receptacle on said carrier has movement for imparting rolling motion to said charged glass.

29. In a glass feeding and delivering machine, the combination of a molten-glass chamber, a housing having a mouth, a knife having reciprocation in said housing and forming a gate for said mouth, a knife-bar for the latter, a slide on said housing, receding wipers and contacts therefor between said knife-bar and slide, and means for reciprocating said slide.

30. In a glass feeding and delivering machine, the combination of a molten-glass chamber, a housing having a mouth, a knife having reciprocation in said housing and forming a gate for said mouth, a knife-bar for the latter, a slide on said housing, receding wipers and contacts therefor between said knife-bar and slide, means for reciprocating said slide, a rotary carrier, receptacles thereon adapted to intermittently register with said mouth for receiving the molten glass from said mouth, said carrier having connection with said slide for intermittently and successively operating said knife and carrier.

31. The method or process of preparing molten glass for forming mechanism which consists in discharging the molten glass from a molten-glass chamber into a receptacle in which the molten glass is permitted to attain a level substantially coincident with the level of the molten glass in said chamber, severing said discharged molten glass, and then ejecting said severed glass from said receptacle.

32. The method or process of preparing molten glass for forming mechanism which consists in discharging the molten glass from a molten-glass chamber into a receptacle in which the molten glass is permitted to attain a level substantially coincident with the level of the molten glass in said chamber, severing the molten glass in said receptacle from the molten glass in said chamber, and discharging said molten glass from said receptacle with a rolling motion.

33. The method or process of preparing molten glass for shaping mechanism which consists in discharging the molten glass from a molten-glass chamber into a receptacle and ejecting said discharged glass with a rolling motion while passing to said shaping mechanism.

34. The method or process of preparing molten glass for shaping mechanism which consists in discharging the molten glass from a molten-glass chamber and severing such discharged glass in the form of a blank and subjecting such blank to rolling motion by surface contact in its passage to the shaping mechanism.

35. The method or process of preparing molten glass for shaping mechanism which consists in discharging the molten glass from a molten-glass chamber into a receptacle, severing said discharged glass in the form of a blank, and rolling said blank by the movement of said receptacle preparatory to its discharge therefrom into the shaping mechanism.

36. In a glass feeding and delivering machine, the combination of a molten-glass chamber having a mouth, a receptacle into which molten glass is adapted to discharge, means for severing the discharged molten glass into a blank, said receptacle having a slanting bottom and means for shifting said receptacle to change said slant of said bottom for discharging said blank.

846,058. COMB. CHARLES SCHMIDT, New York, N. Y., assignor of one-half to Joseph C. Hoffmann, Brooklyn, N. Y. Filed July 21, 1906. Serial No. 327,209.

Claim.—1. A comb for ladies' hair, comprising a main portion having teeth and a locking-plate also having teeth curved or bent around so as to point reversely, means for engaging said plate slidably upon the main portion in a direction longitudinal of the teeth thereof so that the teeth of the plate pass upward between the teeth of the main portion to engage the hair of the wearer, and means for locking the plate in such relation after a predetermined amount of such upward slidable movement.

2. A comb for ladies' hair, comprising a main portion having teeth and a back with lateral extensions, and locking-plate having teeth curved around so as to point reversely and having ears which slide upwardly on said extensions, so that the teeth of the plate enter between the teeth of the main portion to engage the hair of the wearer.

3. A comb for ladies' hair, comprising a main portion having teeth and a locking-plate having teeth bent around to point reversely and adapted to pass between the teeth of the comb, said plate having ears bent around to engage the main portion, and having means coöperating with the main portion to hold the locking-plate in position.

4. In combination, a comb for ladies' hair, having a pair of extensions thereon, the lower edges of said extensions being beveled, and a locking-plate having ears adapted to engage said beveled extensions and having prongs adapted to enter between the teeth of the comb.

5. In combination, a comb for ladies' hair, having a pair of extensions thereon, the lower edges of said extensions being beveled, and a locking-plate having bent-over ears to engage said extensions and having prongs to enter between the teeth of said comb, said locking-plate having protuberances thereon adapted to be received in corresponding recesses of the comb.

846,059. AUTOMATIC RELIEF AND BACK-PRESSURE VALVE. JOHN V. SCHMID, Philadelphia, Pa. Filed Sept. 17, 1906. Serial No. 334,991.

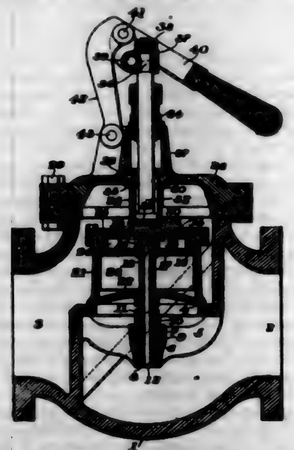

Claim.—1. In a valve, a valve-casing having an inlet and an outlet chamber, a valve-seat in said casing, a piston-support, a piston carried thereby, and a hollow valve surrounding said piston and guided on said support, said piston dividing said valve into a plurality of closed chambers.

2. In a valve, a valve-casing having an inlet and an outlet chamber, a valve-seat in said casing, a piston-support, a piston carried thereby, and a hollow valve surrounding said piston and guided on said support, said piston dividing said valve into a plurality of closed chambers and the upper end of said support terminating within said valve.

3. In a valve, a valve-casing having an inlet and an outlet chamber, a valve-seat in said casing, a piston-support, a piston carried thereby a hollow valve surrounding said piston and guided on said support, said piston dividing said valve into a plurality of closed chambers and having a passage leading from the inlet-chamber to one of said valve-chamber.

4. In a valve, a valve-casing having an inlet and an outlet chamber, a valve-seat having a spider, a combined stop-piston and guide support carried by said spider, a piston fixed on said support, and a combined hollow valve and double dash-pot surrounding said piston and guided by said support, said support having a passage extending from the inlet-chamber into said hollow valve.

5. In a valve, a casing having an inlet and an outlet chamber, a valve-seat having a spider in said casing, a piston-support carried by said spider, a piston fixed on said support, a hollow main valve surrounding said piston and mounted on said support, said piston dividing said main valve into two closed chambers, said support having a passage leading from the inlet-chamber to one of said valve-chambers, and a check-valve in said passage.

6. In a valve, a casing having an inlet and an outlet chamber, a valve-seat having a spider carried thereby in said casing, a piston-support carried by said spider, a piston secured at the upper end of said support, a hollow main valve surrounding said piston and engaging said support, said piston dividing said main valve into two closed chambers, said support, having a passage therethrough communicating with the inlet-chamber and one of said valve-chambers, a check-valve in said passage, and means for manually actuating said main valve.

7. In a valve, a casing having an inlet and an outlet chamber, a valve-seat having a spider in said casing, a support carried by said spider, a piston removably secured to said support, a hollow main valve engaging said support and in which said piston is mounted, said casing having a removable side having a chamber therein, said main valve having an extension engaging said chamber, said piston dividing said main valve into two closed chambers, said support having a passage leading from the inlet-chamber to one of said valve-chambers, and means engaging said piston for manually actuating said valve.

8. In a valve, a casing having an inlet and an outlet chamber, a valve-seat having a spider in said casing, a support carried by said spider, a piston removably secured to said support, a hollow main valve engaging said support and in which said piston is mounted, said casing having a removable side having a chamber therein, said main valve having an extension engaging said chamber, said piston dividing said main valve into two closed chambers, said support having a passage leading from the inlet-chamber to one of said valve-chambers, and means for engaging said extension for manually actuating said valve, said means being adapted to permit said valve to be automatically actuated.

9. In a valve, a casing having an inlet and an outlet chamber, a valve-seat having a spider within said casing, a support carried by said spider, a piston carried by said support, a hollow valve surrounding said piston and engaging said support, said piston dividing said valve into two closed chambers, said support having a passage therethrough leading from the inlet-chamber to the upper of said valve-chambers, and a check-valve in said passage at the upper end thereof.

10. In a valve, a casing having an inlet and an outlet chamber, a valve-seat having a spider in said casing, a support carried by said spider, a sleeve-lining removably mounted on said support, a piston fixed on said support, a hollow main valve surrounding said piston and engaging said lining, said piston dividing said valve into two closed chambers, said support having a passage therethrough leading from the inlet-chamber to the upper of said valve-chambers, and a check-valve in said passage.

11. In a valve, a casing having an inlet and an outlet chamber, a valve-seat having a spider in said casing, a support carried by said spider, a piston having annular grooves therein engaging said support, a hollow main valve in which said piston is mounted and engaging said support, said piston dividing said main valve into two closed chambers, said support having a passage therethrough leading from the inlet-chamber to one of said valve-chambers, means for admitting fluid-pressure to said passage, said support having a passage opening into the other of said chambers, and means for admitting motive fluid thereto.

12. In a valve, a casing having an inlet and an outlet

chamber, a valve-seat having a spider in said casing, a support carried by said spider, a piston removably carried by said support, a hollow main valve surrounding said piston and engaging said support and divided by said piston into two closed valve-chambers, said support having a passage leading from the inlet-chamber to the upper of said valve-chambers, a check-valve in said passage, and means intermediate said check-valve and said main valve for admitting fluid-pressure to the latter.

13. In a valve, a casing having an inlet and an outlet chamber, a valve-seat having a spider in said casing, a support carried by said spider, a piston removably secured to said support, a hollow main valve engaging said support and surrounding said piston and divided thereby into two valve-chambers, said support having a passage leading from the inlet-chamber to one of said valve-chambers, a check-valve in said passage, means for admitting fluid-pressure to said passage, said support having a second passage therethrough leading to the other of said valve-chambers, and means for controlling the passage of fluid-pressure thereto.

14. In a valve, a casing having an inlet and an outlet chamber, a valve-seat having a spider in said casing, a support carried by said spider, a piston removably carried by said support, a hollow valve surrounding said piston and engaging said support, said piston dividing said valve into a plurality of chambers, said support having a passage therethrough leading from said inlet-chamber to the upper of said valve-chambers, a check-valve in said passage, a pipe leading from a fluid-supply to said passage, said support having a passage opening into the lower of said chambers, and a pipe leading from a fluid-supply communicating with said passage.

15. In a valve, a valve-casing having an inlet and an outlet chamber, a valve-seat having a spider, a piston-support carried by said spider, a piston fixed on said support, and a combined hollow valve a double dash-pot surrounding said piston and guided by said support, said piston serving as a stop for said valve in both directions.

16. In a valve, a valve-casing having an inlet and an outlet chamber, a valve-seat having a spider, a piston-support carried by said spider, a piston fixed on said support, and a hollow valve surrounding said piston and guided by said support, said support having a passage extending from the inlet-chamber into said hollow valve, said piston serving as a stop for said valve, in both directions.

17. In an automatic valve, a casing having an inlet and outlet chamber, a combined stop, guide, and piston-support, a piston thereon, and a combined hollow valve-disk and double dash-pot guided on said support, the lower end of said hollow valve-disk and double dash-pot engaging said piston when said valve-disk and double dash-pot reaches its maximum stroke.

18. In an automatic valve, a casing having an inlet and outlet chamber and a valve-seat, a combined stop, guide, and piston-support, a piston carried thereby, and a combined hollow valve-disk and double dash-pot surrounding said piston and guided on said support, said piston dividing said combined hollow valve-disk and double dash-pot into a plurality of chambers, the size of which vary when the valve is automatically actuated.

19. In an automatic valve, a casing having an inlet and outlet chamber, a valve-seat having a spider supported below said seat, a combined stop, guide, and piston-support carried by said spider, a piston removably secured to said support, a combined hollow valve-disk and double dash-pot engaging said combined stop, guide and piston-support and in which said piston is mounted, said casing having a removable side having a chamber therein, said combined valve-disk and double dash-pot having a piston engaging said chamber, said piston dividing said dash-pot into two chambers, said support having a passage leading from the inlet-chamber to the upper chamber of said dash-pot, and means for manually actuating said valve-disk.

20. In an automatic valve, a casing having an inlet and outlet chamber, a valve-seat having a spider, a combined stop, guide, and piston-support carried by said spider, a piston removably secured to said support, a combined hollow valve-disk and double dash-pot engaging said support and in which said piston is mounted, said casing having a removable side having a chamber therein, said combined valve and double dash-pot having a piston engaging said chamber, said piston dividing said dash-pot into two chambers, said support having a passage leading from the inlet-chamber to the upper chamber of the dash-pot, and means engaging said piston for manually actuating said valve and dash-pot, said means being adapted to permit said valve to be automatically actuated.

21. In an automatic valve, a casing having an inlet and outlet chamber, a valve-seat having a spider, a combined stop, guide, and piston-support carried by said spider, a piston carried by said support, a combined hollow valve-disk and double dash-pot surrounding said piston and engaging said support, said piston dividing said dash-pot into two chambers, said support having a passage therethrough leading from the inlet-chamber to the upper chamber of said dash-pot, and an automatic check-valve in said passage at the upper end thereof.

22. In an automatic valve, a casing having an inlet and outlet chamber, a valve-seat having a spider, a combined stop, guide, and piston-support carried by said spider, a sleeve removably mounted on said support, a piston fixed on said support, a combined hollow valve-disk and double dash-pot surrounding said piston and engaging said sleeve, said piston dividing said dash-pot into two chambers, said spider being supported from below said valve-seat, said support having a passage therethrough leading from the inlet-chamber to the upper chamber of said double dash-pot, and an automatic check-valve in said passage.

23. In an automatic and fluid-pressure-actuated valve, a casing having an inlet and outlet chamber, a valve-seat having a spider supported from below said seat, a combined stop, guide, and piston-support carried by said spider, said piston having annular grooves therein, a combined hollow valve-disk and double dash-pot engaging said support and surrounding said piston, said piston dividing said dash-pot into two chambers, said support having a passage therethrough leading from the inlet-chamber to the upper chamber of said dash-pot, means for admitting fluid-pressure to said passage, said support having a passage opening into the lower chamber of said dash-pot, and means for admitting fluid-pressure thereto.

24. In an automatic and fluid-pressure-operated valve, a casing having an inlet and outlet chamber, a valve-seat having a spider supported from below the valve-seat, a combined stop, guide, and piston-support carried by said spider, a piston removably carried by said support, a combined hollow valve-disk and double dash-pot surrounding said piston and engaging said support, said piston dividing said dash-pot into two chambers, said support having a passage leading from the inlet-chamber to the upper chamber of said dash-pot, an automatic check-valve in said passage, and means intermediate said check-valve and the upper chamber of said dash-pot for admitting fluid-pressure to said passage.

25. In an automatic and fluid-pressure-operated valve, a casing having an inlet and outlet chamber, a valve-seat having a spider supported from below said seat, a combined stop, guide, and piston-support carried by said spider, a piston removably secured to said support, a combined hollow valve-disk and double dash-pot engaging said support and surrounding said piston, said piston dividing said dash-pot into two chambers, said support having a passage leading from the inlet-chamber to the upper chamber of the dash-pot, an automatic check-valve in said passage, means for admitting fluid-pressure to said passage, said support having a second passage therethrough leading to the lower chamber of said dash-pot, and means for controlling the passage of fluid-pressure thereto.

26. In an automatic and fluid-pressure-operated valve, a casing having an inlet and outlet chamber, a valve-seat having a spider supported below said seat, a combined stop, guide, and piston-support carried by said spider, a piston removably carried by said support, a combined hollow valve-disk and double dash-pot surrounding said piston and engaging said support, said piston dividing said dash-pot into a plurality of chambers, said support having a passage therethrough leading from said inlet-chamber to the upper chamber of said dash-pot, an automatic check-valve in said passage, a conduit leading from a fluid-supply to said passage, said support having a passage leading from said inlet-chamber into the lower chamber of said dash-pot, and a conduit leading from the fluid-supply communicating with said second passage.

846,060. SEPARATOR. OTTO SELG, New York, N. Y. Filed Sept. 24, 1906. Serial No. 336,031.

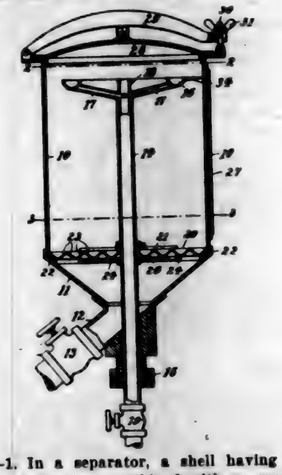

Claim.—1. In a separator, a shell having a tapering base and a stuffing-box, combined with an open false bottom, an inlet-pipe entering the base below said bottom, and a vertically-movable outlet-pipe extending through the vessel and engaging the stuffing-box, substantially as specified.

2. A separator provided with a bottom having a series of sloping ridges, and openings in the furrows between said ridges, substantially as specified.

3. In a separator, a shell, combined with an inclosed false bottom having a series of sloping ridges and intervening openings, and with an inlet below said bottom and an outlet above said bottom, substantially as specified.

4. In a separator, a shell having a tapering base, combined with a false bottom having sloping ridges and intervening openings, an inlet-pipe below said bottom, and a vertically-movable outlet-pipe extending above said bottom, substantially as specified.

5. In a separator, a shell, combined with an inclosed false bottom having a series of ridges and intervening openings, an inlet below said bottom, an adjustable outlet-pipe extending above said bottom, and a trough connected to the upper end of said pipe, substantially as specified.

846,061. HANDSAW ATTACHMENT. WALTER C. SENNETT, Portland, Me. Filed Dec. 18, 1906. Serial No. 348,437.

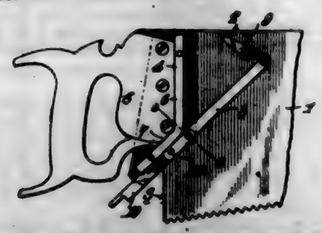

Claim.—1. A handsaw attachment comprising an abutment fixed to the saw-blade and having sections disposed at an angle to each other, a pivoted member connected with the saw-blade at a point opposite the point of merger of said sections and having portions adapted to abut against either of said sections and a catch pivotally connected to the upper end of said pivoted member and adapted to engage the upper end of said abutment.

2. A saw attachment comprising an abutment fixed to the side of the saw-blade and having sections extending at an angle to each other, a pivoted member connected with the saw-blade at a point opposite the point of merger of said sections and having portions adapted to engage either of said sections, a bar pivoted to said pivoted member and adapted to be folded against the same or swung into alinement with the same.

846,062. SWITCH-STAND. FRED W. SNOW, Hillburn, N. Y., assignor to Standard Equipment Company, Mahwah, N. J., a Corporation of New Jersey. Filed Nov. 10, 1906. Serial No. 342,809.

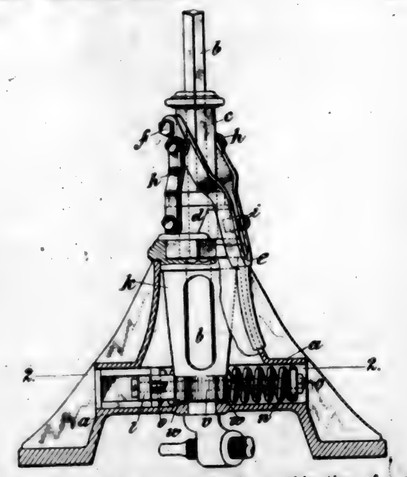

Claim.—1. In a switch-stand, the combination of a rotatable shaft, a bar yielding at both ends and acting against the shaft, and rotatable means upon the bar operating between the bar and shaft and adapted to hold the shaft stationary.

2. In a switch-stand, the combination of a rotatable shaft, a bar yieldingly held at each end and acting against the shaft, and a rotatable member on the bar operating between the bar and shaft.

3. In a switch-stand, the combination of a rotatable shaft, a bar-spring actuated at each end and acting against the shaft, and a rotatable member on the bar operating between the bar and shaft.

4. In a switch-stand, the combination of a rotatable shaft, a bar yielding at each end, a rotatable member, and means on the shaft to embrace said member.

5. In a switch-stand, the combination of a rotatable shaft, a yielding bar having a projecting curved rotating member central thereon and embraced by the shaft.

6. In a switch-stand, the combination of a rotatable shaft, a yielding bar having a projecting curved rotating member, a spring at each end of the bar to press the member against the shaft, and means on the shaft to embrace said member.

7. In a switch-stand, the combination of a rotatable shaft, a bar yielding at both ends, and a rotatable member upon the bar adapted to hold the shaft stationary and reduce friction when the shaft moves.

8. In a switch-stand, the combination of a rotatable shaft, a bar yielding at both ends, and a roller journaled centrally upon the bar and adapted to hold the shaft stationary and to reduce friction when the shaft moves.

9. In a switch-stand, the combination of a rotatable shaft, a bar-spring actuated at each end, a roller journaled centrally upon the bar and yieldingly held against the shaft by the springs and adapted to hold the shaft stationary and to reduce friction when the shaft moves.

10. In a switch-stand, the combination of a rotatable shaft, a bar, a roller central upon the bar, and a spring at each end of the bar to press the roller against the shaft.

11. In a switch-stand, the combination of a rotatable shaft, a block thereon having a recess, a bar yielding at both ends, and a roller central upon the bar adapted to engage in the recess to hold the shaft stationary and to reduce the friction when the shaft rotates.

12. In a switch-stand, the combination of a rotatable shaft, a block thereon having four recesses, a bar yielding at both ends, a roller central upon the bar and adapted to engage the recesses one at a time to hold the shaft stationary and to reduce friction when the shaft rotates.

13. In a switch-stand, the combination of a rotatable shaft, a block thereon having a recess, and bar, a roller upon the bar, and means at each end of the bar to hold the roller yieldingly against the block.

14. In a switch-stand, the combination of a rotatable shaft, a block thereon having a recess, a bar, a roller central upon the bar, and a spring at each end of the bar to press the roller against the block.

15. In a switch-stand, the combination of means for operatively connecting the stand with the switch, a block thereon adapted to rotate in the stand, means to lock the first-named means and block together, a bar yielding at both ends, and a rotatable member upon the bar and adapted to hold the block stationary and to reduce friction when the block moves.

16. In a switch-stand, the combination of means for operatively connecting the stand with the switch, a block thereon having a recess and rotatable in the stand, means to lock the first-named means and block together, a bar having a spring at each end, a roller central upon the bar, said roller normally resting in the recess to hold the block stationary.

17. In a switch-stand, the combination of a bar-spring actuated at both ends, operative connections for a switch, a rotatable member upon the bar interposed between said bar and operative connections, and means to move the switch through said operative connections whereby the switch may be moved by and through said means and operative connections or automatically through said operative connections and rotatable member.

846,063. SWITCH-STAND. FRED W. SNOW, Hillburn, N. J., assignor to Standard Equipment Company, Mahwah, N. J., a Corporation of New Jersey. Filed Nov. 10, 1906. Serial No. 342,810.

Claim.—1. In a switch-stand, the combination of connecting means for operatively connecting a switch thereto, resisting means to oppose the movement of the connecting means, and friction-reducing means embracing the resisting means.

2. In a switch-stand, the combination of a rotatable means, connecting means for operatively connecting the rotating means with the switch, resisting means to oppose the rotation of the rotating means, means upon the rotating means embracing the resisting means and including friction-reducing means.

3. In a switch-stand, the combination of a rotatable shaft, a bar having a projection to resist the rotation of the shaft, and means on the shaft embracing the projection and coöperating with the projection to resist the rotation of the shaft and to reduce friction when the shaft rotates.

4. In a switch-stand, the combination of a rotatable shaft, a projection to resist the rotation of the shaft, and means on the shaft embracing the projection and including friction-reducing members on each side of the projection.

5. In a switch-stand, the combination of a rotatable shaft, and means to oppose the rotation of the shaft including a bar having a projection, means embracing the projection and rollers mounted upon the last-named means on each side of the projection.

6. In a switch-stand, the combination of a rotatable shaft, a block upon said shaft, a spring-actuated projection coöperating the said block to resist the rotation of the shaft, and rollers upon the block upon each side of the projection.

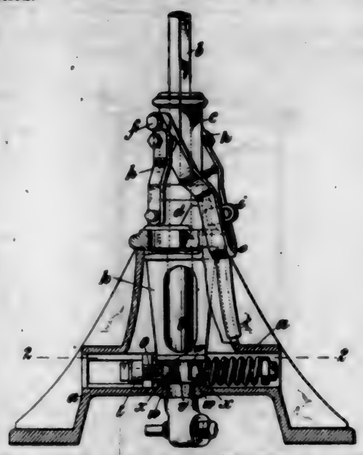

7. In a switch-stand, the combination of a rotatable shaft, a spring-actuated projection, a block having four recesses and four projections, and a roller upon the block at each projection, each recess being adapted to fit substantially the projection.

846,064. COMBINATION BILL-HEAD, DUPLICATE, LABEL, RECEIPT, AND ENVELOP. JOHN SOUDER, Philadelphia, Pa. Filed Sept. 20, 1906. Serial No. 335,452.

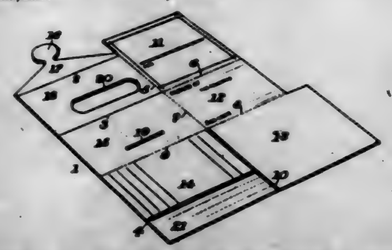

Claim.—1. A device of the character described, comprising in a single sheet an envelop, a bill-head attached thereto, a duplicate slip adjacent to and disconnected from the bill-head, and a label connected to the envelop and foldable in relation to said duplicate.

2. A device of the character described, comprising in a single sheet an envelop, a bill-head attached thereto, a duplicate slip adjacent to and disconnected from the bill-head, a label connected to the envelop and foldable in relation to said duplicate, and a receipt-slip adjacent the duplicate slip.

3. A device of the character described, comprising in a single sheet an envelop, a bill-head attached thereto, a duplicate slip adjacent to and disconnected from the bill-head, and a label connected to the envelop and foldable in relation to said duplicate, said envelop being provided with a panel through which the address on the bill-head is visible when the device is folded.

4. A device of the character described, comprising in a single sheet an envelop, a bill-head attached thereto, a duplicate slip adjacent to and disconnected from the bill-head, a label connected to the envelop and foldable in relation to said duplicate, and a receipt-slip adjacent the duplicate slip, said label and receipt being of less width than the bill-head.

5. A device of the character described, comprising in a single sheet an envelop, a bill-head attached thereto, a duplicate slip adjacent to and disconnected from the bill-head, a label connected to the envelop and foldable in relation to said duplicate, and a receipt-slip adjacent the duplicate slip, said label and receipt being of less width than the bill-head.

6. A device of the character described, comprising in a single sheet an envelop, a bill-head attached thereto, a duplicate slip adjacent to and disconnected from the bill-head, a label connected to the envelop and foldable in relation to said duplicate, a receipt-slip adjacent the duplicate slip, said label and receipt being of less width than the bill-head, and an address portion foldably united to the end of the bill-head.

7. A device of the character described, comprising in a single sheet, an envelop and a bill-head attached thereto at the bottom thereof and of less length than the width of the two sides of the envelop, said envelop being provided with a panel through which the address on the bill-head is visible when the device is folded.

8. A device of the character described, comprising in a single sheet, an envelop, a bill-head attached thereto, said envelop being provided with a panel through which the address of the bill-head is visible when the device is folded, and a label separate from said bill-head attached to said envelop.

9. A device of the character described, comprising in a single sheet, an envelop, a bill-head attached thereto, said envelop being provided with a panel through which the address on the bill-head is visible when the device is folded, and a receipt-slip separate from said bill-head attached to said envelop.

10. A device of the character described, comprising in a single sheet, an envelop, a bill-head secured thereto, and a duplicate slip separate from said bill-head secured to said envelop adjacent said bill-head, said envelop being provided with a panel through which the address on the bill-head is visible when the device is closed.

846,065. TRIMMING DEVICE FOR SEWING-MACHINES. WILLIAM H. STEDMAN, Hartford, Conn., assignor to The Merrow Machine Company, Hartford, Conn., a Corporation of Connecticut. Filed May 15, 1902. Serial No. 107,508.

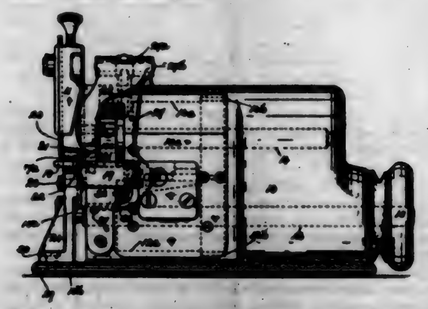

Claim.—1. The combination with a sewing-machine embodying a frame constituting a casing for the driving mechanism, a needle-plate at one end of the casing a stitch-forming mechanism embodying a needle-carrier, connections between the needle-carrier and driving mechanism located at the end of the casing, a trimmer-carrying arm pivotally mounted on the frame in rear of the casing and at one side of the line of work-feed, said arm being curved up over the casing and stitch forming and driving mechanisms, a trimmer carried by the forward end of the arm and a connection between the arm and driving mechanism passing in through the top of the casing; substantially as described.

2. In a sewing-machine, the combination with the frame constituting a casing, a needle-plate at one end of the casing, a drive-shaft journaled in the casing and projecting at one end from the casing above the level of the needle-plate, a trimmer-carrier pivoted to the casing at approximately the level of the needle-plate and extending over the drive-shaft into proximity to the needle-plate, a trimmer on said carrier, a stitch-forming mechanism embodying a needle-carrier and upwardly and downwardly extending driving connections between the shaft and trimmer and needle carriers respectively.

846,066. IRONING DEVICE. MONROE SUNSHINE, New York, N. Y. Filed Oct. 30, 1906. Serial No. 341,256.

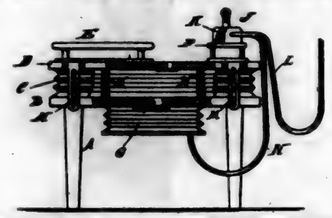

Claim.—1. The combination with an ironing-table, of an air-compressor, an ironing-buck and means for operating the air-compressor from said buck, and a conductor connecting the air-compressor with a gas-heated sad-iron, substantially as set forth.

2. The combination with an ironing-table, of an air-compressor, an ironing-buck, a sad-iron support and means for operating the air-compressor from the buck and from the sad-iron support, and a conductor connecting the air-compressor with a gas-heated sad-iron, substantially as set forth.

3. The combination with an ironing-table, of an air-compressor, an ironing-buck, means for operating the air-compressor from said buck, a sad-iron support, means for operating the compressor from said support, of a compressed-air reservoir connected with the air-compressor, and a flexible conductor connecting the reservoir and a gas-heated sad-iron, substantially as set forth.

846,067. METALLIC FEED-BOX. HARRY M. THAYER, Woodhull, Ill. Filed June 15, 1906. Serial No. 321,944.

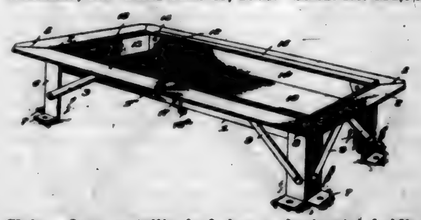

Claim.—In a metallic feed-box, a horizontal holding-frame consisting of angled side and end bars meeting in flush joints at the ends of the frame, angled corner-legs arranged to constitute a joint-coupling for the meeting ends of said side and end bars, a tiltable metallic trough pivotally hung at its ends within the holding-frame and consisting of a single blank of sheet metal struck up to produce side and end walls, the latter of which are provided at their extremities with inturned corner-flaps overlapping and secured to the adjacent side walls, one of the side walls of the trough being provided at its upper edge with an outstanding stop-flange, and an automatic catch fitted to one of the side bars of the holding-frame and arranged to engage a bottom corner of the trough.

846,068. ACOUSTICON. KELLEY M. TURNER, New York, and NORTON W. JOHNSTON, Chappaqua, N. Y., assignors, by mesne assignments, to General Acoustic Company, a Corporation of New York. Filed Aug. 25, 1905. Serial No. 275,762.

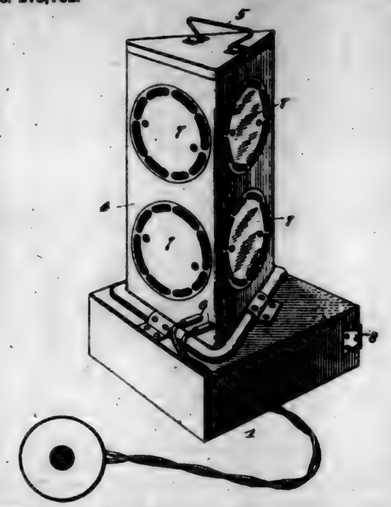

Claim.—In a telephonic transmitting apparatus, a base or box adapted to contain an electric battery, a prismatic structure erected upon and supported by said base or box, said structure having an equilateral triangular form with three symmetrical faces, a transmitter inset into each of said faces, and electrical connections including said battery and said transmitters adapted to be connected to a suitable receiver.

846,069. REVOLVING DOOR STRUCTURE. BURNS H. UHRICH, Atchison, Kans. Filed Oct. 21, 1905. Serial No. 283,864.

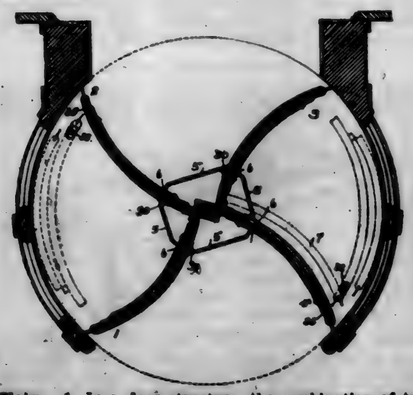

Claim.—1. In a door structure, the combination of two separable sections, each section comprising a pair of wings capable of being brought into substantial parallelism, a casing having concaved walls, said wings being substantially of the same curvature as the casing-walls, and being constructed and arranged to be moved aside when separated into positions substantially parallel with the walls of the casing.

2. In a door structure, a casing having concaved walls, a rotary door comprising wings foldable on each other and having substantially the same curvature as the walls of the casing, and means for permitting said wings to be moved into parallelism with the curve of the casing-wall.

3. In a door structure, the combination of two separable sections, each section comprising a pair of foldable wings and a casing having concaved walls, said wings being substantially of the same curvature as the casing-walls and the sections constructed and adapted to be swung aside when separated into positions substantially parallel with the walls of the casing.

4. In a door structure, the combination of two separable sections, each section comprising a pair of foldable wings and a casing having concaved walls, said wings being substantially of the same curvature as the walls of the casing and the sections constructed and adapted to be swung aside into positions substantially parallel with the walls of the casing when separated, a rotatable support and means for locking one at least of said sections to said rotatable support.

5. In a door structure, the combination of two separable sections, each section comprising a pair of foldable wings which fold against each other from a point at or near the center of the door structure and a casing, a central rotatable bearing, means for locking one at least of said sections to said bearing and said sections provided with means at or near their outer edges upon which they are capable of swinging as centers when the sections are separated.

6. In a door structure, the combination of two separable sections, each section comprising a pair of foldable wings which fold against each other from a point at or near the center of the door structure and a casing, a central rotatable bearing, means for locking said sections together and one at least of them to the rotatable bearing, projectable means at the outer edges of said sections at the top and bottom of the sections upon which the latter are capable of being swung as centers when the sections are separated, and fixed sockets in position to receive the projectable means.

7. In a door structure, the combination of two separable sections, each section comprising a pair of foldable wings and a casing having concaved walls, a central rotatable bearing, means for locking said sections together and one at least of them to the rotatable bearing, said wings being substantially of the same curvature as the casing-walls and the sections constructed and adapted to be swung into positions substantially parallel with the walls, and projectable means at the outer edges of the sections upon which the sections are capable of being turned as centers when separated.

8. A door structure comprising two sections, each section comprising two radial wings hinged together, the inner edges of the sections detachably connected together at the center, the entire structure normally supported by a central pivot from which it is detachable and means located at the outer edge of each section which are made the sole pivotal support of said sections when the latter are separated and swung out of the passage-way.

9. In a door structure, the combination of separable sections, each of which comprises a pair of wings hinged together and foldable against each other from a point at or near the center of the door structure, means for locking said sections together, means for locking one of the sections to a central rotatable support and pivots at the outer edges of each of said sections upon which the sections are capable of being swung when separated from each other.

10. In a door structure, the combination of separable sections, each of which comprises two wings hinged together, means for locking said sections together, a central rotatable support, means for locking one of said sections to said support, pivots at the outer edges of said sections whereon the latter are swung as pivots when separated from each other, said wings being of curved form approximately corresponding with the wall of the casing, thereby increasing the free space within the casing when the sections are folded.

11. In a door structure, the combination of sections, each section comprising two foldable wings, hinged to each other at or near the center of the door structure, a hanger on which said sections are detachably suspended at the center of the door structure, a rock-shaft having a crank-arm for locking one of said sections to said hanger, a bottom pivot in alinement with the hanger for said sections, said hanger and pivot affording a bearing upon which the door turns, and means for simultaneously operating said rock-shaft and said lower pivot to provide or do away with the bearing at the center of the door.

12. In a door structure, the combination of sections, each section comprising two parts, hinged to each other at or near the center of the door structure, a hanger on which said sections are detachably suspended at the center of the door structure, a rock-shaft having a crank-arm for locking one of said sections to said hanger, a bottom pivot in alinement with the hanger for said sections, said hanger and pivot affording a bearing upon which the door turns, and means for simultaneously operating said rock-shaft and said lower pivot, to provide or do away with the bearing at the center of the door, pivots at the outer edges of said sections and means for actuating said pivots to afford bearings for said sections, whereby when the center means is unlocked, the sections may be swung on the pivots at the outer edges thereof.

13. In a door structure, the combination of a circular casing and segmental curved wings hinged together in pairs separably united at a common center, and means for swinging said wings from an edge outward toward said casing so that when in such position their curves will approximately conform with the curve of the casing.

14. In a door structure, the combination of a ball-bearing hanger or rotatable support having a member 11 projecting downward with slots therein, a wing having a crank rock-shaft and a crank-arm coacting with one of said slots to lock said wing to said member 11 and means comprising a rock-shaft and a crank-arm for locking a second wing to the first-mentioned wing.

15. In a door structure, the combination of separable sections, each section comprising two parts hinged together at or near the center of the door structure, means for locking said sections together, and means for locking one of said sections to a central rotatable support, said means comprising a rock-shaft having a locking-arm, a lower pivot and floor-socket, a sliding plate, rods connecting said plate with said rock-shaft and lower pivot, a rotatable face-plate having a socket, and a crank-pin connecting said rotatable plate with said sliding plate, whereby said sections may be unlocked simultaneously from said rotatable support and from said floor-socket.

16. In a door structure, the combination of separable sections, means for locking them together, each section comprising two wings hinged together at or near the center of the door structure, a rotatable hanger or support to which said sections are attached, a central pivot at the lower edge of said sections and means for simultaneously detaching said sections from the hanger and withdrawing said pivot.

846,070. INTERNAL-COMBUSTION ENGINE. HERBERT G. UNDERWOOD, New York, N. Y. Filed June 7, 1905. Serial No. 264,042.

Claim.—1. In an internal-combustion engine, the combination of a working cylinder having an upward extension with opposite longitudinal slots and closed ends, an uninclosed crank-shaft, a trunk-piston open from its head to its end and covering the slots in the cylinder, a wrist-pin extended from the piston through said slots and pitmen connecting the wrist-pin and the crank-shaft external to the cylinder, the working cylinder being above the crank-shaft with its head end adjacent to the crank-shaft, substantially as described.

2. In an internal-combustion engine, the combination of a base-plate, an uninclosed crank-shaft having bearings therein, a working cylinder supported above said base-plate with its head end above the crank-shaft and provided with an upward extension having opposite longitudinal slots and closed ends, a trunk-piston open from its head to its end and arranged to cover said slots, a wrist-pin extending from the piston through said slots, and pitmen connecting the wrist-pin and the crank-shaft external to the cylinder, substantially as described.

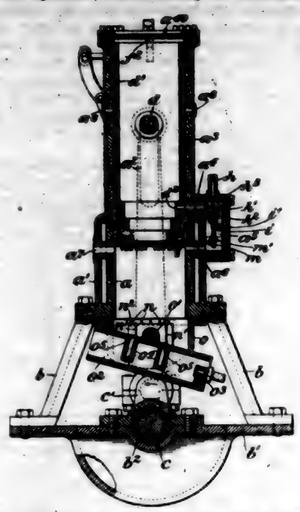

3. In an internal-combustion engine, the combination of a cylinder having a closed head and a closed extension with opposite slots and provided with an inlet-port adapted to be uncovered by the piston as it approaches the forward limit of its stroke, a second port connected with the first, and a third port in said extension adapted to be uncovered by the piston as it approaches the rearward limit of its stroke, a hollow trunk-piston adapted to receive through its open end air admitted through the last-named port and provided near its head end with a port arranged to register with the second-named port as the piston approaches the forward limit of its stroke, an uninclosed crank-shaft, a wrist-pin projecting from the piston through said slots and external pitmen connecting the wrist-pin and the crank-shaft, substantially as described.

4. In an internal-combustion engine, the combination of an uninclosed crank-shaft, a cylinder above the crank-shaft having its closed head end adjacent to the crank-shaft, having a closed extension remote from the crank-shaft with opposite longitudinal slots, and provided with an inlet-port adapted to be uncovered by the piston as it approaches the forward limit of its stroke, a second port connected with the first, and a third port in said extension adapted to be uncovered by the piston as it approaches the rearward movement of its stroke, a hollow trunk-piston adapted to receive through its open end air admitted through the last-named port and provided near its head end with a port arranged to register with the second-named port as the piston approaches the forward limit of its stroke, a wrist-pin projecting from the piston through said slots, and external pitmen connecting the wrist-pin and the crank-shaft, substantially as described.

5. In an internal-combustion engine, the combination of a cylinder having a closed head and a closed extension with opposite longitudinal slots, and provided with an inlet-port adapted to be uncovered by the piston as it approaches the forward limit of its stroke, a second port connected with the first through a mixing-chamber and a third port in said extension adapted to be uncovered by the piston as it approaches the rearward limit of its stroke, means to supply the fuel basis of the charge to said mixing-chamber, a hollow trunk-piston adapted to receive through its open end air admitted through the last-named port and provided near its head end with a port arranged to register with the second-named port as the piston approaches the forward limit of its stroke, an uninclosed crank-shaft, a wrist-pin projecting from the piston through said slots, and external pitmen connecting

the wrist-pin with the crank-shaft, substantially as described.

6. In an internal-combustion engine, the combination of an uninclosed crank-shaft, a working cylinder having its closed head end adjacent to the crank-shaft and having an opposite closed extension with opposite longitudinal slots, a piston covering said slots, a wrist-pin projecting from the piston through said slots, external pitmen connecting the wrist-pin and the crank-shaft, and means to admit air under pressure to said extension in front of the piston, substantially as described.

7. In an internal-combustion engine, the combination of an uninclosed crank-shaft, a working cylinder having its closed head end adjacent to the crank-shaft and having an opposite closed extension with opposite longitudinal slots, a piston covering said slots, a wrist-pin projecting from the piston through said slots, external pitmen connecting the wrist-pin and the crank-shaft, means to admit air under pressure to said extension in front of the piston, and means actuated by a moving part of the engine to control the admission of air to said extension, substantially as described.

8. In an internal-combustion engine, the combination of an uninclosed crank-shaft, a working cylinder having its closed head end adjacent to the crank-shaft and having an opposite closed extension, with opposite longitudinal slots, a piston covering said slots, a wrist-pin projecting from the piston through said slots, external pitmen connecting the wrist-pin and the crank-shaft, means to admit air under pressure to said extension in front of the piston, a valve to control the admission of air, and means actuated by a moving part of the engine to operate said valve, substantially as described.

9. In an internal-combustion engine, the combination of an uninclosed crank-shaft, a working cylinder having its closed head end adjacent to the crank-shaft and having an opposite closed extension, with opposite longitudinal slots, a piston covering said slots, a wrist-pin projecting from the piston through said slots, external pitmen connecting the wrist-pin and the crank-shaft, means to admit air under pressure to said extension in front of the piston, a valve to control the admission of air, means actuated by a moving part of the engine to operate said valve, and means to retain said valve normally in a closed position, substantially as described.

846,071. PIANISSIMO DEVICE. WILLIAM C. VOGEL and HARRY K. SNELL, Rockford, Ill. Filed Jan. 6, 1906. Serial No. 294,897.

Claim.—1. In a piano-action the combination with a vertical action-bracket, of a lever-rail, links pivotally connecting the said lever-rail to the said vertical action-bracket, a hammer-rest rail, adapted to be moved upwardly and rearwardly and connecting means between the hammer-rest rail and the lever-rail adapted to lift the lever-rail upwardly and forwardly during upward and rearward movement of the hammer-rest rail.

2. In a piano-action a vertically-movable lever-rail, a lever pivotally suspended at its rear end from said rail, a pilot pivoted at its lower end to an intermediate portion of the said lever, a capstan-screw carried by the lever in advance of the pilot, a key, and a capstan-screw carried by the key in advance of the screw carried by the lever the screw on the lever engaging the key and the screw on the key engaging the lever, as and for the purpose set forth.

3. In a piano-action an upwardly and forwardly movable lever-rail, a movable hammer-rest rail, an adjustable plate carried by said last-mentioned rail, a bar pivotally connected to said plate, means for loosely connecting the lower end portion of said bar to the lever-rail, a key, a pilot, a lever pivotally connected to the pilot intermediate its ends, and pivotally suspended from the lever-rail adjacent its rear end, and a plurality of capstan-screws adapted to coöperate with the said key and lever.

4. In a piano-action a vertical main action-bracket having a foot portion at its lower end, said foot portion being cut away on its upper face, a rib on the rear face of the vertical action-bracket, the said bracket being perforated adjacent the foot, the lever-rail, a plate carried by said lever-rail and having perforated shoulders at its ends, links having hooked members engaging respectively perforations in the shoulders of the plate and perforations in the action-bracket, said links being arranged in pairs and upon opposite sides of the rib, a block inserted in the rear face of the lever-rail, the said lever-rail being beveled along its lower front edge, and a cushion carried by said block and a portion of the beveled edge and adapted to rest in the cut-out portion of the foot.

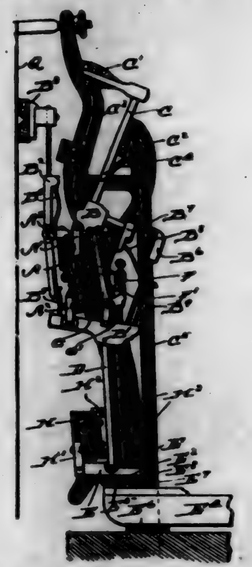

5. A device of the kind described comprising a movable hammer-rest rail, a lever-rail, a lever-rail hanger, a vertically-slotted block, an arm carried by the block and having a curved portion loosely engaging the lever-rail hanger, and a bar adjustably held in the slot of the block and pivotally supported from the hammer-rest rail.

6. In a piano-action a movable hammer-rest rail, a plate adjustably carried by said rail, a bar having its central portion offset with respect to its end portions and having its upper end pivotally connected to said plate, a lever-rail, a lever-rail hanger, a slotted block, an arm carried by the block and loosely in engagement with the lever-rail hanger, the lower end portion of the bar passing through the slot of the block, means for locking the said bar to the block, and means for pivotally connecting the lever-rail to the vertical-action rail of a piano.

7. The combination with a vertically-movable lever-rail, an angle-plate secured thereto, parallel lugs carried by said plate, a cross-piece connecting said lugs and having a round under face, a block, an arm carried by the block and having a curved end portion adapted to rest between the lugs of the plate and beneath the cross-piece, a flexible sleeve carried by the curved portion of said arm and adapted to engage the cross-piece, a movable hammer-rest rail, a bar pivotally supported therefrom, and means for connecting said bar to the said block.

846,072. LAST. JOHN H. WAITE, Brockton, Mass. Filed May 19, 1906. Serial No. 261,098.

Claim.—1. As an article of manufacture, a last for making Blucher shoes and the like having its instep portion provided with stationary depressions adapted to coöperate with fastening-strings or temporary lacings to hold the fore part of a shoe-upper from undue longitudinal stretching during the lasting operation, the last from the toe to the instep portion being smooth.

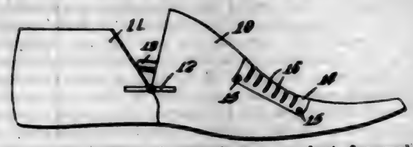

2. As an article of manufacture, a last for making Blucher shoes, having a transversely-grooved metallic plate inlaid into the instep portion of the last, whereby the grooves of said plate coöperate with the fastening-strings or temporary lacings to hold the leather of the instep portion of a shoe-upper from being unduly stretched during lasting.

846,073. CASKET-HOLDER. PETER WALLRATH, Oxford, Mich. Filed Aug. 31, 1906. Serial No. 332,759.

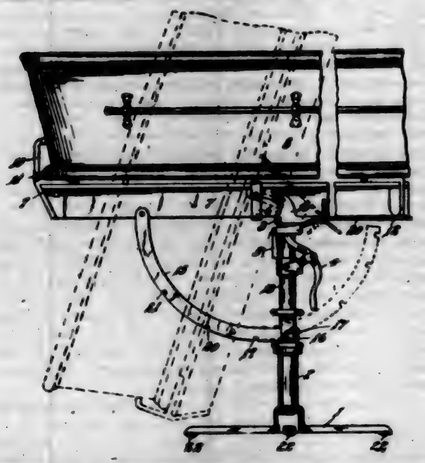

Claim.—1. A casket-holder, having in combination a standard and provided with a forked terminal extending to one side of the vertical axis of said standard and a stop extending to the opposite side of said vertical axis, a bar engaging between said forks and pivotally connected thereto and adapted to swing away from and into engagement with said stop, substantially as described.

2. In a casket-holder, the combination of a base member, a standard rising therefrom, a supplemental supporting-piece telescoping therewithin, a table pivotally supported upon the upper portion of said supplemental part, a lifting-lever supported by a portion of the standard and adapted to engage against a portion of the supplemental part to raise the same relatively thereto, a pawl adapted to engage against the standard after said rising and to hold said supplemental portion of the table in raised position with respect thereto, being pivotally supported by said supplemental part, a pivoted brace-segment depending from said table and slidably engaging through said standard, means for fixing the same with respect thereto in any one of a variety of positions, and means carried by that end of the table which it is intended to depress whereby the casket supported thereupon may be held in position with respect thereto, substantially as described.

3. A casket-holder, having in combination a standard, a support telescoping therein provided with forked terminals extending to one side of the vertical axis of said standard, a stop extending to the opposite side thereof a bar engaging between said forks and pivotally connected thereto, a brace adapted to engage between the bar and a fixed part of said support, substantially as described.

4. A casket-holder, having in combination a base, a standard, a support engaging said standard, a table pivotally connected to said support at one side of the axis of said standard, a stop on the other side thereof means for lifting the support and the table connected thereto, a pawl adapted to hold the table, and support it in its lifted position, a curved brace member pivoted to said table and engaging through said standard and adapted to be held to said standard in any one of a plurality of positions, substantially as described.

846,074. VENTILATOR. WILLIAM F. WARDEN, Akron, Ohio. Filed Sept. 27, 1906. Serial No. 336,406.

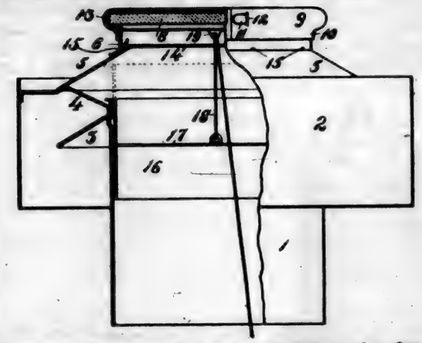

Claim.—The combination in a ventilator, of a flue, a roof therefor spaced apart therefrom and supported thereby provided with an opening approximating in size and area the opening in said flue, an upwardly-extending perforated wall on said roof surrounding said opening, a sheet of light-admitting substance mounted on and covering the space inclosed by said wall, means for securing said sheet of light-admitting substance in position, a flange positioned within said wall forming in connection therewith a trough in open communication with the top of said roof through a perforation in said wall, a wind-shield for inclosing the upper end of the flue and said roof, a slidable sleeve arranged when in one position to close the space existing between the upper end of said flue and said roof thereby arresting the entrance of any foreign matters to said flue from the outside thereof, and means for moving said sleeve.

846,075. HYDRAULIC RAM. JOHN D. WEAVER and WILLIAM H. WEAVER, Beavertown, Pa. Filed Oct. 8, 1906. Serial No. 337,228.

Claim.—1. An apparatus of the class described, comprising the combination with the ram bed and chamber having an inlet and an eduction port, and the compression-casing having a compression-chamber, of an escape-valve mechanism comprising a valve-seat-carrying plate securable over the escape-aperture of the ram-bed, a bracket projecting therefrom, an adjustable bearing member carried by the bracket, a balance-beam having a shaft mounted in said bearing member, a valve-seat plate secured to said carrying-plate, a valve coöperating therewith and connected with the balance-beam, and means for adjusting the operation of the valve, substantially as shown and described.

2. In a hydraulic ram, the combination with the ram-chamber, the compression-cylinder and the escape-port, of a valve mechanism for controlling said escape-port, said valve mechanism comprising a pivotally-mounted balance-lever, a bearing for said lever and means coöperating with the bearing so that the bearing may be adjusted to various positions to vary the fulcrum of the balance-lever, substantially as shown and described.

3. In a hydraulic ram, the combination with the ram-bed and the compression-cylinder, of an escape-valve mechanism comprising a valve-seat removably held over the escape-aperture in the ram-bed, said valve-seat having an

aperture, a valve for closing said seat-aperture, a balance-beam to one end of which said valve is connected, a supporting-bracket, a bearing member adjustably secured thereto, a bearing-shaft for said balance-beam held in said bearing member, and means for adjusting the movement of said balance-beam, substantially as shown and described.

4. In a hydraulic ram, the combination with the ram-bed and the compression-cylinder, of an escape-valve mechanism comprising a valve-seat removably held over the escape-aperture in the ram-bed, said valve-seat having an aperture, a valve for closing said seat-aperture, a balance-beam to one end of which said valve is connected, a supporting-bracket, a bearing member adjustably secured thereto, a bearing-shaft for said balance-beam held in said bearing member, means for adjusting the movement of said balance-beam, and tension devices coöperating with the balance-beam, substantially as shown and described.

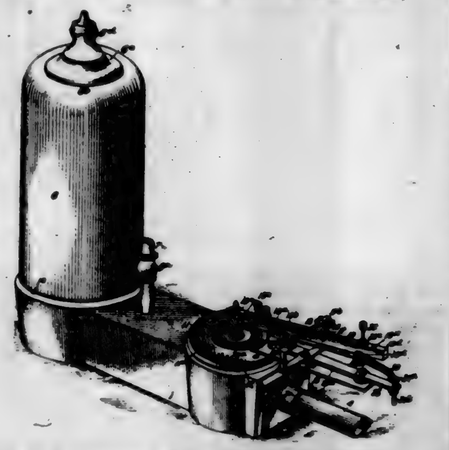

5. In a hydraulic ram, the combination with the ram-bed and the compression-cylinder, of an escape-valve mechanism comprising a valve-seat removably held over the escape-aperture in the ram-bed, said valve-seat having an aperture, a valve for closing said seat-aperture, a balance-beam to one end of which said valve is connected, a supporting-bracket, a bearing member adjustably secured thereto, a bearing-shaft for said balance-beam held in said bearing member, means for adjusting the movement of said balance-beam, and adjustable tension devices coöperating with the balance-beam, substantially as shown and described.

6. An apparatus of the class described, comprising the combination with the ram-bed and the compression-cylinder, said ram-bed and said compression-cylinder having valved communication, said ram-bed having induction and eduction ports, and having an escape-port, a valve-seat-carrying member detachably secured over said escape-port, an apertured valve-seat carried by said carrying member and detachably connected thereto, a valve for closing said seat-aperture, said valve having a stem projecting through said seat-aperture, a slotted bracket member secured to said carrying-plate, a supporting member having bearings and adjustably secured to said slotted bracket, a balance-beam having a shaft mounted in said support-bearings, means for adjusting the balance-beam shaft to various positions along the beam to vary its fulcrum, an extension-bracket secured to said first-mentioned bracket, an anvil secured to said extension-bracket, a sliding carriage adjustably secured to said balance-beam, a leaf-spring carried by the sliding carriage to engage the extension-bracket anvil, means for adjusting the tension of said spring, and means for adjusting the stroke of said balance-beam.

7. An apparatus of the class described, comprising the combination with the ram-bed and the compression-cylinder, said ram-bed and said compression-cylinder having valved communication, said ram-bed having induction and eduction ports, and having an escape-port, a valve-seat-carrying member detachably secured over said escape-port, an apertured valve-seat carried by said carrying member and detachably connected thereto, a valve for closing said seat-aperture, said valve having a stem projecting through said seat-aperture, a slotted bracket member secured to said carrying-plate, a supporting member having bearings and adjustably secured to said slotted bracket, a balance-beam having a shaft mounted in said support-bearings, means for adjusting the balance-beam shaft to various positions along the beam to vary its fulcrum, an adjustable extension-bracket secured to said first-mentioned bracket, an adjustable anvil secured to said adjustable extension-bracket, a sliding carriage adjustably secured to said balance-beam, a leaf-spring carried by the sliding carriage for engaging the adjustable extension-bracket anvil, means for adjusting the tension of said spring, and means for adjusting the stroke of said balance-beam.

8. The combination with the hollow ram-bed having one end open, of a closure-cap for said open end having an induction-port, said ram-bed having a dam near the other end and an eduction-port, a compression-housing removably secured over said dam, and having valve communication with the inlet-chamber of the ram-bed, said ram-bed having an air-admitting aperture, and a supplemental induction-port and an escape-aperture, a valve-seat-carrying plate removably secured over said escape-port, an apertured valve-seat removably carried by said carrying-plate, a valve for coöperating with said valve-seat having a stem projecting through the aperture therein, a balance-beam secured to said valve-stem, a shaft carried by said balance-beam, a bracket projecting from said ram-bed, a support having bearings to receive the balance-beam shaft and adjustably secured to said bracket, a sliding carriage mounted on said balance-beam, a leaf-spring carried by said sliding carriage, a second sliding carriage mounted on said balance-beam, means carried by the second sliding carriage for adjusting the tension of the leaf-spring, means for adjusting the stroke of the balance-beam, and means carried by the bracket for engaging the leaf-spring, substantially as shown and described.

9. The combination with the hollow ram-bed having one end open, of a closure-cap for said open end having an induction-port, said ram-bed having a dam near the other end and an eduction-port, a compression-housing removably secured over said dam, and having valved communication with the inlet-chamber of the ram-bed, said ram-bed having an air-admitting aperture and a supplemental induction-port and an escape-aperture, a valve-seat-carrying plate removably secured over said escape-port, an apertured valve-seat removably carried by said carrying-plate, a valve for coöperating with said valve-seat having a stem projecting through the aperture therein, a balance-beam secured to said valve-stem, a shaft carried by said balance-beam, a bracket projecting from said ram-bed, a support having bearings to receive the balance-beam shaft and adjustably secured to said bracket, a sliding carriage mounted on said balance-beam, a leaf-spring carried by said sliding carriage, a second sliding carriage mounted on said balance-beam, means carried by the second sliding carriage for adjusting the tension of the leaf-spring, means for adjusting the stroke of the balance-beam, means carried by the bracket for engaging the leaf-spring, said balance-beam comprising a pair of parallel members and spacing-blocks secured between the ends thereof substantially as shown and described.

10. The combination with the hollow ram-bed having one end open, of a closure-cap for said open end having an induction-port, said ram-bed having a dam near the other end and an eduction-port, a compression-housing removably secured over said dam, and having valved communication with the inlet-chamber of the ram-bed, said ram-bed having an air-admitting aperture and a supplemental induction-port and an escape-aperture, a valve-seat-carrying plate removably secured over said escape-port, an apertured valve-seat removably carried by said carrying-plate, a valve for coöperating with said valve-seat having a stem projecting through the aperture therein, a balance-beam secured to said valve-stem, a shaft carried by said balance-beam, a bracket projecting from said ram-bed, a support having bearings to receive the balance-beam shaft and adjustably secured to said bracket, a sliding carriage mounted on said balance-beam, a leaf-spring carried by said sliding carriage, a second sliding carriage mounted on said balance-beam, means carried by the second sliding carriage for adjusting the tension of the leaf-spring, means for adjusting the stroke of the balance-beam, means carried by the bracket for engaging the leaf-spring, said balance-beam comprising a pair of parallel members and spacing-blocks secured between the end thereof, said sliding carriages having grooves to receive the parallel members, said spacing-blocks having threaded apertures to receive adjusting-screws substantially as shown and described.

11. The combination with the hollow ram-bed having one end open, of a closure-cap for said open end having an induction-port, said ram-bed having a dam near the other end and an eduction-port, a compression-housing removably secured over said dam, and having valved communication with the inlet-chamber of the ram-bed, said ram-bed having an air-admitting aperture and a supplemental induction-port and an escape-aperture, a valve-seat-carrying plate removably secured over said escape-valve, an apertured valve-seat removably carried by said carrying-plate, a valve for coöperating with said valve-seat having a stem projecting through the aperture therein, a balance-beam secured to said valve-stem, a shaft carried by said balance-beam, a bracket projecting from said ram-bed, a support having bearings to receive the balance-beam shaft and adjustably secured to said bracket, a sliding carriage mounted on said balance-beam, a leaf-spring carried by said sliding carriage, a second sliding carriage mounted on said balance-beam, means carried by the second sliding carriage for adjusting the tension of the leaf-spring, means for adjusting the stroke of the balance-beam, means carried by the bracket for engaging the leaf-spring, said balance-beam comprising a pair of parallel members and spacing-blocks secured between the end thereof, said sliding carriages having grooves to receive the parallel members, said spacing-blocks having threaded apertures to receive adjusting-screws substantially as shown and described.

846,076. HANDLE FOR SHEET-METAL CAN-JACKETS OR OTHER RECEPTACLES. GEORGE W. WEBER, New York, N. Y., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 6, 1905. Serial No. 290,510.

Claim.—1. The combination of a sheet-metal can-jacket or receptacle having a recess or depression on the inside thereof to receive a handle-reinforcing plate, and an integral socket provided with openings at the extremities thereof to receive the pivot members of a handle, with a handle-reinforcing piece fitting in said recess or depression, and provided with a pivot groove or channel to receive the pivot members of the handle, and flanges or shoulders for the pivot ends of the handle to abut against, and a wire handle having pivot ends or members inserted through said openings at the extremities of the pivot-socket in the can-jacket, substantially as specified.

2. The combination with a can-jacket or receptacle provided with an integral pivot-socket having openings at the ends thereof for insertion of the pivot ends of a wire handle, of a wire handle having pivot ends inserted through said openings and fitting in said socket, and a reinforcing-plate interposed between the can-jacket and the pivot members of the handle, substantially as specified.

3. The combination with a can-jacket or receptacle provided with an integral pivot-socket having openings at the ends thereof for insertion of the pivot ends of a wire handle, of a wire handle having pivot ends inserted through said openings and fitting in said socket, and a reinforcing-plate interposed between the can-jacket and the pivot members of the handle, said reinforcing-plate having a channel or groove to receive the pivot members of the handle, substantially as specified.

4. The combination with a can-jacket or receptacle provided with an integral pivot-socket having openings at the ends thereof for insertion of the pivot ends of a wire handle, of a wire handle having pivot ends inserted through said openings and fitting in said socket, and a reinforcing-plate interposed between the can-jacket and the pivot members of the handle, said reinforcing-plate having a channel or groove to receive the pivot members of the handle, and provided with flanges or shoulders for the pivot ends of the handle to abut against, substantially as specified.

5. The combination with a can-jacket or receptacle provided with an integral pivot-socket having openings at the ends thereof for insertion of the pivot ends of a wire handle, of a wire handle having pivot ends inserted through said openings and fitting in said socket, and a reinforcing-plate interposed between the can-jacket and the pivot members of the handle, said reinforcing-plate having a channel or groove to receive the pivot members of the handle, said jacket or receptacle having a recess or depression on the inside to receive said reinforcing-plate, substantially as specified.

6. The combination with a can-jacket or receptacle provided with an integral pivot-socket having openings at the ends thereof for insertion of the pivot ends of a wire handle, of a wire handle having pivot ends inserted through said openings and fitting in said socket, and a reinforcing-plate interposed between the can-jacket and the pivot members of the handle, said reinforcing-plate having a channel or groove to receive the pivot members of the handle, and also having a flap or fold to embrace the pivot members of the handle, substantially as specified.

7. The combination with a sheet-metal vessel provided with a recess or depression on its inner side, and having a partly-round straight pivot-socket extending across said recess or depression, and furnished with openings at the ends thereof formed partly in the marginal wall of said recess or depression for insertion of straight pivot members of a wire handle, of a spring-wire handle having straight pivot members and provided with a reverse bend at its middle portion toward said straight pivot members partially straightened out to cause said pivot members to enter said socket and to assume a position in line with each other, substantially as specified.

8. The combination with a sheet-metal vessel provided with a recess or depression on its inner side, and having a partly-round straight pivot-socket extending across said recess or depression, and furnished with openings at the ends thereof formed partly in the marginal wall of said recess or depression for insertion of straight pivot members of a wire handle, of a spring-wire handle having straight pivot members and provided with a reverse bend at its middle portion toward said straight pivot members partially straightened out to cause said pivot members to enter said socket and to assume a position in line with each other, said recess or depression serving to accommodate a portion of the diameter of the pivot members of the wire handle, and said pivot-socket the remaining portion of such diameter, substantially as specified.

9. The combination with a sheet-metal vessel provided with a handle-pivot socket having openings at the ends thereof for insertion of the pivot members of a wire handle, and lips or shoulders in the socket for the extremities of the pivot members of the handle to abut against, of a wire handle having pivot members inserted through said openings and fitting in said socket, substantially as specified.

10. The combination with a sheet-metal vessel having an open-ended pivot-socket to receive the straight pivot members of a wire handle, of a wire handle having straight pivot members fitting in said sockets, and a shoulder at

combination with the ram-bed and the compression-cyl- | carrying-plate, a valve for coöperating with said valve-

3. The combination with a can-jacket or receptacle pro- | pivot members fitting in said sockets, and a shoulder at

the middle portion of said socket for the ends of the pivot members of the handle to abut against, substantially as specified.

846,077. PUPPET-VALVE. RALPH WISHON, Columbus, Ohio. Filed Aug. 23, 1905. Serial No. 275,370.

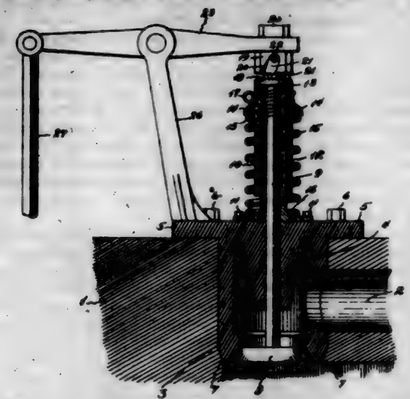

Claim.—1. A valve provided with a stem and a head, telescoping sleeves for guiding the valve-stem and maintaining the same in alinement, a suitable seat for the head, mechanical means for positively turning the valve-head on the seat before moving the same from the seat, and resilient means surrounding the sleeves for holding the head of the valve to the seat.

2. The combination with a valve and valve-stem, of a toothed member to which said valve-stem is secured, a reciprocatory member arranged adjacent said toothed member and having recesses formed therein, and pawls located in said recesses, the walls of said recesses limiting the movement of said pawls.

846,078. SAFETY GAS-TRAP. FRANK J. WOOD, Brooklyn, N. Y. Filed July 1, 1904. Serial No. 215,033.

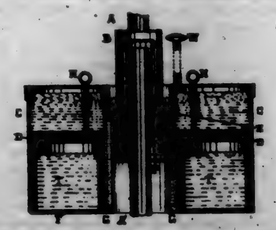

Claim.—1. In a safety gas-trap, a connecting-pipe, an enlargement thereof, an open-bottomed bell within said enlargement, a second connecting-pipe leading from the upper portion of the bell and a second enlargement on said second connecting-pipe enveloping the lower portion of the first-named enlargement, an annular vessel surrounding said enlargements and communicating therewith, and a sealing liquid in said vessel whose normal level is higher than the upper edge of the second-named enlargement whereby on cessation of the gas-pressure the liquid overflows into the second enlargement and seals the bell.

2. A safety gas-trap comprising a gas-conduit, a vessel in communication with the gas-conduit, a sealing liquid in said vessel, a displacing-piston loosely fitting said vessel and having a cavity and an aperture connecting said cavity with the interior of the vessel and an operating-handle for said piston.

3. In a safety gas-trap a displacing-piston with its operating-handles and connections mounted in a liquid-containing vessel, a liquid-containing cavity in said displacing-piston, a communicating aperture in the bottom of said displacing-piston for the purpose described.

846,079. EXTENSIBLE SHAFT. VICTOR A. YOST, Ossining, N. Y. Filed Nov. 7, 1906. Serial No. 342,406.

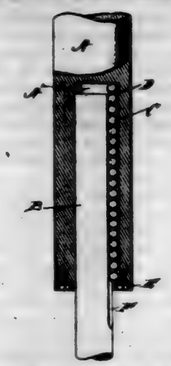

Claim.—1. An endwise-extensible shaft comprising two separable members one of which is formed with a bore or socket into which the other member fits snugly to prevent lateral movement while being free to slide longitudinally, a key directly connecting the two members for coincident rotation formed of rotatable antifriction-devices, and means for holding said devices in place, both while the shaft members are connected and when they are separated.

2. An endwise-extensible shaft comprising two separable members one of which is formed with a bore or socket into which the other member fits snugly to prevent lateral movement while being free to slide longitudinally, a key directly connecting the two members for coincident rotation formed of rotatable antifriction-balls, and means for holding said balls in place in series parallel with the axis of the shaft, both while the shaft members are connected and when they are separated.

3. An endwise-extensible shaft comprising two separable members formed with longitudinal grooves, a longitudinal series of balls arranged in said grooves in said shaft members, and a cap on the end of the outer shaft member closing the end of the groove therein and preventing the balls from moving endwise out of the groove.

4. An endwise-extensible shaft comprising two members one fitting within the other, one of which is formed with a groove, a longitudinal series of balls contained in said groove and the other of which shaft members is formed with a corresponding groove into which the balls extend, the width of said first-mentioned groove next the other member being less than the diameter of the balls, whereby the balls are prevented from moving laterally out of said groove when the shaft members are separated.

5. An endwise-extensible shaft comprising two separable members one of which is formed with a bore or socket into which the other member fits snugly to prevent lateral movement while being free to slide longitudinally, the socketed member of said shaft being formed with a longitudinal groove opening into the bore of the shaft member and the other member of said shaft being formed with a shallower groove, a series of antifriction-balls arranged in said grooves and keying the shaft members together for coincident rotation, and a cap on the outer end of the outer member for preventing the balls from moving endwise out of the groove therein when the shaft members are separated.

846,080. PAINT-REMOVER AND PROCESS OF MAKING THE SAME. PETER T. AUSTEN and FREDERICK J. MAYWALD, New York, N. Y. Filed Nov. 26, 1906. Serial No. 345,165.

Claim.—1. A paint-remover comprising a fluid emulsion of a mixture of a plurality of volatile solvents of different chemical character and having substantially unimpaired solvent power in an aqueous carrier, said emulsion being creamy in character, fluid and flowable, free from caustic or corrosive components or free acids and consisting in greater part of said volatile solvents.

2. A paint-remover comprising a fluid emulsion of a mixture of a plurality of volatile solvents of differing chemical character in an aqueous carrier containing a dissolved proteid body, said emulsion being creamy in character, fluid and flowable, free from caustic or corrosive components or free acids and consisting in greater part of said volatile solvents.

3. A paint-remover comprising a fluid emulsion of a mixture of a plurality of volatile solvents of differing chemical character in an aqueous carrier containing a dissolved proteid body and a colloidal carbohydrate, said emulsion being creamy in character, fluid and flowable, free from caustic components and consisting in greater part of said volatile solvents.

4. A paint-remover comprising a fluid emulsion of a mixture of a plurality of volatile solvents of differing chemical character in an aqueous carrier containing a dissolved caseinate, said emulsion being creamy in character, fluid and flowable, free from caustic components and consisting in greater part of said volatile solvents.

5. A paint-remover comprising a fluid emulsion of a plurality of volatile solvents of differing chemical character in an aqueous carrier containing dissolved ammonium caseinate, said emulsion being creamy in character, flowable, free from caustic components and consisting in greater part of said volatile solvents.

6. A paint-remover comprising a fluid emulsion of a mixture of volatile solvents in an aqueous carrier containing a dissolved caseinate and a colloidal carbohydrate, said emulsion being creamy and flowable.

7. A paint-remover comprising a fluid emulsion of a mixture of volatile solvents in an aqueous carrier containing dissolved ammonium caseinate and a colloidal carbohydrate, said emulsion being creamy and flowable.

8. A paint-remover comprising a fluid emulsion of a mixture of volatile solvents in an aqueous carrier containing dissolved ammonium caseinate and Chinese gelatin.

9. A paint-remover comprising a fluid emulsion of a mixture of a plurality of volatile solvents of differing chemical character but comprising a petroleum hydrocarbon, and having substantially unimpaired solvent power in an aqueous carrier, said emulsion being creamy in character, flowable, free from caustic or corrosive components or free acids and consisting in greater part of said volatile solvents.

10. The process of making a paint-remover which consists in mixing a plurality of differing volatile solvents having substantially unimpaired solvent power and emulsifying such mixture in an alkaline aqueous carrier in such proportions as to make a fluid creamy emulsion consisting in greater part of said volatile solvents.

11. The process of making a paint-remover which consists in mixing a plurality of differing volatile solvents having substantially unimpaired solvent power and emulsifying such mixture in an alkaline aqueous carrier containing a dissolved proteid body in such proportions as to make a fluid creamy emulsion consisting in greater part of said volatile solvents.

12. The process of making a paint-remover which consists in mixing a plurality of differing volatile solvents and emulsifying the mixture in an aqueous carrier containing a dissolved caseinate in such proportions as to make a fluid creamy emulsion consisting in greater part of said volatile solvents.

13. The process of making a paint-remover which consists in mixing a plurality of differing volatile solvents and emulsifying the mixture in an aqueous carrier containing dissolved caseinate of ammonium, in such proportions as to make a fluid creamy emulsion consisting in greater part of said volatile solvents.

14. The process of making a paint-remover which consists in mixing a plurality of differing volatile solvents and emulsifying the mixture in an aqueous carrier containing a dissolved proteid and a colloidal carbohydrate in such proportions as to make a fluid creamy emulsion consisting in greater part of said volatile solvents.

846,081. RECEIVER. LOUIS W. AUSTIN, Washington, D. C., assignor to National Electric Signaling Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Oct. 27, 1905. Serial No. 340,845.

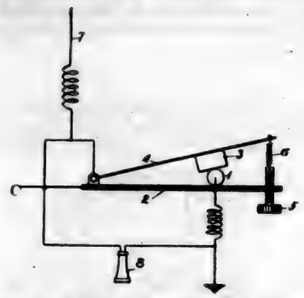

Claim.—1. In a system of signaling, a receiver consisting of a thermo-couple having as its elements tellurium and silicon.

2. In a system of signaling by electromagnetic waves, a receiver consisting of a thermo-couple having as its elements tellurium and silicon.

846,082. HOOF-PAD. CHARLES BELLMANN, Milwaukee, Wis., assignor to himself and Arnold Glaus, Milwaukee, Wis. Filed Mar. 5, 1906. Serial No. 304,158.

Claim.—1. A hoof-pad having a pair of lugs near the rear corner thereof, and a central lug between them leaving a space between the central lug and the two side lugs adapted to receive a part of the shoe.

2. A right and left hoof-pad having a pair of protuberances or lugs carrying calks and at the rear portion of said pad on opposite sides thereof, one of said protuberances being set farther forward than the other.

3. In combination, a hoof-pad of resilient material having two side protuberances, and a central protuberance at the rear part thereof, and a shoe having rearward extensions lying between said protuberances.

4. A hoof-pad comprising a piece of resilient material underlying the hoof and having a protuberance *c* at the rear of the center of the foot, a pair of rear corner protuberances *b* carrying calks, and a recess *m* underlying the frog of the hoof; in combination with a shoe composed of a continuous band having its front portion conforming to the outline of a hoof and having inward extensions *d*, rearward extensions *e* and a bridge *f* connecting said rearward extensions at the rear.

5. A hoof-pad of resilient material having a seat adapted to receive a metallic shoe thereupon and a projecting lug outside of said seat, and a metallic calk set in and projecting from said lug.

6. A hoof-pad of resilient material having a seat to receive a metallic shoe thereupon and a projecting lug at the rear corner thereof, outside of said seat, and a metallic calk slidably removably set in a recess in said lug and projecting from the surface thereof.

7. A hoof-pad of resilient material having a seat for a metallic shoe on its under surface, said pad having project-

ing lugs or protuberances on the opposite rear quarters thereof outside said seat, and metallic calks slidably removably set in grooves in said protuberances.

8. A right and left hoof-pad having a seat for a metallic shoe and immediately at the rear thereof a pair of protuberances or lugs carrying calks at the rear portion of said pad on opposite sides thereof, one of said protuberances being set farther forward than the other.

9. A hoof-pad of resilient material having a seat for a metallic shoe in the interior thereof occupying the rear quarter or quarters of said pad, a pair of protuberances or lugs having metallic calks set therein, said calks being at the rear of said shoe-seat.

846,083. HORSESHOE. CHARLES BELLMANN, Milwaukee, Wis., assignor to himself and Arnold Glaus, Milwaukee, Wis. Filed Mar. 5, 1906. Serial No. 304,159.

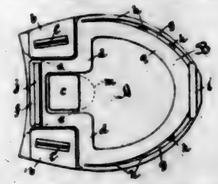

Claim.—1. A hoof-gear for horses comprising a front central calk, a rear central transverse calk underlying the frog, means for transmitting the pressure from the rear calk to the sides of the hoof, a pair of cushioned auxiliary side calks, and supporting means for all of said calks.

2. A hoof-gear for horses comprising, in combination, a front center calk, a rear center calk, a pair of cushioned side calks, means for supporting said calks in position, and means for transmitting the pressure from said rear center calk to the sides of the hoof.

3. A horseshoe comprising a continuous closed metallic ring, conforming approximately to the shape of the horse's foot and adapted to support it at the edges thereof, said ring being adapted to be supported upon the ground only at points on and near the central axis, whereby it may have a side-to-side balancing action in combination with a pad independent of said shoe and on which the latter is mounted, said pad having independent side calks set therein.

846,084. ELECTRICAL MEASURING INSTRUMENT. ADELBERT O. BENECKE, Newark, N. J., assignor to American Instrument Company, Newark, N. J., a Corporation of New Jersey. Filed Dec. 13, 1906. Serial No. 347,594.

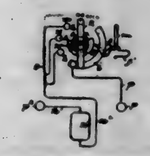

Claim.—1. The combination with an electrical measuring instrument having a case and cover therefor, of means for compelling the direction of an electrical current through a high resistance and means rendered operative by opening said cover for thereafter cutting out portions of said resistance to produce a successively wider needle deflection of the instrument.

2. In an electrical measuring instrument having a case and hinged cover, the combination of means for first compelling the direction of the current through a high resistance and means rendered operative by opening said cover for thereafter changing said resistance by predetermined gradations to produce successively wider needle deflections of the instrument.

3. In an electrical measuring instrument having a hinged cover, the combination of a resistance with means for first compelling the direction of a current through all of said resistance and means normally inoperative, but rendered operative by opening said cover for thereafter cutting out portions of said resistance to produce successively wider needle deflections of the instrument.

4. The combination with an electrical measuring instrument its case and hinged cover, of means for compelling the direction of an electrical current through a high resistance and means for thereafter cutting out portions of said resistance to produce a successively wider needle deflection of the instrument and means for restoring said parts to initial position upon the completion of any particular measurement by the closing of said hinged cover.

5. In an electrical measuring instrument having a hinged cover, the combination of means for first compelling the direction of the current through a high resistance and means for thereafter changing said resistance by predetermined gradations to produce successively wider needle deflections of the instrument and means actuated by the closing of said hinged cover for restoring said parts to initial position upon the completion of any particular measurement.

6. In an electrical measuring instrument having a case and cover, the combination of a resistance with means for first compelling the direction of a current through all of said resistance and means for thereafter cutting out portions of said resistance to produce successively wider needle deflections of the instrument and means actuated by the closing of said cover for restoring said parts to initial position upon the completion of any particular measurement.

7. In a safety device for electrical measuring instruments having a case and a cover therefor, a series of positive multiple-range contacts and a single negative contact, a contact-spring and means for setting said spring to electrically connect said negative contact successively with said positive contacts and means actuated by closing said cover to trip said contact-spring to restore it to normal position.

8. In a safety device for electrical measuring instruments, a case having a cover a series of positive multiple-range contacts, a single negative contact, a contact-spring, means for setting said spring to electrically connect said negative contact successively with said positive contacts, a tension-spring for maintaining in said contact-spring a normal bias to initial position and trip mechanism actuated by said cover for releasing said contact-spring from set position.

9. In an electrical measuring instrument, the combination with the instrument-case and its hinged cover, of a safety device secured to said case, said device comprising a series of positive multiple-range contacts and a single negative contact, a contact-spring, means for setting said spring to electrically connect said negative contact successively with said positive contacts, a tension-spring for maintaining in said contact-spring a normal bias to initial position and trip mechanism operated by said hinged cover to release said contact-spring from set position.

10. In an electrical measuring instrument, the combination with the instrument-case and its hinged cover, of a base secured to said case, a series of positive contacts and a negative contact secured to said base, a central shaft, a contact-spring mounted on said shaft, a tension-spring connecting said shaft and said base for maintaining in said shaft, a normal bias to initial position, a contact-spring secured to said shaft and means for setting said shaft with said contact-spring to electrically connect said negative contact successively with said positive contacts against the normal bias of said tension-spring and trip mechanism operated by said hinged cover to release said shaft and contact-spring from set position.

11. In a safety device for electrical measuring instruments, the combination of a case having a cover, a plurality of positive contacts connected in parallel with a series resistance, a single negative contact connected to the return-circuit of the instrument, a contact-spring and means for setting the same to successively connect said positive contacts with the negative contact, means actuated by said cover for tripping said setting means to release said contact-spring and a tension-spring for restoring said contact-spring to initial position.

12. In a safety device for electrical measuring instruments, a case and a cover therefor, a base, a plurality of positive contacts and a single negative contact mounted upon said base, said positive contacts being connected in parallel with the series resistance of the instrument, a central shaft, a contact-spring mounted upon said shaft, a tension-spring secured to said shaft and to the base, means for setting said contact-spring to successively connect said positive contacts with said negative contact and means actuated by said cover for tripping said setting means to permit said tension-spring to restore said contact-spring to initial position.

13. A safety device in combination with an electrical measuring-instrument case and means for rendering said device inoperative by the closing of said case.

14. A safety device in combination with a portable electrical measuring-instrument case and means for rendering said device operative or inoperative by the opening or closing of said case.

15. A safety device for electrical instruments, in combination with the instrument-case and means for rendering said device operative by the opening of said case.

846,085. SPRING-SEAT. ALBERT BODENSTEIN, Trenton, N. J., assignor to Thomas A. Stoll, Trenton, N. J. Filed Mar. 3, 1905. Serial No. 248,214.

Claim.—The combination of a strut laterally and upwardly arched, a clip embracing said strut and having hooked ends rising slightly above the crown of said arch, and a spiral spring mounted on said arch of said strut, said spring having one or more of its lowermost coils engaged with said hooked ends of said clip and resting on the crown of said arch at a point on each side of said clip, and clamped between said arch and said hooked ends of said clip, substantially as described.

846,086. GEARING. GEORGE E. BOUVIER and JOSEPH N. PROULX, Woonsocket, R. I. Filed Sept. 6, 1906. Serial No. 333,491.

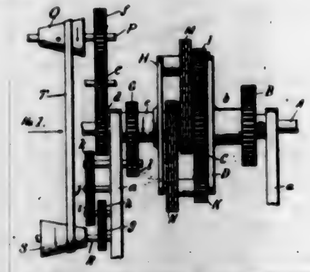

Claim.—1. The combination in a differential driving connection, of two oppositely-disposed cone-pulleys, a belt connecting the same, a main shaft, a spur-gear fast thereon, a gear from which motion is to be taken loosely mounted on the main shaft, a frame movable with the latter gear, a spur-gear carried by the frame and intermeshed with and movable around the spur-gear fast on the shaft, a gear fixed with respect to the said spur-gear of the frame, a gear loose on the shaft and connected with the last-claimed gear, a driving connection intermediate the main shaft and one of the cone-pulleys, and a driving connection intermediate the other cone-pulley and the last-mentioned gear loose on the shaft.

2. The combination in a differential driving connection of two oppositely-disposed cone-pulleys, a belt connecting the same, a main shaft, a spur-gear fast thereon, a gear from which motion is to be taken, loosely mounted on the main shaft, a frame movable with the latter gear, a spur-gear and a sprocket-gear fixed with respect to each other and carried by the frame; the spur-gear being intermeshed with and movable around the spur-gear fast on the shaft, a sprocket-gear loose on the shaft, a sprocket-belt connecting said sprocket-gear and the first-mentioned sprocket-gear, a driving connection intermediate the main shaft and one of the cone-pulleys, and a driving connection intermediate the other cone-pulley and the last-claimed sprocket-gear.

846,087. FOLDING PASTE-TABLE AND TOOL-BOX. SAMUEL W. BRADT, West Sand Lake, N. Y., assignor of one-half to Harry E. Clinton, Troy, N. Y. Filed Feb. 1, 1906. Serial No. 298,931.

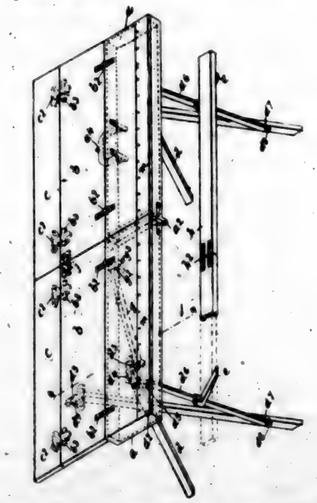

Claim.—1. A paper-hanger's table composed of separate oblong box or case members open at one side and hinged together at one end and adapted to be folded together to form an oblong box or case, said box or case members being provided at their corresponding outer longitudinal edges with hinged table members, and said hinged table members being provided with supplemental table members which are adapted to be detachably connected therewith, the means for connecting the supplemental table members with the hinged table members when the latter are in position for use being also employed for connecting the supplemental table members with the sides of the box or case when the parts of the table are folded together to form such box or case, the sides of said box or case being formed by the hinged table members.

2. A foldable table of the class described provided with a plurality of sets of legs, the separate parts of which are connected by pivot-pins and provided at their upper ends with tongues adapted to engage keepers secured to the bottom of the table members, brace members pivoted to the pivot-pins by which the leg members of each set are connected and provided at their free ends with hooks adapted to engage keepers secured to the bottom of the table members, one leg member of each set being provided with a brace member which is pivoted to the top portion thereof and the free end of which is adapted to be connected with the bottom portion of the corresponding leg member of each set, said braces being also provided with pivoted supports adapted to be held in a horizontal position for supporting a straight-edge bar and to be folded adjacent to said braces.

846,088. SHAFT-COLLAR. CHARLES E. BRINLEY, Philadelphia, Pa., assignor to The American Pulley Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Apr. 6, 1906. Serial No. 310,284.

Claim.—1. A shaft-collar comprising a plurality of annular disks of sheet metal, and an annular sheet-metal member riveted to the disks and uniting them, substantially as set forth.

2. A shaft-collar formed of pressed sheet metal, forming a channel U-shaped in cross-section, open toward the shaft and presenting both edges of the metal for contact therewith, substantially as set forth.

3. A shaft-collar formed of pressed sheet metal, comprising parallel annular disks having their inner edges presented for contact with the shaft; means rigidly connecting said disks, affording a channel adjacent to said shaft intermediate said edges; and means for securing said collar in position, substantially as set forth.

4. A shaft-collar formed of pressed sheet metal, comprising parallel annular disks having their inner edges presented for contact with the shaft; an annular sheet-metal member with overlapping ends connecting said disks in rigid relation; and a set-screw passing through said overlapping ends uniting them together and also setting the collar on the shaft, substantially as set forth.

5. A shaft-collar formed of pressed sheet metal, comprising parallel annular disks having their inner edges presented for contact with the shaft; and a peripheral wall connecting said disks in rigid relation, said peripheral wall being riveted to said disks, substantially as set forth.

6. A shaft-collar comprising a hollow ring having a peripheral wall and side walls formed of pressed sheet metal, said peripheral wall being provided with means for connecting said walls in rigid relation; and a set-screw in the peripheral wall whereby the collar is set on the shaft, substantially as set forth.

7. A sheet-metal shaft-collar comprising side plates in the form of annular disks, provided with openings; an annular sheet-metal member interposed between the side plates, formed by bending sheet metal into circular form with overlapping ends and provided with projecting spuds on its edges, said spuds being received and riveted in said openings in the side plates, substantially as set forth.

8. A sheet-metal shaft-collar comprising side plates in the form of annular disks provided with openings; a uniting member interposed between the side plates formed by bending sheet metal into circular form with flat overlapping ends and provided with projecting spuds on its edges, said spuds being received and riveted in said openings in the side plates; and a nut with spuds projecting from two sides, simultaneously riveted between the side plates immediately adjacent to the overlapping ends of the uniting member, substantially as set forth.

9. A shaft-collar comprising an annular sheet-metal member and two annular disks of the same, all united by riveting projecting portions of the strips into the disks, said annular disks having embossed portions on their outside surfaces for the protection of the rivet-heads, substantially as set forth.

10. A split shaft-collar of sheet metal composed of two similar segments each formed by the riveting together of two sheet-metal side plates and one uniting-piece, the side plates being provided at their extremities with corresponding interlocking edges of irregular contour and the uniting-pieces being provided with flattened extremities, substantially as set forth.

11. A split collar of sheet metal made up of two similar segments each of which comprise two side plates, with a uniting-piece riveted between them; the side plates being provided with corresponding interlocking edges where they abut against the other segment, including a radial and a tangential edge; the uniting-pieces each consisting of somewhat more than semicircles with overlapping flattened ends; and a nut in immediate juxtaposition to one of the flattened ends of said uniting-pieces, substantially as set forth.

12. A semi-annular section for a split collar composed of four integral rolled-steel pieces, to wit, a uniting-piece extending somewhat over a semicircle with flattened extremities and provided with spuds on its edges; two similar side plates each equal in extent to a semi-annulus, terminating at each end in similar interlocking edges and having openings; and a nut, with formation of projecting spuds thereon, said spuds on the edges of the uniting-piece and nut being received and riveted within corresponding openings in the side plates whereby all are united to form a complete split-collar section, with inclosure of one of the flattened extremities of the uniting-piece and exposure of the other, substantially as set forth.

13. A sheet-metal shaft-collar comprising side plates in the form of annular disks; an annular uniting member interposed within the side plates formed by bending sheet metal into circular form with overlapping ends, said overlapping ends having registering holes and provided with means for securing said side plates and uniting member in rigid relation.

14. A sheet-metal shaft-collar comprising side plates in the form of annular disks; an annular uniting member interposed between the side plates, formed by bending sheet metal into circular form with overlapping ends, said overlapping ends having registering holes; a nut placed coaxially with the registering holes in said uniting member, said side plates nuts and uniting member being secured in rigid relation substantially as set forth.

15. A sheet-metal shaft-collar comprising side plates in the form of annular disks; a uniting member interposed between the side plates formed by bending sheet metal into circular form, and provided with openings through the ends thereof; a nut registering with said openings, said side plates nut and uniting member being secured in rigid relation.

846,089. AJUSTABLE WINDOW-SHADE-SUPPORTING MEANS. JOHN F. CANNON, Erick, Okla. Filed Sept. 8, 1906. Serial No. 333,834.

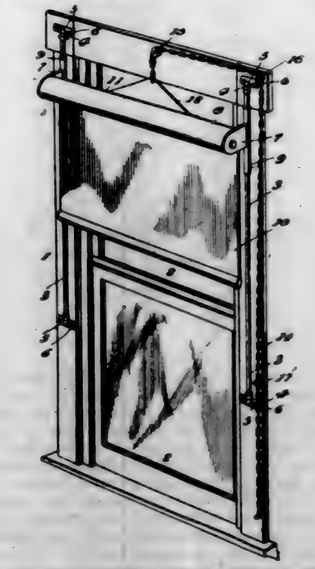

Claim.—1. In a device of the character described, the combination of spaced guide-rods, supporting-plates formed with outwardly-projecting extensions detachably engaging the said guide-rods, spring-mousings carried by the plates and coöperating with the extensions to prevent accidental displacement of the guide-rods, and window-shade-supporting means mounted upon the guide-rods.

2. In combination, a window-frame, spaced vertical guides arranged at opposite sides of said window-frame, supporting-plates attached to the window-frame and embodying outwardly-projecting extensions engaging the guides and securing the latter to the frame, spring-mousings carried by said plates and coöperating with the guides to prevent accidental displacement of the latter, brackets slidably mounted upon the guides, a member connecting the brackets together, a shade supported by the brackets, and means for raising and lowering the connecting member and brackets aforesaid to vary the position of the shade, the shade-supporting member, brackets and guides being bodily removable by disengagement of the latter from the extensions before mentioned.

846,090. AUTOMATIC PIANO. MELVILLE CLARK, Chicago, Ill. Filed Dec. 26, 1905. Serial No. 293,157.

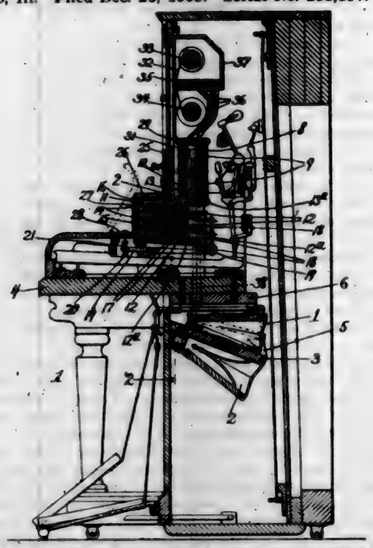

Claim.—1. In an automatic piano, in combination with the piano-case and the manual-keys, a pneumatic-action comprising motor-pneumatics and their controlling and operating devices contained in the piano-case, such motor-pneumatics being extended horizontally above the rear portion of the manual-keys within the case, having their moving members at their lower side and hinged at their forward ends for lifting at their rear ends in the collapse of the pneumatics; levers fulcrumed upon the lower side of the motor-pneumatic-supporting frame extending fore and aft underneath the latter; operating connections from the rear ends of such levers to the rear ends of the motor-pneumatics respectively, said levers at their forward ends overhanging and being adapted to act downwardly upon the respective keys of the manual forward of the fulcrums of the latter.

2. In an automatic piano, in combination with the piano-case and the manual-keys, a pneumatic-action comprising motor-pneumatics and their controlling and operating devices contained in the piano-case, such motor-pneumatics being extended horizontally above the rear portion of the manual-keys within the case, having their moving members at their lower side and hinged at their forward ends for lifting at their rear ends in the collapse of the pneumatics; levers fulcrumed upon the lower side of the motor-pneumatic-supporting frame extending fore and aft underneath the latter; operating connections from the rear ends of such levers to the rear ends of the motor-pneumatics respectively; striker-buttons adjustably mounted on the forward ends of said levers overhanging the respective keys of the manual forward of the fulcrums of the latter.

3. In an automatic piano, in combination with the piano-case and the manual-keys, a pneumatic-action comprising motor-pneumatics and their controlling and operating devices contained in the piano-case, such motor-pneumatics being extended horizontally above the rear portion of the manual-keys within the case, having their moving members at their lower side and hinged at their forward ends for lifting at their rear ends in the collapse of the pneumatics; levers fulcrumed upon the lower side of the motor-pneumatic-supporting frame extending fore and aft underneath the latter; operating connections from the rear ends of such levers to the rear ends of the motor-pneumatics respectively; striker-buttons having threaded stems set through the forward ends of the levers with the buttons at the lower end of the stem overhanging the respective keys of the manual forward of the fulcrums of the latter, the upper ends of the stems being upwardly accessible for adjustment of the buttons.

4. In an automatic piano, in combination with the piano-case having back of the manual an elevated or shouldered portion inclosed at the upper and forward side, and having the music-desk extending up from the rear of the shelf formed by the upper side of said shouldered portion, a pneumatic-action comprising a system of motor-pneumatics housed within said shouldered portion and having a supporting-frame which at the upper side protrudes inwardly beyond the lower end of the desk; a primary-pneumatic chamber mounted upon said rearwardly-protruding portion of the motor-pneumatic frame and extending upwardly therefrom behind the desk, the motor-pneumatics of said system having their moving members located at the lower side and hinged at the forward end for lifting at the rear ends in the collapse of the pneumatics; fore-and-aft extending levers fulcrumed intermediate their ends on the lower side of the motor-pneumatic frame; connections from the moving members of the pneumatics to the rear ends of said levers respectively, said levers being extended forwardly beyond the lower edge of the forward inclosing side of said shouldered portion of the case and adapted to be exposed upwardly at said forward ends, and strikers mounted on said upwardly-exposed ends overhanging the manual-keys respectively forward of the fulcrums of the latter.

846,091. DETACHABLE RUNNING-BOARD FOR MOTOR-VEHICLES. HOWARD E. COFFIN, Lansing, Mich., assignor to Olds Motor Works, Lansing, Mich., a Corporation of Michigan. Filed Apr. 14, 1906. Serial No. 311,700.

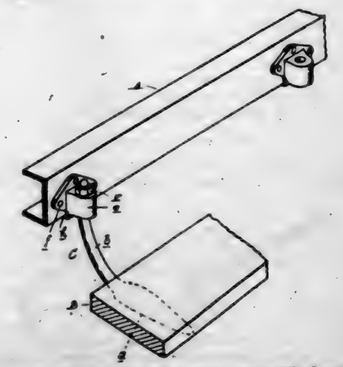

Claim.—1. The combination with a vehicle-frame, of a running-board provided with a plurality of hangers secured thereto, and sockets on said frame with which said hangers have a detachable engagement.

2. The combination with a frame, of a running-board having a plurality of hangers attached thereto, the shanks of said hangers terminating in vertically-extending portions, and socket members secured to the frame for engaging said vertically-extending portions of the shanks.

3. The combination with a frame, of a running-board and a detachable connection between said running-board and frame comprising a hanger having a horizontal portion secured to the running-board, and shank having a vertically-extending tapered portion terminating in a threaded end, a socket secured to the frame correspondingly tapered to receive said shank, and a nut for engaging the threaded portion of the shank and clamping the same in said socket.

4. The combination with a frame and running-board, of a detachable connection for said running-board, comprising the hangers C, having the horizontal portion *a*, the tapered portion *c*, and the threaded portion *d*, the socket member D secured to the frame having the tapered socket *e*, and a clamping-nut for engaging the threaded portion of the shank above said socket.

846,092. LOCOMOTIVE-HEADLIGHT. THOMAS D. COMER, Norton, Va. Filed Oct. 8, 1906. Serial No. 338,044.

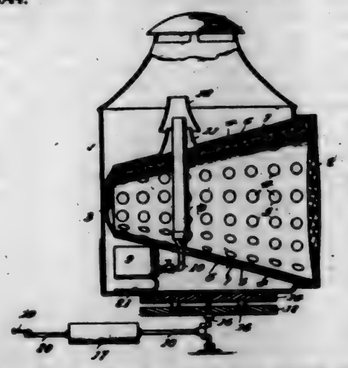

Claim.—1. A reflector having its body provided with a plurality of openings, shouldered jewels arranged in said openings and prevented from inward displacement by their shoulder portions which overlap the parts of the reflector-body adjacent to and surrounding the openings thereof, and a covering enveloping the reflector and holding the jewels in place.

2. A reflector having its body provided with a plurality of openings, shouldered jewels arranged in said openings and prevented from inward displacement by their shoulder portions which overlap the parts of the reflector-body adjacent to and surrounding the openings thereof, and a covering enveloping the reflector and holding the jewels in place, said covering consisting of a fabric of refractory material and an encircling binder of wire.

846,093. SPRING LOCK-SEAL. JOHN C. DAVIS, Hastings, Mich. Filed May 31, 1906. Serial No. 319,625.

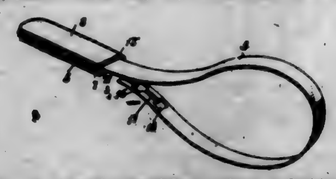

Claim.—1. A seal comprising a strap, a locking device carried by one end of the strap and provided with main and auxiliary locking members adapted to engage the opposite end of the strap, and a sectional housing including the interlocked ends of the strap, one section of the housing being integral with the locking device and an opposite section integral with the strap.

2. A seal comprising a strap having one end thereof provided with spaced locking-recesses, a locking device carried by the opposite end of the strap and provided with main and auxiliary locking members adapted to engage the recesses, and a housing inclosing the locking device, one wall of the housing being integral with the strap and the other integral with the locking device.

3. A seal comprising a strap having one end thereof provided with spaced recesses and having a longitudinal rib intersecting said recesses, and a locking device carried by the opposite end of the strap and provided with spring locking-tongues adapted to be depressed and enter the recesses by engagement with the longitudinal rib.

4. A seal comprising a strap having one end thereof provided with spaced locking-recesses, spaced locking-tongues carried by the opposite end of the strap and adapted to engage the recesses in the strap, and a yieldable auxiliary locking member adapted to engage one of the tongues for preventing accidental withdrawal of the strap from the locking member.

5. A seal comprising a strap having one end thereof provided with locking-recesses, a sectional housing one section of which is formed integral with the opposite end of the strap, a locking-tongue formed integral with the adjacent section of the housing, and a yieldable locking member disposed above the tongue and adapted to engage and lock said tongue when the strap is partially withdrawn from the housing.

6. A seal comprising a strap having one end thereof provided with spaced recesses, a housing carried by the opposite end of the strap, a plurality of spring-tongues extending laterally from the housing and adapted to enter the recesses in the adjacent end of the strap, and a yieldable locking member adapted to engage one of the tongues for preventing withdrawal of the strap from the housing, there being a vertical wall formed in the strap at the open end of said housing and forming a partial closure for the latter.

7. A seal comprising a strap having one end thereof bent to form one wall of a housing, a locking member seated in said housing and adapted to engage the opposite end of the strap, and a plate carried by the locking member and forming the opposite wall of said housing.

8. A seal comprising a strap having one end thereof bent to form one wall of a housing and its opposite end formed with a locking-recess, a locking member forming the opposite wall of the housing and provided with a spring-tongue adapted to engage a recess in the adjacent end of the strap, and an auxiliary locking-tongue disposed above the adjacent end of the tongue and adapted to engage the latter when the perforated end of the strap is partially withdrawn from the housing.

9. A seal comprising a strap having one end thereof bent to form one wall of a housing, a locking member seated within the housing and adapted to engage the opposite end of the strap, said locking member being provided with an extension bent upon itself and extended in parallel relation with the locking member to form the opposite wall of said housing.

10. A seal comprising a strap having one end thereof bent downwardly and laterally to form one wall of a housing, and its opposite end provided with a locking-recess, a locking member seated within the housing and having one end thereof bent upon itself and provided with a marginal bead for engagement with the adjacent wall of the housing, and a spring-tongue forming a part of the locking member and having its bill disposed in the path of movement of the perforated end of the strap and adapted to engage the recess therein.

846,094. EXTENSIBLE METALLIC SCREEN. ALBERT A. DAY, New York, N. Y. Filed June 19, 1906. Serial No. 322,482.

Claim.—1. An extensible metallic screen, comprising an inner screen-section and an outer screen-section, each section having horizontal frame-bars provided with longitudinal guiding beaded portions, for engaging corresponding portions of the other section, the outer portions of the horizontal bars of said outer section only being bent over parallel to the faces of said bars on one side to form retaining-flanges for engaging the horizontal bars of the inner screen-section, substantially as described.

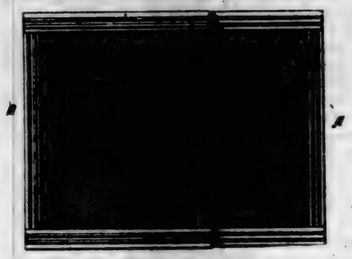

2. An extensible metallic screen comprising an inner and an outer screen-section each composed of a section of screen fabric, vertical bars of sheet metal secured thereto, and horizontal bars, each formed of a strip of sheet metal folded longitudinally upon itself, inclosing a marginal portion of the screen fabric and beaded longitudinally to secure and stretch the fabric and form guiding portions to engage the corresponding portions of the other screen-section, the horizontal bars of the outer screen-section only having the portions adjacent to the fold, bent over and parallel with one side of said bars to form retaining-flanges for the inner screen-section, substantially as described.

3. An extensible metallic screen, comprising an inner and an outer screen-section each composed of a section of screen fabric, vertical bars of sheet metal secured thereto, and horizontal bars, each formed of a strip of sheet metal folded longitudinally upon itself, inclosing a marginal portion of the screen fabric and beaded longitudinally to secure the fabric and form guiding portions to engage the corresponding portions of the other screen-section, the horizontal bars of the outer screen-section only having the portions adjacent to the fold, bent over and parallel with one side of said bars to form retaining-flanges for the inner screen-section, said retaining-flanges being also beaded and engaging the grooved portions in rear of the beaded portions of the inner screen-section, substantially as described.

4. An extensible metallic screen comprising an inner and an outer screen-section each composed of a section of screen fabric, vertical frame-bars formed of sheet metal folded longitudinally, embracing marginal portions of the fabric and beaded longitudinally to points adjacent to the ends to stretch and retain the fabric therein, and horizontal bars also formed of sheet metal folded longitudinally inclosing marginal portions of the fabric and the ends of the vertical bars, and beaded longitudinally to stretch and retain the fabric therein, and form guiding portions thereon, the portions of the horizontal bars of the outer screen-section only, adjacent to the fold, being bent over and parallel to one face of said bars to form retaining-flanges for said inner screen-section, substantially as described.

5. An extensible metallic screen comprising an inner and an outer screen-section each composed of a section of screen fabric, vertical frame-bars formed of sheet metal folded longitudinally, embracing marginal portions of the fabric and beaded longitudinally to points adjacent to the ends to retain the fabric therein, and horizontal bars also formed of sheet metal folded longitudinally inclosing marginal portions of the fabric and the ends of the vertical bars, and beaded longitudinally to retain the fabric therein and form guiding portions thereon, the portions of the horizontal bars of the outer screen-section only, adjacent to the fold, being bent over and parallel to one face of said bars to form retaining-flanges for said inner screen-section, the end portions of the vertical frame-bars inclosed within the horizontal frame-bars, extending beyond the beaded portions of the latter, and being correspondingly and transversely beaded, substantially as described.

6. An extensible metallic screen comprising an inner and an outer screen-section, each comprising a piece of screen fabric, vertical bars secured thereto, and horizontal bars secured thereto and beaded longitudinally to form guiding portions to engage corresponding portions of the other section, the horizontal bars of the outer section only having their outer edges bent over to form retaining-flanges for the inner section, and the outside vertical bar of each section having a portion bent perpendicularly thereto, and provided with a groove for engaging a stationary guide, substantially as described.

7. An extensible metallic screen comprising an inner and an outer screen-section, each comprising a piece of screen fabric, vertical bars secured thereto, and horizontal bars secured thereto and beaded longitudinally to form guiding portions to engage corresponding portions of the other section, the horizontal bars of the outer section only having their outer edges bent over to form retaining-flanges for the inner section, and the outside vertical bar of each section having a portion bent perpendicularly thereto, and provided with a groove for engaging a stationary guide, and means for locking the horizontal bars of the inner and outer screen-sections with respect to each other, substantially as described.

8. An extensible metallic screen comprising an inner screen-section, and an outer screen-section, each composed of a piece of screen fabric, vertical frame-bars secured thereto, one of said bars having a perpendicular portion provided with a guiding-groove for engaging a stationary guide, and horizontal frame-bars each formed of a piece of sheet metal folded longitudinally inclosing a marginal portion of the fabric and beaded longitudinally throughout their length to form guiding portions engaging corresponding portions of the other section, the horizontal bars of the outer screen-section only having guiding-flanges bent over parallel with one face of said bars and engaging the horizontal bars of the other screen-section, and means for locking the horizontal bars of the two screen-sections together, substantially as described.

9. An extensible metallic screen comprising an inner screen-section and an outer screen-section, each composed of a piece of screen fabric, vertical frame-bars, each formed of a piece of sheet metal folded upon itself inclosing marginal portions of the fabric, and beaded longitudinally to retain the fabric therein, one of said vertical bars being wider than the other, and having a folded portion bent at right angles to the main portion substantially throughout its length, and beaded to provide guiding portions to engage a stationary vertical guide, horizontal frame-bars each formed of a strip of sheet metal folded longitudinally inclosing marginal portions of the fabric, and beaded longitudinally to secure the fabric and form guiding portions to engage the other screen-section, and means for locking the horizontal bars of said inner and outer screen-sections together, substantially as described.

846,095. INDICATOR FOR OVERHEATED SHAFT-BEARINGS AND THE LIKE. FRANK W. DICK, Rotherham, England. Filed Dec. 9, 1905. Serial No. 291,153.

Claim.—1. The combination with a bearing, of a metallic ribbon composed of two metals of different expansibility bound together and wound in a spiral and subjected to the heating action of the bearing, a tubular element fixed in the bearing and to one end of the metallic ribbon, a central rod, a striker, a tongue-piece coacting at certain predetermined temperature with the striker, and a bell adapted to be sounded when the tongue-piece and the striker coact, substantially as described.

2. The combination with a bearing, of a metallic ribbon composed of two metals of different expansibility bound together and wound in a spiral and subjected to the heating action of the bearing, a tubular element fixed in the bearing and to one end of the metallic ribbon, a central rod, a lever on said central rod, a link connecting said lever to a pivotally-carried bracket, a bell carried by said bracket, a spring-trigger for sounding said bell, and a knob on the

shaft adapted to coact with the trigger when the predetermined temperature is reached, substantially as described.

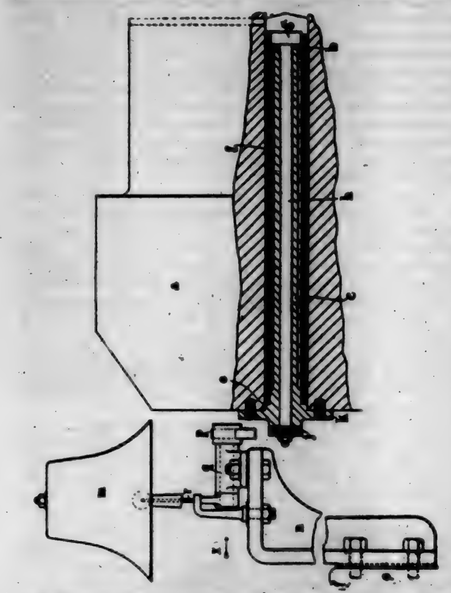

3. The combination with a bearing, of a metallic ribbon composed of two metals of different expansibility bound together and wound in a spiral and subjected to the heating action of the bearing, a tubular element fixed in the bearing and to one end of the metallic ribbon, a central rod, a lever on said central rod, a link connecting said lever to a spindle, a trigger on said spindle, a knob on the shaft adapted to coact with the trigger when the predetermined temperature is reached, and a bell adapted to be sounded when the knob and trigger coact, substantially as described.

4. The combination with a bearing, of a metallic ribbon composed of two metals of different expansibility bound together and wound in a spiral and subjected to the heating action of the shaft-bearing, a tubular element fixed in the bearing and to one end of the metallic ribbon, a central rod, a lever on said central rod, a link connecting said lever to a spindle, an adjusting-screw on said link, a trigger on said spindle, a knob on the shaft adapted to coact with the trigger when the predetermined temperature is reached, and a bell adapted to be sounded when the knob and trigger coact, substantially as described.

5. The combination with a bearing, of an overheat device comprising a Breguet thermostat, a bell, a trigger for sounding said bell controlled by said thermostat, and a striker operated to strike said trigger when said thermostat is overheated.

6. The combination with a fixed part and a rotating part, of an overhead-indicator comprising a striker on one of said parts to operate the bell of said indicator, a Breguet thermostat, a bracket carrying said bell and the trigger to sound the latter, and said bell and trigger, said bracket being controlled by said thermostat to throw said trigger into the path of said striker.

7. The combination with a bearing, of an overheat device, comprising a Breguet thermostat, a bell with a clapper and means for actuating the same lying normally out of the path of a striker, a device connected to said thermostat and adapted to throw said means into position for engagement with said striker, and the striker aforesaid lying normally out of engagement with said means but adapted to engage the same when the thermostat is overheated.

846,096. AUTOMATIC SWITCH. ALBERT C. DOHRMANN, Rivergrove, and CLARENCE WAITE, Chicago, Ill. Filed June 28, 1906. Serial No. 323,864.

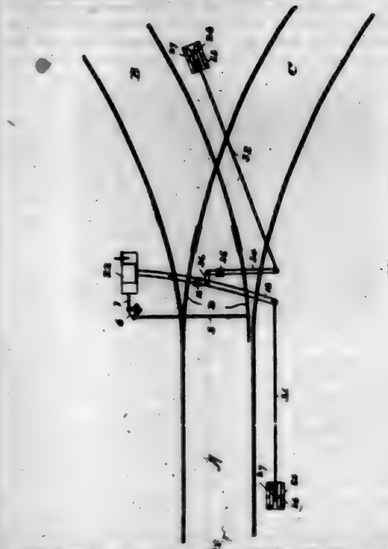

Claim.—1. An automatic switch-actuating mechanism, comprising, in combination, a slideway located alongside the track in advance of the switch, a slide mounted in said slideway, actuating connections from said slide to the switch, a contact pivotally mounted on the said slide, a tappet mounted on a locomotive, means controlled by the engineer for moving said tappet into and out of a position in which it is adapted to engage said contact, the latter having a member disposed transversely of the slide in the path of movement of said tappet, and a guide engaging said contact through a portion of its sliding movement but permitting said contact to turn on its pivot at the end of its movement and permit said tappet to pass, substantially as described.

2. In an automatic switch-actuating mechanism, the combination with a slidable switch-plate, and connections therefrom to the switch, of a pivoted lever one end whereof has a lost-motion connection to said switch-plate, a single locking device adapted to lock said switch-plate at both limits of its movement, connections between said locking device and said lever operable when the latter swings in either direction, a contact mechanism located alongside the track in advance of the switch, actuating connections from said contact mechanism to the other end of said lever, a tappet mounted on a locomotive, and means controlled by the engineer for moving said tappet into and out of a position in which it is adapted to engage said contact mechanism, substantially as described.

3. In an automatic switch-actuating mechanism, the combination with a slidable switch-plate having a pair of locking-apertures, and connections from said switch-plate to the switch, of a pivoted lever one end whereof has a lost-motion connection to said switch-plate, a slidable locking-bar, a spring tending to force the latter into locking engagement with one or the other of said locking-apertures, connections between said locking-bar and said lever operable when the latter swings in either direction, a contact mechanism located alongside the track in advance of the switch, actuating connections from said contact mechanism to the other end of said lever, a tappet mounted on a locomotive, means controlled by the engineer for moving said tappet into and out of a position in which it is adapted to engage said contact mechanism, substantially as described.

4. In an automatic switch-actuating mechanism, the combination with a switch-plate, of a slide-block having a lost-motion connection therewith and adapted to actuate said plate, connections from said plate to the switch, a pivoted lever one end whereof engages said slide-block, a locking mechanism for said switch-plate, and actuating connections therefrom to said slide-block, a contact mechanism located alongside the track in advance of the switch, actuating connections from said contact mechanism to the other end of said lever, a tappet mounted on a locomotive, and means controlled by the engineer for moving said tappet into and out of a position in which it is adapted to engage said contact mechanism, substantially as described.

5. In an automatic switch-actuating mechanism, the combination with a switch-plate having locking-apertures, of a slide-block having a lost-motion connection therewith, and adapted to actuate said plate, connections from said plate to the switch, a pivoted lever one end whereof engages said slide-block, a spring-pressed reciprocable locking-bar adapted to engage the apertures of said plate, an actuating-link for unlocking said locking-bars between the latter and said slide-block, a contact mechanism located alongside the track in advance of the switch, actuating connections from said contact mechanism to the other end of said lever, a tappet mounted on a locomotive, and means controlled by the engineer for moving said tappet into and out of a position in which it is adapted to engage said contact mechanism, substantially as described.

6. In a switch-actuating mechanism, the combination with a contact mechanism located alongside the track in advance of the switch, of actuating connections from said contact mechanism to the switch, a tappet mounted on the locomotive, means controlled by the engineer for moving said tappet into and out of a position in which it is adapted to engage said contact mechanism, automatic means for locking said switch-actuating connections against movement in both positions of the switch, and an inclosed manually-operable lever operatively connected to both said switch-actuating connections and said locking means, said manually-operable lever being free to yield under the movement of the automatic switch-actuating connections, substantially as described.

7. In a switch-actuating mechanism, the combination with an apertured slidable switch-plate, and connections therefrom to the switch, of a contact mechanism located alongside the track in advance of the switch, actuating connections from said contact mechanism to said slidable switch-plate, a tappet mounted on the locomotive, means controlled by the engineer for moving said tappet into and out of a position in which it is adapted to engage said contact mechanism, a spring-actuated locking-bar adapted to engage the apertures of said switch-plate to lock the latter against movement in either position of the switch, and an inclosed manually-operable lever operatively connected to both said switch-plate and said locking-bar, said manually-operable lever being free to yield under the sliding movement of said switch-plate, substantially as described.

8. In a switch-actuating mechanism, the combination with a slidable switch-plate having a pair of locking-apertures, and connections from said switch-plate to the switch, of a pivoted lever one end whereof has a lost-motion connection to said switch-plate, a slidable locking-bar, a spring tending to force the latter into locking engagement with one or the other of said locking-apertures, connections between said locking-bar and said lever operable when the latter swings in either direction, a contact mechanism located alongside the track in advance of the switch, actuating connections from said contact mechanism to the other end of said lever, a tappet mounted on the locomotive, means controlled by the engineer for moving said tappet into and out of a position in which it is adapted to engage said contact mechanism, and a manually-operable lever connected to and adapted to operate said locking-bar and said pivoted lever, substantially as described.

846,097. TRAIN-VENTILATING SYSTEM. JOHN H. ELWARD, Hutchinson, Kans. Filed June 14, 1905. Serial No. 265,234.

Claim.—1. In a car-ventilating system, a plurality of air-ducts, each carried by one of the cars, coupling devices

for connecting the ducts together, an air-duct adapted to be arranged on the locomotive of the train and to be coupled to the duct of the next adjacent car, and having a funnel at its front end adapted to introduce air under natural draft, an auxiliary duct connected with said duct on the locomotive and having a funnel-mouth disposed to draw in air into the said duct in a direction opposite to that in which it enters the funnel of the main duct, a double-acting valve mechanism adapted to open one of said ducts, and to close the other one, and an air-pump connected with said auxiliary duct and arranged to draw air through it and deliver it to the main duct.

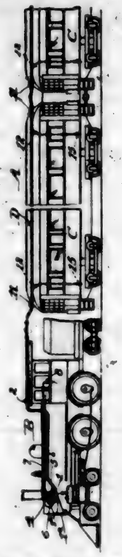

2. In a train-ventilating system, the combination with air-ducts arranged upon the cars to be ventilated, and adapted to be connected in a series when a train is made up, of a main air-supply duct adapted to be carried by the locomotive, and having a funnel at its front end adapted to direct air traveling in one direction into the said main duct, an auxiliary air-duct connected with said main air-duct, and having at its front end a funnel arranged to take air in an opposite direction to that in which it enters the funnel on the main air-duct, a double-acting valve mechanism arranged to cut off the flow of air through one of said ducts and permit its flow through the other one thereof alternately, and an air-pump connected with said auxiliary duct, and adapted to deliver air to said main air-duct.

3. In a car-ventilating system, the combination with the air-ducts on the cars to be ventilated, of a main air-supply pipe arranged upon the train, and having at its forward end a funnel arranged to deliver air under natural draft to said main duct, an auxiliary air-duct connected at one end with said main air-duct, and having at its forward end a funnel adapted to receive air on lines opposed to the lines on which air enters the first-described funnel, a valve in said main air-duct between the funnel at the forward end thereof and the point at which the auxiliary duct connects with the main air-duct, a valve in said auxiliary duct between the funnel at one end thereof and the point of connection of said duct with said main air-duct, means for operating said valves arranged to alternately open one and close the other one of said ducts to the passage of air, an air-pump connected with said auxiliary duct at a point between the valve therein and the connection of said duct with the main air-duct, and means for actuating said air-pump.

4. In a train-ventilating system, the combination of an air-duct leading to the cars to be ventilated and provided

at its forward end with a funnel or air-collector opening forward, an auxiliary duct connected with the main air-duct and provided with an end opening in a direction substantially opposite to that in which the said funnel or air-collector opens, means for forcing air into the main duct through the auxiliary duct, and valves for controlling the passage of air through the said main and auxiliary ducts, substantially as set forth.

5. In a train-ventilating system, the combination of a main air-duct, a branch pipe leading therefrom arranged to deliver to the interior of the car, a cup-shaped distributer situated opposite to the open end of the branch pipe and provided with an opening substantially in line therewith, and a duct or pipe leading from the said distributer, and connected with the said opening therein, and arranged to carry off foreign substances delivered with the air through the branch pipe, substantially as set forth.

6. In a train-ventilating system, the combination with a main air-duct and a branch leading therefrom and arranged to deliver air to the interior of a car, of a cup-shaped distributer situated opposite the open end of the branch pipe, having a funnel-shaped connection 16 disposed substantially in line with the branch pipe, and a pipe or duct of smaller size than the branch pipe leading from the said funnel-shaped connection and arranged to carry off foreign particles that may be introduced along with the air delivered through the branch pipe, substantially as set forth.

846,098. CAR-VENTILATOR. JOHN H. ELWARD, Hutchinson, Kans. Filed June 14, 1905. Serial No. 265,235.

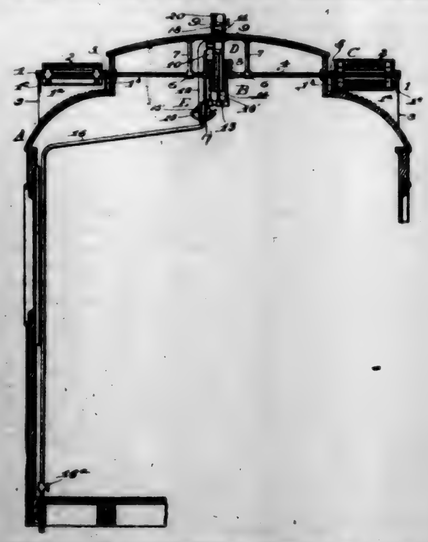

Claim.—1. In a car-ventilating apparatus, the combination of an open-ended bearing or supporting-frame having inclined side walls 1^a arranged to be secured to the roof of a car, and end plates 1^b and 1^c, the outer end plate being arranged with its lower edge somewhat above the roof of the car so as to leave an open space for the escape of snow, dirt and the like, a wind-wheel located in the said bearing-frame and air-forcing means connected with and operated by the said wind-wheel, substantially as described.

2. In a car-ventilating apparatus, the combination of an open-ended and open-top bearing or supporting frame, the outer end wall thereof having its lower edge above the support to which the frame is secured to permit the escape of snow and like material, a hood 19 over the top of the frame, a wind-wheel mounted in the said bearing-frame, and air-forcing means connected with and operated by the said wind-wheel, substantially as described.

3. In a car-ventilating apparatus, the combination of a wind-wheel supported on the top of a car, a pump located inside the car and connected with and operated by the wind-wheel, an inlet-pipe leading from the outer air to the pump, a cowl at the end of the inlet-pipe, and distributing-pipes within the car leading from the pump, substantially as described.

846,099. PICTURE-MOUNTING PAGE OR SHEET. CHARLES F. ENGSTROM, St. Charles, Ill. Filed Aug. 27, 1906. Serial No. 332,144.

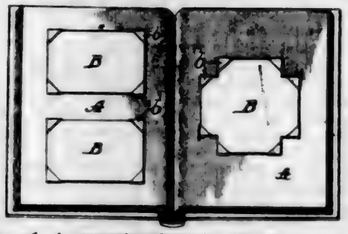

Claim.—1. A mounting-sheet in the form of a Greek cross having diagonally-disposed strips of material extending across the corners of the mounting-sheet whereby a picture or the like can be secured in the mounting-sheet in a vertical or horizontal position.

2. A mounting-sheet having diagonal flaps integral therewith and extending therefrom at the corners, said flaps being adapted to be folded across the corners of the mounting-sheet and turned down between the sheet and page to which the sheet is adapted to be secured.

3. A mounting-sheet in the form of a Greek cross, having diagonally-disposed flaps integral with said mounting-sheet and extending from the corners thereof, said flaps being adapted to be folded across the corners of the mounting-sheet and turned down between the sheet and the page to which the sheet is adapted to be secured.

846,100. ATTACHMENT FOR STEAM-BOILERS. BLAIR A. ESTEP, South Bend, Ind. Filed June 22, 1905. Serial No. 266,392.

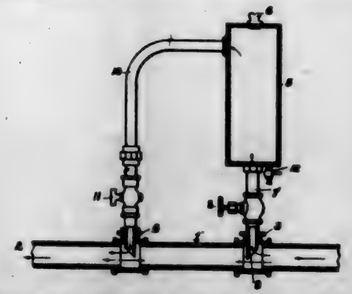

Claim.—In an apparatus of the class described, the combination with the boiler feed-pipe, and the reservoir, of means for forcing a boiler compound from the reservoir by the flow of water through the feed-pipe, comprising an intake-pipe communicating with the bottom of the reservoir and with the feed-pipe and having its end that enters the feed-pipe cut obliquely with its opening facing in a direction opposite to the flow of the water, whereby an injection action is provided, an escape-pipe connected with the reservoir near the upper end thereof and with the feed-pipe in the rear of the intake-pipe and having its end that enters the feed-pipe cut obliquely with the opening facing in the direction of the flow of the water, whereby an ejection action is provided, and valves in the intake and escape pipes for controlling the flow of material therethrough.

846,101. PUMP. HENRY M. ETTER, Shippensburg, Pa. Filed Sept. 10, 1906. Serial No. 333,985.

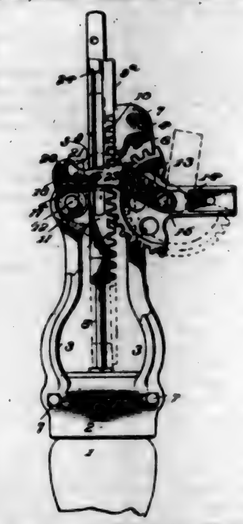

Claim.—1. In a pump, the combination with an actuating-rack and a segment arranged for engagement with said rack, of a pair of supporting-arms, a pump-head in which said arms are mounted to move laterally, the segment being provided with trunnions journaled in said supporting-arms, and means for holding said supporting-arms in two different positions with respect to the pump-head whereby to support the segment in mesh or out of mesh with the rack-bar.

2. In a pump, the combination with a pump-head, provided with outwardly-opening pockets, a pair of supporting-arms provided with bosses mounted to move in said pockets and supported therein, said bosses being provided with bearing-openings, an actuating-segment having trunnions supported in said openings, an actuating rack-bar movable through said head, and means for holding said supporting-arms in two different positions, transversely considered, in the head, whereby to hold the segment in mesh with the rack-bar or out of engagement therewith.

3. In a pump, the combination of a head provided with a transversely-extending chamber and two opposite pockets at one side of said chamber, a pair of supporting-arms mounted to slide horizontally in said chamber and provided at one end with bosses slidingly mounted in said pockets, said bosses being provided with sockets or bearing-openings, a segment provided with trunnions journaled in said openings, a rack-bar movable through the head across the plane of said segment, and means for securing the said arms of the head in two different positions, namely, with the segment in mesh with the rack-bar, and out of mesh with said bar.

4. In a pump, the combination with the pump-head, provided with outwardly-opening pockets at one side and with oppositely-registering apertures near the opposite side, of a pair of supporting-arms provided at one end with bosses mounted to slide in said pockets and also provided with two sets of transversely-alining apertures, either of which is arranged to be brought into registry with the apertures in the pump-head, a locking-pin adapted to be inserted through the registering apertures in the arms and pump-head, a rack-bar movable through the head, and an actuating-segment journaled in the bosses of said supporting-arms.

5. In a pump, the combination with the pump-head, provided with outwardly-opening pockets at one side and with oppositely-registering apertures near the opposite side, of a pair of supporting-arms provided at one end with bosses mounted to slide in said pockets and also provided with two sets of transversely-alining apertures, either of which is arranged to be brought into registry with the apertures in the pump-head, a locking-pin adapted to be inserted through the registering apertures in the arms and pump-head, a rack-bar movable through the head, an actuating-segment journaled in the bosses of said supporting-arms, and a bolt securing the said arms together at one end, the proportion of the parts being such that the bolt will abut against the pump-head when the arms are moved in one direction, at a point where one set of the apertures of said arms are in registry with the apertures in the pump-head, and whereby the bosses of said arms will abut against the rear walls of the pockets in the pump-head when the other set of apertures of the arms are in registry with the apertures in the pump-head.

6. In a pump, the combination with the head provided at one side with pockets and at the other side with bosses, an actuating rack-bar movable through the head, an anti-friction-roller provided with trunnions mounted in the bosses of the pump-head, supporting-arms provided with bosses at one end, said bosses being mounted to slide in the pockets of the pump-head, the other ends of said arms sliding upon and supported by the bosses of the pump-head, a segment having trunnions journaled in the bosses of said arms, and means for securing the said arms to the head in two different positions, namely, with the segment in mesh with the rack-bar, and out of mesh with said bar.

7. In a pump, the combination of a pump-head provided at its upper end with a transversely-extending chamber, with outwardly-opening pockets at one side of said chamber and with interior bosses at the other side of said chamber, a pair of supporting-arms provided at one end with bosses mounted to slide in said pockets, and provided at their other ends with flanges supported upon and mounted to slide on the interior bosses of the pump-head, an actuating rack-bar movable through the head, an actuating-segment having trunnions journaled in the bosses of said arms, and means for securing the said arms to the head in two different positions, namely, with the segment in mesh with the rack-bar, and out of mesh with said bar.

8. In a pump, the combination of a pump-head, a rack-bar mounted to move vertically through said head and provided with a solid portion above its teeth, a toothed segment, supports in which said segment is pivotally mounted, said supports being movable in a plane at right angles to the plane of movement of the rack-bar, means for securing the said segment-supports to the pump-head in two different positions, namely, with the segment in mesh with the rack-bar, and out of mesh with said bar, and means for limiting the downward movement of the rack-bar to a point where its uppermost tooth is in registry with the uppermost tooth of the segment when the latter is swung so as to bring such tooth to its lowermost position.

9. In a pump, the combination of a pump-head, a rack-bar mounted to move vertically through said head and provided with a solid portion above its teeth, a toothed segment, supports in which said segment is pivotally mounted, said supports being movable in a plane at right angles to the plane of movement of the rack-bar, means for securing the said segment-supports to the pump-head in two different positions, namely, with the segment in mesh with the rack-bar, and out of mesh with said bar, the rack-bar being provided with a lug adapted to limit its downward movement to a point of rest and at an elevation that will admit of the section being moved into gear with the teeth of the rack-bar only when the uppermost tooth of the segment and the uppermost tooth of the rack-bar are in registry with each other.

846,102. METHOD AND APPARATUS FOR DRAWING GLASS. ROBERT L. FRINK, New Castle, Pa. Filed Aug. 29, 1906. Serial No. 332,498.

Claim.—1. The method of drawing hollow glass articles, which consists in drawing a hollow glass body of in-

definite length from a molten bath in a manner to maintain a substantially fixed distance between the bath and point of application of the drawing strain, and supplying air to the interior of said hollow body during the drawing.

2. The method of drawing hollow glass articles, which consists in drawing a hollow glass cylinder of indefinite length from a molten bath, progressively changing the point of application of the drawing strain to said cylinder, and supplying air to the interior of the cylinder during the drawing.

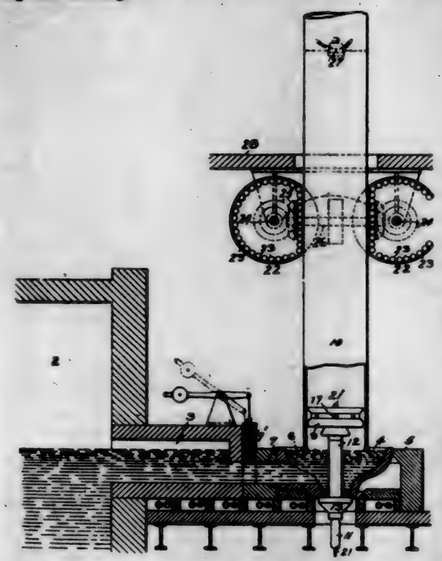

3. The method of drawing hollow glass articles, which consists in drawing a hollow glass cylinder of indefinite length from a molten bath, progressively changing the point of application of the drawing strain to said cylinder, supplying air to the interior of the cylinder during the drawing, and then severing the cylinder into lengths.

4. The method of drawing hollow glass articles, which consists in drawing a continuous cylinder of indefinite length from a bath of molten glass, applying heat to the bath during the drawing operation, supplying air to the interior of the cylinder, and cooling the air thus supplied; substantially as described.

5. The method of drawing hollow glass articles, which consists in drawing a continuous cylinder of indefinite length from a bath of molten glass, applying heat to the bath during the drawing operation, supplying air to the interior of the cylinder, cooling the air thus supplied, and then severing the drawn cylinder into lengths; substantially as described.

6. The method of regulating the pressure of air or other gaseous fluid supplied to the interior of hollow glass articles while drawing the same, which consists in introducing the air or other fluid into a partially-confined space within such article, and controlling the escape of the fluid by its action on the walls of the article; substantially as described.

7. The method of regulating the pressure of air or other gaseous fluid supplied to the interior of hollow glass articles, while being drawn, which consists in introducing the fluid into a confined space within such article and causing the article itself under the action of the fluid to regulate the escape of the fluid from such space; substantially as described.

8. In drawing hollow glass articles, the method of regulating the air-supply to the interior of the article being drawn, which consists in introducing the air to the article below the point where the glass sets, and utilizing its action upon the article to control its escape; substantially as described.

9. The method of drawing hollow glass articles, which consists in drawing a hollow body from a molten bath, and introducing air therein and confining the same below the point at which the glass sets, whereby said air is caused to distend the unset glass body and thereby automatically regulate its pressure.

10. In apparatus for drawing glass, a drawing pot or receptacle, a head around which the hollow glass article is drawn, said head being of a size to substantially close the hollow article, and means for drawing a hollow article of indefinite length around said head, said drawing means being arranged to progressively change its point of grip on the hollow article.

11. In glass-drawing apparatus, a drawing pot or receptacle, a head around which the hollow glass article is drawn, said head being of a size to substantially close the hollow article, and means for automatically regulating the pressure between said head and bath.

12. In glass-drawing apparatus, a drawing pot or receptacle, a head around which the hollow glass article is drawn, said head being of a size to substantially close the hollow article and serving as a means for regulating the pressure between itself and the bath, and means for producing between said head and the bath a pressure different from atmospheric pressure.

13. In glass-drawing apparatus, a drawing pot or receptacle, a head around which the hollow glass article is drawn, said head being of a size to substantially close the hollow article, and an air-inlet opening between said head and bath.

14. In glass-drawing apparatus, a drawing pot or receptacle, means for drawing therefrom a continuous cylinder of indefinite length, said drawing means being arranged to progressively change its point of grip on said cylinder, and means for supplying air to the interior of the cylinder during the drawing operation.

15. In apparatus for drawing glass, a drawing pot or receptacle, means for drawing therefrom a continuous cylinder of glass of indefinite length, said drawing means being arranged to progressively change its point of grip on the cylinder, means for supplying air to the interior of the cylinder during the drawing operation, and means for severing the cylinder above the drawing means.

16. In apparatus for drawing glass, a glass pot or receptacle, means for maintaining a supply of glass in said receptacle, drawing devices for drawing a continuous cylinder from the glass in the receptacle, and means for supplying air to the interior of the cylinder arranged in combination with the cylinder to automatically regulate the pressure of the air-supply; substantially as described.

17. In glass-drawing apparatus, a drawing pot or receptacle, a head around which the hollow glass article is drawn, said head being of a size to substantially close the hollow article and being located in such proximity to the bath that the glass will still be plastic when it passes said head, and means for supplying air between said head and bath.

18. In glass-drawing apparatus, a drawing pot or receptacle, a head around which a hollow glass article is drawn, said head being of a size to substantially close the hollow article and being located in such proximity to the bath that the glass will not be set when it passes the head, and means for supplying air to the head and introducing the same between said head and the bath.

19. In glass-drawing apparatus, a drawing pot or receptacle, a head around which a hollow glass article is drawn, said head having two parts and being of a size to substantially close the hollow article at two points and being located in such proximity to the bath that the glass will not be set when it passes the head, means for supplying air between the lower part of the head and the bath, and means for the escapement of air from between the two parts of the head.

20. In glass-drawing apparatus, a head around which a hollow glass article is arranged to be drawn, said head having flanges one of which is substantially the diameter of the article to be drawn, and the other of which is of slightly less diameter, and means for supplying air to the interior of the article being drawn below said head, the head having means intermediate of the two flanges to permit the escape of air-pressure; substantially as described.

21. In glass-drawing apparatus, an air supply and regulating head to which a hollow glass article is adapted to be drawn, said head having an upper flange of substantially the diameter of the article being drawn, and a lower flange slightly less in diameter, means for supplying air to the interior of the glass article below the head, the said head having means for the escape of air-pressure between the two flanges, and means for cooling the air; substantially as described.

22. In glass-drawing apparatus, an air regulating and cooling head about which a hollow glass article is adapted to be drawn, means for supplying air to the interior of the head, and to permit the escape therefrom into the article being drawn below the head, means for permitting the escape of air from below the head, and means for circulating a cooling medium in the head; substantially as described.

23. In apparatus for drawing hollow glass articles, a drawing-roll having a periphery supported at the ends and yielding between the ends and adapted to yieldingly grip the article being drawn.

24. In apparatus for drawing hollow glass articles, a pair of drawing-rolls arranged upon opposite sides of the article to be drawn and having peripheries supported at the ends and yielding between the ends.

25. In apparatus for drawing hollow glass articles, a pair of drawing-rolls arranged upon opposite sides of the article to be drawn, said rolls being provided with yielding peripheries supported at their ends only, and a flexible refractory covering for said yielding peripheries.

26. In a glass-drawing apparatus, a drawing-roll having its periphery of wire fabric of spring character, and a refractory covering; substantially as described.

846,103. STAIR-ROD HOLDER. ISAAC N. GIFFIN, Van Wert, Ohio. Filed May 15, 1906. Serial No. 317,040.

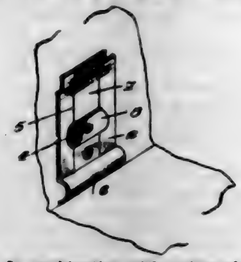

Claim.—1. In combination with a riser of stairs, a stair-rod holder consisting of a rod-engaging member, and a member applied to the riser to engage the rod-engaging member and detachably hold the same in position.

2. In a stair-rod holder, the combination of an attaching-plate, a stair-rod-engaging member provided with a slot to receive the attaching-plate, and a member applied to the attaching member and arranged to engage the rod-engaging member to detachably position the latter.

3. In a stair-rod holder, the combination of an attaching-plate, a rod-engaging member provided with an extension or flange to engage a rod and having a slot to receive the attaching-plate, and a member pivoted between its ends to the attaching-plate and adapted to engage opposite side portions of the rod-engaging member to support the latter in operative position.

4. In a stair-rod, the combination of an attaching-plate, a stair-rod-engaging member provided with a slot, and a finger-piece pivoted between its ends to the attaching-plate and adapted when arranged transversely of the attaching-plate to engage opposite side portions of the stair-rod-engaging member, the finger-piece when moved into a position longitudinally of the attaching-plate permitting displacement of the rod-engaging member.

846,104. SIGNAL-LANTERN. ALEXANDER H. HANDLAN, Jr., St. Louis, Mo. Filed Oct. 5, 1906. Serial No. 337,540.

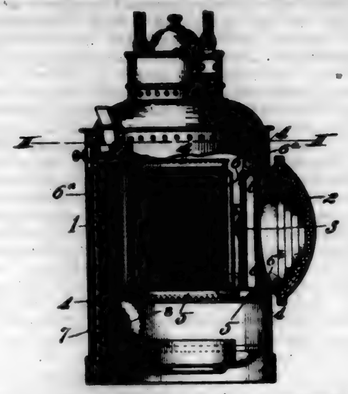

Claim.—1. The combination, with a lantern-body having an opening; of lower and upper curved right-angle guide-strips, a glass-plate-holding frame having a curved front plate provided with an opening corresponding to the opening in the lantern-body, and adapted to slide in the guide-strips, a segmental bottom plate, upon which the glass plate is supported, and vertical channel-strips at the edges of the holding-frame in which the edges of the glass plate are received, a depending segmental rack-bar secured to the bottom plate and having a recess receiving the flange of the lower guide-strip, a crank-shaft journaled in the lantern-body, and a vertical pinion mounted upon and fixed to the crank-shaft.

2. The combination, with a lantern-body having an opening; of lower and upper curved right-angle guide-strips, a glass-plate-holding frame having a curved front plate provided with an opening corresponding to the opening in the lantern-body, and adapted to slide in the guide-strips, a segmental bottom plate, upon which the glass plate is supported, and vertical channel-strips at the edges of the holding-frame in which the edges of the glass plate are received, a depending segmental rack-bar secured to the bottom plate and having a recess receiving the flange of the lower-guide-strip, a crank-shaft journaled in the lantern-body, a vertical pinion mounted upon and fixed to the crank-shaft, the bearing-sleeve through which the crank passes, the bearing-collar in which the bearing-sleeve is supported, and the spring-plate mounted upon the bearing-sleeve and pressing against the lantern-body, and against the pinion.

846,105. IRONING-BOARD. ELMER W. HARRIS, WILLIAM BREMER, and NELS RASMUSSEN, Cedar Falls, Iowa, assignors to Harris & Cole Bros. Inc., Cedar Falls, Iowa, a Corporation of Iowa. Filed Oct. 2, 1905. Serial No. 280,944.

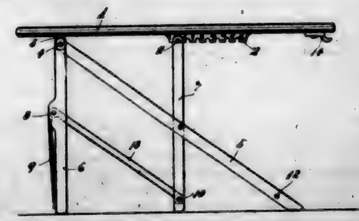

Claim.—1. An ironing-board having three pairs of pivotally-connected supporting-legs, all of which are arranged to engage with the floor, two of which pairs are connected for parallel movements, and for angular movements with respect to the third pair of legs, substantially as described.

2. The combination with an ironing-board, of two pairs of legs pivotally connected thereto, a third pair of legs crossed with and pivotally connected to one of the aforenoted pairs of legs, and a link pivotally connecting the first two pairs of the aforenoted legs for parallel movements and for angular movements with respect to the third pair of legs, substantially as described.

3. The combination with an ironing-board 1, having a notched lock-bar 2 depending therefrom, of a pair of relatively long legs 5, and a pair of relatively short legs 6, pivotally connected to said board 1 at common pivotal points, the second pair of relatively short legs 7 crossed with and pivotally connected to said long legs 5 and having at their upper ends the tie-rod 11, engageable with said notched bar 2, and the link 13 connecting said legs 6 and 7 for parallel movements and for angular movements with respect to said legs 5, substantially as described.

846,106. STARTING MECHANISM FOR GAS-ENGINES. CHARLES G. HERBERT, Detroit, Mich. Filed Mar. 20, 1905. Serial No. 250,900.

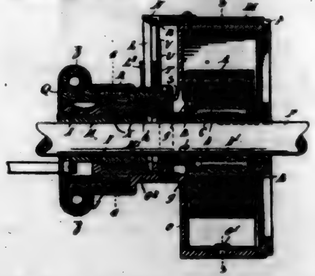

Claim.—1. In an apparatus of the kind described, the combination of a movable part a clutch part H, adapted to engage said movable part of said apparatus and be disengaged therefrom, a spring acting to reëngage said part when disengaged, a catch adapted to hold said part out of engagement against the action of said spring, and means operated by the relative motion of the parts of said apparatus for releasing said catch to permit it to engage said movable part.

2. In an apparatus of the kind described, the combination of the relatively movable parts B and O, a part S actuated by the relative movement of said parts, a lock upon the part O, a spring upon the part S connected with the bolt of said lock and adapted to act in different directions at the two ends of the travel of the part S, a restraining-catch for said lock and means for actuating said catch.

3. The combination of the shaft F, sleeve B, clutch between said sleeve and shaft, said sleeve being provided with screw-threads, drums O, nut S on said drum engaging said screw-threads, a clutch between said drum and a stationary arbor, part H adapted to secure sleeve B from rotation and releasing the same, a bolt L adapted to prevent the engagement of part H with sleeve B, a bolt on said drum adapted to engage and disengage said drum with said shaft, means connecting said nut with each of said bolts so that the movement of said nut shall actuate said bolts, substantially as shown and described.

846,107. CURTAIN-FIXTURE. CHARLES L. HOPKINS, Chicago, Ill. Filed Dec. 1906. Serial No. 346,707.

Claim.—1. In a curtain-fixture, the combination of a curtain-stick having spring-extended ends, heads carried by said ends, said stick having at each of its ends two bearing-points over one or the other of which the head may swing when moved out of perpendicularity with the stick, and a second spring adapted to move the head away from the stick proper and tending to resist tilting of said head away from either of said bearing-points.

2. In a curtain-fixture, the combination of a curtain-stick having extensible ends, a spring for extending said ends, heads carried by said ends, said stick having at each of its ends two bearing-points over one or the other of which the head may swing when moved out of perpendicularity with the stick, and a second spring located within the head and adapted to move the head away from the stick proper and tending to resist tilting of said head away from either of said bearing-points.

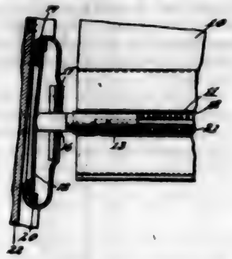

3. In a curtain-fixture, the combination of a stick, a head beyond the end of the stick, an extension slidably arranged within the stick and extending into the head, said extension being provided with upwardly and downwardly extending members located within the head and over which the head may turn when said head is moved out of perpendicularity to the stick, and a spring tending to resist movement of the head away from either of said upwardly and downwardly extending members.

4. In a curtain-fixture, the combination of a stick having an extensible end, a head carried by said end, said end projecting into the head and having two bearing-points within the head for engagement with said head, and a spring within the head adapted to resist movement of the head away from either of said bearing-points.

5. In a curtain-fixture, the combination of a stick having an extensible end, a spring adapted to extend said end, a head carried by said end, said end projecting into the head and having two bearing-points within the head for engagement with said head, and a spring adapted to resist movement of the head away from either of said bearing-points.

6. In a curtain-fixture, the combination of a stick, a stem slidably arranged in the stick and projecting from the end thereof, a head carried by said stem, said stem having a point of engagement with the head above the plane of the stick and a point of engagement with the head below the plane of the stick, a spring for thrusting said stem outward relative to the stick, and a spring for thrusting the head outward relative to the stem and tending to resist movement of said head away from either of said points.

7. In a curtain-fixture, the combination of a stick, an outwardly-spring-pressed extension at the end of the stick, a head carried by said extension, said extension having a point of engagement with the head above the plane of the stick and a point of engagement with said head below the plane of the stick, and a spring adapted to move said head outward on said extension and to resist movement of said head away from either of said points of engagement.

8. In a curtain-fixture, the combination of a stick, an extension at the end of the stick, a head carried by the extension and normally engaging the extension above and below the stick, a spring for thrusting said extension outward relative to the stick, and a spring for thrusting said head outward relative to the extension and resisting tilting of said head.

846,108. ART OF CONSTRUCTING CONCRETE FOUNDATION-PIERS. GEORGE W. JACKSON, Chicago, Ill. Filed Nov. 8, 1905. Serial No. 286,421.

Claim.—1. The improvement in the method of constructing concrete foundation-piers in the earth, which consists in digging the excavation, lining the sides of the excavation with successively lower sections of lagging as the work of excavating progresses, separately suspending each section of the lining as it is placed in position and thereafter expanding the suspending means to press the lagging against the sides of the excavation.

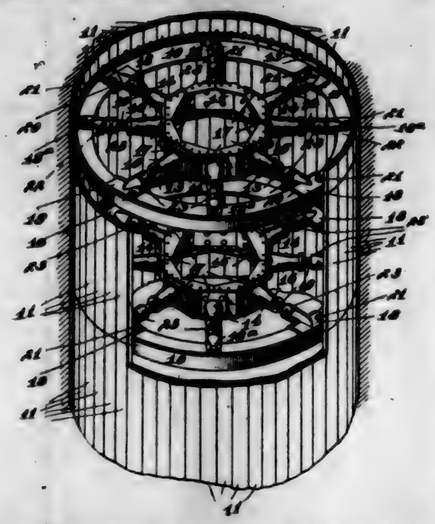

2. The improvement in the method of constructing concrete foundation-piers in the earth, which consists in digging the excavation, lining the sides of the excavation with successively lower sections of lagging as the work of excavating progresses, expanding said lagging outwardly against the sides of the excavation, and suspending each section of lagging after it is inserted in place and before it is expanded from a superjacent expanded lining-section.

3. Means for placing and supporting successively lower sections of lagging in an excavation in the earth formed to receive a concrete pier, embracing means located at the level of each section of lagging for preliminary suspending the same and means thereafter acting on the lagging-suspending means for pressing the lagging outwardly against the sides of the excavation.

4. Means for placing and supporting successively lower sections of lagging in an excavation in the earth formed to receive a concrete foundation-pier, comprising expansible lagging-supporting rings located severally at the levels of the sections of lagging and means for expanding said rings outwardly.

5. Means for supporting the lagging in an excavation in the earth formed to receive a concrete foundation-pier, comprising expansible lagging-supporting rings, an open frame located within each ring and expanding devices interposed between said open frames and the lagging-supporting rings.

6. Means for supporting the lagging in an excavation in the earth formed to receive a concrete foundation-pier, comprising expansible lagging-supporting rings, an open frame located within each ring, and jack-screws attached to the central open frames and acting at their outer ends against said lagging-supporting rings.

7. Means for supporting the lagging in an excavation in the earth formed to receive a concrete foundation-pier, comprising expansible lagging-supporting rings, a centrally-located open frame located within each ring, and jack-screws attached to said central frames and extending outwardly and detachably connected at their outer ends with said lagging-supporting rings.

8. Means for supporting the lagging in an excavation in the earth formed to receive a concrete foundation-pier, comprising a plurality of vertically-separated, expansible lagging-supporting rings, means acting on the rings to expand the same outwardly, and thereby press the lagging against the sides of the excavation, and means for suspending each successively lowermost ring, as the excavating-work progresses, from a higher expanded ring until the lagging is inserted between said lower ring and the side of the excavation and the said lower ring and lagging expanded outwardly.

9. Means for supporting the lagging in an excavation in the earth formed to receive a concrete foundation-pier, comprising a plurality of expansible lagging-supporting rings, means acting against the rings to expand the same outwardly and thereby press the lagging against the sides of the excavation, and suspending-hooks for spacing a lower unexpanded ring from an upper ring, and for suspending said lower ring until the lagging is applied thereto and the lagging supported thereby pressed outwardly.

10. The art of building foundation-casings which consists in positioning expansible casing-rings, then introducing the lagging behind the rings, and then expanding the rings.

11. The art of building foundation-casings for wells which consists in positioning expansible casing-rings, then introducing the lagging behind the rings, and then expanding said rings by means of jacks until the lagging is forced into engagement and pressed against the walls of the well.

12. The art of building sectional foundation-casings which consists in placing the first or top section in position, then positioning the expansible casing-rings for the next lower section and supporting said rings from the first section, introducing lagging around said rings and finally expanding the rings.

13. An expansible casing-ring formed of T-iron, lugs secured to the flange of said T-iron, and jacks engaging with said lugs for the purpose of expanding said rings.

846,109. DEVICE FOR WASHING PHOTOGRAPHIC PRINTS. ALFRED S. JOHNSON, Jr., Waupun, Wis. Filed Apr. 3, 1905. Serial No. 253,392.

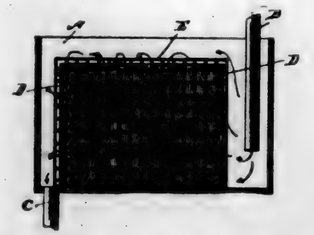

Claim.—1. A device of the kind described, comprising a tank, supply and discharge pipes arranged respectively at opposite ends of the tank, plates vertically arranged in said tank and parallel to the sides of the tank, means for spacing said plates from the sides of the tank, and a plurality of foraminous partitions arranged vertically between the plates, as and for the purpose set forth.

2. A device for washing photographic prints, comprising a tank having a supply-pipe at one end and a discharge-pipe at the other end, blocks secured to each side of said tank, a pair of vertical plates arranged between said blocks, and a plurality of vertical foraminous partitions coated with celluloid arranged between said plates, as set forth.

846,110. GAME APPARATUS. GEORGE H. JURICK, Jersey City, N. J. Filed Nov. 27, 1906. Serial No. 345,852.

Claim.—A game apparatus composed of a table, a surrounding polygonal rail, a central pocket, divisions converging from the angles of the rail toward the center of the table, a further division concentric to the rail and dividing the table into a series of inner and outer courts, and consecutive numbers within the inner courts, substantially as specified.

846,110.

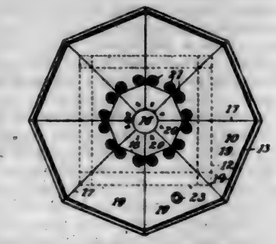

846,111. SLIP-COVER SHEET-METAL CAN FOR LARD AND OTHER ARTICLES. BALDWIN H. KANNENBERG, Oak Park, Ill., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Sept. 27, 1905. Serial No. 280,248.

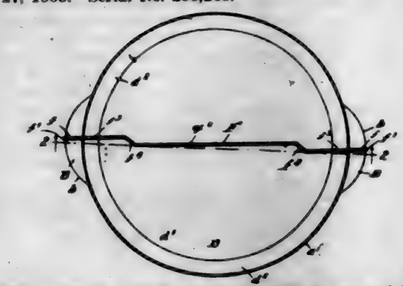

Claim.—1. In a lard or other sheet-metal can of large size and diameter, the combination with the slip-cover and flexible sheet-metal can-body provided with outwardly-bowed side handles projecting downwardly at an angle to the can-body and secured thereto at their upper edges and having curved and downwardly-inclined outer edges or rims, of a wire slip-cover holder having depending ends furnished with hooks, engaging the curved and downwardly-inclined rims of the can-body handles, and having a straight portion extending over and diametrically across the cover, and provided with horizontal bends engaging the flat or disk portion of the cover and serving to tighten the holder on the cover and afford a laterally-extended bearing of the same against the cover, substantially as specified.

2. The combination with a can-body furnished with outwardly-bowed side handles projecting downwardly at an angle to the can-body and secured thereto at their upper edges and of a slip-cover, and a wire holder extending over and across the cover and having depending ends furnished with hooks engaging the handles, said holder being provided with a tightening-bend in the plane of the cover and engaging the same, substantially as specified.

846,112. STEAM-METER. WILLARD A. KITTS, Oswego, N. Y., assignor to Kitts Manufacturing Company, Oswego, N. Y., a Corporation of New York. Filed July 27, 1906. Serial No. 328,031.

Claim.—1. In a steam-meter of the class described, a chamber having an inlet and an outlet, a tilting receptacle within the chamber between the inlet and outlet and provided with buckets movable alternately by the water of condensation accumulating therein into position to receive such water from the inlet, a rock-shaft located in the vertical plane of and above the swinging axis of said receptacle, arms projecting in opposite directions from and secured to said rock-shaft, shoulders on the receptacle above said rock-shaft and movable alternately into engagement with said arms as the receptacle is tilted in opposite directions whereby the rock-shaft is operated first in one direction and next in the opposite direction, a counter mechanism and means on the rock-shaft for actuating said counter mechanism at each reverse movement.

2. In a steam-meter, a closed receptacle having an inlet in its top and an outlet in its base, a tilting receptacle having a lengthwise partition dividing it into equal compartments each open at the top and having bottom plates diverging upwardly from the lower edge of the partition, pivotal bearings for said receptacle located in the plane of the partition below a direct line drawn between the outer edges of said bottom plates, the upper edge of said partition being movable with the receptacle to opposite sides of the vertical plane of the inlet whereby the water of condensation may discharge first into one compartment and then into the other compartment, a rock-shaft located above and in the same vertical plane as said pivotal bearings and provided with oppositely-projecting arms, and shoulders on the receptacle above the rock-shaft and alternately engaging said arms as the bucket is rocked in opposite directions.

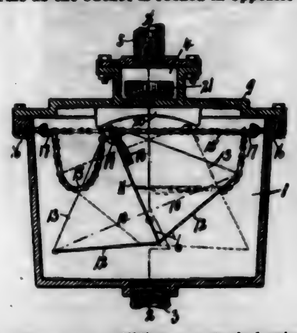

3. In a steam-meter, a tilting receptacle having a lengthwise partition dividing it into opposite equal compartments, adjustable limiting-stops and flexible connections between said stops and upper portion of the receptacle whereby the tilting movement of said receptacle may be varied.

4. In a steam-meter, a tilting receptacle having opposite equal compartments open at the top and an inclosing case for said receptacle and opposite flexible connections between said receptacle and opposite sides of the inclosing case.

5. In a steam-meter of the class described, an inclosing case, a receptacle pivotally mounted near its bottom within the case and provided with opposite equal compartments open at the top, said receptacle having an inlet in its top to discharge water of condensation into one of the underlying compartments, flexible connections between said receptacle and opposite sides of the inclosing case, and means for adjusting said connections for stopping the swinging of the receptacle at different positions.

6. In a steam-meter of the class described, an inclosing case having an inlet in its top and an outlet in its base, a tilting receptacle mounted in the case between the inlet and outlet, a rock-shaft located above the swinging axis of the receptacle and provided with oppositely-projecting arms, adjustable shoulders on the receptacle above said arms for alternately engaging the latter to rock the shaft in reverse directions as the receptacle is tilted in opposite directions, and means for adjusting said shoulders.

7. In a steam-meter of the class described, an inclosing case having an inlet in its top and an outlet in its base, a tilting receptacle and open-sided pivotal bearings therefor whereby the receptacle may be removed from the case, said receptacle having opposite similar compartments open at the top and movable alternately into position to receive water of condensation from the inlet, and a rib on the lower face of the top of the case in proximity to the top of the receptacle to prevent upward displacement of said receptacle from its bearings.

846,113. MANUFACTURE OF SINGLE-SPIRAL AUGERS. ANDREW KRIEGER, Columbus, Ohio. Filed Jan. 29, 1906. Serial No. 298,405.

Claim.—The method of making augers, which consists in forming a blank having a substantially cylindrical body with an end portion of slightly greater diameter than that of the body, die-forging a single-spiral groove in the body, and double-spiral grooves in the enlarged end portion of

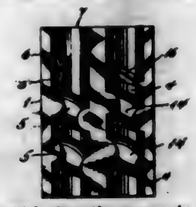

less depth and width than the groove in the body, substantially as and for the purpose set forth.

846,114. ELECTRICAL WINDING. JACOB W. LATTIG, Wyncote, and CHARLES L. GOODRUM, Philadelphia, Pa. Filed Mar. 3, 1904. Renewed Jan. 30, 1907. Serial No. 354,911.

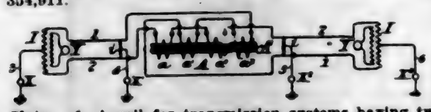

Claim.—1. A coil for transmission systems having two windings and a core, said windings composed of two wires laid on the core so that their turns for equal current will produce substantially equal magnetic effects, and metallic-circuit connections for said coil comprising a pair of incoming terminals and a pair of outgoing terminals, the incoming terminals being connected to the two windings at opposite ends of the coil, and the outgoing terminals being similarly connected to the other two ends of the said windings, the arrangement being such that for currents in the metallic circuit the two windings will neutralize each other upon the core, substantially as described.

2. A coil for electric transmission systems employing differential connections, having two windings and a common core, each winding being subdivided and the subdivision of the two windings alternated on the core, together with a pair of incoming and a pair of outgoing circuit-terminals, each pair disposed at opposite ends of the windings, the arrangement being such that for circuit passing serially through the windings they will neutralize each other, substantially as described.

3. A coil for electric transmission systems employing differential connections, having two windings upon a core, each winding being subdivided and the subdivisions of the opposite windings alternated in connection, substantially as described.

4. A coil for electric systems having opposed windings laid on and connected so that current will flow through them serially in the same general direction from end to end of the core, whereby the potential difference between contiguous points is reduced to the drop around one winding, substantially as described.

5. A neutral or differential coil having a low static capacity, comprising a core, an initial layer of wire wound thereon in one direction, a second and third layer both wound in a reverse direction to the first layer, a fourth and fifth layer both wound in the same direction as the first layer, and so on, the first and third layers being joined at one end of the coil and the third and fifth at the other while the second and fourth are joined at one end of the coil and the fourth and sixth at the other, and so on, substantially as described.

846,115. LANTERN. CHARLES S. LELAND and HOLLIS R. HYSOM, Mount Desert, Me. Filed May 31, 1906. Serial No. 319,540.

Claim.—1. A lantern provided with a chimney-carrying frame constructed in telescopic sections, means tending to force said sections apart, the lantern being also provided with a base and a burner carried thereby, sundry of said sections being provided with shoulders, and a locking device partially encircling the base of the burner and provided with oppositely-extending rod-like arms journaled on the base of the lantern and provided at their ends with upwardly-extending fingers formed with hooks designed for engagement with said shoulders whereby to hold the sections in retracted relation, and a spring-pressed handle connected to said arms.

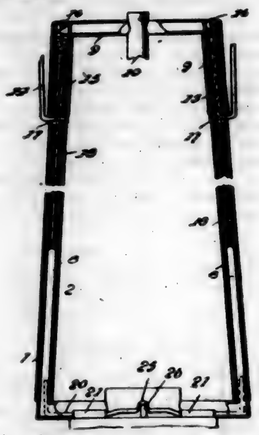

2. A lantern provided with a chimney-carrying frame constructed in telescopic tubular sections, namely, base, intermediate, and the top sections, compression-springs connecting the top sections with the intermediate sections and tending to draw the same together, expansion-springs arranged within the intermediate sections and tending to move the intermediate sections into extended relation to the base-sections, means for locking the intermediate sections in retracted relation to the base-sections, a chimney-basket mounted in the intermediate sections and designed to directly support the chimney, and a chimney-crown carried by the top sections.

3. A lantern provided with a chimney-carrying frame constructed in sections including top sections and other sections with which said top sections telescope, springs tending to draw said top sections downwardly with respect to the other sections, means for supporting the chimney by said other sections, and a chimney-crown suspended from said top sections and provided with a rim arranged to fit around the upper edge of the chimney, whereby the extension of the top sections with respect to the other sections will draw the crown away from and free the upper edge of the chimney.

4. A lantern provided with a chimney-carrying frame constructed in telescopic sections, means tending to force said sections apart, the lantern being also provided with a base and a burner carried thereby, sundry of said sections being provided with shoulders, and a locking device constituting rod-like arms journaled on said base and provided with fingers, said fingers being formed with hooks adapted for engagement with said shoulders whereby to hold the sections in retracted relation, and a spring-pressed handle connected to said arms.

5. A lantern provided with a chimney-carrying frame constructed in telescopic tubular sections, namely, oppositely and upwardly extending base-sections, intermediate sections in which the upper ends of the base-section telescope, and top sections in which the upper ends of the intermediate sections telescope, compression-springs connected to said top sections and intermediate sections and tending to draw the same together, expansion-springs arranged within the intermediate sections and tending to move the intermediate sections into extended relation to the base-sections and means for locking the intermediate sections in retracted relation to the base-sections.

6. A lantern provided with a chimney-carrying frame

constructed in sections, including top sections and other sections with which said top sections are arranged to telescope, a bail provided with offset ends secured to said other sections, compression-spring connected to said top sections and to the offset ends of said bail and arranged to draw the top sections downwardly with respect to the other sections and a chimney-crown carried by said top sections.

7. A lantern provided with a chimney-carrying frame constructed in three sections, namely, a bottom section, an intermediate section, and a top section, all of said sections being tubular and telescoping one within the other, a chimney-support mounted between the intermediate sections and directly carried thereby, whereby the extension of said intermediate sections with respect to the base-sections will raise the chimney, and a chimney-crown carried by the top sections and adapted to engage the top of the chimney whereby the extension of the top sections with respect to the intermediate sections will carry the chimney-crown away from the top of the chimney, as and for the purpose set forth.

846,116. LANTERN-LIGHTING DEVICE. CHARLES S. LELAND and HOLLIS R. HYSOM, Mount Desert, Me. Filed May 31, 1906. Serial No. 319,541.

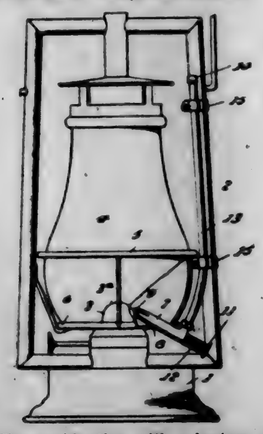

Claim.—The combination with a lantern provided with a frame embodying side members, a draft-ring within the frame and a burner above the draft-ring, and a cylinder extending upwardly and inwardly through an opening in said draft-ring and detachably secured in said opening and provided with a side-opening nipple, the inner end of said cylinder being provided with converging fingers, a plunger slidable within the cylinder from the rear end thereof, a spring encircling the cylinder in the rear of said nipple, and secured to the cylinder and to the said plunger whereby to press the plunger forwardly within the cylinder, said plunger being provided at its rear end with a finger-piece, a feed-tube for igniting-pellets extending vertically along one side member of the frame, a swivel-cap connecting the lower end of said tube with the nipple and the cylinder, and detachable clips 15 connecting the feed-tube to the side member of the lantern-frame.

846,117. MACHINE FOR MAKING BOLTS, PINS, &c. JOHN F. LOMAN, Pittsburg, Pa. Filed Dec. 7, 1905. Serial No. 290,680.

Claim.—1. In a machine for making bolts, pins, &c., the combination of a counter-shaft with separable gripping-dies, one of which is stationary and the other has a direct lateral movement, a lever for imparting said lateral movement toward the stationary die, means on the counter-shaft imparting said movement, means for locking said lever in this position, and means connected to the counter-shaft for unlocking said lever.

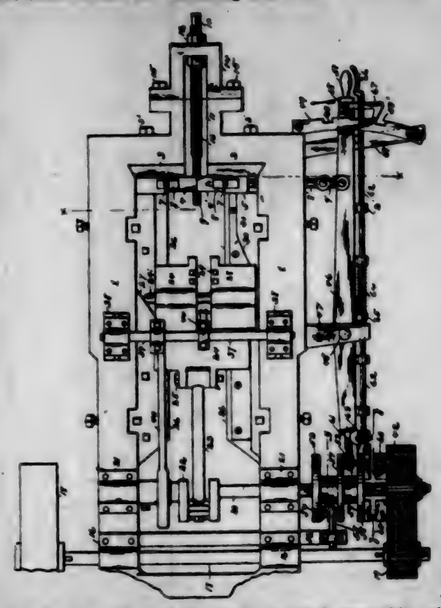

2. In a machine of the class described, separable gripping-dies in two parts, one of which has a lateral movement, a lever pivoted to the frame of the machine and having means at one end for operating said movable gripping-die, a counter-shaft carrying a clutch member, a slidable head mounted on said counter-shaft and formed with spaced flanges between two of which the free end of said lever extends, a stationary pin extending between two of said flanges, one of said flanges being provided with a clutch member adapted to coöperate with the clutch member of said counter-shaft and with a peripheral cam to unlock said lever and another of said flanges provided with a cam adapted to engage said pin, means for locking the lever and connections free from the peripheral cam and to likewise unlock the lever.

3. In a machine of the class described, a drive-shaft, a counter-shaft geared to the drive-shaft to operate the moving parts of the machine and carrying a clutch member, a head slidably mounted on said counter-shaft and rotative therewith and formed with three flanges spaced apart, one of said flanges having a clutch member for cooperating with the clutch member of said counter-shaft and with a peripheral cam, and another of said flanges provided with a lateral cam, a pivoted lever one end of which projects between two of said flanges, a stationary pin projecting between the flanges in the path of said lateral cam and adapted to open said clutch during the rotation of said moving head, a rod mounted on said pivoted lever, a bar having spaced recesses, a latch swinging on said lever and adapted to be alternately engaged with said recesses, separable gripping-dies in two parts, one of which has a lateral movement and connected to said lever and arranged to be operated thereby, whereby said laterally-moving gripping-die may be locked against said stationary die and automatically released and separated from the same.

846,118. BAG-HOLDING MECHANISM FOR BAG-TURNING MACHINES. SAMUEL T. LOCKWOOD, Portland, Oreg. Filed Jan. 15, 1906. Serial No. 296,181.

Claim.—1. In a bag-turning machine, a bag-holder constructed to exert tension on the mouth of the bag while the bag is being turned, and means for releasing the tension on the distended bag before it is stripped from the holder to facilitate its removal.

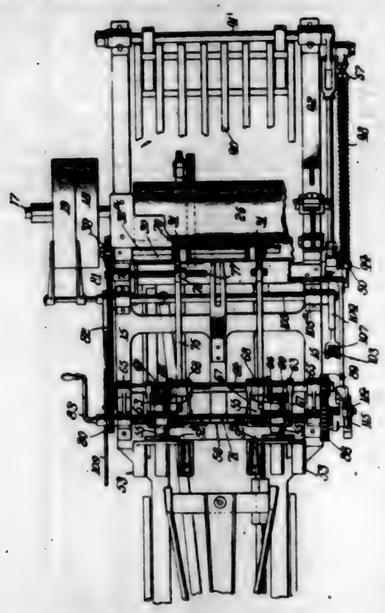

2. In a bag-turning machine, the combination with the bag-holder constructed to exert tension on the mouth of the bag while the bag is being turned and the bag-turning arms, of means operating to release the tension on the distended bag just before it is stripped from the holder by said bag-turning arms.

3. In a bag-turning machine, the combination with bag-holding arms which are spread to distend the mouth of the bag placed thereover, of means permitting said bag-holding arms to yield toward each other preparatory to stripping the bag therefrom.

4. In a bag-turning machine, the combination with a bag-holder comprising two arms over which the mouth of the bag is placed, means for spreading the arms to stretch the mouth of the bag, and reciprocating bag-turning arms, of means operating to release the tension on the bag before it is stripped from the holder by said bag-turning arms.

5. In a bag-turning machine, the combination with a bag-holder comprising two arms over which the mouth of the bag is placed, means for spreading the arms apart to stretch the mouth of the bag, and adjustable means for releasing tension on the bag before it is stripped from the arms by the bag-turning arms, the adjustment of said tension-releasing device adapting the machine to bags of different lengths.

6. In a bag-turning machine, the combination with the bag-turning arms, and a bag-holder comprising parts which are separated to distend the mouth of a bag placed thereover, of a cam for operating the bag-holding arms, and means for releasing the tension on the distended mouth of the bag preparatory to stripping the bag from said bag-holding arms.

7. In a bag-turning machine, the combination with the bag-turning arms, and a bag-holder comprising parts which are separated to distend the mouth of a bag placed thereover, of a cam for operating the bag-holding arms, and a supplemental cam projection carried by said cam operating to release the tension on the bag-mouth preparatory to stripping the bag from said holder-arms.

8. In a bag-turning machine, the combination with the bag-turning arms and a bag-holder comprising parts which are separated to distend the mouth of a bag placed thereover, of a cam for operating the bag-holding arms, and an adjustable supplemental cam projection carried by said cam operating to release the tension on the bag-mouth preparatory to stripping the bag from said holder-arms.

9. In a bag-turning machine, a bag-holder embracing bag-holding arms movable away from each other to distend the mouth of the bag, of means for operating the bag-holder arms embracing a cam and a swinging arm operating on the cam-surface thereof, and a supplemental cam-surface that is adjustable on the main cam-surface for releasing the tension on the bag.

10. In a bag-turning machine, a bag-holder comprising two rotative parts having arms which operate in pairs, means for intermittently turning said parts comprising an endwise-reciprocating link or bar, and a pawl-and-ratchet mechanism operatively connecting said rotative parts of the bag-holder and said link or bar.

11. In a bag-turning machine, a bag-holder comprising two rotative parts having bag-engaging arms operating in pairs, means for intermittently rotating said parts comprising an endwise-reciprocating link or bar, a pawl-and-ratchet mechanism operatively connecting said link or bar and the rotative parts of the holder and a cam for reciprocating said link or bar.

12. In a bag-turning machine, a bag-holder comprising two rotative parts having bag-engaging arms which operate in pairs, shafts fixed to said parts, and means for imparting intermittent rotation to said shafts comprising a shaft extending transversely across the machine, intermeshing gears on the transverse shaft and the holder-shafts, a gear-pinion on the transverse shaft, a gear-wheel meshing with said pinion, and a pawl-and-ratchet mechanism operating to turn said gear-wheel.

13. In a bag-turning machine, a bag-holder comprising two rotative parts having bag-engaging arms which operate in pairs, shafts fixed to said rotative parts and means for imparting intermittent rotation to said shafts comprising a shaft extending transversely across the machine, intermeshing gears on the transverse shaft and the holder-shafts, a gear-pinion on the transverse shaft, a gear-wheel meshing with said pinion, a rotative sleeve fixed to said gear-wheel, ratchet-teeth on said sleeve, a collar rocking on said sleeve and carrying a pawl engaging said teeth, and means for rocking the collar on said sleeve.

14. In a bag-turning machine, a bag-holder comprising two rotative parts having bag-engaging arms which operate in pairs, shafts fixed to said rotative parts and means for imparting intermittent rotation to said shafts comprising a shaft extending transversely across the machine, intermeshing gears on the transverse shaft and the holder-shafts, a gear-pinion on the transverse shaft, a gear-wheel meshing with said pinion, a rotative sleeve fixed to said gear-wheel, ratchet-teeth on said sleeve, a collar rocking on said sleeve and carrying a pawl engaging said teeth, and means for rocking the collar on said sleeve, comprising a reciprocating link connected with said collar, and a cam operating to impart endwise reciprocation to said link.

15. In a bag-turning machine, the combination with rotative bag-holders, of means for imparting intermittent rotation to said holders comprising a rotative sleeve geared to the holders, a pawl-and-ratchet mechanism operating to turn said sleeve, and a stop on said sleeve for arresting the overthrow of said holders.

16. In a bag-turning machine, the combination with rotative bag-holders carrying bag-engaging arms operating in pairs, of means for imparting intermittent rotation to the holders comprising a rotative sleeve geared to the holders, a ratchet on said sleeve, an actuating-link carrying a pawl engaging said ratchet and a stop for arresting the rotation of said sleeve embracing coöperative parts on said link and sleeve.

17. In a bag-turning machine, the combination with rotative bag-holders carrying bag-engaging arms operating in pairs, of means for imparting intermittent rotation to the holders comprising a rotative sleeve geared to said holders, a ratchet on said sleeve, an actuating-link carrying a pawl engaging said ratchet, and a stop for arresting

the rotation of said sleeve embracing a star-wheel rotating with said sleeve and a stop-pin carried by said link.

18. In a bag-turning machine, the combination with rotative bag-holders carrying bag-engaging arms which operate in pairs, of means for intermittently rotating said bag-holders comprising a rotative sleeve geared to the holders, a ratchet on said sleeve, a collar rocking on the sleeve and carrying a pawl which engages said ratchet, a reciprocating link pivoted to said collar for rocking the same and a stop for arresting the overthrow of the holders embracing a stop-pin carried by said link.

19. In a bag-turning machine, the combination with rotative bag-holders carrying bag-engaging arms which operate in pairs, of means for intermittently rotating said holders comprising a rotating sleeve geared to said holders, a ratchet carried by said sleeve, a collar rocking on said sleeve and carrying a pawl which coöperates with said ratchet, a reciprocating link for rocking said sleeve, a lever pivoted to the lower end of said link, a cam operating against the other end of said lever, and a spring applied to said lever and operating thereon in opposition to the cam.

20. In a bag-turning machine, the combination with rotary bag-holders, of means for intermittently rotating said holders comprising a rotative sleeve geared to the holders, a ratchet carried by the sleeve, a collar rocking on the sleeve and carrying a pawl which coöperates with said ratchet, a reciprocating link for rocking said sleeve, means for reciprocating said link comprising a rotative cam, a lever pivoted to the lower end of said link and operating at its other end against the cam, a spring applied to said lever and operating thereon in opposition to the cam, and means for adjusting the tension of said spring.

21. In a bag-turning machine, the combination with rotary bag-holders, of means for intermittently rotating said holders comprising a rotative sleeve geared to the holders, a ratchet carried by the sleeve, a collar rocking on the sleeve and carrying a pawl which coöperates with said ratchet, a reciprocating link for rocking said sleeve, means for reciprocating said link comprising a rotative cam, and a lever pivoted to the lower end of said link and operating at its other end against the cam, a spring applied to said lever and operating thereon in opposition to the cam, and means for adjusting the tension of said spring, comprising a rock-shaft provided with an arm arranged to operate on said spring, an adjusting-arm fixed to said rock-shaft and means for locking said adjusting-arm in different positions of adjustment.

22. In a bag-turning machine, the combination with rotative bag-holders carrying bag-engaging arms operating in pairs, of means for imparting intermittent rotation to the holders, comprising a rotative sleeve geared to said holders, a ratchet on said sleeve, an actuating-link operating a pawl engaging said ratchet, and means for backing the pawl away from the ratchet to release the tension of the bag supported by said holder-arms.

23. In a bag-turning machine, the combination with two rotative bag-holders carrying bag-engaging arms operating in pairs, shafts fixed to and rotating the bag-holders, a shaft extending transversely across the machine and geared to said bag-holder shafts, means for imparting intermittent rotation to said shafts and the bag-holders, and means for moving the bag-holders and the driving-gears thereof toward and away from each other for adjusting the machine to bags of varying widths.

24. In a bag-turning machine, the combination with two rotative bag-holders carrying bag-engaging arms operating in pairs, shafts fixed to and rotating said holders, bearings in which said shafts are mounted, a shaft extending transversely across the machine, intermeshing gears on said transverse and holder shafts, the gears of the transverse shaft being movable endwise of said shaft, means for imparting intermittent rotation to the said transverse shaft and therethrough to the holders, interlocking connections between said bearings for the holder-shafts and said gears of the transverse shaft, and means for moving said bearings toward and from each other, carrying therewith the said holders, the holder-shafts and the intermeshing gears of the holder-shafts and transverse shaft.

25. In a bag-turning machine, the combination with two rotative bag-holders carrying bag-engaging arms operating in pairs, shafts fixed to and rotating said holders, bearings in which said shafts are mounted, a shaft extending transversely across the machine, intermeshing gears on said transverse and holder shafts, the gears of the transverse shaft being movable endwise of the shaft, means for imparting intermittent rotation to the said transverse shaft and therethrough to the holders, interlocking connections between said bearings for the holder-shafts and said gears of the transverse shaft, and means for moving said bearings toward and from each other, carrying therewith the said holders, the holder-shafts and the intermeshing gears of the holder-shafts and transverse shaft, comprising a right and left hand screw-threaded shaft, the said bearings for the holder-shafts being provided with corresponding screw-threaded apertures through which said screw-threaded shaft extends.

846,119. TURNING-ARM-ACTUATING MECHANISM FOR BAG-TURNING MACHINES. SAMUEL T. LOCKWOOD, Portland, Oreg. Filed Jan. 15, 1906. Serial No. 296,182.

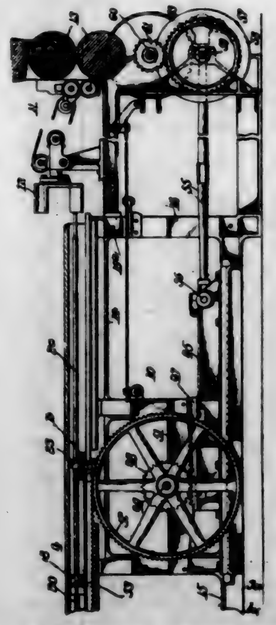

Claim.—1. In a bag-turning machine, the combination with longitudinally-reciprocating, pivoted bag-turning arms, of an elongated cam located centrally of said arms for spreading the outer ends of said arms during the longitudinal reciprocation thereof.

2. In a bag-turning machine, the combination with the frame and a carriage reciprocating on said frame, of bag-turning arms carried by and pivoted to the frame and a centrally-located cam for spreading the arms during the longitudinal reciprocation of the carriage.

3. In a bag-turning machine, the combination with the frame and a carriage reciprocating thereon, of bag-turning arms carried by and pivoted to said carriage, a centrally-located cam or cam-bar having opposing tapered sides and lugs or projections associated with said turning-arms and traveling against the inclined faces of the cam during the longitudinal reciprocation of the carriage.

4. In a bag-turning machine, the combination with the frame and a carriage reciprocating thereon, of bag-turning arms pivoted at their inner ends to the carriage, studs rotatively mounted on said carriage and engaging the arms between the ends thereof, and a centrally-located cam for spreading the arms during the longitudinal reciprocation of the carriage.

5. In a bag-turning machine, the combination with the frame and a carriage reciprocating thereon, of bag-turning arms pivoted at their inner ends to the carriage, studs rotatively mounted on said carriage and engaging said arms between the ends thereof, a centrally-located cam having inclined faces and studs associated with said arms and traveling against the inclined margins of said cam.

6. In a bag-turning machine, the combination with the frame and a carriage reciprocating thereon, of bag-turning arms carried by and pivoted to the carriage, rotative studs engaging said arms, laterally-sliding bars on the carriage by which said studs are carried, and a centrally-located cam for spreading or separating said bars during the longitudinal reciprocation of the carriage.

7. In a bag-turning machine, the combination with the frame and a carriage reciprocating thereon, of bag-turning arms carried by and pivoted at their inner ends to the carriage, rotative studs engaging said arms between their ends, laterally-sliding bars mounted on the carriage by which said studs are carried, roller-bearing studs depending from said slide-bars and a centrally-located cam against the inclined faces of which the roller-bearing studs travel during the reciprocation of the carriage.

8. In a bag-turning machine, the combination with the frame and a carriage reciprocating thereon, of bag-turning arms pivoted at their inner ends to the carriage, rotative studs engaging said arms between their ends, laterally-sliding bars mounted on the carriage by which said studs are carried, a centrally-located cam mounted on the frame for spreading said sliding bars and arms during the reciprocation of the carriage, and means for fixedly adjusting the rotative studs toward and away from each other.

9. In a bag-turning machine, the combination with the frame, and a carriage reciprocating thereon, of bag-turning arms pivoted to said frame, a centrally-located cam for spreading the arms during the reciprocation of the carriage, and springs for restoring the arms toward each other when released from said cam.

10. In a bag-turning machine, the combination with the frame and a reciprocating carriage thereon, of bag-turning arms carried by and pivoted at their inner ends to the carriage, rotative studs mounted on the carriage and engaging the bag-turning arms between the ends of the latter, a centrally-located, stationary cam or cam-bar operating to spread said studs apart during the longitudinal reciprocation of the carriage, and springs applied to move said studs inwardly when released from the cam.

11. In a bag-turning machine, the combination with a frame and a carriage reciprocating thereon, of bag-turning arms carried by and pivoted at their inner ends to the carriage, rotative studs mounted on the carriage with which the arms are engaged, laterally-sliding bars upon which said rotative studs are mounted, studs depending from said bars, a centrally-located cam or cam-bar adapted for engagement by the studs to spread the arms laterally outwardly during the longitudinal reciprocation of the carriage, and springs applied to normally hold said slide-bars in their innermost positions.

12. In a bag-turning machine, the combination with the frame, a carriage reciprocating on the frame, and a bag holding and pressing mechanism at one end of the frame, of bag-turning arms carried by the carriage, means for spreading the arms away from each other during their movement toward said holding and pressing mechanism, and means for reciprocating said carriage comprising a rack on the under surface of said carriage, a longitudinally-sliding rack in the frame, and gears interposed between said racks.

13. In a bag-turning machine, the combination with the frame, a carriage reciprocating thereon and a bag holding and pressing mechanism at one end of the frame, of bag-turning arms carried by and pivoted to the carriage, a centrally-located cam for spreading the arms during the movement thereof toward the holding and pressing mechanism, and means for reciprocating said carriage comprising a rack on the under surface of said carriage, a longitudinally-sliding rack in the frame, a shaft mounted transversely in the machine-frame, a gear-pinion fixed thereto and meshing with said frame-rack and a larger gear-wheel fixed also to said shaft and meshing also with the carriage-rack.

14. In a bag-turning machine, the combination with the frame, a carriage reciprocating on the frame, and a bag holding and pressing mechanism at one end of the frame, of bag-turning arms carried by the carriage, means for spreading the arms away from each other during their movement toward said holding and pressing mechanism, and means for reciprocating said carriage comprising a rack on the under surface of said carriage, a longitudinally-sliding rack in the frame, gears interposed between said racks, a crank rotating in unison with the bag holding and pressing mechanism, and a pitman connecting said frame-rack with said crank.

846,120. ELECTRICAL SWITCH. RAY H. MANSON, Elyria, Ohio, assignor to The Dean Electric Company, Elyria, Ohio, a Corporation of Ohio. Filed Mar. 31, 1904. Renewed Jan. 30, 1907. Serial No. 354,910.

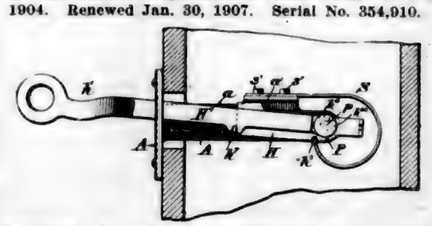

Claim.—1. An electrical switch comprising a base or support, an operating-stub pivoted thereon, contact members controlled by said stub, an inclosure for said base, contacts and stub, and a lever lying partly within and partly without the inclosure, together with means detachably connecting the lever and stub, said means operable for connection from without the inclosure, but for disconnection operable only within the same, substantially as described.

2. An electrical switch comprising a base, contact devices mounted thereon, an operating member for said contact devices, a spring-latch normally holding said member in operative position, and a hook-lever detachably engaging said operating member and having movement relative to said operating member.

3. An electrical switch comprising a base or support, contact members mounted thereon, an operating-lever therefor removably pivoted to the base, and an extension-lever connected to said operating-lever but manually detachable therefrom, substantially as described said extension-lever and said operating-lever being capable of relative movement.

4. A telephone hook-switch comprising the following instrumentalities: a frame or support, a set of contact-springs mounted thereon, a short lever pivoted thereon and connected with said springs to alter the relations thereof in its movements, a long lever carrying a receiver-hook at one end and adapted to engage the short lever at the other end with a latch connection, substantially as described.

5. A telephone hook-switch comprising a frame, contact members and a pivot-post immovably mounted on said frame, an operating-lever adapted to detachably engage said post and to actuate said contact members in its movements, a hook-lever adapted to move said operating-lever, and a spring-latch operating in conjunction with said operating-lever to hold said hook-lever in position.

6. A telephone hook-switch comprising the following instrumentalities: a frame composed of a longitudinal member having a pivot-post at one end, and a transverse member secured thereto at the other end, contact-springs carried by said longitudinal member, a short lever pivoted on said post and coöperating with said springs, an actuating-spring for said lever, a long lever extending through the transverse member of the frame and to the pivot-post, and

a latch connection between the levers controlled by the actuating-spring, substantially as described.

7. A telephone hook-switch comprising the following instrumentalities: a frame, two limiting-stops on said frame, a pivot-post also thereon, a short lever pivoted on said post and limited in movement by one stop, a long lever also pivoted on said post and having a shorter path of travel due to the other stop, together with an integral latch-finger carried by the short lever and a shoulder engaged thereby on the long lever, substantially as described.

8. A telephone hook-switch comprising the following instrumentalities: a frame, a short actuating-lever thereon and contact-springs controlled thereby, a detachable long lever adapted to be engaged with the short lever to form an extension thereof, and a spring-catch adapted to maintain the same in engagement, substantially as described.

9. A telephone hook-switch comprising the following instrumentalities: an escutcheon-plate, a supporting-frame projecting from and carried by said plate, contact-springs secured to said frame, a detachable operating-lever adapted to be extended through said escutcheon-plate into operative engagement with said springs and a latch for maintaining the same normally in engagement, substantially as described.

10. In a telephone hook-switch, the combination with a frame and contact members carried thereby, of a fixed pivot-post on said frame, an operating-lever for said contact members detachably held on said pivot-post, an extension-lever detachably engaging said post and said operating-lever, and means for holding said levers on said post and for holding said operating-lever in engagement with said extension-lever.

11. A telephone hook-switch comprising the following instrumentalities; a frame A, a pivot-post P thereon, a flange on said frame and contact-springs *s* carried thereon, a lever H pivoted on said post, a forked member h^3 on said lever engaging one of said springs, a latch-finger h^7 at the other end of the lever, and a separate overlying lever H' having the terminal notch h^{10} to engage the pivot and a notch h^{70} to engage the finger h^7, together with an actuating-spring exerting upward pressure on the lever H, substantially as described.

12. In a telephone hook-switch, the combination with a base and contacts mounted thereon, of an operating-lever pivoted to said base and controlling said contacts, and an actuating-lever slipped into engagement with said operating-lever and readily removable therefrom, substantially as described.

13. In a telephone hook-switch, the combination with a base, of a two-part hook-lever comprising a member pivoted to the base and a second member slipped into engagement with the first member and working on the same pivot, substantially as described.

846,121. MERCHANDISE-CABINET. LEONARD MATTHEWS, Jr., St. Louis, Mo., assignor to Norvell-Shapleigh Hardware Company, St. Louis, Mo., a Corporation. Filed Oct. 15, 1906. Serial No. 338,991.

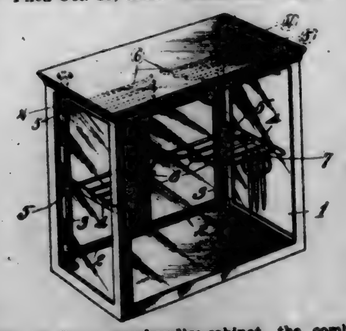

Claim.—1. In a merchandise-cabinet, the combination of a case, a post mounted within said case, a horizontal bracket-arm swingingly connected to said post, and horizontal transverse hanger-rods carried by said bracket-arm and projecting from the outer side thereof, substantially as set forth.

2. A merchandise-cabinet comprising a post mounted in one corner of the cabinet, a horizontal bracket-arm swingingly fitted to said post, horizontal transverse hanger-rods carried by said bracket-arm on one side only so as to enable the bracket-arm to extend parallel with the end of the cabinet.

846,122. RAIL-BOND. GEORGE A. MEAD, Mansfield, Ohio. Filed Nov. 23, 1904. Serial No. 233,937.

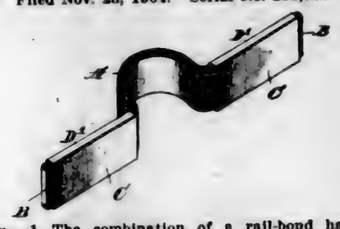

Claim.—1. The combination of a rail-bond having a terminal, of a longitudinally-removable solder-strip provided with retaining-flanges at the edges thereof to engage over the edges of the bond-terminal.

2. The combination with a rail-bond having terminals, of a solder-strip adapted to be removably applied to one surface of the bond-terminal and having flanges engaging over the edges of the terminal of the bond, said flanges having turned-over portions to engage the other surface of the bond-terminal.

846,123. PAPER-FOLDING MACHINE. MICHAEL MEHLE, Laibach, Austria-Hungary, assignor of two-thirds to Emerich C. Mayer, Gratz, Austria-Hungary, and Anton Decman, Laibach, Austria-Hungary. Filed Dec. 8, 1906. Serial No. 346,866.

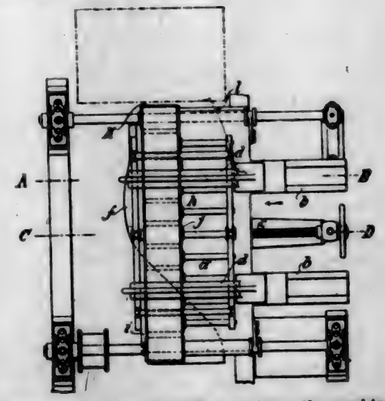

Claim.—1. In a paper-folding machine, the combination with a table, of a bending-plate coöperating with one edge of the table to form a slot of equal width throughout the length of the plate, and an extending portion on the plate forming a spiral, whereby the receiving and outlet ends of said portion lie at an angle of one hundred and eighty degrees to each other.

2. In a paper-folding machine, the combination with a table, of a bending-plate having a portion thereof extending along the entire top and edge of the table parallel thereto forming a slot of equal width and height longitudinally thereof and an extending portion on said plate curving under the table forming a spiral, whereby the receiving and outlet ends of said extending portion lie at an angle of one hundred and eighty degrees to each other.

3. In a paper-folding machine, the combination with a table, of a bending-plate forming a slot of equal area throughout its length with one edge of the table, and a spirally-formed extended portion on said plate having its receiving end lying parallel to the top of the table and its outlet end parallel to the bottom of the table.

4. In a paper-folding machine, the combination with a table, of a bending-plate projecting over one edge thereof and parallel thereto, and a spirally-formed extended portion on said plate having a narrow receiving end portion parallel to the top of the table and a wider outlet portion parallel to the bottom of the table.

5. In a paper-folding machine, the combination with a table, of a bending-plate projecting over the table parallel to the top and one edge thereof throughout the entire length of the table, and having a portion extending beyond the edge of the table parallel to the top thereof at one end and bending downward under the table in a spiral curve terminating in a plane parallel to the under side of the table.

6. In a paper-folding machine, the combination of a table gradually diminishing in thickness from its receiving to its outlet end, a bending-plate projecting over one edge of the table parallel thereto and forming a slot of equal height throughout its length, said plate extending beyond the edge of the table at its receiving end and bending downward under the table and terminating in a plane parallel with the under side of the table.

7. In a paper-folding machine, the combination of a table tapering in cross-section laterally and longitudinally, a bending-plate mounted with one edge parallel to the top of the table and having an extended portion projecting beyond the edge of the table parallel to the top thereof and bending downward under the table and terminating in a plane parallel to the under side of the table and in close proximity thereto.

8. In a paper-folding machine, the combination of a table having its under side beveled toward the top both longitudinally and laterally of the table, means for supporting one edge of the latter, a bending-plate having one edge parallel to the free edge of the table and having an extended portion projecting beyond said edge parallel to the top of the table and bending downward under the table and terminating in a plane parallel to the under side of the table and in close proximity thereto.

9. In a paper-folding machine, the combination with supporting members, of a table having its under side beveled both longitudinally and laterally and adjustably mounted in the supporting members, supporting-arms mounted on and extending over the table, a bending-plate mounted on said arms and having one edge parallel to and extending over the free edge of the table and provided with an extended portion projecting beyond said free edge parallel to the top of the table and bending downward under the table and terminating in a plane parallel to the under side of the table and in close proximity thereto.

10. In a paper-folding machine the combination of a table, a bending-plate projecting over one edge thereof and parallel thereto, and having a portion extending beyond the edge of the table parallel with the top thereof at one end and bending downward under the table in a spiral curve terminating in a plane parallel to the under side of the table and means to adjust the table transversely to the direction in which the paper is fed thereon.

846,124. CASH-REGISTER. PETER MEYER, Cologne, Nippes, Germany. Filed Feb. 19, 1904. Renewed Oct. 27, 1906. Serial No. 340,901.

Claim.—1. In a cash-register, the combination of a plurality of number-segments, an axle on which said segments are movably mounted, ratchet-wheels connected with said segments, a series of bell-crank levers corresponding in number to the number of segments, pawls on said levers, a shaft on which said axle is mounted and guides for the lower ends of said bell-crank levers, helical springs mounted in said guides and pressing against the lower ends of said levers, inclined surfaces on said levers, and outwardly-projecting buttons from said levers.

2. In a cash-register, the combination of pawl-levers, pins projecting from said levers, a bar, a locking-plate provided with slots therein, screws passing through said slots and engaging said bar to guide said plates, and projections on said locking-plates corresponding with said pins.

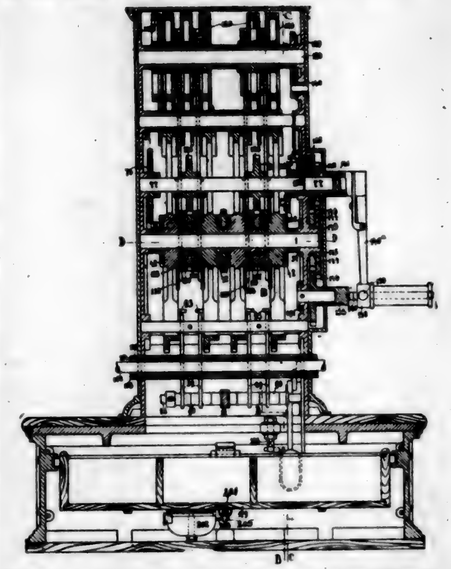

3. In a cash-register, the combination of pawl-levers, a movable locking-plate for said levers, a bar on which said plate is mounted, a spring fixed to said bar and said locking-plate, a fork on said locking-plate, a roller mounted in said fork, a movable lever provided with a wedge-shaped end, a cam-disk adapted to push said wedge between the roller and the wall of the cash-register case, in order to displace said locking-plate, a pawl pivoted to said bar and a tooth in said movable locking-plate with which said pawl is adapted to engage.

4. In a cash-register, the combination of a casing, a segment, a fixed axle about which said segment is movable, a forwardly-extending lever provided with a button outside of said casing, a guide for said lever, a spring in said guide, a bar secured to said lever, adjusting-screws provided for said bar, a lever projecting to the rear, a cross-bar provided for said lever, pawls pivoted to said cross-bar, a second cross-bar, springs connected to said pawls and to said second cross-bar, a bar of quadrangular cross-section mounted in said casing, and pins on the rearward part of said segments adapted to engage with said pawls.

5. The combination of rearward segments, toothed segments connected thereto, a series of concentric hollow shafts, toothed wheels on said hollow shafts, and gearing with said toothed segments, pulleys on said shafts, pulleys vertically above the same indicator-ribbons on said pulleys, and means for allowing the ribbons to be observed.

6. In a cash-register, the combination of a casing, indicator-ribbons, means for allowing the ribbons to be observed, said means comprising a shutter and an opening for said casing, a cover-plate for said opening, a bar, screws in said bar passing through slots in said cover-plate to guide said plate, a lever, a rod connecting said bar to said lever, a cam on said lever, a cam-disk adapted to operate said cam, a pin on said lever, provided with a tooth, against which said pin abuts, and a spring for said lever.

7. In a cash-register, the combination of a plurality of number-segments with projecting hubs, ratchet-wheels and

disks rotatably mounted on each of said hubs, said disks being provided with a single tooth each, toothed wheels and disks provided with recesses with which said ratchet-wheel and first-named disks are connected, a resilient tooth mounted in the recess of each of said last-named disks connected with the number-segments, a pawl on each ratchet-wheel, an adding mechanism, and rods connecting the ratchet-wheels with said adding mechanism.

8. In a cash-register, the combination of number-segments provided with hubs, ratchet-wheels and single-tooth wheels on said hubs, toothed wheels and recessed disks provided with resilient teeth with which said ratchet-wheels and single-tooth wheels are connected, a shaft, toothed wheels and resilient pins adapted to engage with the teeth of the ratchet-wheels.

9. In a cash-register, the combination of an axle, number-segments carried by said axle, a shaft, toothed wheels mounted on said shaft, a crank for said shaft, a toothed wheel connected with said crank, a second toothed wheel mounted on a pivot on the wall of the cash-register gearing with said crank-wheel, a second toothed wheel with which said last-named wheel engages, a toothed wheel gearing with the last-named wheel and fixed to the shaft and with a toothed wheel having a pin and a nose on said pin, a resilient pin in the crank-handle, and a pin for pushing back the said resilient pin.

10. In a cash-register, the combination of a shaft, toothed wheels carried by said shaft, a ratchet-wheel, a resilient locking-cone on said ratchet-wheel, pivoted pawl-levers a lever with a locking-tooth mounted on the pivot of the pawl-levers, engaging with its upper end, the ratchet-wheel and extending beyond said pivot in the same manner as the pawl-levers.

11. In a cash-register, the combination of a drawer provided with a resilient slide, a rotatable lever a support on said slide, a pin carried by said support, and a locking-pin which the rotatable lever abuts against when elevated, but clears when lowered.

12. In a cash-register, the combination of a drawer provided with a resilient slide, a double-armed lever pivoted to the casing, a second double-armed lever, a connecting-rod for said second lever, a short double-armed lever provided with a cam, a cam-disk for operating said cam and a spring for holding said last-named lever in normal position.

13. In a cash-register, the combination of a drawer, means for locking and unlocking said drawer, a double-armed lever with a pawl at its upper end, a ratchet-wheel, a pin on said ratchet-wheel, a rectangular bent arm on said double-armed lever, and a lock for said arm adapted to be operated with a key on the outside of the register.

846,125. FASTENER FOR CAR-DOORS. RICHARD MOSLEY, St. Louis, Mo. Filed Dec. 20, 1905. Serial No. 292,599.

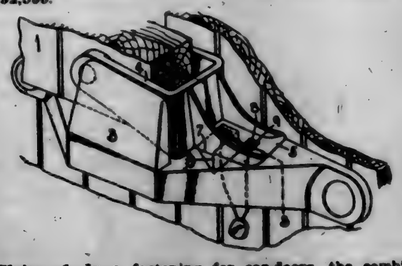

Claim.—1. In a fastening for car-doors, the combination with a part provided with an opening extending therethrough, of a pivotally-mounted part having a projection designed to drop into said opening, said projection being provided with a longitudinally-extending opening to receive the sealing-wire which is also passed through the opening in the part first referred to whereby said pivotally-mounted member is fastened; substantially as described.

2. In a fastener for car-doors, the combination with a guide-bracket having horizontally-disposed receding extensions arranged on each side of an upwardly-extending retaining portion, one of said extensions being provided with an opening, and a pivoted member mounted on the car-door and provided with a bevel-ended projection designed to coöperate with the opening in the receding extension of said bracket; substantially as described.

3. In a fastener for car-doors, the combination of a guide-bracket having a sealing-opening, and a yoke-shaped member pivotally mounted on the car-door and provided with a projection having an inclined face, which projection is designed to drop into a recess in the guide-bracket, said projection being provided with a sealing-opening which coöperates with the sealing-opening in the guide-bracket; substantially as described.

4. In a fastener for car-doors, the combination of a bracket comprising an upwardly-extending retaining portion and receding extensions on each side of said retaining portion, and a movable member on the car-door for engaging a recess in one of said extensions; substantially as described.

846,126. CAR-DOOR. JOHN MONTGOMERY, Toronto, Ontario, Canada. Filed Feb. 26, 1906. Serial No. 302,961.

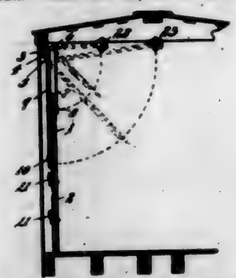

Claim.—1. In a car-door, in combination with a bracket at each end of the door-opening, each having arms extending in different directions, and having pivot-holes in the ends, rods pivoted at their ends therein and depending therefrom, there being one of said rods on each side of the plane of the door-openings, two independent door-sections slidably secured to said rods, one of said sections being adapted to reach below the other, and each being adapted to be slid toward the point of pivoting of its supporting-rods and to be thereafter swung to a position of substantial perpendicularity to the plane of the door-opening.

2. In a car-door, the combination of a plurality of systems of rods each pivotally supported from the frame of the door on one side of the plane of the door-opening, a plurality of door-sections slidably attached to each of the rods of one system, said sections being adapted when in use to hang in the same plane one above the other, and being adapted to be slid on said rods toward their points of pivoting and with them to be swung to a position of non-use just under the roof of the car, substantially as described.

3. In a car-door, in combination with a pair of door-sections adapted to hang one above the other when in use, a pair of pivotally-supported rods for each section, to which it is slidably attached, means by which said rods are supported whereby they and the section which they support are maintained at all times in different planes, and means carried by each of the sections and adapted to engage against the adjacent edges of the door-opening whereby it may be clamped in position with respect thereto, substantially as described.

4. In a car-door, the combination of a bracket having arms terminating in different planes with respect to the door-opening, a plurality of sets of rods, those of one set being longer than those of another, each pivotally depending from the ends of said arms, a pair of door-sections, each supported by one of said sets of rods and slidable with respect thereto, clamping means on the lateral edges of said sections adapted to engage the adjacent edge of the door-frame, substantially as described.

5. In a car-door, in combination with the facing-posts of a door-opening, a plurality of door-sections adapted to stand one above another in the same vertical plane, a set of pivoted supporting-rods to which the internally-facing surface of the upper of said sections is slidably attached, a second set of rods to which the external surface of the lower of said sections is similarly attached, each of said sections being adapted to be slid upon its rods toward their point of pivoting and to be thereafter swung with them to a position of angularity with respect to their position of closure, and means carried near the lateral edges of each section adapted to engage against said facing-posts to lock the sections in place across the door-opening, substantially as described.

6. In a car-door, the combination of pivoted rods of two different lengths, two of the greater length being pivoted within and two of the shorter length without the door-opening, and a pair of door-sections each slidably connected to one of the sets of rods, the lower section to the long rods and the upper section to the short rods, each section being adapted to be slid on its supporting-rods toward their points of pivoting and to be thereafter swung with them to a position of substantial parallelism beneath the car-roof, substantially as described.

846,127. GONDOLA-CAR STAKE. WILLIAM O. MOODY and HAROLD A. SIMMS, Chicago, Ill. Filed Oct. 26, 1906. Serial No. 340,697.

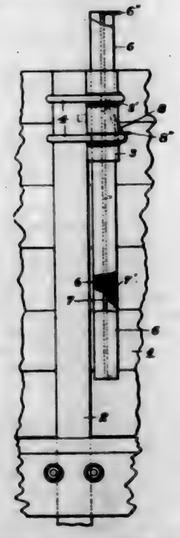

Claim.—1. A car, in combination with an extension-stake guide on the side thereof, an extension-stake vertically movable in said guide and a dog pivoted on said guide for engagement with said stake at different elevations, substantially as described.

2. A car side and stake, in combination with an extension-stake guide secured to said side and stake, an extension-stake movable in said guide and means for securing the stake therein in different elevations, substantially as described.

3. A car side and stake, in combination with an extension-stake guide secured to said side and stake, an extension-stake movable in said guide and a dog pivoted on said guide for engagement with said extension-stakes, substantially as described.

4. A car side, in combination with an extension-stake guide thereon, an extension-stake vertically movable in said guide and provided with a plurality of shoulders or projections and a dog or pawl on said guide for engagement with said stake, substantially as described.

5. A car side, in combination with an extension-stake guide thereon, an extension-stake vertically movable in said guide and provided with short intermediate shoulders or projections and long end shoulders or projections, a dog pivoted on said guide for engagement with the short projections of said stake and coöperating with said long extensions to prevent the withdrawal of the stake with said guide, substantially as described.

6. A car side, in combination with an extension-stake guide, staple-bolts securing said guide on the car side and provided with an opening in its side, a dog or pawl pivoted on one of said staple-bolts and an extension-stake engaged with said pawl within said guide, substantially as described.

7. A car side and stake, in combination with an extension-stake guide engaged with the car side and stake staple-bolts passing around said stake-guide and secured in the car side and an extension-stake vertically movable in said guide, substantially as described.

8. A car side and stake, in combination with an extension-stake guide engaged with the car side and stake staple-bolts passing around said stake-guide and secured in the car side, an extension-stake vertically movable in said guide and a pivotal dog or pawl engaged with said extension-stake, substantially as described.

9. A car side and stake, in combination with an extension-stake guide engaged with the car side and stake staple-bolts passing around said stake-guide and secured in the car side, an extension-stake vertically movable in said guide and a dog or pawl pivotally attached to said guide and engaged with said extension-stake, substantially as described.

10. A car side, in combination with an extension-stake guide, bolts interlocked with said guide and fastening the same on the car side, a swinging pawl pivoted on one of said bolts, another of said bolts serving as a stop for said pawl and an extension-stake vertically movable in said guide and engaged with said pawl, substantially as described.

11. A car, in combination with a metallic stake-guide rigidly secured to the side thereof, said guide being provided with a pivotal dog or pawl, a metallic stake vertically movable in said guide, and said stake being provided with spaced means for engagement by said dog, substantially as and for the purpose specified.

12. A metallic stake-guide, in combination with a gravity-dog provided therein, a vertically-movable metallic stake and long and short spaced means on said stake for engagement by said dog, substantially as and for the purpose specified.

13. A car, in combination with a metallic stake-guide, rigidly secured thereto, a metallic stake held in said guide, said stake being provided at or near its lower end with a stop; and a dog having normally limited movement, held by the stake-guide and preventing withdrawal of the stake from said guide, substantially as described.

14. In a gondola car, a rigidly-secured metallic stake-guide, in combination with a vertically-movable I-beam stake extending through said guide, and a gravity-dog held by the latter; said stake being provided with means adapted for engagement by said dog, for the purpose specified.

15. In a gondola car, a rigidly-mounted metallic stake-guide, in combination with a vertically-movable I-beam stake provided at intervals with openings and projections, and means held by said guide for engagement therewith, for the purpose specified.

16. A gondola-car stake consisting of a flanged metal bar, the web portion of which is provided with a longitudinal series of openings and projections, substantially as described.

17. A car-stake guide, consisting of a metallic sleeve having a rectangular opening in its side and provided with grooves for the reception of staple-bolts, substantially as described.

18. A car-stake, consisting of a metallic sleeve having a rectangular opening in its side and provided with grooves

for the reception of staple-bolts, in combination with a stake-holding dog or pawl, substantially as described.

19. A car-stake, consisting of a metallic sleeve having a rectangular opening in its side and provided with grooves for the reception of staple-bolts, in combination with a stake-holding dog or pawl, and bolts, on one of which said pawl is provided, substantially as described.

846,128. CAR-COUPLING. SAMUEL MORRIS, Newark, Ohio, assignor of one-half to Moses H. Neil, Columbus, Ohio. Filed May 14, 1906. Serial No. 316,708.

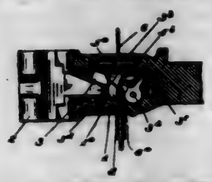

Claim.—1. In a car-coupling, the combination with the draw-head having a tailed knuckle pivoted horizontally therein, of a knuckle-locking block pivoted to swing vertically therein and having a rest pivoted thereon to support the block in position to permit uncoupling, and a lever pivoted to swing horizontally in the draw-head adapted to have one arm struck by the tail of the knuckle and its other end adapted to dislodge the said rest when the knuckle is moved into coupling position.

2. In a car-coupling, the combination with the draw-head and a tailed knuckle pivoted horizontally therein, a knuckle-locking block provided with a recess and pivoted to swing vertically in the draw-head, a rest pivoted on said block to swing by gravity to support the block in position to permit uncoupling movement of the tail of the knuckle, and a lever pivoted to swing in a horizontal plane in the draw-head and having one arm adapted to be moved by the tail of the knuckle and its other arm extending into the aforesaid recess of the knuckle-locking block whereby it is adapted to dislodge the said rest when the knuckle is moved toward coupling position.

3. In a car-coupling, the combination with the draw-head and a tailed knuckle pivoted horizontally therein, a knuckle-locking block provided with a recess and pivoted to swing vertically in the draw-head, a rest pivoted in said block to swing by gravity to support the block in position to permit uncoupling movement of the tail of the knuckle, the axis of the pivot of said rest being in fixed relation both to the block and the rest, and a lever pivoted to swing in a horizontal plane in the draw-head and having one arm adapted to be moved by the tail of the knuckle and its other arm extending into the aforesaid recess of the knuckle-locking block whereby it is adapted to directly strike and dislodge the said rest when the knuckle is moved toward coupling position.

846,129. SLIDING-DOOR FASTENER. CLYDE S. MORSE, Shabbona, Ill. Filed Apr. 25, 1906. Serial No. 313,588.

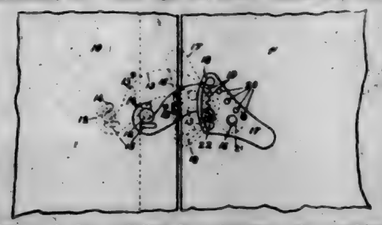

Claim.—1. In a sliding-door fastener, the combination with an operating member or lever fulcrumed to one of the pieces to be connected together so as to be moved in a plane parallel with the surface of the door and having near one of its ends a transverse slot, of an engaging member pivotally secured at one of its ends to the first-named member and having at its other end a hook to engage a projection or engaging device on the other piece to be connected, and adapted to move in a plane parallel with the surface of the door, substantially as described.

2. In a sliding-door fastener, the combination with an operating member or lever having near one of its ends a transverse slot, of a fulcrum secured to one of the pieces to be connected together and extending through said slot, an engaging member pivotally secured at one of its ends to the first-named member and having at its other end a hook to engage a projection or engaging device on the other piece to be connected, the said lever and engaging member adapted to move in a plane parallel with the surface of the door, substantially as described.

3. In a sliding-door fastener, the combination with an operating member or lever having near one of its ends a transverse slot provided in one of its edges with a series of recesses, of a fulcrum secured to one of the pieces to be connected together and located in one of the recesses of said slot, a curved engaging member pivotally secured at one of its ends to be first-named member and having at its other end means to engage a projection or engaging device on the other piece to be connected, substantially as described.

4. In a sliding-door fastener, the combination with an operating member or lever having near one of its ends a transverse slot provided in one of its edges with a series of recesses, of a fulcrum secured to one of the pieces to be connected together and located in one of the recesses of said slot, a curved engaging member pivotally secured at one of its ends to the first-named member and having at its other end a hook and a slot for engagement with a projection on the other piece to be connected, substantially as described.

5. In a sliding-door fastener, the combination with an operating member or lever having in one of its ends a transversely-curved slot provided in one of its edges with a series of recesses and having near one of its edges a series of openings, of a curved engaging member having at one of its ends a hook and adapted at its other end to be pivotally secured to the operating member, substantially as described.

6. In a sliding-door fastener, the combination with an operating member or lever fulcrumed to one of the pieces to be connected together, of an engaging device located on the other piece to be connected, an engaging member pivotally secured at one of its ends to the first-named member and having at its other end means to engage said engaging device, the pivot of said members being located at a point which when the operating member has been turned to the limit of its locking movement will be out of alinement with the fulcrum and engaging device, substantially as described.

846,130. COMBINED WAGON AND SLED. JOHN P. MÜLLER, Freeport, Ill. Filed Feb. 17, 1906. Serial No. 301,645.

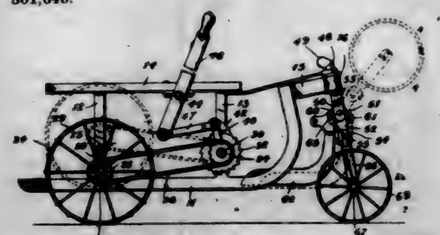

Claim.—1. In a combined sled and carriage, including a supporting-frame platform and spaced runners, wheels movably connected to said frame, means for disposing said wheels to support said runners at one end spaced from the ground or to permit the runners to bear upon the ground, a steering element movably connected to said frame, and means for disposing said steering element to support the runners at the other end spaced from the ground or bearing upon the same.

2. In a combined sled and carriage, including a supporting-frame, platform and spaced runners, wheels movably connected to said frame, means for disposing said wheels to support said runners spaced from the ground or to permit the runners to bear upon the ground, a substantially vertical shaft mounted for rotation upon said frame and with foot-rests at one end, a steering element movably connected to said shaft, and means for disposing said steering element to support said runners spaced from the ground or to permit the runners to bear upon the ground.

3. In a combined sled and carriage, including a supporting-frame platform and runners, arms swinging upon said frame and having ground-wheels rotatively mounted upon their free ends, steering-wheels swinging horizontally upon said frame, a steering-runner associated with said steering-wheels, means for disposing said arms in one position to cause said runners and wheels to simultaneously bear upon the ground, and for disposing said arms in another position to cause said wheels to support the frame and runners above the ground, means operative from said platform for rotating said wheels, and means for causing said steering-wheels and steering-runner to alternately bear upon the ground.

4. In a combined sled and carriage, including a supporting-frame platform and runners, arms swinging upon said frame and having wheels rotatively mounted upon their free ends, means for disposing said arms to cause said runners and wheels to simultaneously bear upon the ground or to cause said wheels to support the frame and runners above the ground at one end, means operative from the platform for rotating said wheels, a substantially vertical shaft mounted for rotation upon said frame and with foot-rests at one end, a steering element connected to said shaft, and means for disposing said steering element to support said runners at the other end spaced from the ground or bearing upon the same.

5. In a combined sled and carriage, including a supporting-frame platform and spaced runners, wheels movably connected to said frame, means for disposing said wheels to support said runners spaced from the ground or to permit the runners to bear upon the ground, a substantially vertical shaft mounted for rotation upon said frame and with foot-rests at one end, an arm swinging from said shaft longitudinally of the frame, and a steering element swinging from said arm transversely of the frame.

6. In a combined sled and carriage, including a supporting-frame platform and spaced runners, wheels movably connected to said frame, means for disposing said wheels to support said runners spaced from the ground or to permit the runners to bear upon the ground, a substantially vertical shaft mounted for rotation upon said frame and with foot-rests at one end, an arm swinging from said shaft longitudinally of the frame, and a yoke-frame swinging from said arm transversely of the frame and carrying spaced steering-wheels.

7. In a combined sled and carriage, including a supporting-frame platform and spaced runners, wheels movably connected to said frame, means for disposing said wheels to support said runners spaced from the ground or to permit the runners to bear upon the ground, a substantially vertical shaft mounted for rotation upon said frame and with foot-rests at one end and forked at the other end, an arm pivoted between said forked portion, a steering element swinging from said arm, and means for securing said steering element in position to support said runners above the ground or bearing upon the same.

8. In a combined sled and carriage including a supporting-frame platform and spaced runners, ground-wheels movably connected to said frame, steering-wheels movably supported on said frame, a steering-runner associated with said steering-wheels, means for disposing said ground-wheels and runners to simultaneously engage the ground, and for disposing said ground-wheels to support the runners above the ground, means operative from the platform for rotating said ground-wheels, and means for causing said steering-wheels and steering-runner to alternately bear upon the ground.

846,131. MACHINE FOR GRAINING WOOD. CHARLES W. MUNS, Detroit, Mich. Filed May 20, 1905. Serial No. 261,450.

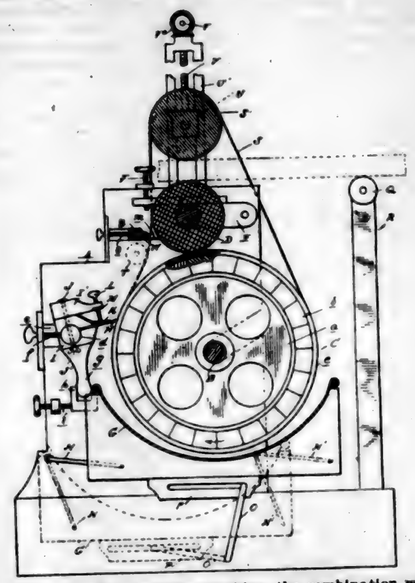

Claim.—1. In a graining-machine, the combination with a traveling wood-pattern surface, of a scraper for removing the surplus pigment therefrom comprising a leather strip forming a scraping edge, and a metallic spring-strip for yieldingly pressing said leather against the pattern-surface.

2. In a graining-machine, the combination with a traveling wood-pattern surface, of a scraper for removing the surplus pigment therefrom consisting of a continuous leather strip forming the scraping edge, a series of metallic springs backing said scraping edge and individual tension adjustments for each spring.

3. In a graining-machine, the combination with a traveling wood-pattern surface, of a scraper for removing the surplus pigment therefrom consisting of a pair of clamping-bars, a leather strip arranged between the same and projecting to form a scraping edge for bearing against the pattern-surface, and screws bearing against the rear edge of said leather strip for adjusting the same toward the pattern-surface at different points in the length thereof.

4. In a graining-machine, the combination with a traveling wood-pattern surface, of a scraper for removing the surplus pigment therefrom consisting in a leather strip and a pair of clamping-bars embracing the same, means for adjusting said bars in angularity and in distance from the pattern-surface, a series of springs for backing the leather strip, and individual adjusting-screws for varying the tension of said springs.

5. In a graining-machine, the combination with a rotary wood pattern, of a segmental pigment-tank, and means for vertically adjusting said tank comprising a pair of link-hangers, a crank, and a slotted bearing supporting the tank with which said crank engages, whereby the tank may be simultaneously adjusted vertically and laterally.

6. In a graining-machine, the combination with a traveling wood-pattern surface, of a scraper for removing the surplus pigment therefrom, means for adjusting the scraper toward or from said surface and means for moving portions of the scraping edge toward or from said surface.

7. In a graining-machine, the combination with a traveling wood-pattern surface, of a scraper for removing the surplus pigment therefrom yieldingly pressed thereagainst,

means for adjusting the tension of said scraper at different points in its length, and means for adjusting the angularity of said scraper in relation to said surface.

8. In a graining-machine, the combination with a traveling wood-pattern surface, of a scraper having a flexible edge conformable to variations in the contour of said wood surface, and auxiliary resilient means for pressing the scraping edge in contact with the surface of the wood at all points in the length thereof.

9. In a graining-machine, the combination with a traveling wood-pattern surface, of a scraper extending across said surface transversely of the direction of movement thereof, independently-adjustable reinforcements for said scraper and means for adjusting said scraper toward or from said surface.

10. In a graining-machine, the combination with a traveling wood-pattern surface, of a scraper extending across said surface, means for independently yieldingly pressing portions of the edge of said scraper against said surface, and means for changing the angularity of said scraper to said surface.

846,132. SUPPLY-VALVE FOR FLUSH-TANKS. RHODA McGRAW, Syracuse, N. Y. Filed June 4, 1906. Serial No. 320,182.

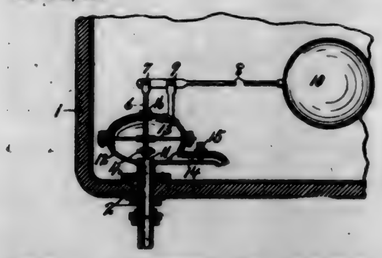

Claim.—1. In combination with a flush-tank, a water-supply pipe, a water-chamber connecting with the water-supply pipe and provided with a lateral discharge, an adjustable valve in the discharge, a diaphragm forming one side of the chamber, a main valve attached to the diaphragm and coacting with the inlet to regulate the flow of water into said chamber, and a float attached to the diaphragm.

2. In combination with a flush-tank having a valved water-inlet, a chamber inclosing the inlet having one of its sides provided with a flexible diaphragm of greater area than the cross-sectional area of the inlet, said chamber having a lateral discharge-passage of less cross-sectional area than the inlet, a valve for the inlet attached to the diaphragm, and a float also attached to said diaphragm.

3. A supply-valve for flush-tanks comprising a chamber having an inlet and an outlet of less cross-sectional area than the inlet, said chamber having a flexible impervious diaphragm at one side of the inlet and outlet and of greater area than the cross-sectional area of the inlet, a valve for the inlet, and a float, both valve and float being attached to the diaphragm.

4. A water-supply valve for flush-tanks, comprising a water-chamber having an inlet and an outlet, the latter being of less cross-sectional area than the inlet, a valve for the inlet, an additional valve in the outlet, a diaphragm forming one side of the chamber and attached to the inlet-valve, and having one side exposed to the inlet and outlet, and its other side exposed to interior of the tank, and a float attached to the diaphragm.

5. In combination with the flush-tank a water-supply chamber in the tank having an inlet and an outlet the latter being of less size than the inlet, a movable element forming one of the sides of the water-chamber, a valve for the inlet and a float, both valve and float being connected to said movable element, the latter being of greater area than the inlet, and means for varying the size of the outlet.

846,133. ASSORTMENT-BOX OR DISPLAY-RACK FOR LEAD-PENCILS. FRANK McINTYRE, New York, N. Y., assignor to Eagle Pencil Company, New York, N. Y. Filed Sept. 12, 1906. Serial No. 334,323.

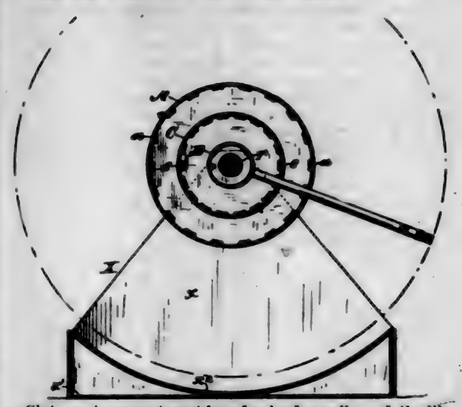

Claim.—An assortment-box for lead-pencils and the like, consisting of a drum mounted to revolve in a suitable supporting-stand provided with transverse lines of pencil-receiving perforations formed with inturned serrated edges for the purposes stated, a central imperforate hub within, and fixed to, the drum and concentric with the periphery thereof, and a diaphragm or partition within, and fixed to, the drum between, and concentric with, the hub and the periphery, and provided with transverse lines of perforations, similar to those in the periphery, each perforation in the diaphragm being arranged in radial relation to its fellow perforation in the periphery—the parts being constructed and arranged substantially as hereinbefore set forth.

846,134. PUZZLE. CHARLES M. NEALY, Chicago, Ill. Filed Dec. 26, 1906. Serial No. 349,559.

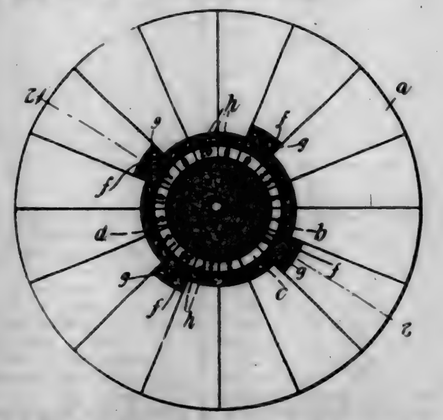

Claim.—1. In a puzzle the combination of a set of independently-rotatable concentric disks, a back sheet upon which they are mounted, said disks having exposed annular portions at their peripheries bearing printed characters, a plurality of sight-apertures in said back sheet, and an indicator-sheet behind said back sheet and of a different color therefrom for directing attention to the points at which the printed characters are to be read.

2. In a device of the class described, the combination of a set of independently-rotatable concentric disks of different sizes and so arranged one above another that a peripheral portion of each is visible beyond the edge of the one above it; printed characters on the exposed portions of said disks; a backing-sheet whereon said disks are mounted, said backing-sheet having sight-apertures located just beyond the edge of the largest superposed disk; and a rear member behind said backing-sheet and of a color different therefrom and also rotatable about the same center as the superposed disks, said rear member also having printed characters thereon at the same distance from the center as said sight-apertures.

3. In a device of the class described, the combination of a set of independently-rotatable concentric disks of different sizes and so arranged one above another that the peripheral portion of each is visible beyond the edge of the one above it; printed characters on the exposed portions of said disks; a backing-sheet whereon said disks are mounted, said backing-sheet having sight-apertures located just beyond the edge of the largest superposed disk; and a rear member behind said backing-sheet and of a color different therefrom and also rotatable about the same center as the superposed disks, said rear member also having printed characters thereon at the same distance from the center as said sight-apertures the disks above the backing-sheet having at their peripheral portions lines radiating toward the center the lines of the different disks subtending arcs of equal degrees whereby the lines of the different disks may be brought to register.

846,135. PRUNING IMPLEMENT. JOHN C. O'BRIEN, Murphytown, W. Va. Filed July 16, 1906. Serial No. 326,461.

Claim.—1. As a new article of manufacture, a pruning implement comprising a socket, a stock having a cutting edge extending at right angles to the socket, and a guide-arm extending from one edge toward one side of the cutter from one side of the stock and terminating in a hook projection in a direction opposite to that of the cutting edge of the stock.

2. As a new article of manufacture, a pruning implement comprising a socket, a flattened stock combined therewith and having its under edge provided with a hook disposed to one side of the socket, and its upper edge, that constitutes the knife, disposed at approximate right angles to the socket, and a guide-arm extending from one side of the stock and terminating in a hook projection in a direction opposite to that of the cutting edge of the stock.

846,136. CREDIT-ACCOUNTING APPLIANCE. ROLLIN D. PARDEE, Garrettsville, Ohio, assignor to The McCaskey Register Company, Alliance, Ohio, a Corporation of Ohio. Filed Mar. 31, 1906. Serial No. 309,029.

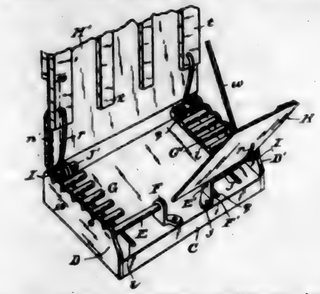

Claim.—1. Credit-accounting appliances including a frame, studs attached to the frame, bill-holding leaves provided with hinge members formed of wire encircling the studs and having ends secured to the leaves, and springs on the studs and engaging the leaves.

2. Credit-accounting appliances including a frame, a plurality of studs attached to the frame, one pair of the studs being longer than the others, bill-holding leaves hinged on the frame, and springs mounted on the studs and engaging the leaves, the springs on said longer studs being longer than the other springs.

3. Credit-accounting appliances including a frame, a plurality of studs attached to the frame, one pair of the studs being longer than the others and having each an end support connected detachably thereto, bill-holding leaves hinged on the studs, and springs mounted on the studs and engaging the leaves, the springs on said longer studs being longer than the other springs.

4. Credit-accounting appliances including a frame, studs attached to the frame, and bill-holding leaves having turned-over edges and provided with hinge members formed of wire encircling the studs and having ends secured in the turned-over edges of the leaves, one end of each hinge member extending parallel to the studs and another end of the hinge member extending at right angles to the studs.

5. Credit-accounting appliances including a frame, studs attached to the frame, bill-holding leaves provided with hinge members formed of wire encircling the studs and having ends secured to the leaves, said leaves being provided also with springs having arms secured against lateral movement to the leaves, the springs being mounted on the studs.

846,137. DUMPING-CAR. FRANCIS PETHLER, Minneapolis, Minn. Filed Nov. 30, 1906. Serial No. 345,712.

Claim.—1. The combination, with a dumping-car, of a swinging bolster arranged to prevent premature tilting of the car-body, a rock-shaft having cranks, one of said cranks having a pivotal connection with said bolster and an operating-rod pivotally connected to the other crank, substantially as described.

2. The combination, with a dumping-car, of a bolster adapted to prevent premature tilting of the car-body, said bolster comprising metal bars pivoted at their lower ends

on the truck-frame, and antifriction-wheels mounted on the upper ends of said bars and adapted to engage the under side of the car-body, a cross-piece connecting said bars and longitudinally-movable means at each end of the car for swinging said bars and cross-piece to an upright position or to an inoperative inclined position.

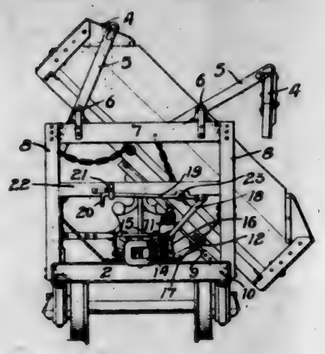

3. The combination, with a dumping-car, of castings secured to the truck-frame, bars pivoted on said castings, and having straps 13, antifriction-wheels mounted on the upper ends of said bars and adapted to engage the under side of the car-body, a cross-piece 12 connecting said bars, and means for swinging said bars to an upright operative position or to an inclined inoperative position.

4. The combination, with a truck-frame, of a swinging bolster mounted thereon, a rock-shaft pivoted on said frame parallel substantially with said bolster and extending from a point near the middle of said bolster to the end of said frame, said shaft having a crank at its inner end and a link connecting it with said cross-piece, and said shaft having also a crank at its outer end extending in the opposite direction from said first-named crank, and means for rocking said shaft to operate said bolster.

5. The combination, with a dumping-car, of a swinging bolster mounted thereon and adapted to prevent premature tilting of the car-body, a rock-shaft having a crank at one end pivotally connected with said bolster, and a second crank at its other end, an operating-rod pivotally connected to said second crank and having an offset, and a guide wherein said rod is slidable and adapted to enter said offset and lock said rod against longitudinal movement.

6. The combination, with a truck-frame and a dumping-car mounted thereon, of a swinging bolster mounted on said frame, and arranged to prevent premature tilting of said car, standards 8 mounted on said truck-frame at the end of the car, a cross-bar 22 connecting said standards, an operating-rod 19 slidable in a guide 21 on said cross-bar and having an offset 23 adapted to receive said guide and means operatively connecting said rod with said bolster, whereby the longitudinal movement of said rod will swing said bolster to an operative or inoperative position.

7. The combination, with a dumping-car arranged to tilt toward each side, of swinging bolsters provided on the truck-frame on each side of the car and arranged to prevent premature tilting of the car-body, rock-shafts mounted on said truck-frame and having cranks, means pivotally connecting one of said cranks on each shaft to the bolsters respectively, and operating-rods pivotally connected with the other cranks respectively, and whereby said shafts will be rocked and said bolsters swung to an operative or inoperative position.

8. The combination, with a dumping-car, of a swinging bolster mounted thereon and adapted to prevent premature tilting of the car, an operating-rod provided at one end of the car and having an offset, a guide wherein said rod is slidable and adapted to enter said offset to lock said rod against longitudinal movement, and a rock-shaft operatively connected with said rod and bolster.

846,138. TONGUE-TRUCK FOR HARVESTERS. GEORGE L. PHELPS, Chicago, Ill., assignor to International Harvester Company, a Corporation of New Jersey. Filed Oct. 22, 1906. Serial No. 339,922.

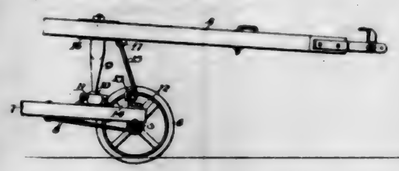

Claim.—1. In a tongue-truck, the combination of a stub-tongue, a truck, a universal-joint connection between said stub-tongue and said truck, and means for temporarily making said connection substantially inflexible in a vertical plane.

2. In a tongue-truck, the combination of a stub-tongue, a truck, a universal-joint connection between said stub-tongue and said truck, a link pivotally connected with said truck and adapted to engage with the stub-tongue, when moved about its pivotal axis in one direction, in a manner to secure the tongue and truck in substantially fixed relation in a vertical plane with each other.

3. In a tongue-truck, the combination of a stub-tongue, a truck, a universal-joint connection between said stub-tongue and said truck, a link pivotally connected with said truck and adapted to engage with the stub-tongue, when moved about its pivotal axis in one direction, in a manner to secure the tongue and truck in substantially fixed relation in a vertical plane with each other.

4. In a tongue-truck, the combination of a stub-tongue, a truck-axle, a draft-tongue secured to said axle, a universal-joint connection between said stub-tongue and said draft-tongue, a clip secured to said draft-tongue, a link having one end pivotally connected with said clip, and means for detachably connecting its opposite end with said stub-tongue in a manner to hold said stub-tongue and draft-tongue in substantially fixed relation in a vertical plane with each other.

5. In a tongue-truck, the combination of a stub-tongue, a truck-axle, a draft-tongue secured to said axle, a flexible connection between said stub-tongue and said draft-tongue, a clip secured to said draft-tongue, a U-shaped link having the lower ends of its side members pivotally connected with said clip and adapted to swing in a vertical plane in the direction of draft, and a hook-shaped plate secured to the stub-tongue and adapted to receive the upper end of said link.

846,139. METHOD OF MAKING TROUGHS. CLARENCE D. PRUDEN, St. Paul, Minn. Filed Apr. 15, 1904. Serial No. 203,277.

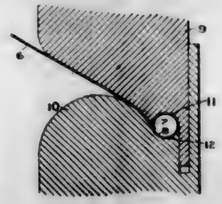

Claim.—The method of forming troughs, consisting of first forming a curve along one edge of the trough-blank, then forming a similar curve parallel to said edge curve, and then pressing said curved edge against said parallel curved portion to form a roll, and simultaneously and oppositely curving the adjacent body of the blank, for the purpose set forth.

846,140. COAL SCREENING AND GRADING APPARATUS. JOSEPH RAFF, Collinsville, Ill., assignor of one-fourth to Louis F. Lumaghi, Collinsville, Ill., and one-fourth to Joseph D. Lumaghi, St. Louis, Mo. Filed Oct. 22, 1906. Serial No. 339,932.

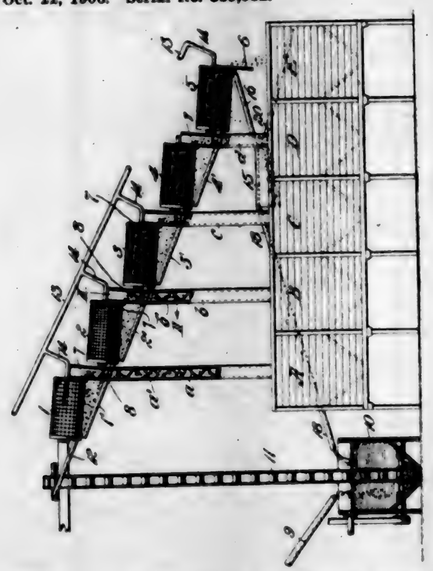

Claim.—1. In an apparatus of the character described, the combination of a plurality of rotatable screens having open ends and arranged in a stepped series and at varying elevations, means for delivering material to the uppermost of said screens, a vertical chute for receiving the material discharged through the open end of the higher screen, and having a runway-section extending across the chamber thereof and a hood covering the runway-section for deflecting the material to opposite sides of the runway-section, a runway located beneath the higher screen for conducting the screened material from the higher screen to the runway-section within the vertical chute, and a runway conducting the material from the runway-section within the vertical chute to a screen located at a lower level, substantially as set forth.

2. In an apparatus of the character described, the combination of a plurality of rotatable screens, means for delivering the screened material from one to another of said screens, a refuse-receptacle, means for conducting the refuse material discharged from the final one of said screens to said refuse-receptacle, a screen in said refuse-receptacle, a settling-tank, and a conducting member leading from said refuse-receptacle screen to said settling-tank, substantially as set forth.

3. In an apparatus of the character described, the combination of a plurality of rotatable screens, a settling-tank, a conveyer for conducting the material to be screened from said settling-tank to the first of said screens, means for conducting screened material from one to another of said screens, means for conducting material discharged through the mesh of the final one of said rotatable screens, a refuse-receptacle into which the material discharged from said final screen is conducted, and a trough leading from said receptacle to said settling-tank, substantially as set forth.

846,141. COAL-WASHER. JOSEPH RAFF, Collinsville, Ill., assignor of one-fourth to Louis F. Lumaghi, Collinsville, Ill., and one-fourth to Joseph D. Lumaghi, St. Louis, Mo. Filed Oct. 22, 1906. Serial No. 339,933.

Claim.—1. In a coal-washer, the combination with a jig and a jig-operating member, of a refuse-receiving well, a conveyer operatable in said well, conveyer-operating means adapted to be driven by said jig-operating member, and means acted upon by the coal entering said jig for moving said conveyer-operating means into coöperation with said jig-operating member, substantially as set forth.

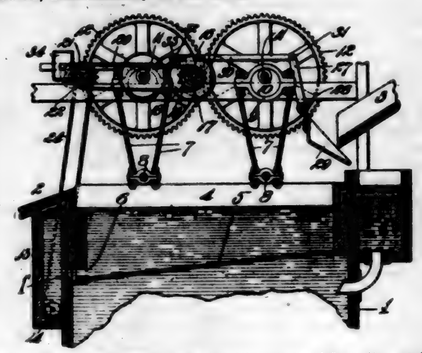

2. In a coal-washer, the combination with a jig, and a jig-operating member, of a refuse-receiving well, a conveyer operatable in said well, conveyer-operating means adapted to be driven by said jig-operating member, and means acted upon by the coal entering said jig for moving said conveyer-operating means into coöperation with said jig-operating member, substantially as set forth.

3. In a coal-washer, the combination with a jig and a jig-operating member, of a refuse-receiving well, a conveyer operatable in said well, a driving member arranged for coöperation with said jig-operating member, means cooperating with said driving member for operating said conveyer, and means acted upon by the coal entering said jig for moving said driving member toward and away from said jig-operating member, substantially as set forth.

4. In a coal-washer, the combination with a jig and a jig-operating member, of a refuse-receiving well, a conveyer operatable in said well, a driving member arranged for coöperation with said jig-operating member, means cooperating with said driving member for operating said conveyer, and lever mechanism acted upon by the coal entering the jig for moving said driving member into and out of engagement with said jig-operating member, substantially as set forth.

5. In a coal-washer, the combination with a jig and a jig-operating member, of a refuse-receiving well, a conveyer operatable in said well, a shiftable driving member arranged for coöperation with said jig-operating member, means coöperating with said driving member for operating said conveyer, and a lever having connection with said driving member for shifting it to and from said jig-operating member and having a part adapted to be acted upon by the coal entering said jig, substantially as set forth.

6. In a coal-washer, the combination with a jig and a jig-operating shaft, of a driving-wheel mounted on said shaft, a refuse-receiving well, a conveyer operatable in said well, a driven shaft, a driving-wheel mounted on said driven shaft, driving means connecting said last-named driving-wheel to said conveyer, a shifting member associated with said last-named driving-wheel for moving it to and from said first-named driving-wheel, and means acted upon by the coal entering said jig for moving said shifting member, substantially as set forth.

7. In a coal-washer, the combination with a jig and a shaft for operating said jig, of a driving-wheel on said shaft, a refuse-receiving well, a conveyer operatable in said well, a suitably-supported conveyer-operating wheel arranged for engagement with said shaft-carried wheel, and means acted upon by the coal entering said jig for shifting said conveyer-driving wheel to and from said first-named wheel, substantially as set forth.

8. In a coal-washer, the combination with a jig and a shaft for operating said jig, of a driving-wheel on said shaft, a refuse-receiving well, a conveyer operatable in said well, a suitably-supported conveyer-operating wheel

arranged for engagement with said shaft-carried wheel, and lever mechanism acted upon by the coal entering said jig for automatically shifting said conveyer-driving wheel to and from said first-named wheel, substantially as set forth.

9. In a coal-washer, the combination with a jig and a shaft for operating said jig, of a driving-wheel on said shaft, a refuse-receiving well, a conveyer operatable in said well, a suitably-supported conveyer-operating wheel arranged for engagement with said shaft-carried wheel, and lever mechanism acted upon by the coal entering said jig for shifting said conveyer-driving wheel to and from said first-named wheel; said lever mechanism being provided with a counterbalance-weight, substantially as set forth.

10. In a coal-washer, the combination with a jig and a shaft for operating said jig, of a driving-wheel on said shaft, a refuse-receiving well, a conveyer operatable in said well, a suitably-supported conveyer-operating wheel arranged for engagement with said shaft-carried wheel, and means for shifting said conveyer-driving wheel to and from said first-named wheel and comprising an eccentric coöperating with said conveyer-driving wheel, and means adapted to be acted upon by coal entering said jig for moving said eccentric, substantially as set forth.

11. In a coal-washer, the combination with a jig and a shaft for operating said jig, of a driving-wheel on said shaft, a refuse-receiving well, a conveyer operatable in said well, a suitably-supported conveyer-operating wheel arranged for engagement with said shaft-carried wheel, and means for shifting said conveyer-driving wheel to and from said first-named wheel and comprising an eccentric coöperating with said conveyer-driving wheel, and lever mechanism having connection with said eccentric adapted to be acted upon by the coal entering said jig, substantially as set forth.

12. In a coal-washer, the combination with a jig and a shaft for operating said jig, of a driving-wheel on said shaft, a refuse-receiving well, a conveyer operatable in said well, a suitably-supported conveyer-operating wheel arranged for engagement with said shaft-carried wheel, and means for shifting said conveyer-driving wheel to and from said first-named wheel and comprising an eccentric coöperating with said conveyer-driving wheel, and lever mechanism having connection with said eccentric and adapted to be acted upon by the coal entering said jig; said lever mechanism being provided with a counterbalance-weight, substantially as set forth.

846,142. EYE-CLEANSING DEVICE. WILLIAM REEVES, New Haven, Conn. Filed Apr. 14, 1906. Serial No. 311,684.

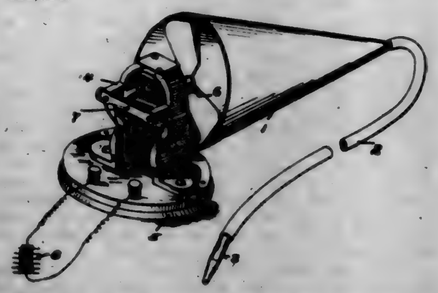

Claim.—1. In a device of the character described, the combination with a base; of a hood connected therewith; rotary suction means in said hood; and a flexible tube having an apertured tip connected with one end thereof and secured to said hood.

2. In a device of the character described, the combination with a hood having an aperture through one end thereof of less diameter than the other end of said hood; of rotary suction means operative in the larger end of said hood; a flexible tube connected at one end with said hood; and an apertured tip fixed in the opposite end of said tube.

3. In a device of the character described, the combination with a base; of a funnel-shape hood connected therewith; means, as a rotating fan, in the larger end of said funnel, for producing a suction therethrough; and a flexible tube having an apertured tip connected with one end thereof and secured to said hood.

4. In a device of the character described, the combination with a base 5; of the hood 1; a motor 4; a fan 6 rotated thereby; a flexible tube 2 connected with said hood; and an apertured tip fixed in one end of said tube.

846,143. FOLDING TABLE. CHARLES T. RIDGELY, Springfield, Ohio, assignor to The Standard Trimmer Company, Springfield, Ohio, a Corporation of Ohio. Filed May 19, 1906. Serial No. 317,744.

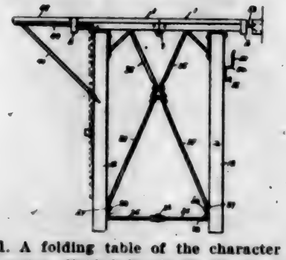

Claim.—1. A folding table of the character described, comprising a top divided longitudinally into two equal sections arranged to fold along the line of division, said sections being provided with battens, and bars secured to the lateral edges of said battens and having projecting hinge-lugs pivotally connected, said lugs projecting to an extent such as to leave a clear space between the battens when the sections are folded to receive a straight-edge or the like, the sections being provided with marginal strips to space them apart when folded, and fastening devices for securing the sections when folded, substantially as described.

2. A folding table of the character described, comprising a top divided longitudinally into two equal sections arranged to fold along the line of division, said sections being provided with battens, and bars secured to the lateral edges of said battens and having projecting hinge-lugs pivotally connected, said lugs projecting to an extent such as to leave a clear space between the battens when the sections are folded to receive a straight-edge or the like, legs pivoted to said bars and arranged to fold against the top flush with the battens, strips secured to the margins of the sections to space them apart when folded, and fastening devices for securing the sections when folded, substantially as described.

3. A folding table of the character described, comprising a top divided longitudinally into two equal sections arranged to fold along the line of division, said sections being provided with battens, and bars secured to the lateral edges of said battens and having projecting hinge-lugs pivotally connected, said lugs projecting to an extent such as to leave a clear space between the battens when the sections are folded, legs arranged to fold against the top flush with the battens, folding brackets carried by the rear legs, and an extension-leaf adapted to be supported on said brackets and to be detachably connected with the rear top section, said extension-leaf being adapted to lie within the space between the top sections when folded, said top sections having marginal spacing-strips provided with fastening devices, substantially as described.

4. In a folding table of the character described, a top divided longitudinally and provided at its ends with battens divided in the same plane, bars extending longitudinally of the inner edges of said battens and secured thereto, said bars having pivoted hinge-lugs at their meeting ends and pivot-lugs for the legs projecting inwardly from their outer portions, and legs arranged in pairs at each end of the top, each leg having secured to its upper end a metallic fitting embracing the sides and top of the leg, the inner side member of said fitting having a direct upward extension forming a pivot-lug connected to one of the pivot-lugs of the corresponding batten-bar, said side member having a diverging brace-bar extending from its lower portion upward and provided at its upper end with a pivot-lug pivotally connected to the other pivot-lug of the batten-bar, substantially as described.

5. In a folding table of the character described, the combination, with a top divided centrally into two longitudinal sections hinged to fold along the line of division, of legs pivoted in pairs to each end of the top, one to each section, and cruciform braces connecting the lower portions of the legs to the under side of the top, said braces being pivoted at their ends to the legs and the table-top, and also pivoted to each other at their intersections to fold around two pivotal axes at right angles to each other, substantially as described.

6. In a folding table of the character described the combination, with a top divided centrally into two longitudinal sections hinged to fold along the line of division, of legs pivoted in pairs to each end of the top, one to each section, and cruciform braces pivoted at their lower end to the lower portions of the legs and at their upper ends to the under side of the top, said braces being pivoted together at their intersections to fold upwardly but not downwardly, and being also pivoted together at their intersections by means of pivots which are coincident with the pivotal axis of the top sections when the legs are folded, substantially as described.

7. In a folding table of the character described, the combination, with a hinged sectional top, and legs hinged to different sections thereof, of cruciform braces between the legs and top, each brace comprising two pairs of converging rods pivoted at their diverging ends to the legs and top respectively, and hinge-plates to which the converging ends of one pair are pivoted and the converging ends of the other pair are rigidly fastened, said pivot-plates being provided with hinge-lugs and a connecting-pivot arranged at right angles to the pivotal axis of the rods, substantially as described.

8. In a folding table of the character described, the combination, with a hinged sectional top, and legs hinged to different sections thereof, of cruciform braces between the legs and top, each brace comprising two pairs of converging rods pivoted at their diverging ends to the legs and top respectively, and hinge-plates to which the converging ends of one pair are pivoted and the converging ends of the other pair are rigidly fastened, said pivot-plates being provided with hinge-lugs and a connecting-pivot arranged at right angles to the pivotal axis of the rods, said hinge-plates being also provided with stop projections formed integral therewith and extending over the pivoted rods, substantially as described.

9. In a folding table of the character described, a top provided with hinged legs, in combination with an extension-leaf, and folding brackets for supporting said leaf, each bracket comprising a supporting-rod pivoted to the upper end of the corresponding rear leg and a brace-rod pivoted to the end of the supporting-rod, each rear leg being provided with a socket to receive the end of the brace-rod when in working position, and a spring-clip to hold the brace-rod and supporting-rod parallel with the legs when in folded position, substantially as described.

10. In a table of the character described, a top, and folding legs, in combination with an extension-leaf, and folding brackets for supporting said leaf, each bracket comprising a supporting-rod pivoted at one end to the upper end of a leg, and a brace-rod pivoted to the other end of the supporting-rod and having a recess at its free end, the leg being provided with a recess to receive the free end of the brace-rod and having a pin extending into said recess and adapted to enter the recess in the end of the supporting-rod, substantially as described.

11. In a folding table of the character described, a top, and legs hinged thereto, folding brackets secured to said legs and adapted to support an extension-leaf, in combination with an extension-leaf, the meeting edges of the leaf and top being provided with fastening devices, the one comprising a projection having a shank and enlarged head, the other provided with a recess and a locking-plate adjacent thereto and having a slot to fit the shank of the projection, substantially as described.

12. In a folding table of the character described, a top divided longitudinally into two equal sections arranged to fold along the line of division, said sections being provided with battens divided in the same plane, metallic reinforcing hinge-bars extending longitudinally of the inner vertical edges of said battens and secured thereto, and hinge-lugs located at the meeting ends of said bars, pivotally connected, and provided with opposed surfaces which meet when the top sections are extended horizontally, substantially as described.

846,144. POLE-DISTRIBUTION RACK FOR TELEPHONE SYSTEMS. WILLIAM ROBINSON, Muskegon, Mich., assignor to The W. G. Nagel Electric Company, Toledo, Ohio, a Corporation of Ohio. Filed May 3, 1906. Serial No. 314,947.

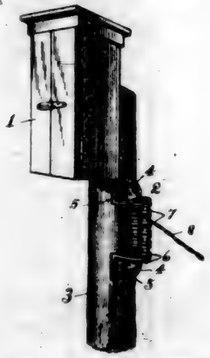

Claim.—1. A wire-distribution bracket, comprising in combination with a support, two spaced members secured to the support, a rod-like element connecting said members and held thereby in spaced relation to the support, and a plurality of insulating-spools carried by said element.

2. A wire-distribution bracket comprising in combination with a support, spaced members secured to the support and having outwardly-projecting portions, a plurality of rod-like members connecting said projecting portions of the spaced members, and a plurality of insulating-spools carried by each rod-like member.

3. A wire-distribution bracket, comprising spaced adjustable end brackets capable of being secured to a supporting member and having projecting portions, a plurality of pins connecting the projecting portions of the end brackets, and a plurality of insulating-spools carried by each pin intermediate the projections, substantially as described.

4. A wire-distribution bracket comprising spaced securing parts, means connecting said parts, and a plurality of abutting insulating-spools carried in axial alinement by said means.

5. A wire-distribution bracket comprising, in combination with a support, spaced L-shaped securing parts carried by the support, a plurality of pin members secured at their ends to said parts, and a plurality of insulating-spools axially carried by said pin members, substantially as described.

846,145. CAN-END-SOLDERING MACHINE. FRANK RUDOLPH and CHARLES J. NELSON, Chicago, Ill., assignors to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Sept. 21, 1905. Serial No. 279,378.

Claim.—1. In a machine for soldering the end seams of round cans, the combination with a flux-bath and a solder-

bath, of two transversely-inclined solder-runways along which the cans may be rolled in an inclined position, two endless chain conveyers for rolling the cans along the soldering-runways, two horizontally and vertically adjustable buffing-runways, inclines connecting the soldering and buffing runways, two endless belt conveyers for rolling the cans along the buffing-runways, means for vertically adjusting said belt conveyers, two pairs of rapidly-revolving soft cylindrical buffers composed of flexible textile disks arranged parallel to said buffing-runways, two can-cooling conveyers extending along and parallel to said soldering and buffing runways, curved guides for turning and delivering the cans from the runways onto the cooling-conveyers in an upright position, a hood extending over said rotary cylindrical buffers and the buffing-runways, inclined bottom plates having a discharge-mouth, curved shields extending over the two lower rotary cylindrical buffers and an upright division-plate extending between the two pair of rotary cylindrical buffers, substantially as specified.

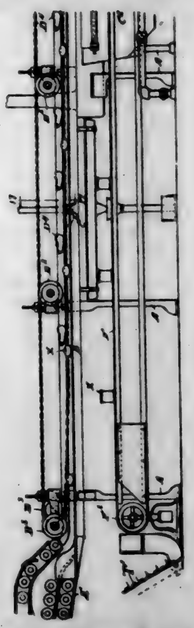

2. In a machine for soldering the end seams of round cans, the combination with a solder-bath, transversely-inclined soldering-runways, means for rolling the cans along the soldering-runways, horisontally and vertically adjustable buffing-runways, means for rolling the cans along said runways, can-cooling conveyers below the runways, and two pair of rapidly-rotating soft cylindrical buffers arranged longitudinally adjacent to the buffing-runways and engaging the fresh solder-coated outside surface of the cans as they are rolled along said buffing-runways to remove the surplus solder from such surfaces, before the cans are delivered to the cooling-conveyers, substantially as specified.

3. In a machine for soldering the end seams of round cans, the combination with a solder-bath, transversely-inclined soldering-runways, means for rolling the cans along the soldering-runways, horisontally and vertically adjustable buffing-runways, means for rolling the cans along said runways, can-cooling conveyers below the runways, and two pair of rapidly-rotating soft cylindrical buffers arranged longitudinally adjacent to the buffing-runways and engaging the fresh solder-coated outside surface of the cans as they are rolled along said buffing-runways to remove the surplus solder from such surfaces, before the cans are delivered to the cooling-conveyers, and means for vertically adjusting the two upper rotary cylindrical buffers, substantially as specified.

4. In a machine for soldering the end seams of round cans, the combination with a solder-bath, a soldering-runway along which the cans are rolled, means for rolling the cans along said runway, a vertically and horizontally adjustable buffing-runway, means for rolling the cans along said buffing-runway, and a pair of rapidly-rotating soft, flexible cylindrical buffers engaging the outside solder-coated surfaces of the cans as they are rolled along the runway, substantially as specified.

5. In a machine for soldering the end seams of round cans, the combination with a solder-bath, a soldering-runway along which the cans are rolled, means for rolling the cans along said runway, a vertically and horizontally adjustable buffing-runway, means for rolling the cans along said buffing-runway, and a pair of rapidly-rotating soft, flexible cylindrical buffers engaging the outside solder-coated surfaces of the cans as they are rolled along the runway, and a cooling-conveyer below said runways, substantially as specified.

6. In a machine for soldering the end seams of round cans, the combination with a solder-bath, a soldering-runway along which the cans are rolled, means for rolling the cans along said runway, a vertically and horizontally adjustable buffing-runway, means for rolling the cans along said buffing-runway, and a pair of rapidly-rotating soft, flexible cylindrical buffers engaging the outside solder-coated surfaces of the cans as they are rolled along the runway, and a cooling-conveyer below said runways, and means for turning and delivering the cans from their rolling position on said runways into an upright position on said cooling-conveyers, substantially as specified,

7. In a machine for soldering the end seams of round cans, the combination with a solder-bath, soldering-runways for the cans, means for rolling the cans along said soldering-runways, cooling-conveyers, buffing-runways, means for rolling the cans along said buffing-runways, two pair of rapidly-rotating soft, flexible cylindrical buffers engaging the outside solder-coated surfaces of the cans as they roll along the runways, a hood surrounding and inclosing the said rotary buffers and the buffing-runways, inclined bottom plates beneath said hood and the rotary buffers and an upright division-plate extending between the two pairs of buffers, substantially as specified.

8. The combination with a soldering-runway and solder-bath, of a cooling-conveyer, a buffing-runway, rotary cylindrical buffers parallel to the buffing-runway and means for adjusting the buffing-runway up and down, substantially as specified.

9. The combination with a soldering-runway and solder-bath, of a cooling-conveyer, a buffing-runway, rotary cylindrical buffers parallel to the buffing-runway and means for adjusting the buffing-runway up and down, and means for adjusting the buffing-runway to and from the buffers, substantially as specified.

10. The combination with a soldering-runway and solder-bath, of a cooling-conveyer, a buffing-runway, rotary cylindrical buffers parallel to the buffing-runway and means for adjusting the buffing-runway up and down, and means for adjusting the buffing-runway to and from the buffers, and means for vertically adjusting the upper buffer, substantially as specified.

846,146. SPINNING-MULE. JOSEPH SCHMITT, Woonsocket, R. I. Filed May 16, 1906. Serial No. 317,221.

Claim.—1. In a spinning-mule, a tension device comprising a bracket rigidly secured to the head-stock frame, an arm pivotally secured to the bracket, means for applying a spring tension to the pivoted arm, means for adjusting the spring tension, a segmental arm having a curved T-shaped end and rigidly secured to the faller-rod shaft in a position for the curved end to frictionally engage with the arm on the bracket when the carriage has reached its outward stretch, whereby the faller-rods are given a frictional resistance for a predetermined interval at the point of backing off, as described.

2. In a spinning-mule, a tension device comprising a bracket rigidly secured to the head-stock frame, a vertical arm, means for adjustably securing the vertical arm to the bracket, a horizontal arm pivotally secured to the vertical arm, a segmental arm comprising a member having a curved T-shaped end adjustably secured to a member which is rigidly secured to the faller-rod shaft in a position for the curved T-shaped end to frictionally engage with the horizontal arm when the carriage has reached its outward stretch, means for exerting a spring tension on the horizontal arm, and means for adjusting the spring tension, whereby the faller-rods are given a frictional resistance for a predetermined interval at the point of backing off, as described.

3. In a spinning-mule, the combination with a faller-rod shaft *p* and a head-stock frame *v*, of a tension device *w* comprising a bracket 4 rigidly secured to the frame *v*, a vertical arm 5 adjustably secured to the bracket 4 by a bolt 6 through a vertical slot 7 in the bracket, a flat arm 8 pivotally secured at its end 9 in a horizontal position to the upper end of the vertical arm 5 by a bolt 10 and having an upwardly-curved free end 11, a coiled spring 12 surrounding the end 9 and secured at one end to the head of the bolt 10, the other end being formed into an arm 13 adapted to bear on the flat arm 8, a short arm 14 rigidly secured to the vertical arm 5 by a bolt 15 and having in its outer end a vertical adjusting-bolt 16 held in its adjusted position by a nut 17 and supported by the arm 14 in a position for the upper end of the adjusting-bolt to engage with the under side of the flat arm 8 and a segmental arm 18 having the two-part lower member 19 secured to the faller-shaft *p* by a bolt 20, and an upper member 21 adjustably secured to the lower member 19 by a bolt 22 through a vertical slot in the member 19, and having a curved T-shaped end 23 covered with leather 24 or similar material, whereby the faller-rods are given a frictional resistance for a predetermined interval, as described.

846,147. AUTOMATIC SWITCH. GERHARD SCHMITZ, Byesville, Ohio, assignor of one-half to David Barclay, Byesville, Ohio. Filed Sept. 19, 1906. Serial No. 335,221.

Claim.—1. The combination with a switch-actuating member, of a car-actuated trip constructed to swing in either direction, means for automatically returning the trip to operative position, and a connection between said trip and member for operating the switch when the trip is swung in either direction, and constructed to allow the return movement of the trip.

2. The combination with a switch-actuating member, of a car-actuated trip constructed to swing in either direction, means for automatically returning the trip to operative position, and a loose connection between said trip and member constructed to operate the switch when the trip is swung in either direction, and to permit the return movement of the trip.

3. The combination with a switch-actuating member, of a normally erect car-actuated trip constructed to swing in either direction, and a connection between said trip and member to operate the switch when the trip is swung in either direction, and constructed to allow the return movement of the trip.

4. The combination with a switch-actuating member, of a looped rod loosely connected thereto, and a car-actuated trip constructed to swing in either direction to engage either end of the loop for operating the switch.

5. The combination with a switch-actuating member, of a looped rod loosely connected thereto, and a normally erect car-actuated trip engageable with either end of the loop for operating the switch.

846,147.

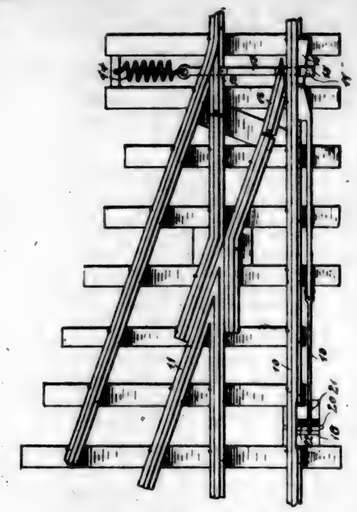

846,148. METHOD OF MAKING TOILET-MIRRORS AND OTHER LIKE ARTICLES. HERMAN M. SCHWARTZ, Northampton, Mass., assignor to Florence Manufacturing Company, Northampton, Mass., a Corporation of Massachusetts. Filed July 30, 1900. Serial No. 25,232.

Claim.—The improved method of manufacturing toilet-mirrors and the like articles, consisting in taking a back having formed therein the required cavity with raised sides, placing the facing-sheets within the said cavity with its edges in juxtaposition to the said sides, placing a die within the cavity above the sheet and in contact with the latter near its edge and also with the raised side of the cavity of the back, and flowing plastic composition into the space intervening between the die, the edge of the sheet, and the side of the cavity of the back, substantially as described.

846,149. GARMENT-FITTING STAND. GEORGE H. SCULLY, Kansas City, Mo. Filed Apr. 18, 1905. Renewed Sept. 22, 1906. Serial No. 335,777.

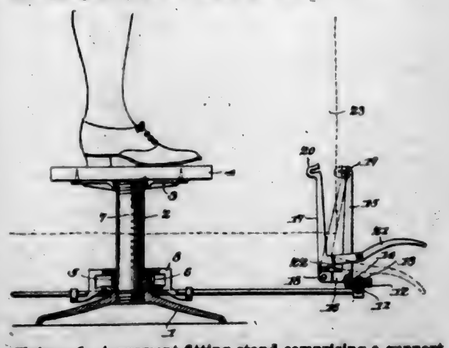

Claim.—1. A garment-fitting stand comprising a support having a scale, a platform upon the support, a substan-

tially horizontal arm carried by the support and adjustable vertically thereon in coöperative relation with the scale, and a hem-gage carried by the outer end portion of the arm.

2. A garment-fitting stand comprising a support having an upright scale, a platform upon the support, a substantially horizontal arm adjustable vertically upon the support in coöperative relation with the scale and also rotatable around the support, and a hem-gage carried by the arm.

3. A garment-fitting stand comprising a support having an upright scale and a platform, a vertically-adjustable collar embracing the support, a bracket rotatably embracing the support and rotatably carried by the collar, a substantially horizontal arm carried by the bracket, and a hem-gage carried by the arm.

4. A garment-fitting stand comprising a support having a platform, a substantially horizontal arm carried by the support and adjustable vertically thereon, and a hem-gage carried by the arm.

5. A garment-fitting stand comprising a support having a platform, a collar embracing the support and adjustable vertically thereon, a bracket embracing the support and rotatably carried by the collar, a substantially horizontal arm carried by the bracket, and a hem-gage carried by the arm.

6. A garment-fitting stand comprising a support having a platform, a bracket rotatable upon the support and adjustable vertically thereon, said bracket being provided with spaced guides, substantially horizontal arms adjustable endwise through the guides, and a hem-gage carried by corresponding ends of the arms.

7. A hem-marking gage for dress-fitting stands comprising a pair of upright gage members, one of the gage members being provided with an upright seat and the other member having a jaw to force a portion of a skirt into the seat and produce an upright fold therein, the seat and the jaw being provided with transverse openings which are alined when the jaw is in the seat for the reception of a pin therethrough.

8. A hem-marking gage for dress-fitting stands comprising a stationary upright gage member having a vertically-bifurcated laterally-projected seat at its upper end, the sides of the seat having corresponding slots, and an upright pivotal gage member having an upstanding jaw to enter the seat of the other jaw and fold a portion of a skirt vertically, the jaw of the pivotal gage being provided with a transverse slot which is alined with the slot of the fixed gage member for the reception of a pin to be passed through the folded portion of the skirt.

9. A hem-marking gage for dress-fitting stands comprising an upstanding gage member having a vertically-bifurcated laterally-projected jaw at its upper end and a laterally-directed heel portion at its lower end, another upright gage member pivoted to the heel to work toward and away from the fixed gage member, the upper end of the pivotal gage member being provided with an upstanding jaw to enter the bifurcation of the fixed jaw and fold a portion of a skirt vertically, the two jaws being provided with transverse openings which are in alinement when the jaws are engaged for the reception of a pin, a treadle connected to the pivotal jaw, and a spring to yieldably maintain the gage members separated.

10. In a garment-fitting stand, the combination of an upright support having a platform upon the top thereof, a vertically-adjustable bracket carried by the support and rotatable concentrically thereon, an endwise-adjustable substantially horizontal arm carried by the bracket, an upstanding stationary gage member at one end of the arm with the upper end of the gage member provided upon its inner side with a laterally-projected jaw which is bifurcated vertically and horizontally, an upright pivotal gage member disposed at the inner side of the fixed gage member with its upper end provided with an upright jaw to enter the vertical bifurcation of the fixed jaw and provided with a horizontal bifurcation for alinement with the horizontal bifurcation of said fixed jaw, a treadle connected to the pivotal gage member, and a spring to yieldably maintain the gage members separated.

846,150. WATER-CLOSET. JOSEPH W. SHARP, Jr., Philadelphia, Pa., assignor to Haines, Jones and Cadbury Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Nov. 21, 1906. Serial No. 344,401.

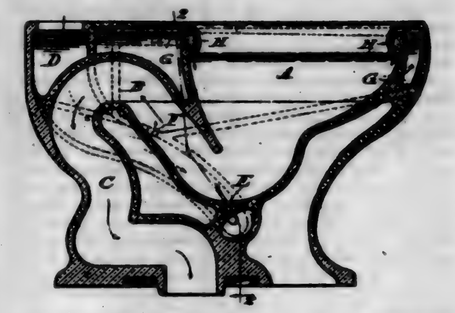

Claim.—1. A closet-bowl having a suitable siphon-passage, a supply-passage, a jet-port in said supply-passage delivering to said siphon-passage a bowl-encircling chamber, a second port leading from said supply-passage to said bowl-encircling chamber, and a bowl-flushing chamber or passage in communication circumferentially with said bowl-encircling chamber.

2. A closet-bowl having a siphon-passage, a supply-passage, a jet-port in said supply-passage delivering to said siphon-passage, a bowl-encircling chamber a second port leading from said supply-passage to said bowl-encircling chamber, and a bowl-flushing chamber or passage in open communication with said first-named chamber throughout its entire circumference.

3. A closet-bowl having a bowl-encircling chamber, a bowl-flushing chamber or passage delivering to said bowl and having open communication with said first-named chamber throughout its entire circumference, a siphon-passage communicating with the bowl, and a supply-passage delivering to said siphon-passage and said bowl-encircling chamber.

4. A closet-bowl having a bowl-encircling chamber, a bowl-flushing chamber or passage delivering to said bowl, a circumferential dam or bowl extension between said chambers, a suitable siphon-passage communicating with the bowl, and a supply-passage delivering to said bowl-encircling chamber and said siphon-passage.

5. A closet-bowl comprising a bowl-encircling chamber having an inclined bottom, a bowl-flushing chamber or passage delivering to said bowl, a circumferential dam or bowl extension between said chambers, a suitable siphon-passage communicating with said bowl, and a supply-passage delivering to said siphon-passage and to the inclined bottom of said bowl-encircling chamber at the lowest point thereof.

6. A closet-bowl having a bowl-encircling chamber, a bowl-flushing chamber or passage delivering to said bowl, a circumferential dam or bowl extension between said chambers, a siphon-passage communicating with the bowl, and a supply-passage delivering through one port to the siphon-passage and through the other port to said bowl-encircling chamber at a point below the normal water-line of the closet.

7. A closet-bowl comprising a bowl-encircling chamber, a bowl-flushing chamber or passage delivering to said bowl, a circumferential dam or bowl extension between said chambers, a siphon-passage communicating with the bowl, and a supply-passage delivering through one port to said siphon-passage and through the other port to said bowl-encircling chamber at the lowest point thereof.

8. A closet-bowl comprising a bowl-encircling chamber, a bowl-flushing chamber or passage delivering to said bowl, a circumferential dam or bowl extension of varying height between said chambers, a siphon-passage communicating with the bowl, and a supply-passage delivering through one port to said siphon-passage and through the other port to said bowl-encircling chamber at the lowest point thereof.

9. A closet-bowl comprising a bowl-encircling chamber, a bowl-flushing chamber or passage delivering to said bowl, a circumferential dam or bowl extension of greater height at its rear than at its front between said chambers, a siphon-passage communicating with the bowl, and a supply-passage delivering through one port to said siphon-passage and through the other port to said bowl-encircling chamber at the lowest point thereof.

10. A closet-bowl having an outer bowl-encircling supply and refill chamber, an inner bowl-encircling flushing chamber or passage, and a dam or bowl extension between said chambers.

11. A closet-bowl having an outer bowl-encircling supply and refill chamber, an inner bowl-encircling flushing chamber or passage, and a dam or bowl extension of varying height between said chambers.

12. A closet-bowl having an outer bowl-encircling supply and refill chamber, an inner bowl-encircling flushing chamber or passage, and a dam or bowl extension of greater height at its rear than at its front between said chambers.

13. A closet-bowl having an outer bowl-encircling supply and refill chamber, an inner bowl-encircling flushing chamber or passage, and a circumferential channel of varying capacity connecting said chambers.

14. A closet-bowl having an outer bowl-encircling supply and refill chamber, an inner bowl-encircling flushing chamber or passage, and a circumferential channel of less capacity at its rear than at its front connecting said chambers.

846,151. EXTENSION VEHICLE-STEP. GEORGE F. SHAW, San Francisco, Cal. Filed Apr. 21, 1906. Serial No. 313,036.

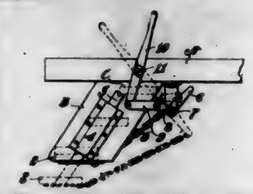

Claim.—1. The combination with a car or vehicle of permanent inclined steps, guides fixed upon the sides of the step-frame, a bar having a step fixed thereon, extending beneath the lowermost permanent step, said bar having its ends upturned and slidable in the guides, and a lever and intermediate connections by which the step and slides may be retracted, said intermediate connections including two crank-arms standing at an angle to each other and turnable about a single axis, means connecting one of said arms with said lever, and a connection between the other crank-arm and the movable step, said other crank-arm adapted to carry the said connection beyond the center of a line drawn from said axis to the movable step whereby the parts are retained substantially in a locked position.

2. The combination with a car or vehicle and steps thereof, of a supplemental step extending beneath the lowest permanent step, a bar having parallel separated sections to which the step is fixed, said sections being turned to stand parallel with the permanent step sides, guides in which the ends of the bar are slidable, a lever fulcrumed to a fixed portion of the car, a shaft, crank-arms thereon and standing one at an angle to the other, a link connecting one of said arms with the lever, and a flexible connection between the other crank-arm and the step, said other crank-arm adapted to carry the flexible connection beyond the center of a line drawn from said shaft to the movable step whereby the parts are retained in a locked position.

846,152. HORSE-DETACHER. HEBRADIAS G. SIMPSON, Elkhorn, W. Va. Filed Feb. 26, 1906. Serial No. 302,978.

Claim.—1. The improved attachment for vehicles comprising a frame which includes a rear bar, arms projecting forward therefrom and adapted to extend in front of the axle, a front bar connecting the ends of said arms, sliding bolts for engaging shaft-irons or swingletrees, connecting-rods, springs and pivoted lever arranged vertical for operating such sliding rod, substantially as described.

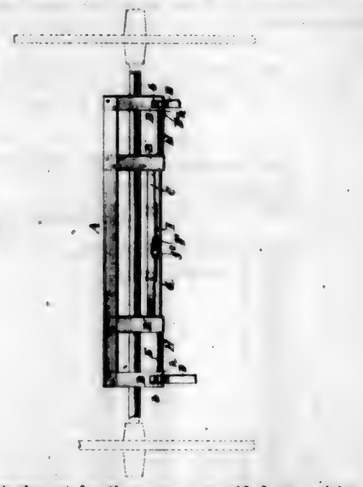

2. The attachment for the purpose specified, comprising a rear bar adapted to engage the front axle, parallel horizontal arms extending forward from the ends of said bar, two parallel bars connecting the front ends of said arms, sliding bolts arranged between the bars and in suitable bearings or supports, a lever provided between the bars and adapted to swing in a vertical plane, links connecting the lever with the aforesaid bolts, and springs applied to the bolts, substantially as described.

3. The combination with the front axle of a vehicle, of an attachment comprising a bar adapted to engage the rear side of the axle, arms extending forward horizontally from the axle from the ends of said bar, a front bar which rigidly connects the front ends of said arms, the latter having slots for receiving thill-irons or swingletree-eyes, bolts sliding in guides on said bar for locking or releasing horse attachments, a lever arranged vertically and pivoted to the front bar and with which the inner ends of the bolts are connected, an arc-bar, and means for locking the lever therewith, and springs applied for holding the bolts normally extended and locked with the horse attachments, substantially as described.

846,153. COUNTING DEVICE FOR BLANK-CUTTING MACHINES. ELBRIDGE G. SOUTHER, Lynn, Mass. Filed June 7, 1906. Serial No. 320,548.

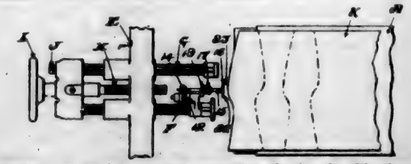

Claim.—1. The improved counting device for blank-cutting machines comprising a finger located in the line of motion of the strip from which the blanks are cut at a distance from the cut less than the width of a blank and greater than the width of the waist, and a registering device operatively connected with said finger.

2. The improved counting device for blank-cutting machines comprising a finger-plate provided with two projections adapted to contact with different curves of successive blanks and be moved by contact therewith, and a registering device operatively connected with the said finger-plate.

3. The improved counting device for blank-cutting machines comprising a finger-plate slidably mounted and located in the line of motion of the strip from which the blanks are cut at a distance from the cut less than the width of a blank and greater than the width of the waste, and a registering device operatively connected with said finger-plate.

846,154. INCUBATOR. NEWTON C. SPRAGUE, Minneapolis, Minn., assignor to M. W. Savage, Minneapolis, Minn. Filed Jan. 29, 1906. Serial No. 298,302.

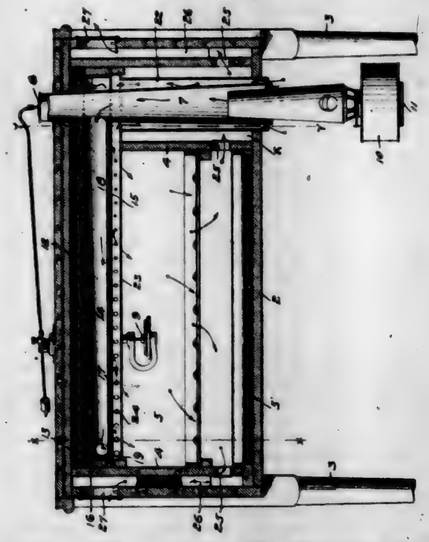

Claim.—1. The combination with an incubator and egg-chamber having exhaust-flues for the foul air, of a vertical cool-air flue, a horizontal flue projecting within said chamber and communicating with the said cool-air flue, and said horizontal flue having a series of holes gradually increasing in diameter as they recede from said vertical flue, substantially as described.

2. An incubator having an egg-chamber and a hot-air-circulating chamber in the upper part thereof and provided with a metallic floor, a vertical hot-air flue in one end of said circulating-chamber, a horizontal hot-air flue communicating with said vertical flue and extending centrally of said chamber from one end to the other thereof and discharging into said chamber at one end and spaced from the bottom thereof, said circulating-chamber having discharge-flues leading to the open air, a cold-air flue inclosing said vertical hot-air flue, a horizontal cold-air flue communicating with the vertical one and arranged centrally beneath said circulating-chamber and having a series of openings in its walls leading into said egg-chamber, and a strip of heat-insulating material interposed between said horizontal hot-air flue and the bottom of said chamber and said horizontal cold-air flue, whereby the heating of the bottom of said chamber and the walls of said cold-air flue by direct contact with the hot surface of said hot-air flue, is prevented, substantially as described.

3. An incubator having an egg-chamber and a shallow hot-air-circulating chamber in the upper part thereof extending from end to end and from side to side of the egg-chamber and having suitable exhaust-openings at one end, a vertical hot-air flue, a horizontal hot-air flue communicating therewith and extending along the center line of said circulating-chamber and having branch pipes at one end discharging into said chamber, said branch pipes being spaced from the bottom of said circulating-chamber a heat-insulating material separating said horizontal hot-air flue from said bottom, and a cold-air flue located beneath said chamber and having openings leading into said egg-chamber, substantially as described.

4. An incubator having an egg-chamber and a hot-air-circulating chamber in the upper part thereof extending from end to end and from side to side of said chamber, said circulating-chamber having a top inclined downwardly from the center toward each side and an insulating material between said top and the top of the incubator and said circulating-chamber having exhaust-openings at one end, a vertical hot-air flue, a horizontal hot-air flue communicating with said vertical flue and extending within said circulating-chamber along the middle line thereof and separated from the floor of said chamber, a cold-air flue arranged beneath the middle line of said circulating-chamber and having a series of openings leading into said egg-chamber, a vertical cold-air flue inclosing said vertical hot-air flue and communicating with said horizontal cold-air flue, and a strip of insulating material separating said horizontal cold-air flue from said hot-air flue, substantially as described.

846,155. BROODER. NEWTON C. SPRAGUE, Minneapolis, Minn., assignor to M. W. Savage, Minneapolis, Minn. Filed Jan. 29, 1906. Serial No. 298,303.

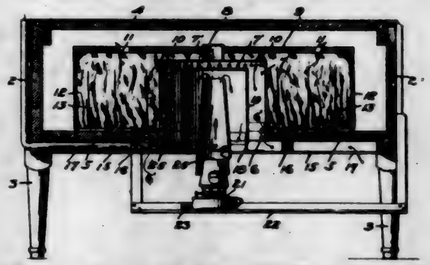

Claim.—1. In a brooder, the combination, with a casing having a floor provided with an opening therein, of a perforate drum mounted on said floor over said opening and spaced from the top of the brooder, a hover-plate supported above said drum and spaced from the top and side walls of the brooder, a curtain supported on said hover-plate and inclosing said drum, an imperforate drum arranged within the opening in said floor and spaced from the walls and top of said first-named drum and having an exhaust or foul-air flue, means supporting said imperforate drum, a pipe extending up into said imperforate drum, a lamp arranged beneath said pipe and said perforate drum having a cold-air-intake flue and said hover-plate having exhaust-openings, and said drums being separable and removable from their supports to facilitate the cleaning of their interior surfaces, substantially as described.

2. In a brooder, the combination, with a casing having a floor provided with an opening therein and a flange surrounding the same, of a drum having a closed top and perforate side walls and an open bottom fitting over said flange, a hover-plate supported above said drum and spaced from the top of the brooder and the side walls thereof and having a curtain inclosing said drum, a plate arranged beneath the floor of the brooder, a second flange mounted on said plate beneath the opening in said floor, an imperforate drum fitting on said second flange and extending up through the opening in said floor into said first-named drum and spaced therefrom, and said perforate drum having a cold-air inlet and said imperforate drum having a foul-air exhaust, a pipe projecting up through said plate into said imperforate drum and a lamp arranged beneath said pipe and said drums being removably mounted on said flanges, whereby access may be had to their interior surfaces for cleaning purposes.

3. In a brooder, the combination, with a casing having a floor provided with an opening therein and a flange inclosing said opening, of a perforate drum removably mounted on said flange, a plate arranged beneath said floor, a second flange thereon beneath the opening in said floor, an imperforate drum removably mounted on said second flange and projecting up through said opening into said perforate drum and spaced from the walls thereof, said perforate drum having a cold-air-intake opening, and said imperforate drum having a foul-air-exhaust flue, a pipe projecting up into said imperforate drum, and a lamp arranged beneath said pipe.

4. The combination, with a brooder-casing having a floor provided with an opening therein, of a perforate drum arranged over said opening, clips provided on the top of said drum, a hover-plate resting upon said clips and spaced from the top of the brooder and having exhaust-openings and a curtain inclosing said drum, an imperforate drum projecting up into said first-named drum through the hole in said floor, means supporting said imperforate drum, a plate whereon said imperforate drum is supported, said perforate drum having a cold-air-intake flue, and said imperforate drum having an exhaust-flue, a pipe supported in said plate and projecting up into said imperforate drum, and a lamp arranged beneath said pipe.

846,156. CULTIVATOR. WILLIAM M. STAMPS, Newnan, Ga. Filed July 25, 1906. Serial No. 327,680.

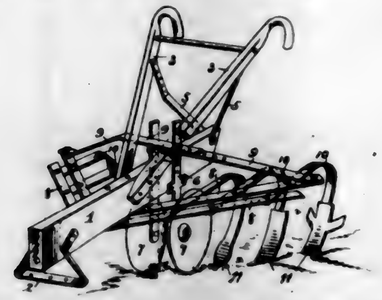

Claim.—1. In a cultivator having handles and a clevis, the combination of a draft-beam; inverted-U-shaped members, consisting each of two inverted corresponding U-shaped rods, secured at their top ends to the under face of said draft-beam; substantially rectangular fenders secured to said U-shaped members; frame-bars, pivoted at their front ends to the under side of said draft-beam, two on each side of said beam, the bars on each side of the beam being independently adjustable; gangs of drag-bars, pivoted at their front ends to the under side of said frame-bars, and plow-points secured to the free ends of said drag-bars, and adapted to be shifted laterally by means of said adjustable bars, substantially as shown and described and for the purposes set forth.

2. The combination of the draft-beam 1; the inverted-U-shaped adjustable members 12', secured at their upper ends to said draft-beam; fenders 12, adjustably secured to said U-shaped members; frame-bars 8, pivoted at their front ends to the under side of said draft-beam, two on each side thereof; independent means for adjusting the frame-bars on each side of the beam, and a gang of drag-bars on each side of said draft-beam, and pivoted at their front ends to the under side of said frame-bars and adapted to be shifted laterally therewith, and a clevis reversibly secured to the draft-beam substantially as shown and described and for the purposes set forth.

3. The combination of the draft-beam; the reversible clevis, secured to the front end thereof, having one side extending further out from one side of said draft-beam than the other; fenders, adjustably secured to said draft-beam; frame-bars, pivoted at their front ends to the under side of said draft-beam, two on each side thereof; means for adjusting the frame-bars on each side of the beam independently, and a gang of drag-bars on each side of said draft-beam, pivoted at their front ends to the under side of said frame-bars, adjustable therewith and carrying plow-points, substantially as shown and described and for the purposes set forth.

846,157. ROPE-GRAB FOR OIL OR OTHER DRILLED WELLS. LAWRENCE STEPHENS, Macksburg, Ohio. Filed Dec. 12, 1906. Serial No. 347,422.

Claim.—1. The improved rope-grab comprising a head portion adapted for attachment to a stem, a pendent toothed jaw formed integrally with the head portion, a movable toothed jaw which is detachable from the head, means for connecting the two jaws, which consist of parallel links pivoted to each of the jaws, and a means for connecting the movable jaw with the head, detachably, the same consisting of an easily-breakable member, the engaging parts being provided with bores to receive the said member, substantially as described.

2. The improved rope-grab comprising a head portion having a pendent toothed jaw which is formed integrally with the head, a movable toothed jaw which is detachable from the head, parallel links connecting the two jaws so that the movable one maintains the same position relative to the other when the grab is in use, and breakable means for connecting the movable jaw with the head, as shown and described.

846,158. SOCKET BUSHING OR FITTING FOR ELECTRICAL PURPOSES. WILLIAM B. STEWART, Philadelphia, Pa. Filed Aug. 9, 1906. Serial No. 329,871.

Claim.—1. In an electric device, a bushing or fitting, the latter consisting of a bushing formed of sections, each provided with a single recess in its inner face, each recess being of the form of the portion of an ellipse, the recesses when the sections are together being of the form of a complete ellipse forming a common opening for the plurality of wires placed side by side therein.

2. An electric device having a socket with a screw-threaded neck thereon and a bushing or fitting adapted to be screwed into said socket and tightened therein and formed of sections, each provided with a single partly-oblong recess therethrough, the recesses, when the sections are together, forming a completely-oblong recess adapted to receive a plurality of wires or conductors and clamp the same side by side against each other.

846,158.

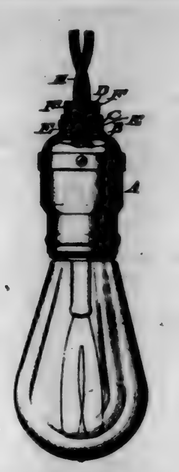

846,159. SANDPAPER-HOLDER. MARTIN V. B. STONE, Swampscott, Mass. Filed Apr. 27, 1906. Serial No. 313,916.

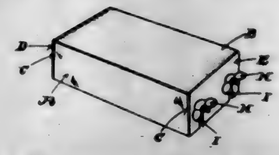

Claim.—1. The improved sandpaper-holder, comprising a block of resilient material, a pair of plates for two opposite faces of the block, and securing means for holding the said plates against the adjacent faces of the block said securing means comprising a rod passing through the block and engaging the said plates.

2. The improved sandpaper-holder, comprising a block, a pair of plates each provided with an incurved edge, and securing means for holding the said plates against the adjacent faces of the block.

3. The improved sandpaper-holder, comprising a block, a pair of plates for two opposite faces of the block, one of said plates being slotted for convenience of removal, and securing means comprising a rod passing through the block and a thumb-nut for holding the said plates against the adjacent faces of the block.

4. The improved sandpaper-holder, comprising a block, a pair of plates for two opposite faces of the block, and securing means comprising a rod passing through the block and a thumb-nut for holding the said plates against the adjacent faces of the block, said rod being fixedly attached to one of the said plates with its end flush with the surface of the said plate.

846,160. FRUIT-BRUSHING MACHINE. THOMAS STRAIN, near Fullerton, Cal. Filed Dec. 4, 1905. Serial No. 290,287.

Claim.—1. A fruit-brushing machine comprising a horizontally-rotating bottom brush; a horizontal conchoidal brush above the same and forming with the bottom brush a runway for the passage of the fruit through the machine.

2. A fruit-brushing machine comprising a rotating bottom brush; a stationary top brush above said bottom brush; and a horizontal conchoidal brush intermediate of said top and bottom brushes.

3. A fruit-brushing machine comprising a rotating bottom brush; a top brush above said bottom brush; means to give said top brush a reciprocating motion; and a horizontal conchoidal brush intermediate of said top and bottom brushes.

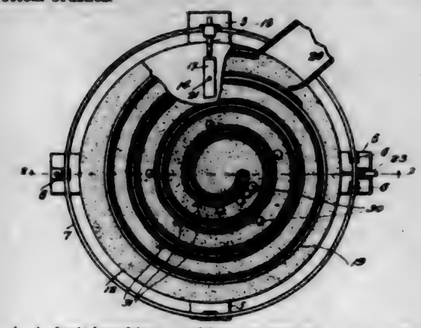

4. A fruit-brushing machine comprising a flat horizontally-rotating botton brush; a top brush above said bottom brush; and means to give said top brush a reciprocating motion.

846,161. FRUIT-BRUSHING MACHINE. THOMAS STRAIN, near Fullerton, Cal. Filed Nov. 9, 1906. Serial No. 342,592.

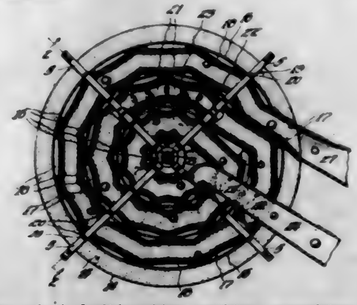

Claim.—1. A fruit-brushing machine, comprising a flat horizontally-rotating bottom brush; vertical and horizontally-undulating brushes above said bottom brush and forming with the bottom brush a runway for the passage of the fruit through the machine, said brushes above said bottom brush being so arranged that the passage-way is circular in general outline.

2. A fruit-brushing machine, comprising a flat horizontally-rotating bottom brush; vertical and horizontally-undulating brushes above said bottom brush and forming with the bottom brush a runway for the passage of the fruit through the machine, said brushes above said bottom brush being so arranged that the passage-way is circular in general outline; a sectional top brush secured to the top of the frame and projecting into the said channel.

3. A fruit-brushing machine, comprising a flat horizontally-rotating bottom brush; a plurality of segmental webs concentric with each other and separated from each other secured above the bottom brush; a plurality of straight short brushes secured to said web, whereby a plurality of runways for the passage of the fruit through the machine are formed thereby together with the bottom brush, the vertical sides of said runways being serpentine; sectional top brushes secured to the top of the frame and projecting into said channels.

4. A fruit-brushing machine, comprising a flat horizontally-rotating bottom brush; a plurality of segmental webs concentric with each other and separated from each other adjustably secured above the bottom brush; a plurality of straight short brushes secured to said webs in serpentine form; brushes connecting the adjacent webs, whereby a continuous concentric stepped runway is formed by said webs and brushes and the bottom brush, the vertical sides of said runway being serpentine; and a sectional top brush secured to the top frame and projecting into the said channel.

846,162. FRUIT-BRUSHING MACHINE. THOMAS STRAIN, near Fullerton, Cal. Filed Nov. 9, 1906. Serial No. 342,593.

Claim.—1. A fruit-brushing machine, comprising a flat horizontally-rotating bottom brush; a horizontally-undulating conchoidal brush above the same and forming with the bottom brush a runway for the passage of the fruit through the machine.

2. A fruit-brushing machine, comprising a horizontally-rotating flat bottom brush; a horizontally-undulating conchoidal brush above the same; a sectional top brush in the channels formed by the conchoidal brush and the bottom brush, said top brush being secured to the top of the frame of the machine.

846,163. COFFEE-URN. WILLIAM F. STUBINGER, St. Louis, Mo. Filed July 5, 1906. Serial No. 324,887.

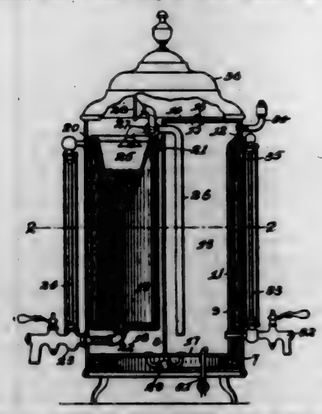

Claim.—1. A coffee-urn comprising an outer casing, a division-wall located within said casing, a water-heating receptacle located to one side of the division-wall, and forming a heating-space between the outer casing and the wall of the receptacle, a receptacle located on the other side of the division-wall, a coffee-receptacle suspended in the last-named receptacle, a faucet connected to the coffee-receptacle by which the contents may be withdrawn, a coffee-bag suspended into the coffee-receptacle, and a siphon extending into the water-receptacle, and permitting a spray of boiling water to be brought in contact with the coffee in the bag, substantially as specified.

2. A coffee-urn comprising an outer casing, a division-wall located within said casing, a water-heating receptacle located to one side of the division-wall, and forming a heating-space between the outer casing and the wall of the receptacle, a receptacle located on the other side of the division-wall, a coffee-receptacle suspended in the last-named receptacle, a faucet connected to the coffee-receptacle by which the contents may be withdrawn, a coffee-bag suspended into the coffee-receptacle, and a siphon extending into the water-receptacle, and permitting a spray of boiling water to be brought in contact with the coffee in the bag, and a valve-controlled connection between the two receptacles in the casing, and a water-supply pipe admitting water into the water-receptacle, substantially as specified.

3. A coffee-urn comprising an outer casing, two receptacles formed in said casing, one of said receptacles being of smaller diameter than the casing forming a space between the two into which the heat may radiate, a coffee-receptacle suspended in one-half of the casing, a siphon connecting the water-receptacle with the coffee-receptacle, a self opening and closing valve carried by the siphon for admitting water into the coffee-receptacle, and a valve-controlled connection between the two receptacles formed in the casing for admitting water from one to the other, and suitable gages whereby the contents may be ascertained in the various receptacles, substantially as specified.

4. A device of the class described, comprising an outer casing, a water-receptacle formed in said casing of smaller diameter, and arranged to permit the heat to contact with the bottom, and half of its circumference, the upper end of the water-receptacle connected to the upper end of the outer casing, a coffee-receptacle suspended in half of the outer casing and forming sufficient space for the surrounding of heated water, substantially as specified.

846,164. TENPIN. JOHN M. TEETOR, Indianapolis, Ind., assignor of one-half to Charles R. Balke, Indianapolis, Ind. Filed May 31, 1906. Serial No. 319,539.

Claim.—1. The combination with a tenpin, of an inlaid deadening or yielding pad or shield situated at and surrounding the striking portion of said tenpin and a cushion-pad situated between said shield or yielding pad and the unyielding portion of said tenpin.

2. The combination with a tenpin provided with a central shield-receiving groove of a yielding or retractive shield or pad and a reinforcing-backing of a resilient material.

846,165. WELL-DRILLING MACHINE. GEORGE N. THOMAS, Pacific, Mo. Filed Oct. 18, 1906. Serial No. 339,498.

Claim.—1. In a well-drilling machine, the combination of a shaft carrying a cam, a drum and its axle, a radial

arm extending from the axle and into the path of the cam, and a pin extending from the drum and into the path of the arm.

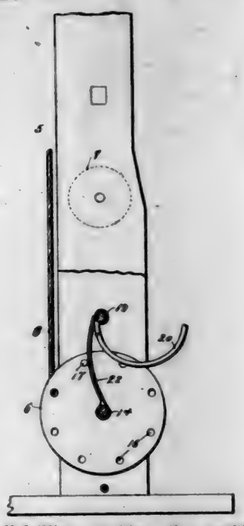

2. In a well-drilling machine, the combination of a shaft carrying a cam, a drum and its axle, a radial arm extending from the axle and into the path of the cam and its shaft, and a pin extending from the drum and into the path of the arm.

3. In a well-drilling machine, the combination of a shaft carrying a cam, a drum and its axle, the drum having a series of holes at a distance from its axis, a pin engageable with any one of said holes, and a radial arm extending from the drum-axle between the pin and the cam.

846,166. BILLIARD-CUE. WILLIAM H. THOMAS, Ermelo, Transvaal. Filed Oct. 16, 1906. Serial No. 339,233.

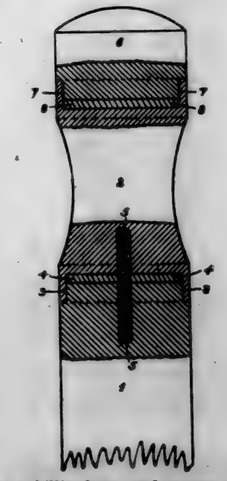

Claim.—In a billiard-cue and means for fixing a tip thereon, in combination, a cue reduced in diameter at the end, a holder made cup shape at one end to fit the reduced portion of the cue, a screw screwed into the end of the cue and into the end of the holder for connecting the latter to the former, a resilient diaphragm fitted into the end of the holder next the end of the cue, the other end of the holder being made cup shape and formed with an internal thread, a tip reduced in diameter screwing into the end of the holder, and a resilient diaphragm fitted in the recess in the holder next the end of the tip, substantially as described.

846,167. WASHING-MACHINE. LAWRENCE D. THORNBURGH, Morrison, Okla. Filed Oct. 19, 1905. Serial No. 283,505.

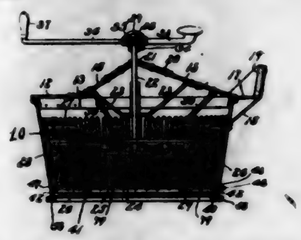

Claim.—1. In a washing-machine, a receptacle for the garments having a swinging closure, a shaft mounted for oscillating and vertical movement through said closure, a rubber member formed of a disk having a plurality of radial ribs and connected to said shaft and operative within said receptacle, and springs spaced apart and connected at one end to said closure and converging and connected at the other ends to said rubber member and permitting a yielding oscillatory and vertical movement to the rubber member.

2. In a washing-machine, a receptacle for the garments to be washed having a segmental top portion extending partly over the same, a semiconical closure member extending over the remainder of the receptacle and hinged to said segmental portion, a spider-frame secured to the apex of said conical portion and provided with a central shaft-bearing, brace members depending from said closure and converging to a central shaft-bearing, a shaft mounted for rotary and longitudinal movement through said bearings, a rubber member connected to the lower end of said shaft, and a plurality of springs spaced apart and connected at one end to said closure and converging, and connected at the other ends to the rubber member.

3. In a washing-machine, a receptacle for the garments, a shaft mounted for vertical and oscillatory movement in said receptacle, a rubber member formed of a disk having a plurality of radial ribs and connected to said shaft within the receptacle, springs connected between said disk and receptacle and permitting a yielding vibratory and vertical movement to said rubber member, and interlocking links within said springs and limiting the longitudinal movement of said springs.

4. In a washing-machine, a receptacle for the garments, a shaft mounted for vertical and oscillatory movement in said receptacle, a rubber member upon the lower end of said shaft, a lever-arm having a terminal hub formed with right-angled intercepting apertures with the upper end of said shaft disposed in one of said apertures, a rod having a handle at one end and with the other end perforated and bearing over said shaft within the other of said apertures, and a set-screw operating through said hub and bearing upon said shaft therein.

846,168. INK-WELL. DANIEL A. VALENTINE, Oakland, Cal. Filed Dec. 12, 1906. Serial No. 347,449.

Claim.—1. The combination in an ink-well of a substantially cylindrical body having a flange projecting around it below the top, a cap or cover closable upon the top of the well, with its lower edge resting upon the flange of the body, said cap having short circumferential slots in opposite sides, and plates hinged to the body having the free ends inturned and adapted to engage with the slots or grooves of the cover.

2. In an ink-well, a cylindrical body having a projecting circumferential flange below the top, a cap or cover fitting the top of the well with its edge resting upon the flange and having circumferential grooves or channels in the sides, and a pen-opening through the top, hinge-plates having the upper ends inturned to engage the grooves of the top, and means located beneath the body-flange about which the hinge-plates are turnable to engage or disengage with the cover.

3. In an ink-well, a cylindrical open-top body having a circumferential flange below its upper edge, and an inwardly-projecting lug, a cover fitting the upper portion of the well, with its lower edge resting upon the body-flange, means by which the cover is retained in place and allowed a limited rotation whereby the hole in the cover is brought to register with the interior of the well, and with the lug by which it is closed.

4. An ink-well having a concaved bottom, a circumferential flange below the top, a cover, the lower edge of which rests upon the flange, said cover having a hole made vertically through the top, said cover having its opposite sides provided with grooves, plates hinged below the flange of the well having their upper ends adapted to engage the grooves of the cover whereby the cover may be turned in either direction, a lug projecting from the inner and top portion of the well with which the hole in the cover may be turned to register as a closure, and from which it may be re-turned to allow access to the interior of the well.

5. The combination in an ink-well of a flanged body portion having a lug projecting from one side of the flange, a cover fitting upon the well and having a vertical pen-opening, said cover having grooves made in opposite sides, hinges carried by the body adapted to engage or disengage with the grooves of the top, a fixed closing-lug within the well with which the cover-opening may be caused to register, a desk or part having openings made through it to receive the well and the flange and cover portions respectively, said desk having slots into which the hinges and the lug are received to lock the cover in place and prevent the turning of the well.

846,169. MACHINE FOR FILLING CASED BOTTLES. THEODORE L. VALERIOUS, Fort Atkinson, Wis., assignor to The Creamery Package Mfg. Company, Chicago, Ill., a Corporation of Illinois. Filed May 13, 1905. Serial No. 260,196.

Claim.—1. In a bottle-filling machine, a suitable bottle-support, in combination with a liquid-tank, means for relatively moving said tank and support, and a plurality of bottle-filler valves mounted for relative movement upon said tank in a horizontal plane, substantially as described.

2. In a bottle-filling machine, a bottle-support and a liquid-tank relatively movable, in combination with a plurality of bottle-filler valves depending from said tank, and means permitting the horizontal movement of said valves with relation to one another to increase or decrease the distances between the centers of said valve, substantially as described.

3. In a bottle-filling machine, a liquid-tank, in combination with a plurality of bottle-filler valves, each provided with a movable eccentric mounting upon said tank, substantially as and for the purpose described.

4. In a bottle-filling machine, a liquid-tank, provided with a plurality of openings or journals in its lower part, in combination with disks rotatably mounted in said openings, and bottle-filler valves eccentrically mounted in said disks, as and for the purpose specified.

5. In a bottle-filling machine, a liquid-tank, in combination with a row of disks revolubly mounted in the bottom of said tank, and a plurality of bottle-filler valves eccentrically mounted upon respective disks and communicating with said tank, substantially as described.

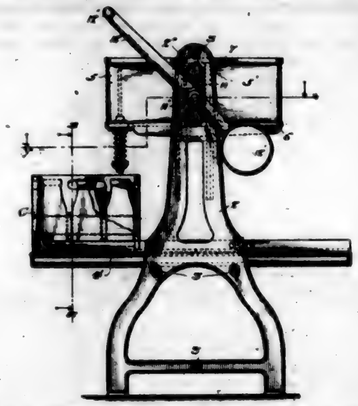

6. In a bottle-filling machine, a liquid-tank, in combination with a disk or plug revolubly mounted in the bottom of said tank, a stuffing-box eccentrically mounted in said disk, and a bottle-filler valve having a tubular portion slidably held in said stuffing-box, substantially as described.

7. In a bottle-filling machine, a suitable frame, provided with a bottle-case track or slideway, adapted to hold cases containing bottles of different sizes, a liquid-tank arranged above said track, means for raising and lowering said tank, and a row of bottle-filler valves depending from said tank and relatively adjustable thereon to correspond to each row of bottles placed upon said track, substantially as described.

8. In a bottle-filling machine, a liquid-tank, in combination with a plurality of bottle-filler tubes, each provided with a movable eccentric mounting upon said tank for changing the spacing of said tubes, and stops to limit the movement of said mountings; substantially as described.

9. In a bottle-filling machine, a liquid-tank provided with a plurality of openings in its lower part, in combination with disks rotatably mounted in said openings, bottle-filler tubes eccentrically mounted in said disks, and stops for limiting the eccentric movement of the tubes; substantially as described.

10. In a bottle-filling machine, a liquid-tank, in combination with a row of disks detachably mounted in the bottom of said tank, a plurality of bottle-filler tubes eccentrically mounted upon respective disks and communicating with said tank, and stops for limiting the eccentric movement of said tubes; substantially as described.

11. In a bottle-filling machine, a liquid-tank, in combination with a disk or plug revolubly mounted in the bottom of said tank, a packing-ring eccentrically mounted in said disk, and a bottle-filler valve having a tubular portion slidably held in said packing-ring; substantially as described.

846,170. WATER-GATE. WILLIAM C. WEEKS, Spokane, Wash. Filed Oct. 8, 1906. Serial No. 337,964.

Claim.—1. In a water-gate to regulate and control the discharge of water through an opening in a dam, bulkhead or other structure, the combination of any number of articulated elements or members composing the body of the gate, the same being held together by hinges, these hinges coöperating with tipping-blocks, so arranged that when the gate is being raised, the rotation of the bottom member on its hinges will, after a certain variable amount of such rotation, cause the tipping-blocks on this first member to engage with those on the second member and those on the second member to engage those on the third, this process being continuous until the last gate

member that it is desired to displace is so effected, each tipping-block after a certain amount of rotation, disengaging itself from the one preceding and succeeding and ascending with the gate members in a position at or varying from one hundred and eighty degrees from that assumed by the member when the gate is down, substantially as set forth.

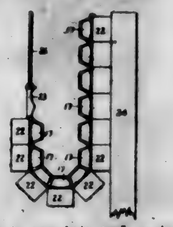

2. In a water-gate to regulate and control the discharge of water through an opening in a dam, bulkhead or other structure, the body of the gate being composed of any number of articulated members, such members being held together with hinges coöperating with tipping-blocks, substantially as set forth.

3. In a water-gate to regulate and control the discharge of water through an opening in a dam, bulkhead or other structure, the body of the gate being composed of any number of articulated members, such members being held together with hinges, coöperating with tipping-blocks, such tipping-blocks having the distinguishing feature of inclined side surfaces, which may be on an angle of sixty-seven and one-half degrees or vary therefrom as desired, to effect the purposes sought, substantially as set forth.

846,171. PLOW. LEMUEL M. WHISENHANT, Monroe, county, Ala. Filed May 4, 1906. Serial No. 315,121.

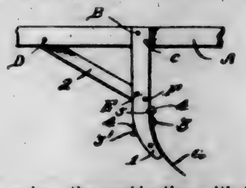

Claim.—In a plow, the combination with the longitudinally-slotted standard having a transverse notch formed across the forward face of its members at either side of the slot, of a downward-projecting shovel disposed at the lower end of said face with its upper edge adjacent said notch, a frog consisting of a transverse head lying in said notch and overlying the upper edge of the shovel, a shank extending rearward and downward from said head through the slot of the standard, and a rear washer portion bearing against the rear face of said standard, a bolt passing through the shovel, standard-slot and said washer portion, and a nut engaging the end of the bolt.

846,172. CARRIAGE-TOP ATTACHMENT. WILLIAM C. WILLITTS, Eckford, Mich. Filed June 1, 1906. Serial No. 319,721.

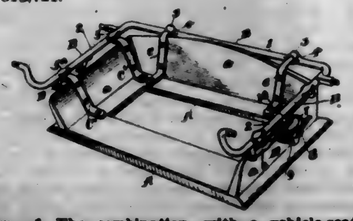

Claim.—1. The combination, with a vehicle-seat, and brackets or arms attached thereto, of a shifting spring-rail applied to said brackets for supporting a buggy or carriage top, one portion of said rail underlying certain brackets, and other portions overlying other brackets, and means for securing the overlying portion upon its supporting-brackets, substantially as described.

2. The combination, with a vehicle-seat, and brackets projecting therefrom and provided with knobs, of a shifting spring-rail having in one portion sockets in the upper side for receiving the knobs of the rear brackets, and arms provided in the under side with sockets for receiving the side brackets, and a fastening applied to the side arms of the rail for securing it to the front brackets, substantially as described.

3. The combination, with a vehicle-seat having projecting rear brackets and two brackets on each side, of the shifting rail lying upon the side brackets and beneath the rear brackets and provided on the under side with catches 10 arranged between the side brackets, a fastening device comprising a member hinged to the rail in front of the side brackets, a cam-lever pivoted to one end of the same, a link pivotally connected with said lever and adapted to engage a catch when said member is raised into engagement with one of the side brackets, substantially as described.

4. The combination, with a vehicle-seat having rear and side brackets extending outward, a shifting spring-rail adapted to lie under the rear brackets and over the side brackets, of a fastening device pivoted to the rail and adapted to engage the under side of one of the side brackets and including a device for locking it detachably, whereby the rail is secured upon the brackets, substantially as described.

846,173. GUN-SIGHT. HARRY J. WISE and THOMAS T. WISE, Wayzata, Minn. Filed Nov. 27, 1906. Serial No. 345,362.

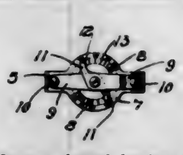

Claim.—1. A firearm-barrel having forward and rear sights and a side sight provided with a scale representing the speed of a moving object, said side sight being capable of adjustment on said scale according to the speed of the object, whereby when said side sight intersects the line of vision between the rear sight and the object, the angle formed between said line and a straight line, between the rear and front sights, extended, will represent the proper lead.

2. The combination, with a gun-barrel, of a clamp secured thereon and provided with a disk or plate near the muzzle of the barrel, said disk having a scale thereon graduated to indicate miles and said barrel having forward and rear sights and a side sight mounted on said plate and movable over said scale, whereby when the sight is set on the scale for the approximate speed of a moving object and is in line with the object and the rear sight, the gun-barrel will have the proper lead, substantially as described.

846,174. SLEIGH-RUNNER ATTACHMENT FOR WHEELED VEHICLES. AUGUSTUS G. WYETH, Newark, Ohio. Filed May 28, 1904. Serial No. 210,163.

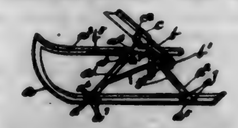

Claim.—1. In a runner attachment for wheeled vehicles, the combination of an oscillating clamp formed in two pieces, means to permit said clamp to rock upon the bolt which secures it to the runner attachment, a spindle-covering of tubular construction formed of sheet metal formed with one or two downwardly-extending flanges, said flanges having a plurality of bolt-holes therein to permit of a lateral adjustment of the runner attachment, a brace secured to said flanges having two arms extending from the spindle-covering to the knees, said brace being formed with a lug at its upper end, said lug having an opening through its center to permit the passage of the bolt by which it is secured to the spindle-covering, said lug and arms being formed integral, for the purpose set forth substantially as described.

2. The combination, in a sleigh-runner attachment for wheeled vehicles, of the sleeve *b* said sleeve being stamped from sheet-steel having flanges b^3, the said flanges having a plurality of bolt-holes therein, the side plates a^4 and the T-plates a^5, the braces b^4 and b^5 running from the knees and rave of the sleigh-runner to the flanges of the sleeve *b*, means to secure said braces to said flanges, the clamp *c*, means to secure said clamp to the vehicle-axle, means to permit said clamp to oscillate and means to prevent the runner turning over, for the purpose set forth substantially as described.

846,175. POULTRY-FEEDER. ZACHARIAH XEVERS, Santa Cruz, Cal. Filed Oct. 15, 1906. Serial No. 339,052.

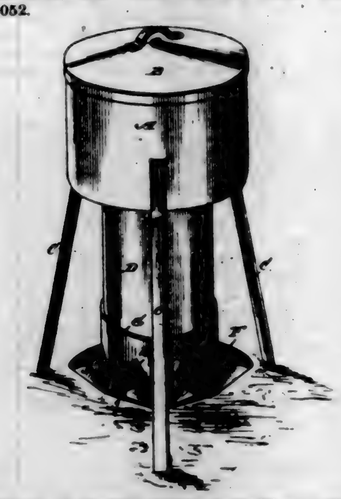

Claim.—1. A poultry-feeder, comprising a stationary conduit, a feed-trough having a plurality of outwardly-projecting spouts, a guide-sleeve encircling the lower end of the conduit and secured to the trough and having a plurality of cut-away portions or openings disposed opposite the spouts, and means for vertically adjusting the trough with relation to the conduit, substantially as and for the purpose set forth.

2. A poultry-feeder, comprising a stationary conduit, a feed-trough having a plurality of spouts, a guide-sleeve secured to the trough and having openings or cut-away portions disposed opposite the spouts, and means for vertically adjusting the trough with relation to the conduit, consisting of a hanger depending from the conduit, a screw-rod engaging the hanger and extending through the trough, and a regulating-nut engaging said rod, substantially as and for the purpose described.

846,176. SASH LOCK AND HOLDER. ZACHARIAH XEVERS, Santa Cruz, Cal. Filed Dec. 11, 1906. Serial No. 347,824.

Claim.—A ventilating sash lock and holder comprising a rectangular strip of metal bent upon itself to provide a base of double thickness and the ends thereof extending upward and downward to form a standard and a fastening-clip respectively, the lower portion of the double base extending outward and forward beyond the standard and

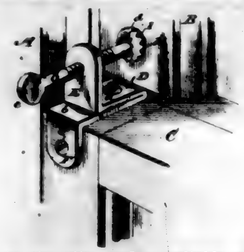

terminating in the clip, and a suitable screw-rod with clamping-head supported by the standard, substantially as and for the purpose set forth.

846,177. BOTTLE. JAMES C. ANDERSON, Washington, D. C. Filed Dec. 18, 1906. Serial No. 348,391.

Claim.—1. A bottle provided with a sheet-metal collar adapted to receive a closure device, said sheet-metal collar and the bottle-neck secured in fixed permanent relation by an interposed body of metal consolidated or welded with the collar, and in close, liquid and gas tight contact with the neck of the bottle, substantially as hereinbefore described.

2. In combination with a bottle formed with an exterior projection adjacent to the upper extremity of the neck, and a metallic collar adapted to receive a closure device and surrounding and terminating below the projection on the bottle-neck, a metallic key consolidated with and welded to the metallic collar, and in liquid and gas tight contact with the neck of the bottle below the projection thereon, substantially as set forth.

3. A sheet-metal collar for bottles and adapted to receive a closure device, in combination with a non-expansible ring or band surrounding the upper terminus of the collar and adapted to resist the expansive force of the closure device and to protect the neck of the bottle against fracture, substantially as hereinbefore described.

4. A sheet-metal collar adapted to be secured in fixed relation with the neck of a bottle and provided at its upper projecting extremity with a surrounding non-expansible and non-compressible ring held in fixed relation with said collar, as set forth.

5. In combination with a bottle and a sheet-metal collar secured to the upper extremity of the neck, a non-expansible ring surrounding the upper terminus of the collar, and a soft-metal closure device adapted to be expanded to produce a fluid and gas tight joint with the collar, substantially as described.

6. In a bottle such as described and a sheet-metal collar secured to the upper extremity thereof and adapted to receive an expansible closure device, a non-expansible ring or band secured in fixed relation with the exterior projecting portion of the collar, substantially as hereinbefore set forth.

846,178. CLUTCH. MORRIS H. AVERY, Woonsocket, R. I. Filed Feb. 27, 1906. Serial No. 303,220.

Claim.—1. A clutch comprising a driving member having an internal annular clutching-face, a driven member, a plurality of clutching-jaws pivotally secured to the driven member tangentially to the clutching-face on the driving

member, rolls rotatably supported on the outer face of the clutching-jaws, coiled springs operatively secured to the clutching-jaws and to the driven member, a sleeve having a cone-shaped inner end adapted to engage with the free ends of the clutching-jaws, means on the clutching-jaws adapted to adjust the jaws relative to the sleeve, means for moving the sleeve inward, whereby the jaws are expanded and the rolls caused to pinch between the clutching-face on the driving member and the outer face of the jaws, and means for moving the sleeve outward, whereby the rolls are instantaneously released.

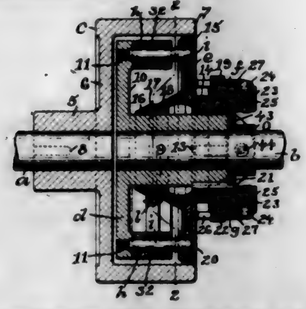

2. The combination with a driving-shaft and a driven shaft, of a clutch member secured to the driving-shaft and having an internal annular clutching-face, a clutch member secured to the driven shaft, a plurality of clutching-jaws pivotally secured to the driven member tangentially to the clutching-face on the driving member, rolls rotatably supported under spring tension on the outer face of the clutching-jaws, coiled springs operatively connected to the clutching-jaws and to the driven member, a sleeve having a cone-shaped inner end adapted to engage with the free ends of the clutching-jaws and an annular groove in the outer end, a ring in the annular groove, outwardly-extending arms on the ring, spring-actuated pins in the arms, a shipper operatively connected to the ring, means on the shipper for depressing the spring-actuated pins, and a cam-collar secured to the driven shaft in a position to engage with the spring-actuated pins, whereby on moving the shipper inward the clutching-jaws are expanded and the rolls caused to pinch between the clutching-face on the driving member and the face of the clutching-jaws and on moving the shipper outward the pins are brought into engagement with the cam-collar and the rolls instantaneously released, as described.

3. In a clutch, a clutching-jaw *h* having the convex semicircular clutching-face 31, the transverse hole 32 in one end for pivotally securing the jaw to a stud, the L-shaped end 33 having the hole 34, the boss 35 in which is a screw-threaded hole 36, the adjusting-stud *k* having the head 37, and the screw-threaded shank 38 secured in the hole 36 by a lock-nut 39, a clutching-roll *m* rotatably secured in the yoke 40 having a stem 41 with an enlarged end which extends through the hole 34 in the L-shaped end 33, and a coiled spring 42 on the stem 41 intermediate the enlarged end of the stem and the L-shaped end 33, as described.

4. In a clutch, a shipper mechanism comprising a shipping-sleeve *e* having a central hub 14 and a disk 15, the hub 14 having the cone-shaped inner end 16, the intermediate annular ledge 17, the second cone-shaped portion 18 and the outer annular groove 19, the disk 15, having the oppositely-disposed holes 20 20, a shipping-ring *f* shaped to fit in the annular groove 19 and having the trunnions 22 22, the outwardly-extending arms 23 23 in the ends of which are pins 24 24 held under spring tension by the coiled springs 25 25, a shipper *g* having the transverse slots 26 26, the under beveled side arms 27 27, the end 28 pivotally secured to the bracket 29 and the handle 30, and a cam-collar *o* having the cam edge 43 secured in a position to engage with the pins 24 24, as described.

5. In a clutch, the combination with a driving-shaft *a* and a driven shaft *b*, of a driving member *c*, a driven member *d*, a shipping-sleeve *e*, a shipping-ring *f*, a shipper *g*, clutching-jaws *h h*, studs *i i* for pivotally supporting the clutching-jaws, adjusting-studs *k k* on the clutching-jaws, coiled springs *l l* connected to the clutching-jaws *h h* and to the driven member *d*, clutching-rolls *m m* rotatably supported on the clutching-jaws and a cam-collar *o* secured to the driven shaft *b*, as shown and described.

6. A clutch comprising a driving member having a clutch-face, a driven member, expansible gripping devices carried by said driven member for engagement with said clutch-face, axially-movable means for actuating said gripping devices in their functions, movable pins carried by said actuating means, automatic means for engagement with said pins to impart initial movement to said actuating means to disengage the same from said gripping devices and manually-operated means for moving said pins to be engaged by said automatic means.

7. A clutch comprising a driving member having a clutch-face, a driven member, expansible gripping devices carried by said driven member and having their bearing-surfaces angularly disposed with relation to said clutch-face whereby a wedge-shaped space occurs therebetween, brackets carried in movable relation by said gripping devices, rolls journaled in said brackets and designed to work in said wedge-shaped space, springs engaging said brackets to normally move the same and the rolls carried thereby toward the larger end of said space, means for expanding said gripping members and means for restoring said gripping members to initial position upon disengagement of said last-named means.

8. A clutch comprising a driving member having a clutch-face, a driven member, movable gripping devices carried by said driven member, a cone-shaped sleeve for engagement with said gripping devices to move the same into frictional contact with said clutch-face, said driven member having laterally-projecting pins, said sleeve having a portion of its material apertured to receive said pins therethrough and means for moving said sleeve axially in either direction.

9. A clutch comprising a driving member, a driven member, gripping devices interposed therebetween for frictionally binding the same, a movable actuating element for said gripping devices, spring-held pins carried by said element, a cam carried by said driven member for engagement with said pins in one position thereof, and a manual shipper for moving said element, said shipper having an initial free movement or play and including means for actuating said pins in such movement to be engaged by said cam.

846,179. CATCH. HENRY R. BAKER, Attleboro, Mass., assignor to R. F. Simmons Company, a Corporation of Rhode Island. Filed June 30, 1906. Serial No. 324,147.

Claim.—1. In a jewelry-catch, the combination with a hollow casing provided with parallel ears, and a guiding-post provided with an inwardly-beveled extremity inwardly compressed, of a pivoted member mounted within said casing and pivoted between said ears, said pivoted member having a beak adapted to register with said post at the base of its beveled portion, and a seat upon the other side of its pivot, and an endwise-compressible spring inclosed and concealed within said hollow casing and acting on the seat of said pivoted member.

2. In a jewelry-catch, the combination with a casing provided with ears, and a hollow guiding-post having an inwardly-beveled extremity and bent inward forming an inclined shoulder, of a pivoted member mounted in the ears, an inwardly and downwardly directed beak upon the pivoted member adapted to normally contact with the post at the base of its beveled portion, and a spring in the casing pressing against the pivoted member.

846,180. NON-REFILLABLE VESSEL. LOUIS BARNES, Cleveland, Ohio. Filed Sept. 21, 1906. Serial No. 335,605.

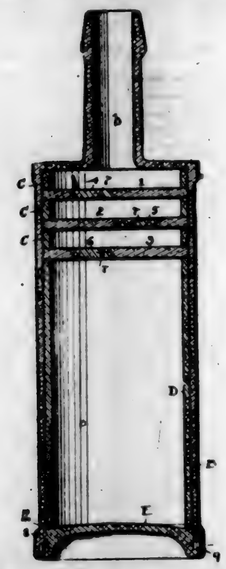

Claim.—1. A non-refillable vessel having a series of two or more removable diaphragms having openings and suitably spaced apart, and self-closing valves set into said openings in said diaphragms in staggered relations.

2. A non-refillable vessel having a series of separate diaphragms set apart from each other in the top portion thereof and formed in halves, and valves in said diaphragms supported transversely of the joints between the said halves.

3. A non-refillable vessel having a plurality of independently-removable diaphragms in its upper portion formed each in halves and having recesses in the edges of said halves, pivotally-supported valves occupying said recesses and rings separating said diaphragms.

4. A non-refillable vessel having alternate rings and removable diaphragms in its upper portion, rings separating said diaphragms, valves in staggered relation in said diaphragms and a tube extending between the lower diaphragm and the bottom of the vessel serving to keep the said rings and diaphragm in place.

5. A non-refillable bottle having a series of separate valved diaphragms suitably spaced apart, a tube engaging the lower diaphragm and a bottom threaded in the vessel and bearing against said tube, suitable packing intervening the tube and bottom to make a fluid-tight joint.

846,181. RAIL-BRACE. JOHN BERLIEN, St. Louis, Mo. Filed Oct. 23, 1906. Serial No. 340,220.

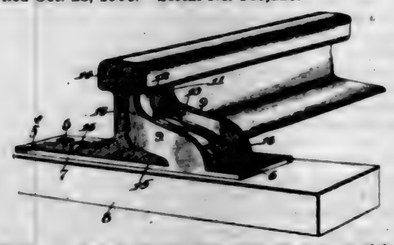

Claim.—A device of the class described, comprising a base-plate provided with spike-openings, upwardly-projecting arms formed integral with said base-plate, the ends of said arms connected by a web, and a strengthening-rib whereby said arms are reinforced, said arms so arranged as to communicate with the web and flange of the rail, substantially as specified.

846,182. VARIABLE-SPEED TRANSMISSION MECHANISM. JUDSON H. BOUGHTON, New York, N. Y. Filed Aug. 2, 1906. Serial No. 328,942.

Claim.—1. A variable-speed mechanism comprising a motor-shaft, a sun-gear mounted to rotate therewith, a loosely-mounted brake-wheel adjacent said sun-gear, planet-gears mounted on said brake-wheel and meshing with said sun-gear, disks mounted to rotate with said planet-gears, an annular gear having internal teeth meshing with said planet-gears, and means for engaging the peripheries of said disks to vary the speed of said planet-gears.

2. A variable-speed mechanism comprising a motor-shaft, a sun-gear mounted to rotate therewith, a loosely-mounted brake-wheel adjacent said sun-gear, planet-gears mounted on said brake-wheel and meshing with said sun-gears, disks mounted to rotate with said planet-gears, an internally-toothed gear meshing with said planet-gears, means for holding the brake-wheel from rotation, and means engaging the peripheries of said disks to prevent rotation of said planet-gears.

3. A variable-speed mechanism comprising a motor-shaft, a sun-gear mounted to rotate therewith, a loosely-mounted brake-wheel adjacent said sun-gear, planet-gears mounted on said brake-wheel and meshing with said sun-gear, disks mounted to rotate with said planet-gears, an internally-toothed gear meshing with said planet-gears, means for holding the brake-wheel from rotation, and a clutch-wheel for engaging the peripheries of said disks to prevent rotation of said planet-gears.

4. A variable-speed mechanism comprising a motor-shaft, a sun-gear mounted to rotate therewith, a loosely-mounted brake-wheel adjacent said sun-gear, planet-gears mounted on said brake-wheel and meshing with said sun-gear, disks mounted to rotate with said planet-gears, an internally-toothed gear meshing with said planet-gears, means for holding the brake-wheel from rotation, and a clutch-wheel having its periphery provided with recesses to engage the peripheries of said disks to prevent rotation of said planet-gears.

5. A variable-speed transmission-gearing, comprising a motor-shaft, a sun-gear fixedly mounted thereon, a loose brake-wheel on one side, planet-wheels engaging with the sun-gear, each planet-gear being mounted on a stub-shaft passing through said brake-wheel a cone-clutch on the opposite end of each stub-shaft, an internal-toothed annular gear on the other side of the sun-gear, loose on the shaft, and also engaging with the planet-gears, and a clutch-disk by the side of the brake-wheel and adapted to turn therewith and to engage with the cone-clutches.

6. A variable-speed transmission mechanism, comprising a motor-shaft, a sun-gear keyed thereto, an internal-toothed annular gear on one side, a sprocket-wheel, a brake-wheel on the other side of the sun-gear loosely mounted on the shaft, and having a tubular sleeve, a plurality of planet-gears mounted on loose stub-shafts through said brake-wheel, said planet-gears engaging with the sun and annular gears, cone-clutches on the outer ends of the stub-shafts, and a clutch-disk slidably mounted on the sleeve of the brake-wheel and adapted to engage with the cone-clutches, as set forth.

846,183. HAIR-STRAIGHTENER. CHARLES C. CALL, Hayden, Ind. Filed Apr. 30, 1906. Serial No. 314,521.

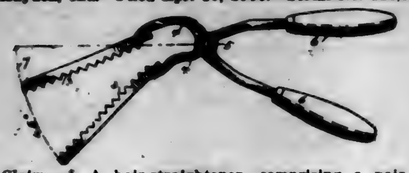

Claim.—1. A hair-straightener, comprising a pair of solid plates with transverse interfitting teeth of triangular cross-section and a pair of crossed handles secured thereto.

2. A hair-straightener, comprising a pair of solid plates with transverse interfitting teeth of triangular cross-section and a pair of crossed handles secured thereto and extending therefrom at an angle to the plane as well as to the longitudinal axis of said plates.

846,184. RIDING-PLOW. WILLIAM L. CASADAY, South Bend, Ind. Filed July 23, 1904. Serial No. 217,754.

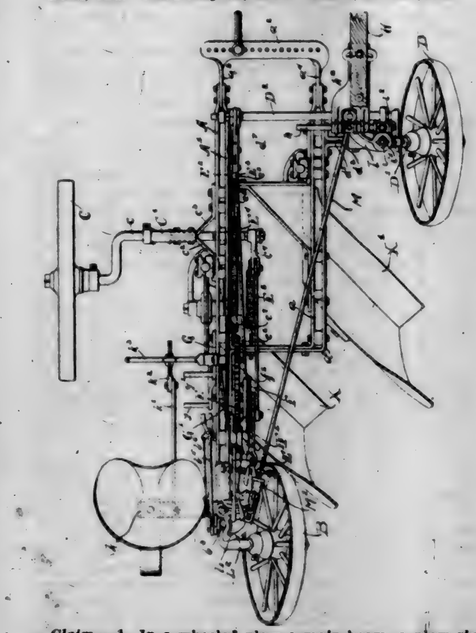

Claim.—1. In a wheeled plow a main beam, a plow rigidly secured thereon, a laterally-disposed wheel supporting said beam, a rear inclined wheel, an axle therefor, an upright standard connected with said axle, and on which the beam is adapted to slide, a seat carried on the upper end of said standard, a lever and a segment adapted to adjust said beam as to height and means for connecting said beam with the segment to permit the plow to pass over obstructions with operating the lever.

2. In a wheeled plow the combination with the supporting-wheels of a beam adjustably supported thereon, means acting to adjust said beam as to height on the front wheel, elevating means on the rear axle, a link connected therewith at one end and adapted at the other end for either pivotal or slidable connection with the beam.

3. In a wheeled plow, the combination with a land-wheel of an axle therefor bent to afford a crank, a plow-beam to which the crank is journaled, an inclined furrow-wheel journaled at the side of the beam, a standard connected with the axle thereof, and on which said beam is slidably secured, a rear inclined wheel also provided with a standard, operative connection engaged on the rear end of the beam and on said standard for the rear wheel adapted to elevate the beam thereon, a rod or bar connecting the upper ends of said standards and acting to produce corresponding movement in each in cramping the wheels and means thereon adapted to automatically release the rear standard.

4. A wheeled plow comprising a land-wheel, and front and rear inclined furrow-wheels, a vertical standard connected with the axle of each inclined wheel, a plow-beam slidably secured on said standards, a lever at the upper end of each standard, a connecting-rod between said levers and acting to correspondingly adjust said wheels in turning, a lock for said rear standard, automatic means for releasing the same and means admitting of varying the angle of inclination of the rear wheel.

5. A gang-plow comprising a main and a side beam rigidly connected together, a plow rigidly secured in each, a colter secured to each beam in advance of each plow, a land-wheel and front and rear inclined furrow-wheels on which the plow is supported, an upright standard connected with the axle of each furrow-wheel and on which said beams are slidably engaged, a rock-shaft journaled on the front end of said beams, a hand and a foot lever connected therewith acting to elevate said beams, plows and colters, a seat rigidly secured on one of said standards and means connected therewith acting to hold the rear end of the beam in an adjusted position.

6. In a wheeled plow, the combination with the beams of plows rigidly secured thereto, a colter in advance of each plow, a land-wheel and front and rear inclined furrow-wheels, an upright standard connected with the axle of each furrow-wheel and rotatively journaled at the ends of the beams on which said beams are adapted to slide upwardly, independently and simultaneously operated means for adjusting the front ends of the beams vertically, means for adjusting the height of the rear ends of the beams, means for locking the rear standard from rotation, an automatically-operative connection between said front and rear standards of the furrow-wheels whereby the cramping of one wheel acts to release the lock and cramp the other in turning, and means adapted to adjust the angle of inclination of the rear caster-wheel.

7. In a wheeled plow, the combination with a beam of a land-wheel, a bent axle therefor journaled to said beam, front and rear inclined furrow-wheels each having a bent axle affording in part an upright standard and slidably journaled on said beam, a tooth-segment rigidly secured on the beam, combined foot and hand operating levers therefor, a movable segment secured on the hand-lever, a lever therefor, connecting-rods engaged on said levers and operatively connected with said beam and one of the axles and acting to elevate the front end of the frame by simultaneous movement of said levers and springs engaged on said beams, and operating mechanism acting to lift the beams.

8. In a wheeled plow means for locking the rear wheel from lateral movement, operative connections between the front and rear wheels, and a cam thereon adapted to lift said lock when the front wheel is turned.

9. In a wheeled plow, the combination with a front and rear furrow-wheel of an upright or standard connected with each axle, a lever carried on each standard, a connecting-rod pivotally engaging and connecting said levers whereby cramping of one wheel produces corresponding movement in the other, a segment adjacent said rear standard, a vertically-movable detent adapted to engage the same and hold said levers in position for the wheels to track straight ahead and means on said rods acting to raise said detents and release the standards in turning.

10. In a wheeled plow, a vertically-adjustable beam, plows rigidly secured thereon, wheels supporting the said beam by means affording vertical adjustment of the same, a laterally-extending bracket journaled on one of said wheels, brace-rods connecting the same with said beam and a seat carried on said bracket and adapted to be unaffected by the elevation of the beams.

11. In a wheel-plow a furrow-wheel at each end of the beam, a lever carried by each, a connecting-rod joining said levers, a segment and a detent at the rear end of said connecting-rod and a slotted link in said rod provided with an inclined under surface adapted to slidingly engage said detent and elevate the same in cramping the wheel.

12. In wheeled plows having a front and a rear furrow-wheel, a connecting-rod eccentrically connecting the axles of the furrow-wheels, a detent at the rear furrow-wheel acting to hold the wheels at straight-ahead position and automatically-operated means at said rear furrow-wheel for releasing said detent.

13. In a wheeled plow, front and rear furrow-wheels, a lever operatively connected with each, a connecting-rod pivotally connected with one of said levers and slidably connected with the other, a detent holding said latter lever and adapted to be released by movement of the connecting-rod whereby said wheels have a slight independent movement but cramp simultaneously.

14. In a wheeled plow, a front and a rear furrow-wheel, a lever rigidly secured on each, a detent rigidly engaging the lever for the rear wheel and holding the same straight, a connecting-rod at one end positively engaging the front lever and at its other end slidably engaging the rear lever and admitting of slight movement of the front independently of the rear wheel and a cam operated by the connecting-rod acting to release the detent in cramping.

15. In a wheel-plow, the combination with the front and rear furrow-wheels, of a connecting-rod operated by the front furrow in cramping and a sliding cam thereon acting to automatically release and cramp the rear furrow-wheel with the front wheel.

16. In a wheeled plow the combination with the front and rear furrow-wheels provided with upwardly-directed standards of a land-wheel, a frame slidably engaged on said standards, a transverse shaft journaled on the front end of said frame, a toggle-lever engaged on said shaft and on the upper end of the front standard; a lever pivoted near the rear end of said frame, means for locking said leyer in position, a notched segment pivoted on said lever, an arm on said shaft, rods engaged thereon and engaged one on said lever and one on said segment, a lever pivoted on said segment, a bent axle on said land-wheel, an arm on the inner end thereof, a rod connecting said last-named lever with said arm, plows carried on said frame and springs engaged on the frame and said rods acting to assist in elevating the frame.

17. In a device of the class described the combination with a land-wheel, of a front and a rear furrow-wheel, a beam adjustably engaged on said wheels, a rock-shaft on the front end of said beam, a lever pivoted on the beam, means adapted to hold said lever in adjusted position, a bar connecting said lever with the rock-shaft, a coiled spring engaged at one end to said bar and at the other end to said beam and acting normally to elevate the beam, plows on said beam and means connecting the front and rear furrow-wheels and adapted to simultaneously cramp the same.

18. In a device of the class described the combination with a beam, of a land-wheel therefor, a bent axle on said land-wheel and journaled on the beam, a front and a rear furrow-wheel, standards thereon means slidably connecting said beam on said standards, a rock-shaft on the front end of said beam, a lever pivoted on the beam, a rod connecting said lever with the rock-shaft, a coiled spring engaged at one end on said rod and at the other end on said beam, a coiled spring engaged at one end on the axle of the land-wheel and at the other on said beam, adjustable means adapted to rotate the axle in adjusting the beam and means for simultaneously cramping the furrow-wheels.

846,185. ELECTRICAL INDICATING DEVICE. CHARLES CRANDALL, Newport, R. I. Filed June 2, 1906. Serial No. 319,823.

Claim.—1. In a signal system, a series of rail-sections insulated from each other, said sections being placed in staggered relation, a main battery, a relay, a main-current wire extending the length of the road, a lightning-arrester therein, and connections with the opposite sections of the insulated rails with the main-current wire and the relay whereby when the trucks of a car engage the oppositely-arranged insulated rail-sections, a circuit is formed through said sections, the trucks of the car, and relay; local circuits operatively arranged with relation to the relay, and means for indicating the position of the car, said means being actuated by the local circuits.

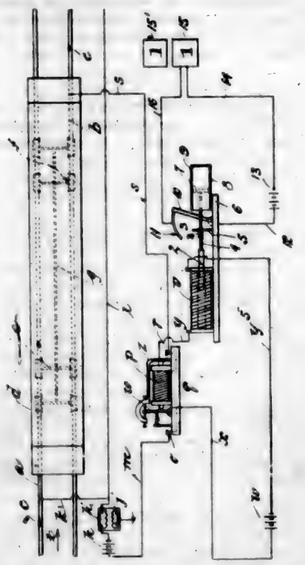

2. In a signal system, a main-current wire extending the entire length of the road or section, a main battery, insulated rail-sections placed in staggered relation to each other, a relay, one terminal of the main battery being connected with the coil of the relay, the other terminal of said battery being connected to the main-circuit wire and to one section of the rail-sections, a wire leading from the oppositely-disposed insulated rail-sections to the relay, whereby the staggered rail-sections are bridged by the trucks of a car when the same enters the section, and means for indicating the number of the section and the number of the train.

3. In a signal system, a main-current wire extending the entire length of the road or section, a main battery, insulated rail-sections placed in staggered relation to each other, a relay, one terminal of the main battery being connected with the coil of the relay, the other terminal of said battery being connected to the main-circuit wire and to one rail-section, a wire leading from the oppositely-disposed insulated sections to the relay, whereby the staggered rail-sections are bridged by the trucks of a car when the same enters the sections, a local circuit, a battery for the same, a solenoid connected with one terminal of the local battery and with the framework of the relay, the second terminal of the local battery being connected to the armature of the relay, and a quick-closing switch operated by the core of the solenoid, whereby a second local circuit is closed, and indicating means in said local circuit for determining the position of a train with reference to the respective sections of the road.

4. In a signal system for railways, the opposite rails of which are placed in staggered relation and the sections of each rail being insulated from each other, a main battery and two local batteries, a relay operated by the two trucks of a car and engaging oppositely-disposed rail-sections, electrical connections between the oppositely-

disposed rails and the relay and main battery, a solenoid included in the circuit of the first local battery and connected to the terminals of the same, the armature and framework of the relay being included in the circuit of the first local battery, the quick closure and slow opening switch mechanism being operated by the core of the solenoid, and electrical connections from the second local battery to an indicating mechanism, an electromagnet energized by the current on the second local battery, and means operatively connected with the armature of the second electromagnet for displaying the numerals corresponding with the respective rail-sections of the road when the insulated sections of the road are "bridged" by the two trucks of a car.

846,186. STOVE OR OVEN DOOR SUPPORT. RICHARD A. CULTER, Peoria, Ill., assignor to Culter and Proctor Stove Company, Peoria, Ill., a Corporation of Illinois. Filed Apr. 12, 1906. Serial No. 311,329.

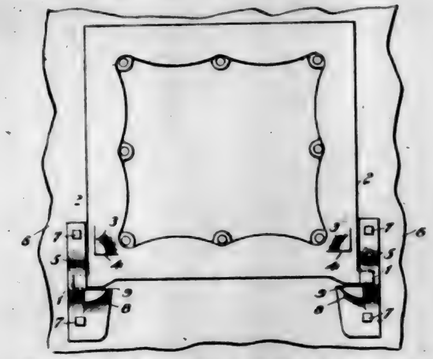

Claim.—1. A pintle-mounted drop-door for stoves and ovens having a pair of front projections each forming a shoulder at an angle to the face of the door, in combination with forwardly-extending brackets for the pintles of the door, each bracket having a front impact-surface, the axis of the door-pintles being permanently in a plane above the plane of said impact-surface, whereby in the dropping of the door the impact of the fall will cause the shoulders on the door facing toward the pintles to strike the impact-surface of said brackets which face away from the pintles and thus direct the force of the impact inward and prevent the breaking of the door.

2. A pintle-mounted drop-door for stoves and ovens having abutting stop-surfaces on the door-frame in a plane approximately tangential to an arc described from the pintles, in combination with shoulders forwardly extending from the pintle-brackets and having front impact-surfaces, whereby the stopping action will operate in a direction radial to the axis of the pintles, and the door will operate as an agent in preventing its own breakage.

846,187. APPARATUS FOR USE IN BREWING. CHARLES B. DAVIS, New York, N. Y. Filed Nov. 15, 1906. Serial No. 287,384.

Claim.—1. In a brewing apparatus, the combination of a tun provided with a discharge-opening, a sieve arranged beyond said opening and adapted to pass liquids flowing from the tun, but to arrest solids and retain them substantially within the tun, and a gate arranged in front of said sieve and between it and the interior of the tun and adapted, when closed, to protect said sieve, all substantially as set forth.

2. In a brewing apparatus, the combination of a tun, a rake within said tun, formed of a series of connected parts, comprising a shaft, arms extending therefrom, and binders connecting them, together with a spiral sparger supported on the shaft of said rake, at substantially right angles to the plane of the arms, and secured to said rake, whereby the sparger strengthens the rake and the movement of the rake moves the sparger, all substantially as set forth.

3. In a brewing apparatus, the combination of a tun provided with an opening for the discharge of liquids and solids, a gate closing and controlling said opening, and a sieve-gate below said first gate and protected by it, and adapted to pass the liquids flowing from the tun, but to arrest the solids proceeding therefrom, all substantially as set forth.

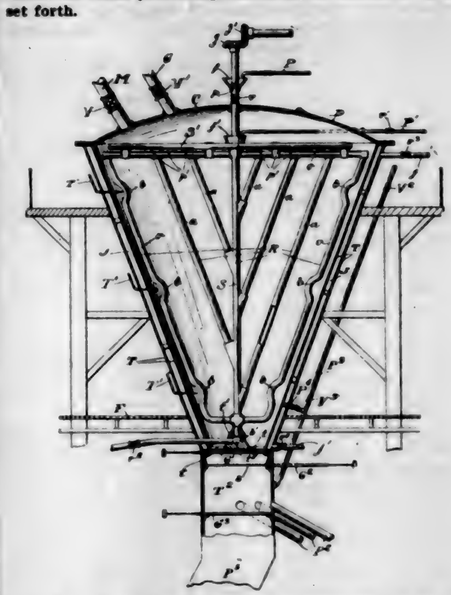

4. In a brewing apparatus, the combination of a tun provided with a second or false-bottom tank, openings into and from said tank for the receipt and discharge of liquids and solids, a gate closing the inlet thereto, a gate closing the solids-outlet therefrom, but located below the liquids-outlet, and a sieve-gate, adapted to pass the liquids flowing from the tun, but to arrest the solids proceeding therefrom, located between the first gate and the liquids-outlet and protected by said first gate, all substantially as set forth.

5. In a brewing apparatus, the combination of a tun in the form of an inverted hollow cone frustum, a hollow rotatable rake within said tun, conforming generally to the form of the tun, and provided with a series of arms adapted to agitate the contents of the tun on different lines, means, substantially as set forth, for introducing liquid into the interior of said rake and withdrawing it therefrom without contact between said liquid and the mash within the tun, inlets for grains and other material, a sparger and means substantially as set forth for introducing sparging-water into and for delivering it from the same into the space to be occupied by the mass of material within the tun, a jacket surrounding said tun and provided with inlets and outlets, an extension below the main body of said tun, an opening into said extension and an outlet therefrom, removable gates controlling the passage of material through said openings, a removable sieve intermediate said gates adapted to be placed across said openings, pipes leading from said extension, between said gates and below said sieve, and a pipe, leading from said extension to a point above the intended level of the material to be treated in the tun.

6. In a brewing apparatus, the combination of a tun provided with a second or false-bottom tank, openings into and from said tank for the receipt and discharge of liquids and solids, a gate closing the inlet thereto and a gate closing the solids-outlet therefrom, located an appreciable space from the first gate, all substantially as set forth.

846,188. FERTILIZER-DISTRIBUTER. SAMUEL K. DENNIS and FRANK W. RICE, Chicago, Ill., assignors to International Harvester Company, a Corporation of New Jersey. Filed Feb. 3, 1906. Serial No. 299,253.

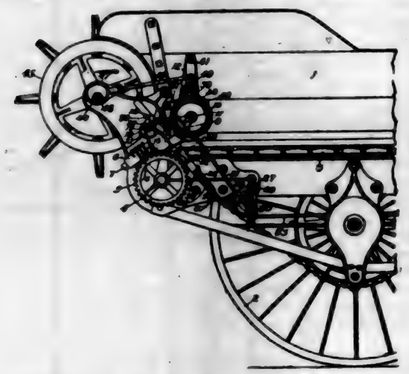

Claim.—1. A fertilizer-distributer comprising, in combination, a receptacle, a movable bottom forming part of said receptacle, a rotatable distributing-cylinder, means for moving said bottom toward said cylinder, said means comprising a shaft connected with said bottom, a gear-wheel secured to said shaft, a worm adapted to engage with said wheel, said worm having a gear connection with a ratchet-wheel rotatably mounted upon a fixed part of the machine, a pawl and a vibratile pawl-carrying arm, said pawl adapted to engage with said ratchet-wheel, and means connected with said cylinder and operative to vibrate said pawl-carrying arm.

2. A fertilizer-distributer comprising, in combination, a receptacle, a movable bottom forming part of said receptacle, a rotatable distributing-cylinder, means for moving said bottom toward said cylinder, said means comprising a shaft connected with said bottom, a gear-wheel secured to said shaft, a ratchet-wheel rotatably mounted on a fixed part of the machine, motion-transmitting means connecting said ratchet-wheel with said cylinder, a gear-bracket adapted to swing about the axis of said ratchet-wheel, a worm carried by said bracket and adapted to engage with said gear-wheel, a spring operative to disengage said worm from said wheel, a pivotally-mounted cam operative to swing said gear-bracket against the action of said spring, and means for operating said cam.

3. A fertilizer-distributer comprising, in combination, a receptacle, a movable bottom forming part of said receptacle, a rotatable distributing-cylinder, means for moving said bottom toward said cylinder, said means comprising a shaft connected with said bottom, a gear-wheel secured to said shaft, a ratchet-wheel rotatably mounted on a fixed part of the machine, motion-transmitting means connecting said ratchet-wheel with said cylinder, a gear-bracket adapted to swing about the axis of said ratchet-wheel, a worm carried by said bracket and deriving motion from said ratchet-wheel and adapted to engage with said gear-wheel, a spring operative to disengage said worm from said wheel, a pivotally-mounted cam, operative to swing said gear-bracket against the action of said spring, said cam having angularly-arranged stop-shoulders, a sliding bar adapted to rotate said cam and engaging with said angularly-arranged stop-shoulders in a manner to retain the cam in adjusted position, and means for operating said sliding bar.

4. A fertilizer-distributer comprising, in combination, a receptacle, a movable bottom forming part of said receptacle, a rotatable distributing-cylinder, means for moving said bottom toward said cylinder, said means comprising a shaft connected with said bottom, a gear-wheel secured to said shaft, a ratchet-wheel rotatably mounted on a fixed part of the machine, motion-transmitting means connecting said ratchet-wheel with said cylinder, a gear-bracket adapted to swing about the axis of said ratchet-wheel, a worm carried by said gear-bracket and deriving motion from said ratchet-wheel and adapted to engage with said gear-wheel, means for moving said bracket toward said gear-wheel, said means comprising a cam pivotally mounted upon a fixed part of the machine, said cam having angularly-arranged stop-shoulders and radially-projecting teeth upon opposite sides thereof, a sliding bar adapted to engage with said stop-shoulders and having oppositely-disposed projections adapted to engage with said teeth, and means for sliding said bar.

5. A fertilizer-distributer comprising, in combination, a receptacle, a movable bottom forming part of said receptacle, a rotatable distributing-cylinder, means for moving said bottom toward said cylinder, said means comprising a shaft connected with said bottom, a gear-wheel secured to said shaft, a ratchet-wheel journaled upon a fixed part of the machine, motion-transmitting means connecting said ratchet-wheel with said cylinder, a gear-bracket adapted to swing about the axis of said ratchet-wheel, a worm carried by said bracket and deriving motion from said ratchet-wheel and adapted to engage with said gear-wheel, means for moving said bracket toward said gear-wheel, said means comprising a cam pivotally mounted upon a fixed part of the machine and engaging with said bracket, said cam having angularly-arranged stop-shoulders and radially-projecting teeth upon opposite sides thereof, a sliding bar adapted to engage with said stop-shoulders, said bar having oppositely-disposed projections adapted to engage with said teeth and a cut-away portion affording clearance for the angle of the stop-shoulders when the cam is rotated, and means for operating said bar.

6. A fertilizer-distributer comprising, in combination, a receptacle, a movable bottom forming part of said receptacle, a rotatable distributing-cylinder, means for moving said bottom toward said cylinder, said means comprising a shaft connected with said bottom, a gear-wheel secured to said shaft, a worm adapted to engage with said gear-wheel, motion-transmitting means connecting said worm with said cylinder, means for adjusting said worm toward or from said gear-wheel, said means comprising a rotatable cam, a sliding bar operatively connected with said cam, a pawl pivotally mounted upon a fixed part of the machine and adapted to lock said gear-wheel against movement in one direction, said pawl being controlled by said sliding bar, and means for operating said bar.

7. A fertilizer-distributer comprising, in combination, a receptacle, a movable bottom forming part of said receptacle, a rotatable distributing-cylinder, means for moving said bottom toward said cylinder, said means comprising a shaft connected with said bottom, a ratchet-wheel rotatably mounted upon a fixed part of the machine, motion-transmitting means connecting said ratchet-wheel and said shaft, motion-transmitting means connecting said distributing-cylinder and said ratchet-wheel, said second motion-transmitting means comprising a pawl-carrying arm pivotally mounted upon the axis of the ratchet-wheel, a pawl mounted upon said arm and adapted to engage with said ratchet-wheel, a pawl-controlling lever pivotally mounted upon the axis of the ratchet-wheel and having a cam-surface adapted to contact with the toe of said pawl in a manner to disengage it from the ratchet-wheel, and means for adjusting said pawl-controlling lever.

8. A fertilizer-distributer comprising, in combination, a receptacle, a movable bottom forming part of said receptacle, a rotatable distributing-cylinder, means for moving said bottom toward said cylinder, said means comprising a shaft connected with said bottom, a ratchet-wheel journaled upon a fixed part of the machine, motion-transmitting means connecting said shaft with said ratchet-wheel, motion-transmitting means connecting said distributing-cylinder and said ratchet-wheel, said second motion-transmitting means comprising a pawl-carrying arm pivotally mounted upon the axis of the ratchet-wheel, a pawl mounted upon said arm and adapted to engage with said

ratchet-wheel, said pawl-arm having a longitudinally-arranged slot, a swinging lever having one end pivotally connected with a fixed part of the machine and provided with a roller at its opposite end adapted to engage with said slot, an eccentric forming part of said distributing-cylinder, and a pitman connection between said eccentric and said swinging lever.

9. A fertiliser-distributer comprising, in combination, a receptacle, a movable bottom forming part of said receptacle, a rotatable distributing-cylinder, means for moving said bottom toward said cylinder, said means comprising a shaft connected with said bottom, a gear-wheel secured to said shaft, a ratchet-wheel rotatably mounted upon a fixed part of the machine, motion-transmitting means connecting said ratchet-wheel with said cylinder, a gear-bracket adapted to swing about the axis of said ratchet-wheel, a worm carried by said gear-bracket and deriving motion from said ratchet-wheel and adapted to engage with said gear-wheel, means for moving said bracket toward said gear-wheel, said means comprising a cam pivotally mounted upon a fixed part of the machine, said cam having angularly-arranged stop-shoulders and radially-projecting teeth upon opposite sides thereof, a sliding bar adapted to engage with said stop-shoulders and having oppositely-disposed projections adapted to engage with said teeth, and means for positively sliding said bar in one direction and yieldingly in an opposite direction.

846,189. HOT-AIR REGISTER. FRED H. DUDLEY, Lincoln, Nebr. Filed Aug. 9, 1906. Serial No. 329,936.

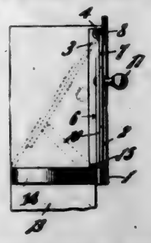

Claim.—1. A hot-air register comprising a register-frame, a spacing-frame, a pivot-rod for said spacing-frame disposed adjacent said register-frame to form a slot, and an extensible valve having an auxiliary-valve section adapted to fit into the slot between the pivot-rod of the spacing-frame and the register-frame for locking said extensible valve in closed position.

2. A hot-air register comprising a register-frame having a pair of supporting-flanges formed at their upper ends with open-ended slots, a pivot-rod mounted in said slots, an extensible valve comprising a main-valve section having a slot and also having its upper end curled around said pivot-rod and an auxiliary-valve section slidable upon said main-valve section and having a handle projecting through the slot in said main-valve section, a second pivot-rod mounted upon said supporting-flanges near the lower end of said register-frame so as to form a slot adapted to receive the lower end of said auxiliary-valve section for locking the valve in closed position, a bracket having its upper end curled around said second pivot-rod and its lower end bent to form a pocket, a filling-piece mounted in said pocket, a spacing-frame having eccentrically-arranged rings of different sizes, and bolts extending through said rings, bracket and filling-piece for holding the same together, said spacing-frame being adapted to hold said extensible valve in different positions of adjustment.

846,190. RAILROAD-CROSSING. EDWARD T. DUMAS, Chicago, Ill. Filed Dec. 17, 1906. Serial No. 348,206.

Claim.—1. In a railroad-crossing, the combination of fixed track-rails with fixed crossing-rails having their adjacent ends spaced apart and longitudinally-movable rail-sections to connect the track and crossing rails, and guides at each end of the movable rail-sections with which the rail-sections are always in engagement to guide the movable rail-sections into contact with the fixed track-rails at the proper points thereon.

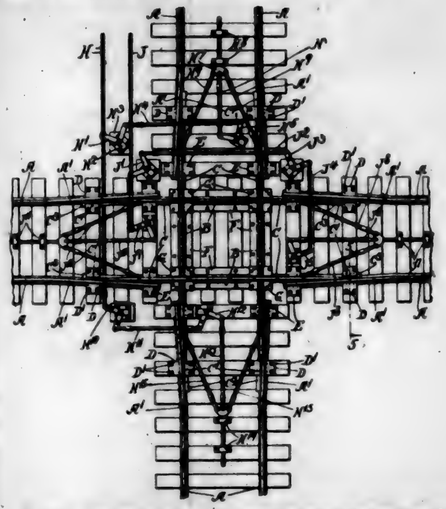

2. In a railroad-crossing the combination of fixed track-rails having their ends bent outwardly with fixed crossing-rails having their adjacent ends spaced apart and longitudinally-movable rail-sections having switch-points to connect the track and crossing rails, and guides to guide the movable rail-sections into contact with the fixed track-rails at proper points thereon.

3. In a railroad-crossing the combination of fixed track-rails, having their ends bent outwardly with fixed crossing-rails having their adjacent ends spaced apart and longitudinally-movable rail-sections having switch-points to connect the track and crossing rails, and guides adjacent the bent portions of the fixed track-rails to receive said rails and to receive and form bearings for the movable rail-sections.

4. In a railroad-crossing, the combination of fixed track-rails having their ends bent outwardly with fixed crossing-rails having their adjacent ends spaced apart and longitudinally-movable rail-sections having switch-points to connect the track and crossing rails, and a pair of guides for each fixed track-rail to receive the bent end of the same and to receive and form a bearing for its respective movable rail-section.

5. In a railroad-crossing, the combination of fixed track-rails having their ends bent outwardly with fixed crossing-rails having their adjacent ends spaced apart and longitudinally-movable rail-sections having switch-points and flanges adjacent thereto, to connect the track and crossing rails, and guide-plates having slots to receive the flanges of the fixed track-rails and of the movable rail-sections.

6. In a railroad-crossing, the combination of fixed track-rails having their ends bent outwardly with fixed crossing-rails having their adjacent ends spaced apart and longitudinally-movable rail-sections having switch-points and wedge-shaped flanges adjacent thereto to connect the track and crossing rails, and guide-plates having slots to receive the flanges of the fixed track-rails and of the movable rail-sections.

7. In a device of the character described, the combination of fixed rails having bends therein with movable rail-sections terminating in switch-points lying along the bends of the fixed rails and guide-plates to receive the bent portions of the fixed rails and the switch-points so as to maintain the latter in constant relation to the bends of the former.

8. In a railroad-crossing, the combination of fixed track-rails with fixed crossing-rails having their adjacent ends spaced apart and longitudinally-movable rail-sections to connect the track and crossing rails, and chairs associated with the fixed crossing-rails to receive and guide the ends of the movable rail-sections into contact with said fixed crossing-rails.

9. In a railroad-crossing, the combination of fixed track-rails with fixed crossing-rails having their adjacent ends spaced apart, longitudinally-movable rail-sections to connect the track and crossing rails, and chairs associated with the crossing-rails and having slots in their upper faces to receive and guide the inner ends of the movable rail-sections.

10. In a railroad-crossing, the combination of fixed track-rails with fixed crossing-rails having their adjacent ends spaced apart, longitudinally-movable rail-sections to connect the track and crossing rails, and chairs associated with the crossing-rails and having slots in their upper faces in which the crossing-rails are seated and which receive and guide the inner ends of the movable rail-sections.

11. In a railroad-crossing, the combination of fixed track-rails with fixed crossing-rails having their adjacent ends spaced apart, sleepers on which the crossing-rails are mounted, chairs connecting the ends of said sleepers and having slots in their upper faces meeting in the middle and longitudinally-movable rail-sections to connect the track and crossing rail, inner ends of said rail-sections seated and movable in the slots in said chairs.

12. In a device of the character described, the combination of a fixed track-rail with a rail-section movable longitudinally with respect to the track-rail, one of said elements having a switch-point lying along the other, and rigid means fixed to a stationary part of the road-bed for holding said switch-point pressed against the other rail in all positions of the movable section.

13. In a device of the character described, the combination of a fixed track-rail, with a rail-section movable longitudinally with respect to the track-rail and having a switch-point lying along the fixed rail, and rigid means fixed to a stationary part of the road-bed for holding said switch-point pressed against the fixed rail in all positions of the movable section.

14. In a device of the character described, the combination of a fixed track-rail with a rail-section movable longitudinally with respect to the track-rail and having a switch-point lying along the fixed rail and a guiding-flange, and rigid means fixed to a stationary part of the road-bed and engaging with the flange for holding said switch-point pressed against the fixed rail in all positions of the movable section.

15. In a device of the character described, the combination of a fixed track-rail with a rail-section movable longitudinally with respect to the track-rail and having a switch-point lying along the fixed rail and a guiding-flange, and means fixed to the stationary part of the road-bed having a part overlapping the flange to keep said switch-point at the proper level and pressed against the fixed rail in all positions of the movable section.

16. In a device of the character described, the combination of a fixed track-rail with a rail-section movable longitudinally with respect to the track-rail and having a switch-point lying along the fixed rail and a wedge-shaped flange, and means fixed to a stationary part of the road-bed having a part coacting with the wedge to force the switch-point into contact with the fixed rail.

17. In a device of the character described, the combination of a fixed track-rail with a rail-section movable longitudinally with respect to the track-rail and having a switch-point lying along the fixed rail and a wedge-shaped flange, and an undercut slotted guide-plate fixed to a stationary part of the road-bed having a part to receive said flange.

18. In a device of the character described, the combination of a fixed track-rail having a bend therein, with guiding means fixed to a stationary part of the road-bed to engage with the rail near its bend so as to keep the bend of the rail at the same place on the track regardless of the creep of the rail.

19. In a device of the character described, the combination of a fixed track-rail having a bend therein, with two guide-plates having slots to receive the flange of the rail fixed to stationary parts of the road-bed, said guide-plates adapted to keep the bend of the rail at the same place on the track regardless of the creep of the rail.

20. In a device of the character described, the combination of two rails, at least one of said rails being movable and one of said rails having a switch-point adapted to lie along the other rail, with rigid means fixed to a stationary part of the road-bed for keeping said switch-point constantly in contact with the other rail in all positions of said rails relative to each other.

21. In a device of the character described, the combination of two rails, at least one of said rails being movable and one of said rails having a switch-point adapted to lie along the other rail, the flange of at least one of said rails being wedge-shaped, with a guide-plate having a slot therein to receive the flanges of said rails, said guide-plate adapted to keep said switch-point constantly in contact with the other rail in all positions of said rails relative to each other.

846,191. DISPLAY-CASE. HENRY C. EGLY, Philadelphia, Pa. Filed Jan. 3, 1907. Serial No. 350,582.

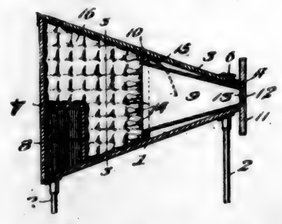

Claim.—1. A display-case comprising a box-like structure having converging side walls, a display-table supported within the case at the larger end thereof, a sight-tube supported within the case in advance of the table, the forward end of said tube projecting through an opening formed in the reduced end of the case, an illuminating means arranged between the rear end of the tube and the case.

2. A display-case comprising a box-like structure having converging side walls, a display-table supported within the case at the larger end thereof, a sight-tube supported within the case in advance of the table, the forward end of said tube projecting through an opening formed in the reduced end of the case, an illuminating means arranged between the rear end of the tube and the case, said illuminating means being disposed beyond the plane of the tube.

3. A display-case comprising a box-like structure having converging side walls, a display-table supported within the case at the larger end thereof, a sight-tube supported within the case in advance of the table, the forward end of said tube projecting through an opening formed in the reduced end of the case, an illuminating means arranged between the rear end of the tube and the case, said illuminating means being disposed beyond the plane of the tube, and a disk carried by the forward end of the tube and contacting with the forward edges of the case, said disk being formed with a sight-opening protected by a section of transparent material.

4. A display-case comprising a box-like structure having converging side walls, a display-table supported within the case at the larger end thereof, a sight-tube supported within the case in advance of the table, the forward end of said tube projecting through an opening formed in the reduced end of the case, an illuminating means arranged between the rear end of the tube and the case, said illuminating means being disposed beyond the plane of the tube, the interior of the tube being of a non-reflecting material, and a light-reflecting material covering the interior of the case in rear of said tube.

846,192. SHADE-ROLLER. JOHN EVANS, Denver, Colo. Filed May 9, 1905. Serial No. 259,573.

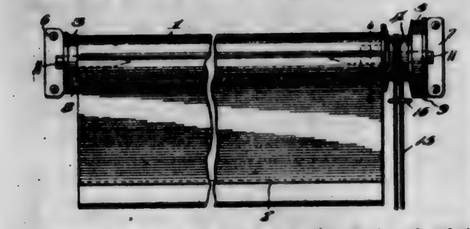

Claim.—In a device of the class described, a bracket having an elongated opening inclined upwardly and outwardly in a diagonal plane relative to a horizontal line drawn centrally through the opening and provided with a laterally-projecting flange disposed remote from the inner end of the opening and to intersect the line of the major axis of the latter, a shade-roller having an end socket, a winding-spool having a reduced neck formed to enter said socket for attaching the spool to the roller, said spool being provided with a central longitudinal bore continued through the neck and with a bearing-surface adapted to contact with the flange, a pintle entered through the said bore and driven into the roller for fixing the spool in place, the pintle being projected beyond the outer end of the spool for engagement with the opening in the bracket, a shade wound upon the roller and acting thereon by gravity to maintain the bearing-surface and flange normally in frictional engagement, a flexible operating element wound upon the spool and operable for rotating the roller to raise the shade, and a guide member for the element projecting horizontally outward beyond a line drawn vertically through the bracket-opening, whereby said element when manipulated will cause the pintle to ride upward and outward in the opening and lift the bearing-surface out of contact with the flange.

846,193. CENTRIFUGAL CLUTCH. JOSEPH FELLOWS, Philadelphia, Pa., assignor to The Enterprise Manufacturing Company of Pennsylvania, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Feb. 15, 1904. Serial No. 193,642.

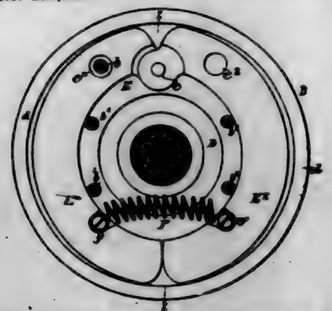

Claim.—1. The combination in a centrifugal clutch, of a driving element and a flanged driven element, a clutch element consisting of two arms, one of said arms being pivoted to the driving element and the other arm being free of the said driving element, substantially as described.

2. The combination in a centrifugal clutch, of a driving element and a flanged driven element, a pin on the driving element, a clutch element consisting of two arms pivoted together, an opening in one of said arms at a point at one side of the pivot through which extends the pin of the driving element, substantially as described.

3. The combination in a centrifugal clutch, of a driving element having a pin projecting from its inner surface, a flanged driven element, a clutch element consisting of two arms pivoted together, and a spring for retracting said arms, each arm having an opening at one side of the pivot-point for the reception of the driving-pin, substantially as described.

4. The combination of a shaft, a driven shell and a driving-disk mounted on the shaft, a flange on the shell, two arms loosely mounted within the shell pivoted together at one end, a spring connecting the free ends of the arms together, an opening in each arm near the pivot, and a pin on the driving-disk extending into one of the openings in the arms, substantially as described.

5. The combination of a driving element and a driven element, clutch mechanism consisting of two arms pivoted together and pivoted to the driving element, means for drawing the arms together and stops to limit the inward movement of the arms, substantially as described.

6. The combination of a driving-disk, a pin thereon, clutch mechanism hung on said pin and consisting of two arms pivoted together, a spring coupled to each arm, stop-pins projecting from the driving-disk acting to limit the inward movement of the arms, substantially as described.

846,194. ROLL-PAPER HOLDER AND CUTTER. JOHN F. FINAN, Cumberland, Md. Filed Oct. 9, 1906. Serial No. 338,102.

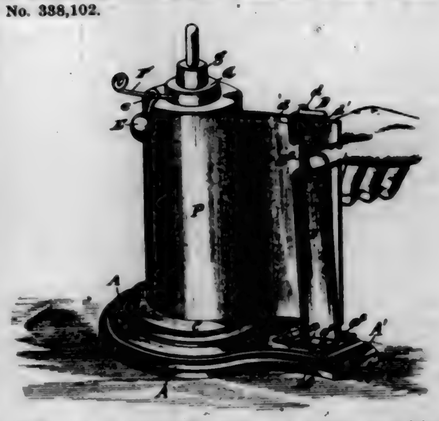

Claim.—1. A paper-roll holder and cutter, comprising means to rotarily sustain the roll and a radially-swinging cutter-bar having a throat through which the paper passes one end of said cutter-bar being pivoted a fixed distance from the axis of the roll and the other end being movable to and from the axis of the roll at varying angles thereto.

2. A paper-roll holder and cutter, comprising means for holding a paper-roll about an upright axis and an upright deflectable cutter-bar having a throat through which the edge of the paper passes, said cutter being hung to swing radially about its lower end to or from said axis at varying angles thereto.

3. A paper-roll holder and cutter comprising means for holding a paper-roll about an upright axis and an upright deflectable cutter-bar having a throat through which the edge of the paper passes, a hinged connection for the lower end of the cutter-bar and one or more springs for holding the cutter-bar in normal upright position.

4. A paper-roll holder and cutter, comprising means for holding a paper-roll about an upright axis and an upright deflectable cutter-bar having a hinge on one side of its lower end and headed bolts and springs on the other side.

5. A paper-roll holder and cutter comprising a base having a central fixed upright spindle with a metallic face-plate on top of the base and closely surrounding the spindle, a turn-table arranged about the spindle and having on its lower side a metal face-plate closely surrounding the spindle, a detached but integral ring arranged around the spindle between the two face-plates and loosely turning between the face-plates, and means for tearing off the paper from the roll.

6. A paper-roll holder and cutter, comprising means for rotarily holding the roll in upright position about a vertical axis, an upright and yielding cutter-bar and a gravitating and swinging weight hung upon a support from the center of the roll-holder and bearing against the upper edge of the paper-roll.

7. A paper-roll holder and cutter, comprising a spindle for the roll having a slotted top end, a cap with the socket fitting the top end of the spindle and having an arm extending across the socket and fitting in the slot of the spindle and having its outer end bent upwardly, a gravitating and swinging weight hung upon said inclined arm and a yielding cutter-bar.

846,195. BOOK COVER OR PROTECTOR. GEORGE A. FLOHR, Bellevue, Ky., and ADAM MILLER, Jr., Cincinnati, Ohio. Filed May 5, 1906. Serial No. 315,341.

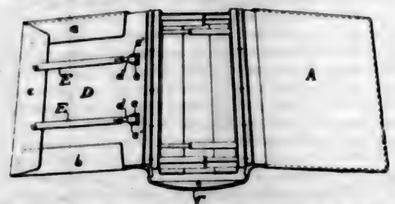

Claim.—1. A book-protector comprising a pocket to receive one of the covers of a book, a portion provided with flaps adapted to fold over upon the other cover of the book, said portion and pocket being integral, and means secured to one of the flaps and adapted to be attached to one of the covers of a book, whereby the protector is yieldingly held thereon.

2. A book-cover protector comprising a pocket to receive one of the covers of a book, a portion integral with the pocket and provided with one or more flaps adapted to fold over upon the other cover of the book, attaching mechanism comprising a pair of members, one of which is secured to one of said flaps, and the other member adapted to be attached to the book-cover, whereby the protector and its flap are yieldingly held in place.

3. A book-protector comprising a pocket to receive one of the covers of a book, a portion integral with said pocket portion and provided with flaps adapted to fold over upon the other cover of the book, elastic straps secured to one of the flaps, mechanism adapted to be secured to said cover of the book whereby the free ends of said straps may be held in place but permit of the extension of the protector.

846,196. INSERTIBLE TOOTH FOR METAL SAWS. SAMUEL FREAS, Trenton, N. J., assignor to Henry Disston & Sons, Incorporated, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Sept. 21, 1906. Serial No. 335,614.

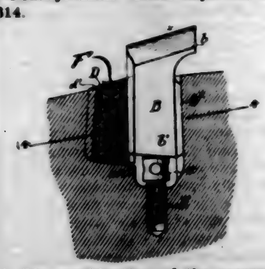

Claim.—1. The combination of the recessed body of a saw, a tooth mounted in said recess and a wedge also mounted in the recess back of the tooth, the wedge being wider at the inner end than at the outer end, substantially as described.

2. The combination of the recessed body of a saw, a tooth mounted in said recess, a wedge also mounted in said recess back of the tooth, said wedge being wider at the inner end than at the outer end, and an adjusting-screw passing through a threaded opening in the wedge and bearing upon the base of the recess, substantially as described.

3. The combination of the recessed blade of a saw, a tooth having a point and a shank, said shank being slightly tapered, being wider at the base than at the throat, a wedge in the recess back of the tooth, said wedge being wider at the inner end than at the outer end, substantially as described.

846,197. WAGON-HOUND. AUGUST H. FREITAG, Columbia, S. C. Filed July 2, 1906. Serial No. 324,437.

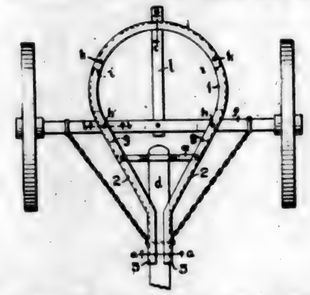

Claim.—In combination with an axle, a reach and a tongue, a hound comprising a semicircular portion, inwardly-converging side portions and forwardly-extending parallel extensions of said side portions, said side portions bearing on the axle, said semicircular portion bearing on the reach, said hound being made of L-angle metal with the webs thereof uppermost and outermost to form hollows in the inner under sides of the hound, blocks in the angles of the side portions and bearing on the axle, a curved wear-block in the angle of the semicircular portion and bearing on the reach, the said tongue being disposed in the angles between the parallel extensions of the converging side portions, and a bar secured transversely on the rear portion of the tongue and having its ends secured in the angles of the converging side portions, substantially as described.

846,198. FIGURE-WEAVING ATTACHMENT FOR DOBBY-LOOMS. JOSEF A. GROSS, Scranton, Pa. Filed Sept. 6, 1905. Serial No. 277,229.

Claim.—1. In a loom, a set of neck-cords comprising the cords for actuating those warp-threads which are to form an entire figure, a vertically-movable frame engaging when lifted to raise each one of the set of neck-cords but allowing the said cords to have free vertical movement themselves independent of the frame, mechanism for lifting said frame at intervals to lift the neck-cords to slacken the same above the lifted frame, and mechanism for raising and lowering the neck-cords independently of the said frame to form a figure, substantially as described.

2. In a loom, a set of neck-cords comprising the cords for actuating those warp-threads which are to form an entire figure, a vertically-movable frame having a comber-board through the holes of which the neck-cords pass, stops on said cords above the comber-board incapable of passing through the holes of said board, mechanism for raising said frame at intervals to engage with said stops to raise the neck-cords and slacken the same above the lifted frame, and mechanism for raising and lowering said neck-cords independently of the said frame to form a figure, substantially as described.

8. The combination in a loom of a plurality of vertically-movable section-frames, two or more series of sets of neck-cords each set comprising the cords for actuating the threads which are to form an entire figure and each attached to one of said section-frames and to no other frame, means for lifting said frames at intervals so as to slacken the attached cords above the lifted frame, and mechanism above said frames to which the neck-cords for all the frames are connected and by which said cords are raised and lowered at proper intervals to form a figure, substantially as described.

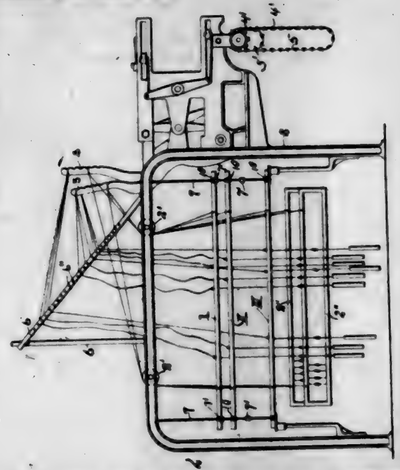

4. In a loom, one or more series of sets of neck-cords, each set comprising the cords for actuating the warp-threads which are to form an entire figure, and one or more vertically-movable frames, each frame engaging when lifted to raise one series of neck-cord sets and one series only, but allow the said cords to have free vertical movement themselves independently of the frames, means for lifting each of said frames at intervals to lift the series of neck-cords with which it engages to slacken the same above the lifted frame, and means by which the neck-cords are raised and lowered independently of the frames at intervals to form a figure, substantially as described.

5. In a loom, one or more series of sets of neck-cords, each set comprising the cords for actuating the warp-threads which are to form an entire figure, and one or more vertically-movable frames, each frame engaging when lifted to raise one series of neck-cord sets and one series only, but allow the said cords to have free vertical movement themselves independently of the frames, means for lifting each of said frames at intervals to lift the series of neck-cords with which it engages to slacken the same above the lifted frame, figure-hooks above said frames to which the neck-cords of all the frames are attached and by which the neck-cords are raised and lowered independent of the frames, and mechanism for actuating the said hooks at intervals to raise one or more of the neck-cords of each set to form a figure, substantially as described.

6. In a loom, a series of heddles for raising and lowering the warp-threads for the ground of the fabric to be woven, two or more series of sets of neck-cords, each set comprising the cords for actuating the threads which are to form an entire figure, two or more vertically-movable frames, each frame engaging to raise one series of neck-cord sets and one series only, when it is raised but allowing the cords of a set to have free vertical movement independently of the frames, mechanism for lifting and lowering said ground-warp heddles when the frames are lowered, mechanism for lifting each of said frames at intervals to lift the series of sets of neck-cords with which it engages in order to slacken the same above the lifted frame, and mechanism whereby the single neck-cords are raised and lowered independently of the frame at intervals to form a figure, substantially as described.

7. In a loom, two or more series of sets of neck-cords each set comprising the cords for actuating those warp-threads which are to form an entire figure, a plurality of vertically-movable frames one above another each frame having comber boards or slips therein through which neck-cords of all sets pass, stops on the neck-cords, stops on each neck-cord of a set of neck-cords above the comber-boards of one or another of the frames adapted to be engaged by the comber-board when its respective frame is raised, mechanism for lifting each of the frames at intervals to bear against the neck-cord stock above it to lift the said cords and slacken them above the lifted frame, and mechanism by which the said neck-cords are raised and lowered independent of the frames to form a figure, substantially as described.

8. In a loom, a plurality of vertically-movable section-frames one above another in the same plane, comber boards or slips in each frame spaced apart from each other, comber boards or slips of one frame being out of vertical alinement with the comber boards or slips of every other frame, two or more series of sets of neck-cords each set comprising the cords for actuating those warp-threads which are to form an entire figure, the cords of each set passing through the holes of a comber slip or board in one frame and through the spaces between the comber-slips of the other frames, a stop on each neck-cord above the comber-boards through which it passes and adapted to be engaged by the comber-board when its frame is lifted, mechanism for lifting each of the frames at intervals to bear against the neck-cords and slacken them above the lifted frame, and mechanism by which the said neck-cords are raised and lowered independently of the frame to form a figure, substantially as described.

9. In a loom, two or more series of sets of neck-cords each set comprising the cords for actuating those warp-threads which are to form an entire figure, vertical guide mounted on the loom, two or more vertically-movable frames sliding on said guide-bars and mounted one above another, stops on said guides for limiting the vertical movement of said frames, comber boards or slips in said frames through the holes of which the neck-cords of all the sets of neck-cords pass, stops on each of the neck-cords of a set above the comber-boards of one or another of the frames and adapted to be engaged by the same when its respective frame is raised, mechanism for lifting each of the frames at intervals to bear against the neck-cord stops above it to lift the said cords and slacken them above the lifted frame, and mechanism by which the neck-cords are raised and lowered independently of the frames to form a figure, substantially as described.

10. In a dobby-loom, one or more series of sets of neck-cords each set comprising the cords for actuating those warp-threads which are to form an entire figure, a plurality of vertically-movable frames one above another, each frame having comber boards or slips therein through which the neck-cords of all the sets of neck-cords pass, stops on each neck-cord of a set above the comber-boards of one or another of the frames and adapted to be engaged by the same when its respective frame is raised, a plurality of figure-levers above the said frames, each lever connected with one of the neck-cords of each set to raise or lower the same to form a figure, an inclined frame mounted upon the loom and having transverse rods over which the neck-cords pass from the said figure-levers down and through the said frames, two or more levers connected each to one of the section-frames to raise or lower the same at proper intervals, and two or more levers attached to heddles for raising or lowering the threads of the ground-warp, substantially as described.

11. In a dobby-loom, one or more series of sets of neck-cords each set comprising the cords for actuating those warp-threads which are to form an entire figure, a plurality of vertically-movable frames one above another, each frame having comber boards or slips therein through which the neck-cords of all the sets of neck-cords pass, stops on each neck-cord of a set above the comber-boards of one or another of the frames and adapted to be engaged by the same when its respective frame is raised, a plurality of figure-levers above the said frames, each lever connected with one of the neck-cords of each set to raise or lower the same to form a figure, an inclined frame mounted upon the loom and having transverse rods over which the neck-cords pass from the said figure-levers down and through the said frames, two or more levers connected each to one of the section-frames to raise or lower the same at proper intervals, and two or more levers attached to heddles for raising or lowering the threads of the ground-warp, substantially as described.

12. An attachment for looms comprising guide-rods, a rectangular frame provided with guide-eyes at the ends surrounding said rods and adapted to slide up and down thereon, said frame being formed of two end pieces and two longitudinal pieces, the latter grooved along their length and provided with perforated comber-slips, the perforations therein adapted to engage with the harness-cords of a loom, and the ends of said comber-slips fitting in the side grooves in the side pieces, and pins whereby the said comber-slips may be held adjusted at any desired point.

13. In a loom, one or more series of sets of neck-cords each set comprising the cords for actuating the warp-threads which are to form an entire figure, a plurality of vertically-movable frames, each frame engaging when lifted to raise one series of neck-cord sets and one series only, but allowing the said cords to have free vertical movement themselves independently of the frames, harness-levers, one for each of said frames to lift the same at intervals to lift the series of neck-cords with which it engages to slacken the same above the lifted frame, figure harness-levers above said frames to each of which one of the neck-cords from each set is attached and by which one of the neck-cords of each set is raised and lowered independently of the frames, and a double lever-actuating chain, one chain actuating the figure-levers and the other chain actuating the said frame-raising levers, substantially as described.

846,199. BALING-PRESS. JOHN W. GRAVES, Covington, Tenn., assignor to International Cotton Company, Boston, Mass, a Corporation of South Dakota. Filed Oct. 12, 1904. Serial No. 228,194.

Claim.—1. In a baling-press, the combination with a forcibly-operated bale-forming means, and a platen, piston and cylinder coöperating therewith, of a secondary press operated by the depression of the said piston.

2. In a baling-press, the combination with a forcibly-operated bale-forming means, and a primary platen, piston and cylinder coöperating therewith, of a secondary platen, piston and cylinder operated by the depression of the first-named piston; the piston area or cross-section of the secondary piston being in substantial excess of that of the primary piston.

3. In a baling-press, the combination with a forcibly-operated bale-forming means, and a platen, piston and cylinder coöperating therewith, of a secondary platen, piston and cylinder operated by the depression of the first-named piston; the secondary platen and piston being sufficiently heavy to overbalance the first-named platen and piston.

4. In a baling-press, the combination with a forcibly-operated bale-forming means, and a platen, piston and cylinder coöperating therewith, of a secondary press operated by the depression of said piston; said piston being provided with a sleeve constructed to move in unison therewith, or to be locked fast to said cylinder.

5. In a baling-press, the combination with a forcibly-operated bale-forming means, and a platen, piston and cylinder coöperating therewith, of a secondary platen, piston and cylinder operated by the depression of the first-named piston; the last-named piston being provided with a sleeve and a locking means for causing said sleeve to be locked fast to the first-named cylinder, or to move in unison with such first-named piston.

6. In a baling-press, the combination with a forcibly-operated bale-forming means, and a platen, piston and cylinder coöperating therewith, of a secondary press having its platen, piston and cylinder, a pipe joining said cylinders provided with a pressure-valve, and a by-pass pipe communicating about said valve and having a stop-cock therein.

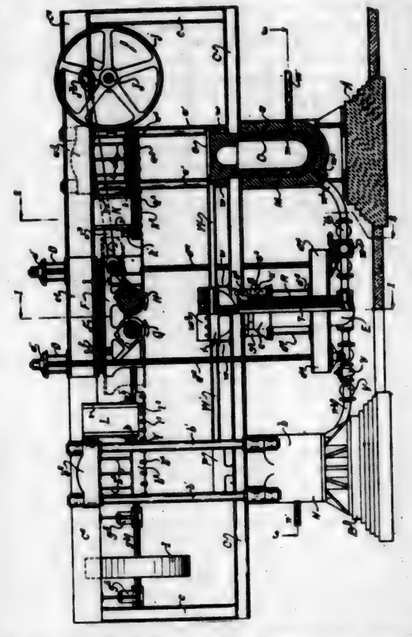

7. In a baling-press, the combination with a forcibly-operated bale-forming means, and a platen, piston and cylinder coöperating therewith, of two secondary presses having their cylinders connected by suitable piping to the first-named cylinder, an adjustable pressure-valve in each piping, and closable connections between the first-named cylinder and each of the other two cylinders.

8. A baling-press composed of three hydraulic presses having their platens in the same horizontal plane when in their lowest positions, trackways joining the central platen to each of the two others, and a carriage running on said trackways and platens.

846,200. AUGER. WILLIAM HALLINAN, Central City, Ky., assignor of one-third to George Baker and one-third to Shelby Gish, Central City, Ky. Filed July 27, 1906. Serial No. 328,049.

Claim.—In a device of the character described, the combination with an auger provided on one end with a plurality of recesses and a central opening, of detachable bits for said auger, a plurality of lugs carried by said bits and registering with said recesses, said bits being provided with openings registering with said opening in said auger, a bolt passing through said openings to clamp said bits in position, said openings in said bits and said auger being provided with alined slots, and a longitudinal shoulder carried by said bolt, adapted to engage within said slots and coöperating with said lugs and said recesses, to prevent an independent movement of said bits when in the clamped position, substantially as described.

846,201. DETACHABLE HARROW-CART. JOHN W. HARMON, Creston, Iowa. Filed July 21, 1905. Serial No. 271,970.

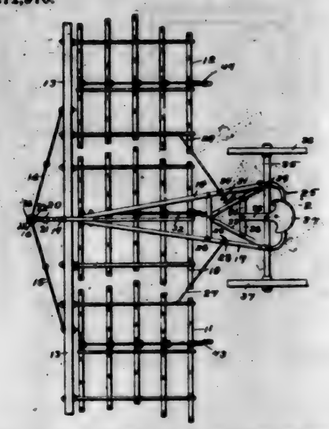

Claim.—1. In a device of the class described, a pivotally-mounted frame, a curved track forming the rear end of the frame, a pivotally-mounted truck pivoted to the frame, and means for maintaining the truck in position relative to the frame.

2. In a device of the class described, a pivotally-mounted frame, a curved track forming the rear end of the frame, a pivotally-mounted truck pivoted to the frame, means for maintaining the truck in position relative to the frame, and means for securing the forward end of the frame to a doubletree.

3. In a device of the class described, a harrow having a number of sections therein, a draw-bar for connecting the sections of said harrow together, a frame pivotally and detachably secured to the draw-bar, and a truck capable of lateral movement relative to the line of advance of the frame.

4. In a device of the class described, a harrow having a number of sections therein, a draw-bar for connecting the sections of said harrow together, a frame pivotally and detachably secured to the draw-bar, a truck capable of lateral movement relative to the line of advance of the frame, and means for securing the frame to the outer sections of the harrow in such a way as to allow the frame to have a slight lateral movement.

5. In a device of the class described, a harrow having a number of sections therein, a draw-bar for connecting the sections of said harrow together, a frame pivotally and detachably secured to the draw-bar, a truck capable of lateral movement relative to the line of advance of the frame, means for securing the frame to the outer sections of the harrow in such a way as to allow the frame to have a slight lateral movement, and means for maintaining the truck in position relative to the frame.

6. In a device of the class described, a harrow having a number of sections therein, a draw-bar for connecting the sections of said harrow together, a frame pivotally and detachably secured to the draw-bar, a truck capable of lateral movement relative to the line of advance of the frame, means for securing the frame to the outer sections of the harrow in such a way as to allow the frame to have a slight lateral movement, and spring-actuated means for maintaining the truck in position relative to the frame, designed to be operated by foot-power.

846,202. FENCE-POST. PHILIP J. HARRAN, Bloomfield, Ind. Filed Sept. 21, 1906. Serial No. 335,613.

Claim.—A fence-post composed of light sheet metal bent to provide a flat face, tongues struck up from said flat face and bent outward and thence inward at points intermediate their ends, said tongues forming, at their points of connection to the face of the post, wire-retaining pockets, the free ends of said tongues normally lying outside the plane of the face of the post.

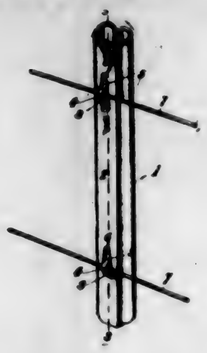

846,203. WINDOW-JACK. JOHN S. HAWLEY, New York, N. Y. Filed June 27, 1906. Serial No. 323,735.

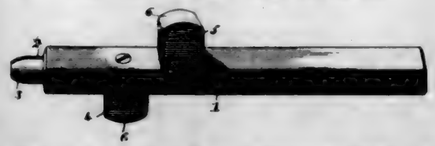

Claim.—1. In a device of the character described, a lever having a substantially cylindrical end, fulcrum-blocks of different heights secured to the lever, and a soft velvet fabric secured to and covering the fulcrum-blocks.

2. In a device of the character described, a straight lever having a reduced end adapted to be projected into a recess in a window-sash, and fulcrumed blocks of different heights having rounded outer faces secured to said lever.

3. In a device of the character described, a lever having a reduced end adapted to be projected in a recess in a window-sash, fulcrumed blocks of different heights having rounded outer faces secured to said lever, and a soft material covering said rounded faces of the blocks.

846,204. CORN-HARVESTER. JOHN HETTRICH, Grand Island, Nebr. Filed Dec. 6, 1905. Serial No. 290,593.

Claim.—1. In a corn-harvester and in combination, a frame, means for supporting the frame, means on the frame for snapping the ears from the stalks, a series of husking-rollers arranged behind the snapping means and inclined upwardly and backwardly, a conveyer arranged above the husking-rollers and substantially parallel therewith and delivering at its rear end to the said husking-rollers, a stalk-ejecting device comprising a series of transverse corrugated rollers arranged adjacent to the delivery end of the conveyer, whereby the delivered ears will be caused to travel over the rollers of the series, and a conveyer for receiving the husked ears arranged beneath the lower ends of the husking-rollers.

2. In a corn-harvester and in combination, a frame, means for supporting the frame, means on the frame for snapping the ears from the stalks, a series of husking-rollers arranged behind the snapping means, a conveyer arranged above the husking-rollers and delivering at its rear end thereto, a stalk-ejecting device comprising a series of transverse rollers arranged adjacent to the delivery end of the conveyer, whereby the delivered ears will be caused to travel over the rollers of the series, and a conveyer for receiving the husked ears from the husking-rollers.

3. In a corn-harvester and in combination, a frame, means for supporting the frame, means on the frame for snapping the ears from the stalks, a husking device supported by the frame, a conveyer delivering at its rear end to the husking device, and a stalk-ejecting device comprising a series of transverse rollers arranged adjacent to the

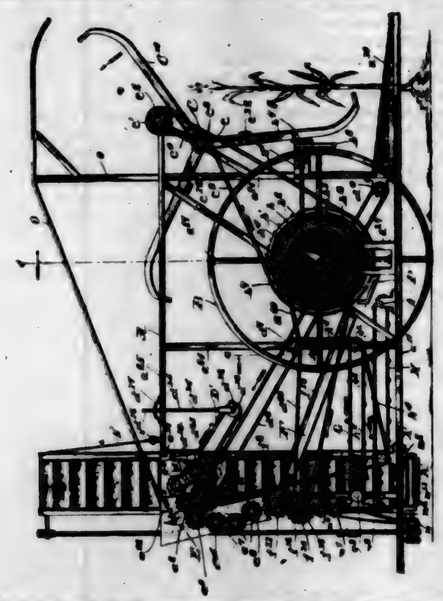

delivery end of the conveyer, whereby the delivered ears will be caused to travel over the rollers of the series during their passage to the husking device.

846,205. TROLLEY-HARP. CHARLES HIBBARD and WARREN HIBBARD, Sandy Hill, N. Y., assignors to Glens Falls Improved Trolley Fork Company, Glens Falls, N. Y. Filed Feb. 28, 1906. Serial No. 303,408.

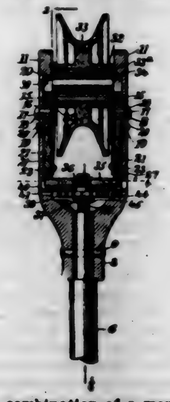

Claim.—1. The combination of a member provided with standards spaced apart and provided with apertures and with bearing portions merging into said apertures, a stub-shaft provided with ends adapted to fit said bearing portions, disks mounted within said apertures and provided with portions for engaging said stub-shaft, being adapted to move slightly in a direction crossing the general plane of rotation of said disks, means for moving said disks by hand, and mechanism for locking said disks rigidly against said stub-shaft.

2. The combination of a fork provided with slots and with bearing portions, revoluble disks connected with said fork and provided with apertures adapted to register with said slots and also adapted to register with said bearing portions, means controllable at will for turning said disks, said disks being adapted to travel laterally in a direction crossing the plane of revolution of said disks, lugs provided with portions for engaging said disks, and mechanism controllable by hand for forcing said lugs toward said disks.

3. The combination of a fork, a stub-shaft mounted therein and adapted to support a trolley-wheel, revoluble disks coacting with said fork for locking said stub-shaft rigidly in relation thereto, sliding lugs for engaging said revoluble disks, a movable plate for actuating said sliding lugs, and screw mechanism for moving said movable plate.

4. The combination of a fork, a stub-shaft mounted therein and adapted to support a trolley-wheel, revoluble disks coacting with said fork for locking said stub-shaft rigidly in relation thereto, sliding lugs for engaging said revoluble disks, a movable plate for actuating said sliding lugs, screw mechanism for moving said movable plate, and means for locking said screw mechanism in a predetermined position.

5. The combination of a fork, a stub-shaft mounted therein, revoluble members for placing said stub-shaft in position relatively to said fork and for displacing the same, means for forcing said revoluble members in a direction lateral to the general direction of rotation thereof so as to hold said stub-shaft in position and to release the same from said position, and sheet-metal plates mounted upon said fork and partially covering said revoluble members and said mechanism for actuating the same.

6. The combination of a fork, a member mounted thereupon and adapted to support a trolley-wheel, revoluble disks mounted upon said fork and adapted to permit the insertion and removal of said member, lugs engaging said disks for clamping the same in predetermined positions, a movable plate engaging said lugs for the purpose of forcing the same in a predetermined direction, and means controllable at will for actuating said movable plate.

7. The combination of a fork provided with a bearing portion, and an aperture merging thereinto and provided with a slot, a sheet-metal guard connected with said fork and provided with a slot registering with said aperture, said bearing portion and said slot of said fork, a stub-shaft provided with ends for engaging said bearing portions, said ends being adapted to follow said slot and said aperture of said fork, and means for clamping the ends of said stub-shaft rigidly against said bearing portions.

8. A trolley-harp, comprising a fork provided with slots and with bearing portions disposed adjacent to said slots, revoluble disks mounted upon said fork and movable relatively thereto in a direction crossing the general plane of revolution of said disks, said revoluble disks being provided with apertures adapted to register with said slots, a pin provided with end portions for fitting into said slots of said fork, and also into said apertures of said disks, said end portions of said pin being of proper conformity to fit against said bearing portions of said fork, and means for locking said disks.

9. The combination of a fork provided with angular bearing portions and with apertures leading thereto, a stub-shaft provided with angular ends adapted to engage said bearing portions and to follow said apertures leading thereto, and means for positively locking said stub-shaft relatively to said fork.

10. The combination of a fork, a stub-shaft mounted thereupon and adapted to support a trolley-wheel, pressure mechanism connected with said fork and detachably engaging said stub-shaft for the purpose of holding the same in position to said fork, and means controllable at will for varying the degree of pressure exerted by said pressure mechanism against said stub-shaft.

11. The combination of a fork provided with bearing portions, a shaft mounted upon said fork and provided with portions engaging said bearing portions, said shaft being adapted to support a trolley-wheel, a movable member connected with said fork and temporarily engaging

said shaft for the purpose of holding the same in position, and means controllable at will for adjusting said movable member relatively to said shaft.

12. The combination of a fork provided with bearing portions and with apertures leading thereto, a member provided with surfaces for engaging said bearing portions, said surfaces being adapted to follow said apertures, a trolley-wheel mounted upon said member, and mechanism including an adjustable screw for retaining said member temporarily in a predetermined position relatively to said fork.

846,206. INKSTAND. JAMES A. IRVING, Philadelphia, Pa. Filed Mar. 9, 1906. Renewed Jan. 28, 1907. Serial No. 354,539.

Claim.—1. In an inkstand, the combination with a collapsible reservoir for the ink, having an ink-outlet below the level of the ink; and, means arranged to collapse said reservoir by tilting it, substantially as set forth.

2. In an inkstand, the combination with a collapsible reservoir for the ink, having an ink-outlet below the level of the ink; of pivotal supports for said reservoir; and means arranged to collapse said reservoir by tilting it, substantially as set forth.

3. In an inkstand, the combination with a collapsible reservoir for the ink; of means arranged to automatically collapse said reservoir by tilting it, substantially as set forth.

4. In an inkstand, the combination with a collapsible reservoir for the ink; of pivotal supports for said reservoir; an ink-outlet below the level of the ink; and means arranged to automatically collapse said reservoir, when tilted, substantially as set forth.

5. In an inkstand, the combination with a collapsible reservoir for the ink; of a font communicating with said reservoir below the level of the ink; and means arranged to automatically compress said reservoir by tilting and thereby force ink into said font, substantially as set forth.

6. In an inkstand, the combination with a collapsible reservoir for the ink; of pivotal supports for said reservoir; a font communicating with said reservoir below the level of the ink; and means arranged to automatically collapse said reservoir and thereby force ink into said font when tilted, substantially as set forth.

7. In an inkstand, the combination with collapsible reservoir; of pivotal supports for said reservoir; a font communicating with said reservoir below the level of the ink; and a cam arranged to automatically collapse said reservoir, substantially as set forth.

8. In an inkstand, the combination with a collapsible reservoir; of a font in invariable relation with said reservoir, communicating therewith below the level of the ink; means arranged to automatically compress said reservoir and thereby charge said font; and, means arranged to detain the reservoir in compressed position and thereby continuously charge said font, substantially as set forth.

9. In an inkstand, the combination with a collapsible reservoir; of a font communicating with said reservoir below the level of the ink; means arranged to automatically compress said reservoir, when tilted, and thereby charge said font; and means arranged to detain said reservoir in tilted position, substantially as set forth.

10. In an inkstand, the combination with a collapsible reservoir; of pivotal supports for said reservoir; a font communicating with said reservoir below the level of the ink, and a cam arranged to compress the reservoir, when tilted, and permit its distention when released, substantially as set forth.

11. In an inkstand, the combination with a collapsible reservoir; of pivotal supports for said reservoir; a font communicating with said reservoir below the level of the ink; a rock-shaft carrying a cam arranged to compress said reservoir when tilted; a stop arranged to limit the movement of said cam; and a stop arranged to limit the movement of said reservoir, substantially as set forth.

12. In an inkstand, the combination with a collapsible reservoir; of pivotal supports for said reservoir; a font communicating with said reservoir below the level of the ink; a cam arranged to compress the reservoir when tilted, and to permit its distention when released; and a slide arranged to determine the movement of said reservoir, substantially as set forth.

13. In an inkstand, the combination with a collapsible reservoir; of pivotal supports for said reservoir; a font communicating with said reservoir below the level of the ink; a cam arranged to compress the reservoir, when tilted, and to permit its distention when released; and means arranged to limit the movement of said reservoir, substantially as set forth.

14. In an inkstand, the combination with a collapsible reservoir; of a casing for said reservoir; a font; a nipple below the level of the ink, extending through the wall of said reservoir and said casing, and comprising a flange arranged to bear against the inner surface of said reservoir; a square portion on said nipple arranged to extend through a square aperture in said casing; and an elbow connecting said font with said reservoir, in threaded engagement with said nipple, substantially as set forth.

15. In an inkstand, the combination with a reservoir; of axially-alined trunnions on said reservoir; and standards provided with bearings for said trunnions, and arranged to be flexed toward and away from each other, whereby said trunnions are alternately engaged and released with respect to said bearings, substantially as set forth.

16. In an inkstand, the combination with a frame comprising flexible standards; of a collapsible reservoir, detachably pivoted for oscillation in said standards; a font communicating with said reservoir below the level of the ink; and means, detachably supported in said standards, arranged to automatically collapse said reservoir, substantially as set forth.

17. In an inkstand, the combination with a frame comprising flexible standards; of a collapsible ink-reservoir pivoted in removable relation in said standards; a rock-shaft carrying a cam arranged to compress said reservoir and pivoted in said standards in such relation that by flexing them outwardly said rock-shaft and reservoir may be readily removed, substantially as set forth.

18. In an inkstand, the combination with a collapsible ink-reservoir; of a casing for said reservoir comprising an aperture; and mechanism extending through said aperture arranged to collapse said reservoir by pressing thereon, to expel ink therefrom, substantially as set forth.

846,207. RAILWAY. STEPHEN E. JACKMAN, New York, N. Y. Filed June 18, 1906. Serial No. 322,283.

Claim.—1. A railway having a continuous track consisting of an uptrack, a homestretch leading back to the foot of the uptrack, and an intermediate track-section between the upper end of the said uptrack and the starting-point of the said homestretch, the said intermediate section having a beginning loop portion, an ending loop portion and a middle portion appearing in plan in the form of the figure 8.

2. A railway having a continuous track consisting of an uptrack, a homestretch leading back to the foot of the uptrack, and an intermediate track-section between the upper end of the said uptrack and the starting-point of the said homestretch, the said intermediate section having a beginning loop portion, an ending loop portion and a middle portion appearing in plan in the form of the figure 8, the middle members of the said middle portion crossing each other in different horizontal planes.

3. A railway having a continuous track consisting of an uptrack, a homestretch leading back to the foot of the uptrack, and an intermediate track-section between the upper end of the said uptrack and the starting-point of the said homestretch, the said intermediate section having beginning and ending portions, each appearing in plan in the form of a loop terminating at one end in a straight shank, and a middle portion appearing in plan in the form of the figure 8.

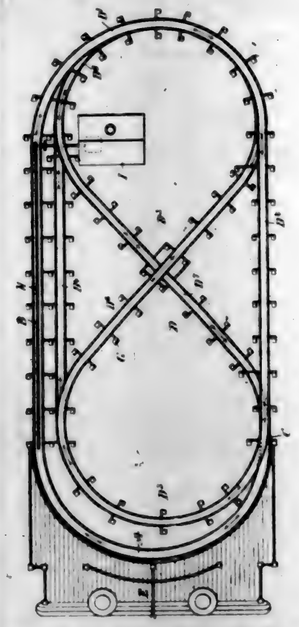

4. A railway having a continuous track consisting of an uptrack, a homestretch leading back to the foot of the uptrack, and an intermediate track-section between the upper end of the said uptrack and the starting-point of the said homestretch, the said intermediate section having beginning and ending portions, each appearing in plan in the form of a loop terminating at one end in a straight shank, and a middle portion appearing in plan in the form of the figure 8 and connecting at its ends with the shanks of the beginning and ending portions.

5. A railway having a continuous track consisting of an uptrack, a homestretch leading back to the foot of the uptrack, and an intermediate track-section between the upper end of the said uptrack and the starting-point of the said homestretch, the said intermediate section having beginning and ending portions, each appearing in plan in the form of a loop terminating at one end in a straight shank, the shanks of the said beginning portions being approximately parallel, and a middle portion appearing in plan in the form of the figure 8.

6. A railway having a continuous track consisting of an uptrack, a homestretch leading back to the foot of the uptrack, and an intermediate track-section between the upper end of the said uptrack and the starting-point of the said homestretch, the said intermediate section having beginning and ending portions each appearing in plan in the form of a loop terminating at one end in a straight shank, the shanks of the said beginning portions being approximately parallel and arranged in different horizontal planes, and a middle portion appearing in plan in the form of the figure 8.

7. A railway having a continuous track consisting of an uptrack, a homestretch leading back to the foot of the uptrack, and an intermediate track-section between the upper end of the said uptrack and the starting-point of the said homestretch, the said intermediate section having beginning and ending portions, each appearing in plan in the form of a loop terminating at one end in a straight shank, the said beginning and ending portions being arranged at opposite ends of the intermediate track-section, and a middle portion appearing in plan in the form of the figure 8.

846,208. RAILWAY. STEPHEN E. JACKMAN, New York, N. Y. Filed June 18, 1906. Serial No. 322,284.

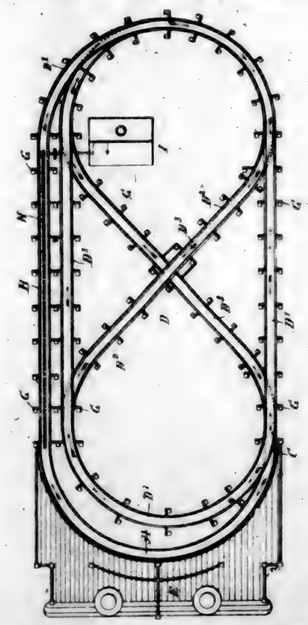

Claim.—1. A railway having a continuous track consisting of an uptrack, a homestretch leading back to the foot of the said uptrack, and an intermediate track-section connecting the upper end of the uptrack with the beginning-point of the homestretch, the said intermediate track-section having a complete loop portion and a figure-8 portion, of which one connects with the uptrack and the other connects with the homestretch.

2. A railway having a continuous track consisting of an uptrack, a homestretch leading back to the foot of the said uptrack, and an intermediate track-section connecting the upper end of the uptrack with the beginning-point of the homestretch, the said intermediate track-section having a complete loop portion and a figure-8 portion, of which the loop portion connects with the uptrack and leads to the said figure-8 portion, and the latter connects with the said homestretch.

3. A railway having a continuous track consisting of an uptrack, a homestretch leading back to the foot of the said uptrack, and an intermediate track-section connecting the upper end of the uptrack with the beginning-point of the homestretch, the said intermediate track-section having a complete loop portion and a figure-8 portion, of which one connects with the uptrack and the other connects with the homestretch, the end loops of the loop portion and the end loops of the figure-8 portion being arranged one above the other.

4. A railway having a continuous track consisting of

an uptrack, a homestretch leading back to the foot of the said uptrack, and an intermediate track-section connecting the upper end of the uptrack with the beginning-point of the homestretch, the said intermediate track-section having a complete loop portion and a figure-8 portion, of which one connects with the uptrack and the other connects with the homestretch, and the middle members of the figure-8 portion crossing each other in different horizontal planes.

846,209. RAILWAY. STEPHEN E. JACKMAN, New York, N. Y. Filed June 20, 1906. Serial No. 322,540.

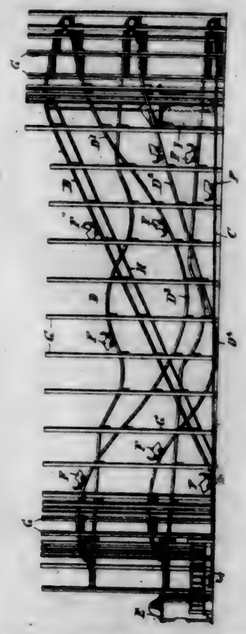

Claim.—1. A railway having a continuous track consisting of an uptrack, a homestretch leading back to the bottom of the uptrack, and a loop-section connecting the upper end of the said uptrack with the beginning of the said homestretch, the said loop-section having a plurality of convolutions, of which the side arms on one side of the loop-section are disposed in different vertical planes and inward from the said homestretch.

2. A railway having a continuous track consisting of an uptrack, a homestretch leading back to the bottom of the uptrack, and a loop-section connecting the upper end of the said uptrack with the beginning of the said homestretch, the said loop-section having a plurality of convolutions, of which the side arms on one side of the loop-section are disposed in different vertical planes and inward from the said homestretch, the said side arms having dips, of which the dips of one side arm may have any desired depth relative to the depth of the dips of an adjacent side arm and the said homestretch.

846,210. BRAKE MECHANISM FOR INCLINED RAILWAYS. STEPHEN E. JACKMAN, New York, N. Y. Filed June 28, 1906. Serial No. 323,320.

Claim.—1. An apparatus of the class described provided with a track having a manually-controlled brake mechanism arranged in the track to engage and brake the car on its downward travel, the said brake mechanism comprising a brake-beam arranged longitudinally on the car, and brake-shoes arranged longitudinally in the track to engage opposite sides of the said car brake-beam.

2. An apparatus of the class described provided with a track having a manually-controlled brake mechanism arranged in the track to engage and brake the car on its downward travel, the said brake mechanism comprising a brake-beam arranged longitudinally on the car and brake-shoes in the form of beams arranged longitudinally in the track to engage opposite sides of the said car brake-beam.

3. An apparatus of the class described provided with a track having a manually-controlled brake mechanism arranged in the track to engage and brake the car on its downward travel, the said brake mechanism comprising a brake-beam arranged longitudinally on the car and brake-shoes arranged longitudinally in the track to engage opposite sides of the said car brake-beam, springs pressing the said brake-shoes, and a manually-controlled device for placing the said springs under tension.

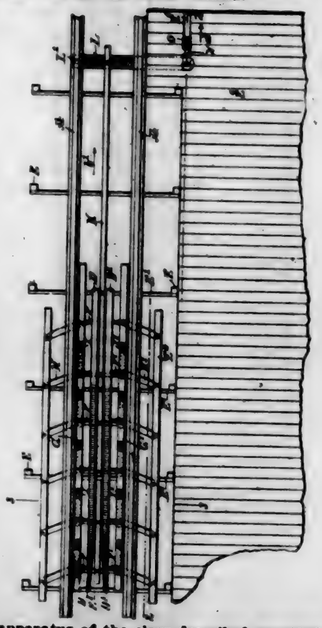

4. An apparatus of the class described provided with a track having a manually-controlled brake mechanism arranged in the track to engage and brake the car on its downward travel, the said brake mechanism comprising a brake-beam arranged longitudinally on the car and brake-shoes arranged longitudinally in the track to engage opposite sides of the said car brake-beam, sets of arms pivoted in the track, longitudinal bars pivotally connected with the said sets of arms, springs interposed between the said brake-shoes and the said bars, a hand-lever, and a connection between the said hand-lever and the said bars.

5. An apparatus of the class described provided with a track having a manually-controlled brake mechanism adapted to engage and brake the car on its travel in the said track, the said brake mechanism comprising a beam secured longitudinally to the car, brake-shoes in the form of beams and mounted to slide laterally to engage opposite sides of the said car brake-beam, and means yieldingly connected with the said brake-shoes and manually controlled for moving the said brake-shoes into engagement with the said car brake-beam.

6. An apparatus of the class described provided with a track having a manually-controlled brake mechanism arranged in the track to engage and brake the car on its downward travel, the said brake mechanism comprising a brake-beam arranged longitudinally in the track to engage opposite sides of the said car brake-beam, sets of arms pivoted in the track, longitudinal bars pivotally connected with the said sets of arms, springs interposed between the said brake-shoes and the said bars, a hand-lever, a connection between the said hand-lever and the said bars, the said connection comprising sets of levers, one set for each bar, cross-bars connecting opposite levers of the said sets of levers with each other, a reach-rod connecting the said cross-bars with each other, and a lever fulcrumed on the track and pivotally connected with the said reach-rod and the said hand-lever.

846,211. GRAIN-RENOVATOR. LEWIS J. JOHNSON, Springbay, Ill. Filed Nov. 9, 1905. Serial No. 286,626.

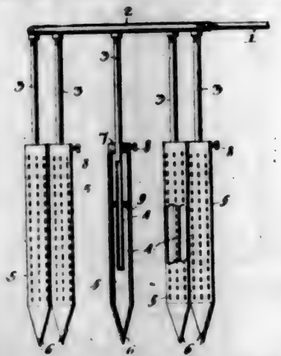

Claim.—1. The herein-described grain-renovating apparatus comprising the distributer-head, the pipe discharging thereinto, the discharge-pipes projecting from the distributer-head, the perforated cylindrical casings having the conical lower portions and the heads at their upper ends, said heads having openings in which the discharge-pipes are slidable and provided with clamping means to secure the said pipes therein, said casings being adjustable on said discharge-pipes toward and from said distributer-head.

2. The herein-described grain-renovating apparatus comprising the perforated casings having the tapered lower ends, the heads and the clamping-screws, and the distributer-head having the pipe discharging thereinto and the discharge-pipes projecting therefrom, said discharge-pipe extending through the heads of the casings, slidable in said heads, entering the casings and having the heads movable in said casings, substantially as described.

846,212. MOTOR-CYCLE. WALTER C. JOHNSON, Colemans Hatch, England. Filed Nov. 26, 1906. Serial No. 345,196.

Claim.—A motor-cycle having a front steering-wheel and a twin-tread rear driving-wheel of less diameter than the steering-wheel, a suitable frame in which said wheels are journaled, a motor carried within said frame, operating connections from the motor to said driving-wheel, and a foot-platform located upon each side of the rear wheel below the axis thereof, upon which the rider may stand astride of the rear wheel and readily mount and dismount therefrom, substantially as described.

846,213. BOILER CHECK-VALVE. LEOPOLD KASSANDER, New York, N. Y., assignor to Nathan Manufacturing Company, New York, N. Y. Filed Nov. 30, 1906. Serial No. 345,699.

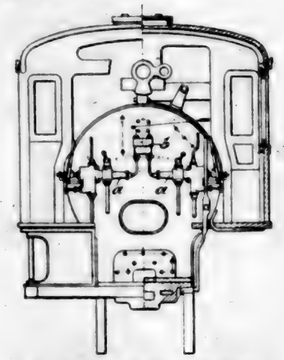

Claim.—1. In a double boiler check-valve, a valve-body divided vertically into two distinct and separate series of three superposed communicating chambers—a primary chamber below, an intermediate chamber and a check-valve chamber above—a check-valve in the intermediate chamber accessible through a cap-closed lateral opening in the walls of said chamber, a check-valve in the check-valve chamber accessible through a cap-closed opening in the top of the valve-body, a delivery-chamber common to and communicating with the check-valve chambers of each series, and a separate stop-valve for controlling communication between the delivery-chamber and each check-valve chamber, substantially as set forth.

2. In a boiler check-valve having a shell provided with check-controlled superposed communicating chambers *e*, *f*, *g* as described, an inclined valve-seat *k* in the intermediate chamber *f*, a check-valve *k*, and a correspondingly-inclined cap-closed lateral opening in the wall of the shell in substantially axial alinement with said valve-seat, substantially as and for the purposes hereinbefore set forth.

846,214. VOLTAGE-REGULATOR FOR ALTERNATING-CURRENT GENERATORS. FREDERICK R. KELLER, Lancaster, Pa. Filed Oct. 22, 1906. Serial No. 340,006.

Claim.—1. The combination with an alternating-current generator and its exciter, of regulating means consisting of a rotary converter, having its alternating-current end supplied from said generator and its direct-current end connected to oppose the current generated by the exciter, with a source of constant voltage connected in series with the direct-current end of the rotary converter to oppose the current generated thereby, substantially as described.

2. The combination with an alternating-current generator and its exciter, of a rotary converter having its alternating-current end supplied with current from said generator and its direct-current end connected in series with the field-winding of the exciter, with a storage battery also connected in series with the field-winding and so arranged that its voltage under normal conditions substantially equals and neutralizes that of the direct-current end of the rotary converter, substantially as described.

3. The combination with an alternating-current generator and its exciter, of two rotary converters having their alternating-current ends respectively supplied from the

generator and from a series-transformer connected in the line, the direct-current ends of said rotaries being connected in series with the field-winding of the exciter, substantially as described.

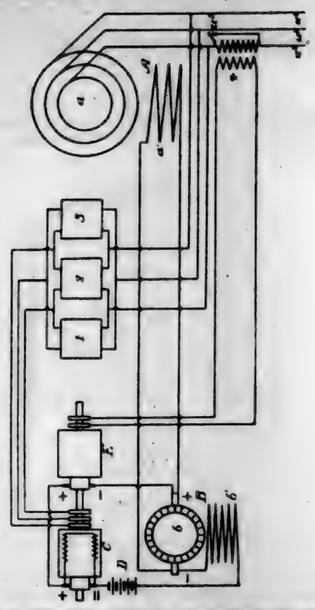

4. The combination with an alternating-current generator and its exciter, of two rotary converters having their alternating-current ends supplied from said generator, the direct-current ends of said rotaries being connected in series with the field-winding of the exciter, the latter of the rotaries being connected to generate a current flowing in the same direction as that generated by the exciter and to oppose that generated by the other rotary, substantially as described.

5. The combination with an alternating-current generator and its exciter, of two rotaries having their alternating-current ends supplied from said generator, the direct-current ends of said rotaries being connected in series with the field-winding of the exciter, the rotor of one of said two rotaries being driven from the rotor of the other rotary, substantially as described.

6. The combination with an alternating-current generator and its exciter, of two rotary converters supplied with current from said generator and having their direct-current ends connected to the exciter, the rotor of one of the rotaries being driven from the rotor of the other, substantially as described.

7. The combination of a pair of rotary converters having their direct-current ends connected to oppose each other, a storage battery connected in series with the direct-current ends of said rotaries, and an exciter having its field-winding in circuit with the rotaries and the battery, with an alternating-current generator having its field-winding supplied from the exciter, the alternating-current ends of the rotaries being connected so that the voltage of the currents supplied thereto varies proportionately with the voltage of the alternating-current generator, substantially as described.

846,215. PLAITER OR RUFFLER FOR SEWING-MACHINES. JOHN T. KELLEY, New London, Ohio. Filed Oct. 31, 1906. Serial No. 342,422.

Claim.—1. In a plaiter or ruffler for sewing-machines, a fold-forming device comprising upper and lower plates hinged together at one side edge and between which the material passes to the stitch-forming devices, the lower plate having at the opposite edge an upwardly-projecting guard, and the upper plate having a spring-catch engaging said guard.

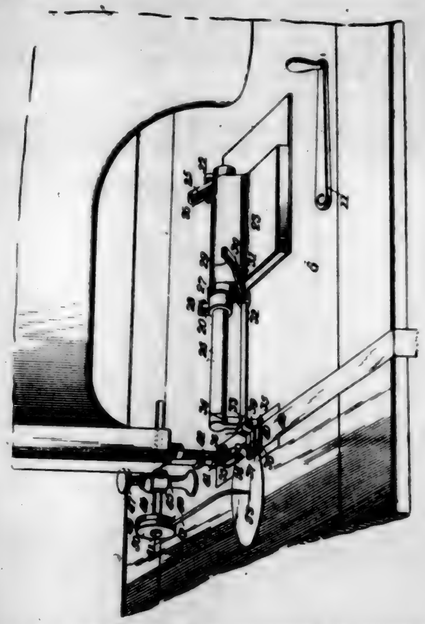

2. In a plaiting or ruffling attachment for sewing-machines, the combination with a fold-forming device, of a rock-shaft mounted in bearings on the bed-plate of the machine with one end beside the needle, and extending laterally at a right angle to the line of feed, the rock-shaft having a depending crank-arm at the end adjacent the needle, a rocker mounted on the bed-plate and having a grooved arm, a second rock-shaft carried in bearings in said arm and parallel to said shaft and having a projection in the groove, the fold-forming device being connected at its side edge to the end of said second shaft, and means to operate the shafts and rocker.

3. In a plaiting or ruffling attachment for sewing-machines, in combination, a bearing-bracket on the bed-plate of the machine at one side of the stitch-forming devices, a rock-shaft in said bracket, extending at a right angle to the line of feed and with one end adjacent said devices having a depending crank-arm thereon, a rocker mounted on the bracket concentric with said shaft and having a grooved arm, a second rock-shaft carried by the crank-arm, and having an arm at its outer end with a projection in the groove, and a fold-forming device carried on the inner end of said second shaft.

4. In a plaiting attachment for sewing-machines, in combination, a power-shaft under the bed-plate, an eccentric and gear attached together and loose on said shaft, a clutch between the shaft and the eccentric and gear, a crank-disk geared to said gear, rods connected to the eccentric and disk and extending through the bed-plate, rock-shafts connected to and operated by said rods, and a fold-forming device carried by the shafts adjacent to the stitching devices.

846,216. METHOD OF TREATING ORES. WILLIAM KEMP, Tucson, Ariz. Filed June 25, 1906. Serial No. 323,234.

Claim.—1. The method herein described of treating ores, which consists in subjecting said ores to the action of solid fuel, continuously replenishing said solid fuel, and supplying air to said solid fuel while in transit to thus replenish the main body thereof.

2. The method herein described of treating ores, which consists in forming a fuel body for the purpose of subjecting said ores to the action thereof, replenishing said fuel body by dropping solid fuel thereinto, supplying air to said fuel body thus formed, and separately subjecting air to the fuel while being dropped.

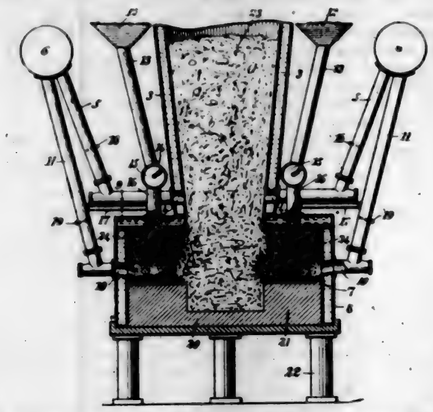

3. The method herein described of treating ores, which consists in forming an ore body, forming a fuel body in close proximity thereto, continuously replenishing said fuel body by dropping fuel thereinto, applying a blast of air to said fuel thus being dropped in order to prevent the retrogression of the flames and gases relatively to the supply from which said fuel is being dropped, and applying an air-blast to said ore body for the purpose of burning out sulfurous components of the ore.

846,217. GUN-SIGHT. DEAN W. KING, Jr., San Francisco, Cal. Filed May 10, 1906. Serial No. 316,097.

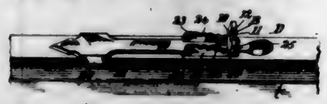

Claim.—1. In a gun-sight, a body having an opening therein and a square diaphragm adjustably and reversibly mounted in said opening, the said diaphragm having notches in its edges of varying sizes and shapes said notches being at the centers of the respective sides of the diaphragm.

2. In a gun-sight, a body having an opening therein and a square diaphragm adjustably and reversibly mounted in said opening, the said diaphragm having notches in its edges of varying sizes and shapes, said notches being at the centers of the respective sides of the diaphragm and means for holding the diaphragm in adjusted position and means for bodily raising and lowering the said sight.

3. In a gun-sight, a body having an opening therein and a diaphragm mounted to slide in said opening, the upper edge of the diaphragm being visible from the front and the rear of the body, the said diaphragm being provided with notches in its edges of varying shape and size, the said diaphragm being also provided with a white or illuminated panel upon one face the corners whereof center the said notches, and means for holding said diaphragm in adjusted position.

4. In gun-sights, the combination with the body of the sight, of a square sighting-diaphragm adjustably, removably and reversibly supported in the said body, the said diaphragm having sight-notches in its edges of varying sizes and shapes said notches being at the centers of the respective sides of the diaphragm.

5. In gun-sights, the combination with the body of the sight, of a sighting-diaphragm adjustably, removably and reversibly supported in the said body, the said diaphragm having sight-notches in its edges of varying sizes and shapes, the said diaphragm being also provided with a diamond-shaped white panel upon one of its faces, the corners of which panel center the said notches.

6. In a gun-sight, the combination with a body-section, a spring-shank secured to the bottom portion of said body-section, means for attaching the said shank to a barrel, and a sighting-diaphragm adjustably, removably and reversibly supported in the said body, the said sighting-diaphragm having notches in its edges of varying shapes and sizes, of an adjusting member comprising a plate adapted to slide beneath the free end of the shank, side pieces extending up from the side edges of the said plate, the upper edges of which side pieces are downwardly and rearwardly inclined and stepped, which stepped surfaces engage with the body of the sight at each side of its center, and means for moving the said adjusting member.

846,218. MACHINE FOR CAPPING BOTTLES. GEORG KIRKEGAARD, New York, N. Y. Filed Dec. 21, 1905. Serial No. 292,693.

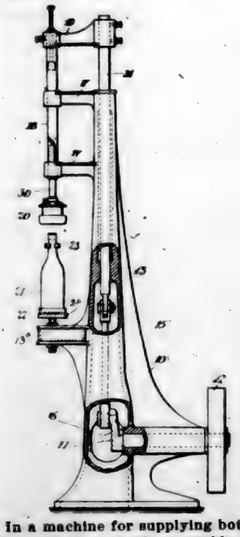

Claim.—1. In a machine for supplying bottles with caps provided with an independently-movable locking-ring, means for holding the cap against turning movement on the bottle, and means for turning the ring, for locking the cap in place.

2. In a machine for supplying bottles with caps provided with a locking-ring, means for pressing the cap down upon, and holding it in close contact with, the neck of the bottle, and means for actuating said ring, independently of the cap, for locking the latter in place.

3. In a machine for capping bottles, a cap-applying head having means for receiving a cap with a clamping-ring, and means whereby the cap is pressed on the bottle and the clamping-ring subsequently turned.

4. In a machine for capping bottles, a cap-applying head having means for receiving a cap having a clamping-ring, means whereby the same is initially compressed upon the bottle, and means whereby the clamping-ring is subsequently rotarily engaged so as to be locked thereon.

5. In a machine for capping bottles, a cap-applying head adapted to receive and hold a cap having a locking part thereon, and means whereby said locking part is

moved relatively to the cap to clamp the latter in place upon a bottle-neck.

6. In a machine for capping bottles, a cap-applying head adapted to grasp and hold a cap having a locking part by its engagement with such locking part, and means whereby said head is rotated to clamp said cap upon a bottle.

7. In a machine for capping bottles, a cap-applying head adapted to receive and hold a cap and having an independently-revoluble housing, and means whereby the cap is first depressed upon a bottle, and subsequently locked thereon by non-positive rotary movement of the housing.

8. In a machine for capping bottles, a cap-applying head adapted to receive and hold a cap having a clamping-ring, and means whereby it is initially depressed and the clamping-ring subsequently rotated to clamp and lock the cap upon a bottle.

9. In a machine for capping bottles, a cap-applying head adapted to receive a cap having a locking part, means in said head for grasping said part and turning it with relation to the cap and simultaneously pressing said cap upon a bottle.

10. In a machine for capping bottles, a cap-applying head adapted to receive a cap having a locking part, means for pressing said cap upon a bottle, and means for turning said locking part relatively to the cap.

11. In a machine for capping bottles, a cap-applying head having means for engaging two separate parts of a cap, and imparting a relative movement thereto so as to lock the cap upon a bottle.

12. In a machine for capping bottles, a cap-applying head having means for engaging two relatively movable parts of the cap, and imparting a relative movement thereto so as to lock the same upon a bottle.

13. In a machine for capping bottles, a cap-applying head having means for engaging the cap and the usual clamping-ring thereof, and imparting a relative movement thereto.

14. In a machine for capping bottles, a cap-applying head having means for engaging the cap and forcing it upon a bottle, and means for engaging the clamping-ring and applying a final rotary movement thereto.

15. In a machine for capping bottles, a vertically-movable main operating-spindle having a cap-applying head at its lower end, means for receiving a bottle in alinement with said spindle, and means whereby a cap having a clamping-ring is initially pressed and the ring subsequently locked upon the bottle.

16. In a machine for capping bottles, a vertically-reciprocating main operating-spindle, a shaft guided therein and normally spring-pressed downward, a cap-applying head secured to said shaft, and means whereby the reciprocations of said main operating-spindle initially press the cap-applying head upon a bottle and subsequently rotate it.

17. In a machine for capping bottles, a reciprocating main operating-spindle, and a shaft having a cap-applying head guided to move initially rectilinearly and subsequently rotarily within said main operating-spindle.

18. In a machine for capping bottles, a reciprocating main operating-spindle having an axially-movable core spring-pressed outward therefrom and carrying a cap-applying head, and means whereby the core is first pressed inward and subsequently turned when the cap is applied to a bottle.

19. In a machine for capping bottles, a reciprocating main operating-spindle having a shaft spring-pressed outward therefrom and adapted to have a rectilinear and subsequent circumferential movement, and carrying a cap-applying head, whereby the head is initially pressed and subsequently turned in applying a cap upon a bottle.

20. In a machine for capping bottles, a reciprocating main operating-spindle having a shaft spring-pressed outward therefrom and carrying a cap-applying head, and cam means for imparting an initial pressing and subsequent rotary movement to said cap-applying head.

21. In a machine for capping bottles, a hollow reciprocating spindle having a cam-groove in its wall, and a shaft spring-pressed outward from said spindle and carrying a cap-applying head, and engaged by said cam-groove whereby it has an initial pressing and subsequent rotary movement.

22. In a machine for capping bottles, a reciprocating hollow spindle having a cam-groove in its wall, a shaft having a cap-applying head spring-pressed outward from said spindle and guided by said cam-groove, and an anti-friction-bearing at the end of said shaft to permit revoluble movement.

23. In a machine for capping bottles, a reciprocating spindle having a cam-groove and a cap-applying head guided by said spindle and groove to have an initial pressing and subsequent rotary movement.

24. In a machine for capping bottles, a reciprocating spindle having a shaft spring-pressed outward therefrom, and a cap-applying head on said shaft and having a frictionally-engaged independently-revoluble housing.

25. In a machine for capping bottles, a reciprocating spindle having a cam-groove, a cap-applying head guided by said groove to have an initial pressing and subsequent rotary movement, and a pawl-carrying housing adapted to have a rotary movement frictionally imparted to it.

26. In a machine for capping bottles, a reciprocating spindle having a spring-pressed shaft carrying a cap-applying head, said cap-applying head having a central swivel bearing-plate, and an outside housing adapted to be frictionally rotated thereby.

27. In a machine for capping bottles, a vertically-reciprocating spindle having a cap-applying head in spring-pressed engagement therewith, said cap-applying head having a housing frictionally engaged thereto, whereby rotary movements of the cap-applying head are non-positively imparted to said housing.

28. In a machine for capping bottles, a cap-applying head having a revoluble housing arranged to frictionally rotate therewith, and means for adjusting the degree of the frictional engagement.

846,219. GUARD FOR TAKE-UP MECHANISMS FOR LOOMS. LOUIS LABEAU, Briggsville, Mass. Filed May 24, 1906. Serial No. 318,479.

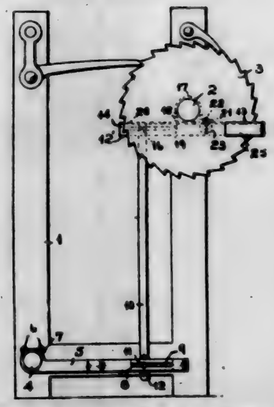

Claim.—1. In a loom, a take-up mechanism, and an oscillating guard for said mechanism.

2. In a loom, a take-up gear, and a reciprocating guard for said gear.

3. In a loom, a take-up gear, and an oscillating guard for said gear.

4. In a loom, a take-up gear, a shaft, a swinging guard for said gear, and means for imparting the motion of said shaft to said guard.

5. In a loom, a take-up gear, a rock-shaft, a guard mounted for oscillation adjacent to said gear, and operative connections between said guard and said rock-shaft.

6. In a loom, a take-up gear, a rock-shaft, a pivotally-mounted guard-lever for said gear, an arm upon said rock-shaft, and a connection between said lever and said arm.

7. In a loom, a take-up gear, an oscillatory guard for said gear, a rock-shaft, and adjustable connections between said shaft and said guard.

8. In a loom, a take-up gear, an adjustably-mounted oscillatory guard-lever for said gear, and means for operating said lever.

9. In a loom, a take-up gear, a pivot, a guard-lever for said gear, means for adjustably mounting said lever upon said pivot, and means for operating said lever.

10. In a loom, a take-up gear, a pivot, a guard-lever for said gear, means for adjustably mounting said lever upon said pivot, and a driving connection adjustably connected to said lever.

846,220. WRENCH. BENJAMIN N. LEHMAN, FRANK COOK, and JAMES ROBERTSON, Eureka, Utah. Filed Mar. 22, 1906. Serial No. 307,392.

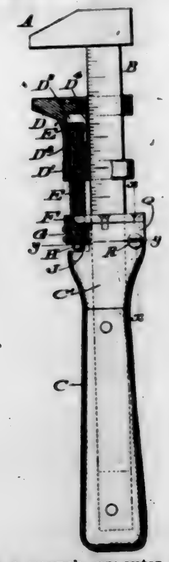

Claim.—1. In a wrench, an outer jaw, a movable jaw, a handle, a shank on said jaw, the same being telescopically received in said handle and having serrations in its side, a head on said handle, the same having a recess therein, an offset on said head, the same having a recess at an angle to that of said head, a dog disposed in the recess of said head, and adapted to engage either of said recesses, a stem extending angularly from said dog and occupying the recess of said offset, a button connected with said stem and a spring pressing outwardly against said button and occupying the recess of said offset.

2. In a wrench, a handle, a movable jaw, an outer jaw, its shanks telescopically received in said handle, a head on said handle having an offset, a dog disposed in a recess in said head and having an angularly-disposed stem passed transversely through said offset, and a spring-pressed button movable in said offset and detachably connected with said stem, and the dog being removably held thereby in the handle.

3. In a wrench, a handle, a movable jaw, an outer jaw, its shank telescopically received in said handle, a head on said handle having an offset, a dog disposed in a recess in said head and having an angularly-disposed stem passed transversely through said offset, and a spring-pressed button movable in said offset and being detachably connected with said stem, and the dog removably held thereby in the handle, and engaging the side of the shank opposite that upon which the button is disposed.

4. In a wrench, a handle, an outer jaw, its shank telescopically received in the handle, a head and an offset on the handle, a movable jaw loosely movable on said shank and chambered, and a screw engaged with the movable jaw in said chamber and with means on the handle, with the end of the screw engaging a shoulder on the head of the handle.

5. In a wrench, a handle, an outer jaw, its shank telescopically received in the handle, a head and an offset on the handle, a movable jaw loosely movable on said shank and chambered, a screw engaged with the movable jaw in said chamber and with means on the handle, with the end of the screw engaging a shoulder on the head of the handle, and a boss on the handle on which said screw is swiveled.

6. In a wrench, a handle, an outer jaw, its shank telescopically received in the handle, a head and an offset on the handle, a movable jaw loosely movable on said shank and chambered, a screw engaged with the movable jaw in said chamber and with means on the handle, with the end of the screw engaging a shoulder on the head of the handle, and a boss on the handle on which said screw is swiveled, said boss being detachably secured to the handle and its offset.

7. In a wrench, a handle, an outer jaw, its shank telescopically received in the handle, a head and an offset on the handle, a movable jaw loosely movable on said shank and chambered, a screw engaged with the movable jaw in said chamber and with means on the handle, with the end of the screw engaging a shoulder on the head of the handle, a boss on the handle on which said screw is swiveled, said boss being detachably secured to the handle and its offset, and a thumb-piece on said screw between said shoulder and boss.

8. In a wrench, a jaw, a shank on which the same is freely mounted, a nut, a piece connecting said jaw and nut, the same having a chamber therein, a screw held against longitudinal movement and fitted in said nut and adapted to enter said chamber, and a head on said screw within said chamber of greater diameter than the bore of said nut, a wall of said piece having a passage therein in communication with said chamber, said screw being independent of said shank.

846,221. FLUSHING-TANK VALVE. WILLIAM H. LUDEWIG, Rock Island, Ill. Filed May 31, 1906. Serial No. 319,584.

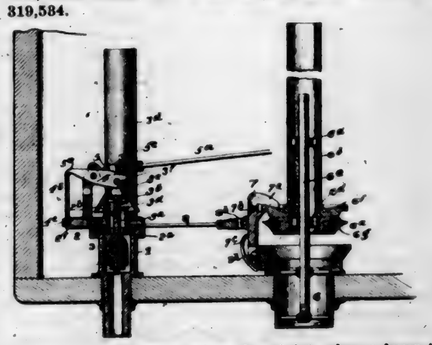

Claim.—1. The combination of an inlet-valve, a lever to which the valve is pivotally connected, a catch for locking said valve open, a float, a float-lever adapted to open the valve when the float descends, and a trip operated by said float-lever for disengaging the catch when the float rises to the proper water-level.

2. The combination of a valve-casing, a valve therein, means for closing the valve, a rocking lever to which the valve-stem is pivotally connected, a catch for locking said lever to hold the valve open, a float, a float-lever adapted to open the valve when it descends, and means operated by said float-lever for disengaging the catch when the float rises to the proper water-level.

3. In combination, an inlet-valve, an oscillating lever pivotally connected to the valve-stem, a spring-catch engaging the lever to hold the valve in open position, a second lever, a float connected therewith, means whereby the float-lever causes the opening of the valve when the float descends, and a tripping-finger on said float-lever adapted to disengage the catch from the first lever and permit the valve to close when the float rises to the proper point.

4. The combination of a valve-casing, an oscillating lever pivoted on said casing, an inlet-valve having its stem pivotally connected to said lever, a catch adapted to lock the valve in open position, a second lever pivoted beside the first lever, a float connected with said second lever, the second lever being adapted to engage the first lever and open the valve when the float descends, and a tripping device on the second lever adapted to release the valve-catch when the float rises.

5. The combination of a valve-casing, an oscillating lever pivoted on said casing, an inlet-valve having its stem pivotally connected to said lever, a spring-catch adapted to lock the lever when the valve is open, a second lever pivoted beside the first lever, a float connected with said second lever, an adjusting device on the second lever adapted to engage the first lever, and open the valve when the float descends, and an adjustable tripping device on the second lever adapted to disengage the catch from the first lever when the float rises.

6. The combination of a valve-casing, a lever pivoted on the upper part of said casing, a valve-stem pivotally connected to one end of said lever, a valve on said stem; a spring for closing said valve, a float-lever pivoted beside the first lever, a float adapted to cause the float-lever to actuate the first lever when the float descends, a spring-catch for locking the valve-lever when the valve is opened, and means for disengaging the catch from the valve-lever when the float rises.

7. The combination of a two-part valve-casing, a lever pivoted on the upper part of said casing, a valve-stem pivotally connected to one end of said lever, a valve on said stem, a spring for closing said valve, a float-lever pivoted beside the first lever, a float adapted to cause the float-lever to actuate the first lever when the float descends, a spring-catch for locking the valve-lever in opened position, and a tripping device adjustably attached to said float-lever adapted to disengage the catch from the valve-lever when the float rises.

8. In a tank inlet-valve, the combination of a casing having a valve-seat, a valve-stem, a dispersing skirt-flange on said stem above the seat, and a valve on said stem; with an oscillating lever from which the valve-stem is suspended, a spring-catch for locking said lever when the valve is open, an oscillating float-lever pivoted beside the first lever adapted to engage the latter when the float descends and open the valve, and a tripping device adapted to disengage said catch from the lever when the float rises to the desired point.

9. In a tank inlet-valve, the combination of a valve-casing having a valve-seat, a valve-stem passing through said seat, a dispersing-flange on said stem above the seat, a valve on said stem below said flange, and a spring for closing the valve; with an oscillating lever from which the valve-stem is suspended, a spring-catch for locking said lever when the valve is open, an oscillating float-lever pivoted beside the first lever, a device on said lever adapted to engage the first lever when the float descends and open the valve, and an adjustable tripping device on the float-lever adapted to disengage said catch from the first lever when the float rises to the desired point.

846,222. FLAG-HOLDER. NANCIE S. MAKEPEACE, Dayton, Ohio. Filed Dec. 6, 1906. Serial No. 346,592.

Claim.—1. A flagstaff-holder comprising a standard provided with longitudinal slots adapted to receive flagstaffs, a transverse slot communicating with said longitudinal slots, and a locking-bar adapted to engage the ends of said staffs within said transverse slot, substantially as shown and described.

2. A flagstaff-holder comprising a standard having slots arranged at an inclination to the central longitudinal line of said standard, a transverse slot communicating with said inclined slots, and a locking-bar arranged within said transverse slot, substantially as shown and described.

3. A flagstaff-holder comprising a standard having a beveled end and longitudinal slots adapted to receive flagstaffs, a transverse slot communicating with said longitudinal slots, and a locking-bar arranged within said transverse slot, substantially as shown and described.

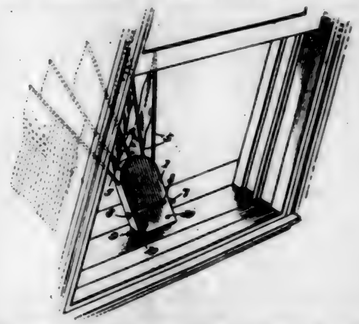

4. A flagstaff-holder comprising a standard having a beveled end, and slots arranged at an inclination to the central longitudinal line of said standard, a transverse slot communicating with said inclined slots, and extending only part way through said standard, and a locking-bar arranged within said transverse slot, substantially as shown and described.

5. The combination with a plurality of flagstaffs having screw-eyes connected with their ends, of a standard provided with slots adapted to receive said flagstaffs and arranged at an inclination to the central longitudinal line of said standard, a transverse slot communicating with said inclined slots, and a locking-bar arranged within said transverse slots and adapted to engage the screw-eyes of said flagstaffs therein, substantially as shown and described.

846,223. MEANS FOR MAINTAINING CONSTANT THE VOLTAGE OF AN ELECTRIC CIRCUIT. THOMAS MARSHALL, Chicago, Ill. Filed Jan. 10, 1907. Serial No. 351,683.

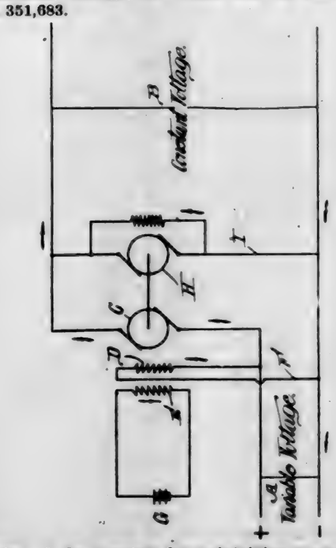

Claim.—1. In a system for maintaining a constant voltage in an electric circuit, the combination of a variable-voltage circuit, a generator having a field connected across the variable-voltage circuit, a constant-voltage circuit connected with the generator and the variable-voltage circuit, and an unvarying field opposing or neutralizing the first said field.

2. In a system for maintaining a constant voltage in an electric circuit, the combination of a variable-voltage circuit, a generator having a field connected across the variable-voltage circuit, a constant-voltage circuit connected with the generator and the variable-voltage circuit, a second field arranged to oppose the first said field, and a constant-potential circuit supplying the second said field.

3. In a system of maintaining a constant voltage in an electric circuit, a generator having a field connected across the variable-voltage circuit, a constant-voltage circuit connected with the generator and the variable-voltage circuit, an unvarying field opposing or neutralizing the first said field, and a motor for driving the generator connected with the constant-voltage circuit.

846,224. CHAMBER, SLOP-JAR, AND THE LIKE. CHRISTIAN W. MEINECKE, Jersey City, and DANIEL HOGAN, Hoboken, N. J., assignors to Whitall Tatum Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 5, 1906. Serial No. 346,492.

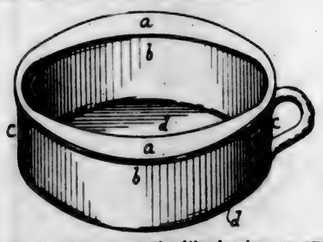

Claim.—1. A chamber or the like having an oval opening, and outwardly-extending flanges tapering toward each end of the opening.

2. A chamber or the like having an oval opening, outwardly-extending flanges and a belly or projection on each side under each flange.

3. A chamber or the like having an ovel opening, and outwardly-extending flanges, both ends of the chamber having straight walls.

4. A chamber or the like having an oval opening and outwardly-extending flanges diminishing in size to both or one end of the chamber.

5. A chamber or the like having an outwardly-extending flange or flanges and an oval opening.

6. A chamber or the like having an oval opening outwardly-extending flanges and a round body portion.

846,225. WELL-PUMP. AUGUSTUS L. MEDLOCK, Stratford, Tex. Filed Oct. 16, 1905. Serial No. 282,953.

Claim.—1. In a well-pump, the combination with an outflow-pipe having a pump-cylinder and piston arranged therein, of a strainer, a suction-tube communicating at its lower end with the bottom portion of the strainer, a sealing-coupling between the upper end of said suction-tube and the outflow-pipe, and a sealing connection between said coupling and the pump-cylinder.

2. In a well-pump, the combination of an outflow-pipe having pumping mechanism arranged therein, of a strainer, a junction-pipe fitting within the outflow-pipe, a coupling member connecting the strainer and junction-pipe, and a suction-tube supported within the strainer by the coupling member and communicating at its lower end with the strainer and at its upper end with the junction-pipe.

3. In a well-pump, the combination with an outflow-pipe having pumping mechanism arranged therein, of a strainer, a suction-pipe communicating with the lower portion thereof, a junction-pipe connected with the suction-pipe, and a sealing connection between said junction-pipe, and the outflow-pipe.

4. An attachment for well-pumps comprising a strainer, a junction-pipe, a ported coupling connecting said elements, and a suction-tube within the strainer carried by said coupling.

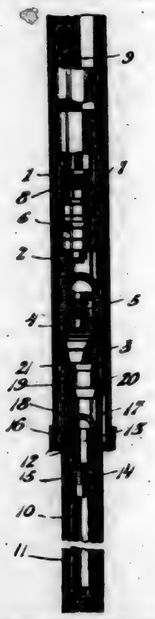

5. An attachment for well-pumps comprising a strainer, a junction-pipe provided at its upper end with a countersunk external gasket, a ported coupling connecting the strainer and junction-pipe, and a suction-tube supported by the coupling within the strainer.

6. An attachment for well-pumps comprising a strainer, a suction-tube disposed therein, and a coupling member connected with the suction-tube and adapted to have a sealing connection with the outflow-pipe.

7. In combination, a strainer, a suction-tube communicating with the lower portion thereof, a connecting junction-pipe, and means for securing a sealing connection between said pipe and the outflow-pipe of a pumping mechanism.

8. In a well-pump, a strainer, a suction-tube communicating with the lower portion thereof, a junction-pipe connected with the tube and adapted to fit within the outflow-pipe of the pumping mechanism, and means for establishing a sealing connection between said junction-pipe and the cylinder of the pumping mechanism.

9. In a well-pump, the combination with an outflow-pipe having a pump-cylinder and piston arranged therein, of a strainer, a suction-tube communicating at its lower end with the bottom portion of the strainer, a coupling connection between the upper end of said suction-tube and the outflow-pipe, said connection having a flared portion provided with a packing engaging the wall of the pipe, and a sealing connection fitted in said flared portion of the coupling and receiving the lower end of the pump-cylinder.

11. In a well-pump, the combination with a flow-pipe pipe having pumping mechanism arranged therein, of a strainer, a suction-tube arranged within the strainer, and a coupling member connecting said strainer with the pumping mechanism, said coupling member forming a seal joining the tube and pumping mechanism to form an air-tight joint.

11. In a well-pump, the combination with a flow-pipe having a cylinder and piston arranged therein, of a strainer, a suction-tube arranged within the strainer, a coupling member at the upper end of said tube inserted

within the flow-pipe and forming a seal engaging the wall thereof, and a gasket fitting within said coupling member and about the lower end of the cylinder.

12. In a well-pump, the combination with a flow-pipe having pumping mechanism therein, of a strainer, a suction-tube arranged within the strainer and having a coupling member extending upwardly into the flow-pipe, said coupling member being frictionally fitted within the pipe, and a sealing connection between said coupling member and the pumping mechanism.

13. An attachment for well-pumps comprising a suction-tube adapted to fit within the strainer, and a coupling frictionally engaging the interior of said pipe connecting the tube therewith, said coupling having a sealing connection with the pumping mechanism for the formation of a vacuum within the tube, said coupling member and connection being disposed within the lower end of the pipe and removable therefrom.

14. In a well-pump, the combination with a flow-pipe having pumping mechanism arranged therein, of a strainer, a suction-tube arranged within the strainer and composed of a plurality of sections, a coupling connecting said sections for longitudinal adjustment, and means for establishing a sealing connection between the upper end of said tube and the pumping mechanism.

846,226. WELL-TUBE. AUGUSTUS L. MEDLOCK, Midland, Tex. Filed Aug. 4, 1906. Serial No. 329,205.

Claim.—1. In a well-pump, the combination with an outflow-pipe having pumping mechanism arranged therein, of a strainer fitted at its upper end in the outflow-pipe, a suction-tube arranged within the strainer and projecting at its upper end therefrom, said suction-tube being provided at its upper end with a flared portion bearing against the upper end of the strainer and a cylindrical portion provided with a packing bearing against the pipe, and a gasket fitted within said cylindrical portion and forming a sealing connection between the suction-tube and pumping mechanism.

2. In a well-pump, the combination with a flow-pipe having pumping mechanism arranged therein, of a strainer fitted at its upper end within the flow-pipe, a suction-tube arranged within the strainer and projecting at its upper end above the upper end of the strainer and provided with a packing engaging the wall of said pipe, and a sealing connection between said upper end of the tube and the cylinder of the pumping mechanism.

3. In a well-pump, the combination with a flow-pipe having pumping mechanism arranged therein, of a strainer frictionally supported at its upper end within the flow-pipe, a suction-tube arranged within the strainer and extending above the same, the upper end of said tube having a frictional packing engagement with the wall of the pipe, and a sealing connection between the said upper end of the tube and the pumping mechanism.

4. In a well-pump, the combination of an outflow-pipe, a cylinder arranged therein and having an inwardly-tapered lower end, a bottom check-valve and a working piston arranged in said cylinder, a strainer having its upper end outwardly flared and fitted in the outflow-pipe, a suction-tube extending upwardly through the strainer and having a flared portion bearing on the flared end of the strainer and a cylindrical portion provided with packing bearing against the outflow-pipe, and a coupling-gasket having a flared upper portion receiving the flared lower end of the cylinder, and a cylindrical portion fitting within the cylindrical portion of the suction-tube.

5. In a well-pump, the combination with a flow-pipe having pumping mechanism arranged therein, of a strainer frictionally fitting at its upper end in the flow-pipe, a suction-tube arranged within the strainer and composed of longitudinally-adjustable sections, the upper section having its upper end projecting above the strainer and provided with a sealing-packing engaging the wall of the pipe, and a sealing connection between said upper end of the suction-tube and the cylinder of the pumping mechanism.

6. In a well-pump, the combination of an outflow-pipe, a strainer, a suction-tube arranged therein, the upper ends of the strainer and suction-tube being fitted within the flow-pipe for independent support therefrom, and a sealing connection between the upper end of the suction-tube and the cylinder of the pumping mechanism.

7. In a well-pump, the combination with an outflow-pipe having pumping mechanism arranged therein, of a strainer having its upper end fitted within the pipe, a longitudinally-adjustable suction-tube arranged within the strainer and having its upper end projecting above the same, the said upper end of the suction-tube being enlarged to form a coupling provided with a packing engaging the pipe, and a gasket forming a sealing connection between said coupling and the cylinder of the pumping mechanism.

846,227. ELECTRIC MOTOR. DAVID MENDELSON, Brooklyn, N. Y. Filed Jan. 25, 1907. Serial No. 354,035.

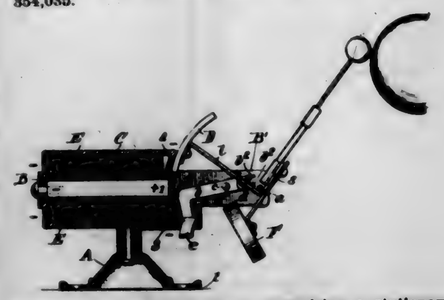

Claim.—1. An electric motor, comprising a stationary electromagnet constructed with three poles, a vibrating armature moving about a center in front of the electromagnet across the pole-faces of the electromagnet and an automatic circuit-closing switch.

2. An electric motor, comprising a stationary electromagnet constructed with three poles having a concave face, a vibrating armature pivoted on an axis beyond the end and in front of the electromagnet and having a convex face arranged to move across the triple pole-faces and an automatic circuit-closing switch.

3. An electric motor, comprising a stand, a horizontal electromagnet constructed with three pole-faces and stationarily mounted upon the stand, a horizontal two-branched frame attached to the electromagnet and extending beyond the same, a rock-shaft arranged in bearings in the outer ends of the branches of the frame, and having a rigidly-attached and inwardly-projecting arm bearing a convex-faced armature playing across the triple pole-faces of the electromagnet and an automatic circuit-closing switch.

4. An electric motor, comprising an electromagnet having a supporting-frame, a vibrating armature with a tappet projection and a switch having two pins arranged on opposite sides of the armature-tappet, the switch being composed of two expanding flat springs binding with a frictional contact against the adjacent stationary surfaces to remain in the position to which it may be adjusted until moved again.

5. An electric motor, comprising a base, two horizontal frame-bars having between them a stationary electromagnet supported upon said base, a vibrating armature arranged in front of the poles of the electromagnet and a circuit-closing switch operated by the swing of the armature.

6. An electric motor, comprising a base, two horizontal frame-bars having between them a stationary electromagnet, an armature pivoted to swing across the end of the electromagnet, a circuit-closing switch operated by the swing of the armature and a weighted arm attached to the armature to balance same and start it back after being advanced.

7. An electric motor, comprising a vibrating armature, a fixed electromagnet, a circuit-closing switch operated by the oscillations of the armature and means for holding the circuit-closing switch closed when motor is at rest to enable it to be self-starting.

846,228. STEP-LADDER. ELLIS W. MILLER, Greensburg, Ind., assignor of one-half to John Batterton, Greensburg, Ind. Filed Jan. 18, 1906. Serial No. 295,938.

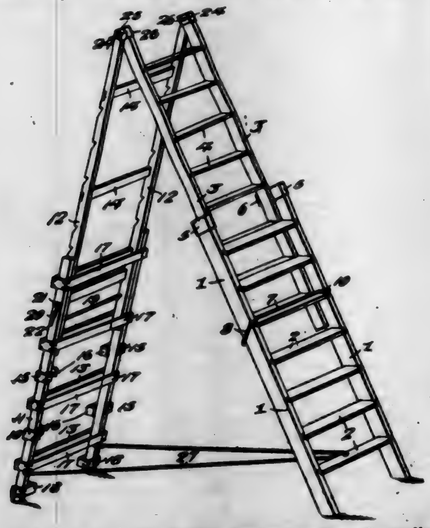

Claim.—1. In a step-ladder, the combination of parallel main braces provided with notches, parallel extension-braces also provided with notches and arranged to slide in contact with the inner surfaces of the main braces, and a ball-shaped catch terminally connected pivotally to one set of braces and extending across all the braces and adapted to engage the notches in the braces, substantially as described.

2. In a step-ladder, parallel side bars connected by treads or steps, clips secured to said bars and provided with angular hooks parallel extension-bars connected by treads or steps and mounted to slide between and in contact with the main side bars and rest against the treads or steps which connect the main side bars, and a catch comprising a straight central portion which is adapted to rest upon and extend lengthwise of the upper side of one of the steps of the lower ladder-section, said catch comprising terminal arms which are pivotally connected to the extension-bars and which are bent to embrace the main side bars, substantially as described.

846,229. WAGON. JOSEPH H. MONTGOMERY, Puerto de Luna, N. Mex. Filed Nov. 16, 1905. Serial No. 287,640.

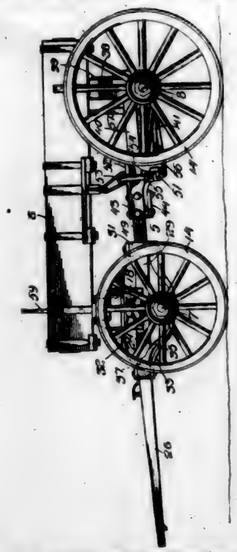

Claim.—1. In a vehicle, the combination with front and rear axles, of wheels revolubly connected with the axles, a sand-board secured upon the front axle, a bolster pivotally mounted upon the sand-board, hounds engaged between the sand-board and front axle and extending forwardly and rearwardly therebeyond, a cross member secured to the rearward ends of the hounds, a tongue pivoted between the forward ends of the hounds, said transverse member having a longitudinal horizontal slot therein, a member secured to the axle and extending forwardly and rearwardly therebeyond, said forwardly-extending portion being disposed for engagement by the tongue to limit the movement of the latter in one direction, and a reach-pole pivoted to the rearward portion of the second-named member and adjustably connected with the rearward axle, said reach-pole extending through the slot of the horizontal member.

2. In a vehicle, the combination with front and rear axles, of wheels revolubly connected with the axles, a sand-board secured upon the front axle, a bolster pivotally mounted upon the sand-board, hounds engaged between the sand-board and front axle and extending forwardly and rearwardly therebeyond, a cross member secured to the rearward ends of the hounds, a tongue pivoted between the forward ends of the hounds, said transverse member having a longitudinal horizontal slot therein, a

member secured to the axle and extending forwardly and rearwardly therebeyond, said forwardly-extending portion being disposed for engagement by the tongue to limit the movement of the latter in one direction, a reach-pole pivoted to the rearward portion of the second-named member and adjustably connected with the rearward axle, upper and lower pairs of braces secured to the transverse member and to the hounds, and supplemental braces secured to the axle and to the hounds, said reach-pole extending through the slot of the horizontal member.

846,230. HINGED POST FOR LOOSE-LEAF BINDERS. LUCENA M. MORDEN, Waterbury, Conn. Filed Feb. 26, 1904. Serial No. 195,409.

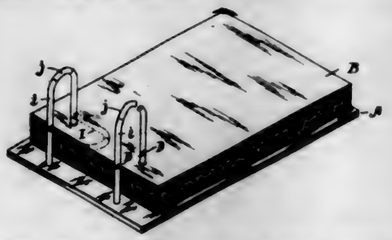

Claim.—1. A post for a paper-file having a plurality of sections each formed with lapped ends at the joint, with one of such ends squared transversely to form corners, the adjacent part having a tubular socket with spring therein, and a loose plug adapted to bear upon such corners to hold the post in a straight or flexed position, as desired.

2. In a paper-file, the combination, with a suitable base, of a pair of hinged posts adapted to receive suitably-perforated sheets of paper, a pair of adjacent supports with arms movable to and from the said posts to secure the papers thereon, and such support and post hinged to bend downward over the pile of papers when required.

3. In a paper-file, the combination, with a post for holding perforated papers together, of a support having integral connection at the base with the post, an arm upon such support movable to and from the said post to secure the papers thereon, and such post and support hinged to bend downward over the pile of papers when required.

4. In a paper-file, an endless link having parallel sides forming a post for holding perforated papers together and a support adjacent to such post, one end of the link forming an integral connection between such post and support, and the other end of the link formed as a movable arm, the post and support being jointed laterally to bend down upon the papers when required.

846,231. LOCK. THOMAS S. MORTON, Quincy, Ill. Filed Oct. 13, 1905. Serial No. 282,572.

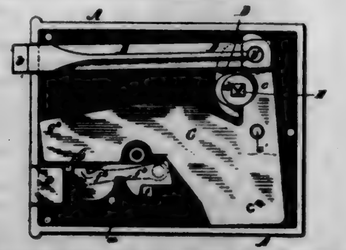

Claim.—The improved lock comprising a casing, a sliding latch, and the gravity member C made approximately T shape and pivoted in the middle of its head and below the pivotal connection of the same with said latch, its pendent portion extending below the pivot and below the plane of the lateral arm c^2, as shown and described.

846,232. RESERVOIR-BLEEDER. JOHN E. MOURNS and HOMER J. TINSLEY, Chillicothe, Ohio. Filed Apr. 26, 1906. Serial No. 313,899.

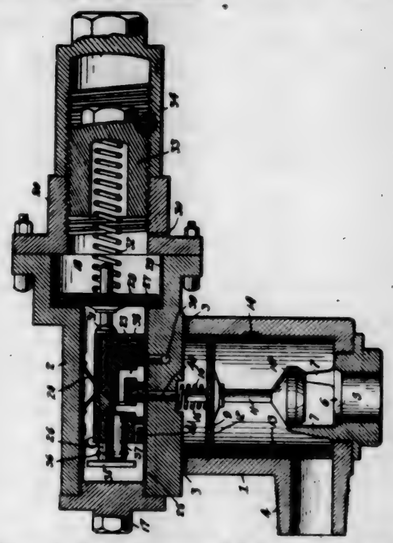

Claim.—1. In an apparatus of the character described, a main reservoir having a drain connection, a valve for controlling the latter, means for actuating said valve, a movable element actuated in one direction by the pressure in said reservoir, a spring for actuating said element in the reverse direction, and means carried by said element for controlling the operation of said valve-actuating means.

2. A device of the character described comprising a casing having communicating chambers, one of said chambers having an outlet and a drain connection, and the other an inlet connection and an exhaust-port, a valve for controlling said outlet, a piston for operating said valve, a valve for controlling the communication between said chambers and said exhaust-port, a piston for actuating the last-mentioned valve, and a spring for actuating the last-mentioned piston.

3. A device of the character described comprising a casing having communicating chambers, one of said chambers having an outlet and a drain connection, and the other an inlet connection and an exhaust-port, a valve for controlling said outlet, a piston for operating said valve, a valve for controlling the communication between said chambers and said exhaust-port, a piston for actuating the last-mentioned valve, a spring for actuating the last-mentioned piston, and means for regulating the tension of said spring on said piston.

4. A device of the character described comprising a casing having communicating chambers, one of said chambers having an outlet and a drain connection, and the other an inlet connection and an exhaust-port, a valve for controlling said outlet, a piston upon the stem of said valve and adapted to slide in the first-mentioned chamber, the latter having an equalizing-port to equalize the pressure upon opposite sides of said piston, a spring for actuating said valve and piston, a slide-valve in the other of said chambers having a feed-passage and an exhaust-passage to coact with said exhaust-port and the passage affording communication between said chambers, a stem having a limited sliding movement in said slide-valve, a valve carried by said stem and slidable in said slide-valve to open and close said exhaust-passage, a piston upon the stem of said slide-valve, a spring for actuating the last-mentioned stem and piston in one direction, and means for regulating the tension of the last-mentioned spring, substantially as described.

846,233. SIGN-PAINTING PROCESS. THEODORE MUNNECKE, New York, N. Y. Filed Feb. 23, 1906. Serial No. 302,498.

Claim.—1. The process of forming characters on a surface which consists in applying a material adhering to the said surface, covering the same with a facing-sheet rendered adhesive by heat, backing said facing-sheet with a backing-sheet and applying heat to said backing-sheet to effect an adhesion between said facing-sheet and said material.

2. The process of forming characters on a surface which consists in applying a material adhering to said surface, covering the same with a composite sheet having a facing-sheet rendered adhesive by heat and a backing-sheet substantially unaffected by heat, and applying a heated body to said backing-sheet to effect an adhesion of said facing-sheet to said material.

3. The process of painting signs or characters upon glass, which consists in forming a character of leaf, applying a composite sheet over said leaf, said composite sheet consisting of a layer of tin-foil disposed outermost and a sheet of rubber tissue disposed inwardly and pressing the face of said tin-foil thereafter with a heated object, to effect an adhesion between the tissue and the leaf.

846,234. FLUE-CLEANER. WILLIAM J. MCCORMICK, Trivoli, Ill. Filed July 11, 1906. Serial No. 325,672.

Claim.—A device of the class described comprising a handle having a flattened head, a pair of forwardly-projecting spring-arms having their rear ends arranged to bear on opposite sides of the head, one of said arms being provided with a rearwardly-opening slot, fastening-bolts entered through the head within said slot and adapted for detachably connecting the slotted arm with the handle and outwardly-projecting scraper-blades attached to the forward ends of the arms.

846,235. SLIDING-DOOR FASTENER. JOHN A. MCPHAYDEN, Evansville, Ind. Filed July 16, 1906. Serial No. 326,527.

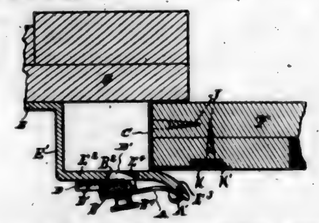

Claim.—1. In a device of the character described, the combination with a support and a slidable door, of a stop-plate provided with an outwardly-curved end, secured to said support, said curved end provided with an aperture formed contiguous to its outer end, a removable spring extending parallel with the outwardly-curved end of said stop-plate, fastening means positioned within the aperture of the stop-plate and fixedly securing one end of said spring to said stop-plate, a block formed upon said spring and extending through the stop-plate, a dog carried by said stop-plate and adapted to engage the block for holding the same in an inoperative position, said door provided with a recess, and the block adapted to be positioned within the recess for locking said door in an adjusted position.

2. In a device of the character described, the combination with a support and a movable door, of an angular protecting-plate provided with an aperture, secured to said door, said door provided with a recess registering with the aperture of said protecting-plate, a stop-plate secured to said support, said stop-plate comprising a base, a right-angled extension integral with said base, an outer extension integral with said right-angled extension, said outer extension provided with an aperture near one end and with an aperture intermediate its ends, a removable spring in engagement with said outer extension, a screw engaging said spring and positioned within the aperture near the end of the outer extension, a block integral with said spring and extending through the other aperture, said block adapted to be positioned within the aperture of the protecting-plate and within the recess of said door for securing the door in an adjusted position, and a dog secured to the outer extension and adapted to be positioned between the outer extension and the spring, in engagement with the block for holding the same in an inoperative position.

3. In a device of the character described, the combination with a support and a movable door, of a stop-plate provided with an aperture, secured to said support, said door provided with a recess adapted to register with the aperture of said stop-plate, a removable spring fixedly secured at one end to said stop-plate, a block secured to said spring intermediate its ends, said block extending through the aperture of said stop-plate and adapted to be positioned within the recess of said door for securing said door in an adjusted position, a dog secured to said stop-plate contiguous to said spring and adapted to be positioned between the stop-plate and the spring against said block for holding the same in an inoperative position.

4. In a device of the character described, the combination with a support and a movable door, of a stop-plate provided with an aperture, secured to said support, a removable spring fixedly secured at one end to the outer end of said stop-plate, a block integral with said spring and normally positioned within the aperture of said stop-plate, a removable thumb-screw carried by said spring and block, and a dog carried by said stop-plate and adapted to

be positioned between said spring and stop-plate for holding said block in an inoperative position.

5. In a device of the character described, the combination with a support, of a stop-plate secured to said support, said stop-plate provided with an outer extension positioned parallel with said support, a movable door adapted to be positioned between the outer extension of said stop-plate and said support, said stop-plate provided with an aperture, said door provided with a recess adapted to register with said aperture, a removable spring extending across the aperture of and fixedly secured at one end to the stop-plate, a block secured to said spring intermediate its ends and extending through the aperture of the stop-plate and adapted to be positioned within the recess of the door for securing the door in a locked position, and a dog carried by the outer extension of said stop-plate, contiguous to said spring and adapted to be positioned between the spring and stop-plate for holding said block in an inoperative position.

846,236. BEDSTEAD. NELLIE B. NOBLE, Ithaca, N. Y. Filed Oct. 29, 1903. Renewed Feb. 6, 1907. Serial No. 356,098.

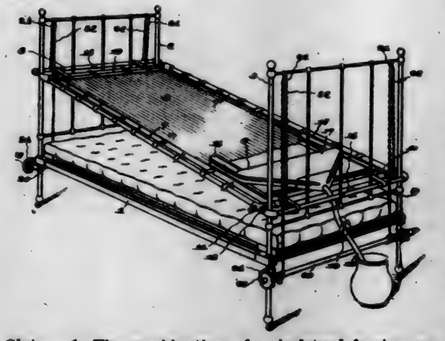

Claim.—1. The combination of a bedstead having uprights at its ends and a support for a patient, said support being supported by the bedstead and removable as a whole therefrom and being provided with means coacting with the uprights for limiting the movement of the support longitudinally and laterally, substantially as and for the purpose specified.

2. The combination of a bedstead having uprights at its ends and a support for a patient, said support being connected to the bedstead and separable as a whole therefrom, and being provided at its opposite ends with openings, the inner side walls of the openings being opposed to opposite side surfaces of the uprights and the inner end walls of the openings being opposed to opposite end surfaces of the uprights, substantially as and for the purpose described.

3. The combination with a metallic bedstead having head and foot uprights comprising vertically-arranged standards and upper and lower cross-rails; of a movable support comprising side bars, end bars arranged within the upright standards, supporting means secured at its edges to the side and end bars, and additional end bars arranged to the outside of the uprights and connected to the side bars; drums provided on the bedstead; pulleys supported by the upper cross-rails of the uprights; and flexible connections having corresponding ends connected to the drums, their intermediate portions passing between the first-named end bars of the support and the additional end bars and passing over the pulleys, and their other ends connected to the additional end bars, substantially as described.

4. The combination of a supporting-frame, a movable frame comprising side bars, outer cross-bars, inner cross-bars having their outer surfaces separated from the inner side surfaces of the outer cross-bars, one of the inner cross-bars being revoluble relatively to the side bars, clutch-sections provided on the revoluble bar and one of the other bars, a spring for engaging the clutch-sections, supporting means secured to a fixed part of the movable frame and to the revoluble inner cross-bar, and means connected to the frames for holding the movable frame in its adjusted position, substantially as described.

5. The combination of a supporting-frame, a movable frame comprising side bars and cross-bars, one of the bars being revoluble and movable endwise relatively to the others, clutch-sections provided on the revoluble bar and one of the other bars, a spring for engaging the clutch-sections, supporting means secured to a fixed part of the movable frame and to the revoluble bar, and means connected to the frames for holding the movable frame in its adjusted position, substantially as and for the purpose described.

6. The combination of a supporting-frame, a movable frame comprising side bars, outer cross-bars, inner cross-bars having their outer side surfaces separated from the inner side surfaces of the outer cross-bars, one of the inner cross-bars being revoluble relatively to the side bars means for holding the revoluble inner cross-bar in its adjusted position, supporting means secured to a fixed part of the movable frame and to the revoluble inner cross-bar, and means connected to the frames for holding the movable frame in its adjusted position, substantially as and for the purpose specified.

7. The combination of a supporting-frame having separated uprights, a movable frame comprising side bars having opposing surfaces of their extremities at the outside of the ends of the uprights, and outer and inner cross-bars at opposite sides of said uprights, supporting means secured to the movable frame, and means connected to the frames for holding the movable frame in its adjusted position, substantially as and for the purpose set forth.

8. The combination of a bedstead, a frame movable relatively to the bedstead separable therefrom and including movable means, and supporting means secured to a fixed part of the frame and to said movable means, whereby said supporting means may be tightened and loosened through the manipulation of said movable means.

9. The combination of a supporting-frame having separated uprights, a movable frame comprising side bars having opposing surfaces of their extremities at the outside of the ends of the uprights, and outer and inner cross-bars at opposite sides of the uprights, said movable frame being connected to the supporting-frame and separable therefrom, and supporting means detachably connected to the side bars and the inner cross-bars of the frame, substantially as and for the purpose set forth.

10. The combination of a bedstead, a frame movable relatively to the bedstead, and a waterproof supporting means detachably secured to the frame and provided with raised inflatable side portions, a receiving-pocket at one end and an exit-conduit, substantially as and for the purpose specified.

11. The combination of a supporting-frame having separated uprights, a movable frame comprising side bars having their extremities at the outside of the ends of the uprights, and outer and inner cross-bars at opposite sides of the uprights, said movable frame being connected to the supporting-frame and separable therefrom, supporting means detachably connected to members of the movable frame, and waterproof supporting means mounted on the former supporting means and also detachably connected to members of the movable frame, substantially as and for the purpose set forth.

846,237. SHAFT-PACKING. FREDERICK T. NOLAN, Crystal River, Fla. Filed Nov. 9, 1906. Serial No. 342,657.

Claim.—1. The combination with a rotatable shaft, of a collar rigidly secured thereto, a second collar spaced from the first-mentioned collar upon said shaft and having an annular flange in engagement with the circumferential surface of the first-mentioned collar, and projections carried by one of said collars adapted to engage with the other collar, whereby the two are caused to rotate simultaneously and with the shaft.

2. The combination with a rotatable shaft, of a collar

rigidly secured thereto, a second collar mounted upon said shaft and having an annular flange in engagement with the outer surface of the first-mentioned collar, projections carried by one of said collars and in engagement with recesses of the other collar, and means intermediate said collars and normally tending to force them apart.

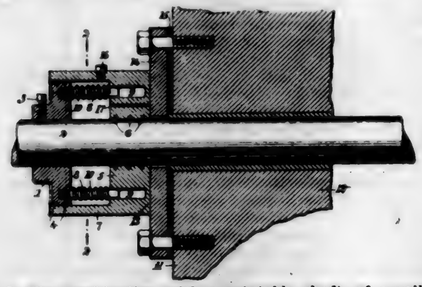

3. The combination with a rotatable shaft, of a collar rigidly secured thereto, a second collar carried by said shaft and having an annular flange in engagement with a surface of the first-mentioned collar, projections carried by one of said collars and adapted to engage in recesses of the other collar for causing their simultaneous rotation, and spiral springs intermediate said collars and normally tending to move the second-mentioned collar in respect to the first-mentioned one.

4. The combination with a rotatable shaft, of a journal-box within which said shaft rotates, a collar secured to said shaft and having a cylindrical outer surface, a second collar intermediate said first-mentioned collar and the journal-box and in engagement with the outer surface of the latter, an annular flange carried by said last-mentioned collar and in engagement with the cylindrical surface of the first-mentioned collar, and means intermediate said collars for forcing the second-mentioned collar into engagement with the journal-box and causing the simultaneous rotation of the two collars with the shaft.

5. The combination with a rotatable shaft, of a journal-box within which said shaft rotates and provided with a smooth outer surface, a collar mounted upon the shaft and having one side thereof in engagement with said surface, and means carried by said shaft for causing the rotation of the collar with the shaft, and resiliently forcing said collar into engagement with said surface.

6. The combination with a rotatable shaft, of a journal-box within which said shaft rotates and presenting a smooth outer surface, a collar rigidly secured to said shaft and having a cylindrical outer surface, a second collar intermediate said journal-box and said first-mentioned collar and having an annular flange in engagement with the outer surface of the first-mentioned collar, means intermediate the collars for causing their simultaneous rotation, means intermediate said collars for forcing the second-mentioned collar into engagement with the journal-box, and means for admitting oil to the space between the collars and to the bearing-surface of the journal-box and the second-mentioned collar.

7. The combination with a rotatable shaft, of a collar rigidly secured thereto, said collar having an outer cylindrical surface, a second collar mounted upon said shaft but spaced from the first-mentioned collar, a cylindrical flange carried by the second collar and in engagement with the cylindrical surface of the first-mentioned collar, said collars and flange forming an annular inclosure, a plurality of pins carried by the first-mentioned collar and extending into engagement with the second-mentioned collar within the annular flange, resilient means for forcing said collars apart, and means for admitting oil to the annular chamber between said collars.

846,238. ROOF-GUTTER. JAMES O'DOWD, Tapanui, New Zealand. Filed Aug. 28, 1906. Serial No. 276,038.

Claim.—For the purpose indicated, in combination with a corrugated-metal roof lengths of plain galvanised iron having one edge resting upon the convexities of the corrugated iron and the other edge flanged to fit upon the molded edge of the guttering, and means for securing the

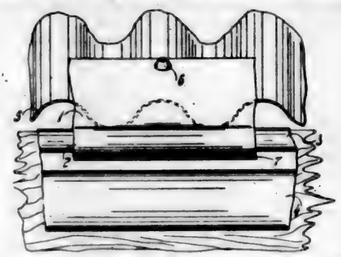

lengths of iron to the roof, substantially as set forth herein.

846,239. CRANK-HANGER. FRANK M. OSBORNE, Anaconda, Mont. Filed Dec. 6, 1906. Serial No. 346,572.

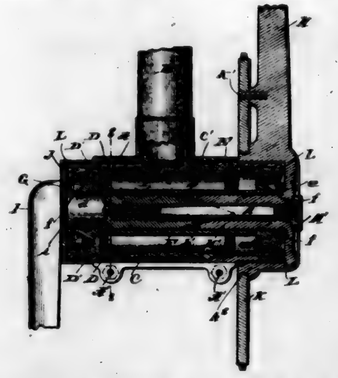

Claim.—1. The combination substantially as herein described, of the cranks having inwardly-projecting shaft-sections, one of which has its end tapered, and the other of which has a tapered recess to receive said end, such shaft-sections being bored longitudinally and one of the sections having its bore threaded, and the bore of the other section extending entirely through the same to the outer side of its crank, and one of the cranks having at the outer end of its shaft-section a threaded portion and a dust-cap screwed thereon, and the other crank having a dust-cap encircling its shaft-section, and a sprocket-wheel on the inner end thereof, the bolt connecting the shaft-sections and screwed at one end into the threaded socket of one of said sections and projecting at its other end outwardly beyond the outer side of the other shaft-section, and threaded at said end, a nut on such end of the bolt, a cone-sleeve encircling the shaft-sections, and provided at its ends with cones and with cylindrical portions projecting outwardly beyond the same, the adjusting-tube encircling the cone-sleeve, the ball-cups threaded at their inner ends on the adjusting-sleeve and provided at their outer ends with the inwardly-projecting end flanges fitting around the cylindrical end portions of the cone-sleeve, the balls within said cup bearing on the cones of the sleeve, packing-washers turning with the cranks and fitting on the shaft-sections thereon and lapping the joints between the end flanges of the ball-cups and the cylindrical portions of the cone-sleeve, and the bracket consisting of a split sleeve encircling the opposite ball-cups, and provided with binding-bolts whereby to be tightened thereon, substantially as and for the purposes set forth.

2. The combination in a crank-hanger, of the cone-sleeve having the cones and the end portions projecting

beyond the same, the ball-cups with the end flanges fitting at their inner edges on said end extensions, the cranks having the shaft-sections, and the packing-washers fitting over the shaft-sections and overlapping the joints between the ends of the cups and the end extensions of the cone-sleeve, substantially as and for the purposes set forth.

846,240. CAR-TRUCK. ALLEN E. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Nov. 19, 1906. Serial No. 344,021.

Claim.—1. A car-truck comprising side frames having pedestals connected thereto, tie-bar braces connected at their opposite ends to the side frames and consisting of angles upon the horizontal legs of which the legs of the pedestals rest, and removable angles secured to the vertical legs of said angles for closing the lower ends of the pedestals; substantially as described.

2. A car-truck comprising side frames having pedestals connected thereto, pedestal-tie-bar braces consisting of straight angles arranged with their horizontal legs projecting inwardly, and inclined angles arranged with their horizontal legs projecting outwardly, and removable angles secured to the straight angles for closing the lower ends of the pedestals; substantially as described.

3. A car-truck comprising side frames having pedestals connected thereto, pedestal-tie-bar braces consisting of a plurality of angles connected together, and transversely-extending angles fastened to the tie-bar braces on opposite sides of the truck; substantially as described.

4. A car-truck having flanged side frames to which pedestals are secured, straight angles arranged with their horizontal legs projecting inwardly and fastened to said pedestals, inclined angles arranged with their horizontal legs projecting outwardly and secured at their lower ends to said straight angles and at their upper ends to the flanges of the side frames, and a transversely-extending angle connected to the straight angles on the opposite sides of the truck at the points where said angles are connected to the inclined angles, the horizontal leg of said transversely-extending angle being cut away to permit the ends of said angle to butt against the vertical legs of the straight angles; substantially as described.

5. A car-truck comprising a side frame having pedestals connected thereto, and a pedestal-tie-bar brace consisting of straight angles fastened to the pedestals, and inclined angles having their upper ends bent to extend parallel to the side frames to which they are fastened; substantially as described.

6. A car-truck comprising flanged side frames provided with pedestals for receiving journal-boxes, equaliser-bars adapted to rest on said journal-boxes, coiled springs interposed between the outer ends of said bars and the side frames of the truck, depending bearings supported by the lower flanges of the side frames, and members at each side of the truck fulcrumed on said bearings and connected at their opposite ends to the inner ends of the equaliser-bars, said depending bearings being adapted to be adjusted to one side or the other of the center line of the truck to vary the tractive power on the wheels of the truck; substantially as described.

7. A truck comprising side frames provided with pedestals for receiving journal-boxes, equaliser-bars adapted to rest on said journal-boxes, coiled springs interposed between the outer ends of said bars and the side frames, a bearing depending from each side frame, semi-elliptical springs fulcrumed on said bearings and links connecting the inner ends of the equalizer-bars to the opposite ends of said spring; substantially as described.

846,241. GRADE-METER. THOMAS M. K. OVERLAND, New York, N. Y. Filed July 25, 1906. Serial No. 327,734.

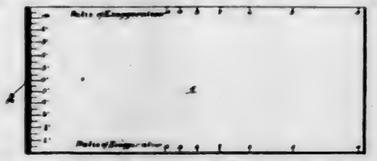

Claim.—1. A profile-protractor marked to indicate a per-cent. scale and a ratio-of-exaggeration scale, the respective scales being so relatively disposed that a line drawn from a determinate point on the ratio-of-exaggeration scale through a determinate point on the per-cent. scale will indicate a line of the determinate per cent. incline exaggerated the number of times indicated by the determinate point of the ratio-of-exaggeration scale.

2. A profile-protractor having a per-cent. scale and a ratio-of-exaggeration scale, the respective scales being so relatively disposed that their scale-marks provide indicating-points for a line of a determinate per cent. incline at a determinate ratio of exaggeration, the respective scales being disposed at a right angle to each other with the per-cent. scale indicating numerals consecutively increasing from the point of juncture of the scales, and the ratio-of-exaggeration scale indicating numerals consecutively decreasing therefrom.

3. A profile-protractor having a per-cent. scale and a ratio-of-exaggeration scale, the respective scales being so relatively disposed that their scale-marks provide indicating-points for a line of a determinate per cent. incline at a determinate ratio of exaggeration, the respective scales being disposed at right angles to each other with the per-cent. scale indicating numerals consecutively increasing from the point of juncture of the scales, and the ratio-of-exaggeration scale indicating numerals consecutively decreasing therefrom, the per-cent. scale indicating lines being equally spaced throughout the length of the scale and the ratio-of-exaggeration scale indicating lines being respectively separated by gradually-increasing spaces.

846,242. SEWING-AWL. ARTHUR M. PARKER, Los Angeles, Cal. Filed Dec. 11, 1905. Serial No. 291,201.

Claim.—1. An awl comprising a handle A having a chamber C extending into its rear, a shaft or spool-holder G secured in the end of the chamber C adapted to hold the spool D with the thread L thereon, the thread passage-ways M, N and O for the passage of the thread out and back through the said handle into the chamber C, between the end of the said chamber and the end of the said spool, then out through the handle and leading to the eye in the point of the needle J, a securing-wire H, the spool extension E and the shoulder F.

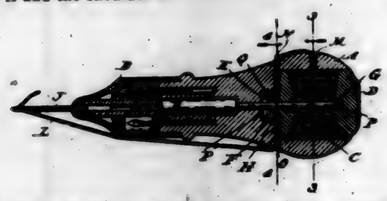

2. In a sewing-awl provided with a chuck carrying an eye-pointed and grooved needle, and a chamber extending into the rear end of the handle having a thread passage-way extending from the chamber to the outer side of the handle, a turnably and slidably secured spool or bobbin extending from the chamber and forming a part of the surface of the rear end of the handle, and the thread passage-ways through the handle, between the base of the spool or bobbin and the bottom of the chamber, substantially as described.

846,243. TYPE-WRITER CABINET. CHARLES B. PERRY, Herkimer, N. Y. Filed Jan. 26, 1906. Serial No. 297,958.

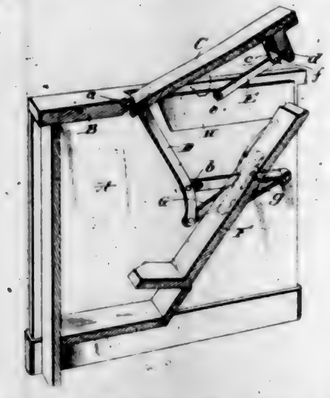

Claim.—1. In combination with a cabinet, a fixed top strip or section at the rear of the cabinet, said fixed section having a substantially vertical face at its forward edge; a movable top section adapted to form an extension forward of said fixed section when in normal horizontal position; means for lowering said movable section within the cabinet, consisting of a link D pivoted to the rear portion of the movable section and to the cabinet, and a link E pivoted to the cabinet at a point about midway between the front and rear edges of said movable section when in such horizontal position and extending downward and forward and pivoted to the movable section toward the front thereof, the inclination of the last-mentioned link being such as to cause a forward movement of the movable section when the same is lifted from its horizontal position, such that its rear edge will clear the vertical face of the fixed section as said movable section is lowered.

2. In combination with a cabinet, a fixed top strip or section at the rear of the cabinet, said fixed section having a substantially vertical face at its forward edge; a movable top section adapted to form an extension forward of said fixed section when in normal horizontal position; a shelf beneath the movable top section provided with bracket-arms pivotally attached to the cabinet; means for lowering the movable top section within the cabinet, consisting of a link pivoted to the rear portion of the movable section and to the cabinet, and having a short arm or extension beyond its pivot; a link pivoted to the cabinet at a point about midway between the front and rear edges of the movable top section when the latter is in normal horizontal position, said link extending downward and forward and pivoted to the movable section toward the front thereof, the inclination of the last-mentioned link being such as to cause a forward movement of the movable section when the same is lifted from its horizontal position, such that its rear edge will clear the vertical face of the fixed section as said movable section is lowered; and a third link connecting the short arm of the first-mentioned link with the lower shelf, substantially as described, whereby the lowering of the top section is caused to move the lower shelf from its normal inclined position to a substantially horizontal position and the return of the horizontal top section is caused to restore the shelf to its inclined position.

846,244. HAWSE-PIPE. CHARLES PETRIE, St. Johns, Newfoundland. Filed May 2, 1906. Serial No. 314,849.

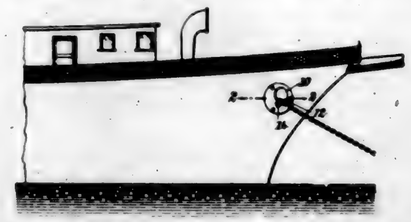

Claim.—1. A hawse-pipe having a depression in its outer face, said depression having an upwardly-extending lip at the outer side thereof, a roller located in said depression and projecting above the lower surface of the pipe, a collar on the opposite side of the hawse-pipe from the roller, and a roller journaled in the collar.

2. A hawse-pipe having a depression in its outer face, said depression having an upwardly-extending lip at the outer side thereof, a roller located in said depression and projecting above the lower surface of the pipe, said depression being curved to correspond roughly with the outline of the roller and serving as a pocket to hold the roller in position, a collar on the opposite side of the hawse-pipe from the roller, and a roller journaled in the collar.

3. A hawse-pipe having a depression in its outer face, an outwardly-extending lip on one side of said depression, a spindle having a screw-threaded end passing through said lip and through the opposite wall of the hawse-pipe, a roller mounted on said spindle, a collar located on the opposite side of the hawse-pipe from said roller and having a projecting lip, and a second roller journaled in said lip and in the opposite side of the collar.

4. A hawse-pipe having a depression in its outer face, an outwardly-extending lip on one side of said depression, a spindle having a screw-threaded end passing through said lip and through the opposite wall of the hawse-pipe, a roller mounted on said spindle, a collar located on the opposite end of the hawse-pipe from said roller and having a projecting lip, and a second roller journaled in said lip and in the opposite side of the collar, both of said rollers being located with their centers below the lower inner surface of the hawse-pipe but with their operating-surfaces projecting above said lower surfaces.

846,245. ATTACHMENT FOR GRINDING CENTERS. CHARLES L. PETRIKIN, Muncy, Pa. Filed Sept. 24, 1906. Serial No. 335,902.

Claim.—1. An attachment for grinding lathe-centers comprising a frame having means to rigidly clamp it to the tail-stock of the lathe, two shafts journaled in the frame, means for frictionally driving one of said shafts from the lathe, a grinding-wheel fixed to the other shaft

and driven by the frictionally-driven shaft, and means for reciprocating the grinding-wheel.

2. An attachment for grinding lathe-centers comprising a substantially U-shaped frame, grinding means journaled in said frame, and means clamping the frame to the spindle of the tail-stock of the lathe and supporting it therefrom in a horizontal, diagonal position.

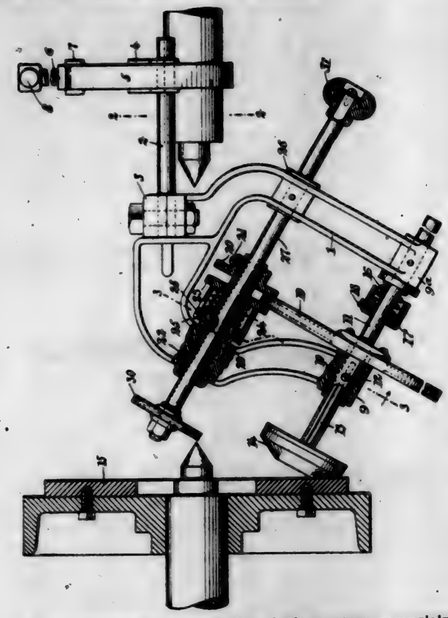

3. An attachment for grinding lathe-centers comprising a frame, shafts journaled transversely in the frame, a friction-wheel fixed to one of said shafts, a collar fixed to the friction-wheel shaft between the frame, a spring interposed between the collar and frame, means for frictionally driving the other shaft from the friction-wheel shaft, a grinding-wheel fixed to said other shaft, and means for reciprocating said shaft in its bearings whereby the grinding-wheel is moved back and forth over the lathe-center.

4. An attachment for grinding lathe-centers, comprising a U-shaped frame, two shafts transversely journaled in the frame, a friction-wheel fixed to the outer end of one of said shafts, a grinding-wheel fixed to the outer end of the other shaft, a friction-wheel fixed to the friction-wheel shaft within the frame, a friction-collar rigidly carried by the grinding-wheel shaft and engaging one side of the friction-wheel fixed within the frame, a second collar slidable over the grinding-wheel shaft adapted to engage the opposite side of the friction-wheel within the frame, and a spring interposed between said slidable collar and the frame.

846,246. BOX-FASTENER. GRILLS A. PRATHER, George, Mo. Filed May 17, 1904. Serial No. 208,453.

Claim.—In a device of the class described, the combination with a box having recesses in its ends, of spring-tongues secured at one of their ends in the said recesses and extending upwardly and outwardly from said recesses, the upper ends of said tongues being provided with openings, cleats secured to the said box at its ends and extending over the said recesses, said cleats having recesses in their sides adjacent the said box, said recesses in said cleats being in registration with the recesses in said box to receive the said upper end of said spring-tongues, said cleats being provided with openings communicating with said recesses therein, a lid for the box including a top portion and depending cleats, latches carried by the under edges of said last-named cleats and arranged to extend downwardly and into the recesses in said first-named cleats, said latches having each projections arranged to extend into the openings in said spring-tongues to hold the said top in closed position, springs secured to said last-named cleats at one end and resting against the upper

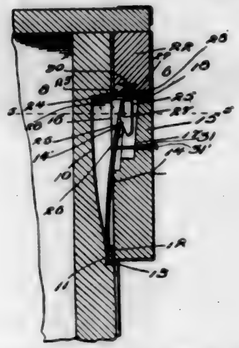

faces of the first-named cleats to hold the said cleats and the said last-named cleats yieldably in spaced relation, the openings of the first-named cleats being adapted for the reception of an implement for engagement with the spring-tongues to move the latter out of engagement with the said latches.

846,247. PLATE FOR ARCHES. THEODORE SCHILLINGER, New York, N. Y. Filed Mar. 9, 1906. Serial No. 305,161.

Claim.—An arch construction comprising two beams and two slabs, each beam being engaged by one edge of a slab and the other edge of the slab being left free and having a suspender extended therefrom for engagement with the beam engaging such slab, the free ends of the slabs being out of contact with one another so as to form a space, and a filling inserted in said space.

846,248. SQUARE. WILLIAM A. SCHMALS, Duryea, Pa. Filed Oct. 19, 1905. Serial No. 283,496.

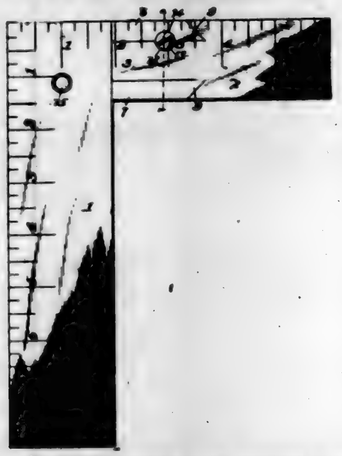

Claim.—A square comprising a leg provided at one side with a groove and having spaced arms arranged at right angles to it and located at the ends of the said groove, said arms being also provided at their inner opposite faces with grooves and having their outer ends tapered, the end edges being straight and converging toward the outer extremities of the arms, a second leg provided with a tongue having projecting side and end edges to fit in the said grooves, whereby the two legs are slidably interlocked, the leg having the tongue being also provided at the inner end thereof with substantially triangular notches receiving the tapered ends of the said arms to hold the same against lateral movement, and the said tongue and one of the arms having matching threaded segmental recesses forming a circular opening, and a screw entirely filling the said opening and retaining the legs in their interlocked relation.

846,249. FOUNDATION FOR BUILDINGS. PAUL SEILER, Oakland, Cal. Filed June 16, 1906. Serial No. 322,084.

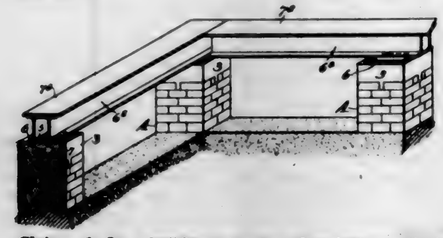

Claim.—1. In a building structure foundation-walls, independent casings mounted thereon having level bottoms, balls movable independently within said casings, flat plates resting upon the balls, and a superstructure carried thereon, and yielding incombustible linings between the balls and the surrounding casings.

2. In a building structure, a fixed base, casings carried on the walls having level metal bottoms, balls contained within the casings, cylindrical inclosures for each of the balls, said inclosures and the interior of the casings having a lining or filling of yielding non-combustible material, plates supported upon the balls and a superstructure carried upon the plates.

3. In a building structure, a fixed base, casings carried thereon and having interior yielding linings, blocks loosely fitting within said casings, and having openings with yielding linings, balls loosely fitting said openings, substantially level surfaces supporting the balls, and plates resting upon the balls and forming supports for a superstructure.

846,250. CALENDAR. RICHARD C. SELLERS, Swarthmore, Pa., and PHILIP SELLERS, Meriden, Conn.; said Philip Sellers assignor to said Richard C. Sellers. Filed May 9, 1906. Serial No. 315,966.

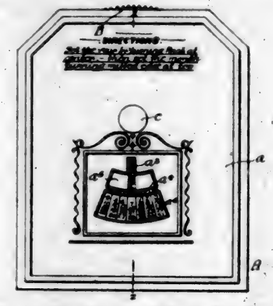

Claim.—1. A calendar consisting of a frame, two co-operating movable pieces therein, one of said pieces having marked on it the numerals corresponding to a number of years and the other having on it a number of series of numerals corresponding in number to the days of the month, said latter piece also having on it the names of the various months, the frame being provided with symbols indicating the days of the week and being constructed to coöperate with both pieces to render visible the name of a month, the group of numerals corresponding in number to the number of days in said month, as well as the numerals of a single year, being also visible through the frame, substantially as described.

2. A calendar consisting of a frame having two movable pieces therein, one of said pieces having on it numerals for indicating the years and having openings bearing a definite position relatively to said numerals, the other piece having on it the names of the months so placed as to be visible through said openings in the first piece, there being on said second piece a number of series of numerals for indicating the days of the month and the frame having in it an opening or openings for rendering visible the numerals of any one year and also the name of that month which is visible through one of the openings of one of the movable pieces, said opening being shaped to permit a definite and predetermined group of numerals indicating the days of the month to be visible corresponding to the particular month whose name is visible, substantially as described.

3. The combination in a calendar of a frame and two pieces movably supported therein, the first of said pieces having a number of spaces certain of which are marked to indicate years, there being openings through said piece at definite distances apart and definitely placed relatively to the year-markings, the second piece being divided into similar spaces certain of which are marked to indicate the names of months, there being a number of series of numerals indicating the days of the month distributed in definite positions in said spaces, said pieces being positioned in the frame so that the first piece is over the second piece and the names of the months on the second piece are visible through the openings in the first piece, there being an opening or openings in the frame to render visible the designation of a single year and also seven of the spaces containing numerals indicating the days of the month, substantially as described.

4. A calendar consisting of a frame, two disks revolubly supported therein, means for turning the disks at will, one disk being provided with markings arranged in a circle to indicate years and also having openings adjacent to certain of said markings, the second disk being

divided into a series of spaces containing the numerals of a number of series for indicating the days of the month and also having in certain of the spaces the names of months placed to be visible through the openings in the first disk, there being openings in the frame to render visible any particular year, the name of any month therein, and a group of the numerals corresponding to the number of days in said month, substantially as described.

5. A calendar consisting of a frame, two disks revolubly supported therein, means for turning the disks at will, one disk being provided with markings arranged in a circle to indicate years and also having openings adjacent to certain of said markings, the second disk being divided into a series of spaces containing the numerals of a number of series for indicating the days of the month and also having in certain of the spaces the names of months so placed as to be visible through the openings in the first disk, the numbers for indicating the days of the month being arranged on spiral lines definitely placed relatively to the names of the months, there being openings in the frame to render visible any particular year, the name of any month therein, and a group of the numerals corresponding to the number of days of said month, substantially as described.

6. A calendar consisting of a frame, a pair of disks revolubly supported therein, the first of said disks having numerals arranged in a circle to indicate the years and being provided with a series of openings definitely placed relative to said years, a second disk having a series of radially-extending spaces, a number of series of numerals arranged on said second disk in spiral lines, of which the numerals of each series are placed seven spaces from the series next adjacent to it, certain of said spaces being marked with the names of months, the frame having openings, of which one is placed to permit a single year on the first disk to be visible, the other opening being placed and constructed to permit the name of a month to be visible in any of seven positions and a third opening formed to render visible the numerals of any seven of the radial spaces of the second disk and being marked to indicate the days of the week, substantially as described.

7. A calendar consisting of a frame, two independently-revoluble disks concentrically supported therein, one having on it the names and days of months the other having on it the years, the frame having on it indications for the days of the week and being formed to permit only certain groups of the days of the month to be visible, substantially as described.

846,251. ARTIFICIAL CORK AND METHOD OF MAKING THE SAME. JOSÉ SERRA (Y CARBÓ), Barcelona, Spain, assignor to Harvey Coale, Baltimore, Md. Filed Apr. 17, 1906. Serial No. 312,260.

Claim.—1. As a new article of manufacture, an artificial cork consisting of a granular base and a liquid binding material mixed therewith and rendered insoluble therein by heat.

2. An artificial cork material consisting of a granular base of cork and a binding material which has been rendered insoluble therein by heat.

3. An artificial cork composed of finely-divided or granulated cork and a binding material composed of an albumenous substance; substantially as described.

4. The method of making artificial cork, consisting in taking granulated cork mixing therewith a soluble coagulable binding material and finally subjecting the material to heat to render the binding material insoluble.

5. The method of making an artificial cork consisting in taking a pulverized base, mixing therewith a binding material and finally hardening said binding material and rendering it insoluble by heat, substantially as described.

6. The method of making artificial cork, consisting in taking granulated cork; mixing therewith a coagulable binding material and finally submitting the composition to a moist heat under pressure to render the binding material insoluble.

7. The method of making artificial cork, consisting in taking granulated cork; mixing therewith albumen and subjecting the composition to such heat as will render the albumen insoluble and retain the natural elasticity and flexibility of the cork; substantially as described.

8. The method of making artificial cork, consisting in taking granulated cork; mixing it with albumen and subjecting the composition to moist heat, substantially as described.

9. The method of making artificial cork, consisting in taking granulated cork; cleansing and purifying the same, adding thereto albumen as a binding material, subjecting the composition to pressure and to a moist heat whereby the albumen is coagulated and becomes insoluble, while the product retains all the elasticity and flexibility of the natural material; substantially as described.

846,252. FASTENER FOR SHOE-UPPERS. CHARLES K. SHAROOD, St. Paul, Minn. Filed May 18, 1906. Serial No. 317,599.

Claim.—1. A shoe-upper fastener having parallel cross-bars and parallel side arms, one of the cross-bars having a hooked connection with one of the side arms, and the other side arm being extensible to adjust the distance between the cross-bars, the means which permits extension of the arm serving also to exercise torque on the latter for the purpose of maintaining the hooked engagement of the cross-bar and side arms.

2. A shoe-upper fastener comprising two sections of spring-wire, each having a loop encircling the other, and the loop connections being constructed to exercise a torsional strain between the sections as well as permitting extension of the fastener, said sections being arranged to form an open rectangle and the end of one section having a hook for engagement with the end portion of the other section, these parts being kept in engagement by the torsional strain between the two sections.

846,253 DARNING IMPLEMENT. GERTRUDE SHEAR, Bergman, Ark. Filed Oct. 3, 1906. Serial No. 337,266.

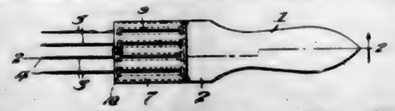

Claim.—1. A darning instrument comprising a handle, a plurality of needles carried thereby, a casing mounted on the handle and having one of its walls provided with a plurality of openings, and a plurality of thread-carrying bobbins rotatably mounted in the casing for feeding the threads through said openings to the respective needles.

2. A darning implement comprising a handle, a plurality of forwardly-projecting needles carried thereby, a casing mounted on the handle, a plurality of thread-carrying bobbins rotatably mounted in the casing and a movable cover for the casing provided with a plurality of longitudinal slots disposed in alinement with the respective needles and constituting guides for the several threads.

846,254. SASH-FASTENER. EMANUEL SLOAN, Beehouse, Tex. Filed Sept. 26, 1906. Serial No. 336,284.

Claim.—1. In a sash-fastener, the combination with a window-frame and a sash slidably mounted therein, of a normally inclined tilting bar pivotally mounted upon the meeting-rail of the sash with its ends arranged to engage the opposite side of the frame, a latch device coöperating with one end of the bar for normally holding the bar in locking position, said device being releasable to permit movement of the bar, and a retracting device connected with the other end of the bar for tilting the released bar to throw it out of locking position.

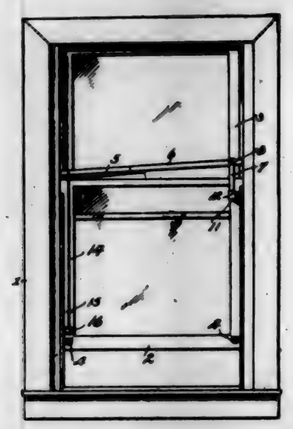

2. In a sash-fastener, the combination with a sash-frame and a sash slidably mounted therein, of a normally inclined spring-actuated tilting locking-bar pivotally mounted upon the meeting-rail of the sash with its ends arranged to engage the opposite sides of the window-frame, a swinging keeper upon the one of the side rails of the sash, a latch-hook carried by the normally upper end of the bar to engage said keeper, whereby the bar is held in locking position, and a retracting device connected with the normally lower end of the bar and in guided engagement with the other side rail of the sash for tilting the same to retracted position when the keeper is swung out of engagement with the latch-hook.

3. In a sash-fastener, the combination with a window-frame, and a sash slidably mounted therein, of a tilting locking-bar arranged above the meeting-rail of the sash, said bar being coextensive in length with said rail, a supporting-spring for the bar operative to normally hold the same in locking position with its ends in engagement with the opposite sides of the window-frame, a latch member pivoted to one of the ends of the bar, a keeper upon one of the side rails of the sash adapted to be engaged by said latch member to hold the bar in locking position, and an operating-rod in guided connection with the other side rail of the sash and connected with the other end of the bar, whereby the latter may be tilted to throw it out of locking position.

846,255. STALK-PULLER. CULLEN R. SMITH, Fentress, Tex. Filed July 28, 1906. Serial No. 328,179.

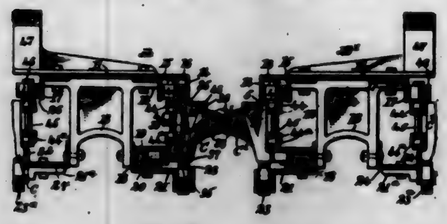

Claim.—1. In a pulling-machine, wheel-supported parallel casings having an upward and rearward inclination, endless chains of grippers carried by the casings, the grippers of the inner leads of opposing chains being in close relation to each other, the grippers of one chain being rigid and the grippers of the other chain yielding, and means for rotating the said chains of grippers from the axle of the machine.

2. In a pulling-machine, wheel-supported casings having an upward and rearward inclination, endless chains of grippers mounted to revolve around said casings, the grippers on the inner leads of opposing chains being in close relation to each other, the grippers of one chain being of rigid construction and the grippers of the opposing chain being spring-controlled and provided with play in their supports.

3. In a pulling-machine, independent wheel-supported casings provided with shoes at their forward ends, the said casings having upward and rearward inclination, adjustable standards connecting the said casings, a chain of grippers mounted to revolve around each casing, passing through the said casings at the rear of and at a point adjacent to the shoes, the grippers of one chain being of rigid construction, and the grippers of the opposing chain of yielding construction, roller-guides for the chains, and means for simultaneously driving the chain of grippers of both casings from the axle of the machine.

4. In a pulling-machine, independent casings, an arched axle from which said casings are pivotally suspended, a mechanism for simultaneously raising and lowering the forward portions of the said casings, a chain of grippers mounted to revolve around each casing, the grippers at the inner leads of the chains being in close relation to each other, the grippers of one chain being of rigid construction and the grippers of the opposing chain of yielding construction, and a driving mechanism for the two chains of grippers, which driving mechanism is driven from the axle of the machine.

5. In a pulling-machine, independent wheel-supported casings, arched standards adjustably connecting the said casings, a chain of grippers mounted to revolve around the said casings, the grippers of the inner leads of the said chains being in close relation to each other, means for driving the said chains of grippers from the axle of the machine, an adjusting device for the forward end portions of the said casings, and a clutch mechanism for controlling the driving means for the said chains of grippers.

6. In a pulling-machine, wheel-supported parallel and spaced casings, means for raising and lowering the forward ends of the said casings, chains of grippers mounted to revolve around the said casings, driving-sprockets for the said chains located within the casings, one of which sprockets in each casing is adjustable, the grippers of the inner leads of the said chains being in close relation to each other, means for adjustably connecting the said casings, and a driving mechanism operated from the said axle and operatively connected with one of the driving-sprockets of each chain of grippers.

7. In a pulling-machine, the combination with opposing and spaced casings, an arched axle from which the said casings are suspended, said casings having an upward and a rearward inclination, driving-sprockets located within the said casings, one of which is adjustable in each casing, a chain of grippers carried by the said driving-sprockets and arranged to travel around the said casings, the grippers of the inner leads of the said casings being in close relation to each other and the grippers on one chain being of rigid construction and the grippers of the opposing chain of a yielding construction, a drive-shaft, a gear connection between the drive-shaft and one of the said sprocket-wheel, a driving connection between the axle and the drive-shaft, clutches mounted on the said shaft, means for controlling the said clutches, and an adjusting device for the forward ends of the casings.

846,256. SALT AND PEPPER CELLAR. PURNELL W. SMITH, Philadelphia, Pa. Filed Mar. 22, 1906. Serial No. 307,356.

Claim.—In combination, a receptacle, a perforated top therefor, a tube depending from the top and formed inte-

gral therewith, and a ball within the tube, said tube being hermetically closed.

846,257. SAFETY-COCK. JAMES C. STRATIFF, Tyrone, Pa. Filed Apr. 21, 1905. Serial No. 256,742.

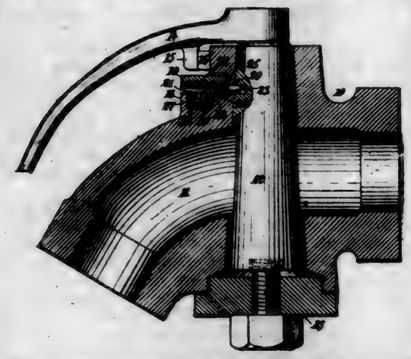

Claim.—A cock comprising a body provided at one side with a chamber having alined horizontal openings, an opening at right angles to said openings, and a recess in the wall opposite the last-named opening, the chamber being also provided with a transverse wall, a plug operating in the body and provided with a polygonal recess in one side, a bolt working in the alined openings of the chamber and having a polygonal inner end, and provided with a collar a short distance from said inner end and with a lug within the said chamber for engagement by a ward of a key for operating the same, and a spring surrounding the bolt between the transverse wall of the chamber and the collar of the bolt, substantially as herein shown and described.

846,258. BRICKMAKING-MACHINE. EDGAR R. SUTCLIFFE, Leigh, England. Filed Oct. 22, 1906. Serial No. 340,063.

Claim.—1. In a brick-press, a revolving mold-table, plungers entering molds therein from the top and also from the bottom, means for causing pressure to be applied to the said plungers, fixed pivots attached to a stationary part of the machine, pins attached to a movable part connected to one of the plungers, so that they come into sliding contact either directly or indirectly, with the fixed pivots and thereby raise the plunger clear of the mold.

2. In a brick-press, a revolving mold-table, plungers entering molds therein from the top and also from the bottom, means for causing pressure to be applied to the said plungers, fixed pivots attached to a stationary part of the machine, pins attached to a movable part connected to one of the plungers, holes in the revolving table, and a spring-operated pin carried by a movable part of the pressing mechanism.

3. In a brick-press, a revolving mold-table, plungers entering molds therein from the top and also from the bottom, means for causing pressure to be applied to the said plungers, fixed pivots attached to a stationary part of the machine, pins attached to a movable part connected to one of the plungers, a dummy mold surrounding the top plunger, and means for keeping the said dummy mold in contact with the surface of the revolving table.

4. In a brick-press, a revolving mold-table, plungers entering molds therein from the top and also from the bottom, means for causing pressure to be applied to the said plungers, a pivoted bracket supported at one end on adjustable eyebolts, fixed pins carried by the bracket with bowls thereon, and pins on the pressing mechanism supporting the top plunger adapted to slide over the said bowls, substantially as and for the purpose set forth.

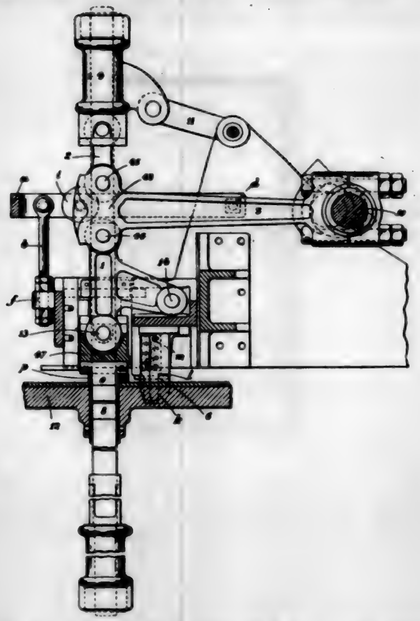

5. In a brick-press, a revolving mold-table, plungers entering molds therein from the top and also from the bottom, a system of toggle-levers arranged to operate said plungers, rollers mounted adjacent said top plunger, and pins carried by said plunger mechanism and adapted to be thrust over said rollers to raise said plunger, substantially as described.

6. In a brick-press, a revolving mold-table, plungers entering molds therein from the top and also from the bottom, a system of toggle-levers connected to the top plunger and operating between the upper and lower crossheads of a tension system, a pivoted bracket supported at one end on adjustable eyebolts, fixed pins carried by the bracket with bowls thereon, and pins forming extensions of one of the toggle-joint spindles.

7. In a brick-press, a revolving mold-table, plungers entering molds therein from the top and also from the bottom, mechanism for operating said plungers, a bracket mounted adjacent said top plunger mechanism, rollers mounted in said bracket, fixed pins arranged in said plunger mechanism, and means for operating said mechanism to thrust said pins over said rollers to raise said top plunger, substantially as described.

8. In a brick-press, a revolving mold-table, plungers entering molds therein from the top and also from the bottom, means for causing pressure to be applied to the said plungers, a pivoted bracket supported at one end on adjustable eyebolts, fixed pins carried by the bracket with bowls thereon, pins on the pressing mechanism supporting the top plunger adapted to slide over the said bowls, holes in the revolving table, and a spring-operated pin carried by a movable part of the pressing mechanism.

9. In a brick-press, a revolving mold-table, plungers entering molds therein from the top and also from the bottom, mechanism for operating said plungers, rollers mounted adjacent said top plunger mechanism, fixed pins arranged in said mechanism, means for operating said plunger mechanism to thrust said pins over said rollers to raise said top plunger, said revolving table being provided with recesses adjacent the molds, and a spring-operated pin carried by said plunger mechanism and adapted to engage within said recesses to aline said plunger with the corresponding mold, substantially as described.

10. In a brick-press, a revolving mold-table, plungers entering molds therein from the top and also from the bottom, means for causing pressure to be applied to the said plungers, a pivoted bracket supported at one end on adjustable eyebolts, fixed pins carried by the bracket with bowls thereon, pins on the pressing mechanism supporting the top plunger adapted to slide over the said bowls, a dummy mold surrounding the top plunger, and springs for keeping the dummy mold in contact with the surface of the table.

11. In a brick-press, a revolving mold-table, plungers entering molds therein from the top and also from the bottom, mechanism for operating said plungers, a bracket mounted adjacent said top plunger mechanism, rollers mounted in said bracket, means for adjusting said bracket, fixed pins arranged in said plunger mechanism, means for operating said mechanism to thrust said pins over said rollers to raise said top plungers, said revolving table being provided with recesses adjacent the molds, and a spring-operated pin carried by said plunger mechanism and adapted to engage within said recesses to aline said plunger with the corresponding mold, substantially as described.

12. In a brick-press, a revolving mold-table, plungers entering molds therein from the top and also from the bottom, means for causing pressure to be applied to the said plungers, a pivoted bracket supported at one end on adjustable eyebolts, fixed pins carried by the bracket with bowls thereon, pins on the pressing mechanism supporting the top plunger adapted to slide over the said bowls, holes in the revolving table, a spring-operated pin carried by a movable part of the pressing mechanism, a dummy mold surrounding the top plunger, and springs for keeping the dummy mold in contact with the surface of the table.

13. In a brick-press, a revolving mold-table, plungers entering molds therein from the top and also from the bottom, mechanism for operating said plungers, a dummy mold surrounding the top plunger, springs arranged to keep said mold in contact with said table, rollers mounted adjacent the top plunger mechanism, and pins carried by said plunger mechanism and adapted to be thrust over said rollers to raise said plunger, substantially as described.

14. In a brick-press, a revolving mold-table, plungers entering molds therein from the top and also from the bottom, mechanism for operating said plunger, a dummy mold surrounding the top plunger, springs arranged to keep said mold in contact with said table, rollers mounted adjacent the top plunger mechanism, pins carried by said plunger mechanism and adapted to be thrust over said rollers to raise said plunger, said revolving table being provided with recesses adjacent the molds, and a spring-operated pin carried by said plunger mechanism and adapted to engage within said recesses to aline said plungers with the corresponding mold, substantially as described.

846,259. MACHINE FOR MEASURING AND CUTTING CLOTH. PETER S. SWAN, Calcutta, India, and NORMAN FRASER, Arbroath, Scotland. Filed Mar. 26, 1906. Serial No. 308,136.

Claim.—1. In a machine for measuring and cutting cloth, and the like, in combination, a main shaft driven continuously, measuring and horizontally-reciprocating cutting mechanism, and gearing for intermittently and alternately actuating such mechanism from the continuously-running shaft.

2. In a machine for measuring and cutting cloth, and the like, a main shaft, a spur-wheel thereon, and through which it is continuously driven, two partially-toothed wheels carried by the spur-wheel, measuring and cutting shafts, pinions thereon gearing with the partially-toothed wheels, grooves in the spur-wheels and studs on the pinions capable of sliding in the grooves, measuring-rollers, changeable gear driving such rollers from the measuring-shaft, a table, a knife running in a slot therein, gearing operating the knife from the cutting-shaft and a cam-operated slotted presser-bar working above the table.

3. In a machine for measuring and cutting cloth, and the like, a disk knife and mechanism for intermittently giving a reciprocating and also a rotatory motion thereto in combination with means for drawing out and measuring off the length of cloth to be cut and for holding the cloth while being cut.

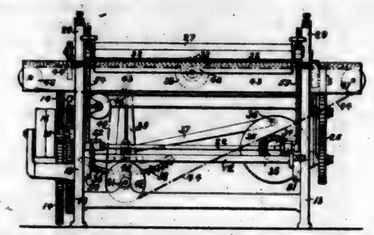

4. In a machine for measuring and cutting cloth, and the like, a table over which the material to be cut is passed, a saddle slidable in a rail on the table, a knife carried by the saddle, a slot in the table through which the knife protrudes, means for giving a rotatory motion to the knife, a drum-shaft, chains connecting the opposite ends of the saddle therewith, an intermittently-driven cutting-shaft gearing connecting the two shafts and consisting of bevel-gear actuating a crank-pin disk connected to a lever carrying a toothed sector-gearing with a pinion on the drum-shaft, and means for holding the cloth while being cut.

5. In a machine for measuring and cutting cloth, and the like, a table over which the material to be cut is passed, a saddle slidable in the table, a knife carried by the saddle a slot in the table through which the knife protrudes, a drum-shaft, chains connecting the opposite ends of the saddle therewith, means for rotating the drum-shaft intermittently and alternately in opposite directions so as to give an intermittent reciprocatory motion to the knife and means for holding the cloth while being cut.

6. In a machine for measuring and cutting cloth and the like, cloth-measuring gear comprising measuring-rollers, intermittently-driven changeable gear including an epicyclic train, one member of which is connected to the measuring-rollers, the second member of which is actuated by the changeable gear, and the third member of which is also intermittently driven through changeable gear in combination with means for cutting the cloth.

7. In a machine for measuring and cutting cloth and the like, a measuring-roller, a changeable-gearing device for driving same, an epicyclic train in said gearing device and comprising a shaft geared to the measuring-roller, a disk-pinion loose upon the shaft changeable gearing for driving the disk, orbital pinions carried in the disk a bevel-pinion loose upon the shaft and gearing with the orbital pinions, a pinion fixed to the bevel-pinion changeable gearing driving that pinion a second bevel-pinion fast upon the shaft and also gearing with the orbital pinions and means for intermittently driving the changeable-gear device, as described in combination with means for cutting the cloth.

846,260. RAILWAY BUMPING-POST. WILSON E. SYMONS, Chicago, Ill. Filed Oct. 31, 1906. Serial No. 341,464.

Claim.—1. In a structure of the character set forth, the combination with a swinging carrier member, of means for securing the same to a railway-track, a car-engaging member, means detachably connecting the members, and a yielding support for the car-engaging member.

2. In a structure of the character set forth, the combination with a swinging carrier member, of means for se-

curing the same to a railway-track, a car-engaging member, means detachably and loosely connecting the members to permit a slight relative play between them, and a yielding support for the car-engaging member.

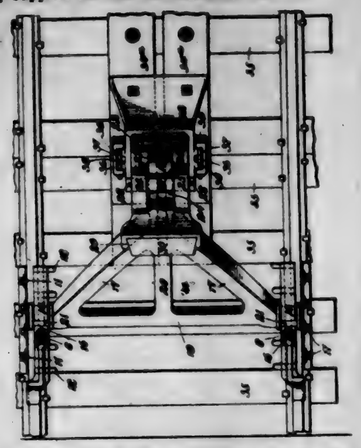

3. In a structure of the character set forth, the combination with a swinging carrier member, of means for securing the same to a railway-track, a car-engaging member, one of said members having a socket, the other having a portion that engages in the socket, and means for maintaining said portion in the socket.

4. In a structure of the character set forth, the combination with a car-engaging member having a socket, of a swinging carrier member having one end engaged in the socket, and means for pivotally mounting the other end of the carrier member.

5. In a structure of the character set forth, the combination with a car-engaging member having a socket, of a carrier member having a stem loosely engaged and secured in the socket to permit a slight relative play between said members.

6. In a structure of the character set forth, the combination with a car-engaging member, of a carrier member, one of said members having a socket, the other having a portion located in the socket, and a key engaging the members for preventing their disassociation.

7. In a structure of the character set forth, the combination with a car-engaging member, of a carrier member, one of said members having a socket and a shoulder adjacent to the socket, the other having a portion located in the socket and a shoulder spaced from and opposed to the first-mentioned shoulder, and a key located between the shoulders for preventing the disassociation of the members.

8. In a structure of the character set forth, the combination with a car-engaging member, of a carrier member, one of said members having a socket and ears on opposite sides of the socket, the other member having a stem located in the socket, and a key arranged in the ears and engaging the member having the stem, said key preventing the disassociation of the members.

9. In a structure of the character set forth, the combination with a yieldingly-supported car-engaging member having a socket, a shoulder disposed adjacent to the socket and ears located on opposite sides of the socket, of a pivotally-mounted carrier member having a stem that passes through the socket and having a shoulder on its rear end disposed in spaced relation to the shoulder of the car-engaging member and between the ears, and a key passing through the ears and between the shoulders.

10. In a structure of the character set forth, the combination with a car-engaging member, comprising a head having a socket between its ends, one end of the head constituting a car-engaging bumper, of a yielding support engaging the other end of the head, and a pivotally-mounted carrier having a stem extending into the socket and secured to the head.

11. In a structure of the character set forth, the combination with a tapered carrier having a stem at its smaller end, of a car-engaging member having a socket that receives the stem, and means for pivotally mounting the wider end of the carrier.

12. In a structure of the character set forth, the combination with a carrier comprising convergently-disposed side arms and a strut connecting their spaced ends, of a car-engaging member carried by the narrow end of the carrier member, and means for pivotally mounting the wider end thereof.

13. In a structure of the character set forth, the combination with a carrier comprising convergently-disposed side arms, a strut connecting their spaced ends and an intermediate member connecting the strut and the convergent ends of the side arms, of a car-engaging member carried by the narrower end of the carrier member, and means for pivotally mounting the wider ends of the carrier member.

14. In a structure of the character set forth, the combination with a carrier member comprising convergently-disposed side arms having a stem at their convergent ends, a strut connecting the spaced end of the side arms and a brace connecting an intermediate portion of the strut and the convergent ends of the side arms, of a car-engaging member having a socket that receives the stem of the carrier member, a yielding support for the car-engaging member, and means for pivotally securing the wider end of the carrier member to the rails of a track.

15. In a structure of the character set forth, the combination with a bracket-mounting, of a car-engaging member, and a carrier member for the car-engaging member and having a pivotal connection with the bracket-mounting, said carrier member being interlocked against detachment from the bracket-mounting when in one position, and being detachable therefrom when located in another position.

16. In a structure of the character set forth, the combination with a bracket member, of a carrier member, one of said members having a socket provided with a contracted mouth, the other member having a pintle that engages in the socket and is interlocked therewith when in one position but can be passed through the mouth when in another position, and a car-engaging member carried by the carrier member.

17. In a structure of the character set forth, the combination with a bracket member, of a carrier member, one of said members having a socket provided with a contracted mouth, the other member being provided with a pintle having a width in one direction that is greater than the mouth and substantially equal to the diameter of the socket and having a less width in another direction that permits its passage through the mouth, and a car-engaging member mounted on the carrier member.

18. In a structure of the character set forth, the combination with spaced bracket members having sockets provided with contracted mouths, of means for securing the same to a railway-track, a carrier member having pintles that are cam-shaped in cross-section so that they will pass through the contracted mouths of the bracket member when the carrier member is in one position, and will fit snugly in the socket when in different position, a car-engaging member carried by the carrier member, and means for yieldingly supporting the car-engaging member.

19. In a structure of the character set forth, the combination with brackets arranged to fit against rails of different sizes and having a plurality of upright slots to receive holding-bolts, said brackets having sockets, of a carrier member having pintles that engage in the sockets, and a car-engaging member carried by the carrier member.

20. In a structure of the character set forth, the combination with brackets having sockets, of means for securing the brackets to a railway-track, a tapering carrier member having pintles engaged in the sockets and having a stem at its contracted end, a car-engaging member comprising a head having a socket that receives the stem, a key for securing the stem in the socket, and yielding means for supporting the head.

21. In a structure of the character set forth, the combination with a swinging carrier member, of means for mounting the same on a railway-track, a car-engaging member, means detachably connecting the members, and yielding means for resisting the movement of the car-engaging member when struck by a car.

22. In a structure of the character set forth, the combination with a swinging carrier member, of means for mounting the same on a railway-track, a car-engaging member, means detachably and loosely connecting the members to permit a slight relative play between them, and means for yieldingly resisting the movement of the car-engaging member when struck by a car.

846,261. MILK-PAIL. GEORGE THOMAS, Endicott, Va. Filed Jan. 7, 1907. Serial No. 351,162.

Claim.—The combination with a milk-pail, of a cover removably fitted thereon and provided with a central opening bounded by an upstanding flange on the cover, and a cylindrical strainer-cup fitting in said opening and provided at its upper edge with a continuous retainer lip or clasp which fits over and around the upstanding flange of the cover, said strainer-cup being provided at a point above the bottom thereof with an annular strainer, substantially as described.

846,262. NUT-LOCK. ANDREW F. THOMPSON, Hornick, Iowa. Filed Nov. 3, 1906. Serial No. 341,931.

Claim.—1. A nut-lock comprising a bolt having a squared outer end, said squared outer end having a slot therein, a nut fitted to the bolt, a hood or cover for said nut, said hood provided with a slotted outer end, a key inserted in the slots of the hood and squared end of the bolt, and a spring for locking said key in place, substantially as described.

2. A nut-lock comprising a bolt having a squared outer end, a nut fitted to said bolt, a hood fitted to said nut, a key for locking said hood to said bolt and nut, and a spring locking device provided with a spring-tongue for holding said key in place, substantially as described

---

846,263. DISH-DRAINER. JAMES P. TIBBITS, New York, N. Y. Filed Sept. 8, 1906. Serial No. 333,740.

Claim.—1. A dish drainer and drier, comprising a plurality of longitudinal wires, span-wires hooked upon said longitudinal wires and crossing each other in pairs, and means for supporting said longitudinal wires.

2. A dish drainer and drier, comprising end frames, longitudinal members extending from one of said end frames to the other and connected at the top thereof, other longitudinal members extending from one of said frames to the other and connected at the bottom thereof, span-wires extending from the longitudinal member at the top of said end frames and crossing to the longitudinal member at the bottom of the opposite side of said end frames, and other span-wires crossing said span-wires first mentioned, each span-wire loosely engaging a particular span-wire crossing it, for the purpose of supporting dishes.

3. The combination of a wire framework, a number of span-wires extending from one part of said framework to another, said span-wires being in the same plane, and another number of span-wires extending from one part of said framework to another and being similarly in the same plane, the arrangement being such that the plane of one set of span-wires crosses the plane of another set of span-wires, one span-wire in one plane being paired with another span-wire in the other plane, the crossing-points of the several pairs being located sufficiently above the bottom to enable dishes supported between pairs to rest with their lower edges clear, substantially as described.

4. The combination of a number of span-wires occupying a definite plane, and a number of other span-wires occupying a definite plane crossing said first-mentioned plane, each span-wire of one plane being paired with a single wire of the other plane, the wires of each pair being disconnected from each other but resting in contact.

5. The combination of a framework, and span-wires connected therewith and crossing each other, the crossing-point of said wires being so positioned as to admit the edges of dishes between successive crossing-points and to support said dishes with the lower edges thereof free.

6. The combination of a drip-tray, and a wire frame mounted therein and provided with wires for supporting dishes, said wires being so crossed as to engage said dishes at points removed from the edges thereof, in order to allow said edges to clear said drip-tray.

7. A dish drainer and drier, comprising a rack having end frames provided with portions bent upward so as to form a surface upon which said frame may rest, a plurality of supporting members extending from one of said end frames to the other, and span-wires arranged in pairs, the wires of each pair crossing each other and engaging said supporting members.

846,264. CONVERTIBLE FORK AND RAKE. CHARLES C. TYLER, Anneta, N. C. Filed July 14, 1906. Serial No. 326,259.

Claim.—1. The combination with a rake-head, of a handle pivoted to the side of the rake-head, a brace bearing against the handle, adjustable longitudinally on the handle, and provided on one end with a spur and on the opposite end with an offset arm bearing against the top of the rake-head and adjustably secured thereto, and a sleeve having a locking engagement with the opposite end of said brace, substantially as shown and described.

2. The combination with a rake-head, of a handle pivoted to the side of the rake-head, a brace bearing against the handle, adjustable lengthwise thereon, and provided on

one end with an offset arm having a slot formed therein engaging a pin secured to the top of the rake-head, and a sleeve having a locking engagement with the opposite end of the brace, substantially as shown and described.

3. The combination with a rake-head, of a handle pivoted thereto, a brace bearing against the handle, adjustable lengthwise thereof, and provided with an offset forward end bearing against the top of the rake-head and adjustably secured thereto, the opposite end of said brace being provided with a spur and a sleeve having an interior spiral groove engaging the spur formed on the end of the brace, substantially as shown and described.

846,265. COMPOSITION OF MATTER. ERNEST VOLLER, Jersey City, and MAXIMILIAN F. THALBERG, Hoboken, N. J. Filed Jan. 7, 1907. Serial No. 351,184.

Claim.—1. The herein-described composition of matter, consisting of water, copper sulfate, plaster-of-paris, and eggs, substantially as described.

2. The herein-described composition of matter, consisting of water, copper sulfate, plaster-of-paris, eggs, and a coloring-matter.

3. The herein-described composition of matter, formed of water, ten gallons, copper sulfate, one bushel, plaster-of-paris, one bushel, and fifty eggs, including the ground shells.

846,266. MULTIPLE-PRESSURE SYSTEM. CASIMIR VON PHILP, Bethlehem, Pa., assignor to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Nov. 22, 1905. Serial No. 288,608.

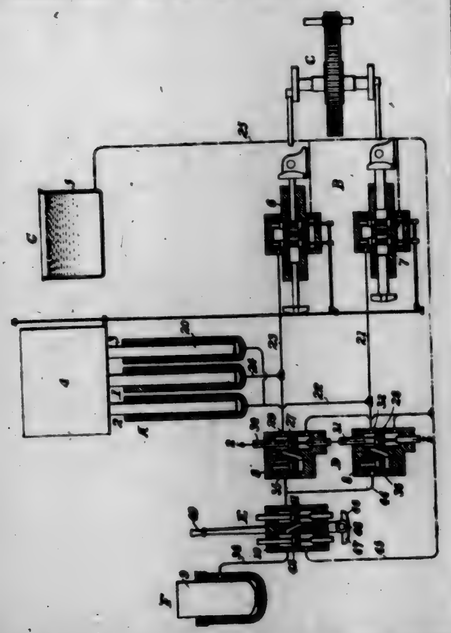

Claim.—1. The combination of an accumulator having a plurality of cylinders and plungers, a source of water-supply communicating with each cylinder, a press-cylinder, means for forcing the motor fluid into the accumulator-cylinders, and means for putting the different accumulator-cylinders into communication with the forcing means and with the press-cylinder to secure different pressures in the latter, substantially as set forth.

2. The combination of an accumulator having a plurality of cylinders and plungers, a source of water-supply communicating with each cylinder, a press-cylinder, a plurality of means for forcing the motor fluid into the accumulator-cylinders, and means for putting the different accumulator-cylinders into accumulation with the forcing means and with the press-cylinder to secure different pressures in the latter, substantially as set forth.

3. The combination of an accumulator having a plurality of cylinders and plungers, a source of water-supply communicating with each cylinder, a press-cylinder, a plurality of independent pumps, constituting means for forcing the motor fluid into the accumulator-cylinders, and means for putting the different accumulator-cylinders into communication with the forcing means and with the press-cylinder to secure different pressures in the latter, substantially as set forth.

4. The combination of an accumulator having a plurality of cylinders and plungers, a source of water-supply, independent pumps for forcing water into the different cylinders and a press-cylinder, separate communications between the latter and different cylinders of the accumulator, and means for controlling said communications and for controlling the discharge from the different accumulator-cylinders, substantially as set forth.

5. The combination of an accumulator having a plurality of cylinders and plungers, a source of water-supply, independent pumps for forcing water into the different cylinders and independent means for permitting its discharge from different cylinders, a press-cylinder, and a valve device with valves and ports arranged to connect the press-cylinder with one or more of the accumulator-cylinders and to connect the others of said accumulator-cylinders with the discharge-port, substantially as set forth.

6. The combination with an accumulator having a plurality of cylinders, of independent pumps connected one to one of the cylinders and the other to others of the cylinders, a press-cylinder communicating independently with different accumulator-cylinders, means for opening and closing the communications, and means for opening and closing the discharge from each accumulator-cylinder, substantially as set forth.

7. The combination with an accumulator having a plurality of cylinders, of independent pumps, a press-cylinder, a valve device, a conduit connected in circuit with one of the accumulator-cylinders, the valve device and one of the pumps, a second conduit connected in circuit with a plurality of accumulator-cylinders, with the valve device and with the other pump, and a conduit between the valve device and the press-cylinder all arranged to permit one or more of the accumulator-cylinders to be put into communication with the press-cylinder or with the pipe supplying one of the pumps, substantially as set forth.

8. The combination with a press-cylinder, of a supply-pipe, an accumulator having a plurality of cylinders, and means whereby water may be forced into one or more of said cylinders and whereby one or more may be put into communication with the press-cylinder and others connected with an exhaust-port, substantially as set forth.

9. The combination with a press-cylinder, of a supply-pipe, an accumulator having a plurality of cylinders, and independent pumps whereby water may be forced into one or more of said cylinders and whereby one or more may be put into communication with the press-cylinder and others connected with the pipe supplying one or other of the pumps, substantially as set forth.

10. The combination with a press-cylinder, of an accumulator having a plurality of independent cylinders and plungers therefor, and means whereby to put the press-cylinder in communication with a single accumulator-cylinder or with a plurality of such cylinders and for discharging the water from the accumulator-cylinders with which the press-cylinder is not in communication, substantially as set forth.

11. The combination with a press-cylinder, of an accumulator having a plurality of independent cylinders and plungers therefor, and means whereby to simultaneously put the press-cylinder in communication with a single accumulator-cylinder or with a plurality of such cylinders and for discharging the water from the accumulator-cylinders with which the press-cylinder is not in communication, substantially as set forth.

12. The combination with a press-cylinder, of an accumulator having a plurality of independent cylinders and plungers therefor, and a valve device having a plurality of valves and ports whereby to put the press-cylinder in communication with a single accumulator-cylinder or with a plurality of such cylinders and for discharging the water from the accumulator-cylinders with which the press-cylinder is not in communication, substantially as set forth.

13. The combination with a press-cylinder, of an accumulator having a plurality of independent cylinders and plungers therefor, and a valve device having a plurality of valves and ports whereby to put the press-cylinder into communication with one or more of the accumulator-cylinders, and simultaneously open the exhaust from the accumulator cylinder or cylinders not in communication with the press-cylinder.

14. The combination with a press-cylinder, of an accumulator having a plurality of independent cylinders and plungers therefor connected to a common cross-head, and means whereby to put the press-cylinder in communication with a single accumulator-cylinder or with a plurality of such cylinders and for discharging the water from the accumulator-cylinders with which the press-cylinder is not in communication, substantially as set forth.

15. The combination in a multiple-pressure system, of an accumulator having a plurality of cylinders and plungers, a tank, independent pumps for supplying different cylinders, a press-cylinder, conduits between the said parts, and a valve device communicating with the conduits and having ports and valves arranged to connect a single accumulator-cylinder or a plurality of such cylinders with the press-cylinder and to open the line of communication between the accumulator-cylinders not so connected, with the source of water-supply to the pumps.

16. The combination in a multiple-pressure system, of an accumulator having a plurality of independent cylinders and plungers, a press-cylinder, a change-valve device and conduits whereby to connect the press-cylinder with a single accumulator-cylinder or with a plurality of such cylinders, and a control-valve device between the change-valve device and the press-cylinder, substantially as set forth.

17. The combination in a multiple-pressure system, of an accumulator having a plurality of independent cylinders and plungers, connected to a common cross-head, a press-cylinder, a change-valve device and conduits whereby to connect the press-cylinder with a single accumulator-cylinder or with a plurality of such cylinders, and a control-valve device between the change-valve device and the press-cylinder, substantially as set forth.

846,267. MUSIC-SHEET. JOHN B. WALKER, New York, N. Y., and ALEXANDER R. BOND, Plainfield, N. J. Filed Aug. 18, 1906. Serial No. 331,200.

Claim.—1. A music-sheet consisting of a web containing fibers and provided with perforations disposed in a definite order relative to the general length of said web, the trend of said fibers extending crosswise of said general length of said web.

2. A music-sheet consisting of a web of material containing fibers and provided with perforations of different lengths for controlling the duration of different notes, the majority of said fibers being disposed in a general direction crossing the direction represented by the lengths of said perforations.

3. A music-sheet consisting mainly of fibers, the majority of which lie in a common direction, said music-sheet being provided with perforations representing successive notes and chords of a musical composition, the direction in which the perforations follow one another in interpretation crossing said common direction in which said fibers are disposed.

4. A music-sheet formed mainly of fibers and provided with perforations representing consecutive notes and chords of a musical composition, the majority of said fibers having a common direction transverse to the direction in which the perforations follow one another in interpretation.

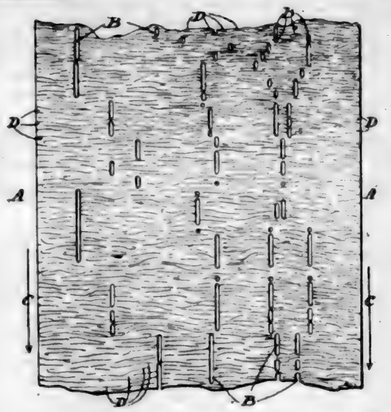

5. A music-sheet formed mainly of fibers and provided with music-controlling elements arranged in a definite succession, the majority of said fibers having a common direction transverse to the direction in which the music-controlling elements follow one another in interpretation.

6. A music-sheet formed mainly of fibers and provided with music-controlling elements arranged in definite succession, the majority of said fibers being so disposed relatively to said music-controlling elements as to reduce to a minimum the tendency to expansion and contraction of said sheet transversely to the direction in which the music-controlling elements follow one another in interpretation.

846,268. VIOLIN-PIANO. FRANK H. WATSON, Huntingdon, Tenn. Filed Jan. 6, 1906. Serial No. 294,924.

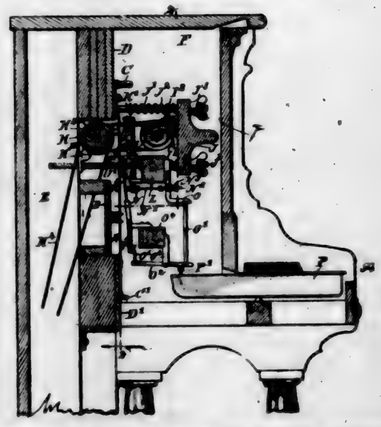

Claim.—1. A violin-piano provided with a narrow resinous traveling band for engagement with the treble strings and a broad resinous band for engagement with the bass strings.

2. A violin-piano having a resinous traveling band for engagement with the strings, a plurality of inclined pulleys over which passes the said band, and a removable grooved and driven roller for the said band.

3. A violin-piano having a resinous traveling band for engagement with the strings, a plurality of inclined pul-

leys over which passes the said band, and a removable grooved and driven roller for the said band, the latter extending transverse of the sounding-board and the said roller being arranged below the wrest-plank and between the strings and the back post of the violin-piano.

4. A violin-piano provided with an endless band for sounding the piano-strings, a grooved roller over which passes the band, inclined pulleys over which passes the said band, supports for the pulleys extending at one side thereof and means for keeping the said band taut.

5. A violin-piano provided with an endless band for sounding the piano-strings, a grooved roller over which passes the band, inclined pulleys over which passes the said band, bearings for supporting the pulleys and extending at one side thereof and spring-pressed means for keeping the said band taut.

6. A violin-piano provided with an endless band for sounding the piano-strings, a grooved roller over which passes the band, pulleys over which passes the said band, and a spring-pressed movable rail carrying the said pulleys.

7. A violin-piano provided with an endless band for sounding the piano-strings, a grooved roller over which passes the band, pulleys over which passes the said band, a rail carrying the said pulleys, fixed rods for the rail to slide on, and springs coiled on the said rods and pressing the said rail for holding the said band taut.

8. A violin-piano provided with an endless band for sounding the piano-strings, a grooved roller over which passes the band, pulleys over which passes the said band, a rail carrying the said pulleys, fixed rods for the rail to slide on, springs coiled on the said rods and pressing the said rail for holding the said band taut, and adjusting-nuts screwing on the said rods against the said rail.

9. A violin-piano provided with a casing having an opening in its end, an endless band for sounding the piano-strings, a grooved roller over which passes the band, pulleys over which passes the said band, and removable bearings for removably supporting the said roller to allow of running the roller sidewise through the opening in the end of the piano-casing.

10. A violin-piano provided with a resinous traveling band for engagement with the strings of the piano, a spring-pressed rock-shaft disposed vertically and provided at its upper end with means for engaging the said band to press the latter against a string, a pulley on the lower end of said rock-shaft, a cord passing over the said pulley, a lever, an adjustable connection between the lever and the said cord, and key-controlled means for imparting a swinging movement to said lever.

11. A violin-piano provided with a resinous traveling band for engagement with the strings of the piano, a spring-pressed rock-shaft disposed vertically, a rail carrying bearings in which the rock-shaft is mounted to turn, the said rock-shaft being provided at its upper end with means for engaging the said band to press the latter against a string, a pulley on the lower end of said rock-shaft, a cord passing over said pulley, key-controlled means for exerting tension on the said cord, the said means including a lever fulcrumed on the said rail, and a device adjustable in the said lever and connected with the cord, and means for adjusting the said device.

12. A violin-piano provided with a resinous traveling band for engagement with the strings of the piano, a spring-pressed rock-shaft, a friction-roller carried by said rock-shaft for engaging the band to press the latter against a string, a pulley on the said rock-shaft, a cord passing over said pulley, a hook-bolt connected with the cord, a lever in which the hook-bolt is adjustably held, and means controlled by a piano-key for imparting swinging motion to the said lever.

13. A violin-piano provided with resinous traveling bands, one for engagement with the treble strings, and the other for engagement with the bass strings, rollers over which pass the said bands, means for driving the rollers at different speeds to cause the band for the treble strings to travel at a higher rate of speed than the band for the bass trings, inclined pulleys for the bands to pass over and spring-pressed rails carrying the said pulleys, the rails being located opposite the corresponding rollers.

846,269. BOTTLE-WASHER. GARDNER K. WATSON, Farrell, Miss. Filed Sept. 20, 1906. Serial No. 335,473.

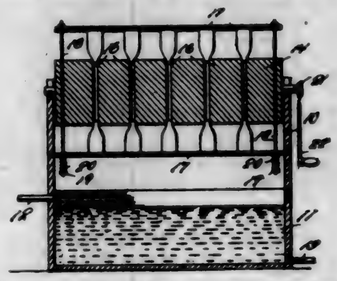

Claim.—1. A bottle-washing machine comprising a rotary carrier having holes formed through said carrier for the reception of the necks of bottles, means for retaining the bottles in place in the said holes, the latter being arranged to have the mouths of the bottles on one side of the carrier directly opposed to the mouths of the bottles on the other side, and means for operating the carrier.

2. A bottle-washing machine comprising a carrier having holes formed therethrough for the reception of the necks of the bottles, spring-pressed foot-plates bearing on the bottoms of the bottles, the holes in the carrier being arranged to have the mouths of the bottles on one side directly opposed by the mouths of the bottles on the other side, and a crank for operating the carrier.

846,270. BUCKET-MAKING MACHINE. JOHN A. WATT, Halifax, Nova Scotia, Canada. Filed Dec. 13, 1905. Serial No. 291,660.

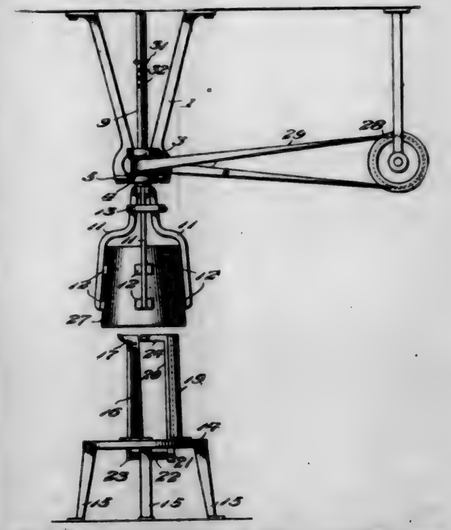

Claim.—1. A bucket-making machine comprising means for revolubly supporting a block of material, a cutting means adapted for initial entry into a channel in the block and arranged for movement toward and from the axis of rotation, said means cutting in opposition to the movement of rotation of the block.

2. A bucket-making machine comprising a support for a block of material, a cutting means arranged for initial entry into a channel formed in the block, said means cutting in opposition to the movement of rotation, means for producing a relative rotation between the block and the cutting means, and means for operating said cutting means at an angle to the axis of rotation.

3. A bucket-making machine comprising means for revolubly supporting a block of material, a gouge-cutter for forming a channel longitudinally of the block, a cutting means adapted for initial entry into said channel and arranged to cut in opposition to the movement of rotation of the block, and means for moving said cutting means in a plane at an angle to the axis of rotation.

4. A bucket-making machine comprising means for revolubly supporting a block of material, a gouge-cutter for forming a channel longitudinally of the block and concentric of its surface, and a chisel-cutter for forming a channel transversely of the block to connect with the longitudinal channel, said chisel-cutter traveling in the path of the gouge-cutter and being normally inoperative.

5. A bucket-making machine comprising means for revolubly supporting a block of material, a gouge-cutter for forming a channel longitudinally of the block and concentric of its surface, and a chisel-cutter for forming a channel transversely of the block to connect with the longitudinal channel, said chisel-cutter traveling in the path of the gouge-cutter and being normally inoperative, and means to feed said chisel transversely of the block.

6. A bucket-making machine comprising means for revolubly supporting a block of material, a table secured below said means, a gouge-cutter supported by said table, a chisel-cutter revolubly supported by the table, a spring for operating said cutter, and means for securing the chisel-cutter against the operation of the spring.

846,271. STOPPER. BENJAMIN F. WHELDEN, Ludlow, Vt. Filed July 14, 1906. Serial No. 326,217.

Claim.—1. A vessel having a tubular discharge-neck, a stopper arranged in the neck, the latter being provided at a point between the ends of the stopper with a frangible portion, metal caps arranged in the neck respectively above and below the stopper, and a cement filling in the neck above the uppermost cap.

2. A vessel having a tubular discharge-neck, a stopper arranged in the neck, the latter being provided at a point between the ends of the stopper with a frangible portion, conical caps arranged respectively above and below the stopper, a connecting element extended through the stopper and terminally engaged with the caps, and a cement filling in the neck above the uppermost cap.

3. A vessel having a tubular discharge-neck, a stopper arranged in said neck, the latter being provided at a point between the ends of the stopper with a frangible portion and at a point below said stopper with an inner marginal groove, a conical protecting-cap seated in the neck above the stopper, a second cap arranged in the neck below the stopper and seated in said groove, a connecting element extended through the stopper and engaged with the cap, and a cement filling in the neck above the uppermost cap.

846,272. COMBINED TURNING-TOOL AND CALIPERS. RAY S. WHIPPLE and JOHN A. OLESSAK, Philadelphia, Pa. Filed Nov. 15, 1905. Serial No. 287,450.

Claim.—1. A combined turning-tool and calipers, comprising a handle-bar, a cutter-bit projecting from the forward end of the handle-bar, an adjustable caliper-leg carried by the handle-bar and projecting beyond and in front of the cutter-bit, and means for adjusting the caliper-leg from the rear end of the handle-bar.

2. A combined turning-tool and calipers, comprising a handle-bar, a cutter-bit projecting from the forward end of the handle-bar, a sliding member on the handle-bar, a caliper-leg secured to said sliding member and projecting beyond and in front of the cutter-bit, and means for operating the sliding member to move the caliper-leg toward and from the cutter-bit.

3. The combination with a slotted handle-bar, a cutter-bit, and a slide mounted on the handle-bar, of means for clamping the slide-block upon the handle-bar, means for securing the cutter-bit on the handle-bar, and a curved caliper-leg secured by one end on the slide and extended in advance of the cutter-bit.

4. The combination with a handle-bar having a longitudinal slot, a slide mounted on the handle-bar, and having a perforate internally-threaded lug depending at one end and working in said slot, a cutter-bit securable on the lower side of the handle-bar and projecting at the forward end thereof, releasable means for clamping the slide on the handle-bar, an exteriorly-threaded adjusting-rod engaging the lug in its perforation, means for turning said rod, and a curved caliper-leg mounted by one end on the slide and extended in advance of the cutter-bit.

5. The combination with a handle-bar having two longitudinal slots, a slide mounted on the handle-bar and having a depending, perforated, internally-threaded lug on its rear end, working in one of the slots in the handle-bar, a screw-bolt passing through the other slot in the handle-bar and through a perforation in the slide, a clamping-nut on the projecting end of the screw-bolt, a threaded adjusting-rod held in the slot in the outer end of the handle-bar and engaging the depending lug, means carried at the rear end of the adjusting-rod for its manual rotation, a cutter-bit having its nose projected forward of the handle-bar, and a curved caliper-leg secured by one end on the forward end of the slide and having its free end extended in advance of the cutter-bit.

6. In a device of the character described, the combination with a handle-bar having a graduated scale on one side, of a cutter-bit on the lower side of the handle-bar, the cutting edge thereof projecting forward of said bar, a slide on the forward portion of the handle-bar, an index-finger on the slide indicating on the scale, a curved caliper-leg secured by one end on the slide, and having its free end extended in advance of the cutting edge of the bit, and means for operating the slide and thus adjusting the free end of the caliper-leg toward or from the cutting edge of the bit.

846,273. DRIVING MECHANISM. ADOLPH WUNDERLICH, Croydon, England, assignor to The London Electric Firm, Croydon, England. Filed May 10, 1906. Serial No. 316,226.

Claim.—1. A driving-gear comprising a pin, a carrier therefor, a stationary cam, means for rotating said carrier so that the pin follows the cam and means for transmitting motion from the carrier to the element to be driven.

2. A driving-gear comprising pins, a carrier therefor, a stationary cam, means for rotating the carrier so that the pins follow the cam and means for transmitting motion from the carrier to the element to be driven.

3. A driving-gear comprising pins, a carrier therefor, a stationary cam-plate having cam-slots therein, means for rotating the pin-carrier so that the pins follow in the cam-slots and means for transmitting the motion of the carrier to the element to be driven.

4. A driving-gear comprising pins, a carrier therefor, a

cam, means for rotating the carrier so that the pins follow the cam, a second set of pins on the carrier, a second cam adapted to be driven by the second set of pins and connected to the element to be driven.

5. A driving-gear comprising pins, a carrier for the same in the form of a plate, a stationary cam-plate provided with cam-slots, an eccentric for rotating the carrier-plate so that the pins follow the cam-slots, and means for transmitting the motion of the carrier-plate to the element to be driven.

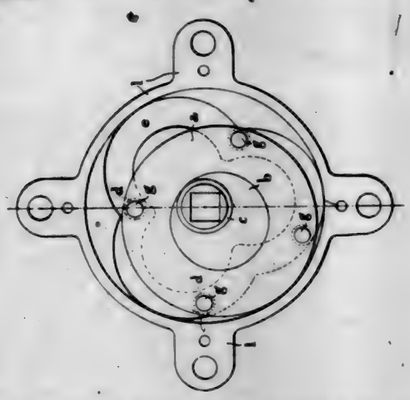

6. A driving-gear comprising pins a carrier for the same in the form of a plate, a cam-plate provided with cam-slots, an eccentric for rotating the carrier-plate so that the pins follow the cam-slots, a second set of pins on the carrier-plate and a second cam-plate having cam-slots for receiving the second set of pins and means for connecting the second cam-plate to the element to be driven.

7. A driving-gear comprising a series of carriers, pins on said carriers, a series of cam-plates, alternately disposed in regard to the carriers and provided with cam-slots for receiving the respective pins on the carriers, means for rotating the carriers so that the pins follow their respective cam-slots and means for transmitting motion from any of the cam-plates.

8. A driving-gear for a winch comprising a fixed cam-plate provided with cam-slots, pins engaging therein, a ring-plate for carrying said pins, an eccentric for rotating said ring-plate so that the pins follow the cam-slots, a second set of pins on said ring-plate, and a plate provided with circular recesses for receiving said second set of pins and driven thereby.

846,274. CARPENTER'S SQUARE. GEORGE YATES, Wyoming, Pa. Filed Feb. 5, 1906. Serial No. 299,520.

Claim.—The herein-described carpenter's square having the short arm or base and the long arm or altitude perpendicular one to the other with their outside edges graduated in inches and half inches from their point of intersection to their ends, said base having the quadrant 3 described about its twelve-inch mark as center, and both the base and altitude having the scores 4 radiating from the twelve-inch mark on the base and intersecting the inch and half-inch graduations on the altitude, legends adjacent to the graduations on the altitude signifying the length of rafters having a twelve-inch base and a pitch corresponding to the respective graduations, a row of legends on the altitude adjacent to said graduations, the legends of said row signifying the decrease in length of succeeding jack-rafters at the same pitch arranged sixteen and eighteen inches apart, representations of fragments of various polygons on said base and legends upon said base adjacent to said polygons signifying the length of each side based upon a given unit of measurement, substantially as shown and described.

846,274.

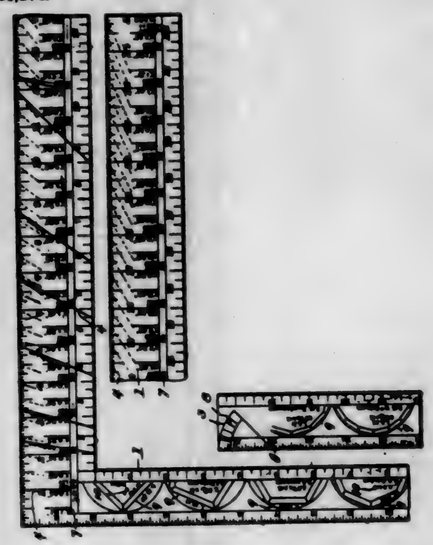

846,275. VALVED OUTLET FOR WASTE AND OVERFLOW PIPES. DAVID W. YORK, State Farm, Mass. Filed Feb. 24, 1906. Serial No. 302,704.

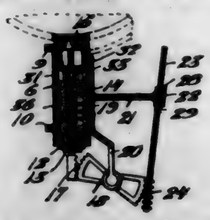

Claim.—1. In a valved outlet and overflow connection for washbasins and the like, the combination of a basin having main and overflow outlets, a valve-casing communicating with said outlets and having upper and lower exhaust-passages, a valve-stem vertically adjustable in the casing and having a valve governing the main outlet, means for operating said stem to open and close the valve, and a drain-partition fixed to and movable with the stem below the outlet-valve and having passages for the flow of water to the lower exhaust of the valve-casing.

2. In an outlet connection for washbasins and the like, the combination of a basin having main and overflow outlets, a valve-chamber communicating at its upper end with said outlets and provided with upper and lower exhaust-passages, a plug closing the lower end of the valve-chamber, and having a bearing extension projecting above the lower exhaust-passage, a stem sliding in said plug and bearing extension and carrying at its upper end a valve controlling the main outlet, means for operating said stem, and a drain-partition carried by the stem and having a portion to telescope over the bearing extension to prevent leakage of water between the same and stem.

3. In a valved outlet connection for washbasins and the like, the combination of a basin having main and overflow outlets, a valve-chamber communicating at its upper end with said outlets and provided with upper and lower exhaust-passages, a plug closing the lower end of the valve-chamber and having a bearing extension projecting above the lower exhaust-passage, a stem slidable in the plug and bearing extension and carrying at its upper end a valve

controlling the main outlet, a cup or partition fixed to the stem below the main valve and having a perforated body and a tubular portion telescoping over the upper end of the bearing, a spring arranged to exert pressure on said partition, and means for sliding said stem to adjust the main valve to open or closed position.

846,276. ELECTRIC SIGNAL CONTROL. MATHEW ABT, New York, N. Y. Filed Mar. 26, 1906. Serial No. 308,031.

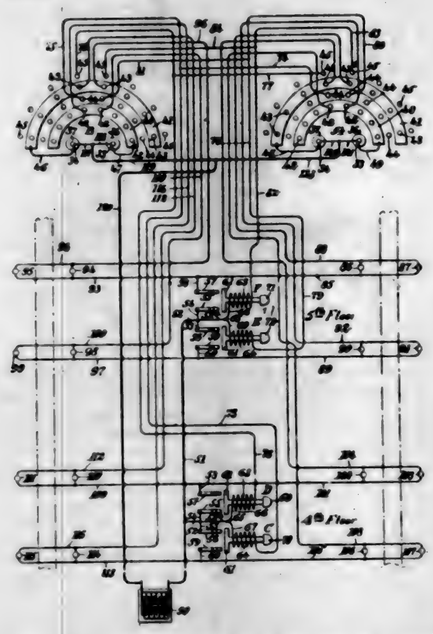

Claim.—1. The combination of a plurality of contacts normally closed, electric lamps mounted upon different floors and connected with said contacts respectively, mechanism controllable by movements of a revoluble member for opening said contacts successively, so as to darken said lamps in a predetermined relative order corresponding to that of the successive floors, and mechanism for opening a plurality of lamp-circuits while said elevator is traveling in a particular direction.

2. The combination of a revoluble member connected with the hoisting mechanism of an elevator, said revoluble member being provided with a boss, a star-wheel to be turned step by step as said revoluble member is turned, a cam connected with said star-wheel, a rocker disposed partially within the path of said cam so that said rocker is actuated by movements of said cam, contacts to be opened and closed by movements of said rocker, one of said contacts being opened whenever the other is closed, and separate circuits each connected with one of said contacts and controllable thereby for signaling the arrival of the elevator from a particular direction only.

3. In an electrical signal system, the combination of a plurality of contacts normally closed and representing different floors, mechanism controllable by movements of an elevator for opening said contacts in a predetermined successive order representing the succession of different floors to be passed by the elevator-car, electric lamps connected with said contacts and lighted thereby, and means controllable by movements of the car through predetermined distances for opening a plurality of circuits through said lamps.

846,277. BRICK-MACHINE. HENRY ARMSTRONG, Rochester, N. Y. Filed Dec. 10, 1906. Serial No. 347,117.

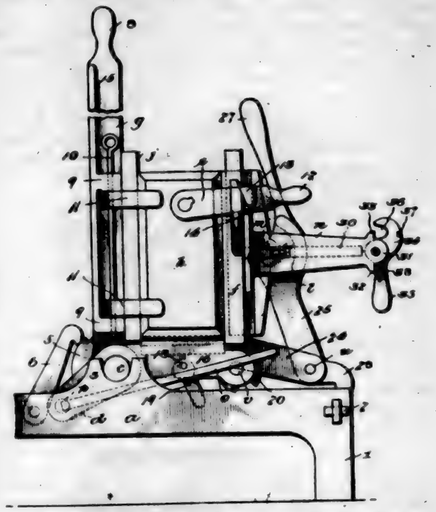

Claim.—1. In a brick-machine, the combination of a supporting-frame, a shaft pivotally mounted in said frame, levers carrying a pallet serving as the back of a mold, and plates serving as the bottom of the mold, and also carrying a front door provided with movable division-plates, and end doors hinged to said levers, substantially as described.

2. In a brick-machine, the combination of a frame, a shaft supported therein, operating-levers mounted on said shaft, a pallet adapted to be carried by said operating-levers, end doors pivotally supported one on each of said operating-levers, a bottom provided with finishing-plates carried by said levers, a front door provided with finishing-plates and with movable division-plates pivotally mounted on said levers, and means for fastening the end and front doors together, substantially as described.

3. In a brick-machine, the combination of a front door forming a part of the mold, pivotal supports for said front door, said door being provided with recessed brackets and with apertures, division-plates mounted to slide in the apertures of said door, a shaft connected to all of said division-plates and adapted to slide in the recesses of said brackets, means for moving said shaft and with it the division-plates outwardly from the mold, and means for locking said shaft in its moved-out position, substantially as described.

4. In a brick-machine, the combination of an apertured front door, pivotal supports therefor, division-plates adapted to slide through the apertures in said front door, a shaft to which said division-plates are secured, recessed brackets secured to said front door and guiding said shaft, a pivoted forked lever, the arms of which engage said shaft, and means for locking said shaft after it has been moved to pull out the division-plates from the machine, substantially as described.

5. In a brick-machine, the combination of a mold comprising a pallet, bottom, end doors, and front door, means for securing said end doors to said front door, pivotal supports for said front door, division-plates adapted to slide in apertures in said front door, a shaft to which all of said division-plates are secured, recessed brackets for guiding said shaft, a pivoted forked lever, the arms of which engage said shaft, said arms being provided with downwardly-extending portions adapted to rest upon the frame of the machine and normally support said front door in a vertical position, substantially as described.

6. In a brick-machine, the combination of a support-

ing-frame, a shaft mounted on said frame, operating-levers mounted on said shaft, each lever including a vertical portion, a downwardly and rearwardly extending portion, a horizontal portion, a pallet adapted to rest against said vertical portions, end doors hinged to said vertical portions, a bottom carried by said horizontal portions, a front door pivotally supported at the ends of said horizontal portions, means for locking said end doors to the front door, division-plates adapted to slide in apertures in the front door, a shaft to which said division-plates are all secured, and means for moving said shaft to draw the division-plates out of the mold, and means to lock said shaft after said plates have been drawn out, substantially as described.

7. In a brick-machine, the combination of a mold, operating-levers for separating the parts of said mold, each lever being provided with an apertured downwardly and rearwardly projecting part, a supporting-frame, a shaft mounted on said frame on which said levers are mounted, apertured brackets on said shaft, and a lever and pin at each end of the machine, said pin being adapted to be moved in and out of the aperture in the projecting part of said levers, substantially as described.

846,278. GRADER. JOHN BAGLEY, Tacoma, Wash. Filed July 10, 1906. Serial No. 325,481.

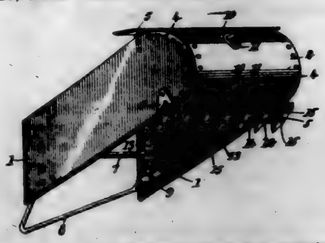

Claim.—1. A grader having a bucket presenting a plurality of blades having cutting edges, one of said blades having a plurality of teeth mounted thereupon and projecting beyond said edge.

2. In a grader, a bucket having an end plate, blades secured adjacent to the edges of said end plate, one of said blades having teeth with split shanks mounted thereupon, said shanks and said teeth having extensions adapted to be secured to said end plate.

3. A grader having side plates, and an end plate curved about a horizontal axis and mounted between said side plates, blades secured to the horizontal edges of said end plate, and teeth having split shanks mounted upon one of said blades with the teeth projecting beyond the edge thereof.

4. A grader having side plates, means rigidly connecting the front ends thereof, an end plate extending between the side plates and curved around a horizontal axis, presenting the concave side to the front of the grader to form a bucket, blades secured to the longitudinal edges of said end plate, and teeth having split shanks mounted upon one of said blades and extending beyond the edge thereof, said shanks having extensions rigidly secured to said end plate.

846,279. MOLDING-MACHINE. HENRY BANNON, Elwood, Ind. Filed July 6, 1905. Serial No. 268,373.

Claim.—1. A molding-machine comprising a stationary mold-bottom having a perforation therethrough, a pair of levers pivotally mounted with respect to said mold-bottom and each having a slot, a core-plate provided with a stud on each side, each stud entering one of said slots.

2. A molding-machine comprising a core-plate, cores thereon, pivoted levers for operating the core-plate a catch for locking the levers in position to hold said core-plate in elevated position, means for disengaging the catch from the core-plate, and a mold mounted above said core-plate.

3. A molding-machine comprising a core-plate, cores thereon, a pair of pivoted levers to which the core-plate is pivoted, a locking device for locking the levers in position to hold the core-plate elevated, and a mold-box above the core-plate and having openings in its bottom corresponding in size and shape to the cores.

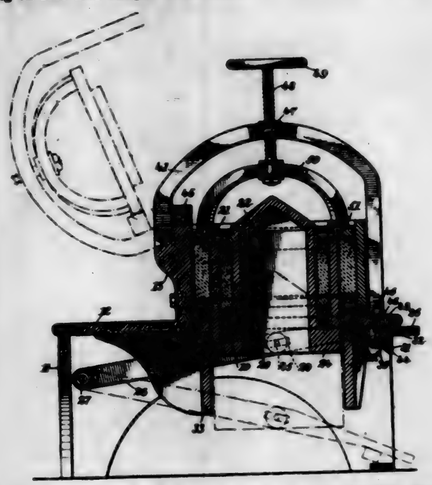

4. A molding-machine, comprising a table having openings in its top, a mold-box on the table-top, a pallet on the table-top within the mold-box and provided with openings corresponding to the openings of the table-top, a core-plate below the table-top and provided with a plurality of cores projecting through the openings of the table-top and pallet, means for operating the core-plate, a frame hinged to one wall of the mold-box and having its free end detachably secured to the table-top, a press-plate frame adjustably carried by the said frame, and a press-plate carried thereby and corresponding in shape to the pallet but being the negative thereof.

5. A molding-machine, comprising a table having openings in its top, a mold-box on the table-top, a pallet on the table-top within the mold-box and provided with openings corresponding to the openings in the table-top, a core-plate below the table-top and provided with a plurality of cores projecting through the openings of the table-top and pallet, means for operating the core-plate, a hinged frame extending over the mold-box, a press-plate frame, a screw secured to the press-plate frame and working in the hinged frame, and a press-plate carried by the said frame, said press-plate corresponding in shape to the pallet but being the negative thereof.

6. A molding-machine, comprising a table having a plurality of openings in its top, a mold-box on the table, one side of the mold-box being fixedly secured to the table-top, a pallet on the table-top within the mold-box and provided with openings corresponding to the openings in the table-top, core-plate below the table-top and provided with a plurality of cores projecting through the openings of the table-top and pallet, means for operating the core-plate, a frame hinged to the fixed side of the mold-box extending over the mold-box and having its free end in locking engagement with the table-top, a press-plate frame, a press-plate carried by the said frame, said press-plate corresponding in shape to the pallet but being the negative thereof, and means for adjustably supporting the press-plate frame from the hinged frame.

7. In a molding-machine, the combination of a table having a guide upon its lower surface and a plurality of perforations in its top, said top constituting the bottom of the mold, a core-plate located below the top of the table and adapted to move in said guides, said core-plate being provided with a plurality of cores, pivoted levers to which the core-plate is pivoted for moving the core-plate toward and from the top of the table from below, and means for locking the lever in position to hold the core-plate in elevated position.

8. In a molding-machine, the combination of a table having a guide upon its lower surface and a plurality of perforations in its top, said top constituting the bottom of the mold, a core-plate located below the top of the table and adapted to move in said guides, said core-plate being provided with a plurality of cores, pivoted levers to which the core-plate is pivoted for moving the core-plate toward and from the table, means for locking the levers in position to hold the core-plate in elevated position, a pallet located on the top of the table and having perforations corresponding to the shape of the cores, a standard on the table, a series of walls movably mounted on the standard and constituting the main part of the mold, a frame pivoted to the standard, and a press-plate mounted on the frame.

846,280. DRAFT-EQUALIZER. EDWIN A. BARRY, Sutherland, Iowa. Filed Aug. 29, 1906. Serial No. 332,493.

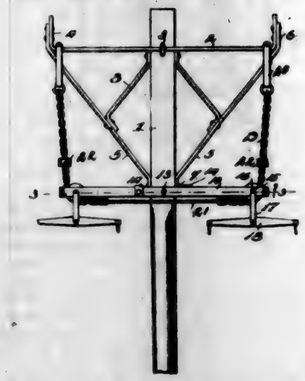

Claim.—1. In a device of the class described a tongue or pole having a cross-bar, braces connecting said cross-bar with the tongue to constitute a draft-frame, a doubletree pivoted upon the frame and having guide members at the ends thereof, flexible elements guided over said members and connected at their rear ends with the cross-bar of the draft-frame, and a rod connecting the forward ends of the flexible elements and extending across the tongue adjacent to and in front of the doubletree.

2. In a device of the class described a tongue having a cross-bar, braces connecting the ends of said cross-bar with the tongue, a doubletree composed of two yokes or members pivoted upon the tongue, guide-pulleys carried by said yokes, flexible elements guided over said pulleys and connected at their rear ends with the cross-bar, and a rod connecting the front ends of said flexible elements and extending across the tongue in front of and adjacent to the doubletree.

3. In a device of the class described a tongue having a cross-bar, a doubletree comprising two independent yokes or members pivoted upon the tongue and having overlapping arms each provided with a clip engaging the rear edge of the other, guide-pulleys carried by the yokes, and flexible elements connected at their front ends adjacent to and in front of the doubletree and having their rear ends connected with the cross-bar.

4. In a device of the class described a tongue having a cross-bar, a doubletree comprising two independent yokes or members pivoted upon the tongue, guide-pulleys carried by said yokes or members, flexible elements guided over said pulleys and having their front ends connected in front of and adjacent to the doubletree, said flexible elements being connected at their rear ends with the cross-bar, a stop member secured upon said flexible elements in rear of the ends of the yokes or members of the doubletree to limit the rearward movement of the latter.

846,281. TIE-PLATE. EDWIN H. BELL, Chicago, Ill., assignor to The Railroad Supply Company, Chicago, Ill., a Corporation of Illinois. Filed June 8, 1906. Serial No. 320,848.

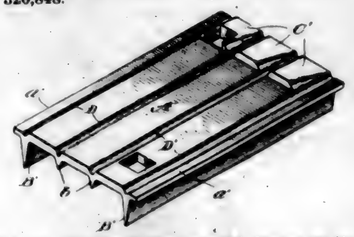

Claim.—A tie-plate having parallel flanges on its under-surface extending longitudinally with respect to and adapted to be embedded in a tie, parallel grooves in its upper surface vertically aliining with said flanges, and having a broken transverse shoulder on its upper surface the sections of which are located intermediate of said grooves.

846,282. LABEL-SPREADER. GEORGE N. BYL and JOSEPH KOEHLER, Jersey City, N. J. Filed May 9, 1906. Serial No. 315,962.

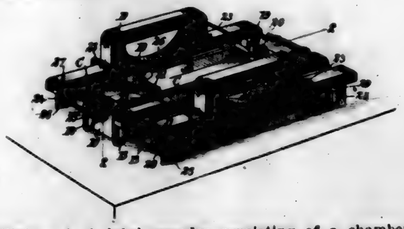

Claim.—1. A label-spreader consisting of a chambered body-section open at the bottom, partitions adjustable in the said body-section, said partitions being provided with label-retaining flanges at their bottom portions, and feed-bars for labels, having sliding and guided movement relative to the said body.

2. In a label-spreader, a chambered body open at the bottom, a series of partitions adjustably located in the said body, each partition being provided with a label-retaining flange at its lower edge, a retaining-bar passed through said partitions, set-screws connected with the retaining-bar, being adapted to tighten the same on the said partitions, and feed-bars mounted to slide at each side of the said body.

3. In a label-spreader, a chambered body, partitions adjustable in the said body, having label-retaining flanges at their lower ends, feed-bars having loose guided connection with the said body, means for securing the partitions in adjusted position, adjusting-bars carried by the body, and binding and guard plates secured to the outer end portions of the said adjusting-bars.

4. In a label-spreader, a chambered body-section open at the bottom, a partition adjustably located in said body-section and having a label-retaining flange at its lower end, feed-bars mounted for sliding movement at the side portions of the said body, adjusting-bars extending from the body in opposite directions, a locking device common to the adjusting-bars and to the partition, guard or binding plates secured to the outer end portions of the adjusting-bars, and handle-bars connected with the binding-plates.

5. In a label-spreader, the combination with a chambered body open at the bottom, slotted ears at the ends of

the said body, feed-bars located at the sides of the said body, connecting-rods for the feed-bars, passed through the slots in the said ears, and a handle for the device, of partitions having openings therein at their upper edges, the said partitions being adjustable in said body, each partition being provided with a label-retaining flange at its lower end, a bar loosely passed through the said partitions and loosely placed in the said body, adjusting-bars mounted to slide in opposite directions on the said body, binding or guard plates secured to the outer ends of the adjusting-bars, and fastening devices common to the bar passed through the partitions and to the said adjusting-bars for the purpose described.

846,283. SHAFT-PACKING. CHARLES L. COOK, Louisville, Ky. Filed Dec. 8, 1906. Serial No. 346,877.

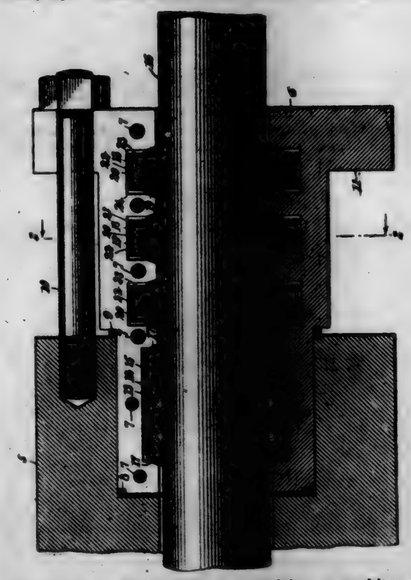

Claim.—1. A shaft-packing comprising a packing-case, a pair of packing-rings arranged in the case for engaging with a shaft, each of said rings consisting of segmental sections, a sectional sealing-ring for engaging around the packing-rings, means for holding the sections of the sealing-ring in position, and ball-rings engaging with the packing-rings and the sealing-ring.

2. In a shaft-packing, a packing-case through which the shaft extends, the said packing-case having an interior annular channel, a pair of packing-rings arranged in the channel and adapted for engagement with the shaft, each ring consisting of segmental sections, a sealing-ring consisting of segmental sections engaging around the packing-rings, lugs on the outer sides of the packing-ring, sections for engaging between the ends of the sealing-ring sections, a spring-ring engaging around the sealing-ring sections, and ball-rings engaging the sides of the several rings and also engaging with the opposite walls of said channel.

3. The combination with a stuffing-box for a motor, of a packing-casing having an interior annular channel provided with inclined walls extended therein, packing-rings arranged between said casing and the stuffing-box, packing-rings arranged in the channel, and ball-rings between the packing-rings and the walls of the channels.

4. The combination with the stuffing-box for a motor-cylinder, of a packing-case secured to the stuffing-box and having a portion extended therein, the said portion within the stuffing-box having an annular channel, a fire-ring consisting of segmental sections arranged in said channel, the said ring having interior annular channels for lubricant, sectional ball-rings engaging with the ends of the fire-ring and with the walls of said channel, and packing-rings arranged in the casing outward of the stuffing-box.

846,284. WATER ELEVATING AND DELIVERING APPARATUS. EDWARD D. COUCH, Scotts Crossroads, Va. Filed Mar. 13, 1906. Serial No. 305,835.

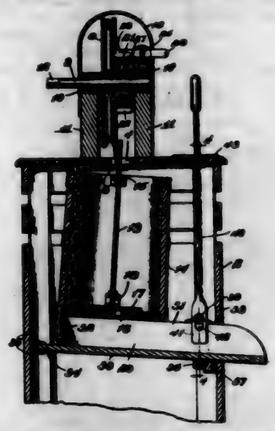

Claim.—1. In a water elevating and delivering apparatus, a well, a curb or casing provided with guides, a pair of valved buckets, hoisting means upon the casing for alternately and simultaneously raising and lowering said buckets, a trough shiftable horizontally in the guides to a position beneath either bucket when the latter is elevated, and a lever fulcrumed on the casing and operatively connected with the trough, whereby the latter may be shifted independently of the hoisting means.

2. In a water elevating and delivering apparatus, a well, a curb or casing provided with guides, valved buckets, means mounted upon the curb or casing for raising and lowering the buckets, a delivery-trough slidably mounted in said guides to be shifted beneath either of the buckets upon the elevation of the latter to delivery position, a transverse rod upon the bucket, and an operating-lever fulcrumed upon the curb and having a trough-shifting portion loosely engaging said rod and adapted to be shifted into engagement with the sides of the trough to adjust the latter in either direction.

3. In a water elevating and delivering apparatus, a well, a curb or casing provided with guides and having an opening at one side, valved buckets, means mounted upon the curb or casing for raising and lowering the buckets, a delivery-trough slidably mounted in said guides and projecting at its discharge end through said opening, said trough having a bottom extension engaging one of the guides, and a pivoted lever for shifting the trough.

4. In a water elevating and delivering apparatus, a hoisting-rope, an operating-windlass therefor, a ratchet-wheel upon the windlass-shaft provided with notches or teeth having outer curved shoulders, and a gravity-dog having a portion to engage the teeth, said portion being formed with a recessed face to ride upon said curved shoulders.

5. In a water elevating and delivering apparatus, a well, a curb or casing provided with guides, a pair of valved buckets, hoisting means supported by the casing for alternately and simultaneously raising and lowering said buckets, a delivery-trough slidably mounted in said guides to be shifted beneath either of the buckets upon the elevation thereof, said trough being provided with a transverse rod extending between the sides thereof, and an operating-lever fulcrumed on the casing and having a slotted end engaging said rod, and a bearing portion to engage the sides of the trough, whereby the latter may be shifted upon the reverse swinging movements of said lever.

840,285. GEARING. WILLIAM CRAWFORD, Bradford, Pa., assignor to Bovaird & Company, a Copartnership. Filed Feb. 6, 1906. Serial No. 299,827.

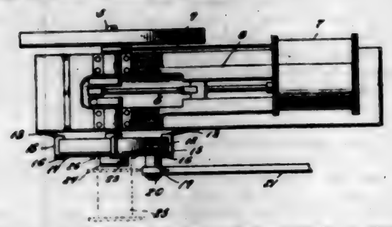

Claim.—1. In combination, a driving-shaft, a stationary plate having an annular gear encircling the shaft and constituting a gear-case with an open side, a disk journaled on the driving-shaft and closing said open side, a pinion on the driving-shaft within the gear-case, a planet-gear journaled on the plate within the gear-case and meshing with both said pinion and rack, said rotary disk having a centrally-arranged projecting hub and an eccentrically-arranged boss arranged respectively for the attachment of a winding-drum and a wrist-pin, substantially as described.

2. In combination, a driving-shaft, a stationary plate through which said shaft projects, said plate having an annular flange carrying internal rack-teeth, said plate and flange forming a gear-case, a pinion on the driving-shaft within the gear-case, a rotary disk rotatably mounted on the driving-shaft and closing the open side of said case, a planet-gear carried by said disk within the gear-case and meshing with said rack and pinion, removable cleats carried by said annular flange and overlapping the edge of the disk, and means for detachably connecting the part to be operated to said disk, substantially as described.

846,286. GAME DEVICE. HOWARD D. DARLINGTON, Norwood, Ohio. Filed Mar. 28, 1906. Serial No. 308,461.

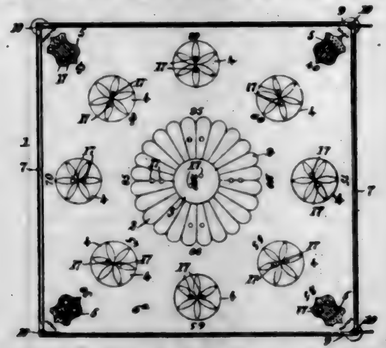

Claim.—1. In a game device, a game-board having counting-sections thereon, contact-points at said sections, a source of electrical supply in circuit with the said contact-points, an alarm device in said circuit, and a projectile adapted to be thrown on the board, and having a metal section adapted for engagement with the contact-points in the counting-sections to close the said electrical circuit.

2. In a game device, a game-board having counting-sections produced thereon, separated contact-points for each section, a source of electrical supply in circuit connection with all of said contact-points, a signaling device in said circuit, and a projectile adapted to be thrown on the board and having means for closing the circuit.

3. In a game device, a game-board having counting-sections produced thereon, separated contact-points at each section, a source of electrical supply in circuit connection with all of the said contact-points, a signaling device in said circuit, and an object adapted to be thrown on the board, the said object having a metal section for engagement with any two of the said contact-points in any counting-section to complete the electric circuit.

4. In a game device, the combination with a game-board provided with counting-sections, separate contact-points at each of said sections, a source of electrical supply in circuit connection with all of said contact-points, and a signaling device in said circuit, and a projectile provided with a resilient body and a metal section, the said projection being adapted to be thrown on the board, and close the circuit in any counting-section by engagement with the contact-points of said section.

5. In a game device, a board having a counting-space, an electrical circuit including a signal and a pair of contacts disposed in said space, and an object adapted to be thrown on the board having a contact portion designed to engage and electrically connect said pair of contacts for operating the signal.

6. In a game device, a board having a plurality of pairs of contact members disposed therein, an electrical circuit including a signal and said contacts, a projectile adapted to be thrown on the board having a contact portion adapted to connect any pair of contact members for closing the circuit and operating the signal.

7. In a game device, a board having counting-spaces each containing a pair of contact members, an electrical circuit including said contacts and containing a signal, and a game-piece adapted to be thrown onto the board and having a contact portion designed to electrically connect any pair of said contact members for closing the circuit and operating the signal.

8. In a game device, a board having disposed upon its surface a plurality of contact members arranged in pairs, a normally open electrical circuit including said contact members and containing a signal, and an elastic game-piece adapted to be thrown onto the board and having a contact portion for electrically connecting any pair of contact members to complete the circuit and operate the signal.

9. In a game device, a board having connecting-spaces, contact members disposed in said spaces and arranged in pairs, a signal, means electrically connecting the contacts with the signal to form a normally open circuit, and a projectile adapted to be thrown onto the board, said projectile having a contact portion adapted to coöperate with the pairs of contacts on the board for closing the circuit and operating the signal.

846,287. BRUSH. HARRY DELLE, Cincinnati, Ohio. Filed Oct. 13, 1906. Serial No. 338,825.

Claim.—A device of the class described comprising a tubular handle, a forwardly-projecting guide-rod attached to the rear wall of the handle and disposed centrally and longitudinally of the latter, a plunger slidably and telescopically arranged in the handle and having a central longitudinal bore to receive said guide-rod, said handle and plunger being provided with interengaging stop-shoulders for limiting the outward movement of the plunger, a polishing-head carried at the outer end of the latter, means for rotating the plunger during relative reciprocation of the stem and handle, and an expanded spring coiled upon the guide-rod and arranged to bear on the plunger for normally projecting the same beyond the handle.

846,288. PURIFICATION OF SULFURIC ACID. VERO C. DRIFFIELD and FREDERICK W. WRIGHT, Liverpool, England, assignors to The United Alkali Company Limited, Liverpool, England. Filed Mar. 21, 1906. Serial No. 307,187.

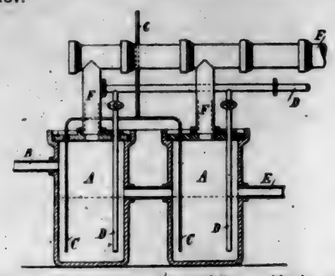

Claim.—1. The process of purifying sulfuric acid from arsenic, consisting in treating at a temperature preferably between 90° centigrade and 150° centigrade, the sulfuric acid with an agent capable of transforming the arsenic present in the arsenious state into arsenious chlorid, and blowing air through the mixture, substantially as described.

2. The process of purifying sulfuric acid from arsenic, consisting in treating at a temperature preferably between 90° centigrade to 150° centigrade the sulfuric acid with hydrochloric acid and blowing air through the mixture substantially as described.

3. The process of purifying sulfuric acid from arsenic consisting in treating the acid with an agent capable of reducing to the arsenious state the arsenic present in the arsenic state, treating at a temperature preferably between 90° centigrade and 150° centigrade with hydrochloric acid and blowing air through the mixture substantially as described.

4. The process of purifying sulfuric acid from arsenic, consisting in treating the sulfuric acid with sulfurous anhydrid, then treating at a temperature preferably between 90° centigrade and 150° centigrade with hydrochloric acid and blowing air through the mixture substantially as described.

846,289. CAR-STANDARD. GEORGE W. DU BES, New Orleans, La. Filed Oct. 15, 1906. Serial No. 339,056.

Claim.—1. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of standards provided with inclined tongues, and perforated heels, brackets secured to the vehicle-body and provided with inclined pockets adapted to receive said tongues, and U-shaped bolts, having loops with double curves and horizontal legs projecting inwardly, said bolts engaging in the perforations in the heels of said standards, and forming a support for the standards when in the elevated position and a holder therefor when in the lowered position, substantially as described.

2. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of standards provided with inclined tongues, and perforated heels, brackets secured to the vehicle-body and provided with inclined pockets adapted to receive said tongues, and U-shaped bolts having loops with double curves and horizontal legs projecting inwardly, said bolts engaging in the perforations in the heels of said standards, and forming a support for the standards when in the elevated position and a holder therefor when in the lowered position, with means for securing together the oppositely-disposed standards on both sides of the vehicle, substantially as described.

3. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of standards provided with inclined tongues, and perforated heels, brackets secured to the vehicle-body and provided with inclined pockets adapted to receive said tongues, and U-shaped bolts having loops with double curves and horizontal legs projecting inwardly, said bolts engaging in the perforations in the heels of said standards, and forming a support for the standards when in the elevated position and a holder therefor when in the lowered position, chains connected to the heads of said standards, and means for securing said chains to similar chains on the standards on the opposite side of the vehicle, substantially as described.

4. In an apparatus for maintaining and releasing loads on cars or other vehicles, the combination of a metal standard provided with a downwardly and inwardly inclined tongue, and a perforated heel, a metal bracket secured to the vehicle-body and provided with an inclined pocket adapted to receive said tongue, and a U-shaped bolt having loops with double curves and horizontal legs projecting inwardly, said bolts engaging in the perforation in the heel of said standard, and forming a support for the standard when in the raised position, and a holder for the standard when in the lowered position, substantially as described.

5. In an apparatus for maintaining and releasing loads on cars or other vehicles, the combination of a metal standard provided with a holding-tongue located above the heel of said standard, a metal bracket secured to the vehicle-body and provided with a pocket adapted to receive said tongue, and a U-shaped bolt having loops with double curves and horizontal legs projecting inwardly, said bolts engaging in the heel of said standard, and forming a support for the standard when in the raised position, and a holder for the standard when in the lowered position, substantially as described.

6. In an apparatus for maintaining and releasing loads on cars or other vehicles, the combination of a standard provided with a downwardly and inwardly inclined tongue, and with a heel having an elongated slot therein, a bracket secured to the vehicle-body and provided with an inclined pocket adapted to receive said tongue, and a U-shaped bolt having loops with double curves and horizontal legs projecting inwardly, said bolts engaging in the slot in the heel of said standard, and forming a support for the standard when in the raised position, and a holder for the standard when in the lowered position, substantially as described.

7. The combination with a metal standard having an elongated slot in its heel, of a U-shaped bolt engaging in said slot and having a vertical loop with a double curve, and horizontal legs projecting inwardly, said bolt engaging in said slot in the heel of the standard and forming a support for the standard when in the elevated position, and a holder therefor when in the lowered position, substantially as described.

846,290. SELF-CLEARING CHAIN-STAY FOR CAR-STANDARDS. GEORGE W. DU BES, New Orleans, La. Filed Nov. 9, 1906. Serial No. 342,692.

Claim.—1. In an apparatus of the character described, the combination with a car-standard, of a weight adapted to slide on said standard, and a stay-chain secured to said weight, substantially as and for the purposes described.

2. In an apparatus of the character described, the combination with a car-body provided with oppositely-disposed standards, of stay-chains for connecting the standards on opposite sides of the car, means for detachably connecting said stay-chains, and weights mounted to slide on said standards and connected to the opposite ends of said stay-chains, substantially as and for the purposes described.

3. In an apparatus of the character described, the combination with a substantially vertical standard having a guide-flange thereon, of a weight mounted to slide on said guide-flange, and a chain having one end secured to said weight and being provided with a fastening device at the other end, substantially as described.

4. In an apparatus of the character described, the combination with two oppositely-disposed standards, each provided with a guide-flange on the outer edge thereof, of a weight mounted to slide on each guide-flange, a chain connected to the upper part of said weight, and means for detachably connecting the opposite chains, substantially as described.

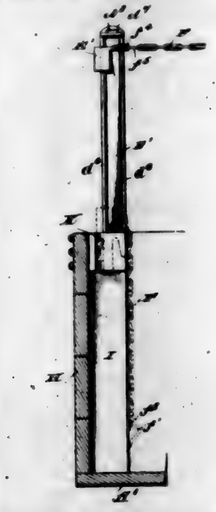

5. In an apparatus of the character described, the combination with a car-standard provided with a slot in its head, of a weight adapted to slide on said standard, and a stay-chain passing through said slot in said standard and secured to said weight, substantially as and for the purposes described.

6. In an apparatus of the character described, the combination with a car-body provided with oppositely-disposed standards, each having a slot in its head, of stay-chains passing through said slots for connecting the standards on opposite sides of the car, means for detachably connecting said stay-chains, and weights mounted to slide on said standards and connected to the opposite ends of said stay-chains, substantially as and for the purposes described.

7. In an apparatus of the character described, the combination with a substantially vertical standard having a guide-flange thereon and having a slot in its head, of a weight mounted to slide on said guide-flange, and a chain rove through said slot and having one end secured to said weight and being provided with a fastening device at the other end, substantially as described.

8. In an apparatus of the character described, the combination with two oppositely-disposed standards, each having a slot in its head and each provided with a guide-flange on the outer edge thereof, of a weight mounted to slide on each guide-flange, a chain rove through said slot and connected to the upper part of said weight, and means for detachably connecting the opposite chains, substantially as described.

9. In an apparatus of the character described, the combination with a car-standard provided with a slot in its head, of a weight adapted to slide on said standard, and a stay-chain passing through said slot in said standard and secured at one end to said weight, and having a device at the other end too large to pass through said slot, substantially as and for the purposes described.

10. In an apparatus of the character described, the combination with a car-body provided with oppositely-disposed standards, each having a slot in its head, of stay-chains rove through said slots for connecting the standards on opposite sides of the car, means for detachably connecting said stay-chains, each of larger diameter than said slots, and weights mounted to slide on said standards and connected to the opposite ends of said stay-chains, substantially as and for the purposes described.

11. In an apparatus of the character described, the combination with a substantially vertical standard having a guide-flange thereon and having a slot in its head, of a weight mounted to slide on said guide-flange, and a chain rove through said slot and having one end secured to said weight and being provided with a fastening device at the other end, of larger diameter than said slot, substantially as described.

12. In an apparatus of the character described, the combination with two oppositely-disposed standards, each having a slot in its head and each provided with a guide-flange on the outer edge thereof, of a weight mounted to slide on each guide-flange, a chain rove through said slot and connected to the upper part of said weight, a stopper for preventing the free end of the chain from passing through the slot, and means for detachably connecting the opposite chains, substantially as described.

846,291. STEEL FLOOR CONSTRUCTION. JAMES A. EMERSON, Oxford, Ind. Filed Mar. 17, 1906. Serial No. 306,679.

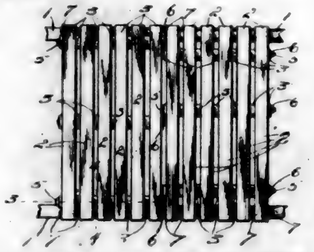

Claim.—A roadway construction for bridges comprising, in combination with floor-supporting girders, a plurality of independent sections secured to the girders each formed of a series of beams provided with top and bottom flanges, solid spacing-blocks between said beams, and binding-rods passing through said blocks and beams, the framework of each section being distinct from that of the adjacent sections.

846,292. ICE-CUTTING MACHINE. EVAN F. EVANS, Burlington, Iowa. Filed Jan. 18, 1906. Serial No. 296,690.

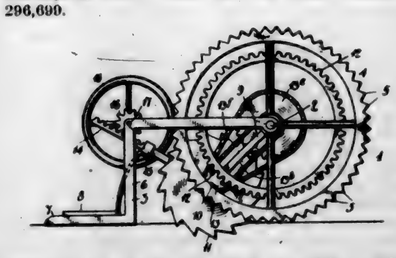

Claim.—An ice-cutting machine comprising a frame, consisting of two substantially right-angular connected side portions, a main shaft journaled in the forward ends of said side portions, supporting and drive wheels upon said shaft, runners upon the lower rear ends of said side portions of the frame, a platform connecting said runners, swinging arms upon said main shaft, a saw-shaft journaled in said arms, a circular saw upon said saw-shaft, a sprocket-wheel fixed to said saw-shaft, a sleeve

upon said main shaft, a sprocket-wheel fixed to said sleeve, a sprocket-chain connecting said sprocket-wheels, a second sprocket-wheel fixed to said sleeve, a sprocket-wheel loose upon said saw-shaft, a sprocket-chain connecting the latter and said second sprocket-wheel upon said sleeve, a pinion fixed to said loose sprocket-wheel and loose upon said saw-shaft, a gear fixed to one of said driving-wheels and in mesh with said pinion, an operating-shaft journaled in the angles of the side portions of said frame, a pinion upon the last-mentioned shaft, a guide, rack-bars pivotally connected to said saw-carrying shaft, slidably mounted in said guide and engaged in said pinion, and a hand-wheel upon said operating-shaft, substantially as described.

846,293. MOTOR. SAMUEL J. EVANS, Bluefield, W. Va. Filed Aug. 26, 1905. Serial No. 275,885.

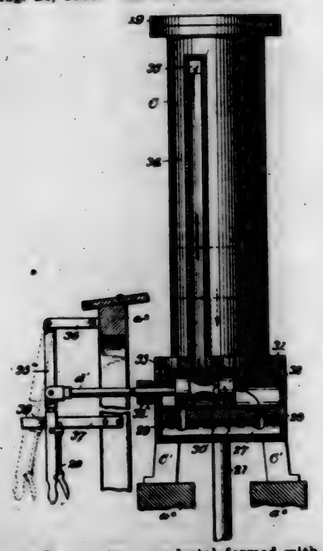

Claim.—1. In a motor, a pedestal formed with a valve-chamber, and an exhaust-chamber, the valve-chamber having in one side feed-ports, one at each side of the center of length of the chamber, and in the opposite side at its center a supply-pipe, and the exhaust-chamber having ports leading into the ends of the valve-chamber out of register with the feed-ports, a piston-valve in the valve-chamber and having an annular centrally-located groove, means for operating the valve, a cylinder having its open lower end secured upon the pedestal and into which opens one of the feed-ports of the valve-chamber, the cylinder being provided with a passage-way leading from its upper end to the other feed-port of the said valve-chamber, and a piston in said cylinder.

2. In a motor, a cylinder, a piston within the cylinder provided with a rod extending out therefrom, a valve-chamber below the cylinder, an exhaust-chamber below the valve-chamber, feed-ports extending from the valve-chamber to the top and bottom portions of the cylinder, ports connecting the exhaust-chamber with the valve-chamber, which ports enter the valve-chamber near its ends and at the sides opposite to that provided with the feed-ports, a supply-pipe which enters the said steam-chamber at the same side at which the exhaust-ports enter and at a point between said exhaust-ports, a grooved piston-valve mounted to slide in the said chamber, and means for manually operating and controlling the said valve.

3. In a motor, a cylinder, a piston within the cylinder provided with a rod extending out therefrom, a valve-chamber located below the said piston, an exhaust-chamber located below the valve-chamber, a steam-feed port leading from the valve-chamber to the bottom portion of the cylinder, a second steam-feed port also leading from the valve-chamber to the upper portion of the cylinder, entering said cylinder a predetermined distance below its head, ports connecting the exhaust-chamber with the valve-chamber at the side opposite that containing the feed-ports, a discharge for the said exhaust-chamber, a steam-supply-pipe which leads into the valve-chamber at a point between the exhaust-ports, a grooved piston-valve mounted to slide in the valve-chamber, and means for operating and regulating the throw of the said valve.

846,294. INKING ARRANGEMENT FOR PRINTING-PRESSES. GEORGE P. FENNER, New London, Conn. Filed Apr. 24, 1906. Serial No. 313,496.

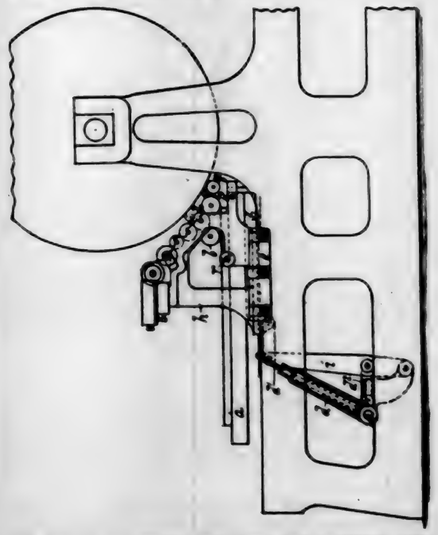

Claim.—1. A cylinder and type-bed combined with a small or supplemental ink-roller made to sit close between the surface of the cylinder and bed, a bracket or carriage for the rollers, a wedge-clamp at the foot of the bracket or stand to hold the latter in place and means for shifting the bracket.

2. A cylinder and type-bed combined with a small or supplemental ink-roller made to sit close between the surface of the cylinder and bed, a bracket or stand for the rollers, a clamp for the bracket, a shifting lever for the bracket and a link adapted to be moved to central or locking position by the lever to hold the roller-stand in position.

3. A cylinder and type-bed, a supplemental ink-roller, and yielding bearings for steadying said roller and adapted to be pressed down or set out of action to allow adjustment and holding-screws adapted to be set against a side of the bearings to keep the same out of action or retracted while the supplemental ink-roller is being set.

4. A cylinder and type-bed, a supplemental ink-roller, bearings for the roller, springs for normally moving the bearings to the roller and clamp-screws or holders for keeping the bearings out of action and leave the roller free for adjustment.

846,295. GAS-GENERATOR. CLARENCE D. FINLEY, Memphis, Tenn. Filed Feb. 21, 1906. Serial No. 302,289.

Claim.—A domestic gas-generator comprising a pair of closed chambers, each having a conoidal top, and one being entirely inclosed within the other and having its walls spaced at substantially equal distances from the other at all points, the innermost chamber serving for the reception of hydrocarbon, a hydrocarbon-inlet, and a gas-outlet connected to the top of the inner chamber, the outer chamber serving as a water-jacket and the upper portion thereof forming a steam-space, a secondary jacket or casing surrounding the water-space of the outer chamber and

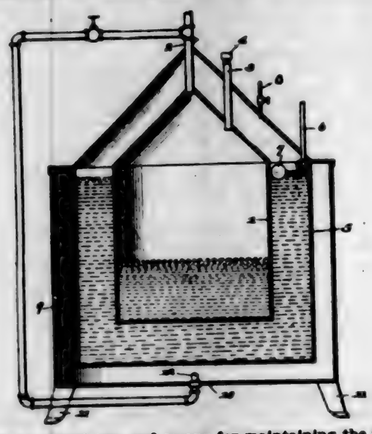

having a closed top, and means for maintaining the water-level of the outer chamber in approximately the horizontal plane of the closed top of the outer jacket, the bottom of said outer jacket being provided with an opening for the admission of a heating medium, and supporting-legs on which said outer jacket is mounted.

846,296. SPEEDOMETER. ADALBERT FLEISCHMANN, Frankfort-on-the-Main, Germany, assignor to The Firm of Volt-Ampère-Gesellschaft, Fleischmann & Co., Frankfort-on-the-Main, Germany. Filed May 11, 1906. Serial No. 316,293.

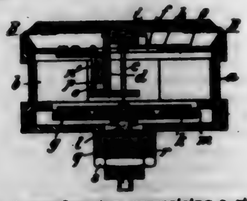

Claim.—1. A speedometer, comprising a stationary, permanent magnet, a rotary plate adjacent to said magnet, one or more armature-pieces on said plate, a non-magnetic metal disk interposed between the magnet and the armature, the latter projecting beyond said disk so as to be entirely inclosed by the magnetic lines of force, a spring having a tendency to turn the said element in the opposite direction to the action of the eddy-currents induced by the rotation of the armature, and an indicator for indicating the deflection of said disk from its normal position.

2. A speedometer, comprising a stationary, permanent magnet, a rotary plate located adjacent to said magnet and means for adjusting said plate toward and from the said magnet, one or more armature-pieces on said plate, a non-magnetic metal disk interposed between the magnet and the armature, said armature-pieces projecting beyond the edge of said disk so as to be entirely inclosed by the magnetic lines of force, means for adjusting said disk toward and from the armature, a spring having a tendency to return said disk to its normal position, and an indicator for indicating the deflection of said disk from its normal position.

3. A speedometer, comprising a stationary, permanent magnet, a rotary plate adjacent to said magnet, one or more armature-pieces on said plate, a non-magnetic metal disk interposed between the magnet and the armature, said armature-pieces projecting beyond the edge of said disk so as to be entirely inclosed by the magnetic lines of force, means for adjusting said disk toward and from said armature, a spring having a tendency to return said element to its normal position, and an indicator for indicating the deflection of said disk from its normal position.

846,297. PROCESS OF MAKING COLLAPSIBLE AND EXPANSIBLE VESSELS. WESTON M. FULTON, Knoxville, Tenn., assignor to The Fulton Company, Knoxville, Tenn., a Corporation of Maine. Original application filed July 19, 1904, Serial No. 217,286. Divided and this application filed Nov. 2, 1904. Serial No. 231,120.

Claim.—1. A process of making substantially homogeneous flexible corrugated-metal walls for expansible and collapsible vessels from rolled or drawn sheet metal having its outer surfaces more condensed than the interior portion, consisting in removing said condensed surfaces and corrugating the substantially homogeneous remaining portion of said sheet.

2. A process of making substantially homogeneous flexible corrugated-metal walls for expansible and collapsible vessels from metal tubing having surfaces more condensed than the interior portions of the wall of the tubing, said process consisting in removing from said tubing the condensed surfaces of the wall and corrugating the substantially homogeneous remaining portion of the wall of the tubing.

846,298. PHOTOPLATE-HOLDER. JOHN R. GARLICK, Readstown, Wis. Filed Aug. 8, 1905. Serial No. 273,258.

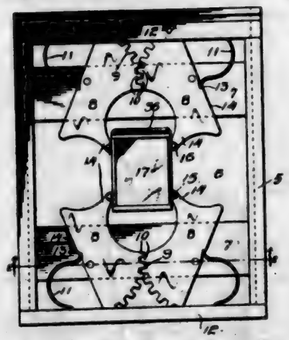

Claim.—1. A plate-holder comprising a frame, pairs of plates pivoted in the frame adjacent to the ends thereof, the plates of each pair being connected for simultaneous movement, said plates being disposed for engagement of their outer ends with the frame to limit the inward movement of their inner ends, means for holding the plates yieldably with their inner ends at the inward limits of their movement and pins carried by the inner ends of the plates, said pins being adapted for the reception of a supplemental plate-holder therebetween.

2. A device of the class described comprising a frame, plates pivoted in the frame, said plates being connected in pairs for simultaneous movement, springs carried by the ends of the frame and engaged with the plates to

hold the latter with their inner ends yieldably at the limit of their movement toward each other, arms carried by the inner ends of the plates and pins carried by the arms, said pins being adapted to rest against a body to hold the latter therebetween.

3. The combination with a plate-holder, of plates pivoted in the holder, pins carried by the plates, said plates being movable to move the pins toward and away from the center of the holder, means for limiting the inward movement of the pins, and means for holding the plates yieldably with the pins at the inward limits of their movement, said pins being adapted to receive a supplemental plate-holder therebetween.

4. A device of the class described comprising a frame adapted for the reception of a plate-holder, said frame being open at its forward side, a slide arranged for movement into and out of position to close the opening and means for removing the slide from a plate-holder engaged in the frame, said means being adapted for operation when the frame is disposed in a camera.

5. A device of the class described comprising a frame arranged for the reception of a plate-holder, said frame being open at one side, a slide arranged for movement into and out of position to close the frame, a curtain slidably mounted in the slide and a grip carried by the curtain and adapted for engagement with the slide of a plate-holder in the frame, said curtain being arranged for movement to move the slide of said plate-holder into and out of operative position and means for limiting the movement of the curtain.

6. A device of the class described comprising a frame open at one side, means for holding a plate-holder within the frame, a slide disposed in the frame for movement into and out of position to close the open side thereof, said slide having a passage therein returned at its outer end toward the inner end of the slide, guides carried by the slide and communicating with the passage at the returned end thereof, a curtain slidably mounted in the passage for movement to lie at times in the passage and at times in the guides, a grip carried by the inner end of the curtain and adapted for engagement of the slide of a plate-holder within the frame for movement of said slide with the curtain, and means for moving the grip into position to receive the slide of the plate-holder when the grip is moved toward the slide, said curtain being adapted for engagement of one end of the frame to prevent entire withdrawal of the plate-holder slide from the plate-holder.

846,299. COFFEE AND TEA FLASK. JOHN GARRIGAN, New York, N. Y. Filed Feb. 14, 1906. Serial No. 301,002.

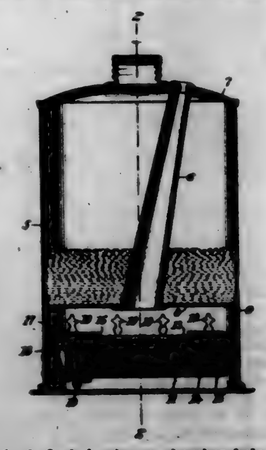

Claim.—1. A flask having a chamber below its bottom wall, a draft-tube extended through the top and bottom of the flask, a spring-supported socket member in said chamber, and a lamp for removably engaging in said socket member.

2. A flask, a center draft-tube extended through the top and bottom of the flask, a wall extended downward from the bottom of the flask and forming the wall of a chamber below the bottom of the flask, a socket member, a spring connection between said socket member and said downwardly-extended wall, a lug on the lower side of the said socket member, and a lamp for removably engaging in said socket member.

3. A flask, a center draft-tube extended through the top and bottom of the flask, a downward extension from the bottom of the flask, forming the wall of a chamber below said bottom, a socket member, a substantially U-shaped spring having one leg connected to said downward extension and the other leg connected to the lower side of the socket member, a lug on the lower side of the socket member, and a lamp for removably engaging in said socket member.

4. The combination with a flask and a socket member supported below the bottom wall of the flask, of a lamp comprising a tube having an opening at the top, a screen material extended across said opening, (asbestos or the like) within the tube, and an outer tube mounted to rotate in the first-named tube, the said outer tube being provided with an opening.

846,300. STEAM-TRAP. WILLIAM GEIPEL, Southwark, England. Filed July 12, 1906. Serial No. 325,859.

Claim.—1. An expansion steam-trap of the type herein referred to, comprising a frame or body, expansion-tubes rigidly fixed at one end to said frame or body and free to move laterally at their outer ends, a valve-case connecting the free ends of said tubes and having inlet and outlet chambers connected by a water-discharge passage, a valve controlling said discharge-passage, and an external abutment against which said valve can act through its spindle, said valve being arranged to open in an inward direction against the fluid-pressure within the trap when the expansion parts of the trap contract, and to close in an outward direction and to be held closed by the said fluid-pressure when the said parts again expand.

2. An expansion steam-trap of the type herein referred to comprising a frame or body, inlet and outlet expansion-tubes fixed at one end to said frame or body, a valve-case fixed to the free ends of said tubes, having inlet and outlet chambers that are connected respectively to the inlet and outlet tubes, and are directly connected together by a water-discharge passage, a valve controlling said discharge-passage, and an external abutment against which said valve can act through its spindle, said abutment being carried by that part of the frame or body to which the inlet expansion-tube is nearest and toward which said tube moves when it contracts, said valve being arranged to open in an inward direction against the fluid-pressure within the trap when the expansion parts of the trap contract, and to close in an outward direction and to be held closed by the said fluid-pressure when the said parts again expand.

3. An expansion steam-trap of the type herein referred to comprising a frame or body, an upper inlet expansion-tube and a lower outlet expansion-tube fixed to said frame or body, a valve-case fixed to the free ends of said tubes and having upper and lower chambers to the lower of which the inlet expansion-tube is connected and to the upper of which the outlet expansion-tube is connected, a water-discharge passage connecting said upper and lower chambers, a valve arranged in the lower chamber to control said discharge-passage and provided with a spindle extending to the exterior of said valve-case, and an external abutment against which said valve can act through its spindle, said valve being arranged to open in an inward direction against the fluid-pressure within the trap when the expansion parts of the trap contract, and to close in an outward direction and to be held closed by the said fluid-pressure when the said parts again expand.

4. An expansion steam-trap of the type herein referred to comprising a frame or body, an upper inlet expansion-tube and a lower outlet expansion-tube fixed to said frame or body, a valve-case fixed to the free ends of said tubes and having upper and lower chambers to the lower of which the inlet expansion-tube is connected and to the upper of which the outlet expansion-tube is connected, a water-discharge passage connecting said upper and lower chambers, a valve controlling said discharge-passage, said valve being arranged to open in an inward direction against the fluid-pressure within the trap when the expansion parts of the trap contract, and to close in an outward direction and to be held closed by the said fluid-pressure when the said parts again expand, and means for controlling and operating said valve.

5. An expansion steam-trap of the type herein referred to comprising a frame or body, an upper inlet expansion-tube and a lower outlet expansion-tube fixed to said frame or body, a valve-case fixed to the free ends of said tubes and having upper and lower chambers to the lower of which the inlet expansion-tube is connected and to the upper of which the outlet expansion-tube is connected, a water-discharge passage connecting said upper and lower chambers, a valve controlling said discharge-passage and arranged in the lower chamber of the valve-case so as to open in a downward and inward direction and to close in an upward and outward direction, and means for controlling and operating said valve.

6. In combination with an expansion steam-trap having a discharge-valve, an automatic throttling device arranged in the water-discharge passage of said trap at the outer side of the water-discharge valve and capable of being moved to different extents according to the pressure of the escaping water, said throttling device being adapted to oppose a yielding resistance to the water-pressure and to produce a variable throttling action according to its extent of movement.

7. In combination with an expansion steam-trap, having a discharge-valve, an automatic throttling device arranged in the water-discharge passage of said trap at the outer side of the water-discharge valve and in the path of escaping water, and a spring that normally holds the said throttling device in its open position and permits the same to close the passage to a greater or less extent according to the pressure upon it of the escaping water.

8. An expansion steam-trap of the type herein referred to comprising a frame or body, inlet and outlet expansion-tubes fixed at one end to said frame or body, a valve-case fixed to the free ends of said tubes and having inlet and outlet chambers that are connected respectively to the inlet and outlet tubes and are directly connected together by a water-discharge passage, a valve controlling said discharge-passage, said valve being arranged to open in an inward direction against the fluid-pressure within the trap when the expansion parts of the trap contract, and to close in an outward direction and to be held closed by the said fluid-pressure when the said parts again expand, and an automatic throttling device arranged in the water-discharge passage of said trap so as to be operated by the pressure of escaping water after the same has passed the water-discharge valve of the trap, said throttling device being adapted to offer a variable throttling action according to the pressure of the escaping water.

9. An expansion steam-trap of the type herein referred to, comprising a frame or body, expansion-tubes rigidly fixed at one end to said frame or body and free to move laterally at their outer ends, a valve-case connecting the free ends of said tubes and having inlet and outlet chambers connected by a water-discharge passage, a valve controlling said water-discharge passage, means for operating and controlling said valve, and an automatic throttling device arranged at the exit side of said valve and whereby

extending to the exterior of said valve-case, and an external abutment against which said valve can act through its spindle, said valve being arranged to open in an inward direction against the fluid-pressure within the trap when the expansion parts of the trap contract, and to close in an outward direction and to be held closed by the said fluid-pressure when the said parts again expand.

4. An expansion steam-trap of the type herein referred to comprising a frame or body, an upper inlet expansion-tube and a lower outlet expansion-tube fixed to said frame or body, a valve-case fixed to the free ends of said tubes and having upper and lower chambers to the lower of which the inlet expansion-tube is connected and to the upper of which the outlet expansion-tube is connected, a water-discharge passage connecting said upper and lower chambers, a valve controlling said discharge-passage, said valve being arranged to open in an inward direction against the fluid-pressure within the trap when the expansion parts of the trap contract, and to close in an outward direction and to be held closed by the said fluid-pressure when the said parts again expand, and means for controlling and operating said valve.

5. An expansion steam-trap of the type herein referred to comprising a frame or body, an upper inlet expansion-tube and a lower outlet expansion-tube fixed to said frame or body, a valve-case fixed to the free ends of said tubes and having upper and lower chambers to the lower of which the inlet expansion-tube is connected and to the upper of which the outlet expansion-tube is connected, a water-discharge passage connecting said upper and lower chambers, a valve controlling said discharge-passage and arranged in the lower chamber of the valve-case so as to open in a downward and inward direction and to close in an upward and outward direction, and means for controlling and operating said valve.

6. In combination with an expansion steam-trap having a discharge-valve, an automatic throttling device arranged in the water-discharge passage of said trap at the outer side of the water-discharge valve and capable of being moved to different extents according to the pressure of the escaping water, said throttling device being adapted to oppose a yielding resistance to the water-pressure and to produce a variable throttling action according to its extent of movement.

7. In combination with an expansion steam-trap, having a discharge-valve, an automatic throttling device arranged in the water-discharge passage of said trap at the outer side of the water-discharge valve and in the path of escaping water, and a spring that normally holds the said throttling device in its open position and permits the same to close the passage to a greater or less extent according to the pressure upon it of the escaping water.

8. An expansion steam-trap of the type herein referred to comprising a frame or body, inlet and outlet expansion-tubes fixed at one end to said frame or body, a valve-case fixed to the free ends of said tubes and having inlet and outlet chambers that are connected respectively to the inlet and outlet tubes and are directly connected together by a water-discharge passage, a valve controlling said discharge-passage, said valve being arranged to open in an inward direction against the fluid-pressure within the trap when the expansion parts of the trap contract, and to close in an outward direction and to be held closed by the said fluid-pressure when the said parts again expand, and an automatic throttling device arranged in the water-discharge passage of said trap so as to be operated by the pressure of escaping water after the same has passed the water-discharge valve of the trap, said throttling device being adapted to offer a variable throttling action according to the pressure of the escaping water.

9. An expansion steam-trap of the type herein referred to, comprising a frame or body, expansion-tubes rigidly fixed at one end to said frame or body and free to move laterally at their outer ends, a valve-case connecting the free ends of said tubes and having inlet and outlet chambers connected by a water-discharge passage, a valve controlling said water-discharge passage, means for operating and controlling said valve, and an automatic throttling device arranged at the exit side of said valve and whereby at low pressures a maximum opening for escaping water is produced, and at high pressures a minimum opening is produced.

10. An expansion steam-trap of the type herein referred to comprising a frame or body, an upper expansion-tube and a lower outlet expansion-tube fixed to said frame or body, a valve-case fixed to the free ends of said tubes and having upper and lower chambers to the lower of which the inlet expansion-tube is connected and to the upper of which the outlet expansion-tube is connected, a water-discharge passage connecting said upper and lower chambers, a valve controlling said water-discharge passage, means for operating and controlling said valve, and an automatic throttling device arranged at the exit side of said valve and whereby at low pressures a maximum opening for escaping water is produced, and at high pressures a minimum opening is produced.

11. An expansion steam-trap of the type herein referred to, comprising a frame or body, expansion-tubes rigidly fixed at one end to said frame or body and free to move laterally at their outer ends, a valve-case connecting the free ends of said tubes and having inlet and outlet chambers connected by a water-discharge passage, a valve controlling said discharge-passage, means for operating and controlling said valve, an automatic throttling-valve, and a spring controlling said throttling-valve so that at low pressures a maximum opening for escaping water or steam will be produced, and at high pressures a minimum opening will be produced.

12. An expansion steam-trap of the type herein referred to comprising a frame or body, inlet and outlet expansion-tubes fixed at one end to said frame or body, a valve-case fixed to the free ends of said tubes and having inlet and outlet chambers that are connected respectively to the inlet and outlet tubes and are directly connected together by a water-discharge passage, an inwardly-opening valve controlling said discharge-passage, means for operating and controlling said valve, an automatic throttling-valve, and a spring controlling said throttling-valve so that at low pressures a maximum opening for escaping water or steam will be produced, and at high pressures a minimum opening will be produced.

13. An expansion steam-trap of the type herein referred to comprising a frame or body, an upper inlet expansion-tube and a lower outlet expansion-tube fixed to said frame or body, a valve-case fixed to the free ends of said tubes and having upper and lower chambers to the lower of which the inlet expansion-tube is connected and to the upper of which the outlet expansion-tube is connected, a water-discharge passage connecting said upper and lower chambers, a valve arranged in the lower chamber to control said discharge-passage and provided with a spindle extending to the exterior of said valve-case, and an external abutment against which said valve can act through its spindle, said valve being arranged to open in an inward direction against the fluid-pressure within the trap when the expansion parts of the trap contract, and to close in an outward direction and to be held closed by the said fluid-pressure when the said parts again expand, said valve being also mounted to slide endwise upon its spindle so that upon being opened to a small extent by the contraction of parts of the trap it will be free to be quickly moved into its fully-open position by the issuing water independently of the said spindle.

14. An expansion steam-trap of the type herein referred to comprising a frame or body, an upper inlet expansion-tube and a lower outlet expansion-tube fixed to said frame or body, a valve-case fixed to the free ends of said tubes and having upper and lower chambers to the lower of which the inlet expansion-tube is connected and to the upper of which the outlet expansion-tube is connected, a water-dischage passage connecting said upper and lower chambers, a valve controlling said discharge-passage and provided with a spindle extending to the exterior of said valve-case, arranged to open in an inward direction against the fluid-pressure within the trap when the expansion parts of the trap contract, and to close in an outward direction and to be held closed by the said fluid-pressure when the said parts again expand, and a lever mount-

ed on the trap-frame and against one arm of which the said valve-spindle can bear when the trap contracts.

15. An expansion steam-trap of the type herein referred to comprising a frame or body, an upper inlet expansion-tube and a lower outlet expansion-tube fixed to said frame or body, a valve-case fixed to the free ends of said tubes and having upper and lower chambers to the lower of which the inlet expansion-tube is connected and to the upper of which the outlet expansion-tube is connected, a water-discharge passage connecting said upper and lower chambers, a valve controlling said discharge-passage and provided with a spindle extending to the exterior of said valve-case, arranged to open in an inward direction against the fluid-pressure within the trap when the expansion parts of the trap contract, and to close in an outward direction and to be held closed by the said fluid-pressure when the said parts again expand, and a lever mounted on the trap-frame and against one arm of which the said valve-spindle can bear when the trap contracts and the other arm of which has connected to it a thrust-rod that bears against one of the expansion-tubes.

846,301. LUBRICATOR. CHRISTIAN G. GLASRUD, Sheyenne, N. D. Filed Dec. 13, 1905. Serial No. 291,553.

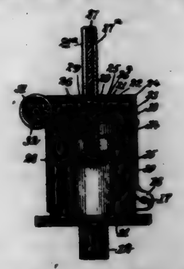

Claim.—1. A lubricator, comprising a cup, a plunger therein, a threaded stem connected thereto, a nut coacting with the stem, a means for revolubly mounting the nut, a gear connected to turn the nut, a gear connected to turn the stem, the second gear having less teeth than the first, a worm meshing with the gears, a shaft carrying the worm, a means for revolubly mounting the shaft, a ratchet attached to the shaft, an inertia-arm arranged to swing on the shaft, an inertia-pawl carried by the arm and coacting with the ratchet, an inertia-dog carried by the means for mounting the shaft and coacting with the ratchet, the dog and pawl alternately engaging the ratchet, and means for limiting the movement of the inertia-arm independently of the shaft.

2. A lubricator, comprising a cup, a plunger therein, a threaded stem connected thereto, a nut coacting with the stem, a means for revolubly mounting the nut, a device for rotating the nut, a device for rotating the stem in the same direction but at a slower speed, a worm for operating said device, a shaft carrying the worm, means for revolubly mounting the shaft, a ratchet attached to the shaft, an inertia-arm arranged to swing on the shaft, an inertia-pawl carried by the arm and coacting with the ratchet, an inertia-dog carried by the means for mounting the shaft and coacting with the ratchet, the dog and pawl alternately engaging the ratchet, and means for limiting the movement of the inertia-arm independently of the shaft.

3. A lubricator, comprising a cup, a plunger therein, a threaded stem connected thereto, a nut coacting with the stem, a means for revolubly mounting the nut, a device for rotating the nut, a device for rotating the stem in the same direction but at a lower speed, means for driving said devices, a shaft mounting said means, means for revolubly mounting the shaft, a ratchet attached to the shaft, an inertia-arm arranged to swing on the shaft, an inertia-pawl carried by the arm and coacting with the ratchet, an inertia-dog carried by the means for mounting the shaft and coacting with the ratchet, the dog and pawl alternately engaging the ratchet, means for limiting the movement of the inertia-arm independently of the shaft.

4. A lubricator, comprising a cup, a plunger therein, a threaded stem connected thereto, a nut coacting with the stem, a means for revolubly mounting the nut, a gear connected to turn the nut, a gear connected to turn the stem, the second gear having less teeth than the first, a worm meshing with the gears, a shaft carrying the worm, means for revolubly mounting the shaft, a rachet attached to the shaft, an inertia-arm arranged to swing on the shaft, an inertia-pawl carried by the arm and coacting with the ratchet, and an inertia-dog carried by the means for mounting the shaft and coacting with the ratchet, the dog and pawl alternately engaging the ratchet.

5. A lubricator, comprising a cup, a plunger therein, a threaded stem connected thereto, a nut coacting with the stem, a means for revolubly mounting the nut, a gear connected to turn the nut, a gear connected to turn the stem, the second gear having less teeth than the first, a worm meshing with the gears, a shaft carrying the worm, means for revolubly mounting the shaft, a ratchet attached to the shaft, an inertia-arm arranged to swing on the shaft, an inertia-pawl carried by the arm and coacting with the ratchet, and an inertia-dog carried by the means for mounting the shaft and coacting with the ratchet, the dog and pawl alternately engaging the ratchet, said inertia-arm being bifurcated, and the inertia-pawl being pivoted in the bifurcated portion of the arm.

6. A lubricator, comprising a cup, a plunger therein, a threaded stem connected thereto, a nut coacting with the stem, a means for revolubly mounting the nut, a device for rotating the nut, a device for rotating the stem in the same direction, but at a lower speed, means for driving said devices, a shaft mounting said means, means for revolubly mounting the shaft, a ratchet attached to the shaft, an inertia-arm arranged to swing on the shaft, an inertia-pawl carried by the arm and coacting with the ratchet, an inertia-dog carried by the means for mounting the shaft and coacting with the ratchet, the dog and pawl alternately engaging the ratchet, means for limiting the movement of the inertia-arm independently of the shaft, said means consisting of two stops, and devices for mounting the stops to permit adjustment toward and from each other.

7. A lubricator, comprising a cup, a casing secured to the cup and provided with an apertured plate, a nut mounted in the opening of the said plate, a plunger in the cup and having a threaded stem working in the nut, a gear mounted upon the nut to turn therewith, a second gear having less teeth than the first gear, said gear being loosely mounted upon the nut and connected with the threaded stem to turn therewith, a shaft mounted on the casing, a worm on the shaft and engaging the said gear-wheels, a ratchet-wheel also on said shaft, an inertia-arm mounted on the hub of the ratchet-wheel and provided with a weight at its free end, a pawl pivoted on the said arm and engaging the ratchet-wheel, and an inertia-dog pivoted on the casing and engaging the ratchet-wheel.

8. In a lubricator, the combination of a cup, a plunger-piston operating therein, a screw attached to the piston, a nut engaging the same, means mounting the nut, a shaft, means for revolubly mounting the same, means operated from the shaft for rotating the screw and for rotating the nut in the same direction but at a higher speed, a ratchet attached to the shaft, an inertia-arm hung loosely from the shaft, an inertia-pawl carried by the arm and coacting with the ratchet, and an inertia-dog mounted on the means for mounting the shaft and coacting with the ratchet.

9. In a lubricator, the combination of a cup, means for forcing the lubricant from the same, a shaft in connection therewith, a ratchet fast on the shaft, an inertia-arm hung from the shaft, an inertia-pawl carried by the arm, and an inertia-dog, the pawl and dog coacting with the ratchet and being arranged to act alternately, said inertia-arm being recessed and the pawl being pivoted in the recess of the arm.

10. In a lubricator, the combination of a cup, a casing adjustable thereon, a means for forcing the lubricant from the cup, a shaft for driving said means, a ratchet fast on the shaft, an inertia-arm hung loose from the shaft, an inertia-pawl carried by the arm and coacting with the ratchet, and an inertia-dog mounted on the casing and coacting with the ratchet, said pawl and dog acting alternately.

11. In a lubricator, the combination of a cup, a casing adjustable thereon, a means for forcing the lubricant from the cup, a shaft for driving said means, a ratchet fast on the shaft, an inertia-arm hung loose from the shaft, an inertia-pawl carried by the arm and coacting with the ratchet, an inertia-dog mounted on the casing and coacting with the ratchet, said pawl and dog acting alternately, and adjustable inertia-arm stops mounted in the casing.

846,302. THERMIC COMPRESSOR FOR AIR AND GASES. EMILE GOBBE, Jumet, Belgium. Filed Mar. 1, 1904. Serial No. 196,099.

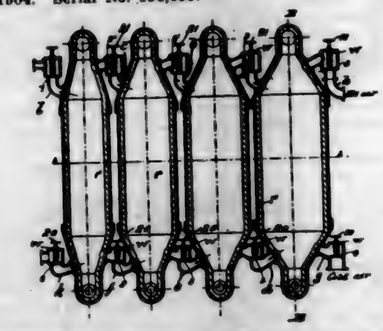

Claim.—1. A compressor for air and gases having reservoirs with valved connections, a temperature-interchanger for each reservoir communicating with its reservoir at its lower and at its upper end, means for insuring the circulation of the air in each reservoir in reverse directions, a hot-air-inlet pipe for the first reservoir having a closing valve, and an outlet-pipe for the last reservoir having a valve.

2. The combination of a series of connected reservoirs each provided with two injectors arranged opposite each other, a compressed-air conduit for feeding these injectors, slides closing and opening alternately the communication of the conduit of compressed air with the injectors, and means for controlling these slides.

846,303. CUTTING AND POLISHING MACHINE. HERBERT E. HALL, Lynn, Mass. Filed Feb. 18, 1904. Serial No. 194,211.

Claim.—1. A machine of the character described, comprising laterally-movable work-holding and tool-carrying members, the supports for said members being relatively positioned to cause the lateral path of movement of one member to be at an angle to the lateral path of movement of the other member.

2. A machine of the character described, comprising laterally-movable work-holding and tool-carrying members, the supports for said members being relatively positioned to cause the lateral path of movement of one member to be at an acute angle to the lateral path of movement of the other member.

3. A machine of the character described, comprising laterally-movable work-holding and tool-carrying members, the supports for said members being relatively positioned to cause the lateral path of movement of one member to be at an acute angle to the lateral path of movement of the other member, and springs for imparting a yielding pressure of said members in opposite directions.

4. A machine of the character described, comprising laterally-movable work-holding and tool-carrying members, the supports for said members being relatively positioned to cause the lateral path of movement of one member to be at an acute angle to the lateral path of movement of the other member, the work and tool carried by said members being adapted to abut in a relatively endwise direction, and springs actuating said members in opposite directions to cause said work and tool to yieldingly abut.

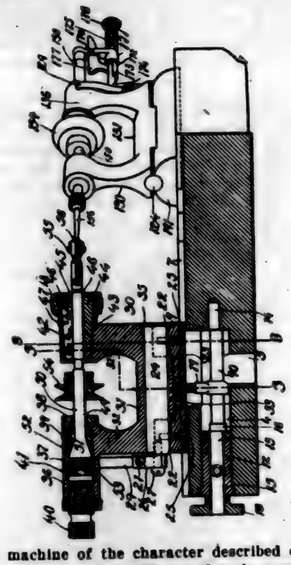

5. In a machine of the character described comprising laterally-movable work-holding and tool-carrying members, the supports for said members being relatively positioned to cause the lateral path of movement of one member to be at an acute angle to the lateral path of movement of the other member, the work and tool carried by said members being adapted to abut in a relatively endwise direction, springs actuating said members in opposite directions to cause said work and tool to yieldingly abut, means being provided for adjusting the tool endwise of its carrying member.

6. In a machine of the character described, a pivoted work-holder, a pivoted tool-holder, said holders having their axes at substantially an angle of one hundred and thirty degrees relatively to each other, and means for causing lateral movement of the tool-holder and work-holder toward each other whereby the tool is made to follow the center of the work at all positions.

846,304. PUNCH. JAMES F. HARDY, New York, N. Y., assignor to Consolidated Dental Manufacturing Company, New York, N. Y., a Corporation of New York. Filed Mar. 15, 1905. Serial No. 250,238.

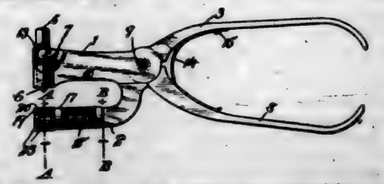

Claim.—1. A punch for rubber dam comprising a pair of stationary jaws, a punch mounted in one of the jaws to move in a right line, a punch-operating arm housed in and

pivotally secured to one of the stationary jaws, a die-cylinder mounted in rotary adjustment on the other of the stationary jaws and projecting beyond the end of said jaw, the said die-cylinder being provided with radial die-holes in that portion which projects beyond the end of the jaw.

2. A punch for rubber dam comprising a pair of stationary jaws, a punch mounted in one of the jaws to move in a right line, a punch-operating arm housed in and pivotally secured to one of the stationary jaws, a die-cylinder mounted in rotary adjustment on the other of the stationary jaws and projecting beyond the end of said jaw, the said die-cylinder being provided with radial die-holes of different sizes in that portion which projects beyond the end of the jaw.

846,305. COMBINED TRAIN SIGNAL AND INDICATING APPARATUS. WILLIAM A. HARRIS and BENJAMIN S. H. HARRIS, Greenville, S. C., assignors to The Harris Manufacturing Company, Greenville, S. C., a Corporation of South Carolina. Filed Mar. 23, 1904. Renewed June 6, 1906. Serial No. 320,450.

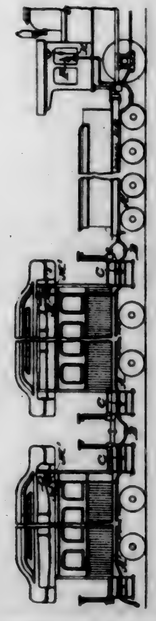

Claim.—1. The combination substantially as herein described, of a signal-pipe, an operating device having a cylinder provided with a tubular extension in connection with the signal-pipe, a piston operating in said cylinder, a check-valve controlling the connection between the cylinder and the signal-pipe and arranged and operating in the tubular extension of the cylinder and having a projecting portion for engagement by the piston-rod, the spring for readjusting the piston to normal position, and the piston-rod extending through the check-valve and having a shoulder or projection arranged to hold the check-valve closed in the normal position of the piston, a cylinder in communication with the signal-pipe and having a port and a whistle connected therewith, a piston operating in said cylinder and chambered on its under side whereby it will not in any position shut off communication between the cylinder and the whistle-port, an indicator above the piston and having a casing, an indicator-plate provided with a ratchet, a slide-rod arranged for operation by the piston and having a pawl engaging with the ratchet of the indicator-plate, a detent for engaging said ratchet to hold the indicator-plate in its different positions, and a crank-arm in connection with said detent for releasing the same, all substantially as and for the purposes set forth.

2. The combination of the signal-pipe, the signal, an operating-cylinder communicating with the signal-pipe, a piston in said cylinder, a check-valve controlling communication between the cylinder and signal-pipe, means whereby the piston when in normal position may hold the check-valve closed, and means for holding the check-valve open when the piston is out of normal position.

3. An apparatus substantially as described, comprising a signal-pipe, a signal arranged to be operated by impulses given the air in said pipe, an operating-cylinder communicating with the signal-pipe, a piston in said cylinder, a check-valve controlling communication between the cylinder and signal-pipe, means whereby the piston when in normal position may hold the check-valve closed, and a spring for holding the check-valve open when the piston is out of normal position.

4. The combination with the signal-pipe, and a signal for operation therefrom, of an operating device having a cylinder connected with the signal-pipe, a pressure-producing piston operating in the cylinder, a spring for holding said piston in normal position, a check-valve between the cylinder and the signal-pipe, and means whereby the piston when in normal position will hold the check-valve closed.

5. The combination of a signal-pipe, the operating device having a cylinder provided with a tubular extension connected with the signal-pipe and having a valve-seat in said tubular extension, the piston in the cylinder, the piston-rod extending through the tubular extension, the check-valve in the tubular extension and encircling the piston-rod, means on the piston-rod for holding the check-valve closed in the normal position of the piston, and a spring for actuating the piston to normal position.

6. In an apparatus substantially as described, the combination of a signal-pipe, a cylinder in communication with said pipe and having a whistle-port, a whistle in communication with said port, a piston operating in said cylinder, the passage to the whistle-port being unobstructed in all positions of the piston, an indicator having a movable part, and means whereby said movable part of the indicator may be operated from the piston.

7. In an apparatus substantially as described and in combination with a pipe for conveying impulses, a series of operating devices comprising cylinders, pistons operating in the cylinders to produce signal-operating pressure in the pipe, and check-valves for controlling communication between the cylinders and the pipe for conveying impulses, and a spring for normally opening the check-valve.

8. In an apparatus substantially as described and in combination with a pipe for conveying impulses, a series of operating devices including cylinders in communication with the pipe, pistons operating in the cylinders to produce signal-operating pressure in the pipe, check-valves controlling the communication between the cylinders and the pipe, and means connected with the pistons whereby to hold the check-valves closed when the pistons are in normal position.

846,306. COMBINED TRAIN SIGNAL AND INDICATING APPARATUS. WILLIAM A. HARRIS and BENJAMIN S. H. HARRIS, Greenville, S. C., assignors to The Harris Manufacturing Company, Greenville, S. C., a Corporation of South Carolina. Filed Mar. 23, 1904. Renewed June 6, 1906. Serial No. 320,451.

Claim.—1. The improvement in signaling apparatus herein described comprising the signals at the opposite ends of the line, the cylinders connecting near one end with said signals, the signal-pipe proper connecting with the other ends of the cylinders whereby the cylinders form practically parts of the signal-pipe for conducting impulses from said pipe to their respective signals, the ends of the cylinders adjacent to the ports communicating with the signals having venting or discharge openings, the pistons operating in their cylinders and movable in normal position to points where they close the venting or discharge openings in said cylinders and open communication between the cylinders and the ports leading to their respective signals, the piston-rods and handles and spring-latches for securing the pistons in normal position.

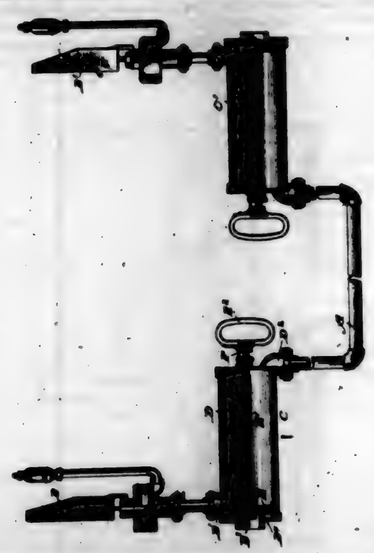

2. The combination of the signal-pipe, the signals at the opposite ends of the signal-pipe, and the devices for operating the signals having cylinders communicating at one end with their respective signals and at their other ends with the signal-pipe whereby communication between the signal-pipe and the signals is effected through the respective cylinders.

3. A signaling apparatus comprising a signal-pipe, a signal or signals arranged for operation by impulses imparted to the fluid in the signal-pipe and an operating device having a cylinder communicating at one end with the signal-pipe and at its other end with the signal and a piston in said cylinder and adapted for operation whereby to produce impulses in the signal-pipe.

4. The combination with the signal of an operating device having a cylinder provided at one end with a discharge opening or vent and adjacent to said end with a port communicating with the signal and the piston in the cylinder and movable to a point beyond the port communicating with the signal when said piston is adjusted to position to close the venting or discharge opening of the cylinder and connections between said cylinder and a signal-pipe whereby the piston and cylinder may be operated to produce impulses in the signal-pipe and the cylinder may be utilized as a conduit for the passage of impulses from the signal-pipe to the signal.

5. A signaling apparatus comprising an independent train-pipe carrying atmospheric pressure, signals and indicators operating in correspondence with said signals at the opposite ends of and forming open ends at such opposite ends of the signal-pipe and means for imparting impulses to the fluid in the signal-pipe whereby to operate the signals and indicators.

6. A signaling apparatus comprising a signal-pipe, signals at the opposite ends of the pipe and through which open communication between the atmosphere and the signal-pipe is normally established, indicators acting in correspondence with said signals and means for imparting impulses to the fluid in the signal-pipe for operating the signals and indicators at one or the other end thereof.

7. A signaling apparatus comprising the opposite signals, the signal-pipe, the cylinders between the signal-pipe and their respective signals, the pistons in said cylinders and adjusted normally to position to open communication between the signal-pipe and their respective signals and the pistons in said cylinders being adapted for imparting impulses to the fluid in the signal-pipe for operating the signal at the opposite end of the signal-pipe.

8. In a signaling apparatus an operating device comprising a cylinder having a vent or discharge opening at one end and provided near said end with a port for communication with the signal and at its opposite end with a port for communication with the signal-pipe and the piston operating in said cylinder and movable in normal position to a point where it will close the vent or discharge-opening in the end of the cylinder and will establish communication between the signal-port and the body of the cylinder.

9. The combination with the signal, and the cylinder having near one end a port communicating with the signal and also having at such end a vent or discharge-port, and provided at its other end with an outlet-port and the signal-pipe communicating therewith, of the piston-operating in the cylinder and movable in normal position to a point where it will close the vent or discharge-port from the cylinder and open communication between the signal-port and the body of the cylinder, the piston-rod and a latch for holding the piston from accidental displacement from its normal position.

846,307. GAS-ENGINE-REGULATING VALVE. FRANKLIN G. HOBART, Beloit, Wis., assignor to Fairbanks, Morse & Co., Chicago, Ill., a Corporation of Illinois. Filed Apr. 2, 1904. Serial No. 201,231.

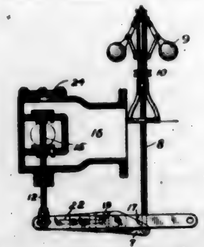

Claim.—1. The combination with a casing having a gas inlet and an air inlet and a mixing chamber, of a balanced valve controlling each of said inlets, levers attached to the stems of said valves, means for operating one of said levers directly from a governor, and the sliding adjustable connection 20 between said lever and the other lever 17 controlling the other valve, substantially as described.

2. A gas engine regulating valve comprising a casing having air and gas inlets with valves controlling said two inlets respectively, a crank shaft and a governor controlling the angular position of said shaft, a crank on the shaft actuating one of the said inlet valves, a lever for the other inlet valve substantially parallel to the crank arm and having its pivot on one side of the crank shaft and its operative connection to the inlet valve on the other side of such crank shaft and a sliding connection between the lever and the crank whereby the amount of oscillation of said lever may be adjusted between any desired limits.

846,308. BALANCE-WHEEL BRIDGE FOR WATCHES. ERNEST H. HORN, Waterbury, Conn., assignor to The Waterbury Clock Co., Waterbury, Conn., a Corporation. Filed Oct. 29, 1906. Serial No. 341,088.

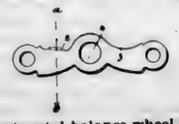

Claim.—A sheet-metal balance-wheel bridge for watches, provided with a flat integral spring-receiving finger ar-

ranged to stand flatwise in a plane passing through the center or approximately the center of the pivot-bearing of the bridge, and formed with a hole to receive the outer end of the balance or hair spring and the pin by which the said end is secured in place.

846,309. LOCK. JOHN G. HORSEY, Sidcup, England. Filed Oct. 18, 1905. Serial No. 283,289.

Claim.—1. In a lock, the combination with a bolt comprising a plurality of members and toggle-connecting means, of a sliding plate, and a slotted operating-lever connected to said plate and toggle connections.

2. In a lock, the combination with a bolt comprising a plurality of members and toggle-connecting means, of a sliding plate, and an operating-lever having key-engaging means connected to said plate and toggle connections.

3. In a lock, the combination of a bolt comprising a plurality of members having interfitting projections, and connecting means for said members comprising pivotal links adapted to be fitted into alinement with each other when the bolt is actuated.

4. In a lock, the combination of a bolt comprising a plurality of members having interfitting projections and guide means, and connecting means for said members including pivotal links adapted to be shifted into alinement with each other when the bolt is in a locked position.

5. In a lock, the combination of a bolt comprising a movable member and a stationary member, toggle-connecting links, said links being in alinement with respect to each other when the bolt is in thrown position, and a slide-plate in operative relation with said bolt and toggle connection.

6. In a lock, the combination of a bolt comprising a plurality of members and toggle-connecting means including pivotal links adapted to be shifted into alinement with each other when the bolt is in a locked position, a sliding plate, and an operating-lever connected to said plate and toggle connection.

7. In a lock, the combination with a bolt comprising a plurality of members and toggle-connecting means, of a sliding plate, and a slotted operating-lever having key-engaging means connected to said plate and toggle connection.

8. The combination with a bolt comprising a plurality of members, toggle-connecting means for said members, a sliding plate carried by one of said members and having pivotally mounted thereon an operating-lever, and a plurality of spring-controlled tumblers in operative relation therewith.

846,310. BOILER FIRE-BOX. CHARLES W. HULLINGS, Philadelphia, Pa. Filed July 23, 1906. Serial No. 327,346.

Claim.—1. The combination with a locomotive-boiler having a fire-box bounded by lateral and forward water-legs, and by a rear downward extension of said boiler, of a downward and forward inclined transverse water-passage attached to and communicating with said lateral water-legs and said rear downward extension, a parallel rearward and upward inclined transverse water-passage attached to and communicating with said lateral and forward water-legs, and overlying the forward end of said downward and forward inclined water-passage, pipes connecting the front end of the latter water-passage to the forward water-leg, and pipes connecting the rear end of the former water-passage to the boiler above the fire-box, substantially as specified.

2. A locomotive-boiler having in its fire-box, above the grate, a rear downward-inclined arched water-passage attached to and communicating laterally and in rear with water-holding portions of said boiler, and a front upward-inclined arched water-passage, parallel to the first-named passage, and attached to and communicating laterally and in front with water-holding portions of said boiler, the last-named passage overlying the first-named passage at or

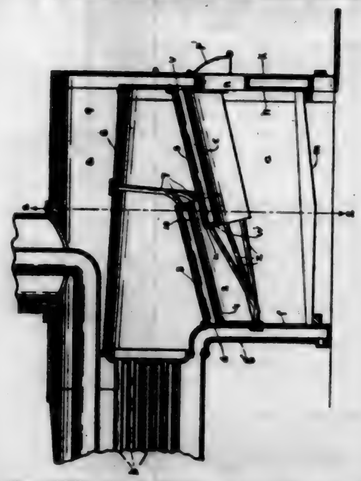

about the middle of the fire-box to provide a reverting-flue, pipes connecting the underlying passage to the front water-holding portion of the boiler, and pipes connecting the overlying passage to a water-holding portion of the boiler over the fire-box, said parts being combined together substantially as specified.

846,311. CAR-REPLACER. WILLIAM A. HUTSON, Orlando, Fla. Filed July 5, 1906. Serial No. 324,801.

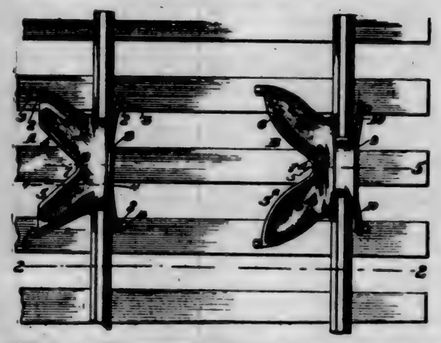

Claim.—1. The improved car-replacing apparatus comprising two frogs having each a recess or groove to receive the head of a rail and two wings which extend laterally, and upward, and to the right and left upon divergent lines, the wings of both frogs being sloped or inclined downward in each direction and one provided centrally with a convexity and the other with a concavity, for forcing and guiding the wheels of a derailed truck toward and upon the rails, substantially as described.

2. The improved car-replacer comprising two frogs each having a lengthwise recess to receive the head of a rail and provided with laterally-extended divergent wings having a raised rim or edge and the wings of one frog being convex on the outer side in a longitudinal direction and

the wings of the other frog being concave in the same direction, the convex frog having a bridge-section on the opposite side of the rail-groove which is provided with a lengthwise groove to receive the flange of the wheel, and the concave frog having a groove 8^a on the inner side of the recess for the rail as and for the purpose specified.

3. The improved car-replacer comprising two frogs each having a lengthwise recess for receiving the head of a rail and each provided with a laterally-extended wing diverging at an angle, each wing having a raised rim and one of the wings provided with a lengthwise convexity and the other with a lengthwise concavity, as and for the purpose specified.

4. The improved car-replacer comprising two frogs each having a lengthwise recess adapted to receive the head of a rail and one of them constructed with an adjacent bridge-section and with a groove extending thereon parallel to the rail-recess, the other frog having a corresponding bridge-section provided with inwardly-curved grooves and with an intermediate raised flange, substantially as described.

5. A car-replacer comprising two frogs each having a rail-recess and one constructed with a bridge portion which is provided on the upper side with a longitudinal groove, the other frog having a corresponding bridge-section provided with grooves curved inward, the bridge-section being sloped or curved downward to furnish a trackway for the truck-wheels in the replacing operation, as and for the purpose specified.

846,312. SNAP-FASTENER. THEOPHILUS R. HYDE, Jr., Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a Corporation of Connecticut. Filed Jan. 2, 1906. Serial No. 294,157.

Claim.—1. A snap-fastener socket member, having a stud-engaging member, a head of horn provided with a recess, and a fastening-eyelet of funnel shape and having its flared portion expanded in said recess and its tubular portion upset within the stud-engaging member to attach the device to an article.

2. A snap-fastener socket member, having a stud-engaging member, a head of horn provided with a recess, and a fastening-eyelet of funnel shape and having its flared portion expanded in the inner angle of said recess and its tubular portion upset within the stud-engaging member to attach the device to an article.

3. A snap-fastener socket member, having a stud-engaging member, a head of horn provided with a recess in its back, an eyelet inserted and rigidly secured in said recess and having a portion projecting beyond the head and adapted to enter and be upset in the stud-engaging member and thereby secure the stud-engaging member to the head and to the glove or other article.

846,313. MAIL-TRANSPORTATION SYSTEM. OLIVER O. JOHNSON, Windom, Minn. Filed June 27, 1906. Serial No. 323,664.

Claim.—1. In a device of the character described, the combination of an elevated trackway; a carrier mounted for travel thereon; a cable for moving said carrier; means for operating said cable; and a hanger for supporting said trackway and cable, said hanger being provided with an opening adjacent its lower end to permit the passage of the carrier therethrough; means adjacent said opening for supporting said trackway; a rod connected to the under face of said hanger and provided with a pulley for supporting the lower stretch of said cable and a pulley connected with the upper portion of said hanger for supporting the upper stretch of said cable.

2. In a device of the character described, the combination of an elevated trackway; a carrier mounted for travel thereon; a cable for moving said carrier; means for operating said cable; and a hanger for supporting said trackway and cable; said hanger being provided with an opening adjacent its lower end to permit the passage of the carrier therethrough; means movable upon the under face of said hanger adjacent said opening for supporting said trackway; means connected with the carrier for moving said supporting means out of the path of said carrier; a rod connected to the under face of said hanger and provided with a pulley for supporting the lower stretch of said cable and a pulley connected with the upper portion of said hanger for supporting the upper stretch of said cable.

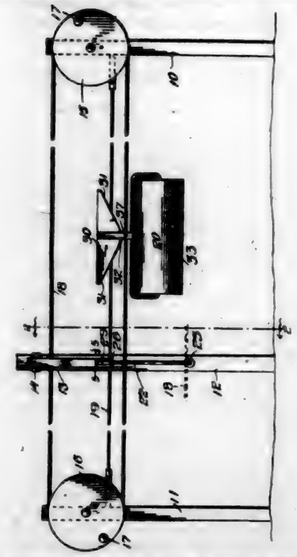

3. In a device of the character described, the combination of an elevated trackway; a carrier mounted for travel thereon; a cable for moving said carrier; means for operating said cable; and a hanger for supporting said trackway and cable; said hanger being provided with an opening adjacent its lower end to permit the passage of the carried therethrough; a plate attached to the under face of said hanger adjacent said opening and movable thereacross for supporting said trackway; means connected with said carrier for moving said plate out of the path of said carrier during its passage through said opening and pulleys connected to the upper and lower portions of said hanger to support the upper and lower stretches respectively of said cable.

4. In a device of the character described, the combination of an elevated trackway; a carrier mounted for travel thereon; a cable for moving said carrier; means for operating said cable; said hanger being provided with an opening adjacent its lower end to permit the passage of the carrier therethrough; a plate attached to the under face of said hanger adjacent said opening and movable thereacross for supporting said trackway; means connected to said carrier for moving said plate out of the path of said carrier during its passage through said opening; means attached to said hanger for limiting the movement of said plate in both directions and pulleys connected to the upper and lower portions of said hanger for supporting the upper and lower stretches respectively of said cable.

5. In a device of the character described, the combination of an elevated trackway; a carrier mounted for travel thereupon; a cable for moving said carrier; means for operating said cable; a hanger for supporting said trackway and cable; said hanger being provided with an opening

at its lower end to permit the passage of the carrier therethrough; a plate attached to the under face of said hanger adjacent said opening and movable thereacross for supporting said trackway; means connected with said carrier for moving said plate out of the path of said carrier on its passage through said opening; a catch mounted on said hanger for limiting the movement of said plate in both directions; and pulleys connected with the upper and lower portions of said hanger to support the upper and lower portions of said hanger to support the upper and lower stretches respectively of said cable.

6. In a device of the character described, in combination; a flexible elevated trackway; a carrier mounted for travel thereon; a cable for moving said carrier; means for operating said cable; a hanger for supporting said trackway and cable, and provided with an opening through which said carrier passes and means on said carrier for elevating said trackway during its passage through said opening.

7. In a device of the character described, a flexible elevated trackway; a carrier mounted for travel thereon and provided with oppositely-inclined ends; a cable for moving said carrier; means for operating said cable; a hanger for supporting said trackway and cable, and provided with an opening adjacent its lower end through which said carrier passes; and a roller attached to said carrier to elevate said trackway during the passage of said carrier through the hanger-opening.

8. In a device of the character described, an elevated trackway; a carrier movable upon said trackway; a cable for moving said carrier; a cable-wheel for operating said cable; and a hanger for supporting said cable and trackway, and provided with an opening at the lower end thereof to permit the passage of said carrier thereto; a shank connected to said carrier; a receptacle attached to said shank and a roller mounted on said carrier for elevating said trackway during the passage of said carrier through said hanger-opening.

9. In a device of the character described, an elevated trackway and an operating-cable; a carrier mounted to travel on said trackway and comprising a body portion having oppositely-inclined ends; a shank connected to said body portion and a receptacle attached to said shank, said body portion being provided with an opening to permit the passage therethrough of said trackway; rollers mounted in the interior of said body portion and adapted to travel on said trackway; a hanger for supporting said trackway and cable; and provided with an opening to permit the passage of said carrier therethrough and means connected with said carrier for elevating said trackway during the passage of said carrier through said hanger-opening.

10. In a device of the character described, in combination; a flexible elevated trackway; a carrier mounted to travel thereon and comprising a body portion having oppositely-inclined ends, a shank connected to said body portion, and a receptacle attached to said shank; a cable for moving said carrier and a cable-wheel for operating said cable; a hanger for supporting said cable and trackway; and provided with an opening at its lower end to permit the passage of said carrier therethrough a plate mounted on the under face of said hanger adjacent said opening and movable across the path of said carrier-shank, the body portion of said carrier being provided with an opening to permit the passage of said trackway therethrough and rolls mounted in the interior of said body portion, and adapted for travel on said trackway; and means connected with said carrier for elevating said trackway during the passage of said carrier through said hanger-opening.

846,314. MATCH-BOX. HENRY M. KABELL, Westford, Mass. Filed June 8, 1906. Serial No. 320,844.

Claim.—1. A match-box comprising a body portion having a chamber therewithin provided with a trap at its bottom, and having a match-discharge opening communicating with the trap, a slide, a finger carried by the slide and lying in position for engagement by a match within the trap to move said match outwardly through the opening when the slide is moved, an agitator located within the chamber for movement into and out of position to cover the trap, and means connected with the slide and arranged to hold the agitator normally in position to cover the trap and arranged for movement to permit of movement of the agitator out of such position when the slide is moved, said means being arranged to hold the agitator in normal position when the slide is in match-projecting position.

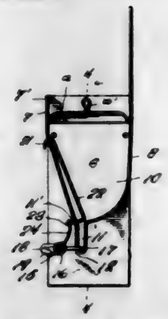

2. A match-box comprising a body portion having a chamber therewithin and having a match-discharge opening, a slide having a finger movable into the body portion for engagement of matches therewithin successively to project them through the discharge-opening, means for holding the slide with the finger yieldably in match-engaging position, an agitator within the chamber and having a lip provided with a recess in its free edge, and a projection carried by the slide and engaging the free edge of the lip, to hold the agitator against movement, said projection being movable with the slide into position to enter the recess to permit of movement of the agitator.

3. A match-box comprising a body portion having a chamber therewithin provided with a trap at its bottom and having a match-discharge opening at one end of the trap, said trap having a recess in its end wall opposite to the discharge-opening, and having a longitudinal slot at its lower portion, said body portion having a horizontal slot above the trap, a rod mounted horizontally exteriorly of the body portion, a slide mounted upon the rod and having a finger extending through the slot of the trap and in position to enter the recess, a spring engaged with the rod and arranged to hold the slide with its finger normally in the recess, an agitator pivoted to the wall of the body portion above the horizontal slot, for movement into and out of position to cover the trap, said agitator having a lip extending outwardly through the slot and having a cut-away portion in its outer edge between its ends, a projection carried by the lip and arranged to prevent disengagement of the lip from the slot, and a projection carried by the slide and engaging the outer edge of the lip, said projection being arranged to hold the agitator in position to cover the trap when at the ends of the lip, and in position to permit of movement of the agitator out of trap-covering position when between the ends of the lip or in the cut-away portion.

846,315. SUNSHADE OR UMBRELLA SUPPORT. DORA M. KERCH, Chicago, Ill. Filed Feb. 7, 1906. Serial No. 299,971.

Claim.—1. A sunshade-holder comprising a base provided with inturned retaining lips or flanges, a turn-table mounted on the base and engaged beneath said retaining lips or flanges, standards extending upward from the turn-table, a sunshade-staff-holding sleeve connected pivotally to said standards, clamping means for confining the sleeve about the staff, and means for fastening the turn-table to prevent rotation thereof.

2. An umbrella or sunshade support comprising a base provided with inturned retaining lips or flanges, one of which carries a binding-screw, attaching means for said base, a turn-table mounted on the base and working beneath said retaining lips or flanges and adapted to be engaged by said binding-screw, standards extending upward from the turn-table, a staff-holding sleeve connected pivotally to said standards, and a clamping-bolt for confining the sleeve about the staff.

846,316. MACHINE FOR MAKING WINDOW OR PLATE GLASS. WILLIAM W. W. KEYES, Alexandria, Ind., assignor of one-fourth to Gilford B. Roberts and one-fourth to John F. Merker, Alexandria, Ind. Filed Aug. 24, 1903. Renewed June 21, 1906. Serial No. 322,700.

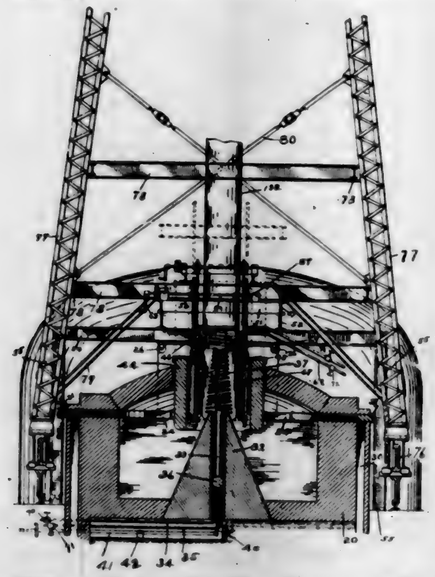

Claim.—1. In a machine for making sheet or plate glass, an open drawing-ring, and means for elevating it from contact with the body of molten glass out of which the sheet or plate glass is to be formed.

2. In a machine for making sheet or plate glass, a tank for the molten glass, a spreader extending above the surface of the glass and surrounded by the glass, an open drawing-ring, and means for lowering the drawing-ring to the surface of the glass surrounding said spreader and then for elevating said ring.

3. In a machine for making sheet or plate glass, a tank for the molten glass, a spreader located in said tank and extending above the surface of the glass therein, an open ring for drawing a cylinder of glass upward from the molten glass about said spreader, means for chilling the surface of the molten glass near the point from which the cylinder is being drawn, and means for regulating the chill imparted thereby to the glass.

4. In a machine for making sheet or plate glass, a tank for the molten glass, an open drawing-ring, means for lowering said drawing-ring to the molten glass and elevating the same therefrom, and stationary means for chilling the cylinder of glass that is located within the path of the ring.

5. In a machine for making sheet or plate glass, a tank for the molten glass, a stationary receptacle for a chilling fluid located above the molten glass, an open drawing-ring of larger diameter than said receptacle, and means for lowering said ring about said receptacle and into contact with the molten glass and elevating the same.

6. In a machine for making sheet or plate glass, a drawing-ring, means for lowering it into contact with the surface of the molten glass and slowly elevating it so as to draw a cylinder of glass from the molten glass, a coil of chilling-pipes located so as to be within the cylinder of glass, and another coil of chilling-pipes located to surround the cylinder of glass, said coils extending upward from a point immediately above the body of molten glass.

7. In a machine for making sheet or plate glass, means for starting the withdrawal of a cylinder of glass from the surface of a body of molten glass, and a circular clamp surrounding the cylinder and clamping it below the top thereof and continuously elevating the same after it has been started.

8. In a machine for making sheet or plate glass, means for holding the cylinder of glass below the top thereof and continuously elevating the same after it has been started, and means for cutting said cylinder of glass into sections after it has been sufficiently hardened and while it is being elevated.

9. In a machine for making sheet or plate glass, a tank for molten glass having an opening through its top, a spreader within said tank extending from the bottom to a point above the surface of the glass, a cylinder extending downward through an opening in said tank to a point below the surface of the glass and surrounding the upper end of said spreader, and means for operating on the glass within said cylinder near the upper end of said spreader.

10. In a machine for making sheet or plate glass, a tank for the molten glass, a spreader extending up in said tank to a point above the surface of the glass, an inner chilling-coil mounted at the top of said spreader, means for drawing the glass from a line surrounding the top of said spreader, and an outer chilling-coil around the cylinder of glass being drawn, the lower end of said outer coil surrounding the upper end of said spreader.

11. In a machine for making sheet or plate glass, a tank for the molten glass, a spreader in said tank extending above the surface of the glass, a coil of pipe mounted on the upper end of said spreader with outlet and inlet pipes to said coil through said spreader, and means for vertically adjusting the position of said coil.

12. In a machine for making sheet or plate glass, a tank for the molten glass, a spreader in said tank extending above the surface of the glass, a coil of pipe mounted on the upper end of said spreader with outlet and inlet pipes to said coil through said spreader, valves in said pipes for controlling the flow of water through said coil, another coil of pipes, means for supporting it about said central coil, valve-controlled pipes leading to said outer coil, and means for drawing a cylinder of glass from the surface of the molten glass between said coils.

13. In a machine for making sheet or plate glass, a tank for the molten glass, a tower above the same, means for starting the formation of a cylinder of glass, means for clamping the cylinder of glass after it is started, a plurality of means on the top of the tower for elevating said starting and said clamping means, and means for operating said elevating means together or independently of each other.

14. In a machine for making sheet or plate glass, a tank for the molten glass, a tower above the same, two drums mounted on said tower, shafts on which said drums are mounted, means for driving the same, clutches on each shaft for transmitting power from the shaft to the drum thereon, means for operating each of said clutches independently, chains on each drum, a pair of pulleys mounted

on the tower over which said chains pass so as to bring the chains of each pair opposite each other, and means for operating on the glass in and above the tank that may be connected or disconnected at will with said chains.

15. In a machine for making sheet or plate glass, a tank for the molten glass, a drawing-ring for starting a cylinder of glass upward from the surface of the molten glass, a plurality of rods extending upward from said ring, a ring at the upper end of said rods for holding their free ends in place, and means for elevating or lowering the frame thus formed in connection with said drawing-ring.

16. In a machine for making sheet or plate glass, a tank for the molten glass, means for starting a cylinder of glass upward from the surface of the molten glass, a clamping-ring for engaging and holding said cylinder of glass after it has been started, said clamping-ring consisting of a plurality of sections hinged together at all their adjacent ends save one so as to form a separable ring, and means for drawing and holding the ends of said ring together.

17. In a machine for making sheet or plate glass, a tank for the molten glass, means for starting a cylinder of glass upward from the surface of the molten glass, a clamping-ring for engaging and holding said cylinder of glass after it has been started, said clamping-ring consisting of a plurality of sections hinged together at their adjacent ends save one so as to form a separable ring, a bracket secured to one end of said ring, a spring-catch secured to the other end, a spring-controlled rod extending loosely through said bracket, a bar pivoted to the inner end of said rod, and a handle pivoted between its ends to the outer end of said bar with a pin on the inner end of said handle to engage said catch, substantially as shown and described.

18. In a machine for making sheet or plate glass, a tank for the molten glass with an opening in the top thereof, a cylinder running through said opening with its lower end below the surface of the glass, four rods extending upward from said cylinder and equidistant from each other, and supporting said rods and means for independently elevating or lowering each of said rods so as to adjust the vertical position of said cylinder or any portion thereof.

19. In a machine for making sheet or plate glass, a tank for the molten glass having an opening in the top, a cylinder extending downward into said opening with its lower end below the surface of the glass, screw-rods extending upward from said cylinder, a frame above said tank, brackets mounted on said frame through which said screw-rods extend, a spiral gear internally threaded and mounted on each of said rods above said bracket, horizontally-disposed shafts, gears on said shafts for actuating the spiral gears on said threaded rods, clutches on said chutes for engaging or disengaging said gears, and means for actuating said shafts separately or together, as desired.

20. In a machine for making sheet or plate glass, a tank for the molten glass, means for drawing a cylinder of glass upward from the surface thereof, a cutter operative within the cylinder of glass, and means for lowering said cutter into the upper end of the cylinder of glass whereby the upper portion thereof may be cut off.

21. In a machine for making sheet or plate glass, a tank for the molten glass, means for continuously drawing a cylinder of glass upward from the surface of the molten glass, a cap adapted to fit upon the upper end of the cylinder of glass, a cutter mounted in connection with said cap and adapted to enter the cylinder of glass, means on said cap for operating the cutter, and means for elevating and lowering said cap.

22. In a machine for making sheet or plate glass, a tank for the molten glass, means for drawing a cylinder of glass upward from the surface thereof, a cap-plate adapted to be placed upon and surround the upper end of the cylinder of glass, a tube extending centrally through said cap, arms pivoted to the lower end of said tube, guide-rollers on the lower end of two of said arms, a diamond on the lower end of one arm, a block for spreading said arms, means operative through said tube for moving said block to spread said arms, a bevel-gear on said tube above said cap, and means mounted on the cap for actuating said bevel-gear to revolve the tube and diamond.

23. In a machine for making sheet or plate glass, a tank containing molten glass, means for drawing a cylinder of glass upward from the surface thereof, a platform mounted above said tank through which said cylinder of glass is elevated, means for cutting off sections of said cylinder of glass above said patform, and trucks on said platform for moving the sections of glass as they are cut.

846,317. CHECK-VALVE. RICHARD H. KIDDLE, Kinsman, Ohio. Filed Jan. 3, 1906. Serial No. 294,440.

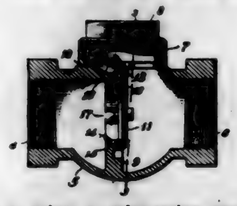

Claim.—In a valve, a valve-casing provided with a transverse partition having a threaded opening formed therein and having one end thereof extended laterally to form a support and provided with alined bearings, there being a depression formed in the extension between the bearings, a detachable valve-seat threaded in said opening and provided with inwardly-extending lugs, a valve pivoted in said bearings and having a limited lateral movement, and a finger-piece formed on the pivoted end of the valve and movable into engagement with the walls of the depression when the valve is moved to open position.

846,318. MECHANICAL CONNECTION. LEWIS T. KLINE, Alpena, Mich. Filed Aug. 8, 1906. Serial No. 329,737.

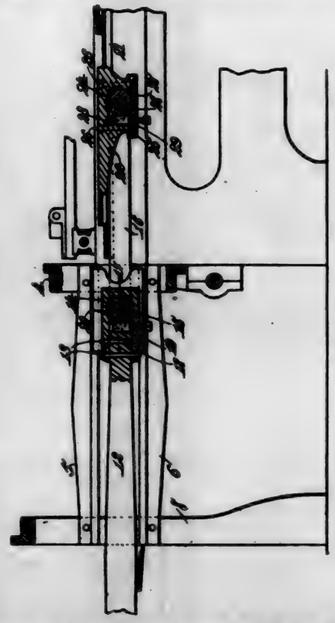

Claim.—1. In a mechanical connection, the combination with a reciprocatory element, of a hanger depending therefrom and provided with an opening, a plate secured to the hanger, a pin extending through the opening in the hanger, bearings for the pin mounted within the opening and supported by the plate, means arranged within the opening for adjusting the bearings, means extending through the plate for shifting said adjusting means, a pair of links positioned one at each side of the hanger and connected to said pin, a reciprocatory pitman, a pair of guide-shoes, a pin extending through one end of the pitman and guide-shoes and connected to the links, bearings carried by the pitman for the last-mentioned pin, and adjustable means for the bearings.

2. In a mechanical connection, the combination with a reciprocatory element, of a hanger depending therefrom, a pair of links between which the hanger extends, a pin extending through the hanger and connected to the links, adjustable bearings carried by the hanger for the links, a reciprocatory pitman, a pair of guide-shoes arranged between the links, a pin extending through one end of the pitman and through the shoes and secured to the links for connecting the links to the pitman, and adjustable bearings for the pin carried by one end of the pitman.

846,319. KITCHEN CABINET-TABLE. ZERA KNAPP, Cleveland, Ohio, assignor of one-half to Otis Munson, Cleveland, Ohio. Filed Jan. 24, 1906. Serial No. 297,594.

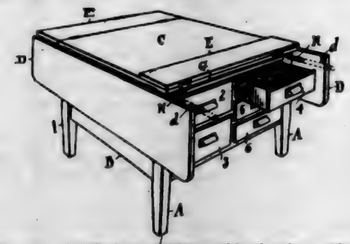

Claim.—1. A kitchen cabinet-table having side wings hinged at its sides and adapted to be raised and lowered, in combination with leaves hinged transversely on the ends of the top of the table and means on said side wings to support the outer edges of said leaves in both positions of said wings.

2. A kitchen cabinet-table having side wings hinged at its sides and adapted to be raised and lowered, in combination with leaves hinged transversely of the ends of the top of the table, and means on said side wings to support the outer edges of said leaves in both positions of said wings, comprising projections on the under side of said side wings extending beyond the inner edge thereof.

846,320. GAME APPARATUS. RICHARD T. LAMBERT, Boston, Mass. Filed June 2, 1906. Serial No. 319,910.

Claim.—1. A game apparatus comprising a deflecting-wall having an opening, a series of chutes behind said wall, each communicating with the opening in the wall, a corresponding series of ball pockets or stalls adapted to arrest balls dropping through said chutes, a hopper at the front side of the deflecting-wall adapted to receive balls that rebound therefrom, and means for guiding balls from the hopper to the front portion of the apparatus.

2. A game apparatus comprising a deflecting-wall having an opening, a series of chutes behind said wall, each communicating at its upper end with the opening in the wall, a corresponding series of ball-arresting pockets or stalls at the front portion of the apparatus, adapted to receive balls falling through said chutes, each pocket having a valved ball-outlet in its bottom, and means for operating the valves of said outlets.

3. A game apparatus comprising a deflecting-wall having an opening, a series of chutes behind said wall, each communicating with the opening in the wall, a corresponding series of ball pockets or stalls, adapted to arrest balls dropping through said chutes, a hopper at the front side of the deflecting-wall adapted to receive balls that rebound therefrom, said hopper having an inclined bottom with forwardly-projecting extensions at opposite ends of the series of pockets, and oblique guides adapted to deflect balls laterally to the extensions.

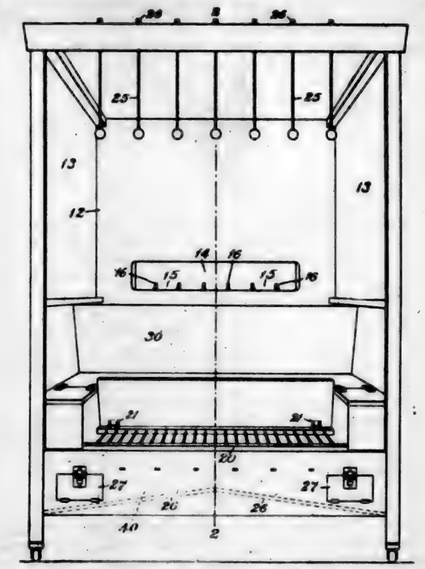

4. A game apparatus comprising a deflecting-wall having an opening, a series of chutes behind said wall, each communicating with the opening in the wall, a corresponding series of ball pockets or stalls, adapted to arrest balls dropping through said chutes, a hopper at the front side of the deflecting-wall adapted to receive balls that rebound therefrom, said hopper having an inclined bottom with forwardly-projecting extensions at opposite ends of the series of pockets, oblique guides adapted to deflect balls laterally to said extensions, ball-outlets in said extensions, and a spent-ball receptacle located below the extensions.

5. A game apparatus comprising a deflecting-wall having an opening, a series of chutes behind said wall, each communicating with the opening in the wall, a corresponding series of ball-receiving pockets or stalls at the front portion of the apparatus, adapted to receive balls dropping through said chutes, a hopper adapted to receive balls that rebound from the deflecting-wall, said hopper having an inclined bottom with extensions at opposite ends of the series of stalls, and means for guiding balls from the hopper to the front portion of the apparatus, said hopper having an inclined bottom with extensions at opposite ends of the series of stalls, and means for guiding balls to said extensions, said pockets and extensions having valved ball-outlets, and a spent-ball receptacle under said outlets.

6. A game apparatus comprising a deflecting-wall having an opening, a series of chutes behind said wall, each communicating with the opening in the wall, a corresponding series of ball-receiving pockets or stalls at the front portion of the apparatus, adapted to receive balls dropping through said chutes, a hopper adapted to receive balls that rebound from the deflecting-wall, said hopper having an inclined bottom with extensions at opposite ends of the series of stalls, and means for guiding balls to said extensions, said pockets and extensions having valved ball-outlets, a spent-ball receptacle under said outlets having oppositely-arranged inclines extending downwardly from the center to the sides of the apparatus, and ball-outlets at the ends of said receptacle.

7. A game apparatus comprising a deflecting-wall having an opening, a series of chutes behind said wall, each communicating with the opening in the wall, a corresponding series of ball-arresting pockets or stalls at the front portion of the apparatus, means for guiding balls to

said pockets, and a movable grated cover above said pockets.

846,321. COMBINED TROUSERS-BUTTON AND DRAWERS-SUPPORTER. JOHN T. LANE, Kansas City, Mo. Filed Oct. 18, 1905. Serial No. 283,268.

Claim.—A combined trousers-button and drawers-support comprising two members, one member having two disks disposed side by side, the outer edge of one being formed over the periphery of the other, one disk having a central raised portion provided with a plurality of perforations to receive the threads for securing the member to the trousers, the other disk having a central projection with a knob-like end, said projection and central portion being on opposite sides of said member, the other member comprising a disk having a central raised resilient socket portion for receiving and releasably engaging the knob-like projection, said other member having circularly arranged outside the socket portion a plurality of perforations adapted to receive the threads for securing said other member to the drawers.

846,322. WATER-DISTILLING APPARATUS. ROBERT S. LAZENBY and HENRY C. LAZENBY, Waco, Tex. Filed Feb. 11, 1905. Renewed Jan. 4, 1907. Serial No. 350,818.

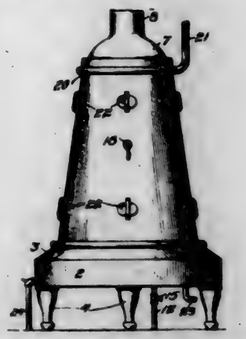

Claim.—1. A condensing apparatus comprising a chamber, air-flues passing through the chamber and having no communication therewith and arranged to effect a circulation of air therethrough, means for mixing air with the steam to be condensed, means for conveying the mixed air and steam into the chamber and in contact with the flues, a stack with which the exhaust ends of the flues communicate, and means for conveying the empyreumatic gases from the chamber into the stack in a direction to establish a draft therethrough.

2. A condensing apparatus comprising a chamber, air-flues passing through said chamber, and out of communication therewith, a steam-inlet arranged to discharge against the lower portions of said flues, and means for directing the steam not condensed by the lower portions of said flues against the upper portions thereof.

3. A condensing apparatus comprising a chamber, air-flues passing through said chamber and out of communication therewith, a steam-inlet arranged to direct steam outwardly against the lower portions of said flues, and means for returning the steam not condensed by the lower portions of said flues inwardly against the upper portion thereof.

846,323. CANE-STUBBLE CUTTER AND DESTROYER. JULES LE BLANC, Jeanerette, La., assignor of one-fourth to Philip J. Hebert, one-fourth to Helaire T. Hebert, and one-fourth to Felix J. Hebert, Jeanerette, La. Filed July 12, 1906. Serial No. 325,964.

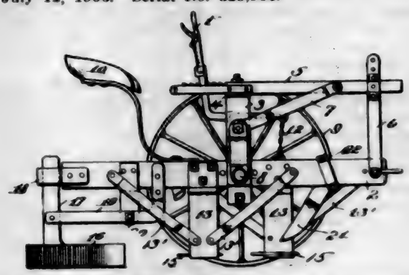

Claim.—1. The combination of a beam, stubble-cutting knives associated with said beam, a lever, a standard connected with the lever, a guide member connected with the beam and through which said standard projects, and a scraper carried by said standard for directing the stubble cut by said knives in lateral directions.

2. The combination of a beam, stubble-cutting knives associated with said beam, a lever fulcrumed between its ends, the forward portion of the lever straddling the beam, a standard having a vertical and a horizontal portion, the vertical portion being jointed with the rear end of said lever, a scraper fastened to the horizontal portion of said standard and serving to direct the stubble cut by said knives in lateral directions, and a guide member through which the vertical portion of said standard works.

3. The combination of a beam, standards depending from said beam, stubble-cutting knives attached removably to said standards, a lever fulcrumed between its ends and having a portion straddling said beam, a standard having vertical and horizontal portions, the vertical portion being connected with said lever, a scraper connected with the horizontal portion of said last-mentioned standard and for directing stubble cut by said knives in lateral directions, and a guide member on the beam through which the vertical portion of said last mentioned standard works.

846,324. SLIDING DOOR. ANDREW L. LEWIS, Petersburg, Va. Filed Mar. 29, 1906. Serial No. 308,799.

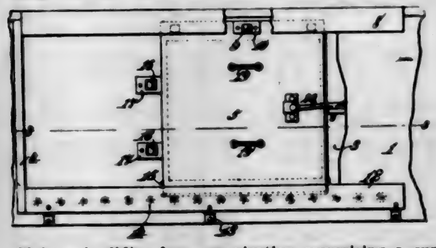

Claim.—A sliding-door organization comprising a support having an upper track free of rollers and including inner and outer metallic members, a lower track having inner and outer members with longitudinally-alined rollers held therebetween and below the upper edges thereof, upper and lower vertically-alined rollers on the support between the upper and lower tracks, and a door engaging the tracks at its upper and lower extremities and having the weight thereof imposed on the lower rollers exclusively, the said door being provided with rollers projecting from the inner and outer surfaces of the upper end thereof, the said inner rollers being adjacent the ends of the door and an outer roller located at about the center of the same, and the intermediate portion of the inner side of the door having metallic strips extending fully thereacross which are held in contact with the vertically-alined rollers between the upper and lower tracks.

846,325. INCUBATOR. GEORGE E. LITTLEFIELD, Buffalo, N. Y. Filed Feb. 16, 1905. Serial No. 245,847.

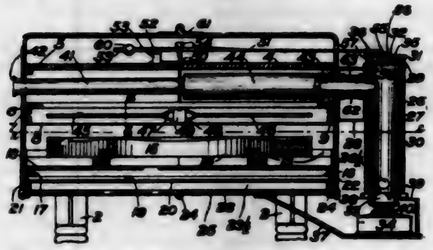

Claim.—1. An incubator-chamber having a removable bottom; an egg-tray; a diaphragm beneath said egg-tray for the diffusion of air within the chamber, and adapted to be removed when the bottom of said chamber is open.

2. An incubator-chamber having a door, and a removable bottom; an egg-tray removable through said door; a supporting-frame for said egg-tray and a diaphragm beneath it, for diffusing air through the chamber; both supporting-frame and diaphragm being removable when the bottom of said chamber is open.

3. In an incubator, the combination with the incubating-chamber, of a heater comprising a central flue for products of combustion, open to the atmosphere at its upper end; a concentric surrounding flue for hot air, also open at its upper end; and means for discharging the heated air from the heater into the chamber; dampers adapted to close, respectively, the flues above mentioned; a thermostat within said chamber; and means operated by said thermostat for opening and closing said dampers successively.

4. In an incubator, the combination with the incubating-chamber, of a hot-air heater, a water-reservoir adjacent to said heater and warmed thereby; a flue for discharging heated air from the heater to the chamber, extending through said reservoir above the water-line and open thereto.

5. In an incubator, the combination with the incubating-chamber, of a hot-air heater; a water reservoir adjacent to said heater and warmed thereby; a flue for conducting the waste products of combustion from said heater through said reservoir and chamber to the atmosphere; a tube around said flue, extending from said heater through said reservoir above the water-line, and open thereto, into said chamber.

6. In an incubator, the combination with the incubating-chamber, of a hot-air heater comprising a flue for the products of combustion and an adjacent flue for the heated air; reservoirs, adapted to supply moisture to the air at the inlet and outlet, respectively, of the hot-air flue of said heater; a flue for the heated air leading from the hot-air flue in said heater, through the reservoir at this point into said chamber.

846,326. RAILWAY-GATE-OPERATING MECHANISM. MILTON H. LOUDON, Kansas City, Mo. Filed July 3, 1905. Serial No. 268,129.

Claim.—1. In a road-gate, the combination of a pivoted gate, a pivot-shaft on which the gate is mounted, an electric motor, a power-transmitting means between the motor and the gate, said power-transmitting means including friction-gear to permit running of the motor after the gate has been moved from one position to the other.

2. In apparatus of the class described, a pivotally-mounted gate, and an electric motor for actuating the same, a power-transmitting means between the motor and the gate, said power-transmitting means including friction-gear to permit the motor to continuously operate and hold the gate in lowered position, and means tending to resist the operation of the motor and move said gate to elevated position.

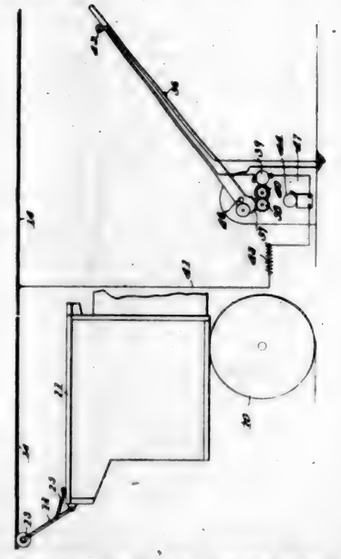

3. In apparatus of the class described, the combination with a pivotally-mounted railway-gate, of an electric motor for operating the same, gearing connections between the motor and the gate and including friction-gear which will permit continuous operation of the motor in order to hold the gate closed, a continuous conductor extending along the railway-line and electrically connected to the motor, and a source of energy and a traveling contact on each train, whereby on the approach of the train within a predetermined distance the motor will be operated.

846,327. CALLING DEVICE FOR TELEPHONE-EXCHANGES. FRANK A. LUNDQUIST, Chicago, Ill. Filed June 13, 1904. Serial No. 212,325.

Claim.—1. The combination with a receiver-hook arranged to be depressed by the weight of a receiver, and a contact-making device arranged to be operated each time that the hook is depressed, of a spring-actuated member by which said contact-making device is operated, a governor mechanism by which the speed of said member is controlled, and a slipping connection between said member and said hook, said connection being so arranged that the hook may be depressed at a greater speed than the movement of said member.

2. The combination with a receiver-hook, and an arm movable with respect to each other, of a spring arranged to hold the hook and the arm normally at one extreme of their movement with respect to each other, and a contact-making device operated by the movement of the arm when the hook is moving in a direction which would disturb the normal relationship between the hook and the arm if the arm remained stationary.

3. The combination with a receiver-hook, an arm, and a slotted connection between the hook and the arm, said connection being arranged to permit a limited movement of the arm and hook with respect to each other, of a spring normally holding the two at one extreme of their movement with respect to each other, and a contact-making device operated by the force of said spring when said hook is being depressed.

4. The combination with a contact-making device, and a source of power for operating it, of a receiver-hook, means by which an ascent of said hook will set said device preliminary to the making of a contact thereby, and means by which a descent of said hook will release said device.

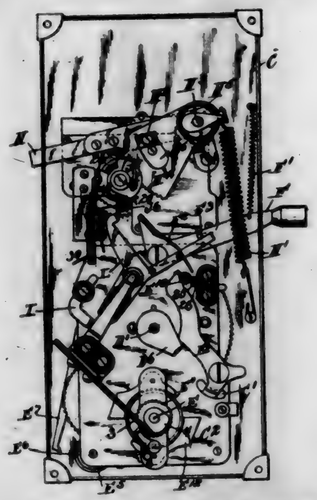

5. In a calling device arranged to control the operations of a switching mechanism, an indicator adapted to be set for a required advance of such switching mechanism, a contact-making device arranged to send impulses for causing such advance, a spring placed under tension by the setting of said indicator and arranged to operate said contact-making device, a key for setting said device into operation so as to send the required impulses and to return the indicator to its normal position, a second contact-making device and a receiver-hook connected together, and means by which a descent of the hook will cause the second device to send an impulse to the switching mechanism over a different course than that traversed by the impulses before mentioned.

6. The combination with two courses over which impulses may be sent, of a contact-making device for sending and an indicator for determining the number of impulses to be sent over one of said courses, a second contact-making device and a receiver-hook for causing the second device to send an impulse over the second course, and an independent governor for each device for controlling the speed of its movement.

7. The combination with two courses over which impulses may be sent, of a separate contact-maker for each course, an indicator arranged to be set by hand for the sending of a desired number of impulses over one of said courses, a governor for controlling the speed with which such impulses are sent, a receiver-hook arranged so that by its descent it will cause an impulse to be sent over the second course, and means by which a forced descent of said hook is prevented from influencing the duration of the impulse over the second course.

8. The combination with a receiver-hook, and a contact device arranged to close one electrical connection when the hook is elevated, to close a second electrical connection when the hook is depressed, and to temporarily close an intermediate electrical connection while passing from the elevated to the depressed position, of means by which a rapid downward movement of the hook is prevented from affecting the rate of speed at which said electrical connections succeed each other.

9. A contact-closing device, a spring for operating it, a governor for controlling the speed thereof, means for stopping the contact-closing device when it has made the desired number of contacts, and a slipping connection between said contact-closing device and said governor whereby the impact due to stopping said closing device is reduced.

10. In a calling device, an indicator adapted to be set for the making of any desired number of contacts, a key for starting the making of such contacts into operation a circuit normally disconnected from the contact-making parts, means by which the movement of the key for starting the making of the contacts also connects the contact-making parts to said circuit, a receiver-hook, and means by which a descent of said hook disconnects said circuit from the contact-making parts.

11. The combination of two electric circuits over which impulses may be sent, of a calling device provided with one contact-closing device for sending impulses over one circuit and a second contact-closing device for sending an impulse over the other circuit, means for setting the first contact-closing device into operation, a receiver-hook provided with connections for operating the second contact-closing device, and means by which the operation of the second contact-closing device will not send an impulse over the second circuit until after impulses have been sent over the first circuit by the first contact-closing device.

12. The combination with a contact-closing device, a battery, and a normally open connection between said battery and said contact-closing device, a receiver-hook arranged to operate said contact-closing device during its descending movement, and a key arranged to close the connection between said battery and said contact-closing device, when said hook is in an elevated position.

13. The combination with a contact-closing device, a battery, and a normally open connection between said battery and said contact-closing device, of a receiver-hook, a key arranged to close the connection between the battery and the contact-closing device, when said hook is in an elevated position, and means by which a descent of the hook will first cause an operation of said device and then break its connection to said battery.

14. The combination with two electric circuits over which impulses may be sent, of a separate contact-closing device for each circuit, independently-operative means for causing the contact-closing devices to send impulses over their respective circuits, and means by which the second contact-closing device is inoperative to send an impulse over the second circuit until after the first contact-closing device has been operated to send impulses over the first circuit.

15. The combination with a battery, a contact-making device normally disconnected from said battery, and means for operating said contact-making device, of a telephone-calling device adapted to be operated for the selection of a desired telephone-station, and means by which the operation of said calling device will connect said contact-making device to said battery.

16. The combination with a circuit over which impulses may be sent, of a contact-making device normally disconnected from said circuit, an indicator arranged to be set for the making of any desired number of contacts by said device, a key for connecting said circuit to said device and for starting said device into operation, and a receiver-hook arranged to disconnect said device from said circuit.

17. The combination with one branch of an electrical circuit, and two other branches normally diconnected from the first branch, of a key for connecting the first branch to the others so as to form two complete circuits, a contact-maker in one circuit for sending impulses thereover, an indicator for determining the number of impulses to be sent by said contact-maker, means by which a movement of said key to connect the first branch to the others will set said contact-maker into operation, a separate contact-maker in the second circuit, a receiver-hook arranged to operate the contact-maker in the second circuit, and means by which upon the hook operating such contact-maker the making of a contact thereby will be followed by said hook breaking the connection between the first branch and the other two branches.

18. The combination with two normally incomplete circuits and a separate contact-maker for each, of an indicator for determining the number of contacts to be made by one contact-maker, a receiver-hook for causing an operation of the second contact-maker, a key for closing said circuits elsewhere than at the points at which said contact-makers operate, means by which a movement of said key to close said circuits will start the first contact-maker into operation, and means by which a descent of said hook to operate the second contact-maker will restore said key to its normal position and break the connections made thereby.

846,328. REGISTERING DEVICE FOR TELEPHONE-EXCHANGES. FRANK A. LUNDQUIST, Chicago, Ill. Filed Oct. 20, 1904. Serial No. 229,233.

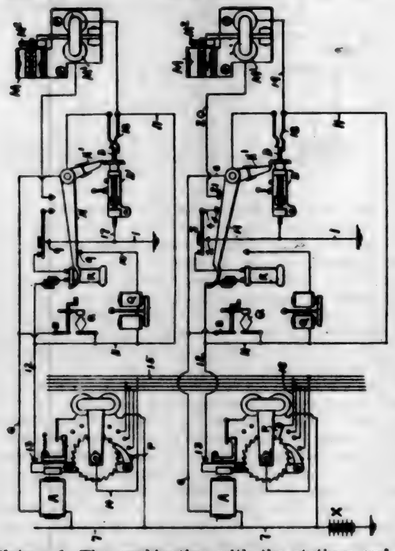

Claim.—1. The combination with the stations and the central office of an automatic telephone-exchange, of an electrically-operated switching mechanism at the central office for each local station, means by which a subscriber at his local station may operate his switching mechanism so as to complete connections from his own station to any of the other stations in the exchange, and a registering device at each local station arranged to be operated by a response received from the selected station.

2. The combination with the stations of a telephone-exchange, of an electrically-operated registering device at each station, means by which a subscriber at any one station, may place his registering device in connection with a selected one of the other stations, and automatically-operating means by which upon a response being received from the selected station an impulse will be sent through the electrically-operated registering device of the calling-station.

3. The combination with a series of local stations each of which is provided with an electrically-operated switching mechanism located at a central office, and means controlled from each station for operating its switching mechanism so as to select and signal a desired one of the other stations, of a registering device at each local station, and means by which a response received from the selected station will cause an automatic operation of the registering device at the selecting-station.

4. The combination with a series of local stations, a switching mechanism at a central office for each station, interconnecting wires for said switching mechanisms, and means controlled from each station for shifting its switching mechanism to any desired interconnecting wires so as to complete electrical connections from a calling to a desired one of the other stations, of an electrically-operated registering device at each station, an electrical connection from one side of each registering device to the associated switching mechanism, a battery at the central office and a receiver-hook at each local station, another connection from the other side of each registering device to said battery, said last-mentioned connection being open when the receiver-hook is depressed and closed when the hook is elevated, and means by which each hook in moving from its depressed to its elevated position temporarily closes a connection between said battery and the interconnecting wire which is normal for that station.

5. The combination with a series of local stations, a switching mechanism at a central office for each station, a normal wire for each switching mechanism, and means controlled from each station for connecting its switching mechanism to any of the other normal wires, of a registering device at each station provided with connections to the switching mechanism thereof, and means by which upon a subscriber at any station responding to a signal delivered thereto an electrical impulse will flow over the normal wire of the responding station and cause an operation of the registering device belonging to the station which has connected its switching mechanism to that wire.

6. The combination with the local stations and the electrically-operated switching mechanisms of an automatic telephone-exchange, of a registering device at each local station, and means by which the registering device of a calling-station is operated by a response being received from a called station.

7. The combination with the stations of a telephone-exchange, means for completing telephonic connections between a calling and a called station, and a device at each station for registering the calls originating thereat, of a battery and devices so arranged that said battery will remain inactive except at such times as short impulses are sent therefrom, and means by which upon the completion of telephonic connection between a calling and a called station one such short impulse from said battery will cause an operation of the registering device at the calling-station.

8. The combination with the stations of a telephone-exchange, and a battery and devices so arranged that said battery will remain inactive except for short impulses sent therefrom, of a registering device at each station for indicating the number of calls originating thereat, and automatic means actuated by an impulse from said battery for operating the registering device of a calling-station when a response is made by the called station.

9. The combination with the stations of a telephone-exchange, switching mechanisms by which calling and called stations are placed in telephonic connection with each other, and a registering device at each station for indicating the calls originating thereat, of a battery, devices for sending short impulses therefrom, means by which said battery is inactive at times other than those when short impulses are sent, means by which impulses sent from said battery serve to operate said switching mechanisms so as to place calling and called stations in telephonic connection with each other, and means by which an extra impulse sent from said battery will operate the registering device of the calling-station.

846,329. MACHINE FOR CLEANING AND SEPARATING COTTON FROM ITS IMPURITIES. JOHN S. LYLE, McLoud, Okla. Filed Aug. 7, 1906. Serial No. 329,555.

Claim.—1. In a machine of the kind stated, in combination, a rotary breaker, a pair of beating-rolls, a screen extending partly around the breaker and rolls, a drum having spikes, a slatted apron partly surrounding the drum, and means to take off the cleaned material from the drum.

2. In a machine of the kind stated, the combination, with a rotary drum having projecting spikes, and a casing extending partly around the drum, of a device for sep-

arating the material carried around by the drum, the same consisting of a plate arranged in the opening of the casing and above the drum and curved backward, or opposite to the rotation of the drum, substantially as described.

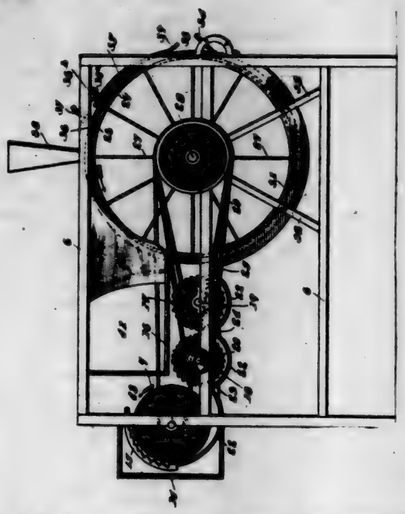

3. In a machine of the kind stated, the combination with the drum having projections, of a casing extending partly around the same, a separating-plate extending across the drum at a space from the end of the casing and curved backwardly to throw waste back upon the outer surface of the casing, and a rake above the end of the casing and extending along said space.

4. In a machine of the kind stated, the combination with a drum having projections, of a slatted apron extending around the lower part thereof, a casing extending around part of the upper half thereof, with a space between the end of the apron and the beginning of the casing, a lip extending outwardly from said opening at an incline to return material thereto, means at the end of the casing to cut off the heavier material from the drum and return same to the outside of the casing, down which it falls to the lip, and means on the outer side of the casing to project the heavier part of said material beyond the lip.

5. In a machine of the kind stated, the combination with a drum having projections, of a casing extending partly around the upper half thereof and having an opening at its beginning for the return of material to the drum and a projecting lip under said opening, means at the end of the casing to separate the heavier part of the material being carried around by the drum and return the same upon the outer side of the casing, and a plate upon the outer side of the casing above the lip, bent out at its lower edge to project the heavier part of said material beyond the lip.

6. In a machine of the kind stated, the combination with a rotary drum having projections, and part of its surface uncovered, of an inclined plate opposite the said uncovered part arranged to receive light material thrown from the drum, the plate being inclined downwardly toward the drum, to return lighter material thereto, and means for deflecting the heavier part of the material over and beyond the said plate, as described.

846,330. WIRE-BUTTON MACHINE. FREDERICK MARGGRAFF, Augusta, Ky. Filed July 29, 1904. Serial No. 218,621.

Claim.—1. In a machine for forming wire buttons the combination of movable compression-jaws, a pin for carrying wire forward between the jaws while they stand apart to bend it into a U shape, means for carrying the pin forward between and stopping it just beyond the jaws, means for then moving the jaws together to bend the wire around the pin to form the head and prongs of the blank, and means for bending the head relatively to the prongs while they are held between the compression-jaws.

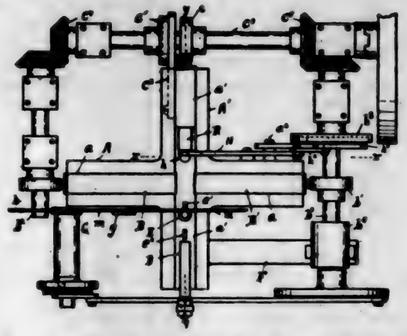

2. In a machine for forming wire buttons the combination of movable compression-jaws having registering grooves upon their meeting faces, a pin for carrying a wire forward between the jaws and in the grooves, to bend it into a U shape, means for carrying the pin forward between and stopping it just beyond the jaws, a means of moving the jaws together to bend the wire around the pin to form the head and prongs of the blank, and means for bending the head relatively to the prongs while they are held between the jaws.

3. In a machine for forming a wire button the combination of movable compression-jaws, a means for feeding the wire forward between the jaws to form it into a U shape, means for bringing the jaws together after the bend of the U has passed them to form a head projecting beyond and adjacently-disposed prongs held between the jaws, bending members adjacent to the jaws, a means for actuating one of said members to bend the prongs at a short distance from the head and means for actuating the other bending member to bend the head back upon the bent portion of the prongs.

4. In a machine for forming wire buttons, the combination of movable compression-jaws, a pin for pushing a wire forward between the jaws, means for arresting the movement of the pin just beyond the jaws, a means for bringing the jaws together to bend the wire around the pin to form the button-head, a means for disengaging the pin from the wire, bending members adjacent the jaws, and a means for actuating them to bend the head relatively to the prongs.

5. In a wire-button machine the combination of movable compression-jaws, a carriage, a pin and a gripping-jaw mounted on the carriage, a finger mounted movably on the carriage, means for carrying the finger into contact with the gripping-jaw to cause it to hold a wire against the pin, a means for reciprocating the carriage to carry the pin forward between the compression-jaws, and a means for bringing the jaws together to bend the wire about the pin to form the head.

6. In a wire-button machine the combination of movable compression-jaws, a carriage, a pin and a gripping-jaw mounted on the carriage, a finger mounted movably on the carriage, means for carrying the finger into contact with the gripping-jaw to cause it to hold a wire against the pin, a means for reciprocating the carriage to carry the pin forward between the compression-jaws, a means for bringing the jaws together to bend the wire about the pin to form the head, bending members for putting a double bend in the prongs adjacent to the head, and a ram for flattening the bend against the compression-jaws to form the head at right angles to the prongs.

7. In a wire-button machine the combination of movable compression-jaws, a carriage, a movable pin and a gripping-jaw mounted upon the carriage, a sliding finger and a sliding bar, means for actuating the finger and the bar to cause the former to contact said jaw for holding a wire thereto and the latter to withdraw the pin from contact with the wire, means for moving the carriage forward to carry the pin between the jaws, means for bringing the jaws together to bend the wire about the pin, bending members adjacent to the jaws and means for actuating them to bend the head relatively to the prongs after the pin has been withdrawn from the head.

8. In a wire-button machine the combination of movable compression-jaws, a carriage, a movable pin and a gripping-jaw mounted upon the carriage, a sliding finger and a sliding bar, means for actuating the finger and the bar to cause the former to contact said jaw for holding the wire thereto and the latter to withdraw the pin from contact with the wire, means for moving the carriage forward to carry the pin between the jaws, means for bringing the jaws together to bend the wire about the pin, bending members mounted adjacent to the jaws, means for actuating them to put a double bend in the prongs adjacent to the head and a ram mounted upon the carriage to flatten the head against the compression-jaws to form the same at right angles to the prongs.

9. In a wire-button machine the combination of compression-jaws, means for feeding a wire across the jaws, a carriage, a movable pin mounted upon the carriage, means for actuating the carriage to carry the pin forward between the compression-jaws to push the wire between the jaws to form it into a U shape, means for bringing the compression-jaws together to bend the wire about the pin to form the head and to bring the prongs adjacent to each other, a means for giving a short additional step to the carriage to carry the head a short distance beyond the compression-jaws, means for withdrawing the pin from the head, bending members mounted adjacent to the jaws, means for actuating one to bend the prongs adjacent to the compression-jaws, a means for actuating the other bending member to bend the head at the end of the prongs, a ram mounted upon the carriage and a means for actuating the carriage to carry the ram against the button-head and the compression-jaws.

846,331. METALLIC STRIP FOR DASHES. JESSE H. MATTHEWS, Des Moines, Iowa. Filed Apr. 12, 1905. Serial No. 255,120.

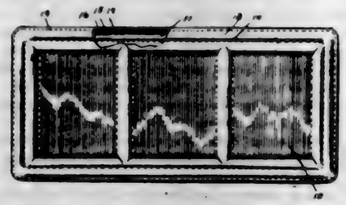

Claim.—1. In a device of the class described, two portions, a metallic strip between the edges of the portions, a cloth secured to the metallic strip by folding said strip around the edge of said cloth, and stitches extending longitudinally of the portions and through the cloth for securing the metallic strip to the portions.

2. A dashboard comprising a frame, portions forming the front and back thereof, a metallic strip placed between the upper edges of the portions in such a way that the upper edge of the metallic strip is substantially in line with the upper edge of the portions, and means for securing the metallic strip in position relative to the portions.

3. In a device of the class described, two portions, a metallic strip having its upper edge substantially in line with the upper edges of the two portions, and means for securing the metallic strip between the two portions.

4. In a device of the class described, two leather portions, a metallic strip between the leather portions, having its upper edge only exposed, said upper edge substantially in line with the upper edges of the leather portions, and means rigidly secured to the metallic strip by which it is secured between the leather portions.

846,332. VIOLIN-BRIDGE. WILLIAM H. MAY, Bridgeport, Conn. Filed June 8, 1906. Serial No. 320,768.

Claim.—A violin-bridge having its lower portion cut away to form an enlarged open space and long legs, and having the lateral edges of its lower portion extended to form shoulders, said legs being strengthened by pins of suitable material driven downwardly into said shoulders in lines converging to a point.

846,333. NON-REFILLABLE BOTTLE. CLARENCE MEDLEY, Calgary, Alberta, Canada. Filed Apr. 18, 1906. Serial No. 312,503.

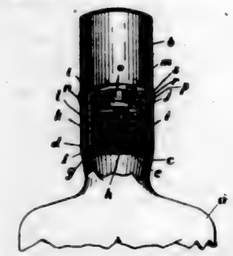

Claim.—1. In a device of the class described, in combination with the neck of a bottle having a tapered portion, a disk fitting within said neck adjacent to said tapered portion having an annular groove in the outer periphery and a central tapered circular orifice therethrough, a ring of compressible water-tight material inserted in said groove and abutting the tapered portion of said neck making a water-tight joint, a tapered float-valve fitting the central tapered orifice in said disk and closing the same, a cone-shaped weight resting upon said valve and disk, a cylindrical plug fitting within said neck above said disk and resting thereon having a cone-shaped recess in the under side thereof and a plurality of vertical slots in the outer periphery in communication with the said recess, a cap fitting within said neck and resting on said plug having a central orifice therethrough and a recess in the under side in communication with the vertical slots in said plug, and means for retaining said cap within the said neck, as and for the purpose specified.

2. In a device of the class described, in combination with the neck of a bottle having a tapered portion at the lower end thereof and an annular groove therein intermediate of its length, a disk fitting within said neck adjacent to said tapered portion having an annular groove in the outer periphery and a central tapered circular orifice therethrough, a ring of compressible water-tight material inserted in said groove and abutting the tapered portion of said neck making a water-tight joint, a tapered float-valve fitting the central tapered orifice in said disk and closing the same, a cone-shaped weight resting upon said valve and disk, a cylindrical plug fitting within said neck above said disk and resting thereon having a cone-shaped recess in the under side thereof and a plurality of vertical slots in the outer periphery in communication with the said recess, a cap fitting within said neck and resting on said plug having a central orifice therethrough and a recess in the under side in communication with the vertical slots in said plug and an annular groove in the outer

periphery thereof registering with the annular groove in said neck having vertical slots extending upwardly therefrom, and a plastic cement fitting said annular grooves, as and for the purpose specified.

846,334. WORK-HOLDING ATTACHMENT FOR DRILLS. GEORGE E. METCALF, Worcester, Mass., assignor to Harrington & Richardson Arms Co., Worcester, Mass., a Corporation of Massachusetts. Filed Feb. 11, 1905. Serial No. 245,240.

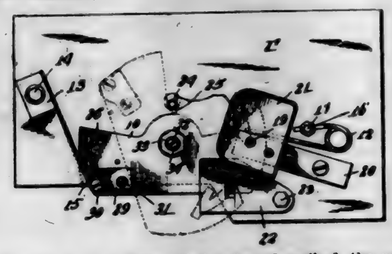

Claim.—1. In a device of the class described, the combination of a table or support, a stop thereon, and a work-holder mounted to have to-and-fro motion thereon, said work-holder being provided with a pair of stop-shoulders for limiting its motion in both directions and with a work-receiving socket for carrying a piece into position to be drilled when the work-holder is moved in one direction, said socket projecting over the edge of the table to carry the piece of work off from the table support and permit it to be dropped down through the socket in the work-holder when moved in the opposite direction.

2. In a device of the class described, the combination of a table or support, a stop thereon, a work-holder mounted to have to-and-fro motion thereon, said work-holder having a pair of stop-shoulders for limiting its motion in two directions, a positioning-spring engaging the work when in operative position, and a holding-spring acting as a stop for the holder during the drilling.

3. In a device of the class described, the combination of a table or support, a work-holder mounted to have to-and-fro motion thereon, a positioning-spring engaging the work carried by the work-holder, a holding-spring acting as a stop during drilling, and an operating-piece for releasing the holding-spring and moving back the work-holder.

4. In a device of the class described, the combination of a table or support, a work-holder mounted to have to-and-fro motion thereon, a positioning-spring, and a holding-spring coöperating with the work-holder, and an adjustable limit-stop to limit the travel of the work-holder.

5. In a device of the class described, the combination of a plate or support, a center stud, a bushing pivoted on the center stud, and a work-holding plate having an opening larger than the bushing and adjustably clamped on the bushing.

6. In a device of the class described, the combination of a table or support, a work-holder mounted thereon and capable of a to-and-fro motion, a holding-spring acting as a stop for the work-holder, and an operating-piece for releasing the holding-spring from the work-holder and moving the work-holder back.

7. A work-holder capable of a to-and-fro motion and having a pair of stop-shoulders in combination with an adjustable stop located in the path of both shoulders for limiting the motion of the work-holder in both directions, and means for automatically locking the work-holder when one shoulder engages the stop.

8. A work-holder capable of a to-and-fro motion in combination with means for limiting its motion in two directions, means for automatically locking the holder when in one of its limiting positions, and means for unlocking the holder and moving it in a direction away from said limiting position.

9. A work-holder capable of a to-and-fro motion and having a pair of stop-shoulders in combination with an adjustable stop located in the path of both shoulders for limiting the motion of the work-holder in both directions, means for automatically locking the holder when one of said shoulders engages the stop, and means for unlocking the holder and sending it in a direction to move the last-named shoulder away from the stop.

846,335. VALVE FOR SPRINKLER SYSTEMS. JAMES MCALEAR, St. Paul, Minn. Filed Nov. 18, 1905. Serial No. 287,991.

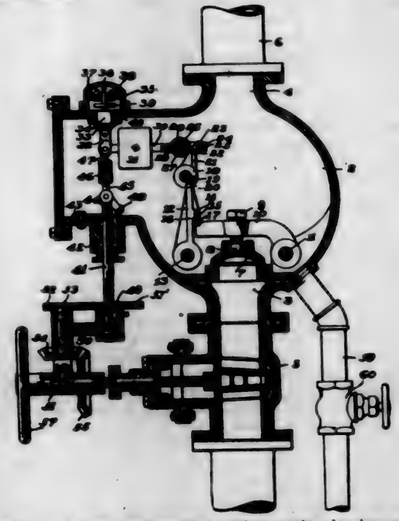

Claim.—1. The combination with a casing having ports for connection with the water-supply and the sprinkler system and an auxiliary port, the port leading to the system being open, of main and auxiliary valves arranged to close said supply and auxiliary ports, said auxiliary valve being normally closed by the pressure in said casing, means released by the opening of said auxiliary valve for normally locking said main valve, a manually-controlled water-inlet valve, means for positively locking said auxiliary valve in its closed position when said water-inlet valve is closed, and means connecting said locking means with said water-inlet valve whereby when said water-inlet valve is opened said locking means will be surely operated to release said auxiliary valve.

2. The combination with a casing having ports for connection with the water-supply and the sprinkler system and an auxiliary port leading to the atmosphere, of main and auxiliary valves, the former closing said supply-port and the latter said auxiliary port and being normally held in its closed position by the pressure within said casing, said sprinkler-system port being open to admit pressure to said casing, a compound-lever mechanism connecting said auxiliary and main valves and locking the latter in its closed position until said auxiliary valve is released, a water-inlet valve, means for locking said auxiliary valve in its closed position before the pressure is admitted to said casing, and a manually-operated mechanism connected with said locking means for releasing said auxiliary valve and opening said water-inlet valve, substantially as described.

3. The combination with a casing having ports for connection with the water-supply and the sprinkler system and an auxiliary port leading to the atmosphere, said sprinkler-system port being open, of main and auxiliary valves, the latter being held in its closed position by the pressure within said casing, means connecting said main and auxiliary valves and whereby the former will be held in its closed position until the latter is released, a rod for locking said auxiliary valve in its closed position while the valves are being set, a water-inlet valve having a stem and hand-wheel, and operative connections provided between said stem and said rod whereby when said inlet-valve is opened said rod will be operated to release said auxiliary valve.

4. The combination with a valve-casing having ports for connection with the water-supply and the sprinkler system and an auxiliary port, the port leading to the system being open, of main and auxiliary valves arranged to close said supply and auxiliary ports, a hub having a limited oscillating movement, an arm mounted thereon and connected with said auxiliary valve, mechanism between said hub and main valve for holding said valve in its closed position, and said mechanism being released by the oscillation of said hub when said auxiliary valve is opened to unlock said main valve, substantially as described.

5. The combination with a valve-casing having ports for connection with the water-supply and the sprinkler system and an auxiliary port, the port leading to the sprinkler system being open to admit pressure to said casing, of main and auxiliary valves arranged to close said supply and auxiliary ports, an oscillating hub, levers for locking said main valve and released by the movement of said hub, mechanism connecting said hub with said auxiliary valve and whereby the movement of said hub to release said levers is controlled by the opening of said auxiliary valve, substantially as described.

6. The combination with a valve-casing having ports for connection with the water-supply and the sprinkler system and an auxiliary port, the port leading to the system being open, of main and auxiliary valves arranged to close said supply and auxiliary ports, an oscillating hub connected with said auxiliary valve, a second oscillating hub released by the movement of said first-named hub, and mechanism released by the movement of said second-named hub for normally locking said main valve, substantially as described.

7. The combination with a valve-casing having ports for connection with the water-supply and the sprinkler system and an auxiliary port, the port leading to the system being open, of main and auxiliary valves arranged to close said supply and auxiliary ports, an oscillating hub, means released by the movement of said hub for normally locking said main valve in its closed position, an arm provided on said hub and having an antifriction-bearing, a second hub having a limited oscillating movement and provided with a yoke between which and said hub said arm is inserted, and means connecting said second-named hub with said auxiliary valve and provided with a suitable weight whereby when the pressure is relieved in said casing said auxiliary valve will open and release said main valve, substantially as described.

8. The combination with a valve-casing having ports for connection with the water-supply and the sprinkler system and an auxiliary port, the port leading to the sprinkler system being open, of main and auxiliary valves arranged to close said supply and auxiliary ports, a lever pivoted at one end and arranged to bear on said main valve, a second pivoted lever having an antifriction-bearing on the free end of said first-named lever, means for locking said second-named lever in operative engagement with said first-named lever, and mechanism connecting said locking means and the auxiliary valve and whereby said locking means will be operated to release said levers and said main valve when said auxiliary valve is opened, substantially as described.

9. The combination with the valve-casing having ports for connection with the water-supply and the sprinkler system and an auxiliary port leading to the atmosphere, of main and auxiliary valves arranged to close said supply and auxiliary ports, the port leading to the system being open, a lever pivoted at one end and arranged to bear on said main valve, a second lever having an antifriction-bearing on the free end of said first-named lever, an oscillating hub having a recess to receive the free end of said second-named lever and provided with an arm, means connecting said arm with said auxiliary valve whereby when said valve is held in its closed position said hub will be prevented from rotating to release said second-named lever, substantially as described.

10. The combination with a valve-casing having ports for connection with the water-supply and the sprinkler system and an auxiliary port leading to the atmosphere, the port leading to the system being open to admit pressure to said casing, of main and auxiliary valves, the latter being held in its closed position by the pressure in said casing, a lever arranged to bear on said main valve, a second lever having an antifriction-bearing at one end on said first-named lever, an oscillating hub having a recess to receive the end of said second-named lever and provided with an upwardly-projecting arm, a shaft having a recess, a hub loosely mounted thereon and having a lug to project into said recess, a yoke mounted on said last-named hub and between which and said hub said arm is held, and an arm projecting from said last-named hub and connected with said auxiliary valve.

11. The combination with a sprinkler system, of a casing having main and auxiliary valves, the former controlling the admission of water to the system and the latter controlling the opening of said main valve, a manually-controlled water-inlet valve, means for locking said auxiliary valve in its closed position when said water-inlet valve is closed, and means whereby when said water-inlet valve is opened said locking means will be operated to release said auxiliary valve, substantially as described.

12. In a sprinkler system, the combination with main and auxiliary valves, the former controlling the admission of water to the system and the latter the opening of said main valve, a manually-controlled water-inlet valve and means whereby when said water-inlet valve is opened said auxiliary valve will be released to allow the opening of said main valve.

13. In a sprinkler system, a valve controlling the admission of water to the system, mechanism normally held by the pressure in the system to lock said valve in its closed position, a manually-controlled water-inlet valve and means actuated by the opening of said manually-controlled valve for holding said locking mechanism in its locked position and releasing the same when said manually-controlled valve is opened and pressure is admitted to the system, substantially as described.

846,336. AUTOMATIC FIRE-SIGNAL SYSTEM. ROBERT L. MCELROY, JOHN E. SHEPHERD, and JAMES G. NOLEN, Chicago, Ill., assignors, by direct and mesne assignments, to Automatic Fire Protection Company, a Corporation of Maine. Filed Dec. 12, 1903. Renewed July 23, 1906. Serial No. 327,403.

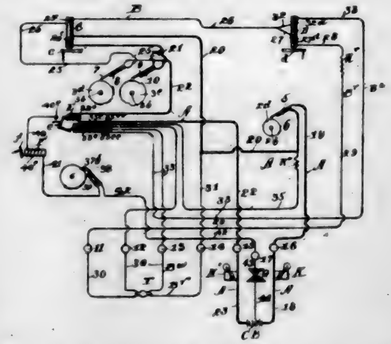

Claim.—1. In a fire-signal system, a main circuit including a signal-responsive instrument, a source of supply of electric energy for said circuit, a subcircuit having two branches in parallel to the main circuit, a signal-transmitting device in one of said circuits, an electromagnetic actuating device for said signal device arranged in

a portion of the main circuit paralleled by the subcircuit, said actuating device being adapted to become operative on the rupture of the subcircuit, and thermostatic devices in said subcircuit arranged and adapted to simultaneously rupture both branches thereof.

2. In a fire-signal system, a main circuit including a central signal-responsive instrument, a source of current-supply arranged to energize the main circuit, a subcircuit having two branches in parallel to the main circuit, a signaling device in one of said circuits, an electromagnetic actuating means therefor having its magnet in the portion of the main circuit paralleled by the subcircuit, a second signaling device arranged in one of said circuits, an electromagnetic actuating device therefor having a differentially-wound magnet, one of the coils whereof is included in each branch of the subcircuit, and thermostatic devices common to both branches of said subcircuit.

3. In a fire-signal system, a main circuit including a signal-responsive device, a source of current-supply for said main circuit, a signaling device arranged to break said main circuit and having a coil of its magnet arranged in said circuit, a subcircuit in shunt around said coil including a second coil of said electromagnet, differentially wound with respect to the first coil, said subcircuit having two parallel branches, a second signaling device arranged in one of said circuits, a differentially-wound electromagnetic operating device for said second signaling device, the coils whereof are included in the parallel branches of the subcircuit, and thermostatic devices adapted to break and make connection in both branches of the subcircuit simultaneously.

4. In a fire-signal system, a main circuit, including a signal-responsive device, a source of current-supply for said main circuit, a subcircuit having two branches parallel to the main circuit, signaling devices adapted to transmit signals through the main and sub circuits for actuating said devices comprising an electromagnet included in the main circuit, another signaling device, adapted to send signals through one of the circuits, an actuating device for the last said signaling device comprising a differentially-wound electromagnet, one of the coils whereof is included in each branch of the subcircuit, and thermostats in said subcircuit adapted when fused to first break both thermostat-wires and subsequently reëstablish a circuit therethrough.

5. In a fire-signal system, a main circuit including signal-responsive devices, a source of current-supply for said circuit, a subcircuit having two branches parallel to a portion of the main circuit, a signaling device in one of said circuits, electromagnetic actuating means therefor arranged in the portion of the main circuit paralleled by the subcircuit, a second signaling device arranged in one of the said circuits, an actuating device therefor comprising a differentially-wound electromagnet, one of the coils whereof is arranged in each branch of the subcircuit, and balancing resistances arranged in the two branches of said subcircuit.

6. In a fire-signal system, a main circuit, including a signal-responsive device, a source of current-supply in said circuit, a ground connection from said circuit, a subcircuit having two branches parallel to the main circuit, signaling devices and actuating means therefor arranged in said circuits, thermostats in said subcircuit branches adapted to cross said branches, means for breaking a subcircuit branch to isolate a section of said branch from electrical connection with the other, an electromagnet in the portion of the main circuit paralleled by the subcircuit adapted when energized to maintain said circuit-breaker in inoperative position, a grounded subcircuit adapted to be connected to the isolated section of the thermostat-subcircuit by the action of the circuit-breaker, and a signaling device and operating means therefor operatively associated with said grounded subcircuit.

7. In a signal system, two circuits having portions oppositely disposed so that current may flow therethrough in opposite directions, a common source of supply for said circuits, a means for establishing a cross between the oppositely-disposed portions of said circuits, and signaling instrumentalities associated with said circuits and arranged to be actuated on the occurrence of a cross between such circuits.

8. In a signal system, a source of current-supply, two circuits deriving current from said source of supply and having proximate portions wherein the circuit flows in opposite directions, said circuits having definite relative resistances and the resistances being so disposed that the relation is not preserved in the corresponding portions of the two circuits lying between their proximate portions and the negative terminal of the source of supply, a signaling apparatus responsive to relative variations of current-flow in said two circuits, and means for establishing a cross between the circuits in the proximate portions thereof.

9. In a fire-signal system, a main circuit, a subcircuit having two branches in parallel to a portion of the main circuit, signaling instrumentalities comprising two circuit-interrupters arranged for successive operation, one located in the subcircuit and one in the main circuit, electromagnetic actuating devices arranged and adapted to actuate the circuit-breakers upon an abnormal decrease of current-flow in the subcircuit, and a thermostat arranged and adapted when fused to break both subcircuit branches and then reëstablish a current-path through the subcircuit.

10. In a fire-signal system, a main circuit, a subcircuit having two branches in parallel to the main circuit, a signaling instrumentality in the main circuit, actuating device therefor responsive to abnormal decrease in current-flow through the subcircuit, another signaling instrumentality in one of the circuits, an actuating device therefor responsive to relative variations in current-flow through the two branches of the subcircuit, and a thermostat arranged and adapted when fused to break both branches of the subcircuit.

11. In a signal system, in combination with circuits to be supervised comprising two wires, of signal-transmitting means for indicating a break in either wire, other signal-transmitting means for indicating a break in both wires, signal-responsive devices, and suitable circuit connections between said signal-responsive devices and the break-indicating means.

12. In a signal system, in combination with circuits to be supervised comprising two wires, of signal-transmitting means for indicating a variation in the relative current-flow through said two wires, another signal-transmitting means for indicating a cessation of current-flow in both of said wires, signal-responsive devices and suitable circuit connections between signal-transmitting means and the signal-responsive devices.

13. In a fire-alarm system, a main circuit, a subcircuit, an electromagnetic signaling apparatus comprising an actuating-magnet responsive to rupture of the subcircuit, and a normally set signal device associated with the magnet to be actuated thereby when the subcircuit is ruptured and again actuated when the subcircuit is reëstablished, said signal device comprising two sets of signaling-pens, one in the subcircuit and one in the main circuit, signal-responsive devices in the main circuit, a battery in said main circuit, and a thermostat in the subcircuit adapted when fused to first rupture said subcircuit and then reëstablish it.

846,337. MEANS FOR DRYING OR CURING PAPER-BOARD. THOMAS W. MCFARLAND, Chicago, Ill. Filed Feb. 3, 1902. Renewed Aug. 28, 1906. Serial No. 332,353.

Claim.—1. In an apparatus for the purpose described, the combination of a table for receiving the board, and a board-carrier adapted to rest upon said table for receiving the board therein, substantially as set forth.

2. In an apparatus for the purpose described, the combination of a table over which the board may be projected, a board-carrier arranged on said table below the upper surface thereof and adapted to receive the board as it is projected onto the table, substantially as set forth.

3. In an apparatus for the purpose described, the combination of a table upon which the board may be projected, a carrier supported on said table in line with and adapted to receive the board, said carrier comprising removable side clamps for holding the board removably in place, substantially as set forth.

4. In an apparatus for the purpose described, the combination of a frame of flat form, means at one edge thereof whereby the same may be suspended on edge, means at one edge of the frame for engaging the side of the board to be held and holding the same against the frame, and removable means at the other edge of the frame for also engaging and holding the board.

846,338. PROCESS OF PROMOTING COMBUSTION. PATRICK J. MCNAMARA, Baltimore, Md. Filed June 20, 1906. Serial No. 322,658.

Claim.—1. The process of promoting combustion, consisting in enveloping coal with a substance having the property of becoming incandescent at a comparatively low temperature.

2. The process of promoting combustion, consisting in mixing with coal a substance containing silica, oxid of iron, alumina, lime, and magnesia, in about the proportion specified.

3. The process of promoting combustion, which consists in mixing with the coal silica, oxids of iron, calcium, and magnesium.

4. The process of promoting combustion which consists in performing the combustion of fuel within a communicating porous coating of heat-non-conductive substance, concentrating the heat within the combusting fuel to a point at which carbon has a superior affinity for oxygen than hydrogen, and securing the heat therefrom by radiation from the porous heat-non-conductive coating within which the fuel is caused to combust.

5. The process of promoting combustion, which consists in performing the combustion of fuel within a communicating porous envelop of heat-non-conductive substance, concentrating the heat within the combusting fuel to a point at which carbon has a superior affinity for oxygen than hydrogen, and securing the heat therefrom by radiation from the porous heat-non-conductive envelop within which the fuel is caused to combust.

846,339. SAFETY THIRD RAIL FOR RAILWAY-TRACKS. JOHN MCRAVEN, Little Rock, Ark. Filed Feb. 27, 1906. Serial No. 303,279.

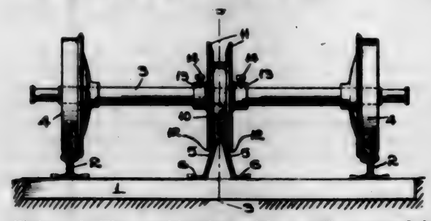

Claim.—1. The combination with a rail arranged between the track-rails of a railway-track, and a grooved wheel loosely mounted on the car-axle above said rail; substantially as specified.

2. The combination with an A-shaped rail positioned between the usual track-rails of a railway-track, of a grooved wheel loosely mounted upon the car-axle, and which grooved wheel extends downwardly over the top of the A-shaped rail; substantially as specified.

3. The combination with a car-axle, of a pair of collars rigidly held on the center thereof, a grooved wheel arranged for rotation on the car-axle between said collars, and an A-shaped third rail fixed to the ties between the ordinary track-rails, and the upper end of said third rail extending between the flanges of the wheel; substantially as specified.

846,340. ELECTRIC SWITCH MECHANISM. FRANK C. NEWELL, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Apr. 4, 1902. Serial No. 101,414.

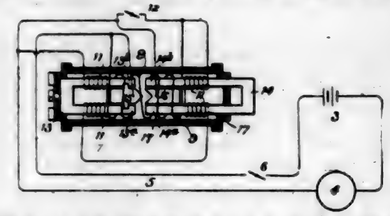

Claim.—1. The combination with a pair of separable contact terminals having magnetizable parts, of an energizing winding for holding said contact terminals in engagement, a second winding of stronger force adapted to separate them, and a shunt and switch for shunting out the more powerful winding to allow the terminals to come together.

2. The combination with a pair of separable contact terminals having magnetizable parts, of an energizing winding for holding said contact terminals in engagement, a second winding adapted to separate them, and a shunt and switch for shunting out the second winding to allow the terminals to come together.

3. The combination with a pair of separable contact terminals having magnetizable parts, of a winding around said terminals tending to magnetize them to attract them together, a high resistance winding in circuit with said first winding and tending to keep the magnetism below the strength at which the terminals will be brought together, and a shunt and pilot switch for shunting out the high resistance winding.

4. The combination with a pair of separable contact terminals having magnetizable parts, of an energizing winding for holding said contact terminals in engagement, a second winding adapted when fully energized to separate the contact terminals, and means for deënergizing said second winding to a strength less than that of the first winding to permit the first winding to actuate the terminals.

5. The combination with a pair of separable contact terminals having magnetizable parts, of an energizing winding for holding said contact terminals in engagement, a second stronger winding adapted when energized to separate said contact terminals, and means for deënergizing said second stronger winding to a strength less than that of the first winding to permit the first winding to actuate the terminals.

6. The combination of a main circuit, main circuit terminals comprising parts of the core of a solenoid, the solenoid around said terminals being attached to the main circuit and being in series with a pilot circuit, a higher resistance coil in said pilot circuit, a shunt for said high resistance coil and a switch for opening and closing the said shunt circuit.

7. The combination with two relatively movable terminals, of a main circuit with a solenoid surrounding said terminals wound to secure unlike polarity at the terminals, a high resistance coil connecting to said solenoid and to the main circuit and wound to secure like polarity of the terminals, and a shunt with a switch therein whereby the current through the high resistance coil may be reduced in order to increase the current in the solenoid to draw said terminals together.

8. The combination of two relatively movable terminals comprising contact blocks and horse shoe magnets surrounding the same, a solenoid surrounding both of said magnets as a whole and wound to secure unlike polarity of the terminals, high resistance coils wound upon each leg of said horse shoe magnet in such a way as to secure like

polarity of the terminals, and a shunt and switch for shunting out the high resistance coils.

9. In combination, a main circuit, a pair of separable contact terminals therefor having magnetizable parts, a coil therefor, a supplementary resistance coil normally in series with the first coil and in a shunt to the main circuit, and a pilot switch and shunt to shunt out the supplemental coil whereby to increase the current in the first coil and close the terminals.

10. The combination with a pair of separable contact terminals having magnetizable parts, of a winding to cause them to be attracted toward each other to close the circuit, a stronger winding adapted to hold the terminals apart, and means to shunt out this latter coil.

11. The combination with a pair of separable contact terminals having magnetizable parts, of electric coils on the terminals adapted to magnetize them for attraction and other supplemental electric coils thereon adapted to magnetize them for repulsion, whereby the terminals are closed or opened by decreasing or increasing the current in said supplemental coils.

846,341. BEARING FOR ROTARY SHAFTS. FREDERICK OGDEN, Keighley, England. Filed Aug. 8, 1906. Filed No. 329,664.

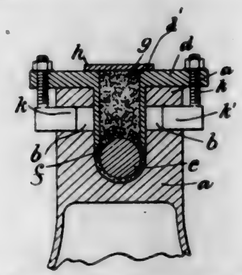

Claim.—1. In bearings for rotary shafts of cotton-gins, a cap formed to fit in said bearings and having a cavity to receive a plastic lubricant, a skeleton bush removably fitting within the bearings below the cap, and means for securing said parts in position.

2. In bearings for rotary shafts of cotton-gins a cap formed to fit in said bearings and having a cavity to receive a plastic lubricant, a skeleton bush to fit within the bearings and said cap and bolts having lateral projections or wings to take into openings in said bearings in order to secure the cap and bush in position.

3. In bearings for rotary shafts of cotton-gins a cap formed to fit in said bearings and having a cavity to receive a plastic lubricant, a skeleton bush removably fitting within the bearings below said cap, means for securing said cap and bush in position and a cover for protecting same.

846,342. SCABBLING-MACHINE. JOHN M. OWENS and MACK H. OWENS, Oolitic, Ind. Filed Sept. 15, 1904. Serial No. 224,577.

Claim.—1. A scabbling-machine comprising a power-shaft, a frame, means operative by said power-shaft for adjusting the frame, scabbling-disks revolubly mounted on the frame, a stone-carrying platen movable relative to the frame, and means operative by the power-shaft for intermittently feeding said platen.

2. A scabbling-machine comprising a power-shaft, a frame, means operative by said power-shaft for adjusting the frame, scabbling-disks revolubly mounted on the frame, a stone-carrying platen movable relative to the frame, and means operative by the power-shaft for intermittently feeding said platen, said means being reversible to permit intermittent feed of the platen in either direction.

3. A scabbling-machine comprising a frame-bed, a frame slidable on said bed, scabbling-disks mounted in different vertical planes on said frame, means carried by the frame for simultaneously operating said disks in reverse directions, a platen-bed formed with a recess and secured independently of the frame-bed, a platen mounted for longitudinal movement on said bed, and an intermittently-driven feed-screw connected with the platen and operative in said recess formed in the platen-bed.

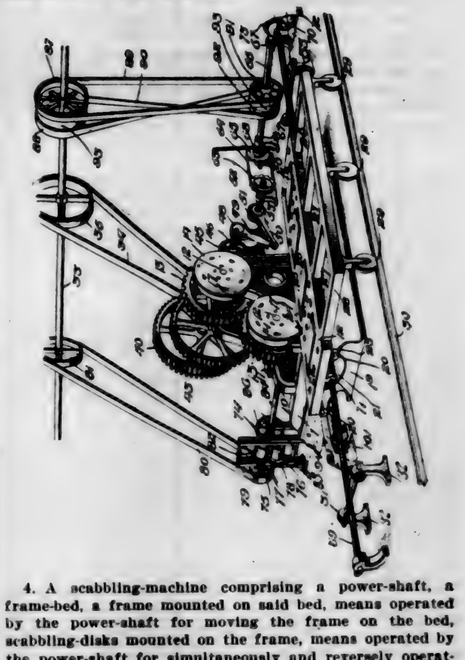

4. A scabbling-machine comprising a power-shaft, a frame-bed, a frame mounted on said bed, means operated by the power-shaft for moving the frame on the bed, scabbling-disks mounted on the frame, means operated by the power-shaft for simultaneously and reversely operating said scabbling-disks, a platen movable relative to the frame, and means operated by the power-shaft for intermittently feeding said platen.

5. A scabbling-machine comprising a movable stone-support platen, a frame adjustable toward and away from the platen and duplicate scabbling means supported on the frame and operating in reverse directions, said means operating at respectively different heights relative to the surface of the platen, and one of said means being arranged to extend below the surface of the platen.

6. A scabbling-machine comprising an intermittently-driven platen, a frame adjustable at right angles relative to the platen, duplicate scabbling means having a fixed operative relation to said frame, said means being respectively mounted at different heights relative to the surface of the platen, and one of said means being arranged in advance of the other relative to the direction of movement of the platen, and means for operating the scabbling means in relatively reverse directions.

7. A scabbling-machine comprising a platen, a frame adjustable to and from the platen, scabbling-disks mounted on the platen and geared for operation in reverse directions, and tools projecting from the face of each of said disks, the path of movement of the tools of one of said disks extending below the surface of the platen.

8. A scabbling-machine comprising a platen, a frame adjustable to and from the platen, duplicate scabbling means supported on the frame and operated in reverse directions, the path of movement of one of said means extending below the surface of the platen, the path of movement of the other of said means extending toward the platen below the upper limit of the path of movement of the first-noted means.

9. A scabbling-machine comprising a platen, a frame adjustable to and from the platen, duplicate scabbling means supported on the frame and operating in reverse directions, the operative paths of movement of the respective means overlapping between the respective upper and lower edges of the stone being scabbled, and the path of movement of one of said means extending below the surface of the platen.

10. A scabbling-machine comprising a platen, a frame adjustable to and from the platen, scabbling-disks supported by the frame and geared for movement in reverse directions, scabbling-tools carried by the respective disks, the path of movement of the tools of one disk extending below the surface of the platen, and the path of movement of the tools of the other disk extending below the highest point of the path of movement of the tools of the first disk.

846,343. STORE-FRONT CONSTRUCTION. FRANCIS J. PLYM, Kansas City, Mo. Filed July 8, 1905. Serial No. 268,832.

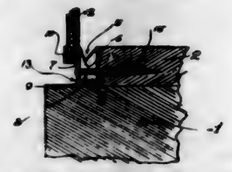

Claim.—1. In a construction of the character described, the combination of a window-setting, a rigid shelf in the window-opening, formed with a portion projecting farther inward of said opening near one edge of the shelf than the other, a window-glass fitting edgewise against the face of the shelf, and a resilient means for applying lateral pressure on the glass to clamp it firmly against the said projecting portion of the shelf.

2. In a construction of the character described, the combination of a window-setting, a rigid shelf in the window-opening and provided with air-holes, and with a rigid portion projecting farther inward of said opening near one edge of the shelf than the other, a window-glass fitting edgewise against the face of the shelf, and resilient means for applying lateral pressure on the glass, to clamp the same firmly against said projecting portion of the shelf.

3. In a construction of the character described, the combination of a window-sill, the floor of the window, a shelf supported upon the sill, a window-glass resting upon the shelf, and a resilient gutter interposed between the floor and the lower portion of the window-glass and pressing the latter yieldingly against the shelf and away from the floor.

4. In a construction of the character described, the combination of a window-sill, the floor of the window, a shelf supported upon the sill, a window-glass resting upon the shelf, a resilient gutter interposed between the floor and the lower portion of the window-glass and pressing the latter yieldingly against the shelf and away from the floor, and fastening devices securing the shelf at the proper point upon the sill.

5. In a construction of the character described, the combination of a window-sill, the floor of the window, a shelf supported upon the sill, a window-glass resting upon the shelf, a resilient gutter interposed between the floor and the lower portion of the window-glass and pressing the latter yieldingly against the shelf and away from the floor, and screws extending through the shelf and into the floor of the window and securing said shelf at the desired point of adjustment.

6. In a construction of the character described, the combination of a shelf having one or more holes in its lower portion, a window-glass upon the shelf, and a resilient gutter pressing upon the lower portion of the glass to clamp it firmly upon the shelf.

7. In a construction of the character described, the combination of a shelf having one or more holes in its lower portion, a window-glass upon the shelf, and a resilient gutter pressing upon the lower portion of the glass to clamp the same firmly upon the shelf and provided with one or more drain-holes.

8. In a construction of the character described, the combination of a shelf, a gutter at one side of the shelf and adapted to discharge water externally of the latter, a window-glass upon the shelf, and means above the shelf applying a yielding pressure on the glass to clamp it firmly upon the shelf.

9. In a construction of the character described, the combination of a shelf, a gutter at one side of the shelf and adapted to discharge water externally of the latter, a window-glass upon the shelf, and a resilient gutter above the first-named gutter and provided with one or more drain-openings and applying a yielding pressure against the lower portion of the glass to clamp the same firmly upon the shelf.

10. In a construction of the character described, the combination of a window-setting, a shelf within and rigid with said setting and provided with one or more apertures, a window-glass within the window-opening and having edgewise engagement with the shelf, a flange at one edge of the shelf and overlapping the contiguous face of the glass, and means for applying a yielding pressure laterally against the glass to press the same firmly against said flange.

11. In a construction of the character described, the combination of a window-glass, a rigid part engaging the same and preventing movement thereof edgewise or sidewise in one direction and provided with one or more apertures, means applying a yielding pressure against the glass to clamp it firmly upon and laterally against said part and adjustable means for securing said part with the glass clamped between it and said yielding means.

12. In a window-front construction, a metallic plate comprising a standard, a shelf projecting substantially at right angles to the standard from one edge of the same and provided at its opposite edge from the standard with a flange paralleling the standard, a gutter projecting from the opposite edge of the standard from the shelf, and in the opposite direction to the latter, and a base portion fitting against said gutter at the opposite side of the same from the shelf and projecting in the same direction but at a greater distance than said shelf from said standard.

13. In a construction of the character described a metallic plate having a resilient and substantially V-shaped gutter formed integrally with said plate and disposed at one side of the same and provided with drain-holes.

846,344. AIR-PURIFYING WATER-SCREEN. WILLIAM J. RAFFERTY, Chicago, Ill. Original application filed Feb. 1, 1905, Serial No. 243,762. Divided and this application, filed Feb. 26, 1906. Serial No. 303,075.

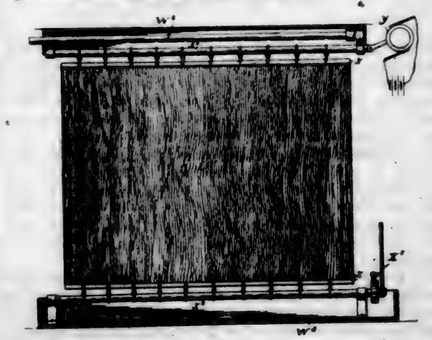

Claim.—1. An air purifying and moistening apparatus, comprising a passage through which the air flows, a sheet permeable to air, and having a flow of water thereover, extending across said passage, and means to vibrate the sheet.

2. In an air purifying and moistening apparatus, the combination with a screen through which the air passes, and having a flow of water thereover, of means to vibrate the screen.

3. In an air purifying and moistening apparatus, the combination with a screen through which the air passes, of a water-pipe above the screen having a series of perforations from which water flows down over the screen, and means to vibrate the screen laterally.

846,345. SEAL-ENVELOP. WILLIAM H. REED, Pittsburg, Pa. Filed Jan. 2, 1906. Serial No. 294,140.

Claim.—The combination, with an envelop provided with flaps having wide overlapping ends, a slot in the closing-flap and a guard-strip formed integrally with the inner flap and projecting above the flaps and slot, of a seal or metal clasp for said envelop comprising a plate bent upon itself to form two integral portions, one having spaced-apart teeth at its side edges and outer end with those teeth at the sides arranged in opposite pairs, and the other or anvil portion of the clasp having transverse concave depressions and a depression at its end, the transverse depressions corresponding in width and arrangement with the pairs of teeth and all the depressions each having surrounding flat surfaces against which the flaps of the envelop bear while being punctured by the teeth, as herein shown and described.

846,346. SCRUBBING-BRUSH. JEROME RICH, Jackson, Mich. Filed Oct. 18, 1906. Serial No. 339,510.

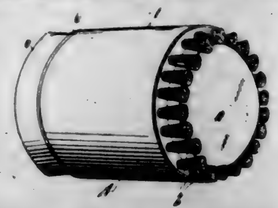

Claim.—1. A combined scrubbing-brush and soap-holder comprising a hollow tubular member having bristles arranged on its lower end and adapted to receive a cake of soap, a guide formed on the inner wall of said member, and a follower adapted to move in said hollow member and provided with means for engaging said guide.

2. A combined scrubbing-brush and soap-holder comprising a hollow tubular member having bristles arranged on its lower end and adapted to receive a cake of soap, guides formed on the inner walls of said member, and a follower adapted to move in said hollow member and provided with spring-arms adapted to slide in said guides.

3. A combined scrubbing-brush and soap-holder comprising a hollow tubular member having bristles arranged on its lower end and adapted to receive a cake of soap, a guide formed on the inner wall of said member, and a follower adapted to move in said hollow member and provided with means for engaging said guide, and a top to close the upper end of said hollow member above said follower.

4. A scrubbing-brush comprising a hollow casing open at both ends and having bristles arranged on its lower end and adapted to receive a cake of soap, and laterally-extending removable pins projecting through said casing to penetrate the soap and hold it in position.

846,347. DISPLAY-STAND. JOSEPH F. RIEDY, Hamburg, Iowa. Filed Oct. 1, 1906. Serial No. 336,972.

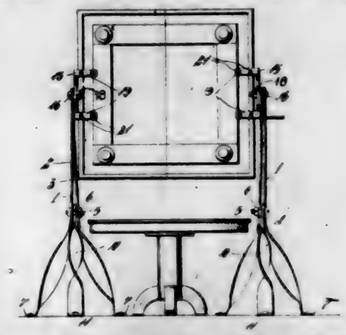

Claim.—1. A display-stand comprising a standard having means for securing it to a supporting-base, said standard having a divided upper end, a plate pivotally mounted between said divided end and having lateral arms provided with spaced apertures for connecting it with an article to be supported.

2. A display-stand comprising a standard composed of two bars secured together at an intermediate point with their lower ends diverging to form supporting-legs for attachment to the floor, and a plate adjustably clamped between the upper ends of said bars with its ends extended on opposite sides of said standard and provided with lateral extensions.

3. A display-stand comprising a standard composed of two bars secured together at an intermediate point and having registering apertures in their upper ends, and an arc-shaped plate having a central aperture and its ends bent at right angles to form lateral arms, and a bolt extending through the apertures in said bars and plate and having a clamping-nut at its outer end.

846,348. FOLDING MUSIC-RACK. JOSEPH H. ROCKWELL, Providence, R. I. Filed Mar. 7, 1906. Serial No. 304,717.

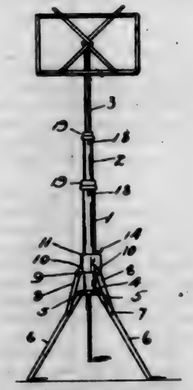

Claim.—1. In a folding music-rack, a supporting-stand composed of a plurality of telescoping members, legs pivoted at one end to the lower member and adapted to be turned or folded back against said member, said lower member being provided with one or more holes in its side, a locking-collar connected to said legs and adapted to embrace and slide on said lower member, said collar being provided with a recess, a resilient locking member fixed at its lower end to said collar in the recessed portion thereof, the upper portion of said locking member being offset to form an operating-handle, a knob or projection on the face of said member adapted to normally engage one of said holes in the side of said lower member whereby the legs are locked in the desired position to support the stand.

2. In a folding music-rack, a supporting-stand composed of a plurality of tubular members one telescoping within the other, one end of the tubing in the receiving sections being slotted, a spring-ring fitted around said slotted portion to force the same inward and bind the member working therein, and an inclosing cap or collar covering said ring to assist in holding the same in position.

846,349. DOOR-GAGE. JOSEPH T. ROOT, Boston, Mass. Filed Oct. 29, 1906. Serial No. 340,965.

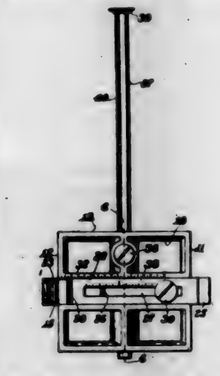

Claim.—1. In a marking-gage, the combination of a straight edge; a slotted member adjustable therein provided with a cutting knife-edge; a scale for determining the location of said cutting edge relative to said straight edge; a second slotted member provided with a cutting knife-edge extending through the slot in the other member and adjustable to and from the other cutting edge; and means extending through said slots for securing said second member in position relative to the other member.

2. In a marking-gage, the combination of a straight edge; two slotted members movable longitudinally of each other with their adjacent faces in contact and each provided with a cutting knife-edge; and means extending through said slots for retaining said cutting edges in such adjusted position.

3. In a marking-gage, the combination of a straight edge; two slotted members movable longitudinally of each other with their adjacent faces in contact and each provided with a cutting knife-edge; a scale on each of said members to determine the position of said knife-edge to said straight edge; and means extending through said slots for retaining said cutting edges in such adjusted position.

4. In a marking-gage, the combination of a straight edge; two members each provided with a cutting knife-edge with one side parallel to said straight edge said two parallel sides being the sides farthest apart; means for adjusting said members relative to each other and to said straight edge; means for retaining said cutting edges in said adjusted position; and means for determining the location of said cutting edges relative to each other and to said straight edge.

5. In a marking-gage, the combination of a frame provided with a plurality of straight edges and a groove extending from one side to the other; a pair of reversible adjustable members mounted in said groove each provided with a cutting edge to adapt said cutting edges to operate in connection with either of two straight edges; and means for securing said members in adjusted position.

6. In a marking-gage, the combination of a frame provided with a plurality of straight edges and a groove extending from side to side; a pair of members adjustable longitudinally of said groove each of said members being provided with a slot lengthwise thereof; a cutting edge on the outer member; a cutting edge on the inner member extending through the slot in the outer member; and means for securing said members in adjusted position.

7. In a marking-gage, the combination of a frame provided with a plurality of straight edges and a groove extending from one straight edge to the other; an adjustable slotted member in said groove provided with two cutting edges extending at right angles thereto in opposite directions; an adjustable member beneath said slotted member provided with a cutting edge adapted to pass through said slot when not in use; and means for clamping said members in adjusted position.

8. In a marking-gage, the combination of a frame provided with two parallel straight edges; a member at right angles thereto provided with two knife-edged cutters extending in opposite directions and each having its side farthest removed from its coöperating straight edge parallel with said straight edge; and means for clamping said member in adjusted position.

9. In a marking-gage, the combination of a frame provided with two parallel straight edges; a member at right angles thereto provided with two cutters extending in opposite directions the outwardly-extending cutter being located farther from its coöperating straight edge than the other is from its straight edge; and means for clamping said member in adjusted position.

10. In a marking-gage, the combination of a frame provided with two parallel straight edges and a groove extending from one straight edge to the other; a member in said groove provided with two cutters extending in opposite directions the outwardly-extending cutter being located farther from its coöperating straight edge than the other is from its straight edge; and means for clamping said member in adjusted position.

11. In a marking-gage, the combination of a frame provided with two parallel straight edges; a member at right angles thereto provided with two knife-edged cutters extending in opposite directions one at each end of said member; means for clamping said member in adjusted position; and a scale on said member to locate the position of said member.

846,350. FRICTION-CLUTCH. WILLIAM F. ROTHE, East St. Louis, Ill. Filed Dec. 11, 1905. Serial No. 291,267.

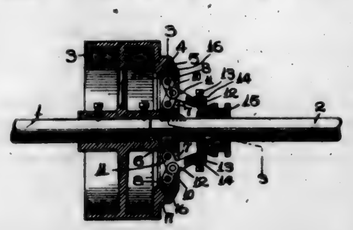

Claim.—In a friction-clutch, a rotating member provided in one face with a V-shaped groove, a shaft, a spider fixed thereon, blocks arranged to slide in the outer ends of the arms of the spider, the outer ends of which blocks are dovetailed, friction-blocks engaging in the V-shaped groove, and plates fitted to the inner faces of the friction-blocks, in which plates are formed dovetailed grooves which receive the dovetailed ends of the sliding blocks; substantially as specified.

846,351. SHEET-METAL DISPLAY CAN OR BOX. FRANK RUDOLPHI and EMIL BRAUNINGER, Chicago, Ill., assignors to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Nov. 13, 1905. Serial No. 287,159.

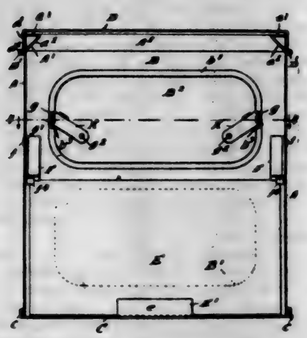

Claim.—1. In a sheet-metal display-can, the combination with a front plate furnished with a display-opening, and a removable inside-fitting glass plate, and provided with an integral countersunk portion above the display-opening to form an outside recess or seat to receive a sign-plate, of a removable external sheet-metal sign-plate fitting in said recess or seat of the front plate and provided at its ends with integral right-angle tongues projecting through slots in the front plate and movable keepers mounted on the inside of the front plate and projecting through the slots in the tongues of the sign-plate to hold the external sign-plate removable on the front plate, substantially as specified.

2. In a sheet-metal display-can, the combination with a front plate furnished with a countersunk portion forming an external recess or seat for a sign-plate, the angle flange or wall of said countersunk portion having slots through the base thereof, of a removable sheet-metal sign-plate provided with bent and slotted tongues projecting through said slots in the front plate, and movable keepers pivotally mounted on the inside of the countersunk portion of the front plate and engaging the slotted tongues of the sign-plate to hold the sign-plate in place, substantially as specified.

3. In a sheet-metal display-can, the combination with the front plate, of a removable externally-fitting sign-plate having bent and slotted tongues projecting through the slots in the front plate and movable keepers mounted on the inside of the front plate and engaging the slotted tongues of the sign-plate to hold the same in place, substantially as specified.

4. In a sheet-metal display-can, the combination with the front plate having an external seat for a sign-plate and a slot through the same, of a removable external sign-plate having a bent tongue projecting through said slot in the front plate, and a movable keeper mounted on the inside of the front plate and engaging the tongue of the sign-plate, substantially as specified.

5. In a sheet-metal display-can, the combination with the can-body having upright sheet-metal side plates and a front display-plate of brass provided with an external sign-plate seat surrounded by a marginal wall, of a removable sheet-metal sign-plate fitting in said external seat on the front plate with its marginal edges abutting against the marginal wall of said seat, and provided with integral bent tongues projecting through slots in the front plate, and movable keepers mounted on the inside of the front plate and engaging the bent tongues of the sign-plate, substantially as specified.

846,352. REGULATOR FOR USE WITH FILLING-VALVES. ADOLPH SCHNEIDER, Chicago, Ill., assignor to Henry Schneider, Trinidad, Colo. Filed Sept. 14, 1905. Serial No. 278,482.

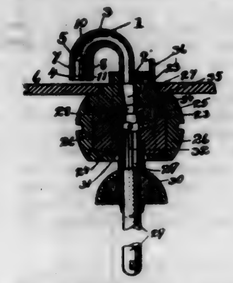

Claim.—1. In combination with a pressure-equalization valve, a regulator having an imperforate valve member normally unseated and adapted to be seated by an abnormal rush of liquid through the valve to tightly seal the opening, substantially as described.

2. In combination with a pressure-equalization valve, a regulator consisting of a tubular casing, and a movable imperforate valve member in one end of the casing adapted to be seated by an abnormal rush of liquid through the regulator and equalization-valve to tightly seal the opening, substantially as described.

3. In combination with a pressure-equalization valve, a regulator having a tubular casing of inverted-U shape having one end inserted into the liquid-passage of the equalization-valve and the other end downwardly opening and formed with an enlarged chamber providing a seat, a movable imperforate valve member normally open and adapted to be seated by an abnormal rush of pressure through the regulator and equalization-valve to tightly seal the opening, substantially as described.

4. In combination with a pressure-equalization valve, a regulator consisting of a tubular casing of inverted-U shape having one end inserted into the liquid-supply passage of the equalization-valve and the other end opening downwardly and provided with an enlarged valve-chamber beveled at its inner end to form a seat, and an imperforate valve member slidably mounted within the chamber and provided with ribs or flanges around its outer wall and adapted to be seated by an abnormal rush of liquid through the regulator and equalization-valve to tightly seal the opening, substantially as described.

5. In combination with a pressure-equalization valve a regulator having a tubular casing of inverted-U shape having one end inserted into the liquid-passage of the equalization-valve and the other end downwardly opening and formed with an enlarged chamber providing a seat, a movable imperforate valve member normally open and adapted to be seated by an abnormal rush of pressure through the regulator and equalization-valve to tightly seal the opening, and a spring for normally holding the valve unseated, substantially as described.

846,353. KNITTED FABRIC. ROBERT W. SCOTT, Leeds Point, N. J., assignor of one-half to Louis N. D. Williams, Ogontz, Pa. Filed June 21, 1906. Serial No. 322,735.

Claim.—1. A knitted web having eyelet-holes therein formed by laterally displacing the yarn of a normal sinker-wale adjacent to a sinker-wale which is not thus displaced and causing said displaced sinker-wale to engage an adjoining needle-wale.

2. A knitted web having eyelet-holes therein produced by laterally displacing the yarn of a sinker-wale and causing it to engage both of the adjoining needle-wales.

3. A knitted web having eyelet-holes therein produced by laterally displacing yarns in a plurality of adjoining courses of a sinker-wale, and causing said displaced yarns to engage with an adjoining needle-wale.

4. A knitted web having eyelet-holes therein produced by laterally displacing yarns in a plurality of adjoining courses of a sinker-wale and causing said displaced yarns to engage both of the adjoining needle-wales.

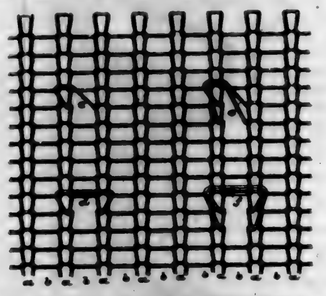

5. The mode herein described of producing a knitted web having eyelet-holes therein, said mode consisting in manipulating sinker-wales between adjoining needles of the set upon which the web is produced, by elongating a sinker-wale in a plane different from that in which the stitches are formed, and then transferring said elongated sinker-wale to one or both of the adjoining needles.

846,354. CURLING-IRON. GEORGE F. SHIELDS, Kern, Cal. Filed Aug. 19, 1905. Serial No. 274,879.

Claim.—An electric curling-iron comprising a handle formed of a pair of sections each of which is provided with a longitudinal bore and with a pair of recesses intermediate the ends of said bore and communicating therewith, the recesses and bores registering when the sections are secured together; binding-posts arranged in the recesses of one member and extending into the recesses in the opposite member; a tubular clamping member; a heating-coil in said clamping member, the terminals of the heating-coil being connected with the binding-posts; circuit-wires connecting the binding-posts and leading outwardly of the bore of the handle; a ferrule embracing the sections of the handle, said ferrule having spaced ears; a second clamping member pivotally mounted in the ears of said ferrule and provided with a handle; and a spring arranged between the handles to hold the clamping members in engagement with each other.

846,355. APPARATUS FOR CHARGING GAS-RETORTS. WALTER SLINGSBY, Ovenden, near Halifax, England, assignor to Drakes Limited, Ovenden, near Halifax, England, an English company. Filed Apr. 21, 1906. Serial No. 312,987.

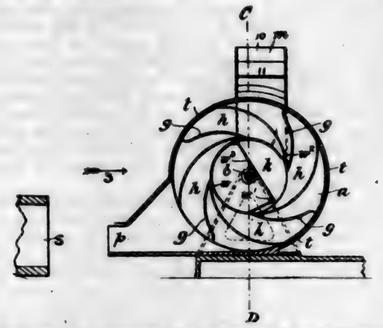

Claim.—1. A device of the character described comprising a substantially central receiving-chute, an outlet, and a series of pockets movable successively from a position to receive the material from said chute to a position to discharge the same through said outlet, the pockets being curved in a manner to cause the material to be passed gradually throughout the length of the pocket during the movement of the latter from its receiving to its discharging position.

2. A device of the character described comprising a substantially central receiving-chute, an outlet, and a series of pockets movable successively from a position to receive the material from said chute to a position to discharge the same through said outlet, said pockets being curved and extending in a direction tangential to two circles corresponding with the path of movement of the inner and outer extremities of the pockets, the material passing gradually throughout the length of the pockets during the movement of the latter from their receiving to their discharging position.

3. A device of the character described comprising inner and outer casings arranged concentrically, said casings each having openings for the passage of the material, a chute for delivering the material within the inner casing, and a series of pockets substantially fitting within and mounted to rotate between said casings and adapted to successively receive material through the opening in the inner casing and discharge it through the opening in the outer casing, said pockets being curved in a manner to cause the material to be passed gradually throughout the length thereof, said openings being positioned relatively to each other in a manner to prevent direct passage of the material from one opening to the other.

4. A device of the character described comprising inner and outer casings arranged concentrically, said casings each having openings for the passage of the material, a chute for delivering the material within the inner casing, and a series of pockets substantially fitting within and mounted to rotate between said casings and adapted to successively receive material through the opening in the inner casing and discharge it through the opening in the outer casing, said pockets being curved in a manner to cause the material to be passed gradually throughout the length thereof, said openings being located on opposite sides of the center of said casings, whereby the material will be prevented from passing directly from one opening to the other.

5. A device of the character described comprising inner and outer casings arranged concentrically, said casings each having openings for the passage of the material, a chute for delivering the material within the inner casing, and a series of open-ended pockets substantially fitting within and mounted to rotate between said casings, the ends of the pockets being movable successively past said openings, said pockets being curved in a manner to cause

the material to be passed gradually throughout the length thereof, said openings being positioned on opposite sides of the center of said casings, whereby one extremity of the pockets will be closed at all times.

6. A device of the character described comprising inner and outer casings arranged concentrically, said casings each having openings for the passage of the material, a chute for delivering the material within the inner casing, and a series of open-ended pockets substantially fitting within and mounted to rotate between said casings, the ends of the pockets being movable successively past said openings, said pockets being curved and extending in a direction tangential to two circles corresponding with the path of movement of the inner and outer extremities of the pockets, said openings being positioned on opposite sides of the center of said casings.

7. A device of the character described comprising a substantially central receiving-chute, a propeller having pockets the inner extremities of which cross the mouth of said chute, said pockets being curved in a manner to cause the material to be passed gradually throughout the length thereof, an outlet for the material passing through said pockets, and means for rotating the propeller.

8. A device of the character described, comprising a substantially central receiving-chute, a propeller having blades the inner extremities of which cross the mouth of said chute, said blades extending in a direction to cause the material to be passed gradually throughout the length thereof, an outlet for the material carried by the blades, and means for rotating the propeller.

9. A device of the character described comprising a substantially central receiving-chute, a propeller having blades the inner extremities of which cross the mouth of said chute, said blades being curved and extending in a direction tangential to two circles corresponding with the path of movement of the inner and outer extremities of the blades, said blades extending in a direction to cause the material to be passed gradually throughout the length thereof, an outlet for the material carried by the blades, and means for rotating the propeller.

10. A device of the character described comprising a substantially central receiving-chute, a propeller having curved blades, the inner extremities of which cross the mouth of said chute, said blades extending in a direction to cause the material to be passed gradually throughout the length thereof, an outlet for the material carried by the blades, and means for rotating the propeller.

11. A device of the character described comprising inner and outer casings arranged concentrically, a diaphragm within the inner casing, said casings each having openings for the passage of the material, a chute for delivering the material within the inner casing on one side of said diaphragm, and a series of pockets substantially fitting within and mounted to rotate between said casings and adapted to successively receive material through the opening in the inner casing and discharge it through the opening in the outer casing, said openings being located on opposite sides of the center of said casings.

12. A device of the character described comprising inner and outer casings arranged concentrically, said casings each having openings for the passage of the material, a rotating shaft located centrally of said casings, a disk carried by said shaft and extending through the inner casing and into juxtaposition to the outer casing, said disk intersecting said openings to provide a pair of openings for each casing, independent pockets located on opposite sides of said disk between said casings, the extremities of the pockets being adapted to move past said openings, the pairs of openings being located on opposite sides of the shaft, and a common chute for delivering the material within the inner casing on either side of said disk.

846,356. VENDING-MACHINE. ADELBERT SMITH, Seward, N. Y. Filed Apr. 26, 1904. Serial No. 205,007.

Claim.—1. A vending-machine comprising a goods-chute, inwardly-movable guide-bars arranged within the chute, inwardly-extending arms carried by the guide-bars, guide-rods carried by the arms and parallel to the front of the chute, and means for delivering goods from the said chute.

2. A vending-machine comprising a goods-chute angled at its lower end, a trough upwardly open in advance of the lower end of the chute, the rear wall of the chute being slotted in the angled portion, adjustable guide-bars arranged in the chute and adapted to vary the width of same, wires carried by the said bars and running lengthwise of the chute, a fender arranged in the chute in advance of the slot, and means working through the slot adapted to lift articles to be vended to a plane above the upper edge of the fender, as and for the purpose set forth.

846,357. PRODUCER-GAS APPARATUS. HARRY F. SMITH, Lexington, Ohio. Filed Apr. 17, 1906. Serial No. 312,231.

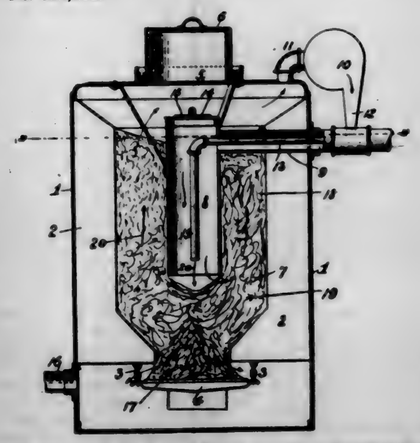

Claim.—1. In a gas-producer generator operated by inverted combustion or downdraft, means for introducing the elements promotive of combustion, as air and steam, comprising a passage arranged centrally within the fuel chamber or magazine and having its lower end delivering below the unignited fuel mass, into the ignited portion thereof and its upper end provided with a closure having suitably-controlled passages opening into the combustion-chamber, means for returning the gases from the combustion-chamber and delivering the same, together with indrafts or blasts of air, again into the incandescent fuel mass.

2. In a gas producer or generator operated by inverted combustion or downdraft, a steam and air passage arranged centrally within the fuel chamber or magazine, and having its lower end delivering below the unignited fuel and into the ignited portion thereof and its upper end provided with a closure having suitably-controlled passages opening into the combustion-chamber and means, including an outlet, for passing the air and steam through said ignited or incandescent fuel, and conducting away the gas thus generated or produced, below the fire-grate.

3. In a gas generator or producer operated by inverted combustion or downdraft, a centrally-located air and steam inlet passage having its upper end provided with a closure having suitably-controlled passages opening into the combustion-chamber and a fuel-magazine provided with an inlet for air and an outlet for products of combustion and volatile gases, a mixing-chamber or burner wherein the volatile gases from the fuel-magazine and the air passing into the centrally-arranged air-passage may be thoroughly mixed and burned, and means for passing the products of combustion, along with the commingled air, into the gas-generating portion of the fuel-bed.

4. An apparatus of the character described, comprising a central suspended air and steam passage, also removed from both the top of the producer-chamber and the fire-grate below, and delivering into the fuel-chamber, an air and steam inlet pipe delivering into the upper end of said steam and air passage, and a gas-outlet discharging at a point below the grate, said suspended air and steam passage having a closure provided with suitably-controlled passages opening into the combustion-chamber.

5. An apparatus of the character described, comprising a central suspended air and steam passage delivering into the fuel-chamber, and having a closure provided with suitably-controlled passages opening into the combustion-chamber, said passage being also removed from both the top of the producer-chamber and the fire-grate below, an air and steam inlet pipe delivering into said passage, and means for generating a continuous air-current through the fuel-chamber via said air and steam passage.

6. An apparatus of the character described, comprising a central suspended air-passage delivering into the fuel-chamber and having its producer-chamber-contained end adapted to be closed during the suction action induced in said producer-chamber, said passage being also removed both from the top of the producer-chamber and the fire-grate below, a blast-generating device having a suction or inlet pipe connection with the producer-chamber at its upper end, and a blast-delivery pipe connected to said blast-generating device and discharging into said air and steam passage near its lower end.

7. An apparatus of the character described, comprising a fuel-chamber, a central air and steam passage delivering into said fuel-chamber and removed both from the top of the producer-chamber and the fire-grate below, an air and steam inlet pipe delivering into said passage, means for controlling the air-inlet end of said passage, a gas-outlet discharging at a point below the fire-grate, and a blast-generating device for inducing continuous air-suction current through the fuel-chamber via said air and steam passage.

846,358. PROCESS OF HANDLING ASH IN GAS-PRODUCERS. HARRY F. SMITH, Lexington, Ohio. Filed Nov. 7, 1906. Serial No. 342,372.

Claim.—1. The described process of removing ash from downdraft gas-producers, which consists in agglomerating the ash in relatively large masses or clinkers; and in removing said clinkers from above the fuel-bed, out through the upper end of the producer.

2. The described process of removing ash from downdraft gas-producers, which consists in delivering the forming ash at a readily-accessible point in the fuel-bed; in agglomerating the ash in relatively large masses or clinkers; and in removing said clinkers from above the fuel-bed, out through the upper end of the producer.

846,358.

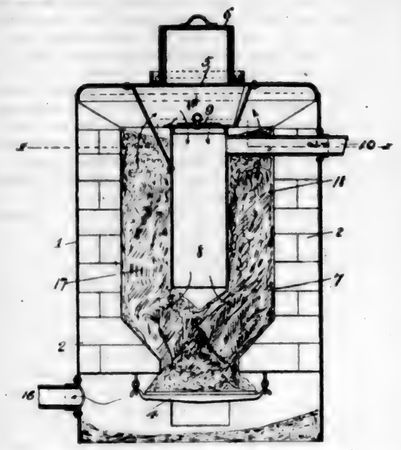

846,359. DISPLAY-RACK. FRANK P. SPARMAKER and JOHN L. HENRY, Philadelphia, Pa.; said Sparmaker assignor to said Henry. Filed Oct. 26, 1905. Serial No. 284,451.

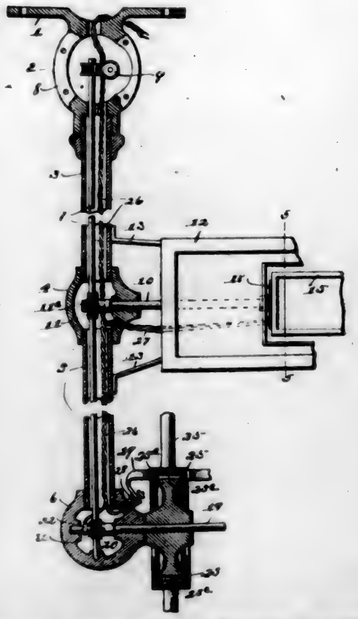

Claim.—1. A device of the kind described comprising a fixed frame, a stationary mirror in vertical alinement with the frame, the said frame having a central cut-out portion, a sign-casing rotatably mounted in alinement with the cut-out portion, of the same, a plurality of display-racks, revolubly mounted adjacent the mirror and adapted to pass in advance of and in the rear of said mirror and between the mirror and the frame above mentioned, common means for rotating the display-racks and sign-casing, and means for illuminating the same.

2. A device of the kind described comprising support-

ing-columns, a frame carried between said columns and centrally cut out, a sign-casing rotatably mounted in horizontal alinement with the cut-out portion of the frame, a mirror stationarily held between the said columns, a rotatable shaft supported by said columns, hubs upon said shaft, said hubs being arranged at opposite ends of the mirror, radial arms carried by the hubs, connecting-rods, display-racks loosely carried by said rods and adapted to revolve about the mirror and between the mirror and the frame, and means carried by one of said supporting-columns for rotating the display-rack and sign-casing.

3. A device of the kind described comprising a supporting-column consisting of a casting carrying a casing, a pipe threaded at one end into said casing, a second casing threaded upon the opposite end of the pipe, a second pipe in alinement with the first and threaded into the second casing, a casing threaded upon the opposite end of the second pipe, a shaft extending through the pipes and intermediate casing, means in the first-mentioned casing for rotating the said shaft, a shaft at a right angle to the said first-mentioned shaft extending into the intermediate casing, intermeshing gears carried in the said intermediate casing by the said shafts, a third shaft parallel to the second-mentioned shaft and having one end journaled in the last-mentioned casing, intermeshing gears carried within said casing by the first-mentioned and thrid-mentioned shafts, respectively, a sign-casing carried by the second shaft, a mirror loosely mounted upon the third-mentioned shaft, radial arms supported from and rotating with the said third-mentioned shaft, connecting-rods carried by the said arms, display-racks loosely mounted upon said connecting-rods and revolving about the mirror and between the mirror and sign-casing, incandescent lamps within the sign-casing, incandescent lamps upon the mirror-frame, electrical conductors arranged within the pipes and leading to and from said lamps, and means for alternately breaking and making the circuit of the lamps upon the mirror frame.

846,360. WRENCH. FREDERICK SPROWLS, West Finley, Pa. Filed Jan. 4, 1906. Serial No. 294,613.

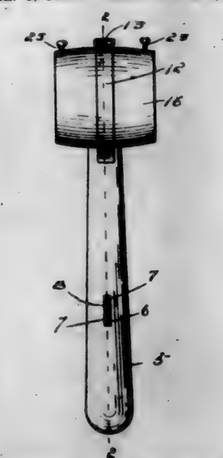

Claim.—In a wrench, the combination with a handle having a longitudinal passage therewithin opening through the upper end of the handle, a rod slidably disposed in the passage, a dog carried by the rod and extending beyond the inner end of the handle, said handle having a lateral slot communicating with its passage, a lateral finger-piece carried by the rod and extending outwardly through the slot, said slot being located adjacent to the lower end of the handle, a cross-pin engaged in the rod below the slot, a spring engaged between the lower end of the passage and the cross-pin to hold the rod with the dog yieldably projected beyond the upper end of the handle, an arcuate plate carried by the upper end of the handle, an arcuate jaw pivoted at one end to the outer end of the plate and lying at its other end against the handle, means for holding the jaw in engagement with the handle, and a nut-engaging head having a circumscribing groove in which the plate and jaw are engaged for rotation of the head, said head having teeth within its groove for the reception of the dog therebetween.

846,361. BEARING FOR SPINNING-MACHINE SPINDLES. ALFRED STELL, Steeton, near Keighley, England. Filed Aug. 29, 1905. Serial No. 276,194.

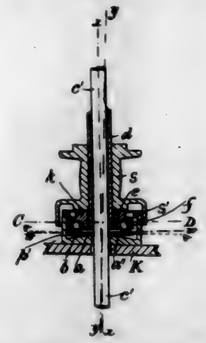

Claim.—1. An improved spindle-bearing comprising an outer receptacle or containing member, a ball-race member loosely mounted therein and having a substantially flat upper surface, one of said members having a convex face to permit the ball-race member to rock, and antifriction-balls mounted upon the upper surface of said ball-race member, substantially as specified.

2. An improved spindle-bearing comprising an outer receptacle or containing member, a ball-race member loosely mounted therein and having a substantially flat upper surface, one of said members having a convex face to permit the ball-face member to rock, antifriction-balls mounted on the upper surface of said ball-race member, and a circular wall or ring for retaining the balls in a lateral direction, substantially as herein specified.

3. In a bearing for a hollow spindle, an outer receptacle having the upper surface of its base part of a convex form, a ball-race mounted on said convex surface, antifriction-balls mounted on said ball-race, and a circular retainer for said antifriction-balls, substantially as herein specified.

4. In a bearing for a hollow spindle, an outer receptacle having the upper surface of its base part of a convex form, a ball-race mounted on said convex surface, antifriction-balls mounted on said ball-race, and a circular retainer for said antifriction-balls, said retainer having a flange near its axis to form a lateral stay for the balls, substantially as herein specified.

5. In a bearing for a hollow spindle, an outer receptacle having the upper surface of its base part of a convex form, a ball-race mounted on said convex surface, said ball-race having a flange encircling its outer edge to retain the balls laterally, antifriction-balls mounted on said ball-race, and a circular retainer for said antifriction-balls, substantially as herein specified.

6. In a bearing for a hollow spindle, an outer receptacle having the upper surface of its face part of a convex form, a ball-race mounted on said convex surface, antifriction-balls mounted on said ball-race, a circular retainer for said antifriction-balls, a hollow spindle, a relatively stationary spindle, and a spring-clip taking into a groove formed on the inner surface of the outer receptacle, substantially as herein specified.

846,362. PRESS. GEORGE W. SWIFT, Jr., Bordentown, N. J. Filed Oct. 25, 1905. Serial No. 284,294.

Claim.—1. In a press, the combination with opposed

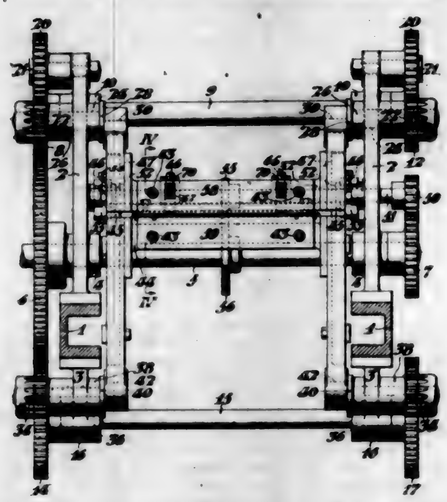

cross-heads; of eccentrics arranged to oscillate said cross-heads; and, means on said cross-heads arranged to impress a web, substantially as set forth.

2. In a press, the combination with means arranged to progress a web; of opposed cross-heads; eccentrics arranged to oscillate said cross-heads in the direction of the movement of said web; and means on said cross-heads arranged to intermittently impress said web, substantially as set forth.

3. In a press, the combination with side frames; of eccentrics mounted to rotate in said frames; and, cross-heads carried by said eccentrics, arranged to intermittently impress a moving web and to travel with said web during said impressing period, substantially as set forth.

4. In a press, the combination with side frames; of eccentrics mounted to rotate in said frames; cross-heads carried by said eccentrics, arranged to intermittently impress a moving web, and to travel with said web during said impressing period; and, means arranged to progress said web, substantially as set forth.

5. In a press, the combination with side frames; of eccentrics mounted to rotate in said frames; cross-heads carried by said eccentrics, arranged to intermittently impress a moving web, and to travel with said web during said impressing period; and, means carried by said cross-heads arranged to perforate said web, substantially as set forth.

6. In a press, the combination with side frames; of eccentrics mounted to rotate in said frames; cross-heads carried by said eccentrics, arranged to intermittently impress a moving web, and to travel with said web during said impressing period; and, cutting-blades carried by said cross-heads arranged to sever said web, substantially as set forth.

7. In a press, the combination with side frames; of eccentrics mounted to rotate in said frames; cross-heads carried by said eccentrics, arranged to intermittently impress a moving web, and to travel with said web during said impressing period; web punching and cutting mechanism carried by said cross-heads; and, a stripper-plate arranged to free said web from the punching and cutting mechanism, substantially as set forth.

8. In a press, the combination with side frames; of eccentrics mounted to rotate in said frames; cross-heads carried by said eccentrics, arranged to intermittently impress a moving web, and to travel with said web during said impressing period; web-cutting mechanism carried by said cross-heads; a stripper-plate arranged to free the web from said cutting mechanism; plungers supporting said plate; and, springs tending to thrust said plungers, substantially as set forth.

9. In a press, the combination with side frames; of eccentrics mounted to rotate in said frames; cross-heads carried by said eccentrics, arranged to intermittently impress a moving web, and to travel with said web during said impressing period; web-cutting mechanism; a stripper-plate arranged to free the web from said cutting mechanism; plungers supporting said plate; springs tending to thrust said plungers; and, means arranged to limit the movement of said plungers, substantially as set forth.

10. In a press, the combination with eccentrics; of cross-heads carried by said eccentrics, arranged to intermittently impress a moving web, and to travel with said web during said impressing period; a main driving-shaft; means connecting said eccentrics with said shaft; and, means operatively connected with said shaft, arranged to continuously progress said web, substantially as set forth.

11. In a press, the combination with eccentrics; of cross-heads carried by said eccentrics, arranged to intermittently impress a moving web, and to travel with said web during said impressing period; a main driving-shaft; means connecting said eccentrics with said shaft; a counter-shaft; means connecting said shafts; and, co-operative means carried by said shafts arranged to progress said web, substantially as set forth.

12. In a press, the combination with eccentrics; of cross-heads carried by said eccentrics, arranged to intermittently impress a moving web, and to travel with said web during said impressing period; and, guide-bars connecting said cross-heads in alinement, substantially as set forth.

13. In a press, the combination with eccentrics; of cross-heads carried by said eccentrics arranged to intermittently impress a moving web, and to travel with said web during said impressing period; connecting-rods secured to said cross-heads; slideways in said connecting-rods; and, guide-bars in said slideways connecting said cross-heads in alinement, substantially as set forth.

14. In a press, the combination with means arranged to continuously progress a web; of alined cross-heads arranged to contemporaneously reciprocate vertically and horizontally to intermittently impress said web and travel therewith during said impressing period, substantially as set forth.

15. In a press, the combination with means arranged to continuously progress a web; of alined cross-heads arranged to contemporaneously reciprocate vertically in opposite directions, and horizontally in the same direction, to intermittently impress said web and travel therewith during said impressing period, substantially as set forth.

16. In a press, the combination with means arranged to continuously progress a web; of opposed cross-heads; means on said cross-heads arranged to impress said web; means coupling said cross-heads for reciprocation in alinement in opposite directions normal to the plane of said web; and, similar eccentrics respectively connected with said cross-heads, arranged to reciprocate and oscillate them coincidently with the longitudinal movement of said web during the impressment of the latter, substantially as set forth.

846,363. DRINKING-FOUNTAIN FOR POULTRY. CHARLES R. UPSON, Bristol, Conn., assignor to George Upson, Philadelphia, Pa. Filed Apr. 11, 1906. Serial No. 311,018.

Claim.—1. A drinking-fountain comprising a horizontally-disposed cylindrical reservoir, a removable cap therefor, and a horizontally-disposed trough secured to said cap and resting on the ground to prevent the device from rolling.

2. A drinking-fountain comprising a trough, a hood adjustably arranged thereover, and a reservoir for supplying said trough.

3. A drinking-fountain comprising a trough, a hood adjustably arranged thereover, and a reservoir for sup-

plying the trough, said reservoir and trough resting on the ground to prevent displacement of the device.

4. A drinking-fountain comprising a water-receptacle, a trough connected therewith, a hood slidably mounted on said trough, and means for locking the hood to said trough.

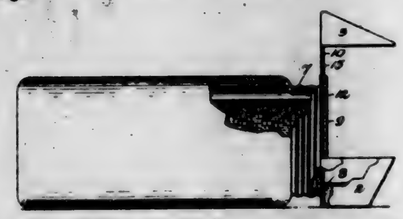

5. A drinking-fountain comprising a water-receptacle, a trough connected therewith, guide-flanges formed on said trough, and a hood slidably arranged in said guide-flanges.

6. A drinking-fountain comprising a water-receptacle, a trough connected therewith, an extended back formed on said trough-section, guide-flanges formed on said back, a hood slidably arranged in said guide-flanges, and means for locking the hood to said trough.

846,364. GRAIN-SHOCKING DEVICE. JOHN C. WAGONER, Anthony, Kan. Filed Apr. 25, 1904. Serial No. 313,656.

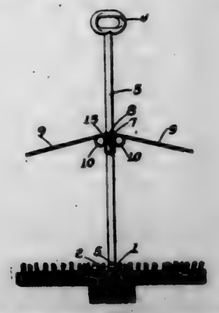

Claim.—1. A grain-shocking device comprising an extensible support, a slotted sleeve on the support and a series of supporting-arms fastened to the extensible support and in part adapted to engage in the slots in the sleeve to lock the arms against lateral movement.

2. A grain-shocking device comprising an extensible support, a slotted sleeve on the support and a series of supporting-arms fastened to the extensible support and having coil portions adapted to engage in the slots in the sleeve to lock the arms against lateral movement.

3. In a grain-shocking device, a support at least in part tubular and having a series of side openings and a series of supporting-arms having intermediate coil portions and angular inner portions; said coil portions being adapted to contact with the support and form braces to maintain the arms in supporting position, and said angular inner portions being adapted to be inserted and locked in the side openings, substantially as set forth.

4. In a grain-shocking device, a support at least in part tubular and having a series of side openings, a contractile sleeve on the support having slots, a series of supporting-arms having intermediate coil portions and angular inner portions and a binding around the sleeve and through the coil portions of the supporting-arms; said coil portions being adapted to seat in the slots in the sleeve and contact with the support and form braces to maintain the arms in supporting position, and said angular inner portions being adapted to be inserted and locked in the side openings, substantially as set forth.

846,365. AUTOMATIC TROLLEY-RETRIEVER. ROBERT J. WALKER, Anderson, Ind. Filed Jan. 13, 1906. Serial No. 295,937.

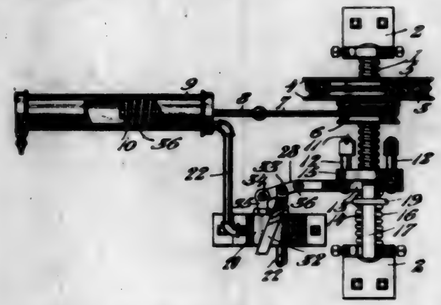

Claim.—1. The combination with a trolley-arm, of a laterally-movable pulley having the trolley-rope connected thereto, a fluid-pressure cylinder, a piston working therein and operatively connected with said pulley, a valve controlling said cylinder, and tripping mechanism connected with said valve and adapted to be operated upon in the lateral movement of the pulley.

2. The combination with a trolley-arm, of a laterally-movable pulley having the trolley-rope connected thereto, a fluid-pressure cylinder, a piston working therein and operatively connected with said pulley, a valve controlling said cylinder, and a spring-pressed shipper-head operatively connected with said valve and arranged in the path of movement of said pulley.

3. The combination with a trolley-arm, of a laterally-movable pulley to which the trolley-rope is connected, a fluid-pressure cylinder, a piston working therein and operatively connected with said pulley, a screw-shaft on which the pulley is mounted, a valve controlling said cylinder, a valve-operating lever, and a lever-shipping element arranged contiguous to said screw-shaft and mounted in the path of said pulley as the latter moves in a direction lengthwise of said shaft.

4. The combination with a trolley-arm, of a drum or pulley to which the trolley-rope is connected, a shaft on which said pulley is mounted, a fluid-pressure cylinder, a piston working therein, a valve controlling said cylinder, a shipper-head operatively connected with said valve and provided with laterally-extending posts adapted to be acted upon by the pulley as the latter moves lengthwise of the shaft, a guide-plate for said posts acting as a stop for the shipper-head and means for urging the shipper-head toward said guide-plate and stop.

5. The combination with a trolley-arm, a laterally-movable pulley to which the trolley-rope is connected, a fluid-pressure cylinder, a piston working therein, a valve controlling said cylinder, operative connections between said piston and pulley, means operable by the lateral movement of the pulley for moving said valve, and a spring interposed between the piston and one end of the cylinder.

6. The combination with a trolley-arm, of a laterally-movable drum or pulley having the trolley-rope connected thereto, a fluid-pressure cylinder, a piston working therein and operatively connected with the pulley, a valve controlling said cylinder, means operable by the lateral movement of said pulley to open the inlet-valve to said cylinder, and means for locking the parts in position to maintain said valve open.

7. The combination with a trolley-arm, of a drum or pulley having the trolley-rope connected thereto, a fluid-pressure cylinder, a piston working therein and operatively connected to the pulley, a valve controlling the inlet to said cylinder, a shipper-head operatively connected to said valve and adapted to be operated upon by the pulley, and a spring catch-arm or detent for engaging said shipper-head and locking the same in position to hold said valve open.

8. The combination with a trolley-arm, of a drum or pulley having the trolley-rope connected thereto, a fluid-pressure cylinder, a piston working therein and operatively connected to the pulley, inlet and outlet valves controlling said cylinder, and a valve-controlling shipper-head arranged to be operated by said drum or pulley for simultaneously changing the positions of the inlet and outlet valves.

846,366. COIN-CONTROLLED LIQUID-VENDING APPARATUS. FRANK W. WATERMAN, Baltimore, Md., assignor of one-third to Herbert E. Gilson and one-third to Frederick T. Dorton, Baltimore, Md. Filed Oct. 29, 1904. Serial No. 230,531.

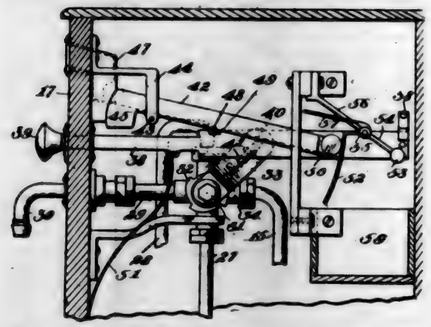

Claim.—1. An apparatus of the class described, involving a coin-chute, a tilting coin-receiving trough pivotally connected near one end thereof to a case and having a deep slot throughout its extent, a weight at the pivotal end of the trough, a lug extending from one side of the coin-receiving trough, a pull-rod having a spring-controlled detent for engagement with the lug to normally lock the rod against movement, a spring for returning the pull-rod to its normal inoperative position, and a pivotally-mounted gate normally held against the discharge end of the coin-trough, an arm carried by said gate, and means on said pull-rod adapted to engage the arm to release the gate upon movement of the pull-rod in one direction to allow the discharge of the coin from the coin-trough.

2. In an apparatus of the class described, a pivotally-mounted coin-trough having a depending weight at one end thereof and a deep slot extending throughout its longitudinal extent, a lug projecting from said trough, a pull-rod, a spring-controlled detent carried by the pull-rod and normally in engagement with the lug on the coin-trough to hold the pull-rod against movement, a pivotal gate mounted at the discharge end of the coin-trough for preventing the release of the coin from said trough until the gate is actuated, an arm on said gate, a pin carried by the pull-rod for engagement with the arm to operate the gate for releasing the coin from the trough, and a spring for holding the pull-rod in locking engagement with the coin-trough.

3. In an apparatus of the class described, a tiltable coin-receiving trough, a pull member, said trough being provided with means to normally prevent advancing movement of said pull member and tiltable from its normal position by the action of a coin or equivalent device to release said pull member, a gate to temporarily retain the coin or equivalent device in said trough and means coöperative with the pull member for operating said gate on the advancing movement of said pull member to release the coin from said trough.

4. In an apparatus of the class described, a tiltable coin-receiving trough, a pull member, said trough being provided with means to prevent advancing movement of the pull member when said trough is in its normal position, said trough being tiltable from said normal position by the action of a coin or equivalent device, a gate to positively and temporarily hold said coin or equivalent device in said trough to insure the tilting movement thereof, means for positively holding said gate in its effective position and means connected with the pull member for causing the operation of the gate to release the coin or equivalent device on the advancing movement of said pull member.

5. In an apparatus of the class described, a tiltable coin-receiving trough, a pull member, said trough being tiltable from a normal position by the action of a coin or equivalent device and being provided with means to prevent the advance movement of the pull member when the trough is in its normal position, the latter having a slot open at one end for the discharge therefrom of the coin or equivalent device, a gate, means connected with the gate for normally holding the same against the delivery end of said slot to thereby temporarily retain the coin or equivalent device in the trough, and means coöperative with the pull member for swinging the gate open on the advancing movement of said pull member to release the coin from the trough.

6. In an apparatus of the class described, a pull member, a trough movable from a normal position by the action of a coin or equivalent device, said trough being provided with means to positively hold the pull member against movement when said trough is in its normal position and operable by said coin or equivalent device to release the pull member, a gate to retain temporarily the coin in said trough to insure the releasing movement of said pull mcmebr, and means controlled by the pull member for operating the gate to release the coin therein.

846,367. SUSPENDERS FOR WEARING-APPAREL. ALFRED WEINTRAUD, London, England. Filed Jan. 3, 1905. Serial No. 239,475.

Claim.—1. A suspenders-tab having a connecting and supporting device arranged against the outer face thereof and between the buttonhole at the outer end and the point of suspension of the tab, and a rivet extending through the lower portion of said means for fixedly securing the said means to the tab.

2. A suspenders-tab having a connecting and supporting means arranged against the outer face thereof, said means embodying a body portion having an inturned upper end forming a bead which constitutes a stop, and means for securing the body portion to the tab.

3. A suspenders-tab having a connecting and supporting means arranged against the outer face thereof, said means embodying a body portion having an inturned upper end forming a bead which constitutes a stop, and a rivet extending through the lower portion of said means for fixedly securing it to the tab.

4. A suspenders-tab having a combined connecting and supporting means arranged at the outer face thereof, said means consisting of a plate embodying a lower portion and an offset upper portion, said offset upper portion having an inwardly-extending stop, and a rivet extending through the lower portion for securing the said means to the tab.

846,368. TELEPHONE SIGNALING DEVICE. KLAS WEMAN, Buffalo, N. Y. Filed Jan. 23, 1906. Serial No. 297,464.

Claim.—1. In a device of the character described, the combination of a base member, permanent magnets secured thereto, a yoke arranged transversely over the top

of said permanent magnets, an adjusting-screw in said yoke, a rivet embracing said screw and having its lower end mushroomed, a bridge carried by said rivet, an armature held in said bridge, and electromagnets mounted upon said base member, the relative distance of the armature from the electromagnets being adjustable by turning said adjusting-screw, substantially as described.

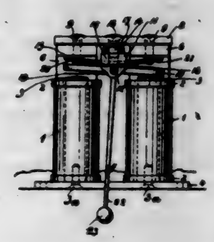

2. In a device of the character described, the combination of a base member, permanent magnets associated therewith and a yoke arranged transversely over said permanent magnets, an adjusting-screw in said yoke, a bridge held by said adjusting-screw, an armature retained within said bridge, electromagnets mounted upon said base member and means for preventing lateral displacement of said armature and appurtenant parts, said means comprising a curved spring held against rotatory and lateral movement, substantially as described.

3. In a device of the character described, the combination of a base member having electromagnets mounted thereon, permanent magnets secured to said base member and having legs turned in over the tops of said electromagnets, a yoke arranged across the legs of said permanent magnets, screws having ends projecting beyond the lower faces of said legs to secure the yoke to the legs of said permanent magnets, an adjusting-screw in said yoke, a rivet, embracing said adjusting-screw having an enlarged head and a mushroomed end, a curved spring and a bridge carried by said rivet between its enlarged head and mushroomed end, means for guiding the longitudinal movement of said spring, an armature retained in said bridge and adapted to have oscillating motion therein, a tongue carrying a hammer at its end adapted to be secured to said armature, and a flat spring retained between said tongue and armature and being provided to prevent the armature from sticking to the pole-pieces of said electromagnets, substantially as described.

4. In a device of the character described, the combination of electromagnets, a yoke arranged thereover, a bridge depending from said yoke, an adjusting-screw passing through the yoke and being adapted to raise and lower the bridge, an armature pivotally retained in said bridge, and means for preventing displacement of said armature consisting of a curved spring held against lateral and rotatory movement substantially as described.

5. In a device of the character described, the combination of electromagnets, a yoke arranged thereover, an adjusting-screw passing through said yoke, a bridge movably held by said adjusting-screw, an armature pivotally retained in the bridge, and means for preventing displacement of the armature, said means comprising an apertured curved spring and guide-screws extending from said yoke through the apertures in said curved spring, substantially as described.

6. In a device of the character described, the combination of electromagnets, a yoke arranged thereover, an adjusting-screw passing through said yoke, a rivet having an enlarged head and mushroomed end, embracing said adjusting-screw, a bridge carried by said rivet, an armature pivotally retained by the bridge, and means for preventing displacement of the armature, said means consisting of a curved spring provided with an aperture near each end thereof, and a guide-screw extending from the said yoke into each aperture, substantially as described.

846,369. WATERPROOFING COMPOSITION. WILMOT M. WHEELER, Danbury, Conn. Filed Apr. 24, 1906. Serial No. 313,486.

Claim.—A waterproofing composition composed of the following ingredients in the proportion set forth: one quart of benzin, one quart gasolene, one quart of naphtha, one quart of alcohol, one ounce of mutton-tallow, one ounce of paraffin, one ounce of white wax, one ounce of beeswax, and one ounce of sugar of lead.

846,370. HOT-WATER HEATER. EDWIN F. WHITE, Hollidaysburg, Pa., assignor of one-third to Edward H. L. Page, Hollidaysburg, Pa., and one-third to Robert Lee Walker, Duncansville, Pa. Filed Dec. 13, 1905. Serial No. 291,607.

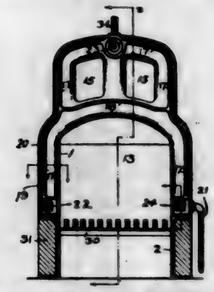

Claim.—1. A hot-water heater formed of hollow sections provided with outer vertical legs extending up to a continuously upwardly curved cross portion or waist, a central vertical riser and two side risers extending up from the waist portion and connected by an upwardly-curved top portion, the side risers being set in from the vertical legs.

2. A hot-water heater formed of hollow sections provided with outer vertical legs extending up to a continuously upwardly curved cross portion or waist, a central vertical riser and two side risers extending up from the waist portion and connected by an upwardly-curved top portion, the side risers being set in from the vertical legs, the vertical legs forming the outer walls of the fire-chamber, and a grate extending the full width between said legs.

3. A hot-water heater formed of hollow sections provided with outer vertical legs extending up to a continuously upwardly curved cross portion or waist, a central vertical riser and two side risers extending up from the waist portion and connected by an upwardly-curved top portion, the side risers being set in from the vertical legs, the connections between the legs and waist being on a gradual upward curve merging into the two side risers and central vertical riser.

4. A hot-water heater formed of hollow sections provided with outer vertical legs extending up to a continuously upwardly curved cross portion or waist, a central vertical riser and two side risers extending up from the waist portion and connected by an upwardly-curved top portion, the side risers being set in from the vertical legs, the connections between the vertical legs and risers extending up from the waist portion being formed on a gradual upward curve or arch.

5. A hot-water heater formed of hollow sections provided with outer vertical legs, a continuously upwardly curved cross portion or waist and risers above the same connected with an upwardly-curved top portion, each said section having on each side of it a web flanged near the outer edge thereof to form connection with the next section, said webs when united forming an outer insulating-recess.

6. A hot-water heater formed of hollow sections each provided with outer vertical legs extending up a continuously upwardly curved cross portion, a central riser and two vertical side risers extending up therefrom connected to an upwardly-curved top portion and having spaces for forming a fire-chamber and return-flues, said sections having on each side thereof near the outer edge flanges extending out to form the meeting edges of the sections and having a cross flange or web extending between said flanges in the line of the waist portion of the section.

7. A hot-water heater formed of hollow sections provided with vertical legs extending up to a cross portion or waist, and having above the same a top portion, said sections having connecting-passages at the bases of the legs and at the center of the top portion, and connecting-bolts passing through said passages to secure the sections together.

8. A hot-water heater formed of hollow sections provided with vertical legs extending up to an upwardly-curved cross portion or waist, a central vertical riser and two side risers extending up from the waist portion and connected to an upwardly-curved top portion, said sections having connecting-passages at the bases of the legs and at the central top portion and a separate hollow cross-leg adapted to extend across at the base of the leg portions, said cross-leg having formed with it a support for the grate-bars.

9. A hot-water heater formed of hollow sections provided with vertical legs extending up to an upwardly-curved cross portion or waist, a central vertical riser and two side risers extending up to an upwardly-curved top portion, a continuous flange extending out from each side of each section near its outer edge for union with the other sections and a back plate or box having an inwardly-extending flange corresponding to such flanges and connected thereto by straps.

846,371. STORE-SERVICE LADDER. LE ROY WILLOUR, Ashland, Ohio. Filed June 26, 1906. Serial No. 323,505.

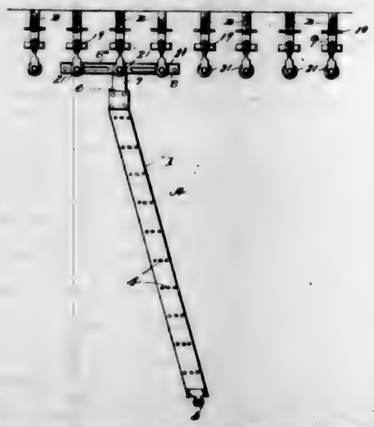

Claim.—1. In a store-service ladder the combination with a track-section of T-iron shape carried by the ladder, of a hanger comprising a securing-base, a post depending therefrom and having a cruciform suspending portion comprising four arms extending horizontally from said post, said arms being severally provided with longitudinal slots, pulley-brackets having their two upper ends projected through a selected pair of oppositely-disposed slots in movable relation thereto and means for effecting a lateral and vertical adjustment of said pulley-brackets with relation to said arms.

2. In a store-service ladder, the combination with a track-section of T-iron shape carried by the ladder, of a hanger-securing plate, a post depending therefrom, arms extending outwardly from said post, said arms being provided in their upper and lower portions with registering longitudinal slots, pulley-brackets having their ends projected through said slots, means carried upon said arms and engaging said pulley-brackets to effect a lateral adjustment thereof with relation to said arms and means carried by said pulley-brackets and engaging said arms to effect a lateral adjustment of said brckets, and for the purpose set forth.

3. In a store-service ladder, the combination with a track-section of T-iron shape carried by the ladder, of a hanger-securing plate, a post depending therefrom, arms extending outwardly from the post and having longitudinal slots, pulley-brackets having their ends projected through said slots, thumb-screws carried by said arms engaging said pulley-brackets to move the same laterally, and means carried by said brackets engaging said arms to effect a vertical adjustment of said brackets.

846,372. BOWLING-PIN. FREDERICK M. WOOD, Boston, and GEORGE S. LITTLEFIELD and FRANK W. PHILBRICK, Winchester, Mass., assignors to Frederick M. Wood, trustee, Boston, Mass. Filed Oct. 19, 1904. Serial No. 229,050.

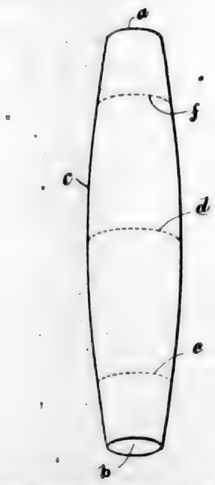

Claim.—The combination with a ball or projectile of small diameter, of a pin the height of which is substantially treble the diameter of said ball, said pin being circular in cross-section and provided with flat bases or ends and bulging or curved sides tapering from the middle toward said ends, the diameter of the middle portion being nearly double the diameter of said bases or ends, the diameter of the zones where the pin is struck by said ball being slightly less than the diameter of said ball.

846,373. APPARATUS FOR SPRAYING AND CONDITIONING YARNS. GEORGE WRAY and ARTHUR WRAY, Keighley, England. Filed July 17, 1905. Serial No. 269,944.

Claim.—1. In apparatus of the class described, a spray-producer, a traveling apron, means for transmitting motion thereto, said means having an independent movement to cause the entire outer surface of the contained yarn to be subjected to the action of the spray, means, including a pump, for supplying a liquid to said spray-producer, and means independent of the pump for controlling the pressure of the liquid.

2. In apparatus of the class described, a traveling apron, change-wheel-driving mechanism for transmitting motion thereto so that the rate of speed thereof may be regulated, and means for causing a spray of water or liquid to fall upon said apron under pressure, said means including independent liquid-supplying and pressure-controlling devices, the apron having an independent movement to cause the entire outer surface of the contained yarn to be subjected to the action of the spray.

3. In apparatus of the class described, a traveling apron, spray-producing devices mounted above said apron, the apron having an independent movement to cause the entire outer surface of the contained yarn to be subjected to the action of the spray, an accumulator, means for supplying water or liquid to said accumulator, and independent means for controlling the supply of liquid to the accumulator.

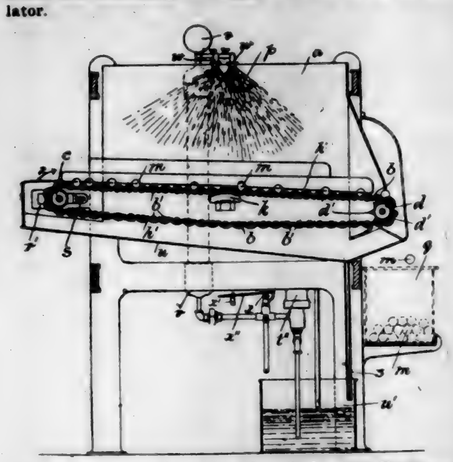

4. In apparatus of the class described, a traveling apron, spray-producing devices mounted to operate in conjunction with said traveling apron, the apron having an independent movement to cause the entire outer surface of the contained yarn to be subjected to the action of the spray, an accumulator, means for supplying water or a liquid to said accumulator, and means, intermediate said accumulator and said supply means, for controlling the pressure of the liquid in said accumulator.

5. In apparatus of the class described, a traveling apron having rotatable rollers, means whereby said rollers are rotated at one part of their path of motion and means whereby water or a liquid may be sprayed over said apron during its traveling movements substantially as set forth.

6. In apparatus of the character described, a spraying device, and means movable through the spraying zone for passing contained yarn into and through said zone said means having an independent movement to cause the entire outer surface of the contained yarn to be subjected to the spraying action.

7. In apparatus of the character described, a spraying device, means movable through the spraying zone for passing contained yarn into and through said zone said means having an independent movement to cause the entire outer surface of the contained yarn to be subjected to the spraying action, and means for controlling the movement of the contained yarn through said zone to control the extent of spraying action to which the yarn is subjected.

8. In apparatus of the character described, a spraying device and means for supplying liquid thereto under pressure, means movable through the spraying zone for passing contained yarn into and through said zone said means having an independent movement to cause the entire outer surface of the contained yarn to be subjected to the spraying action, and means for regulating the pressure of said liquid.

9. In apparatus of the character described, a spraying device, and a traveling apron adapted to carry contained yarn through the spraying zone, each of the yarn-containers being given a motion on its axis during its passage through said zone.

10. In apparatus of the character described, a spraying device, a traveling apron adapted to carry contained yarn through the spraying zone, and means for imparting a motion on its axis to each of the yarn-containers during its passage through said zone.

846,374. DRAFT AND BUFFING GEAR FOR CARS. IRA O. WRIGHT, Baltimore, Md., assignor to Farlow Draft Gear Co., Baltimore, Md. Filed Jan. 10, 1907. Serial No. 351,668.

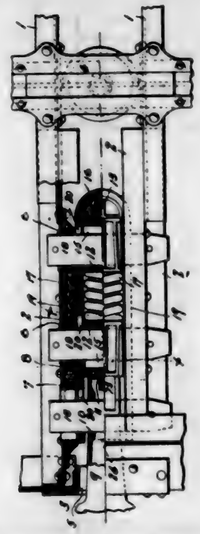

Claim.—1. The combination in a draft and buffing gear provided with supports having slots, of a coupler and draw-bar; a front slotted follower-block; a rear slotted follower-block; a spring or springs between the blocks; slotted links which take the strains in drawing; and keys within the slots of the supports, links, follower-blocks, and draw-bar; the rear key being fixed in the supports, and the rear follower-block being movable relative to said key in drawing.

2. The combination in a draft and buffing gear provided with supports having slots, of a coupler and draw-bar; a front slotted follower-block; a rear slotted follower-block; a spring or springs between the blocks; slotted links which take the strains in drawing; and keys within the slots of the supports, links, follower-blocks, and draw-bar; the rear key being fixed in the supports, the draw-bar and front follower-block being movable rearwardly in buffing, and the rear follower-block being movable in a forward direction in drawing.

3. The combination in a draft and buffing gear provided with supports having slots, of a coupler and draw-bar; a front slotted follower-block; a rear slotted follower-block; a spring or springs between the blocks; slotted links which take the strains in drawing; and keys within the slots of the supports, links, follower-blocks, and draw-bar; the rear key being fixed in the supports, the coupler and front follower-block being movable rearwardly in buffing while the links remain stationary, and the rear follower-block being movable relative to the rear key in drawing.

4. The combination in a draft and buffing gear provided with supports having slots; of a coupler and draw-bar; a front slotted follower-block; a rear slotted follower-block; a spring or springs between the blocks; slotted links which take the strains in drawing; and keys within the slots of the supports, links, follower-blocks, and draw-bar; the rear key being fixed in the supports, the two links being united at their rear ends and engaging the rear follower-block which is movable relative to the rear key in drawing.

5. The combination in draft and buffing gear provided with supports having slots; of a coupler and draw-bar; a front slotted follower-block; a rear slotted follower-block; a spring or springs between the blocks; slotted links which take the strains in drawing; and keys within the slots of the supports, links, follower-blocks, and draw-bar; the rear key being fixed, the two links being united at their rear ends, and a block being interposed between the rear follower-block and the united ends of the links.

6. The combination in a draft and buffing gear provided with supports having slots, of a coupler and draw-bar; a front slotted follower-block; a rear slotted follower-block; a spring or springs between the blocks; slotted links which take the strains in drawing; keys within the slots of the supports, links, and follower-blocks; and means for connecting the draw-bar with the front ends of the links; the rear key being fixed in the supports, and the rear follower-block being movable over the fixed key in drawing.

7. The combination in a draft and buffing gear provided with supports having slots, of a coupler and draw-bar; a front slotted follower-block; a rear slotted follower-block; a spring or springs between the blocks; slotted links which take the strains in drawing; keys within the slots of the supports, links, and follower-blocks; and means for connecting the draw-bar with the front ends of the links; the rear key being fixed in the supports; the draw-bar and front follower-block being movable rearwardly in buffing, and the rear follower-block being movable in a front direction in drawing.

8. The combination in a draft and buffing gear provided with supports having slots, of a coupler and draw-bar; a front slotted follower-block; a rear slotted follower-block; a spring or springs between the blocks; slotted links which take the strains in drawing; keys within the slots of the supports, links, and follower-blocks; and means for connecting the draw-bar with the front ends of the links; the rear key being fixed in the supports, the two links being united at their rear ends and bearing against the rear follower-block which latter is movable over the rear key in drawing.

9. The combination in a draft and buffing gear provided with supports having slots, of a coupler and draw-bar; a front slotted follower-block; a rear slotted follower-block; a spring or springs between the blocks; slotted links which take the strains in drawing; keys within the slots of the supports, links, and follower-blocks; and means for connecting the draw-bar with the front ends of the links; the two keys which pass through the follower-blocks being fixed in the supports, and the blocks being movable relative to the keys.

10. The combination in a draft and buffing gear provided with supports having slots, of a coupler and draw-bar; a front slotted follower-block; a rear slotted follower-block; a spring or springs between the blocks; slotted links which take the strains in drawing; keys within the slots of the supports, links, and follower-blocks; and means for connecting the draw-bar with the front ends of the links; the two keys which pass through the follower-blocks being fixed in the supports, the links united at their rear ends, and the slots in the blocks being longer than the width of the keys so the blocks may move relative to the keys.

11. The combination in a draft and buffing gear provided with supports having slots, of a coupler and draw-bar; a front slotted follower-block; a rear slotted follower-block; a spring or springs between the blocks; slotted links which take the strains in drawing; keys within the slots of the supports, links, and follower-block; and means for connecting the draw-bar with the front ends of the links; the two keys which pass through the follower-blocks being fixed, the blocks being movable relative to the keys, and the links slotted so as to move relative to the keys in drawing.

12. The combination in a draft and buffing gear provided with supports having slots of a coupler and draw-bar; a front slotted follower-block; a rear slotted follower-block; a spring or springs between the blocks; slotted links which take the strains in drawing; keys within the slots of the supports, links, and the follower-blocks; and means for connecting the draw-bar with the front ends of the links; the two links being united at their rear ends, and a filling-block interposed between said ends and the rear follower-block, said filling-block being provided with a recess to receive a lug upon the end of the follower-block.

13. The combination in a draft and buffing gear provided with supports having slots, of a coupler and draw-bar; a front slotted follower-block, a rear slotted follower-block; a spring or springs between the blocks; slotted links which take the strains in drawing; keys within the slots of the supports, links, and follower-blocks; and means for connecting the draw-bar with the front ends of the links; said links being united at their rear ends, the follower-blocks being of identical construction and each having a projecting lug, and a recessed casting located between the rear follower-block and the ends of the links.

14. The combination in a draft and buffing gear provided with supports having slots, of a coupler and draw-bar; two slotted follower-blocks; a spring or springs; slotted links united at their rear ends to form a U-shaped strap; keys located within the slots of the supports, follower-blocks, and links; and means for connecting the draw-bar with the links.

15. The combination in a draft and buffing gear provided with supports having slots, of a coupler and slotted draw-bar; slotted follower-blocks; a spring or springs; slotted links united at their rear ends to form a U-shaped strap, and keys within the slots of the supports, links, follower-blocks, and draw-bar.

16. The combination in a draft and buffing gear having supports with slots, of a coupler and draw-bar; two slotted follower-blocks; two keys within the slots of the supports and the slots of the follower-blocks; and a U-shaped strap connecting the coupler with the rear follower-block; said keys being tapered so that when the follower-blocks and spring or springs and one key are in place the other key can be driven into place and compress the spring or springs.

17. The combination with a draft and buffing gear having slotted supports and constructed and operating substantially as described, of a rear fixed key removable endwise from the slotted supports, and a slotted follower-block through which the key passes; the slot in the follower-block being longer than the width of the key whereby the block may move relative to the key.

18. The combination in a draft and buffing gear, operating substantially as set forth, of two fixed keys, two follower-blocks with elongated slots, a spring or springs, a draw-bar, and two links with elongated slots; said links being secured to the draw-bar, and the elongated slots allowing the said links to move relative to the keys.

19. The combination in a draft and buffing gear provided with supports having slots, of a coupler and draw-bar; two slotted follower-blocks; a spring or springs; keys located within the slots of the supports and slots of the follower-blocks, said keys being removable endwise from the said slotted supports, and said rear key being of less width than the length of the slot in the rear follower-block; and means for connecting the draw-bar with the rear follower-block.

20. The combination in a draft and buffing gear provided with supports having slots, of a coupler and draw-bar; two slotted follower-blocks; a spring or springs; keys located within the slots of the supports and slots of the follower-blocks, said keys being removable endwise from the said slotted supports, and each of said keys being of less width than the length of the slot in the follower-block through which it passes; and means for connecting the draw-bar with the rear follower-block.

846,375. SPINNING-MACHINE SPINDLE AND ITS APPURTENANCES. JAMES WRIGHT and HEBDEN WRIGHT, Ingrow, near Keighley, England. Filed Sept. 14, 1905. Serial No. 278,359.

Claim.—1. In spinning machinery of the class described, a flier constructed to be supported at its upper and lower extremities, and having one or more side arms with free ends to enable the yarn or thread to pass around the same, said flier also having an annular piece mounted in position to guide said thread after it leaves the flier-arm and before it is wound on the bobbin, a spindle for supporting said flier, and means for transmitting motion thereto, substantially as herein specified.

2. In spinning machinery of the class described, a flier having legs supported at both ends and having arms the ends of which are free and formed to guide the yarn or thread being produced, a supplementary guiding part fixed on said flier for guiding the thread after it leaves the arms of said flier, a spindle for supporting said flier, a tube or sleeve on said spindle to support a bobbin thereon, and means for transmitting vertical motion to said sleeve and said flier, substantially as herein specified.

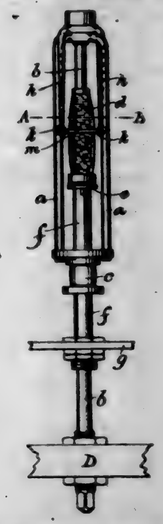

3. In spinning machinery of the class described, a flier having legs supported at both ends and having arms with free ends and having an annular piece mounted in position to guide the thread after it leaves the flier-arms and before it is wound on the bobbin, a spindle for supporting said flier, a tube or sleeve taking over said spindle to support the bobbin and said flier, and means for raising said flier to facilitate the process of doffing, substantially as herein specified.

4. In spinning machinery of the class described, a flier having legs supported at both ends and having arms with free ends and having an annular piece mounted in position to guide the thread after it leaves the flier-arms and before it is wound on the bobbin, a spindle for supporting said flier, a tube or sleeve on said spindle to support the bobbin thereon, means for transmitting motion to said sleeve and said flier, means for raising said flier, and means for raising the guide-board to facilitate the process of doffing, substantially as herein specified.

846,376. SPEED-CHANGING AND BRAKE GEAR FOR MOTOR-DRIVEN ROAD-VEHICLES. ARTHUR H. ADAMS, London, England. Filed June 8, 1906. Serial No. 320,846.

Claim.—1. In mechanism for controlling the speed-changing gear of a motor-driven road-vehicle, the combination of speed-change control-levers, sleeves, means for positively connecting each of said sleeves to a corresponding speed-change control-lever, and trip mechanism operating between each of said sleeves and the speed-change control-levers to which the individual sleeve is not positively connected.

2. In mechanism for controlling the speed-changing gear of a motor-driven road-vehicle, the combination of speed-change control-levers, sleeves, link-and-lever mechanism connecting each of said sleeves to a corresponding speed-change control-lever, and trip mechanism operating between said sleeves and the speed-change control-levers to which the individual sleeve is not positively connected.

3. In mechanism for controlling the speed-changing gear of a motor-driven road-vehicle, the combination of speed-change control-levers, toothed racks extending one from each of said speed-change control-levers, fixed catches respectively adapted to be engaged by one of said toothed racks, sleeves, means for positively connecting each of said sleeves to a corresponding speed-change control-lever and trip mechanism operating between each of said sleeves and the speed-change control-levers to which the individual sleeve is not positively connected.

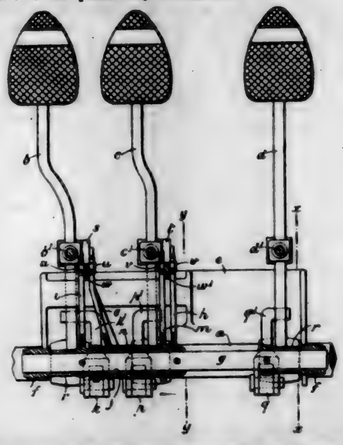

4. In mechanism for controlling the speed-changing gear of a motor-driven road-vehicle, the combination of speed-change control-levers, means for locking said speed-change control-levers individually in their operative positions, sleeves, means for positively connecting each of said sleeves to a corresponding speed-change control-lever, a trip-pin corresponding to each speed-change control-lever and attached thereto, and trip-levers extending from each of said sleeves and coacting with the trip-pins, attached to each speed-change control-lever to which the individual sleeve is not positively connected.

5. In mechanism for controlling the speed-changing gear of a motor-driven road-vehicle, the combination of speed-change control-levers, means for locking said speed-change control-levers individually in their operative positions, sleeves, means for positively connecting each of said sleeves to a corresponding speed-change control-lever, a trip-pin corresponding to each speed-change control-lever and attached thereto, and trip-levers extending from said sleeves, there being an inclined trip edge on said levers respectively coacting with said trip-pins.

6. In mechanism for controlling the speed-changing gear of a motor-driven road-vehicle, the combination of speed-change control-levers, toothed racks extending one from each of said speed-change control-levers, fixed catches respectively adapted to be engaged by one of said toothed racks, trip-pins corresponding to each toothed rack and extending therefrom sleeves, means for positively connecting each of said sleeves to a corresponding speed-change control-lever, trip-levers extending from said sleeves to positions adjacent to the trip-pins respectively attached to each speed-change control-lever to which the individual sleeve is not positively connected, there being inclined trip edges on said trip-levers, and hooks on said trip-levers respectively adapted to engage the corresponding trip-pin.

7. In mechanism for controlling the speed-changing gear of a motor-driven road-vehicle the combination of speed-change control-levers, an auxiliary shaft, sleeves, means for positively connecting each of said sleeves to a corresponding speed-change control-lever, and trip mechanism operating between each of said sleeves and the speed-change control-levers to which the individual sleeve is not positively connected.

8. In mechanism for controlling the speed-changing gear of a motor-driven road-vehicle, speed-change control-levers movable from normal inoperative to operative position independently of each other, a brake-lever, an auxiliary shaft, means fixed to said shaft and having connection with said brake-lever for rocking said shaft by movement of the brake mechanism, means connected to said shaft and operative upon the speed-control levers for returning the latter to normal position by movement of the shaft, and independent means associated with each of said control-levers so that when one of the levers is operated the remaining levers will be returned to an inoperative position.

9. In mechanism for controlling the speed-changing gear of a motor-driven road-vehicle, the combination of change-speed control-levers, a brake-lever, an auxiliary shaft, means for positively rocking said shaft by the movement of said brake-lever, trip-pins corresponding to each of said change-speed control-levers and attached thereto, and trip-levers fast on said auxiliary shaft and hooks there being inclined trip edges on said trip-levers respectively adapted to engage the respectively corresponding trip-pins.

10. In mechanism for controlling the speed-changing gear of a motor-driven road-vehicle, the combination of change-speed control-levers, a toothed rack corresponding to each of said change-speed control-levers and extending therefrom, fixed catches respectively adapted to be engaged by said toothed racks, trip-pins on said toothed racks, a brake-lever, an auxiliary shaft, means connecting the said shaft with the brake-lever for positively rocking said shaft by the movement of said brake-lever and trip-levers fast on said auxiliary shaft having an inclined trip edge and a hook adapted to engage the respectively corresponding trip-pins.

11. In mechanism for controlling the speed-changing gear of a motor-driven road-vehicle, the combination of speed-change control-levers, a brake-lever, an auxiliary shaft, means for positively rocking said shaft by the movement of said brake-lever, sleeves mounted on said auxiliary shaft, means for positively connecting each of said sleeves to a corresponding speed-change control-lever, trip mechanism operating between each of said sleeves and the speed-change control-levers to which the individual sleeve is not positively connected, and trip mechanism operating between said auxiliary shaft and all the said speed-change control-levers.

846,377. BAND-CUTTER FOR THRESHING-MACHINES. MARTIN C. ALBERTSON, Oakes, N. D. Filed Mar. 3, 1906. Serial No. 304,039.

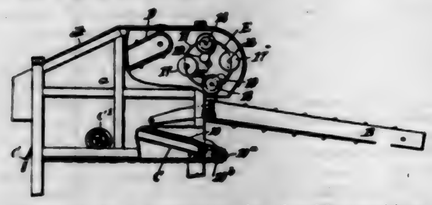

Claim.—1. In a band-cutter for threshing-machines, a shaft, a driver for the shaft, a frame secured on the shaft, comprising opposing heads, shafts mounted to turn in the said heads, disk cutters secured on the latter-named shafts, brake-disks secured on the shafts journaled in the said heads, and gravity friction-brakes for the said brake-disks, pivoted upon said heads.

2. In a band-cutter for threshing-machines, a main shaft, a frame carried by the main shaft, comprising opposing heads secured to the main shaft, and shafts mounted to turn in the said heads, disk cutters secured to the shafts carried by the said heads, the said disk cutters being in staggered arrangement, brake-disks secured to the shafts journaled in the heads, and friction-brakes adapted for engagement with the said brake-disks, which friction-brakes are pivoted to the said heads at one end and are weighted at their opposing or free ends, for the purpose specified.

3. In a band-cutter for threshing-machines, a casing adapted as an auxiliary attachment to a threshing-machine, a main shaft journaled in the said casing, which shaft is provided with a driving-pulley, a frame carried by the main shaft, comprising opposing heads, shafts journaled in the said heads, cutters secured on the latter-mentioned shafts, brake-disks secured on the cutter-shafts, the brake-disk on opposing shafts being at opposite ends of the said shafts, and friction-brakes pivoted at one of their ends to the heads of the said frame, being weighted at their opposite or free ends, the body portions of the said friction-brakes being curved to fit snugly to the peripheral surfaces of the said brake-disks, for the purpose set forth.

846,378. WIRE-RETRIEVING ATTACHMENT FOR TROLLEY-WHEELS. WILLIAM C. ALTHEN, Columbus, Ohio, assignor of one-sixth to William F. Miesse, one-sixth to William N. Gearhart, and one-sixth to Benjamin F. Hirt, Columbus, Ohio. Filed Apr. 2, 1906. Serial No. 309,247.

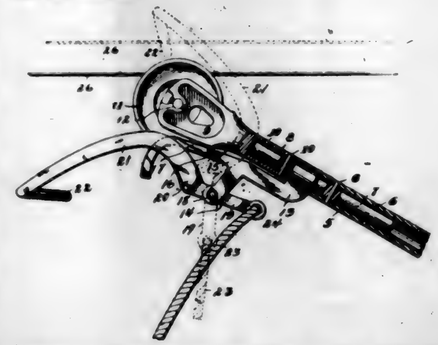

Claim.—1. The combination with a trolley pole and wheel, of a bracket secured to said trolley-pole and lying in the rear thereof, said bracket carrying a bifurcated member, the arms of which lie upon opposite sides of the trolley-wheel, a yoke pivoted in the bracket and having a V-shaped wire-guiding portion, said yoke having an arm which extends beyond its pivotal point and adapted to have a trolley-rope secured thereto.

2. The combination with a trolley-pole and wheel, of a yoke pivotally mounted upon the rear side of the trolley-pole, said yoke having a V-shaped wire-guiding portion, an arm carried by said yoke which extends beyond its pivotal point and is adapted to have a trolley-rope secured thereto, and a member having arms which lie upon each side of the trolley-wheel and a depending portion which connects said arms.

846,379. STEAM-CONDENSER. CHARLES AMBROSE and FRANK D. SCHWARTZ, Chicago, Ill. Filed Aug. 28, 1905. Serial No. 276,118.

Claim.—1. In an air-cooled steam-condenser, an air-drum, in combination with steam admission and exhaust heads at the respective ends of said drum, flue-sheets interposed between said drum and heads, a plurality of steam-tubes extending through said drum and flue-sheets and connecting with said heads, air entrance and exit openings in said drum, and a fan connected with one of said openings, substantially as described.

2. In a steam-condenser, an air-drum provided with air entrance and exit openings, in combination with a plurality of steam-tubes extending through said drum, means at the ends of the drum for admitting and exhausting steam from said tubes, a fan connected with said drum for

moving air therethrough, a plurality of partial partitions arranged within said drum among and parallel with said tubes and dividing the drum into a number of communicating longitudinal air-passages and means for moving air through said passages whereby air is caused to flow longitudinally upon the steam-tubes, substantially as described.

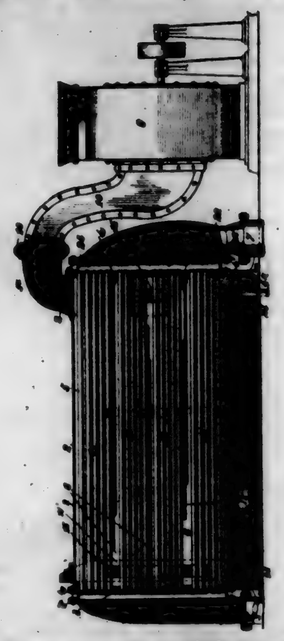

3. In a steam-condenser, an air-drum provided with air entrance and exit openings, in combination with a plurality of steam-tubes extending through said drum, heads closing the ends of the drum, for admitting and exhausting steam from said tubes, a fan connected with said drum for moving air therethrough, a plurality of partial partitions arranged within said drum and dividing it into a number of communicating, longitudinal air-passages, and means for moistening the air entering said drum, substantially as described.

4. In a steam-condenser, an air-drum having flue-sheets closing its ends, in combination with a plurality of steam-tubes connected with said sheets, steam admission and exhaust heads applied to said flue-sheets and communicating with said tubes, a plurality of longitudinally-arranged partitions in said drum and providing tortuous longitudinal air-passage, each portion or section of which contains a plurality of said tubes and said drum having air entrance and exit openings at the ends of said tortuous passage, substantially as described.

5. In a steam-condenser, an air-drum having flue-sheets closing its ends, in combination with a plurality of steam-tubes connected with said sheets, steam admission and exhaust heads attached to said flue-sheets and communicating with said tubes, a plurality of longitudinally-arranged partitions in said drum providing a tortuous longitudinal air-passage, each section of which contains a plurality of said tubes, said drum having air entrance and exit openings at the ends of said tortuous passage, and means for moistening air prior to its entrance to said drum, substantially as described.

6. In an air-cooled steam-condenser, an air-drum provided with air entrance and exit openings and having flue-sheets closing its ends, in combination with a plurality of steam-tubes extending through said drum and secured in said flue-sheets, steam admission and exhaust heads attached to said flue-sheets and communicating with said tubes, means forming a tortuous passage within said drum, said passage terminating at the air-openings in said drum and means for causing air to flow rapidly through said drum-passage, substantially as described.

7. In a steam-condenser, an air-drum provided with air entrance and exit openings and having flue-sheets closing its ends, in combination with a plurality of steam-tubes extending through said drum and secured in said flue-sheets, steam admission and exhaust heads having their inner sides formed by said flue-sheets, longitudinal, partial, alternated partitions providing a tortuous passage between the air-openings of said drum and an air-moving fan connected with one of the openings of the drum, substantially as described.

8. In an air-cooled steam-condenser, an air-drum provided with air entrance and exit openings and having flue-sheets closing its ends, in combination with a plurality of steam-tubes extending through said drum and secured in said flue-sheets, steam admission and exhaust heads communicating with said tubes, means forming a tortuous passage within said drum, between said openings, means for causing air to flow rapidly through said drum-passage, and means adjacent to the drum's air-entrance opening for moistening the air, substantially as and for the purpose specified.

9. In an air-cooled steam-condenser, an air-drum, in combination with flue-sheets closing the ends thereof, steam-tubes connecting said sheets, steam admission and exhaust heads having their inner sides formed by said flue-sheets, suitable expansion-joints connecting the drum, sheets and heads, and means for driving air through said drum between said flue-sheets, substantially as described.

10. In a steam-condenser, an air-drum, in combination with flue-sheets closing the ends thereof, steam-tubes connecting said sheets, steam admission and exhaust heads applied to said flue-sheets and coextensive therewith, suitable expansion-joints connecting the drum, sheets and heads, a plurality of partitions within the drum parallel with said tubes, each said partition extending from one flue-sheet to a point near the other flue-sheet, said partitions providing a tortuous longitudinal passage within said drum and means for driving large volumes of moist air through said passage, substantially as described.

11. In a steam-condenser, a plurality of steam-tubes and admission and exhaust heads therefor, in combination with an air-drum inclosing said tubes and provided with air entrance and exit openings, a plurality of longitudinal, staggered partitions of different lengths arranged between groups of tubes and means for moving air through the tortuous passage thus made, substantially as described.

12. In a steam-condenser, a pair of flue-sheets and a plurality of steam-tubes having their ends secured therein, in combination with alternated longitudinal partitions of less length than said tubes and each abutting a flue-sheet, suitable inclosing walls constituting with said partitions a tortuous air-passage between said flue-sheets and suitable steam admission and exhaust heads, substantially coextensive with said respective flue-sheets, and joined thereto, substantially as described.

13. In a steam-condenser, a pair of flue-sheets and a plurality of steam-tubes having their ends secured therein, in combination with alternated longitudinal partitions of less length than said tubes and each abutting a flue-sheet, said partitions or sheets being of gradually-increasing length toward the top of the group of tubes, suitable inclosing walls constituting with said partitions a tortuous air-passage between said flue-sheets and suitable steam admission and exhaust heads joined to respective flue-sheets, substantially as described.

14. In a steam-condenser, a pair of flue-sheets and a plurality of steam-tubes having their ends secured therein, in combination with alternated longitudinal partitions of less length than said tubes and each abutting a flue-sheet, said partitions or sheets being of gradually-increasing length toward the top of the group of tubes, suitable inclosing walls constituting with said partitions a tortuous air-passage through the groups of tubes between said flue-sheets and suitable steam admission and exhaust heads flexibly or expansibly joined to respective flue-sheets, substantially as described.

15. In a steam-condenser, a pair of flue-sheets and a plurality of longitudinal steam-tubes having their ends secured therein, in combination with alternated longitudinal partitions or sheets of different lengths, all of less length than said tubes and each abutting a flue-sheet, suitable inclosing walls constituting with said partitions a tortuous air-passage, and suitable steam admission and exhaust heads substantially coextensive with respective flue-sheets and joined thereto by expansion-joints, substantially as described.

16. In a steam-condenser, a plurality of steam-tubes and the flue-sheets belonging thereto, in combination with an inclosing drum having air entrance and exit openings, a plurality of longitudinal partitions providing a tortuous air-passage within said drum between said flue-sheets, means for varying the length of said partitions and the effective length of the different sections of said passage, suitable steam admission and exhaust connections upon said flue-sheets for said tubes and means for moving air through said passage, substantially as described.

17. In an air-cooled steam-condenser, a plurality of parallel tortuously-communicating air-passages, in combination with groups of steam-tubes arranged longitudinally in said passages, means for admitting and exhausting steam to and from said groups of tubes, means for moving large volumes of air through said communicating passages and devices for varying the sizes of the opening between each pair of said passages, substantially as described.

18. In an air-cooled steam-condenser, an air-drum, in combination with flue-sheets at the ends thereof, steam admission and exhaust heads attached to said flue-sheets, a plurality of longitudinal tubes extending between said flue-sheets, a plurality of externally-operable longitudinal partitions forming a tortuous air-passage within said drum and suitable means for moving the air through said passage, substantially as described.

19. In a steam-condenser, an air-drum provided with air exit and entrance openings, in combination with a plurality of steam-tubes arranged longitudinally in said drum, suitable steam admission and exhaust heads connected with said tubes, a plurality of partial partitions arranged in the drum parallel with said tubes, suitable air-moistening means and an air-straining trunk arranged beneath said drum and communicating with the air-entrance opening therein, substantially as described.

20. In a steam-condenser, an air-drum and flue-sheets closing the ends thereof, in combination with steam admission and exhaust heads upon the outer sides of said flue-sheets, a plurality of longitudinal steam-tubes held in said flue-sheets, a plurality of adjustable two-part partitions arranged longitudinally in said drum, and said drum having slots in its side for the admission of air and through which said partitions may be operated, substantially as described.

21. In a steam-condenser, an air-drum having flue-sheets and steam-heads at its ends, in combination with a plurality of longitudinal steam-tubes extending between said flue-sheets and communicating with said heads, ports and dampers in the side of said drum, said drum being also provided with main air entrance and exit openings, a damper for regulating said entrance-opening, an air-moistening device and a plurality of staggered longitudinally-adjustable partitions provided in the drum, parallel with the tubes therein and separating the latter into groups, substantially as described.

22. In a steam-condenser, a horisontal air-drum, provided with air entrance and exit openings, in combination with flue-sheets forming the ends of said drum, a large number of longitudinal steam-tubes extending between said flue-sheets, steam admission and exhaust heads of segmental form attached to said flue-sheets, an air-moving fan connected with the exit-opening of said drum, means for regulating the admission of air to said drum and three or more horizontal partitions arranged in said drum and separating said tubes into groups, said partitions being staggered within the drum and each thereof extending from one flue-sheet at a point adjacent to the opposite flue-sheet and means within the drum for varying the effective length of each partition, substantially as described.

846,380. CONDENSER. CHARLES AMBROSE and FRANK D. SCHWARTZ, Chicago, Ill. Filed Sept. 13, 1905. Serial No. 278,211.

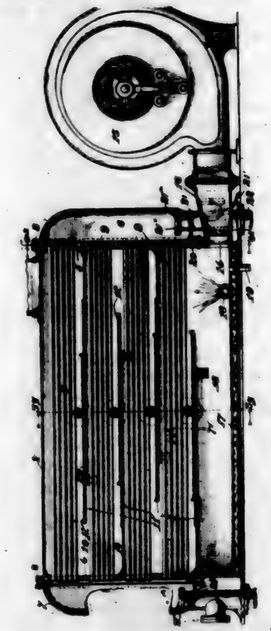

Claim.—1. In a steam-condenser an air-drum, in combination with flue-sheets, at the ends of said drum, a plurality of groups of steam-tubes, arranged in said flue-sheets, a plurality of longitudinal partitions arranged between the groups of tubes and providing a tortuous longitudinal air-passage within said drum, an air-trunk at the bottom of the drum parallel with said air-passage, a blast-fan connected with said air-trunk and suitable steam admission and exhaust heads communicating with said steam-tubes, substantially as described.

2. In a steam-condenser, an air-drum, containing a plurality of longitudinal partitions, dividing the same into an air-blast-steadying trunk open at one end only and a tortuous longitudinal air-passage, in combination with groups of tubes arranged in the divisions of said passage, steam admission and exhaust heads communicating with said tubes, air-moistening means provided in said air-trunk and a blast-fan, for delivering air to said trunk, substantially as described.

3. In a steam-condenser, a closed air-drum, containing a steadying-trunk and a tortuous air-passage and having air entrance and exit openings at the ends of said passage, in combination with means for increasing and decreasing the length of said passage, a fan connected with said drum, steam-tubes arranged longitudinally in the air-passages of said drum and steam admission and exhaust heads, communicating with said tubes, substantially as described.

4. In a steam-condenser, a closed air-drum, having air entrance and exit openings and containing a tortuous longitudinal air-passage, in combination with means for moving air through said passage, steam-tubes, arranged longitudinally in the several divisions of said air-passage, steam admission and exhaust heads communicating with

said steam-tubes and a water-trap provided in said steam-admission head, substantially as described.

5. In a steam-condenser, an air-drum, provided with air entrance and exit openings and having an air-trunk and a water-pan or drum in its bottom, in combination with horizontal, staggered partitions in said drum, horizontal, longitudinal steam-tubes extending through the ends of said drum, steam admission and exhaust heads communicating with said tubes, and means for causing large volumes of air to flow over said pan and upward through said drum, substantially as described.

6. In a steam-condenser, an air-drum, provided with air entrance and exit openings and containing a plurality of steam-tubes, in combination with steam admission and exhaust heads closing the ends of said drum, a plurality of longitudinally-adjustable partitions in said drum, rotary shafts extending across said partitions, shaft-bearings in the sides of the drum, and means for rotating said shafts to adjust said partitions, substantially as described.

7. In an air-cooled steam-condenser, an air-drum containing steam-tubes, in combination with a plurality of longitudinal partitions therein, movable partition parts, racks at the sides of each said part respective rotary shafts borne in the walls of said drum and gears on said shafts, meshing with said racks for adjusting said parts, substantially as and for the purpose specified.

8. In a steam-condenser, an air-drum having flue-sheets closing its ends, in combination with a plurality of tubes held in said sheets, longitudinal partitions within said drum, steam admission and exhaust heads, an air-trunk or pressure-steadying chamber in the bottom of said drum, and a blast-fan adapted to discharge air into said air-trunk, substantially as described.

846,381. TELEPHONE-EXCHANGE. CLARENCE A. ANDERSON, Salina, Kans., assignor of one-half to John Anderson, Salina, Kans. Filed Jan. 3, 1905. Serial No. 239,344.

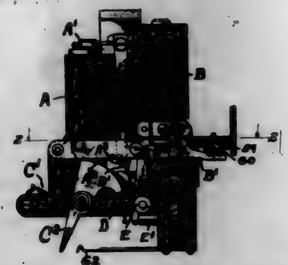

Claim.—1. The combination with a central office, a party-line, a battery, and a series of local stations, of a magnet at each station for connecting it telephonically to the line, a signaling device at the central office, means by which a subscriber at any other station may send a signal to the central office, means by which the sending of such a signal will operate the connecting-magnet of the station from which such signal is sent, and means by which the operation of the signaling device at the central office will break the connections to said battery so as to prevent any other station from having its connecting-magnet similarly operated.

2. The combination with a central office, and a series of local stations connected to a party-line, of a switching mechanism at each station, a similar switching mechanism and a signaling device at the central office, means by which an operation of a local-station switching mechanism causes a similar operation of the central-office switching mechanism, and means by which the central-office switching mechanism serves as a relay for said signaling device.

3. The combination with a central office, a series of local stations, a party-line, and a main battery, of a drop and a local battery therefor at the central office, a magnet at each local station by the operation of one of which its stations are telephonically connected to the line, means by which upon a subscriber closing the connection between his magnet and the main battery he will also cause the connection to be closed between the drop and the local battery so as to cause its operation, and means by which an operation of the drop opens the main-battery connection so as to prevent a similar closure by a subscriber at some other station.

4. In a party-line exchange, the combination with a battery by means of which the party-line is operated so as to establish telephonic connections between stations, of a line-drop for indicating calls on the line, and means by which an operation of said drop will disconnect said battery from the line.

5. The combination with a central office, a party-line, and a series of local stations each provided with an ordinary telephone set, of a contact-closing device at each station adapted to be operated by a subscriber thereat, a station-connecting magnet at each station and a signal-controlling magnet at the central office, a battery having connections extending to said magnets, means by which upon a subscriber operating his contact-closing device he will cause an operation of his own magnet and the signaling device at the central office, and means by which an operation of the signaling device breaks the battery connections to said magnets.

6. The combination with the central office and the local stations of a party-line exchange, of a drop and local battery therefor, means by which a signal sent over the line connects said drop to said battery, means by which the operator at the central office may restore the line to its normal position after a signal has been sent over it, and means by which the connection between the drop and the battery will not be broken until the line is so restored.

7. In a party-line exchange, the combination with a source of electricity by means of which the party-line is operated so as to establish communicating connections between stations, of a signaling device for indicating calls on the line, and means by which an operation of said signaling device will disconnect said source of electricity from the line.

846,382. SWITCHING MECHANISM. CLARENCE A. ANDERSON, Salina, Kans., assignor of one-half to John Anderson, Salina, Kans. Filed Jan. 29, 1906. Serial No. 298,386.

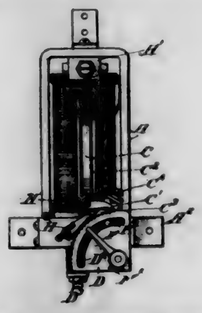

Claim.—1. In a switching mechanism, a permanent magnet in the form of an inverted U, an electromagnet having its upper end supported by a pivot, said pivot being connected to and supported by the central part of the permanent magnet and said electromagnet having its lower end adjacent to and between the poles of the permanent magnet, springs for normally holding the lower end of the electromagnet midway between the poles of the permanent magnet, a bracket secured to the lower end of the permanent magnet, a ratchet-wheel supported on said bracket, and a pawl secured to the lower end of the electromagnet and arranged to engage said ratchet-wheel.

2. In a switching mechanism, a permanent magnet in the form of an inverted U, a pivot secured to the upper end of said permanent magnet and located between the legs thereof, an electromagnet having its upper end supported by said pivot and having its lower end normally resting midway between the poles of the electromagnet, a bracket secured to the lower end of the permanent magnet, a ratchet-wheel supported on said bracket, a spring tending to normally hold said wheel at its normal position, a screw by which the normal position of the wheel is adjusted, and a pawl secured to the lower end of the electromagnet and arranged to engage said ratchet-wheel.

3. In a switching mechanism, a permanent magnet in the form of an inverted U, an electromagnet having its upper end pivotally supported at the upper end of the permanent magnet and having its lower end between the poles of the permanent magnet, springs acting to normally hold the lower end of the electromagnet midway between the poles of the permanent magnet but arranged to permit such lower end to be moved toward either pole, a bracket secured to the lower end of the permanent magnet, a ratchet-wheel supported on said bracket, a spring acting to return said wheel to its normal position after being moved, a pawl carried by the lower end of the electromagnet and serving to advance said wheel when the electromagnet is moved toward one pole of said permanent magnet, a holding-pawl pivoted to said bracket, and a projection extending from said holding-pawl and so arranged that a movement of the lower end of the electromagnet toward the opposite pole of the permanent magnet will release said holding-pawl from said wheel.

846,383. CHAINING DEVICE. HARRY B. ARDEN, New York, N. Y. Filed Jan. 15, 1906. Serial No. 296,162.

Claim.—1. In a device of the class described, a ring, and a plurality of chains each having fastening means about the middle of its length.

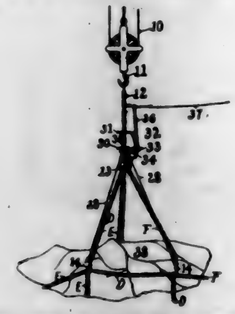

2. In a device of the class described, means for supporting a number of chains, each of said chains being provided about the middle of its length with fastening means, and means for releasing said fastening means.

3. In a device of the class described, a ring and a plurality of chains suspended therefrom, each of said chains being provided with a hook about the middle of its length.

4. In a device of the class described, a ring and a plurality of chains suspended therefrom, each of said chains being provided with a hook about the middle of its length, each of said hooks comprising a catch, means for supporting the same, and a bolt for holding or releasing said catch.

5. In a device of the class described, means for supporting a number of chains, each of said chains being provided about the middle of its length with a hook, said hook having manually-controlled and automatic means for releasing a chain.

6. In a device of the class described, means for supporting a number of chains, each of said chains being provided about the middle of its length with a hook, said hook being provided with a supporting-plate to which the chain-engaging part is pivoted, and manually-controlled means for releasing said chain-engaging part.

846,384. LEAD PRODUCT. JOHN W. BAILEY, New York, N. Y., assignor, by mesne assignments, to United Lead Company, a Corporation of New Jersey. Filed June 26, 1902. Serial No. 113,213.

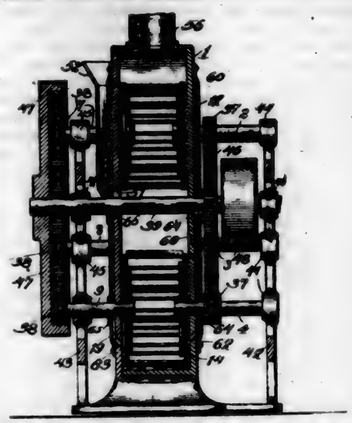

Claim.—1. As a new article of manufacture, metallic lead in the form of an impalpable powder or dust.

2. As a new article of manufacture, a powder consisting of metallic lead reduced to such a fine state that it may be conveyed in opposition to the force of gravity by a moderate current of air.

3. As a new article of manufacture, an impalpable powder or dust produced by pulverizing metallic lead in a dry state.

846,385. GUN-SIGHT. JOHN Y. BASSELL and FRED C. BLENKNER, Columbus, Ohio. Filed Feb. 15, 1906. Serial No. 301,157.

Claim.—1. The combination with a gun-barrel and the permanently-attached block of the front sight thereof, of a detachable base having a recess adapted to receive the front sight and provided with a longitudinally-extending depression, and a hood movable on said base conforming to the contour of the depression to form therewith a globe or ring.

2. The combination with a gun-barrel and the permanently-attached block of the front sight thereof, of a detachable base having a recess adapted to receive the front sight and provided with a longitudinally-extending depression, a hood movable on said base conforming to the contour of the depression to form therewith a globe or ring, and means for fastening the hood in position on the base.

3. The combination with a gun-barrel and the permanently-attached block of the front sight thereof, of a detachable base having a central longitudinal recess adapted to receive the front sight and provided with a longitudinally-extending concaved depression, and a hood movable on said base conforming to the contour of the depression to form therewith a globe or ring.

4. The combination with a gun-barrel and the permanently-attached block of the front sight thereof, of a detachable base having a recess adapted to receive the front sight and provided with a longitudinally-extending depression, a hood movable on said base conforming to the contour of the depression to form therewith a globe or ring, and a spring-latch adapted to engage with the hood for holding the same in position.

5. The combination with a gun-barrel and the perma-

nently-attached block of the front sight thereof, of a detachable base having a longitudinal recess adapted to receive the front sight and formed with guides and a longitudinally-extending depression, and a hood movable in said guides on the base and conforming to the contour of the depression to form therewith a globe or ring.

6. The combination with a gun-barrel and the permanently-attached block of the front sight thereof, of a detachable base having a central longitudinal recess adapted to receive the block of the front sight and provided with a longitudinally-extending concaved depression, means for fastening the base on the block, and a hood movable on the base over the front sight and conforming to the contour of the depression to form therewith a globe or ring.

7. The combination with a gun-barrel and the permanently-attached block of the front sight thereof, of a detachable base adapted to fit about the front sight, a hood movable on the base, an interchangeable sight-piece supported on the base, and a reflector.

8. The combination with a gun-barrel and the permanently-attached block of the front sight thereof, of a detachable base adapted to fit about the front sight having guides and an interchangeable sight-piece, of a hood movable in said guides, and a reflector.

9. The combination with a gun-barrel and the permanently-attached block of the front sight thereof, of a detachable base adapted to fit about the front sight, a hood movable on the base, a hinged reflector, and means for holding the reflector in position.

10. The combination with a gun-barrel and the permanently-attached block of the front sight thereof, of a detachable base having a recess adapted to receive the front sight and provided with guides, a hood slidable in said guides, an interchangeable sight-piece, and spring-held means for locking the sight-piece in position.

11. The combination with a gun-barrel and the permanently-attached block of the front sight thereof, of a detachable base having a recess adapted to receive the front sight and provided with guides, a sight-piece, a slidable hood, and means arranged on the base for holding the hood in position.

12. The combination with a gun-barrel and the permanently-attached block of the front sight thereof, of a detachable base having a recess adapted to receive the front sight, a removable adjustable hood, an interchangeable sight-piece, and a reflector.

13. The combination with a gun-barrel and the permanently-attached block of the front sight thereof, of a detachable base having a recess adapted to receive the front sight, a sight mounted on the base, and a hood shorter than the base longitudinally and movable on the base so as to cover and uncover the sight-piece without being entirely removed from the base.

14. The combination with a gun-barrel and the permanently-attached block of the front sight thereof, of a detachable base having a recess adapted to receive the front sight and provided with a concave depression and guides, an interchangeable sight-piece arranged on the base, a removable hood conforming to the contour of the depression and movable in said guides, and means for holding the hood in position on the base.

15. The combination with a gun-barrel and the permanently-attached block of the front sight thereof, of a detachable base having a recess adapted to receive the front sight and provided with a concave depression, an interchangeable sight arranged on the base and a movable hood conforming to the contour of the depression to form therewith a globe or ring.

846,386. SAFETY MECHANISM FOR ELEVATORS. HERBERT BAWDEN and WILLIAM HOSKIN, Central City, Colo., assignors of one-third to Herbert C. Eastman. Filed Oct. 14, 1906. Serial No. 282,805.

Claim.—1. The combination with an elevator-car, of a draw-head carried by said car, a post fixedly secured at one end to said draw-head and extending through a portion of said car, a spring surrounding said post, rods fixedly secured to said draw-head, key-plates fixedly secured to said rods, each key-plate provided with diverging elongated apertures, movable, horizontal shafts positioned within the apertured portions of said key-plates, and pivoted dogs carried by said car and engaging and coöperating with said shafts.

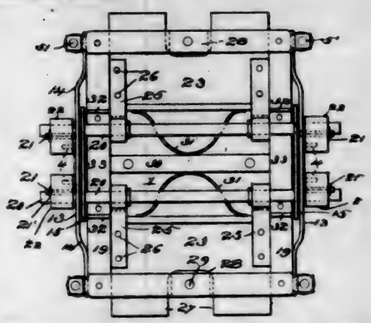

2. The combination with an elevator-car, of outwardly-bowed protecting-plates carried by said car, a movable shaft carried by said car and supported upon said protecting-plates, dogs carried by said car and engaging and cooperating with said shaft, and means positioned between said protecting-plates and car and being capable of moving said shaft laterally for actuating said dogs.

3. The combination with an elevator-car, of spaced plates carried rigidly by the car and provided each with a horizontal slot, plates movably mounted adjacent the rigid plates and provided with inclined slots, shafts extending through the horizontal and inclined slots, pawls carried by the shafts and pivoted upon the rigid plates, and means to move the movable plates.

4. The combination with an elevator-car, of spaced plates carried rigidly by the car and provided each with a horizontal slot, plates movably mounted adjacent the rigid plates and provided with slots reversely inclined from the vertical, shafts extending through the horizontal and inclined slots, pawls carried by the shafts and pivoted upon the rigid plates, and means to move the movable plates.

5. The combination with an elevator-car, of spaced plates carried rigidly by and at opposite sides of the car, and provided each with a horizontal slot, plates movably mounted adjacent the rigid plates and provided with inclined slots registering with the horizontal slots, shafts extending through the horizontal and inclined slots, pawls carried by the shaft and pivoted upon the rigid plates, and means to move the movable plates.

6. The combination with an elevator-car, of spaced plates carried rigidly by and at opposite sides of the car, and provided each with a horizontal slot, plates mounted adjacent the rigid plates and provided with inclined slots registering with the horizontal slots, shafts disposed transversely of the car and extending through the registering horizontal and inclined slots, pawls carried by the shafts and pivoted upon the rigid plates, and means to move the movable plates.

7. The combination with an elevator-car, of spaced plates carried rigidly by and at opposite sides of the car and provided each with a horizontal guide-slot, plates movably mounted adjacent the rigid plates and provided with guide-slots reversely inclined from the vertical and registering with the horizontal guide-slots, shafts disposed transversely of the car and extending through the horizontal and inclined slots, pawls carried upon the extended ends of the shafts and pivoted upon the rigid plates, and means to move the movable plates vertically.

8. The combination of an elevator-car, a protecting-plate carried by the car and spaced therefrom, a slidably-mounted key-plate interposed between the car and the protecting-plate, a shaft movably mounted on the car and protecting-plate and loosely connected to the key-plate, a catch having operative connection with the shaft, and means for actuating the key-plate to control the catch.

9. The combination of an elevator-car, a protecting-plate carried by the car and spaced therefrom, a slidably-mounted key-plate interposed between the car and the protecting-plate, the said key-plate being formed with an elongated opening, a shaft passing through the elongated opening in the key-plate and movably mounted upon the car and protecting-plate, a catch having an operative connection with the shaft, and means for actuating the key-plate to control the catch.

846,387. MATERIAL OF FABRIC AND RUBBER. CHARLES C. BEEBE, Arlington, Mass. Filed Mar. 19, 1906. Serial No. 306,737.

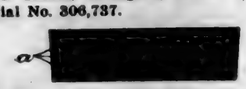

Claim.—1. The herein-described material which consists of a series of parallel adjacent layers of fabric which has been treated with rubber, combined with a uniting and finishing film of rubber of material thickness, completely inclosing the edges of the layers of fabric.

2. The herein-described material which consists of a tread portion comprising a series of parallel adjacent layers of fabric the surfaces of which have been treated with rubber, combined with a uniting and finishing film of rubber along the edges of said adjacent layers to inclose said edges; and a portion of solid rubber in addition to the tread portion.

846,388. CHICKEN-WATERER. PHILIP BERNARD, Jefferson, S. D. Filed July 27, 1906. Serial No. 328,083.

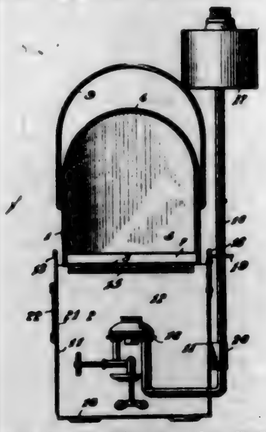

Claim.—1. A device of the class described comprising a superimposed tank having a trough and provided with tapering transverse ribs forming depending wedges, a supporting-casing receiving the tank and provided at opposite sides with upwardly-projecting flanges spaced from the sides of the tank to provide openings, the ends of the casing being engaged by the ribs whereby the tank is wedged thereon, and a heating device located within the lower casing.

2. In combination with the supporting-casing provided at the top with flanges along each side, the tank having a trough and provided with depending ribs which engage the inner face of the casing, the tank resting on the upper edges of the casing at the ends, and being of a width less than that of the casing so as to leave escape-openings at the sides of the tank.

846,389. EXTENSION-HANDLE FOR AUGERS. JASPER BLACKBURN, Chillicothe, Mo. Filed May 22, 1906. Serial No. 318,233.

Claim.—An auger-handle, comprising a tubular member, a block carried by the upper end thereof, through which block is formed a non-circular opening, a solid member arranged to slide through the opening in the block, there being recesses formed in opposite sides of the sliding member, pins carried by the block for engaging in said recesses, handles fulcrumed in the block and pivotally connected at their lower ends to the outer ends of the pins, and leaf-springs carried by the block, the free ends of which bear on the lower ends of the handles; substantially as specified.

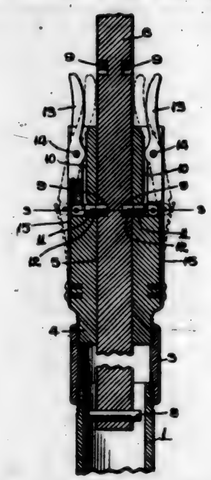

846,390. MAIL-BAG CATCHER. WILLIAM J. BOCK, Loomis, Cal. Filed Aug. 16, 1906. Serial No. 330,840.

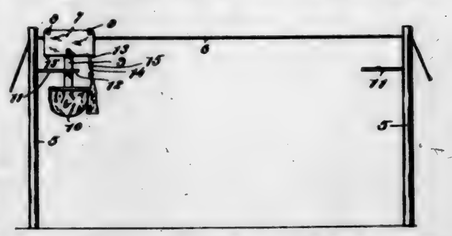

Claim.—1. In a mail catching and delivering mechanism, the combination with a track, of a traveler movable upon the track, a bag-receptacle carried by the traveler, means for detachably connecting a bag with the traveler, and a member arranged for movement with respect to the traveler for delivery of a bag into the receptacle and for operation of the attaching means to release the latter, said member being arranged for movement of the traveler therewith.

2. A mail-bag holder comprising a fixed member, jaws engaging the fixed member and having shanks, said jaws being arranged for movement to release the member when the shanks are moved toward each other, a spring engaged between the shanks to hold them yieldably against movement to release the member, levers pivoted together to the shanks and pivoted in crossed relation, a bag-receiving member pivoted to the levers at their pivot-point, and members pivoted to the ends of the levers opposite to the shanks for movement into and out of position to hold said ends of the levers against movement toward each other.

3. In a mechanism of the class described, the combination with a track, of a traveler movable on the track, stops at the ends of the track, a bracket carried by the traveler, a receptacle carried by the bracket, steadying devices located in position to receive the bracket therebetween

when the traveler is at the ends of the track to hold the latter against swinging movement, means for holding a bag to the traveler, means for disengaging the holding means, and a movable member having a resilient finger engaging the bracket for movement of the traveler with the member, said finger being arranged for movement to permit of movement of the member independently of the bracket when the traveler has reached the limit of its movement, and a nose carried by the member for movement into position to operate the releasing means when the finger is disengaged from the bracket.

4. A receiving mechanism for mail-boxes comprising a track, a traveler movable on the track, a bracket depending from the traveler, a receptacle carried by the bracket, and steadying devices located at the ends of the track and arranged to receive the bracket to hold it with the traveler against swinging movement when the traveler is at the ends of the track.

5. In a mechanism of the class described, the combination with movable portions, of means for limiting the movement of said portions, an arm movable with respect to the movable portions, a finger pivoted to the arm and engaging the movable portions, a spring arranged to hold the finger yieldably against movement with respect to the arm, and in position for movement of said portions with the arm, said finger being arranged for movement against the action of the spring to permit of independent movement of the arm when the first-named movable portions have reached the limit of their movement, a bag-holder detachably connected with the movable portion, means for releasing the bag, and a nose carried by the arm for movement to actuate the releasing means after the finger is disengaged from the movable positions.

6. In a mechanism of the class described, the combination with a track, of a traveler movable on the track, a depending member carried by the bracket, means for limiting the movement of the traveler on the track, a ring detachably connected with the traveler and adapted for the attachment of a mail-bag thereto, an arm movable with respect to the traveler, a finger pivoted to the arm and engaging the opposite side of the depending member from the ring, said finger being movable toward and away from the member upon its pivot, a spring arranged to hold the finger yieldably against the depending member, and a nose carried by the arm in position for passage through the ring when the arm is moved over the depending member.

846,391. BASS-DRUM AND CYMBAL BEATER. HARRY A. BOWER, Boston, Mass. Filed Oct. 22, 1906. Serial No. 339,895.

Claim.—1. In a device of the character described, a drumstick, and an actuator therefor comprising a curved spring having one end stationary and the other end connected to the stick, said spring being adapted to be engaged between its ends to effect the actuation of the stick thereby.

2. In a device of the character described, a base, a drumstick pivotally connected to the base, and a curved spring having one end connected to the base and the other end connected to the stick, whereby pressure upon the spring effects the actuation of the stick.

3. In a device of the character described, a base, a drumstick pivotally connected to the base, a curved spring having one end connected to the base and the other end connected to the stick, and a foot-piece secured to the curved face of the spring between its ends.

4. In a device of the character described, a base having a transverse pivot-pin, a curved spring pivoted upon said pivot-pin, a drumstick, means for pivotally connecting said stick to said base, and means for flexibly connecting the free end of said spring to said stick.

5. In a device of the character described, a base, a drumstick pivotally connected to the base, a curved spring having one end connected to the base and the other end connected to the stick for actuating the stick, and a stop for limiting the movement of the spring.

6. In a device of the character described, a base adapted to rest upon the floor and having clamp members at one end for engagement with a drum and an abutment or rest at the other end for the heel of the drummer's foot, a curved spring connected to the base and extending toward the clamp members, a foot-plate attached to the convex face of said spring, and a drumstick pivotally connected to the base at a point adjacent the clamp members and connected to said spring.

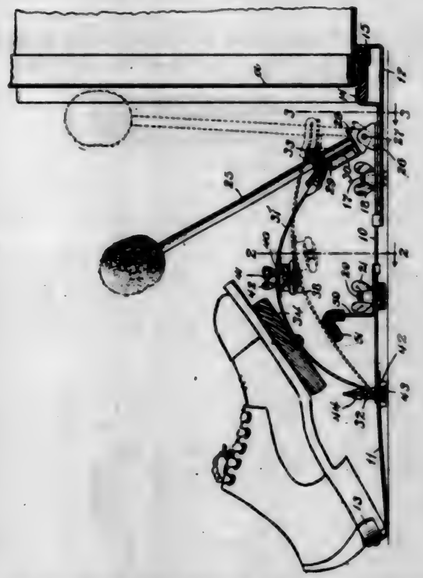

7. In a device of the character described, the combination with a cymbal, of means for sounding the cymbal, comprising a curved spring, one or more strikers extending laterally from said spring and adapted to impinge upon the cymbal, and means for yieldingly mounting said striker or strikers on said spring.

8. In a device of the character described, a curved spring secured at one end and having its other end free, means for guiding the free end of the spring, and one or more cymbal-strikers projecting laterally from said spring between its ends.

9. In a device of the character described, a base, an actuator connected to said base, a pivot connected to the actuator, and a plurality of diverging cymbal-strikers mounted upon said pivot, and means for yieldingly holding said strikers in operative position.

10. In a device of the character described, the combination with a base, and an actuator connected thereto, of a bracket on the actuator having a yoke, one or more strikers pivoted on said yoke, and an elastic band around said yoke and the inner ends of said strikers substantially as set forth.

11. In a device of the character described, a base, a drumstick pivoted to said base, a curved spring connected to said base and said stick for actuating the latter, a lateral extension of said base for supporting a cymbal, and one or more strikers on said spring for engaging the cymbal.

12. In a device of the character described, a base, a drumstick pivoted to said base, a lateral extension of said base upon which a cymbal may be supported, means on said base by which it may be connected to a drum, a curved spring loosely connected to the base and to the drumstick, one or more cymbal-strikers on the said spring, and a heel-rest on the base in such relation to the spring that the said spring may be depressed by the foot of the drummer when his heel is against said rest.

846,392. TANK-CAR. THOMAS R. BROWN, New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Dec. 1, 1906. Serial No. 345,855.

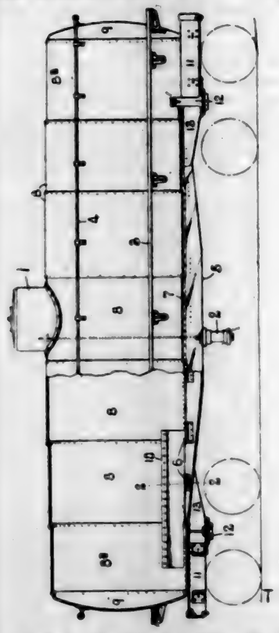

Claim.—1. A tank-car without outside sills in which a trough-shaped longitudinal sill is riveted to the tank said sill forming the sole supporting frame member for the tank; substantially as described.

2. In a tank-car without outside sills, a trough-shaped longitudinal sill which is flanged at the top and riveted to the tank said sill forming the sole supporting frame member for the tank; substantially as described.

3. In a tank-car without outside sills, a longitudinal sill or sills provided with vertical webs which are connected to the lower edges of circumferential tank-sheets; substantially as described.

4. In a tank-car without outside sills, a tank comprising circumferential sheets, the lower edges of which are spaced apart and connected to the vertical webs of a longitudinal sill or sills; substantially as described.

5. A tank-car in which body-bolsters are connected only by a longitudinal sill which forms a part of the tank said sill forming the sole supporting frame member for the tank; substantially as described.

6. A tank-car without outside sills in which the lower edges of circumferential tank-sheets are spaced apart and riveted to a longitudinal sill; substantially as described.

7. A tank-car without outside sills in which the lower edges of circumferential tank-sheets are spaced apart and riveted to a trough-shaped longitudinal sill; substantially as described.

8. A tank-car without outside sills in which a longitudinal sill is riveted to the lower edges of circumferential tank-sheets; substantially as described.

9. In a tank-car without outside sills, a longitudinal sill or sills provided with vertical webs and top flanges which are connected to the lower edges of circumferential tank-sheets; substantially as described.

10. In a tank-car without outside sills, a longitudinal sill or sills provided with vertical webs which are connected at the top and bottom, said sill or sills being secured to the lower edges of circumferential tank-sheets; substantially as described.

11. In a tank-car without outside sills, a longitudinal sill provided with vertical webs which are connected at the bottom by an integral sheet and connected at the top by interposed spacing members; substantially as described.

12. In a railway-car without outside sills, body-bolsters connected by a trough-shaped longitudinal sill which is flanged at its upper edges; substantially as described.

13. In a railway-car without outside sills, body-bolsters connected by a trough-shaped longitudinal sill which is deepest at its middle portion and provided with flanges at its upper edge; substantially as described.

14. A railway-car without outside sills in which the buffing and pulling stresses are transmitted to a trough-shaped longitudinal sill which is flanged at its upper edges; substantially as described.

15. A tank-car in which the tank is reinforced adjacent the draft members and body-bolsters by internal tank-braces which terminate short of the center of the car; substantially as described.

16. In a tank-car, the combination with a tank, of draft members, body-bolsters connected by a longitudinal sill which terminates at the bolster-points, and internal tank-braces which terminate short of the center of the car, said braces being secured to the tank adjacent said draft members and body-bolsters; substantially as described.

17. In a tank-car, the combination with a tank, of body-bolsters provided with extensions which are arranged longitudinally the tank and secured to the under side thereof, a longitudinal sill or sills connecting said body-bolsters and interiorly-arranged braces connected to the ends of said longitudinal sill; substantially as described.

18. A tank having an outwardly-projecting stiffening member and inwardly-extending braces, said braces being arranged only at the ends of the stiffening member.

19. A tank-car having a trough-shaped supporting member whose vertical side walls extend up into the tank.

20. A tank-car having a trough-shaped supporting member whose vertical side walls extend up into the tank, and whose upper edges are reinforced.

21. A tank-car having a trough-shaped supporting member whose vertical side walls extend up into the tank where they are connected.

22. A tank-car having a trough-shaped supporting member whose vertical side walls extend down below said trough-shaped member.

23. A tank-car having a trough-shaped supporting member whose vertical side walls extend down below said trough-shaped member and whose lower edges are reinforced.

846,393. NAIL AND RIVET MACHINE. JOHN BUCKLEY, Waterbury, Conn. Filed Jan. 21, 1905. Serial No. 242,077.

Claim.—1. A metal-working machine, comprising a main shaft, a head connected therewith, a metal-working die, and means connected with said die for engaging said head and transmitting motion therefrom to the die; said means comprising a slide upon which said die is mounted, and provided with a circular opening, an arm having a cylindrical portion fitting in said opening and provided with a projection having a depression, a cam-surface on the head, having a shape corresponding to the depression in the arm and adapted to engage therewith to swing the arm upon the axis of the cylindrical portion as a center, said arm being provided with a pin and a stationary element having a guide-slot for said pin.

2. In a metal-working machine, the combination with the shaft, of a head operated thereby, a die-carrying slide, a second slide connected with the head and provided with a cam for operating the die-carrying slide, and means for adjusting said second slide toward and from the head, thereby to vary the movement of the die-carrying slide.

3. A metal-working machine comprising a rotatable

cam, a die and means connected with said die for engaging said cam and transmitting motion therefrom to the die and for disengaging the die from the cam; said means comprising a bodily-movable roller, a head for supporting the roller, and a spring adapted to engage said head and hold the roller in elevated position out of contact with said cam.

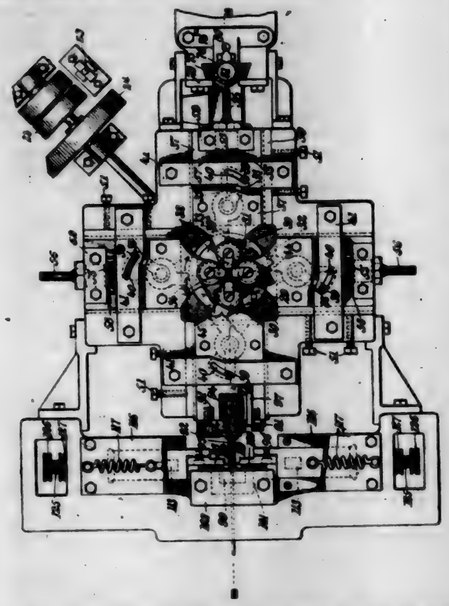

4. A metal-working machine comprising a rotatable cam, a die, means connected with said die for engaging said cam and transmitting motion therefrom to the die; said means comprising a bodily-movable roller and means for disengaging the roller from the cam, said disengaging means comprising a movable element connected with said roller and adapted to move the latter out of engagement with the cam.

5. A metal-working machine, comprising a cam, a die, a head, a roller for engaging the cam supported by the head and connected with the die, said head being movable whereby to disengage the roller from the cam.

6. A metal-working machine, comprising a rotatable head having an internal cam and an external cam, a die, means for transmitting motion to the die in one direction from the external cam, means for transmitting motion to the die in the other direction from the internal cam, said first-mentioned means comprising a toggle, and said last-mentioned means comprising a roller, said toggle and roller being connected with the die, and means for disengaging the roller from the internal cam, while the toggles remain in connection with the external cam.

7. A metal-working machine, comprising a main shaft, a head mounted thereon and provided with an external cam and an internal cam, a die, means connected with said die and adapted to be engaged by said external cam for moving the die, a frame connected with the die, a spindle reciprocatingly mounted in said frame and provided with means for limiting the extent of its motion, a knob mounted upon one end of said spindle, a spring mounted upon said knob and adapted to engage with said frame to hold the knob in elevated position, and a roller rotatably mounted upon one end of the spindle and adapted to engage with the internal cam.

8. A metal-working machine, comprising a main shaft, a head mounted thereon and provided with an external cam and an internal cam, a die, means connected with said die and adapted to be engaged by said external cam for moving the die, a frame connected with the die, a spindle reciprocatingly mounted in said frame, a knob mounted upon said spindle, a spring mounted upon said knob and adapted to engage with said frame to hold the knob in elevated position, and a roller mounted upon each spindle for engaging the internal cam.

9. A metal-working machine, comprising a main shaft, two cams connected therewith, a die, means connected with said die and adapted to be engaged by one of said cams for moving the die, a frame connected with the die, a spindle reciprocatingly mounted in said frame, means for holding said spindle in an elevated position, and a roller rotatably mounted upon the spindle and adapted to engage the other cam.

10. A metal-working machine, comprising a main shaft, a head mounted thereon and provided with two cams, a die, means connected with said die and adapted to be engaged by one of said cams for moving the die in one direction, a frame connected with the die, a roller movably connected with said frame and adapted to engage with the other cam for moving the die in the opposite direction, and resilient means for holding the roller in elevated position.

11. A metal-working machine, comprising a main shaft, a head mounted thereon and provided with an external cam and an internal cam, a die, means connected with said die and adapted to be engaged by one of said cams for moving the die, a movably-mounted roller connected with said means and adapted to engage with the other cam for moving the die in the opposite direction, and means for holding the roller in operative position and in inoperative position.

12. A metal-working machine, comprising a main shaft, a head connected therewith, an external cam and an internal cam on said head, a metal-working device, means for connecting said metal-working device with said cams, said means comprising a toggle-joint and a roller said metal-working device comprising a heading-die adapted to be reciprocated by said cams, a cutting device, means for operating said cutting device from said main shaft, a pair of dies adapted to grip a wire for holding it when said heading-die operates, and means connected with said main shaft for moving one of said last-mentioned dies in a path transverse to the path of movement of the heading-die and against the other of said pair of dies.

13. A metal-working machine, comprising a main shaft, a head connected therewith, an external cam and an internal cam on said head, a metal-working device, means for connecting said metal-working device with said cams, said means comprising a toggle-joint and a roller said metal-working device comprising a heading-die adapted to be reciprocated by said cams, a cutting device, means for operating said cutting device from said main shaft, a pair of dies adapted to grip a wire for holding it when said heading-die operates, means connected with said main shaft for moving one of said last-mentioned dies in a path transverse to the path of movement of the heading-die and against the other of said pair of dies, and means operable from the main shaft for swinging the heading-die on an axis parallel to its line of reciprocating movement.

14. A metal-working machine, comprising a main shaft, a slide, means connected with the main shaft for reciprocating said slide, a heading-die connected with said slide and reciprocable therewith, a pair of gripping-dies, means for operating said pair of dies, a shearing device comprising a pair of jaws movable in a line transverse to said heading-die, and means for forcing said jaws toward each other; said means comprising a pivoted lever connected with each die, and a cam connected with the main shaft and provided with two projections for engaging with said levers.

15. A metal-working machine, comprising a main shaft, a slide, means connected with the main shaft for reciprocating said slide, a heading-die connected with said slide and reciprocable therewith, a pair of gripping-dies, means for operating said pair of dies, a shearing device comprising a pair of jaws movable in a line transverse to said heading-die, means for forcing said jaws toward each other, means for adjusting said jaws toward and from each other, and resilient means for drawing them away from each other.

16. A metal-working machine, comprising a main shaft, a slide, means connected with the main shaft for reciprocating the slide, a heading-die mounted upon the slide, and means for moving the heading-die in a path transverse to the line of movement of the slide; said means comprising a block pivoted to the slide and carrying said die, said block being provided with a slot concentric with the axis upon which it is pivoted and said die being provided with a stud passing through said slot for limiting the motion of the block about its pivot, a cam connected with the main shaft for swinging said block in one direction about its pivot, and a spring mounted on the slide for forcing the block in the opposite direction.

17. A metal-working machine, comprising a slide, a heading-die mounted on the slide, and means for moving the heading-die in a path transverse to the path of motion of the slide, said means comprising a block pivoted to the slide and carrying said die, said block being provided with a slot and said die being provided with a stud passing through said slot for limiting the motion of the block about its pivot.

18. A metal-working machine, comprising a slide, a heading-die mounted on the slide, means for moving the heading-die in a path transverse to the path of motion of the slide, said means comprising a block pivoted to the slide and carrying said die, said block being provided with a slot and said die being provided with a stud passing through said slot for limiting the motion of the block about its pivot, a cam connected with the main shaft for swinging said block in one direction about its pivot, and a spring mounted on the slide for forcing the block in the opposite direction.

19. A metal-working machine, comprising a shaft, a slide, means connected with the shaft for reciprocating the slide, a plate pivoted by one end upon the front of the slide, a heading-die mounted upon the plate, and means for swinging the plate upon its pivotal connection, whereby to bodily move the heading-die transversely of the line of reciprocation of the slide while retaining it in parallelism therewith.

20. A metal-working machine comprising a shaft, a slide, means in connection with the shaft for reciprocating the slide, a plate pivoted by one end to the front of the slide, a heading-die mounted centrally on the plate, means for swinging the plate whereby to bodily move the heading-die transversely of the line of reciprocation of the slide while retaining it in parallelism therewith, and a spring for returning the plate to its normal position.

21. In a metal-working machine, the combination with the shaft, of a head operated thereby, a die-carrying slide, a cam having a surface for operating the slide and movable in ways on the head, and means for adjusting the cam radially with respect to the head.

22. In a metal-working machine, the combination with the shaft, of a head operated thereby, a cam having a recess in one of the sides thereof and radially movable in ways on the head, and a key in the recess for securing the cam in its adjusted position.

23. A metal-working machine, comprising a slide, a heading-die mounted upon the slide, and means for moving the heading-die in a path transverse to the line of movement of the slide, said means comprising a block pivoted to the slide and carrying said die, said block being provided with a slot, and said die being provided with a stud passing through said slot for limiting the motion of the block about its pivot.

24. A metal-working machine, comprising a slide, a heading-die mounted upon the slide, means for moving the heading-die in a path transverse to the line of movement of the slide, said means comprising a block pivoted to the slide and carrying said die, said block being provided with a slot, and said die being provided with a stud passing through said slot for limiting the motion of the block about its pivot, and means for swinging said block about its pivot.

25. A metal-working machine, comprising a slide, a heading-die connected therewith, means for moving the heading-die comprising a block pivoted to the slide and carrying the die, said block being provided with a slot and said die being provided with a stud passing through the slot, means for swinging said block in one direction about its pivot, and yielding means mounted on the slide for forcing the block in the opposite direction.

26. A feeding device comprising a pair of shafts, one of said shafts being movably mounted with respect to the other, a roller upon each of said shafts, said roller having a groove for receiving a wire, one of said rollers being composed of two disks, each of said disks having a depression extending entirely across its face, and means for angularly adjusting said disks with respect to each other about their axes, said means comprising a stud swiveled upon one of said disks, a stud swiveled upon the other disk, and a screw for connecting said studs, one of said disks being provided with a curved slot through which the stud mounted upon the other disk is adapted to pass, and one of said studs being provided with means for permitting the screw to turn therein without moving longitudinally with respect to the stud.

27. A feeding device comprising a pair of shafts, one of said shafts being movably mounted with respect to the other, a roller upon each of said shafts, said roller having a groove for receiving a wire, one of said rollers being composed of two disks, each of said disks having a depression extending entirely across its face, and means for angularly adjusting said disks with respect to each other about their axes, said means comprising a stud swiveled upon one of said disks, a stud swiveled upon the the other disk, and a screw for connecting said studs.

28. A feeding device, comprising a pair of shafts, one of said shafts being movably mounted with respect to the other, a roller upon each of said shafts said roller having a groove for receiving a wire, one of said rollers being composed of two disks, each of said disks having a depression extending entirely across the face, and means for angularly adjusting said disks with respect to each other about their axes.

29. A metal-working machine, comprising a rotating head having two cam-surfaces, a die, means for transmitting motion to the die in one direction from one cam-surface, means for transmitting motion to the die in the other direction from the other cam-surface, and means for disengaging one of said means from its cam-surface without disturbing the other.

846,394. TELEPHONE SYSTEM. CHARLES G. BURKE and EDWARD J. BURKE, Brooklyn, N. Y., assignors of one-half to John Q. A. Whittemore, Boston, Mass. Filed Oct. 14, 1905. Serial No. 282,732.

Claim.—1. In a telephone system the combination of a subscriber's station and a central station, a line annunciator, a switch, a circuit-breaker and means controlled by the subscriber and the said switch for connecting and disconnecting the annunciator to the said circuit-breaker to give different indications when a connection is desired and when the conversation is completed.

2. In a telephone system the combination of a subscriber's station and a central station, a line annunciator, a switch, a circuit-breaker for producing a pulsating current and means controlled by the subscriber and the said switch for causing the circuit-breaker to operate the annunciator when a connection is desired and for causing the said annunciator to operate when the conversation is completed.

3. In a telephone system the combination of a subscriber's station and a central station, a line annunciator, a source of current, a means for varying the said current and means controlled by the subscriber for directing the said current to the annunciator to indicate when the connection is desired and when the conversation is completed.

4. In a telephone system the combination of a subscriber's station and a central station, a line-annunciator lamp, means controlled by the subscriber and the operator for varying the light of the lamp.

5. In a telephone system the combination of a subscriber's station and a central station, a jack and a line

annunciator associated with the said subscriber's line, a circuit-breaker and a plug-switch for connecting and disconnecting the said circuit-breaker with the said annunciator and a magnet controlled by the subscriber for causing the annunciator to give one indication when the connection is desired and to give a different indication when the conversation is completed.

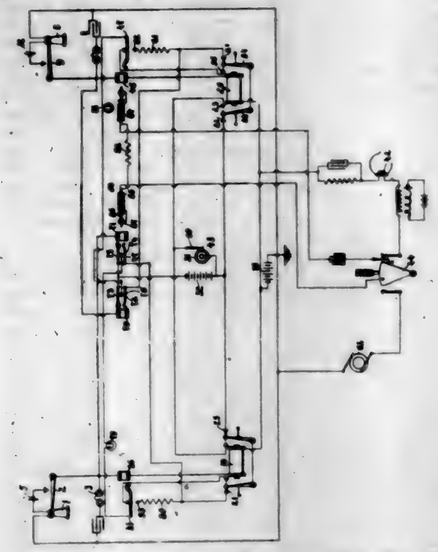

6. In a telephone system the combination of a subscriber's station and a central station, a jack and a line-annunciator lamp associated with the said subscriber's line, a circuit-breaker, and means for normally connecting the said circuit-breaker with the said lamp and means controlled by the subscriber and the operator for causing the said lamp to give one indication when the connection is desired and an indication of a different character when the conversation is completed.

7. In a telephone system the combination of a plurality of subscribers' stations and a central station, a jack and an annunciator-lamp associated with each of the said subscribers' stations, a circuit-breaker normally connected with switches located in the said jacks, plugs adapted to operate the said switches, a means controlled by each subscriber and switch for causing the associated annunciator to give one indication when the connection is desired and a different indication when the conversation is completed.

8. In a telephone system the combination of a subscriber's station and a central station, a lamp located at the central station and controlled by the subscriber, a means for causing the said lamp to give indications of different characters until the connections with another subscriber are made and the connections are broken.

9. In a telephone system the combination of a subscriber's station and a central station, an annunciator associated with the subscriber's line, plug-circuits located at the central station, means for causing the said annunciator to give an indication until the said plug-circuit is connected with the said subscriber's station and to cause a different indication until the said connection is broken.

10. In a telephone system the combination of a subscriber's station and a central station, a line-annunciator lamp, means located at the subscriber's station for controlling the said lamp and means located at the central station for controlling the said lamp, and means for causing the said lamp to produce lights of a different character when the subscriber desires to have a connection made and when the conversation is completed.

11. In a telephone system the combination of a subscriber's station and a central station, a line annunciator, means located at the subscriber's station for controlling the said lamp, means located at the central station for controlling the said lamp, and means for causing the said lamp to produce a light of one character when the means located at the subscriber's station is operated in one direction and for producing a light of another character when the means located at the subscriber's station is operated in another way.

12. In a telephone system the combination of a subscriber's station, and a central station, a line-annunciator lamp, means located at the subscriber's station and means located at the central station for controlling the said lamp, means for causing the said lamp to produce a fluctuating light when a connection is desired and for producing a steady light when the conversation is completed.

13. In a telephone central system the combination of a plurality of subscribers' stations, jacks associated with the said stations, an annunciator associated with each of the said jacks, means for causing the said annunciator to actuate in one way when the subscriber desires to be connected with another and in a second way when one subscriber thus connected to another desires to be disconnected and in a third way when the subscriber thus connected desires to be disconnected.

14. In a telephone central system the combination of a plurality of subscribers' stations, jacks associated with the said stations, an annunciator associated with each of the said jacks, means for causing the said annunciator to be actuated in one way when the subscriber desires to be connected with another and another way when either one of the subscribers desires to be disconnected and in a third way when both subscribers desire to be disconnected.

15. In a telephone central system the combination of a plurality of subscribers' stations, jacks connected to the said stations, an annunciator associated with each of the said jacks, means for causing the said annunciator to be actuated when a subscriber desires to be connected with another and to be actuated in one way when a subscriber thus connected desires to be disconnected and to be actuated in another way when the other connected subscriber desires to be disconnected.

16. In a telephone central system the combination of a plurality of subscribers' stations, jacks connected with said stations, an annunciator associated with each of the said jacks, means for causing the said annunciator to be actuated when a subscriber desires to be connected with another and to be actuated in one way when one of the connected subscribers desires to be disconnected and in another way when the other of the connected subscribers desires to be disconnected and to be actuated when both subscribers desire to be disconnected.

17. In a telephone central system the combination of a plurality of subscribers' stations, jacks connected with said stations, an annunciator associated with each of the said jacks, means for causing the said annunciator to be actuated in one way when a subscriber desires to be connected with another and to be actuated in another way when one of the connected subscribers desires to be disconnected and to be actuated in a third way when the other of the connected subscribers desires to be disconnected and in a fourth way when both subscribers desire to be disconnected.

18. In a telephone central system the combination of an annunciator, switches for controlling the said annunciator, means for causing the said annunciator to be actuated in one way when one of two connected subscribers desires to be disconnected and to be actuated in another way when the other connected subscriber desires to be disconnected.

19. In a telephone central system the combination of an annunciator, switches for controlling said annunciator, means for causing the said annunciator to be actuated in one way when either one of two subscribers desires to be disconnected and to be actuated in another way when both subscribers desire to be disconnected.

20. In a telephone central system the combination of an annunciator, switches for controlling the said annunciator, means for causing the said annunciator to be actuated in one way when one of two connected subscribers desires to be disconnected and to be actuated in another way when the other connected subscriber desires to be disconnected and to be actuated in a third way when both subscribers desire to be disconnected.

21. In a telephone central system the combination of a plurality of subscribers' stations, jacks connected with said stations, a lamp associated with each jack, means for causing the said lamp to give a light of one character when a subscriber desires to be connected with another subscriber and to give a light of another character when either subscriber desires to be disconnected.

22. In a telephone central system the combination of a plurality of subscribers' stations, jacks connected with said stations, a lamp associated with each jack, means for causing the said lamp to give a light of one character when a subscriber desires to be connected with another, to give a light of another character when one subscriber desires to be disconnected and to give a light of a third character when the other connected subscriber desires to be disconnected.

23. In a telephone central system the combination of a plurality of subscribers' stations, jacks connected with said stations, a lamp associated with each jack, means for causing the said lamp to give a light of one character when one of two connected subscribers desires to be disconnected and to give a light of another character when the other of the connected subscribers desires to be disconnected and to give a light of a third character when both of the subscribers desire to be disconnected.

24. In a telephone central system the combination of a lamp, switches for controlling the said lamp, means for causing the said lamp to be actuated when either one of the subscribers desire to be disconnected and to give a light of a different character when both subscribers desire to be disconnected.

25. In a telephone central system the combination of a lamp, switches for controlling the said lamp, means for causing the said lamp to give a light of one character when one of two connected subscribers desires to be disconnected and to give a light of another character when another of the connected subscribers desires to be disconnected.

26. In a multiple-board central system the combination of a plurality of subscribers' stations, a plurality of jacks, connected to each station, a lamp associated with each set of jacks, means for causing the said lamp to be actuated when a subscriber desires to be connected with another and to be actuated when either subscriber desires to be disconnected.

27. In a multiple-board central system the combination of a plurality of subscribers' stations, a plurality of jacks connected to each station, an annunciator associated with each set of jacks, means for causing the said annunciator to be actuated when a subscriber desires to be connected with another and to be actuated in one way when one subscriber desires to be disconnected and to be actuated in another way when the other subscriber desires to be disconnected.

28. In a telephone central system the combination of a plurality of subscribers' stations, jacks connected to the said subscribers' stations, means for connecting the said jacks together, an annunciator associated with each jack, means for causing the said annunciator to be operated in one way before its associated jack is connected to the said connecting means and in another way after it is connected with the said connecting means and in a third way after the said connecting means is connected with another jack.

846,395. GAS-MANUFACTURING APPARATUS. JACOB J. BUSENBENE, Chicago, Ill., assignor to Industrial Gas Construction Co., Chicago, Ill., a Corporation of Illinois. Filed May 26, 1906. Serial No. 318,826.

Claim.—1. The combination of a casing having alined openings at opposite ends, an injector-tube extending through the opening at the inner end of said casing and equipped with nuts clampingly engaging the inner end wall of the casing, a valve connected with said injector-tube, and extending through a lateral wall of said casing, and a nozzle connected with the outer end of the casing and communicating with the outer end of said injector-tube, said nozzle having a liquid-passage and an air-passage for the purpose set forth.

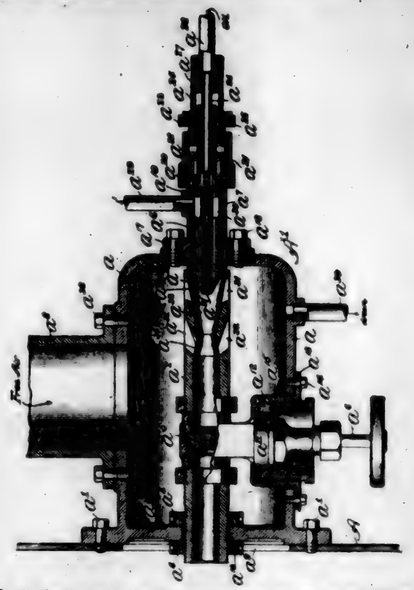

2. A device of the character set forth, comprising a casing, an injector-tube therein, and a nozzle comprising a tubular member extending through a wall of said casing, and having an orifice presented to the injector-tube, said nozzle comprising an outer tubular member provided with an external flange secured to the casing-wall, an internal tubular member forming an annular passage with the outer member, a pipe connected with said annular passage, and a pipe connected with the interior of the internal member.

3. A device of the character set forth, comprising a casing, an air-conduit connected therewith, an injector-tube within the casing equipped with a valve having a stem extending through a lateral wall of the casing, and a nozzle comprising a tubular member extending through the outer end of the casing, a laterally-extending pipe connected with said member, a tubular member having threaded connection with said first-named tubular member and having a tapering point entered in a tapering bore at the point of said first-named tubular member, an internal tubular member extending through said second-named tubular member, and a pipe in communication with the interior of said third-named member.

4. A device of the character set forth, comprising a casing, an injector-tube within said casing, and a nozzle applied to an end of said casing and communicating with said injector-tube, said nozzle comprising an outer tubular member, an intermediate member extending through the outer tubular member and having screw connection therewith, a packing-gland connected with said first-named tubular member and through which the shank of the second-named tubular member extends, and an internal tubular member extending through the second-named tubular member and adjustably connected with said packing-gland.

5. A device of the class set forth comprising a casing, an injector-tube within the casing, a valve controlling said injector-tube and having a stem projecting through a lateral wall of said casing, and a nozzle applied to an end of said casing, said nozzle comprising an outer tubular member, a pipe extending laterally therefrom and in communication with the interior of said tubular member,

an intermediate tubular member extending substantially through the outer tubular member, and forming therewith an annular passage, screw connections between said tubular members, a packing-gland encircling the shank of the second-named tubular member, and adjustably connected with the shank of the first-named tubular member, and an internal tubular member extending through the second-named tubular member and adjustably connected with said packing-gland.

6. The combination with a mixer-chamber wall having an opening, of a casing having its end secured to said wall and covering said opening, an injector-tube extending through the inner wall of said casing, a valve connected with said injector-tube, a packing-gland connected with a lateral wall of said casing and receiving said valve and a nozzle extending through the outer end wall of said casing and in communication with said injector-tube.

7. The combination of a casing, an injector-tube therein, and a nozzle comprising an external tubular member having a bore with a tapering orifice in communication with the injector-tube, an intermediate tubular member with a tapering point entered in said orifice, said second-named tubular member being adjustably connected with said first-named tubular member, and an internal tubular member extending through said second-named tubular member and into the orifice of the first-named tubular member, said third-named tubular member being adjustable with relation to said first and second named tubular members.

8. The combination of a casing, an injector-tube therein having its outer end extending to near the outer end of the casing, said injector-tube having a bore tapering inwardly from its outer end and then expanding, and having two sets of openings communicating with said bore at the tapering portions thereof, and a nozzle connected with the outer end of the casing and having liquid and air passages communicating with said injector-tube adjacent to the openings therein.

9. The combination with a mixer-chamber wall having an opening, of a casing having one end secured to said wall and covering said opening, an injector-tube extending through the inner end wall of said casing, a valve connected with said injector-tube and having an operating-stem extending through a lateral wall of said casing, an atmospheric-air-intake conduit connected with said casing, and a nozzle extending through the outer end wall of said casing and provided with a liquid-passage and an air-passage for fluids under pressure.

846,396. BEEHIVE-FRAME. JOHN T. CALVERT and FRANK G. MARBACH, Medina, Ohio, assignors to The A. I. Root Company, Medina, Ohio. Filed Mar. 5, 1906. Serial No. 304,245.

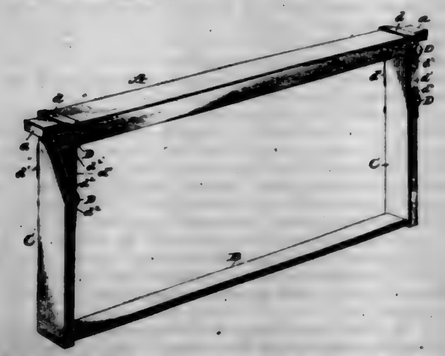

Claim.—1. A hive-frame composed of vertical and horizontal bars, and a metal band extending over the horizontal bar and along each side of the vertical bar, and carrying frame-spacing means.

2. A hive-frame comprising horizontal and vertical bars having a combined strengthening and spacing device consisting of a U-shape metal band having bosses or projections.

3. A hive-frame having horizontal and vertical bars provided with a combined strengthening and spacing device consisting of a metal band extending over the horizontal bar and along both sides of the vertical bar, and provided with similar bosses or projections on both portions which extend along the vertical bar.

4. A hive-frame comprising a top bar and vertical end bars, the top bar having a portion which projects beyond each of the end bars, and a metal band extending over the top bar near each end thereof, down along both sides of each end bar, and provided with frame-spacing means.

5. A spacing device for hive-frames, consisting of a lug or boss, stamped or struck up from a metal strip, and having a stiffening rib or ribs extending from the lug or boss, the outer surface of the rib or ribs being inclined.

846,397. RAILWAY JOURNAL-BEARING. GUILLIAM H. CLAMER and CHARLES F. HOPKINS, Philadelphia, Pa., assignors to Ajax Metal Company, a Corporation of Pennsylvania. Filed Aug. 31, 1906. Serial No. 332,785.

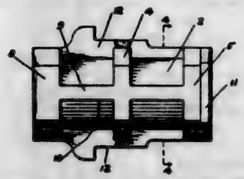

Claim.—A bearing consisting of metals whereof one is relatively weak and soft and the other is relatively strong and hard and comprising a semicylindrical portion having upon its exterior semipolygonal projections arranged at and intermediate of its ends and having a centrally-disposed projecting rib, the upper faces of said rib and projections constituting a plain semipolygonal surface in combination with a journal-box for containing the bearing and with a wedge having a semipolygonal face and interposed between the journal-box and said semipolygonal surface, substantially as described.

846,398. CORNER-BEAD. JEROME M. COLEMAN, Warren, Pa., assignor to The Rogers Shear Company, Warren, Pa., a Corporation of Delaware. Filed Mar. 15, 1906. Serial No. 306,225.

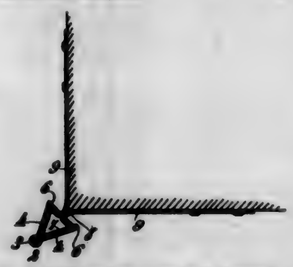

Claim.—1. A bead having a central channel, and flanges diverging from said channel, each of the flanges having inturned flanges along their outer edges extending toward and separated from each other.

2. A bead having a central channel, and flanges diverging from said channel, each of the flanges having inturned flanges along their outer edges extending toward and separated from each other combined with a resilient clip having a triangular head and arms, the head being adapted to longitudinally adjustably fit the space bounded by the several flanges, and the arms being adapted to extend through the space between the inturned flanges.

3. A bead for the purpose described having a body, and a channel extending along the body, the outer portions of the sides of the body being extended toward and separated from each other to provide a mouth.

4. A bead for the purpose described comprising a substantially tubular body having a mouth along one side and a channel along the other side combined with a clip having a head to travel solely in said tubular body, said clip having arms extending from the head thereof and through said mouth.

846,399. TILTING GATE. EDWIN C. COMPHER, Leesburg, Va. Filed Aug. 10, 1906. Serial No. 329,982.

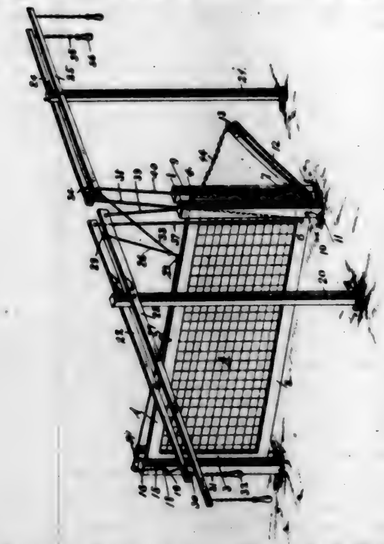

Claim.—A tilting gate, consisting of two hinge-posts 8 and 9, situated on one side of a roadway; two latch-posts 16 and 17, situated on the other side of the roadway; a rod 18, passing through said latch-posts; a gate-panel, having in its lower right-hand corner a perforation 5, and to the left and on a horizontal line with said perforation, a perforation 6, and to the right of said perforation 5, and above the same, another perforation 7, said gate-panel hinged between said hinge-posts by a bolt 11; a U-shaped weight, its lower end pivoted on said bolt 11, its free end movably secured to the upper right-hand corner of said gate-panel by a cable 12; lever-posts 20, and 21, secured, one on each side of the roadway and on a line with said hinge-posts 8 and 9; levers 22 and 23, secured, one on each side of said lever-post 20, and levers 24 and 25, one secured on each side of lever-post 21; cable 37, its upper end secured to the fulcrum end of lever 22, its lower end to the lower right-hand corner of the gate-panel and to the left of the perforation 5; a cable 38, its upper end secured to the fulcrum end of lever 24, its lower end secured to the lower right-hand corner of the gate-panel and to the left of said perforation 5; cables 39 and 40, their upper ends secured to levers 23 and 25, respectively, their lower ends to said gate-panel to the right of said perforation 5, and a little above the same; a spring-latch secured to the free end of said gate and adapted to catch under the bolt 18, cord 26, secured to the free end of said latch, passing thence along the upper edge of said gate, thence through eye 29, in lever 22, and cord 33, one end secured to said cord 26, its other end passing through eye 34, of lever 24, thence along said lever to its free end, thence through an eye and terminates in a handhold, substantially as shown and described, and for the purposes set forth.

846,400. CLAMP FOR GROUND-WIRE ELECTRICAL CONNECTIONS. WARREN R. COX, Cleveland, Ohio, assignor to George R. Blackburn, Cleveland, Ohio. Filed Feb. 19, 1906. Serial No. 301,802.

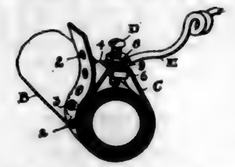

Claim.—1. A clamp for ground-wire electrical connections having a series of holes in one end and a flat portion near its other end having a perforation through the same and a catch on the extremity of the said end adapted to make engagement with said holes in the opposite end, and a tightening-screw through said flat portion engaging a nut on the under side of the strap.

2. A clamp for ground-wire connections having one end bent to approximately V shape with a flat portion between the sides of said bend and a screw through said flat portion and a nut on said screw, and a series of holes in one end of said clamp and a catch on the extremity of the other end adapted to engage in one or another of said holes, and a wire-engaging nut on said screw over said clamp.

846,401. UNDERWEAR. CHARLES R. DE BEVOISE, Newark, N. J. Filed Mar. 1, 1906. Serial No. 303,658.

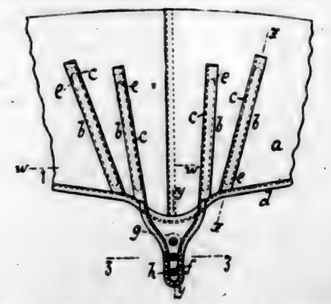

Claim.—A strip of material having a transverse end fold and further doubled longitudinally thereby doubling the transverse end fold upon itself, said strip when folded constituting a pocket, combined with a garment to which the longitudinal edges of the strip are secured thereby forming a closed pocket and freely connecting the pocket to the garment, and a binding on the garment adapted to close that end of the pocket opposite to that end in which is formed the transverse fold and said transverse fold forming a closure or closed portion at its respective end of the pocket.

846,402. CONVEYER. JOHN F. DOEHLE, Plainfield, N. J. Filed Dec. 22, 1905. Serial No. 292,912.

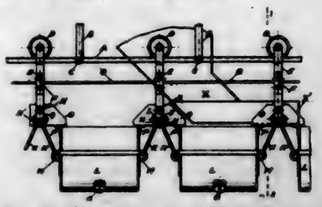

Claim.—1. In a conveyer, a rigid track, supports arranged to suspend and hold the track, a series of trolleys

connected together and arranged to run upon the track, a series of buckets and links connecting adjacent buckets, said links being connected to the trolleys.

2. In a conveyer, a rigid track, a stationary cable, rods connecting the track to the cable, a series of trolleys connected together and arranged to run upon the track, each of said trolleys comprising a pair of wheels with one wheel on either side of the rods, a series of buckets, links connecting adjacent buckets, said links being connected to the trolleys.

3. In a conveyer, a rigid track having vertical and horizontal curves, supports arranged to hold and suspend the track, a series of trolleys arranged to run upon the track, a haulage-cable to which said trolleys are connected, a series of buckets, and links connecting each bucket to two of said trolleys.

4. In a conveyer, the combination of a series of connected buckets, a rigid track, supports arranged to suspend and to hold the track, trolleys arranged to run on the track, each of said trolleys comprising a pair of wheels, one of said wheels on either side of the track-supports, and links arranged to flexibly connect the buckets together and to flexibly connect each of said buckets to two of said trolleys.

5. In a conveyer, a suspended rigid track therefor, rods arranged to support the track, trolleys arranged to run on the track, each of said trolleys comprising a pair of wheels with one wheel on either side of the rods, brackets on either side of the track, said brackets arranged to support the wheels, a series of buckets and intermediate connections between the brackets and the buckets arranged to flexibly connect each of the buckets to two of the brackets.

6. In a conveyer, the combination of a series of hanging buckets, a rigid track having horizontal and vertical curves and links flexibly connecting the buckets together and to the track.

7. In a conveyer, a track therefor, a plurality of trolleys arranged to run on said track connections between the trolleys and a plurality of buckets flexibly connected to the trolleys and also to each other.

8. In a conveyer, a track therefor, a plurality of trolleys arranged to run on said track, a plurality of buckets and links connecting the buckets to the trolleys and to each other.

9. In a conveyer, a rigid track therefor, a plurality of trolleys arranged to run on said track, a haulage-cable, said trolleys being rigidly connected to the cable, and a plurality of buckets flexibly connected to the trolleys and also to each other.

10. In a conveyer, a suspended rigid track therefor, a plurality of trolleys arranged to run on said track, a plurality of buckets, links arranged to connect the buckets to the trolleys and to each other, and a haulage-cable connected to the trolleys.

11. In a conveyer, a suspended rigid track therefor, a plurality of trolleys arranged to run on said track, brackets on either side of the track, a plurality of buckets links flexibly connecting the buckets to the brackets and to each other, a haulage-cable for the trolleys, said brackets being rigidly connected to the haulage-cable.

12. In a conveyer, a suspended rigid track therefor, a plurality of trolleys arranged to run on said track, brackets on either side of the track, a plurality of buckets flexibly connected to the trolleys and to each other, a haulage-cable for the trolleys, said brackets being rigidly connected to the haulage-cable and means for positively driving said haulage-cable.

13. In a conveyer, a suspended rigid track therefor, a plurality of trolleys arranged to run on said track, brackets on either side of the track, a plurality of buckets flexibly connected to the trolleys and to each other, a haulage-cable for the trolleys, said brackets being rigidly connected to the haulage-cable, and wheels arranged to drive said haulage-cable, said wheels being provided with recesses for said brackets.

14. In a conveyer, the combination of a suspended rigid track, a plurality of trolleys arranged to run on said track, a plurality of buckets flexibly connected to the trolleys and to each other, and plates arranged to cover the space between said buckets.

15. In a conveyer, the combination of a suspended rigid track, a plurality of trolleys arranged to run thereon, wheels for said trolleys, brackets for supporting the wheels, a plurality of buckets and a universal joint between each trolley and buckets.

16. In a conveyer, the combination of a suspended rigid track, a plurality of trolleys arranged to run thereon, wheels for said trolleys, a plurality of buckets, brackets, and links arranged to connect said buckets to said trolleys and to each other and plates arranged to cover the space between the buckets, said plates being flexibly connected to the brackets.

17. In a conveyer, the combination of a suspended rigid track, a plurality of trolleys arranged to run thereon, wheels and brackets for said trolleys, a plurality of buckets, links arranged to connect said buckets to said brackets, and to each other and plates arranged to rest upon the buckets and to cover the space between the buckets, said plates being flexibly connected to the brackets and arranged to move freely in one direction but not in the opposite direction.

18. In a conveyer, the combination of a suspended rigid track, a plurality of trolleys arranged to run thereon, wheels and brackets for said trolleys, a plurality of buckets, links arranged to connect the buckets to the trolleys and to each other, plates arranged to cover the space between the buckets, said plates being connected to the brackets, a haulage-cable connected to said brackets and a chute above the path of travel of the buckets.

19. In a conveyer, the combination of a suspended rigid track, a plurality of trolleys arranged to run thereon, wheels for said trolleys, a plurality of buckets, links arranged to connect the buckets to the trolleys and to each other, plates arranged to cover the space between the buckets, said plates being connected to the buckets, a haulage-cable connected to said brackets and a chute above the path of travel of the buckets, said chute being provided with a scraping-surface.

20. In a conveyer, the combination of a suspended rigid track, a plurality of trolleys arranged to run thereon, wheels for said trolleys, a plurality of buckets, links arranged to connect the buckets to the trolleys and to each other, plates arranged to cover the space between the buckets, said plates being connected to the brackets, a haulage-cable connected to said brackets, a chute above the path of travel of the buckets, a projection upon each bucket and means opposite the chute arranged to engage with said projections and to steady the buckets while they are being filled.

21. In a conveyer, the combination of a suspended rigid track, a plurality of trolleys arranged to run thereon, wheels and brackets for said trolleys, a plurality of buckets and links arranged to connect the buckets to the trolleys and to each other, plates arranged to cover the space between the buckets, said plates being connected to the brackets, a haulage-cable connected to said brackets, a chute above the path of travel of the buckets, a projection upon each bucket and means for automatically tilting the buckets by their own movement.

22. In a conveyer, the combination of a suspended rigid track, a plurality of trolleys arranged to run thereon, wheels for said trolleys, brackets for said wheels, a plurality of buckets, links arranged to connect the buckets to the brackets and to each other, plates arranged to cover the space between the buckets, said plates being connected to the brackets, a haulage-cable, said brackets being connected to the haulage-cable at equal intervals, and a wheel for positively driving the haulage-cable.

23. In a conveyer, the combination of a suspended rigid track, a plurality of trolleys arranged to run thereon, wheels for said trolleys, brackets for said wheels, a plurality of buckets, and links arranged to connect the buckets to the trolleys and to each other, plates arranged to cover the space between the buckets, said plates being connected to the brackets, a haulage-cable connected to said brackets, a chute above the path of travel of the buckets, a projection upon each bucket, means opposite the chute arranged to engage with said projections and to steady the buckets while they are being filled, and a cam arranged to engage with said projections and to tilt the buckets by their own movement.

24. In a conveyer, the combination of a suspended rigid track, a plurality of trolleys arranged to run thereon, wheels for said trolleys, brackets for the wheels, a plurality of buckets, and links arranged to connect the buckets to the trolleys and to each other, plates arranged to cover the space between the buckets, said plates being connected to the brackets, a haulage-cable connected to said brackets, a chute above the path of travel of the buckets, a projection upon each bucket, means opposite the chute arranged to engage with said projections and to steady the buckets while they are being filled, and a cam arranged to tilt the buckets over and back again by their own movement.

25. In a conveyer, the combination of a suspended rigid track, supporting-rods therefor, a cable, said rods being attached to the track and to the cable, a plurality of trolleys arranged to run on the track, flanged wheels for said trolleys, brackets for supporting said wheels, a plurality of buckets, links arranged to connect the buckets to the brackets and to each other, a universal joint interposed between the links and the brackets, plates arranged to cover the space between the buckets, said plates being connected to the brackets and arranged to prevent the tilting of the buckets in one direction, a haulage-cable, said brackets being attached to the haulage-cable at equal intervals, a wheel arranged to drive the haulage-cable, a chute above the path of travel of the buckets, a projecting roller upon each bucket, means opposite the chute arranged to engage with said projections and to steady the buckets while they are being filled and a cam arranged to tilt the buckets over and back again by their own movement.

26. In a conveyer, the combination of a rigid track, supports for suspending and holding the track, trolleys arranged to run on the track and links connecting each bucket to two of said trolleys, said links being arranged to allow the distances between the buckets to vary.

27. In a conveyer, the combination of a series of buckets, means for connecting the buckets together, said means being arranged so that the distance between the buckets may vary, a rigid track, supports arranged to suspend and to hold the track, trolleys arranged to run on the track, each of said trolleys comprising a pair of wheels, one of said wheels on either side of the track-supports, and links arranged to flexibly connect the buckets together and to flexibly connect each of said buckets to two of said trolleys.

846,403. SINGLE-SHAFT CENTRIFUGAL MACHINE. WILLIAM L. D'OLIER, Philadelphia, Pa. Filed Dec. 7, 1904. Serial No. 235,807.

Claim.—1. In a single-shaft centrifugal drive, the combination of a hanger, a sleeve member having a gyration bearing in said hanger, a rotatable shaft extending through said sleeve member and having a bearing thereon, a bracket for supporting a motor element secured to said sleeve member, and a projection on said hanger adapted to engage said bracket to prevent its rotation.

2. In a single-shaft centrifugal drive, the combination of a hanger, a non-rotatable sleeve member extending above and having a gyration bearing in said hanger, a rotatable shaft having a bearing upon the top of said sleeve member, a bracket for supporting a motor element extending below said hanger, said bracket having an aperture to receive said sleeve member and secured thereto at the upper end thereof.

3. In a single-shaft centrifugal drive, the combination of a hanger, a sleeve member having a gyration bearing in said hanger, a rotatable shaft having a bearing upon the top of said sleeve member, a bracket for supporting a motor element secured to said sleeve member above said hanger and extending below said hanger, and a projection on said hanger adapted to engage said bracket to prevent its rotation.

4. In a single-shaft centrifugal drive, the combination of a hanger, a sleeve member having a gyration bearing in said hanger, a bracket secured to said sleeve member above said hanger and extending below said hanger, a projection on said hanger adapted to engage said bracket to prevent its rotation, a rotatable shaft extending through said sleeve member, and a bearing for said shaft on said sleeve member above said bracket.

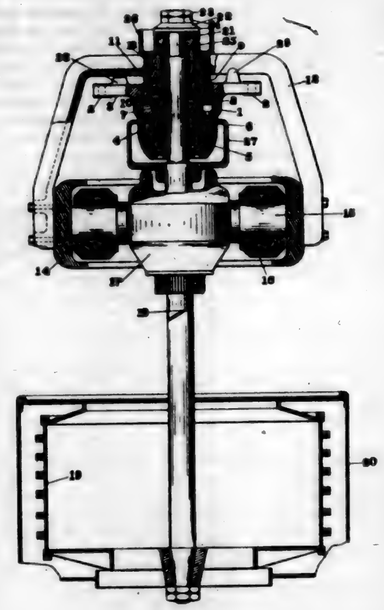

5. In a single-shaft centrifugal drive, the combination of a hanger, a sleeve member extending above and having a gyration bearing in said hanger, a bracket secured to said sleeve member above said hanger and extending below said hanger, a resilient member surrounding said sleeve member beneath said bracket and confined between said sleeve member and said hanger, and a rotatable shaft extending through said sleeve member and having a bearing thereon above said bracket.

6. In a single-shaft centrifugal drive, the combination of a hanger, a ball member having a gyration bearing in said hanger, a non-rotatable sleeve member independent of said ball member extending through said ball member and resting thereon, a rotatable shaft having a bearing upon said sleeve member, and a bracket for supporting a motor element secured to said sleeve member above said hanger and extending below said hanger.

7. In combination, a hanger, a non-rotatable sleeve member having a gyration bearing in said hanger, a rotatable shaft having a bearing upon the top of said sleeve member, an element of a driving-motor secured upon said shaft to drive the same, a complementary motor element, a bracket for supporting said complementary motor element in operative position extending from below said hanger over said hanger and operating as a unit with said sleeve member to gyrate therewith.

8. In a single-shaft centrifugal drive, the combination of a vertically-disposed hanger, a ball member having a gyration bearing in said hanger, a non-rotatable sleeve member extending loosely through said ball member and resting thereon, resilient means confined between said sleeve member and hanger and a vertical rotatable shaft having a bearing upon the end of said sleeve member.

846,404. ELECTRIC FUSE. LOUIS W. DOWNES, Providence, R. I. Filed Dec. 8, 1903. Serial No. 184,308.

Claim.—In an inclosed electric fuse, a fuse-link, a shell, a cap closing an open end thereof and having an opening therethrough, a plate secured to the cap and having an opening therethrough in alinement with the opening in the cap and a flange on said plate around the opening therein, a terminal electrically connected with the fuse-link and projecting through openings in and beyond the cap and flanged plate to constitute a fuse-terminal, said flange fitting closely about said terminal and rigidly connecting it with the cap.

846,405. CHECK ATTACHMENT TO VEHICLES. SAMUEL L. DUCKETT, Goldfield, Col., assignor of one-half to William J. Kermode, Victor, Col. Filed Mar. 17, 1906. Serial No. 306,575.

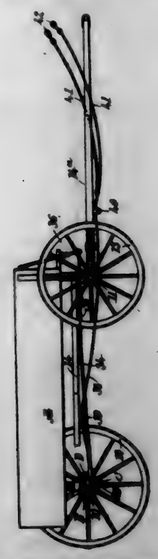

Claim.—1. In a check attachment for vehicles, a shaft, pivoted carrier-arms for the said shaft, friction-wheels carried by the shaft, elbow-levers supported on the rear axle of the vehicle and connected with the carrier-arms, means for moving the elbow-levers to raise the carrier-arms, and a strap secured at one end to the shaft, its other end being bifurcated and provided with means for attachment to the bit of a harness.

2. In a check attachment for vehicles, a shaft, pivoted carrier-arms for the said shaft supported from the rear axle of a vehicle, friction-wheels carried by said shaft, brackets secured to the forward face of the rear axle of the vehicle, elbow-levers fulcrumed in said brackets and connected with the carrier arms to move the same to bring the friction-wheels into or out of engagement with the hubs of the wheels of the vehicle, means for actuating the elbow-levers and a strap bifurcated at its forward end and provided with means for attachment to the rings of a bit, the opposite end of the strap being attached to said shaft.

3. In a vehicle, the combination with the rear axle, its supporting-wheels and bands on the supporting-wheels, of carrier-arms pivotally attached to the axle, a shaft mounted in the said carrier-arms, friction-rollers on the shaft, adapted for engagement with the bands on said wheels, elbow-levers supported on the rear axle and connected by links with said carrier-arms, a lever, connections between the said lever and the said elbow-levers to move the latter to raise and lower the carrier-arms and the shaft, a strap attached to the said shaft, bifurcated at its forward end, and fastening devices at the bifurcated end of the strap, for attachment to the harness.

4. In a vehicle, the combination with the axle thereof, wheels loosely mounted on the axle, bands on the said wheels, carrier-arms pivotally supported from the said axle, a shaft journaled in the carrier-arms, brackets secured to the forward face of the axle, elbow-levers fulcrumed on said brackets and each having a horizontal and a vertical member, link connections between the horizontal members of the elbow-levers and the carrier-arms, and friction-rollers carried by the said shaft, adapted for engagement with the bands of the said wheels, of a pulley on the said shaft, a strap secured to the said pulley, provided with means at its opposite end for attachment to a harness, an operating-lever, and connections between the said operating-lever and the said vertical members of the elbow-levers to move the elbow-levers to raise and lower the said carrier-arms.

5. In a vehicle, the combination with an axle and its supporting-wheels, bands secured on the hubs of the said wheels, carrier-arms pivotally supported beneath the axle, a shaft journaled in said carrier-arms, a pulley located between the ends of the shaft, and friction-wheels mounted on the end portions of the shaft, for engagement with the said bands on the wheels, of elbow-levers supported on the axle, link connections between the elbow-levers and the said supporting-arms, an operating-lever, link connections between the operating-lever and the elbow-lever, a strap, and guides for the said strap, one end of which strap is secured to said pulley on the said shaft, the opposite end of the strap being provided with means for attachment to the harness.

6. In a check attachment for vehicles, brackets adapted to be secured to a vehicle-axle, carrier-arms pivotally connected at their rear ends with said brackets, the said carrier-arms each consisting of a rear horizontal member and an upwardly and forwardly extending member, the said arms each having an enlarged portion at the junction of its members, a shaft mounted to turn in the enlarged portions of the carrier-arms, friction-wheels carried by said shaft, elbow-levers supported by the vehicle-axle and each having a forwardly-extending horizontal member and a downwardly-extending member, connections between the horizontal members of said elbow-levers and the front ends of said carrier-arms, means connected with the downwardly-extending members of said elbow-levers to move the same to raise and lower the carrier-arms, and a strap secured at one end to the said shaft and provided at its other end with means for attachment to a harness.

7. In a check attachment for vehicles, brackets secured to a vehicle-axle, carrier-arms pivotally connected at their rear ends with the said brackets, the said carrier-arms each consisting of a rear horizontal member and an upwardly and forwardly extending member, the said carrier-arms each having an enlarged portion at the junction of its members, a shaft mounted to turn in the enlarged portions of the carrier-arms, friction-wheels carried by said shaft, elbow-levers supported on the vehicle-axle and having horizontal and vertical members, the horizontal members being connected by links with the front ends of said carrier-arms, means connected with the vertical members of the elbow-levers to move the latter to raise and lower the front ends of said carrier-arms and carry the said friction-wheels into or out of engagement with the hubs of the wheels of the vehicle, a pulley on the said shaft, and a strap bifurcated at its forward end and provided with means for attachment to the rings of a bit, the opposite end of the strap being secured to said pulley.

846,406. INTESTINE-CLEANER. WILLIAM F. DUNCKER, Wrightsville, Pa., assignor of one-third to Jacob Ohmit and one-third to Steven Wilson, Wrightsville, Pa. Filed Nov. 6, 1905. Serial No. 286,021.

Claim.—1. The combination substantially as herein described of front and rear feed-rollers, a pair of upper and lower scrapers arranged between the front and rear feed-rollers and spaced apart, and pressing devices operating between the scrapers and comprising plates projecting across their respective scrapers and spaced apart at their adjacent ends to form a way for the casings, a pivoted support for said plates, and means whereby the support may be rocked and set the plates toward and from their respective scrapers, substantially as and for the purpose set forth.

2. The combination in a machine, substantially as described of a pair of scrapers spaced apart, and a pressing device between said scrapers and having pressing-sections connected together and corresponding to the spaced-apart scrapers and movable jointly toward and from their respective scrapers the respective pressing devices being spaced apart to form a passage for the casings, substantially as set forth.

3. The combination of a pair of scrapers and a presser pivoted between the said scrapers and having opposite pressing-sections corresponding to their respective scrapers and a support to which said pressing-sections are secured, and means whereby the support may be shifted to set the pressing-sections toward and from their respective scrapers the respective pressing devices being spaced apart to form a passage for the casings, substantially as set forth.

4. The combination of a presser having opposite pressing-sections and pivoted between the same, a scraping-section on one side of one pressing-section, and a scraping-section on the opposite side of the other pressing-section the respective pressing devices being spaced apart to form a passage for the casings, substantially as set forth.

5. The combination, of a pair of scrapers spaced apart, a pressing device pivoted between said scrapers and comprising pressing-plates projecting adjacent to their respective scrapers and spaced apart at their adjacent ends to form a passage between them for the casings, substantially as set forth.

6. The combination of the front feed-rollers, the rear feed-rollers, the upper and lower scrapers between said front and rear rollers, the presser between the upper and lower scraper and having pressing-sections opposite their respective scrapers, said pressing-sections being spaced apart at their adjacent ends for the passage of the intestines between them and means whereby the pressing-sections may be adjusted toward and from their respective scrapers.

7. The combination in a machine substantially as described of the feed-rollers, the scraping-rollers, the pressing devices extending across their respective scraping-rollers and adapted to press the intestines against the same and a water-supply pipe having discharge devices extending adjacent to their respective feed-rollers and scraping-rollers the respective pressing devices being spaced apart to form a passage for the casings, substantially as set forth.

8. In a machine for cleaning intestines a turning device for turning the intestines inside out and comprising a series of arms secured at one end and movable toward and from each other at their free ends the latter being arranged at the receiving end of the turning device, the arms being adapted to spring apart at said free ends to bind within and expand the end of an intestine, and means for compressing the arms to contract such ends to permit their insertion within such end of the intestine, substantially as set forth.

9. The combination in a machine, substantially as described, with the turning device comprising the expansible arms and means for compressing the same, of a water-delivery nozzle above the said arms and adapted to deliver water to the casing in the turning device, whereby to facilitate the turning of said casing, substantially as set forth.

10. The combination in a machine, substantially as described, of a device for turning the intestines, a feeding-roller above said turning device and adapted to deliver the intestine thereto and a guide-rod and gate in advance of said feed-roller for holding the casing while it is being applied to the turning device, substantially as set forth.

11. The combination in a machine substantially as described with a pair of scrapers having yielding blades spaced apart, of a presser between said scrapers and comprising a pivoted support and unyielding plates projecting in opposite directions therefrom and adjacent to their respective scrapers the respective pressing devices being spaced apart to form a passage for the casings, substantially as and for the purpose set forth.

12. The combination in a machine, substantially as described, of the front and rear feed-rollers, the upper and lower scrapers between said front and rear rollers, the rocking presser having pressing-sections extending adjacent to their respective scrapers, a guide I and gate J in rear of the rear feed-rollers, the carrying-roller H in rear of the guide I, the device for turning the casing and located below the carrier H and a nozzle for delivering water to the casing held by the turning device the respective pressing devices being spaced apart to form a passage for the casings, all substantially as and for the purpose set forth.

13. The combination in a machine substantially as described with a turning device having means for holding one end of the intestine, such intestine-holding means being spaced apart whereby the intestine or casing may be suspended from and dropped between them to form a pocket, of a water-delivery nozzle above the said device and adapted to deliver water into a pocket formed by the turning of the casing, whereby to form a feeder for the casing, substantially as set forth.

14. The combination with a pair of scrapers spaced apart, of a pressing device arranged between the scrapers and having pressing-plates to coöperate with their respective scrapers and having an opening between the said pressing-plates for the passage of the intestines through the pressing device in the passing thereof between the two scrapers.

846,407. MEANS FOR CIRCULATING A COOLING MEDIUM IN GAS-ACTUATED ROCK-DRILLS. OTHO C. DURYEA, Los Angeles, Cal., assignor to National Gas Drill Co., Los Angeles, Cal., a Corporation of California. Filed Dec. 11, 1905. Serial No. 291,218.

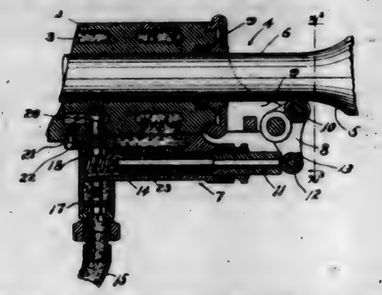

Claim.—1. In a gas-actuated rock-drill, a cylinder, a pump for circulating a cooling medium therethrough, and a piston for said cylinder provided with a taper portion for operating the pump.

2. In a gas-actuated rock-drill, the combination with a cylinder having a passage for a cooling medium, of a pump-cylinder communicating with such passage, a piston for the pump-cylinder, means for actuating the same, and a piston for the rock-drill having a slanting face for operating said actuating means.

3. In a rock-drill, a piston having a slanting face, a pump for circulating a medium for cooling the cylinder of the rock-drill, a bell-crank arranged to be operated by the slanting face and to operate the pump, and yielding means for holding the pump-piston in position for engagement with the bell-crank.

4. In a rock-drill, a piston having a slanting face, a pump for circulating a medium for cooling the cylinder of the rock-drill, a bell-crank detached from the pistons and arranged to be operated by the slanting face and to operate the pump, and yielding means for holding the pump-piston in position for engagement with the bell-crank.

846,408. VULCANIZING APPARATUS. HENRY H. FROST, London, England, assignor to Harvey Frost & Company, Limited, London, England. Filed Dec. 29, 1904. Serial No. 338,715.

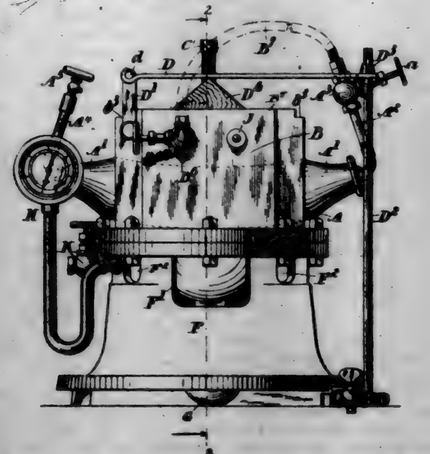

Claim.—1. In a vulcanizing apparatus, the combination of an outer mold for an article of curvilinear form, an inner rigid mandrel having a curvilinear axis and formed to make firm contact with the inner surface of the article, and means for heating the outer mold and the inner mandrel.

2. In a vulcanizing apparatus for a hollow article of curvilinear form, the combination with an outer mold having walls forming a jacket and adapted for firm contact with the article, of an inner hollow rigid mandrel having a curvilinear axis and adapted for firm contact with the inner surface of the hollow article, means for supplying a heating medium to the jacket of the outer mold, and means for supplying a heating medium to the interior of the mandrel.

3. In a vulcanizing apparatus for hollow articles of curvilinear form, the combination of a hollow rigid mandrel having a curvilinear axis and adapted for firm engagement with the inside of the article to be treated, and means for supplying heat to the interior of the mandrel.

4. In a vulcanizing apparatus the combination with a channel-mold open at both ends, of jacketed walls for the mold, a hollow valve-tube-receiving member inserted into the space between the walls, a dished base communicating with the space between the walls and heating means disposed beneath the base.

5. In an apparatus for vulcanizing tire-covers, the combination of a hollow rigid mandrel for the tire-cover, means for supplying a heating medium to the interior of the mandrel, a mold for the tire-cover and means for heating the mold.

6. In a vulcanizing apparatus the combination with a dished member constituting a steam-generator of a mold-channel open at both ends and having hollow walls communicating with the steam-generator, a flat portion at the upper end of the walls, a hollow tubular valve-tube-receiving member closed at one end and let into the hollow space between the channel-walls and heating means disposed beneath the steam-generator substantially as described.

7. In a vulcanizing apparatus the combination with a steam-generator of a mold-channel having hollow walls communicating with the generator, a hollow mandrel between which and the channel-mold the article to be treated is placed, means for conveying steam from the generator to the interior of the mandrel and means for supplying heat to the generator.

8. In a vulcanizing apparatus the combination with a steam-generator of a mold-channel having hollow walls communicating with the generator, a hollow mandrel having tapered ends and means for supplying heat to the generator.

9. In a vulcanizing apparatus the combination with a steam-generator of a mold-channel having hollow walls communicating with the generator, a hollow mandrel, tapered ends to the mandrel, a flexible conduit between the generator and the mandrel, and means for supplying heat to the generator.

10. In a vulcanizing apparatus the combination with a steam-generator of a mold-channel having hollow walls communicating with the generator, a hollow mandrel, tapered ends to the mandrel, a flexible conduit between the generator and the mandrel, a valve on the conduit and means for supplying heat to the generator.

11. In a vulcanizing apparatus the combination with a steam-generator of a mold-channel having hollow walls communicating with the generator, a hollow mandrel, tapered ends to the mandrel, a flexible conduit between the generator and the mandrel, a valve on the conduit, a blow-off cock on the mandrel and means for supplying heat to the generator.

12. In a vulcanizing apparatus the combination with a dished member constituting a steam-generator of a mold-channel open at both ends and having hollow walls communicating with the steam-generator, a flat portion at the upper end of the walls, a hollow tubular member closed at one end and let into the hollow space between the channel-walls, a second hollow member between which and the channel-mold the article to be vulcanized is placed and heating means disposed beneath the steam-generator substantially as described.

13. In a vulcanizing apparatus the combination with a dished member constituting a steam-generator, of a mold-channel open at both ends and having hollow walls communicating with the steam-generator, a flat portion at the upper end of the walls, a hollow tubular member closed at one end and let into the hollow space between the channel-walls, a second hollow member between which and the channel-mold the article to be vulcanized is placed, a flexible valve-controlled conduit between the steam-space of the generator and the second hollow member, and heating means disposed beneath the steam-generator substantially as described.

14. In a vulcanizing apparatus the combination with a dished member constituting a steam-generator, of a mold-channel open at both ends and having hollow walls communicating with the steam-generator, a flat portion at the upper end of the walls, a hollow tubular member closed at one end and let into the hollow space between the channel-walls, a hollow mandrel, tapered ends to the mandrel, a flexible valve-controlled conduit between the generator and the mandrel, a blow-off cock on the mandrel and heating means disposed beneath the steam-generator substantially as described.

15. In a vulcanizing apparatus the combination with a channel-mold open at both ends and having hollow walls of a steam-generator consisting of a dish-shaped member communicating with the hollow walls, a stand for the generator, having openings in its walls, a burner beneath the generator and supported in the stand, a flat portion at the upper end of the hollow walls, a hollow cylindrical member closed at one end and inserted in the hollow walls, a second hollow vulcanizing member, between which and the channel-mold the article to be vulcanized is placed, a flexible conduit between the steam-space of the generator and the second member, a valve on the conduit, a blow-off cock on the second member, and a clamp for pressing the article onto the vulcanizing-surface.

16. In a vulcanizing apparatus the combination with a channel-mold open at both ends and having hollow walls of a steam-generator consisting of a dish-shaped member communicating with the hollow walls, a stand for the generator having openings in its walls, a burner beneath the generator and supported in the stand, a flat portion at the upper end of the hollow walls, a hollow cylindrical member closed at one end and inserted in the hollow walls a hollow mandrel having tapering ends and constituting the second hollow vulcanizing member, between which and the channel-mold the article to be vulcanized is placed, a flexible conduit between the steam-space of the generator and the second member, a valve on the conduit, a blow-off cock on the second member, and a clamp for pressing the article onto the vulcanizing-surface.

17. In a vulcanizing apparatus, the combination of an outer mold for an article of curvilinear form, an inner rigid mandrel having a curvilinear axis and formed to make firm contact with the inner surface of the article, means for heating the outer mold and the inner mandrel, and means for independently regulating the heat of the mandrel.

18. In a vulcanizing apparatus for a hollow article of curvilinear form, the combination with an outer mold having walls forming a jacket and adapted for firm contact with the article, of an inner hollow rigid mandrel having a curvilinear axis and adapted for firm contact with the inner surface of the hollow article, means for supplying heat to the jacket of the outer mold, means for supplying heat to the interior of the mandrel, and means for independently regulating the heat of the mandrel.

846,409. COUPLING DEVICE. VINCENT DE P. GAA, Richmond, Ind., assignor to Robert W. Stimson, Richmond, Ind. Filed Dec. 3, 1906. Serial No. 346,088.

Claim.—In a coupling device, the combination of a male member secured to a vertical post and having a head with a face parallel with the post but formed on an angle horizontally, a hook integral with the male member and extending outward and upward from said face parallel with the body of the male member but at an angle with relation to its face, said hook having an outer vertical face parallel with said post, the female member comprising a body secured to a relatively horizontal rail, two arms of unequal lengths extending out from said body and spaced apart with the faces of said arms adapted to contact with

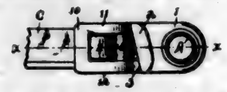

the face of the male member, a round key extending across between said arms whereby said hook may be inserted between said arms and between said key and the body of the female member to lock the members in engagement with each other.

846,410. BOX-MAKING MACHINE. FRED R. HARRIS, New York, N. Y., assignor to The American Tobacco Company, New York, N. Y., a Corporation of New Jersey. Filed July 18, 1902. Serial No. 116,034.

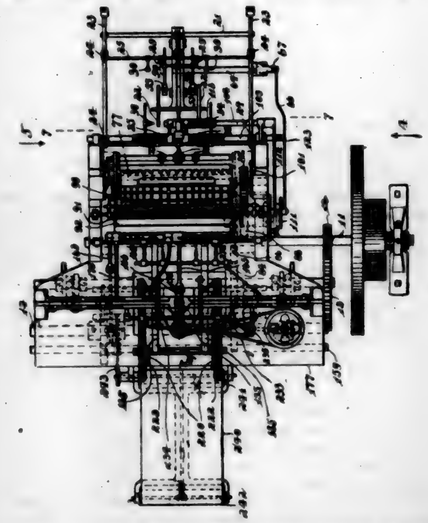

Claim.—1. The combination of feeding devices for feeding material to be pasted, a paster, a support coöperating therewith, separating means for moving one of said members away from the other, means for actuating said separating means, a detector-finger adapted to be engaged by the material as it advances to the paster, and devices controlled by the detector-finger for causing the separating means to be actuated by the actuating means, substantially as described.

2. The combination of feeding devices for feeding material to be pasted, a rotary paster, a support coöperating therewith, separating means for moving the paster away from the support without interrupting its rotation, means for actuating said separating means, a deterctor-finger adapted to be engaged by the material as it advances to the pasting-roll, and devices controlled by the detector-finger for causing the separating means to be actuated by the actuating means, substantially as described.

3. The combination of feeding devices for feeding material to be pasted, a paster, a support coöperating therewith, means for moving one of said members away from the other, a stop for preventing the operation of said means, releasing devices for withdrawing said stop to permit said means to operate, and a detector-finger for controlling the operation of said releasing devices adapted to be engaged by the material as it advances to the paster, substantially as described.

4. The combination of feeding devices for feeding material to be pasted, a rotary paster, a support coöperating therewith, means for moving one of said members away from the other, a stop for preventing the operation of said means, releasing devices for withdrawing said stop to permit said means to operate, a detector-finger for controlling the operation of said releasing devices adapted to be engaged by the material as it advances to the paster, and means for returning the parts to pasting position at will, substantially as described.

5. The combination of a blank-holder, means for advancing blanks successively from the holder, a rotary paster, a support coöperating therewith, means for moving one of said members away from the other, a stop for preventing the operation of said means, releasing devices for withdrawing said stop to permit said means to operate, a detector-finger for controlling the operation of said releasing devices adapted to be engaged by the material as it advances to the paster, and means for returning the parts to pasting position at will, substantially as described.

6. The combination of feeding devices for advancing material to be pasted, pasting mechanism, means for controlling the pasting mechanism to prevent the application of paste by the paster to other parts of the machine when no material is in position to be pasted, a stop for preventing the operation of said means, releasing devices for withdrawing said stop to permit said means to operate, and a detector-finger for controlling the operation of said releasing devices adapted to be engaged by the material as it advances to the pasting mechanism, substantially as described.

7. The combination of feeding devices for advancing material to be pasted, pasting mechanism, means for controlling the pasting mechanism to prevent the application of paste by the paster to other parts of the machine when no material is in position to be pasted, a stop for preventing the operation of said means, a movable member, connecting devices for connecting said member with said stop, and a detector-finger for controlling said connecting devices adapted to be engaged by the material as it advances to the pasting mechanism, substantially as described.

8. The combination of feeding devices for advancing material to be pasted, pasting mechanism, means for controlling the pasting mechanism to prevent the application of paste by the paster to other parts of the machine when no material is in position to be pasted, a stop for preventing the operation of said means, an intermittently-reciprocating member, connecting devices for connecting said member with said stop, and a detector-finger for controlling said connecting devices adapted to be engaged by the material as it advances to the pasting mechanism, substantially as described.

9. The combination of feeding devices for advancing the material to be pasted, pasting mechanism, means for controlling the pasting mechanism to prevent the application of paste by the paster to other parts of the machine when no material is in position to be pasted, a stop for preventing the operation of said means, a detector-finger adapted to be engaged by the material as it advances to the pasting mechanism, an intermittently-reciprocating member, a part connected with the stop, and a part controlled by the detector-finger and arranged to be projected between said member and said part when no material is being advanced to the pasting mechanism, substantially as described.

10. The combination of the rock-shaft 109, means for intermittently rocking said shaft, finger 115 fast on said shaft, stop-arm 108 loosely mounted on said shaft, finger 114 carried by the stop-arm 108 and projecting in proximity to the finger 115, detector-finger 117, lever 119 connected with the detector-finger 117 and having a lug 121 adapted to be projected between the fingers 114 and 115, substantially as described.

11. The combination of an intermittently-reciprocating member, a stop-arm having a part projecting in proximity to said member, a detector-finger 117, a lever 119 having a slotted pivotal connection with its support and with the detector-finger 117 and having a part adapted to be projected between the reciprocating member and the part carried by the stop-arm, substantially as described.

12. The combination of means for advancing blanks successively to be pasted, pasting mechanism, means for controlling the pasting mechanism to prevent the application of paste by the paster to other parts of the machine when no blank is in position to be pasted, a stop for preventing the operation of said means, a member moving in time with the feeding of the blanks, connecting devices for connecting said member with said stop, and a detector-finger for controlling said connecting devices adapted to be engaged by the blanks as they are advanced to the pasting mechanism, substantially as described.

13. The combination of means for advancing blanks successively to be pasted, a rotary paster, a support coöperating therewith, means for moving one of said members away from the other, a stop for preventing the operation of said means, releasing devices for withdrawing said stop to permit said means to operate, said releasing devices including a member moving in time with the feeding of the blanks, and a detector-finger for controlling the operation of said releasing devices adapted to be engaged by the blanks as they are advanced to the paster, substantially as described.

14. The combination of means for advancing blanks successively to be pasted, a rotary paster, a support coöperating therewith, means for moving one of said members away from the other, devices for controlling the operation of said means including a member moving in time with the feeding of the blanks, and a detector-finger for controlling the operation of said devices adapted to be engaged by the blanks as they advance to the paster, substantially as described.

15. The combination of a rotary paster, a support coöperating therewith, rotary journal-blocks 100 in which the shaft of the paster is eccentrically journaled, means for rotating said journal-blocks to move the paster away from the support, and means controlled by the material to be pasted for preventing the operation of said means for moving the paster, substantially as described.

16. The combination of means for advancing material to be pasted, a pasting-cylinder, securing means for attaching to the surface of the cylinder pasting-surfaces of different sizes and in different positions, a support coöperating with the pasting-surfaces, a vibrating transfer-roll for applying paste to the pasting-surfaces, and means for vibrating the transfer-roll adjustable for varying the time of vibration of said roll and for holding it in the paste-applying position for a longer or shorter period, substantially as described.

17. The combination of means for advancing material to be pasted, a pasting-cylinder adapted to carry pasting-surfaces of different sizes, a vibrating transfer-roll for applying paste to the pasting-surfaces, and means for vibrating the transfer-roll adjustable for holding it in the paste-applying position for a longer or shorter period, substantially as described.

18. The combination of means for advancing separate blanks successively to be pasted, a rotary paster, a series of supporting-rolls on which the blanks pass the paster, feeding-rolls coöperating with one or more of the supporting-rolls, folding devices, and feeding devices including a pair of feeding-rolls beyond the supporting-rolls for advancing the blanks to the folding devices at an accelerated speed, substantially as described.

19. The combination of means for advancing separate blanks successively to be pasted, pasting devices, folding devices, and feeding devices for advancing the blanks from the pasting devices to the folding devices at a speed greater than the speed at which they are advanced to and past the pasting devices, substantially as described.

20. The combination of a holder for blanks, pasting devices, means for advancing the blanks successively from the holder to the pasting devices, folding devices, and feeding devices for advancing the blanks from the pasting devices to the folding devices at a speed greater than the speed at which they are advanced from the holder to the pasting devices, substantially as described.

21. The combination of a holder for blanks, means for advancing the blanks successively from the holder, folding devices, and feeding devices for advancing the blanks to the folding devices with a speed greater than the speed at which they are advanced from the holder, substantially as described.

22. The combination of means for advancing separate blanks successively to be pasted, pasting devices, folding devices, rolls for advancing the pasted blanks at a speed greater than the speed at which they are advanced to the pasting devices, and feeding-tapes moving at such accelerated speed for carrying the blanks from the feeding-rolls to the folding devices, substantially as described.

23. The combination of blank-folding devices, feeding devices for advancing the blanks to the folding devices, a stop for limiting the movement of the blanks, a pusher lying normally out of the path of the blanks, and means for moving said pusher transversely of and in the direction of movement of the blanks for engaging the rearward edge of the blanks to force them against the stop, substantially as described.

24. The combination of blank-folding devices, feeding-tapes for advancing the blanks to the folding devices, a stop for limiting the movement of the blanks, a pusher lying normally out of the path of the blanks, and means for moving said pusher transversely of and in the direction of movement of the blanks for engaging the rearward edge of the blanks to force them against the stop, substantially described.

25. The combination of blank-folding devices, feeding devices for advancing the blanks to the folding devices, a stop for limiting the movement of the blanks, and a swinging pusher for engaging the rearward edge of the blanks to force them against the stop, substantially as described.

26. The combination of blank-folding devices, feeding devices for advancing the blanks to the folding devices, a stop for limiting the movement of the blanks, a swinging pusher for engaging the rearward edge of the blanks to force them against the stop, and means for adjusting the stop and pusher for different-sized blanks, substantially as described.

27. The combination of blank-folding devices, feeding devices for advancing the blanks to the folding devices, a stop for limiting the movement of the blanks, and a swinging pusher mounted on a horizontal shaft above the path of the blanks for engaging the rearward edge of the blanks to force them against the stop, substantially as described.

28. The combination of blank-folding devices, stops for engaging adjacent edges of the blank to determine its position with relation to the folding devices, and pushers for engaging the opposite edges of the blank, one of said pushers being pivotally mounted on a horizontal shaft located in a plane above the plane in which the blanks are positioned with relation to the folding devices to permit the blank to be fed to the folding devices beneath said pusher, substantially as described.

29. The combination of blank-folding devices, stops for engaging adjacent edges of the blank to determine its position with relation to the folding devices, a reciprocating pusher for engaging the edge of the blank opposite to the edge engaged by one of the stops, and a swinging pusher for engaging the edge of the blank opposite to the edge engaged by the other of the stops, substantially as described.

30. The combination of blank-folding devices, feeding devices for advancing the blanks to the folding devices, a stop for limiting the movement of the blanks, and positioning devices for positioning the blanks transversely of the direction of their movement to the folding devices, substantially as described.

31. The combination of blank-folding devices, feeding devices for advancing the blanks to the folding devices, and a reciprocating pusher for positioning the blanks transversely of the direction of their movement to the folding devices, substantially as described.

32. The combination of blank-folding devices, feeding devices for advancing the blanks to the folding devices, means for determining the position of the blanks longitudinally of the direction of their feeding movement, and a stop and a reciprocating pusher for engaging opposite edges of the blanks to position them transversely of the direction of their movement to the folding devices, substantially as described.

33. The combination of blank-folding devices, feeding devices for advancing the blanks to the folding devices, a stop for limiting the movement of the blanks, a pusher for engaging the rear end of the blanks held normally out of the path of the blanks, and a stop and a reciprocating pusher for engaging opposite edges of the blanks to position the blanks transversely of the direction of their movement to the folding devices, substantially as described.

34. In a box-making machine, the combination of a reciprocating former, side and end folders between which the blank is carried by the former, a reciprocating support, and means for operating the support to deliver the formed box from between the folders after the former has been witdrawn from the box, substantially as described.

35. In a box-making machine, the combination of a reciprocating former, side and end folders between which the blank is carried by the former, a reciprocating support, and means for operating the support to clamp the bottom section of the blank to the former during the folding operation and to deliver the formed box from between the folders after the former has been retracted therefrom, substantially as described.

36. In a box-making machine, the combination of a former, side and end folders coöperating with the former to fold the blank, means for causing a separating movement between the former and the folders for retracting the former from the box, a reciprocating support for delivering the box from between the folders after the former has been retracted therefrom, substantially as described.

37. In a box-making machine, the combination of a former, side and end folders coöperating with the former to fold the blank, means for causing a separating movement between the former and the folders for retracting the former from the box, retaining-shoulders for stripping the box from the former, and means for delivering the formed box from between the folders past the retaining-shoulders, substantially as described.

38. In a box-making machine, the combination of a reciprocating former, side and end folders, retaining-shoulders for stripping the box from the former, and means for delivering the box from between said folders past the retaining-shoulders, substantially as described.

39. In a box-making machine, the combination of a reciprocating former, side and end folders between which the blank is carried by the former, retaining-shoulders for stripping the box from the former, means for clearing the box from the retaining-shoulders, and means for delivering the box from between the folders past the retaining-shoulders, substantially as described.

40. In a box-making machine, the combination of a reciprocating former, side and end folders between which the blank is carried by the former and one pair of said folders having a reciprocating movement toward and away from the former, retaining-shoulders on the reciprocating folders for stripping the box from the former, clearers adapted to project beyond said folders when the reciprocating folders are retracted, and a reciprocating support for delivering the box from between the folders, substantially as described.

41. In a box-making machine, the combination of a former, side and end folders coöperating with the former to fold the blank, means for causing a separating movement between the former and the folders for retracting the former from the box, retaining-shoulders for stripping the box from the former, and means for clearing the box from the retaining-shoulders to permit the box to be delivered from between the folders past the retaining-shoulders, substantially as described.

42. In a box-making machine, the combination of a former, side and end folders coöperating with the former to fold the blank and one pair of said folders having a reciprocating movement toward and away from the former, retaining-shoulders on the reciprocating folders for stripping the box from the former, and clearers adapted to project beyond said shoulders when the reciprocating folders are retracted, substantially as described.

43. In a box-making machine, the combination of a former, reciprocating folders coöperating with the former to fold the blank, retaining-shoulders on said folders for stripping the box from the former, and clearers adapted to project beyond said shoulders when the folders are retracted, substantially as described.

44. In a box-making machine, the combination of a former, reciprocating folders coöperating with the former to fold the blank, retaining-shoulders on said folders for stripping the box from the former, and stationary clearers extending through openings in the folders to project beyond said shoulders when the folders are retracted, substantially as described.

45. In a machine for making boxes from blanks having bottom sections *a*, side sections *c*, end sections *b* and stay-flaps *d* extending from the ends of the side sections, the combination of a former, side-folders for folding the side sections of the blank against the former, reciprocating end-folders for folding the end sections of the blank against the former, and stay-flap folders adjustably mounted on the end-folders and adapted to fold the stay-flaps inside the end sections, substantially as described.

46. In a machine for making boxes from blanks having bottom section *a*, side sections *c*, end sections *b* and stay-flaps *d* extending from the ends of the side sections, the combination of a former, side-folders for folding the side sections of the blank against the former, end-folders for folding the end sections of the blank against the former, and stay-flap folders mounted on the end-folders and projecting above and inward beyond the end-folders, for folding the stay-flaps inside the end sections substantially as described.

47. In a machine for making boxes from blanks having bottom section *a*, side sections *c*, end sections *b* and stay-flaps *d* extending from the ends of the side sections, the combination of a former, side-folders for folding the side sections of the blank against the former, reciprocating end-folders for folding the end sections of the blank against the former, stay-flap folders mounted on the end-folders and adapted to fold the stay-flaps inside the end sections, and means for adjusting the stay-flap folders longitudinally of the end-folders, substantially as described.

48. In a machine for making boxes from blanks having bottom section *a*, side sections *c*, end sections *b* and stay-flaps *d* extending from the ends of the side sections, the combination of a former, side-folders for folding the side sections of the blank against the former, reciprocating end-folders for folding the end sections of the blank against the former, stay-flap folders mounted on the end-folders and adapted to fold the stay-flaps inside the end sections, and means for adjusting the stay-flap folders to project a greater or less distance inward beyond the end-folders, substantially as described.

49. In a machine for making boxes from blanks having bottom section *a*, side sections *c*, end sections *b* and stay-flaps *d* extending from the ends of the side sections, the combination of a former, side-folders for folding the side sections of the blank against the former, reciprocating end-folders for folding the end sections of the blank against the former, means for adjusting the side-folders and the end-folders for coöperating with formers of different sizes, stay-flap folders mounted on the end-folders and adapted to fold the stay-flaps inside the end sections, and means for adjusting the stay-flap folders longitudinally of the end-folders, substantially as described.

50. In a machine for making boxes from blanks having bottom section *a*, side sections *c*, end sections *b* and stay-flaps *d* extending from the ends of the side sections, the combination of a former, reciprocating side-folders for folding the side sections of the blank against the former, reciprocating end-folders for folding the end sections of the blank against the former, means for adjusting the side-folders and the end-folders for coöperating with formers of different sizes, stay-flap folders mounted on the end-folders and adapted to fold the stay-flaps inside the end sections, and means for adjusting the stay-flap folders longitudinally of the end-folders, substantially as described.

51. In a machine for making boxes from blanks having bottom section *a*, side sections *c*, end sections *b* and stay-flaps *d* extending from the ends of the side sections, the combination of a reciprocating former, side-folders for folding the side sections of the blank against the former, reciprocating end-folders for folding the end sections of the blank against the former, stay-flap folders mounted on the end-folders, and a reciprocating support actuated to clamp the bottom section of the blank against the former and to move downward with the former, substantially as described.

52. In a machine for making boxes from blanks having bottom section *a*, side sections *c*, end sections *b* and stay-flaps *d* extending from the ends of the side sections, the combination of a reciprocating former, side-folders for folding the side sections of the blank against the former, reciprocating end-folders for folding the end sections of the blank against the former, stay-flap folders mounted on the end-folders, a reciprocating support actuated to clamp the bottom section of the blank against the former and to move downward with the former, feeding devices for advancing blanks beneath the former, and positioning devices for positioning the blanks transversely of the direction of their movement to the folding devices, substantially as described.

53. In a machine for making boxes, the combination of a reciprocating former, side and end folders, a support for raising the formed box above the folders, and discharging devices independent of the folders for engaging opposite sides of the box to carry the box from the forming devices longitudinally of the engaged sides and transversely to the direction in which the box is moved by the support, substantially as described.

54. In a machine for making boxes, the combination of a reciprocating former, side and end folders, a support for raising the formed box above the side and end folders, and discharging-belts for engaging opposite sides of the box to move it from the folding devices transversely to the direction in which the box is moved by the support, substantially as described.

55. In a machine for making boxes, the combination with folding devices comprising side and end folders for folding a blank to form a box, of means for moving the formed box from between the side and end folders, a discharging-belt for engaging opposite sides of the box to move it from the folding devices transversely to the direction of such movement of the box from between the side and end folders, substantially as described.

56. In a machine for making boxes, the combination with folding devices for folding a blank to form a box, of a pair of discharging-belts, and means for moving the belts toward each other to engage opposite sides of the box to move it from the folding devices, substantially as described.

57. In a machine for making boxes, the combination of a reciprocating former, side and end folders, a support for raising the formed box above the side and end folders, discharging-belts on opposite sides of the path of the former and mounted to move toward and from each other, means for holding the belts normally retracted away from the path of the former and for moving them toward each other to engage the box to move it from the folding devices, substantially as described.

58. In a machine for forming boxes, the combination with folding devices for folding a blank to form a box, of a discharging-belt, means for moving the discharging-belt clear of the folding devices during the folding operation and for moving it into position to engage the box after the completion of the folding operation, substantially as described.

59. In a machine for making boxes, the combination with folding devices for folding a blank to form a box, of a pair of discharging-belts, swinging frames on which the belt-pulleys are mounted, and means for swinging said frames to cause the belts to approach each other to engage the box, substantially as described.

60. In a machine for making boxes, the combination with folding devices for folding a blank to form a box, of discharging-belts 200 carried by swinging frames 223, brackets by which the swinging frames are pivotally supported, adjustable toward and away from each other, means for driving the belts including an adjustable pulley 228, and means for swinging the frames to cause the belts to approach each other to engage the box, substantially as described.

61. In a machine for making boxes, the combination with folding devices for folding a blank to form a box, of discharging-belts 220 carried by swinging frames 223, adjustable brackets 222 by which the swinging frames are pivotally supported, adjustable driving-pulley 228, belt-pulleys 226 on shafts mounted in the brackets 224, and the belt-driving pulleys 221 carried by shafts journaled in the swinging frames 223 and having a universal connection with the shafts of the pulleys 226, and means for swinging the frames 223 to cause the belts to approach each other to engage the box, substantially as described.

62. In a machine for making boxes, the combination with the folding devices for folding a blank to form a box, of a pair of discharging-belts, means for moving the belts toward each other to engage the box, and a discharging-apron for receiving the boxes from the belts, substantially as described.

63. In a machine for making boxes, the combination with the reciprocating former and a reciprocating support coöperating with the former during the folding operation, of means for reciprocating said members, and adjustable connections between said means and said members for varying the amount of the movement of said members and the relative positions of said members, substantially as described.

846,411. APPARATUS FOR DUPLICATING PHONOGRAPH-RECORDS. VARIAN M. HARRIS, Chicago, Ill., assignor of one-fifth to Robert Burns, Chicago, Ill. Original application filed Apr. 11, 1904, Serial No. 202,515. Divided and this application filed Apr. 20, 1906. Serial No. 312,763.

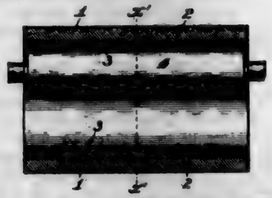

Claim.—1. In an apparatus for making duplicate phonograph-records the combination of a phonograph-mold having a longitudinal circular bore that is provided with a negative-matrix surface, and a pressure-roller of a cylindrical form having a uniform diameter along its entire length and arranged to move in an orbital path with relation to such matrix-surface and impart a positive impression to an interposed cylindrical phonograph-blank of flexible material, along the entire length of such blank and in a progressive manner, substantially as set forth.

2. In an apparatus for making duplicate phonograph-records the combination of a phonograph-mold having a longitudinal circular bore that is provided with a negative-matrix surface and a pressure-roller of a cylindrical form having a uniform diameter along its entire length and arranged longitudinally in said bore with its axis eccentric to the axis of such bore, and adapted to have a rotary movement around its axis and an orbital movement around the axis of said bore, so as to impart a positive impression to an interposed cylindrical phonograph-blank of flexible material, along the entire length of such blank and in a progressive manner, substantially as set forth.

846,412. MASSAGE APPARATUS. JOHANNES C. JOHANSEN, Copenhagen, Denmark. Filed Oct. 4, 1906. Serial No. 337,363.

Claim.—1. In massage apparatus, the combination of a part adapted to contact with the body, a plurality of rotating weights adapted to vibrate such part, and means for varying the relative positions of such weights and holding them in such position so as to regulate their vibrating effect, such means including a projection connected to one of said weights, and a part having a series of recesses connected with the other of said weights.

2. In massage apparatus, the combination of a part adapted to contact with the body, a plurality of rotating weights adapted to vibrate such part, a hollow shaft carrying one of said weights, a second shaft within such hollow shaft carrying the other of said weights, one of said shafts having a series of recesses, and the other having a projection adapted to enter said recesses, and a spring adapted to permit adjustment of said projection in the several recesses and to hold such parts in engagement.

3. In massage apparatus, the combination of a part adapted to contact with the body, a plurality of rotating weights adapted to vibrate such part, a hollow shaft *d* carrying one of said weights, a shaft *k* within the shaft *d* carrying the other of said weights, a disk *g* having a series of recesses fixed to one of said shafts, a projection *l* fixed to the other of said shafts, and a spring *m* adapted to hold such projection in such recesses.

846,413. TELEPHONE SYSTEM. ISIDOR KITSEE, Philadelphia, Pa. Filed Apr. 8, 1904. Serial No. 202,209.

Claim.—1. In a telephonic system wherein two or more outlying circuits center in one exchange, a repeater for each of said circuits, one coil thereof connected in said circuit, the second coil thereof connected with a localized circuit, an annunciator in said localized circuit, a source of current for said circuit, said circuit normally open but adapted to be closed through the armature of said repeater, a conducting-line connected with one terminal to said second coil and connected with the other terminal in multiple arc to one jack in each of the switchboards, a second annunciator, a source of current, and connecting-plug in electrical contact with said conducting-line.

2. In telephony, the circuits of two or more outlying stations centering in one exchange, each circuit provided with a repeater, one coil of said repeater connected directly to the outlying circuit, the second coil of said repeater adapted to be connected electrically to said outlying circuit through the armature of said repeater, each of said repeaters provided with means to close a second circuit independent of the cord-circuit, a second circuit, a source of current for said second circuit and an annunciator therefor, each repeater also provided with means to connect thereto one jack in each of the switchboards located in said exchange.

3. In a telephonic exchange a series of repeaters connected each with one coil to an outlying station and connected each with one coil to a series of jacks, each of said jacks located in a separate switchboard, the second of said coils adapted to be connected to the armature of said repeater of said outlying circuit when not in use and adapted to be connected when in use to a second circuit

a source of current and an annunciating device for said second circuit.

4. In a telephonic system wherein two or more outlying circuits center in one exchange, means in said exchange for each of said circuits to repeat the impulses transmitted, means to establish a circuit including the repeating means of two circuits, said means consisting of a single conductor normally connected to one of said circuits a plug connected to one of said circuits, both of said circuits adapted to be connected through the insertion of said plug in one of the jacks pertaining to one of said circuits.

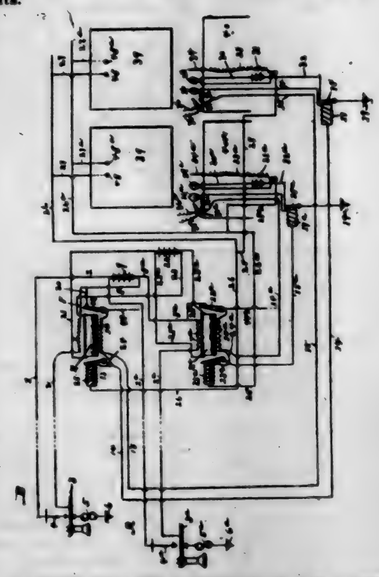

5. In combination with a telephonic circuit centering in an exchange, a source of current included in said circuit, an electromagnetic device included in said circuit, said electromagnetic device provided with two armatures, a second source of current, a circuit for said source, and an annunciator for said circuit, the terminals of said circuit adapted to be brought in electrical contact through said armatures, one of said armatures normally in contact with one of the lines of said circuit, but adapted to break said contact as soon as said electromagnetic device is energised.

6. In combination with a telephonic circuit centering in an exchange, a source of current for said circuit, a repeater for said circuit, said repeater provided with two armatures, a second circuit, and a source of current for said second circuit, said second circuit normally open but adapted to be closed through the energising of the core of said repeater, an annunciator for said second circuit, adapted to be made active through the closing of said circuit.

7. In combination with a telephonic circuit centering in an exchange, a repeater for said circuit, one coil of said repeater connected in said circuit, the second coil connected to a localised circuit, an annunciator, a source of current for said localised circuit, said localised circuit adapted to be operated through the armature of said repeater, a second annunciating device, a circuit for said device, a source of current for said circuit, a plug connected to said circuit, said annunciating device adapted to be made operative through the insertion of the plug in a second telephonic circuit.

8. In a telephonic system wherein two or more circuits center in one exchange, a repeater for each of said circuits, an annunciator means operatively related to said repeater to make active the annunciator pertaining to said circuit, a source of unidirective current including a second annunciator connected normally to one coil of said repeater and provided with means to be connected to a second circuit and means whereby the repeated impulses of one circuit are transmitted over a circuit including a coil of a repeater pertaining to a second circuit, and whereby the second annunciator is made active as long as said repeating-circuit is maintained.

9. In combination with a telephone system wherein two or more circuits center in one exchange, connecting means and repeating-coils in said exchange, said connecting means consisting of a single conductor located in the switchboard and normally connected electrically to the repeating-coil of one circuit, and a second conductor, movable, and adapted to be brought into electrical contact with said first conductor, said second conductor connected electrically to the repeating-coil of a second circuit.

10. In combination with two telephonic circuits centering in one exchange, each provided with a repeating-coil, connecting means to connect said two circuits inductively for the purpose of intercommunication, said connecting means consisting of a stationary jack located in the switchboard and a movable plug, said stationary jack consisting of one single conductor connected to a repeating-coil of one of said circuits, and the plug consisting of a single conductor normally connected to a repeating-coil of the second of said circuits designed to be connected to the said first circuit.

11. In combination with two or more telephonic circuits centering in one exchange, a repeater for each of said circuits, annunciating means in operative relation to the armature of the repeaters for each of said circuits, a generator of electricity and an electromagnet for the circuit of said annunciating means, and a third circuit including a source of current, said third circuit operatively connected to the grounded armature of said electromagnet.

12. In combination with two telephonic circuits centering in one exchange, repeating means for each of said circuits, a series of switchboards in said exchange, each of said switchboards embracing one terminal of the repeating means of each of said circuits, connecting means for each of said circuits, each of said connecting means normally in electrical connection with the repeating means of one of said circuits, in a manner so that through the electrical connection of the connecting means of one circuit with the switchboard-terminal of a second circuit, a repeating-circuit is established including the repeating means of both circuits.

13. In combination with two telephonic circuits centering in one exchange, means to connect said two circuits inductively for the purpose of communication, said means embracing a repeater for each of said circuits, one coil of each of said repeaters included in one of said circuits, the second of said coils each connected to a localised circuit and in operative relation to its subscriber-circuit through its own armature, a single conductor connected with one terminal to one of the coils of the repeaters for each of said subscriber-circuits, a series of jacks connected in multiple arc to each of said single conductors and a single-line plug adapted to be inserted in one or the other of said jacks for each of said circuits.

846,414. RECEIVING DEVICE FOR ELECTRIC TRANSMISSION. ISIDOR KITSEE, Philadelphia, Pa., assignor of one-half to William J. Latta, Philadelphia, Pa. Filed Apr. 10, 1905. Serial No. 254,768.

Claim.—1. In combination with means to receive electric impulses, a receiving device operatively connected with a source of alternating or interrupted current, in a manner so as to nullify the effect of said impulses, a source of direct current, means to nullify the effect of said direct source on said receiver, and means to disturb the nullifying effect in accordance with the incoming impulses.

2. A receiving instrument for electric transmission provided with two coils, each of said coils connected to a source of alternating or interrupted current and a source of direct current, the action of one of said coils nullifying the action of the second of said coils and means to vary the nullifying effect in accordance with the impulses received.

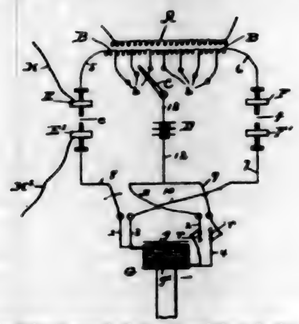

3. In electric transmission a receiving device, a source of alternating or interrupted current and a source of direct current, both normally connected to said receiving device, adjustable means to vary the flow of said currents through said receiving device in a manner so as to nullify its effect on said device, and means to receive transmitted impulses, said transmitted impulses adapted to vary said nullifying effect.

846,415. TELEGRAPHY. ISIDOR KITSEE, Philadelphia, Pa., assignor of one-half to William J. Latta, Philadelphia, Pa. Filed Feb. 26, 1906. Serial No. 302,984.

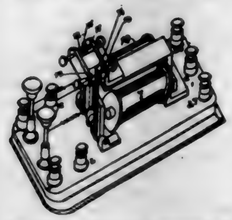

Claim.—1. In telegraphy, a transmitting device comprising the key proper, two localised circuits, each containing an electromagnet, the resistance of both these circuits differing from each other, an armature for each electromagnet, means to connect said armatures to the line and ground respectively, a source of current for the line and means to change the connection of said source as to the line and ground through the movement of the lever of the key proper.

2. In a telegraphic transmitting device, a key, two localised circuits, one of said localised circuits adapted to be opened and closed through the key-switch and the second of said localised circuits adapted to be opened and closed through the key-lever.

3. A telegraphic transmitter embracing the key proper, two localised circuits, each circuit containing an electromagnetic device, the resistance of one of said devices greater than the resistance of the second and means to close each of said circuits independently of each other; means integral with said electromagnets to connect the line and ground directly, a source of current for said line and means to connect said source with one or the other of its poles to the line and ground respectively, said means dependent on the operation of said key.

4. In a device of the class described, transmitting means, two circuits operatively related to said means, each circuit comprising an electromagnet, means at said transmitting means to make operative one or the other of said circuits, a source of current, and means operatively related to said electromagnets to connect said source with the positive or negative pole to a line of transmission.

5. A telegraphic transmitter comprising the manually-operated key proper and two electromagnets in operative relation to said key, an electric circuit for each of said electromagnets, means integral with said key to make operative one or the other of said circuits and means integral with each of said electromagnets to connect a source of current to the line of transmission with the positive or negative pole.

846,416. TELEGRAPHIC RECEIVING DEVICE. ISIDOR KITSEE, Philadelphia, Pa. Filed Sept. 6, 1906. Serial No. 333,497.

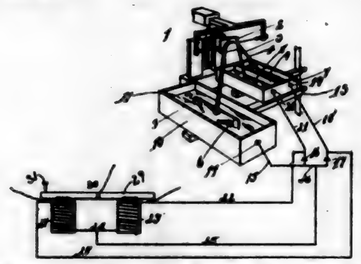

Claim.—1. In a device of the class described, means to operate a local circuit, said means comprising two conductors connected each electrically with a separate conducting liquid and connected both jointly with a second conducting liquid, a local circuit for each of said conductors and means operatively related to the device, inserted in the line, to move one or the other of the conductors in and out of the region of the second conducting liquid.

2. In combination with a telegraphic receiving device, means to operate therewith a local circuit embracing translating device, said means comprising two conductors, operatively related to the receiving device, a conducting fluid for one terminal of each of said conductors and a second conducting fluid common to the second terminal of both of said conductors, a non-conducting fluid for the second conducting fluid, a circuit for each of said conductors and a translating device for said circuits.

3. In telegraphy, a receiving device inserted in the line of transmission, two conductors for same, a separate fluid contact for one terminal of each of said conductors, a fluid contact common for the other terminal of both conductors, a local circuit for each of said conductors, said local circuit adapted to be operated through the movement of one or the other of said conductors.

4. In telegraphy, a receiving device, two conductors in operative relation to the movable part of said receiving device, two local circuits, each of said conductors in operative relation to one of said circuits through fluid conductors, a translating device common to both of said circuits, each of said circuits adapted to be operated through one of said conductors.

5. In combination with a receiving device comprising stationary magnets and a movable coil, two conductors mechanically related to said coil, a local circuit for each of said conductors, a translating device common to both of said local circuits and means to operate one or the other of said local circuits through the movement of one or the other of said conductors.

6. In combination with a receiving device two conductors related to the movable part of said receiving device, liquid contacts for each of said conductors, a local circuit for each of said conductors, a translating device common to both of said local circuits, said translating device adapted to be operated through the movement of one or the other of said conductors.

846,417. PROPULSION OF SUBMARINE VESSELS. SIMON LAKE, Bridgeport, Conn. Continuation of application filed May 28, 1901, Serial No. 62,207. Divided and this application filed Nov. 17, 1905. Serial No. 287,758.

Claim.—1. A submarine vessel comprising a hull constructed with a high center of buoyancy and low center

of gravity and provided with a series of ballast tanks or compartments and means whereby water may be admitted to and expelled from the same, a propeller-wheel mounted upon a suitable shaft and means for driving the same, a guide plane or planes fixed to the hull in a position substantially parallel with the direction of operation of said propeller-wheel, and a pivotally-mounted horizontal rudder disposed immediately in the rear of said propeller-wheel and in the direct line of action of the same and operating, when inclined, to forcibly raise or lower the stern of the vessel to incline it from its normal horizontal relation.

2. A submarine vessel comprising a hull constructed with a high center of buoyancy and low center of gravity and provided with a series of ballast tanks or compartments and means whereby water may be admitted to and expelled from the same, a conning-tower rising materially above said hull and disposed directly over its center of buoyancy, a propeller-wheel mounted upon a suitable shaft and means for driving the same, a guide plane or planes fixed to the hull in a position substantially parallel with the direction of operation of said propeller-wheel, and a pivotally-mounted horizontal rudder disposed immediately in the rear of said propeller-wheel and in the direct line of action of the same and operating, when inclined, to forcibly raise or lower the stern of the vessel to incline it from its normal horizontal relation.

3. A submarine vessel comprising a hull constructed with a body of rounded cross-section throughout with cylindrical amidship portion and upwardly-tapered end portions having their upper sides at the same level, a conning-tower rising materially above the same from the amidship portion, a closed superstructure applied to the upper side of the body portion with upright sides and substantially flat deck, flat lateral fins extending lengthwise of the vessel as substantial continuations of said flat deck to constitute guide planes for steadying the direction of travel of the vessel, a propeller-wheel mounted upon a suitable shaft with means for driving the same and disposed in a plane substantially parallel with said guide plane, and a pivotally-mounted horizontal rudder disposed immediately in the rear of said propeller-wheel and in the direct line of action of the same and operating, when inclined, to forcibly raise or lower the stern of the vessel to incline it from its normal horizontal relation.

4. A submarine vessel comprising a hull constructed with a high center of buoyancy and low center of gravity and provided with a series of ballast tanks or compartments and means whereby water may be admitted to and expelled from the same, a propeller-wheel mounted upon a suitable shaft and means for driving the same, a guide plane or planes fixed to the hull in a position substantially parallel with the direction of operation of said propeller - wheel, pivotally - mounted horizontal hydroplanes normally maintained in parallel relation with said fixed guide plane or planes and provided with means for inclining the same in reference thereto, and a pivotally-mounted horizontal rudder disposed immediately in the rear of said propeller-wheel and in the direct line of action of the same and operating, when inclined, to forcibly raise or lower the stern of the vessel to incline it from its normal horizontal relation.

846,418. FIRE-ESCAPE. KALMAN LEON and ARTHUR E. DOWELL, Washington, D. C.; said Dowell assignor to said Leon. Filed Mar. 22, 1906. Serial No. 307,486.

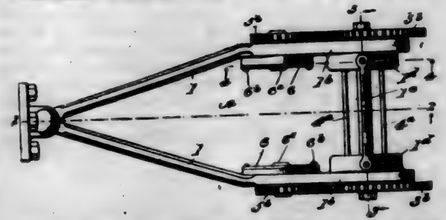

Claim.—1. In a fire-escape apparatus, the combination of a supporting-frame, provided with a circular recess and shaft-bearings, a main shaft journaled in the bearings, a plate detachably but fixedly secured to the frame and covering the recess and having a bearing for the end of a secondary shaft, a lowering device connected with said main shaft, a secondary rotatable shaft extending axially through the recess and having one end journaled in a bearing in the frame at the bottom of the recess and its other end journaled in the bearing in the plate, and centrifugally-acting frictional brakes in said recess connected to and rotatable with and by said secondary shaft, and gearing between the main and secondary shafts, substantially as described.

2. In a fire-escape apparatus, the combination of a supporting-frame, provided with opposite circular recesses, a main shaft extending across the frame and journaled in bearings in said frame adjacent the recesses, sprockets on said shaft, an endless-ladder-lowering device running over said sprockets, removable plates covering the recesses and fixedly attached to the frame, a pair of secondary rotatable shafts one in and extending axially through each recess and journaled in bearings in the frame and in the plate, and centrifugally-acting frictional brakes in said recesses on opposite sides of and rotatable with and by said secondary shafts, and gearing between the main and secondary shafts, substantially as described.

3. In a fire-escape apparatus, the combination of a branched frame having circular recesses in its arms and fixed plates covering said recesses and detachably attached to the frame, a rotatable main shaft journaled in said arms, adjacent the recesses, sprockets on said shaft, an endless ladder running over said sprockets, removable secondary rotatable shafts extending axially through said recesses and journaled in bearings in the arms and plates and provided with projections, centrifugally-acting friction-brake members in said recesses loosely engaged by said projections and thereby caused to rotate with such shafts, and gearing between the main shaft and the secondary shafts, substantially as described.

4. In combination, a branched frame having circular recesses in its arms near their outer ends, removable plates covering said recesses and fixedly attached to the frame, rotatable shafts extending axially through said recesses and journaled in the frame and plates and provided with oppositely-projecting wings or lugs within the recesses, and oppositely-disposed friction-brake members in said recesses loosely engaging said lugs; with a main shaft journaled in the arms adjacent said recesses, gearing between said shaft and the winged shafts, and a flexible lowering device connected with the main shaft, substantially as described.

5. In a fire-escape, the combination of a branched frame having circular recesses in its arms near their outer ends, means for attaching the frame to a wall, removable plates fixedly attached to the frame and covering said recesses, rotatable shafts journaled in the arms and plates and extending axially through said recesses and provided with oppositely-projecting wings or lugs within the recesses, and pinions on the outer ends of said winged shafts, and oppositely-disposed friction-brake members in said recesses loosely engaging said wings; with a main shaft extending across the frame and journaled in the arms adjacent said recesses, gears on said shaft engaging the pinions on the winged shafts, sprockets on the main shaft, and an endless sprocket-chain ladder running over said sprockets, substantially as described.

846,419. REWINDING MECHANISM FOR SELF-PLAYING PIANOS. HERMANN MEYER, New York, N. Y. Original application filed Aug. 3, 1905, Serial No. 272,499. Divided and this application filed Dec. 23, 1905. Serial No. 293,079.

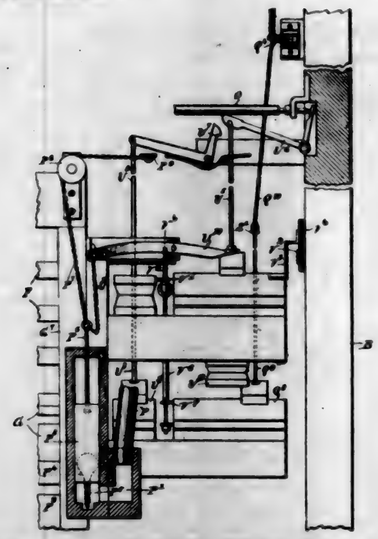

Claim.—1. A self-playing piano provided with a rewinding mechanism, a pneumatic controlling the said rewinding mechanism, a wind-chest connected with the said pneumatic, a valve for connecting and disconnecting the said pneumatic and wind-chest, a pair of pneumatics, and a mechanism connecting the pair of pneumatics with the said valve to actuate the latter on simultaneously actuating the said pair of pneumatics.

2. A self-playing piano provided with a rewinding mechanism, a pneumatic controlling the said rewinding mechanism, a wind-chest connected with the said pneumatic, a valve for connecting and disconnecting the said pneumatic and wind-chest, a pair of pneumatics, and a mechanism connecting the pair of pneumatics with the said valve to actuate the latter on simultaneously actuating the said pair of pneumatics, the said mechanism allowing individual working of either of the said pneumatics of the pair of pneumatics without affecting the said valve.

3. A self-playing piano provided with a rewinding mechanism, a pneumatic controlling the said rewinding mechanism, a wind-chest connected with the said pneumatic, a valve for connecting and disconnecting the said pneumatic and wind-chest, the said valve having a stem a pair of pneumatics, and a lever fulcrumed on the stem of the said valve and having its ends connected with the said pair of pneumatics to allow the latter to work individually, and when working simultaneously to move the lever bodily to actuate the valve.

4. A self-playing piano provided with a rewinding mechanism, a pneumatic controlling the said rewinding mechanism, a wind-chest connected with the said pneumatic, a valve for connecting and disconnecting the said pneumatic and wind-chest, the said valve having a stem a lever fulcrumed between its ends on the stem of the said valve, a spring pressing the said valve to hold it normally closed, and a pair of pneumatics loosely connected with the ends of the said lever to allow individual working of the pneumatics of the pair of pneumatics and to move the said lever bodily to open the valve on actuating the pair of pneumatics simultaneously.

5. A self-playing piano provided with a note-sheet, a tracker-board, rollers for winding up and rewinding the said note-sheet, separate gearings for driving the said rollers and provided with clutch members, a driven shaft having a clutch member for engagement with either of the said gearing clutch members, a pneumatically-controlled shifting device for shifting the said driven shaft in the direction of its length to move the shaft clutch member out of engagement with one of the gearing clutch members and into engagement with the other gearing clutch member, and a pneumatically-controlled locking device for the said shifting device, the said note-sheet having apertures controlling the tracker-board openings to the said devices.

846,420. DENTAL BRACKET. ALBERT W. MCKENNEY, Roxbury, Mass. Filed Apr. 28, 1906. Serial No. 314,182.

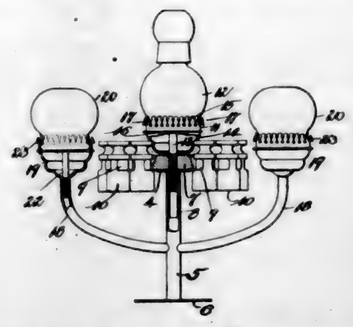

Claim.—1. In a device of the character described, a standard, a rotary cylindrical carrier journaled on said standard, a plurality of holders fast to the periphery of said carrier, said holders each adapted to receive and hold a bottle, and a socket fast to said carrier and adapted to receive and hold a lamp.

2. In a device of the character described, a standard consisting of a central stem and a plurality of side arms, a socket fast to each of said side arms, respectively, said sockets adapted to receive and hold receptacles, a carrier rotatably supported on said central stem, and means for detachably affixing bottles to said carrier.

3. In a device of the character described, a standard consisting of a hollow central stem and a plurality of side arms, a socket fast to each of said side arms, respectively, said sockets adapted to receive and hold receptacles, a cylindrical carrier having a spindle projecting downwardly therefrom into said hollow stem, whereby said carrier is rotatably supported thereon, a plurality of U-shaped spring-holders fast to the periphery of said carrier, each of said holders adapted to receive and hold a bottle, and a socket fast to said carrier and concentric therewith, said socket adapted to receive and hold a lamp.

846,421. COTTON-CLEANER AND GIN-FEEDER. MICHAEL B. NORRIS and JESSE L. NORRIS, Temple, Tex. Filed Aug. 14, 1905. Serial No. 274,131.

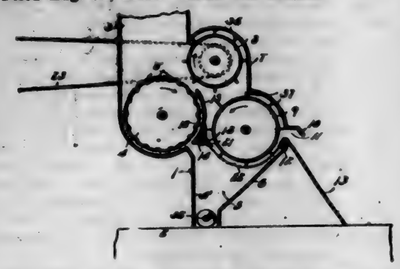

Claim.—1. In a device of the class described, a feed-flue, a grooved separating-roller journaled near the bottom of said feed-flue and incased thereby, a shield supported hingedly in front of said roller, a toothed picker-roller supported for rotation above and in advance of said corrugated roller and shield, and a cleaning-roller to which the cotton is delivered by the picker-roller.

2. In a device of the class described, a casing including a feed-flue, a corrugated separating-roller journaled near the bottom of said flue and incased thereby, a shield supported hingedly in front of said corrugated roller, a toothed picker-roller supported for rotation above and in advance of the shield and corrugated roller, and a toothed cleaning-roller supported for rotation below and in advance of the picker-roller to receive material discharged from the latter.

3. In a device of the class described, a casing including a feed-flue, a corrugated separating-roller journaled near the lower end of said flue and incased thereby, a picker-roller supported for rotation above and in advance of said corrugated roller, a cleaning-roller supported for rotation below and in advance of the picker-roller, a beam supported transversely in the casing, a shield connected hingedly with said beam between the corrugated roller and the cleaning-roller and extending in the direction of the picker-roller, a brace secured adjacent to a slot or outlet in the casing in front of the cleaner-roller, a screen connecting said brace with the transverse beam and extending beneath and concentric with the cleaner-roller, a chute beneath said screen, and a conveyer in said chute.

4. In a device of the class described, a casing including a feed-flue, a separating-roller journaled near the lower end of said flue, an angular lip overhanging a discharge-slot in the opposite side of said casing, a brace adjacent to the lower edge of said slot, a toothed cleaning-roller supported for rotation in advance of the separating-roller, a picker-roller serving to convey the cotton from the separating-roller to the feeding-roller, a beam supported transversely in the casing between the cleaning and separating rollers, a screen connected with said beam and with the brace and extending beneath the cleaning-roller, and a rock-shaft supported by the transverse beam and having teeth constituting a comb extending in the direction of the cleaning-roller.

846,422. DYNAMO-ELECTRIC MACHINE. ERNST OELSCHLIGER, Charlottenburg, Germany, assignor to Siemens-Schuckert Werke, Gesellschaft mit Beschränkter Haftung, Berlin, Germany, a Corporation of Germany. Filed Dec. 10, 1904. Serial No. 236,259.

Claim.—1. In a motor-starter, the combination of a continuous-current motor, a continuous-current starting-dynamo in series with said motor, a permanent resistance of small inductance in series with the field of said dynamo, and means for varying and reversing the current in the field of said dynamo.

2. In a motor-starter, the combination of a motor, a generator in series therewith, a fixed resistance of small inductance in series with the field of said generator, means for supplying current to said generator-field, and means for causing the tension of the current supplied to be in excess of the tension for which the generator-field is wound.

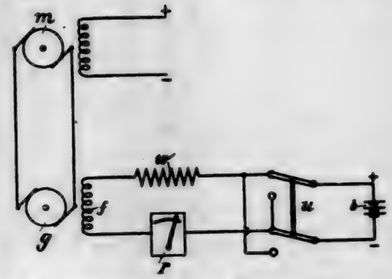

3. In a motor-starter, the combination with a motor, a generator in series therewith, a fixed resistance of small inductance in series with the generator-field, means for supplying current to said field, and means for causing the tension of said current to be sufficiently in excess of the tension for which the generator-field is wound to compensate for the loss of tension in said fixed resistance.

846,423. FEEDING MECHANISM FOR CORN-HUSKING MACHINES. JAMES W. PAIGE, Chicago, Ill., assignor, by mesne assignments, to Garland-Vila Manufacturing Company, Muskegon, Mich., a Corporation of Maine. Filed Feb. 15, 1906. Serial No. 301,231.

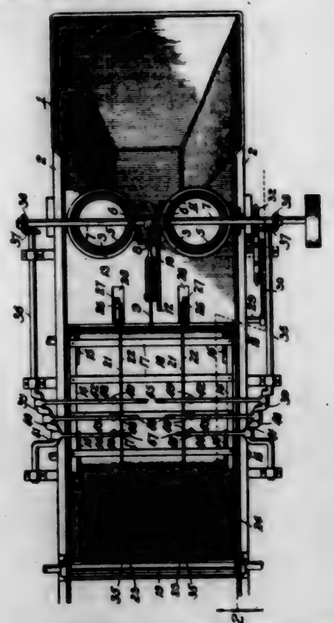

Claim.—1. A feeding mechanism for corn-husking machines, in which is combined means for advancing the stalks, a series of distributing-rakes arranged to move laterally in opposite directions from opposite sides of the machine and means for imparting an increasing length of stroke to said rakes in the order of their succession.

2. A feeding mechanism for corn-husking machines, in which is combined means for initially advancing a bundle in a central path upon the feeding-platform, a band-cutting device located in said path, a horizontal feeding-apron following said initial advancing means, a series of distributing-rakes located upon opposite sides of the feeding-platform and means for imparting a successively increasing movement to said rakes in the order of their arrangement upon the platform, whereby the distribution of the stalks may be accomplished gradually and completed by the time they arrive at the feed-rolls.

3. A feeding mechanism for corn-husking machines, in which is combined a feed-hopper, rollers or drums having vertical axes for initiating the forward movement of the stalks in a central position upon the hopper, an endless feeding-apron for receiving and advancing the stalks from said rollers, a plurality of rakes located upon opposite sides of said machine and cranks having varying lengths of stroke for actuating said rake.

4. In a machine of the class described, the combination with feed-rolls and a hopper, of means for advancing the stalks in the hopper, a series of rakes upon each side of the hopper, means for imparting an increasing length of stroke to said rakes in the order of their succession, serrated bars arranged lengthwise of the path of movement of the stalks and means for reciprocating said bars.

846,424. AUTOMATIC HOG-WATERER. CHARLES PELMULDER, Grant City, Iowa. Filed Feb. 2, 1906. Serial No. 299,654.

Claim.—1. In an automatic hog-waterer, a closed trough, a dead-air chamber in one of its end walls, an aperture in the end wall below the dead-air chamber, an open-topped extension from the apertured end wall, a supply-pipe, a valve-support on the inner end of the supply-pipe, a valve-stem pivoted to the valve-support and a valve and a float fixed to the valve-stem, a float-support pivoted in the trough and a rod connected therewith and extended through the aperture in the end of the trough into the open-topped chamber, arranged and combined to operate as set forth.

2. An automatic hog-waterer, comprising a trough, a fixed cover on the trough, an open-topped extension at the same end of the trough, a dead-air chamber in the end of the trough, an aperture in the end wall of the trough below said dead-air chamber, a supply-pipe fixed in the other end of the trough, a valve-support clamped to the end of said pipe, a valve-stem pivotally connected with the valve-support, a float fixed to the end portion of the valve-stem, a valve fixed to the valve-stem to engage the supply-pipe, a float-support pivoted in the trough, a rod pivoted to the float-support and extended into the uncovered extension of the trough and an auxiliary fountain fixed to the outside over an aperture in the trough, arranged and combined to operate in the manner set forth for the purposes stated.

846,425. RAILROAD-CROSSING. JOHN E. REESE, Louisville, Ky., assignor, by direct and mesne assignments, of one-sixth to Charles M. Ballard, one-half to Wilton F. Blackford, one-fifth to William Neal, and two-fifteenth to George L. Martin, Louisville, Ky. Filed Sept. 12, 1906. Serial No. 334,314.

Claim.—1. In a railroad-crossing, the combination with fixed main and crossing rails, of intervening movable sections of a length adapting them to abut end to end against the fixed main and crossing rails, and means for shifting the sections of one track out of position and the sections of the other track into position and vice versa so that the ends of one pair of sections will occupy the same space previously occupied by the ends of the other pair.

2. In a railroad-crossing, the combination with fixed main and crossing rails, of intervening sections comprising relatively movable members of a combined length adapting the sections to abut end to end against the fixed main and crossing rails, and means for shifting the section members of one track out of position and the section members of the other track into position and vice versa so that the ends of one pair of sections will occupy the same space previously occupied by the ends of the other pair.

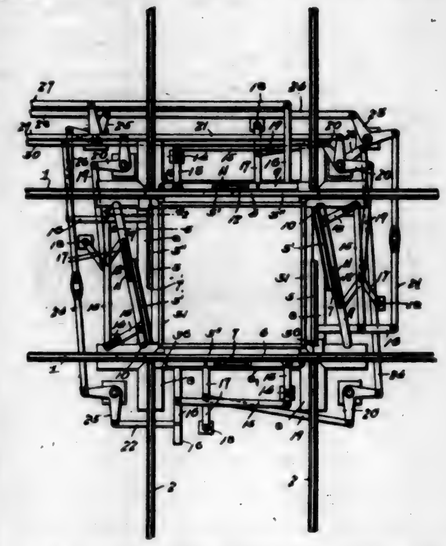

3. In a railroad-crossing, intersecting track-rails each embodying a movable section divided to comprise end-to-end separable members, and means for shifting the members into and out of line with the track-rails.

4. In a railroad-crossing, intersecting track-rails each embodying a movable section divided to comprise end-to-end separable members, and means for shifting the members into and out of line with the track-rails and causing one member to overlap the other.

5. In a railroad-crossing, intersecting track-rails each embodying a movable section divided to comprise end-to-end separable members, and means for shifting the members into and out of line with the track-rails operating to move one member endwise and the adjoining member laterally.

6. In a railroad-crossing, intersecting track-rails each embodying a movable section divided to comprise end-to-end separable members, and means for shifting the members into and out of line with the track-rails including a clamp with which one of said members has a sliding engagement.

7. In a railroad-crossing, intersecting track-rails each embodying a movable section divided to comprise end-to-end separable members, and means for shifting the members into and out of line with the track-rails including a pivoted clamp to which one of the members is connected and a device for swinging said clamp.

8. In a railroad-crossing, intersecting track-rails each embodying a movable section divided to comprise end-to-end separable members, and means for shifting the members into and out of line with the track-rails including a pivoted clamp and lever connections for swinging and bracing said clamp.

9. In a railroad-crossing, intersecting track-rails each embodying a movable section divided to comprise end-to-end separable members, and means for shifting the members into and out of line with the track-rails including a pivoted clamp, connections for swinging and bracing said clamp, and a keeper for engaging said clamp.

10. In a railroad-crossing, intersecting track-rails each

embodying a movable section divided to comprise end-to-end separable members, and means for shifting one member lengthwise and the other both lengthwise and laterally away from the track-rails.

11. In a railroad-crossing, the combination with fixed intersecting track-rails, of intervening rail-sections each divided to comprise end-to-end separable members one of which is adapted to be moved endwise and the other both endwise and laterally, means connecting said members for causing such relative movement, and means for shifting one member and thereby effecting the movement of the member connected therewith.

846,426. SPRINKLER. CARL C. RHODES, Honolulu, Hawaii, and HARRY G. RHODES, San Francisco, Cal. Filed May 10, 1905. Serial No. 259,739.

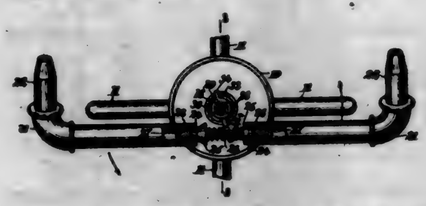

Claim.—1. The combination with a movable conduit, having jet-outlets opposing the rotary effects of one another, of valves in the jet-outlets for intermittently directing the flow through the different outlets, and means whereby the movement of the conduit may operate said valves.

2. The combination with a movable conduit having a plurality of jet-outlets, of a valve for each outlet, and means operable by the movement of the conduit for shifting the valves.

3. The combination with a rotatable conduit having a plurality of jet-outlets, of a valve for each outlet, said valves having a common support, and means whereby the rotation of the conduit may shift said valves.

4. The combination with the standard, of a movable head rotatable thereon, means for supplying liquid to the head, opposite jet-pipes leading from the head, valves for directing the flow alternately through the jet-pipes, and means whereby the movement of the conduit may operate said valves.

5. The combination with a standard, of a hollow head rotatable thereon, means for supplying liquid to the head, opposite jet-pipes leading from the head, movable means for closing the pipes, and contact projections carried by the standard and head for coöperating with said closing means.

6. The combination with a standard, of a hollow head rotatable thereon, means for supplying liquid to the head, opposite jet-pipes leading from the head, movable means for closing the pipes, contact projections carried by the standard and head for coöperating with said closing means, and means for adjustably fixing the position of one of the projections.

7. The combination with a standard, of a hollow head rotatable thereon, means for supplying liquid to the head, opposite jet-pipes leading from the head, a valve for controlling the opening through each pipe, and a movable member carried by the standard and coöperating with the valves.

8. The combination with a standard, of a hollow head rotatable thereon, means for supplying liquid to the head, opposite jet-pipes leading from the head, a valve for controlling the opening through each pipe, a rod connecting the valves, springs surrounding the rod, and a movable member carried by the standard and contacting with the springs.

9. The combination with a stationary tube, of a nozzle mounted to move thereon and adapted to be moved in one direction by reaction of the water issuing therefrom, said tube having an opening, means adapted to alternately connect said opening with said nozzle and to cut it off therefrom, and means for automatically moving said nozzle backwardly in its path.

846,427. ALTERNATING-CURRENT MACHINE WITH COMMUTATORS AND WITH COMPENSATING WINDINGS. RUDOLF RICHTER, Charlottenburg, Germany, assignor to Siemens-Schuckert-Werke, G. M. B. H., Berlin, Germany, a Corporation of Germany. Filed Aug. 28, 1906. Serial No. 332,359.

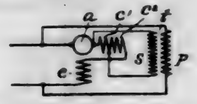

Claim.—1. The combination, in an alternating-current machine of the type described, of an armature-winding, a compensation-winding connected in series thereto, a field-magnet winding connected to said compensation-winding, means connected electrically directly with said compensation-winding adapted to produce a difference of potential between one part of the compensation-winding and another part of the same whereby an auxiliary field is produced, for the purpose specified.

2. The combination, in an alternating-current machine of the type described, of an armature-winding, a compensation-winding connected in series thereto, a field-magnet winding connected to said compensation-winding, means connected electrically directly with said compensation-winding adapted to produce a difference of potential between the one end and the other end of the same whereby an auxiliary field is produced, for the purpose specified.

3. The combination, in an alternating-current machine of the type described, of an armature-winding, a compensation-winding connected in series thereto, a field-magnet winding connected to said compensation-winding, the primary winding of a transformer connected to two parts of said machine between which a difference of potential normally exists, the secondary winding of said transformer connected to two different parts of said compensation-winding whereby an auxiliary field is produced, for the purpose specified.

4. The combination, in an alternating-current machine of the type described, of an armature-winding, a compensation-winding connected in series thereto, a field-magnet winding connected to said compensation-winding, the primary winding of a transformer, a resistance in series with the same, said primary winding and resistance being connected in parallel with said field-magnet winding, the secondary winding of said transformer connected to two different parts of said compensation-winding whereby an auxiliary field is produced, substantially as described.

5. The combination, in an alternating-current machine of the type described, of an armature-winding, a compensation-winding connected in series thereto, a field-magnet winding connected to said compensation-winding, the primary winding of a transformer connected in parallel with said field-magnet winding, the secondary winding of said transformer, a resistance in series with the same, said secondary winding and said resistance being connected to two different parts of said compensation-winding, whereby an auxiliary field is produced, substantially as described.

6. The combination, in an alternating-current machine of the type described, of an armature-winding, a compensation-winding connected in series thereto, a field-magnet winding connected to said compensation-winding, the primary winding of a transformer, a resistance in series with the same, said primary winding and said resistance being connected in parallel with said field-magnet winding, the secondary winding of said transformer, a resistance in series with the same, said secondary winding and said latter resistance being connected to two different parts of said compensation-winding, whereby an auxiliary field is produced, substantially as described.

846,428. RIBBED KNITTED FABRIC. ROBERT W. SCOTT, Leeds Point, N. J., assignor of one-half to Louis N. D. Williams, Ogonts, Pa. Filed June 25, 1906. Serial No. 323,266.

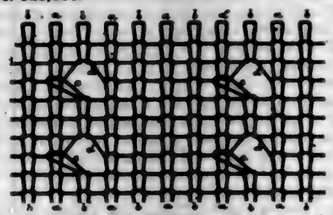

Claim.—1. A ribbed knitted web having eyelet-holes therein produced by transfer of a stitch of a wale of one face into an adjoining wale of the other face.

2. A ribbed knitted web having eyelet-holes therein produced by transfer of a stitch of a wale of one face into an adjoining wale of the other face, said transferred stitch being followed by an open loop in the wale from which the transfer was made.

3. The mode herein described of producing eyelet-holes in ribbed knitted webs, consisting in knitting the web upon two sets of needles drawn in different directions in adjacent wales, and then transferring stitches from wales drawn in one direction to interloop with wales drawn in the other direction.

4. The mode herein described of producing eyelet-holes in ribbed knitted webs, consisting in knitting the web upon two sets of needles drawing in different directions in adjacent wales, and then transferring stitches from wales drawn in one direction to interloop with wales drawn in the other direction, solely by movement of the needles in respect to one another.

5. The mode herein described of producing eyelet-holes in ribbed knitted webs, consisting in knitting the web upon two sets of needles drawn in different directions in adjacent wales, and then transferring stitches from wales drawn in one direction to interloop with wales drawn in the other direction, solely by movement of the needles in respect to one another, and then knitting further courses of web by normal operation of the needles.

6. The mode herein described of producing eyelet-holes in ribbed knitted webs, consisting in knitting the web upon two sets of needles drawn in different directions in adjacent wales, and then transferring stitches from wales drawn in one direction to interloop with wales drawn in the other direction, solely by movement of the needles in respect to one another, and then knitting further courses of web by normal operation of the needles.

846,429. RIBBED KNITTED FABRIC. ROBERT W. SCOTT, Leeds Point, N. J., assignor of one-half to Louis N. D. Williams, Ogonts, Pa. Filed Aug. 17, 1906. Serial No. 331,014.

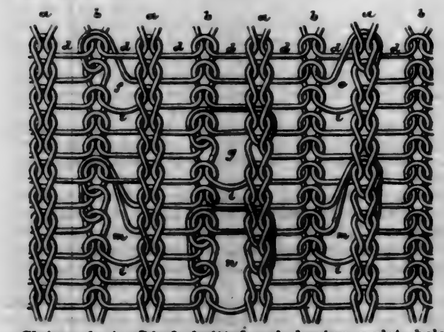

Claim.—1. A ribbed, knitted web having eyelet-holes therein, each formed by the laterally-displaced yarn of a sinker-wale engaging an adjoining needle-wale of said ribbed fabric.

2. A knitted web having eyelet-holes therein, each formed by the laterally-displaced yarn of a sinker-wale engaging an adjoining needle-wale, and by a slackened sinker-wale of a preceding course.

3. A ribbed, knitted web having eyelet-holes therein, each produced by the laterally-displaced yarn of a sinker-wale engaging adjoining needle-wales of both faces of the web.

4. A ribbed, knitted web having eyelet-holes therein, each produced by the laterally-displaced yarn of a sinker-wale engaging adjoining needle-wales of both faces of the web and by a slackened sinker-wale of a preceding course.

5. A ribbed, knitted web having eyelet-holes therein, each produced by the laterally-displaced yarns in a plurality of adjoining courses of a sinker-wale engaging with an adjoining needle-wale.

6. A ribbed, knitted web having eyelet-holes therein, each produced by the laterally-displaced yarns in a plurality of adjoining courses of a sinker-wale engaging with an adjoining needle-wale and by a slackened sinker-wale of a preceding course.

7. A ribbed, knitted web having therein eyelet-holes, each produced by the laterally-displaced yarns in a plurality of adjoining courses of a sinker-wale engaging adjoining needle-wales of both faces of the web.

8. A ribbed, knitted web having therein eyelet-holes, each produced by the laterally-displaced yarns in a plurality of adjoining courses of a sinker-wale engaging adjoining needle-wales of both faces of the web and by a slackened sinker-wale of a preceding course.

846,430. OPEN-WORK KNITTING-MACHINE. ROBERT W. SCOTT, Leeds Point, N. J., assignor of one-half to Louis N. D. Williams, Ogontz, Pa. Filed Sept. 20, 1906. Serial No. 335,403.

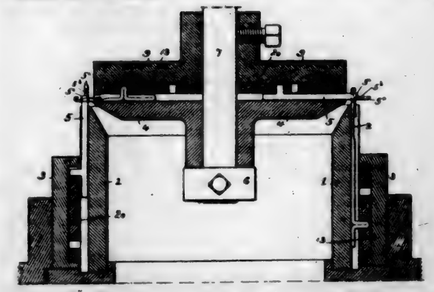

Claim.—1. The combination, in a knitting-machine, of needles, means for knitting thereupon, means for transferring sinker-wale loops to adjoining needles, and means for forming one or more plain wales and courses between the wales and courses in which such transfer is effected.

2. The combination, in a knitting-machine, of needles, means for knitting thereupon, means for transferring simultaneously to an adjoining needle or needles sinker-wale loops in a plurality of courses, and means for forming one or more plain wales and courses between the wales and courses in which the transfer is effected.

3. The combination, in a knitting-machine, of needles, means for knitting thereupon, means for transferring sinker-wale loops to adjoining needles, means for forming one or more plain wales and courses between the wales and courses in which such transfer is effected, and means for slackening the sinker-wale loop in advance of the transferred loop or loops.

4. The combination, in a knitting-machine, of needles, means for knitting thereupon, means for transferring sinker-wale loops whereby the same loop engages needles on opposite sides of it, and means for forming one or more plain wales and courses between the wales and courses in which such transfer is effected.

5. The combination, in a knitting-machine, of needles, means for knitting thereupon, transfer-points, each consisting of a stem with inclined transfer portion and an unobstructed loop-supporting portion beyond the same, means for advancing or retracting said points to engage, displace and release certain sinker-wale loops of the web, and means for operating the needles to engage and receive said loops.

6. The combination, in a knitting-machine, of needles, means for knitting thereupon, transfer-points, each consisting of a stem with inclined transfer portion having a shoulder at the base of the same, and an outer unobstructed loop-supporting portion, means for advancing and retracting said points to engage, displace and release certain sinker-wale loops of the web, and means for operating the needles to engage and receive said loops.

7. The combination, in a knitting-machine, of needles, means for knitting thereupon, means for transferring sinker-wale loops to an adjoining needle or needles, and means for preventing engagement of the sinker-wales by the transfer devices in some of the courses whereby the said sinker-wales in such courses are not displaced.

8. The combination, in a knitting-machine, of needles, means for knitting thereupon, means for transferring sinker-wale loops to an adjoining needle or needles, and means for retracting the transfer devices, in knitting some of the courses, before they reach the point at which the sinker-wale loops will be laid upon them.

9. The combination, in a knitting-machine, of needles, means for knitting thereupon, means for transferring sinker-wale loops to an adjoining needle or needles, and means for engaging the transfer devices with the sinker-wale loops but arresting the transfer operation for one or more courses.

10. The combination, in a knitting-machine, of needles, means for knitting thereupon, sinker-wale-loop-transfer devices, a cam for projecting the same into position for receiving the sinker-wale loops, and an adjustable cam which permits the transfer devices to remain in said projected position or retracts the same in order to cause them to miss the loops.

11. The combination, in a knitting-machine, of needles, means for knitting thereupon, sinker-wale-loop-transfer devices, a cam for projecting the same to receive said sinker-wale loops, and a cam for further projecting the same to effect transfer of said loops, said latter cam being adjustable to inoperative position.

12. The combination, in a knitting-machine, of needles, means for knitting thereupon, sinker-wale-loop-transfer devices, a cam for projecting the same to engage said sinker-wale loops, a cam for further projecting them to effect transfer of said loops, and a cam for retracting the transfer devices in order to cast the loops, both of said latter cams being adjustable to inoperative position.

13. The combination, in a knitting-machine, of needles, means for knitting thereupon, sinker-wale-loop-transfer devices, and means for causing certain of the latter to coact with certain of the knitting-needles and others to coact subsequently with others of said knitting-needles.

14. The combination, in a knitting-machine, of needles, means for knitting thereupon, sinker-wale-loop-transfer devices, and a rotating wheel for operating said transfer devices in sets.

15. The combination, in a knitting-machine, of needles, means for knitting thereupon, and sinker-wale-transfer devices constructed to receive a sinker-wale loop and laterally spread the same for engagement with the needles on opposite sides of it.

16. The combination, in a knitting-machine, of needles, means for knitting thereupon, and a sinker-wale-transfer device constructed to receive a sinker-wale loop and spread the same for engagement with the needles on opposite sides of it, said transfer device having members between which the transferred loop can pass when said transfer device is retracted.

17. The combination, in a rib-knitting machine, of two sets of needles, means for knitting thereupon, sinker-wale-transfer devices, and means for operating same to receive sinker-wale loops and transfer them to needles of one set.

18. The combination, in a rib-knitting machine, of needles, means for knitting thereupon, sinker-wale-transfer devices, and means for operating same to receive sinker-wale loops and transfer them to adjoining needles, some of said sinker-wale devices coacting with needles of one set and others coacting with needles of the other set.

19. A transfer-point for knitting-machines, said point having a stem, a diagonal transfer member formed by an open bend in the stem, and an unobstructed loop-supporting member outwardly beyond said transfer member.

20. A transfer-point for knitting-machines, said point having a stem, a diagonal transfer member formed by an open bend in the stem and having a shoulder at the base of the same, and an unobstructed loop-supporting member outwardly beyond said transfer member.

21. A transfer-point for knitting-machines, said point having a stem, a diagonal transfer member, formed by an open bend in the stem, and an unobstructed loop-supporting member outwardly beyond said transfer member and in the same longitudinal plane as the stem.

22. A transfer-point for knitting-machines, said point having a stem, a diagonal transfer member formed by an open bend in the stem and having a shoulder at its base, and an unobstructed loop-supporting member outwardly beyond said transfer member and in the same longitudinal plane as the stem.

23. A transfer-point for knitting-machines, said point having a stem, and a diagonal transfer member with stem connection at its base at a right angle to the stem and a loop-supporting member at its outer end.

24. A transfer-point for knitting-machines, said point having a stem, and a diagonal transfer member with stem connection at its base at a right angle to the stem and a loop-supporting member at its outer end, said stem and loop-supporting member being in the same longitudinal plane.

25. The combination, in a knitting-machine, of needles, means for knitting thereupon, and means for transferring simultaneously to an adjoining needle or needles sinker-wale loops in a plurality of courses.

26. The combination, in a knitting-machine, of needles, means for knitting thereupon, means for transferring simultaneously to an adjoining needle or needles, sinker-wale loops in a plurality of courses, and means for forming one or more plain courses between successive groups of transferred courses.

846,431. OPENWORK KNITTING-MACHINE. ROBERT W. SCOTT, Leeds Point, N. J., assignor of one-half to Louis N. D. Williams, Ogonts, Pa. Filed Oct. 4, 1906. Serial No. 337,437.

Claim.—1. The combination, in a knitting-machine, of needles, means for knitting thereupon, and means for transferring sinker-wale loops to adjoining needles to form eyelet-holes in the knitted web, said sinker-wale-loop-transfer devices being disposed in independently-operable sets.

2. The combination, in a knitting-machine, of needles, means for knitting thereupon, and means for transferring sinker-wale loops to adjoining needles to form eyelet-holes in the knitted web, said sinker-wale-loop-transfer devices being disposed in independently-operable sets, and cams for operating said transfer devices having, for different sets of the same, members adjustable to position for causing the transfer devices to engage the sinker-wale loops or to position which will prevent such engagement.

3. The combination, in a knitting-machine, of needles, means for knitting thereupon, and means for transferring sinker-wale loops to adjoining needles to form eyelet-holes in the knitted web, said transfer devices being disposed in independently-operable sets and each set being combined with a cam for moving its members into position for engaging the sinker-wales, the transfer devices of all of the sets being combined with a single set of cams for moving them to transfer position and then retracting them to position for casting their loops.

4. The combination, in a knitting-machine, of needles, means for knitting thereupon, and means for transferring sinker-wale loops to adjoining needles to form eyelet-holes in the knitted web, said transfer devices being disposed in independently-operable sets and each set being combined with an adjustable cam for moving its members to position for engaging the sinker-wales or permitting them to remain in inoperative position, the transfer devices of all of the sets being combined with a single set of cams for moving them to transfer position and then retracting them to position for casting their loops.

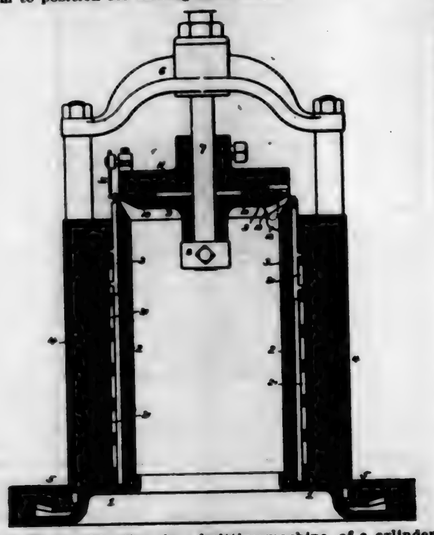

5. The combination, in a knitting-machine, of a cylinder and dial, needles carried by the latter, means for knitting upon said needles, and means for transferring sinker-wale loops to adjoining needles to form eyelet-holes in the knitted web, said transfer devices being disposed in independently-operable sets in the cylinder of the machine.

6. The combination, in a knitting-machine, of a cylinder and dial, needles carried by the latter, means for knitting upon said needles, and means for transferring sinker-wale loops to adjoining needles to form eyelet-holes in the knitted web, said transfer devices being disposed in independently-operable sets in the cylinder of the machine, and having butts in superposed horizontal planes and each set of transfer devices having, in its respective horizontal plane, a cam for moving its members into position for engaging the sinker-wales.

7. The combination, in a knitting-machine, of a cylinder and dial, needles carried by the latter, means for knitting upon said needles, and means for transferring sinker-wale loops to adjoining needles to form eyelet-holes in the knitted web, said transfer devices being disposed in independently-operable sets in the cylinder of the machine, and having butts in superposed horizontal planes and each set of transfer devices having, in its respective horizontal plane, a cam for moving its members into position for engaging the sinker-wales, said cam being adjustable into such position that it will fail to effect such projection.

8. The combination, in a knitting-machine, of a cylinder and dial, needles carried by the latter, means for knitting upon said needles, and means for transferring sinker-wale loops to adjoining needles to form eyelet-holes in the knitted web, said transfer devices being disposed in independently-operable sets in the cylinder of the machine and each device having two butts for being acted upon by its operating-cams, all of the transfer devices having butts in the same plane combined with cams for moving them to transfer position and retracting them to casting position, and each set of transfer devices having butts in its own independent horizontal plane, and a cam for acting upon said butts to project the transfer devices to position for engaging the sinker-wale loops.

9. The combination, in a knitting-machine, of a cylinder and dial, needles carried by the latter, means for knitting upon said needles, and means for transferring sinker-wale loops to adjoining needles to form eyelet-holes in the knitted web, said transfer devices being disposed in independently-operable sets in the cylinder of the machine and each device having two butts for being acted upon by its operating-cams, all of the transfer devices having butts in the same plane combined with cams for moving them to transfer position and retracting them to casting position, and each set of transfer devices having butts in its own independent horizontal plane, and a cam for acting upon said butts to project the transfer devices to position for engaging the sinker-wale loops, said latter cam being adjustable to the inoperative position.

846,432. PRINTING-PRESS. WILLIAM H. SMILEY, Niles, Ohio. Original application filed Mar. 7, 1905. Serial No. 248,821. Divided and this application filed Dec. 5, 1905. Serial No. 290,394.

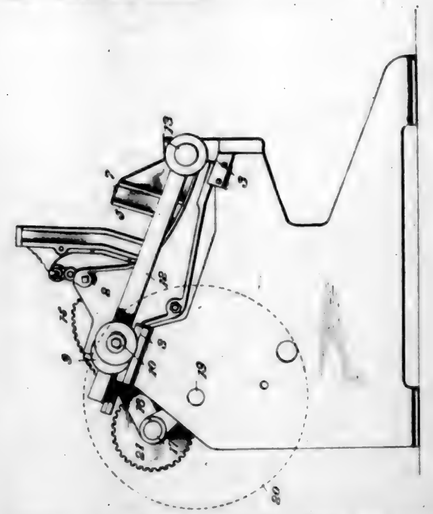

Claim.—1. A printing-press having a platen and a type-bed, one being movable relatively to the other, and means for operating the movable member comprising an elliptical gear and an eccentric gear intermeshing with each other for imparting to the movable member a dwell at the extremes of travel and for accelerating its speed between such dwells.

2. In a printing-press having a movable bed, means for reciprocating the latter and imparting increased force to the imprints, comprising an elliptical gear-wheel and an eccentric gear-wheel intermeshing with each other.

3. A printing-press having a stationary platen, a movable type-carrying bed, and means for reciprocating the latter comprising an elliptical gear and an eccentric gear-wheel intermeshing with each other.

4. A printing-press having a stationary frame, a type-bed carrier slidably mounted on said frame, a driven shaft mounted on said carrier and having an elliptical gear, means for imparting a reciprocatory movement to the carrier by the revolution of its shaft, a power-shaft, and an eccentrically-mounted gear-wheel driven thereby and meshing with said elliptical gear.

5. A printing-press having a stationary frame, a type-bed carrier slidably mounted on said frame, a driven shaft mounted on said carrier and having an elliptical gear,

means connecting said shaft and the frame for imparting a reciprocatory movement to the carrier by the revolution of its shaft, a power-shaft, and an eccentrically-mounted gear-wheel driven thereby and meshing with said elliptical gear.

6. A printing-press having a stationary frame, a type-bed carrier slidably mounted on said frame, a driven shaft mounted on said carrier and having crank-pins at its ends, links connected to said crank-pins and to said frame, an elliptical gear on said shaft, a power-shaft, an eccentrically-mounted gear-wheel meshing with said elliptical gear, a short shaft for such eccentric gear, a gear-wheel on said short shaft, and a pinion on said power-shaft meshing with said latter gear-wheel.

846,433. IRONING OR BOSOM BOARD. WILLIAM THUERER, Chicago, Ill., assignor to Sinclair Laundry Machinery Co., Chicago, Ill., a Corporation of Illinois. Original application filed Nov. 19, 1904, Serial No. 233,434. Divided and this application filed Aug. 6, 1906. Serial No. 329,437.

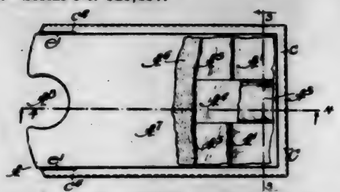

Claim.—1. An ironing-board having an ironing-surface provided with a yielding support, said yielding support comprising a strip or area which is made of a material more yielding than the other parts of said support, for the purpose set forth.

2. An ironing-board having an ironing-surface provided with a yielding support, said yielding support comprising a longitudinally-disposed part which is made of a material more yielding than the other parts of said support, for the purpose set forth.

3. An ironing-board comprising a base-plate, an ironing-surface and a yielding body interposed between the base-plate and the ironing-surface including a longitudinal central part made of a material more yielding than the side portions thereof.

4. An ironing-board comprising a base-plate, an ironing-surface, and an interposed yielding support consisting of two side sections and a centrally-disposed strip, which latter is made of a material more yielding than the side sections.

5. An ironing-board comprising a base-plate provided with a central longitudinal depression, a soft strip of yielding material within said depression, and sections of relatively harder material on the plate, one at each side of the central strip, said central strip being made thicker than, and flush at its upper surface with said side sections, and an ironing-surface cloth thereon.

6. An ironing-board comprising a base-plate, a rubber support thereon comprising two side sections and a centrally-disposed strip, which latter is more yielding than the side sections, a layer of yielding material resting on said support, and a surface cloth thereon.

7. An ironing-board comprising a base-plate provided with a central longitudinal depression, an ironing-surface cloth, and an interposed yielding support consisting of a strip of yielding material within said depression and sections of relatively harder material one at each side of the central strip, said central strip being thicker than and flush at its upper surface with said side sections, and said base-plate being provided with rims or flanges, between which and the central strip, said side sections are held in place.

8. The combination with an ironing-board and its support, said board being provided on its under face with undercut notches, studs mounted in said support and provided with beveled heads adapted to enter said notches, one of said studs being rotatable to release it from its associated undercut notch.

846,434. INTERNAL-COMBUSTION ENGINE. HERBERT G. UNDERWOOD, New York, N. Y. Original application filed June 7, 1905, Serial No. 264,042. Divided and this application filed Oct. 25, 1905. Serial No. 284,270.

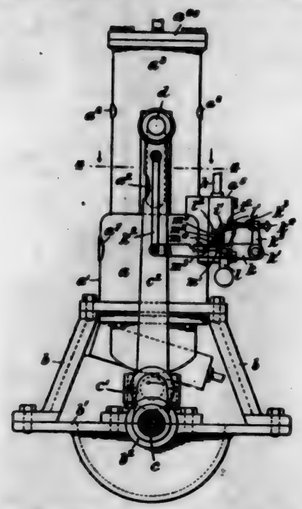

Claim.—In an internal-combustion engine, the combination of a working cylinder, an air-compressor connected to said cylinder, a mixing-chamber included in said connection, means to supply the fuel basis of the charge to said chamber, a valve to control the passage from said chamber to said cylinder, a valve-stem carrying two projections, a vibrating carrier, a pendulum mounted on said carrier and adapted to engage one or the other of said projections to shift the valve and means to retain the valve in either position, substantially as described.

846,435. MEANS FOR APPLYING HANDLES TO SHEET-METAL VESSELS. GEORGE W. WEBBER, New York, N. Y., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Original application filed Dec. 6, 1905, Serial No. 290,510. Divided and this application filed Aug. 3, 1906. Serial No. 329,008.

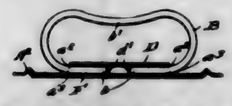

Claim.—1. The combination with a sheet-metal vessel provided with a recess or depression on the inner side, and a pivot-socket having openings at the ends thereof for insertion of the pivot members of a wire handle, of a wire handle having pivot members inserted through said openings and fitting in said socket, said vessel having on the inside at the portion thereof to which the handle is applied a cap-groove and a supplemental cap soldered thereto, substantially as specified.

2. The combination with a sheet-metal vessel provided with a recess or depression on its inner side, and a straight pivot-socket having openings at the opposite ends thereof for insertion of the pivot members of a wire handle, of a wire handle having straight pivot members inserted through said openings and fitting end to end in said socket, and a cap soldered on the inside of the vessel at the portion thereof to which the handle is applied to prevent leakage at the socket-openings for the handle, substantially as specified.

3. The combination with a can or receptacle provided with an integral pivot-socket having openings at the opposite ends thereof for insertion of the pivot members of a wire handle, of a spring-wire handle having straight pivot members inserted through said openings and fitting end to end in said socket, said handle having a middle portion provided with a reverse bend toward the pivot members and a cap secured on the inside of the vessel at the portion thereof to which the handle is applied to prevent leakage at the socket-openings, substantially as specified.

4. The combination with a sheet-metal vessel provided with a cap secured thereto at the portion thereof to which the handle is to be applied, of a part-round pivot-socket for the pivot members of the handle, having openings at the opposite ends thereof for insertion of the pivot members of a wire handle, and a wire handle having open or separated straight pivot members inserted through said openings at the ends of the pivot-socket and fitting end to end in said pivot-socket, said handle having a middle portion provided with a reverse bend toward the pivot members, substantially as specified.

5. The combination with a sheet-metal vessel provided with a cap secured thereto at the portion thereof to which the handle is to be applied, of a pivot-socket for the pivot members of the handle having openings at the ends thereof for insertion of the pivoted members of a wire handle, and a wire handle having open or separated pivot members inserted through said openings at the ends of the pivot-socket and fitting in said pivot-socket, and lips or shoulders in said pivot-socket for the extremities of the pivot members of the handle to abut against, substantially as specified.

6. The combination with a sheet-metal vessel having an open-ended pivot-socket to receive the straight pivot members of a wire handle, of a wire handle having straight pivot members fitting in said sockets, a shoulder in said socket at the middle portion thereof for the ends of the pivot members of the handle to abut against, and a supplemental cap secured to the vessel at the portion thereof to which the handle is applied, substantially as specified.

846,436. SAFETY MECHANISM FOR ELEVATORS. HERBERT BAWDEN and WILLIAM HOSKIN, Central City, Colo., assignors of one-third to Herbert C. Eastman. Original application filed Oct. 14, 1905, Serial No. 282,805. Divided and this application filed July 6, 1906. Serial No. 325,017.

Claim.—1. The combination with an elevator-car, of oppositely-disposed key-plates carried by the car, a movable shaft loosely connected to the oppositely-disposed key-plates, a sliding catch having an operative connection with the shaft, and means for actuating the key-plates to control the movement of the catch.

2. The combination with an elevator-car, of parallel key-plates provided with elongated apertures, carried by said car, a movable shaft positioned within the apertured portion of said key-plates, means for actuating said key-plates for moving said shaft, and a slidable catch connected to said shaft.

3. The combination with an elevator-car, of oppositely-disposed apertured key-plates carried by the said car, a movable shaft engaging with the apertures in the oppositely-disposed key-plates, a sliding catch having an operative connection with the movable shaft, and means for actuating the key-plates to control the movements of the catch.

4. The combination with an elevator-car, of oppositely-disposed, slidably-mounted key-plates carried by the said car, each of the key-plates being formed with a pair of apertures, a pair of movable shafts engaging with the apertures in the key-plates, sliding catches having an operative connection with the shafts, and means for actuating the key-plates to control the movements of the catches.

5. The combination with an elevator-car, of outwardly-bowed protecting-plates carried by said car, a movable shaft carried by said car and supported upon said protecting-plates, key-plates interposed between said protecting-plates and said car, a catch secured to said shaft, and means for vertically moving said key-plates and thereby actuating said shaft and catch.

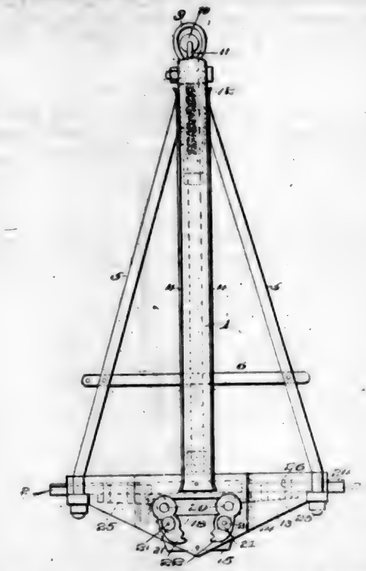

6. In a mechanism of the class described, the combination with an elevator-car, of horizontally-movable catches carried by said car, shafts secured to said catches, vertically-movable plates connecting said shafts, yielding means interposed between said catches, and means for actuating said plates and shafts.

7. The combination with an elevator-car, of oppositely-disposed slidably-mounted key-plates carried by the said car, each of the key-plates being formed with reversely-inclined elongated apertures, shafts connecting the key-plates and engaging with the apertures, catches having an operative connection with the shafts, and means for actuating the key-plates to control the movements of the catches.

8. The combination with an elevator-car, of oppositely-disposed key-plates provided with reversely-inclined elongated apertures, and slidably mounted upon the said car, shafts connecting the oppositely-disposed key-plates and passing through the reversely-inclined apertures therein, plates slidably mounted upon the bottom of the car, connecting means between the plates and the shafts, and means for actuating the key-plates to control the movements of the plates.

9. The combination with an elevator-car, of slidable catches carried by said car, vertically-movable key-plates carried by said car, means connecting said key-plates to said catches, and yielding means interposed between said catches and adapted to exert an outward pressure thereon.

846,437. ARTIFICIAL FUEL. DANIEL DRAWBAUGH, Eberlys Mill, and BLAKE E. GAMBLE, Bowmansdale, Pa. Filed Oct. 15, 1906. Serial No. 339,036.

Claim.—1. The method of making artificial fuel, consisting of comminuting carbonaceous material, adding thereto and mixing therewith manganese dioxid; adding to the above a thoroughly-mixed mass of hydrated sulfate of lime and chromatised gelatin with sufficient water to insure adhesion; then pressing the mixed ingredients into blocks or briquet, and drying the same.

2. The herein-described artificial fuel, consisting of comminuted carbonaceous material about ninety-two per cent.,

hydrated sulfate of lime about seven and three-fourths per cent., and manganese dioxid about one-fourth per cent. and a waterproofing and weather-resisting agent.

3. The herein-described artificial fuel, consisting of comminuted carbonaceous material about ninety-two per cent., hydrated sulfate of lime about seven and three-fourths per cent., manganese dioxid about one-fourth per cent., and a solution of chromatised gelatin.

846,438. BOX-OPENER. JOHN MARSHALL, New York, N. Y., assignor of one-half to John Langan, Brooklyn, N. Y. Filed Jan. 11, 1906. Serial No. 295,581.

Claim.—A tool for the purpose stated embodying a flat plate provided with a handle, the end of the plate opposite the handle being split and formed approximately half-and-half into a claw and a wedge-shaped projection respectively, the claw being curved and projected edgewise from the plate and the wedge-like projection being turned up flatwise at substantially right angles to the plane of the plate and in rear of and at right angles to the plane of the claw.

846,439. MOTOR. HERBERT S. MILLS, Chicago, Ill. Original application filed Feb. 27, 1905, Serial No. 247,492. Divided and this application filed Nov. 4, 1905. Serial No. 285,877.

Claim.—1. The combination with a spring-motor of an element operated thereby, means for normally holding said element against rotation, a winding-motor, and mechanism operated by the spring-motor and connected with said holding means and serving to start the winding-motor after the release of said element from its holding means, for the purpose set forth.

2. The combination of a spring-motor, an element driven thereby, a stop coacting with said element, a winding-motor, starting and stopping mechanism for the winding-motor controlled by the spring-motor, and a locking device for said stop controlled by the spring-motor, whereby movement of said element for a predetermined period is permitted and rewinding of the spring-motor effected, for the purpose set forth.

3. The combination of a spring-motor, an element driven thereby, a stop coacting with said element, an electric winding-motor having a circuit, circuit-controlling mechanism actuated by said spring-motor, and mechanism controlled from said spring-motor serving to withhold said stop for a predetermined period to permit rotation of said element, for the purpose set forth.

4. The combination with a winding-shaft of a spring-motor, of a winding-motor geared thereto, a circuit-controlling wheel, and a pawl actuated with said winding-shaft and serving to actuate said wheel, for the purpose set forth.

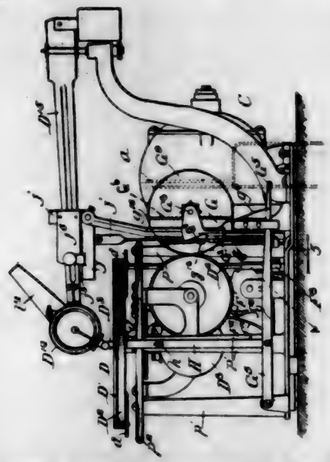

5. In motor-controlling mechanism of the character described, the combination with a spring-motor and an electric winding-motor, of a spring-held slidable circuit-controlling member F^6, a lever G' serving to retract the member F^6, and a rotary wheel G equipped with a cam serving to operate said lever.

6. In mechanism of the character described, the combination of a spring-motor, an element actuated thereby, a stop-carrying lever, a stop carried thereby and coacting with said element, a locking-pawl G^4 for the stop-carrying lever, a lever G^3, a spring-held pawl carried thereby and coacting with the pawl G^4, and a wheel G controlling the lever G^3, for the purpose set forth.

7. The combination with a spring-motor and a winding-motor, of an element actuated by the spring-motor, a yieldingly-held stop normally restraining said element from moving, a normally retracted stop for said element, and mechanism controlled from the spring-motor serving to hold said first-named stop retracted, after withdrawal, for a period and then project the second-named stop and also start the winding-motor, for the purpose set forth.

8. The combination with a spring-motor and a winding-motor, of an element actuated by the spring-motor, a yieldingly-held stop normally restraining said element from moving, a normally retracted stop for said element, a lock for holding said first-named stop retracted for a period after withdrawal from said element, a wheel controlling said lock, and means controlled by said wheel for projecting the second-named stop and starting the winding-motor, for the purpose set forth.

9. The combination with a spring-motor, of an element operated thereby, holding means normally restraining said element from rotation, an electric winding-motor having a circuit, means for effecting withdrawal of said holding means to permit rotation of said element under the action of the spring-motor, means for automatically moving said holding means again into position to restrain said element from rotation, and circuit-controlling means operated by the power of the spring-motor, whereby the winding-motor is set in operation after said spring-motor has operated for a predetermined period.

10. The combination with a spring-motor, of an element operated thereby, means for normally holding said element against rotation, an electric winding-motor having a circuit, means for effecting release of said element to permit rotation thereof, and circuit-controlling means operated by the power of the spring-motor to close the circuit after the spring-motor has operated said element for a predetermined period.

11. The combination with a spring-motor, of an element operated thereby, a stop whereby rotation of said element may be restrained, means for retracting said stop and maintaining it in a retracted position for a predetermined period to permit rotation of said element for a predetermined period, an electric winding-motor having a circuit, and circuit-controlling means operated by the power of the spring-motor to close the circuit after the spring-motor has operated said element for a predetermined period.

12. The combination with a spring-motor, of an element operated thereby, a stop whereby rotation of said element may be restrained, means for retracting said stop and maintaining it in a retracted position for a predetermined period to permit rotation of said element for a predetermined period, means for causing the stop to resume its position for restraining said element, an electric winding-motor, and circuit-controlling means operated by the power of the spring-motor to close the circuit after the spring-motor has operated said element for a predetermined period.

REISSUES.

12,614. APPARATUS FOR MAKING AND SHARPENING ROCK-DRILLS. GILBERT GLOSSOP, Leeds, England, assignor of one-half to Thomas Henry Bradbury, Leeds, England, and one-half to Andrew Makie Niven, Robert Niven, and John Wylie Craig Niven, Johannesburg, Transvaal. Filed Aug. 19, 1903. Serial No. 170,099. Original No. 661,798, dated Nov. 13, 1900.

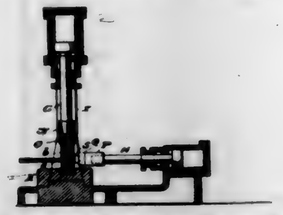

Claim.—1. In a machine for treating drill-bars, the combination with an upsetting-hammer, of a tool-block having a groove tapered both transversely and longitudinally, and a die composed of halves and similarly tapered to fit said groove.

2. In a machine for treating drill-bars, the combination with suitable dies and means for operating them, of a gripping device for the drill-bar comprising stationary guides inclined toward each other, gripping-blocks movable in said guides, and means for actuating said blocks.

3. In a machine for treating drill-bars, a gripping device for the bar, comprising a hollow split gripping-block, tapered guides for the two parts of said block, a connecting-lug on each part, a rock-shaft provided with rock-arms engaging said lugs, and means for operating said shaft.

4. In machinery or apparatus for treating rock-drills, the combination of two hammers operating at right angles, and an anvil, the hammer-head N of one hammer having a wing drawing, forming and pointing die or tool *d* and a holding-die *i*, the hammer-head P of the other hammer having a wing-sharpening tool or die *k*, while the anvil-block is provided with a wing pointing, forming and drawing die *o* and a holding-die *h*, all substantially as herein set forth.

5. In a machine or apparatus for treating rock-drills, the combination of two hammers operating at right angles, an anvil, the hammer-head N of one hammer having a wing drawing and pointing die or tool *d* and a holding-die *i*, the hammer-head P of the other hammer having a wing-sharpening tool or die *k*, and the anvil-block being provided with a wing pointing, forming and drawing die *o* and a holding-die *h*, and of the double gripping device consisting of two hollow split taper gripping-blocks *n*, tapered guides or slides, connecting-lugs *q*, rocking levers *s*, shaft *r*, and foot-lever *p*, all substantially as herein set forth.

DESIGNS.

38,469. BADGE. JAMES A. MONTGOMERY, Los Angeles, Cal. Filed Jan. 18, 1907. Serial No. 352,965. Term of patent 14 years.

Claim.—The ornamental design for a badge as shown.

38,470. COVERED DISH OR SIMILAR ARTICLE. CHARLES J. AHRENFELDT, New York, N. Y. Filed Jan. 31, 1907. Serial No. 355,158. Term of patent 7 years.

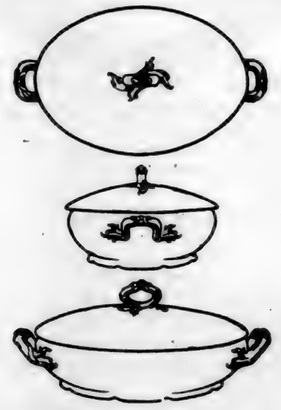

Claim.—The ornamental design for a covered dish or a similar article as shown.

38,471. PLATE OR SIMILAR ARTICLE. CHARLES J. AHRENFELDT, New York, N. Y. Filed Jan. 31, 1907. Serial No. 355,159. Term of patent 7 years.

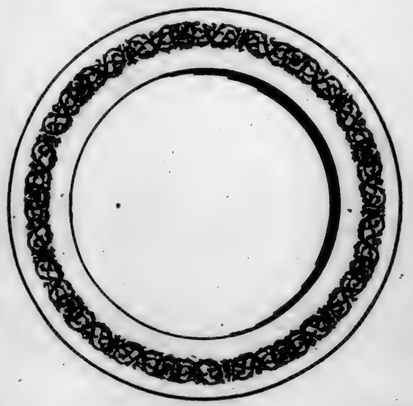

Claim.—The ornamental design for a plate or similar article substantially as shown.

38,472. PLATE OR SIMILAR ARTICLE. CHARLES J. AHRENFELDT, New York, N. Y. Filed Jan. 31, 1907. Serial No. 355,160. Term of patent 7 years.

Claim.—The ornamental design for a plate or similar article substantially as shown.

38,473. PLATE OR SIMILAR ARTICLE. CHARLES J. AHRENFELDT, New York, N. Y. Filed Jan. 31, 1907. Serial No. 355,161. Term of patent 7 years.

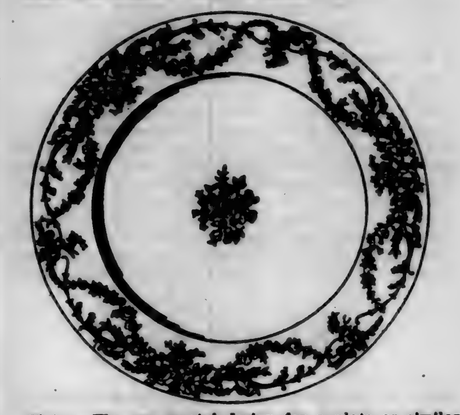

Claim.—The ornamental design for a plate or similar article substantially as shown.

TRADE-MARKS

PUBLISHED MARCH 5, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 1,179. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) HENRY M. SCHNARR, Ossining, N. Y. Filed Apr. 11, 1905.

Particular description of goods.—Enameled-Metal Household Utensils.

Ser. No. 3,608. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) GREAT BEAR SPRING CO., Oswego and Albany, N. Y.; Jersey City, N. J.; Philadelphia, Pa., and Washington, D. C. Filed Apr. 29, 1905.

GREAT BEAR SPRING.

Particular description of goods.—Table-Water.

Ser. No. 4,106. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) AMERICAN GLUE CO., Boston, Mass., assignor to American Glue Company, a Corporation of Massachusetts. Filed May 3, 1905. Used ten years.

NEW ENGLAND

Particular description of goods.—Emery-Cloth and Sandpaper in Any Form, Coated on One or Both Sides of the Cloth or Paper with the Abrasive.

Ser. No. 6,215. (CLASS 53. SACCHARINE FOODS NOT INCLUDED IN CLASS 47.) HENRY TATE & SONS, LIMITED, London, England. Filed May 22, 1905. Used ten years.

TATE

Particular description of goods.—Refined Sugars of All Description.

Ser. No. 6,478. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) SOCIÉTÉ ANONYME DES ANCIENS ÉTABLISSEMENTS PANHARD & LEVASSOR, Paris, France. Filed May 24, 1905.

Particular description of goods.—Wrenches, Hammers, Screw-Drivers, and Tire Removers and Replacers.

Ser. No. 6,851. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE C. CALLAHAN CO., La Fayette, Ind. Filed May 29, 1905.

MONEY-BACK

Particular description of goods.—Canned Fruits and Canned Vegetables.

Ser. No. 7,265. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) EGYPTIAN CHEMICAL COMPANY, Boston, Mass. Filed June 2, 1905.

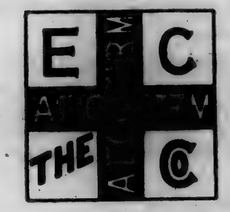

Particular description of goods.—Embalming Fluids and Disinfectants.

Ser. No. 7,920. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) KEYSTONE FENCE COMPANY, Peoria, Ill. Filed June 12, 1905.

MONARCH

Particular description of goods.—Wire Fence.

Ser. No. 8,184. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) DR. HESS & CLARK, Ashland, Ohio. Filed June 15, 1905. Used ten years.

DR. HESS

Particular description of goods.—Medicated Stock Foods.

Ser. No. 9,161. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) THE WILL & BAUMER COMPANY, Syracuse, N. Y. Filed June 27, 1905.

GLEAMLIGHT BRAND

Particular description of goods.—Candles.

Ser. No. 9,162. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) THE WILL & BAUMER COMPANY, Syracuse, N. Y. Filed June 27, 1905. Used ten years.

HELION

Particular description of goods.—Candles.

Ser. No. 9,352. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) CIOTTI, VINCENTI & Co., Baltimore, Md. Filed June 28, 1905. Used ten years.

COLGATE

Particular description of goods.—Maryland Rye Whisky.

Ser. No. 9,502. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) THE FRANKFORT DISTILLERY, Frankfort, Ky. Filed June 30, 1905.

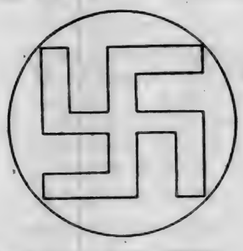

Particular description of goods.—Whisky.

Ser. No. 10,894. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J. Filed July 27, 1905.

99

Particular description of goods.—Cotton-Seed Oils.

Ser. No. 11,262. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) THE FIRM OF CARL ZEISS, Jena, Germany. Filed Aug. 4, 1905.

CARL ZEISS.
JENA

Particular description of goods.—Measuring and Scientific Optical Apparatus, Appliances, and Instruments.

Ser. No. 11,413. (CLASS 59. HOROLOGICAL INSTRUMENTS.) HAMMEL, RIGLANDER & Co., New York, N. Y. Filed Aug. 8, 1905.

LONGEVAL

Particular description of goods.—Watchsprings.

Ser. No. 12,083. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ARMOUR & COMPANY, Chicago, Ill. Filed Aug. 30, 1905.

Florafoam

Particular description of goods.—Shaving Cream or Paste.

Ser. No. 13,222. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) C. A. LINDGREN & CIE VINHANDELS AKTIEBOLAG, Stockholm, Sweden. Filed Oct. 2, 1905.

Particular description of goods.—Arrack Punch.

Ser. No. 13,547. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) FREDERICK M. KETCHUM, Arlington, Md. Filed Oct. 13, 1905.

BELVIDERE BRAND

Particular description of goods.—Canned Fruits and Vegetables.

Ser. No. 14,806. (CLASS 55. WINES.) GEO. G. SANDEMAN SONS & Co. LIMITED, London, England. Filed Nov. 20, 1905.

Particular description of goods.—Port and Sherry Wines.

Ser. No. 14,825. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) PAGE & SANDEMAN, London, England. Filed Nov. 20, 1905.

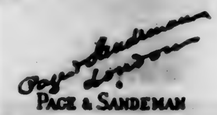

PAGE & SANDEMAN

Particular description of goods.—Apricot-Brandy.

Ser. No. 14,857. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) INTERLOCKING FENCE COMPANY, Morton, Ill. Filed Nov. 20, 1905.

CROWN

Particular description of goods.—Wire Fence.

Ser. No. 14,874. (CLASS 43. THREAD AND YARN.) ONEIDA COMMUNITY LIMITED, Kenwood, N. Y. Filed Nov. 21, 1905.

COMMUNITY

Particular description of goods.—Silk Twist, Silk Thread, Skeined Sewing-Silk, Embroidery-Silk, Shifili-Silk, Buttonhole-Twist, Machine-Twist, Buttonhole-Thread, and Machine-Thread.

Ser. No. 15,559. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) THE ROTHENBERG COMPANY, San Francisco, Cal. Filed Dec. 21, 1905.

Particular description of goods.—Whisky.

Ser. No. 16,230. (CLASS 8. DETERGENTS.) A. & F. PEARS LIMD., London, England. Filed Jan. 17, 1906. Used ten years.

Particular description of goods.—Perfumed Soap.

Ser. No. 18,403. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) CONSERVENFABRIK LENZBURG VORM. HENCKELL & ROTH A. G., Lenzburg, Switzerland. Filed Mar. 31, 1906.

POMMEL

Particular description of goods.—Beverages Made by the Extraction of Apples and Impregnated with Carbonic Acid.

Ser. No. 19,100. (CLASS 48. DAIRY PRODUCTS.) ABRAHAM & STRAUS, Brooklyn, N. Y. Filed Apr. 27, 1906.

Priscilla

Particular description of goods.—Sterilized Cream and Condensed Milk.

Ser. No. 19,879. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ALFRED GÖDE & Co., Berlin, Germany. Filed May 26, 1906.

Particular description of goods.—Hematogenic or Blood-Forming Iron Compounds, Either in Form of a Liquid or in Form of Tablets, Lozenges, Powders, or Pills.

Ser. No. 20,151. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) ABRAHAM & STRAUS, Brooklyn, N. Y. Filed June 8, 1906. Used ten years.

MONTAUK

Particular description of goods.—Canned Fruits, Canned Vegetables, Jelly, and Jam.

Ser. No. 20,159. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) E. A. ARMSTRONG MFG. CO., Chicago, Ill. Filed June 8, 1906.

RAINO

Particular description of goods.—Textile-Fabric Waterproof Coats, Capes, Overalls, Pants, and Hats.

Ser. No. 20,179. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) REUBEN E. MARTIN, Fort Worth, Tex. Filed June 9, 1906.

Particular description of goods.—Liquid Face-Enamel.

Ser. No. 20,202. (CLASS 12. MASONRY MATERIALS.) H. A. WHITEMAN & CO., Wilkes-Barre, Pa. Filed June 11, 1906.

CAR-MITE

Particular description of goods.—Rubber Roofing.

Ser. No. 20,344. (CLASS 59. HOROLOGICAL INSTRUMENTS.) LANGENDORF WATCH CO., Langendorf, Switzerland. Filed June 16, 1906.

Particular description of goods.—Watches, Watchcases, and Watch-Movements.

Ser. No. 20,345. (CLASS 59. HOROLOGICAL INSTRUMENTS.) LANGENDORF WATCH CO., Langendorf, Switzerland. Filed June 16, 1906.

LONVILLE

Particular description of goods.—Watches, Watchcases, and Watch-Movements.

Ser. No. 20,500. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) S. STERNAU & Co., Brooklyn, N. Y. Filed June 23, 1906. Used ten years.

Particular description of goods.—The Following Articles Made of Metal: Chafing-Dishes, Fancy Kettles, Coffee-Machines, Trays, Towel-Racks, Soap-Dishes, Towel-Rings, Comb-and-Brush Racks, Soap-Racks, Sponge-Holders, Combination Soap-Racks and Sponge-Holders, Holders for Water-Carafes, Tooth-Brush Holders, Metal Baskets for Soiled Towels, Toilet-Paper Holders, Match-Holders, Robe-Hooks, Whisk-Broom Holders, Spray-Hooks, Bath-Brush Holders, Combination Soap-Dish, Mug, Tooth-Brush-Vase Holders, Combination Mug and Tooth-Brush-Vase Holders, Combination Soap-Dish, Mug, and Tooth-Brush-Vase, and Tooth-Powder-Bottle Holders, Combination Mug and Soap-Dish Holders, Mug-Holders, Combination Soap-Dish and Tumbler Holders, Combination Soap-Dish, Tumbler, and Tooth-Brush Holders, Bath-Sprays, Spray-Brushes, Shower-Bath Rings, Bath-Yokes and Overhead Showers, Teapots, Coffee-Pots, Coffee-Servers, Coffee or Tea Pot Stands, Sugar-Bowls, Cream-Pitchers, Wine-Coolers, Salt and Pepper Sets, Percolating Coffee-Pots, Chafing-Dish Pans, Chafing-Dish Stands, Chafing-Dish Spoons, Tourists' Chafing-Dishes, Chafing-Dish Forks, Chafing-Dish Skimmers, Chafing-Dish Egg-Poachers, Chafing-Dish Omelet-Pans, Chafing-Dish Toasters, Alcohol-Flagons, Chafing-Dish Hangers, Wind-Shields for Coffee-Machines and Chafing-Dishes, Metal Trays, Tea-Kettles, Tea-Kettle Stands, Tea-Kettle Cranes, Hot-Water Urns, Baking-Dishes, Traveling Companions, Hot-Water Plates, Hot-Water-Plate Covers, Crumb Trays and Scrapers, Platters, Covers, Ash-Receivers, Ash-Receiver Stands, Candlesticks, Jardinières with Stands, and Candelabra.

Ser. No. 20,750. (CLASS 52. PACKING-HOUSE PRODUCTS.) THE JONES DAIRY FARM, Fort Atkinson, Wis. Filed July 6, 1906. Used ten years.

JONES

Particular description of goods.—Sausages, Hams, Bacon, Salt Pork, and Lard.

Ser. No. 20,863. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FREDERICK A. STECK, Oil City, Pa. Filed July 12, 1906.

Particular description of goods.—A Preparation Used for Throat and Head Spray and External Applications.

Ser. No. 20,920. (CLASS 33. GLASSWARE NOT OTHERWISE CLASSIFIED.) THE FOSTORIA GLASS SPECIALTY COMPANY, Fostoria, Ohio. Filed July 13, 1906.

PYRO

Particular description of goods.—Chimneys and Globes for Lights.

Ser. No. 21,058. (CLASS 47. CONFECTIONERY.) HENRY HEIDE, New York, N. Y. Filed July 21, 1906.

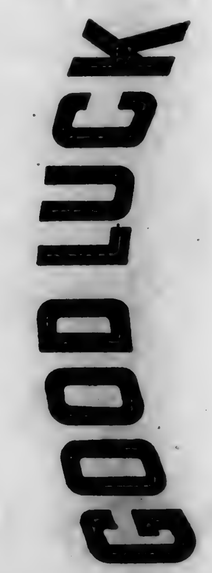

Particular description of goods.—Candies.

Ser. No. 21,061. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) E. & J. BASS, New York, N. Y. Filed July 21, 1906.

EMPIRE
ART SILVER

Particular description of goods.—Silver-Plated Jewelry, Silver-Plated Toilet-Ware, Hollow Ware, and Flat Ware.

Ser. No. 21,187. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) POLLEDO, TORRES & CA., Buenos Aires, Argentine Republic. Filed July 26, 1906.

EL GAITERO

Particular description of goods.—Kerosene.

Ser. No. 21,345. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) A. L. IDE & SONS, Springfield, Ill. Filed Aug. 6, 1906.

IDEAL

Particular description of goods.—A Combined Steam-Engine and Dynamo-Electric Machine.

Ser. No. 21,346. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) A. L. IDE & SONS, Springfield, Ill. Filed Aug. 6, 1906. Used ten years.

IDEAL

Particular description of goods.—Steam-Engines.

Ser. No. 21,347. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) A. L. IDE & SONS, Springfield, Ill. Filed Aug. 6, 1906. Used ten years.

IDE

Particular description of goods.—Steam-Engines.

Ser. No. 21,477. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) ANTHONY FISCHER, Flushing, N. Y. Filed Aug. 11, 1906.

Particular description of goods.—Whisky.

Ser. No. 21,478. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) ANTHONY FISCHER, Flushing, N. Y. Filed Aug. 11, 1906.

Particular description of goods.—Whisky.

Ser. No. 21,480. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ANTHONY FISCHER, Flushing, N. Y. Filed Aug. 11, 1906.

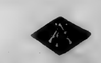

Particular description of goods.—A Remedy for Malaria and Grippe.

Ser. No. 21,749. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) EPHRAIM S. WELLS, Jersey City, N. J. Filed Aug. 25, 1906. Used ten years.

ROUGH ON

Particular description of goods.—Veterinary Remedies, Cough Medicines, Preparations for the Removal of Corns and Bunions, Preparations for the Cure of Toothache, Neuralgia, Face-Ache, and other Pains, Preparations for the Improvement of the Hair, Skin, and Complexion, Tonics and Remedies for the Cure of Diseases of the Stomach, Liver, Kidneys, Skin, Blood, Nerves, Lungs, Nose, and Throat.

Ser. No. 21,829. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) JACKSON COMPANY, Nashua, N. H. Filed Aug. 31, 1906.

Particular description of goods.—Cotton Piece Goods and Cotton Blankets.

Ser. No. 21,874. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) GEORGE CUTTER CO., South Bend, Ind. Filed Sept. 4, 1906.

JUNIOR.

Particular description of goods.—Mast-Arms Generally Employed for the Support or Hanging of Lamps.

Ser. No. 22,050. (CLASS 71. TOBACCO PRODUCTS.) WERTHEIMER BROS., Baltimore, Md. Filed Sept. 12, 1906.

BULL HEAD

Particular description of goods.—Cigars.

Ser. No. 22,214. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) INDIAN HEAD MILLS OF ALABAMA, Walker, Ala. Filed Sept. 21, 1906.

Particular description of goods.—Cotton Piece Goods and Cotton Blankets.

Ser. No. 22,259. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) SOCIETE ANONYME DE LA GRANDE DISTILLERIE E. CUSENIER FILS AINE ET COMPAGNIE, Paris, Ornans, Charenton, and Marseilles, France; Mulhouse, Germany, and Brussels, Belgium. Filed Sept. 21, 1906.

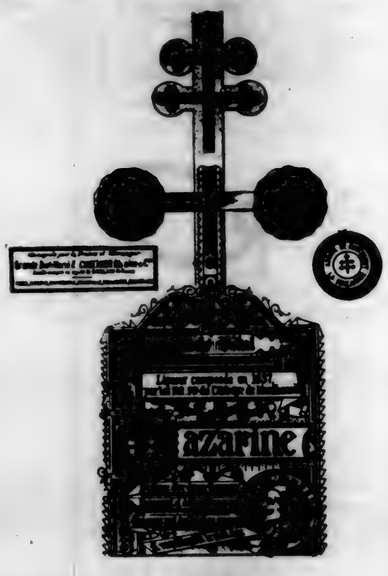

Particular description of goods.—A Cordial.

Ser. No. 22,260. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) SOCIETE ANONYME DE LA GRANDE DISTILLERIE E. CUSENIER FILS AINE ET COMPAGNIE, Paris, Ornans, Charenton, and Marseilles, France; Mulhouse, Germany, and Brussels, Belgium. Filed Sept. 21, 1906.

Particular description of goods.—Cordials.

Ser. No. 22,592. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GREGOIRE KERSCHENMEYER, Luxembourg, Grand Duchy of Luxembourg. Filed Oct. 8, 1906.

Nodosol

Particular description of goods.—Hemorrhoidal Preparations in the Form of Suppositories, Salves, and Teas.

Ser. No. 22,595. (CLASS 33. GLASSWARE NOT OTHERWISE CLASSIFIED.) WM. R. NOE, New York, N. Y. Filed Oct. 8, 1906.

Three Feather Brand

Particular description of goods.—Lamp-Chimneys.

Ser. No. 22,642. (CLASS 27. RAILWAY EQUIPMENT NOT OTHERWISE CLASSIFIED AND RAILWAY ROLLING-STOCK.) FRIED. KRUPP AKTIENGESELLSCHAFT, Essen-on-the-Ruhr, Germany. Filed Oct. 11, 1906.

Particular description of goods.—Car-Axles, Car-Wheels, Naves, Spokes, Tires for Railway Rolling-Stock, Wheels with Axles for Railway Rolling-Stock, Parts of Locomotives, Trucks for Railway Rolling-Stock, Bearings for Railway Rolling-Stock, Spiral Springs and Steel Springs Used on Railway-Cars and Locomotives, Bogies, Frame-Plates for Locomotives and Cars, Fish-Plates, Rail-Chairs, Frogs, and Switches.

Ser. No. 22,858. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FREERICKS & TAMMEN, San Diego, Cal. Filed Oct. 23, 1906.

Particular description of goods.—Cough-Drops.

Ser. No. 22,865. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) THE RAVEN GLOSS MFG. CO., New York, N. Y. Filed Oct. 23, 1906.

Kleano

Particular description of goods.—A Preparation for Cleaning and Whitening Articles Made of Canvas or Duck.

Ser. No. 22,872. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) UNION CARD & PAPER CO., New York, N. Y. Filed Oct. 24, 1906.

Glenhurst

Particular description of goods.—Writing-Paper, Bond-Paper, and Ledger-Paper.

Ser. No. 22,961. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) THE COLLINS COMPANY, Collinsville, Conn. Filed Oct. 29, 1906. Used ten years.

COLLINS.

Particular description of goods.—Pickaxes, Cavadores, Barretones, Tarpalas, Palas, Shovels, Spades, Crowbars, Picks, Hoes, Mill-Picks, Sledges, Hammers, Wedges, and Wrenches.

Ser. No. 22,963. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) THE COLLINS COMPANY, Collinsville, Conn. Filed Oct. 29, 1906. Used ten years.

DYNAHICUT.

Particular description of goods.—Pickaxes, Cavadores, Barretones, Tarpalas, Palas, Shovels, Spades, Crowbars, Picks, Hoes, Mill-Picks, Sledges, Hammers, Wedges, and Wrenches.

Ser. No. 22,982. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) FARMERS FRIEND STOCK FOOD COMPANY, West Milton, Ohio. Filed Oct. 29, 1906.

Particular description of goods.—Stock Food.

Ser. No. 23,004. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) ROSENZWEIG BROS. & CO., New York, N. Y. Filed Oct. 30, 1906.

Particular description of goods.—Men's and Boys' Coats, Pants, Vests, and Overcoats, Exclusive of Overalls and Jumpers.

Ser. No. 23,270. (CLASS 8. DETERGENTS.) ANTHON V. HASSMAN, Elkhart, Ind. Filed Nov. 12, 1906.

Lotafoam

Particular description of goods.—A Liquid Soap.

Ser. No. 23,372. (CLASS 33. GLASSWARE NOT OTHERWISE CLASSIFIED.) WELSBACH CO., Gloucester, N. J. Filed Nov. 15, 1906.

Particular description of goods.—Illuminating-Glassware, Comprising Globes, Shades, and Chimneys.

Ser. No. 23,452. (CLASS 55. WINES.) CARMEL WINE COMPANY, New York, N. Y. Filed Nov. 19, 1906.

CARMEL

Particular description of goods.—Wines.

Ser. No. 23,486. (CLASS 71. TOBACCO PRODUCTS.) GEORGE HAROLD GRANT WING, New York, N. Y. Filed Nov. 20, 1906.

ALMA MATER,

Particular description of goods.—Cigars and Cigarettes.

Ser. No. 23,504. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) RICE, STIX DRY GOODS COMPANY, St. Louis, Mo. Filed Nov. 20, 1906.

VICTORIA

Particular description of goods.—Knitted, Netted, and Lace Gloves.

Ser. No. 23,599. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) BERNSTEIN KAUFMAN & COMPANY, Philadelphia, Pa. Filed Nov. 26, 1906.

Particular description of goods.—Cravats.

Ser. No. 23,770. (CLASS 19. BOATS AND ROAD-VEHICLES.) GASTON DUMOND, Paris, France. Filed Dec. 5, 1906.

Particular description of goods.—Automobiles and Parts Thereof, Except Rubber Tires.

Ser. No. 23,781. (CLASS 68. PUBLICATIONS.) THE JEWELERS CIRCULAR PUBLISHING CO., New York, N. Y. Filed Dec. 5, 1906.

Particular description of goods.—Periodicals.

Ser. No. 23,807. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) REVERE RUBBER COMPANY, Boston, Mass. Filed Dec. 6, 1906.

UNITY

Particular description of goods.—Belting, Hose, and Machinery Packings Composed of Rubber, Rubber Compositions, Metals, or Textile Fabrics or Combinations Thereof.

Ser. No. 23,811. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) EMORY L. BAUER, New York, N. Y. Filed Dec. 6, 1906.

MALITONE

Particular description of goods.—A Proprietary Medicine for the Cure of Malaria, Chills, Fever, and Grippe.

Ser. No. 23,816. (CLASS 5. ADHESIVES.) CAPE ANN ISINGLASS COMPANY, Boston, Mass. Filed Dec. 6, 1906.

Particular description of goods.—Isinglass.

Ser. No. 23,873. (CLASS 54. SEA FOODS.) REISS & BRADY, New York, N. Y. Filed Dec. 8, 1906.

CRESCA

Particular description of goods.—Sardines, Sardine Paste, Sprats, Mackerel, Tunny Fish, Herring, Neunaugen, Shrimps, Bucklinge, Sardeles, Caviar, Anchovies, Salmon, Slids, Crawfish-Broth.

Ser. No. 23,981. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) HABGADINE-MCKITTRICK DRY GOODS COMPANY, St. Louis, Mo. Filed Dec. 13, 1906.

Particular description of goods.—Textile Collars, Cuffs, and Outer and Dress Shirts.

Ser. No. 23,994. (CLASS 51. MALT LIQUORS.) FRED FEIL BREWING COMPANY, Philadelphia, Pa. Filed Dec. 13, 1906.

Particular description of goods.—Beer, Ale, Brown Stout, and Extract of Malt.

Ser. No. 23,997. (CLASS 5. ADHESIVES.) GREENE & COMPANY, Boston, Mass. Filed Dec. 13, 1906.

KULIK

Particular description of goods.—Starch or Size for Use in the Manufacture of Cloth or in Connection with Cloth.

Ser. No. 24,063. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE DILL & COLLINS CO., Philadelphia, Pa. Filed Dec. 15, 1906.

BLACK & WHITE

Particular description of goods.—Surface-Coated Engraving-Papers.

Ser. No. 24,069. (CLASS 53. SACCHARINE FOODS NOT INCLUDED IN CLASS 47.) O. W. PEIRCE COMPANY, La Fayette, Ind. Filed Dec. 15, 1906.

NEW COTTAGE

Particular description of goods.—Corn-Syrup.

Ser. No. 24,173. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) JOHN SILVEY & Co., Atlanta, Ga. Filed Dec. 20, 1906.

UNCLE REMUS

Particular description of goods.—Hosiery.

Ser. No. 24,178. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) W. C. R. TURNBULL, Aiken, S. C. Filed Dec. 20, 1906.

VIGOR-VIM

Particular description of goods.—A Non-Alcoholic Carbonated Beverage.

Ser. No. 24,249. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) JOHN ASTROM, Milwaukee, Wis. Filed Dec. 24, 1906.

Particular description of goods.—Signaling Apparatus.

Ser. No. 24,361. (CLASS 8. DETERGENTS.) WASHINGTON BERRY, Chicago, Ill. Filed Dec. 31, 1906.

Particular description of goods.—Soaps.

Ser. No. 24,384. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) PURE FOOD BAKING POWDER CO., Chicago, Ill. Filed Jan. 2, 1907. Used ten years.

PURE FOOD

Particular description of goods.—Baking-Powder.

Ser. No. 24,385. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE REA-PATTERSON MILLING COMPANY, Coffeyville, Kans. Filed Jan. 2, 1907.

ROYAL OWL

Particular description of goods.—Wheat-Flour.

Ser. No. 24,429. (CLASS 68. PUBLICATIONS.) WILLIS BULLOCK, Canajoharie, N. Y. Filed Jan. 3, 1907. Used ten years.

HAY TRADE JOURNAL

Particular description of goods.—A Newspaper.

Ser. No. 24,539. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) AUGUST GIESECKE, Milwaukee, Wis. Filed Jan. 9, 1907.

Particular description of goods.—Rheumatic Remedy.

Ser. No. 24,562. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) SOCIETE ANONYME DE LA GRANDE DISTILLERIE E. CUSENIER FILS AINE ET COMPAGNIE, Paris, France. Filed Jan. 10, 1907.

Particular description of goods.—Apricot-Brandy.

Ser. No. 24,569. (CLASS 60. INKS AND INKING MATERIALS.) JOHN P. CONNER, West New Brighton, N. Y. Filed Jan. 11, 1907.

TRI-COLO

Particular description of goods.—Printing-Ink Reducers and Driers.

Ser. No. 24,624. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) MOXIE NERVE FOOD COMPANY OF NEW ENGLAND, Saco, Me.; Boston, Mass., and New York, N. Y. Filed Jan. 14, 1907. Used ten years.

MOXIE

Particular description of goods.—Non-Alcoholic Carbonated Beverage and Syrup for Making the Same.

Ser. No. 24,659. (CLASS 10. FERTILIZERS.) NAVASSA GUANO COMPANY OF WILMINGTON, Wilmington, N. C. Filed Jan. 15, 1907. Used ten years.

NAVASSA
ACID PHOSPHATE

Particular description of goods.—Fertilizers.

Ser. No. 24,665. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINERY MEDICINES.) PEROXIDENT MANUFACTURING COMPANY, St. Louis, Mo. Filed Jan. 16, 1907.

Peroxident

Particular description of goods.—Almond-Meal.

Ser. No. 24,731. (CLASS 28. SEWING-MACHINES AND ATTACHMENTS.) WHITE SEWING MACHINE CO., Cleveland, Ohio. Filed Jan. 17, 1907. Used ten years.

WHITE

Particular description of goods.—Sewing-Machine Needles Used in Family and Manufacturing Sewing-Machines.

Ser. No. 24,740. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) CHARLES E. MOODY & Co., Boston, Mass. Filed Jan. 18, 1907. Used ten years.

MATCHLESS

Particular description of goods.—Tea and Coffee.

Ser. No. 24,754. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) RECORDS & GOLDSBOROUGH, Baltimore, Md. Filed Jan. 18, 1907.

MARYLAND PRIDE

Particular description of goods.—Whisky.

Ser. No. 24,779. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) EVERETT ROBINSON, Baltimore and Hopewell, Md. Filed Jan. 19, 1907.

BULL DOG BRAND

Particular description of goods.—Canned Tomatoes.

Ser. No. 24,798. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ELI ATWELL, Mountain Dale, N. Y. Filed Jan. 21, 1907.

Noxall

Particular description of goods.—Corn Cure, Spavin Cure, and Liquid Court-Plaster.

Ser. No. 24,820. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) IMPERIAL DISTILLING & CORDIAL CO., Chicago, Ill. Filed Jan. 22, 1907.

Particular description of goods.—Cordials.

Ser. No. 24,831. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) H. FRANK & SONS, Wheeling, W. Va. Filed Jan. 22, 1907.

WOOLENBURY

Particular description of goods.—Men's, Women's, and Children's Knitted Underwear.

Ser. No. 24,841. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) WILD PIGEON MINERAL SPRINGS COMPANY, Portland, Oreg. Filed Jan. 22, 1907.

Particular description of goods.—Mineral Water.

Ser. No. 24,843. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JAMES M. MYERS, Cincinnati, Ohio. Filed Jan. 22, 1907.

Particular description of goods.—A Remedy for Diseases of the Blood, in Tablet Form.

Ser. No. 24,854. (CLASS 8. DETERGENTS.) THE LAUNDRY BLUE CO., Chicago, Ill. Filed Jan. 23, 1907.

WONDER-WAX

Particular description of goods.—Washing Compounds.

Ser. No. 24,857. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) THE H. N. PERVEAR COMPANY, Providence, R. I. Filed Jan. 23, 1907.

Particular description of goods.—Jewelry for Personal Adornment.

Ser. No. 24,891. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) FARBENFABRIKEN VORM. FRIEDR. BAYER & Co., Elberfeld, Germany. Filed Jan. 25, 1907.

SOPHOL

Particular description of goods.—Coal-Tar Dyes, Disinfectants, Preservatives for Food, Photographic Developers, Chemicals Used in Printing and Dyeing.

Ser. No. 24,894. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) MAX AMS, New York, N. Y. Filed Jan. 25, 1907.

BLUE PAIL BRAND

Particular description of goods.—Pie-Fillings, Preserves, and Jellies.

Ser. No. 24,943. (CLASS 47. CONFECTIONERY.) MANUFACTURING CO. OF AMERICA, Philadelphia, Pa. Filed Jan. 28, 1907.

FULL MOON

Particular description of goods.—Candy and Chewing-Gum.

Ser. No. 24,956. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) BRONNE-MAYER COMPANY, New York, N. Y. Filed Jan. 28, 1907.

Broadway

Particular description of goods.—Men's and Boys' Shirts other Than Knit Shirts or Shirts Made of Knitted Material.

Ser. No. 24,960. (CLASS 51. MALT LIQUORS.) M. K. GOETZ BREWING CO., St. Joseph, Mo. Filed Jan. 28, 1907.

Particular description of goods.—A Malt Extract.

Ser. No. 24,968. (CLASS 47. CONFECTIONERY.) STEPHEN F. WHITMAN & SON, Philadelphia, Pa. Filed Jan. 28, 1907.

Chocolate Blossoms

Particular description of goods.—Chocolates and Chocolate Candies.

Ser. No. 24,994. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) JOHN A. MORGART, Smithfield, Va. Filed Jan. 29, 1907.

Particular description of goods.—Mineral Water.

Ser. No. 25,011. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) ALMA MANUFACTURING COMPANY OF BALTIMORE CITY, Baltimore, Md. Filed Jan. 30, 1907.

SIMPLEX

Particular description of goods.—Buckles.

Ser. No. 25,029. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) GEO. BOEPFELDT & Co., New York, N. Y. Filed Jan. 31, 1907.

CORONET

Particular description of goods.—Talking-Machines.

Ser. No. 25,052. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) TOWNSEND GRACE CO. OF BALTIMORE CITY, Baltimore, Md. Filed Feb. 1, 1907.

Particular description of goods.—Straw Hats and Caps.

Ser. No. 25,056. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) OWEN OSBORNE, Philadelphia, Pa. Filed Feb. 1, 1907.

Particular description of goods.—Hosiery.

Ser. No. 25,057. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) OWEN OSBORNE, Philadelphia, Pa. Filed Feb. 1, 1907.

"The LITTLE MISCHIEF"

Particular description of goods.—Hosiery.

Ser. No. 25,079. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) THE OMO MANUFACTURING COMPANY, Middletown, Conn. Filed Feb. 2, 1907.

Armia

Particular description of goods.—Dress-Shields.

Ser. No. 25,083. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) SETON LEATHER CO., Newark, N. J. Filed Feb. 2, 1907.

Particular description of goods.—Patent Side Leather.

Ser. No. 25,085. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOHN N. STEARNS, Syracuse, N. Y. Filed Feb. 2, 1907.

PALOL

Particular description of goods.—Castor-Oil.

Ser. No. 25,088. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) J. L. WARD MEDICINE COMPANY, Big Springs, Tex. Filed Feb. 2, 1907.

J. L. Ward

Particular description of goods.—Kidney-Pills, Blood and Liver Pills, Iron-Tonic Pills, Laxative-Quinin and Cold Pills, and Headache-Tablets.

Ser. No. 25,091. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) RICE, STIX DRY GOODS COMPANY, St. Louis, Mo. Filed Feb. 2, 1907.

OUR PRESIDENTS

Particular description of goods.—Cotton Piece Goods.

Ser. No. 25,093. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) RICE, STIX DRY GOODS COMPANY, St. Louis, Mo. Filed Feb. 2, 1907.

THE GEM

Particular description of goods.—Cotton Piece Goods.

Ser. No. 25,096. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) RICE, STIX DRY GOODS COMPANY, St. Louis, Mo. Filed Feb. 2, 1907.

Particular description of goods.—Cotton Piece Goods.

Ser. No. 25,097. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) RICE, STIX DRY GOODS COMPANY, St. Louis, Mo. Filed Feb. 2, 1907.

Particular description of goods.—Cotton Piece Goods.

Ser. No. 25,110. (CLASS 9. EXPLOSIVES.) COAST MANUFACTURING & SUPPLY CO., Berkeley, Cal. Filed Feb. 4, 1907.

Particular description of goods.—Fuses.

Ser. No. 25,111. (CLASS 9. EXPLOSIVES.) COAST MANUFACTURING & SUPPLY CO., Berkeley, Cal. Filed Feb. 4, 1907.

METROPOLITAN

Particular description of goods.—Fuses.

Ser. No. 25,114. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) KALAMAZOO PLAYING CARD CO., Kalamazoo, Mich. Filed Feb. 4, 1907.

"KOH-I-NOOR"

Particular description of goods.—Playing-Cards.

Ser. No. 25,121. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) BROWN DURRELL CO., Boston, Mass. Filed Feb. 4, 1907.

The ribbon being printed in blue.

Particular description of goods.—Hosiery and Knitted Underwear.

Ser. No. 25,123. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) JOHN DITTMAR & SONS, Baltimore, Md. Filed Feb. 4, 1907.

Particular description of goods.—Duck-Pins.

Ser. No. 25,129. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) THE INTERNATIONAL M'F'G. CO., New York, N. Y. Filed Feb. 4, 1907.

Particular description of goods.—Handkerchiefs.

Ser. No. 25,137. (CLASS 53. SACCHARINE FOODS NOT INCLUDED IN CLASS 47.) WELCH BROS. MAPLE CO., Burlington, Vt. Filed Feb. 4, 1907.

MAYFLOWER BREAKFAST SYRUP

Particular description of goods.—Syrup.

Ser. No. 25,155. (CLASS 68. PUBLICATIONS.) ROBERT M. VAN ARSDALE, New York, N. Y. Filed Feb. 5, 1907.

AMERICAN ENGINEER

Particular description of goods.—A Monthly Publication.

Ser. No. 25,157. (CLASS 28. SEWING-MACHINES AND ATTACHMENTS.) L. C. KING & Co., Frankfort, Ind. Filed Feb. 5, 1907.

Gem City

Particular description of goods.—Sewing-Machines.

Ser. No. 25,161. (CLASS 9. EXPLOSIVES.) COAST MANUFACTURING & SUPPLY CO., Berkeley, Cal. Filed Feb. 6, 1907. Used ten years.

Particular description of goods.—Fuses.

Ser. No. 25,165. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) SOCIETY OF CHEMICAL INDUSTRY IN BASLE, Basel, Switzerland. Filed Feb. 6, 1907.

Particular description of goods.—Combinations of Quinin and its Derivatives with the Anhydro Oxymethylendiphosphoric Acid and its Derivatives Designed for Use as Antipyretic Tonics.

Ser. No. 25,170. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) ROBT. SHOEMAKER & Co., Philadelphia, Pa. Filed Feb. 6, 1907.

IMPERIAL

Particular description of goods.—White Lead.

Ser. No. 25,171. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) ROBT. SHOEMAKER & Co., Philadelphia, Pa. Filed Feb. 6, 1907.

IMPERIAL

Particular description of goods.—Ready-Mixed Paints.

Ser. No. 25,188. (CLASS 68. PUBLICATIONS.) THE NATIONAL BAKER PUBLISHING COMPANY, Philadelphia, Pa. Filed Feb. 7, 1907.

The National Baker.

Particular description of goods.—A Periodical.

Ser. No. 25,201. (CLASS 9. EXPLOSIVES.) COAST MANUFACTURING & SUPPLY CO., Berkeley, Cal. Filed Feb. 8, 1907. Used ten years.

Particular description of goods.—Fuses.

TRADE-MARKS

REGISTERED MARCH 5, 1907.

61,037. SUMMER WHITE COTTON-SEED OIL. The American Cotton Oil Company, near Guttenburg, N. J.
Filed November 26, 1906. Serial No. 23,614. PUBLISHED JANUARY 8, 1907.

61,038. COTTON-SEED OIL. The American Cotton Oil Company, near Guttenburg, N. J.
Filed November 26, 1906. Serial No. 23,616. PUBLISHED JANUARY 8, 1907.

61,039. COTTON-SEED OIL. The American Cotton Oil Company, near Guttenburg, N. J.
Filed November 26, 1906. Serial No. 23,617. PUBLISHED JANUARY 8, 1907.

61,040. ROOFING-SLATE. Bangor Roofing Slate Manufacturers Association, Bangor, Pa.
Filed June 21, 1905. Serial No. 8,750. PUBLISHED JANUARY 8, 1907.

61,041. MILK, CREAM, BUTTER, AND MILK-POWDER. The Bernese Alps Milk Co., Stalden, Emmenthal, Switzerland.
Filed November 13, 1905. Serial No. 14,571. PUBLISHED JANUARY 8, 1907.

61,042. CERTAIN NAMED SOUP PREPARATIONS. Fabrik von Maggis Nahrungsmitteln, Kemptthal, Switzerland.
Filed September 29, 1905. Serial No. 13,123. PUBLISHED JANUARY 8, 1907.

61,043. CERTAIN NAMED SOUP PREPARATIONS. Fabrik von Maggis Nahrungsmitteln, Kemptthal, Switzerland.
Filed September 29, 1905. Serial No. 13,124. PUBLISHED JANUARY 8, 1907.

61,044. FRUITS, VEGETABLES, NUTS, AND FLAVORING EXTRACTS AND ESSENCES. Lowell M. Reynolds, Brockton, Mass.
Filed November 30, 1906. Serial No. 23,680. PUBLISHED JANUARY 8, 1907.

61,045. CERTAIN NAMED MEATS, LARD, LARD SUBSTITUTES, AND UNCTUOUS FOOD SUBSTANCES. Schwarzschild and Sulzberger Company, Kansas City, Kans.; Chicago, Ill., and New York, N. Y.
Filed October 14, 1905. Serial No. 13,616. PUBLISHED NOVEMBER 27, 1906.

61,046. WHEAT, RYE, AND GRAHAM FLOURS. J. R. Thomas' Sons, Youngstown, Ohio.
Filed July 13, 1905. Serial No. 10,247. PUBLISHED JANUARY 8, 1907.

61,047. COFFEE. Acker, Merrall & Condit Company, New York, N. Y.
Filed December 11, 1906. Serial No. 23,938. PUBLISHED JANUARY 8, 1907.

61,048. FLAVORING EXTRACT. Charles Jacquin et Cie., Inc., New York, N. Y.
Filed December 11, 1906. Serial No. 23,932. PUBLISHED JANUARY 8, 1907.

61,049. FLAVORING EXTRACT. Charles Jacquin et Cie., Inc., New York, N. Y.
Filed December 11, 1906. Serial No. 23,933. PUBLISHED JANUARY 8, 1907.

61,050. TEA. Chase & Sanborn, Boston, Mass.
Filed March 15, 1906. Serial No. 17,910. PUBLISHED MAY 22, 1906.

61,051. CERTAIN FOOD PREPARATIONS. H. J. Heinz Company, Allegheny, Pa.
Filed July 6, 1906. Serial No. 20,754. PUBLISHED JANUARY 8, 1907.

61,052. CERTAIN FOOD PREPARATIONS. H. J. Heinz Company, Allegheny, Pa.
Filed July 6, 1906. Serial No. 20,755. PUBLISHED JANUARY 8, 1907.

61,053. CERTAIN FOOD PREPARATIONS. H. J. Heinz Company, Allegheny, Pa.
Filed July 6, 1906. Serial No. 20,756. PUBLISHED JANUARY 8, 1907.

61,054. PREPARED FOOD MADE FROM FISH AND OTHER INGREDIENTS. A. W. Marshall, London, England.
Filed December 5, 1905. Serial No. 15,209. PUBLISHED JANUARY 8, 1907.

61,055. STOVE-GASOLENE. The National Refining Company, Cleveland, Ohio.
Filed December 11, 1906. Serial No. 23,934. PUBLISHED JANUARY 8, 1907.

61,056. COFFEE. The Ohio Coffee & Spice Company, Columbus, Ohio.
Filed April 15, 1905. Serial No. 1,711. PUBLISHED JANUARY 8, 1907.

61,057. MEAL, FLOUR, AND CEREAL BREAKFAST FOOD. Ralston Purina Co., St. Louis, Mo.
Filed April 6, 1905. Serial No. 654. PUBLISHED JANUARY 8, 1907.

61,058. CERTAIN NAMED BAKERY PRODUCTS. Reiss & Brady, New York, N. Y.
Filed December 8, 1906. Serial No. 23,869. PUBLISHED JANUARY 8, 1907.

61,059. CHEESE. Reiss & Brady, New York, N. Y.
Filed December 8, 1906. Serial No. 23,871. PUBLISHED JANUARY 8, 1907.

61,060. HORSESHOE-PADS. Revere Rubber Company, Boston, Mass.
Filed September 29, 1905. Serial No. 13,143. PUBLISHED JANUARY 1, 1907.

61,061. MINERAL ROOF-PAINT, HOT-SURFACE PAINT, AND ROOF CEMENT PAINT. The Rossing Paint & Roofing Co., Minneapolis, Minn.
Filed September 6, 1906. Serial No. 21,944. PUBLISHED JANUARY 8, 1907.

61,062. ENAMEL PAINT. Le Ripolin (Société Anonyme Française de peintures Laquées et d'enduits sous-marins procédés Lefranc & Briegleb réunis), Paris, France, and Amsterdam, Netherlands.
Filed December 7, 1905. Serial No. 15,221. PUBLISHED JANUARY 8, 1907.

61,063. FLAVORING EXTRACTS. Blanke-Baer Chemical Company, St. Louis, Mo.
Filed November 3, 1906. Serial No. 23,095. PUBLISHED JANUARY 8, 1907.

61,064. POULTRY AND STOCK FOOD. Ralston Purina Co., St. Louis, Mo.
Filed November 26, 1906. Serial No. 23,613. PUBLISHED JANUARY 8, 1907.

61,065. OLIVE-OIL. Robert Stevenson & Co., Chicago, Ill.
Filed September 13, 1906. Serial No. 22,068. PUBLISHED JANUARY 8, 1907.

61,066. CHOCOLATE, SWEET AND UNSWEETENED, AND COCOA. RUNKEL BROTHERS INCORPORATED, New York, N. Y.
Filed October 9, 1906. Serial No. 22,613. PUBLISHED DECEMBER 18, 1906.

61,067. BARLEY. SCHWABACHER BROS. & CO. INC., Seattle, Wash.
Filed November 14, 1906. Serial No. 23,339. PUBLISHED JANUARY 8, 1907.

61,068. DRIED FRUITS, SAGO, BIRD-SEED, TAPIOCA, AND SPLIT PEAS. SCHWABACHER BROS. & CO. INC., Seattle, Wash.
Filed November 14, 1906. Serial No. 23,340. PUBLISHED JANUARY 8, 1907.

61,069. SLICED SMOKED BEEF. FRED W. SIEBERT, Yonkers, N. Y.
Filed September 24, 1906. Serial No. 22,303. PUBLISHED JANUARY 8, 1907.

61,070. COTTON-SEED OIL. THE AMERICAN COTTON OIL COMPANY, near Guttenburg, N. J.
Filed November 26, 1906. Serial No. 23,615. PUBLISHED JANUARY 8, 1907.

61,071. BREWERS GRAIN. ATLANTIC EXPORT COMPANY, New York, N. Y.
Filed December 6, 1906. Serial No. 23,809. PUBLISHED JANUARY 8, 1907.

61,072. LUBRICATING-OIL. CLARKSON & FORD CO., New York, N. Y.
Filed May 10, 1906. Serial No. 19,408. PUBLISHED JANUARY 8, 1907.

61,073. CUTTING-OIL. CLARKSON & FORD CO., New York, N. Y.
Filed May 10, 1906. Serial No. 19,409. PUBLISHED JANUARY 8, 1907.

61,074. OUTER WAISTS, OUTER SKIRTS, AND SUITS. ADOLPH COHEN, New York, N. Y.
Filed April 7, 1906. Serial No. 18,607. PUBLISHED JANUARY 8, 1907

61,075. CERTAIN CORDAGE. COLUMBIAN ROPE COMPANY, Auburn, N. Y
Filed July 20, 1906. Serial No. 21,026. PUBLISHED JANUARY 8, 1907.

61,076. GIN KINAHAN & COMPANY LIMITED, Dublin, Ireland.
Filed May 3 1906. Serial No. 19,256. PUBLISHED JANUARY 8, 1907.

61,077. CERTAIN SHIRTS, OVERALLS, AND PANTALOONS. JACOB LEVI, Paterson, N. J.
Filed September 12, 1906. Serial No. 22,052. PUBLISHED JANUARY 8 1907.

61,078. INFANTS' HATS AND CAPS. S. MAYER & SONS, New York, N. Y.
Filed December 8, 1906. Serial No. 23,883. PUBLISHED JANUARY 8, 1907.

61,079. WHEAT-FLOUR. MEDLIN MILLING CO., Fort Worth, Tex.
Filed January 5, 1906. Serial No. 15,938. PUBLISHED JANUARY 8, 1907.

61,080. LUBRICATING-OIL. THE NATIONAL REFINING COMPANY, Cleveland, Ohio.
Filed December 11, 1906. Serial No. 23,935. PUBLISHED JANUARY 8, 1907.

61,081. SOAP. THE POMPEIAN MFG. CO., Cleveland, Ohio.
Filed December 11, 1906. Serial No. 23,936. PUBLISHED JANUARY 8, 1907.

61,082. TROUSERS. POTSDAM CLOTHING MANUFACTURING COMPANY, Potsdam, N. Y.
Filed December 6, 1906. Serial No. 23,827. PUBLISHED JANUARY 8, 1907.

61,083. PREPARATION FOR CLEANING STRAW AND BAST HATS. MAX QUEISSER, Berlin, Germany.
Filed October 3, 1906. Serial No. 22,471. PUBLISHED JANUARY 8, 1907.

61,084. WHISKY. RIDGER & LINDLEY, Salt Lake City, Utah.
Filed October 1, 1906. Serial No. 22,411. PUBLISHED JANUARY 8, 1907.

61,085. SEALING-WAX OF ALL VARIETIES, MUCILAGE, AND PASTE. THADDEUS DAVIDS COMPANY, New York, N. Y.
Filed July 10, 1906. Serial No. 20,832. PUBLISHED JANUARY 8, 1907.

61,086. WHISKY. LEIGH W. WALKER, Pittsburg, Pa.
Filed November 1, 1906. Serial No. 23,036. PUBLISHED JANUARY 8, 1907.

61,087. WHISKY. JAMES WALSH & CO., Cincinnati, Ohio.
Filed August 10, 1905. Serial No. 11,503. PUBLISHED JANUARY 8, 1907.

61,088. STOVE-POLISH. WILLIAM WIERHAKE, St. Louis, Mo.
Filed December 11, 1906. Serial No. 23,945. PUBLISHED JANUARY 8, 1907.

61,089. CERTAIN FIREARMS, EQUIPMENTS, AND PROJECTILES. WINCHESTER REPEATING ARMS CO., New Haven, Conn.
Filed July 17, 1906. Serial No. 20,979. PUBLISHED JANUARY 8, 1907.

61,090. AUTOMOBILE HATS AND CAPS. 35 % AUTOMOBILE SUPPLY CO., New York, N. Y.
Filed December 12, 1906. Serial No. 23,956. PUBLISHED JANUARY 8, 1907.

61,091. WHISKY. H. F. CORBIN & CO., Cincinnati, Ohio.
Filed January 23, 1906. Serial No. 16,431. PUBLISHED OCTOBER 2, 1906.

61,092. DECALCOMANIAS AND TRANSFER-PICTURES. R. DÜHRSSEN, New York, N. Y
Filed November 26, 1906. Serial No. 23,604. PUBLISHED JANUARY 8, 1907.

61,093. GIN. JOHN C. WELLER CO., Louisville, Ky.
Filed December 6, 1906. Serial No. 23,832. PUBLISHED JANUARY 8, 1907.

61,094. GIN. HERMAN OBERNAUER, Pittsburg, Pa.
Filed August 9. 1906. Serial No. 21,437. PUBLISHED JANUARY 8, 1907.

61,095. WHISKY. HERMAN OBERNAUER. Pittsburg, Pa.
Filed December 6, 1906. Serial No. 23,826. PUBLISHED JANUARY 8, 1907.

61,096. CANNED VEGETABLES. OKLAHOMA WHOLESALE GROCER CO., Oklahoma, Okla. Ter.
Filed September 13, 1906. Serial No. 22,068. PUBLISHED JANUARY 8, 1907.

WITHDRAWN.

61,098. BLACKBERRY BRANDY AND CORDIALS. RHEINSTROM, BETTMAN JOHNSON & CO., Cincinnati, Ohio.
Filed June 19. 1905. Serial No. 8,481. PUBLISHED JANUARY 8, 1906.

61,099. WHISKY. SIELEMANN DISTILLING CO., St. Louis, Mo.
Filed December 6, 1906. Serial No. 23,829. PUBLISHED JANUARY 8, 1907.

61,100. MIXTURE HAVING FOR ITS ESSENTIAL INGREDIENTS A VEGETABLE OIL AND AN ANIMAL FAT. THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La.
Filed July 27, 1905. Serial No. 10,898. PUBLISHED JANUARY 8, 1907.

61,101. GAME-COUNTERS AND CHIPS. THE UNITED STATES PLAYING CARD COMPANY, Cincinnati, Ohio.
Filed November 21, 1906. Serial No. 23,521. PUBLISHED JANUARY 8, 1907.

61,102. GAME-COUNTERS AND CHIPS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.
Filed December 5, 1906. Serial No. 23,775. PUBLISHED JANUARY 8, 1907.

61,103. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
Filed December 12, 1906. Serial No. 23,948. PUBLISHED JANUARY 8, 1907.

61,104. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
Filed December 12, 1906. Serial No. 23,951. PUBLISHED JANUARY 8, 1907.

61,105. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
Filed December 12, 1906. Serial, No. 23,953. PUBLISHED JANUARY 8, 1907.

61,106. PREPARATIONS FOR CLEANING AND POLISHING FURNITURE AND WOODWORK. ATLAS SPECIALTY COMPANY, Buffalo, N. Y.
Filed July 2, 1906. Serial No. 20,691. PUBLISHED JANUARY 8, 1907.

61,107. PERIODICAL PUBLICATIONS DEVOTED TO PHOTOGRAPHY. ALICE W. CHAMBERS, Philadelphia, Pa.
Filed December 6, 1906. Serial No. 23,818. PUBLISHED JANUARY 8, 1907.

61,108. SEWING-THREAD AND ART-NEEDLEWORK YARNS. CHICAGO THREAD MFG. CO., Chicago, Ill.
Filed November 19, 1906. Serial No. 23,473. PUBLISHED JANUARY 8, 1907.

61,109. COLLARS, COLLAR-PADS, AND BACK-BANDS FOR HORSES. COUCH BROS. & J. J. EAGAN CO., Atlanta and East Point, Ga.
Filed September 20, 1906. Serial No. 22,381. PUBLISHED JANUARY 8, 1907.

61,110. WHISKY. EDW. B. BRUCE CO., Baltimore, Md.
Filed August 13 1906. Serial No. 21,498. PUBLISHED JANUARY 8, 1907.

61,111. LEATHER BOOTS AND SHOES. GEO. D. WITT SHOE CO. Lynchburg, Va.
Filed December 6, 1906. Serial No. 23,796. PUBLISHED JANUARY 8, 1907.

61,112. COTTON PIECE GOODS. GRENDEL MILLS, Greenwood, S. C.
Filed November 22, 1906. Serial No. 23,535. PUBLISHED JANUARY 8, 1907.

61,113. LEATHER BOOTS AND SHOES. GUTHMANN CARPENTER & TELLING, Chicago, Ill.
Filed May 8, 1905. Serial No. 4,643. PUBLISHED JANUARY 8, 1907.

61,114. FERTILIZERS. HOME FERTILIZER & CHEMICAL COMPANY OF BALTIMORE CITY. Baltimore, Md.
Filed November 24, 1906. Serial No. 23,576. PUBLISHED JANUARY 8, 1907.

61,115. MONTHLY PERIODICAL. WILLIAM J. JOHNSTON, New York, N. Y.
Filed September 1, 1905. Serial No. 12,130. PUBLISHED JANUARY 8, 1907.

61,116. CHIFFONNIERS, DRESSERS, AND COMMODES. MARVEL FURNITURE COMPANY, Jamestown, N. Y.
Filed June 15, 1906. Serial No. 20,306. PUBLISHED JANUARY 8, 1907.

61,117. MALT EXTRACTS. PARAGON MALT EXTRACT CO., New York, N. Y.
Filed June 21, 1906. Serial No. 20,468. PUBLISHED JANUARY 8, 1907.

61,118. LEATHER BOOTS AND SHOES. EPHRAIM PHELPS, Jr., New Orleans, La.
Filed February 16, 1906. Serial No. 17,115. PUBLISHED JANUARY 8, 1907.

61,119. CATAMENIAL BANDAGES. THE REMSEN MANUFACTURING COMPANY, Hartford, Conn.
Filed November 9, 1906. Serial No. 23,203. PUBLISHED JANUARY 8, 1907.

61,120. WRAPPING-PAPER, PAPER-BOARDS, AND PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y.
Filed December 11, 1906. Serial No. 23,936. PUBLISHED JANUARY 8, 1907.

61,121. WRAPPING-PAPER AND PAPER-BOARDS. THE UNION BAG & PAPER COMPANY, New York, N. Y.
Filed December 11, 1906. Serial No. 23,937. PUBLISHED JANUARY 8, 1907.

61,122. WHISKY. ALEXANDER J. WEIL, Cincinnati, Ohio.
Filed November 14, 1906. Serial No. 23,342. PUBLISHED JANUARY 8, 1907.

61,123. WHISKY. ALEXANDER J. WEIL, Cincinnati, Ohio.
Filed November 14, 1906. Serial No. 23,342. PUBLISHED JANUARY 8, 1907.

61,124. AUTOMATIC MUSIC-PLAYING INSTRUMENTS AND MUSIC-ROLLS THEREFOR. THE WILCOX & WHITE COMPANY, Meriden, Conn.
Filed November 20, 1906. Serial No. 23,500. PUBLISHED JANUARY 8, 1907.

61,125. SILK PIECE GOODS. YORK SILK MANUFACTURING CO., York, Pa.
Filed December 7, 1906. Serial No. 23,865. PUBLISHED JANUARY 8, 1907.

61,126. EMBROIDERIES, EMBROIDERY-PATTERNS, AND NEEDLEWORK-DESIGNS ON LINEN OR OTHER FABRICS. LUDWIG E. GOETZ & COMPANY, New York, N. Y.
Filed October 12, 1906. Serial No. 22,669. PUBLISHED JANUARY 8, 1907.

61,127. MINERAL WATER. HINCKLEY & SCHMITT, INC., Chicago, Ill.
Filed September 17, 1906. Serial No. 22,124. PUBLISHED JANUARY 8, 1907.

61,128. COATS, TROUSERS, VESTS, OVERCOATS, AND RAIN-COATS. A. B. KIRSCHBAUM & CO., Philadelphia, Pa.
Filed May 22, 1906. Serial No. 19,773. PUBLISHED JANUARY 8, 1907.

61,129. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. LANGENDORF WATCH CO., Langendorf, Switzerland.
Filed March 16, 1906. Serial No. 17,926. PUBLISHED SEPTEMBER 25, 1906.

61,130. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. LANGENDORF WATCH CO., Langendorf, Switzerland.
Filed March 16, 1906. Serial No. 17,929. PUBLISHED SEPTEMBER 25, 1906.

61,131. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. LANGENDORF WATCH CO., Langendorf, Switzerland.
Filed March 16, 1906. Serial No. 17,931. PUBLISHED SEPTEMBER 25, 1906.

61,132. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. LANGENDORF WATCH CO., Langendorf, Switzerland.
Filed March 16, 1906. Serial No. 17,932. PUBLISHED SEPTEMBER 25, 1906.

61,133. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. LANGENDORF WATCH CO., Langendorf, Switzerland.
Filed March 16, 1906. Serial No. 17,933. PUBLISHED SEPTEMBER 25, 1906.

61,134. LEATHER BOOTS, SHOES, AND SLIPPERS. PAUL BROTHERS, Philadelphia, Pa.
Filed December 6, 1906. Serial No. 23,789. PUBLISHED JANUARY 8, 1907.

61,135. LEATHER BOOTS, SHOES, AND SLIPPERS. PAUL BROTHERS, Philadelphia, Pa.
Filed December 6, 1906. Serial No. 23,790. PUBLISHED JANUARY 8, 1907.

61,136. LEATHER BOOTS, SHOES, AND SLIPPERS. PAUL BROTHERS, Philadelphia, Pa.
Filed December 6, 1906. Serial No. 23,791. PUBLISHED JANUARY 8, 1907.

61,137. LADIES' AND MISSES' LEATHER SHOES AND SLIPPERS. PAUL BROTHERS, Philadelphia, Pa.
Filed December 6, 1906. Serial No. 23,792. PUBLISHED JANUARY 8, 1907.

61,138. LEATHER BOOTS, SHOES, AND SLIPPERS. PAUL BROTHERS, Philadelphia, Pa.
Filed December 8, 1906. Serial No. 23,877. PUBLISHED JANUARY 8, 1907.

61,139. BEER. PITTSBURGH BREWING COMPANY, Pittsburg, Pa.
Filed May 4, 1906. Serial No. 19,289. PUBLISHED JANUARY 8, 1907.

61,140. WHISKY. H. ROSENHEIM & SON, Baltimore, Md.
Filed June 19, 1905. Serial No. 8,464. PUBLISHED OCTOBER 16, 1906.

61,141. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
Filed December 12, 1906. Serial No. 23,949. PUBLISHED JANUARY 8, 1907.

61,142. MINERAL WATER. VIRGINIA ETNA LITHIA SPRINGS CO., Jersey City, N. J., and New York, N. Y.
Filed October 24, 1906. Serial No. 22,898. PUBLISHED JANUARY 8, 1907.

61,143. TUNING-PINS FOR PIANOS. W. WAGNER, Jr., Plattenberg, Germany.
Filed May 22, 1906. Serial No. 19,782. PUBLISHED JANUARY 8, 1907.

61,144. TUNING-PINS FOR PIANOS. W. WAGNER, Jr., Plattenberg, Germany.
Filed May 22, 1906. Serial No. 19,783. PUBLISHED JANUARY 8, 1907.

61,145. AUTOMOBILES AND PARTS THEREOF, EXCEPT RUBBER TIRES. ARGUS MOTOREN GESELLSCHAFT JEANNIN & CO. COMM.-GES., Berlin, Germany
Filed April 18, 1906. Serial No. 18,908. PUBLISHED JANUARY 8, 1907.

61,146. CARPET-SWEEPERS. BISSELL CARPET SWEEPER COMPANY, Grand Rapids, Mich.
Filed July 27, 1905. Serial No. 10,880. PUBLISHED JANUARY 8, 1907.

61,147. CARPET-SWEEPERS. BISSELL CARPET SWEEPER COMPANY, Grand Rapids, Mich.
Filed July 27, 1905. Serial No. 10,881. PUBLISHED JANUARY 8, 1907.

61,148. METALLIC FASTENERS FOR BELTS. THE BRISTOL CO., Waterbury, Conn.
Filed May 9, 1906. Serial No. 19,379. PUBLISHED JANUARY 8, 1907.

61,149. CERTAIN MACHINERY AND PARTS THEREOF. CHANDLER & TAYLOR COMPANY, Indianapolis, Ind.
Filed June 24, 1905. Serial No. 8,996. PUBLISHED JANUARY 8, 1907.

61,150. CERTAIN MACHINERY. THE DEFIANCE MACHINE WORKS, Defiance, Ohio.
Filed July 27, 1906. Serial No. 21,209. PUBLISHED JANUARY 8, 1907.

61,151. CERTAIN METAL MANUFACTURES. THE EBERHARD MANUFACTURING COMPANY, Cleveland, Ohio.
Filed April 6, 1905. Serial No. 546. PUBLISHED JANUARY 8, 1907.

61,152. RAZORS. INTERNATIONAL CUTLERY COMPANY, Fremont, Ohio.
Filed July 3, 1905. Serial No. 9,670. PUBLISHED JANUARY 8, 1907.

61,153. BUGGIES AND CARRIAGES. STUDEBAKER BROS. MFG. CO., South Bend, Ind.
Filed February 14, 1906. Serial No. 17,026. PUBLISHED JANUARY 8, 1907.

61,154. CERTAIN METAL MANUFACTURES. WM. VOGEL & BROS., Brooklyn, N. Y.
Filed June 19, 1906. Serial No. 20,408. PUBLISHED JANUARY 8, 1907.

61,155. CERTAIN EDGE-TOOLS. A. BALDWIN & CO. LTD., New Orleans, La.
Filed September 5, 1906. Serial No. 21,926. PUBLISHED JANUARY 8, 1907.

61,156. EYE MEDICINE. ABRAM R. CANTER, Wilkinsburg, Pa.
Filed November 22, 1906. Serial No. 23,533. PUBLISHED JANUARY 8, 1907.

61,157. COTTON DUCK. DENISON COTTON MILL CO., Denison, Tex.
Filed December 6, 1906. Serial No. 23,790. PUBLISHED JANUARY 8, 1907.

61,158. SALVE. THE GORDONELL CHEMICAL COMPANY, Baltimore, Md.
Filed October 27, 1906. Serial No. 22,942. PUBLISHED JANUARY 8, 1907.

61,159. THERMOMETERS, BAROMETERS, MERCURY-GAGES, SPRING-GAGES, AND HYDROMETERS. THE HOFMANN & MAURER MFG. CO., Rochester, N. Y.
Filed December 10, 1906. Serial No. 23,904. PUBLISHED JANUARY 8, 1907.

61,160. CERTAIN MEDICINES. HUMPHREYS' HOMEOPATHIC MEDICINE CO., New York, N. Y.
Filed June 23, 1906. Serial No. 20,523. PUBLISHED JANUARY 8, 1907.

61,161. TRANSPARENT NON-STAINING PASTE OF IODIN, TRUE OIL OF WINTERGREEN, AND MENTHOL. THE IODALINE COMPANY, New York, N. Y.
Filed April 17, 1906. Serial No. 18,880. PUBLISHED JANUARY 8, 1907.

61,162. COMPLEXION-POWDER. THE J. A. POISONI PHARMACAL CO., St. Louis, Mo.
Filed December 6, 1906. Serial No. 23,794. PUBLISHED JANUARY 8, 1907.

61,163. MEN'S, WOMEN'S, AND CHILDREN'S KNITTED UNDERSHIRTS AND DRAWERS. H. JACQUIN & CO., New York, N. Y.
Filed April 2, 1906. Serial No. 18,432. PUBLISHED JANUARY 8, 1907.

61,164. RIVETS. JUDSON L. THOMSON MFG. CO., Waltham, Mass.
Filed December 3, 1906. Serial No. 23,763. PUBLISHED JANUARY 8, 1907.

61,165. CERTAIN MEDICINAL COMPOUNDS. KNOLL & CO., Ludwigshafen-on-the-Rhine, Germany.
Filed August 29, 1906. Serial No. 21,797. PUBLISHED JANUARY 8, 1907.

61,166. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. LANGENDORF WATCH CO., Langendorf, Switzerland.
Filed March 16, 1906. Serial No. 17,928. PUBLISHED SEPTEMBER 25, 1906.

61,167. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. LANGENDORF WATCH CO., Langendorf, Switzerland.
Filed March 16, 1906. Serial No. 17,935. PUBLISHED SEPTEMBER 25, 1906.

61,168. STOMACH-BITTERS. TH. LAPPE, Neudietendorf, Germany.
Filed May 24, 1906. Serial No. 19,831. PUBLISHED JANUARY 8, 1907.

61,169. WHISKY. MICHAEL LETZELTER, Pittsburg, Pa.
Filed December 6, 1906. Serial No. 23,823. PUBLISHED JANUARY 8, 1907.

61,170. KNITTED SOCKS AND STOCKINGS. MAGNET KNITTING MILLS, Clinton, Tenn.
Filed November 8, 1906. Serial No. 23,176. PUBLISHED JANUARY 8, 1907.

61,171. DENTIFRICE. MEADE & BAKER CARBOLIC MOUTH WASH CO., Richmond, Va.
Filed December 6, 1906. Serial No. 23,803. PUBLISHED JANUARY 8, 1907.

61,172. ANTISEPTIC SALVE. AUGUST OBROCK, New York, N. Y.
Filed December 4, 1906. Serial No. 23,761. PUBLISHED JANUARY 8, 1907.

61,173. ANIMAL-TRAPS. ONEIDA COMMUNITY LIMITED, Oneida and Niagara Falls, N. Y.
Filed December 5, 1906. Serial No. 23,784. PUBLISHED JANUARY 8, 1907.

61,174. CERTAIN METAL MANUFACTURES. READING HARDWARE COMPANY, Reading, Pa.
Filed July 20, 1906. Serial No. 21,075. PUBLISHED JANUARY 8, 1907.

61,175. CERTAIN METAL MANUFACTURES. READING HARDWARE COMPANY, Reading, Pa.
Filed July 20, 1906. Serial No. 21,076. PUBLISHED JANUARY 8, 1907.

61,176. MAGNETOS. ROBERT BOSCH, NEW YORK, INC., New York, N. Y.
Filed November 28, 1906. Serial No. 23,655. PUBLISHED JANUARY 8, 1907.

61,177. REMEDY FOR CURING LA GRIPPE, COLDS, AND SIMILAR AILMENTS. THE SOUTHERN CHEMICAL COMPANY, Dallas, Tex.
Filed November 26, 1906. Serial No. 23,612. PUBLISHED JANUARY 8, 1907.

61,178. HOSIERY. HERMANN STÄRKER, Chemnitz, Germany, and New York, N. Y.
Filed July 18, 1905. Serial No. 10,534. PUBLISHED MAY 29, 1906.

61,179. RELIEF-PRINTING PLATES. GEORGE C. THAYER, Indianapolis, Ind.
Filed June 11, 1906. Serial No. 20,206. PUBLISHED JANUARY 8, 1907.

61,180. EXPECTORANT, SEDATIVE, ANTISPASMODIC MEDICINE. THE TILDEN COMPANY, New Lebanon, N. Y.
Filed December 10, 1906. Serial No. 23,910. PUBLISHED JANUARY 8, 1907.

61,181. ARC AND INCANDESCENT ELECTRIC LAMPS. THE TOLEDO RAILWAYS LIGHT COMPANY, Toledo, Ohio.
Filed November 19, 1906. Serial No. 23,470. PUBLISHED JANUARY 8, 1907.

61,182. REMEDY FOR VARIOUS DISEASES OF POULTRY. HENRY E. TURPIN, Haywards, Cal.
Filed October 10, 1906. Serial No. 22,623. PUBLISHED JANUARY 8, 1907.

61,183. COMBINED ABDOMINAL SUPPORTS AND HOSE-SUPPORTERS. NELLIE LENNON DIGNEY, Bridgeport, Conn.
Filed May 22, 1906. Serial No. 19,757. PUBLISHED SEPTEMBER 11, 1906.

61,184. BLOOD-TONIC. EDWARD F. FAHEY, Pittsfield, Mass.
Filed April 9, 1906. Serial No. 18,638. PUBLISHED JANUARY 8, 1907.

61,185. REMEDY FOR SEASICKNESS. BYRON E. FORTNER, Camden, N. J.
Filed October 30, 1906. Serial No. 23,015. PUBLISHED JANUARY 8, 1907.

61,186. LINIMENT. C. W. MASSIE, Fort Worth, Tex.
Filed May 21, 1906. Serial No. 19,742. PUBLISHED JANUARY 8, 1907.

61,187. MEDICINAL REMEDIES FOR THE EYES. T. E. MCPHERSON & CO., Kennett, Mo.
Filed August 1, 1905. Serial No. 11,105. PUBLISHED JANUARY 8, 1907.

61,188. HOSE-SUPPORTERS. A. STEIN & CO., Chicago, Ill.
Filed June 23, 1906. Serial No. 20,516. PUBLISHED NOVEMBER 13, 1906.

61,189. REMEDY FOR CERTAIN DISEASES. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
Filed August 22, 1905. Serial No. 11,881. PUBLISHED JANUARY 8, 1907.

61,190. REMEDY FOR CERTAIN DISEASES. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
Filed August 22, 1905. Serial No. 11,883. PUBLISHED JANUARY 8, 1907.

61,191. DYESTUFFS. AMERICAN DYEWOOD COMPANY, Philadelphia, Pa.
Filed June 16, 1906. Serial No. 20,357. PUBLISHED DECEMBER 25, 1906.

61,192. LEATHER BOOTS AND SHOES. GEO. D. WITT SHOE CO., Lynchburg, Va.
Filed December 6, 1906. Serial No. 23,797. PUBLISHED JANUARY 8, 1907.

61,193. PREPARATION FOR REMOVING SUPERFLUOUS HAIR FROM THE HUMAN BODY. HALL & RUCKEL, New York, N. Y.
Filed November 16, 1906. Serial No. 23,300. PUBLISHED JANUARY 8, 1907.

61,194. NON-POISONOUS INSECTICIDE AND ANTISEPTIC. THOMAS C. MURPHEY, Philadelphia, Pa.
Filed February 8, 1906. Serial No. 16,840. PUBLISHED JANUARY 8, 1907.

61,195. BITTERS. THE MCCART-MOSSET CO., Cleveland, Ohio.
Filed June 24, 1905. Serial No. 8,908. PUBLISHED JANUARY 8, 1907.

61,196. INSECT-POWDERS. THE NATIONAL DISINFECTANT COMPANY, Cincinnati, Ohio.
Filed December 3, 1906. Serial No. 23,721. PUBLISHED JANUARY 8, 1907.

61,197. CHLORATES AND BICHROMATES. THE NATIONAL ELECTROLYTIC CO., Niagara Falls, N. Y.
Filed April 27, 1906. Serial No. 19,104. PUBLISHED JANUARY 8, 1907.

61,198. NERVE-TONICS. THE PEAL MEDICINE COMPANY, Cleveland, Ohio.
Filed September 24, 1906. Serial No. 22,300. PUBLISHED JANUARY 8, 1907.

61,199. REMEDY FOR DISEASES OF THE BLOOD, LIVER, STOMACH, AND KIDNEYS. PEERLESS HERB CO., Williamsport, Pa.
Filed May 18, 1906. Serial No. 19,657. PUBLISHED JANUARY 8, 1907.

61,200. CERTAIN NAMED TOILET PREPARATIONS. THE POMPEIAN MFG. CO., Cleveland, Ohio.
Filed January 6, 1906. Serial No. 15,951. PUBLISHED DECEMBER 25, 1906.

61,201. TABLE-SALT. RED SEAL NEVER DAMP SALT COMPANY, Kearny, N. J.
Filed November 23, 1906. Serial No. 23,561. PUBLISHED JANUARY 8, 1907.

61,202. MATERNITY OUTFITS. THE REMSEN MANUFACTURING COMPANY, Hartford, Conn.
Filed November 9, 1906. Serial No. 23,202. PUBLISHED JANUARY 8, 1907.

61,203. CERTAIN CHEMICALS. SHARP & DOHME, Baltimore, Md.
Filed October 10, 1906. Serial No. 22,635. PUBLISHED JANUARY 8, 1907.

61,204. CARBOLIC OINTMENT. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
Filed August 2, 1905. Serial No. 11,183. PUBLISHED JANUARY 8, 1907.

61,205. ESSENCE OF JAMAICA GINGER. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
Filed August 2, 1905. Serial No. 11,193. PUBLISHED JANUARY 8, 1907.

61,206. PREPARATION FOR THE CURE OF SKIN DISEASES. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
Filed August 2, 1905. Serial No. 11,194. PUBLISHED JANUARY 8, 1907.

61,207. ITCH-OINTMENT. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
Filed August 2, 1905. Serial No. 11,199. PUBLISHED JANUARY 8, 1907.

61,208. PREPARATION FOR THE CURE OF VENEREAL DISEASES AND THEIR RESULTS. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
Filed September 6, 1905. Serial No. 12,286. PUBLISHED JANUARY 8, 1907.

61,209. REMEDY FOR THE CURE OF CHILLS AND FEVER. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
Filed September 6, 1905. Serial No. 12,288. PUBLISHED JANUARY 8, 1907.

61,210. REMEDY FOR COLDS AND COUGHS, LA GRIPPE, AND HEADACHE. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
Filed September 6, 1905. Serial No. 12,294. PUBLISHED JANUARY 8, 1907.

61,211. KIDNEY MEDICINE. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
Filed September 6, 1905. Serial No. 12,296. PUBLISHED JANUARY 8, 1907.

61,212. CANDY VERMIFUGE. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
Filed September 14, 1905. Serial No. 12,555. PUBLISHED JANUARY 8, 1907.

61,213. MEDICINE FOR THE CURE OF DISEASES OF THE STOMACH, LIVER, AND KIDNEYS. THE VERNO COMPANY, Milwaukee, Wis.
Filed November 30, 1906. Serial No. 23,697. PUBLISHED JANUARY 8, 1907.

LABELS

REGISTERED MARCH 5, 1907.

13,385.—*Title:* "UNION BEER, HOP AND HOREHOUND BEVERAGE." (For a Beverage.) GEORGE ALTREE, Jacksonville, Fla. Filed January 4, 1907.

13,386.—*Title:* "SWIFT'S SPECIFIC." (For a Medicine for the Cure of All Blood and Skin Diseases and for Purifying the Blood.) SWIFT SPECIFIC CO., Atlanta, Ga. Filed February 8, 1907.

13,387.—*Title:* "CHINESE." (For Soap.) MICHIGAN SOAP WORKS, Detroit, Mich. Filed February 11, 1907.

13,388.—*Title:* "BALSAM SANITISSUE." (For Toilet-Paper.) ARTHUR HOYT SCOTT, Oak Lane, Pa. Filed February 9, 1907.

13,389.—*Title:* "S. P. CO'S." (For Toilet-Paper.) SCOTT PAPER CO., Philadelphia, Pa. Filed February 9, 1907.

13,390.—*Title:* "GILT EDGE." (For a Metal-Polish.) ARTHUR H. CROSS, New York, N. Y. Filed February 9, 1907.

13,391.—*Title:* "SCHMIDT'S NEW STAR PIANO POLISH." (For a Piano-Polish.) F. C. LOUIS SCHMIDT, New York, N. Y. Filed January 29, 1907.

PRINTS

REGISTERED MARCH 5, 1907.

1,914.—*Title:* "BUSTER BROWN BREAD." (For Bread.) W. E. LONG CO., Chicago, Ill. Filed February 8, 1907.

1,915.—*Title:* "SPRING AND SUMMER STYLES 1907." (For Hats.) SAMUEL MUNDHEIM CO., Brooklyn, N. Y. Filed January 21, 1907.

1,916.—*Title:* "LEAD FLANGE UNION COUPLING-LEAD AND INSIDE THREAD." (For Lead Flange Union-Couplings.) H. MUELLER MANUFACTURING COMPANY, Decatur, Ill. Filed November 9, 1906.

1,917.—*Title:* "LEAD FLANGE UNION COUPLING-LEAD PIPE." (For Lead Flange Union-Couplings.) H. MUELLER MANUFACTURING COMPANY, Decatur, Ill. Filed November 1, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

A. A. ROSENBUSH & COMPANY v. THE ROSE SHOE MANUFACTURING COMPANY.

Decided May 26, 1906.

TRADE-MARK INTERFERENCE—PRIORITY—CREDIBILITY OF TESTIMONY.

Where the testimony presented in behalf of both the opposing parties is subject to uncertainty, the testimony of Rosenbush concerning the adoption of the mark in 1895 or 1896, which is supported by the testimony of his former partner, Levie, is entitled to as great weight as the testimony of a single disinterested witness testifying from his unaided memory concerning the adoption of the mark by The Rose Shoe Manufacturing Company nearly eight years after the event.

ON APPEAL.

TRADE-MARK FOR BOOTS AND SHOES.

Messrs. Noyes & Harriman and *Mr. Howard A. Coombs* for A. A. Rosenbush & Company.

Mr. C. T. Belt for The Rose Shoe Manufacturing Company.

ALLEN, *Commissioner:*

This is an appeal by A. A. Rosenbush & Company from the decision of the Examiner of Interferences awarding priority of adoption and use of the trade-mark in issue to The Rose Shoe Manufacturing Company.

The issue is the word "Rose" as a trade-mark for shoes. The Rose Shoe Manufacturing Company registered this mark on July 21, 1905. The application of A. A. Rosenbush & Company was filed on July 22, 1905. The date of adoption and use alleged in the statement of The Rose Shoe Manufacturing Company is 1900. The statement of A. A. Rosenbush & Company alleges adoption and use in 1891. The Examiner of Interferences found that The Rose Shoe Manufacturing Company have established adoption and use in and from the spring of 1898 at least and that A. A. Rosenbush & Company have established adoption and use in and from the spring of 1899 and no earlier. He therefore decided the case in favor of The Rose Shoe Manufacturing Company.

The Rose Shoe Manufacturing Company took depositions of seven persons. The depositions of Bartold and Muckle are of no assistance in determining when the mark was adopted and used. Nissen refers to the date 1892; but it is not clear that he meant to testify to use of the trade-mark "Rose" at that time. (Record of The Rose Shoe Manufacturing Company, p. 15. Qs. 13–17.) His answer to question 19 indicates that the first use of the mark within his knowledge was not long prior to 1900. Leckinger testifies that he has bought shoes from The Rose Shoe Manufacturing Company and from their predecessor for the past nineteen years. When asked what trade-mark was associated with these shoes, he answered "Rose." (Pp. 8–9, Qs. 6–8, 13, 14, and 16.) I cannot gather from the testimony that this witness meant to state that the trade-mark "Rose" was used in 1886 or at any other definite date subsequent thereto. The testimony of Levis is likewise unsatisfactory. He has made boxes and printed labels for The Rose Shoe Manufacturing Company since 1896. (Pp. 7 and 8, Qs. 4, 6, and 10.) He was asked what the firm-name was in 1896 and after answering was asked and answered:

Q. 8. I hand you three (3) cartons bearing the word "Rose" and ask you if these are some of the boxes you have made and labels you have printed as referred to in your preceding answer? (Cartons referred to produced in evidence and marked "Exhibit A.")
A. They are.
Q. 9. Have you continuously made these boxes and printed these labels?
A. I have.
Q. 10. Since when?
A. I have made the box for the "Rose" shoes since 1896.

The witness may have intended to testify that boxes bearing the trade-mark "Rose" were made in 1896; but it is not at all certain that such is the case. The propositions are wholly statements by counsel, and it is not clear as to just what the witness was assenting. The testimony of all of these witnesses is insufficient to fix any date early enough to avail in this proceeding. This is especially true in view of the fact that the dates which The Rose Shoe Manufacturing Company seeks to establish are long prior to the date set up in the statement of their registration. As was pointed out by the Examiner of Interferences on the authority of *The Gem Cutlery Company* v. *Leach* (114 O. G., 2089.) a trade-mark applicant may prove an earlier date of adoption and use than that alleged in his statement; but to avail him such proof must be clear and convincing.

The testimony of Rooker and Prusick is more satisfactory. The former testifies that the mark was used by The Rose Shoe Manufacturing Company and its predecessors from before early in 1899, when a change was made in the name of the company. The latter, who is a shoe dealer, asserts that he has bought shoes from The Rose Shoe Manufacturing Company and their predecessors continuously since May, 1898, bearing the trade-mark "Rose." (P. 25, Qs. 7–13.) It is not apparent how he fixes the date; but he is a disinterested witness, and his testimony, so far as appears, is worthy of

belief. It is not important whether the date fixed is correct within several months, and there are no unquestioned facts or circumstances which justify disregard of what he says. It is concluded, therefore, that the Examiner of Interferences correctly held that The Rose Shoe Manufacturing Company is entitled a date of adoption and use as early as 1898; but it is further concluded that this company is not entitled to any earlier date.

The case of A. A. Rosenbush & Company as to a date prior to April or May, 1898, rests on the testimony of Rosenbush and Levie. Rosenbush testified in part as follows:

Q. 5. When did you go into business on your own account?
A. On August 1st, 1894. I went into partnership in the wholesale boot and shoe business in Chicago, firm-name being Goldsmith, Rosenbush & Levie.
Q. 6. What were the names of your partners?
A. Samuel Goldsmith and Jerome M. Levie.
Q. 8. How long did this partnership continue?
A. This partnership continued until December 15th, 1898.
Q. 10. When you started in business in 1894 did you immediately begin to sell shoes?
A. Yes, sir.
Q. 11. What trade-marks, if any, did you use upon the shoes sold by your concern?
A. We used the word "Rose."
Q. 14. Now, will you state as nearly as possible to date when you first sold shoes bearing this "Rose" trade-mark?
A. The spring of 1895.
Q. 15. You are unable to fix the date any nearer at the present time?
A. Yes, sir.
Q. 18. How much did you use this trade-mark while your concern was doing business at Chicago?
A. We used it continuously from spring of '95 to the spring of '98.
Q. 19. State when, as nearly as you can remember, the last shipment of shoes was made bearing this trade-mark by the concern of which you were a member?
A. About November of 1898.

Levie testifies in part as follows:

Q. 7. What was the business of Goldsmith, Rosenbush & Levie?
A. Jobbing shoes.
Q. 8. How long did this partnership continue?
A. About four and one-half years.
Q. 9. You commenced then, in August, 1894?
A. Yes.
Q. 11. State whether or not Goldsmith, Rosenbush & Levie used any trade-marks upon the shoes sold by them?
A. Some.
Q. 12. What trade-mark did they use?
A. Well, we used the name "Waddell" used the name "Rose" and several others.
Q. 14. When did you first start to use the name "Rose" on the shoes sold by this firm?
A. Can't tell exactly—haven't any data to go by. It was between 1894 and 1898.
Q. 15. Could you tell whether it was nearer 1894 than 1898?
A. Well, yes, it was about a year or a year and a half after we started in business.

Both Rosenbush and Levie give the names of a number of dealers to whom their firm sold shoes bearing the trade-mark in issue. It appears that the firm of Goldsmith, Rosenbush & Levie went out of business in December of 1898. It is regarded as satisfactorily established that A. A. Rosenbush & Company are the successors of that firm and that they acquired whatever rights the prior firm may have had in the trade-mark in issue. I regard the testimony of Rosenbush and Levie as sufficient to establish adoption of the mark in issue by the predecessor of A. A. Rosenbush & Company prior to April, 1898, the earliest date which the evidence will support for The Rose Shoe Manufacturing Company.

It is true of the testimony of Rosenbush and Levie, as it is of that of Rooker and Prusick, that the witnesses are testifying long after the event and that the dates are not fixed by one scrap of physical evidence, and it is also true in each case that one of the two witnesses is interested. Yet with Rosenbush and Levie, as has been stated of Prusick, I find no good reason to doubt their veracity or believe that they were mistaken as to the dates and facts which they allege. The Examiner of Interferences rejected their testimony for the following reasons:

The fact that Rosenbush does not remember whether or not any of the shoes purchased from Goldsmith, Rosenbush & Levie and sold after he had removed to Boston bore the trade-mark "Rose," when taken in connection with Levie's testimony on cross-examination, that many marks were adopted by this firm and abandoned (Levie, X-Q. 2), and the inconsistent statements of Rosenbush and Levie as to the date of adoption of the trade-mark "Rose," and their contradictory statements as to the kind of shoes upon which this trade-mark was used, renders the testimony insufficient to satisfactorily establish its use prior to its adoption by the firm of A. A. Rosenbush & Co., as will hereinafter appear.

Whether the shoes shipped to Boston bore the trade-mark in issue seems to me to be of no consequence here, nor do I find in the professed inability of Rosenbush to remember the fact an indication that his memory is unreliable as to the facts which he does profess to remember, and the same reasoning applies to Levie's admission that several marks were abandoned. It does not, in my opinion, materially weaken his assertion that the use of the mark "Rose" was continuous. The slight discrepancy as to the kinds of shoes upon which the marks were used is also regarded as inconsequential. The fact is not relevant, and Levie practically admitted an uncertainty as to the same, which does not appear to be remarkable. The difference in the dates of adoption fixed by the two witnesses is more serious. Nevertheless, their testimony taken as a whole convinces me that in all probability the firm of Goldsmith, Rosenbush & Levie adopted the mark some time in the years 1895 or 1896, and in any event prior to The Rose Shoe Manufacturing Company's date of April or May of 1898. I am particularly well satisfied in basing my decision on the probable use of the mark by Goldsmith, Rosenbush & Levie in 1895 or 1896 by reason of the fact that The Rose Shoe Manufacturing Company's date of April or May, 1898, is subject to uncertainty to at least the same extent, being fixed by a single witness testifying nearly eight years after the event and, so far as appears, from his unaided memory.

The decision of the Examiner of Interferences is reversed, and priority of adoption and use is awarded to A. A. Rosenbush & Company.

FUNKE *v.* BALDWIN.

Decided January 10, 1907.

1. TRADE-MARKS—CANCELATION OF REGISTRATION—SECTION 13 OF ACT OF 1905 CONSTRUED.

Section 13 of the act of 1905, providing for the cancellation of trade-mark registrations, applies only to those registrations made under that act.

2. SAME—SAME—SAME—NOT APPLICABLE TO REGISTRATIONS UNDER ACTS OF 1881 AND 1882.

By section 30 of the act of 1905 all legislation inconsistent with the provisions of the act of 1905 is repealed except the Trade-Mark Acts of 1881 and 1882 in their application to registrations made thereunder. The acts of 1881 and 1882 are to stand, so far as registrations made thereunder are concerned, whether consistent with the act of 1905 or otherwise.

APPEAL from Examiner of Interferences.

TRADE-MARK FOR LAMPS.

Mr. Grafton L. McGill for Funke.

Messrs. Kerr, Paige & Cooper for Baldwin.

ALLEN, *Commissioner:*

This is an appeal from a decision of the Examiner of Interferences denying an application for cancelation of the registration of a trade-mark.

The registration is one under the Trade-Mark Act of 1881. The application for cancelation is made under section 13 of the Trade-Mark Act of February 20, 1905. The Examiner of Interferences refused cancelation on the ground that the provisions for cancelation of registration found in the act of 1905 do not apply to registrations under the act of 1881 and that the Office is without other authority to cancel the registration of a trade-mark.

The conclusion of the Examiner of Interferences is believed to be correct.

The issue of a certificate of registration under the act of 1905 for a definite period is by the act made subject to the possibility that the Commissioner of Patents may cancel the registration before the expiration of this period. Such a cancelation will undoubtedly completely destroy all effect of the registration. The right to sue and *prima facie* evidence of ownership which the registration represented will no longer exist. Certificates of registration under the act of 1881 were issued for a period which when those certificates were issued was not terminable by any act of the Commissioner of Patents. He might reregister the same mark to another party and issue a new certificate thereon, but the old registration and certificate would remain in force, representing the same right to sue and the same *prima facie* evidence of ownership as when first issued. Neither were registrations under the act of 1881 terminated by adverse decisions in the courts upon the supposed trade-mark rights which they represented. The right to sue and to assert as *prima facie* evidence of ownership remained inherent in the registration until the end of the period for which it was issued, notwithstanding any such decisions which might be rendered.

The question which is now presented is whether section 13 of the act of 1905, providing in general terms for the cancelation of trade-mark registrations, authorizes in the case of registration under the act of 1881 curtailment of the period for which the earlier act provided that such registrations should represent a right to sue and should be *prima facie* evidence of ownership of a trade-mark.

The answer to this question is believed to be found in section 30 of the act of 1905, providing as follows:

Sec. 30. That this act shall be in force and take effect April first, nineteen hundred and five. All acts and parts of acts inconsistent with this act are hereby repealed except so far as the same may apply to certificates of registration issued under the act of Congress approved March third, eighteen hundred and eighty-one, entitled "An act to authorize the registration of trade-marks and protect the same," or under the act approved August fifth, eighteen hundred and eighty-two, entitled "An act relating to the registration of trade-marks."

All legislation inconsistent with the provisions of the act of 1905 is repealed except the Trade-Mark Acts of 1881 and 1882 in their application to registrations made thereunder. The acts of 1881 and 1882 are to stand, so far as registrations made thereunder are concerned, whether consistent with the act of 1905 or otherwise. The intention of Congress as gathered from this is that as to registrations under the act of 1881 the provisions and conditions of those acts only are to apply and that the act of 1905, except as it duplicates the provisions of the earlier acts, applies only to registrations which shall be made under it. It is concluded, therefore, that section 13 of the act of 1905, providing for the cancelation of trade-mark registrations, applies only to those registrations made under that act.

Of the many arguments advanced by the appellant it is only necessary to refer here to that alleging an express distinction in the present trade-mark statute of those sections which apply only to registrations under it, leaving the remaining sections, including section 13 upon cancelation, applicable to all registrations. The phrase "trade-marks registered under this act" appears in sections 17, 18, 19, and 20 of the act of 1905, and from this the appellant infers that the remaining sections are applicable to registrations under either act. This inference, however, is believed to be unwarranted, for the reason that the phrase in question appears to be used merely to distinguish those suits brought upon registrations under the statute from those which may be brought upon State registrations or upon common-law rights.

The decision of the Examiner of Interferences denying the application of Funke for the cancelation of trade-mark registration of Baldwin, No. 39,885, of March 3, 1903, is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

IN RE AMERICAN CIRCULAR LOOM COMPANY.

Decided December 4, 1906.

1. TRADE-MARK—"CIRCULAR LOOM"—DESCRIPTIVE.

The words "Circular Loom" refused registration as a trade-mark for "conduits and coverings for electrical conductors consisting of fiber spirals wrapped with fiber and tape, and covered with a protective cotton tube with an outer coating of an insulating compound and mica" on the ground that they are descriptive of the protective cotton tube, which is one of the material parts of the construction. An inspection of the article shows that the cotton tube is woven on a circular loom, which must be known to dealers in the goods, and it may well be inferred that this product of a circular loom is considered a superior quality in the trade.

2. SAME—ARBITRARY WORDS—SECONDARY MEANING.

Sometimes arbitrary words, adopted primarily as a mark to indicate origin or ownership, may through long-continued and wide sale of the particular article come to indicate quality also, and in such event the owner would not be debarred from their protection as a trade-mark. It would have to appear with certainty, however, that at the time of adoption the mark was for the purpose of indicating origin, manufacture, or ownership and not at all as descriptive of grade or quality.

Mr. William S. Hodges, Mr. Everett N. Curtis, and *Mr. Charles F. Perkins* for the American Circular Loom Company.

Mr. Fairfax Bayard for the Commissioner of Patents.

SHEPARD, *J.:*

The appellant appeals from a decision refusing registration of the words "Circular Loom" as a trade-mark for "conduits and coverings for electrical conductors containing a resilient spiral lining, and an element for closing the openings between the spirals."

The specimen sections of tubes exhibited with the applications show, as stated by the Examiner of Trade-Marks—

conduits and coverings for electrical conductors consisting of fiber spirals wrapped with fiber and tape, and covered with a protective cotton tube with an outer coating of an insulating compound and mica.

The ground of refusal is thus stated:

The protective cotton tube is obviously woven on a circular loom, of the type shown in the patent to C. N. Brown, No. 690,355,

December 21, 1901, (see Fig. 10, thereof,) and, therefore, the term "Circular Loom," as applied to the applicant's goods, is believed to be descriptive.

If the term be in fact descriptive, the refusal of registration was undoubtedly right; for as said by Mr. Chief Justice Fuller in *Lawrence M'f'g. Co.* v. *Tennessee M'f'g. Co.*, (C. D., 1891, 415; 55 O. G., 1528; 138 U. S., 547:)

Nothing is better settled than that an exclusive right to the use of words, letters, or symbols to indicate merely the quality of goods to which they are affixed, cannot be acquired.

See, also, *Brown Chemical Co.* v. *Meyer*, (C. D., 1891, 346; 55 O. G., 287; 139 U. S., 540, 542,) in which it was held that the words "Iron Bitters" were "so far indicative of the ingredients, characteristics and purposes of the plaintiff's preparation," that they could not be appropriated as a trade-mark. In the opinion in that case, Mr. Justice Brown said:

The general proposition is well established that words which are merely descriptive of the character, qualities or composition of an article, or of the place where it is manufactured or produced, cannot be monopolized as a trade-mark.

The principle so well established has been embodied in the recent Trade-Mark Act, section 5 of which denies registration to—

words or devices which are descriptive of the goods with which they are used, or of the character or quality of such goods.

It is true that the entire conduit of the applicant is not the product of a circular loom, but a material part of the construction is the protective cotton tube that receives the outer coating, and which, as said by the Examiner, is "obviously woven on a circular loom." What plainly appears upon ordinary inspection must, for a stronger reason, be well known to dealers in the goods; and it may well be inferred that this product of a circular loom, namely, a seamless protective cotton tube, is considered a superior quality in the trade. To this extent, the words "Circular Loom" are clearly descriptive of one of the chief ingredients or characteristics of the conduits to which they are applied. Nor is this objection met by the contention of the applicant, that, as shown in the Herrick patent under which its manufacture is carried on, this element may be braided or knitted and not necessarily woven; and even if woven it is not indispensable to employ a circular loom, as a strip woven in a straight loom and folded longitudinally about the tube would accomplish the purpose shown in Fig. 4 of the Herrick patent. The answer is that it is not made in either of these possible forms; and if it were, the words "Circular Loom" would amount to a false description.

It is further contended that—

the words "Circular Loom" have never been used by the trade in a strictly descriptive sense, but have always been used in an arbitrary manner, and at the most are merely suggestive of one of the several parts of the appellant's conduit.

It would seem that what is "suggestive" of an ingredient or characteristic of an article of manufacture is also descriptive of the same. Be that as it may, there is nothing beyond this argumentative statement to show that the words were originally adopted, or have ever been understood in a secondary sense as indicative of origin or ownership, and not of quality. They are not merely coined, fancy or arbitrary words that can have no other reasonable effect than to indicate origin or ownership. Sometimes arbitrary words, adopted primarily as a mark to indicate origin or ownership, may, through long-continued and wide sale of the particular article come to indicate quality also, and in such event the owner would not be debarred from their protection as a trade-mark. It would have to appear with certainty, however, that at the time of adoption the mark was for the purpose of indicating origin, manufacture or ownership, and not at all as descriptive of grade or quality. (*Lawrence M'f'g. Co.* v. *Tennessee M'f'g. Co.*, C. D., 1891, 415; 55 O. G., 1585; 138 U. S., 537, 547; *Cellular Clothing Co.* v. *Maxton*, 1899 App. Cas., 326.) In that case, as in the first of the two citations, the question of unfair trade or competition was also involved. It was held that the word "Cellular," being a word descriptive of the article of cloth manufactured, could not be appropriated as a technical trade-mark. It was also contended in that case that by long-continued manufacture and sale of the particular goods the word had come to be generally regarded in a secondary sense as indicating nothing more than origin and manufacture. Considerable evidence was offered on the point, but its sufficiency was denied. Referring to the case of *Reddemay* v. *Benham*, known as "The Camel's Hair Belting Case" (1896 App. Cas., 199,) which all of the judges distinguished from the case at bar, Lord Shand said, (p. 340:)

Of that case I shall only say, that it no doubt shows it is possible where a descriptive name has been used to prove that so general, I should rather say so universal has been the use of it as to give it a secondary meaning and so to confer on the person who has so used it a right to its exclusive use or, at all events, to such a use that others employing it must qualify their use by some distinguishing characteristic. But I confess I have always thought, and I still think, that it would be made almost impossible for any one to obtain the exclusive right to the use of a word or term which is in ordinary use in our language and which is descriptive only—and, indeed, were it not for the decision in Reddemay's case, I should say this would be made altogether impossible.

Lord Davy said, (p. 343:)

A man who takes upon himself to prove that words, which are merely descriptive or expressive of the quality of the goods, have acquired the secondary sense to which I have referred, assumes a much greater burden—and, indeed, a burden which it is not impossible, but at the same time extremely difficult to discharge—a much greater burden than that of a man who undertakes to prove the same thing of a word not significant and not descriptive, but what has been compendiously called a "fancy" word.

See, also, *Bennett* v. *McKinley*, (13 C. C. A., 25, 26; 65 Fed. Rep., 505.)

We consider the question presented here as governed by the foregoing authoritative decisions, and shall not consume time in an attempt to review the multitude of cases cited on the briefs—in many of which analogous words have been upheld as trade-marks, and in many others denied. In very many of them, moreover, the question involved was one of fair trade and not of technical trade-mark. It is only a question of the latter kind that can come before us on appeals from the refusal of registration in the Patent Office. We agree with the tribunals of the Patent Office that the words "Circular Loom," as presented on the application, are descriptive in the sense of the law forbidding registration as a trade-mark.

The decision appealed from will, therefore, be affirmed; and the clerk will certify this decision to the Commissioner of Patents as required by law. Affirmed.

Court of Appeals of the District of Columbia.

THE ROSE SHOE MANUFACTURING COMPANY v. A. A. ROSENBUSH & CO.

Decided December 4, 1906.

1. TRADE-MARK—PRIORITY.

Where Rosenbush in his application alleges adoption in 1891, but the earliest date mentioned in his testimony is the "spring of 1895," and his testimony is only supported by that of a former partner, who fixes the date as "about a year and a half" after August 1, 1894, when the firm commenced business, *Held* insufficient to prevail over the Rose Shoe Manufacturing Company, which presents the testimony of several credible witnesses who clearly trace the use of the trade-mark by the Rose Shoe Manufacturing Company, and its predecessors in business from the year 1894.

2. SAME—CONTINUOUS USE—PRESUMPTION.

Where several successive firms manufacturing ladies' shoes are shown to have occupied the same factory, it is reasonable to suppose that once having adopted a trade-name, they would continue its use notwithstanding a reorganization of the firm.

Mr. C. E. Foster for the Rose Shoe Manufacturing Company.

Mr. Louis H. Harriman for A. A. Rosenbush & Company.

ROBB, *J.*:

Hearing on appeal from a decision of the Commissioner of Patents in a trade-mark interference case.

The issue is the word "Rose" as a trade-mark for shoes. The Rose Shoe Manufacturing Company, of Rochester, N. Y., the senior party, and appellant here, registered this mark July 21, 1905, and the application of A. A. Rosenbush & Co., the appellee, was filed July 22, 1905. An interference was duly declared, testimony in the form of depositions taken by both parties, and priority of adoption and use awarded appellant by the Examiner of Interferences. From this decision an appeal was taken to the Commissioner of Patents, who reversed the decision of the Examiner of Interferences, and awarded priority of adoption and use to appellee. The decision of the Commissioner is here challenged.

A. A. Rosenbush, a partner in the firm of A. A. Rosenbush & Co., of Boston, Mass., about August 1, 1894, formed a partnership at Chicago, Ill., with Samuel Goldsmith and Jerome M. Levie, under the firm-name of Goldsmith, Rosenbush & Levie, and engaged in the wholesale boot and shoe business in Chicago. Rosenbush testified that the firm first used the word "Rose" as a trade-mark "in the spring of 1895," and that the word was thereafter continuously used "to the spring of '98." In November, 1898, Rosenbush purchased the stock, fixtures and good-will of the firm and removed to Boston. Shortly thereafter he opened a place of business in Boston, and continued the use of the word "Rose" as a trade-mark down to the time when he sought its registry. His testimony as to the use of the word as a trade-mark in Boston is corroborated by other witnesses, and we find no difficulty on that point. The deposition of his former partner, Levie, was taken in Chicago, and he was asked "Whether or not Goldsmith, Rosenbush & Levie used any trade-marks upon the shoes sold by them?" He answered: "Some." He was then asked what trade-marks they used, and to this he replied: "Well, we used the name 'Waddell,' used the name 'Rose,' and several others." He was asked when the firm first used the name "Rose" as a trade-mark, and he answered: "Can't tell exactly—haven't any data to go by. It was between 1894 and 1898." When asked if he could tell whether it was nearer 1894 than 1898, he said: "Well, yes, it was about a year or a year and a half after we started in business." On cross-examination he was asked: "About how many other trade-marks did you use besides the words 'Rose' and 'Waddell?'" and replied: "Not over half a dozen, they changed from time to time. The merchandise would not market, and we would have to change them."

In the above application for registry of A. A. Rosenbush & Co., the truth of the statements therein being sworn to by A. A. Rosenbush, it is stated that—

the trade-mark has been continuously used in our business since the year 1891.

In the application of the appellant it is stated that—

this trade-mark has been continuously used in business by said corporation and in the business of M. J. Whitman Co., from whom title is derived, since the 1st day of March, 1900.

Charles A. Rooker, the secretary and treasurer of the Rose Shoe Manufacturing Company, was asked why he did not give an earlier date, and replied as follows:

I simply gave 1900 from my personal knowledge without any investigation or inquiry among my predecessors, as to the first use of the word "Rose." If I had been asked by my attorney to give an earlier date, I certainly could have done so.

He further testified that the original company was known as S. Raubert & Siebert, and that this company was succeeded by Siebert, Whitman & Bartold, who were in turn succeeded by Siebert, Whitman & Co., and they in turn by M. J. Whitman Co., the immediate predecessor of the Rose Shoe Manufacturing Company. Mr. Rooker was asked whether the trade-mark "Rose" was used on shoes sold by the predecessors of his company, and answered that shoes bearing that trade-mark were manufactured and sold by Siebert, Whitman & Bartold, Siebert, Whitman & Co., M. J. Whitman Co., and the Rose Shoe Manufacturing Company, and that Siebert, Whitman & Bartold manufactured and sold the "Rose" shoe prior to 1899 when the firm changed to Siebert, Whitman & Co.

John A. Levis, a paper-box manufacturer, of Rochester, testified that he had been making boxes and printing cartons bearing the word "Rose" for the Rose Shoe Manufacturing Company and its predecessors since 1896, when the firm-name was Siebert, Whitman & Bartold. Mr. Levis identified three cartons bearing the word "Rose" as having been printed by him for Siebert, Whitman & Bartold.

Philip H. Leckinger, of Rochester, a salesman in the retail shoe store of his father who had been a retail shoe dealer for forty-five years, testified that his father had bought shoes from Raubert & Siebert and all their successors down to the Rose Shoe Manufacturing Company, and that the trade-mark "Rose" was associated with these shoes.

Frank J. Nissen, of Port Clinton, Ohio, succeeded his father in 1901 in the retail boot and shoe business at that place. Mr. Nissen testified that he first bought shoes from the predecessors of the appellant when he started to manage his father's business in 1892, and that he had since continuously bought the "Rose" shoe. Mr. Nissen did not definitely state when the trade-mark "Rose" was first used on the shoes he purchased from the various predecessors of the appellant. He did, however, produce two shoes so marked, which were bought in 1900, and he testified that these were not the earliest shoes so marked which he had purchased.

Ferdinand Bartold testified that he was employed by Raubert & Siebert for five or six years prior to 1894; that in 1894 he became a member of the firm of Siebert, Whitman & Bartold, which firm continued in business for about four years and a half when it was succeeded by Siebert, Whitman & Co., in whose employ and its successors, the M. J. Whitman Co. and the Rose Shoe Manufacturing Company, he continued; and that each

of these firms manufactured and sold shoes under the name "Rose." He testified further:

Q. By what name were the shoes manufactured by these various concerns known, and particularly Siebert, Whitman & Bartold?
A. The name "Rose."
Q. Was the name used on the shoes?
A. Yes, sir.
Q. I hand you exhibits "B" and "C" and ask you if the marks you find on those shoes are practically the same as originally used?
A. Yes, sir.
Q. Since your first connection with the "Rose" shoe, has the "Rose" shoe to your personal knowledge, been continuously manufactured and sold by the Rose Shoe Company and their predecessors?
A. Yes, sir.

William J. Muckle, president of the Rose Shoe Manufacturing Company, testified that his knowledge of the Company and its predecessors extended over a period of about eighteen years; that he was in the factory, saw the shoes made, and knew that they were manufactured and sold as the "Rose" shoe. He further testified that each of these companies had used the trade-mark "Rose" exclusively; and that over ninety per cent. of the output of the factory contained that word as a trade-mark.

A Mr. Prusick, of Philadelphia, testified to buying the "Rose" shoe from these companies since April or May, 1898, but his testimony is not material here.

Both Mr. Rooker and Mr. Muckle testified that the appellant and its predecessors had built up an extensive interstate and foreign business.

The sole issue is whether the adoption of this trade-mark by the appellant antedates its adoption by the appellee. Although Rosenbush, in his application, claimed 1891 as his date of adoption, the earliest date mentioned in his testimony is "the spring of 1895." His former partner, Levie, as we have seen, finally fixes the date as "about a year or a year and a half" after August 1, 1894, when the firm commenced business. From this testimony, and from this alone, we must find when appellee first used the word. Appellant, on the other hand, produced several credible witnesses, who clearly traced the use of the word by Siebert, Whitman & Bartold in 1894, and by all their various successors down to and including the Rose Shoe Manufacturing Company. The testimony of Mr. Leckinger is susceptible of no other reasonable construction than that he had been purchasing shoes containing the trade-mark "Rose" from these various companies for about nineteen years. Mr. Leckinger is an entirely disinterested witness, and his testimony must be given the weight to which it is entitled. Mr. Bartold, to be sure, is employed by the appellant, but his testimony being consistent and reasonable is certainly entitled to as much weight as the testimony of one of the parties. His testimony is clear and convincing that the word "Rose" has been used by the various companies since 1894 at least. Having been connected with these firms, either as a partner or as an employee, Mr. Bartold is in a position to intelligently testify concerning the subject-matter of this controversy. Mr. Muckle, the president of the company, and presumably a man of intelligence and character, testified, in effect, that the word "Rose" has been used by his company and its predecessors for about eighteen years. His testimony is entitled to as much weight as the testimony of the appellee. These various firms occupied the same factory, and each manufactured ladies' shoes. It is reasonable to suppose that once having adopted a trade-name, they would continue its use notwithstanding a reorganization of the firm, and, therefore, the testimony of Mr. Bartold, that the name has been in continuous use since 1894, corroborated as it is by the testimony of the other witnesses, is not only reasonable but, to our minds, conclusive as to when the mark was first adopted by appellant's predecessors.

A careful analysis of the whole evidence, we think, irresistibly leads to the conclusion that appellant adopted this mark prior to the date of its adoption by appellee even though we accept the uncorroborated statement of Mr. Rosenbush that his predecessor first used the mark "in the spring of 1895."

It follows that the decision of the Commissioner must be reversed. The clerk of the court will certify this opinion, and the proceedings of this court in the premises, to the Commissioner of Patents, according to law. Reversed.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 15, 1907.

James J. Six Dykstra, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Friedrich Adolf Richter, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to James J. Six Dykstra, of Chicago, Ill. The notices of declaration mailed by the Patent Office in the usual manner to the said James J. Six Dykstra at his known address, 94 South Market street, Chicago, Ill., and to his attorney of record have been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said James J. Six Dykstra, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 15, 1907.

Whitman & Welch, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Exposition Cotton Mills, of Atlanta, Ga., for registration of a trade-mark, an application and a registration of the Massachusetts Cotton Mills, of Lowell, Mass., and a trade-mark registered to Whitman & Welch, of New York, N. Y., and Hartford, Conn. It has been impossible to locate said Whitman & Welch, and registered letters addressed to this firm have been returned by the Post-Office Department unclaimed.

Notice is therefore hereby given to said Whitman & Welch, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 4, 1907.

James M. McClave, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application for patent filed by Walter G. Swart, of Denver, Colo., and an application for patent filed by James M. McClave, of the same place. It appears from the record of the interference that the said James M. McClave has removed from his known address, No. 1034 Broadway, Denver, Colo., and his present whereabouts is unknown. Notice is therefore hereby given to the said James M. McClave, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., January 18, 1907.

F. G. Whitney & Company, their assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of E. M. Weinberg & Company, of 134 Mott street, borough of Manhattan, New York, N. Y., for registration of a trade-mark and a trade-mark registered to F. G. Whitney & Company, of Attleboro, Mass., and the notice of said declaration mailed by the Patent Office in the usual manner to the said F. G. Whitney & Company having been returned undelivered, notice is hereby given to the said F. G. Whitney & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents in order that the notice of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 127—No. 2. TUESDAY, MARCH 12, 1907. PRICE—$5 per year.

CONTENTS.

	Page.
ISSUE OF MARCH 12, 1907	397
INTERFERENCE NOTICE	397
CORRESPONDENCE	397
APPLICATIONS UNDER EXAMINATION	398
INTERFERENCE NOTICE	398
PATENTS GRANTED	399
REISSUES	825
DESIGNS	827
TRADE-MARKS—REGISTRATION APPLIED FOR	829
TRADE-MARKS—REGISTERED	841
LABELS	845
PRINTS	845
COMMISSIONER'S DECISIONS—	
Ex parte Barrett and Alter	847
Ex parte Brooks	847
Ex parte Bettendorf	848
DECISIONS OF THE U. S. COURTS—	
Computing Scale Company of America v. The Automatic Scale Company	849
INTERFERENCE NOTICES	852

ISSUE OF MARCH 12, 1907.

Patents	864—No.	846,440 to No.	847,303, inclusive.
Designs	7—No.	38,474 to No.	38,480, inclusive.
Trade-Marks	119—No.	61,214 to No.	61,332, inclusive.
Labels	12—No.	13,392 to No.	13,403, inclusive.
Prints	9—No.	1,918 to No.	1,926, inclusive.
Reissues	2—No.	12,615 to No.	12,616, inclusive.
Total issue	1013		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks Labels, and Prints.
Alabama	1	1	New Hampshire	2	.....
Alaska, District of	.....	.....	New Jersey	38	6
Arizona Territory	.....	.....	New Mexico Ter't'y	2	.....
Arkansas	6	.....	New York	108	45
California	25	1	North Carolina	4	.....
Colorado	10	.....	North Dakota	6	.....
Connecticut	22	3	Ohio	57	8
Delaware	2	.....	Oklahoma Territ'y	2	.....
District of Columbia	9	.....	Oregon	6	.....
Florida	2	.....	Pennsylvania	113	11
Georgia	6	.....	Philippine Islands	.....	.....
Hawaii Territory	1	.....	Porto Rico	.....	.....
Idaho	2	.....	Rhode Island	12	3
Illinois	82	15	South Carolina	3	.....
Indiana	18	4	South Dakota	2	.....
Iowa	12	1	Tennessee	8	.....
Kansas	11	1	Texas	12	.....
Kentucky	4	1	Utah	2	.....
Louisiana	1	1	Vermont	2	.....
Maine	6	1	Virginia	8	1
Maryland	10	2	Washington	13	1
Massachusetts	30	7	West Virginia	12	2
Michigan	22	.....	Wisconsin	12	3
Minnesota	19	9	Wyoming	.....	.....
Mississippi	7	.....	U. S. Army	.....	.....
Missouri	27	3	U. S. Navy	.....	.....
Montana	2	.....			
Nebraska	4	2	Total to citizens of the United States	775	132
Nevada	1	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Natal	.....	.....
Austria-Hungary	4	1	Netherlands	1	.....
Belgium	1	.....	Newfoundland	.....	.....
Brazil	.....	.....	New South Wales	.....	.....
British West Indies	.....	.....	New Zealand	2	.....
Canada	9	.....	Norway	.....	.....
Cape Colony	.....	.....	Persia	.....	.....
Chile	.....	.....	Queensland	.....	.....
China	.....	.....	Roumania	.....	.....
Costa Rica	.....	.....	Russia	1	.....
Cuba	.....	1	Scotland	.....	.....
Denmark	1	.....	South Australia	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	20	1	Sweden	.....	.....
France	15	1	Switzerland	1	1
Germany	34	3	Transvaal, South Africa	2	.....
Haiti	.....	.....	Victoria	.....	.....
Ireland	.....	.....	Western Australia	.....	.....
Italy	2	.....			
Japan	.....	.....			
Java	.....	.....	Total to citizens of foreign countries	96	8
Mexico	3	.....			

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 23, 1907.

Wilson-Cass Company, its assigns or representatives, take notice:

An interference has been declared by this Office between an application of Frank Fuller, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to the Wilson-Cass Company, of Philadelphia, Pa. The notice of declaration mailed by the Patent Office in the usual manner to the said Wilson-Cass Company has been returned by the Post-Office Department undelivered, and the attorney of record for said company is dead.

Notice is therefore hereby given to the said Wilson-Cass Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

Correspondence.

1. Communications to the Patent Office must be addressed to the Commissioner of Patents.

2. A double correspondence with the inventor and an assignee, or with a principal and his attorney, or with two attorneys cannot generally be allowed.

3. The assignee of the entire interest of an invention is entitled to hold the correspondence with the Office.

4. Actions by the Office which are wanting in official propriety will be canceled from the files. Communications to the Office in violation of the requirements of decorum and courtesy will not be accepted or will be returned.

5. Separate letters must be written about assignments for record, final fees for patents, orders for copies, abstracts of title, complaints against officials, and every other distinct subject of communication.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business March 5, 1907.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Mar. 1	Feb. 28	55
327	XVIII. Steam-Engineering, etc ...	Feb. 30	Feb. 6	149
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	Feb. 20	Feb. 6	170
109	XVI. Telegraphy and Telephony..	Feb. 19	Feb. 7	134
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Feb. 19	Feb. 6	198
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Feb. 19	Feb. 6	91
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Feb. 19	Feb. 6	103
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	Feb. 19	Feb. 5	191
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Feb. 19	Feb. 4	196
167	V. Bookbinding, Harvesters, Jewelry, and Music.	Feb. 16	Jan. 25	247
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Feb. 14	Feb. 6	275
303	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Feb. 14	Feb. 6	164
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Feb. 14	Feb. 2	322
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Feb. 14	Jan. 30	261
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Feb. 13	Feb. 2	275
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Feb. 12	Jan. 30	240
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Feb. 11	Feb. 8	219
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Feb. 11	Feb. 7	291
123	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Feb. 11	Feb. 6	204
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Feb. 11	Feb. 6	212
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Feb. 11	Jan. 28	426
147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Woodworking.	Feb. 11	Jan. 24	303
378	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Feb. 8	Feb. 5	344
173	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Feb. 8	Feb. 2	230

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Feb. 8	Jan. 29	203
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Feb. 7	Feb. 6	264
307	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	Feb. 7	Jan. 26	205
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Feb. 6	Feb. 6	535
142	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sewerage.	Feb. 6	Feb. 2	356
382	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	Feb. 5	Feb. 4	356
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Feb. 4	Jan. 18	278
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Feb. 2	Jan. 12	280
332	X. Carriages and Wagons.....	Jan. 31	Feb. 5	426
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Jan. 30	Jan. 21	417
329	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making, etc.	Jan. 28	Jan. 28	309
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Jan. 28	Jan. 23	310
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Jan. 26	Jan. 26	257
343	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Jan. 25	Jan. 28	624
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	Jan. 24	Jan. 24	307
	Total number of applications awaiting action			10,437
159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	Mar. 2	Feb. 27	171
	Designs	Feb. 28	Feb. 21	35
	Labels and Prints			

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 9, 1907.

James M. McClave, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application for patent filed by Walter O. Swart, of Denver, Colo., and an application for patent filed by James M. McClave, of the same place. It appears from the record of the interference that the said James M. McClave has removed from his known address, No. 1624 Broadway, Denver, Colo., and his present whereabouts is unknown. Notice is therefore hereby given to the said James M. McClave, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

PATENTS

GRANTED MARCH 12, 1907.

846,440. WASHER FOR LATHES. EARL C. ADAMS, Belle Vernon, Pa. Filed May 29, 1906. Serial No. 319,303.

Claim.—The combination with a lathe-spindle having a fixed collar, and a chuck received on the spindle and having a face-plate, of two concentric rings loosely mounted on the spindle between the collar thereof and the face-plate of the chuck, and one of which rings is loosely connected to the other ring, the rings having registering parallel grooves in the adjacent faces, and wedge-keys in the grooves, one at each side of the spindle for spreading the rings and forcing the same into engagement with the collar and face-plate respectively.

846,441. DRAWER-PULL. FRANK X. AMMANN, Weehawken, N. J. Filed Sept. 14, 1906. Serial No. 334,625.

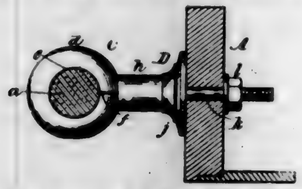

Claim.—In a drawer-pull, the combination of a rod, an integral split ring embracing said rod and having normally separated end portions formed into a conical threaded nipple, a coupling comprising a sleeve having a flange to rest against the front of the drawer and provided with a threaded conical socket to receive the conical nipple of said ring and thereby pull the ends of said ring together about said rod, a stem extending rearwardly from said coupling, and a nut threaded on said stem.

846,442. PENCIL-HOLDER. FRANK M. ASHLEY, New York, N. Y., assignor of one-half to Albert T. Scharps, New York, N. Y. Filed Feb. 7, 1905. Serial No. 244,582.

Claim.—1. A two-part pencil embodying a holder and a chuck, the former integrally closed at its butt and containing a lead-compartment merging in an extended inwardly-tapering bearing at the holder front, and the chuck having a lead-gripping portion at its forward extremity and provided with an extended tapering shank adapted to be engaged within the tapering bearing of the holder continuously throughout the length of said bearing.

2. A two-part pencil embodying a holder and a chuck, the former integrally closed at its butt and containing a lead-compartment merging in an extended inwardly-tapering bearing at the holder front, and the chuck containing an extended longitudinal lead-passage contracted at the forward extremity of the chuck to contribute in forming a gripping portion thereat, the rear major part of the passage being of larger diameter than the passage at the said gripping portion, said chuck being also provided with an extended rear shank adapted to be engaged within the tapering bearing of the holder continuously throughout the length of said bearing.

3. A two-part pencil embodying a holder and a chuck, the former integrally closed at its butt-end and containing a lead-compartment merging in an extended inwardly-tapering bearing at the holder front, and the chuck having an extended rearwardly-tapering shank adapted to conform within said bearing, said chuck containing a central longitudinal lead-passage, an extended radial slot opening through the chuck side and intersecting said passage, and an external groove diametrically located with respect to said slot, the chuck having a gripping portion at its front extremity from which latter the passage and slot rearwardly extend.

4. A two-part pencil embodying a holder and a chuck, the former containing at its front end, an extended inwardly-tapering bearing, and the chuck having an intermediately-located external enlargement, and an extended rearwardly-tapering shank, the latter adapted for engagement within the holder-bearing continuously throughout the length of the latter, and the enlargement being removed at opposite sides to render said enlargement convenient for the engagement of the fingers in the removal of the chuck, said chuck containing a central longitudinal lead-passage, and an extended radial slot opening through the chuck side and intersecting said passage, the chuck having a gripping portion at its front extremity from which latter the passage and the slot rearwardly extend.

5. A two-part pencil embodying a holder and a chuck, the former integrally closed at its butt-end and containing a lead-compartment merging in an extended inwardly-tapering bearing at the holder front, and the chuck having an intermediately-located external enlargement, and an extended rearwardly-tapering shank, the latter adapted for frictionally conforming within said bearing throughout its entire length, and the enlargement being removed at opposite sides to render said enlargement convenient for the engagement for the fingers in the removal of the chuck, said chuck containing a central longitudinal lead-passage and an extended radial slot opening through the chuck side and intersecting said passage, the chuck having a gripping portion at its front extremity from which latter the passage and the slot rearwardly extend.

6. A two-part pencil embodying a holder and a chuck, the former containing a lead-compartment merging in an extended inwardly-tapering bearing at the holder front, said chuck having an extended rearwardly-tapering shank adapted to conform within said bearing, and provided with a central longitudinal lead-passage and an extended radial slot opening through the chuck side and intersecting said passage, and provided with an enlarged portion to serve as a gripping-surface, the rear part of the pencil-passage being of larger bore than the front part so that the pencil will be held exclusively by the front end of the chuck.

846,443. MUSIC TYPE-WRITER. LOUIS C. BADEAU and ISAAC F. BADEAU, Mahopac, N. Y. Filed Sept. 19, 1905. Serial No. 279,122.

Claim.—1. In a music type-writer, a horizontal type-carrier having type and keys therefor, and means for moving a type toward the printing position, including a num-

ber of staff-keys, a single moving body, and means upon said moving body whereby each of said staff-keys is enabled to actuate it differently, to localize a desired type.

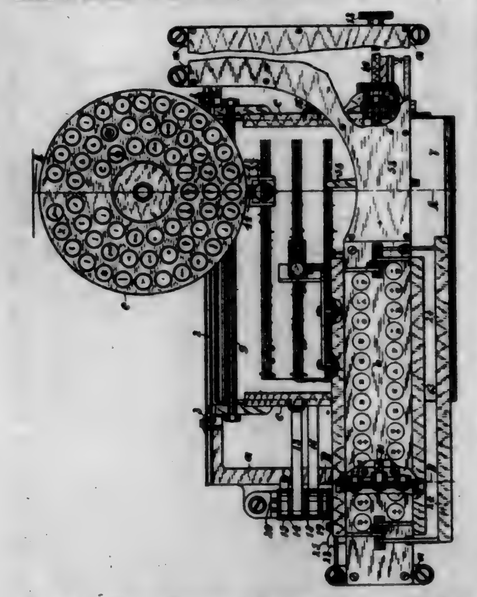

2. In a music type-writer, a horizontal type-carrier having type and keys therefor, and means for moving a type toward the printing position, including a number of staff-keys, a horizontally-moving body, and means upon said moving body whereby each of said staff-keys is enabled to actuate it differently, to localize a desired type.

846,444. PROCESS OF MAKING METALLIC OXIDS. JOHN W. BAILEY, Jersey City, N. J., assignor, by mesne assignments, to United Lead Company, a Corporation of New Jersey. Filed Mar. 12, 1902. Serial No. 97,848.

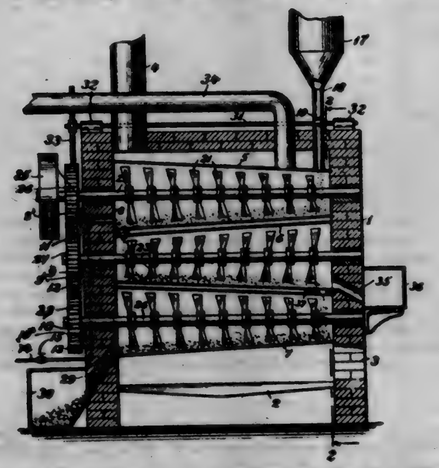

Claim.—1. The process of making an oxid of a metal, which process consists in reducing the metal to an impalpable metallic powder and then slowly oxidizing the powder by heating it in the presence of an oxidizing agent.

2. The process of making an oxid of a metal, which process consists in reducing the metal to an impalpable metallic powder and then oxidizing the powder by subjecting it to the action of heated air.

3. The process of making an oxid of a metal, which process consists in reducing the metal to an impalpable metallic powder and then subjecting the powder to the action of an oxidizing agent in such manner as to oxidize the metal without vaporization of the oxid.

4. The process of making an oxid of a metal, which process consists in reducing the metal to an impalpable metallic powder and then subjecting the powder to the action of heated air in such manner as to oxidize the metal without vaporization of the oxid.

5. The process of making an oxid of a metal, which process consists in reducing the metal to an impalpable metallic powder and then heating the powder in a closed chamber to a temperature below the fusing-point of the metal and at the same time subjecting the metal to the action of an oxidizing agent.

6. The process of making an oxid of metallic lead suitable for pigment, said process consisting in reducing the lead to an impalpable metallic powder and then slowly oxidizing the powder.

7. The process of making an oxid of metallic lead suitable for pigment, said process consisting in reducing the lead to an impalpable metallic powder and then slowly oxidizing the powder by subjecting it to the action of a heated oxidizing agent.

8. The process of making an oxid of metallic lead suitable for pigment, said process consisting in reducing the lead to an impalpable metallic powder and then subjecting the powder to the action of an oxidizing agent in such manner as to oxidize the metal without vaporization of the oxid.

9. The process of making an oxid of metallic lead suitable for pigment, said process consisting in reducing the lead to an impalpable metallic powder and then heating the powder in a closed chamber to a temperature below the fusing-point of the metal and at the same time subjecting the metal to the action of an oxidizing agent.

10. The process of making an oxid of a metal, which process consists in reducing the metal to an impalpable metallic powder, heating the powder in the presence of an oxidizing agent, and agitating the powder to uniformly expose all parts thereof to the oxidizing agent.

11. The process of making an oxid of a metal, which consists in reducing the metal to an impalpable metallic powder and then heating the powder in the presence of air and moisture.

12. The process of making an oxid of a metal, which consists in reducing the metal to an impalpable metallic powder and then heating the powder in the presence of a current of air and steam.

13. The process of making an oxid of a metal which consists in reducing the metal to an impalpable metallic powder and then heating the powder in a muffle and at the same time subjecting it to the action of a current of heated air and steam.

14. The process of making an oxid of a metal, which consists in heating the metal in the form of an impalpable powder to a temperature below the fusing-point in a closed muffle and at the same time subjecting the metal to the action of a current of heated air.

15. The process of making an oxid of a metal, which consists in heating the metal in the form of an impalpable powder to a temperature below the fusing-point in a closed muffle and at the same time subjecting the metal to the action of a current of heated air and steam.

16. The process of making an oxid of a metal, which consists in heating the metal in the form of an impalpable powder to a temperature below the fusing-point in a closed muffle and at the same time agitating the metal and subjecting the metal to the action of a current of heated air.

17. The process of making an oxid of a metal, which consists in heating the metal in the form of an impalpable powder to a temperature below the fusing-point in a closed muffle and at the same time agitating the metal and subjecting the metal to the action of a current of heated air and steam.

18. The process of making an oxid of a metal, which process consists in heating the metal in the form of an impalpable powder in such manner as to gradually transform the metal into the character of oxid desired.

19. The process of making an oxid of a metal, which process consists in gradually oxidizing the metal in the form of an impalpable powder by subjecting the powder to the action of an oxidizing agent and moisture.

20. The process of making an oxid of a metal, which consists in subjecting the metal in the form of an impalpable powder to the action of a current of air and moisture heated to a temperature lower than that at which the metal fuses.

21. The process of making lead oxid suitable for pigment, said process consisting in reducing the lead to an impalpable metallic powder and then heating the powder in the presence of air and moisture.

22. The process of making lead oxid suitable for pigment, said process consisting in reducing the lead to an impalpable metallic powder and then heating the powder to a temperature below the fusing-point of the metal in the presence of air and moisture.

23. The process of making an oxid of a metal, which consists in reducing the metal to an impalpable metallic powder, feeding the powder and steam into a heated muffle in regulated quantities and subjecting the powder to the action of a current of heated air.

24. The process of making an oxid of a metal, which consists in reducing the metal to an impalpable metallic powder, feeding the powder and steam in regulated quantities into a closed muffle heated to a temperature below the fusing-point of the metal, agitating the powder in the muffle and at the same time subjecting the powder to the action of a current of heated air.

25. The process of making an oxid of a metal which consists in reducing the metal to an impalpable metallic powder and then subjecting the powder to a gradually-increasing temperature in the presence of air and moisture.

26. The process of making an oxid of a metal which consists in reducing the metal to an impalpable metallic powder and then subjecting the powder to a gradually-increasing temperature in the presence of a current of heated air and steam.

27. The process of making an oxid of a metal which consists in reducing the metal to an impalpable metallic powder, then heating the powder to a temperature below the fusing-point of the metal in the presence of air, and then as the metal becomes oxidized increasing the temperature thereof.

28. The process of making an oxid of a metal which consists in reducing the metal to an impalpable metallic powder, then heating the powder to a temperature below the fusing-point of the metal in the presence of air and moisture, and then as the metal becomes oxidized increasing the temperature thereof.

29. The process of making lead oxid, which process consists in heating the lead in the form of an impalpable powder in such manner as to gradually transform the lead into the character of oxid desired.

30. The process of making lead oxid, which process consists in gradually oxidizing the lead in the form of an impalpable powder by subjecting the powder to the action of an oxidizing agent and moisture.

846,445. FOLDING MATTRESS. CHARLES A. BAKER, Weehawken, N. J., assignor to New York Couch Bed Company, Rome, N. Y., a Corporation of New York. Filed May 17, 1906. Serial No. 317,801.

Claim.—1. A manifold mattress composed of three sections hinged together and each having a substantially uniform thickness from edge to edge, the hinged connections being located at the upper and lower angles of one edge of the intermediate section and separated from each other by a space substantially equal to the thickness of the intermediate section, whereby the sections may be opened and closed like a book without strain on the said connections.

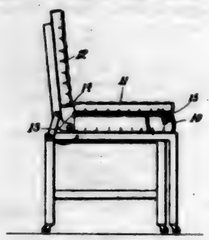

2. A manifold mattress composed of three sections hinged together and each having a substantially uniform thickness from edge to edge, two of the adjacent sections having a combined thickness substantially equal to the thickness of the third section, the hinged connections being located at the upper and lower angles of one edge of the intermediate section and separated from each other by a space substantially equal to the thickness of the intermediate section, whereby the sections may be opened and closed like a book without strain on the said connections.

3. A manifold mattress composed of three sections hinged together like the leaves of a book, two of the adjacent sections each having a skirt attached to their edges to cover over the under parts.

846,446. CHIMNEY-COWL. WILLIAM R. A. BALL, St. Thomas, N. D. Filed Oct. 1, 1906. Serial No. 336,957.

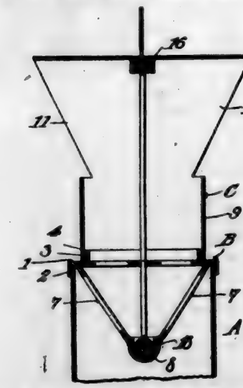

Claim.—1. A cowl comprising a supporting member having a retaining-flange at the periphery thereof, converging hangers depending from said member and having a socket at their merging ends, a ball within the socket, a shaft extending therefrom and journaled within the supporting members, a hood bearing upon one end of the shaft and rotatable therewith, a plate outstanding from the hood, a collar rotatable with the hood, and an upstanding circular guide-flange upon the supporting member and loosely surrounded by the collar.

2. A chimney-cowl comprising a supporting member consisting of a plate adapted to rest upon the upper end of the chimney and having a depending flange at its outer edge and an upstanding annular flange at its inner edge, a cross-piece connected with said plate, diverging hangers connected with said plate, a socket supported by said hangers, a hood consisting of an annular collar adapted to fit around the upstanding annular flange of said supporting member, inclined fan-shaped front and rear walls connected at their lower ends with said collar and at their upper ends with each other to provide end openings in said hood, a block connected with the upper ends of said front and rear walls, a vertical shaft threaded into said

block, and a ball having a threaded connection with the lower end of said shaft and being fitted into the socket of said supporting member.

846,447. APPARATUS FOR THE EXTRACTION OF LIQUIDS FROM SOLID MATERIALS. WILLIAM M. BARNES, Philadelphia, Pa. Filed May 13, 1904. Serial No. 207,784.

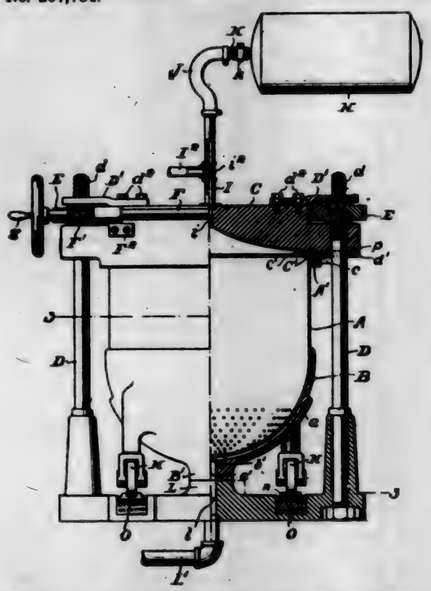

Claim.—1. In a machine of the character described, in combination, a vessel having an inner and an outer wall at one portion thereof, there being a space between said walls, ribs between the inner and outer walls forming passages, there being perforations in the inner wall opening into the space between the walls and an outlet from said space toward which said passages converge.

2. In a machine of the character described, in combination, a vessel having an inner and outer wall at one portion thereof, there being a space between said walls, ribs between the inner and outer walls, there being perforations in the inner wall opening into the space between the walls and an outlet from said space, a fixed pedestal having an outlet adapted to coincide with the orifice in the vessel, wheels upon which said vessel is carried, tracks upon which said wheels run, and yielding supports for said tracks contiguous to said pedestal.

3. In a machine of the character described, in combination, a vessel having perforations in its walls, an open end, a cover, means to force said cover into air-tight connection with the open end of said vessel, an air-pressure reservoir, a pipe, there being an orifice in said cover with which said pipe connects, a connection between said pipe and the air-reservoir, an exhaust-pipe, connecting with the pipe last mentioned, and a valve adapted to connect the first-mentioned pipe with either the pressure-reservoir or exhaust-pipe.

4. In a machine of the character described, in combination, a vessel having an open end, a laterally-projecting flange at its open end, a cover, having a vertical projection, adapted to contact with said flange, and a portion adapted to overlie said flange and an elastic packing interposed between said flange and overlying portion of cover.

5. In a machine of the character described, in combination, a vessel, there being an outlet from said vessel, a cover supported independently of said vessel, said vessel having a movement relative to said cover and means, when said vessel is in alinement with said cover, to force the cover into air-tight connection with the vessel.

6. In a machine of the character described, in combination, a vessel, there being an outlet from said vessel, a cover supported independently of said vessel, said vessel having a movement relative to said cover and means, when said vessel is in alinement with said cover, to force the cover into air-tight connection with the vessel, a source of air-pressure, and connection between said source of pressure and the interior of the cover.

7. In a machine of the character described, in combination, a vessel, there being an outlet from said vessel, a cover supported independently of said vessel, said vessel having a movement relative to said cover and means, when said vessel is in alinement with said cover, to force the cover into air-tight connection with the vessel, and an outlet in vertical alinement with the cover adapted to register with the vessel-outlet.

8. In a machine of the character described, in combination, a vessel, there being an outlet from said vessel, a cover supported independently of the said vessel, said vessel having a movement relative to said cover and means, when said vessel is in alinement with said cover, to force the cover into air-tight connection with the vessel, an outlet in vertical alinement with the cover adapted to register with the vessel-outlet, a source of air-pressure, and connection between said source of pressure and the interior of the cover.

9. In a machine of the character described, in combination, a vessel, there being an outlet from said vessel, a cover supported independently of said vessel, said vessel having a movement relative to said cover and means, when said vessel is in alinement with said cover, to force the cover into air-tight connection with the vessel, and a fixed outlet in vertical alinement with the cover adapted to register with the vessel-outlet, and a yielding support for the vessel when said vessel is in said alinement.

10. In a machine of the character described, in combination, a vessel, there being an outlet from said vessel, a cover supported independently of said vessel, said vessel having a movement relative to said cover and means, when said vessel is in alinement with said cover, to force the cover into air-tight connection with the vessel, a fixed outlet in vertical alinement with the cover adapted to register with the vessel-outlet, and a yielding support for the vessel when said vessel is in said alinement, a source of air-pressure and connection between said source of pressure and the interior of the cover.

11. In a machine of the character described, in combination, a track, a vessel supported so as to travel on said track, a cover supported independently of said vessel in line of travel of said vessel, and means to force said cover into air-tight connection with said vessel.

12. In a machine of the character described, in combination, a track, a vessel supported so as to travel on said track, a cover supported independently of said vessel in line of travel of said vessel, and means to force said cover into air-tight connection with said vessel, a source of air-pressure, and connection between said source of pressure and the interior of the cover.

13. In a machine of the character described, in combination, a track, a vessel, having an outlet supported so as to travel on said track, a cover supported independently of said vessel in line of travel of said vessel, an outlet in vertical alinement with said cover, and adapted to register with the vessel-outlet when the vessel is in alinement with the cover, means to force the cover into air-tight connection with the vessel.

14. In a machine of the character described, in combination, a track, a vessel, having an outlet supported so as to travel on said track, a cover supported independently of said vessel in line of travel of said vessel, an outlet in vertical alinement with said cover, and adapted to register with the vessel-outlet when the vessel is in alinement with the cover, means to force the cover into air-tight connection with the vessel, a source of air-pressure, and connection between said source of pressure and the interior of the cover.

15. In a machine of the character described, in combination, a track, a vessel, having an outlet supported so as to travel on said track, a cover supported independently of said vessel, in line of travel of said vessel, a fixed outlet in vertical alinement with said cover and adapted to register with the vessel-outlet when the vessel is in alinement with the cover, means to force the cover into air-tight connection with the vessel, the track adjacent to the fixed outlet being yieldingly supported.

16. In a machine of the character described, in combination, a track, a vessel, having an outlet supported so as to travel on said track, a cover supported independently of said vessel, in line of travel of said vessel, a fixed outlet in vertical alinement with said cover and adapted to register with the vessel-outlet when the vessel is in alinement with the cover, means to force the cover into air-tight connection with the vessel, the track adjacent to the fixed outlet being yieldingly supported, a source of air-pressure and connection between said source of pressure and the interior of the cover.

17. In a machine of the character described, in combination, a vessel, there being an outlet from said vessel, a cover for said vessel and a yielding support for said vessel in alinement with said cover.

846,448. MEANS FOR SEPARATING AND ELIMINATING SMOKE-SUSPENDED MATTER. SAMUEL BENSON, Chicago, Ill. Filed Aug. 17, 1904. Renewed July 28, 1906. Serial No. 328,245.

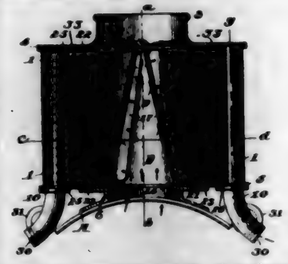

Claim.—1. In an apparatus of the class described, a combustion-chamber, means for the escape of products of combustion therefrom, means for centrifugally separating solid particles from the escaping gases, means for separating liquid from the solid particles and fluid-pressure means for returning said solid particles to the combustion-chamber.

2. In an apparatus of the class described, a combustion-chamber, a smoke-box in communication therewith, an exhaust-pipe located in said smoke-box, a casing in communication with said smoke-box and having a smoke-outlet at its top, a separating-cylinder secured exteriorly to the casing and in communication therewith, a fixed turbine-wheel within and spaced away from the casing to form an annular whirl-chamber, said wheel comprising a hollow cone provided with outwardly-extending hollow arms or spokes, the outlet thereof being tangential to the periphery of the wheel said arms forming passage-ways communicating with the smoke-box and the whirl-chamber, a series of deflecting-segments located between the cone and the wall of the casing and means of communication between the separating-cylinder and the combustion-chamber.

3. In an apparatus of the class described, a combustion-chamber, a smoke-box in communication therewith, a casing having an outlet at its top in communication with the smoke-box, a separating-cylinder secured exteriorly to the casing, the ends of the casing-wall and the walls of the separating-chamber being arranged to form a communicating volute slot adapted to cause a whirling motion in the separating-cylinder, a perforated partition screen or wall in the separating-cylinder, means of communication between one side of said wall in the said cylinder and the combustion-chamber and means of communication from the other side of said wall to a suitable offtake and means for producing a rapid rotary or spiral motion of the products of combustion within the said cylinder.

4. In an apparatus of the class described, a combustion-chamber, a smoke-box in communication therewith, an exhaust-pipe arranged in said smoke-box, a casing provided with a smoke-outlet secured to said smoke-box and in communication therewith, a fixed turbine-wheel within and spaced away from the casing, said wheel comprising a hollow cone provided with hollow arms or spokes extending radially and curved tangentially at the periphery, said arms being in communication with the smoke-box and whirl-chamber, annular top and bottom plates in said casing, a series of circumferentially-arranged deflecting members secured between said plates in the spaces between the hollow arms and a separating-cylinder exteriorly secured to the casing and in communication therewith and with the combustion-chamber.

5. In an apparatus of the class described a combustion-chamber, means for the escape of the products of combustion therefrom, a casing associated therewith and provided with a smoke-outlet, smoke-whirling means in said casing, a separating-chamber secured exteriorly to the casing the ends of the casing-wall and the walls of the separating-cylinder being so connected and arranged as to form a volute passage between them, a screen in the separating-cylinder forming a continuation of the said passage, said screen dividing the said separating-chamber into a water-drain space provided with a suitable outlet and a cinder-chamber and means of communication between said cinder-chamber and the combustion-chamber.

6. In an apparatus of the class described, a combustion-chamber, a smoke-box in communication therewith, an exhaust-pipe in said smoke-box, a casing in communication with the smoke-box, a fixed turbine-wheel within said casing, said wheel comprising a hollow central body provided with outwardly-extending curved hollow arms, said wheel being spaced away from the casing to form an annular whirl-chamber, said hollow arms being in communication with the smoke-box and whirl-chamber, annular top and bottom inclosing plates, spaced plates located therebetween and forming passage-ways leading from the whirl-chamber to the smoke-outlet therefrom, an approximately cylindrical chamber secured exteriorly to the casing and in communication therewith, means for giving products of combustion a spiral motion therein and means of communication between the said chamber and the combustion-chamber.

7. In an apparatus of the class described, a combustion-chamber, a smoke-box in communication therewith provided with an exhaust-pipe, a casing in communication with said smoke-box having a slot in its side, a separating-chamber provided with a slot in its side secured to the said casing so that the said slots register, said slots establishing communication between the casing and the separating-chamber, means of communication between said separating-chamber and the combustion-chamber, a reversible duplex turbine-wheel within and spaced away from the wall of the casing, said wheel being capable of operation in either fixed vertical position and means of communication between the smoke-box and the smoke-outlet from the casing.

8. In an apparatus of the class described, a combustion-chamber, a smoke-box in communication therewith, a fluid-pressure jet in said smoke-box, one or more petticoat-pipes located in proximity to the said jet, a casing communicating with said pipes having a slot in its side and a smoke-outlet at its top, a separating-chamber provided with a corresponding slot in its side and secured to the casing so that the said slots register, thereby establishing communication between the casing and the separating-chamber, a fixed duplex turbine-wheel within and spaced away from the wall of the casing to form an annular whirl-chamber, primary centrifugal separating means within said chamber, secondary centrifugal separating means within said separating-chamber, communicating tubular draft means connecting the separating-chamber and the combustion-chamber for eliminating combustible matter, tubular means connected with the separating-chamber for the elimination of water, draft means for conducting crude smoke from the combustion-chamber through the turbine-wheel member to the whirl-chamber

and draft means for discharging purified smoke through said wheel member and outlet, substantially as described.

9. In an apparatus of the class described, a combustion-chamber, means for the escape of products of combustion therefrom, means for centrifugally separating solid products of combustion from the escaping gases, means for giving the said solid particles a spiral motion and means for returning said solid products to the combustion-chamber in a spirally-moving current.

10. In an apparatus of the class described, a combustion-chamber, means for the escape of products of combustion therefrom, means for the return of a portion of the said products of combustion to the combustion-chamber and fluid-pressure means for propelling the said portion of the products of combustion back to the said chamber in a spirally-moving current through said means.

11. In an apparatus of the class described, a combustion-chamber, means for the escape of products of combustion therefrom, means for producing a rotary or spiral movement of said products, fluid-pressure means to increase the rapidity of said movement, means for separating the outer portion of the whirling body from the inner portion and means whereby said separated outer portion may be given a spiral motion and returned to the combustion-chamber in a spirally-moving current by the action of said fluid-pressure means.

12. In an apparatus of the class described, a combustion-chamber, means for the escape of products of combustion therefrom, a separator in communication therewith for separating unconsumed particles from the escaping gases, said separator comprising a casing and means for giving the products of combustion a rotary or spiral movement within said casing and means of communication between the outer portion of said casing and the combustion-chamber, said means extending throughout the vertical height of said casing, whereby unconsumed particles, carried in the outer portion of the whirling products of combustion within the casing may be returned to the combustion-chamber.

13. In an apparatus of the class described, means for separating solid particles from products of combustion, said means comprising a casing, means for giving said products of combustion a rotary or spiral movement therein, the peripheral wall of said casing being provided with a slot extending throughout the height thereof, and one or more offset lips on the periphery of said casing adjacent said slots for separating the outer portion of said whirling body from the inner portion, substantially as described.

14. In an apparatus of the class described, means for separating solid particles from products of combustion, said means comprising a casing, means for giving said products of combustion a rotary or spiral movement therein, the peripheral wall of said casing being provided with a slot extending throughout the height thereof, means for deflecting said particles outwardly and one or more offset lips on the periphery of said casing adjacent said slots for separating the outer portion of said whirling body from the inner portion.

15. In an apparatus of the class described, means for separating said particles from products of combustion, said means comprising a vertically-disposed casing, a fixed turbine-wheel within and spaced away from the walls of the casing to form an annular whirl-chamber between the said wheel and wall, said wheel comprising a hollow cone provided with hollow curved arms outwardly extending therefrom, said wall being provided with one or more slots extending throughout the vertical height of said casing, and one or more offset lips on the inner periphery of said casing adjacent said slot or slots to separate and deflect the outer portion of the products of combustion within the casing from the inner portion.

16. In an apparatus of the class described, a combustion-chamber, a smoke-box connected therewith, a vertically-disposed casing connected with said smoke-box and having a smoke-outlet at its top, a separating-cylinder secured to the said casing and communicating therewith throughout the vertical height thereof, offset lips adjacent said means of communication, a fixed turbine-wheel within and spaced away from the walls of said casing to form an annular whirl-chamber, said wheel comprising a hollow cone provided with hollow curved arms or spokes extending outwardly therefrom to form passage-ways from the smoke box to the whirl-chamber and means of communication between the said separating-cylinder and the said combustion-chamber.

17. In an apparatus of the class described, a combustion-chamber, a smoke-box in communication therewith, a vertically-disposed casing suitably secured to the said smoke-box and having a smoke-outlet, a separating-cylinder secured exteriorly to the casing and communicating therewith throughout the vertical height of the latter, offset lips adjacent said means of communication, a fixed turbine-wheel within and spaced away from the walls of the casing to form a whirl-chamber, said wheel comprising a hollow cone provided with hollow curved arms or spokes extending outwardly therefrom to form passage-ways from the smoke-box to the whirl-chamber, one or more deflecting elements for throwing solid particles outwardly and means of communication between the separating-cylinder and the combustion-chamber.

18. In an apparatus of the class described, a combustion-chamber, a smoke-outlet therefrom, a vertically-disposed casing in communication with said smoke-outlet, said casing being provided with one or more slots in its peripheral wall extending throughout the vertical height thereof, one edge of said slot being nearer the center of said casing than the other edge, whereby the first-named edge forms an offset lip, a separating-cylinder secured to the said casing and communicating therewith through said slot, a fixed turbine-wheel within and spaced away from the walls of the casing to form an annular whirl-chamber, said wheel comprising a hollow cone provided with radially-disposed hollow arms or spokes forming passage-ways leading from the smoke-outlet to the whirl-chamber and means of communication between said cylinder and the combustion-chamber.

19. In an apparatus of the class described, a combustion-chamber, a smoke-box in communication therewith, a fluid-pressure jet located in said smoke-box, a vertically-disposed casing in communication with said smoke-box and having a smoke-outlet at its top, said casing being provided with a slot in its peripheral wall extending throughout the vertical height thereof, one edge of said slot outstanding from said peripheral wall to form an offset lip, a separating-cylinder secured exteriorly to the said casing and in communication therewith through said slot, said offset lip serving to split off and switch smoke-suspended matter into the said separating-cylinder, a fixed turbine-wheel within and spaced away from the walls of the casing to form an annular whirl-chamber, said wheel comprising a hollow cone provided with hollow tangentially-curved arms or spokes extending outwardly therefrom, communicating with the smoke-box and whirl-chamber and means of communication between the separating-chamber and the combustion-chamber.

846,449. TOY. EDGAR W. BRIMMER, Copemish, Mich. Filed Dec. 13, 1906. Serial No. 347,678.

Claim.—1. A mechanical toy comprising a resilient hoop, a toy figure supported diametrically thereof, and means for laterally compressing said hoop for the purpose set forth.

2. A mechanical toy comprising a resilient hoop, crossed strings extending diametrically thereof for supporting toy figures, and means for laterally compressing said hoop for the purpose set forth.

3. A mechanical toy comprising a resilient hoop, crossed toy-supporting strings extending diametrically thereof, a base member for said hoop, and means for laterally compressing said hoop comprising a tie member secured at one end to the hoop and at the other to a lever connected to the base member.

4. A mechanical toy comprising a resilient hoop, a toy figure supported diametrically thereof, a base member for said hoop, a lever housed in said base member and having an end extending beyond said base, and a tie connection between said lever and the outer side of said hoop for the purpose set forth.

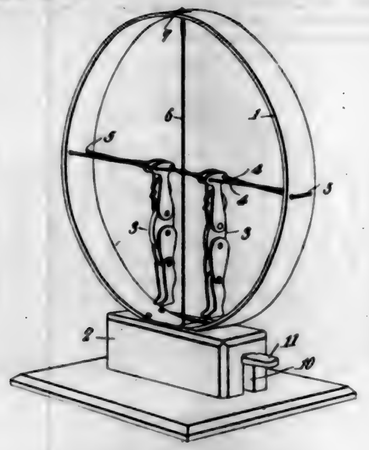

846,450. WOODEN COLUMN. HARLIN BROWN, Mayfield, Mich. Filed Sept. 21, 1906. Serial No. 335,595.

Claim.—1. As a new article of manufacture, a wooden column comprising a plurality of solid superposed blocks permanently secured together at the abutting ends, and having a continuous exterior coating, forming a unitary structure having the appearance and attributes of a one-piece column and capable of transportation and manipulation as such.

2. As a new article of manufacture, a wooden column comprising a plurality of solid blocks secured together end to end and covered with veneer extending across the joints between the blocks to conceal the same and assist in holding the blocks together, and giving the article the appearance and qualities of a one-piece column.

3. As a new article of manufacture, a sectional column consisting of wood veneered with a web of fabric permanently secured thereon and forming the outer exposed coating thereof.

846,451. TRUCK. WILLIAM C. BURRY, Allegheny, Pa. Filed May 2, 1906. Serial No. 314,793.

Claim.—1. A truck, comprising an upper, and a lower, metallic ring, each formed with projecting lugs having recesses on their outer faces, vertically-disposed supports fitting within said recesses, and secured to said lugs, and formed at their lower ends with outwardly-turned feet resting on the lower ring, and casters secured below the lower ring.

2. A truck, comprising an upper and a lower metallic ring, spaced apart, and secured by, vertical supports, the upper ring being of concavo-convex form in cross-section to provide an annular groove on the under side of the ring, and a flared upper surface for said ring.

3. A truck, comprising an upper metallic ring having an annular groove on its under surface, and a flared upper surface, lugs depending from said ring, and formed with vertical recesses on their outer faces; a lower ring provided with upwardly-projecting lugs vertically alined with the lugs of the upper ring, and formed with vertical recesses on their outer faces, in combination with a plurality of vertical supports fitting said recesses and secured thereto, and formed at their lower ends with outwardly-extending feet, and a plurality of casters secured to the under surface of the lower ring.

846,452. CRACKER-BOX. JOSEPH H. BYRNE, Pittsburg, Pa. Filed Feb. 7, 1906. Serial No. 299,915.

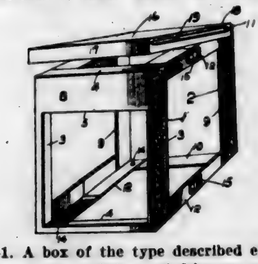

Claim.—1. A box of the type described embodying two frames, a transparent plate carried by one of said frames, outwardly-extending pins carried by the upper edges of the other of said frames, angle-strips pivotally connected to the top and bottom edges of said frames and having their ends hinged together, a bottom plate detachably mounted in said frames, side walls mounted in said frames, and a lid slidably mounted upon said pins and adapted to engage the top and back of said box, substantially as described.

2. A box of the type described embodying two frames, a transparent plate carried by one of said frames, hinged strips connecting said frames, a bottom plate detachably mounted in said frames, side walls carried by said frames, and a lid slidably connected to said box, substantially as described.

3. A box of the type described embodying flanged frames, hinged strips connecting said frames, a bottom plate loosely mounted in said frames, side walls loosely mounted in said frame, and a lid connected to one of said frames, substantially as described.

4. A box of the type described embodying two collapsible frames, side walls mounted in said frames, a bottom plate mounted in said frames, a lid loosely mounted upon one of said frames, slotted flanges on the sides of said

cover, outwardly-projecting pins on the sides of the upper frames and loosely fitting in the slots in said cover-flanges, substantially as described.

846,453. TIRE. EDWIN B. CADWELL, New York, N. Y., assignor of one-third to Frank Johnston and one-third to Frank M. Ashley. Filed Mar. 24, 1904. Serial No. 199,676.

Claim.—1. A tire having recesses in its sides which extend toward the center of the tread, said recesses being spaced from each other less than the width of the tire, said tire having cells formed in the base thereof, substantially as described.

2. A tire having recesses in its sides which extends toward the center of its tread, said recesses being staggered relative to each other, in combination with cells in its base; substantially as described.

3. A tire having recesses in its sides and tread which extend toward the center of the tread, said recesses being V-shaped in form, in combination with cells in its base; substantially as described.

4. A tire having recesses in its sides in combination with cells in its base, and a strip of flexible material to seal the open ends of said cells; substantially as described.

5. A tire composed of separable sections, each section having recesses in its sides above its base-section, and cells in its base; substantially as described.

6. A tire composed of separable sections, each section having recesses in its sides, above its base-section, cells in its base and holding-clips in its base, substantially as described.

7. A tire composed of separate sections, each section having recesses in its sides, above its base-section, cells in its base, and means whereby the sections may be united to the rim of the wheel; substantially as described.

8. A tire composed of separable yielding sections, each section having V-shaped recesses in its sides and cells in its base; substantially as described.

9. A tire composed of separable sections, each section having recesses in its sides extending toward the center of the tread, with cells in its base located on each side of the center of said tire-section and forming thereby a central web which extends from the base of the tire to the surface of the tread; substantially as described.

10. A tire having recesses in its sides extending toward the center of the tread, cells in its base on each side of the center of the tire, and binding-wires extending through the solid portion of the tire; substantially as described.

11. A tire composed of separate sections, each section having recesses in its sides and cells in its base, and a holding-plate located in each section.

12. A tire composed of separate sections, each section having recesses in its sides and cells in its base, a holding-plate in each section and provision for holding said sections together on a wheel.

13. A tire having recesses in its sides and cells in its base and holding-clips comprising metal plates having their outer edges turned upward at an angle as shown.

14. A tire having recesses in its sides adapted to contact under tread compression, and closed pneumatic cells in its base.

15. A tire having recesses in its sides adapted to contact under tread compression, closed pneumatic cells in its base, and means for holding said tire to a wheel.

846,454. SPITTOON. ORRIN CADY, Cincinnati, Ohio. Filed Mar. 7, 1906. Serial No. 304,637.

Claim.—A spittoon which has a flat, elongated bottom with two parallel edges between which it is pointedly extended in opposite directions beyond these edges, a body correspondingly elongated, an upwardly and outwardly inclined rim on said body and elongated handles parallel to each other and parallel to the edges of the bottom, provided on opposite sides of the body below the rim of the

same and projecting in a manner that if the spittoon is tilted on one of the parallel edges of its bottom, the particular handle on that side and above such edge will limit the tilting movement, all as shown and described.

846,455. CUSHIONED TIRE. ZENAS A. CURTIS, Channing, Tex. Filed Feb. 5, 1906. Serial No. 299,584.

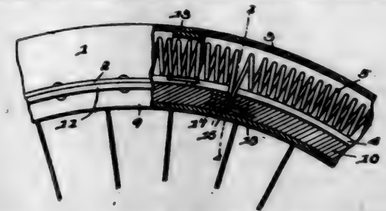

Claim.—1. A cushioned tire having outwardly-directed attaching-flanges, an annular base secured to the flanges, a coil-spring having angular ends embedded in the material of said annular base, and a metallic sheath having outwardly-directed flanges secured to said annular base on opposite sides of said coil-spring.

2. A cushioned tire comprising a tubular sheath having one end reduced to fit within the other end, an annular base secured to the inner periphery of the sheath with the inner portion of the base convexed to fit the concavity of a wheel-rim, one end of the base being projected beyond the adjacent end of the sheath, and the other end of the base being terminated short of the adjacent end of the sheath.

3. A cushioned tire comprising a tubular sheath having one end reduced to fit within the other, an annular base secured to the inner periphery of the sheath with the inner periphery of the base shaped to fit the rim of a wheel, that end of the base adjacent the reduced end of the sheath being terminated short of said end of the sheath, the other end of the base being projected beyond the adjacent end of the sheath, and a helical spring contained within the sheath with its ends connected to the respective ends of the base.

4. A cushioned tire comprising a tubular sheath having one end reduced to fit within the other end, a base secured to the inner periphery of the sheath and shaped to fit the rim of a wheel, that end of the base which is adjacent the reduced end of the sheath being terminated short of said end of the sheath, the other end of the base being projected beyond the adjacent end of the sheath, and a helical spring housed within the sheath with its ends lying at the respective ends of the base and formed into prongs driven into said ends of the base.

846,456. HAY-RAKE. JOSEPH DAIN, Ottumwa, Iowa. Filed Apr. 16, 1904. Serial No. 203,395.

Claim.—1. In a rake, the combination of a frame, a rake-head pivotally mounted at the front thereof, a lever connected with said rake-head for rocking the same, a transverse shaft for rocking said rake-head, and draft mechanism connected with said transverse shaft for actuating the same by the draft of the team to rock the rake-head.

2. In a rake, the combination of a frame, a rake-head pivotally mounted at the front thereof, a lever connected with said rake-head for rocking the same, a transverse shaft for rocking said rake-head, draft mechanism connected with said transverse shaft for actuating the same by the draft of the team to rock the rake-head, and means connecting said shaft and lever.

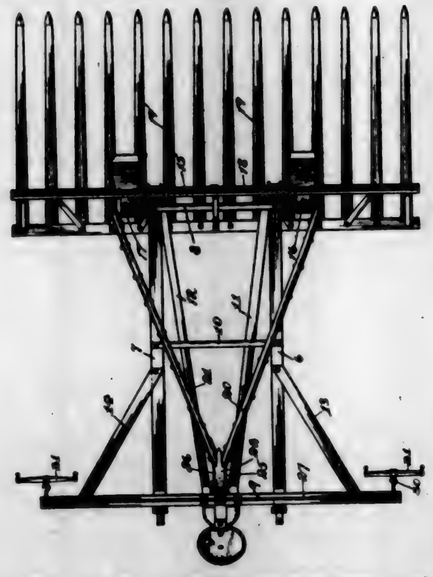

3. In a rake, the combination of a main frame, a rake-head pivotally supported at the forward portion thereof, a rock-shaft, a lever, means connecting said lever, the rock-shaft and said rake-head, whereby the rake-head may be rocked by power applied initially to said lever or to said rock-shaft, and draft mechanism connected with said rock-shaft.

4. In a rake, the combination of a main frame, a rake-head pivotally supported at the forward portion thereof, a rock-shaft extending transversely of said frame, means connecting said rock-shaft with said rake-head whereby by rocking said shaft the points of the rake-teeth may be moved vertically, one or more arms carried by said rock-shaft, and draft apparatus connected with said arm or arms for rocking the same.

5. In a rake, the combination of a main frame, a rake-head pivotally supported at the forward portion thereof and adapted to be rocked to vertically move the rake-teeth, a rock-shaft at the rear portion of said frame and extending transversely thereof, draft devices connected with the end portions thereof, for rocking the same, and means connecting said rock-shaft with said rake-head and acting to rock the same when draft is applied to said draft devices, substantially as described.

6. In a rake, the combination of a main frame, a rake-head pivotally supported in the forward portion thereof, a rock-shaft, a lever means connecting said rock-shaft with said lever, means connecting said lever with said rake-head, and draft devices connected to said rock-shaft for rocking the same by the draft of the team, substantially as described.

7. In a rake, the combination of a main frame, a rake-head pivotally supported at the forward portion thereof, a rock-shaft mounted on said frame and extending transversely thereof, draft devices connected at opposite sides of the machine with said rock-shaft at one side of the axis thereof, and means connecting the intermediate portion of said rock-shaft at the opposite side of the axis thereof with the upper portion of said rake-head, whereby the application of the draft to said rock-shaft will operate to raise the points of the rake-teeth, substantially as described.

8. In a rake, the combination of a main frame, a rake-head pivotally supported at the forward portion thereof, a rock-shaft mounted on said frame, draft devices connected with said rock-shaft at one side of the axis thereof, a lever mounted on said frame, means connecting said lever with said rock-shaft at the opposite side of the axis thereof, and means connecting said lever with said rake-head, substantially as described.

9. In a rake, the combination of a main frame, a rake-head pivotally supported at the forward portion thereof, a rock-shaft mounted on said frame, draft devices connected with said rock-shaft at one side of the axis thereof, a lever pivotally mounted at its lower end upon said frame, means connecting said lever at a point above its pivot with said rock-shaft at a point below the axis thereof, and means connecting said lever with the rake-head, substantially as described.

846,457. BRAKE. HENRY J. DOHRER, St. Joseph, Mo., assignor of one-third to Joseph W. Dohrer and one-third to David E. Curtin, St. Joseph, Mo. Filed Apr. 30, 1906. Serial No. 314,495.

Claim.—1. In a vehicle-brake the combination with a geared wheel attached to the inside of the spokes of a wheel and spaced from and surrounding the wheel-hub, a round bar and the pinion at the outer end thereof, of compression-plates, the lower one round at the bottom, the upper one having a valley in the top the interior of each being semicircular, boxing therefor, duplicate yokes, their set-screws, an eccentric and eccentric-rod, a lever, a conveyer and a slotted arm thereon, a pin, its lower end fastened therein and a spring and cap carried thereby, a lifter rigidly fastened to the eccentric-rod engaging with said pin and spring, a frame rigidly attached to the axle, and all necessary supports, substantially as set forth and shown.

2. In a vehicle-brake the combination with a lever and frame, a round bar, pinion and gear-wheel, of an eccentric and eccentric-rod, spaced compression-plates adapted to grip said round bar the upper one provided with a valley for engagement with the eccentric, a conveyer, a slotted arm thereon and its guide-screw, a curved pin attached to the top of said arm, a spiral spring and cap on said pin and a lifter carried on said eccentric-rod and adapted to engage with said pin and elevate the slotted arm of the conveyer, substantially as set forth and shown.

3. The combination with a vehicle-brake provided with a pinion-bar, of an eccentric and eccentric-rod, a lifter carried by said eccentric-rod, a conveyer carried thereon, a slotted conveyer-arm, a curved pin on said pinion-bar and its spring and cap, adapted to engage with said lifter, substantially as described.

4. In a vehicle-brake the combination with the cogs of a casting carried by the spokes of a wheel spaced from the hub of the wheel and a bar and the pinion thereon, of a lower compression-plate rounded at the bottom, an upper compression-plate provided with a valley in the top, said compression-plates being adapted to engage with said pinion-bar, an eccentric operating in said valley, an eccentric-rod, a lever engaging with the eccentric-rod, a frame, duplicate yokes inclosing said compression-plates and box-

ing and bar, and set-screws to take up wear, substantially as shown and set forth.

846,458. STRING-TAPERING MACHINE. JOHN P. DONOVAN, Westfield, Mass., assignor to United States Whip Company, Westfield, Mass., a Corporation of Massachusetts. Filed May 12, 1906. Serial No. 316,461.

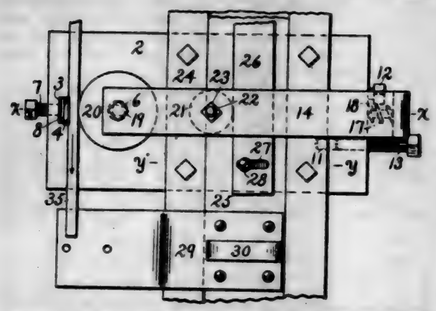

Claim.—1. The combination, in a string-tapering machine, with a fixed knife, of a horizontally-movable string-follower adapted to bear on the string and a reciprocating carrier for said follower, such knife and follower forming a passage through which to draw the string, means to normally withdraw said carrier with its follower from close proximity to said knife, and means to forcibly actuate the carrier and follower toward the knife and thus contract such passage.

2. The combination, in a string-tapering machine, with a fixed knife, of a horizontally-movable string-follower adapted to bear on the string and a reciprocating carrier for said follower, such knife and follower forming a passage through which to draw the string, means to normally withdraw said carrier with its follower from close proximity to said knife, and manually-operated means for forcibly actuating the carrier and follower toward the knife to contract such passage.

3. The combination, in a string-tapering machine, with a fixed knife, of a horizontally-movable string-follower adapted to bear on the string and a reciprocating carrier for said follower, such knife and follower forming a passage through which to draw the string, means to normally withdraw said carrier with its follower from close proximity to said knife, and pedally-operated means for forcibly actuating the carrier and follower toward the knife to contract such passage.

4. The combination, in a string-tapering machine, of a fixed knife, a horizontally-movable string-follower adapted to bear on the string and a reciprocating carrier for said follower, such knife and follower forming a passage through which to draw the string, an actuating-follower connecting with the carrier, means to normally withdraw said carrier with the string-follower from close proximity to said knife, and a reciprocating member arranged crosswise of the carrier and adapted to engage said actuating-follower and when moved in one direction cause said string-follower to approach the knife and contract such passage.

5. The combination, in a string-tapering machine, of a suitably-supported knife, a string-follower and a reciprocating carrier therefor, an actuating-follower connected with the carrier, means to normally withdraw said carrier and the string-follower from close proximity to said knife, a slide and a suitably-supported raceway therefor arranged crosswise of the carrier, and an adjustable member on said slide adapted to engage said actuating-follower and when moved in one direction cause said string-follower to approach the knife.

7. The combination, in a string-tapering machine, with a suitably-supported knife, of a string-follower and a reciprocating carrier therefor, means to normally withdraw said carrier with its follower from close proximity to said knife, means to forcibly actuate the carrier and follower toward the knife, and stops in the path of travel of the carrier to limit its movement in both directions.

7. The combination, in a string-tapering machine, with a fixed knife, of a horisontally-movable string-follower adapted to bear on the string and a reciprocating carrier for said follower, such knife and follower forming a passage through which to draw the string, means to normally withdraw said carrier with its follower from close proximity to said knife, a treadle, and connecting means between said treadle and carrier for forcibly actuating the latter toward the knife to contract such passage.

8. The combination, in a string-tapering machine, with a suitably-supported knife, of a string-follower and a reciprocating carrier therefor, means to normally withdraw said carrier with its follower from close proximity to said knife, a treadle, connecting means between said treadle and carrier for forcibly actuating the latter toward the knife, and stops in the path of travel of the carrier to limit its movement in both directions.

9. The combination, in a string-tapering machine, of a suitably-supported knife, a string-follower and a reciprocating carrier therefor, an actuating-follower connected with the carrier, means to normally withdraw said carrier with the string-follower from close proximity to said knife, a reciprocating member arranged crosswise of the carrier and adapted to engage said actuating-follower and when moved in one direction cause said string-follower to approach the knife, and a holder for strings attached to the front of said member.

10. The combination, in a string-tapering machine, of a slotted bed and a support therefor, a vertical knife fastened to said bed, a carrier-frame comprising two horizontal arms arranged above and below the bed and adapted to be reciprocated toward and away from said knife, a vertical spindle connecting the free ends of said frame, such spindle extending through the slot in the bed, a roll mounted on said spindle above the bed, means to tension the frame with its roll away from the knife, and means to forcibly actuate the frame and roll toward the knife.

11. The combination, in a string-tapering machine, with a reciprocating carrier provided with an actuating-follower, and tension means for said carrier, of a slide and a raceway therefor arranged crosswise of the carrier, an actuating-bar mounted on said slide and having slots in its ends, said bar being adapted to bear against said follower and actuate the carrier against its tension means, and screws passing through said slots into the slide to provide adjustment for the bar.

12. The combination, in a string-tapering machine, with a bed, and adjustable stops projecting therefrom, of a reciprocating carrier mounted in operative relation with said stops and adapted to have its movement in both directions limited thereby, tension means for said carrier, and means to actuate the carrier against such tension means.

846,459. CAR-FENDER. NANCY P. DUNCAN, Pittsburg, Pa. Filed Nov. 19, 1906. Serial No. 344,034.

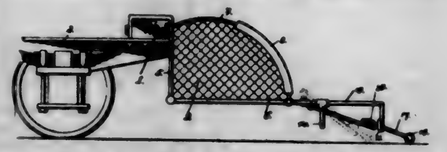

Claim.—1. In a fender, the combination with a car, of a main frame supported therefrom, side frames carried by said main frame, outwardly-extending rods carried by said main frame, bars connecting said rods, an auxiliary frame hinged to said main frame and extending outwardly between said bars, hook-shaped members slidably mounted upon said auxiliary frame and adapted to temporarily engage said rods, and a resilient roller connecting said members, substantially as described.

2. A car-fender comprising a suitably-supported main fender-frame, auxiliary-fender supporting-rods pivotally connected at their inner ends to the main fender-frame, and provided with eyes at their outer ends, an auxiliary fender hinged at its rear edge to the forward edge of the main fender-frame and having a sleeve at each end adjacent its forward edge, hook members slidable in said sleeves and normally engaging in the eyes of said supporting-rods, and a roller carried by said hook members.

3. A car-fender comprising a main fender-frame, an auxiliary fender hinged at its rear edge to the forward edge of the main fender-frame, supporting-rods connected at their inner ends to the main fender-frame and provided with eyes at their outer ends, slidable means carried by the auxiliary fender and engaging in said eyes for normally holding the forward edge of the auxiliary fender suspended, the said slidable means extending forwardly in front of the auxiliary fender, and a roller carried by said slidable means, as and for the purpose described.

846,460. LOCKING HAT AND COAT RACK. JACOB E. DUNDORE, Wilkinsburg, Pa. Filed Dec. 6, 1906. Serial No. 346,588.

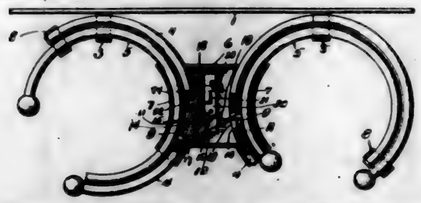

Claim.—1. A hat and coat rack consisting of a supporting-bar, clasps supported thereby and comprising stationary members and movable members, a locking-casing carried by said stationary members and having guideways for said movable members, spring-held balls mounted in said stationary members and engaging said movable members, a pivoted lever adapted to engage said balls, a locking mechanism controlling the movement of said lever, and a key for manipulating said locking mechanism.

2. A hat and coat rack consisting of a supporting-bar, clasps carried thereby, said clasps comprising movable members and stationary members, a locking-casing carried by said members, movable spring-held balls carried by said stationary members and engaging said movable members, and a locking mechanism located in said casing for moving said balls out of engagement with said movable members.

3. In a hat and coat rack, a supporting-bar, a clasp carried thereby, said clasp comprising a movable member and a stationary member, a casing supported by said stationary member and having a guideway for said movable member, and means mounted in said casing for locking said movable member in a fixed position.

4. In a hat and coat rack, a supporting-bar, clasps carried by said bar, said clasps comprising movable members and stationary members, and means interposed between said clasps to lock said movable members in a fixed position.

846,461. PERIMETER-MEASURING DEVICE. ALBERT W. ENGEL, Chicago, Ill. Filed Feb. 3, 1906. Serial No. 299,277.

Claim.—1. A perimeter-measuring device comprising a metal clip having two apertures opening through the opposite lateral edges of the clip, in combination with a flexible tape having one end secured to the clip without occupying either of said apertures, the tape being adapted to pass freely through said apertures successively.

2. A perimeter-measuring device comprising a flexible tape and a metal clip secured to one end thereof, the clip being clenched to the tape intermediate the ends of the clip and having toward each end an oblong aperture whose length is transverse to the tape and through which the tape may pass freely, each aperture being open through to the edge of the clip, said openings being at diagonally opposite corners of the respective apertures.

3. A perimeter-measuring device comprising a flexible tape, a metal clip clenched securely to the tape by being lodged upon one surface thereof and clenched thereto between the ends of the clip, said clip having two transversely-oblong apertures through which the tape may pass freely, said apertures being both covered at one side by the tape and being cut through to the opposite end edges of the clip at the opposite lateral edges of the tape.

846,462. DYEING APPARATUS. PAUL FONTAINE, Troyes, France. Filed Sept. 25, 1906. Serial No. 336,202.

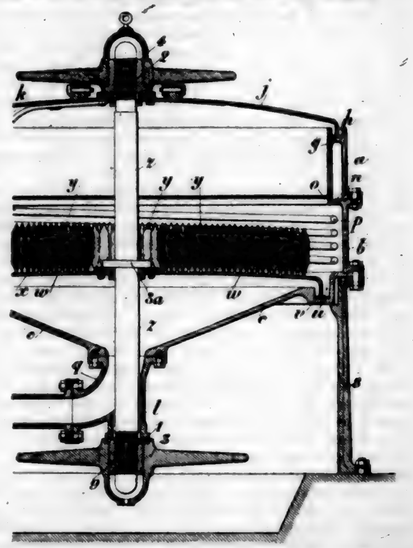

Claim.—1. In dyeing apparatus, as herein described, the combination of a vat comprising an intermediate casing having projecting thereinto a perforated diaphragm, an upper casing forming an annular chamber communicating with the chambers formed by said intermediate casing and a lower casing of truncated cone form, there being an annular recess in said lower casing in which said diaphragm rests, and means for supplying a circulation of liquid to said chambers, substantially as described.

2. In dyeing apparatus as herein described, the combination of a vat comprising an upper casing forming an annular chamber, an intermediate casing and a lower casing of truncated cone form, there being a communicating passage between the chambers formed by said upper and intermediate casings, a diaphragm resting in an annular groove in said lower casing and projecting into the chamber formed by said intermediate casing, and a cap or cover resting upon and closely pressed to an annular groove formed in the upper part of the wall of said upper casing, substantially as described.

3. In dyeing apparatus as herein described, the combination of an upper casing forming an annular chamber, an intermediate cylindrical casing secured to said upper casing, a lower casing of truncated cone form secured to said intermediate casing, a perforated diaphragm resting upon said lower casing and reaching into the chamber formed by the intermediate casing and a pump having two branch pipes one of which communicates with the chamber formed by said upper casing and the other of which com-

municates with the chamber formed by said lower casing, substantially as described.

4. In dyeing apparatus as herein described, the combination of an upper casing provided with an exterior annular groove, a removable cap having a depending flange resting in said groove, an intermediate casing secured to said upper casing, there being an intercommunicating liquid-passage of limited area between the chambers formed by said casings, a lower casing of truncated cone form secured to said intermediate casing, a diaphragm seated upon the interior of said lower casing and extending into the chamber formed by the intermediate casing, and means for pressing said diaphragm to its seat, substantially as described.

5. In dyeing apparatus as herein described, the combination of an upper casing provided with an exterior annular groove, a removable cap having a depending flange resting in said groove, an intermediate casing secured to said upper casing, there being an intercommunicating liquid-passage of limited area between the chambers formed by said casings, a lower casing of truncated cone form secured to said intermediate casing, a diaphragm seated upon the interior of said lower casing and extending into the chamber formed by said intermediate casing, and means for pressing said diaphragm to its seat, said means comprising a rod extending through said chambers and carrying substantially at its median point a collar which is adapted to press upon the diaphragm, substantially as described.

6. In dyeing apparatus as herein described, the combination of an upper casing provided with an exterior annular groove, a removable cap having a depending flange resting in said groove, an intermediate casing secured to said upper casing, there being an intercommunicating liquid-passage of limited area between the chambers formed by said casings, a lower casing of truncated cone form secured to said intermediate casing, a diaphragm seated upon the interior of said lower casing and extending into the chamber formed by said intermediate casing, and means for pressing said diaphragm to its seat, said means comprising a rod extending through said chambers and carrying substantially at its median point a collar which is adapted to press upon the diaphragm, and a nut engaging a screw-threaded portion near each extremity of said rod, said nuts serving to hold the cover tightly to the upper casing, substantially as described.

7. In dyeing apparatus as herein described, the combination of a series of three superposed casings forming a dyeing-vat, an arched perforated diaphragm resting upon the lower casing and extending into the chamber formed by the intermediate casing, and bobbin-carriers adapted to be held in the perforations of said diaphragm, each of said bobbin-carriers comprising two telescoping interlocking sleeves and a spindle set in one of said sleeves, substantially as described.

8. In dyeing apparatus as herein described, the combination of three superposed casings forming a dyeing-vat, a perforated diaphragm resting upon the lower casing and extending into the chamber formed by the intermediate casing, and bobbin-carriers adapted to be held in the perforations of said diaphragm, each of said bobbin-carriers comprising an external sleeve having a lower helicoidal surface, a second sleeve adapted to telescope with said first-named sleeve and having a spur engaging the helicoidal surface of said external sleeve, and a perforated spindle set in said second sleeve, substantially as described.

9. In dyeing apparatus as herein described, the combination of three superposed casings forming a dyeing-vat, a perforated diaphragm resting upon the lower casing and extending into the chamber formed by the intermediate casing, and bobbin-carriers adapted to be held in the perforations of said diaphragm, each of said bobbin-carriers comprising an external sleeve having an enlarged internal longitudinally-extending slot and a helicoidal lower surface, an internal sleeve being adapted to telescope with said external sleeve, said internal sleeve having a spur which is adapted to be passed through the slot in the external sleeve and is designed to engage the lower helicoidal surface of said external sleeve, and a perforated conical spindle secured in the upper part of said internal sleeve, substantially as described.

846,463. STRAIGHTENING AND BENDING MACHINE. KIRTLAND C. GARDNER and FLORENCE C. BIGGERT, Jr., Pittsburg, Pa., assignors to United Engineering & Foundry Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed May 14, 1906. Serial No. 316,607.

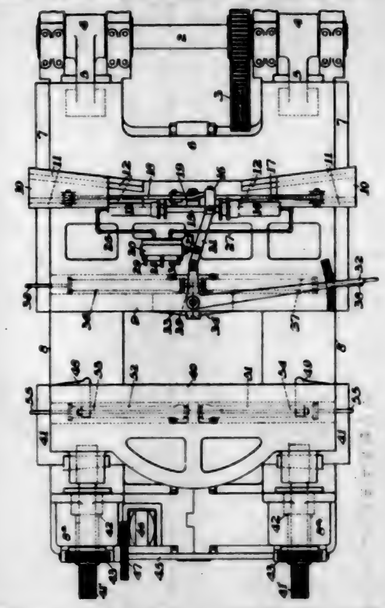

Claim.—1. In a bending or straightening machine, a bending-head, a bending die or anvil laterally movable in said head, and a power-cylinder for actuating the die or anvil and having its piston connected thereto; substantially as described.

2. A bending or straightening machine having its bending-heads provided with laterally-movable dies or anvils, and power-cylinders mounted in the said heads and having their pistons directly connected to the dies or anvils to actuate the same; substantially as described.

3. In a bending or straightening machine, a bending-head having guideways therein, a bending die or anvil mounted in said guideways for lateral movement, and a power-cylinder seated in the said head and having its piston directly connected to the die or anvil to actuate the same; substantially as described.

4. In a bending or straightening machine, a power-shaft, a slide-block connected thereto, a bending-head, and wedge members connecting the said head and block adjustably for the purpose of adjusting the said head, power means for actuating the wedge members, and controlling means whereby said members are simultaneously actuated; substantially as described.

5. In a bending or straightening machine, a power-shaft, a slide-block connected thereto, a bending-head, movable wedge members forming an adjustable connection between the slide block and head, and power-cylinders for actuating the wedge members; substantially as described.

6. In a bending or straightening machine, a reciprocating head, means for actuating the same, adjustable wedge members forming a part of the connection between the head and the actuating means, power-cylinders having their pistons connected to the wedge members, a reversing-valve for controlling the cylinders, and connected to the pistons thereof to be automatically closed by the movement of the pistons, and means for opening the valve; substantially as described.

7. In a bending or straightening machine, a power-shaft, a slide-block actuated thereby, a reciprocating head, adjustable wedge members forming a connection between the slide-block and head, power-cylinders having their pistons connected to the wedge members, a reversing-valve for controlling the cylinders, and a lever for controlling the valve; substantially as described.

846,464. TELEGRAPHIC INSTRUMENT AND THE LIKE. ALBERTO GENTILI, Veneto, Italy. Filed July 17, 1905. Serial No. 270,135.

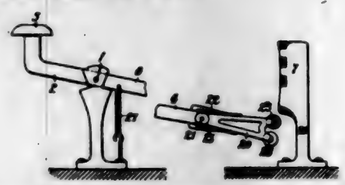

Claim.—1. A Morse key consisting of a pivoted key-lever a contact-lever pivoted thereto, said contact-lever being provided at its extremity with two rollers one of conducting and the other of insulating material, and a contact-piece with which one or other of the rollers contact so that upon the movement of the key in one direction contact is made between the contact-piece and the key, while upon its movement in the reverse direction no contact is made substantially as specified.

2. A Morse key consisting of a pivoted key-lever, a contact-lever pivoted thereto and maintained in position by means of two oppositely-disposed springs, said contact-lever being provided at its extremity with two rollers, one of conducting and the other of insulating material, and a contact-piece with which one or other of the rollers contact, so that upon the movement of the key in one direction contact is made between the contact-piece and the key while upon its movement in the reverse direction no contact is made substantially as specified.

846,465. GEARING. ALPHONSE GERBER, Paterson, N. J., assignor to King Quick Gerber Co., Paterson, N. J., a Corporation. Filed May 26, 1906. Serial No. 318,862.

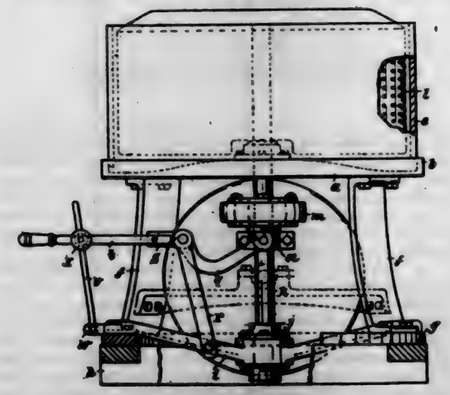

Claim.—1. The combination of the frame, a driven shaft journaled therein, a driving-shaft, power-transmitting devices carried the one by one shaft and the other by the other shaft, the one on the driven shaft being splined thereon, means for shifting said last-named device lengthwise of its shaft comprising a lever and a link pivotally connected with the frame and affording a fulcrum for the lever, and means for securing said lever in any position to which it is movable on its fulcrum, substantially as described.

2. The combination of the frame, a vertical driven shaft journaled in the frame, a friction-wheel splined on the shaft, a collar surrounding the shaft and supporting said friction-wheel, said collar having trunnions, a stand pivoted in the frame, a lever engaged with said trunnions at one end and pivoted in said stand, means for securing the lever at any position to which it is adjusted, a face-plate frictionally engaging the periphery of the friction-wheel, and means for rotating the face-plate, substantially as described.

3. The combination of a suitable bed, a frame comprising a spider having its end portions resting on said bed and its body portion unsustained, a vertical driven shaft stepped in the body portion of said spider, a friction-wheel splined on said shaft, a face-plate frictionally engaging the periphery of the friction-wheel, means for rotating the face-plate, and means for moving the friction-wheel longitudinally of the shaft, substantially as described.

4. The combination of a suitable bed, a frame comprising a spider having its end portions resting on said bed and its body portion depressed, a vertical driven shaft stepped in the body portion of said spider, a friction-wheel splined on said shaft, a face-plate frictionally engaging the periphery of the friction-wheel and having its center above said body portion of the spider, means for rotating the face-plate, and means for moving the friction-wheel longitudinally of the shaft, said friction-wheel being movable below the center of the face-plate substantially to the body portion of the spider, substantially as described.

5. The combination of a bed, a suitable frame resting thereon, a driven shaft journaled in said frame, a friction-wheel splined on said shaft, means for moving said friction-wheel longitudinally of the shaft, an engine arranged on said bed and movable toward said shaft, a driving-shaft journaled in the engine-frame and disposed at right angles to the driven shaft, a face-plate carried by the driving-shaft and engaging said friction-wheel, and means acting to normally move the engine, the driving-shaft and the face-plate toward the driven shaft, substantially as described.

6. The combination of a bed, a suitable frame resting thereon, a driven shaft journaled in said frame, a friction-wheel splined on said shaft, means for moving said wheel longitudinally of the shaft, an engine arranged on said bed and movable toward said shaft, a driving-shaft arranged at right angles to the driven shaft and journaled in the engine-frame, a face-plate carried by the driving-shaft and engaging said friction-wheel, a cam-shaft having its cams engaging the engine-frame, and means for causing said cam-shaft to rotate and thus cause its cams to move the engine-frame, substantially as described.

846,466. LOOM-SHUTTLE. ARNOLD GULDEMANN, Paterson, N. J. Filed Apr. 20, 1906. Serial No. 312,839.

Claim.—1. The combination of a shuttle, a bobbin-spindle, a mounting therefor arranged in the shuttle, pivoted bobbin-holding jaws, and a link pivotally connected with said jaws on relatively opposite sides of their pivots, substantially as described.

2. The combination of a shuttle having a bobbin-spindle, a mounting therefor arranged in the shuttle, said spindle extending longitudinally of the shuttle, bobbin-holding jaws pivoted in said mounting, and a link pivotally connected with said jaws on relatively opposite sides of their pivots, substantially as described.

846,467. BOTTLE-STOPPER. ADDINGTON B. HAMILTON, Roslindale, Mass., assignor of two-thirds to James F. O'Brien, Boston, Mass. Filed Nov. 17, 1906. Serial No. 343,879.

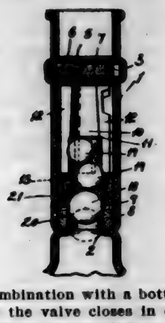

Claim.—1. In combination with a bottle, a valve, and a seat against which the valve closes in obstructing inflow of liquid to the bottle; said seat being yieldable to permit displacement of the valve under pressure and adapted to prevent subsequent opening of the valve, whereby escape of liquid which may enter the bottle under such pressure is prevented.

2. In combination with a bottle, a valve-seat and a valve within the neck of the bottle; the valve-seat being yieldable to permit inward movement of the valve and inflow of liquid past the same, under pressure; and adapted to grip the valve to prevent outflow of the liquid.

3. In combination with a bottle, a ball-valve, and an elastic valve-seat slightly less in diameter at its most restricted point than the ball and enlarged below such point; whereby the valve-seat is adapted to yield when external pressure is applied and permit displacement of the valve into a position below the seat to prevent discharge of liquid in the bottle.

4. In combination with a bottle, an elastic ring located within the neck of the bottle, formed with a narrow internal shoulder constituting a valve-seat, and enlarged below such shoulder; and a ball-valve having a greater diameter than said valve-seat, normally adapted to lie above the same, but adapted to be crowded by pressure past the seat, and by bearing against the inner side of the latter, to prevent discharge of liquid from the bottle.

5. In combination with a bottle, an elastic ring located within the neck of the bottle, formed with a narrow internal shoulder constituting a valve-seat, and enlarged below such shoulder; and a ball-valve having a greater diameter than said valve-seat, normally adapted to lie above the same, but adapted to be crowded by pressure past the seat, and by bearing against the inner side of the latter, to prevent discharge of liquid from the bottle; the bottle-neck having an internal flange of less diameter than the ball-valve, to support the valve when the latter is crowded past the seat.

6. In combination with a bottle having an internal flange or shoulder in its neck; a plug formed with an internal cavity, external passages, and slots opening from said cavity to the passages, adapted to reside within the bottle-neck; an elastic packing-ring between the inner end of the plug and said flange; and a ball within the cavity of the plug; said ring preventing leakage of liquid around the plug and serving as a seat for the ball whereby to close the passage through the bottle-neck.

7. In combination with a bottle having an internal flange or shoulder in its neck; a plug formed with an internal cavity, external passages, and slots opening from said cavity to the passages, adapted to reside within the bottle-neck; an elastic packing-ring between the inner end of the plug and said flange having a narrow internal zone of restricted diameter; and a ball within the cavity of the plug of slightly-greater diameter than said zone and shoulder; said ring preventing leakage of liquid around the plug and serving as a seat for the ball whereby to close the passage through the bottle-neck.

8. In combination with a bottle having an internal flange or shoulder in its neck adjacent the base thereof, and an internal groove near the mouth; a plug formed with an internal cavity, external passages, and slots opening from said cavity to the passages, adapted to reside within the bottle-neck; a pin contained in a recess in the outer end of said plug adapted to be projected into said groove to retain the plug in place; a compressible resilient medium in such recess for so projecting the pin; an elastic packing-ring between the inner end of the plug and said flange; and a ball within the cavity of the plug; said ring preventing leakage of liquid around the plug and serving as a seat for the ball whereby to close the passage through the bottle-neck.

9. A device for preventing a second use of a bottle, consisting of a plug adapted to reside in a bottle-neck, having slots in its sides and an internal cavity open at one end; the cavity being cylindrical adjacent the open end and tapered to a smaller diameter toward the closed end thereof; a ball adapted to enter the tapered portion, and a larger ball fitting closely and movably in the cylindrical portion of the cavity, forming a valve; and a yielding ring forming a valve-seat.

10. A device for preventing a second use of a bottle, consisting of a plug adapted to reside in a bottle-neck, having an axial bore open at one end and closed at the other end, a slot in its side extending to the closed end of the bore, a second slot intermediate the ends of the bore, and offset external grooves extending from one of its ends to the several slots; and a ball adapted to reside within the bore to form a valve.

11. A device for preventing a second use of a bottle, consisting of a plug adapted to reside in a bottle-neck, having external longitudinal grooves in its sides and a central bore extending inward from one end toward the other end, and having also passages connecting alternate grooves with different portions of the length of said bore; one of said passages opening into the bore at the inner end to permit discharge of liquid, and another at a distance from the end thereof for inflow of air.

12. A device for preventing a second use of a bottle, consisting of a plug adapted to reside in a bottle-neck, having a bore extending axially into one end and closed at the other, said bore being cylindrical at its open end and tapered toward the closed end; having also longitudinal external grooves or passages of different lengths, and slots through its sides, each located at one side of, and connected with, one of the grooves by a transverse passage; the transverse passages being at different distances from the closed end of the bore; a ball-valve adapted to fit movably in the cylindrical portion of the bore and to uncover the slots when a bottle containing the plug is inclined with its mouth below the horizontal; and a smaller ball adapted to enter the tapered portion of the bore and to roll therefrom, moving the ball-valve into the cylindrical portion below the slots, when the bottle is horisontal.

13. A device for preventing a second use of a bottle, consisting of a yielding valve-seat within the neck of the bottle; a ball-valve coöperating therewith to close the passage therethrough; and a plug reliably secured in the bottle-neck, having a guiding-passage in line with the valve-seat, of substantially the same diameter as the ball, and outlets above said passage, adapted to guide the ball to the seat; the seat being adapted to yield when the ball is pressed against it, and to retain the ball.

14. A device for preventing a second use of a bottle, consisting of a yielding valve-seat bearing against an internal shoulder within the neck of the bottle and against the sides of the neck; a ball-valve coöperating therewith to close the passage therethrough; and a plug reliably secured in the bottle-neck, having a guiding-passage in line with the valve-seat, of substantially the same diameter as the ball and outlets above said passage, pressing at its end against the valve-seat to prevent leakage of liquid between its sides and the sides of the bottle-neck, the guiding-passage being adapted to guide the ball to the seat; and the seat being adapted to yield when the ball is pressed against it, and to retain the ball.

846,468. LOG-SPUR ATTACHMENT FOR CONVEYER-CHAINS. HARRISON S. HANCOCK, Newbern, N. C. Filed Aug. 31, 1906. Serial No. 332,838.

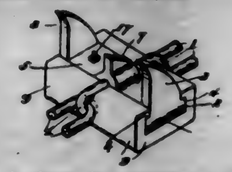

Claim.—1. A clamp for attaching a spur-plate to a chain-link, comprising a cap having a groove to fit the chain, end pieces slidable on the spur-plate and on the cap and having grooved and cavities fitting the links, and suitable bolts for securing the clamping parts.

2. A spur device for conveyer-chains, comprising a plate having spurs and insertible through a chain-link, a cap supported by the plate and fitting the link, and the clamping ends slidable on the cap and the plate and fitting the link and the links adjacent said link.

3. In an attachment for chain conveyers, the combination, with a plate having spurs or teeth and adapted to be inserted with the teeth through a link of the chain, and a cap fitting the plate and the link, of a pair of end clamps slidable on the cap and plate and having faces coacting on the link and on the adjacent links.

4. In an attachment for chain conveyers, the combination, with a plate having spurs or teeth, and a cap fitting between the spurs and holding one of the link-bars, of the end clamps slidable on the cap and plate and having coacting faces to hold the other bar of the link and the ends of the adjacent links.

5. The combination, with the spur-plate having shoulders, and the cap having shoulders flush with the plate-shoulders, of the end clamps having flanges slidable on all of said shoulders, and suitable bolts extending through the cap, plate and end clamps.

846,469. CIRCUIT-BREAKER. RUDOLF E. HELLMUND, New York, N. Y. Filed Jan. 21, 1904. Serial No. 190,011.

Claim.—1. In combination, a contact member, a latch adapted to hold the same in circuit-completing position, a weight mounted above and adapted to swing about a pivotal point, said weight normally resting at one side of said pivotal point, and electromagnetic means adapted to swing said weight over said pivotal point and permit the same to fall into operative relation with said latch and release said contact member.

2. In combination, a contact member, an operating member, means connecting said contact member and said operating member adapted to hold the former in circuit-completing position, a weight mounted above and adapted to swing about a pivotal point, said weight normally resting at one side of said pivotal point, and electromagnetic means adapted to swing said weight over said pivotal point and permit the same to fall against said connecting means and release said contact member from connection with said operating member.

3. In combination, a contact member, a latch adapted to hold the same in circuit-completing position, a weight mounted above and adapted to swing about a pivotal point, electromagnetic means adapted to throw said weight over said pivotal point and permit the same to fall into operative relation with said latch and release said contact member, a spring tending to throw said contact member away from circuit-completing position, and means upon said contact member adapted to coact with means fixed upon said weight and return said weight to its original position.

4. In combination, a contact member, an operating member, a latch connecting said contact member and said operating member and adapted to hold said contact member in circuit-completing position, a spring tending to throw said contact member out of such position, a weight mounted above and adapted to swing about a pivotal point, electromagnetic means adapted to swing said weight over said pivotal point and permit the same to fall against said latch and release said contact member, and means upon said contact member adapted to coact with means upon said weight and return said weight to its original position upon said contact member being released.

5. In combination, a pivotally-mounted contact member, a latch adapted to hold said contact member in circuit-closing position, a spring tending to throw said contact member out of such position, a weight mounted above and adapted to swing about a pivotal point, a leg in fixed relation to and adapted to swing with said weight, electromagnetic means adapted to throw said weight over said pivotal point and permit the same to fall against and release said latch, and means upon said contact member adapted to coact with said leg and return said weight to its original position upon said latch being released.

6. In combination, a pivotally-mounted contact member, a pivotally-mounted operating member, a latch connecting said members and adapted to hold said said contact member in circuit-completing position, a spring tending to throw said contact member out of such position, a weight mounted above and adapted to swing about a pivotal point, a leg in fixed relation to said weight, said weight normally resting at one side of said pivotal point, electromagnetic means adapted to swing said weight over said pivotal point and permit the same to fall against and release said latch, and means upon said contact member adapted to coact with said leg and return said weight to its original position upon said contact member being released.

7. In combination, a circuit-closing member, means adapted to retain the same in inoperative position, a pivoted weight adapted to be swung against said retaining means to release the same, an electromagnet, a core adapted to be actuated by the same, and a hook mounted upon said core adapted to engage and operate said pivotally-mounted weight.

8. In combination, a contact member, means adapted to retain said contact member in inoperative position, and a member adapted to operate said contact member and to render inoperative said retaining means.

9. In combination, a contact member, a spring adapted to retain said contact member in inoperative position, and a manually-actuated member adapted to render inoperative said retaining-spring.

10. In combination, a contact member, a lug upon the same, means adapted to engage said lug and retain said contact member in inoperative position, and a manually-actuated member adapted to operate said contact member and to render inoperative said retaining means.

11. In combination, a contact member, a lug thereon, means adapted to engage said lug and retain said contact member in inoperative position, and a member adapted to actuate said contact member and having a lug adapted to render said retaining means inoperative.

12. In combination, a contact member, a lug thereon, a spring adapted to engage said lug and retain said contact member in inoperative position, and a member adapted to actuate said contact member and having a lug adapted to render said retaining-spring inoperative.

13. In combination, a contact member, an operating member, a member connecting the same, and a pivotally-mounted weight adapted to engage said connection to release the same.

14. In combination, a contact member, an operating member, a member connecting the same, and a pivotally-mounted current-actuated weight adapted to engage said connecting member to release the same.

15. In combination, a contact member, an operating member, a member connecting the same, a pivotally-mounted current-actuated weight adapted to engage said connecting member to release the same, and a stop adapted to limit the movement of said weight.

16. In combination, a contact member, an operating member, a latch adapted to connect the same, a pivotally-mounted current-actuated weight adapted to engage said latch to release the same, and a stop adapted to limit the movement of said weight.

17. In combination, a contact member, an operating member, a connection between the same, automatic current-operated means adapted to release said connection, means adapted to retain said contact member in inoperative position, and means whereby said operating member is adapted to render said retaining means inoperative.

18. In combination, a contact member, an operating member, a connection between the same, automatic current-operated means adapted to release said connection, a spring adapted to retain said contact member in inoperative position, and means whereby said operating member is adapted to render said retaining-spring inoperative.

19. In combination, a pivotally-mounted contact member, an operating member adapted to swing about the same axis, a latch connecting said contact member and said operating member, means adapted to retain said contact member in inoperative position, and means carried by said operating member adapted to render said retaining means inoperative.

20. In combination, a pivoted contact member, an operating member adapted to swing about the same axis, a member connecting said contact member and said operating member, and automatic current-actuated, gravity-retracted means adapted to release the same.

21. In combination, a pivotally-mounted contact member, and operating member adapted to swing about the same axis, a latch connecting said contact member and said operating member, a spring adapted to retain said contact member in inoperative position, and means carried by said operating member adapted to render said retaining-spring inoperative.

22. In combination, a pivoted contact member, an operating member adapted to swing about the same axis, a member adapted to connect said contact member and said operating member, automatic current-actuated, gravity-retracted means adapted to release the same, and means adapted to retain said contact member in inoperative position.

23. In combination, a contact member, an operating member, a member adapted to connect the same, automatic current-actuated, gravity-retracted means adapted to release said connecting member, means adapted to retain said contact member in inoperative position, and means carried by said operating member adapted to render said retaining means inoperative.

24. In combination, a pivotally-mounted contact member, an operating member adapted to swing about the same axis, a member adapted to connect said contact member and said operating member, automatic current-actuated, gravity-retracted means adapted to release the same, means adapted to retain said contact member in inoperative position, and means carried by said operating member adapted to render said retaining means inoperative.

25. In combination, a contact member, an operating member, a connection between the same, a pivotally-mounted weight adapted to release said connection, and means adapted to retain said contact member in inoperative position.

26. In combination, a contact member, an operating member, a connection between the same, a pivotally-mounted current-actuated weight adapted to release said connection, and means adapted to retain said contact member in inoperative position.

27. In combination, a contact member, an operating member, a connection between the same, a pivotally-mounted, current-actuated, gravity-retracted weight adapted to release said connection, and means adapted to retain said contact member in inoperative position.

28. In combination, a contact member, an operating member, a connection between the same, a pivotally-mounted weight adapted to release said connection, means adapted to retain said contact member in inoperative position, and means carried by said operating member adapted to render said retaining means inoperative.

29. In combination, a contact member, an operating member, a connection between the same, a pivotally-mounted weight adapted to release said connection, a spring adapted to retain said contact member in inoperative position, and means carried by said operating member adapted to render said retaining-spring inoperative.

30. In combination, a contact member, an operating member, a connection between the same, a pivotally-mounted current-actuated weight adapted to release said connection, means adapted to retain said contact member in inoperative position, and means carried by said operating member adapted to render said retaining means inoperative.

31. In combination, a contact member, an operating member, a connection between the same, a pivotally-mounted current-actuated, gravity-retracted weight adapted to release said connection, means adapted to retain said contact member in inoperative position, and means carried by said operating member adapted to render said retaining means inoperative.

32. In combination, a movable contact member, a lug upon the same, means adapted to engage said lug and retain said contact member in inoperative position, a member adapted to render inoperative said retaining means, and means adapted to cushion the movement of said contact member.

33. In combination, a contact member, a lug thereon, means adapted to engage said lug and retain said contact member in inoperative position, a member adapted to actuate said contact member and having a lug adapted to render said retaining means inoperative, and means adapted to cushion the movement of said contact member.

34. In combination, a pivotally-mounted contact member, an operating member adapted to swing about the same axis, a latch adapted to connect said contact member and said operating member, means adapted to retain said contact member in inoperative position, means carried by said operating member adapted to render inoperative said retaining means, and means adapted to cushion the movement of said contact member.

35. In combination, a contact member, an operating member, a connection between the same, a pivotally-mounted current-actuated weight adapted to release said connection, means adapted to retain said contact member in inoperative position, and means adapted to cushion the movement of said contact member.

36. In combination, a pivotally-mounted contact member, an operating member, a connection between the same, a pivotally-mounted current-actuated weight adapted to release said connection, means adapted to retain said contact member in inoperative position, and means adapted to cushion the movement of said contact member.

846,470. TIME-CONTROLLED MECHANISM. J HENRY HERMANCE, Hot Springs, Ark. Filed June 30, 1906. Serial No. 324,192.

Claim.—1. The combination with a tank, of a vertically-swinging lever pivoted adjacent the tank, a receptacle carried on one end of the lever and extending into the tank when said end is lowered, a detent for holding the lever in lowered position, means for lifting the lever when the detent is released, a rotatable disk carrying a pin engageable with the detent for releasing the same, and means for actuating the disk to release the detent at a predetermined time.

2. The combination with a tank, of a vertically-swinging lever pivoted adjacent the tank, a receptacle carried on one end of the lever, and extending into the tank when said end is lowered, a detent for holding the lever in lowered position, means for elevating the lever when the detent is released, a rotatable disk, a pin carried by the disk and adjustable thereon, and engageable with the detent for releasing the same, and means for actuating the disk to release the detent at a predetermined time.

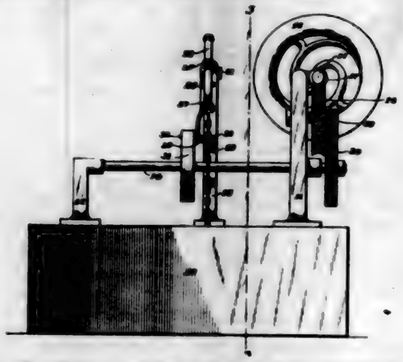

3. The combination with a tank, of a vertically-swinging lever pivoted adjacent the tank, a receptacle carried on one end of the lever, and extending into the tank when said end is lowered, a detent for holding the lever in lowered position, means for elevating the lever when the detent is released, a rotatable disk having a plurality of openings, a pin extensible into one of said openings, and engageable with the detent for releasing the same, and means for actuating the disk to release the detent at a predetermined time.

4. The combination with a tank, of a standard adjacent the same, a vertically-swinging lever pivoted to the standard and having at one end a weight, a receptacle carried on the other end of the lever, and extending into the tank when said end is lowered, a detent pivoted to the lever and engageable with the standard for holding the lever in lowered position, and means for releasing the detent at a predetermined time.

846,471. FEED-GOVERNOR FOR OIL-ENGINES. FRANKLIN G. HOBART, Beloit, Wis., assignor to Fairbanks, Morse & Co., Chicago, Ill., a Corporation of Illinois. Filed July 27, 1903. Serial No. 167,163.

Claim.—1. In an oil feeding device the combination with a casing having a mixing passage and a suction valve, of an air inlet and an oil feed device provided with an orifice leading into the mixing passage, and a cut off valve operated by the engine governor for constricting the passage of air into said passage operating just at the inlet orifice for the oil, substantially as described.

2. The combination with an oil reservoir, of an oil inlet leading into the engine mixing chamber and a controlling valve therefor, an air inlet leading into the mixing chamber and surrounding the oil inlet and a valve automatically moved by the engine governor operating to constrict the passage for admission of the air and oil mixture just opposite to the point of the oil inlet, substantially as described.

3. In an explosion engine the combination with a governor, a cylinder, mixing chamber and suction valve therefor and an oil feed pipe, of an air chamber surrounding the mouth of the said pipe and having an opening leading to the mixing chamber, and a valve slidable over the mouth of said pipe and the opening of said mixing chamber to control the vapor, and means whereby the valve may be controlled.

4. The combination with an engine casing having a mixing chamber and an air inlet thereto, of an upturned oil inlet suction tube situated inside the air inlet, a sliding valve constricting the opening of the air inlet at the end of the oil tube and automatically moved by a suitable engine governor.

5. The combination with an engine cylinder of a reciprocating rod and automatic means for reciprocating it, a sliding plate upon said rod, openings for air and oil into the mixing chamber controlled by said sliding plate, an oil inlet tube opening into the mixing chamber and having its end opposite said sliding plate, whereby the opening for admission of air and oil vapor is controlled just at the point where the air and oil are mixed, substantially as described.

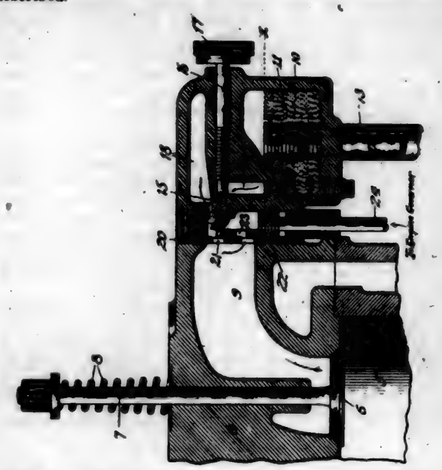

6. In combination in an oil feed governor valve, a mixing chamber, an oil reservoir kept at a constant level, an upstanding suction feed pipe from the oil reservoir, an air chamber surrounding the mouth of said pipe and having an opening leading to the mixing chamber, and a valve slidable over the mouth of said pipe and the opening of said mixing chamber to control the vapor, and means whereby the valve may be controlled.

7. In a gas engine the combination with an air chamber and a slide valve for controlling the inlet from said chamber to the cylinder of the engine, of an oil reservoir and an upturned suction inlet pipe for the oil located immediately behind the said slide valve, whereby the vapor of oil and air is controlled immediately at the inlet of the oil, substantially as described.

846,472. HEATING-BOILER. CHARLES L. HOLDEN, Indianapolis, Ind. Filed Feb. 10, 1905. Serial No. 245,056.

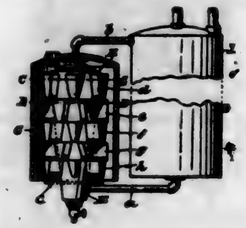

Claim.—1. A boiler including a shell having a plurality of series of branches; the branches of the different series having different lengths decreasing in length from one end to the other end of the shell.

2. A boiler including a shell having a plurality of series of integral branches the openings to which in the shell are narrower at one end than at the other end thereof.

3. A boiler including an oblong shell having main por-

tions of the wall thereof inclined to its major axis and branch portions that have opposing side walls inclined to planes that are at right angles to the major axis.

4. A boiler including a boiler-shell having a greater diameter at its top than at its bottom and provided with lateral branches that are longer and narrower at their bottoms than at their tops and closed at their ends.

5. A boiler including an oblong shell having a plurality of series of lateral branches formed integral therewith, one end of the shell having less diameter than the other end thereof, and the branches having inclined sides, a jacket extending about the shell and the branches thereof, an oblong tank, a pipe connected to one end part of the tank and also to the smaller end part of the shell adjacent to a series of the branches thereof, and a pipe connected to the other end part of the tank and also to the larger end part of the shell adjacent to a separate series of the branches thereof.

6. A boiler including an oblong circular shell having a plurality of series of lateral branches extending radially to the axis of the shell, the lengths of the branches differing in the different series with a burner arranged nearer to the longer than the shorter branches, a jacket extending about the shell and the branches thereof, an oblong tank having a pipe connected to the top thereof, the pipe being connected also to the top of the shell, with a pipe connected to the bottoms of the tank and the shell.

7. A boiler including a shell provided with a plurality of series of radiating branches each series in a different horizontal plane, the branches of either series being in radial planes between the planes of the branches in next adjacent series thereof, the branches extending an equal distance from the axis of the shell, and the shell having less diameter at the bottom than at the top thereof.

846,473. COFFEE-POT. GEORGE F. W. HOLMAN, Philadelphia, Pa. Filed May 2, 1906. Serial No. 314,740.

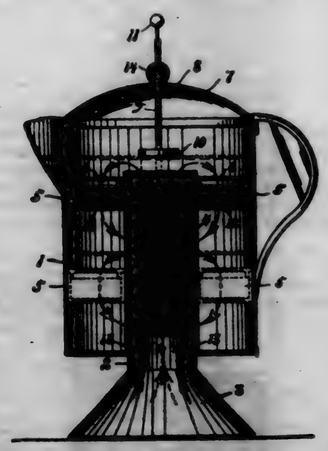

Claim.—In a steeping apparatus, a pot-body, a heating-base exterior thereto, an annular collar connecting said pot-body and heating-base and projecting above the bottom of said pot-body, said projecting portion being provided with a plurality of openings immediately above said bottom, an open-topped central tube, reticulated throughout its length and removably mounted upon the projecting portion or neck of said annular collar, and a reticulated annular receptacle for the substance to be steeped, mounted and adjustable at any desired height upon said central tube, whereby the contents of said receptacle may be immersed and circulation by convection secured at varying levels of the liquid in said pot-body, substantially as and for the purposes described.

846,474. PLANING-MACHINE. WILHELM HOLTHAUS, Mülheim-on-the-Ruhr, Germany. Filed Nov. 14, 1906. Serial No. 343,452.

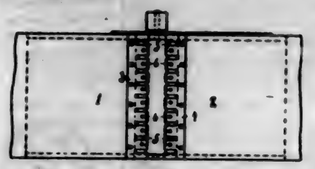

Claim.—In a planing-machine, a device for decreasing or entirely silencing the buzzing noise caused by the machine when in operation, comprising in combination, with the machine, the beds 1, 2 of the latter, lips or ledges 3, 4 fixed on the adjacent inner ends of said beds and made rather wide so as to allow of the beds being placed rather far away from each other, and provided with notches 5 and holes 6 for the purpose of preventing the air whirled up by the quick rotation of the machine from being compressed and thrown against the blades of the lips or ledges but to escape freely through said notches and holes, substantially as described and shown.

846,475. PEEP-SIGHT FOR TWYER-STOCKS. SETH HOSKING, Wheeling, W. Va., assignor to National Tube Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Nov. 8, 1906. Serial No. 342,486.

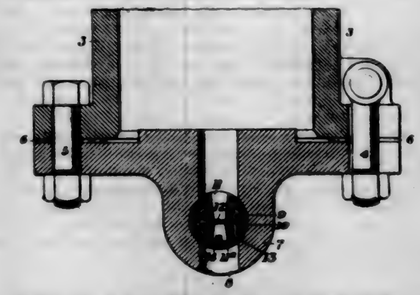

Claim.—1. A peep-sight for furnace twyer-stocks comprising a flange having a boss thereon, a taper opening through the boss, a plug extending through the taper opening, an opening extending through the boss and flange, an opening through the plug, a glass centrally located lengthwise of the opening in the plug, said plug being adapted to be rotated through at least one hundred and eighty degrees in the taper opening; substantially as described.

2. A peep-sight for furnace twyer-stocks comprising a flange having a boss thereon, a taper opening through the boss, a removable plug extending through the taper opening, an opening extending through the boss and flange, an opening through the plug, a glass centrally located lengthwise of the opening in the plug, said plug being adapted to be rotated through at least one hundred and eighty degrees in the taper opening; substantially as described.

846,476. BELT AND BUCKLE. WILLIAM C. HYNARD and GEORGE F. MERHAN, New York, N. Y. Filed Apr. 7, 1906. Serial No. 310,468.

Claim.—A combined belt and buckle, comprising a belt portion having one or more buttonholes in its opposite ends, and a buckle portion comprising a frame having top, bottom and side bars, a vertical cross-bar connecting the top and bottom bars and located substantially midway between the side bars, and in a plane coincident with or forward of said side bars and a short stud projecting forwardly from substantially the central portion of the cross-bar and having an enlarged head, the opposite ends of the belt portion being adapted to be secured on said stud and to lap over each other substantially in alinement.

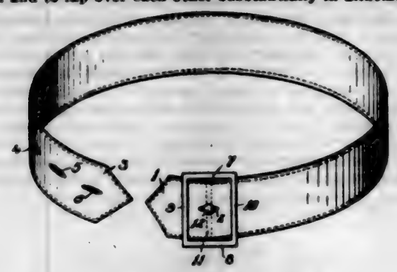

846,477. OIL-PROOF ELECTRICAL INSULATING COMPOUND AND METHOD OF MAKING SAME. JOHN J. KESSLER, Jr., St. Louis, Mo. Filed June 29, 1906. Serial No. 324,026.

Claim.—1. An insulating compound comprising a mixture of a non-conducting mineral and oil, which has been dried and ground.

2. An insulating compound comprising a mixture of a non-conducting mineral and linseed-oil, which has been dried and ground.

3. An insulating compound comprising a mixture of a non-conducting mineral and linseed-oil varnish, which has been dried and ground.

4. An insulating compound comprising a mixture of a non-conducting mineral and oil, which has been dried and ground, and a volatile oil.

5. An insulating compound comprising a mixture of a non-conducting mineral and linseed-oil, which has been dried and ground, and a volatile oil.

6. An insulating compound comprising a mixture of a non-conducting mineral and linseed-oil varnish, which has been dried and ground, and a volatile oil.

7. That improvement in the art of producing insulating compounds which consists in mixing a non-conducting mineral with an oil, hardening the mixture, grinding the mixture, and mixing therewith a volatile oil with the ground mass.

8. That improvement in the art of producing insulating compounds which consists in forming a mixture of a non-conducting mineral and linseed-oil, drying the mixture, and thereafter grinding the dried mixture together with a volatile oil.

9. That improvement in the art of producing insulating compounds which consists in forming a mixture of a non-conducting mineral and oil, drying the mixture, and thereafter grinding the dried mixture together with a volatile oil.

10. That improvement in the art of producing electrical insulating compounds which consists in forming a mixture of a non-conducting mineral and oil-varnish, drying the mixture, and thereafter grinding the dried mixture with a volatile oil.

11. That improvement in the art of producing electrical insulating compounds which consists in forming a mixture of an inert non-conducting mineral and linseed-oil varnish, drying the mixture, and thereafter grinding the dried mixture with a volatile oil.

846,478. ENVELOP. FRANK KLOUSNITZER, Herman, Pa., assignor of one-third to Albert Smith, Herman, Pa. Filed Jan. 24, 1906. Serial No. 297,679.

Claim.—1. An envelop of the class described, embodying a front portion, end flaps, a side flap and a sealing-flap, said end flaps and said side flap having slots formed therein, the one edge of each slot being scalloped, said side flap having triangular openings formed therein adjacent to the slot thereof forming an intervening neck portion, tabs carried by said side flap and adapted to be adhesively secured within the slots of said end flaps, a tab carried by said sealing-flap and adapted to be adhesively secured within the slot of said side flap, and to the neck portion between said slot and triangular openings, substantially as described.

2. An envelop embodying a front portion, end flaps, a side flap, and a sealing-flap, said end flaps having slots formed therein with scalloped edges, adhesive tabs carried by said side flap and adapted to be secured in the slots of said end flaps, said side flap having a slot formed therein, and triangular openings adjacent to said slot thereby forming an intervening neck portion, an adhesive tab carried by said sealing-flap and adapted to engage in the slot of said side flap, and be fastened to said intervening neck portion, substantially as described.

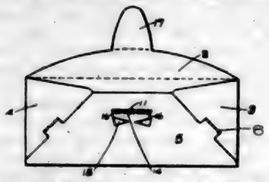

3. An envelop of the class described, embodying a front portion, end flaps, a side flap, and a sealing-flap, each of said end flaps being provided with a slot having one of its edges scalloped, said side flap being provided with a slot, and triangular apertures arranged so as to form an intervening neck portion between said slot and said apertures, adhesive tabs carried by said side flap and adapted to engage in the slots of said end flaps, a tab carried by said sealing-flap and adapted to engage in the slot of said side flap and be attached to said intervening neck portion substantially as described.

846,479. TELEPHONE. STANISLAW A. KOLTONSKI, Boston, Mass., assignor to Electric Gas Lighting Company, Boston, Mass., a Corporation of Maine. Filed Dec. 9, 1904. Renewed Mar. 7, 1906. Serial No. 304,781.

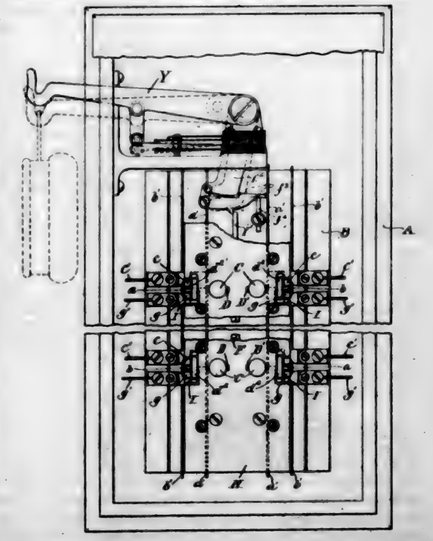

Claim.—1. In an electrical switch, a latch having two lateral arms, one arm having a catching-nose bent out of plane of the main body of the latch to avoid interference with a twin latch, and the other carrying a cam, a cam so carried, and means for guiding said latch.

2. In an electrical switch, a twin latch having a lateral cam-carrying arm, a cam thereon, a vertical leg or

prong provided with a catching-nose, and means for guiding said latch.

3. In an electrical switch, a latch having two lateral arms, one arm having a catching-nose bent out of plane of the main body of the latch to avoid interference with a twin latch, and the other carrying a cam, a cam so carried, means for guiding said latch, and a push-button mounted thereon.

4. In an electrical switch, a twin latch having a lateral cam-carrying arm, a cam thereon, a vertical leg or prong provided with a catching-nose, means for guiding said latch, and a push-button mounted thereon.

5. In an electrical switch, the combination of a latch having two lateral arms, one arm having a catching-nose, the other carrying a cam, a cam so carried, and means for guiding said latch; with a twin latch having a lateral cam-carrying arm, a cam thereon, a vertical leg or prong provided with a catching-nose, and means for guiding said latch.

6. In an electrical switch, the combination of a latch having two lateral arms, one arm having a catching-nose bent out of plane of the main body of the latch to avoid interference with a twin latch, the other carrying a cam, a cam so carried, and means for guiding said latch; with a twin latch having a lateral cam-carrying arm, a cam thereon, a vertical leg or prong provided with a catching-nose, and means for guiding said latch.

7. In an electrical switch, the combination of a latch having two lateral arms, one arm having a catching-nose and the other carrying a cam, a cam so carried, and means for guiding said latch; with a twin latch having a lateral cam-carrying arm, a cam thereon, a vertical leg or prong provided with a catching-nose, means for guiding said latch, and a locking-bar mounted between said latches.

8. In an electrical switch, the combination of a latch having two lateral arms, one arm having a catching-nose bent out of plane of the main body of the latch to avoid interference with a twin latch, the other carrying a cam, a cam so carried, and means for guiding said latch; with a twin latch having a lateral cam-carrying arm, a cam thereon, a vertical leg or prong provided with a catching-nose, means for guiding said latch, and a locking-bar mounted between the said latches.

9. In an electrical switch, the combination of a latch having two lateral arms, one arm having a catching-nose and the other carrying a cam, a cam so carried, and means for guiding said latch; with a twin latch having a lateral cam-carrying arm, a cam thereon, a vertical leg or prong provided with a catching-nose, means for guiding said latch, and a locking-bar mounted between said latches; a receiver-hook, properly connected with said locking-bar, adapted to release the latches from the locking-bar when the receiver is hung upon the hook; all substantially as described and shown.

846,480. PROCESS OF ELECTRIC WELDING. LAURENCE S. LACHMAN, New York, N. Y., assignor to Standard Pulley Manufacturing Company, a Corporation of New York. Filed Oct. 28, 1905. Serial No. 284,906.

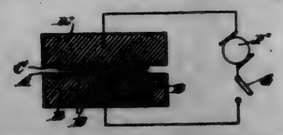

Claim.—1. The process of electrically welding a thin piece of sheet metal to another relatively thicker piece, which consists in providing projecting portions upon the thicker piece of metal, placing said projections against the surface of the thin sheet of metal, passing a current through said sheets of metal and the projecting portions, thereby fusing said portions and heating the thin sheet of metal at the points of contact and simultaneously forcing the two sheets of metal together to securely weld one to the other.

2. The process of electrically welding a piece of substantially thin metal to another piece of relatively thicker metal, which consists in providing a point or projecting portion upon the thick piece of metal, placing said thick piece upon the thin piece with the said point or projection of said thick piece in direct contact with the surface of the thin piece of metal, passing a current of electricity through said pieces of metal and through the point or projection, thereby fusing said point and heating the thin piece of metal at the point of contact and incorporating said point in the metal of the thin piece forming a true weld and simultaneously forcing the two pieces of metal together to securely weld one to the other.

846,481. BRAKE. VAN BUREN LAMB, New Haven, Conn., assignor to Keystone Brake-Shoe Company, New York, N. Y., a Corporation of New York. Filed Oct. 6, 1905. Serial No. 281,596.

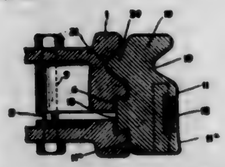

Claim.—1. In apparatus of the class described, in combination, a shoe-supporting member provided with a recess having undercut side walls, and a shoe comprising a pair of substantially interchangeable shoe members, each of which is provided upon its rear surface with a tenon adapted to fit within said recess and upon its forward surface with a recess adapted to receive a similar tenon.

2. In apparatus of the class described, in combination, a shoe-supporting member provided with a recess having undercut walls, and a shoe comprising a pair of substantially interchangeable shoe members, each of which is provided upon its rear surface with a tenon adapted to fit within said recess and upon its forward surface with a recess adapted to receive a similar tenon.

3. In apparatus of the class described, in combination, a shoe-supporting member provided with a recess having undercut side walls converging toward one end of the member, and a shoe comprising a pair of substantially interchangeable shoe members, each of which is provided upon its rear surface with a tenon adapted to fit within said recess and upon its forward surface with a recess adapted to receive a similar tenon.

4. In apparatus of the class described, in combination, a shoe-supporting member provided with a recess having undercut side walls converging toward both ends of the member, and a shoe comprising a pair of substantially interchangeable shoe members, each of which is provided upon its rear surface with a tenon adapted to fit within said recess and upon its forward surface with a recess adapted to receive a similar tenon.

5. In apparatus of the class described, in combination, a shoe-supporting member provided with a recess of decreasing depth toward one end thereof and having undercut side walls, and a shoe comprising a pair of substantially interchangeable shoe members, each of which is provided upon its rear surface with a tenon adapted to fit within said recess and upon its forward surface with a recess adapted to receive a similar tenon.

6. In apparatus of the class described, in combination, a shoe-supporting member provided with a recess of decreasing depth toward one end thereof and having undercut side walls converging toward one end of the member, and a shoe comprising a pair of substantially interchangeable shoe members, each of which is provided upon its rear surface with a tenon adapted to fit within said recess and upon its forward surface with a recess adapted to receive a similar tenon.

7. In apparatus of the class described, in combination, a shoe-supporting member provided with a recess having undercut side walls converging toward one end thereof,

and a shoe comprising a pair of substantially interchangeable shoe members, each of which is provided with a rear surface of general convex form in a transverse direction and with a tenon upon said rear surface adapted to fit within said recess, said shoe members being provided upon their forward surfaces with recesses adapted to receive similar tenons.

8. In a device of the class described, in combination, a braking member provided with a dovetail tenon the walls of which converge toward one end of the member, a supporting member provided with a correspondingly-shaped mortise, and means adapted to clamp said tenon within said mortise.

9. In apparatus of the class described, in combination, a shoe-supporting member provided with a recess having undercut side walls converging toward one end of the member, and a shoe comprising a pair of substantially interchangeable shoe members, each of which is provided with a rear surface of a general convex form in a transverse direction and with a tenon upon said rear surface adapted to fit within said recess, said shoe members being provided upon their forward surfaces with recesses adapted to receive similar tenons.

10. In a device of the class described, in combination, a brake-shoe having a rearwardly-projecting member, a brake-head provided with a recess adapted to receive said member and fit a portion thereof, and means adapted to clamp another portion of said brake-head about said member.

11. In a device of the class described, in combination, a brake-shoe having a rearwardly-projecting member provided with undercut side walls, a brake-head provided with a recess adapted to receive said member and fit a portion thereof, and means adapted to clamp another portion of said head into engagement with said member.

12. In a device of the class described, in combination, a brake-head having a recess therein, said brake-head being bifurcated through a portion of its extent, a brake-shoe having a member designed to be seated in said recess, and means for clamping the bifurcated portion of said brake-head about said member.

13. In a device of the class described, in combination, a brake-head having a recess therein, said brake-head being bifurcated, a brake-shoe having a member designed to be seated in said recess, and means for clamping the bifurcated portion of said brake-head about said member.

14. In a device of the class described, in combination, a brake-shoe having a projection the greatest width of which is at a point intermediate its ends, and a brake-head provided with a recess in which a portion of said projection is adapted to fit closely, a portion of the walls of said recess being adapted to be brought into engagement with the remaining portion of said projection.

15. In a device of the class described, in combination, a brake-shoe having a projection the greatest width and thickness of which is at a point intermediate its ends, a brake-head provided with a recess in which a portion of said projection is adapted to fit closely, and means for forcing a portion of the walls of said recess into engagement with the remaining portion of said projection.

16. In a device of the class described, in combination, a brake-shoe provided with a projecting member having its greatest width at a point intermediate its ends, and a brake-head having a recess in which a portion of said member is adapted to fit closely, a portion of the walls of said recess being adapted to be moved into engagement with the remaining portion of said member.

17. In a device of the class described, in combination, a brake-shoe provided with a projecting member having its greatest width at a point intermediate its ends, a brake-head having a recess in which a portion of said member is adapted to fit closely, and means for clamping a portion of the walls of said recess into engagement with the remaining portion of said member.

18. In a device of the class described, in combination, a brake-head provided with a recess open at one end and closed at the other, a brake-shoe provided with a projecting member adapted to be seated in said recess with one end thereof engaging the closed end of said recess, and means for contracting a portion of the walls of said recess into engagement with a portion of said member.

19. In a device of the class described, in combination, a brake-head having a shoe-receiving face, a recess in said receiving-face of greater width at the bottom than at the top thereof, said recess being open at one end and closed at the other and being tapered from a point intermediate its ends to the closed end thereof, a brake-shoe having a projecting member shaped similarly to the tapered portion of said recess adapted to be seated therein and engage the closed end thereof, and means for clamping a portion of the walls of said recess into engagement with a portion of said member.

20. In a device of the class described, in combination, a bifurcated brake-head provided with a longitudinally-extending recess in its receiving-face and having overhanging walls so that the said recess is of greater width at the bottom than at the top thereof, said recess being tapered from a point intermediate its length in all directions to a closed end, and a brake-shoe provided with a longitudinally-extending lug one end of which is adapted to fit closely in the tapered end of said recess, the opposite end being adapted to be clamped between the walls of said recess by means extending through the bifurcated portion of said brake-head.

21. In a device of the class described, in combination, a brake-shoe provided with a longitudinally-extending tenon having outwardly-directed, lateral surfaces, said tenon being tapered toward either end thereof from a point intermediate said ends, and a brake-head provided with a mortise one end of which is shaped to correspond with one end of said tenon, the walls of the opposite end being adapted to be clamped into engagement with the opposite end of said tenon.

22. In a device of the class described, in combination, a brake-shoe provided with a longitudinally-extending tenon having outwardly-directed, lateral surfaces, said tenon being tapered toward either end thereof from a point intermediate its ends, a brake-head provided with a mortise one end of which is shaped to correspond with the tapered portion of said tenon, and means for clamping the walls of the opposite end of said recess into engagement with the opposite end of said tenon so that they fit closely along the entire contacting surface thereof.

23. In a device of the class described, in combination, a brake-shoe provided with a longitudinally-extending tenon having outwardly-directed, lateral surfaces, said tenon being tapered in width and thickness from a point intermediate its ends toward either end thereof, a brake-head provided with a mortise one end of which is shaped to correspond with an end of said tenon, and means for clamping the walls of the opposite end of said mortise into engagement with the opposite end of said tenon.

24. In a device of the class described, in combination, a brake-shoe provided with a longitudinally-extending tenon having outwardly-directed, lateral surfaces, said tenon being tapered in width and thickness from a point intermediate its ends toward either end thereof, a bifurcated brake-head provided with a mortise, the bifurcation therein extending within said mortise, one end of said mortise being shaped to correspond with said tenon and having a closed end to form an abutment for the end thereof, and a clamping member extending through the bifurcated portion of said brake-head adapted to clamp the walls of said mortise into engagement with said tenon.

25. A brake-shoe having a wearing-face and a back face formed substantially in parallel relation so that the wearing-face of one shoe will fit the back face of another shoe, and provided upon its back face with a longitudinally-extending, undercut tenon and upon its wearing-face with a recess adapted to receive a similar tenon of another shoe.

26. A brake-shoe having front and rear faces formed substantially upon arcs of equal radii provided upon its rear face with a tenon having undercut side walls and upon its forward face with a recess adapted to receive and fit about a similar tenon.

27. A brake-shoe provided with wearing and attaching faces formed upon arcs of equal radii, and provided with a tenon upon its attaching-face having outwardly-directed

walls and a mortise having receding walls upon its wearing-face, said mortise being adapted to receive the tenon of another shoe.

28. A brake-shoe having back and wearing faces formed upon arcs of equal radii so that the wearing-face of one shoe may fit about the back face of another shoe, and provided with a longitudinally-extending tenon upon its back face and a recess upon its wearing-face, a portion of which is shaped similarly to a portion of said tenon, said recess being adapted to receive the tenon of another shoe, and means adapted to close one end of said recess.

29. A brake-shoe having wearing and back faces formed upon arcs of equal radii so that the wearing-face of one shoe may fit about the back face of another shoe, and provided with a longitudinally-extending tenon upon its back face, and a recess having a closed end upon its wearing-face, the portion of said recess adjacent the closed end being shaped similarly to a portion of said tenon so that the same may receive the tenon of another shoe, and means adapted to close the opposite end of said recess.

30. A brake-shoe formed with wearing and back faces upon arcs of equal radii so that the wearing-face of one shoe will fit the back face of another shoe, and provided with a tapering projection upon its back face and a tapering recess in its wearing-face, said recess being closed at one end and open at the other, and means extending transversely through the open end of said recess.

31. A brake-shoe formed with wearing and back faces upon arcs of equal radii so that the back face of one shoe will fit the wearing-face of another shoe, and provided with a recess in its wearing-face having a closed end, the open end of said recess being intercepted by a transversely-extending recess, and means extending through said last-mentioned recess to close said first-mentioned recess.

32. In apparatus of the class described, in combination, a shoe-supporting member having formed in its forward surface a recess provided with undercut side walls, and a brake-shoe having upon its rear surface a tenon adapted to fit said recess and upon its forward surface with a recess adapted to receive and fit a like tenon upon another shoe.

33. In apparatus of the class described, in combination, a shoe-supporting member having formed in its forward surface a recess provided with undercut side walls converging toward one end thereof, and a brake-shoe having upon its rear surface a tenon adapted to fit said recess and upon its forward surface with a recess adapted to receive and fit a like tenon upon another shoe.

34. A brake-shoe having in its wearing-face a recess in which the attaching part of another shoe is adapted to be received and being provided with a member seated in a transverse recess adapted to engage the attaching part upon another shoe and maintain said shoes in an interfitted condition.

35. A brake-shoe having in its wearing-face a recess in which the attaching part of another shoe is adapted to be received, said brake-shoe being provided with a member dovetailed in a transversely-extending recess therein adapted to engage a part upon another shoe when the same is seated in said first-mentioned recess.

36. A brake-shoe having in its wearing-face a recess adapted to receive a filler-piece.

37. A brake-shoe having in its wearing-face a recess adapted to receive a filler-piece and being provided with a recess extending transversely of said first-mentioned recess adapted to receive a retaining-key.

38. In combination, a brake-shoe having in its wearing-face a recess, a wedge-shaped filler-piece adapted to be received in said recess, and means adapted to maintain said filler-piece in place therein.

39. In combination, a brake-shoe having in its wearing-face a recess, a filler-piece adapted to be seated in said recess, and means adapted positively to engage said filler-piece to maintain the same in position in said recess.

40. In combination, a brake-shoe having a substantially wedge-shaped recess adapted to receive a correspondingly-shaped filler-piece, and means located in a recess extending transversely of said first-mentioned recess adapted to maintain said filler-piece in position in said first-mentioned recess.

41. In combination, a brake-head, a brake-shoe provided with means whereby the same may be attached to said brake-head, and a filler-piece located in a recess in said brake-shoe.

42. In combination, a brake-head, a brake-shoe provided with a wedge-shaped tenon upon its rear face adapted to be seated in a recess in the face of said brake-head, a filler-piece located in a recess in the face of said brake-shoe, and means for retaining said filler-piece in position therein.

43. In combination, a brake-head, a brake-shoe provided with a tenon upon its attaching-face adapted to be seated in a recess in said brake-head, said brake-shoe being provided with a recess in its wearing-face, a filler-piece seated in the recess in said brake-shoe, and means adapted positively to retain said filler-piece in position therein.

44. In combination, a brake-head, a brake-shoe provided with a tenon upon its attaching-face and having outwardly-projecting walls, said tenon being adapted to be seated in a recess in said brake-shoe, said recess being provided with receding walls, said brake-shoe being provided with a recess having receding walls upon its wearing-face, a filler-piece seated in the recess in said brake-shoe, and means for retaining said filler-piece in position therein.

45. In combination, a brake-head, a brake-shoe having back and wearing faces formed upon arcs of equal radii so that the wearing-face of one shoe may fit about the back face of another, said brake-shoe being provided with a longitudinally-extending tenon upon its back face, and a longitudinally-extending recess upon its wearing-face, the tenon upon said back face being adapted to be received in the recess in said brake-head, the recess in the wearing-face of said shoe being adapted to receive the tenon of another shoe, and means adapted to close one end of said recess.

46. In combination, a brake-head, a brake-shoe formed with back and wearing faces upon arcs of equal radii so that the wearing-face of one shoe may fit the back face of another, said shoe being provided with tapering projection upon its back face adapted to be received in a similarly-shaped recess in said brake-head and being further provided with a tapering recess in its wearing-face, said last-mentioned recess being closed at one end and open at the other, a filler-piece seated in said recess, and means extending transversely through the opening in said recess adapted to retain the filler-piece in position therein.

47. A brake-shoe formed with back and wearing faces upon arcs of equal radii and provided with an attaching member, said brake-shoe being greatest in thickness opposite said attaching member.

48. A brake-shoe formed with back and wearing faces upon arcs of equal radii having an attaching member, said brake-shoe increasing gradually in thickness from its lateral sides to a point opposite said attaching member.

49. A brake-shoe formed with back and wearing faces of equal radii having a longitudinally-extending attaching member, said brake-shoe being so constructed as to gradually diminish in thickness in either direction laterally from a plane extending longitudinally thereof cutting the middle portion of said attaching member.

50. In apparatus of the class described, in combination, a plurality of substantially interchangeable shoe members, each of which is provided with means upon its front and rear surfaces for forming a dovetailed connection with similar shoe members in front or at the rear of the same and each of which is provided with a rear surface of a general convex form in a transverse direction.

51. In apparatus of the class described, in combination, a plurality of substantially interchangeable shoe members, each of which is provided with means upon its front and rear surfaces adapted to form a dovetailed connection with similar shoe members in front or at the rear of the same, and each of which is of a decreasing thickness toward the sides of the shoe.

52. In apparatus of the class described, in combination, a plurality of substantially interchangeable shoe members, each of which is provided with means upon its front and rear surfaces adapted to form a dovetailed connection with similar shoe members in front or at the rear of the same, and each of which is of a decreasing thickness toward the sides of the shoe, the lateral walls of said dovetailed connections being converged toward one end of the shoe.

53. In apparatus of the class described, in combination, a plurality of substantially interchangeable shoe members, each of which is provided with means upon its front and rear surfaces adapted to form a dovetailed connection with similar shoe members in front or at the rear of the same, and each of which is of a decreasing thickness toward the sides of the shoe, the lateral walls of said dovetailed connections being converged toward both ends of the shoe.

54. In apparatus of the class described, in combination, a plurality of substantially interchangeable shoe members, each of which is provided with means upon its front and rear surfaces adapted to form a dovetailed connection with similar shoe members in front or at the rear of the same, the lateral walls of said dovetailed connections converging toward one end of the corresponding shoe.

55. In apparatus of the class described, in combination, a plurality of substantially interchangeable shoe members, each of which is provided with means upon its front and rear surfaces adapted to form a dovetailed connection with similar shoe members in front or at the rear of the same, the lateral walls of said dovetailed connections converging toward both ends of the corresponding shoe.

56. In apparatus of the class described, in combination, a plurality of substantially interchangeable shoe members, each of which is provided upon one surface with a dovetail tenon of decreasing thickness toward one end of the shoe and upon its opposite surface with a recess adapted to receive and fit a similar tenon.

57. In apparatus of the class described, in combination, a plurality of substantially interchangeable shoe members, each of which is provided upon one surface with a dovetail tenon of decreasing thickness toward one end of the shoe and upon its opposite surface with a recess adapted to receive and fit a similar tenon, the walls of said tenons being converged toward one end of the shoe.

58. In apparatus of the class described, in combination, a plurality of substantially interchangeable shoe members, each of which is provided upon one surface with a dovetail tenon of decreasing thickness toward both ends of the shoe and upon its opposite surface with a recess adapted to receive and fit a similar tenon, the walls of said tenons being converged toward both ends of the shoe.

59. In apparatus of the class described, in combination, a shoe-supporting member provided upon its forward surface with a recess of decreasing depth toward the ends thereof, and a shoe member provided upon its rear surface with a tenon adapted to fit said recess.

60. In apparatus of the class described, in combination, a shoe-supporting member provided with a recess having undercut side walls converging toward each end thereof, and a shoe member provided with a tenon adapted to fit said recess.

61. In apparatus of the class described, in combination, a shoe-supporting member provided with a recess having undercut side walls converging toward each end thereof and of decreasing depth toward the ends of the shoe, and a shoe member provided with a tenon adapted to fit said recess.

62. In apparatus of the class described, in combination, a shoe-supporting member provided with a recess having undercut side walls, and a shoe comprising a pair of substantially interchangeable shoe members, each of which is provided upon its rear surface with a tenon adapted to fit within said recess and upon its forward surface with a recess adapted to receive a similar tenon, the ends of said shoe members projecting beyond the corresponding tenons.

63. In apparatus of the class described, in combination, a shoe-supporting member provided with a recess having undercut walls, and a shoe comprising a pair of substantially interchangeable shoe members, each of which is provided upon its rear surface with a tenon adapted to fit within said recess and upon its forward surface with a recess adapted to receive a similar tenon, the ends of said shoe members projecting beyond the corresponding tenons.

64. A supporting member for a brake-shoe having in its wearing-face a recess in which the attaching part of said shoe is adapted to be received, and being provided with a member seated in a transverse recess therein adapted to engage the attaching part upon said shoe and maintain the same in an interfitted condition.

65. A supporting member for a brake-shoe having in its wearing-face a recess in which the attaching part of said shoe is adapted to be received, said member being provided with means dovetailed in a transversely-extending recess therein adapted to engage a part of said shoe when the same is seated in said first-mentioned recess.

846,482. METHOD OF FORMING PERFORATED TUBES AND SCREENS. MAHLON E. LAYNE, Houston, Tex. Filed June 19, 1905. Serial No. 265,972.

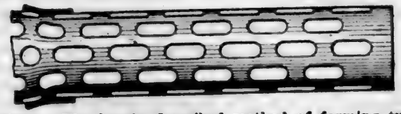

Claim.—The herein described method of forming tubular perforated screens which consists of perforating a sheet of metal, bending the same into tubular shape and draw welding the edges, substantially as described.

846,483. GOLD-SAVING APPARATUS. JAMES H. LEGGETT, Oroville, Cal. Filed Dec. 14, 1905. Serial No. 291,734.

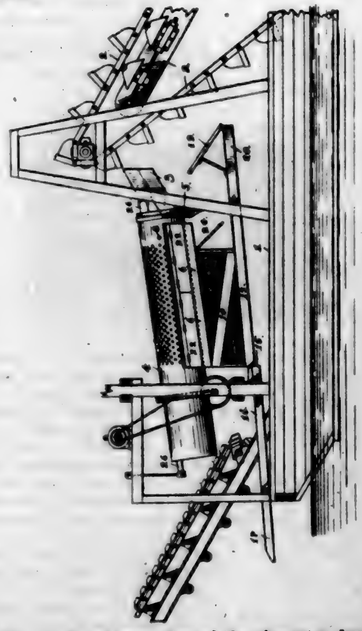

Claim.—1. In an apparatus of the character described, the combination of a bucket-ladder and digging-buckets, a movable screen for screening the material raised by said buckets, a pan beneath said screen, a grizzly located beneath the upper end of the bucket-ladder and adapted to catch the material discharged from the buckets and not reaching the screen, and a flume beneath the grizzly and connected with the pan beneath the screen, substantially as described.

2. In an apparatus of the character described, the com-

bination of a bucket-ladder and digging-buckets, a movable screen for screening the material raised by said buckets, a pan beneath said screen, a grizzly located beneath the upper end of the bucket-ladder and adapted to catch the material discharged from the buckets and not reaching the screen, and a flume beneath the grizzly having riffles and connected with the pan beneath the screen, substantially as described.

3. In an apparatus of the character described, the combination of a bucket-ladder and digging-buckets, a movable screen for screening the material raised by said buckets, a vertical series of pans beneath said screen, a grizzly located beneath the upper end of the bucket-ladder and adapted to catch the material discharged from the buckets and not reaching the screen, and a flume beneath the grizzly and connected with one of said pans, substantially as described.

4. In an apparatus of the character described, the combination of a bucket-ladder and digging-buckets, a movable screen for screening the material raised by said buckets, a vertical series of pans beneath said screen, a grizzly located beneath the upper end of the bucket-ladder and adapted to catch the material discharged from the buckets and not reaching the screen, and a flume beneath the grizzly and provided with riffles, and connected with one of said pans, substantially as described.

5. In an apparatus of the character described, the combination, with digging-buckets, of a movable cylindrical screen for screening the material raised by said buckets, and a pan beneath the screen for saving the fine gold, said screen being provided at its upper end with a number of holes adapted to permit a suitable number of comparatively large rocks to fall therethrough into the said pan to assist in saving the gold, substantially as described.

846,484. APPARATUS FOR TEACHING ARITHMETIC. ANDREW LEITCH, Sunderland, England. Filed Dec. 21, 1905. Serial No. 292,762.

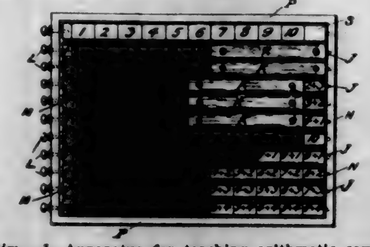

Claim.—1. Apparatus for teaching arithmetic comprising a frame, a plurality of rotatable prisms each carrying ciphers and differently-colored divisions mounted in said frame, and means for covering and uncovering part of the surfaces of said prisms for the purpose set forth.

2. Apparatus for teaching arithmetic comprising a frame, a plurality of rotatable prisms having each toward one end a series of divisions and toward the other end numbers equivalently spaced, and means for covering a given length of the surfaces of each said prism for the purpose set forth.

3. Apparatus for teaching arithmetic comprising a frame, a plurality of rotatable prisms each carrying ciphers and differently-colored divisions mounted in said frame and a series of slides adapted to be manipulated to cover a given length of the surfaces of each of said prisms for the purpose set forth.

4. Apparatus for teaching arithmetic comprising a frame, a series of rotatable prisms each having variously-colored divisions and other variously-numbered divisions mounted in said frame, a series of slides adapted to cover part of the length of each said prism, said slides having differently-colored divisions on their surface substantially as described.

5. Apparatus for teaching arithmetic comprising a frame, a plurality of rotatable prisms having their surfaces divided in two series of equal divisions, one series being numerical signs, slides movable longitudinally on said prisms and adapted to cover such space thereof that the uncovered divisions at one end have a numerical relation to the sign marked on the division to the right thereof substantially as described.

846,485. KINDERGARTEN APPARATUS. ANDREW LEITCH, Sunderland, England. Filed Apr. 27, 1906. Serial No. 314,090.

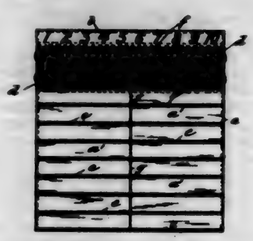

Claim.—1. Apparatus for teaching arithmetic comprising a frame having a compartment and an exhibiting-board and a series of independently-rotatable prisms having contrasted surfaces mounted in said compartment.

2. Apparatus for teaching arithmetic comprising a frame having a compartment and an exhibiting-board, extending below said compartment, a series of independently-rotatable prisms having contrasted surfaces mounted in said compartment, ledges on said exhibiting-board and a plurality of loose strips of different surface character adapted to be placed on said ledges.

3. Apparatus for teaching arithmetic comprising a frame having an open-fronted space, two rows of independently-rotatable prisms mounted one above the other in said space said prisms having three faces contrasted in color, and an exhibiting-board beneath said space.

4. Apparatus for teaching arithmetic comprising a frame having an open-fronted space independently-rotatable prisms in said space said prisms having three faces contrasted in color, an exhibiting-board beneath said space, transverse ledges on the face of said board, and a plurality of strips of graduated length and having surface divisions corresponding in breadth to the length of a prism said divisions being colored in groups contrasting with one another.

5. Apparatus for teaching arithmetic comprising a frame having in its upper end a box, an open-fronted space beneath said box, a plurality of vertical partitions dividing said space into equal compartments, two rows of independently-rotatable prisms mounted one above the other in said compartments said prisms having three faces contrasting in color, an exhibiting-board beneath said space transverse ledges on the face of said board and a plurality of strips of graduated length and having surface divisions corresponding in breadth to the length of a prism said divisions being colored in groups contrasting with one another.

846,486. ICE-TOOL. GEORGE LEPLEY, Tiffin, Ohio. Filed Mar. 28, 1906. Serial No. 308,527.

Claim.—In an implement of the character described, a pair of duplicate plates placed face to face, each plate provided with a rectangular longitudinal channel and a plurality of parallel transverse channels extending from said longitudinal channel to one edge of each of said plates, and each plate being provided with parallel spaced and registering-sockets in the opposite edge thereof from that having the transverse channels, a plurality of teeth disposed in said transverse channels with their rectangular heads bearing in said longitudinal channels, a forked handle bearing in said sockets, and fastening-bolts passing through said plates and said forked handle.

846,486.

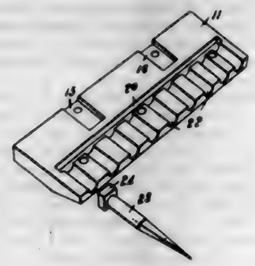

846,487. REVERSING MECHANISM FOR EXPLOSIVE-ENGINES. LEON M. J. C. LEVAVASSEUR, Puteaux, France. Filed Oct. 20, 1904. Serial No. 229,303.

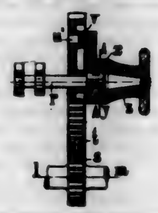

Claim.—In a reversing device for explosive-engines, the combination, with the cam-shaft having longitudinal ribs thereon, of a gear-wheel rotatable on said shaft adjacent to said ribs and provided on one face with openings or seats, stop-pins adjacent to said seats, means for rotating said gear-wheel from the engine-shaft, a knob having grooves engaging said ribs on said cam-shaft and slidable axially of the latter though rotatable therewith, said knob being limited in its angular movement with respect to said gear-wheel by said stop-pins, a pin on said knob to engage either of said seats in said gear-wheel, and a spring confined within said knob and serving to normally maintain the latter against said gear-wheel.

846,488. RECEPTACLE FOR CARD-INDEXES. WILLIAM LIVINGSTONE, New York, N. Y. Filed Mar. 9, 1906. Serial No. 305,044.

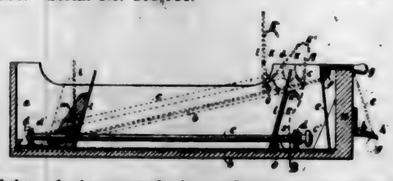

Claim.—1. A receptacle for card-indexes comprising the combination with a receptacle, of a card-rest, a guide-rod to engage the cards, a front facing-plate and a rear follower to hold the cards together, one of which is supported on the card-rest and the other movably connected with the guide-rod, all of which said parts when in their normal position inclosed within and resting upon the bottom of the receptacle, but capable of being raised at the forward end of the receptacle to the desired height the said rod being confined within the receptacle and protected against being used as a handle, substantially as specified.

2. In a receptacle for card-indexes, the combination with a receptacle having lateral slots at the rear end, of a card-rest provided with pivotal projections which engage the said slots, a guide-rod mounted thereon, said card-rest adapted to be moved horizontally and lifted at the forward end to carry the cards to or above the top of the box, a front facing-plate and a rear follower to hold the cards together, one of which is supported on the card-rest and the other movably connected with the guide-rod, said parts in their normal position inclosed within and resting upon the bottom of the receptacle and capable of being raised at the forward end of the receptacle to the desired height, the said rod being confined within the receptacle and protected against being used as a handle, substantially as specified.

3. In receptacles for card-indexes a card-receptacle, a card-rest slidably connected at one end with the receptacle and adapted to be moved longitudinally and at the opposite end capable of being lifted, and a rod to engage the cards and connect them with the support, substantially as specified.

4. In receptacles for card-indexes a card-receptacle, a card-rest slidably connected therewith at one end and adapted to be lifted to raise and sustain the cards above the top of the receptacle and to move longitudinally while being lifted, means for holding it in its upper position, and a rod to engage the cards and connect them with the card-support, substantially as specified.

5. In receptacles for card-indexes, a card-receptacle, a card-rest slidably connected therewith at one end and capable of being lifted to raise and sustain the cards above the top of the receptacle, a rod to engage the cards and connect them with the card-rest and a front facing-plate connected with the card-rest to hold the cards normally in an oblique position with respect to the card-rest, substantially as specified.

6. In receptacles for card-indexes, a card-receptacle, a card-rest slidably connected therewith at one end and capable of being lifted to raise and sustain the cards above the top of the receptacle, a rod to engage the cards and connect them with the card-rest, and a front facing-plate connected with the card-rest to hold the cards normally in an oblique position and adapted to be turned back and hold them in a more oblique position with respect to the card-rest, substantially as specified.

7. In receptacles for card-indexes, a card-receptacle, a card-rest slidably connected therewith at one end and capable of being lifted to raise and sustain the cards above the top of the receptacle and to move longitudinally when lifted, means for lifting the end to its upward position, means for sustaining the end when lifted to its upward position, a rod to engage the cards and connect them with the card-rest, and a front facing-plate connected with the card-rest, substantially as specified.

8. In receptacles for card-indexes a card-receptacle, a card-rest slidably connected therewith at one end and capable of being lifted to raise and sustain the cards above the top of the receptacle and to move longitudinally when lifted, means for sustaining the end when lifted to its upward position, a rod to engage the cards and connect them with the card-rest, a front facing-plate hinged to the card-rest and set normally at an oblique angle to the bottom of the receptacle and the rod but when the card-rest is lifted adapted to be turned back to lessen its inclination to the card-rest and rod, substantially as specified.

9. In receptacles for card-indexes, a card-receptacle, a card-rest slidably connected therewith at one end and capable of being lifted and at the same time to move longitudinally, a rod to engage the cards and connect them with the card-rest, a front facing-plate hinged to the card-rest set normally at an oblique angle to the bottom of the receptacle and the rod, but when the card-support is lifted assuming a position perpendicular to the bottom of the receptacle and adapted to be turned back and held in an inclined position with respect to the card-rest and rod to allow the exposed card to be turned downward and away from the card immediately behind it to fully expose the latter, substantially as specified.

10. In receptacles for card-indexes, a card-receptacle, a card-rest slidably connected therewith at one end and capable of being lifted and to move longitudinally, supports at opposite ends of the card-rest provided with perforations, the perforation in the support at the liftable end of the card-rest being screw-threaded, and a rod to engage the cards and connect them with the card-rest in-

serted in the said perforations and its end next to the liftable end of the card-rest screwed into the support, substantially as specified.

11. In receptacles for card-indexes, a card-receptacle, a card-rest slidably connected therewith at one end and capable of being lifted at the opposite end, supports at opposite ends of the card-rest, a rod to engage the cards and connect them with the card-rest inserted in the supports and connected therewith in a similar manner said rod inclosed within the receptacle normally where it cannot be gotten at, substantially as specified.

12. In receptacles for card-indexes, a card-receptacle, a card-rest slidably connected therewith at one end and capable of being lifted and to move longitudinally, uprights at opposite ends of the card-rest, a rod connected therewith to engage the cards and connect them with the card-rest, said rod provided with a knob at one end screw-threaded adjacent to the shoulder of the knob and adapted to be inserted in the perforations in the uprights and to make screw connection with the upright adjacent to the liftable end of the card-rest, substantially as specified.

13. In receptacles for card-indexes, a card-receptacle, a card-rest slidably connected therewith at one end and capable of being lifted at the opposite end and to move longitudinally, a rod to engage and connect the cards with the card-rest supported on the card-rest wholly within the receptacle whereby it is concealed when the card-rest and the cards are in their normal position in the receptacle, substantially as specified.

14. In receptacles for card-indexes, a card-receptacle, a card-rest slidably connected therewith at one end and capable of being lifted at the opposite end and at the same time move longitudinally, a rod to engage and connect the cards with the card-rest supported on and connected with the card-rest wholly within the receptacle, a cord connected with the liftable end of the card-rest which extends up to the top of the receptacle and carried over a roller and the top of the receptacle to the outside of the front thereof, means for holding the end of the cord when the card-rest is in its normal position, and means for securing the same to hold and sustain the card-rest when lifted, substantially as specified.

15. In receptacles for card-indexes, a card-rest slidably connected with the receptacle at one end and capable of being lifted at the opposite end and at the same time moved longitudinally, a rod to engage and connect the cards with the card-rest supported on and connected with the card-rest wholly within the receptacle, a cord attached to the liftable end of the card-rest and extended up to the top of the receptacle over a roller and its end carried to the outside of the front thereof, a knob on the end of the cord and a handle on the front of the receptacle provided with a slit to receive the cord and secure it for the purpose of holding the card-rest when lifted, substantially as specified.

16. In receptacles for card-indexes a rectangular box open at the top, a card-rest consisting of a metal strip having lateral projections in its edges at the rear end, grooves in the bottom of the box to receive the said projections and thus slidably connect the rear end of the card-rest with the box while the front end is liftable to the top of the box, a cord having one end connected with the card-rest and the other end carried up to the top of the box and over a roller to the outside of the front, a rod to engage and connect the cards with the card-rest, and means for securing the end of the cord when the card-rest is in its normal position and also when lifted, substantially as specified.

17. In receptacles for card-indexes a rectangular box open at the top, a card-rest consisting of a metal strip having lateral projections on its edges at the rear end, grooves in the bottom of the box to receive the said projections and thus slidably connect the rear end of the card-rest with the box while the front end is liftable to the top of the box, a cord having one end connected with the card-rest and the other end carried up to the top of the box and over a roller to the outside of the front, a rod to engage and connect the cards with the card-rest, a front facing-plate hinged to the card-rest and set normally at an oblique angle thereto, and which when the card-rest is lifted is adapted to be turned back to increase its obliquity to the card-rest, and means for securing the end of the cord when the card-rest is in its normal position and also when it is lifted to the top of the receptacle, substantially as specified.

18. In receptacles for card-indexes, a rectangular box open at the top, a card-rest consisting of a metal strip having lateral projections on its edges at the rear end, grooves in the bottom of the box to receive the said projections and thus slidably connect the rear end of the card-rest with the box while the front end is liftable to the top of the box, a cord having one end connected with the card-rest and the other end carried up to the top of the box and over a roller to the outside of the front, a rod to engage and connect the cards with the card-rest, a front facing-plate hinged to the card-rest and set normally at an oblique angle thereto but when the card-rest is lifted adapted to be turned back to increase its obliquity to the card-rest, substantially as specified.

19. In receptacles for card-indexes, a card-receptacle, a card-rest slidably connected therewith at one end and capable of being lifted to raise and sustain the cards above the top of the receptacle, a rod to engage the cards and connect them with the card-rest, a rear facing-plate and a front facing-plate connected with the card-rest and parallel to each other to hold the cards normally in an oblique position with respect to the card-rest, the front facing-plate adapted to be turned back and hold the cards in a still more oblique position with respect to the card-rest when the latter is lifted, substantially as specified.

846,489. APPARATUS FOR THE MANUFACTURE OF GAS. FERDINAND LOGAN, Phœnixville, Pa. Filed Feb. 16, 1904. Renewed July 23, 1906. Serial No. 327,404.

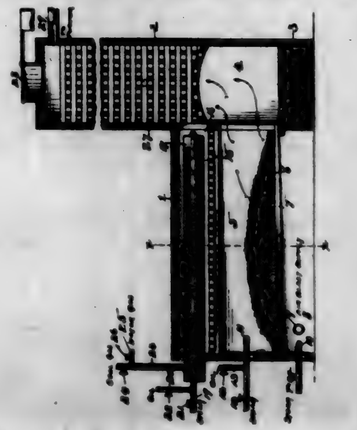

Claim.—1. An apparatus for generating gas, comprising a fire-chamber, a retort-chamber above the fire-chamber, a superheating and fixing chamber adjacent to said chambers and in communication with both of said chambers, and a checker-work partition separating the fire-chamber and retort-chamber throughout the length of each.

2. An apparatus for generating gases, comprising a fire-chamber, a retort-chamber above the fire-chamber, a superheating and fixing chamber adjacent to said chambers and communicating with both of said chambers, retorts within the retort-chamber, a pipe connecting the reterts at one end thereof, steam and oil pipes leading to one of the retorts, and a coal-gas outlet leading from one of the retorts, said outlet-pipe being provided with a water-gas branch pipe.

3. An apparatus for generating gases, comprising a fire-chamber, a retort-chamber above the fire-chamber, retorts within the retort-chamber, a pipe connecting the retorts at one end thereof and within the retort-chamber, a superheating and fixing chamber adjacent to said retort and fire chambers and communicating with both of the said chambers, and a checker-work partition separating the fire-chamber and retort-chamber throughout the length of each.

4. An apparatus for generating gas, comprising a fire-chamber having an air-blast pipe and steam-pipe below it, a retort-chamber above the fire-chamber, a checker-work partition intermediate said chambers and extending throughout the length of each chamber, a superheating and fixing chamber adjacent to the fire and retort chambers and communicating with both, oil and steam pipes leading into the fire-chamber and an outlet for the gas at or near the top of the fixing-chamber.

5. An apparatus for generating gas, comprising a fire-chamber, a retort-chamber located directly above the fire-chamber and extending throughout the length of the fire-chamber, a checker-work partition separating said chambers throughout the length of each, a superheating and fixing chamber adjacent to and connected with both of the said chambers, checker-work within the fixing-chamber, said fixing-chamber communicating with the fire-chamber below said checker-work partition and the retort-chamber communicating with the fixing-chamber at one end thereof and above the checker-work partition, and an outlet for the gas at the top of the fixing-chamber.

6. An apparatus for generating gas, comprising a fire-chamber, a retort-chamber extending throughout the length of the fire-chamber and arranged above the same, retorts within the retort-chamber, a pipe connecting the retorts at one end thereof and within the retort-chamber, and a superheating and fixing chamber adjacent to said retort and fire chamber and connected to and communicating with both of said chambers at one end thereof.

846,490. LUMBER-WAGON. SILAS J. LONCKS and WILLIAM M. HOLCOMB, Blanchard, Ark. Filed Mar. 2, 1906. Serial No. 303,887.

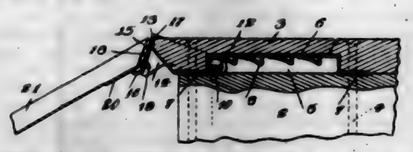

Claim.—1. In a device of the character described, the combination with a bunk of a swinging chock-block laterally adjustable thereon and comprising side arms embracing the upper side of the bunk, and a connecting cross member adapted to rest and slide upon the upper surface of the bunk whereby to hold the side arms in angular position with respect to said upper surface, and means for holding said chock-block at different lateral adjustments with respect to the tongue, the cross connecting member being provided at its upper surface with means for engaging the end of the bunk whereby to support the chock-block in suspended position down over the end of the bunk.

2. The combination with a bunk, of a swinging chock-block laterally adjustable thereon and designed to be moved out over the end of the bunk, said chock-block comprising a pair of side arms embracing the upper side of the bunk and a cross connecting member provided with an outwardly-turned lower edge 16 and an inwardly-turned opposite edge 17, the first-named edge being adapted to rest upon the upper surface of the bunk and slide along the same, and the other, inturned edge, being adapted to engage with the end of the bunk for the purpose specified, and means for holding the chock-block at different lateral adjustments with respect to the bunk.

3. In a device of the character described, the combination with a bunk, of a swinging chock-block laterally adjustable thereon and designed to be moved out over the end of the bunk, said chock-block being provided with an overhanging edge designed to engage with the end of the bunk whereby to sustain itself in said position, and said chock-block being provided with a slot designed for the attachment thereto of a skid.

4. In a device of the character described, the combination with a bunk, of a swinging chock-block laterally adjustable thereon and arranged to swing down over the end of the bunk, means for supporting the chock-block in said position, the chock-block being provided with a slot, and a skid having a hook designed to enter said slot, whereby it will be supported at one end by said block.

5. In a device of the character described, a bunk provided with a cap-piece and a laterally-extending slot, a swinging chock-block provided with a cross-pin whereby it is slidably mounted in said slot, said chock-block being designed to rest on the upper surface of the cap-piece, and means for holding said chock-block at different adjusted positions on the cap-piece, said means including a series of catches in the slot and with which the cross-pin is designed to engage.

6. In a device of the character described a bunk provided with a cap-piece having a recess in its lower face producing a slot in the bunk, a metallic lining for said slot, and provided with a series of locking-catches, a recessed pin mounted in said slot, means for turning said pin to bring the recess thereof in registry with said catches whereby the pin may be slid back and forth in said slot, and a swinging chock-block carried by said pin and embracing the cap-piece.

7. In a device of the character described, a bunk provided with a lateral slot, a series of locking-catches in said slot, and a cap-piece, a pin mounted to slide in said slot and arranged to hold itself in engagement with any of said notches, means whereby the pin may be slid along the slot, and a chock-block embodying two side braces or arms embracing the cap-piece and pivotally mounted on said pin and arranged to swing in a vertical plane over the upper surface of the cap-piece, said chock-block also embodying a cross connecting member provided with an outturned edge designed to rest on the upper surface of the cap-piece.

846,491. SPRAYER. LEWIS I. LUTES, Detroit, Mich., assignor to Mitchell T. Buchanan. Filed Aug. 10, 1906. Serial No. 330,028.

Claim.—1. A sprayer attachment for hose-nozzles comprising a spraying-plate having means to attach the nozzle thereto, and a deflector pivoted to the plate on a pivot extending substantially parallel to the plate and arranged to swing over the nozzle to either edge of the plate.

2. A sprayer attachment for nozzles comprising a spraying-plate turned up at the front end and having at the rear a clip to attach the nozzle, and a deflector comprising a plate pivoted on the clip and extending forwardly therefrom and arranged to swing over the plate and stand edgewise at either edge thereof.

846,492. PROCESS OF TREATING NICKEL ORES, &c. RALPH W. E. MACIVOR, London, England, assignor to Metals Extraction Corporation Limited, London, England, a Corporation. Filed Feb. 2, 1906. Serial No. 299,181.

Claim.—1. In the process of treating nickel ores or oxidised nickel mattes, mixing the ground ore or nickel oxids with chlorid of magnesium, and subsequently heating the mixture, substantially as described.

2. The process of treating nickel ores or oxidised nickel mattes for the recovery of nickel, consisting of mixing the ground ore or oxid of nickel with chlorid of magnesium, heating the mixture and then lixiviating the same to yield a solution of chlorid of nickel, substantially as described.

846,493. MEANS FOR SECURING PORTRAITS AND OTHER TABLETS TO WALLS. FRANCIS T. MALLON, Brooklyn, N. Y. Filed Apr. 9, 1906. Serial No. 310,777.

Claim.—1. The herein-described means for securing a tablet to a stone or wall, comprising a socket formed in the stone or wall and adapted to receive a key-plug, a key-plug secured in said socket and provided with a threaded head, a nut secured in the back of the tablet and adapted to be screwed onto said head, and means for preventing the turning of the tablet.

2. The herein-described means for securing a tablet to a stone or wall, comprising a socket formed in the stone or wall and adapted to receive a key-plug, a key-plug secured in said socket and provided with a threaded head, and a nut secured in the back of the tablet and adapted to be screwed onto said head, said tablet being provided at one side and at the back thereof with a recess which opens outwardly through the side thereof and the stone or wall with a corresponding recess adapted to register therewith, and said recess being adapted to receive cement or similar material, substantially as shown and described.

3. A tablet adapted to be secured to a stone or wall, said tablet being provided with a nut which is secured in the back thereof centrally thereof, and in the back thereof adjacent to one side thereof with a recess which opens through said side and through the back thereof, substantially as shown and described.

846,494. WINDOW-SHADE ADJUSTER. FRANK J. MANSMANN and ANDREW A. MANSMANN, Pittsburg, Pa. Filed Oct. 26, 1906. Serial No. 340,704.

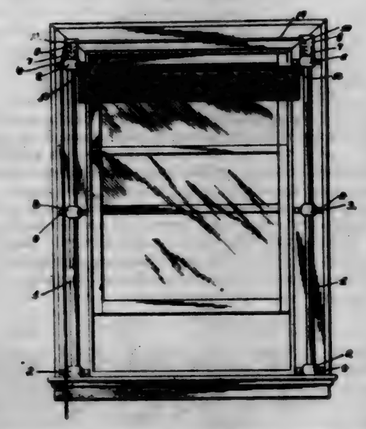

Claim.—The combination with a window-frame, of parallel hollow guides secured to opposite sides of the frame, and formed with longitudinal slots, slotted slides within said guides for supporting a shade-roller, suspending-cords secured to said slides, caps for said guides, each comprising a vertical sleeve fitting over the upper end of the guide and an integral horizontal tubular housing, and pulleys mounted within said housings, over which the suspending-cords extend, said housing serving to conceal the pulleys.

846,495. CARPENTER'S SQUARE. WILLIAM MORLEY, Millvale, Pa. Filed Sept. 6, 1906. Serial No. 333,465.

Claim.—1. In a folding square a latch-section having a recess in one end, and a keeper-section, hinge members carried by said sections which hinge members are pivotally connected together, a latch arranged within the recess in the end of the latch-section and having an engaging tooth, and a keeper carried in the end of the keeper-section adapted to receive the tooth of said latch, and having a beveled outer face for engagement with said tooth, substantially as described.

2. In a folding square, a latch-section having a hinge member projecting from its longitudinal edge near one end thereof and having a recess in one end, and a keeper-section having a hinge member projecting from one end and having a recess to receive the hinge member of the latch-section, the said hinge members being pivotally connected together, a latch arranged wholly within the recess in one end of the latch-section, and a keeper carried on one end of the keeper-section for engagement with the said latch, substantially as described.

846,496. GRINDING-MACHINE. WALTER J. MUNCASTER and LAWRENCE A. FLETCHER, Cumberland, Md. Filed Oct. 11, 1905. Serial No. 282,338.

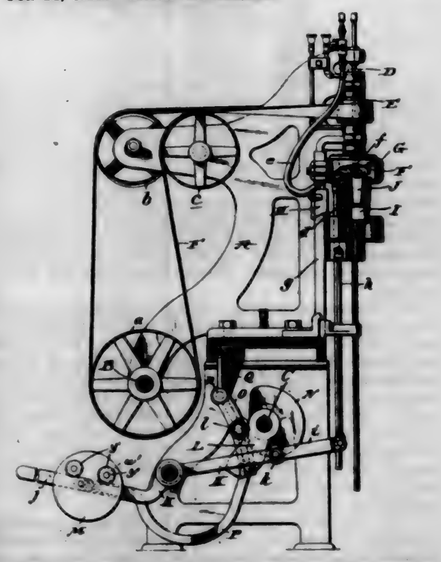

Claim.—1. In a machine of the character described, the combination of a grinding-wheel; a chuck or work-holder movable toward and from said wheel; a lever connected

with and serving to move the chuck; a cam for moving said lever in one direction; a weight for moving the lever in the opposite direction; and means, substantially such as shown and described, for varying the position of said weight relatively to the fulcrum of the lever as the grinding progresses.

2. In combination with a grinding-wheel, a chuck or work-holder, and mechanism for automatically moving the chuck toward the grinding-wheel and gradually or progressively increasing the pressure of its contained work against said wheel.

3. In combination with a grinding-wheel, a chuck or work-holder; a lever connected with said chuck and serving to move the same toward the grinding-wheel; a weight carried by said lever and serving to move its chuck-carrying arm toward the grinding-wheel; and means for automatically moving said weight to increase its effect upon the lever as the chuck approaches the grinding-wheel.

4. In combination with a grinding-wheel, a chuck or work-holder; means for causing one of said members to approach the other at predetermined rate; and automatic mechanism for positively increasing the pressure of one of said members toward the other in definite and fixed relation to the rate of approach of one of said members toward the other.

5. In a grinding-machine, the combination of a grinding-wheel; means for rotating said wheel; a chuck or work-holder; a lever fulcrumed between its ends; a connection between one arm of said lever and the chuck; a weight carried by the other arm of said lever; and a cam, serving to move said weight relatively to the fulcrum of the lever, whereby its effectiveness is varied as the grinding operation proceeds.

6. In a grinding-machine, the combination of a grinding-wheel; a chuck or work-holder; a lever connected with and serving to move said chuck; a cam for moving said lever in one direction; a weight for moving the lever in the reverse direction; and a cam for moving the weight relatively to the fulcrum of the lever on which it is mounted, substantially as set forth.

7. In a grinding-machine, the combination of a suitable frame; a shaft mounted and rotatable in bearings in said frame; a grinding-wheel carried by said shaft; a slide movable upon ways on the frame, toward and from the grinding-wheel; a chuck or work-holder carried by said slide; a lever fulcrumed in the frame; a connection between said lever and the slide; a cam for moving the lever in one direction; a weight carried by the lever and serving to move it in the opposite direction; and a second cam for moving the weight toward and from the fulcrum of the lever.

8. In combination with a suitable frame, and with a shaft D mounted in bearings in said frame and provided with a grinding-wheel F', a slide H guided upon ways on the frame and provided with a chuck I; a lever K fulcrumed in the frame; a rod h connecting one arm of said lever with the slide H; a cam N serving to depress said arm of the lever; a weight M carried by the other arm of said lever; a swinging arm or lever O; a link P connecting lever O and weight M; and a cam L serving to move the lever O and through it to shift the weight M relatively to the fulcrum of lever K.

9. In combination with a grinding-wheel and chuck or work-holder of a grinding-machine, a lever K connected with and serving to move the chuck toward and from the grinding-wheel; a shiftable weight carried by said lever; a swinging lever having a slot curved in an arc of a circle from the axis of a stud or bolt carried by the weight; a link extending from said bolt to the slotted lever; and a bolt connecting the lever and the link and adjustable in said slot toward and from the fulcrum of the lever, as and for the purpose set forth.

10. In a grinding-machine, the combination of a grinding-wheel; a chuck or work-holder movable toward and from said wheel; a lever having one arm connected with and serving to move the chuck, and having a second arm inclining downward toward its fulcrum; a weight movable upon said inclined arm of the lever; a swinging lever; a link connecting the weight and said swinging lever; and a cam serving to move the swinging lever and through it and the link to move the weight, the inclination of the lever-arm causing the weight to hold the swinging lever in contact with its actuating-cam.

11. In a grinding-machine, the combination of a grinding-wheel; a chuck or work-holder movable toward and from said wheel; a lever fulcrumed between its ends, having one arm connected with and serving to move the work-holder; means for actuating said lever; a weight carried by the other arm of the lever; a swinging arm or lever; a link connecting the weight with said swinging arm or lever; a connection between said link and swinging arm or lever, adjustable toward and from the fulcrum of the latter to vary the movement of the weight; and a cam serving to move said swinging arm or lever.

12. In a grinding-machine, the combination of a grinding-wheel; a chuck or work-holder movable toward and from said wheel; a lever for moving said work-holder; means for actuating said lever; a weight carried by said lever and serving to urge the chuck toward the grinding-wheel; antifriction-rollers for said weight; and a cam serving to shift the weight upon the lever, relatively to the fulcrum of the latter.

13. In a grinding-machine, the combination of a grinding-wheel; a chuck or work-holder movable toward and from the grinding-wheel; a lever connected with and serving to move the work-holder; a weight carried by and serving to move in one direction said lever; means for moving said lever in the opposite direction; a lever for shifting the weight; a link connecting said lever and weight; and means for initially adjusting the weight relatively to the fulcrum of its supporting or carrying lever.

14. In a grinding-machine, the combination of a grinding-wheel; a chuck or work-holder movable toward and from the grinding-wheel; a lever connected with and serving to move the work-holder; a weight carried by and serving to move in one direction said lever; means for moving said lever in the reverse direction; a lever for shifting the weight upon its lever; a link connecting said weight and its shifting-lever; means for initially adjusting the weight relatively to the fulcrum of its supporting or carrying lever; and means for varying the effective length or throw of the weight-shifting lever.

15. In a grinding-machine, the combination of a grinding-wheel; a chuck or work-holder movable toward and from the grinding-wheel; a lever connected with and serving to move the work-holder; a weight carried by and serving to move in one direction said lever; means for moving said lever in the opposite direction; a lever for shifting the weight upon its carrying or supporting lever; and means for initially setting or adjusting the weight upon said lever.

846,497. MACHINE FOR STRAIGHTENING SHAFTING AND THE LIKE. WALTER J. MUNCASTER, Cumberland, Md., assignor to Cumberland Steel Company of Allegany County, Cumberland, Md., a Corporation of Maryland. Filed Jan. 4, 1906. Serial No. 294,632.

Claim.—1. In a machine for straightening cylindrical bodies, the combination of two pairs of rolls and an intermediate roll, the paired rolls and single roll being arranged with their axes oblique to each other and to the common axis about which they are grouped, and at varying points in the length of said axis; and means for imparting rotation to at least two of said rolls.

2. In a machine for straightening cylindrical bodies, the combination of two pairs of supporting-rolls, an intermediate roll, and means for imparting rotation to at least two of said rolls, the several rolls being arranged about a common axis and having their axes oblique to said common axis and to each other.

3. In a machine for straightening cylindrical bodies, the combination of two pairs of rolls and a roll intermediate the proximate ends of the two roll pairs, the several rolls being grouped about a common axis and having their axes oblique thereto and to each other, and the paired rolls being movable longitudinally toward and from the intermediate roll.

4. In a machine for straightening cylindrical bodies the combination of two pairs of rolls, and a roll intermediate the proximate ends of the two roll pairs, the several rolls being grouped about and movable toward and from a common axis, and having their axes oblique to said common axis and to each other.

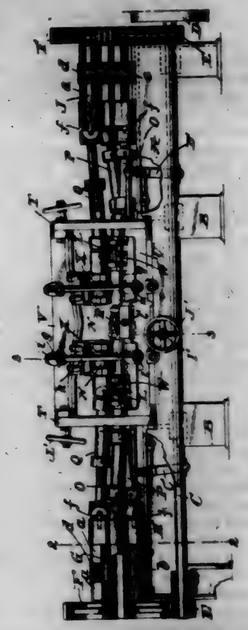

5. In a machine for straightening cylindrical bodies, the combination of two pairs of rolls, and a roll interposed between the proximate ends of the two roll pairs, the several rolls being grouped about and movable toward and from a common axis, and having their axes oblique to said axis and to each other, and the paired rolls being longitudinally movable toward and from the intermediate roll.

6. In a machine for straightening cylindrical bodies, the combination of a suitable framework having guideways converging toward a common axis; roll-carrying carriages mounted and longitudinally movable upon said guideways; an intermediate roll-carrying carriage movable radially or in a right line perpendicular to said axis; and connections between one of the longitudinally-movable roll-carriages and the radially-movable carriage, for imparting to it such radial movement.

7. In a machine for straightening cylindrical bodies, the combination of a suitable frame having three or more sets of guideways converging toward a common axis; three roll pairs mounted in carriages arranged end to end upon the lower sets of guideways, the intermediate pair being fixed against longitudinal movement, and the outer pairs being longitudinally movable toward and from the intermediate pair; and independent roll-carrying carriages mounted upon the upper guideways, in alternation with the lower carriages and rolls, said independent carriages and rolls being longitudinally movable toward and from each other.

8. In combination with girders U, U, converging toward a common axis, and with roll-carrying carriages mounted and longitudinally adjustable thereon; roll-carrying carriages mounted upon the guideways intermediate of said longitudinally-movable carriages and movable toward and from said common axis; girder V having guideways likewise converging toward the common axis and having twice the degree of inclination of the girders U, U; and roll-carrying carriages mounted and movable on the guideways of girder V.

9. In combination with paired rolls L, M and R, S, intermediate roll N; gearing for imparting rotation to said rolls L, M and N; and telescopic shaft connections between the rolls and gearing, whereby said rolls are adapted to be longitudinally adjusted without becoming disconnected from the gearing.

10. In combination with a frame comprising girders U, U and V, having guideways converging toward a common axis; carriages mounted and longitudinally movable on said guideways and provided with rolls; other roll-carriages mounted at the mid-length of the girders U, U, provided with rolls, and movable radially to said common axis; yokes C', D', connected with the longitudinally-movable carriages; means for causing said yokes to approach and recede from each other; and wedges carried by two of the longitudinally-movable carriages and passing between the radially-movable carriages and the girders on which they are supported, whereby the radially-movable carriages are caused to move simultaneously with the longitudinally-moving carriages.

11. In combination with girders or supports having converging guideways; roll-carriages mounted and longitudinally movable upon said guideways; roll-carriages mounted upon the guideways intermediate of the longitudinally-movable carriages and movable radially toward and from the common axis toward which the guideways converge; and means for simultaneously moving the several carriages toward and from said common axis.

12. In a machine for straightening cylindrical bodies, the combination of a frame provided with guideways convergent toward a common axis; roll-carrying carriages mounted on said guideways and movable longitudinally thereon to cause their endwise and axial approach; interposed roll-carrying carriages movable radially toward and from said common axis; and means for thus adjusting the roll-carriages, said carriages having their roll-receiving bearings swiveled upon their bases, substantially as described, whereby the angle of roll-axes may be varied to accord with the approach or separation of the rolls.

13. In combination with a suitable frame, comprising girders U, U, and V, having convergent guideways; roll-carrying carriages mounted and longitudinally movable on said guideways; yokes C', D', connected with some of said carriages; a two-part rod G', having its proximate ends reversely threaded; a nut E' connecting the rod-sections; and means, substantially such as described, for rotating said nut.

14. In combination with a main frame, and roll-carrying carriages mounted and longitudinally movable thereon toward and from each other; yokes C', D', connected with said carriages; a divided rod G', having its sections connected with the respective yokes; a nut E' connecting the rod-sections; a worm-wheel F' carried by said nut; a worm H' meshing with said worm-wheel; a shaft I' carrying said worm; and means for turning said shaft.

15. In combination with girders U, U, having guideways convergent toward a common axis; a girder V having guideways also convergent toward said axis, but at twice the angle of those of the girders U, U; roll-carrying carriages mounted on the several guideways and longitudinally adjustable thereon; and screws swiveled in the girder V and threaded in the carriages thereon, for moving said carriages longitudinally upon their guideways.

16. In a machine for straightening cylindrical bodies, a main frame comprising a base; two triangular frames mounted thereon; girders extending from one to the other of said frames, connecting the same, and provided with convergent guideways; and tie-rods connecting the girders at points intermediate of the triangular frames, substantially as shown and described.

17. In a machine for straightening cylindrical bodies, the combination of three pairs of rolls; an intermediate opposing roll or rolls between the first and second pairs of rolls; an intermediate opposing roll or rolls between the second and third pairs of rolls, all of said rolls being grouped about and movable toward and from a common axis, and having their axes oblique to one another and to the common axis, the rolls being longitudinally adjustable; and means for imparting rotary motion to at least two of the rolls.

18. In a machine for straightening cylindrical bodies, a series of rolls grouped about and radially adjustable toward and from a common axis and also longitudinally adjustable, said rolls being beveled at their forward or receiving ends to facilitate entrance of a cylindrical body between them and having their axes oblique to one another and to the common axis; and means for rotating at least two of said rolls.

19. In a machine for straightening cylindrical bodies, a series of rolls grouped about a common axis and having their axes oblique to one another and to said common axis; and means for imparting rotation to at least two of said rolls, the rolls being set at varying points in the length of said common axis and being adjustable toward and from said axis and also longitudinally thereof.

846,498. PROCESS OF SMELTING SULFID ORES. CORYDON W. MUNSON, Toledo, Ohio. Filed Mar. 23, 1906. Serial No. 307,686.

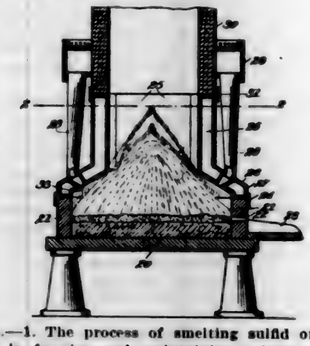

Claim.—1. The process of smelting sulfid ores, which consists in forming and maintaining a heap of the ore with inclined sides from the base upward, forming a limited and confined air-space around the base of the heap, and forcing a heated air-blast into said space.

2. The process of smelting sulfid ores, which consists in forming and maintaining a low charge with inclined sides from the base upward, preventing the spread of the charge at a point above its base and maintaining an air-space surrounding the said inclined sides including the base thereof, and forcing air into said space and upon said inclined sides.

3. The process of smelting sulfid ores, which consists in forming and maintaining a heap of the ore with inclined sides from the base upward, heating the heap to a temperature sufficient to enable a portion of the sulfur therein to be released and to combine with oxygen, forcing air upon the exposed sides of the heap including the base thereof, thereby effecting combustion of a portion of the sulfur and enveloping the heap in a mantle of flame and fusing the outer portion of the heap, and confining the fusing zone of flame to the approximate inclined sides of the heap, within the confined air-space.

4. The process of smelting sulfid ores, which consists in forming and maintaining a confined air-space between the walls of a furnace and the sides of a low ore charge around the base thereof, and forcing a hot-air blast into said space.

5. The process of smelting sulfid ores, which consists in forming and maintaining a confined air-space between the walls of a furnace and the sides of a low ore charge around the base thereof, and uniformly distributing hot air under pressure in said space to drive back into the mass on the furnace-hearth the gases resulting from the melting of the sulfur in portions of such charge.

6. The process of smelting sulfid ores which consists in forming and maintaining a low charge of the ore with inclined sides, forcing a heated air-blast against the surface of said charge around the base thereof, and preventing the direct passage of the air upward over the said surface of the charge.

7. The process of smelting sulfid ores, which consists in forming and maintaining a heap of the ore with inclined sides from the base upward, forming an upwardly-converging confined air-space surrounding the base of the heap, and forcing a heated air-blast into said space.

8. The process of smelting sulfid ores which consists in forming and maintaining a heap of the ore with inclined sides from the base upward, forcing a heated air-blast against the surface of the heap adjacent to its base, and preventing the spread of the ore above that part of the surface into which the blast is driven.

9. The process of smelting sulfid ores, which consists in forming and maintaining a heap of the ore with inclined sides from the base upward, forming a limited and confined air-space around the base of the heap, forcing a heated air-blast into said space and simultaneously feeding fuel to said space.

10. The process of smelting sulfid ores, which consists in forming and maintaining a heap of the ore with inclined sides, forming a limited and confined air-space around the heap, forcing a heated air-blast into said space and simultaneously feeding fines and concentrates to said space.

846,499. APPARATUS FOR MAKING BISULFITE LIQUOR. JOHN C. MURRAY, Bangor, Me., assignor of one-third to George C. Crafts, Bangor, Me., and one-third to George W. Fortier, Orono, Me. Filed Oct. 16, 1906. Serial No. 339,243.

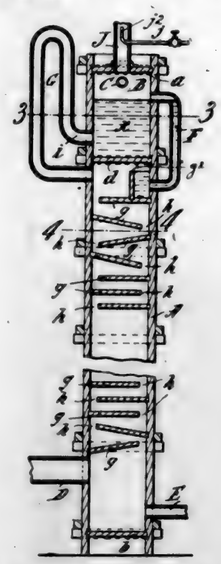

Claim.—1. A gas-absorption apparatus consisting of a tower, suitable gas-inlet and liquid-outlet in the lower portion thereof and suitable liquid-inlet and gas-outlet in the upper portion thereof, a partition extending across the interior of the tower near the upper end thereof but below said liquid-inlet and gas-outlet and constituting the upper portion of the tower interior as a liquid-reservoir, a liquid-conduit leading from said reservoir at a point considerably above said partition and discharging into the tower interior therebeneath, a vertical series of staggered overlapping baffle-plates occupying the lower interior beneath said partition in position to receive the discharge from said conduit, and a pipe distinct from said conduit

for conducting the rising gas through the liquid in said reservoir before escaping through the gas-outlet.

2. A gas-absorption apparatus consisting of a tower, suitable gas-inlet and liquid-outlet at the base and suitable liquid-inlet and gas-outlet at the top thereof, an imperforate partition extending completely across the interior of the tower near the upper end thereof but below said liquid-inlet and gas-outlet, thus constituting the upper portion of the tower interior as a liquid-reservoir, a vertical series of staggered overlapping baffle-plates occupying the tower interior beneath said partition, a liquid-conduit leading from said reservoir at a point considerably above the partition and discharging onto the series of baffle-plates therebeneath, and a siphon-shaped gas-conduit leading from beneath and adjacent said partition and opening into the reservoir at a point below the upper end of the liquid-conduit.

3. A gas-absorption apparatus consisting of a tower, suitable gas-inlet and liquid-outlet at the base and suitable liquid-inlet and gas-outlet at the top thereof, an imperforate partition extending completely across the interior of the tower near the upper end thereof but below said liquid-inlet and gas-outlet, thus constituting the upper portion of the tower interior as a liquid-reservoir, a vertical series of staggered overlapping baffle-plates occupying the tower interior beneath said partition, a liquid-conduit leading from said reservoir at a point considerably above the partition and discharging onto the series of baffle-plates therebeneath, a siphon-shaped gas-conduit leading from beneath and adjacent said partition and opening into the reservoir at a point below the upper end of the liquid-conduit, and an upright wall rising from the top baffle-plate to a point above the discharge end of the liquid-conduit and extending from wall to wall of the tower parallel to the free edge of the plate and facing said end of the conduit.

846,500. COIN-COLLECTOR. FRANK R. MCBERTY, Evanston, and HOWARD B. HOLMES, Park Ridge, Ill., assignors to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 7, 1904. Serial No. 235,858.

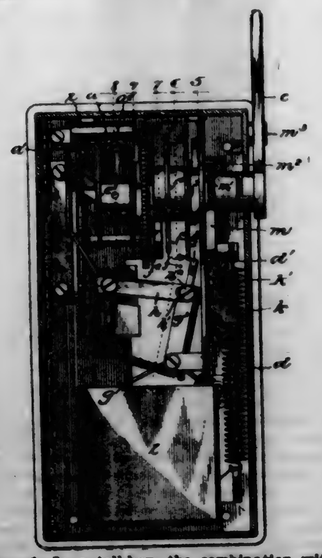

Claim.—1. In a toll-box, the combination with a movable coin-receiver, of a signal device, a series of signal-controllers each arranged to coöperate with said signal device to produce a distinctive succession of signals according to the controller selected, and a caliper-lever constructed and arranged to be adjusted by a coin in the receiver, and to bring different ones to said controllers and the signal device into operative relation to each other, the controller selected being dependent upon the adjustment of said caliper-lever, whereby a distinctive succession of signals is produced according to the size of the deposited coin.

2. In a toll-box, the combination with a movable temporary coin-receiver, of a caliper-lever constructed and arranged to be adjusted by a coin in said receiver during the advance movement thereof, toothed disks arranged to be rotated in the movement of said coin-receiver, the teeth of each disk being spaced differently from its neighbors, a signal-actuating device arranged to be adjusted by said caliper-lever and brought thereby into operative relation to any disk, according to the size of the deposited coin, the selected disk being adapted in its rotation to engage said signal-actuating device to produce a distinctive signal.

3. In a toll-box, the combination with a temporary coin-receiver, of a rocking shaft carrying said coin-receiver, a caliper-lever constructed and arranged to be operated by a coin in said receiver during the advance movement thereof, a number of signal-wheels loosely mounted upon said shaft and arranged to be rotated by the coin-receiver in its return movement, and a signal-actuating trigger arranged to be adjusted by said caliper-lever into operative relation to any one of said signal-wheels, according to the size of the deposited coin, to produce a distinctive signal in the return movement of said receiver.

4. In a toll-box, the combination with a rocking temporary coin-receiver, of a caliper-lever constructed and arranged to be adjusted by a coin in the receiver during the advance movement thereof, toothed signal-wheels arranged to be rotated during the return movement of said coin-receiver, a signal-actuating trigger in position to be moved by said lever into alinement with any one of said wheels dependent upon the size of the deposited coin, said trigger being engaged by the disk in its rotation to give a distinctive signal, said caliper-lever when adjusted by a coin of improper size being arranged to move said signal-controlling mechanism into a position out of alinement with any of said wheels.

5. In a toll-box, the combination with a rocking temporary receiver, of a caliper-lever constructed and arranged to be adjusted by a coin in the receiver during the advance movement thereof, a signal device, actuating mechanism therefor adjusted by said lever to a position dependent upon the size of the deposited coin, a locking device for holding said actuating mechanism in its adjusted position, a number of signal-wheels rotated during the return movement of said coin-receiver, each of said signal-wheels being arranged to operate the actuating mechanism of said signal device to give a distinctive signal according to the position of adjustment of said mechanism, and means actuated in the return of said coin-receiver for counteracting said locking device.

6. In a toll-box, the combination with a rocking temporary receiver, of a caliper-lever constructed and arranged to be adjusted by a coin in the receiver during the advance movement thereof, a signal device, a striker therefor, a trigger controlling said striker, a support for said striker and trigger arranged to be adjusted by said caliper-lever to a position dependent upon the size of the deposited coin, a number of toothed wheels arranged to be rotated in the return movement of the coin-receiver, the teeth of each wheel being spaced differently from its neighbors, the teeth of said plate during the rotation thereof being arranged to engage said trigger according to the position of adjustment and operate the signal device to produce a distinctive signal.

7. In a toll-box, the combination with a rocking shaft, of a temporary coin-receiver carried thereby, a caliper-lever constructed and arranged to be set by a coin in said receiver during its movement in one direction, a collar loosely mounted upon the shaft, signal-wheels secured thereto, teeth for said collar, a pawl carried by said coin-receiver adapted to engage the teeth of said collar during its return movement to rotate the same, signal mechanism arranged to be moved by said caliper-lever into operative relation to any one of said wheels, according to the size of the deposited coin, such wheel during its rotation operating said mechanism to produce a distinctive signal, and escapement mechanism arranged to retard the return movement of said coin-receiver and the rotation of said wheels.

8. In a toll-box, the combination with a rocking shaft, of a temporary coin-receiver carried thereby, a caliper-lever constructed and arranged to be adjusted by a coin in the receiver during the advance movement thereof, a number of toothed disks loosely mounted upon said rocking shaft and arranged to be rotated in the return movement of said coin-receiver, the teeth of each disk being spaced differently from the teeth of its neighbor, a gong, a striker therefor, a trigger controlling said striker, a support for said trigger and striker adapted to be adjusted by said caliper-lever to bring said trigger into alinement with any one of said disks, according to the size of the deposited coin, the teeth of said disk in its rotation engaging said trigger to produce a distinctive signal, a locking device arranged to maintain said support in its adjusted position, and means actuated in the return of said coin-receiver for counteracting said locking device to release the said support.

9. In a toll-box, the combination with a temporary coin-receiver, of a rocking shaft carrying said coin-receiver, a handle for moving said shaft forward, a caliper-lever constructed and arranged to be set in the forward movement of said coin-receiver, a number of toothed disks loosely mounted upon said shafts and arranged to be rotated by said coin-receiver in the return movement thereof, the teeth of each disk being spaced differently from its neighbors, an audible-signal device, a striker therefor having a support arranged to be adjusted by said caliper-lever to bring the end of the striker into alinement with the teeth of any wheel according to the size of the deposited coin, whereby the striker will be operated a predetermined number of times to produce a distinctive signal, a latch-bar carried by said support, a detent arranged to engage the teeth of said latch-bar to hold the support in its adjusted position, an arm carried by said shaft, and a spring connected with said arm and adapted to effect the return of said coin-receiver to its original position, said arm being arranged in the end of its movement to engage said detent to release the said support.

10. In a toll-box, the combination with a rocking shaft, of a temporary coin-receiver carried thereby having an opening in the side through which a coin may project, a lever, a caliper-plate arranged to be engaged by a coin in the receiver during the forward movement thereof to adjust said lever, signal-wheels arranged to be rotated by said coin-receiver in its return movement, signal mechanism arranged to be brought into alinement with each of said wheels according to the size of the deposited coin, to be operated thereby and give a distinctive signal, and a cash-box adapted to receive the coin at the end of the forward movement of the receiver, and means for moving said caliper-plate back of each coin during the forward movement of the receiver to prevent the coin from being carried back in the return movement of said receiver.

11. In a toll-box, the combination with a rocking shaft, of a temporary coin-receiver carried thereby having an opening in the side through which the coin placed therein projects, a lever, a caliper-plate carried thereby arranged to be engaged by a coin in the receiver during the advance movement thereof to adjust said lever, a cash-box arranged to receive a coin from said receiver at the end of its forward movement, signal-wheels adapted to be rotated by said coin-receiver in its return movement, signal mechanism arranged to be moved by said lever into alinement with any one of said wheels, according to the size of the deposited coin, to be operated thereby in the rotation of such wheel, a locking device arranged to hold said signal mechanism in its adjusted position, said caliper-plate falling behind the coin after the locking of said signal mechanism to prevent the fraudulent return of the coin, said lever having a definite lost motion with respect to said signal mechanism, whereby the lever and caliper-plate may move to bring the end of the plate behind the coin without disturbing the adjustment of said signal-controlling mechanism.

12. In a toll-box, the combination with a rotating temporary coin-receiver, signal mechanism actuated in the return movement thereof, a handle for moving said coin-receiver, and stops limiting the movement of said handle, said handle having a definite lost motion with respect to the receiver upon the return movement thereof, whereby undue interference with the signal mechanism by a forced return of the handle is prevented, as described.

13. In a toll-box, the combination with a rotating temporary coin-receiver, of a transverse slot therein arranged to receive the coin, and ribs formed in said receiver in the sides of said slot upon which the coin is adapted to rest, whereby sticking of the flat sides of the coin to the walls of the receiver is prevented.

14. In a toll-box, the combination with a movable coin-receiver, of a signal device, a caliper-lever constructed and arranged to be adjusted by a coin in the receiver during the movement of said receiver, the extent of its adjustment being dependent upon the size of such coin, and means controlled by said lever when adjusted for causing said signal device to give a signal distinctive to the size of the deposited coin.

15. In a toll-box, the combination with a coin-receiver, of a signal device, a series of controlling means each adapted to cause said signal device to give a distinctive signal, and caliper mechanism associated with the coin-receiver, adapted to be adjusted by a coin in the receiver, and arranged to bring different ones of said controlling means and the signal device into operative relation to each other, the controlling means selected being dependent upon the adjustment of the caliper mechanism; whereby a distinctive succession of signals is produced according to the size of the deposited coin.

16. In a toll-box, the combination with a movable coin-carrier adapted to receive coins of various sizes, of a cash-box adapted to receive a coin of any of such sizes from said carrier at the end of its forward movement, means for preventing the return of the carrier until the coin therein has been discharged, and distinctive signal mechanism controlled by coins in said carrier.

17. In a toll-box, the combination with a movable coin-carrier, of a cash-box into which a coin is discharged from said carrier at the end of its forward movement, a caliper-lever constructed and arranged to be adjusted by a coin in said carrier, means controlled by said lever for preventing the return movement of the carrier until said coin is discharged, and signal mechanism controlled by the adjustment of said lever.

18. In a toll-box, the combination with a movable coin-receiver, of a signal device, a series of signal-controlling mechanisms each arranged to coöperate with said signal device to produce a distinctive succession of signals, a caliper-lever constructed and arranged to be adjusted by a coin in the receiver, and means controlled by the coin in its adjustment adapted to bring different ones of said signal-controlling mechanisms and the signal device into operative relation to each other, the signal-controlling mechanism selected being dependent upon the adjustment of said caliper-lever.

19. In a toll-box, the combination with a coin-receiver, of a signal device, a series of signal-controllers each arranged to coöperate with said signal device to produce a distinctive signal, and a lever constructed and arranged to be adjusted by a coin in the receiver to bring different ones of said controllers and the signal device into operative relation to each other, the controller selected being dependent upon the adjustment of said lever.

20. In a toll-box, the combination with a movable coin-receiver, of a signal device, a series of distinctive signal-controllers, and a lever constructed and arranged to be adjusted by a coin in the receiver during the movement thereof to bring different ones of said controllers and the signal device into operative relation to each other; whereby said signal device may produce a variety of signals dependent upon the coin deposited.

846,501. DUMP-CAR. THOMAS B. MCKNIGHT, Aurora, Ill., assignor to Western Wheeled Scraper Company, Aurora, Ill., a Corporation of Illinois. Filed Jan. 26, 1905. Serial No. 242,763.

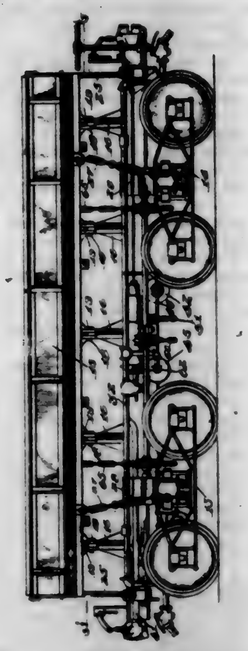

Claim.—1. In a dump-car, the combination of a tilting car-body, a plurality of compressed-air cylinders, lever mechanism connected to the car-body near one of the side edges thereof and operated by one of said cylinders for tilting the car-body in one direction, lever mechanism connected with the car-body near the opposite side edge and operated by the other cylinder for returning the car-body to its normal position, and means for controlling the admission of compressed air to said cylinders.

2. In a dump-car, the combination of a tilting car-body, a compressed-air cylinder, a piston operated by the admission of compressed air thereto, a lever actuated by said piston, and means connected with the car-body near one of the side edges thereof and actuated by said lever to effect the tilting of the car-body when said lever is actuated by the admission of compressed air to said cylinder.

3. In a dump-car, the combination of a tilting car-body, a compressed-air cylinder, a piston operated by the admission of compressed air thereto, a lever actuated by said piston, a rock-shaft, means for rocking said shaft by the actuation of said lever, and means connecting said rock-shaft with the car-body so that the rocking of said shaft effects the tilting of the car-body.

4. In a dump-car, the combination of a tilting car-body, a rock-shaft, means connecting said rock-shaft with the car-body at one side of the center thereof so that the rocking of said shaft effects the tilting of said car-body, and compressed-air mechanism for rocking said shaft.

5. In a dump-car, the combination of a tilting car-body, a plurality of rock-shafts, means connecting one of said rock-shafts with said car-body for tilting it in one direction, means connecting the other rock-shaft with the car-body for tilting it in the opposite direction, and compressed-air mechanism for rocking said shafts.

6. In a dump-car, the combination of a tilting car-body, a plurality of rock-shafts, means connecting one of said rock-shafts with said car-body for tilting it in one direction, means connecting the other rock-shaft with the car-body for tilting it in the opposite direction, a compressed-air cylinder connected with one of said rock-shafts for operating the same, a compressed-air cylinder connected with the other rock-shaft for operating the same, and means for admitting compressed air to either of said cylinders at pleasure.

7. In a dump-car, the combination of a tilting car-body, a rock-shaft, one or more cam-levers mounted on said rock-shaft and connected with said car-body at one side of the center thereof for tilting the same, and means for rocking said shaft.

8. In a dump-car, the combination of a tilting car-body, a rock-shaft, one or more cam-levers mounted on said rock-shaft and connected with said car-body for tilting the same, a compressed-air cylinder, a cam-lever carried by said rock-shaft and connected with said compressed-air cylinder for rocking said shaft, and means for controlling the admission of compressed air to said cylinder.

9. In a dump-car, the combination of a tilting car-body, a plurality of compressed-air cylinders, a plurality of rock-shafts connected, respectively, with opposite side edges of the car-body for tilting the same in either direction, pistons operating in said cylinders, and cam-levers carried by said rock-shafts and connected, respectively, with said pistons.

10. In a dump-car, the combination of a tilting car-body, compressed-air motor mechanism for tilting the car-body, and intermediate mechanism connecting said motor mechanism with the car-body and arranged to give said motor mechanism greater leverage during the early part of the dumping operation.

11. In a dump-car, the combination of a tilting car-body, a rock-shaft, cam-levers carried by said rock-shaft, one of said cam-levers being connected with the car-body and arranged to tilt the same when said rock-shaft is rocked in the proper direction, and compressed-air actuating mechanism connected with the other cam-lever, said cam-levers being arranged relatively to each other so as to give the compressed-air-operating mechanism greater leverage during the early part of the dumping operation.

12. In a dump-car, the combination of a tilting car-body, a plurality of train-pipes, means controlling the admission of air to said train-pipes, compressed-air cylinders connected with said train-pipes, lever mechanism operated by the admission of compressed air to one of said cylinders for swinging the car-body in one direction, and lever mechanism operated by the admission of compressed air to the other cylinder for swinging the car-body in the opposite direction.

13. In a dump-car, the combination of a car-body adapted to tilt laterally in either direction, a plurality of air-pipes, means for admitting air under pressure to either of said pipes, lever mechanism actuated by compressed air from one of said air-pipes for tilting the car-body in one direction, and lever mechanism actuated by compressed air from the other of said air-pipes for tilting the car-body in the opposite direction.

14. In a dump-car, the combination of a tilting car-body, a truck, compressed-air cylinders, means operated by the admission of compressed air to one of said cylinders for tilting the car-body in one direction, means operated by the admission of compressed air to the other of said cylinders for tilting the car-body in the opposite direction, and detachable stays connected with the opposite side edges of the car-body and with the truck.

15. A dump-car having a truck, a pivotally-mounted car-body, one or more pivots centrally disposed under the car-body for pivotally supporting the same on said truck, a stationary fluid-pressure cylinder secured to said truck, a lever actuated by said cylinder, and intermediate means connected with said lever and with the car-body and actuated by said lever to tilt the car-body to dump the car.

16. A dump-car, having a pivotally-mounted car-body, a fluid-pressure cylinder, lever mechanism actuated from said cylinder means actuated by said lever mechanism and connected with the car-body at one side of the center thereof for swinging said car-body, and means for supplying fluid-pressure to said cylinder.

17. A dump-car having a tilting car-body, a rock-shaft connected with said car-body whereby by rocking said shaft the car-body may be tilted, and fluid-pressure-actuated mechanism for rocking said shaft.

18. A dump-car having a tilting car-body, a rock-shaft mounted independently of said car body, means connecting said rock-shaft with said car-body whereby by rocking said shaft said car-body may be tilted, and fluid-pressure-actuated mechanism for rocking said shaft.

19. A dump-car having a truck, a pivotally-mounted car-body, one or more pivots centrally disposed under the car-body for pivotally supporting the same upon said truck, a stationary fluid-pressure cylinder secured to said truck, lever mechanism actuated by said cylinder, and intermediate means connected with said lever mechanism and with the car-body at one side of the axis thereof and actuated by said lever to tilt the car-body to dump the same.

20. A dump-car having a truck, a tilting car-body mounted on said truck, a fluid-pressure cylinder horizontally disposed and secured to said truck, a lever fulcrumed on said truck and actuated by said cylinder, and means actuated by said lever for tilting the car-body.

21. A dump-car, comprising a truck, a car-body pivotally supported thereon, a fluid-pressure cylinder, a lever actuated by said cylinder, and flexible means connected with said lever and with the car-body for tilting the car-body.

846,502. FIRE-ALARM SYSTEM. JAMES G. NOLEN, Chicago, Ill., assignor of one-half to Frank B. Cook, Chicago, Ill. Filed Sept. 24, 1903. Serial No. 174,462.

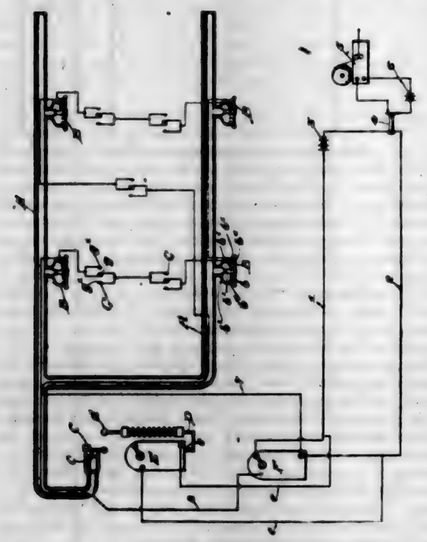

Claim.—1. A fire-alarm system comprising suitable piping, fluid-actuated signal-initiating devices connected with said piping, a signal-transmitting device adapted to be set in operation by the generation of pressure in the piping, a second signal-transmitting device, thermostats connected with said second signal-transmitting device, a battery and suitable circuit connections for normally maintaining a flow of current through said thermostats, and a signal-receiving apparatus suitably connected with both of said signal-transmitting devices, the circuit connections being such that a break in the piping will cause a break in the circuit of said thermostats.

2. A fire-alarm system comprising suitable piping, a number of box-like signal-initiating devices connected with said piping, each of said signal-initiating devices having a flexible diaphragm and a normally closed valve, the chamber of each box-like signal-initiating device containing a suitable quantity of volatile or explosive liquid, a normally closed float-operated switch in the chamber of each of said box-like signal-initiating devices, a signal-transmitting device adapted to be operated by the generation of pressure in said piping, another signal-transmitting device, thermostats connected in series with said float-operated switches, said rheostats and switches being connected with said last-mentioned signal-transmitting device, suitable circuit connections, means for normally maintaining a flow of current through said switches and thermostats, and suitable signal-receiving apparatus connected with both of said signal-transmitting devices.

3. A fire-alarm system, comprising suitable piping, a number of box-like signal-initiating devices connected with said piping, each signal-initiating device being provided with a normally closed valve and a diaphragm for operating said valve, each of said signal-initiating devices containing also a suitable quantity of volatile or explosive liquid adapted when subjected to heat to cause said diaphragm to open said valve, a normally closed float-operated switch in the chamber of each of said signal-initiating devices, a signal-transmitting device adapted to be set in operation by the operation of any one of said signal-initiating devices and the consequent generation of pressure in the piping, a second signal-transmitting device provided with an electromagnet for releasing its normally wound-up mechanism, a low-resistance shunt extending around said magnet, a plurality of thermostats, said shunt including said normally closed switches and thermostats, a battery and suitable circuit connections for normally maintaining a flow of current through said switches and thermostats, and a suitable signal-receiving apparatus connected with both of said signal-transmitting devices.

4. A fire-alarm system comprising suitable piping, signal-initiating devices adapted to generate pressure in said piping upon the application of heat thereto, a signal-transmitting device adapted to be set in operation by the generation of pressure in said piping, another signal-transmitting device involving an electromagnet for releasing its normally wound-up clockwork, and involving also means for producing an electrical make-and-break action, a suitable number of thermostats, each thermostat being adapted when subjected to heat to open a circuit and then immediately close the same, a shunt of low resistance extending around said magnet and including said thermostats, a battery and suitable circuit connections for normally maintaining a flow of current through said thermostats, and suitable signal-receiving apparatus connected with both of said signal-transmitting devices.

5. A fire-alarm system comprising a system of piping provided with means for generating pressure therein on the application of heat to such means, an electrical fire-alarm system having thermostats capable of breaking the normal path of the current and of maintaining the electrical continuity of the circuit after such break, signal-receiving apparatus, suitable signal-transmitting devices, and suitable means and circuit connections for normally maintaining a flow of current through said thermostats, the circuits of said thermostats being to an extent identified with said piping, whereby a break in the piping is practically certain of producing a break in the circuit, and whereby the signal-receiving apparatus and signal-transmitting devices may be employed for not only producing fire-alarms but also for supervising both the electrical apparatus and the said piping.

6. In a fire-alarm system, in combination, a piping system provided with means for generating pressure therein when unduly heated, thermostatic switches operable to any undue amount of heat, electric signal-transmitting means associated with the thermostats and piping system for actuation by the generation of pressure in the piping or operation of the thermostatic switches, signal-responsive apparatus, and suitable circuit connections including a source of current-supply.

846,503. POST-MAUL. CHARLES PALMER, Harvard, Ill. Filed Jan. 15, 1906. Serial No. 296,159.

Claim.—1. The combination with a handle, of a bolt connected to the end thereof, and free to vibrate or oscillate laterally to a limited extent and a head mounted upon the bolt.

2. The combination with a handle, of a head, a bolt connecting the head and handle, and having limited lateral vibration with respect to the handle and a spring between the bolt and the head.

3. The combination with a handle having a cap on the end thereof, of a bolt the head of which is held loosely under the cap and the body of which projects therefrom, a striking-head mounted on the projecting part of the bolt, and a spring between the bolt and the striking-head.

4. The combination with a handle having a projecting bolt loosely connected to the end thereof, of a head through which the bolt extends, having a recess surrounding the bolt, and a spring coiled around the bolt in the recess, in compression between the head and a nut on the bolt.

846,504. ENVELOP. CASIMIR PANEK, McKeesport, Pa. Filed June 22, 1906. Serial No. 322,839.

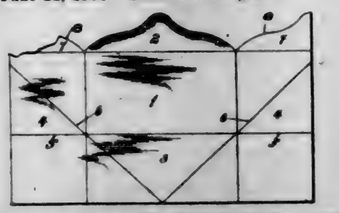

Claim.—An envelop made from a blank comprising a front section provided with the usual sealing-flap, a section extending from the lower edge of the front, side flaps extending from the ends of the front and the section below the front, and supplemental sealing-flaps extending from the upper edges of the side flaps, said blank being first folded along lines, extending obliquely from the center of the lower edge of the blank to points below the folding-line of the sealing-flap, to provide, a back section for the envelop, and reinforcing triangular side and center flaps, gummed along their edges, then folded to seal the said triangular reinforcing-flaps upon the back, and to bring the supplemental sealing-flaps into register with the main sealing-flap.

846,505. GEAR-CUTTING MACHINE. JOHN PARKER, Providence, R. I., assignor to Brown and Sharpe Manufacturing Company, Providence, R. I., a Corporation of Rhode Island. Filed Nov. 7, 1904. Serial No. 231,748.

Claim.—1. A machine for cutting bevel or spur gears having in combination a cutter-carriage, a reciprocating mechanism therefor, a cutter-spindle mounted on the carriage, mechanism for rotating the spindle during the reciprocation of the carriage, a work-spindle, a swivel-head carrying said spindle, a vertically-adjustable slide on which said head is mounted, and indexing mechanism for the work-spindle, substantially as described.

2. A machine for cutting bevel or spur gears having in combination a cutter-carriage, a reciprocating mechanism therefor, a cutter-spindle mounted on the carriage, mechanism for rotating the spindle during reciprocation of the carriage, a work-spindle, a swivel-head carrying said spindle adjustable about an axis parallel to the cutter-spindle, a slide on which said head is mounted adjustable at right angles to the movement of the cutter-carriage, and indexing mechanism for the cutter-spindle, substantially as described.

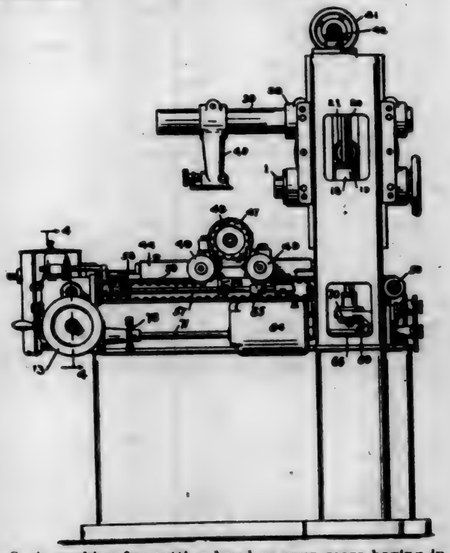

3. A machine for cutting bevel or spur gears having in combination a cutter-carriage, reciprocating mechanism therefor, a cutter-spindle mounted on the carriage, a work-spindle, a head in which said spindle is mounted adjustable to vary the inclination of the work-spindle, and indexing mechanism for the work-spindle, substantially as described.

4. A machine for cutting bevel or spur gears having in combination a cutter-carriage mounted to travel in a fixed path, reciprocating mechanism for the carriage, a cutter-spindle mounted on the carriage, a work-spindle, a swivel-head carrying said spindle adjustable about an axis parallel to the axis of the cutter-spindle, and indexing mechanism for the work-spindle, substantially as described.

5. A machine for cutting bevel or spur gears having in combination a reciprocating cutter-carriage, a rotary cutter-spindle mounted thereon, a work-spindle provided with means for supporting the work at either end, a swivel-head carrying said spindle, and an adjustable slide on which the head is mounted, whereby either end of the spindle may be brought into proper relation to act upon the work carried thereby, substantially as described.

6. A machine for cutting bevel or spur gears having in combination, a reciprocating cutter-carriage, a work-spindle, a swivel-head carrying said spindle and means for supporting the work at either end of the spindle, whereby either end of the spindle may be brought into proper relation for the cutter to act upon the work carried thereby, substantially as described.

7. The combination with a reciprocating cutter-carriage, of a head adjustable longitudinally thereon, a cutter-spindle mounted in said head and mechanism for rotating said spindle, substantially as described.

8. A gear-cutting machine having in combination, a main driving-shaft, two cone-gears parallel to said shaft, adjustable intermediate gears for connecting the cone-gears with the main driving-shaft, a cutter-carriage, connections between one of said cone-gears and the cutter-carriage for feeding the same forward, and connections between the other cone-gear and the cutter-spindle for driving the spindle, substantially as described.

9. A gear-cutting machine having in combination, a driving-shaft 72 provided with two elongated gears, two cone-gears corresponding to said elongated gears, an adjustable intermediate gear for connecting each elongated gear with its cone-gear, a cutter-carriage, connections between one of said cone-gears and the carriage for feeding the same forward, a cutter-spindle on the carriage, and connections between the other cone-gear and the spindle for driving said spindle, substantially as described.

10. A machine for cutting bevel or spur gears, having in combination a work-supporting spindle, a head in which said spindle is mounted, a plate provided with a cylindrical bearing in which it may be adjusted, an index worm-wheel connected with the spindle, an index-worm mounted concentric with the bearing of said plate, and means for adjustably securing said head on said plate, substantially as described.

11. A machine for cutting bevel or spur gears, having in combination a work-supporting spindle, a head in which said spindle is mounted, a swivel-plate on which said head is adjustably secured, a vertically-adjustable slide carrying said plate, an index worm-wheel connected with the spindle, an index-worm mounted concentric with the swivel-plate, and gearing connecting the work with the indexing mechanism, substantially as described.

12. A machine for cutting bevel or spur gears, having in combination a work-supporting spindle, a head in which said spindle is mounted, a swivel-plate on which said head is adjustably secured, an index worm-wheel connected with the spindle, an index-worm mounted concentric with said swivel-head, a vertically-adjustable slide on which said plate is mounted, a vertical shaft connected with the indexing mechanism, and gearing carried by said slide connecting said shaft with said worm, substantially as described.

13. A gear-cutting machine having in combination, a work-supporting spindle, an index worm-wheel connected therewith, an index-worm engaging said worm-wheel, a worm-shaft on which said worm is mounted, means for connecting and disconnecting the worm and worm-shaft, and means for turning the worm manually independently of the worm-shaft, substantially as described.

14. A gear-cutting machine having in combination, a work-supporting spindle, an index worm-wheel connected therewith, an index-worm engaging said wheel, an index-shaft, a clutch for connecting said worm and shaft, and means for manually turning the worm when disconnected from the shaft, substantially as described.

15. A gear-cutting machine having in combination, a work-supporting spindle, an index worm-wheel connected therewith, a worm-shaft provided with a taper, an index-worm mounted on said shaft and provided with a corresponding taper, means for forcing said tapers together, and means for turning the worm independently of the shaft when the frictional engagement of the tapers is relieved, substantially as described.

16. A gear-cutting machine having in combination, a work-supporting spindle, an index-worm connected therewith, a worm-shaft provided with a taper, a worm-sleeve mounted on said shaft and provided with a corresponding taper, a head on said worm-sleeve by which it may be turned, and means for forcing said sleeve forward to engage the tapers or relieving the pressure on the sleeve, substantially as described.

17. A gear-cutting machine having in combination, a work-supporting spindle, an index worm-wheel connected therewith, an index-worm engaging said wheel, and means for connecting and disconnecting the worm-wheel with the spindle at will whereby the work-spindle may be turned independently of the indexing mechanism without disconnecting the indexing-worm and worm-wheel, substantially as described.

18. A gear-cutting machine having in combination, a work-supporting spindle, an index worm-wheel mounted thereon, a friction-clutch between the worm-wheel and spindle for connecting and disconnecting the same, and an index-worm engaging the worm-wheel, substantially as described.

19. A gear-cutting machine having in combination, a work-supporting spindle provided with a taper, a sleeve mounted thereon provided with a corresponding taper, an index worm-wheel on said sleeve, an index-worm engaging said worm-wheel, and means for forcing said sleeve forward to engage said tapers or relieving the pressure on said sleeve, substantially as described.

20. A gear-cutting machine having in combination, a work-supporting spindle provided with a taper, a taper bearing in which said spindle is mounted, a sleeve mounted on said spindle provided with a taper for engaging the taper on the spindle, and an index worm-wheel adjustably mounted on said sleeve, substantially as described.

846,506. CONTINUOUS HEATING-FURNACE. HARRY PARROCK, Youngstown, and WILLIS MCKEE, Elyria, Ohio; said Parrock assignor to said McKee. Filed July 25, 1904. Serial No. 217,941.

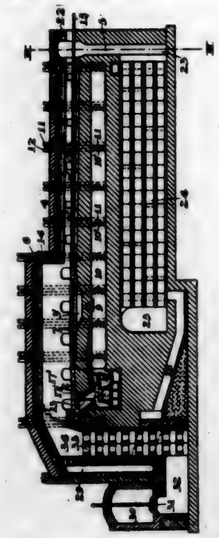

Claim.—1. A continuous heating-furnace having a hearth at one end and an intake at the other end, spaced piers extending longitudinally between the intake and hearth, the floor of the furnace between the piers being provided with scale-pockets having discharge-openings leading downwardly through the bottoms of the pockets, the roof of the furnace having openings disposed to give access therethrough to the respective pockets for forcing scale through the discharge-openings substantially as described.

2. A continuous furnace having a combustion-chamber at one end and an intake at the other end, the roof portion adjacent the combustion-chamber being elevated above the front roof portion, a cross-arch closing the space between the two roof portions, the floor of the furnace having a scale-pocket beneath the elevated roof portion and provided with a discharge-opening, the cross-arch having an opening disposed to give access therethrough to the scale-pocket for forcing scale through the discharge-opening substantially as described.

3. A continuous heating-furnace having a hearth at one end and an intake at the other end, the roof portion of the furnace over the hearth being elevated above the front

roof portion, a cross-arch closing the space between the two roof portions, longitudinal piers supported upon the floor of the furnace and leading to the hearth, scale-pockets in the furnace-floor between the piers and beneath the elevated roof portion, said pockets having discharge-openings leading downwardly through their bottoms, the cross-arch having openings disposed to give access therethrough to the respective pockets for forcing scale through the discharge-openings substantially as described.

4. A continuous heating-furnace having a feed-out opening through its floor, a billet-support below the opening, and a reciprocating pusher working across said support; substantially as described.

5. A continuous heating-furnace having a feed-out opening through its floor and inclined to the vertical, said opening leading downwardly toward the intake of the furnace, and a vertically-disposed swinging door mounted within and normally closing said opening substantially as described.

6. A continuous heating-furnace having a feed-out opening leading downwardly through its floor, a stationary billet-support located below the opening in position to receive the billets when they pass through said opening, and means working across the top of the support to move the billet along said support substantially as described.

7. A continuous heating-furnace having a feed-out opening leading downwardly through its floor, a billet-support below the opening in position to receive billets passing therethrough, said support being disposed transversely of the furnace, the side walls of the furnace having openings at opposite ends of the support, and means working through one of the openings to push billets across the support and discharge them through the opposite opening substantially as described.

8. A continuous heating-furnace having a feed-out opening inclined downwardly through its floor and toward the intake of the furnace, a normally vertical swinging door mounted within and closing the feed-out opening, a billet-support located below the opening in position to receive billets discharging therethrough, and means working across the top of the support to move billets thereacross substantially as described.

9. A continuous heating-furnace having an intake extending the full width of the furnace, an upright outlet-flue at the intake end of the furnace intersecting the intake-passage and extending at opposite sides thereof for a vertical distance above the bottom of the passage exceeding the thickness of a billet substantially as described.

10. A continuous heating-furnace having an intake extending the full width of the furnace, an outlet-flue at the intake end of the furnace intersecting the bottom of the intake-passage and extending at opposite sides thereof throughout the height of the intake-passage substantially as described.

846,507. AUTOMATIC LUBRICATOR. ADOLPHE PÉRIEL, Marseille, France. Filed May 9, 1906. Serial No. 315,878.

Claim.—1. In an automatic lubricator, the combination, with the journal-box having a lubricant-receiving pocket and a passage communicating with said pocket and leading toward the journal, of a ball within said pocket loosely seated on the inlet-mouth of said passage, and a hemispherical cap inclosing said ball and provided with a plurality of perforations.

2. In an automatic lubricator, the combination, with the journal-box having a lubricant-receiving pocket formed therein, and a passage leading to the journal, of a tube arranged within said passage, a ball loosely seated on the inlet-mouth of said tube, and a perforated cap inclosing said ball and attached to said tube, said cap being arranged within said lubricant-receiving pocket.

846,508. EXPLOSION-ENGINE. SIDNEY A. REEVE, Worcester, Mass., assignor to Charles F. Brown, trustee, Reading, Mass. Filed July 16, 1902. Serial No. 115,812.

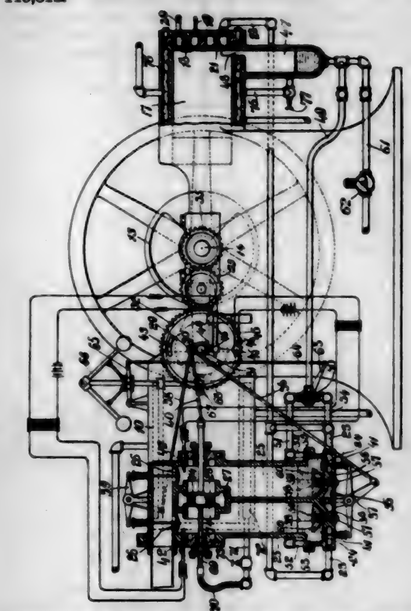

Claim.—1. In an explosion-engine, the combination of a working cylinder and piston, a plurality of explosion-chambers alternately connectible with the same end of said cylinder, and compressing means distinct from said chambers and operated by the working piston for alternately charging said chambers with combustion fluid.

2. In an explosion-engine, the combination of a working cylinder and piston, a plurality of explosion-chambers alternately connectible with the same end of said cylinder, a compressor-cylinder having a piston operated by the working piston and having discharge connections with the respective explosion-chambers, and automatically-operated valve mechanism controlling the admission from said connections to the explosion-chambers.

3. In an explosion-engine, the combination of a working cylinder and piston, two explosion-chambers supplying the same end of the cylinder, a single moving valve structure adapted to alternately connect said chambers with the cylinder, and mechanism for moving said valve structure at half the number of cycles of the working piston.

4. In an explosion-engine, the combination of a working cylinder and piston, two explosion-chambers having a common outlet to the cylinder, a sliding piston-valve controlling said outlet, and mechanism for moving said valve at half the number of strokes of the working piston.

5. In an explosion-engine, the combination of a working cylinder and piston, a plurality of explosion-chambers, connected to supply the same end of said cylinder, means to alternately connect said chambers with the cylinder, a compressor-cylinder having a piston operated by the engine, and means to connect said compressor-cylinder alternately with said explosion-chambers.

6. In an explosion-engine, the combination of a working cylinder and piston, a compressor for charging said cylinder, distinct from said cylinder and having a clearance-chamber, means to supply a clearance-varying liquid to said chamber, and connections for controlling the liquid-level in said chamber by the compression in said cylinder.

7. In an explosion-engine, the combination of a working cylinder having a clearance-chamber, means for supplying a clearance-varying liquid to said chamber, and a compressor adapted to charge said cylinder and connected to control the liquid-level in said chamber.

8. In an explosion-engine, the combination of a working cylinder, a compressor-cylinder for charging the same, connected clearance-chambers for said cylinder, and means to supply clearance-varying liquid to said chambers.

9. In an explosion-engine, the combination of a working cylinder and piston, an explosion-chamber for said cylinder, a compressor-cylinder for charging said explosion-chamber having a piston driven by the engine and a clearance space of chamber, means to transfer liquid between said clearance-space and explosion-chamber, and means to supply said liquid thereto.

10. In an explosion-engine the combination of a working cylinder and piston, two explosion-chambers for said cylinder, a compressor-cylinder arranged to alternately charge said chambers and having a piston driven by the engine and a clearance space or chamber, means to transfer liquid between said clearance-space and explosion-chambers, and means to supply said liquid thereto.

11. In an explosion-engine the combination of a working cylinder and piston, an explosion-chamber for said cylinder, a compressor-cylinder for charging said explosion-chamber having a piston driven by the engine and a clearance space or chamber, means to transfer liquid between said clearance-space and explosion-chamber, means to supply said liquid thereto and means controlled in accordance with the speed of the engine for controlling the transfer of liquid.

12. In an explosion-engine the combination of a working cylinder and piston, two explosion-chambers for said cylinder, a compressor-cylinder arranged to alternately charge said chambers and having a piston driven by the engine and a clearance space or chamber, means to transfer liquid between said clearance-space and explosion-chambers, means to supply said liquid thereto and means controlled in accordance with the speed of the engine for controlling the transfer of liquid.

13. In an explosion-engine the combination of a working cylinder and piston, two explosion-chambers, a compressor-cylinder arranged to alternately charge said chambers and having a piston driven by the engine and a clearance space or chamber, means to transfer liquid between said clearance-space and explosion-chambers, means to supply said liquid thereto and means controlled in accordance with the speed of the engine for directing the flow alternately in opposite directions.

14. In an explosion-engine the combination of a working cylinder and piston, two explosion-chambers for said cylinder, a compressor-cylinder for charging said explosion-chambers having a piston driven by the engine and a clearance space or chamber, means to supply a liquid to said explosion-chambers and clearance-space, a liquid-transferring connection between said explosion-chambers and space including induction and eduction conduits connected to the explosion-chambers and having respectively check-valves opening toward and away from said explosion-chambers, and means to establish the flow alternately through said induction and eduction conduits.

15. In an explosion-engine the combination of a working cylinder and piston, two explosion-chambers for said cylinder, a compressor-cylinder for charging said explosion-chambers having a piston driven by the engine and a clearance space or chamber, means to supply a liquid to said explosion-chambers and clearance-space, a liquid-transferring connection between said explosion-chambers and space including induction and eduction conduits connected to the explosion-chambers and having respectively check-valves opening toward and away from said explosion-chambers, and means controlled in accordance with the speed of the engine for establishing the flow alternately through said induction and eduction conduits.

16. In an explosion-engine, the combination of a working cylinder and piston, an explosion-chamber for said cylinder, means to supply a liquid to said chamber, an inlet to the lower part of said chamber for supplying combustion fluid thereto, and an admission-valve controlling said inlet.

17. In an explosion-engine, the combination of a working cylinder and piston, an explosion-chamber for said cylinder, a compressor-cylinder for charging said explosion-chamber having a piston driven by the engine and a clearance space or chamber, means to transfer liquid between said clearance-space and explosion-chamber, means to supply said liquid thereto, and means to release liquid from said clearance-space upon the attainment of a predetermined pressure of compression.

18. In an explosion-engine, the combination of a working cylinder and piston, a plurality of explosion-chambers, means to alternately connect said chambers with the cylinder, means to admit liquid to said chambers, means to admit an explosive alternately to the chambers, and means to control the quantity of liquid and the admission of explosive according to the speed of the engine.

19. In an explosion-engine, the combination of a working cylinder and piston, an explosion-chamber for said cylinder, a compressor-cylinder for charging said explosion-chamber having a piston driven by the engine and a clearance space or chamber, means to transfer liquid between said clearance-space and explosion-chamber, means to supply said liquid thereto, and means to control the transfer of liquid, and the admission of the charge to the explosion-chamber, according to the speed of the engine.

20. In an explosion-engine, the combination of a working cylinder having a clearance-chamber, means to supply a clearance-varying liquid, and means controlled in accordance with the speed of the engine for directing the flow of said liquid alternately toward and away from said clearance-chamber.

21. In an explosion-engine, the combination of a working cylinder, an explosion-chamber therefor, a valve controlling communication between said cylinder and chamber and chambered for a cooling liquid, means for supplying said liquid to the valve, and an outlet from the liquid-chamber of the valve to said explosion-chamber.

22. In an explosion-engine, the combination of a working cylinder, two explosion-chambers therefor, a moving hollow valve structure adapted to alternately connect said chambers with the cylinder and having outlets to the chambers, and outwardly-opening check-valves for said outlets.

23. In an explosion-engine, the combination of a working cylinder, a reciprocating piston therein, an explosion-chamber therefor, and a valve timed with the piston and controlling the connection between said cylinder and explosion-chamber, said valve being arranged to open by the force of the explosion.

24. In an explosion-engine, the combination of a working cylinder, an explosion-chamber therefor, a valve controlling the connection between said cylinder and explosion-chamber and adapted to be opened by the force of the explosion in the latter, means for operating said valve, and an elastic connection between said valve and operating means.

25. In an explosion-engine, the combination of a working cylinder, two explosion-chambers therefor, a valve adapted to alternately connect said chambers with the cylinder, means for reciprocating said valve, and elastic means connecting said valve and said reciprocating means and arranged to permit said valve to yield in either direction.

26. In an explosion-engine, the combination of a working cylinder and piston, a charging-cylinder having a piston operated by the working piston, and clearance-varying means for one of said cylinders operated by the pressure in the other cylinder.

846,509. GAME APPARATUS. EUGENE H. RICHTER, Chicago, Ill. Filed May 8, 1905. Serial No. 259,295.

Claim.—1. A game apparatus, comprising a board having a terminal-station and a starting-station, said board also having upon its face play-spaces all of which are

provided with recurring series of sequence-indicating characters, and a play-indicating device provided with the same series of characters.

2. A game apparatus, consisting of a board having a terminal-station, opposed starting-stations and two opposed groups of play-spaces each provided with recurring series of sequence-indicating characters, and a rotatable play-indicator having the same series of characters.

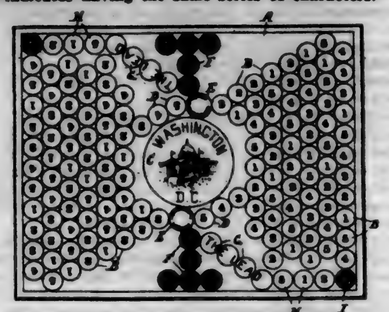

3. In a game apparatus, the combination of a board having a central or terminal space, a plurality of play-spaces upon opposite sides of the central space bearing recurring series of sequence-indicating characters, a plurality of starting-spaces on opposite sides of said terminal space, a plurality of spaces upon opposite sides of the central space representing the position of the players, a plurality of movable figures representative of the players adapted to be moved from space to space upon the board, and a play-indicating device having a series of characters corresponding with the characters on the play-spaces.

4. A game apparatus, comprising a board having a central or terminal station, a plurality of independent lines dividing the board into separate play-spaces, said spaces being provided with recurring series of sequence-indicating characters, opposed stations from which the movable figures representing the players may start, stations in opposite corners of the board through which the movable figures of the players must pass, stations representing the homes of the opposed players, a movable figure for each player adapted to be moved over the surface of the board, and a play-indicating device having a series of characters corresponding with those on the play-spaces.

5. A game apparatus, comprising a board having a relatively large, central circle, a plurality of relatively small play-circles, provided with recurring series of sequence-indicating characters, circles representing starting-stations, a movable figure and a play-indicating device having characters corresponding with the characters on the play-circles.

846,510. SAWING-MACHINE. MAX ROSENOW, Peoria, Ill. Filed July 12, 1905. Serial No. 269,299.

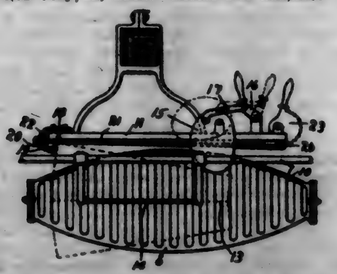

Claim.—1. In a sawing-machine, the combination of a saw, a carriage adapted to carry the work to and from engagement with the saw, a gage for regulating the thickness of the cut, and withdrawable means on said gage adapted to be projected from the face of the gage across the path of the saw for preliminarily adjusting the work on the carriage.

2. In a sawing-machine, the combination of a saw, a carriage adapted to carry the work to be sawed to and from engagement with the saw, a gage for regulating the thickness of the cut, cam-disks adapted to be projected forward from the face of the gage, and means for indicating the line of contact of the forward edge of the work with the gage.

3. A machine for sawing in planes parallel to a predetermined line not parallel to the edge of the work, comprising the combination with a saw and a traveling carriage, of means for preliminarily placing the work on said carriage embracing a gage located at one side of the path of the carriage to engage the forward end of the work on the carriage to regulate the thickness of the cut, and a withdrawable means adapted to be projected beyond the plane of the face of said gage to engage a rearward point of said work.

4. A machine for sawing in planes parallel to a predetermined line not parallel to the edge of the work, comprising the combination with a saw and a traveling carriage, of means for preliminarily placing the work on said carriage embracing a gage located at one side of the path of the carriage to engage the forward end of the work on the carriage to regulate the thickness of the cut, and means on the carriage to engage the top of the work to indicate the relation between the line of cut of the saw and the position of the work on the carriage.

846,511. ORTHO-OXY-MONOAZO DYE. WILLY SCHUMACHER, Höchst-on-the-Main, Germany, assignor to Farbwerke vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany, a Corporation of Germany. Filed Mar. 20, 1906. Serial No. 307,033.

Claim.—As a new product the monoazo dyestuff which is the product of combination of diazotized nitro-chlor-ortho-aminophenol, being a derivative of paranitraniline and of para-chlorophenol, and of 1.8-dioxy-3.6-naphthalene-disulfonic acid, it is a dark powder of bronze luster, soluble in water with a red color, which turns blue on addition of caustic alkali or sodium carbonate, it dissolves in concentrated sulfuric acid with a red-blue color, on reduction by tin and hydrochloric acid the dyestuff forms oxy-chloro-para-phenylene-diamin OH : Cl : NH_2 : NH_2 : —1 : 4 : 2 : 5 and animo 1.8-3.6 naphthalene-disulfonic acid; in an acid-bath it dyes wool red, this shade turns a beautiful fast greenish blue when treated with chromates, chrome-mordanted wool is also directly dyed such a greenish-blue shade.

846,512. VAPOR-LAMP. OSCAR J. SEEHAUSEN, Chicago, Ill. Filed Aug. 21, 1905. Serial No. 275,020.

Claim.—In combination with a burner, having an air and gas mixing chamber provided with air-openings, a hollow shell-like shield extending around said openings for substantially one-half the circumference of said chamber and being affixed to the latter, the ends of said shell being disconnected and spaced apart and extending upwardly to shield the adjacent openings.

846,513. STREET-INDICATING MECHANISM. THOMAS W. SMALL, Cleveland, Ohio, assignor, by mesne assignments, to The Acme Automatic Street Indicating Company, Cleveland, Ohio, a Corporation of Ohio. Filed May 17, 1905. Serial No. 260,771.

Claim.—1. In a machine of the character described, an indicating device, means for advancing the same, a projection provided upon one of the moving parts of said advancing mechanism, a lever having a detent-finger normally in the path of said projection, a cam rotatable with said projection and connected with said lever to normally prevent the removal of said detent, a locking device connected with said lever, and an electromagnet for operating said lever.

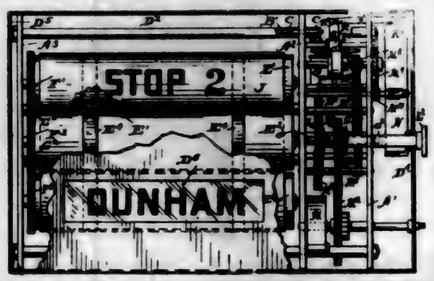

2. In a machine of the character described, an indicating device, means for advancing the same, a projection provided upon one of the rotating parts of said advancing mechanism, an oscillating lever having at one end a detent-finger normally in the path of said projection, an internal cam rotatable with said projection and having a recess, a member carried by the lever and engaging said cam and adapted to hold said finger in the path of said projection, said recess relieving said member when the projection engages the detent, an electromagnet for operating said lever, and a locking device controlled by said lever.

846,514. CIRCUIT-CLOSING MECHANISM FOR RAILWAY-INDICATORS. THOMAS W. SMALL, Cleveland, Ohio, assignor, by mesne assignments, to The Acme Automatic Street Indicating Company, Cleveland, Ohio, a Corporation of Ohio. Filed Aug. 14, 1906. Serial No. 330,563.

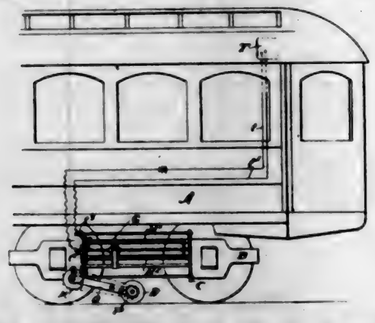

Claim.—1. The combination of a pair of screws, a measuring-wheel geared therewith and adapted to rotate such screws, a traveling member adapted to engage either screw and thereby move in either direction, and contacts, one of which is carried by said traveling member.

2. The combination of a measuring-wheel, a member connected therewith caused to travel along its path and automatically back again for continued rotation of the wheel in one direction, and electric contacts brought into engagement by such travel, whereby no manual operation is required when the return trip begins.

3. The combination of a pair of screws, a member adapted to be driven in one direction by one screw, and in the opposite direction by the other, means for automatically changing the engagement from one screw to the other as the member reaches the end of its travel, contacts controlled by such travel, a measuring-wheel, and driving connections between the same and the screws.

4. The combination of a vehicle adapted to travel along a route and back again with the same end of the vehicle foremost, a measuring-wheel carried by the vehicle and adapted to be rotated by such travel, a member connected with such wheel and caused thereby to move in one direction for the outgoing trip of the vehicle, and move back again in another direction for the return trip, and automatic means for actuating said member at the end of the outgoing trip to cause its direction of movement to be changed, and electric contacts brought into engagement by the movement of such member.

5. The combination of a vehicle, a measuring-wheel carried thereby, a traveling contact member, two sets of electric contacts, mechanism connecting said member with the measuring-wheel and adapted to cause the member to travel along said contacts as the vehicle travels, and mechanism for automatically shifting said member from one set of contacts to the other when the vehicle reaches the end of its outgoing trip.

846,515. ELECTRICALLY-ACTUATED CLOCK. RUBEN W. SMEDBERG, St. Peter, Minn. Filed July 9, 1906. Serial No. 325,303.

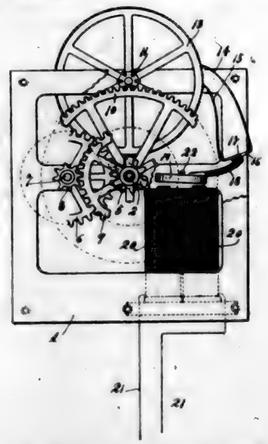

Claim.—1. In an electrically-actuated clock, the combination with the minute and hour hands and gears connecting the same for properly-timed movements, of a ratchet-wheel for driving said gears, a magnet in an actuating-circuit, a vibratory armature subject to said magnet, and a pair of reversely-acting spring-pressed pawls connected to and receiving reversely vibratory movements from said armature, and which pawls are pressed laterally against said ratchet-wheel and serve to retract said armature from said magnet when the actuating-circuit is broken, substantially as described.

2. In an electrically-actuated clock, the combination with the minute and hour hands and gears connecting the same for properly-timed movements, of a ratchet-wheel for driving said gears, a magnet in an actuating-circuit, a pivoted arm having an armature subject to said magnet, a head connected to said arm, and a pair of reversely-acting spring-pawls secured to said head and operating on said ratchet-wheel, and which spring-pawls press laterally against said ratchet-wheel and serve to retract said armature from said magnet when the circuit is broken, substantially as described.

3. In an electrically-actuated clock, the combination with the minute and hour hands and gears connecting the same for properly-timed movements, of a ratchet-wheel for driving said gears provided with one hundred and fifty teeth, a magnet in an actuating-circuit, a pivoted arm having an armature subject to said magnet, a pair of reversely-acting spring-pawls carried by said arm and pressing laterally against the teeth of said ratchet-wheel

with a force tending to retract said armature from said magnet, and which spring-pawls under one movement of said armature impart a first half-step of movement to said ratchet-wheel, and under the other movement of said armature impart a second half-step of movement to said ratchet-wheel, substantially as described.

846,516. MEANS FOR ATTACHING RAILS TO TIES. WILLIAM C. SMITH, Minneapolis, Minn. Filed Dec. 21, 1906. Serial No. 348,887.

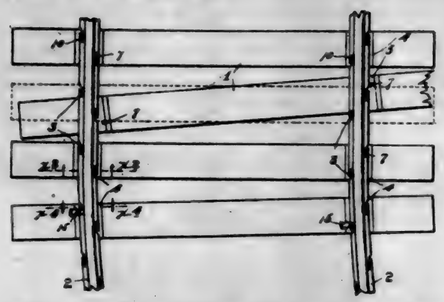

Claim.—1. The combination with a rail having open notches in its base-flanges, of ties having rigid posts and detachable pins, which posts are engageable with certain of the notches of said rails by lateral movements, and which pins are driven through flange-notches on the other side of the rail, and coöperating with said posts to secure said rails to said ties with freedom for vertical adjustments, substantially as described.

2. The combination with rails 2 having angular notches 3 in their base-flanges, of ties 1, shimming-blocks 6 seated in said ties below said rails, posts 7 rigidly secured to said ties, and projecting upward through said shimming-blocks and through certain of the notches of said rails, and pins 10 passed through other notches of said rails, through said shimming-blocks and into seats in the said ties, substantially as described.

3. The combination with rails 2, having angular notches 3 in their base-flanges, of ties 1 underlying said rails, shimming-blocks 6 seated in said ties below said rails, posts 7 rigidly secured to said ties and projecting upward through said shimming-blocks and through certain of the notches of said rails, pins 10 passed through other notches of said rails, through said shimming-blocks and into seats in said ties, and spacing-blocks interposed between the upper portions of said posts 7 and the adjacent faces of the rails, and nails or similar devices driven into said spacing-blocks and engageable with said posts to hold said spacing-blocks against endwise displacement, substantially as described.

4. The combination with rails 2 having angular notches 3 in their base-flanges, of ties 1 underlying said rails, shimming-blocks 6 seated in said ties below said rails, posts 7 rigidly secured to said ties and projecting upward through said shimming-blocks and through certain of the notches of said rails, thrust-brackets 15 rigidly secured to said ties and the corresponding posts 7, spacing-blocks 13ª interposed between said posts 7 and said rails, spacing-caps 18 interposed between the upper portion of said bracket 15 and the treads of the rails, and pins 10 passed through certain of the notches 3 of said rails, through said shimming-blocks and into seats in said ties, substantially as described.

846,517. BEEHIVE. CHARLES SPIESLING, Dalton Station, Ill. Filed June 7, 1906. Serial No. 320,618.

Claim.—In a beehive of the kind described, the combination with a plurality of brooding-frames adapted to be suspended by the top rails thereof, of an inclosing case, the end walls of said case being shouldered down internally for supports for said frames, a single aperture in said case, said aperture commencing externally above the middle line of the height of said case in one of said end walls, said aperture extending inward to the center of the thickness of said wall and vertically therein up to the shoulder near the top, and a lid adapted to cover the top of said case,

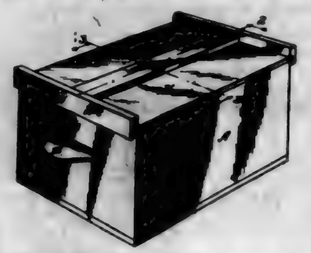

the inside of said lid when said lid is closed on said hive being only a sufficient height above the frames in said hive as to allow the bees to crawl to and from the frames and said aperture in said case.

846,518. HAT-PIN. GEORGE N. STEERE, Cranston, R. I., assignor to George N. Steere and Company, Cranston, R. I., a Firm. Filed Aug. 10, 1906. Serial No. 329,961.

Claim.—1. In a hat-pin the combination with a hollow head and a pin-shaft fixed to the head, of means within the head for retaining pins, and a cover hinged to the top of the head.

2. In a hat-pin the combination with the head and pin-shaft, of a strip fixed within the head provided with perforations to receive pins, and a cap-shaped cover hinged to the head.

846,519. IMITATION ANIMAL-HEAD. WILLIAM STELLWAGEN, New York, N. Y., assignor to Charles W. Stevens, New York, N. Y. Filed May 3, 1906. Serial No. 315,061.

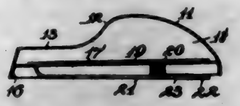

Claim.—1. A form to simulate an animal's head comprising a sheet of fine-mesh fabric bent to imitate the upper portion of the head, a second piece of fabric on the bottom of the form and set within the periphery of the form to provide a recess, and a coat of stiffening material applied to the form.

2. An article of the kind described, comprising a form to simulate an animal's head having a filling of resilient material, and a flat lower sheet, and a clasp comprising a pair of pivoted jaws, one of the jaws being located between the filling and the sheet.

3. A form to simulate an animal's head comprising a shell of fine-mesh fabric, having a narrow nose portion, a sharply-bent portion to form a stiffener for the structure, and this sharply-bent portion merging by a long curve to the back of the head, a soft bottom sheet to form a soft throat portion, and a filling of resilient material within the shell.

846,520. SHUTTER-OPERATOR. ELIS F. STENMAN, Worcester, Mass. Filed Mar. 6, 1906. Serial No. 304,602.

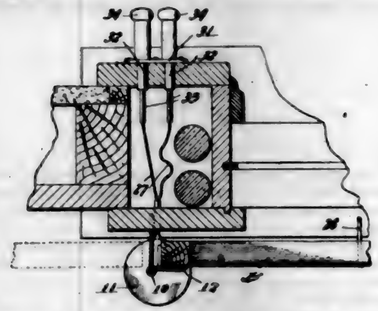

Claim.—1. The combination of a hinged shutter, a latch carried thereby, a wheel movable with the pivoted shutter, flexible means for operating said wheel, and a connection from the flexible means for operating the latch.

2. The combination of a hinged shutter, a latch carried thereby, a wheel movable with the pivoted shutter, flexible means secured to said wheel and having two ends extending from said wheel, and a connection in said wheel for operating the latch.

3. The combination of a hinged shutter, a latch carried thereby, catches for holding the shutter open or closed, a grooved wheel movable with the pivoted shutter, flexible means secured to said wheel and having two ends extending therefrom, and an operating-arm arranged in said grooved wheel in position for engaging said flexible means and for operating the latch.

4. The combination of a pivoted shutter, a latch carried thereby, catches for holding the shutter open or closed, a grooved wheel secured to the shutter, a flexible cord or rope secured to the grooved wheel, an arm arranged in said grooved wheel and engaging the latch, said arm being provided with a shoe which is engaged by the flexible cord or rope; whereby as said shutter is opened or closed, the engagement between said shoe and said rope will change relatively to the point of the rope which is secured to the wheel.

5. The combination of a pivoted shutter, a latch secured thereto, catches for holding the shutter open or closed, a grooved wheel secured to the shutter, a flexible cord or rope secured to the grooved wheel, an operating-arm fitted to slide in the grooved wheel, a spring normally pushing the arm in one direction, said operating-arm having a shoe which said rope engages, the end of the operating-arm engaging the latch, means for conducting the ends of said rope inside of the building, operating-handles on the ends of said rope, and springs for keeping the handles normally in retracted position.

846,521. ELECTRIC FURNACE. LE ROY W. STEVENS, Syracuse, N. Y., assignor to Advance Furnace Company of America, Utica, N. Y. Filed Sept. 16, 1905. Serial No. 278,767.

Claim.—1. The combination with the furnace-body and the electrode of a stuffing-box, a movable sleeve mounted in the stuffing-box and surrounding the electrode, and providing a space between the inner wall of the sleeve and the electrode, granular refractory material in said space, means for retaining the granular material in position in the sleeve, and means for connecting the sleeve to the electrode, substantially as set forth.

2. The combination with the furnace-body and the electrode of a stuffing-box, a movable sleeve mounted in the stuffing-box and surrounding the electrode, and providing a space between the inner wall of the sleeve and the electrode, granular refractory material in said space, and means for retaining the granular material in position in the sleeve, substantially as set forth.

3. The combination with the furnace-body and movable electrode of an upright opening in the body through which the electrode is passed into the chamber of the body approximately fitting the electrode at the lower end and enlarged to provide a space, granular refractory material in said space surrounding the electrode above the closely-fitting point, substantially as set forth.

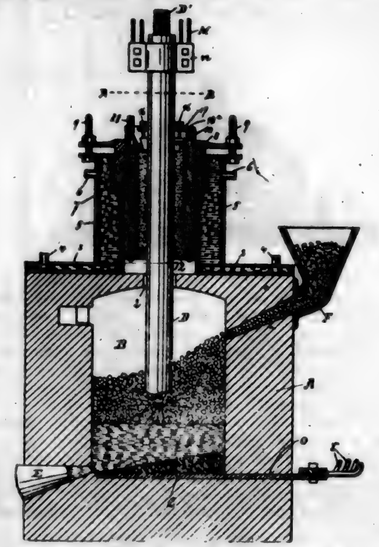

4. The combination in an electric furnace having a furnace-body with an interior chamber and a movable electrode, an upright opening through which the electrode is passed into the chamber, said opening approximately fitting the electrode at the inner end and enlarged to provide a space for granular refractory material above the closely-fitting point, and granular refractory material filling said space, substantially as set forth.

5. The combination with the furnace-body having an interior chamber, and the electrode of an electric furnace, of a stuffing-box, a movable sleeve mounted in the stuffing-box and surrounding the electrode, and providing a space between the inner wall of the sleeve and the electrode, and having means for circulating water within the body of the sleeve, granular material in said space means for retaining the granular material in position within the sleeve, and means for connecting the sleeve to the electrode, substantially as set forth.

6. The combination with the furnace-body having an internal chamber and the electrode of an electric furnace, of a stuffing-box, a movable sleeve mounted in the stuffing-box and surrounding the electrode and providing a space between the inner wall of the sleeve and the electrode for granular refractory material, a wall of non-conducting refractory material closing the lower end of said space, and granular refractory material contained in said space, substantially as set forth.

7. The combination with the furnace-body having an internal chamber and the electrode of an electric furnace, of a stuffing-box surrounding an opening through the body into the chamber, a movable sleeve mounted in the stuffing-box and surrounding the electrode, and means for connecting the sleeve to the electrode, substantially as set forth.

8. The combination with the furnace-body having an interior chamber and the electrode of an electric furnace, of a stuffing-box, a movable sleeve mounted in the stuffing-box and surrounding the electrode, and provided with an interior chamber, and means for circulating water through said chamber, substantially as set forth.

9. The combination with the furnace and electrode of

an electric furnace, of a stuffing-box having a chamber for packing surrounding the electrode, and a chamber for circulating water, of a sleeve surrounding the electrode and working in said stuffing-box, substantially as set forth.

846,522. POLARIZED ELECTRIC SIGNAL-BELL. WILLIAM M. THOMAS, Chicago, Ill., assignor of one-half to Otto Eisenschiml, Chicago, Ill. Filed Aug. 3, 1906. Serial No. 329,018.

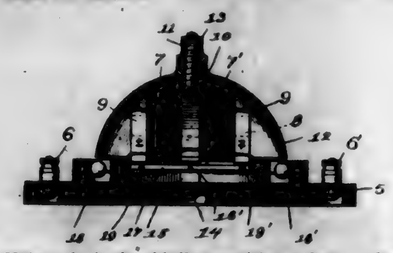

Claim.—1. A signal-bell comprising a base, a horizontally-disposed electromagnet-core, having downwardly-projecting poles, a support, carrying said core located intermediate the poles thereof, a stem vertically projecting from said support, a gong adjustably secured to said stem, and an armature centrally pivoted to said support, the ends whereof confront the poles of said magnet.

2. In combination, a magnet-core having projecting pole-pieces, a centrally-located triangular support having legs for attachment to a base, an armature pivoted to said support by pivot-studs taking through said legs, the ends whereof confront said pole-pieces, and coils on the ends of said magnet-core between the support and pole-pieces respectively.

846,523. DEVICE FOR PROTECTING SAFES AND VAULTS. PHILIP H. THOMPSON, Waldron, Ark. Filed Apr. 28, 1906. Serial No. 314,298.

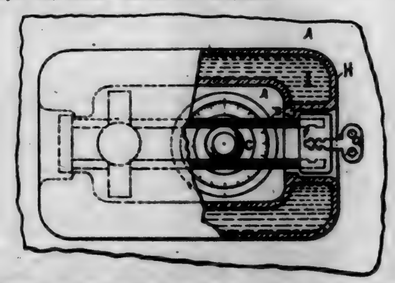

Claim.—1. In combination with a safe or vault door of a vessel containing a gas or gas-producing liquid, said vessel constructed to be applied and removably secured after the door is locked, fitting over the handles and locking device of the door, substantially as described.

2. In combination with a safe or vault door of a vessel containing a gas or gas-producing liquid, said vessel covering the whole or a part of the front of the safe or vault, and a locking device for removably securing said vessel to the safe or vault, substantially as described.

846,524. RAIL-JOINT. WILLIAM P. THOMSON, Landsdowne, and SAMUEL G. THOMSON, Altoona, Pa., assignors to Thomson-Thomson Company, Philadelphia, Pa., a Partnership. Filed Aug. 30, 1906. Serial No. 332,573.

Claim.—1. A splice-bar for rails having a freely-depending flange to extend below the base of the rail, said flange gradually decreasing in thickness toward its lower edge; substantially as described.

2. A splice-bar for rails having a freely-depending flange to extend below the base of the rail, said flange gradually decreasing in thickness through its intermediate middle portion toward its lower edge; substantially as described.

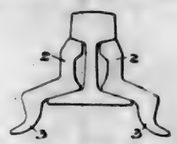

3. A splice-bar for rails having a freely-depending flange to extend below the base of the rail, said flange being of gradually-decreasing thickness toward its lower end, and stiffened at its lower edge; substantially as described.

4. A splice-bar for rails having a freely-depending flange to extend below the base of the rail, said flange being of gradually-decreasing thickness through its middle portion and stiffened at its lower edge at the inner side; substantially as described.

5. A splice-bar for rails having a freely-depending flange to extend below the base of the rail, said flange being of gradually-decreasing thickness through its middle portion and stiffened at its lower edge at the outer side; substantially as described.

6. A splice-bar for rails having a freely-depending flange to extend below the base of the rail, said flange being of gradually-decreasing thickness toward its lower edge and stiffened at its lower edge at both inner and outer sides; substantially as described.

7. A splice-bar for rails having a freely-depending flange to extend below the base of the rail, said flange being of gradually-decreasing thickness toward its lower edge and having a curvilinear face; substantially as described.

8. A splice-bar for rails having a freely-depending flange to extend below the base of the rail, said flange being of gradually-decreasing thickness toward its lower edge and having a compound curve; substantially as described.

9. A splice-bar for rails having a freely-depending flange to extend below the base of the rail, said flange being of gradually-decreasing thickness toward its lower edge and having a curvilinear face stiffened at or near its lower edge; substantially as described.

10. A splice-bar for rails having a freely-depending flange to extend below the base of the rail, said flange being of gradually-decreasing thickness through its middle portion and stiffened at its lower edge uniformly upon both sides of its central plane; substantially as described.

11. A splice-bar for rails having a freely-depending flange to extend below the base of the rail, said flange having a reversely-curved middle portion or member which is of gradually-decreasing thickness toward the lower edge of the flange; substantially as described.

12. A splice-bar for rails having a freely-depending flange to extend below the base of the rail, said flange having a reversely-curved middle portion or member which is of gradually-decreasing thickness toward the lower edge of the flange, said flange being stiffened at its lower portion; substantially as described.

846,525. METAL-SAWING APPARATUS. ADAM TINDEL, Philadelphia, Pa., assignor to The High Duty Saw and Tool Company, a Corporation of Pennsylvania. Filed May 12, 1906. Serial No. 316,497.

Claim.—1. In mechanism of the class described, a saw-blade, in combination with a table having sections adapted for holding upon or between them an object to be acted upon by said blade and means whereby the sections of said table can be opened and closed.

2. In mechanism of the class described, a base, a carriage movable on said base, a saw-blade supported by said carriage, a sectional table supported by said base and adapted for holding work upon or between the sections thereof, and a screw for moving the one section of the table with reference to the other.

3. In mechanism of the class described, a saw-blade, in combination with a sectional table, jaws between the table-sections for holding the work so that said blade can act thereon, and means for moving one of said sections with reference to the other.

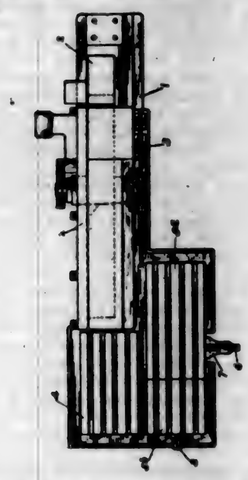

4. In mechanism of the class described, a sectional table, a chuck held between the sections of said table and a cutting device adapted to operate upon work held by said chuck.

5. In mechanism of the class described, a base having a table, a carriage movable on said base, a saw-blade supported by said carriage, a sectional table mounted on said first table and adapted for holding work between the sections thereof so that said blade can act thereon, and means for moving said sectional table transversely to said blade.

6. In mechanism of the class described, a base, and a table having a section with a base movable on said first base, and a section movable on the second base.

846,526. APPARATUS FOR THE PRODUCTION OF PIGMENTS. CLINTON P. TOWNSEND, Washington, D. C., assignor to Elmer A. Sperry, Cleveland, Ohio. Filed Apr. 18, 1902. Serial No. 103,600.

Claim.—1. In a cell for the production of pigment, an anode, a cathode of relatively reduced area, and means for circulating the electrolyte successively past the electrodes.

2. In combination, an electrolytic cell, for the production of pigment, a separator for the pigment produced therein, and an injector arranged to circulate the electrolyte successively through the cell and the separator.

3. In combination, an electrolytic cell, a separator, conduits between said cell and separator, and an injector arranged to aid the circulation of the electrolyte between the cell and the separator.

4. In a cell for the production of white lead, an anode of lead and a suitable cathode, and means for circulating the electrolyte upwardly between the electrodes and thence to a point external to the electrolytic field, substantially as described.

5. In a cell for the production of white lead, an anode of lead and a suitable cathode, means for circulating the electrolyte upwardly between the electrodes and thence to a point outside the electrolytic field, means for separating the pigment, and means for returning the electrolyte to the electrolytic field, substantially as described.

6. In a cell for the production of white lead, an anode of lead and a suitable cathode, means for circulating the electrolyte in a tortuous path within the cell and thence to a point outside the electrolytic field, means for separating the pigment, and means for returning the electrolyte to the electrolytic field, substantially as described.

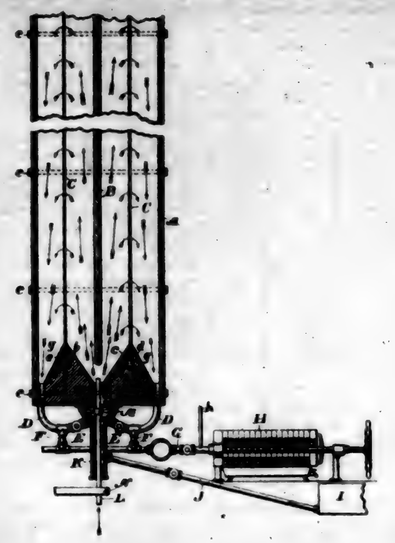

846,527. NECKTIE-FRAME. WILLIAM C. TRUMAN, London, England. Filed Dec. 14, 1906. Serial No. 347,778.

Claim.—1. In a frame or support upon which a necktie is to be tied before being attached to the collar of the wearer; the combination with a horizontal bar curved to fit closely to the collar and having at each end a vertically-standing loop, and having a loop centrally beneath said bar, and two lower depending arms meeting centrally, and at their meeting faces each having a semicircular indentation to admit and grip the shank of a stud; of a loop-formed member proceeding from about the center of the upper horizontal bar, being downwardly inclined, and standing away from the vertical face of the curved frame substantially as set forth.

2. In a frame or support upon which a necktie is to be tied before being attached to the collar of the wearer; the combination with a horizontal bar curved to fit closely to the collar and having at each end a vertically-standing loop, and having a loop centrally beneath said bar, and two lower depending resilient arms meeting centrally, and at their meeting faces each having a corresponding semicircular indentation to admit and grip the shank of a stud; of a member proceeding from about the center of the upper horizontal bar, extending in a straight line downwardly and being forwardly inclined, then extending substantially horizontally for a distance and again bent and extending upwardly to about the center of the horizontal bar to form a somewhat triangularly-shaped loop composed of the said two angularly-bent straight portions and the horizontal portion, said loop-formed member standing away from the vertical face of the curved frame substantially as set forth.

3. In a frame or support upon which a necktie is to be tied before being attached to the collar of the wearer; the combination with a horizontal bar curved to fit closely to the collar and having at each end a vertically-standing loop and having parallel horizontal members forming a

horizontal loop centrally beneath said bar, and two lower depending arms extending from the lower member of said horizontal loop members, meeting centrally, and at their meeting faces each having a corresponding semicircular indentation to admit and grip the shank of a stud; of a member bent into loop form, proceeding from about the center of the upper horizontal bar, being downwardly inclined, and standing away from the vertical face of the curved frame substantially as set forth.

4. In a frame or support upon which a necktie is to be tied before being attached to the collar of the wearer; the combination with a horizontal bar curved to fit closely to the collar and having at each end a vertically-standing loop, and having parallel horizontal members forming a horizontal loop centrally beneath said bar, and two lower depending resilient arms extending from the lower member of said horizontal loop members, meeting centrally, and at their meeting faces each having a corresponding semicircular indentation to admit and grip the shank of a stud; of a member proceeding from about the center of the upper horizontal bar extending in a straight line downwardly and being forwardly inclined, then extending substantially horizontally for a distance and again bent and extending upwardly to about the center of the horizontal bar to form a somewhat triangularly-shaped loop composed of the said two angularly-bent straight portions and the horizontal portion, said loop-formed member standing away from the vertical face of the curved frame substantially as set forth.

846,528. AIR-BRAKE SYSTEM. WALTER V. TURNER, Wilmerding, Pa., assignor, by direct and mesne assignments, to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Aug. 1, 1903. Renewed Apr. 23, 1906. Serial No. 313,320.

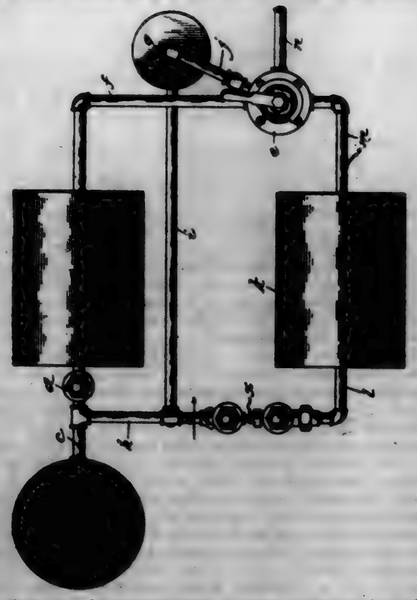

Claim.—1. In combination, a main reservoir for relatively high pressure, a supply reservoir for relatively lower or train line pressure, an application reservoir for a higher pressure than that of the main reservoir, means for maintaining the desired pressures in these reservoirs, a train pipe and an engineer's valve provided with service exhaust means and having connection to the three reservoirs and train pipe, and adapted to connect the main and supply reservoirs to the train pipe, and to connect the application reservoir to the service exhaust means, whereby such means are operated.

2. In combination, a main reservoir for relatively high pressure, a supply reservoir for relatively lower or train line pressure, an application reservoir for a higher pressure than that of the main reservoir, means for maintaining the desired pressures in these reservoirs, a train pipe and an engineer's valve provided with service exhaust means and a direct exhaust and having communication to the reservoirs and train pipe adapted to connect the main and supply reservoirs to the train pipe to connect the train pipe to the direct exhaust and to connect the application reservoir to the service exhaust means whereby such means are operated.

3. In combination, a main reservoir for relatively high pressure, a supply reservoir for relatively lower or train line pressure, an application reservoir for a higher pressure than that of the main reservoir, means for maintaining the desired pressures in these reservoirs, a train pipe and an engineer's valve connected to the three reservoirs and the train pipe and having a direct exhaust port and a service exhaust valve comprising a piston for governing the service exhaust valve, and a rotary valve with connections whereby the main and supply reservoirs may be connected to the train pipe and the train pipe to the direcet exhaust, and whereby connection between the application reservoir and the service exhaust cylinder is made for opening the service exhaust valve.

4. In combination, a main reservoir for relatively high pressure, a supply reservoir for relatively lower or train line pressure, an application reservoir for a higher pressure than that of the main reservoir, means for maintaining the desired pressures in these reservoirs, a train pipe and an engineer's valve connected to the three reservoirs and the train pipe and having a direct exhaust port and a service exhaust valve and comprising a piston for governing the service exhaust valve continuously exposed on one side to train pressure to keep the valve closed and having a connection on the other side whereby it may be connected to the application reservoir to open the valve, and a rotary valve with connections whereby the main and supply reservoirs may be connected to the train pipe and the train pipe to the direct exhaust, and whereby connection between the application reservoir and the service exhaust cylinder is made for opening the service exhaust valve.

5. In an air brake system, the combination of an air pump, main supply and application reservoirs connected therewith, a train pipe, and an engineer's valve provided with exhaust valve mechanism for the train line and connected with the three reservoirs and with the train pipe to supply pressure from the first two reservoirs to the train pipe and to operate the exhaust valve mechanism of the train pipe by connecting the application reservoir therewith, substantially as described.

6. In an air brake system, the combination of a main reservoir, a supply reservoir, an application reservoir, a train pipe, an engineer's valve body provided with four passages connected with the main, supply, and application reservoirs and train pipe, an exhaust chamber provided with a service exhaust, an exhaust valve in the exhaust chamber, a piston connected therewith, and a rotary valve provided with one passage to connect and disconnect the main line reservoir and train pipe, a second passage to connect and disconnect the supply reservoir and train pipe, and a third passage or groove to connect and disconnect the application reservoir with the chamber on one side of the exhaust valve piston so as to operate the exhaust valve and open the service exhaust by the superior pressure in the application reservoir, substantially as described.

7. In an air brake system, the combination of a main reservoir, a supply reservoir, a train pipe, an application reservoir, an engineer's valve body provided with an emergency exhaust and passages therethrough connected with the main, supply, and application reservoirs and train pipe and provided with an exhaust chamber having a service exhaust, an exhaust valve in the exhaust chamber provided with a piston for operating the same, and a rotary valve in the valve body provided with one passage to connect and disconnect the main reservoir and train pipe, a second passage to connect and disconnect the supply reservoir and train pipe, a third passage to connect the application reservoir with the chamber on one side of the exhaust valve piston to operate the same and open the service exhaust, and a fourth passage to connect the train pipe with the emergency exhaust, substantially as described.

8. In an air brake system, the combination of an air pump, main and supply reservoirs connected therewith, controlling valve mechanism in the connections between the air pump and the said reservoirs, an application reservoir having free communication with the air pump, a train pipe, an engineer's brake valve connected with all of said reservoirs and train pipe and provided with an exhaust chamber having a service exhaust, a slide valve for opening and closing said exhaust service, a piston connected with said slide valve and exposed on one side to train line pressure for operating said slide valve, and a rotary valve in said engineer's valve body for connecting and disconnecting the main and supply reservoirs with the train pipe and the application reservoir with the other side of the exhaust valve piston, substantially as described.

9. In an air brake system, a train pipe, means including a main reservoir for supplying pressure therefor, an engineer's valve provided with service exhaust means, an application reservoir for operating such service exhaust means, and means whereby a higher pressure is maintained in the application reservoir than in the main reservoir.

10. In combination, a reservoir for supplying pressure to the train line, an application reservoir, means whereby a higher pressure is maintained in the application reservoir than in the first reservoir, a train pipe and an engineer's valve provided with service exhaust means and having connection with the two reservoirs and adapted to connect the first reservoirs with the train pipe and to connect the application reservoir with the service exhaust means whereby such means are operated.

846,529. ATTACHMENT FOR WHEELS. FRANK UNGER, Rimersburg, Pa. Filed Oct. 2, 1906. Serial No. 337,155.

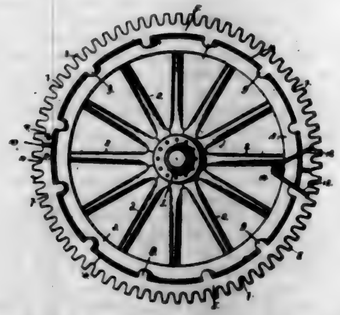

Claim.—1. An attachment for wheels of the character described, consisting of two hinged semicircular sections having central peripheral grooves formed therein intersected by transverse grooves to form two rows of peripheral teeth, inwardly-extending lugs carried by said sections, and a double clevis adapted to connect the free ends of said sections together, substantially as described.

2. An attachment for wheels, comprising two semicircular sections hinged together at one end and having peripheral teeth, and means engaging the sections at their free ends to bind them upon a wheel, and comprising a double clevis one part engaging one section and the other part engaging the other section, said parts of the clevis spanning the wheel-rim, and a single bolt securing both parts of the clevis to the sections and wheel-rim.

846,530. WATER-ELEVATOR. ALPHONSE VANDENAMEELE, Forest, near Brussels, Belgium. Filed Jan. 24, 1906. Serial No. 297,542.

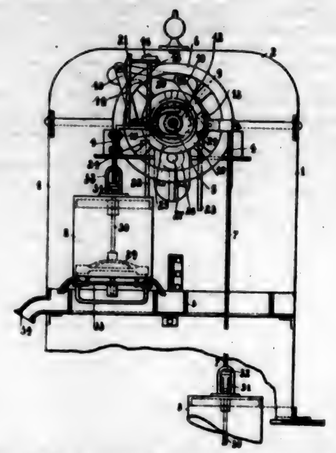

Claim.—1. In a water-elevator the combination with a completely-closed casing, adapted to cover the opening of a well, a flat basin or trough in the lower part of said casing, and two circular openings in said trough for the passage of the elevator-buckets; of a suitable frame stationarily arranged in the upper part of the casing, a main drive-shaft journaled on said frame, and means for imparting movement thereto from the outside of the casing, a loose elevator-pulley on said main shaft, two loose conical gear-wheels on the latter on one side of the pulley, and an intermediate toothed pinion meshing with the gear-wheels: a cam on one side face of the elevator-pulley and a cam on the opposite side face of the adjacent gear-wheel, said cams being adapted to engage one another, when the gear-wheel is rotated in either direction: a suitable clutch arranged and longitudinally movable between said conical gear-wheels, a rope passing around the elevator-pulley and a bucket attached to each end of said rope: a suitable valve in the bottom of each bucket; a double ratchet on the hub of the elevator-pulley: two pawls arranged on opposite sides of said double ratchet: a link connecting the upper ends of said pawls; a vertical rocking shaft, journaled on the frame, a suitable connection between said rocking shaft and the connecting-link; a suitable connection with said rocking shaft and the clutch, means for engaging one pawl with the double ratchet and actuating said clutch, when a bucket is arrived at the end of its upward movement: means for opening the valve of the bucket at this moment, and means for directing the discharged water into said trough, substantially as set forth.

2. In a water-elevator the combination with a completely-closed casing, adapted to cover the opening of a well, a flat basin or trough in the lower part of said casing, and two circular openings in said trough for the passage of the elevator-buckets: of a suitable frame stationarily arranged in the upper part of the casing, a main drive-shaft journaled on said frame, and means for imparting movement thereto from the outside of the casing, a loose elevator-pulley on said main shaft, two loose conical gear-wheels on the latter on one side of the pulley, and an intermediate toothed pinion meshing with the gear-wheels: a cam on one side face of the elevator-pulley and a cam on the opposite side face of the adjacent gear-wheel, said cams being adapted to engage one another, when the gear-wheel is rotated in either direction: a suitable clutch arranged and longitudinally movable between said conical gear-wheels, a rope passing around the elevator-pulley and a bucket attached to each end of said rope; a suitable valve in the bottom of each bucket: a double ratchet on the hub of the elevator-pulley: two pawls arranged on

opposite sides of said double ratchet: a link connecting the upper ends of said pawls: an upwardly-projecting fork on said link: a vertical rocking shaft journaled on the frame: a horizontal arm on the upper end of said rocking shaft adapted to be engaged and rotated by said fork: a suitable fork on the lower end of said rocking shaft and suitably connected with said clutch: means for engaging one pawl with the double ratchet and actuating said clutch when a bucket is arrived at the end of its upward movement: means for opening the valve of the bucket at this moment, and means for directing the discharged water into said trough, substantially as set forth.

3. In a water-elevator the combination with a completely-closed casing, adapted to cover the opening of a well, a flat basin or trough in the lower part of said casing, and two circular openings in said trough for the passage of the elevator-buckets: of a suitable frame stationarily arranged in the upper part of the casing, a main drive-shaft journaled on said frame, and means for imparting movement thereto from the outside of the casing, a loose elevator-pulley on said main shaft, two loose conical gear-wheels on the latter on one side of the pulley, and an intermediate toothed pinion meshing with the gear-wheels: a cam on one side face of the elevator-pulley and a cam on the opposite side face of the adjacent gear-wheel, said cams being adapted to engage one another, when the gear-wheel is rotated in either direction: a suitable clutch arranged and longitudinally movable between said conical gear-wheels, a rope passing around the elevator-pulley and a bucket attached to each end of said rope: a suitable valve in the bottom of each bucket: a double ratchet on the hub of the elevator-pulley: two pawls arranged on opposite sides of said double ratchet: a link connecting the upper ends of said pawls: an upwardly-projecting fork on said link: a vertical rocking shaft journaled on the frame: a horizontal arm on the upper end of said rocking shaft adapted to be engaged and rotated by said fork: a suitable fork on the lower end of said rocking shaft and suitably connected with said clutch: a laterally-projecting arm on the lower end of each pawl, a vertically-movable bolt, pivotally connected with said arm, a suitable guide-socket secured to the frame for guiding said bolts which are adapted to be alternately engaged and raised by the buckets when the same are arrived at the end of their upward movement, means for opening the valve of each bucket when it is arrived at the end of its upward stroke, and means for directing the discharged water into said trough, substantially as set forth.

846,531. PICTURE-CABINET. EUGENE E. VIETS, Troy Center, Pa. Filed Jan. 11, 1906. Serial No. 295,634.

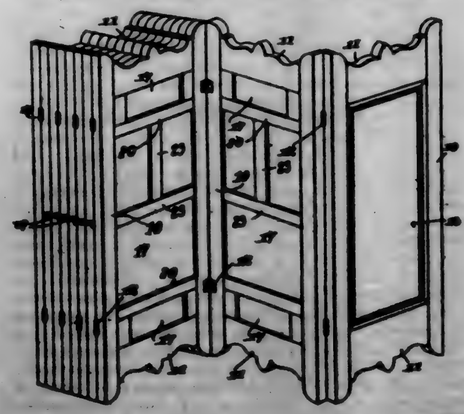

Claim.—A display device comprising a frame formed of spaced side members and end members having relatively wide intersecting channels in the inner faces and with relatively small intersecting channels extending from the larger channels, filler-plates disposed in said extended channels whereby continuous pockets are formed in the frames at opposite sides of the filler-plates, and spacer-bars having rabbets corresponding to said pocket portions and with end tenons movably engaging the same.

846,532. WINDMILL. CHARLES VISKOCHIL Carnegie, Pa., and JERRY VISKOCHIL, Warrensville, Ohio. Filed Sept. 6, 1906. Serial No. 333,551.

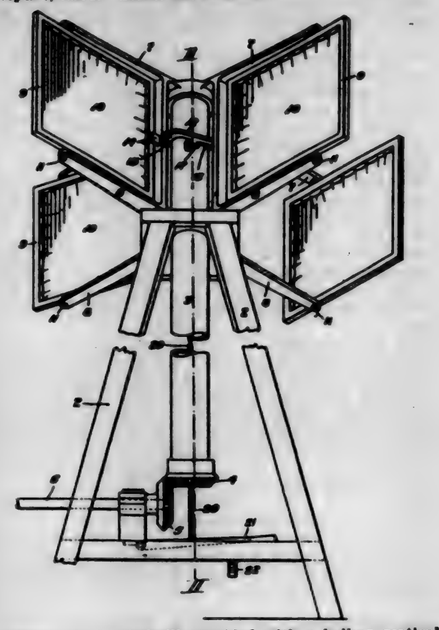

Claim.—1. A windmill provided with a hollow vertical shaft, a series of laterally-extending sail-supporting arms provided with pivotally-mounted sails, means providing abutments for the inner edges of said sails at one side, and an actuating element passing through the vertical shaft and engaging said means for simultaneous operation, substantially as set forth.

2. A windmill provided with a hollow vertical shaft, a series of vertically-extending sail-supporting arms, sails pivotally mounted in said arms, means providing abutments for the inner edges of said sails at one side, a flexible device for retracting said abutments simultaneously, and springs for reëxtending them to operative position, substantially as set forth.

3. A windmill provided with a hollow vertical shaft, a series of laterally-extending sail-supporting arms, sails pivotally mounted in said arms, pivoted arms having abutments for the inner edges of said sails at one side, a cord engaging said arms for retracting said abutments from operative position, and means for reëxtending them, substantially as set forth.

4. In a windmill, the combination of a vertically-arranged supporting-framework, a hollow vertical shaft mounted therein provided with radially-arranged sail-arms, sails pivotally mounted between said arms, spring-pressed abutments for locking the inner edges of said sails at one side in operative position, and a flexible element so connected with said abutments as to withdraw them all simultaneously to unlocking position, substantially as set forth.

5. In a windmill, the combination of a supporting-framework, a vertically-arranged hollow shaft mounted in said framework and provided with laterally-arranged sail-supporting arms, sails pivotally mounted between said arms having their major portion extending inwardly, locking-abutments adapted to engage the inner edges of the sails at one side, with means passing through the hollow shaft for actuating said abutments to locate them in operative or inoperative position, substantially as set forth.

6. In a windmill, the combination of a supporting-framework, a vertically-arranged hollow shaft mounted in said framework and provided with laterally-arranged sail-supporting arms, sails pivotally mounted between said arms having their major portion extending inwardly, locking-abutments adapted to engage the inner edges of the sails at one side, a flexible connection engaging said locking-abutments and extending downwardly within the hollow shaft, and mechanism for retaining said flexible connection under tension, substantially as set forth.

7. In a windmill, the combination of a supporting-framework, a vertically-arranged hollow shaft mounted in said framework and provided with laterally-arranged sail-supporting arms, sails pivotally mounted between said arms having their major portion extending inwardly, locking-abutments adapted to engage the inner edges of the sails at one side, a flexible connection engaging said locking-abutments and extending downwardly within the hollow shaft, and mechanism for retaining said flexible connection under tension, said mechanism being capable of disconnection, and means for exerting reverse pressure upon the locking-abutments to throw them into engaging position, substantially as set forth.

8. In a windmill, the combination of a supporting-framework, a vertically-arranged hollow shaft mounted in said framework and provided with laterally-arranged sail-supporting arms, sails pivotally mounted between said arms having their major portion extending inwardly, locking-abutments adapted to engage the inner edges of the sails at one side, a flexible connection engaging said locking-abutments and extending downwardly within the hollow shaft, and mechanism for retaining said flexible connection under tension, said flexible connection being provided with an intervening swivel whereby the upper portion thereof may rotate with the shaft, substantially as set forth.

9. In a windmill, the combination of a vertically-arranged supporting-framework, a vertical hollow shaft mounted therein provided with laterally-arranged arms, sails pivotally mounted in said arms, locking-abutments adapted to engage said sails at one side of their inner edges, means passing through the hollow shaft for actuating said locking-abutments to engage and disengage the sails, and gearing arranged to transmit motion from the hollow-shaft, substantially as set forth.

846,533. ELECTRIC CONTROLLER. FERDINAND VOLK, Pittsburg, Pa., assignor of one-sixth to CASPER J. POLLMAN, Pittsburg, Pa. Filed Sept. 29, 1906. Serial No. 336,751.

Claim.—1. In an attachment for electric controllers of motors, the combination with the operating-shaft of a controller, the cover-plate thereof, a controller-lever, and means for locking the same in a fixed position, of a plate secured to said cover-plate, circumferentially-arranged staggered beveled lugs carried by said plate, a casing carried by said lever, a reciprocating member mounted in said casing, a beveled spring-pressed tooth carried by said member, an actuating-arm slidably mounted upon said lever and connecting with said member, a revoluble handle carried by said lever and adapted to actuate said arm to reciprocate said member, substantially as described.

2. In an attachment for electric controllers of motors, the combination with the operating-shaft of a controller, the cover-plate thereof, a controller-lever, and means for locking the same in a fixed position, of a plate secured to said cover-plate, lugs carried by said plate, and forming a sinuous path, a reciprocating member carried by said lever, a spring-pressed beveled tooth mounted in said member and adapted to engage said plate and said lugs, a revoluble handle carried by said lever, an arm slidably mounted upon said lever and connecting with said handle and said member, and means actuated by a partial rotation of said handle to reciprocate said member, substantially as described.

3. In an attachment for electric controllers of motors, and the operating-lever thereof, of a plate carried by said controller, beveled lugs carried by said plate and forming a sinuous path, a hub rotative upon said shaft and provided with a laterally-extending guideway a reciprocating member carried by said lever and movable in said guideway, a yielding tooth carried by said reciprocating member and adapted to engage said lugs on said plate, a handle carried by said lever, and means actuated by said handle to reciprocate said member, substantially as described.

4. The combination with a controller and the operating-lever thereof, of a plate secured to said controller and having a sinuous path formed thereon, a hub carried by said controller-shaft and provided with a laterally-extending guideway a reciprocating tooth-carrying member supported by said lever and adapted to travel in said guideway, a revoluble handle carried by said lever, and means actuated by said handle to reciprocate said member, substantially as described.

5. In an attachment for electrical controllers, the combination with the operating-shaft, a cover-plate having a socket and with circumferentially-arranged staggered lugs associated therewith and beveled at one side, a controller-lever having a handle at its free end, a rod extending through said handle, a bolt associated with said lever and adapted to movably engage the socket in said lever-plate, a connecting means between said rod and bolt, a reciprocating member associated with said lever, a spring-pressed tooth associated with said lever and adapted for alternate and yieldable connection with said sets of lugs, and means whereby the partial rotation of said handle will dispose said tooth in operative position relative to said sets of lugs.

6. In an attachment for electrical controllers, the combination with a cover member having a socket, an annular plate concentric to said socket and provided with staggered beveled lugs, a controller-shaft extending through said socket, a hub rotative upon said shaft and having a seat bearing in said socket, and with a lateral arm having a guideway radially of the hub, an operative lever coupled to rotate with said shaft and provided with a casing inclosing the guideway, a reciprocating member movable in said guideway, a spring-pressed tooth carried by said reciprocating member and adapted to alternately engage said lugs, means connected to said operative cover for locking the same to said plate, and means operative by said lever for actuating said reciprocating member and disposing said tooth for engagement alternately with the sets of lugs.

846,534. MATERIAL FOR FLEXIBLE WEARING-SURFACES. JOHN J. VOORHEES, Jersey City, N. J. Filed Aug. 25, 1905. Serial No. 275,756.

Claim.—1. As a new article of manufacture, a material for belting and the like comprising a body of cementing material, strengthening material embedded in said cement-

ing material, and a plurality of metallic studs having short, small shanks, and large, flat heads embedded in the cementing medium, the shank of said stud being adapted to form part of the wearing-surface of the fabric, and the flat head being secured beneath the strengthening fabric and adjacent thereto, so as to be held securely thereby, substantially as described.

2. As a new article of manufacture, a material for belting and the like comprising a body of cementing medium, a plurality of layers of strengthening fabric embedded in said cementing material, and a plurality of metallic studs having short, small shanks, and large, flat heads embedded in the cementing medium, the shank of said stud being adapted to form part of the wearing-surface of the fabric, and the flat head being secured beneath the one or more layers of the strengthening fabric and adjacent thereto, so as to be held securely thereby, substantially as described.

3. As a new article of manufacture, a material for belting and the like comprising a body of cementing medium, a plurality of layers of strengthening fabric embedded in said cementing material, and a plurality of metallic studs having short, small shanks, and large, flat heads, the shank of said stud being adapted to form part of the wearing-surface of the fabric, and the flat head being secured firmly between two adjacent layers of said strengthening fabric, so as to be held securely thereby, substantially as described.

846,535. RAIL AND CHAIR. JAMES F. WALKER, Carthage, Mo. Filed Mar. 22, 1906. Serial No. 307,485.

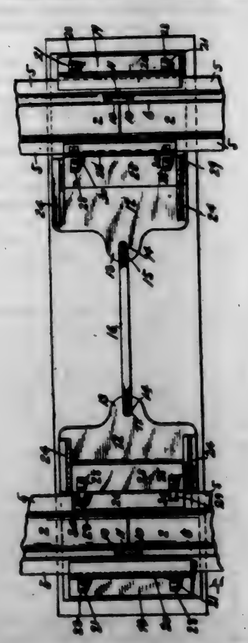

Claim.—In combination with a rail having a longitudinal cut-out portion, a base-plate therefor a rib on the plate extending within the cut-out portion but not contacting with the walls thereof, an immovable fish-plate carried by the base-plate engaging one side of the rail, guides carried by the base-plate and arranged at right angles to the rail, a movable fish-plate for engaging the opposite side of the rail, said plate having extensions engaging the guides.

846,536. BRICKMAKING PLANT. HIRAM H. WALSH, Little Ferry, N. J. Filed Oct. 8, 1906. Serial No. 337,888.

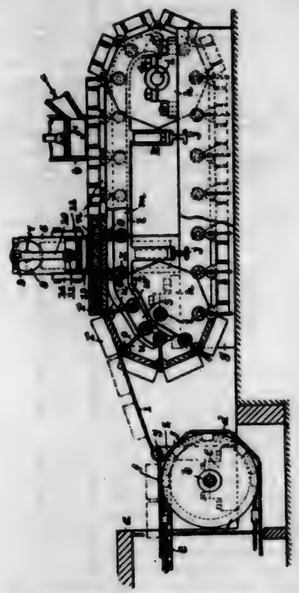

Claim.—1. A combined endless conveyer and shaping or molding apparatus comprising a series of linked plates forming the bottom wall of the molds, other walls thereon extending longitudinally thereof to form two opposed sides to each mold or compartment, and transversely-extending walls movable in and out of the plane of the longitudinally-extending walls, in planes coincident with where said plates break joints substantially as described.

2. A combined endless conveyer and shaping or molding apparatus comprising a series of linked plates forming the bottom wall of the molds, other walls thereon extending longitudinally thereof to form two opposed sides to each mold or compartment, and transversely-extending walls movable in and out of the plane of the longitudinally-extending walls, in planes coincident with where said plates break joints in combination with means for advancing said apparatus and means for moving the movable walls, substantially as described.

3. A combined endless conveyer and shaping or molding apparatus comprising a series of linked plates forming the bottom wall of the molds, other walls thereon extending longitudinally thereof to form two opposed sides to each mold or compartment, and transversely-extending walls movable in and out of the plane of the longitudinally-extending walls, in planes coincident with where said plates break joints in combination with means for advancing said apparatus, means for moving the movable walls and means for effecting the removal of the contents of the charged molds upon the withdrawal of the movable walls, substantially as described.

4. A combined endless conveyer and shaping or molding apparatus comprising series of linked plates forming the bottom wall of the molds and other walls arranged to form opposed sides to each mold or compartment, said other walls being movable in planes coincident with where said plates break joints out of operative juxtaposition to said series of plates to leave the contents of said molds clear of said walls, substantially as described.

5. A combined endless conveyer and shaping or molding apparatus comprising series of linked plates forming the bottom wall of the molds and other walls arranged to form opposed sides to each mold or compartment, said other walls being movable in planes coincident with where said plates break joints out of operative juxtaposition to said series of plates to leave the contents of said molds clear of said walls, in combination with means for receiving the contents of the charged molds arranged in operative proximity to said flexible body, substantially as described.

6. A combined endless conveyer and shaping or molding apparatus comprising the flexible body portion forming the bottom wall of the molds and other walls arranged to form opposed sides to each mold or compartment, said other walls being movable out of operative juxtaposition to said body portion to leave the contents of said molds clear of said walls, in combination with a plate resting at one end on the flexible body portion of said apparatus in alinement with the molds, substantially as described.

7. A combined endless conveyer and shaping or molding apparatus comprising a series of spaced linked plates forming the bottom wall of the molds, and other walls arranged to move relatively vertically in the spaces between said plates, in combination with means for effecting the movement of said other walls, substantially as described.

8. A combined endless conveyer and shaping or molding apparatus comprising the flexible body portion forming the bottom wall of the molds, said body portion having transverse openings therethrough and other walls arranged to move relatively vertically in said openings, in combination with grooved guides operatively engaged by and adapted to move said other walls, substantially as described.

9. A combined endless conveyer and shaping or molding apparatus comprising the flexible body portion forming the bottom wall of the molds and other walls arranged to form opposed side walls of the molds, said other walls being movable out of operative juxtaposition to said flexible body to leave the contents of said molds clear of said walls, in combination with an inclined plate having its higher end resting on said body portion, substantially as described.

846,537. ANTISIPHON DRAINAGE-TRAP. DAVID WHITEFORD, Chicago, Ill. Filed Apr. 1, 1905. Serial No. 253,350.

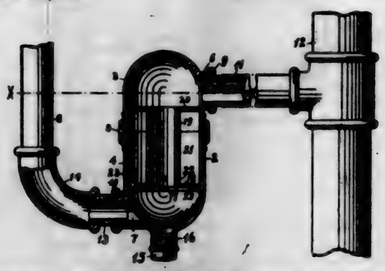

Claim.—1. In a drainage-trap, the combination with the trap-chamber, of a tube arranged in the path of flow through said chamber, said tube having flanges which serves as a partition-wall between said tube and the wall or walls of said trap-chamber, said tube and flanges together providing an inclosure surrounding the path of flow through said trap-chamber, said inclosure being partly open to said path in such a manner that liquid will flow by gravity from said tube into said trap-chamber.

2. In a drainage-trap, the combination with the trap-chamber, of a tube of less diameter than the interior of said chamber, means for partly closing the space between said tube and the wall or walls of said chamber to provide an auxiliary chamber which encircles the path of flow through said trap-chamber and permits liquid to drain by gravity from said tube into said trap-chamber.

3. The combination, in a drainage-trap, of an inner chamber and an outer chamber, said inner chamber serving as a conduit between the inlet and outlet openings of said trap, and removable walls between said chambers.

4. In a drainage-trap, the combination of an upper and a lower section, each section being substantially cup-shaped, removable partition-walls within said sections, which provide, respectively, a conduit between the openings into and from said trap and a partially-closed chamber surrounding said conduit, and means for securing said sections together.

5. In a drainage-trap, in combination a trap-body consisting of upper and lower sections such as 3 and 4 or 24, the upper section provided with the outlet 6 and the lower section provided with the inlet and trap-space comprising bottom portion of the lower section and the parts 13 and 14, or an equivalent such as 25, said trap-space provided with the opening 16 normally closed by the plug 15, and the tube 19 in combination with intersecting walls arranged to provide the pocket or auxiliary chamber 21 or 21'.

6. A drainage-trap comprising upper and lower sections and means for securing said sections together separably, the upper section having therein an outlet-opening 6, the lower section having an inlet-opening 7 and the curved trap-space proper connecting the body of the trap with the drain-pipe 8, the tube 19 and the intersecting walls which, together with said tube, provide the pocket or auxiliary chamber surrounding said tube, said chamber having an opening, or several openings, communicating with the path of flow through said trap.

846,538. TURBINE-GOVERNING MECHANISM. JAMES WILKINSON, Providence, R. I., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed July 16, 1906. Serial No. 326,466.

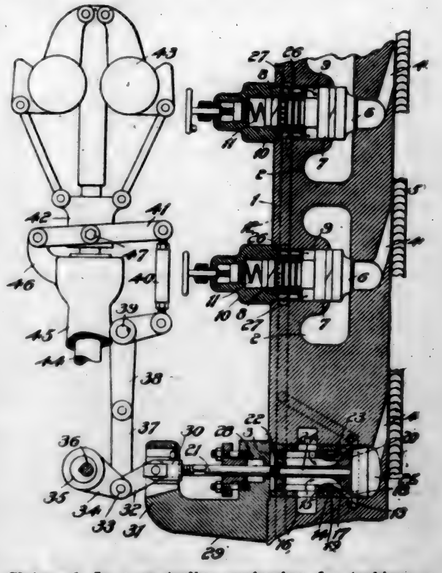

Claim.—1. In a controller mechanism for turbines, a controller-nozzle, an eccentric, toggle-arms for transmitting oscillatory motion from said eccentric to said controller-nozzle, speed-responsive means to vary the angle between said arms, and a valve controlled by fluid acted upon by said nozzle.

2. In a controller mechanism for turbines, a controller device acting upon a portion of the turbine-supply, a valve controlled by the fluid acted upon by said device, an

operating-stem for said device, an eccentric, toggle-arms connecting said eccentric and stem, and a link pivotally connected to said arms and operatively connected to a speed-responsive device.

3. In a controller mechanism for turbines, fluid-controlled supply-valves, a conduit for the controller-fluid, a controller device which is adapted to admit fluid-pressure to and eject it from said conduit, and means to fluctuate the pressure in said conduit comprising an eccentric, and means to impart uniform movements therefrom to said device, in combination with a speed-responsive device and means controlled thereby to vary the length of the transmission means between said eccentric and device.

4. In a fluid-controller mechanism for valves, a speed-responsive controller device comprising an annular valve adjacent to a jet-orifice, a port coöperating with said jet-orifice, an annular seat for said valve, a supply-port for admitting fluid to said orifice, an exhaust-port which is closed by said valve as said orifice discharges fluid into said port, and means to oscillate said controller device, said jet being adapted to eject fluid from said port when said exhaust-port is open.

5. In a fluid-controller mechanism for valves, a controller-chamber, a controller device which fits therein as a valve, a port leading from the side of said chamber, a jet-orifice in said device, a groove on one side of said orifice and a valving-face terminating at said orifice on the other side thereof, means to supply fluid to said orifice, an exhaust for said fluid controlled by said valving-face, and one or more valves controlled by the action of the fluid in said port in the chamber.

6. A controller mechanism for a turbine comprising a controller-fluid chamber, a controller device therein provided with a jet-orifice and a valving portion, a fluid-pressure supply acted upon by said device in said chamber, a supply-valve controlled by the fluid in said chamber, said jet and valve coöperating to move and hold said supply-valve closed and said jet acting with an ejector effect to cause said supply-valve to move in the other direction, and a port through which fluid exhausts under the control of said device.

7. In combination with a fluid-motor having one or more fluid-pressure-controlled valves, a controller mechanism for said valves utilizing a reciprocatory valve and fluid-jet to control the pressure of the valve-controlling fluid.

8. In combination with a fluid-motor, one or more fluid-pressure-controlled valves, means to effect the operation of said valves responsive to a controller-fluid pressure, and means to produce fluctuations in said latter pressure which comprises a vibratory controller device utilizing a fluid-jet to produce pressure-waves, and a valve to produce a constant pressure.

9. In a motor, one or more fluid-pressure-controlled valves, a controller device therefor comprising a cylindrical body, a narrow peripheral jet-orifice in said body which is smooth but for a groove to one side of said orifice, a chamber in which said device seats pressure-tight, a supply-port at one end of said chamber, an enlarged exhaust-port at the other into which said chamber opens, and a valve-controlling fluid-conduit leading from a point adjacent to said exhaust-port.

10. In a motor, one or more fluid-pressure-controlled valves, a reciprocatory controller device for discharging a wide thin jet of fluid at an angle to the line of travel of said device and in the direction of the fluid's exhaust, an exhaust-opening for said fluid, and means coöperating with said jet for controlling the operation of said valve or valves.

11. In a turbine-controlling apparatus utilizing a fluid jet to produce a variable valve-controlling fluid-pressure, a controller-nozzle device adapted to discharge a cone-shaped jet.

12. In a turbine-governing apparatus, a movable jet-nozzle adapted to discharge fluid at an acute angle to the axis of its travel, and means responsive to said jet which vary the fluid-supply to the turbine.

13. In a turbine-governing apparatus, a governor-shifted jet-nozzle adapted to discharge fluid in a thin laterally-flowing jet at an angle other than a right angle to its line of travel, said fluid flowing from all sides of said nozzle so as to balance it, and means responsive to said jet which vary the fluid-supply to the turbine.

14. In a turbine, a supply-valve, an annular operating-piston therefor, a cylinder, a controller-fluid conduit surrounding said cylinder and provided with a plurality of ports adapted to admit the fluid uniformly to said annular piston.

15. In a turbine, a supply-valve, a fluid-motor therefor comprising a cylinder, a chambered head therefor, an annular piston, a guide connected to said piston and adapted to enter the chamber in said head, a controller-fluid passage surrounding said head, and a ring of ports leading from said passage through the head into the annular piston-chamber.

16. In a turbine-controller mechanism, a plurality of valves having annular pistons and cylinders, and a common controller-fluid conduit which connects with a ring of pressure supply and exhaust ports entering each cylinder.

17. In a turbine-controller mechanism, a controller device comprising a jet-orifice and a valve, means to impart uniform oscillations to said device, said valve having an effective surface substantially equal in length to the oscillatory movements thereof, and a narrow seat for said valve interposing between a port to receive the impact effect of said jet and an exhaust-port for said jet fluid.

846,539. RENDERING-TANK. FREDERICK G. WISSLOGEL, Indianapolis, Ind., assignor to United States Construction and Utilization Company, Rochester, N. Y., a Corporation of New York. Filed Oct. 8, 1906. Serial No. 338,066.

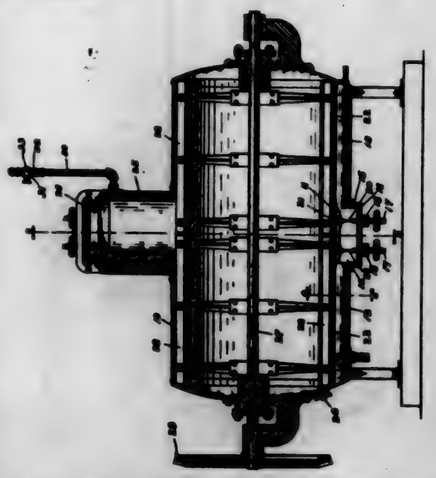

Claim.—1. In a rendering-tank, the combination, with a receiving-body having a slot in its lower side, and stirring mechanism mounted in the body, of a steam-jacket embracing the lower side of said body under the slot and having an opening in its side opposite the said slot, a cover for said opening, and a removable perforated plate bridging the slot in the main body.

2. In a rendering-tank, the combination, with the receiving-tank and stirring mechanism mounted therein, said tank having a longitudinal slot extending through the bottom of said tank, of a steam-jacket embracing the lower side of said tank and covering said slot, and said jacket having an opening leading thereinto, a cover for said opening, a perforated plate carried by said cover and normally lying in the before-mentioned slot so as to bridge the same, and removable perforated plates bridging said slot at the ends of the perforated plate carried by said cover.

846,540. PROTOGRAPHIC SHUTTER. ANDREW WOLLENSAK, Rochester, N. Y., assignor to Wollensak Optical Company, Rochester, N. Y., a Corporation of New York. Filed June 23, 1906. Serial No. 323,074.

Claim.—1. In a photographic shutter, a casing having an aperture, shutter-blades pivoted to said casing and adapted to close said aperture, means connected to each blade for opening and closing the blades, spring means for closing the blades, stronger spring means for opening the blades, and mechanism for throwing said stronger spring means out of operation.

2. In a photographic shutter, a casing having an aperture, a series of shutter-blades pivoted to said casing and adapted to close said aperture, a ring connected to each blade for opening and closing the same, spring means for actuating said ring to close the blades, stronger spring means for actuating said ring to open the blades, and mechanism for throwing said stronger spring means out of operation.

3. In a photographic shutter, a casing having an aperture, a series of shutter-blades pivoted to said casing and adapted to close said aperture, a rotary ring in said casing connected to each blade for opening and closing the blades, spring means for actuating the ring to close the blades, stronger spring means for actuating said ring to open the blades, and mechanism for throwing said stronger spring means out of operation.

4. In a photographic shutter, a casing having an aperture, a series of shutter-blades pivoted to said casing and adapted to close said aperture, a rotary ring in said casing having a slot-and-pin connection to each blade for opening and closing the blades, spring means for actuating the ring to close the blades, stronger spring means for actuating the ring to open the blades, and mechanism for throwing said stronger spring means out of operation.

5. In a photographic shutter, a casing having an aperture, a series of shutter-blades pivoted to said casing and adapted to close said aperture, a rotary ring in said casing connected to each blade for opening and closing the blades, an operating-plate in said casing connected to said ring, a spring connected to said operating-plate for closing the blades, a stronger spring connected to said plate for opening the blades, and mechanism for throwing said stronger spring out of operation.

6. In a photographic shutter, a casing having an aperture, a series of shutter-blades pivoted to said casing and adapted to close said aperture, means connected to each blade for opening and closing the blades, spring means for closing the blades, stronger spring means for opening the blades, mechanism for throwing said stronger spring means out of operation, and adjustable stopping means for stopping the opening movement of said blades.

7. In a photographic shutter, a casing having an aperture, a series of shutter-blades pivoted to said casing and adapted to close said aperture, a ring connected to each blade for opening and closing the same, spring means for actuating said ring to close the blades, stronger spring means for actuating said ring to open the blades, mechanism for throwing said stronger spring means out of operation, and a movable ring having an eccentric cam-surface in the path of a part moving with said blades for limiting the opening movement thereof.

8. In a photographic shutter, a casing having an aperture, a series of shutter-blades pivoted to said casing and adapted to close said aperture, a rotary ring in said casing connected to each blade for opening and closing the blades, spring means for actuating the ring to close the blades, stronger spring means for actuating said ring to open the blades, mechanism for throwing said stronger spring means out of operation, and a movable ring having an eccentric cam-surface in the path of a part moving with said blades for limiting the opening movement thereof.

9. In a photographic shutter, a casing having an aperture, a series of shutter-blades pivoted to said casing and adapted to close said aperture, a rotary ring in said casing having a slot-and-pin connection to each blade for opening and closing the blades, spring means for actuating the ring to close the blades, stronger spring means for actuating the ring to open the blades, mechanism for throwing said stronger spring means out of operation, and a movable ring having an eccentric cam-surface in the path of a part moving with said blades for limiting the opening movement thereof.

10. In a photographic shutter, a casing having an aperture, a series of shutter-blades pivoted to said casing and adapted to close said aperture, a rotary ring in said casing connected to each blade for opening and closing the blades, an operating-plate in said casing connected to said ring, a spring connected to said operating-plate for closing the blades, a stronger spring connected to said plate for opening the blades, mechanism for throwing said stronger spring out of operation, and a movable ring having an eccentric cam-surface in the path of a part moving with said blades for limiting the opening movement thereof.

11. In a photographic shutter, a casing having an aperture, a series of shutter-blades pivoted to said casing and adapted to close said aperture, a rotary ring in said casing connected to each blade for opening and closing the blades, spring means for actuating the ring to close the blades, stronger spring means for actuating said ring to open the blades, mechanism for throwing said stronger spring means out of operation, and a movable ring having an eccentric cam-surface in the path of a part connected with one of said blades for limiting the opening movement of the series of blades.

12. In a photographic shutter, a casing having an aperture, a series of shutter-blades pivoted to said casing and adapted to close said aperture, a rotary ring in said casing having a slot-and-pin connection to each blade for opening and closing the blades, spring means for actuating the ring to close the blades, stronger spring means for actuating the ring to open the blades, mechanism for throwing said stronger spring means out of operation, and a movable ring having an eccentric cam-surface in the path of a part connected with one of said blades for limiting the opening movement of the series of blades.

13. In a photographic shutter, a casing having an aperture, a series of shutter-blades pivoted to said casing and adapted to close said aperture, a rotary ring in said casing connected to each blade for opening and closing the blades, an operating-plate in said casing connected to said ring, a spring connected to said operating-plate for closing the blades, a stronger spring connected to said plate for opening the blades, mechanism for throwing said stronger spring out of operation, and a movable ring having an eccentric cam-surface in the path of a part connected with one of said blades for limiting the opening movement of the series of blades.

14. In a photographic shutter, a casing, blade-supports pivoted to said casing, each support having a stud and a groove, a blade for each support engaging in said groove and having a perforation to fit upon said stud, whereby the blade is held in place and is removable from said plate, and means for operating said blades.

15. In a photographic shutter, blade-supports pivoted to said casing, each support having a circumferentially-grooved pin and a stud, a blade for each support having a portion fitting in said groove and a perforation fitting upon said stud, whereby the blade is held in place and is removable from said plate, and means for operating said blades.

16. In a photographic shutter, a casing, blade-supports pivoted to said casing, each blade-support having a circumferentially-grooved pin and a stud, a blade for each sup-

port having a notch in its edge and a perforation, whereby when the notch in the edge of the blade rests in the groove of the pin and the perforation fits upon the stud the blade is held in place and is removable from said plate, and means for operating said blades.

846,541. RECEPTACLE FOR ACIDS. GEORGE P. ADAMSON, Easton, Pa., assignor to General Chemical Company, New York, N. Y., a Corporation of New York. Filed May 26, 1906. Serial No. 318,822.

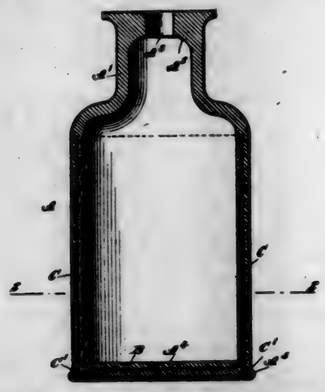

Claim.—1. A bottle comprising a body portion of relatively large diameter and a reduced upper portion or neck portion, said body portion being provided at its bottom with a bead, a continuous perforated strengthening-body of a stiff material embedded in said body portion and provided with a beaded lower edge in the said bead of the body portion, and a perforated disk embedded in the bottom of the bottle and located at a higher level than the bottom of said strengthening-body.

2. A receptacle having a continuous perforated resistant body embedded in its walls, and a stiff perforated disk embedded in its bottom and set at a distance above the lower end of said resistant body.

846,542. CHIMNEY-DAMPER. ALBERT E. ALBERTSON, Evansville, Minn. Filed Dec. 20, 1904. Serial No. 237,701.

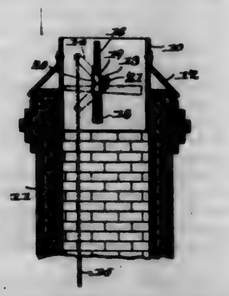

Claim.—In a device of the class described, a casing open at the ends and with parallel sides and adapted to extend into the upper end of a chimney and removably bearing therein, a flange connected at its upper edge to the exterior of the casing above the chimney and extending outwardly and downwardly at an angle thereto and bearing upon the upper outer face of the chimney, and a damper swinging within said casing and operative exteriorly of the same.

846,543. PROCESS OF PURIFYING AND CONCENTRATING SUGAR-JUICES. JULES A. BESSON, Caen, France. Filed May 4, 1904. Serial No. 206,805.

Claim.—The process of preventing incrustation in the evaporation of sugar-juice which consists in adding precipitated gelatinous alumina to the said juice prior to evaporation, substantially as herein described.

846,544. ELECTRIC HEATER. ALBERT H. BREMER, WILLIAM J. CHATTIN, and AUGUST H. HORNISCH, Philadelphia, Pa. Filed Jan. 3, 1906. Serial No. 294,388.

Claim.—1. In a combination with a tank or boiler, of a plurality of tubes located therein and opening out through said tank or boiler, and electric heating devices located in said tubes.

2. In combination with a tank or boiler disposed at an inclination from the inlet to the outlet, of a plurality of tubes located in said tank or boiler and opening out through the same, and electric heating devices located in said tubes.

3. In an electric heating apparatus, the combination, of a tank or boiler having an inlet at the bottom of one end and an outlet at the top of the other end, said tank being inclined upward from the inlet to the outlet; a plurality of tubes located in the tank or boiler, and electric heating devices in said tubes.

4. In an electric heating apparatus, the combination, of a tank or boiler having an inlet at the bottom of one end and an outlet at the top of the other end, said tank being inclined upward from the inlet to the outlet; a plurality of tubes suspended within the tank or boiler and opening out at their upper ends through the top of said tank or boiler, and electric heating devices removably located in said tubes.

5. In an electric heating apparatus for the purposes set forth, the combination with the tank or boiler, of a series of tubes depending through the top thereof and closed at their lower ends, and electric heating devices supported removably in said tubes.

6. In an electric heating apparatus for the purpose set forth, the combination with a tank or boiler, of tubes suspended in said tank or boiler and arranged in parallel rows, said tubes being closed at their lower ends and opening out through the tank at their upper ends, and electric heating devices suspended within the tubes.

7. In an electric heating apparatus for the purpose set forth, the combination with a tank or boiler, of tubes suspended in said tank or boiler, said tubes being closed at their lower ends and opening out through the tank at their upper ends, electric heating devices suspended in the tubes so as to be removable therefrom, and a covering-plate covering the upper end of the electric heating apparatus, substantially as shown and described.

8. In an electric heating apparatus for the purpose set forth, the combination with a tank or boiler, of tubes suspended in said tank or boiler and closed at their lower ends, and electric heating devices for said tubes comprising end plates, rods interposed between the end plates and upon which the resistance-wires are wound, and a bolt connecting the end plates and aforesaid rods.

9. In an electric heating apparatus for the purpose set forth, the combination with a tank or boiler, of tubes suspended in said tank or boiler and closed at their lower ends, and electric heating devices for said tubes comprising end plates, rods interposed between the end plates and a bolt for connecting the end plates and rods, one of said end plates fitting within the tube and the other projecting beyond the edges of the tube to support such electric heating device within the tube, substantially as shown and described.

10. In an electric heating apparatus for the purpose set forth, the combination with a water tank or boiler, of tubes suspended in said tank or boiler from the top thereof, said tubes being closed at their lower ends; together with electric heating devices for said tubes comprising end plates, rods interposed between said end plates and having the resistance-wires wound thereon, and a bolt connecting the end plates and rods, one of the end plates fitting within the tube and the other projecting beyond the same for supporting the electric heating device in said tube, and a covering-plate adapted to cover the electric heating devices and secured to the tank or boiler.

11. In an electric heating apparatus for the purpose set forth, the combination with a water tank or boiler comprising a body portion having outwardly-projecting flanges at its upper edge, a top secured to said flanges with an interposed packing, said top having holes therein arranged in series, tubes threaded in said holes so as to depend in the tank or boiler, the lower ends of said tubes being closed, electric heating devices mounted in said tubes through the open ends thereof, and a plate covering the electric heating devices and forming the top of the apparatus.

12. In an electric heating apparatus for the purpose set forth, the combination, of a tank or boiler comprising the body having lateral flanges at its upper end, a top secured to said flanges with a packing interposed, said top having holes therein, a boss at one end of the tank or boiler having an opening at its lower end for the inlet-pipe and a boss at the upper part of the other end of the tank or boiler having an opening for the outlet-pipe, such latter end of the boiler also provided with feet to dispose the boiler at an upward inclination; together with tubes depending from the openings in the top of the boiler and closed at their lower ends, electric heating devices located in the tubes and connected in series, and a covering-plate, the latter having bushings for the passage of the electric conducting-wires, substantially as herein shown and described.

846,545. REINFORCED CASKET-HANDLE. MAX BREMER, Elgin, Ill., assignor to The Western Casket Hardware Company, Elgin, Ill., a Corporation of Illinois. Filed Apr. 13, 1906. Serial No. 311,435.

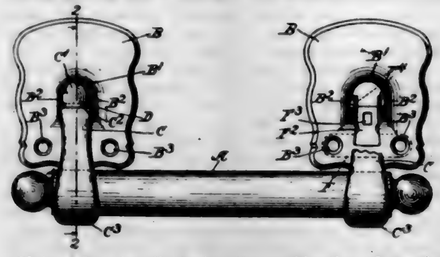

Claim.—In a handle device, the combination of a socket with a hanger, a pivot for the hanger, a reinforcing-plate in the socket, perforated lugs on said plate forming bearings for the pivot, a slot in said plate, a reinforcement in the hanger provided with a curved part lying over and partly around the pivot, and a lug on the end of said reinforcement adapted to extend into the slot in the socket-reinforcing plate when the handle is lifted.

846,546. TOASTER. JOHN M. BROCK, New York, N. Y., assignor to William M. Crane Company, a Corporation of New York. Filed Aug. 7, 1905. Serial No. 272,996.

Claim.—1. A toaster consisting of a base with an opening therein, an upwardly-tapering hollow reticulated member, means for supporting the material to be toasted in a substantially upright position adjacent to the outer surface of the reticulated member, and means for deflecting a portion of the heated gases away from the vertical central portion of the material being toasted and toward the vertical side portions of said material.

2. A toaster consisting of a base with an opening therein, an upwardly-tapering hollow reticulated member, means for supporting the material to be toasted in a substantially upright position adjacent to the outer surface of the reticulated member, means for deflecting a portion of the heated gases away from the vertical central portion of the material being toasted and toward the vertical side portions of said material, and means so arranged with relation to the opening in the base as to distribute the heated gases passing through said opening.

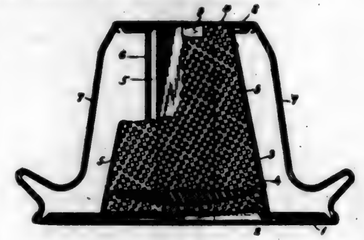

3. A toaster consisting of a base with an opening therein, an upwardly-tapering hollow reticulated member, means located adjacent to the exterior surface of said upwardly-tapering hollow reticulated member for supporting the material to be toasted in a substantially upright position, imperforate means arranged opposite the vertical central portions of the material being toasted and adapted to deflect a portion of the heated gases away from said central portions and toward the vertical side portions of said material, and means so arranged with relation to the opening in the base as to distribute the heated gases passing through said opening.

4. A toaster consisting of a base with an opening therein, a hollow reticulated heat-distributer in shape like the frustum of a pyramid, a plurality of supports each located adjacent to and substantially parallel with one of the outer surfaces of the pyramidal heat-distributer for supporting the material to be toasted, an imperforate deflector-plate arranged opposite each of the outer surfaces of the hollow reticulated heat-distributer, and a reticulated baffle-plate arranged with relation to the opening in the base so as to distribute the heated gases passing through said opening.

5. In a toaster, the combination of a base with an opening therein, an upwardly-tapering hollow reticulated member, means for supporting the material to be toasted in a substantially upright position adjacent to the outer surface of the reticulated member, means for deflecting a portion of the heated gases away from the vertical central portion of the material being toasted and toward the vertical side portions of said material, and a member arranged in substantially horizontal position adjacent to the opening in the base in such manner as to become highly heated and thereby to heat the toast by radiation.

6. A toaster consisting of a base with an opening therein, an upwardly-tapering hollow reticulated member, means for supporting the material to be toasted in a substantially upright position adjacent to the outer surface of the reticulated member, means for deflecting a portion of the heated gases away from the vertical central portion of the material being toasted and toward the vertical side portions of said material, means so arranged with relation to the opening in the base as to distribute the heated gases passing through said opening, and a top member, said supports being connected at one end to said top and at the other end to said base.

846,547. FOUNTAIN-PEN. FRANCIS C. BROWN, New York, N. Y. Filed Mar. 17, 1906. Serial No. 306,494.

Claim.—1. In a fountain-pen, the combination with the barrel, of a cap, the body of which has an internal diameter reduced at the open end of the cap to closely fit the barrel, but larger in the body of the cap so as to form an air-chamber around the barrel, the cap being formed, at different distances from its end, with openings leading into said chamber.

2. A cap for fountain-pens, having its interior diameter reduced at the open end and enlarged in the body of the cap, said cap having openings leading to the said enlarged portion, and an internal push-pin visible through said openings.

3. A cap for fountain-pens, having a slitted open end, and a plurality of split elastic rings surrounding said ends and arranged in break-joint fashion.

4. A cap for fountain-pens, having its interior diameter reduced at the open end and enlarged in the body of the cap, the open end of the cap being slitted, and a clamping or contracting ring surrounding said slitted end.

5. In a fountain-pen, a nib-carrier provided with upper and lower feed-tongues adapted to receive the nib between them, and a transversely-concaved brace engaging the lower feed-tongue.

6. In a fountain-pen, a nib-carrier provided with a feed-tongue adapted to engage the lower face of the nib, and a transversely-concaved brace engaging the lower feed-tongue.

7. In a fountain-pen, a barrel, a sliding feed-bar therein, a nib-carrier located at the forward end of the feed-bar and provided with an abutment, a transversely-concaved brace extending forward of said abutment, and a cap provided with an internal push-pin adapted to engage said abutment and to lie within the concavity of the brace.

8. In a fountain-pen, a barrel, a sliding feed-bar therein, a nib-carrier located at the forward end of the feed-bar and provided with an abutment recessed on its forward face, a transversely-concaved brace extending forward of said abutment, and a cap provided with an internal push-pin adapted to lie within the concavity of the brace and to engage, with its end, the recess of the abutment.

9. In a fountain-pen, a barrel having a perforated plug at its rear end, a feed-bar having its rear end slidably mounted in said plug and having a nib-carrier at its front end and an abutment at one side of said nib-carrier, said feed-bar being freely movable for projecting the nib-carrier from or retracting it within the barrel, and a cap adapted to fit over and slide upon either end of the barrel, said cap being provided with an interior push-rod adapted to engage the rear end of the feed-rod or the abutment at the front end thereof and move said rod the required distance when the cap is slipped on the barrel.

846,548. ANVIL. LAURENCE F. CLAR, Willits, Cal. Filed Jan. 5, 1905. Serial No. 239,707.

Claim.—1. In an anvil with a removable face-plate the combination of a face plate member, comprising a plate and longitudinal tongue secured thereto; an anvil having a longitudinal groove adapted to receive said tongue to form a dovetail joint between said face-plate member and the anvil which is adapted to pull said member against the anvil; a transversely-undercut portion on the anvil into which a portion of the face-plate member is adapted to come in wedging contact to pull same against the anvil; and means adapted to drive and hold said face-plate member in wedging contact with said undercut portion.

2. In an anvil with a removable face-plate the combination of a longitudinal, tongue-and-groove connection between the face-plate and the anvil; a transversely-undercut portion on the anvil at one end thereof and adapted to coact in wedging contact with the end of the tongue when the fact-plate is seated; and means comprising a tapering key extending through transverse keyways in the anvil and tongue, and adapted to drive said end of the tongue into said undercut portion on the anvil.

3. In an anvil with a removable face-plate the combination of a face-plate member comprising a plate and longitudinal tongue secured thereto; an anvil having a longitudinal undercut groove opening endwise and adapted to receive said tongue and to permit endwise engagement and disengagement thereof, but to prevent lateral movement, and also removal in a vertical direction from the anvil; a raised portion on the anvil adapted to wedge under a portion of the face-plate member when said member is driven toward one end thereof and seated; and means comprising a key adapted to wedge and hold the face-plate member in wedging position.

4. In an anvil with a removable face-plate the combination of a face-plate member comprising a plate and a tongue extending along the length of said plate but not fully to one end thereof; an anvil having an undercut groove adapted to receive said tongue to form a dovetail joint between the face-plate member and the anvil; the said groove extending lengthwise of the anvil but not any substantial distance into the horn of the anvil; a transversely-undercut portion on the anvil into which the end of the tongue is adapted to come in wedging contact; a raised portion on the anvil adapted to wedge under that part of the plate extending beyond the tongue when the face-plate member is driven toward the horn and at the same time that the aforesaid undercut portion on the anvil and said tongue come into wedging contact.

5. In an anvil with a removable face-plate the combination of a face-plate member comprising a plate and longitudinal tongue secured thereto, an anvil having a longitudinal undercut groove opening endwise and adapted to coact with said tongue to permit endwise insertion and removal of the tongue in said groove but to prevent lateral movement and also removal in a vertical direction; a transversely-undercut portion on the anvil into which a portion of the face-plate member is adapted to come in wedging contact to pull same against the anvil; and means adapted to drive the face-plate member simultaneously both down against the anvil and endwise into said undercut portion and to maintain said member in the driven positions.

6. In an anvil with a removable face-plate the combination of a face-plate member comprising a plate and longitudinal tongue secured thereto; an anvil having a longitudinal undercut groove opening endwise and adapted to receive said tongue and to prevent removal thereof in all directions except endwise; a key adapted to be inserted into transversely keyways in the anvil and said tongue, said key where it coacts with the keyway in the tongue being undercut to drive said tongue down against the anvil and tapering to drive said tongue endwise toward one end of the anvil; and an abutment at said end of the anvil.

7. In an anvil with a removable face-plate the combination of a face-plate member comprising a plate and a longitudinal tongue, a longitudinal undercut groove in the anvil opening endwise and adapted to receive said tongue and prevent removal thereof in any direction except endwise; the keyways 11 and 12 through the sides of the anvil and the tongue respectively and the key 10 having end portions provided with oppositely-inclined edges and a middle portion provided with edges inclined in the same direction, one of which constitutes the undercut edge 13.

8. In an anvil with a removable face-plate the combination of an anvil having the longitudinal groove 5, the face-plate member 3 comprising the tongue 4 cut short so as to leave a portion 19 extending beyond the tongue; the undercut portion 6 coacting with the portion 7 on the tongue; the undercut portion 8 on the extension part of the face-plate coacting with the portion 9 on the anvil, and means comprising a tapering key adapted to be inserted through transverse keyways in the anvil and the tongue on the face-plate and further adapted to wedge the face-plate toward said undercut portion 6.

9. In an anvil with a removable face-plate the combination of an anvil having the longitudinal groove 5, the tongue 4 on the face-plate, the undercut portion 6 in the anvil adapted to coact with the portion 7 on the tongue; and means comprising a tapering key with an undercut edge, said key being insertible through the anvil and the tongue and adapted to pull the face-plate against the anvil and drive it toward said undercut portion 6.

10. In combination an anvil; a composite removable face-plate comprising a hard material suitable for a working face integrally combined with another softer material suitable for the body portion of the face-plate; a tongue formed in the said softer material of the face-plate; and said anvil being provided with a groove with which said tongue is adapted to engage.

11. In an anvil with a removable face-plate, the combination of a face-plate member comprising a plate and longitudinal tongue secured thereto; an anvil having a longitudinal groove adapted to receive said tongue to form a dovetailed joint between the face-plate member and the anvil; means comprising a tapering key working in keyways in the anvil and adapted to drive and hold said face-plate member into contact with an abutment located in the path of the face-plate member; and said abutment.

846,549. LAMINATED WHEEL. PERCY L. CLARK, Champaign, Ill., assignor to Emma F. Clark, Champaign, Ill. Filed Mar. 3, 1906. Serial No. 303,937.

Claim.—1. A toothed wheel built up from identically die-cut sheet-metal disks or laminæ having each two identically-located apertures for assembling and securing together the disks with their respective points cut by the same point of the die registered or alined, and means for holding them compactly contiguous successively.

2. A toothed wheel consisting of a plurality of toothed sheet-metal disks of identical outline, all having a central aperture and an eccentrically-located registering feature, in combination with a rigid element driven tight through the central apertures of the disks, the disks being assembled on the central element in lateral contact successively.

3. A toothed metal wheel consisting of a plurality of thin sheet-metal disks of identical outline, having each a central aperture and an eccentrically-located registering feature, in combination with a shouldered shaft or staff on which the disks make a drive fit and are driven against the shoulder and in lateral contact successively.

4. A toothed metal wheel comprising a plurality of thin sheet-metal disks of identical outline, having each a central aperture and an eccentrically-located registering feature, in combination with a tubular hub or staff, having an annular flange forming a shoulder, the disks being assembled with a drive fit on such tubular hub or staff against said shoulder and in lateral contact successively.

5. A toothed metal wheel built up from identically die-cut sheet-metal disks or laminæ having a central aperture and assembled with their respective points cut by the same point of the die registered or alined, in combination with a central staff on which said disks are mounted with a drive fit compactly contiguous successively.

6. A toothed wheel consisting of a plurality of toothed sheet-metal disks of identical outline having an identically-located alining aperture in combination with a rigid element driven tight through said alining apertures, the disks being assembled thereon compactly contiguous successively.

7. A toothed wheel consisting of a plurality of toothed sheet-metal disks of identical outline having a plurality of identically-situated alining or registering apertures; rigid alining elements extending through said apertures respectively and making drive fit with the disks therein, the disks being assembled on such alining elements compactly contiguous successively.

846,550. DEVICE FOR RENDERING BOTTLES NON-REFILLABLE. VALENTINE CLARK, Dryad, Wash. Filed May 22, 1906. Serial No. 318,131.

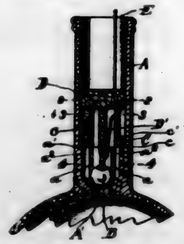

Claim.—1. In a device for rendering bottles non-refillable, a bottle-neck having an opening at its lower end and a valve-seat above said opening, and having vertical grooves extending upwardly from said valve-seat, an open-ended cylinder disposed above said vertical grooves said cylinder having radial grooves on its lower edge, and vertical grooves on its outer circumference connecting with said radial grooves, a top guard member consisting of a head resting on said cylinder and a central downwardly-extending pin projecting into said cylinder, said top member having vertical grooves or passages in its outer circumference, and a ball-valve adapted to be seated on the valve-seat and control the opening between the bottle-neck and the body of the bottle.

2. In a device for rendering bottles non-refillable, a bottle-neck having an opening at its lower end and a valve-seat above said opening, vertical ribs extending upwardly from said valve-seat and having grooves between said ribs, an open-ended cylinder disposed above said vertical ribs, a horizontal flange extending outwardly from the base of said cylinder and having radial grooves in the lower face of said flange and vertical grooves in the circumference of said flange connecting with the radial grooves, the upper edge of said cylinder having vertical slots, a top guard member resting on the top edge of the cylinder and rigidly secured within the bottle-neck, said top guard comprising a head and a downwardly-extending central vertical pin projecting into the cylinder, the head

of said top member having vertical grooves or passages in its circumference, and a ball-valve seat on the aforesaid valve-seat to control the opening between the bottle-neck and the body of the bottle.

3. In a device for rendering bottles non-refillable, a bottle-neck having an opening at or near its lower end and having an enlarged passage above the same, an open-end cylinder disposed above said passage, said cylinder being of less diameter than the internal bore of the bottle-neck and having openings through its vertical walls, a top guard member consisting of a head resting on said cylinder and a downwardly-extending pin projecting into said cylinder, said head having passages therethrough, and a valve adapted to be seated above and control the opening at or near the lower end of the bottle-neck.

846,551. BODY-BRACE AND HOSE-SUPPORTER. JOSEPH COHEN, New York, N. Y. Filed Sept. 24, 1906. Serial No. 335,895.

Claim.—A body-brace and garment-supporter, comprising a continuous girdle having enlarged ends adapted to overlap in front to form an abdominal pad, the top of said overlapping ends being provided with detachable fastening means, and a pair of hose-supporters attached to the lower edges of each enlarged end, one of each pair of hose-supporters being arranged to support one of the hose and the other of each pair the other hose.

846,552. AUTOMATIC FOLDING STAND. SIDNEY T. COLLINS and GEORGE BROWNING, Hinsdale, Ill. Filed May 17, 1906. Serial No. 317,392.

Claim.—1. An automatic folding stand, comprising a telescoping bar, means for attaching an object to the extremities of one member of said bar, a pair of arms attached at one point to said member, and adapted to cooperate with a portion thereof to form a tripod and support said bar, and connections between said arms and the other member of said bar for controlling the position of said arms.

2. An automatic folding stand, comprising a telescoping bar, means for attaching an object to said bar, a plurality of arms attached to, and adapted to coöperate with a portion of said bar to support the same in position, resilient means tending to normally hold said arms closed, and means controlled by the telescoping of said bar for automatically moving said arms into position to support said bar.

3. An automatic folding stand, comprising a telescoping bar, means for attaching an object to the extremities of one member of said bar, a pair of arms pivotally attached to said bar, and adapted to coöperate with a portion thereof to form a tripod and support said bar, resilient means tending to hold said arms closed and said bar extended, and means controlled by the telescoping of said bar for automatically moving said arms into position to support said bar.

4. An automatic folding stand, comprising a telescoping bar, a plurality of arms pivotally attached to one member of said bar, resilient means tending to hold said arms closed and said bar extended, and a link for each arm connecting the same to the other member of said bar, the parts connecting said arms to said bar being arranged to control the length of said bar when extended and when telescoped.

5. In a device of the kind described, a bar, and means for attaching a bag to said bar, comprising a clip provided with a plurality of clamping members adapted to engage a part of the side of said bag between them, and means operable wholly from the outside of said bag for controlling the operation of said clamping members.

846,553. AUTOMATIC TILTING VIAL-CASE. WILSON W. CUMMINS, Lidgerwood, N. D. Filed Apr. 12, 1906. Serial No. 311,317.

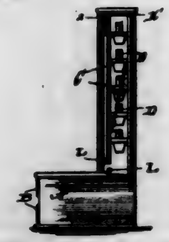

Claim.—1. A cabinet of the type set forth embodying pairs of vertical members, the rear member of each pair being rigidly affixed to the cabinet, holders consisting of a pair of spaced members the upper of which has openings formed therein, links connected rigidly to the upper of said members and having their ends pivoted to said vertical members, and springs connected at their ends to each of the vertical members.

2. A cabinet of the type set forth embodying two pairs of spaced vertical members, the rear member of each pair being rigidly affixed to the cabinet, holders consisting of a pair of horizontal spaced members, connecting-pieces secured to the ends of said horizontal members, links secured to said holders, said links each being pivotally connected to each of said vertical members, coil-springs secured at their ends to said vertical members, a hand-grip connecting the forward of said vertical members, and stops to engage said forward of the vertical members.

846,554. COMPOSITION OF MATTER FOR FIRE-KINDLING. EDWIN W. DALEY and CHARLES JOHNSON, Nashville, Tenn., assignors to Nashville Chemical Company, Nashville, Tenn., a Corporation of Tennessee. Filed Mar. 5, 1906. Serial No. 304,237.

Claim.—1. A kindling composition comprising naphthalene and a combustible filler, as sawdust or similar granular material, the larger proportion being naphthalene, combined together by incorporating the sawdust in the naphthalene while in molten state, the composition being pressed into blocks and solidified in that form.

2. A kindling composition comprising naphthalene and a combustible granular filler, as sawdust, of which the naphthalene is in the largest proportion, together with a relatively small proportion of a binding substance, as rosin, the said ingredients being combined together by incorporating the sawdust in a molten or hot liquid admixture of the naphthalene and rosin, and the composition being made into blocks of solid form.

846,555. PROCESS OF BURNING CEMENT AND APPARATUS THEREFOR. HENRY L. DOHERTY, Madison, Wis. Filed Apr. 7, 1906. Serial No. 310,561.

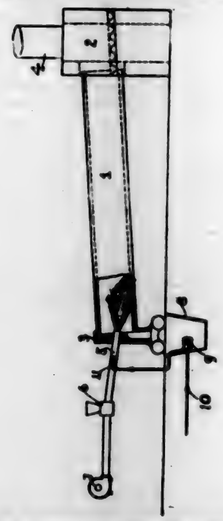

Claim.—1. The process of burning cement-clinker in rotary kilns which consists in directly impinging on an advancing stream of cement material in such kilns a tempered flame of burning fuel carried by a jet of commingled air and steam, the relative proportion of the steam in such jet being so regulated as to confine the temperature produced within the upper and lower limits of safe clinkering temperature.

2. The process of burning cement-clinker which consists in directly impinging on a traveling stream of cement material a tempered flame of burning fuel carried by an aeriform jet containing a modicum of steam, the proportion of steam in such jet being regulated to confine the temperature produced within the upper and lower limits of safe clinkering temperatures.

3. The process of burning cement-clinker in rotary kilns which consists in directly impinging on an advancing stream of cement material in such kilns a tempered flame of burning fuel carried by an aeriform jet containing a modicum of steam, the proportion of steam in such jet being regulated to confine the temperature produced within the upper and lower limits of safe clinkering temperatures, and from time to time slightly modifying said proportion within said limits to obviate ring formation.

4. The process of burning cement-clinker which consists in impinging on an advancing stream of cement materials a tempered flame of powdered coal carried by an air-jet containing sufficient water-vapor to temper and confine the temperature produced within the upper and lower limits of safe clinkering temperatures.

5. The process of burning cement-clinker in rotary kilns which consists in directly impinging on an advancing stream of cement materials in such kilns a tempered flame of powdered coal carried by an air-jet containing sufficient water-vapor to temper and confine the temperature produced within the upper and lower limits of safe clinkering temperatures, and in periodically varying such proportion within such limits to obviate ring formation.

6. A cement-clinker apparatus comprising a rotary inclined kiln, means for feeding raw material thereto and removing finished clinker therefrom, and flame-producing means therefor comprising a burner arranged to direct a flame into direct impingement upon material advancing therethrough, a feeding device furnishing said burner with powdered fuel, air-supplying means for transporting said fuel to and through the burner into impingement upon the material and means for furnishing to said air a modicum of steam.

7. A cement-clinker apparatus comprising a rotary inclined kiln, means for feeding raw material thereto and removing finished clinker therefrom, and flame-producing means therefor comprising a burner arranged to direct a flame into direct impingement upon material advancing therethrough, a feed device furnishing said burner with powdered fuel, air-supplying means for transporting said fuel to and through the burner, and a water-vaporizing device located in proximity to the clinker-removing means and having a pipe connection with said flame-producing means whereby undue heat of the impinging flame may be tempered.

846,556. FISH-TRAP. EDWARD F. DOLLAR, Blowing Cave District, Grady county, Ga. Filed Nov. 14, 1906. Serial No. 343,363.

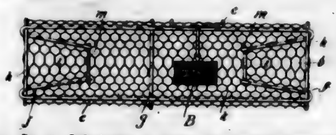

Claim.—In a fish-trap, a cage or pound comprising a body made up of longitudinal wires *e* having inwardly bent and converging, opposite end portions *f*, a ring of wire arranged at the middle of the body, rings of wire arranged at the ends of the body, and wire-netting arranged on the longitudinal wires *e* and having inwardly-bent end portions which latter serve together with the wire portions *f* to form contracted entrances at the ends of the body; the intermediate portion of the wire-netting receiving in its interstices the longitudinal wires *e* and the rings of wire, and the inwardly-bent end portions of said netting receiving in their interstices throughout their length the inwardly-bent end portions *f* of said wires *e*, whereby the wire-netting is connected of itself throughout its length to the wires, and a door connected to said body and controlling an opening in the side of the same.

846,557. TELEPHONE TRUNKING SYSTEM. FRANCIS W. DUNBAR, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 1, 1902. Serial No. 117,923.

Claim.—1. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and a called telephone-line at its incoming end, of a guard-signal at the incoming end of the trunk, means operated by current flowing over one side only of the trunk for placing said signal in condition to operate when the connection is established at the outgoing end of the trunk, and further means actuated by current sent over a portion of the talking-circuit when the trunk is connected with the called line and before the response of the called subscriber for rendering said signal inoperative, substantially as described.

2. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, of a guard-signal for the incoming end of the trunk, a relay

actuated over one side of the trunk and ground when the connection is established at the outgoing end of the trunk for operating said signal and a second relay adapted to be actuated over one side of the talking-circuit when the connection with the called line is established, said latter relay serving to prevent the operation of said signal, substantially as described.

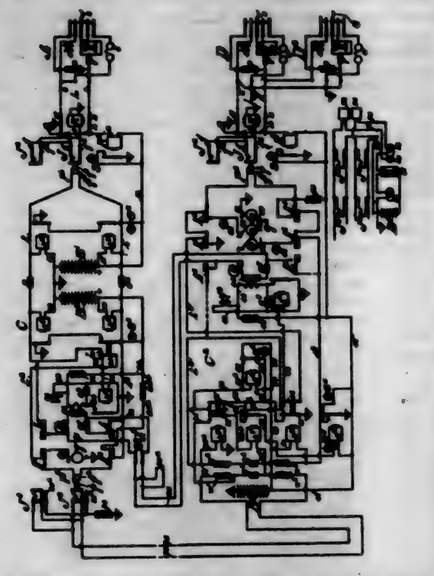

3. The combination with a trunk-line adapted to be connected with a calling telephone-line at its outgoing end and a called telephone-line at its incoming end, of a signal associated with said incoming end, a relay also at said incoming end adapted to be operated by current sent over one side of the trunk and ground before the subscribers are in conversation and over the metallic trunk-line during conversation, and a second relay at said incoming end adapted to be operated by current flowing over a portion of the talking-circuit when the trunk is connected with the called line, said relays jointly controlling said signal so as to operate the same to give a guard indication when the connection is established at the outgoing end only and so as to give a disconnect indication when the connection is severed at the outgoing end and the incoming end is connected with the called line, substantially as described.

4. The combination with a trunk-line adapted to be connected with a calling telephone-line at its outgoing end, and with a called telephone-line at its incoming end, of a relay actuated over one side of the trunk and ground before the subscribers are in conversation and over the metallic trunk during conversation, a second relay adapted to be operated over one side of the talking-circuit when the trunk is connected with the called line, and a signal for the incoming end of the trunk, said signal being actuated when either of said relays is energized and the other deënergized, whereby in the one instance it serves as a guard-signal and in the other as a disconnect-signal, substantially as described.

5. The combination with a trunk-line extending between different switchboard-sections and adapted to connect telephone-lines together for conversation, of a relay at the incoming end of the trunk responsive to current over one side only of the trunk with suitable return when the connection is established at the outgoing end and the called subscriber's telephone is not in use, a second relay at said end actuated over a portion of the talking-circuit when connection is established with the called line, a signal whose actuation depends upon said relays and adapted to be operated to indicate when a connection exists at either end only, and a pilot-signal also associated with the trunk and actuated whenever said first-named signal is actuated, substantially as described.

6. The combination with a trunk-line extending between different switchboard-sections and adapted to connect telephone-lines together for conversation, of a relay at the incoming end of the trunk responsive to current over one side only of the trunk with suitable return when the connection is established at the outgoing end and the called subscriber's telephone is not in use, a second relay at said end actuated over a portion of the talking-circuit when connection is established with the called line, a signal whose actuation depends solely upon said relays and adapted to be operated to indicate when a connection exists at either end only, and a pilot-signal also associated with the trunk and actuated whenever said first-named signal is actuated, substantially as described.

7. The combination with a trunk-line extending between different switchboard-sections and adapted to connect telephone-lines together for conversation, of a relay at the incoming end of the trunk responsive to current over one side only of the trunk with suitable return when the connection is established at the outgoing end and the called subscriber's telephone is not in use, a second relay at said end actuated over a portion of the talking-circuit when connection is established with the called line, and a signal entirely controlled by said relays and actuated when connection exists at either end only whereby it acts under one condition as a guard-signal and under the other as a disconnect-signal, substantially as described.

8. The combination with a trunk-line, of a cord-circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, of a retardation-coil legged to ground from one side of the talking-circuit established by the connection of the cord with the trunk but normally disconnected therefrom, a supervisory signal associated with the cord-circuit and placed in condition to operate by current flowing through said retardation-coil and means actuated by the response of the called subscriber for rendering said supervisory signal inoperative, substantially as described.

9. The combination with a trunk-line, of a cord-circuit to connect with its outgoing end, of a called subscriber's line with which its incoming end is to connect, a retardation-coil legged to ground from one side of the talking-circuit established by the connection of the cord with the trunk, but normally disconnected therefrom, and a supervisory signal associated with the cord-circuit and placed in operative condition by current flowing over one side of the talking-circuit and through the retardation-coil, said signal being rendered inoperative by current flowing over the other side of the talking-circuit when the called subscriber responds, substantially as described.

10. The combination with a trunk-line, of a cord-circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is to connect, a retardation-coil legged to ground from one side of the talking-circuit established by the connection of the cord with the trunk, said coil being normally disconnected therefrom, a supervisory signal in connection with the cord and placed in operative condition by current flowing over one side of the talking-circuit and through said retardation-coil, and a relay actuated by current flowing over the other side of the cord-circuit upon the response of the called subscriber to render said signal inoperative, substantially as described.

11. The combination with a trunk-line, of a cord-circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is to connect, a retardation-coil legged to ground from one side of the talking-circuit established by the connection of the cord with the trunk, said retardation-coil being normally disconnected therefrom, a relay actuated by current flowing over one side of the cord-circuit and through said retardation-coil, a supervisory signal associated with the cord-circuit and placed in operative condition by said relay when actuated, and a second relay actuated by current flowing over the other side of the talking-circuit upon the response of the called subscriber to render said signal inoperative, substantially as described.

12. The combination with a trunk-line, of a cord-circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to connect, a retardation-coil legged to ground from one side of the trunk-circuit during conversation only, said retardation-coil being normally disconnected from said trunk-circuit, a supervisory signal associated with the cord-circuit and placed in operative condition by current flowing through said retardation-coil, and means actuated upon the response of the called subscriber for rendering said supervisory signal inoperative, substantially as described.

13. The combination with a trunk-line, of a cord-circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is to connect, a retardation-coil legged to ground from one side of the trunk-circuit during conversation only, said retardation-coil being normally disconnected from the trunk, a supervisory signal associated with the cord-circuit and placed in condition to operate by current over one side of the talking-circuit and through said retardation-coil to ground, and means actuated by current flowing over the other side of the trunk-circuit upon the response of the called subscriber for rendering said signal inoperative, substantially as described.

14. The combination with a trunk-line, of a cord-circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is to connect, a retardation-coil normally disconnected from the trunk-circuit but connected with one side thereof by the connection of the cord-circuit with the trunk, a supervisory signal associated with the cord and placed in operative condition by current flowing through said retardation-coil, and means actuated upon the response of the called subscriber for rendering said supervisory signal inoperative, substantially as described.

15. The combination with a trunk-line having spring-jacks at its outgoing end, of a cord-circuit to connect with said jacks and a called subscriber's line with which its incoming end is to connect, an additional contact in said jack normally disconnected from the line, a retardation-coil connected between ground and said contact, means for connecting said contact with one side of the trunk when the cord-circuit plug is inserted in the jack, a supervisory signal associated with the cord-circuit and placed in operative condition by current flowing through said retardation-coil, and means actuated by the response of the called subscriber for rendering said signal inoperative, substantially as described.

16. The combination with a trunk-line adapted to be connected with a calling telephone-line at its outgoing end and a called telephone-line at its incoming end, of an electromagnetic device normally legged to ground at its incoming end for the operation of certain telephonic apparatus, and a retardation-coil legged to ground at the outgoing end during conversation over which current is adapted to flow for the operation of certain telephonic apparatus, said retardation-coil being normally disconnected from the circuit whereby the presence of earth currents cannot normally cause the undesired operation of the said electromagnetic device, substantially as described.

17. The combination with a trunk-line adapted to be connected with a calling telephone-line at its outgoing end and a called telephone-line at its incoming end, of a relay normally legged to ground from one side of the trunk-circuit at its incoming end and arranged to control telephonic apparatus at said end, and a retardation-coil legged to ground at the outgoing end during connection over which current is adapted to flow to operate telephone apparatus, said retardation-coil being normally disconnected from the circuit whereby the presence of earth currents will not effect the undesired operation of the relay, substantially as described.

18. The combination with a trunk-line adapted to be connected with a calling telephone-line at its outgoing end and a called telephone-line at its incoming end, of a relay normally legged to ground from one side of the trunk-line at its incoming end for the operation of telephonic apparatus, and a retardation-coil legged to ground from the same side of the trunk-circuit at the outgoing end when a connection exists therewith over which current is adapted to flow for the operation of telephonic apparatus, said retardation-coil being normally disconnected from the trunk, whereby the presence of earth currents will not effect the undesired operation of the relay, substantially as described.

19. The combination with a trunk-line adapted to be connected with a calling telephone-line at its outgoing end and a called telephone-line at its incoming end, of a relay normally legged to ground from one side of said trunk-line at the incoming end to control telephone apparatus at said end, a retardation-coil normally disconnected from the trunk at its outgoing end, and means for automatically connecting the same with the trunk when the connection is established therewith at its outgoing end over which current is adapted to flow for the operation of telephonic apparatus, whereby the undesired operation of the relay by earth currents is prevented, substantially as described.

20. The combination with a trunk-circuit extending between different switchboard-sections, of a trunk-relay at the incoming end of said trunk energized by current over one limb only of the outgoing end, a second relay energized over one limb only of the incoming end when a connection is established with a called line, and a signal at said incoming end which will be displayed at the actuation of either of said relays but effaced at the actuation of both, substantially as described.

846,558. FOUNTAIN MARKING-BRUSH. JOSEPH B. FISCHER, Chicago, Ill., assignor to Ernest A. Tesch, Chicago, Ill. Filed Nov. 22, 1905. Serial No. 288,543.

Claim.—In a marking device, a fluid-holding tube having an air-inlet opening in its upper end, a closure for said opening, a nipple detachably secured to the lower end of said tube, said nipple having a valve-seat and a fluid-channel therein, a valve adjustably arranged in said tube and nipple, a tapering nozzle detachably secured to said nipple, said nozzle having a chamber and a fluid-passage formed therein, a brush having portions of its bristles surrounding said nozzle, a sleeve adjustably mounted on said nozzle and adapted to clamp the bristles around the nozzle, and a cap detachably secured to said sleeve and adapted to serve as a protector for said bristles.

846,559. CONTINUOUS DECORATING-KILN. JOHN GAMBLE, East Liverpool, Ohio. Filed Apr. 16, 1906. Serial No. 311,999.

Claim.—1. A kiln of the character described, provided with a heating or "firing" tunnel-section having two series of heat-conducting flues or passages communicating with a source of heat and extending tortuously in opposite directions through the walls of said tunnel-section.

2. A kiln of the character described, provided with a heating or "firing" tunnel-section having two series of heat-conducting flues or chambers, tortuously traversing the walls thereof in opposite directions and communicating with a source of heat, said source of heat being arranged near the entrance end of said heating-chamber or tunnel-section and the series of heat-conducting flues toward the delivery end having a greater range than the series of heat-conducting flues toward the entrance end.

3. A kiln of the character described, having a heating or "firing" section and an extension-chamber with a right-angled end wall opposed to the plane of the entrance to the chamber of said heating or "firing" section, and a tunnel extension beyond said wall communicating with said extension-chamber, said extension-chamber having an inclined lateral wall deflected oppositely to said end wall substantially out of the plane of said chamber-entrance.

4. A kiln of the character described, having a heating or "firing" section and end extension-chambers each having a right-angled end wall opposed to the plane of the entrance to said "firing" section and having an inclined lateral wall forming with said right-angled wall the entrance to said extension-chamber at a point substantially out of alinement with the aforesaid entrance.

846,560. TOY. WALTER V. GILBERT, London, England. Filed June 5, 1906. Serial No. 320,248.

Claim.—1. A toy simulating in appearance a crab or other living animal, the same comprising a body portion formed of a spring device bent or bowed to produce opposing upper and lower parts and attachments connected with the lower member and projecting through the upper one and adapted to slide therethrough when the said parts are caused to approach and recede from each other by compression and release of compression, substantially as described.

2. A toy simulating a crab or other living animal comprising a body portion formed of a thin resilient blank bowed to produce opposing upper and lower parts corresponding to the similar parts of the animal's body, one of such parts being provided with openings and the other having attachments representing movable parts of the living animal and which are adapted to slide in the aforesaid openings and to project above the part provided with the latter, when the said parts are caused to approach each other by the application of pressure, substantially as described.

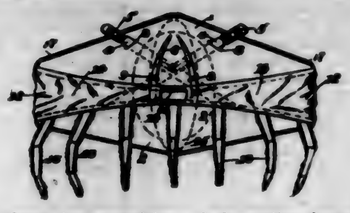

3. A figure toy comprising a body portion formed of a thin resilient plate bowed to produce opposing upper and lower parts and having its bowed back indented transversely, one of the said parts being provided with openings and the other having attachments representing movable members of the body of a living animal and which are caused to slide through the part provided with openings when pressure is applied to the ends or apices of the bowed indented back, substantially as described.

4. A figure toy simulating a crab or other crustacean and comprising a body portion formed of a thin resilient plate which is bowed to produce upper and lower members which are opposed to each other and represent in the toy the upper and lower portions of the shell of the animal and attachments comprising devices which are connected with one of the opposing members and represent movable parts of the living crab or other animal, the same being adapted to slide and project more or less when the opposing parts representing the shell are pressed toward each other and then released, substantially as described.

5. A figure toy comprising a body portion formed of a thin resilient plate which is bowed to produce opposing upper and lower parts, the upper part being provided with openings and devices representing antennæ of the living animal, the same being attached to one of said parts and adapted to project and slide through the openings in the other when the said parts are caused to approach and recede from each other by compression and release thereof, substantially as described.

6. A figure toy comprising a body portion formed of a thin resilient plate which is bowed to produce opposing upper and lower parts, the upper part having openings and devices representing antennæ of the living animal, the same being attached to the lower part and projecting through openings in the upper one, their upper ends projecting toward each other and being caused to approach more nearly when the body is compressed, substantially as described.

7. A figure toy comprising a body portion formed of a thin resilient blank which is bowed to produce opposing upper and lower members, representing the body of the animal, the upper member having openings and the lower member being provided with attachments representing antennæ of the living animal, the same being curved and projecting through the openings in the upper part, so that when the body is compressed the antennæ approach each other, substantially as described.

8. A figure toy simulating a crab or other crustacean comprising a body portion formed of a thin resilient blank which is bowed to produce opposing upper and lower parts representing the body of an animal, the upper part having openings and devices in the nature of bars or narrow strips which are attached to the lower part and project through openings in the upper one, their outer ends being constructed to simulate the eyes of a living animal which are projected more or less when the body of the device is compressed, substantially as described.

9. A figure toy comprising a body portion formed of a thin resilient plate bowed to produce opposing upper and lower parts representing the shell of a living animal, one of said parts being provided with openings and the other with attachments comprising bars or strips which are connected with the lower part and extend diagonally across each other and being adapted to slide in the openings in the upper part whereby they are projected diagonally when the body of the device is compressed, the outer ends of said bars or strips being constructed to represent the eyes of the living animal, substantially as described.

10. A figure toy simulating a crab or other crustacean comprising a body portion formed of a thin resilient plate bowed to produce opposing upper and lower members representing the shell of the living animal, one of which is provided with openings and the other with attachments in the form of bars or strips which cross each other diagonally and project through the openings in the upper member and are constructed exteriorly to represent the movable members of the living animal, and means for connecting the two bars or strips at their intersection whereby their movement on each other is limited, substantially as described.

11. A figure toy comprising a body portion formed of a thin resilient plate which is bowed to produce opposing upper and lower parts representing the body of the living animal, the upper part being provided with openings and the lower part with attachments representing antennæ and the eyes of a living animal, such attachments being projected through the openings in the upper part and thus adapted to slide therein when the bow of the device is alternately compressed and released, substantially as described.

12. A figure toy simulating a living animal comprising a body portion formed of a thin resilient plate which is bowed to produce opposing upper and lower parts that represent corresponding portions of the body of the living animal, the lower part being provided with pendent members corresponding to the legs or other movable members of the body of a living animal, substantially as described.

13. A blank for a figure toy comprising a thin resilient plate having at one edge projecting members representing movable parts of the body of a living animal and provided in the opposing part with slots or openings adapted to receive such movable parts, substantially as described.

14. A blank for a figure toy comprising a thin resilient plate having its edges provided with insets at central opposing points, as and for the purpose specified.

15. A figure toy comprising a body portion formed of a thin resilient plate which is bowed to produce opposing upper and lower parts representing the corresponding portions of the body of a living animal, a fabric being secured to the edges of said upper and lower parts and thus connecting the same and masking the interior of the body portion, substantially as described.

16. A figure toy comprising a body portion formed of a thin resilient plate which is bowed to produce opposing upper and lower parts representing corresponding portions of the living animal, and a fabric applied to the opposing edges of said parts and provided in the front with an opening, the bowed back of the body portion being also provided with a masked opening, as described.

17. A figure toy comprising a body portion formed of a thin resilient plate which is bowed to produce opposing upper and lower parts, the bowed back being provided with an opening and a translucent piece extending across said opening and another masking-piece applied to the opposing edges of the body portion and provided in the front with a sight-hole, substantially as described.

846,561. SPRING DEVICE FOR PRODUCING DIFFERENTIAL MOVEMENTS. WALTER V. GILBERT, London, England. Filed June 28, 1906. Serial No. 323,152.

Claim.—1. The spring device formed of a blank of resilient material in bowed shape and having its back indented transversely, each terminal of the indent being located farther from one end than the other of the said back, substantially as described.

2. The spring device formed of a blank of resilient material in bowed shape, its sides or wings being concave on the inner side and its back having a transverse indent whose terminals are each located farther from one end than the other of the said back, substantially as described.

3. The spring device formed of a blank of resilient material in bowed shape, its sides or wings being concave on the inner side and its back having a transverse indent, each terminal of the indent being located farther from one end than from the other end of said back, substantially as described.

4. The spring device formed of a blank of resilient material, the same having a bowed shape and the back indented upon a line inclined to the longer diagonal of said back, substantially as described.

5. The spring device formed of a bowed blank of resilient material whose opposing outwardly-projecting sides or wings are continuously curved from end to end, and a back with which said wings are united upon curved lines, the said back having an indent extending across it and two triangular components extending from the indent, each differing from the other in configuration, substantially as described.

6. The spring device formed of a resilient blank having a bowed shape and one of its opposing wings extended beyond the other, the back which connects the said wings being indented upon a line whose terminals are located at unequal distances from the ends of the back, substantially as described.

7. The spring device formed of a resilient blank having a bowed shape and one of its opposing wings extended beyond the other, the back which connects the said wings being indented upon a line that is inclined to the longer diagonal extending between the ends of the back, substantially as described.

8. The spring device formed of two resilient blanks each having a bowed shape and one of its opposing wings extended beyond the other, and the back which connects the differential wings being indented upon a line whose terminals are located at unequal distances from the ends of such back, the lower wings being placed together and connected so that the longer upper wings extend outward in opposite directions, substantially as described.

9. The spring device formed of a resilient plate in a bowed shape, the back which connects the sides or wings thereof having separated indents and the terminal of each indent being located farther from one end than the other of the said back, substantially as described.

10. The spring device formed of a resilient plate in bowed shape and having two outwardly-projecting, continuously-curved wings, the back which connects them having separated indents extending across it and arranged at an angle to each other, the two triangular portions of the back extending from the respective indents to the ends of the back, and a flat portion intervening the indents, substantially as described.

11. The spring device formed of a resilient blank having a bowed shape and one of its opposing wings extended beyond the other and the back which connects said wings being indented upon a line whose terminals are located at unequal distances from the ends of the back, and transverse braces applied to the under side of the longer wing and loosely connecting the side edges of the same, substantially as described.

12. The spring device formed of a resilient blank having a bowed shape and one of its opposing wings provided with a spring-tongue which normally closes an opening in the wing and means for preventing the said tongue

from passing through the opening, it being free to open on the inner side of the wing, substantially as described.

13. The spring device formed of a resilient blank having a bowed shape and its back indented upon a line whose terminals are located at unequal distances from the ends of the back, the latter having insets located to the side of the longer diagonal of the back, substantially as described.

14. The spring device formed of a resilient blank having a bowed shape and its back being indented upon a line whose terminals are located at unequal distances from the ends of the back, the said ends being reinforced substantially as and for the purpose specified.

15. The spring device formed of a resilient blank constructed in sections which are rigidly connected, the back of such device being indented upon a line whose terminals are located at unequal distances from the ends of the back, substantially as described.

16. The spring device having a bowed shape and indented back provided with corrugations extending from the terminals of the indent to the ends of the back, as shown and described.

17. The spring device formed of a resilient blank in bow shape, its back being indented and the two triangular component surfaces thus produced being dissimilar in size and configuration, substantially as described.

18. The spring device formed in bow shape, of a blank of resilient material and having its back indented and the outline thereof being an irregular or distorted diamond shape, as described.

19. A spring device in bow shape and having an indented back, the terminals of the indent being located at different distances from the longer, intersecting diagonal, as shown and described.

20. A resilient device formed in bow shape and having opposing inwardly-concave sides or wings and an indented back which connects said wings, the line of said indentation thereof and the diagonal extending between the ends of the back intersecting, two triangular component surfaces dissimilar in configuration being thus formed on opposite sides of said indent, substantially as described.

846,562. SUPPORTING-GARMENT. BELLE M. GRAYSON, Milwaukee, Wis. Filed Mar. 14, 1906. Serial No. 305,931.

Claim.—1. The combination with a garment for the upper portion of the body, of a strengthening fabric secured to the garment over the shoulders and at the front and rear thereof; said strengthening fabric having on the rear side downwardly-extending crossed members having their lower portions extended in the form of flaps substantially covering the hips of the wearer and extending to the front of the leg at their lower ends, and a set of hose-supporters connected with each of said flaps near their lower ends.

2. The combination with a garment for the upper portion of the body, of a strengthening fabric secured to the garment over the shoulders and at the front and rear thereof, said strengthening fabric having on the rear side downwardly-extending crossed members having their lower portions extended in the form of flaps substantially covering the hips of the wearer and extending to the front of the leg at their lower ends, and a set of hose-supporters connected with each of said flaps near their lower ends, said flaps being provided with auxiliary flaps on their outer surfaces to which the hose-supporters may be secured by means of suitable fastenings.

846,563. LAMP-PENDANT. HERBERT W. HANWELL, Northampton, England. Filed Sept. 11, 1906. Serial No. 334,170.

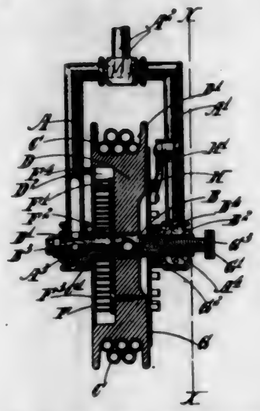

Claim.—1. In an adjustable lamp-pendant, the combination of a rotatable drum, means for supporting the drum, a lamp-fitting, a coil connected at one end to the fitting and at the other end to the winding-face of the drum, a spring control for the drum whereby after rotation in one direction it may be returned in the other, a friction member for applying a constant retarding action against rotation of the drum in the direction for lowering the lamp-fitting, and means automatically operated by movement of the drum in the reverse sense whereby the friction member is rendered inoperative and the drum is thus freed from the retarding action throughout the whole range of its movement in the direction for raising the lamp-fitting, substantially as set forth.

2. In an adjustable lamp-pendant, the combination of a support, a spindle rotatably mounted therein, a drum fast on the spindle, a friction member mounted free on the spindle and in contact with the drum, a device for maintaining these two members in contact with each other, means for adjusting this device so that one of the members may be advanced relatively nearer to or allowed to retire from the other, a lamp-fitting, a coil connected at one end to the lamp-fitting and at the other end to the winding-face of the drum, a spring control for the drum whereby after rotation in one direction it may be returned in the other, means for holding the friction member against rotation with the drum in one direction and means whereby movement of the drum in the reverse sense automatically releases the friction member so that it rotates with the drum, substantially as set forth.

3. In an adjustable lamp-pendant, the combination of a support, a spindle rotatably mounted therein, a drum fast on the spindle, a friction member mounted free on the spindle and in contact with the drum, a set-screw carried by the spindle and operatively connected with one of the members thereon so that they are kept in engagement with each other, means for adjusting the set-screw in the longitudinal direction of the spindle so that one of the members may be advanced toward or allowed to withdraw from the other, a lamp-fitting, a coil connected at one end to the lamp-fitting and at the other end to the winding-face of the drum, a spring control for the drum whereby after rotation in one direction it may be returned in the other, means for holding the friction member against rotation with the drum in one direction, and means whereby movement of the drum in the reverse sense automatically releases the friction member so that it rotates with the drum, substantially as set forth.

4. In an adjustable lamp-pendant, the combination of, a support, a spindle rotatably mounted therein, a drum fast on the spindle, a lamp-fitting, a coil connected at one end to the lamp-fitting and at the other end to the winding-face of the drum, a spring control for the drum whereby, after rotation in one direction it may be returned in the other, a friction member mounted free on the spindle, a sleeve free to slide on the spindle and situated on that side of the friction member remote from the drum, a pin projecting from the sleeve into a longitudinal slot in the spindle, this end of the spindle being hollow, an adjusting-screw mounted longitudinally in the hollow end of the spindle and projecting beyond the same while its inner end bears against the pin of the sleeve so that by advancing the screw the sleeve and consequently the brake member may be advanced into frictional engagement with the side of the drum, and means for automatically holding the friction member against rotation with the drum when the latter tends to rotate in the direction to unwind the coil and lower the lamp-fitting and to release it when the drum rotates in the opposite direction, substantially as set forth.

5. In an adjustable lamp-pendant the combination of a supporting-yoke, a spindle rotatably mounted in the free ends of the yoke-arms, one end of the spindle being conical and fitting a correspondingly-shaped socket in the yoke-arm on that side, this arm and the corresponding end of the spindle being both hollow, ports in the conical end of the spindle communicating with the interior of the yoke-arm, means for connecting the yoke-arm with a gas-supply conduit, a drum fast on the spindle, a flexible conduit coiled on the drum and communicating at one end with the gasway in the spindle, a lamp-fitting carried at the other end of the conduit and in communication therewith, a spring control for the drum whereby, after rotation in one direction, it may be returned in the other direction, a friction member, means for forcing this member into frictional engagement with a friction-surface which moves in both directions with the drum, means for automatically holding the friction member against rotation with the drum when the latter tends to rotate in a direction to unwind the coil and lower the fitting, and to release it when the drum rotates in the opposite direction, a detachable bearing-cap for that end of the yoke-arm which engages the end of the spindle remote from the conical portion, and means for swiveling this yoke-arm relatively to the other so that when the cap is removed it can be swung clear of the spindle, substantially as set forth.

6. In an adjustable lamp-pendant the combination of, a supporting-yoke, a spindle rotatably mounted in the free ends of the yoke-arms, one end of the spindle being conical and fitting a correspondingly-shaped socket in the yoke-arm on that side, this yoke-arm and the corresponding end of the spindle being hollow, ports in the conical end of the spindle whereby the interior of the spindle is maintained in free communication with the interior of the yoke-arm, means for connecting the yoke with a gas-supply conduit, a drum fast on the spindle, a flexible conduit coiled on the drum and communicating at one end with the gasway in the spindle, a lamp fitting at the other end of the conduit and in communication therewith, a spring control for the drum whereby, after rotation in one direction, it may be returned in the other, a friction member carried free on the spindle, means for automatically holding the friction member against rotation with the drum when the latter tends to rotate in the direction to unwind the coil and lower the fitting, and to release it when the drum rotates in the opposite direction, a sleeve free to slide on the spindle and disposed on that side of the friction member remote from the drum, a pin projecting from the sleeve into a longitudinal slot in the spindle, this end of the spindle being hollow, an adjusting-screw mounted longitudinally in the hollow end of the spindle and projecting beyond the same while its inner end bears against the pin of the sleeve, a detachable bearing-cap for that end of the yoke-arm carrying this end of the spindle, and means for swiveling this arm relatively to the other so that, when the cap is removed, it can be swung clear of the spindle, substantially as set forth.

846,564. MAIL-COLLECTOR. ALBERT B. HART, Hartford, Conn., assignor, by mesne assignments, to The American Serial Lock Company, Hartford, Conn., a Corporation of Connecticut. Filed Feb. 4, 1904. Renewed Nov. 9, 1905. Serial No. 286,495.

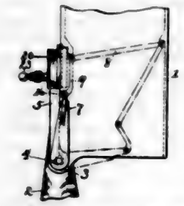

Claim.—1. A receiver, a collector, means for locking the receiver and collector in engagement and including a sectional lock, a key movably secured within one section of the lock and having a bit permanently located therein and bits to be projected into the opposite section of the lock to operate mecchanism therein, interengaging index devices borne upon the meeting faces of the two sections of the lock, those upon one section being movable and operated by a bit on the key during the rotation of the latter.

2. A receiver, a collector, means for locking the receiver and collector in engagement and including a sectional lock, movable index devices located on one section of the lock, a key movably secured to said section and having a bit permanently located therein and another bit projected into the opposite section of the lock to operate mechanism therein, and stationary index devices borne upon the last-mentioned section of the lock to register with the movable indexes on the opposite section of the lock.

3. A receiver, a collector, a sectional lock with a section borne on each of said parts, a key movably secured within one section of the lock but movable to locate it in the opposite section of the lock and having a different movement to operate the mechanism of both sections of the lock, an index located on one section of the lock, and a movable registering-index located on the opposite section of the lock, said index being operated by the key in its turning movement.

4. A receiver, a collector, a sectional lock having a section borne upon each of said parts, a key movably secured within one section of the lock but having movement to locate it in the opposite section and a different movement to operate the mechanism of both sections of the lock, said key having devices for acting upon the mechanism in each section of the lock, a stationary index upon one section of the lock and a movable interengaging index upon the opposite section of the lock operated by the key in its rotation.

5. In a mail-collecting device, a mail-box having locking devices and a section of a lock for operating said devices, a mail-bag having locking devices and a section of a lock bearing lock mechanism including a key movably secured and having a bit permanently located therein, and bits to be projected into the opposite section of the lock, said bits operating the mechanism of both sections of the lock in the turning movement of the key.

6. A receiver, a collector, means for locking said parts together, said means including a sectional lock and a key having bits, said key being movably secured and having one bit permanently located in one section of the lock but movable to locate a bit in the opposite section of the lock, the mechanism of both sections being operated by the bits in the turning movement of the key.

7. A receiver, a collector, means for locking said parts in engagement, said means including a key having bits one of which is permanently located in one section of the lock; said key being movable to locate a bit in the opposite section of the lock, and the mechanism of both sections of

the lock being operated by the key in its turning movement.

8. A receiver bearing one section of a lock including a locking-bolt, a collector bearing another section of a lock including a locking-bolt, tumbler mechanism for locking a bolt against movement, and a key movably secured to and having a bit permanently located within one section of the lock but movable to locate a bit in the opposite section, the mechanism of both sections being operated by the key in its turning movement.

9. In a mail-collecting device, a receiver and a collector, lock mechanism appurtenant to said parts, a key for a lock, means for locating the key in its working position, and a guard operated by the movement of the key when located out of its working position.

10. A receiver, a collector, a section of a lock borne upon each of said parts, a key movably secured to one of said sections but movable into the opposite section to operate the mechanism of both sections, and a guard to prevent longitudinal movement of said key.

11. A receiver, a collector, sections of a lock borne upon each of said parts, a key movably secured within one section of the lock but movable into the opposite section to operate the mechanism of both sections, means for locating the key in its working position, and a guard to prevent rotation of the key when located out of its working position.

12. A receiver, a collector, sections of a lock borne upon each of said parts, a key movably secured to one of said parts but movable into the opposite part to operate the mechanism of both sections of the lock, and a lock to prevent rotative and longitudinal movement of the key.

13. A receiver, a collector, sections of a lock borne upon each of said parts, a key movably secured to one of said sections and movable into the opposite section to operate the mechanism of both sections, means for locating the key in its working position, and a guard operated by the key to lock it against lengthwise and rotative movement and by turning movement of the key when located out of its operative position.

14. A receiver, a collector, sections of a lock borne upon each of said parts, a movable index located upon one section and an interengaging immovable index located upon the opposite section, a key movably located in one of the sections and movable into the opposite section to operate the mechanism of both sections, and including a bit normally disengaged from the index but operating said index in its turning movement.

15. In a mail-collecting device, a receiver and a collector each bearing a section of a lock to be operatively engaged, locking and unlocking mechanism located in each section of the lock, one of said mechanisms including a key adapted to engage both sections of the lock, a bit located upon the key to engage the mechanism of each section of the lock, and a guard for one of said bits.

16. In a mail-collecting device, a receiver and a collector each bearing a section of a lock, lock mechanism in each of said sections, a key normally located in one section of the lock but movable and having bits to engage the mechanism of each section of the lock, and a movable guard for one of said bits.

17. In a lock, in combination, a key having a bit, a movable guard having a recess for the passage of said bit in the normal position of the guard, but out of registering position with the bit when moved from normal position.

18. In a lock having lock mechanism, a key having a bit to operate said mechanism, a movable guard having a recess and a pass for the reception of said bit in the normal position of the guard but preventing passage of the bit in the abnormal position of the guard.

19. In a lock including its locking mechanism, a key having a bit to operate said mechanism, a movable guard having a pass for the reception of said bit in the normal position of the guard, but preventing passage of the bit in the abnormal position of the guard.

20. In a lock including its lock mechanism, a key having a bit to operate said mechanism, a movable guard having means to permit the passage of the bit in the normal position of the guard, but preventing passage of the bit in the abnormal position thereof, and means for holding the guard against backward movement.

21. In a mail-collecting device, a mail-box containing a section of a lock, a mail-bag containing the opposite section of the lock, means for operating the sections of the lock, said means including a key to be located in each section to operate the mechanism thereof, registering index-dials on the meeting faces of the lock, a detent-plate for holding the dials against movement, and a bit on the key to disengage the detent-plate from said dials.

22. In a mail-collecting device, a receiver bearing a section of a lock, a collector bearing another section of the lock, a key to be located in each section of the lock to operate its mechanism, and a guard having means to allow passage of the key in its normal position but preventing such passage in its abnormal position.

23. A receiver bearing a section of a lock, a collector bearing another section of the lock, a key to be located in each section of the lock to operate its mechanism, a guard having means to allow passage of the key in its normal position, but preventing such passage in its abnormal position, and means for holding the guard against backward movement.

24. A receiver bearing a section of a lock, a collector bearing another section of the lock, a key to be located in each section of the lock, index-dials located on the meeting faces of the sections of the lock, a detent-plate to hold the dials against movement, and a bit on the key to disengage the detent and to rotate a dial.

25. A receiver bearing a section of a lock, a collector bearing another section of the lock, a key to be located in each section to operate the mechanism thereof, a guard having means permitting passage of the key in the normal position of the guard, but preventing movement of the key in its abnormal position, index-dials located on the adjacent faces of the sections of the lock, a detent-plate to prevent movement of the dials, and a bit on the key to disengege the detent-plate and move a dial.

26. In combination with a lock, a key having bits located upon opposite sides thereof and adapted for turning movement within the lock, tumblers located upon one side of the key and a bolt located upon the opposite side of the key, said tumblers and bolt to be operated by said bits.

27. In a sectional lock, including the lock mechanism, tumblers and a bolt located in one section, index-dials located on the opposite section, and a key having a bit for the operation of the tumblers, a bit for the operation of said bolt and a bit for the operation of the dials.

28. A receiver bearing a section of a lock including a bolt, a collector bearing another section of the lock including a bolt, index-dials on the adjacent faces of the sections of the lock, a key having bits to be located in each section of the lock to operate the bolts and to operate said dials.

29. A receiver having a section of a lock, a collector bearing another section of the lock, a locking-bolt appurtenant to one of said sections and having an arm, a series of tumblers each having lateral slots to engage said arm to permit movement of the tumblers and a lengthwise slot to engage the arm and permit lengthwise movement of the bolt, and a key having bits to be located in both sections of the lock to operate said tumblers and their lock mechanism.

30. In combination in a lock including a bolt with an arm extending therefrom, tumblers having crosswise slots to engage said arm and permit movement of the tumblers and lengthwise slots to permit lengthwise movement of the bolt, and a key having a bit to operate said tumblers and a bit to engage the bolt to move the same.

31. A receiver, a collector, means for locking the receiver and collector together and including a sectional lock, a key movable to engage and operate each section of the lock, and means for preventing rotation of the key except when in proper position and to lock said key in its turning movement out of proper position.

32. A receiver, a collector, means for locking the receiver and collector together and including a sectional lock, a key movable to engage and operate each section of the lock, a guard to prevent movement of the key except when in proper position, and a gage for determining the proper position of the key to operate the sections of the lock.

33. A receiver, a collector, means for locking the receiver and collector together and including a sectional lock, a key located in one section of the lock and movable into the opposite section to operate the mechanism of both sections, a guard to prevent movement of the key except when in proper position, and a gage to determine the proper position of the key.

34. A receiver, a collector, a section of a lock borne upon each of said parts, a key located in one section but having movement into the opposite section and a different movement to operate the mechanism of both sections of the lock, a guard to prevent movement of the key except when in proper position, and means for determining the proper position of the key.

35. In a lock, in combination, a key arranged for movement into proper position to operate the lock, means for determining the proper position of the key to operate the mechanism, and a block operated by the key to lock the latter in a movement when located in an improper position.

36. In a lock, in combination with a longitudinally-movable key, means for determining the proper position of the key to operate the mechanism, and means to lock said key against movement in a movement of the key when out of its proper position.

37. In a sectional lock, two sections to be secured together, a key movable from one section into the opposite section to operate the lock mechanism, and a stop to prevent movement of the key to operate the mechanism except when the two sections of the lock are in proper engagement.

38. In a sectional lock, two sections to be united, a key movable from one section into the opposite section, a stop for said key, and a feeler extending from the stop and operated by engagement of the two sections of the lock to remove the stop from the path of the key.

39. In combination in a sectional lock, two sections to be united, a key movable from one section into the opposite section, a stop adapted to be located in the path of movement of the key and also to be located in a recess in one section of the lock, and a feeler projecting through the wall of one section of the lock to engage the opposite section whereby the stop is removed from the path of the key only when the two sections of the lock are properly seated.

846,565. NAIL-CLIPPER. GEORGE HAVELL, Newark, N. J., assignor to Louis C. Langie, Rochester, N. Y. Filed Jan. 29, 1906. Serial No. 298,335.

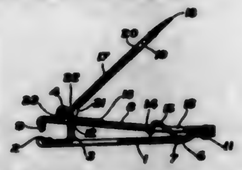

Claim.—1. A nail-trimmer comprising plates fastened together at one end, one of which is of resilient material, and having jaws at their other ends, one of said plates being perforated adjacent to its jaw, and the other having a hook adapted to pass through the perforation in the other plate, a lever adapted to engage said hook above the perforated plate and to close the jaws, and means for preventing lateral movement of the lever.

2. A nail-trimmer comprising plates fastened together at one end, one of which is of resilient material, and having jaws at their other ends, one of said plates being perforated adjacent to its jaw, and the other having a hook adapted to pass through the perforation in the other plate, a lever adapted to engage said hook above the perforated plate and to close the jaws, and a hook pivoted to the lower plate and extending up through registering apertures in the other plate and the operating-lever respectively; the aperture in said other plate being elongated as shown to permit the pivoted hook to swing forwardly therein out of the way of the lever.

3. A nail-trimmer comprising plates fastened together at one end, one of which is of resilient material, and having jaws at their other ends, one of said plates being perforated adjacent to its jaw, and the other having a hook adapted to pass through the perforation in the other plate, a lever adapted to engage said hook above the perforated plate and to close the jaws, and engaging guide means on the lever and said perforated plate for preventing lateral movement of the lever.

4. A nail-trimmer comprising plates of resilient material fastened together at one end, and having jaws at their other ends that normally tend to open, a lever pivotally supported by one of said plates above the other, adapted to close the jaws when folded down upon the upper plate, and having a perforation in its free end, and a hook pivoted to the under plate, extending up through a perforation in the upper plate, and adapted to pass through the perforation in said lever to engage and lock said lever down upon the upper plate; said perforation being elongated to permit the hook to swing forwardly out of the way of the downward movement of said lever.

5. A nail-trimmer comprising plates of resilient material fastened together at one end, and having jaws at their other ends that normally tend to open, one of said plates being perforated and having a stop at the edge of said perforation to limit the movement of said jaws, a lever pivotally supported above the perforated plate by the other plate and adapted to close the jaws when folded down upon the upper plate, and a hook pivoted upon the lower plate, adapted to extend through the perforation in the upper plate to engage and lock the lever down upon the upper plate, and, when disengaged from said lever, to lie below the surface of said upper plate, against said stop.

6. A nail-trimmer comprising spring-controlled jaws tending normally to open, a bearing-plate carrying one of said jaws, and having a bearing at its free end, a lever having a transverse bar in said bearing, and adapted to close said jaws, and engaging guide means on said lever and the adjacent jaw for preventing lateral movement of said lever.

7. A nail-trimmer comprising spring-controlled jaws tending normally to open, a bearing-plate carrying one of said jaws, and having a bearing at its free end, a lever having a transverse bar in said bearing, and adapted to close said jaws, and engaging means on said lever and the adjacent jaw, consisting of a rib on one of said parts and a groove on the other, for preventing lateral movement of the lever.

8. A nail-trimmer comprising spring-controlled jaws tending normally to open, one of said jaws having one or more longitudinal ribs upon its outer surface, and a lever pivotally supported above the jaw last mentioned, having a shoulder adapted to engage said jaw and to depress it, and grooves in said shoulder to receive said ribs.

846,566. HIGH-TENSION DIRECT-CURRENT ELECTRIC SYSTEM. JOHN S. HIGHFIELD, London, England. Filed Dec. 21, 1906. Serial No. 348,948.

Claim.—1. In a direct-current system of electric supply the combination of the apparatus for generating the current and a plurality of consuming-stations, a line connecting said stations in series, a permanently-earthed conductor at the generating place electrically connected with the generating apparatus at an intermediate and neutral point, and a plurality of earthed conductors at various points in the system with means for connecting the line to earth through said conductors at such points.

2. In a system of direct-current electric supply the combination of a power-generating plant and an earthed connection at an electrically intermediate point in said plant, a plurality of consuming-stations and a line connecting said stations in series to the terminals of the generating plant, a plurality of permanently-earthed conductors adjacent to the line at various points thereof,

and two connections from each of said earthed conductors leading to two points on the line at opposite sides of power-consuming apparatus therein, each of said connec-

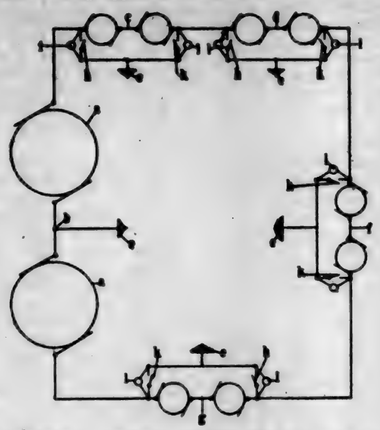

tions including a switch whereby the line may be connected directly to the earthed conductor.

846,567. BUOY, TORPEDO, AND SIMILAR DEVICE. WARREN E. HILL, New York, N. Y., assignor to Thomas F. Rowland, New York, N. Y. Filed May 31, 1905. Serial No. 263,033.

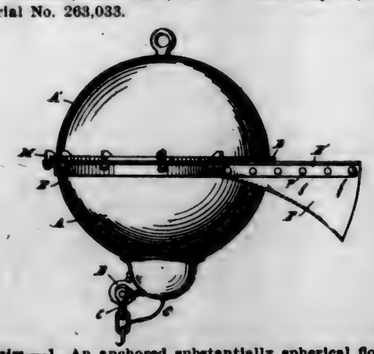

Claim.—1. An anchored substantially spherical floating device provided with a substantially horisontally arranged fin projecting from one side adjacent the center thereof to promote the substantially uniform submergence of said device.

2. An anchored substantially spherical floating device provided with a substantially horisontally projecting fin unsymmetrical about the axis of attachment of the device and adjacent its middle portion.

3. An anchored submerged floating device provided with a substantially horisontal fin projecting from one side thereof and having a downwardly-inclined free end.

4. An anchored floating device provided with a substantially horisontally arranged fin projecting from one side thereof and a vertically-arranged fin projecting from the same side of said device.

5. A floating device provided with a substantially horizontally arranged fin projecting from one side thereof and having its free end downwardly inclined and outwardly-diverging substantially vertical fins at either side of said horisontal fin.

6. A submerged floating device having a substantially horisontally arranged fin projecting from one side and adjacent the middle thereof and an anchor-line connection on the opposite side of the vertical axis of said device.

7. A submerged substantially spherical floating device provided with a substantially horisontally arranged fin projecting from one side thereof and provided with a buoyant fender.

8. A submerged floating device provided with a substantially horizontally arranged fin projecting therefrom to promote its uniform submergence and a buoyant fender connected with said device and substantially symmetrical with respect to its vertical axis of flotation.

9. A submerged floating device provided with a substantially horizontal fin projecting unsymmetrically from said device with respect to its axis of attachment to promote its uniform submergence and a buoyant device connected with said fin to substantially counterbalance its weight.

10. An anchored submerged substantially spherical floating device provided with a substantially horizontally projecting fin around the circumference of and unsymmetrical about the axis of attachment of said device and having a width substantially equal to the diameter of said device.

11. A submerged substantially spherical floating device having a substantially horizontally arranged fin of a width substantially equal to the diameter of said device projecting circumferentially from one side thereof and an anchor-line connection on the opposite side of the vertical axis of said device.

12. A floating device provided with a substantially horizontally arranged fin projecting from one side thereof, the free end of said fin being downwardly inclined and provided with outwardly-diverging substantially vertical fins at either side of said horizontal fin and provided with a buoyant fender substantially in line with said fin.

13. A substantially spherical floating device, a projecting fin having attaching means encircling said device and auxiliary fins adjacent said fin and transversely arranged with respect thereto.

14. A substantially spherical floating device, a fin provided with attaching means encircling said device and a buoyant fender to be secured to said attaching means and device substantially in line with said fin.

15. An anchored submerged floating device provided with means to cause said device to face varying currents and provided with a downwardly and rearwardly inclined fin engaging such currents to promote the substantially uniform submergence of said device.

16. An anchored submerged floating device provided with a fin to cause said device to face varying currents and provided with a downwardly and rearwardly inclined fin engaging such currents to promote the substantially uniform submergence of said device.

17. A submerged floating device to be anchored in varying currents provided with a downwardly and rearwardly inclined substantially horizontal fin engaging such currents to promote the substantially uniform submergence of said device.

18. An anchored submerged floating device, provided with means to cause said device to face varying currents and provided with a projecting fin engaging such currents, to promote the substantially uniform submergence of said device.

19. An anchored submerged substantially spherical floating device, provided with a projecting fin adjacent the middle portion engaging varying currents to promote the substantially uniform submergence of said device.

20. An anchored submerged floating device provided with means to cause said device to face varying currents and provided with a projecting fin adjacent the middle portion thereof engaging such currents, to promote the substantially uniform submergence of said device.

21. An anchored submerged floating device, provided with a substantially horisontal projecting fin engaging varying currents to promote the substantially uniform submergence of said device.

846,568. DUMPING-WAGON. JESSEY C. HORNE and DAVID H. YATES, Madison, Fla. Filed Dec. 5, 1906. Serial No. 290,444.

Claim.—1. In a dumping-wagon, a frame having side sills, end pieces spacing and connecting the sills, and bolsters having upturned ends abutting exteriorly upon the sills.

2. A frame having side sills, end members spacing and connecting the same, binding-rods adjacent to and spaced from the end members, and bolsters having upturned ends abutting exteriorly upon the sills.

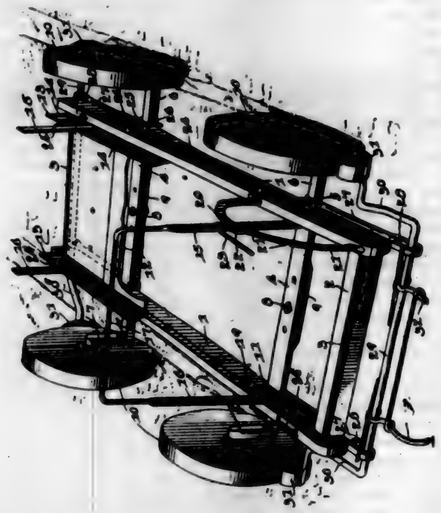

3. A frame, bolsters connected with said frame, axles pivotally connected with the bolsters, and a lever connected pivotally with the frame and having a head provided with oppositely-disposed notches adapted to engage either one of the axles.

4. A frame, bolsters connected with said frame, axles pivotally connected with the bolsters, and means for locking one of the axles against rotation.

5. In a dumping-wagon, a frame, rock-shafts journaled in said frame, bottom plates supported upon the rock-shafts and overlapping one another, and arms or levers extending upwardly from one of the rock-shafts and connected by an overhead arch.

6. In a dumping-wagon, a frame, rock-shafts journaled in the frame, bottom plates supported upon the rock-shafts and overlapping one another, levers extending from the rock-shafts at the ends of the frame, and link-rods connecting said levers.

7. In a dumping-wagon, a frame, rock-shafts journaled in the frame, bottom plates secured upon the rock-shafts and overlapping one another, arms or levers extending from the rock-shafts at the ends of the frame, overhead arches connecting said levers in pairs across the wagon-bed, and link-rods connecting said levers in pairs at the sides of the wagon-bed.

8. In a dumping-wagon, a frame, rock-shafts journaled in the frame, bottom plates supported upon the rock-shafts and overlapping one another, a pair of side members, links connecting the side members with the overlapping corners of the bottom plates, an arm or lever connected with one of the rock-shafts, a stop member pivoted upon said lever, and a segment secured upon the frame and having notches adapted to be engaged by the stop member.

9. In a dumping-wagon, a bed-frame having bolsters, drop-arch axles pivotally connected with the bolsters, draw-bars connected with the axles and having slots near their outer ends, hitching-bars slidable in said slots and provided with cranks at their extremities, and brake-shoes connected with the cranks.

10. In a dumping-wagon, a bed-frame having bolsters, axles pivotally connected with the bolsters, means for locking one of the axles against rotation upon its pivot, draft-bars connected with the axles and having slots near their outer ends, hitching-bars slidably supported in the slots of the draft-bars, brake-shoes connected with the hitching-bars, and a draft member such as a tongue having hounds adapted to be detachably connected with the hitching-bars.

11. In a dumping-wagon, a bed-frame having side sills and end pieces, binding-rods adjacent to and spaced from the end pieces, wheel-carrying axles supporting the bed-frame, rocking bottom plates supported in the bed-frame, means for securing the bottom plates at various adjustments, and inclined planes having flanges adapted for engagement with the binding-rods at the ends of the bed-frame.

12. In a dumping-wagon, a frame, rock-shafts journaled in the frame, bottom plates supported upon the rock-shafts and overlapping one another, a pair of side members, links connecting the side members with the overlapping corners of the bottom plates, and hooks pivoted upon the frame and adapted to engage the side members.

846,569. TRACING OR MARKING TOOL. ALBERT E. JONES, East Orange, N. J. Filed Mar. 7, 1906. Serial No. 304,698.

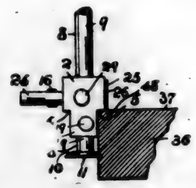

Claim.—1. A tracing or marking implement comprising a main body provided with an enlarged portion and a narrow portion extending therefrom, said enlarged portion and narrow portion producing offsets forming a longitudinally-extending guide upon each side of the said main body, said portions being provided with a pair of longitudinally-extending guiding-holes, said wide portion being provided also with a single and laterally-extending hole, said laterally-extending hole being arranged in a plane at right angles to the planes of the said longitudinally-extending holes, a rod slidably arranged in each longitudinally-extending hole, a tracing or marking wheel on each rod, the marginal edge of the one wheel extending beyond one edge of said narrow portion, and the marginal edge of the other wheel extending beyond the other edge of said narrow portion, a rod slidably arranged in said laterally-extending hole, and a tracing or marking wheel on said rod, the marginal edge of said wheel extending beyond one of the marginal edges of said enlarged portion, substantially as and for the purposes set forth.

2. A tracing or marking implement comprising a main body provided with an enlarged portion and a narrow portion extending therefrom, said enlarged portion and narrow portion producing offsets forming guides, said portions being provided with a pair of longitudinally-extending guiding-holes, said wide portion being provided also with a single and laterally-extending hole, said laterally-extending hole being arranged in a plane at right angles to the planes of the said longitudinally-extending holes, a rod slidably arranged in each longitudinally-extending hole, a tracing or marking wheel on each rod, the marginal edge of the one wheel extending beyond one edge of said narrow portion and the marginal edge of the other wheel extending beyond the other edge of said narrow portion, a rod slidably arranged in said laterally-extending hole, and a tracing or marking wheel on said rod, the marginal edge of said wheel extending beyond one of the marginal edges of said enlarged portion, and set-screws for securing said rods in their fixed and adjusted positions, substantially as and for the purposes set forth.

846,570. GRAIN-BIN. OLIVER KELSEY, Connell, Wash. Filed July 12, 1906. Serial No. 325,878.

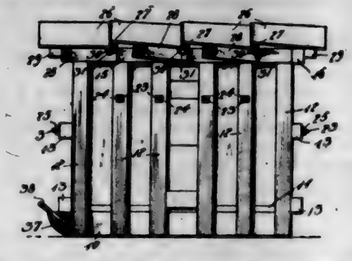

Claim.—In a grain-bin, a receptacle having projecting pins on the outside thereof on opposite sides, a removable cover, and cleats secured to the cover adjacent opposite edges thereof and slidable lengthwise under the aforesaid pins, the ends of the cleats being recessed to receive the pins.

846,571. ELASTIC-FLUID TURBINE. ZAREH H. KEVORKIAN, Pittsburg, Pa. Filed Feb. 2, 1906. Serial No. 299,133.

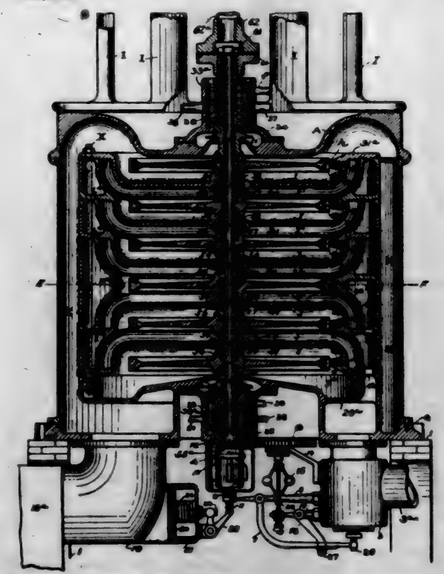

Claim.—1. In a turbine, the combination of a plurality of assembled and superposed chambers for different stages of steam-pressure, a rotary turbine-wheel in each chamber, means for delivering steam to one of the central wheels, and means for delivering the exhaust-steam from said central wheel to the wheels both above and below said central wheels.

2. In a turbine, the combination of a succession of chambers for different stages of steam-pressure, a rotary turbine-wheel in each chamber, means for delivering steam to the central wheel, means for delivering steam from said central wheel successively to the wheels on each side thereof, and means for conducting the exhaust-steam from the last wheel on one side of said central wheel and for delivering it to the last wheel on the other side of said central wheel.

3. In a turbine, the combination of a succession of chambers for different stages of steam-pressure, a rotary turbine-wheel in each chamber, means for delivering steam to the central wheel, an extra chamber with its turbine-wheel, and means for delivering steam to said extra turbine-wheel from the extreme turbine-wheels first mentioned.

4. In a turbine, the combination of a base-plate, a plurality of assembled and contiguous annular chambers for different stages of steam-pressure, rotary turbine-wheels therein, bolts holding said chambers together, an annular shell surrounding said chambers and secured to said base-plate, a cover for the chambers attached to said shell, ports and nozzles for admitting steam to one of the central turbine-wheels, an annular air-jacket surrounding each chamber, and means for conducting the steam from the central turbine-wheel successively to those wheels which are above and below the same.

5. In a turbine, the combination of a plurality of assembled and contiguous annular chambers for different stages of steam-pressure, rotary turbine-wheels therein, ports and nozzles for admitting steam to the central turbine-wheel, means for conducting the steam from the central wheel to the wheels above and below the same, and pipes for the escape of the condensed steam from the upper chambers to those respective lower chambers where the same pressures prevail.

6. In a turbine the combination of an annular section 29, having an air-jacket surrounding the same, and having a central opening, a turbine-wheel in said opening, dished sections with surrounding air-jackets on each side of said section 29, a turbine-wheel in each dished section, bolts holding all sections together, a base-plate, a shell surrounding all sections and secured to said base-plate, a cover on said shell, inlet and exhaust pipes for the steam to enter said sections, a conical socket on each side of each wheel, doubly conical collars, fitting in the sockets and passing through said sections in a loose but steam-tight manner, a shaft passing through said sockets and collars, and means for pressing the collars into said sockets.

7. In a turbine, the combination of a wheel having a semicylindrical depression oblique to the peripheral surface thereof, a steam-dividing block in said depression, having surfaces curving from the center of the entrance of said depression to the respective sides of the depression, and a pin in said wheel for holding said block in said depression.

8. In a turbine, the combination of a wheel having a semicylindrical depression oblique to the peripheral surface thereof, a steam-dividing block in said depression having surfaces curving from the center of the entrance of said depression to the respective sides of the depression, and a pin in said wheel for holding said block in said depression, said wheel having a hole with an enlarged bore at the inner end, and said pin having a flange which protrudes into said bore.

9. In a turbine, the combination of turbine-wheels, hubs therefor, having sockets, a shaft, a shoulder thereon at the lower end, a step-journal having a tapered end for fitting into the socket of the lowest wheel, a flange on the journal, the hub of the lowest wheel resting on said flange, doubly conical spacing-collars keyed on said shaft between said hubs and fitting in the respective sockets, turbine-sections through which pass said collars, packing-rings between said collars and the material of said sections.

10. In a turbine, the combination of rotary turbine-wheels, collars, a shaft passing through said collars and wheels, and being of less linear expansion by heat than the collars and wheels, and means for clamping the collars and wheels together, the collars being keyed to and the wheels being loose on said shaft before being clamped.

846,572. ROOFING CONSTRUCTION. CHARLES J. KUNZLER, Pittsburg, Pa. Filed Apr. 2, 1906. Serial No. 309,297.

Claim.—1. In a roof, the combination with a plurality of overlapping layers of roofing material, of transversely-laid metallic strips and securing-nails arranged to pass through the exposed portion of each layer of roofing material, substantially as set forth.

2. In a roof, the combination with a plurality of overlapping layers of roofing material, of metallic securing-strips laid continuously over the successive exposed portions of said layers, and securing-nails passing through the strips and the exposed portions of the roofing material, substantially as set forth.

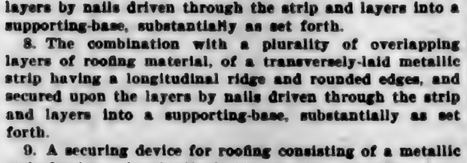

3. In a roof, the combination with a plurality of overlapping layers of roofing material, of metallic securing-strips laid continuously over the successive exposed portions of said layers, securing devices passing through the strips and the exposed portions of the roofing material, and covering-strips of flexible material laid over the metallic strips lengthwise thereof and transversely across the exposed portions of the roofing material, substantially as set forth.

4. In a roof, the combination with a plurality of overlapping layers of roofing material, of metallic securing-strips laid continuously over the successive exposed portions of said layers, securing devices passing through the strips and the exposed portions of the roofing material, and covering-strips of flexible material laid over the metallic strips lengthwise thereof and transversely across the exposed portions of the roofing material, with intervening layers of cementing material between the roofing material, metallic strips, and covering-strips respectively, substantially as set forth.

5. In a roof, the combination with a plurality of overlapping layers of roofing material, of transversely-laid metallic strips and securing-nails arranged to pass through the exposed portion of each layer of roofing material, and longitudinal covering-strips of flexible material laid over said metallic strips, with cementing material laid between the metallic strips and the covering-strips and entirely over the overlapping layers, and an outer coating of gravel or the like embedded in the upper surface thereof, substantially as set forth.

6. In a roof, the combination with the supporting-sheathing of the roof, of upwardly-extending metallic edge reinforcing-strips having inwardly-extending flanges, overlapping layers of roofing material extending beneath said flanges and against the upwardly-extending reinforcing-strips, securing-nails passing through said flanges and the exposed portions of the roofing material, supplemental metallic securing-strips laid continuously over the successive exposed portions of the overlapping layers of roofing material, and securing-nails passing through said strips and layers, substantially as set forth.

7. The combination with a plurality of overlapping layers of roofing material, of a transversely-laid metallic strip having a longitudinal ridge and secured upon the layers by nails driven through the strip and layers into a supporting-base, substantially as set forth.

8. The combination with a plurality of overlapping layers of roofing material, of a transversely-laid metallic strip having a longitudinal ridge and rounded edges, and secured upon the layers by nails driven through the strip and layers into a supporting-base, substantially as set forth.

9. A securing device for roofing consisting of a metallic strip having a longitudinal ridge portion extending above the plane of the bearing edges, laid transversely across the exposed portions of overlapping layers of roofing material and secured thereon by nails driven through the body portion between the edges and through said layers of roofing material to cause the edges of the strip to bear downwardly thereon and across the edges of the roofing material, substantially as set forth.

10. In a roof, the combination with a plurality of overlapping layers of roofing material, of transversely-laid metallic strips having a longitudinal ridge and secured upon the layers by nails driven through the strips and the exposed portion of each layer of roofing material, and longitudinal covering-strips of flexible material laid over said metallic strips with an intervening layer of cementing material, substantially as set forth.

11. In a roof, the combination with a plurality of overlapping layers of roofing material, of transversely-laid metallic strips having a longitudinal ridge and secured upon the layers by nails driven through the strips and the exposed portion of each layer of roofing material, and longitudinal covering-strips of flexible material laid over said metallic strips, with cementing material laid between the metallic strips and the covering-strips and entirely over the overlapping layers, substantially as set forth.

846,573. SASH-WINDOW. PAUL KUPELWIESER, Brioni, near Pola, Austria-Hungary. Filed Dec. 3, 1906. Serial No. 346,102.

Claim.—1. A sash-window having a plurality of sashes adapted to slide in the same vertical plane, comprising an upper sash having an eye thereon, an upper cross-rail having a movable catch to engage said eye, operating devices for said catch consisting of a spring normally holding said catch retracted, and means arranged to be actuated by a lower sash in its movements and leave it in inoperative position upon other movements of said lower sash.

2. A sash-window having a plurality of sashes adapted to slide in the same vertical plane, comprising an upper sash having an eye thereon, an upper cross-rail having a movable catch to engage said eye, operating devices for said catch consisting of a spring normally holding said catch retracted, a cam for advancing said catch periodically, and means arranged to be operated by the lower sash in its movement for actuating said cam, whereby said catch is advanced so as to engage said eye upon certain movements of said lower sash and left in retracted position during other movements thereof.

3. A sash-window having a plurality of sashes arranged to slide in an upper sash having an eye thereon, an upper cross-rail having a movable catch to engage said eye, a spring normally holding said catch retracted, a cam for periodically advancing said catch to operative position, a ratchet-wheel to operate said cam, a pivoted pawl to engage said ratchet-wheel, and a projection from said pawl arranged to be engaged by a part on a lower sash in its movement whereby said catch is advanced to engage said eye upon certain movements of said lower sash and left retracted during other movements thereof.

4. A sash-window comprising an upper sash, a lower sash and guiding-frame arranged to slide in the same vertical

plane, connections between said upper sash and the frame of said lower sash, whereby upon a movement of said upper sash said lower sash and frame are moved in reverse direction and a hinged connection for said lower sash with said frame.

5. A sash-window comprising a plurality of sashes arranged to slide in the same vertical plane, a movable side rail adapted to be brought over an end of said sashes and means on said rail whereby it is adapted to be brought into engagement with all of said sashes simultaneously.

6. A sash-window comprising a plurality of sashes, arranged to slide in the same vertical plane, a movable side rail adapted to be brought over an end of said sashes, a slidable rod mounted in said rail carrying wedge members spaced apart and hooks on the window-frame arranged to coöperate with said wedge members whereby said rails may be securely clamped to all of said sashes simultaneously.

7. A sash-window comprising a plurality of sashes arranged to slide in the same vertical plane, hinged side rails adapted to be swung over the ends of said sashes, slidable rods mounted in said rails, wedge members fixed on said rods and spaced apart, and hooks on the window-frame, arranged to coöperate with said wedge members whereby upon manipulation of said rods, said rails may be securely clamped to all of said sashes simultaneously.

8. A sash-window comprising a series of sashes arranged to slide in the same vertical plane, fillets carried by certain of said sashes arranged to be guided in the window-frame, extensions of said fillets adapted to guide an upper sash and pins carried by said fillets arranged to slide in grooves of the window-frame and to fulcrum in the bottoms of such grooves whereby certain of said sashes may be swung laterally upon said pins as pivots.

9. A sash-window comprising a series of sashes arranged to slide in the same vertical plane, means for detachably holding the upper sash of said series in elevated position, means coöperating with an intermediate sash in certain of its movements arranged to render inoperative said holding means for the upper sash and permitting same to remain operative during other movements, a lower sash and connections between the same and said intermediate sash whereby movements of the latter occasions movements of the former in reverse directions.

846,574. PEAT-DRIER. BENJAMAN F. LAMBERT, Anderson, Ind. Filed July 16, 1906. Serial No. 326,470.

Claim.—1. In a drying apparatus, the combination of an inclosing structure having a furnace built in its forward end, a cylinder extending longitudinally through the structure above the furnace and inclining downwardly toward its rear end and provided with interior lifting-flanges, means outside of the furnace structure for rotatably supporting the cylinder, means outside of the furnace structure for rotating the cylinder, a stationary chute or hopper emptying into the forward end of the cylinder and having an exhaust-opening between its filling end and its emptying end, and means for forcing a current of hot air upward through the cylinder, said means consisting of a stationary disk closing the rear lower end of the cylinder, an air-conduit connected to this disk and extending forward through the furnace structure and having its inlet open to the atmosphere direct, and an air-forcing device interposed at a suitable point in this air-conduit, substantially as set forth.

2. In combination, a furnace structure, an upwardly and forwardly inclined rotatable cylinder mounted therein, a stationary tube at the upper end of the cylinder and means connected to said tube for permitting exhaust and for feeding material into the cylinder, a stationary disk closing the lower end of the cylinder and provided with a discharge-opening, a blast-pipe communicating with the interior of the cylinder through said disk and means for creating a blast through said pipe, and means for heating the air conducted to said pipe.

3. In combination with a furnace structure, a rotatable inclined cylinder extending therethrough, means for charging material into the upper end of the cylinder and discharging it from the lower end, means on the interior of the cylinder for agitating the material during its travel, and means for forcing a current of hot air up through the cylinder, said means consisting of a conduit connected to the lower end of the cylinder and extending forwardly through the combustion-chamber and into the fire-box of the furnace, the portion lying in the fire-box being branched off laterally in opposite directions and extending through the side walls of the furnace to the outside atmosphere, and a fan-blower located between the furnace and the lower end of the cylinder.

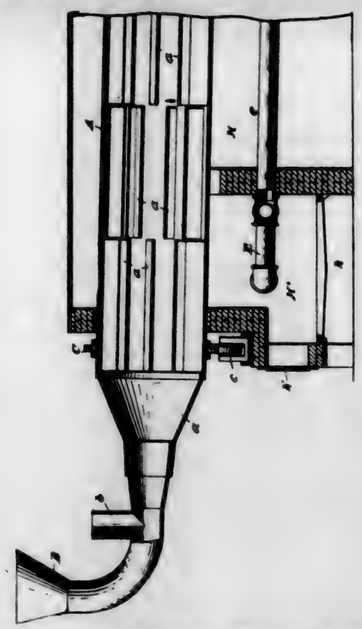

4. In combination, a furnace structure, an upwardly and forwardly inclined rotatable cylinder mounted therein and having its upper end contracted, a stationary tube entering the center of the contracted upper end of the cylinder and means connected to said tube for permitting exhaust and for feeding material into the cylinder, a stationary disk closing the lower end of the cylinder and provided with a discharge-opening, a blast-pipe communicating with the interior of the cylinder through said disk and means for creating a blast through said pipe, and means for heating the air conducted to said pipe.

846,575. SEINING-MACHINE. WILLIAM LARSON, Astoria, Oreg. Filed June 25, 1906. Serial No. 323,330.

Claim.—1. In a seine-hauling apparatus, the combination with a frame, of casters pivoted to the frame whereby the car may be moved in any direction, of parallel lines having their ends adapted to be secured to the beach, a connection between the car and one of said lines, means for increasing or decreasing the length of said connection, and power mechanism connected to the other line to move the car in a direction parallel to the lines.

2. A seine-hauling apparatus, comprising a car, a spool journaled in suitable supports on the car on which the seine may be wound, a pair of spools mounted in bearings on the car, a pair of lines each connected at one end to one of the spools, and having their other ends extending out in opposite direction from the car, anchors for securing the outer ends of the lines to the beach or the like, and means for driving the spools alternately to wind one line or the other upon its respective spool whereby the car will be moved toward the anchor of the line being wound, and means for driving the spool for winding the seine.

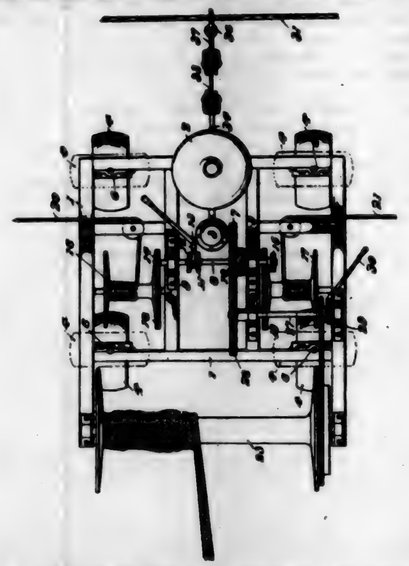

3. A seine-hauling apparatus, comprising a car, provided with means for hauling the seine, a pair of spools mounted in suitable supports on the car, lines extending in opposite direction from the car, each line having one end attached to one of the spools, gears on the spools, a shaft mounted in supports on the car and adapted for longitudinal movement, gears on the ends of the shaft, adapted to mesh alternately with the gears of the spools, means for moving the shaft longitudinally, and means for driving said shaft, whereby said spools may be alternately driven.

846,576. MAGAZINE-GUN. JOSEF LAUBER, Vienna, Austria-Hungary. Filed Aug. 14, 1905. Serial No. 274,097.

Claim.—1. In a magazine-firearm, having lateral cartridge feed and ejecting mechanism, the combination of a vertically-movable breech-base and means operated by the trigger to raise the base and grip the cartridge in the breech-block, during the first part of the pull of the trigger, means for releasing the hammer as the trigger is further pulled and for allowing the base to fall and the cartridge to be ejected after the trigger has been released.

2. In a magazine-firearm having lateral cartridge feed and ejecting device, the combination of a movable breech-base, having cam-surfaces on its under side, a sliding wedge-piece mounted thereunder to engage said cam-surfaces, means for connecting said wedge-piece to the trigger, and means for firing the hammer after the wedge-piece has been moved to raise the breech-base and for allowing the base to fall after the trigger is released.

3. In a magazine-firearm having lateral cartridge feed and ejecting mechanism, the combination of a movable breech-base, having cam-surfaces thereunder, a cam-piece mounted in the bottom of the breech-chamber, a movable wedge-piece to slide between said cams and raise and lower the base, a lever to link said wedge-piece to the trigger, a cocking-lever linked to said wedge-piece lever, and having a lug to release the hammer after the base has been raised, and means for returning the parts to their initial position after the trigger has been released.

4. In a magazine-firearm having lateral cartridge feed and ejecting mechanism, the combination of a movable breech-base, having cam-surfaces thereunder, a sliding wedge to raise and lower the same, means for operating the said sliding wedge from the trigger when the latter is pulled, to close the breech, a cocking-lever and means in connection therewith to cock the hammer as the wedge is withdrawn to raise the base, and to release the hammer at the end of the pull of the trigger and means for returning the parts to their initial position after the trigger has been released.

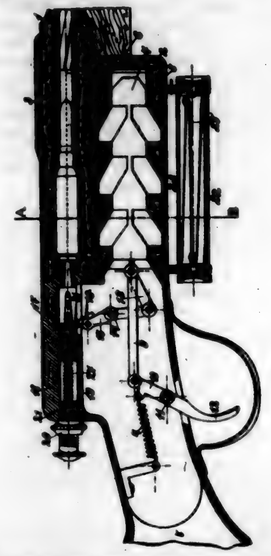

5. In a magazine-firearm having lateral cartridge feed and ejecting mechanism, the combination of a vertically-movable breech-base and means in connection with the trigger for raising and lowering the same when the trigger is pulled and released and for cocking and releasing the hammer during the pull on the trigger, a magazine encircling the breech-chamber and opening laterally into the same, and springs therein to force a cartridge onto the top of the breech-base when the latter is in its lower position, thereby throwing out the cartridge-shell, substantially as described.

6. In a magazine-firearm having lateral cartridge feed and ejecting mechanism, the combination of a vertically-movable breech-base and means in connection with the trigger for raising and lowering the same when the trigger is pulled and released and for cocking and releasing the hammer during the pull on the trigger, a magazine consisting of a double-walled cylinder, between the walls of which the cartridges are held, the said magazine encircling the lower part of the breech-chamber and opening into the breech at the side thereof, spring mechanism to force the cartridge on the top of the breech-base when the latter is in its lower position substantially as described.

846,577. SIDE BEARING FOR CARS. HENRY D. LAUGHLIN, Chicago, Ill. Filed Dec. 18, 1906. Serial No. 348,410.

Claim.—1. In a side bearing for cars, a recessed base member, an antifriction device movable longitudinally within said base, coiled springs for centering said antifriction device, a bearing-plate mounted upon the latter, operative connections between the ends of said bearing-

plate and said springs, a centrally-located stop upon the side of said base member, and stops upon the ends of the sides of the bearing-plate, said bearing-plate stops being arranged to impinge upon the first-named stop and thereby protect the operative connections before either of said springs shall have been fully compressed.

2. In a side bearing for cars, a box-like base member, an antifriction device longitudinally movable therein, helical springs for centering said antifriction device, movable abutments normally held between the outer ends of said springs and the end walls of the base member, a bearing-plate mounted upon said antifriction device, the ends of said bearing-plate being provided with laterally-positioned stops, a centrally-located stop integral with the side wall of the base member and projecting upwardly and outwardly, said stop being arranged to receive the thrust of the stops upon said bearing-plate before either of said springs shall have been fully compressed by movement of said bearing-plate.

3. In a side bearing for cars, a box-like base member the longitudinal sides of which are each provided with a central, upwardly and outwardly projecting stop-lug, an antifriction device movable longitudinally within said base, a top bearing-plate mounted upon said antifriction device for longitudinal motion, the sides of the top bearing-plate overhanging the sides of said base member, stop-lugs projecting inwardly from the sides of the top plate at the ends thereof, loosely-mounted abutment-plates within the respective ends of the top bearing-plate, springs interposed between said plates and the ends of the antifriction device, stops upon the base member for limiting the outward motion of said plates; said inwardly-projecting lugs of the top bearing-plate being so positioned as to impinge upon said centrally-located lugs of the base member before either of said springs shall have become fully compressed.

4. In a side bearing for cars, a box-like base member the longitudinal sides of which are each provided with a central, upwardly and outwardly projecting stop-lug, an antifriction device longitudinally movable within said base, a top bearing member consisting of a plate having downwardly-projecting or overhanging sides and end portions, stop-lugs projecting inwardly from the end portions of said overhanging sides, loosely-mounted abutment-plates within the respective ends of said top bearing member, compression-springs lying between said abutment-plates and said antifriction device, and stops upon the ends of the base member for limiting the outward movement of the abutment-plates; said stop-lugs of the ends of the top bearing member being so positioned as to impinge upon said stop-lugs of the base member before full compression of said springs.

5. In a side bearing for cars, a base member, an antifriction device movable longitudinally upon said base, one or more centering-springs acting upon said antifriction device to center the latter relatively to the base, a bearing-plate traversing the antifriction device, and rigid stop-shoulders upon the bearing-plate and base member, respectively, arranged to positively limit the longitudinal traverse of the plate in each direction.

846,578. SIDE BEARING FOR CARS. HENRY D. LAUGHLIN, Chicago, Ill. Filed Dec. 18, 1906. Serial No. 348,411.

Claim.—1. In a side bearing for cars, a fixed base member, a longitudinally-movable top bearing member, an interposed antifriction device, said top member having normally extended or overhanging ends, stops carried by and preferably integral with said ends, said stops being positioned to strike the ends of the base member for limiting the travel of the top bearing member, and webs for strengthening the overhanging portions of said top member.

2. In a side bearing for cars, a fixed base member, a longitudinally-movable top bearing member, an interposed antifriction device, said top member having normally extended or overhanging ends, centering-springs compressible by shifting of the top bearing member, stops carried by the ends of said top bearing member, said stops being positioned to strike the ends of the base member before the extreme possible compression of said springs, and webs for strengthening the overhanging portions of the top bearing member.

3. In a side bearing for cars, a fixed base member, an antifriction device held within said base member, a movable top member mounted upon said antifriction device, said top member being provided at its ends with longitudinally-overhanging extensions, depending end walls carried by said extensions and one or more longitudinal vertical webs strengthening said extensions, said end walls forming stops adapted to strike the ends of the base member for limiting the travel of the top bearing member.

4. In a side bearing for cars, a fixed base member, a longitudinally-movable top bearing member, an interposed antifriction device, said top member being provided at its ends with longitudinally-overhanging extensions, integral, depending end walls upon said extensions, lugs depending from said top member in substantial register with the ends of the base member, and vertically-disposed webs connecting said lugs with the adjacent end walls, the latter forming stops adapted to limit the travel of the top bearing member.

5. In a side bearing for cars, a top bearing member comprising a horizontal bearing portion, depending lugs for engaging centering devices, end portions extending beyond said lugs, stop-walls at the ends of said end portions, webs forming the sides of said end portions, and intermediate webs connecting said lugs to said stop-walls.

6. In a side bearing for cars, a base member and a top member mounted for longitudinal movement upon the base member, said top member having normally overhanging ends, said overhanging ends and the base member being provided with interfitting parts adapted to interlock when in contact with one another, for the purpose described.

7. In a side bearing for cars, a base member and a top member mounted for longitudinal movement upon the base member, the ends of said top member extending beyond those of the base member, stops carried by the ends of the top member, said stops and the ends of the base member being formed to interlock when in contact with one another, for the purpose described.

8. In a side bearing for cars, a base member and a top member mounted for longitudinal travel upon the base member, said top member having normally overhanging end portions depending stops carried by said end portions, said stops each being provided with an inward projection, and each end of the base member being formed with an undercut recess adapted to receive the inward projection of the adjacent end of the top bearing member, for the purpose described.

9. In a side bearing for cars, a base member, an antifriction device mounted to traverse said base member, a top member mounted for longitudinal movement upon said antifriction device, the ends of said top member extending normally beyond those of the base member, and means for arresting the movement of the top member within limits of travel not greater than the length of the extension thereof beyond the base member, whereby the interior of the bearing is at all times maintained covered.

846,579. COOKING-STOVE. OLUF LEE, Minneapolis, Minn. Filed Apr. 19, 1906. Serial No. 312,593.

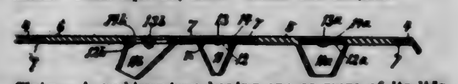

Claim.—A cooking-stove having one or more of its lids provided with a funnel-shaped draft-tube extending with its small end downward into the fire-space, and a damper in the upper end of the funnel, said tube standing at an incline.

846,580. ADJUSTABLE RULE. JOHN B. LA VASSEUR, Duluth, Minn. Filed June 18, 1906. Serial No. 322,177.

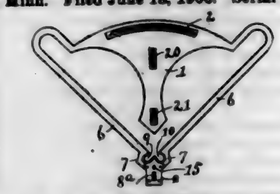

Claim.—1. In a ruling device, the combination of a body member comprising a central portion and two rule-bars positioned at opposite sides of said central portion and in part spaced therefrom, two other rule-bars, said other rule-bars being directed at an angle to each other and extending into the space between the first said rule-bars and said central portion; and means for adjustably securing the second said rule-bars to said central portion.

2. In a ruling device, the combination of a body portion including two ruling-bars set at an angle to each other, said bars being enlarged at their lower ends to form a tongue at the apex of the angle formed by them, said bars having mortises formed in said enlarged portion, said mortises extending through the inner or ruling faces of said bars, and means for closing the inwardly-opening mouth of one or the other of said mortises when necessary or desirable for operating said device.

3. In a ruling device, the combination of a body member comprising two rule-bars directed at an angle to each other and an intermediate inwardly-projecting portion meeting said rule-bars at their divergent ends, and projecting into the angle formed by said rule-bars; two other rule-bars directed at an angle to each other and extending into spaces between the first said rule-bars and said inwardly-projecting portion; means adjustably securing the said other rule-bars to said inwardly-projecting portion, adjustable means for supporting said body portion; an adjustable straight-edge, and means connecting said straight-edge to said body portion.

4. In ruling device, the combination with a suitable support having a block mounted thereon, of a body portion adjustably clamped at one end to said block, said body portion including two ruling-bars extending at an angle to each other, said body portion including a tongue extending outwardly from the apex of the angle described by said bars, means for raising said tongue above said support, and means for clamping said tongue to said support, said body portion being adapted to pivot on the latter said clamping means, and the parts of said body portion intermediate of the two said clamping means being clear of contact with said support or block or raising means.

5. In a ruling device, the combination with a suitable support having a block secured thereto, of a body portion adjustably secured to said block, said body portion including a pair of ruling-bars extending at an angle to each other, said body portion including a tongue extending outwardly from the apex of the angle formed by said bars, said bars having mortises formed therein at or near the apex of the angle formed by said bars, said mortises extending through the upper and lower and inner faces of said bars, means for temporarily closing the inwardly-opening mouth of either of said mortises, means for temporarily partly closing the other of said mortises, a second pair of ruling-bars extending at an angle to each other and adapted to lie in the spaces between the first said ruling-bars and the central part of said body portion, said second pair of ruling-bars being connected together by cross-pieces adapted to extend across the central part of the said body portion, means for clamping said cross-pieces to the central part of said body portion, a straight-edge adjustably secured to said tongue between said tongue and said support, means for clamping said tongue to said support, and a pointer carried by said tongue.

846,581. COAT. SAMUEL LEWIS, Meridian, Miss. Filed Jan. 18, 1905. Serial No. 241,665.

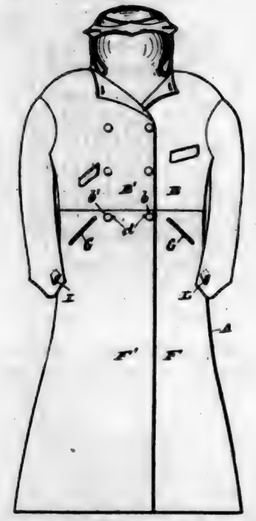

Claim.—1. In a coat, a flap on each side extending from the waist down and adapted to be secured to either the front or the back of the coat, substantially as shown and described.

2. In a coat, a flap at each side consisting of a double thickness of material formed by laterally extending the front and back portions of the garment, substantially as shown and described.

3. In a coat, a flap at each side consisting of a double thickness of material formed by laterally extending the front and back portions of the garment, said flaps having buttonholes therein, and buttons on the front and back of the coat at the waist to register with said buttonholes, substantially as shown and described.

4. In a coat, a flap at each side extending from the waist down consisting of a double thickness of material formed by laterally extending the front and back portions of the garment each of said flaps having a buttonhole at its upper free corner and a buttonhole near its upper edge intermediate the ends of the flap, and buttons on the front and back of the coat spaced apart to register with the buttonholes in the flaps, substantially as shown and described.

5. In a coat, the front consisting of the pieces B and B' having their rear edges extended laterally from the waist down to form one face of a flap at each side of the coat, and the back piece E extended laterally from the waist down to form the other face of the flap, said flaps being adapted to be folded over either the front or the back of the coat, and means to secure said flaps in either position, substantially as shown and described.

846,582. FILTER. HEINRICH LIEBERICH, Neustadt-on-the-Hardt, Germany, assignor to the firm of L. Lieberich Sohne, G. M. B. H., Neustadt-on-the-Hardt, Germany. Filed June 2, 1905. Serial No. 263,413.

Claim.—1. A filter comprising an apertured discharge-pipe, a series of filtering elements mounted on said pipe, a cap surrounding one end of the discharge-pipe to cover the apertures of said end, and means for adjusting said cap lengthwise of the pipe to clamp the filtering elements.

2. A filter comprising an apertured discharge-pipe, a series of filtering elements mounted on said pipe, a cap surrounding one end of the discharge-pipe to cover the apertures of said end, means for adjusting said cap lengthwise of the pipe to clamp the filtering elements,

and a casing formed with a pocket to accommodate said cap.

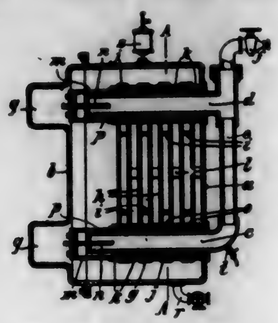

846,583. BRUSH-MAKING MACHINE. WILLIAM G. LIEBIG, Detroit, Mich. Filed Feb. 26, 1906. Serial No. 302,965.

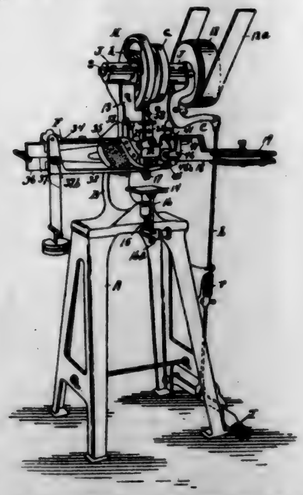

Claim.—1. In a brush-making machine, in combination with a driven shaft, a plurality of cam members carried thereby, a notched oscillatory bristle gatherer and carrier pivotally supported on the frame of the machine and adapted to select at each oscillation a specific quantity of bristles from a mass with which some portion of its periphery is in constant engagement, means engaging one of said cams whereby motion is imparted therefrom to the bristle gatherer and carrier, cam-actuated reciprocating means adapted to forcibly engage against a portion of said gatherer and carrier to effect the release of the tuft of bristles held by it at its intended point of delivery, means reciprocated by another of said cams whereby a staple is located over the released tuft, and means carried by said carrier-engaging means adapted to thereafter drive the staple and bristles into the brush-back, substantially as described.

2. In a brush-making machine, in combination with a driven shaft, a plurality of cam members carried thereby, the faces of each being provided with differently-arranged cam-races, a notched oscillating tuft-gatherer adapted to select from a store of bristles a predetermined quantity at each oscillation, means connecting said carrier and one of the cam members whereby the carrier is actuated, means for locating a staple over the tuft of bristles delivered by the carrier at the end of each stroke, and means actuated by one of said cam members whereby the carrier is jolted at the end of each oscillation to effect the release of the bristles, and the staple and tuft thereafter driven into the brush-back, substantially as described.

3. In a brush-making machine, the combination of means for feeding forward a mass of bristles in bulk, and an oscillatory gatherer and carrier comprising a body portion having some portion of its periphery in constant engagement with the mass of bristles, there being a bristle-carrying notch in its periphery adapted to select a predetermined quantity from the mass of bristles at each oscillation and to deposit the same at their intended point of delivery at a later phase of its oscillation, a slidable plate on one face of said body portion adapted, by movement along said face, to close said notch, and to be withdrawn from its closing position, at certain points in each cycle of operation of the carrier, and a fixed smoothing member projecting from the other face of said body portion, adapted to counteract by the engagement of its even periphery against the bristles, the displacing influence of the notched periphery of the body portion, substantially as described.

4. In a brush-making machine, a notched bristle-carrying member comprising a body portion adapted to engage with its periphery against the exposed side of a supply of bristles and to extract therefrom a fixed quantity at each oscillation, a member slidably attached to one face of said body portion, adapted to coöperate with the periphery of said body portion in the operation of selecting and removing bristles, and a supplemental member fixed to said body portion and adapted to counteract the displacement and agitation of the stored bristles due to the engagement thereagainst of the periphery of the body portion by similar engagement thereagainst with its unbroken periphery, substantially as described.

5. In a brush-making machine, in combination with an oscillatory notched gatherer and carrier adapted to engage with its periphery against a supply of bristles in bulk and to select therefrom a specific quantity at each oscillation and carry the same to their point of deposit, reciprocating actuating means therefor, and a reciprocating member deriving its actuation from the same source as said reciprocating actuating means adapted to forcibly contact a projecting portion of said gatherer and carrier at a certain point in each oscillation to effect the release at the point of deposit of the selected quantity of bristles, substantially as described.

6. In a brush-making machine, in combination with a driven shaft, a plurality of cam members carried thereby, one of said cam members having a yielding raceway whereby irregularity of motion may be imparted at a specific point, a plurality of reciprocatory slides engaging said cams and deriving their actuation therefrom, one of said slides being adapted to feed a staple forward in position to be driven, a notched oscillatory gatherer and carrier adapted to engage against a mass of bristles in bulk and to select therefrom a specific quantity at each oscillation, said carrier deriving its actuation from another of said slides, and the subsequent ejection of the tuft being accomplished by the forcible engagement against a part of said carrier of a third slide, and means carried by the third slide adapted to engage the staple after a tuft has been located therebeneath and drive the same into the brush-back, substantially as described.

7. An oscillatory bristle-gatherer for a brush-making machine, having in combination a body portion provided with a notched periphery adapted to engage against a supply of bristles in bulk and to select and remove therefrom a certain quantity at each oscillation, a bristle-retaining member fixed to said body portion and engaging with its periphery the bristles remaining after each oscillation of the carrier, a sliding plate pivoted to said body portion and movable in a plane parallel thereto, adapted to coöperate with the notched periphery of the body portion in holding the bristles during a portion of each oscillation, an adjustable member at the other end of the carrier from its notched periphery fashioned to receive a jarring impact to effect the release of the bristles held in the slotted portion at their point of deposit and a reciprocating member adapted to sharply contact said adjustable member at a certain point in each cycle of operations, substantially as described.

8. A bristle gatherer and carrier, having in combination a notched, oscillatory, bristle-engaging body portion adapted to automatically select and remove a tuft of bristles at each oscillation, a bristle-alining portion fixed to said body portion, and a plate slidably connected to said body portion and adapted to coöperate with it in the retention of the tuft of bristles during its period of transit from its storage location to its place of deposit, substantially as described.

9. In a brush-making machine, in combination with a rotary shaft, a plurality of cam members carried thereby, said cam members having differently-arranged races on each face, and there being one race provided with a yielding member whereby a faltering motion is imparted to a member engaging thereagainst, a notched oscillatory gatherer and carrier adapted to remove from a supply of bristles with which it is in engagement a specific quantity at each oscillation, means for causing the carrier to release the confined bristles at the desired point of deposit, means for locating a staple thereover, and interconnecting means between each of said members other than the shaft and cams, and a corresponding cam whereby each derives its actuation therefrom upon the rotation of said shaft, substantially as described.

846,584. LINOTYPE-MACHINE. CHARLES T. LIBBY, Portland, Me. Filed July 20, 1903. Serial No. 166,275.

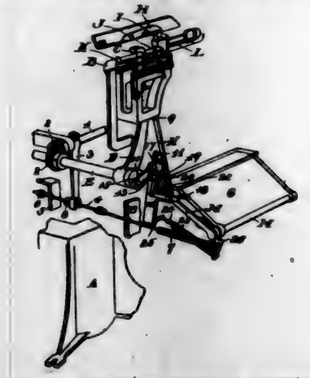

Claim.—1. In a linotype-machine, in combination with the vertically-movable assembling-elevator, mechanism of varying force efficient alternately to raise the elevator and counterbalance its fall by gravity, means to periodically hold down and release said elevator.

2. In a linotype-machine, in combination, an assembling-elevator, elevator-reciprocating mechanism, means for alternately taking away from and restoring to said reciprocating mechanism the force to raise said elevator and means for periodically detaining the elevator at either end of its movement.

3. In a linotype-machine, in combination, an assembling-elevator, mechanism adapted in one position to raise said elevator and in another position to let it fall without jar, means actuated by a moving part of the machine to shift said mechanism alternately between the two positions.

4. In a linotype-machine, in combination, an assembling-elevator, a spring provided with one anchorage from which it is adapted to raise said elevator, and with another anchorage from which it is adapted to let the elevator fall without jar, means to alternately shift said spring from one anchorage to the other.

5. In a linotype-machine, in combination, a vertically-movable assembling-elevator, a spring for raising said elevator, means for taking away the strength of said spring enough and quick enough to let said elevator return, means for temporarily holding the elevator down and controlling means.

6. In a linotype-machine, in combination, the assembling-elevator, a spring tending to raise said elevator, means for periodically taking away the force of said spring enough merely to break the fall of said elevator, a latch for holding up said elevator temporarily, means for automatically throwing out said latch and means for regulating said spring.

7. In a linotype-machine, in combination, the line-delivery shaft, a latch, three springs, the first spring tending to hold said latch in, a lever also adapted to yieldingly hold said latch in actuated by the second spring, a lever on the line-delivery shaft yieldingly actuated by said shaft and tending to throw said latch out through the medium of the third spring, said third spring being strong enough to overpower the first spring above mentioned but not the first and second combined, a key-lever adapted to be operated manually to withdraw the first-mentioned lever, whereby said latch is unlatched when both the line-delivery shaft is acting and the first-mentioned lever withdrawn.

8. In a linotype-machine, an assembling-elevator, elevator-reciprocating mechanism, a latch adapted to temporarily hold down said elevator, two means for holding said latch in engagement and means for overpowering said two means successively.

9. In a linotype-machine, in combination, an assembling-elevator, means for raising said elevator, a latch under double control for holding said elevator down, one adapted to act arbitrarily, the other automatically, and means by which the assembling-elevator, when the arbitrary releasing mechanism has been brought into operation before the automatic releasing mechanism has acted, remains waiting until the latter acts.

10. In a linotype-machine, in combination, an assembling-elevator, means to raise said elevator, a latch to hold said assembling-elevator down, two levers to operate said latch adversely, one actuated automatically by some moving part of the machine to throw it out, the other actuated by a spring to hold it in, means to withdraw the latter operated manually.

11. In a linotype-machine, in combination, the assembling-elevator, means for raising and letting it down, a latch to hold it down two levers acting adversely adapted to operate said latch, two springs tending to hold said levers in engagement with the latch, one lever tending to hold the latch in, a spring engaging the latch with strength enough only to hold the latch in when both levers are away, the other lever operated automatically, to throw it out and actuated by the line-delivery shaft, the latter when both are in operation being the weaker, and the former being adapted to be operated manually and fitted with a latch adapted to prevent its reëngaging before the assembling-elevator has gone up.

12. In a linotype-machine, in combination, the line-delivery shaft, a latch, a spring tending to hold said latch in, a lever also adapted to yieldingly hold said latch in actuated by another spring, a lever on the line-delivery shaft yieldingly actuated by said shaft and tending to throw said latch out, strong enough to overpower the first spring above mentioned but not the two combined, a key-lever adapted to be operated manually to withdraw the first-mentioned lever, another latch adapted to latch the first-mentioned lever down operated adversely by a spring under it to hold it in, and the tail of the first-mentioned latch over it to throw it out, whereby the latch when the first-mentioned lever is manually withdrawn while the lever actuated by the line-delivery shaft is not acting remains latched until the lever on the line-delivery shaft acts and then is unlatched.

13. In a linotype-machine, in combination, the assembling-elevator, mechanism adapted to raise the elevator and let it down, mechanism doubly controlled for latching the elevator down, mechanism for arbitrarily releasing the elevator, a hand-operated clasp adapted to lock the last-mentioned mechanism out of action, the line-delivery carriage and its shaft, mechanism actuated by the latter to release the elevator.

14. In a linotype-machine, in combination, an assembling-elevator, mechanism for reciprocating the same, a latch adapted to hold the elevator down, a spring tending to hold said latch in, a lever also adapted to yieldingly hold said latch in a spring to actuate said lever, the line-delivery carriage and its shaft, a lever on the line-delivery shaft yieldingly actuated by said shaft and tending to throw said latch out, strong enough to overpower the first spring above mentioned but not the two combined, a key-lever adapted to be operated manually to withdraw the first-mentioned lever, another latch adapted to latch the first-mentioned lever down and to be thrown out by the tail thereof, a spring adapted to hold said latch in, a clasp manually operated to lock the key-lever down.

15. In a linotype-machine, in combination, the assembling-elevator, a spring tending to raise said elevator, a latch for holding said elevator up, means for automatically throwing out said latch, allowing the elevator to fall, and means for controlling the action of said elevator-spring, whereby the same may act to break the fall of the elevator.

16. In a linotype-machine, the vertically-movable assembling-elevator, a spring with both ends thereof subject to change position, the attaching end changing with the movements of the elevator and the anchorage end shifting from one hold to another hold adjustable to give said spring in the one position the necessary tension to raise the elevator and in the other position tension enough merely to let it fall without jar, in combination with devices for operating said spring and controlling said elevator.

17. In a linotype-machine, an attachment for operating the assembling-elevator comprising a spring and means for tensioning same enough to raise the elevator, for holding said spring at said tension while the elevator rises and for letting the spring down to a tension sufficient merely to let it fall without jar, operating substantially as described.

18. In a linotype-machine, the vertically-movable assembling-elevator and automatic actuating mechanism therefor, in combination with a spring-pressed latch to periodically hold said elevator down, a lever operated by a moving part of the machine to throw out said latch, key mechanism adapted to block the releasing motion of said lever automatically and to be thrown out manually.

19. In a linotype-machine, an assembling-elevator, elevator-actuating mechanism, a spring-pressed latch for periodically holding down said elevator, automatically-actuated mechanism for operating said latch, a device for automatically blocking the last-named mechanism adapted to be manually withdrawn.

20. In a linotype-machine, in combination, the assembling-elevator, elevator-actuated mechanism, a spring-pressed latch for periodically holding down said elevator, automatically-actuated mechanism for operating said latch, a device for automatically blocking the last-named mechanism adapted to be manually withdrawn, a device for locking the last-named device out of action.

21. In a linotype-machine, the assembling-elevator and automatic actuating mechanism therefor, in combination with a latch adapted to hold the elevator down, mechanism for automatically unlatching said latch and devices for automatically blocking and manually releasing the last-mentioned mechanism.

22. In a linotype-machine, the assembling-elevator and automatic actuating mechanism therefor, in combination with a latch adapted to hold the elevator down, mechanism for automatically unlatching said latch, devices for automatically blocking and manually releasing the unlatching mechanism, and devices connected with the blocking device for manually locking it out of and letting it into action.

846,585. METHOD OF PRODUCING BRONZE-PRINTINGS. CARL A. R. LUDEWIG, Hamburg, Germany. Filed Nov. 13, 1905. Serial No. 287,171.

Claim.—1. The method of producing bronze-printings having a lustrous, silk-like appearance, which comprises producing a mixture of powdered bronze and a soluble powdered carrier capable of being rendered transparent by a suitable solvent, damping a surface with said solvent and applying the mixture thereto to permit the ground of said surface to show through the carrier thus rendered transparent, said bronze particles maintained separated by the carrier.

2. The method of producing bronze-printings having a lustrous silk-like appearance, which comprises producing a mixture of powdered bronze and a soluble powdered colored carrier capable of being rendered transparent by a suitable solvent, damping a colored surface with said solvent and applying the mixture thereto to permit the color to show through the carrier thus rendered transparent, said bronze particles maintained separated by the carrier.

846,586. IDENTIFICATION DEVICE. CLARENCE D. LUKENS, St. Louis, Mo. Filed Feb. 26, 1906. Serial No. 303,035.

Claim.—1. The combination with an imperforate transparent receptacle, of a body to be preserved sealed therein, a staining fluid preservative for said body also sealed in said receptacle and in contact with said body, and an identification device also sealed in said receptacle and in contact with said fluid, said identification device having an identification character for said body perforated therein.

2. The combination with an imperforate transparent receptacle, of a body to be preserved sealed therein, a liquid containing iodin for preserving said body and also sealed in said receptacle and in contact with said body, and an identification device having an identification character for said body perforated therein and also sealed in said receptacle and in contact with said liquid.

3. The combination with an imperforate transparent receptacle, of a body to be preserved sealed therein, a liquid containing iodin sealed in and partly filling said receptacle and in contact with said body for preserving said body, and an identification device for said body also sealed in said receptacle and accessible to said liquid, said identification device having an identification character for said body perforated therein.

4. The combination with an elongated, imperforate transparent receptacle, of a body to be preserved sealed therein and occupying one end thereof, a preservative for said body also sealed in said receptacle, and an identification device having an identification character for said body also sealed in said receptacle at the other end thereof, said identification character being unaffected by said preservative, said tube having a fracture-point intermediate its ends.

5. The combination with an elongated transparent receptacle, of a body to be preserved sealed therein and occupying one end thereof, a preservative for said body also sealed in said receptacle and partially filling the remaining space therein, and an identification device having an identification character for said body also sealed in said receptacle at the other end thereof, said identification character being unaffected by said preservative, said tube being provided with a fracture-point intermediate said body and said identification device.

6. The combination with an imperforate transparent receptacle provided with a fracture-point, of a body to be preserved sealed in said receptacle, a preservative for said body also sealed in said receptacle and in contact with said body, and an identification device having an identification character for said body and also sealed in said receptacle and in contact with said preservative, said identification character being unaffected by said preservative.

7. The combination with an elongated imperforate transparent receptacle, of a body to be preserved sealed therein and occupying one end thereof, a staining preservative fluid for said body also sealed in and partially filling said receptacle and in contact with said body, and an identification device having an identification character for said body perforated therein, said identification device occupying the other end of said receptacle and being accessible to said liquid.

8. The combination with an imperforate transparent receptacle, of a body to be preserved sealed therein, a fluid preservative for said body also sealed in said receptacle and in contact with said body, and an identification device also sealed in said receptacle and affected by said fluid preservative, said identification device having an identification character unaffected by said fluid preservative.

846,587. COFFEE-HOLDER. WALTER MAECHLER, Chicago, Ill. Filed Nov. 9, 1906. Serial No. 342,689.

Claim.—A holder for coffee and the like consisting of a bag having a hem at the top and a series of holes around the same, a split ring within the hem, and hooks loose on the ring and extending through the holes in the hem.

846,588. APPARATUS FOR TREATING MATERIALS. CHARLIE E. MARK, Chicago, Ill. Filed Sept. 12, 1903. Serial No. 172,862.

Claim.—1. An apparatus for treating granular or comminuted materials, comprising a suitable support for said materials and a moving member adapted for both agitating and injecting fluids into said materials together with suitable provisions for introducing the ore or other materials to be treated, and for withdrawing the same, and means for subjecting the ore or other materials to heat while subject to the action of the said combined agitating and fluid-injecting means operated by endless chains.

2. Apparatus for treating granular or comminuted materials, comprising means for supporting and agitating said materials, said means including a movable member through which fluids are injected into said materials together with suitable provisions for introducing the ore or other materials to be treated, and for withdrawing the same, and means for subjecting the ore or other materials to heat while subject to the action of the said combined agitating and fluid-injecting means operated by endless chains.

3. Apparatus for treating granular or comminuted materials, comprising means for supporting, heating, and agitating materials, said means including a movable member through which fluids are injected into the said materials together with suitable provisions for introducing the ore or other materials to be treated, and for withdrawing the same, and means for subjecting the ore or other materials to heat while subject to the action of the said combined agitating and fluid-injecting means operated by endless chains.

4. A furnace having a suitable hearth for supporting granular or comminuted materials, a hollow agitating device adapted to be given movement directly above the hearth, so as to agitate whatever materials are to be treated on said hearth, and suitable devices for connecting said agitating device with a source of fluid-pressure together with suitable provisions for introducing the ore or other materials to be treated, and for withdrawing the same, and means for subjecting the ore or other materials to heat while subject to the action of the said combined agitating and fluid-injecting means operated by endless chains.

5. A furnace having a suitable hearth for supporting granular or comminuted materials, a hollow agitator adapted to be given movement directly above the hearth, so as to agitate the materials which are to be treated on said hearth, and suitable devices for connecting said agitator with a source of air-pressure together with suitable provisions for introducing the ore or other materials to be treated, and for withdrawing the same, and means for subjecting the ore or other materials to heat while subject to the action of the said combined agitating and fluid-injecting means operated by endless chains.

6. A roasting-furnace having a suitable hearth, hollow rabbles having outlets and adapted to be operated in any suitable manner, and suitable devices for connecting said rabbles with a source of air-pressure together with a pair of parallel endless chains for operating the rabbles together with suitable provisions for introducing the ore or other materials to be treated, and for withdrawing the same, and means for subjecting the ore or other materials to heat while subject to the action of the said combined agitating and fluid-injecting means.

7. A roasting-furnace having a suitable hearth, means for rabbling and introducing air into the body of ore resting on the hearth, said means including air-injecting devices which are independent of and arranged immediately above the hearth, and a suitable arrangement for connecting the said air-injecting devices with a source of air-pressure together with a pair of parallel endless chains for operating the rabbles together with suitable provisions for introducing the ore or other materials to be treated, and for withdrawing the same, and means for subjecting the ore or other materials to heat while subject to the action of the said combined agitating and fluid-injecting means.

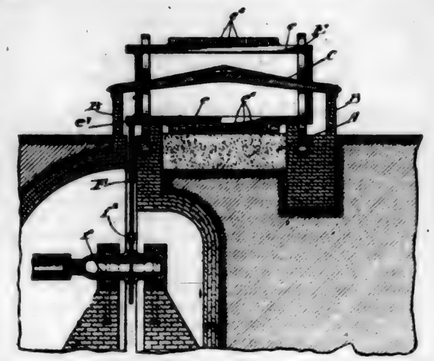

8. A roasting-furnace comprising means for supporting, rabbling, and injecting air into the ore, said means including a movable member through which the air is injected into the ore together with a pair of parallel endless chains for operating the rabbles together with suitable provisions for introducing the ore or other materials to be treated, and for withdrawing the same, and means for subjecting the ore or other materials to heat while subject to the action of the said combined agitating and fluid-injecting means.

9. A roasting-furnace having a suitable hearth, hollow rabbles provided with outlets and adapted to be operated in any suitable manner, a source of air-pressure, and means including automatically-operated valves for connecting said rabbles with the source of air-pressure together with a pair of parallel endless chains for operating the rabbles together with suitable provisions for introducing the ore or other materials to be treated, and for withdrawing the same, and means for subjecting the ore or other materials to heat while subject to the action of the said combined agitating and fluid-injecting means.

10. A roasting-furnace comprising a hearth for supporting the ore, a pair of parallel endless chains, fluid-delivering rabbles carried and operated by said chains, and means for supplying air to said rabbles.

11. An apparatus for treating granular or comminuted materials, comprising a suitable support for said materials, and a moving member adapted for both agitating and injecting fluids into said materials, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided is alternately connected with and disconnected from the source of air or other fluid pressure.

12. Apparatus for treating granular or comminuted materials, comprising means for supporting, heating and agitating materials, said means including a movable member through which fluids are injected into the said materials, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided is alternately connected with and disconnected from the source of air or other fluid pressure.

13. A furnace having a suitable hearth for supporting granular or comminuted materials, a hollow agitating device adapted to be given movement directly above the hearth, so as to agitate whatever materials are to be treated on said hearth, and suitable devices for connecting said agitating device with a source of fluid-pressure, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided is alternately connected with and disconnected from the source of air or other fluid pressure.

14. A roasting-furnace having a suitable hearth, hollow rabbles having outlets and adapted to be operated in any suitable manner, and suitable devices for connecting said rabbles with a source of air-pressure, together with power-transmitting connections for operating the rabbles, and suitable provisions whereby the combined agitating and fluid-injecting means thus provided is alternately connected with and disconnected from the source of air or other fluid pressure.

15. A roasting-furnace having a suitable hearth, means for rabbling and introducing air into the body of ore resting on the hearth, said means including air-injecting devices which are independent of and arranged immediately above the hearth, a suitable arrangement for connecting the said air-injecting devices with a source of air-pressure, and suitable provisions whereby the combined agitating and fluid-injecting means thus provided is alternately connected with and disconnected from the source of air or other fluid pressure.

16. A roasting-furnace comprising means for supporting, rabbling and injecting air into the ore, said means including a movable member through which the air is injected into the ore, together with power-transmitting connections for operating the rabbles, and suitable provisions whereby the combined agitating and fluid-injecting means thus provided is alternately connected with and disconnected from the source of air or other fluid pressure.

17. A roasting-furnace having a suitable hearth, hollow rabbles provided with outlets and adapted to be operated in any suitable manner, a source of air-pressure, and means including automatically-operated valves for connecting said rabbles with the source of air-pressure, together with power-transmitting connections for operating the rabbles, and suitable provisions whereby the combined agitating and fluid-injecting means thus provided is alternately connected with and disconnected from the source of air or other fluid pressure.

18. A roasting-furnace comprising a hearth for supporting the ore, a pair of parallel endless chains, fluid-delivering rabbles carried and operated by said chains, and means for supplying air to said rabbles, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided is alternately connected with and disconnected from the source of air or other fluid pressure.

19. A roasting-furnace provided with fluid-delivering mechanical rabbles, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided is alternately connected with and disconnected from the source of air or other fluid pressure.

20. A roasting-furnace comprising a hearth and one or more fluid-delivering mechanical rabbles, substantially as shown and described, agitating and fluid-injecting means, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided is alternately connected with and disconnected from the source of air or other fluid pressure.

21. An apparatus for treating granular or comminuted materials, comprising a suitable support for said materials, and a moving member adapted for both agitating and injecting fluids into said materials, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided is connected with the source of air or other fluid pressure for only a portion of its path of travel through the ore or other materials being treated.

22. A furnace having a suitable hearth for supporting granular or comminuted materials, a hollow agitating device adapted to be given movement directly above the hearth, so as to agitate whatever materials are to be treated on said hearth, and suitable devices for connecting said agitating device with a source of fluid-pressure, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided is connected with the source of air or other fluid pressure for only a portion of its path of travel through the ore or other materials being treated.

23. A roasting-furnace provided with fluid-delivering mechanical rabbles, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided is connected with the source of air or other fluid pressure for only a portion of its path of travel through the ore or other materials being treated.

24. A roasting-furnace comprising a hearth and one or more fluid-delivering mechanical rabbles, substantially as shown and described, agitating and fluid-injecting means, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided is connected with the source of air or other fluid pressure for only a portion of its path of travel through the ore or other materials being treated.

25. An apparatus for treating granular or comminuted materials, comprising a suitable support for said materials, and a moving member adapted for both agitating and injecting fluids into said materials, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided receives air or other fluid through a rotary wheel-like member adapted to have the ends of its hollow spokes successively connected with the said means.

26. Apparatus for treating granular or comminuted materials, comprising means for supporting, heating and agitating materials, said means including a movable member through which fluids are injected into the said materials, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided receives air or other fluid through a rotary wheel-like member adapted to have the ends of its hollow spokes successively connected with the said means.

27. A furnace having a suitable hearth for supporting granular or comminuted materials, a hollow agitating device adapted to be given movement directly above the hearth, so as to agitate whatever materials are to be treated on said hearth, and suitable devices for connecting said agitating device with a source of fluid-pressure, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided receives air or other fluid through a rotary wheel-like member adapted to have the ends of its hollow spokes successively connected with the said means.

28. A roasting-furnace having a suitable hearth, hollow rabbles having outlets and adapted to be operated in any suitable manner, and suitable devices for connecting said rabbles with a source of air-pressure, together with power-transmitting connections for operating the rabbles, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided receives air or other fluid through a rotary wheel-like member adapted to have the ends of its hollow spokes successively connected with the said means.

29. A roasting-furnace having a suitable hearth, means for rabbling and introducing air into the body of ore resting on the hearth, said means including air-injecting devices which are independent of and arranged immediately above the hearth, and a suitable arrangement for connecting the said air-injecting devices with a source of air-pressure, together with power-transmitting connections for operating the rabbles, and suitable provisions whereby the combined agitating and fluid-injecting means thus provided receives air or other fluid through a rotary wheel-like member adapted to have the ends of its hollow spokes successively connected with the said means.

30. A roasting-furnace comprising means for supporting, rabbling and injecting air into the ore, said means including a movable member through which the air is injected into the ore, together with power-transmitting connections for operating the rabbles, and suitable provisions whereby the combined agitating and fluid-injecting means thus provided receives air or other fluid through a rotary wheel-like member adapted to have the ends of its hollow spokes successively connected with the said means.

31. A roasting-furnace having a suitable hearth, hollow rabbles provided with outlets and adapted to be operated in any suitable manner, a source of air-pressure, and means including automatically-operated valves for connecting said rabbles with the source of air-pressure, together with power-transmitting connections for operating the rabbles, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided receives air or other fluid through a rotary wheel-like member adapted to have the ends of its hollow spokes successively connected with the said means.

32. A roasting-furnace comprising a hearth for supporting the ore, a pair of parallel endless chains, fluid-delivering rabbles carried and operated by said chains, and means for supplying air to said rabbles, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided receives air or other fluid through a rotary wheel-like member adapted to have the ends of its hollow spokes successively connected with the said means.

33. A roasting-furnace comprising a hearth and one or more fluid-delivering mechanical rabbles, substantially as shown and described, agitating and fluid-injecting means, together with suitable provisions whereby the combined agitating and fluid-injecting means thus provided receives air or other fluid through a rotary wheel-like member adapted to have the ends of its hollow spokes successively connected with the said means.

34. Apparatus for treating granular or comminuted materials, comprising means for supporting and agitating said materials, said means including a movable member through which fluids are injected into the said materials, together with suitable provisions whereby the said combined agitating and fluid-injecting means passes through the ore or other materials for only a portion of its path of travel.

35. Apparatus for treating granular or comminuted materials, comprising means for supporting, heating and agitating materials, said means including a movable member through which fluids are injected into the said materials, together with suitable provisions whereby the said combined agitating and fluid-injecting means passes through the ore or other materials for only a portion of its path of travel.

36. A furnace having a suitable hearth for supporting granular or comminuted materials, a hollow agitator adapted to be given movement directly above the hearth, so as to agitate the materials which are to be treated on said hearth, and suitable devices for connecting said agitator with a source of air-pressure, together with suitable provisions whereby the said combined agitating and fluid-injecting means passes through the ore or other materials for only a portion of its path of travel.

37. A roasting-furnace having a suitable hearth, hollow rabbles having outlets and adapted to be operated in any suitable manner, and suitable devices for connecting said rabbles with a source of air-pressure, together with power-transmitting connections for operating the rabbles, and suitable provisions whereby the said combined agitating and fluid-injecting means passes through the ore or other materials for only a portion of its path of travel.

38. A roasting-furnace having a suitable hearth, means for rabbling and introducing air into the body of ore resting on the hearth, said means including air-injecting devices which are independent of and arranged immediately above the hearth, and a suitable arrangement for connecting the said air-injecting devices with a source of air-pressure, together with power-transmitting connections for operating the rabbles, and suitable provisions whereby the said combined agitating and fluid-injecting means passes through the ore or other materials for only a portion of its path of travel.

39. A roasting-furnace comprising means for supporting, rabbling and injecting air into the ore, said means including a movable member through which the air is injected into the ore, together with power-transmitting connections for operating the rabbles, and suitable provisions whereby the said combined agitating and fluid-injecting means passes through the ore or other materials for only a portion of its path of travel.

40. A roasting-furnace having a suitable hearth, hollow rabbles provided with outlets and adapted to be operated in any suitable manner, a source of air-pressure, and means including automatically-operated valves for connecting said rabbles with the source of air-pressure, together with power-transmitting connections for operating the rabbles, and suitable provisions whereby the said combined agitating and fluid-injecting means passes through the ore or other materials for only a portion of its path of travel.

41. A roasting-furnace comprising a hearth for supporting the ore, a pair of parallel endless chains, fluid-delivering rabbles carried and operated by said chains, and means for supplying air to said rabbles, together with suitable provisions whereby the said combined agitating and fluid-injecting means passes through the ore or other materials for only a portion of its path of travel.

42. A roasting-furnace comprising a hearth and one or more fluid-delivering mechanical rabbles, substantially as shown and described, agitating and fluid-injecting means, together with suitable provisions whereby the said combined agitating and fluid-injecting means passes through the ore or other materials for only a portion of its path of travel.

43. In a roasting-furnace, the combination of hollow rabbles, a source of air-pressure, and means for automatically and alternately connecting the rabbles with the source of air-pressure and disconnecting the same therefrom.

846,589. BAILING-MACHINE. WILLIAM P. MARSH, Dayton, Ohio, assignor to Will M. Kinnard, Dayton, Ohio. Filed Apr. 28, 1905. Serial No. 257,930.

Claim.—1. In a bailing-machine, a series of plungers each independent of the other for cutting, holding, and

bending the wire, a shaft with cam-wheels one for each plunger and connecting mechanism for operating said plungers, a block for holding the vessel to be bailed, with driving and clenching mechanism to secure said bail when formed to the paper vessel.

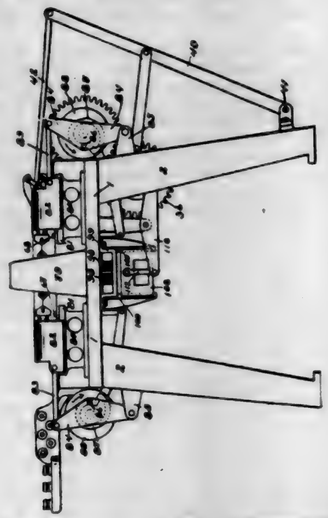

2. In a bailing-machine, a series of plungers each independent of the others for cutting, holding, and bending the wire, a shaft with cam-wheels one for each plunger and connecting mechanism for operating said plungers, a block for holding the vessel to be bailed, a pair of driving devices with shafts, cam-wheels and connecting mechanism for operating same to drive the ends of the wire through the vessel, with a pair of clenchers with cams and connecting mechanism to operate same to clench the ends of the bail in place.

3. In a bailing-machine, a series of plungers each independent of the others for cutting, holding, and bending the wire, a shaft with cam-wheels one for each plunger and connecting mechanism for operating said plungers, a block for holding the vessel to be bailed, a pair of driving devices with shafts, cam-wheels and connecting mechanism for operating same to drive the ends of the wire through the vessel, a pair of driving devices, with shafts at right angles to and geared to said plunger-shaft, cam-wheels thereon, and connecting mechanism for operating the driving devices to drive the ends of the wire through the vessel, with a pair of clenchers within the block with cams on the shafts of the driving devices, and connecting mechanism to operate the clenchers to secure the ends of the bail in place.

4. In a bailing-machine, a reciprocating clamp to draw the wire across the machine, a series of plungers with means for actuating them to hold, cut off, and bend the wire at both ends simultaneously, and driving mechanisms for driving the bent ends of the wire through the vessel.

5. In a bailing-machine, the combination with a guide-frame and five reciprocating plungers horizontally disposed therein, of a driving-shaft, with cam-wheels thereon connected with said plungers, the middle plunger carrying a fork to hold the wire to be acted upon, and the other two pairs of plungers bending the wire, with posts upon which the wire is bent, and means for withdrawing the outermost posts to permit bending around the innermost posts.

6. In a bailing-machine, a driving mechanism, consisting of a sliding block, a slotted head mounted to slide in said block to receive the wire to be driven, with a longitudinal recess in said head, a driving-plate mounted in said recess, with a spring to keep said slotted head extended to receive the wire, and to permit the head to be withdrawn to bring the said driving-plate into action.

7. In a bailing-machine, feeding mechanism for the wire, consisting of a sliding block carrying a relatively fixed and a loose plate between which plates the wire is passed, a flattened shaft mounted to rotate in said block, bearing on said loose plate, with means for shifting said sliding block and connection therefor to said flattened shaft, whereby the shifting of the sliding block will tighten and release said clamping-plates.

846,590. HOOK-SWITCH. CHARLES T. MASON, Sumter, S. C., assignor to The Sumter Telephone M'f'g. Co., Sumter, S. C., a Corporation of South Carolina. Filed Dec. 21, 1906. Serial No. 348,895.

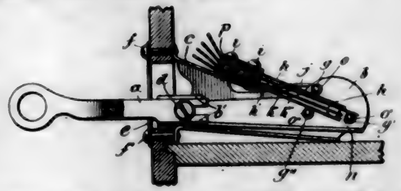

Claim.—1. In a telephone switching apparatus, the combination of a pivoted switch-hook, insulating circuit-changing springs each and all having a free end lying adjacent the pivot, and insulated pins projecting from the hook on opposite sides of the pivot and alternately co-operating with said springs.

2. In a telephone switching apparatus, the combination of a pivoted switch-hook, insulating circuit-changing springs having their free ends adjacent the pivot, and pins disposed longitudinally of the hook and on opposite sides of the pivot to coöperate alternately with said springs.

3. In a telephone switching apparatus, the combination of a pivoted switch-hook, insulating circuit-changing springs having their free ends adjacent the pivot, and pins projecting from the hook and arranged in substantially triangular relation about the hook-pivot to co-operate with said springs to establish signaling and talking connections respectively.

4. In a telephone switching apparatus, the combination of a pivoted switch-hook, insulating circuit-changing springs including one member longer than the others and having their free ends adjacent the pivot, pins on the hook disposed on opposite sides of the pivot adapted to engage the short and long springs alternately in the respective positions of the hook.

5. In a telephone switching apparatus, the combination of a pivoted switch-hook, insulating circuit-changing springs including an intermediate member longer than the others, said springs having their free ends adjacent the pivot, and pins on the hook disposed in triangular relation about the pivot to coöperate with said springs to establish signaling and talking connections respectively.

6. In a telephone switching apparatus, the combination of a pivoted switch-hook, insulated circuit-changing springs including two short springs and a relatively long spring, the latter having a normal trend toward the short springs, all of said springs having their free ends adjacent the hook-pivot, and pins on the hook on opposite sides of the pivot adapted to engage the outer short spring and the long spring alternately in the respective positions of the hook.

7. In a telephone switching apparatus, the combination of a pivoted switch-hook, insulated circuit-changing springs including two short springs, a single short spring, and a relatively long intermediate spring, the free ends of all of said springs lying adjacent the pivot, and pins on the hook disposed in triangular relation about the pivot to coöperate with the outer short springs and the intermediate spring to establish signaling and talking connections respectively.

8. In a telephone switching apparatus, the combination of a frame, a switch-hook pivoted thereto, insulated circuit-changing springs mounted on said frame and each and all having a free end extending toward the pivot, and insulated pins projecting from the hook and lying on opposite sides of the pivot and alternately coöperating with said springs.

9. In a telephone switching apparatus, the combination of a frame, a switch-hook pivoted thereto, insulated circuit-changing springs mounted on said frame and having their free ends extending toward the pivot, said springs including two short springs and a relatively long spring, and pins projecting from said hook and lying on opposite sides of the pivot to alternately force said short springs into positive contact with each other and with the long spring and relieve said contact in the respective positions of the hook.

10. In a telephone switching apparatus, the combination of a frame, a switch-hook pivoted thereto, insulated circuit-changing springs mounted on said frame and having their free ends extending toward the pivot, said springs including two short springs, a single short spring and an intermediate long spring, and three pins on said hook arranged in triangular form about the pivot and coöperating with the appropriate springs to cause them to positively engage for signaling and talking connections in the alternate positions of the hook.

846,591. AUTOMATIC FIREARM. WILLIAM MASON, New Haven, Conn., assignor to Winchester Repeating Arms Co., New Haven, Conn., a Corporation. Filed Mar. 20, 1905. Serial No. 250,932.

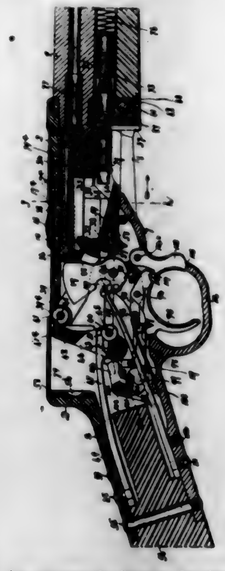

Claim.—1. An automatic firearm having the right-hand side wall of its gun-frame formed near its forward end with an ejection-opening, and its left-hand side wall formed near its forward end with a gas-escape opening which latter extends alongside of the forward end of the breech-block of the gun when the said breech-block is in its closed position, whereby the escape of gas is provided for when the breech-block is in its closed position.

2. An automatic firearm having the right-hand side wall of its gun-frame formed with an ejection-opening and the left-hand side wall thereof formed with a gas-opening and its top formed with a handle-opening, and its bottom being made open for the reception of the lower tang and for the production in front of the said tang, of a loading-opening, the said gas-escape opening being located to provide for the escape of gas when the breech-block of the gun is in its closed position.

3. In a balanced breech-block automatic firearm, the combination with a gun-frame formed with a side ejection-opening and having its top closed at the front and rear except for a handle-opening, of a non-rotatable balanced breech-block, and a handle attached directly to the top of the breech-block and moving back and forth in the handle-opening which is closed by the block when the same is in its closed position, whereby the entire top of the frame is closed, when the block is in its closed position, and closed, except for the handle-opening, when the block is in its open position.

4. In a balanced breech-block firearm, the combination with a gun-frame having a handle-opening in its top and closed at its rear end to provide a recoil-abutment, of a non-rotatable balanced breech-block, and a handle secured to the breech-block through the said handle-opening which is closed by the block when the same is in its closed position, the said handle-opening being located to the rear of the front end of the frame and the handle being secured to the block to the rear of the forward end thereof, whereby the top of the frame over the forward end of the block when the same is in its closed position is left solid.

5. In an automatic firearm, the combination with a gun-frame having its rear end closed to form a recoil-abutment for the breech-block and formed in its right-hand side wall with an ejection-opening, in its left-hand side wall with a gas-escape opening and having a handle-opening located in its top at a point to the rear of the said gas-escape and ejection openings; of a non-rotatable balanced breech-block, and a handle attached to the top of the block to the rear of the forward end thereof and moving back and forth in the said handle-opening, the top of the frame in front of the handle-opening being left solid.

6. In a balanced breech-block firearm, the combination with a gun-frame having its rear end closed to form a recoil-abutment for the breech-block, and formed in its top with a handle-opening located to the rear of its front end; of a non-rotatable breech-block formed at its front end with a bolt-like extension or closure, and a handle attached through the said handle-opening to the breech-block at a point directly in the rear of the said bolt-like extension or closure which, when the breech-block is in its closed position, is covered by the solid portion of the top of the frame in front of the said handle-opening.

7. In a balanced breech-block automatic firearm, the combination with a gun-frame having its top formed with a handle-opening located to the rear of its front end and having its rear end closed to form a recoil-abutment for the breech-block; of a non-rotatable balanced breech-block rising into the said handle-opening, and a handle attached through the said handle-opening to the breech-block at a point to the rear of the front end thereof and overhanging the sides of the frame which is made solid in front of the said handle-opening to cover the forward end of the breech-block when the same is in its closed position.

8. In an automatic firearm, the combination with a reciprocating breech-block, of a lever operating upon the rear end thereof for moving it forward, and a flat spring coacting with the said lever for the operation thereof the forward end of the said spring extending forward over the pivot at the lower end of the lever upon which the spring exerts a forward thrust.

9. In an automatic firearm, the combination with a reciprocating breech-block, of a breech-block lever coacting at its upper end with the breech-block, and a flat spring extending forward over the pivot on which the lever swings and coacting with the lever to push the same forward, a firing-pin mounted in the breech-block, a hammer located forward of the said lever for coaction with the said firing-pin, and a hammer-spring.

10. In an automatic firearm, the combination with a reciprocating breech-block, of a breech-block lever coacting at its upper end with the block and formed with an opening, and a flat spring extending forward into the said opening and engaging with the lever at a point in front of the pivot thereof for exerting a forward push on the lever.

11. In an automatic firearm, the combination with a gun-frame and an upper and a lower tang, of a reciprocating breech-block, a breech-block lever coacting at its upper end with the rear end of the block, a flat spring secured to the said upper tang and at its forward end extending over the pivot of the said lever for pushing the same forward, a firing-pin mounted in the breech-block, a hammer located in front of the said lever, and a hammer-spring connected with the said lower tang.

12. In an automatic firearm, the combination with a reciprocating breech-block, of a breech-block lever coacting at its upper end with the rear end of the breech-block and formed with an opening, of an antifriction-roller located in the forward portion of the said opening in front of the pivot on which the said lever turns, and a flat spring having its forward end extended into the said opening of the lever in position to coact with the said antifriction-roller.

13. In an automatic firearm, the combination with the gun-frame and the lower tang, of a reciprocating breech-block, a breech-block lever pivoted in the lower tang and formed with an opening, of an antifriction-roller carried by the said lever, and a flat spring secured to the gun-frame and extending forward into the opening in the said lever and engaging with the said roller and formed with a bevel through which it acts on the said roller to exert a constant effort to push the lever, and hence the breech-block, forward.

14. In an automatic firearm, the combination with a breech-block, of a swinging and longitudinally-yielding carrier engaged by the said block for being elevated and depressed into its cartridge-delivering and cartridge-receiving positions.

15. In an automatic gun, the combination with the breech-block, of a swinging carrier engaged by the said block for being swung into its elevated and depressed positions, and having an elongated pivot-hole and a spring-chamber extending forward thereof, a pivot passing through the said pivot-hole, a spring located in the said chamber in front of the said pivot, and a carrier-spring, whereby when the carrier is engaged by the breech-block for being swung into its elevated position, it yields longitudinally rearward.

16. In an automatic firearm, the combination with the gun-frame and the lower tang, of a reciprocating breech-block, a swinging and a longitudinally-yielding carrier mounted in the said tang and swung into its elevated and depressed positions by the block, and a carrier-spring mounted in the said tang and engaging with the carrier for holding the same in its elevated and depressed positions.

17. In an automatic firearm, the combination with a reciprocating breech-block, of a swinging and longitudinally-yielding carrier formed at its rear end with an upwardly-extending arm for engagement by the said block when the same moves rearward, whereby the carrier is swung into its elevated position and the forward portion of the said carrier being also adapted to be engaged by the said block for swinging the carrier into its depressed position on the forward movement of the block, and a carrier-spring coacting with the rear end of the carrier for holding it in its elevated and depressed positions.

18. In a balanced breech-block firearm, the combination with a gun-frame having a side ejection-opening made solid at the top of its front end, closed at its rear end to form a recoil-abutment and having the forward end of its main chamber reduced in dimensions to form a contracted secondary chamber into which the cartridges are fed preparatory to being introduced into the gun-barrel; of a balanced breech-block the forward end of which is reduced to adapt it to enter the said secondary chamber, an extractor carried by the said reduced forward end of the block, and means for ejecting the extracted shells through the said side ejection-opening.

19. In a balanced breech-block firearm, the combination with the barrel thereof, of a gun-frame having the top of its front end made solid, having its rear end closed to form a recoil-abutment and having the forward end of its main chamber contracted to form a secondary chamber; a breech-block adapted at its forward end to enter the said secondary chamber, an arm depending from the block, and a swinging carrier engaged by the said arm for operation thereby, the walls of the contracted secondary chamber confining the cartridges as they are being fed into the gun-barrel.

20. In a balanced breech-block firearm, the combination with a gun-frame having its upper front end made solid, its rear end closed to form a recoil-abutment, a side ejection-opening located to the rear of its front end and its main chamber contracted to form a secondary chamber; of a breech-block adapted to enter the said contracted secondary chamber, an arm depending from the block, and a swinging carrier engaged by the arm and adapted to receive the same as the breech-block moves into its closed position.

21. In a firearm, the combination with a gun-frame having the top of its front end made solid, its rear end closed to form a recoil-abutment, a side ejection-opening located to the rear of its front end and the forward end of its main chamber contracted to form a secondary chamber; of a breech-block adapted to enter the said contracted secondary chamber, an arm depending from the breech-block, a pivotal carrier engaged by the said arm and lifted into its cartridge-delivering position thereby, an extractor mounted in the right-hand side of the breech-block at the forward end thereof, and an ejector located in the left-hand wall of the gun-frame.

22. In an automatic firearm, the combination with a reciprocating breech-block, of a hammer, trigger and sear, and a timing mechanism constructed and arranged to be engaged and operated directly by the rear end of the said breech-block for operation thereby, whereby the trigger and sear are operatively connected only when the gun is closed and ready for firing.

23. In an automatic firearm, the combination with a reciprocating breech-block, of a hammer, sear and trigger, a timing-lever having an upper and a lower arm, the former being adapted to be engaged directly by the rear end of the said breech-block for the operation of the lever directly thereby, and a spring-actuated timing-piece carried by the said lower arm of the timing-lever and adapted to be entered between the trigger and the sear for communicating the movement of the former to the latter.

24. In a firearm, the combination with a tubular magazine, of a breech-block, and a cartridge-gate pivoted at its lower end to swing in a plane at a right angle to the axis of the magazine and operated by the said block and provided with an inclined lip to prevent the noses of the cartridges from shearing as they are lifted for introduction into the gun-barrel.

25. In a tubular magazine firearm, the combination with the gun-frame, of a tubular magazine, a reciprocating breech-block, a pivotal cartridge-carrier, a cartridge-gate for the said magazine, the said gate being opened by the said block when the same moves into its closed position and having an inclined lip to prevent the noses of the cartridges from shearing as they are lifted for introduction into the gun-barrel.

26. In a firearm, the combination with the gun-frame, of a reciprocating breech-block, a breech-block lever, a spring for operating the same, and two antifriction-rollers mounted in the said block on the same axis and respectively engaging with the gun-frame and the said lever and operating independently of each other.

27. In a firearm, the combination with the gun-frame, of a reciprocating breech-block, a breech-block lever, a spring for the operation thereof, and three antifriction-rollers mounted on the same axis in the upper rear corner of the breech-block, the central and larger roller being engaged with the said gun-frame and the smaller rollers being engaged with the said lever which clears the said central roller.

846,592. FRICTION-GEARING. LUDWIG MAURER, Nuremberg, Germany. Filed Dec. 19, 1906. Serial No. 348,648.

Claim.—1. In a friction-gearing, the combination with a pair of friction-wheels, of a longitudinally-shiftable driving-shaft, a fast and a loose friction-disk mounted on said shaft, and a gear-shifting mechanism comprising means for simultaneously moving the loose friction-disk and the shaft with the fast disk in opposite directions without moving the axes of the friction-wheels.

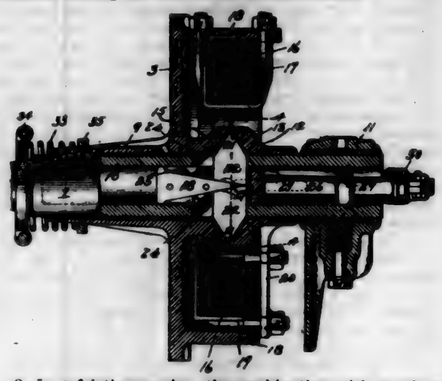

2. In a friction-gearing, the combination with a pair of friction-wheels, of a longitudinally-shiftable driving-shaft, fast and loose friction-disks mounted on said shaft, a release-spring arranged to normally move the friction-disks away from the friction-wheels, an elastic coupling between the loose disk and the shaft, and a shifting mechanism comprising means for simultaneously moving the shaft and the loose disk in opposite directions.

3. In a friction-gearing, the combination with the friction-wheels, of a longitudinally-shiftable driving-shaft having a hollow end portion, fast and loose friction-disks mounted on the shaft, an elastic coupling between the loose disk and the shaft, and a shifting mechanism centrically arranged within the hollow shaft portion and having wedge devices for simultaneously moving the shaft and the loose disk in opposite directions.

4. In a friction-gearing, the combination with the friction-wheels, of a longitudinally-shiftable driving-shaft having a hollow end portion provided with side guide-slots, fast and loose friction-disks mounted on the shaft, the loose disk having a presser-head, a fast abutment-collar on the driving-shaft, a reciprocal operating-plunger working in said hollow shaft portion and provided with a carrying-fork, a pair of opposite wedge-blocks carried in the said fork and projecting through said guide-slots for engagement between and against said abutment-collar and presser-head, an actuating-wedge also carried by the fork of the plunger and operating between said blocks, and a release-spring interposed between the driving-shaft and the loose disk for moving said elements in opposite directions.

846,593. LOCK-NUT. ANDRÉ MINNE, Asnières, France. Filed July 23, 1903. Serial No. 166,750.

Claim.—The lock-nut herein described having the contacting locking-face reduced to a crescent-shaped surface the greatest width of which is equal to the depth of the thread of the bolt.

846,594. CAR-DOOR. RICHARD MOBLEY, St. Louis, Mo., assignor of one-half to Republic Railway Appliance Company, St. Louis, Mo., a Corporation of Illinois. Filed Nov. 9, 1904. Serial No. 231,980.

Claim.—1. The combination with a car-door, of a track, a hanger engaging the same and having its lower extremity pivotally secured to said door, and a pair of links connecting the hanger with the upper end of the before-mentioned door, the pivotal connection between said links and the point of engagement of the hanger with the track as well as the pivotal engagement between the door and the lower extremity of the hanger being each in substantially the same plane, in both the open and closed positions.

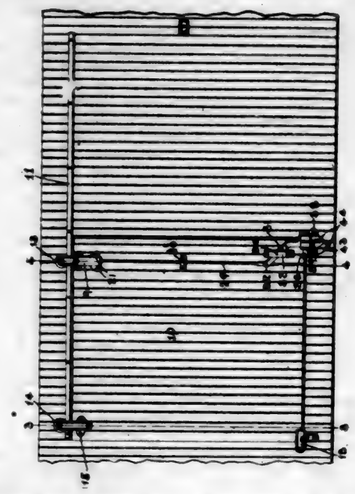

2. The combination with a car-door, of a track, a hanger engaging the same by means of a roller carried by said hanger and having an integral lower extremity pivotally secured directly to said door, a link pivoted to the upper end of said door, a second link pivoted intermediate the ends of said hanger, means for connecting said links midway between said hanger and door, and an operating-rod secured at such connecting-point.

3. The combination with a car-door, of a track, a hanger suspended therefrom and having its lower extremity pivotally secured to said door, a pair of links connecting the upper end of said door and the hanger, the joining-point between said links being in substantially the same plane with the point of engagement between the hanger and the before-mentioned track and the point of connection between the door and the lower extremity of said hanger, in both the open and closed position of the door, and an operating-rod attached to the connection between said links.

4. The combination with a car-door, of a track, a hanger suspended therefrom, a plate at the upper end of said door, means for pivotally connecting the lower extremity of said hanger to said plate, a link pivoted to the central portion of said hanger, a second link pivotally engaging said first-mentioned link and the upper end of said plate whereby a toggle-joint is formed between the plate and the hanger, an operating-rod connected at the junction of said links, and a lug on said hanger and projecting above said links thereby limiting the upward movement of the operating-rod and the junction-point of the toggle.

5. The combination with a car-door, of a track, a hanger suspended therefrom by means of a roller secured to said hanger and having its lower extremity secured to said door, a toggle-joint connecting the central portion of said hanger and the upper end of said door, an operating-rod pivotally secured to the links of said toggle-joint by the connection thereof, and a lug on the hanger extending over the links for limiting the upward movement of said operating-rod and the junction-point of said links.

6. In a suspended flush car-door, the combination with means, including a vertically-movable rod, for forcing the upper rear edge of the door inwardly into its door-opening, of a lever to which said rod is connected, a bracket-

lug on the side wall of the car, and a cam-face on said bracket-lug which is engaged by said lever.

7. The combination with a bracket-lug having a cam-face and secured to the side wall of a car and near the door-opening, of a lever having a wedge-shaped part designed to engage the cam-face of said bracket-lug, a suspended flush door upon which said lever is mounted, and means at the upper edge of said door operatively connected to said lever for forcing the upper edge of the door inwardly; substantially as described.

8. The combination of a bracket-lug secured to the side wall of a car, a cam-face on said bracket-lug, a lever designed to coöperate with the cam-face on said bracket-lug, said lever being secured to a suspended flush car-door, an overhead track for supporting said door, and mechanism operatively connected with said lever for exerting a thrust against the upper edge of the door and said track for forcing the upper edge of the door inwardly; substantially as described.

9. The combination of a bracket-lug secured to the side wall of a car, a cam-face on said bracket-lug, a lever pivotally mounted upon a suspended flush door and coöperating with the cam-face of said bracket-lug, a pivoted part on said lever provided with an opening whereby the lever may be sealed to said bracket-lug, a rod connected to said lever, an overhead track, a roller-hanger coöperating with said track and pivotally connected to the upper rear edge of the door, and a toggle mechanism connected to said rod, to the upper edge of the door, and to said pivoted hanger for forcing the door inwardly into its opening when the lever is in engagement with its bracket-lug; substantially as described.

10. The combination with a car-door, of a track, a hanger suspended therefrom by means of a roller secured to the upper end of the hanger, the hanger having an integral portion extending over the outer face of the door and pivoted at its lower end thereto, a pair of pivotally-connected links connecting the upper end of said door and hanger at a point intermediate the connection of the hanger with the track and said pivot-point of the extension, an operating-rod attached to the links at the point of connection therebetween, and the pivotal connection between the links being at all times substantially in the same line with the point of engagement between the hanger and the above-mentioned track and the point of connection between the door and the extension of the hanger.

846,595. FLUSH CAR-DOOR. RICHARD MOBLEY, St. Louis, Mo., assignor of one-half to Republic Railway Appliance Company, St. Louis, Mo., a Corporation of Illinois. Filed Feb. 18, 1905. Serial No. 246,304.

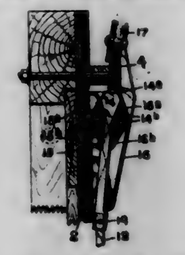

Claim.—1. In a flush car-door, the combination with a bracket-keeper having an inclined or cam face, said keeper being secured to the side wall of the car near the lower rear edge of the door-opening, a lever mounted on the door and swinging in a plane parallel to the face thereof, said lever being provided with a locking-wedge coöperating with the inclined or cam face of said keeper, a roller-hanger pivotally connected to the upper rear edge of the door and suspending said door from the track-rail arranged on the side wall of the car, and means for connecting the said lever and for coöperating with the said roller-hanger for moving the rear edge of the door inwardly into its opening; substantially as described.

2. In a flush car-door, the combination with a bracket-keeper having an inclined or cam face, said bracket-keeper being secured to the side wall of the car adjacent the rear lower edge of the door-opening, a lever pivotally mounted on the car-door and movable in a plane parallel to the face thereof, said lever being provided with a locking-wedge coöperating with the inclined or cam face of said keeper, a pivoted part carried by said lever and having an opening designed to register with an opening in the bracket-keeper for the passage of a seal-wire, a roller-hanger pivotally connected to the upper rear edge of the door for suspending the door from the track-rail, means operating between said roller-hanger and the upper rear edge of the door for moving said door inwardly and outwardly, and a connection between said lever and said means; substantially as described.

3. In a flush car-door, the combination with the door, of vertically-operable means for moving the upper rear edge of the door into and out of its opening, and means movable in a plane parallel to the face of the door for wedging the lower edge of the door in place, said wedging means being operatively connected to said first-mentioned means; substantially as described.

4. The combination with a car-door, of a hanger mounted upon the upper rear edge thereof, said hanger comprising two parts pivotally connected together, one of said parts being mounted upon the door and the other of said parts carrying a roller, a wedge-block operating between said parts for opening and closing them, a bracket-keeper on the side wall of the car adjacent the rear edge of the door-opening, said bracket-keeper having an inclined or cam face and a lever connected to said wedge-block and carrying a locking-wedge for coöperating with the inclined or cam face of said keeper; substantially as described.

5. The combination with a car-door, of a hanger part secured thereto, a companion hanger part pivotally connected to the first-mentioned part and carrying a roller at its upper end, said hanger parts each being provided with oppositely-inclined faces 15^a 15^b, and 16^a 16^b, respectively, and a wedge-block having oppositely-inclined faces 14^a 14^b for coöperating therewith; substantially as described.

6. A hanger for flush car-doors comprising a door part and a roller part pivotally connected together at their lower ends and each having inclined faces 15^a 15^b, and 16^a 16^b, respectively, and a wedge-block arranged between and coöperating with said inclined faces; substantially as described.

7. A hanger for flush car-doors comprising a door part and a roller or track part, each having oppositely-inclined faces 15^a 15^b, and 16^a 16^b, respectively, a wedge-block arranged between and coöperating with said inclined faces, and means for operating said wedge-block, said means comprising in part a rod having a joint in its length to accommodate the lateral movement of the wedge-block; substantially as described.

8. A hanger for flush car-doors comprising a door part 15 having inclined faces 15^a and 15^b, a roller part 16 carrying a flanged roller at its upper end, which roller is designed to roll on a track, said part 16 being pivotally connected at its lower end to the part 15 and having inclined faces 16^a and 16^b, and a wedge-block operating within and between the parts 15 and 16, said wedge-block having inclined faces 14^a for coöperating with the inclined faces 15^a and 16^a, and said wedge-block also having inclined faces 14^b for coöperating with inclined faces 15^b and 16^b; substantially as described.

9. A hanger for flush car-doors comprising a door part and a roller part pivotally connected together, means for swinging said parts on their pivotal connection, and a gravitating device mounted on the car-door and moving in a plane parallel to the face of said door, said gravitating device coöperating with said means and exerting an energy on said parts tending to cause the door to impinge against the side wall of the car when in its fully-open position; substantially as described.

10. The combination with a car-door, of a hanger comprising a door part and a roller part pivotally connected together, and each having inclined faces, a wedge-block coöperating with said inclined faces to move the door laterally, a lever connected to said wedge-block, a locking-wedge on said lever forming a weighted end thereof and a bracket-keeper having an inclined or cam face, said bracket-keeper being secured to the side wall of the car adjacent the lower rear edge of the door-opening and designed to coöperate with the locking-wedge when the door is opposite its opening for wedging the lower rear edge of the door in its home position; substantially as described.

846,596. DUMPING AND DISTRIBUTING APPARATUS. ARTHUR MOORE, War Eagle, W. Va. Filed Dec. 14, 1905. Serial No. 291,769.

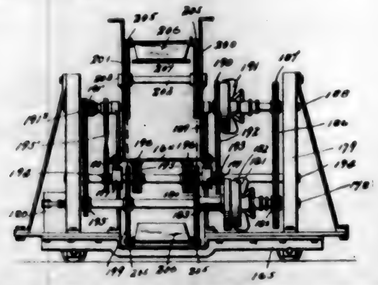

Claim.—1. In a dumping and distributing apparatus the combination with a dump of a hopper arranged to receive the material dumped, an endless conveyer comprising a trough and blades traveling in said trough, doors or gates located in the bottom of the trough, and a movable spout adapted to be moved bodily beneath any of said doors.

2. In a dumping and distributing apparatus the combination of a hopper, discharge-spouts leading from said hopper, an endless conveyer located below the mouth of said discharge-spout, a trough adapted to receive material from said endless conveyer, an endless flight located in said trough, and means for imparting movement to said endless flight and for imparting bodily movement to the trough transversely of the car.

3. In a distributing apparatus an endless conveyer comprising a trough, doors or gates arranged in the bottom of said trough, means for conveying material through said trough, and a trough or spout adapted to be bodily moved beneath any of said doors.

4. In a distributing apparatus the combination with an endless conveyer comprising a U-shaped trough having doors or gates located in the bottom thereof, of a spout adapted to be moved bodily beneath any of said doors or gates, a car upon which said spout is mounted, and means for moving said spout bodily with relation to said car.

5. In a distributing apparatus the combination with an endless conveyer comprising a trough having doors or gates located in the bottom thereof, of a second trough adapted to be moved bodily beneath any of said doors or gates, an endless flight mounted in said second trough, a car upon which said second trough is mounted, and means carried by said car for imparting movement to the endless flight and for imparting bodily movement to said trough with relation to said car.

6. In a dumping and distributing apparatus, the combination of a hopper, discharge-spouts leading from said hopper, an endless conveyer located beneath said discharge-spouts, a trough adapted to receive material from said endless conveyer, means for moving said trough longitudinally with respect to said conveyer and means for moving said trough transversely with respect to said conveyer.

7. In a dumping and distributing apparatus, the combination of a hopper, discharge-spouts leading therefrom, an endless conveyer located beneath said discharge-spouts, a fulcrumed trough adapted to receive material from said endless conveyer, means for moving said trough longitudinally with respect to said conveyer, means for moving said trough transversely with respect to said conveyer and means for swinging said trough upon its fulcrum.

8. In a dumping and distributing apparatus, the combination of a hopper, discharge-spouts leading therefrom, an endless conveyer located beneath said discharge-spouts, a trough adapted to receive material from said endless conveyer, a car or truck longitudinally movable with respect to said conveyer, and supporting said trough and means for moving said trough transversely with relation to said conveyer.

9. In a dumping and distributing apparatus, the combination of a hopper, discharge-spouts leading therefrom, an endless conveyer located beneath said discharge-spouts, a platform movable longitudinally with respect to said conveyer, a movable trough pivotally mounted upon said platform, means for moving said trough transversely with respect of said platform, and means for swinging said trough in either direction upon its pivot.

10. In a dumping and distributing apparatus, the combination with an endless conveyer of a car, a trough adapted to receive material from said conveyer and movably mounted on said car, means for imparting longitudinal movement to said trough, with respect to said conveyer and means for imparting transverse movement to said trough with respect to said conveyer.

11. In a dumping and distributing apparatus, the combination with an endless conveyer of a car movable longitudinally with respect to said conveyer, a trough adapted to receive material from said conveyer and movably mounted upon said car transversely, with relation thereto and to said conveyer.

12. In a dumping and distributing apparatus, the combination with an endless conveyer of a car movable longitudinally with respect to said conveyer, a trough adapted to receive material from said conveyer pivotally mounted upon said car and movable as a whole transversely with relation thereto, means for raising and lowering said trough upon its pivot and means for imparting transverse movement to said trough with relation to said car and said conveyer.

13. In a dumping and distributing apparatus, the combination with an endless conveyer, of a pivoted trough adapted to receive material therefrom, means for moving said trough upon its pivot, means for moving said trough longitudinally with respect to said conveyer, and means for moving said trough transversely with respect to said conveyer all of said means being capable of independent or simultaneous and coöperative action.

14. In a dumping and distributing apparatus, the combination with a conveyer comprising a trough, doors or gates located in the bottom of said trough and means for conveying material through said trough, of a second trough, adapted to be moved bodily beneath any of said doors or gates, an endless flight mounted in said second trough, a car upon which said second trough is mounted, and means carried by said car for imparting movement to the endless flight and for imparting bodily movement to said trough, with relation to said car.

15. In a distributing mechanism, an endless conveyer comprising a trough, doors or gates arranged in the bottom of said trough, means for conveying material through said trough, a suspended spout and means for moving said spout along the line of the longitudinal axis of said trough beneath a selected one of said doors or gates.

16. In a distributing mechanism, an endless conveyer comprising a trough, doors or gates arranged in the bottom of said trough, means for conveying material through said trough, a suspended spout and means for moving said spout along the line of its own axis beneath a selected gate and transversely with relation to said trough.

17. In a distributing mechanism, an endless conveyer comprising a trough, doors or gates arranged in the bottom of said trough, means for conveying material through said trough, a suspended spout, means for moving said spout along the line of the longitudinal axis of said trough beneath a selected one of said doors or gates and

means for moving said spout along the line of its own longitudinal axis beneath a selected gate and transversely with relation to said trough, both of said last-named means being capable of simultaneous or independent operation.

18. In a dumping apparatus the combination with a trough having discharge-gates and a material-feeding mechanism in said trough of a car, a second trough mounted thereon, and capable of movement along the line of its axis, an endless feed-belt extending through said second trough, a motor on said car, transmission-gearing driven from said motor and means for engaging said gearing independently or simultaneously with the driving connections of said feed-belt and said second trough as and for the purpose set forth.

19. In a dumping apparatus the combination with a conveyer designed to automatically discharge its material at any selected point, of a car, a trough mounted thereon and capable of movement along the line of its axis, a motor on said car, transmission-gearing driven from said motor, means for actuating said trough to move the same forwardly, means for actuating said trough to move the same rearwardly and means for engaging said transmission-gearing with either one of said last-named means.

20. In a dumping apparatus the combination with a conveyer designed to automatically discharge its material at any selected point, of a car, a trough suspended thereon and having rack-teeth, supporting-pinions engaging said teeth, a motor, a transmission-gearing driven thereon, and independent means for driving said pinions in either direction and means for operatively engaging said transmission-gearing with either one of said independent means.

21. In a dumping apparatus, a car, a spout pivotally suspended therefrom, a suspension-rope, a winding and unwinding means therefor and a wheeled frame supporting said last-named means.

22. In a dumping apparatus, a car, a spout pivotally suspended therefrom, a suspension-rope, a winding and unwinding means therefor and a wheeled frame supporting said last-named means and adapted to have movement in the same direction as said car.

846,597. SPRING-RING. EUGENE W. MORRHOUSE, Providence, R. I., assignor to B. A. Ballou and Company, Inc., Providence, R. I., a Corporation of Rhode Island. Filed Sept. 1, 1906. Serial No. 332,900.

Claim.—1. An article of the class described, consisting of an open seamless tubular ring provided with a split end portion and a circumferential slot, and a sliding bar mounted in said tubular ring and provided with an operating member made integral with said sliding bar and projecting through said circumferential slot, substantially as described.

2. An article of the class described, consisting of an open seamless tubular ring provided with a split end portion and a circumferential slot, and a spring-actuated sliding bar mounted in said tubular ring and provided with an operating member struck up therefrom and projecting through said circumferential slot, substantially as described.

3. An article of the class described, consisting of an open seamless tubular ring provided with a split end portion and a circumferential slot and a spring-actuated sliding bar mounted in said tubular ring and provided with an undercut operating member struck up therefrom and extending through said circumferential slot, substantially as described.

846,598. BALL-COCK FOR FLUSH-TANKS. JAMES MCKAIG, Allegheny, Pa. Filed Dec. 14, 1905. Serial No. 291,917.

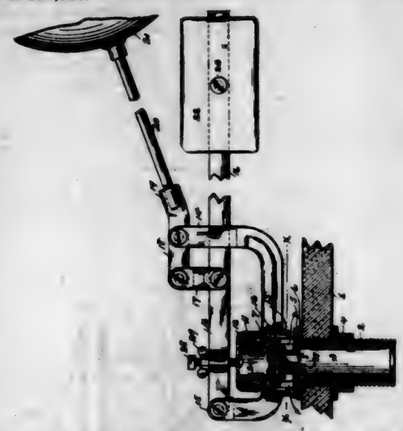

Claim.—1. In a device of the class described, a valve-casing having a valve-seat, a valve bearing upon said seat, a lever swinging from said casing and coupled to said valve near its swinging end and with a weight adjustably disposed thereon, and a float-lever coupled to said weight-lever between its weight and the valve.

2. In a device of the class described, a valve-casing having a valve-seat and with spaced lateral standards, a valve bearing upon said seat, a lever pivoted to swing from one of said standards and coupled to said valve and with its free end weighted, a float-lever swinging from the other of said standards and coupled to said weighted lever between the valve and weight.

846,599. AUTOMOBILE-FRAME. ALEXANDER NICHOLSON and INGWALD T. RUDE, Chicago, Ill. Filed Oct. 12, 1906. Serial No. 338,680.

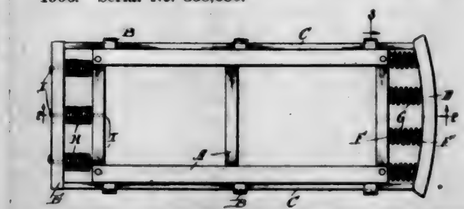

Claim.—1. A buffer-frame of the kind described consisting of a main frame constructed of side and end bars, each of said side bars having an aperture near the end of said bars and in line with each other; a series of projections arranged in line on the outside face of each of the end bars of said frame, each of said series of projections being adapted to support the end of a coiled spring; an oblong sliding frame supported on the outside flanges of said main frame, the front end of said frame being curved and extending beyond the end of the main frame, the inside of said curved end being provided with projections corresponding in number and relative position with the said projections on the front end of bar on the main frame, and adapted to support the ends of coiled springs, the end bar of said sliding frame extending through said apertures in the sides of the main frame, and provided on the outer end face with projections corresponding with the projections on the inside of the end of the main frame; a series of coiled springs, said springs being supported on said projections on said main and sliding frames, and compressible between the end bars of said main and said sliding frames as described and for the purposes specified.

2. A buffer-frame of the kind described, consisting of the combination of a main frame oblong in form having sides of I-beams and ends of channel-bars; apertures in the web of said side bars, located near the ends thereof and in line with each other; with a slidable frame of oblong form having sides adapted to fit between and to slide on the outside flanges of said I-beams, the front end of said slidable frame extending beyond the front end of said main frame, and the rear end of said slidable frame extending transversely through said apertures in said I-beams; a series of open-coiled springs supported between the ends of said main frame and the ends of said slidable frame, said springs being adapted to be compressed by the movement of said slidable frame under pressure, as described and for the purposes specified.

846,600. WATER-CLOSET BEND. BEN OAKES, Detroit, Mich. Filed Aug. 8, 1906. Serial No. 329,665.

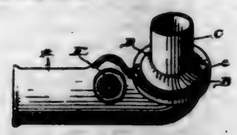

Claim.—1. A water-closet bend, its inlet screw-threaded to receive a flange, the flange having an opening eccentric to the threaded portion to receive a pipe connection leading to a closet, the construction being such that a slight lateral adjustment of the pipe with reference to the closet and bend may be effected by rotating said flange, substantially as described.

2. A pipe connection comprising an elbow having an enlarged inlet end, waste-openings near the inlet end above the general axis of the elbow, and deflecting-partitions in the elbow continuous with the waste-openings.

3. A water-closet bend having auxiliary waste-inlets, and guiding partitions on the inner walls of the bend continuous to the openings therein.

4. A water-closet bend having auxiliary waste-inlets above the center thereof, and guiding-partitions in the upper portion of the inner walls of the bend continuous to the inlets.

5. A water-closet bend having a threaded inlet, a flange fitting in said threaded inlet, said flange having an eccentric opening to receive a pipe connection and provided with means for rotating the same.

846,601. BARREL-LEVELNG MACHINE. JOHN S. ORAM, Cleveland, Ohio. Filed May 25, 1906. Serial No. 318,716.

Claim.—1. In a barrel-leveling machine, a stationary base provided with a vertically-arranged box extending through the base, which box is provided above the base and externally with a laterally and outwardly projecting horizontally-arranged annular flange resting upon and secured to the base; a vertically-reciprocating blow-striking head arranged in its lower position a short distance above the base and provided centrally with a depending stem which has lateral bearing in the box; means for actuating the head; a stave-leveling ring arranged to extend under the lower ends of the staves of a barrel to be operated on while in an upright position, which ring in the lower position of the head is held a suitable distance above the head but movable upwardly and within a striking distance of the head, and means for centering the barrel relative to the ring.

2. In a barrel-leveling machine, a stationary base provided with a vertically-arranged box; a vertically-reciprocating blow-striking head arranged in its lower position a suitable distance above the base and provided centrally with a depending stem which has lateral bearing in the box; means for actuating the head; a stave-leveling ring arranged to extend under the lower ends of the staves of a barrel to be operated on in an upright position, which ring in the lower position of the head is held a suitable distance above the head but within striking distance of the head and movable upwardly, and means for centering the barrel relative to the ring.

3. In a barrel-leveling machine, a stationary base; a vertically-reciprocating blow-striking head arranged in its lower position a suitable distance above the base; means for reciprocating the head; means for guiding the head during its reciprocation; a stave-leveling ring which in the lower position of the head is held opposite and a suitable distance above the head but within striking distance of the head and movable upwardly, and means for centering the barrel relative to the ring.

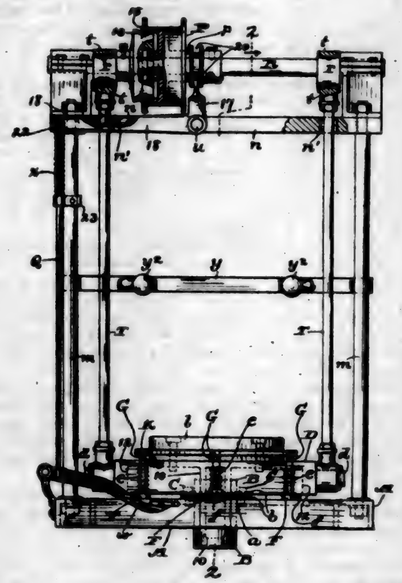

4. In a barrel-leveling machine, a stationary base; an upright box arranged centrally of and extending through and supported from the base; a blow-striking head movable up and down above the base and provided centrally with a depending stem which has lateral bearing in the box; means for actuating the head; a stave-leveling ring which in the lower position of the head is held opposite and a suitable distance above the head but within striking distance of the head and movable upwardly, and means for centering the barrel relative to the ring.

5. In a barrel-leveling machine, a suitably-supported upright box; a blow-striking head movable up and down and provided with a depending stem which has lateral bearing in the box; means for actuating the head; a stave-leveling ring which in the lower position of the head is held opposite and a suitable distance above the head within striking distance above the head and movable upwardly, and means for centering the barrel relative to the ring.

6. In a barrel-leveling machine, a box; a blow-striking head provided with a stem which has bearing in the box; means for actuating the head; a stave-leveling ring arranged to overlap the ends of the stave of a barrel at one end of the barrel, which ring is held a suitable distance from but opposite the head preparatory to the ring-striking operation of the head but within striking distance of and movable from the head, and means for centering the barrel relative to the ring.

7. In a barrel-leveling machine, a blow-striking head movable up and down; means for guiding the head; means for actuating the head; a stave-leveling ring which in the lower position of the head is held opposite and a suitable distance above the head but within striking distance of the head and movable upwardly, and means for centering the barrel relative to the ring.

8. In a barrel-leveling machine, a suitably-guided movable blow-striking head; means for actuating the head; a stave-leveling ring, which in its blow-receiving position is held opposite and a suitable distance from the head but within striking distance of and movable from the head, and means for centering the barrel relative to the ring.

9. In a barrel-leveling machine, a stationary base; a blow-striking head movable up and down above the base; means for guiding the head; means for actuating the head; a stave-leveling ring which in the lower position of the head is arranged a suitable distance above the head but within striking distance of the head and movable upwardly; pins attached at their upper ends to the ring and depending from the ring loosely through the ring-striking head and resting on the base in the lower position of the head.

10. In a barrel-leveling machine, a stationary base; a suitably-guided blow-striking head movable up and down above the base; means for actuating the head; a stave-leveling ring which in the lower position of the head is arranged a suitable distance above the head but within striking distance of the head and movable upwardly, said ring having depending members extending loosely through the blow-striking head and resting on the base in the lower position of the head.

11. In a barrel-leveling machine, a stationary base; a suitably-guided blow-striking head movable up and down above the base; means for actuating the head; a stave-leveling ring which in the lower position of the head is arranged a suitable distance above the head but within striking distance of the head and movably upwardly, said ring having depending members extending loosely through the ring-striking head and resting on the base in the lower position of the head, which depending members are provided with shoulders arranged a suitable distance below a downwardly-facing surface of the head, and spiral springs coiled around the said depending members and interposed between the said surface of the head and the aforesaid shoulders.

12. In a barrel-leveling machine, a suitably-guided blow-striking head movable up and down; upright rods operatively attached to the head; means for actuating the said rods in unison, and a stave-leveling ring which in the lower position of the head is held opposite and a suitable distance above the head but within striking distance of the head and movable upwardly.

13. In a barrel-leveling machine, a suitably-guided movable blow-striking head; head-operating means comprising a suitably-driven shaft having eccentrics operatively connected with the head; and a stave-leveling ring held opposite and a suitable distance from the head preparatory to the striking operation of the head, which ring is movable from the head independently of the head, and means for centering the barrel relative to the ring.

14. In a barrel-leveling machine, a suitably-guided movable blow-striking head; means for actuating the head; a stave-leveling ring held in its blow-receiving position opposite and a suitable distance from the head preparatory to the striking operation of the head, which ring is movable from the head, and means whereby the ring is positively returned into its blow-receiving position after the striking operation of the head.

15. In a barrel-leveling machine, a stationary base; a suitably-guided blow-striking head movable up and down above the base having a recess or chamber in its under side; means for actuating the head; a stave-leveling ring which in the lower position of the head is arranged a suitable distance above the head but within striking distance of the head and movable upwardly, said ring having members depending into the aforesaid chamber and resting on the base in the lower position of the head.

16. In a barrel-leveling machine, a stave-leveling ring movable up and down and forming a seat for a barrel placed on end; means for centering the barrel relative to the ring, and means for intermittently striking upwardly against the under side of the ring.

17. In a barrel-leveling machine, a stave-leveling ring movable up and down and forming a seat for a barrel placed on end, and means for intermittently striking upwardly against the ring.

18. In a barrel-leveling machine, a stave-leveling ring arranged to support a barrel on end and movable up and down, and means for delivering blows upwardly against the ring from below the ring.

19. In a barrel-leveling machine, a stave-leveling ring movable up and down and suitably supported in its blow-receiving position; devices for centering the upper and lower ends of a barrel placed on end upon the ring relative to the ring, and means for delivering blows upwardly against the ring from below the ring.

20. In a barrel-leveling machine, a suitably-guided blow-striking head movable up and down; means for actuating the head; a movable stave-leveling ring movable up and down above the aforesaid head and forming a seat for a barrel placed on end upon the ring, which ring is arranged within striking distance of but somewhat above the head in the lower position of the head, and a circular member instrumental in centering the barrel relative to the ring and mounted on and secured to the head within the ring and projecting a suitable distance above and being loosely embraced by the ring.

21. In a barrel-leveling machine, a base; a suitably-guided head movable up and down above the base and in its lower position being out of contact with the base; means for actuating the head, and a ring movable up and down above the head and forming a seat for the lower end of a barrel placed on end upon the ring, which ring is held a suitable distance above but within striking distance of and movable from the head in the lower position of the head.

22. In a barrel-leveling machine, a suitably-guided blow-striking head; means for actuating the head; a stave-leveling ring which in its blow-receiving position is held opposite and a suitable distance from the head but within striking distance of and movable from the head, and means for limiting the movement of the ring independently of the head upon being struck by the latter during the operation of the head.

846,602. BARREL-LEVELING MACHINE. JOHN S. ORAM, Cleveland, Ohio. Filed June 11, 1906. Serial No. 321,192.

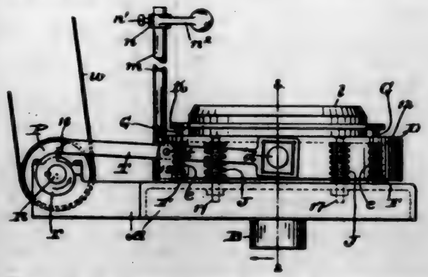

Claim.—1. In a barrel-leveling machine, a blow-striking head movable up and down; means for guiding the head; springs acting to retain the head in its upper position; means for intermittently lowering the head; an upwardly-movable stave-leveling ring which in the lower position of the head is held opposite and a suitable distance above the head but within striking distance of the head, and means for centering the barrel relative to the ring.

2. In a barrel-leveling machine, a suitably-guided movable blow-striking head; springs acting to retain the head at one extremity of its movement; means for intermittently actuating the head against the action of the springs; a stave-leveling ring which in its blow-receiving position is held opposite and a suitable distance from the head but within striking distance of and movable from the head, and means for centering the barrel relative to the ring.

3. In a barrel-leveling machine, a suitably-guided blow-striking head movable up and down; springs acting to retain the head in its upper position; suitably-supported levers operatively connected with the head and adapted to intermittently actuate the head against the action of the springs; means for operating the levers, and a stave-leveling ring which in the lower position of the head is held opposite and a suitable distance above the head but within striking distance of the head and movable upwardly.

4. In a barrel-leveling machine, a suitably-guided movable blow-striking head; springs acting to retain the head at one extremity of its movement; suitably-supported levers operatively connected with the head and adapted to intermittently actuate the head against the action of the springs; a suitably-operated shaft provided with cams arranged to operate the levers during the rotation of the shaft, and a stave-leveling ring which in its blow-receiving position is held opposite and a suitable distance from the head.

5. In a barrel-leveling machine, a stave-leveling ring arranged to support a barrel on end and movable up and down, and spring-actuated means for delivering blows upwardly against the ring from below the ring.

6. In a barrel-leveling machine, a blow-striking head movable up and down; means for guiding the head; means acting to retain the head in its upper position; means for intermittently depressing the head; a suitably-supported upwardly-movable stave-leveling ring arranged to extend under the lower ends of the staves of a barrel to be leveled, and means for centering the barrel relative to said ring.

7. In a barrel-leveling machine, a stationary base provided with a suitably-guided blow-striking head movable up and down above the base and having an interior chamber which is open at the bottom, which head is provided with members depending from the top wall of and through the said chamber and into the base; spiral springs coiled around the said depending members and confined between the said wall and the base; means whereby the head is intermittently lowered against the action of the springs, and an upwardly-movable stave-leveling ring which in the lower position of the head is held opposite and a suitable distance above but within striking distance of the aforesaid head.

8. In a barrel-leveling machine, a blow-striking head movable up and down; means for guiding the head; springs for actuating the said head in one direction; cam-actuated means for actuating the head in the opposite direction; a movable stave-leveling ring movable up and down above the head and forming a seat for the lower end of the barrel to be leveled, which ring is arranged within striking distance of the head.

9. In a barrel-leveling machine, a blow-striking head movable up and down; a suitably-driven shaft having cams; levers arranged to be operated by the cams and operatively connected with the head to depress the head during each rotation of the shaft; means acting to retain the head in its upper position, and a stave-leveling ring movable up and down above the head and forming a seat for the lower end of the barrel to be leveled, which ring in the lower position of the head is arranged a suitable distance above but within striking distance of the head.

10. In a barrel-leveling machine, a reciprocating blow-striking head; means for actuating the head in one direction; springs for actuating the head in the opposite direction; means for guiding the head, and a stave-leveling ring arranged opposite and movable from and toward the head and arranged to be struck by the head during the reciprocation of the head.

846,603. FIREPROOF SHUTTER. PATRICK O'REILLY, San Francisco, Cal. Filed July 25, 1906. Serial No. 327,747.

Claim.—1. In a building, the combination with a wall provided with a window-opening, of a casing in said wall, said casing opening upon said window-opening, a horizontally-movable shutter positioned within said casing, a coiled spring engaging at one end the inner end of said casing and at its opposite end said shutter, means extending through said spring and fastened near one end to said shutter and having its opposite end extending through said wall whereby the shutter may be drawn into said casing, and means for holding said shutter in said casing.

2. In a building, the combination with a wall provided with a window-opening, a movable shutter for closing said opening, of a locking device carried by said wall and be-

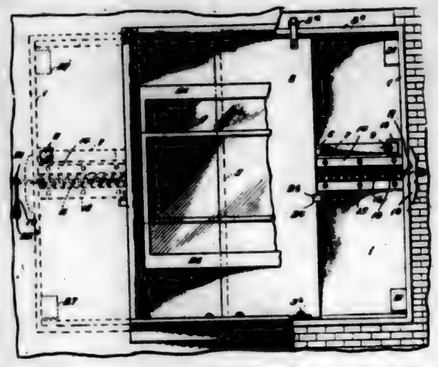

ing capable of holding said shutter stationary, said device comprising a spring provided with a catch near one end, a catch formed upon said shutter and adapted to ride over said spring and engaging its catch for holding said shutter stationary, a push-plunger supported upon said wall and normally engaging the catch of said spring, and means for automatically moving said shutter for closing the window-opening when said plunger is actuated for releasing the catches.

3. In a building, the combination with a wall provided with a window-opening, a compartment formed in said wall, a movable shutter positioned within said compartment, of horizontal cleats positioned within said compartment, yieldable means positioned between said cleats and normally exerting an outward pressure upon said shutter, a flexible member secured to said shutter and extending through said yieldable means and through the walls and adapted to be engaged for drawing said shutter into said wall, and means for normally holding said shutter within said wall.

4. In a building, the combination with a wall provided with a window-opening, said wall provided with a recess, opening upon said window-opening, a horizontally-movable shutter normally positioned within said recess, of a pair of horizontal guide-cleats positioned within said recess, a horizontal, coiled spring between said guide-cleats and positioned between the inner ends of said shutter and recess and engaging said shutter, and means for holding said shutter within said recess.

846,604. TOLL-BOX. PAUL E. OSWALD, Los Angeles, Cal., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 7, 1905. Serial No. 248,908.

Claim.—1. In a toll-box, the combination with a coin-chute leading through the box to a refund-tray, said chute normally providing an unobstructed path for a proper-sized operating-coin, of a coin-distributing device, a normally closed by-path leading from the coin-chute to said distributing device, magnetically-actuated mechanism adapted to open said by-path, contacts closed by a coin in said chute, alternative channels leading from said distributing device, one of said channels opening into a cash-box, the other channel leading to a refund-tray, and magnetically-actuated mechanism adapted to move said distributing device to divert a coin held therein into either of the aforesaid channels.

2. In a toll-box, the combination with a coin-chute leading through the box, of a movable coin-distributing device capable of a number of positions, said distributing

device in one position intercepting and receiving a coin passing through said chute, contacts operated by a coin in the chute, a cash-box passage, said coin-distributing device registering therewith in another position, a return-passage with which said distributing device registers in its third position, and electromagnetic mechanism adapted to effect the movement of said distributing device into such positions.

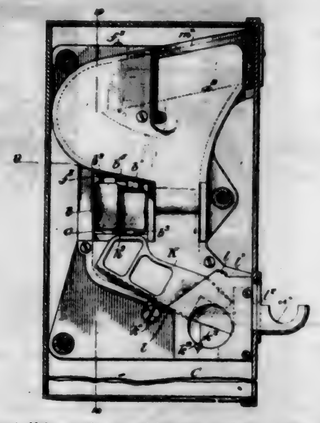

3. In a toll-box, the combination with a chute leading through the box having a normally closed passage leading therefrom, of a magnet, a coin-distributing device, means controlled by said magnet for opening said passage in said chute and advancing said distributing device into an intermediate position to register with said passage, contacts operated by a coin in said chute, an electromagnetic means for moving said distributing device another step, a coin-receptacle on each side of said distributer when in its intermediate position, said distributer registering with one of said receptacles when released from its intermediate position and with the other of said receptacles when advanced from its intermediate position by said last-mentioned magnet.

4. In a toll-box, the combination with a chute leading through the box, of a magnet, a coin-distributing device, a movable part forming a portion of the wall of said chute, means controlled by said magnet for moving said part and simultaneously moving said coin-distributing device into an intermediate position to register with the opening thus made in the chute; whereby a coin passing through the chute is diverted into said coin-distributing device, contacts operated by a coin in said chute, a cash-box, means for operating said coin-distributing device to transfer a coin held therein into said cash-box when said device is released from said intermediate position, a return-chute, and electromagnetic means adapted to move said coin-distributing device from its intermediate position and throw a coin held therein into said return-chute.

5. In a toll-box, the combination with a chute leading through the box, of a magnet, a coin-distributing device, a portion of said device normally forming a part of said chute, means controlled by said magnet for moving said device into an intermediate position to displace said portion and cause said distributing device to register with the opening thus made to intercept and receive a coin passing through the box, contacts operated by a coin in the chute, a ledge adapted to support a coin in said distributing device when the same is in its intermediate position, a cash-box, means for moving said distributing device when released from its intermediate position to register with said cash-box, a return-chute, a magnet, and means controlled thereby for moving said distributing device from its intermediate position to register with said return-chute.

6. In a toll-box, the combination with a chute leading through the box to a refund-tray, of a magnet, a coin-distributing device, a projection of said device normally completing said chute, means controlled by said magnet for moving said device into an intermediate position, to displace said projection and cause the distributing device to register with the opening thus made to receive a coin passing through the chute, contacts operated by the coin in the chute, hold-over contacts operated in the movement of said distributing device into such intermediate position, a ledge below the distributer adapted to support a coin therein when the said distributing device is in such intermediate position, a cash-box, means for causing said distributing device to register with said box when said device is released from such intermediate position, a return-chute opening into the main chute near the refund-tray, a magnet, and means controlled thereby for moving said distributing device from its intermediate position to register with said return-chute.

7. In a toll-box, the combination with a coin-chute leading through the box, of a coin-distributing device having a portion forming a part of said chute, a pair of electromagnets, pivoted levers adapted to be moved by the armatures of said electromagnets, the free end of one lever being connected with the upper portion of said distributing device and the free end of the other lever being connected with the lower portion thereof; whereby said coin-distributing device may be given different positions, said first-mentioned lever being adapted to move said distributing device to a position to open a by-path from the main chute into said distributing device to intercept a coin passing through the chute, contacts operated by a coin in the coin-chute, a cash-box, means for moving said distributing device when released from its intermediate position to register with said cash-box, and a return-chute, said second-mentioned lever being adapted to move said distributing device from its intermediate position to register with said return-chute.

8. In a toll-box, the combination with a chute leading through the box, of a magnet, a coin-distributing device, a movable part forming a portion of said chute, means controlled by said magnet for displacing said movable part and advancing said coin-distributing device into an intermediate position to register with the opening thus made in the chute, whereby a coin passing through the chute is diverted into said coin-distributer, the coin-distributer being so proportioned to the size of the coin held therein that said coin will close the aforesaid opening made in said chute, whereby coins subsequently deposited before the coin in said distributing device is disposed of, will pass on through the box and be refunded to the depositor, contacts operated by a coin in said chute, a cash-box, means for moving said coin-distributing device to register therewith when said device is released from said intermediate position, a return-chute, and a magnet adapted to move said coin-distributing device from its intermediate position to register with said return-chute.

9. In a toll-box, the combination with a coin-chute leading through the box to a refund-tray, said chute normally providing an unobstructed path for the proper-sized operating-coin of a cash-box, a coin-distributer adapted to intercept and receive a coin passing through the chute, and electromagnetically-operated mechanism for moving said coin-distributer to transfer said coin into the cash-box or into said coin-chute.

10. In a toll-box, the combination with a coin-chute leading through the box, said chute normally providing an unobstructed path for a proper-sized operating-coin therein, of a coin-distributer, an electromagnet, an armature therefor adapted when attracted to move one end of said distributer, said distributer when in such position being adapted to intercept and receive a coin passing through the chute, a passage with which said distributer registers when released, a second electromagnet, an armature therefor adapted when attracted to move the opposite end of said distributer, and a second passage with which said distributer registers when so moved by said last-mentioned magnet.

11. In a toll-box, the combination with a laterally-movable coin-distributer having an opening in the bottom thereof through which a coin may pass, of a movable stop normally registering with the discharge-opening of said distributer to support a coin therein, a support below the plane of said movable stop, means for moving said distributer to an alternative position to register with said support, said distributer being adapted in such movement to transfer a coin held therein to said support, and means for imparting a return movement to said distributer, said stop being adapted to be engaged by the coin and moved aside in such return movement to permit the release of the coin upon a complete oscillation of the distributer.

12. In a toll-box the combination with a laterally-movable coin-distributer having an open bottom, of means for giving said distributer alternative positions, and a series of laterally-movable steps in vertical rows registering with the respective positions of said distributer adapted to support a coin therein, the steps on each row being staggered relatively to the steps on the other row, whereby in the initial movement of the distributer the coin is shifted from the step in one row to a lower step in the other row, and in a subsequent return movement the coin engages the first step and moves it aside, the coin being finally released by the oscillation of the distributer sufficiently to shift the coin from the last step of the series.

13. In a toll-box, the combination with a coin-chute leading through the box, of a movable part forming a portion of the wall of said chute, a coin-distributer, electromagnetic means adapted when energized to displace said part and move the distributer into an intermediate position to register with the opening thereby made in said chute; whereby a coin passing through the box is diverted into said distributer, contacts actuated by a coin in the chute, a pivoted arm, a finger carried thereby lying below the distributer and adapted to support a coin therein when the same is in its intermediate position, a stop adapted to limit the movement of said arm, a second pivoted arm having a finger below the distributer in a plane below the first-mentioned finger, the movement of said arm being limited by said stop, means for operating the distributer when released by the de-energization of said magnet to throw the coin upon the finger of said arm, a ledge below both fingers onto which said coin steps when said electromagnetic means are again operated and said distributer assumes its intermediate position, the coin in such movement of the distributer pushing away the finger in front thereof, a cash-box, said distributer when again released being operated to deposit a coin therein, a return-chute, and electromagnetic means adapted to move the distributer from its intermediate position to throw a coin held therein into said return-chute, the coin on the ledge in either movement of said distributer pushing away the finger in front thereof.

14. In a toll-box, the combination with a cash-box and a refund-tray, of a coin-chute leading through the toll-box to said refund-tray, a temporary coin-receptacle, a by-path leading thereto from said coin-chute, a gate normally closing said by-path, a normally open exit from said temporary receptacle to a chute leading to said cash-box, a second gate arranged to close said exit when said first-mentioned gate is opened, and electromagnetic mechanism adapted to control said gates.

15. In a toll-box, the combination with a cash-box and a refund-tray, of a coin-chute leading through the box and having branches communicating with said cash-box and refund-tray, two gates controlling the branch of said chute leading to the cash-box, one of said gates being located at the entrance to said branch leading to the cash-box and being normally closed, the other of said gates being located in said branch between the first-mentioned gate and the cash-box and being normally open, and electromagnetically-actuated mechanism adapted to control said gates.

16. In a toll-box, the combination with a cash-box and a refund device, of a coin-chute leading through the box, and having two branches, one leading to the refund device, a temporary coin-receptacle to which said other branch leads, alternative passages leading from said temporary receptacle, one to the cash-box and the other to the refund device, a gate arranged to normally close the branch of said coin-chute leading to the temporary receptacle, distributing mechanism adapted to direct the coin upon its release from said temporary receptacle into either of its alternative channels, and electromagnetic mechanism adapted to control said gate and said distributing mechanism.

17. In a toll-box, the combination with a cash-box and a refund device, of a coin-chute leading through the box to the refund device, a temporary coin-receptacle, a channel leading therefrom to said cash-box, said temporary receptacle normally resting in position to deposit a coin held therein in said channel leading to the cash-box, and electromagnetic mechanism adapted to move said temporary receptacle into a position to receive a coin from said coin-chute, whereby the coin is first diverted into the temporary receptacle and then upon return of said receptacle to its normal position is deposited in the cash-box.

18. In a toll-box, the combination with a cash-box and a refund device, and a coin-chute leading through the box to said refund device, of a temporary coin-receptacle, a normally open channel leading therefrom to said cash-box, a by-path leading from said coin-chute to said temporary receptacle, mechanism adapted to open said by-path and close said channel leading from the temporary receptacle to the cash-box, and an electromagnet controlling said mechanism, whereby a coin is first diverted into said temporary receptacle and upon the return movement of the mechanism is deposited in the cash-box.

19. In a toll-box, the combination with a cash-box and a refund device, and a coin-chute leading through the box to said refund device of a temporary coin-receptacle, alternative channels leading therefrom, one to said cash-box and the other to said refund device, said channel leading to the cash-box being in position to receive a coin released from said temporary receptacle, coin-distributing mechanism adapted to divert a coin released from said receptacle into said channel leading to the refund-tray, a normally closed by-path from said coin-chute to said temporary receptacle, and electromagnetically-actuated mechanism adapted to open said by-path and to control said coin-distributing mechanism.

20. In a coin-collector, the combination with a coin-chute leading through the box to a refund-tray, said chute normally providing an unobstructed path for a proper-sized operating-coin therein, of a cash-box, coin-detaining mechanism adapted to divert a coin from said chute, a magnet for operating said mechanism, coin-refunding mechanism adapted to return a coin released by said detaining mechanism to said coin-chute, and a second magnet for operating said refunding mechanism.

846,605. TWISTING-FRAME. FRANCIS A. PAIGE, Central Falls, R. I. Filed July 25, 1906. Serial No. 327,684.

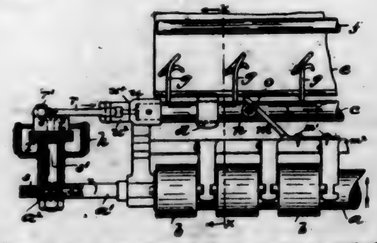

Claim.—1. In a machine of the character described, the combination of a horizontally-disposed traverse-rod, yarn-guides secured thereto, means operatively connected with said rod for intermittently reciprocating the latter in a rectilinear path, and mechanism for oscillating the rod and guides during said reciprocating movements.

2. In a machine of the character described, a horizontally-mounted traverse-rod, a plurality of suitably-spaced yarn-guides rigidly secured thereto, means for imparting a reciprocatory endwise movement to said rod, and means

for turning the latter a short angular distance while it is being reciprocated, substantially as described and for the purpose set forth.

3. In a machine of the character described, the combination with a tank or vessel for containing water and a guide-rod mounted therein, of a horizontally-arranged traverse-rod located contiguous to said vessel, a plurality of yarn-guides secured to the traverse-rod, the free end or eye portion of the guides extending into said vessel, means for reciprocating said traverse-rod in a rectilinear path, and means coöperating with the last-named rod for slowly oscillating it, whereby the position of the guides with respect to the yarn being acted upon is continually changing.

4. In a machine of the character described, the combination with a guide rod or member and revoluble rolls, of a plurality of suitably-mounted yarn-guides located intermediate said guide-rod and rolls, and means for intermittingly reciprocating the yarn-guides and at the same time moving them in planes at an angle to that in which they are reciprocating.

5. In a machine of the character described, a movable rod or member, a plurality of guides secured to said rod, each guide having an eye or loop for the passage of yarn, means for intermittingly reciprocating said members in a horizontal plane, and means for imparting a limited degree of angular movement to the guides while they are being reciprocated in said plane.

6. In a machine of the character described, the combination of a traverse bar or member, a plurality of suitably-spaced yarn-guides secured thereto, means for intermittingly reciprocating said rod and its guides, suitably-located adjustable stationary arms, and devices mounted on said traverse-bar arranged to coöperate with said arms, whereby a rocking or swinging movement is imparted to the traverse-bar and its guides.

846,606. RUNNING-GEAR. FRANK J. PATTERSON and SPENCER E. MAGEE, Trent, S. D.; said Magee assignor to said Patterson. Filed Aug. 22, 1906. Serial No. 331,618.

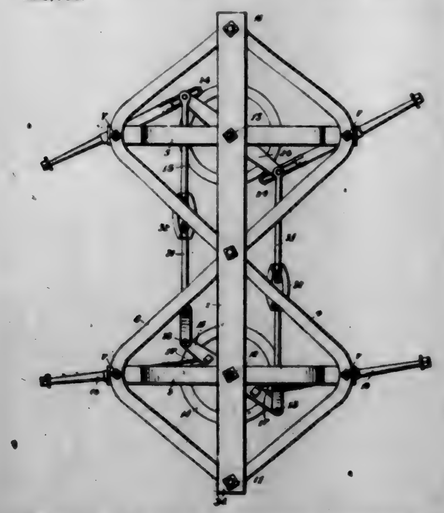

Claim.—1. A frame for running-gear, comprising upper and lower parallel reaches, upper and lower transverse bowed members located near the ends of said reaches, upper and lower S-shaped bracing members secured to said reaches and transverse members, and fifth-wheels secured to the lower members at the points of intersection of the reaches and the transverse members.

2. A frame for running-gear, comprising upper and lower parallel reaches, upper and lower transverse bowed members located near the ends of said reaches, upper and lower S-shaped bracing members secured to said reaches and transverse members, and fifth-wheels secured to the lower members at the points of intersection of the reaches and the transverse members, axles pivoted between the outer ends of said transverse members, arms pivoted concentric with and resting upon said fifth-wheels, and slidably connected with said axles, and rods connecting said arms.

3. The combination with a frame comprising upper and lower transverse members, a fifth-wheel secured to the lower member, upper and lower reaches, upper and lower braces connected to the ends of said transverse members and to the reaches, axles pivoted between the ends of the transverse members, upper and lower parallel arms pivoted concentric with and resting upon said fifth-wheel, and receiving between them the inner ends of the axles, and means for connecting said axles with the steering-wheels of a propelling-vehicle.

4. In a running-gear, the combination with a pair of independently-pivoted axles, of an arm pivoted intermediate its ends, pivotal slidable connections between the arm and the respective axles which are disposed inwardly from the ends of said arm, another pair of independently-pivoted axles, another arm pivoted intermediate its ends and having slidable pivotal connections with the axles last named, connecting members between the outer ends of the arm first named and the ends of the arm last named, another running-gear for another vehicle which has steering-wheel axles, and connections between said steering-wheel axles and the aforesaid connections between the arms of the first-named running-gear, whereby the wheels of the first-named running-gear will travel in the tracks of the wheels of the last-named running-gear.

5. The combination with a frame, of two pairs of axles pivoted near the ends thereof, connections between the inner ends of each pair of axles for turning them in opposite directions, and connections between the axles on the same side of the frame for causing them to move in the same direction.

6. The combination with a frame, of two pairs of axles pivoted near the ends thereof, connections between the inner ends of each pair of axles for turning them in opposite directions, and connections between the axles on the same side of the frame for causing them to move in the same direction, said latter connections being so attached as to cause the axles in one pair to have a greater angular movement than those in the other pair.

846,607. MICROMETER-GAGE. JOHN L. PEDDYCOART, East Waterloo, Iowa. Filed Feb. 28, 1906. Serial No. 303,543.

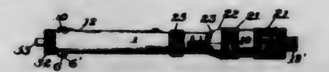

Claim.—1. In a micrometer-gage, a barrel, a measuring-pin extensible transversely of the barrel, an anvil axially in line with the pin and in rigid relation to the barrel, means for extending the pin, and means for measuring the degree of extension thereof.

2. In a micrometer-gage, a barrel, a transverse bushing therein, an anvil on one side of the barrel rigidly related thereto, and a measuring-pin in the bushing axially extensible therein and in the line of said anvil.

3. In a micrometer-gage, a barrel, a measuring-pin placed transversely thereof, a screw-threaded part on the barrel in alinement with the measuring-pin, and an extension-piece to engage the screw-threaded part.

4. In a micrometer-gage, a barrel, a transverse bushing having a threaded portion external to the barrel, a measuring-pin extensibly mounted in the bushing, and an extension-piece adapted to screw on said bushing.

5. In a micrometer-gage, a barrel, a slotted bushing transverse thereto, a measuring-pin in the bushing, a plunger movable in the slot in said bushing and having a slanted end adapted to engage and actuate the measuring-pin.

6. In a micrometer-gage, a barrel, a measuring-pin extensible transversely of the barrel, a plunger in the barrel engaging said pin and in rigid relation to the barrel, means for moving the plunger, an anvil axially in line with the pin, and means connected therewith for measuring the degree of extension of the measuring-pin.

7. In a micrometer-gage, a barrel, a measuring-pin extensible transversely of the barrel, an anvil axially in line with the pin and in rigid relation to the barrel, a plunger in the barrel adapted to actuate the pin, a sleeve screw-threaded to the barrel adapted to engage the plunger and force it into engagement with the pin.

8. In a micrometer-gage, a barrel, a measuring-pin extensible transversely of the barrel, an anvil on the barrel axially in line with the pin and in rigid relation to the barrel, a plunger in the barrel adapted to actuate said pin, a sleeve screw-threaded to the barrel engaging the plunger, and a spring to retract the plunger.

9. In a micrometer-gage, a barrel, a slotted bushing transversely mounted therein, a pin in and alined with the bushing, a plunger in the barrel having a slanted end and guided by the bushing-slot, said slanted end bearing on the lower end of the pin, and a sleeve screw-threaded to the barrel to actuate the plunger.

10. In a micrometer-gage, a barrel, a slotted bushing transversely mounted therein, a pin in and alined with the bushing, a plunger in the barrel having a slanted end and guided by the bushing-slot, said slanted end bearing on the lower end of the pin, a sleeve screw-threaded to the barrel to actuate the plunger, and a spring to retract the plunger.

11. In a micrometer-gage, a barrel, a measuring-pin movable transversely thereto, means for measuring the degree of extension, an anvil on the side of the barrel opposite the measuring-pin, and an extension-piece adapted to be mounted on the barrel in alinement with the measuring-pin.

12. In a micrometer-gage, a barrel, a measuring-pin movable transversely thereto, a sleeve screw-threaded to the barrel, an anvil on the end of the barrel opposite to the sleeve, and an extension-piece adapted alternatively to be mounted on the barrel in alinement with the measuring-pin and on the sleeve in alinement with the anvil.

13. In a micrometer-gage, a barrel having a fixed measuring-point thereon, a pin extensible transversely to the barrel, a bracket on said pin, and means for gaging the extension of said bracket with reference to said fixed point.

14. In a micrometer-gage, a barrel, a measuring-pin movable transversely thereof, a bracket on said pin, an extension-piece on the barrel, a bracket thereon, and means for gaging the relative extension of said brackets.

846,608. SIDE BEARING FOR CARS. HUBERT M. PERRY, Joliet, Ill., assignor to Henry D. Laughlin, Chicago, Ill. Filed Oct. 23, 1905. Serial No. 283,950.

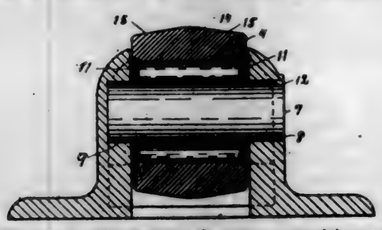

Claim.—1. A side bearing for cars comprising a box-like base member provided with an integral cover portion apertured for the periphery of the main supporting-roller and having an opening at its lower side through which the main roller may be inserted, a journal-pin mounted thereon, and an open-ended main roller mounted upon said journal and having its periphery protruding through and above the cover portion of the housing, a series of rollers mounted within said main roller around said journal-pin, and a pair of washers mounted within the ends of said main roller concentrically with the journal-pin and confining the smaller rollers.

2. A side bearing for cars comprising a box-like base member provided with an integral cover portion apertured for the periphery of the main supporting-roller and having an opening at its lower side through which the main roller may be inserted, a journal-pin mounted thereon, and an open-ended main roller mounted upon said journal and having its periphery protruding through and above the cover portion of the housing, said journal-pin being inserted through one side of the housing and into but not through the opposite side of the housing, and suitable means for confining said journal-pin immovably in place.

3. A side bearing for cars, comprising a box-like base member provided with an integral cover portion apertured for the periphery of the main supporting-roller and having an opening in its lower side through which said main roller may be inserted, said base member having comparatively light side walls, thickened journal-pin bearings formed integral with the opposite side walls in axial alinement, said thickened bearings being formed by inwardly-projecting annular bosses; and a journal-pin, the ends of which are seated within said thickened bearings.

846,609. SIDE BEARING FOR CARS. HUBERT M. PERRY, Chicago, Ill., assignor to Henry D. Laughlin, Chicago, Ill. Filed Dec. 18, 1906. Serial No. 348,414.

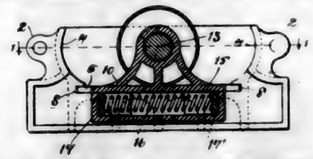

Claim.—1. A side bearing comprising a casing-frame, an antifriction-roller mounted to roll upon a way in said frame, an axially-disposed trunnion upon said roller a centering-frame connected with the trunnion of said roller and constructed to form a spring-cage, a coiled spring arranged within said cage, and movable abutments engaging the ends of the spring and coöperating with the centering-frame and with stops on the casing-frame.

2. A side bearing comprising a casing-frame, a pair of axially-alined antifriction-rollers mounted to roll upon ways in said frame, a trunnion connection between said rollers, a centering-frame journaled on said trunnion and provided with a cage portion, a centering-spring within said cage, movable abutments in the ends of said cage, and projecting outside the latter, there being stop-shoulders on the casing-frame, limiting the movement of the respective abutments in one direction.

3. A side bearing comprising a casing-frame, a pair of axially-alined antifriction-rollers mounted to roll upon ways in said frame, a trunnion connection between the rollers, a centering-frame journaled on said trunnion, extending laterally therefrom and provided with a cage portion located chiefly below the ways upon which said rollers travel, and between the latter, guides confining said centering-frame to a to-and-fro movement with the rollers, a centering-spring arranged within said cage and extending from end to end thereof, movable abutments arranged one in each end of said cage, there being lateral projections upon each abutment, coöperating stop-shoulders formed in the respective casing-frame members, and guides upon said casing-frame members, arranged to confine said movable abutments to to-and-fro movements with the centering-frame.

4. A side bearing comprising a main casing-frame, formed of two separately-formed members, rigidly united with each other along a joint extending longitudinally and vertically throughout the length of the casing there being registering external flanges at the respective ends of said casing members, rivets or bolts extending through said flanges and rigidly uniting said members, an antifriction-roller and spring centering mechanism arranged within said casing, and confining and retaining guides in

said casing, within which said centering mechanism operates, and whereby the parts are held in assembled and cooperative relation by the union of the two casing members.

5. A side bearing comprising a main casing-frame, formed of two separately-formed members, rigidly united with each other along a joint extending longitudinally and vertically throughout the length of the casing, one or more wear-plates seated in the interior of said casing and forming a bottom or way upon which an antifriction-roller may travel, the lateral and end margins of said wear plate or plates being let into grooves formed in the casing members and secured therein by the union of said casing members, and one or more antifriction-rollers arranged within said casing and mounted to traverse said wear plate or plates.

6. A side bearing comprising a main casing-frame, formed of two separately-formed members, rigidly united with each other along a joint extending longitudinally and vertically throughout the length of the casing, and provided with an internal way or roller-track, an antifriction-roller mounted to traverse said way and laterally-disposed guideways parallel with said roller-track, whereby, when the parts are assembled and the casing-frame members united, the operative parts are all thereby cooperatively confined and secured.

846,610. SIDE BEARING FOR CARS. HUBERT M. PERRY, Chicago, Ill., assignor to Henry D. Laughlin, Chicago, Ill. Filed Dec. 18, 1906. Serial No. 348,415.

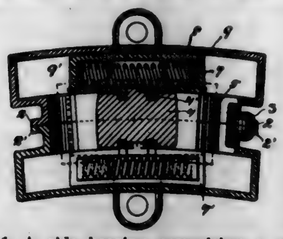

Claim.—1. A side bearing comprising a casing-frame having a central longitudinally-extending bottom-way and longitudinally-disposed guideways arranged parallel with said central way and at each side thereof, one or more antifriction-rollers mounted to traverse said central way, a centering-frame mounted to reciprocate in each of said laterally-disposed parallel ways and operatively connected with the trunnions of said rollers, centering-springs arranged within said centering-frames and movable abutments arranged one in each end of each centering-frame, and coöperating with said springs and with abutment-stops upon the casing-frame.

2. A side bearing comprising a casing-frame having a central, longitudinally-extending bottom-way and longitudinally-disposed guideways arranged parallel with said central way and at each side thereof, one or more antifriction-rollers mounted to traverse said central way, a centering-frame guided to reciprocate in each of said laterally-disposed parallel ways, and having journal connections with said rollers, and centering-springs arranged within said lateral ways and operating upon the respective centering-frames to center the latter.

3. A side bearing comprising a casing-frame having a central longitudinally-extending bottom-way and longitudinally-disposed undercut guide-ways or chambers arranged parallel with said central way at each side of the latter and in horizontal register with the axis or axes of the antifriction roller or rollers, one or more antifriction-rollers mounted to traverse said central way, a centering-frame having journal connections with said roller or rollers, at each end of the latter, each centering-frame having a cage portion fitting and reciprocating within the corresponding lateral guideway, a coiled expansion-spring arranged within the cage portion of each centering-frame, a movable abutment arranged in each end of each cage portion, and having lateral projections extending beyond the sides of said cage portion, and stop-shoulders arranged within said lateral ways and operating to limit the movement of each abutment in a direction away from the transverse center of the side bearing, while leaving it free to move with the centering-frame in the opposite direction.

4. A side bearing comprising a casing-frame formed of two members rigidly united with each other along a joint extending longitudinally and vertically throughout the length of the casing, and having a central longitudinally-extending bottom-way and longitudinally-disposed guideways arranged parallel with said central way and at each side thereof, one or more antifriction-rollers mounted to traverse said central way, a centering-frame mounted to reciprocate in each of said laterally-disposed parallel ways and operatively connected with the corresponding trunnion or trunnions of the roller or rollers, centering-springs arranged within said centering-frames, and movable abutments arranged one in each end of each centering-frame, and coöperating with said springs and with abutment-shoulders upon the casing-frame, said laterally-disposed parallel ways being of undercut form in cross-section and open at the side through which the roller-trunnions enter, only, whereby the whole structure is held in assembled and proper coöperative relation by the union of the two main casing members.

846,611. HEATER. MAX F. W. PLISKE, Lakewood, Ohio. Filed June 21, 1906. Serial No. 322,734.

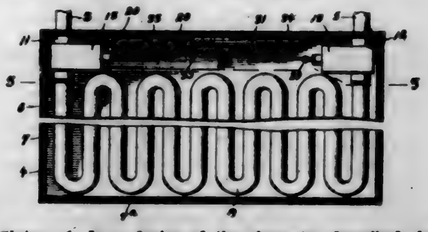

Claim.—1. In a device of the character described, for utilizing the exhaust of an engine, a heating-box, heating-coils arranged therein, an inlet-pipe leading from said exhaust to said coils, a valve in said inlet, an outlet-pipe leading from said coils, a valve in said outlet, an air-valve in said heating-box and means for simultaneously operating the said inlet, outlet and air valves, substantially as described.

2. In a device of the character described, for utilizing the exhaust of an engine, a heating-box, heating-coils arranged therein, an inlet-pipe leading from said exhaust and connected to one end of said coils, a valve in said inlet, an outlet-pipe connected to and leading from the other end of said coils, a valve in said outlet, an air-valve in the wall of said heating-box, and means for simultaneously operating said inlet, outlet and air valves, substantially as described.

846,612. CARTRIDGE AND PROCESS OF MANUFACTURE THEREOF. FRANCIS I. DU PONT, Wilmington, Del., assignor to The E. I. du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Original application filed July 12, 1905, Serial No. 269,306. Divided and this application filed Sept. 7, 1905. Serial No. 277,312.

Claim.—1. The process of charging shells which consists in cutting a sheet of explosive material into strips of predetermined total width, cutting the strips transversely along lines spaced apart at uniform distances to form sets of strips of equal and predetermined length, bunching the sets of strips, and inserting the bunched sets of strips into shells.

2. The process of charging shells which consists in cutting a sheet of explosive material into strips of equal width and of predetermined total width, cutting the strips transversely along lines uniformly spaced apart to form sets comprising strips of equal numbers and dimensions, bunching the sets of strips, and inserting the bunched strips into shells.

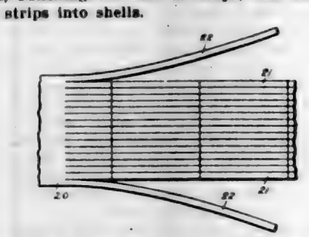

3. A cartridge having a charge of predetermined superficial area composed of strips of predetermined total width and of predetermined equal length, formed from a single sheet of explosive material cut successively longitudinally and transversely and bunched before insertion into the shell.

4. A cartridge having a charge of predetermined superficial area composed of strips of equal width, and of predetermined total width and of predetermined equal length, formed from a single sheet of explosive material cut successively longitudinally and transversely and bunched before insertion into the shell.

846,613. ELEVATOR SAFETY DEVICE. CHARLES R. PRATT, Montclair, N. J., assignor to Robert M. Currier, Boston, Mass. Filed Mar. 27, 1905. Serial No. 252,150.

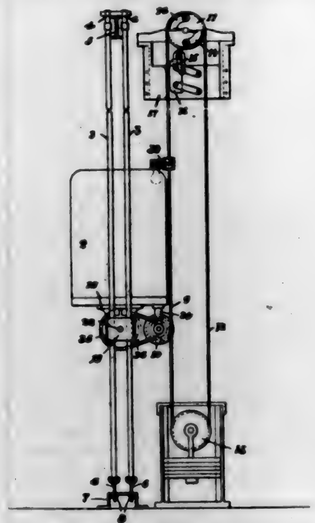

Claim.—1. In a safety device for elevators, a flat cold-rolled or drawn tension-strip of metal extending longitudinally of the hoistway from end to end thereof, said strip being flexible and adapted to be coiled or rolled upon itself, means for engaging the extremities of said tension-strip and stretching the same, and gripping means upon the car to engage said strip.

2. In a safety device for elevators, a plurality of cold-rolled or drawn steel tension-strips arranged longitudinally of the hoistway at the sides of the car and being continuous or free from joints or welds from one end of the hoistway to the other, said strips being flexible and adapted to be coiled or wound up for transportation, means supporting said strips by their opposite ends while leaving them freely exposed on all sides and adapted to bring the said strips under tension as desired, and means adapted to be carried by the car to inclose or surround said strips and exert a gripping action thereon.

3. In a safety device for elevators, tension-strips arranged in the hoistway on opposite sides of the car, fixed gripping-jaws mounted on the car and lying outside said tension-strips, a rigid rod extending between said jaws, a hollow shaft mounted on said rod between said fixed jaws, a right-hand threaded nut on one end and a left-hand threaded nut on the other end of said hollow shaft, movable jaws mounted one on each of said nuts and adapted to be forced outwardly against the said fixed jaws, and means automatically operated by the falling of the car for rotating said hollow shaft.

846,614. VEHICLE-CLEANING DEVICE. BURTON H. PUGH, Topeka, Kans. Filed Mar. 24, 1906. Serial No. 307,915.

Claim.—A cleaning device of the fountain-brush type, comprising a tubular handle, a brush-body fixed on one end of the handle and having a bore arranged to receive water from the tubular handle, and a continuous spiral groove in its outer side, and also having radial passages extending from the bore to its outer side, at points between whirls of the continuous spiral groove, a continuous band of cotton cording arranged with its bight in the continuous spiral groove of the body, and a retaining-strip seated in the bight of the continuous band of cotton cording so as to hold same in the groove and connected to the body.

846,615. INK-WELL. JEPTHA B. RANDOLPH, Omaha, Nebr. Filed Apr. 30, 1906. Serial No. 314,581.

Claim.—1. In combination, an ink-well as described, comprising a neck portion having seated upon its upper wall-surface oppositely-disposed and outwardly-projecting lugs and having an inwardly-projecting annular bead formed upon its upper rim and a downwardly-projecting annular rim formed upon its inner, lower surface, and having an annular groove formed upon its inner surface between said inwardly-projecting annular bead and downwardly-projecting annular rim, the lower boundary of said annular groove being formed as an angular, annular

ledge; a floor portion having a central cavity formed thereon with a projecting wall 6; a plunger formed with a sleeve adapted to have a seating within said neck portion, the upper end of said sleeve having an angular, annular extension passing outwardly and from its perimeter extended upwardly and convergingly with a convexed outer surface, and terminating in a manner to form a circular basin within the planes of the sleeve; the angular, outward and annular extension of the sleeve being extended from its perimeter downwardly and adjacently to said sleeve to form an overhanging wall having upon its inner surface a lug-engaging, spiral groove, and to form between said overbanging wall and sleeve an annular recess adapted to seat therein the upper end of said neck portion; a downwardly-extending tube formed centrally upon said circular basin of the plunger and having a lower end adapted to have a seating upon the projecting wall 6 of said central cavity of the floor portion; said downwardly-extending tube having an aperture gradually increasing in width from its lower end to its junction with said circular basin.

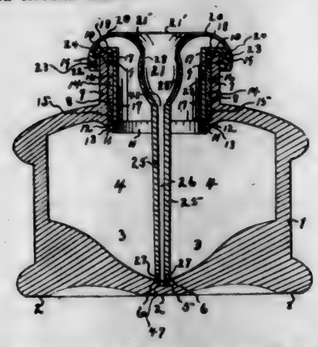

2. In combination, an ink-well as described, comprising a neck-portion having seated upon its upper wall-surface opposite-disposed and outwardly-projecting lugs and having an inwardly-projecting annular bead formed upon its inner rim and a downwardly-projecting annular rim formed upon its inner, lower surface, and having an annular groove formed upon its inner surface between said inwardly-projecting annular bead and downwardly-projecting annular rim, the lower boundary of said annular groove being formed as an angular, annular ledge; a floor portion having a central cavity formed therein; a plunger formed with a sleeve adapted to have a seating within said neck portion, the upper end of said sleeve having an angular, annular extension passing outwardly and from its perimeter extended upwardly and convergingly with a convexed outer surface, and terminating in a manner to form a circular basin within the planes of the sleeve; the angular, annular and outward extension of the sleeve being extended from its perimeter downwardly and adjacently to said sleeve to form an overhanging wall having upon its inner surface a lug-engaging, spiral groove, and to form between said overhanging wall and sleeve an annular recess adapted to seat therein the upper end of said neck portion; a downwardly-extending tube formed centrally upon said circular basin of the plunger and having a lower end adapted to have a seating within said central cavity of the floor portion.

3. In combination, an ink-well as described, comprising a receptacle having a neck portion and a floor portion; said neck portion having an inwardly-projecting, annular bead formed upon its upper rim and a downwardly-projecting annular rim formed upon its inner, lower surface, and having an annular groove formed upon its inner surface between said inwardly-projecting annular bead and downwardly-projecting annular rim, the lower boundary of said annular groove being formed as an angular, annular ledge; a sleeve seated within said annular groove of said neck portion; a rotatable and vertically-adjustable plunger seated within the sleeve of said annular groove and formed as a central basin therein, said plunger being downwardly extended from said basin as a tube having an aperture gradually convergent from the basin to its lower end; the lower end of said tube adapted to have a seating upon said floor portion of the receptacle.

4. In combination, an ink-well as described, comprising a receptacle having a neck portion and a floor portion; said neck portion having an inwardly-projecting, annular bead formed upon its upper rim and a downwardly-projecting annular rim formed upon its inner, lower surface, and having an annular groove formed upon its inner surface between said inwardly-projecting annular bead and downwardly-projecting annular rim, the lower boundary of said annular groove being formed as an angular, annular ledge; a sleeve seated within said annular groove of said neck portion; a rotatable and vertically-adjustable plunger seated within the sleeve of said annular groove and formed as a central basin therein, said plunger being downwardly extended from said basin as a tube having a lower end adapted to be seated upon said floor portion of the receptacle.

846,616. HOT-AIR REGISTER. JOHN W. RATE, Tavistock, Ontario, Canada. Filed Jan. 25, 1906. Serial No. 297,797.

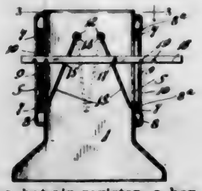

Claim.—1. In a hot-air register, a box, a conduit leading from the box, a plurality of deflector-plates disposed within the box, opposed face-plates provided with openings, a plurality of rods notched at each end, each rod being pivotally attached to a single deflector-plate and projecting through said openings and adapted to engage either of said face-plates to positively lock said deflector-plates in position.

2. In a hot-air register, a conduit having outwardly-upturned edges, a register-box having inwardly-turned upper edges interlocked with the upturned edges of the conduit, a plurality of deflector-plates disposed within said box, opposed face-plates provided with openings, a plurality of rods notched at each end, each rod being pivotally attached to a single deflector-plate and projecting through said openings and adapted to engage either of said face-plates to positively lock said deflector-plates in position.

3. In a hot-air register, a rectangular register-box provided with openings in its opposite sides, the walls of said openings being turned outward, borders disposed around the openings and provided with offset flanges interlocked with the outwardly-turned edges of said box, a face-plate provided with openings and pins adapted to engage openings provided in the border, a plurality of deflector-plates, and means for moving and positively locking and unlocking the deflector-plates from either side of said box.

846,617. STONE-BOAT. FRANK C. RAWSON, Worcester, Mass. Filed July 23, 1906. Serial No. 327,386.

Claim.—1. A stone-boat comprising a main body part formed with a series of strips cut from a single piece of wood and having the grain thereof running at an angle to the under wearing-surface thereof and having their upper and lower surfaces substantially flat in transverse section, and side strips cut from a single piece of wood and having the grain thereof running at an angle to the under wearing-surface thereof, said strips being upwardly tapered in transverse section, whereby when they are secured to the main body part their upper and lower surfaces incline upwardly and outwardly with respect to the corresponding surfaces of the main body part.

2. A stone-boat comprising a main body part formed of a series of longitudinal strips each cut from a single piece of wood and formed with the upwardly and forwardly extending wearing-surface C on the under side thereof at an angle to the under side of the main portion of said strip, the grain of the wood running at an angle to said wearing portions of said strips, the upper and lower surfaces of said body part being substantially flat in transverse section, and side strips cut from a single piece of wood and of the same shape in longitudinal section as the strip of the main part of the boat and being upwardly tapered in transverse section, whereby the upper and lower surfaces thereof will incline upwardly and outwardly with respect to the corresponding surfaces of the main body part, substantially as described and for the purpose set forth.

3. A stone-boat comprising a main body part formed of a series of wood strips whose upper and lower surfaces are substantially horizontal and whose side edges are perpendicular to said upper and lower surfaces, and with a forward upward extending portion, the under side of the said forward portion of the boat being inclined upwardly and forwardly and at an angle to the grain of the wood, whereby the wear on said forward part will be on the ends of the wood fibers instead of along the edges thereof, and side strips upwardly tapered in transverse section throughout their length, whereby when they are connected to the perpendicular sides of the body part of the boat the upper and lower surfaces of said side strips will incline upwardly and outwardly, the under side of the forward part of said side strips being inclined upwardly and forwardly, whereby the wear thereon will be against the ends of the fiber of said side strips, and the said side strips will form side flanges for the boat throughout the length thereof.

846,618. FOLDING SLED OR GO-CART. ISIDOR RAUTENBERG, Chicago, Ill. Filed May 14, 1906. Serial No. 316,810.

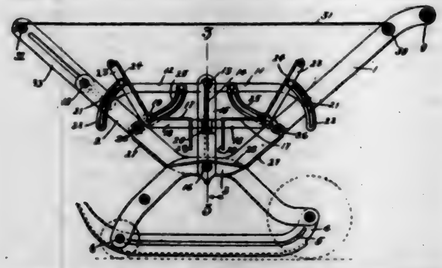

Claim.—1. A folding go-cart comprising in combination two pairs of levers, each pair being pivotally connected with the other between the ends of both pairs, seat-supporting bars pivotally secured at one end to one of said pairs of levers and supported at their free ends upon a part of the frame, back-supporting members pivotally secured to said seat-supporting bars, adjusting and supporting means disposed on said last-named levers and said back-supporting members, arms pivotally secured to said last-named pair of levers above said seat-supporting bars, supporting means engaging said arms, runners provided with longitudinal slots pivotally secured to one of said pairs of levers, and projections on the lower free ends of the other pair of said levers traveling in said slots.

2. A folding go-cart comprising two pairs of oppositely-disposed lazy-tong levers connected by cross-bars, sled-runners pivotally secured at one end to the lower free ends of one of said levers of each pair and provided with longitudinal slots, projections on the lower free ends of the other levers traveling in said slots, seat-supporting means disposed on said levers and movable relatively thereto, arms disposed on said levers above said seat-supporting means and movable relatively thereto, a seat-back pivotally mounted on said seat-supporting means, and coacting adjusting means disposed on said seat-back and on one lever of each of said pairs for adjusting the position of said seat-back relatively to said seat-supporting means.

3. A folding go-cart comprising two pairs of oppositely-disposed lazy-tong levers each having its free end portions offset to opposite sides and connected together by means of cross-bars, said end portions of said levers of each pair being adapted to approach each other when said go-cart is folded, seat-supporting means disposed on said levers and having pivotal connection with one lever of each pair, a seat-back pivotally mounted on said seat-supporting means, slotted quadrants mounted on said back, thumb-bolts disposed on said last-named levers and adapted to engage said quadrants to support said seat-back in various positions, arms disposed above said seat-supporting means, a foot-rest disposed below said seat-supporting means, sled-runners having longitudinal slots pivotally secured to the lower free ends of one lever of each pair, and projections on the lower free ends of the runners of the other levers adapted to travel in said slots, the relative pivotal movement of said pairs of levers being limited by said runners.

4. A folding go-cart comprising two pairs of oppositely-disposed lazy-tong levers connected by cross-bars, said levers having their free end portions offset in opposite directions on opposite sides of their pivotal connections, sled-runners provided with longitudinal slots and having their ends curved upwardly pivotally secured at one end to the lower free ends of one lever of each pair, projections on the lower free ends of the other levers traveling in said slots and adapted when said levers move pivotally to turn said runners on their pivots upwardly at their free ends toward said levers, and seat-supporting means disposed on said levers and adapted to be moved by relative pivotal movement of the latter to substantially vertical, and horizontal positions respectively.

5. A folding go-cart comprising two pairs of oppositely-disposed lazy-tong levers connected by cross-bars, said levers having their free end portions offset in opposite directions on opposite sides of their pivotal connections, sled-runners provided with longitudinal slots, and having their ends curved upwardly pivotally secured at one end to the lower free ends of one lever of each pair, projections on the lower free ends of the other levers traveling in said slots and adapted when said levers move pivotally to turn said runners on their pivots upwardly, at their free ends toward said levers, flanges on the lower edges of said runners, and antifriction-rollers disposed on said projections and traveling on said flanges.

6. A folding go-cart comprising two pairs of oppositely-disposed lazy-tong levers connected by cross-bars, said levers having their free end portions offset in opposite directions on opposite sides of their pivotal connections, sled-runners provided with longitudinal slots, and having their ends curved upwardly pivotally secured at one end to the lower free ends of one lever of each pair, projections on the lower free ends of the other levers traveling in said slots and adapted when said levers move pivotally to turn said runners on their pivots upwardly, at their free ends toward said levers, flanges on the lower edges of said runners, and antifriction-rollers disposed on said projections and traveling on said flanges, and seat-supporting means movably supported on said levers and adapted to be actuated by relative movement thereof.

7. A folding go-cart comprising two pairs of oppositely-disposed lazy-tong levers connected by cross-bars, said levers having their free end portions offset in opposite directions on opposite sides of their pivotal connections, sled-runners provided with longitudinal slots, and having their ends curved upwardly pivotally secured at one end to the

lower free ends of one lever of each pair, projections on the lower free ends of the other levers traveling in said slots and adapted when said levers move pivotally to turn said runners on their pivots upwardly, at their free ends toward said levers, flanges on the lower edges of said runners, and antifriction-rollers disposed on said projections and traveling on said flanges, and seat-supporting means movably supported on said levers and adapted to be actuated by relative movement thereof, a seat-back pivotally secured to said seat-supporting means, and coacting supporting devices disposed on said seat-back and said levers for adjustably supporting the former.

8. A folding go-cart comprising two pairs of oppositely-disposed lazy-tong levers connected by cross-bars and constituting a folding frame, one lever of each pair being longer than the other and said longer levers constituting handle-bars for propelling the vehicle, traction devices disposed on the lower free ends of said levers, seat-supporting means disposed on said levers above their pivotal connections with each other, said seat-supporting means being movable relatively to said levers and actuated by relative movement of the latter to vary the position of said seat-supporting means, longitudinally-movable extension members disposed on the upper end portions of said shorter levers, a cross-bar connecting the same at their free ends, a shade-roller disposed on the upper end portions of said longer levers, and a shade carried thereby and adapted to be drawn, to form a roof over said seat-supporting means and secured at its free end to said cross-bar of said extension members.

846,619. NON-EXPLOSIVE OIL-CAN. FREDERICK W. REIBER, Sugar Grove, Ohio, assignor to Nicholas Schlee, Charles Kemmler, John E. Crooks, and Ferdinand Siegel, Columbus, Ohio. Filed Feb. 5, 1906. Serial No. 299,478.

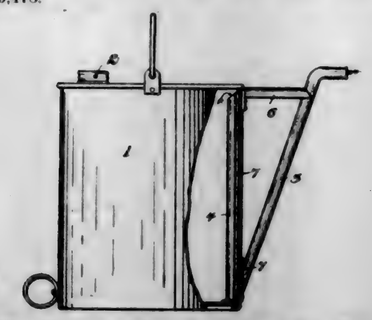

Claim.—A non-explosive oil-can comprising a body provided with a port in the lower portion of its side wall adjacent the can-bottom, a vertically-disposed interior tube U shape in cross-section and having side and bottom flanges by means of which it is secured throughout its length and at its bottom to the inner face of the side wall and bottom respectively to embrace said port, the upper end of said interior tube being open and in close proximity to the can-top and spaced therefrom, and a pouring-tube flanged at its lower end and secured thereby to the exterior of the side wall about the port therein to establish communiaction between the two tubes through said port, said pouring-tube being extended to a point above the can-top and suitably braced.

846,620. CHANGE-SPEED AND REVERSING MECHANISM. PROSPER RENAUX, Paris, France. Filed Dec. 4, 1906. Serial No. 346,314.

Claim.—1. In a speed-gear of the kind described and in combination, a driven shaft, a rotatable member loose on said shaft, a series of circular toothed gears fixed to said shaft, a corresponding series of pinions normally out of mesh with said gears and carried on the said rotatable member on the shaft, a clutch member connected to each pinion, a driving-shaft, a clutch member on one end of said shaft, means to place any desired pinion in mesh with its corresponding circular gear and at the same time opposite to the driving-shaft clutch member, and means to place said clutch member in and out of engagement with the clutch member of the pinion so placed.

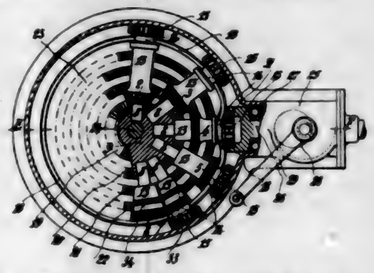

2. In a speed-gear of the kind described and in combination, a driven shaft, a disk fixed on said shaft and provided on one face with a series of concentric bevel-toothed rings, a rotatable member loose on said shaft, means to rotate said member independent of said shaft, a series of radial spindles secured in said rotatable member, a sleeve rotatable and longitudinally movable on each spindle, said sleeve having a bevel-wheel on one end a clutch member on the other end and being provided with a groove, a stationary cam-ring, engaging each of said spindle-grooves, adapted to maintain each bevel-pinion out of mesh with its corresponding circular gear, and having a depression at one point adapted to move the sleeve on the spindle and bring any one desired pinion in mesh with one of said gear, a driving-shaft, a clutch member on the end of said shaft, said member being arranged opposite the depression in said cam-ring, and means to bring said clutch member in and out of connection with the clutch member of a bevel-pinion when said bevel-pinion is in mesh with its ring-gear.

3. In a speed-gear of the kind described and in combination, a driven shaft, a disk fixed on said shaft, and provided on one face with a series of concentric bevel-toothed rings, a rotatable member loose on said shaft, means to rotate said member independent of said shaft, a series of spindles radially secured in said rotatable member, a sleeve rotatable and longitudinally movable on each spindle, said sleeve having a bevel-wheel on one end a clutch member on the other end and being provided with a groove, a radial spindle also carried in said rotatable member and having a sleeve rotatable and longitudinally movable thereon, a bevel-wheel on said sleeve and a groove on said sleeve, a second spindle adjacent to the last-mentioned spindle, a sleeve rotatable and longitudinally movable thereon, a collar on said sleeve adapted to engage with the groove in the adjacent sleeve, a small pinion on said sleeve in mesh with the pinion on said adjacent sleeve, a clutch member on the outer end of said sleeve and a guiding-groove on said sleeve, a stationary cam-ring engaging each of said spindle-grooves adapted to maintain each bevel-pinion out of mesh with its corresponding circular gear and having a depression at one point adapted to move the sleeve on the spindle and bring any one desired pinion in mesh with one of said bevel-toothed ring, a driving-shaft a clutch member on the end of said shaft, said member being arranged opposite the depression in said cam-ring, and means to bring said clutch member in and out of connection with the clutch member corresponding to a bevel-pinion when said bevel-pinion is in mesh with its ring-gear.

846,621. STOVE. JAMES M. ROBERTSON, Montreal, Quebec, Canada. Filed Nov. 10, 1904. Serial No. 232,260.

Claim.—1. In a gas-stove having a shell, a gas-burner within the shell, an oven within the shell above the burner such oven being constructed to prevent the entry of burned gases from the burner, an exit-flue for conducting the burned gases from the shell, such oven having an opening in its upper portion for the escape of cold gases therefrom to the first-mentioned flue, and a damper controlling the said exit-opening for the purpose of preventing the escape of the steam arising from the article being cooked.

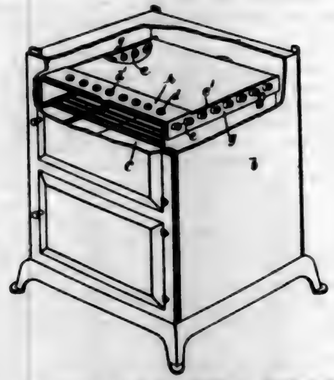

2. In a gas-stove having a shell, a gas-burner within the shell, an oven within the shell, above the burner, such oven being constructed to prevent the entry of burned gases from the burner, an exit-flue for conducting the burned gases from the shell, such oven having a series of openings in its upper portion out of the path of the gases from the burner for the escape of cold gases therefrom to the first-mentioned flue, and a damper controlling the said series of exit-openings for the purpose of preventing the escape of the steam arising from the article being cooked.

3. In a gas-stove having an oven permanently located within the shell thereof and an exit-flue for the gases of combustion, such oven having a series of exit-flues extending along one edge of the top thereof and the top edge of each of two opposite side, of a damper controlling said series of exit-flues and consisting of two longitudinal members and a transverse member connecting the longitudinal members together at one end, the longitudinal members having openings located a distance apart greater than such openings and the transverse member having a series of openings located adjacent to one side edge thereof and a distance from the other side edge greater than the diameter of the last-mentioned openings, the shell of the gas-stove having an opening in one side and the damper having a handle rigidly secured thereto projecting through such openings.

846,622. POST-HOLE DIGGER AND POLE-SETTER. DAVID H. ROBINSON, Indianapolis, Ind. Filed Apr. 21, 1906. Serial No. 312,949.

Claim.—1. The combination, with a vehicle, of a turn-table mounted thereon and having a portion which may be projected beyond the side of the vehicle, a boring-shaft mounted in suitable bearings on said portion of the turn-table and vertically movable therethrough, a hole-forming tool carried by said shaft, means for lifting said shaft, and means for driving the shaft.

2. The combination, with a vehicle, of a turn-table mounted thereon and having a portion which may be projected beyond the side of the vehicle, a boring-shaft mounted in suitable bearings on said portion of the turn-table and vertically movable therethrough, a hole-forming tool carried by said shaft, means for lifting said shaft, means for driving the shaft, and a lifting-derrick also carried by said turn-table.

3. The combination, with a vehicle, of a hole-forming tool carried thereby, means for supporting said hole-forming tool at either side of the vehicle, and means for vertically adjusting said tool.

4. The combination, with a vehicle, of a hole-forming tool carried thereby, means for supporting said hole-forming tool at either side of the vehicle, means for vertically adjusting said tool, and lifting mechanism also carried by said vehicle.

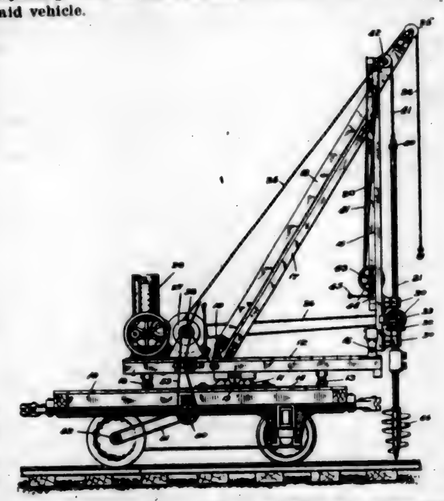

5. The combination, with a vehicle, of a turn-table mounted thereon, a boring-shaft vertically adjustable on said turn-table, a hole-forming tool carried by said shaft, means for rotating said shaft, a boom pivoted upon said turn-table, means for raising and lowering said boom, and lifting mechanism consisting in part of a cable supported by said boom.

846,623. FERTILIZER-DISTRIBUTER. CHARLES B. ROZAR, Empire, Ga. Filed July 27, 1906. Serial No. 328,138.

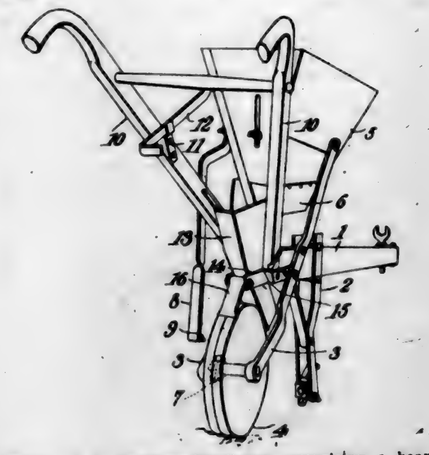

Claim.—1. A fertilizer-distributer comprising a beam, a follow-wheel supporting the beam, a hopper pivoted to the beam, handles attached to the beam, irons bolted to the beam, and the ends of said handles, said irons having intermediate portions which extend transversely behind the edges of the handles, a scraper pivoted between the rear ends of said irons and resting upon the periphery of the follow-wheel.

2. A fertilizer-distributer comprising a beam, a follow-wheel supporting the beam, a hopper pivoted upon the beam, handles attached to the beam, a chute secured at its

edges to the inner faces of said handles and extending in advance of the center of the follow-wheel, irons bolted at their forward ends to the beam and the handles, said irons having intermediate transversely-extending portions which pass behind the edges of the handles, the rear portions of said irons bearing laterally against the sides of the chute, and a scraper pivoted between said irons and bearing against the periphery of the follow-wheel.

846,624. DEVICE TO DISCLOSE OPENING OF THE SHUNT-CIRCUITS OF ELECTRIC METERS. WILLIAM L. SAUNDERS, Denver, Colo., assignor of two-thirds to Daniel K. Hickey, Denver, Colo. Filed June 27, 1905. Serial No. 267,278.

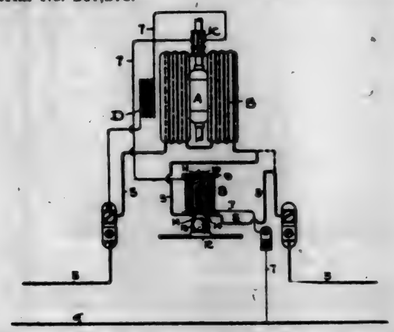

Claim.—1. The combination with an electric meter of an electromagnetic switch the coil of which is placed in the shunt-circuit, and having an armature adapted to engage the terminals of a broken wire of the main circuit when in its normal position.

2. The combination with an electric meter of an electromagnet placed in the shunt-circuit, suitably-located contacts respectively engaging the terminals of a broken wire of the main circuit, an armature adapted to simultaneously engage said contacts when in its normal position, and a seat adapted to receive said armature when released from the magnet.

3. The combination with an electric meter of an electromagnet located in the shunt-circuit, contact-points respectively engaging the terminals of a broken wire of the main circuit secured thereto, an armature adapted to simultaneously engage said contacts, and an insulated seat located below said magnet and adapted to receive and support the armature when the core loses its magnetization.

846,625. ELECTRIC SWITCH. HARRY SAWYER, Muskegon, Mich. Filed July 11, 1904. Serial No. 215,985.

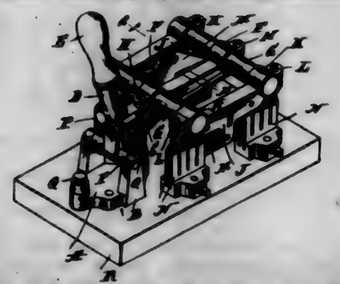

Claim.—1. An electric switch including a pivoted lever, insulator-pins carried by said lever, members supported by said insulator-pins, and conductor-sections carried by said members.

2. In an electric switch, a pivoted lever having bosses, insulator-pins carried by said bosses, members supported upon the ends of said pins, and conductor-pieces secured to said members.

3. In an electric switch, a pivoted lever, insulator-pins clamped to said lever, members having clamp devices at the ends thereof to receive the ends of said insulator-pins, and conducting parts carried by said members.

4. In an electric switch, a pivoted lever having clamp devices, insulator-pins received and held by said clamp devices, members having a transversely-bored split boss at each end thereof to receive the ends of said insulating-pins, clamp-screws for clamping said split bosses upon said pins, and conductor members carried by the first said members.

5. In an electric switch, a pivotally-mounted lever, an insulator-pin rigidly clamped to said lever, a member rigidly clamped upon the end of said pin, and a conductor member connected to the first said member.

6. In an electric switch, a pivotally-mounted lever, an insulating-pin rigidly clamped intermediate its ends to said lever, a member rigidly clamped upon each end of said pin, and a conductor member carried by each of the first said members.

7. In an electric switch, a bracket having standards, a lever pivotally mounted in said standards and having a handle connection, insulating-pins clamped to said lever, members clamped upon the ends of said pins, and conductor members carried by the first said members.

8. In an electric switch, a bracket having standards, a lever pivotally mounted in said standards, insulator-pins clamped upon said lever, members clamped upon said insulator-pins, conductor members carried by the first said members, and limit-stops for limiting the rocking or swinging movement of said lever.

9. An electric switch including a pivotally-mounted bell-crank lever, insulator-pins carried by one arm of said lever, and conductor-sections carried by said insulator-pins, the other arm of said lever forming means of attachment of an operating-handle.

10. An electric switch, including a pivotally-mounted bell-crank lever, an insulating-pin rigidly carried by one arm of said lever, and a conductor portion adjustably mounted upon said pin, the other arm of said lever forming means of attachment of an operating-handle.

11. An electric switch including a pivotally-mounted lever, a rigid insulator-pin extending transversely across and adjustably clamped to said lever, and a conductor portion carried by said pin.

12. An electric switch including a pivotally-mounted lever, a rigid insulator-pin adjustably mounted on said lever, a conductor-section adjustably mounted on said pin, and means for rigidly clamping said conductor-section to said pin in adjusted position.

13. In an electric switch, the combination of a pivotally-mounted lever carrying a clamp, a rigid insulator-pin adjustably secured in said clamp, and a conductor portion rigidly carried by said pin.

14. An electric switch including a pivoted lever, spaced rigid insulator-pins carried by said lever, a conductor-section and means for rigidly securing said section to the pins.

15. In an electric switch, a pivoted lever, transverse rigid insulator-pins adjustably secured to the lever and spaced from each other, a conductor member and means operatively related to the member for adjustably and rigidly securing said member to the pins.

846,626. CONTROLLER FOR ELECTRIC MOTORS. FREDERIC SCHAEFER, Wilkinsburg, Pa. Filed Feb. 20, 1906. Serial No. 302,101.

Claim.—1. A controller for electric motors that comprises a transformer and two sets of relatively movable engaging contact members one of which is mounted upon the transformer core or frame.

2. A controller for electric motors that comprises a rotatably-mounted transformer having a winding which is provided with a plurality of taps, a set of contact-fingers connected thereto and attached to but insulated from the transformer and a corresponding set of stationary contact parts which are engaged by the fingers on the rotatable member.

3. A controller for alternating-current electric motors that comprises a transformer which is movably supported, a series of contact-fingers that are fixed relative thereto, a plurality of intermediate taps in the winding of said transformer which are connected to said contact-fingers, and a plurality of stationary contact members which are engaged by said fingers.

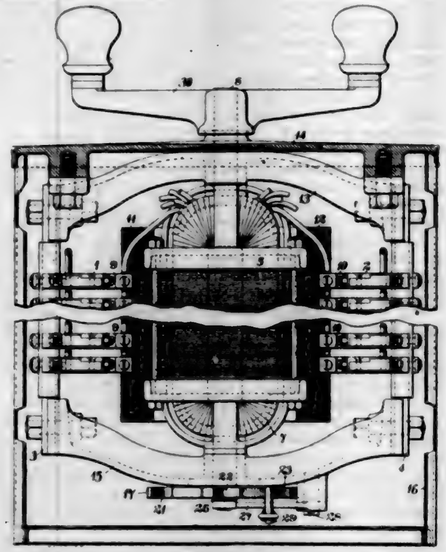

4. In a circuit-controller, the combination with a plurality of stationary contact members that are connected to electric supply and motor circuits, of a movably-mounted transformer and a plurality of contact-fingers which are fixed relative thereto and are connected to taps in the transformer-winding.

5. In a controller, the combination with a movably-mounted transformer-core, two similar windings therefor, a pair of strips of insulating material attached thereto, two groups of contact-fingers which are mounted on said strips and are connected to said windings, of similar stationary groups of contact members which may be engaged by said transformer-fingers.

6. In a controller for electric motors, the combination with a rotatably-mounted transformer, an operating-handle therefor, contact-fingers connected to the windings of said transformer and fixed relative thereto, and stationary contact members which are adapted to be engaged by the transformer-fingers, of means for accentuating a plurality of controller positions comprising a notched cam that is fixed relative to the transformer and an engaging pawl therefor.

7. In a controller for polyphase electric motors, the combination with a rotatably-mounted transformer-core, a plurality of windings therefor, groups of contact-fingers connected to said winding and fixed relative to said core, of stationary contact members which are adapted to be simultaneously engaged by said groups of transformer-fingers and are connected to the electric motor and supply circuits.

8. In a controller for a multiphase electric motor, the combination with a rotatably-mounted transformer-core, a pair of similar windings therefor, two groups of contact-fingers which are respectively connected to said windings and are fixed upon diametrically opposite sides of the core, and means for operating said rotatable parts, of two similar groups of stationary contact members that are adapted to be simultaneously engaged by the movable contact-fingers.

9. In a controller for a multiphase electric motor, the combination with a rotatably-mounted transformer-core, a pair of similar windings therefor, two groups of contact-fingers which are respectively connected to said windings and are fixed upon diametrically opposite sides of the core, and means for operating said rotatable parts, of two similar groups of stationary contact members that are adapted to be simultaneously engaged by the movable contact-fingers and are respectively connected to different phases of the motor and supply circuits.

10. In a controller for a two-phase electric motor, the combination with a rotatably-mounted transformer-core, a pair of similar windings therefor, two groups of contact-fingers which are respectively connected to said windings and are fixed upon diametrically opposite sides of the core, and means for operating said rotatable parts, of two similar groups of stationary contact members that are adapted to be simultaneously engaged by the movable contact-fingers, and means for accentuating the several positions of engagement between the stationary and movable contact members.

11. In a controller for a two-phase electric motor, the combination with a rotatably-mounted transformer-core, a pair of similar windings therefor, two groups of contact-fingers which are respectively connected to said windings and are fixed upon diametrically opposite sides of the core, and means for operating said rotatable parts, of two similar groups of stationary contact members that are adapted to be simultaneously engaged by the movable contact-fingers, and means for accentuating the several positions of engagement between the stationary and movable contact members comprising a notched cam which is fixed to the rotatable members and an engaging pawl therefor.

12. In a controller for electric motors, the combination with a rotatably-mounted transformer having a winding which is provided with a plurality of taps, a series of contact-fingers that are connected thereto and are fixed to and insulated from the transformer, and a corresponding series of stationary contact parts which are engaged by the fingers on the rotatable member, of an interlocking device that permits movement of said rotatable transformer progressively in only one direction from the "off" position and from the running position.

13. In a controller for electric circuits, the combination with a plurality of stationary contact members that are connected to electric and motor circuits, a rotatably-mounted transformer and a plurality of contact-fingers which are fixed relative thereto and are adapted to engage said stationary contact members and are also connected to taps in the transformer-winding, of an interlocking device that permits progressive rotation of said transformer member in one direction and prevents rotation in the opposite direction when said member occupies one or more predetermined positions.

14. In a controller for electric motors, the combination with a rotatably-mounted transformer, an operating-handle therefor, contact-fingers connected to the windings of said transformer, and fixed relative thereto, stationary contact members which are adapted to be engaged by the transformer-fingers, of means for accentuating the plurality of controller positions which permit progressive rotation of said transformer member in one direction and prevent rotation in the opposite direction when said transformer occupies one or more predetermined positions and which comprise a notched cam that is fixed relative to the transformer and an engaging pawl therefor.

15. In a controller for a polyphase electric motor, the combination with a rotatably-mounted transformer-core, a pair of similar windings therefor, two groups of contact-fingers which are respectively connected to said windings and are fixed upon diametrically opposite sides of the core, means for operating said rotatable parts, two similar groups of stationary contact members that are adapted to be simultaneously engaged by the movable contact-fingers, of means for indicating the controller positions which permit progressive rotation of said transformer member in one direction and prevent rotation in the opposite direction when said transformer occupies one or more predetermined positions and which comprise a notched cam that is fixed relative to the transformer and an engaging pawl therefor.

16. In a controller, the combination with a member comprising a transformer and a set of contact-terminals mounted thereon, of a member having a second set of

contact-terminals to coöperate with the first set and means for moving one of said members relatively to the other.

846,627. COVERING FOR HAY, GRAIN, &c. PETER SCHOENLE, Afton, Iowa. Filed Mar. 1, 1906. Serial No. 303,667.

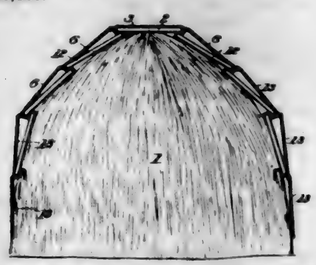

Claim.—1. As a new article of manufacture, a link for hay-stack-covering supports, comprising a body portion provided at one end with an eye and at its opposite end with upper and lower rests for the support of adjacent covering elements.

2. A hay-stack covering comprising a series of jointed covering-support elements, some of said elements having upper and lower covering-rests at one end.

3. A hay-stack covering comprising a suspending member, a covering-support element provided with a double rest for covering elements, and another covering-support element coöperating with the aforesaid covering-support element.

846,628. TELEPHONE-EXCHANGE APPARATUS. EDWIN H. SMYTHE, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 21, 1905. Serial No. 292,770.

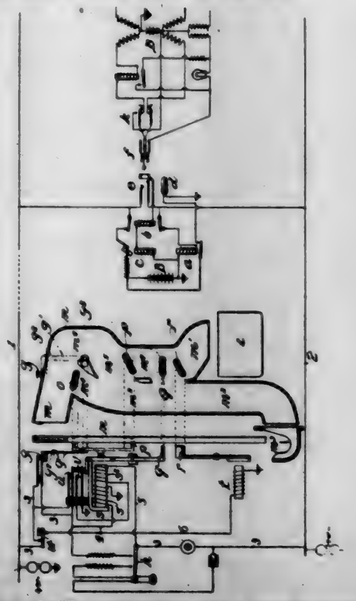

Claim.—1. The combination with a metallic-circuit telephone-line, of a coin-collector at a subscriber's station having a retaining-magnet and a refunding-maguet and corresponding coin-distributing mechanisms operated by said magnets, a normal circuit for the retaining-magnet over one side of the line, a subscriber's key controlling said circuit, a circuit for said refunding-magnet also controlled by said key, and connecting apparatus at the central office adapted to establish an independent energizing-circuit for said retaining-magnet over the other side of the telephone-line.

2. The combination with a telephone-line, of a subscriber's coin-collector having a magnet, mechanism operated in the response of said magnet for retaining a deposited coin, said mechanism being adapted in its return to normal condition to release the coin within the collector, a second magnet, refund mechanism operated in the response of said second magnet, an operator's key, a circuit for said second magnet controlled by said key, an operator's connection-switch and a circuit for said first magnet controlled by said connection-switch.

3. The combination with a telephone-line, of a coin-collector at the substation having a magnet, mechanism controlled by the response of said magnet for retaining a deposited coin, said mechanism being adapted in its return to normal condition to release the coin within the coin-collector, a source of current, an energizing-circuit for said magnet, a second magnet, refund mechanism operated in the response thereof, a subscriber's key adapted to close a circuit through the second magnet, and switching mechanism under the control of the operator for disconnecting the current-supply from either the first magnet alone or from both magnets, to control the disposition of the coin.

4. The combination with a telephone-line, of a coin-collector having a temporary coin-receiver, a retaining-magnet and mechanism operated in the response of said magnet for holding a coin in said receiver, said mechanism being adapted in returning to normal condition to discharge the coin within the collector, a normal circuit from the central office for said retaining-magnet, electromagnetic refunding mechanism adapted to return a discharged coin, a subscriber's refund-key, an operating-circuit for said refunding mechanism normally controlled by said key, operator's connecting apparatus at the central office, an independent energizing-circuit for said retaining-magnet, established by said connecting apparatus, an operator's key arranged to interrupt the energizing-circuit of said retaining-magnet while maintaining a battery connection with the circuit of said refunding mechanism to permit the recovery of the coin, and switching mechanism automatically operated in removing said connecting apparatus, adapted to interrupt the supply of current to both the retaining and refunding mechanism, to automatically discharge the coin within the collector.

5. The combination with a metallic-circuit telephone-line, of a coin-collector at the substation thereof having an operating-magnet in a branch from one side of the line, means operated by said magnet while excited for temporarily retaining a deposited coin, means at the central office for normally supplying current to said branch, a second magnet, mechanism operated in the response thereof for refunding a coin released by the first-mentioned magnet, a switch for operation by the subscriber, adapted to interrupt the branch circuit through the first-mentioned magnet and to close a circuit through the second-mentioned magnet, to refund the coin, and connecting apparatus at the central office adapted to establish an independent energizing-circuit for the first-mentioned magnet; whereby the subscriber may recover the deposited coin until the central-office operator has responded, the coin being thereafter under the control of the operator.

6. The combination with a telephone-line, of a subscriber's coin-collector having a magnet, coin-distributing mechanism operated in the response of said magnet for detaining a deposited coin, said mechanism being adapted in its return to normal condition to release the coin within the collector, a contact adapted to be actuated by a coin, means for supplying current to said magnet to excite the same, connecting apparatus at the central office and means controlled thereby for interrupting the excitation of said magnet in the removal of a connection.

7. The combination with a telephone-line and a central battery, of a coin-collector at the substation thereof having a magnet and mechanism operated by the response of said magnet and its subsequent return to normal condition for disposing of a deposited coin, an energizing-circuit for said magnet from the central battery over one side of the line, controlled by contacts of the coin-collector, an independent energizing-circuit for said magnet over the other side of the line, a plug and spring-jack and switching apparatus controlled in making connection therewith adapted to establish said independent circuit and break said first-mentioned energizing-circuit, said apparatus being adapted to delay in restoring said first-mentioned circuit when the plug connection is taken down; whereby the coin is automatically disposed of without a special act of the operator.

8. The combination with a telephone-line having a battery normally connected with one side thereof at the central office, of a coin-collector at a substation having a coin-chute normally discharging into a return-passage, a branch of the coin-chute normally discharging into a cash-box, a magnet *s* having a winding in a branch circuit from the battery side of the telephone-line, a contact arranged to be closed by a coin in the chute, controlling the circuit through the magnet, mechanism operated in the response of the magnet for diverting a coin into said branch and detaining said coin therein, a second magnet *t*, means operated by said second magnet adapted to divert a released coin from said branch into the return-passage, and a manual-key adapted to shift the circuits to deënergize magnet *s* and energize magnet *t*, whereby a deposited coin may be recovered by the subscriber if the operator does not respond, and is automatically returned if the line-circuit is interrupted.

9. The combination with a telephone-line, of a coin-collector at the substation thereof having a coin-chute *m*, a refund-passage m^2 connected with said chute as a normal continuation thereof, a temporary coin-receiver m^7, a cash-box adapted to receive a coin from said temporary receiver, a magnet, mechanism actuated in the response of said magnet adapted to divert a deposited coin into said temporary receiver, said mechanism being adapted to discharge the coin into the cash-box upon the return of said magnet to normal condition, a branch circuit for said magnet from one side of the telephone-line and a battery normally connected with the same side, a contact adapted to be closed by a coin in the chute to close said branch circuit, and means at the central office for interrupting the flow of current in said circuit.

10. The combination with a telephone-line, of a coin-collector at the substation thereof having a coin-chute adapted normally to return a deposited coin, of a magnet and mechanism operated in the response of said magnet for detaining a deposited coin, said mechanism being adapted to discharge the coin into a permanent receptacle upon a mere return to normal condition, a circuit for said magnet over the telephone-line, controlled by the initial deposit of a coin, an operator's circuit at the central office and means for connecting the same with the line, means controlled independently of the coin for maintaining the excitation of said magnet before and during connection of said operator's circuit with the line, and means controlled in disconnecting said operator's circuit, for deënergizing said magnet; whereby the coin is automatically returned if the line-circuit is interrupted, but is brought under control of the operator by connection with the line and automatically discharged into the permanent receptacle by the mere act of taking down the connection.

11. The combination with a telephone-line, of a battery at the central office terminal thereof, a slow-acting relay having contacts normally connecting said battery to one side of the line, and operator's connection-switch and its circuits at the central office, means controlled in closing said connection-switch for exciting said relay to cut off the normal battery connection, and also for establishing a battery connection with the other side of the line, a coin-collector at the substation of the line having a coin-chute with a normal refund continuation, a contact adapted to be actuated by a coin in the chute, a magnet having an energizing-circuit from the normal battery side of the line, controlled by said contact, an independent energizing-circuit from the other side of the line, and coin-controlling mechanism actuated in the response of the magnet to detain a coin in its passage through the chute, said mechanism being adapted in its return to normal condition to discharge the coin into a permanent receptacle; whereby a coin is automatically detained if the line-circuit is in order, is brought under the control of the operator when connection is made with the line, and is automatically deposited in the act of taking down the connection, by the momentary interruption of current-supply during the delay of said slow-acting relay to re-establish the normal battery connection.

12. The combination with a double-wire telephone-line, of a coin-collector at a subscriber's station, having a retaining-magnet and a refunding-magnet and corresponding mechanism operated by said magnets, a central-office battery, a normal circuit from said battery over one side of the line to said retaining-magnet, a coin-actuated contact for closing said normal circuit, a subscriber's refund-key adapted to connect the refund-magnet to said normal battery side of the line while cutting said retaining-magnet out of said normal circuit, operator's connecting apparatus adapted to open said normal circuit while establishing an independent locking-circuit for said retaining-magnet over the other side of the line, means controlled in the removal of the connecting apparatus for temporarily deënergizing said retaining-magnet to release the coin within the collector, and an operator's key associated with the connecting apparatus adapted to open the said locking-circuit while applying current to the first-mentioned side of the line to permit operation of said refunding-magnet.

13. The combination with a telephone-line, of a subscriber's coin-collector having a coin-passage, a magnet, mechanism operated in the response of said magnet for detaining a coin in the passage, said mechanism being adapted in its return to normal condition to release the coin within the collector, subscriber's refund mechanism for recovering a released coin, operator's connecting apparatus at the central office adapted to establish a locking-circuit for said magnet during connection, and an operator's key controlling said locking-circuit to permit the recovery of the coin by the subscriber.

14. The combination with a telephone-line, of a subscriber's coin-collector having a magnet, coin-depositing mechanism operated in the return of said magnet to normal condition after response, operator's connecting apparatus at the central office, means controlled thereby for maintaining the excitation of said magnet during connection, subscriber's refunding mechanism, and means controlled by said connecting apparatus for blocking the operation of said refunding mechanism.

15. The combination with a telephone-line, of a substation coin-collector having a chute to receive coins, said chute normally discharging into a refund-passage, a magnet, mechanism operated in the response of said magnet for detaining a deposited coin, said mechanism being adapted in its return to normal condition to deposit the detained coin in a permanent receptacle, a contact adapted to be actuated by a coin passing through the chute for closing a circuit through said magnet, a source of current normally applied to such circuit at the central office, operator's connecting apparatus and an automatic switch actuated in the removal of said connecting apparatus after connection for interrupting the supply of current to said magnet-circuit; whereby the coin is automatically deposited as an incident to the removal of a connection.

16. The combination with a telephone-line, of a substation coin-collector having a chute to receive coins, said chute normally discharging into a refund-passage, a magnet, mechanism operated in the response of said magnet for detaining a deposited coin, said mechanism being adapted in its return to normal condition to release the coin within the collector, a contact adapted to be actuated by a coin passing through the chute, for closing a circuit through said magnet, a subscriber's refund-key, means controlled thereby for breaking said magnet-circuit and diverting the released coin into a refund-passage, operator's connecting apparatus at the central office, arranged to establish an independent energizing-circuit for said magnet during connection, and a slow-acting automatic switch operated during connection, for interrupting the first-men-

tioned magnet-circuit, whereby the magnet returns to normal condition to deposit the coin during the delay of said automatic switch in reëstablishing the magnet-circuit upon taking down a connection.

17. The combination with a metallic-circuit telephone-line, of a coin-collector at the substation thereof having a magnet and coin-distributing mechanism operated thereby, a central battery, a slow-acting relay at the central office normally connecting said battery with one side of the line, a contact arranged to be actuated by a coin in the collector and adapted to connect said magnet with said side of the line having the normal battery connection, contacts operated by said magnet in its response to close an independent connection of the magnet to said normal battery side of the line, and operator's connecting apparatus at the central office adapted to close an exciting-circuit for said slow-acting relay and also to establish a battery connection to the other side of the line, said magnet having a locking-winding connected with said last-mentioned side of the line; whereby the magnet is excited upon the initial deposit of a coin, is maintained excited during the connection, and is automatically deënergized during the delay of the slow-acting relay in reëstablishing the circuit when the connecting apparatus is removed.

846,620. WIRE-CUTTER. GEORGE E. SULTEEN, Redkey, Ind., assignor of one-half to William F. Milligan, Portland, Ind. Filed Jan. 19, 1907. Serial No. 353,157.

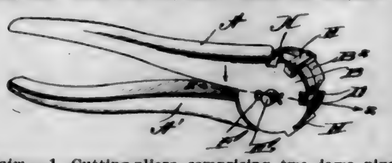

Claim.—1. Cutting-pliers comprising two jaws pivoted together and each provided with a groove, the inner edges of the walls of which are adapted to have a shearing effect, an angled finger projecting from each jaw in opposite directions and adapted to engage over the marginal edge of a jaw to hold the jaws against lateral stress while shearing, as set forth.

2. Cutting-pliers comprising two jaws pivoted together and each provided with a groove, the inner edges of the walls of which are adapted to have a shearing effect, an angled finger projecting from each jaw in opposite directions and adapted to engage over the marginal edge of a jaw to hold the jaws against lateral stress while shearing, each jaw having a recess formed in the edge thereof, the bottoms of which recesses are inclined and through which the angled ends of said fingers are adapted to pass when separating the jaws, as set forth.

3. Cutting-pliers comprising two jaws pivoted together and each provided with a groove, the inner edges of the walls of which are adapted to have a shearing effect, an angled resilient finger projecting from each jaw in opposite directions and adapted to engage over the marginal edge of a jaw to hold the jaws against lateral stress while shearing, each jaw having a recess formed in its edge adjacent to the handle and the bottom of each recess inclining from the inner edge of the jaw and against which the resilient fingers are adapted to contact as the jaws are separated, as set forth.

846,630. FEED-GAGE. LA ROY E. TAIT, Red Cloud, Nebr. Filed Dec. 5, 1905. Serial No. 290,386.

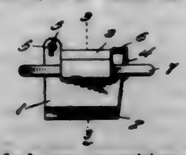

Claim.—1. A feed-gage, comprising upper and lower members, said members being adapted to receive a tympan-sheet between them, a sheet-metal clamp bent upon itself having upper and lower members, and adapted to receive said first-named members between them, the upper member of said clamp being also bent upon itself and having a tongue mounted therein, substantially as described.

2. A feed-gage, composed of upper and lower members, and having an aperture, a clamp having a pair of integral pivot-rods, adapted to pass through said aperture, and capable of being bent in opposite directions, substantially as described.

846,631. WAIST. ELIZABETH G. TERBUTT, Albany, N. Y. Filed Mar. 27, 1905. Serial No. 252,152.

Claim.—1. In a waist having along its front strip a row of buttonholes; a tape secured at frequent intervals to the outside of the front strip corresponding to the one containing the buttonholes, upon which tape a series of adjustable and detachable buttons are secured, which permits said buttons to be moved thereon, to place the same in position to register with the buttonholes on the corresponding strip.

2. The combination of a waist-garment and a waistband secured thereto; said waistband provided with a series of holes; a series of detachable and adjustable buttons arranged in pairs; a tape connecting each pair of buttons; said tape secured to said waistband by passing through two of said holes which are adjacent to each other, substantially as described.

3. The combination of a waist-garment and a waistband; a series of detachable and adjustable buttons; a means for securing said buttons in pairs, to said waistband, and adjustably securing the connections between the buttons forming the pairs, substantially as described.

846,632. GRAIN-SHOCKER. GEORGE W. TICE, Riley Center, Mich., assignor of one-half to Allen K. Tice, Larimore, N. D. Filed Oct. 5, 1905. Serial No. 281,433.

Claim.—1. The combination with a shock-former, of a traveling support therefor to which said former is rotatably connected, the said former being adapted when released to engage with the ground and be turned about its pivot thereby, and releasable means for holding said former out of contact with the ground.

2. The combination with a shock-former, of a frame, an axle supporting one end of said former, and releasable means supporting the other end of said former, the said former being adapted when released to engage with the ground and be turned upon its pivot thereby.

3. The combination with a shock-former comprising a plurality of sections, of a traveling support therefor to which said former is rotatably connected, the said former being adapted when released to engage with the ground and be turned upon its pivot thereby, releasable means for holding said former out of contact with the ground, and means for removing one of said sections from the rear of the shock when said former has reached an approximately upright position.

4. The combination with a shock-former, of a support therefor to which said former is rotatably connected, the said former being adapted to move from receiving to discharging position, and means for completing a revolution of said former for each discharge.

5. The combination with the shock-former, of a traveling support therefor to which said former is rotatably connected, the said former being adapted to engage with the ground and be turned upon its pivot thereby, releasable means for holding said former out of contact with the ground and means for returning said former to receiving position.

6. The combination with the shock-former, of a traveling support therefor to which said former is rotatably connected, the said former being engageable with the ground and rotatable thereby, said former having a plurality of sections, and means placed under stress by the rotation of said former for pressing the said sections toward each other.

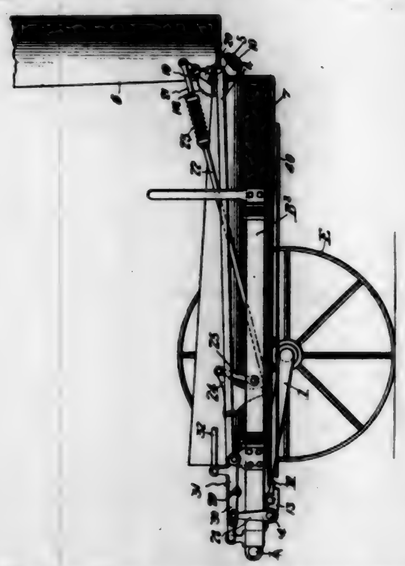

7. The combination of a movable shock-former comprising a plurality of sections, and means placed under stress by the movement of said former for pressing the said sections toward each other.

8. The combination with a shock-former comprising a plurality of sections, of a traveling-support therefor to which said former is rotatably connected, the said former being adapted to engage with the ground and be rotated thereby, means for bringing the said sections together, and means placed under stress by the rotary movement of said former for further pressing the sections toward each other.

9. The combination with a shock-former, of a traveling support therefor to which said former is rotatably connected, the said former being adapted to engage with the ground and be rotated thereby into discharging position, and means placed in operable position by the rotary movement of said former for moving said former into receiving position.

10. The combination with a shock-former, of means for feeding sheaves to said former, and a common means for setting said former in operation to deposit a shock and removing the driving power from said feeding means.

11. The combination with a shock-former comprising a plurality of sections, of means for bringing said sections together, releasable means for maintaining said former in receiving position, means for feeding sheaves to said former, and a common means for cutting off the power from said feeding means, releasing said former-retaining means, and operating said means for bringing said sections together.

12. The combination with a frame, a bail pivotally secured thereto, a former rotatably secured to said bail, said former comprising a plurality of sections, and a tension device placed under stress by the movement of said bail away from said frame, said tension device being connected to said former and adapted to press the sections on said former together.

13. The combination with a frame, of a bail pivotally secured thereto, a shock-former having a plurality of sections rotatably secured to said bail, links between said frame and bail, and a tension device connected to said links and said former.

14. The combination with a frame, of a bail pivotally secured thereto, a shock-former rotatably secured to said bail, said former being adapted to turn from receiving to discharging position, and means for completing a revolution of said former placed in operative position by movement of said bail relative to said frame.

15. The combination with a frame, of a bail pivotally secured thereto, a shock-former rotatably secured to said bail, said former being adapted to turn from receiving to discharging position, links between said bail and frame, and means for completing a revolution of said former connected between said links and said former.

16. In combination with a traveling support, a shock-former rotatably connected thereto, and a series of rearwardly-extending rods mounted on the support under the former, said rods being divided into two sets, each curving outwardly at the rear from a central line, whereby, as the shocker rotates to dump the shock, the teeth will spread the base of the shock laterally.

17. The combination with the traveling support, of a shock-former mounted thereon to turn about an axis transverse to the direction of travel of the support, the said former comprising sections divided approximately along a plane passing longitudinally through the axis of rotation and said sections being individually rotatable about the axis of rotation of the former as a whole.

18. The combination with the traveling support, of a shock-former mounted thereon to turn about an axis transverse to the direction of travel of the support, the said former comprising sections divided approximately along a plane passing through the axis of rotation, and means tending to move one of the sections of said former away from the other.

19. In a grain-shocker, the combination with a traveling support, of a shaft extending transversely to the movement of said shocker over the field and rotatably mounted upon said support, a shock-former comprising a plurality of sections divided by a plane approximately through the axis of said shaft, one of said sections being rotatably mounted upon said shaft and the other section being fixed to said shaft, and a spring connected between said shock-former sections and tending to separate them.

20. The combination with a self-binding harvester, of a shocker-carrying frame pivoted transversely of the movement of the machine and free to rise at its rear end, a shocker rotatably mounted at its rear end on an axis substantially parallel to said axis of the frame, and a releasable latch for supporting the front end of the shocker.

21. The combination with a self-binding harvester, of a shocker-carrying frame pivoted transversely of the movement of the machine and free to rise at its rear end, a shocker rotatably mounted at its rear end on an axis substantially parallel to said axis of the frame, a releasable latch for supporting the front end of the shocker, a discharger for delivering the bundles from the binder into the shocker, and means whereby the driver may simultaneously release the latch and stop the discharger.

22. The combination with a self-binding harvester, of a shocker rotatably mounted at its rear end on an axis that is free to rise and fall vertically, said axis being transverse to the movement of the machine and a releasable latch for supporting the front end of the shocker.

846,633. HINGE-JOINT FOR PIN-TONGUES. GEORGE H. TILFORD, Providence, R. I. Filed Nov. 2, 1906. Serial No. 341,752.

Claim.—1. The combination with a pivot having flanges and trunnions at its end, of a pin-tongue having a loop extending around the pivot between the flanges, and ears having openings in which the flanges and trunnions of the pivot are seated.

2. The combination with a pivot having flanges and trunnions at its ends, of a pin-tongue having a loop extending around the pivot between the flanges.

846,634. CHEESE GUARD AND SUPPORT FOR CHEESE-CUTTERS. JAMES E. VAN DEVENTER and LAFE SWANK, Anderson, Ind., assignors to American Cheese Cutter Company, Anderson, Ind., a Corporation of Indiana. Filed Aug. 6, 1906. Serial No. 329,471.

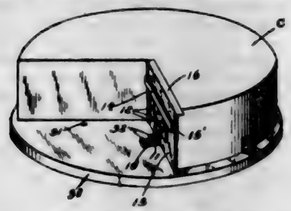

Claim.—1. In a cheese-cutter, the combination with a support adapted to be connected to the cheese-carrying table, of a face-guard comprising a plate adapted to engage the cut face of a cheese, and intermediate connections between said guard and the support permitting radial adjustment of the plate upon the support.

2. In a cheese-cutter, the combination, with a cheese-carrying table, of a guard-support, means for connecting said support to the table, and a face-guard comprising a plate connected to the support by means permitting radial adjustment of the plate.

3. In a cheese-cutter, the combination, with a cheese-carrying table, of a guard-support, means for connecting said support to the table, said means permitting adjustment of the support angularly upon the table, and a face-guard comprising a plate connected to the support by means permitting radial adjustment of the plate.

4. In a cheese-cutter, the combination, with the cheese-carrying table, of a guard-support, means for connecting said support to the table said means permitting angular adjustment of the support upon the table, a face-guard comprising a pair of plates one vertically adjustable upon the other to vary the effective height of the guard and means for connecting said guard to the support, said means permitting radial adjustment of the guard.

5. In a cheese-cutter, the combination, with the cheese-carrying table, of a guard-support, means for connecting said support to the table, a face-guard comprising a pair of plates one vertically adjustable upon the other to vary the effective height of the guard, and means for connecting said guard to the support, said means permitting radial adjustment of the guard.

6. In a cheese-cutter, the combination, with a cheese-carrying table, of a guard-support, means for connecting said support to the table, and a face-guard comprising a pair of plates one vertically adjustable upon the other to vary the effective height of the guard, one of said members having a downturned lip adapted to overlie the upper edge of the support.

7. In a cheese-cutter, the combination, with a cheese-carrying table, having a hole in its face, of a guard-support having a pin at one end adapted to enter said hole, means for clamping the support to the table, and a guard-plate held in vertical position by said support.

8. In a cheese-cutter, the combination, with a cheese-carrying table, having a hole in its face, of a guard-support having a pin at one end adapted to enter said hole, means for clamping the support to the table, a guard-plate having a downturned lip at its upper end to receive the upper edge of the support, and a supplemented guard-plate vertically adjustable upon the other guard-plate.

846,635. SPRING-MATTRESS. BERTHOLD WEINBERG, New York, N. Y. Filed June 16, 1906. Serial No. 321,954.

Claim.—1. The combination with a wire-netting having perforated connecting members, of spiral springs the lower ends of which are extended in a straight line and formed at their free ends into hooks to engage the perforations of the connecting members, substantially as set forth.

2. The combination with a wire-netting having perforated connecting members, of double spiral springs the individual springs of which run over into each other and the lower ends of which are extended in a straight line and formed into hooks for engagement with the perforations of the connecting members of the wire-netting, substantially as set forth.

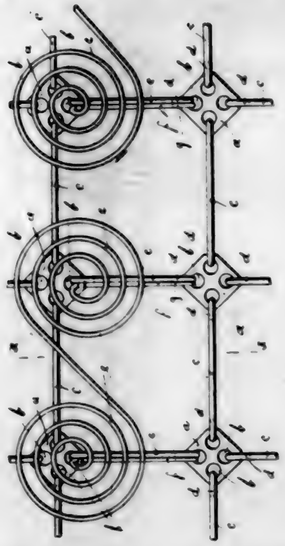

3. The combination with a wire-netting having perforated connecting members, of multiple spiral springs the lower and upper ends of which alternately are extended and coiled upward and downward respectively, the lower ends of the individual springs at the ends of the multiple spring being extended in a straight line and formed into hooks for engagement with the perforated members, substantially as set forth.

846,636. TOILET-BRUSH. ANDREW A. WENSINGER, Toledo, Ohio. Filed Nov. 24, 1906. Serial No. 344,849.

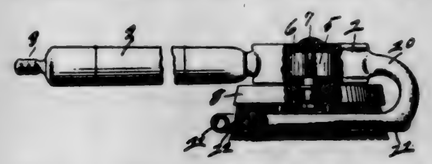

Claim.—1. A toilet-brush comprising a hollow body, a water-wheel mounted for rotation therein, a brush connected to and rotatable with said wheel, means for directing a supply of water against said wheel to impart rotation thereto, and an annular discharge-head surrounding the brush and adapted to direct the water upon the periphery of the brush, substantially as described.

2. A toilet-brush comprising a hollow cylindrical body, a water-wheel mounted upon an axle to rotate within the body, the axle being extended downwardly through the body, a brush carried at the lower end of the axle and rotatable therewith, means for directing a supply of water against the wheel, and a combined discharge-head and guard adapted to direct the water against the periphery of the brush, said head consisting of an annular perforated tube connecting with the interior of the body and surrounding the brush and positioned slightly above the plane of the brush-face, substantially as described.

846,637. SIGHT FOR FIREARMS. GEORGE S. WILCOX, Hartford, Conn., assignor to The Lyman Gun Sight Corporation, Middlefield, Conn., a Corporation of Connecticut. Filed Jan. 29, 1906. Serial No. 298,396.

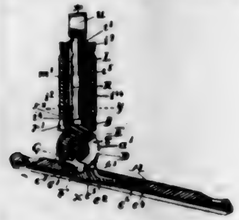

Claim.—1. In a sight for firearms, the combination of a base, a sight mounted in the base for swinging and transverse movements, means for imparting transverse movement to the sight, and a loose or free connection between the sight and said means as to rotary motion whereby the sight may be swung without producing transverse movement thereof.

2. In a sight for firearms, the combination of a base, a rotatable arbor journaled in the base and having a spiral groove or way, a sight mounted upon and rotatable about and independently of the arbor, and means connecting the sight and arbor for lengthwise movement of the sight thereon by the camming action of said groove the engagement between the sight and said means being a free one as to rotary motion, whereby the sight may rotate about the arbor.

3. In a sight for firearms, the combination of a base, a rotatable arbor journaled in the base and having a spiral groove or way, a sight mounted on the arbor and rotatable thereon independently of the arbor, a part engaging said groove or way and the sight, the engagement of the sight and said part permitting the swinging of the sight independently of said part, and means whereby the arbor may be rotated.

4. In a sight for firearms, the combination of a base, a rotatable arbor journaled in the base and having a spiral groove or way, a sight mounted on the arbor and rotatable independently thereof, and a shoe situated in a slot in a member of the sight and engaging said groove or way, whereby rotation of the arbor acts to shift the sight lengthwise of the arbor.

5. In a sight for firearms the combination of a base, a rotatable arbor horizontally journaled in the base and having a spiral groove or way, a sight mounted and adapted to be swung upon the arbor, means for actuating the sight lengthwise of the arbor by the camming action of the groove, and a spring-actuated detent for engaging and holding the sight in sighting position, substantially as and for the purpose specified.

6. In a sight for firearms the combination of a base provided with vertical ears, a rotatable arbor horizontally journaled in the ears of the base transversely of the line of sight, and having a spiral groove or way, a sight-joint mounted and adapted to be swung upon the arbor, a shoe carried by the sight-joint in engagement with the spiral groove of the arbor, for actuating the sight lengthwise of the arbor by the camming action of the groove, and a spring-actuated detent for engaging and holding the sight-joint in sighting position, substantially as and for the purpose specified.

7. In a sight for firearms the combination of a base, a part mounted on the base comprising a tubular shell having a longitudinal way or slot, a sight-post fitted within the shell and provided with a pin projecting through said way, sleeve fitted upon the shell having a spiral slot engaging the pin of the sight-post, and means for retaining the sleeve in position on the shell substantially in the manner and for the purpose specified.

8. In a sight for firearms the combination of a base, a part mounted on the base comprising a tubular shell having a longitudinal way or slot, a sight-post fitted within the shell and provided with a pin projecting through said way, a sleeve fitted upon the shell having a spiral slot engaging the pin of the sight-post, a knurled sleeve, fitted over the spirally-slotted sleeve and rigidly secured thereon, and means for retaining the sleeve in position on the shell, substantially in the manner and for the purpose specified.

9. In a sight for firearms the combination of a base, a rotatable arbor horizontally journaled in the base and having a spiral groove or way, a sight-joint comprising an eye mounted and adapted to be swung upon the arbor, and a tubular shell having a longitudinal way or slot, a sight-post fitted within the shell and provided with a pin projecting through said way, a sleeve fitted upon the shell having a spiral camming-slot engaging the pin of the sight-post, a knurled sleeve fitted and received over the camming-sleeve and rigidly secured thereon, a collar and a nut on said shell for retaining the knurled sleeve in place thereon, and a spring-detent for holding the knurled sleeve stationary, substantially as and for the purpose specified.

10. In a sight for firearms the combination of a base, a sight hinged to the base, and a spring-actuated detent comprising a lever fulcrumed in the base and having its long arm resilient and bearing at its terminal point upon the base, and the short arm terminating in a spur for engaging the sight and locking it in sighting position, substantially in the manner and for the purpose specified.

11. In a sight for firearms the combination of a base, a rotatable arbor journaled in the base, a sight, means for actuating the sight transversely of the arm for windgage, by rotation of the arbor, the folding operating-handle H having a cylindrical part fitting a cylindrical seat *h'* in the head of the arbor and adapted for being folded from the vertical to the horizontal position with respect to the arbor-head, substantially in the manner and for the purpose specified.

846,638. SIGHT FOR FIREARMS. JAMES WINDRIDGE, Middlefield, Conn., assignor to The Lyman Gun Sight Corporation, Middlefield, Conn., a Corporation of Connecticut. Filed Mar. 23, 1906. Serial No. 307,717.

Claim.—1. In a sight for firearms, the combination of a longitudinally-movable sight-post, a rotal member acting to move said post, a bearing for said member to turn upon, a stop to limit endwise movement of said member, and a spring holding said rotal member against said stop.

2. In a sight for firearms, the combination of a longitudinally-movable sight-post, a rotal nut engaging said post to move the same longitudinally, a bearing for the nut, a stop to limit endwise movement of the nut, at one end thereof, and a spring acting on the nut at its other end and pressing it toward said stop.

3. In a sight for firearms, the combination of a longitudinally-movable sight-post, a rotal member acting to move said post, a bearing for said member to turn upon, a stop to limit endwise movement of said member, and a spring acting to hold said rotal member against said stop and to hold it from rotation.

4. In a sight for firearms, the combination of a longitudinally-movable sight-post, a rotal member acting to move said post, a stop to prevent endwise movement of the rotal member in one direction, and a spring-detent device to hold said member from rotation and exerting endwise pressure thereon.

5. In a sight for firearms, the combination of a longitudinally-movable sight-post, a rotal member acting to move said post, a bearing for said member to turn upon, an annular spring concentric with said bearing, a detent engagement between the spring and the rotal member, and means to prevent the spring from rotating.

6. In a sight for firearms, the combination of a longitudinally-movable sight-post, a support in which the same is mounted, rack-teeth on said post, a rotal member on said support engaging said rack-teeth, and a nut or collar screwed on the support at one end of the rotal member, said nut being perforated for the passage of the sight-post, and having a slot engaged by the rack thereon, whereby the nut or collar is held from rotation.

7. The combination with a rotal adjusting member having detent-notches in its faces, of a standard or stationary part forming a bearing or support for said member, and an elastic ring of flatwise or curved configuration interposed and adapted to act expansively between the parts and provided with a detent for engaging the notches of the adjusting member, and means for preventing rotal movement of the elastic ring, substantially as and for the purpose specified.

8. In a sight for firearms the combination with the sight-supporting member of a sight-post movably mounted or guided in said member, a rotal adjusting-nut journaled on the sight-supporting member in engagement with the sight-post, and an annular spring of flatwise curved or arched configuration interposed between and exerting its tension upon the adjusting-nut and its thrust-bearing, substantially in the manner and for the purpose specified.

9. In a sight for firearms the combination with the sight-supporting member of a sight-post movably mounted or guided in said member, a rotal adjusting-nut journaled on the sight-supporting member in engagement with the sight-post, an annular spring of flatwise curved or arched configuration interposed between and exerting its tension upon the adjusting-nut and its thrust-bearing, and means for holding the spring secure against rotation on its seat or with reference to the sight-supporting member, substantially as and for the purpose specified.

10. In a sight for firearms the combination with a sight-supporting member of a sight-post movably mounted or guided in said member, a rotal adjusting-nut journaled on the sight-supporting member in screw-threaded engagement with the sight-post and having a series of detent-notches in its end, and an annular spring of flatwise curved or arched configuration interposed between and exerting its tension upon the adjustment-nut and its thrust-bearing and having a radial projection or detent guided in the sight-supporting member and adapted to engage the notches of the adjusting-sleeve to hold it stationary, substantially as and for the purpose specified.

11. The combination of a sight-supporting member having a guiding-way for the reception of a sight-post and an annular seat or socket surrounding the guiding-way, a sight-post fitting said guiding-way, an annular spring of flatwise or arched configuration received in said socket and provided with a detent projection, an adjusting nut or sleeve mounted on the sight-supporting member in engagement with the spring and having a series of detent-notches for the engagement of the detent projection of the spring, means for securing the adjusting-sleeve against the thrust of the spring, and means for holding the spring from rotating in its seat, substantially as and for the purpose specified.

12. The combination of a sight-supporting member having a guiding-way for the reception of a sight-post and an annular seat or socket surrounding the guiding-way, and having a slot extending from the socket, a sight-post fitting the guiding-way and provided with a toothed rack, an adjusting-nut mounted on the sight-supporting member over said annular seat with its screw-threads in engagement with the rack-teeth of the sight-post, and having a series of detent-notches in the end adjacent said annular seat, a collar mounted on the sight-supporting member at the opposite end of said adjusting-nut to hold the same in place, and an annular spring of flatwise curved or arched configuration received in said socket and provided with a detent projection guided in the slot extended from the socket and adapted to engage the notches of the adjusting-sleeve, said spring exerting its tension to hold the adjusting-sleeve against its holding-collar, and engage the detent projection with the notches of the adjusting-sleeve, substantially as and for the purpose specified.

13. The combination of the sight-supporting member provided with a tubular stem having a slotted way and an annular seat or socket at the base of the stem, and a radial slot in connection therewith, a sight-post guided in the tubular stem and provided with a toothed rack fitting and projecting through the slotted way thereof, an internally-threaded adjusting nut or sleeve journaled on the stem in engagement with said rack and having a series of detent-notches at the end adjacent the socket of the sight-supporting member, a nut or collar screwed on the stem to secure the adjusting-sleeve thereon and an annular flatwise or bent spring received in the said socket and provided with a detent projection guided in said radial slot and adapted to engage the detent-notches of the adjusting-sleeve, substantially as and for the purpose specified.

14. The combination of the sight-supporting member provided with a tubular stem having a slotted way and an annular seat or socket at the base of the stem and a radial slot in connection with the socket, a sight-post guided in the tubular stem and provided with a toothed rack fitting and projecting through said slotted way, an internally-threaded adjusting nut or sleeve journaled on the stem in engagement with said rack and having a boss entering said socket provided with a series of detent-notches, a nut or collar screwed on the stem to secure the adjusting-sleeve thereon, and an elastic ring of flatwise curved or bent configuration received in the socket and provided with a detent projection guided in said radial slot and adapted to engage the detent-notches of the sleeve to lock the sleeve stationary, substantially as and for the purpose specified.

846,639. SIGHT FOR FIREARMS. JAMES WINDRIDGE, Middlefield, Conn., assignor to The Lyman Gun Sight Corporation, Middlefield, Conn., a Corporation of Connecticut. Filed May 28, 1906. Serial No. 319,068.

Claim.—1. In a sight for firearms, the combination of a base, a folding part or joint hinged thereto, a non-yielding locking device that is movable laterally or crosswise of the sight and means to hold said device immovably in locking position.

2. In a sight for firearms, the combination of a base, a folding part or joint hinged thereto, a non-yielding locking member movable parallel with the direction of the axis of movement of the joint and interlocking said parts, and means for moving the locking member into such interlocking engagement and immovably holding it in such engagement.

3. In a sight for firearms, the combination of a base, a folding part or joint, a pivotal connection between said parts, a non-yielding locking member movable in one of said parts parallel with the direction of the axis of such connection, and into and out of engagement with the other one of said parts and means to hold said member immovably in such engagement.

4. In a sight for firearms, the combination of a base, a folding part or joint, a laterally-movable screw or bolt pivotally connecting said parts, a non-yielding locking member in one of the parts and adapted to interlock with the other part, and means for moving the locking member into such interlocking engagement by lengthwise motion of the screw or bolt and hold it immovably in such engagement.

5. In a sight for firearms, the combination of a part provided with a pair of hinge-ears, a part hinged between said ears, one of said ears having a slot or slots opening through to the part between the ears, and a locking device having a spur reaching through the slot and engaging the part pivoted between the ears.

6. In a sight for firearms, the combination of a part provided with a pair of hinge-ears, a part hinged between said ears, one of the ears having a slot or slots reaching through to the part between them, a locking device having a spur reaching through the slot and engaging the part between the ears, and means to immovably hold said device in engagement with said part.

7. In a sight for firearms, the combination of a part provided with a pair of hinge-ears, a part between said ears, a pivot hinging the said parts together, and a ring seated in one of said ears and having a spur or spurs to engage slots and depressions in once of said ears and the part between them.

8. In a sight for firearms, the combination of a part provided with hinge-ears, a folding part between said ears, a screw pivotally connecting said parts, and a locking-ring seated and guided in one of said ears between the head of the screw and the folding part, and having a spur or spurs, said ear and folding part having spur-engaging slots and depressions.

846,640. FORCE-PUMP. CHARLES WOLF, St. Louis, Mo. Filed Oct. 15, 1906. Serial No. 339,089.

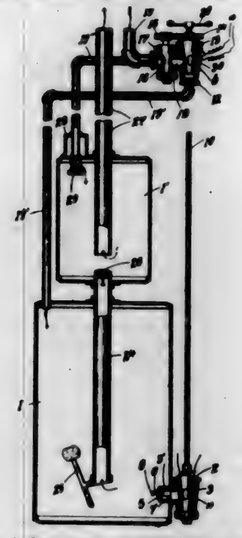

Claim.—1. A force-pump comprising two intercommunicating cylinders or tanks, means for filling one of said cylinders from a suitable source of liquid-supply, means for permitting the escape of air during the filling of the cylinders, a vibrating diaphragm in the path of said air-escape, an electric circuit of which said diaphragm forms one of the terminals, a contact member forming the opposite terminal of said circuit, the latter closing by the impact of the escaping air-current against the diaphragm and the forcing of the diaphragm against said contact member, and means for permitting the pneumatic expulsion of the liquid from the second cylinder during the filling of the first cylinder, substantially as set forth.

2. A force-pump comprising two intercommunicating cylinders or tanks, means for filling one of said cylinders from a suitable source of liquid-supply, a compressed-air-supply pipe, a double valve-casing coupled to said air-pipe, branches leading from the valve-casing to the respective cylinders, valves in said casings adapted to be relatively positioned to permit the air to flow into one or the other of said cylinders, and an inlet-valve for the liquid-supply adapted to be operated in conjunction with the operation of the air-controlling valves, substantially as set forth.

3. A force-pump comprising two intercommunicating cylinders or tanks, means for filling one of said cylinders from a suitable source of liquid-supply, a compressed-air-supply pipe, a double valve-casing coupled to said air-pipe, branches leading from the valve-casing to the respective cylinders, valves in said casings adapted to be relatively positioned to permit the air to flow into one or the other of said cylinders, an inlet-valve for the liquid-supply to the first cylinder adapted to be operated in conjunction with the air-controlling valves, and relatively positioned to admit the liquid to the first cylinder while the contents of the second cylinder is being pneumatically expelled, and to cut off the liquid-supply while the contents of the first cylinder is being expelled, substantially as set forth.

4. A force-pump comprising a main and a supplemental superposed cylinder of smaller capacity, a pipe connecting the cylinders, a check-valve at the upper end of said pipe, a float-valve at the lower end of said pipe, a hollow rotatable liquid-supply valve adapted to admit liquid to the main cylinder, a double valve-casing located above the supplemental cylinder, a compressed-air pipe leading to said casing, valves in said casing, branches leading from the casing in operative connection with said valves for conveying the compressed air alternately to the respective cylinders, a check-valve in the supplemental cylinder for closing the inlet to the air-pipe leading therefrom, a rod or staff leading upward from the liquid-supply valve, suitable gearing between the said rod and the valve-stems of the air-controlling valves, a delivery-pipe leading from the bottom of the supplemental cylinder, and means for actuating said gearing to effect alternate expulsion of the liquid from the respective cylinders, for closing the liquid-supply valve during the expulsion of the contents from the main cylinder, and opening the same during the filling thereof, and the expulsion of the contents of the supplemental cylinder, substantially as set forth.

846,641. POST-MOLD. DIEDRICH C. ADDICKS, Stroh, Ind. Filed Oct. 31, 1906. Serial No. 341,369.

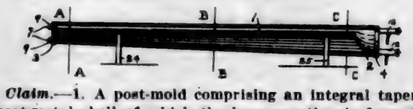

Claim.—1. A post-mold comprising an integral tapering sheet-metal shell of which the lower portion is formed of parallel sides connected by a semicylindrical portion, and the upper portion by curved sides and portions connecting the curves to the parallel lower sides, the shell being bulged out at the larger end at the corners between the upper and lower portions; reinforcing-rods; perforated caps adapted to fit over the ends of the shell; set collars adapted to fit over the upper ends of the rods; and tightening means to engage the opposite end of each reinforcing-rod to hold the rods and the caps in position.

2. A post-mold comprising an integral shell of thin sheet metal which may be sprung to discharge the molded post, perforated caps to fit the ends of the shell, and means to engage the ends of reinforcing members that extend longitudinally through the mold and out through the perforations in the caps to tension the reinforcing members individually and hold the caps in position.

846,642. PROCESS OF REDUCING METALLIC SULFIDS. EDWARD L. ANDERSON, St. Louis, Mo., assignor, by direct and mesne assignments, of one-half to himself and Harvey Atchisson, St. Louis, Mo., and one-half to John H. Miller and Chalon G. Cloud, McLeansboro, Ill. Filed Dec. 26, 1905. Serial No. 293,334.

Claim.—1. In the reduction of sulfid ores, the process of subjecting the ore to the action of an electric current flowing from an anode to a primary cathode in the presence of a quantity of the ore serving as a secondary cathode in an electrolyte capable of dissolving the metal constituent of said secondary cathode and forming a salt therewith, whereby said salt is decomposed and the metal deposited on the primary cathode, substantially as set forth.

2. In the reduction of sulfid ores, the process of subjecting the ore to the action of an electric current in an aqueous solution of an acid electrolyte capable of dissolving the metal constituent of the ore and forming a salt therewith, the current being passed from the anode to a

primary cathode undecomposable by said current, whereby the ore serves as a secondary decomposable cathode from which the metal constituent enters into solution with the electrolyte and is subsequently deposited on the primary cathode, substantially as set forth.

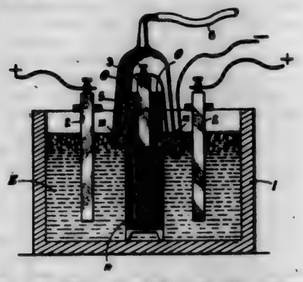

3. In the reduction of sulfid ores, the process of subjecting a cathode of the ore to the action of an electric current in an electrolyte capable of dissolving the metal constituent of the ore and forming a soluble salt therewith, decomposing said salt, and depositing the said metal constituent on a suitable undecomposable cathode, substantially as set forth.

4. In the reduction of sulfid ores, the process of subjecting the ore to the action of an electric current flowing from an anode to an undecomposable cathode and to the ore in an aqueous solution of an acid electrolyte capable of dissolving the metal constituent of the ore and forming a salt therewith, decomposing said salt, and depositing said metal constituent on the undecomposable cathode, substantially as set forth.

5. In the reduction of metallic compounds, the process of subjecting the compound to the action of an electric current flowing from an anode to an undecomposable cathode and to the compound in an electrolyte capable of dissolving the metal constituent of the compound and forming a soluble salt therewith, whereby said salt is decomposed and the metal constituent deposited on the undecomposable cathode, substantially as set forth.

846,643. GANG-PLOW. GEORGE BISHOP, Oxbow, Saskatchewan, Canada. Filed Mar. 28, 1906. Serial No. 308,573.

Claim.—1. In a gang-plow the combination with the frame of rearwardly-extending beams pivoted to the same, plows secured thereto, gage-wheels, standards supporting the gage-wheels and slidably supported on each beam, levers for raising and lowering the gage-wheels, arc-shaped arms secured to the beams, sliding blocks on the arms having therein slots into which the levers fit and thumb-screws for retaining said slots in any adjusted position as and for the purpose specified.

2. In a gang-plow the combination with the frame of a plurality of D-shaped lugs secured to the rear thereof, a plurality of flat plow-beams extending between said lugs and pivoted thereto, the flat side of the beams lying in a vertical plane and pivoting means extending through each pair of lugs and the plow-beams between as and for the purpose specified.

3. In a plow the combination with the triangular frame having the rear portion thereof obliquely inclined of a plurality of D-shaped lugs secured to the oblique rear portion having the rear parts thereof parallel to the front of the plow and the side portions flat and extending in a vertical plane, plow-beams extending between the lugs and pivoting means extending through the plow-beams, through both sides of one lug and through one side of the adjacent lug whereby a perpendicular action is givent the plow-beams as and for the purpose specified.

4. In a gang-plow the combination with the frame of a plurality of D-shaped lugs secured to the rear portion thereof having the rear portions thereof parallel to the front of the frame, and the side portions formed flat and extending in a substantially vertical plane and a plurality of plow-beams pivoted between the lugs as and for the purpose specified.

846,644. VALVE. JAMES E. BRADY, Covington, Ky., assignor to Mary A. Brady, Covington, Ky. Filed Oct. 13, 1905. Serial No. 282,557.

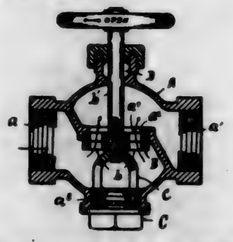

Claim.—1. A valve-casing having a partition dividing it into two chambers, an opening in the valve-casing opposite the partition, a valve-seat formed in the partition having a series of perforations therein, a valve seated against the valve-seat and having perforations which may be made to register with the perforations in the valve-seat and a nut seated in the opening in the casing opposite the partition and having an upwardly-projecting bracket to contact the valve and to hold it yieldingly to its seat.

2. A valve-casing having an inlet and an outlet opening divided by a horizontal perforated partition, and having an opening in its bottom opposite the partition, a removable valve-seat secured in the partition and having a series of perforations in it, a valve seated upward against the valve-seat, having a series of perforations to be made to register with the perforations in the valve-seat, and a nut seated in the opening in the bottom of the casing and having an upwardly-projecting bracket to engage the lower end of the valve-stem and to bear against the valve to hold it yieldingly and evenly to its seat.

846,645. AUXILIARY PRINTING ATTACHMENT FOR CYLINDER PRINTING-PRESSES. ASA P. BROOKS, New Ulm, Minn. Filed Nov. 3, 1906. Serial No. 341,903.

Claim.—1. The combination with a cylinder-press having the usual printing devices, of an auxiliary printing-cylinder arranged for coöperation with the press-cylinder, a lock for holding said auxiliary printing-cylinder against rotation, itself arranged to be actuated by said press-cylinder, substantially as described.

2. The combination with a printing-press having a rotary tympan-equipped cylinder and the usual printing devices coöperating therewith, of an auxiliary printing-cylinder arranged to be frictionally driven by the press-cylinder, and a lock normally holding said auxiliary cylinder against rotation and itself arranged to be actuated by said press-cylinder, substantially as described.

3. The combination with a printing-press having a tympan-equipped cylinder and the usual coöperating printing devices, of an auxiliary printing-cylinder arranged to be frictionally driven by said press-cylinder, a lock for holding said auxiliary printing-cylinder in a normal position, means for varying the normal positions of said auxiliary cylinder with respect to said lock, and means whereby the said lock will be moved into operative and inoperative positions at the proper times under rotation of the press-cylinder, substantially as described.

4. The combination with a cylinder-press, of an auxiliary printing-cylinder arranged to be frictionally driven by said press-cylinder, a notched lock-disk adjustably secured to one end of said auxiliary cylinder, a spring-pressed lock-bolt having a lock-lug engageable with the notch of said lock-disk to hold said auxiliary cylinder in

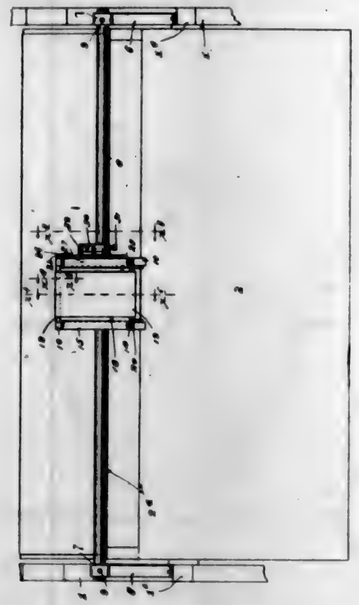

a normal position, and cam-acting means carried by the press-cylinder and operative on said lock-bolt to control the locking and releasing movements thereof, substantially as described.

846,646. TANK-CAR. THOMAS R. BROWN, New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Dec. 1, 1906. Serial No. 345,854.

Claim.—1. In a tank-car, a tank sheet or plate having a longitudinally-disposed trough-like depression, and longitudinally-disposed reinforcing-flanges; substantially as described.

2. In a tank-car, a tank sheet or plate having a longitudinally-disposed trough-like depression at its center and having its edges flanged to add stiffness to the structure; substantially as described.

3. In a tank-car, a tank sheet or plate reinforced with flanges at its edges and having circumferential tank-sheets secured to said edges; substantially as described.

4. In a tank-car, a tank sheet or plate extending from end to end of the car and having reinforcing-flanges, and circumferential tank-sheets riveted to said reinforcing-flanges; substantially as described.

5. In a tank-car, a bottom sheet or plate continuous from end to end of the car and forming a medium through which buffing and pulling stresses are transmitted; substantially as described.

6. In a tank-car, a bottom sheet or plate extending from end to end of the car for supporting the lading and forming a medium through which buffing or pulling stresses are transmitted, and tank-sheets forming the top and side walls of the tank which are secured to said bottom plate; substantially as described.

846,646.

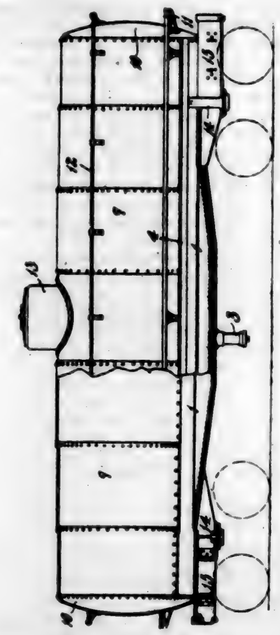

846,647. SHOULDER-BRACES. GEORGE R. CRAW and OTTO MILLER, Chicago, Ill. Filed Feb. 21, 1906. Serial No. 302,240.

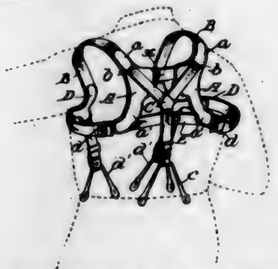

Claim.—1. A shoulder-brace comprising shoulder-straps; shoulder-pads secured thereto, and through which said shoulder-straps extend; an elastic webbing connecting said shoulder-pads; a body-strap, to which the lower ends of the shoulder-pads are connected; armpit-shields joining the free ends of said shoulder and body straps; and suspender-ends depending from said armpit-shields and shoulder-pads.

2. A shoulder-brace comprising shoulder-straps; shoulder-pads secured thereto, and through which said shoulder-straps extend; a triangular tie-pad securing the extended ends of said shoulder-straps; a body-strap, to which the lower ends of the shoulder-pads are connected; armpit-shields joining the free ends of said shoulders and body straps; and suspender-ends depending from said armpit-shields and said triangular tie-pad.

3. A shoulder-brace comprising shoulder-straps; shoulder-pads secured thereto, and through which said shoulder-straps extend; a triangular tie-pad securing the extended ends of said shoulder-straps; an elastic webbing connecting said shoulder-pads; a body-strap, to which the lower ends of the shoulder-pads are connected; armpit-shields joining the free ends of said shoulder and body straps; and suspender-ends depending from said armpit-shields and said triangular tie-pad.

4. A shoulder-brace comprising shoulder-straps; shoulder-pads secured thereto; a triangular tie-pad connected to said shoulder-pads by webbing; an adjustable body-strap to which the lower ends of the shoulder-pads are connected; armpit-shields joining the free ends of said shoulder and body straps; and suspender-ends depending from said armpit-shields and said triangular tie-pad.

5. A shoulder-brace comprising shoulder-straps; shoulder-pads secured thereto; a triangular tie-pad connected to said shoulder-pads by webbing; an elastic webbing connecting said shoulder-pads; an adjustable body-strap to which the lower ends of the shoulder-pads are connected; armpit-shields joining the free ends of said shoulder and body straps; and suspender-ends depending from said armpit-shields and said triangular tie-pad.

6. A shoulder-brace comprising shoulder-pads each provided with a transverse slit in their upper lobes; shoulder-straps secured near their ends to said shoulder-pads and having their free ends extended through said slits and secured together; a body-strap to which the lower ends of the shoulder-pads are connected; armpit-shields joining the free ends of said shoulder-straps and body-straps; and suspender-ends depending from said armpit-shields and the extended ends of said shoulder-straps.

7. A shoulder-brace comprising shoulder-pads each provided with a transverse slit in their upper lobes; shoulder-straps secured near their ends to said shoulder-pads and having their free ends extended through said slits and secured together; an elastic webbing connecting said shoulder-pads; a body-strap to which the lower ends of the shoulder-pads are connected; armpit-shields joining the free ends of said shoulder-straps and body-straps; and suspender-ends depending from said armpit-shields and the extended ends of said shoulder-straps.

8. A shoulder-brace comprising shoulder-pads each provided with a transverse slit in their upper lobes; shoulder-straps secured near their ends to said shoulder-pads and having their free ends extended through said slits; a triangular tie-pad joining the extended ends of said shoulder-straps; a body-strap to which the lower ends of the shoulder-pads are connected; armpit-shields joining the free ends of said shoulder-straps and body-strap; and suspender-ends depending from said armpit-shields and said triangular tie-pad.

846,648. OBSTETRICAL SUPPORTER. FRANCIS M. CRUME, Stiles, Tex. Filed July 24, 1906. Serial No. 327,562.

Claim.—1. A device of the character described comprising stirrups, a foot-rest extending through and fulcrumed upon each stirrup, combined loops and grips, straps connecting the stirrups and loops, looped knee-straps connected to the loops, and a cross-strap connecting the loops of the knee-straps.

2. A device of the character described comprising oppositely-disposed looped knee-straps, an adjustable strap connecting the intermediate portions of the knee-straps, triangular grips secured to the ends of the knee-straps, stirrups adjustably connected to said grips, and foot-rests secured to and adapted to rock within the stirrups.

846,649. HYDRAULIC SEPARATOR. JAMES CURATOLO, Philadelphia, Pa. Filed July 21, 1906. Serial No. 327,227.

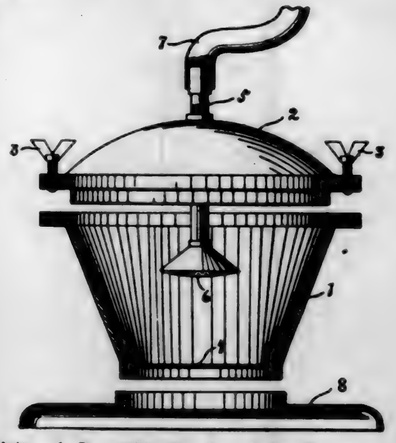

Claim.—1. In combination in a hydraulic separator, a receptacle, provided with a reticulated bottom, a cover, a centrally-located pipe mounted and vertically adjustable in said cover and provided with a spraying-nozzle whereby a downward discharge upon said reticulated bottom may be effected from varying heights above the same, substantially as described.

2. In combination in a hydraulic separator, a receptacle having inwardly-sloping sides and a meshed or perforated bottom, a cover adapted to be secured thereto, a centrally-located pipe adjustably mounted in said cover and terminating in a spraying-nozzle, means such as the flexible tubing 7 for suppying water to said pipe, and an auxiliary cover into which said receptacle may be fitted, substantially as and for the purposes described.

846,650. CIGAR-CUTTER. JAMES E. ELLIS, Plymouth, Ind. Filed Dec. 19, 1906. Serial No. 348,579.

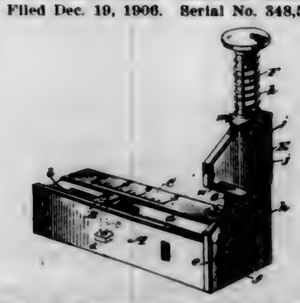

Claim.—1. A cigar-cutter comprising a suitable base with trough in which the cigar is placed, a slotted standard having a throat to receive the truck end of the cigar, a vertically-movable blade, a guide-block secured thereto and engaging the slot in the standard, means for operating the blade, and means for vertically adjusting the standard to regulate the position of the throat thereof with relation to the trough, substantially as and for the purpose set forth.

2. A cigar-cutter comprising a suitable bed or base with trough thereon, a vertically-adjustable standard upon the end of the bed or base and having a vertical guide-slot, a cutting-blade, a guide-block to which the blade is connected and engaging the guide-slot, a mortised guide, and a spring-actuated plunger engaging the mortised guide, and a finger-guard upon the bed or base, substantially as and for the purpose described.

846,651. AUTOMATIC LATCH. GEORGE C. EMMERT, Mount Morris, Ill. Filed Feb. 8, 1906. Serial No. 300,078.

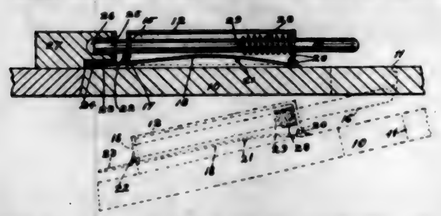

Claim.—In an automatic latch, the combination with a hollow casing secured to the door and having an opening in each of its ends and a recess or slot in its front end, of a bolt located in said openings and having a downturned end, an actuating-spring coiled around the bolt within the casing and engaging at one of its ends the bolt and at its other end one end of the casing, an engaging spring-lever located longitudinally in the casing and extending through the ends thereof between the bolt and door, said spring-lever having at one of its ends spaced-apart lugs to engage one end of the casing and provided near its other end with an outward projection located outside of the front end of the casing to engage the front end of the bolt, and also provided at its front end with a forward extension to coact with the latch-plate, and a rod transversely secured on the casing below said spring-lever, substantially as described.

846,652. COUPLING FOR SCRAPERS. JOHN ENGEBRETSEN, San Diego, Ca. Filed Sept. 22, 1905. Serial No. 279,686.

Claim.—1. A coupling for scrapers comprising a bar having an eye at one end and forked at the opposite end and means for attaching said bar to the scrapers, substantially as described.

2. A coupling for scrapers comprising a curved bar having an eye at one end and its opposite end provided with an adjustable link and means for attaching said bar to the scrapers, substantially as described.

3. A coupling for scrapers comprising a curved bar having an eye at one end and forked at its opposite end and provided with an adjustable link and means for attaching said bar to the scrapers, substantially as described.

4. A coupling for scrapers comprising a bar made in two parts one of said parts adjustable on the other for the purpose of adjusting the length of said bar and means for attaching said bar to the scrapers, substantially as described.

5. A coupling for scrapers comprising a frame designed to be attached to a scraper, a bar pivoted to said frame at one end and its opposite end designed to be attached to a scraper at the rear of the first-named scraper, substantially as described.

6. A coupling for scrapers comprising a frame designed to be attached to a scraper, braces for said frame, a bracket attached to said frame having holes, a pin, a bar pivoted to said frame at one end by said pin, substantially as described.

7. A coupling for scrapers comprising a frame designed to be attached to a scraper, a bar pivoted to said frame at one end and its opposite end designed to be adjusted lengthwise, substantially as described.

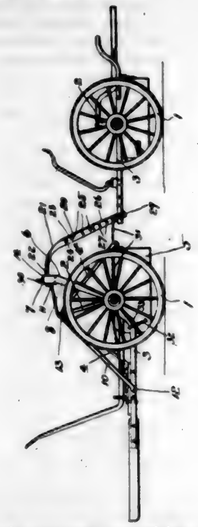

8. A coupling for scrapers comprising a frame designed to be attached to a scraper, and provided with a bracket, a bar provided with an eye, and a pin for pivoting said bar to said bracket, substantially as described.

9. A coupling for scrapers comprising a frame designed to be mounted on the axle of a scraper, braces connecting said frame with the frame of a scraper, a bracket mounted on said first-named frame and provided with upper and lower horizontal portions, having holes therein, a bar having an eye at one end, and a pin designed to engage the holes in the bracket and the eye in the bar and thereby pivot the bar to said bracket, and the opposite end of said bar provided with means for adjusting its length, substantially as described.

10. A coupling for scrapers comprising a bar turned laterally upon itself at the upper end and provided with an eye, and forked at its lower end and provided with an adjustable link and means for attaching said bar to the scrapers, substantially as described.

11. A coupling for scrapers comprising a bar the upper portion of which is in a horizontal plane and the lower portion in a vertical plane and adjustable lengthwise and means for attaching said bar to the scrapers, substantially as described.

12. A coupling for scrapers comprising a bar having its lower end adjustable as to length and means for supplementing the strain on said bar, substantially as described.

13. A coupling for scrapers comprising a bar having its lower end adjustable as to length and a chain for supplementing said bar, substantially as described.

846,653. COUPLING FOR SCRAPERS. JOHN ENGEBRETSEN, San Diego, Cal. Filed Mar. 10, 1906. Serial No. 305,334.

Claim.—1. A coupling for scrapers, comprising a pair of frames secured to a scraper, a bar connecting said frames, and means on said bar for connecting it with another scraper, substantially as described.

2. A coupling for scrapers comprising a pair of frames mounted on the axle of a scraper and connected together by means of a bar, brackets on another scraper, and means for connecting said bar with said bracket, substantially as described.

3. A coupling for scrapers comprising a frame connected to a scraper and provided with a bracket, a bracket on another scraper, and means for connecting said frame and bracket, substantially as described.

4. A coupling for scrapers comprising a pair of frames having upper and lower members connected together and forked at their ends, a bar seated on said forked ends, a bracket mounted on said bar, brackets provided with an eyebolt and a pin for connecting the bracket on said bar with the eyebolt, substantially as described.

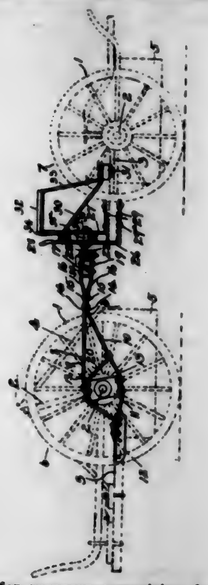

5. A coupling for scrapers comprising frames designed to be mounted on a scraper, means for connecting said frames, brackets designed to be mounted on a second scraper, and means for connecting said frames and brackets by which said scrapers are coupled together, substantially as described.

6. A coupling for connecting two or more scrapers together comprising frames provided with blocks which are mounted on the axle at each side of one of the scrapers, a bar connecting said frames, and a coupling mounted on the other scraper designed to be connected with the bar of the first-named scraper, substantially as described.

7. A coupling for connecting two or more scrapers together comprising frames provided with blocks which are mounted on the axle at each side of one of the scrapers, a bar connecting said frames, a bracket mounted on said bar, brackets mounted on the other scraper, provided with a vertically-adjustable eyebolt, and a pin for connecting the bracket on said bar with the eyebolt, substantially as described.

8. A coupling for connecting two or more scrapers together comprising frames mounted on the axle at each side of one of the scrapers, a bar connecting said frames, a bracket mounted on said bar, brackets mounted on the other scraper each provided with a series of holes, a coupling member designed to be adjusted vertically by being inserted into said holes, and means for pivotally connecting the bracket on the bar of the first-named scraper with the coupling member of the last-named scraper, substantially as described.

9. In a coupling for scrapers, a frame on one scraper, a bracket on the other scraper and means for connecting said frame and bracket, substantially as described.

846,654. FRICTION-CLUTCH. CHARLES H. ERICKSON and JOHN P. NYSTROM, Cleveland, Ohio. Filed June 4, 1906. Serial No. 320,146.

Claim.—1. A friction-clutch, comprising a belt-pulley having a rim or flange tapered inwardly on the under side, a disk or spider having a rim or flange projecting into the pulley-rim and exteriorly tapered to fit the taper of the pulley, an annular slot or recess in the pulley, a plurality of bolts, the heads of which play in said slot, and which pass loosely through holes in the spider, springs encircling the bolts and reacting between the pulley and the spider to hold the tapered surfaces apart, cam-levers pivotally connected at their outer ends to the outer ends of the bolts, and means for simultaneously moving the inner ends of the levers to press the tapered surfaces together.

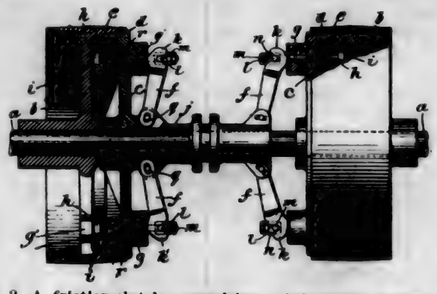

2. A friction-clutch, comprising a belt-pulley having a rim or flange tapered inwardly on the under side, a disk or spider having a rim or flange projecting into the pulley-rim and exteriorly tapered to fit the taper of the pulley, an annular slot or recess in the pulley, a plurality of bolts the heads of which play in the slot and which pass loosely through holes in the spider, springs encircling the bolts and reacting between the pulley and spider to hold the tapered surfaces apart, trunnioned swivels carried by the outward ends of the bolts, levers pivoted at their outer ends to the trunnions of the swivels and having cams bearing upon the spider, a loose sleeve on the spider-shaft, and a pin-and-slot connection between the sleeve and the inner ends of the levers.

846,655. GAME APPARATUS. THOMAS J. FALVEY, South Boston, Mass., assignor to Elizabeth Joaquin, South Boston, Mass. Filed Nov. 17, 1906. Serial No. 343,876.

Claim.—1. The combination, with a spinning-top provided with a plurality of numerals around its periphery, of a base provided with a hole adapted to receive said top, an inclined track mounted on said base, said track adapted to guide said top into said hole, and a bell adapted to be actuated by said top when said top enters said hole.

2. In a game apparatus a base provided with a hole therein, an inclined track provided with a groove terminating adjacent to said hole, and a bell having an actuating member located beneath said hole.

3. In a game apparatus a base having an outer wall extending around its periphery and an inner wall extending part way therearound and an inclined track provided with a groove, said track provided with means of attachment to the upper and lower sides of said base, respectively.

4. In a game apparatus a base having an outer wall extending around its periphery and an inner wall extending part way therearound, said base provided with a plurality of depressions in its upper side and an inclined track provided with a groove, said track provided also with means of attachment to the upper and lower sides of said base, respectively.

5. In a game apparatus a base having an outer wall extending around its periphery and an inner wall extending part way therearound, said base provided with a plurality of depressions in its upper side, said base also provided with a hole therein, an inclined track provided with a groove, said track also provided with means of attachment to the upper and lower sides of said base, respectively, and a bell having an actuating member located beneath said hole.

6. In a game apparatus a base having an outer wall extending around its periphery and an inner wall extending part way therearound, said base provided with a plurality of depressions in its upper side, said base also provided with a series of holes in its upper side and a second series of holes in its under side, and an inclined track provided with a series of projections adapted to enter said series, respectively.

846,656. SWING. FRANCIS J. FORGET, Goshen, Ind. Filed Jan. 10, 1907. Serial No. 351,655.

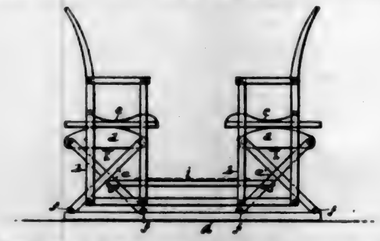

Claim.—1. A swing comprising in combination a base, a seat-frame, a seat, inverted rockers arranged in pairs to carry the seat, and swinging arms secured at their lower extremities to the base and at their upper extremities to opposite ends of the rockers, the swinging arms of each pair crossing each other, substantially as set forth.

2. A swing comprising in combination a base, a seat-frame, a seat, inverted rockers arranged in pairs to carry the seat, swinging arms secured at their lower extremities to the base and at their upper extremities to opposite ends of the rockers, the swinging arms of each pair crossing each other, and a spring secured at its lower extremities to a fixed portion of the mechanism and at its upper end to the seat to restore the seat to normal position.

3. A swing comprising in combination a base, a seat-frame, a seat, inverted rockers arranged in pairs to carry the seat, swinging arms secured at their lower extremities to the base and at their upper extremities to opposite ends of the rockers, the swinging arms of each pair crossing each other, and a cross-bar underneath the rocker, and a spring connected at its lower end with the cross-bar and at its upper end to the seat for the purpose described.

4. A swing comprising in combination a base, a seat-frame, a seat, inverted rockers arranged in pairs to carry the seat, swinging arms secured at their lower extremities to the base and at their upper extremities to opposite ends of the rockers, the swinging arms of each pair crossing each other, and a foot-rest secured at its extremities to the corresponding swinging arm.

5. A swing comprising in combination a base, a seat-frame, a seat, inverted rockers arranged in pairs to carry the seat, swinging arms secured at their lower extremities to the base and at their upper extremities to opposite ends of the rockers, the swinging arms of each pair crossing each other, and a foot-rest arranged to swing in the same direction as the rockers.

846,657. PROCESS OF EXTRACTING COPPER. OSCAR FRÖLICH, Berlin, Germany. Filed Mar. 12, 1906. Serial No. 305,579.

Claim.—1. A method of extracting copper from copper ores and smelting products, which method consists in first heating the said products without admission of air to a temperature, by which the loose sulfur is driven off, then chlorinating at a temperature between 0° centigrade and 350° centigrade by means of chlorinating-gases.

2. A method of extracting copper from copper ores and smelting products, which method consists in first heating the said products without admission of air to a temperature, by which the loose sulfur is driven off, then treating it with gaseous chlorin, hydrochloric acid and ferric chlorid at a temperature between 0° and 350° centigrade.

3. A method of extracting copper from copper ores and smelting products, which method consists in first heating the said products without admission of air, to a temperature, by which the loose sulfur is driven off, then treating with gaseous chlorin, hydrochloric acid and ferric chlorid at a temperature between 0° and 350° centigrade then adding air at a temperature higher than the boiling-point of ferric chlorid, and finally collecting the chlorinating-gases thus formed.

4. A method of extracting copper from copper ores and smelting products, which method consists in first heating the said products without admission of air, to a temperature, by which the loose sulfur is driven off, then treating with gaseous chlorin, hydrochloric acid and ferric chlorid at a temperature between 0° and 350° centigrade then adding air at a temperature higher than the boiling-point of ferric chlorid, collecting the chlorinating-gases formed, leaching with water and finally introducing the solution into a rotating apparatus, containing iron.

5. A method of extracting copper from copper ores and smelting products, which method consists in first heating the said products without admission of air to a temperature by which the loose sulfur is driven off, then treating with gaseous chlorin, hydrochloric acid and ferric chlorid at a temperature between 0° and 350° centigrade then adding air at a temperature higher than the boiling-point of ferric chlorid, then collecting the chlorinating-gases formed, leaching with water and introducing the solution into a rotating apparatus, containing iron, after the deposition of copper oxidizing the remaining solution in a rotating apparatus by an air-blast, then driving off the water and the water of crystallization by heating, and finally regaining the chlorinating-gases by introducing a limited quantity of air.

6. The method of extracting copper from copper ores and smelting products, which method consists in first heating the said products without admission of air to a temperature by which the loose sulfur is driven off, then treating with gaseous chlorin, hydrochloric acid and ferric chlorid at a temperature between 0° and 350° centigrade, then adding air at a temperature higher than the boiling-point of ferric chlorid, then collecting the chlorinating-gases formed, leaching with water introducing the solution into a rotating apparatus containing iron, after the deposition of copper, oxidizing the remaining solution in a rotating apparatus by an air-blast, then by driving off the water and the water of crystallization by heating, and regaining the chlorinating-gases by introducing a limited quantity of air and treating the chlorinated sulfur, obtained during the chlorination, with hot water.

7. The method of extracting copper from copper ores and smelting products, which method consists in first heating the said products without admission of air to a temperature by which the loose sulfur is driven off, then treating with gaseous chlorin, hydrochloric acid and ferric chlorid at a temperature between 0° and 350° centigrade, then adding air at a temperature higher than the boiling-point of ferric chlorid, then collecting the chlorinating-gases formed, leaching with water and introducing the solution into a rotating apparatus containing iron and after the deposit of copper, oxidizing the remaining solution in a rotating apparatus by an air-blast, then driving off the water and the water of crystallization by heating, and regaining the chlorinating-gases by introducing a limited quantity of air, treating the chlorinated sulfur, obtained during the chlorination with hot water, finally after taking off of copper and iron, heating the remaining part of the ore above the boiling temperature of sulfur and distilling the sulfur formerly combined to the copper and the iron.

846,658. CIGARETTE-BOX MAKING AND PACKING MACHINE. FELIPE GIROUD, New York, N. Y., assignor to American Wrapping and Box Machine Company, New York, N. Y., a Corporation of New York. Filed June 11, 1901. Serial No. 64,127.

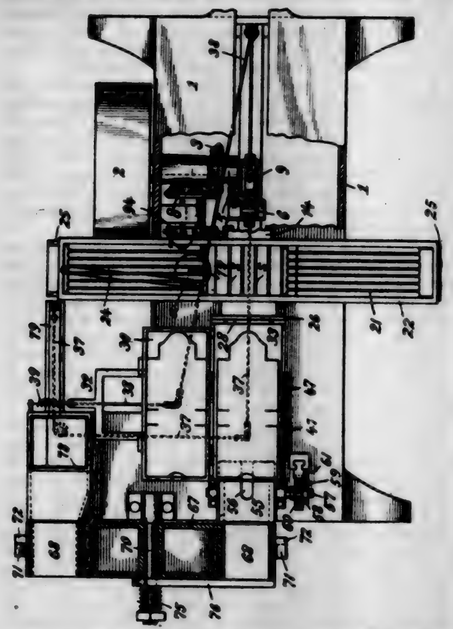

Claim.—1. In a wrapping-machine, means for feeding a wrapper, means for feeding to the latter the article to be wrapped and for advancing the wrapper with the article, a receiving-drum, means for locking the same against rotation, means for shifting the drum axially to release the same, and means thereupon coacting with the drum to rotate the latter.

2. In a wrapping-machine, a shuck-containing receptacle, means for feeding a wrapper, means for feeding to the latter the article to be wrapped and for advancing the wrapper with the article in a rectilinear direction, means located in the path of movement of the wrapper coacting therewith during said advancing movement to fold the wrapper about the article, a receiving-drum having a pocket designed to be brought into alinement with the said path of movement of the article and wrapper, and means for feeding a shuck to said compartment before the latter is brought into alinement with the said path of movement.

3. In a wrapping-machine a shuck-containing receptacle, means for feeding the shucks successively therefrom along a rectilinear path, means for feeding a wrapper along a parallel path and a drum turning on an axis parallel with said paths of movement having pockets designed to register successively, first with the path of feed of the shucks and thereafter with the path of feed of the wrappers as and for the purpose set forth.

4. In a wrapping-machine a receptacle containing the articles to be wrapped, a receptacle containing the wrappers, a plunger for advancing the article and wrapper, folding means located contiguous to the path of movement of the plunger, means for feeding the article into the path of the plunger in advance of the latter, means for feeding the wrapper into the path of an article, means for advancing the plunger whereby the article will be advanced and engage the wrapper and the latter will be brought into engagement with the folding means whereby it will be folded about the article, means for containing a plurality of shucks, means for feeding the same successively in a direction substantially parallel with the line of movement of the wrapper and article, a drum having a plurality of pockets designed to be registered in rotation with the line of feed of the chucks and thereafter with the line of feed of the wrapper and article, as and for the purpose set forth.

5. In a wrapping-machine a shuck-receptacle, a receiving-drum provided with a plurality of pockets, means for feeding the shucks thereinto, an article-receptacle, a wrapper-receptacle, an advancing-plunger, means for feeding the articles in advance of the plunger, and means for feeding the wrapper in advance of the article, the article and wrapper being advanced under the influence of the plunger in a single general direction and discharged into registering pockets of the drum, as and for the purpose set forth.

6. The drum herein described, provided with the compartments, and with lugs 73, 74 on its periphery, in combination with a driving-shaft a cam-lever on the driving-shaft to engage and force the drum outward; a cam-lever on the same shaft to coöperate with said lugs and to rotate the drum, and a spring to throw the drum back to its normal position after the operation of the said cams, substantially as described.

846,659. CONCRETE BRIDGE. GEORGE GLASCOCK, Veedersburg, Ind. Filed May 31, 1906. Serial No. 319,634.

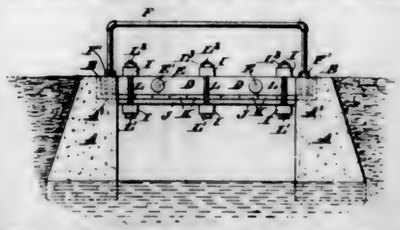

Claim.—1. In concrete bridges for highways, the combination in concrete abutments of approved design at either side of the waterway, the same comprising angular niches at the upper inner corners of the concrete abutments, the angle-plates securely positioned within the niches, and the abutting shoulders integral with the abutments at the ends of the niches for the prevention of any longitudinal movement of the plates and dependent parts positioned within the niches, substantially as specified.

2. In a concrete bridge for highways, the same comprising concrete abutments of approved design at either side of the waterway and provided with angular niches, angle-plates, and abutting shoulders integral with the abutments as and for the purpose set forth, horizontal beams set parallel with their ends upon the angle-plates in the angular niches and lateral flanges at their upper and lower sides which project inwardly toward each other making the side beams C-shaped and of greater height than the inner beams and inner beams I-shaped and of less height than the outer side beams as and for the purpose specified, lateral tie-rods inserted through ordinary openings in the horizontal beams made in the manner and for the purpose set forth, concrete of approved materials and proportions provided with a smooth surface even with the tops of the inner beams and curved upward at the sides to the tops of the outer side beams for the purpose set forth, an earthen cover of preferred clay overlaid upon the concrete to or above the plane between the tops of the outer side beams as and for the purpose set forth, and removable side rails set in metallic sockets secured in the concrete for the prevention of side traveling, all as and for the purposes set forth, substantially as specified.

846,660. GAGE. PERLEY R. GLASS, Quincy, Mass., and LORENZ MUTHER, Denver, Colo.; said Glass assignor to The Peerless Machinery Company, Boston, Mass. Filed June 30, 1906. Serial No. 324,134.

Claim.—1. In apparatus of the class described, an arm having a bearing portion or foot, and an adjustable fulcrum sustaining said bearing portion or foot, whereby the inclination of the under side of the bearing portion or foot may be adjusted to the taper of the stock to be reskived, and on which said bearing portion or foot rests.

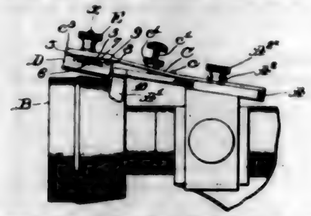

2. In apparatus of the class described, an arm having a bearing portion or foot slotted longitudinally, and an adjustable fulcrum mounted on said slot and sustaining said bearing portion or foot, change of position of the fulcrum changing the inclination of the lower side of the bearing portion or foot in contact with the stock.

3. In apparatus of the class described, a foundation-plate having a portion to constitute an edge-guide, combined with an arm provided with a bearing portion or foot, and an adjustable fulcrum on which said foot may tip between its ends, the adjustment of the fulcrum providing for varying the inclination of the under side of said bearing portion or foot to adapt the same to the already-skived edge of material to be reskived.

4. A foundation-plate having a portion to constitute an edge-guide, a bearing portion or foot, and means to sustain adjustably a fulcrum on which said bearing portion or foot is mounted, the adjustment of the fulcrum varying the inclination of the under side of the bearing portion or foot, and means for adjusting vertically the device for sustaining said bearing portion or foot.

5. In apparatus of the class described, a plate slotted for the reception of a carriage, a carriage adjustably mounted in said plate and having a fulcrum, a bearing portion or foot sustained by said fulcrum, change of position of the fulcrum changing the inclination of the lower side of the bearing portion or foot, and means to prevent longitudinal movement of said bearing portion or foot.

846,661. EGG-BEATER, WHISK, &c. ERNEST R. GODWARD, Invercargill, New Zealand. Filed Apr. 19, 1906. Serial No. 312,548.

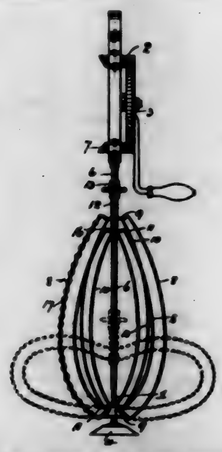

Claim.—1. In a device of the kind indicated, in combination, spindles rotating in opposite directions to each of which beaters are attached, a friction-sleeve upon one spindle connected with one set of beaters, and a sucker upon the lower end of the principal spindle adapted to be fixed while the spindle rotates, as described and set forth.

2. In a device of the kind indicated, in combination, a principal spindle and a sleeve-spindle upon the same, adapted to rotate in opposite directions, sets of beaters, one set revolving with the principal spindle and one set with the sleeve-spindle, a friction-sleeve adapted to rotate with the sleeve-spindle and to be moved up and down the same, a wire or wires encircling each of the beaters, and a sucker upon the lower end of the principal spindle, all substantially as described and operating as set forth.

846,662. EGG-BEATER. ERNEST R. GODWARD, Invercargill, New Zealand. Filed Dec. 22, 1906. Serial No. 349,117.

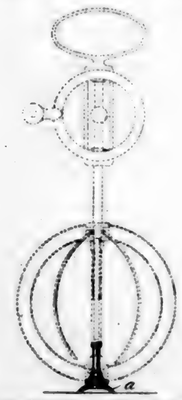

Claim.—1. In combination with an egg-beater, a suction base or support.

2. In combination with an egg-beater, a disk attached to the lower end thereof by a loose connection, said disk being made concave to give suction support, substantially as described.

846,663. CHAIN-SAW. ALBERT M. GRANBERY, Collierville, Tenn. Filed June 21, 1906. Serial No. 322,753.

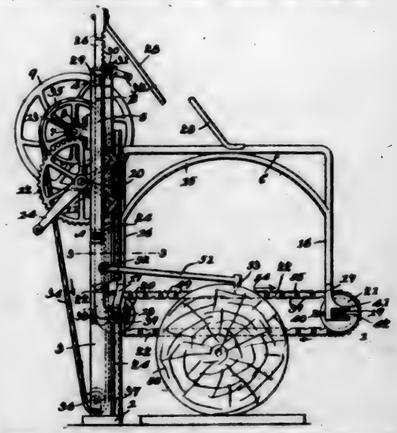

Claim.—1. The combination of a main frame comprising spaced uprights, guideways on the uprights, a saw-carrying frame extending outwardly from between the uprights, a saw-actuating shaft mounted on the latter frame, means on the shaft engaging in the guideways, a rack guided on the main frame and connected with the saw-carrying frame, means on the main frame for actuating the rack,

and a bracing member connecting the saw-carrying frame and rack to support the outer end of the former.

2. The combination of a main frame comprising a pair of uprights, angle-irons on the uprights for forming guideways, a saw-carrying frame arranged at right angles to the main frame with its outer end suspended free, a shaft on the saw-carrying frame for actuating the saw, bearing-blocks for the ends of the shaft engaging in the guideways, a vertically-disposed rack having its lower end connected with the said shaft, means on the upper end of the main frame guiding the rack, and a bracing member between the upper end of the rack and the outer portion of the saw-carrying frame.

3. The combination of a main frame comprising a pair of uprights, vertical guideways thereon, a saw-carrying frame comprising an inverted-U-shaped structure extending outwardly at right angles to the plane including the uprights, a driving-shaft on the main frame disposed with its axis at right angles to the plane of the saw-carrying frame, a saw-driving shaft on the second frame disposed parallel with the said driving-shaft, a sprocket-and-chain mechanism on the main frame actuated by the driving-shaft, means for guiding the saw-carrying frame along the guideways, a sprocket on the saw-driving shaft permanently meshing with the chain of the said mechanism, and means for feeding the saw-carrying frame.

4. The combination of a main frame comprising uprights spaced apart and connected at their ends, a driving-shaft adjacent the upper end of the frame, a crank-shaft arranged at one side of the frame for actuating the driving-shaft, a shaft at the base of the frame, sprockets on the shafts at points intermediate the uprights, a sprocket-chain extending from one sprocket to the other and arranged with one-half extending vertically, guides on the uprights disposed parallel with the said half of the sprocket-chain, an inverted-U-shaped structure having its lower ends bifurcated, grooved wheels arranged between the bifurcations of the said structure, a chain saw extending around the wheels, a saw-driving shaft journaled on one of the bifurcated ends of the structure and carrying one of the grooved wheels, bearing-blocks on the saw-driving shaft engaging in the guideways of the main frame, a rack connected with the said structure, a pinion meshing therewith, and a crank-shaft for actuating the pinion supported on the upper end of the main frame and having its crank on the same side of the latter as the crank for the driving-shaft.

5. The combination of a main frame comprising a base, spaced uprights mounted thereon, and a cross-piece mounted on the uprights, with a saw-carrying frame extending outwardly from between the uprights, a saw-actuating shaft mounted on the latter frame, metal strips of angular cross-section arranged on the uprights and coöperating therewith to form guideways, blocks on the ends of the shaft movable in the guideways, a rack guided on the main frame and connected with the saw-carrying frame, means on the cross-piece for actuating the rack, and a bracing member connecting the saw-carrying frame and rack to support the outer end of the former.

6. The combination of a main frame, a horizontal driving-shaft mounted thereon, a fly-wheel on the shaft, a power-multiplying gearing for transmitting motion to the driving-shaft, a sprocket-and-chain device on the frame actuated by the driving-shaft, vertical guides on the frame, a saw-carrying frame movable on the main frame, a wheel on the saw-carrying frame for driving the saw, a shaft for the latter wheel, bearing-blocks on the ends of the shaft engaging in the guides, a sprocket connected with the wheel and arranged to be permanently in mesh with the chain of said device, and means for raising and lowering the saw-carrying frame.

7. The combination of an upright rectangular frame, a vertically-movable saw-carrying frame extending from one side of the main frame and movable on the latter, a rack attached to the lower portion of the saw-carrying frame and guided on the main frame, a bracing member connected with the rack at its upper portion and with the outer portion of the saw-carrying frame, a crank-shaft mounted at the upper end of the main frame, a pinion on the crank-shaft meshing with the rack, a driving-shaft below the crank-shaft, a sprocket-and-chain mechanism on the main frame arranged to receive motion from the driving-shaft, and means on the saw-carrying frame for receiving motion from the said mechanism and imparting it to the saw.

846,664. CATTLE-STANCHION. JOHN HACKER, Caledonia, Mich. Filed Nov. 26, 1906. Serial No. 345,162.

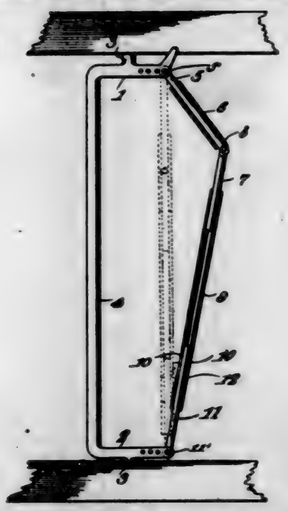

Claim.—1. A stanchion comprising head and foot pieces with a side piece rigidly connecting the same together, an opposite side piece composed of pivoted sections which in turn are pivotally connected with the head and foot pieces and a slidable member coöperating with the end of one of the sections for holding said section of the last said side piece in laterally-extended position and adapted to be moved by the animal to release the side sections whereby they may assume substantially vertical positions and be held in such position by said sliding member.

2. A stanchion comprising head and foot pieces, a side piece rigidly connecting the head and foot pieces together, a laterally-movable side comprising a member pivoted to the head-piece, a sleeve slidably located upon said member, a rod pivoted near its upper end to said member and having a notch for the reception of the edge of the sleeve, a tube attached to said rod, a second rod pivoted to the foot-piece and entering said tube and means for limiting the movement of said tube with relation to the last said rod.

864,665. CLEANER AND POLISHER. WILLIAM J. M. HAMES, Atlanta, Ga. Filed Mar. 23, 1906. Serial No. 307,716.

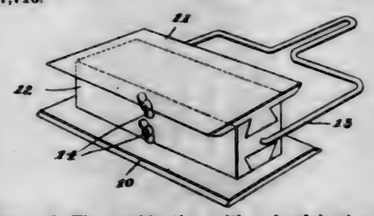

Claim.—1. The combination with a head having dovetailed grooves therein; of a yoke embracing the head and pivotally connected to opposite portions thereof, a handle upon the yoke, a shoe upon one face of the head and extending beyond the adjoining faces of the head and beyond those portions of the yoke embracing the head, a shoe upon one face of the head and parallel with the first-mentioned shoe, opposite edges of the last-mentioned shoe extending beyond the adjoining faces of the head, dovetailed extensions upon the shoes and within the grooves in the head, and independent means for securing said extensions within the grooves.

2. The combination with a head having a groove therein; of a yoke embracing the head and pivotally connected to opposite portions thereof, a handle upon the yoke, a shoe upon one face of the head and extending beyond the adjoining faces of the head and beyond those portions of the yoke embracing the head, an extension upon the shoe and within the groove in the head, and means for securing said extension within the groove.

846,666. CYLINDRICAL REAMER. BENOT M. W. HANSON, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Filed July 17, 1902. Serial No. 115,954.

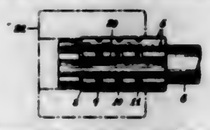

Claim.—A reamer for cylindrical holes, having its cutting-ribs interrupted by depressions to form a plurality of independent circumferential series of cutting edges disposed in parallel planes at right angles with the axis of the reamer, the said cutting edges being provided with a cutting clearance.

846,667. CHALK-TROUGH. CHRISTOPHER A. HESS, Bismarck, N. D. Filed July 2, 1906. Serial No. 324,414.

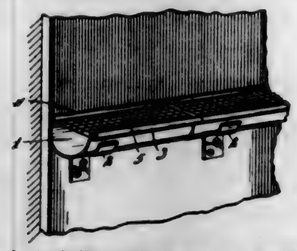

Claim.—1. A chalk-trough formed of a series of sheet-metal section having overlapping ends and adapted to be removably supported at the lower endge of the blackboard, wire screens arranged across said trough-sections and secured thereto, and means on the outer edge of the trough for preventing chalk or erasers from falling off said screens.

2. A chalk-trough comprising a sheet-metal plate bent to form a trough with one edge thereof bent inwardly against the side wall thereof and with its other edge extended laterally and outwardly and then turned inwardly and bent under to form a chalk-holder and screen-clamp, and a screen clamped between the bent edges of said trough.

846,668. METALLIC PISTON-PACKING. WILLIAM HOEY, Chicago, Ill. Filed Sept. 4, 1906. Serial No. 333,150.

Claim.—1. In combination with a stuffing-box having a sleeve provided with a tapered bore, a piston-rod, a metal ball surrounding the piston-rod and divided so that the several parts will contact the piston-rod and the walls of the stuffing-box to form fluid-tight joints, and means for holding the several parts of said ball in contact and operative position.

2. In combination with a stuffing-box having a sleeve provided with a tapered bore, a piston-rod, a metal ball having an axial opening to receive the piston-rod, and divided so that when assembled the joints meet at right angles, and means for holding the several parts of said ball in contact with the piston-rod, the walls of the stuffing-box and each other.

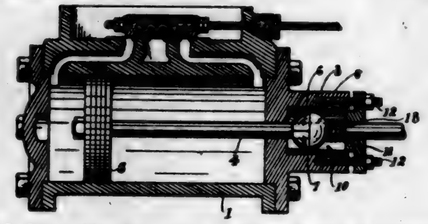

3. In combination with a stuffing-box having a sleeve provided with a tapered bore, a piston-rod centrally located therein, a metal ball divided into four equal parts and having an axial opening to receive the piston-rod, a gland to said stuffing-box, a spring between the gland and the metal ball, and means for adjusting the pressure of the spring, whereby the several parts of the ball are held in contact with the piston-rod, the walls of the stuffing-box and each other to form fluid-tight joints.

4. The combination of a stuffing-box, a sleeve therein having a tapered internal bore, a piston-rod centrally located therein, a metal ball having an axial opening to receive the piston-rod, said ball being divided into four parts so that all the joints meet at right angles, a gland to close the stuffing-box, a spring surrounding the piston-rod and in contact with the metal ball at one end and with the gland at the other end, and bolts to hold the gland in place, and adjust the pressure of the spring.

846,669. WEIR-GAGE. EDWARD B. HOWELL, Butte, Mont. Filed May 14, 1906. Serial No. 316,798.

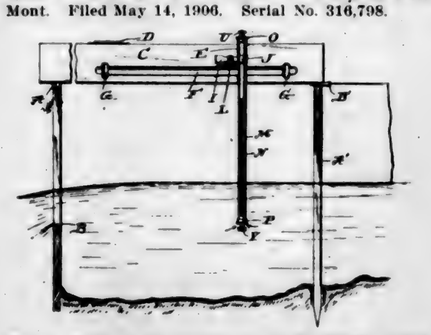

Claim.—1. In an instrument for gaging liquid at weir-notches, the combination of a straight-edge; a gage-tube adjustably secured to said member at substantially right angles to the longitudinal axis thereof; and a valve for opening and closing said tube.

2. In an instrument for gaging liquid at weir-notches, the combination of a straight-edge; a transparent gage-tube adjustably secured thereto; a valve for opening and closing said tube; and a scale, located in operative relation with the tube.

3. In an instrument of the character specified, the combination of a straight-edge; a transparent tube adjustably secured thereto; a valve located at the lower end of the tube; a graduated valve-stem connected to the valve and extending through the tube; and means for actuating said stem to open and close the valve.

4. In an instrument of the character specified, the combination of a straight-edge; and a gage secured thereto, said gage comprising a shell or casing provided with a sight-opening or slot in its face, a glass tube mounted within the shell, means for effecting a tight joint between the ends of the tube and the shell, a valve located at the lower end of the shell and arranged to close an opening

formed therein leading into the tube, a valve-stem provided with graduations upon that face which stands in line with the opening formed in the shell, means for preventing rotation of the stem, and means to move the stem endwise to open and close the valve.

5. In an instrument of the character specified, the combination of a straight-edge; and a gage adjustably secured thereto, said gage comprising a metallic shell or casing provided with a longitudinally-disposed sight-opening, a glass tube mounted within the casing, a cap-piece secured upon each end of the shell, a gasket interposed between each cap-piece and the adjacent end of the tube, a valve located beneath the lower cap-piece and arranged to close a relatively large opening formed therein, a flat, graduated valve-stem secured to the valve and projecting into notches extending outwardly from the opening in the lower cap-piece, and means for raising and lowering the stem.

6. In an instrument of the character specified, the combination of a straight-edge provided with a seat or recess extending across the same and with a second recess longitudinally disposed; a clamp arranged adjacent to said recesses; and a gage-tube arranged to be held by the clamp in one or the other recess.

7. In an instrument of the character specified, the combination of a straight-edge provided with two recesses intersecting each other at substantially right angles; a gage-tube adapted to be seated in one or the other of said recesses; and a clamp located adjacent to the point of intersection of the recesses, whereby said clamp may be employed to hold the tube in either recess, substantially as described.

8. In an instrument of the character specified, the combination of a straight-edge; a transparent tube adjustably secured thereto; a valve located at the lower end of the tube; a valve-stem connected to the valve and extending upwardly through the tube; and a thumb-screw secured upon the upper threaded end of the stem, whereby the valve may be opened and closed when the gage is in the water without the necessity of the user placing his hand in the water, substantially as described.

846,670. GRITS AND DUST PURIFIER. CHARLES JAQUET, Strassburg-Königshofen, Germany, assignor to Schneider, Jaquet & Cie., G. M. B. H., Strassburg-Königshofen, Germany. Filed Nov. 15, 1906. Serial No. 343,593.

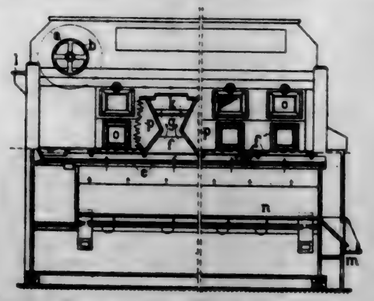

Claim.—1. In a grit and dust purifier, in combination, an air-supply duct running longitudinally of the machine and having an aperture at the bottom, working sieve-chambers alongside of the air-duct through which the air-current ascends, troughs below the sieve-chambers on each side of the supply-duct, an upper settling-chamber communicating therewith, and means for removing descending matter from the said working and settling chambers and troughs, substantially as described.

2. In a grit and dust purifier, in combination, an air-supply duct running longitudinally of the machine and having at the bottom a longitudinal aperture, working sieve-chambers alongside of the air-duct through which the air-current ascends, troughs below the sieve and on each side of the air-supply duct, an upper settling-chamber communicating with each, means for closing the exit from the sieve-chambers, and means for removing descending matter from the said working and settling chambers, substantially as described.

3. In a grit and dust purifier, in combination, a single air-supply duct running longitudinally of the machine and having an exit-aperture at the bottom, a plurality of working sieve-chambers alongside of the supply-duct and above its exit through which the air-current from said exit ascends, and an upper settling-chamber running longitudinally of the machine directly above the supply-duct and divided into a plurality of compartments each communicating with a corresponding sieve-chamber, and means common to all the compartments for conveying away matter settling in the same, substantially as described.

4. In a grits and dust purifier, in combination, a single air-supply duct running longitudinally of the machine and having an exit-aperture at the bottom, a plurality of working sieve-chambers alongside of the supply-duct through which the air-current from the exit of the supply-duct ascends, a plurality of upper settling-chambers above the supply-duct and communicating with the sieve-chambers, the surface of the said chambers upon which the material could lodge being inclined, and conveyers located in the bottom of and common to all of the settling-chambers, substantially as described.

5. In a grits and dust purifier, in combination, an air-supply duct running longitudinally of the machine and having an aperture at the bottom, a plurality of working sieve-chambers on each side of said duct and above the exit thereof, through which the air-current ascends, and a single settling-chamber located above the duct and between the working chambers and divided into a plurality of compartments each communicating with an oppositely-located pair of said working chambers, means for stopping the passage of air through the sieve-chambers at will, and means common to all the compartments for conveying away matter settling therein, substantially as described.

846,671. TYPE-WRITER ATTACHMENT. CLARENCE D. KING and ANDREW H. MILSTEAD, Atlanta, Ga., assignors to Elliott-Fisher Company, New York, N. Y., a Corporation of Delaware. Filed May 5, 1905. Serial No. 258,925.

Claim.—1. In a type-writing machine, the combination with a flat platen, of a frame mounted to travel thereover, printing mechanism on the frame, and means for retaining a work-sheet which is movable over the platen with the frame and disposed to be written upon by the printing mechanism.

2. In a type-writing machine, the combination with a flat platen, of printing mechanism mounted to travel thereover, and a work-holder movable over the platen with the printing mechanism and retaining the work-sheet which is disposed in position to be printed upon and is movable relative to the printing mechanism for line-spacing.

3. In a type-writing machine, the combination with a flat platen, of a frame mounted to travel thereover and carrying a work-sheet, and printing mechanism mounted on and movable with the frame and disposed to print upon said sheet.

4. In a type-writing machine, the combination with a flat platen, of a support movable thereover and carrying a work-sheet, printing mechanism mounted on the support, and means for advancing said sheet relative to the printing mechanism for line-spacing.

5. In a type-writing machine, the combination with a flat platen, of printing mechanism movable thereover, a work-sheet movable with the printing mechanism, line-spacing mechanism for the machine, and means operated by the said line-spacing mechanism for advancing the work-sheet relative to the printing mechanism.

6. In a type-writing machine, the combination with a flat platen, of a frame mounted to travel thereover, a carriage movable on the frame, printing mechanism mounted on the carriage, and a pair of work-holders carried by the frame and retaining a work-sheet extending between the holders and under the printing mechanism.

7. In a type-writing machine, the combination with a flat platen, a frame mounted to travel thereover, a carriage movable on the frame, and printing mechanism mounted on the carriage, of delivering and receiving members mounted on the frame to support a work-sheet wound upon said members and extending under the printing mechanism, and means for rotating the receiving member to line-space the sheet.

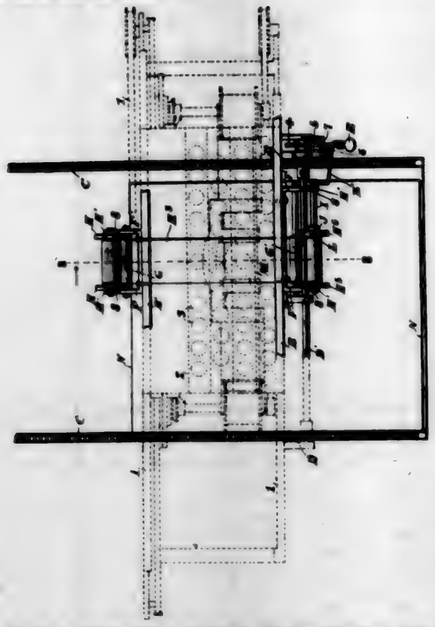

8. In a type-writing machine, the combination with a flat platen, a frame mounted to travel thereover, a carriage on the frame, and printing mechanism, of delivering and receiving members mounted on the frame and retaining a work-sheet wound upon said members and extending under the printing mechanism, line-spacing mechanism including a line-spacing lever movable to cause the advance of the frame over the platen, means for rotating the receiving member to advance the work-sheet relative to the printing mechanism, and an operative connecton between said means and the line-spacing lever.

9. The combination with a type-writer including a platen, printing mechanism, and line-spacing mechanism, of means for retaining a work-sheet opposite the platen and in position to be directly printed upon by the type-writer, delivering and receiving members retaining a narrow tally-sheet extending between said members and located opposite a portion only of the work-sheet to permit the transference of type impressions from one sheet to the other, simultaneously with the printing of that portion of the record of which a tally-record is desired, and means whereby the operation of the line-spacing mechanism of the type-writer will operate the receiving member to advance the tally-sheet in the direction of line-spacing.

10. In a type-writer, the combination with a frame and platen, relatively movable, of means for retaining separate work sheets or webs one on the platen and the other on the frame, and printing mechanism on the frame.

11. In a type-writer, the combination with a frame and platen, of printing mechanism on the frame, devices for retaining separate work sheets or webs of different widths one opposite the other on the frame and platen, respectively, and each in position to be operated upon directly by the printing mechanism, the frame and platen being relatively movable to space the character printed.

12. The combination with a type-writing machine, of delivering and receiving spools adapted to deliver and receive a work-sheet led opposite the printing mechanism, and line-spacing mechanism including a reversible dog arranged to engage and rotate the receiving-spool in either direction according to the direction in which the work-sheet is wound thereon.

13. The combination with a type-writer including a platen and a frame, relatively movable for line-spacing, and printing mechanism mounted on the frame, of means for retaining separate work-sheets on the platen and frame respectively and in position to be printed upon.

14. The combination with a type-writer including a platen and a frame, relatively movable for line-spacing, and printing mechanism mounted on the frame, of means for retaining separate work-sheets on the platen and frame respectively and in position to be printed upon, and means for line-spacing the sheet retained on the frame.

15. The combination with a type-writer including a platen and a frame relatively movable for line-spacing and printing mechanism mounted on the frame to print upon a primary work-sheet on the platen, of a pair of holders carried by the frame to retain a tally-sheet extending between the holders and interposed between the platen and printing mechanism, and line-spacing mechanism for effecting relative movement of the platen and printing mechanism to line-space the printing on the primary work-sheet and arranged to advance the tally-sheet for line-spacing.

16. The combination with a type-writer including a platen and printing mechanism, relatively movable, of means for retaining a primary work-sheet on the platen, a pair of holders for a tally-sheet extending between the holders and interposed between the platen and printing mechanism, line-spacing mechanism for the primary work-sheet, and means for advancing the tally-sheet from one holder to the other.

17. The combination with a type-writer including a platen and printing mechanism, relatively movable, of means for retaining a primary work-sheet on the platen, a pair of holders for a tally-sheet extending between the holders and interposed between the platen and printing mechanism, line-spacing mechanism for the primary work-sheet, and means operated by said line-spacing mechanism for advancing the tally-sheet from one holder to the other.

18. The combination with a platen and printing mechanism, relatively movable for letter and line spacing mechanism, a primary work-sheet retained on the platen, line-spacing mechanism arranged to cause relative line-spacing movement of the platen and printing mechanism to line-space the matter printed on the primary sheet, holders retaining a tally-sheet extended over a portion of the primary sheet, and means for operating one of said holders to line-space the tally-sheet.

19. The combination with a type-writer including a platen and printing mechanism, of means for retaining a work-sheet opposite the platen and in position to be directly printed upon by the type-writer, delivering and receiving members retaining a narrow tally-sheet extending between said members and located opposite a portion only of the work-sheet to permit the transference of type impressions from one sheet to the other simultaneously with the printing of that portion of the record of which a tally-record is desired, and line-spacing mechanism operative to advance the tally-sheet from the delivering member to the receiving member and to effect relative line-spacing movement of the platen and printing mechanism.

20. The combination with a type-writing machine including a platen and printing mechanism mounted to travel thereover, of holders retaining a plurality of work-sheets in position to be printed upon, and line-spacing mechanism operative to cause the printing mechanism to travel relative to the platen and to cause the line-space advance of one of the work-sheets relative to the printing mechanism.

21. The combination with a type-writing machine including a platen and printing mechanism relatively mov-

able for line-spacing, of means for holding work-sheets in position to be printed upon, and line-spacing mechanism operative to effect relative line-spacing movement of the platen and printing mechanism and a line-spacing movement of one of the work-sheets relative to the printing mechanism, said line-spacing mechanism being also operative to effect relative movement of the printing mechanism and platen without advancing said work-sheet relative to the printing mechanism.

22. The combination with a type-writing machine including a platen and printing mechanism, of means for retaining two work-sheets between the platen and printing mechanism, and line-spacing mechanism including a line-space actuator operative to effect line-spacing of the writing on one or both of said sheets.

23. The combination with a type-writing machine including a frame, a carriage movable thereon for letter-spacing, and a platen, of line-spacing mechanism mounted on the frame and operative to advance the outermost sheet of a plurality of sheets interposed between the platen and printing mechanism without advancing the innermost of said sheets.

24. The combination with a type-writing machine including a platen, a frame movable thereover for line-spacing, and printing mechanism mounted on the frame, of means for retaining a work-sheet between the platen and printing mechanism, and line-spacing mechanism common to both the frame and the work-sheet.

25. The combination with a type-writing machine including a platen, a machine-frame movable thereover, and printing mechanism mounted on the frame, of a paper-carrier also mounted on the frame and arranged to deliver a work-sheet between the platen and printing mechanism.

26. The combination with a type-writing machine including a platen, a frame movable thereover, and printing mechanism mounted on the frame, of a work-holder likewise mounted on the frame to engage and hold a work-sheet interposed between the platen and printing mechanism, said holder being movable to advance the sheet.

27. The combination with a type-writer including a platen, a frame mounted to travel thereover, and printing mechanism mounted on the frame, of paper-holders carried by the frame in front and rear thereof to engage and hold a paper web extended between the platen and printing mechanism.

28. The combination with a type-writing machine, including a platen and printing mechanism, relatively movable, of means for holding work-sheets between the platen and printing mechanism, line-spacing mechanism operative to line-space the writing on both sheets and also operative to effect relative movement of the platen and printing mechanism to line-space the writing on one sheet only.

29. The combination with a type-writing machine including a platen and printing mechanism, of line-spacing mechanism operative to effect line-spacing of the writing on a plurality of work-sheets interposed between the platen and printing mechanism, and also operative to effect line-spacing of the writing on the inner sheet without advancing the outer sheet relative to the printing mechanism.

30. The combination with a type-writing machine including a frame, a carriage movable thereon, a platen, and printing mechanism relatively movable for letter-spacing, of means for supporting a work-sheet from the frame of the type-writer exclusively and interposed between the platen and printing mechanism.

31. In a type-writing machine, the combination with a flat platen, of printing mechanism movable thereover, means for causing a work-sheet to move with the printing mechanism, line-spacing mechanism for said work-sheet, and means operated by said line-spacing mechanism for causing the printing mechanism to be advanced over the platen.

846,672. HIGH-PRESSURE ELECTRICAL APPARATUS. FRANZ J. KOCH, Dresden, Germany. Filed Jan. 24, 1906. Serial No. 297,713.

Claim.—1. In high-pressure electrical apparatus the combination of a primary alternating-current circuit, a primary coil in said circuit, resistance in the primary circuit, a secondary consumption-circuit, a secondary coil in said secondary circuit an electrical apparatus to be worked said apparatus having a certain breaking-through pressure, a secondary auxiliary circuit, a secondary coil in said auxiliary circuit and means for letting through current not desired in the secondary consumption-circuit said means stopping the current of the sign desired in the consumption-circuit.

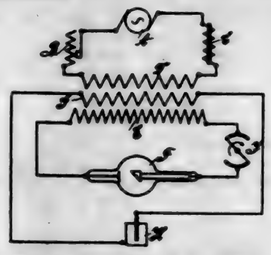

2. In a high-pressure electrical apparatus the combination of a primary alternating-current circuit, a primary coil in said circuit, resistance in the primary circuit, a secondary consumption-circuit, a secondary coil in said secondary circuit, a high-pressure valve device arranged in the secondary consumption-circuit, an electrical apparatus to be worked said apparatus having a certain breaking-through pressure, a secondary auxiliary circuit, a secondary coil in said auxiliary circuit and means for letting through current not desired in the secondary consumption-circuit said means stopping the current of the sign desired in the consumption-circuit.

3. In high-pressure electrical apparatus the combination of a primary alternating-current circuit, a primary coil in said circuit a self-induction device in the primary circuit, a secondary consumption-circuit, a secondary coil in said secondary circuit, an electrical apparatus to be worked said apparatus having a certain breaking-through pressure, a secondary auxiliary circuit, a secondary coil in said auxiliary circuit and an electric valve device adapted to coöperate with the self-induction device of the primary circuit and increase the pressure in the secondary consumption-circuit during the passage of current of desired sign and to reduce the pressure during the passage of current of undesired sign.

4. In high-pressure electrical apparatus the combination of a primary alternating-current circuit, a primary coil in said circuit, a self-induction device in the primary circuit, a secondary consumption-circuit, a secondary coil in said secondary circuit, an electrical apparatus to be worked said apparatus having a certain breaking-through pressure, a secondary auxiliary circuit, a secondary coil in the auxiliary circuit, an electric valve device in the auxiliary circuit and a condenser in said circuit adapted to coöperate with the self-induction device in the primary circuit and increase the pressure in the secondary consumption-circuit during the passage of a current of the desired sign and reduce the pressure during the passage of current of undesired sign.

5. In high-pressure electrical apparatus the combination of a primary alternating-current circuit, a primary coil in said circuit, resistance in the primary circuit, a secondary consumption-circuit, a secondary coil in said secondary circuit, an electrical apparatus to be worked said apparatus having a certain breaking-through pressure, a secondary auxiliary circuit, a secondary coil in said auxiliary circuit, said coil consisting of windings of the primary coil and adapted to form a by-path and means for letting through current not desired in the secondary consumption-circuit said means stopping the current of the sign desired in the consumption-circuit.

6. In high-pressure electrical apparatus the combination of a primary alternating-current circuit, a primary coil in said circuit, resistance in the primary circuit, a secondary consumption-circuit, a secondary coil in said secondary circuit, an electrical apparatus to be worked said apparatus having a certain breaking-through pressure, a secondary auxiliary circuit, a secondary coil in said auxiliary circuit, said coil consisting of windings of the primary coil and adapted to form a by-path, an electric valve device in the auxiliary circuit and a condenser in the said auxiliary circuit adapted to coöperate with the self-induction device in the primary circuit and increase the pressure in the secondary consumption-circuit during the passage of the current of the desired sign and reduce the pressure during the passage of the current of undesired sign.

846,673. ELECTRIC SWITCH. ANDREW KORSCHE, Chicago, Ill., assignor to The Liquid Carbonic Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 26, 1905. Serial No. 293,238.

Claim.—1. An electric switch comprising a stationary contact, a contact-lever fulcrumed at one end, a movable contact carried by said lever at its other end, a handle-lever arranged in substantial alinement with the contact-lever and fulcrumed at one end between the ends of the contact-lever, and yielding means connecting the handle-lever and the contact-lever and comprising a spring-pressed rod slidably arranged in the handle of the handle-lever, said rod being pivotally connected at its forward end to the contact-lever and pivotally jointed in front of the handle.

2. An electric switch comprising a stationary contact, a contact-lever fulcrumed at one end, a movable contact carried by said contact-lever at its other end, a handle-lever fulcrumed at one end between the ends of the contact-lever, said fulcrums being in a plane above the stationary contact, and a spring-controlled rod connected to said handle-lever between its ends and to said contact-lever between its ends.

3. In an electric switch, the combination of a stationary contact, a contact-lever fulcrumed at one end, a movable contact carried by the other end of said contact-lever, a handle-lever fulcrumed at one end between the ends of the contact-lever, said fulcrums being in a plane above the stationary contact, a rod pivotally connected to the contact-lever and slidably arranged in the handle-lever, and a spring within the handle-lever acting on said rod.

4. In an electric switch, the combination of a stationary contact, a contact-lever fulcrumed at one end, a movable contact carried by said contact-lever at its other end a handle-lever fulcrumed at one end between the ends of the contact-lever, said fulcrums being in a plane above the stationary contact, a rod pivotally connected at one end to said contact-lever and slidably arranged in the handle-lever, said rod being jointed adjacent to said handle-lever, and a spring within the handle-lever acting on said rod.

5. In an electric switch, the combination of a stationary contact, a bifurcated contact-lever fulcrumed at its bifurcated end, a movable contact carried by the other end of said contact-lever, a handle-lever bifurcated at one end and fulcrumed at its bifurcated end between the ends of the contact-lever, the bifurcated ends of said contact and handle levers overlapping one another, and yielding means connecting said levers and located within their bifurcated ends.

6. In an electric switch, the combination of a base, a stationary contact on the base, standards on the base, a bifurcated contact-lever having its bifurcated end fulcrumed in a pair of said standards, a movable contact carried by the other end of said contact-lever, a bifurcated handle-lever fulcrumed at its bifurcated end in another pair of said standards and located between the ends of said contact-lever, yielding means connecting said levers and located within their bifurcated ends, and means for limiting the outward movement of said levers.

7. An electric switch comprising a base, a stationary contact on the base, standards on the base, a bifurcated contact-lever fulcrumed at its bifurcated end in a pair of said standards, a movable contact carried by the other end of said lever, a bifurcated handle-lever having its bifurcated end arranged to overlap the bifurcated end of the contact-lever, said bifurcated end of the handle-lever being fulcrumed in another pair of said standards located between the ends of the contact-lever, means for limiting the outward movement of said levers, a rod pivotally connected at one end to the contact-lever between the movable contact and the fulcrum of the handle-lever, and having its other end slidably arranged in said handle-lever, a compression-spring within the handle-lever and acting on said rod, and a joint in said rod between said handle-lever and the fulcrum of the contact-lever.

846,674. GUN-RACK. EDWIN E. LAMB, Hartford, Conn., assignor of one-half to Frank Claffey, Hartford, Conn. Filed Oct. 11, 1905. Serial No. 282,359.

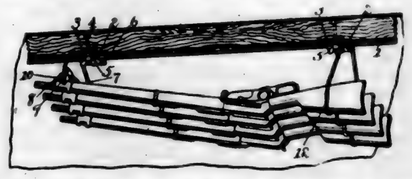

Claim.—1. In combination with the ridge-pole of a tent, a gun-rack including a muzzle and a butt support secured to the ridge-pole and each including a frame having side parts shaped to conform to the sloping walls of the tent and a transversely-arranged piece rigidly secured to a side part and forming means for support of the muzzle and butt of a rifle.

2. In combination with the ridge-pole of a tent, a gun-rack removably secured thereto and including a muzzle and a butt support each including a frame having side parts shaped to conform to the sloping walls of the tent and a transversely-arranged piece rigidly connected to a side part and forming means of attachment for the muzzle and butt of a rifle.

3. In combination with the ridge-pole of a tent, a gun-rack including a base secured to the under side of the ridge-pole with side parts embracing the sides of the pole, and a frame secured to said base and depending therefrom and having means for holding a rifle.

4. In combination with the ridge-pole of a tent, a gun-rack including a butt-support depending from the ridge-pole and having recesses for the reception of the butts of the rifles and a muzzle-support depending from said ridge-pole and having hooks for the reception of the swivels of the rifles.

5. An improved gun-rack including a base having knuckles formed thereon to embrace the sides of a ridge-pole, a frame with its ends projecting through said knuckles and secured therein and bent at an angle thereto, and having means for holding a rifle therein.

6. In combination with the ridge-pole of a tent, a gun-rack including a butt-support having a base with knuckles to embrace the sides of the ridge-pole with a frame having its ends extending through the knuckles and bent to embrace the same, said frame being bent at an angle to the base and having means for supporting the butts of rifles, and a muzzle-support including a similarly-formed base with hooks secured to a lower cross-bar.

7. In combination with the ridge-pole of a tent, a gun-rack including a muzzle and a butt support secured to the ridge-pole and each including a frame having side parts depending from the ridge-pole and a transversely-arranged piece rigidly connected to the side parts and forming means for the support of the muzzle and butt of a rifle.

846,675. AUTOMATIC CLOSING DEVICE FOR DOORS OF RAILWAY-CARS. CARL LEHNERT, Marxloh, Germany. Filed Oct. 2, 1906. Serial No. 337,053.

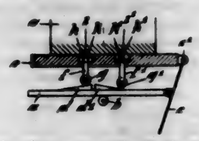

Claim.—A device for automatically locking the doors of railway-cars while the train travels, comprising in combination with the railway-car, rods *a* mounted at both sides of said car, rollers *b* mounted below said rods and adapted to allow of the latter being moved longitudinally, baffle-plates *c* pivotally connected to each end of said rods and fixed by pivotal means to the face of said car, wedge-like projections *d d'* provided on said rods below the doors of said car, and vertical bolts *f f'* movably and securely mounted in the floor of said car and capable of being moved upward and of entering a groove provided in the doors of said car and thus locking the latter upon said rods *a* being moved longitudinally under the influence of the natural wind-draft produced during the run of the train on said baffle-plates, substantially as described and shown.

846,676. TROUSERS-HANGER. ROBERT J. LINKLATER, Buffalo, N. Y. Filed Feb. 20, 1905. Serial No. 246,446.

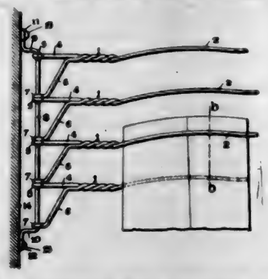

Claim.—1. A trousers-hanger comprising two members which are intertwisted in an intermediate part for mutual support and extend parallel and in proximity from one end of the intermediate intertwisted part to one end of said members and curve in correspondence to the lower extremity of the trousers-leg between which the lower extremities of trousers are adapted to be slipped to suspend the trousers in inverted position from the hanger and extend at an angle from each other from the opposite end of the intermediate part to provide vertically-separated means of attachment to a suitable support.

2. A trousers-hanger including two wires having outer portions extending parallel and in proximity between which the lower extremities of trousers are adapted to be slipped to suspend the trousers in inverted position from the hanger, intermediate intertwisted portions for mutual support and inner portions extending at an angle to provide separated means of attachment to a suitable support and provided at their inner ends with eyes.

3. In combination, a vertical support and a plurality of individual trousers-holders mounted in a vertical row on said support, each of said individual holders being arranged at a different horizontal plane whereby the trousers are supported at different heights and comprising two wires having outer portions extending parallel and in proximity between the lower extremity of trousers and slipped to support them therefrom in inverted position, intermediate portions which are twisted together for mutual support, and inner portions having eyes encircling the vertical support and which are separated to stiffen the supporting of the holders from the vertical support, substantially as set forth.

4. In combination, a vertical support adapted to be attached to any convenient point, and a plurality of trousers-holders mounted on said vertical support in a vertical row whereby said trousers-holders are in different horizontal planes and support the trousers at different heights, each of said holders comprising two wires having outer portions extending parallel and in proximity between which trousers are adapted to be supported, intermediate intertwisted portions for mutual support, and inner portions one of which extends diagonally downward and inward from the intertwisted portions and has an eye at its end encircling the support, and the other of which extends substantially horizontal inwardly and also has an eye encircling the support whereby each support is supported at two different points to stiffen its support and also separate the holders sufficiently from each other for convenient manipulation.

846,677. SLIPPER-SOLE. OSMOND E. LOWERY and WILLIAM D. LOWERY, Brooklyn, N. Y. Filed Jan. 25, 1906. Serial No. 297,831.

Claim.—A slipper-sole comprising a stiffening-sole-shape piece, a sheet of leather or other suitable material, secured upon the under side of said sole-shape piece, and extending upward, around and above the edge thereof to form a flange, and a binding-strip secured to and supporting said flange, said binding-strip being under tension and serving as the only means to support said flange.

846,678. FASTENING DEVICE. MARIE L. MARTINEZ, Baltimore, Md. Filed Feb. 12, 1906. Serial No. 300,745.

Claim.—1. A fastening device comprising an eye member made from a single piece of spring metal doubled upon itself to provide an upper and a lower portion, the upper portion being resilient or springy and adapted for movement toward and from the lower portion, and each portion being provided with a keyhole-slot which slots register with each other, and the upper portion being provided with humps at opposite sides of the slot therein, and a stud member having a stud, the head of which is adapted to pass upwardly through the enlarged portion of the slot in the lower portion of the eye member and then through the registering enlarged portion of the slot in the upper portion and then to ride over the said humps and lie behind the latter.

2. A fastening device comprising a section or member having upper and lower portions which overlap, the upper portion being resilient and provided with a keyhole-slot and the lower portion also having a keyhole-slot, the two slots registering with each other and a second section provided with a stud adapted to engage within the slots of the sections, the said upper portion being bent downwardly upon each side of the slot therein to form guides to direct the head of the stud upwardly over the upper face of the upper portion as and for the purpose set forth.

3. A fastening device comprising a section having upper and lower portions, said portions being constructed from a strip of spring metal bent back upon itself so that the upper and lower portions overlap, the said upper and lower portions having registering slots, and a second section having a stud adapted to engage within said slots, the upper portion being bent downwardly upon each side of the slot therein to form guides to direct the head of the stud upwardly over the upper face of the upper portion as and for the purpose set forth.

4. A fastening device comprising a section having upper and lower overlapping portions, the upper portion being resilient and provided with a slot and the lower portion also having a slot, humps formed in the upper portion at opposite sides of the slot therein, and a second section having a stud adapted to engage within said slots, the upper portion being bent downwardly upon each side of the slot therein to form guides to direct the head of the stud upwardly over the upper face of the upper portion as and for the purpose specified.

5. A fastening device comprising a section having upper and lower portions provided with registering slots, the upper portion being bent down upon each side of the slot therein to form guides 10, and a second section having a headed stud adapted to engage within the slots, the said stud being adapted to pass upwardly through the slot in the lower portion of the eye member and be then directed by said guides upwardly through the slot in the upper portion of the eye member so that the head of the stud will lie upon the upper face of said upper portion as set forth.

846,679. CARBURETER. MORRIS B. MASON and EDWARD M. SINCLAIR, Sioux City, Iowa, assignors, by mesne assignments, to Columbia Gas & Construction Company, Sioux City, Iowa, a Corporation of South Dakota. Filed Feb. 1, 1906. Serial No. 298,993.

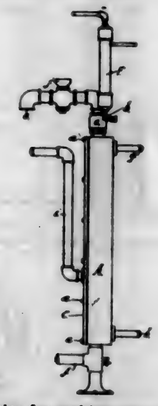

Claim.—In a device for making gas, a U-shaped frame or case forming an outer chamber, pipes for introducing heated air, vapor or steam into said chamber for heating the same, in combination with a plate secured to the open side of said frame forming a central chamber therein, perforated baskets suspended one above another in said central chamber, said baskets being larger at the top than at the bottom, pipes leading into the top of said central chamber from a source of gasolene-supply and the outer air, valves for regulating the supply of gasolene and air thereto, and pipes at the side and bottom of said chamber for conducting the gas therefrom, substantially as described.

846,680. GAS-MACHINE. MORRIS B. MASON and EDWARD M. SINCLAIR, Sioux City, Iowa, assignors, by mesne assignments, to Columbia Gas & Construction Company, a Corporation of South Dakota. Filed Sept. 19, 1906. Serial No. 335,309.

Claim.—1. In a machine for the manufacture of gas, the combination with a primary atomizer consisting of a coil or series of tubes and perforated baskets suspended in said tubes, a source of liquid-supply from which the gas is made, means for introducing a supply of air into said tubes and means for regulating the supply of liquid and air and for forcing the liquid from said source of supply, of secondary atomizers consisting of vertical tubes communicating with the primary atomizer and perforated baskets in said tubes, means for supplying the liquid direct to said secondary atomizer and means for heating the liquid and air in said atomizer, substantially as described.

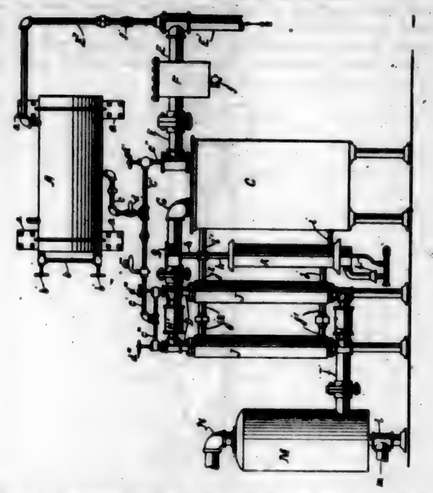

2. In a machine for the manufacture of gas, the combination with a source of liquid-supply from which the gas is made, a primary atomizer consisting of a series of tubes or coils inclosed in a heated tank or chamber, means for introducing a supply of air and for regulating the supply of liquid and air, perforated baskets suspended in said coils through which the liquid and air are required to pass, of secondary atomizers leading from the primary atomizer and consisting of vertical tubes inclosed in heated chambers, perforated baskets suspended in said tubes, means for introducing the liquid direct into said secondary atomizer for regulating the degree of richness of the gas, and a chamber for cooling said gas and drawing the moisture therefrom, substantially as described.

846,681. BLACKBOARD-ERASER CLEANER. HERMAN MEYER, Salt Lake City, Utah. Filed Feb. 10, 1906. Serial No. 300,541.

Claim.—1. A blackboard-eraser cleaner comprising a body having a dust-chamber provided with a top opening, a screen over said opening, and a slide having an opening intermediate of its ends and adapted to be reciprocated upon said screen as described.

2. A blackboard-eraser cleaner comprising a body having a dust-chamber therein provided with a top opening, a screen over said opening, lateral grooves in the side of said body which project above its top, a slide having lateral guides to engage said grooves and an opening in said slide to permit an eraser to be reciprocated upon said screen as specified.

846,682. FIREPROOF WINDOW CONSTRUCTION. WILLIAM H. MILLER, Galveston, Tex. Filed June 22, 1906. Serial No. 322,955.

Claim.—1. The combination with a window-frame having a bar near the center thereof; of a sash in said frame and below said bar, means at the lower end of said sash to coöperate with the frame to form a weather-strip, the upper edge of said sash and the lower edge of said bar being cut away whereby the sash will be telescopically received by the bar.

2. The combination with a window-frame having a transom-bar near its center; of a sash immovably secured in the lower portion of said frame, the upper edge of said sash being cut away, a reinforcing-bead at one edge of said sash; a sash pivotally secured in the upper end of said frame and coöperating means on said tilting sash and frame to form a weather-strip.

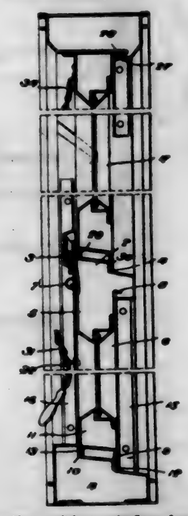

3. The combination with a window-frame having a transom-bar near the central portion thereof, the lower portion of said transom-bar being cut away; of a sash stationary in the lower portion of said frame, the upper edge of said sash being cut away whereby said sash may be telescopically entered in the transom-bar, a bead on one edge of said sash, means to retain said sash in the frame, a tilting sash in the upper portion of said frame, means to pivotally secure said sash in the frame, and a projection at the upper end of said sash adapted to engage a portion of said frame and form a weather-strip.

4. The herein-described adjustable carrying-plates for window-sash adapted to be adjustably secured to either side thereof, said plates being countersunk in the edges of the sash and adjustably held in position by retaining-bolts or screws combined with seating-plates having guide-ways or slots for receiving the lug of the adjustable plate.

846,683. MATCH-DISPENSING BOX. GEORGE H. MOORE and WILLIAM C. MOORE, Morgantown, W. Va. Filed May 3, 1906. Serial No. 315,077.

Claim.—1. A blank for a box comprising a face-section having notches in its lower end, side members integral with said face member, the lower end of said side members being at an acute angle to the longitudinal plane of the side members, flaps at the angular ends of said side members, sections integral with the longitudinal edges of said side members and adapted to be directed at right angles thereto to form the rear wall of the box, and an extension on each of said last-named sections adapted to be slanted and directed into engagement with the lower end of said face-section, said parts forming a receptacle when properly folded.

2. A receptacle of the class described comprising a face member having notches at the lower edge thereof, side members integral with said face, flap-sections at the lower ends of said side members, sections integral with said side members and at right angles thereto, a floor-section integral with the lower ends of said sections, and at an angle thereto.

3. A receptacle of the class described comprising a receptacle rectangular in cross-section and having a plurality of notches in one end of the face thereof, a bottom section at an angle to the longitudinal axial plane of the receptacle, said bottom section having a notch therein registering with one of the notches in the face of said receptacle, whereby when the matches are deposited in said receptacle, they may be readily grasped and removed therefrom.

846,684. CIGAR-LIGHTER. JAMES H. MOORE, Portland, Oreg., assignor to Moore Electric Cigar Lighter Company, Portland, Oreg., a Corporation of Oregon. Filed Oct. 2, 1906. Serial No. 337,079.

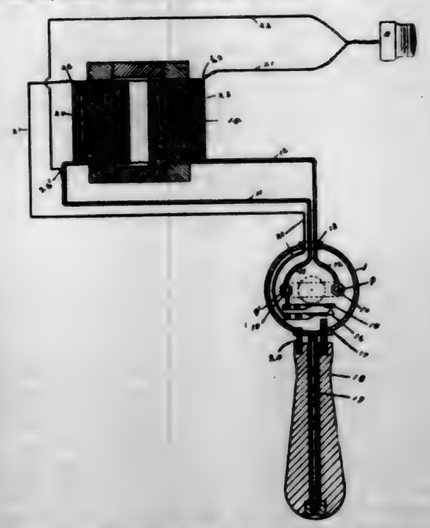

Claim.—1. A cigar-lighter comprising in combination with an electric circuit, a casing, a resistance-piece mounted within said casing and connected in said circuit, circuit making and breaking mechanism within said casing, and a handpiece for supporting said casing and having a movement relative thereto adapted to manipulate said circuit making and breaking mechanism.

2. A cigar-lighter comprising in combination with an induced or low-potential current of electricity, a casing, a resistance-piece mounted in said casing and connected in the circuit for said current, circuit making and breaking mechanism within said casing, and a handpiece slidably connected with said casing and adapted to automatically make and break the circuit when grasped and released, substantially as described.

3. A cigar-lighter comprising in combination with a source of alternating current of electricity, a transformer connected therewith, a secondary or low-potential circuit emerging from said transformer, a casing through which said circuits pass, a resistance-piece within said casing and connected in the secondary circuit, and means for making and breaking the circuits.

4. In a cigar-lighter of the character referred to, the combination with a main or primary circuit of electricity, of a transformer, a secondary circuit from said transformer, a hand-casing through which both the primary and secondary circuits pass, a resistance-piece mounted within said casing and included in the secondary circuit, circuit making and breaking mechanism included in the primary circuit and within said casing, a handpiece, and means for manipulating said circuit making and breaking mechanism, substantially as described.

846,685. FLUID-PRESSURE PLUNGER. EDGAR H. MUMFORD, Newtown township, Delaware county, Pa. Filed Nov. 9, 1905. Serial No. 286,522.

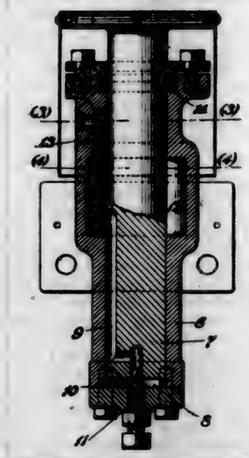

Claim.—A plunger apparatus comprising in combination, a ram, a casing or chamber therefor, said casing being constructed to stand in vertical position with a liquid chamber at the lower end, and a storage chamber above the lower end, and a packing above said storage chamber, with means for introducing a lighter fluid, as air, between said packing and said storage chamber, substantially as described.

846,686. LOOM-SHUTTLE. BERNARD MCANENANY, Fitchburg, Mass. Filed Apr. 2, 1906. Serial No. 309,447.

Claim.—1. A bobbin-spindle for loom-shuttles having a body portion provided with a rearwardly-extending shank and a forwardly-extending tapering journal, a plate fulcrumed at one end to said body and having an upturned flange at its other end to engage the bobbin, a headed bolt secured to said plate and extending through said body, a retracting spring on said bolt, and a releasing-bolt secured to said plate and extending loosely through said spindle-bobbin.

2. A shuttle for looms comprising a hollow body, a bobbin-spindle having a rearwardly-projecting shank adapted to engage a socket in said shuttle-body, a transversely-disposed pin or bolt adapted to be inserted through said shuttle-body and spindle thereby rigidly securing the latter in place, a fulcrum-lug formed on the under side of said spindle, a bobbin-holding plate fulcrumed on said lug, a retaining bolt or pin connected to said holding-plate, said bolt projecting upwardly through an aperture and a recess formed in said spindle, a coiled retracting spring arranged around said bolt in said recess, a bobbin-releasing bolt arranged in a slot in said spindle and connected at its lower end to said holding-plate and a thumb-piece or head formed on the upper end of said bolt, substantially as described.

846,686.

846,687. HAMMER. WILLIAM MCDOUGALL, Chicago, Ill. Filed June 22, 1906. Serial No. 322,942.

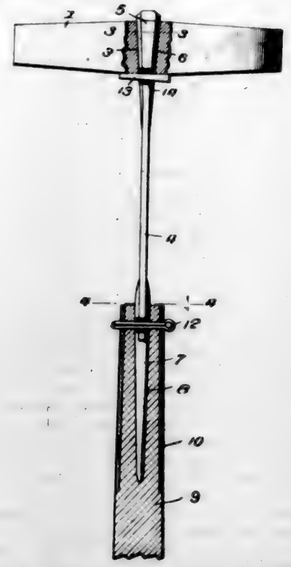

Claim.—1. A hammer of the class described comprising the combination with a hammer proper having a wedge-shaped slot therein; of a metallic section having a head, a tapered shank at the lower end of said section, a handle having a socket at one end thereof to receive said shank, means to secure said shank in said socket and additional means to secure the hammer to the head.

2. A device of the class described comprising the combination with a hammer proper having a tapered slot therein and tapered depressions in each face of said slot; of a

yielding metallic section, a tapered head at one end of said section, tapered semicircular projections on each face of said head, said head adapted to be received by the slot in the hammer, a circular tapered shank at the lower end of said metallic section, a handle-section having a socket to receive said shank, and means to secure said shank in said socket.

3. A hammer of the class described comprising the combination with a hammer proper having a wedge-shape slot therein; of a metallic section having a head adapted to fit said wedge-shaped slot, a handle secured to the lower end of said metallic section and a key adapted to be inserted through an opening in said metallic section to secure the hammer to the head.

846,688. INCLOSURE FOR POULTRY. PATRICK McEVOY, Oil City, Pa. Filed Mar. 13, 1906. Renewed Jan. 7, 1907. Serial No. 351,227.

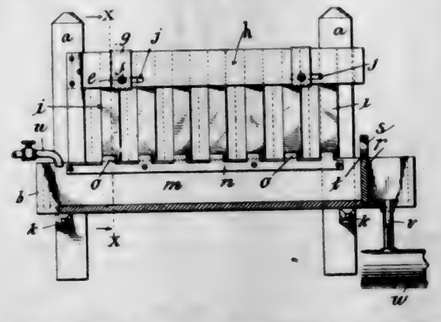

Claim.—1. In an inclosure for poultry, the combination of a frame provided with vertically-disposed members separated from one another by openings; a second frame mounted upon said frame free to slide lengthwise and provided with vertically-disposed members, whereby said openings may be covered to any degree; and strap members for binding said frames together.

2. In an inclosure for poultry, the combination of a pair of coöperating supports; a trough mounted thereon; a frame provided with slats and mounted upon said supports, said slats being separated by openings; and a second frame mounted free to slide relatively to the first-named frame and provided with means for covering said openings.

3. In an inclosure for poultry, the combination of a pair of coöperating supports; a trough mounted thereon; a frame provided with slats and mounted upon said supports, said slats being separated by openings; and a second frame mounted free to slide relatively to the first-named frame and provided with slats for covering said openings, said slats rubbing in their movement along the upper edge of the rear side of said trough.

4. In an inclosure for poultry, the combination of a frame with vertically-disposed members separated from one another by openings; a second frame mounted upon said frame free to slide lengthwise and provided with vertically-disposed members, whereby said openings may be covered to any degree; strap members for binding said frames together, and means for holding the second frame in adjusted position.

5. In an inclosure for poultry, the combination of a stationary frame with vertically-disposed members separated from one another by openings; a slidable frame mounted upon said stationary frame free to slide lengthwise and provided with vertically-disposed members, whereby said openings may be covered to any degree; devices mounted in said stationary frame which support the slidable frame during its sliding movement; and means coöperating with said devices for locking said slidable frame in any adjusted position.

846,689. TRACTION-WHEEL. JOSEPH MCNEAL, Laporte City, Iowa. Filed June 9, 1906. Serial No. 321,083.

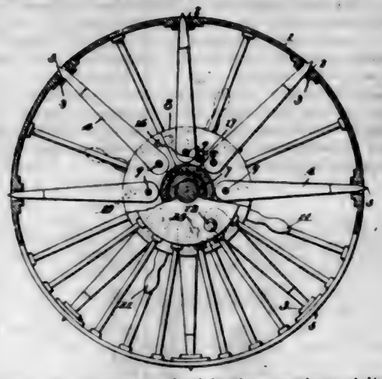

Claim.—1. A traction-wheel having openings at its rim, tractors having ends located in said openings, a plate rotatably mounted upon the wheel-hub, said plate having perforations which extend in radial lines with relation thereto, and means for securing the inner ends of the tractors to said plate at the said perforations thereof.

2. A traction-wheel having perforations at its rim, tractors passing through said perforations, a plate rotatably mounted upon the wheel-hub, the inner ends of said tractors being adjustably pivoted to said plate, and lever-operated means operatively connected with said plate and adapted to partially rotate the same.

3. A traction-wheel having openings at its rim, tractors extending through said openings, a plate rotatably mounted upon the wheel-hub, the inner ends of said tractors being pivotally and adjustably attached to said plate, a means for partially rotating said plate while the wheel is at rest, and a means for partially rotating said plate while the wheel is in motion.

4. A traction-wheel having openings provided in its rim, tractors located in said openings, plates connected together and being rotatably mounted upon the wheel-hub, the inner ends of said tractors being adjustably pivoted between said plates, and means for partially rotating said plates.

5. A traction-wheel having openings at its rim, tractors located in said opening, plates oppositely arranged and connected together and being rotatably mounted upon the wheel-hub, the inner ends of said tractors being adjustably pivoted between said plates, a means for partially rotating said plates, and a means for fixing said plates with the wheel-hub after they have been partially rotated.

846,690. DISPLAY OUTFIT. SAMUEL NEWMAN and HENRY R. BOTHWELL, Cincinnati, Ohio, assignors to The Newman Manufacturing Co., Cincinnati, Ohio, a Corporation of Ohio. Filed May 1, 1905. Serial No. 258,178.

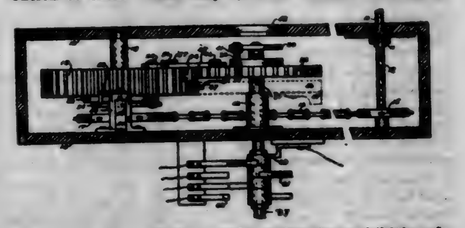

Claim.—1. In a display outfit, embracing exhibiting devices supported for rotation, the combination therewith by intervenient, operatively-connected mechanism, of two shafts, a gear-wheel on each, the face of one gear-wheel being of larger width than the face of the other and provided with a blank space extending across part of its face, one gear-wheel being slidably mounted to permit adjustment to a position whereby either the continuous or the blank part of the face of the one wheel is caused to come opposite the face of the other wheel, changing accordingly the rotation from a constant to an intermittent one, and means to throw the wheels in mesh after every intermission.

2. In a display outfit, embracing exhibiting devices supported for motion, the combination therewith by intervenient, operatively-connecting mechanism, of two shafts, a gear-wheel on each, the face of one of which is wider than the face of the other and provided with a blank space in its face opposite the face of the narrow wheel, and a single tooth on the narrower wheel adapted to engage at intervals the continuous part of the face of the broader wheel.

3. In a display outfit, embracing exhibiting devices supported for motion, the combination therewith by intervenient, operatively-connecting mechanism, of two shafts, a gear-wheel on each, one of which is provided with a blank space in part of its face whereby, when said space arrives opposite the face of the other wheel, the operation of this particular wheel is interrupted, a notched keeper provided on this wheel, a spring-actuated stop to positively lock the same by engaging this keeper, lever-arms carried by this wheel and a projection on the other wheel adapted to act upon these arms for the purpose of moving thereby the stop out of the keeper on the locked wheel, to release the same and to start it again into mesh with the acting wheel.

4. In a display outfit, embracing exhibiting devices supported in an upright position for rotary motion, the combination therewith by intervenient, operatively-connecting mechanism, of two shafts, a gear-wheel on each, the face of one of which is wider than the face of the other and has a blank space in part of its face opposite the face of the narrow wheel whereby, when said space arrives opposite this latter wheel, the meshing contact between the two opposite faces of the wheels is interrupted, a single tooth on the wheel with the narrower face which at that time remains in contact with the face of the broader wheel and projections, one or each wheel, adapted to engage each other intermittently to move the idle wheel again into mesh.

846,691. THERMAL CUT-OUT FOR ELECTRIC CIRCUITS. GWYNNE E. PAINTER, Baltimore, Md. Filed Nov. 13, 1906. Serial No. 343,184.

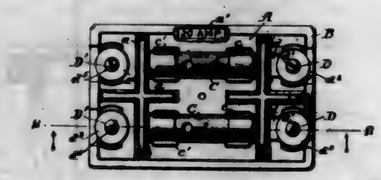

Claim.—1. Means for protecting an electric circuit comprising two fuses of different carrying capacities connected in series, and a fuse-block in which the fuse of greater carrying capacity is sealed against removal without detection.

2. A device for protecting an electric circuit comprising a fuse-block two series-connected fuses of different carrying capacities, means carried by said fuse-block for removably supporting the fuse of lesser carrying capacity, and means for sealing the fuse of greater carrying capacity to prevent its removal from said block without detection.

3. A fuse-block of fragile insulating material provided with suitable binding-posts for connecting it in an electric circuit, a fuse carried by said block, said fuse being sealed against removal therefrom without fracturing said block.

4. A fuse-holder provided with means for removably supporting an electric fuse and having a fuse sealed in said holder and connected in series with said fuse-supporting means.

5. A device for protecting electric circuits comprising a fuse, a casing therefor composed of fragile material sealed against access, means for removably supporting a second fuse, and suitable connections between said means and said sealed fuse, for the purpose specified.

6. A device for protecting an electric circuit comprising a fuse, a two-part casing inclosing said fuse, said casing being sealed against access, and means for removably supporting a second fuse, said means being connected in series with said inclosed fuse.

7. An electric fuse-support comprising a sealed casing of fragile insulating material, a fuse inclosed therein, and means secured to the outside of said casing for removably supporting a fuse said means being connected in series with the first-mentioned fuse.

846,692. CONTROLLING MEANS FOR VALVES. CHARLES A. PARSONS, Newcastle-upon-Tyne, and JOHN TURNBULL, Wallsend, England; said Turnbull assignor to said Parsons. Filed June 9, 1905. Serial No. 264,481.

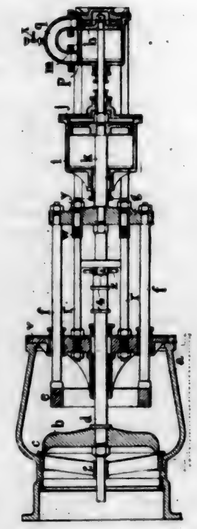

Claim.—1. In combination, a non-return valve, a controlling-motor arranged coaxially with and adapted to close said non-return valve against pressure, said valve and motor being both capable of independent motion, a dash-pot arranged to retard the action of the controlling-motor, substantially as described.

2. In combination, a non-return valve, a fluid-pressure motor, a cross-head adapted to be reciprocated by said motor, rods attached to said cross-head, and passing fluid tightly through the non-return-valve casing, a ring supported on the ends of the rods and arranged to bear against the valve so as to close it against pressure when required, substantially as described.

3. In combination, a non-return valve, a controlling-motor adapted to close said valve against pressure, means for holding the valve shut independently of the controlling-motor comprising studs *r*, a coöperating cross-head *g* and nut *y*, substantially as described.

4. In combination, a non-return valve, a fluid-pressure motor adapted to close said valve against pressure, said valve and motor being both capable of independent motion and mounted coaxially, a dash-pot cylinder, a piston in said cylinder, a passage of constricted area connecting the ends of said cylinder, substantially as described.

846,693. ROTATING MAGNET FOR DYNAMO-ELECTRIC MACHINES. CHARLES A. PARSONS, GEORGE G. STONEY, and ALEXANDER H. LAW, Newcastle-upon-Tyne, England; said Stoney and Law assignors to said Parsons. Filed Aug. 21, 1906. Serial No. 331,455.

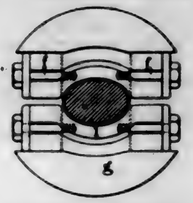

Claim.—1. In dynamo-electric machinery, a wound rotor comprising a shaft, a core having projecting pole-tips integral therewith and perpendicular to the axis of rotation, separate coils wound round said core, and bolts placed transversely across said coils, as and for the purposes described.

2. In dynamo-electric machinery, a wound rotor, comprising a shaft, a core having projecting pole-tips integral therewith, coils on said core, said coils being of reduced cross-section in proximity to said shaft, as and for the purposes described.

3. In dynamo-electric machinery, a wound rotor, comprising a shaft having one diameter longer than the other, a core having projecting pole-tips integral therewith, and coils on said core, as and for the purposes described.

4. In dynamo-electric machinery, a wound rotor comprising a shaft, a core having projecting pole-tips integral therewith, coils on said core, said coils being of reduced cross-section and being bent outward in proximity to said shaft as and for the purposes described.

5. In dynamo-electric machinery, a wound rotor, comprising an oval shaft, a core having projecting pole-tips integral therewith, coils on said core, said coils being bent outward and of reduced cross-section in proximity to said shaft, as and for the purposes described.

6. In dynamo-electric machinery, a wound rotor, comprising a shaft, a core having projecting pole-tips integral therewith, coils on said core, said coils being of reduced cross-section in proximity to said shaft, and means for dissipating heat from said reduced portions, as and for the purposes described.

846,694. BOOT-PULLER. HOWARD M. PAUL, Philadelphia, Pa. Filed Dec. 13, 1906. Serial No. 347,659.

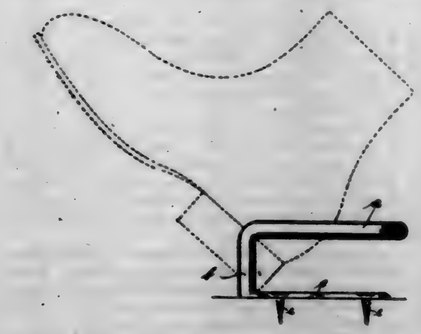

Claim.—As a new article of manufacture, a boot-puller made up of a single rod of metal the body portion of which is V-shaped; the ends of the body portion being bent vertically downward to form legs and the extremities of the rod being bent to form feet lying in a plane substantially parallel to the plane of the V-shaped body portion, and flaring outwardly from the lower end of said legs; said feet being flattened and formed with holes adapted to receive screws for securing the boot-puller to the floor.

846,695. BICYCLE PACKAGE-CARRIER. WILLIAM H. REED, Sawtelle, Cal. Filed Apr. 30, 1906. Serial No. 314,517.

Claim.—1. A package-carrier for bicycles comprising a basket-shaped receptacle provided with a substantial top rim; a rod passing from one side of the rim to the other side thereof in a direction to conform to the sides of the basket; and a stem secured to the center of said rod, said stem being adapted to be secured to the front fork of the bicycle.

2. A package-carrier for a bicycle comprising a nearly circular top rim; a side rod secured to the top rim, said side rod being of a shape to conform to the sides of the carrier; a stem secured to the bottom of said side rod, said stem being adapted to be secured to the front fork of the bicycle; a bottom plate secured upon said stem; and interlaced wires secured to said bottom plate and said top rim.

846,696. IRONING-BOARD. EDWARD C. RIEDEL, Ander, Tex. Filed Mar. 30, 1906. Serial No. 308,953.

Claim.—1. In an ironing-board, the combination with the board proper; of guide members secured thereto, said guide members having rectangular notches in the upper portions thereof, and suitable ways in the lower portions thereof, a supporting-leg for said board, a bifurcated head at the upper end of said supporting-leg, the projecting ends of which are adapted to take alternately in said ways and notches as set forth.

2. In an ironing-board, the combination with the board proper and means to secure one end thereof to a suitable support; of guide members secured to said board, said guide members having ways in the lower portions thereof, rectangular locking-notches in the upper portion thereof, a supporting-leg having a head at the upper end thereof, lateral projections carried by said head and adapted to alternately take into said ways and locking-notches, and an auxiliary support yieldingly secured to said supporting-

leg, the free end of which is adapted to engage a block upon said board.

846,697. PROCESS OF PREPARING A BUTTERMILK SUBSTITUTE. ARTHUR SAUER, Zwingenberg, Germany. Filed Nov. 7, 1905. Serial No. 286,295.

Claim.—Process of preparing a buttermilk substitute consisting in pasteurizing two hundred parts of skimmilk and twenty parts of ordinary milk at 176°, cooling the mixture to 77°–86°, mixing with 6.6 parts of a pure culture of bacteria for developing lactic acid and aroma, maintaining this temperature till the degree of acidity of 3.5 to 3.6 is obtained, quickly cooling the milk to 57°, and allowing it to acidify further as set forth, as and for the purpose specified.

846,698. STARTING-CRANK FOR EXPLOSION-ENGINES. ANTON SCHLÜTER, Munich, Germany. Filed Mar. 5, 1906. Serial No. 304,376.

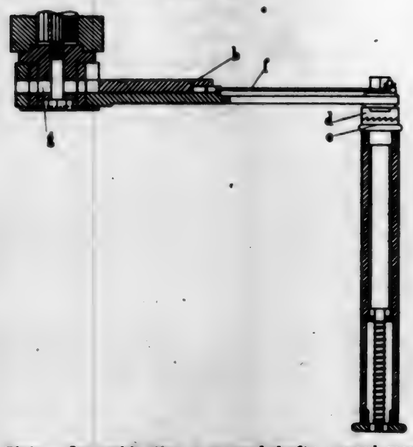

Claim.—In combination, a grooved shaft; a crank mounted thereon; a spring-actuated member secured to the crank and having an inclined end adapted to engage in the shaft-groove; a spring-actuated bolt on the crank, adapted to engage the said spring-actuated member; a handle for operating the crank; spring-controlled clutch mechanism located therein; and a rod connecting the latter with the said spring-actuated member; whereby when the engine overtakes the crank motion, the said member is pushed back and is engaged by the said bolt; and on the backward motion of the engine, the connecting-rod and said member are operated in such manner by the clutch that said member is raised and engaged and held by the bolt; substantially as described.

846,699. PLATE AND PAN LIFTER. ABRAM L. SMITH, Juniata borough, Pa. Filed July 19, 1906. Serial No. 326,813.

Claim.—A plate-lifter constructed of two lengths of wire, one of the lengths being twice doubled upon itself thereby forming four strands, said strands being twisted about one another to provide a main support and handle, the loop formed by the first bend in the length of wire providing an attaching-eye *b*, one end portion of the length of wire being bent laterally to provide a bail-shaped jaw the end of which is twisted about the main support and terminated in an eye *g* and the second end of said length being twisted about a part of the first strand and one strand of the eye *b* and said second length of wire forming a bail-shaped jaw having ends provided with hooks or eyes which intergage with the eyes *b g*, respectively, substantially as described.

846,699.

846,700. FILLING-REPLENISHING LOOM. JOHN SMITH and EDWARD S. STIMPSON, Hopedale, Mass., assignors to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Aug. 18, 1906. Serial No. 331,116.

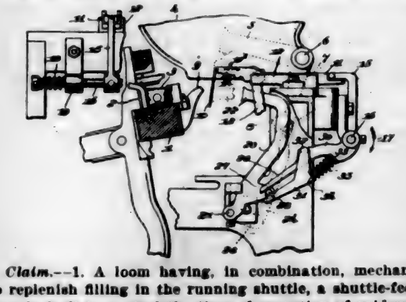

Claim.—1. A loom having, in combination, mechanism to replenish filling in the running shuttle, a shuttle-feeler, a rock-shaft to control the time of operation of said mechanism, an operating connection between the rock-shaft and feeler, to move the latter into feeling position when the shaft is turned to effect the operation of the replenishing mechanism, said connection including two relatively movable spring-controlled members, and a returning-spring for and coiled around the rock-shaft, engagement of the feeler with the shuttle causing relative movement of the spring-controlled members as the turning movement of the rock-shaft is completed, and means to effect such turning movement when filling replenishment is called for, said spring-controlled members offering no resistance to the turning movement when the shuttle is properly positioned.

2. A loom having, in combination, a lay provided with a bunter, mechanism to replenish filling in the running shuttle, means to effect the operation thereof, including a dog normally out of the bunter-path, a rock-shaft, a shuttle-feeler, a member movable therewith to govern the position of the dog, an operating connection between the rock-shaft and feeler, including a rocker-arm carrying jaws, a spring mounted on the arm to close the jaws upon a stud movable with the feeler, said stud, and means to turn automatically the rock-shaft when filling replenish-

ment is called for, said spring offering no resistance to movement of the rock-shaft and arm when the shuttle is properly positioned, arrest of the feeler by the shuttle when improperly positioned for replenishment preventing operative positioning of the dog and causing the jaws to open as the turning movement of the rock-shaft is completed.

3. In a loom provided with filling-replenishing mechanism, in combination, a rock-shaft to control the time of operation of said mechanism, a filling-fork and its slide, outward movement of the slide upon detection of filling absence turning the rock-shaft to effect actuation of the replenishing mechanism, a swinging shuttle-feeler having a projecting stud, an arm fast on said shaft and provided with a fixed jaw and a relatively movable jaw, to embrace the stud, a spring mounted on the arm to normally close the jaws and effect swinging movement of the feeler as the shaft is turned, the spring at such time offering no resistance to such turning of the rock-shaft, while permitting separation of the jaws if the shuttle-feeler engages the shuttle, and a returning-spring for the rock-shaft.

4. In a loom provided with filling-replenishing mechanism, controlling means therefor, including a rock-shaft having an arm fast thereon and provided with a jaw, a coöperating jaw pivotally mounted on the arm, a light spring between the arm and pivoted jaw, to normally close the jaws, a swinging shuttle-feeler having a lateral stud embraced by the jaws, turning of the rock-shaft acting through said arm, jaws and stud to move the shuttle-feeler into operative position prior to filling replenishment, the jaw-spring yielding when the feeler engages an improperly-positioned shuttle, to prevent filling replenishment, a filling-fork, means governed thereby to turn the rock-shaft upon detection of filling absence, and a light spring to return the rock-shaft to normal position and retract the means governed by the fork.

5. In a loom, in combination, mechanism to replenish filling in the running shuttle, a rock-shaft to control the time of operation of said mechanism, a filling-fork and its slide, movement of the latter upon detection of filling failure turning the rock-shaft to cause the operation of the replenishing mechanism, and a returning-spring for the rock-shaft, acting thereupon and located at the end adjacent the fork and slide.

846,701. SOCKET. RAY SMITH, Elkins, W. Va. Filed July 18, 1906. Serial No. 326,758.

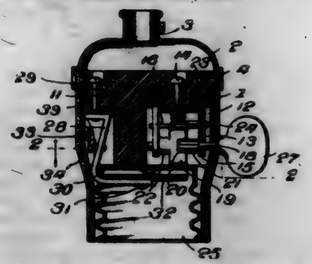

Claim.—1. A device of the class described comprising a housing, a cap for said housing, said cap having stems thereon adapted to enter slots in the housing, and a keeper longitudinally movable in said housing, said keeper having a hooked terminal adapted to engage one of the stems and prevent rotation of the cap upon the housing.

2. A device of the class described comprising a housing, a cap secured to said housing, a head within said housing having a recess in the lower end thereof, a frame in said recess, a bolt extending through the head and frame, the lower end of said bolt projecting beyond the frame, a contact-plate having an angular recess in each end thereof, to receive the depending portions of the frame, a spring disposed between the contact-plate and frame and around the extended end of said bolt, a shaft rotatably mounted in the lower end of said depending portions, a contact-key on said shaft and rigid therewith, a socket in the lower end of said housing and secured to said head, said socket being in the path of said key whereby when said key is turned to one position an electric circuit will be completed through the frame and socket.

846,702. SHOE-FASTENER. CHARLES A. SPIES, Menominee, Mich. Filed Dec. 8, 1905. Serial No. 290,986.

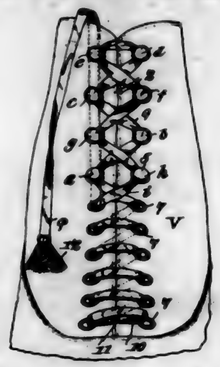

Claim.—The combination with a vamp having interior facings and provided at its upper portion with exterior studs and with eyelets in its facings and within its lower portion with eyelets extending through the vamp and facings, the two end eyelets having integral, alining sockets extending therefrom; of a lacing threaded through the eyelets in the facing and vamp and having a tip to engage either or both sockets.

846,703. SYSTEM FOR THE SUPPLY OF CURRENT DEMANDS. FRANK W. SPRINGER, Minneapolis, Minn. Filed Sept. 17, 1906. Serial No. 335,032.

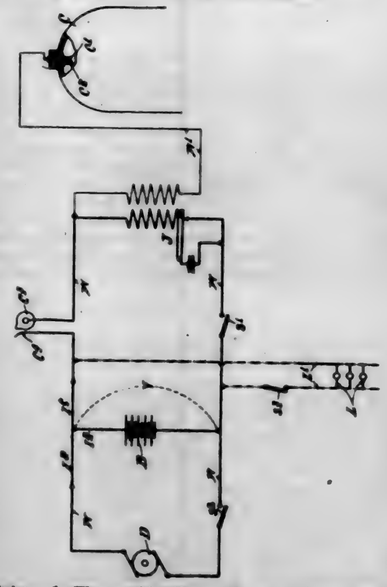

Claim.—1. The combination with a primary cell or battery, of means for intermittently sending a reverse current through said primary cell or battery, immediately following each battery discharge or series of battery discharges, to thereby depolarise the same.

2. The combination with a primary cell or battery, of means for intermittently sending a reverse current through said primary cell or battery, immediately following each battery discharge or series of battery discharges, to thereby refresh the same.

3. The combination with a primary cell or battery and a dynamo of relatively high potential, connected in parallel and arranged to coact to afford an intermittent or fluctuating current-supply, and means for intermittently opening and closing a demand-circuit of said apparatus, whereby, at times intervening current discharges, said dynamo will send reverse current through said primary battery and thereby intermittently depolarise or refresh the same.

4. The combination with an internal-combustion engine, of an ignition system therefor comprising a primary cell or battery, and engine-actuated source of electrical energy of relatively high potential connected in parallel with said primary cell or battery, and means for intermittently opening and closing a demand-circuit of said ignition system, whereby reverse current will be sent through said battery, and said battery will be intermittently depolarized or refreshed, at times intervening discharges from said battery.

5. In an apparatus for affording a continuous and an intermittent current-supply, devices receiving intermittent supplies, devices receiving continuous supplies, and a primary cell or battery and a relatively high potential source of electrical energy connected in parallel and arranged to coact to produce the said intermittent and continuous current-supplies, and which high-potential source of electrical energy operates to intermittently send reverse current through said primary cell or battery, at times intervening the intermittent current discharges.

846,704. PIPE-COUPLING. HENRY S. STUCY, Louisville, Ky. Filed Sept. 6, 1906. Serial No. 333,557.

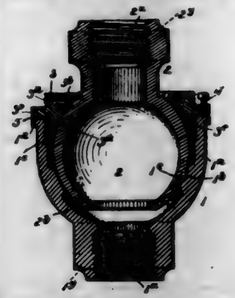

Claim.—1. In a flexible pipe-joint, the combination with a ball member and a bell member, of an internally-reversible and double-faced bearing-ring having an external annular flange and a pair of unequal externally-threaded faces, said bell member having an internally-threaded portion to receive said ring, substantially as shown and described.

2. In a flexible pipe-joint, the combination with a ball member and a bell member, of an internally-reversible and double-faced bearing-ring having an external annular flange and a pair of unequal externally-threaded faces, said bell member having an internally-threaded portion to receive said ring, and means carried by the ring-flange for engaging the bell member to lock the ring in place.

3. The combination with a ball member and a bell member, the bell member having an internal bearing-flange, a threaded mouth and a flange surrounding the mouth, of a reversible bearing-ring having a pair of equal internal bearing-faces and an external annular flange and externally-threaded portions that coöperate with the bell-mouth, said externally-threaded portions of the ring being of different relative length.

4. The combination with a ball member and a bell member, the bell member having an internal bearing-flange, a threaded mouth and a flange surrounding the mouth, of a reversible bearing-ring having a pair of equal internal bearing-faces and an external annular flange and externally-threaded portions that coöperate with the bell-mouth, said externally-threaded portions of the ring being of different relative length, and a set-screw passing through the ring-flange and engaging the bell-flange.

846,705. CANDLE-HOLDER. HERCULAN TARTSCH, Königsberg, Germany. Filed July 20, 1904. Serial No. 217,393.

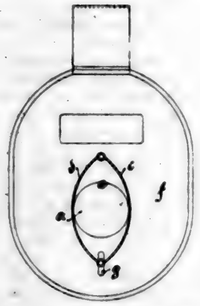

Claim.—In a candle-holder the combination of two spring-acting metal strips, pins at the ends of said strips, the said strips being connected to each other by hinge-like connection around said pins, a base-plate, one of the said pins being attached to the said base-plate, a slot in the said base-plate, the second one of the said hinge-pins being displaceable in said slot, substantially as and for the purpose set forth.

846,706. CANDLE-HOLDER. HERCULAN TARTSCH, Königsberg, Germany. Filed July 20, 1904. Serial No. 217,394.

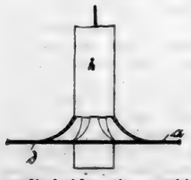

Claim.—In a candle-holder the combination of plates arranged tightly one above the other, radial tongues, produced by slots, in one of the plates and radial tongues, likewise produced by slots, in the superimposed plate, the tongues being arranged alternatingly to each other in such a manner, that the tongues of one plate cover the slots of the other plate, a central opening in the plates, means for securely combining the plates with each other, substantially as described and for the purpose set forth.

846,707. COMPOSITE BRAKE-SHOE. DANIEL O. WARD, Oak Park, Ill. Filed Jan. 22, 1906. Serial No. 297,300.

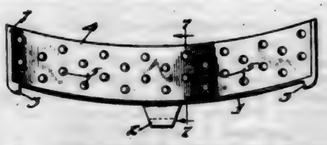

Claim.—1. A brake-shoe, comprising a back-plate without marginal inclosing projections, provided with one or more projecting inserts upon its front side, in combination

with a body positioned upon the back, arranged about and secured to said inserts, and means for securing said shoe in position.

2. A brake-shoe, comprising a back plate without marginal inclosing projections, provided with one or more projecting inserts upon its front side formed integral therewith, in combination with a body positioned upon said back arranged about and secured to said inserts, and means for securing said shoe in position.

3. A brake-shoe, comprising a back plate without marginal inclosing projections, provided with one or more projecting inserts upon its front side, each insert having a plurality of transverse openings therethrough, in combination with a metal body positioned upon said back, arranged about said inserts and entering the openings therein, and means for securing said shoe in position.

4. A brake-shoe, comprising a back plate without marginal inclosing projections, provided with a key-lug upon its back formed integral therewith and one or more projecting inserts upon its front side, in combination with a body positioned upon said back, arranged about said inserts, and independently attached to said back and inserts.

5. A brake-shoe, comprising a metal back plate without marginal projections provided with a keyway extension upon its back, projections upon its front side extending to the face of the shoe and formed integral with said back plate, in combination with a cast-iron body surrounding said projection.

6. A brake-shoe, comprising a back plate without marginal projections provided with one or more inserts upon its front side formed integral therewith and extending to the wearing-face of the shoe, in combination with a metal body positioned upon said back and arranged about and secured to said inserts, and means for securing said shoe in position.

7. A brake-shoe, comprising a back plate without marginal projections, one or more sheet or plate inserts mounted thereon formed integral therewith and extending to the wearing-face of the shoe, in combination with a metal body positioned upon the back plate, arranged about the inserts and independently attached to said back plate and said inserts, and means for securing said shoe in position.

8. A brake-shoe, comprising a back plate without marginal projections provided with openings, one or more inserts mounted upon its front side formed integral therewith and extending to the wearing-face of the shoe, in combination with a metal body positioned upon said back plate and interlocking with the openings therein, and arranged about and attached to said inserts, and means for securing said shoe in position.

9. A brake-shoe, comprising a back plate provided with a key-lug upon its back formed integral therewith, one or more sheet or plate inserts mounted thereon and extending to the wearing-face of the shoe, each insert having a transverse opening formed therein, in combination with a metal body positioned upon said back plate, arranged about and interlocking with said inserts, and means for securing said shoe in position.

10. A brake-shoe, comprising a back plate provided with openings, and one or more sheet or plate inserts mounted upon its front side extending to the wearing-face of said shoe, each insert having a transverse opening formed therein, in combination with a metal body positioned upon said back plate, arranged about said inserts and interlocking with the openings in said back plate and said inserts, and means for securing said shoe in position.

11. A brake-shoe, comprising a back plate provided with one or more sheet or plate inserts formed integral therewith, extending to the wearing-face of the shoe, both the inserts and the back plate having openings formed therein, in combination with a metal body positioned upon the back plate and arranged about said inserts and interlocking with the openings in said inserts and said back plate, and means for securing said shoe in position.

12. A brake-shoe, comprising a back plate provided with one or more sheet or plate inserts formed integral therewith, extending to the wearing-face of the shoe, both the inserts and the back plate having openings formed therein, in combination with a metal body positioned upon the back plate and arranged about said inserts and interlocking with the openings in said inserts and said back plate and means upon the back plate for securing said shoe in position.

13. A brake-shoe back of suitable form without marginal projections, provided with one or more inserts positioned upon its front side and adapted to extend to the wearing-face of the shoe, and means formed integral with said back for securing the finished shoe in position.

14. A brake-shoe back plate of suitable form, provided with one or more inserts formed integral therewith positioned upon its front side and adapted to extend to the wearing-face of the shoe, and means upon said back plate for securing the finished shoe in position.

15. A brake-shoe back plate of suitable form provided with one or more sheet or plate inserts formed integral therewith positioned upon its front side and adapted to extend to the wearing-face of the shoe, and means upon the back plate for securing the finished shoe in position.

16. A brake-shoe back plate of suitable form, provided with one or more inserts positioned upon its front side each insert provided with transverse openings, and means upon said back plate for securing the finished shoe in position.

17. A brake-shoe back plate of suitable form provided with openings, one or more inserts mounted upon its front side and adapted to extend to the wearing-face of the shoe, and means formed integral with said back plate for securing the finished shoe in position.

18. A brake-shoe back plate of suitable form provided with one or more inserts upon its front side adapted to extend to the wearing-face of the shoe, both the inserts and the back plate having openings formed therein, and means upon the back plate for securing the finished shoe in position.

19. A brake-shoe back plate of suitable form provided with one or more sheet or plate inserts upon its front side formed integral therewith, both the inserts and said back plate having interlocking means formed thereon, and means upon the back plate for securing the finished shoe in position.

20. A brake-shoe back plate of suitable form without marginal projections provided with one or more projecting inserts upon its front side, interlocking means upon said inserts, and means formed integral with said back plate for securing the finished shoe in position.

21. A brake-shoe, comprising a back plate without marginal projections provided with one or more projecting inserts upon its front side, and a body positioned upon the back inclosing said inserts, in combination with interlocking means between said body and said inserts and means formed integral with said back plate for securing said shoe in position.

22. A brake-shoe, comprising a back plate provided with inserts upon its front side projecting to the wearing-face of the shoe, and a metal body positioned upon the back plate inclosing said inserts, in combination with interlocking means between said body and the inserts and back plate, and means formed integral with said back plate for securing said shoe in position on a brake-head.

23. A brake-shoe, comprising a metal back plate without marginal projections provided with a keyway extension upon its back side, projections upon its front side extending toward the face of the shoe and formed integral with said back plate, in combination with a cast-metal body surrounding said projection.

846,708. DEVICE FOR SUPPORTING TRIAL-FRAMES. JOHN P. WEAVER, Terre Haute, Ind. Filed May 18, 1906. Serial No. 317,562.

Claim.—1. In a device for supporting trial-frames, the combination with extensible head-embracing members, of an adjustable member secured thereto and carrying a swinging hook adapted to engage and support the trial-frames, substantially as set forth.

2. In a device for supporting trial-frames, the combination of the head-embracing members, of an adjustable member secured thereto and carrying a swinging member adapted to engage and support the trial-frames, and a grasping device attached to the lower end of the rear member, whereby the device may be adjusted upon the head of a patient, as set forth.

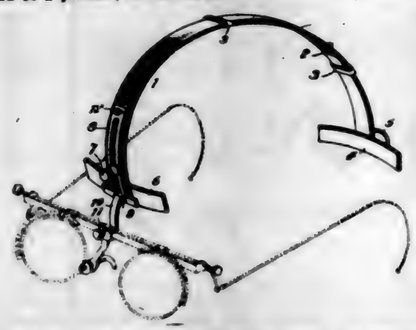

3. In a device for supporting trial-frames, the combination of head-embracing members, an adjustable plate attached to the lower end of the front member, means for securing such plate in its adjusted position, and a swinging hook depending from the lower end of said plate for engagement with the trial-frame, substantially as set forth.

846,709. ROLLING WINDOW-SHADE CONNECTION. CHEEVER L. WEBSTER, Galion, Ohio, assignor of one-half to Thomas L. Brown and one-half to Rosa M. Webster, both of Galion, Ohio. Filed Nov. 29, 1905. Serial No. 289,568.

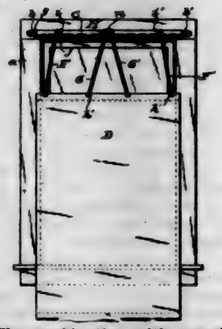

Claim.—1. The combination with a spring-roller and a window-shade, of a shade connection attached to the shade and extending partially about the roller and secured thereto, a tape-like check device attached to the shade and also to the roller, and a clasp device attached to the roller and connecting the check device operatively with the roller at a point remote from the point of attachment of the shade connection.

2. The combination with a spring-roller, and a shade connection extending partially about the roller, of a check device comprising a clasp extending about the roller and having an aperture therein, and a tape attached to the shade and extending through the aperture of the clasp and under a part of the clasp, the tape and the clasp being secured to the roller at a point remote from said aperture, substantially as and for the purposes set forth.

3. The combination with a spring-roller, and a shade having suspenders attached thereto and extending partially about the roller and secured thereto, of a clasp having an aperture therein and extending about the roller, a pair of tapes secured to the shade and extending obliquely to the aperture and therethrough to a point on the roller remote from the aperture, and a fastener extending through the clasp and the pair of tapes into the roller, substantially as and for the purposes set forth.

846,710. CASH-DRAWER. NATHAN W. WILLIAMS, Seattle, Wash., assignor of one-fourth to Major C. Hunt, Seattle, Wash. Filed Dec. 5, 1905. Serial No. 290,484.

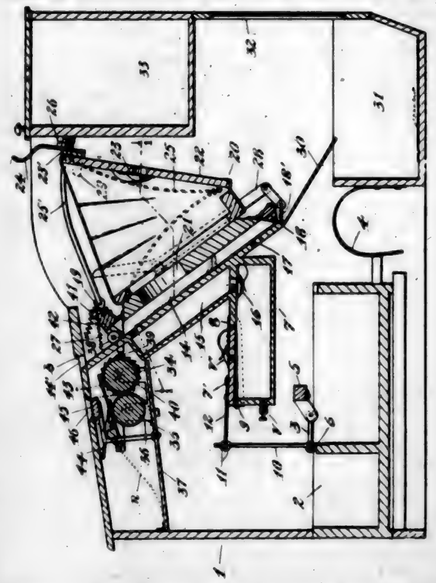

Claim.—1. In a device of the character described, in combination with the cash-drawer and the locking means thereof, a check-controlled fluid-operative means for operating said drawer-locking means.

2. In a device of the character described, in combination with the cash-drawer and the locking means thereof, a fluid-supply means, and a check-controlled fluid-operative release means for said locking means connected with said supply means.

3. In a device of the character described, in combination with the cash-drawer and the locking means thereof, check-controlled fluid-operative means for releasing said locking means, and means related to said last means for intermittently advancing a record-sheet.

4. In a device of the character described, in combination with the cash-drawer and the locking means thereof, a check-receiving pocket, a fluid-supply means discharging into said pocket, and fluid-operative release for said locking means, connected to said pocket so as to receive fluid therefrom when a check is inserted into the pocket.

5. In a device of the character described, in combination with the cash-drawer and the locking means thereof, a fluid-supply means, and a fluid-operative release means for said locking means arranged to receive fluid from said supply means, but spaced therefrom so that a check can be passed therebetween for controlling the passage of the fluid from said supply means.

6. In a device of the character described, in combination with the cash-drawer and the locking means thereof, a fluid-supply means, a fluid-controlled release means for said locking means, a pocket receiving fluid from said supply means and adapted to discharge into said release means, and valves in the upper and lower portions of said pocket.

7. In a device of the character described, in combination with the cash-drawer and the locking means thereof, a fluid-supply means, a fluid-controlled release means for said locking means, pockets receiving fluid from said sup-

ply means and adapted to discharge into said release means, and valves in the upper and lower portions of said pockets.

846,711. SOD-CUTTER. NIKOLAI O. WOLD, Sheyenne, N. D. Filed Aug. 31, 1906. Serial No. 332,827.

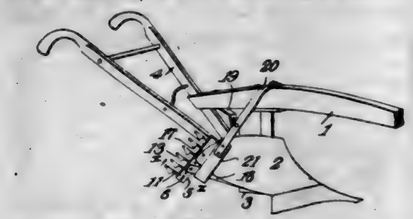

Claim.—1. An attachment for plows comprising a base, an arcuate yoke adjustable in the direction of its curve upon the base, and a blade carried by the yoke.

2. An attachment for plows comprising a base, an arcuate yoke adjustable in the direction of its curve upon the base, and a blade adjustably connected to the yoke.

3. An attachment for plows comprising a base, an arcuate yoke adjustable in the direction of its curve upon the base, and a blade adjustably connected to the ends of the yoke.

4. An attachment for plows comprising a base, an arcuate yoke adjustable in the direction of its curve upon the base, a rotatable sod-cutting blade adjustably connected to the yoke, and means for holding said blade against rotation.

5. An attachment for plows comprising a base, an arcuate yoke adjustable in the direction of its curve upon the base, a cutting-blade slidably and rotatably mounted within the yoke, and means for holding the blade against movement in relation to the yoke.

6. An attachment for plows comprising a base, an arcuate yoke adjustable in the direction of its curve upon the base, a stem slidably and rotatably mounted within the ends of the yoke, means for holding the stem against movement within the yoke, and a cutting-blade adjustably secured to the stem.

7. The combination with a plow; of a sod-cutting attachment therefor comprising blades connected to and extending beyond the plow, and means for directing upturned sods upon the blades.

8. The combination with a plow; of a sod-cutting attachment therefor comprising a base, cutting-blades adjustably connected to the base, and means for directing upturned sod upon the blades.

9. The combination with a plow having a moldboard; of a sod-cutting attachment therefor comprising a base secured to the moldboard, yokes adjustably mounted upon the base, cutting-blades extending beyond the moldboard, stems thereon adjustably mounted in the yokes, and means for directing upturned sod along the moldboard and upon the blades.

846,712. TANK-VALVE. CHARLES WRIGHT, South Greensburg, Pa., assignor to J. A. Binkey, Greensburg, Pa. Filed Aug. 6, 1906. Serial No. 329,495.

Claim.—1. In a tank-valve, an outer casing provided with an inlet-passage, an inner casing therein, each end of which is perforated and the intermediate portion is adapted to engage with the outer casing, an air-pipe connected with the upper end of the inner casing, a hollow valve rotatably mounted in the inner casing provided with an air-vent adapted to register with said air-pipe, and with perforations adapted to register with the perforations in the inner casing, and means for rotating said valve by the rise and fall of the water in the tank, substantially as described.

2. In a tank-valve, an outer casing provided with an inlet-passage, an inner casing within the outer casing, each end of which is perforated, and the inner end is recessed, a perforated tapered valve-seat in the recess, a perforated, rotatable, hollow valve in the inner casing, the inner end of which is conical to fit said seat and the outer end is flanged to rest upon the outer end of the inner casing, and means for rotating said valve by the rise and fall of water in the tank, substantially as described.

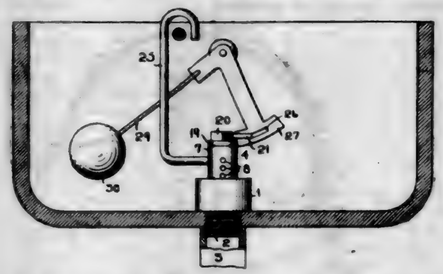

3. In a tank-valve the combination with an outer casing having a water-inlet passage, of an inner casing adapted to be screwed into said outer casing, said inner casing having formed therein inlet-passages, an upwardly-projecting cylindrical extension formed at the end of said inner casing, said extension having formed therein a series of discharge-passages and an air-vent, a valve-seat arranged in the lower end of said inner valve-casing, said seat having formed therein a conically-shaped aperture and a series of water-inlet passages which aline with the passages in said casing, a conically-shaped hollow valve adapted to engage the conical aperture in said valve-seat, said valve having formed therein inlet-passages, a cylindrical extension formed in the upper end of said valve, said extension having formed therein a series of discharge-passages and an air-vent, a plug to hold said valve in place, a crank-handle connected to the upper end of said plug and means connected to said crank-handle whereby the valve may be closed or opened by the rise and fall of the water in the tank, substantially as described.

4. In a tank-valve the combination with an outer casing, of an inner casing adapted to be screwed into said outer casing, said inner casing having formed therein a series of inlet-passages, a valve-seat arranged in said inner casing, said seat having formed therein a tapering passage and a series of inlet-passages alining with the inlet-passages in said casing, a cylindrical extension formed in the upper end of said casing, said extension having formed therein a series of discharge-passages and an air-vent, an air-discharge pipe connected to said vent, a conically-shaped valve adapted to engage said tapering recess in said seat, said valve having formed therein a series of inlet-passages adapted to be turned into and out of engagement with the inlet-passages in said seat in the casing, a cylindrical extension formed on the upper end of said valve to engage the extension on said casing, said valve extension having formed therein discharge-passages and an air-vent adapted to be turned into and out of alinement with the discharge-passages, and air-vent in the extension of said casing, a plug adapted to be screwed into engagement with the upper end of said valve to hold the same in place, a crank-handle connected to the upper end of said plug, a pivotally-mounted bell-crank lever having formed in one of its arms a segmental slot to receive the end of said crank-handle and a float connected to the other arm of said lever, whereby the same is operated by the rise and fall of the water in the tank, thereby automatically closing and opening said valve, substantially as described.

5. In a flushing apparatus, a tank, an outer casing having its lower end projecting therethrough and screw-threaded for the reception of the supply-pipe and its inner end interiorly screw-threaded, an inner casing having its intermediate portion screw-threaded and secured thereby to the outer casing, each end of the inner casing being perforated, an air-pipe secured in one of the perforations of the upper end of the inner casing, the upper end of which is curved and extends above the water-level of the tank, a perforated hollow valve rotatably mounted in the inner casing, a crank on the outer end of said valve, a pivotally-mounted bell-crank lever in the tank having one end adapted to engage with said crank, and a float on the other end of said lever, whereby the valve is controlled by the rise and fall of the water in the tank, substantially as described.

846,713. HOSE-RACK. CHARLES WRIGHT, South Greensburg, Pa., assignor to J. A. Binkey, Greensburg, Pa. Filed Aug. 6, 1906. Serial No. 329,496.

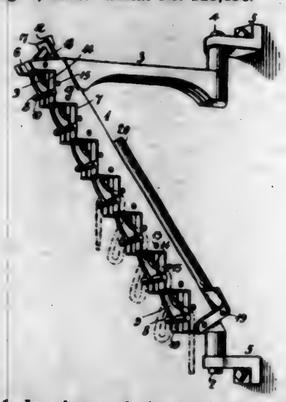

Claim.—1. In a hose-rack the combination with a pivotally-mounted inclined supporting-bar, of a series of notches arranged in the outer edge thereof, to form coil-seats, spring-actuated clamping devices to hold said hose-coils in place in said seats, a releasing-bar to engage said hose-clamps and means to actuate said bar to simultaneously disengage said clamping devices from the hose-coils, substantially as described.

2. In a hose-rack the combination with a pivotally-mounted inclined supporting-bar, of a series of notches arranged therein to form hose-coil seats, a series of angular clamping-bars pivotally mounted on said bar, curved hose-engaging surface formed on the inner edges of the outer ends of said clamping-bars to engage the coils of hose in said seats or notches, springs connected to said clamping-bars to hold the same in yielding engagement with said hose-coils, a slotted releasing-bar to engage the rear ends of said clamping-bars, and means to actuate said releasing-bar to disengage said clamping-bars from the hose-coil, substantially as described.

3. In a hose-rack the combination with a pivotally-mounted inclined supporting-bar having formed therein a longitudinally-disposed slot or passage, of a series of notches forming seats in the forward or outer side of said bar, angular hose-clamping bars pivotally mounted in said slot adjacent to said seats or notches, a cross-head formed on the outer end of said clamping-bars, an upwardly-projecting lug formed on the inner ends thereof, springs connected to said clamping-bars to hold the same in yielding engagement with the hose-coils, a releasing-bar slidably mounted on the rear side of said supporting-bar in engagement with the rear ends of said clamping-bars and an operating-lever pivotally mounted on the lower end of said supporting-bar and connected to said releasing-bar whereby the latter may be actuated to simultaneously operate the clamping-bars to disengage the same from the hose-coils, substantially as described.

846,714. WHIFFLETREE. WILLIAM T. YOUNG, Grand Rapids, Mich. Filed Feb. 17, 1906. Serial No. 301,611.

Claim.—1. A doubletree, comprising a beam of sheet metal bent in U shape in cross-section, a reinforcing-plate also bent in U shape in cross-section and secured to the middle of the beam, U-shaped end closures embracing the ends of the beam and secured thereto, and rearwardly-projecting U-shaped loops secured to the respective sides of the beam between its ends and middle.

2. A doubletree comprising a beam of sheet metal bent U shape in cross-section, a reinforcing-plate also bent U shape in cross-section, embracing the middle of the beam and secured thereto, a clevis-iron secured between the sides of the beam and opposite the reinforcing-plate, U-shaped end closures embracing the ends of the beam and secured thereto, U-shaped loops projecting rearward and attached to the respective sides of the beam between the ends and middle thereof, pulleys journaled within the beam, and chains engaging the pulleys and extending through openings in the front side of the beam.

846,715. HORSE-HITCH. EDWIN J. AITKEN, Spokane, Wash. Filed Sept. 19, 1906. Serial No. 335,198.

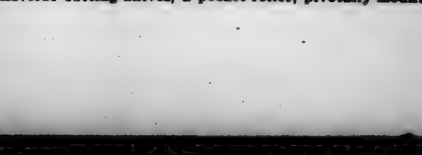

Claim.—In a horse-hitch, a bar having on each end a sprocket-wheel secured by shafts which allow the sprockets to revolve, said sprockets adapted to operate a chain belt having means for fastening a rope or cable to one of its links, one of said sprockets being provided with ratchet-teeth which engage corresponding teeth in a ratchet-wheel secured to the hub of a vehicle-wheel, means carried by the device for attaching it to the axle of a vehicle, a U-clip to prevent a lateral motion of the device when it is in operation, and means for operating the device, substantially as set forth.

846,716. MACHINE FOR ASSEMBLING LEAVES. PAUL ASHELM, Berlin, Germany. Filed July 19, 1906. Serial No. 326,874.

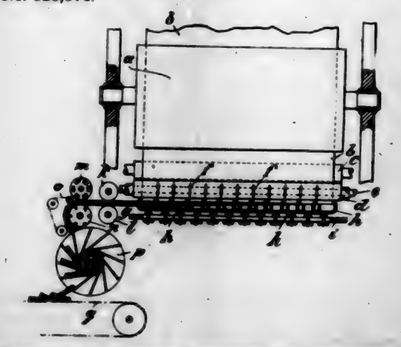

Claim.—1. An improved machine for assembling the single leaves of ticket and note blocks for calendars, printed on a band of paper, consisting of longitudinal and transverse cutting-knives, a pocket-roller, pivotally-mount-

ed adjustable prongs so arranged that the longitudinal stripe cut from the band of paper in the required width of the block-leaves, are conducted through the turning-prongs in order to form a block-band, from which parts in the required length of the block-leaves are cut off, and are piled up by the pocket-roller over or adjacent to each other, so that the single blocks can be lifted off, ready for stitching them together, substantially as herein described and set forth.

2. In a machine of the character described, means for feeding a band of paper, conducting-rollers, means for cutting the paper into longitudinal strips, turning-prongs arranged at an angle to the direction in which said strips move and in an inclined direction to said band, said prongs being each independently pivotally mounted and adjustable to and from each other and serving to pile the strips one upon the other, delivery-rolls through which said piled strips pass, cutting-rollers, and a rotatable pocket-wheel for receiving the cut strips.

3. In a machine of the character described, means for feeding a band of paper, conducting-rollers, means for cutting the paper into longitudinal strips, turning-prongs arranged at an angle to the direction in which said strips move and in an inclined direction to said band, said prongs being each independently pivotally mounted and adjustable to and from each other and serving to pile the strips one upon the other, delivery-rolls through which said piled strips pass, cutting-rollers, a rotatable pocket-wheel for receiving the cut strips, and means for adjusting said prongs.

4. In a machine of the character described, means for feeding a band of paper, conducting-rollers, means for cutting the paper into longitudinal strips, turning-prongs arranged at an angle to the direction in which said strips move and in an inclined direction to said band, said prongs serving to pile the strips one upon the other, delivery-rolls through which said piled strips pass, cutting-rollers, a rotatable pocket-wheel for receiving the cut strips, and a guide-band mounted upon rollers beyond the cutting-rollers with a portion curved parallel with the periphery of one of said rollers above the pocket-wheel for engaging the strips after they are cut by the cutters.

846,717. FABRIC-TUFTING MACHINE. JAMES J. BAIRD, Los Angeles, Cal. Filed July 6, 1905. Serial No. 268,545.

Claim.—1. In a tufting device the combination of two hollow tubes; a plunger-rod in one of said tubes having a presser-foot on the projecting end thereof; a spiral spring surrounding said plunger-rod and adapted to hold the same in an extended position; a presser-foot on the projecting end of the plunger-rod and having a perforation therethrough for the reception and operation of a tufting-needle, the said presser-foot having on the lower side thereof an annular downwardly-projecting flange adapted to engage the fabric operated on; a swivel mounted on the lower end of said plunger-rod and having therein an eye for the reception of a guide-wire; a hollow needle adjustably mounted in the other tube and adapted when in place therein to be in line with the opening in the presser-foot in combination with a guide-rest having projecting therefrom a guide-wire for the insertion in the eye of the swivel substantially as herein shown and described.

2. The herein-described tufting device comprising the companion tubes A and B; a plunger-rod E mounted in the tube B and having on the lower end thereof a swivel I having an opening I' therein for the reception of the guide-wire; a spiral spring G encircling said plunger; a presser-foot F on said plunger-rod having an annular downwardly-projecting flange F' on the lower part thereof; a hollow needle C detachably mounted in the tube A and provided with means to detachably hold the same in said tube comprising the needle-retaining spring D in combination with a guide-rest H having mounted thereon the guide-wire H' all in combination substantially as herein shown and described.

3. In combination with a tufting device of the character herein described the herein-described detachable guide-rest for holding the tufting device in contact with the fabric operated on comprising a guide-rest H having projecting therefrom a guide-wire H', said guide-rest being vertically movable on the presser-foot shank.

4. In a tufting-machine, two hollow tubes; a spring-pressed plunger-rod slidably mounted in one of said tubes; a presser-foot on the projecting end of said plunger-rod, said presser-foot having an opening therethrough and a downwardly-projecting flange which terminates in a blunt edge surrounding said opening; and a hollow needle removably and operatively connected to the other tube, said needle passing through the opening in said presser-foot.

5. In a tufting device of the character herein described the combination of a plunger-rod with a presser-foot on the lower end thereof; a swivel I having an opening I' therethrough for the reception of a guide-rod; a guide-rest H having a guide-rod H' extending therefrom through the opening I' in the swivel.

6. A vertical needle-bar; a needle detachably secured in the lower end thereof; a hollow tube secured to said needle-bar, and with the bar forming an operating-handle; a spring-pressed plunger-rod movable in said hollow tube; and a presser-foot having a needle-opening therein on the lower end of said plunger-rod, said presser-foot having a downwardly-projecting flange surrounding the needle-opening.

846,718. POWDER-DISTRIBUTER. WILLIAM J. BARBER, Honeoye Falls, N. Y., assignor of one-half to Charles E. Boult, Honeoye Falls, N. Y. Filed Aug. 21, 1906. Serial No. 331,509.

Claim.—1. In a device of the class described, a cylinder having intake-valves at the ends, a plunger operating in said cylinder, a receptacle associated with said cylinder and provided with discharge-nozzles, a valve-chamber associated with said cylinder at one end, a tubular chamber extending longitudinally of said cylinder and provided with ports communicating respectively with said valve-chamber and cylinder, a port between said valve-chamber and cylinder, a valve movably disposed within said valve-chamber and operating to alternately close the ports therein, and a conductor between said valve-chamber and receiver.

2. In a device of the class described, a cylinder having intake-valves at the ends, a plunger operating in said cylinder, a receptacle associated with said cylinder and provided with discharge-nozzles, a valve-chamber associated with said cylinder at one end, and with diverging sides, a tubular chamber extending longitudinally of said cylinder and provided with ports communicating respectively with said cylinder and said valve-chamber through one of its diverging sides, a port between the other diverging side of the valve-chamber and said cylinder, a valve within said chamber with one end engaging the contracted end of the same and free to move between the diverging sides

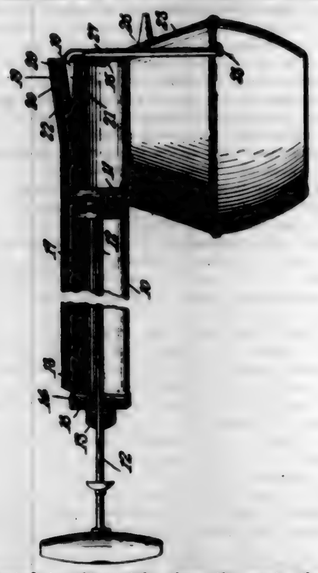

and adapted to alternately close the ports therein, and a conductor between said valve-casing and receptacle.

846,719. PROTECTIVE COVERING FOR GLASS OR OTHER FRAGILE RECEPTACLES. CHARLES S. BARON and JAMES F. HAFFEY, Tiffin, Ohio; said Haffey assignor to said Baron. Filed Sept. 26, 1904. Serial No. 226,089.

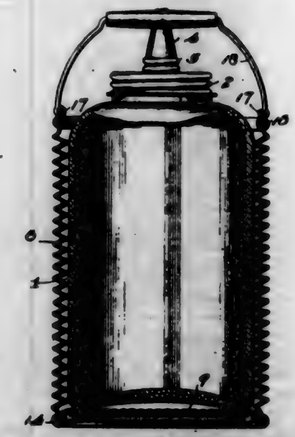

Claim.—1. In a can-guard or the like, the combination with a side member provided with resilient bands, of a bottom member having an edge in proximity to the edge of the side member, and a bead securing the parts together and covering the edges of said members.

2. In a can-guard or the like, the combination with a side member, of a separate woven-wire bottom member assembled with and secured thereto.

3. In a can-guard or the like, the combination with a side member, woven-wire bottom member, and bead securing the side and bottom members together.

4. In a can-guard or the like, the combination with a woven-wire side member and woven-wire bottom member, of a bead securing the side and bottom members together, and a bead secured to the upper edge of the side member and constituting a finish therefor.

5. In a can-guard or the like, the combination with woven-wire side and beads substantially as set forth, of a metal-disk bottom adapted to fit within the side member against the bottom bead, substantially as and for the purpose set forth.

6. In a can-guard or the like, flexible side and bottom members united by a bead-blank formed to constitute a rigid finish member.

7. In a can-guard or the like, the combination with a side member made of woven wire, of a detachable bottom member assembled within and secured thereto, independently of the can.

846,720. HINGED LAST. FRANCIS E. BENTON, Stoughton, Mass. Filed Feb. 23, 1906. Serial No. 302,503.

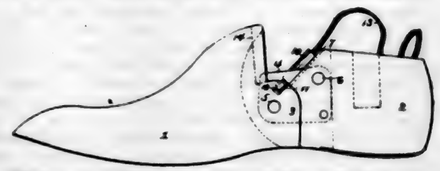

Claim.—1. A hinged last, comprising toe and heel portions, a curved enlargement on the toe portion to fit a curved recess in the heel portion, a link pivotally connecting the heel and toe portions, a spring-pressed pin on the heel portion and a bushing in the curved enlargement to receive the pin.

2. A hinged last, comprising heel and toe portions, a curved enlargement on the toe portion the heel portion having a curved recess to receive said curved enlargement, a metal barrel secured to the heel portion, the toe portion having a recess to receive the barrel when the last members are swung together, a spring-pressed pin in the barrel, a bushing in the curved enlargement to receive the pin and lock the last in extended form, and means for withdrawing the pin from locked position.

846,721. WINDOW-VENTILATOR. MILTON H. BERRY, Evanston, Ill., assignor to Berry Ventilator Company, Chicago, Ill., a Corporation of Maine. Filed Mar. 7, 1906. Serial No. 304,611.

Claim.—1. The combination with a window, of a ventilator arranged to open and close synchronously with the opening and closing of the window; the said ventilator being open at its ends and having a transparent wall bar-

ring the direct passage of air and also having foraminated bottom and top walls.

2. The combination with a window, of a ventilator arranged to open and close synchronously with the opening and closing of the window; the said ventilator being open at its ends and having a transparent wall barring the direct passage of air and also having sectional foraminated walls which are adjustable as to width for the purpose set forth.

3. The combination of a window-casing, a sliding sash therein, a ventilator arranged to open and close with the sash, and an adjustable or movable air-excluding device interposed between and connecting the ventilator and the casing.

4. The combination of a window-casing, a sliding sash therein, a collapsible or foldable ventilator arranged to open and close with the sash; the said ventilator being open at its ends and having a transparent inner wall, and an adjustable or movable air-excluding device interposed between and connecting the ventilator and the casing.

5. The combination of a window-casing, a sliding sash therein, a collapsible or foldable ventilator arranged to open and close with the sash; the said ventilator being open at its ends and having an inner wall formed by transparent panels hinged together, and bottom and top, foraminated walls hinged to the inner wall, and an adjustable or movable air-excluding device interposed between and connecting the ventilator and the casing.

6. The combination of a window-casing, a slidable sash therein, a ventilator arranged to open and close with the sash, a spring-roller carried by the ventilator, and a curtain connected to and adapted to be wound on the roller and also connected to the casing.

7. The combination of a window-casing, a lower slidable sash, an upper slidable sash carrying rods, means on the lower sash for engaging said rods, a ventilator connected with the rods and arranged to open and close with the upper sash, a spring-roller carried by the ventilator, and a curtain connected to and adapted to be wound on the spring-roller and also connected to the casing.

8. The combination of a window-casing, a sliding sash therein, and a ventilator disposed at the inner side of the sash and connected with the same and also with the casing; the said ventilator being open at its outer side and at one or both of its ends.

9. The combination of a window-casing, a sliding sash therein, and a ventilator disposed at the inner side of the sash and connected with the same and also with the casing; the said ventilator being open at its outer side and at one or both of its ends and having a transparent inner wall.

10. The combination of a window-casing, a sliding sash therein, a ventilator disposed at the inner side of the sash and connected with the same and also with the casing; air-excluding means arranged at the juncture of the sashes and movable therewith, and means for locking said excluding means at intervals to the casing.

11. The combination with a window; of a collapsible ventilator connected with the window and arranged to be unfolded and opened on the opening of the window.

12. The combination with a window; of a collapsible ventilator connected with the window and arranged to be unfolded and opened on the opening of the window and having a transparent wall for barring the direct passage of air.

13. In a device of the character described, the combination with a window of a ventilator, said ventilator being provided with a top and bottom, a side wall hinged to the top and bottom, said wall being formed with a plurality of folds to permit the ventilator to be expanded to register with any point to which the window may be opened.

14. In a device of the character described, the combination with a window of a ventilator, said ventilator being provided with a top and bottom and side wall, said wall being formed with a plurality of folds to permit the ventilator to be expanded to register with any point to which the window may be opened.

15. In a device of the character described, the combination with a window of a ventilator, said ventilator being provided with a top and bottom, a side wall of lapped sections hinged to the top and bottom, said wall being formed with a plurality of folds.

16. In a device of the character described, the combination with a window of a ventilator, said ventilator being provided with a top and bottom and a side wall of lapped sections, said wall being formed with a plurality of folds.

17. In a device of the character described, the combination with a window of a ventilator formed with a plurality of sections, their adjacent edges being pivotally connected and adapted to fold in a compact form.

18. The combination with a window of a foldable device to deflect the air-currents entering when the window is open, said device being constructed of sections hinged to each other and adapted to expand to register with the opening of the window.

19. The combination with a window of a foldable device to deflect the air-currents entering when the window is open, said device being constructed of telescoping and hinged sections adapted to expand to register with the opening of the window.

20. In a device of the character described, the combination with a window of a ventilator having each end open, said ventilator being provided with a top, the said top being perforated, a side wall formed with a number of folds to permit the ventilator to be expanded to register with the opening of the window.

21. In a device of the character described, the combination with a window of a ventilator having each end open, said ventilator being provided with a top and bottom, the said top being perforated, a side wall formed with a number of folds to permit the ventilator to be expanded to register with the opening of the window.

846,722. WINDOW-VENTILATOR. MILTON H. BERRY, Chicago, Ill., assignor to Berry Ventilator Company, Chicago, Ill., a Corporation of Maine. Filed Aug. 30, 1906. Serial No. 332,585.

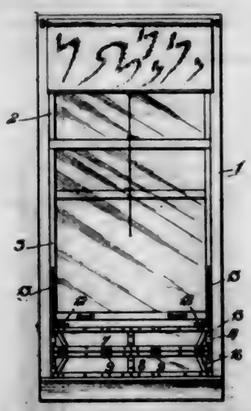

Claim.—1. The combination with a window having movable sashes, of a ventilator adapted to open and close with the opening and closing of the window-sash, said ventilator being foldable and having a horizontal perforated plate attached to the sash, the whole ventilator setting inside of the sash, said horizontal perforated plate being covered with a fine screen, for the purpose set forth, substantially as described.

2. The combination with a window having movable sashes, of a ventilator adapted to open and close with the opening and closing of the window-sash, said ventilator being foldable and having a horizontal perforated plate attached to the sash, the whole ventilator setting inside of the sash, said horizontal perforated plate being covered with a fine screen, an adjustable or movable device adapted to close the opening in the ends of the said ventilator for the purpose set forth, substantially as described.

3. The combination of a window-casing having slidable sashes mounted therein, of a ventilator connected to one of the said sashes, said ventilator arranged to open and close with the said sash, its inner wall being formed of hinged sections, means to prevent said hinged sections assuming a vertical position, for the purpose set forth, substantially as described.

4. The combination of a window-casing having slidable sashes mounted therein, of a ventilator connected to one of the said sashes, said ventilator arranged to open and close with the said sash, its inner wall being formed of hinged sections, means to prevent said hinged sections assuming a vertical position, said means consisting of a stop formed of members pivotally attached to each other, one of said members being provided with a shoulder to prevent the said stop from assuming a vertical position.

5. The combination with a window having movable sashes, of a ventilator adapted to open and close with the opening and closing of the window-sash, said ventilator being foldable and having a horizontal perforated plate attached to the sash, the whole ventilator setting inside of the sash, said horizontal perforated plate being covered with a fine screen, the inner wall of said ventilator being formed of hinged sections, means to prevent said hinged sections from assuming a vertical position.

6. The combination with a window having movable sashes, of a ventilator adapted to open and close with the opening and closing of the window-sash, said ventilator being foldable and having a horizontal perforated plate attached to the sash, the whole ventilator setting inside of the sash, said horizontal perforated plate being covered with a fine screen, the inner wall of said ventilator being formed of hinged sections, means to prevent said hinged sections from assuming a vertical position, said means consisting of a stop formed of members pivotally attached to each other, one of said members being provided with a shoulder to prevent the said stop from assuming a vertical position, for the purpose set forth, substantially as described.

7. The combination with a window having movable sashes, of a ventilator adapted to open and close with the opening and closing of the window-sash, said ventilator being foldable and having a horizontal perforated plate attached to the sash, the whole ventilator setting inside of the sash, said horizontal perforated plate being formed with a fine screen, the inner wall of said ventilator being formed of hinged sections, means to prevent said hinged sections from assuming a vertical position, said means consisting of a stop formed of members pivotally attached to each other, one of said members being provided with a shoulder to prevent the said stop from assuming a vertical position, detachable braces extending from the outer corners of said ventilator to the window-sash, for the purpose set forth, substantially as described.

8. The combination of a window having movable sashes, of a ventilator adapted to open and close with the opening and closing of the window-sash, said ventilator being foldable, its side being formed of hinged sections and its top being formed of a horizontal plate, attached to the sash, there being perforations in said plate, the whole ventilator setting inside of the sash, said horizontal perforated plate being covered with a fine screen, an adjustable or movable device adapted to close the opening at the ends of said ventilator, means to prevent said hinged sections from assuming a vertical position, for the purpose set forth, substantially as described.

846,723. RADIAL SETTING-GAGE FOR CUTTER-HEAD KNIVES. CHARLES W. H. BLOOD, Boston, Mass., assignor to S. A. Woods Machine Company, Boston, Mass. Filed Apr. 28, 1906. Serial No. 314,149.

Claim.—1. A setting-gage for cutter-head knives, comprising swinging holding means for positioning the gage, and a rotary engaging device mounted to turn by engagement with the edge of the knife and to swing with said holding means.

2. A setting-gage for cutter-head knives, comprising movable holding means for positioning the gage, and an engaging device to force the knife backwardly into accurate adjustment, movable automatically with relation to the holding means upon coming in contact with the edge of the knife.

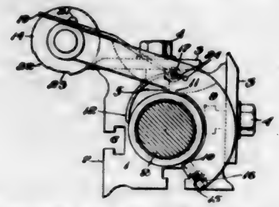

3. A setting-gage for cutter-head knives, comprising holding means for positioning the gage, and an edge-engaging device carried by said means and movable past the edge of the knife, said device having an arc surface mounted to swing concentrically of said arc.

4. A setting-gage for cutter-head knives, comprising holding means for movably engaging one side of the journal of the cutter-head, and edge-engaging means carried by said holding means at the opposite side of the said journal at a fixed radial distance from the axis of the cutter-head.

5. A setting-gage for cutter-head knives, comprising holding means for movably engaging the journal of the cutter-head, including a drag for yieldingly holding the gage in position, and edge-engaging means carried by said holding means for moving therewith at a fixed radial distance from the axis of the cutter-head.

6. A setting-gage for cutter-head knives, comprising holding means for movably engaging the journal of the cutter-head, including a spring locking device for releasing said holding means from the journal, and edge-engaging means carried by said holding means for moving therewith at a fixed radial distance from the axis of the cutter-head.

7. A setting-gage for cutter-head knives, comprising holding means for movably engaging the journal of the cutter-head, said holding means engaging the journal circumferentially at three bearing-points separated by intervening gaps for accommodating said holding means to varying sizes of journals, and edge-engaging means carried by said holding means for moving therewith at a fixed radial distance from the axis of the cutter-head.

8. A setting-gage for cutter-head knives, comprising holding means for movably engaging the journal of the cutter-head, said holding means having at least three independent bearing-points, one of said points being adjustable and normally rigid, and edge-engaging means carried by said holding means for moving therewith at a fixed radial distance from the axis of the cutter-head.

9. A setting-gage for cutter-head knives, comprising holding means for movably engaging the journal of the cutter-head, said holding means having at least three independent bearing-points, one of said points being yieldingly adjustable to different sizes of journals, and edge-engaging means carried by said holding means for moving therewith at a fixed radial distance from the axis of the cutter-head.

10. A setting-gage for cutter-head knives, comprising an arm provided with means for removably embracing the journal of the cutter-head, a lateral shaft extending from the free end of said arm parallel to the journal-axis, and an engaging device on said lateral shaft having an arc surface to engage the edge of a knife to be set.

11. A setting-gage for cutter-head knives, comprising an arm provided with means for removably embracing the journal of the cutter-head, a lateral shaft extending from the free end of said arm parallel to the journal-axis, and an arc-shaped engaging device sliding on said shaft for engaging the edge of a knife to be set.

12. A setting-gage for cutter-head knives, comprising opposite holding-arms provided at one end with means for partially embracing the journal of the cutter-head, and having means for yieldingly engaging said journal opposite said embracing means for holding the latter in constant contact with the journal, a shaft extending laterally

from one arm to the other at a given radial distance from said journal, said shaft being provided with an arc-shaped surface for engaging the cutting edge of a blade to be set.

13. A setting-gage for cutter-head knives, comprising opposite holding-arms provided at one end with means for partially embracing the journal of the cutter-head, and having means for yieldingly engaging said journal opposite said embracing means for holding the latter in constant contact with the journal, a shaft extending laterally from one arm to the other at a given radial distance from said journal, said shaft being provided with an arc-shaped surface for engaging the cutting edge of a blade to be set, said yielding means having a projecting portion extending externally of said arm in position to be engaged by the operator for releasing said yielding means from engagement with the journal.

14. A setting-gage for cutter-head knives, comprising opposite holding-arms provided at one end with means for partially embracing the journal of the cutter-head, and having means for yieldingly engaging said journal opposite said embracing means for holding the latter in constant contact with the journal, a shaft extending laterally from one arm to the other at a given radial distance from said journal, said shaft being provided with an arc-shaped surface for engaging the cutting edge of a blade to be set, said yielding means consisting of a spring pivotally mounted in said arm and bent at one end to partially embrace said journal and at its other end projecting outwardly in position to be engaged by the operator, said arm having means for removably restraining said projecting end.

15. A setting-gage for cutter-head knives, comprising opposite holding-arms for partially spanning and engaging the journal of the cutter-head, a lateral shaft connecting the free ends of said arms, and opposite engaging devices having arc surfaces movable toward and from each other on said shaft, for simultaneously engaging the edge of a knife adjacent its opposite ends and forcing said knife back into gaged position.

16. A setting-gage for cutter-head knives, comprising opposite holding-arms for partially spanning and engaging the journal of the cutter-head, a lateral shaft connecting the free ends of said arms, and an engaging device pivotally mounted on said shaft and having a stepped peripheral surface in arcs of different radial distances from its pivotal center, for engaging the cutting edge of a knife to be set.

846,724. MEANS FOR ATTACHING RAILS TO METALLIC TIES. JACOB F. BOWMAN, Artesia, N. Mex. Filed Dec. 8, 1906. Serial No. 346,835.

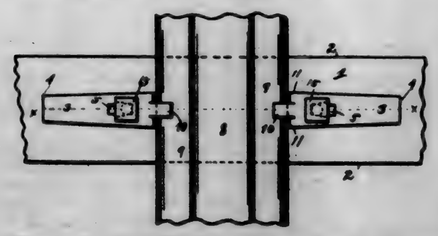

Claim.—1. A metallic tie having openings in its upper surface lying on each side of the rail, in combination with a spring-clamp which engages the rail-flange and the tie at one end and the tie at the other end, and a double-headed bolt adapted to be passed through the spring-clamp and the tie to maintain said clamp in engagement with the rail-flange and the tie.

2. A metallic tie having openings therein lying on each side of the rail, in combination with a spring-clamp, one end of which engages the openings nearest to the rail in the tie and overlaps the rail-flange, a double-headed bolt adapted to extend through openings in said clamp and in the tie, one of said heads interlocking with the tie and the other interlocking with the spring-clamp to prevent rotary movement of said bolt.

3. In a fastener for uniting rails to metallic cross-ties, the combination with a metallic cross-tie having suitable openings on both sides of the rail, of a spring-clamp interlocking at one end with the tie and the rail and at the other end with the tie, a bolt penetrating an opening in the body of said spring-clamp and the tie with means on one end thereof for interlocking with the tie, and means on the other end thereof for interlocking with the spring-clamp to maintain a proper engagement between the spring-clamp and the tie, and the rail, and to prevent said bolt from turning from a locking position.

846,725. PORTABLE ELEVATOR. FRANK H. BROWN and FRED H. BROWN, Colfax, Wash. Filed Dec. 23, 1905. Serial No. 293,143.

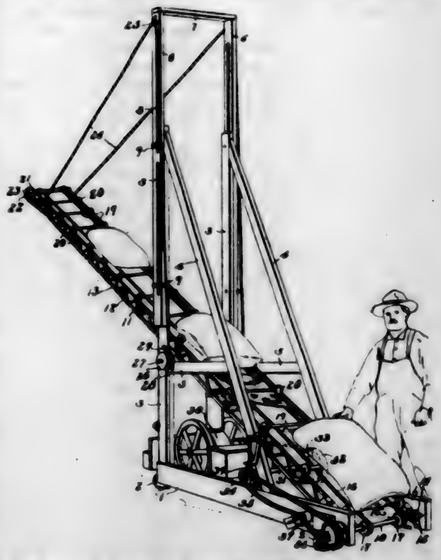

Claim.—1. A portable elevator comprising a base-frame, an elevator-frame pivotally mounted thereon and having tracks, an endless conveyer carried by said elevator-frame, transverse shafts extending across the outer side of said conveyer and having wheels to engage said tracks, and an operating-shaft journaled in said base-frame closely adjacent to the ground and having sprocket-wheels to operate the endless conveyer and guide the same close to the ground, the wheels on the transverse shafts of the conveyer being of approximately the same diameter as the sprocket-wheels on the operating-shaft, whereby said wheels on the transverse shafts will contact with the operating-shaft to prevent said transverse shafts from being forced against the periphery of said sprocket-wheels.

2. A portable elevator having an inclined frame provided with tracks, a plurality of axles provided with wheels to run on the tracks, sprocket-chains secured to the inner sides of the axles for operating the same, and an endless belt mounted between the axles and the sprocket-chains, said chains serving to hold the belt against the axles, and said axles serving to produce transverse ribs on the outer surface of the belt to prevent slipping of articles carried thereon.

3. A portable elevator having an inclined frame provided with angular tracks, a plurality of axles provided with wheels to run on the tracks, sprocket-chains secured to the inner sides of the axles, an endless belt mounted between the axles and the sprocket-chains and having a series of perforations adjacent each chain, said chains serving to hold the belt against the axles, and said axles serving to produce transverse ribs on the belt to prevent slipping of articles carried thereon, and sprocket-wheels having teeth adapted to engage the sprocket-chains and to project through the perforations of the endless belt.

846,726. PLANTER AND FERTILIZER-DISTRIBUTER. BENNIE W. BURDETT and GEORGE W. GOODWIN, Jr., Simpsonville, S. C. Filed July 9, 1906. Serial No. 325,373.

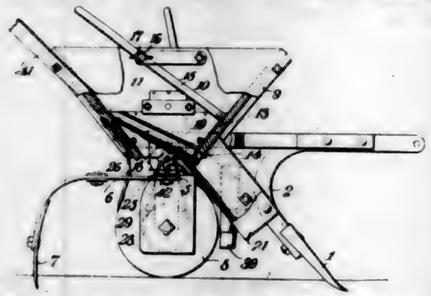

Claim.—1. An implement of the nature described consisting of the hopper, brackets supporting said hopper, a traction-wheel journaled between the lower ends of said brackets, said brackets having at intermediate points horizontal portions, plow-beams pivotally connected at their forward ends to said horizontal portion.

2. An implement of the nature described consisting of a hopper, brackets supporting said hopper, a traction-wheel journaled between the lower ends of said brackets, said brackets having at intermediate points horizontal portions, plow-standards pivoted at their forward ends to the horizontal portions of the brackets, and bars connecting said standards together in proper relation to each other.

3. An implement of the nature described consisting of a hopper, a partition dividing said hopper into compartments, a wheel journaled under the hopper, a stirrer-shaft journaled in the hopper-partition, a sprocket-wheel attached to the stirrer-shaft and being located within the hopper-partition, and means operatively connecting said sprocket-wheel with the traction-wheel.

4. An implement such as described consisting of a hopper, a partition dividing said hopper into compartments, a traction-wheel supporting the hopper, said hopper having an outlet, a chute located in the bottom of the hopper and disposed toward said outlet and having upturned edges, a valve adapted to open and close said outlet, a pivoted handle attached to said valve, a means for securing said handle in a desired position, strips attached to the sides of the hopper and extending down over the edges of said chute.

5. An implement of the nature described consisting of a hopper, a traction-wheel supporting the same, said hopper having an outlet, a spur-wheel rotatively supported and entering said outlet, means operatively-connecting said spur-wheel with the traction-wheel, said outlet having an enlarged T end, a pivoted valve adapted to open and close said T end of the outlet, a slide adapted to move longitudinally over the opposite end of the outlet and over the said spur-wheel.

6. An implement such as described consisting of a hopper having an outlet, a wheel supporting said hopper, a spur-wheel suitably journaled and entering the hopper-outlet, means operatively connecting said spur-wheel with the traction-wheel, a longitudinally-movable slide located in the hopper and adapted to move over the hopper-outlet and the spur-wheel, said slide having a ledge which covers and rides over the spurs of the said wheel.

846,727. BALL-BEARING. LOUIS BUSO, Dallas City, Ill. Filed Dec. 6, 1906. Serial No. 346,583.

Claim.—1. The combination in a ball-bearing for vehicle-wheels, of an axle-spindle having a portion adjacent to its outer end on which is a thread extending in one direction, and a reduced portion at its outer end on which is a thread extending in the opposite direction, and also having longitudinal grooves in the said threaded portions, a box arranged on the spindle, a combined cup and nut having a threaded bore to receive the inner threaded portion of the spindle, and also having a longitudinal groove in the wall of said bore, antifriction-balls carried by the combined cup and nut and arranged to bear against the inner end of the box, a combined cup and nut having a threaded bore to receive the inner threaded portion of the spindle, and also having longitudinal grooves in the wall of said bore, antifriction-balls carried by the combined cup and nut and arranged to bear against the outer end of the box, a key removably arranged in registered grooves of the spindle and combined cup and nut, and a nut turned on the reduced and threaded end of the spindle and arranged to retain the key in position.

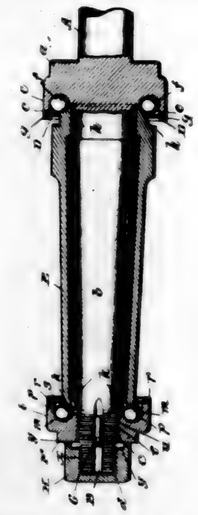

2. The combination in a ball-bearing for vehicle-wheels, of a box, an axle-spindle extending through the box and having a portion adjacent to its outer end on which is a thread extending in one direction, and a reduced portion at its outer end on which is a thread extending in the opposite direction, and also having longitudinal grooves in the said threaded portions, a cup carried on the inner portion of the spindle, antifriction-balls contained in said cup and bearing against the inner end of the box, a combined cup and nut having a threaded bore to receive the inner threaded portion of the spindle, and also having longitudinal grooves in the wall of said bore, antifriction-balls carried by the combined cup and nut and arranged to bear against the outer end of the box, a key removably arranged in registered grooves of the spindle and combined cup and nut, and a cap-nut turned on the reduced and threaded end of the spindle and having a circular space in its inner end for the purpose set forth.

3. The combination in a ball-bearing for vehicle-wheels, of an axle-spindle having a portion adjacent to its outer end on which is a thread extending in one direction, and a reduced portion at its outer end on which is a thread extending in the opposite direction, and also having longitudinal grooves in the said threaded portions, a box removably arranged on the spindle, a combined cup and nut having a threaded bore to receive the inner threaded portion of the spindle, and also having a longitudinal groove in the wall of said bore, antifriction-balls carried by the combined cup and nut and arranged to bear against the outer end of the box, a key removably arranged in the grooves of the spindle and combined cup and nut, and a cap-nut turned on the reduced and threaded end of the spindle and having an enlarged circular space in its inner end for the purpose set forth.

4. The combination in a bearing for vehicle-wheels, of an axle-spindle having a portion adjacent to its outer end

on which is a thread extending in one direction, and a reduced portion at its outer end on which is a thread extending in the opposite direction, and also having longitudinal grooves in the said threaded portions, a box removably arranged on the spindle, a box-retaining device having a threaded bore to receive the inner threaded portion of the spindle and also having one or more longitudinal grooves in the wall of said bore, a key removably arranged in registered grooves of the spindle and box-retaining device, and a suitable nut turned on the reduced and threaded end of the spindle.

5. The combination of an axle-spindle provided with a threaded portion, an interiorly-threaded nut mounted on the spindle, there being three equidistant, longitudinal grooves formed in the one, four equidistant longitudinal grooves formed in the other, and a key removably arranged in registered grooves of the spindle and nut.

846,728. SHAPING-MACHINE. ROBERT B. COCHRANE and WILLIAM A. WARMAN, Rochester, N. Y., assignors, by direct and mesne assignments, to Cochrane Bly Company, Rochester, N. Y., a Corporation of New York. Filed May 22, 1901. Serial No. 61,403.

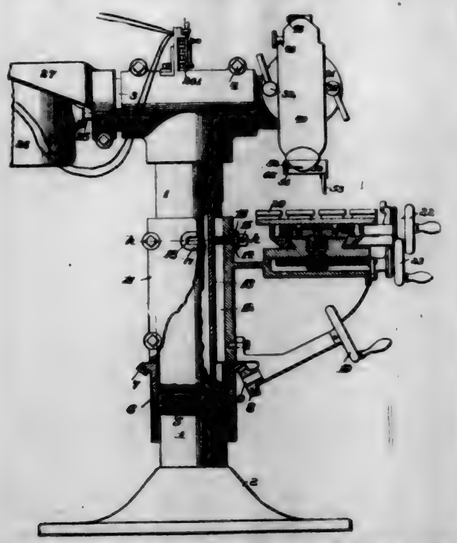

Claim.—1. In a shaper, the combination with a main frame and a horizontally-extending arm mounted thereon and rotatable about its longitudinal axis, means for clamping the arm in adjusted position, a reciprocatory tool-carrier mounted on the arm and adjustable in a plane extending parallel with said axis thereof, and an operating-shaft for the tool-carrier extending through the arm.

2. In a shaper, the combination with a main frame and an arm mounted for longitudinal adjustment thereon and rotatable about its longitudinal axis, of clamping devices for securing the arm in adjusted position, an operating-shaft extending through the arm, a guide mounted on the latter and adjustable at an angle to the axis of the arm in a plane extending parallel therewith, a reciprocating tool-carrier on the guide and connections between it and the shaft.

3. In a shaper, the combination with a main frame or support, of an arm or frame on the main frame and rotatable on its longitudinal axis, an operating-shaft extending through the arm, a guide-frame pivoted on the arm on an axis extending transversely of the latter, an arbor concentric with the pivotal center of the guide and connected to the shaft, a tool-carrier on the guide and connections between it and the arbor for causing the operation of the former.

4. In a shaper, the combination with a main frame or support, an arm rotarily adjustable on its longitudinal axis in the frame having an operating-shaft extending longitudinally thereof and an arbor extending transversely thereof and connected to the shaft, of a guide pivoted on the arm on an axis substantially concentric with that of the arbor, a reciprocatory tool-carrier on the guide and connections between it and the arbor.

5. In a shaper, the combination with a main frame or support, and a horizontally-extending arm thereon having an operating-shaft and an arbor extending transversely thereof and connected to the shaft, of a guide rotarily adjustable on the arm on an axis substantially concentric with that of the arbor, a reciprocating tool-carrier on the guide and connections between it and the arbor.

6. In a shaper, the combination with a main frame or support, and a horizontally-extending arm thereon rotarily adjustable on its longitudinal axis, an operating-shaft extending longitudinally of the arm and an arbor geared thereto and extending transversely of the shaft, of a guide rotarily adjustable on an axis substantially concentric with that of the arbor, a reciprocating tool-carrier on the guide and operating connections between it and the arbor.

7. In a shaper, the combination with a main frame or support and an arm or frame rotarily adjustable on its axis and having an operating-shaft therein and an arbor extending transversely thereof having a crank thereon, of a head adjustable on the arm or frame around the axis of the arbor, a tool-carrier on the head and a pitman connecting the crank and tool-carrier.

8. In a shaper, the combination with a main frame or support and an arm or frame supported on the main frame and rotarily adjustable on its axis, having an operating-shaft therein and a motor for operating the shaft supported on the arm, of an arbor extending in a plane transversely of the shaft, a head adjustable at an angle to the shaft around the axis of the arbor, a reciprocating tool-carrier on the head and connections between the arbor and tool-carrier for reciprocating the latter.

9. In a shaper, the combination with a main frame or support, an arm thereon and an operating-shaft therein, an arbor on the arm extending at an angle to the shaft and driven therefrom, of a head rotarily adjustable on the arm around the axis of the arbor, a reciprocatory tool-carrier on the head and connections between the arbor and carrier for actuating the latter.

10. In a shaper, the combination with the main frame or support having the horizontal bearing therein, the arm rotarily adjustable in the bearing, a motor at one end of the arm, an operating-shaft connected to the motor and extending through the arm, of a head mounted on the end of the arm opposite the motor and adjustable at an angle to the arm on an axis extending transversely of that of the arm, a reciprocating tool-carrier on the head and connections between it and the shaft for causing its operation.

11. In a shaper, the combination with the main frame or support, having the horizontal bearing therein, the arm rotarily adjustable in the bearing and an operating-shaft extending through the arm, of a head mounted on the end of the arm mounted upon an axis extending transversely of that of the arm and adjustable at an angle to the longitudinal axis thereof, a reciprocating tool-carrier on the head and driving connections between it and the shaft.

12. In a shaper, the combination with an arm or frame a shaft extending longitudinally thereof and an arbor extending at right angles to the shaft and driven therefrom having a crank, of a head adjustable around the axis of the arbor, a slide thereon and a pitman connecting the slide and crank to actuate the former.

13. In a shaper, the combination with a supporting-arm, having the transversely-extending bearing, an arbor journaled in the bearing having the flange at one end thereof, the wheel at the other end said flange and wheel preventing longitudinal movement in the bearing, and a reciprocating tool supported on the arm and actuated by the arbor, of an operating-shaft extending longitudinally of the arm and connections between the shaft and arbor.

14. In a shaper, the combination with a supporting-arm, having the transversely-extending bearing, the arbor therein having the crank, and the face-plate on the arm extending transversely of the bearing, of the head rotarily adjustable on said plate on an axis concentric with that of the arbor, means for securing the head in position, and a reciprocatory tool-carrier on the head and a pitman connecting it with the crank.

15. In a shaper, the combination with a supporting-arm having the transversely-extending bearing, the arbor therein having the crank, and the face-plate on the arm extending transversely of the arbor, of the head rotarily adjustable on said face-plate on an axis coincident with that of the arbor, means for securing the head in position, a reciprocating tool-carrier on the head, a pitman connecting the crank and tool-carrier and means for adjusting the pitman relatively to the crank and carrier.

16. In a shaper, the combination with a reciprocatory tool carrier or slide, of a tool carried thereby and movable relatively thereto to clear the work, a crank operating the carrier and connections between the crank and tool for positively moving the tool on the carrier during the movement of the carrier in one direction.

17. In a shaper, the combination with a reciprocatory tool carrier or slide, of a tool carried thereby and movable relatively to the work to clear it when retracted, and an oscillatory screw actuated in opposite directions for operating the tool laterally of its line of cutting when the carrier moves in one direction.

18. In a shaper, the combination with a reciprocating tool-carrier, of a tool carried thereby and movable relatively to the work to clear it when retracted, and an opposite screw connection for moving the tool laterally of the line of cutting when reciprocated in opposite directions.

19. In a shaper, the combination with a reciprocatory tool-carrier, of a tool carried thereby and movable relatively to the line of cutting to clear the work, means for actuating the tool to clear the work and yielding connections between said means and the tool.

20. In a shaper, the combination with a reciprocatory tool-carrier, of a tool carried thereby and movable relatively to the line of cutting to clear the work, means for actuating the tool to clear the work embodying a screw and yielding connections between the screw and tool.

21. In a shaper, the combination with a reciprocatory tool-carrier, of a tool carried thereby and movable relatively to the line of cutting to clear the work, a screw for operating said tool relatively to the work and means for oscillating said screw in opposite directions as the carrier is reciprocated.

22. In a shaper, the combination with a reciprocatory tool-carrier, of a tool carried thereby and movable laterally relatively to the line of cutting to clear the work, a screw for operating said tool relatively to the work having tappets thereon and a movable part coöperating with the tappets when the carrier is at the extremes of its movement.

23. In a shaper, the combination with a reciprocatory tool-carrier and a tool-holder pivoted thereon, of a rotary crank connected to the carrier, and means for moving the tool-holder on its pivot actuated by the crank.

24. In a shaper, the combination with a reciprocatory tool-carrier and a tool-holder pivoted thereon, of a rotary crank connected to the carrier and means for moving the tool-holder on its pivot embodying a screw and connections between the crank and screw for oscillating the latter from the former.

25. In a shaper, the combination with a support, a reciprocatory tool-carrier, a tool-holder movable on the carrier to cause the tool to clear the work and operating devices for moving the holder arranged on the support and having an extensible connection with the holder.

26. In a shaper, the combination with a support, and a reciprocatory tool-carrier, of a tool-holder movable on the carrier to cause the tool to clear the work, means on the carrier for moving the holder, an oscillatory shaft on the support and an extensible connection between it and said means.

27. In a shaper, the combination with a support, and a reciprocatory tool-carrier, of a tool-holder movable on the carrier to cause the tool to clear the work, means on the carrier for moving the holder embodying a screw and nut, an oscillatory shaft on the support and an extensible connection between the shaft and screw.

28. In a shaper, the combination with a support, and a reciprocatory tool-carrier, of a tool-holder movable on the carrier to cause the tool to clear the work, means on the carrier for moving the holder embodying a screw and nut and yielding connections between them and the holder, an oscillatory shaft on the support and an extensible connection between the shaft and screw.

29. In a shaper, the combination with a reciprocatory tool-carrier, of a head rotarily adjustable thereon, the tool-holding holder movable on the head and means for moving the holder on the head extending axially of the center of adjustment of the latter whereby the holder may be moved on the head in all positions of rotary adjustment of the latter.

30. In a shaper, the combination with a reciprocatory tool-carrier, having the cylindrical extension thereon, of the head rotatably adjustable on the boss, the tool-holder movable on the head and means concentric with the extension for operating the holder on its pivot.

31. In a shaper, the combination with a reciprocatory tool-carrier, the tool-holder movable thereon, an oscillatory screw and a right and left threaded connection between the screw, carrier and holder.

32. In a shaper, the combination with a reciprocatory tool-carrier, the tool-holder pivoted thereon, the nut, the springs arranged between the nut and holder, the screw threaded in the carrier and in the nut by threads having opposite leads.

33. In a shaper, the combination with a reciprocatory tool-carrier, and the nut in the end thereof, of the tool-holder pivoted on the carrier, the nut, the springs between the holder and nut, the screw provided with threads having opposite leads engaging the nuts and means for oscillating the screw.

34. In a shaper, the combination with a support, the rotary arbor having the crank-pin, the reciprocatory tool-carrier and the pitman connected thereto and to the crank-pin, of the tool-holder pivoted on the carrier, the oscillatory arbor having the tappets engaged by the crank-pin and an extensible connection between the arbor and tool-holder embodying a screw connection for moving the holder as the carrier is reciprocated.

35. In a shaper, the combination with the standard or column having the keyway therein, of a vertically-movable work-supporting frame sleeved on the column and a spline or key adjustably connected to the frame to permit rotation of the latter independently of the key.

36. In a shaper, the combination with the standard or column having the keyway therein, and the reciprocatory tool-carrier thereon universally adjustable relatively to the standard, of a work-supporting frame sleeved on the standard and vertically and rotarily adjustable thereon, a key adjustably connected to the frame and operating in the keyway.

37. In a shaper, the combination with the standard or column having a keyway therein, of a work-supporting frame sleeved on the column and vertically adjustable thereon having the horizontal slot, a key arranged in the keyway of the column and a securing device extending through the slot connected to the key and adjustably connected to the frame.

38. The combination with the standard or column having a keyway therein, of a work-supporting frame sleeved on the standard and having the horizontal slot with serrated edges, a key-plate in the keyway the locking-plate coöperating with the serrated edges of the slot and the bolt connecting the locking plate and key.

846,729. FIRE-ALARM SYSTEM. MILES CONNOR, Pueblo, Colo. Filed June 22, 1906. Serial No. 322,926.

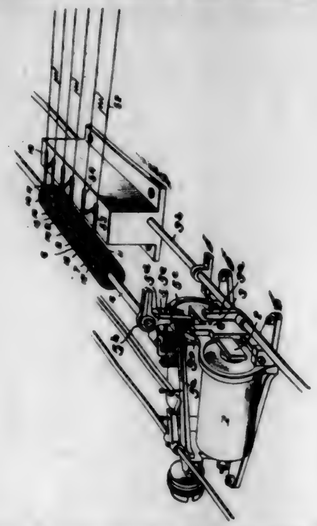

Claim.—1. The combination with a plurality of circuits having alarms and a repeating mechanism in said circuits, of a drum secured to a portion of said repeating mechanism and means disposed in coöperative relation with said drum and circuits whereby a signal will be transmitted through all of said circuits simultaneously.

2. The combination with a plurality of electric circuits having signaling mechanism at various points and a repeating mechanism for said circuits, of a drum on said repeating mechanism, contact-plates on said drum and means to dispose said circuits into engagement with said plates whereby the individual circuits will be disposed into one common circuit.

3. The combination with a repeating mechanism for alarm systems, of a drum secured to said repeating mechanism, contact-plates on said drum, contact-fingers disposed over said drum and adapted to engage said contact-plates, auxiliary plates secured to said drum and adapted to engage said fingers when the drum is rotated and a plurality of circuits connected to said fingers.

4. An attachment for a plurality of signaling-circuits having a repeating mechanism, comprising a drum, contact-plates on said drum, fingers disposed over said drum and adapted to engage said contact-plates whereby individual circuits will be disposed into a common circuit, when said fingers engage said contact-plates and auxiliary plates on said drum adapted to engage said fingers when the drum is rotated thereby disposing said common cir cuit into individual circuits.

5. An attachment for alarm systems comprising a drum, contact-plates on said drum, fingers to engage said contact-plates to dispose said individual circuits into a common circuit, and auxiliary plates on said drum adapted to engage said fingers and dispose said common circuit into individual circuits.

6. The herein-described signaling system comprising a plurality of individual circuits, a repeater disposed into coöperation with said individual circuits, a drum disposed on said repeater, means to rotate said drum, contact-plates on said drum, fingers disposed into coöperation with said plates whereby individual circuits will be disposed into a common circuit, signaling mechanism at various points in said circuits, means carried by said drum to dispose said common circuit into individual circuits and additional means to operate said circuits whereby various alarms will be sounded.

7. The combination with a plurality of independent circuits having alarms and a repeating mechanism in said circuits; of a drum secured to a portion of said repeating mechanism and adapted to be operated thereby, a plurality of contact-plates on said drum, contact-fingers in said circuits adapted to coöperate with said plates and switches in said circuits adjacent said fingers whereby the circuit may be shunted from said fingers.

8. The combination with a plurality of independent circuits having alarms and signaling mechanism thereon and means to dispose said independent circuits into a common circuit, of a resistance between the poles of each independent circuit whereby when an alarm is transmitted over one of the circuits an entire removal of current in the remainder of the circuits will be prevented.

9. In a combined alarm and signaling system having a plurality of individual circuits and alarm and signaling instruments in said circuits, of means to dispose all of said circuits into a common circuit and means to automatically cut out a portion of said signaling instruments when the current in the common circuit is reduced to a predetermined point.

10. The combination with a plurality of individual circuits and means to dispose said individual circuits into a common circuit, of telephonic and telegraphic signaling devices in said circuits adapted to be operated by a reduction of current strength in said circuits, and shunting devices in said circuits adapted to be automatically operated when the current is reduced to a predetermined point whereby a further reduction of current strength will be prevented.

11. The combination with a plurality of independent circuits adapted to transmit fire-alarm signals when the circuit is broken and to transmit telegraphic and telephonic signals when the current strength is reduced, of means to dispose all of said individual circuits into a common circuit, signaling devices on said circuits and means to shunt the current around said signaling devices when the current strength has been reduced to a predetermined point thereby preventing the accidental operation of the fire-alarm instruments.

846,730. MEANS FOR CONTROLLING THE VALVES FOR EXPLOSIVE-ENGINES. GEORGE CORMACK, Jr., and FREDERICK C. ZUMDAHL, Rockford, Ill. Filed Feb. 5, 1904. Serial No. 192,104.

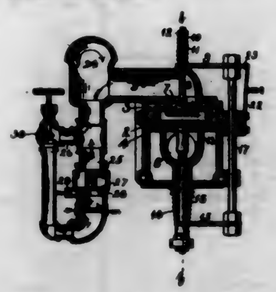

Claim.—In a gasolene-engine, the combination of an exhaust-valve, an inlet-valve, two coiled springs surrounding the stem of the inlet-valve and of different lengths, a connection between the valves, the connection with the inlet-valve being such as to compress both springs only when the exhaust-valve is open.

846,731. SADDLETREE AND TREE-PAD PLATE. JOHN E. L. CRAWFORD, Lisbon, Ohio. Filed Nov. 8, 1906. Serial No. 342,544.

Claim.—1. A saddletree-plate comprising a yoke having a central opening, oppositely-disposed springs arranged on said yoke with their inner ends overlapping and having openings therein, a bolt extending through said yoke and spring-openings, and a nut on said bolt for clamping said parts rigidly together.

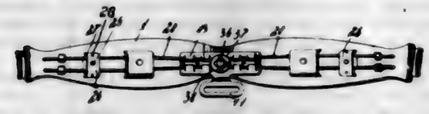

2. A saddletree-plate comprising a yoke having a slot extending transversely thereof, oppositely-disposed springs with their inner ends overlapping over said slot and having apertures registering with each other and with the slot, a bolt extending through said yoke and spring-apertures, and a nut on said bolt, said springs being bifurcated throughout the greater portion of their length.

846,732. FRUIT-CLIPPER. THOMAS H. DESHANE, Seattle, Wash. Filed Oct. 20, 1905. Serial No. 283,682.

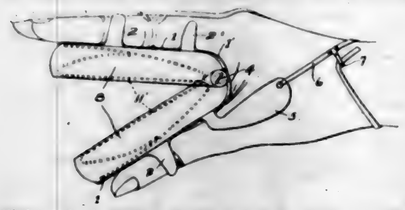

Claim.—1. A device of the type set forth comprising hinged jaws, cutter-blades secured to said jaws, and springs secured to said jaws, each spring consisting of a gripper portion and inturned end portions, one of which is secured to the adjacent jaw, the other of said end portions being free and bearing on said first-named end portions, the gripper portions of the springs being arranged adjacent the cutting edges of the blades, as specified.

2. A device of the type set forth comprising a pair of jaws increased in width at one end and provided with spaced-apart lugs pivoted together, blades secured to the inner faces of said jaws, lugs spaced apart along the edges of the outer faces of said jaws, another lug formed integral with one jaw at the side edge portion thereof and extending rearwardly so as to engage the back of the hand of the operator, and a spring secured to each jaw, said springs having gripper portions which are curved in cross-section and inbent end portions one of which is free and bears on the other.

846,733. CLUTCH MECHANISM. JOSEPH DOEPKER and FRANK DOEPKER, Ottawa, Ohio. Filed Oct. 29, 1906. Serial No. 341,040.

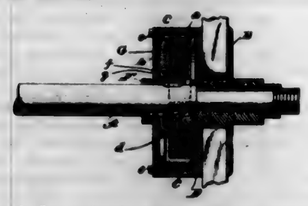

Claim.—1. In a clutch mechanism, the combination of a shaft or axle, a wheel loosely mounted on the shaft or axle and equipped with a rim, a disk loosely mounted on the axle and having a rib of T form in cross-section on one side, a shoe movable toward and from the rim and having a groove of T form in cross-section receiving the rib of the disk, and a cam fixed on the axle and arranged to move the shoe with respect to the rim.

2. In a clutch mechanism the combination of a shaft or axle, a wheel loosely mounted thereon and equipped with a rim, a cam fixed on the shaft or axle and having a curvilinear flange, of angular form in cross-section, and a shoe arranged between the cam and the rim so as to be moved by the former against the latter, and having a lateral pin engaged by the curvilinear flange of the cam, for the purpose set forth.

3. In a clutch mechanism, the combination of a shaft or axle, a wheel loosely mounted on the shaft or axle and equipped with a rim, a disk loosely mounted on the axle and having ribs of T form in cross-section on one side, shoes movable toward and from the rim and having grooves of T form in cross-section receiving the ribs of the disk and also having lateral pins on which are antifriction-rollers, and a cam fixed on the shaft or axle in position to force the shoes outward and having curvilinear flanges, of angular form in cross-section, receiving the antifriction-rollers on the lateral pins of the shoes.

846,734. TOBACCO-CUTTER. NAPOLEON DU BRUL, Cincinnati, Ohio. Filed Oct. 15, 1904. Serial No. 228,543.

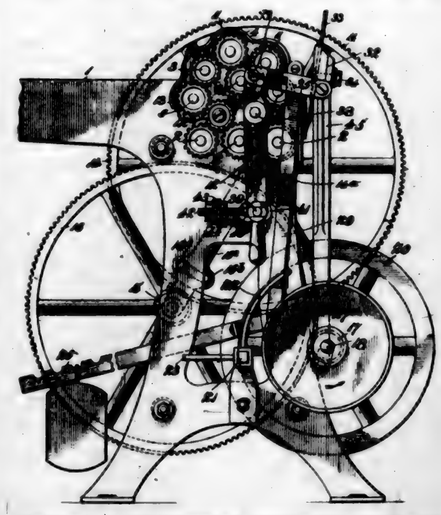

Claim.—1. A continuous-feed reciprocating tobacco-cutter comprising continuously-revolving feed-rolls, a mouth to which tobacco is delivered by said rolls to be cut, a knife mounted at an angle to the plane of said mouth, moving downward in suitable relation to cut tobacco protruding therefrom and mounted to rock upon an axis in a horizontal plane passing through the knife, a crank-shaft suitably mounted upon the lower portion of the machine beneath the knife parallel to the rocking axis of the knife, and a connection between the crank of said shaft and the knife, for imparting the downward cutting movement to the knife during the downward rotation of the crank, an outward rocking movement to remove the blade from the mouth and an upward movement to said blade during the upward movement of the crank.

2. In a continuous-feed reciprocating tobacco-cutter, the combination of upper and lower feed-rolls, a cutting-mouth to which the tobacco to be cut is fed by said rolls, a knife reciprocating in cutting relation to said mouth during its downward stroke and held at an angle to the plane of the mouth during its cut, means whereby said knife is mounted to rock upon an axis in a horizontal plane passing through the knife whereby it may rock to bring its cutting edge away from the mouth during its upper movement, a connection rigid with the knife in the direction of its rocking movement, extending downwardly to the lower portion of the machine, a crank-shaft upon

which said connection has bearing, imparting the downward movement to the knife-blade and holding said blade in cutting relation to the mouth during the downward movement of the crank and rocking the blade outward from the mouth and moving it upward during the upward movement of the crank, and a direct train of reducing spur-gears extending from the crank-shaft to and in driving relation with the feed-rolls and imparting continuous rotation thereto in definite relation to the cutting-stroke of the knife.

3. The combination with the frame and the continuous-feeding mechanism mounted thereon, of a knife-holder, a crank-shaft in driving relation with one end of the knife-holder, a pair of vibratory links each connected to the other end of the knife-holder, a pair of adjustable levers upon which the vibratory links swing, a transverse tie-rod for connecting the adjustable levers, a threaded eye-bolt for setting the adjustable levers and a nut for locking the adjustable levers in any desired position.

4. The combination with the cranked drive-shaft, of the feed mechanism, reducing-gearing connecting the cranked drive-shaft and the feed mechanism, constructed to cause the continuous operation of the feeding mechanism, and a knife-holder connected at one end to the crank-shaft and at its other end moving in an eccentric orbit.

5. The combination with the drive-shaft, of a feeding mechanism, reducing-gear connecting the drive-shaft and the feed mechanism, constructed to cause the continuous operation of the feed mechanism, a reciprocating knife and means for causing it to oscillate about an axis in a horizontal plane intersecting the knife, while it is reciprocated by the crank-shaft.

6. The combination with the continuous-feeding mechanism, of a knife-holder, vibratory links connected to said knife-holder pivoted means for shifting the fulcrums of the vibratory links, and means for causing the other end of the knife-holder to travel in a circular path.

7. The combination with the continuous-feeding mechanism, of a knife-holder, vibratory links connected to one end of the knife-holder, pivoted means for shifting the fulcrums of the vibratory links and a crank-shaft connected to the other end of the knife-holder.

8. The combination with the continuous-feeding mechanism, of a knife, a knife-holder, vibratory links connected to one end of the knife-holder in a horizontal plane cutting the knife means for shifting the fulcrums of the vibratory links, and means for causing the other end of the knife-holder to travel in a circular path.

9. The combination with the continuous-feeding mechanism, of a knife-holder, a pair of adjustable levers, a pair of vibratory links each connected at one end to an adjustable lever and at its other end to the knife-holder near one end, and a crank-shaft connected to the knife-holder near the other end.

10. The combination with the continuous-feeding mechanism, of a knife, a knife-holder, vibratory links connected to one end of the knife-holder in a horizontal plane intersecting the knife, means for shifting the fulcrums of the vibratory links, and a crank-shaft connected to the other end of the knife-holder.

11. In a machine for cutting tobacco, the combination with the drive-shaft carrying a gear, of feeding-rolls, a second shaft parallel to the first for operating the feeding-rolls, a gear carried thereby a swinging arm journaled on said second shaft, and a reducing-gear carried by the swinging end of the arm and geared to the drive-shaft and the feed-roll-operating shaft.

12. In a machine for cutting tobacco, the combination with the drive-shaft, carrying a gear, of feeding-rolls, a shaft for operating the feeding-rolls, a gear carried thereby, a swinging arm journaled on said shaft, and a reducing-gear carried by the swinging end of the arm and geared to the drive-shaft and the feed-roll-operating shaft, and a pitman-driven knife operated continuously from the drive-shaft.

13. In a machine for cutting tobacco the combination with the feeding-rolls, of a cranked drive-shaft, a reducing-gearing between the feeding-rolls and the cranked drive-shaft constructed to continuously operate the rolls, a knife-holder connected at one end to the cranked drive-shaft, and means for causing the other end of the knife-holder to travel in an arcuate path.

14. In a machine for cutting tobacco having continuously-rotating feed-rolls, the tobacco-feeding rolls, a drive-shaft a reciprocating cutter operated through an arcuate path by the drive-shaft, a pinion secured to drive-shaft, an intermediate reducing-gear driven by said pinion, a reducing-gear leading to feed-rolls driven by the intermediate reducing-gear.

15. In a machine for cutting tobacco having continuously-rotating feed-rolls, the tobacco-feeding rolls, a drive-shaft, a pinion secured to drive-shaft, an intermediate reducing-gear driven by said pinion, a reducing-gear leading to feed-rolls driven by the intermediate reducing-gear, vibratory levers connected to the frame and a knife-holder pivoted at one end to the vibratory links and at the other end connected to the crank-shaft, the coöperating relation between the vibratory levers and the crank-shaft being such that the knife moves in an eccentric path.

846,735. BALING-PRESS. HARRY L. DUNCAN, New York, N. Y. Filed Aug. 13, 1901. Serial No. 71,896.

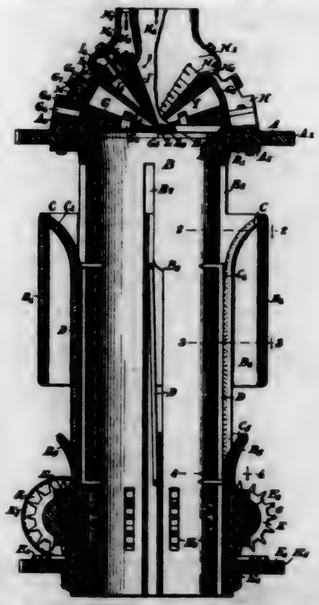

Claim.—1. In a baling-press, a rotating slotted cap-plate, a conical feeder revolubly mounted on said cap-plate to feed material into the slot in said cap-plate, a conical condenser revolubly mounted on said cap-plate and driven by said feeder, an outer casing and an inner casing each having a cylindrical top portion secured to said cap-plate, said inner casing being connected with said condenser to supply lint thereto, and the annular space between said casings being connected with the interior of said condenser to exhaust air therefrom, a baling-chamber mounted adjacent said cap-plate and provided with a sizing-collar, a series of rotary ejectors mounted on the discharge end of said chamber to engage a bale within said chamber and to regulate the movement of said bale through said chamber, retainer-slots, cam-guides and retainer-guides formed in said chamber, longitudinal slots in said chamber, to form bale-engaging ribs in which said retainer-slots are formed and retainers to be inserted through said retainer-slots and to engage said guides.

2. In a baling-press, a rotating slotted cap-plate, a conical feeder revolubly mounted on said cap-plate, a conical condenser revolubly mounted on said cap-plate and driven from said feeder, an outer and an inner casing secured to said cap-plate, said casings having a cylindrical top portion, said inner casing being connected to said condenser to supply lint thereto, and the annular space between said casings being connected with the interior of said condenser to exhaust air therefrom.

3. In a baling-press, a revoluble conical ejector and a helical thread formed on the exterior of the same to engage a bale.

4. In a baling-press a conical ejector, a helical thread on the exterior of the same, said thread projecting a varying distance from said ejector throughout the length of said thread to gradually engage a bale.

5. In a baling-press, a bale-supporting chamber, a series of conical ejectors having bale-gripping helical threads on the exterior of the same mounted on said chamber, and means to rotate all said ejectors in unison.

6. In a baling-press, a bale-supporting chamber, a rotary ejector mounted on said chamber, a helical thread formed on the exterior of said ejector to project into said chamber to engage a bale.

7. In a baling-press, a bale-supporting chamber, a series of rotary ejectors mounted on said chamber, helical threads formed on said ejectors to project into said chamber to engage a bale and means to rotate said ejectors in unison.

8. In a baling-press, a baling-chamber, means to form a continuous bale in said chamber, means past which said bale moves to control its movement through said chamber, said chamber being formed with retainer-slots and retainers having separated projecting feet to be inserted through said slots into said bale to divide the same and to hold the separate bales in position after leaving said chamber.

9. In a baling-press, a baling-chamber, means to form a continuous bale in said chamber, means to continuously move said bale from said chamber, said chamber being formed with retainer-slots, and retainers to be inserted through said slots into said bale to divide the same into separate bales and to hold said bales in position after they move out of said chamber.

10. In a baling-press, a chamber to support a continuous forming bale, ejectors adjacent the discharge end of said chamber to govern the movement of said bale through said chamber, there being retainer-slots formed in said chamber and retainers having separated rigidly-supported feet to be inserted through said slots into said bale to divide the same into separate bales and to retain said bales in position after they move from said chamber.

11. In a baling-press, a chamber to support a bale, there being retainer-slots and upper and lower retainer-guides adjacent said slots formed in said chamber, and retainers to be inserted through said slots into said bale and to engage said guides to be held in position in said bale.

12. In a baling-press, a chamber to support a bale there being formed in said chamber retainer-slots and upper and lower retainer-guides adjacent said slots and retainers to be inserted through said slots to engage said guides to be thereby forced into said bale and held in position therein.

13. In a baling-press, a chamber to support a continuous forming bale, there being formed in said chamber slots and upper and lower retainer-guides adjacent said slots to hold retainers inserted through said slots into said bale in position in said bale.

14. In a baling-press, a chamber to support a continuous forming bale, there being formed in said chamber retainer-slots, cam-guides, and retainer-guides, adjacent said slots, to force retainers inserted through said slots into said bale and to hold said retainers in position in said bale.

15. In a baling-press, a chamber to support a continuous bale there being formed in said chamber retainer-slots, cam-guides and retainer-guides and retainers having projecting sharp points to engage said bale to be inserted through said slots to engage said guides, said retainers being carried along said chamber by said bale and said points being thereby forced into said bale.

16. In a baling-press, a chamber to support a continuous bale, there being retainer-slots and cam-guides formed in said chamber and retainers to be inserted through said slots to engage said cam-guides and to be forced into said bale by the longitudinal movement of said bale through said chamber.

17. In a baling-press, a chamber to support a bale, means to move said bale through said chamber, retainers and means actuated by the longitudinal movement of said bale through said chamber to insert said retainers into said bale.

18. In a baling-press, a chamber to support a continuous forming bale, there being retainer-slots formed in said chamber, retainers to be inserted into said slots to engage said bale and to be thereby carried longitudinally through said chamber and means engaging said retainers to force said retainers into said bale as they are moved longitudinally through said chamber.

19. In a baling-press, a chamber with longitudinal slots therein to support a bale, retainer curved cam-guides adjacent said slots, and retainers to coact with said guides to be thereby inserted in said bale.

20. In a baling-press, a baling-chamber, means to form a continuous bale in said chamber, means past which said bale moves to control its movement through said chamber, said chamber being formed with retainer-slots and retainers having projecting feet to be inserted through said slots into said bale to divide the same into separate bales.

21. In a baling-press, a chamber to support a bale, there being retainer-slots formed in said chamber, retainers to be inserted through said slots into said bale and bale-governing elements past which said bale and retainers move to govern the movements of said bale through said chamber.

22. In a baling-press, a chamber to support a continuous forming bale, means adjacent the discharge end of said chamber to hold said bale under longitudinal compression, retainers having pointed feet rigidly projecting laterally therefrom and spaced apart at substantially the length of a separate bale and means acting through the longitudinal movement of said bale through said chamber to insert said feet into said bale within said chamber.

23. In a baling-press, a chamber to support a continuous forming bale, there being retainer-slots formed in said chamber, rigid retainers of substantially the length of a bale, projecting feet at the ends of said retainers and means to force said feet into said continuous bale to sever the same and to retain the separate bales in position.

24. In a baling-press, a chamber to support a continuous forming bale, there being retainer-slots formed in said chamber, rigid retainers of substantially the length of a bale, projecting feet at the ends of said retainers, retainer-guides adjacent said slots to engage both ends of said retainers to force said feet into said bale.

25. In a baling-press, a chamber to support a continuous bale, there being retainer-slots formed in said chamber, retainers substantially the length of a bale, bale-severing feet at the ends of said retainers and means to simultaneously force said feet into said continuous bale.

26. In a baling-press, a bale-severing retainer substantially the length of a bale, rigidly-projecting bale-severing feet at the ends of said retainer to be forced into a continuous bale to divide the same into separate bales and to retain said bales in compressed condition.

27. In a baling-press, a rigid bale-separating retainer substantially the length of a bale, rigidly-projecting bale-severing feet at the ends of said retainer and guiding projections at the ends of said retainer.

28. In a baling-press, a chamber to support a forming bale, means adjacent the discharge end of said chamber to hold said bale under compression, retainers having feet projecting therefrom spaced apart at substantially the length of a separate bale and means to insert said feet into said bale within said chamber to retain the separate bales on their discharge from said chamber.

29. In a baling-press, a chamber to support a continuous bale, means adjacent the discharge end of said chamber to hold said bale under compression, said chamber being provided with retainer-slots and with laterally-displaced upper and lower retainer-guides adjacent said slots, retainers having feet projecting therefrom spaced apart at substantially the length of a bale to be inserted into

said slots and said feet being forced into said bale in laterally-displaced position by said guides.

30. In a baling-press, a chamber to support a continuous forming helical bale, means past which said bale moves to govern its movement through said chamber and means to divide said continuous bale and to hold the separate bales in position after leaving said chamber.

846,736. SUBMARINE TORPEDO-BOAT. ALFRED ELGAR, North Brixton, England. Filed June 12, 1905. Serial No. 264,938.

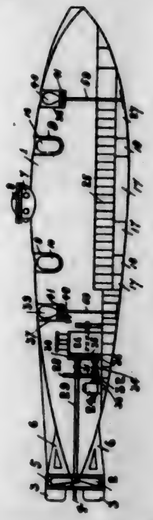

Claim.—1. In a submarine boat the combination of wells in which are carried buoyant torpedoes, wells in which are carried buoys to indicate the position of the boat if sunk, said buoys being automatically released when the boat sinks below a certain depth, an extensible spar torpedo fitted in the bow of the boat, a grapnel normally housed in a chamber at the bottom of the boat for securing and cutting the cables connected to submarine boats, and means for propelling and submerging the boat, all substantially as specified.

2. A submarine boat provided with means for submerging and propelling same, wells in which are carried buoyant torpedoes and buoys for indicating position of boat if sunk, means for holding the torpedoes and buoys in the wells and means for launching the torpedoes and releasing said buoys operated by release-levers within the boat substantially as shown and described.

3. In a submarine boat provided with wells in which are carried buoys for indicating the position of the boat if sunk, a valve opening inward in the top of the buoy, a tube connecting the inside of the buoy with the inside of the boat, a ring at the bottom of the buoy, a bolt passing through said ring, a lever attached to said bolt, an armature secured to short arm of said lever, an electromagnet which attracts said armature when energized and an electric battery and a manometer to close the electric circuit when the boat reaches a predetermined depth as and for the purpose specified.

846,737. WATER-TUBE BOILER. WILLIAM S. ELLIOTT, Pittsburg, Pa. Filed Sept. 14, 1905. Serial No. 278,438.

Claim.—1. In a water-tube boiler, a longitudinal upper steam and water drum, a lower longitudinal mud-drum which is shorter than the upper drum, tubes connecting the two drums, transverse baffles between said tubes, and a front transverse water-chamber having tubes connecting it to the steam and water drum; substantially as described.

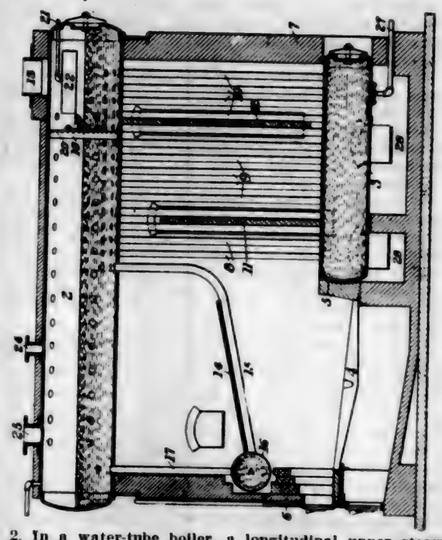

2. In a water-tube boiler, a longitudinal upper steam and water drum, a lower longitudinal mud-drum which is shorter than the upper drum, tubes connecting the two drums, transverse baffles between said tubes, and a front transverse water-chamber having tubes connecting it to the steam and water drum with a baffle lying on said tubes over the furnace-chamber; substantially as described.

3. A longitudinal-drum boiler of the water-tube type having a transverse partition in the steam and water drum extending above the water-level, and a baffle in the rear of the partition arranged to cause a moderate up-and-down circulation in the rear of said partition; substantially as described.

4. In a water-tube boiler, a longitudinal upper steam and water drum, a lower longitudinal mud-drum, tubes connecting the two drums, baffling between said tubes, and a front transverse water-chamber between the levels of the steam and water drum and the mud-drum and having tubes connecting it to the steam and water drums; substantially as described.

5. In a water-tube boiler, a longitudinal mud-drum, a longer longitudinal steam and water drum extending in front of the mud-drum and connected thereto by water-tubes, a furnace in front of the mud-drum and under the steam and water drum, a transverse water-chamber near the front wall, and tubes connecting the chamber with the steam and water drum and extending over the furnace; substantially as described.

6. In a water-tube boiler, a longitudinal mud-drum, a longer longitudinal steam and water drum extending in front of the mud-drum and connected thereby by water-tubes, a furnace in front of the mud-drum and under the steam and water drum, a transverse water-chamber near the front wall, tubes connecting the chamber with the steam and water drum and extending over the furnace, and baffling lying on said tubes and over the furnace; substantially as described.

7. In a longitudinal-drum water-tube boiler, a mud-drum which is shorter than the steam and water drum, a furnace in front of the mud-drum and under the steam and water drum, and a front transverse water-chamber having at least two sets of tubes connecting it to the upper steam and water drum, one set of tubes forming at least part of the roof of the furnace; substantially as described.

8. In a longitudinal-drum water-tube boiler, a mud-drum which is shorter than the steam and water drum, a furnace in front of the mud-drum and under the steam and water drum, and a front transverse water-chamber having at least two sets of tubes connecting it to the upper steam and water drum, one set of tubes forming at least part of the roof of the furnace and having baffling lying thereon; substantially as described.

9. A longitudinal-drum water-tube boiler having an upper longitudinal steam and water drum provided with a transverse partition extending above the water-level, and baffles in front of and in the rear of the partition arranged to cause longitudinal circulations on both sides of the partition.

10. In a longitudinal-drum boiler of the water-tube type, a steam and water drum extending in front of the mud-drum, and a front transverse water-chamber hung above the grate-level by water-tubes from the steam and water drum and having at least part of its tubes extending over the furnace; substantially as described.

11. In a water-tube boiler, a longitudinal upper steam and water drum, a lower longitudinal mud-drum, tubes connecting the two drums, baffles between said drums, a furnace in front of the front end of the mud-drum, and a roof over the furnace consisting of water-tubes supporting baffles; substantially as described.

12. In a longitudinal-drum water-tube boiler, a steam and water drum having a transverse partition dividing it into compartments, and baffling between the tubes in each compartment to give a circulation in each side of said partition; substantially as described.

13. In a longitudinal-drum water-tube boiler, a steam and water drum having a transverse partition dividing it into compartments, and baffling between the tubes in each compartment to give a circulation on each side of said partition, the baffles dividing each set of tubes into sets of unequal numbers; substantially as described.

14. In a longitudinal-drum boiler, a steam and water drum having an intermediate transverse partition extending above the water-level, a feed-water inlet in the rear water-compartment, and a baffle among the tubes in the rear of the partition and arranged to cause circulation in the water-tubes entering said rear compartment; substantially as described.

15. In a water-tube boiler, an upper steam-drum and a lower mud-drum parallel therewith, tubes connecting said drums, and a front transverse water-chamber located between the levels of the steam-drum and the mud-drum having tubes connecting it to the steam and water drums; substantially as described.

16. In a water-tube boiler, a steam and water drum, a lower mud-drum parallel therewith, tubes connecting the drums, baffles between said tubes, a water-chamber over the front of the furnace, said chamber being below the level of the steam and water drum and above the level of the mud-drum, and water-tubes connecting the water-chamber to the steam and water drum and forming at least a part of the roof of the furnace; substantially as described.

17. In a water-tube boiler, an upper steam-drum, a lower mud-drum parallel therewith, tubes connecting the two drums, water-tubes longitudinal with the furnace, forming at least a part of the roof of the furnace, and having their front ends connected to the upper steam and water drums, their rear ends connected to a water-chamber located between the levels of the steam and water drums and the mud-drum a set of tubes connecting the water-chamber with the steam and water drums; substantially as described.

18. In a water-tube boiler, having steam and water drums connected to parallel mud-drums by water-tubes, a furnace in front of the mud-drum, a water-chamber near the front wall, and tubes connecting the chamber with the steam and water drums and extending over the furnace; substantially as described.

19. In a water-tube boiler, having steam and water drums connected to parallel mud-drums by water-tubes, a furnace in front of the mud-drum, a water-chamber near the front wall, tubes connecting the chamber with the steam and water drums and extending over the furnace, and baffle-plates above the tubes and over the furnace; substantially as described.

20. In a longitudinal-drum water-tube boiler, a mud-drum and a steam and water drum, a furnace in front of the mud-drum, a front water-chamber located between the levels of the mud-drum and the steam and water drum having at least two sets of tubes connecting it to the upper steam and water drum, one set of tubes forming at least a part of the roof over the furnace; substantially as described.

21. A water-tube boiler having a lower mud-drum, an upper steam and water drum parallel therewith, water-tubes connecting said drums, and water-tubes supporting and forming at least a part of the roof of the furnace-chamber and having connections at two different points into the steam and water drum whereby a circulation is introduced therethrough; substantially as described.

22. In a boiler of the water-tube type, a steam and water drum over the furnace in front of the mud-drum, and connected therewith, a source of heat below the steam and water drum and in front of the mud-drum, a water-chamber under the steam and water drum, tubes connecting said water-chamber with said steam and water drum, so as to form a complete cycle of circulation, independent of the circulation due to the tubes connecting the steam and water drum with the mud-drum; substantially as described.

846,738. WATER-TUBE BOILER. WILLIAM S. ELLIOTT, Pittsburg, Pa. Filed Mar. 21, 1906. Serial No. 307,190.

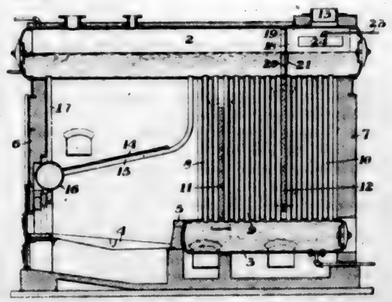

Claim.—1. In a longitudinal-drum water-tube boiler, a steam and water drum having a transverse partition with an opening at or below the water-line, and means for varying the area of said opening; substantially as described.

2. In a longitudinal-drum water-tube boiler, an upper drum having a transverse partition with a steam-opening in its upper part, and a water-opening in its lower part, and an adjustable closure for the water-opening; substantially as described.

3. In a longitudinal-drum water-tube boiler, a shorter longitudinal mud-drum, a bridge-wall in front of the mud-drum, a longer upper drum extending over the furnace in front of the mud-drum, tubes connecting the rear part of the upper drum with the mud-drum and located in the rear of the bridge-wall, a transverse baffle among the tubes, and a partition in the upper drum in line with the baffle and having a hole through it at a point not above the water-line of the boiler; substantially as described.

4. In a longitudinal-drum water-tube boiler, a shorter mud-drum, a longer upper drum extending over the furnace in front of the mud-drum, tubes connecting the rear part of the upper drum with the mud-drum, a transverse baffle among the tubes, a partition in the upper drum in line with the baffle and having a hole through it, and an adjustable closure for said hole; substantially as described.

5. In a longitudinal-drum water-tube boiler, a shorter mud-drum, an upper longer steam and water drum having its rear part connected by tubes to the mud-drum, a pair

of transverse baffles among said tubes, a partition in the upper drum substantially in line with the second baffle, said partition having a hole with an adjustable closure therefor; substantially as described.

6. A cylindrical drum having tubes connected thereto and arranged in transverse rows on opposite sides of a longitudinal plane, each row upon one side of said plane being in line with the space between two adjacent rows on the opposite side, the space between the rows on each side being sufficient for the passage of a tube therethrough from the intermediate row on the other side; substantially as described.

846,739. BUCKET FOR ELASTIC-FLUID TURBINES. EDMUND H. FARQUHAR, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 21, 1906. Serial No. 327,177.

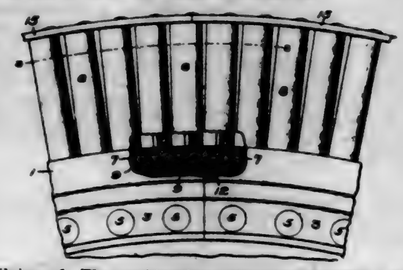

Claim.—1. The combination with a base having a dovetail or undercut groove, of a plurality of separately-formed buckets having shanks fitting said groove, and spacing-blocks in said groove between said bucket-shanks, the material of the base at the ends of the groove being upset to secure the parts together.

2. The combination with a base having a dovetail or undercut groove, of a plurality of separately-formed buckets of uniform cross-section and cut away at one end to form shanks fitting said groove, spacing-blocks in said groove flush with the surface of the base and having curved ends fitting against the bucket-shanks, and lips upset at the ends of the groove to hold the parts together.

3. The combination with a base having a dovetail or undercut groove, of a plurality of separately-formed buckets of uniform cross-section and cut away at one end to form shanks fitting said groove, spacing-blocks of the same material as the buckets fitted into said groove and fitting the curves of said bucket-shanks, a filling-block at the end of the groove of substantially the same material as the base, and incisions in the ends of the base forming upset lips to hold the parts together.

4. In an elastic-fluid turbine the combination of a bucket-support having a groove formed therein which is narrower at the throat than at the bottom, buckets having projections thereon which enter the groove and are retained in place by the walls thereof and devices for spacing the buckets apart to preserve the proper pitch, the ends of the support being riveted over to force the buckets and the spacing devices into engagement with each other and also to secure them rigidly in said support.

846,740. WRENCH. MILTON FORDER, Thief River Falls, Minn. Filed Aug 27, 1906. Serial No. 332,283.

Claim.—1. In a wrench of the class described comprising the combination with a handle having an elongated slot therein and a socket at one end thereof, a jaw stationary with said handle; of a shank adjustably mounted in said slot and socket, a jaw movable with said shank, a shaft at the inner end of said shank, a cam-lock rotatably secured to said shaft, and means to operate said lock whereby said shank will be secured in its adjusted position in the slot.

2. In a wrench of the class described comprising the combination with a handle having an elongated slot therein and a socket at one end thereof and a jaw rigid with said handle; of a shank adapted to be disposed through said socket and into said slot, means to hold the free end of said shank in alinement with said handle, a jaw at the outer end of said shank and movable therewith, a plurality of teeth on the lower edge of said shank, a shaft at the inner end of said shank, a cam-lock rotatably secured on said shaft, means to operate said lock and a plurality of notches at the lower edge of said slot adapted to receive the teeth on said shank whereby when the cammed portion of said lock is in engagement with the upper edge of said slot, the shank and jaw carried thereby will be held in its adjusted position.

3. In a wrench of the class described comprising the combination with a handle portion having an elongated slot therein and a plurality of notches at one edge of said slot; of a shank adapted to be disposed in said slot, teeth carried by said shank, a shaft at one end of said shank, a lock on said shaft, said lock having a cammed portion whereby when the lock is turned in one position, the teeth upon said shank will be directed into engagement with the notches in the slot and a handle on said lock to rotate the same.

846,741. CIRCULAR-DISTRIBUTER. ROBERT G. FRASER, Philadelphia, Pa. Filed Jan. 11, 1906. Serial No. 295,588.

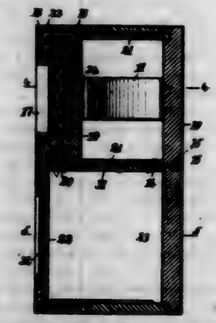

Claim.—1. A circular-distributer comprising a box having a front plate provided with an opening at one end through which the circulars can project, a follower, means for forcing the follower toward the front plate, and a series of separating-strips located between the several circulars in the box.

2. A circular-distributer comprising a box having a front plate provided with an opening at one end through which the circulars can project, a follower, means for forcing the follower toward the front plate, and a series of separating-strips located between the several circulars in the box, said separating-strips which are located adjacent to said opening being provided with plates projecting toward the ends of the circulars for further separating them from each other.

3. A circular-distributer comprising a box having an opening near one corner thereof, and a series of separators adapted for the circulars located within the box, said box being provided with grooves for guiding said separators.

4. A circular-distributer comprising a box having an opening near one corner thereof, a series of separators for the circulars located within the box, said box being provided with grooves for guiding said separators, and the box having a front plate provided with grooves for permitting the separators to drop from the distributer.

5. In a circular-distributer the combination of a box, means in the box for forcing circulars toward the front thereof, and a series of separators located within the box, said box having grooves for guiding said separators toward the front thereof and grooves through which the separators are adapted to drop from the box.

6. In a circular-distributer the combination of a box, means in the box for forcing circulars toward the front thereof, grooves through which the separators are adapted to drop from the box, and a receptacle located in position to receive said separators.

7. The combination of a receptacle for circulars with a separator for the circulars, said separator comprising a wire having a plate extending therefrom.

8. The combination of a receptacle, a series of envelops for receiving circulars located in said receptacle, means for separating said envelops from each other, and means for constantly forcing said envelops to one side of the receptacle, said separating means comprising a plurality of series of wires, the wires of one series each having a separating-plate extending therefrom.

9. The combination with a receptacle of a series of envelops contained in said receptacle for receiving circulars and the like, each envelop having an opening in one edge, and means for separating said envelops from each other, said receptacle having an opening for permitting the normal projection of the edges of the envelops.

846,742. FOLDER ATTACHMENT FOR HEMMERS. EDWARD F. GIBBONS, Jersey City, N. J. Filed Oct. 24, 1905. Serial No. 284,145.

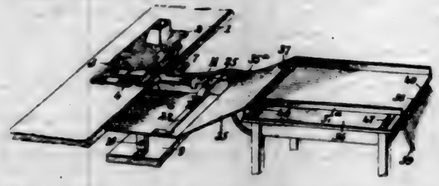

Claim.—1. A folder for sewing-machines, comprising a plate having a roll formed at one edge thereof, presenting a space adapted to receive the hemmer-tongue of said machine, a spring attached on said plate under said hemmer-tongue, and a guide attached to said plate and presenting a downwardly-projecting flange adjacent to said roll.

2. A folder attachment for sewing-machines, comprising a plate presenting a scroll adapted to fold the goods at one edge, and a holder having a body attached to said plate opposite said scroll, a tongue attached to said body and pressing the goods against the inner side of said scroll, a resilient member constraining said tongue, and means for adjusting said tongue toward said resilient member.

3. A folder attachment for sewing-machines, comprising a plate adapted to fold the goods at one edge, and a holder having a body, a tongue attached to said body and pressing the goods against said plate, a resilient member constraining said tongue, and means for adjusting said tongue toward said resilient member.

846,743. COMBINED CIGAR-CUTTER AND NAIL-CLIPPER. GEORGE HAVELL, Newark, N. J., assignor to Louis C. Langie, Rochester, N. Y. Filed Nov. 11, 1904. Serial No. 232,354.

Claim.—1. A combined tool having a trough-shaped frame provided with a cutting-aperture and a cutter-jaw, pivoted arms carrying cutters adapted to coöperate with said jaw and said aperture, and an operating-lever directly engaging said arms whereby said cutters are operated simultaneously.

2. A combined tool having a trough-shaped frame provided with a cutting-aperture and a cutter-jaw, movable arms carrying cutters adapted to coöperate with said jaw and with said aperture, and an operating-lever for actuating both of said arms simultaneously.

3. A combined tool having a frame, a cutter-jaw and a cutting-aperture in said frame, movable arms carrying cutters adapted to coöperate with said jaw and said aperture, and an operating-lever engaging both said arms for actuating them simultaneously.

4. The nail-clipper having a trough-shaped frame with cutting-seat at the forward end and beveled aperture c in one of the side flanges, a spring-cutter movable to and from the seat, and a thumb-lever pivoted transversely to the flanges with means for pressing the cutter toward the seat, and adapted when desired to press a cutting-arm past the aperture c, whereby the nail-clipper may be furnished with a cigar-tip cutter at the pleasure of the maker.

5. The combination, with a nail-clipper having a side flange with an aperture therein for the cigar-tip and having a thumb-lever to actuate the clipper, of a cigar-cutting arm pivoted upon the flange with cutting-blade adjacent to the aperture, and a spring for holding the cigar-cutting arm normally raised, and the thumb-lever pivoted transversely to the flange and extended over the cigar-cutting blade to operate the same simultaneously with the nail-cutter.

6. A nail-clipper having a trough-shaped frame with aperture in the side flange and cigar-cutting arm pivoted upon the said flange with cutting-blade adjacent to the aperture, a spring-leaf riveted to the bottom of the trough with cutter at its forward end for clipping the nails, a spring to hold the cigar-cutting blade normally raised, and a thumb-lever pivoted transversely to the flanges with cam to press upon the spring-leaf, and extended over the cigar-cutting blade to operate the same simultaneously with the clipper.

7. In a nail-clipper, the combination, with a trough-shaped frame having side flanges with a cigar-cutter applied to one of said flanges and the slot in the bottom at the rear, of the spring-leaf riveted to the bottom of the trough with nail-cutter at its forward end, a thumb-lever pivoted between the trough-flanges with cams to operate the leaf-spring and hold the lever normally raised by the same, and a latch having a foot with rivet extended through the said slot, and forwardly-projecting hook arranged and adapted to engage the tip of the thumb-lever to hold the same closed.

846,744. BOTTLE-SEAL. CHARLES G. HAWLEY, Minneapolis, Minn. Filed Mar. 20, 1900. Serial No. 9,376.

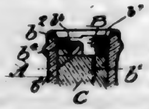

Claim.—1. A new article of manufacture comprising a frangible bottle-seal made up of thick and thin halves or portions, as described, one of which is provided with a spud or nail adapted to be driven into a cork by the insertion of the seal into a bottle-neck, for the purpose set forth.

2. A new article of manufacture comprising a frangible bottle-seal made up of thick and thin portions, the thick portion provided with a fixed spud or nail adapted to be driven into the cork when the seal is inserted in a bottle-neck, for the purpose set forth.

3. A new article of manufacture comprising a frangible bottle-seal made up of thick and thin portions, the latter to be broken from the former, and the two together adapted to fill the opening of a bottle-neck, and a seal-fastening fixed eccentrically in the seal, substantially as described.

4. A new article of manufacture comprising a frangible bottle-seal made up of thick and thin portions connected by a weak portion and together adapted to fill the opening of a bottle-neck, and said thin portion being provided with a depending web or lug of substantially the depth of said thick portion to rest upon the top of the cork to prevent the passage of a thread or wire, substantially as described.

5. A new article of manufacture comprising a frangible bottle-seal made up of thick and thin halves or portions, and a spud or nail projecting downwardly from said thick portion, as described.

6. A new article of manufacture comprising a frangible bottle-seal made up of thick and thin portions, the latter to be broken from the former, and the two together adapted to fill the opening of a bottle-neck, and a spud or nail cast in said thick portion, for the purpose specified.

7. A new article of manufacture comprising a frangible bottle-seal made up of thick and thin portions connected by a weak portion and together adapted to fill the opening of a bottle-neck, said thin portion being provided with a depending web or lug to block the passage of a thread or wire, and said thick portion having a spud or nail, substantially as described.

8. A new article of manufacture comprising a circular frangible seal provided with an eccentrically-positioned spud or nail, as and for the purpose specified.

9. A new article of manufacture comprising a circular frangible seal divided into two halves by a straight breaking-groove, and one of said halves provided with a spud or nail, as and for the purpose specified.

10. A new article of manufacture, a frangible bottle-seal comprising a thick portion and a thin portion connected by a weak portion, said thin portion being provided with a depending web or lug to block the passage of a thread or wire, and a nail or spud provided in said thick portion, substantially as described.

11. The combination, with a bottle-neck and a cork therein, of a frangible seal fitting said neck over said cork and within the neck, said seal comprising thick and thin portions connected by a weak portion, and an eccentrically-placed nail or fastening in said thick portion, substantially as described.

12. A frangible seal comprising thick and thin portions, adapted together to fill the opening in a bottle-neck and a spud or nail in said thick portion, as described.

13. A frangible seal comprising thick and thin halves or portions, and a barbed spud, fixed in said thick portion, substantially as described.

14. The combination with a bottle-neck and a cork therein of a frangible seal in the top of said neck over said cork and below the top of the bottle-neck, said seal comprising a thick half and a thin half, said thick half resting upon the cork, and said thin half joined to said thick half by a weak part, adapted to be broken from said thick half by pressure upon said thin half, as described.

15. A frangible seal of disk form adapted to fill the neck of a bottle comprising thick and thin portions provided with a groove, *b*, and depending webs at the ends of said groove to prevent the safe insertion of a removing-tool, substantially as described.

16. A bottle-seal of frangible material, disk-like in form, adapted to fill the opening in a bottle-neck and comprising a thick nail or spud holding portion and a thin portion integral with said thick portion and adapted to be broken therefrom by pressure, and a nail or spud, substantially as described.

17. A bottle-seal of frangible material, disk-like in form, adapted to fill the opening in a bottle-neck, and comprising a thick nail or spud holding portion and a thin portion integral with said thick portion and adapted to be broken therefrom by pressure, and a nail or spud depending from said thick portion, substantially as described.

18. A bottle-seal of frangible material, disk-like in form, adapted to fill the opening in a bottle-neck, and comprising a thick nail or spud holding portion, a thin portion integral with said thick portion and adapted to be broken therefrom by pressure, and a nail or spud depending from said thick portion and eccentrically located with relation to the disk or seal as a whole, substantially as described.

19. A bottle-seal of frangible material, disk-like in form, adapted to fill the opening in a bottle-neck, and comprising a thick nail or spud holding portion, a thin portion integral with said thick portion and adapted to be broken therefrom by pressure, said thin portion being formed with its top below the top of the thick portion, whereby the top of said thick portion serves to protect said thin portion from accidental breakage, substantially as described.

20. A bottle-seal of frangible material, disk-like in form, adapted to fill the opening in a bottle-neck and comprising a thick nail or spud holding portion, a thin portion integral with said thick portion and adapted to be broken therefrom by pressure, said thin portion being formed with its top below the top of the thick portion, whereby said thick portion serves to protect said thin portion from accidental breakage, and the upper edge of the seal being rounded, as and for the purpose specified.

21. The combination of a bottle-neck, containing a cork driven below the top of the bottle-neck with a disk-like seal of frangible material filling the bottle-neck above the cork and having its top below the top of the bottle-neck, said seal comprising a thick nail or spud holding portion, a nail or spud cast into said thick portion and driven into said cork, a thin seal portion integral with said thick portion, adapted to be broken therefrom by pressure and having its top below the top of said thick portion, whereby the latter serves to protect said thin portion from accidental breakage, substantially as described.

22. The combination of a bottle-neck containing a cork with a seal of frangible material filling the upper part of the bottle-neck and having its top below the top of the bottle-neck, said seal comprising thick and thin portions having a weak integral connection, the nail or spud eccentrically and permanently secured in the thick portion of the seal and driven into said cork, and a distinguishing character provided upon the under side of the thin portion of the seal and visible therethrough, substantially as and for the purpose specified.

23. A bottle-seal of frangible material, disk-like in form and having an integrally-attached depending spud or nail for fastening the same to the bottle-cork, substantially as described.

24. A bottle-neck containing a cork depressed below the top of said neck, in combination with a frangible seal in the neck and also below the top thereof and a single pin eccentric fastening for said seal in said neck.

846,745. HAME. JOSEPH F. HOFFNER, Fosston, Minn. Filed Mar. 5, 1906. Serial No. 304,315.

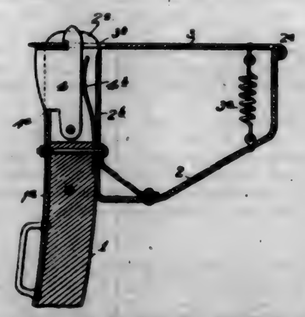

Claim.—A device of the character described, comprising a bracket attached to a hame member and having a hasp or guard pivoted to said bracket, and a spring-pressed latch or dog pivoted within the upper end of said hame member and having its upper hook-equipped end effective for engagement with said hasp or guard, said latch or dog having its outer vertical edge projecting beyond the corresponding surface of said hame member.

846,746. COMBINED BUSHING AND BEARING FOR SHAFTS OF STEAM-TURBINES. CHARLES V. KERR, Wellsville, N. Y. Filed July 6, 1905. Serial No. 268,493.

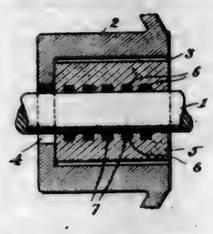

Claim.—1. A combined loose bushing and bearing for rotary shafts of turbines comprising a separating-wall or partition having a depression or pocket opening toward the interior of the turbine, an opening in the depression or pocket for the passage of the shaft, a bushing surrounding the shaft and loosely seated in said depression or pocket and retained therein by the motive-fluid pressure within the turbine, and a combined packing and lubricant material within the bushing adjacent to the bearing-surface of the shaft.

2. A combined loose bushing and bearing for rotary shafts of turbines comprising a separating-wall or partition having a depression or pocket opening toward the interior of the turbine, an opening in the depression or pocket for the passage of the shaft, a bushing surrounding the shaft and loosely seated in said depression or pocket and retained therein by the motive-fluid pressure within the turbine, a combined packing and lubricant material within the bushing and adjacent to and in contact with the shaft, and means for compressing and forcing the combined packing and lubricant material against the shaft.

3. A combined loose bushing and bearing for rotary shafts of turbines, comprising a separating-wall or partition having a depression or pocket opening toward the interior of the turbine, an opening in the depression or pocket, for the passage of the shaft, a bushing surrounding the shaft and loosely seated in said depression or pocket and retained therein by motive-fluid pressure within the turbine, a combined packing and lubricant material within the bushing adjacent to and in contact with the shaft and means yieldingly compressing the combined packing and lubricant material against the shaft.

4. A combined loose bushing and bearing for rotary shafts comprising a separating-wall or partition having a depression or pocket, an opening in the depression or pocket for the passage of the shaft, a bushing surrounding the shaft and loosely seated in said depression and retained therein by motive-fluid pressure, a collar on the inner side and at one end of the loose bushing, a threaded section on the other end of the bushing from that of the collar, a combined packing and lubricant material within the bushing adjacent to and in contact with the shaft and means engaging the threaded sections for compressing and confining the combined packing and lubricant material within the bushing and against the shaft.

5. A combined loose bushing and bearing for rotary shafts comprising a separating-wall or partition having a depression or pocket, an opening in the depression or pocket for the passage of the shaft, a bushing surrounding the shaft and loosely seated in said depression or pocket and retained therein by motive-fluid pressure, a collar on the inner side and at one end of the bushing, a threaded section on the other end of the bushing from that of the collar, a screw-threaded sleeve surrounding the shaft and engaging the threads on the bushing, a follower loosely surrounding the shaft within the bushing and interposed between the collar and the sleeve, a combined packing and lubricant material within the bushing and surrounding the shaft between the collar and follower and a coiled spring surrounding the shaft and interposed between the follower and sleeve.

846,747. STEAM-TURBINE. CHARLES V. KERR, Wellsville, N. Y., assignor to Kerr Turbine Company, Wellsville, N. Y., a Corporation of New York. Filed Nov. 20, 1905. Serial No. 288,233.

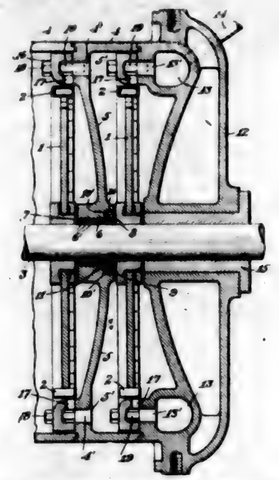

Claim.—1. A multicellular compound turbine comprising a cylinder composed of separable and independent sections for the several stages of expansion of the motive fluid, a vertical partition or wall within each section and secured thereto, motive-fluid ports through each of the partitions, a central shaft-opening in each of the partitions, an annular recess in one face of each of the partitions and near the central shaft-opening, a bushing having a shaft opening and seated within each of the central shaft-openings in the partition and of an outside diameter less than that of the shaft-openings, a collar on each of the bushings and having an annular flange adapted to be seated in the annular recess of the partitions, rectangular grooves in the inner side of each of the shaft-openings in the bushings, a rotary shaft passing through the openings in the bushings, a wheel or disk within each chamber formed by the vertical partitions and fixed to the rotary shaft, a row of buckets on the periphery of each wheel or disk and nozzles for conveying the motive fluid to the buckets.

2. A combined bushing and packing for rotary shafts comprising a partition or division-wall, a circular opening in the partition or division-wall, a depression in the partition or wall surrounding the circular opening, an annular recess in one face of the partition or wall and at the outer edge of the depression in the partition or division-wall and forming a circular ridge on the partition or wall adjacent to the circular opening, an annular bushing having a central opening for the passage of the shaft and loosely seated within the circular opening in the partition or division-wall, an annular extension on one end of the bushing having a flange adapted to be inserted into the annular recess of the partition or wall and the outer side of the circular ridge seated against the inner side of the annular extension.

3. A combined bushing and packing for rotary shafts comprising a partition or division-wall, a circular opening in the partition or division-wall, a depression in the partition or wall surrounding the circular opening, an annular recess in one face of the partition or wall and at the outer edge of the depression in the partition or division-wall and forming a circular ridge on the partition or wall adjacent to the circular opening, an annular bushing having a central opening for the passage of the shaft and loosely seated within the circular opening in the partition or division-wall, a series of grooves on the inner surface of the annular bushing, an annular extension on one end of the bushing having a flange adapted to be inserted into the

annular recess of the partition or wall and the outer side of the circular ridge seated against the inner side of the annular extension.

4. A shaft-packing for rotary shafts comprising a division-wall, a circular opening in the division-wall, an annular groove in one face of the division-wall surrounding said circular opening, packing within said annular groove, an annular bushing of L-section with central opening for the passage of the shaft and adapted to be seated by difference of pressure on opposite sides of said division-wall upon said packing.

5. A shaft-packing comprising a rotary shaft, an annular bushing of L-section surrounding said shaft, a series of grooves on the inner surface of the annular bushing, a division-wall having an annular groove in one face surrounding said shaft, packing in said groove and means for holding said bushing against said packing.

6. A shaft-packing comprising a rotary shaft, an annular bushing of L-section surrounding said shaft, a division-wall having an annular groove in one face surrounding said shaft, packing in said groove and means for holding said bushing against said packing.

7. A packing for rotary shafts of L-section and comprising an annular bearing 6, an outer narrow collar 8 made integral with and at one end of the annular bearing 6, an annular flange 9 on the end of the collar 8, and a series of grooves 6′ on the inner surface of the bearing 6.

846,748. FILTER. ALBERT KLELL, Cleveland, Ohio. Filed Dec. 15, 1904. Serial No. 236,947.

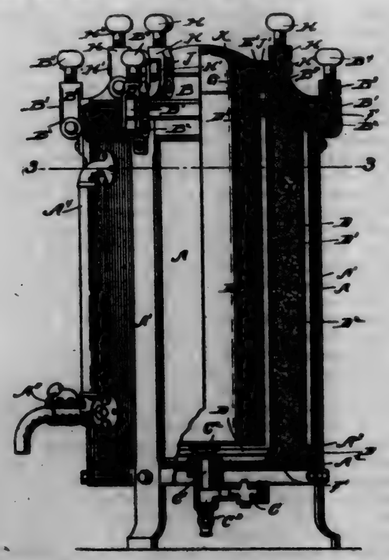

Claim.—1. A filter comprising an outer and an inner imperforate cylinder, perforated cylinders arranged concentrically within the outer cylinder, filtering material arranged intermediate the perforated cylinders, means for admitting water within the inner perforated cylinder, means for drawing water from the outer cylinder, and means for hermetically sealing all of the said cylinders.

2. A device of the kind described comprising concentrically-arranged inner and outer cylinders, concentrically-arranged perforated cylinders, a top centrally cut out, lugs carried by the outer cylinder, lugs carried by the top, pivoted brackets carried by one set of lugs and adapted to engage the lugs of the other set, set-screws working through said brackets, packing material arranged between the top and the outer and the perforated cylinders, means for admitting water to the inner perforated cylinder, filtering material between the perforated cylinders, and a discharge-pipe leading from the outer cylinder.

3. In a filter comprising a plurality of concentrically-arranged cylinders and filtering material, the innermost cylinder extending above the plane of the top of the other cylinders, packing material arranged on the upper ends of the outer cylinders, an outwardly-extending flange arranged on the innermost cylinder, a top centrally cut out and having an inwardly-extending flange adapted to rest below the flange of the innermost cylinder, said top bearing on the packing material, a packing-ring arranged between the two flanges, a top adapted to fit the cut-out portion of the top first mentioned, a packing-ring arranged on the flange of the innermost cylinder and between said flange and the second-mentioned top, and means for clamping each top in position.

4. A filter comprising an outer imperforate cylinder and a real and a false bottom, a rubber ring on the false bottom, perforated cylinders beaded and open at each end arranged within the first-mentioned cylinder and upon the rubber ring, filtering material between the perforated cylinders, a rubber ring arranged on the upper ends of the cylinders, a supply-pipe extending through the bottoms of the outer cylinder, a discharge-pipe leading from one side of the outer cylinder, a non-perforate ice-receptacle arranged concentrically within the perforated cylinders and spaced therefrom, a top adapted to bear on the rubber ring on the cylinders, and means for clamping the said top in place.

846,749. MECHANICAL MOVEMENT. JOHN A. LAIRD, St. Louis, Mo. Filed Sept. 11, 1905. Serial No. 277,860.

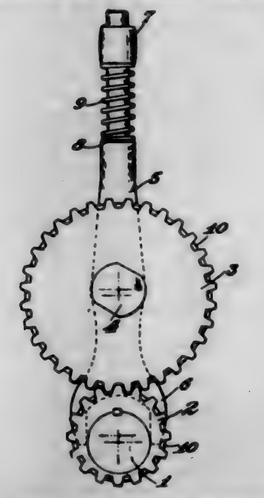

Claim.—1. A mechanical movement comprising a gear-wheel mounted upon a driving-shaft, a larger gear-wheel meshing therewith mounted eccentrically upon a spindle on a reciprocating frame and means for keeping said gears in engagement with each other, the number of teeth of the larger gear-wheel being a definite multiple of the number of teeth of the driving-gear.

2. A mechanical movement comprising a gear-wheel mounted upon a driving-shaft, a larger gear-wheel meshing therewith mounted eccentrically upon a spindle in a movable frame and means for keeping said gears in engagement with each other, the number of teeth of the larger gear-wheel being double the number of teeth of the driving-gear.

3. A mechanical movement comprising a gear-wheel eccentrically mounted upon a driving-shaft, a larger gear-wheel meshing therewith eccentrically mounted upon a spindle on a movable frame and means for keeping said gears in engagement with each other, the number of teeth of the larger gear-wheel being a definite multiple of the number of teeth of the driving-gear.

4. A mechanical movement comprising a gear-wheel mounted upon a driving-shaft, a cam-gear meshing therewith mounted upon a spindle on a movable frame and means for keeping said gears in engagement with each other, the number of teeth of the cam-gear being a definite multiple of the number of teeth of the driving-gear.

5. A mechanical movement comprising a gear-wheel mounted upon a driving-shaft, a larger gear-wheel meshing therewith and mounted eccentrically upon a spindle on a movable frame, and means for keeping said gears in engagement with each other, the number of teeth of the larger gear being a definite multiple of the number of teeth of the driving-gear, and both of said gears being backed with disks whose peripheries coincide with the pitch-lines of the gear-teeth.

6. A mechanical movement comprising a gear-wheel mounted upon a driving-shaft, a larger gear-wheel meshing therewith mounted eccentrically upon a spindle on a movable frame and means for keeping said gears in engagement with each other, the number of teeth of the larger gear-wheel being a definite multiple of the number of teeth of the driving-gear and a lost-motion connecting device for transmitting motion from said frame.

7. A mechanical movement comprising a main frame, a driving-shaft mounted thereon, a gear-wheel mounted on said driving-shaft, a frame movable in guides provided therefor on the main frame, a larger gear-wheel eccentrically mounted in said movable frame and meshing with the gear on the driving-shaft, the number of teeth of said larger gear-wheel being a definite multiple of the number of teeth of the gear-wheel on the driving-shaft, means for keeping said gears in engagement with each other, a rod mounted in guides in the main frame and a lost-motion connecting device for transmitting motion from the movable frame to said rod.

8. A mechanical movement comprising a main frame, a driving-shaft mounted therein, a gear-wheel mounted on said driving-shaft, a movable frame having one end mounted in a guide provided therefor on the main frame and having at its opposite end a yoke astraddle the driving-shaft, a larger gear-wheel eccentrically mounted on said movable frame and meshing with said first-mentioned gear, the number of teeth of the larger gear-wheel being a definite multiple of the number of teeth of the driving-gear, a movable rod arranged in alinement with the outer end of said movable frame in position to be moved out by said frame, and means for retracting said rod to its normal position.

9. A mechanical movement comprising a gear-wheel mounted upon a driving-shaft, a larger gear-wheel meshing therewith mounted eccentrically upon a spindle in a movable frame, means for keeping said gears in engagement with each other, the number of teeth of the larger gear being a definite multiple of the number of teeth of the driving-gear and a lost-motion connecting device for transmitting the movement of said frame to a valve.

846,750. PUMPING-MOTOR. OLAF E. LINDFORS, Fruita, Colo. Filed June 6, 1905. Serial No. 263,981.

Claim.—1. A pumping-motor comprising a double-acting pump with an external piston-rod, suitable framework adjacent thereto, a yoke pivoted with one end to the framework so as to swing in two opposite directions, one or more springs connecting the pump-rod with the swinging end of the yoke so that the springs will operate the piston-rod in the direction of the yoke.

2. A pumping-motor comprising a double-acting pump with an external piston-rod, suitable framework adjacent thereto, a yoke pivoted with one end to the framework so as to swing in two opposite directions, one or more springs connecting the pump-rod with the swinging end of the yoke so that the springs will operate the piston-rod in the direction of the yoke, and a power-increasing mechanism for throwing said yoke from one position to the other and thereby stretch the springs.

3. A pumping-motor comprising a double-acting pump with an external piston-rod, suitable framework adjacent thereto, a yoke pivoted with one end to the framework so as to swing in two opposite directions, one or more springs connecting the pump-rod with the swinging end of the yoke so that the springs will operate the piston-rod in the direction of the yoke, and guides on the framework for the rod operated by the springs, and stops to limit the swinging of the yoke.

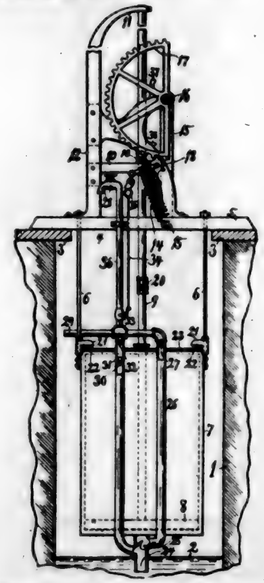

4. A pumping-motor comprising a double-acting pump with an external piston-rod, suitable framework adjacent thereto, a yoke pivoted with one end to the framework so as to swing in two opposite directions, one or more springs connecting the pump-rod with the swinging end of the yoke so that the springs will operate the piston-rod in the direction of the yoke, guides on the framework for the rod operated by the springs, and stops to limit the swinging of the yoke, said rod having a coupling by which to separate the spring-motor from the pump.

5. A pumping-motor comprising a double-acting pump with an external piston-rod, suitable framework adjacent thereto, a yoke pivoted with one end to the framework so as to swing in two opposite directions, one or more springs connecting the pump-rod with the swinging end of the yoke so that the springs will operate the piston-rod in the direction of the yoke, and piping and faucets for distributing the water from the pump and for saving the power of the motor when water is not needed.

6. A pumping-motor comprising a double-acting pump with an external piston-rod, suitable framework adjacent thereto, a yoke pivoted with one end to the framework so as to swing in two opposite directions, one or more springs connecting the pump-rod with the swinging end of the yoke so that the springs will operate the piston-rod in the direction of the yoke, and a power-increasing mechanism for throwing said yoke from one position to the other and thereby stretch the springs, and piping and faucets for distributing the water from the pump and for saving the power of the motor when water is not needed.

846,751. MIXING DEVICE. CHARLES T. MELVIN, Springfield, Mass., assignor of one-half to Elmer Beebe, Holyoke, Mass. Filed Apr. 3, 1906. Serial No. 309,606.

Claim.—1. In a mixing device an axially-vertical cylindrical casing, open at top and bottom having therewithin

several series of blades annularly arranged at different levels supported by and extended both downwardly and inwardly from the casing-wall, and the blades of a given series being inclined as to their widths reversely relatively to the cross-sectional inclination of the blades of the series next thereto.

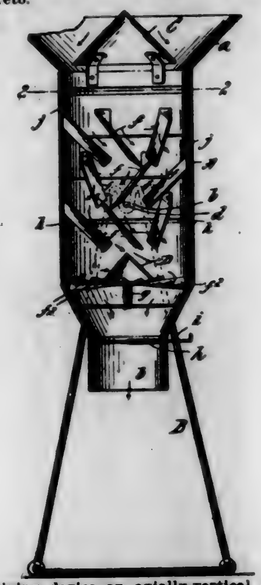

2. In a mixing device an axially-vertical casing, open at top and bottom having therewithin several series of fixed blades annularly arranged at different levels, those of one series being inclined reversely from those of the series next therebelow, and also having therewithin an axially-rotatable shaft provided with a series of revoluble inclined deflector-blades.

3. In a mixing device an axially-vertical casing, open at top and bottom having therewithin several series of fixed blades annularly arranged at different levels, those of one series being inclined reversely from those of the series next therebelow, and having therewithin an axial shaft mounted on which is a series of revoluble inclined deflector-blades and also an upwardly-tapered conical deflector adjacent one of the end openings of the casing.

4. In a mixing device an axially-vertical casing, open at top and bottom having therewithin several series of fixed blades and arranged at different levels, those of one series being inclined reversely from those of the series next therebelow, and also having therewithin an axial shaft mounted on which is a series of revoluble inclined deflector-blades near one of the end openings of the casing and upwardly-tapered conical deflectors within the upper and lower portions of the casing.

5. In a mixing device an axially-vertical casing, open at top and bottom having therewithin several series of fixed blades annularly arranged at different levels, those of one series being inclined reversely from those of the series next therebelow, and also having therewithin an axial shaft mounted on which is a series of revoluble inclined deflector-blades and a centrally-located upwardly-tapered conical deflector made unitary and rotatable with said blades.

6. In a mixing device an axially-vertical cylindrical shell or casing open at top and bottom, having fitted and engaged therewithin a plurality of ring-sections one above another, each ring-section supporting a series of blades extended both inwardly and downwardly, and one series of the blades being inclined as to their widths reversely relatively to the cross-sectional inclination of the blades of the next series.

7. In a mixing device an axially-vertical cylindrical shell or casing open at top and bottom, having removably fitted and engaged therewithin a plurality of separate and independently-movable ring-sections one above another, each ring-section supporting a series of blades inwardly extended therefrom, several of the blades being as to their widths inclined downwardly reversely relatively to the transverse inclination of other of the blades.

8. In a device of the character described, a cylindrical casing open at top and bottom, a plurality of ring-sections fitted and confined at different heights therewithin and each constructed with upwardly-opening slots, and sheet-metal blades, each having an attachment member made with opposite edge recesses and an intermediate neck for detachable engagement with the slots of said ring-sections, the blades proper being as to their lengths extended angularly to the inner face of the ring-section, and inclined as to their widths, the inclinations of one set of the blades being reversed from those of the next set.

846,752. STEAM-TURBINE. JAMES L. MOORE, Wellsville, N. Y., assignor to Kerr Turbine Company, Wellsville, N. Y., a Corporation of New York. Filed Oct. 18, 1905. Serial No. 283,215.

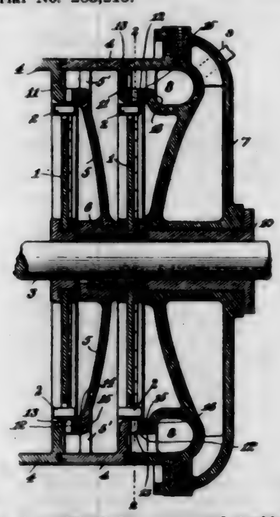

Claim.—1. A multicellular compound turbine comprising a cylinder composed of a series of separable and independent sections for the several stages of expansion of the motive fluid, a vertical partition or wall connected at one end of each of the sections and having peripheral openings for the passage of the motive fluid from one stage to the next succeeding stage of expansion, a dependent flange extending from the inner side of the other end of each section from that of the partition on the same section, a rotary shaft passing centrally through each of said sections and partitions, a wheel or disk within each chamber formed by the separable sections and fixed to the shaft, a row of single buckets on the periphery of each wheel or disk and a removable nozzle-ring interposed between the outer end of each partition of one section and the dependent flange of the adjacent section.

2. A multicellular compound turbine comprising a cylinder composed of a series of separable and independent sections for the several stages of expansion of the motive fluid, a vertical partition or wall connected at one end of each of the sections and having peripheral openings for the passage of the motive fluid from one stage to the next succeeding stage of expansion, a circular groove in the outer face of the partition and near its outer edge, a short dependent flange extending from the inner side of the other end of each section from that of the partition on the same section, a rotary shaft passing centrally through each of said sections and partitions, a wheel or disk within each chamber formed by the separable sections and fixed to the shaft, a row of single buckets on the periphery of each wheel or disk, said wheels and buckets so arranged that the motive fluid passes into one side or edge of the buckets and escapes after reversal of its direction from the other side or edge of the buckets.

3. A multicellular compound turbine comprising a cylinder composed of a series of separable and independent sections for the several stages of expansion of the motive fluid, a vertical partition or wall connected at one end of each of the sections and having peripheral openings for the passage of the motive fluid from one stage to the next succeeding stage of expansion, a circular groove in the outer face of the partition and near its outer edge, a short dependent flange extending from the inner side of the other end of each section from that of the partition on the same section, removable and independent nozzle-rings, each ring having a series of nozzle-passages in one of its flat faces and a circular tongue in its other face, said nozzle-rings being interposed and held between the dependent flanges and the partitions so that the nozzle-passages in each of the nozzle-rings are adjacent to the outer face of a dependent flange and the circular tongue rests within the groove of a partition, a rotary shaft passing centrally through each of said sections and partitions, a wheel or disk within each chamber formed by the separable sections and fixed to the shaft, a row of single buckets on the periphery of each wheel or disk, said wheels and buckets so arranged that the motive fluid passes into one side or edge of the buckets and escapes after reversal of its direction from the other side or edge of the buckets.

4. A multicellular compound turbine comprising a cylinder composed of a series of separable and independent sections for the several stages of expansion of the motive fluid, a vertical partition or wall connected at one end of each of the sections and having peripheral openings for the passage of the motive fluid from one stage to the next succeeding stage of expansion, a short dependent flange extending from the inner side of the other end of each section from that of the partition on the same section, removable and independent nozzle-rings, each ring having a series of nozzle-passages in one of its flat faces and a circular tongue in its other face, said nozzle-rings being interposed and held between the dependent flanges and the partitions so that the nozzle-passages in each of the nozzle-rings are adjacent to the outer face of a dependent flange and the circular tongue rests within the groove of a partition, a rotary shaft passing centrally through each of said sections and partitions, a wheel or disk within each chamber formed by the separable sections and fixed to the shaft, a row of single buckets on the periphery of each wheel or disk, said wheels and buckets so arranged that the motive fluid passes into one side or edge of the buckets and escapes after reversal of its direction from the other side or edge of the buckets.

5. A nozzle-ring for motive-fluid turbines or the like comprising an annular body having two opposite plane faces, a series of grooves or passages in one of said plane faces and a circular tongue or projection on the other face.

6. A separable section for a multicellular compound turbine, comprising an outer annular rim, a hub with central opening, a partition or diaphragm radiating from said hub and connected at its periphery by internal webs to one edge of the rim, a nozzle-ring removably supported on said partition or diaphragm thereby forming passages for the motive fluid from one section to another, and an internal flange at the other edge of the rim.

7. A multicellular compound turbine composed of a series of separable and independent sections, a rotary shaft passing through each of said sections, a wheel or disk fixed to said shaft within each chamber formed by adjacent sections, a series of buckets fixed to the rim of each disk, and a removable and continuous nozzle-ring held between adjacent sections in position to deliver the motive fluid tangentially to said series of buckets.

846,753. RAIL-ANCHOR. JOHN A. MURPHY, White Haven, Pa. Filed Dec. 29, 1906. Serial No. 350,026.

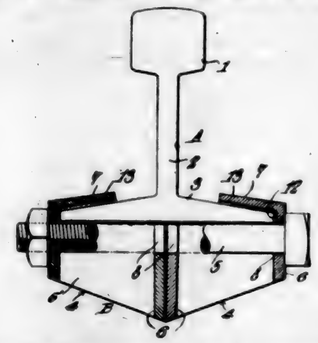

Claim.—The combination of a rail, a two-part anchor therefor, each part comprising a pair of webs extending longitudinally with respect to the rail and arranged one under the web of the rail and the other adjacent the outer edge of the rail-base, transversely-connecting webs between the first-mentioned pair of webs, a flange extending inwardly from the top of the outer web to engage over the rail-base, and a bolt extending through the longitudinally-extending webs of the two parts of the support, the inner longitudinal webs of the parts being of greater cross-sectional area than the outer webs.

846,754. POWER-TRANSMITTING MECHANISM FOR AUTOMOBILES. DAVID L. MCCLINTOCK, Kansas City, Mo. Filed July 19, 1906. Serial No. 326,887.

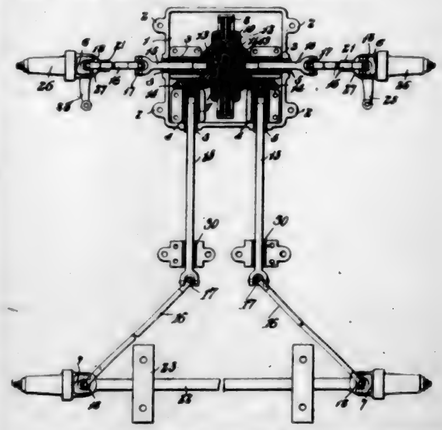

Claim.—1. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, a compensating mechanism, and flexible driving connections extending between the mechanism and each element which include universal joints.

2. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, a flexible driving connection for each element, a gear feathered to each of said connections, and a common means for driving the gears and permitting the same to rotate at different speeds.

3. In a power-transmitting mechanism for motor-vehi-

cles, the combination of a plurality of driven elements, a gear-casing, bearings therein corresponding in number to said elements, flexible connections between each element and bearings, a gear slidably connected with each of the connections, and a master-gear for driving the other gears.

4. In a power-transmitting mechanism for motor-vehicles, the combination of driven elements, flexible driving connections therefor each composed of relatively longitudinally movable parts, a compensating mechanism between the connections which is directly connected to certain of the latter, and miter-gears between the remaining connections and the compensating mechanism.

5. In a power-transmitting mechanism for motor-vehicles, the combination of two sets of driven elements, driving connections for the several elements each composed of two relatively longitudinally movable parts, a compensating mechanism connected directly with the driving connections of one set of elements, and miter-gears between the compensating mechanism and the driving connections of the other set of elements.

6. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, independent driving connections flexibly connected with the elements, a compensating mechanism arranged axially in line with certain of the said connections, and driving means between the remaining connections and the compensating mechanism.

7. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, independent driving connections for the elements each composed of telescoping members, and a compensating mechanism common to the said connections, the same comprising independent sets of gears, a master-gear, and pinions intermediate the master-gear and the sets of gears.

8. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, independent driving connections for the elements, and a compensating mechanism common to the said connections, the same comprising a set of gears slidably mounted with respect to certain of the connections, a second set of gears, a master-gear for driving the said sets, and driving means between the second set of gears and the remaining connections.

9. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, independent driving connections for the elements, and a compensating mechanism common to the said connections, the same comprising a set of gears united with two connections with their axes alining therewith, a second set of gears surrounding the first, a master-gear common to both of said sets, and means for operatively uniting the second set of gears with the remaining connections.

10. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, independent driving connections for the elements, and a compensating mechanism common to the said connections, the same comprising a set of two gears each having a hollow shaft in which one of the driving connections is slidably mounted, a second set of gears rotatably mounted on the first set, a common means for driving the sets of gears independently, and a gearing between each of the gears of the second set and the remaining driving connections.

11. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, independent driving connections for the elements, and a compensating mechanism common to the said connections, the same comprising a master-wheel, an arbor therefor, a set of gears in which the arbor is mounted and with which two of said driving connections are united, and means independent of the said gears for driving the remaining connections from the master-wheel.

12. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, independent driving connections for the elements, and a compensating mechanism common to the said connections, the same comprising a master-wheel, an arbor therefor, gears arranged on opposite sides of the master-wheel which are provided with hollow shaft portions for receiving the ends of the arbor and the ends of two of the driving connections, a second set of gears mounted to rotate independently on the shaft portions of the first gears, and pinions between each of the sets of gears and master-wheel.

13. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, independent driving connections for the elements, and a compensating mechanism common to the said connections, the same comprising a casing, bearings thereon, a master-wheel in the casing, an arbor therefor, a set of gears arranged at opposite sides of the master-wheel which are provided with hollow shaft portions that rest in two of the bearings and receive the arbor and two of said driving connections, a second set of gears mounted on the shaft portions of the first set, pinions between the master-gear and each of said sets of gears, shafts in the other bearings of the casing, and a gearing between each of said latter shafts and the second set of gears.

14. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, independent driving connections for the elements, and a compensating mechanism common to the said connections, the same comprising a master-wheel, gears arranged on opposite sides of the master-wheel which are provided with shaft portions connected with certain of the driving connections, idler-gears disposed concentrically with and on opposite sides of the master-wheel with the first set of gears between them and the latter, pinions between the master-wheel and the idler-gears, a second set of gears arranged concentrically with the master-wheel and located outside of the idler-gears, and pinions carried by the idler-gears which mesh with one of both sets of gears.

15. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, independent driving connections for the elements, and a compensating mechanism common to the said connections, the same comprising a master-wheel, an arbor therefor, gears arranged on the opposite sides of the master-wheel which are provided with hollow shaft portions for receiving the arbor and two of the driving connections, an idler-gear mounted on each of said shaft portions, a second set of gears also mounted on the shaft portions, pinions carried by the master-gear for driving the idler-gears, pinions carried by the idler-gears that connect the gears of one set with those of the other set, and a gearing between each of the gears of the second set and the remaining driving connections.

16. In a power-transmitting mechanism for motor-vehicles, the combination of a pair of driven elements, a compensating mechanism, a driving connection between the mechanism and each element, and means for transmitting power from the mechanism to one of the elements in case the driving connection for the other element becomes inoperative.

17. In a power-transmitting mechanism for motor-vehicles, the combination of a pair of driven elements, a compensating device comprising differentially-actuated gears, a shaft, gears connected with the first-mentioned gears, and pinions on the shaft adapted to be thrown into mesh with the latter gears.

18. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, a compensating mechanism common to all the elements, a driving connection between the mechanism and each element, and an emergency device for connecting two of said driving connections together in case either one should become inoperative.

19. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of sets of driven elements, a compensating mechanism common to the same which is adapted to be mounted on the frame of the vehicle, flexible driving connections extending directly from the mechanism to one set of the elements, flexible connections extending to the other set of elements, and bearings for the latter connections which are adapted to be mounted on the frame of the vehicle intermediate the compensating mechanism and the second set of elements.

20. In a power-transmitting mechanism for motor-vehicles, the combination of two sets of driven elements, a compensating mechanism common to the same which is adapted to be mounted on the frame of the vehicle, a flexible connection between the mechanism and one set of elements, independent driving connections leading from the compensating mechanism to the second set of elements, bearings for the latter connections which are adapted to be mounted on the frame of the vehicle, and universal joints included in the latter connections.

21. In a power-transmitting mechanism for motor-vehicles, the combination of front and rear sets of driven elements, a compensating mechanism common to the same which is adapted to be located on the front portion of the vehicle-frame, flexible connections between the compensating mechanism and the front set of elements, shafts extending rearwardly from the compensating mechanism for transmitting power to the rear set of elements, flexible connections for the rear set of elements, and gearings between each of the shafts and the flexible connections, which are adapted to be mounted on the rear portion of the vehicle-frame.

22. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, a compensating mechanism therefor which is adapted to be mounted on one end of the vehicle-frame, a flexible connection extending directly from the mechanism to one of the elements for driving the latter, a shaft extending longitudinally of the vehicle from the compensating mechanism, a gearing at the opposite end of the shaft from the compensating mechanism, and a flexible driving connection between said gearing and the element adjacent thereto.

23. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, a compensating mechanism, independent driving connections between the elements and mechanism, an emergency device for the mechanism, a change-speed device, and a casing common to the mechanism and device.

24. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, a compensating mechanism adapted to be mounted on the frame of the vehicle, independent driving connections between the elements and mechanism which include universal joints, a change-speed device having one of its gears in mesh with the compensating mechanism, clutches for controlling the change-speed device, and means for controlling the clutches.

25. In a power-transmitting mechanism for motor-vehicles, the combination of a plurality of driven elements, a compensating mechanism adapted to be mounted on the frame of the vehicle, independent driving connections between the elements and mechanism which include universal joints, a change-speed device having one of its gears in mesh with the compensating mechanism, clutches for controlling the change-speed device, and a controlling-lever arranged in coöperative relation with the change-speed device for actuating the clutches.

26. In a power-transmitting mechanism, the combination of a plurality of rotatable driven elements capable of rotating at different speeds, a supporting structure, a hinge-joint between each element and the said structure, a compensating mechanism, and a driving connection between the mechanism and each element, said connection including a gearing at the adjacent hinge-joint through which motion is transmitted to the element.

27. In a power-transmitting mechanism, the combination of a hollow rotatable driven element, a driving element, a support on which the latter element is rotatably mounted, a member on which the driven element is rotatably mounted, a hinged connection between the member and support, a spindle in the member, a universal joint between the spindle and driving element having its center of motion coinciding with the hinged connection, and a gearing between the spindle and the driven element.

28. In a power-transmitting mechanism, the combination of a hollow rotatable driven element, a driving element, a support on which the latter element is rotatably mounted, a member on which the driven element is rotatably mounted, a hinged connection between the member and support, a spindle in the member a universal joint between the spindle and driving element having its center of motion coinciding with the hinged connection, a spur-gear on the spindle, an internal gear on the driven element, and a pinion meshing with the gears.

846,755. BRAKE-SHOE. JOHN J NEWBAKER, Steelton, Pa. Filed Dec. 5, 1905. Serial No. 290,473.

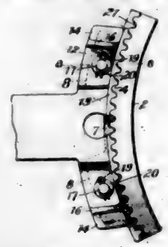

Claim.—1. A brake-shoe consisting of a body portion, and projecting tongues spaced apart to form an intervening recess and oppositely tapered at their ends, said brake-shoe being also provided at the back with a narrow longitudinal web portion which connects the tongues.

2. A brake-shoe consisting of a body portion having corrugated rear faces and provided with projecting tongues spaced apart to provide an intervening recess.

3. The combination with a brake block or head having upper and lower sockets provided with side and end walls a brake-shoe provided with upper and lower projecting tongues spaced from each other and also from the side and ends of the brake-shoe and fitting in the sockets of the brake block or head, said tongues engaging the side and end walls of the sockets and fastening devices piercing the brake-block and the tongues.

4. The combination of a brake block or head provided with upper and lower tapered sockets, a brake-shoe having upper and lower tapered tongues fitting in the sockets and forming wedges for engaging the brake block or head, and fastening devices for securing the tongues in the sockets.

5. The combination of a brake block or head having sockets and provided with a corrugated face, and a brake-shoe consisting of a body portion having corrugated rear faces to interlock with the corrugated face of the brake block or head, and tongues extending from the body portion and secured in the sockets of the brake block or head.

6. The combination of a brake block or head consisting of side portions or flanges and web portions having sockets, a brake-shoe having tongues fitting in the sockets, bolts piercing the tongues and the web portions of the brake-block and having heads engaging the adjacent side portion or flange whereby they are held against rotation, and means for holding the bolts in position.

7. The combination of a brake block or head provided with a corrugated face, a brake-shoe having a corrugated face fitted against and interlocked with the corrugated face of the brake block or head, and means for securing the brake-shoe and the brake block or head in their interlocked relation.

846,756. MATCH-SAFE. EDWARD M. NEWELL, St. Vincent, Minn. Filed Apr. 23, 1906. Serial No. 313,233.

Claim.—1. In a match-safe, the combination with a casing having a delivery-tube, a follower within the casing spring-pressed toward said tube, and a manual ejector in the latter; of an igniter movable at right angles to the length of the delivery-tube, a spring holding it normally across the outlet end of said tube, teeth on the igniter-bar, and a toothed wheel engaging them and having a thumb-lever.

2. In a match-safe, the combination with the casing having a delivery-tube, and means for ejecting the matches therefrom; of a door hinged across the casing and having

an inwardly-projecting flange adjacent its hinge adapted to extend across the magazine when the door is closed.

3. In a match-safe, the combination with the casing having a delivery-tube, and means for ejecting the matches therefrom; of a door hinged across the casing, and having inwardly-projecting flanges across its upper and lower edges, a spring secured within the door between said flanges, and a latch for the door.

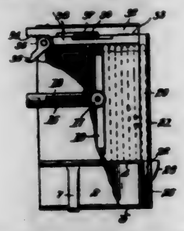

4. In a match-safe the combination with the body forming the casing cut away at one side; of a door filling said cut-away space and hinged to that side, the door having a transverse flange adjacent its hinge adapted to extend across the casing when the door is closed.

5. In a match-safe the combination with the body forming the casing cut away at one side; of a door filling said cut-away space and hinged to that side, the door having a transverse flange adjacent its hinge adapted to extend across the casing when the door is closed, and another transverse flange at its outer edge and being dished between these flanges, an expansive spring located within the dished portion, and means for holding the door closed against the tension of this spring.

846,757. GRAVE-FILLER. WILLIAM S. PENDLETON, Shawnee, Okla., assignor of one-half to Martin C. Fleming, Shawnee, Okla. Filed May 15, 1906. Serial No. 316,929.

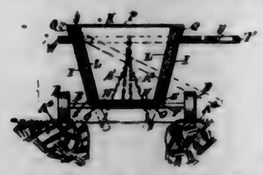

Claim.—1. A grave-filling device, constructed with axles and supporting-wheels, side bars connecting said axles, standards on the side bars, a hopper arranged upon the side bars, and held thereon by support of the standards, hinged doors adapted to form a bottom closure for the hopper, and means to secure the doors closed.

2. A grave-filling device constructed with axles and supporting-wheels, a hopper having end support upon the axles, the hopper being constructed with separable sides and ends, means adapted for securing the hopper sides and ends into assembled condition, a bottom to the hopper, consisting of doors hinged to the hopper sides, and means to secure the doors closed, said means being adapted for control of the doors.

3. A grave-filling device, comprising a truck constructed with suitable axles and supporting-wheels, side bars connecting said axles, standards having means at their lower ends, providing ready arrangement, and suitable support, on the side bars, a hopper arranged upon the truck and held thereon by confining support provided by the standards, hinged doors forming, when closed, a bottom closure for the hopper, levers fulcrumed at the hopper ends, the levers being rigidly connected, a handle whereby to operate the levers, means connecting the doors and said levers, adapted to support them at closed position, and means whereby to secure the doors at closed position, substantially as described.

846,758. HOLDER FOR DOMESTIC ARTICLES. MORRIS PIKE, Westmont, N. J. Filed Dec. 18, 1906. Serial No. 348,446.

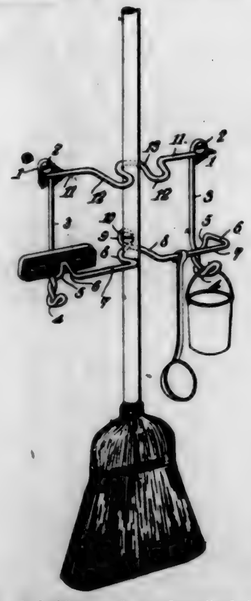

Claim.—1. A holder such as described formed from a single wire, said holder having loops formed at its upper corners and sections extending toward each other from said loops, with sections extending forwardly from the last said sections and a U-shaped loop located between the forwardly-extending sections, sections depending from said corner-loops and connecting with forwardly-extending sections, transversely-extending sections formed at the ends of said forwardly-extending sections, rearwardly-extending sections formed at the inner ends of the transversely-extending sections, said U-shaped loop being located vertically above the rearwardly-extending sections.

2. A holder such as described comprising a continuous wire rod having loops formed at the corners and sections extending toward each other therefrom, forwardly-extending sections located at the inner ends of the first said sections, and a U-shaped loop located between said forwardly-extending sections, sections depending from said corner-loops, hooks formed at the lower ends of said depending sections, vertically-extending sections located at the upper ends of said hooks and being spaced from the depending sections, forwardly-extending sections located at the upper ends of the vertically-extending sections, transversely-extending sections located at the ends of said forwardly-extending-sections, rearwardly-extending sections located at the ends of said transversely-extending sections and a loop located between the rearwardly-extending sections, the U-shaped loop being located vertically above the said rearwardly-extending sections.

846,759. APPARATUS FOR ASPIRATING, TREATING, AND FORCING LIQUIDS. EMIL RICHTER, Zabrze, Germany. Original application filed June 15, 1906, Serial No. 321,853. Divided and this application filed Jan. 17, 1907. Serial No. 352,734.

Claim.—1. In an apparatus of the character described comprising means for producing an annular jet of fluid under pressure, the combination therewith of means for dividing said jet into two separate annular jets one within the other, substantially as described.

2. In an apparatus of the character described comprising means for producing an annular jet of fluid under pressure, the combination therewith of an annular wall for dividing said jet into two separate annular jets one within the other, substantially as described.

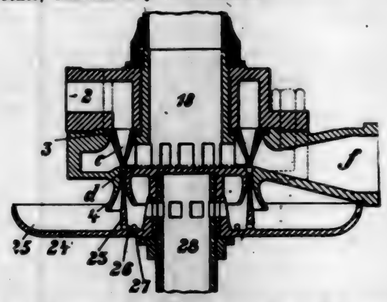

3. In an apparatus of the character described comprising a casing and a plurality of nozzles having annular openings arranged in series in the casing and separated from each other, the combination therewith of means in one nozzle for separating an annular jet from a preceding nozzle into two seperate annular jets, substantially as described.

4. In an apparatus of the character described comprising a casing and a plurality of nozzles having annular openings arranged in series in the casing and separated from each other, the combination therewith of an annular dividing-wall in one nozzle for separating an annular jet from a preceding nozzle into two separate annular jets, substantially as described.

5. In an apparatus of the character described comprising a casing and a plurality of nozzles having annular openings arranged in series in the casing and separated from each other, the combination therewith of an annular dividing-wall in one nozzle for separating an annular jet from a preceding nozzle into two separate annular jets, said dividing-wall separating two receiving-chambers which communicate through said wall, substantially as described.

846,760. JAR-CLOSURE. WILLIAM J. RUST, Sollitt, Ill. Filed Dec. 11, 1905. Serial No. 291,339.

Claim.—The combination with a jar having an externally-threaded neck, of a threaded metallic cap adapted to receive and engage said neck, a flat plate of vitreous material disposed in the upper portion of said cap and provided on its lower face adjacent its edge with an annular washer-seat, a rubber washer disposed between said seat and the upper edge of said neck and an annular projection on the upper face of said plate corresponding in position with the washer-seat on the lower face thereof and adapted to fit a corresponding recess in said cover, said plate being loosely mounted in said cover and rotatable relatively thereto.

846,761. HOTBED FOR ROLLING-MILLS. EDWIN E. SLICK, Pittsburg, Pa. Filed Nov. 9, 1903. Serial No. 180,305.

Claim.—1. A hotbed having a stationary runway with side guides, mechanism for releasing the metal from the guides, a pusher, and mechanism for moving the pusher bodily and sidewise in a non-circular path parallel to the bed to move the metal from the trough onto the bed, said pusher being arranged to move a group of the sections lying on the bed; substantially as described.

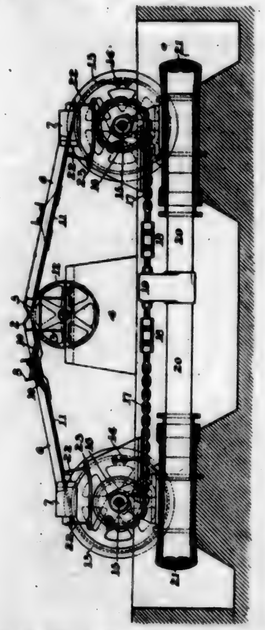

2. A hotbed having a stationary runway with stationary side guides, a substantially continuous pusher and mechanism for moving the pusher bodily and sidewise in a non-circular path parallel to the bed to move the rolled section out of the runway and laterally on the bed; substantially as described.

3. A hotbed having a stationary runway with side guides, mechanism for releasing the metal from the guides, a movable pusher, and mechanism for moving the pusher bodily and sidewise in a non-circular path parallel to the bed to push the metal sidewise from the runway; substantially as described.

4. A hotbed having a stationary runway with fixed side guides, a pusher having lifters, and mechanism for moving the pusher bodily and sidewise in a non-circular path parallel to the bed to lift the section and push it from the runway onto the hotbed; substantially as described.

5. A hotbed having a stationary runway with stationary side guides, a pusher having inclines arranged to lift the metal over the guides and mechanism for moving the pusher bodily and sidewise; substantially as described.

6. A hotbed having a central stationary runway with side guides, a longitudinal pusher having inclined wings on both sides thereof and mechanism for moving the pusher sidewise in either direction to lift the metal out of the runway and move it to either side thereof; substantially as described.

7. A hotbed having a central runway with transverse grooves or slots, a pusher having inclined wings arranged to move through the slots and lift the metal over the guides and mechanism for moving the pusher bodily and sidewise; substantially as described.

8. A hotbed having a central runway, a longitudinal substantially continuous pusher with lifters on each side thereof and flexible connections arranged to move the pusher laterally in either direction; substantially as described.

9. A hotbed having a central fixed runway with fixed

side guides, supporting-bars extending laterally on both sides of the runway, said runway having transverse grooves or slots, a laterally-movable pusher having lifters secured on both sides thereof and mechanism for moving the pusher in either direction to lift the metal from the guideway and move it laterally on the bed; substantially as described.

10. A receiving-bed having a stationary runway provided with side guides, mechanism for moving the metal and guide vertically relative to each other, a pusher, and means for reciprocating the pusher in alternate directions past the runway, substantially as described.

11. A receiving-bed having a runway provided with side guides, mechanism for moving the metal and guides, vertically relative to each other, a pusher adapted to form a continuous contact with the metal, substantially throughout its entire length, and mechanism for moving the pusher sidewise.

12. A receiving-bed comprising a central runway with stationary portions to support the metal and side guides on each side thereof, hotbeds on both sides of the guide portions, a substantially continuous pusher, and mechanism for moving the pusher bodily sidewise in both directions to release the metal from the side guides and move it from the runway; substantially as described.

846,762. SAFETY-LOCK. MICHELE SPECIALE, New York, N. Y. Filed Aug. 20, 1906. Serial No. 331,247.

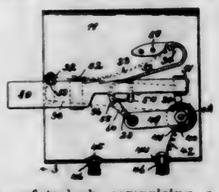

Claim.—1. A safety-lock comprising a bolt, a device adapted to arrest the movement of the bolt before completion and a plurality of instrumentalities engaged with and operating said bolt and device respectively, one of said instrumentalities consisting of a key which is adapted to operate the other.

2. A safety-lock, comprising a bolt, a main or proper key, and means for preventing full movement of the bolt, having a secret key adapted to be operated by the first-mentioned key only to permit operation of the bolt.

3. A safety-lock comprising a locking-bolt, a key adapted to slide the same, a detent adapted to engage with the bolt to arrest its movement before completion, and means adapted to move the detent relatively to the bolt comprising a secret key.

4. A safety-lock, comprising a locking-bolt, a key adapted to move said bolt, a detent for holding the bolt against movement, and a second key adapted to be actuated by the first key and to move said detent.

5. A safety-lock, comprising a locking-bolt, a key adapted to move said bolt, a detent for holding the bolt against movement, and a second key adapted to be actuated by the first key and to move the detent, said second key being permanently mounted in the lock-case.

6. A safety-lock, comprising a locking-bolt, a key adapted to move said bolt, a detent for holding the bolt against movement, and a second key adapted to be actuated by the first key and to move the detent, said second key being permanently mounted in the lock-case and having a stem provided with a projection, and the first-mentioned key being hollow to receive said stem and provided with a supplemental opening to receive said projection.

7. A lock, comprising a bolt, a detent for locking the bolt against movement and a plurality of keys, one of which keys is pivotally mounted in the lock-case and is adapted to move the detent and the other of which keys operates the first-mentioned key and moves the bolt.

8. A lock comprising a bolt, a detent for locking the bolt against movement and a plurality of keys, one of which keys is pivotally mounted in the lock-case and is adapted to move the detent and the other of which keys operates the first-mentioned key and moves the bolt, each of said keys having a bit to engage the bolt and detent respectively.

846,763. EGG-BEATER. ANDREW J. THOMPSON, Chicago, Ill. Filed June 15, 1906. Serial No. 321,872.

Claim.—1. In a beater of the kind stated, the combination of outer and inner rotary loops, and a rod having right and left spirals working respectively through openings in the respective loops, shaped to engage the spirals to produce rotation of the loops by reciprocation of the rod.

2. In a beater of the kind stated, the combination of inner and outer rotary loops having a common axis, the outer loop having an upwardly-projecting extension, and a rod having upper and lower right and left spirals movable respectively through openings in the extension and the inner loop, said openings being shaped to engage the spirals and produce rotation of the loops by reciprocation of the rod.

3. In a beater of the kind stated, the combination of an outer rotary loop having upwardly-projecting side pieces and upper and lower cross-pieces connecting the same, an inner rotary loop having the same axis as the outer loop, a rod having an upper spiral in one direction extending through an opening in the upper cross-piece and a lower spiral in the opposite direction extending through an opening in the lower loop, said openings being shaped to engage the spirals and rotate the loops, and a spring coiled around the rod between said upper and lower cross-pieces.

846,764. SWITCH. WILLIAM R. THOMPSON, South Norwalk, Conn., assignor of one-half to King W. Mansfield, Norwalk, Conn. Filed Apr. 21, 1906. Serial No. 312,052.

Claim.—1. A switch, an operating device therefor, a spring-operated fluid-transmitting device between them, an automatic let-off valve and means adapted to operatively connect the same and the transmitting device, after the operation of the switch-arm by the transmitting device.

2. A switch, an operating-arm therefor, a spring-operated fluid-transmitting device between them, said device comprising a plunger connected to said arm, and a cylinder in which it may be reciprocated to be withdrawn by said arm, and spring means to retract said plunger upon its release, an automatic let-off valve adapted to be engaged by said plunger toward the end of its stroke.

3. A switch, an operating-arm therefor, a spring-operated fluid-transmitting device between them, said device comprising a plunger connected to said arm, and a cylinder in which it may be reciprocated, said switch comprising a plunger, a cylinder therefor operatively connected with said first cylinder, an automatic let-off valve adapted for operation after the transmitting of the motion of the operating-arm to the switch-arm.

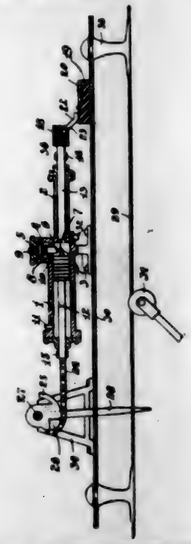

4. A switch, an operating-arm therefor, a spring-operated fluid-transmitting device between them, said device comprising a plunger connected to said arm, and a cylinder in which it may be reciprocated, an automatic let-off valve adapted to be engaged by said plunger toward the end of its stroke.

5. In combination with a conductor, an insulated support therefor, a structure carried on said support comprising two chambers intercommunicating with each other, a vent to the interior of said chambers, a piston in one chamber, a contact-block carried thereby, a second contact-block carried on said support, and adapted to be operatively engaged and disengaged by the contact-block of the plunger, a piston in the other chamber, an operating-arm freely pivoted on said support and engaged by a flexible connection with said second piston, said operating-arm extending into the path of travel of the wheel of a vehicle.

846,765. FRUIT AND VEGETABLE PEELING MACHINE. WILLIAM VOGEL, New York, N. Y., assignor to Betty Vogel, New York, N. Y. Filed Dec. 1, 1905. Serial No. 289,725.

Claim.—1. In a fruit and vegetable peeling machine the combination with a frame and a rotary fork-shaft therein for the fruit or vegetable, of a worm-spindle rotatively borne in the said frame, means for rotation of the worm-spindle and the fork-shaft simultaneously, a carriage loosely mounted on the worm-spindle, a tubular projection at one end of the said carriage, a knife-holder comprising an open casing loosely mounted on the said tubular projection, an arm projecting from the circumference of said casing, a spring arranged in said casing, a second casing rotatively and adjustably borne on the tubular projection alongside the casing of the knife-holder, means in said second casing to engage and wind up the said spring, means for adjusting the said second casing, means for coupling the carriage with the worm-spindle to permit of its being fed along the same, and a knife at the forward end of the knife-holder, substantially as set forth.

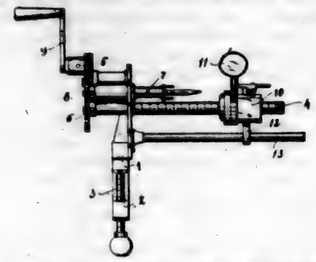

2. In a fruit and vegetable peeling machine, the combination with a knife-holder, of a knife comprising a truncated conical ring sharpened at its upwardly-projecting base, a truncated conical guide-piece loosely fitting in the base portion of the said conical ring, a threaded pin projecting centrally from said guide-piece through the conical ring and adapted to be screwed to the knife-holder, said pin allowing the adjustment of the guide-piece to project more or less outward from the conical ring, whereby the thickness of the peel to be cut off can be varied, substantially as set forth.

846,766. COIN-CONTROLLED TICKET-ISSUING MACHINE. ANTON WANTZEN, London, England. Filed Jan. 6, 1906. Serial No. 294,894.

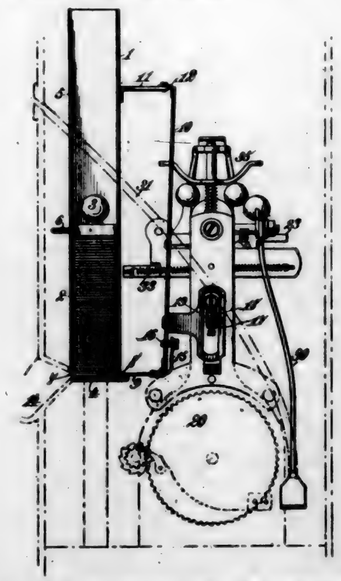

Claim.—1. In a vending-machine, the combination with a container having a delivery-mouth, of a pendulous element operatively associated with said container, a pusher connected to said element and arranged to be reciprocated in the container to deliver articles from the mouth thereof, means for oscillating said pendulous element to reciprocate the pusher, a pressure-applying means combined with said element and pusher for maintaining the operative position of the pusher against the floor of the container, and means for releasing the oscillating means for operation.

2. In a vending-machine, the combination with a container having a delivery-mouth, of a pendulous element

operatively associated with said container, a pusher pivotally connected to said element and arranged to be reciprocated in the container to deliver articles from the mouth thereof, means for oscillating said pendulous element to reciprocate the pusher, a pressure-applying means combined with said element and pusher for maintaining the operative position of the pusher against the floor of the container, and means for releasing the oscillating means for operation.

3. In a vending-machine, the combination with a container having a delivery-mouth, of a pusher, means for movably supporting said pusher, oscillatory means for reciprocating said pusher, an automatic pressure-applying means combined with said pusher, the said movable supporting means and said reciprocating means for maintaining the pusher in line with the delivery-mouth against the bottom of the container, and means for releasing the oscillatory means for operation.

4. In a vending-machine, the combination with a container having a delivery-mouth adjacent the floor thereof, a pusher arranged to reciprocate in said container, a support for said pusher, and a spring connected to said support and said pusher and acting to maintain the latter in contact with the floor of the container, means for reciprocating the pusher, and means for releasing the pusher-reciprocating means for operation.

5. In a vending-machine, the combination with a container provided with a delivery-mouth adjacent the floor thereof, of a pendulous element, a pusher pivotally connected therewith and arranged to reciprocate in said container upon the floor thereof and in line with the delivery-mouth, a spring combined with said pusher and pendulous element for maintaining the operative position of the pusher against the floor of the container, pusher-reciprocating means, and means for releasing the pusher-reciprocating means for operation.

6. In a vending-machine, the combination with a container having a delivery-mouth, of a pusher arranged to reciprocate in said container, a motor for reciprocating said pusher, a controller for regulating the action of the reciprocating means comprising a movable toothed bar provided with a stop, a key coöperating with said toothed bar and stop arranged on a shaft in gear with the motor, a pivoted arm provided with a dog to coöperate with the toothed bar, and a spring connected to said bar, and release means associated with said pivoted arm.

7. In a vending-machine, the combination with a container provided with a delivery-mouth adjacent the floor thereof, of a pendulous element, a pusher pivotally connected therewith and arranged to reciprocate in said container upon the floor thereof and in line with the delivery-mouth, means combined with said pusher and pendulous element for applying pressure to the pusher thereby maintaining the operative position thereof against the floor of the container, pusher-reciprocating means, and means for releasing the pusher-reciprocating means for operation.

8. In a vending-machine, the combination with a container provided with a delivery-mouth adjacent the floor thereof, of a pendulous element pivotally connected at its upper end with said container, a pusher pivotally connected at one end to the lower end of said element and arranged to reciprocate in said container upon the floor thereof and in line with the delivery-mouth, a spring element connected at one end to said pendulous element and at its outer end engaging said pusher, said spring element adapted to maintain the operative position of the pusher against the floor of the container, pusher-reciprocating means, and means for releasing the pusher-reciprocating means.

9. In a vending-machine, the combination with a container provided with a delivery-mouth adjacent the floor thereof, of a pendulous element pivotally connected at its upper end with said container, a pusher pivotally connected at one end to the lower end of said element and arranged to reciprocate in said container upon the floor thereof and in line with the delivery-mouth, an adjustable spring element connected at one end to said pendulous element and at its outer end engaging said pusher, said spring element adapted to maintain the operative position of the pusher against the floor of the container, pusher-reciprocating means, and means for releasing the pusher-reciprocating means.

10. In a vending-machine, the combination with a container provided with a delivery-mouth adjacent the floor thereof, of a pendulous element pivotally connected at its upper end with said container, a pusher pivotally connected at one end to the lower end of said element and arranged to reciprocate in said container upon the floor thereof and in line with the delivery-mouth, an adjustable spring element connected at one end to said pendulous element and at its outer end engaging said pusher, said spring element adapted to maintain the operative position of the pusher against the floor of the container, a loop carried by the pendulous element, and means engaging in said loop for oscillating the pendulous element thereby reciprocating the pusher, and means for releasing the pusher-reciprocating means.

846,767. PHOTOGRAPHIC-PRINTING MACHINE. HOWARD M. WEBSTER, Chicago, Ill. Filed Jan. 20, 1906. Serial No. 296,926.

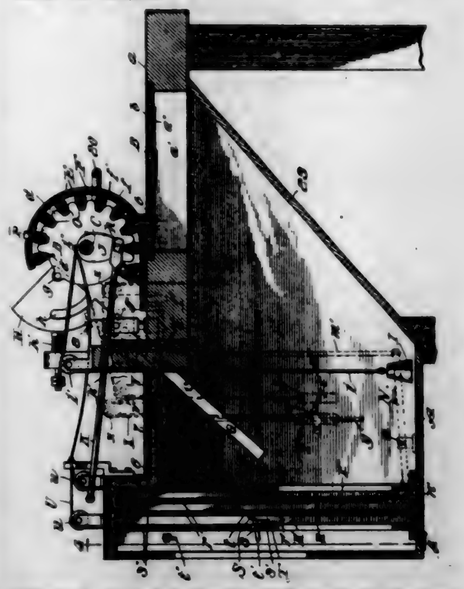

Claim.—1. In a photographic-printing machine, the combination of a horizontal bed, a roller, a thick flexible contact-cushion fastened at one end to the bed and at its other end to the roller, and a handle attached to the front of the roller for moving said roller forward to spread the cushion over the bed.

2. In a photographic-printing machine, the combination of a bed, a flexible cushion, rack-bars on said cushion, a roller comprising toothed disks arranged to engage the rack-bars, and means for moving said roller to spread the cushion over the bed.

3. In a photographic-printing machine, the combination of a bed, a roller comprising toothed disks, a flexible cushion fastened at one end to the bed and at its other end to said roller, rack-bars on said cushion to mesh with the teeth on the disks, and means for moving said roller to spread the cushion over the bed.

4. In a photographic-printing machine, the combination of a bed, a flexible contact-cushion, a roller for spreading said cushion over the bed, and means for applying a yielding pressure to the back of the cushion after it has been spread over the bed.

5. In a photographic-printing machine, the combination of a bed, a thick flexible contact-cushion, means for spreading said cushion over the bed, and pressure-bars arranged to apply pressure on the cushion after it has been spread over the bed.

6. In a photographic-printing machine, the combination of a bed, a flexible contact-cushion, a roller for spreading said cushion over the bed, and means actuated by said roller for applying pressure to the cushion after it has been spread over the bed.

7. In a photographic-printing machine, the combination of a bed, a flexible contact-cushion, a roller for spreading the cushion over the bed, and pressure-bars connected to said roller and arranged to be operated thereby to press upon the cushion after it has been spread over the bed.

8. In a photographic-printing machine, the combination of a bed, a flexible cushion, a roller, bars on the cushion, and pressure-bars connected to the roller and actuated thereby to bear upon the cushion-bars after the cushion has been spread over the bed.

9. In a photographic-printing machine, the combination of a bed, a flexible cushion, a roller, rack-bars on the cushion, teeth on the roller to mesh with said rack-bars, and pressure-bars carried by said roller and arranged to bear upon said rack-bars when the cushion is spread over the bed.

10. In a photographic-printing machine, the combination of a bed, a flexible cushion, a roller, rack-bars on the cushion, teeth on the roller to mesh with said rack-bars, springs on said rack-bars, and pressure-bars carried by the roller and arranged to bear upon said springs when the cushion is spread over the body.

11. In a photographic-printing machine, the combination of a bed, a flexible cushion, a roller, rack-bars on the cushion, teeth on the roller to mesh with said rack-bars, swivels on the bed, and pressure-bars slidably arranged in said swivels and pivotally connected to the roller to bear upon the rack-bars when the cushion is spread over the bed.

12. In a photographic-printing machine, the combination of a bed, a roller, a flexible cushion fastened at one end to the bed and at its other end to the roller, rack-bars on the cushion, teeth on the roller to mesh with the rack-bars on the cushion, shoes on the rack-bars, springs carried by said shoes, swivels on the bed, and pressure-bars slidably arranged in said swivels and pivotally connected to the roller and adapted to be actuated by the roller to bear upon said springs when the cushion is spread over the bed.

13. In a photograhpic-printing machine, the combination of a bed, a flexible cushion, a roller for spreading said cushion over the bed, means for returning the roller to its initial position, and a yielding stop for the roller.

14. In a photographic-printing machine, the combination of a bed, a flexible cushion, a roller for spreading said cushion over the bed, pressure-bars actuated by the roller to bear upon the cushion after it is spread over the bed, a weight for returning the roller to its initial position, and yielding stops arranged to be engaged by the pressure-bars.

15. In a photographic-printing machine, the combination of a bed, a flexible cushion, a roller for spreading said cushion over the bed, and means actuated by the roller for locking said cushion on the bed.

16. In a photographic-printing machine, the combination of a bed, a flexible cushion, a roller for spreading the cushion over the bed, a locking-rod carried by said roller, a locking-plate, and means for interposing the plate in the path of said rod when the roller reaches the limit of its forward movement.

17. In a photographic-printing machine, the combination of a bed, a flexible cushion, a roller for spreading the cushion over the bed, a locking-rod carried by the roller, a locking-plate, a lever for operating said plate to engage the rod, and a shutter for operating said lever.

18. In a photographic-printing machine, the combination of a bed, a flexible cushion, a roller for spreading the cushion over the bed, a standard having an opening therein, a locking-rod pivotally connected to the roller and slidably arranged in said opening, a locking-plate, a face-plate, and means for automatically moving said locking-plate over said opening when the end of the locking-rod rests upon the face-plate to lock the roller in its forward position.

19. In a photographic-printing machine, the combination of a pair of shutters provided with openings normally arranged out of register with each other, means for simultaneously lifting said shutters, means for releasing one shutter so that it may fall by gravity to lowered position with its opening in register with the opening in the other shutter in elevated position, and means for releasing said other shutter at the end of the exposure.

20. In a photographic-printing machine, the combination of a pair of shutters provided with openings normally arranged out of register, lifting-dogs, means for operating said lifting-dogs to carry the shutters simultaneously into elevated position, and means for automatically releasing the lifting-dog from one shutter to permit said shutter to fall to lowered position with its opening in register with the opening in the other shutter in elevated position, and means for automatically operating the other lifting-dog at the end of the exposure to permit its shutter to fall to lowered position with its opening out of register with the opening in the other shutter.

21. In a photographic-printing machine, the combination of a pair of shutters, a pair of lifting-dogs, a stationary tripper for operating one lifting-dog, a movable tripper for operating the other lifting-dog, and means for lifting said dogs.

22. In a photographic-printing machine, the combination of a pair of shutters provided with openings normally out of register with each other, means for lifting said shutters to elevated position and comprising lifting-dogs, a stationary tripper for operating one lifting-dog, a movable tripper for operating the other lifting-dog, and timing means for operating said movable tripper.

23. In a photographic-printing machine, the combination of a bed, a flexible contact-cushion, a roller for spreading the cushion over the bed, a shutter mechanism, and means actuated by the roller for operating said shutter mechanism to start the exposure.

24. In a photographic-printing machine, the combination of a bed, a flexible contact-cushion, a roller for spreading the cushion over the bed, a shutter mechanism, and means actuated by the roller for operating said shutter mechanism to end the exposure.

25. In a photographic-printing machine, the combination of a bed, a flexible contact-cushion, a roller for spreading the cushion over the bed, a shutter mechanism, means actuated by the roller for operating said shutter mechanism to start the exposure, and means actuated by the roller for operating the shutter mechanism to end the exposure.

26. In a photographic-printing machine, the combination of a shutter mechanism, means for timing the exposure comprising a weighted device for operating said shutter mechanism to end the exposure, a drum, a cord fastened to said device and wound around said drum, and means for regulating the movement of said drum to control the movement of said device and time the exposure.

27. In a photographic-printing mathine, the combination of a shutter mechanism, a weighted device for operating the shutter mechanism to end the exposure, a drum, a cord wound around said drum and carrying a weight at one end and connected at its other end to said device, means for lifting said device, and means for regulating the movement of said drum to control the movement of said device and time the exposure.

28. In a photographic-printing machine, the combination of a shutter mechanism, a weighted device for operating the shutter mechanism to end the exposure, a drum, a cord wound around said drum and carrying a weight at one end and attached to said device at its other end, a roller, a cord fastened to said roller and carrying a weight, a lifting-dog on said weight arranged to lift said device, a tripper to release said dog from said device, and means for controlling the movement of said device.

29. In a photographic-printing machine, the combination of a shutter mechanism, a movable tripper to operate said shutter mechanism and end the exposure, a lever for operating said tripper, a weighted rod to operate said

lever, means for lifting said rod out of engagement with said lever, and timing means for controlling the descent of said rod into engagement with said lever.

30. In a photographic-printing machine, the combination of a bed, guide-rods alongside the bed, carriages arranged to travel on said rods, a shaft mounted in said carriages, disks carried by said shaft, and a flexible cushion fastened at one end to the bed and at its other end to said disks.

31. In a photographic-printing machine, the combination of a bed, a pressure-roller arranged to travel over the bed, and a pneumatic suction-cup carried by said roller to pick up the paper on the return movement of the roller.

846,768. EXTRACTION OF GOLD. JAMES W. WORSEY, St. Helens, and EDWIN HOAL, Liverpool, England. Filed June 28, 1904. Serial No. 214,557.

Claim.—1. The process of extracting gold from gold ores, by treating such gold ores to the action of nascent bromid of chlorin produced by the admixture of a salt of chlorate of an alkaline substance, and bromid of an alkaline substance, and a suitable acid in the presence of the ore; substantially as and for the purposes set forth.

2. The process of extracting gold from gold ores, by treating such gold ores to the action of nascent bromid of chlorin produced by the admixture of a salt of chlorate of an alkaline substance, and bromid of an alkaline substance, and a suitable acid in the presence of the ore, and subjecting same to a gentle heat; and subsequently raising the temperature of the mixture; substantially as and for the purposes as herein set forth.

3. The process of extracting gold from gold ores, by treating such gold ores to the action of nascent bromid of chlorin produced by the admixture of a salt of chlorate of an alkaline substance, and bromid of an alkaline substance subjecting same to heat; then separating the gold solution from the undissolved portion; then treating the gold solution with a weak solution of a lead salt added to it, and agitating same; and then subsequently treating it with acid, added to it, and subsequently agitating same, preferably by forcing air through it; substantially as set forth.

846,769. DIAPHRAGM-CLAMP FOR PRESSURE-REGULATORS. THOMAS B. WYLIE, Pittsburg, Pa. Filed Mar. 7, 1906. Serial No. 304,634.

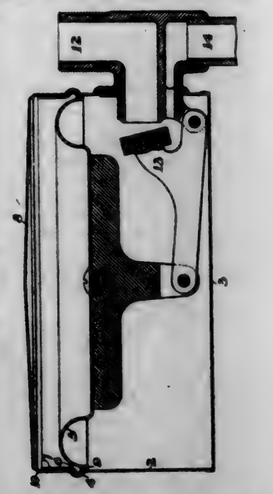

Claim.—1. A sheet-metal casing having an annular bead in its wall, in combination with a continuous sheet-metal clamping-ring, having a corresponding annular rib, and a flexible diaphragm held between the rib and annular groove; substantially as described.

2. A cylindrical sheet-metal casing having an outwardly-forced groove in its wall, a flexible diaphragm having its edge portions lying in the groove, a continuous sheet-metal ring having an outwardly-bulged rib portion arranged to clamp the diaphragm within the groove, and a cover above the securing-ring and sealed to the casing; substantially as described.

846,770. LIFE-BOAT-LAUNCHING MEANS. RICHARD ZOLLING, Oakland, Cal. Filed Jan. 25, 1904. Renewed Jan. 9, 1907. Serial No. 351,566.

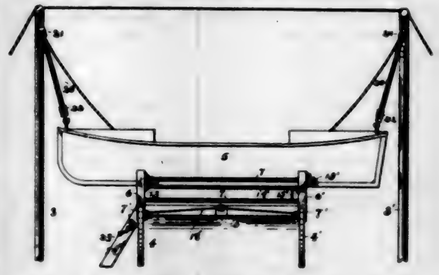

Claim.—1. A means for launching a life-boat, comprising arched supports, a cradle movable thereon, lugs extending outwardly from the respective sides of the cradle, means detachably engaging said lugs for holding the cradle in locked position, mechanism for actuating said last-mentioned means, and guide devices carried by the cradle which coact with the arched supports, said devices after the cradle has been released causing the same to move outward at a downward inclination so as to swing the life-boat clear thereof.

2. A means for launching a life-boat from a vessel or the like, the same comprising a pair of arched supports, a downwardly-curved guide-slot formed in each support, a cradle movable upon the support, means for holding the cradle in locked position, mechanism for actuating the locking means, devices carried by the cradle for causing the same when released to move outward at a downward inclination to swing the life-boat free thereof, said devices working within the guide-slot of the arched supports, and shoulders extending upwardly from the arched supports at the uppermost portion of the slots for limiting the inward movement of the cradle.

3. In a life-boat-launching device, arched members having guideways extending downwardly from the top thereof, a cradle for the boat slidable between said guideways, and means for normally retaining the cradle in its innermost position, including the rock-shaft, means thereon for engaging the cradle, and operable means for the shaft.

4. In a life-boat-launching device, arched members having guideways extending outwardly and downwardly from the top thereof, a cradle for the boat slidable by gravity from the innermost portion of said guideways, and means for normally retaining the cradle in said innermost position, including a rock-shaft, means thereon for engaging the cradle, and operable means for the shaft.

5. In a life-boat-launching device, arched members, having guideways extending outwardly and downwardly from the top thereof, a cradle for the boat slidable by gravity from the uppermost portion of said guideways, and means for normally retaining the cradle in said uppermost position, said means including lugs extending outwardly from the respective ends of the cradle, a rock-shaft extending between the arched members in the rear of said guideways, and hooks operatively connected with said rock-shaft.

6. In a life-boat-launching device, arched members, having guideways extending outwardly and downwardly from the top thereof, a cradle for the boat slidable by gravity from the uppermost portion of said guideways, and means for normally retaining the cradle in said uppermost position, said means including lugs extending outwardly from the respective ends of the cradle, a rock-shaft extending between the arched members in the rear of said guideways, hooks operatively connected with said rock-shaft, and stops on the arched members for limiting the upward and downward movement of the cradle.

7. In a life-boat-launching device, arched members having guideways thereon, a cradle for the boat slidable between said guideways and means for retaining the cradle in its normal position, said means including lugs on the cradle, a rock-shaft extending between the arched members, and means operatively connected with the rock-shaft arranged to engage said lugs.

846,771. APPARATUS FOR MAKING WIRE-GLASS. ARTHUR J. BALDWIN, East Orange, N. J. Filed Nov. 29, 1905. Serial No. 289,589.

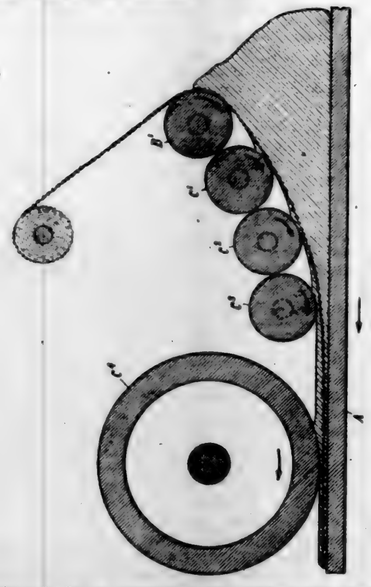

Claim.—1. In an apparatus for making wire-glass, the combination with a rolling-surface, a finishing-roll, and a supply-reel, of a plurality of rolls interposed between the reel and finishing-roll and coacting with material under treatment, said interposed rolls being arranged at varying distances from the rolling-surface.

2. In an apparatus for making wire-glass and in combination a rolling-surface having a rectilinear movement, a finishing-roll mounted thereabove and having a rolling movement in the same general direction as the rolling-surface, a wire-supply and a guide-roll therefor, said guide-roll also having movement in the same general direction as the rolling-surface and having its surface separated from the rolling-surface by a greater distance than that between the periphery of the finishing-roll and the rolling-surface.

3. In an apparatus for making wire-glass, the combination with a rolling-surface, a finishing-roll, and a wire-supply, of a plurality of rolls arranged in close juxtaposition to one another and at gradually-increasing distances from the rolling-surface, said rolls coacting with the material under treatment.

846,772. TRACTOR. FRANK E. BEADLE, London, England. Filed Dec. 18, 1906. Serial No. 348,487.

Claim.—1. A tractor for hauling vehicles comprising a support, a universal joint mounted on the said support and a turn-plate mounted on the said universal joint.

2. A tractor for hauling vehicles comprising a support, means for adjusting the height of the said support, a universal joint mounted on the said support and a turn-table mounted on the said universal joint.

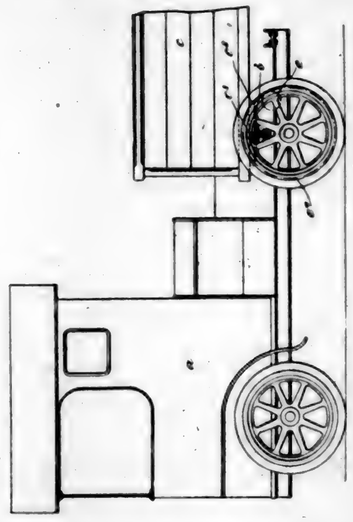

3. A tractor for hauling vehicles comprising a rear axle diverted from the axial plane of the wheels, a support mounted in the said axial plane, means for adjusting the height of the said support, a universal joint mounted on the said support and a turn-table mounted on the said universal joint.

4. A tractor for hauling vehicles comprising a rear axle, two channel-irons spaced apart and united at their ends constituting the said axle, a support mounted on the said axle and guided between the said channel-irons, means for adjusting the height of the said support, a universal joint mounted on the said support and a turn-table mounted on the said universal joint.

5. A tractor for hauling vehicles comprising a rear axle, a support, springs carrying the said support and carried by the said axle, a universal joint mounted on the said support and a turn-plate mounted on the said universal joint.

6. A tractor for hauling vehicles comprising a rear axle, a support, springs carrying the said support and carried by the said axle, means for adjusting the height of the said support, a universal joint mounted on the said support and a turn-table mounted on the said universal joint.

7. A tractor for hauling vehicles comprising a rear axle, a tractor-frame, springs carrying the said tractor-frame and mounted on the said axle, a transverse beam guided in the said tractor-frame, springs carried by the said axle and carrying the said beam, a support mounted on the said beam, a universal joint mounted on the said support and a turn-plate mounted on the said universal joint.

8. A tractor for hauling vehicles comprising a rear axle, two pillars mounted in the axial plane of the said axle, means constituting a universal joint carried by the said pillars and a turn-plate mounted on the said universal joint.

9. A tractor for hauling vehicles comprising a rear axle, two pillars mounted in the axial plane of the said axle, a casting, trunnions on the said casting, bearings on the said pillars to receive the said trunnions, a cylinder, trunnions on the said cylinder at right angles to its axis, bearings on the said casting to receive the said trunnions on the said cylinder, a turn-plate and a cylindrical central

flange on the said turn-plate adapted to fit the said cylinder.

10. A tractor for hauling vehicles comprising a rear axle, two channel-irons spaced apart and united at their ends constituting the said rear axle, a tractor-frame, a transverse beam guided in the said tractor-frame, springs carried by the said axle and carrying the said beam, two tubes carried by the said beam and guided between the said channel-irons, a nut supported at the upper end of each of the said tubes, worm-teeth on the periphery of each nut, a screw-threaded spindle adapted to work in the said nut and extending into the said tube, a shaft adapted to be rotated, two worms on the said shaft gearing with the worm-teeth on the two nuts respectively, means constituting a universal joint mounted on the said spindles and a turn-plate carried by the said universal joint.

11. A tractor for hauling vehicles comprising a rear axle, two channel-irons spaced apart and united at their ends constituting the said rear axle, a tractor-frame, a transverse beam guided in the said tractor-frame, springs carried by the said axle and carrying the said beam, two tubes carried by the said beam and guided between the said channel-irons, a nut supported at the upper end of each of the said tubes, worm-teeth on the periphery of each nut, a screw-threaded spindle adapted to work in the said nut and extending into the said tube, a shaft adapted to be rotated, two worms on the said shaft gearing with the worm-teeth on the two nuts respectively, a casting, trunnions on the said casting, bearings on the said spindles to receive the said trunnions, a cylinder, trunnions on the said cylinder at right angles to its axis, bearings on the said casting to receive the said trunnions on the said cylinder, a turn-plate and a cylindrical central flange on the said turn-plate adapted to fit the said cylinder.

846,773. FILLING-REPLENISHING MECHANISM FOR LOOMS. WILLBURN B. BIRMINGHAM, Raleigh, N. C., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Oct. 1, 1906. Serial No. 336,819.

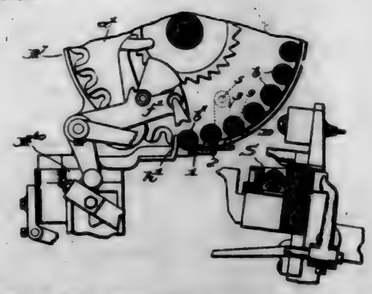

Claim.—1. The combination, with a feeder to hold a plurality of filling-carriers, and a transferrer, of a fixed abutment forming one side of a discharge-throat through which the head of a filling-carrier passes when transferred from the feeder, a buffer to coöperate with and guide and support the opposite side of the head of the filling-carrier, a depending arm on the lower end of which the buffer is mounted, a fixed fulcrum at the upper end of and on which the arm swings toward and from the abutment, and a spring to act upon the arm and normally retain the buffer in operative position.

2. The combination, with a feeder to hold a plurality of filling-carriers, and a transferrer, of a fixed abutment to coöperate with and guide one side of the head of a filling-carrier when transferred, a buffer to coöperate with the opposite side of the head, supporting and guiding the same, an elongated substantially L-shaped support on the lower end of which the buffer is mounted, a fixed fulcrum for the upper end of and on which the support swings toward and from the abutment, and means to yieldingly press the support toward the abutment and maintain the buffer operative.

3. The combination, with an intermittingly-rotatable feeder to hold a plurality of filling-carriers, a stand on which it is mounted, and a transferrer, of a fixed abutment forming one side of a discharge-throat for a filling-carrier when transferred, an oppositely-located buffer fulcrumed on the stand above and back of the abutment, a spring to yieldingly move the buffer into operative position, and a stop to limit movement of the buffer toward the abutment, said buffer forming the other side of the discharge-throat.

4. The combination, with an intermittingly-rotatable feeder to hold a plurality of filling-carriers, a stand on which it is mounted, and a transferrer, of a fixed abutment forming one side of a discharge-throat for a filling-carrier when transferred, an oppositely-located buffer forming the other side of the throat, a depending arm fulcrumed at its upper end on the stand and having a rigid forward extension at its lower end on which the buffer is mounted, and a spring to act upon the arm and normally position the buffer.

5. The combination, with a feeder to hold a plurality of filling-carriers, and a transferrer, of a fixed abutment forming one side of a discharge-throat through which the head of a filling-carrier passes when transferred from the feeder, a depending L-shaped support having a fixed fulcrum above and back of the abutment, a spring to press the support toward the abutment, and an inclined buffer on the lower end of the support opposite the abutment, to coöperate with and guide and support the adjacent side of a filling-carrier head when transferred.

6. The combination, with a feeder to hold a plurality of filling-carriers, and a transferrer, of an abutment, a spring-controlled buffer opposite the abutment, a buffer-support rigidly connected with the buffer and upturned above it, and a fulcrum for and on which the upper end of the buffer-support is pivotally mounted.

7. A support and guide for a filling-carrier in filling-replenishing mechanism for looms, consisting of an L-shaped support having a fulcrum-hub at its upper end and an inclined or beveled foot at its lower end, a spring-seat on the support, and a fixed fulcrum on which the fulcrum-hub is loosely mounted.

8. The combination, with a filling-feeder, of a discharge-throat therefor having a fixed side, a spring-controlled buffer forming the opposite side and movable toward and from the fixed side a fixed fulcrum located at a distance above and back of the buffer and upon which it is movable and a stop to limit movement of the buffer toward the fixed side of the throat.

9. An L-shaped support for a filling-carrier in filling-replenishing mechanism for looms, pivoted and sustained at its upper end only and having a beveled foot at its lower end, and means for holding it yieldingly in the path of the replenishing filling-carrier.

846,774. METHOD AND PROCESS OF MAKING AND APPLYING DECORATIVE PAINT COLORS TO ARTICLES AND MATERIALS. JAY W. BOTHWELL, Denver, Colo. Filed Oct. 15, 1906. Serial No. 339,138.

Claim.—1. The process of mixing varnish, benzin, and paint pigment into a solution, and feeding the same onto the surface of a moving solution, in the presence of benzin, whereby a film of said pigment solution flows over the surface of said solution, then applying to said film of pigment solution a sprinkling of benzin and shellac to set the film so obtained into a fixed pattern, and then feeding material or articles in contact with said continuously-forming pigment-solution film.

2. A process of coating or painting materials and articles with decorative paint solutions, which consists in mixing paint solutions of varnish, benzin and any suitable paint pigment or pigments, to the consistency of a paint solution, then placing said solution or solutions in a suitable receptacle or receptacles, then feeding said solutions onto the surface of a body of flowing or still water, then flowing into said paint solution or solutions as they flow into and spread out into a film on the surface of said water a supply of benzin, then flowing onto and into said film of paint solutions and of benzin a solution of benzin and shellac, and then bringing the material or materials or the article or articles in contact with said film of combined paint solutions and benzin solution and benzin and shellac solutions.

3. A process of applying decorative paint colors to materials and articles of manufacture, which consists of first feeding paint solution or a plurality of different paint solutions and a suitable supply of benzin and a benzin, alcohol and shellac solution simultaneously, onto the surface of a slowly-moving body of any suitable fluid such as water or of a watery solution or of a solution of water, so as to form a film of paint solutions, on said body of fluid, then bringing said materials and articles to be decoratively painted in contact with said film of paint solutions.

846,775. FASTENING DEVICE FOR PICTURE-WIRE. FRANK L. BOYNTON, Washington, D. C. Filed Jan. 24, 1906. Serial No. 297,584.

Claim.—1. A device of the character described, comprising a flat head and a pointed shank formed from a single strand of wire, that portion of the strand constituting the head being bent to provide oppositely-disposed grooves one of which is deeper than the other, and all bent portions of the strand lying in the same plane with each other and with the shank.

2. A device of the character described, comprising a head and a shank formed from a single strand of wire, the head portion of the strand having oppositely-disposed reëntrant bends to form alined grooves which differ from one another in width at their bases.

3. A device of the character described comprising a flat head and a pointed shank formed from a single strand of wire, that portion of the strand constituting the head of the device being provided with a V-bend to provide a wire bite and an arched bend to provide a runner-groove, the base of said V-bend and the apex of the arched bend being directly opposite each other and in alinement.

846,776. MACHINE FOR DEVELOPING PHOTOGRAPHIC PLATES. WILLIAM H. BROWN, Lockhart, Tex. Filed June 15, 1903. Serial No. 161,576.

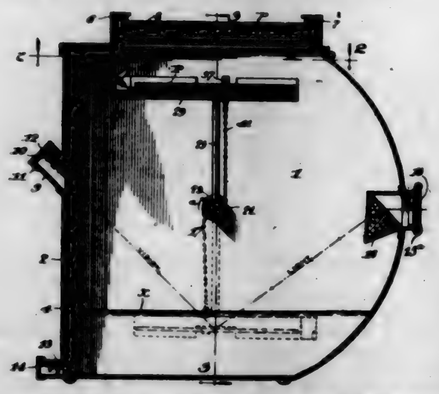

Claim.—1. The combination in apparatus of the class described, of a tank adapted to exclude actinic light, a hollow shaft journaled in said tank, an oscillatory carrier mounted in said shaft, and means operated by movement of the shaft for clamping a photographic plate on said carrier.

2. The combination in an apparatus of the class described, of a tank adapted to exclude actinic light, a hollow shaft journaled in said tank, an oscillatory carrier on said shaft and pivoted fingers operated by the movement of said shaft for clamping a plate on said carrier.

3. The combination in apparatus of the class described, of a suitable tank, a horizontal shaft mounted for oscillatory movement in said tank, arms projecting from said shaft, plate-supporting members secured to said arms at the outer ends thereof, and means for clamping a photographic plate on said supporting members.

4. The combination in apparatus of the class described, of a suitable tank, a shaft mounted for oscillatory movement in said tank, arms projecting outward from said shaft, supporting members presenting a concave supporting-surface attached to said arms at the outer ends thereof, and means for clamping a photographic plate on said members.

5. The combination in apparatus of the class described, of a suitable tank, a shaft mounted for oscillatory movement in said tank, plate-supporting members carried by said shaft, cushions provided on the supporting-surface of said members, and means for holding a plate in contact with said cushions.

6. The combination in apparatus of the class described, of a suitable tank, a shaft mounted for oscillatory movement in said tank, plate-supporting members carried by said shaft, normally inoperative devices for securing a plate in position on said members, and means for holding said members in position to receive a plate.

7. The combination in apparatus of the class described, of a suitable tank, a shaft mounted for oscillatory movement in said tank, plate-supporting members carried by said shaft and having lugs at one end thereof, spring-catches on the wall of said tank to engage said lugs, and means for holding a plate in position on said members.

8. The combination in apparatus of the class described, of a suitable tank, plate-supporting members shiftably mounted in said tank, spring-retracted clamping-fingers, and means for operating said fingers to clamp a plate on said supporting members.

9. The combination in apparatus of the class described, of a suitable tank, shiftable plate-supporting members within said tank, spring-retracted clamping-fingers pivotally mounted on said members, and means for swinging said clamping-fingers positively into operative position.

10. The combination in apparatus of the class described, of a suitable tank, plate-supporting members shiftably mounted in said tank, clamping-fingers pivotally mounted on said supporting members, and springs adapted to hold said fingers normally in inoperative position.

11. The combination in apparatus of the class described, of a suitable tank, plate-supporting members shiftably mounted within said tank, clamping-fingers pivotally mounted on said members, springs to hold said fingers normally in inoperative position, and means for overcoming the tension of said springs to turn said fingers into clamping position.

12. The combination in apparatus of the class described, of a suitable tank, a shaft mounted for oscillatory movement within said tank, plate-supporting members shiftably mounted within said tank, clamping-fingers pivotally mounted on said supporting members, springs for keeping said clamping-fingers normally in inoperative position, and flexible connections between said clamping-fingers and said shaft, whereby said fingers may be thrown into operative position.

13. The combination in apparatus of the class described, of a suitable tank, a shaft mounted for oscillatory movement within said tank, a hollow shaft surrounding the first-mentioned shaft and movable relative thereto, plate-supporting members carried by the first-mentioned shaft, clamping-fingers on said members and normally held in inoperative position, and flexible members connecting said clamping-fingers and said hollow shaft, whereby said clamping-fingers may be thrown into operative position.

14. The combination in apparatus of the class described,

of a suitable tank, a shaft mounted for oscillatory movement in said tank, and having arms projecting therefrom, plate-supporting members mounted on said arms, clamping devices normally held in inoperative position provided on said members, a hollow shaft surrounding the first-mentioned shaft and provided with slots through which said arms project, and flexible connections between said clamping devices and said hollow shaft whereby said clamping devices may be thrown into operative position.

15. The combination in apparatus of the class described, of a suitable tank, means at the top of said tank for holding a plate-holder horizontally in light-excluding contact with said tank, and oscillatory plate-supporting members within said tank and adapted to receive a plate when released from a plate-holder secured in position at the top of said tank.

16. The combination in apparatus of the class described, of a suitable tank, ways for a plate-holder at the top of said tank, a spring-pressed member adapted to hold a plate-holder in engagement with said ways, and shiftable plate-supporting devices within said tank and adapted to receive a plate when discharged from a plate-holder on said ways.

17. The combination in apparatus of the class described, of a suitable tank, plate-supporting devices within said tank, a tube in the side of said tank, a screen mounted in said tube and adapted to exclude actinic light, and a prism provided within said tank and adjacent to said screen to direct light transmitted through said screen.

846,777. CLOTH-CUTTING MACHINE. CROCKETT L. BRYAN, Paducah, Ky. Filed Jan. 3, 1905. Renewed Aug. 14, 1906. Serial No. 330,587.

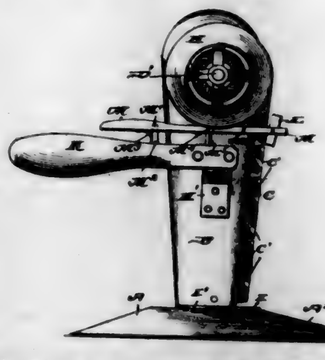

Claim.—1. In a cloth-cutting machine in combination with the base, of the casing connected thereto, said casing being opened at the front, the guide-plate arranged upon the base at the forward side of the casing, the driving sprocket and pulley arranged within the casing and the central guiding portion carrying the guide-ribs, the operating-handle attached to the casing, a lever pivoted to a base carried by the handle provided with sharpening-blocks and means carried by said casing for driving the sprocket as set forth.

2. In a cloth-cutting machine in combination with the base, casing, endless chain of cutting-blades, and means for guiding and operating said endless chain of cutters, of the operating-handle, the bifurcated lever pivotally mounted upon the said handle, the members of said lever being made in sections hinged together, the outer sections being pivoted to the casing, and the sharpening-blocks carried at the outer ends of said outer members and adapted to be brought into engagement with the cutting-blades when the handle of the lever is pressed downwardly, the rest-pins for supporting the joint of the members of the lever and the spring for returning the lever and sharpening-blocks to their normal positions, as set forth.

846,778. ELECTRIC-LIGHT HANGER. FRANKLIN E. CHRISTMAN, Bethelehem, Pa. Filed Dec. 11, 1906. Serial No. 347,333.

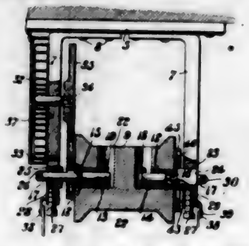

Claim.—1. An electric-lamp hanger including a supporting-bracket, a spring-actuated drum mounted for rotation in the bracket, a flexible conductor the terminals of which are connected with the drum and lamp, respectively, angle-plates carried by the bracket and a depending bail pivotally mounted for swinging movement on the angle-plates and having a guide-opening formed therein for the reception of the flexible conductor.

2. An electric-lamp hanger including a supporting-bracket having spaced depending arms provided with alined openings, split collars disposed within the openings, stationary pins extending through the collars, a spring-actuated drum mounted for rotation on the pins, insulating-bushings interposed between the pins and the collars, a flexible conductor the terminals of which are connected with the drum and lamp, respectively and clamping-screws carried by the arms and bearing against the split collars.

3. An electric-lamp hanger including a supporting-bracket provided with spaced depending arms having alined openings formed therein, split collars seated in said openings, stationary pins extending through the collars, insulating-bushings interposed between the pins and the collars, clamping-screws threaded through the free ends of the arms and bearing against the collars, a spring-actuated drum mounted for rotation on the pins, and a flexible conductor the terminals of which are connected with the drum and lamp, respectively.

4. An electric-lamp hanger including a supporting-bracket provided with spaced depending arms, angle-plates secured to the ends of the arms, clamping-screws extending through the angle-plates and engaging the arms, a yoke pivotally mounted on the angle-plates, a spring-actuated drum mounted for rotation between the arms, and a flexible conductor the terminals of which are connected with the drum and lamp, respectively, there being an opening formed in the pivoted bail for the reception of said conductor.

5. An electric-lamp hanger including a supporting-bracket provided with spaced depending arms having alined openings formed therein, split collars seated in said openings, pins extending through the collars and provided at their outer ends with binding-screws, a spring-actuated drum mounted for rotation on the inner ends of the pins, insulating-bushings interposed between the pins and the collars, wires secured to the binding-screws and operatively connected with an energized circuit, a flexible conductor the terminals of which are connected with the drum and lamp, respectively, and electrical connections between the pins and terminals of the flexible conductor.

6. An electric-lamp-light hanger including a supporting-bracket provided with spaced depending arms having alined openings formed therein, split collars seated in said openings, stationary pins extending through the collars and having their outer ends provided with binding-screws, a flexible bushing interposed between the pins and the split collars, a spring-actuated drum mounted for rotation between the arms, contact members carried by the drum and provided with sockets for the reception of the inner ends of the pins, and a flexible conductor the terminals of which are connected with the contact members and lamp, respectively.

7. An electric-lamp hanger including a supporting-bracket provided with depending arms having alined openings formed therein, split collars seated in said openings, pins extending through the openings and having their outer ends provided with binding-screws and their inner ends conical, insulating-bushings interposed between the pins and collars, a spring-actuated drum mounted for rotation between the arms, contact members having conical-shaped sockets journaled therein for the reception of the conical ends of the pins and provided with transverse openings, a flexible conductor connected with the lamp and passing through the openings in the contact members, and binding-screws carried by the contact members and adapted to engage the terminals of the flexible conductor.

8. An electric-lamp hanger including a supporting-bracket provided with spaced depending arms having alined openings formed therein, split collars seated in said openings, stationary pins extending through the collars and provided with binding-screws, insulating-bushings interposed between the pins and collars, a spring-actuated drum mounted for rotation on the inner ends of the pins and provided with contact members, there being a plurality of spaced openings formed in the drum and disposed at right angles to each other, a flexible conductor operatively connected with the lamp and having its adjacent terminals extending through two of the transverse openings in the drum, and binding-screws for clamping the terminals in engagement with the contact members.

846,779. SIGNALING APPARATUS. CLARENCE W. COLEMAN, Westfield, N. J., assignor to The Hall Signal Company, a Corporation of Maine. Filed Oct. 12, 1906. Serial No. 282,381.

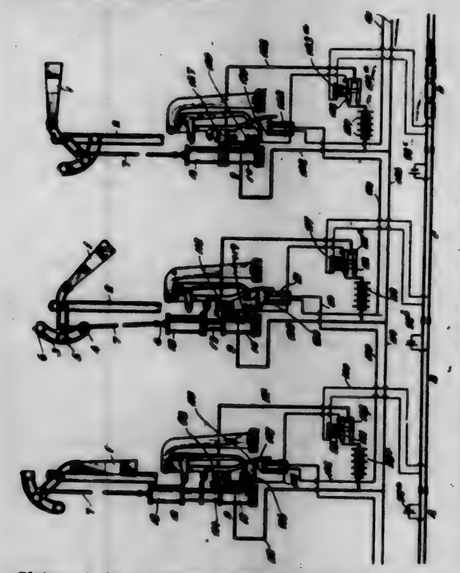

Claim.—1. In a railway signaling apparatus, the combination of a signal, a gas-operated motor for moving said signal to one position, a gas-operated motor for moving said signal to another position, and means whereby one motor bodily moves the other motor to operate the signal.

2. In a railway signaling apparatus, the combination of a signal, a gas-operated motor for moving said signal from danger to caution, a gas-operated motor for moving said signal from caution to safety, means whereby one motor bodily moves the other motor to operate the signal, a tank for liquefied gas, and means to supply gas to each of said motors.

3. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal from danger to caution, a piston and its chamber for moving said signal from caution to safety, means whereby one of the parts of the latter motor is actuated by the former motor, and means for moving the signal relatively to said part.

4. In a railway-signaling apparatus, the combination of a signal, a piston for moving said signal from danger to caution, a piston and its chamber for moving said signal from caution to safety, and means for transmitting the movement of the former piston to the latter piston and piston-chamber.

5. In a railway signaling apparatus, the combination of a signal, a gas-operated motor for moving said signal from danger to caution, a gas-operated motor bodily moved by said former motor for moving the signal from caution to safety, one of said motors serving as an abutment for the other motor.

6. In a railway signaling apparatus, the combination of a signal, a gas-operated motor for moving said signal from danger to caution, a gas-operated motor bodily moved by said former motor for moving the signal from caution to safety, means for holding the signal at caution, said means acting as an abutment for the latter motor.

7. In a railway signaling apparatus, the combination of a signal, a gas-operated motor for moving said signal from danger to caution, a gas-operated motor bodily moved by said former motor for moving the signal from caution to safety, a detent for holding the signal at caution, said detent acting as an abutment for the latter motor, a tank for liquefied gas, and means for supplying gas to each motor.

8. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal, means for giving said piston and its chamber a bodily movement, and a detent for said means.

9. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal, a piston and its chamber for giving said signal an additional movement, each of said chambers having the same capacity, and means for transmitting the movement of the latter piston to the former piston and piston-chamber.

10. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal, a piston and its chamber for giving said signal an additional movement, each of said chambers having the same capacity, means for transmitting the movement of the latter piston to the former piston and piston-chamber, a tank for liquefied gas, and means for supplying gas to each of said chambers.

11. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal, a piston and its chamber for giving said signal an additional movement, each of said chambers having the same capacity, means for transmitting the movement of the latter piston to the former piston and its chamber, and a detent for said means.

12. In a railway signaling apparatus, the combination of a signal, of a piston and its chamber for moving said signal, a piston and its chamber for giving said signal an additional movement, a thrust member rigidly connecting the two pistons, said member transmitting a bodily movement to the latter piston and its chamber.

13. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal, a piston and its chamber for giving said signal an additional movement, and a thrust member permanently connecting one of said pistons to the other piston, said pistons and piston-chambers and thrust member having a common axis.

14. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal, means for admitting gas to said piston-chamber to produce the movement and for cutting off the supply of gas after the movement has been produced, a thrust member connected to one of said parts, a second piston and its chamber for giving the signal an additional movement, said thrust member transmitting the movement from the first piston and its chamber to the second piston and its

chamber, one of the parts of the said second piston and its chamber being guided by said thrust member, means for admitting gas to and cutting off the supply of gas from said second piston and piston-chamber, a detent for holding the signal at one position and another detent for holding the signal at another position, and means for releasing said detents.

15. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal from danger to caution, a piston and its chamber for moving said signal from caution to safety, said last-named piston and its chamber being bodily moved by said first-named piston, a detent for holding the signal at caution, a detent for holding the signal at safety, and means for operating said detents.

16. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal from danger to caution, a piston and its chamber for moving said signal from caution to safety, said last-named piston and its chamber being bodily moved by said first-named piston, a detent for holding the signal at caution, a detent for holding the signal at safety, means for operating said detents, a tank for liquefied gas, and means for supplying gas to each of said chambers.

17. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal from danger to caution, a detent for holding said signal at the caution position, a piston and its chamber moved bodily by the first-mentioned piston and its chamber to move the signal from caution to safety, a detent for holding said signal at safety, means for holding and releasing said detents, and means whereby when the former detent is released, the latter detent is also released.

18. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal from danger to caution, a detent for holding said signal at the caution position, a piston and its chamber moved bodily by the first-mentioned piston to move the signal from caution to safety, a detent for holding said signal at safety, means for holding and releasing said detents, means whereby when the former detent is released, the latter detent is also released, a tank for liquefied gas, and means for supplying gas to each of said chambers.

19. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal from danger to caution, a detent for holding said signal at the caution position, a piston and its chamber moved bodily by the first-mentioned piston and its chamber to move the signal from caution to safety, a detent for holding said signal at safety, means for holding and releasing said detents, and mechanical connections between said means for operating said detents whereby when the former detent is released the latter detent is also released.

20. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal from danger to caution, a detent for holding said signal at the caution position, a piston and its chamber for moving said signal from caution to safety, a detent for holding said signal at safety, means for operating each of said detents, said means for operating the last-named detent being operatable independently of the means for operating said first-named detent, mechanical connections between said means for operating said detents whereby when the former detent is released the latter detent is also released, a tank for liquefied gas, and means for supplying gas to each of said chambers.

21. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal to one position of indication, a piston and its chamber for moving said signal to another position of indication, a detent for holding said signal at the first-named position, a detent for holding said signal at the last-named position, a member for actuating the former detent, a rock-shaft, connections between said latter detent and said rock-shaft, connections between said rock-shaft and said member, said parts being so arranged that when said member is operated to release the former detent, the latter detent is also released.

22. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal to one position of indication, a piston and its chamber for moving said signal to another position of indication, a pivoted member, an electromagnet for actuating said member in one direction, a detent actuated by said member, a rock-shaft, an arm projecting from said rock-shaft, a detent pivoted in said arm, a member for actuating said last-named detent, an electromagnet for actuating said last-named member, an arm connected to said rock-shaft and projecting into the path of said first-named member.

23. In a railway signaling apparatus, the combination of a signal, a piston and its chamber for moving said signal from danger to caution, a piston and its chamber for moving said signal from caution to safety, said latter piston and its chamber being bodily moved by the former piston and its chamber, a pivoted detent for holding said signal at caution, a pivoted lever, an electromagnet for actuating said lever, an arm connected to said lever, connections between said arm and said detent, a projection on said lever, a rock-shaft, an arm connected to said rock-shaft, a detent pivoted in said arm, an electromagnet for actuating said detent, a weight connected to said rock-shaft, a member projecting from said shaft, said member being normally in contact with said projection, and track-circuits for controlling the operation of said magnets.

846,780. CUT-OFF FOR FAUCETS. JOHN W. COLLINS, Washington, D. C. Filed Aug. 14, 1906. Serial No. 330,545.

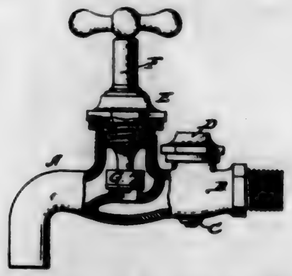

Claim.—1. A faucet of the character described, provided with an elongated portion adapted to receive an auxiliary plug having a metal cap attached thereto, and said cap being adapted to be removed therefrom and to screw upon the faucet-top when the cap carrying the valve-stem and valve is removed from the faucet, substantially as and for the purpose specified.

2. The combination with a faucet, of the casting B provided with the turning plug C adapted to receive a metal cap D; said cap being of the same diameter as that of the cap E carrying the valve-stem F and the valve G, and adapted to be screwed upon the faucet when the said cap E, valve-stem F, and valve G are removed therefrom, substantially as and for the purpose specified.

846,781. CLOCK. ELMER R. CONNELL, Keyser, W. Va. Filed Nov. 12, 1906. Serial No. 343,122.

Claim.—An attachment for striking clocks of that class in which both the hour and half-hour are sounded, comprising an auxiliary gong, an auxiliary hammer, an auxiliary striking-train, a controlling-lever for the latter, a rocker-arm for operating said lever, an arbor carrying said rocker-arm, a crank-pin on the arbor, a crank-pin adjustably secured to the main arbor of the clock, a disk adjustably mounted at a point adjacent to the arbor, a pivot-pin carried by the disk, a lever mounted on the pivot-pin and arranged to be engaged by the adjustable crank, and a connecting-rod extending between the disk-carried lever and the arbor crank-pin.

846,781.

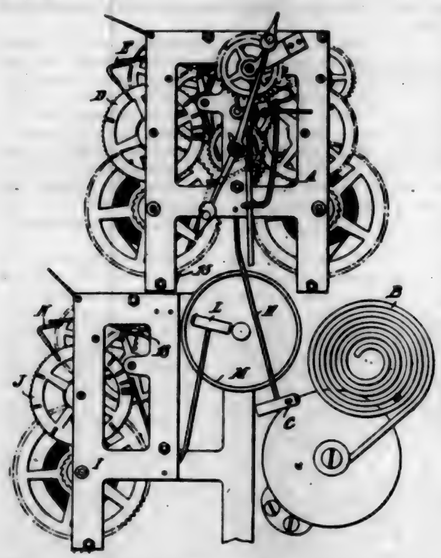

846,782. MEANS FOR DETACHING BUGGY-TOPS. CHRISTIAN G. COOK, Fostoria, Ohio. Filed Oct. 20, 1906. Serial No. 339,844.

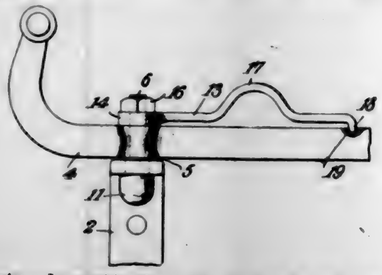

Claim.—In combination with an iron having an elongated perforation, a rail having a bearing which rests upon the upper surface of the iron, a pintle journaled in said bearing and having a head which is elliptical in cross-section, said pintle also having an enlarged cylindrical portion adjoining the head and which is separated from the same by shoulders, said head adapted to pass through said iron perforation, means for turning the pintle, said enlarged cylindrical portion adapted to rotate and lie within the iron perforation.

846,783. AIR-TIGHT OIL-CAN. JOHN DAHL, Ashland, Wis. Filed July 6, 1905. Serial No. 268,550.

Claim.—1. A can having a spout provided with a depending lip and a pivoted link in combination with a cap or closure having a depending flange with an offset forming a lip-engaging hook, a cam-lever pivoted upon the cap and having a link-engaging notch, and a U-shaped catch mounted slidably upon the cap and having an upturned portion adapted for engagement with the handle portion of the cam-lever.

2. A can having a spout provided with a depending lip and a pivoted link in combination with a cap having a depending flange with an offset forming a lip-engaging hook, a cam-lever pivoted upon the cap and having a link-engaging notch, a U-shaped catch mounted slidably upon the cap and having an upturned portion adapted to engage the handle portion of the cam-lever and resilient legs provided with offsets, and flanges secured upon the cap and having offset engaging bulges.

3. A can having a spout provided with a depending lip and a pivoted link in combination with a cap having a depending flange with an offset forming a lip-engaging hook, a cam-lever pivoted upon the cap and having a link-engaging notch, keepers upon the cap having extended flanges provided with bulges, and a lever-engaging catch sliding in the keepers and having resilient legs provided with bulge-engaging offsets.

846,784. SCAFFOLD. NEWTON S. DAVIS, Montrose, Colo. Filed Sept. 8, 1906. Serial No. 333,784.

Claim.—A shingling-bracket comprising a plurality of open links arranged at a suitable distance apart, bars interposed between the open links and pivotally connected at their ends to the ends of said links to permit of the connected links and bars being compactly folded when not in use, means for connecting the connected bars and links to a roof, and a holder for a piece of scantling or the like, having a narrow loop straddling one end of one open link and one end of one bar and removable therefrom and also having a comparatively wide loop disposed opposite to the first-mentioned loop and adapted to receive and support the piece of scantling or the like.

846,785. RAILROAD-TIE. JAMES W. DUNNIGAN, Altoona, Pa. Filed Nov. 7, 1906. Serial No. 342,399.

Claim.—1. A metallic tie formed with a series of independent compartments arranged both above and below the central line of the tie, the tie being also formed to provide a channel intermediate the upper compartments.

2. A metallic tie formed with a series of independent compartments arranged both above and below the central line of the tie, the tie being also formed to provide a channel intermediate the upper compartments, and a section of spike-penetrable material secured in the channel.

3. A metallic tie formed with a series of independent compartments arranged both above and below the central line of the tie, the tie being also formed to provide a channel intermediate the upper compartments, and a plurality of longitudinally-alined sections of wood secured in the channel.

4. A metallic tie constructed of a single strip of sheet metal bent to form a centrally-arranged dovetailed channel, and to form a series of independent compartments below the channel.

5. A metallic tie constructed of a single strip of sheet metal bent to form a centrally-arranged dovetailed channel, and to form a series of independent compartments below the channel, the free ends of the strip bearing beneath the base-wall of the channel.

6. A metallic tie having a centrally-arranged channel, and a series of compartments disposed below the channel, each side wall of the tie being inclined in reverse directions from the longitudinal center.

846,786. BELT-STRETCHER. STEPHEN F. ESHELMAN, Sardis, Ohio, and DAVID R. THORNEN, Sistersville, W. Va. Filed June 26, 1906. Serial No. 323,484.

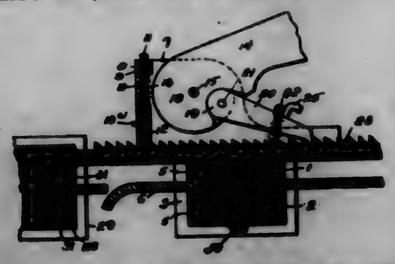

Claim.—1. In a belt and cable stretcher, the combination with clamping-bars, of a housing projecting from one of said bars, a rack extending from another of said bars, means for securing the ends of a belt or cable to said bars, a lever fulcrumed within said housing, and a pawl pivotally secured to said lever and adapted to engage the teeth of said rack, and a vertically-disposed spring-pressed dog carried by the housing for locking the rack when the pawl is released.

2. In a belt-stretcher, the combination with a pair of clamping-bars, of adjustable frames for securing the ends of said bars together, a housing carried by the upper face of the upper bar midway the length of said bar, a lever fulcrumed within said housing, a pawl pivotally secured to said lever, a spring secured to the housing and spanning the pawl, a second pair of clamping-bars, means for securing said bars together, a rack projecting from the upper bar of said second pair, said rack extending through said housing and adapted to be engaged by said pawl, and means for locking said rack when the pawl is disengaged therefrom.

3. In a belt-stretcher, the combination with a pair of clamping-bars, of adjustable frames for securing the ends of said bars together, a housing carried by the upper bar, a lever fulcrumed within said housing, a pawl pivotally secured to said lever, a second pair of clamping-bars, means for securing said bars together, a rack projecting from the upper bar of said second pair said rack extending through said housing and adapted to be engaged by said pawl, and means for locking said rack when the pawl is disengaged therefrom, comprising a vertically-disposed spring-pressed dog supported within said housing.

4. In a belt-stretcher, the combination with a pair of clamping-bars having their opposing faces corrugated, means for securing the ends of said bars together, a housing projecting from the upper face of the upper bar midway the length thereof, a lever fulcrumed within said housing, a pawl pivoted to said lever, a second pair of clamping-bars having corrugated opposing faces, means for securing the ends of said second pair of clamping-bars together, and a rack integral with the upper one of said second-named pair of clamping-bars and extending within said housing.

5. In a belt-stretcher, the combination with two pairs of clamping-bars, of adjustable frames for connecting the ends of said bars, a housing projecting from the upper face of the upper bar of one pair, a rack integral with and projecting from the upper bar of the other pair and extending through said housing, a lever fulcrumed within the housing, a spring-controlled pawl pivotally secured to said lever within the housing and an automatic spring-pressed locking-dog, supported within the housing.

6. In a belt or cable stretcher, the combination with two pairs of clamping-bars, of adjustable frames for connecting the ends of said bars, a housing projecting from the upper face of the upper bar of one pair midway the length of said bar, a rack integral with and projecting from the upper bar of the other pair, and extending through the housing, a lever fulcrumed within the housing, a pawl pivoted to said lever within the housing and engaging said rack and means for securing the ends of the belt or cable to said pairs of bars.

846,787. VEHICLE-FRAME. JAMES H. FOSTER, Cleveland, Ohio, assignor to Parish & Bingham Company, Cleveland, Ohio, a Corporation of West Virginia. Filed Mar. 5, 1906. Serial No. 304,213.

Claim.—1. A vehicle-frame composed of flanged bars and having longitudinal struck-up portions or corrugations therein.

2. A vehicle-frame composed of flanged bars and having longitudinal struck-up portions or corrugations in the base of the same.

3. A vehicle-frame composed of flanged bars and having longitudinal struck-up portions or corrugations therein and extending throughout the length of the same.

4. A vehicle-frame composed of flanged bars and having longitudinal struck-up portions or corrugations therein and extending through the length of the base of the same.

846,788. COLLAPSIBLE BOX. DANIEL F. FRIEDHEIM, New York, N. Y. Filed Dec. 18, 1906. Serial No. 347,579.

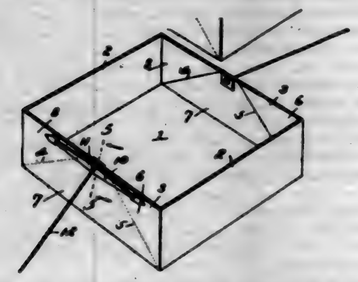

Claim.—1. A collapsible box comprising an uncreased bottom, uncreased ends flexibly connected at their lower edges to the opposite edges of the bottom, creased or folded sides flexibly connected at their lower edges to opposite edges of the bottom and at their vertical edges to the adjoining vertical edges of the ends, each of said sides being folded to form three panels and normally tending to fall inward to the bottom of the box, the folds or creases terminating at the upper free edge of the sides a suitable distance from each other, and a locking-bar pivoted to the outer side of the central panel of each side and of such length as to extend across the folds between the panels when said bar is substantially parallel with the upper edge of the side, and of such width that when it is perpendicular to the edges of the sides it will lie between the two end panels and not engage either of them.

2. A collapsible box comprising a bottom, ends flexibly connected at their lower edges to opposite edges of the bottom, sides flexibly connected to the bottom and to the adjoining vertical edges of the ends, said sides being folded to form three panels, said folds extending upward from the lower corners of the sides at an angle of forty-five degrees, said sides being longer than double their height, whereby the folds at their upper ends will be separated a short distance from each other, and locking-bars pivoted to the outer surfaces of the sides at the centers of the middle panels and adapted to lie, when the box is collapsed, in the channel between the edges of the ends of the box and the edges of the end panels of the sides.

3. A collapsible box comprising a bottom, ends flexibly connected at their lower edges to opposite edges of the bottom, sides flexibly connected to the bottom and to the adjoining vertical edges of the ends, said sides being folded to form three panels, said folds extending upward from the lower corners of the sides at an angle of forty-five degrees, said sides being longer than double their height, whereby the folds at their upper ends will be separated a short distance from each other, and locking-bars pivoted to the outer surfaces of the sides at the centers of the middle panels and adapted to lie, when the box is collapsed, in the channel between the edges of the ends of the box and the edges of the end panels of the sides, a cover, and strings attached to the middle panel of the sides and adapted to secure the cover in place and to assist in holding the box in its extended positions.

846,789. PLOW. LYMAN J. GILMAN, Pinemount, Fla. Filed Nov. 9, 1906. Serial No. 342,648.

Claim.—A plow comprising a shank, a cutter extending from one side thereof and being inclined forwardly at its lower edge and rearwardly at its outer end, said cutter being of greatest breadth at its point of juncture with the shank and gradually decreasing in breadth toward its outer end which is rounded, a sweep extending from the opposite edge of the shank and being of greatest breadth at its point of juncture with the shank and decreasing in breadth toward its outer end, the sweep being of greater area than the cutter, the lower edge of the sweep being inclined forwardly and its outer end inclined rearwardly.

846,789.

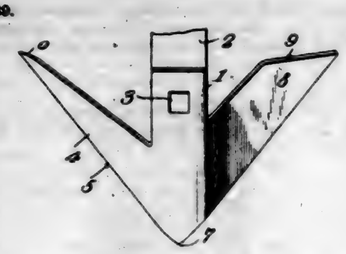

846,790. DOUGH-SHAPING MACHINE. HERMAN F. W. HUMD, New York, N. Y. Filed Mar. 6, 1906. Renewed Jan. 17, 1907. Serial No. 352,812.

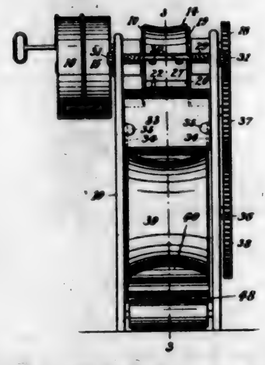

Claim.—1. In a dough-shaping machine, a pair of opposed feed-rollers having concave rims to form an intervening convex and pointed groove, combined with a concave drum, a coöperating apron, and means for conveying the dough from the feed-rollers to the drum, substantially as specified.

2. In a dough-shaping machine, a pair of feed-rollers, and a drum, combined with an intervening coiling-plate having a series of longitudinal ribs, substantially as specified.

3. In a dough-shaping machine, a pair of feed-rollers, and a drum, combined with an intervening coiling-plate having an upper projection that engages one of the feed-rollers, substantially as specified.

4. In a dough-shaping machine, a pair of feed-rollers, and a drum, combined with an intervening coiling-plate having an upper projection that engages one of said rollers, a stop, and a pocket between projection and stop, substantially as specified.

5. In a dough-shaping machine, a pair of feed-rollers, and a drum, combined with an intervening coiling-plate having an upper projection, a series of longitudinal ribs, and a pocket between the projection and ribs, substantially as specified.

6. In a dough-shaping machine, a pair of feed-rollers, and a drum, combined with an intervening flanged coiling-plate having a series of longitudinal ribs, substantially as specified.

7. In a dough-shaping machine, a drum, combined with a pivoted apron, a swiveled set-screw engaging the apron, a rotatable bar engaging the set-screw, and a locking-nut engaging the bar, substantially as specified.

8. In a dough-shaping machine, a pair of concaved feed-rolls, a shaping-drum and means for conveying the dough from the feed-rolls to the drum.

9. In a dough-shaping machine, concaved feed-rolls, a concaved drum, a concaved apron coöperating therewith, and means for conveying the dough from the feed-rollers to the drum and apron.

10. In a dough-shaping machine, concaved feed-rolls combined with a shaping drum and apron, and means for conveying the dough from the feed-rolls to the drum and apron.

846,791. EXCAVATOR. JOSEPH E. KENNEDY, New York, N. Y., and FRANCIS J. HOBSON, Guanajuato, Mexico. Filed Sept. 5, 1906. Serial No. 333,359.

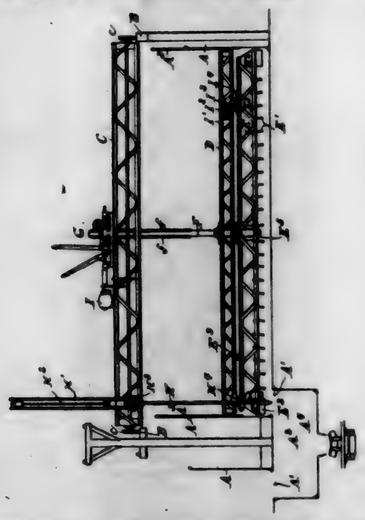

Claim.—1. In an excavating apparatus, the combination, with a series of tanks and a track adjoining them, of a main truss spanning the tanks and carried upon the track, a second transverse truss, means for anchoring the second truss in position relative to the tank; a spider carrying plows and having a circumferential gear and a motor upon the anchored truss driving the spider through the circumferential gear.

2. The combination, with a tank, of tracks at the side thereof; a transverse beam or truss spanning the tank and carried upon the tracks, a central post, gearing upon the truss for raising and lowering the central post, a second truss carried upon the central post and having means for anchoring it in position within the tank, and the spider, also carried upon the post and provided with excavating means, a motor upon the fixed truss, and means at or near the circumference of the spider for driving it by the motor.

3. In an excavating apparatus, the combination with the anchored truss carrying a motor and a spider consisting of radial arms carrying plows and a circumferential gear, of gearing interposed between the anchored truss and the spider; whereby the latter may be rotated by power applied at or near its circumference.

4. In an excavating apparatus, the combination of the transverse beam or truss with a center post carrying an anchored beam and a rotating spider, and means for driving the spider at or near its circumference; with gearing upon the transverse beam or truss coöperating with racks upon the post to raise the apparatus out of the tank, and a worm-gear for lowering it thereinto at desired times.

5. In an excavating apparatus, the combination with the anchored beam or truss, carried upon a central post, of a spider also carried upon the post, and driving connections between the two, at or near the circumference of the spider; and plows carried upon the arms of the spider, the plows upon any arm not tracking with those upon the next arm in advance.

6. In an excavating apparatus, the combination with the anchored beam or truss, of the spider, means for driving the spider, such means carried upon the anchored beam or truss, and plows carried upon the arms of the spider; the plows upon one arm taking up the material where those upon the arm in advance left it, and advancing it by a definite amount toward a discharge-opening, and leaving it in the track of the plow next succeeding.

7. In an excavating apparatus, the combination of the tank with the rotary excavating device carrying the excavated material to a discharge-opening, and a drill arranged to clear the opening at desired times, as described and for the purpose set forth.

8. The combination, with the transverse beam or truss, of a second beam or truss carried thereby and having vertical movement, guides for the vertical movement of the beam or truss, an excavating device having horizontal movements relative to the second beam or truss, with means for driving the excavator whereby the second beam or truss is free to move vertically and is anchored against horizontal motion.

9. The combination, with the transverse beam or truss, of a second beam or truss carried thereby, such second beam or truss carrying a rotary excavator and having vertical movement, with guides for such vertical movement; and securing devices for fastening the beam or truss to the guides arranged to permit free vertical movement, and to anchor the beam or truss against revolution or other horizontal movement.

10. The combination, with a transverse beam or truss, of a central post carrying a second beam or truss, with means upon the first truss for raising or lowering the central post; guides for such vertical movement, such guides preventing radial or horizontal movement of the truss; a spider journaled upon the central post and carrying plows, a motor upon the anchored beam or truss, and gearing interposed between the motor and the spider.

846,792. DISTRIBUTING DEVICE FOR ORES. JOSEPH E. KENNEDY, New York, N. Y., and FRANCIS J. HOBSON, Guanajuato, Mexico. Filed Sept. 5, 1906. Serial No. 333,360.

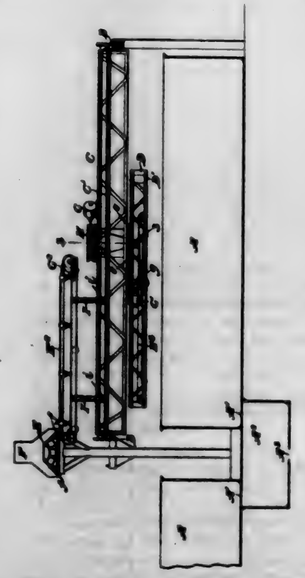

Claim.—1. In a device for distributing finely-divided material, a transverse beam or truss, a conveyer for carrying material to the center of the truss; a revolving arm journaled at the center, a radially-moving conveyer carried by the arm for distributing the material, and a communication between the conveyer upon the truss and the distributing means.

2. In a distributing device, the combination of a fixed conveyer for carrying material to a central point, with a second radially-moving conveyer having also a movement of revolution and receiving and distributing the material from the central point.

3. In a distributing device the combination with a tank, of a transverse truss or beam carrying a central hopper, a conveyer depositing material in the hopper, a second conveyer carried upon a revolving arm and moving outward radially, receiving from the hopper and distributing the deposited material, and independent driving means for the conveyers.

4. In a distributing device, the combination with a tank, of a transverse beam or truss carrying tracks, a central hopper in the truss, means for distributing the material received in the central hopper, and a conveyer longitudinally adjustable upon the tracks on the truss; whereby the hopper at the center may be supplied with material by a single conveyer from either end of the truss as desired.

5. In a distributing device, the combination with a tank or tanks, of a transverse beam or truss, a conveyer longitudinally adjustable upon the truss, a central hopper in the truss, means for distributing in the tank the material received by the central hopper, and means for bringing the material to the adjustable conveyer upon the truss; whereby the hopper may be supplied with material by a single conveyer, from either end of the truss as desired.

6. The combination of a transverse beam or truss having a central hopper, a revolving arm journaled to move around the axis of the hopper, distributing means carried by the revolving arm, and means for carrying to the hopper the material to be distributed.

7. The combination, with a series of tanks, of a transverse beam or truss carried upon tracks so as to span the tanks, conveying devices at the side of the tanks, a conveyer upon the truss, a shifting trip adapted to deliver material from the side conveyer to that upon the truss at desired points, and a radially-moving and revolving conveyer carried by the truss for distributing the delivered material evenly within the tank selected, as described.

8. The combination, with the transverse beam or truss, of a distributing device, an opening through the truss, and a hopper, rigid with the distributing device, journaled in the opening.

9. The combination, with the transverse beam or truss, of the hopper having an enlarged upper end and a smaller longitudinal discharge-opening, and a revolving arm carrying a radially-moving conveyer, substantially parallel to the discharge-opening of the hopper.

10. The combination, in a distributing device, of the three conveyers, the one bringing the material to the circumference of the location at which the material is to be distributed; the second receiving the material from the first and carrying it to the center of distribution, and the third receiving it from the second at such center and distributing it radially, as described and for the purpose set forth.

11. The combination of the transverse beam or truss, the revolving distributing-arm, and the ball-bearing hopper revolving with the distributing-arm.

846,793. POLISHING-BRUSH. JOHN A. KRAG, Rochester, N. Y. Filed Nov. 25, 1904. Serial No. 234,297.

Claim.—1. In a brush, a back, a felt pad, and a pad-cover having free side edges and constituting a brushing-surface, said pad being compressed near its ends by fastening devices and the parts between the fasteners of the pad and the proximate ends of the brush further compressed by the cover fastened to the said ends.

2. In a brush, a back, a felt pad, and a pad-cover constituting a brushing-surface, said pad having fluted edges whereby said edges are made more compressible.

3. In a brush, a back, a plurality of felt pads, and a pad-cover constituting a brushing-surface, said pads having fluted edges whereby said edges are made more compressible.

4. In a brush, a wooden back having the overhanging end extensions, a plurality of felt pads tacked to the back near its ends, a pad-cover consisting of a strip of animal skin with its natural covering, said pads being narrower than the back and narrower than the strip and having fluted edges, and fastening devices securing the strip to the back under the extensions, said natural covering of the strip of skin extending outside of the back, both at its sides and ends.

846,794. MEANS FOR SUPPLYING LUBRICANT FOR THE BEARINGS OF ELASTIC-FLUID TURBINES. AUGUST H. KRUESI, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Jan. 11, 1905. Serial No. 240,546.

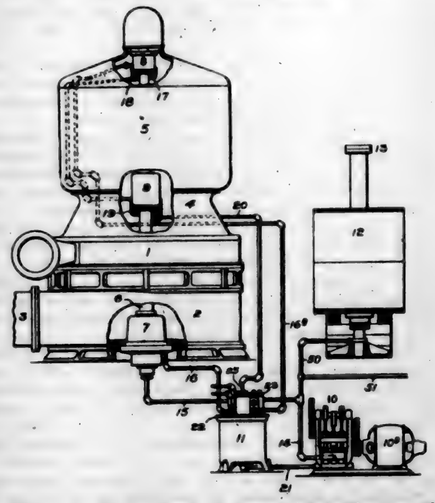

Claim.—1. In a system of forced lubrication, supply and delivery conduits, a baffler for regulating the rate of flow in the conduits comprising a chamber and a screw-threaded plug fitting the chamber, and means for maintaining a closed circuit of the lubricant through the system.

2. In a system of forced lubrication, supply and delivery conduits, a baffler for regulating the rate of flow in the conduits comprising a cylindrical chamber and a plug fitting the chamber and having an external screw-thread, and means for maintaining a closed circuit of the lubricant through the system.

3. In combination, a bearing, a source of lubricant under pressure, a conduit leading from the source to the bearing and having a baffler for regulating the rate of flow comprising a chamber and a screw-threaded plug fitting the chamber, and means for permitting the exhaust lubricant to flow away from the bearing.

4. In a system of forced lubrication, a baffle for regulating the rate of flow comprising a cylindrical chamber, a helically-grooved plug in the chamber, and a screw for adjusting the plug in the chamber to vary the effective length of the groove.

5. In a system of forced lubrication, a baffler for regulating the rapidity of flow, comprising a cylindrical chamber having a passage-way opening into it near one end, a

cylindrical screw-threaded plug fitting said chamber, and means for adjusting said plug lengthwise in said chamber.

6. In a system of forced lubrication, a baffler for regulating the rapidity of flow, comprising a cylindrical chamber having a passage-way opening into it near one end, a cylindrical screw-threaded plug fitting said chamber, and adjusting-screws tapped into the ends of said plug abutting against the ends of said chamber.

7. In a system of forced lubrication, the combination with two branch conduits, of a baffler device comprising a casting containing two cylindrical chambers, respectively in circuit with said branch conduits, and cylindrical plugs in said chambers provided with external screw-threads, each of different pitch from the other.

8. In a system of forced lubrication, the combination with a baffler, comprising a spiral passage, of a pressure-equalizer.

9. In a system of forced lubrication, the combination with a pump, of a pressure-equalizer, and a baffler between said pump and equalizer for reducing the pressure and flow of lubricant before it acts upon the latter.

10. In a system of forced lubrication, an equalizer comprising a cylinder through which lubricant can freely flow at all times, a piston which moves in and out of the cylinder under the pressure of the lubricant without affecting the amount of flow, a long piston-rod, a spring encircling said rod, and guides for preventing said spring from buckling.

11. In a system of forced lubrication, an equalizer comprising a piston, a long piston-rod, a spring encircling said rod and made in sections, and guide-plates placed between said sections and sliding on said rod.

12. In a system of forced lubrication, a cooler for the lubricant comprising a receiver, a coil of water-pipe therein, a cylinder concentric with said coil, a strainer above said coil, a supply-pipe entering above said strainer, and a discharge-pipe leading from within said cylinder.

13. In a system of forced lubrication, a cooler for the lubricant having a top, and one or more bafflers and a pressure-equalizer mounted in said top.

14. In a system of forced lubrication, a cooler for the lubricant having a top, and one or more bafflers, and a pressure-equalizer mounted in said top, the latter having a spring depending into said cooler.

15. In a system of forced lubrication, a device for straining and receiving the return lubricant, with a second device which reduces and equalizes the pressure of the feed lubricant and combines with the first to form a single structure.

16. In a system of forced lubrication, a cooler for the return lubricant, a baffler for the feed lubricant which is carried by the cooler, and a pump receiving lubricant from the cooler and delivering it through the baffler.

17. In a system of forced lubrication, a cooler, a cover therefor having a strainer-compartment, a plurality of bafflers in the cover, and a conduit connecting the bafflers in multiple with respect to the compartment.

18. In a system of forced lubrication, a cooler, a cover therefor having a strainer-compartment, a plurality of bafflers in the cover, a conduit leading from the compartment to the bafflers, a discharge-conduit leading from each baffler, and a pressure-equalizer carried by the cover and located in the discharge-conduit.

19. In a system of forced lubrication, a receiver for return lubricant, a removable cover for the receiver, a strainer carried thereby, a conduit in the cover through which feed lubricant flows, and a pressure-equalizer arranged in the conduit and carried by the cover.

20. In a system of forced lubrication, a receiver for return lubricant, a cover therefor, strainers carried by and removable with the cover of which one strains the feed and the other the return lubricant, a baffling device for the feed lubricant, and a pressure-equalizing device on the discharge side of the baffler which with the latter is carried by and removable with the cover.

21. In a system of forced lubrication, a receiver for return lubricant, a cover therefor, strainers carried by and removable with the cover of which one strains the feed and the other the return lubricant, a baffling device for the feed lubricant, a pressure-equalizing device on the discharge side of the baffler which with the latter is carried by and removable with the cover, and a cooling-coil in the receiver which is supported by the cover.

22. In a system of forced lubrication, supply and delivery conduits, a baffler for regulating the rate of flow in the conduits comprising a chamber and a helically-grooved plug fitting the chamber, and a strainer in the supply-conduit.

846,795. SHAFT-BEARING. AUGUST H. KRUSI, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 30, 1905. Serial No. 280,783.

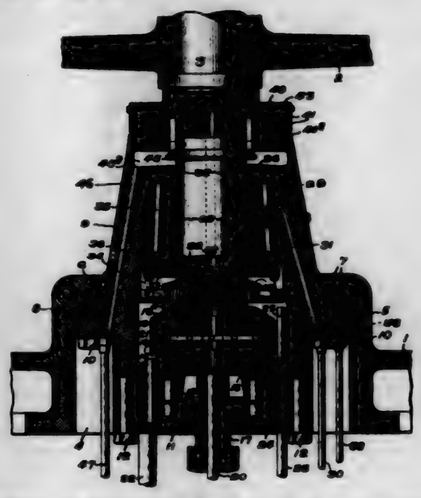

Claim.—1. The combination of a shaft, a chambered base surrounding the shaft, a hydraulic bearing for supporting the shaft, a liquid packing which acts as a seal to prevent the passage of air from the bearing into the base, and a means for maintaining a constant flow of liquid through the packing when the shaft is in operation.

2. The combination of a shaft, a bearing which supports the shaft by a fluid under pressure, a guide-bearing for the shaft, means for continuously maintaining said pressure, a second means independent of the first for lubricating the guide-bearing, and a liquid packing supplied by the first-mentioned means which acts as a seal to prevent leakage from the guide-bearing.

3. The combination of a shaft, a chambered base around the shaft, a bearing which supports the shaft by a fluid film, means for continuously maintaining the film under pressure, and a liquid packing supplied by said means which acts as a seal to prevent air from leaking from the bearing into the chambered base.

4. The combination of a shaft, a chambered base surrounding the shaft, a hydraulic step-bearing for the shaft, a guide-bearing for the shaft, means for supplying lubricant to the step and guide bearings, and a liquid seal between the bearings and the chambered base.

5. The combination of a shaft, a bearing which supports the shaft by a fluid film, a fluid packing for the shaft which prevents pressure from leaking through the bearing, a source of fluid under pressure which maintains a constant flow through the bearing, and a conduit in the shaft which conveys fluid from the bearing to the packing.

6. The combination of a shaft, a bearing which hydraulically supports the shaft, a fluid packing for the shaft, a source of fluid under pressure which maintains a constant flow through the bearing, a conduit in the shaft which receives fluid from the bearing and supplies it to the packing, and separate drains for the packing and bearing.

7. The combination of a shaft, a hydraulic bearing for supporting the same, a casing for the bearing, a hydraulic packing around the shaft, a source of fluid under high pressure which supplies both the bearing and the packing, and means for diminishing the pressure of the fluid before it reaches the packing.

8. The combination of a shaft, a hydraulic bearing for supporting the same, a casing for the bearing, a hydraulic packing around the shaft, a source of fluid under high pressure which supplies both the bearing and the packing, and means located within the bearing-casing for diminishing the pressure of the fluid before it reaches the packing.

9. The combination of a shaft, a step-bearing therefor, an inclosure for the bearing which is subjected to a pressure different from that of the atmosphere, and a packing around the shaft for preventing pressure from escaping through the bearing, said packing comprising a member supported on the bearing, a member rotating with the shaft which coöperates with the other member, and means for supplying fluid to the space between the members.

10. The combination of a shaft, a step-bearing therefor, an inclosure for the bearing which is subjected to a pressure different from that of the atmosphere, and a packing round the shaft for preventing fluid from escaping through the bearing, said packing comprising a series of annular members supported on the bearing, a device mounted on and rotating with the shaft which is provided with a series of annular members which coöperate with those of the other series to hold a body of fluid, and means for supplying fluid between the members to form a seal.

11. The combination of a shaft, a step-bearing therefor, an inclosure for the bearing, and a packing round the shaft for preventing fluid under pressure from escaping through the bearing, said packing comprising a series of annular members surrounding the shaft and located on the bearing, a collar secured to the shaft which is provided with a series of concentric annular members coöperating with the other series to form a restricted passage, and means for forcing fluid through said passage.

12. The combination of a shaft, a step-bearing therefor, an inclosure for the bearing which is subjected to a pressure different from that of the atmosphere, and a packing around the shaft for preventing fluid under pressure from escaping through the bearing, said packing comprising two relatively rotating members having registering grooves in adjacent surfaces and separated by a space, rings arranged in the grooves which coöperate therewith to form a restricted passage, and means for supplying fluid to said passage.

13. In a turbine, the combination of a chambered base which is adapted to receive the exhaust-fluid from the turbine-wheels, a shaft extending into the base, a step-bearing therefor located in the base, means for supplying fluid to the bearing to hydraulically support the shaft, a hydraulic packing around the shaft for preventing leakage of the fluid under pressure from the bearing, and means for supplying fluid from the bearing to the packing.

14. The combination of a shaft, a step-bearing therefor, a guide-bearing, a casing common to both bearings, and independent lubricating systems for supplying the bearings.

15. The combination of a shaft, a step-bearing therefor, a guide-bearing, a casing common to both bearings, independent lubricating systems for supplying the bearings, and means located within the casing for preventing free mingling of the lubricants from the two systems.

16. The combination of a shaft, a step-bearing therefor, a guide-bearing, a casing inclosing the bearings, separate means for supplying lubricant to the bearings, and separate drainage systems which convey exhaust-lubricant away from the bearings.

17. The combination of a shaft, a bearing-casing which is divided into two compartments, a step-bearing in one compartment, a guide-bearing in the other, means for supplying lubricant to each of the bearings, the lubricant from each bearing draining into its respective compartment, and separate drainage-conduits leading from the compartments.

18. The combination of a shaft, a bearing-casing, a step-bearing arranged in the lower end thereof, a guide-bearing located in the upper end of the casing, means for supplying lubricant to the bearings, a diaphragm or drainage-basin between the two bearings which receives lubricant from the guide-bearing, and a discharge-conduit leading from said basin.

19. The combination of a shaft, a step-bearing, a guide-bearing, a fluid packing that forms a seal, means for supplying lubricating fluid to the bearings and also to the packing, a deflector on the shaft between the two bearings for preventing the fluid discharged from one bearing from mixing with that discharged from the other, and a deflector on the shaft between the packing and one of the bearings for deflecting the fluid discharged from the packing.

20. The combination of a shaft, a step-bearing, a guide-bearing, a fluid packing, means for supplying lubricating fluid to the bearings and also to the packing, a deflector on the shaft between the two bearings for preventing the fluid discharged from one bearing from mixing with the discharge from the other, a deflector on the shaft between the packing and one of the bearings for deflecting the fluid discharged from the packing, and separate drainage systems for the bearings and packing.

21. The combination of a shaft, a step-bearing, a guide-bearing, a fluid packing, means for supplying fluid to the bearings and also to the packing, a deflector on the shaft between the two bearings for preventing the fluid discharged from one bearing from mixing with that discharged from the other, a deflector on the shaft between the packing and one of the bearings for deflecting the fluid discharged from the packing, separate drainage systems for the bearings and packing, a casing for the bearings provided with lubricant-collecting chambers for receiving the discharge from the bearings and packing, and drainage-conduits connected with the chambers.

22. In combination, a shaft, relatively movable bearing-blocks therefor provided with a chamber between them, means for supplying fluid to said chamber at a pressure sufficient to maintain a fluid film between the blocks, a casing inclosing the bearing-blocks which forms a chamber to receive the exhaust discharged between the latter, a packing around the shaft for preventing the escape of pressure through said casing, and means for receiving the fluid discharged from said bearing at a decreased pressure and supplying it to the packing.

23. In combination, a shaft, relatively rotatable bearing-blocks therefor provided with a chamber between them, means for supplying fluid to said chamber at a pressure sufficient to maintain a film between the blocks, means for regulating the discharge of fluid between the blocks, a hydraulic packing around the shaft, and means for supplying fluid discharging from between the blocks to said packing.

24. The combination of a shaft, relatively rotatable bearing-blocks therefor provided with a chamber between them, a casing for the bearing-blocks and shaft which receives fluid discharged from between the bearing-blocks, a structure in which the bearing-casing is located that is subjected to a pressure different from that of the atmosphere, a hydraulic packing around the shaft for preventing leakage of fluid under pressure from the casing, a conduit in the shaft which receives fluid from between the bearing-blocks at a pressure lower than the supply-pressure and delivers it to the packing, and an adjustable device between the bearing-blocks for proportioning the amount of fluid discharging to the packing and exhausting from the blocks into the bearing-casing.

25. The combination of a shaft, relatively rotatable bearing-blocks therefor provided with a chamber between them, a casing for the bearing-blocks and shaft which receives fluid discharged from between the bearing-blocks, a structure in which the bearing-casing is located, a hydraulic packing around the shaft for preventing leakage of fluid under pressure from the casing, a conduit in the

shaft which receives fluid from between the bearing-blocks at a pressure lower than the supply-pressure and delivers it to the packing, and a yieldingly-supported and adjustable ring carried by one of and arranged between the bearing-blocks for proportioning the amount and pressure of the fluid supplied to the packing.

26. The combination of a shaft, a bearing for the shaft which is exposed to a given pressure, an inclosure for the bearing which is subjected to a different pressure, and a packing for preventing leakage between the bearing and the inclosure comprising series of overlapping, spaced, concentric annular members suitably supported by the shaft and the bearing respectively to form a tortuous passage, and means for supplying liquid to said passage.

27. The combination of a shaft, a step-bearing for the end of the shaft, a guide-bearing for the shaft adjacent the step-bearing, a casing within which the bearings are supported, means for supplying lubricant to the bearings under pressure, and a liquid sealing device for preventing leakage between the interior and exterior of the casing.

846,796. LUBRICATING SYSTEM FOR TURBINE-SHAFT BEARINGS. AUGUST H. KRUESI, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 30, 1905. Serial No. 280,784.

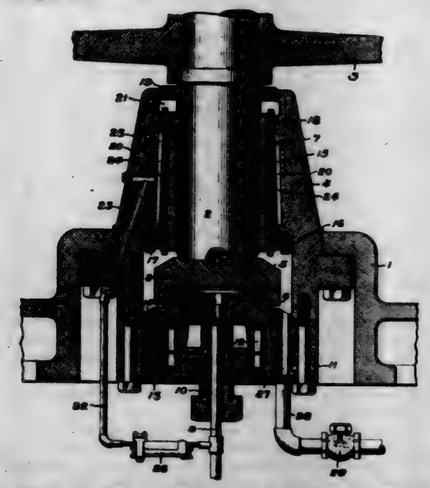

Claim.—1. The combination of a shaft, a step-bearing, a guide-bearing, a casing inclosing the bearings, and a source of lubricant under pressure which is common to and supplies both bearings in parallel.

2. The combination of a shaft, a step-bearing therefor, a guide-bearing, a casing inclosing both of the bearings, and a lubricating system which supplies lubricant in parallel to the bearings at different pressures.

3. The combination of a shaft, relatively rotatable bearing-blocks therefor, a source of fluid under a pressure sufficient to maintain a lubricating-film between the blocks, a guide-bearing, a casing containing both bearings, and a pressure-reducing means which receives fluid from said source and supplies it to the guide-bearing.

4. The combination of a shaft, a step-bearing therefor comprising relatively rotatable blocks, a guide-bearing for the shaft, a casing in which both bearings are located, a conduit for supplying fluid under pressure to the step-bearing to maintain a lubricating-film between the blocks, a second conduit leading from the first to the guide-bearing, and a means in the second conduit for reducing the pressure of the fluid supplied to the guide-bearing.

5. The combination of a chambered base, a shaft extending into said base, two relatively rotatable bearing-blocks forming a step-bearing for the shaft and having a chamber between them, a guide-bearing for the shaft, a conduit for supplying fluid under pressure to said chamber to maintain a supporting-film between the blocks, a second conduit leading from the first at a point without the base to a point within the base to supply fluid to the guide-bearing, and a means in the second conduit for reducing the pressure of the fluid before it is delivered to the guide-bearing.

6. The combination of a chambered base, a shaft extending into the base, a step and guide bearing for the shaft, a casing for the bearings containing a chamber which receives all of the exhaust-lubricant from the step-bearing and a part of the exhaust from the guide-bearing, a second chamber that receives the remainder of the exhaust from the guide-bearing, conduits that supply lubricant to the step and guide bearings, and a conduit that discharges the lubricant from the first-mentioned chamber.

7. The combination of a chambered base, a shaft extending into the base, a guide-bearing for the shaft, a casing for the guide-bearing having a drainage-chamber, means for supplying fluid under pressure to the guide-bearing at a point intermediate its ends whereby the fluid flows between the shaft and bearing and exhausts from the ends of the latter respectively into said chamber and chambered base, and means for conveying away fluid from said drainage-chamber.

8. The combination of a chamber which is adapted to contain vapor under a pressure different from that of the atmosphere, a shaft extending into the chamber, a guide-bearing therefor between which and the shaft fluid under pressure tends to pass, means for maintaining a flow of fluid between the shaft and bearing for lubricating the same and also preventing the passage of fluid under pressure between the atmosphere and the chamber.

9. The combination of a chamber which is adapted to contain vapor under a pressure different from that of the atmosphere, a shaft extending into the chamber, a step-bearing for the shaft, a guide-bearing for the shaft between which and the shaft fluid under pressure tends to pass, means for maintaining a flow of fluid through the step-bearing and between the shaft and the guide-bearing for lubricating the same, and also preventing the passage of fluid due to the difference in pressure between the atmosphere and the chamber.

10. The combination of a shaft, a step-bearing, a guide-bearing, means for supplying a lubricant to the step-bearing at a pressure sufficient to support the shaft, a means for supplying lubricant to the guide-bearing, a casing for both bearings containing a chamber which is located between the bearings and receives the drainage from both, and a drainage-conduit leading from the chamber.

11. The combination of an exhaust-chamber adapted to contain vapor at a pressure below atmosphere, a shaft extending into the said chamber, a step and guide bearing for the shaft, means for supplying lubricant to the bearings, a drainage-conduit for conveying away the lubricant-exhaust from the bearings, and a check-valve in said conduit for preventing the return of exhaust to the bearings under the influence of the low pressure in the chamber.

12. The combination of an exhaust-chamber adapted to contain vapor at a pressure below atmosphere, a shaft extending into the chamber, step and guide bearings for the shaft which are arranged in the chamber, means for supplying lubricant independently to the bearings, a casing for the bearings containing a chamber into which lubricant exhausts, a drainage-conduit connected with the chamber, and a check-valve in said conduit.

846,797. ANTIVIBRATION DEVICE FOR VEHICLES. FREDERICK LAMPLOUGH, London, England. Filed Sept. 7, 1906. Serial No. 333,666.

Claim.—1. In antivibration devices for vehicles in which springs located between the axle and the body of the vehicle are controlled by rings fitting frictionally around pivots fixed to the body or chassis of the vehicle and connections from said rings to the axle, the combination of a large pivot, a ring split at one side fitting frictionally around said pivot, large interfitting V-shaped threads around the exterior of the pivot and around the interior of the split ring, lugs on said ring, a bolt passed through said lugs to apply and regulate the friction, an arm integral with one of said lugs, and means pivotally connecting said arm with the axle.

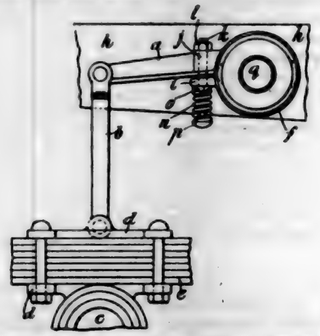

2. In antivibration devices for vehicles in which springs located between the axle and the body of the vehicle are controlled by rings fitting frictionally around pivots fixed to the body or chassis of the vehicle and connections from said rings to the axle, the combination of a large pivot, a ring split at one side fitting frictionally around said pivot, large interfitting V-shaped threads around the exterior of the pivot and around the interior of the split ring, lugs on said ring, a bolt passed through said lugs to apply and regulate the friction, a spring interposed between the bolt-head and the adjacent lug of the split ring, an arm integral with one of said lugs, and means pivotally connecting said arm with the axle.

3. In antivibration devices for vehicles in which springs located between the axle and the body of the vehicle are controlled by rings fitting frictionally around a pivot and having connections to the axle of the vehicle, the combination of a large hollow pivot, a ring split on one side fitting around said pivot, large interfitting V-shaped threads around the exterior of the pivot and around the interior of the split ring, perforations passing from the interior of the pivot to the exterior, lubricant in said hollow pivot, a hole in said pivot for the insertion of the lubricant, and a screw-cap to close said hole.

846,798. CEMENT FENCE-POST. SOLOMON LANDES, Canton, Ohio. Filed Dec. 20, 1906. Serial No. 348,682.

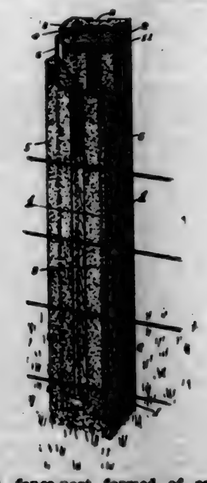

Claim.—1. A fence-post formed of cement, consisting of a solid base portion and a solid upper portion spaced members located between the top and base portions and strengthening-wires embedded in the base, top and spaced members, substantially as and for the purpose specified.

2. A fence-post formed of cement, consisting of a solid base portion and a solid upper portion integral, spaced members located between the upper base portions, strengthening-wires embedded in the base, top, and integral spaced members, grooves formed in the post, and connecting-strips located in the grooves, substantially as and for the purpose specified.

846,799. TRACK CONSTRUCTION. JAMES W. LEAHY, Jersey City, N. J. Filed Dec. 20, 1906. Serial No. 348,740.

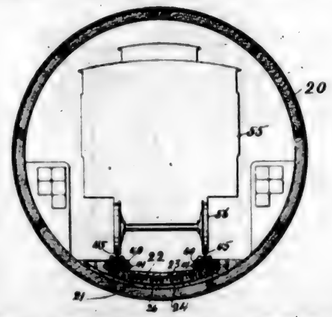

Claim.—1. The combination in a track construction of cross-ties, shoes in said ties, longitudinal runways secured to said shoes and tracks fastened on said runways.

2. The combination in a track construction of a bed of concrete, cross-ties embedded in the concrete, longitudinal tie-bolts connecting the ties, shoes at the ends of each tie, longitudinal runways bolted to the shoes, and tracks secured to the runways.

3. The combination in a track construction of a bed of concrete, cross-ties having openings therethrough embedded in the concrete said openings allowing the concrete on each side of each tie to bind the whole mass thereof, shoes in the ties, longitudinal runways bolted to the shoes, bolts extending from the runways between the ties and embedded in the concrete, track on the runways, clips for the tracks and means to fasten the clips to the runways.

4. The combination in a track construction of a bed of concrete, curved cross-ties embedded in the concrete, an upper and a lower flange contained in each tie, a shoe formed at each end of each tie, a side bearing-plate extending from each shoe, a longitudinal runway supported on each shoe, bolts connecting the runways with the said side plates, and tracks secured to the runways.

5. The combination in a track construction of a bed of concrete, cross-ties embedded in the concrete, shoes formed in the ends of the cross-ties, longitudinal runways secured to the shoes, and ballast located between the longitudinal runways.

6. In a tunnel the combination of cross-ties, shoes extending up from the cross-ties, longitudinal runways bolted to the shoes, concrete around and about the ties, the portions of concrete between the runways on a level and below the lower faces thereof, and tracks fastened to the said runways.

7. In a tunnel the combination of metallic curved cross-ties, shoes formed at the opposite ends of each tie, side bearing-plates formed with each shoe, wooden longitudinal runways supported on the shoes, horizontal bolts clamping the runways with the side bearing-plates, and concrete embedding the ties.

8. The combination in a track construction of a bed of concrete, cross-ties embedded in the concrete, shoes formed in the ends of the cross-ties, a plate extending from one of the shoes for a third rail, and longitudinal runways on the shoes.

9. The combination in a track construction of metallic

cross-ties, shoes extending from the ties, wooden longitudinal runways secured to the shoes, tracks fastened to the runways, concrete between the ties disposed so that the lower surfaces of the runways will clear the concrete when the said runways are disengaged from the shoes.

10. The combination in a track construction of a bed of concrete, cross-ties embedded in the concrete, shoes at the ends of the ties, longitudinal runways secured by the shoes, tracks fastened to the runways, and ballast between the inner accompanying faces of the runways.

846,800. DUMPING-BUCKET. LOUIS A. LEHMANN, New York, N. Y. Filed Sept. 5, 1906. Serial No. 333,330.

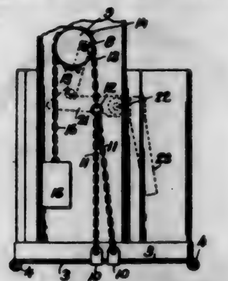

Claim.—1. In an automatic-dumping bucket, the combination with a bucket and its doors, of a shaft, pulleys thereon, and means connecting the doors with a weight or weights, said means passing over the pulleys.

2. In an automatic-dumping bucket, the combination with a bucket-frame and the doors, of a pulley-carrying shaft, and means connecting the doors with a weight, said means passing over the pulley-carrying shaft.

3. The combination of the bucket, the doors, a pulley-carrying shaft having an arm, chains passing from the doors around the pulley-carrying shaft, a weight or weights on the chains, and a locking-latch.

4. The combination of the bucket, its hinged doors, a shaft, a crank-arm thereon, pulleys likewise thereon, a latch engaging the crank-arm, and chains running from the doors around the pulleys, and a weight or weights on the end of the chains.

5. The combination of a bucket, its hinged doors, a shaft, means for locking the shaft, and a weight-provided chain or chains for closing the doors, which chain or chains are controlled as to their operation by the shaft.

846,801. THIN-PLACE DETECTOR FOR LOOMS. PETER S. LEONARD, St. Louis, Mo., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Aug. 8, 1906. Serial No. 329,650.

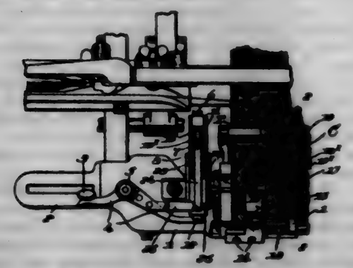

Claim.—1. A loom having a shipper, means to release it, a normally disconnected actuator for said means, and an instrumentality to effect operative connection between the actuator and the releasing means upon the occurrence of a thin place in the cloth, said instrumentality including a detector adapted to rest upon the cloth adjacent the fell and to descend when a thin place is detected, and an adjustable stop to coöperate with and limit descent of the detector independently of engagement of the latter with the cloth.

2. In a loom, a thin-place detector to normally rest upon the cloth adjacent the fell, means controlled by the detector and adapted to effect stoppage of the loom upon the occurrence of a thin place in the cloth, the detector at such time descending through the warp, and means independent of said detector-controlled means and also independent of the cloth to limit the descent and prevent engagement of the detector with the raceway of the lay when a thin place occurs.

3. In a loom, a thin-place detector to normally rest upon the cloth adjacent the fell, means controlled by said detector and adapted to effect stoppage of the loom upon the occurrence of a thin place in the cloth, and adjustable means acting independently of the cloth to limit the descent of the detector through the warp when a thin place occurs.

846,802. RETAINING-BRAKE. DONALD W. LLOYD, Cleveland, Ohio. Filed Feb. 5, 1906. Serial No. 299,616.

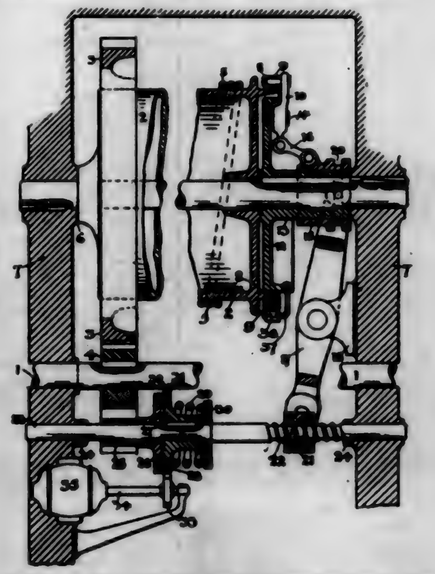

Claim.—1. In a hoisting device, a hoisting-drum, gearing for driving said drum for hoisting, a normally loose band-brake for the drum, and means connected with the gearing for automatically tightening the band of said brake at the end of the hoisting operation.

2. In a hoisting device, a hoisting-drum, gearing for driving said drum, a normally loose band-brake for the drum, and means connected with the gearing for automatically tightening the band of said brake as the load begins to descend.

3. In a hoisting device, a drum, means for turning said drum for hoisting, an external band-brake for controlling the drum, and connections between the driving means and the brake for automatically tightening the band of the brake at the end of the hoisting operation.

4. In a hoisting device, a drum, means for turning said drum for hoisting, a normally loose brake-band for controlling the drum, and connections between the driving means and the brake for automatically setting the brake as the load begins to descend.

5. In a hoisting device, a drum, gearing for turning said drum, a band-brake for controling the drum, and a friction device between the said gearing and brake for automatically tightening the band of the brake.

6. In a hoisting device, a drum, gearing for turning said drum, a brake for controlling the drum, and a friction device between the said gearing and brake for automatically setting the brake as the load begins to descend.

7. In a hoisting device, a drum, gearing for driving said drum, a brake for controlling the drum, a screw-threaded shaft connected to the driving-gears for the drum, a nut adapted to travel on the threads of said shaft, and means connecting the nut with the brake, whereby the brake is set when the nut travels in one direction and is released when the nut travels in the other direction.

8. In a hoisting device, a drum, gearing for driving said drum, a brake for controlling the drum, a screw-threaded shaft connected to the driving-gears for the drum, a nut adapted to travel on the threads of said shaft, a pivoted lever having one end engaging the nut and the other end connected with the brake, whereby the brake is set when the nut travels in one direction and is released when the nut travels in the other direction.

9. In a hoisting device, a drum, means for driving said drum, a screw-threaded shaft, a nut traveling on threads of said shaft, a brake for controlling the drum, connections between said nut and brake, a friction member loose on said shaft and driven by the driving mechanism of the drum, and a friction member keyed to the shaft and coöperating with the first friction member, whereby the shaft is driven in opposite directions as the load is raised or lowered, and the brake is correspondingly released and set.

10. In a hoisting device, a drum, means for driving said drum, a screw-threaded shaft, a nut traveling on a thread of said shaft, a brake for controlling the drum, a pivoted lever having one end engaging the nut and the other end connected with the brake, a friction member loose on said shaft and driven by the driving mechanism of the drum, and a friction member keyed to the shaft and coöperating with the first friction member, whereby the shaft is frictionally driven in opposite directions as the load is raised or lowered, and the brake is correspondingly released and set.

11. In a hoisting device, a drum, gearing for driving said drum, a shaft, a gear on said shaft that is driven from the driving-gears for the drum, said gear being provided with a friction-surface, a friction member keyed to said shaft, a spring for forcing the friction members together so that the shaft is turned with the driving-gears of the drum, a nut adapted to travel on a screw-threaded portion of said shaft, a brake for controlling the drum and means connecting the brake and nut.

12. In a hoisting device, a drum, gearing for driving said drum, a shaft, a gear on said shaft that is driven from the driving-gears of the drum, said gear being provided with a friction-surface, a friction member keyed to said shaft, a spring for forcing the friction members together so that the shaft is turned with the driving-gears of the drum, a nut adapted to travel on a screw-threaded portion of said shaft, a brake for controlling the drum and a fulcrumed lever having one end engaging the nut and the other end connected with the brake.

13. In a hoisting device, a drum, a band-brake for controlling the drum, a train of gearing for turning the drum, a shaft, means for driving the shaft from the driving-gears for the drum, a nut adapted to travel on a screw-threaded part of said shaft, connections between said nut and the said brake, whereby the brake is set when the nut moves in one direction and is released when the nut moves in the opposite direction, a friction device connecting the said shaft with the driving-gears of the drum, whereby the shaft is turned and the nut moved in one direction to loosen the brake as the load is lifted and is moved in the opposite direction to secure the drum as the load begins to lower, and an auxiliary mechanism for controlling the friction device so as to maintain the brake in loose condition, in order that the load may be lowered.

14. In a hoisting device, a drum, a band-brake for controlling the drum, a train of gearing for turning the drum, a shaft, means for driving the shaft from the driving-gears for the drum, a nut adapted to travel on a screw-threaded portion of said shaft, connections between said nut and the said brake, whereby the brake is set when the nut moves in one direction and is released when the nut moves in the opposite direction, a friction device connecting the said shaft with the driving-gears of the drum, whereby the shaft is turned and the nut moved in one direction to loosen the brake as the load is lifted, and is moved in the opposite direction to secure the drum as the load begins to lower, and a motor for controlling the friction device so as to maintain the brake in loose condition in order that the load may be lowered.

846,803. CHAIN-LINK. EDWIN H. MILLS, Columbus, Ohio, assignor of one-half to Lute Hornickle, Cleveland, Ohio. Filed June 25, 1906. Serial No. 323,219.

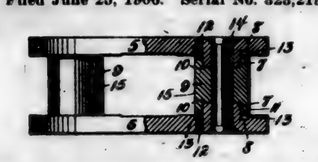

Claim.—1. A chain-link comprising a pair of side plates, a removable wrist-pin located between said side plates, a fastening device passing through the wrist-pin and the side plates for binding said side plates and wrist-pin together, there being bosses carried by the side plates and entering recesses formed in the ends of the wrist-pin, and means for preventing said wrist-pins from turning.

2. A chain-link comprising a pair of side plates having inwardly-extending bosses, wrist-pins located between said side plates and having their ends recessed for the reception of said bosses, there being annular grooves formed in the side plates about said bosses for the reception of the ends of the wrist-pins, means for binding said side plates together, said means passing through the side plates and the wrist-pins, and means for preventing said wrist-pins from turning.

3. A chain-link comprising a pair of side plates, a removable wrist-pin located between said side plates and having notches formed in the ends thereof, and stop members which pass through the side plates and engage in said notches.

4. A chain-link comprising a pair of side plates having inwardly-extending bosses formed thereon, removable wrist-pins having their ends recessed for the reception of said bosses, and fastening devices passing through the wrist-pins and said side plates for binding said side plates together, and pins passing through said side plates and engaging notches formed in the ends of the wrist-pins.

5. A chain-link comprising a pair of side plates, there being inwardly-projecting bosses formed upon each of said side plates, a wrist-pin having cup-like ends adapted to receive said bosses, there being annular channels formed in the side plates about said bosses adapted to receive the ends of the wrist-pin, the end walls of the wrist-pin having diametrically-opposed notches formed therein, a fastening device passing through the side plates and the wrist-pin for binding said side plates and wrist-pin together, and pins which pass through the side plates and engage said notches.

846,804. GATE-LATCH. MORDICA O. PATTON, Rayville, Mo. Filed Apr. 2, 1906. Serial No. 309,494.

Claim.—The combination of a swinging gate comprising a series of horizontal rails connected by end bars, the end bar at the swinging end of the gate being formed of two spaced members secured to opposite sides of the rails, a pair of upright members spaced from the before-mentioned end bars and also secured to opposite sides of the rails, a pair of parallel spaced latch-bars slidably mounted upon the rails and held against lateral displacement by the before-mentioned spaced upright members and the end bar at the swinging end of the gate, a transverse member rigidly connecting the two latch members and causing the same to operate in unison, a hand-lever

pivoted to one of the rails, a link member connecting the hand-lever to the before-mentioned transverse member and enabling the latch-bars to be withdrawn through the medium of the hand-lever, pins passing transversely through the latch-bars and forming stops which engage with the upright members and end bar of the gate to

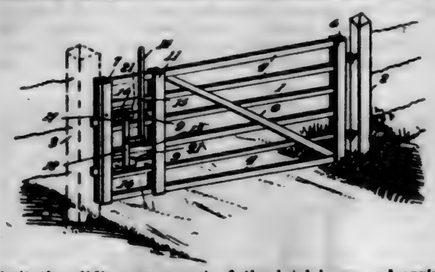

limit the sliding movement of the latch-bars, and spring members extending along the latch-bars and connecting the same to the end bar of the gate-post, the said spring member tending to hold the latch-bars normally in operative position.

846,805. STEREOSCOPE. WILLIAM I. SHERWOOD, New York, N. Y., assignor to William Vogel & Brothers, Brooklyn, N. Y. Filed Feb. 2, 1906. Serial No. 299,173.

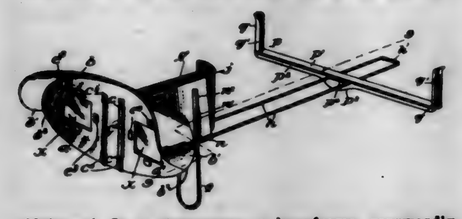

Claim.—1. In a stereoscope, a lens-frame, rearwardly-extending side-by-side round spring-wires, and a removable picture-holder having longitudinal openings with rounded ends and into which openings the said wires are inserted, said wires bearing against the ends of said openings, and said picture-holder being adapted to change the distance between the wires, for substantially the purposes set forth.

2. In a stereoscope, a picture-holder guide comprising spring-wires, a septum applied to said wires, a picture-holder guided on the wires, and means for spreading the wires.

3. In a stereoscope, a lens-frame provided with a hood, a septum, a picture-holder guide comprising spring-wires, a picture-holder guided thereon, and means for spreading the wires.

4. In a stereoscope, the combination, with a lens-frame having transverse sockets, of a picture-holder guide having upright connecting-wires inserted into the sockets.

5. In a stereoscope, the combination, with a lens-frame having transverse grooves and two pairs of slits or openings which together form sockets, some of said grooves being on one and some on the other side of the frame, of a picture-holder guide having upright connecting-wires inserted into the sockets.

6. In a stereoscope, the combination of a lens-frame, guide-wires attached to the same, a picture-holder guided on said wires, and means located between the lens-frame and picture-holder for changing the normal distance between the wires.

7. In a stereoscope, the combination of a lens-frame, guide-wires attached to the same, a picture-holder on said wires, and a handle adapted to spread the wires.

8. In a stereoscope, a lens-frame, an inverted hollow V-shaped septum of sheet material, and a picture-holder guide applied to the lower edges of the septum.

9. In a stereoscope, a lens-frame, an inverted-V-shaped septum, guide-wires to which the lower edges of the septum are applied, and a picture-holder.

10. In a stereoscope, a lens-frame, an inverted hollow V-shaped septum of sheet material provided with a bridge-piece at its rear end, and a picture-holder guide applied to the lower edges of the septum.

11. In a stereoscope, the combination of side-by-side guide-wires, and a septum composed of a doubled piece of sheet metal having its ends bent around and upon said wires.

12. In a stereoscope, the combination of a septum, guide-wires, and means applied to the wires and sides of the septum to spread such side wires.

13. In a stereoscope, an inverted-V-shaped septum, guide-wires, and means inserted into the septum for spreading the sides thereof and for spreading the wires.

14. In a stereoscope, the combination of a picture-holder guide composed of side wires, a picture-holder guided thereon, and a U-shaped handle of spring-wire inserted between the wires on the guide to spread them.

15. In a stereoscope, the combination with a lens-frame of sheet metal having lens-apertures, and lens-holders angular in cross-section, said lens-frame having slits, and said lens-holders having lugs inserted into said slits and bent back upon the front of the lens-frame.

16. In a stereoscope, an apertured lens-frame, angular or L-shaped guides projecting from the back of the frame at two opposite sides of each aperture and tapering toward the inner end of the same, a stop tongue or lip at the inner end of each aperture against which tongue one end of a lens guided by said guides may be pushed, and a retaining tongue or lip at the outer end of each aperture for engagement with the other end of the lens, said tongues also projecting from the back of the frame and coöperating with the guides to secure the lenses upon the back of the lens-frame.

17. A picture-holder for stereoscopes, composed of sheet metal, comprising a cross-piece provided with parallel side flanges, and upwardly-extending picture-guides on the ends of the cross-piece, of general tubular form, said guides having longitudinally-extending side lips for guiding and receiving the ends of a picture, said lips being directed inwardly toward each other, and said flanges having longitudinal openings to receive the picture-holder guide.

18. In a stereoscope, a lens-frame, an inverted-V-shaped septum of sheet material, a bridge-piece, a slot-and-lug connection between the rear end of the septum and the bridge-piece, and a picture-holder.

19. In a stereoscope, the combination of a septum provided with sockets, and a U-shaped wire handle, the ends of which are inserted into said sockets.

846,806. BUTTON-MACHINE. HERBERT J. SKIPP, Newark, N. J. Filed Sept. 12, 1906. Serial No. 334,227.

Claim.—1. A feeding device for button-machines comprising a hopper, means for feeding buttons from the hopper, a trough to receive the buttons from the feeding means, a tripping mechanism to release one button at a time from the trough, a chute arranged to conduct buttons from the tripping mechanism, a clamping means at the bottom of the trough to hold the button while it is being drilled, an ejector for throwing out the finished button, and a mechanism governed by the feeding means actuating the clamping means and the ejector in turn, this mechanism actuating the tripping mechanism alternately with the ejector and the clamping means.

2. A feeding device for button-machines comprising a hopper, a plunger arranged to reciprocate vertically in the hopper, and arranged to conduct buttons near the top of the hopper, the upper surface of the plunger being inclined in two directions, a ledge on one edge of the upper surface, a trough to receive the buttons from the plunger, an oscillating bar having means on each end to engage a button, the oscillations of the bar releasing one button at a time, a chute leading from the trough, a clamping means at the bottom of the chute, and means for ejecting the finished button, and a mechanism to operate the parts of the ejector

and a connection from the ejector-operating mechanism to the reciprocating plunger, and actuated by the plunger.

3. A feeding device for button machines comprising a hopper, a plunger to reciprocate in the hopper and support buttons on its top edge, a trough to receive the buttons from the top of the plunger, a support having a chute thereon, at the end of the trough, a pair of horizontally-slidable plates arranged to clamp a button between them at the bottom of the chute, a vertically-movable plate on the support, means for separating the horisontal slidable plates when the vertically-slidable plate is raised, and a latch connected to the plunger to raise the vertically-slidable plate when the plunger is raised, and a tripping mechanism in the trough arranged to release a button when the plunger is at its upward limit of movement.

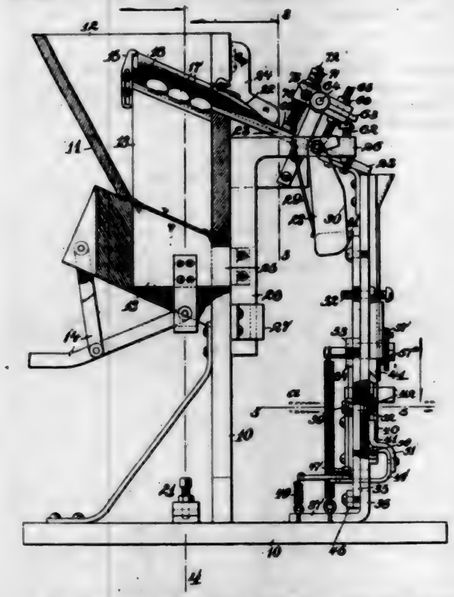

4. In a machine of the kind described, a clamping means comprising a support, a pair of abutting plates arranged to slide to and from one another, a plate movable transversely to the slidable plates and having diverging slots therein, pins secured to the slidable plates and projecting through the slot of the movable plate, and jaws on the opposed plates for holding a button.

5. In a machine of the kind described, a support, a pair of plates slidable to and from one another, a plate movable transversely to the slidable plates and having slots therein, pins secured to the slidable plates and projecting through the slots of the movable plate, jaws on the slidable plates for clamping a button, a perforation in the support, an ejector in the support, and a latch on the movable plate to actuate the ejector when the movable plate has been propelled far enough to partly separate the slidable plates.

6. In a machine of the kind described, a button-clamping means arranged therein, a plate movable to actuate the button-clamping means in and out of engagement with a button, and an ejector consisting of a pivoted lever, one end of which is provided with a perforated ejecting-disk, and the other end being provided with a projecting tongue, a latch on the movable plate to engage the tongue to eject the button, and a spring to return the ejector to its normal position.

7. In a machine of the kind described, a support, a pair of plates slidable to and from one another to clasp and release a button, means for actuating the plates, an ejector actuated by the plate-actuating means, and a vertically-slidable plate to cover the space between the slidable plate after the button is ejected, and means to return the slidable plate from between the plates when the plates are drawn together.

8. In a machine of the kind described, a trough, a bar pivoted above the trough, the bar being arranged to rock, a finger projecting from one end of the bar, and a spring-pressed disk from the other end of the bar, the finger and the disk lying in the trough.

9. In a machine of the kind described, a trough, a bar secured above the trough and arranged to rock, a finger secured to one end of the bar and arranged to project into the trough, a rod on the other end of the bar, a disk arranged on a rod and projecting into the trough, and a spring to yieldingly hold the disk in the trough.

10. In a machine of the kind described, a trough, a rocking bar arranged above the trough, a finger projecting from one end of the bar into the trough, a rod on the other end of the bar, a disk arranged on the rod, the rod of the disk being arranged to slide in the bar, a spring between the disk and the bar, and means for rocking the bar.

846,807. SAFETY ARRANGEMENT FOR HOISTING APPARATUS. WILLIAM THORNBER, Johannesburg, Transvaal. Filed Mar. 27, 1906. Serial No. 308,240.

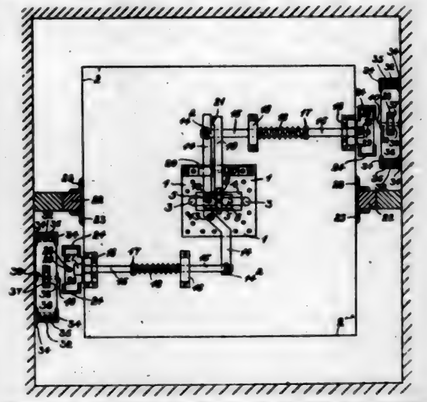

Claim.—1. In safety mechanism for hoisting apparatus, guides, sliding blocks or pieces in said guides, other guides and sliding weights in said latter guides, means for connecting the sliding blocks with the sliding weights, a vehicle and catch-gear carried thereby, which gear is adapted to engage the sliding blocks to cause the weights to arrest the movement of the vehicle.

2. In safety mechanism for hoisting apparatus, the combination of the vehicle, catch-gear fitted thereto, guides and a plurality of sliding blocks or pieces connected together, another set of guides and a plurality of weights slidably supported therein, and means for connecting the sliding blocks with the sliding weights so that in the event of the catch-gear being operated and engaging any one of the sliding blocks, the motion of the vehicle is retarded by the sliding weights.

3. In safety mechanism for hoisting apparatus, the combination with the vehicle and catch-gear fitted thereto, of guides and a plurality of sliding blocks or pieces therein connected together, another set of guides and a plurality of weights slidably supported therein, and means for connecting the several sliding blocks with the sliding weights in such manner that first one weight comes into operation, then another, and so on until the maximum load is reached.

4. In safety mechanism for hoisting apparatus, the combination with the vehicle and catch-gear carried thereby, of guides, a plurality of sliding blocks in said guides, a flexible rope connecting the several sliding blocks, another set of guides and a plurality of weights slidably supported therein, a cross-head, a pulley carried thereby,

another pulley round which the rope passes from the sliding blocks to the pulley in the cross-head, a rope connected to the cross-head, a counterweight fixed to said rope for balancing the several sliding blocks, and projections on the rope which serve for lifting first one weight and then another to operate to retard the motion of the vehicle when the catch-gear engages any one of the sliding blocks.

5. In safety mechanism for hoisting apparatus, the combination with the vehicle of catch-gear carried thereby, a set of guides arranged in the shaft or well traversed by the vehicle at opposite sides of the latter, a plurality of sliding blocks or pieces slidably supported in said guides, another set of guides at opposite sides of the vehicle and a plurality of weights slidably supported in said guides, a cross-head slidingly supported in said guides above the weights, a rope connecting the several sliding blocks, a pulley carried by said cross-head, another pulley fixed above and between the guides for the sliding blocks and weights, the rope passing round the latter pulley, then under the pulley in the cross-head and attached to a fixed point in the shaft, a rope depending from the cross-head, a weight fixed to the latter rope for counterbalancing the several sliding blocks, and projecting pieces provided on the rope for engaging and raising the weights successively off their supports in the guides so that the weights gradually come into operation to retard the movement of the vehicle in the event of the catch-gear being actuated and engaging one of the sliding blocks, substantially as described.

6. In safety mechanism for hoisting apparatus, in combination, the vehicle, catch-gear carried by said vehicle which is adapted to operate in the event of the vehicle becoming unsupported in the shaft, a set of guides provided at opposite sides of the shaft, a plurality of sliding blocks or pieces connected in sections, another set of guides at each side of the shaft, a plurality of weights connected in sections and slidably supported in said guides, ropes which serve for connecting the several sliding blocks of one section, a pulley fixed in the shaft above the sliding blocks round which the rope passes, a cross-head slidably arranged in the weight-guides, another pulley carried by the cross-head round which the rope passes, the end of the rope being fixed to a convenient point above the cross-head in the shaft, a rope suspended from the pulley in the cross-head, and projecting pieces on the rope which serve for raising the weights successively off their supports in the guides to retard the movement of the vehicle in the event of the catch-gear engaging the sliding blocks, substantially as described.

7. In safety mechanism for hoisting apparatus, the combination of a vehicle, catch-gear which is maintained in its inoperative position so long as the weight of the vehicle is on the hauling-rope and which comes into operation automatically in the event of the skip becoming unsupported by said rope, a set of guides provided at opposite sides of the shaft, a plurality of sliding blocks or pieces connected in sections, another set of guides at each side of the shaft, a plurality of weights connected in sections and slidably supported in said guides, ropes which serve for connecting the several sliding blocks of one section, a pulley fixed in the shaft above the sliding blocks round which the rope passes, a cross-head slidably arranged in the weight-guides, another pulley carried by the cross-head round which the rope passes, the end of the rope being fixed to a convenient point above the cross-head in the shaft, a rope suspended from the pulley in the cross-head, and projecting pieces on the rope which serve for raising the weights successively off their supports in the guides to retard the movement of the vehicle in the event of the catch-gear engaging the sliding blocks, substantially as described.

8. In safety mechanism for hoisting apparatus, the combination with the vehicle, of catch-gear carried thereby, said catch-gear comprising a catch-lever and spring-controlled part adapted to operate said catch-lever in the event of the vehicle becoming unsupported by the hauling-rope, a lever which is engaged by the catch-lever to retain the catch-gear in its inoperative position, spring-controlled catch rods or bars actuated by said lever, a set of guides provided at opposite sides of the shaft, a plurality of sliding blocks or pieces connected in sections, another set of guides at each side of the shaft, a plurality of weights connected in sections and slidably supported in said latter guides, ropes which serve for connecting the several sliding blocks of one section, a pulley fixed in the shaft above the sliding blocks round which the rope passes, a cross-head slidably arranged in the weight-guides, a pulley carried by the cross-head round which the rope passes, the end of the rope being fixed to a convenient point above the cross-head in the shaft, a rope suspended from the pulley in the cross-head, and projecting pieces on the rope which serve for raising the weights successively off their supports in the guides to retard the movement of the vehicle in the event of the catch-rods or bars engaging the sliding blocks, substantially as described.

846,808. STONE-DRESSING MACHINE. WILBER H. VAN SICKEL, Philadelphia, Pa., assignor to Thos. H. Dallett Co., a Corporation of New Jersey. Filed Sept. 30, 1905. Serial No. 280,738.

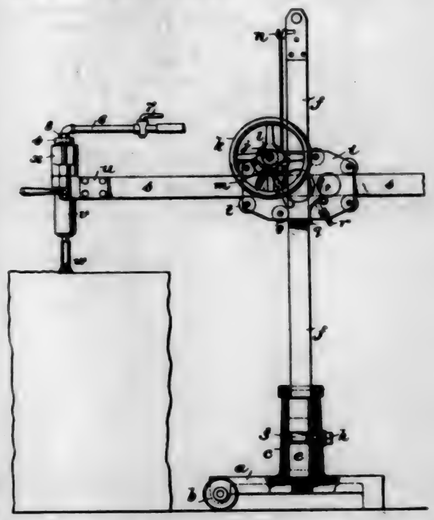

Claim.—1. In a stone-dressing machine, in combination, a bifurcated rotatable standard, a frame vertically movable upon the exterior of said standard, rollers carried by said frame in line with the space between the bifurcation of said standard, an arm extending loosely through said bifurcation, resting upon said rollers, and extending beyond said frame and standard, said arm being adapted to support the operating-tool.

2. In a stone-dressing machine, in combination, a bifurcated rotatable standard, a frame consisting of two plates, connected together, vertically movable upon the exterior of the bifurcated standard, rollers between said plates, an arm, adapted to support the operating-tool, extending loosely through the bifurcation, resting upon said rollers and extending beyond said standard and frame.

3. In a stone-dressing machine, in combination, a tool-carrying arm, a tool-holding bracket carried thereby, a hammer-barrel and valve-box sleeve secured to said bracket, a hammer adapted to be loosely inserted in the hammer-barrel and a loose valve-box adapted to be inserted in the valve-box sleeve, and means independent of the valve-box, hammer-barrel and bracket-securing means to hold the valve-box in fixed and air-tight position whereby the valve may be disconnected and removed without severing connection between the hammer-barrel and valve-box sleeve and bracket.

4. In a stone-dressing machine, in combination, a tool-carrying arm, a tool-holding bracket carried thereby, a hammer-barrel and valve-box sleeve secured to said bracket, a hammer adapted to be loosely inserted in the hammer-barrel and a loose valve-box adapted to be inserted in the valve-box sleeve, a cap having an orifice adapted to be inserted above said valve-box, and means independent of the valve-box, hammer-barrel and bracket-securing means to clamp the cap against the valve-box whereby the valve may be disconnected and removed without severing connection between the hammer-barrel and valve-box sleeve and bracket.

5. In a stone-dressing machine, in combination, a tool-carrying arm, a tool-holding bracket carried thereby, a hammer-barrel and valve-box secured to said bracket, a hammer adapted to be loosely inserted in the hammer-barrel and a loose valve-box adapted to be inserted in the valve-box sleeve, a cap having an orifice adapted to be inserted above said valve-box, and a yoke resting upon said cap and means independent of the valve-box, hammer-barrel and bracket-securing means to force the yoke against the cap whereby the valve may be disconnected and removed without severing connection between the hammer-barrel and valve-box sleeve and bracket.

6. In a stone-dressing machine, in combination, a tool-carrying arm, a tool-holding bracket carried thereby, a hammer-barrel and valve-box sleeve secured to said bracket, a hammer adapted to be loosely inserted in the hammer-barrel and a loose valve-box adapted to be inserted in the valve-box sleeve, a cap having an orifice adapted to be inserted above said valve-box, and an orificed yoke resting upon said cap and means independent of the valve-box, hammer-barrel and bracket-securing means to force the yoke against the cap whereby the valve may be disconnected and removed without severing connection between the hammer-barrel and valve-box sleeve and bracket.

7. In a stone-dressing machine, in combination, a tool-carrying arm, a tool-holding bracket carried thereby, a hammer-barrel and valve-sleeve secured to said bracket, a hammer adapted to be loosely inserted in the hammer-barrel and a loose valve-box adapted to be inserted in the valve-box sleeve, a cap having an orifice adapted to be inserted above said valve-box, and a yoke resting upon said cap and means independent of the valve-box, hammer-barrel and bracket-securing means to force the yoke against the cap whereby the valve may be disconnected and removed without severing connection between the hammer-barrel and valve-box sleeve and bracket.

8. In a stone-dressing machine, in combination, a tool-carrying arm, a tool-holding bracket carried thereby, a hammer-barrel and valve-sleeve secured thereto, a hammer adapted to be loosely inserted in the hammer-barrel and a loose valve-box adapted to be inserted in the valve-box sleeve, a cap having an orifice adapted to be inserted above said valve-box, and an orificed yoke resting upon said cap and means to force the yoke against the cap, the top of the cap having an upwardly-extending curved surface and the lower face of the yoke a corresponding inset.

9. In a stone-dressing machine, in combination, two members, one an upright, the other a frame vertically movable upon said upright, a spring carried by one member and exerting a pressure against the other member, and a tool-carrying arm supported by said frame.

10. In a stone-dressing machine, in combination, two members, one an upright, the other a frame vertically movable upon said upright, and having a bearing point or points upon said upright and a spring carried by one member and exerting a pressure against the other member, and a tool-carrying arm supported by said frame.

11. In a stone-dressing machine in combination, two members, one an upright, the other a frame vertically movable upon said upright, a tool-carrying arm supported by said frame and a spring carried by said frame and exerting a pressure against the member.

12. In a stone-dressing machine, in combination, an upright, a frame vertically movable upon said upright, a tool-carrying arm supported by said frame, said frame being spring-cushioned whereby the arm has a flexible movement.

846,809. SPARK-IGNITION SYSTEM FOR EXPLOSION-ENGINES. RICHARD VARLEY, Englewood, N. J., and ARCHIBALD D. SCOTT, Providence, R. I., assignors to The Autocoil Company, a Corporation of New Jersey. Filed Mar. 22, 1905. Serial No. 251,358.

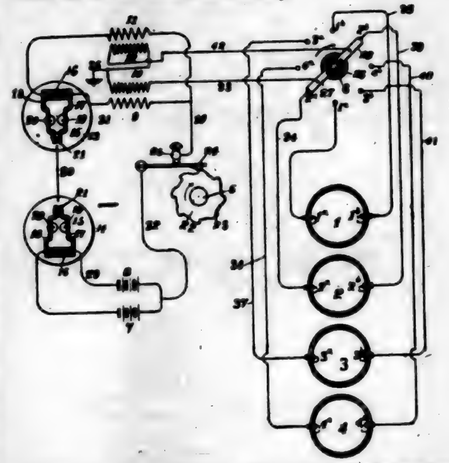

Claim.—1. In an ignition system for explosion-engines, an engine-cylinder, having a plurality of igniting devices, in combination with a rotary distributer for making connection with said igniting devices, a plurality of induction-coils, and means whereby said igniting devices may be connected with the secondary of any induction-coil through the distributer in any predetermined order.

2. In an ignition system for explosion-engines, a pair of induction-coils, a firing device having two electrodes, and means for impelling a unidirectional discharge of current across said electrodes, for a certain interval of time in one direction and then a second unidirectional discharge across said electrodes in the opposite direction, said means acting to utilize for this purpose the current of first one coil and then the other, said coils being connected to discharge in opposite directions.

3. The combination of a multiple-cylinder engine, two igniting devices in each cylinder, two induction-coils and a distributing-switch constructed and arranged to direct current successively through each pair of igniting devices at successive explosions in the respective cylinders.

4. The combination of a multiple-cylinder engine, two igniting devices in each cylinder, two induction-coils and a distributing-switch constructed and arranged to direct current successively through each pair of igniting devices, and to reverse the direction of current at successive explosions in the respective cylinders.

5. In an ignition system for explosion-engines, the combination of a plurality of sources of electricity, a plurality of induction-coils, an igniting device and a single switch whereby any one of said sources of electricity can be connected with any induction-coil and the latter connected with the igniting device.

6. In an ignition system for explosion-engines, the combination of an engine-cylinder having two igniting devices, two induction-coils having their secondaries respectively connected with said igniting devices with reversed polarities, and a single primary circuit including the primaries of both induction-coils whereby sparks in opposite directions are passed across the terminals of said igniting devices.

7. In an ignition system for explosion-engines, the combination of an engine-cylinder having a plurality of igniting devices, a plurality of induction-coils and a single switch for connecting the primary of any coil whereby its secondary circuit successively discharges through said igniting devices in a predetermined order.

846,810. IGNITION SYSTEM. RICHARD VARLEY, Englewood, N. J., assignor to The Autocoil Company, a Corporation of New Jersey. Filed Nov. 27, 1905. Serial No. 289,179.

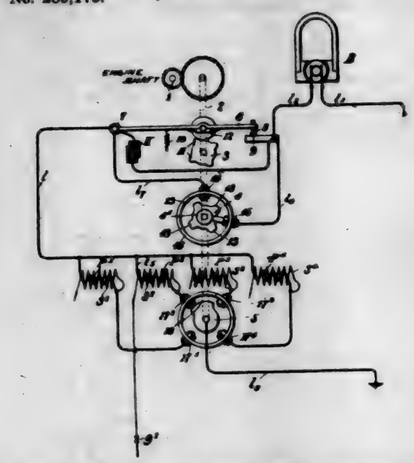

Claim.—1. In an ignition system for explosion-engines, an induction-coil, means for breaking the primary-current circuit therein to induce a jump-spark from the secondary, and separate means for immediately reclosing said circuit at a different point therein.

2. In an ignition system for explosion-engines, an induction-coil, means for breaking the primary-current circuit therein to induce a jump-spark from the secondary, and means for immediately reclosing said circuit at a different point therein.

3. In an ignition system for explosion-engines, an induction-coil, means for breaking the primary-current circuit therein to induce a jump-spark from the secondary, and means for reclosing said circuit at a different point thereof an indefinitely small period of time behind said circuit-breaking action.

4. In an ignition system for explosion-engines, means for breaking a primary induction-coil circuit to produce a jump-spark, and means for reclosing said circuit, at a different point thereof, any desired minute interval thereafter, however small this may be.

5. In an ignition system for explosion-engines, a half-time shaft having a cam with four protuberances thereon, a circuit-breaking lever having a cam-roller in the path of said protuberances, an auxiliary primary circuit including a brush, a conductor upon said shaft and having four segments adapted to pass successively into contact with said brush and complete the primary circuit immediately after it has been broken at the circuit-breaker.

6. In an ignition system for explosion-engines, an induction-coil, a pair of contact-points, means for positively separating said contact-points to break the primary circuit of such induction-coil to induce a jump-spark from the secondary, and separate means for immediately reclosing said circuit at a different point therein.

7. In an ignition system for explosion-engines, a continuously-rotating shaft having separate means thereon for breaking and subsequently closing a circuit, a series of induction-coils, and means upon said shaft for connecting the primaries of the different coils successively into said circuit.

8. In an ignition system for explosion-engines, an induction-coil, a pair of contact-points, means for positively impelling said points apart to break the primary circuit of said induction-coil and induce a jump-spark from the secondary, and positively-impelled means for immediately reclosing said circuit at a different point therein.

9. In an ignition system for explosion-engines, a continuously-rotating shaft having a cam thereon, a circuit-breaking lever in the path of said cam and adapted to abruptly break the primary circuit, and a circuit-closing conductor also fixed to said shaft and having segments arranged to complete the primary circuit a small fraction of a revolution behind said initial break.

10. In an ignition system for explosion-engines, a half-time shaft having a cam with four protuberances thereon, a circuit-breaking lever having a cam-roller in the path of said protuberances whereby said lever is abruptly moved to break the primary circuit, a conductor having segments also fixed upon said half-time shaft, and a brush in the path of said segments arranged to complete said primary circuit immediately after each break thereof.

11. In an ignition system for explosion-engines, a half-time shaft having a circuit-breaking cam thereon, a circuit-closing conductor also disposed upon said shaft and arranged to complete the primary circuit immediately after each break thereof, and a circuit-controller having a segment of substantially quadrant shape also rotating with said shaft and adapted to complete the primary circuits of a plurality of induction-coils successively.

12. In an ignition system for explosion-engines, a magneto-generator having a divided circuit, a cam-operated circuit-breaker in one branch of said circuit and a synchronously-moving circuit-closer in another branch thereof, said circuit-closer being adapted to complete the circuit immediately after the break thereof, a plurality of induction-coils, and means for connecting said induction-coils successively into said circuit.

13. In an ignition system for explosion-engines, a magneto-generator having a divided circuit, a cam-operated circuit-breaker in one branch thereof, a synchronously-moving circuit-closer in another branch thereof adapted to operate immediately after the break of said circuit-breaker, and an induction-coil having its primary in such circuit.

14. In an ignition system for explosion-engines having an induction-coil with a primary ignition-circuit, a half-time shaft and means thereon for breaking the primary ignition-circuit and immediately closing it for an interval of nearly ninety degrees of angular movement, four times in each revolution of said shaft.

15. In an ignition system for explosion-engines having an induction-coil with a primary ignition-circuit, a half-time shaft carrying a circuit-breaking cam and a circuit-closing conductor fixed thereto, and means whereby the primary circuit is alternately broken by said cam and completed by said conductor.

16. In an ignition system for explosion-engines, a primary circuit including a circuit-breaking lever and a circuit-closing conductor in multiple with one another, and means whereby the circuit is first broken at said lever and subsequently completed at said conductor.

17. In an ignition system for explosion-engines having an induction-coil with a primary ignition-circuit, a continuously-rotating shaft, a cam having protuberances thereon, a circuit-breaking lever contacting with said cam, a circuit-closing conductor also mounted on said shaft, and means whereby the primary circuit is broken by said lever and immediately afterward closed by said conductor before the lever has had time to return to its normal position.

18. In an ignition system for explosion-engines having induction-coils with primary ignition-circuits, a continuously-rotating shaft having a cam thereon, a circuit-breaking lever arranged to be engaged by said cam, a circuit-closing conductor having segments adapted to make the primary circuits immediately after it has been broken at the circuit-breaker, and means for directing the primary current into the series of induction-coils successively.

846,811. IGNITION SYSTEM FOR EXPLOSION-ENGINES. RICHARD VARLEY, Englewood, N. J., assignor to The Autocoil Company, a Corporation of New Jersey. Filed Nov. 3, 1906. Serial No. 341,925.

Claim.—1. In an ignition system for explosion-engines, a plurality of vibrator induction-coils having their primaries connected to a common circuit, and means for simultaneously increasing the current received by said coils.

2. In an ignition system for explosion-engines, a plurality of vibrator induction-coils having their primaries connected to a common circuit, means for separately adjusting the coils to take a predetermined current, and means for simultaneously adjusting the coils whereby such current is varied in corresponding amounts in all the coils.

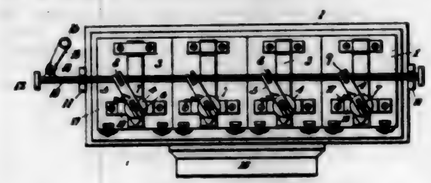

3. In an ignition system for explosion-engines, a plurality of vibrator induction-coils having their primaries connected to a common circuit, and means for separately adjusting the vibrators of the coils, and means for simultaneously adjusting the vibrators of all the coils in corresponding amounts and directions.

4. In an ignition system for explosion-engines, a plurality of coils having vibrator-screws, an arm adjustably attached to said vibrator-screws, and a sliding rod connected to said arms and adapted to swing all of them through a corresponding angle when it is shifted.

5. In an ignition system for explosion-engines, a plurality of vibrator induction-coils having their primaries connected to a common circuit, an ammeter in such circuit, and means for simultaneously adjusting the vibrators of all the coils.

6. In an ignition system for explosion-engines, a plurality of vibrator induction-coils having their primaries connected to a common circuit, an ammeter in such circuit, and means for simultaneously adjusting the vibrators of all the coils in corresponding amounts and directions.

7. In an ignition system for explosion-engines, a plurality of induction-coils having their primaries connected to a common source of battery-current, an ammeter in circuit therewith, and means for automatically adjusting the vibrators of all the coils to take more current when the engine is manipulated to obtain more power.

8. In an ignition system for explosion-engines, a plurality of vibrator induction-coils having their primaries connected to a common circuit, and means connected with the muffler cut-out of the engine for simultaneously adjusting the vibrators of all the coils.

9. In an ignition system for explosion-engines, a plurality of coils having vibrator-screws, an arm adjustably attached to said vibrator-screws, a sliding rod connected to said arms and adapted to swing all of them through a corresponding angle when it is shifted, and an ammeter in circuit with all of the coils to indicate the condition of the adjustment.

10. In an ignition system for explosion-engines, a plurality of coils each having a vibrator-screw, an arm adjustable on said vibrator-screws, and flexible primary-circuit leads attached to said arms.

846,812. HORSE-BLANKET. FREDERICK H. VINTON, Bedford, N. Y. Filed Mar. 28, 1906. Serial No. 308,425.

Claim.—A horse-blanket having two protuberances along the forward median portion of its inner surface in position to engage the sides of the ridge at the base of the neck of the animal to prevent side movement or lateral slipping of the blanket, the protuberances being elongated and sufficiently flexible to enable the forward portion of the blanket, including the protuberances, to follow neck movements of the animal without slipping from position and without chafing or forcing either of said protuberances over the top of said ridge.

846,812.

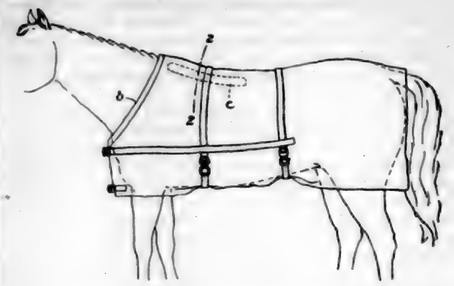

846,813. HAIR-WAVING ATTACHMENT FOR CURLING-IRONS. ANTON WEILER, Syracuse, N. Y. Filed May 3, 1906. Serial No. 314,925.

Claim.—The combination with a curling-iron comprising a mandrel and pivoted clamp adapted to grasp a lock of hair, of an attachment consisting of a toothed plate extending along one side of the iron and formed with a longitudinal flange projecting toward the iron plate-supporting arms pivotally connected at one end to the mandrel and pivotally connected at the opposite ends to the said flange, said arms permitting the plate to be swung back and forth lengthwise of the iron to impart a flat wave to the lock of hair, and a thumb-piece provided on the rear end of the plate as and for the purpose set forth.

846,814. SPEED-GOVERNOR. JAMES C. ANDERSON, Rutherford, N. J., assignor to The Autocoil Company, a Corporation of New Jersey. Filed June 30, 1906. Serial No. 324,119.

Claim.—1. In a speed-governor, a member comprising a drum having a pulley surrounding said drum and protecting the same, and another member comprising a disk having pins projecting therefrom, a plurality of rigid curved shoes pivoted on said pins and adapted to firmly engage the outer surface of said drum, and springs for normally impelling said shoes inward into frictional engagement with said drum.

2. In a speed-governor, a member comprising a drum and having a pulley surrounding said drum and protecting the same, and another member comprising a disk having pins projecting therefrom and a flange surrounding all of said pins, and shoes on said other member loosely pivoted on said pins and spring-pressed inward toward said drum from said web.

3. In a speed-governor, a member having a drum and a pulley surrounding and protecting said drum, and another member having a central shaft, a disk on said shaft and having pins projecting from its face, and having a flange surrounding said pins, and shoes pivoted upon said pins and curved to fit said drum and spring-pressed into contact therewith.

4. In a speed-governor, a shaft having a reduced portion, a driving member on said reduced portion and having a drum, said driving member also having a pulley surrounding and protecting said drum, a disk secured to said shaft and pins projecting from said disk, a flange also projecting from said disk and surrounding said pins, shoes on said pins and curved to correspond to the curvature of said drum, and springs between said shoes and flange.

5. In a speed-governor, a shaft having a reduced portion, a driving member on said reduced portion and having a drum, one end of which is beveled or coned inward, a pulley integral with said driving member and surrounding and protecting said drum, a driven member on said shaft and having a peripheral flange lying within said pulley, pins projecting from said driven member, shoes curved to conform to said drum and pivoted on said pins and springs between said shoes and said flange for moving the shoes toward said drum.

846,815. APPARATUS FOR REMOVING IMPURITIES FROM FURNACE-GASES. RALPH BAGGALEY, Pittsburg, Pa. Original application filed Sept. 24, 1903, Serial No. 174,432. Divided and this application filed Nov. 27, 1903. Serial No. 182,747.

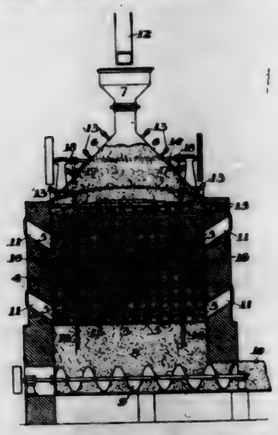

Claim.—1. Means for removing impurities from copper-smelter gases, comprising a vertical column of screening material interposed across the path of the gases, means for supplying fresh material to the top of the column, and a conveyer situated directly in the base of the column, the said column being unobstructed throughout its height and resting upon the conveyer, whereby the screening material may be moved in the column and removed from its base with sufficient rapidity to prevent scaffolding; substantially as described.

2. Means for removing impurities from copper-smelter gases comprising a chamber connected with the gas-outlet of a copper-smelting furnace, and a screen arranged in said chamber, said screen consisting of perforated walls inclosing a vertical space between them having a cross-section, no part of which is of less area than its upper end, a column of granular material in said space and free to move downwardly therein, together with means for supplying material to the upper end of the column and removing it from the lower end; substantially as described.

3. Means for removing impurities from copper-smelter gases, comprising a chamber into which the gases are led from the smelter, a screen interposed in said chamber, said screen consisting of a straight vertical column of granular material inclosed between perforated lateral walls, and a conveying device at the base of the column, the cross-sectional area of the column where it discharged to the conveyer being unrestricted, whereby the column is free to move downward as fast as its lower portion is removed by the conveyer; substantially as described.

4. Means for removing impurities from copper-smelter gases, comprising a chamber to which the gases are led from the smelter, and a vertical screen in said chamber transverse to the passage of the gas, said screen comprising parallel vertical walls having unobstructed inner surfaces and formed with upwardly and outwardly directed perforations or openings, a column of granular material between said walls and extending unobstructedly below the same into an enlarged conveyer-chamber, and a conveyer upon which the base of the column rests; substantialy as described.

5. Means for removing impurities from copper-smelter gases, comprising a chamber to which the gases are led from the smelter, and a vertical screen in said chamber transverse to the passage of the gas, said screen comprising parallel vertical walls having unobstructed inner surfaces and formed with upwardly and outwardly directed perforations or openings, a column of granular material between said walls, and extending unobstructedly below the same into an enlarged conveyer-chamber, and a conveyer upon which the base of the column rests, together with means for spraying the column and for supplying fresh material to its upper end; substantially as described.

846,816. APPARATUS FOR SINKING SHAFTS. RALPH BAGGALEY, Pittsburg, Pa. Filed Sept. 20, 1904. Serial No. 225,234.

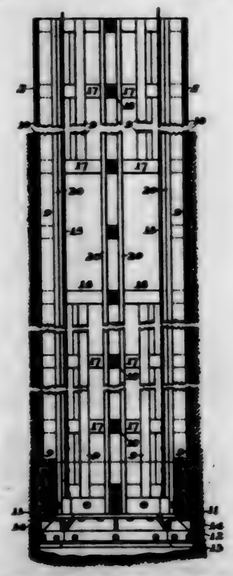

Claim.—1. Means for sinking shafts including a permanent casing suspended from its lower end and made up of superimposed sections capable of being assembled as the casing is lowered, substantially as described.

2. Means for sinking shafts including a permanent casing suspended from its lower end and made up of superimposed sections capable of being assembled as the casing is lowered, each section being an incased framework of beams, substantially as described.

3. Means for sinking shafts including a permanent casing suspended from its lower end and provided with a penetrating bottom, said casing being made up of superimposed sections capable of being assembled as the casing is lowered, each section being an incased framework of beams, substantially as described.

4. Means for sinking shafts comprising a shield at the surface of the ground, and a suspended casing adapted to be lowered through the same, said casing being built up successively as it is lowered; substantially as described.

5. Means for sinking shafts comprising a shield at the surface of the ground having a surrounding supporting-framework; substantially as described.

6. Means for sinking shafts including a permanent casing suspended from its lower end and provided with a penetrating lower edge formed in sections capable of being removed inwardly through the bottom of the casing, substantially as described.

7. Means for sinking shafts including a permanent casing which is built up successively as it is lowered, a ring at the bottom of the casing, suspending means within the casing and connected to the ring, and penetrating shoe-sections detachably connected to the ring and capable of being removed inwardly through the bottom of the casing, substantially as described.

8. Means for sinking shafts including a permanent casing which is built up as it is lowered, said casing including diametric cross-bases and centrally-disposed uprights secured against opposite sides of the braces, substantially as described.

9. Means for sinking shafts including a permanent casing which is built up as it is lowered and provided with a landing-opening, substantially as described.

10. Means for sinking shafts including a permanent casing which is built up as it is lowered, and provided with diametric cross-braces and a landing-opening through that side of the casing against which the ends of the adjacent braces are secured, substantially as described.

11. Means for sinking shafts including a permanent casing which is built up as it is lowered, and provided with diametric cross-braces and centrally-disposed uprights secured to opposite sides of the braces, there being a landing-opening through that side of the casing against which the ends of adjacent braces are secured, substantially as described.

12. Means for sinking shafts including a permanent casing which is built up as it is lowered, and provided with diametric cross-braces and uprights secured to opposite sides of the braces and to the interior of the casing structure, said uprights being disposed to form guides for cages, substantially as described.

13. Means for sinking shafts, comprising a shaft-casing suspended from above by cables, having a carrying-shoe to which the cables are attached and a cutting-shoe or cutter-bar below the carrying-shoe capable of being removed during the progress of the work; substantially as described.

14. Means for sinking shafts including a permanent casing which is successively built up as it is lowered and provided with diametric cross-braces, and uprights secured to opposite sides of the braces and to the interior of the casing structure, said uprights being arranged to form guides for cages, there being a landing-opening formed through that side of the casing to which the ends of adjacent cross-braces are secured, substantially as described.

15. Means for sinking shafts including a permanent casing which is successively built up as it is lowered, a ring secured to the bottom of the casing and extending inwardly, suspending means extending downwardly through the casing and connected to the ring, diametric cross-braces, and uprights rising from the ring and secured respectively to the interior of the casing and to opposite sides of the cross-braces, said uprights being arranged to form guides for cages, substantially as described.

16. Means for sinking shafts, comprising an incased framework of beams suspended from above, the casing thus constituted being built up successively as it is lowered, and being incased with planks; substantially as described.

17. Means for sinking shafts, comprising an incased framework of beams suspended from above, the casing thus constituted being built up successively as it is lowered, and being incased with planks tongued or tenoned together; substantially as described.

18. Means for sinking shafts including a permanent staging having a shaft-opening, and a permanent casing suspended upon the staging and adapted to be lowered through the shaft-opening thereof, substantially as described.

19. Means for sinking shafts including a permanent staging made up of a surface platform and an elevated platform supported thereon by posts, the two platforms being provided with alined shaft-openings, and a permanent casing which is successively built up as it is lowered and suspended from the staging to be lowered through the shaft-openings thereof, substantially as described.

846,817. METHOD OF GENERATING STEAM FROM WASTE HEAT OF SLAG. RALPH BAGGALEY, Pittsburg, Pa. Filed Oct. 14, 1904. Serial No. 228,486.

Claim.—1. The herein-described method of utilising slag from copper-smelting furnaces for the generation of steam, which consists in utilising a portion of the slag to preheat feed-water to a relatively high temperature before it enters the generator, and completing the heating within the generator by the further use of slag out of direct contact with the water; substantially as described.

2. The method herein described which consists in taking a portion of the molten slag from a furnace, heating therewith water not under pressure, and taking the remainder of the slag and heating said water under pressure and out of direct contact therewith for the generation of steam; substantially as described.

3. The method herein described which consists in taking a portion of the molten slag from a furnace, heating therewith water not under pressure, and taking a portion of the remainder of the slag and heating said water under pressure and out of direct contact therewith for the generation of steam; substantially as described.

4. The method of utilising slag from copper-smelting furnaces for the generation of steam, which consists in preheating feed-water in an open vessel to a relatively high temperature by the use of spent slag from a slag-generator and also by molten slag from the furnace, and completing the heating under pressure in a slag-generator wherein the slag and water are maintained out of mutual contact; substantially as described.

5. The herein-described method of generating steam which consists in preheating feed-water by means of hot slag, feeding the preheated feed-water to a steam-generator, and passing hot slag through the generator out of contact with the water.

6. The herein-described method of generating steam which consists in introducing preheated feed-water into a steam-generator, and passing hot slag through the generator out of contact with the water to generate steam by radiation from the slag to the water.

7. The herein-described method of generating steam which consists in passing hot slag through a steam-generator out of contact with the water to generate steam by radiation from the slag to the water, and utilising the spent slag from the generator to preheat feed-water.

846,818. METHOD OF RECOVERING VALUES FROM FLUE-DUST. RALPH BAGGALEY, Pittsburg, Pa. Filed Dec. 5, 1904. Serial No. 235,418.

Claim.—1. The method of recovering mineral values from finely-divided value-bearing material, which consists in placing it in a converter, cementing it therein to the walls of the converter; adding molten matte; blowing air into the matte and liquefying the dust thereby; substantially as described.

2. The method of recovering mineral values from finely-

fusible value-bearing material, which consists in placing it in a converter; cementing it therein with a layer of fusible material; adding molten matte; blowing air into the matte and liquefying the dust thereby; substantially as described.

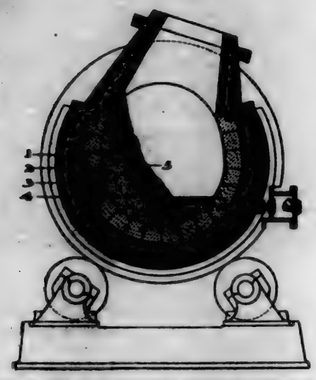

3. The method of recovering mineral values from finely-divided value-bearing material, which consists in placing it in a converter; covering it with coarser value-bearing material; cementing the charge; adding molten matte; blowing air into the matte and liquefying the charge thereby; substantially as described.

4. The herein-described method of recovering values from finely-divided value-bearing material, consisting in placing a charge of the material in a converter, cementing the charge therein, introducing a molten bath upon the cemented surface of the charge, and then heating the converter and continuing the converting process until the charge has been taken up by the bath.

5. The herein-described method of recovering values from finely-divided value-bearing material, consisting in placing a charge of material in a converter, introducing the fusible material into the charge and permitting the same to cool to cement the charge within the converter, then introducing a molten bath upon the surface of the cemented charge, and then heating the converter and continuing the converting process until the charge has been taken up by the bath.

6. The herein-described method of recovering values from finely-divided value-bearing material, consisting in placing a charge of the material within a converter, then introducing molten material upon the surface of the charge without undermining the same, then oscillating the converter to distribute the molten material over the surface of the charge and permitting the same to cool to cement the charge, then introducing a molten bath upon the cemented surface of the charge, and then heating the converter and continuing the converting process until the charge has been taken up by the bath.

7. The herein-described method of recovering values from finely-divided value-bearing material, consisting in placing a charge of material in a converter, then slowly sprinkling molten material upon the surface of the charge without undermining the same and permitting it to cool to cement the charge, then introducing a molten bath upon the cemented surface of the charge, and then heating the converter and continuing the converting process until the charge has been taken up by the bath.

8. The herein-described method of recovering values from finely-divided value-bearing material consisting in placing a charge of material in a converter, cementing the charge within the converter, then introducing molten material upon the surface of the charge without undermining the same and permitting it to cool to cement the charge, delivering a blast of air through the twyers to hasten the cooling and cementing action, then introducing a molten bath upon the cemented surface of the charge, and then heating the converter and continuing the converting process until the charge has been taken up by the bath.

9. The herein-described method of recovering values from finely-divided value-bearing material, consisting in placing a charge of the material in a converter, then placing a layer of coarser fusible material upon the charge to prevent floating of the latter, then placing molten material upon the coarser material and permitting the same to cool to cement the charge within the converter, then introducing the molten bath upon the cemented surface of the charge, and then heating the converter and continuing the converting process until the charge is taken up by the bath.

10. The herein-described method of recovering values from finely-divided value-bearing material, consisting in placing a charge of the material in a converter, then placing a layer of molten material upon the surface of the charge without undermining the latter, oscillating the converter to distribute the molten material over the surface of the charge, delivering a blast of air through the twyers to cool the molten material and cement the charge, then introducing a bath of molten material upon the cemented surface of the charge, and then heating the converter and continuing the converting process until the charge has been taken up by the bath.

11. A step in the recovery of finely-divided value-bearing material, which consists in cementing the material in a converter prior to subjecting it to a converting process.

12. A step in the recovery of finely-divided value-bearing material, which consists in placing the material in a converter and treating the surface thereof so as to prevent flotation of the material prior to subjecting it to a converting process.

13. The method of recovering values from finely-divided value-bearing material, which consists in placing a charge of the material in a converter, treating the surface of the material to prevent flotation thereof, introducing molten matte upon the treated surface of the charge, and then blowing air into the matte and liquefying the value-bearing material.

14. The herein-described method of recovering values from finely-divided value-bearing material, consisting in placing a charge of material in a converter, introducing a molten bath upon the surface of the charge, said surface of the charge being treated prior to the introduction of the molten bath to prevent flotation of the material upon the bath, and then heating the converter and continuing the converting process until the charge has been taken up by the bath.

846,819. BRAKE-BEAM. JOSHUA B. BARNES, Springfield, Ill. Filed Oct. 18, 1906. Serial No. 339,528.

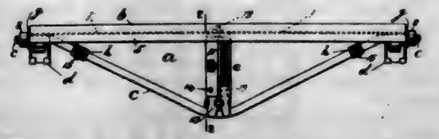

Claim.—1. In a brake-beam for a railroad-car, the combination of a compression member, an eyebolt fixed to the said member adjacent to each end thereof, a brake-head having a bracket adapted to bear against the said member, and having an opening transversely therethrough for registering with the opening of the said bolt, a tension member having screw-threaded end portions adapted respectively to pass through the said openings, a nut on the said portion, a washer between the nut and the end of the compression member, a brake-lever fulcrum intermediate to the said members at their middle portions, and means for fixing the said fulcrum to the compression member, substantially as described.

2. In a brake-beam for a railroad-car, the combination of an I-shaped compression member, an eyebolt fixed to the said member adjacent to each end thereof, a brake-head having a bracket adapted to fit between the flanges and web of the said member, and having an overhanging arm adapted to bear against the top of the said member, the said bracket having an opening transversely therethrough for registering with the opening of the said bolt, a lug on the brake-head adjacent to the said bracket, a circular-shaped tension member having screw-threaded end portions adapted respectively to pass through the said openings, a nut on the said portion having a projection, a washer interposed between the nut and the end of the compression member and adapted to engage the said lug, the said washer having a groove adapted to be engaged by the said projection, a brake-lever fulcrum intermediate to the said members at their middle portions, and means for fixing the said fulcrum to the compression member, substantially as described.

846,820. STORM-FRONT FOR VEHICLES. FREDERICK C. BROCK and EDWARD M. DU BOIS, Columbus, Ohio, assignors to The Vehicle Apron & Hood Company, Columbus, Ohio, a Corporation of Ohio. Filed May 14, 1906. Serial No. 316,643.

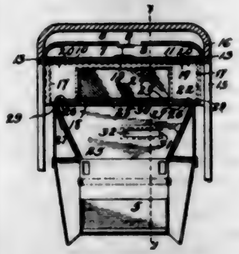

Claim.—1. A storm-front for vehicles comprising a swinging section, and a supporting-frame for said swinging section, said supporting-frame being made in two sections one of which telescopes within the other, and means for forcing said sections apart.

2. A storm-front for vehicles comprising a swinging upper section, a supporting-frame for supporting said swinging upper section, said supporting-frame being made in sections which are slidable with relation to each other, rods carried by said sections, and a turnbuckle threaded upon said rods and adapted to force said rods and said sections apart.

3. In a device of the character described, a supporting-frame made in sections which are slidable with relation to each other, stop-lugs carried by said sections, rods connected to said sections, and a turnbuckle threaded upon said rods and adapted to force said sections and said rods apart.

4. In a device of the character described, the combination with a supporting-frame made in two sections, said sections being slidable with relation to each other, of means for forcing said sections apart, a frame hingedly connected to said last-named members, means for normally holding said frame in an elevated position, and a waterproof covering carried by said frame.

5. In a device of the character described, the combination with a supporting-frame formed of sections which are slidable with relation to each other, rods carried by said sections, a turnbuckle carried by said rods and adapted to force said sections apart, a rectangular frame hingedly connected to said rods, a covering carried by said frame, means for normally holding said frame in an elevated position, and a sheet of transparent material which covers a sight-opening formed in said covering.

6. A storm-front for vehicles comprising a supporting-frame, said supporting-frame being made in sections slidable with relation to each other, and means for forcing said sections apart.

7. A storm-front for vehicles comprising a supporting-frame, said supporting-frame being made in sections slidable with relation to each other, and means for forcing said sections apart to thereby frictionally bind said supporting-frame within a buggy-top.

846,821. DAMPER-ACTUATING DEVICE FOR RANGES, &c. ISAAC BROOKE, Pottstown, Pa. Filed July 28, 1899. Serial No. 725,393.

Claim.—1. The combination with a stove provided with a flue-opening of a damper journaled in said stove and adapted to control said flue-opening, said damper being provided with projecting arms, and an operating member pivoted to the stove and provided with a projection adapted to engage with said arms for rotating said damper in opposite directions and adapted to move one of said arms out of the path of movement of said projection, said projection at that time occupying a position in the path of movement of said arm thereby locking the damper.

2. The combination with a stove provided with a flue-opening, of a damper journaled in the said opening and provided with projecting arms, an operating member pivoted to said stove with the axis of the pivot at right angles to the axis of the said damper and also provided with a projection adapted to engage said arms to rotate the said damper in opposite directions and to move one of said arms out of the path of the movement of said projection and the projection into the path of movement of said arm.

3. The combination with a stove provided with a flue-opening and a damper journaled in said flue-opening, of a pair of arms disposed substantially at right angles to each other and mounted on said damper, a bell-crank lever pivoted to said stove, one of the arms of the said bell-crank lever normally occupying a position between said angularly-disposed arms, but adapted to be moved beyond the end of one of said angularly-disposed arms to lock the damper.

4. The combination with a stove provided with a flue-opening, of a damper, journals for said damper, a pair of arms disposed at an angle to each other and mounted upon one of said journals, a bell-crank lever pivoted to said stove with its axis of movement at right angles to the axis of said journals, one of the projections of said bell-crank lever being adapted to move one of said arms out of the path of movement of said projection, said projection at that time occupying a position in the path of movement of said arms, thereby locking the damper.

846,822. HARNESS ATTACHMENT. ALICE W. BURNETT, Lisbon, Ohio. Filed Oct. 5, 1906. Serial No. 337,515.

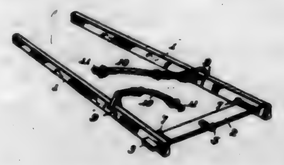

Claim.—In a detachable harness attachment for use in connection with hoisting apparatus, the combination with an ordinary draft-harness having shaft-loops, of two substantially parallel bars having their front ends removably mounted in said loops, a transverse bar rigidly connecting the rear ends of said parallel bars, trace-hooks and a draft-hook fixed on said transverse bar, said parallel bars having slots therein, and adjustable supporting-straps having their ends attached to said bars in said slots, said straps having snap-hooks in their upper ends for attachment to the hip-ring of the harness.

846,823. APPARATUS FOR AND METHOD OF UNITING VITREOUS PARTS. FRANCIS M. F. CAZIN, Hoboken, N. J. Filed May 28, 1904. Renewed Aug. 29, 1906. Serial No. 332,483.

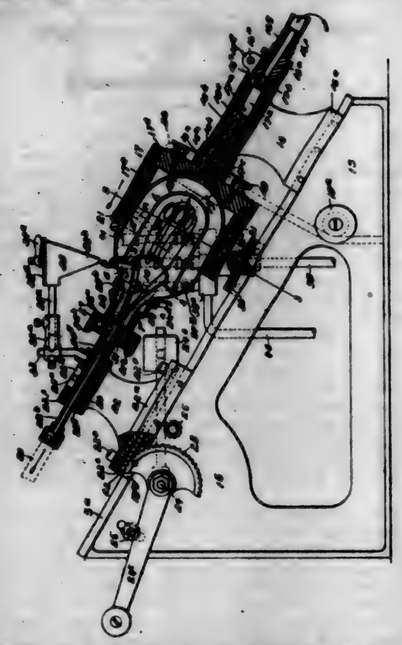

Claim.—1. In an apparatus for joining vitreous articles, means for heating the parts adjacent the joint, means for applying pressure to the said parts from within to cause the article to become welded and means for applying a sealing material to the joint.

2. In an apparatus for making joints between hollow vitreous parts, means for heating the parts adjacent to the joint, means for forcing air into the hollow articles while being heated to press the heated parts together to weld the same, means for applying the vitreous sealing material to the joint and means for simultaneously rotating said parts.

3. In an apparatus of the character stated, a base, a bearing mounted on said base, a bulb-chuck having a shaft rotatable in said bearing, said chuck including a head portion and a bulb-receiver carried thereby, substantially as shown and for the purposes described.

4. In an apparatus of the character stated, a base, a bearing mounted on said base, a bulb-chuck having a shaft rotatable in said bearing, said chuck including a head portion and a bulb-receiver carried thereby, and means for imparting rotary motion to said chuck and means for feeding vitreous material to the joint.

5. In an apparatus of the character stated, a base, a bearing mounted on said base, a bulb-chuck having a shaft rotatable in said bearing, said chuck including a head portion and a bulb-receiver carried thereby, cushions held in the said receiver to engage said bulb and hold it out of engagement with the receiver-walls, and means for rotating said chuck and means for feeding a vitreous material to the joint.

6. In an apparatus of the character stated, a base, a bearing mounted on said base, a bulb-chuck having a shaft rotatable in said bearing, said chuck including a head portion, and a bulb-receiver carried thereby, said chuck-shaft being hollow to receive the bulb-neck and communicate with the interior of the bulb, means for rotating said chuck and means for feeding vitreous material to the joint.

7. In an apparatus of the character stated, a base, a bearing mounted on said base, a bulb-chuck having a shaft rotatable in said bearing, said chuck including a head portion and a bulb-receiver, cushions held within said receiver to hold the bulb out of engagement with the receiver-walls, said chuck-head having a concaved portion, a gasket seated in said concaved portion, said chuck-shaft being hollow to communicate with the interior of the bulb, and means for causing a differential air-pressure between the outside and inside of the bulb while in such chuck and means for applying a vitreous material to the joint, substantially as shown and for the purposes described.

8. In an apparatus of the class described, a base including a bed-plate, a carriage having a bearing mounted thereon, a bulb-chuck having a shaft rotatably mounted in said bearing to receive the bulb, a second carriage mounted on said bed-plate, a base-chuck carried thereby to receive the lamp-base, means for moving said second carriage to or from the first carriage and means for sealing the lamp-bulb and lamp-base together.

9. In an apparatus of the class described, a base including a bed-plate, a carriage having a bearing mounted thereon, a bulb-chuck having a shaft rotatably mounted in said bearing to receive the bulb, a second carriage mounted on said bed-plate, a base-chuck carried thereby to receive the lamp-base, and means for moving said second carriage to or from the first carriage, means for normally forcing said second carriage toward said first carriage to hold the base part against the bulb part and means for sealing the lamp base and bulb together substantially as shown and for the purposes described.

10. In an apparatus of the character stated, a base including a bed-plate, a carriage having a bearing mounted thereon, a bulb-chuck including a shaft rotatably mounted in said bearing to receive the bulb, a second carriage mounted on said bed-plate, a base-chuck carried thereby to receive the lamp-base, means for moving said second carriage to or from the first carriage, said means including a gear mounted on said base, and a rack carried by said second carriage for coöperating therewith and means for sealing the lamp base and bulb together, substantially as shown and for the purposes described.

11. In an apparatus of the character stated, a base including a bed-plate, a carriage having a bearing mounted thereon, a bulb-chuck including a shaft rotatably mounted in said bearing to receive the bulb, a second carriage mounted on said bed-plate, a base-chuck carried thereby to receive the lamp-base, means for moving said second carriage to or from the first carriage, said means including a gear mounted on said base, and a rack carried by said second carriage for coöperating therewith, means for normally moving said second carriage toward said first carriage and means for sealing the lamp base and bulb together substantially as shown and for the purposes described.

12. In an apparatus of the character stated, a base including a bed-plate, a carriage having a bearing mounted thereon, a bulb-chuck having a shaft rotatably mounted in said bearing to receive the bulb, a second carriage mounted on said bed-plate, a base-chuck carried thereby to receive the lamp-base, means for normally moving said second carriage toward said first carriage to hold the base and bulb parts together, means for limiting such normal movement and means for applying a sealing material to the joint between the base and bulb parts of the lamp.

13. In an apparatus of the character stated, a base including a bed-plate, a carriage mounted thereon, a bulb-chuck carried by said carriage, a second carriage mounted on the bed-plate, a base-chuck carried by said second carriage, means for moving one of said carriages toward the other to hold said base and bulb parts together, means for rotating said chucks, a hopper carried by said second carriage, and means for applying a vitreous material to the joint between the lamp and base bulbs, substantially as shown and for the purposes described.

14. In an apparatus of the character stated, a base including a bed-plate, a carriage mounted thereon, a bulb-chuck carried by said carriage, a second carriage mounted on the bed-plate, a base-chuck carried by said second carriage, means for moving one of said carriages toward the other to hold said base and bulb parts together, means for rotating said chucks, a hopper carried by said second carriage, burners mounted on the base and means for feeding a vitreous material to the joint between the lamp base and bulb, substantially as shown and for the purposes described.

15. In an apparatus of the character stated, a base including a bed-plate, a carriage mounted thereon, a bulb-chuck carried by said carriage, a second carriage mounted on the bed-plate, a base-chuck carried by said second carriage, means for moving one of said carriages toward the other to hold the base and bulb parts together, means for rotating said chucks, a hopper carried by said second carriage, a third carriage adjustably mounted on the base between said first and second carriages, burner members carried by said third carriage and means for feeding a vitreous material to the joint substantially as shown and for the purposes described.

16. In an apparatus of the character stated, a base including a bed-plate, a carriage mounted thereon, a bulb-chuck carried by said carriage, a second carriage mounted on the bed-plate, a base-chuck carried by said second carriage, means for moving one of said carriages toward the other to hold the base and bulb parts together, means for rotating said chucks, a hopper carried by said second carriage, a third carriage adjustably mounted on the base between said first and second carriages, burner members carried by said third carriage, means for moving one of said carriages away from the other to withdraw the joined base and bulb from the bulb-chuck and means for applying a vitreous material to the joint substantially as shown and for the purposes described.

17. In an apparatus of the character stated, a base, a bearing carried thereby, a bulb-chuck rotatably mounted in said bearing to receive the lamp-bulbs, a hopper arranged above said chuck to feed sealing material to the joint between the bulb parts, burners carried by the base for heating the joint between the parts to be seated substantially as shown and for the purposes described.

18. The method of joining hollow vitreous articles, consisting in heating the parts adjacent the joint, and applying pressure to such parts from within each article to cause the articles to become welded together and in simultaneously applying a sealing material to the joint.

19. The method of joining hollow vitreous articles, consisting in heating the parts adjacent the joint and applying pressure to such parts from within the joint to cause the joint to become welded together and simultaneously feeding vitreous material to the joint.

20. A method of making joints between hollow vitreous parts consisting in heating the parts adjacent the joint and in forcing air into each of said hollow articles while being heated to press the heated parts together to weld the same and in simultaneously feeding vitreous material to the joint.

846,824. SHOVEL. GEORGE D. CZEKA, Duluth, Minn., assignor of one-half to H. L. Shepherd, Duluth, Minn. Filed Oct. 22, 1906. Serial No. 339,061.

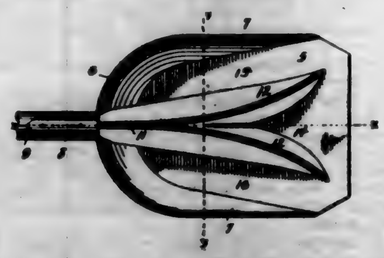

Claim.—1. A shovel comprising a body portion and a longitudinally-extending upstanding web which terminates in outwardly-flaring tongues one of which is located upon each side of the longitudinal medial line of the shovel, said tongues forming a pocket therebetween, and said web and said tongues forming pockets between themselves and the sides of the shovel.

2. In a shovel, the combination with a body portion, of a web which extends from the rear wall of the shovel longitudinally of said shovel and which terminates in outwardly-flaring tongues, said web and tongues dividing the two side portions of the shovel from each other and forming pockets between themselves and the shovel, the sides and the outwardly-flaring portions of said tongues forming a pocket between themselves at the forward portion of the shovel.

846,825. UNIVERSAL ROLLING-MILL. VICTOR CHARTENER, Pittsburg, Pa. Filed Oct. 28, 1903. Serial No. 178,952.

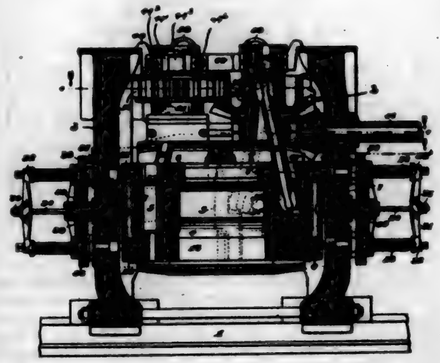

Claim.—1. In a rolling-mill, a pair of housings, a pair of vertical rolls, a driving-shaft extending through and terminating near one of the housings, stationary roll-driving wheels operatively connected to said shaft and rolls and located above the rolls, and means for adjusting the rolls transversely of their axes.

2. In a rolling-mill, a pair of housings, a pair of vertical rolls, a driving-shaft extending through and terminating near one of the housings, stationary roll-driving wheels operatively connected to said shaft and located above the rolls, means for adjusting the rolls transversely of their axes, and wabbler connections between the rolls and the wheels.

3. In a rolling-mill, a pair of vertical rolls adjustable transversely of their axes, a pair of driving-wheels located above the rolls and driving connections between the rolls and wheels, one of the parts connected by the driving connections having an opening through which the latter may be withdrawn.

4. In a rolling-mill, a roll having an opening provided with gear-teeth, a driving-wheel having an opening extending through it and provided with gear-teeth and a roll-driving spindle seated in the openings in said roll and wheel and having teeth gearing with the teeth in said roll and wheel, the opening in the wheel being sufficiently large to permit the withdrawal of the spindle therethrough to disconnect the roll and wheel.

5. In a rolling-mill, a pair of housings, a set of vertical rolls journaled therein, means for driving the same readily detachable therefrom, and a removable frame carrying said driving means and located above the rolls and between the housings.

6. In a rolling-mill, a housing, a pair of vertical rolls supported thereby, means for adjusting the rolls toward or away from each other, stationary gearing for driving said rolls, wabble connections between the rolls and the driving-gearing, and a single frame removably secured to the mill-housing and serving as a housing for said gearing.

846,826. STAPLE-MACHINE. ROBERT COATES, Philadelphia, Pa., assignor to Joseph Hill Brinton, Philadelphia, Pa. Filed Apr. 23, 1906. Serial No. 313,106.

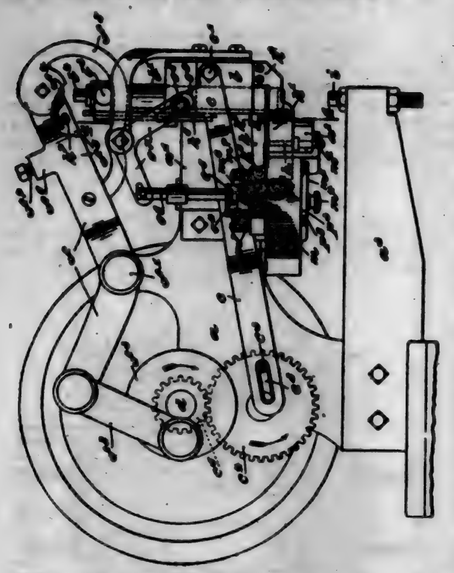

Claim.—1. In a machine for successively forming and setting metallic staples, comprising devices for feeding a metallic ribbon, devices for cutting a staple-blank therefrom and presenting it to staple-forming dies and devices for driving and setting the staple, of a main frame having an overhanging arm, a cross-head mounted to reciprocate laterally thereon, a staple-forming die and a contained staple-driving plunger mounted in said cross-head, with actuating means operating to reciprocate said cross-head laterally, whereby the staple-forming die and its contained plunger are brought in alternating succession into operative position to form a staple and then to drive and set the previously-formed staple.

2. In a machine of the class described, comprising devices to cut a staple-blank from a metallic ribbon fed thereto, a fixed male die adapted to receive the blank therefrom, and a corresponding die brought into operative relation with said fixed die, of a main frame having an overhanging arm, a cross-head mounted thereon and carrying a staple-forming and staple-driving device, and means to reciprocate said cross-head laterally, said means consisting of a rod pivoted at one end to said cross-head and slotted at the other end, a studded gear-wheel coacting with said slot, and means to drive said gear-wheel from the main shaft, whereby the cross-head is brought to a position of rest at the termini of its reciprocatory movements pending the formation of the staple and pending the driving of the same.

3. In a machine of the class described, comprising a staple-forming and staple-driving device, with means to operatively support and reciprocate the same laterally into staple-driving and staple-forming positions respectively, of actuating mechanism comprising the main shaft and a pivoted rocking lever with means to impart motion thereto, mounted intermediate it and the main shaft, said lever having a bifurcated end, with stop-lug devices thereon adapted to engage the plunger, operating to actuate the staple forming and driving elements in downward stroke, and with means to engage projections thereon to actuate the same in upward stroke.

4. In a machine of the class described, comprising devices to feed a metallic ribbon and means for severing a staple-blank therefrom, and staple-forming and staple-driving devices, with means to operatively support and reciprocate the same laterally into staple-forming and staple-driving positions respectively, said means comprising a laterally-reciprocating cross-head, with means to bring said cross-head into positions of rest pending the successive cutting, forming and driving of the staple, and means to actuate the blank-forming, the staple-forming and staple-driving devices during said respective periods of rest.

5. In a machine of the class recited, comprising successively-acting means to feed a strip of metal in predetermined lengths, means to sever a rivet-blank therefrom and means to form a rivet from such blank, the combination therewith of a feed-table pivotally mounted at its delivery end to the blank-forming punch, and carrying a grooved guide for the metallic strip, with means to operatively support said feed-table intermediate of its length and guide its lateral swing in an arc of a circle and coincident with the center of the blank-forming punch, said means consisting of a curved bracket-arm having a sector-slot, and connecting devices between the feed-table and the said slot, with means to fixedly secure said elements at any point of relative adjustment.

6. In a machine of the class recited, comprising successively-acting means to sever a rivet-blank from a strip of metal and means to form a rivet from such blank, the combination therewith of a concrete mechanism operating to simultaneously govern the length of the strip fed and cut off and the angle at which it shall be cut, said mechanism consisting essentially of a grooved feed-table pivotally mounted at its delivery end to the blank-forming punch, a curved cam-bracket having a sector-slot in which said feed-table is operatively mounted and guided intermediate its length, with clamping devices between the cam-bracket and the feed-table, a pair of feed-rolls mounted over said feed-table, pawl-and-ratchet mechanism governing the rotation of the feed-rolls, and means between the ratchet and the cam-surface of the curved cam-bracket governing the engagement of the pawl with the ratchet.

7. In a machine of the class recited, comprising a staple-forming and staple-driving device, with means to operatively support and reciprocate the same laterally into staple-forming and staple-driving positions respectively, said means consisting essentially of a laterally-reciprocating cross-head, the combination therewith of devices to cut a staple-blank from a strip of metallic ribbon, consisting of a pair of pivotally-connected shear-blades, a spring normally holding the blades separated, the free end of the lower shear-blade being secured to the cross-head, a slot in the latter in which the upper blade is guided, and means to move said blade shear-like relatively to the lower and fixed blade.

846,827. TELEPHONE-SERVICE APPARATUS. SAMUEL H. COUCH, Boston, Mass., assignor to Superior Automatic Telephone Company, Boston, Mass., a Corporation of Maine. Filed Apr. 12, 1906. Serial No. 311,320.

Claim.—1. In a telephone-service apparatus, the combination with contact make-and-break mechanism, and a pivoted lever provided with a latch for holding the contact make-and-break mechanism in given position, said catch being normally in position to engage the contact make-and-break mechanism, of a telephone receiver-hook, normally out of engagement with said lever, and a temporary one-way mechanical connection between said hook and holding means.

2. In telephone-service apparatus, the combination with contact make-and-break mechanism and means for holding the same in given position, said holding means being normally in position to engage the contact make-and-break mechanism, of a telephone receiver-hook normally out of engagement with said holding means, and a temporary one-way mechanical connection between said hook and holding means.

3. In telephone-service apparatus, the combination with contact make-and-break mechanism, of a pivoted lever provided with a latch for holding the same in given position, said latch being normally in position to engage the contact make-and-break mechanism, a telephone receiver-hook, and arms provided on said lever and receiver-hook, said arms being normally out of engagement with each other, the receiver-hook arm having a temporary one-way connection with the arm of the latch.

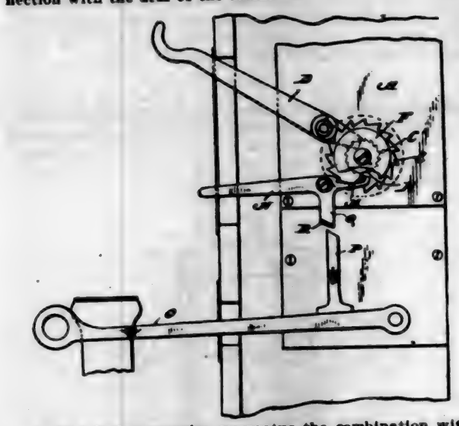

4. In telephone-service apparatus the combination with contact make-and-break mechanism, of a latch for holding the same in given position, a telephone receiver-hook, an arm connected to the latch and having a cam-surface, and a yielding arm connected to the receiver-hook having a temporary one-way connection with the arm of the latch.

5. In telephone-service apparatus the combination with contact make-and-break mechanism, and a telephone receiver-hook, of stop M, latch N, and arms P and Q.

6. In telephone-service apparatus the combination of contact make-and-break mechanism, means for holding same in given position, a telephone receiver-hook, a one-way connection between said hook and holding means which connection is established and actuated by the removal of the receiver from the hook and its subsequent replacement therein, and independent means for releasing said holding means.

846,828. STRAIGHTENING-PRESS. JOHN C. CROMWELL, Cleveland, Ohio, assignor to The Garrett-Cromwell Engineering Company, Cleveland, Ohio, a Corporation of Ohio. Filed July 14, 1905. Serial No. 269,753.

Claim.—1. A straightening-press having a stationary head, and a reciprocating ram, means for adjusting the ram relatively to the stationary head, a movable presser-block carried by the ram, and means for adjusting said block toward and away from the head; substantially as described.

2. A straightening-press having a stationary head, and a reciprocating ram, means for adjusting the ram relatively to the head, a movable presser-block carried by the head, a movable presser-block carried by the ram, and a motive device and connections arranged to move one presser-block backwardly and the other forwardly, said movement being in the plane of the reciprocating ram; substantially as described.

3. A straightening-press having a stationary head, and a reciprocating ram, means for adjusting the ram relatively to the head, a movable presser block carried by the head, a movable presser-block carried by the ram, and a motive device and connections to simultaneously move one presser-block backwardly and the other forwardly, said movement being in the plane of the reciprocating ram; substantially as described.

4. A straightening-press having a reciprocating ram, a crank-shaft for reciprocating the ram, a yoke engaged by the crank-shaft, and a motive device and gearing connected to said yoke and mounted on the ram, whereby the position of the stroke of the ram may be adjusted; substantially as described.

5. A straightening-press having a stationary head and a reciprocating ram, said head and ram each having side anvils and a central horizontally-movable presser-block, a shaft geared to both presser-blocks to actuate the same, and a motive device for actuating said shaft; substantially as described.

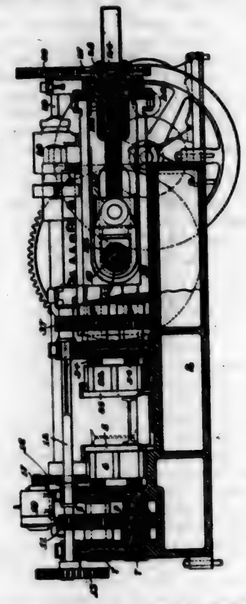

6. A straightening-press having a stationary head and a reciprocating ram, each having a presser-block movable toward and from each other, and a motor having screw-gearing connections arranged to simultaneously move one presser-block backwardly and the other forwardly; substantially as described.

7. A straightening-press having a stationary head and a reciprocating ram, each of said parts having a movable head, means for simultaneously moving one head backwardly and the other forwardly, and a motor having connections arranged to adjust the position of the reciprocating ram; substantially as described.

8. A straightening-press having a stationary head and a reciprocating ram, each having side anvils and a central movable presser-block, a motor on the stationary head, screw-gearing for adjusting each movable presser-block, and connections between the motor and the screw-gearings arranged to simultaneously retract one presser-head and move the other presser-head forward into operative position; substantially as described.

846,829. EGG-BEATER. SAMUEL DANNER, Doniphan, Mo. Filed Jan. 15, 1907. Serial No. 352,473.

Claim.—1. An egg-beater comprising an inverted-U-shaped metal frame having a centrally-projected portion formed with a handhold, a crank-shaft journaled in the ends thereof, a frame comprising side members whose upper ends are secured to the ends of the shaped frame, a cross member joined with the lower ends of the side members, a beater-shaft journaled in the side arms having a crank member, a rod connecting said crank with the other crank-shaft and a beater-frame mounted on the beater-shaft, substantially as shown and described.

2. An egg-beater comprising a body portion formed of a single strand of stout wire bent upon itself to form parallel side arms, its loop or central portion being bent at right angles to the side arms, the side arms being bent to form bearing-eyes, a beater-shaft journaled in the said side-arm eyes, said shaft having a crank portion, a beater-frame mounted on the shaft to turn between the side arms, a frame mounted on the upper ends of the side arms, a crank-shaft journaled in said frame having a handle at

one end and a crank at the other end, a link rod connected to said crank and the beater-shaft crank, said frame having an extension extended upwardly therefrom and formed with a handhold, for the purposes described.

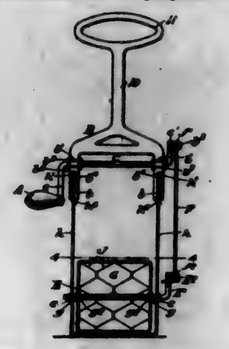

3. The combination with the inverted-U-shaped handle-frame, and the crank-shaft journaled in the pendent arms thereof, said arms having vertical bores, and apertures bisecting said bores; of the wire body portion comprising side members and a base portion, the side members having their ends bent upon themselves whereby to form stiffened portions to fit the bores in pendent arms of the inverted-U frame, means for securing said portions in the said arms, a rotary beater mounted in the said side members of the wire body, the shaft of which has a crank and a pitman connecting said crank with the actuating crank-shaft, all being arranged substantially as shown and described.

846,830. AEROPLANE OR CRAFT FOR AERIAL NAVIGATION. ARMAND DUFAUX and HENRI DUFAUX, Geneva, Switzerland. Filed Feb. 25, 1905. Serial No. 247,395.

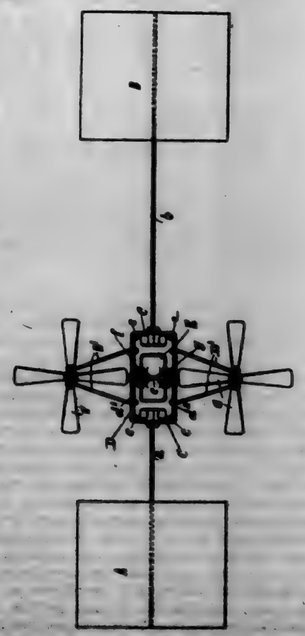

Claim.—In a mechanism of the character described, a drum; a shaft rotatably mounted therein; a motor mounted in said drum, for driving said shaft, said motor being free to swing around said shaft after the manner of a pendulum; an arm for swinging said motor about said shaft; means for securing said arm in adjusted position to said drum; propellers carried by said drum and driven by said shaft; a casing outside of said drum and free to rotate thereon; and wings carried by said casing.

846,831. APPARATUS FOR APPLYING DISINFECTANTS TO WATER-CLOSETS. ALEXANDER D. EASTON, Cincinnati, Ohio, assignor to The National Disinfectant Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Apr. 9, 1906. Serial No. 310,844.

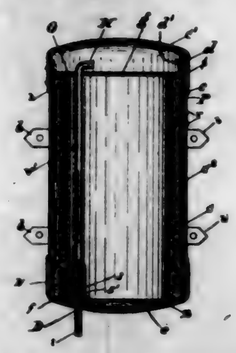

Claim.—1. A device of the character described, comprising an outer case or shell having a suitable bottom, an internal can or receptacle, a kerfed valve-block having a screw-threaded bore and a smooth, tapered seat at the bottom of said bore, a drip-tube having a smooth bore and extending downwardly from the kerfed valve-block with its said smooth bore or passage-way a continuation of said seat and with its lower portion extending through the bottom of the internal receptacle and thence through the bottom of the outer casing, and a vertical valve-rod having a screw-thread adjacent its lower end engaging said threaded bore of the kerfed valve-block and a tapered or pointed lower end adapted to engage said tapered seat in regulating the flow of fluid from the inner receptacle.

2. A device of the character described, comprising an outer shell or casing provided with a suitable bottom, an internal can or receptacle having a top provided with an orifice, a transversely-kerfed valve-block having a valve-seat therein, a drip-tube extending from the seat portion of said valve-block, and a valve-rod having a tapered lower end and engaging said valve-seat and provided with a screw-thread at its lower portion and engaging a screw-threaded bore in said valve-block and having at its upper end a bent portion forming a handle extending beyond the orifice in the can-top.

846,832. WORK-FEEDING PUNCHING-MACHINE. JAMES A. EDEN, Jr., New York, N. Y., assignor to E. W. Bliss Company, a Corporation of West Virginia. Filed Mar. 9, 1905. Serial No. 249,173.

Claim.—1. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch, and means for moving the latch into position to hold the stop out of the way of the clutch, so as to allow the clutch to be thrown in, controlled by the advance of the sheet.

2. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch so as to allow the clutch to be thrown in, and a member in the path of the sheet and operated by the advance of the same adapted to move the latch into position to hold the stop out of the way of the clutch.

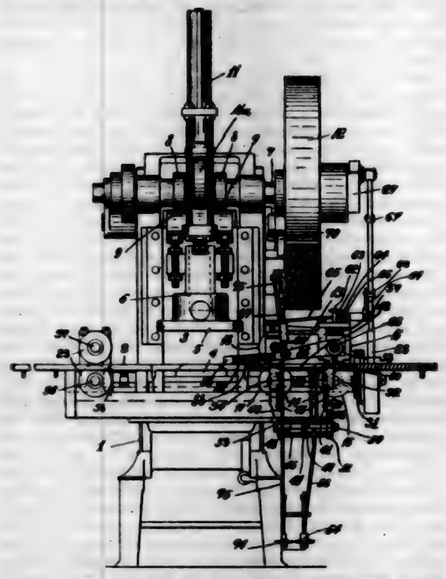

3. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch so as to allow the clutch to be thrown in, and a member in the path of the sheet and lifted by the advance of the same adapted to move the latch into position to hold the stop out of the way of the clutch so as to allow the clutch to be thrown in.

4. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch, a member in the path of the sheet and operated by the advance of the same, and a connection including in part a spring between the member in the path of the sheet and the latch, whereby power will be stored to subsequently move the latch into position to hold the stop out of the way of the clutch.

5. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch, a member in the path of the sheet and lifted by the advance of the same, and a connection including in part a spring between the member in the path of the sheet and the latch, whereby power will be stored to subsequently move the latch into position to hold the stop out of the way of the clutch.

6. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch so as to allow the clutch to be thrown in, and a member in the path of the sheet and actuated by the advance of the sheet under the same for moving the latch into position to hold the stop out of the way of the clutch so as to allow the clutch to be thrown in, and when released by the advance of the sheet beyond it to move the latch out of engagement with the stop.

7. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch, a member in the path of the sheet and actuated by the advance of the sheet under the same, and released by the advance of the sheet beyond it, and a connection, including in part a spring, between the member in the path of the sheet and the latch whereby power will be stored to subsequently move the latch into and out of position to hold the stop out of the way of the clutch.

8. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, punch-releasing means actuated by the advance of the sheet under the same for rendering the operating means for the punching mechanism active, and when released by the advance of the sheet beyond it for restoring the operating means of the punching mechanism to their normal position, and adjusting means for the punch-releasing means whereby the distance of the said punch-releasing means with reference to the punching mechanism can be varied.

9. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism, normally inactive, a punch-releasing member in the path of the sheet and actuated by the advance of the sheet under the same for rendering the operating means for the punching mechanism active and when released by the advance of the sheet beyond it for restoring the operating means of the punching mechanism to their normal position, and adjusting means for the punch-releasing member whereby the distance of the said punch-releasing member with reference to the punching mechanism can be varied.

10. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch, punch-releasing means actuated by the advance of the sheet under the same for moving the latch into position to hold the stop out of the way of the clutch so as

to allow the clutch to be thrown in, and when released by the advance of the sheet beyond it to move the latch out of engagement with the stop, and adjusting means for the punch-releasing means whereby the distance of the said punch-releasing means with reference to the punching mechanism can be varied.

11. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch so as to allow the clutch to be thrown in, a punch-releasing member in the path of the sheet and actuated by the advance of the sheet under the same for moving the latch into position to hold the stop out of the way of the clutch so as to allow the clutch to be thrown in, and when released by the advance of the sheet beyond it to move the latch out of engagement with the stop, and adjusting means for the punch-releasing member whereby the distance of the said punch-releasing member with reference to the punching mechanism can be varied.

12. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch, a punch-releasing member in the path of the sheet and actuated by the advance of the sheet under the same and released by the advance of the sheet beyond it, a connection, including in part a spring, between the punch-releasing member and the latch whereby power will be stored to subsequently move the latch into and out of position to hold the stop out of the way of the clutch, and adjusting means for the punch-releasing member whereby the distance of the said punch-releasing member with reference to the punching mechanism can be varied.

13. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, punch-releasing means actuated by the advance of the sheet under the same for rendering the operating means for the punching mechanism active, and when released by the advance of the sheet beyond it for restoring the operating means of the punching mechanism to their normal position, adjusting means for the punch-releasing means whereby the distance of the said punch-releasing means with reference to the punching mechanism can be varied, and two gages located a variably predetermined distance from the punching mechanism and a variably predetermined distance from each other.

14. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism, normally inactive, a punch-releasing member in the path of the sheet and actuated by the advance of the sheet under the same for rendering the operating means for the punching mechanism active and when released by the advance of the sheet beyond it for restoring the operating means of the punching mechanism to their normal position, adjusting means for the punch-releasing member whereby the distance of the said punch-releasing member with reference to the punching mechanism can be varied, and two gages located a variably predetermined distance from the punching mechanism and a variably predetermined distance from each other.

15. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch, punch-releasing means actuated by the advance of the sheet under the same for moving the latch into position to hold the stop out of the way of the clutch so as to allow the clutch to be thrown in, and when released by the advance of the sheet beyond it to move the latch out of engagement with the stop, adjusting means for the punch-releasing means whereby the distance of the said punch-releasing means with reference to the punching mechanism can be varied, and two gages located a variably predetermined distance from the punching mechanism and a variably predetermined distance from each other.

16. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch so as to allow the clutch to be thrown in, a punch-releasing member in the path of the sheet and actuated by the advance of the sheet under the same for moving the latch into position to hold the stop out of the way of the clutch so as to allow the clutch to be thrown in, and when released by the advance of the sheet beyond it to move the latch out of engagement with the stop, adjusting means for the punch-releasing member whereby the distance of the said punch-releasing member with reference to the punching mechanism can be varied, and two gages located a variably predetermined distance from the punching mechanism and a variably predetermined distance from each other.

17. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch, a punch-releasing member in the path of the sheet and actuated by the advance of the sheet under the same, and released by the advance of the sheet beyond it, a connection, including in part a spring, between the punch-releasing member and the latch whereby power will be stored to subsequently move the latch into and out of position to hold the stop out of the way of the clutch, adjusting means for the punch-releasing member whereby the distance of the said punch-releasing member with reference to the punching mechanism can be varied, and two gages located a variably predetermined distance from the punching mechanism and a variably predetermined distance from each other.

18. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, punch-releasing means actuated by the advance of the sheet under the same for rendering the operating means for the punching mechanism active, and when released by the advance of the sheet beyond it for restoring the operating means of the punching mechanism to their normal position, adjusting means for the punch-releasing means whereby the distance of the said punch-releasing means with reference to the punching mechanism can be varied, two gages located a variably predetermined distance from the punching mechanism and a variably predetermined distance from each other, and means for alternately raising said gages into operative position.

19. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism, normally inactive, a punch-releasing member in the path of the sheet and actuated by the advance of the sheet under the same for rendering the operating means for the punching mechanism active and when released by the advance of the sheet beyond it for restoring the operating means of the punching mechanism to their normal position, adjusting means for the punch-releasing member whereby the distance of the said punch-releasing member with reference to the punching mechanism can be varied, two gages located a variably predetermined distance from the punching mechanism and a variably predetermined distance from each other, and means for alternately raising said gages into operative position.

20. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch, punch-releasing means actuated by the advance of the sheet under the same for moving the latch into position to hold the stop out of the way of the clutch so as to allow the clutch to be thrown in, and when released by the advance of the sheet beyond it to move the latch out of engagement with the stop, adjusting means for the punch-releasing means whereby the distance of the said punch-releasing means with reference to the punching mechanism can be varied, two gages located a variably predetermined distance from the punching mechanism and a variably predetermined distance from each other, and means for alternately raising said gages into operative position.

21. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch so as to allow the clutch to be thrown in, a punch-releasing member in the path of the sheet and actuated by the advance of the sheet under the same for moving the latch into position to hold the stop out of the way of the clutch so as to allow the clutch to be thrown in, and when released by the advance of the sheet beyond it to move the latch out of engagement with the stop, adjusting means for the punch-releasing member whereby the distance of the said punch-releasing member with reference to the punching mechanism can be varied, two gages located a variably predetermined distance from the punching mechanism and a variably predetermined distance from each other, and means for alternately raising said gages into operative position.

22. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch, a punch-releasing member in the path of the sheet and actuated by the advance of the sheet under the same, and released by the advance of the sheet beyond it, a connection, including in part a spring, between the punch-releasing member and the latch whereby power will be stored to subsequently move the latch into and out of position to hold the stop out of the way of the clutch, adjusting means for the punch-releasing member whereby the distance of the said punch-releasing member with reference to the punching mechanism can be varied, two gages located a variably predetermined distance from the punching mechanism and a variably predetermined distance from each other, and means for alternately raising said gages into operative position.

23. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch, means for moving the latch into position to hold the stop out of the way of the clutch, so as to allow the clutch to be thrown in, controlled by the advance of the sheet, and means for moving the latch out of engagement with the stop at will.

24. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch so as to allow the clutch to be thrown in, a member in the path of the sheet and operated by the advance of the same adapted to move the latch into position to hold the stop out of the way of the clutch, and means for moving the latch out of engagement with the stop at will.

25. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch, a member in the path of the sheet and operated by the advance of the same, a connection including in part a spring between the member in the path of the sheet and the latch, whereby power will be stored to subsequently move the latch into position to hold the stop out of the way of the clutch, and means for moving the latch out of engagement with the stop at will.

26. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch so as to allow the clutch to be thrown in, a member in the path of the sheet and lifted by the advance of the same adapted to move the latch into position to hold the stop out of the way of the clutch so as to allow the clutch to be thrown in, and means for moving the latch out of engagement with the stop at will.

27. In a machine of the character set forth, the combination of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch, means actuated by the advance of the sheet under the same for moving the latch into position to hold the stop out of the way of the clutch so as to allow the clutch to be thrown in, and when released by the advance of the sheet beyond it to move the latch out of engagement with the stop, and means for moving the latch out of engagement with the stop at will.

28. In a machine of the character set forth, the combi-

nation of a punching mechanism, a sheet-feeding mechanism, means for operating the sheet-feeding mechanism, means for operating the punching mechanism normally inactive, a clutch controlling the operation of the operating means for the punching mechanism, a stop preventing the clutch from moving into its clutched position, means for moving the stop out of the path of the clutch once to each revolution, a latch for holding the stop out of the way of the clutch so as to allow the clutch to be thrown in, a member in the path of the sheet and actuated by the advance of the sheet under the same for moving the latch into position to hold the stop out of the way of the clutch so as to allow the clutch to be thrown in, and when released by the advance of the sheet beyond it to move the latch out of engagement with the stop, and means for moving the latch out of engagement with the stop at will.

29. In a machine of the character set forth, the combination of a driving and a driven member, a clutch carried by the driving member normally tending to move into clutched position on the driven member, a stop normally in the path of the clutch and preventing the clutch from moving into its clutched position, a rotating cam, a roll connected to the said stop and adapted to move the latter out of the path of the clutch, a member sliding in a bracket carried by said roll, provided with a notch and having a spring tending to move the roll up against the cam, a latch adapted to engage in the notch of the sliding member, a pivoted lever, connections between the pivoted lever and the latch, and a spring interposed in said connection.

30. In a machine of the character set forth, the combination of two gages, two cams for raising said gages having a plurality of teeth and notches arranged so that a notch in one cam comes opposite a tooth on the other cam, a pivoted lever carrying said cams, means for elevating said cams, and means for turning said cams as they are raised so that the teeth on the cams alternately raise the gages when the cams are elevated.

31. In a machine of the character set forth, the combination of superposed feed-rolls, a pivoted shaft carrying the upper of the superposed feed-rolls, two gages and means for simultaneously raising the shaft carrying the upper of the feed-rolls and one of said gages alternately.

32. In a machine of the character set forth, the combination of superposed feed-rolls, a pivoted shaft carrying the upper of the superposed feed-rolls, two gages and means for simultaneously raising the shaft carrying the upper of the feed-rolls and one of said gages alternately, a locking mechanism holding the shaft in its raised position, operating means for imparting an intermittent motion in one direction to the feed-rolls, and means actuated by the operating means of the feed-rolls for moving the shaft down when the rolls are at rest.

33. In a machine of the character set forth, the combination of superposed feed-rolls, a shaft carrying the upper of the superposed feed-rolls, means for raising the shaft carrying the upper of the feed-rolls, a locking mechanism for holding the shaft in its raised position, means for imparting an intermittent motion in one direction to the feed-rolls, and means actuated by the operating means of the feed-rolls for moving the shaft down when the rolls are at rest.

846,833. FORM FOR DISPLAYING WEARING-APPAREL. HENRY C. EDWARDS and HARRY R. H. DUNBAR, Victoria, British Columbia, Canada. Filed Nov. 8, 1904. Renewed July 26, 1906. Serial No. 327,962.

Claim.—1. A display-form comprised of inflatable trunk, leg and arm portions, a valve for each said portions, means for securing said leg and arm portions in bent positions, and means for detachably connecting said last-named portions to the body portion, substantially as described.

2. A display-form, comprised of a trunk integral with upper-arm sections, lower-arm members, leg members, said parts being made of inflatable fabric, a pedestal for sustaining said trunk and having laterally-disposed branches, screw devices provided upon an end of each leg member for securing the same to said branches, and screw devices provided upon the adjacent end of each of the divided arm members for securing the same together, substantially as described.

3. In a display-form, a limb comprised of inflatable material, a valve, and means for securing said limb to various bent positions, substantially as described.

4. In a display-form, an arm member comprised of inflatable material, a valve, wires respectively secured at one end to said arm member and projecting into the several fingers of the hand thereof, said wires terminating in ferrules, substantially as described.

5. In a display-form, an inflatable limb provided with a valve, a tape fixedly secured at one end to said limb and provided adjacent of its other end with a buttonhole adapted to be caught upon a fastening attachment of the limb, and a series of eyes secured to the limb, substantially as described.

6. A display-form consisting of a sack of air-tight material resembling when inflated a single human limb, means for securing said form in bent positions and an automatically-closing valve carried by said form.

846,834. COMBINED BED-PAN AND DOUCHE. NAOMI EGAN, Danville, Cal. Filed Mar. 16, 1906. Serial No. 306,378.

Claim.—1. A bed-pan having a vertical partition dividing the same into two chambers and formed with a central communicating opening, one of the chambers being practically closed and having an outlet-tube provided with a removable cap and an opening with a coupling means therearound, a pipe removably applied to said coupling means, and a plug removably fitted in the partition-opening.

2. A bed-pan having a vertically-disposed, longitudinally-concaved partition-wall having a central opening and dividing the pan into two chambers, one of the latter being practically closed and provided with an outlet-tube having a removable cap and a drain-opening close to the bottom thereof, a pipe removably applied over the drain-opening, and a plug removably fitted in the partition-opening.

846,835. FIRE APPARATUS. HARRY W. EISENBISE, Reading, Pa. Filed June 6, 1904. Serial No. 211,257.

Claim.—In combination, a fire-engine provided with suitable pumping mechanism, a hose-wagon detachably coupled to the front end of the fire-engine and having a length of hose connected to the discharge of the pumping mechanism, self-propelling means for the hose-wagon, distinct self-propelling means for the fire-engine, and clutch mechanism between the last-named means and the pumping mechanism.

846,835.

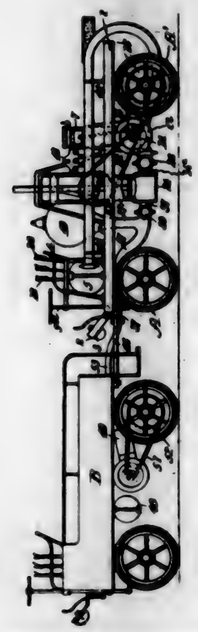

846,836. BOILER-FURNACE. HARRINGTON EMERSON, Topeka, Kans. Filed July 5, 1906. Serial No. 324,763.

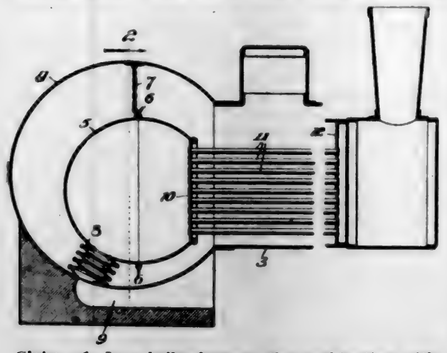

Claim.—1. In a boiler-furnace, the combination with a boiler-shell, of a fire-box movably suspended therein and forming therewith a fire-box-surrounding water-space.

2. In a boiler-furnace, the combination with a boiler-shell, of a fire-box movably suspended therein and having a fuel-inlet leading into it through said shell, said shell and box forming a water-space extending about the latter entirely between opposite sides of said inlet.

3. In a boiler-furnace, a fire-box inclosed in the boiler-shell and nearly surrounded therein by a water-space, said fire-box being movably suspended in the boiler-shell to have limited, independent expansion, contraction and movement therein, a flue-sheet forming one side portion of the fire-box, a flue-sheet secured to the boiler-shell adjacent to the smoke-box and boiler-tubes fastened at opposite ends to said flue-sheets.

4. In a boiler-furnace, a boiler-shell having a spheroidal end portion, a spheroidal fire-box inclosed in said end portion and nearly surrounded therein by a water-space, said fire-box being movably suspended in said end portion to have limited, independent expansion, contraction and movement therein.

5. In a boiler-furnace, a fire-box inclosed in the boiler-shell and nearly surrounded therein by a water-space, and flexible suspending means in the boiler-shell by which the fire-box is hung thereon, for the purpose set forth.

6. In a boiler-furnace, a spheroidal fire-box constructed with externally-ribbed seams and inclosed in the boiler-shell and nearly surrounded therein by a water-space, said ribbed fire-box being movably suspended in the boiler-shell, for the purpose set forth.

7. In a boiler-furnace, a fire-box inclosed in the boiler-shell and nearly surrounded therein by a water-space, said fire-box being loosely supported in the boiler-shell, for the purpose set forth, and a flexible inlet-flue extending through the boiler-shell to the interior of the fire-box.

846,837. TRAVELING CRANE. ALBERT E. EVANS, Pittsburg, Pa., assignor to The National Tube Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Sept. 28, 1906. Serial No. 336,613.

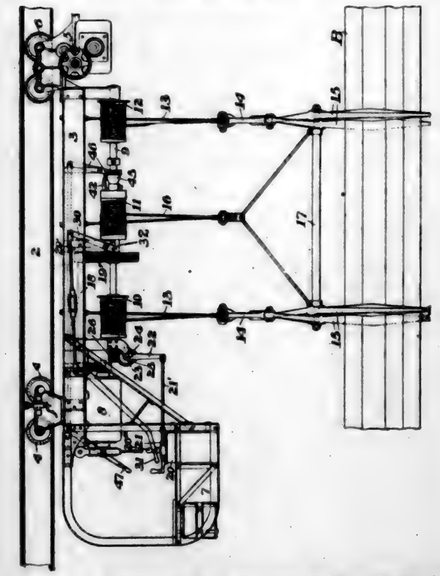

Claim.—1. Apparatus for operating hoisting-drums independently or simultaneously as desired, comprising a shaft and drums, one of said drums being fixed to the shaft, and the other drum having mechanism adapted to permit independent rotation of the shaft to a limited extent, and holding mechanism on said shaft by which the drum is held during such independent motion; substantially as described.

2. Apparatus for operating hoisting-drums independently or simultaneously as desired, comprising a shaft and three drums, at least one of said drums being fixed to the shaft and at least one of the other drums having mechanism on said shaft to permit independent rotation of the shaft to a limited extent; substantially as described.

3. Apparatus for operating hoisting-drums independently or simultaneously as desired, comprising a shaft and drums, one of said drums being fixed to the shaft, and the other drum having mechanism adapted to permit independent rotation of the shaft to a limited extent; and means for rotating said other drum at any point within the limits of its independent rotation substantially as described.

4. The combination of a shaft, a rotative member

mounted loosely thereon, friction mechanism for holding said member, and a collar or projection on the shaft, and a second collar or projection connected with the drum and having loose intermediate motion; and frictional means for rotating said drum at any point within the limits of its loose intermediate motion substantially as described.

5. The combination of a shaft, a rotative member mounted loosely thereon, frictional mechanism for holding said member, a collar or projection on the shaft, and a second collar or projection connected with the drum, and an intermediate loose member or members having collars or projections adapted to engage the collars or projections above mentioned and having intermediate loose motion; substantially as described.

6. The combination of a shaft, a rotative member mounted loosely thereon, frictional mechanism for holding said member, a collar or projection on the shaft, and a second collar or projections connected with the drum and having loose intermediate motion, and a friction device for connecting the last-named collar or projection frictionally with the shaft; substantially as described.

7. Apparatus for operating hoisting-drums independently or simultaneously as desired, comprising a shaft and drums, one of the drums being fixed to the shaft, and the other drum having intermediate mechanism adapted to permit independent rotation of the shaft to a limited extent, holding mechanism adapted to hold the drum during such independent motion, and mechanism adapted to connect and disconnect the shaft with a part of said intermediate mechanism to effect rotation in a reverse direction; substantially as described.

8. Hoisting mechanism comprising tongs, drums by which the tongs are operated, said drums being adapted to raise and lower the tongs, and one of the drums having independent rotation to a limited extent to effect the opening and closing of the tongs, means for rotating the independently-rotatable drum at any point within the limits of said independent rotation said drums being mounted on and rotated by a single shaft; substantially as described.

9. Hoisting mechanism comprising tongs, and a shaft having drums, by which the tongs are operated, said drums being adapted to raise and lower the tongs, and one of the drums having connections on said shaft permitting independent rotation to a limited extent to effect the opening and closing of the tongs; and means for rotating said independently-rotatable drum while the tongs are partly opened substantially as described.

10. Hoisting mechanism comprising tongs and three drums mounted on a shaft by which the tongs are operated, one of the drums having connections on said shaft permitting independent rotation to a limited extent to effect the opening and closing of the tongs; substantially as described.

11. The combination of a shaft, a drum, and collars or projections 33, 34 and 35, on the shaft, one of them being fixed to the shaft, a collar or projection on the drum adapted to engage the collar 35, and means for frictionally connecting the drum to the shaft; substantially as described.

12. Apparatus for operating hoisting-drums independently or simultaneously as desired, comprising a shaft and three drums, two of said drums being fixed to the shaft and the third drum having mechanism on said shaft arranged to permit independent rotation of the shaft to at least a limited extent; substantially as described.

13. Apparatus for operating hoisting-drums independently or simultaneously as desired, comprising a shaft and drums, one of said drums being fixed to the shaft, and the other drum having mechanism adapted to permit independent rotation of the shaft to a limited extent, a motor for operating said shaft and mechanism for automatically stopping said motor; substantially as described.

14. Hoisting mechanism comprising tongs, drums by which the tongs are operated, said drums being adapted to raise and lower the tongs, and one of the drums having independent rotation to a limited extent to effect the opening and closing of the tongs, said drums being mounted on and rotated by a single shaft, a motor for operating said shaft, a controller for said motor, and mechanism for automatically operating said controller to stop the motor at predetermined points; substantially as described.

15. Hoisting mechanism comprising tongs, drums by which the tongs are operated, said drums being adapted to raise and lower the tongs, and one of the drums having independent rotation to a limited extent to effect the opening and closing of the tongs, said drums being mounted on and rotated by a single shaft, a motor for operating said shaft, a controller for said motor, means for operating said controller to start said motor and mechanism operated by the shaft for automatically stopping said motor; substantially as described.

16. Hoisting mechanism comprising tongs and three drums mounted on a shaft by which the tongs are operated, one of the drums having connections on said shaft permitting independent rotation to a limited extent to effect the opening and closing of the tongs, and means on the tongs for limiting the opening and closing movement of said tongs; substantially as described.

17. Hoisting mechanism comprising tongs and three drums mounted on a shaft by which the tongs are operated, one of the drums having connections on said shaft permitting independent rotation to a limited extent to effect the opening and closing of the tongs, means on the tongs by which the opening and closing movement is positively limited; and means arranged to rotate said drums while the tongs are partly opened substantially as described.

18. Hoisting mechanism comprising tongs and three drums mounted on a shaft by which the tongs are operated, one of the drums having connections on said shaft permitting independent rotation to a limited extent to effect the opening and closing of the tongs, and jaws on the tongs by which the opening and closing movement is positively limited; substantially as described.

846,838. LOG-SPLITTING MACHINE. WILLIAM A. FANNON, Appleton, Wis. Filed Dec. 5, 1904. Serial No. 235,651.

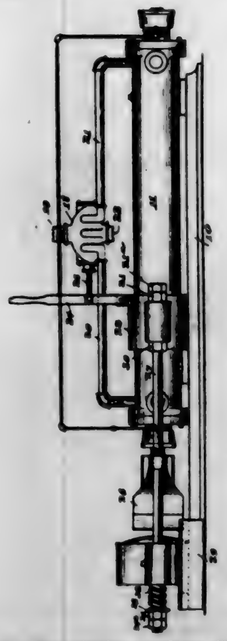

Claim.—1. In a log-splitting machine, the combination with a substantially horizontal cylinder, piston and piston-rod, of an abutment member for the log, laterally rigid guide-rods between said cylinder and abutment member, an ax-head secured to the piston-rod slidably mounted on said guide-rods, said guide-rods serving to maintain a fixed relation of said ax-head to the cylinder and to the log during the splitting operation.

2. In a log-splitting machine, the combination with a substantially horizontal cylinder, piston and piston-rod, of an abutment member for the log, laterally rigid guide-rods between said cylinder and abutment member, an ax-head secured to the piston-rod slidably mounted on said guide-rods, said guide-rods being suitably spaced to serve as a support for the log and also serving to maintain a fixed relation of said ax-head to the cylinder and to the log during the splitting operation.

3. In a log-splitting machine, the combination with a substantially horizontal cylinder, piston, and piston-rod, of a pair of guide-rods rigid at one end with and extending longitudinally of and beyond said cylinder, an elastically-backed abutment member slidably mounted on the other end of said guide-rods, an ax-head secured to the piston-rod of said cylinder slidably mounted on said guide-rods, said guide-rods being suitably spaced to serve as a support for the log and also serving to maintain a fixed relation of said ax-head to the cylinder and to the log during the splitting operation.

4. In a log-splitting machine, the combination with a substantially horizontal cylinder, piston, and piston-rod, of an abutment member for the log, laterally rigid guide-rods between and connecting said cylinder and abutment member, an ax-head secured to the piston-rod of said cylinder slidably mounted on said guide-rods, said guide-rods serving to maintain a fixed relation of said ax-head to the cylinder and to the log during the splitting operation, and means for cushioning the piston at the limit of its working stroke.

5. In a log-splitting machine, the combination with a substantially horizontal cylinder having apertured lateral projections rigid therewith, a piston, and a piston-rod, of an abutment member also provided with apertured lateral projections, guide-rods secured in and between the lateral projections of said cylinder and abutment member, and an ax-head secured to said piston-rod and having apertured lateral ears whereby it is slidably mounted on the said guide-rods and maintained in fixed relation to said cylinder and the log during the splitting operation.

6. In a log-splitting machine, the combination with a cylinder and means for admitting and exhausting motive fluid thereto and therefrom, of a piston therein having a piston-rod, an ax-head on the end of said rod, a bed-plate in advance of said ax-head, an abutment for a log slidably mounted on said bed-plate, a pair of guide-rods rigid with the cylinder at one end and slidably engaged at their other end by said abutment, and cushioning-springs on said rods in rear of said abutment.

7. In a log-splitting machine, the combination with a cylinder and means for admitting and exhausting motive fluid thereto and therefrom, of a piston therein having a piston-rod, an ax-head on the end of said rod, a bed-plate in advance of said ax-head, an abutment for a log slidably mounted on said bed-plate, a cross-head rigid with the cylinder, a pair of guide-rods secured at one end in said cross-head and slidably engaged at their other end by said abutment, and cushioning-springs on said rods in rear of said abutment.

846,839. LOG-SPLITTING MACHINE. WILLIAM A. FANNON and EMIL A. PETERSON, Appleton, Wis. Filed July 14, 1905. Serial No. 269,676.

Claim.—1. In a log-splitting machine, the combination with a horizontal bed-plate, of an ax-operating cylinder bolted to one end of said bed-plate, a head-block bolted to the opposite end of said bed-plate, and a pair of tie-rods rigidly uniting the opposite sides of said cylinder and head-block, respectively, above said bed-plate, substantially as described.

2. In a log-splitting machine, the combination with a horizontal bed-plate, of an ax-operating cylinder bolted to one end of said bed-plate and having apertured lateral ears, a head-block bolted to the opposite end of said bed-plate and provided with apertured lateral ears, and a pair of tie-rods passed at their ends through said ears and rigidly uniting said cylinder and head-block above said bed-plate, substantially as described.

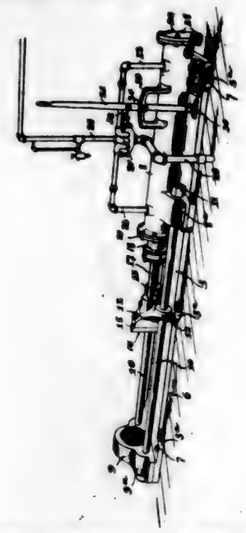

3. In a log-splitting machine, the combination with a horizontal bed-plate, of a cylinder rigidly secured to one end of said bed-plate, a head-block rigidly secured to the opposite end of said bed-plate, tie-rods rigidly uniting said cylinder and head-block above said bed-plate, an ax-head slidably supported and guided on said tie-rods, a piston in said cylinder, and a piston-rod connecting said piston and ax-head, substantially as described.

4. In a log-splitting machine, the combinaion with a horizontal bed-plate, of a cylinder bolted to one end of said bed-plate and having apertured lateral ears, a head-block bolted to the opposite end of said bed-plate and provided with apertured lateral ears, a pair of tie-rods passed at their ends through said ears and rigidly uniting said cylinder and head-block above said bed-plate, an ax-head having apertured lateral ears whereby it is slidably supported and guided on said tie-rods, a piston in said cylinder, and a piston-rod connecting said piston and ax-head, substantially as described.

5. In a log-splitting machine, the combination with a horizontal bed-plate, of an ax-operating cylinder rigidly secured to one end of said bed-plate and provided with means for cushioning the piston at the limits of its stroke, a head-block rigidly secured to the opposite end of said bed-plate, and tie-rods rigidly uniting said cylinder and head-block above said bed-plate, substantially as described.

6. In a log-splitting machine, the combination with a cylinder, a head-block, a piston and piston-rod, disposed horizontally, of a guide between said cylinder and head-block, and an ax-head connected to said piston-rod and slidably mounted on said guide, said ax-head having oppositely-inclined warped sides adapted to both separate and raise the sections of a log in the splitting operation to facilitate their discharge from the machine, substantially as described.

7. In a log-splitting machine, the combination with a cylinder, a head-block, a piston and piston-rod, disposed horizontally, of a pair of parallel guides between said cylinder and head-block, and an ax-head connected to said piston-rod and slidably mounted on said guides, said ax-head having oppositely-inclined concave warped sides adapted to simultaneously separate and raise the sections of a log in the splitting operation to facilitate their discharge from the machine, substantially as described.

8. In a log-splitting machine, the combination with a cylinder, a head-block, a piston and piston-rod disposed horizontally, of a pair of parallel tension-rods rigidly connecting said cylinder and head-block, and an ax-head connected to said piston-rod and slidably mounted at its sides on said rods, said ax-head having a central vertical splitting edge and oppositely-inclined concave warped sides extending rearwardly and outwardly therefrom, substantially as described.

846,840. TRAIN-PIPE COUPLING. JOSEPH E. FORSYTH, Chicago, Ill. Filed July 9, 1906. Serial No. 325,248.

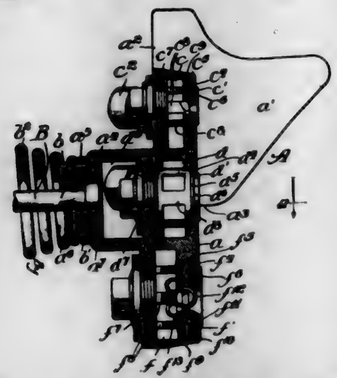

Claim.—1. In an automatic train-pipe coupling, the combination with a coupling-head having a face adapted to be presented to a companion coupling-head, of a pipe connected with said coupling-head, and a gasket connected with said head and removable from the rear of the head without disturbing the pipe, for the purpose set forth.

2. In an automatic train-pipe coupling, a coupling-head having a chamber with an orifice opening at the front face of the coupling-head and a gasket-socket formed at said orifice, a gasket seated in said socket, a plug having threaded connection with the rear portion of the coupling-head, means between the plug and gasket for confining the gasket in its socket, and a pipe independent of said plug communicating with said chamber.

3. In an automatic train-pipe coupling, the combination of a coupling-head having a chamber with an orifice opening at the front face of the coupling-head, a gasket equipped with a flange bearing against an internal shoulder adjacent to the orifice, a plug having threaded connection with the coupling-head in the rear of said chamber, a ring bearing upon said gasket and maintained in position by said plug, and an obliquely-set perforate lug communicating with said chamber and serving as a pipe connection, for the purpose set forth.

4. In an automatic train-pipe coupling, the combination of a coupling-head having a central chamber with an orifice opening at the front face of the coupling-head, a hollow boss in the rear of said chamber having a lateral opening, means connected with said boss for supporting the coupling-head, an obliquely-set pipe communicating with said chamber, a plug having threaded connection with the coupling-head in the rear of said chamber and removable through said lateral opening, a gasket at said orifice, and gasket-confining means between said plug and gasket.

5. In an automatic train-pipe coupling, the combination of a coupling-head having a chamber with an orifice opening at the front face of the coupling-head and an internal shoulder adjacent to said orifice, a plug connected with the coupling-head in the rear of said chamber, a pipe communicating with said chamber, and a gasket comprising a section having a shoulder fitting against said first-named shoulder and a section having a bearing on said first-named section and having a face projecting beyond the front face of the coupling-head, said second-named section being of less diameter than said orifice.

6. In an automatic train-pipe coupling, the combination of a coupling-head equipped with forwardly-projecting guide-prongs and a flat front face between said prongs, a series of chambers in said coupling-head with vertically-alined orifices opening at the front face of the coupling-head in a central vertical plane, obliquely-set pipes connected with said coupling-head and communicating with said chambers, a support connected with the central portion of the coupling-head at the rear side thereof, gaskets at said orifices having retaining-shoulders, and plugs connected with the rear portion of the coupling-head and confining said gaskets.

7. The combination of a coupling-head having forwardly-projecting guide-prongs and provided with a central chamber having an orifice opening at the front face of the coupling-head, a hollow boss projecting from the rear face of the coupling-head at the central portion thereof and having a lateral opening, a nut having threaded connection with the rear end of said boss, a bolt supporting said nut, an obliquely-set pipe communicating with said chamber, a gasket at said orifice, a ring bearing upon said gasket, and a plug insertible through said hollow boss and having threaded connection with the coupling-head in the rear of said ring, for the purpose set forth.

846,841. TRAIN-PIPE COUPLING. JOSEPH E. FORSYTH, Chicago, Ill. Filed July 18, 1906. Serial No. 326,656.

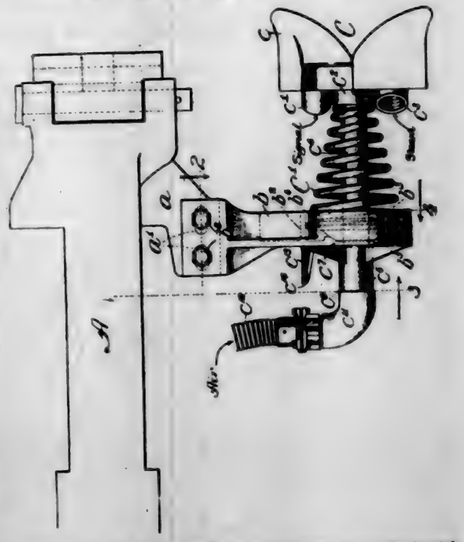

Claim.—1. The combination of a hanger provided with a socket having a part-spherical concave seat, a spring-plate movable in said socket having a part-spherical convex surface bearing on said seat, a coupling-head having a stem extending through said spring-plate, a spring confined between said plate and said head, and means for limiting the forward movement of the coupling-head.

2. The combination of a hanger provided with a socket, a spring-plate universally movable in said socket, a coupling-head having a stem extending through said spring-plate and hanger, a spider connected with said stem in the rear of said hanger, and means for guiding the spider with relation to the hanger when relative movement between the spider and hanger occur.

3. The combination of a hanger provided with a socket having a concave bearing, a disk having a convex surface received by said bearing, a coupling-head having a stem extending through said disk and hanger, a conical coil-spring having its large end bearing on said disk, a member on said stem in the rear of the hanger and limiting the forward movement of the coupling-head, and a member carried by the hanger and serving as a guide for said first-named member, for the purpose set forth.

4. The combination of a hanger having a ring equipped with a socket, a spring-plate bearing in said socket, a coupling-head having a tubular stem extending through said spring-plate and said ring, a conical coil-spring confined between said spring-plate and said coupling-head, a spider splined on said tubular stem in the rear of said hanger, and having a plurality of arms engaging the rear surface of said ring, a rearwardly-projecting lug carried by said ring and coacting with two arms of the spider, and a flexible pipe connected with the rear end of said tubular stem.

5. The combination with the draw-bar of a car, of a lug depending therefrom, a hanger having a bolt-and-slot connection with said lug, a spring having a bearing on said hanger, and a train-pipe coupling-head supported and projected by said spring, for the purpose set forth.

6. The combination of a hanger having a ring at its lower portion, a coupling-head having a stem extending through said ring, a spring confined between said ring and head, a spider splined on said stem in the rear of said ring, a guide member projecting rearwardly from said hanger and coacting with said spider and serving, through the medium thereof, to maintain the coupling-head in righted position, and means on the stem in the rear of the spider for limiting the forward movement of the coupling-head.

846,842. SAFETY-RAZOR. DANIEL W. GAGE, Cambridge, Mass. Filed Nov. 18, 1904. Serial No. 233,323.

Claim.—1. A safety-razor having two cutting-blades arranged to overlap each other, with their contiguous flat sides in the same plane and their cutting edges in different but parallel transverse planes.

2. A safety-razor having two cutting-blades arranged to overlap each other and provided with a notch at either end thereof, and means coöperating with said notches to retain said blades in locked position.

3. A safety-razor having two cutting-blades arranged to overlap each other with their contiguous flat sides in the same plane and provided with a notch at either end thereof, and means coöperating with said notches to retain said blades in locked position.

4. A safety-razor having two cutting-blades arranged to overlap each other, with their contiguous flat sides in the same plane, and means for clamping said blades.

5. In a safety-razor, the combination of a guard-plate provided with a shank, a clamping-plate also provided with a shank, a blade adapted to be clamped between said guard and plate, means for securing together said guard and plate at the ends opposite said shanks, and means for securing together said shanks.

6. In a safety-razor, the combination of a guard-plate provided with a shank, a clamping-plate also provided with a shank, a blade adapted to be clamped between said guard and plate, means for securing together said guard and plate at the ends opposite said shanks, and a tubular handle for securing together said shanks.

7. In a safety-razor, the combination of a tubular handle, two clamping and knife-holding plates provided at their upper ends with means for locking them together and at their lower ends with shanks adapted to fit said tubular handle to clamp the lower ends of said plates together, one of said plates having formed on each edge thereof a series of guard-teeth, and pair of cutting-blades arranged with their contiguous faces in the same plane with the axis of the handle.

8. In a safety-razor, the combination of a plate provided with guard-teeth on opposite edges thereof and having a stirrup at one end and a shank at the other, both formed integral therewith, a plate provided with a tongue to fit said stirrup at one end and a shank at the other, both formed integral therewith and having holes therein, two cutting-blades provided in each end with a notch and arranged parallel to and in contact with each other, pins set in said guard-plate and engaging said notches and holes, and a tubular handle engaging said shanks and clamping the parts firmly together.

9. A safety-razor having a guard-plate, two cutting-blades arranged to overlap each other, and means for clamping said blades against said guard-plate with the cutting edge of a blade at either edge thereof.

10. A safety-razor having a guard-plate, two cutting-blades arranged to overlap each other, a plate for clamping said blades against said guard-plate with the cutting edge of a blade at either edge thereof, and means for securing said plate to said guard-plate.

11. A safety-razor having a guard-plate, two cutting-blades arranged to overlap each other, a plate provided with a shank for clamping said blades against said guard-plate with the cutting edge of said blade at either edge thereof, a handle provided with a socket to receive said shank, and means for securing the opposite end of said clamping-plate to said guard-plate.

12. A safety-razor having a guard-plate provided with a suitable shank, two cutting-blades, a plate provided with a shank for clamping said blades against said guard-plate with the cutting edge of said blades at either edge thereof, a handle provided with a socket to receive said shanks, and means for securing the opposite end of said clamping-plate to said guard-plate.

846,843. ICE-PICK. BONIFACE A. GRASBERGER, Richmond, Va. Filed Mar. 1, 1906. Serial No. 303,728.

Claim.—In an ice-pick, the combination, with a blade formed of a flat strip of metal having rounded side edges and sharp side portions at one end which terminate in a single point, of a hammer-knob provided with a sleeve having two shallow guide-grooves which slide freely over the rounded side edges of the said blade and having open clearance-spaces between the said guide-grooves opposite the flat middle portions of the said blade, and a stop which prevents the said blade from slipping out of the said sleeve.

846,844. BLOWER. WILLIAM W. GREEN, Niles, Mich., assignor to Garden City Fan Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 15, 1905. Serial No. 287,517.

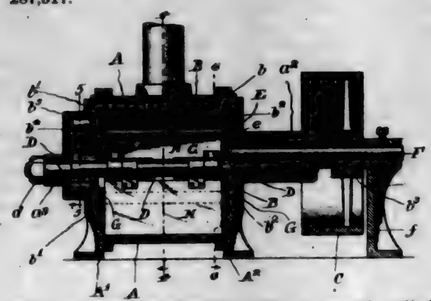

Claim.—1. The combination with a ported cylinder having projecting eccentric bosses at each end, of a hollow cylindrical drum having sleeves journaled in the bosses, said drum being in contact with the wall of the cylinder between its ports, a shaft rigidly fixed to the center of the cylinder at one end, a rigid cylindrical block within the drum in its center line, said block being adapted to receive the opposite end of said shaft, and a plurality of vanes rotatable upon the shaft and extending through slots in the drum.

2. The combination with a ported cylinder, of a rotatable cylindrical drum having sleeves at its two ends, a projecting boss on the cylinder to receive one sleeve, a shaft passing through said sleeve, a cylindrical block rigidly fixed to said shaft, said drum being rotatable upon said block, a cylindrical boss on the opposite end of said cylinder to receive the second sleeve on the drum, a second shaft secured in said boss at one end and in said cylindrical block at its other end and lying in the center line of the cylinder, and a plurality of vanes journaled upon the shaft and extending through slots in the drum-wall.

846,845. WATER-PURIFYING APPARATUS. JOHN C. W. GRETH, Pittsburg, Pa., assignor to Wm. B. Scaife & Sons Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Oct. 22, 1903. Serial No. 178,084.

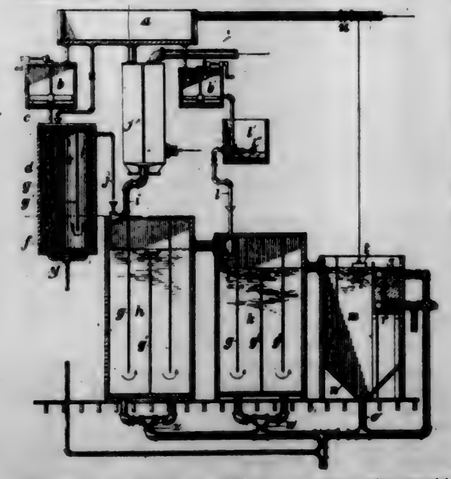

Claim.—1. In water purifying apparatus the combination of a distributing tank, a pair of mixing tanks for chemicals, a hydrate saturating tank, a treatment tank, a chemical tank and a settling tank, each of said tanks being provided with means for causing vertically reverse flow therethrough, and an automatic regulator for the water level in the settling tank.

2. In water purifying apparatus the combination of a lime saturating tank, a lime treatment tank, a soda treatment tank, and a settling and filtering tank, each of said tanks feeding the next by overflow, and having means to cause vertically reverse flow therethrough, and means to introduce the lime and soda into each of the treatment tanks directly in the inflowing stream of water, out of contact with the air, a supply tank for the whole system and means for regulating the supply automatically by the water level in said settling tank, substantially as described.

846,846. RAILWAY-CAR. LOUIE J. HARRIS, New York, N. Y. Filed Aug. 27, 1906. Serial No. 332,279.

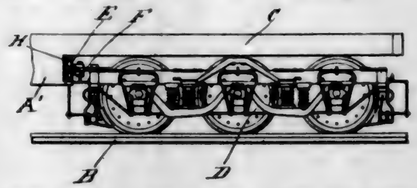

Claim.—1. In a car, a truck, a rigid part extending across the car and lying inwardly or rearwardly of and below the upper face of the truck-frame, to provide a resistance means to the rearward or inward movement of the truck, and intermediate means connected with the car and truck to allow only a limited movement of the truck.

2. In a car having a hangdown, or depending portion of the same, a truck, a rigid part lying inwardly or rearwardly of and below the upper face of the truck-frame, to provide a resistance means to the rearward or inward movement of the truck, and forming a facing for the said hangdown or depending portion, and intermediate means connected with the car and truck to allow only a limited movement of the truck.

3. In a car, a truck, a rigid part lying inwardly or rearwardly of and below the upper face of the truck-frame, to provide a resistance means to the rearward or inward movement of the truck and comprising a resistance device and an auxiliary metal structure, and intermediate means connected with the car and truck to allow only a limited movement of the truck.

4. In a car, a truck, a rigid part extending across the car and lying inwardly or rearwardly of and below the upper face of the truck-frame, to provide a resistance means to the rearward or inward movement of the truck, and intermediate means connected with the car and truck to allow only a limited movement of the truck consisting of a pivoted link mechanism.

5. In a car having a hangdown, or depending portion of the same, a truck, a rigid part lying inwardly or rearwardly of and below the upper face of the truck-frame, to provide a resistance means to the rearward or inward movement of the truck, and forming a facing for the said hangdown or depending portion, and intermediate means connected with the car and truck to allow only a limited movement of the truck consisting of a pivoted link mechanism.

6. In a car, a truck, a rigid part lying inwardly or rearwardly of and below the upper face of the truck-frame, to provide a resistance means to the rearward or inward movement of the truck, and comprising a resistance device and an auxiliary metal structure, and intermediate means connected with the car and truck to allow only a limited movement of the truck consisting of a pivoted link mechanism.

7. In a car, a truck, and a rigid part located a distance away from the truck and lying inwardly or rearwardly of and below the upper face of the truck-frame, and consisting of a metal framework to provide a resistance means to the rearward or inward movement of the truck.

8. In a car, a truck, and a rigid part extending across the car and lying inwardly or rearwardly of and below the upper face of the truck-frame, and consisting of a metal framework to provide a resistance means to the rearward or inward movement of the truck, in combination with a device connected with the car and truck to allow only a limited movement of the truck.

846,847. RAILWAY-CAR. LOUIE J. HARRIS, New York, N. Y. Filed Dec. 29, 1906. Serial No. 349,943.

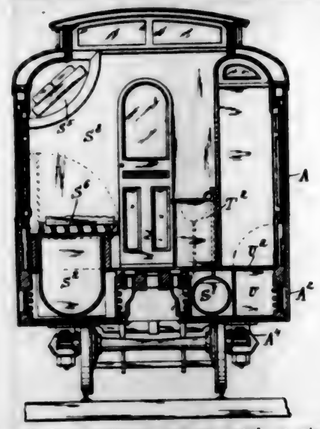

Claim.—1. In a railway car or coach, a storage-compartment located beneath the floor between the trucks, an ice-making plant in the car, a liquid-tank placed in the said storage-compartment, and intermediate connecting-pipes.

2. In a railway car or coach, storage-compartments located beneath the floor between the trucks, an ice-making plant and a laundry apparatus in the car, water-tanks in the said storage-compartments, and intermediate connecting-pipes.

3. In a railway car or coach, a storage-compartment on each side thereof located beneath the floor between the trucks, a bath-tub positioned at one side of the car and extending down into one of the said storage-compartments, a water-tank placed in the other storage-compartment, and intermediate connecting-pipes.

4. In a railway car or coach, a storage-compartment located beneath the floor between the trucks, and a bath-room placed in the car and extending down into the said compartment.

5. In a railway car or coach, a storage-compartment located beneath the floor between the trucks, liquid-dispensing means located in the body of the car, a liquid-tank placed in the storage-compartment, and pipes intermediate the said liquid-dispensing means and the liquid-tank.

6. In a railway car or coach, a storage-compartment extending down beneath the floor, and a boiler located in said compartment and extending up into the car, and a tank connected with the same also located beneath the floor.

7. In a railway car or coach, a storage-compartment located beneath the floor between the trucks, a laundry apparatus in the car, a water-tank placed in the said compartment, and intermediate connecting-pipes.

8. In a railway car or coach, a storage-compartment located beneath the floor between the trucks, a vacuum cleaning device in the car, a tank placed in the said storage-compartment, and intermediate connecting-pipes.

846,848. CABINET. JOHN HERZOG, Saginaw, Mich., assignor to Herzog Art Furniture Co., a Corporation of Michigan. Filed Jan. 23, 1907. Serial No. 353,621.

Claim.—1. A cabinet for phonograph-records comprising a wall, a door mounted to swing toward and away from the wall, and shelves arranged alternately upon the door and the wall.

2. A cabinet comprising a base, a top, a wall erected on the base and supporting the rear portion of the top, a post extending between the front portions of the base and the top, doors mounted to swing between the post and the top, and shelves arranged alternately upon the doors and the wall.

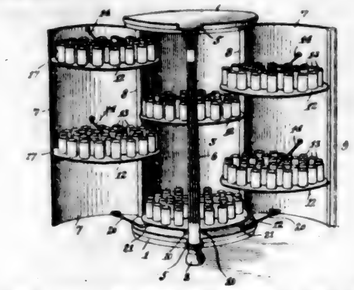

3. In a cabinet, the combination of a wall having a horizontal groove in its inner face, a shelf having its edge seated in said groove, and a bracket having its upper end secured to the wall and its lower end engaging the shelf.

4. In a cabinet, the combination of a crescent-shaped wall having a horizontal groove in its inner face, an oblate shelf having its edge engaged in said groove, and a brace having its upper end secured to the wall and its lower end formed into a hook passing through and engaging the under side of the shelf.

5. The combination of a base, doors mounted pivotally thereon, stops to limit the movement of the doors, links pivoted to the doors and extending inward therefrom, levers pivoted to the inner ends of the said links, and segmental gears at the inner ends of said levers, each of said gears being provided with a double row of teeth, the teeth being arranged alternately.

6. A cabinet comprising a curved wall, curved doors at the ends of the said wall arranged to form a cylinder with the wall, and shelves arranged alternately upon the doors and the wall.

7. A cabinet comprising a circular base having a forward projection, a circular top having a forward projection, a curved wall between the base and top at the rear thereof, a post extending between the forward projections of the top and base, doors mounted to swing between the top and the base and curved to conform to the wall, the doors being arranged to meet behind the post, and shelves arranged alternately upon the doors and the wall.

846,849. SOLUTION OF MERCUROUS OXYCYANID AND DIANISYL-MONOPHENETIDYL-GUANIDIN-CHLORHYDRATE. JACOB G. HIRSCH, Halberstadt, Germany, assignor to Chemische Fabrik von Heyden, Akitengesellschaft, Radebeul, near Dresden, Germany. Filed Aug. 10, 1906. Serial No. 329,957.

Claim.—1. An aqueous solution of 0.5 up to 1.5 per cent. of mercurous oxycyanid and 0.3 up to 1.0 per cent. dianisyl-monophenetidyl-guanidinchlorhydrate containing such a small quantity of an acid as is sufficient to secure a clear state of the solution, substantially as described.

846,850. APPARATUS FOR FEEDING SEPARATE SHEETS OF PAPER TO PRINTING-PRESSES. JAMES W. HOAG, San Francisco, Cal., assignor to The Hoag Rapid Press Company, San Francisco, Cal., a Corporation of California. Filed Jan. 3, 1905. Serial No. 239,476.

Claim.—1. The combination with a reciprocating feed-table and a vacuum-cylinder, means mounted on said table for carrying a paper pile, of a stationary finger adapted to lift the paper pile after the lowermost sheet

has been engaged by said vacuum-cylinder, a jogging-board hinged at its upper edge, a spring mounted on said table adjacent to the lower end of said jogging-board, a rod attached to said jogging-board and extending through said spring and movable thereby, and a stationary projection adapted to engage said board on the return movement of said table.

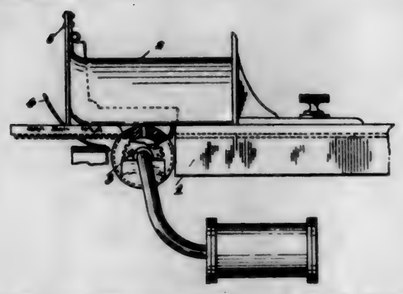

2. In a feed apparatus of the class described, the combination of a reciprocating table adapted to carry a paper pile, a finger adapted to engage said pile and a vacuum-cylinder, with a spring-restrained jogging-board and a stationary projection adapted to engage said jogging-board on the return movement of said table.

3. In a feeding apparatus for a printing-press, the combination of a reciprocating floor on which is supported a pile of sheets of paper, a vacuum-roller for removing a sheet from the pile of paper, means for elevating one edge of the paper pile after the lowermost sheet has been engaged by said vacuum-roller, a hinged jogging-board arranged to engage with and hold elevated the edge of the paper pile, and means for operating said jogging-board, substantially as set forth.

4. In a feeding apparatus for a printing-press, the combination with the reciprocating floor arranged to carry a paper pile, and the vacuum-roller, of a jogging-board, means for holding said jogging-board in normal engagement with the edge of the pile of paper, a stationary member for moving the said board relative to said paper pile, and means for elevating one edge of the paper pile, substantially as set forth.

5. In a feeding apparatus for a printing-press, the combination with the reciprocating floor arranged to carry a paper pile, and the vacuum-roller, of a jogging-board carried by said floor, means for holding the said board in normal engagement with said floor, a stationary member arranged to operate said jogging member to move it out of engagement with the floor, and a finger for elevating one edge of the paper pile after the lowermost sheet has been engaged by the vacuum-roller, substantially as set forth.

6. In a paper-feeding mechanism for printing-presses, the combination of a reciprocating table on which is situated a pile of paper sheets, means for separating from the pile of paper the lowermost sheet, means for elevating one edge of the pile of paper sheets while the separation of the lowermost sheet is taking place, a front jogging-board arranged to hold the sheets with their front edges elevated, and means for moving the said jogging-board to allow the pile of paper sheets to assume its normal position at the moment the paper-sheet-separating means come into operation to take the lowermost sheet, substantially as set forth.

846,851. METAL ALLOY. ARTHUR E. HOBSON, Meriden, Conn., assignor to International Silver Co., a Corporation of New Jersey. Filed Mar. 22, 1906. Serial No. 307,383.

Claim.—1. An alloy composed of copper, nickel, zinc and manganese, the latter to be not more than four per cent. of the whole.

2. An alloy composed of copper, zinc, nickel and manganese, the manganese to be not more than four per cent. and the zinc to be not more than twenty per cent. of the whole.

3. An alloy composed of copper, zinc, nickel and manganese, the manganese to be not more than four per cent., the nickel not more than eighteen per cent., and the zinc not more than twenty per cent. of the whole.

4. An alloy composed of fifty-nine parts copper, twenty parts zinc, eighteen parts nickel, and three parts manganese.

846,852. CARBURETER. GEORGE H. HOLGATE, Philadelphia, Pa. Filed May 8, 1906. Serial No. 315,776.

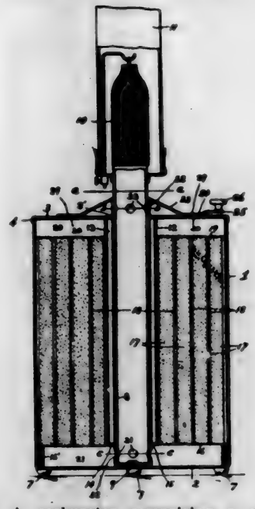

Claim.—1. A carbureter comprising a case, a cover therefor, absorbent material contained within said case, a tube closed at the lower end and open at the upper end, arranged concentrically within the case, and means for securing the lower end of said tube to the bottom of the case whereby said tube is stationary with reference to the case, a tube open at each end, closely fitting said stationary tube, revoluble thereon, a plate resting upon the cover attached to and carried by said revoluble tube, means for imparting a partial revolution thereto, a stationary tube concentric to the said revoluble tube, of a larger diameter, forming an air-space between the two, an inwardly-turned flange at the bottom of said tube, having the edge thereof bearing against the revoluble tube, and openings in the cover and the plate resting thereon, and in the inner stationary tube and the revoluble tube, located below the absorbent material, adapted to be opened or closed simultaneously by the revolution of the movable tube, openings in the inner stationary tube and the revoluble tube located above the bottom of the outer stationary tube, adapted to be opened or closed by imparting revolution to the revoluble tube, said openings being arranged in different register with the first-named openings and adapted to open when the first-named openings are being closed and closed when the first-named openings are opened.

2. A carbureter consisting of a receptacle, absorbent material so arranged as to leave a space below the same, within the receptacle, a stationary tube extending downward through the center of the receptacle, open at its upper end, means for holding this tube stationary, a revoluble tube fitted around the stationary tube and adapted to revolve around the same, ports formed through the walls of both tubes within the space below the absorbent material, ports formed through the walls of both tubes above the receptacle and the first-mentioned ports, both sets of ports adapted to be opened and closed by imparting revolution to the revoluble tube, openings formed through the receptacle, a valve connected with the revoluble tube for opening and closing these port-openings, and means arranged at the upper end of the central tube for inducing an upward flow of the mixed air and gas therethrough.

846,853. ELECTRIC HEATER. JAMES T. HOWELL, Seattle, Wash. Filed May 7, 1906. Serial No. 315,511.

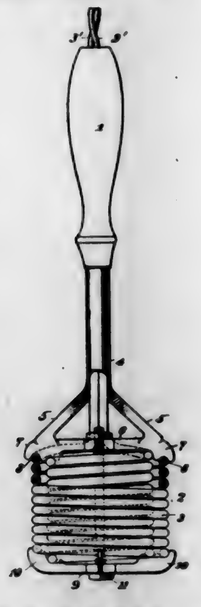

Claim.—1. The method of forming a resistance element which consists in threading a resistance medium through a glass tube, placing the glass tube within a metallic sheathing, and bending the whole into desired form under the influence of heat.

2. The method of forming a resistance element, which consists in threading wire through a glass tube, inclosing the tube in a metallic sheathing, and bending the whole under the influence of heat.

3. The method of forming a resistance element, which consists in threading a resistance-wire through an insulating medium, inclosing the same within a hollow sheathing, and bending the whole to any desired form.

4. A heater comprising a resistance-wire, a vitreous tube surrounding said wire and adapted to seal the same against air and moisture, said tube being inclosed in an outer tube or sheathing of heat-conducting material, the vitreous tube being loosely contained in said outer tube whereby it is not broken by slight bends or strains in the outer tube.

5. A resistance element, comprising a resistance-wire, a metallic tube or sheathing, and an intermediate glass tube.

6. A resistance element, comprising a resistance-wire, a metallic tube or sheathing, and an intermediate glass tube, all bent to any desired form.

7. A heater comprising a resistance element, coiled into a spiral form, a pair of cross-arms for supporting said resistance element, means for connecting said cross-arms, and a handle connected to one of said cross-arms.

8. A heater, comprising a resistance element in the form of a double spiral coil, a pair of cross-arms engaging the respective coils, means for holding said cross-arms in clamping relation upon the coils, and a handle connected to one of said cross arms, the ends of said resistance element being carried by and through said handle.

846,854. SHEARS. LEE A. JONES, Covington, Va. Filed May 10, 1906. Serial No. 316,195

Claim.—1. A pair of shears, embodying blade members, and a connection between them for permitting a combined pivotal and longitudinal movement thereof, of a resilient member operatively connected to the blade members at different distances from the connection, and normally operating to maintain the cutting edges of the blade members in coöperative relation and also to produce a relatively longitudinal movement of the blade members when they are relatively turned.

2. The combination with a pair of blade members one having a fulcrum thereon and the other provided with a longitudinal slot adapted to coöperate with said fulcrum to permit a combined pivotal and longitudinal movement of the blade members, of a resilient member having one end connected pivotally to the outer side of one of the blade members and limited to turn in a given plane and having its opposite end bearing against the inner surface of the other blade member, the spring action of the resilient member normally operating to hold the cutting edges of the blade members in coöperative relation, and the relative location of the points of attachment of the resilient member with the blade members causing a relative longitudinal movement of the blade members during their pivotal movement.

3. The combination with a pair of blade members, one having a pivot thereon and the other provided with a longitudinal slot arranged to coöperate with said pivot to permit relative pivotal movement of the blade members and also a longitudinal movement, of a resilient element having a laterally-turned projection at one end arranged to coöperate with a recess at the inside of one of the blade members, and a pivot arranged on the other blade member and coöperating with the other end of the resilient element for permitting the latter to turn in a given plane only, the spring action of said element operating to hold the cutting edges of the blade members in coöperative relation and the relative location of the points of attachment of said element and the blade members serving to produce a relative longitudinal movement of the blade members during their pivotal movement.

4. A pair of shears comprising a blade having an elongated slot, a blade provided with a perforation, a pivot extending through the perforation and slot and forming a fulcrum for the blades, shanks connected with the blades and provided with grips, and a resilient lever extending from one shank to the other and pivotally connected therewith and disposed with one end on the outer surface of one shank and guided to turn in a given plane only and with the other end pressing on the inner surface of the other shank, the spring action of the said lever operating through the shanks to continuously maintain the cutting edges of the blades in contact.

846,855. TURBINE. HENRY C. KARLSON, Hasbrouck Heights, N. J. Filed Sept. 2, 1903. Serial No. 171,673.

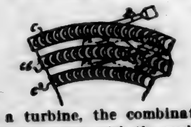

Claim.—1. In a turbine, the combination of a central web for the turbine, buckets with the walls at right angles to said web, extending from each side thereof, collars on the outer ends of the buckets parallel to the central web, conduits adjacent to the inner periphery of the buckets, having outlet-openings of larger area than their inlet-opening, conduits adjacent to the outer periphery of the turbine with outlet-openings greater than their inlet-openings, nozzles located to lead fluids to the buckets, and through the said conduits.

2. In a turbine, the combination of a plurality of concentric rings of buckets at the periphery thereof, means to impinge a propelling fluid against the buckets of one of said rings, conduits connecting the buckets of one ring with a greater number of buckets in the next adjacent ring.

846,856. BOILER-TUBE CLEANER. JAMES F. LAND, Danville, Va. Filed Oct. 8, 1906. Serial No. 338,029.

Claim.—1. In a boiler-flue cleaner, the combination with a stationary tubular casing, having a discharge-aperture at its end, and provided with a steam-inlet, of a hollow nozzle located within said casing and having a part snugly fitting the same and a part adapted to be projected through said discharge-aperture beyond the end of said casing, said projecting part of said nozzle being provided with a discharge-aperture angularly disposed to the axis thereof, and an operating-rod directly and rigidly connected to said nozzle and extending beyond said casing for positively projecting, retracting and rotating said nozzle, substantially as described.

2. In a boiler-flue cleaner, the combination with a stationary tubular casing, having a discharge-aperture at its end, and provided with a steam-inlet, of a hollow nozzle located within said casing and having a part snugly fitting the same and a part adapted to be projected through said discharge-aperture beyond the end of said casing, said projecting part of said nozzle being rounded and provided with a discharge-aperture at its end and with series of apertures extending longitudinally of said nozzle, all of said apertures in said nozzle being angularly disposed to the axis thereof, and an operating-rod directly and rigidly connected to said nozzle and extending outside of said casing for positively projecting, retracting and rotating said nozzle, substantially as described.

3. In a boiler-flue cleaner, the combination with a stationary tubular casing, having a discharge-aperture at its end, and provided with a steam-inlet adjacent to its rear end, of a hollow nozzle located within said casing and having a part intermediate of its ends snugly fitting said casing, the forward portion of said nozzle being of less diameter than that of the interior of said casing and provided with discharge-apertures angularly disposed to the axis thereof, said forward portion of said nozzle being adapted to be projected through said discharge-aperture in said casing, the rearward portion of said nozzle being tapered toward its end and provided with slits therein forming inlet-apertures, and an operating-rod directly and rigidly connected to the rear end of said nozzle and extending outside of said casing for positively projecting, retracting and rotating said nozzle, substantially as described.

4. In a boiler-flue cleaner, the combination with a stationary tubular casing, having a discharge-aperture at its end, and provided with a steam-inlet adjacent to its rear end, of a hollow nozzle located within said casing and having a part intermediate of its ends snugly fitting said casing, the forward portion of said nozzle being of less diameter than that of the interior of said casing and provided with discharge-apertures angularly disposed to the axis thereof, said forward portion of said nozzle being adapted to be projected through said discharge-aperture in said casing, the rearward portion of said nozzle being tapered toward its end and provided with slits therein forming inlet-apertures, an operating-rod directly and rigidly connected to the rear end of said nozzle and projecting through the rear end of said casing for positively projecting, retracting and rotating said nozzle and a gland at the end of said casing surrounding said rod to prevent the escape of steam and to guide said rod, substantially as described.

846,857. PNEUMATIC TOOL. HERMAN LEINEWEBER, South Chicago, Ill., assignor of one-half to W. M. Bayne, Chicago, Ill. Filed Nov. 6, 1906. Serial No. 342,179.

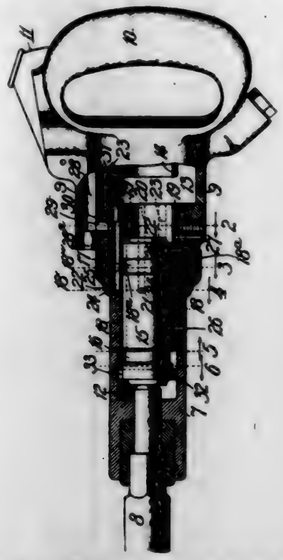

Claim.—1. In a valveless pneumatic tool, the combination of a barrel containing air-chambers in its opposite end portions, an air-pressure-feed passage leading into said barrel and communicating with the supply of actuating air-pressure, air-pressure passages in the barrel-wall leading in opposite directions, respectively, into said chambers, said passages having ports opening into the interior of the barrel and disposed at substantially equal distances apart about the same, and an imperforate reciprocating piston in said barrel working between said chambers and provided near each end with a circumferential pressure-feed groove, with the long section between said grooves of uniform diameter throughout, for the purpose set forth.

2. In a valveless pneumatic tool, the combination of a barrel containing air-chambers in its opposite end portions, an air-pressure-feed passage leading into said barrel and communicating with the supply of actuating air-pressure, air-pressure passages in the barrel-wall leading in opposite directions, respectively, into said chambers, said passages having ports opening into the interior of the barrel and disposed at substantially equal distances apart about the same, and a solid reciprocating piston in the barrel working between said chambers and provided near each end with a circumferential pressure-feed groove, with the long section between said grooves of uniform diameter throughout, for the purpose set forth.

3. In a valveless pneumatic tool, the combination of a barrel containing air-chambers in its opposite end portions, an air-pressure-supply passage in the barrel-wall, pressure-feed passages in said wall leading from said supply-passage to the interior of the barrel, air-pressure passages in said wall communicating with said supply-passages and leading to the forward air-chamber, air-pressure passages in said wall communicating at their inner ends with said supply-passages and leading into the rear air-chamber, ports opening from each set of said air-pressure passages laterally into the interior of the barrel and disposed at substantially equal intervals apart about the same, and a solid reciprocating piston in the barrel working between said chambers and provided near each end with a circumferential pressure-feed groove, with the long section between said grooves of uniform diameter throughout, for the purpose set forth.

4. In a valveless pneumatic tool, the combination of a barrel containing air-chambers in its opposite end portions, an air-pressure-supply passage in the barrel-wall, a pressure-feed groove formed about the interior of said wall and into which said passage leads, pressure-feed passages in said wall communicating with said groove and provided at their inner ends with ports opening laterally into the interior of the barrel at substantially uniform distances apart about the same, air-pressure passages in said wall communicating with said ports and leading to the forward air-chamber, air-pressure passages in said wall having ports at their inner ends at substantially uniform distances apart about the same and leading at their outer ends to the rear air-chamber, and a solid reciprocating piston in the barrel working between said chambers and provided near each end with a circumferential pressure-feed groove, with the long section between said grooves of uniform diameter throughout, for the purpose set forth.

5. In a valveless pneumatic tool, the combination of a barrel containing air-chambers in its opposite end portions, an air-pressure-supply passage in the barrel-wall, a pressure-feed groove formed about the interior of said wall and into which said passage leads, pressure-feed passages in said wall communicating near their outer ends with said groove and provided with ports at varying depths in them leading into the barrel at substantially uniform distances apart about the same, air-pressure passages in said wall having ports near their inner ends at substantially uniform distances apart about the barrel and registering with the outermost of said first-named ports and leading to the forward air-chamber, air-pressure passages in said wall having ports at their inner ends in the plane of the innermost of said first-named ports and at substantially uniform distances apart about the barrel and leading at their outer ends to the rear air-chamber, and a solid reciprocating piston in the barrel working between said chambers and provided near each end with a circumferential pressure-feed groove, with the long section between said grooves of uniform diameter throughout, for the purpose set forth.

846,858. WINDOW. BENJAMIN J. LESLIE, Chicago, Ill. Filed June 5, 1906. Serial No. 320,347.

Claim.—1. A window consisting of a frame, a sash located therein, the upper sash being pivotally mounted and the lower sash being slidably mounted, said frame having at its upper end a horizontally-disposed recess, the upper edge of the upper sash being provided with the horizontally-extending flange adapted to enter the said frame-recess when the sash is closed, the lower edge of said sash being provided with a horizontally-extending flange, the upper edge of the sliding sash being provided with the horizontally-extending flange, the flange upon the lower sash being adapted to lay over the flange at the lower end of the upper sash when the said sash are closed in the frame.

2. A window consisting of a frame having longitudinally-extending recesses, sash mounted in said frame, said sash having at their edges longitudinally-extending recesses, rods movably located in said sash-recesses, and a means attached to said rods for removing the same from the frame-recesses.

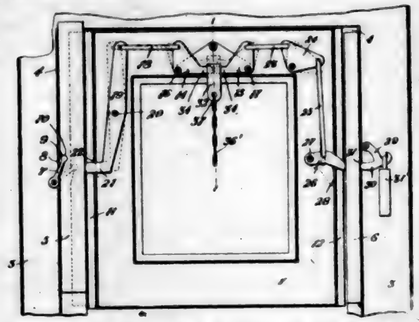

3. A window consisting of a frame having vertically-extending recesses, a sash located in said frame and being provided at its edges with vertically-extending recesses, a rod pivoted at its ends and adapted to swing within the said recesses of the frame and sash, and means for swinging said rod out of one or the other of said recesses.

4. A window consisting of a frame having vertically-extending recesses, a sash located in said frame and having at its edges vertically-extending recesses, rods pivotally mounted at their ends in the frame-recesses and adapted to swing laterally into the sash-recesses, and means for swinging said rods out of said sash-recesses.

5. A window consisting of a frame having vertically-extending recesses, a sash located in said frame and having at its edges vertically-extending recesses, rods located in said recesses and adapted to be moved out of the sash-recesses, and a lever mechanism attached to the sash and operatively connected with said rods for moving them out of said sash-recesses.

6. A window consisting of a frame having vertically-extending recesses, sash located therein and having at its edges vertically-extending recesses, rods adapted to enter the recesses of the sash and the frame when the same are ailned, a lever mechanism attached to the sash and adapted to operate the rods at both of its edges in such manner as to force the said rods out of the sash-recesses when the sash is opened.

7. A window consisting of a frame having vertically-extending recesses, a sash located in said frame and having vertically-extending recesses, rods pivotally mounted in said frame-recesses and adapted to swing into the sash-recesses, a means for forcing said rods into the sash-recesses, and means attached to the sash and adapted to be operated to force the said rods out of said sash-recesses.

8. A window consisting of a frame having vertically-extending recesses, a sash located in said frame and having vertically-extending recesses, rods pivotally mounted in the frame-recesses and adapted to swing into the sash-recesses, a means for normally holding said rods in the sash-recesses, a lever mechanism attached to and carried by the sash and operatively connected with said rods whereby the same may be forced out of the sash-recesses when the same is opened.

9. A window consisting of a frame having vertically-extending recesses, a sash located in said frame and having at its edges vertically-extending recesses, rods positioned in said recesses and when the sash is closed, adapted to extend across the edges of the frame and sash recesses, a means for moving said rods beyond the edges of said recesses consisting of a lever mechanism attached to the sash and being operatively connected with the said rods whereby when the sash is opened the rods are forced beyond the edges of one or the other of said recesses.

10. A window consisting of a frame having vertically-extending recesses, a sash pivotally mounted in said frame and having at its edges vertically-extending recesses, rods retained within the sash-recesses and adapted to enter the frame-recesses and means carried by the sash for withdrawing the rods from the frame-recesses.

11. A window consisting of a frame having vertical recesses, a sash pivoted to the frame and having vertical recesses, rods retained within the sash-recesses and adapted to enter the frame-recesses, arms pivotally supporting said rods in parallel relation, said rods adapted to enter the frame-recesses, and means carried by the sash for withdrawing the rods from the frame-recesses.

12. A window consisting of a frame having vertical recesses, a sash having vertical recesses and being pivoted to the frame, rods retained within the sash-recesses and adapted to enter the frame-recesses, means for withdrawing the rods from the frame-recesses consisting of link connections attached at their outer ends to said rods, and a means for exerting a pull upon the inner ends of said connections.

846,859. FILTER. MARK G. MELVIN, Scranton, Pa., assignor of one-fourth to Thomas L. Alexander, Scranton, Pa. Filed May 15, 1906. Serial No. 316,952.

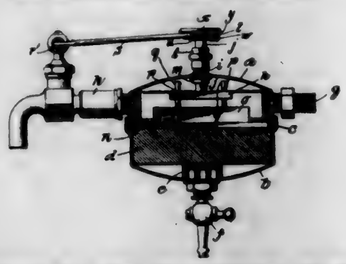

Claim.—1. In a filter, the combination with the shell having a filtering medium therein, of a cleaning-faucet, a rotary cleaner in contact with the filtering medium, and means connecting the cleaning-faucet and the cleaner and transmitting movement from the faucet to the cleaner to rotate the cleaner in one direction only.

2. In a filter, the combination with the shell having a filtering medium therein, of a cleaning-faucet, a cleaner in contact with the filtering medium, and means connecting the cleaning-faucet and the cleaner and transmitting movement from the faucet to the cleaner when the faucet is turned in one direction only.

3. In a filter, the combination with the shell having a filtering medium therein, of a cleaning-faucet, a cleaning mechanism in contact with the filtering medium, means connecting the faucet with the cleaning mechanism, and a pawl-and-ratchet mechanism in said means.

4. In a filter, the combination of a shell, a filtering medium in said shell, a rotary cleaner in contact with the filtering medium, a rotary shaft projecting outside of the shell and held from axial movement therein, means connecting the shaft and the cleaner, a cleaning-faucet having a handle, and means connecting the handle and the shaft to transmit movement from the faucet to the shaft and cleaner.

846,860. BINDER. NELS F. MOGLAND, Chicago, Ill., assignor to Jones Improved Loose Leaf Specialty Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 28, 1906. Serial No. 345,447.

Claim.—1. In a binder, the combination with a cover-section and a hollow clamping-bar, of binding material applied to and flexibly connecting the cover-section and clamping-bar, a portion of the binding material being folded into the end of the bar, and an end plug for the clamping-bar having a reduced portion entering the end of the bar and securing the binding thereat, for the purpose set forth.

2. In a binder, the combination with a cover-section and a hollow clamping-bar, of flexible binding material applied to the outer surface of the cover-section and the outer external surface of the clamping-bar and having a flap folded inwardly over the edge of the cover-section and over the end of the bar and having a flap folded forwardly over the rear edge of the bar, and an end plug having a shank entering said bar, the binding material adjacent to the shank of said plug being forced into said bar, for the purpose set forth.

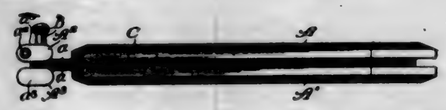

3. In a binder, the combination with a cover-section and a hollow clamping-bar, of binding material applied to the outer surface of the cover-section and the outer external surface of the clamping-bar and having a flap folded inwardly over the edge of the cover-section and over the end of said bar and having also a flap folded forwardly over the rear edge of the clamping-bar, said flaps being cemented on the inner surface of the cover-section and the inner external surface of the clamping-bar, and a plug having a flanged head of substantially the same cross-sectional area as the covered bar and having a shank entered in the bar, the binding material being bent inwardly adjacent to said shank and confined between the shank and the interior surface of the bar, for the purpose set forth.

4. In a binder, the combination with a cover-section and a tubular bar, of flexible binding material applied to the external surface of the cover-section and the outer external surface of the clamping-bar and having a flap folded inwardly over the edge of the cover-section and over the end of the bar, the portion of said material covering the end of the bar having a slit therein, said binding material also having a flap folded inwardly over the rear edge of the bar, a strip of binding material applied to the inner surface of the cover-section and the inner external surface of the clamping-bar and overlapping said flaps, an end plug having a shank entered in said bar, the binding material being forced inwardly thereat and confined between said shank and the interior surface of the bar, and a brad struck inwardly from the metal of the bar and engaging said shank, for the purpose set forth.

846,861. COMPOSITION FOR COATING MEAT. CHARLES E. PERRY and LOUIS BOSSING, Marion, and CHARLES A. FARMER, Columbus, Ohio. Filed Mar. 16, 1906. Serial No. 306,395.

Claim.—A composition for coating meats, comprising the following ingredients and in the proportions stated, viz: pure cider vinegar, one gallon; cayenne pepper, six ounces; fine salt, four ounces; oil of cinnamon, one dram; and oil of allspice, one dram; substantially as described.

846,862. METALLIC RAILWAY-TIE. EDWARD C. POTTER, Chicago, Ill. Filed Nov. 24, 1906. Serial No. 344,810.

Claim.—1. A cast-metal railway-tie comprising a top formed with relatively expanded end portions and a relatively narrower central portion, and a longitudinal base-web formed with relatively shallow end portions and a relatively deeper central portion and of a cross-sectional width approximating the reduced portion of the top of the tie, for the purpose set forth.

2. A cast-metal railway-tie comprising a top formed with relatively expanded end portions, containing slots, and a relatively narrower central portion, and a longitudinal base-web formed with relatively shallow end portions and a relatively deeper central portion increasing in depth toward the transverse center of the tie and of a cross-sectional width approximating the reduced portion of the top of the tie.

846,862.

846,863. SWITCH. JOSEPH C. RAY, Selmer, Tenn., assignor of one-half to D. E. Carter and J. A. Moore, Selmer, Tenn. Filed Nov. 21, 1905. Serial No. 288,452.

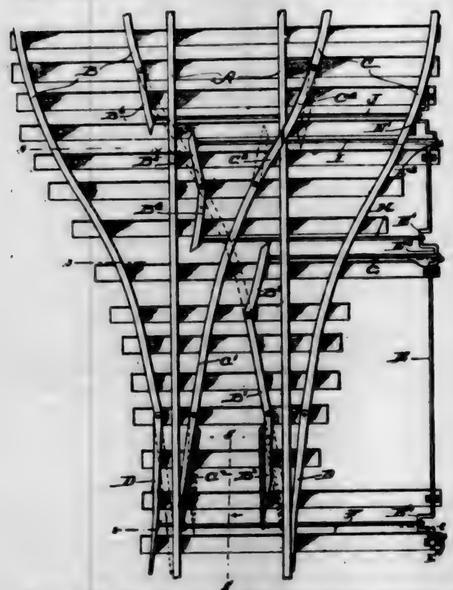

Claim.—The combination with through-track rails, a siding on each side of the track-rails, a crossover-rail leading to one siding and having a pivoted movable end portion adjacent a track-rail, a pivoted crossover leading to the other siding and between the first-mentioned crossover-rail and the track-rail last mentioned, movable crossover-rails pivoted at their meeting ends and between the first-mentioned crossover-rail and the remaining through-rail, and leading to the second siding, and common means for simultaneously bringing into alinement the pivoted crossover-rails leading to the second siding and opening the switch leading to the first-mentioned siding.

846,864. LIVE-FISH HOLDER. CHARLES J. REMSBURG, Lewistown, Md. Filed Jan. 5, 1907. Serial No. 351,024.

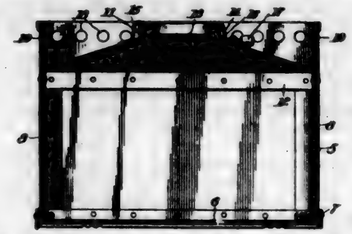

Claim.—1. A holder for live fish having a perforated top permanently secured below the upper edge of the holder, the sides above said top having openings, the said top having an opening to afford access to the interior of the holder.

2. A holder for live fish, having openings near the upper edge thereof, and having a dome-shaped perforated top secured within the sides of the holder, the upper portion of said top being substantially in the plane of the upper edge of the sides of the holder.

3. A holder for live fish having a perforated top supported entirely within the area bounded by the upper edge of the holder and having a flanged central opening, and a cover having perforations fitting within the flanged opening, the sides of the holder above the top having openings for access of air.

4. A rectangular holder for live fish having vertical curved pieces in its corners, and a perforated top having its upper portions substantially in the plane of the upper edges of the sides of the holder, openings being formed in the sides of the holder above the perforated top.

5. A holder for live fish having a perforated top below the upper edge of the holder, the sides above said top having openings, and means for preventing relative lateral movements of two of such holders when one is superimposed upon the other.

846,865. BROODER. WALTER H. ROGERS, Lebanon, Tenn. Filed May 17, 1906. Serial No. 317,308.

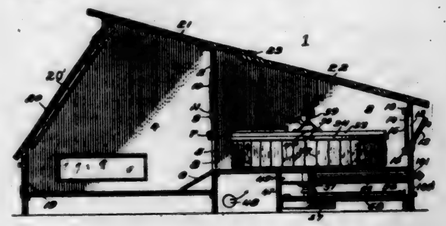

Claim.—1. The combination of the brooder, a support therein, a rod adjustably mounted in said support, a hoverer secured to the lower end of said rod, a damper in the hoverer, a deflector below the said damper, and a heating-drum below the said deflector.

2. The combination of the brooder, a support therein, a hoverer carried by said support, a damper in the top of the hoverer, a deflector below the said damper provided with perforations, and a heating-drum below the said deflector.

3. The combination with the brooder-chamber, of a hoverer adjustably supported therein and having a depending rim, and a blanket adjustably supported on said rim.

4. The combination of the heating-drum having an open upper end, a hover-board above the said drum, and a blanket having its central portion held by said drum and its outer portion adjustably supported by the hover-board.

5. The combination of the hover-board, a heating-drum arranged centrally below the same and having an open top, a rim depending from the edge of the hover-board and having an annular groove, a blanket having its central portion supported by the drum and its outer portion doubled in the annular groove in the rim, and a clamping-ring within the bight of the blanket and fitting in the groove of the rim.

6. The combination of the floor, a partition below the same having an upstanding collar, a drum having its lower end removably fitted over said collar, and a flue leading from the side of the drum between the floor and the partition to the outer air.

7. The combination of the floor, a vertical partition below the same having an opening in its upper portion, a horizontal partition supported by said vertical partition below said opening, a drum removably supported on said horizontal partition, and a flue leading from the side of the drum between the floor and horizontal partition to the outer air.

846,866. DEVICE FOR KEEPING VEHICLE-BOXES FROM ROCKING. CHARLES SALLOWS, Cordova, Ill. Filed Jan. 5, 1906. Serial No. 294,802.

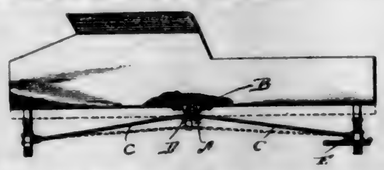

Claim.—The combination with an apertured bar adapted to be secured to the bottom of a buggy, having a central box-loop provided with an opening in alinement with an opening in the bar, a pivoted pin mounted in said openings, a lever mounted on said pin in said box provided with apertured ends, bolts pivotally mounted in the aperture in the end of the lever provided with bifurcated ends, the walls of which are apertured, pintle-pins mounted in said apertures, plates secured to the front and rear axle provided with apertured ears having pins arranged therein, and rods provided with eyes at their ends mounted on said pins, and the pins of the bifurcated bolts, for the purpose described.

846,867. LUBRICATING DEVICE. WALTER SCOTT, Plainfield, N. J. Filed June 23, 1905. Serial No. 266,579.

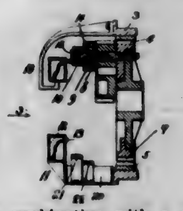

Claim.—1. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member to engage with the end slots, a source of supply of lubricant carried by the reciprocating bed, and means for lubricating the spindle aforesaid from the said source of supply.

2. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the end slots, a source of supply of lubricant carried by the reciprocating bed, and a duct in the spindle adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals.

3. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, and a plurality of ducts jn the spindle adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals.

4. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, and a plurality of ducts in the spindle converging at a common point adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals.

5. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying two rolls, a source of supply of lubricant carried by the reciprocating bed, and a plurality of ducts in the spindle adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals.

6. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying two rolls, a source of supply of lubricant carried by the reciprocating bed, and a plurality of ducts in the said spindle converging at a common point adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals.

7. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, and means for lubricating the said spindle from the said source of supply once to every complete movement of the reciprocating bed.

8. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, and a duct in the spindle adapted to coincide with the source of supply of lubricant on the reciprocating bed once to every complete movement of the reciprocating bed.

9. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, two sources of supply of lubricant carried by the reciprocating bed, and means for lubricating the spindle from the said sources of supply on the reciprocating bed at stated intervals.

10. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, two sources of supply of lubricant carried by the reciprocating bed, and a duct in the spindle adapted to alternately coincide with the said sources of supply.

11. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, and means for

lubricating said spindle once to every three revolutions of the gear.

12. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, and a duct in the spindle adapted to coincide with the said source of supply once to every three revolutions of the gear.

13. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member to engage with the said slots, a source of supply of lubricant, means for automatically lubricating the spindle aforesaid from the said source of supply, and means for lubricating the surface of the roll simultaneously therewith.

14. The combination with a reciprocating bed having two racks, and ends slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the end slots, a source of supply of lubricant, a duct in the spindle adapted to coincide with the source of supply of lubricant at stated intervals, and means for lubricating the surface of the roll simultaneously therewith.

15. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant, a plurality of ducts in the spindle adapted to coincide with the source of supply of lubricant at stated intervals, and means for lubricating the surface of the roll simultaneously therewith.

16. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member to engage with the end slots, a source of supply of lubricant carried by the reciprocating bed, means for lubricating the spindle aforesaid from the said source of supply, and means for lubricating the surface of the roll simultaneously therewith.

17. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the end slots, a source of supply of lubricant carried by the reciprocating bed, a duct in the spindle adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals, and means for lubricating the surface of the roll simultaneously therewith.

18. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, a plurality of ducts in the spindle adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals, and means for lubricating the surface of the roll simultaneously therewith.

19. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying two rolls, a source of supply of lubricant carried by the reciprocating bed, a plurality of ducts in the spindle adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals, and means for lubricating the surfaces of the rolls simultaneously therewith.

20. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying two rolls, a source of supply of lubricant carried by the reciprocating bed, a plurality of ducts in the said spindle converging at a common point adapted to coincide with the source of supply of lubricant on the reciprocating bed at stated intervals, and means for lubricating the surfaces of the rolls simultaneously therewith.

21. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant, means for lubricating the said spindle from the said source of supply once to every complete movement of the reciprocating bed, and means for lubricating the surface of the roll simultaneously therewith.

22. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, means for lubricating the said spindle from the said source of supply once to every complete movement of the reciprocating bed, and means for lubricating the surface of the roll simultaneously therewith.

23. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, a duct in the spindle adapted to coincide with the source of supply of lubricant on the reciprocating bed once to every complete movement of the reciprocating bed, and means for lubricating the surface of the roll simultaneously therewith.

24. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, two sources of supply of lubricant carried by the reciprocating bed, means for lubricating the spindle from the said sources of supply on the reciprocating bed at stated intervals, and means for lubricating the surface of the roll simultaneously therewith.

25. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, two sources of supply of lubricant carried by the reciprocating bed, a duct in the spindle adapted to alternately coincide with the said sources of supply, and means for lubricating the surface of the roll simultaneously therewith.

26. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, means for lubricating said spindle once to every three revolutions of the gear, and means for lubricating the surface of the roll simultaneously therewith.

27. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a spindle moving with said gear carrying a roll or other member adapted to engage with the slots, a source of supply of lubricant carried by the reciprocating bed, a duct in the spindle adapted to coincide with the said source of supply once to every three revolutions of the gear, and means for lubricating the surface of the roll simultaneously therewith.

28. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a roll moving with said gear adapted to engage with the slots, and means for lubricating the surfaces of the said roll having frictional contact under tension with the same so

as to lubricate a considerable portion of the surface thereof.

29. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, two frictional rolls moving with said gear adapted to engage with the slots, and means for lubricating the surfaces of said rolls having frictional contact under tension with the same so as to lubricate a considerable portion of the surface thereof.

30. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage with said racks to reciprocate the bed, a friction-roll moving with said gear, a trough mounted on the bed for the reception of the lubricant, a wick supported by a spring located in said trough against which the friction-roll is adapted to come in contact when it passes the point at which the trough is located.

31. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a roll or other member moving with said gear adapted to engage with the slots, and means located on the reciprocating bed for automatically lubricating the surface of the roll.

32. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a roll moving with said gear adapted to engage with the slots, and means located on the reciprocating bed for automatically lubricating the surface of the said roll while it is out of engagement with the said slots.

33. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage with said racks to reciprocate the bed, two friction-rolls moving with said gear and adapted to engage with the end slots, and means located on the reciprocating bed for automatically lubricating the surfaces of said rolls.

34. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage with said racks to reciprocate the bed, two friction-rolls moving with said gear and adapted to engage with the end slots, and means located on the reciprocating bed for automatically lubricating the surfaces of said rolls while they are out of engagement with the said slots.

35. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a roll moving with said gear adapted to engage with the slots, and means located on the reciprocating bed for lubricating the surfaces of the said roll having frictional contact under tension with the same so as to lubricate a considerable portion of the surface thereof.

36. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, two friction-rolls moving with said gear adapted to engage with the slots, and means located on the reciprocating bed for lubricating the surfaces of said rolls having frictional contact under tension with the same so as to lubricate a considerable portion of the surface thereof.

37. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a roll moving with said gear adapted to engage with said slots, and means located on the reciprocating bed for lubricating the said slots by applying a lubricant to the roll.

38. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, two friction-rolls moving with said gear adapted to engage with said slots, and means located on the reciprocating bed for lubricating the said slots by applying a lubricant to the rolls.

39. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a roll moving with said gear adapted to engage with said slots, and means located on the reciprocating bed for lubricating the said slots by applying a lubricant to the roll once to each complete movement of the bed.

40. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, two friction-rolls moving with said gear adapted to engage with said slots, and means located on the reciprocating bed for lubricating the said slots by applying a lubricant to the rolls once to each complete movement of the bed.

41. The combination with a reciprocating bed having two racks and end slots, of a rotatable gear adapted to alternately engage said racks to reciprocate the bed, a roll moving with said gear adapted to engage with said slots, and means located on the reciprocating bed for lubricating the said slots by applying a lubricant to the roll once to every three revolutions of the gear.

846,868. SHEARS. RUDOLPH SEVIC, Chicago, Ill. Filed Apr. 17, 1906. Serial No. 312,113.

Claim.—1. In a pair of shears, the combination with the blades, of a bolt passing freely through both of the blades at their fulcrum and having rocking engagement with one blade, a nut on the bolt operating by its turning in opposite directions to tighten and loosen the blades relative to each other, and means mounted relative to the nut and bolt operating to resist too ready turning of the nut in either direction on the bolt, for the purpose set forth.

2. In a pair of shears, the combination with the blades, of a bolt passing freely through both of the blades at their fulcrum and having rocking engagement with one blade, a nut on the bolt operating by its turning in opposite directions to tighten and loosen the blades relative to each other, and means operating to resist too ready turning of the nut in either direction on the bolt, comprising a ratchet carried by one of said blades and a pawl for engaging the ratchet during the turning of the nut in either direction.

3. In a pair of shears, the combination with the blades, of a bolt passing freely through both of the blades at their fulcrum and having rocking engagement with one blade, a nut on the bolt operating by its turning in opposite direction to tighten and loosen the blades relative to each other, and means for resisting too ready turning of the nut in either direction on the bolt, comprising a ratchet carried by one of said blades and a spring-pressed plunger-pawl passing through the nut for engaging the ratchet during the turning of the nut in either direction.

4. In a pair of shears, the combination with the blades, of a sleeve passing freely through both of the blades at their fulcrum and having rocking engagement with one blade, a bolt slidable through the sleeve and confined against independent rotation with relation to said sleeve and having a head bearing against the pivoted blade, a nut on the bolt operating by its turning in opposite directions to tighten and loosen the blades relative to each other, and means for resisting too ready turning of the nut in either direction, comprising a ratchet on the sleeve and a pawl on said nut for engaging said ratchet during the turning of said nut in either direction.

5. The combination, in a pair of shears, of a sleeve fastened to one blade and forming the pivot for the other blade, a disk on one end of the sleeve provided with a ratchet-face, a bolt passing through the sleeve and provided at its headed end with an annular recess for receiving the adjacent end of the sleeve, and near its opposite end with a longitudinal groove, a pin on the inner surface of said sleeve for engaging the groove in the bolt, a nut on the bolt and a spring-pressed plunger-pawl passing through the nut for engaging the ratchet, whereby the blades may be tightened or loosened by turning of the nut, and adjustment maintained by engagement of the pawl and ratchet.

846,869. TREE-FELLING MACHINE. ASA V. SNOW, Worcester, Mass. Filed Mar. 17, 1906. Serial No. 306,569.

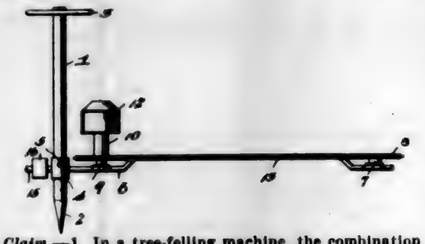

Claim.—1. In a tree-felling machine, the combination of an upright, a support vertically movable on the upright, an endless or chain saw carried by the said support, means for operating the saw, and a counterbalancing-weight secured to the support on the opposite side of the upright from the saw and remaining mechanism.

2. In a tree-felling machine, the combination of an upright having a pointed end, a support movably held by the upright, an endless or chain saw disposed on the support, the latter having a portion thereof extending longitudinally between the parallel portions of the saw and in the same plane as the latter to form a guide, mechanism for operating the saw, and a counterbalancing-weight engaging a part of the support on the opposite side of the upright from the saw and remaining mechanism, the upright forming a pivotal means for the remaining mechanism.

846,870. BORING-MACHINE. CARL SOMERS, Fairmont, W. Va. Filed Mar. 22, 1906. Serial No. 307,496.

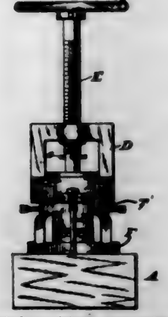

Claim.—In a metal-working apparatus, a base having an apertured bottom, upwardly-extending arms on the base, a ring carried by the arms, a platform in which the base is supported, means for clamping an object in the ring, a head engaging the ring, means engaging the platform and head for holding the head to the ring and for holding the ring and base to the platform, a threaded yoke carried by the head, a feed-screw threaded in the yoke, a stem on the feed-screw and cutter-blades carried by the stem.

846,871. METAL-WORKING MACHINE. FRANCIS M. STAMBAUGH, St. Louis, Mo., assignor to The American Brake Company, St. Louis, Mo., a Corporation of Missouri. Filed Nov. 9, 1905. Serial No. 286,563.

Claim.—1. In a machine of the class described, a work-table, mechanism for imparting an intermittent movement to said table, a plurality of tools carried by members which are arranged adjacent to the table, means coöperating with each tool-carrying member for actuating the same to bring the tool into and out of engagement with the work on the work-table, devices for causing each of said means to become operative, air-controlled apparatus for moving said devices in one direction, whereby the tools are caused to move into engagement with the work, conduits for supplying compressed air to said apparatus, valves for controlling the passage of air through said conduits, a plurality of devices on the work-table for actuating said valves intermittently, and means on the tool-carrying members for actuating said devices in the opposite directions whereby the tools are moved out of engagement with the work; substantially as described.

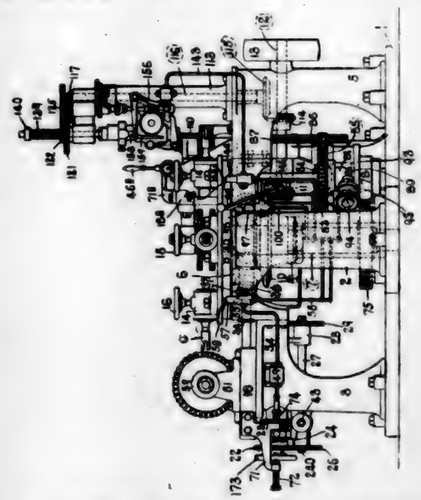

2. In a machine of the class described, a work-table supported by a rotatable shaft provided with a gear, a gear coöperating with the gear on the table-shaft and provided with a clutch-block, a continuously-rotating gear provided with a coöperating clutch-block, yielding means for forcing said clutch-blocks into engagement with each other, positively-actuated means for disengaging said clutch-blocks for permitting the table to come to rest, and air-controlled apparatus for moving said means into an inoperative position to permit said clutch-blocks to reëngage for causing movement to be imparted to the table; substantially as described.

3. In a machine of the class described, a work-table mounted on a rotatable shaft provided with a gear, a coöperating gear meshing therewith and provided with a movable clutch-block, a continuously-rotating gear having a coöperating clutch-block, a plunger for holding said clutch-blocks disengaged, air-controlled apparatus for actuating said plunger to permit the clutch-blocks to move into engagement with each other for imparting rotary movement to the table-carrying shaft, and cam-operated means for moving said plunger into engagement with the movable clutch-block after the table has been moved for a certain distance thereby causing said clutch-block to move into an inoperative position and cause the table to come to rest; substantially as described.

4. In a machine of the class described, a work-table carried by a rotatable shaft provided with a gear having a plurality of sets of teeth, a partially-toothed gear coöperating therewith, a block connected to said last-named gear and provided with a cam-groove, a movable clutch-block carried by said gear, a continuously-rotating gear provided with a coöperating clutch-block, a plunger mounted in a stationary support and adapted to engage the movable clutch-block for holding it normally in an inoperative po-

sition, air-controlled apparatus for causing said plunger to be moved out of engagement with said movable clutch-block, a starting-lever for actuating said air-controlled apparatus, a connection between the plunger and the cam-groove in said block whereby said plunger is moved into engagement with the movable clutch-block after the work-table has moved for a certain distance, and means for locking said table; substantially as described.

5. In a machine of the class described, a work-table carried by a rotatable shaft provided with a gear, a gear cooperating therewith and provided with a movable clutch-block, a continuously-rotating gear having a coöperating clutch-block, a device for holding the movable clutch-block in an inoperative position, air-controlled apparatus for actuating said device to permit the clutch-block to move into engagement with the block carried by the continuously-rotating gear whereby movement is imparted to the table-carrying shaft, means for locking the table, a starting-lever for simultaneously actuating the air-controlled apparatus and unlocking the table, and automatic means for moving the device into engagement with the movable clutch-block after the table has moved for a certain distance; substantially as described.

6. In a machine of the class described, a rotatable work-table, a slide carrying a tool for operating upon work carried by the table, a screw-shaft for imparting a reciprocating movement to said slide, gears loosely mounted on said shaft and rotating continuously in opposite directions, a clutch splined to said shaft and movable into and out of engagement with said gears for causing the shaft to be rotated in opposite directions, a shifting-lever connected to said clutch, a piston provided with means for engaging said shifting-lever, a valve-casing located adjacent to the work-table and having connected thereto a pipe for supplying compressed air and a pipe for conducting the air to said piston, and a valve mounted in said casing and provided with a stem projecting into position to be engaged by said work-table whereby said valve is actuated automatically to permit the compressed air to pass from the supply-pipe into the conducting-pipe; substantially as described.

7. In a machine of the class described, a work-table mounted on a rotatable shaft, mechanism for imparting an intermittent movement to said table, air-controlled apparatus for causing said mechanism to become operative, a plurality of tool-carrying slides mounted adjacent to said table, screw-shafts for imparting reciprocating movement to said slides, a plurality of gears loosely mounted on each screw-shaft and rotating in opposite directions, a continuously-rotating gear loosely mounted on the table-carrying shaft, connections between said gear and the gears on the screw-shafts for actuating said gears, a clutch splined to each screw-shaft between the gears thereon, and means for moving said clutches automatically into and out of engagement with said gears for actuating the screw-shafts to move the slides first in one direction and then in an opposite direction; substantially as described.

8. In a machine of the class described, a table for carrying work, a tool-carrying slide, a screw-shaft for actuating said slide, gears loosely mounted on said shaft and rotating in opposite directions, a clutch splined to said shaft between said gears, a shifting-lever connected to said clutch, air-controlled apparatus for shifting said lever in one direction to cause said clutch to engage with one of the gears whereby the screw-shaft will be actuated for moving the slide toward the work-table, means carried by said slide for shifting said lever into engagement with the other gear as the slide reaches its inward position, thereby causing the screw-shaft to be rotated in the opposite direction for moving the slide outwardly, and means carried by said slide for actuating said shifting-lever to cause the clutch to be moved midway of said gears as said slide reaches its outward position; substantially as described.

9. A machine of the class described, comprising an intermittently-actuated work-carrying member, a plurality of tools arranged adjacent said work-carrying member, mechanism coöperating with each tool for moving it toward and from the work-carrying member, devices for controlling said mechanism, a plurality of valve-casings arranged adjacent the work-carrying member, connections leading from said valve-casings to pistons which actuate said devices, valve-stems projecting outwardly from said valve-casings, devices on the work-carrying member for actuating said valve-stems automatically whereby the said pistons will be supplied with compressed air for actuating said devices in one direction to cause the tools to be moved toward the work-table, and independent means for actuating said devices in the opposite direction to cause the tools to return to normal position; substantially as described.

846,872. CHURN. DANIEL L. STEWART, New Vineyard, Me. Filed July 9, 1906. Serial No. 325,406.

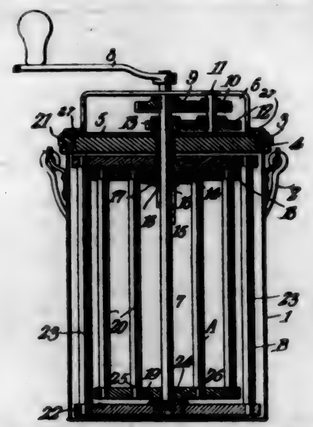

Claim.—1. A churn having a scraper, a main shaft detachably connected with said scraper, a dasher mounted for rotation upon said shaft and located within said scraper, a key-plate mounted upon said dasher, and a dasher-sleeve having a slotted lower end engaged by the key-plate of said dasher and capable of rotation upon said main shaft.

2. A churn comprising a churn-body having a plain, flat bottom, a cover having a rabbeted portion to fit the upper end of said churn-body, a base-plate extending across said cover, a yoke mounted upon said base-plate, a main shaft extending through said yoke and base-plate and having a threaded lower end, a large gear-wheel fixed upon said main shaft, a supplemental shaft journaled in said yoke and base-plate and having a small gear-wheel meshing with the large gear-wheel on the main shaft, a large gear-wheel fixed on the supplemental shaft, a dasher-sleeve surrounding the main shaft and having a small gear-wheel meshing with the large gear-wheel on the supplemental shaft, said dasher-sleeve having slots in its lower end, a scraper having a socket to receive the threaded end of the main shaft, a dasher journaled upon said main shaft within said scraper, and a key-plate mounted upon said dasher and having keys engaging the slots of said dasher-sleeve.

846,873. REFRIGERATOR. EBER C. STRAYER, Cresco, Iowa. Filed Sept. 5, 1906. Serial No. 333,387.

Claim.—A refrigerator comprising a body containing an ice-compartment and having a front opening and also having vertical flanges at opposite sides of said opening, a main door controlling the opening, a vertically-sliding door having grooves receiving the flanges of the body and arranged in one position to close the ice-compartment, hangers arranged in the ice-compartment and connected at their upper ends to the body, guides, of an angular form in cross-section, arranged on and connected to said hangers and having stops at their inner ends, brace-bars connected to the hangers and fixed to the rear and front walls of the body, a drip-pan arranged below and connected to

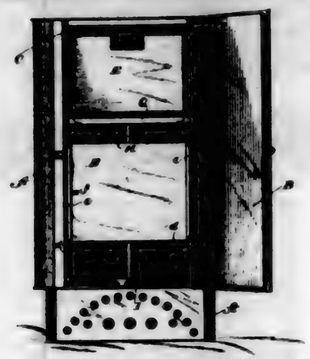

the hangers and brace-bars and having a discharge-pipe, and an ice-receptacle removably arranged in the ice-compartment and on and between the said angular guides.

846,874. PUMP-PACKING. CHARLES W. SWAN, Bolton, Kans. Filed Jan. 19, 1905. Serial No. 241,794.

Claim.—1. In a pump, the combination with the working valve or piston, of a series of packing-rings of plastic and non-plastic metal alternately arranged and mounted to slide on the valve or piston and means for limiting the sliding movement of the rings.

2. In a pump, the combination with the working valve or piston, of a series of packing-rings of plastic and non-plastic material alternately arranged and mounted to slide on the valve or piston, the plastic rings having flaring or bell mouths and the non-plastic rings having tapered ends, and means for limiting the sliding movement of the rings.

3. In a pump, the combination with the working valve or piston of an extension secured thereto, provided at one end with a shoulder and with a removable abutment at the other end, a series of packing-rings carried on the extension and adapted to slide thereon, the combined thickness of the series of rings being less than the distance between the shoulder and the abutment the shoulder and abutment serving to limit the movement of the packing-rings.

4. In a pump, the combination with the working valve or piston, of an extension secured thereto, provided at one end with a shoulder and with a removable abutment at the other end, a series of packing-rings carried on the extension and adapted to slide thereon the combined thickness of the series of rings being less than the distance between the shoulder and the abutment, comprising alternately-arranged rings of plastic and non-plastic material, the shoulder and abutment serving to limit the movement of the packing-rings.

5. In a pump, the combination with the working valve or piston, of an extension secured thereto, provided at one end with a shoulder and with a removable abutment at the other end, a series of packing-rings carried on the extension and adapted to slide thereon, comprising alternately-arranged rings of plastic and non-plastic material, the rings of plastic material having flaring or bell mouths and the rings of non-plastic material having tapered ends, the shoulder and abutment serving to limit the movement of the packing-rings.

6. In a pump, the combination with the working valve or piston provided with an extension having a tapered shoulder at one end and a removable ring having a square end at the other end, of a series of packing-rings between the shoulder and removable ring mounted to slide on the extension, the combined thickness of the series of rings being less than the distance between the shoulder and the abutment, the sliding movement of the rings being limited by the shoulder and removable ring.

7. In a pump the combination with the working valve or piston provided with an extension having a tapered shoulder at one end and a removable ring having a square end at the other end, of a series of packing-rings between the shoulder and removable ring mounted to slide on the extension, the combined thickness of the series of rings being less than the distance between the shoulder and the abutment, comprising alternately-arranged rings of plastic and non-plastic material, the sliding movement of the rings being limited by the shoulder and removable ring.

8. In a pump, the combination with the working valve or piston provided with an extension having a tapered shoulder at one end and a removable ring having a square end at the other end, of a series of packing-rings between the shoulder and removable ring mounted to slide on the extension, comprising alternately-arranged rings of plastic and non-plastic material, the end rings of the series being of plastic material, the sliding movement of the rings being limited by the shoulder and removable ring.

9. In a pump, the combination with the working valve or piston provided with an extension having a tapered shoulder at one end and a removable ring having a square end at the other end, of a series of packing-rings between the shoulder and removable ring mounted to slide on the extension, comprising alternately-arranged rings of plastic and non-plastic material, the plastic rings having flaring or bell mouths and the non-plastic rings having tapered ends, the sliding movement of the rings being limited by the shoulder and removable ring.

10. In a pump, the combination with the working valve or piston provided with an extension having a tapered shoulder at one end and a removable ring having a square end at the other end, of a series of packing-rings between the shoulder and removable ring mounted to slide on the extension, comprising alternately-arranged rings of plastic and non-plastic material, the plastic rings having flaring or bell mouths and the non-plastic rings having tapered ends, the end rings of the series being of plastic material, the sliding movement of the rings being limited by the shoulder and removable ring.

11. In a pump, the combination with the working valve or piston, of a pair of packing-rings, one of plastic metal and the other of non-plastic metal, carried by the valve or piston movable relative thereto and so arranged that the impact of the valve or piston upon the rings causes the rings to be forced together to effect the expansion of the rings of plastic metal.

12. In a pump, the combination with the working valve or piston, of a pair of packing-rings, one of plastic material, having a flaring or bell mouth, and the other of non-plastic material, having a tapered end in contact with the flaring or bell mouth of the ring of plastic material,

carried by the valve or piston and so arranged that the impact of the valve or piston upon the rings causes the rings to be forced together to effect the expansion of the ring of plastic material.

13. In a pump, the combination with the working valve or piston, of a packing-ring of plastic metal carried by the valve or piston and arranged to be movable thereon, and means whereby the impact of the valve or piston upon the ring of plastic metal causes the upsetting or expansion of the ring of plastic metal.

14. In a pump, the combination with the working valve or piston, of a packing-ring of plastic metal having a flaring or bell mouth carried by the valve or piston and arranged to be movable thereon, and means carried by the valve or piston adapted to fit the flaring or bell mouth of the ring of plastic metal, so arranged that the impact of the valve or piston upon the ring of plastic metal causes the upsetting or expansion of the ring of plastic metal.

846,875. CHUCK MECHANISM. ADAM TINDEL, Philadelphia, Pa., assignor to Tindel Morris Company, Eddystone, Pa., a Corporation of Pennsylvania. Filed Nov. 27, 1905. Serial No. 289,362.

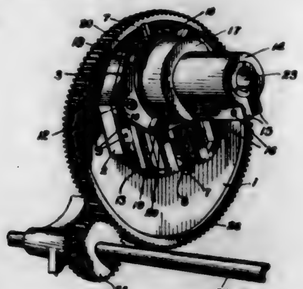

Claim.—1. A chuck mechanism comprising, in combination with a face-plate having guiding means thereon, a slide with guiding means engaging the guiding means of said face-plate, a chuck carried by said slide and having a circular flange thereon, and means for clamping said flange to said slide.

2. A chuck mechanism comprising a face-plate having a base formed integrally therewith and projecting therefrom, said base having longitudinal guiding means, a slide mounted on said base and having guiding means engaging the guiding means of said base, means for adjusting and means for fixing said slide relative to said base, a split sleeve supported by said slide so that it can be turned relatively thereto, said sleeve having a circular base-flange thereon, and means for clamping said flange to said slide.

846,876. CULTIVATOR. HENRY M. TOEPFER, Mount Carroll, Ill. Filed Sept. 7, 1906. Serial No. 333,713.

Claim.—1. A fender or guard for cultivator shovels or plows, consisting of the sheet-metal plate curved horizontally and having the brace-rod arranged substantially as set forth to retain the curvature of the fender-plate.

2. A fender or guard for cultivator shovels or plows formed of a concavo-convex sheet-metal plate curved horizontally and having at its upper edge and on the concave side thereof a device serving as a stop against the upward travel of earth, substantially as set forth.

3. A fender or guard for cultivator shovels or plows, having the curved sheet-metal plate 1 formed with a passage-way 6 at the rear bottom corner thereof in combination with the rod 8 supported on the concave side of the guard and providing a rigid holder for the outer end of the curved plate, substantially as set forth.

4. A fender or guard for cultivator shovels or plows having the curved sheet-metal plate 1, the supporting-bar 2 and the brace-rod 8 rigidly connected to the outer part of the curved plate and rigidly connected to the supporting-bar, substantially as set forth.

846,877. CAR-STAKE. FRANCIS W. TOPLIFF, Greenland, N. H., assignor of one-third to Henry W. Anderson, Exeter, N. H., and one-third to John Walker, New Market, N. H. Filed Jan. 2, 1906. Serial No. 294,060.

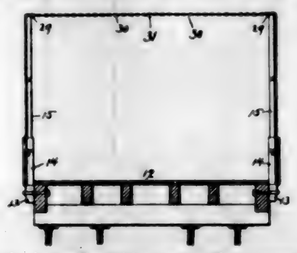

Claim.—1. An adjustable car-stake comprising relatively movable sections and means for positively locking said sections together under different adjustments, to prevent relative movement in either direction.

2. A car-stake comprising a base portion adapted to engage a stake-socket, an upper section adjustable relatively to the base-section and means for positively locking said sections together under different adjustments, to prevent relative movement in either direction.

3. A telescopic car-stake comprising a hollow base-section adapted to engage a stake-socket, an upper section formed to enter the base-section, and means for securing the two sections together, to prevent change in the total length of the stake.

4. A telescopic car-stake comprising a hollow base-section adapted to removably engage a stake-socket, and an upper section formed to enter the base-section, said sections being provided with means for preventing movement of the upper section relatively to the base-section in either direction.

5. A telescopic car-stake comprising a hollow sheet-metal base-section adapted to engage a stake-socket, and a hollow sheet-metal upper section formed to enter the base-section, said sections being provided with means for locking and securing the upper section to the base-section in different fixed positions to vary the length of the stake.

6. A telescopic car-stake comprising a hollow base-section adapted to engage a stake-socket, and provided with a horizontally-arranged keyhole a hollow upper section formed to enter the base-section and provided with a vertical series of horizontally-arranged keyholes, each of which is adapted to coincide with the keyhole in the base-section, and a key adapted to enter into coinciding keyholes in the two sections and provided at its outer end with means for holding the key in engagement with the sections.

7. A telescopic car-stake comprising a hollow base-section adapted to engage a stake-socket, and provided with a horizontally-arranged keyhole and with an ear below the same, a hollow upper section formed to slide in the base-section and provided with a vertical series of horizontally-arranged keyholes, and a key adapted to enter two coinciding keyholes in the two sections and provided at its outer end with an arm adapted to be coupled to said ear.

8. A telescopic car-stake comprising a hollow sheet-metal lower section having at one side an outwardly-projecting longitudinal rib formed by the outwardly-turned edges of the sheet-metal blank, a portion of said rib being hollow to form a groove communicating with the interior of the base-section, and a hollow sheet-metal upper section formed to slide in the lower section and having a longitudinal rib formed by the outwardly-turned edges of the sheet-metal blank, said rib being adapted to enter the groove of the base-section.

9. An adjustable car-stake comprising a base-section adapted to detachably engage a stake-socket, an upper section movable relatively to the base-section to vary the length of the stake, and means for positively locking said sections together to prevent relative movement in either direction.

846,878. LABELING-MACHINE. HARRY H. TOUSSAINT, Newark, N. J. Filed Nov. 23, 1906. Serial No. 344,673.

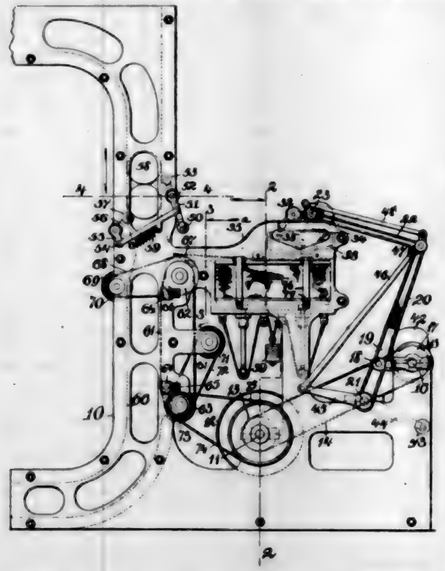

Claim.—1. A machine of the kind described, comprising a frame, a label-reservoir, a paste-reservoir, a carriage riding above the reservoirs and having paste-rolls thereon, means for locking one of the paste-rolls against movement in one direction, means for feeding the paste-rolls from the paste-reservoir to the forward edge of the labels, one paste-roll being adapted to carry the topmost label from the label-reservoir, a can-chute, a tripping mechanism to feed the cans individually to allow one can to drop, on the end of the label, by gravity, and mechanism for tripping the carriage to release the tripping mechanism of the cans.

2. A machine of the kind described, comprising a frame having a paste-reservoir, a label-reservoir, a carriage to engage the paste-reservoir, means for causing the carriage to engage the forward end of the topmost label and feed it forward, mechanism tripped by the carriage to feed a can to the forward edge of the label, and means for twirling the can for affixing the label thereto.

3. A machine of the kind described, comprising a frame having a label-reservoir, a paste-reservoir, a carriage adapted to be supplied with paste from the paste-reservoir, mechanism for causing the carriage to feed the topmost label from the label-reservoir, a tripping mechanism actuated by the carriage for releasing a can when the label has been fed, and means for twirling the can to affix the label thereto, the carriage pasting the label at the inception of the twirling.

4. A machine of the kind described, comprising a frame having a label-reservoir, a paste-reservoir, a carriage having paste-rolls, thereon, adapted to be supplied by the paste-reservoir, means for causing the carriage to engage the topmost label in the label-reservoir and feed it forward, a can, a tripping mechanism to deliver the can to the pasted edge of the label, means for causing the carriage to trip the can, means for twirling the can to affix the label thereto, means for pasting the label at the inception of the twirling, and a brush arranged to revolve faster than the can to insure the affixing of the forward end of the label.

5. A machine of the kind described comprising a frame having a label-reservoir therein, labels in the reservoir, a paste-reservoir above the label-reservoir, tracks above the reservoirs, a carriage riding on the tracks and having paste-rolls thereon, mechanism for forcing the carriage from the paste-reservoir to engage the forward end of the topmost label and feed it forward, a revolving belt forming one wall of its passage, slightly smaller than the diameter of a can, a tripping mechanism for feeding a can and depositing it on the pasted end of the label, and then on the revolving belt, whereby the can is twirled to paste the label to the can, means for pasting the label at the inception of the twirling, and means for withdrawing the carriage to the paste-reservoir.

6. A machine of the kind described, comprising side frames inclosing a paste-reservoir between them, a label-reservoir having labels therein, between the side frames, a carriage riding on the top edge of the side frames and having paste-rolls to engage the paste-reservoir, and to engage the topmost label to feed it forward, cans arranged in a can-chute between the side frames, tripping mechanism actuated by the frame to cause a can to drop on the forward end of the label, a belt, means for directing a can to engage the label between itself and the belt, whereby the can is twirled to affix the label thereto, and means for withdrawing the carriage to the paste-reservoir.

846,879. APPARATUS FOR FORMING FILAMENTS OF METAMORPHOSED CELLULOSE, &c. MONTGOMERY WADDELL, New York, N. Y., assignor to Silas W. Pettit, Philadelphia, Pa. Filed Jan. 22, 1906. Serial No. 297,115.

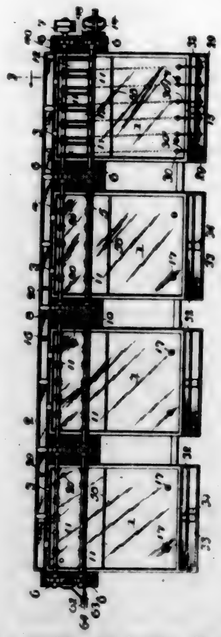

Claim.—1. In a machine for forming filaments of metamorphosed cellulose, the combination with a tank of a series of spinning-heads located at one side of said tank,

means for supplying a fixing solution to said tank from the opposite side thereof, and means adjacent the supply end of said tank for winding said filaments, whereby the circulation of the fixing solution in the tank is in a direction opposite to that of the travel of the filaments being spun.

2. In a machine for forming filaments of metamorphosed cellulose, the combination with a tank of a series of spinning-heads at one side of said tank, a supplemental trough for supplying a fixing solution to said tank from the side opposite said spinning-heads, and a means located adjacent said trough, for winding the spun filaments.

3. In a machine for forming filaments of metamorphosed cellulose, a tank, a pair of shafts arranged transverse to said tank and a winding-ring, supported on and rotated by said shafts, for receiving said filaments as they are delivered from said tank.

4. In a machine for forming filaments of metamorphosed cellulose, a tank, a pair of shafts arranged transverse to said tank, a series of rollers mounted on said shafts, flanged winding-rings supported and rotated by said shafts for receiving said filaments as they are delivered from said tanks.

5. In a machine for forming filaments of metamorphosed cellulose, a tank, a pair of shafts arranged transverse to said tanks, a flanged winding-ring supported and rotated by said shafts for receiving said filaments as they are delivered from said tanks.

6. In a machine for forming filaments of metamorphosed cellulose, a tank, a body upon which the filaments are wound as they are delivered from said tank, means for rotating said body at a constant angular velocity by peripheral contact, a traverse-rod for laying the thread upon said body in courses, and means to reciprocate said traverse-rod at a constantly changing speed.

7. In a machine for forming filaments of metamorphosed cellulose, a series of tanks, a pair of shafts arranged transverse to said tanks, rollers mounted on said shafts, and flanged rings supported upon and rotated by said rollers, for receiving the filaments as they are delivered from said troughs.

8. In a machine for forming filaments of metamorphosed cellulose, the combination of a tank, a pair of shafts transverse to said tank, a series of rollers mounted on said shafts, a flanged winding-ring supported and rotated by said rollers, said ring contacting with said rollers by its flanges only.

9. In a machine for forming filaments of metamorphosed cellulose, the combination with a series of tanks, a pair of shafts arranged transverse to said series of tanks, rollers mounted on said shafts, and flanged rings supported on and rotated by said rollers, the distance between said rollers being such that the flanged rings supported thereon dip for a portion of their circumference below the level of the liquid in the tank.

10. In a machine for forming filaments of metamorphosed cellulose, the combination with a tank, of shafts arranged transverse to said tank, a series of rollers mounted on said shafts, means for rotating said shafts, a flanged winding-ring mounted on said rollers and rotated thereby, said flanged ring being supported on said rollers by its flanges only.

11. In a machine for forming filaments of metamorphosed cellulose, the combination with a series of tanks, a series of spinning-heads mounted at one end of each tank, means for supplying a fixed solution to said tanks from the side thereof opposite said spinning-heads, parallel shafts arranged transverse to said tanks and on the side thereof opposite said spinning-heads, rollers mounted on said shafts, flanged rings located on said rollers and rotated thereby, and a traverse-rod adjacent the surface of said flanged rings.

12. In a machine for spinning filaments of metamorphosed cellulose, the combination with a pair of parallel shafts, means to rotate said shafts, a series of rollers mounted on said shafts, flanged rings supported on and rotated by said rollers by the contact of its flanges with said rollers, a traverse-rod adjacent the surface of said rings, and means to impart to said traverse-rod a reciprocatory motion.

13. In a machine for forming filaments of metamorphosed cellulose, the combination with a pair of parallel shafts, means to rotate said shafts, a series of rollers mounted on said shafts, flanged rings supported on and rotated by said rollers by the contact of their flanges with said rollers, a traverse-rod adjacent the surface of said rings, and means to impart to said traverse-rod a variable reciprocatory motion.

14. In a machine for forming filaments of metamorphosed cellulose, a series of tanks a pair of driving-shafts transverse to said series of tanks, means to rotate shafts, rollers mounted on said shafts, rings provided with flanges for winding the filaments, said rings being supported and rotated by their contact with said rollers, a third shaft, means for rotating said shaft, a cam mounted on said shaft, a traverse-rod reciprocated from said cam, and thread-guides supported on said traverse-rods adjacent said rings.

15. In a machine for spinning filaments of metamorphosed cellulose, the combination with a fixing-tank, a pair of parallel shafts transverse to said tank, a series of flanged rollers mounted on said shafts, flanged rims or tires mounted on said rollers, and flanged winding-rings supported on said rims by their flanges and driven thereby.

16. In a machine for spinning filaments of metamorphosed cellulose, the combination of a tank, a pair of parallel shafts running transverse to said tank, flanged rollers mounted on said shafts, flanged rings supported on said rollers and driven thereby, the distance between said shafts being such that the rings dip beneath the surface of the liquid in the tank.

17. In a machine for forming filaments of metamorphosed cellulose, a seamless winding-ring made from a single piece of sheet metal, and consisting of a cylindrical body portion and flanges, said flanges extending first radially from and then parallel to the body of said ring.

18. In a machine for forming filaments of metamorphosed cellulose, a seamless winding-ring made from a single piece of sheet metal, and consisting of a cylindrical body portion and flanges, said flanges extending first substantially radially from and then parallel to the body of said ring, the thread-carrying surface of said ring being enameled.

19. In a machine for forming filaments of metamorphosed cellulose, a seamless winding-ring made from a single piece of sheet metal, and consisting of a cylindrical body portion and flanges, said flanges extending first radially from and then parallel to the body of said ring, the entire surface of said ring being covered with a vitrified enamel.

20. In a machine for forming filaments of metamorphosed cellulose, a seamless winding-ring made from a single piece of sheet metal, consisting of a perforated cylindrical body portion, and flanges, said flanges extending first radially from and then parallel to the body of said ring.

21. In a machine for forming filaments of metamorphosed cellulose, a ring for receiving the thread as it is formed, a traverse-bar adjacent the surface of said ring, a support carried by said traverse-bar and provided with slots, and a thread-guide frictionally held in said slots.

22. In a machine for forming filaments of metamorphosed cellulose, the combination with a tank, means for causing a fixing liquid to traverse said tank in one direction, and means for forcing viscose, or similar material, into said fixing solution and for causing the same to traverse the tank in a direction opposite to that of the flow of the fixing solution.

23. In a machine for forming filaments of metamorphosed cellulose, the combination of a series of tanks, a supplemental feed-trough, common to said tanks, means for causing a fixing solution in said feed-trough to flow into each tank at one side thereof, overflow-pipes located on the opposite side of each tank, a reservoir, means for conducting the overflow from said overflow-pipes to said reservoir, and thence back to said supplemental feed-trough, means for forcing viscose, or similar material into said fixing solution and means for causing the viscose to traverse the tank in a direction opposite to that of the flow of the fixing solution.

24. In a machine for forming filaments of metamorphosed cellulose, a spinning means, a pair of parallel shafts, a winding-ring supported on and rotated by said shafts for receiving said filaments as they are formed.

25. In a machine for forming filaments of metamorphosed cellulose, a spinning means, a winding-ring for receiving the filaments as they are formed, and means to rotate said ring by peripheral contact.

26. In a machine for forming filaments of metamorphosed cellulose, a spinning means, a flanged winding-ring for receiving the filaments as they are formed, and means to rotate said ring by peripheral contact.

27. In a machine for forming filaments of metamorphosed cellulose, a spinning-head, a tank, a winding-ring for receiving said filaments as they are formed, and means for rotating said ring by peripheral contact.

28. In a machine for spinning filaments of metamorphosed cellulose, the combination of a tank, a pair of parallel shafts running across said tank, a winding-ring supported on and rotated by said shafts for receiving the filaments as they are delivered from said tank, the distance between said shafts being such that the ring dips beneath the surface of the liquid in the tank.

29. In a machine for spinning filaments of metamorphosed cellulose, the combination of a tank, a pair of parallel shafts running across said tank, a flanged winding-ring supported on and rotated by said shafts for receiving the filaments as they are delivered from said tank, the distance between said shafts being such that the ring dips beneath the surface of the liquid in the tank.

30. In a machine for forming filaments of metamorphosed cellulose, a winding-ring having a cylindrical body portion and flanges, said flanges extending first outwardly from and then parallel to the body of said ring.

31. In a machine for forming filaments of metamorphosed cellulose, a winding-ring consisting of a perforated cylindrical body portion and flanges, said flanges extending first outwardly from and then parallel to the body of said ring.

32. In a machine for forming filaments of metamorphosed cellulose, a combined filtering and spinning head, comprising two disks forming an outside casing, a fibrous filtering material, means passing through the center of the said disk and said filtering material for holding said casing together and for compressing said filtering material, a bracket, a stud extending from said bracket and a lug on one of said disks fitting over said stud, said bracket, stud, lug and disk being provided with communicating passages for conducting the liquid to one side of the said filtering material.

33. In a machine for forming filaments of metamorphosed cellulose, a combined filtering and spinning head, comprising two disks forming an outside casing, a fibrous filtering material, means passing through the center of the said disk and said filtering material for holding said casing together and for compressing said filtering material, a bracket, a stud extending from said bracket, a lug on one of said disks fitting over said stud, said bracket, stud, lug and disk being provided with communicating passages for conducting said liquid to one side of said filtering material, and a spinneret mounted on the other of said disks.

846,880. SPRING-SCALE. GEORGE WALKER, New Britain, Conn., assignor to Landers, Frary and Clark, New Britain, Conn., a Corporation. Filed Jan. 14, 1907. Serial No. 352,157.

Claim.—In a spring-scale, the combination of a case or frame with two hanger-levers geared together for moving in unison, with a hanger-bar connected by one end to one of the said hanger-levers and by its other end to the other hanger-lever, and the counterbalancing-springs of the scale suspended on the opposite ends of said hanger-bar.

846,880.

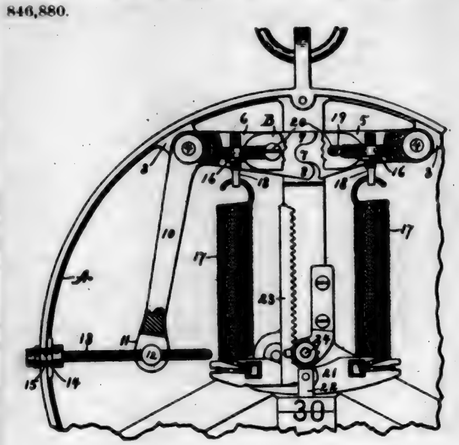

846,881. FILE-CABINET. SAMUEL T. WALTON, Brooklyn, N. Y. Filed Aug. 25, 1905. Serial No. 275,816.

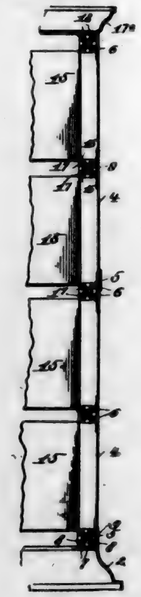

Claim.—1. In a file-cabinet and in combination, an inclosing frame or casing having an unobstructed interior, a plurality of drawers having corner-ribs, and rib-engaging drawer-guides at the intersections of said drawers.

2. In a file-cabinet and in combination, an inclosing frame or casing having an unobstructed interior, a plurality of drawers having corner-ribs, and removable rib-engaging drawer-guides at the intersections of said drawers.

3. In a file-cabinet and in combination, an inclosing frame or casing having an unobstructed interior, a plurality of drawers, drawer-guides at the intersections of said drawers, and means to form an interlocked sliding connection between said drawers and guides.

4. In a file-cabinet and in combination, an inclosing

frame or casing having an unobstructed interior, a plurality of drawers, removable drawer-guides at the intersections of said drawers, and means to form an interlocked sliding connection between the said drawers and guides.

5. In a file-cabinet and in combination, an inclosing frame or casing, a plurality of drawers having guide-engaging corners, and drawer-guides at the intersections of said drawers having sliding engagement with said drawer-corners.

6. In a file-cabinet and in combination, an inclosing frame or casing, a plurality of drawers having guide-engaging corners, and drawer-guides at the intersections of said drawers having sliding and interlocking engagement with said drawer-corners.

7. In a file-cabinet and in combination, an inclosing frame or casing, a plurality of drawers having ribs extending diagonally outward from the drawer-corners at an angle equidistant from the walls of the drawers, said ribs being provided with guide-engaging and interlocking beads, and drawer-guides at the intersections of said drawers having channels or runways to receive and interlock with said beaded ribs.

8. In a file-cabinet and in combination, an inclosing frame or casing, a plurality of drawers having outstanding corner-ribs, and drawer-guides at the intersections of said drawers having channels or runways to receive the corner-ribs of said drawers.

9. In a file-cabinet and in combination, an inclosing frame or casing, a plurality of drawers having outstanding diagonal corner-ribs, and drawer-guides at the intersections of said drawers having diagonally-arranged channels or runways to receive said diagonal corner-ribs.

10. In a file-cabinet and in combination, an inclosing frame or casing, a plurality of drawers having outstanding diagonal corner-ribs provided with guide-engaging beads, and drawer-guides at the intersections of said drawers provided with undercut channels or runways to receive said beaded corner-ribs.

11. A drawer-guide for file-cabinets of substantially cruciform shape in cross-section and having means for engaging ribs on the adjacent corners of a group of drawers.

12. A drawer-guide for file-cabinets of substantially cruciform shape in cross-section, and having means for making interlocking engagement with the ribs on the adjacent corners of a group of drawers.

13. A drawer-guide for file-cabinets of substantially cruciform shape in cross-section and having channels or runways to receive ribs on the adjacent corners of a group of drawers.

14. A drawer-guide for file-cabinets of substantially crucifrom shape in cross-section and having undercut channels or runways to receive and interlock with ribs on the adjacent corners of a group of drawers.

15. In a file-cabinet, the combination with a plurality of sheet-metal drawers having outstanding corner-ribs, of a drawer-guide formed of sheet metal and having rib-receiving channels or runways to receive the adjacent corner-ribs of a group of drawers.

16. In a file-cabinet, the combination with a plurality of sheet-metal drawers having integral outstanding corner-ribs, of a drawer guide and support formed of sheet metal and having rib-receiving channels or runways to receive the adjacent corner-ribs of a group of drawers.

17. In a file-cabinet, the combination with a plurality of sheet-metal drawers having integral outstanding beaded ribs provided with stiffening-cores, of a drawer-guide and support formed of sheet metal and having undercut rib-receiving channels or runways to receive and interlock with the adjacent corner-ribs of a group of drawers.

18. In a file-cabinet and in combination, a group of drawers, guide-engaging members on said drawers, a drawer-guide comprising a group of channel-pieces curved in cross-section to form reëntrant rib-receiving channels or runways, and means for securing said channel-pieces together.

19. In a file-cabinet and in combination, a group of drawers, guide-engaging members on said drawers, a drawer-guide comprising a group of semicircular channel-pieces, and crown-pieces to engage and lock the said channel-pieces together.

20. In a file-cabinet and in combination, a group of drawers, guide-engaging members on said drawers, a drawer-guide comprising a group of semicircular channel-pieces, crown-pieces to engage and lock said channel-pieces together, and a sustaining and stiffening core placed centrally of said group of channel-pieces.

21. A sheet-metal file-cabinet comprising a sectional base formed of overlapped sections, overlapped sectional end panels having interlocking connections with said base-sections, a plurality of drawers, a plurality of drawer guides and supports at the intersections of said drawers, and an overlapping sectional crown-piece supported by and interlocked with said panels.

22. A sheet-metal file-cabinet comprising a sectional base formed of overlapping sections, overlapping sectional end panels having interlocking connection with said base-sections, drawer guides and supports on the inner sides of said panels, a plurality of drawer guides and supports distributed at the intersection of said boxes to interlock and support the same, and overlapping sectional crown-pieces supported by and interlocked with said end panels.

23. In a sheet-metal sectional file-cabinet, the combination with end panels, of drawer-guide-supporting ribs on the inner sides of said panels near the adjacent ends thereof, and a drawer guide and support detachably engaged with said ribs and serving to hold said panels together.

24. In a sheet-metal sectional file-cabinet, the combination with a base-section, of a guide-engaging rib on said base-section, a detachable panel-supporting guide engaging said base-section rib, and a panel having a foot-rib detachably engaging said guide.

25. In a sheet-metal sectional file-cabinet, a crown-piece having guide-engaging ribs, a detachable panel-supporting guide engaging said ribs, and an end panel having a top rib detachably engaging said guide.

26. In a sheet-metal sectional file-cabinet, the combination of cabinet-sections having outstanding guide-engaging ribs at their abutting ends, a guide member making interlocking engagement with said ribs to hold said cabinet-sections together, drawers grouped within said cabinet, and means carried by said guide to serve as drawer guides and supports for the contained drawers.

27. In a file-cabinet, the combination with suitable drawer-guides, of a drawer having guide-engaging ribs extending diagonally outward from the corners thereof at an angle equidistant from the walls of the drawer.

28. In a file-cabinet, the combination with suitable drawer-guides, of a sheet-metal drawer having diagonally-placed integral hollow ribs at its corners, and sustaining and stiffening wires within said hollow ribs.

846,882. WATER-FILTER. O'NEAL WATSON, Crawfordsville, Ind. Filed Sept. 29, 1906. Serial No. 336,697.

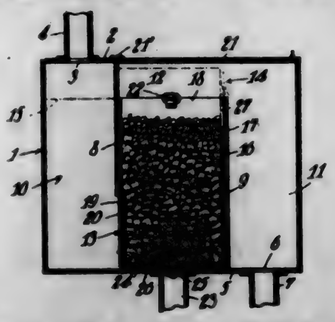

Claim.—1. A filter comprising a casing having inlet and outlet openings in the top and bottom thereof respectively, a pair of spaced parallel partitions of which one extends downwardly from the top of the casing adjacent the inlet and the other extends upwardly from the bottom adjacent the outlet for dividing the casing into three communicating compartments, a receptacle fitted in the middle compartment and communicating with the inlet-compartment at the bottom and with the outlet-compartment at the top, a body of loose filtering material in the receptacle, a flushing-pipe connected with the bottom of the casing, a valve rigidly attached to the receptacle for opening and closing the flushing-pipe, and devices on the upper end of the receptacle for lifting the same to open the valve and to permit the water in the casing to flush out the debris and sediment.

2. A filter comprising a casing, partitions arranged parallel in the casing for dividing the same into inlet and outlet compartments and a filtering-compartment between them, a flushing-pipe independent of the said outlet and common to the inlet and filtering compartments, and a valve controlling said flushing-pipe.

3. A filter comprising a casing having inlet and outlet openings, spaced partitions extending transversely of the casing for dividing the same into inlet and outlet compartments, and an intermediate compartment connected at the bottom with the inlet-compartment and at the top with the outlet-compartment, a receptacle movably mounted in the intermediate compartment, and filtering material arranged in the receptacle.

4. A filter comprising a casing having inlet and outlet openings, a flushing outlet-opening independent of the first outlet-opening, a non-rotatable filtering device movably mounted in the casing which in one position closes the flushing-outlet and in another position opens it, a stationary member in the casing, and a catch on the device for supporting the latter on the said member in a position to open the flushing outlet-opening.

5. A filter comprising a casing having a top inlet-opening and a bottom outlet-opening arranged at diagonal points, a partition extending from the top of the casing toward the bottom thereof and separated from the latter by an opening, a partition parallel to the first and extending upwardly from the bottom of the casing and separated from the top of the latter by an opening, a flushing-outlet in the bottom of the casing at a point between the two partitions, a filtering device movably mounted between the partitions, and means carried by the device for closing the flushing-outlet.

6. A filter comprising a casing, partitions dividing the casing into three compartments, means connecting the compartments in series relation, a filtering element movably mounted in one of the compartments, a spring-catch carried by the element and arranged to engage one of the partitions when the element is lifted to a certain point, and a cover for the filtering and one adjacent compartment.

7. A filter comprising a casing, a partition therein forming a dam over the top of which water flows, a receptacle on one side of the partition and movably mounted in the casing, a filtering material in the receptacle, a flushing device controlled by the movement of the receptacle and means for supporting the receptacle in a position to permit the said flushing device to operate.

8. A filter comprising a casing, a partition therein forming a dam over the top of which water flows, a receptacle on one side of the partition and movably mounted in the casing, a filtering material in the receptacle, a flushing device controlled by the movement of the receptacle, and a catch on the receptacle adapted to engage with the partition for holding the receptacle in a position to permit the said flushing device to operate.

9. A filtering device comprising a casing having an inlet and an outlet compartment and an intermediate filtering-compartment, a filtering element in the intermediate compartment arranged to receive water in a lateral direction and to cause the water to filter upwardly therethrough, means for movably mounting the element in the compartment, a flushing means for the filter which depends for its operation upon the movement of the element, and separate outlets for the filtered and flushing water.

846,883. AUTOMATIC VIOLIN-PLAYER. JOSEPH WAUTERS, New York, N. Y. Filed Mar. 19, 1906. Serial No. 306,717.

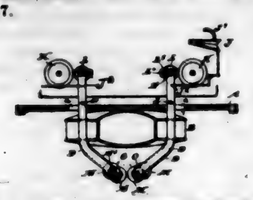

Claim.—1. A violin-player having a vibrator for a string thereof, said vibrator consisting of a disk of glass, means for rotating said disk and means for bringing the moving periphery of said disk into contact with such string.

2. A violin-player having a vibrator for a string thereof, said vibrator consisting of a rotatable disk of flint glass, and means for bringing the moving periphery of said disk into temporary contact with such string.

3. A violin-player having a vibrator for a string thereof, said vibrator consisting of a rotatable disk of flint glass having a smoothly-ground or mat operating-surface, and means for bringing the moving periphery of said disk into temporary contact with such string.

4. A violin-player having a vibrator for a string thereof, said vibrator consisting of a disk of glass having its periphery ground to produce a mat surface, means for rotating said disk, a vibratory lever carrying said disk, and means connected with said lever for causing temporary contact of the moving periphery of said disk with such string.

5. A violin, a board, a vibratory lever, a revoluble disk carried by said lever upon one side of said board to act against a string of the violin, and means mounted to act upon said lever upon the opposite side of said board.

6. A violin, a board, a vibratory lever, a revoluble disk carried by said lever upon one side of said board to act against a string of the violin, means mounted to act upon said lever upon the opposite side of said board, and means on said lever for imparting rotary motion to said disk.

7. A lever fulcrumed between its ends, a disk carried at one end of said lever, a friction-wheel at the other end of said lever, means supplemental to and mounted on said lever for transmitting motion from said friction-wheel to said disk to rotate the latter, a friction driving-wheel, and means for moving said lever to cause frictional contact of said friction-wheel with said driving-wheel.

8. A lever fulcrumed between its ends, a disk rotatably mounted therein, a friction-wheel rotatably mounted in said lever, means supplemental to and mounted on said lever for transmitting motion from said friction-wheel to said disk, a friction driving-wheel, means for moving said lever to cause contact of said friction-wheel with said driving-wheel, and for moving said disk into contact with a relatively fixed violin-string.

9. A lever, a disk rotatably mounted therein, a friction-wheel rotatably mounted in yielding bearings in said lever, means for transmitting motion from said friction-wheel to said disk, a friction driving-wheel, means for moving said lever to cause contact of said friction-wheel with said driving-wheel, and for continuing the movement of said lever to cause later contact of said disk with a violin-string.

10. A pivotally-mounted lever, a disk rotatably mounted in one end thereof, a pulley for said disk, a friction-wheel rotatably mounted in the other end of said lever, a pulley for said friction-wheel, a belt running on said pulleys, a friction driving-wheel, a pneumatic and connections therefrom to said arm, constructed to swing said lever and cause said friction-wheel to contact with said driving-wheel and said disk to contact with a violin-string.

11. A violin-player having a lever, a revoluble disk mounted therein for temporary engagement with a string of a violin, and a yielding mounting for said disk, to provide yielding contact between the disk and string.

12. In a violin-player, a board, a violin mounted thereon, levers pivotally mounted in rear of said board and extend-

ing therethrough, revolving disks carried in the outer ends of said levers, friction-wheels in the inner ends of said levers, means for transmitting motion from said friction-wheels to said disks, friction driving-wheels located adjacent to said friction-wheels, and pneumatics connected to said levers to swing the latter to cause contact of said friction-wheels with said driving-wheels and contact of said disks with the strings of a violin.

846,884. DETONATING TOY. THOMAS B. WILKINSON, New York, N. Y., and FRED G. DIETERICH, Washington, D. C.; said Dieterich assignor to William Percival Wilkinson, Los Angeles, Cal. Filed July 9, 1906. Serial No. 325,278.

Claim.—1. A "return-ball" toy, having a plurality of caps contained therein, automatic means mounted in the ball for adjusting the caps and firing them when the ball is thrown and recoils, as set forth.

2. In a "return-ball" toy, the combination with the ball, a holder having a series of caps, a firing-trigger, a means for simultaneously feeding the caps into firing position and setting the trigger to fire the caps, said means being connected to the ball-sustaining cord and set into action on the recoil of the ball when thrown, as set forth.

3. A device of the character described, comprising a separable two-part body, a revolving holder adapted for removably sustaining a cap-carrying disk and a firing-trigger, means within the said body for automatically revolving the holder and actuating the firing-trigger, said means being connected to the sustaining member or cord, and adapted to be set in action on the recoil of the ball when thrown, as set forth.

4. A device of the character described, comprising a separable two-part holder, a series of explosive caps contained therein, a means operating to independently feed the caps into a firing position and to fire said caps, a flexible sustaining member or cord connected with said means and adapted to actuate them when the ball is thrown and reaches the limit of its thrust, as set forth.

5. A device of the character described, which comprises a hollow ball composed of separable sections, a spring-actuated trigger, and a rotary disk mounted in the ball, said disk engaging the trigger and adapted to set and trip it at each partial revolution of the disk, a plunger having an actuating-head projected radially from the ball and having a pawl-and-ratchet connection with the disk to impart intermittent movement thereto, and a holder having circularly-disposed firing-caps, movable in the line of the firing-trigger head, said holder being detachably mounted on the revolving disk to revolve therewith, as set forth.

6. A mechanical detonating toy, consisting of a ball-like holder, having an internal chamber and a firing-opening provided within an exploding-anvil; in combination with a means held within the ball for automatically feeding a fulminating-cap over the anvil, and exploding it when the ball is thrown and a flexible sustaining member or cord for the ball.

7. In a device of the character described, the combination with the ball having a chamber and a firing-opening provided with an exploding-anvil, of a disk having a series of circumferentially-arranged caps, a revolving disk mounted in the ball, to which the cap-disk is detachably connected, a spring-actuated firing-trigger operating over the anvil, and a means for revolving the cap-carrying means step by step at each throw of the ball and simultaneously actuating the firing-trigger and a flexible ball-sustaining cord that is connected to the said disk-revolving and trigger-actuating means, substantially as shown and described.

8. A device of the class described, comprising in combination with a weighted body and a flexible connection thereto adapted to be grasped by the hand of the operator, of a cap-holding member within said weighted body and containing a plurality of serially-arranged caps, means within the weighted body and connected with the flexible conductor for exploding said caps when the weighted member is thrown from the operator to draw the flexible connection taut, substantially as shown and described.

9. An apparatus of the class described, comprising a weighted member, a cap-carrying magazine within said weighted member, a firing member, a flexible holding member for said weighted member adapted to be held by the operator, and means connected with said holding member for setting said magazine and operating said firing member when the weighted member is thrown from the operator to draw the flexible connection taut.

10. The combination with a casing, a rotatable cap-carrying member within said casing, an anvil, a trigger mechanism for coöperating with said anvil, means carried by the casing for rotating said cap-carrying member to bring the caps in alinement with the anvil and trigger, and means for setting and releasing said trigger, substantially as shown and described.

11. The combination with a casing, a rotatable cap-carrying member within said casing, an anvil, a firing-head, a trigger mechanism for coöperating with said anvil, means carried by the casing for rotating said cap-carrying member to bring the caps in alinement with the anvil and trigger, means for setting and releasing said trigger, means connected with said trigger setting and releasing means and said cap-carrying member setting means and under control of the operator for operating all of said setting and releasing means at times, substantially as shown and described.

12. The combination with a casing, a rotatable cap-carrying-member within said casing, an anvil, a trigger mechanism for coöperating with the anvil, the firing-head, means carried by the casing for rotating said cap-carrying member to bring the caps in alinement with the firing-head and trigger, means for setting and releasing said trigger, means connected with said trigger seeting and relensing means and said cap-carrying-member setting means and under control of the operator for operating all of said setting and releasing means at times, said last-named means comprising a flexible member connected with said operating means and adapted to be held by the operator.

846,885. METHOD OF MAKING HEAD-LININGS FOR BARRELS. LACEY Y. WILLIAMS, Toledo, Ohio. Filed Aug. 29, 1906. Serial No. 332,480.

Claim.—1. The method of forming curved bevel-edged linings, which consists in cutting strips from a curved sheet of wood on a plane oblique to the curved surface of the sheet and lengthwise of the curve.

2. The art of making head-linings consisting in fashioning a sheet or sheets of suitable material to a concavo-convex shape or shapes and severing therefrom strips, the plane of severance being oblique to the curved surface or surfaces of the sheet or sheets and lengthwise of the curve.

3. The art of forming curved bevel-edged linings, which consists in cutting strips from a concavo-convex sheet of wood on a plane at an angle to the curved surface of the sheet, lengthwise of the curve, and substantially parallel with the grain.

4. The art of making head-linings consisting in cutting a block of wood into thin sheets, said cutting being parallel with the grain of the wood, fashioning the sheets to a concavo-convex shape, and cutting the same into strips, the plane of severance being oblique to the curved surfaces of the sheets lengthwise of the curve, and substantially in line with the grain of the wood.

846,885.

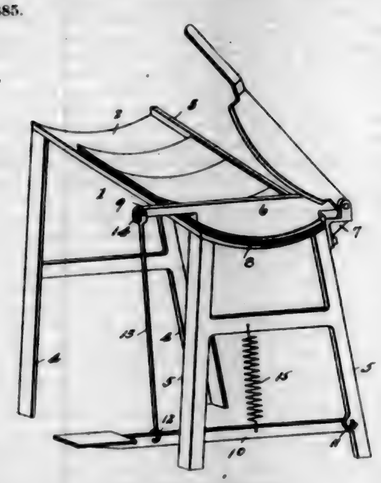

846,886. LINE-HOLDER FOR VEHICLES. JOHN B. WORDEN, Montrose, Iowa. Filed Mar. 28, 1906. Serial No. 308,501.

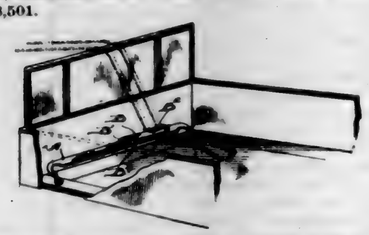

Claim.—The combination with a vehicle foot-rest, of a spring-bar having one end portion secured to said foot-rest, and having its other end portion bent upwardly and back upon itself, and a depending flange carried by a portion of one side of the said bar, as and for the purpose set forth.

846,887. EFFERVESCENT LAUNDRY BLUING. ELIZABETH S. YARNALL, St. Louis, Mo., administratrix of Zachariah S. Yarnall, deceased. Filed Jan. 7, 1904. Serial No. 188,106.

Claim.—1. As a new article of manufacture, a bluing tablet consisting of a soluble blue-base, effervescent agents, and wood-alcohol as a granulating agent, substantially as described.

2. As a new article of manufacture, a bluing tablet consisting of soluble blue, oxalic acid, bicarbonate of soda, wood-alcohol, and mucilage of acacia, substantially as described.

3. As a new article of manufacture, a bluing tablet consisting of soluble blue, oxalic acid, bicarbonate of soda, wood-alcohol, mucilage of acacia, petrolene-oil, and boric acid, substantially as described.

846,888. GRAIN-SHOCKING MACHINE. CHARLEY W. ANDERSON, Portal, N. D., assignor of one-half to Theodore Thoreson, Portal, N. D. Filed Nov. 12, 1906. Serial No. 343,087.

Claim.—1. A shocking-machine having a shocking-chamber provided with bottom and rear doors, means for feeding sheaves to said shocking-chamber, and means for automatically opening said bottom and rear doors when said shocking-chamber becomes full.

2. A shocking-machine having a shocking-chamber provided with bottom and rear doors, a rotary member mounted in said shocking-chamber and dividing the same into a plurality of compartments, means for operating said rotary member each time one of said compartments becomes full, and means for automatically raising said rotary member and opening said bottom and rear doors when said shocking-chamber becomes full.

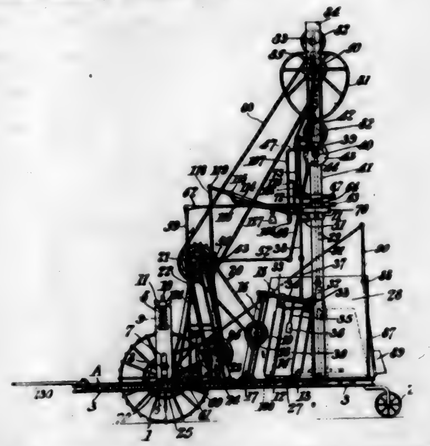

3. A shocking-machine having a shocking-chamber provided with doors, a rotary member mounted in said shocking-chamber and dividing the same into a plurality of compartments, conveying means for feeding sheaves to said shocking-chamber, and means operated by the passage of sheaves through said conveying means for operating said rotary member each time one of said compartments becomes full and for raising said rotary member and opening said doors when siad shocking-chamber becomes full.

4. A shocking-machine having a shocking-chamber, a swinging rear door connected with said shocking-chamber and having a weight, a sliding bottom door having a connection with said swinging door and adapted to be closed thereby, means for feeding sheaves to said shocking-chamber, and means for automatically opening said doors when said shocking-chamber is full.

5. A shocking-machine having a shocking-chamber, a weighted rear door for said shocking-chamber, a bottom door for said shocking-chamber, a flexible connection between said weighted rear door and said bottom door, means for feeding sheaves to said shocking-chamber, and means for automatically opening said rear and bottom doors when said shocking-chamber is full.

6. A shocking-machine having a shocking-chamber, a rotary and vertically-movable member in said shocking-chamber, rear and bottom doors for said shocking-chamber, an operating connection between said rear and bottom doors, means for feeding sheaves to said shocking-chamber, and means for automatically raising said rotary member and opening said bottom and rear doors when said shocking-chamber becomes full.

7. A shocking-machine having a shocking-chamber, a rotary member mounted in said shocking-chamber and dividing the same into a plurality of compartments, means for feeding sheaves to said shocking-chamber, means for operating said rotary member each time one of said compartments becomes full, bottom and rear doors for said shocking-chamber, means for automatically raising said rotary member when said shocking-chamber becomes full, and means for automatically opening said bottom and rear doors during the upward movement of said rotary member.

8. A shocking-machine having a shocking-chamber, bottom and rear doors for said shocking-chamber, a rotary member located in said shocking-chamber, conveying means consisting of a pair of endless belts for conveying sheaves into said shocking-chamber, a rocking member mounted between said endless belts and adapted to be operated by contact with the sheaves, and means controlled by said rocking member for automatically raising said rotary member

and opening said doors when said shocking-chamber becomes full.

9. A shocking-machine having a platform, a ground-wheel, a shocking-chamber mounted on said platform and having bottom doors, springs exerting their tension to open said bottom doors, flexible elements connected with said bottom doors, an auxiliary shaft having a drum to receive said flexible elements, a weighted rear door having a flexible element, a second drum on said auxiliary shaft to receive said last-mentioned flexible element, a rotary member mounted in said shocking-chamber, a vertically-movable yoke connected with said rotary member, an eccentric for raising said yoke, a pair of endless belts for feeding sheaves to said shocking-chamber, a rocking member mounted between said endless belts, means operated by said rocking member for automatically causing a step-by-step rotation of said rotary member, means for operating said eccentric to raise said yoke and rotary member when said shocking-chamber is full, and means operated by the upward movement of said yoke for rotating said auxiliary shaft to open said bottom and rear doors.

846,889. TELEPHONE SYSTEM. ALBERT K. ANDRIANO, San Francisco, Cal., assignor to Direct-Line General Telephone Company, San Francisco, Cal., a Corporation. Filed Mar. 15, 1905. Serial No. 250,153.

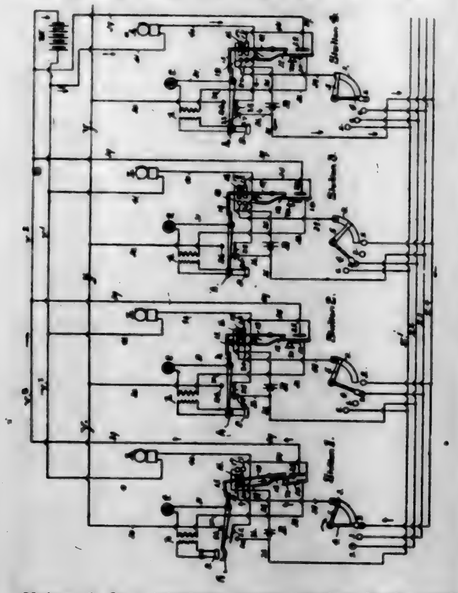

Claim.—1. In a telephone system, stations having each a line, a switching device containing terminals for the line of every station excepting its own line, a primary circuit including a battery and the primary windings of an induction-coil, a return-conductor to which one side of the primary circuit is connectible at will, a ringing circuit including a ringing-key and a movable switch-piece operating to connect the ringing-key in circuit with the line of any selected station and circuit-connecting means between the primary circuit and the line, operating when the ringing circuit is closed by actuating the ringing-key to disconnect the primary circuit from its battery and from the line of its own station, and to establish, when the ringing circuit is broken at the calling-station, a connection between the primary circuit and the switch-piece.

2. In a telephone-switch, line-circuits comprising a line for each station and a return-conductor common to a plurality of the stations, a primary circuit at each station, a switching device containing terminals of all the lines excepting the line of the station itself, a movable switch-piece, a ringing circuit including a ringing-key at each station having a contact-stop connected into one side of the ringing circuit, and a second contact-stop connectible in circuit with the line of a selected station through the movable switch-piece, an adjustable circuit-connecting means operating to disconnect the primary circuit from the line of its own station and connect it into the line of another station through the switching device when the ringing circuit is broken at the calling-station, and means for breaking such connection and restoring the primary circuit to the line of its own station separately of the switch.

3. In a telephone system, the combination with stations each having a line, a primary circuit including a battery and inductive apparatus, and means for connecting the remaining side of the primary circuit into the corresponding circuit of another station through a return-conductor; of circuit-controlling apparatus for disconnecting the inductive apparatus of the station from its own line and connecting it into the line of another station, a means for establishing a calling-circuit between said stations, including a key for closing said circuit and means for actuating the circuit-connecting apparatus by the movement of said key.

4. In a telephone system the combination of a calling-circuit including a signal at each station and circuit-closing device operating to close the calling-circuit, line-circuits comprising a home line to each station and a return-conductor common to a plurality of stations, a primary circuit, a source of energy, circuit-selecting devices having stationary contact-points and a movable contact, and means actuated by the movements of the calling-circuit-closing device operating to disconnect the primary circuit from its own line and its source of energy, and connect it into said movable contact by the act of transmitting a signal to the selected station.

5. In a telephone system, stations having each a primary circuit, line-circuits normally open at every station and comprising a home line to each station into one side of which the primary circuit is normally and directly connected, a return-conductor and means for connecting the remaining side of the primary circuit into the return-conductor; in combination with a ringing circuit common to said stations, including an electrically-actuated signal, a battery a calling-circuit-closing key and circuit-selecting means for bringing the home line of a selected station into relation with the battery and the signal of such station to actuate the signal, and means actuated by the circuit-closing key to cut off the primary circuit of the station from its own home line and connect it into the home line of the selected station by the act of closing the ringing circuit.

6. In a telephone system, the combination with line-circuits comprising a home line for each station and a return-conductor common to a plurality of the stations; of a line-switch at each station containing stationary contacts for the home lines of the other stations, a movable switch-piece, a primary circuit including a battery, said primary circuit being normally connected into its own home line and means for disconnecting the primary circuit from its home line and connecting it into a selected home line through the movable switch-piece.

7. In a telephone system, stations having primary circuits and sources of current, line-circuits consisting of a home line to each primary circuit containing a source of current and a return-conductor which is common to a plurality of the primary circuits, means normally connecting the primary circuit into its own home line, means for closing the said circuit on the return-conductor, the line-selecting switches, calling-circuits including a calling-signal at each station normally connected into its own home line, a source of calling-current with one side of which the calling-signal is permanently connected, circuit-closing devices at each station operating to connect the home line of any other station into the remaining side of the source of calling-current to transmit a calling-current over the circuit completed between one station and another through the selected home line, and means controlled by the calling-circuit-closing device and operating to disconnect the primary circuit from its home line and source of current thereon.

8. In a telephone system, a primary circuit, including inductive apparatus and a source of current, a home line with which one side of the primary circuit is directly connected, a return-conductor and means for connecting the remaining side of said circuit into said conductor; in combination with a switching device comprising a series of stationary contacts which are the terminals of the home lines of other primary circuits, and an adjustable contact freely movable in either direction over said stationary contacts, and circuit-controlling means operating by one adjustment to connect the primary circuit into its own home line, or by another adjustment into the home line of another primary circuit through the said switching device.

9. In a telephone system, normally open line-circuits comprising a home line for each station and a return-conductor, a primary circuit including a source of current on each home line, a line-switching device containing stationary contacts arranged in a circle and comprising terminals of the individual home lines of all the stations but the one at which the switching device is situated, and provided with a rotatable contact-piece movable in either direction at will around the circle of stationary contacts, means for transmitting a signaling-current from one station to another selected station, including a signal normally connected into the home line at each station and a common source of current and circuit-closing devices operating to complete a circuit for the transmission of a signaling-current by closing at the selecting-station the home line of the selected station on the source of such current, means actuated by the said ringing-circuit-closing device for cutting out the home line and the source of current of the primary circuit at the selecting-station and connecting said circuit into the movable contact of its line-switch, and means for completing the line-circuit through the return-conductor.

10. In a telephone system, the combination with a plurality of stations having each a primary circuit and a source of current, of normally open line-circuits comprising a home line for each station, and a return-conductor common to a plurality of stations, means at each station operating to connect at will the primary circuit of the station into the home line of another station, means for transmitting a signaling-current over the selected home line, and means actuated by said signal-transmitting means for cutting out the battery and home line at the signaling-station and completing the line-circuit through the primary circuit so as to include the home line of the selected and signaled station and the source of current on such home line.

11. In a telephone system line conductors arranged to form metallic circuits, line-selecting means at each station by the operation of which a circuit for calling is completed over the selected lines to the opposite station on the circuit, a calling-circuit-closing key, a circuit-controlling device by the operation of which a circuit for talking is completed with the opposite station, means for actuating the circuit-controlling device from the movements of the calling-circuit-closing key, and means operating to lock the said key by the act of hanging up the telephone-receiver and to release it for action by removing the receiver for use.

12. In a telephone system, line conductors, a line-switching device for setting up a calling-circuit with another selected station, a calling-circuit-closing key, means for controlling the completion of a talking-circuit with the called station and operating to complete the same by the act of operating the calling-circuit-closing key, and means for controlling the operative condition both of the calling-circuit-closing key and the talking-circuit-controlling device to lock the same while the telephone-receiver is hung up and to release the said device when the receiver is removed for use.

846,890. IRONING-MACHINE. WILLIAM E. ANDREÉ, Chicago, Ill., assignor to Nelson & Kreuter Company, Chicago, Ill., a Corporation of Illinois. Filed May 27, 1905. Serial No. 262,562.

Claim.—1. In an ironing-machine, in combination, a vertically-movable ironing-table; a curved-faced ironing-plate coöperating with the table; power-actuated mechanism for raising and lowering the table; power-actuated mechanism for rocking the ironing-plate; and means controlled by the table-raising mechanism for starting and stopping the rocking mechanism.

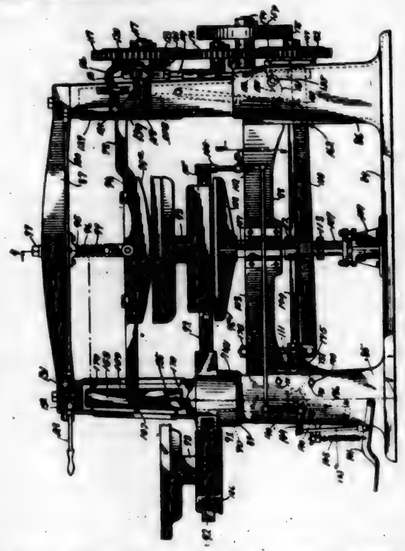

2. In an ironing-machine, in combination, a vertically-movable ironing-table; a curved-faced ironing-plate co-operating with the table; power-actuated mechanism for raising and lowering the table; a normally disengaged clutch for connecting the table-moving mechanism with a source of power; power-actuated mechanism for rocking the ironing-plate; and means controlled by the table-raising mechanism for starting and stopping the rocking mechanism.

3. In an ironing-machine, in combination, a vertically-movable ironing-table; a curved-faced ironing-plate co-operating with the table; an eccentric for moving the table; a continuously-rotatable member; a clutch for connecting the eccentric with the rotatable member; a stop normally disengaging the clutch; a shipper-lever for moving the stop; power-actuated mechanism for rocking the ironing-plate; and means controlled by the table-raising mechanism for starting and stopping the rocking mechanism.

4. In an ironing-machine, in combination, a vertically-movable ironing-table; a curved-faced ironing-plate co-operating with the table; power-actuated mechanism for raising and lowering the table; power-actuated mechanism for rocking the ironing-plate; and means controlled by the table-raising mechanism and acting at the end of its up-stroke for starting the rocking mechanism.

5. In an ironing-machine, in combination, a vertically-movable ironing-table; mechanism for moving the table; a curved-faced ironing-plate; mechanism for rocking the ironing-plate; a power-rotated member; a spring-engaged clutch connecting such member with the rocking mechanism; a spring-retracted trip for disengaging the clutch; and means actuated by the table-moving mechanism at the end of the upstroke of the table for releasing the trip.

6. In an ironing-machine, in combination, a vertically-movable ironing-table; mechanism for moving the table; a curved-faced ironing-plate; mechanism for rocking the ironing-plate; a power-rotated member; a spring-engaged clutch connecting such member with the rocking mechanism; a spring-retracted trip for disengaging the clutch; a swinging arm carried by the ironing-plate; and means actuated by the table-actuating mechanism for throwing the arm out of engagement with the trip as the table rises.

7. In an ironing-machine, in combination, a curved-faced ironing-plate; a swinging support therefor, the plate being pivotally attached to the support; means for rocking the plate; and a cam for moving the plate longitudinally as it rocks.

8. In an ironing-machine, in combination, a curved-faced ironing-plate; a swinging support therefor; pivotal connection between the plate and support; means for rocking the plate; and a fixed cam engaged by the rocking means to move the plate longitudinally as it rocks.

9. In an ironing-machine, in combination, a yieldingly-supported convex-faced ironing-tool, power mechanism for imparting a rocking movement to the tool as it engages the work, and a vertically-movable ironing-board adapted to be raised to the working plane of the tool.

10. In a machine of the class described, the combination with an ironing-board, of an ironing-head adapted to be heated, having a convex face, means for supporting said head, and power-actuated means for imparting a rocking motion to said head.

11. In a machine of the class described, the combination with an ironing-board, of a yieldingly-supported ironing-head adapted to be heated, having a convex face, and power-actuated means for imparting a rocking motion to said head.

12. In a machine of the class described, the combination with an ironing-board, of an ironing-head adapted to be heated, having a convex face, means for supporting said head, a spring acting to thrust the head toward the board, means for adjusting said spring, and power-actuated means for imparting a rocking motion to said head.

13. In an ironing-machine, an ironing-board, combined with a yieldingly-supported ironing-head adapted to be heated, having a convex face, and power-actuated means for rocking said head and for also moving it in a direction lengthwise the ironing-board.

14. In an ironing-machine, in combination, a rocking ironing-plate having a convex face, power-actuated means for rocking the ironing-plate, a swinging arm, and an ironing-board carried by the arm, its face being parallel with the plane of oscillation of the arm, and a locking device for locking the arm in position beneath the ironing-plate.

15. In an ironing-machine, the combination with a rocking ironing-head having a convex face, power-actuated means for rocking it, and a pair of ironing-boards located in a plane beneath said head, arms carrying said ironing-boards projecting radially from a hub, a central support on which said hub is free to be oscillated, and a locking device on the machine-frame for locking either arm in position beneath the ironing-head.

16. In an ironing-machine, an ironing-board, combined with an ironing-plate adapted to be heated, having a convex face, and power-actuated means for rocking said plate, and means for separating the ironing-board and plate at the end of the stroke of the latter.

17. In an ironing-machine, an ironing-board, combined with an ironing-plate adapted to be heated, having a convex face, and power-actuated means for rocking said plate, and for moving it in a direction lengthwise the ironing-board, and means for separating the ironing-board and plate at the end of the stroke of the latter.

846,891. COPPER-REFINING FURNACE. RALPH BAGGALEY, Pittsburg, Pa. Original application filed May 1, 1905, Serial No. 258,152. Divided and this application filed Aug. 8, 1905. Serial No. 273,246.

Claim.—1. A copper-refining furnace having a metal exterior of a thickness to retain the internal heat of the furnace, and an acid lining thin enough to reduce saturation thereof.

2. A copper-refining furnace having a metallic body and lining proportioned in thickness to retain the internal heat within the furnace and to reduce saturation of the lining.

3. A copper-refining furnace having a metallic body and a non-metallic lining, said body being thick enough to retain the internal heat of the furnace.

4. A copper-refining furnace having a metallic body and lining proportioned in thickness to retain the internal heat of the furnace and to reduce saturation of the lining, and a burner for supplying heat to the interior of the furnace.

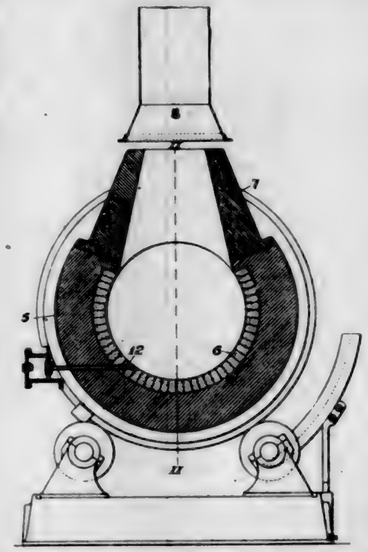

5. A copper-refining furnace comprising a vessel having its longitudinal axis disposed substantially horizontally and capable of rotating upon its longitudinal axis, the top of the vessel having a combined feed and pour-out opening, and a burner projecting through one end of the vessel for heating the interior of the furnace, the vessel consisting of a metallic body and a lining proportioned in thickness to retain the internal heat of the furnace and to reduce saturation of the lining.

846,892. ANTIFRICTION LATERAL-MOTION CENTER-BEARING. JOHN C. BARBER, Chicago, Ill. Filed June 27, 1906. Serial No. 323,656.

Claim.—1. The combination with a truck-bolster having concave roller-bearing seats formed directly thereon, of a body-bolster provided with an upper bearing member, and an intermediate bearing member pivotally connected to said upper bearing member and having concave roller-bearing seats in its under surface, cylindrical rollers interposed between the seats of said lower bearing member and of said intermediate bearing member, radially-disposed conical rollers interposed between said intermediate bearing member and said upper bearing member, and a device holding said conical rollers spaced apart, substantially as described.

3. In a lateral-motion center-bearing, upper and lower and intermediate bearing members, said upper and intermediate bearing members having axially-alined pintle-engaging sleeves, one of which is telescoped into the other, and the sleeve of which intermediate bearing member works in a slot in said lower bearing member, substantially as described.

3. In a lateral-motion center-bearing, upper and lower and intermediate bearing members, said upper and intermediate bearing members having pintle-engaging sleeves, one of which is telescoped into the other, and the sleeve of which intermediate bearing member works in a slot in said lower bearing member, in combination with bearing-rollers interposed between said intermediate bearing member and said upper and lower bearing members, substantially as described.

846,892.

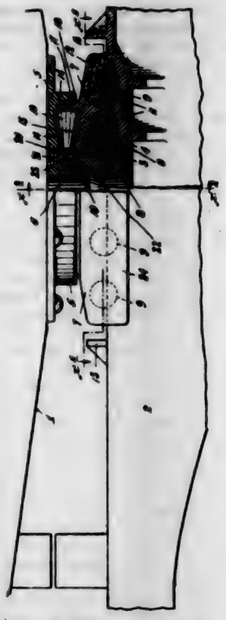

3. In a center-bearing, the combination with upper and lower bearing members 1 and 2 respectively, provided with alined hubs 3 and clearance-channels 9, the said lower member 2 having the annular flange 4, and said bearing member 1 having the annular flange 5, surrounding said flange 4, of the annular wearing-plates 7 and 8 fitting seats formed respectively in the said members 1 and 2, the bearing-rollers 6 interposed between said wearing-plates, and the two-part retaining-ring 10 working within the clearance-channels 9 and engaging the inner edges of said annular wearing-plates 7 and 8 and holding the same against separation, substantially as described.

846,893. ANTIFRICTION CENTER-BEARING. JOHN C. BARBER, Chicago, Ill. Filed July 26, 1906. Serial No. 327,935.

Claim.—1. In a center-bearing, the combination with upper and lower bearing members and detachable wearing-plates applied thereto, of a retaining-ring loosely holding said wearing-plates against separation, and antifriction bearing devices, interposed between said wearing-plates and held thereby against displacement, substantially as described.

2. In a center-bearing, the combination with upper and lower bearing members and detachable wearing-plates applied thereto, of a two-part retaining-ring loosely engaging said two plates and holding the same against separation, and conical bearing-rollers interposed between said wearing-plates and held thereby against displacement, said wearing-plates, retaining-ring and rollers being removable together from between the upper and lower bearing members, substantially as described.

3. In a center-bearing, the combination with upper and lower bearing members and detachable annular wearing-plates applied thereto, of a two-part retaining-ring loosely engaging the inner edges of said annular wearing-plates and holding the same against separation, said wearing-plates having retaining-flanges at their outer portions, and conical bearing-rollers interposed between said wearing-plates and held thereby against displacement, substantially as described.

4. In a center-bearing, the combination with upper and lower bearing members, of annular wearing-plates detachably applied thereto and having reversely-extended annular stop-flanges at their outer portions, and conical bearing-rollers interposed between said annular wearing-plates with their outer ends arranged to thrust against the stop-flanges of said wearing-plates, substantially as described.

846,894. ANTIFRICTION CENTER-BEARING. JOHN C. BARBER, Chicago, Ill. Filed Dec. 10, 1906. Serial No. 347,108.

Claim.—1. The combination with upper and lower members of a center-bearing, formed with conical roller-bearing surfaces, and at least one of which bearing members is provided with an annular thrust flange at the outer extremity of its conical roller-bearing surface, of a plurality of conical rollers interposed between the bearing-surfaces of said upper and lower members of said center-bearing, the said rollers being closely positioned and occupying approximately the entire space in which the rollers travel, said rollers having rounded outer ends that engage and thrust against said annular thrust-shoulder, and having trunnions at their inner ends, and a retaining-ring inward of said rollers and in which the trunnions of said rollers are journaled and with which said trunnions are interlocked, substantially as described.

2. The combination with upper and lower members of a center-bearing formed with conical roller-bearing surfaces and provided at the outer extremities of their conical roller-bearing surfaces with annular thrust shoulders, of a plurality of conical rollers interposed between the bearing-surfaces of the upper and lower members of said center-bearing, the said rollers being closely positioned and occupying approximately the entire space in which the rollers travel, said rollers having their conical and outer end surfaces intact, and the outer ends of said rollers being rounded and arranged to engage and thrust against the annular thrust shoulders of said bearing members, and the said rollers also having trunnions at their inner ends, and a loose retaining-ring in which the trunnions of said rollers are journaled and with which said trunnions are interlocked with freedom for slight endwise movements, substantially as described.

846,895. MEDICINAL EXTRACT. LUDWIG BAUER, Niederlossnitz, Germany. Filed Dec. 8, 1904. Serial No. 235,070.

Claim.—1. The herein-described process, which consists in subjecting a mixture of cola-nuts and seeds and bark of *Eugenia jambolana* to the action of milk of lime, agitating such drugs with the admixture of water, saturating the mixture with carbon dioxid, diluting with water, and filtering through animal charcoal.

2. The herein-described process, which consists in subjecting a mixture of cola-nuts and seeds and bark of *Eugenia jambolana* to the action of milk of lime, agitating such drugs with the admixture of water, saturating the mixture with carbon dioxid to reduce the alkalinity to approximately 0.2 per cent., diluting with water at substantially 50° centigrade, and filtering through animal charcoal.

3. The herein-described process, which consists in reducing a mixture of cola-nuts and seeds and bark of *Eugenia jambolana* to a fine powder, triturating such powder with milk of lime, agitating such drugs with the admixture of

water, saturating the mixture with carbon dioxid, diluting with water, concentrating the liquid, and filtering through animal charcoal.

846,896. TURBINE. NICOLAUS BECKER, Frankfort-on-the-Main, Germany. Filed July 30, 1906. Serial No. 328,400.

Claim.—The combination of an elastic-fluid-turbine wheel with vaulted buckets on its rim, nozzles pointed at the said rim obliquely to the turning plane of the wheel, vaulted chambers extending from one side of the wheel over to the other adapted to receive and reverberate the elastic fluid recoiled from the vaulted buckets and nozzles extending from the said chambers and pointing alternately from either side of the wheel obliquely at the said buckets, the tangential angle at which the several nozzles point against the rim being alike for all while the angle of the oblique lateral direction varies, substantially as described.

846,897. GAS-ENGINE. REUBEN B. BENJAMIN, Chicago, Ill. Filed Jan. 2, 1906. Serial No. 294,277.

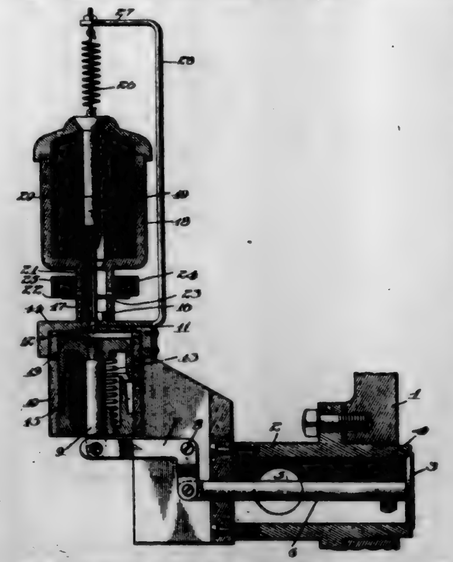

Claim.—1. In a governing device for gas-engines, the combination with an inlet-valve, of an electromagnetically-operated governor for controlling the movement of said valve, and means for preventing said valve from operating until said governor is energized.

2. In a governing device for explosive-engines, the combination with an inlet-valve for the engine, of a resistance device connected with said valve, and an electromagnetic governor for controlling the resistance of said device.

3. In a governing device for explosive-engines, the combination with an inlet-valve for the engine, a vacuum-producing device operated by the opening movement of said inlet-valve, and an electromagnetically-operated governor for controlling the vacuum produced by said device.

4. In a governing device for explosive-engines, the combination with an inlet-valve for the engine, a vacuum-producing device operated by the opening movement of said valve, said vacuum-producing device comprising a chamber having an air inlet or vent, a valve controlling said vent, and an electromagnetically-operated governor connected with said valve.

5. In a governing device for explosive-engines, the combination with an inlet-valve for the engine, of a vacuum-producing device operated by the opening movement of said inlet-valve, an electromagnetic governor for controlling the vacuum produced by said device, and means for preventing the destruction of said vacuum except when said governor is operatively energized.

6. In a governing device for an explosive-engine, the combination with an inlet-valve for the engine, a vacuum-producing device operated by the opening movement of said inlet-valve, said vacuum-producing device comprising a chamber having an air inlet or vent, a valve controlling said vent, an electromagnetically-operated governor connected with said valve, and means for maintaining said vent closed when said governor is inoperative.

7. In a governing device for explosive-engines, the combination with an inlet-valve for the engine, of a vacuum-producing device operated by the opening movement of said inlet-valve and comprising a chamber having an air inlet or vent, a valve controlling said vent, and a solenoid having the core thereof connected with said valve.

8. In a governing device for an explosive-engine, the combination with an inlet-valve for the engine, of a vacuum-producing device operated by the opening movement of said valve and comprising a chamber having an air-inlet, a valve controlling said inlet, a solenoid having the core thereof connected with a valve and tension means for normally holding said valve open.

9. In a governing device, for explosive-engines, the combination with an inlet-valve for the engine, of a vacuum-producing device operated by the opening movement of said inlet-valve and comprising a chamber having an air inlet or vent, a valve for controlling said vent, and an electromagnetic governor operatively connected with said valve, means for normally maintaining said inlet closed and arranged to be maintained open by said governor when the same is operatively energized.

10. In a governing device for gas-engines, the combination with an inlet-valve for the engine, of means for retarding the action of said valve, and electromagnetic means for governing the action of said retarding means.

846,898. CAR-COUPLING. ALBERT BERG, Mount Pleasant, Pa., assignor of one-half to Ananias D. Miller, Mount Pleasant, Pa. Filed Feb. 10, 1906. Serial No. 300,490.

Claim.—1. In a car-coupling, the combination of a draw-head having a polygonal eye, a knuckle-pin mounted on the draw-head and provided with a polygonal portion fitting in the said polygonal eye, whereby the knuckle-pin is interlocked with the draw-head and held against rotary movement, said knuckle-pin being also provided with an integral tapering flange extending around a portion of the periphery of the pin and presenting an upper inclined face, and a swinging knuckle pivoted to the draw-head by the knuckle-pin and having a limited vertical movement, said knuckle being also provided with a recess forming an inclined edge or wall, which rests upon the inclined face of the knuckle-pin to cause the knuckle to open automatically.

2. In a car-coupling, the combination of a draw-head having upper and lower eyes, the lower eye being polygonal, a knuckle-pin arranged in the eyes and provided at its top with means for engaging the top of the draw-head, said knuckle-pin also having a lower polygonal portion to fit the lower eye of the draw-head and provided at the upper face of the said polygonal portion with an outwardly-tapered integral flange curved concentric with the knuckle-pin and presenting an inclined upper face, and a swinging knuckle having an opening to receive the knuckle-pin and provided at the bottom with a recess forming an inclined wall, which rests upon the inclined upper face of the flange of the knuckle-pin.

3. In a car-coupling, the combination of a draw-head having upper and lower eyes, the lower eye being polygonal, a knuckle-pin arranged in the eyes and having a lower polygonal portion to fit the lower eye and provided at the upper face of the said polygonal portion with an outwardly-tapered flange presenting an inclined upper face, and a swinging knuckle having an opening to receive the knuckle-pin and provided at the bottom with a recess forming an inclined face, which rests upon the inclined upper face of the flange of the knuckle-pin, said knuckle-pin being provided at the top with means for engaging the draw-head, and the lower polygonal portions being of greater diameter than the opening of the knuckle to engage the latter.

4. In a car-coupling, the combination of a draw-head having upper and lower eyes, a knuckle-pin arranged in the eyes and having a lower and enlarged portion provided with a tapering extension adapted to engage the bottom of the draw-head to hold the knuckle-pin against rotary movement, said knuckle-pin being also provided at the upper face of the enlarged portion with a plurality of curved flanges tapered outwardly and presenting inclined upper faces, and a knuckle having an opening to receive the knuckle-pin and provided at the bottom with a series of tapering recesses forming inclined faces, which rest upon the inclined faces of the knuckle-pin.

846,899. PAPER RECEPTACLE. FREDERICK H. BEROLD, Jr., Cincinnati, Ohio. Filed Nov. 15, 1906. Serial No. 343,568.

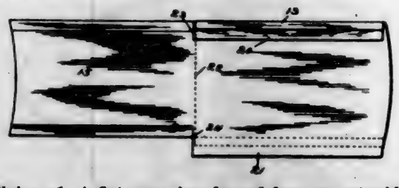

Claim.—1. A flat paper bag formed from an outer blank of suitable paper material, and a lining-blank of waxed paper, each blank comprising a broad side and a narrow side, with a middle line of fold, the broad side of each blank being folded at the side edges to form securing-flaps, and the narrow side of the outer blank being wider than the corresponding side of the lining, with the broad side of the lining wider than the corresponding side of the outer envelop, whereby the lining-blank may be superimposed on the outer envelop, with fold-lines coinciding, and the two blanks may be folded and glued to form a complete lined bag or envelop at one operation.

2. A flat paper bag formed from an outer blank of suitable paper material, and a lining-blank of waxed paper, each blank comprising a broad side and a narrow side, with a middle line of fold, the broad side of each blank being folded at the side edges to form securing-flaps, and the narrow side of the outer blank being wider than the corresponding side of the lining, with the broad side of the lining wider than the corresponding side of the outer envelop, and extensions therefrom beyond the middle line of fold, whereby the lining-blank may be superimposed on the outer envelop, with fold-lines coinciding, and the two blanks may be folded and glued to form a complete lined bag or envelop at one operation.

846,900. TOOTH-BRUSH. WILLIAM O. BLOOM, Worcester, Mass. Filed Feb. 6, 1906. Serial No. 299,700.

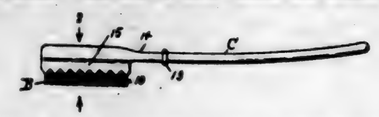

Claim.—1. A brush-section having a block interposed therein provided with bristles or the like, which block is impregnated with antiseptic or cleansing compounds.

2. The combination of a holder, and a brush-section having bristles or the like, said brush-section having a block embodied therein, which block is impregnated with antiseptic or cleansing compounds.

3. A tooth-brush comprising a brush-section made up of a block, bristles or grass in which said block is interposed, said brush-section being impregnated with antiseptic or cleansing compounds, and a holder in which said brush-section is secured.

4. A tooth-brush comprising a holder, and a brush-section which can be detachably secured therein comprising a block having antiseptic qualities and bristles or grass, in which the block is interposed.

5. A brush-section for tooth-brushes comprising a block, a strip of bristles or grass on the same, and a binding holding the bristles or grass to the block.

6. A tooth-brush comprising a holder having a removable brush-section, and protecting-jaws formed on the holder.

7. A tooth-brush comprising a two-part holder for a brush-section, said holder having integral, soft, protecting-jaws, and means for forcing the jaws together for holding the brush-section.

8. A tooth-brush comprising a split or two-part holder having protecting-jaws, a brush-section, and means for forcing the parts of the holder together to clamp the brush-section.

9. A tooth-brush comprising a split or two-part holder having a narrowed neck, a ring thereon, said holder having clamping and protecting jaws, and a detachable brush-section.

846,901. INSULATED RAIL-JOINT. WILLIAM F. BOSSERT, Utica, N. Y. Filed Nov. 30, 1906. Serial No. 345,717.

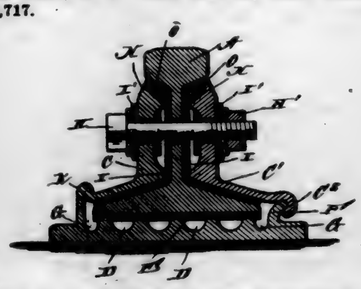

Claim.—1. An insulated rail-joint comprising a chair having a lateral extension adapted to receive the flange of a rail, an insulating material intermediate the bottom of the flange and said lateral extension of the chair, the rail-supporting surface of the chair underneath said insulation being provided with longitudinal grooves, whereby the insulating material may be properly ventilated, removable insulating-strips supported by the upright portions of the chair, the latter having a portion thereof bent upon itself forming means whereby wear may be taken up and said insulating-strips held in contact with the under surface of the tread portion of the rail and the fillet thereof, and insulated means for holding the chair-sections in clamping relation with the rail, as set forth.

2. An insulated rail-joint comprising a chair having a lateral extension adapted to receive the flange of a rail, an

insulating material intermediate the bottom of the flange and said lateral extension of the chair, the rail-supporting surface of the chair underneath said insulation being provided with longitudinal grooves, whereby the insulating material may be properly ventilated a portion of the chair being bent upon itself adjacent to one edge of the flange of the rail, removable insulating-strips mounted one upon each upright portion of the chair and so arranged that they will automatically adjust themselves to the under surface of the tread portion of the rail and the fillet, when the wear is taken up, and insulated means for holding the chair to the rail, as set forth.

3. An insulated rail-joint comprising a chair having a lateral extension adapted to receive the flange of a rail, an insulating material intermediate the bottom of the flange and said lateral extension of the chair, the rail-supporting surface of the chair underneath said insulation being provided with longitudinal grooves, whereby the insulating material may be properly ventilated, a portion of the chair being bent upon itself adjacent to one edge of the flange of the rail, the upright portion of each chair having an inclined concaved seat underneath the tread of the rails to which the chair is applied, removable insulating-strips having their under surfaces convexed and conforming to the surfaces of the seats upon which they are adapted to rest, their upper surfaces conforming to the under surfaces of the tread portions of the rails and the fillet thereof against which they are adapted to be held by the upright portions of the chair, and insulated means for holding the chair to the rail, as set forth.

4. An insulating rail-joint comprising a chair having a lateral extension grooved upon its upper surface and ungrooved upon its bottom, an insulating material placed over said grooved surface and upon which the flange of a rail is adapted to bear, said lateral extension of the rail-joint having grooves in the upper surface thereof beyond the ends of said insulating material and the longitudinal edges of the flange of the rail, the upright portions of the chair having inclined concaved seats, removable insulating-strips having their under surfaces convexed adapted to rest upon said seats, their upper surfaces conforming to the under surface of the tread portion of the rail and the fillet thereof, means for taking up the wear upon the chair, and insulated means for holding the chair to the rail, as set forth.

5. An insulated rail-joint comprising a chair made up of two sections, one of which is provided with a lateral extension which is grooved upon its upper surface, an insulating material covering said grooves and upon which the flange of a rail is adapted to rest, a portion of the lateral extension of said rail-section being provided with an upwardly and outwardly curved flange, the other chair-section being provided with a hook adapted to engage over said curved flange, the rail-supporting chair-section having a portion thereof bent upon itself forming means for taking up wear, the upper ends of the chair-sections having inclined concaved seats, removable insulating-strips resting upon said seats and having their upper surfaces conforming to the under surfaces of the rail and fillet against which they are adapted to adjust themselves as the wear upon the chair-sections is taken up, and insulated means for holding the chair to the rail, as set forth.

846,902. VEHICLE-POLE TIP. ELIAS W. BOSWELL, Darlington, S. C. Filed Aug. 10, 1905. Serial No. 273,659.

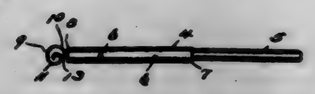

Claim.—A pole-tip comprising an inverted-U-shaped attaching portion, said attaching portion having a web formed at its forward end and a flange formed upon the web as a continuation of the side portion of the U, and a resilient spiral hook formed integral with the said web.

846,903. CARBURETER. FRANK A. BRADBERR, Detroit, Mich. Filed Jan. 15, 1906. Serial No. 296,125.

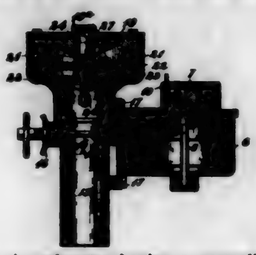

Claim.—1. A carbureter having a normally open mixing-chamber, an outlet therefrom, and a valve between said chamber and the outlet, arranged to close under back pressure.

2. A carbureter for explosive-engines having a normally open safety-valve located between the mixing-chamber and the outlet to the engine-cylinder, and arranged to close under back pressure.

3. A carbureter for explosive-engines, having a mixing-tube with a valve-chamber at the head and an outlet to the cylinder from said chamber, and a suspended normally open valve in said chamber arranged to close the mixing-tube under back pressure from the cylinder.

4. A carbureter for explosive-engines having a mixing-tube with a valve-seat and chamber at the head thereof and an outlet from the chamber, and a spring-supported disk suspended in the chamber in open position above the seat and arranged to close against the same under back pressure.

5. In a carbureter, an oil vessel having a float-valve controlling the inlet thereto, and a tubular priming-pin extending through the top of the vessel, forming a vent.

846,904. LAZY-BACK. HUGH D. BRADY and CARL GERSTENMAIER, St. Paul, Minn. Filed May 16, 1905. Serial No. 260,627.

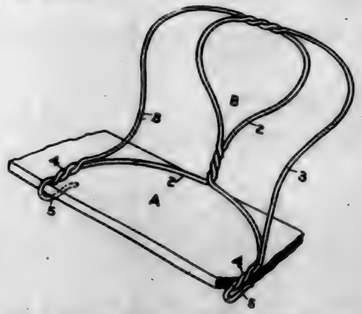

Claim.—A lazy-back of the class described composed of wire bent and intertwisted to form a back portion and forwardly-extending intertwisted sides, the ends of said forwardly-extending sides being bent under and upwardly toward said intertwisted sides to constitute opposed spring gripping-surfaces.

846,905. CONNECTION FOR BATH-SPRAYS AND THE LIKE. HENRY L. BRUEN, Orange, N. J., assignor to The Vant Woud Rubber Company, New York, N. Y. Filed Nov. 22, 1905. Serial No. 288,593.

Claim.—A hose connection for bath-sprays and the like comprising a hollow rigid main body provided at one end with a substantially hemispherical wall, having a central aperture therein, and at the other end with a nipple to receive a hose, the lateral walls of said main body being imperforate and provided adjacent to said hemispherical wall with an annular externally-screw-threaded portion parallel to the axis of said main body, a removable gasket of rubber consisting of a substantially hemispherical portion fitting over the hemispherical end wall of said main body, and having a central aperture therein of less diameter than that of the aperture in said end wall, and a cap consisting of a substantially hemispherical portion to fit over said gasket provided with a central aperture registering with that of the main body and having an annular

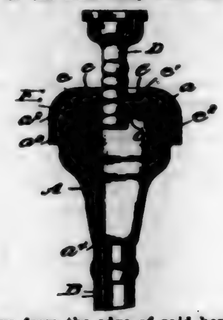

flange extending from the edge of said hemispherical portion and internally screw-threaded to engage the exterior threaded portion of said main body, whereby the entire marginal portions of said gasket are clamped between the end wall of said main body and said cap, substantially as described.

846,906. AUTOMATIC RAILWAY-SWITCH. JOHN D. BURKHOLDER, Lancaster, Pa. Filed Sept. 14, 1906. Serial No. 334,568.

Claim.—1. In automatic mechanism for operating railway-switches, the combination of a pair of treadles on a car with a pair of counter-weighted levers, connections between the same and depending, loosely-connected arms carried by said levers and terminating in pointed arrow-tappets adapted to engage and operate track devices connected to a switch-point for the purpose set forth.

2. In automatic mechanism for operating railway-switches, the combination of a pair of treadles on a car with a pair of counter-weighted lever connections between the same, tappet-carrying arms depending from said levers, vertically-movable pivots for said levers and springs holding the same down in their bearings with yielding pressure substantially as set forth.

3. In automatic mechanism for operating railway-switches, the combination of a pair of treadles on a car with a pair of counterweighted levers, connections between the same, tappet-carrying arms depending from said levers, vertically-movable pivots for said levers, depending bifurcated studs or brackets, receiving the said levers between their bifurcations and the said pivots in vertical slots of said bifurcations, collars surrounding said studs or brackets and resting on said levers and springs bearing on said collars substantially as set forth.

4. In automatic mechanism, a switch-point pivoted for lateral motion and provided with a downwardly-extending stud, in combination with a pair of rods on opposite sides of said stud and having inclined parts, which are adapted to be drawn against it to move the said point laterally in one direction or the other, longitudinally-movable bars, rocking devices arranged to engage and draw said rods, and located in channels below the levels of the rails, and depending devices carried by a car and adapted to be lowered at will into said channels to engage such devices substantially as set forth.

5. In automatic mechanism for operating railway-switches, a switch-point pivoted for lateral motion, in combination with a pair of longitudinal rods, having inclined parts adapted to engage an attachment or part of said point and turn said point in one direction or the other on its pivot, devices arranged on each side of the track, adapted to be struck by depending attachments of a car and provided with connections whereby they thereupon draw on one rod or the other to shift the said switch-point as stated, and replacing-springs for said devices connections and rods substantially as set forth.

6. In automatic mechanism for operating railway-switches, a switch-point pivoted for lateral motion and provided with a downwardly-extending part, in combination with a pair of longitudinally-movable rods, having inclined parts on each side of the same and adapted to move the said point in one direction or the other on its pivot when drawn against said part, longitudinally-movable bars, provided at intervals with lateral studs, transverse rock-shafts arranged at corresponding intervals and provided with depending slotted arms that engage said studs also with raised arms carrying lateral pins, replacing-springs for said bars and the parts attached thereto and a pair of depressible tappets and their actuating devices carried by said car, said tappets being arranged for contact with any of the raised arms on one side of the track or any of the raised arms on the other, according to the tappet lowered substantially as set forth.

7. A pivoted switch-point having a downwardly-extending stud, in combination with a frog or seat having an opening permitting the said stud to extend down through it and move laterally with said switch-point, a raised plate or offset under said point, surrounding said stud and guarding said opening against the admission of water, and devices adapted to be actuated by a passing car, for shifting said switch-point on its pivot from side to side substantially as set forth.

846,907. SCREEN. MORGAN S. CLARK, Roanoke, Va. Filed May 31, 1906. Serial No. 319,550.

Claim.—1. A screen comprising a suitable frame, the upper cross-piece of which is provided with a longitudinal groove, a wire meshing arranged in the frame, and an elongated guideway-bar secured to the meshing and having enlarged portions adapted to fit the groove and rest therein so as to leave open spaces or avenues between the same.

2. A screen comprising a suitable frame, the upper cross-piece of which is provided with a longitudinal groove, a wire meshing arranged in the frame, an elongated guideway-bar secured to the meshing and having enlarged portions adapted to fit the groove and rest therein so as to leave open spaces or avenues between the same, and means for darkening said avenues.

3. A screen comprising a suitable frame, the upper crosspiece of which is provided with a longitudinal groove having a dark-colored floor and side walls, a wire meshing arranged in the frame, and a movably and adjustably mounted guideway-bar having enlarged portions adapted to fit the groove and rest therein.

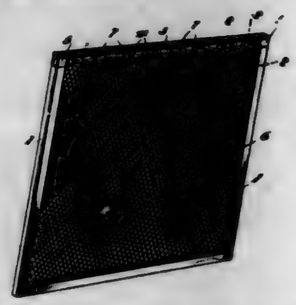

4. A screen comprising a suitable frame, the upper crosspiece of which is provided with a longitudinal groove having a dark-colored floor and side walls, a wire meshing arranged in the frame, and an elongated guideway-bar secured to the meshing and having enlarged portions adapted to fit the groove and rest therein so as to leave open spaces or avenues between the same.

846,908. ROLLER-BEARING. THOMAS COOPER, Kings Lynn, England. Filed May 1, 1906. Serial No. 314,616.

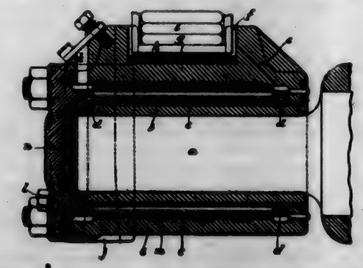

Claim.—A journal-box comprising a casing a portion of which is chilled interiorly, a cage provided with a series of rollers in the casing, said casing having in its top a socket, a plate having a convex upper surface in said socket, and a spring-holder having a flat base coacting with the convex surface of the plate, whereby the oscillations of the vehicle-body are not transmitted to the rollers.

846,909. BOTTLE-STOPPER. AUGUST W. CORDES, New York, N. Y. Filed Apr. 20, 1906. Serial No. 312,772.

Claim.—1. A bottle-stopper comprising a cap or disk having depending fingers corrugated with exterior and interior cam-surfaces curved in the direction of their length, whereby the fingers are made absolutely stiff or rigid, and a clamping-ring supported to bear against said exterior cam-surfaces.

2. In combination with a bottle having a beaded neck roughened or notched upon its under surface, a cap having depending fingers with internal corrugations to engage said roughened or notched portion of the bottle.

3. In combination with a bottle having a neck with a bead roughened or notched upon its under side, a cap or disk having depending fingers arranged to bear against said notched or roughened surface, and a relatively revoluble part arranged to move said fingers inward.

4. In combination with a bottle having a neck with a bead, the under surface of which is roughened or notched, a cap or stopper having fingers to engage said roughened surface, and a part to tighten said fingers when said part is rotated, the fingers being held against rotation by said roughened surface.

5. In combination with a bottle-cap having depending fingers, a botle having a bead with means to prevent independent rotation of the cap thereon.

6. A bottle-stopper, for use in connection with a bottle having a shoulder on the neck thereof, the same comprising a disk having depending fingers provided with inner and outer cam-surfaces set at an angle to each other and to the plane of the body of said fingers, and a vertically-movable ring embracing said fingers and adapted, when the stopper is applied to a bottle, to act upon the outer cam-surfaces thereof and force the inner cam-surfaces thereof into engagement with the shoulder on said bottle, for drawing the stopper downwardly thereon.

7. A bottle-stopper, for use in connection with a bottle having a shoulder on the neck thereof, the same comprising a cap having depending fingers, each provided with a downwardly and inwardly inclined interior surface and with a downwardly and outwardly inclined outer surface, arranged opposite each other to form a wedge, an axially-movable ring embracing said fingers and adapted, when the stopper is applied to a bottle, to act upon the surface of each wedge and force the interior surface thereof into engagement with the shoulder on said bottle, for drawing the cap downwardly thereon, and coöperating means on the cap and the ring for forcing the latter axially when it is rotated.

8. A bottle-stopper comprising a cap and a ring surrounding the cap and rotatable with respect thereto, in combination with a bottle and coöperating devices on the bottle and cap to prevent the latter from rotating when the ring is turned.

846,910. CHAIR. GEORGE E. CRUMP, Spokane, Wash. Filed Feb. 23, 1906. Serial No. 302,605.

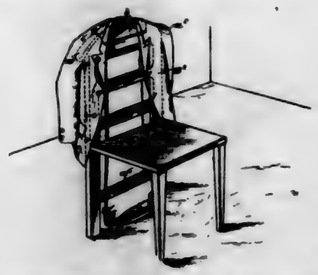

Claim.—1. As an improvement in chairs, a back member therefor whose upper or cross piece has a horisontal recess adapted to receive one end of a garment and a clamping member mounted on the back of said cross-piece for engaging one part of the garment and clamping its end in the said recess, and a clamping means on the lower part of the chair for engaging another part of the garment.

2. In a chair of the character described, the combination with the recessed back piece; of the clamp member whose lower edge is straight, said member being hinged to the back piece to swing down with its lower edge in the plane of the recess in the back piece, a detent for holding it to its down position, said lower edge of the clamp member being yielding with respect to the recess in the chair-back, for the purposes described.

3. The combination with the recessed back member; of the clamp member comprising a main portion hinged at one end to the recessed back piece, a lower portion, and coiled spring connections for joining the upper and lower portions, and a detent on the chair-back for locking the clamp member to its clamping position, as set forth.

846,911. GARMENT-SUPPORT. GEORGE E. CRUMP, Spokane, Wash. Filed Feb. 23, 1906. Serial No. 302,606.

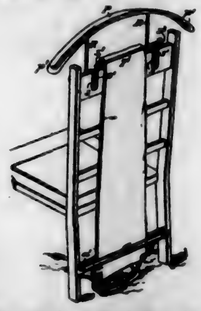

Claim.—1. An attachment of the character described, comprising a pair of side arms having means at the lower end for clamping the top of a chair-back, a cross-bar connecting said side arms adapted to support a pair of trousers therefrom, a clamp thereon for engaging the trousers, and a coat-hanger mounted on the upper end of the side arms, as set forth.

2. A coat-hanger attachment for chairs, comprising a body portion formed of a flexible body bent to form side arms, and a cross-arm, and into clamp-loop form at the points where the side arms and cross-arms merge, and a hanger-piece fixedly secured to the upper end of the side arms.

3. A coat-hanger attachment for chairs, which comprises a body portion bent up from a single strand of spring-wire, having a pair of side arms, a cross member, clamp-loop portions at the points where the side arms and cross member merge, a separate clamp member hinged to the cross-bar having means for interlocking with said bar and a hanger-shaped top fixedly mounted on the upper end of the side arms, as specified.

4. A coat-hanger formed of a single spring-wire strand bent to form a top or hanger portion, a pair of side arms, a cross-bar connecting the side arms, and spring-clamp loops at the points where the side arms and cross-bar merge, as set forth.

5. A coat and trousers hanger, which comprises a supporting member having a coat-hanger shape, a body portion consisting of a spring-wire strand bent to form a pair of side arms, the upper ends of which are fixedly secured to the top or supporting member, the lower ends terminating in spring-clamp loops, the end of said loops merging with a cross-bar, and a clamp-rod hinged in one of the said loops and having a hook end to engage the other loop, as set forth.

846,912. CLUSTER-SOCKET. JOHN H. DALE, New York, N. Y. Filed May 24, 1906. Serial No. 318,487.

Claim.—1. In a receptacle or cluster-socket for incandescent lamps, a plurality of metallic parts having integral arms, terminal screws threaded into each of said parts, threaded shells pivoted to said arms, metallic clips extending to a point coaxial with said shells, and terminal screws on said clips, said terminal screws all projecting in the same general direction, whereby they may be connected in different ways.

2. In a receptacle or cluster-socket for incandescent lamps, a base-block, a plurality of metallic parts each having a terminal screw supported by said base-block, threaded shells supported by said parts, additional metallic clips also supported on said base-block and arranged to extend to points coaxial with said shells, and terminal screws on said metallic clips, all of said terminal screws projecting in the same direction from the base-block whereby they may be connected in different combinations as desired.

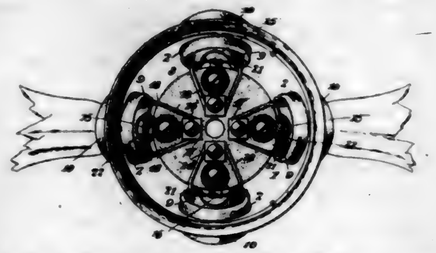

3. In a receptacle or cluster-socket for incandescent lamps, a base or terminal block, a plurality of metallic parts each having a pair of divergent arms secured to said block and constituting terminals, shells pivoted to said arms, metallic clips extending to points coaxial with said shells, and screws or connections passed through said block between said arms for holding the clips in place, said connections constituting terminals therefor.

4. In a receptacle or cluster-socket for incandescent lamps, a base or terminal block having protuberances and constituting a support for the threaded shells and central stud connections of incandescent lamps, and means passed through said protuberances and constituting terminals for said central stud connections.

5. In a receptacle or cluster-socket for incandescent lamps, a base or terminal block having protuberances threaded shells, means secured upon the upper face of said block and supporting said shells, metallic clips upon the lower face of said block and extending to points coaxial with said shells, and electric connections to said clips through said protuberances.

6. In a receptacle or cluster-socket for incandescent lamps, an insulating base or terminal block having threaded shells thereon and terminals therefor, and having protuberances opposite said terminals, metallic clips on the under face of said block and extending to points coaxial with said shells, and electric connections from said clips extending through said protuberances.

7. A receptacle or cluster-socket for incandescent lamps, comprising a base or terminal block having threaded shells thereon, insulating-bushings on said shells, and serving as a support for said base, lamp-terminals on said base, and means for making series or multiple connections between the lamp-terminals.

8. A receptacle or cluster-socket for incandescent lamps comprising a base or terminal block having threaded shells pivoted thereto, a casing serving as a support for said shells, and means projecting from the upper face of said base-block and constituting terminals, said terminals being free to be connected in different combinations.

9. A receptacle or cluster-socket for incandescent lamps comprising a base or terminal block of insulating material, lamp-terminals mounted thereon, means supported by said terminals for receiving a plurality of incandescent lamps additional central stud-terminals, and means projecting from one face of said terminal block for the connection of circuit-wires, each of said terminals having separate means for making such connections.

10. In a receptacle or cluster-socket, an insulating base or block, threaded shells pivoted thereto, central stud connections or terminals corresponding to said shells, and means projecting from one face of said block adapted to make separate circuit-wire connections with each of said threaded shells and central stud connections or terminals.

11. In a receptacle or cluster-socket, an insulating base or block having arms projecting therefrom, threaded shells pivotally supported from said arms, a casing having apertures, bushings in said apertures and surrounding said shells, whereby said base or block is supported, and means projecting from one face of said base or block for establishing any desired circuit-wire connections with said threaded shells.

12. In a receptacle or cluster-socket, an insulating base or block having protuberances thereon, the upper part of said protuberances being of counterbored form, terminals within said protuberances, threaded shells and terminals therefor, all of said terminals being separate and distinct from one another and capable of receiving separate circuit-wires in different combinations.

13. In a receptacle or cluster-socket, a base or terminal block of insulating material having a plurality of metallic terminals thereon, shells fixed to said terminals, a plurality of metallic clips extending to a point axial of said shells, and separate terminals for said metallic clips.

14. In a receptacle or cluster-socket, a plurality of metallic parts each having a pair of arms, shells supported by said arms, and additional metallic clips extending to a point axial of said shells.

15. In a receptacle or cluster-socket, a plurality of metallic parts each having a pair of arms, shells supported by said arms, and additional metallic clips extending to a point axial of said shells, all of said metallic parts and clips being insulated from one another.

16. In a receptacle or cluster-socket for incandescent lamps, a base or terminal block, a terminal comprising a metallic part having four arms, two of which are bent into parallel planes, and two of which diverge from one another, a shell on said divergent arms, a pair of screws in said parallel arms constituting a fastening means and a binding-post respectively, and an additional terminal connection for the central stud of the usual incandescent lamp.

846,913. GRAIN-CAR DOOR. BOYD DAUGHERTY, Chicago, Ill. Filed Nov. 20, 1905. Serial No. 288,140.

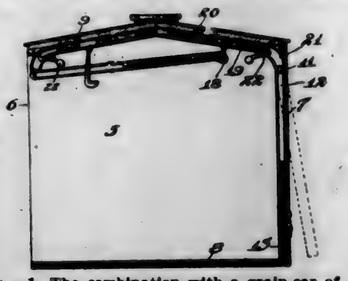

Claim.—1. The combination with a grain-car of a door the side edges of which are composed of channel-bars pivoted toward their upper ends and free to swing inwardly and outwardly from the car, and a series of board sections removably fitting between said channel-bars for increasing and descreasing the closure of the door at will, substantially as described.

2. The combination with a grain-car, of a door the side edges of which are composed of channel-bars pivoted toward their upper ends and free to swing inwardly and outwardly from the car, a series of board sections removably fitting between said channel-bars for increasing and decreasing the closure of the door at will and roof channel-bars into which said bars may be shifted from the door and retained, substantially as described.

3. The combination with a grain-car, of a door the side edges of which are composed of channel-bars pivoted toward their upper ends and free to swing inwardly and outwardly from the car, a series of board sections removably fitting between said channel-bars for increasing and decreasing the closure of the door at will and roof channel-bars registering with the door channel-bars when the door is in a vertical position, substantially as described.

846,914. GLOVE-RETAINING DEVICE. EMMA O. DE VRIES, Washington, D. C. Filed Jan. 8, 1907. Serial No. 351,439.

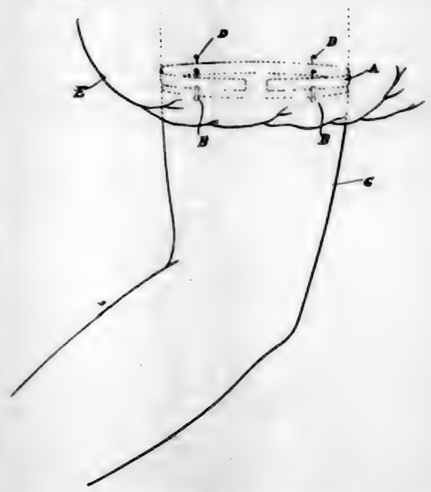

Claim.—1. A device for holding up long-armed gloves comprising a strip of resilient material, clamping means fixed thereto and designed to engage the arm of the glove, and means carried by said strip for engagement with the sleeve of a dress, as set forth.

2. A device for holding up long-armed gloves comprising a band of resilient metal, clamping-jaws carried thereby and designed to engage the arm of the glove, and hooks fixed to said band and adapted to engage the sleeve of a dress, as set forth.

3. A device for holding up long-armed gloves comprising a strip of resilient metal bent in circular form with a space intermediate the ends thereof, whereby the strip may be contracted into a smaller diameter, clamps fixed to the strip and adapted to engage the arm of a glove, and hooks fixed to the strip and projecting outwardly and over the upper edge thereof and designed to engage the sleeve of a dress, as set forth.

846,915. APPARATUS FOR CLEANING AND SEPARATING SEEDS, &c. FREDERICK M. DOSSOR, Doncaster, England. Filed June 11, 1906. Serial No. 321,245.

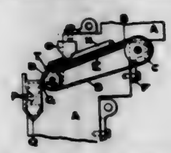

Claim.—1. In a seed-cleaning apparatus, the combination, with a series of inclined endless belts or aprons of rough fabric, arranged in the form of steps, and means for driving the said belts upwardly and rearwardly; of a series of hoppers arranged at the front and lower ends of the said belts, said hoppers being provided internally with inclined projections covered with rough fabric.

2. In seed-cleaning apparatus, the combination, with a support, a frame having its middle part pivoted to the said support, and means for holding the said frame at various inclinations; of a series of inclined endless belts or aprons of rough fabric mounted in the said frame and arranged in the form of steps, means for driving the said belts upwardly and rearwardly, and a series of hoppers supported by the said frame and arranged at the front and lower ends of the said belts, said hoppers being provided with inclined projections internally which are covered with rough fabric.

846,916. COMBINED HOT BLAST, WATER-COIL, AND GAS-BURNER. JOHN B. EHRLICH, Indianapolis, Ind. Filed Dec. 2, 1904. Serial No. 235,240.

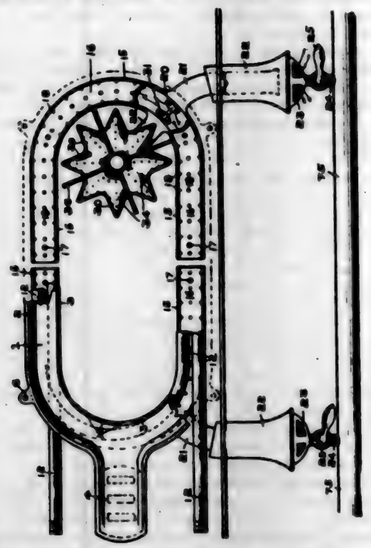

Claim.—1. The combination with a hot-blast conduit, of a water-coil that conforms to the outline of and lying immediately beneath said conduit but independently therefrom, a plurality of independent burners comprising a burner unit and which lie immediately beneath and independently of said water-coil, an inlet-tube communicating with each member of the burner unit, a secondary burner centrally mounted within each member of the burner unit and on a line horizontally with the center of the hot-blast conduit, and inlet-tubes extending from the members of the burner unit to the independet burners.

2. The combination with a hot-blast conduit, of a water-coil that conforms to the outline of and lying immediately beneath said conduit but independent therefrom, a plurality of independent burners comprising a burner unit and which lie immediately beneath and independently of said water-coil, an inlet-tube communicating with each member of the burner unit, secondary burners mounted above and in axial relation, vertically, with the burner unit, and an inlet-tube extending from the burner unit and communicating with the secondary burners.

3. The combination with a hot-blast conduit, of a water-coil that conforms to the outline of and lying immediately beneath said conduit but independently therefrom, a plurality of independent burners comprising a burner unit and which lie immediately beneath and independently of said water-coil, an inlet-tube communicating with each member of the burner unit, star-shaped secondary burners centrally mounted within each member of the burner unit, removable covers for the secondary burners, and perforations in the secondary burner-tops to permit the discharge of the gas.

846,917. VENDING-MACHINE. FRANK FOOTE, Mystic, and NORMAN M. JOHNSTON, Hartford, Conn.; said Johnston assignor of one-half of his right to Edward L. Belknap, Hartford, Conn. Filed Feb. 3, 1906. Serial No. 299,356.

Claim.—1. In a device of the character described, the combination with a coin-slide provided with a coin-seat therein, of a coin-operated slide located beneath said coin-slide and provided with a coin-engaging means projecting above said coin-slide adapted to be engaged by a coin in said seat, whereby said coin-slide and coin-operated slide will be locked and moved together to the limit of their rearward movement.

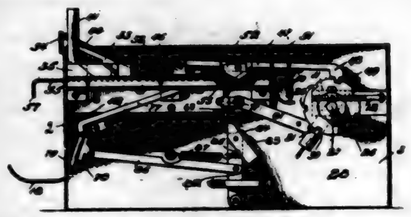

2. In a device of the character described, the combination with a coin-slide provided with a coin-seat therein, of a coin-operated slide located beneath said coin-slide and provided with a coin-engaging means projecting above said coin-slide, whereby said slides are locked and moved together, a stop for limiting the extent of movement of said coin-operated slide and the rearward movement of said coin-slide, the forward movement of said coin-slide being limited by the coin-engaging means on said coin-operated slide.

3. In a device of the character described, the combination with a coin-slide provided with a coin-seat therein, and a longitudinal slot at each side of said seat, of a coin-operated slide located beneath said coin-slide and provided with coin-engaging means seated in said longitudinal slots in the coin-slide adapted to be engaged by a coin in said seat, whereby said coin-slide and coin-operated slide will be locked and moved together to the limit of their rearward movement.

4. In a device of the character described, the combination with a coin-slide provided with a coin-seat therein, and a longitudinal slot at each side of said seat, of a coin-operated slide located beneath said coin-slide and provided with coin-engaging means seated in said longitudinal slots in the coin-slide adapted to be engaged by a coin in said seat, whereby said coin-slide and coin-operated slide will be locked and move together to the limit of their rearward movement, and a suitable kicker or coin-ejector operated by the coin-slide to eject the coin and thereby free said slides for independent movement.

5. In a device of the character described, the combination with a coin-race having a coin-passage therein, and a coin-slide provided with a coin-seat therein, said seat and passage being adapted to register when said slide is drawn to its forward limit, of a coin-ejector or kicker located above said slide and operated thereby and adapted to eject the coin from said coin-seat when said slide has about reached the limit of its rearward movement.

6. In a device of the character described, the combination with a coin-slide having a coin-seat therein, a coin-operated slide located beneath said coin-slide and provided with a coin-engaging means projecting above said coin-slide adapted to be engaged by a coin in said coin-seat and moved therewith, of a delivery mechanism, and means connecting said coin-operated slide with said delivery mechanism, whereby said coin-slide and coin-operated slide when operated will cause the operation of said delivery mechanism.

7. In a device of the character described, the combination with a coin-slide having a coin-seat therein, a coin-operated slide located beneath said coin-slide and provided with a coin-engaging means projecting above said coin-slide adapted to be engaged by a coin in said coin-seat and moved therewith, of a notched wheel or disk connected with a delivery mechanism, means connecting said coin-operated slide with said notched wheel or disk to operate the same when said coin-slide and coin-operated slide are locked and moved together.

8. In a device of the character described, the combination with a coin-slide having a coin-seat therein, a coin-operated slide adapted to be engaged by a coin in said coin-

seat, whereby said slides are locked and moved together, of a notched disk connected with a delivery mechanism, means connecting said coin-operated slide with said notched disk to operate the same when said coin-slide and said coin-operated slide are locked and move toward the limit of their rearward movement, and means controlled by said coin-slide and engaging said notched wheel, whereby said notched wheel or disk is held locked against either forward or backward rotation.

9. In a device of the character described, the combination with a coin-slide having a coin-seat therein, a coin-operated slide adapted to be engaged by a coin in said coin-seat and moved therewith, of a notched wheel or disk connected with a delivery mechanism, a loosely-mounted pawl adjacent to said disk or notched wheel and adapted to engage the notches thereof for the purpose of giving said disk or notched wheel a step-by-step rotation, and adjustable means connecting said pawl and said coin-operated slide, whereby when said slides are locked and moved together said notched disk will be operated at each operation of the slides, and a locking means adapted to engage the notched wheel or disk and hold the same in locked position, said locking means being raised from and lowered into engagement with said wheel or disk by the movement of the coin-slide.

10. In a device of the character described, the combination with a coin-slide, and a notched wheel or disk with a delivery mechanism, of a locking-bar adapted to engage said notched wheel, a spring-pressed pawl on said bar adapted to be engaged by the coin-slide during its rearward movement to lift said locking-bar out of engagement with said wheel or disk to permit rotation, and which on the forward movement of said slide has a yielding engagement therewith, whereby said pawl will be raised independently of said bar, which latter will remain in locked position.

11. In a device of the character described, the combination with a coin-slide having a coin-seat therein, a coin-operated slide adapted to be engaged by a coin in said coin-seat, a coin-face above and a coin-chute below said slides, and a gate at the end of the coin chute, of means connected with said gate to hold the same closed, means attached to the coin-operated slide adapted, when said slide is moved rearwardly, to cause said gate to be opened, and a kicker or ejector to eject the coin from the coin-seat into said coin-chute.

12. In a device of the character described, the combination with a notched wheel or disk connected with a delivery mechanism, of a coin-slide having a coin-seat therein, mechanism adapted to be engaged and operated by the coin in said coin-seat to rotate said notched disk, one step, locking means controlled by the movement of said coin-slide to lock and unlock said notched disk and means operated by said coin-slide to eject the coin from said coin-seat.

13. In a device of the character described, the combination with a notched wheel or disk connected with a delivery mechanism, of a coin-slide having a coin-seat therein, mechanism adapted to be engaged and operated by the coin in said coin-seat to rotate said notched disk, one step, locking means controlled by the movement of said coin-slide to lock and unlock said notched disk, means operated by said coin-slide to eject the coin from said coin-seat, and mechanism actuated by said coin-actuated mechanism to permit the coin after being ejected from said coin-seat to fall to the bottom of the device.

14. In a device of the character described, the combination with a coin-slide having a coin-seat therein, and longitudinal slots flanking said coin-seat, of a coin-operated slide having lugs or fingers adapted to set into said slots and be engaged by a coin therein, and means in said lugs or fingers to permit the passage therethrough of a coin when the latter is thinner than the standard coin, without operating said machine.

15. In a device of the character described, the combination with a coin-slide having a coin-seat therein, longitudinal slots flanking said coin-seat, a slot to the rear of said coin-seat between said longitudinal slots and an open slot in one side of said coin-slide near the rear end thereof, of a coin-operated slide having lugs or fingers adapted to set into said longitudinal slots and be engaged by a coin therein, a stop to limit the extent of rearward movement of said coin-slide, a pivoted arm operated by the movement of said coin-slide to lock and unlock a delivery mechanism and an ejector device also operated by the movement of said coin-slide to eject a coin from said coin-seat when said coin-slide has about reached the limit of its rearward movement.

16. In a device of the character described, the combination with a coin-slide having a coin-seat therein, longitudinal slots flanking said coin-seat, a slot to the rear of said coin-seat between said longitudinal slots, and an open slot in one side of said coin-slide near the rear end thereof, of a coin-operated slide having lugs or fingers adapted to set into longitudinal slots and be engaged by a coin therein, a stop adapted to limit the extent of rearward movement of said coin-slide by engagement with the forward end of the slot in said coin-slide between the longitudinal slots, a pivoted arm operated by the movement of said coin-slide to lock and unlock a delivery mechanism, a dog pivoted on said arm adapted to raise the same on the rearward movement of said coin-slide to disengage the delivery mechanism but which will on the forward movement of said slide be oscillated independent of said pivoted arm for the purpose of keeping said pivoted arm in locking engagement with the delivery mechanism, and an ejector device also operated by the movement of said coin-slide to eject a coin from said coin-seat when said coin-slide has about reached the limit of its rearward movement.

17. In a device of the character described, the combination with a coin-slide-supporting plate, a coin-slide supported thereby and adapted to slide thereon, and a coin-seat having its sides formed in said coin-slide and its bottom by the top surface of said supporting-plate, of a coin-operated slide located beneath said coin-slide-supporting plate, means carried thereby and projecting upward above the top surface of said supporting-plate for engaging a coin in said coin-seat, whereby said slides are locked and moved together until such lock is broken by the ejecting of the locking-coin.

846,918. HARVESTER ATTACHMENT. LOUIS FRANKHEIM, Newton, Wis. Filed Oct. 16, 1905. Serial No. 282,919.

Claim.—1. The combination with a harvester-shoe having a standard and divider, of an attachment consisting of a single-bend bar provided with a rigid taper socket-clip immediately in rear of the bend of same for the engagement of the point of said divider, the rear end of the bar being in connection with said standard and the forward portion of said bar inclined upward at an obtuse angle to the remainder thereof ahead of the clip.

2. The combination with a harvester-shoe having a standard and a divider, of an attachment consisting of a single-bend bar that is longitudinally slotted at the rear end, a rigid taper socket-clip provided in connection with the bar immediately in the rear of the bend of same for the engagement of the point of said divider, and a fastening-bolt engaging said standard and the slot of said bar, the forward portion of which bar is inclined upward at an obtuse angle to the remainder thereof ahead of the clip.

846,919. COMBINED MARKER AND TRACING-WHEEL. RAYMOND L. HERMAN, New York, N. Y., assignor, by mesne assignments, to Hall-Borchert Dress Form Company, a Corporation of New Jersey. Filed June 28, 1906. Serial No. 323,946.

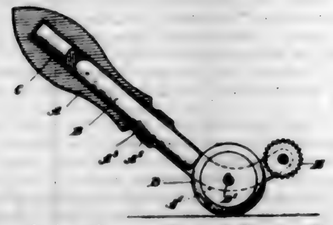

Claim.—1. A tool comprising a hollow handle adapted to contain a marking substance, a follower in said handle, a curved fork having a sleeve portion with spring-fingers to detachably connect it with the said handle, a rotary marker journaled in said fork and adapted to be engaged by the marking substance, and a tracing-wheel journaled in the fork at a greater distance from the handle than the marker.

2. A tool comprising a handle adapted to contain a marking substance, a follower in said handle, a carrying portion connected with the handle, a rotary marker and a tracing-wheel journaled in said carrying portion and located laterally one relatively to the other to bring one or the other to its operative position by turning the handle about its axis.

3. A tool comprising a handle adapted to contain a marking substance, a carrying portion in advance of the handle, a rotary marker journaled in said portion and adapted to be engaged by the marking substance, and a tracing-wheel likewise journaled in said portion and having its active portion located on the side of the handle's axis opposite to that on which the active portion of the rotary marker is located.

846,920. FAUCET. JOHN W. HORTH, Salamanca, N. Y. Filed Mar. 24, 1906. Serial No. 307,899.

Claim.—1. In a faucet, a casing having an internal chamber provided with a discharge-port and having a valve-seat at one end, a valve adapted to close against said seat, a tubular stem carrying the valve and extending through said chamber, said stem having spaced ports adjacent the valve, and spaced ports communicating with the chamber, a stop-pin extending through the casing and entering one of said ports to prevent rotative movement of the stem, and means for moving said stem in the direction of its length.

2. In a faucet, a chambered casing, one end of which is faced to form a valve-seat, a stem extending through said casing, a valve carried by the stem, the stem being hollow for a portion of its length and provided with two sets of ports which permit the flow of liquid through the stem when the valve is open, means for preventing rotary movement of said stem, and means for moving the stem in the direction of its length.

3. In a faucet, a casing having an enlarged chamber and bored at both ends, one end of the casing being faced to form a valve-seat, a stem extending through the casing, said stem being hollow for a portion of its length and being provided with two sets of ports, a valve carried by said stem and arranged to close against the seat, a stuffing-

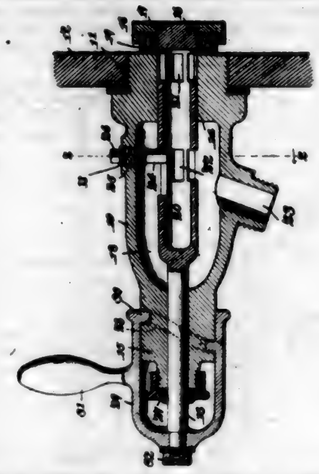

box through which the outer end of the valve-stem passes, a cap member mounted on the outer end of the casing, and having a cam connection therewith, means for connecting said casing to the valve-stem, and an operating-handle carried by the stem.

846,921. CAN-OPENER. ROSS W. HORTON and JEHIEL E. MOLESWORTH, New Athens, Ohio. Filed Mar. 23, 1906. Serial No. 307,673.

Claim.—1. A can-opener comprising a loop-shaped handle, a cutter, a guard, and a fulcrum, all forming parts of a single blank, the fulcrum having an oblong opening and a member of the handle passing through the opening of the fulcrum and having a limited lateral movement therein and provided at its outer end with the cutter.

2. A can-opener comprising a loop-shaped handle, a cutter, a guard, and a fulcrum, all forming parts of a single blank, the fulcrum comprising a series of concentric bends or winds of the blank and having an opening through which a member of the handle passes.

3. The herein-described can-opener formed of a single blank or wire comprising a loop-shaped handle, a cutter, a guard and a fulcrum, the guard being parallel with the cutter and arranged at one side and above the edge of said cutter, and a fulcrum comprising a series of concentric winds or bends and having an oblong opening through which a member of the handle passes and has a limited play, said fulcrum projecting from all sides of the handle to form a guard substantially in the manner specified.

846,922. PLASTIC SOLDERING-PASTE. NEWELL S. JENKINS, Dresden, Germany. Filed June 19, 1906. Serial No. 322,474.

Claim.—1. A soldering-paste consisting of a suitable soldering metal in finely reduced or powdered state, borax, an adhesive and an acid.

2. A soldering-paste consisting of a suitable soldering metal in a finely reduced or powdered state, borax, an adhesive and sulfuric acid.

846,923. SIGNATURE-CONVEYING AND WIRE-STITCHING-MACHINE. CHARLES A. JUENGST, Croton Falls, N. Y. Filed May 26, 1905. Serial No. 262,324.

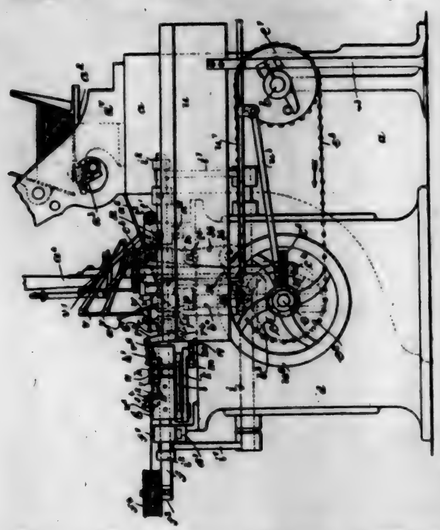

Claim.—1. The combination with devices for delivering groups of collated signatures, of a stitching mechanism having a rectilinear reciprocating movement acting in unison with the movement of the groups of signatures.

2. The combination with devices for delivering groups of collated signatures, of a wire-stitching mechanism having a rectilinear reciprocating movement acting in unison with the movement of the groups of signatures.

3. The combination with devices for delivering groups of collated signatures, of a stitching mechanism having a rectilinear reciprocating movement in line with the direction of delivery of the collated signatures and acting in unison with the movement of the groups of signatures.

4. The combination with devices for delivering groups of collated signatures, of a stitching mechanism having a reciprocating movement acting in line with the movement of the groups of signatures and means for imparting to the stitching mechanism a speed slightly greater than that of the collated signatures as delivered.

5. The combination with devices for progressively delivering spaced-apart groups of collated signatures or sheets, of a wire-stitching mechanism having a rectilinear reciprocating movement acting in unison with the movement of the groups of signatures.

6. The combination with devices for delivering groups of collated signatures progressively from a signature-gathering machine, of a wire-stitching machine, intermediate conveyer devices, and means associated with the latter devices for gradually turning the signatures from an approximately horizontal to a substantially vertical position.

7. The combination with devices for delivering groups of collated signatures progressively from a signature-gathering machine, of a reciprocating wire-stitching machine, intermediate conveyer devices, and means associated with the latter devices for gradually turning the signatures from an approximately horizontal to a substantially vertical position.

8. The combination with devices for delivering groups of collated signatures progressively from a signature-gathering machine, of a wire-stitching machine, intermediate conveyer devices, and means associated with the latter devices for gradually turning the signatures from an approximately horizontal to a substantially vertical position, and means for engaging and holding the groups of collated signatures with pressure.

9. The combination with devices for delivering groups of collated signatures or sheets progressively from a signature-gathering machine, of a conveyer device acting in unison with the devices for collating and delivering the groups as collated and by which the said groups are forwarded from the collating-machine, and a wire-stitching mechanism to which said groups are brought by said devices, said wire-stitching mechanism having a rectilinear reciprocating movement acting in unison with the movement of the collated groups of signatures and sheets.

10. The combination with devices for delivering groups of collated signatures or sheets progressively from a signature-gathering machine, of a conveyer device acting in unison with the devices for collating and delivering the groups as collated and by which the said groups are forwarded from the collating-machine, a wire-stitching mechanism to which said groups are brought by said devices, said wire-stitching mechanism having a reciprocating movement acting in unison with the movement of the collated groups of signatures and sheets, and means for engaging and holding the respective groups of signatures and sheets with pressure during the wire-stitching operation.

11. The combination with devices for delivering groups of collated signatures or sheets progressively from a signature-gathering machine, and a reciprocating wire-stitching mechanism, of an intermediate conveyer mechanism receiving the groups of signatures and sheets from the aforesaid devices as delivered, and which moves in unison therewith, a signature-guiding trough and coacting guide-racks associated therewith and which trough and racks are so constructed as to gradually turn from the inclined to a substantially vertical position, performing the function of turning the respective collated groups of signatures and sheets in transit from an inclined to a substantially vertical position in which they stand on their folded back edges.

12. In a signature-gathering machine, and in combination, means for supporting spools of wire, guides for the wire, means for progressively feeding the wire, means for severing the wire into lengths and forming staples, means for forcing said staples through groups of collated signatures or sheets, means for clenching the staples on the opposite side thereof, a common frame supporting the aforesaid devices, a supporting-bed and guides and means for reciprocating said frame and devices upon the guides of said bed.

13. In a signature-gathering machine and in combination, means for supporting spools of wire, guides for the wire, means for progressively feeding the wire, means for severing the wire into lengths and forming staples, means for forcing said staples through groups of collated signatures or sheets, means for clenching the staples on the opposite side thereof, means for imparting a pressure to the groups of signatures or sheets simultaneous with the stapling operation, a common frame supporting the aforesaid devices, a supporting-bed and guides, and means for reciprocating said frame and devices upon the guides of said bed.

14. In a signature-gathering machine, and in combination, means for supporting spools of wire, guides for the wire, means for progressively feeding the wire, means for severing the wire into lengths and forming staples, means for forcing said staples through groups of collated signatures or sheets, means for clenching the staples on the opposite side thereof, means for adjusting the relations of the aforesaid parts in proportion to the known thickness of the superimposed signatures or sheets, a common frame supporting the aforesaid devices, a supporting-bed and guides, and means for reciprocating said frame and devices upon the guides of said bed.

15. In a conveying and stapling machine, the combination with devices for delivering groups of collated signatures or sheets progressively from a signature-gathering machine, of a signature-guiding trough *c* forming a prolongation of the devices of the signature-gathering machine, a conveyer-chain *c'* with pins moving along said trough and acting in conjunction with the delivering devices of the signature-gathering machine, and guide-racks *v*, *v'*, said parts being constructed so as to turn the signatures or sheets from an inclined into a substantially vertical position with their movement.

16. In a conveying and stapling machine, the combination with devices for delivering groups of collated signatures or sheets progressively from a signature-gathering machine, of a signature-guiding trough *c* forming a prolongation of the devices of the signature-gathering machine, a conveyer-chain *c'* with pins moving along said trough and acting in conjunction with the delivering devices of the signature-gathering machine, guide-racks *v*, *v'*, said parts being constructed so as to turn the signatures or sheets from an inclined into a substantially vertical position with their movement, and a guide for the conveyer-chain *c'* extending along the signature-guiding trough *c* so as to keep the signatures and sheets away from contact with the moving chain.

17. In a conveying and stapling machine, the combination with a conveyer-chain, a signature-trough and a sprocket a^7, around which the chain passes and located at one end of the machine, of a signature-guiding trough *c* connected against and forming a substantial prolongation of the aforesaid signature-trough, a pulley c^2 adjacent to the sprocket a^7, and a conveyer-chain *c'* with pins passing around said pulley so as to receive the superimposed signatures or sheets from the aforesaid conveyer-chain, a sprocket c^3 and vertical shaft c^4 for said sprocket whereby the conveyer-chain *c'* is given a twist in its line of movement.

18. In a conveying and stapling machine, the combination with a conveyer-chain, a signature-trough and a sprocket a^7 around which the chain passes and located at one end of the machine, of a signature-guiding trough *c* connected against and forming a substantial prolongation of the aforesaid signature-trough, a pulley c^2 adjacent to the sprocket a^7, a conveyer-chain *c'* with pins passing around said pulley so as to receive the superimposed signatures or sheets from the aforesaid conveyer-chain, a sprocket c^3 and vertical shaft c^4 for said sprocket, whereby the conveyer-chain *c'* is given a twist in its line of movement, a guide c^7 for the conveyer-chain *c'* and guide-racks *v*, *v'*, to which parts a twist is given so as to turn the signatures or sheets from an inclined into an approximately vertical position.

19. In a conveying and stapling machine, the combination with a signature-guiding trough *c*, of a part *g'* forming a substantial continuation thereof, guide-racks *v*, *v'* between which the signatures and sheets move, a conveyer-chain *c'* with pins, a fence or back support *w*, a movable cross-bar h^3 adapted to come against the face of the signatures or sheets opposite to that of the fence *w*, and means for actuating said cross-bar for compressing the signatures or sheets.

20. In a conveying and stapling machine, the combination with a signature-guiding trough *c*, of a part *g'* forming a substantial continuation thereof, guide-racks *v*, *v'* between which the signatures and sheets move, a conveyer-chain *c'* with pins, a fence or back support *w*, a movable cross-bar h^3 adapted to come against the face of the signatures or sheets opposite to that of the fence *w*, and means for actuating said cross-bar for compressing the signatures or sheets, and means for progressively stapling said superimposed signatures or sheets as thus held and means for clenching the staple.

21. In a conveying and stapling machine, the combination with a signature-guiding trough *c*, of a part *g'* forming a substantial continuation thereof, guide-racks *v*, *v'* between which the signatures and sheets move, a conveyer-chain *c'* with pins, a fence or back support *w*, a movable cross-bar h^3 adapted to come against the face of the signatures or sheets opposite to that of the fence *w*, means for actuating said cross-bar for compressing the signatures or sheets, a shaft 33 in the movable member h^3, a pair of toggle-bars connected thereto and to a fixed part of the machine, a link 34, a shaft 36, cranks 35, a bar f^3 carried by said cranks and having a slidable connection with the link 34, a crank 37, roller 38, a cam 39, and an auxiliary shaft *e* on which is placed the cam 39 for actuating said toggle-bars and effecting the movement of the part h^3.

22. In a conveying and stapling machine, the combination with a signature-guiding trough *c*, of a part *g'* forming a substantial continuation thereof, guide-racks *v*, *v'* between which the signatures and sheets move, a conveyer-chain *c'* with pins, a fence or back support *w*, a movable cross-bar h^3 adapted to come against the face of the signatures or sheets opposite to that of the fence *w*, means for actuating said cross-bar for compressing the signatures or sheets, a shaft 33 in the movable member h^3, a pair of toggle-bars connected thereto and to a fixed part of the machine, a link 34, a shaft 36, cranks 35, a bar f^3 carried by said cranks and having a slidable connection with the link 34, a crank 37, roller 38, a cam 39, an auxiliary shaft *e* on which is placed the cam 39 for actuating said toggle-bars and effecting the movement of the part h^3, a power-shaft *b*, a sprocket on the power-shaft, and a sprocket on said auxiliary shaft, and a chain c^2 connecting said sprockets and shafts for communicating the power of the power-shaft *b* through the auxiliary shaft to said parts.

23. In a conveying and stapling machine, a frame comprising parallel bars *f*, *f*, slide-bars *f'*, *f'* supporting the same, a fixed cross-bar f^2 at one end, spools of wire f^8, f^4 mounted on said cross-bar f^2, the fixed cross-bars *g*, *g'*, g^2 on the bars *f*, *f*, the movable cross-bars *h*, *h'* h^2 also on said parallel bars *f*, *f*, and devices carried thereby for feeding the wire forming the staples and effecting the wire stitching of superimposed signatures or sheets.

24. In a conveying and stapling machine, a frame, comprising parallel bars *f*, *f*, slide-bars *f'*, *f'* supporting the same, a fixed cross-bar f^2 at one end, spools of wire f^8, f^4 mounted on said cross-bar f^2, the fixed cross-bars *g*, *g'*, g^2 on the bars *f*, *f*, the movable cross-bars *h*, *h'*, h^2 also on said parallel bars *f*, *f*, and devices carried thereby for feeding the wire forming the staples and effecting the wire stitching of superimposed signatures or sheets, and series of coacting devices supplying power and for effecting the movement of said parts.

25. In a conveying and stapling machine, a series of reciprocating stitching devices, devices for actuating the same, a sliding support on which the same are moved, a shaft *i*, cranks *i'*, and links i^2 for causing an even reciprocation of said parts.

26. In a conveying and stapling machine, the combination with a bed-frame *d* and bracket-slideways *d'*, d^2 of slide-bars *f'*, *f'* in said slideways, parallel bars *f*, *f* passing through the bars *f'*, *f'*, wire-stitching devices and coacting parts carried thereby.

27. In a conveying and stapling machine, the combination with a series of reciprocating wire-stitching devices, devices forming a receptacle for superimposed signatures or sheets, a fixed member coming against one side of said signatures or sheets, a movable member adapted to be brought against the other side, pairs of toggles for actuating the movable member, a bar f^3, a link having a slidable relation with said bar and at its other end connected to the toggle devices, and means for swinging the link 34 for actuating the movable member by the toggles.

28. In a conveying and stapling machine, the combination with a series of reciprocating wire-stitching devices, devices forming a receptacle for superimposed signatures or sheets, a fixed member coming against one side of said signatures or sheets, a movable member adapted to be brought against the other side, pairs of toggles for actuating the movable member, a bar f^3, a link having a slidable relation with said bar and at its other end connected to the toggle devices, cranks 35, a shaft 36 carrying the same, said cranks carrying said bar f^3, a crank 37, a cam 39 acting thereon, and an auxiliary shaft for said cam.

29. In a conveying and wire-stapling machine, a series of reciprocating wire-stitching devices, a fixed member *g*, movable members *h*, *h'*, a stop device 20 and intermediate devices actuated in one direction by the said stop and pivoted to the member *g* for moving the members *h*, *h'* and feeding the wire.

30. In a conveying and wire-stapling machine, the com-

bination with a series of reciprocating wire-stitching devices, of a member g fixed thereto, bell-crank levers h, h' pivoted to the under side of the member g movable wire-feeding members h, h', means for connecting the same, links i, i' connected at one end to the movable member h' and at their other ends to the short arms of the bell-crank levers, a bar m to which the long arms of said bell-crank levers are pivotally connected, and a roller-stop 20 and spring h^4, substantially as set forth.

31. In a conveying and stapling machine, the combination with reciprocating wire-stitching devices, of a fixed bar 27 recessed and notched, of a cutter o and cutter-bar o', a pin 24 on the cutter-bar, an arm 26, a shaft 23 at one end connected with the arm 26 and at its other end a rocker-bar o^2 engaging the pin 24 by which devices the said cutter and cutter-bar are moved with the reciprocation of the wire-stitching devices.

32. In a conveying and stapling machine, the combination with reciprocating wire-stitching devices, of a fixed bar 27 recessed and notched, a series of cutters and cutter-bars, pivots 23, rocker-bars o^2, pins 24 in the cutter-bars engaging the rocker-bars, a link 25 between similar ends of the rocker-bars, an arm 26 connected to one pivot 23 and at its free end coming in contact with the fixed bar 27 in the recess and notch therefor for effecting the movements of the cutter-bars with the movement of the reciprocating devices.

33. In a conveying and stapling machine, the combination with a fixed part or bar g' vertically slotted, guide-blocks r', r^2 thereon at opposite sides of the vertical slot, a die-block in the vertical slot between the guide-blocks with the upper end of the die-block tapered, and means for drawing down said die-block and devices for returning the same to an initial position.

34. In a conveying and stapling machine, the combination with a fixed part or bar g', vertically slotted, guide-blocks r', r^2 thereon at opposite sides of the vertical slot, a die-block in the vertical slot between the guide-blocks with the upper end of the die-block tapered, a shaft r^4 and crank r^3 connected thereto and to the lower end of the die-block, a crank-arm r^5 and link r^6 for moving the die-block down, and a spring 28 for returning the die-block to an initial position when the other parts are released.

35. In a conveying and stapling machine, the combination with a fixed part or bar g' vertically slotted, guide-blocks r', r^2 thereon at opposite sides of the vertical slot, a die-block in the vertical slot between the guide-blocks with the upper end of the die-block tapered, means for drawing down said die-block, devices for returning the same to an initial position, a fence w bearing against a face of the die-block r and acting as a support for the superimposed signatures or sheets at one side, a support for the signatures or sheets at the opposite side, a cutter o and cutter-bar o', and a plunger-bar for acting upon the staple as cut, guide-blocks through which the staple passes as forced by the plunger-bar over the inclined upper end of the die-block as the same is drawn down.

36. In a conveying and stapling machine, the combination with a fixed member g', a fence w adjacent to the upper surface thereof and against which one side of superimposed signatures or sheets bear, means coming at the other side of the signatures or sheets to hold them in position, means for forming and forcing wire staples through the signatures or sheets, a bar s connected to the said movable part and having notches, rollers s' normally resting in said notches, means for moving said bar longitudinally and dogs s^2 actuated by the movement of said bar s clenching the staples.

37. In a conveying and stapling machine, the combination with a fixed member g', a fence w adjacent to the upper surface thereof and against which one side of superimposed signatures or sheets bear, means coming at the other side of the signatures or sheets to hold them in position, means for forming and forcing wire staples through the signatures or sheets, a bar s connected to the said movable part and having notches, rollers s' normally resting in said notches, means for moving said bar longitudinally, dogs s^2 actuated by the movement of said bar for clenching the staples, and a spring 31 at one end connected to the bar s and at its other end secured to the movable member and normally acting to keep the rollers s' in the notches of said bar.

38. The combination with devices for delivering groups of collated signatures, of a stitching mechanism including means for engaging and holding each group of signatures as progressively delivered, and means for moving the stitching mechanism along with the groups of collated signatures while the stitching is being performed.

39. The combination with devices for delivering groups of collated signatures, of a reciprocating stitching mechanism, means moving therewith for engaging and holding each group of signatures as progressively delivered while the stitching is being performed.

40. The combination with devices for progressively delivering groups of collated signatures, of a stitching mechanism having a movement in unison with the rectilinear reciprocating movement of the groups of signatures.

41. The combination with devices for progressively delivering groups of collated signatures of a wire-stitching mechanism having a movement in unison with the movement of the groups of signatures.

42. The combination with devices for delivering groups of collated signatures, of a stitching mechanism having a movement in line with the direction of delivery of the collated signatures and acting in unison with the movement of the groups of signatures.

43. The combination with devices for delivering groups of collated signatures, of a stitching mechanism having a movement acting in line with the movement of the groups of signatures and means for imparting to the stitching mechanism a speed slightly greater than that of the collated signatures as delivered.

846,924. NAIL-CLIPPER. OTTO KAMPFF, New York, N. Y. Filed Apr. 16, 1906. Serial No. 311,829.

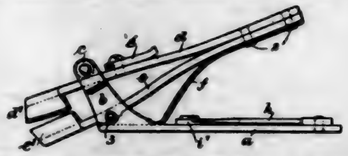

Claim.—1. A nail-clipper comprising a base-plate, a pair of arms rising therefrom, a pair of spring-blades connected at one end and pivotally secured at an intermediate place to said arms and their free ends provided with shear-cutting jaws in oppositely-arranged pairs.

2. A nail-clipper comprising a base-plate, upturned arms formed therewith at one end, spring-blades secured together at one end, shear-cutting jaws arranged in opposite directions at the opposite ends of said blades and spaced apart and in pairs curved to the shape of the nails for right and left hand cut.

3. A nail-clipper comprising a base-plate, upturned arms formed therewith at one end, spring-blades secured together at one end, shear-cutting jaws arranged in opposite directions at the opposite ends of said blades and spaced apart and in pairs curved to the shape of the nails for right and left hand cut, a pivot-pin pivotally connecting the blade nearest the base-plate to said arms, a spring bearing upon the base-plate and connecting with the spring-blades, and means for holding the spring-blades and their jaws in a closed position.

4. A nail-clipper comprising a base-plate, upturned inclined arms formed therewith at one end, a pivot-pin passing across through said arms near the base-plate and a roller pivotally mounted between the free ends of said arms, bent spring-blades riveted together at one end and coming between said arms, the blade nearest the base-plate connected by the pivot-pin to said arms and said roller coming above the upper surface of the other blade, shear-cutting jaws formed at the end of the blades opposite from their end connected by rivets, said jaws being spaced apart, arranged in opposite directions for right and left hand cut and curved approximately to the shape to be given the nails, and in their movement under pressure swinging on the aforesaid pivot and moving beneath the aforesaid roller to force the jaws together to effect the cut.

5. A nail-clipper comprising a base-plate, upturned inclined arms at one end thereof, a pivot-pin passing across through said arms near the base-plate and a roller pivotally mounted between the free ends of said arms, bent spring-blades riveted together at one end and coming between said arms, the blade nearest the base-plate connected by the pivot-pin to said arms and said roller coming above the upper surface of the other blade, shear-cutting jaws formed at the end of the blades opposite from their end connected by rivets, said jaws being spaced apart, arranged in opposite directions for right and left hand cut and curved approximately to the shape to be given the nails, and in their movement under pressure swinging on the aforesaid pivot and moving beneath the aforesaid roller to force the jaws together to effect the cut, and a locking-pawl pivoted to the upper spring-blade and when the jaws are closed adapted at its free end to come against the roller to hold the parts in a closed position.

6. A nail-clipper comprising a base-plate, upturned inclined arms at one end thereof, a pivot-pin passing across through said arms near the base-plate and a roller pivotally mounted between the free ends of said arms, bent spring-blades riveted together at one end and coming between said arms, the blade nearest the base-plate connected by the pivot pin to said arms and said roller coming above the upper surface of the other blade, shear-cutting jaws formed at the end of the blades opposite from their end connected by rivets, said jaws being spaced apart, arranged in opposite directions for right and left hand cut and curved approximately to the shape to be given the nails, and in their movement under pressure swinging on the aforesaid pivot and moving beneath the aforesaid roller to force the jaws together to effect a cut, a knife-blade and a file-blade pivotally connected to the inner face of the base-plate at one end, and a spring whose free ends bear against the knife-blade and file-blade to hold them closed or open.

7. A nail-clipper comprising a base-plate, upturned inclined arms at one end thereof, a pivot-pin passing across through said arms near the base-plate and a roller pivotally mounted between the free ends of said arms, bent spring-blades riveted together at one end and coming between said arms, the blade nearest the base-plate connected by the pivot-pin to said arms and said roller coming above the upper surface of the other blade, shear-cutting jaws formed at the end of the blades opposite from their end connected by rivets, said jaws being spaced apart, arranged in opposite directions for right and left hand cut and curved approximately to the shape to be given the nails, and in their movement under pressure swinging on the aforesaid pivot and moving beneath the aforesaid roller to force the jaws together to effect the cut, and a tongue and integral arm secured to one spring-blade and passing through a recess in the other spring-blade in proximity to the shear-cutting jaws.

8. A nail-clipper comprising a base-plate, upturned inclined arms at one end thereof, a pivot-pin passing across through said arms near the base-plate and a roller pivotally mounted between the free ends of said arms, bent spring-blades riveted together at one end and coming between said arms, the blade nearest the base-plate connected by the pivot-pin to said arms and said roller coming above the upper surface of the other blade, shear-cutting jaws formed at the end of the blades opposite from their end connected by rivets, said jaws being spaced apart, arranged in opposite directions for right and left hand cut and curved approximately to the shape to be given the nails, and in their movement under pressure swinging on the aforesaid pivot and moving beneath the aforesaid roller to force the jaws together to effect the cut, an arm h' secured by rivets 4 to the under surface of the lowermost spring-blade and an integral tongue rising from and at right angles to said arm and passing through recesses formed between the shear-cutting jaws, said tongue forming a guide to insure the accurate movement of the jaws.

9. In a nail-clipper the combination with a pair of connected blades and cutting-jaws on the free ends thereof, of a support to which said jaws are pivotally connected, said support occupying an inclined relation, a movable bearing formed with said inclined support and a spring for effecting the return movement of the spring-blades, whereby the swinging movement of said blades on their pivotal connection closes the cutting-jaws, and effects the cut, and when released, the spring returns the parts to an initial position.

10. In a nail-clipper, the combination with a suitable support, of a pair of spring-blades connected at one end, mounted upon said support and overlapping shear-cutting jaws in oppositely-arranged pairs formed at the other and free ends of said spring-blades.

11. In a nail-clipper, the combination with a suitable support, of a pair of spring-blades connected at one end, mounted upon said support and overlapping shear-cutting jaws in oppositely-arranged pairs formed at the other and free ends of said spring-blades and a guiding device secured adjacent to one jaw and moving through an aperture of the other jaw.

12. A nail-clipper comprising a base-plate, an arm device rising therefrom, a pair of spring-blades connected at one end and pivotally secured at an intermediate place to said arm device and base, and their free ends provided with normally open shear-cutting jaws in oppositely-arranged pairs.

13. A nail-clipper comprising a base-plate, an inclined arm device formed therewith at one end, spring-blades secured together at one end, and normally open shear-cutting jaws arranged in opposite directions at the opposite ends of said blades and spaced apart and in pairs curved to the shape of the nails for right and left hand cut.

14. A nail-clipper comprising spring-blades secured together at one end and normally open shear-cutting jaws spaced apart and arranged in opposite directions at the opposite ends of said blades, a base-plate, an inclined arm device formed therewith at one end, and the base and arm device pivotally connected to the spring-blades at an intermediate place of the latter and in such a manner that the arm device acts as a guide for the movement of the spring-blades.

846,923. AMUSEMENT DEVICE. GEORGE KRAMER, Kansas City, Mo. Filed Aug. 9, 1906. Serial No. 329,842.

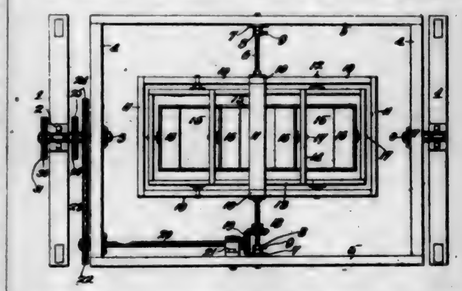

Claim.—1. An amusement device, comprising a rotary frame, a shaft journaled in said frame and extending at right angles to the axis of the rotary frame, secondary frames rigidly secured to said shaft, frames pivoted to the secondary frames with their axes of motion paralleling said shaft, and cars pivotally suspended from the last-named frames and extending parallel with the axis of the main frame.

2. An amusement device comprising a rotary frame, a shaft journaled in said frame and extending at right angles to and intersecting the plane of the axis of the rotary frame, secondary frames rigidly secured to said shaft, frames pivoted to the secondary frames with their axes of motion paralleling said shaft, cars pivotally suspended from the last-named frames and extending parallel with

the axis of the main frame, and means to simultaneously rotate said main and secondary frames.

3. An amusement device, comprising a rotary frame, a shaft journaled in said frame and extending at right angles to and intersecting the plane of the axis of the rotary frame, secondary frames rigidly secured to said shaft, frames pivoted to the secondary frames with their axes of motion paralleling said shaft cars pivotally suspended from the last-named frames and extending parallel with the axis of the main frame, means to secure the main rotary frame in any desired position, and means to rotate the secondary frames while the main frame is stationary.

4. An amusement device, comprising a rotary frame, a shaft journaled in said frame and extending at right angles to and intersecting the plane of the axis of the rotary frame, secondary frames rigidly secured to said shaft, frames pivoted to the secondary frames with their axes of motion paralleling said shaft, cars pivotally suspended from the last-named frames and extending parallel with the axis of the main rotary frame, and means to rotate the main frame without rotating the shaft carried thereby on its own axis, and consequently without rotating the secondary frames around the axis of said shaft.

5. In an amusement device, suitable longitudinally-alined bearings, a frame arranged between said bearings and provided with rigid longitudinally-alined trunnions projecting centrally from its end bars, a shaft intersecting the axis of said trunnions and extending at right angles thereto and journaled in the side bars of said frame, secondary frames secured rigidly on and rotatable with said shaft within the main frame, frames pivoted to the sides of the secondary frames and having the axes of said pivots paralleling said shaft, cars pivotally suspended within the last-named frames, with the axis of said pivotal points paralleling the axis of the main frame, a shaft journaled in the main frame and paralleling its axis and geared to the shaft of the secondary frame, and a wheel journaled on one of the trunnions of the main frame and geared to the shaft carried by said frame.

6. In an amusement device, suitable longitudinally-alined bearings, a frame arranged between said bearings and provided with rigid longitudinally-alined trunnions projecting centrally from its end bars, a shaft intersecting the axis of said trunnions and extending at right angles thereto and journaled in the side bars of the frame, secondary frames secured rigidly on and rotatable with said shaft within the main frame, frames pivoted to the sides of the secondary frames and having the axes of said pivots paralleling said shaft, cars pivotally suspended within the last-named frames with the axes of said pivotal points paralleling the axis of the main frame, a shaft journaled in the main frame and paralleling its axis and geared to the shaft of the secondary frame, a wheel journaled on one of the trunnions of the main frame and geared to the shaft carried by said frame, and means whereby said trunnions and last-named shaft may be turned simultaneously so as to revolve the main frame and the secondary frames at the same speed.

846,926. HORN-SUPPORT FOR TALKING-MACHINES. OTTO KRAUS, New York, N. Y. Filed July 18, 1906. Serial No. 326,703.

Claim.—1. The combination with a rod adapted to positively engage a top portion of a talking-machine case, a bracket provided with jaws in adjustable relation with said rod and adapted to engage the top edge of said case, and means coacting with said bracket to support a horn.

2. The combination with a bracket provided with means for engaging a front edge of the case of a talking-machine, of a rod horizontally disposed and having an angular projection adapted to engage the top portion of said case, said rod being in adjustable relation with said bracket, and means coacting with said bracket to adjustably support a horn.

3. The combination with a horizontally-disposed rod having a projection adapted to be inserted in the slot of a talking-machine case, of a bracket adapted to engage the upper portion of said case and with which said rod is adjustably engaged, and a horn-supporting crane supported by said bracket.

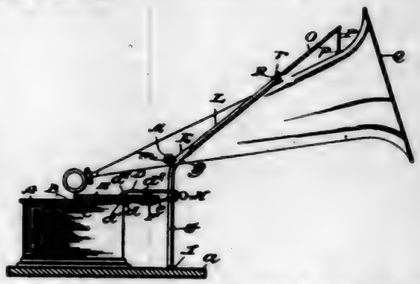

4. The combination of a horizontally-disposed rod having an angular projection adapted to be inserted in the slot of a talking-machine case with a bracket adapted to engage a portion of said case at its front side, said rod being held in adjustable relation with said bracket, means for securing said bracket to said case, and means supported by said bracket for supporting one end of a horn.

5. The combination with a rod having an angular projection at one end adapted to be inserted in a slot of a talking-machine case, of a bracket adjustably engaging the opposite end of said rod and provided with means adapted to clamp one edge of said case, said bracket being formed of sheet metal, and means supported by said bracket adapted to support a horn.

6. The combination of a horizontally-disposed rod having an angular projection adapted to engage a top portion of a talking-machine case, a bracket in sliding relation with one end of said rod, said end being provided with a threaded nut within the bracket to engage said bracket with the case and thus retain the bracket and rod in position, and means held by said bracket for supporting a horn.

7. In a horn-support, the combination with a vertically-disposed rod, a sleeve having a slot extending over one end of said rod, means coactive with said rod and sleeve for forming an adjustable joint, a second rod extending from said joint adapted to support a horn, and means for supporting all of said parts from a machine-case for the purpose set forth.

8. In a horn-support, the combination with a vertically-disposed rod having a curved upper end, of a sleeve having a hinge connection with said rod and an open slot at one end thereof adapted to coöperate with an adjusting-screw, an adjusting-screw, a second rod carried by said sleeve and adapted to support a horn from one of its ends, and means for holding said parts in operable relation to a machine-case.

9. In combination, a rod adapted to engage a top portion of a machine-case and extend from said portion beyond the front of said case, a clamping member provided with an opening through which said rod adjustably extends and having an angular projection adapted to engage the front of said case, means for securing said clamping member and rod in position on said case, a rod adjustably supported by said clamping member and means extending therefrom adapted to support a horn.

846,927. FLUID-PRESSURE THRUST-BEARING. OSKAR LASCHE, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed July 24, 1905. Serial No. 270,972.

Claim.—1. A thrust-bearing comprising a collar which is carried by a spindle and is subjected to thrust first in one direction and then in the other, a casing having walls located on opposite sides of the collar, and means for simultaneously and continuously supplying lubricant under such pressure to the spaces between the opposite sides of the collar and the walls of the casing as will keep the parts lubricated irrespective of the direction and amount of the thrust.

2. A thrust-bearing comprising a collar which is mounted on a spindle and is subjected to axial thrust first in one direction and then in the other, walls located on opposite sides of the collar, the collar and walls having slight longitudinal movement with respect to each other, and means which supply constant or substantially constant amounts of lubricant independent of the pressure to the spaces between the sides of the collar and the walls.

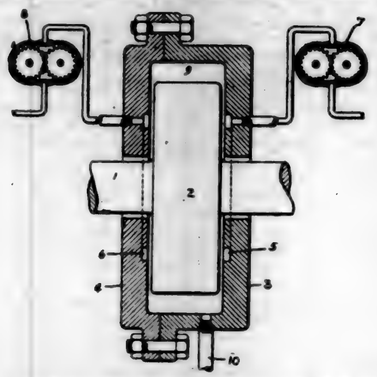

3. A thrust-bearing comprising a collar which is mounted on a spindle and is subjected to axial thrust first in one direction and then in the other, walls located on opposite sides of the collar, the collar and walls having slight longitudinal movement with respect to each other with chambers between the sides of the collar and the walls, and separate sources of supply which supply lubricant to the chambers at variable pressure and substantially constant volume.

4. A thrust-bearing comprising a collar which is mounted on a spindle and is subjected to axial thrust first in one direction and then in the other, walls located on opposite sides of the collar, the collar and walls having slight longitudinal movement with respect to each other with chambers surrounding the shaft and located between the sides of the collar and the walls, and separate pumps which continuously supply lubricant to said chambers.

5. A thrust-bearing comprising a collar which is mounted on a spindle and is subjected to an axial thrust first in one direction and then in the other, a casing surrounding the collar, the collar and casing being arranged to have slight independent longitudinal movement, and separate pumps which continuously supply lubricant to the spaces between the collar and casing, the pressures of the fluid delivered by the pumps being governed by the position of the collar with respect to the walls of the casing.

6. A thrust-bearing comprising a collar which is mounted on a spindle and is subjected to an axial thrust first in one direction and then in the other, a divided casing which surrounds the collar, the collar and casing being arranged to have slight independent longitudinal movement, separate pumps which continuously supply lubricant to the spaces between the collar and casing, the pressures of the fluid delivered by the pumps being governed by the position of the collar within the casing, there being a chamber located between the axle and the cylindrical walls of the casing for collecting the fluid from the pumps after it flows between the inner walls of the casing and the collar, and an outlet which is common to the pumps and collection-chamber.

846,928. TURBINE-ENGINE. HUGO LENTZ, Berlin, Germany. Filed Mar. 31, 1905. Serial No. 253,112.

Claim.—1. In an elastic-fluid turbine, a rotatable element having a plurality of symmetrically-curved buckets each provided with two similar concave impact-surfaces facing in opposite directions, the adjacent impact-faces of successive buckets being oppositely disposed in the plane of rotation of said element, and means to discharge fluid-pressure against said buckets to rotate said element.

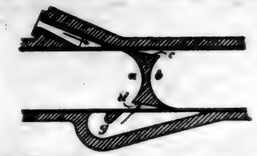

2. In an elastic-fluid turbine, the combination with a rotatable element adapted to be driven in opposite directions by the impact of fluid-pressure, of a plurality of buckets or blades whose front and reverse faces are concaved and whose side edges are parallel and angularly disposed to the plane of rotation of the element.

3. In a turbine, a rotatable element carrying buckets or blades formed with two impact-surfaces which face in opposite directions, said buckets increasing in thickness from the center toward the side edges, an impact-surface and side edge of one bucket standing opposite to the reversely-facing impact-surfaces of an adjacent bucket.

4. In a turbine, a bucket element formed with two wide arcuate impact-faces of substantially equal surface area which face in opposite directions and are arranged in staggered relation to each other, and narrow parallel sides connecting the corresponding edges of said faces.

846,929. WASTE-PIPE CONNECTION FOR CLOSET-BOWLS. HENRY J. LUFF, Cleveland, Ohio, assignor to Charles N. Fiscus, Cleveland, Ohio. Filed Mar. 31, 1905. Renewed Aug. 6, 1906. Serial No. 329,438.

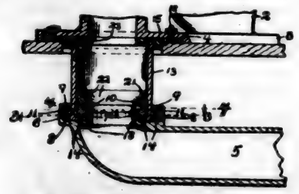

Claim.—1. The combination with a waste-pipe and a closet-bowl of a connection comprising an annular cup formed integral with the rim of the waste-pipe, a pipe-section having one end arranged to extend into said cup and provided at its other end with means for supporting the closet-bowl, a seal arranged in said cup around the end of the pipe-section and a ring arranged within said pipe-section and adapted to rest on the inner wall of said cup, said ring having a beveled inner face to serve as a deflector for material passing through the pipe-section, substantially as described and for the purpose set forth.

2. The combination with a waste-pipe and a closet-bowl of a connection comprising an annular cup formed integral with the rim of the waste-pipe, a pipe-section arranged to extend into said cup, means for locking the pipe-section in the cup so as to prevent the withdrawal of the pipe-section from the cup or the turning of the pipe-section in the cup and a deflector arranged within the pipe-section so as to rest on the rim of said cup for the purpose set forth.

3. The combination with a waste-pipe and a closet-bowl of an annular cup formed integral with the rim of the waste-pipe, a straight pipe-section provided at one end with means for securing it to the closet-bowl and having its lower end extending into the said cup so as to divide the cup into two chambers, one of said chambers being accessible from the exterior of said pipe-section and the other chamber being accessible from the interior of said pipe-section, and a seal arranged in said cup around the end of said pipe-section, substantially as described and for the purpose set forth.

4. The combination with a waste-pipe and a closet-bowl of a connection comprising an annular cup formed in-

tegral with the rim of the waste-pipe, a pipe-section provided at one end with means for securing it to the closet-bowl and having its other end extending down into said cup, projections arranged on the interior surface of said cup and on the lower end of said pipe-section, and a seal arranged in said cup and forming a locking medium between said projections so as to prevent the said pipe-section turning in the said cup.

846,930. GAS-BURNER. ALBERT J. MEYERS, Kansas City, Kans. Filed Jan. 12, 1906. Serial No. 295,761.

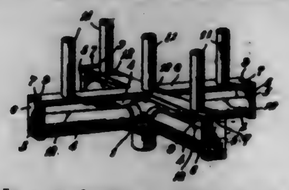

Claim.—In a gas-burner, a central member having a plurality of threaded openings and a gas-discharging aperture; a plurality of tubular apertured arms radially disposed about the said member each arm comprising a casting having a terminal threaded portion for engaging in one of the openings of the member and formed with a closed outer end, and a bracket adjacent the closed end of each arm, said arms being assembled on the central member with their brackets extending in the same direction; a plate having arms arranged with their extremities loosely engaging the said brackets; and short pieces of pipe having threaded engagement in the said plate and disposed in line with the discharging-apertures, one of the pipes being arranged at the center of the said plate and the others on the arms thereof.

846,931. DRINK-MIXER. CLIFFORD G. MILLER, New York, N. Y. Filed Jan. 26, 1907. Serial No. 354,311.

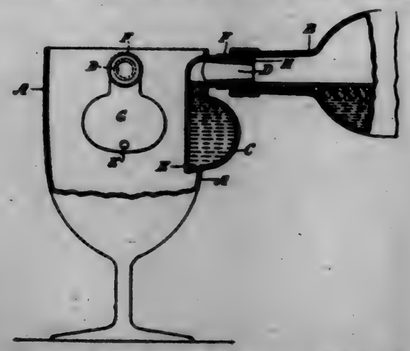

Claim.—1. Means for mixing drinks in variable proportions embodying a holding vessel and one or more measures secured thereto and provided with means for temporarily securing it to the mouth of a bottle in such manner as to establish a vacuum when a liquid is poured from the bottle into the measure, the arrangement being such that when the bottle is detached the measured portion will be released and allowed to run into the vessel, substantially as described.

2. A mixing vessel for liquids provided with a measure having an inlet near the bottom thereof into the vessel, and means at its upper end for temporarily securing it in an air-tight manner directly to the mouth of a bottle, substantially as described.

3. A mixing vessel for liquids provided with a measure having an opening into the vessel at or near its lower end and an outwardly-extending neck at its upper end provided with yielding means adapted to fit into the mouth of a bottle, substantially as described.

4. A mixing vessel for liquids provided with two or more measures of different holding capacity each having an opening into the vessel and means for connecting them temporarily in an air-tight manner to the mouths of bottles, substantially as described.

5. A mixing vessel for liquids provided with two or more measures having openings into the vessel at their lower ends and outwardly-extending necks at their upper ends provided with means for temporarily connecting them in an air-tight manner to the mouths of bottles, substantially as described.

6. A mixing vessel for liquids provided with one or more measures having each an opening into the vessel at its bottom and an outwardly-extending neck at its top surrounded by flexible or yielding means for temporarily securing it directly within the mouth of a bottle, substantially as described.

7. A mixing vessel for liquids provided with two or more measures each having an opening at its bottom into the vessel and an outwardly-extending neck at its top surrounded with flexible or yielding means for temporarily securing it in an air-tight manner within the mouth of a bottle, substantially as described.

8. A mixing vessel for liquids provided with two or more measures each having an opening at its bottom into the vessel and an outwardly-extending neck at its top provided with yielding means for temporarily securing it within the mouth of a bottle, said measures having different holding capacities, substantially as described.

846,932. LOGGING APPARATUS. THOMAS S. MILLER, South Orange, and JOSEPH H. DICKINSON, Montclair, N. J. Filed Nov. 14, 1903. Serial No. 181,205.

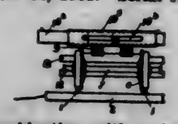

Claim.—The combination with a loading-car, of log-bunkers thereon, each log-bunker comprising a plurality of telescoping members having inboard movement whereby said car may be passed through a derrick or the like straddling the track.

846,933. ROTARY VACUUM-PUMP. DANIEL M. MOORE, Newark, N. J., assignor to Moore Electrical Company, New York, N. Y., a Corporation of New York. Filed May 20, 1904. Serial No. 208,825.

Claim.—1. The combination with a pair of rotary pumps working in series in an oil-bath, of an oil-collecting cylinder or receptacle, a pipe opening into said receptacle and forming a continuation of the outlet for the first pump of the series, and a second pipe connecting the air-space of said receptacle with the inlet for the second pump of the series.

2. The combination substantially as described, of two rotary pumps working in series in an oil-bath, an oil-collecting chamber having two connections, one leading from the outlet of the first pump of the series and the other to the inlet of the second pump of the series, an oil-collecting chamber or trap for the oil passing from the outlet of the second pump and means for returning the oil to the inlet side of the first pump.

3. The combination with a pair of rotary pumps working in tandem or series, of an oil-trap connected with the outlet of the series, a return pipe or connection for returning the oil to the inlet of the series, a shut-off valve in said return-pipe and a back-pressure valve between the outlet of the series and the point of connection of said return-pipe.

4. The combination with two rotary pumps connected up in series, of an intermediate chamber adapted to collect oil, a pipe leading into said chamber above the bottom thereof and joined to the outlet of the first pump of the series, and a second pipe or connection leading from said chamber above the level of the oil and joined to the inlet of the second pump of the series.

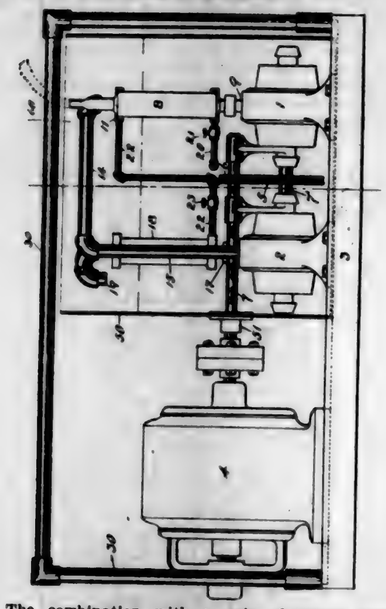

5. The combination with a pair of rotary vacuum-pumps, of an oil-bath, a cylinder or receptacle 11, a pipe 12 forming a continuation of the outlet from the first pump of the series and rising in said cylinder, said pipe being provided with an outlet-port above the level of the oil collecting in the bottom of said cylinder, a return-pipe for returning the oil to the inlet-port of the first pump, a pipe 13 connected with the air-space in the receptacle 11 and joined to the inlet-port of the second member or pump, a receptacle 18 in which terminates a pipe joined to the outlet of the second pump of the series, and means for returning the oil trapped in said receptacle to the cylinder or receptacle 11.

846,934. WAIST-BELT. WILLIAM R. MULOCK, Winnipeg, Manitoba, Canada. Filed Nov. 16, 1906. Serial No. 343,727.

Claim.—1. A waist-belt having a series of fine, closely-arranged, wire teeth secured to its inner face and projecting inwardly therefrom and a supporting-band fixed to the belt and engaging the outer teeth of the series, substantially as described.

2. A waist-belt having a strip or strips secured to its inner face, a brush-like series of fine, closely-arranged, straight, wire teeth carried by said strip or strips and projecting inwardly therefrom, the ends of said teeth forming a surface parallel to the belt, and a metal supporting band or bands fixed to the belt and extending about said teeth to prevent the deflection of the side teeth of the series, substantially as described.

846,935. RAILWAY CROSS-TIE. ELMER E. B. MCCLINTOCK, Baltimore, Md. Filed Aug. 23, 1906. Serial No. 331,689.

Claim.—1. In combination with railway-track rails, a cross-tie of channel formation having in its vertical walls depressions for the rails, each depression being undercut at one end to fit the adjacent flange of a rail, and at the other end provided with a notch having an upper surface corresponding in angle of inclination with the upper surface of the flange of the rails, a plate which is laid in the said inclined notch and covers the other flange of the rail with its ends extending beyond the vertical walls where they are provided with bolt-holes and bolts which pass through the said holes to hold the said plate in position, substantially as specified.

2. In combination with railway-track rails a cross-tie of channel formation having in its vertical walls depressions for the rails, each depression being undercut at one end to fit the adjacent flange of a rail, and at the other end provided with a notch having an upper surface corresponding in angle of inclination with the upper surface of the flange of the rails, a plate which is laid in the said inclined notch and covers the other flange of the rail, and bolts having hooks which are passed through holes in the said vertical walls from the outside thereof to hold the said plate in position, substantially as specified.

846,936. SOAP-BOX. KENZAEMON NISHIMOTO, San Francisco, Cal. Filed May 7, 1906. Serial No. 315,541.

Claim.—1. A soap-holder having in combination a box, a spring-actuated foraminous false bottom therein, and a cover adapted to telescope with the box, said cover having a flange slidably fitting the box and positioned to engage and depress the false bottom coördinately with the application of the cover to the box.

2. A soap-holder comprising a box, a cover therefor, and a spring-actuated foraminous false bottom within said box having laterally-projecting lugs operative in slots in the box, said cover having a flange positioned to engage said lugs and depress the false bottom coördinately with the application of the cover to the box.

3. A soap-holder comprising a box having slotted sides, a cover therefor, and a removable spring-actuated foraminous false bottom in said box, said false bottom having laterally-projecting lugs engageable in the slots in the box and projecting into the path of the cover whereby the false bottom is depressed coördinately with the application of the cover to the box.

846,937. SPRING-WHEEL. LOUIS A. NOËL, Paris, France. Filed July 2, 1906. Serial No. 324,425.

Claim.—1. A spring-wheel comprising in combination a central plate carrying the felly, two side plates solid with the hub and provided with recesses or pockets formed therein, spiral springs located within said recesses or pockets, axles or spindles fixed to the central plate, extending from each side in the recesses or pockets and on

which are fixed the inner coils of the springs, and means for keeping the two side plates at a suitable distance apart.

2. A spring-wheel comprising in combination a central plate carrying the felly, two side plates solid with the hub and provided with recesses or pockets formed therein, spiral springs located within said recesses or pockets, axles or spindles fixed to the central plate, extending from each side in the recesses or pockets and on which are fixed the inner coils of the springs, adjustable cross-bolts connecting the two side plates, and perforations formed in the central plate for the free passage of the hub and the cross-bolts.

846,938. SPRING-WHEEL. LOUIS A. NOËL, Paris, France. Filed July 30, 1906. Serial No. 328,399.

Claim.—1. A spring-wheel comprising in combination a central plate carrying the felly, two side plates solid with the hub and kept one from the other sufficiently apart not to touch the central plate, cylindrical housings or pockets formed in the side plates, axles or spindles fixed to the central plate, conical spiral springs located within the housings or pockets and having their inner coil fixed to said axles or spindles, and means for keeping the two side plates at a suitable distance apart, substantially as described and for the purpose set forth.

2. A spring-wheel comprising in combination a central plate carrying the felly, two side plates solid with the hub and kept one from the other sufficiently apart not to touch the central plate, cylindrical housings or pockets formed in the side plates, axles or spindles fixed to the central plate, conical spiral springs located within the housings or pockets and having their inner coil fixed to said axles or spindles, loops formed at the outer coil of the springs adapted to be passed through openings in the wall of the housings or pockets and to be secured thereto by screws or bolts, and means for keeping the two side plates at a suitable distance apart, substantially as described and for the purpose set forth.

3. A spring-wheel comprising in combination a central plate carrying the felly, two side plates solid with the hub and kept one from the other sufficiently apart not to touch the central plate, cylindrical housings or pockets formed in the side plates, conical spiral springs located within the housings or pockets and so constructed that their blade increases progressively in width and in thickness from the center of the spring to the circumference, and that the distance between the successive coils will likewise increase from the center to the circumference, axles or spindles fixed to the central plate and on which are fixed the inner coils of the springs, and means for keeping the two side plates at a suitable distance apart, substantially as described and for the purpose set forth.

846,939. WAGON RUNNING-GEAR. BENJAMIN F. PADGETT, Laurel, Miss. Filed Aug. 20, 1906. Serial No. 331,361.

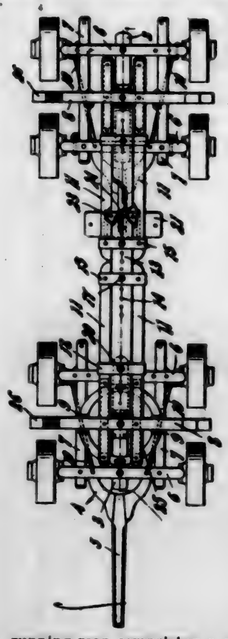

Claim.—1. A running-gear comprising a pair of trucks, each truck having a bolster pivoted thereto, parallel reach-arms attached to each bolster, the arms of one bolster extending toward the arms of the other bolster, and a coupling-bar unattached directly to either bolster and connecting the two sets of reach-arms together.

2. A running-gear comprising a pair of trucks, each truck having a bolster pivotally mounted thereon, parallel reach-arms attached to each bolster, the arms of one bolster extending toward the arms of the other bolster, a coupling-bar unattached directly to either bolster and adjustably connecting the two sets of reach-arms together.

3. A running-gear comprising a pair of trucks each having pivoted axles, a reach connecting said trucks together, a laterally-adjustable bar attached to said reach, a tongue connecting said bar with the axle of the rear truck.

4. A running-gear comprising a pair of trucks each having pivoted axles, a reach connecting said trucks together, bars pivotally connected to the front axles of the trucks and slidably engaging the rear axles of the trucks, rods pivotally connected at their forward ends to the front axles of the truck and pivotally connected at their rear ends to the rear axles of the trucks said rods lying wholly on opposite sides of the axle-pivots, the forward ends of said bars being closer together than their rear ends.

5. A running-gear comprising trucks connected by a reach, pivoted axles attached to the truck, bars pivotally connected to the forward axle of the truck and slidably engaging the rear axle of the truck, rods pivotally connected at their ends to the front and rear axles of the truck said rods lying wholly on opposite sides of the axle-pivots.

846,940. DYEING APPARATUS. HENRI PATTYN, Paterson, N. J. Filed Apr. 26, 1906. Serial No. 313,779.

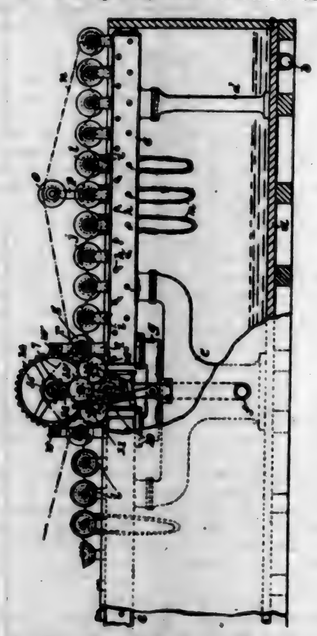

Claim.—1. The combination of a tank, a hollow body arranged therein and having lateral discharge-openings, means for supplying a treating liquid to said body, a series of brackets carried by said body, bobbin-carrying shafts journaled in said brackets and projecting beyond the sides of said body, bobbins arranged on the projecting ends of said shafts, and means for rotating said shafts and the bobbins carried thereby, substantially as described.

2. The combination of a tank, a hollow body arranged therein and having lateral discharge-openings, means for supplying a treating liquid to said body, a series of brackets carried by said body, bobbin-carrying shafts journaled in said brackets and projecting beyond the sides of said body, bobbins arranged on the projecting ends of said shafts, and means for rotating said shafts and the bobbins carried thereby, alternately in reversed directions, substantially as described.

3. The combination of a tank, a hollow body arranged therein and having lateral discharge-openings, means for supplying a treating liquid to said body, rotary bobbin-carrying shafts, means for supporting said shafts above said openings, bobbins arranged on said shafts and projecting beyond the sides of said body, and means for rotating said shafts and the bobbins carried thereby, substantially as described.

4. The combination of a tank, a hollow body arranged therein and having lateral discharge-openings, means for supplying a treating liquid to said body, rotary bobbin-carrying shafts, means for supporting said shafts above said openings, bobbins arranged on said shafts and projecting beyond the sides of said body, a flexible driving device extending alternately over and under said shafts, and means for moving said driving device alternately in reverse directions, substantially as described.

846,941. CONTINUOUS BLUE-PRINTING, WASHING, AND DRYING APPARATUS. CHARLES F. PEASE, Chicago, Ill. Filed Mar. 15, 1906. Serial No. 306,198.

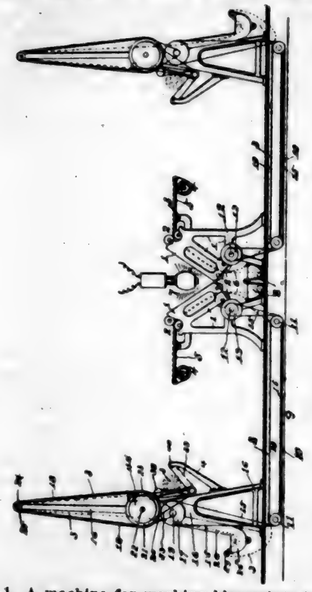

Claim.—1. A machine for washing blue-prints in a continuous sheet or strip, comprising a suitable frame or stand, a feed-roller carried by the frame, a suitable pipe to furnish a spray-wash against one side of the sheet while the latter is in motion, and means for elevating the sheet to permit an accumulated water-bath on the paper in advance of the spray-wash.

2. A machine for washing blue-prints in a continuous sheet or strip, comprising a suitable frame or stand, a feed-roller carried by the frame, a suitable pipe to furnish a spray-wash against one side of the sheet while the latter is in motion, means for elevating the sheet to permit an accumulated water-bath on the paper in advance of the spray-wash, and a device to support the portion of the paper holding said water-bath.

3. A machine for washing and drying blue-prints in a continuous sheet or strip, comprising a suitable frame or stand, a feed-roller carried by the frame, a suitable pipe to furnish a spray-wash against one side of the sheet while the latter is in motion, means for elevating the sheet to permit an accumulated water-bath on the paper in advance of the spray-wash, and a heater to dry out the sheet during its passage to and from the said roller.

4. A machine for washing blue-prints in a continuous sheet of traveling paper, comprising a suitable frame, a roller to feed the paper through the machine, and a pipe discharging water against one side of the paper while the latter is drawn against said pipe to remove surplus water from the paper.

5. The combination with a machine for washing and drying blue-prints in continuous sheets of traveling paper, of a heater located adjacent the path of the paper and adapted to permit the paper to travel from one side of the heater to the other side thereof without contact therewith.

6. In an apparatus for treating a continuous sheet of blue-prints, comprising a suitable frame, a water-tray hung from the frame and having a spray for washing the sheet, a series of rollers arranged in the tray end to end in pairs at an angle one to the other to stretch the wet paper crosswise, a feed-roller in the top of said frame, means for revolving the roller, the rerolling device carried by said frame, and means for operating it.

7. In an apparatus for washing blue-print sheets, the

combination, with a washing-basin, of means to limit the sagging of the sheet under weight of its water-bath, comprising a rack located in the basin and adapted to support the sheet above the bottom of the basin.

8. In an apparatus for washing blue-print sheets, the combination, with a washing-basin, of a roller for elevating the sheet to permit an accumulation of water thereon, and a rack in the basin below the roller to support the sheet and its accumulated water.

9. In an apparatus for washing blue-print sheets, the combination, with a vertically-disposed tray, having suitable water-supply and a basin, the tray-rollers, the basin-roller under which the sheet passes, a support or rack in the basin and under the basin-roller for the sheet, and a roller adjacent the basin for elevating the sheet.

10. In an apparatus for washing blue-print sheets, the combination, with a washing-basin, of a roller over which the sheet passes to its first water-bath, a rack in the basin to limit the sagging of the sheet from said roller under the weight of said bath, and a roller above the rack to prevent displacement of the sheet.

846,942. MILL FOR ROLLING ANNULAR ARTICLES. CASIMIR VON PHILP, Bethlehem, Pa., assignor to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed May 10, 1905. Serial No. 259,686.

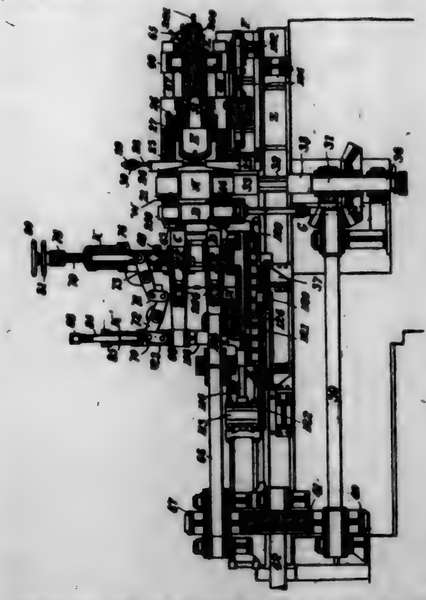

Claim.—1. The combination in a tire-rolling mill, of an outer roll A in stationary bearings, an inner roll B, means for carrying it gradually toward the roll A, guide-rolls 88 movable in guides parallel to lines diverging from the working face of the roll A, other guide-rolls 87, a carriage supporting the rolls 87, means for moving the carriage away from the roll B, and for moving the rolls 87 outward, and means for imparting to the rolls 88 a movement in their guides proportional to the change of position of the center of the tire rolled by the rolls A, B, substantially as set forth.

2. A tire-rolling mill provided with reducing-rolls A, B, C, D, and two pairs of guide-rolls for bearing on the periphery of the tire and having bearings sliding in guides arranged in respect to the reducing-rolls as described, the guide of one pair parallel to lines diverging from the working face of one of the reducing-rolls, and a combination of levers and connections arranged to shift all of said guide-roll bearings in proportion to the increasing diameter of the tire to maintain the rolls at substantially equal distances apart.

3. In a tire-mill, the combination of a pair of rolls C, D, for reducing the width of the tire, a pair of rolls A, B, for reducing its thickness, means for carrying the inner roll B, toward the outer roll A, a pair of guide-rolls at each side and guides therefor, and means for shifting the two guide-rolls at each side outward as the rolling progresses, constructed to preserve throughout the rolling operation the substantial symmetrical position of the guide-rolls about the tire.

4. The combination with the vertical rolls A, B and horizontal rolls C, D and a carriage supporting the latter, of two pairs of guide-rolls, means for moving the guide-rolls adjacent the vertical rolls A, B outward upon stationary bearings, and means for moving the other guide-rolls in bearings upon the carriage, said means proportioned to maintain the rolls at increasing but equal distances from each other as the rolling operations proceed, for the purpose set forth.

5. The combination with the rolls A, B, of a tire-rolling machine, of means for carrying one of said rolls toward the other under pressure, two pairs of symmetrically-disposed guide-rolls, and a series of levers connected and proportioned to hold the same in contact with the periphery of the tire at equal but increasing distances from each other during rolling, substantially as set forth.

6. The combination in a tire-mill, of rolls A and roll B, two pairs of guide-rolls and bearings therefor, a carriage movable to and from the rolls A, B, and levers operatively connected with bearings of all the guide-rolls and with said carriage to shift all the rolls to an extent proportioned to the extent of movement of the carriage, substantially as set forth.

7. The combination with the rolls A and B, the rolls C and D and a carriage therefor, two pairs of guide-rolls, bearings therefor, and levers operatively connected with said bearings and with said carriage to be operated to shift the guide-rolls to an extent determined by and proportioned to the movement of the carriage, substantially as set forth.

8. The combination with the rolls A, B and C, D, of two pairs of guide-rolls, a carriage for the rolls C, D, and means operatively connected with the carriage and with the guide-rolls to shift the latter to an extent determined by the movement of the carriage, substantially as set forth.

9. The combination of the frame, reducing-rolls A, B, reducing-rolls C, D, and carriage therefor, the guide-rolls 87, 88, and sliding bearings therefor on the frame and carriage, rock-shafts turning in the frame and carriage and having arms connected with the bearings of the rolls, and means connected with said rock-shafts to rock the same as the carriage moves outward, substantially as set forth.

10. The combination of the frame, reducing-rolls A, B, reducing-rolls C, D, and carriage therefor, the guide-rolls 87, and sliding bearings and supports therefor on the carriage, rock-shafts turning in the carriage and having arms connected with the bearings of said rolls 87, a cross-head and rods connecting it to arms on the rock-shafts, a pressure device arranged to hold the cross-head in position during part of the movement of the carriage, and means to thereafter carry the cross-head with the carriage, substantially as set forth.

11. The combination of the frame, a carriage sliding thereon, a housing sliding on the carriage and reducing-rolls carried by the housing, guide-rolls 87 and bearings therefor movable on the frame, a stop on the carriage, rock-shafts carried by the carriage and connected with said bearings and having arms, rods connecting said arms and a cross-head, a hydraulic cylinder and plunger supplied with motor fluid under constant pressure and arranged to maintain the cross-head against the stop during the preliminary movement of the carriage, and a bearing on the latter arranged to engage and shift the cross-head during the final movement of the carriage, substantially as set forth.

12. The combination with the sliding carriage for the rolls C, D, and with the guide-rolls 87 and bearings therefor, of rock-arms carried by the carriage and connected with the guide-roll bearings, a cross-head connected with the rock-shaft, a fixed stop, a pressure device for holding the cross-head against the stop, and contact parts arranged to cause the cross-head to move with the carriage after the guide-rolls have reached their outer positions, substantially as set forth.

13. The combination of the frame, rolls A, B, carriage sliding on the frame, housing sliding on the carriage, rolls C, D, carried by said housing, motors for moving the carriage on the frame in reverse directions, a pressure device arranged to hold the housing in position in respect to the rolls A, B, during the first part of the movement of the carriage away from said rolls, and contacts on the carriage and housing insuring the movement of the latter with the former during the final part of the movement of the carriage, substantially as set forth.

14. The combination in a tire-mill, of vertical rolls A, B, and housing therefor, horizontal rolls C and D, and a carriage therefor, two pair of guide-rolls and bearings therefor, lever devices supported by the housings of the vertical rolls, and other lever devices supported by said carriage, said devices independently connected with the guide-roll bearings, and means whereby the lever devices are operated to shift the same to an extent proportioned to the position of the carriage, substantially as set forth.

846,943. FLUID-CHECK DEVICE. JOSEPH C. PHIPPS, Melrose, Mass. Filed Mar. 15, 1906. Serial No. 306,186.

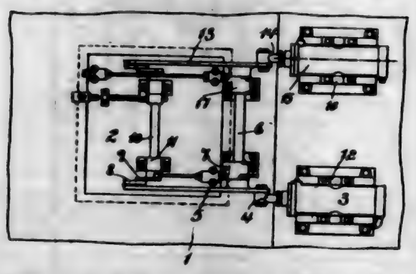

Claim.—1. A check comprising a fluid-chamber, a plunger movable therein and having passages for escape of the fluid to permit movement of the plunger, valves closing said passages and displaceable to open the same upon movement of the plunger in either direction, and means tending to retain one of said valves closed to resist movement of the plunger in one direction.

2. A check comprising a fluid-chamber, a plunger movable therein and having passages for escape of the fluid to permit movement of the plunger, and valves closing said passages and displaceable to open the same upon movement of the plunger in either direction.

3. A check comprising a fluid-chamber, a plunger movable therein and having a passage connecting the fluid-spaces on opposite sides of the plunger, valves closing said passage, and displaceable to uncover the passage by resistance of the fluid upon movement of the plunger in either direction, and means tending to hold one of said valves closed.

4. A check comprising a fluid-chamber, a plunger movable therein and having a passage connecting the fluid-spaces on opposite sides of the plunger, valves closing said passage and displaceable to uncover the passage by resistance of the fluid upon movement of the plunger in either direction, and yielding means tending to hold both of said valves closed.

5. A check comprising a fluid-chamber, a plunger movable therein and having a passage connecting the fluid-spaces on opposite sides of the plunger, valves closing said passage, one valve being displaced to uncover the passage and the other being seated by resistance of the fluid, upon movement of the plunger in each direction.

6. A check comprising a fluid-chamber, a plunger movable therein and having a passage connecting the fluid-spaces on opposite sides of the plunger, valves closing said passage, one valve being displaced to uncover the passage and the other being seated by resistance of the fluid, upon movement of the plunger in each direction, and one of the valves being of greater area than the other.

7. A check comprising a fluid-chamber, a plunger movable therein and having a passage connecting the fluid-spaces on opposite sides of the plunger, valves closing said passage, one valve being displaced to uncover the passage and the other being seated by resistance of the fluid, upon movement of the plunger in each direction, one of the valves being of greater area than the other, and means tending to retain the smaller valve in closed position.

8. A check comprising a fluid-chamber, a plunger movable therein and having a passage connecting the fluid-spaces on opposite sides of the piston, a valve adapted to cover the passage and being provided with a passage opening thereinto, and a valve covering the passage in the first valve.

9. A check comprising a fluid-chamber, a plunger movable therein and having a passage connecting the fluid-spaces on opposite sides of the piston, a valve adapted to cover the passage and being provided with a passage of less size than the first passage and opening thereinto, and a valve covering the passage in the first valve.

10. A check comprising a fluid-chamber, a plunger movable therein and having a passage connecting the fluid-spaces on opposite sides of the piston, a valve adapted to cover the passage and being provided with a passage of less cross-sectional area than the first passage and opening thereinto, and a smaller valve covering the passage in the first valve.

11. A check comprising a fluid-chamber, a plunger movable therein and having a passage connecting the fluid-spaces on opposite sides of the piston, a valve adapted to cover the passage and being provided with a passage of less cross-sectional area than the first passage and opening thereinto, a smaller valve covering the passage in the first valve, and means tending to seat the smaller valve.

12. A check comprising a fluid-chamber, a plunger movable therein and having a passage connecting the fluid-spaces on opposite sides of the piston, a valve adapted to cover the passage and being provided with a passage of less cross-sectional area than the first passage and opening thereinto, a smaller valve covering the passage in the first valve, and means tending to seat both valves.

13. A check comprising a fluid-chamber containing a quantity of relatively incompressible fluid, a plunger movable therein constructed to permit gradual displacement of the fluid from one side to the other thereof as the plunger is moved, and an expansion air-chamber connected with the fluid-chamber.

14. The combination with a hatch or door, of a check constructed with sufficient resistance to normally hold the hatch or door against any motion, and inelastically yieldable to permit closing thereof with a retarded motion upon application of sufficient external force.

15. The combination with a hatch or door, of a check constructed to support the weight of the hatch or door and normally hold the hatch or door open, and to permit closing thereof with a retarded motion when additional force is applied.

16. The combination with a hatch or door, of a check constructed and arranged with provisions for preventing closing of the hatch or door except by the exercise of considerable force, and for opposing a less resistance to the opening thereof.

17. The combination with a hatch or door and the power mechanism for opening and closing the same, of a check constructed and arranged with provisions for preventing closing of the hatch or door except upon operation of said mechanism, and for opposing less resistance to the opening thereof.

18. The combination with a hatch or door, of a check adapted to permit a relatively free movement of the hatch

in one direction and a retarded motion in the opposite direction, and means within the check for normally preventing any motion in the second direction, but displaceable to permit such motion upon the application of additional force.

19. The combination with a hatch or door, of a check comprising a chamber containing fluid, a plunger therein adapted to permit a relatively free passage of the fluid when moving in one direction and a restricted passage when moving in the opposite direction, and a valve normally stopping the restricted passage of the fluid but displaceable by the application of sufficient external force.

846,944. MACHINE FOR CARROTING HIDES. CHARLES PICHARD and EMILE PICHARD, Paris, France. Filed May 8, 1906. Serial No. 315,745.

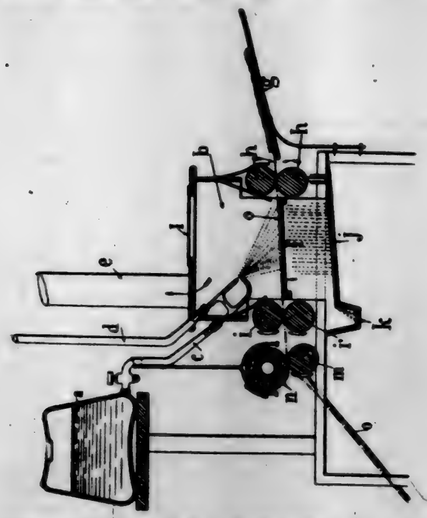

Claim.—In a machine for carroting hides, in combination, a chamber, feed-rollers at the front and rear ends of said chamber and coöperative to feed the hide across said chamber in a straight line, a grid supported within said chamber and over which the hide passes, and means within the upper part of said chamber to direct a jet of vaporized carroting liquid downwardly toward said grid at an acute angle to the same.

846,945. DEVICE FOR FEEDING SHEET MATERIAL. GEORGE H. PIERCE, Quincy, Mass., assignor to New Era Machinery Company, Boston, Mass., a Corporation of New Jersey. Filed Feb. 12, 1906. Serial No. 300,621.

Claim.—1. In a device for feeding sheet material, a pair of feed-rolls, a pawl-and-ratchet mechanism adapted to impart an intermittent rotary motion to one of said rolls, a locking-disk having corrugations upon its periphery fast to said last-named feed-roll, a lock-plate having corrugations upon one face thereof, and mechanism to move the corrugated face of said lock-plate into and out of engagement with the corrugated periphery of said disk.

2. In a device for feeding sheet material, a pair of feed-rolls, mechanism adapted to impart an intermittent rotary motion to one of said rolls, a locking-disk having corrugations upon its periphery fast to said last-named feed-roll, a lock-slide having corrugations upon one end thereof, and mechanism to impart a reciprocatory motion to said slide to move the corrugated end thereof into and out of engagement with the corrugated periphery of said disk.

3. In a device for feeding sheet material, a pair of feed-rolls, mechanism adapted to impart an intermittent rotary motion to one of said rolls, a locking-disk having corrugations upon its periphery fast to said last-named feed-roll, a lock-slide having corrugations upon one end thereof, a cam-lever, an extensible link connecting said slide and lever, and a cam adapted to impart a rocking motion to said lever and a reciprocatory motion to said slide to move the corrugated end thereof into and out of engagement with the corrugated periphery of said disk.

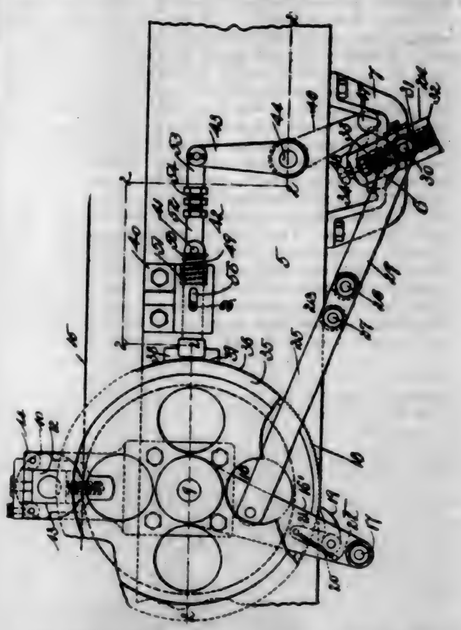

4. In a device for feeding sheet material, a pair of feed-rolls, a pawl-and-ratchet mechanism adapted to impart an intermittent rotary motion to one of said rolls, means to vary the throw imparted to said last-named roll at each of its forward rotary movements, a locking-disk having corrugations upon its periphery fast to said last-named feed-roll, a lock-plate having corrugations upon one face thereof, and mechanism to move the corrugated face of said lock-plate into and out of engagement with the corrugated periphery of said disk.

5. In a device for feeding sheet material, a pair of feed-rolls, a pawl-and-ratchet mechanism adapted to impart an intermittent rotary motion to one of said rolls, a crank-pin operatively connected to said pawl-and-ratchet mechanism, a crank-shaft, means to adjust said crank-pin toward and away from the median axial line of said crank-shaft, a locking-disk having corrugations upon its periphery fast to said last-named feed-roll, a lock-plate having corrugations upon one face thereof, and mechanism to move the corrugated face of said lock-plate into and out of engagement with the corrugated periphery of said disk.

6. In a device for feeding sheet material, a pair of feed-rolls, a pawl-and-ratchet mechanism adapted to impart an intermittent rotary motion to one of said rolls, a crank-pin operatively connected to said pawl-and-ratchet mechanism, a crank-shaft, means to adjust said crank-pin toward and away from the median axial line of said crank-shaft, means to lock said crank-pin against radial movement relatively to said crank-shaft, a locking-disk having corrugations upon its periphery fast to said last-named feed-roll, a lock-plate having corrugations upon one face thereof, and mechanism to move the corrugated face of said lock-plate into and out of engagement with the corrugated periphery of said disk.

7. In a device for feeding sheet material, a pair of feed-rolls, a pawl-and-ratchet mechanism adapted to impart an intermittent rotary motion to one of said rolls, a shaft, a crank-arm fast thereto, a crank-pin adjustable longitudinally of said arm, a block fast to said pin, means to fasten said block to said arm, a link operatively connecting said pin to said pawl-and-ratchet mechanism, a locking-disk having corrugations upon its periphery fast to said last-named feed-roll, a lock-plate having corrugations upon one face thereof, and mechanism to move the corrugated face of said lock-plate into and out of engagement with the corrugated periphery of said disk.

846,946. BILL-FILE. EUGENE PLOURDE, Paterson, N. J. Filed Oct. 19, 1906. Serial No. 339,599.

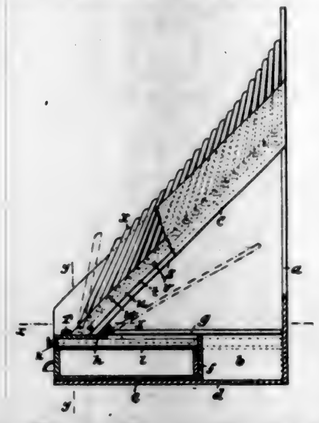

Claim.—The combination of a cabinet comprising an inclined pocket and a horizontally-disposed wall-inclosed space below said pocket, a hinged cover for said space, a drawer occupying a part of said space, a directory-slide arranged above said drawer in said space, and bill-holders arranged in said pocket and a mounting removably supported in said pocket and carrying said bill-holders, substantially as described.

846,947. AUTOMATIC GAS-REGULATOR AND CUT-OFF. ALBERT D. PUETTE and IRVEN E. ROWLAND, Salem, W. Va. Filed Dec. 20, 1906. Serial No. 348,786.

Claim.—1. A device of the character described comprising a valve-casing, a tube slidably mounted therein and opening thereinto, a valve immovably connected to and movable with said tube, a diaphragm connected to the tube, yielding means for holding the valve normally removed from its seat, and means for directing fluid under pressure through the tube and onto the diaphragm to move the valve toward its seat and against the pressure of said yielding means.

2. A device of the character described comprising a valve-casing, a tube slidably mounted therein and opening thereinto, a valve outside of and immovably connected to and movable with said tube, a diaphragm connected to the tube, yielding means for holding the valve normally removed from its seat, means for directing fluid under pressure through the tube and onto the diaphragm to move the valve toward its seat and against the pressure of said yielding means, and a cut-off valve movable with the first-mentioned valve for automatically stopping the flow of fluid through the casing when pressure is removed from the diaphragm.

3. In a device of the character described the combination with a valve-casing and a valve therein; of a tube extending from and immovably connected to the valve and opening into the casing, a disk secured around the tube, a diaphragm secured to and partly supported by the disk, yielding means for holding the valve normally unseated, and means for directing fluid under pressure upon the diaphragm when the valve is open to move said valve against the pressure of said yielding means.

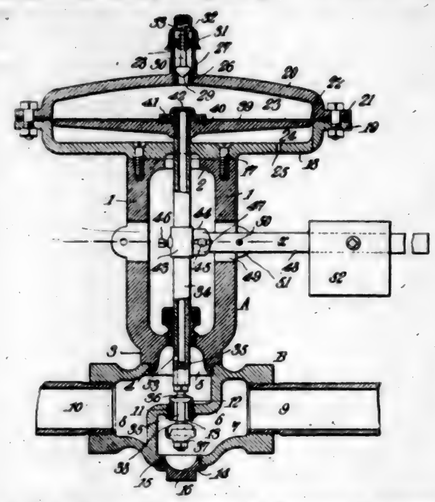

4. In a device of the character described the combination with a valve-casing and a valve therein; of a tube extending from and immovably connected to the valve and opening into the casing, a disk secured around the tube, a diaphragm secured to and partly supported by the disk, yielding means for holding the valve normally unseated, means for directing fluid under pressure upon the diaphragm when the valve is open to move said valve against the pressure of said yielding means, and means for automatically relieving the diaphragm of excessive pressure.

5. In a device of the character described the combination with a valve-casing and a valve therein; of a tube extending from and immovably connected to the valve and opening into the casing, a disk secured around the tube, a diaphragm secured to and partly supported by the disk, yielding means for holding the valve normally unseated, means for directing fluid under pressure upon the diaphragm when the valve is open to move said valve against the pressure of said yielding means, and adjustable means for relieving the diaphragm of excessive pressure.

6. In a device of the character described the combination with a valve-casing and a valve therein; of a tube extending from the valve and opening into the casing, a disk secured around the tube, a diaphragm secured to and partly supported by the disk, yielding means for holding the valve normally unseated, means for directing fluid under pressure upon the diaphragm when the valve is open to move said valve against the pressure of said yielding means, and means movable with the valve for stopping the passage of fluid through the casing when the diaphragm is relieved of pressure.

7. In a device of the character described the combination with a valve-casing and a tube slidably mounted therein and opening thereinto; of a valve, gravity-operated means for holding the valve normally unseated, a cup movable with said valve, a flexible valve carried by the cup and normally seated by said gravity-operated means, a diaphragm, and means for directing fluid under pressure upon the diaphragm when the valves are open to hold the valves unseated.

8. In a device of the character described the combination with a valve-casing and a tube slidably mounted therein and opening thereinto; of a valve, gravity-operated means for holding the valve normally unseated, a cup movable with said valve, a flexible valve carried by the cup and normally seated by said gravity-operated means, a diaphragm, means for directing fluid under pressure upon the diaphragm when the valves are open to hold the valves

unseated, and means for relieving the diaphragm of excessive pressure.

9. A device of the character described comprising a valve-casing, a tube slidably mounted therein and opening thereinto, oppositely-disposed valves movable with and immovably connected to the tube, a gravity-operated lever connected to the tube for holding one of the valves seated, a diaphragm connected to the tube, and means for directing fluid under pressure against the diaphragm when the valves are open to hold said valves from their seats.

10. In a device of the character described the combination with a casing and a tube movably mounted therein and opening thereinto; of oppositely-disposed regulating and cut-off valves movable with the tube and within the casing, a weighted lever connected to the tube for holding the cut-off valve normally seated, a diaphragm connected to the tube, a casing inclosing the diaphragm, said tube adapted to conduct fluid under pressure from the valve-casing to the diaphragm-casing.

11. In a device of the character described the combination with a casing and a tube movably mounted therein and opening thereinto; of oppositely-disposed regulating cut-off valves movable with the tube and within the casing, a weighted lever connected to the tube for holding the cut-off valve normally seated, a disk secured to the tube, a casing inclosing the disk, a flexible diaphragm secured within the casing and extending over the disk, and means upon the tube for clamping the diaphragm upon the disk, said tube adapted to conduct fluid under pressure from the valve-casing to the diaphragm-casing.

12. In a device of the character described the combination with a casing and a tube movably mounted therein and opening thereinto; of oppositely-disposed regulating cut-off valves movable with the tube and within the casing, a weighted lever connected to the tube for holding the cut-off valve normally seated, a disk secured to the tube, a casing inclosing the disk, a flexible diaphragm, means upon the tube for clamping the diaphragm upon the disk, said tube adapted to conduct fluid under pressure from the valve-casing to the diaphragm-casing, and means for relieving the diaphragm of excessive pressure.

846,948. REVOLVING TRAY. JACOB RICHTER, Milwaukee, Wis. Filed Nov. 19, 1906. Serial No. 344,007.

Claim.—1. A revolving tray, comprising a base-plate of sheet metal having pockets pressed therein forming projecting feet beneath the base-plate to rest on a table or the like, bearing-balls seated in the pockets of the base-plate, and a tray member having concentric annular grooves in its bottom to form raceways for the bearing-balls.

2. A revolving tray, comprising a base-plate of sheet metal having pockets pressed therein forming projecting feet beneath the base-plate to rest on a table or the like, bearing-balls seated in the pockets of the base-plate, and a sheet-metal tray member having an annular groove pressed in its bottom surface to form a raceway for the bearing-balls.

3. A revolving tray, comprising a base-plate of sheet metal having pockets pressed therein forming projecting feet beneath the base-plate to rest on the table or the like, bearing-balls seated in the pockets of the base-plate, a sheet-metal tray member having concentric annular grooves pressed in its bottom surface to form raceways for the bearing-balls, and a flange on the tray member engaging the edge of the base-plate to prevent separation of the base-plate and the tray member and to prevent displacement of the bearing-balls.

4. A revolving tray, comprising a base-plate of sheet metal having pockets pressed therein forming projecting feet beneath the base-plate to rest on a table or the like, bearing-balls seated in the pockets of the base-plate, a sheet-metal tray member having concentric annular grooves pressed in its bottom surface to form raceways for the bearing-balls, a rim on the tray member by which it may be turned, and a ring secured to the bottom of the tray member and provided with an inwardly-extending annular flange spaced from the bottom of the tray member and confining the edge of the base-plate therebetween to prevent separation of the base-plate and the tray member and to prevent displacement of the bearing-balls.

846,949. NUT-LOCK. ISAAC N. RIFE, Coatesville, Pa. Filed July 27, 1906. Serial No. 328,109.

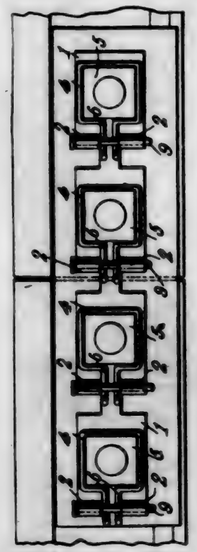

Claim.—1. A nut-lock comprising a plate having a bolt-perforation, a bolt passing through said perforation, a nut bearing against the side of the plate and retaining the same against lateral movement, said plate having formed at its edges oppositely-disposed curls which are spaced apart at their inner ends, a metallic loop bearing against the plate and passing around the nut and having at one side parallel shanks located within the space between the inner ends of the said curls, and a pin passing through the curls and bearing against the shanks of the loop.

2. A nut-lock comprising a plate having a bolt-perforation, a bolt passing through said perforation, a nut locked upon the bolt and bearing against the side of the plate and retaining the same against lateral movement, curls formed at the edges of the plate and being oppositely disposed and spaced apart at their inner ends, a loop passing around the nut and having at one side laterally-disposed parallel shanks which pass through the space between said curls, the said shanks at intermediate points being upwardly bowed, a pin passing through said curls and bearing against the upper bow portions of said loop-shanks.

3. A nut-lock comprising a plate having a bolt-perforation, a bolt passing through said perforation, a nut located upon the bolt and bearing laterally against the plate and retaining the same against lateral movement, said plate having at its edges oppositely-disposed curls spaced apart at their inner ends, a loop passing around the nut and having at one side laterally-disposed parallel shanks which pass through the space between the inner ends of the curls, said shanks at intermediate points being upwardly bowed and near their ends being downwardly bowed, a pin passing through the curls and bearing against the upwardly-bowed portions of the said loop-shanks.

846,950. WELL-BORING TOOL. LEROY K. ROBBINS, St. Louis, Mo. Filed Nov. 30, 1906. Serial No. 345,692.

Claim.—1. In a boring-tool, the combination of a bit and a hollow shank for the reception of said bit contracted at its end which receives said bit, providing narrow passage-ways for directing flat streams of water onto the sides of the bit, substantially as set forth.

2. A boring-tool comprising a bit, a hollow shank formed with laterally-extending slotted ears projecting beyond the shank providing an extended support for the bit and contracted at its lower end so as to provide narrow passage-ways for directing flat streams of water onto the sides of the bit, and means for securing the bit to the ears of the shank.

846,951. SPRING-WHEEL. ARTHUR S. F. ROBINSON, Barsham, England. Filed Jan. 3, 1905. Serial No. 239,384.

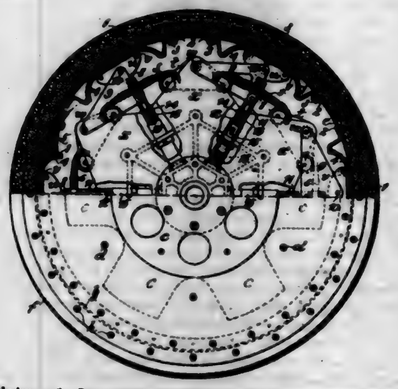

Claim.—1. In a spring-wheel, a rim formed with a horizontal web, an inwardly-extending flange and an outwardly-extending flange, a hub portion, interposed springs that tend to keep said rim and hub concentric, two annular plates secured one to each side of the inwardly-extending flange of said rim, the outer of said plates extending beyond the horizontal web of said flange, a metal disk rigidly secured to said hub and fitting and working between said annular plates, a tire mounted on said rim between the marginal portion of said outer annular plate and the outwardly-extending flange of said rim, distance-pieces embedded in said tire and screw-bolts extending through the marginal portion of said outer plate, said distance-pieces and said outwardly-extending flange, as set forth.

2. In a spring-wheel, a hub portion, a rim portion, interposed springs tending to maintain said portions concentric, thrust-transmitting devices in connection with said springs, a track for said thrust-transmitting devices fixed to one of said portions and consisting of a series of channel-like sections, as set forth.

3. In a spring-wheel, a hub portion, a rim portion, interposed spring-levers tending to maintain said portions concentric, thrust-transmitting devices in connection with said springs, a track for said thrust-transmitting devices fixed to one of said portions and consisting of a series of channel-like sections, each approximately parallel to the corresponding spring, as set forth.

4. In a spring-wheel, a hub portion, a rim portion, interposed springs tending to maintain said portions concentric, thrust-transmitting devices in connection with said springs, a track for said thrust-transmitting devices fixed to one of said portions and consisting of parts on which the thrust-transmitting devices will travel in a rotary sense and adapted to increase the stress of the springs as the said devices travel over said parts until the resistance of the springs prevents further relative rotation of the said two wheel portions, as set forth.

5. In a spring-wheel, a hub portion, a rim portion, interposed springs tending to maintain said portions concentric, thrust-transmitting devices in connection with said springs, a track for said thrust-transmitting devices fixed to one of said portions and consisting of a series of channel-like sections, and supplementary spring-paths for said thrust-transmitting devices, as set forth.

6. In a spring-wheel, a hub portion, a rim portion, interposed springs tending to maintain said portions concentric, thrust-transmitting devices in connection with said springs, a track for said thrust-transmitting devices fixed to one of said portions and consisting of a series of channel-like sections, and chocks arranged to support said sections, as set forth.

7. In a spring-wheel, a hub portion, a rim portion, interposed springs tending to maintain said portions concentric, thrust-transmitting devices in connection with said springs, a track for said thrust-transmitting devices fixed to one of said portions and consisting of a series of channel-like sections secured to said rim portion, as set forth.

8. In a spring-wheel, a hub portion, a rim portion, interposed springs tending to maintain said portions concentric, thrust-transmitting devices in connection with said springs, a track for said thrust-transmitting devices fixed to one of said portions and consisting of a series of channel-like sections of spring-steel, secured to said rim portion, as set forth.

9. In a spring-wheel, a hub portion, a rim portion, interposed springs tending to maintain said portions concentric, thrust-transmitting devices in connection with said springs, and a track for said thrust-transmitting devices fixed to one of said portions consisting of parts fixed to said rim portion on which the thrust-transmitting devices will travel in a rotary sense until the resistance of the springs prevents further relative rotation of the said two wheel portions, as set forth.

10. In a spring-wheel, a hub portion, a rim portion, a series of connected springs and levers tending to maintain said portions concentric, each of said springs consisting of a number of steel blades, a clamping-bolt for each of said springs, links pivoted one to each clamping-bolt, pins fixed to one of said wheel portions and passing through the slots of said links, slotted sliding pieces through the slots of which said pins also extend, radially-arranged sockets in which said sliding pieces work, and springs located in said sockets, as set forth.

11. In a spring-wheel, a hub portion, a rim portion, interposed springs that tend to maintain said portions concentric, a metal disk rigidly secured to one said portion, a pair of annular plates rigidly secured to the other said portion between which the said metal disk extends, a cover-plate secured to said metal disk and overlapping the outer plate of said pair, the said outer annular plate having an outwardly-turned inner edge adapted to bear against said cover-plate, and an interposed annular packing-pad, as set forth.

12. In a spring-wheel, a hub portion, a rim portion, in-

terposed springs that tend to maintain said portions concentric, a metal disk rigidly secured to one said portion, a pair of annular plates rigidly secured to the other said portion between which the said metal disk extends, a cover-plate secured to said metal disk and overlapping the outer plate of said pair, an interposed annular packing-pad, and a light plate that entirely covers the outer side of the wheel, as set forth.

13. In a spring-wheel, a hub portion, a rim portion, interposed springs that tend to maintain said portions concentric, a metal disk rigidly secured to one said portion, a pair of annular plates rigidly secured to the other said portion between which the said metal disk extends, a cover-plate secured to said metal disk and overlapping the outer plate of said pair, the said outer annular plate having an outwardly-turned inner edge adapted to bear against said cover-plate, an interposed annular packing-pad, and a light plate that entirely covers the outer side of the wheel, as set forth.

14. In a spring-wheel, a hub portion, a rim portion, interposed springs that tend to maintain said portions concentric, a metal disk rigidly secured to one said portion, a pair of annular plates rigidly secured to the other said portion between which the said metal disk extends, a cover-plate secured to said metal disk and overlapping the outer plate of said pair, an interposed annular packing-pad, and a light metal guard-ring for said pad, as set forth.

15. In a spring-wheed, a hub portion, a rim portion, interposed springs tending to maintain said portions concentric, thrust-transmitting devices in connection with said springs, a track for said thrust-transmitting devices fixed to one of said portions and consisting of a series of path-surfaces that are reversely inclined in relation to the direction of the thrust of the corresponding spring, as set forth.

16. In a spring-wheel, a hub portion, a rim portion, interposed springs tending to maintain said portions concentric, thrust-transmitting devices in connection with said springs, a track for said thrust-transmitting devices fixed to one of said portions and consisting of a series of sections, each having path-surfaces that are reversely inclined in relation to the direction of the thrust of the corresponding spring, as set forth.

846,952. LANTERN. GEORGE H. ROLFES, St. Louis, Mo. Filed Nov. 30, 1906. Serial No. 345,658.

Claim.—1. In a lantern, the combination with a font-receptacle, a font and burner in said receptacle; of a ventilator surmounting said receptacle and comprising a base-ring having a vertical rim provided with an annular flange whereby it is suspended from the font-receptacle and a concavo-convex deflector-ring above said base-ring extending inwardly beyond the outer edge of the base-ring and spaced apart therefrom to provide an air passage-way between said members, substantially as set forth.

2. In a lantern, the combination with a font-receptacle, a font and burner in said receptacle; of a ventilator surmounting said receptacle and comprising a base-ring having a vertical rim provided with an annular flange whereby it is suspended from the font-receptacle and a deflector-ring extending inwardly beyond the outer edge of the base-ring above said base-ring and spaced apart therefrom to provide an air passage-way between said member; said deflector-ring being concaved at its lower side and having its outer edge higher than its inner edge, substantially as set forth.

3. In a lantern, the combination with a font-receptacle, a font in said receptacle, a burner carried by said font, a skirt depending from said burner; of a ventilator surmounting said receptacle and comprising a base-ring surrounding said skirt and spaced apart from it and having a vertical rim provided with an annular flange whereby it is suspended from the font-receptacle, and a concavo-convex deflector-ring above said base-ring extending inwardly beyond the outer edge of the base-ring, substantially as set forth.

4. In a lantern, the combination with a font-receptacle, a font in said receptacle, a burner carried by said font, a skirt depending from said burner; of a ventilator surmounting said receptacle and comprising a base-ring surrounding said skirt and spaced apart from it and having a vertical rim provided with an annular flange whereby it is suspended from the font-receptacle, and a deflector-ring above said base-ring extending inwardly beyond the outer edge of the base-ring; said base-ring being concaved at its lower side and having its outer edge higher than its inner edge, substantially as set forth.

5. In a lantern, the combination with a font-receptacle, a font in said receptacle, a burner carried by said font, a skirt depending from said burner; of a ventilator surmounting said receptacle and comprising a main lower base-ring surrounding said skirt and spaced apart therefrom and having a vertical rim provided with an annular flange whereby it is suspended from the font-receptacle, a supplemental base-ring above said main base-ring and having an aperture therein larger than the aperture in said main base-ring and a depending rim fitted within the rim of the lower base-ring, and a deflector-ring above said first-mentioned rings extending inwardly beyond the outer edge of said supplemental base-ring, substantially as set forth.

6. In a lantern, the combination with a font-receptacle, a font in said receptacle, a burner carried by said font, a skirt depending from said burner; of a ventilator surmounting said receptacle and comprising a main lower base-ring surrounding said skirt and spaced apart therefrom and having a vertical rim provided with an annular flange whereby it is suspended from the font-receptacle, a supplemental base-ring above said main base-ring and having an aperture therein larger than the aperture in said main base-ring and having a depending rim fitted within the rim of the lower base-ring, and a deflector-ring above said first-mentioned rings extending inwardly beyond the outer edge of said supplemental base-ring; said deflector-ring being of greater diameter than either of said first-mentioned rings, substantially as set forth.

7. In a lantern, the combination with a font-receptacle, a font in said receptacle, a burner carried by said font, a skirt depending from said burner; of a ventilator surmounting said receptacle and comprising a main lower base-ring surrounding said skirt and spaced apart therefrom and having a vertical rim provided with an annular flange whereby it is suspended from the font-receptacle, a supplemental base-ring above said main base-ring and having an aperture therein larger than the aperture in said main base-ring and having a depending rim fitted within the rim of the lower base-ring, and a deflector-ring above said first-mentioned rings extending inwardly beyond the outer edge of said supplemental base-ring; said deflector-ring being concaved at its lower side, substantially as set forth.

8. In a lantern, the combination with a font-receptacle, a font and burner in said receptacle; of a ventilator surmounting said receptacle and comprising a lower base-ring having a vertical rim provided with an annular flange, a supplemental base-ring having a dependant rim fitted within the rim of the lower base-ring, a deflector-ring, a vertical rim surmounting said deflector-ring and having horizontal perforations therein, and an imperforate annular flange above said surmounting vertical rim, substantially as set forth.

9. In a lantern, the combination with a font-receptacle, a font and burner in said receptacle; of a ventilator surmounting said receptacle and comprising a lower base-ring having a vertical rim provided with an annular flange, a supplemental base-ring having a depending rim fitted within the rim of the lower base-ring, a deflector-ring, a vertical rim surmounting said deflector-ring and having horizontal perforations therein, and an imperforate annular flange above said surmounting vertical rim; said flange being bent downwardly within said surmounting vertical rim, substantially as set forth.

10. In a lantern, the combination with a font-receptacle, a font and burner in said receptacle; of a ventilator surmounting said receptacle and comprising a lower base-ring having a vertical rim provided with an annular flange, a supplemental base-ring having a depending rim fitted within the rim of the lower base-ring, a deflector-ring, a vertical rim surmounting said deflector-ring and having horizontal perforations therein, and an imperforate annular flange above said surmounting vertical rim; said flange being bent downwardly and inwardly within said surmounting vertical rim, substantially as set forth.

846,953. HAT-RETAINING DEVICE. SIGISMUND ROSENTHAL, New York, N. Y. Filed Jan. 22, 1907. Serial No. 353,434.

Claim.—1. A retaining device for hats, comprising a clasp adapted for attachment to the brim thereof, a cord carried by said clasp and terminating in a loop, a shiftable take-up having attached thereto the free end of the cord, said take-up comprising a hollow body portion having a removable cover and being provided with openings adapted to receive the cord intermediate the ends thereof.

2. A retaining device for hats, comprising a clasp adapted for attachment to the hat, a cord carried by said clasp and terminating in a loop, a shiftable take-up having attached thereto the free end of the cord, said take-up comprising a plurality of separably connected members and being provided with openings adapted to receive the cord intermediate the ends thereof.

3. A retaining device for hats comprising a clasp adapted for attachment to the hat, a cord carried by said clasp and terminating in a loop, and a shiftable take-up composed of a hollow body portion having openings in the wall thereof, one of said openings being adapted to retain the free end of said cord, the other of said openings being adapted to retain said cord intermediate the ends thereof, said body portion being provided with a cover, substantially as and for the purpose described.

4. A retaining device for hats, comprising a clasp adapted for attachment to a hat, a cord carried by said clasp and terminating in a loop, a shiftable take-up composed of a hollow body portion having openings in the wall thereof, one of said openings being adapted to retain the free end of said cord, the other of said openings being adapted to retain said cord intermediate the ends thereof, and a cover pivotally connected to said body portion.

846,954. PROCESS OF TREATING PHOTOGRAPHIC PRINTS. PETER SCHUMACHER, Frankfort-on-the-Main, Germany, assignor to the Firm of Klimsch & Co., Frankfort-on-the-Main, Germany. Filed Dec. 27, 1905. Serial No. 293,532.

Claim.—1. The process for decomposing photographic pictures into a system of grains by evaporating on a sensitized plate a resinous solution in suitable solvents.

2. The process for decomposing photographic pictures into a system of grains by evaporating on a sensitized plate a resinous solution in suitable solvents, characterized by the fact that the evaporation is carried out under the same conditions of heating and dampness of the plate, of the resinous solution and the laboratory respectively.

3. The process for decomposing photographic pictures into a system of grains by evaporating on a sensitized plate a resinous solution in suitable solvents characterized by the addition of ingredients such as other resinoids or calcium chlorid, turpentine or alkalies for producing the modification of the grain by variation of the concentration of the solution.

4. The process for decomposing photographic pictures into a system of grains by evaporating on a sensitized plate a resinous solution in suitable solvents in which the production of the grain is effected in a room separated from the atmosphere the dampness of which is maintained constant by appropriate mediums.

5. The process for decomposing photographic pictures into a system of grains by evaporating on a sensitized plate a resinous solution in suitable solvents in which the production of the grain is effected in a room nearly or completely saturated with dampness, the plate and its bed being previously heated and in which calcium chlorid and turpentine are added to the resinous solution.

846,955. SCREEN FOR WINDOWS. WILLIAM SEIBT, Chicago, Ill. Filed Aug. 22, 1906. Serial No. 331,675.

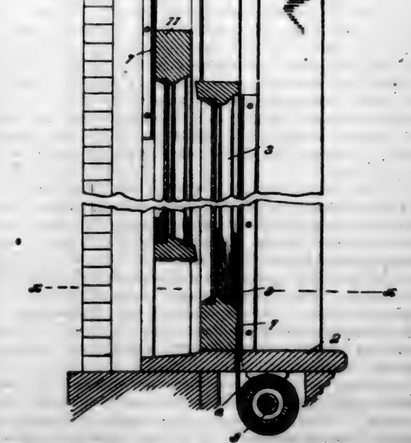

Claim.—1. In means of the class described, the combination of a window embodying a frame, a sash mounted therein, a roller, a screen rolled about said roller and connected at one end with the sash, guides at opposite sides of the frame coöperating with the edge portions of the screen as specified, and weather-strips applied to the

guides and bearing against the sash substantially as specified.

2. In means of the class described, the combination of a window embodying a frame, a sash mounted therein, a roller, a screen rolled about said roller and connected at one end with the sash, guides at opposite sides of the frame coöperating with the edge portions of the screen as specified, each guide embodying a refolded portion, and a weather-strip attached to the guide in the refolded portion thereof and bearing against the sash.

846,956. APPAREL HANGER AND SUPPORT. WALDO H. SHAW, Springfield, Mass. Filed Oct. 8, 1906. Serial No. 337,995.

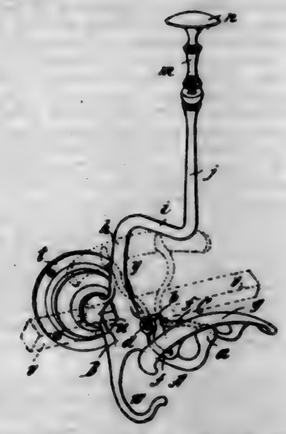

Claim.—1. A device for the purpose described, consisting of a supporting-back and a hook forwardly extending therefrom, provided with an upwardly-extending ear between said back and the extremity of the hook, and an arm pivotally connected to said ear and having a curved coat-hanger adapted to be positioned and supported on, and transversely of, said hook, and to be swung rearwardly therefrom.

2. A device for the purpose described, consisting of a supporting-back and a hook forwardly extending therefrom, provided with an upwardly-extending ear between said back and the extremity of the hook, and a frame comprising a pair of separated, forwardly-divergent arms, and a curved coat-hanger member integral with said arms, said frame being pivotally connected to said ear, and adapted to be swung to a position of support on the extremity of the hook, or to a position backwardly away from the hook.

3. A device for the purpose described, consisting of a supporting-back, a hook forwardly extending therefrom, said back comprising a portion upwardly extended above and to the rear of the hook continued in a member forwardly extended over the hook and terminating in an upstanding post, and an arm pivotally connected to said hook at the rear of its extremity and having a curved coat-hanger adapted to be supported on, and transversely of and relatively to, said hook and to be moved to a position in the space between the hook and said member forwardly extended thereover.

4. A hook and hanger consisting of a rearwardly-located shank or body portion having a prismatic aperture therethrough, a horizontal rearwardly-extended threaded stud, and a forwardly-extending hook, and a frame comprising forwardly-divergent arms and a transverse bow-shaped member, said arms being pivotally connected to the hook at the rear of its extremity.

5. A hook and hanger consisting of a rearwardly-located shank or body portion having a prismatic aperture transversely therethrough, a horizontal rearwardly-extended threaded stud, and a forwardly-extending hook, a frame comprising forwardly-divergent arms and a transverse bow-shaped member, said arms being pivotally connected to the hook at the rear of its extremity, and an attachment back plate having a forwardly-opening threaded socket for the screw engagement therein of said threaded stud.

6. A hook and hanger consisting of a rearwardly-located shank or body portion having a prismatic aperture transversely therethrough, a horizontal rearwardly-extended threaded stud, a forwardly-extending hook, formed with an upstanding ear to the rear of the hook end and having a portion forwardly extended above said hook, upwardly continued in a post having an upwardly-extended headed post continuation, said post and post continuation having the one a screw-stud the other a threaded socket, the one part being screw engaged into the other, and a frame comprising forwardly-divergent arms and a transverse bow-shaped member, said arms being pivotally connected to the said ear, and an attachment back plate having a forwardly-opening threaded socket for the screw engagement therein of said threaded stud.

846,957. KEY-RETAINER. WILLIAM H. SHAW, Murphy, Cal. Filed July 5, 1906. Serial No. 324,859.

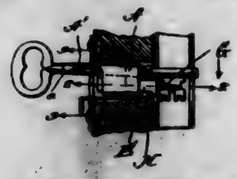

Claim.—1. A device for retaining keys in locks consisting of a casing adapted to fit over the shank portion of the key, a block held by said casing, and a spring-pressed pin mounted within said block and adapted to be positioned adjacent to the wing of the key, as set forth.

2. A device for preventing keys from being removed from locks, comprising a casing having wings thereon which terminate in flanges, a metallic block adapted to be supported upon said flanges, and a spring-pressed pin mounted within the block and adapted to be positioned adjacent to one side of the wing of the key, as set forth.

3. A device for preventing keys being removed from locks, comprising a casing having two wings which are downwardly bent and terminating in flanges, a hollow metallic block having a portion of its surface convexed and adapted to rest upon said flanges, and a spring-pressed pin mounted within said block and having a lug projecting through a slot in the block, whereby the pin may be drawn back into the block under the tension of the spring bearing against the same, as set forth.

846,958. PROCESS OF COKING COAL. SAMUEL B. SHELDON, Buffalo, N. Y. Filed Jan. 2, 1907. Serial No. 350,400.

Claim.—1. The process of coking coal which consists in applying heat to the coal for the purpose of coking the same, cooling the coke and transmitting to the coal, prior to the coking operation, heat abstracted from the coke in cooling the same.

2. The process of coking coal which consists in advancing the coal in a continuous mass into a coking-oven, applying heat to the part of said oven adjacent to its receiving end to coke the coal and circulating a heat-transmitting medium in contact with the walls of the part of said oven adjacent to its discharge end to abstract heat from the coke.

3. The process of coking coal which consists in advancing coal in a continuous mass into an elongated coking-chamber, applying heat to the coal in the part of said chamber adjacent to its receiving end, abstracting heat from the coke in the part of said coking-chamber adjacent to its discharge end and transmitting to the coal, prior to its entrance into the coking-chamber, heat so abstracted from the coke.

4. The process of coking coal which consists in advancing coal in a continuous mass through a preheating-chamber into an elongated coking-chamber, applying heat to coke the coal in the part of said coking-chamber adjacent to its receiving end, abstracting heat from the coke in the part of said coking-chamber adjacent to its discharge end, and transmitting heat so derived from the coke to the walls of said preheating-chamber to preheat the coal passing therethrough prior to its introduction into the coking-chamber.

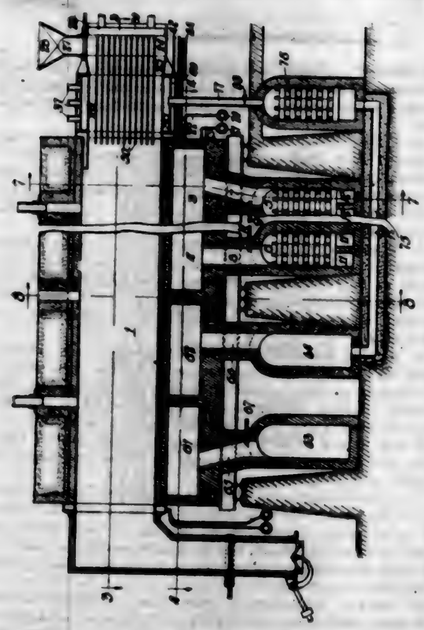

5. The process of coking coal in a coking-oven having a preheating-chamber at the receiving end thereof from which the coal is advanced into the oven, which consists in circulating a heat-transmitting medium in contact with the walls of the oven in the part thereof adjacent to its discharge end, to abstract heat therefrom, and conducting the heat-transmitting medium into contact with the walls of said preheating-chamber.

6. The process of coking coal in a coking-oven provided with a coking-chamber and with a preheating-chamber at the receiving end thereof, which consists in circulating a heating medium in contact with the walls of the coking-chamber in the part thereof adjacent to its receiving end, circulating a heat-transmitting medium in contact with the walls of said coking-chamber in the part thereof adjacent to its delivery end, and conducting said heating medium into contact with the walls of said preheating-chamber.

846,959. PICTURE-FRAME ATTACHMENT. WILLIAM H. SHEPHERD, Des Moines, Iowa. Filed May 24, 1906. Serial No. 318,555.

Claim.—1. As a new article of manufacture, a picture-frame attachment consisting of a plate bent and bifurcated at its ends to produce legs and feet bent at right angles to the legs and a screw pivotally connected with the center of the plate.

2. A fender attachment for picture-frames consisting of a plate of sheet metal bifurcated at its ends to produce legs and a screw pivoted to the center of the plate, in combination with a picture-frame to engage a wall as set forth for the purposes stated.

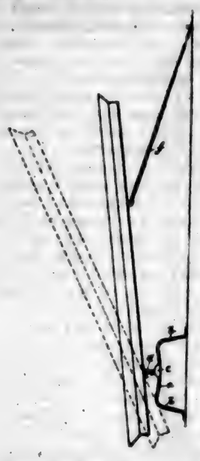

846,960. CIRCUIT-CLOSING MECHANISM. THOMAS W. SMALL, Cleveland, Ohio, assignor, by mesne assignments, to The Acme Automatic Street Indicating Company, Cleveland, Ohio, a Corporation of Ohio. Filed Jan. 26, 1906. Serial No. 298,086.

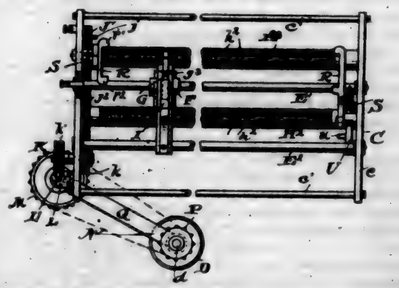

Claim.—1. The combination of a rotatable screw having a threaded portion of insulating material and an interior electric conductor, contact-pins carried by the threaded portion in electric connection with said conductor, a traveling nut adapted to mesh with the threaded portion and having a contact coöperating with the contacts on the thread of the screw.

2. The combination of a pair of screws, means adapted to rotate such screws, a traveling member adapted to engage either screw and thereby move in either direction, and contacts, one of which is carried by said traveling member and others of which are insulatingly carried by the threaded portions of said screws.

3. The combination of a pair of screws, a member adapted to be driven in one direction by one screw, and in the opposite direction by the other, means for automatically changing the engagement from one screw to the other as the member reaches the end of its travel, a contact device carried by the member, a series of coöperating contacts insulatingly carried by the threads of the screws, and means for rotating the screws.

4. The combination of a pair of screws having insulating-threads, a member adapted to be driven in one direction by one screw, and in the opposite direction by the other, means for automatically changing the engagement from one screw to the other as the member reaches the end of its travel, contacts controlled by such travel and carried in part by the threaded portion of the screws, there being

hand-operated means for changing the engagement from one screw to the other intermediate of the ends thereof.

5. The combination of a pair of screws having insulating-threads, a member extending between the screws and carrying two partial insulating-nuts, means for rotating the screws in such direction as to cause the member to travel in opposite directions, means for shifting said member at the end of its travel to withdraw one nut from its screw and bring the other nut into engagement with the other screw, and contacts carried by the threaded portions of the screws and by said member.

6. The combination of a pair of rotatable screws parallel with each other, a head slidably guided parallel with the screws, a pivoted arm carried by said head, nuts carried by said arm adapted to engage one screw or the other, means for temporarily holding said arm in either extreme position, means operating to engage said arm at the end of its travel to shift the one nut out of engagement with its screw and the other nut into engagement with the other screw and contacts insulatingly carried by the threads of said screws and by said nuts.

7. The combination of a pair of screws, means for rotating them, a pair of movable dogs near the opposite ends of the screws, means for actuating said dogs periodically, contact-making means adapted to engage either screw, and means actuated by said dogs for shifting the contact-making means whenever it arrives at the end of its travel.

8. The combination of a pair of screws, mechanism for rotating them, a contact-controlling device driven by said screws in one direction or the other according to the screw engaged, a pair of pivoted dogs near the opposite ends of the screws, said dogs being periodically actuated as the screws rotate, mechanism carried by the contact-maker and adapted to come into engagement with either dog at the end of the travel of the contact-maker, whereby said mechanism is shifted to change the engagement from one screw to the other.

9. In a contact-making device, the combination of a rotatable screw composed of a metal shaft and insulating threaded sleeve surrounding the same, metallic pins extending from the periphery of the screw into said shaft, a traveling nut adapted to mesh with the screw and carrying a contact adapted to successively engage the pins in the insulating-sleeve.

10. The combination of a frame, a rod insulatingly carried thereby, a slidable cross-head mounted on said rod, a nut on said cross-head and carrying a contact, a screw having a metallic shaft and an insulating threaded sleeve around the same, contact-pins passing through said sleeve and into engagement with the shaft, means for rotating said screw, and binding-posts, one in electric connection with the screw and the other with said insulating-rod.

11. The combination of a pair of screws, means for rotating them, a pair of dogs near the opposite ends of the screws, means for actuating said dogs periodically, contacts insulatingly carried by the threaded portions of said screws, a coöperating contact-maker adapted to engage the thread of either screw and be driven thereby, and means actuated by said dogs for shifting the contact-maker whenever it arrives at the end of its travel.

12. The combination of a rotatable screw comprising a metallic core and an insulating threaded sleeve, radial contact-pins carried by such sleeve and engaging such core, a traveling contact adapted to operate in the thread-groove and be driven thereby longitudinally of the screw and coöperate with the contact-pins as they present themselves.

13. The combination of a pair of screws each including a shaft and an insulating threaded sleeve carried thereby, means adapted to rotate such screws, an insulating traveling member adapted to engage either screw and be thereby moved in either direction, and contacts, one of which is carried by said traveling member, and others of which are carried by the threaded portions of said screws.

14. The combination of a pair of screws, each including a shaft and an insulating threaded sleeve carried thereby, an insulating member adapted to be driven in one direction by one screw and in the opposite direction by the other, means for automatically changing the engagement from one screw to the other as the member reaches the end of its travel, a contact device carried by the threaded sleeve and engaging the shaft, and means for rotating the screws.

846,961. AUTOMOBILE-HORN. IRA E. STUMP, Cleveland, Ohio. Filed Dec. 13, 1906. Serial No. 347,582.

Claim.—1. A horn, comprising a cylindrical horn-body inclosing a plurality of longitudinally-extending impinging notched tubes forming communicating fluid-pressure chambers.

2. A horn, comprising a cylindrical main body portion provided with caps or heads and inclosing a plurality of longitudinally-extending tubes provided at one end with notched openings adjacent to one of said heads and at the other with adjustable inlet-slot openings formed in the opposite head.

3. A horn, comprising a cylindrical main body portion provided with flanged caps or heads and inclosing a plurality of longitudinally-extending impinging tubes having the ends thereof abutting against said caps or heads and notched openings forming communicating fluid-pressure chambers.

4. A horn comprising a cylindrical main body portion, front and rear flanged heads mounted on the ends thereof, a plurality of tubes mounted therein and having the ends thereof abutting against said heads, an inlet-pipe provided with recesses adjacent to said rear head, a bolt secured at one end to said front head and at the other to said inlet-pipe, and openings formed in said rear head and communicating with said tubes.

5. A horn comprising a main body portion, heads mounted on the ends thereof, a plurality of tubes mounted therein, a centrally-located bolt-rod passing through said heads and between said tubes, an inlet-pipe secured to one end of said bolt-rod and adjustable slot-openings leading into the ends of said tubes.

6. A horn, comprising a cylindrical main body portion provided with heads, a plurality of fluid-pressure chambers formed therein, by means of impinging tubes abutting against said heads, openings formed in one of said heads and leading to said chambers, and valve-openings formed in said main body portion and communicating with said chambers.

7. A horn, comprising a main body portion provided with heads, longitudinally-extending fluid-pressure chambers formed therein by means of tubes, adjustable slot-openings formed in said heads and leading to said chambers, and adjustable valve-openings formed in said main body portion and leading to said chambers.

8. A horn, comprising a main body portion provided with heads, a plurality of tubes mounted therein and provided with communicating fluid-pressure chambers within and about the walls of said tubes inlet-slots formed in one of said heads and communicating with said tubes, an inlet-pipe impinging against said head and provided with recesses directing the operating fluid to said inlet-slots, and a longitudinally-extending bolt passing through said heads and secured to said inlet-pipe.

9. A horn, comprising a cylindrical main body portion provided with heads, and a plurality of impinging tubes mounted therein and providing communicating fluid-chambers within and without said tubes respectively.

10. A horn, comprising a cylindrical main body portion inclosing a plurality of fluid-chambers defined by a plurality of notched and impinging longitudinally-extending tubes.

11. In a horn, a horn-body inclosing a plurality of tubes, a head provided with slot-openings leading thereto, adjustable lips mounted over said slot-openings, and an intake-pipe secured to said head and provided with slots directing the operating fluid against said adjustable lips.

12. A horn-body inclosing a plurality of fluid-chambers provided with slot-openings at the sides and adjustable lips at the ends.

13. A horn, comprising a horn-body having longitudinally-extending fluid-chambers provided with adjustable lip and valve openings at the ends and sides thereof, respectively.

14. In a horn, a horn-body divided to form a plurality of longitudinally-extending fluid-chambers provided at their ends with inlet-slot openings and at their sides with outlet-valve openings.

846,962. SHEET-PACKING CARRIER. EUGENE B. THAYER, Jersey City, N. J. Filed Dec. 7, 1906. Serial No. 346,720.

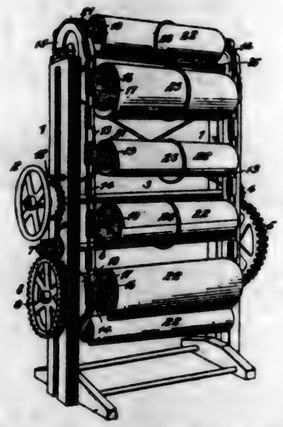

Claim.—A sheet-packing carrier in which is comprised a frame; a hand-wheel mounted on a shaft and having a ratchet-wheel and retaining-ratchet at one side of the frame; a gear on said shaft for actuating a train for moving a main shaft; a pair of sprocket-wheels on said main shaft; a free shaft at the top of the frame bearing sprocket-wheels; a sprocket-chain passing over the two sets of sprocket-wheels, said chains bearing projecting blocks having perforations therethrough, and removable pins, the bodies whereof are substantially the same diameter as the perforations in said blocks, the pins having heads at their outer ends, a portion of each pin next to the head being of less diameter than the body of the pin; the whole combined and arranged to operate, substantially as shown and described.

846,963. CAR-STAKE AND ATTACHING MEANS THEREFOR. JOHN A. TOOMEY, Chicago, Ill. Filed June 25, 1906. Serial No. 323,382.

Claim.—1. In a device of the class described a plate, a housing pivoted thereon, laterally-projecting locking-arms engaged thereto, a stake slidably engaged in said housing and means for locking the housing to the plate.

2. In a device of the class described the combination with a plate of a housing pivoted thereon, a stake slidably engaged in said housing and adapted to swing to either a vertical or a horizontal position and means for locking said stake in either of its adjusted positions to positively prevent vertical or horizontal movement in said adjustments.

3. In a device of the class described the combination with an attaching-plate of a stake pivoted thereon and means for locking the stake in its adjusted positions, said stake being movable relatively of the plate only when turned at an angle with the vertical.

4. In a device of the class described the combination with a supporting-plate of a stake slidably and pivotally engaged thereon and a spring-controlled lock adapted to hold said stake in adjusted position.

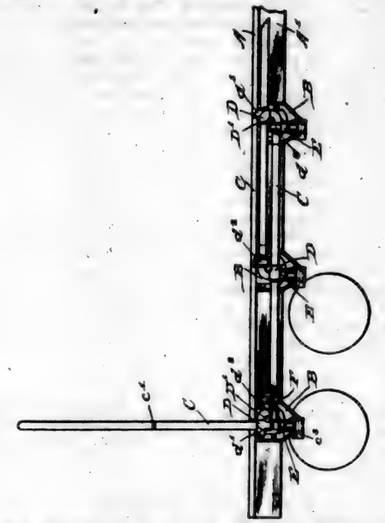

5. The combination with a car of a stake slidably and pivotally engaged thereon and means engaged to said stake adapted to limit its sliding movement.

6. In a device of the class described the combination with supporting means adapted to be engaged to a car, of means pivoted thereon adapted to receive a stake, a stake slidably engaged in said receiving means and a spring-controlled lock adapted to hold the stake in adjusted position.

7. In a device of the class described the combination with an attaching-plate of a housing pivoted thereon, a stake slidably engaged in said housing and a lock adapted to receive said stake in either a vertical or a horizontal position, said stake being secured from movement when in both the vertical and horizontal adjustments.

8. In a device of the class described the combination with a plate, of a housing pivoted thereon, laterally-directed arms on said housing, a stake slidably engaged in said housing and projecting from the bottom thereof and a spring-controlled lock adapted to engage the bottom of said stake when the stake is in a vertical position and to engage one of said arms when the stake is in a horizontal position.

9. In a device of the class described the combination with a plate having a supporting-ledge thereon, of a housing pivoted on the plate above said ledge, laterally-directed arms on said housing, a stake slidably engaged in said housing and adapted to rest on said ledge when in an upright position and a spring-controlled lock adapted to engage said stake and arms and hold the stake in its adjusted positions.

10. In a device of the class described the combination with an attaching-plate, of a housing pivotally engaged thereon, a stake slidably engaged in said housing, means limiting the movement of said stake in the housing and means for positively locking the stake in both a vertical and a horizontal position.

11. The combination with a car of vertically and a horizontally adjustable stake therefor and spring-controlled means adapted to secure said stake in either adjustment.

12. In a device of the class described the combination with a car of a plate thereon, an adjustable housing pivoted thereto and provided with laterally-directed arms, a stake slidable in said housing, means adapted to engage said stake to secure said housing in one adjustment and to

engage one of said arms to secure said housing in another adjustment.

13. In a device of the class described the combination with a car of stakes therefor, a housing adapted to hold each stake, laterally-projecting arms on said housing and a lock for engaging one of the same and securely holding said stake in horizontal position.

14. In a device of the class described the combination with a car of a housing or casing secured thereon and a stake therein adapted to be supported vertically and adapted to slide relatively of the casing or housing only when the stake is at an angle with the perpendicular.

15. In a device of the class described the combination with a car of a housing or casing secured to a side sill thereof, a stake engaged thereto and slidable therein only when inclined at an angle from the vertical.

16. The combination with a car of stakes pivotally secured on the side sills thereof, and capable of assuming a vertical position only when fully extended and slidable on the car when in an inclined position and supports for said stake while in horizontal position.

17. In a device of the class described the combination with a casing or housing of a stake seated therein and relatively slidable thereof when the stake is turned at an angle with the vertical and said stake always firmly locked from movement when in a vertical position.

18. In a device of the class described the combination with a car of a housing or casing engaged to a side sill thereof and a stake seated therein always firmly secured from sliding movement when in a vertical and horizontal position and slidable in said housing when the stake is turned at an angle with the vertical.

19. In a device of the class described the combination with a car of a housing engaged thereto, a stake seated in said housing secured at all times from sliding movement when in a vertical position and slidable in said housing when the stake is turned at an angle with the perpendicular, means limiting the sliding movement of said stake and means positively securing said stake from sliding movement when in a horizontal position.

20. In a device of the class described the combination with a car of a stake therefor, means supporting said stake whereby the stake is at all times locked from vertical movement, said stake adapted to slide relatively of said support when turned at an angle therewith.

21. In a device of the class described the combination with a housing of a stake therein always locked from sliding movement when in a vertical position, and slidable in said housing when turned at an angle with the perpendicular, a stop limiting the sliding movement of said stake, means at all times preventing the stake from making a complete revolution thereby preventing the stake from leaving the housing, said stake securely locked from sliding movement when in a horizontal position.

22. In a device of the class described the combination with a housing of a stake slidable therein when turned at an angle with the vertical and positively secured from sliding movement when in a vertical and horizontal position.

23. In a device of the class described the combination with a car of a housing engaged thereto, a stake slidable therein by gravity when turned at an angle with the vertical, means limiting the sliding of said stake and means positively locking the stake from turning a half-revolution thereby at all times preventing the same from reversing and dropping into contact with the ties or ground.

846,964. CROSSCUT-SAW GUARD AND HANDLE CONNECTION. JOHN TOBA, Matlock, Wash. Filed June 23, 1906. Serial No. 323,142.

Claim.—1. The combination with the connecting-arm adapted to be clamped over the back edge of a saw where it forms the only contact therewith, of a hand-guard comprising a bar extending through the said arm perpendicular thereto and terminating in a spring-fender under the cutting edge of the saw.

2. The combination, with a saw, a saw-handle, and an arm for connecting the handle to the saw, said arm having a longitudinal saw-groove open at both ends and a vertical slot on one side of the groove, of a hand-guard terminating in a spring-fender and having a bar extending

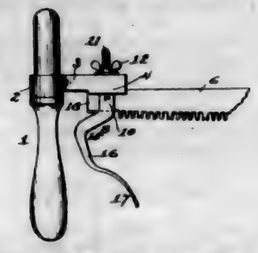

through the slot and the said groove side, and a suitable nut for clamping the parts together.

846,965. APLIANCE FOR CROSSCUT-SAWS. JOHN TOBA, Matlock, Wash. Filed June 23, 1906. Serial No. 323,143.

Claim.—1. In an undercutter, the combination, with a bracket, and a roller journaled therein, of a clamp having a screw-stem connection with the bracket whereby the distance between the clamp and the bracket may be varied, and a clamping-screw carried by and extending through one end of the clamp.

2. In an undercutter, the combination, with a roller having annular grooves, and a bracket in which the roller is journaled, of a one-piece clamp having an opening between its sides for the insertion of an ax-handle against one of said sides, a screw connection between the clamp and a bracket, and a clamping-screw carried by and extending through the other of said sides to engage the handle.

3. In an undercutter, the combination, with a bracket having a screw-stem, and a roller journaled in a bracket, of an ax-handle clamp carried by the screw-stem and having ends of unequal length from the stem, and a clamping-screw carried by and projecting from one of said ends into the clamp.

4. In an undercutter, the combination, with a roller, and a bracket in which the roller is journaled and having a screw-stem, of a clamp carried by the stem and having an inclined side terminating in a curved end, and a clamping-screw carried by and working through the other side of the clamp.

846,966. CAN-HEADING MACHINE. NELSON TROYER, Portland, Oregon. Filed July 24, 1905. Serial No. 270,976.

Claim.—1. A can-heading machine, comprising a horizontal table and turret revoluble above the table, a can-carrying belt tangent to one side of the table, a curved yielding arm fixed in the path of the belt to divert the cans from the belt and deliver them successively to the turret, a second can-head belt traveling toward the side of the table, jaws hinged to the turret having an opening into which the can-heads are delivered from the belt, means for holding the can-heads in position within the jaws, means by which the cans successively delivered to the apparatus are caused to register with the can-heads, means for forcing the can-heads upon the can ends, releasing the cans, and discharging them from the apparatus.

2. In a can-heading machine, a horizontal circular table, a turret revoluble with relation thereto, and means by which cans are delivered to the turret and revoluble therewith, jaws hinged and revoluble with the turret, said jaws having slotted openings presented toward the periphery of the apparatus, an endless traveling belt delivering heads into the slots of the jaws successively, a spring-pressed blade projecting into the line of travel of the jaws and entering the slots so as to contact with and seat the can-heads therein.

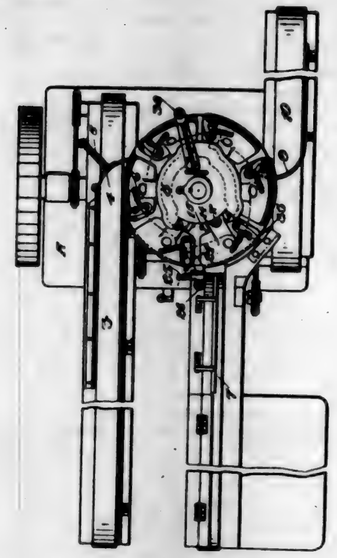

3. In a can-heading apparatus, a horizontal table, a revoluble turret or carrier for the cans, jaws hinged with relation to and carried by the turret, said jaws comprising an upper single plate, a lower plate consisting of two segments hinged at one side forming when closed a circular conical opening to fit over and direct the can end, and blade projecting into the line of travel of the jaws and a circular chamber within which the can-heads are received and registered with the can position.

4. In a can-heading machine, a head receiving and holding device, comprising a chambered upper plate having a segmental semicircular rim at the rear, a lower plate consisting of two segments, the rear half being fixed to the upper plate and the front half hinged to the said upper plate, said lower plates having semicircular downwardly-diverging openings, a spring by which the hinged lower portion is normally held open, and a latch by which said segment is locked when closed against the rear fixed portion.

5. In a can-heading machine, a head-carrying jaw consisting of an upper plate having a chamber and segmental and beveled rim on its lower face, a lower plate one half of which is fixed to the upper plate and forms a channel with the rim thereof, the other half being hinged at one side to open and close with relation to the fixed half, segments slidable between the upper and the fixed lower plate, acting in conjunction with the rim to hold the flange of the can-head, a spring by which the hinged section of the lower plate is normally held open, a latch, and a stud engaged by said latch by which the movable segment of the lower plate is locked when closed, and a spring fixed to the upper plate adapted to engage the outer edge of the can-head flange whereby the head is locked in position to register with the opening in the lower plate of the jaw.

6. In a can-heading machine, a head-carrying jaw comprising a single upper plate and a two-part lower plate, means for closing and opening one of said lower plates to hold and release a can-head, means for revolving and raising said jaw, means for placing a can in the path of travel, and beneath the jaw, means for depressing the jaw and forcing the can-head upon the end of the can, means for releasing the can, raising the jaw, and discharging the can.

7. In a can-heading machine, a horizontally-revoluble turret, with can receiving and carrying pockets, hinged can-head-carrying jaws registering with the turret-pockets, said jaws comprising an upper single plate and a lower plate formed of sections hinged at one side, means for placing and holding can-heads within the jaws, means for tilting the jaws upwardly, means for delivering cans beneath the jaws, means for pressing the heads upon the cans, releasing the cans and heads, and raising the jaws to allow the cans to be discharged.

8. In a can-heading machine, a horizontally-revoluble turret, with can receiving and carrying pockets, hinged can-head-carrying jaws registering with the turret-pockets, a stationary cam, said jaws including an upper single plate and a lower plate formed of sections hinged at one side, contacts carried by the jaws and engaging with the cam to raise and lower the jaws at fixed intervals, means for placing cans in the turret-pockets to register with the can-heads within the jaws.

846,967. POSITIVE-FEED LUBRICATOR. JOSEPH H. WESSON, Springfield, Mass. Filed June 7, 1906. Serial No. 320,549.

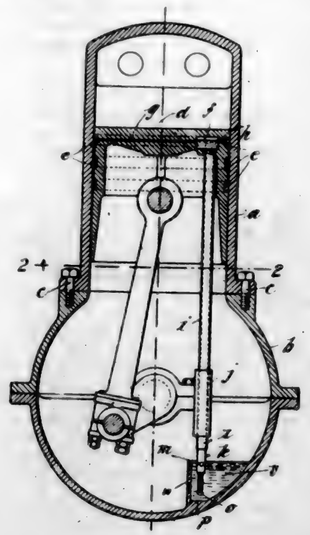

Claim.—1. In a lubricator, a piston-head, a pump carried by the piston-head and having an inlet, a piston for sweeping across the inlet and actuated by the piston-head, a valve between the inlet and the piston-head whereby when the pump is carried into a reservoir of oil a definite amount of the same is forced by the piston to the piston-head, as described.

2. In a lubricator, a cylinder having a crank-casing adapted to contain a lubricant and having a shoulder on the same, means extending from the piston to within a short distance of the crank-casing, a sleeve for guiding said means, a barrel having an opening secured to said means, a plunger carried by the barrel and adapted to open and close the opening, whereby when the opening is brought below the level of the lubricant and the plunger engages said shoulder, the oil will be forced through said means.

846,968. BALL-WINDER. FRED A. WHITMORE, Philadelphia, Pa., assignor to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed Oct. 26, 1906. Serial No. 340,756.

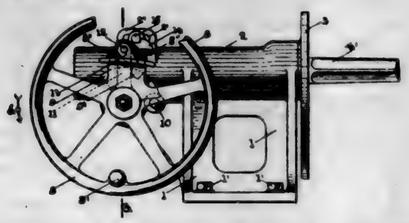

Claim.—1. In a ball-winder for yarn, &c., the combination with a hand-wheel for moving longitudinally, through intermediate mechanism, the spindle on which the yarn is wound, of a positive stop for the hand-wheel on the outward and inward movement of the spindle, and locking mechanism for automatically locking and holding the spindle in its inward position.

2. In a ball-winder for yarn, &c., the combination with the spindle on which the yarn is wound, a rack connected with said spindle, a pinion for moving said rack, a rotary shaft carrying said pinion, and a hand-wheel for rotating said shaft, of connections intermediate said hand-wheel and shaft, and means for positively stopping the rotation of said hand-wheel and said rotary shaft in each direction, at the end of each longitudinal movement of said spindle, and means, automatically operated for holding and locking the rotary shaft when the spindle is in its inward position.

846,969. SHUNT FOR ELECTRIC CIRCUITS. MAURICE J. WOHL, New York, N. Y., assignor to Victor Electric & Manufacturing Co., a Corporation of New York. Filed Dec. 13, 1906. Serial No. 347,685.

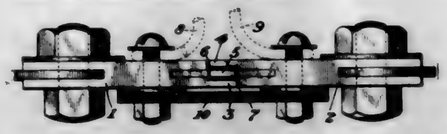

Claim.—1. In a shunt for electric circuits, a pair of terminal blocks of conducting material, and a conductor extending between and inclosed by said blocks.

2. In a shunt for electric circuits, a pair of terminal blocks of conducting material, and a conducting-plate extending between and inclosed by said blocks.

3. In a shunt for electric circuits, a pair of terminal blocks of conducting material, and a portion of metal forming a conductor extending between and inclosed by said blocks.

4. In a shunt for electric circuits, a pair of terminal blocks of conducting material, and a conductor extending between and inclosed by said blocks, the mass of said blocks being relatively large as compared with that of said conductor.

5. In a shunt of electric circuits, a pair of terminal blocks of conducting material, and a conductor extending between and inclosed by said blocks, the cross-sectional area of said blocks being relatively large as compared with that of said conductor.

6. In a shunt for electric circuits, a pair of terminal blocks of conducting material, and a conductor extending between and inclosed by said blocks, the said conductor being formed of a material of higher resistance than the resistance of said blocks.

7. In a shunt for electric circuits, a pair of terminal blocks of metal, and a conductor extending between and inclosed by said blocks.

8. In a shunt for electric circuits, a pair of terminal blocks of conducting material having opposing faces separated by insulating material, and a conductor extending between and inclosed by said blocks.

9. In a shunt for electric circuits, a pair of terminal blocks having relatively large heat-conducting capacity, and a conductor extending between and inclosed by said blocks.

10. In a shunt for electric circuits, a pair of terminals each having a projecting portion therefrom, and a conductor extending between said terminals and so positioned as to be inclosed thereby and by said projecting portions.

11. In a shunt for electric circuits, a pair of terminals having projecting portions from the opposing faces thereof, and a conductor extending between said terminals and so positioned as to be inclosed thereby and by said projecting portions.

12. In a shunt for electric circuits, a pair of terminals each having a projecting portion therefrom, a conductor extending between said terminals and so positioned as to be inclosed thereby and by said projecting portions, and insulating material separating said projecting portions from said conductor.

13. In a shunt for electric circuits, a pair of terminals having projecting portions from the opposing faces thereof, a conductor extending between said terminals and so positioned as to be inclosed thereby and by said projecting portions, and a portion of insulating material separating each of said projections from the opposing face of the opposite terminal.

14. In a shunt for electric circuits, a pair of terminals having projecting portions from the opposing faces thereof, a conductor extending between said terminals and so positioned as to be inclosed thereby and by said projecting portions, and a portion of insulating material separating each of said projections from said conductor.

15. In a shunt for electric circuits, a pair of terminals having projecting portions from the opposing faces thereof, a conductor extending between said terminals and so positioned as to be inclosed thereby and by said projecting portions, and a portion of insulating material separating each of said projections from the opposing face of the opposite terminal and from said conductor.

846,970. SIGN CHARACTER. WILLIAM A. ZIMMERMAN, Brooklyn, N. Y. Filed July 16, 1906. Serial No. 326,369.

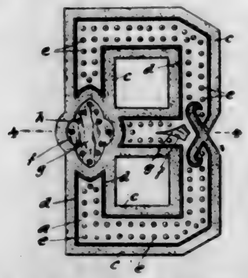

Claim.—1. A sign letter or character composed of a thin sheet of transparent celluloid provided with a gilt backing and with an ornamental border composed of stippled transparent cement.

2. A sign letter or character composed of a thin sheet of transparent celluloid provided with a gilt backing and with an ornamental border composed of stippled transparent cement placed on the front surface of said sheet of celluloid.

3. A sign letter or character composed of a thin sheet of transparent material having a gilt backing and provided with an ornamental border composed of stippled transparent cement, and a supplemental ornamental border composed of paint, said borders being placed on said transparent material.

4. A sign letter or character composed of a thin sheet of transparent celluloid having a gilt backing and provided with an ornamental border composed of stippled transparent cement, and a supplemental ornamental border composed of paint, said borders being placed on the front of said transparent material.

5. A sign letter or other character composed of a thin sheet of transparent celluloid having a gilt backing, said letter or other character being provided with ornamental borders of transparent stippled cement, and the gilt backing being provided with openings covered by translucent ornamental material.

6. A letter or other character composed of a thin sheet of celluloid having a gilt backing, the letter or other character being provided with an ornamental border of stippled transparent cement and with an ornamental border of paint, the gilt backing being provided with openings covered with translucent ornamental material.

7. A sign letter or character composed of a sheet of celluloid having a gilt backing, the letter or other character being provided with an ornamental border of stippled transparent cement and with an ornamental border of paint, the gilt backing being also provided with openings covered with translucent material, the body portion of the letter or character being also provided within said border with ornamental designs composed of transparent cement or varnish placed on the celluloid sheet.

8. A sign letter or character composed of a thin sheet of transparent celluloid provided with a gilt backing, the front of said letter being provided with an ornamental border composed of stippled transparent cement.

846,971. MULTISTAGE TURBO-PUMP. NICHOLAS W. AKIMOFF, Philadelphia, Pa. Filed July 21, 1906. Serial No. 327,138.

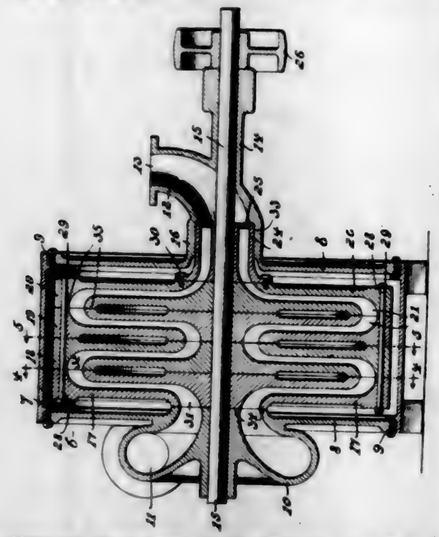

Claim.—1. In a pump of the character described, a housing provided with an inlet and an outlet, a series of runners arranged side by side in the housing, each of said runners having an internal chamber extending from one side to the other to permit in contiguous faces of said runners a direct communication of the chambers with each other, and said runners adapted, when rotated, to suck fluid through the inlet of the housing and discharge the same through the outlet thereof.

2. In a pump of the character described, a housing provided with an inlet and an outlet, a series of runners arranged side by side in the housing, each of said runners having an internal chamber extending from one side to the other to permit in contiguous faces of said runners a direct communication of the chambers with each other, and said runners adapted, when rotated, to suck fluid through the inlet of the housing and discharge the same through the outlet thereof and to confine the fluid within its chambers during passage through said housing.

3. In a pump of the character described, a housing provided with an inlet and an outlet, a series of runners arranged side by side in the housing, each of said runners having an internal chamber terminating at one side near the central portion and at the side opposite thereto near the perimeter thereof to form a circuitous passage-way through said runners by directly communicating with each other in contiguous faces of the runners.

4. In a pump of the character described, a housing provided with an inlet and an outlet, a series of runners arranged side by side in the housing, each of said runners having an internal chamber terminating at one side near the central portion and at the side opposite thereto near the perimeter thereof to form a circuitous passage-way through said runners by directly communicating with each other in contiguous faces of the runners and means for connecting the runners with each other by engaging portions located adjacent to the perimeter thereof.

5. In a pump of the character described, a housing provided with an inlet and an outlet, a series of runners arranged side by side in the housing, each of said runners having an internal chamber extending from one side to the other to permit in contiguous faces of said runners a direct communication of the chambers with each other and blades arranged in each of the chambers of the runners for forcing, when rotated, fluid therethrough.

6. In a pump of the character described, a housing provided with an inlet and an outlet, a series of runners arranged side by side in the housing, each of said runners having an internal chamber extending from one side to the other to permit in contiguous faces of said runners a direct communication of the chambers with each other, blades arranged in each of the chambers of the runners for forcing, when rotated, fluid therethrough, and a diffuser forming a sleeve and connecting the chamber of one of said runners with the outlet of said housing.

7. In a pump of the character described, a stationary housing having a centrally-located inlet and an outlet, a shaft carried by the housing, a series of flat hollow bodies resting side by side and forming connected passage-chambers for fluid connected with the inlet of the housing and terminating radially adjacent to the shaft and periphery of the hollow bodies, blades arranged in the chambers of the bodies for forcing fluid therethrough, a centrally-arranged diffuser forming a sleeve surrounding the shaft and connecting the chambers of the bodies with the outlet of the housing, means for connecting the bodies with each other to form fluid-tight joints between the housing and runners, and means for rotating said shaft and by the same said bodies and diffuser.

8. In a pump of the character described, a stationary housing having a centrally-located inlet and an outlet, a shaft carried by the housing, a series of flat bodies carried by the shaft, each having a chamber forming combined a circuitous passage-way for fluid and communicating with the inlet and the outlet of said housing, and means for connecting said bodies with each other so as to form fluid-tight joints between the same.

9. In a pump of the character described, a stationary housing having a centrally-located inlet and an outlet, a shaft carried by the housing, a series of flat bodies resting side by side and forming a unitary structure carried by said shaft, each of said bodies having a chamber forming combined a circuitous passage-way for fluid connected with the inlet of said housing, blades arranged in each of the chambers of said bodies for forcing when rotated fluid therethrough, a diffuser-sleeve connecting the bodies with said housing and conducting the fluid from the chambers thereof to the outlet, said diffuser-sleeve and the portion of the first of said bodies contacting with said housing adapted to form fluid-tight joints between said housing and bodies, and means for connecting said bodies with each other to form fluid-tight joints between the same.

10. In a pump of the character described, a housing provided with an inlet and an outlet, a shaft carried by said housing, a series of hollow runners mounted on said shaft, each having a chamber forming combined circuitous passage-ways, a sleeve terminating in the outlet of said housing, the passage-ways of said runners adapted to eliminate lateral thrust of the runners on said shaft, and said sleeve adapted in the discharge of said fluid to force said runners at the inlet of said passage-ways against the contacting surface of said housing.

846,972. LINOTYPE-MACHINE. JOHN ALLAN, New York, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Dec. 13, 1906. Serial No. 347,671.

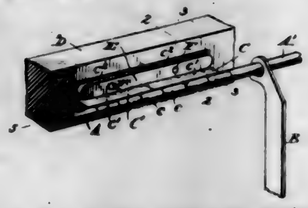

Claim.—1. In a linotype-machine, the combination of guide-wires A, A', each having at one end reduced portions *a*, *a'*, with sustaining-clips encircling said portions and flush with the surface of the wires, whereby the two wires are held in line and prevented from separating longitudinally.

2. In combination with the wires A, A', each having at one end reduced portions *a*, *a'*, the clips encircling and sustaining said portions, one of the wires having its end extended into the clip supporting the opposite wire, as described, whereby the wires are maintained in line and held together end to end.

3. In a linotype-machine, and in combination, a matrix-supporting wire having a circumferential groove with side shoulders therein, and an encircling clip seated within the groove flush with the outer surface of the wire; whereby it is adapted to sustain the wire and also to hold the same against end motion.

4. In combination with the wires A, A', each having the reduced portions at one end, the encircling clips B, B', applied to the respective wires, and a common support having said clips rigidly secured thereto and held in line thereby.

5. In combination with the wires A, A', each having reduced portions, clips C, C', a supporting-bar D, a confining-plate E, and rigid connections between said parts.

846,973. DUST-COLLECTING SYSTEM. WILLIAM E. ALLINGTON, Saginaw, Mich. Filed July 26, 1906. Serial No. 327,804.

Claim.—1. In a system of the character described, the combination with a fan, of a pipe communicating therewith, said pipe comprising straight sections and an interposed elbow or bend, said elbow or bend being in transverse cross-section, curved throughout, and of area greater than the sectional area of the straight sections wherewith it communicates, the dimension of such section on an axis in the plane of the bend being not greater than its dimension on an axis at right angles to such plane.

2. In a material and air handling system of the character described, the combination with a fan, of a pipe communicating therewith, and comprising straight sections, and an interposed elbow, said elbow being of transverse sectional area in excess of the area of the straight sections wherewith it communicates, and of cross-section ovate in configuration with its major axis transverse to the plane of the elbow.

3. In a system of the character described, the combination with a fan, of a pipe communicating therewith, said pipe comprising an elbow or bend structure having straight circular ends, and an intermediate longitudinal bend of sectional area greater than the end areas and of diameter

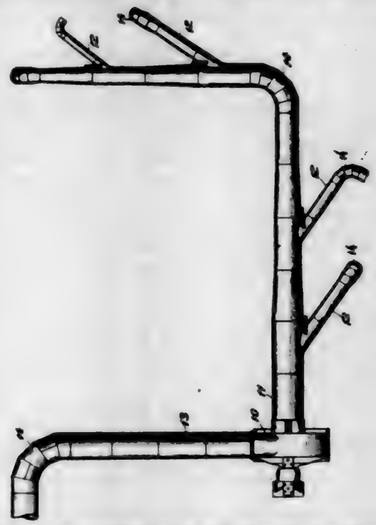

at right angles to the plane of the bend greater than the diameter of the ends.

846,974. BAR-SOAP CUTTER. ESTRATE J. ATHANASSIADES, New York, N. Y. Filed May 29, 1906. Serial No. 319,265.

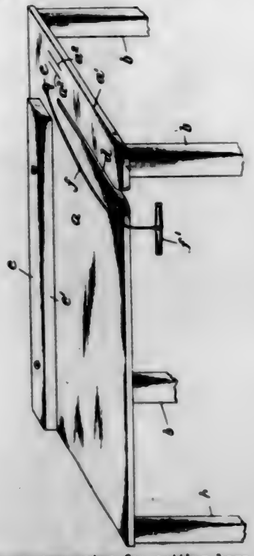

Claim.—In an apparatus for cutting bars of soap into cakes or the like, the combination of a horizontal table provided with a single slot disposed adjacent one end of the table and extending perpendicularly rearward from the front edge thereof, an upright guide disposed upon the rear portion of the table perpendicular to the slot and in coöperative relation thereto, the body of the table comprehended within said slot and guide constituting an expanded, unbroken supporting or display surface, a flexible strand adapted to enter the slot and confined at its rear end and at no other point, a hand-grip secured to the front end, and an anchor securing the rear end of the strand to the table adjacent to the surface thereof and in alinement with, and remote from the front end of, the slot.

846,975. PAPER DISH. ISAAC BERTIN, New York, N. Y. Filed Feb. 24, 1906. Serial No. 302,668.

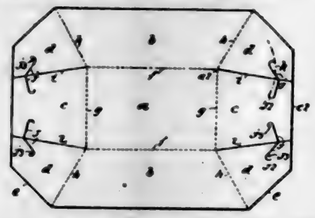

Claim.—A blank for making paper dishes comprising a body portion, folding side portions, folding end portions and folding corner portions, the corner portions being cut off at an angle and being separated from the end portions by narrow slits, and the body, side and corner portions being separated by score-lines, the adjacent parts of the corner and end portions at a predetermined distance from the corresponding corners of the body portion being provided with inwardly converging slits, one of which is provided with an inwardly-directed hook portion and the other with an outwardly-directed hook portion, substantially as shown and described.

846,976. PAPER-HANGER'S SUPPORT. JAMES L. BONAR, Moundsville, W. Va. Filed June 16, 1906. Serial No. 322,108.

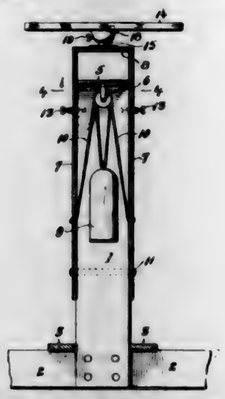

Claim.—1. In a device of the class described, a standard, a table-carrier slidably mounted thereon, a table disposed upon said carrier, and means carried by the standard for counterbalancing the weight of the table and carrier.

2. In a device of the class described, a standard, a table-carrier slidably mounted thereon, a table disposed upon said carrier, means carried by the standard for counterbalancing the weight of said table and carrier, and means carried by the standard for securing the carrier in position.

3. In a device of the class described, a standard, a table-carrier slidably mounted thereon, a table disposed upon said carrier, means carried by the standard for counterbalancing the weight of said table and carrier, and means permitting tilting of the table upon the carrier.

4. In a device of the class described, a standard, a table-carrier slidably mounted thereon, a table disposed upon said carrier, means carried by the standard for counterbalancing the weight of the table and carrier, means permitting tilting of the table upon the carrier, and means for permitting a rotation of said table upon the carrier.

5. In a device of the class described, a standard, a table-carrier slidably mounted thereon, a table disposed upon said carrier, means carried by the standard for counterbalancing the weight of the table and carrier, means permitting tilting of the table upon the carrier, means for permitting a rotation of said table upon the carrier, parallel feet secured to said standard, and cross-bars connecting said feet.

6. In a device of the class described, standards comprising parallel members connected at their upper ends, a bearing-pulley depending from said connecting member, a carriage comprising opposite members connected by a cap-plate, a table upon the top of said carriage, a weight disposed between said standards, and cable connections from said carriage over said pulley and to said weight.

7. In a device of the class described, standards comprising parallel members connected at their upper ends, a bearing-pulley depending from said connecting member, a carriage comprising opposite members connected by a cap-plate, a table upon the top of said carriage, a weight disposed between said standards, cable connections from said carriage over said pulley to said weight, keepers carried by said standards embracing said carriage, and securing-screws carried by said keepers to engage the carriage.

8. In a device of the class described, standards comprising parallel members connected at their upper ends, a bearing-pulley depending from said connecting members, a carriage comprising opposite members connected by a cap-plate, a table upon the top of said carriage, a weight disposed between said standards, cable connections from said carriage over said pulley to said weight, keepers carried by said standards embracing said carriage, securing-screws carried by said keepers to engage the standards, a table carried by said cap-plate, and a connecting-strap extending between the opposite members of the carriage at its lower end.

9. In a device of the class described, a carrier, a post mounted thereon and provided with a circumferential groove, a paper-supporting table at the top of said carrier, a bearing-block on said table provided with a recess of greater diameter than said post to permit tilting thereon, and a screw carried by said block and extending into the groove of said post.

10. In a device of the class described, a carrier, a table mounted thereon comprising a frame having a waterproof covering, a body of reticulated material disposed over said covering, and a fabric finishing-surface disposed upon said reticulated material.

846,977. BATH-TUB-LEG FASTENING. CLARENCE H. BOOTH, Detroit, Mich. Filed June 16, 1906. Serial No. 321,970.

Claim.—1. A seamless steel bath-tub provided at four points upon the curved portions intervening between its bottom and sides with reinforcing-plates shaped to fit against the curved portions and united thereto, each plate formed with a central depression laterally open on one side and provided with a slot in its bottom, a leg having a shank projecting inwardly beneath the depression and

a securing-bolt passing through the shank and the plate and having its head seated in the depression thereof.

2. A seamless steel bath-tub provided at each of four points upon the curved portions of its body intervening between the bottom and sides thereof with reinforcing-plates conforming to the shape of the tub and united thereto, each plate formed with a central depression adapted to form a nut-seat for the securing-bolt of a detachable supporting-leg, each plate and its depressed portion being wholly within the angle formed by the sides and bottom of the tub and the depressed portions forming the leg-rests for the tub.

3. The combination of a bath-tub, a leg-fastening comprising a sheet-metal disk shaped in conformity to the rounded portions of the tub intervening between its bottom and sides and united thereto, said disk provided with a central depression laterally open at the inner side and adapted to form a nut-seat for the securing-bolt of the leg, a leg having a shank projecting inwardly beneath said depressed portion of the plate and a securing-bolt passing through said shank and plate and having its tightening-nut on the lower end of the bolt beneath the shank of the leg, the leg extending upwardly above the shank and surrounding with its marginal upper edge the upper marginal portion of the plate and contacting therewith.

4. The combination of a bath-tub, a leg-fastening comprising a sheet-metal disk shaped in conformity to the curved portions intervening between the bottom and sides of the body of the tub and united thereto, the disk formed with a central depression open laterally and adapted to receive the securing-bolt of the leg and form a nut-seat for the head thereof, a leg having an inwardly-projecting shank forming a bearing for the depressed portion of the sheet-metal disk, and a bolt securing the shank to the depressed portion of the metal disk, said metal disk and its depressed portion being wholly within the angle formed by the sides and bottom of the tub and the leg projecting upwardly above the shank and marginally surrounding and contacting with the marginal outer portion of the disk.

5. A seamless steel bath-tub provided at each of four points of its body portion with a reinforcing-plate united thereto and conforming to the shape of the tub, each plate formed with a central depression adapted to form a nut-seat for the securing-bolt of a detachable supporting-leg.

6. A seamless steel bath-tub provided at four points on the under side of its body portion with reinforcing-plates conforming to the shape of the tub and united thereto, each plate formed with a depressed portion, and a supporting-leg detachably secured to the depressed portion of each plate.

7. The combination with a seamless steel bath-tub, of a leg-fastening comprising a reinforcing-plate united to the body of the bath-tub and provided with a depressed portion and a leg detachably secured to the depressed portion, said depressed portion being formed on one side of a longitudinal slit in the plate and forming a nut-seat, open on one side, for the securing-bolt of the leg.

846,978. TYPE-WRITING MACHINE. BYRON A. BROOKS, New York, N. Y., assignor to Union Typewriter Company, Jersey City, N. J., a Corporation of New Jersey. Filed Oct. 19, 1901. Serial No. 79,188.

Claim.—1. In a type-writing machine, the combination of a platen, a paper-feeding device normally in contact with the platen, a paper-stop against which the leading edge of the paper is adapted to abut and arranged adjacent to said paper-feeding device, and means for moving the paper-stop toward the platen when the paper-feeding device is out of contact with the platen, the arrangement being such that the paper-stop may be brought to a position to arrest the paper when it is fed into the machine and past the said paper-feeding device.

2. In a type-writing machine, the combination of a platen, a paper-feeding device, a paper-stop against which the leading edge of the paper is adapted to abut, and means for withdrawing the paper-feeding device from contact with the platen and for interposing the paper-stop in the path of the leading edge of the paper.

3. In a type-writing machine, the combination of a platen, a paper-feeding device, a paper-stop against which the leading edge of the paper is adapted to abut, means for moving the paper-stop toward the platen and beyond the contact-face of the feeding device and means for automatically locking the parts in such positions.

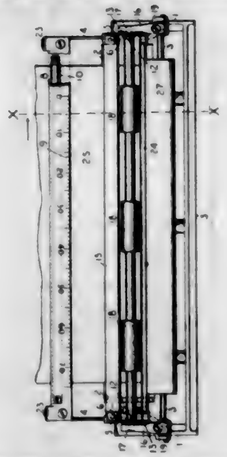

4. In a type-writing machine, the combination of a platen, a paper-feeding device, a paper-stop against which the leading edge of the paper is adapted to abut, means for withdrawing the paper-feeding device from contact with the platen and for simultaneously interposing the paper-stop in the path of the leading edge of the paper, and means for automatically locking the parts in such positions.

5. In a type-writing machine, the combination of a platen, a movable paper-stop and means for changing the angle which the plane of the abutting or contact face of said stop bears to the surface of the platen, whereby the stop in one position will afford an abutment for the leading edge of the paper and in another angular position will permit the paper to move freely past it.

6. In a type-writing machine, the combination of a platen, a movable paper-stop, means for changing the angle which the plane of said stop bears to the surface of the platen, whereby the stop in one position will afford an abutment for the leading edge of the paper, but in the other position will permit the paper to pass by, a paper-feeding device which coöperates with said platen, and operative connections between the paper-feeding device and the paper-stop, whereby a movement of one of the parts to or from the operative position will cause a movement of the other.

7. In a type-writing machine, the combination of a platen, a movable paper-stop, means for changing the angle which the plane of said stop bears to the surface of the platen, whereby the stop in one position will afford an abutment for the leading edge of the paper but in the other position will permit the paper to pass by, a paper-feeding device which coöperates with said platen, operative connections between the paper-feeding device and the paper-stop whereby a movement of one of the parts to or from the operative position will cause a movement of the other, and means for locking the paper-feeding device out of operative position while the stop is in operative position.

8. In a type-writing machine, the combination of a platen, a movable paper-stop mounted independently of the platen and which extends substantially throughout the length thereof, said stop being adapted to constitute an abutment for the leading edge of the paper, and means for moving said paper-stop into the path of the paper as it is introduced into the machine.

9. In a type-writing machine, the combination of a platen, a movable paper-stop which extends substantially throughout the length of the platen and which is adapted to constitute an abutment for the leading edge of the paper, means for moving said paper-stop into operative position and means for automatically retaining the paper-stop in the position to which it is moved.

10. In a type-writing machine, the combination of a platen, a paper-feeding device coöperating therewith, a movable paper-stop which extends substantially throughout the length of the platen and which is adapted to constitute an abutment for the leading edge of the paper, means for moving the feeding device into and out of operative feeding relation with the platen, and operative connections between the paper-feeding device and the paper-stop, whereby a movement of the former out of operative feeding relation will effect a movement of the paper-stop into arresting position.

11. In a type-writing machine, the combination of a platen, a paper-feeding device coöperating therewith, a movable paper-stop which extends substantially throughout the length of the platen and which is adapted to constitute an abutment for the leading edge of the paper, means for moving the feeding device into and out of operative feeding relation with the platen, operative connections between the paper-feeding device and the paper-stop and means for automatically locking the feeding device in inoperative position while the stop is in arresting position.

12. In a type-writing machine, the combination of a platen, a paper-feeding device, and a paper-stop against which the leading edge of the paper is at all times adapted to abut when the paper-feeding device is out of coöperative relation with the platen.

13. In a type-writing machine, the combination of a platen, a paper-feeding device, a paper-stop arranged beyond the feeding device and against which the leading edge of the paper is at all times adapted to abut when the paper-feeding device is out of operative relation with the platen and means for moving said paper-feeding device out of operative relation with the platen; whereby the paper may be introduced past the feeding device and arrested by the stop and then clamped upon the platen by the feeding device when the latter is restored to normal position.

14. In a type-writing machine, the combination of a platen, a plurality of feed-rollers which coöperate therewith, means for moving said feed-rollers out of contact with the platen, a movable stop against which the leading edge of the paper is adapted to abut, and means for controlling the movement of the paper-stop by the moving means for the feed-rollers.

15. In a type-writing machine, the combination of a platen, a plurality of feed-rollers which coöperate therewith, means for simultaneously moving all of said feed-rollers out of contact with the platen, a movable paper-stop against which the leading edge of the paper is adapted to abut, means for controlling the movement of the paper-stop by the moving means for the feed-rollers, and mechanism for automatically locking the feed-rollers away from the platen.

16. In a type-writing machine, the combination of a platen, a movable spring-pressed frame, one or more paper-feed rollers carried by said frame and adapted to coöperate with the platen, a paper-stop against which the leading edge of the paper is adapted to abut, and means for moving the frame and simultaneously conveying the paper-stop into effective position to constitute an abutment for the paper.

17. In a type-writing machine, the combination of a platen, a movable spring-pressed frame, one or more paper-feed rollers carried by said frame and adapted to coöperate with the platen, a paper-stop carried by said frame and adapted to constitute an abutment against which the leading end of the paper may abut, and a second movable feed-roller-carrying frame which coöperates with and is adapted to move the first-mentioned frame.

18. In a type-writing machine, the combination of a platen, a movable spring-pressed frame, one or more paper-feed rollers carried by said frame and adapted to coöperate with the platen, a paper-stop carried by said frame and adapted to constitute an abutment against which the leading end of the paper may abut, a second movable feed-roller-carrying frame which coöperates with and is adapted to move the first-mentioned frame, and means for automatically locking both of said frames in position where the rollers are maintained out of contact with the platen and the paper-stop is in the path of the leading end of the paper.

19. In a type-writing machine, the combination of a platen, paper-feeding mechanism therefor, said paper-feeding mechanism comprising separate frames, presser-bars or paper-blades carried by said frames and located on opposite sides of the printing-line, paper-feed rollers carried by each of said frames, and a paper-stop carried by one of said frames and adapted to be moved to a position where it will constitute an abutment for the leading edge of the paper when the frame carrying it is moved in one direction and to be moved out of such position when the frame carrying it is moved in an opposite direction.

20. In a type-writing machine, the combination of a platen, paper-feeding mechanism therefor, said paper-feeding mechanism comprising separate spring-pressed movable frames, the movement of one of which controls the movement of the other, presser-bars or paper-blades carried by said frames and located on opposite sides of the printing-line, a scale upon one of said paper-blades, paper-feed rollers carried by said frames, a paper-stop carried by one of said frames and adapted to be moved to a position where it will constitute an abutment for the leading edge of the paper when the frame carrying it is moved in one direction, and means for automatically locking the frames in such position, whereby the paper-blades and feed-rollers are maintained away from the platen.

21. In a type-writing machine, the combination of a platen, paper-feeding mechanism therefor, said paper-feeding mechanism comprising separate movable frames, presser-bars or paper-blades carried by said frames and located on opposite sides of the printing-line, paper-feed rollers carried by said frames, and a paper-stop carried by one of said frames and adapted to be moved so as to change the angle which the plane of said stop bears to the surface of the platen.

22. In a type-writing machine, the combination of a platen, paper-feeding mechanism therefor, said paper-feeding mechanism comprising separate spring-pressed frames, presser-bars or paper-blades carried by said frames and located on opposite sides of the printing-line, paper-feed rollers carried by said frames, a paper-stop carried by one of said frames and adapted to be moved to a position where it constitutes an abutment for the leading edge of the paper when the frame carrying it is moved in one direction, and means for adjusting the tension of the springs upon said first-mentioned frame.

23. In a type-writing machine, the combination with a platen and suitable paper-feeding mechanism therefor, of a movable frame, a paper-stop carried by said frame and adapted to constitute an abutment for the leading edge of the paper throughout the length of the platen when the frame is in one position and to permit the free passage of the paper when the frame is in another position.

24. In a type-writing machine, the combination with the cylinder or platen and a horizontal scale or paper-retainer, of a gage or stop located and operating rearwardly of the horizontal scale or paper-retainer, independent of and co-operative with the cylinder or platen for entering the paper into the machine and positively horizontally positioning the paper in the machine.

25. In a type-writing machine, the combination with a platen, of a device for pressing paper against the platen, a gage for squaring the leading edge of the paper relatively to the printing-line, said gage normally out of use; means for releasing said pressure device, and means connected to said releasing means throwing said gage into use.

26. In a type-writing machine, the combination with a platen, of a device for pressing paper against the platen, a gage at the platen for squaring the leading edge of the pa-

per relatively to the printing-line, said gage normally out of use; means for both releasing said pressure device and simultaneously throwing said gage into working position.

27. In a type-writing machine, the combination with a platen, and a platen-frame, of a device for pressing paper against the platen, a gage at the platen for squaring the leading edge of the paper relatively to the printing-line, said gage normally out of use; and a single key upon the platen-frame and connected to means for both releasing said pressure device and throwing said gage into working position.

28. In a type-writing machine, the combination of a platen, a paper-feed roller pivotally mounted to swing into and out of contact with the platen, a paper-stop pivoted to swing into and out of operative position, hand-actuated means for controlling said swinging movements of the feed-roller and paper-stop, and operative connections between said feed-roller and paper-stop.

29. In a type-writing machine, the combination of a platen, a paper-feed roller pivotally mounted to swing into and out of contact with the platen, a paper-stop pivoted to swing into and out of operative position, and hand-actuated means for automatically swinging the paper-stop into position to arrest the leading edge of the paper when the feed-roller is moved out of contact with the platen.

30. In a type-writing machine, the combination of a platen, a platen-frame, a paper-feed roller pivotally supported on the platen-frame to swing into and out of contact with the platen, a paper-stop for arresting the leading edge of the paper, said stop being pivoted on the platen-frame to swing into and out of operative position, and means for automatically moving the stop into operative position when the paper-feed roller is moved out of coöperation with the platen.

31. In a type-writing machine, the combination of a platen, a paper-feed roller, a hand-actuated cam for moving said feed-roller away from the platen, and a stop for the leading edge of the paper and which is automatically moved into the operative position by an actuation of said cam.

32. In a type-writing machine, the combination of a platen, a paper-feeding device, a paper-stop, and means for automatically rendering the paper-stop effective to arrest the paper when the paper-feeding device is moved out of contact with the platen.

33. In a type-writing machine, the combination of a platen, a paper-feeding device, a paper-stop, means for automatically rendering the paper-stop effective to arrest the paper when the paper-feeding device is moved out of contact with the platen, and means for locking said paper-feeding device in the released or inoperative position and for maintaining the stop in the operative position.

34. In a type-writing machine, the combination of a platen, a paper-feed roller coöperating therewith, a gage for squaring the leading edge of the paper, means for releasing said feed-roller and for automatically moving the gage into operative position, and means for locking the feed-roller in the released position and for maintaining the gage in the operative position.

35. In a type-writing machine, the combination of a platen, a paper-feed roller coöperating therewith, a gage adapted to arrest the leading edge of the paper after it has passed said feed-roller, means for releasing said feed-roller and for automatically moving the gage into operative position, and means for automatically locking the feed-roller in the released position and for maintaining the gage in the operative position.

36. In a type-writing machine, the combination of a platen, parallel paper-feed rollers coöperating therewith, a gage for squaring the leading edge of the paper relatively to the printing-line, and means for releasing said parallel feed-rollers by a single operation and for automatically moving the gage into operative position.

37. In a type-writing machine, the combination with a revoluble platen, of rollers for pressing the paper against the platen, a key for throwing off said pressure-rollers, and a paper-gage normally away from the platen, but movable toward the platen by said key at the roller-releasing operation, so as to afford an abutment or gage against which the leading edge of the paper may be squared relatively to the printing-line.

38. In a type-writing machine, the combination with a platen, of a gage for squaring the leading edge of the paper relatively to the printing-line, said gage being normally in a position of disuse, a yielding device coöperating with said gage, and key-controlled means for locking said gage away from the platen.

39. In a type-writing machine, the combination with a platen, of a pressure-roller, a key for effecting the release of the pressure-roller, means being provided whereby the key is detained in working position, a gage normally in a position of disuse, for squaring the leading edge of the paper relatively to the printing-point, and means for enabling said key by its roller-releasing movement to cause the movement of said gage toward the platen.

846,979. STEEL ALLOY AND ITS MANUFACTURE. JAMES CHURCHWARD, New York, N. Y. Filed Dec. 14, 1906. Serial No. 347,821.

Claim.—1. An alloy consisting of steel, nickel, manganese and titanium, in substantially the proportions specified.

2. The herein-described mode of producing a steel alloy containing titanium, which consists in first melting titanium, then melting together steel and nickel, then mixing manganese with the molten titanium, and then adding to the molten titanium and manganese the molten alloy of nickel and steel the latter being at as high a temperature as the metals may be raised to avoid volatilization.

846,980. RAIN GUARD OR HOOD FOR WINDOWS. ALBERT P. CHUTE, Boston, Mass. Filed Aug. 4, 1906. Serial No. 329,206.

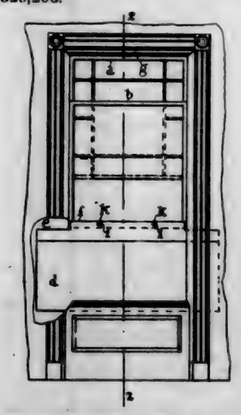

Claim.—1. The combination with a window, of a rain guard or hood coöperating therewith and comprising inclined portions located outside of the window and of greater length than the width of the window, and an upright portion or lip extended through the window-opening and secured to the lower sash of the window to move therewith, and means to fasten said slip to said lower sash, substantially as described.

2. The combination with a window, of a rain guard or hood comprising a portion located outside of the window and extended beyond the sides of the same, and an upright portion of less length than the inclined portion extended through the window-opening, and means to secure said upright portion in fixed position within the building in which the window is located.

3. The combination with a window, of a rain guard or hood comprising a downwardly-inclined portion located outside of the window and of a length greater than the width of the window, and a portion or lip of less length than said inclined portion which is extended through the window-opening and secured to the lower sash to move therewith without interfering with the movement of said lower sash, substantially as described.

4. A rain guard or hood for windows comprising an inclined portion of a length greater than the width of the window with which it coöperates and an upright portion or lip of less length than said inclined portion, substantially as described.

846,981. SCREW. JAMES H. CLAIBORNE, Jr., San Francisco, Cal. Filed Sept. 17, 1906. Serial No. 334,945.

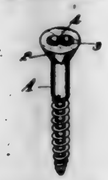

Claim.—1. In a wood-screw the head thereof provided with a single sunken chamber whose walls are substantially parallel with the axis of the screw said chamber being in the form of two substantially cylindrical portions the side walls of which intersect.

2. A wood-screw having a head with a sunken chamber whose length is greater than its width, said chamber consisting of two cylindrical portions whose walls are parallel with the axis of the screw and whose adjacent sides intersect to form a single connecting-chamber having inwardly-projecting points at opposite sides of the central portion thereof.

846,982. BOILER. EDWARD S. CLARK, Boston, Mass. Filed Mar. 6, 1906. Serial No. 304,609.

Claim.—1. A flash-boiler comprising a plurality of sections disposed one above the other, the first section receiving the feed at its top and discharging at its bottom into the bottom layer of the lowest section, said lowest section directly discharging at its top into the top layer of an intermediate section, and an outlet from said intermediate section.

2. A flash-boiler comprising a plurality of retroverted sections disposed one above the other, the uppermost section receiving the feed at its top layer and discharging from its bottom layer into the bottom layer of the lowest section, said lowest section discharging from its top layer by a direct connection at one side into the top layer of an intermediate section, and an outlet from the bottom layer of the intermediate section.

3. A flash-boiler comprising a plurality of sections disposed one above the other and composed of a tube bent back and forth upon itself, alternate retroversions being parallel, and adjacent retroversions being at an angle to each other, the first of said sections receiving the feed at its top and discharging at its bottom into the bottom layer of the lowest section which discharges at its top directly into the top layer of an intermediate section, and an outlet from said intermediate section.

846,983. ATTACHMENT FOR BOTTLE-WASHING MACHINES. WILLIAM J. CUNNINGHAM, Philadelphia, Pa. Filed Apr. 13, 1906. Serial No. 311,514.

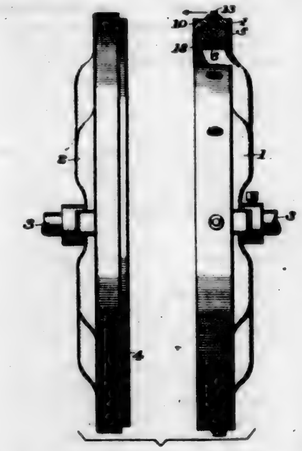

Claim.—1. In a device of the character described, a disk, a band therefor, and cranks forming a movable connection for said band and disk.

2. In a device of the character described, a disk, a band therefor, and cranks forming a connection for said band and disk and seated in recesses, whereby the band may closely fit the disk.

3. In a device of the character described, a disk, cranks mounted at suitable intervals thereon, a band adapted to be suitably connected with said cranks and having means whereby said cranks can move.

4. In a device of the character described, a wheel having openings at intervals therein, cranks each having one arm movably mounted in one of said openings and a rubber band having openings adapted to receive the other arm of said cranks, and provided with recesses in which are seated the connecting-arms of said cranks.

846,984. PHOTOGRAPHIC SHUTTER. GUSTAV DIETZ, Yonkers, N. Y. Filed Mar. 7, 1906. Serial No. 304,612.

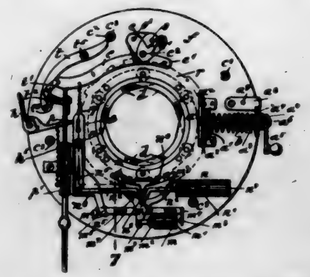

Claim.—1. In a photographic shutter, the combination, with a spring-actuated driving mechanism for the flies, of a speed-indicating ring arranged circumferentially around the shutter, and an operative connection between said driving mechanism and said indicating-ring, whereby the latter is moved in either direction by the former.

2. In a photographic shutter, the combination, with a driving mechanism for the flies including a motor-spring,

of a speed-indicating ring, and an operative connection between said motor-spring and said indicating-ring, whereby the latter is moved in the same direction and in the same ratio as the former.

3. In a photographic shutter, the combination, with the shutter-case, of a driving mechanism for the flies including a ratchet-wheel, and a speed-indicating ring geared to said ratchet-wheel and provided with speed-indicating graduations.

4. In a photographic shutter, the combination, with the escapement mechanism, and the mechanism for driving the flies, of a time-lever fulcrumed to the case, and an elbow-lever fulcrumed to said time-lever and adapted to be thrown into engagement with the escapement mechanism.

5. In a photographic shutter, the combination, with the escapement mechanism, and the fly-driving mechanism, of a time-lever, an elbow-lever fulcrumed to the same, and means for setting the time-lever for placing the elbow-lever in or out of engagement with the escapement mechanism.

6. In a photographic shutter, the combination, with the driving-ring for the flies provided with a finger extension, of a retarding device, and means for throwing the retarding device in or out of engagement with the finger extension.

7. In a photographic shutter, the combination, with the driving-ring for the flies, of a forked lever fulcrumed to the case, an air-check connected with the forked lever, and means for opening or closing the air-check.

8. In a photographic shutter, the combination, with the driving-ring for the flies, of a retarding device, an air-check, and an automatic connection between said retarding device and air-check.

9. In a photographic shutter, the combination, with the driving-ring provided with a finger extension, of a retarding device, and an automatically-operated air-check, said air-check being closed when the retarding device is disconnected, and opened when the retarding device is connected with the finger extension of the driving-ring.

10. In a photographic shutter, the combination, with the driving-ring for the flies, of a retarding device, and means for connecting said retarding device to said driving-ring throughout the movement of the latter, whereby said driving-ring is retarded evenly throughout such movement.

846,985. FEED-BAG. GUSTAVUS P. DRUECK, Jr., Chicago, Ill. Filed May 31, 1906. Serial No. 319,514.

Claim.—A nose-bag comprising a bag-body, a foldable band surrounding the rim of said body and having joints in opposite portions thereof, slides on portions of the band to fit over the joints, rods immovably fixed to diametrical opposite points of the band in planes at right angles to the joints, said rods extending rearwardly and terminating in hooks, the rods also having upwardly-struck loops therein adjacent to their points of attachment to the bag, and holding-strips adjustably connected to the said loops.

846,986. KNIT BOOT. FREDERICK G. EBERHART, Jr., Mishawaka, Ind., assignor to Mishawaka Woolen Manufacturing Company, Mishawaka, Ind., a Corporation of Indiana. Filed July 27, 1904. Serial No. 218,414.

Claim.—A fulled knit boot of the character described having the leg portion opposite and for a part of the distance above the ankle portion knitted of double thickness of homogeneous material, the two thicknesses being united and merged into the web of the boot at their upper and lower edges, substantially as and for the purpose described.

846,986.

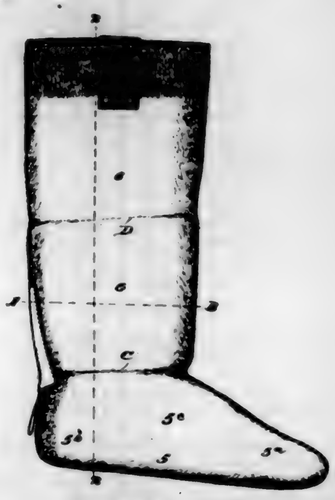

846,987. ATTACHMENT FOR DRAWING-BOARDS. GEORGE R. EVANS, Philadelphia, Pa. Filed June 20, 1906. Serial No. 322,512.

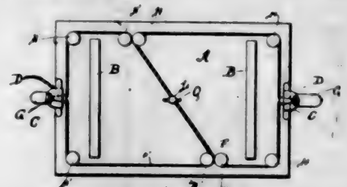

Claim.—1. In combination with a drawing-board, two traveling tapes, portions of which lie parallel and in close proximity with each other, means for clamping said parallel portions together, two blocks, one attached to each tape and a straight-edge attached to said blocks, as and for the purpose set forth.

2. In combination, a drawing-board, two blocks each adapted to travel along one edge of the board, a straight-edge attached to said blocks, a bracket carried by each of the blocks, a tempered-steel tape secured to each of the brackets, a series of guide-pulleys over which each tape travels, said pulleys being so arranged as to cause a portion of each of the tapes to lie side by side and a clamp through which the tapes pass and by which they may be clamped together, as and for the purpose set forth.

3. The herein-described combination of a drawing-board, two series of guide-pulleys journaled upon the under side of the board, two tapes running over said pulleys and so arranged that a portion of each tape lies parallel and in proximity to a portion of the other, means for clamping the last-named portions of the tapes together, two brackets to which the ends of the tapes are attached, a spring carried by each of the brackets adapted to bear against the under side of the board, a block secured to each of the brackets, a straight-edge having slots in each end and thumb-screws passed through said slots for attaching the straight-edge to said blocks, as shown and described.

846,988. COMBINED ENVELOP AND LETTER-SHEET. ARTHUR J. FARMER, Detroit, Mich. Filed Mar. 10, 1906. Serial No. 305,195.

Claim.—1. The combination with a complete envelop having a closing-flap, of a sheet of paper detachably connected to the outer edge of the flap of the envelop whereby

the envelop and sheet of paper may be relatively folded so as to superimpose the heading-space of the paper on the outer surface of the envelop preparatory to the insertion of a sheet of carbon-paper to effect the simultaneous inscription of the name and address of the sendee at the head of the sheet and on the envelop.

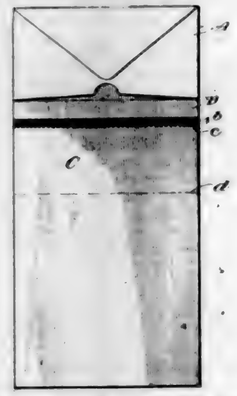

2. The combination with a complete envelop having a closing-flap, of a sheet of paper detachably connected to the flap of the envelop.

3. The combination with a complete envelop having a closing-flap, of a sheet of paper detachably connected to the flap of the envelop by a weakened line.

4. The combination with an envelop, of a sheet of paper formed integrally with the flap of the envelop, the paper being detachable from the envelop by means of a line of perforations.

5. The combination with a complete envelop, of a sheet of paper detachably connected to the envelop whereby the top of the paper and outer surface of the envelop may be superimposed in position to permit the insertion of a sheet of carbon-paper preparatory to simultaneously inscribing the name and address of the sendee at the top of the sheet and on the envelop.

6. The combination with a complete envelop, of a sheet of paper detachably secured to the envelop and adapted to be folded so as to overlie the envelop, the sheet of paper having thereon means for indicating the position of the lower edge of the envelop when the paper overlies the envelop.

846,989. SURVEYING INSTRUMENT. PHILIP FERBER, Hoboken, N. J., assignor to The Keuffel & Esser Company, Hoboken, N. J., a Corporation of New Jersey. Filed Dec. 17, 1904. Serial No. 237,235.

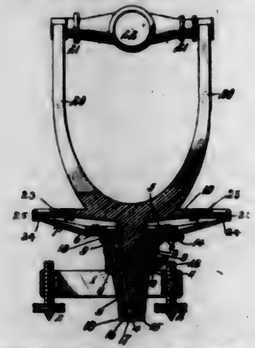

Claim.—An instrument of the character described comprising the usual socket member and the lower limb secured thereto and having an inturned peripheral flange, in combination with the spindle seated in the socket member, the upper limb integral with the spindle, and the vernier-ring secured to the upper limb, and having a downturned peripheral flange embracing the flange of the lower limb, as and for the purpose set forth.

846,990. OIL-BURNER. JAMES C. FITZSIMMONS, Oakland, Cal. Filed Dec. 31, 1906. Serial No. 350,280.

Claim.—1. In an oil-burner, a head having a rounded, slotted, nose portion, said head having respective oil and steam passages opening into opposite sides of the slot in said nose portion, a disk provided with annular flanges on the two sides fitting in said slot with the spaces bounded by said flanges communicating with respective of said oil and steam passages, said flanges slotted above and below the disk for the egress of the oil and steam, said disk being turnably mounted to direct the flame to either side of the axial line of the burner and means for securing said disk in position in the head.

2. In an oil-burner, a burner-head having a transverse slot and provided with upper and lower oil and steam passages discharging into said slot, a disk having upper and lower flanges, fitting in said slot, the space inclosed by one of said flanges registrable with the discharge-opening of said oil-passage and the space inclosed by the other of said flanges registrable with the discharge-opening of said steam-passage, said flanges slitted to provide respective oil and steam outlets, and means for removably holding said flanged disk in position in said head, said disk being turnable in a plane at right angles to the axis of the head whereby it may direct the flame to either side of the axial line of the burner or straight ahead.

3. In an oil-burner, a forked head having respective oil and steam passages opening into the slot in the head, a deflector fitting in said slot and having respective discharge-orifices in communication with said oil and steam passages, said deflector being turnable in a plane at right angles to the axis of the head, and means for compressing the forked portion of said head to grip said deflector to hold it in operative position.

846,991. BUCKLE. HENRY J. GAISMAN, New York, N. Y. Filed Oct. 1, 1906. Serial No. 336,868.

Claim.—1. A buckle comprising a frame provided with springs, a lever pivotally connected with said springs, and means between the lever and the frame for causing the separation or approach of the lever and frame upon the rotation of said lever.

2. A buckle comprising a frame provided with springs, and a lever pivotally connected with said springs and provided with one or more projections adapted to coact with the frame to cause the lever and frame to separate or approach upon the rotation of the lever with respect to the frame.

3. A buckle comprising a frame provided with springs on opposite sides, and a lever located between the springs and pivotally connected thereto, said lever having means to coact with the frame to cause the separation or approach of the lever and frame upon rotation of the lever.

4. A knuckle comprising a frame provided with springs on opposite sides, and a lever pivotally connected with the springs and located between the same, said lever having one or more projections to engage the frame to cause the separation or approach of the lever and frame upon rotation of the lever.

5. A buckle comprising a frame provided with springs, a lever pivotally connected with the springs and provided with a gripping member, and means carried by the lever for causing the separation or approach of the lever and frame upon rotation of the lever.

6. A buckle comprising a frame provided with springs having pivots, a lever having bearings receiving said springs, said lever having a gripping member to coact with the frame, and also provided with one or more projections to engage the frame to cause the separation or approach of the lever and frame upon rotation of the lever.

7. A buckle comprising a frame having a cross-bar, springs carried by said frame substantially perpendicular to the cross-bar, a lever pivoted to the springs and located between the same, said lever being provided with a gripping member to coact with said cross-bar, and also having one or more projections to coact with the frame to cause the separation or approach of the lever and frame when the lever is rotated.

8. A buckle comprising a frame provided with springs, and a lever located between the springs and pivotally connected therewith, said lever having a gripping member, and also provided with projections to coact with the frame, said projections being located at opposite ends of the gripping member providing a space for the passage of a belt or strap between said projections.

9. A buckle comprising a frame provided with an opening, a pair of springs having a cross-bar all made integral providing an opening alined with the opening of the frame, said springs being secured to said frame, a lever located between the springs and pivotally connected therewith, and means for causing the separation or approach of the lever and frame upon rotation of the lever.

10. A frame provided at one side with an offset cross-bar, springs carried by the frame substantially perpendicular to said cross-bar, said frame having flanges extending along the edges of said springs, and a lever located between the springs and pivotally connected therewith, said lever having a gripping member to coact with the cross-bar.

846,992. FEEDING MECHANISM FOR PRINTING-MACHINES. HARRY C. GAMMETER, Cleveland, Ohio, assignor to The American Multigraph Company, Cleveland, Ohio, a Corporation of Ohio. Filed Sept. 19, 1904. Serial No. 225,154.

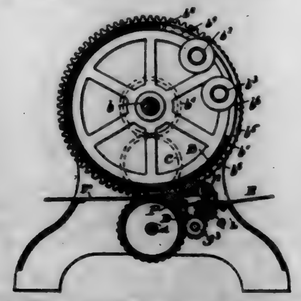

Claim.—1. The combination of a printing-drum, an impression-platen a pair of paper-feed rollers, arms for holding one of said rollers out of contact with the other, a roller carried by one of said arms, a member adjustably carried by said drum and adapted to engage said last-mentioned roller to govern engagement of the feed-rollers, and means for driving one of the feed-rollers.

2. The combination of a printing-drum, an impression-platen a pair of feed-rollers, one above the other, gearing connecting the drum and lower feed-roller, a movable ring surrounding the periphery of the drum and adjustably locked thereto, and means carried by said ring and adapted to periodically cause depression of the upper feed-roller into gripping engagement with the lower roller.

3. The combination of a rotary printing-drum, an impression-platen, a pair of feed-rollers, an intermediately-pivoted arm supporting near one end one of the feed-rollers and carrying near the other end a cam-roller, an adjustable ring surrounding the drum, and a cam on said ring adapted to engage said cam-roller.

4. The combination of a rotary printing-drum, an impression-platen, a pair of feed-rollers, one above the other, means for driving the lower feed-roller, a pivoted arm carrying one end of the upper feed-roller, means on the drum to engage said arm and thereby move the feed-roller, a rock-shaft, a series of upwardly-projecting stops carried thereby, a rock-arm on said rock-shaft, and a downward projection on the arm first mentioned adapted to bear on said rock-arm whereby when the upper feed-roller is lowered said stops are thereby withdrawn from active position.

846,993. OIL-BURNER. WILLIAM R. GILMORE, Williams, Cal. Filed June 20, 1906. Serial No. 322,542.

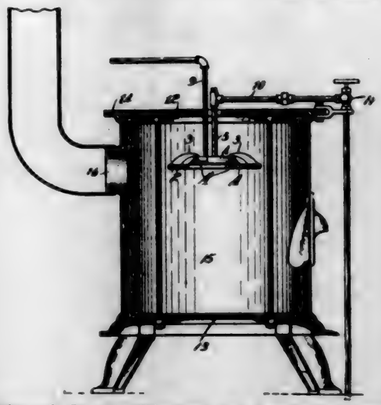

Claim.—1. In an oil-burner, the combination with a stove or heater, of a plate suspended therein and having an opening in its central portion, a second plate of larger diameter than the first plate having means engaging said first plate to suspend the second plate directly from and below the first plate, said second plate having perforations through it outside of the edge of the first plate, and a hydrocarbon-supply pipe fixed to the first plate and connecting with the central opening thereof, said plates being spaced from each other a short distance to form a passage for the hydrocarbon therebetween, and the perforations of the second plate allowing a downdraft to pass near the vapor-outlet between the said plates, and a pipe adapted to deliver a fluid upon the upper surface of said first plate.

2. A hydrocarbon and oil burner including a plate having vertical holes made around its periphery, and a disk secured to the plate and forming therewith a shallow central chamber with escape-passages around the periphery of the disk, an annular channel formed in the top of the disk, an oil-pipe connecting through the center of the disk, with the chamber beneath, means for supplying water into the annular channel of the disk, and a stove or heater within which the burner is suspended, said heater having an air-passage around the oil-supply pipe, and a draft-passage.

846,994. COUPLING. EGBERT H. GOLD, Chicago, Ill. Filed July 14, 1905. Serial No. 269,641.

Claim.—1. A coupler comprising a gasket-seat adapted to conform to a gasket forming a section of a sphere, a part of said face of the coupler overhanging the gasket-seat, said overhanging part being cut away to permit the insertion of the gasket.

2. A coupler comprising a concave gasket-seat, a portion of said coupler overhanging said gasket-seat, and a part of said overhanging portion being cut away to permit the insertion and rotation of a gasket, as described.

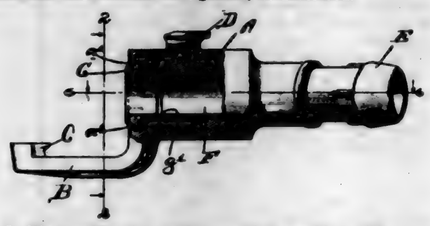

3. The combination with a coupler provided with a concave gasket-seat, a portion of said coupler overhanging said gasket-seat, and a part of said overhanging portion being cut away to receive a gasket, of a gasket provided with a flat face surrounding the passage through said gasket, and with convex surfaces, all so constructed and arranged that said gasket may be inserted in said gasket-seat through said cut-away portions and then turned to operative position.

4. The combination with a coupler provided with a spherical gasket-seat, a portion of said coupler overhanging said gasket-seat, and a part of said overhanging portion being cut away to receive the gasket, of a gasket forming a part of a sphere, said gasket having a flattened face surrounding the opening through said gasket and of less diameter than the maximum diameter of said gasket, all so constructed and arranged that said gasket may be inserted through the said cut-away part of the coupler and rotated to operative position.

846,995. ADJUSTABLE ANCHOR DEVICE. WILLIAM L. GREELEY, New York, N. Y. Filed Oct. 30, 1906. Serial No. 341,359.

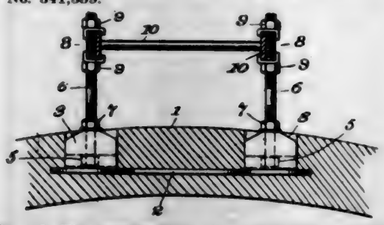

Claim.—1. The combination of an anchor-iron adapted to be embedded in a wall and having separate slotted portions extending outward toward the surface of the wall, two nuts fitting into the slotted portions, means for retaining said nuts therein but permitting movement of the same toward or from each other, and screw-threaded rods adapted to be inserted in said slotted portions and screwed into said nuts, together with sliding clamps mounted on the outer ends of said rods and a ladder adapted to be grasped by said clamps.

2. The combination of an anchor-iron adapted to be embedded in a wall and having separate slotted portions extending outward toward the surface of the wall, two nuts fitting into the slotted portions, means for retaining said nuts therein but permitting movement of the same toward or from each other, and screw-threaded rods adapted to be inserted in said slotted portions and screwed into said nuts, together with sliding clamps mounted on the outer ends of said rods and a ladder adapted to be grasped by said clamps, the outer ends of said rods being threaded and nuts mounted on said threaded portion and engaging said clamps.

3. The combination of an anchor-iron adapted to be embedded in a wall and having separate slotted portions extending outward toward the surface of the wall, two nuts fitting into the slotted portions, means for retaining said nuts therein but permitting movement of the same toward or from each other, and screw-threaded rods adapted to be inserted in said slotted portions and screwed into said nuts, together with sliding clamps mounted on the outer ends of said rods and a ladder adapted to be grasped by said clamps, and jam-nuts mounted on the inner ends of said rods interiorly of the anchor-iron.

846,996. TUBING. EDWIN T. GREENFIELD, Kiamesha, N. Y. Filed Jan. 24, 1906. Serial No. 297,644.

Claim.—1. A series of interlocking and relatively movable spirals and a series of butt-jointed spirals incased therein, the spirals of the inner series being laterally curved and coacting with the outer series to prevent displacement lengthwise thereof, substantially as described.

2. A series of laterally-curved, interlocking and relatively movable spirals having gaskets, and a series of butt-jointed spirals incased therein, said spirals being movable relatively to each other and the spirals of the inner series being laterally curved and coacting with the outer series to prevent displacement lengthwise thereof, substantially as described.

3. A series of interlocking and relatively movable metallic spirals and a series of butt-jointed spirals incased therein and directly underlying those of the outer series, the spirals of the inner series being laterally curved and coacting with the outer series to prevent displacement lengthwise thereof, substantially as described.

4. A series of metallic spirals each having edge flanges one of which overlaps an edge flange of the adjacent spiral, a gasket between said overlapping flanges and a series of butt-jointed spirals incased within said series first-named, the spirals of the inner series being laterally curved and coacting with the outer series to prevent displacement lengthwise thereof, substantially as described.

5. A series of metallic spirals, each having edge flanges one of which overlaps an edge flange of the adjacent spiral, and a series of butt-jointed spirals incased therein, the joints between the spirals registering substantially with those of the outer series, the spirals of the inner series being laterally curved and coacting with the outer series to prevent displacement lengthwise thereof, substantially as described.

846,997. PRINTER'S INK-ROLLER CABINET. HENRY P. HAMILTON, Two Rivers, Wis., and HUBBARD HAMILTON, Detroit City, Minn., assignors to The Hamilton Manufacturing Company, Two Rivers, Wis., a Corporation of Wisconsin. Filed July 18, 1906. Serial No. 326,718.

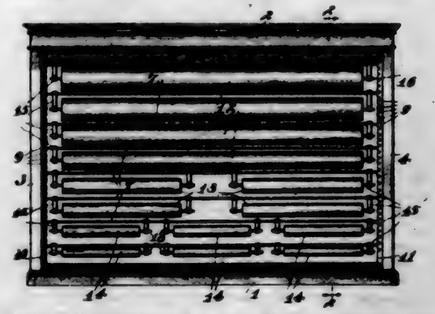

Claim.—1. A cabinet for ink-rollers, comprising suitable inclosing walls one of which is adapted to open and

close to render the interior of said cabinet accessible, supports secured to the end walls of said cabinet, rods which extend across said cabinet the ends of which engage said supports and double hooks adapted, respectively, for engagement with said rods and with the ends of the stocks of the ink-rollers.

2. A cabinet for ink-rollers, comprising suitable inclosing walls, one of which is adapted to open and close to render the interior of said cabinet accessible, supports secured to the end walls of said casing and forming series extending both vertically and from front to back thereof, rods which extend across said cabinet the ends of which are interchangeable in said supports, and double hooks adapted, respectively, for engagement with said rods and with the ends of the stocks of the ink-rollers.

3. A cabinet for ink-rollers, comprising suitable inclosing walls, one of which is adapted to open and close to render the interior of said cabinet accessible, supports secured to the end walls of said cabinet, rods which extend across said cabinet the ends of which engage said supports and double hooks adapted, respectively, for engagement with said rods and with the ends of the stocks of the ink-rollers, and a water-tight pan at the bottom of said cabinet.

4. A cabinet for ink-rollers, comprising suitable inclosing walls, one of which is adapted to open and close to render the interior of said cabinet accessible, supports secured to the end walls of said casing and forming series extending both vertically and from front to back thereof, rods which extend across said cabinet the ends of which are interchangeable in said supports, double hooks adapted, respectively, for engagement with said rods and with the ends of the stocks of the ink-rollers, and a water-tight pan at the bottom of said cabinet.

5. A cabinet for ink-rollers, comprising suitable inclosing walls, one of which is adapted to open and close to render the interior of said cabinet accessible, cleats secured to the end walls of said casing provided with notches in their upper edges, rods which extend across said cabinet the ends of which are interchangeable in said notches and double hooks, adapted, respectively, for engagement with said rods and with the ends of the stocks of the ink-rollers.

6. A cabinet for ink-rollers, comprising suitable inclosing walls, one of which is adapted to open and close to render the interior of said cabinet accessible, cleats secured to the end walls of said casing provided with notches in their upper edges, rods which extend across said cabinet, the ends of which are interchangeable in said notches, double hooks respectively adapted for engagement with said rods and with the ends of the stocks of the ink-rollers, and a water-tight pan in the bottom of said cabinet.

846,998. PYROMETER. JOHN F. HAMMOND, Brewster, N. Y., assignor to The S. S. White Dental Manufacturing Company, Philadelphia, Pa. Filed Nov. 1, 1905. Serial No. 285,380.

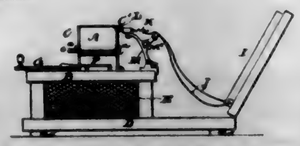

Claim.—1. A furnace-muffle having a thermocouple mounted therein and forming a part thereof, said thermocouple being located in the muffle-chamber with its members extending through the walls of said muffle and exposed upon the outside thereof, the exposed portions of said members being bent and extended along the outer wall of the muffle.

2. In an electric pyrometer-furnace, the combination of a removably-supported muffle, a thermocouple mounted therein and exposed on the outside thereof, a galvanometer, electrical connections between said thermocouple and galvanometer, and spring-actuated carriers for supporting said connections in yielding and separable contact with the exposed thermocouple.

3. In an electric pyrometer-furnace, the combination of a muffle, a thermocouple mounted therein and exposed on the outside thereof, said couple consisting of two members of dissimilar metals, two thermocouple extensions, each of the same metal as the thermocouple member with which it is adapted to come in contact, conductors connected to said extensions at a point beyond the radiant heat zone of the furnace, said conductors being of a different metal from the thermocouple and its extensions, and a galvanometer to which said conductors are connected.

4. In an electric pyrometer-furnace, the combination of a muffle, a thermocouple mounted therein and exposed upon the outside thereof, thermocouple extensions, a galvanometer, conductors between said galvanometer and thermocouple extensions, and spring-actuated carriers for said thermocouple extensions.

5. In an electric pyrometer-furnace, the combination of a removably-supported muffle, a thermocouple mounted therein and exposed on the outside thereof, said couple consisting of two members of dissimilar metals, two thermocouple extensions each of the same metal as the thermocouple member with which it is adapted to come in contact, spring-actuated carriers for supporting said extensions in yielding and separable contact with the exposed thermocouple members, conductors of a different metal from the thermocouple and its extensions connected to said extensions at a point beyond the radiant heat zone of the furnace, and a galvanometer to which said conductors are connected.

6. In an electric pyrometer-furnace, the combination of a muffle, a thermocouple mounted therein and exposed upon the outside thereof, thermocouple extensions having no permanent connection with said thermocouple, non-conducting tubes surrounding said extensions which project beyond the ends thereof, spring-actuated carriers for supporting said tubes and causing the forward end of each thermocouple extension to bear upon the exposed portion of its respective thermocouple, and conductors connected to the other ends of said thermocouple extensions.

846,999. GRAIN AND SEED CLEANER, SEPARATOR, AND GRADER. CHARLES N. HATFIELD, Fountain City, Ind. Filed Aug. 23, 1906. Serial No. 331,779.

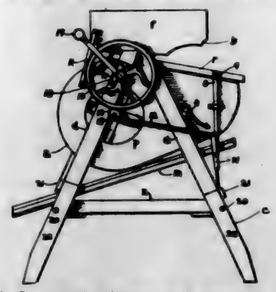

Claim.—1. In a grain cleaner and separator, side frames having each two converging bars intersecting at the top, a waste-box connecting said frames at the bottom, a fan-case above the waste-box, a folding hopper having end links pivotally connected thereto and to said fan-case, and screens located intermediately of the hopper and waste-box, said converging bars having folding leg extensions normally abutting at their ends against the lower ends of said bars and adapted to fold inward against the waste-box.

2. In a grain cleaner and separator, side frames having each two converging bars intersecting at the top, a waste-box connecting said frames at the bottom, a fan-case above the waste-box, a folding hopper having end links pivotally connected thereto and to said fan-case, and detachable screens located intermediately of the hopper and waste-box adapted when detached to lie upon said waste-box, said hopper being adapted to fold downward until it rests upon said screens.

3. In a grain cleaner and separator, side frames having each two converging bars intersecting at the top, a waste-box connecting said frames at the bottom, a fan-case above the waste-box, a folding hopper having end links pivotally connected thereto and to a portion of the separator, said hopper lying between the meeting ends of said converging bars, and having a pin-and-grove connection therewith, detachable screens located intermediately of said hopper and waste-box, and folding leg extensions of said converging bars.

4. In a grain cleaner and separator, a fan-case having a lower inclined deflector grain-board lying across the bottom portion of the mouth thereof and an opening for passage of grain in rear of said grain-board, an upper grain-board lying across the upper portion of the mouth of the fan-case, having an opposite inclination to that of the lower grain-board, and acting to deliver the grain thereupon, said grain-boards being separated by an interval from each other, a terminal blast-regulating board pivoted to the lower end of the upper grain-board, a fan in said fan-case, a screen overlying the fan-case and the interval separating said grain-boards and separated by an interval from the top of the lower grain-board, and a screen underlying the fan-case and the opening thereof in rear of the lower grain-board.

5. In a grain cleaner and separator, side frames, a waste-box at the bottom of said frames, a hopper at the top of the same, an intermediate fan-case, detachable screens, and operating-levers for said screens having transverse rod connections, the upper of said screens resting at its upper end upon the fan-case and having at its lower end a forked connection embracing one of said transverse rod connections, the lower of said screens resting at its lower end upon the waste-box and having at its upper end a detachable forked connection with the other of said transverse rod connections.

6. In a grain cleaner and separator, side frames, a waste-box at the bottom of the same, a hopper at the top of the same, an intermediate fan-case, screens located intermediately of the hopper and waste-box, operating means for said screens, having spring-levers provided with a rigid connection with the separator at their lower ends, gearing having an operating connection with said spring-levers to vibrate the same, and intermediately-pivoted levers having an operating connection with said screens and with said spring-levers.

7 In a grain cleaner and separator, side frames, a hopper, a fan-case, screens, and operating means for said screens having a spring-lever provided with a rigid connection with the separator at its lower end, gearing having a pitman connection with said spring-lever to vibrate the same, an intermediately-pivoted lever having a pivotal connection at its ends with said screens and with said spring-lever.

8. In a grain cleaner and separator, side frames, a hopper, screens, a fan-case, and operating means for said screens having spring-levers provided with a rigid connection at their lower ends with the separator, gearing having a pitman connection with said spring-levers, intermediately-pivoted levers having at their ends a transverse rod connections with said screens and with said spring-levers.

9. In a grain cleaner and separator, side frames having each two upward-extending bars provided with folding lower extensions, a fan-case, and upper and lower screens within and supported by said side frames, and a folding hopper having end links pivotally connected thereto and to a portion of the separator.

10. In a grain cleaner and separator, side frames having each two upward-extending bars provided at their lower ends with folding leg extensions normally abutting at their lower ends against the lower ends of said bars, a fan-case, and upper and lower screens within and supported by said side frames, and a folding hopper having end links pivotally connected thereto and to a portion of the separator.

11. In a machine of the class described, the combination with spring-levers rigidly attached by their lower ends to the frame and having their upper ends in connection with the driving-shaft of adjustable vibrating levers, transverse rods connecting the upper and lower ends of such levers, a detachable cleaning-screen in engagement with the upper transverse rod, and a detachable grading-screen in engagement with the lower transverse rod.

847,000. LIQUID-SOAP HOLDER. JULIUS F. HELMOLD, Chicago, Ill. Filed Feb. 12, 1906. Serial No. 300,754.

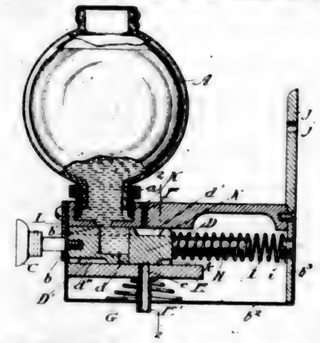

Claim.—1. In a device of the class described the combination of a reservoir having an opening at bottom, a plate having an opening registering with the opening of the reservoir, a reciprocable slide-valve having a measuring-chamber adapted to register with the opening of the plate, said chamber being also open at bottom, means for yieldingly holding said valve in contact with said plate, and means for reciprocating the valve, substantially as described.

2. In the device of the class described, the combination of a reservoir having an opening at bottom, a plate having an opening registering with the opening of the reservoir, a reciprocable slide-valve having a measuring-chamber adapted to register with the opening of the plate, said chamber being also open at bottom, means for yieldingly holding said valve in contact with the under side of the plate, and means for reciprocating the valve, the contacting faces of the plate and valve being flat, substantially as described.

3. In a device of the class described, the combination of a reservoir having an opening at bottom, a plate having an opening registering with the opening of the reservoir, a reciprocable slide-valve having a measuring-chamber adapted to register with the opening of the plate, said chamber being open at bottom, means for yieldingly holding the valve in contact with the under side of the plate, and means for reciprocating the valve, the engaging surfaces of the plate and valve being flat and said surfaces of the valve being raised above the body thereof, substantially as described.

4. In a device of the class described, the combination of a reservoir having an opening at bottom, a plate having an opening registering with the opening of the reservoir, a reciprocable slide-valve having a measuring-chamber opening at the bottom, a second plate movable toward and from the valve, and means for yieldingly holding the second plate in contact with the valve, the engaging faces of the valve and plates being flat, substantially as described.

5. In a device of the class described the combination of a reservoir having an opening at bottom, a plate having an opening registering with the opening of the reservoir, a reciprocable slide-valve having a measuring-chamber adapted to register with the opening of the plate, said chamber being open at bottom, a second plate engaging the bottom side of the valve, the engaging faces of the valve and plate being flat, and means for yieldingly pressing one of the plates toward the other, substantially as described.

6. In a device of the class described, the combination of a reservoir having an opening at bottom, a plate having an opening registering with the opening of the reservoir, a

reciprocable slide-valve having a measuring-chamber adapted to register with the opening of the plate, said chamber being open at bottom, a second plate having contact with the bottom side of the valve, and having an opening with which the opening of the chamber is adapted to register, means for reciprocating the valve so as to alternately bring the chamber into and out of register with the openings of the plate and a spring for yieldingly forcing one of the plates toward the other, substantially as described.

7. In a device of the class described, the combination of a reservoir having an opening at bottom, a box, the top of which is formed by a plate having an opening registering with the opening of the reservoir, a reciprocable slide-valve having a measuring-chamber adapted to register with the opening of the plate, said chamber being open at bottom, a second plate engaging the bottom side of the valve and having an opening through which the opening on the bottom of the chamber may be brought to register, and a spring interposed between the second plate and the bottom of the box, substantially as described.

847,001. COKING-OVEN. LOUIS J. HIRT, Brookline, Mass. Filed Jan. 3, 1903. Serial No. 137,630.

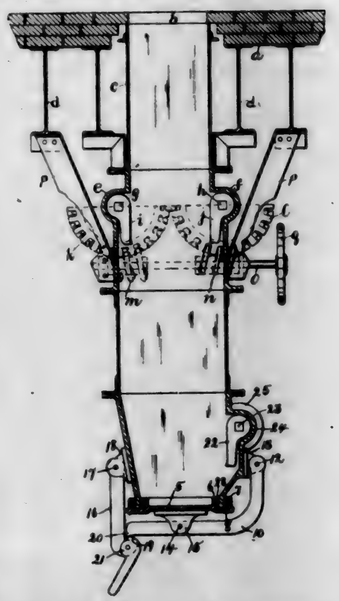

Claim.—1. In a coking-oven, in combination, a coking-chamber provided with an extension having at its lower end a discharge outlet or mouth, a cover to normally close said mouth, supporting cranks or arms located within the extension above the said mouth, rock-shafts upon which the said cranks or arms are mounted, worm-gears mounted on the said rock-shafts outside of the said extension, and a rotatable shaft provided with worms in mesh with said gears, substantially as described.

2. In a coking-oven, in combination, a coking-chamber provided with an extension having its lower portion of greater area than its upper portion, rock-shafts supported in the portion of larger area on opposite side of the extension, cranks or arms attached to said rock-shafts and movable toward each other, means to operate said rock-shafts, a rock-shaft located below the first-mentioned rock-shaft and provided with cranks or arms, and means to operate said second rock-shaft, substantially as described.

847,002. SEESAW. PETER HOOGERZEIL, Beverly, Mass. Filed Mar. 5, 1906. Serial No. 304,215.

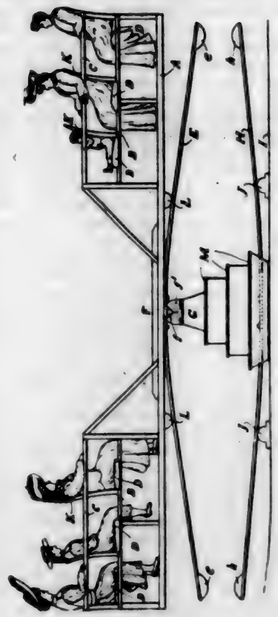

Claim.—1. A seesaw, comprising a tilting board; springs set beneath it, projecting downward toward each end; springs set beneath it and projecting upward toward each end; said upper and lower springs being adapted to co-operate when the board is in motion.

2. A seesaw, comprising a pivoted tilting board, and a spring on the under side thereof having a single piece extending from end to end and fastened tangentially to the tilting board at the pivot.

3. A seesaw, comprising a tilting board and springs arranged longitudinally, fastened flatwise beneath its center and projecting therefrom with a tangential curve, in combination with pillows arranged as fulcrums bearing against the projecting portions.

4. A seesaw, comprising a tilting board and springs arranged longitudinally, fastened flatwise beneath its center and projecting therefrom with a tangential curve, in combination with pillows arranged adjustably in position as fulcrums bearing against the projecting portions.

5. A seesaw, comprising a tilting board; springs fastened centrally beneath it, one on the board pointing endwise and downward, the other on the floor pointing endwise and upward, said springs having their ends adapted to engage each other approximately under the ends of the tilting board.

6. A seesaw, comprising a pivoted tilting board; upper and lower springs set longitudinally thereunder, one on the board and the other on the floor, said springs being arranged to engage at their ends; and pads thereon at the points of engagement.

7. A seesaw, comprising a pivoted tilting board; and a plurality of sliding seats at each end of the board, said seats being independently adjustable toward and from the pivot.

8. A seesaw, comprising a pivoted tilting board; seat-supports thereon; and a plurality of sliding seats mutually adjustable on said supports at each end of the board; and hand-rails arranged above the seat-support at each side.

847,003. ELECTRIC FURNACE. BASILIUS VON ISCHEWSKY, Kiew, Russia. Filed Feb. 15, 1906. Serial No. 301,122.

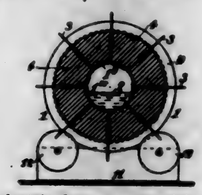

Claim.—An electric furnace comprising a hollow cylindrical body having a lining of material which is electrically conductive only at a high temperature, and a plurality of electrodes housed in the cylindrical wall of said body and abutting at their inner ends against said lining.

847,004. PUMP-OPERATING MECHANISM. JOHN H. KANE, Kiowa, Kans., assignor of one-half to Henry H. Damman, Kiowa, Kans. Filed June 5, 1906. Serial No. 320,348.

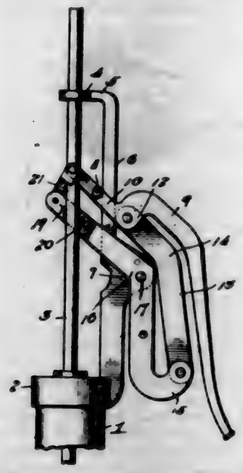

Claim.—1. The combination with a pump stock and rod, of a head having an upright, a compensator intermediately fulcrumed to the upright and having one extremity movably embracing the pump-rod, a handle, a link movably attached to the handle and to the lower extremity of the compensator and also movably connected to the pump-rod, and link connecting means between the end of the handle attached to the pump-rod and the adjacent end of the compensator.

2. The combination with a pump stock and rod, of a head carrying an upright with an intermediate offset, a compensator fulcrumed on the offset, a handle movably attached to the rod, a link movably connected at opposite ends to an intermediate portion of the handle and to the lower extremity of the compensator, and link means connecting the end of the handle attached to the rod and the adjacent end of the compensator.

847,005. BRAIDING-MACHINE. JACOB E. KIRSZBO, Philadelphia, Pa., assignor to Hensel-Colladay Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Apr. 13, 1906. Serial No. 311,499.

Claim.—1. In a braiding-machine, a wheel having four slots therein, an end wheel having six slots therein, and means for rotating said latter wheel so that every other slot registers with a slot in said first wheel.

2. In a braiding-machine, a wheel having slots therein, a gear fixed relative to said wheel, a gear intermediate said wheel and said fixed gear, a wheel having six slots therein, a gear carried thereby and adapted to engage said intermediate gear, a second gear on which said latter gear is mounted and coacting with said fixed gear, and means for causing either said fixed gear or intermediate gear to act as a driving member.

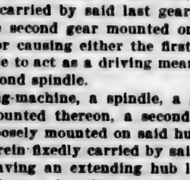

3. In a braiding-machine, a wheel having four slots therein, an end wheel having six slots therein, means for rotating said end wheel so that every slot therein registers with a slot in said first wheel, and means for effecting the rotation of said end wheel so that every other slot therein registers with a slot in said first wheel.

4. In a braiding-machine, a train of wheels having a similar number of slots therein, an end wheel having a different number of slots therein, means for rotating said end wheel to cause each slot therein to register with a slot in one of the other wheels, and means for rotating said end wheel so that only a portion of the slots therein register with the slots in one of said other wheels.

5. In a braiding-machine, a spindle, a gear having an extending hub mounted on said spindle, a wheel having four slots therein fixed to said hub, a second gear loosely mounted on said hub intermediate said wheel and said first gear, a second spindle, a gear having an extending hub mounted thereon and coacting with said first gear, a gear loosely mounted on said hub and coacting with said second gear, a wheel having six slots therein carried by said loosely-mounted gear, and means for causing the gears carried by either the first or second spindle to move in unison.

6. In a braiding-machine, a spindle, a gear having an extending hub mounted on said spindle, a wheel having four slots therein fixed to said hub, a second gear loosely mounted on said spindle intermediate said wheel and said first gear, a second spindle, a gear having an extending hub mounted thereon and coacting with said first gear, a gear loosely mounted on said hub and coacting with said second gear, a wheel having six slots therein carried by said former gear, and removable means for causing the gears carried by either the first or second spindle to move in unison.

7. In a braiding-machine, a spindle, a gear thereon having an extending hub, a second gear loosely mounted on said hub, a wheel having four slots therein fixedly carried by said hub, a second spindle, a gear having an extending hub loosely mounted thereon and engaging said first gear, a second gear loosely mounted on said hub, a wheel having six slots therein carried by said last gear, said last gear coacting with the second gear mounted on the first spindle, and means for causing either the first or second gear on the first spindle to act as a driving means for the wheel carried by the second spindle.

8. In a braiding-machine, a spindle, a gear having an extending hub mounted thereon, a second gear having a larger diameter loosely mounted on said hub, a wheel having four slots therein fixedly carried by said hub, a second spindle, a gear having an extending hub loosely mounted thereon, a second gear loosely mounted on said second spindle and having an extending hub, a selvage-wheel carried by said hub, the second gear on said first and second spindle coacting with each other, the first gear on the first and second spindle coacting with each other, and a removable fastening device engaging the first and second gear on one of said spindles.

9. In a braiding-machine, a spindle, a gear having an extending hub mounted thereon, a second gear loosely

mounted on said hub and having a larger diameter than said first gear, a wheel having four slots therein carried by said hub, a second spindle, a gear mounted thereon and coacting with the first gear of the first spindle, said gear on the second spindle having an extending hub, a second gear loosely mounted thereon and having an extending hub and coacting with the second gear on the first spindle, a wheel having six slots therein carried by the hub of the second gear on the second spindle, the second gear on the second spindle having a smaller diameter than the first gear thereon, and removable means engaging the two gears on the first spindle to cause the same to move in unison.

10. In a braiding-machine, a spindle, a gear having an extended hub mounted thereon, a second gear loosely mounted on said hub and having a larger diameter than said first gear, a wheel having four slots therein carried by said hub, a second spindle, a gear mounted thereon and coacting with the first gear of the first spindle, said gear on the second spindle having an extending hub, a second gear loosely mounted thereon and having an extending hub and coacting with the second gear on the first spindle, a wheel having six slots therein carried by the hub of the second gear on the second spindle, the second gear on the second spindle having a smaller diameter than the first gear thereon, and removable means engaging the two gears on either spindle to cause said gears to move in unison.

847,006. BOTTLE-STOPPER. GEORG KIRKEGAARD, New York, N. Y., assignor of one-half to Fridtjof Jebsen, New York, N. Y. Filed June 13, 1906. Serial No. 321,430.

Claim.—1. A bottle-stopper comprising a circular disk having depending flanges, said disk arranged to be bent upward across one of its diameters to permit of said flanges being placed over a body of greater diameter than the inner diameter of the flanges.

2. A bottle-stopper comprising a circular disk having depending flanges, said flanges being provided with inwardly-projecting rims, said disk arranged to be bent upward across one of its diameters to permit of said flanges and rims being placed over a body of greater diameter than the inner diameter of the projecting rims.

3. A bottle-stopper comprising a circular disk having depending flanges, said flanges being provided with inwardly-projecting rims, said disk arranged to be bent upward across one of its diameters to permit of said flanges and rims being placed over a body of greater diameter than the inner diameter of the projecting rims, and means for fastening said rims together.

4. A bottle-stopper comprising a circular disk having two flanges depending from opposite sides of its periphery, said disk arranged to be bent upward across one of its diameters to permit of said flanges being placed over a body of greater diameter than the inner diameter of the flanges.

5. A bottle-stopper comprising a circular disk having two flanges depending from opposite sides of its periphery, said flanges being provided with an inwardly-projecting rim, said disk arranged to be bent upward across a diameter between said flanges to permit of said flanges and rim being placed over a body of greater diameter than the diameter of the rim, and means for drawing the rim about said body.

6. A bottle-stopper comprising a circular disk having two flanges depending from opposite sides of its periphery, said flanges being provided with an inwardly-projecting rim, portions of said rim arranged to connect the bottom of said flanges, said disk arranged to be bent upward across a diameter between said flanges to permit of said flanges being placed over a body of greater diameter than the diameter of the rim, said connecting portions arranged to draw the rim about said body and to secure the disk to the body.

7. A bottle-stopper comprising a circular disk having depending flanges, a resilient packing within said disk, said disk arranged to be bent upward across one of its diameters to permit of said flanges being placed over a body of greater diameter than the diameter of the flanges.

8. In combination with a bottle having an inclined annular shoulder below its mouth, of a stopper comprising a circular disk having depending flanges, said flanges being provided with an inwardly-projecting rim of smaller diameter than the diameter of the annular shoulder, a resilient packing within the disk, said disk arranged to be bent upward across one of its diameters to permit of said flanges and rim being placed over the annular shoulder.

847,007. ELECTRIC SWITCH. ISIDOR KITSEE, Philadelphia, Pa. Filed Mar. 19, 1904. Serial No. 198,908.

Claim.—1. A switch of the class described, comprising a face-plate having a bayonet-slot formed therein, a pair of contacts arranged upon the inner face of said plate and spaced apart, said contacts forming circuit-terminals, a movable conducting member arranged between said contacts and adapted to open and close the circuit therethrough, said member having a loose pivotal connection with the face-plate to permit the member having limited sliding movement thereon, and a projection carried by said member and extending through said slot for actuating said member, said projection coöperating with said slot to lock the movable member in engagement with said contacts.

2. A switch of the class described, comprising a face-plate having a bayonet-slot formed therein, a pair of contacts arranged upon the inner face of said plate and spaced apart, said contacts forming circuit-terminals, a movable conducting member arranged between said contacts and adapted to open and close the circuit therethrough, said member having a longitudinal slot, a pin arranged in said slot and connected to the face-plate, whereby said member is pivotally connected thereto but capable of limited sliding movement thereon, a projection carried by said member and extending through said bayonet-slot for actuating said member, said projection coöperating with said slot to lock the movable member in engagement with said contacts, and a spring for releasing the movable member from engagement with the contacts when the projection has been released from its engaged position in the slot.

3. In an electric switch, a stationary member, a movable member pivoted midway between its two ends to said stationary member, the movable member being provided with a slot formed longitudinally thereon, through which the pivotal pin extends, two stationary contact-points adapted to be connected by the movable member when the same is moved in one direction, a spring tending to move the movable member so as to break connection, said spring so connected as to move the movable member longitudinally to the limit of its slot, when the connection is made between the two contact-points, and means whereby the movable member is automatically locked in this position when so moved, and a knob secured to the movable member for moving the same in the opposite direction longitudinally to allow the spring to return it to its original position as and for the purpose specified.

4. In an electric switch, a stationary member, a movable member, a longitudinal slot provided in the movable member, a pivot extending through said slot into the stationary part, two stationary contact-points adapted to be electrically connected when the movable member is moved in one direction, a guideway formed in the stationary member concentric with the pivotal point of the movable member, a projection extending from the movable member and adapted to ride in said guideway, a spring connected to the movable member tending to hold the same so that its projection is at one end of the concentric slot when the contact is broken, a notch formed at the other end of the concentric slot into which the projection is forced by the spring when the contact is made between the two contact-points, and means secured to the movable member for raising the projection out of the notch and for moving the projection into alinement with the notch as and for the purpose specified.

5. An electric switch embracing a support, a movable conductor provided with a longitudinal slot and pivotally secured to said support, a spring connected to the movable conductor and support respectively, a guideway in the support, a projection from the movable conductor extending through said guideway, said guideway terminating in a notch, stationary contacts adapted to be secured to the current-carrying circuit and means to move to and fro said movable conductor.

847,008. CONVERTER. ISIDOR KITSEE, Philadelphia, Pa. Filed June 10, 1904. Serial No. 211,975.

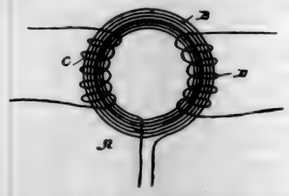

Claim.—1. A device of the class described consisting of three coils, one coil adapted to be connected to the primary current, and both of the other coils adapted to be connected to consuming devices, one of the last-named two coils acting as the core for both of the other two coils.

2. An electric converter, the magnetic core of which consists of a coil of iron wire, the individual turns insulated from each other, the terminals of the iron core connected to a working circuit.

3. A converter or inductance coil provided with an iron core forming a closed magnetic circuit, said iron core consisting of a series of turns of insulated iron wire, the terminals of the iron core connected to a working circuit.

847,009. FLEXIBLE SPINDLE FOR CENTRIFUGAL MACHINES. IVAR P. B. KNUDSEN, Copenhagen, Denmark. Filed Sept. 24, 1906. Serial No. 336,021.

Claim.—1. A flexible spindle having a hollow portion, and a rod located in the hollow portion and seated at opposite ends in the spindle to prevent the altering of the length of the spindle.

2. A spindle for centrifugal machines having a bearing portion, a hollow flexible portion, and a rod located in the hollow flexible portion and preventing the altering of the length of the spindle.

3. The combination with the drum; of a spindle secured to and supporting the weight of said drum and comprising a bearing portion, a flexible portion below said bearing portion and means for preventing the altering of the length of the spindle; a bearing for the spindle; and means for driving the spindle.

847,009.

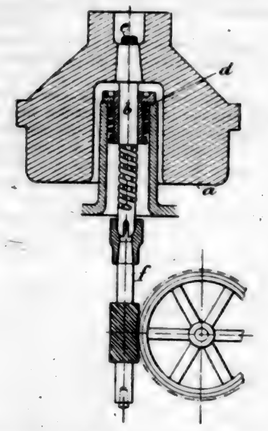

847,010. JET-CONDENSER. ERNST KOERTING, Pegli, Italy. Filed June 9, 1906. Serial No. 320,926.

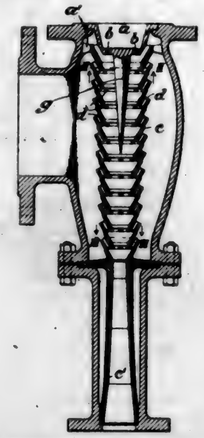

Claim.—1. In a water-jet condenser, the combination of a perforated tube, means for supplying steam to the perforations thereof and a water-nozzle adapted to emit a number of convergent water-jets past the openings of said perforations.

2. In a water-jet condenser, a steam-chamber and a perforated tube therein having one end connected with a discharge-opening, and a water-nozzle at the other end of said tube adapted to emit a plurality of water-jets through the said tube.

3. In a water-jet condenser, a condensing-tube having a multiplicity of steam-passages through its wall, a discharging-tube at the end of the said tube and means for directing a series of water-jets past the openings of said condensing-tube, convergent at or near the junction of the said tubes.

4. In a water-jet condenser, a perforated tube with one end open to discharge, in combination with a water-chamber at the other end of said tube and a number of jet-holes formed in the partition between said chamber and tube whereby a plurality of converging water-jets may be directed through said tube.

5. In a water-jet condenser, a condensing-tube and a water-nozzle having a number of jet-holes located in a circle

concentric with the axis of said tube and adapted to emit water-jets which converge at a point in the axis of said tube.

6. In a water-jet condenser, a steam-casing and contained therein a tube having steam-passages in its wall, in combination with a water-nozzle at the end of said tube provided with circularly-arranged convergent jet-holes, and a central tapered jet-guide between said holes.

7. In a water-jet condenser, a steam-casing and a water-nozzle adapted to emit a number of converging water-jets within said casing, in combination with means for conducting the steam to the inside and outside of said convergent jets.

8. In a water-jet condenser, a water-nozzle adapted to emit a number of convergent jets and having lateral perforations adapted to admit steam to the space inside of said convergent jets.

9. In a water-jet condenser, a water-nozzle adapted to emit a number of convergent water-jets and a tube having its wall substantially parallel with said jets and perforated to admit steam into contact with said water.

10. In a water-jet condenser, a water-nozzle, adapted to emit a number of water-jets, and a tube or chamber adjacent said water-jets having steam-conducting passages in its wall, said passages being interlocated with respect to said water-jets, whereby the steam is directed through said jets.

11. In a water-jet condenser, a water-nozzle having a circularly-arranged series of jet-holes, a part within said jet-holes having passages therein adapted to conduct steam to the interior of the water-jets and a part surrounding said jet-holes having passages for admitting steam to the exterior of said jets.

847,011. FIREARM. HENRY M. KOLB and CHARLES FOEHL, Philadelphia, Pa. Filed June 27, 1906. Serial No. 323,689.

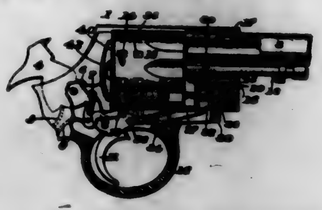

Claim.—1. In a firearm, a cylinder rotatably mounted on a suitable support, and means suitably actuated in one position to lock said support and in the other position to release said support and lock said cylinder.

2. In a firearm, a cylinder rotatably mounted on a suitable support, and means, actuated by the movement of the trigger, serving in one position to lock said support and in the other position serving to lock said cylinder.

3. In a firearm, a cylinder rotatably mounted on a suitable support, an extractor pin or rod and means in one position serving to lock said pin and in the other position serving to lock the cylinder.

4. In a firearm, a cylinder rotatably mounted on a suitable support, a spring-actuated bolt for locking said cylinder in one position and the cylinder-support in the other and adapted to be actuated by the trigger, and a dog adapted to lock said cylinder and actuated by the movement of the hammer.

5. In a firearm, a cylinder rotatably mounted on a suitable support, a lock therefor, an extractor-rod suitably mounted with respect to said cylinder, a pin actuated by the movement of the trigger and adapted to lock said rod and a dog actuated by said trigger for locking said cylinder.

6. In a firearm, a cylinder rotatably mounted on a suitable support, a lock for said cylinder actuated by the hammer, a lever pivotally supported adjacent said cylinder, a pin actuated by said lever for locking said support and a dog carried by said lever and adapted to lock said cylinder.

7. In a firearm, a cylinder rotatably supported, means for swinging said cylinder to one side for loading and discharging the shells, a guide in the front face of the rear portion of the frame for directing the cylinder to its proper position and a second guide in front of said cylinder adapted to direct the same to its proper position.

8. In a firearm, a cylinder rotatably supported, means for swinging said cylinder to one side of the frame, an extractor-rod suitably mounted with respect to said cylinder and having an end projecting beyond the same, a guide adapted to engage said projecting end for directing the same to a suitable opening in the frame of the firearm and a second guide forward of the cylinder adapted to guide the same to its proper position.

9. In a firearm, a frame having a suitable opening therein, a rotatable cylinder, a support therefor adapted to be swung to one side of said frame and carry said cylinder, an extractor-rod suitably mounted with respect to said cylinder and having a projecting end, a guide adapted to engage said end and direct the same to said opening, a second guide in the frame of the firearm forward of the cylinder and a pin carried by said support and entering said guide for directing the cylinder to its proper position.

10. In a firearm, a cylinder rotatably mounted in a suitable support, spring-actuated means for locking said cylinder in one position and the cylinder-support in the other, and a dog adapted to lock said cylinder and actuated by the movement of the trigger to unlock the same.

11. In a firearm, a cylinder, means for bringing the same to one side for loading or for discharging shells and a stop for preventing the cylinder from striking the frame of the firearm when said cylinder is being returned to its normal position.

12. In a firearm, a cylinder rotatably mounted upon a suitable support, an arm on which said support is pivotally mounted, said arm being rotatably supported, and a stop carried by said cylinder-support adapted to prevent the cylinder from striking the frame of the firearm when said cylinder is returned to its normal position.

13. In a device of the character described, a cylinder rotatably mounted upon a suitable support, an arm to which said support is rotatably connected, said arm being rotatably mounted upon the frame of the firearm and a pin carried by said support adapted to contact with a suitable portion of the frame of the firearm to prevent the cylinder from contacting therewith.

14. A firearm, a cylinder, a rotatably-mounted support upon which said cylinder is suitably mounted, a pin carried by said support and a guide in the frame of the firearm against which said pin is adapted to contact, and to be guided to its proper place as the cylinder is returned to the firing position.

15. In a firearm, a rotatably-mounted arm, a cylinder-support pivotally mounted on said arm, a cylinder on said support, a pin carried by said support, an inclined guide in the frame of the firearm against which said pin is adapted to contact as the cylinder is returned to firing position to prevent the cylinder striking the frame and said pin following said guide to properly direct the cylinder to the firing position.

847,012. MANICURING IMPLEMENT. SIMON KORPER, New York, N. Y. Filed Nov. 20, 1906. Serial No. 344,196.

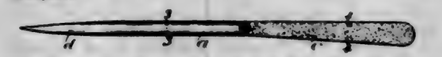

Claim.—1. A manicuring implement comprising a middle or handle portion, a flat end provided with abrasive material so as to be used for a nail-file, and a nail and skin treating device formed at the opposite end of the handle.

2. A manicuring implement comprising a middle portion or handle, a flat beveled portion at one end of the same provided at one side with an abrasive substance and at the other side with a soft polishing layer, and at the opposite end of the handle a nail and skin treating device.

847,013. DRILL-BRACE. THOMAS KUHN, Hornell, N. Y. Filed Oct. 8, 1906. Serial No. 337,970.

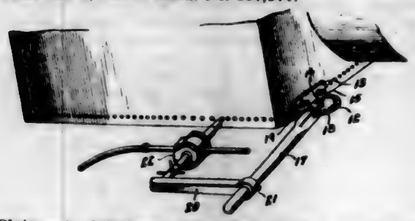

Claim.—A drill-brace consisting of the combination with a holding-bracket comprising a flange provided with slots for attaching bolts, and a semicircular platform having a series of holes near its curved edge, of a swinging bar having a bifurcated end embracing said platform and pivotally connected thereto, said bar being provided with registering openings in the arms of its bifurcated portion at a distance from its pivot to register with said holes in said platform, a removable pin adapted, to pass through the openings in said bar and the holes in said platform and thereby retain said swinging bar in any position to which it may be swung or adjusted, and a rigid brace-arm adjustably carried by said arm.

847,014. HOLDER FOR LIQUID SOAP. JOHN E. LEE, Conshohocken, Pa., assignor to Johnson and Johnson, New Brunswick, N. J., a Corporation of New Jersey. Filed Jan. 27, 1906. Serial No. 298,246.

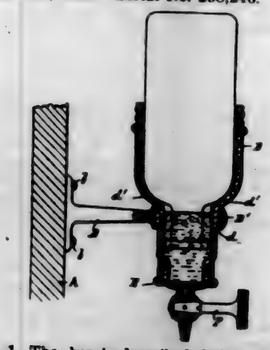

Claim.—1. The herein-described holder for dispensing liquid soap and the like, and consisting of a receiver having a neck with a valved closure at its lower end, a widened body part at its upper end open at the top and intermediate shoulders adapted to receive and support a bottle upside down, the widened part above the shoulders constituting a chamber adapted to hold liquid.

2. The herein-described holder for dispensing liquid soap and the like, and consisting of a receiver having a neck with a valved closure at its lower end, a widened body part at its upper end open at the top and intermediate shoulders adapted to receive and support a bottle upside down, the widened part above the shoulders constituting a chamber adapted to hold liquid and a removable cap for the open upper end of the body of the receiver.

847,015. MANUFACTURE OF WATERPROOF AND NON-EXUDING CEMENTS. RICHARD LIEBOLD, Berlin, Germany. Filed Feb. 5, 1906. Serial No. 299,631.

Claim.—1. A method consisting in impregnating cement material while in a warm condition with a waterproofing and anti-exuding mass.

2. A method consisting in impregnating cement material while in a warm condition with a waterproofing and anti-exuding soap mass.

3. A method consisting in impregnating cement material while in a warm condition with fatty acids in the form of soap.

4. A method consisting in impregnating cement material while in a warm condition with a mixture composed of stearic acid and potash.

5. A method consisting in impregnating cement material while in a warm condition with a mixture composed of stearic acid, potash and colophony.

6. A method consisting in impregnating cement clinkers while in a warm condition with a waterproofing and anti-exuding mass.

847,016. CRUSHING MORTAR AND SEPARATOR. HUGH R. LOGAN, Carson, Nev. Filed Sept. 17, 1906. Serial No. 334,961.

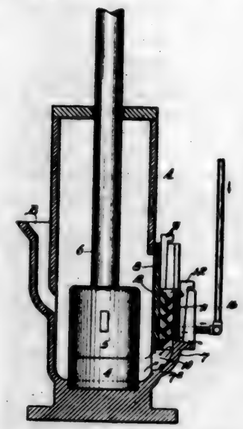

Claim.—1. An ore-separating attachment for crushing mortars said attachment including opposed series of oppositely-inclined plates fixed vertically one above the other and having their lower ends overlapping and separated to form a vertically-disposed tortuous channel for the discharge of the crushed material.

2. The combination with a mortar having a side delivery-opening and a vertical passage connecting at its lower end therewith, of a series of opposed oppositely-inclined plates in said passage for giving a tortuous course to the crushed material delivered thereinto through said opening, the front wall of said passage forming a dam over the top edge of which the crushed material is delivered from the uppermost of said plates.

3. The combination with a mortar having an upwardly-curved extension from the lower portion of its front wall, opposed walls separated from each other to form a passage for the crushed material delivered over said extension, and plates fixed to each of the walls and inclined inwardly and downwardly and having their lower ends overlapping whereby the passage is made tortuous, the lowermost of said plates receiving the splash of the ore and directing it upwardly to the succeeding plate, said front wall having a top overflow above the level of the uppermost of said plates.

4. The combination with a mortar having a discharge-opening in its front of spaced members forming substantially a vertical passage which communicates with said opening, a series of oppositely-inclined plates in said passage forming a tortuous passage for the crushed material, over the top edge of the outermost of said spaced members said material is discharged, and means for producing a variable pressure in the passage for regulating the flow therethrough and the final discharge of the material.

5. The combination with a mortar having an opening in the lower part of its front, and spaced plates forming substantially a vertical passage which connects with said opening, the outermost of said plates being removably secured and forming a dam over the top edge of which the material is delivered from said passage, means in said passage forming a tortuous passage for said material, a pipe by which water is supplied to the mortar under pressure, and discharge-pipes and cocks whereby the flow of material through said passage may be increased or diminished.

847,017. PROCESS OF SMELTING LEAD AND COPPER ORES. ALFREDO LOTTI, Marseille, France. Filed July 25, 1905. Serial No. 271,161.

Claim.—1. The process of mixing sulfid ore with molten slag and passing air through the mixture.

2. The process of adding sulfid ore to molten slag, effecting an intimate mixture of said elements, and passing air through the mixture.

3. The process of adding sulfid ore to molten slag, effecting an intimate mixture of said elements, and treating the mixture with air to effect desulfurization.

4. The process of adding silicious matter to sulfid ores or matte, roasting the mixture, adding the roasted material to molten slag, effecting an intimate mixture of said elements and treating the mixture with air to effect desulfurization.

847,018. LAVATORY AND MEANS FOR SUPPORTING SAME. JOHN MADDOCK, Trenton, N. J. Filed May 17, 1906. Serial No. 317,406.

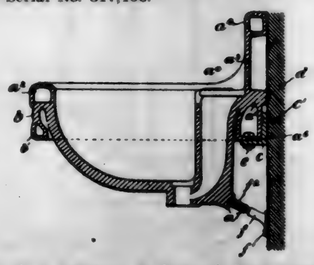

Claim.—1. A lavatory in integral form comprising a bowl and top plate with a hollow peripheral enlargement, a short skirting depending therefrom and extending about the front and sides of the bowl, the edge of said skirting having a hollow peripheral enlargement, a back extending upwardly from said top plate with a hollow, peripheral enlargement continuing from the enlargement about said top plate, a rear, hollow enlargement to seat upon a wall-support, and a lower seat for an inclined stay-bracket.

2. A lavatory adapted to be supported from a wall, said lavatory having a rear seating portion, an angle-iron adapted to be secured to the wall and to support the lavatory by its rear seating portion, and an inclined extensible stay-bracket adapted to be secured to the wall below said angle-iron, and to have an additional support for said lavatory by impinging against the latter at a point below said seating portion.

847,019. MACHINE FOR PREPARING CHOCOLATE ICING. PAUL F. E. MAGNIEZ, Amiens, France. Filed July 12, 1904. Serial No. 216,253.

Claim.—1. In a machine for preparing chocolate icing, the combination of two series of horizontal parallel rollers of which the adjacent rollers in each series are in such close proximity to each other as to be substantially in contact, said series opposing and being arranged one above the other, and means for rotating the rollers in each series in the same direction, but oppositely to the rollers in the other series.

2. In a machine for preparing chocolate icing, the combination, superposed rows of horizontal rollers arranged in pairs composed of rollers of both rolls, the rollers in each row being in such close proximity to each other as to be substantially in contact, laterally-adjustable bearings for the upper rollers of two adjacent groups at one end of the machine, feed-rollers arranged above said last-named rollers, and a hopper above said feed-rollers.

3. In a machine for preparing chocolate icing, in combination, superposed rows of horizontal rollers arranged in pairs composed of rollers of both rolls, the rollers in each row being in such close proximity to each other as to be substantially in contact, laterally-adjustable bearings for the upper rollers of two adjacent groups at one end of the machine, feed-rollers arranged above said last-named rollers, and a hopper above said feed-rollers.

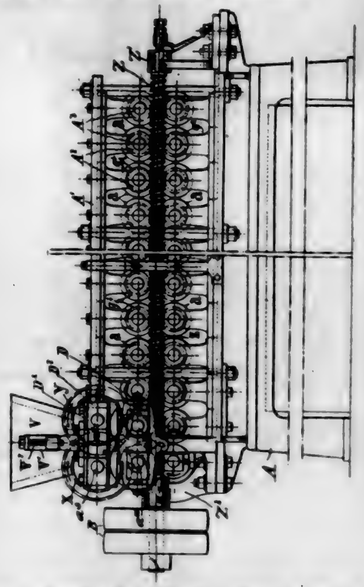

4. In a machine for preparing chocolate icing, the combination, with opposing side frames, of horizontal rollers journaled in said side frames and arranged in a plurality of vertically-disposed pairs, worm-gears on the shafts of said rollers, and a worm-spindle engaging the worm-gears of both the upper and lower rollers.

5. The combination of two series of horizontal parallel rollers of which the adjacent rollers in each series are in such close proximity to each other as to be substantially in contact, said series being arranged in superposed relation, means for rotating the rollers in the lower series in one direction and the rollers of the upper series, with the exception of the end roller at the ingoing end of the machine, in the opposite direction, means for rotating said end roller of the upper series in a direction opposite to the rotation of the other rollers in said series, feed-rollers arranged above said end roller and the roller adjacent thereto, and a hopper above said feed-rollers.

6. In a machine for preparing chocolate icing, the combination of two superposed series of parallel rollers, a worm-spindle for rotating the rollers of each series in the same direction, but oppositely to the rollers in the other series, and gearing operated by said spindle to rotate the end roller of the upper series oppositely to the other rollers in said series.

7. In a machine for preparing chocolate icing, the combination of two superposed series of parallel rollers, worm-gears carried by the shafts of all said rollers except the end roller of the upper series, a worm-spindle engaging the worm-gears of the rollers in both series, and gearing operated from said worm-spindle for rotating said end roller oppositely to the other rollers in the same series.

8. In a machine for preparing chocolate icing, the combination of two superposed series of parallel rollers of which the adjacent rollers in each series are in close proximity, worm-gears mounted on the shafts of said rollers, a worm-spindle engaging the worm-gears of the rollers in both series and acting to rotate the rollers in each series in the same direction but oppositely to the rollers in the other series, feed-rollers arranged above the first two rollers of the upper series, and gearing operated from said worm-spindle for rotating the end roller of the upper series oppositely to the other rollers in the same series, and for rotating said feed-rollers.

847,020. DOUGH-RAISER. FRENCH MCDONALD, Hiawatha, Kans. Filed Aug. 9, 1905. Serial No. 273,402.

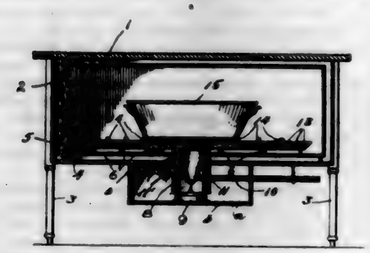

Claim.—1. A device of the class described comprising a major casing, a support located within the casing, a minor casing disposed beneath the first-named casing, a cylindrical member located partly within the minor casing and partly within the major casing and extending through the floor of the latter casing, and a heater located within the minor casing and beneath the said cylindrical member.

2. A device of the class described comprising a casing, a support arranged within the casing, a cylindrical casing opening through the floor of said first-named casing and having an inner inverted conical portion, a pipe communicating with said inverted conical portion, and a heater disposed beneath the casing and said conical portion thereof.

3. A device of the class described comprising a casing, a cylindrical member extending through the floor of the casing, a support arranged within the casing above the said member, said cylindrical member including a closed inner inverted conical portion, a burner located beneath the cylindrical member and its said portion and means for admitting air to the said inverted conical portion.

4. A device of the class described comprising a casing, a support located within the casing, a cylindrical member extending through the floor of the casing and beneath the support, said member being closed at its upper end and having its lower end open, means for introducing air into the member, and means located beneath the open end of the member for heating the air introduced thereinto.

5. A device of the class described comprising a casing, a support located within the casing, a cylindrical member extending through the floor of the casing and including an integral depending inverted conical portion located therewithin, a pipe communicating with the said inverted conical portion and means for heating the said portion.

6. A device of the class described comprising a casing, a support located within the casing, a cylindrical member extending through the floor of the casing, said cylindrical member including an integral inverted conical portion closing one end of the said member and located therewithin, a pipe communicating with the said inverted conical portion, and means for heating said portion.

847,021. MONOLINE COMPOSING-MACHINE. JAMES MCNAMARA, Montreal, Quebec, Canada, assignor, by mesne assignments, to Mergenthaler Linotype Company, New York, N. Y., a Corporation of New York. Filed July 14, 1905. Serial No. 269,748.

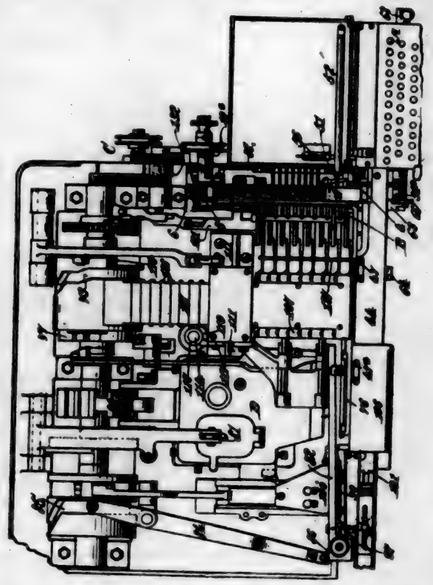

Claim.—1. In a monoline composing-machine, in combination with a composing-box, a series of matrix-bar arresters, and a series of movable matrix-bar keepers combined for coöperation therewith.

2. In a monoline composing-machine, in combination, a series of movable matrix-bar arresters, and a series of movable matrix-bar keepers combined for synchronous operation.

3. In a monoline composing-machine, in combination with a composing-box, a series of pivotally-mounted matrix-bar arresters, a series of pivoted matrix-bar keepers, said arresters and keepers being arranged in coöperative pairs, and said arresters engaging the said keepers for withdrawing the latter from the matrix-bar drop-space of the composing-box when the former are withdrawn from such space.

4. In a monoline composing-machine, in combination with a composing-box, a series of matrix-bar arresters, and a series of matrix-bar keepers combined for coöperation therewith, and means actuated by finger-key mechanism for operating said keepers and arresters.

5. In a monoline composing-machine, in combination with a composing-box, a series of pivoted matrix-bar arresters, a series of pivoted matrix-bar keepers combined for coöperation therewith, and means actuated by finger-key mechanism for operating said arresters and keepers.

6. In a monoline composing-machine, in combination with a composing-box, a series of pivoted matrix-bar arresters, a series of pivoted matrix-bar keepers combined for coöperation therewith, and a series of slides actuated from finger-key mechanism for operating said arresters.

7. In a monoline composing-machine, in combination with a composing-box, of a series of matrix-bar arresters, means for projecting said arresters into the drop-space of the composing-box, a series of matrix-bar keepers combined for coöperation with said arresters and normally held clear of the said drop-space by said arresters and adapted to automatically enter said space when the corresponding arrester is projected into said space, and means for simul-

taneously withdrawing said arresters and said keepers from said space.

8. In a monoline composing-machine, in combination with a composing-box, of a series of pivoted matrix-bar arresters, a series of matrix-bar keepers provided with cams, said arresters provided with an element to movably engage said cams whereby the keepers are released and permitted to be projected into the matrix-bar drop-space of the composing-box and be withdrawn therefrom when the matrix-bar arresters are withdrawn.

9. In a monoline composing-machine, in combination with a composing-box, of a series of pivoted matrix-bar arresters, a series of matrix-bar keepers provided with cams, said arresters provided with an element to movably engage said cams whereby the keepers are released and permitted to be projected into the matrix-bar drop-space of the composing-box and be withdrawn therefrom when the matrix-bar arresters are withdrawn, and means actuated from finger-key mechanism for operating said arresters and keepers.

10. In a monoline composing-machine, in combination with a composing-box, a series of matrix-bar arresters, and a series of matrix-bar keepers arranged in coöperative pairs, the arrester and keeper elements of each pair being out of alinement with each other whereby the arrester is adapted to engage beneath the bottom of a matrix-bar and the keeper engage a recess in said bar.

11. In a monoline composing-machine, in combination with a composing-box, a series of pivoted matrix-bar arresters, and a series of pivoted matrix-bar keepers arranged in coöperative pairs, the arrester and keeper elements of each pair being out of alinement with each other whereby the arrester is adapted to engage beneath the bottom of a matrix-bar and the keeper engage a recess in said bar.

12. In a monoline composing-machine, in combination with a composing-box, a series of matrix-bar arresters provided with drop-bar-engaging portions, a series of matrix-bar keepers combined for coöperation with said arresters and having their bar-engaging portions in a plane different from the bar-engaging portions of the arresters, and means for operating said arresters and keepers.

13. In a monoline composing-machine, in combination with a composing-box, a series of matrix-bar arresters provided with drop-bar-engaging portions, a series of matrix bar keepers combined for coöperation with said arresters and having their bar-engaging portions in a plane different from the bar-engaging portions of the arresters, and means for operating said arresters and keepers in substantial synchronism.

14. In a monoline composing-machine, in combination with a composing-box, a series of matrix-bar arresters provided with drop-bar-engaging portions, a series of matrix-bar keepers combined for coöperation with said arresters and having their bar-engaging portions in a plane different from the bar-engaging portions of the arresters, and means actuated by finger-key mechanism for operating said arresters and keepers in substantial synchronism.

15. In a monoline composing-machine, in combination with a composing-box, a series of matrix-bar arresters provided with drop-bar-engaging portions a series of matrix-bar keepers combined for coöperation with said arresters and having their bar-engaging portions in a plane different from the bar-engaging portions of the arresters, the raised rear ends of the matrix-bar arresters adapted to engage said keepers whereby the latter are withdrawn from the matrix-bar drop-space of the composing-box when the former are withdrawn.

16. In a monoline composing-machine, in combination with a composing-box, a series of matrix-bar arresters, means for operating said arresters, a series of matrix-bar keepers combined for coöperation with said arresters and the operation of which is controlled by said arresters.

17. In a monoline-machine, a composing-box to receive the successive descending matrices, in combination with a laterally-movable bridge arranged to enter the edge of each matrix, and an alining-rail located outside of the box and forming the continuation of the bridge to receive the matrices therefrom; whereby each matrix is given a continuous support at one edge both within and without the composing-box.

18. In a monoline composing-machine, in combination with a composing-box, of a pivoted bridge for supporting and guiding matrix-bars to an alining-rail outside of the composing-box.

19. In a monoline composing-machine, matrix-bars notched in one edge, in combination with a composing-box into which the matrices descend one at a time, and an automatic reciprocating bridge arranged to enter the box and the edge of each matrix to sustain the latter as it is advanced toward the composed line.

20. In a monoline composing-machine, the combination of a composing-box to receive the successive matrices, a bridge movable edgewise in relation to the matrices to sustain them during their delivery toward the composed line, and a matrix-ejector acting at the beginning of its advance to cause the engaging movement of the bridge.

21. In a monoline composing-machine, in combination with a composing-box, of means for ejecting matrix-bars from said box onto an alining-rail located outside thereof, and a pivoted bridge operated by the ejecting means arranged in said composing-box for supporting and guiding matrix-bars onto said alining-rail.

22. In a monoline composing-machine, in combination with a composing-box, means for ejecting matrix-bars from said box onto an alining-rail located outside of the box, and a pivoted bridge aranged in the box for supporting and guiding the matrix-bars onto said rail, said bridge provided with a cam engaging a recess in the ejector whereby it is operated by and in unison with said ejector.

23. In a monoline composing-machine, a composing-box into which the successive matrices descend, a front wall or plate arranged to enter through one side of the composing-box and advance across the same to the opposite side and adapted in itself to hold the matrices in position therein, a horizontal ejector for delivering the matrices from the box, and means for withdrawing the wall-plate bodily to permit delivery of the matrices.

24. In a monoline composing-machine, in combination with a composing-box, of a movable front wall and a division or partition wall associated therewith and normally extending into the matrix-bar space of said composing-box, and means for withdrawing said front wall and division-wall to permit of the passage of matrix-bars out of said box.

25. In a monoline composing-machine, in combination with a composing-box and an oscillator, of a movable front wall for the composing-box normally guarding the matrix-bar drop-space thereof, a cam mounted in the oscillator and adapted to intermittently engage the oscillator-shaft, and a connection between said cam and front wall whereby the latter is intermittently withdrawn from in front of the composing-space to permit passage of the matrix-bars out of the composing-box.

26. In a monoline-machine, a composing-box into which the matrix-bars successively descend, in combination with a series of matrix-bar arresters, a laterally-movable bridge for supporting and guiding the matrix-bars as they are delivered from the box, a retractable front wall to aid in guiding the matrix-bars into the box, a horizontally-moving ejector, and means for operating said members in proper order, substantially as described.

27. In a monoline composing-machine, in combination with a composing-box, of a series of matrix-bar arresters, a series of matrix-bar keepers, a bridge for supporting and guiding matrix-bars in said box, a movable front wall for the matrix-bar drop-space, and means for operating said arresters, keepers, bridge, and front wall.

28. In a monoline composing-machine, in combination with a composing-box, a series of matrix-bar arresters, and a series of matrix-bar keepers combined for coöperation therewith, means for operating said arresters and keepers, means for ejecting matrix-bars from said box onto an alining-rail located outside thereof, and a movable bridge arranged in said box and operated by said ejector.

29. In a monoline composing-machine, in combination with a composing-box, a series of matrix-bar arresters, and a series of matrix-bar keepers combined for coöperation therewith, means for operating said arresters and keepers, means for ejecting matrix-bars from said box onto an alining-rail located outside thereof, a movable bridge arranged in said box and operated by said ejector, a movable front wall, and means for operating the same.

30. In a type-composing mechanism, an abutment movable in the direction of the length of the composed line, a support for said abutment having a sliding connection therewith, a connecting-spring tending to hold the abutment against the advance of the line, and a pivot for the support lying transversely to the length of the line, whereby the abutment is permitted to move bodily backward out of the path of the line to permit the advance of the latter.

31. In a composing mechanism, a line-abutment comprising a piston having at one end line-engaging fingers adapted to enter and move along the line-race, a transversely-pivoted barrel supporting said piston, and a spring connecting the piston and barrel.

32. In a composing mechanism, a resistant movable in advance of the composed line, a support for the resistant having a longitudinal sliding connection therewith, said support pivoted that it may carry the resistant out of the path of the line, and a spring tending to hold the resistant against the advancing line.

33. In a machine for composing and casting type, a line-carriage comprising a line-moving wing, a movable head-block and a line-lock-up arm connected with the wing, movable therewith, and adapted to engage with said head-block for locking up the line during the performance of the operations where it is desired that the line be locked up, and for releasing or relieving the line to facilitate distribution thereof.

34. In a machine for composing and casting type, in combination with a line-carriage comprising a line-moving wing, a movable head-block, a line-lock-up arm adapted to engage the said block, means for moving said wing and arm into and withdrawing the same from operation upon the line, means for maintaining the same in coöperative relation with the line and head-block, means for relieving the pressure of the lock-up arm upon the head-block to facilitate distribution of the line, and means for withdrawing said arm and wing from the line-race when the line has been removed therefrom.

35. In a type composing and casting machine, in combination with a line-carriage, comprising a line-moving wing, a movable head-block provided with a recess, and a line lock-up provided with a pusher, means for causing the pusher to force the head-block closely against the line, means for maintaining the line lock-up during the line conveying and casting operation, and means for permitting limited movement of the line-lock-up arm to enable its pusher element to enter the recess in the head-block, whereby the line is released or relieved to facilitate distribution.

36. In a type casting and composing machine, in combination with a line-carriage, comprising a line-moving wing, a movable head-block having a recess, and a line-lock-up arm having a head-block pusher, means for maintaining coöperative relation of said elements with respect to a locked-up line during line conveying and casting operations, means for withdrawing said wing and arm from line-engaging position, and a stop for arresting the movement of the line-lock-up arm when its pusher has entered the recess in the head.

37. In a type composing and casting machine assembly and line-transferring mechanism, comprising a stationary assembly-rail arranged and proportioned to enter part way only into the alining-recesses of matrix-bars, a line-carriage, a traveling alining-rail arranged to enter the full depth of the alining-recesses, and means for causing said rail to engage and support the line during transit.

38. In a monoline-machine, the combination of a stationary assembling-rail 28 to temporarily sustain the composed matrices, a carriage to transport the composed line from the stationary rail to the casting position, an alining-bar movably mounted in the carriage to engage and hold the matrices, and means for advancing said bar into the notched edges of the matrices beyond the depth to which the assembling-rail enters; whereby exact alinement of the matrices is secured and maintained notwithstanding their wear upon the stationary rail.

39. In a type composing and casting machine, the combination with a fixed assembly-rail and a line-carriage, of a traveling alining-rail, connected to and partaking of the movement of the carriage, said traveling alining-rail provided with a longitudinal channel, a slide on which said alining-rail is mounted, provided with pins engaging cam-slots in said alining-rail, pins interposed in the path of movement of the said alining-rail, one of said pins arranged to stop the longitudinal travel of the alining-rail until the said rail has fully engaged the matrix-bars and is clear of said pin, and the other thereof arranged to stop the travel of the alining-rail until the same is withdrawn from engagement with such matrix-bars and is in coincidence with the longitudinal groove in said rail.

40. In a type composing and casting machine, a shiftable mold, means for shifting the same, and a connection between said mold and shifting means to facilitate disconnection and substitution of molds, consisting of a link having dowel connection with the mold and with the mold-shifting means, an overhanging ledge on the mold to engage one end of the link, and a button on the mold-shifting means adapted to be turned to overlie the dowel connection of the link with such means and to be turned to uncover such dowel connection, that end of the link which is connected to the mold being mutilated or cut away so that when it is turned in proper relative angle to the mold the link may be readily removed.

41. In a type composing and casting machine, the combination with a shiftable mold and a trimming-knife arranged in front thereof, and means for shifting the mold, of a link connecting the mold with the shifting means, a trimming-knife wiper pivotally mounted upon the said link, and a guard operatively interposed between the mold and trimming-knife adapted to engage said wiper and keep it out of contact with the trimming-knife in one movement of the mold, and permit said wiper to engage said knife in the other movement of the mold.

42. In a type composing and casting machine, matrix-distributing mechanism comprising matrix-lifting plates having matrix-stringing elements and means for lowering and lifting said plates to matrix-stringing position and matrix-distributing position comprising an elevator and a post provided with a spiral groove, a gear mounted for reciprocal movement upon said post, connected with said elevator, operatively meshing with said lifter-plates, and provided with means engaging said spiral groove for imparting rotation to said gear and reciprocating movement to said plates.

43. In a type composing and casting machine, matrix-distributing mechanism comprising matrix-lifting plates having matrix-stringing elements and means for lowering and lifting said plates to matrix-stringing position and matrix-distributing position comprising an elevator and a post provided with a groove in part spirally arranged and in part parallel with the movement of the elevator, whereby said lifter-plates move first in a right line to lift the matrix-bars and spacers clear of the line-carriage and then rearwardly to bring their stringer elements in alinement with the hanger elements of the magazine.

44. In a type composing and casting machine, distributing mechanism comprising a vertically reciprocatory elevator, lifter-plates arranged to reciprocate horizontally in said elevator and provided with slots of varying length, one of said plates provided with a rack, and a pin entering the slots of the other plates, a post provided with a groove in part spiral and in part parallel with the movement of said elevator; a gear in mesh with said rack and mounted to reciprocate upon said post and partaking of the movements of the elevator, and provided with means engaging the groove in the post for imparting rotary movement to said gear and reciprocating movement to said lifter-plates.

45. In a type composing and casting machine, a line-carriage and a lever for moving the same, of distributer

mechanism comprising matrix-lifters, and a sweep for removing matrices from said lifters onto the hanger elements of the magazine, said sweep being connected to and actuated by the line-carriage lever.

46. In a type composing and casting mechanism, the combination with a magazine, of means for discharging matrices from said magazine comprising an oscillator, a continuously-rotating shaft and a cam on said oscillator adapted to intermittently engage said shaft, and means for adjusting the relation between said shaft and cam to regulate the throw of the oscillator.

47. In a type composing and casting mechanism, the combination with a magazine, of means for discharging matrices from said magazine comprising an oscillator, a continuously-rotating shaft and a cam on said oscillator adapted to intermittently engage said shaft, and an eccentric associated with said shaft for adjusting the relation between said shaft and cam to regulate the throw of the oscillator.

48. In a monoline-machine, in combination with a composing-box, a series of arresters to support the falling matrix-bars, and a corresponding series of keepers adapted to engage the bars and prevent them from rebounding.

49. In a monoline composing-machine, in combination with a composing-box, a series of arresters adapted to act at one end of the matrix-bars to determine their descent, and a series of keepers adapted to engage one edge of the matrix-bars and combined for synchronous coöperation with the arresters.

50. In a monoline-machine, in combination with a composing-box, movable means for arresting the matrix-bars at various heights, and means engaging one edge of the matrix-bars to prevent rebound thereof, the last-named means being operated by the first, substantially as described.

51. In a monoline-machine, and in combination with the mold having an overhanging ledge, a detachable actuating device for said mold comprising a link pivotally connected with the mold and cut away in such manner as to permit its disconnection when turned to an inoperative position.

52. In a monoline composing-machine, in combination with a composing-box, means for supporting the matrix-bars at various heights, means engaging in one edge of the matrix-bars to prevent the rebound thereof when supported, said last-mentioned means actuated to engage in one edge of the matrix-bars by the first-mentioned means when the latter is moved to supporting position, and operating means for said supporting means.

53. In a monoline composing-machine, in combination with a composing-box, means for supporting the matrix-bars at various heights, means engaging in one edge of the matrix-bars to prevent the rebound thereof when supported, said last-mentioned means actuated to engage in one edge of the matrix-bars by the first-mentioned means when the latter is moved to supporting position, and means actuated by finger-key mechanism for operating said supporting means.

54. In a monoline composing-machine, in combination with a composing-box, means for supporting the matrix-bars at various heights, means engaging in one edge of the matrix-bars to prevent the rebound thereof when supported, said last-mentioned means actuated to engage in one edge of the matrix-bars by the first-mentioned means when the latter is moved to supporting position, and means for withdrawing to inoperative position the said supporting and engaging means.

55. In a monoline composing-machine, in combination with a composing-box, means for supporting the matrix-bars at various heights, means engaging in one edge of the matrix-bars to prevent the rebound thereof when supported, said last-mentioned means actuated to engage in one edge of the matrix-bars by the first-mentioned means when the latter is moved to supporting position, and means for simultaneously withdrawing to inoperative position the supporting and engaging means.

56. In a monoline-machine, a removable box to receive the descending matrices, in combination with matrices notched in one edge, means for ejecting the matrices sidewise from the box, a receiving-rail outside of the box in position to enter the matrix-notches, and means within the box arranged to enter the same notches and guide the matrices upon the outside rail.

57. In a monoline composing-machine, the combination with a composing-box, of means for arresting the matrix-bars, means for retaining the matrix-bars from the rebound when arrested, means for supporting and guiding matrix-bars in said box, a movable front wall for the matrix-bar space, and means for operating said arresting, retaining, supporting and guiding means and said front wall.

58. In a monoline composing-machine, in combination with a composing-box, means for supporting the matrix-bars at various heights, means engaging in one edge of the matrix-bars to prevent the rebound thereof when supported, said last-mentioned means actuated to engage in one edge of the matrix-bars by the first-mentioned means when the latter is moved to supporting position, and slides actuated from finger-key mechanism for operating said arresters.

59. In a composing mechanism for monoline-machines, means for arresting the matrices at different heights, and a series of devices at different heights to engage the matrices and prevent them from rebounding.

60. In a monoline-machine, the matrices each having a detaining-notch, in combination with means for arresting the matrices at different heights, and a series of keepers or detents arranged to enter said notch one at a time according to the height of the matrix.

61. In a monoline-machine, the combination with the matrices having a series of characters and alining notches, of a composing mechanism including means for arresting the matrices at different heights, and means engaging the matrices at the lower extremity to prevent their rebound.

62. In a monoline-machine, a composing-box, means for delivering the matrices successively downward into said box, a plate to form one wall of the box to prevent the matrices from falling forward, said plate being arranged to advance through the side wall of the box and across the same to the opposite side, and mechanism for automatically retracting the plate to prevent the delivery of the matrices from the box to the line.

63. In a monoline composing mechanism, and in combination with a composing-box, the two plates 32 and 32^a, an ejector for delivering the matrices laterally from the box, and means for alternately advancing the plates and the ejector.

847,022. APPARATUS FOR TRANSPOSING THE KEY-NOTE IN PERFORMANCES OF THE PIANOLA. HUGO T. NOLTHENIUS, Delft, Netherlands. Filed Apr. 17, 1906. Serial No. 312,236.

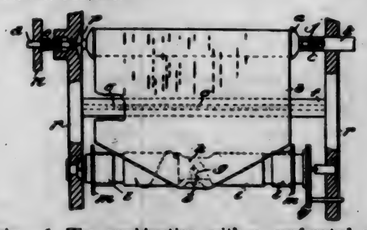

Claim.—1. The combination with a perforated music-sheet, a tracker, and a pair of rolls for said music-sheet, of a plurality of filling-up pieces of varying lengths and corresponding to the different keys and adapted to be introduced singly between one end of the winding-roll and the bearing-axis of said roll, the other roll having means for correspondingly attaching the music-sheet.

2. The combination with a perforated music-sheet, a tracker, and a pair of rolls for said music-sheet, of a plurality of filling-up pieces of varying lengths and corresponding to the different keys and adapted to be introduced singly between one end of the winding-roll and the bearing-axis of said roll, the other roll having a plurality of devices for correspondingly attaching said music-sheet.

3. The combination with a perforated music-sheet, a tracker, and a pair of rolls for said music-sheet, of a plurality of filling-up pieces of varying lengths and corresponding to the different keys and adapted to be introduced singly between one end of the winding-roll and the bearing-axis of said roll, the other roll having a pair of flanged slidable bushings for guiding said music-sheet and a plurality of attaching devices corresponding to the filling-up pieces.

4. The combination with a perforated music-sheet, a tracker, and a pair of rolls for said music-sheet, of a plurality of filling-up pieces of varying lengths and corresponding to the different keys and adapted to be introduced singly between one end of the winding-roll and the bearing-axis of said roll, the other roll having a plurality of longitudinally-spaced attaching devices corresponding to the filling-up pieces.

5. The combination with a perforated music-sheet, a tracker, and a pair of rolls for said music-sheet, of a plurality of filling-up pieces of varying lengths and corresponding to the different keys and adapted to be introduced singly between one end of the winding-roll and the bearing-axis of said roll, the other roll having an annular recess and a plurality of longitudinally-spaced attaching devices in said recess.

6. The combination with a perforated music-sheet, a tracker, and a pair of rolls for said music-sheet, of a plurality of filling-up pieces of varying lengths and corresponding to the different keys and adapted to be introduced singly between one end of the winding-roll and the bearing-axis of said roll, the other roll having adjustable guiding means, an annular recess, and a plurality of longitudinally-spaced attaching devices.

7. The combination with a perforated music-sheet, a tracker, and a pair of rolls for said music-sheet, of a plurality of filling-up pieces of varying lengths and corresponding to the different keys and adapted to be introduced singly between one end of the winding-roll and the bearing-axis of said roll, the other roll having a plurality of attaching devices, the said filling-up pieces and attaching devices corresponding to each other and to the different keys.

847,023. SEAT AND SEAT-BACK FOR RAILWAY ROLLING-STOCK. ALLEN E. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Sept. 17, 1906. Serial No. 334,966.

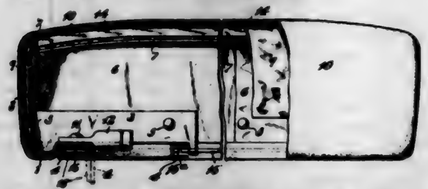

Claim.—1. A seat consisting of a metallic frame, an outer covering turned underneath said frame, splines placed upon the outer face of said covering for clamping the edge portions thereof against the underneath side of the frame, and depending flanges formed integral with said frame and adapted to be bent upwardly for securing said splines in position; substantially as described.

2. A seat consisting of a metallic frame, an outer covering turned underneath said frame, splines about which the edge portions of said outer covering are wrapped, and flanges on said frame which are adapted to be bent upwardly to clamp the covering against the underneath side of the frame; substantially as described.

3. A seat consisting of a metallic frame, having vertical walls and portions extending inwardly from said walls, an outer covering incasing said vertical walls and turned underneath the inwardly-extending portions of the frame, splines about which the edge portions of said covering are wrapped, and flanges on said inwardly-extending portions which are adapted to be bent into engagement with the outer covering to secure it in position; substantially as described.

4. A seat consisting of a metallic frame, having vertical walls and portions extending inwardly therefrom, said inwardly-extending portions being bent to form recesses, an outer covering incasing said vertical walls and inwardly-extending portions, and having a turned edge which lies in said recesses, and flanges on said inwardly-extending portions which are adapted to be bent into engagement with the turned edge of the outer covering to confine it in said recesses; substantially as described.

5. A seat-frame comprising flanged metallic members, gussets for securing said members together, and upwardly-extending plates fastened to the flanges of said metallic members and incasing the corners formed by the junction of said metallic members; substantially as described.

6. A seat consisting of a metallic frame, having vertical walls and inwardly-extending S-shaped portions, the upper edges of said vertical walls being curved inwardly, channel-shaped slats secured to the inwardly-projecting portions of the frame, springs mounted on said slats, spring-bands extending over the upper ends of said springs and being fastened to the vertical walls of the frame, a piece of fibrous material stretched over said spring-bands and secured to teeth formed integral with the vertical walls of the frame and an outer covering bent underneath the inwardly-extending portions of the frame, splines consisting of separate metal strips and corner-pieces about which the outer covering is wrapped, and flanges on the inwardly-extending portions of the frame adapted to be bent into engagement with the outer covering to clamp it and the splines against the inwardly-extending portions of the frame.

847,024. COMBINED RAIL-FASTENER AND TIE. FRANCIS M. PAXTON, Washington, Pa. Filed Dec. 31, 1906. Serial No. 350,158.

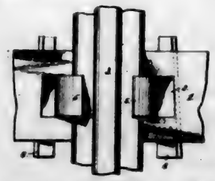

Claim.—The combination with a railway-tie formed with a dovetail recess having transversely-inclined walls, of a rail resting on the tie above said recess, clamping-blocks within said recess formed with integral oppositely-extending flanges overlapping the base of the rail, said blocks being beveled on their outer sides, and wedge-keys driven between the inclined walls of said recess and the beveled sides of the blocks.

847,025. PLOW. ANDREW PEDERSON, Effington, S. D. Filed May 7, 1904. Serial No. 206,885.

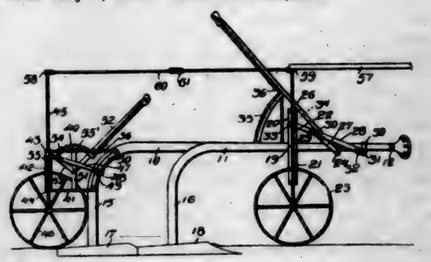

Claim.—1. A plow comprising laterally-spaced mutually-connected beams, standards, shares carried by said standards, brackets carried by said beams, said brackets

being provided with apertured ears, front and rear supporting wheels including stems pivotally and slidably mounted in the ears of said brackets, lifting-levers pivotally connected with the stems and pivotally and slidably connected with the beams, and means for holding the said levers in their adjusted positions.

2. A plow comprising laterally-spaced mutually-connected beams, standards, shares carried by the standards, brackets carried by the beams, said brackets having apertured ears formed thereon, supporting-wheels including stems, said stems being slidably and pivotally engaged in the apertured ears of said brackets, hangers on one of said beams, a rock-shaft associated with one of said hangers, a lever for rocking said shaft, an arm carried by said shaft, a rod having one of its ends pivotally engaged with the other of said hangers, said arm being pivotally engaged with the said rod adjacent its end opposite its pivotal connection with the last-named hanger, a spherical enlargement on said stem and sockets carried by said rods for engagement with said enlargement, a rock-shaft mounted in the other of said brackets a rod pivoted at one of its ends to said bracket, an arm carried by said rock-shaft, pivotal connections between said arm and said rod, a spherical enlargement on the other of said stems, sockets carried by said rod for engagement with said enlargement on said stem, and a lever associated with said rock-shaft for rocking the same.

847,026. MOTOR-DRIVEN FARM IMPLEMENT. MELVIN O. SANDBERG, Granite Falls, Minn. Filed Sept. 13, 1906. Serial No. 334,518.

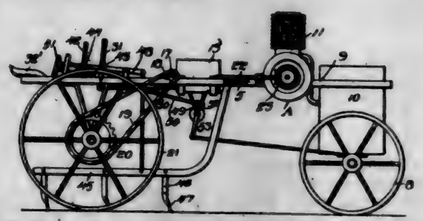

Claim.—1. In a machine of the class described, the combination with a frame, of a motor in the frame, steering-wheels at the forward end of the frame, steering mechanism connected with the wheels, a gear-box in the frame, power-varying gear within the box, said gear including a shaft extending outwardly of the box, transversely of the machine, connections between the motor and gear, a counter-shaft journaled transversely of the machine, a differential gear for the counter-shaft, connections between the first-named shaft and the counter-shaft, drive-wheels for the frame, sprockets carried by the drive-wheels, sprockets carried by the counter-shaft, chain connection between the sprockets of the drive-wheels and counter-shaft, a seat at the rearward end of the frame, and a steering-wheel connected with the steering mechanism and lying within reach of the seat.

2. In a machine of the class described, the combination with a frame, of a motor mounted in the frame, a shaft connected with the motor for rotation thereby, a disk splined upon the shaft, a second shaft, a disk splined upon the second shaft and extending at right angles to the first-named disk and lying in position to receive the first-named disk against its periphery, a spring arranged to hold the first-named disk yieldably in engagement with the second-named disk, concentric circular series of pins carried by the first-named disk, said second-named disks having peripheral sockets for the reception of the pins and being movable to receive the pins of the different series in its sockets interchangeably, means for moving the first-named disk against the action of the spring, means for moving the second-named disk transversely of the first-named disk, drive-wheels for the frame, and connections between the second shaft and the drive-wheels for operation thereof.

3. In a machine of the class described, the combination with a frame, of a motor mounted in the frame, a shaft connected with the motor for operation thereby, a disk splined upon the shaft, a second disk extending at right angles to the first-named disk and lying in position to receive the first-named disk against its periphery when the first-named disk is at one limit of its movement, a shaft extending at right angles to the first-named shaft and upon which the second-named disk is splined, a collar on the first-named shaft on the opposite side of the first-named disk from the second-named disk, a spring arranged between the first-named disk and collar, to hold the first-named disk against the second-named disk, an angle-lever connected with the first-named disk for movement thereof against the action of the spring, means for moving the angle-lever, means for holding the moving means with the first-named disk out of engagement with the second-named disk, a plurality of concentric circular series of pins carried by the first-named disk at its side adjacent to the second-named disk, said second-named disk having pin-receiving sockets in its periphery and being movable to receive the pins of the different series interchangeably, a grooved collar carried by the second-named disk, a yoke engaged in the groove of the collar, an angle-lever pivoted to the yoke, a third angle-lever, connections between the second and third angle-levers for simultaneous movement thereof, a pivoted hand-lever, a rod pivoted to the hand-lever and to the third angle-lever for simultaneous movement thereof, and means for holding the hand-lever with the disk in position to receive pins of the different series.

847,027. GLASS DRAWING AND BLOWING APPARATUS. HARRY G. SLINGLUFF, Hartford City, Ind., assignor to George T. Oliver, Allegheny county, Pa. Filed Jan. 6, 1906. Serial No. 294,927.

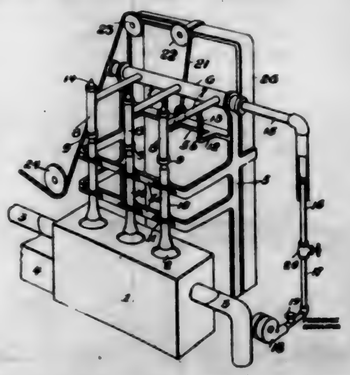

Claim.— 1. In a glass drawing and blowing apparatus, the combination with the glass-tank, of a plurality of drawing and blowing tools, means for effecting relative movement of the tools and tank to effect the simultaneous drawing of a plurality of cylinders of glass, a conduit for distributing air under pressure to the series of tools, and a pressure regulator coöperating therewith for regulating the pressure of the air supplied to said tools, said regulator being constructed to maintain the air-pressure substantially constant within a glass cylinder while the same is being drawn, substantially as described.

2. In a glass drawing and blowing apparatus, the combination with a glass-tank, of a plurality of drawing and blowing tools, means for effecting relative movement of the tools and tank, means for distributing air under pressure to the series of tools, and means connected with each tool for maintaining the air in all the tools at the same pressure, substantially as described.

3. In a glass drawing and blowing apparatus, the combination with a glass-tank, of a plurality of drawing and blowing tools, means for effecting relative movement of the tools and tank, means for distributing air under pressure to the series of tools, a pressure-regulator for regulating the pressure of air supplied to the tools, and means connected with each of the tools for maintaining the same air-pressure therein, substantially as described.

4. In a glass drawing and blowing apparatus, the combination with a glass-tank, of a plurality of drawing and blowing tools, movable relatively to said tank, means for distributing air under pressure to said tools, and a pop or relief valve set for the same pressure connected with each of said tools, substantially as described.

5. In a glass drawing and blowing apparatus, the combination with a glass-tank, of a plurality of drawing and blowing tools, movable relatively to said tank, means for distributing air under pressure to said tools, a pop or relief valve set for the same pressure communicating with each of said tools, and a pressure-regulator for regulating the pressure of air distributed to said tools, substantially as described.

6. In a glass drawing and blowing apparatus, the combination with a glass-drawing tank, of a plurality of drawing and blowing tools, a frame upon which said tools are fixedly mounted, and movable relatively to the tank, an air-pressure supply communicating with each of the tools, and a pop or relief valve set for a given pressure controlling an outlet from each of said tools, substantially as described.

7. In a glass drawing and blowing apparatus, the combination with a glass-drawing tank, of a plurality of drawing and blowing tools, a frame upon which said tools are fixedly mounted, and movable relatively to the tank, an air-pressure supply communicating with each of the tools, a pop or relief valve set for a given pressure controlling an outlet from each of said tools, and a pressure-regulator in the air-supply system controlling the pressure of air distributed to the tools, substantially as described.

8. In a glass drawing and blowing apparatus, the combination with a glass-drawing tank having a plurality of drawing-openings, a plurality of drawing and blowing tools movable into and out of said openings, a frame upon which said tools are mounted, means for moving said frame away from and toward the tank, an air-pressure-supply pipe on said frame communicating with each of said tools, an air-pressure-supply system communicating with said supply-pipe, and means for maintaining the air at each tool at a substantially constant pressure, substantially as described.

9. In a glass drawing and blowing apparatus, the combination with a glass-drawing tank having a plurality of drawing-openings, a plurality of drawing and blowing tools movable into and out of said openings, a frame upon which said tools are mounted, means for moving said frame away from and toward the tank to effect the simultaneous drawing of a plurality of glass-cylinders, an air-pressure-supply pipe on said frame, communicating with each of said tools, an air-pressure-supply system communicating with said supply-pipe, and a pressure-regulator in said system for maintaining the same air-pressure in said supply-pipe and tools, substantially as described.

10. In a glass drawing and blowing apparatus, the combination with a glass-drawing tank having a plurality of drawing-openings, a plurality of drawing and blowing tools movable into and out of said openings, a frame upon which said tools are mounted, means for moving said frame away from and toward the tank, an air-pressure-supply pipe on said frame, communicating with each of said tools, an air-pressure-supply system communicating with said supply-pipe, a pressure-regulator in said system for controlling the pressure of air distributed to the said supply-pipe and tools, and a pop or relief valve set for the same pressure coöperating with each drawing-tool, substantially as described.

11. In a glass drawing and blowing apparatus, the combination with a glass-drawing tank, of a plurality of openings through which glass may be drawn, a frame above said tank, a plurality of drawing and blowing tools mounted in said frame, an air-pressure-supply pipe on said frame having branches communicating with the drawing-tools, means for moving said frame toward and from the tank, an air-pressure system having a main supply-pipe communicating with the supply-pipe on the frame, and a pressure-regulator in said pipe for controlling the pressure of air distributed to the supply-pipe, substantially as described.

12. In a glass drawing and blowing apparatus, the combination with a glass-drawing tank, of a plurality of openings through which glass may be drawn, a frame above said tank, a plurality of drawing and blowing tools mounted in said frame, an air-pressure-supply pipe on said frame having branches communicating with the drawing-tools, means for moving said frame toward and from the tank, an air-pressure system having a main supply-pipe communicating with the supply-pipe on the frame, a pressure-regulator in said pipe for controlling the pressure of air distributed to the supply-pipe, and a valve in said main supply-pipe for opening and closing communication between said pipe and the supply-pipe on the frame, substantially as described.

13. In a glass drawing and blowing apparatus, the combination with a glass-drawing tank having a plurality of openings, a plurality of drawing and blowing tools, a reciprocating frame on which said tools are removably mounted, means for reciprocating the said frame with reference to the tank, an air-pressure-supply pipe on the frame having branches adapted to communicate with the said tools, pressure-relief valves in said branches adapted to maintain the same air-pressure in all of said branches and the tools connected thereto, a main air-pressure-supply pipe having a telescopic connection with the said air-pressure supply on the frame, and means for supplying air thereto under pressure, substantially as described.

14. In a glass drawing and blowing apparatus, the combination with a glass-drawing tank having a plurality of openings, a plurality of drawing and blowing tools, a reciprocating frame on which said tools are removably mounted, means for reciprocating the said frame with reference to the tank, an air-pressure-supply pipe on the frame having branches adapted to communicate with the said tools, pressure-relief valves in said branches adapted to maintain the same air-pressure in all of said branches and the tools connected thereto, a main air-pressure-supply pipe having a telescopic connection with the said air-pressure supply on the frame, means for supplying air thereto under pressure, and a valve in said main air-pressure-supply pipe for controlling the passage of air therethrough, substantially as described.

15. In a glass drawing and blowing apparatus, the combination with a glass-drawing tank having a plurality of openings, a plurality of drawing and blowing tools, a reciprocating frame on which said tools are removably mounted, means for reciprocating the said frame with reference to the tank, an air-pressure-supply pipe on the frame having branches adapted to communicate with the said tools, pressure-relief valves on said branches adapted to maintain the same air-pressure in all of said branches and the tools connected thereto, a main air-pressure-supply pipe having a telescopic connection with the said air-pressure supply on the frame, means for supplying air thereto under pressure, a valve in said main air-pressure-supply pipe for controlling the passage of air therethrough, and a pressure-regulator between said valve and the source of air-pressure for governing the pressure of air delivered to said valve, substantially as described.

16. In a glass blowing and drawing apparatus, the combination with a glass-drawing tank or kiln, having a plurality of drawing-openings, a plurality of drawing and blowing tools coöperating therewith to draw and blow, conjointly and simultaneously, a plurality of cylinders or rollers of glass therefrom, and means for distributing air under the same pressure in all of said tools, and for maintaining said pressure constant within a cylinder while this is being drawn, substantially as described.

17. In a glass drawing and blowing apparatus, the combination with a glass-drawing tank or kiln, of a drawing device and a plurality of blowing devices co-

operating with said tank to draw and blow a plurality of cylinders or rollers, simultaneously and conjointly, means controlled by a single valve for distributing air under pressure to all of said devices, and means for maintaining air under a pressure substantially constant in each of said drawing and blowing devices during the drawing operation, substantially as described.

847,028. STEAM-ACTUATED VALVE FOR ENGINES. DANIEL C. SPRINGER, Connellsville, Pa. Filed May 29, 1906. Serial No. 319,308.

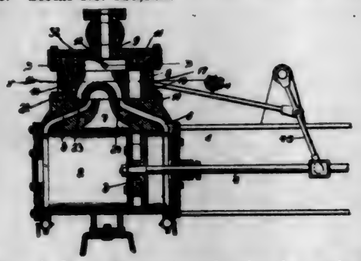

Claim.—1. In a steam-actuated valve for engines, the combination with a cylinder having inlet and exhaust ports, and a piston working in said cylinder, of a steam-chest mounted on the cylinder and provided with a valve-head, a frame fitting the said walls of said steam-chest and being of less height than the said steam-chest, ports in the side walls of said frame, and communicating ports in the side walls of the steam-chest, a reciprocating valve mounted in said frame having inlet-ports and an exhaust-port, a second steam-chest connected to the first-mentioned steam-chest, a cylindrical valve mounted in said second-named steam-chest, having recessed faces, and having ports communicating with the aforesaid ports in the walls of the first-mentioned steam-chest, a stem connected to said cylindrical valve, and connections between said stem and the piston-rod of the engine whereby said cylindrical valve is operated as the piston in the cylinder is reciprocated.

2. In a steam-actuated valve for engines, the combination with a cylinder having inlet and exhaust ports, and a piston working therein, of a steam-chest secured to said cylinder, a frame fitted within said steam-chest and of less height than the said chest, ports in said frame, and registering ports in the walls of the steam-chest, a plate fitted on top of said frame and having a central opening, a valve fitted within the frame to reciprocate beneath said plate, and having inlet and exhaust ports, a second steam-chest secured to the first-mentioned steam-chest, ports for establishing communication between the second-named steam-chest and the ports in the walls of the first-mentioned steam-chest, a balanced valve in said second-named steam-chest, a stem connected to said valve, and connections between said stem and the piston-rod of the cylinder whereby the valve is actuated as said piston is reciprocated, substantially as described.

847,029. HEN'S NEST. CHARLES M. STEELY, Philadelphia, Pa. Filed May 18, 1906. Serial No. 317,571.

Claim.—A device of the class described comprising a casing including a nest-floor having an opening therein for the passage of eggs, a base-floor, one side of said casing being provided with an opening extending between the floors, a door hinged to said side of the casing in position to close the opening, an inclined flexible trough-shaped egg-receptacle located between the floor and in spaced relation to the base-floor and a tray removably located upon the base-floor and beneath the nest-floor.

847,030. HAND-CAR. JOHN H. TAYLOR, Normandy, Tenn. Filed Dec. 28, 1906. Serial No. 349,909.

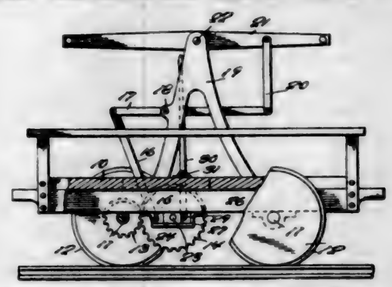

Claim.—1. In a hand-car, the combination with the driven axle and its pinion, of the drive-gear and its axle, a pivotally-supported bearing for the axle of the drive-gear, and a lever pivotally connected with the said bearing to move it on its pivot and disconnect or connect the driving-gear from the said pinion.

2. In a hand-car the combination with the driven axle and its pinion, of the drive-gear, means for operating it, a pivoted bearing for the axle, means for supporting the bearing, and a lever pivotally connected with said bearing to move it on its pivot and disconnect or connect the driving-gear from the said pinion.

847,031. MANICURE IMPLEMENT. ABRAHAM L. TOLMAN, Orange, Mass. Filed Jan. 25, 1906. Serial No. 297,735.

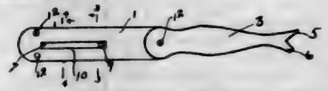

Claim.—1. The herein-described implement consisting of the combination of a pair of plates provided at one end with spring-fingers terminating in tweezer-points and at the other end formed with a centrally-located groove between said plates, a rivet on each side of said groove for holding the plates in contact, a slot in one plate communicating with said groove and a needle in said groove having its inner end upturned through said slot.

2. The herein-described implement consisting of the combination of a pair of plates provided at one end with swinging tweezer-fingers pivoted thereto, a slot in one of said plates and a needle slidably held between said plates and having the end thereof upturned through said slot, whereby said tweezer-fingers when swung over said plates will cover said upturned needle end.

847,032. PROCESS FOR THE PRODUCTION OF PIGMENTS. CLINTON P. TOWNSEND, Washington, D. C., assignor to Elmer A. Sperry, Cleveland, Ohio. Filed Apr. 18, 1902. Renewed Feb. 11, 1907. Serial No. 356,871.

Claim.—1. The method of producing white lead which consists in passing an electric current from a lead anode to a cathode through an electrolyte capable of yielding a lead solvent and containing a carbonating agent, causing the electrolyte to flow past an electrode and thence to a point outside the field of electrolysis at sufficient velocity

to transport the pigment, and transporting the pigment by such flow, substantially as described.

2. The method of producing white lead which consists in passing an electric current from a lead anode to a cathode through an electrolyte capable of yielding a lead solvent and containing a carbonating agent, causing the electrolyte to flow past the anode and thence to a point outside the field of electrolysis at sufficient velocity to transport the pigment, and transporting the pigment by such flow, substantially as described.

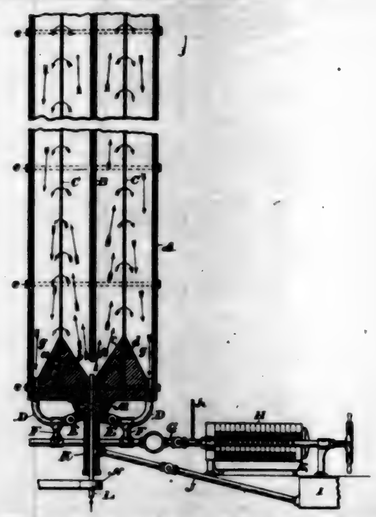

3. The method of producing white lead which consists in passing an electric current from a lead anode to a cathode through an electrolyte capable of yielding a lead solvent and containing a carbonating agent, causing the electrolyte to flow between the electrodes and thence to a point outside the field of electrolysis at sufficient velocity to transport the pigment, and transporting the pigment by such flow, substantially as described.

4. The method of producing white lead which consists in passing an electric current from a lead anode to a cathode through an electrolyte capable of yielding a lead solvent and containing a carbonating agent, causing the electrolyte to flow repeatedly past an electrode and thence to a point outside the field of electrolysis at sufficient velocity to transport the pigment, and transporting the pigment by such flow, substantially as described.

847,033. GRAMOPHONE MECHANISM. EDUARD WAWRINA, Vienna, Austria-Hungary. Filed Nov. 7, 1905. Serial No. 286,306.

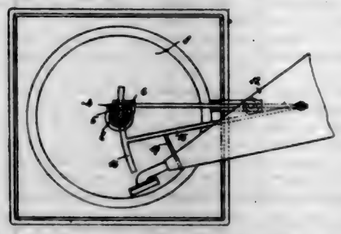

Claim.—1. The combination of a gramophone and its rotary record-tablet, a movable stylus-supporting member, means for supporting said member, and means, operative from said tablet and comprising a rotary part engaged with the tablet, for moving the stylus relatively to the tablet, substantially as described.

2. The combination of a gramophone and its rotary record-tablet having a concentric hub, a movable stylus-supporting member, means for supporting the said member and means, operative from said hub and comprising a rotary part engaged with the tablet, for moving said member on its pivot whereby to effect a movement of the stylus relatively to the tablet, substantially as described.

3. The combination of a gramophone and its rotary record-tablet, a pivoted stylus-supporting member and means comprising a rotary toothed part engageable with the tablet and a rack controlling said stylus-supporting member, for moving said member on its pivot and thus moving the stylus relatively to the tablet, substantially as described.

4. The combination of a gramophone and its rotary record-tablet, an arm, means for supporting said arm, a rotary toothed part engageable with the tablet and journaled in said arm, a stylus-supporting member fulcrumed in said arm and a rack carried by said member and engaging said toothed part, substantially as described.

5. The combination of a gramophone and its rotary record-tablet, an arm, means for supporting said arm, said tablet having a concentric hub, a rotary toothed part engaging the hub and journaled in said arm, means for maintaining said part in engagement with the hub, a stylus-supporting member fulcrumed in said arm and a rack carried by said member and engaging said toothed part, substantially as described.

847,034. BLUE-PRINTING MACHINE. SAMUEL B. WHINERY, Pittsburg, Pa. Filed Sept. 24, 1903. Serial No. 174,487.

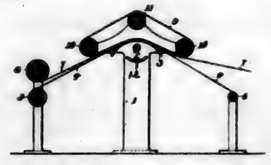

Claim.—1. In a blue-printing machine, a curved fixed transparent printing-surface consisting of a segment of a cylinder, means for causing the sensitised paper and the characters to be printed to travel transversely over the convex face of the printing-surface, and a lamp at the concave side of the printing-surface and parallel to the said surface.

2. In a printing-machine, a curved fixed transparent printing-surface, means for causing the sensitized paper and the characters to be printed to travel transversely over the convex face of the printing-surface and light-radiating means at the concave side of the printing-surface.

847,035. MAIL-CONVEYER. FRANK S. WHITE and JEROME F. STAFFORD, Minneapolis, Kans. Filed Sept. 13, 1906. Serial No. 334,478.

Claim.—1. A mail-conveying system comprising terminal uprights, a cable rigidly supported by the uprights, a traveling cable mounted beneath the first-named cable, a bracket including arms, wheels carried by the arms and arranged to travel upon the fixed cable, a clip carried by the bracket and connected with the traveling cable, and a carrier supported by the bracket.

2. A mail-conveying system comprising terminal uprights, a cable rigidly supported by the uprights, a traveling cable arranged beneath the first-named cable, a bracket formed of a bar of metal bent to form right-angularly-extended portions, a wheel journaled at the end of one of the portions, an arm connected with the said portion, a wheel journaled upon the arm, said wheels being arranged to travel upon the fixed cable, and a clip carried by the other portion and connected with the traveling cable.

3. A mail-conveying system comprising terminal uprights, a cable rigidly supported by the uprights, an endless cable mounted for travel beneath the first-named cable,

a bracket having a portion secured to the endless cable and arranged for travel upon the fixed cable, and a carrier supported by the bracket.

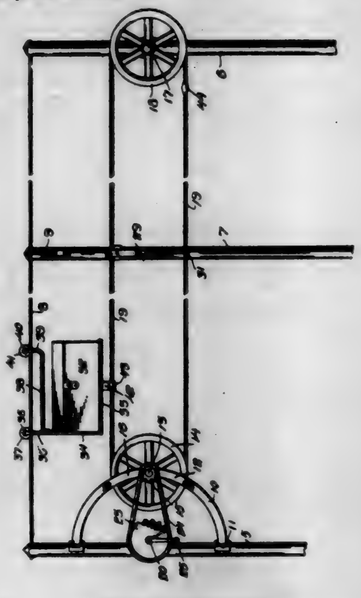

847,036. HARROW. JAMES F. WILLIAMS, Sturgis, Miss. Filed July 12, 1906. Serial No. 325,956.

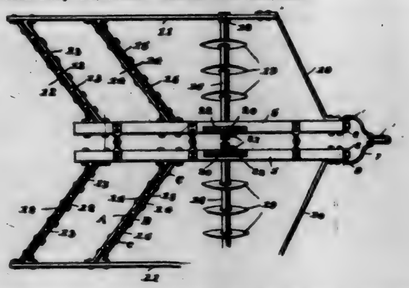

Claim.—A harrow comprising longitudinally-extending beams, pivotally connected for independent vertical movement, rearwardly and laterally extending front members secured to the beams, rearwardly-extending side members carried by the outer ends of the front members and extending in parallel relation to the beams and rearwardly therebeyond, forwardly-convergent tooth-bars secured to the rearward ends of the side members and to the beams, tooth-bars secured to the beams and side members forwardly of the first-named tooth-bars and in parallel relation thereto, ground-treating teeth carried by the bars, brackets carried by the beams and side members forwardly of the tooth-bars, transverse shafts journaled in the brackets, disks mounted upon the shafts, the disks of each shaft lying in parallel relation and at an angle to the beams, levers carried by the shafts for movement of the latter in their bearings, means for holding the levers with the shafts at different points of their movement, and a yoke having inwardly-turned end portions in which the forward ends of the beams are revolubly engaged, said yoke being adapted for the attachment of a draft-animal thereto.

847,037. GROUPING MECHANISM FOR VOTING-MACHINES. CHARLES C. ABBOTT, Pittsfield, Mass., assignor to Triumph Voting Machine Company, Pittsfield, Mass., a Corporation of New Jersey. Filed Dec. 26, 1906. Serial No. 349,550.

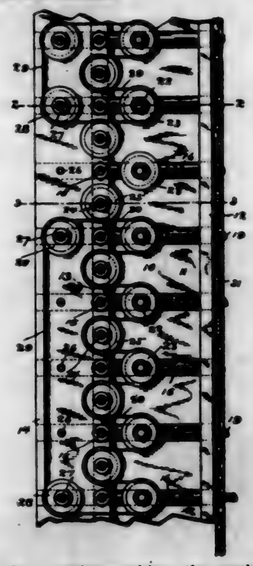

Claim.—1. In a voting-machine, the combination of a grouping-upright, slides in the upright, rollers on the upright and on the slides and a flexible endless grouping member passing over said rollers, substantially as described, for the purpose specified.

2. In a voting-machine, the combination of a grouping-upright, rollers 25 mounted thereon, slides reciprocating in the upright, rollers 23 mounted thereon, rollers 28 mounted on the upright and an endless flexible grouping member passing alternately about rollers 23 and 25 and about rollers 28.

3. In a voting-machine, the combination of a grouping-upright having rollers 25 mounted thereon and screw-holes 26, screw-studs engaging said holes and carrying rollers 28, slides reciprocating in the upright, rollers mounted thereon and an endless flexible grouping member passing alternately about rollers 22 and 25 and about rollers 28.

4. In a voting-machine, the combination of a grouping-upright comprising a plate 11 having vertical flanges 12 and 13 and a plate 14 secured to flange 13, said flanges being provided with guide-holes, slides reciprocating in said guide-holes, rollers 23 mounted on the slides, rollers 25 and 28 mounted on the upright and an endless flexible grouping member passing about said rollers.

5. In a voting-machine, the combination of a grouping-upright, slides in the upright, rollers on the upright and on the slides, an endless flexible grouping member passing over said rollers, and means for locking the slides against movement in regular voting.

6. In a voting-machine, the combination of a grouping-upright, slides in the upright, rollers on the upright and on the slides, an endless flexible grouping member passing over said rollers and screw-pins in the upright engaging the slides to lock the slides against movement in regular voting.

7. In a voting-machine, the combination of a grouping-upright, slides in the upright, rollers on the upright and on the slides, an endless flexible grouping member passing over said rollers, and means for returning the slides to their normal position after a voting operation.

8. In a voting-machine, the combination of a grouping-upright, slides in the upright, rollers on the upright and on the slides, an endless flexible grouping member passing over said rollers and laterally-movable returning-bars which return the slides to their normal position after a voting operation and lock them.

847,038. DRYING-MACHINE. ELWOOD B. AYRES, Philadelphia, Pa., assignor to The Philadelphia Textile Machinery Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Nov. 17, 1906. Serial No. 343,852.

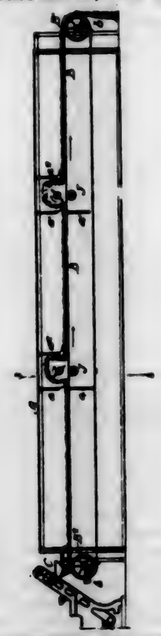

Claim.—1. The combination in a drying-machine, of a perforated endless-belt conveyer, a lifter having arms arranged close to the belt so driven that its under side will move in a direction opposite to the direction of movement of the conveyer and at such a speed that the material will be lifted off the conveyer and carried over the rotating lifter, with a partition situated at one side of the lifter above the material, so that the material as it passes over the lifter will come in contact with the partition and be directed onto the belt, substantially as described.

2. The combination in a drying-machine, of an endless perforated conveyer, a rotating lifter, said lifter being rotated so that its under side will move in a direction opposite to the direction of movement of the conveyer, with partitions on each side of the lifter above the material carried by the belt, and means for circulating air through the endless belt and the material, substantially as described.

3. The combination in a drying-machine, of an endless-belt conveyer, a lifter having fingers arranged to lift the material, the under side of the lifter moving in a direction opposite to the direction of movement of the belt so that the material on the belt will be carried over the lifter, a roller supporting the belt and mounted directly under the lifter, and partitions extending across the drier on each side of the lifter, substantially as described.

847,039. LOOSE-LEAF BINDER. JOHN B. BARLOW, Grand Rapids, Mich. Filed Apr. 9, 1906. Serial No. 310,831.

Claim.—1. In a loose-leaf-binding device, the combination of top and bottom covers, binding-posts having one end connected to one cover, and the other end provided with a head, the other cover provided with openings to receive the binding-posts, a yieldable locking-strip upon the latter cover and slidably connected thereto, said strip being bent on itself to form offsets and having keyhole-slots engaging at one end the heads of the binding-posts and at the other end permitting such heads to pass therethrough.

2. In a loose-leaf-binding device, the combination of top and bottom covers, binding-posts having one end rigidly attached to the bottom cover, the top cover provided with openings permitting the binding-posts to pass therethrough, shoulders, necks and heads upon such binding-posts, the heads being of less diameter than the shoulders, and the holes in the openings on the top cover being of less diameter than said shoulders, a locking-strip having keyhole-slots for engagement with the heads of the binding-posts and being bent on themselves to form offsets to tension the top cover with respect to the bottom cover, and means for slidably connecting the locking-strip to the top cover.

3. In a loose-leaf-binding device and in combination with the top and bottom cover, a binding-post rigidly attached to the bottom cover and having a shoulder, neck and head, such head being of less diameter than the full diameter of the binding-post, and an extension-post provided at one end with a similar shoulder, neck and head, and at the other end with means for detachably engaging the head upon the main body of the post.

847,040. COUNTING MECHANISM FOR VOTING-MACHINES. CARL G. BARNUM, Pittsfield, Mass., assignor to Triumph Voting Machine Company, Pittsfield, Mass., a Corporation of New Jersey. Filed Nov. 2, 1906. Serial No. 341,766.

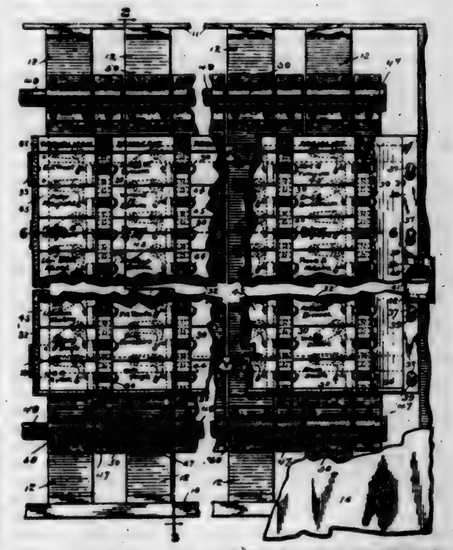

Claim.—1. In a machine of the character described the combination with counters having shafts extending therefrom, weights secured to said shafts and depending therefrom and pins projecting from the weights, of voting members having counter-dogs adapted to engage the pins, mechanism for causing engaged counters to rotate bodily

about the pins and mechanism for disengaging the counter-dogs from the pins near the end of the rotation of the counters about the pins leaving the weights to complete the rotation of the counter-shafts.

2. In a machine of the character described the combination with counters having shafts extending therefrom, weights secured to said shafts and depending therefrom and pins projecting from the weights, of oscillatory voting members having counter-dogs with holes adapted to receive the pins in the engaging position, mechanism for causing engaged counters to rotate bodily about the pins and mechanism for disengaging the counter-dogs from the pins near the end of the rotation of the counters about the pins leaving the weights to complete the rotation of the counter-shafts.

3. In a machine of the character described the combination with counters having shafts extending therefrom, weights secured to said shafts and depending therefrom and pins projecting from the weights, of voting members having counter-dogs adapted to engage the pins, counter-bars by which the counters are carried, mechanism for imparting to the counter-bars endwise and lateral rotary oscillation and for imparting to engaged counters bodily rotation about the pins and mechanism for disengaging the counter-dogs from the pins near the end of the rotation of the counters about the pins leaving the weights to complete the rotation of the counter-shafts.

4. In a machine of the character described the combination with counters having shafts extending therefrom, weights secured to said shafts and depending therefrom and pins projecting from the weights, of voting members having counter-dogs adapted to engage the pins, mechanism for causing engaged counters to rotate bodily about the pins, and resetting-slides having inclines which disengage the counter-dogs from the pins near the end of the rotation of the counters about the pins, leaving the weights to complete the rotation of the counter-shafts.

5. In a machine of the character described the combination with a counter-shaft having a weight depending therefrom and a pin extending from the weight, of voting mechanism, a counter-dog controlled thereby and engaging the pin, mechanism for causing the counter to rotate bodily and mechanism for disengaging the counter-dog before the end of the rotation of the counter, leaving the weight to complete the rotation of the counter-shaft.

6. In a machine of the character described the combination with counters having shafts extending therefrom and weights depending from said shafts, of a counter-locking door contiguous to said weights and which is engaged by said weights to prevent complete rotation of the counter-shafts in either direction.

7. In a machine of the character described the combination with counters having shafts extending therefrom and weights depending from said shafts, of a counter-locking door normally engaged by said weights and preventing forward rotation of the counter-shafts and also preventing complete backward rotation of the counter-shafts by the engagement therewith of the weights when they are swung above the counter-shafts.

8. In a machine of the character described the combination with counters having shafts extending therefrom and weights depending from said shafts, of a counter-locking door contiguous to said weights to prevent complete rotation of the counter-shafts in either direction and means for moving the counters bodily away from the door and imparting rotation to the counter-shafts.

9. In a machine of the character described the combination with counters having shafts extending therefrom and weights depending from said shafts, of a counter-locking door contiguous to said weights, for the purpose set forth, voting members having counter-dogs adapted to engage the weights, counter-bars by which the counters are carried and means for imparting endwise and lateral oscillation to the counter-bars to move the counters away from the door and rotate the shafts of engaged counters.

10. In a machine of the character described the combination with counters having shafts extending therefrom and weights depending from said shafts, of a counter-locking door contiguous to said weights, for the purpose set forth, voting members having counter-dogs adapted to engage the weights, counter-bars by which the counters are carried, means for imparting endwise and lateral oscillation to the counter-bars, for the purpose set forth, and means for disengaging the counter-dogs from the weights near the end of the rotation of the counter-shafts, leaving the weights to complete the rotation.

11. In a machine of the character described the combination with counters having shafts extending therefrom and weights secured to said shafts, of a counter-locking door which is engaged by the weights to prevent complete rotation of the counter-shaft in either direction and is provided with openings to disclose the counter-numerals.

12. In a machine of the character described the combination with counters having shafts extending therefrom and weights secured to said shafts, of a counter-locking door which is engaged by the weights to prevent complete rotation of the counter-shaft in either direction and is provided with openings to disclose the counter-numerals and with ways to receive ballot-strips.

13. In a machine of the character described the combination with counters having shafts extending therefrom and weights depending from said shafts, of a counter-locking door which is engaged by said weights to prevent complete rotation of the counter-shafts in either direction and is provided with openings 30 to disclose the counter-numerals and with ways on its outer face and ballot-strips in said ways.

14. In a machine of the character described the combination with a front plate, voting members having counter-dogs, counters having shafts extending therefrom, weights depending from said shafts and pins extending from the weights and adapted to be engaged by the counter-dogs, of a counter-locking door which is engaged by the weights to prevent complete rotation of the counter-shafts in either direction and is provided with openings to disclose the counter-numerals and ways upon the front plate and counter-locking door to receive corresponding ballot-strips.

15. In a machine of the character described the combination with a front plate, voting mechanism, counters, locking means upon the counters, and connecting mechanism intermediate the voting mechanism and the counters, of a counter-locking door engaging the counter-locking means and having openings to disclose the counter-numerals and corresponding ballot-strips on the front plate and door.

16. In a machine of the character described the combination with the front plate, voting members, counters, locking means upon the counters, connecting mechanism intermediate the voting members and the counters, and counter-actuating mechanism, of a counter-locking door engaging the counter-locking means and having openings to disclose the counter-numerals, ways on the front plate and door and ballot-strips in said ways corresponding with the respective voting members and counters, so that the votes for candidates may be tabulated while the counters remain locked.

17. In a machine of the character described the combination with counters having shafts extending therefrom and weights depending from the shafts, of a counter-locking door which is engaged by the weights, for the purpose set forth, headed studs upon the free edge of the door, a locking-plate having openings which receive the heads of the studs and slots leading therefrom which receive the shanks of the studs and means for locking said plate in the engaging position.

18. In a machine of the character described the combination with counters having shafts extending therefrom and weights depending from the shafts, of a counter-locking door which is engaged by the weights, for the purpose set forth, headed studs upon the free edge of the door, a locking-plate having openings which receive the heads of the studs, slots leading therefrom which receive the shanks of the studs and a locking-lug and a bracket contiguous to the locking-lug in the closed position, said bracket and said lug being provided with holes in line with each other to receive the hasp of a padlock.

19. In a machine of the character described the combination with counters having shafts extending therefrom and weights depending from the shafts, of a counter-locking door which is engaged by the weights, for the purpose set forth, headed studs upon the free edge of the door, a locking-plate having openings which receive the heads of the studs, slots leading therefrom which receive the shanks of the studs and a locking-lug, a bracket having a stop engaged by the door and means for securing the locking-lug to the bracket.

847,041. AUTOMOBILE-TIRE-WINDING MACHINE. EUGENE D. C. BAYNE and LAWRENCE A. SUBERS, Cleveland, Ohio. Filed Nov. 19, 1906. Serial No. 344,094.

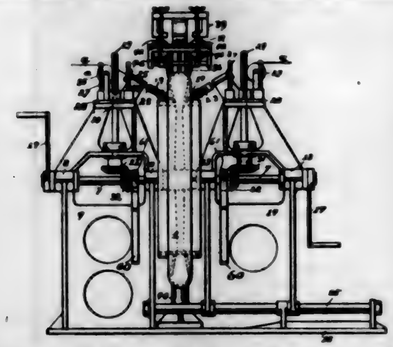

Claim.—1. In a machine for circumferentially winding insulated thread to form a tire-casing or tube, a circular frame separable into component portions, a rotatable support to which the tire-frame is detachably secured at its inner edge, a shaft on which said rotatable support is secured, and means for rotating the shaft, substantially as described.

2. In a machine for the purpose described, a rotatable tire-frame, said tire-frame being divisible in sections, a rotatable support upon which said tire-frame is mounted, said tire-frame being detachable from said support, a shaft having a separable portion upon which said support and tire-frame are mounted, and bearings for each portion of said shaft, the bearings for said separable portion of said shaft being movable toward and from said tire-frame and support, substantially as described.

3. In a machine for the purpose described, an annular rotatable tire-frame formed in separable portions, a rotatable support therefor to which the tire-frame is detachably secured at its inner edge, a shaft on which said tire-frame and support are mounted, means for rotating said shaft and instrumentalities for applying a thread insulated with adhesive material to all parts of the surface of said tire-frame, as said tire-frame rotates whereby said insulated thread is wound circumferentially thereon, substantially as described.

4. The combination with a rotatable collapsible tire-frame and a pivotal support therefor, of means for rotating said tire-frame and instrumentalities for applying threads insulated with an adhesive substance simultaneously to the crown and side surfaces of said tire-frame as said tire-frame rotates, whereby said insulated threads are circumferentially wound thereon, substantially as described.

5. The combination with a rotatable tire-frame having sides and tread and lateral surfaces and a pivot-support therefor, of means for rotating said tire-frame, instrumentalities for applying thread insulated with adhesive material directly to the sides of said tire-frame, instrumentalities for applying similar insulated thread to the tread portion thereof, and instrumentalities for applying thread similarly treated to the lateral surfaces thereof, whereby a unitary surface is produced, substantially as described.

6. In a machine for the purpose described, the combination with a separable rotatable tire-frame, of a rotatable wheel having an expansible rim upon which said tire-frame is mounted, a supporting-shaft therefor interlocking extremities for said shaft, fixed bearings for one portion of said shaft and movable bearings for the other portion of said shaft and means for rotating said shaft and tire-frame and tire-frame support, substantially as described.

7. The combination with a rotatable tire-frame, having side, tread and lateral surfaces adapted to receive circumferentially-wound insulated threads, and a pivotal support therefor of means for rotating said tire-frame, director-wheels positioned and arranged upon each side of said tire-frame, by means of which insulated thread is applied to the aforesaid surfaces of said tire-frame, and instrumentalities for obtaining lateral and vertical movements for the director-wheels, substantially as described.

8. The combination with a rotatable tire-frame on which circumferentially-laid insulated threads can be wound and means for rotating the same, of director-wheels over which the insulated threads are applied to the tire-frame, supports for said wheels, means for supplying said wheels with elastic pressure and guide-wheels on said supports adapted to lead the insulated threads to said director-wheels, substantially as described.

9. In combination with a rotatable tire-frame having tread and side and lateral surfaces, and a pivotal support therefor of means for rotating the tire-frame, grooved spring-pressed directors adapted to apply the insulated thread to the aforesaid surfaces, supports for said directors, and means for giving a radial movement to the directors which apply the insulated thread to the sides of the tire-frame, said movement controlled by the said means for rotating said tire-frame, substantially as described.

10. In combination in a machine for the purpose set forth, a rotatable tire-frame having a crown, sides and lateral extensions, a shaft and rimmed wheel on which the tire-frame is mounted, spring-pressed director-wheels in engagement respectively with the crown, sides and lateral extensions of said tire-frame, and arranged to apply an insulated thread directly thereto in a circumferential wind and automatically-operating mechanism for radially moving the side-winding director-wheels to correspond to the increasing diameter of the wind, substantially as described.

11. In combination in a machine for the purpose set forth, a rotatable tire-frame having a crown and side portions, an operating-shaft therefor, director-wheels and supports therefor adjacent to said tire-frame and on both sides thereof, adapted and arranged to engage the respective surfaces of crown and side portions, the supports for the director-wheels for the side portions having screw-threaded openings, screw-threaded shafts passing through said screw-threaded openings in said supports, and a geared connection between said screw-threaded shafts and the said operating-shaft, substantially as described.

12. In combination, in a machine for winding insulated threads circumferentially to form a tire-casing or tube, a rotatable and separable tire-frame having crown, side and laterally-extending portions, a rimmed wheel on which the tire-frame is mounted, a divided shaft therefor, bearings for said wheel, a bed-plate upon which said bearings are mounted, one set of said bearings being movable thereon, a pair of director-wheels for said thread adapted to engage the crown portion of said tire-frame and to move together as said cord is laid, a pair of director-wheels adapted to engage the side portions of said tire-frame and move diametrically outward as the thread is wound, a common support for the said crown-engaging wheels, said support mounted on said bed-plate, supports for said side-engaging wheels, said supports mounted in guides for radial movement relatively to said tire-frame, and having screw-threaded openings therein, and screw-threaded shafts passing through said openings and geared connections for said shafts and divided shafts, substantially as described.

13. A support for a pair of director-guides for the purpose set forth, consisting of a standard, an arm pivoted thereon, vertical rods spring-pressed and arranged for vertical movement in said arm, a fork to which the lower ends of said rods are secured, a horizontal rod in said

fork, upon which said director-wheels are loosely mounted, a semicircular hub for each wheel, in which said wheel rotates said hub having arms a guide-wheel in one of said arms, and a roller in the other, and a horizontal rod on said fork, on which said roller runs, substantiallily as described.

14. In combination with director-wheels, adapted to wind the crown-surface of a tire-case or tube, a horizontal rod on which said wheels are mounted, a support for said rod, an arm to which said support is adjustably secured for vertical movement, a guide-wheel for each director-wheel, said guide-wheels being arranged to move in unison with said director-wheels, substantially as described.

15. The combination with a collapsible and rotatable tire-frame, formed in detachable portions, having a coating of tenacious fabric thereon, of automatically-acting instrumentalities for applying a circumferential wind of thread thereon under elastic pressure.

16. The combination with a collapsible and rotatable tire-frame, of a rotating device for applying a circumferential wind of thread having a tenacious surface thereupon under elastic pressure.

17. The combination with a collapsible annular tire-frame, formed in detachable portions, of an expansible wheel-rim upon which said frame is detachably secured, and means for rotating said wheel, substantially as described.

847,042. HOSE-COUPLING. JOSEPH BERK, San Francisco, Cal. Filed Dec. 10, 1906. Serial No. 347,233.

Claim.—1. A hose-coupling, the two members whereof are identical in form, each comprising a spring having a loop and a pivoted arm adapted to engage the spring of the opposite member and extend the same, substantially as described.

2. A hose-coupling, the two members whereof are identical in form, each comprising a spring attached at its ends to the member, the middle portion forming a loop, and a pivoted arm adapted to engage the spring of the opposite member and extend the same, substantially as described.

3. A hose-coupling, the two members whereof are identical in form, each comprising a spring attached at its ends to the member, the middle portion forming a loop and the sides being coiled, and a pivoted arm adapted to engage the spring of the opposite member and extend the same, substantially as described.

4. A hose-coupling, the two members whereof are identical in form, each comprising a spring having a loop and a pivoted arm adapted to engage the spring of the opposite member and extend the same, said arm having a lip to engage the loop to release the spring when the arm is reversed, substantially as described.

5. A hose-coupling, the two members whereof are identical in form, each comprising a spring having a loop and a pivoted arm adapted to engage the spring of the opposite member and extend the same, each member having an oblique end and having also a guide covering the inner or retreating portion of said end, of the other member, substantially as described.

847,043. PNEUMATIC TOOL. EDWARD B. BOYER, Peoria, Ill. Filed Jan 2, 1906. Serial No. 294,119.

Claim.—1. The combination of a cylinder having longitudinally-disposed chambers spaced apart by a flanged portion, said cylinder having a longitudinally-disposed inlet-port extending from the rear end thereof to a point adjacent the flanged portion, a hammer-piston arranged in said cylinder, said piston fitting the bore in said flanged portion and said piston having an enlarged head fitting the bore of the cylinder, said piston being formed with longitudinally-disposed ports with lateral extensions opening through the sides of the piston, said cylinder having an exhaust-port in its side wall in front of said flanged portion thereof, said piston having an annular chamber in its rear end with which the ports in the piston communicate and a stationary imperforate buffer arranged in the rear end of the cylinder, said buffer being provided with a tubular chamber at its forward end of a length substantially equal to the length of that portion of the bore of the cylinder in which the head of the piston reciprocates.

2. The combination of a cylinder having longitudinally-disposed chambers spaced apart by a flanged portion, said cylinder carrying a longitudinally-disposed inlet-port extending from the rear end thereof to a point adjacent to the flanged portion, a hammer-piston slidably mounted in said flanged portion and arranged within the cylinder, said piston having an enlarged cup-shaped end, said end being of a size substantially the same as said cylinder and adapted to slide therein, said piston being formed with longitudinally-disposed ports with lateral extending ports passing through the sides of the piston and communicating one of said chambers with the other of said chambers after the hammer-piston has completed its forward movement, said cylinder being provided with an exhause-port opening into one of said chambers, a stationary imperforate buffer arranged in the rear end of the cylinder, said buffer being provided with a tubular chamber of a length substantially equal to the length of that portion of the bore of the cylinder in which the head of the piston reciprocates.

3. The combination with a cylinder having longitudinally-disposed chambers spaced apart by a flanged portion, said cylinder having a longitudinally-disposed inlet-port extending from the rear end thereof to a point adjacent to the flanged portion, a hammer-piston arranged in said cylinder, the body portion of said piston adapted to slide within said flanged portion, said piston having an enlarged end portion, said enlarged end portion adapted to close the inlet-valve, said piston being provided with longitudinally-disposed ports with laterally-extending extremities opening through the sides of the piston, said cylinder having an exhaust-port in its side wall in front of said flanged portion thereof, said longitudinal ports in the hammer-piston adapted to communicate with the chamber into which the exhaust-port leads upon the contact of said chamber-piston with the tool, thereby providing means by which the steam is exhausted from the compression-cylinder, a stationary imperforate buffer arranged in the rear end of the cylinder, said buffer being provided with a tubular chamber at its forward end of a length substantially equal to the length of that portion of the bore of the cylinder in which the head of the piston reciprocates.

847,044. THERMOSTATIC CIRCUIT-CONTROLLING DEVICE. LOUIS H. BRITTON, Cleveland, Ohio. Filed Dec. 10, 1906. Serial No. 347,190.

Claim.—1. A device of the class described having a pair of contacts, a vacuum-chamber, an air-opening, a fusible seal for closing said opening to normally preserve the vacuum in said vacuum-chamber, a body of conducting material normally maintained out of coöperative relation with said contacts by said vacuum and releasable by the breaking thereof on the fusion of said seal and movable at such time into position to electrically connect said contacts.

2. A device of the class described having a pair of contacts, a vacuum-chamber, an air-opening, a fusible seal for said air-opening, and a body of mercury normally upheld out of coöperative relation with said contacts by said vacuum and releasable by the breaking thereof on the fusion of said seal and movable by gravity into electrical connection with said contacts.

3. A device of the class described having a pair of contacts, a vacuum-chamber, a fusible seal to normally preserve the vacuum in said chamber, and a body of conducting material normally maintained out of coöperative relation with said contacts by said vacuum and releasable by the breaking thereof on the fusion of said seal and movable when released into position to electrically connect said contacts.

4. A device of the class described, comprising a body having a vacuum-space, a pair of contacts fitted in said body and separated by said space, a tube rising from said body and containing a conducting substance normally upheld therein by the vacuum, and a fusible seal in connection with the tube for normally maintaining the vacuum, said seal when fused causing the destruction of said vacuum and releasing said conducting substance, and the latter when released being movable into the space between said contacts and serving to electrically bridge the same.

5. A device of the class described having a body and a vacuum-space, contacts fitted in said body and separated by said space, a tube fitted to the body, rising therefrom and in communication with said space, a body of mercury normally upheld in said tube by the vacuum in said space, said tube having an air-opening, and a fusible seal in the tube normally closing said opening to maintain the vacuum, the seal when fused serving to break said vacuum and thereby release the mercury to permit the latter to flow into the space between the contacts to electrically connect the latter.

6. A device of the class described, having a T-shaped body, the portions of which are horizontally and vertically disposed respectively, and are provided with passages, contacts fitted in the passage in the horizontal portion and separated from each other by a vacuum-space, a tube fitted in the passage of the vertical portion, a body of mercury contained in said tube and normally upheld by the vacuum, said tube having an air-opening, and a seal in the tube for normally closing said opening and thus preserving the vacuum, said seal when fused causing the destruction of the vacuum and the release of the mercury, whereby the latter can gravitate into said space to electrically connect said contacts.

7. A device of the class described having a T-shaped body, the portions of which are horizontally and vertically disposed respectively, and are provided with passages, contacts fitted in the passage in the horizontal portion and separated from each other by a vacuum-space, a tube fitted in the passage of the vertical portion, a body of mercury contained in said tube and normally upheld by the vacuum, a seal in the tube for normally closing said opening and thus preserving the vacuum, said seal when fused causing the destruction of the vacuum and the release of the mercury, whereby the latter can gravitate into said space to electrically connect said contacts, and said tube having means for preventing the accidental dropping of said seal.

8. A device of the class described having a T-shaped body, the portions of which are horizontally and vertically disposed, and are provided with passages extending through the same, the body having interiorly thereof at the junction between said passages a shoulder, a tube fitted in the passage of the vertical portion and resting on said shoulder, said tube being narrowed at its base, having an opening in its apex, and an internal shoulder between its ends, a seal upheld by said internal shoulder, closing said opening and of fusible material, and a body of mercury in the tube between the seal and base.

847,045. SECTIONAL CASE FOR VOTING-MACHINES. ARTHUR B. CAMP, Pittsfield, Mass., assignor to Triumph Voting Machine Company, Pittsfield, Mass., a Corporation of New Jersey. Filed Sept. 4, 1906. Serial No. 333,040.

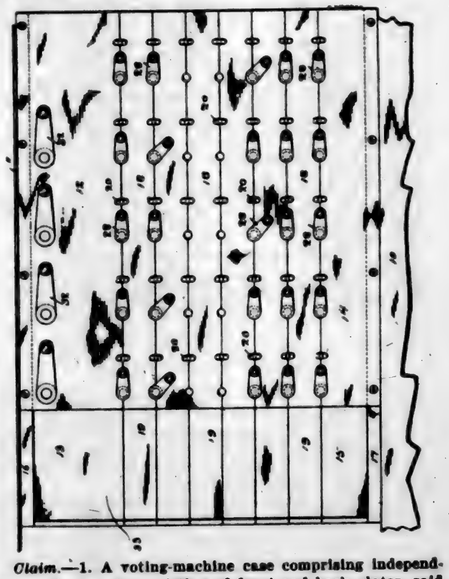

Claim.—1. A voting-machine case comprising independent sections each consisting of front and back plates, said plates being provided in their edges with corresponding recesses which together form bearings for voting members, and U-shaped tie-bolts by which the plates of the sections are secured together and the sections are secured to each other.

2. A voting-machine-case section comprising front and back plates provided in their edges with recesses 26, for the purpose set forth, near their edges with holes and from the holes to the edges with recesses, and U-shaped tie-bolts whose heads engage the recesses, one leg of each bolt passing through corresponding holes in the front and back plates.

847,046. CLOTHES-CLAMP. THOMAS W. DE LAUGHTER, Niles, Ohio. Filed Dec. 11, 1906. Serial No. 347,294.

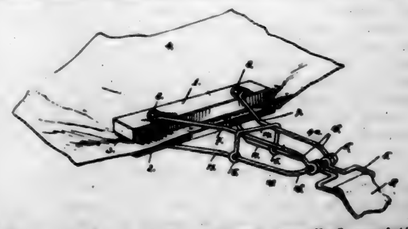

Claim.—A clamp of the character described consisting of two cleats having serrated confronting faces, pivotally-connected wire arms carried by said cleats, one of said arms being formed with an eyelet, and with loops for pivotally holding the other of said arms, a strap slidably mounted upon one of said arms and adapted to embrace the other of said arms.

847,047. GROUPING MECHANISM FOR VOTING-MACHINES. WILLARD M. DELAVAN and ARTHUR B. CAMP, Pittsfield, Mass., assignors to Triumph Voting Machine Company, Pittsfield, Mass., a Corporation of New Jersey. Filed Dec. 26, 1906. Serial No. 349,551.

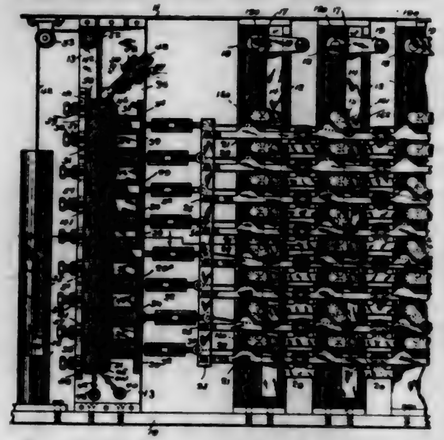

Claim.—1. In a voting-machine the combination of flexible members, slides to which they are connected, a flexible grouping member passing through the slides, means for locking the flexible grouping member both sides of each slide and means for returning the slides to their normal position after a voting operation.

2. In a voting-machine the combination of flexible members, slides to which they are connected, means for adjusting the length of the flexible members, means for locking the flexible grouping member both sides of each slide and means for returning the slides to their normal position after a voting operation.

3. In a voting-machine the combination of flexible members, slides to which they are connected, turnbuckles intermediate the flexible members and the slides, a flexible grouping member passing through the slides, means for locking the flexible grouping member both sides of each slide and means for returning the slides to their normal position after a voting operation.

4. In a voting-machine the combination of flexible members, slides to which they are connected, a grouping-upright in which the slides reciprocate, a flexible grouping member passing through the slides each end being connected to the upright, mean for locking the flexible grouping member both sides of each slide and means for returning the slides to their normal position after a voting operation.

5. In a voting-machine the combination of flexible members, slides to which they are connected, rollers 350 on the slides, a grouping-upright in which the slides reciprocate and which is provided with rollers 45, a flexible grouping member connected to the upright above and below the slides and passing alternately about the rollers on the slides and the upright, means for locking the flexible grouping member to rollers 45 and means for returning the slides to their normal position after a voting operation.

6. In a voting-machine the combination of flexible members, slides to which they are connected, rollers 350 on the slides, a grouping-upright having grooves in which said rollers travel and which is provided with rollers 45, a flexible grouping member connected to the upright above and below the slides and passing alternately about the rollers on the slides and the upright, means for locking the flexible grouping member to rollers 45 and means for returning the slides to their normal position after a voting operation.

7. In a voting-machine the combination of flexible members, slides to which they are connected, a grouping-upright in which the slides reciprocate, a flexible grouping member passing through the slides and connected to the upright at each end, one of said connections being adjustable, means for locking the flexible grouping member both sides of each slide and means for returning the slides to their normal position after a voting operation.

8. In a voting-machine the combination of flexible members, slides to which they are connected, a grouping-upright in which the slides reciprocate, a flexible grouping member passing through the slides and connected to the upright below the slides, an eye on the upright above the slides, a threaded rod passing loosely through the eye to which the upper end of the flexible grouping member is connected, and nuts engaging said rod and the opposite sides of the eye by which the flexible grouping member is adjusted.

9. In a voting-machine the combination of flexible members, slides to which they are connected, a grouping-upright in which the slides reciprocate, a flexible grouping member passing through the slides, means for adjusting the length of the flexible members and the flexible grouping member, and means for locking the flexible grouping member above and below each slide.

10. In a voting-machine the combination of flexible members, slides to which they are connected, rollers 350 on the slides, a grouping-upright in which the slides reciprocate and which is provided with rollers 45, a flexible grouping member connected to the upright and passing alternately about the rollers on the slides and the upright, friction-shoes for clamping the flexible grouping member to rollers 45, and screws engaging the upright by which the friction-shoes are carried.

11. In a voting-machine the combination of flexible members, slides to which they are connected, rollers 350 on the slides, a grouping-upright in which the slides reciprocate and which is provided with rollers 45, a flexible grouping member connected to the upright and passing alternately about the rollers on the slides and the upright, friction-shoes for clamping the flexible grouping member to rollers 45, screws passing through the upright, by which the friction-shoes are carried, pins extending from the upright and engaging the shoes, and set-nuts for locking the shoes after adjustment.

12. In a voting-machine the combination of flexible members, slides to which they are connected, rollers 35 and 350 on the slides, a grouping-upright in which the slides reciprocate and which is provided with rollers 45 and 46, a flexible grouping member connected to the upright and passing alternately about rollers 45 and 350, a flexible returning member connected to the upright below the slides and passing alternately about rollers 35 and 46, and a weight connected to the flexible returning member.

13. In a voting-machine the combination of flexible members, slides to which they are connected, rollers 35 and 350 on the slides, a grouping-upright in which the slides reciprocate and which is provided with rollers 45 and 46, a flexible grouping member connected to the upright above and below the slides, and passing alternately about rollers 45 and 350, a flexible returning member connected to the upright below the slides and passing alternately about rollers 35 and 46, rollers above the slides over which the flexible returning member passes, a weight on said member and a dash-pot in which the weight slides.

14. In a voting-machine the combination of flexible members, slides to which they are connected, a flexible grouping member passing through the slides and means for locking the flexible grouping member both sides of each slide.

15. In a voting-machine the combination of voting members, flexible members engaged thereby in the operation of voting, slides to which the flexible members are connected, a flexible grouping member passing through the slides, means for locking the flexible grouping member both sides of each slide, means for returning the slides after a voting operation and means for returning the slides after a voting operation.

16. In a voting-machine the combination of voting members provided with locking-lugs, flexible members engaged thereby in the operation of voting, slides to which the flexible members are connected, a flexible grouping member passing through the slides, means for locking the flexible grouping member above and below each slide, means for returning the slides after a voting operation and reciprocating wedge-bars which engage the locking-lugs to reset the voting members after a voting operation.

17. In a voting-machine the combination of flexible members, slides to which they are connected, a grouping-upright in which the slides reciprocate, threaded rods extending from the slides and passing through the upright, nuts on said rods for determining the number of slacks given to the flexible members, for the purpose set forth, a flexible grouping member passing through the slides and connected to the upright and means for locking the flexible grouping members both sides of each slide.

18. In a voting-machine the combination of flexible members, slides to which they are connected, a grouping-upright in which the slides reciprocate and which is provided with an end strip 38, threaded rods extending from the slides and passing through said end strip, a nut 65 on said rod between the slides and the end strip, a nut 66 on said rod outside the end strip, for the purpose set forth, a flexible grouping member passing through the slides and connected to the upright and means for locking the flexible grouping member above and below each slide.

19. In a voting-machine the combination of voting members provided with locking-lugs, flexible members engaged thereby in the operation of voting, voting-member uprights provided with lugs 21, slides to which the flexible members are connected, a flexible grouping member passing through the slides, means for locking the flexible grouping member above and below each slide, means for returning the slides after a voting operation and reciprocating wedge-bars supported by lugs 21 which engage the locking-lugs to reset the voting members.

20. In a voting-machine the combination of slides, a flexible grouping member passing through said slides and means for locking the flexible grouping member both sides of each slide.

21. In a voting-machine the combination of slides, a grouping-upright in which they reciprocate, a flexible grouping member passing through the slides and connected to the upright and means for locking the flexible member both sides of each slide.

847,048. CHANGE-GEARING. ARCHIBALD H. EHLE, Philadelphia, Pa. Filed Oct. 16, 1906. Serial No. 339,186.

Claim.—1. The combination of a frame, an intermediate shaft and a driving-shaft arranged parallel with each other and mounted in bearings in the said frame, a driving-shaft arranged at right angles to said shafts and in a central position in respect thereto, a bevel-pinion mounted on the said shaft, the intermediate shaft having a squared portion, a sleeve mounted on the squared portion so as to slide on but turn with the shaft and having teeth at each end, bevel-wheels mounted on the cylindrical portions of the shafts, one on each side of the squared portion and meshing with the bevel-pinions of the driving-shaft, said wheels having teeth on their faces arranged to engage the teeth of the clutch-sleeve, gear-wheels of different diameters, one secured to one end of the intermediate shaft and the other secured to the opposite end of the intermediate shaft between the bevel-wheels and the bearings, a driven shaft having a central squared portion, a long sleeve mounted on the squared portion having teeth at each end, gear-wheels loosely mounted on the cylindrical portions of the said shaft on each side of the squared portion, said wheels differing in diameter so as to mesh with the wheels on the intermediate shaft, and means for shifting the two sleeves, substantially as described.

2. The combination of a frame, an intermediate shaft and a driving-shaft arranged parallel with each other and mounted in bearings in the said frame, a driving-shaft arranged at right angles to said shafts and in a central position in respect thereto, a bevel-pinion mounted on the said shaft, the intermediate shaft having a squared portion, a sleeve mounted on the squared portion so as to slide on but turn with the shaft and having teeth at each edge, bevel-wheels mounted on the cylindrical portions of the shafts, one on each side of the squared portion and meshing with the bevel-pinions of the driving-shaft, said wheels having teeth on their faces arranged to engage the teeth of the clutch-sleeve, gear-wheels of different diameters, one secured to one end of the intermediate shaft and the other secured to the opposite end of the intermediate shaft between the bevel-wheels and the bearings, a driven shaft having a central squared portion, a long sleeve mounted on the squared portion having teeth at each end, gear-wheels loosely mounted on the cylindrical portions of the said shaft on each side of the squared portion, said wheels differing in diameter so as to mesh with the wheels on the intermediate shaft, and means for shifting the two sleeves, said driven shaft extending beyond the bearings on each side, and sprocket-wheels mounted on the extensions of the shaft, substantially as described.

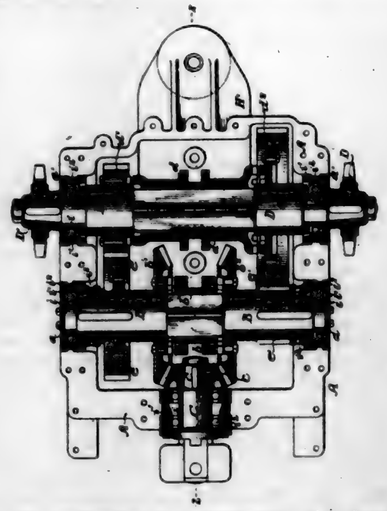

3. The combination in a change-gear, of a frame, a driving-shaft mounted in bearings in the frame, a bevel-pinion thereon, an intermediate shaft, ball-bearings on the frame for the said intermediate shaft, a clutch-sleeve mounted on the central portion of the said shaft so as to turn with but slide upon the shaft, two bevel-wheels loose on the shaft and meshing with the driving-pinion, two gear-wheels one on each end of the shaft between the bearing-boxes and the hubs of the bevel-wheels, said gear-wheels being of different diameter and having extended hubs, thrust-bearings mounted on the extended hubs of the said gear-wheels, each of said bearings consisting of two rings and a series of balls between them, a driven shaft, gear-wheels on the shaft meshing with the gear-wheels on the intermediate shaft, and means for locking one or other of the gear-wheels to the driven shaft, substantially as described.

847,049. STOVEPIPE-ELBOW. WILLIAM C. EMBURY, Rochester, N. Y. Filed Feb. 12, 1906. Serial No. 300,665.

Claim.—1. A stovepipe-elbow comprising two transversely-corrugated sections, the corrugations of one section being entered within those of the other at both sides of the elbow and the corrugations thus combined extending entirely around the elbow.

2. A stovepipe-elbow comprising two transversely-cor-

rugated sections, the corrugations of one section being entered within those of the other, said corrugations having similarly-situated coacting faces bearing against each other and opposing separation of said sections lengthwise the elbow, said corrugations being wider on the outer than on the inner side and the combined corrugations occupying the entire surface of the elbow except the ends.

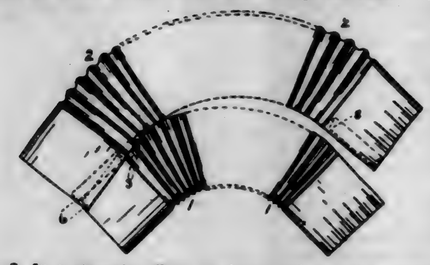

3. In a stovepipe-elbow, an inner and an outer section, the sections being corrugated transversely except at their ends, the corrugations of the sections being adapted to be engaged about midway between the smaller and larger longitudinal curves of the elbow.

4. In a stovepipe-elbow, an inner section with tapering or wedge-shaped corrugations, an outer section with similar wedge-shaped corrugations, the wider parts of the corrugations on the inner section engaging the narrower parts of the corrugations on the outer section, the sections having end securing means.

5. In a stovepipe-elbow, an inner section with approximately radial corrugations, an outer section with similar corrugations, said corrugations not registering when the edges of the sections are placed side by side, the sections being adapted to yield or spring to bring such corrugations into engagement.

6. A stovepipe-elbow comprising two transversely-corrugated sections, the corrugations of one section being suitable to enter within those of the other, said sections having folded parts at their ends adapted to be assembled endwise to provide for nesting the sections of a plurality of elbows.

847,050. SYSTEM OF LUBRICATION FOR TURBINES. WILLIAM L. R. EMMET, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 22, 1903. Serial No. 162,524.

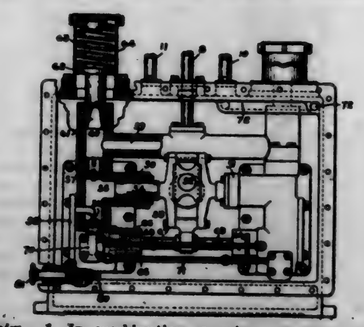

Claim.—1. In combination, a prime mover, a vacuum-chamber therefor, a bearing located therein, a pump for supplying lubricant under pressure to the bearing, a means for equalising the pressures of the fluid discharge by the bearing and that on the suction side of the pump, and a means assisting to fill the cylinder of the pump on its suction-stroke.

2. A prime mover and a bearing therefor, in combination with pumps supplying lubricant to the bearing, an equalising-chamber for the pumps, an elastic yielding means connected with said chamber, and a means for positively feeding fluid to the cylinders of the pumps on their suction-strokes.

3. A prime mover and a bearing therefor, in combination with pumps supplying lubricant to the bearing, an equalising-chamber therefor, a means for positively feeding fluid to the cylinders of the pumps on their suction-strokes, and a yielding medium located between the pump and bearing and acted upon by the fluid delivered by the pumps.

4. A prime mover and a bearing therefor, in combination with a pump supplying lubricant to the bearing, a means for positively supplying fluid to the pump-cylinder on its suction-stroke, and a yielding medium which is acted upon by the fluid delivered by the pump.

5. A prime mover having a vertical shaft, a step-bearing for supporting the shaft comprising upper and lower blocks between which a film of lubricant is maintained, and gu'de-bearings for the shaft, in combination with a pump for supplying lubricant under pressure to the bearings, a conduit extending from an upper to a lower guide-bearing for supplying the latter with lubricant, and a conduit extending from the lower guide-bearing to the said pump.

6. A prime mover comprising a vertical shaft, a step-bearing for supporting the shaft including upper and lower blocks, between which a film of lubricant is maintained, a guide-bearing, a chamber which surrounds the step and guide bearings and receives lubricant exhausting therefrom, a pump which supplies lubricant to the step-bearing and also to the guide-bearing, and a conduit which receives lubricant from the chamber and returns it to the pump.

7. In combination, a turbine having a step-bearing, a chamber in which the bearing is located, a pump for supplying fluid under high pressure to the bearing, a supply-chamber therefor, a collection-chamber formed in the bearing, and a conduit for equalising the fluid-pressures in the bearing and supply chambers.

8. In combination, a turbine having a step-bearing, a chamber in which the bearing is located, a pump for supplying fluid under high pressure to the bearing, a supply-chamber therefor, a collection-chamber formed in the bearing, a conduit for equalising the pressures in the bearing and supply chambers, and a means acting in combination with the piston for forcing fluid into the pump-cylinder during the suction-stroke.

9. In combination, a turbine having a step-bearing comprising upper and lower blocks between which a film of lubricant is maintained, a guide-bearing located above the step-bearing and in proximity thereto, a pump which supplies lubricant to the step-bearing from which it flows to the guide-bearing, and a conduit which returns the lubricant to the pump after it has passed through both bearings.

10. In combination, a casing divided into compartments, a pump located in one compartment, a means for positively filling the pump-cylinder on the suction-stroke, a second pump located in the second compartment, and a driving-shaft which extends into both compartments and is common to the pumps.

11. In combination, a casing divided by a wall into compartments, a pump, a second pump for filling the first pump-cylinder on the suction-stroke, a third pump, a single driving-shaft which extends through the wall, a cross-head actuated by the shaft and connected to the first and second mentioned pumps, and a driving connection between the third pump and the shaft.

12. In combination, a pair of main-pump cylinders, pistons therefor, filling-pumps which discharge fluid into the cylinders of the main pumps on the suction-stroke, and a cross-head for producing relative movements of the pistons and cylinders of all the pumps.

13. In combination, a pump, a casing in which the pump is submerged, and a compartment formed in the casing, which receives the fluid to be pumped and permits it to overflow into the casing.

14. In combination, a pump, a casing in which the pump is submerged, a compartment formed in the casing, which receives the fluid to be pumped and permits it to overflow into the casing, and a cooling means located in said compartment.

15. In combination, a pump, a casing which incloses it, a driving-shaft for the pump located within the casing, a gear mounted thereon, a detachable cover for the casing, a shaft and gearing carried by the cover, the gearing coöperating with the gear on the driving-shaft, and a driving means for the gearing.

16. In combination, a casing, a dividing-wall therefor, pumps situated on opposite sides of the wall, a driving-shaft for the pumps, which extends through the wall, and a bearing for one end of the shaft, which is detachable from a point outside of the casing.

17. In combination, a casing, a dividing-wall therefor, a shaft which extends through the wall, pumps situated within the casing on opposite sides of the wall, means located on opposite sides of the wall for imparting motion from the shaft to the pumps, and means for rotating the shaft.

18. In combination, a casing, a pump mounted within the casing, a driving-shaft, a bearing for the shaft supported by the wall of the casing, and means for supporting the pump-cylinder from the bearing.

19. In combination, a casing, a pump located within the casing, a driving-shaft also located within the casing, bearings for the shaft supported by the walls of the casing, a propelling-motor located external to the casing, a detachable cover for the casing, a shaft carried thereby, gearing between the cover-shaft and motor, and gearing between the cover-shaft and the main driving-shaft, which is located between the pump and one of the walls of the casing.

20. In combination, a pair of main pumps, a second pair of pumps for filling the cylinders of the main pumps on their suction-strokes, a driving means which imparts corresponding movements to the main and filling pumps, and conduits which convey fluid from the filling-pumps on their compression-strokes to the cylinders of the main pumps on their suction-strokes.

21. In combination, a pair of oppositely-disposed main pumps, a second pair of oppositely-disposed pumps for filling the cylinders of the main pumps, a driving means common to all of the pumps, which is located between the adjacent ends of the pump-cylinders, and a conduit which conveys fluid from each of the filling-pumps to a main pump.

22. In combination, a pair of main pumps, a second pair of pumps for forcing liquid into the cylinders of the main pumps on their suction-strokes, a driving means which imparts corresponding movements to the main and filling pumps, conduits which convey fluid from the filling-pumps on their compression-strokes to the cylinders of the main pumps on their suction-strokes, and an equalising-chamber into which the main pumps discharge.

23. In combination, a pair of main pumps, a second pair of pumps for forcing liquid into the cylinders of the main pumps on their suction-strokes, a driving means which imparts corresponding movements to the main and filling pumps, conduits which convey fluid from the filling-pumps on their compression-strokes to the cylinders of the main pumps on their suction-strokes, an equalising-chamber into which the main pumps discharge, and an elastic yielding device which is subjected to the pressure within the equalising-chamber.

24. In combination, a casing, a pump located within the casing, a vacuum-chamber, a bearing within the chamber, conduits extending between the pump and the bearing and between the bearing and the casing so that the interior of the casing is subjected to the pressure of the chamber, a source of fluid-supply for the pump within the casing, a settling-chamber connected with the source of fluid-supply, and a means for closing the connection between the source and the settling-chamber when the latter is opened to the atmosphere.

25. In combination, a pump, a chamber working under a vacuum into which the pump discharges, a supply-tank for the pump connected directly with the chamber, a settling-chamber for the supply-tank, and means for closing the connection between the tank and the settling-chamber when the latter is open to atmosphere.

26. A prime mover comprising a vertical shaft, a step-bearing for supporting the weight of the shaft and attached parts comprising opposed blocks which are separated by a film of lubricant, a guide-bearing which receives lubricant after it exhausts from the step-bearing, a chamber which receives the lubricant after it passes through the step and guide bearings, a conduit for supplying fluid under pressure to the step-bearing, and a conduit which is connected with and discharges lubricant from the chamber.

847,051. HARROW. WILLIAM B. ESSICK, Manley, Nebr. Filed Sept. 17, 1906. Serial No. 334,868.

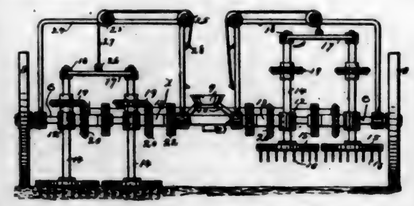

Claim.—1. The combination with a frame, a divided axle mounted therein, vertical shafts mounted in pairs in the frame and driven from said axle, disks on said vertical shafts having projections on the face thereof, and means for lifting the vertical shafts in independent pairs and throwing the vertical shafts into and out of gear.

2. The combination with a frame provided with arched portions, a divided axle mounted therein, of vertical shafts supported in said frame between the arched portions thereof, counter-shafts mounted in the frame and adapted to transmit rotation from the axle to the vertical shafts, disks carried by the vertical shafts provided with projections, and suspension means carried by the arched portions for raising and lowering the vertical shafts.

3. A rotary harrow comprising a frame having arches thereon and formed with rearwardly-extending brackets, a divided axle in said frame, vertical shafts and horizontal shafts journaled in said brackets, reduction-gearing between the axle and counter-shafts, bevel-gearing between the counter-shafts and vertical shafts, toothed disks carried by the vertical shafts, bars connecting the upper ends of the vertical shafts in pairs, and elevating mechanism supported by the arches for raising the vertical shafts bodily.

847,052. BOOK-REST AND THE LIKE. ARTHUR ENGLEFIELD, Longford, near Gloucester, England. Filed Dec. 19, 1905. Serial No. 292,449.

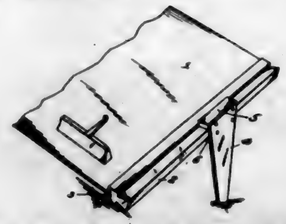

Claim.—1. In a device of the character described, the combination of a book-supporting member, a dovetailed member having a groove on one side adapted to receive one edge of said book-supporting member and an arm having a groove adjacent to and parallel with one end thereof, said groove being adapted to receive said dovetailed member for the purpose described.

2. In a device of the character described, the combination of a supporting member, a dovetailed member suitably secured to one edge of said supporting member and an arm

having a groove adjacent to and parallel with one end thereof, said groove being adapted to receive said dovetailed member for the purpose described.

847,053. SOAP-HOLDER. JOHN EVANS, Jr., and GEORGE A. STEINER, Salt Lake City, Utah. Filed May 7, 1906. Serial No. 315,536.

Claim.—1. The combination of soap-holding means comprising a chambered head, a spring-pressed piston in the chamber of said head, a headed pin for insertion in said head, a circumferential groove passing about said pin, a transverse pin passing through the chamber of the head to engage in the groove of the pin, means carried by said piston for engaging the end of the headed pin and locking it from withdrawal, a ring rotatably connected to said chambered head, and a wire loop pivoted in the ring for the purpose described.

2. The combination of soap-holding means comprising a pin, a chambered head in which the pin is adapted to be inserted, a spring-pressed piston slidable in the head longitudinally of the pin, and means adapting the piston to lock the head and pin together.

3. The combination of soap-holding means comprising a headed pin having its opposite end pointed with a circumferential groove adjacent thereto, a chambered head in which the pointed end of the pin is adapted to be inserted, a spring-pressed piston having a bore passing therethrough slidable in the head, and a transverse pin fixed in the head adapted to engage with the groove of the headed pin and lock the pin and head together when the bore of said piston is engaged with said headed pin.

847,054. PRODUCER-GAS PLANT. PETER EYERMANN, Beloit, Wis. Filed July 21, 1905. Serial No. 270,698.

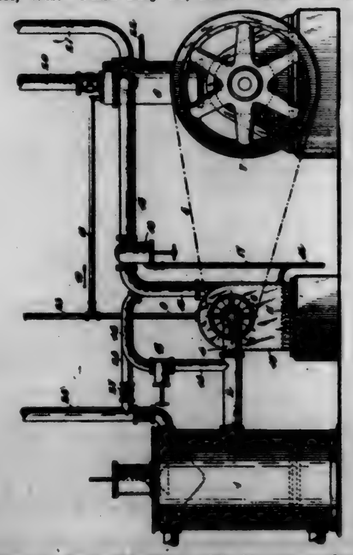

Claim.—1. In combination with the gas-producer and connected with the gas-outlet pipe therefrom, a suction-fan having water-injecting devices and a suitable gas-outlet pipe therefrom, a circulating relief-pipe connected to the gas-outlet from the fan, and connected to the gas-outlet pipe from the producer, substantially as described.

2. In combination with the gas-producer and connected with the gas-outlet pipe therefrom, a suction-fan having water-injecting devices and a suitable gas-outlet pipe therefrom, a circulating relief-pipe connected to the gas-outlet from the fan, and connected to the waste-gas pipe from the producer, substantially as described.

3. In combination with the gas-producer and connected with the gas-outlet therefrom, a suction-fan having water-injecting devices and a suitable gas-outlet pipe therefrom, a circulating relief-pipe connected to the gas-outlet from the fan, a connection to the gas-consumer, to the gas-outlet pipe from the producer and to the waste-gas pipe from said relief-pipe, substantially as described.

4. In combination with the gas-producer and the gas-consumer a suction-fan having suitable gas-inlet and gas-outlet pipes therefrom and water-injecting and waste-water-overflow pipes, a circulating relief-pipe connected to said gas-pipes and means in these pipes for controlling the quantity and for operating the plant, substantially as described.

847,055. RAKE. CHARLES F. FIELD, Bangor, Me. Filed Apr. 6, 1906. Serial No. 310,296.

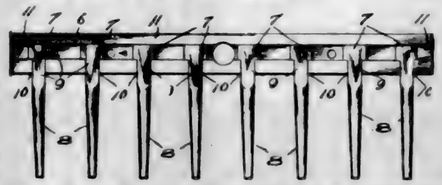

Claim.—1. A farm-rake comprising in its construction the main cross-bar of the rake-head slotted longitudinally in combination with individual rake-teeth having cross-heads arranged in said slot and short transverse slots leading from the longitudinal slot for the shanks of the rake-teeth which latter are square in their portions adjacent to their heads to fit said transverse slots, a cross-plate to cover the main cross-bar and the heads of the rake-teeth therein, and the broad bands tightened on the ends of said bar and secured thereto.

2. The combination, with the main cross-bar, longitudinally and transversely slotted as described, of the rake-teeth with cross-heads secured in said slots, and the square blocks in the ends of the longitudinal slot of the main cross-bar and the broad bands tightened and secured on the end of said bar.

847,056. MACHINE FOR PRODUCING ORNAMENTAL SURFACES ON FLEECED FABRICS. CHARLES H. FRENCH, Canton, Mass., assignor to French & Ward, New York, N. Y., a Firm. Filed May 14, 1906. Serial No. 316,771.

Claim.—1. A machine for producing ornamental surfaces on fabrics having fleeced coarse surfaces, comprising a revoluble napping-drum having an uninterrupted peripheral combing-face, means for drawing the fabric in the direction of its length past the said combing-face, and an intermittently-rocking beam for moving the fabric periodically in engagement with the said combing-face.

2. A machine for producing ornamental surfaces on fabrics having fleeced coarse surfaces, comprising a revoluble napping-drum having an uninterrupted peripheral combing-face, a drawing device for drawing the fabric past the said napping-drum in the direction of the length of the fabric, a beam mounted to rock for moving the fabric into and out of engagement with the said combing-face, and in the direction of the width of the fabric and in the direction of the length of the napping-drum, and means for periodically rocking the said beam.

3. A machine for producing ornamental surfaces on

fabrics having fleeced coarse surfaces, comprising a revoluble napping-drum having an uninterrupted peripheral combing-face, a drawing device for drawing the fabric past the said napping-drum in the direction of the length of the fabric, a beam mounted to rock for moving the

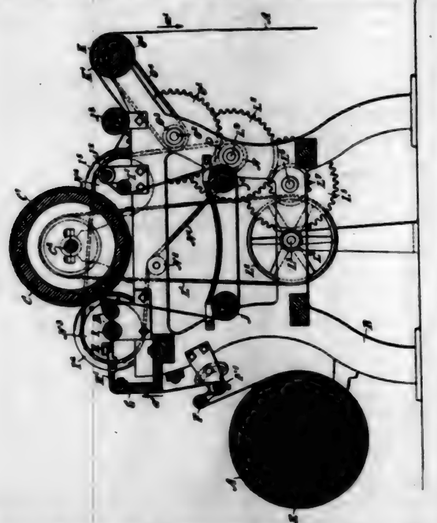

fabric into and out of engagement with the said combing-face and in the direction of the width of the fabric and in the direction of the length of the napping-drum, an arm on the said beam, and a cam device connected with the said arm for periodically rocking the said beam.

847,057. EXCAVATING-WHEELER. FRANK F. FURLOUGH, Denver, Colo. Filed July 28, 1906. Serial No. 328,201.

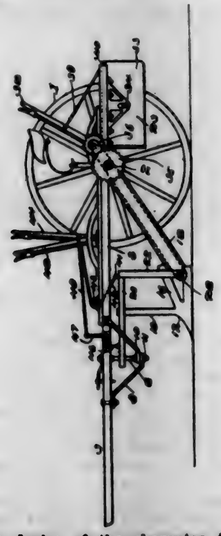

Claim.—1. A device of the character described, comprising a vehicle, an excavating-plow comprising an inclined moldboard, a landside for assisting in guiding the same, a plurality of independent uprights secured to said landside and said moldboard, a lever for regulating the angle at which the plow operates, and an elevator for accommodating the matter removed by said plow.

2. A device of the character described, comprising a vehicle, an excavating-plow secured thereto, an elevator pivotally secured to said plow for accommodating the matter excavated, means secured to said excavating-plow for adjusting the position of the same, a rod for guiding the movement of said adjusting means, and levers for operating said means.

3. A device of the character described, comprising a vehicle, an excavating-plow comprising a plow proper, uprights secured to said plow, a bar secured to said uprights, means for guiding the movement of said bar and means for changing the angle of said bar for adjusting the position of said plow and an elevator for accommodating the matter excavated.

4. A device of the character described, comprising a vehicle, an excavating-plow mounted on said vehicle, a bar positioned longitudinally of said vehicle and rigidly secured to said plow, a guiding-rod passed through one end of said bar, braces secured to said vehicle for holding in position said guiding-rod and a plurality of mechanisms mounted on said vehicle for operating each end of said plow independently.

5. A device of the character described, comprising a vehicle, an excavating-plow mounted on said vehicle, a beam secured to said plow, a bell-crank lever secured to said vehicle, means connecting said bell-crank lever with said beam, and a lever connected with said bell-crank lever for operating the same for varying the angle at which said plow operates.

847,058. OPTICAL DEVICE FOR USE WITH MEASURING INSTRUMENTS. GASTON GAILLARD, Paris, France. Filed May 26, 1906. Serial No. 318,905.

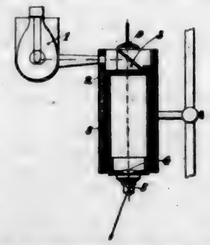

Claim.—1. An optical device for measuring instruments to enable the reading of the indications of the instrument comprising a fixed optical system embodying a luminous source, a diaphragm, a refractor, and an objective and a movable optical system for receiving the rays emitted by the fixed optical system and embodying a refractor for directing the luminous rays toward a scale or screen.

2. An optical device for measuring instruments to enable the reading of the indications of the instrument comprising means for directing the luminous rays along the axis of rotation of the movable parts of the instrument, and means for directing said rays toward the scale of the instrument or a screen.

847,059. RATCHET TOOL-HOLDER. PATRICK F. GALLAGHER, Pittsburg, Pa., assignor of one-half to Harry Gordon, Pittsburg, Pa. Filed Dec. 21, 1905. Serial No. 292,828.

Claim.—In an implement of the class described, a stock having annularly-disposed ratchet-teeth and an annular channel intermediate the ends, and with means at one end for supporting an operating-tool and with means at the other end for supporting a holding means, a handle having a concaved head at one end with longitudinal recesses on the side edges and partly embracing the ratchet portion

of said stock and carrying a yoke-bearing in said annular channel, a sleeve bearing around said stock and against said annular ratchet portion at the side opposite from said yoke and provided with a lateral extension engaging

said head, means for fastening said extension to said head, pawls swinging in said recesses and engaging said ratchet-teeth, and means for alternately operating said pawls.

847,060. BRUSH. CLEOPHAS GAMACHE, Barre, Vt. Filed June 28, 1906. Serial No. 323,775.

Claim.—1. The combination of a rotary brush, a water-wheel for rotating the brush, said wheel being provided with supply and exhaust connections, a connection between the supply connection and brush for delivering water to the latter, said connection being provided with a valve for cutting off the supply of water to the brush without affecting the operation of the motor.

2. The combination of a rotary brush, a water-motor for driving the brush, said motor including a casing having inlet and exhaust ports, supply and exhaust pipes communicating with said ports, and a connection between the waste-pipe and brush, whereby the waste water may be delivered to the latter, and a cut-off valve arranged in said connection.

3. In a rotary brush, the combination of a casing having inlet and exhaust ports, a water-wheel arranged within the casing, a hollow shaft carried by said wheel and projecting through the casing, one end of said shaft being connected with the brush and in open communication with the bristles thereof, supply and exhaust pipes connected with the casing and communicating with the supply and exhaust ports thereof, and a waste connection between the exhaust-pipe and hollow shaft, said connection being provided with a cut-off valve, whereby the flow of water to the brush may be controlled without affecting the operation of the motor-wheel.

4. The combination with a rotary brush, of a water-motor for driving the same, means for conducting the waste water from the motor to the brush, and means for cutting off the delivery of waste water to the brush without affecting the operation of the motor.

847,061. MECHANICAL STOKER. NORMAN B. GEE, Altoona, Pa. Filed May 7, 1906. Serial No. 315,543.

Claim.—1. In a stoker, a stoking-engine having a rocking shaft, a fuel-conveyer, and a driving-shaft for the conveyer arranged in line with the rocking shaft and having a ratchet connection therewith.

2. In a stoker, the combination with the tender and a stoking-engine, of a rocking shaft carried upon the stoking-engine, a driving-engine having an operating connection with said rocking shaft, a fuel-conveyer extending from the tender to the stoking-engine, and a self-adjusting driving-shaft connection between the conveyer and said rocking shaft.

3. In a stoker, the combination with a stoking-engine, a fuel-conveyer, a shaft carried by the stoking-engine, a self-adjusting driving-shaft connection between said stoking-engine shaft and the conveyer, a driving-engine, and a self-adjusting operating mechanism between said driving-engine and said stoking-engine shaft.

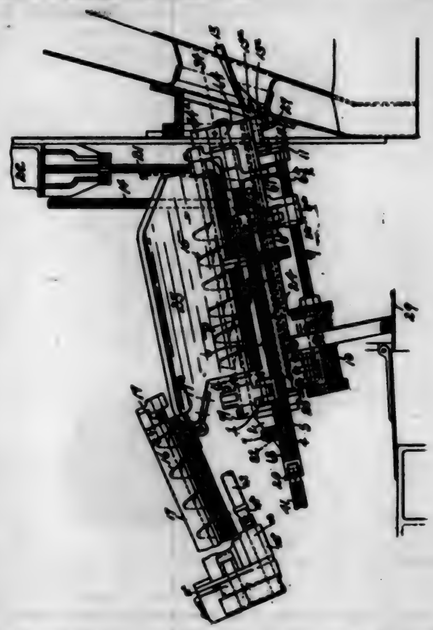

4. In a stoker, the combination with the tender and a stoking-engine arranged to be set at an angle, a fuel-conveyer leading from the tender to the engine, a line of shafting for driving said conveyer, a driving-engine, and operating mechanism connecting the driving-engine with said line of shafting, said operating mechanism being self-adjusting to accommodate itself to any angularity of the stoking-engine.

5. In a stoker, the combination with the tender and a stoking-engine, a fuel-conveyer loosely arranged above the stoking-engine and leading from the tender, a line of shafting for driving the fuel-conveyer, said line of shafting including universally-jointed and telescopic sections, and a driving-engine having self-adjusting operating connections with said line of shafting.

6. In a stoker, the combination with the tender and a stoking-engine, of a fuel-conveyer leading from the tender, a rocking shaft carrying a ratchet device, a conveyer drive-shaft including a toothed member engaged by said ratchet device, and a driving-shaft having an operating connection with said shaft.

7. In a stoker, the combination with the tender and a stoking-engine, of a fuel-conveyer leading from the tender and loosely supported by the stoking-engine, a rocking shaft supported at one side of the stoking-engine and carrying a ratchet device, a telescopic drive-shaft having universal joints at its opposite end portions and also including a driving-journal provided with a toothed section received and engaged by said ratchet device, a driving-engine, and a self-adjusting connection between said driving-engine and said rocking shaft.

8. In a stoker, the combination with the tender and a stoking-engine, of a fuel-conveyer leading from the tender and loosely supported above the stoking-engine, a carrying-bracket mounted on one end of the stoking-engine, a rocking shaft arranged at one side of the engine and supported by said bracket, said rocking shaft carrying a ratchet device rigid therewith and arranged within said carrying-bracket, a driving-shaft for the conveyer having a ratchet member provided with a toothed section received in and engaged by said ratchet device, a driving-engine, and an operating connection between said driving-engine and said rocking shaft.

9. In a stoker, the combination with a stoking-engine, of a fuel-conveyer, a rocking shaft having a driving connection with said conveyer, a driving-engine, and self-adjusting operating mechanism comprising a rock-arm on said rocking shaft, a reciprocal rod having a loose-link connection with said rock-arm, a bell-crank lever pivotally supported at one side of its angle and having a loose-link connection between one of its arms and said reciprocal rod, the other arm of said bell-crank having connection with the pitman of the driving-engine.

10. In a stoker, a stoking-engine having a fuel-chute and a stoking-head working therein, said engine also having a valve-shaft, a movable deflector carried upon the chute, and deflector-operating mechanism operated from said valve-shaft.

11. In a stoker, a stoking-engine, having a rotary valve-shaft, an adjustable deflector-plate mounted for movement at the discharge end of the engine, and an operating mechanism operated from said valve-shaft and comprising means for rocking the deflector-plate on a horisontal axis.

12. In a stoker, a stoking-engine having a rotary valve-shaft, a deflector-plate arranged beyond the discharging end of the engine, operating mechanism connected with said valve-shaft and comprising means for rocking said deflector-plate on a horisontal axis, a rocking engine-shaft, an operating connection between the engine-shaft and the valve-shaft, and a driving-engine having an operating connection with said rocking engine-shaft.

13. In a stoker, a stoking-engine, a horisontal rocking deflector-plate arranged beyond the engine, a supporting-journal for the plate provided with a slotted arm, and a suitably-operated crank member engaging said slotted arm to effect a rocking of the deflector upon a horisontal axis.

847,062. RECORDING SYSTEM FOR SALESMEN'S ORDERS AND SHIPMENTS. FREDERICK E. GETZ, Ellicott City, Md. Filed July 3, 1906. Serial No. 324,663.

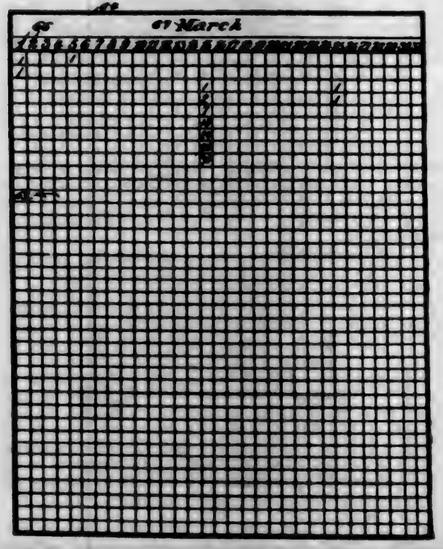

Claim.—1. A recording system for salesmen's orders and shipments thereof comprising a salesman's sheet provided with means to identify it and further provided with means to form a plurality of vertically-extending appropriately-designated columns of spaces to receive the number of the salesman's order, name and address of the purchaser, amount of the order, said sheet further provided with means at one side of the columns of spaces to form an appropriately-designated group of columns each of which is further designated, which latter designation indicates a month of a year, said last-mentioned columns each adapted to receive data to indicate on which day of the month an order is to be shipped, and a shipper's sheet provided with means to designate it for a month of a year and further having means to form a plurality of columns of spaces, each of said last-mentioned columns designated by a numeral, said numerals equal in number to the days of the month, for the purpose set forth.

2. A recording system for salesmen's orders and shipments thereof comprising a salesman's sheet provided with means to identify it and further provided with means to form a plurality of vertically-extending appropriately-designated columns of spaces to receive the number of the salesman's order, name and address of the purchaser, amount of the order, said sheet further provided with means at one side of the columns of spaces to form an appropriately-designated group of columns each of which is further designated, which latter designation indicates a month of a year, said last-mentioned columns each adapted to receive data to indicate on which day of the month an order is to be shipped, and a shipper's sheet provided with means to designate it for a month of a year and further having means to form a plurality of columns of spaces, each of said last-mentioned columns designated by a numeral, said numerals equal in number to the days of the month, for the purpose set forth.

3. A recording system for salesmen's orders and shipments thereof comprising a salesman's sheet provided with means to identify it and further provided with means to form a plurality of vertically-extending appropriately-designated columns of spaces to receive the number of the salesman's order, name and address of the purchaser, amount of the order, said sheet further provided with means at one side of the columns of spaces to form an appropriately-designated group of columns each of which is further designated, which latter designation indicates a month of a year, said last-mentioned columns each adapted to receive data to indicate on which day of the month an order is to be shipped, said sheet further having means to form an appropriately-designated longitudinally-extending column of spaces to receive totals, and a shipper's sheet provided with means to designate it for a month of a year and further having means to form a plurality of columns of spaces, each of said last-mentioned columns designated by a numeral, said numerals equal in number to the days of the month, for the purpose set forth.

4. A recording system for salesmen's orders and shipments thereof comprising a salesman's sheet provided with means to identify it and further provided with means to form a plurality of vertically-extending appropriately-designated columns of spaces to receive the number of the salesman's order, name and address of the purchaser, amount of the order, said sheet further provided with means at one side of the columns of spaces to form an appropriately-designated group of columns each of which is further designated, which latter designation indicates a month of a year, said last-mentioned columns each adapted to receive data to indicate on which day of the month an order is to be shipped, said sheet further provided with means at one side of said last-mentioned plurality of columns to form an appropriately-designated column of spaces to receive data in relation to shipping instruction, said sheet further having means to form an appropriately-designated longitudinally-extending column of spaces to receive totals, and a shipper's sheet provided with means to designate it for a month of a year and further having means to form a plurality of columns of spaces, each of said last-mentioned columns designated by a numeral, said numerals equal in number to the days of the month, for the purpose set forth.

847,063. SLIPPER-SOLE. ISAAC GREENBERG, New York, N. Y. Filed Aug. 19, 1905. Serial No. 274,927.

Claim.—1. A slipper-sole having a channel in its outer edge in a plane substantially parallel with that of the top of the sole, producing an integral top and bottom flap respectively above and below the channel, a series of binding-stitches formed in the edge of the top flap embracing it at both sides, and a second chain of stitches interlocking with the binding-stitches and surrounding the outer edge of the top flap.

2. A slipper-sole having a channel in its outer edge in a plane substantially parallel with that of the top of the sole, producing a flap above and below the channel, a series of binding-stitches formed in the edges of said top flap embracing it at both sides, and a second chain of stitches interlocking with the binding-stitches and surrounding the outer edge of the top flap in combination with a crocheted upper sewed to the second set of stitches.

847,064. BUCKLE. WILLIAM H. GRIFFIN, Oxford, Ala. Filed Jan. 18, 1906. Serial No. 296,659.

Claim.—1. A buckle having a flat body with arms projecting thereover in reverse directions from opposite sides and located inwardly from opposite ends of the body, and a fastening means between the arms, the arms normally projecting from the opposite side edges of the body and bent over and parallel to the latter and having their free extremities separated from and in parallel relation to the side edges of the body opposite those from which they project.

2. A buckle of the class set forth, having a flat body with spaced arms projected thereover in reverse directions, the arms being integrally formed with the opposite side edges of the body and projected over the latter in parallel planes and located inwardly from opposite ends of the body and having their free extremities at a distance from and parallel with the side edges of the body opposite the edges from which the said arms project to form open sides to the buckle.

3. A buckle comprising a flat body with integrally-formed arms projected from the opposite side edges thereof over the body in reverse directions at a distance from the latter to form open sides for the buckle, the arms being parallel to the body and located inwardly from opposite ends of the said body, the said arms having their free ends parallel to and in alinement with the side edges of the body opposite the side edges from which they project, and a fastening device projecting from the intermediate portion of the body between opposing side edges of the arms.

4. A buckle having a flat body with pairs of arms extending thereover in reverse directions from opposite side edges and also over the opposite flat sides of the body, the portions of the arms connecting with the body being closely arranged, the free ends of the arms being parallel to and in alinement with the side edges of the body opposite the side edges of the latter from which they project, and a fastening device projecting from the body at a distance from opposing side edges of pairs of the arms.

5. A buckle having a flat body with pairs of arms extending from opposite side edges thereof, the arms being formed by dividing laterally-projecting portions at opposite side edges of the body, to provide contiguous pairs of arms which are bent in reverse directions over opposite sides of the plate, the free extremities of the arms terminating in alinement with the side edges of the body opposite the side edges of the latter from which they project.

6. A buckle having a body with arms extending thereover in reverse directions and forming open sides to the buckle, and closing means movably connected to the buckle-body and coöperating with the free extremity of the arms to close the buckle sides.

847,065. BODY TO BE HEATED ELECTRICALLY. ERNST HAAGN, Hanau, Germany, assignor to The Firm of W. C. Heraeus, Hanau, Germany. Filed Mar. 16, 1906. Serial No. 306,437.

Claim.—1. The herein-described method of producing bodies to be heated electrically, which consists in securing a resistance in the desired position by means of organic matter, applying a layer of fireproof insulating material to the one side of the resistance, allowing this layer to harden, heating it a little to destroy the organic matter, applying a second layer of fireproof insulating material to the other side of the resistance, allowing the second layer to harden, and finishing the body by burning it at a high temperature.

2. The herein-described method of producing vessels to be heated electrically, which consists in covering an internal form with a fabric of organic material, securing a resistance (wire, strip or wire net) in the desired position on the fabric by sewing it thereon with yarn of organic fiber, introducing the internal form with the fabric and the resistance into an external form, filling up the space between them with a fireproof insulating material, allowing the latter to harden, cutting off the fabric above the external form, withdrawing the internal form with the rest of fabric, removing the external form, heating a little the vessel so formed to destroy the organic matter, applying a layer of fireproof insulating material to the inside of the vessel, allowing this second layer to harden, and finishing the body by burning it at a high temperature.

3. The herein-described method of producing bodies to be heated electrically, which consists in securing a resistance in the desired position by means of organic matter, applying a layer of fireproof insulating material to the one side of the resistance, allowing this layer to harden, heating it a little to destroy the organic matter, applying a second layer of fireproof insulating material to the other side of the resistance, allowing the second layer to harden, burning the body at a high temperature, and enameling it.

4. The herein-described method of producing vessels to be heated electrically, which consists in covering an internal form with a fabric of organic material, securing a resistance (wire, strip or wire net) in the desired position on the fabric by sewing it thereon with yarn of organic fiber, introducing the internal form with the fabric and the resistance into an external form, filling up the space between them with a fireproof insulating material, allowing the latter to harden, cutting off the fabric above the external form, withdrawing the internal form with the rest of fabric, removing the external form, heating a little the vessel so formed to destroy the organic matter, applying a layer of fireproof insulating material to the inside of the vessel, allowing this second layer to harden, burning the body at a high temperature, and enameling it.

847,066. CANE. FRANCIS L. HALL, San Pedro, N. Mex. Filed Mar. 19, 1906. Serial No. 306,877.

Claim.—1. The combination of a staff or stick provided with a permanent magnet with an attached ball equipped with an armature or keeper.

2. The combination of a staff or stick provided with a permanent magnet, with an attached rebounding ball equipped with an armature or keeper.

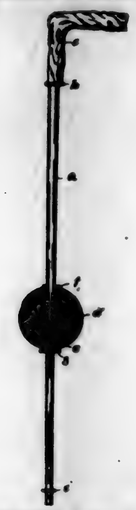

3. The combination with a cane having a handle and a permanent magnet, of a rebounding ball through which the cane extends, said ball being equipped with an armature or keeper.

847,067. WAGON. EUGENE W. HARMON, Blaine, Me. Filed Feb. 5, 1906. Serial No. 299,503.

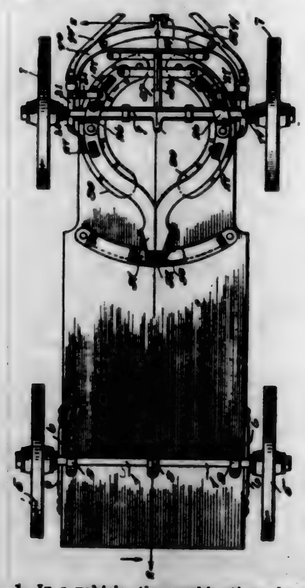

Claim.—1. In a vehicle, the combination of a front axle pivotally secured to the vehicle-bed, a fifth-wheel carried by said axle, a vehicle-tongue attached to said axle, and a supplemental connection for draft-power secured to said axle and fifth-wheel, substantially as described.

2. In a vehicle, the combination of a front axle pivotally secured to the vehicle-bed and provided with upturned ends, a fifth-wheel carried by said axle and provided with a rearward extension, means for guiding said extension and confining it against vertical movement, brackets carried by the upturned ends of said axle, and a tongue-coupling pivotally secured to said brackets, substantially as described.

3. In a vehicle, the combination of a front axle pivotally secured to the vehicle-bed and provided with upturned ends, a fifth-wheel carried by said axle and provided with a rearward extension, means for guiding said extension and confining it against vertical movement, brackets carried by the upturned ends of said axle, braces for securing said brackets to the fifth-wheel, and a tongue-coupling pivotally secured to said brackets, substantially as described.

4. In a vehicle, the combination of a front axle with upturned ends, brackets carried by said upturned ends of the axle, a tongue-coupling pivotally secured to said brackets, and adjustable means connecting said coupling and the upturned ends of said axle for adjusting said coupling about its pivotal connections, substantially as described.

847,068. HARROW. ALFRED D. HARRIS, Caldwell, Kans. Filed July 7, 1906. Serial No. 325,170.

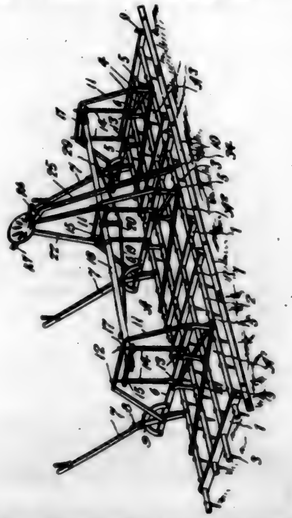

Claim.—1. In combination, a harrow, supporting-frames carried by the harrow, a seat-supporting bar yieldingly mounted upon said supporting-frames, and a seat mounted on said bar.

2. In combination, a harrow, seat-supporting frames mounted thereon, said frames having guide-rods provided with cushioning-springs, a seat-supporting bar having hanger-arms slidably mounted on said guide-rods and supported by said springs, and a seat carried by the supporting-bar.

3. In combination, a harrow, seat-supporting frames mounted thereon, said frames having guide-rods provided with cushioning-springs, bracket-arms slidably mounted on said guide-rods and supported by the springs, a seat-supporting bar carried by the bracket-arms, and a seat carried by said bar.

4. In combination, a harrow having rotary teeth-carrying members provided with crank-arms, links connecting the crank-arms, means for communicating motion to the links to adjust the teeth-carrying members, brackets movable with the links, guide-rods pivotally attached at their lower ends to the links and slidably engaging the brackets at their upper ends, cushioning-springs on the rods, bracket-arms slidably and pivotally engaging the rods and

supported by said springs, a seat-supporting bar carried by the bracket-arms, and a seat mounted on said bar.

5. In combination, a harrow having rotary teeth-carrying members provided with crank-arms, links connecting the crank-arms, means for communicating motion to the links to adjust the teeth-carrying members, brackets movable with the links, guide-rods pivotally attached at their lower ends to the links and slidably connected at their upper ends with the brackets, cushioning-springs on the rods, bracket-arms slidably and pivotally engaging the rods and supported by said springs, a seat-supporting bar carried by the bracket-arms, a seat mounted on said bar, a brace adjustably connected with the seat, a draft-beam pivotally hung at the front of the harrow, and a yielding connection between said beam and brace.

6. In a seat-support for harrows, the combination of a harrow having a plurality of rotary teeth-carrying members, means for adjusting said members, brackets adjustable with said supporting-means and provided with spring-guides, a seat-supporting bar slidably and pivotally adjustable on said guides and yieldingly sustained by the springs thereof, and a seat carried by said support.

7. In a seat-support for harrows, the combination with a harrow having a plurality of rotary teeth-carrying members, and adjusting means therefor having a swinging action, of brackets carried by and movable with said adjusting means, a draft element pivotally hung upon the harrow, guides associated with the adjusting means and brackets and provided with cushioning-springs, a seat-supporting bar having members slidably and pivotally engaging said guides and yieldingly sustained by the springs, a seat supported by said bar, and a brace adjustably connected with the bar and having a yielding spring connection with the draft element.

8. A harrow provided with rocking elements for adjusting the teeth thereof, supporting-frames pivotally connected with the rocking elements and adjustable therewith, guide members associated with and carried by said rocking elements and supporting-frames and provided with cushioning-springs, a seat-supporting bar carrying bracket members slidably and pivotally engaging the guide members and yieldingly supported by said springs, and a seat carried by said bar.

847,069. CAR-WHEEL. THEODORE L. HAWKINS, Pittsburg, Pa. Filed Apr. 11, 1906. Serial No. 311,066.

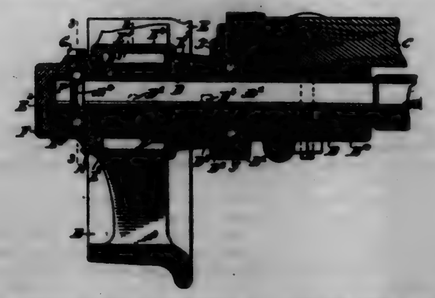

Claim.—1. The combination of a pedestal with a car-wheel, a bushing for the wheel, and an axle-journal extending through the said pedestal into the said bushing, said pedestal having a recess for receiving the bushing.

2. The combination of a pedestal having a bearing for an axle-journal and provided with an annular recess, a car-wheel, a bushing for the wheel extending into the recess of the pedestal, and an axle having its journal extending through the said pedestal-bearing and the said bushing.

3. The combination of a pedestal having a bearing and an annular recess at its outer end, a car-wheel, a bushing in the hub thereof, the inner end of which bushing is provided with a head fitting the said pedestal-recess.

847,070. CASH-CARRIER. JOHN F. HAYNS, Scranton, Pa. Filed May 18, 1906. Serial No. 317,576.

Claim.—1. In a cash-carrier, the combination of a cable, a resilient member mounted upon the cable, a guide member, an outwardly-projecting arm mounted upon the guide member and extending into engagement with the cable, a catch carried by the said arm, a carriage mounted upon the cable and engaging with the said catch whereby it is drawn against the action of the resilient member, and means whereby the carriage will be automatically released after being moved against the action of the resilient member.

2. In a cash-carrier, a cable, a resilient member mounted upon the cable, and a retainer for the resilient member comprising a bar extending longitudinally upon the cable and provided with a transverse opening through which the cable is inserted.

3. In a cash-carriage, a cable, a resilient member mounted upon the cable, and a retainer for the resilient member comprising a bar disposed longitudinally upon the cable and provided with a central transverse opening, and with reversely-inclined grooves communicating with the said opening and proportioned to accommodate the cable.

4. In a cash-carrier, a cable, a resilient member surrounding the cable, a retainer for the resilient member comprising a bar provided with a centrally-disposed, transverse opening and with reversely-inclined grooves communicating with the central opening and extending to the opposite ends of the bar, means upon one end of the bar for engaging the resilient member, and means upon the other end of the bar for positioning the said bar upon the cable.

5. In a cash-carrier, a cable, a resilient member upon the cable, a guide mounted adjacent to the cable, an arm slidably mounted upon the said guide member and extending to the cable, a catch member movably mounted upon the arm, and a carriage mounted upon the cable and provided with means for engagement with the catch whereby it can be moved against the action of the before-mentioned resilient member.

6. In a cash-carrier, a cable, a resilient member mounted upon the cable, a carriage mounted and movable upon the cable, a guide member mounted adjacent the cable, a sleeve downwardly extending from the guide member and movable longitudinally thereof, a catch slidably mounted upon the sleeve and in position for engagement with the carriage, means to move the sleeve and engaged carriage upon the cable against the tension of the resilient member, and means to release the carriage.

7. A cash-carrier comprising a cable, a resilient member mounted upon the cable, a carriage mounted and movable upon the cable and over and in engagement with the resilient member, a guide member mounted adjacent the cable, a sleeve projecting from and longitudinally movable upon the guide member, means carried upon the sleeve detachably for engaging the carriage, means to move the sleeve and the engaged carriage rearwardly upon the guide member against the tension of the resilient member, and means to release the carriage.

8. In a cash-carrier, the combination of a cable, a resilient member mounted upon the cable, a guide member located adjacent the cable, an outwardly-projecting arm movable longitudinally with respect to the guide member and extending into engagement with the cable, a catch movably mounted upon the before-mentioned arm and provided with a trip, a carriage mounted upon the cable and engaging with the catch upon the before-mentioned arm whereby it is drawn against the action of the resilient member, and means carried by the guide member for engaging the trip and releasing the carriage after the latter has been moved against the action of the resilient member.

847,071. POTATO DIGGER AND ASSORTER. JAMES P. HERBERT, HENRY S. PRICE, and EDWARD J. PRICE, New Brunswick, N. J. Filed Oct. 27, 1905. Serial No. 284,651.

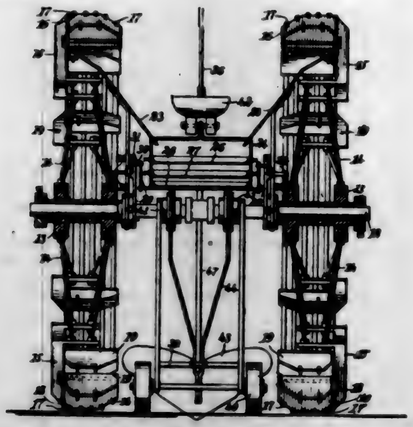

Claim.—1. A harvesting-machine comprising a wheel having a rim consisting of a series of tires spaced apart, said rim being of smaller diameter on the inside than at the center.

2. A harvesting-machine, comprising a vehicle having wheels consisting of a series of spaced tires, a plurality of plates mounted within said tires and having depressions for receiving them, and means for holding said plates against the tires.

3. A harvesting-machine, consisting of a vehicle having wheels comprising a series of tires spaced apart, those on the inside being of smaller diameter than those on the outside, means for holding said tires in fixed position, and adjustable vanes mounted within the tires.

4. A harvesting-machine consisting of a vehicle having wheels, comprising a series of tires spaced apart and adjustable vanes mounted within the tires.

5. A harvesting-machine consisting of a vehicle having wheels, each comprising spokes, a series of radial plates fixed to the spokes, a series of tires connected with the plates, and adjustable vanes mounted on the plates.

6. A harvester consisting of a vehicle having wheels each comprising a rotatable hub, spokes connected with the hub, a series of radial plates fixed to the spokes and having depressions in their outer surfaces, a series of circular tires mounted in said depressions, and adjustable vanes mounted on the plates.

7. A harvester consisting of a vehicle having wheels each comprising a rotatable hub, spokes connected with the hub, a series of radial plates fixed to the spokes and having depressions in their outer surfaces, a series of circular tires mounted in said depressions, and adjustable vanes mounted on the plates, said plates being beveled on their inner edges, and the tires mounted on said inner edges being of smaller diameter than those on the outside of the plates.

8. A harvester consisting of a vehicle having wheels each comprising a rotatable hub, spokes connected with the hub, a series of radial plates fixed to the spokes and having depressions in their outer surfaces, a series of circular tubes mounted in said depressions, adjustable vanes mounted on the plates, and a circular plate mounted on the outside of each series of radial plates and constituting the outer boundary of the wheel.

9. A harvesting-machine consisting of a vehicle having wheels comprising a rim having open spaces, said rim constituting a receptacle for the reception of articles to be harvested, a circular plate mounted on the outside of said rim, the said plate having a series of curved slots, and a series of pivoted vanes mounted inside the tire, said vanes having rods projecting through said slots, whereby they may be fixed in adjusted positions.

847,072. MOTOR. WILLIAM HUGHES, Sharon, Pa. Filed June 23, 1906. Serial No. 323,089.

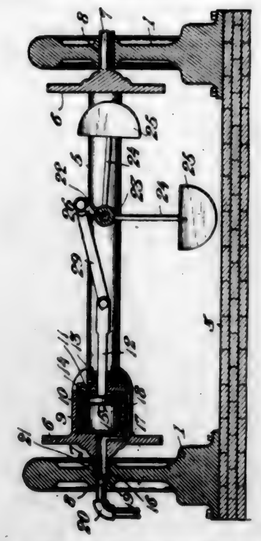

Claim.—1. A weight-motor comprising a frame mounted for revolution, weights connected together and arranged at an angle relative to each other, and auxiliary means for imparting an initial movement to the weights, said means being operative to project the weights in succession beyond the plane of the frame, whereby to utilize the weights for imparting a movement to the frame.

2. A weight-motor comprising a frame mounted for revolution, connected weights movably supported in the frame and arranged at the angle with respect to each other and means for imparting initial movement to the weights in succession, said means being operative to simultaneously project one of the weights beyond the frame and move the other weight in the plane of the frame-axis.

3. A weight-motor comprising a frame mounted for revo-

lution, weights mounted in the frame and disposed at right angles to each other, and means for initially moving the weights from a position within the plane of the frame to a position at right angles thereto.

4. A weight-motor comprising a frame mounted for revolution, a sleeve revolubly supported in the frame, weights projecting from the sleeve at right angles to each other, and means for moving the weights in succession from a position within the plane of the frame to a position at right angles thereto.

5. A weight-motor comprising a frame mounted for revolution, a plurality of weights movably supported in the frame and operating in a plane at right angles to the plane of movement of the frame, and means for initially operating the weights.

6. A weight-motor comprising a frame mounted for revolution, a plurality of weights movably supported in the frame and operating in a plane at right angles to the plane of movement of the frame, a cylinder supported by the frame, a piston within the cylinder, and a connection between said piston and weights.

7. A weight-motor comprising a frame mounted for revolution, a plurality of weights movably supported in the frame and operating in a plane at right angles to the plane of movement of the frame, a cylinder supported by the frame, a piston within the cylinder, a connection between said piston and weights, and means for admitting a motive fluid to the cylinder in a predetermined position of the weights.

8. A weight-motor comprising a frame mounted for revolution and comprising spaced side bars, a cylinder supported by the frame, means for admitting a motive fluid to the cylinder in a predetermined position of the frame, a piston within the cylinder, a sleeve mounted for revolution between the side bars of the frame, weight-arms projecting from the sleeve at a right angle to each other, weights carried by the free ends of said arms, and a connection between the piston and sleeve.

847,073. RAIL-JOINT. JAMES S. A. HUNT, Mattie, W. Va. Filed Feb. 28, 1906. Serial No. 303,435.

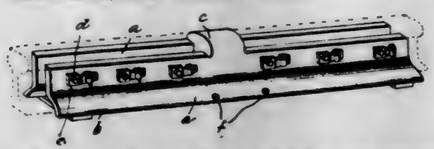

Claim.—A railway-rail joint comprising in its construction fish-plates adapted to fit the sides and lateral flanges of the rails and having at their longitudinal center a bridge to form a short section of the track-rail made integral with the fish-plates, transverse plates at the bottom ends of the fish-plates made integral therewith and extending from edge to edge of the flanges, the said transverse plates being formed on a plane below the bottom of the bottom of the rails, and spike-holes formed through the flanges of the fish-plates near their edge on opposite sides of the bridge-piece at an appreciable distance from its sides.

847,074. HAY-RAKE. JAMES W. HURD, Dona, Va. Filed Oct. 11, 1906. Serial No. 338,451.

Claim.—1. In a hay-rake an axle comprising a plurality of sections, means whereby said sections may be folded into parallelism with each other, and means for retaining them in alinement or in folded position.

2. In a hay-rake an axle comprising a plurality of sections, means whereby said sections may be folded into parallelism with each other, spindles on the outer ends of the sections, and a spindle on the inner end of one of the sections.

3. In a hay-rake, a folding axle, tooth-carrying elements slidable upon the axle, and means for locking the axle in extended position and for holding the same in shortened position.

4. In a horse hay-rake, an axle constructed in hinged sections, one section having a spindle at each end and the other section a spindle at its outer end, and a recess at its inner end wherein to receive the inner spindle of the opposing axle-section, means for locking the sections in extended position, and devices for holding said sections in shortened position.

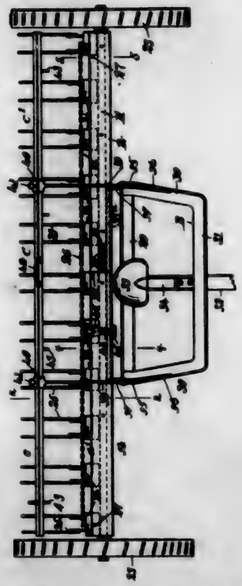

5. In a hay-rake, an axle constructed in hinged sections, which axle is provided with outer spindles and an intermediate spindle, a series of teeth-carrying elements slidably mounted upon the axle, means for limiting the relative movement of said elements, devices for locking said elements in adjusted position, and a draft-frame having sliding connection with the axle and serving as a lock for the sections of the axle when the latter is at full length for service.

6. In a hay-rake, an axle constructed in hinged sections, which axle is provided with outer spindles and an intermediate spindle, a series of teeth-carrying elements slidably mounted upon the axle, means for limiting the relative movement of said elements, devices for locking said elements in adjusted position, a draft-frame having sliding and hinged connection with the axle, a cleaning-bar for the rake-teeth, pivotally connected with the draft-frame, and means for rocking said axle.

7. In a horse hay-rake, the combination with an axle constructed in two hinge-connected sections, each section being provided with a channel at the front and at the rear, said channels being partially opened at their outer side portions, one of the said sections of the axle being provided with a spindle at each end, and the other section with a spindle at its outer end and with a recess at its inner end to receive the inner spindle of the opposing axle-section, and supporting-wheels for the axle, of a series of blocks held to slide in the rear channels of the axle-sections, rake-teeth secured to said blocks, flexible connections between the blocks, means for locking the blocks in adjusted position upon the axle, a draft-frame, arms pivotally connected to said frame, having head-sections adapted to slide in the forward axle-channel, and a connecting-bar uniting the heads of the said pivoted bars of the frame, which connecting-bar likewise has sliding movement in the said forward axle-chamber, whereby when the axle is adjusted to full length and the draft-frame is made to extend out at each side of the hinge connection between the sections of the axle the connecting-bar of the said frame will serve to lock the sections in their extended position.

847,075. BOTTLE OR JAR AND THE LIKE. JAKOB HÜRLIMANN, Halidon, N. J. Filed Sept. 5, 1906. Serial No. 333,380.

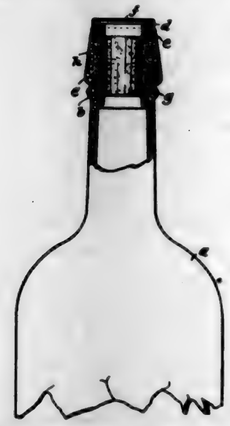

Claim.—1. The combination of a bottle, jar or the like, a capsule permanently secured in the mouth thereof and having its lower end open and its upper end portion enlarged to form a head bearing against the top of the bottle-mouth, said head having a larger inside diameter than the inside diameter of the capsule and also having a relatively weak wall closing off the way through said capsule, and a stopper fitted into said capsule below said wall, substantially as described.

2. The combination of a bottle, jar or the like, a capsule permanently secured in the mouth thereof and having its lower end open and its upper end portion enlarged to form a head bearing against the top of the bottle-mouth, said head having a larger inside diameter than the inside diameter of the capsule and also having a relatively weak wall closing off the way through said capsule, and the top surface of said head being flat or smooth, and a stopper fitted in said capsule below said wall, substantially as described.

847,076. MAIL-TRANSPORTATION SYSTEM. LANDON C. JARRETT, Marshall, N. C. Filed Sept. 13, 1906. Serial No. 334,479.

Claim.—1. In a mail-transportation system, the combination with a traffic-wire and means for supporting the same; of a carrier adapted to travel thereon consisting of a receptacle provided at each end with a mail-compartment comprising a series of letter-boxes, arranged in tiers; and means located within the interior of said receptacle between said compartments for automatically propelling the carrier, said means including a pair of uprights, a frame carried by said uprights, a pair of transversely-extending shafts journaled in said frame, a trolley-wheel and a sprocket-wheel mounted on each shaft; a sprocket-chain connecting said sprockets, an engine and a driving connection between said sprocket-chain and said engine.

2. In a mail-transportation system, the combination with a traffic-wire, and means for supporting the same; of a carrier adapted to travel upon said wire, and consisting of a receptacle provided with a mail-compartment at each end; an engine located in the interior of said receptacle in the space between said compartments; an upright mounted adjacent each compartment and extending above the upper edges of the receptacle; an open frame secured to the tops of said uprights; a transverse shaft journaled in said frame adjacent each end thereof; a trolley-wheel mounted on each shaft within the frame, and a sprocket-wheel mounted on each shaft exteriorly of the frame; a transverse shaft mounted in said receptacle intermediate said compartments; a sprocket-wheel mounted in said last-mentioned shaft; a sprocket-chain connecting the several sprocket-wheels; and a driving connection between the engine and the last-mentioned sprocket-wheel for automatically propelling the carrier.

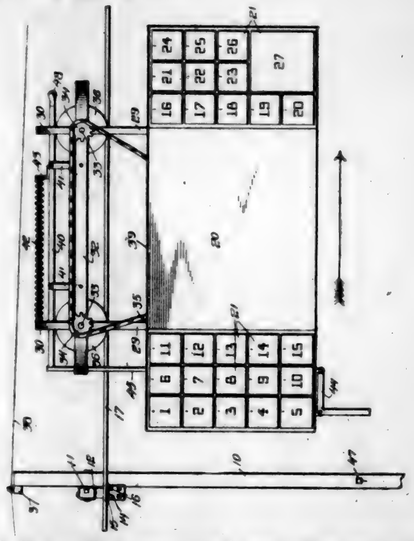

3. In a mail-transportation system, the combination with a supporting-pole, including a cross-rod secured to the upper portion thereof; of a depending bracket secured to each end of said cross-rod; a clamp secured to each bracket, and comprising a pair of vertically-disposed spaced members formed with diverging jaws at their upper portions; a traffic-wire seated within said jaws and held in place thereby; a carrier adapted to travel upon said wire; and means located within said carrier for automatically effecting its propulsion.

4. In a mail-transportation system, the combination with a traffic-wire and means for supporting the same; of a carrier adapted to travel upon said wire; means located within the carrier for automatically effecting its propulsion; a pair of uprights secured to said carrier; an open frame carried by said uprights; a pair of transversely-disposed shafts mounted in said frame; a trolley-wheel mounted on each shaft; a brake adapted to be moved into contact with said trolley-wheels; and means for automatically operating said brake.

847,077. AMALGAMATOR AND CONCENTRATOR. JULIUS A. JEAN, Denver, Colo., assignor of one-half to George A. Moors, Denver, Colo. Filed Jan. 18, 1906. Serial No. 296,661.

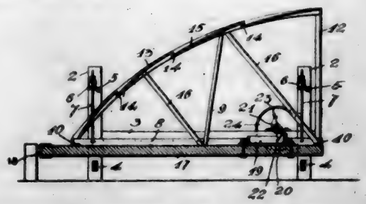

Claim.—1. A separator of the character described comprising a supporting-frame, a swinging frame loosely mounted therein, an outwardly-curved amalgamating and

concentrating table arranged on said frame, riffles formed in and extending transversely across said table and means to swing said frame, a bumping-beam connected to said frame and a stop or obstruction for said bumping-beam, substantially as described.

2. In a separator of the character described, the combination with a supporting-frame having upright corner-posts provided with supporting-brackets, of a swinging frame, hanger-rods pivotally connected at their lower ends to said swinging frame and adapted to be loosely engaged at their upper ends with the brackets on said corner-posts, a curved amalgamating and concentrating table supported on said swinging frame, transversely-disposed riffles formed in said table adapted to contain mercury, a bumping-beam secured to said swinging frame, a tripping-box secured to said bumping-beam, wear-plates arranged in said box, an operating-shaft, and a double cam mounted thereon to engage the wear-plates in said box and thereby swing said amalgamating-frame in one direction, substantially as described.

847,078. PRODUCTION OF ORGANIC SULFONIC ACIDS. MICHAEL JLJINSKY, Crefeld, Germany, assignor to R. Wedekind & Co., Uerdingen-on-the-Rhine, Germany. Filed July 14, 1903. Serial No. 165,426.

Claim.—1. The new useful more basic anthrachinone-sulfonic acids having one sulfonic group in the ortho (1) position, forming a calcium-sodium salt, being amorphous and very easily soluble in water and yielding in melting with lime new oxy-anthrachinone-sulfonic acids for dyeing mordanted wool a fine violet-red.

2. Process for obtaining the described new anthrachinone-sulfonic acids consisting in sulfonating the sodium salt of the anthrachinone 2.6 disulfonic acid with fuming sulfuric acid in the presence of mercury.

847,079. ELECTROMAGNETIC TRANSMITTING DEVICE. MAX JOHANNET, Paris, France. Filed Nov. 27, 1906. Serial No. 345,341.

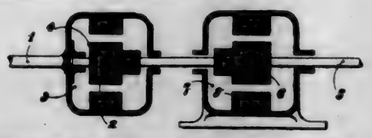

Claim.—An electromechanical transmission from a motor-shaft to a driven shaft, comprising two dynamos, one of which constitutes a generator and the other a receiver, said dynamos having the armatures thereof keyed upon the driven shaft, the generating-dynamo having its field-magnets integrally connected to the motor-shaft, and the receiving-machine having its field-magnets subdivided into sections, and an electromagnetic regulator for placing in circuit a variable number of the sections of the field-magnets of the receiving-dynamo and operating automatically in proportion to the intensity of the current developed in the generating-machine, for the purpose of varying the field of the receiving-machine, and consequently causing the variation in the inverse sense of the two factors (couple and speed) of the constant power available on the driven shaft.

874,080. INTERRUPTED CONTACT FOR THIRD-RAIL SYSTEMS. ADOLPH S. KATZMAN and HENRY A. VIERTHANN, New York, N. Y. Filed Sept. 28, 1906. Serial No. 336,550.

Claim.—1. The combination of a rocking arm, a contact member of substantially keystone form mounted thereupon, a feed-wire disposed adjacent to said rocking arm, contact-blocks mounted upon said feed-wire and provided with wedge-shaped portions mating said member of substantially keystone form, and means for maintaining such rocking arm in a predetermined normal position.

2. The combination of a feed-wire, supports therefor, contact-blocks mounted upon said feed-wire and provided with inclined contact-faces, a contact-arm disposed adjacent to said feed-wire, a contact member mounted upon said contact-arm and provided with inclined contact-faces mating said inclined contact-faces of said block, a spring connected with said contact-arm for holding the same in a predetermined normal position, and a roller mounted upon said contact-arm and adapted to be engaged by a trolley-shoe.

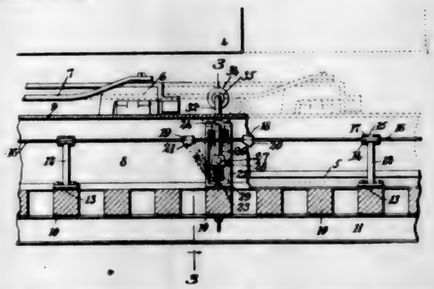

3. The combination of a plurality of insulated supports, a feed-wire extending from one of said supports to another, contact-blocks mounted upon said feed-wire and provided with obliquely-inclined contact-faces, a rocking arm disposed adjacent to said contact-blocks and provided with a member for engaging one or the other of said blocks according to the direction in which said rocking arm may be moved, and means for normally holding said rocking arm in a predetermined position.

4. The combination of a casing, a pedestal mounted thereon and provided with a bearing, a rocking arm journaled within said bearing, a plurality of insulated posts mounted within said casing, a continuous feed-wire supported upon said posts, contact-blocks connected electrically with said feed-wire and disposed upon opposite sides of said rocking arm, a contact member mounted upon said rocking arm and adapted to engage with the other of said contact-blocks when said rocking arm is moved, a spring connected with said rocking arm and normally holding the same out of electrical communication with said contact-blocks, said rocking arm being provided with a portion to be engaged by a traveling shoe.

847,081. AUTOMATIC FUNNEL. ENGELBERT R. KERN, Faribault, Minn. Filed Apr. 14, 1906. Serial No. 311,764.

Claim.—In a self-closing valve, the combination with the funnel proper and its mouth and outflow-spout, hinged weighted valve and its seat in the funnel, means for raising the valve, a latch-wire extending from the bottom of the valve and having a right-angular bend the terminal of which is bent at a substantial right angle to the first-mentioned bend, a float below the funnel-spout, having a wire connected therewith extending up through the spout and provided at its upper end with a return-bend hook, the end portion of the latter wire extending laterally from the lower end of the bill of said hook, the last-mentioned bend of the latch-wire being adapted to engage the hook of the float-wire and to be disengaged therefrom and being also adapted to engage the lateral extension from the bill of the hook when the valve is closed.

847,082. PIPE-CLAMP. LOUIS KRUEGER, EMIL J. KINKLER, and OSCAR H. CARMICHAEL, Beeville, Tex. Filed Oct. 6, 1906. Serial No. 337,666.

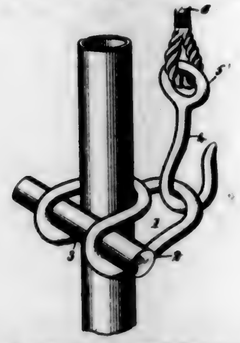

Claim.—1. A pipe-clamp comprising an oval ring bent into hook shape at one side of its transverse center, forming the hook into members of unequal lengths, the shorter member adapted to bind a pipe or the like at one side, means passing through the bend of the hook coacting with the shorter member for binding the pipe at its opposite side, and means connected to the longer member of the hook for raising and lowering the pipe.

2. A pipe-clamp comprising an oval ring bent into hook shape adapted to bind a pipe or the like at one side, and means passing through the bend of the hook to bind the pipe at its opposite side.

3. A pipe-clamp comprising a ring bent upon itself into substantially hook shape and an element seated in the bend for the purpose described.

4. A pipe-clamp comprising an oval ring bent upon itself into substantially hook shape at one side of its transverse center, forming the hook in two members of unequal length, and a member seated in the bend of said hook, for the purpose described.

5. A pipe-clamp comprising an oval ring bent into hook shape adapted to bind a pipe or the like at one side, and a ring passing through the bend of the hook to bind the pipe at the opposite side.

847,083. SAFETY DEVICE FOR ELEVATORS. GEORGE R. LAYMAN, Lincoln, Ill. Filed June 9, 1906. Serial No. 320,980.

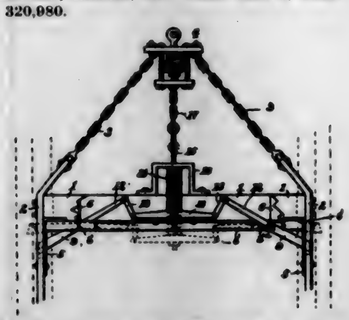

Claim.—In a safety device for elevator or mining cages, the combination with the parallel beams and flat side bars constituting the upper part of the cage, of the transverse shafts 7 having squared portions near their ends, boxes 8ª through which the ends of the shaft project, said boxes being open at their outer ends and closed at their inner ends providing a wall or abutment at the rear end of each box, and dogs 9 having slots in their rear ends by which they are mounted on the squared end portions of the shafts within the boxes and so that the abutments may receive the end thrust of the dogs; together with a movable bar connected to the shafts by links 13 and arms 12, a rod connecting said bar to the connecting device for the hoisting and lowering cable, and a spring adapted to actuate the bar, as shown and described.

847,084. STREET-CAR FENDER. WILLIAM D. LEFTWICH, Pittsburg, Pa. Filed Dec. 29, 1906. Serial No. 349,979.

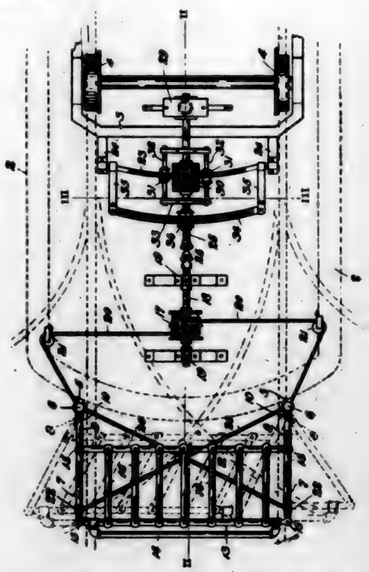

Claim.—1. The combination with a car provided with a winding-drum, of a laterally-adjustable fender, flexible connections between the fender and the drum, and mechanism automatically operative upon turning of the car-truck, to actuate said winding-drum and fender, substantially as set forth.

2. The combination with a car provided with a winding-drum, of a laterally-adjustable fender, flexible connections between the fender and the drum, a truck provided with a rack-bar, and a shaft connected with said drum and provided with a pinion engaging said rack-bar, substantially as set forth.

3. The combination with a car provided with a winding-drum, of a laterally-adjustable fender, flexible connections between the fender and the drum, a truck provided with a rack-bar, and a shaft connected with said drum and provided with a pinion engaging said rack-bar, with flexible connections between said shaft and drum, substantially as set forth.

4. The combination with a car provided with a winding-drum, of a laterally-adjustable fender, flexible connections between the fender and the drum, a truck provided with a rack-bar, a shaft connected with said drum and provided with a pinion engaging said rack-bar, and supporting and guiding devices for said shaft and pinion, substantially as set forth.

5. The combination with a car provided with a winding-drum, of a laterally-adjustable fender, flexible connections

between the fender and the drum, a truck provided with a rack-bar, a shaft connected with said drum and provided with a pinion engaging said rack-bar, supporting and guiding devices for said shaft and pinion, and a rear sliding bearing for said shaft having upper and lower cushioning-springs, substantially as set forth.

847,085. APPARATUS FOR TREATING FOAMING LIQUIDS. FRANZ H. LEHNERT, Dresden-Plauen, Germany, assignor to Ernst Fischer, Dresden, Germany. Filed June 23, 1906. Serial No. 323,011.

Claim.—1. An apparatus of the character described comprising a main receptacle, a funnel therein, means for heating the receptacle, and means passing through the funnel and the top and bottom of the receptacle for cooling the matter passing through the funnel, substantially as described.

2. An apparatus of the character described comprising a main receptacle, a funnel therein, means for heating the receptacle, a hollow cooling-cover for the receptacle and means communicating with the interior of the cooling-cover and passing through the funnel and receptacle for cooling the matter passing through the funnel, substantially as described.

3. An apparatus of the character described comprising a main receptacle, a funnel therein, means for heating the receptacle, a hollow cooling-cover for the receptacle, and a coil of pipe connected with the hollow cover and passing through the funnel and receptacle, for cooling the matter passing through the funnel, substantially as described.

847,086. COMBINED AIR AND GAS ADMISSION VALVE FOR EXPLOSIVE-ENGINES. HUGO LENTZ, Berlin, Germany. Filed Dec. 22, 1905. Serial No. 292,954.

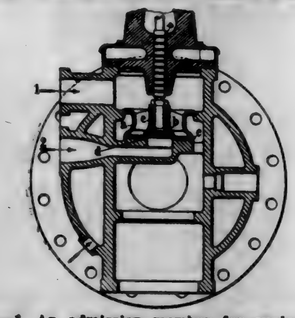

Claim.—1. An admission member for explosion-motors consisting of a tubular double-seated valve, serving as air-valve, in combination with the gas-valve in such a manner that the seat of the latter is approximately or completely in the corresponding plane of the seat of the air-valve.

2. An admission member for explosion-motors consisting of a tubular double-seated valve, serving as air-valve, in combination with and cast in one piece with the gas-valve, in such a manner that the hub of the double-seated valve serves at the same time as gas-valve.

3. An admission member for explosion-motors consisting of a tubular double-seated valve, serving as air-valve, in combination with and cast in one piece with the gas-valve, in such a manner that the ratio between the contour of the gas-valve, and the sum of the contours of the seats of the air-valve, corresponds to the ratio of the volumes of the constituents of the explosive mixture.

4. An admission member for explosion-motors consisting of a tubular double-seated valve, serving as air-valve, in combination with and cast in one piece with the gas-valve, in such a manner that the surfaces of the horizontal passage-sections of the air and gas valves are proportional to the ratio of the volumes of the constituents of the explosive mixture.

5. An admission member for explosion-motors consisting of a tubular double-seated valve, serving as air-valve, in combination with and cast in one piece with the gas-valve, in such a manner that the surfaces of the horizontal passage-sections of the air and gas valves are proportional to the ratio of the volumes of the constituents of the explosive mixture, the gas-valve being surrounded by a collar of appropriate cross-section in order to maintain constant the ratio of the passages to the ports.

6. In a gas-engine, the combination of a tubular double-seated air-inlet valve, a gas-valve coacting therewith, and seats for the valves lying in approximately the same plane.

7. In a gas-engine, the combination of a tubular inlet-valve, two annular seats with which the ends of said valve respectively coact, a gas-valve supported within and centrally coincident to the air-inlet valve, and a seat with which the gas-valve coacts, the gas-valve seat and one seat of the air-inlet valve being in approximately the same plane.

847,087. ELECTRIC SWITCH. GUSTAV W. LIDEN, New York, N. Y. Filed Nov. 23, 1905. Serial No. 288,717.

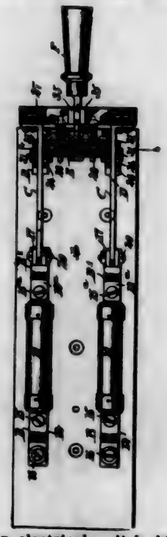

Claim.—1. In an electrical switch, binding-posts, knife-blades pivotally connected with the binding-posts, contact-posts adapted to receive free portions of the said knife-blades, said contact-posts being provided with keeper-heads, a latch operating between the knife-blades to and from the keeper-sections of the said keeper-posts to lock the said knife-blades to said contact-posts or to unlock them therefrom.

2. In an electric switch, binding-posts, knife-blades pivoted to the said posts, a connecting medium between the outer ends of the said knife-blades, contact-posts having slotted and beveled upper ends and recesses below the beveled surfaces, and a spring-controlled latch operative between the knife-blades in front of the contact-posts, for locking engagement with the keeper-sections of said posts.

3. In an electric switch, binding-posts, knife-blades pivoted to the said posts, a connecting medium between the outer ends of the said knife-blades, contact-posts having slotted and beveled upper ends and recesses below the beveled surfaces, and a spring-controlled latch operative between the knife-blades in front of the contact-posts for locking engagement with the keeper-sections of said posts, the said latch consisting of a body of insulating material and metal latch-plates which engage with the contact-posts, whereby the said latch acts as a locking device and a conductor.

4. In electric knife-blade switches, a combined latch and conducting device carried by the knife-blades and adapted for engagement with the contact-posts of said blades.

5. In an electric switch, binding-posts, contact-posts, the contact-posts being provided with recesses in their outer faces and with slots in their upper ends, knife-blades pivoted to the binding-posts, being adapted to enter the slots in the contact-posts, a spring-controlled combined lock-latch and conductor operatively placed between the said knife-blades and opposite the recessed portions of the contact-posts for locking engagement therewith, a handle for operating the said knife-blades, and an operative connection between the handle and the latch.

6. In electric switches, the combination with a knife-blade switch, contact-posts for the switch, a combined latch and conducting device connected with the switch, a handle for the switch and an operative connection between the handle and the latch, whereby the movement of the handle for opening and closing the switch will move the latch out of and into engagement with the contact-posts.

847,088. VARIABLE-SPEED ELECTRIC MOTOR. JOHN C. LINCOLN, East Cleveland, Ohio, assignor to The Lincoln Company, Cleveland, Ohio, a Corporation of Ohio. Filed Jan. 12, 1906. Serial No. 295,765.

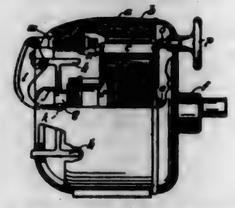

Claim.—1. In a dynamo-electric machine, the combination with its field structure, of a laterally-positioned magnetic system beyond the fields, means for exciting the same, comprising windings thereon in series circuit with the armature of the motor, an armature mounted normally to rotate beneath the fields, and suitable mechanism for effecting the relative lateral movement of the armature and field structure, adapted to increase the speed of rotation and simultaneously subject the armature to the excited magnetic system, substantially as set forth.

2. In a variable-speed electric motor, the combination with the field structure thereof, of an armature normally rotating within said field structure, suitable mechanism for effecting the relative lateral movement of the armature and field structure, whereby the speed of the motor is controlled, and means for creating a commutating-field for the armature in its positions of withdrawal from the field structure, comprising a magnetic core positioned beyond the field structure closely adjacent to the armature when withdrawn therefrom, and exciting-windings upon said core adapted to produce a magnetic field for the armature-coils at the moment of commutation, substantially as set forth.

3. In a variable-speed electric motor of the general class described, the combination with its field structure, of an armature mounted normally to rotate therein, means for effecting the partial axial withdrawal of the armature from its field structure to increase its speed of rotation, and a separate magnetic system laterally positioned to subject the armature-coils to a field at the moment of commutation; said magnetic system being excited by windings in series relation with the armature, substantially as set forth.

4. In a variable-speed electric motor of the general class described, the combination with its field structure, of an armature mounted normally to rotate therein, means for effecting the partial axial withdrawal of the armature from its field structure to increase its speed of rotation, and a separate magnetic system suitably excited to subject the coils of the armature to lines of magnetic force in opposition to those generated by the field structure, whereby the normal speed drop of the motor is corrected, substantially as set forth.

5. In a variable-speed electric motor of the general class described, the combination with its field structure, of an armature mounted normally to rotate therein, means for effecting the partial axial withdrawal of the armature from its field structure to increase its speed of rotation, and separate magnetic systems laterally positioned beyond the field structure comprising a pole piece or core suitably excited to present a polarity similar to that of the rearwardly and laterally adjacent pole of the field structure, and a second pole piece or core suitably excited to subject the armature-coils to lines of force in opposition to those generated by the field structure, whereby a commutating-field is produced and the speed drop is corrected, respectively, substantially as set forth.

6. In a variable-speed electric motor of the class described, the combination with its field structure, of two laterally-positioned electromagnets having exciting-windings thereon in series relation with the armature; the same affording commutating-fields, an armature normally rotating within the field structure, and means for partially withdrawing the armature from said field structure into positions of adjustment beneath the commutating-fields, substantially as set forth.

7. In a variable-speed electric motor of the class described, the combination with its field structure, of laterally-positioned electromagnets having a plurality of windings upon the respective limbs thereof in series relation with the armature; said windings being adapted respectively to supply a commutating-field and to subject the coils of the armature to lines of magnetic force in opposition to those generated by the field structure, an armature normally rotating within the field structure, and suitable mechanism for partially withdrawing the armature from said field structure into positions of adjustment beneath the electromagnets, substantially as set forth.

8. In a variable-speed electric motor of the class described, the combination with its field structure, of an armature mounted normally to rotate therein, means for effecting the partial withdrawal of the armature axially from said field structure, and a heavy spring associated therewith adapted to counterbalance the inward pull of the armature during the period of its withdrawal, substantially as set forth.

9. In a variable-speed electric motor of the class described, the combination with its field structure, of an armature mounted normally to rotate therein, and means for effecting the partial axial withdrawal of the armature from said field structure, comprising a rocker-arm or lever, and screw mechanism associated therewith adapted to actuate said rocker-arm or lever and withdraw the armature from the field structure to effect an increase in speed, substantially as set forth.

10. In a variable-speed electric motor of the type herein set forth, the combination with its field structure, of an armature mounted normally to rotate therein, a rocker-arm or lever connected therewith, a spring opposing the movement of the rocker-arm and armature, and screw mechanism associated therewith for actuating the rocker-arm partially to withdraw the armature axially from its normal position of rotation within the field structure, substantially as set forth.

11. In a variable-speed electric motor of the type herein set forth, the combination with its field structure, of an armature mounted normally to rotate therein, a sliding bearing for the armature, a supporting frame or spider for said bearing, a rocker-arm or lever associated there-

with, a spring opposing the movement of said rocker-arm, and screw mechanism positioned within the motor-frame adapted to actuate the rocker-arm and the armature-bearing, whereby said armature is axially withdrawn from its normal position of rotation within the field structure, substantially as set forth.

12. In a variable-speed electric motor of the type herein set forth, the combination with its field structure, of an armature mounted normally to rotate therein, means for effecting the partial withdrawal of the armature axially from said field structure, comprising a connecting rocker-arm or lever, a counterbalancing-spring, and screw mechanism associated therewith for moving the armature, and additional means for treating a commutating magnetic field for the armature in its positions of withdrawal, substantially as set forth.

847,089. RAILROAD-SWITCH. GEORGE E. MADELEY, Kaufman, Tex. Filed July 11, 1906. Serial No. 325,619.

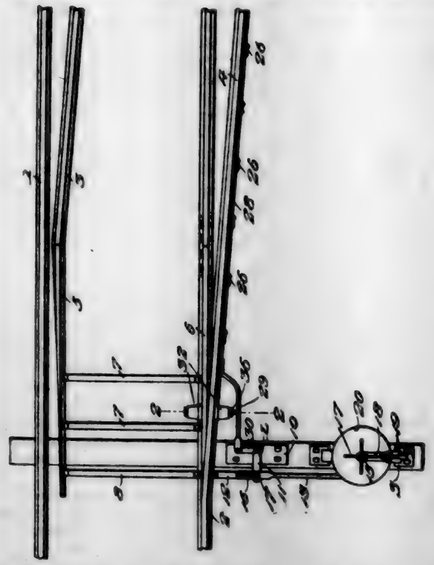

Claim.—1. In a railroad-switch, a pair of switch-tongues, tie-bars connecting said tongues, spring means for forcing one of the switch-tongues in the direction of the adjacent siding-rail to keep the switch normally closed to the siding, a bell-crank supported for movement in a horizontal plane, a vertically-movable detector-bar normally supported above the surface of the head of the siding-rail, a link connecting the detector-bar with one arm of the bell-crank, a link connecting the other arm of the bell-crank with one of the tie-bars connecting the switch-tongues, a switch-stand, a shaft supported for rotation in said stand and having an operating-handle, a crank at the lower end of said shaft, and a link connecting said crank with the arm of the bell-crank which is connected with the tie-bar of the switch-tongues; said link being provided with a slot having slidable engagement with the pin whereby it is connected with the arm of the bell-crank.

2. In a railroad-switch, a pair of suitably-connected switch-tongues, spring means actuating said tongues to keep the switch normally closed, a detector-bar pivotally supported above the plane of the tread of a siding-rail, clips for supporting said detector-bar, a bell-crank, links connecting the arms of said bell-crank respectively with the detector-bar and with the switch-tongues, and means for actuating the bell-crank to simultaneously open the switch to the siding and depress the detector-bar to a position below the tread of the siding-rail adjacent to which it is supported.

3. In a railroad-switch, a pair of suitably-connected switch-tongues, spring means actuating said tongues to keep the switch normally closed, a detector-bar normally supported above the plane of the tread of a siding-rail, a bell-crank, links connecting the arms of said bell-crank respectively with the detector-bar and with the switch-tongues, a switch-stand having a table provided with a single locking-notch, a shaft journaled in the switch-stand and extending through the table, a radial arm upon said shaft having a pivoted handle adapted to engage the locking-notch, a crank upon the shaft, and a link connecting said crank with an arm of the bell-crank lever; said link having a slot slidably engaging the pin, whereby it is connected with the bell-crank.

4. In a railroad-switch, the combination with a siding-rail, of clips engaging the rail-flange, bolts connecting the clips beneath the rail-flange and clamping said clips in position, pins extending from the clips at one side of the rail, links or arms pivoted upon said pins, a detector-bar carried by said links or arms and held normally above the surface of the rail, lugs formed upon the clips supporting the links or arms to limit the movement of the latter, a switch-stand, and connection between said detector-bar and switch-stand.

847,090. COMBINED HORSE-COLLAR AND HAME. JOSEPH MARTIN, Midland, Ohio. Filed Aug. 29, 1906. Serial No. 332,525.

Claim.—The herein-described combined horse-collar and hame consisting of wooden hame-sections, each having a recess and shoulder at the opposite edges thereof, an enlargement formed near the outer edge of said hame-section, and a curved recess extending longitudinally of the hame between the shoulders, and a pad secured to one of said shoulders by fastening means driven through the inner side of the pad and into the hame, and the other edge of the pad being secured by fastenings driven from the outer side of the pad into the hame, said pad being disposed in the curved recess extending longitudinally of the hame, substantially as described.

847,091. STREET-CAR FENDER. CHARLES B. MEAD, East Palestine, Ohio. Filed Jan. 12, 1907. Serial No. 351,922.

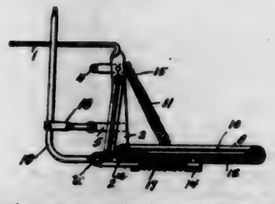

Claim.—1. A street-car fender embodying straps, depending arms carried thereby, stirrups connecting said arms, a shaft journaled in the lower ends of said arms, a forward frame carried by said shaft and having a perforated metallic sheet mounted in said frame, springs connecting said arms and said frame, a rear fender-frame pivotally mounted between said arms, a forwardly-extending spring-held arm carried by said frame and adapted to engage the forward fender-frame, and a pivoted lever carried by one of said stirrups and connecting with said rear fender-frame, substantially as described.

2. A street-car fender consisting of arms, fender-frames pivotally carried by said arms, springs connecting one of said frames to said arms, a forwardly-extending spring-held arm carried by one of said frames and engaging the other of said frames, for maintaining it in a horizontal position, means supported by said arms for manually releasing the horizontally-held frame, and means for securing said fender to a car.

3. A street-car fender consisting of depending arms, fender-frames pivotally mounted between said arms, means carried by one of said frames for normally holding the other of said frames in a horizontal position, means connecting with said arms for elevating a horizontally-held frame, and means supported from said arms for manually releasing the horizontally-held frame.

847,092. STEAM-ACTUATED VALVE. ERNEST A. MENKING, Pittsburg, Pa. Filed July 25, 1906. Serial No. 327,656.

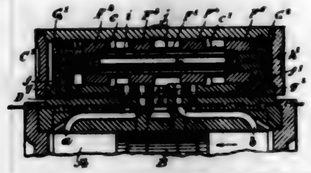

Claim.—1. A duplex steam-engine provided with cylinders, pistons reciprocating therein, steam-chests, main piston-valves in the said steam-chests, and auxiliary piston-valves, each having a stem extending through the corresponding main piston-valve and connecting the auxiliary piston-valves with each other, each cylinder having cross-over-ports leading from near the middle of the cylinder to the steam-chest for the other cylinder.

2. A duplex steam-engine provided with cylinders, pistons reciprocating therein, steam-chests, main piston-valves in the said steam-chests, and auxiliary piston-valves, each having a stem extending through the corresponding main piston-valve and connecting the auxiliary piston-valves with each other, each cylinder having cross-over-ports leading from near the middle of the cylinder to the steam-chest for the other cylinder, and each auxiliary piston-valve having exhaust-ports for conducting the steam from the steam-chests to the main exhaust.

3. A duplex steam-engine provided with cylinders, pistons reciprocating therein, steam-chests, main piston-valves in the said steam-chests, and auxiliary piston-valves each having a stem extending through the corresponding main piston-valve and connecting the auxiliary piston-valves with each other, each cylinder having cross-over-ports leading from near the middle of the cylinder to the steam-chest for the other cylinder, the said valve-stem having relief-ports at its ends for connecting the ends of the steam-chests with annular spaces in the main piston-valves and which spaces are connected with the main exhausts.

4. The combination with a steam-chest having inlet and exhaust ports leading to the ends of the cylinder, said steam-chest having also live-steam ports, a main piston-valve, a stem slidable in the chest and having at each end auxiliary valves, the main valve being mounted on the stem for sliding movement between the auxiliary valves, said chest having inlet-ports for admitting steam to the space between the ends of the main valve and the auxiliary valves whereby to move said valve along the stem, and exhaust-ports leading therefrom, each of said auxiliary valves having a port therethrough for connecting the space between said valve and the adjacent end of the chest with the exhaust when the main valve abuts thereagainst, whereby to permit said stem to move to connect the space between the main valve and the auxiliary valve at the opposite end of the chest with the exhaust.

5. A duplex steam-engine provided with cylinders, pistons reciprocating therein, steam-chests, main piston-valves in the said steam-chests, and auxiliary piston-valves, each having a stem extending through the corresponding main piston-valve and connecting the auxiliary piston-valves with each other, each cylinder having cross-over-ports leading from near the middle of the cylinder to the steam-chest for the other cylinder, the said cross-over-ports being controlled by the said pistons on reaching an approximately midway position in their cylinders.

6. A duplex steam-engine provided with cylinders, pistons reciprocating therein, steam-chests, main piston-valves in the said steam-chests, and auxiliary piston-valves, each having a stem extending through the corresponding main piston-valve and connecting the auxiliary piston-valves with each other, each cylinder having cross-over-ports leading from near the middle of the cylinder to the steam-chest for the other cylinder and draining into the latter.

7. A duplex steam-engine provided with cylinders, pistons reciprocating therein, steam-chests, main piston-valves in the said steam-chests, and auxiliary piston-valves, each having a stem extending through the corresponding main piston-valve and connecting the auxiliary piston-valves with each other, each cylinder having cross-over-ports leading from near the middle of the cylinder to the steam-chest for the other cylinder, each crossover-port having a draining-port into the other cylinder.

847,093. PAPER-BOX MACHINE. ALBERT W. MITCHELL, New Haven, Conn., assignor, by mesne assignments, to John N. Leonard, trustee, New Haven, Conn. Filed Mar. 7, 1906. Serial No. 304,673.

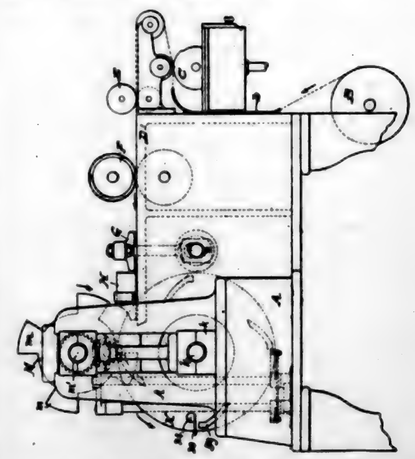

Claim.—1. A paper-box machine having two coöperating wheels, one carrying radially-projecting formers and the other of which has two disks between which said formers may pass and devices to act in conjunction with the formers to fold the flaps of the box-blanks.

2. A paper-box machine, having two coöperating wheels, one carrying radially-projecting formers and means for folding the flaps first at one end of the blank and then those at the other end of the blank against a former.

3. A paper-box machine, having two coöperating wheels, one carrying radially-projecting formers of an outline different from the box to be formed, and means for folding the flaps first at one end of the blank and then those at the other end of the blank against a former.

4. A paper-box machine, having two coöperating wheels, one carrying segmental formers, means for folding against the segmental former the flaps of the box-blank first at one end of the blank and then those at the other end.

5. A paper-box machine, having two coöperating wheels, one carrying radially-projecting formers and the other of which has two disks between which said formers may pass and devices to act in conjunction with the formers to fold the flaps of the box-blank, and means for imparting continuous rotary motion to the wheels.

6. A paper-box machine, having two coöperating wheels, one carrying radially-projecting formers and means for folding the flaps first at one end of the blank and then those at the other end of the blank against a former, and means for imparting continuous rotary motion to the wheels.

7. A paper-box machine, having two coöperating wheels, one carrying radially-projecting formers of an outline different from the box to be formed, and means for folding the flaps first at one end of the blank and then those at the other end of the blank against a former, and means for imparting continuous rotary motion to the wheels.

8. A paper-box machine, having two coöperating wheels, one carrying segmental formers, means for folding against the segmental former the flaps of the box-blank first at one end of the blank and then those at the other end, and means for imparting continuous rotary motion to the wheels.

9. A paper-box machine, having two coöperating wheels, one carrying formers and the other having two disks between which the formers may pass and folders for folding in the ends of the blank first at one end of the blank and then at the other end.

10. A paper-box machine, having two coöperating wheels, one carrying formers and the other having two disks between which the formers may pass and devices on the second wheel for folding the side and end flaps first at one end of the blank and then at the other end.

11. A paper-box machine, having two coöperating wheels, one carrying radially-projecting formers and the other carrying sliding folders to fold the side flaps and folders to fold the end flaps.

12. A paper-box machine, having two coöperating wheels, one of which has formers and the other of which has two disks, between which the formers may pass, these disks carrying devices to fold in the side flaps and then to fold the end flaps first at one end of the blank and then at the other.

13. A paper-box machine, having two coöperating wheels, one carrying formers and the other having two disks with notched inner edges to receive the blanks to start the side folds of the box, the formers passing between the disks to complete the side folds, and means for folding the flaps first at the forward end of the blank and then at the rear end of the blank.

14. A paper-box machine, having two coöperating wheels, one carrying radially-projecting formers and means for folding the flaps first at one end of the box-blank and then the flaps at the other end, and devices for imparting an extra pressure to the folding means.

15. A paper-box machine, having two coöperating wheels, one carrying formers and the other carrying hinged folding-blades to fold the end flaps of the blanks and means for imparting an extra pressure to the blades when the flaps have been folded.

16. A paper-box machine, having two coöperating wheels, one carrying formers and the other having two disks notched at their inner edges and a stationary guide projecting between the disks and over which the folding of the blank may be begun as the blank enters the notches of the disks.

847,094. MACHINE FOR BENDING METALLIC TUBES. FLEURY V. M. MONNET and EMILE J. A. MOYNE, Paris, France. Filed Oct. 1, 1906. Serial No. 336,914.

Claim.—1. In an appliance for bending tubes, the combination of a base, a guide adjacent said base, means for adjusting said guide horizontally, means for adjusting said guide angularly, means for holding said guide stationary during the bending operation, a mandrel, a former mounted on said base, a clamping member attached to said former, and means for rotating said former, substantially as described.

2. In an appliance for bending tubes, the combination of a base, a guide, means carried by said base for adjusting said guide horizontally, a front supporting-arm connected to said guide, a back supporting-arm pivotally mounted at one end to said front supporting-arm and having a slot-and-pin connection adapted to hold said guide stationary during the bending operation, a mandrel supported by said front supporting-arm, a former mounted on said base, a clamping member attached to said former, and means for rotating said former, substantially as described.

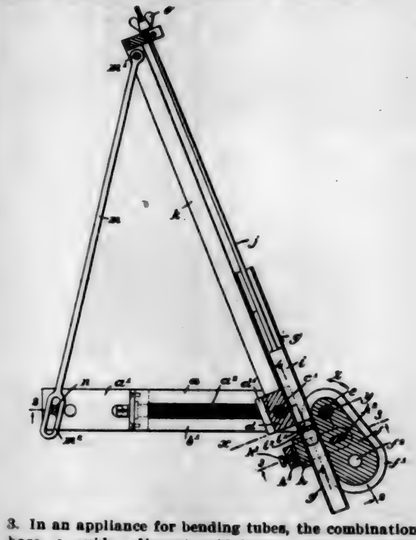

3. In an appliance for bending tubes, the combination of a base, a guide adjacent said base, a screw and block mounted in said base adapted to adjust said guide horizontally, a front supporting-arm connected to said guide at one end, a back supporting-arm connected at one end to said front supporting-arm and at the other end to said base, a slot-and-pin connection for said base and back supporting-arm, a mandrel comprising a cylindrical body having deformable segments pivotally connected thereto by means of a jointed bolt and nuts, a rod connected at one end to said mandrel and at the other end to said front supporting-arm, a former pivotally mounted on said base, a clamping member rigidly attached to said former, and a handle attached to said former and adapted to actuate the same, substantially as described.

4. In an appliance of the kind described, in combination: a base-plate, a triangular deformable frame mounted on said base-plate, a former capable of rotating on a pivot supported by said base-plate, means for turning said former, means for clamping the tube to be bent on the former, a mandrel fastened at one end near one of the apices of the deformable frame and entering at its other end the tube to be bent, means for adjusting said mandrel longitudinally, a rectangular guide-piece pivoting on an axis coinciding with another apex of the deformable frame, said guide-piece having a straight active surface to support the tube to be bent, on the outside, means for shifting at will the axis on which said guide-piece is pivoted to and from the center of rotation of the former and means for deforming the deformable frame in order to vary the inclination of the axis of the mandrel and of the tube to be bent with regard to the base-plate in order to allow, concurrently with the movement of displacement of the axis of oscillation of the guide-piece, the shifting of the same to or from the center of rotation of the former, and the distance between the point of application of the resultant of pressure applied to the tube and the center of rotation of the turning former to be varied, substantially as described and as shown in the accompanying drawings.

5. In an appliance of the kind described in combination: a base-plate, a former pivoted on a stud at one end of the base-plate, a rigid rod connected at one end by means of an adjustable joint to the other end of said base-plate, a bar pivoted at one end at the other end of said rod, a carriage which is longitudinally movable on the base-plate and is pivotally mounted at the other end of said bar, means for shifting the carriage along the base-plate, a mandrel adjustable in the direction of its length fastened at one end at the extreme end of said bar near the point where it is jointed at said rod and entering, at its other end, the tube to be bent and a guide-piece having a straight active surface in order to support the tube on its exterior, said guide-piece being mounted in such a manner that it can oscillate on the pivot connecting the carriage with the bar, substantially as described and for the purposes set forth and as shown in the accompanying drawings.

847,095. ENVELOP. LEVI B. MYERS, Altoona, Pa. Filed Mar. 7, 1906. Serial No. 304,720.

Claim.—1. An envelop consisting of a body and integral top and bottom flaps foldable over each other and over said body and an integral end flap foldable over the top and bottom flaps and with an integral sealing-flap at the free end of the end flap and adapted to be inserted between the body and the top and bottom flaps, said body portion having a perforation at the end opposite from the end flap and said sealing-flap having a plurality of spaced slits, whereby when the envelop is folded the sealing-flap will project beneath said perforations and with said slitted portion thereof in position to be engaged by a postage-stamp when attached over said perforation.

2. An envelop consisting of a body top and bottom flaps having adhesive material at the edges and foldable over each other and over said body and an integral end flap foldable over the top and bottom flaps and with adhesive material at the edges and with a sealing-flap at the free end of the end flap and with adhesive material at its juncture with said end flap adapted to be inserted between the body and the top and bottom flap, said body having a perforation at the opposite end from the end flap, whereby when the envelop is folded the sealing-flap will project beneath said perforation in position to be engaged by a postage-stamp when attached over said perforation.

847,096. FAN-HANGER. MARSHALL E. MCBEE, Alto, Tex. Filed May 11, 1906. Serial No. 316,312.

Claim.—1. In a fan-hanger, a fixed section provided with means for supporting the same, an adjustable section mounted thereon for sliding movement, an elevating-shaft journaled in the fixed section, and a cable connection from said shaft to the top of the adjustable section.

2. In a fan-hanger, a fixed section provided with means for supporting the same, an adjustable section mounted thereon for sliding movement, an elevating-shaft carried by the fixed section, a cable connection from said shaft to the adjustable section, a bracket carried by the fixed section, and holding means carried by said bracket to engage said shaft.

3. In a fan-hanger, a fixed section provided with means for supporting the same, an adjustable section mounted thereon for sliding movement, an elevating-shaft carried by the fixed section, a cable connection from said shaft to the adjustable section, a bracket carried by the fixed section, and a set-screw threaded through said bracket and into said shaft.

4. A fan-hanger comprising a fixed head having securing means thereon and a depending portion, an adjustable section mounted to slide upon said depending portion, a tongue-and-groove connection between said depending portion and adjustable section, and means upon the fixed section for adjusting and retaining said adjustable section.

5. A fan-hanger comprising a fixed head having a depending portion at one side thereof, an adjustable section mounted beneath the remaining portion of the head to slide upon said depending portion, and means journaled in said head and connected to the section for raising and lowering the same.

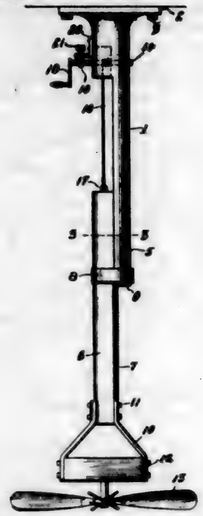

6. In a fan-hanger, a head having a recessed portion and a depending section provided at one side of the recessed portion, a coöperating adjustable section, an operating-shaft having a bearing in the head, and a cable connection disposed upon said shaft within said recess and connected to the top of the adjustable section.

847,097. CUPOLA-FURNACE. BENJAMIN D. MCCORMICK, Akron, Ohio. Filed Aug. 22, 1905. Serial No. 275,282.

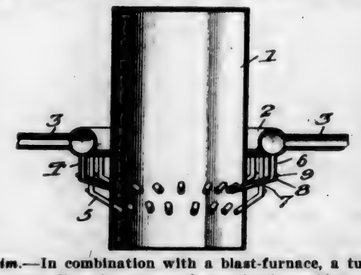

Claim.—In combination with a blast-furnace, a tubular duct surrounding the same and constituting a blast-chamber, two sets or series of twyers connected with said duct and having downwardly and inwardly inclined injector portions extended through the wall of the furnace and projecting beyond the inner face of the latter for delivering the injected blast directly into the furnace charge, the injector portions of one set of twyers being disposed in a plane above and arranged at a different inclination relative to the corresponding portions with the other set of twyers and the two sets of injector portions being alternated in arrangement around the furnace, and means for supplying a blast fluid under pressure to the blast-chamber.

847,098. POLISHING COMPOUND. EDWARD W. MCFARREN, Saginaw, Mich. Filed Apr. 2, 1906. Serial No. 309,559.

Claim.—1. A polishing compound composed of the following ingredients in proportion as follows, two pounds of tripoli, one-fourth of a pound of rotten stone, one-fourth

of a pound of tallow, one-half of a pound of stearin and one pint of petroleum-oil.

2. A polishing compound composed of tripoli, rotten stone, tallow, stearin and petroleum-oil, the said ingredients being commingled.

847,099. SPRING-WHEEL. ELON A. NELSON, Chicago, Ill. Filed Nov. 26, 1906. Serial No. 345,256.

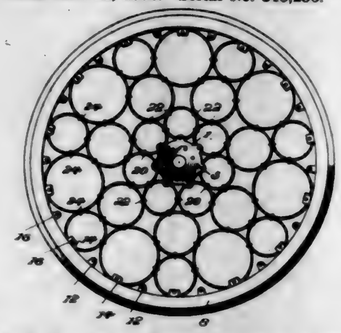

Claim.—1. In a wheel, the combination of a hub and a rim, a series of spring-rings secured to said hub, a series of spring-rings secured to said rim, and a series of spring-rings secured to both series of the aforesaid rings, substantially as described.

2. In a wheel, the combination of a hub and a rim, a series of spring-rings secured to said hub, a series of spring-rings secured to said rim, and a series of spring-rings secured to both series of the aforesaid rings, the said rings being graduated in size with the smallest rings next to the hub and the largest rings next to the rim, substantially as described.

3. In a wheel, the combination of a hub and a rim, a series of spring-rings surrounding said hub and connected thereto and to each other, a series of rings within the rim and connected thereto, and a third series of rings between the rings connected with the hub and the rings connected with the rim and connected to both sets of said rings, substantially as described.

4. In a wheel, the combination of a hub and a rim, a series of spring-rings of relatively small size surrounding said hub and connected thereto, a series of larger rings around the rings connected with the hub and connected thereto, and a series of still larger rings interposed between the second series of rings and the rim and connected both to said rings and to the rim, substantially as described.

5. In a wheel, the combination with a hub and a rim of a plurality of spring-rings of relatively small size surrounding the hub and connected therewith, a series of larger rings connected to the first set of rings, and a third set of rings connected to the second set of rings and to the rim, this third set of rings comprising a set of rings larger than the second set having smaller rings interposed between them, substantially as described.

6. In a wheel, the combination of a hub, a rim formed of two sections having ears or lugs, and spring-rings interposed between the hub and the rim, the ears or lugs on the rim forming a means connecting the rings to the rim, substantially as described.

7. In a wheel, the combination of a hub and a rim, a plurality of series of spring-rings located between the hub and the rim, the said rim being formed in sections each section having a flange on its exterior and ears or lugs on the interior, the flanges forming a retaining means for the tire and the lugs a retaining means for the spring-rings, substantially as described.

8. In a wheel, the combination with a hub and a rim, of a plurality of spring-rings located between the hub and the rim, the said rim being formed in sections and having flanges and two sets of ears or lugs, the flanges acting to retain the tire in position, and one set of lugs to secure the sections of the rims together, and the other set of lugs to hold the rings in place, substantially as described.

9. In a wheel, the combination with a hub and a rim, of a plurality of series of spring-rings located between the hub and the rim and loops connecting the rings together, said loops being rounded where they contact with the flat sides of the spring-rings, substantially as described.

847,100. SHADE AND CURTAIN BRACKET. CHARLES F. NICHOLSON, Penn Grove, N. J. Filed Nov. 3, 1906. Serial No. 341,939.

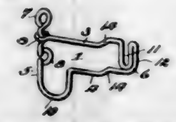

Claim.—1. A bracket of the character described comprising a single piece of wire bent to form an upper horizontal arm having an eye at the rear end thereof, a lower horizontal arm, a vertical attaching-arm extending through the eye of the upper horizontal arm and provided above and below the same with attaching members, a looped portion connecting the rear end of the lower horizontal arm to the lower end of the vertical arm, a supporting portion arranged at and connecting the forward ends of said horizontal arm and offset from the plane thereof.

2. A bracket of the character described comprising a single piece of wire having one of its ends arranged to form an upper horizontal arm having an eye at the rear free end thereof, and its opposite end arranged to form a vertical attaching-arm extending upwardly through said eye and provided with attaching members above and below the same, the intermediate portion of the wire being bent to provide a lower horizontal arm, a depending looped portion connecting the rear end of said arm with the lower end of the lower arm, and a supporting portion arranged at and joining the forward ends of the horizontal arms.

3. A bracket of the character described comprising a single piece of wire bent to form a supporting portion and upper and lower arms, the upper arm being provided at its rear end with an eye, and a vertical attaching-arm extending upwardly from the rear end of the horisontal arm through said eye and provided above and below the same with attaching members.

4. A bracket of the character described comprising a single piece of wire bent to form upper and lower horizontal arms, one longer than the other, the upper horizontal arm being provided at its rear end with an eye, a vertical attaching-arm extending upwardly through the eye and provided above and below the same with attaching portions, a depending looped portion connecting the rear end of the lower horisontal arm with the lower end of the vertical attaching-arm, and a supporting portion arranged at and connecting the forward ends of the horisontal arms, said portion being offset from the plane of the said arms.

847,101. CULTIVATOR. ARNOLD NOLF, Copemish, Mich. Filed June 16, 1906. Serial No. 322,046.

Claim.—1. A cultivator comprising a frame having laterally-adjustable side beams, rock-shafts carried by the beams, each of said shafts comprising a pair of sections journaled at their outer ends in the beams and slidably connected at their inner ends, cultivator-teeth carried by the rock-shaft sections, and means for coupling the rock-shaft sections and rocking said shaft in unison.

2. A cultivator comprising a frame having laterally-adjustable side beams, rock-shafts carried by said beams, each of said shafts comprising a pair of sections journaled at their outer ends in the beams and slidably connected at their inner ends, links having a cranked engagement with the rock-shaft sections, a lever connected with said links

for simultaneously rocking the rock-shaft sections, cultivator-teeth mounted upon the rock-shaft sections, and means for adjusting the side beams.

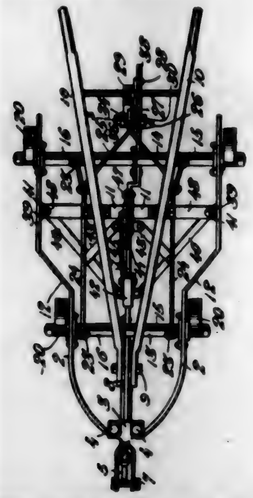

3. A cultivator comprising a main beam, side beams pivotally connected with the main beam for lateral adjustment, rock-shafts carried by the side beams, each of said shafts comprising a pair of sections journaled at their outer ends in the side beams and slidably connected at their inner ends, cranks upon the rock-shaft sections, cultivator-teeth upon said sections, links connecting the cranks of the respective rock-shaft sections, a yoke coupling the links, and an operating-lever connected with the yoke for adjusting said rock-shaft sections.

4. A cultivator comprising a main beam, side beams pivoted to the main beam for lateral adjustment, rock-shafts carried by the side beams, each of said shafts comprising a pair of sections journaled at their outer ends on the main beam and slidably connected at their inner ends, cultivator-teeth upon the journaled ends of the shaft-sections, a rear central tooth pivotally mounted on the main beam, cranks upon the shaft-sections, links connecting said cranks, a yoke coupling the cranks, an adjusting-lever pivotally connected with the main beam and yoke for rocking the crank-shaft sections in unison, and an operative connection between said lever and said rear central cultivator-tooth for adjusting the latter simultaneously with the shafts.

5. A cultivator comprising a main beam, side beams pivotally connected at their forward ends with the main beam for lateral adjustment, front and rear rock-shafts carried by the side beams, each of said shafts comprising a pair of sections journaled at their outer ends on the side beams and slidably connected at their inner ends, cultivator-teeth on the journaled ends of the shaft-sections, cranks upon said shaft-sections, links connecting the sections of the front and rear shafts on opposite sides of the main beam, a yoke connecting the rear ends of the links to couple the shaft-sections for simultaneous adjustment, and a lever upon the rear end of the main beam connected with said yoke.

6. A cultivator comprising a frame including a main beam, side beams pivotally connected at their forward ends with the main beam, cultivator-teeth supported by the side beams, a sliding sleeve on the main beam, divergent levers pivotally connecting said sleeve with the side beams, correspondingly-arranged links connecting the levers with the main beam, a lever operatively connected with the sliding sleeve, whereby the side beams may be adjusted, and resilient braces connecting the side beams with the frame, said braces being adapted to permit outward movement of the side beams and by their retractile energy to assist in restoring said beams to normal position.

7. A cultivator comprising a central main beam, side beams pivotally connected for lateral adjustment at their forward ends to the main beam, front and rear rock-shafts carried by said side beams, each of said shafts comprising a pair of sections journaled at their outer ends on the side beams and slidably connected at their inner ends, cultivator-teeth on the journaled ends of the shaft-sections, cranks upon said shaft-sections, an operating-lever, connections between said lever and the respective crank-shaft sections for rocking the latter in unison, said crank-shaft sections being slidably connected as described to permit lateral adjustment of the side beams, and adjusting mechanism on the frame and connected with said side beams for adjusting the same in and out.

847,102. APPARATUS FOR BENDING OR COILING OF METAL BARS, STRIPS, WIRE, &c. ERNST NOLLE, Weissenfels, Germany. Filed Aug. 14, 1906. Serial No. 330,570.

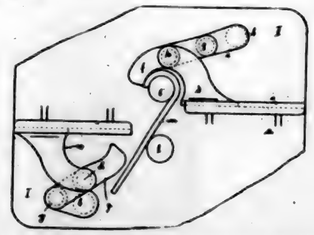

Claim.—1. In a device of the character described, the combination of a fixed mandrel, a reciprocating slide, a bending-finger pivotally connected at a point between its ends to the reciprocating slide, one end of the bending-finger coöperating with the mandrel to enable a strip to be bent around the same, and a crank-shaft carrying a lever engaging the opposite end of the bending-finger and operating to produce both a reciprocating movement of the slide and a swinging movement of the lever.

2. In a device of the character described, the combination of a fixed mandrel, a reciprocating slide formed with an outwardly-projecting arm, a bending-finger pivotally mounted at an intermediate point upon the arm, one end of the bending-finger coöperating with the mandrel, and a crank engaging the opposite end of the bending-finger and serving to produce both a reciprocating movement of the slide and a swinging movement of the lever.

847,103. FILTERING APPARATUS. MATHIAS N. OTTO, Lancaster, Pa. Filed May 29, 1906. Serial No. 319,238.

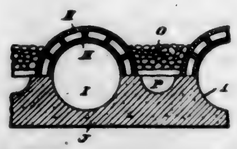

Claim.—1. In filtering apparatus a bed provided in its upper face with a series of horizontal channels having outwardly and downwardly inclined bottoms, in combination with a series of horizontal porous semicylindrical arches supported on said base and covering said channels substantially as set forth.

2. In filtering apparatus, a basin or inclosure provided with an inlet-space at one end and means for supplying the same, also with a partition which is lower than the proximate parts of the outer wall, in combination with a series of arches of filtering material in the main chamber

divided by said partition from said inlet-space, channels covered by said arches and outlets from said channels substantially as set forth.

8. In filtering apparatus, a series of filtering-arches and channels covered thereby, in combination with alternating cleaning-troughs, independent outlets from said channels and from said troughs, means for supplying water to said arches and cleaning-troughs, and valves controlling at will the outflow from the latter substantially as set forth.

4. In filtering apparatus, a basin having the outlet end of its exterior wall lower than the rest of said wall and also provided near its inlet end with a partition which is lower than the latter, in combination with means for supplying water to the space between said partition and the proximate end of said basin, means for filtering the water as it passes from the main chamber of the basin on the other side of said partition, inclined troughs in the floor of said basin, separate from said filtering means, outlets from said troughs through the exterior wall of said basin and valves operated at will for opening and closing these outlets to clean the said main chamber substantially as set forth.

847,104. HOT-WATER REGULATOR. GEORGE PARGE, Allegheny, Pa. Filed Mar. 29, 1906. Serial No. 308,719.

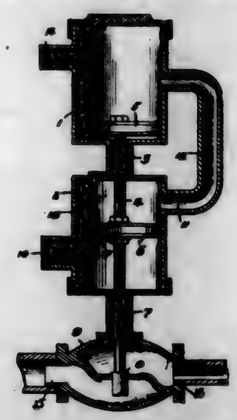

Claim.—1. In a device of the class described two cylinders of equal size and a valve-body spaced apart, said cylinders closed at the ends and said valve-body having an internal valve-seat and inlet and outlet pipes, a piston-rod common to both of said cylinders and extending into said valve-body, a valve carried by said rod and adapted to engage said valve-seat, piston-heads carried by said rod and operating respectively within said cylinders, an inlet leading into one of said cylinders and an outlet leading from the other of said cylinders, and a pipe connecting said cylinders and serving to conduct the liquid from one to the other.

2. A device of the character described, comprising a plurality of cylinders and a valve-body, said cylinders having inlet and outlet ports, a piston-rod slidably mounted in said cylinders and common to all, a piston-head carried by one extremity of said rod and slidable in one of said cylinders, a second piston-head carried intermediate the extremities of said piston-rod and slidable in the other of said cylinders and adapted to open and close the outlet-port thereof, means comprising a valve carried by the other extremity of said piston-rod and adapted to seat within said valve-body, said second-named piston-head being provided with a tapering port, a tapering stem carried by one end of said second-named cylinder and arranged within said tapering port, substantially as described.

847,105. SIGNAL. WILLIAM H. PARRISH, Jr., Nashville, Tenn. Filed Nov. 3, 1906. Serial No. 341,952.

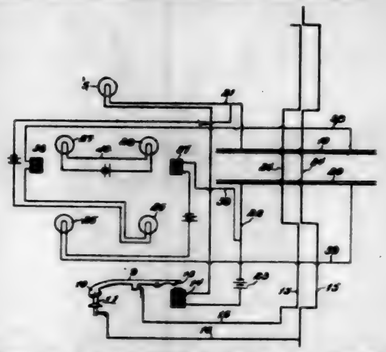

Claim.—1. A crossing signaling system, including a means operated by one train for signaling the crossing train, and means for operating an independent signal in the event of defect of the first-mentioned means.

2. A crossing signaling system, including a means operated by one train for signaling and controlling a crossing train, and test means for signaling to the crossing train the condition of the first-mentioned means.

3. A crossing signaling system, including a normally open circuit adapted to be closed by the travel of the train, said circuit including a signal and controlling means for the crossing train, and a test-circuit to indicate to the operator of the crossing train the condition of the first-mentioned circuit.

4. A crossing signaling system, including a main circuit having a signal and controlling means for the crossing train, said main circuit being normally open and arranged to be closed to operate the signal and controlling means by the passage of a train, and a test-circuit including a part of the main circuit.

5. A crossing signaling system, including a main circuit having a signal and controlling means for the crossing train, said main circuit being normally open and arranged to be closed to operate the signal and controlling means by the passage of a train, and a test-circuit including a part of the main circuit, said test-circuit being normally closed and including a "clear" signal.

6. A crossing signaling system, including a main circuit having a signal and controlling means for the crossing train, said main circuit being normally open and arranged to be closed to operate the signal and controlling means by the passage of a train, a test-circuit including a part of the main circuit, said test-circuit including a "clear" signal, and a danger-signal controlled by the test-circuit.

7. The combination with a steam-railroad and electric-railroad crossing, of a signaling system comprising a main circuit including a prescribed length of the steam-railroad tracks, a signal arranged in said circuit, a power-circuit for the electric railroad, and means included in the main signal-circuit for breaking the power-circuit upon the closing of the main circuit.

8. The combination with a railroad-crossing of a steam and electric road, of a main signal-circuit including a signal for the motorman of the electric road, said circuit being normally open and including a prescribed length of the steam-railroad tracks, and a test-circuit normally closed and including the prescribed length of the steam-railroad track.

9. The combination with a railroad-crossing of a steam and electric road, of a main signal-circuit including a signal for the motorman of the electric road, said circuit being normally open and including a prescribed length of the steam-railroad tracks, and a test-circuit normally closed and including the prescribed length of the steam-railroad track, said test-circuit including a "clear" signal.

10. The combination with a railroad-crossing of a steam and electric road, of a main signal-circuit including a signal for the motorman of the electric road, said circuit being normally open and including a prescribed length of the steam-railroad tracks, a test-circuit normally closed and including the prescribed length of the steam-railroad track, said test-circuit including a "clear" signal, and a danger-signal controlled by the test-circuit.

11. The combination with a railroad-crossing of a steam and electric road, of a main signal-circuit including a signal for the motorman of the electric road, said circuit being normally open and including a prescribed length of the steam-railroad tracks, a test-circuit normally closed and including the prescribed length of the steam-railroad track, said test-circuit including a "clear" signal, a danger-signal normally concealed while the test-circuit is closed, and means operative upon the breaking of the test-circuit to expose the danger-signal.

12. The combination with a railroad-crossing, of a signal-box arranged adjacent the crossing, a main signal-circuit including a prescribed length of one of the crossing tracks, a signal and power controlling means for the train of the other crossing track located within the signal-box, said signal and power controlling means being influenced by the main circuit, duplicate test-circuits each including the prescribed length of one of the respective tracks and normally closed, clear-signals and danger-signals carried by the signal-box, and means for controlling the signals in accordance with the condition of the test-circuits.

13. The combination with a railroad-crossing, of a signal-box arranged adjacent thereto, a main circuit including a prescribed length of track-rails of one of the tracks, a signal and power controlling means arranged within the box and adapted to be influenced by the presence of a train upon the prescribed length of track, test-circuits, each including one of the prescribed lengths of track and being normally closed, a "clear" signal included in each test-circuit and arranged within the box, a danger-signal arranged within the box, and a shutter controlled by the test-circuit to conceal the danger-signal while the test-circuit is closed and to expose said signal upon the opening of the test-circuit.

14. The combination with a railroad-crossing, of a signal-box arranged adjacent thereto, a main circuit including a prescribed length of track-rails of one of the tracks, a signal and power controlling means arranged within the box and adapted to be influenced by the presence of a train upon the prescribed length of track, test-circuits, each including one of the prescribed lengths of track and being normally closed, a "clear" signal for each test-circuit, said "clear" signal being arranged within the box, a plurality of danger-signals arranged within the box, and means whereby the opening of a test-circuit extinguishes the "clear" signal in said circuit, exposes one of the danger-signals, and conceals the "clear" signal of the other test-circuit.

15. The combination with a railroad-crossing, of a signal-box arranged adjacent thereto, a main circuit including a prescribed length of track-rails of one of the tracks, a signal and power controlling means arranged within the box and adapted to be influenced by the presence of a train upon the prescribed length of track, test-circuits, each including one of the prescribed lengths of track and being normally closed, a "clear" signal for each test-circuit, said "clear" signal being arranged within the box, a plurality of danger-signals arranged within the box, shutters pivotally supported within the box, electromagnets included in each test-circuit and operating when energized to maintain the shutters in position to conceal the danger-signals, said shutters upon the deënergization of the magnets gravitating to conceal the clear-signals.

847,106. CLOTHES-PIN. SIMON PASQUALIN, New York, N. Y., assignor of one-half to William J. H. McKillop, Brooklyn, N. Y. Filed May 14, 1906. Serial No. 316,728.

Claim.—1. In a clothes-pin, the combination of a bar having a notch cut in one end thereof for receiving a line, a finger substantially triangular in longitudinal section seated over said notch, a second finger of approximately like form seated over a notch and cut-out portion at the opposite end of the bar, said second finger also having a corresponding notch and a cut-out portion adapted to register with those of the bar, a pin transversely embedded at the back of the bar at its center, and a single spring coiled about the ends of said pin and pressing on the outer ends of both of said fingers, as described.

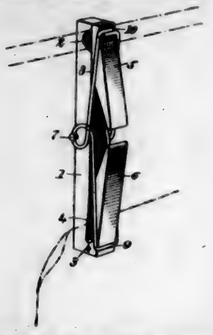

2. In a clothes-pin a bar having a rope-engaging notch at one end, a clamping-finger substantially triangular in longitudinal section seated over said notch, a second clamping-finger of approximately like form seated at the same side but at the opposite end of the bar, and a single spring for yieldingly pressing on the outer ends of both fingers.

3. A clothes-pin comprising a bar, a clamping-finger at each end of the bar rockingly mounted directly on its top face, and a single spring connected to the center of the bar and pressing on the outer end of each finger, said spring acting to keep the bar and fingers assembled.

847,107. SHIELD. MAUD E. PATTERSON, Baltimore, Md. Filed Sept. 25, 1906. Serial No. 336,141.

Claim.—1. The combination with a corset, of a shield arranged at the ends of the busks, said shield comprising a cushion of flexible material having a nipple whereby to inflate the cushion and provided with oppositely-arranged ears on the edges thereof, said ears having openings therethrough and safety-pins engaging the openings and the corset whereby to secure the shield in place.

2. The combination with a corset, of a shield arranged at the ends of the busks, said shield comprising a cushion of flexible material, and provided with oppositely-arranged ears on the edges thereof, and means in connection with the ears and engaging the corset whereby to secure the shield in place.

847,108. FENDER. JAMES R. PLAUK, Camden, Ind. Filed May 19, 1906. Serial No. 317,780.

Claim.—A structure of the character described comprising a plurality of plow-beams, each having a fender connected thereto, each of said fenders consisting of a strip of metal bent at one end into U-shaped form so as to provide two straight parallel arms of different lengths, the longer one of which is provided with a coiled spring

formed thereon and extending forwardly therefrom, and means for slidably attaching and detaching the U-shaped bend of each fender of the plow-beam, consisting of U-shaped clips having arms to embrace said beam, clip-plates 9 located on the outer side of the U-shaped bend

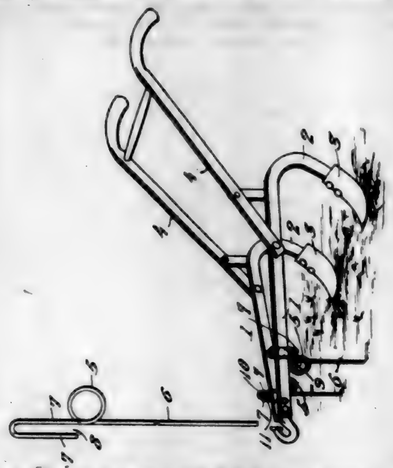

and curved inwardly on cross-section, and having openings arranged one above the other for the passage therethrough of the arms which serve to clamp the U-shaped ends of each fender between the plow-beams and said plates, substantially as described.

847,109. PAPER-FEED-ACTUATING MECHANISM FOR VOTING-MACHINES. CHARLES H. PITNEY, Pittsfield, Mass., assignor to Triumph Voting Machine Company, Pittsfield, Mass., a Corporation of New Jersey. Filed Jan. 7, 1907. Serial No. 351,054.

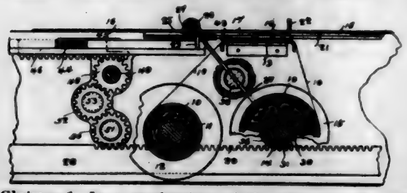

Claim.—1. In a mechanism of the character described, the combination with a paper-receiving shaft having a sliding clutch member keyed thereto, a pinion loose on said shaft and a fixed clutch member carried by said pinion, of a sliding shutter and intermediate connections actuated by the shutter for connecting and disconnecting the clutch members.

2. In a mechanism of the character described, the combination with a paper-receiving shaft having a sliding clutch member keyed thereto, a pinion loose on said shaft and a fixed clutch member carried by said pinion, of a clutch-lever engaging the sliding clutch member, a clutch-rod pivoted to the clutch-lever, and a sliding shutter which lifts the clutch-rod and tilts the clutch-lever.

3. In a mechanism of the character described, the combination with a paper-receiving shaft having a sliding clutch member keyed thereto, a pinion loose on said shaft and a fixed clutch member carried by said pinion, of a clutch-lever engaging the sliding clutch member, a clutch-rod pivoted to the clutch-lever and having a pin extending therefrom and a sliding shutter having an incline which engages the pin, raises the clutch-rod and tilts the clutch-lever when the shutter is moved to the open position, said pin riding down the incline, permitting the clutch-rod to drop, and tilting the clutch-lever in the opposite direction when the shutter is moved to the closed position.

4. In a mechanism of the character described, the combination with a paper-receiving shaft having a sliding clutch member keyed thereto, a fixed clutch member carried by said pinion, a spring acting on said clutch member, a pinion loose on said shaft and a fixed clutch member carried by said pinion, of a sliding shutter and intermediate connections actuated by the shutter for connecting and disconnecting the clutch members.

5. In a mechanism of the character described, the combination with a paper-receiving shaft having a sliding clutch member keyed thereto, a pinion loose on said shaft and a fixed clutch member carried by said pinion, of a clutch-lever engaging the sliding clutch member, a clutch-rod pivoted to the clutch-lever, a sliding shutter which lifts the clutch-rod and tilts the clutch-lever, means for locking a partly or wholly opened shutter against return movement and means for unlocking opened shutters and returning them to the closed position and simultaneously disengaging the clutch members.

6. In a mechanism of the character described, the combination with a paper-supply shaft, a paper-receiving shaft on which the paper is wound therefrom and a backing-plate intermediate said shafts over which the paper is drawn, for the purpose set forth, of a sliding clutch member keyed to the paper-receiving shaft, a pinion loose on said shaft, a fixed clutch member carried by said pinion, a sliding shutter and intermediate connections actuated by the shutter for connecting and disconnecting the clutch members.

7. In a mechanism of the character described, the combination with a paper-supply shaft, a paper-receiving shaft on which the paper is wound therefrom and a backing-plate intermediate said shafts over which the paper is drawn, for the purpose set forth, of a sliding clutch member keyed to the paper-receiving shaft, a pinion loose on said shaft, a fixed clutch member carried by said pinion, a clutch-lever engaging the sliding clutch member, a clutch-rod pivoted to the clutch-lever and a sliding shutter which engages and lifts the clutch-rod and tilts the clutch-lever to place the clutch members in engagement.

8. In a mechanism of the character described, the combination with a paper-receiving shaft, a sliding clutch member keyed thereto, a pinion loose on said shaft and a fixed clutch member carried by said pinion, a clutch-lever engaging the sliding clutch member, a clutch-rod pivoted to the clutch-lever and having pins extending therefrom, a plurality of sliding shutters which engage said pins to lift the clutch-rod, tilt the clutch-lever and engage the clutch members and means for moving opened shutters to the closed position and permit the pins to ride down the inclines and the clutch-rod to drop and tilt the clutch-lever to disengage the clutch members.

9. In a mechanism of the character described, the combination with a paper-receiving shaft having a sliding clutch member keyed thereto, a pinion loose on said shaft and a fixed clutch member carried by said pinion, of a clutch-lever engaging the sliding clutch member, a clutch-rod pivoted to the clutch-lever and having a pin extending therefrom and a sliding shutter having an incline which engages the pin and raises the clutch-rod to move the sliding clutch member downward into engagement with the fixed clutch member, the pin sliding down the incline and the clutch-rod dropping to raise the sliding clutch member out of engagement.

847,110. RAILROAD-TIE. JOSHUA H. PRICE, Cleveland, Iowa. Filed Nov. 21, 1906. Serial No. 344,381.

Claim.—A device of the type set forth comprising a metallic casting having confronting integral lips and formed with wedge-shaped recesses adjacent each of said lips, wedge-shaped blocks for insertion into said respective recesses, said blocks having a major portion flush with the surface of said casting, and being provided with integral lips confronting in spaced relation the lips of said casting, and overhanging said major portion, said major portion serving as a rail base-plate and means for preventing displacement of said block from said casting.

847,111. STARTING RESISTANCE FOR MOTORS. HENRY G. REIST, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 23, 1904. Serial No. 213,782.

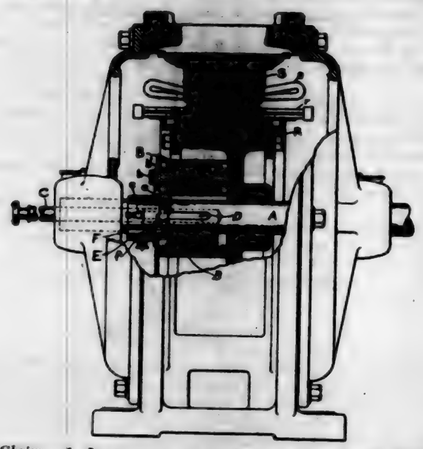

Claim.—1. In a motor, a member supporting the rotor-winding and having a supporting offset flange secured to the shaft, a plurality of bolts secured to said flange and distributed around the shaft and extending parallel thereto, resistance-bobbins mounted on said bolts and insulated therefrom, a ring engaging the outer ends of said bolts and holding them against centrifugal strain, and axially-movable contacts engaging the peripheries of said bobbins.

2. In a motor, a member supporting the rotor-winding and having a supporting offset flange secured to the shaft, a plurality of bolts secured to said flange and distributed around the shaft and extending parallel thereto, resistance-bobbins mounted on said bolts and insulated therefrom, a ring engaging the outer ends of said bolts and holding them against centrifugal strain, an axially-movable collar surrounding the shaft, and contacts carried by said collar and engaging the outer peripheries of said bobbins.

3. In a motor, resistances mounted on the rotor, axially-movable contacts adapted to engage said resistances, a notched rack on the shaft, and a spring-pressed pawl carried by the movable contacts and engaging said rack.

4. In a motor, a collar surrounding the shaft and axially movable thereon, contacts carried by said collar, resistances mounted on the rotor and adapted to be engaged by said contacts, a notched rack on the shaft, and a spring-pressed pawl carried by said collar and engaging said rack.

5. In a motor, resistance-bobbins mounted on the rotor with their axes parallel with the shaft, a collar axially movable on the shaft, contacts carried by said collar and adapted to engage the peripheries of said bobbins, a notched rack on the shaft, and a spring-pressed pawl carried by said collar and engaging said rack.

847,112. BOAT-PLUG. GEORGE W. RAWTON, Brooklyn, N. Y. Filed Jan. 18, 1907. Serial No. 352,903.

Claim.—1. The improvement in boat-plugs herein described, comprising a base-plate having an opening and provided on opposite sides thereof with posts or standards curved on their outer sides, a ring on said posts and threaded on its outer side and projecting laterally beyond the outer sides of the posts, affording at its lower edge an abutment for engagement by a stop device, a cap having a top plate and a depending side portion whose lower end is brought to an edge and whose inner side is threaded to screw upon the external flange of the top ring of the body portion and a screw turning through said depending portion of the cap near its lower end and projecting inwardly to engage the abutment at the lower end of the threaded ring when the cap is adjusted to the uppermost position, the lower edged end of the cap being adapted to seat itself upon the base-plate when the cap is lowered, substantially as and for the purpose set forth.

2. A boat-plug having a body portion provided with an upper ring threaded on its outer side and having at its lower edge an abutment for a stop device and with posts or standards supporting said ring, and a cap fitting upon the said body portion and having a depending part threaded in engagement with the said threaded ring, the posts or standards forming a support for the threaded ring and being of comparatively reduced diameter whereby to afford space for the operation of a stop device on the cap and a stop device projecting inwardly from the cap adjacent to the lower edge thereof and adapted to engage the abutment at the lower edge of the threaded ring when the cap is raised, as set forth.

3. A boat-plug having a base-plate, a ball-valve and a cage therefor below the base-plate, the latter having a central opening, a body portion on the base-plate surrounding said central opening and having the lower portion consisting of posts curved on their outer sides and a ring mounted on said posts and of greater diameter than the lower portion and threaded on its outer side, a cap having a top plate and a depending cylindrical portion threaded on its inner side to engage with the threads of the top ring, the lower edge of said ring forming an abutment, and a screw threaded through the lower portion of the depending part of the cap and projecting at its inner end to engage with the lower edge of the threaded ring when the cap is raised, to limit the movement thereof, substantially as set forth.

4. A boat-plug having a body portion provided with a top ring threaded on its outer side and with a lower or cylindrical portion supporting said top ring and of less diameter than said ring, whereby the latter affords at its lower end an abutment for engagement by a stop device and a stop device movably connected with the cap near its lower end and adapted to engage the abutment at the lower end of the threaded ring to limit the upward movement of the cap, substantially as set forth.

847,113. DOOR-CHECK. JOHN L. RIDGWAY, Chevy Chase, Md. Filed Apr. 2, 1906. Serial No. 309,490.

Claim.—1. A door-check comprising a case, a bolt which normally protrudes beyond its case, and means for momentarily retarding the bolt when first struck, after which

it automatically releases it and permits it to slide back into the case.

2. A door-check comprising a gravity-bolt, and a gravity-lock for retarding the bolt with the first pressure upon the bolt and then automatically releasing it.

3. A door-check comprising a gravity-bolt and means for momentarily retarding the bolt after sustaining the first stroke of the door and then automatically permitting the release of the bolt.

4. A door-check comprising a casing having a cavity therein, a gravity slide-bolt fitted to and guided by the edges of the cavity and a gravity-lock, for retarding the bolt.

5. A door-check comprising a suitable casing having a diagonally-disposed cavity therein, a gravity-bolt fitted to and sliding in said cavity, said bolt having a recessed inner edge, and a gravity-lock adapted to normally rest upon the bottom of the cavity and impinge upon the recessed edge of the bolt and be displaced therefrom by the pressure upon the bolt.

6. In a door-check, the combination with a casing having a diagonally-disposed cavity therein with parallel upper and lower edges, of a bolt fitted to slide in the cavity and drop therein by gravity, and means for automatically locking the bolt in its projected position and for automatically releasing the bolt when the latter is struck or pressed.

7. In a door-check, the combination with a suitable casing having a diagonally-disposed cavity therein and a spring secured at the edge of the cavity, its free end projecting from the wall of the cavity, of a gravity-bolt having a recessed inner edge and a gravity-lock normally resting against the bottom of the cavity, the inner edge of the bolt and the free end of the spring, whereby the initial pressure upon the outer end of the bolt causes the lock to be temporarily wedged between the bolt and the wall of the cavity from which position it is displaced by continued or successive pressure upon the bolt.

847,114. ROPE-COUPLING. FREDERICK H. ROEWE and WILLIAM A. MATHEWS, Fennimore, Wis. Filed Nov. 4, 1905. Serial No. 285,946.

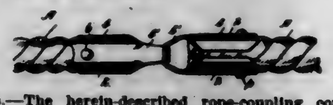

Claim.—The herein-described rope-coupling consisting of two members of like construction each formed from a single sheet-metal blank, and provided with two enlarged end portions, and an intermediate reduced portion, the ends of said enlarged portions being inwardly curved and provided with pointed terminal corners, said corners being bent inwardly to provide rope-engaging tangs, the reduced intermediate portion being bent upon itself to form a loop and the enlarged portions being bent into semicircular form in cross-section to engage the opposite sides of the end of a rope, the two loops formed on the two members being connected, and a bolt passing through each member to secure the same to the opposite ends of a rope, essentially as described.

847,115. SPEED-REGULATOR. RUFUS E. RUCKER, Longbeach, Cal., assignor of one-half to Melville Scott Rucker, Longbeach, Cal. Filed Dec. 14, 1905. Serial No. 291,706.

Claim.—1. A device of the character described, employing a hollow or tubular shaft, gearing independent of said shaft, radial arms or rods arranged in connection with said shaft, frictional clutches effective to engage said gearing and adjustable upon said arms or rods and capable of being actuated thereby, said clutches being automatically controlled by retractable springs connected thereto, near their ends and to a relatively fixed part upon said tubular shaft, and means for actuating said rods or arms.

2. A device of the character described, employing a hollow or tubular shaft, gearing independent of said shaft, radial arms or rods having their inner ends projecting into said tubular shaft and equipped with ball-bearings, frictional clutches adjustable upon said rods or arms and effective for engagement with said gearing and adapted to be actuated by said arms or rods, retractable springs

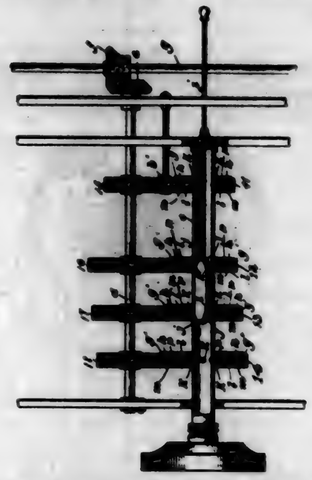

connected to said frictional clutches, near their ends and to a relatively fixed part carried by said tubular shaft, and a shipping-mandrel movable within said shaft and adapted for engagement with the ball-bearings of said arms or rods in applying said clutches.

847,116. SAD-IRON HEATER. HALSEY W. RUSSELL, Manchester, N. H. Filed Nov. 28, 1906. Serial No. 345,443.

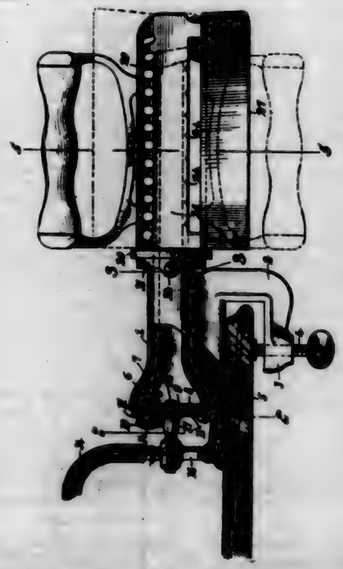

Claim.—1. A gas-heater having a main frame, a sleeve rotatably mounted thereon and provided with a mixing-chamber, a burner connected with said sleeve and provided with discharge-apertures and a longitudinal guideway arranged opposite to said apertures, and a sad-iron provided on its upper portion with guides adapted to engage said guideway, substantially as shown and described.

2. The combination with a main frame, of a sleeve rotatably mounted thereon, provided with a mixing-chamber and connected with a burner having discharge-orifices, and a guideway arranged opposite to said orifices adapted to engage a guide formed in the upper portion of a sad-iron.

3. The combination with a main frame, of a sleeve rotatably mounted thereon and provided with a mixing-chamber, and atmospheric regulating devices connected therewith, a journal connected with said sleeve and provided with discharge-orifices extending longitudinally of said burner, and means connected with said burner adapted to engage a sad-iron so as to enable said burner to be rotated on the main frame by means of the sad-iron, substantially as shown and described.

4. The combination with a main frame, of a sleeve rotatably mounted thereon and provided with an enlarged head forming a mixing-chamber, a burner connected with said sleeve and provided with apertures extending longitudinally of said burner, and a longitudinal guideway adapted to engage a sad-iron, substantially as shown and described.

5. The combination with a main frame, of a sleeve rotatably mounted thereon and provided with an enlarged head forming a mixing-chamber, a burner connected with said sleeve and provided with apertures extending in a longitudinal line, and a reduced end adapted to engage a sad-iron and lock said iron against rotary motion on said burner, substantially as shown and described.

6. The combination with a main frame, of a sleeve rotatably journaled thereon and provided with an enlarged head forming a mixing-chamber, a burner connected with said sleeve and provided with orifices extending in a longitudinal line, and a spring-clamp adapted to lock said sleeve in engagement with the main frame, substantially as shown and described.

7. The combination with a main frame, of a sleeve rotatably mounted thereon and provided with an enlarged head forming a mixing-chamber, a burner connected with said sleeve and provided with apertures extending in a longitudinal line, and with means adapted to engage the main frame and limit the rotary motion of said sleeve on the main frame, substantially as shown and described.

8. The combination with a main frame, of a sleeve rotatably mounted thereon and provided with an enlarged head, a burner connected with said sleeve and provided with apertures extending in a longitudinal line and means adapted to engage the upper portion of a sad-iron and hold said iron against rotary motion on the burner, a regulating-plate adjustably secured to the end of said sleeve, and a gas-cock connected with the main frame provided with means adapted to be controlled by the rotation of the sleeve in the main frame, substantially as shown and described.

9. The combination with a main frame, of a sleeve rotatably mounted thereon and provided with an enlarged head forming a mixing-chamber, and with segmental end plates, an adjusting-plate secured to the segmental plates of the sleeve and provided with openings adapted to register with the openings in the end of said sleeve, a supply-cock connected with the main frame, means connected with said adjusting-plate adapted to operate said cock and a burner connected with said sleeve and provided with discharge-orifices, and an oppositely-disposed guideway adapted to engage the upper portion of a sad-iron, substantially as shown and described.

10. In a gas-burner, the combination with a main frame, of a sleeve rotatably mounted thereon and provided with an enlarged head forming a mixing-chamber, a supply-cock freely connected with said sleeve and adapted to be operated by the rotary movement of said sleeve and a burner connected with said sleeve and provided with discharge-apertures arranged in a longitudinal line, and interlocking mechanism arranged on the opposite side of said sleeve adapted to engage the upper portion of a sad-iron, substantially as shown and described.

11. The combination with a main frame, of a sleeve rotatably mounted thereon, provided with an enlarged head forming a mixing-chamber, an adjusting-plate secured to the end of said sleeve, a supply-cock loosely connected with said plate and provided with a detachable tip extending into the interior of said mixing-chamber and a burner connected with said sleeve provided with discharge-orifices extending in a longitudinal line, and with interlocking means adapted to engage a sad-iron and hold said iron against rotary motion on said burner, substantially as shown and described.

12. A sad-iron heater having a supply-valve, a rotatable burner operatively connected with said valve and provided with discharge-orifices, and with means adapted to engage a sad-iron, substantially as shown and described.

847,117. STEAM COOKING APPARATUS. WILLIAM C. SALMON, Minneapolis, Minn. Filed Mar. 26, 1906. Serial No. 308,096.

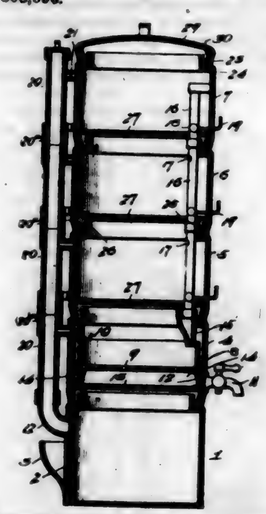

Claim.—A steam cooking apparatus comprising a lower boiler with a seat at the top thereof and a flange forming the inner portion of the seat, a plurality of compartments separably superimposed on the boiler and similarly provided with seats at their upper portions and inwardly-deflected flanges at their bottom portions to engage the seats, the lower compartment next to the boiler having a meat-receptacle formed therein above the closed bottom thereof, the bottom of the meat-receptacle being perforated and forming with the bottom of the said lower compartment, a receptacle for meat-juices, a cock connected to the said lower receptacle and located on the exterior of the lower compartment, a drip-duct at the upper portion of the lower compartment, a plurality of tubes carried by the compartments above the lower compartment and adapted to be joined when the compartments are assembled, the said tubes having cut-offs in each compartment and also openings communicating with the upper portions of the compartments, and a vertical steam-pipe formed in sections carried by each compartment and communicating with the boiler.

847,118. BUCKLE. LOUIS SANDERS, New York, N. Y. Filed Nov. 16, 1906. Serial No. 343,656.

Claim.—1. A buckle, comprising a frame, formed of side bars, a front bar, a rear or attaching bar, a pivot-bar intermediate of its ends, and a rest-bar adjacent to the front bar, the pivot-bar being within the plane of the frame, and the attaching and rest bars below the plane of said frame, and a spring-tongue mounted on the pivot-bar

and having its front end terminating short of the front bar of the frame and resting upon the rest-bar, the said tongue being provided intermediate of its ends with a downwardly-extending offset or step and having its forward end portion projecting substantially at right angles from the said offset or step.

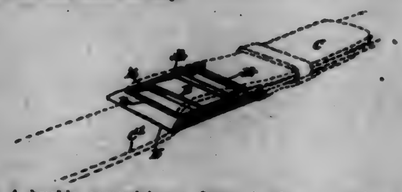

2. A buckle comprising a frame having a rest-bar adjacent to its front bar and below the plane thereof, and a tongue pivoted in the frame between the ends thereof and having its free end terminating short of the front bar of the frame and resting upon the rest-bar, said tongue being provided intermediate of its ends with a downwardly-extending offset or step and having its forward portion projecting substantially at right angles from the said offset or step.

847,119. PLUNGER-CLEANING MEANS FOR FLUID-OPERATING MACHINES. WILLARD T. SEARS, Philadelphia, Pa. Filed Mar. 17, 1906. Serial No. 306,633.

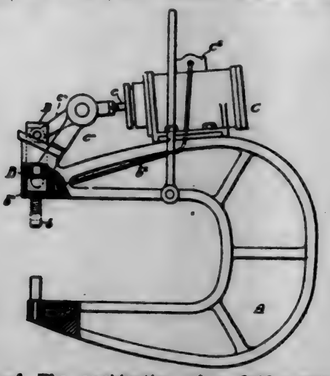

Claim.—1. The combination of a fluid-operated tool having a guide and a reciprocatory member movable therein, there being a portion of said member placed to intermittently engage the guide, with means for delivering fluid upon said portion of the reciprocatory member to remove foreign bodies therefrom, substantially as described.

2. The combination of a fluid-operated tool having a reciprocatory portion and a guide therefor, means connected to a source of fluid under pressure for delivering such fluid to said reciprocatory portion, with means for causing such delivery of fluid only at such time as the reciprocatory portion is being drawn into its guide, for the purpose of removing foreign bodies from its surface, substantially as described.

3. The combination in a fluid-operated machine having a reciprocatory plunger and a frame provided with guides for said plunger, of a device for delivering fluid under pressure to said plunger in an annular stream around the same after each winding stroke, substantially as described.

4. The combination with a fluid-operated tool, a plunger and guides therefor, of an engine for actuating said plunger, there being an annular cavity surrounding the plunger and opening onto the surface thereof, said cavity being connected to a source of fluid under pressure, substantially as described.

5. The combination with a fluid-operated tool having a plunger and guides, of an engine for actuating said plunger, there being an annular cavity surrounding the plunger and discharging onto the surface thereof, and a pipe connecting said cavity with a source of fluid under pressure, the parts being arranged to cause a discharge of fluid onto the plunger each time the latter is drawn into its guides, substantially as described.

6. The combination of a fluid-operated tool having a reciprocatory portion and a guide therefor, with means for delivering fluid from within the guide to said reciprocatory portion in such manner as to remove foreign bodies from its surface, substantially as described.

847,120. BRICK-MACHINE. THEODORE SHERWALL, Barry, Ill. Filed Jan. 7, 1907. Serial No. 351,240.

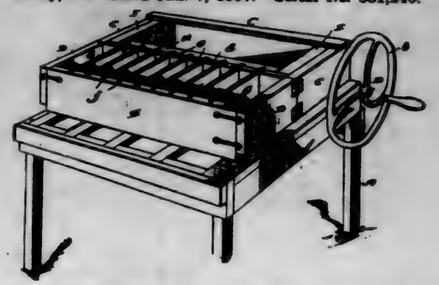

Claim.—A brick-machine comprising a stand flat at its upper side, a body fixed on the upper side of the stand and having side walls and also having a forward wall in which at intervals of its length are vertical notches or kerfs, side walls hinged to and extending forward from the forward ends of the side walls of the body, a removable front wall arranged on the flat upper side of the stand and between the hinged side walls and having vertical grooves in its inner side, means for detachably connecting said front wall to the hinged side walls, a removable pallet resting on the flat upper side of the stand and between the front wall of the body, the hinged side walls and the detachably-connected front wall, whereby when the front wall is removed and the hinged walls are swung outward, the pallet may be moved forward on the flat stand and removed therefrom, dividing-plates movable fore and aft in the vertical notches or kerfs of the body-wall, a bar connecting said dividing-plates at the rear thereof and having rearwardly-extending arms at its ends, racks on said arms, and a shaft journaled in bearings on the stand and having spur-gears intermeshed with said racks.

847,121. HEATING DEVICE. THOMAS SHARP, Carlisle, Pa. Filed Aug. 30, 1906. Serial No. 332,637.

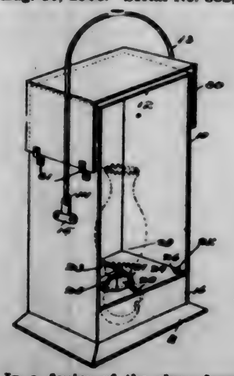

Claim.—1. In a device of the class described, a casing open at one side and proportioned to receive and accommodate a heating element, cleats along the sides of the casing and parallel with the bottom, upright studs extending above the cleats, a bifurcated plate proportioned to be inserted within the casing and resting upon the cleats, and provided with notches formed in the opposite sides positioned to engage upon the studs, and a latch pivoted upon the plate and proportioned to removably engage a convenient part of the heating element.

2. In a device of the class described, a casing opened at one side, a heating element positioned within the casing, cleats upon the sides of the casing, studs projecting from the cleats, a plate resting upon the cleats and engaging the studs, and a hook pivotally connected to the plate and serving to retain the heating element in position.

847,122. SHOW-CASE. HADLEY H. SHELDON, Albion, Mich. Filed Mar. 17, 1906. Serial No. 306,638.

Claim.—The herein-described show-case provided with sliding sashes at the front side thereof, in combination with counterbalance-weights, a box or compartment at the rear side of the case, a cord or cable connected to each weight and connected to the sash at the opposite upper corners thereof and extending over guide-pulleys and passing around a pulley carried by each weight, handles connected to the weights, said handles extending through a slot in the case for moving said weights up and down within said box or compartment for raising and lowering the sash.

847,123. COMBINATION MOP AND WRINGER. HARRY L. SLUSSER, Columbus Grove, Ohio, assignor to Perfection Mop and Clothes Rack Co., Lefpsic, Ohio. Filed Apr. 23, 1906. Serial No. 313,301.

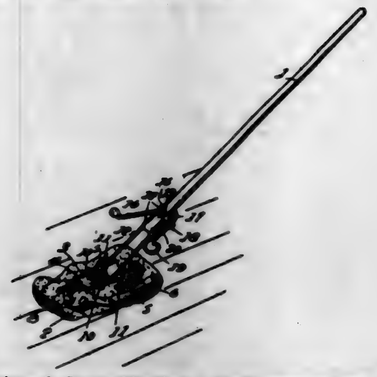

Claim.—1. In combination, a handle provided with an extension embodying spaced sides, a plate carried by said extension, a mop-cloth-attaching frame having sides pivotally attached at one end to said plate, ears projecting from the plate and engaging the sides of the mop-cloth-attaching frame to prevent spreading of the latter, and to hold the latter in engagement with the plate, and means connecting the handle extension above mentioned with the plate of the holder and preventing disengagement of the sides of the mop-cloth-attaching frame from the ears aforesaid.

2. In combination, a handle provided with an extension embodying spaced sides, a plate carried by said extension, a mop-cloth-attaching frame having sides pivotally attached at one end to said plate, ears projecting from the plate and engaging the sides of the mop-cloth-attaching frame to prevent spreading of the latter and to hold the latter in engagement with the plate, and pivot projections extending from the sides of said extension and connecting the same with the plate of the mop-holder, said pivot projections engaging with the sides of the mop-cloth-attaching frame to prevent disengagement of the latter from the ears aforesaid.

3. A device of the character described, comprising a handle, a mop-holder consisting of a plate and a mop-cloth-attaching frame pivotally connected to said plate, means for holding the mop-cloth-attaching frame in pivotal connection with the plate to admit of movement of said attaching-frame preliminary to disconnection thereof, and means connecting the handle with the plate and coöperating with the latter to normally prevent movement of the mop-cloth-attaching frame necessary to disconnection of the same from the plate.

4. In combination, a handle provided with a handle extension comprising spaced sides having outwardly-extending pivot projections at the lower extremities thereof, a mop-holder consisting of a plate provided with longitudinal flanges apertured to receive the pivot projections of the handle extension, and also having lateral extensions formed with integral upwardly-projecting ears, and a mop-cloth-attaching frame embodying spaced sides having inwardly-projecting terminals passing through the longitudinal flanges of the plate to establish pivotal connection therewith, the sides of the mop-cloth-attaching frame overlapping the lateral extensions of the plate and being arranged upon the inner sides of the ears of said extensions, the pivot projections of the handle extension engaging over the sides of the mop-cloth-attaching frame to hold the same in position upon the inner sides of the ears, whereby the mop-cloth-attaching frame is maintained rigid with respect to the plate.

847,124. CORK-PULLER. GENNARO SPARANO, Philadelphia, Pa. Filed June 9, 1906. Serial No. 321,009.

Claim.—A cork-extractor comprising a stem, arms connected therewith, means for projecting said arms to arrange them transverse the stem, a sleeve mounted for longitudinal movement on the stem, said sleeve being formed with diametrically-opposed openings to receive and engage the arms, means for preventing independent rotation of the stem, and means for locking the sleeve against independent longitudinal movement relative to the stem, the walls of the openings in the sleeve serving to engage the arms in the longitudinal movement of the sleeve and force said arms within the plane of the sleeve and against the tension of the arm-projecting means.

847,125. WEED-CUTTER. ROBERT W. STEELE, Twin Falls, Idaho. Filed Dec. 14, 1905. Renewed Nov. 3, 1906. Serial No. 341,944.

Claim.—1. In a weed-cutter and in combination a frame comprising a plurality of longitudinal bars and cross-bars connecting the ends of the longitudinal bars, bearings on the lower faces of the longitudinal bars, a shaft having a cranked portion journaled on the bars, wheels on the outer

ends of the shaft, gear-wheels on the cranked portion adjacent to the outer longitudinal bars, brackets secured to the said longitudinal bars, shafts journaled in the brackets and provided with worms engaging the gear-wheels, a hand-wheel for manipulating the shaft, side plates on the central longitudinal bar and provided at their front and rear ends with depending portions, the front depending portions being provided with a plurality of alined perforations and projecting beyond the longitudinal bars, a doubletree connected to sundry of the perforations, side plates on the outer longitudinal bars projecting beyond the front ends thereof and having a curved depending portion at their rear ends, a tongue pivoted in the upper perforations of the first-named side plates, means for varying the angle of the frame and tongue, means for fixing the parts in their adjusted position, knives connected at one end to the curved depending portions of the side plates on the outer longitudinal bars and at their other end to the side plates on the rear depending portions of the central longitudinal bar and arranged at an acute angle with respect to each other, a vertical cutter secured to the rear depending portions of the side plates on the central longitudinal bar at the junction of the knives, finger-bars between the knives, and upwardly and backwardly inclined fingers on the longitudinal bars.

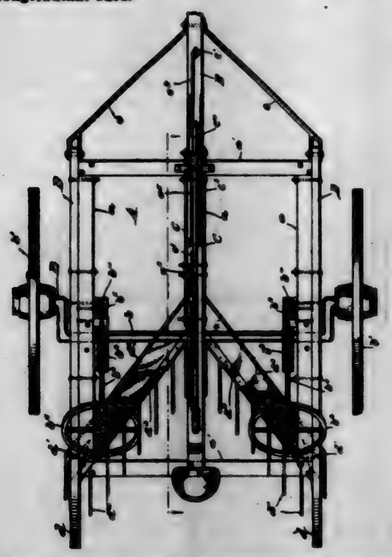

2. In a weed-cutter and in combination, a frame comprising a plurality of longitudinal bars, and cross-bars connecting the ends of the longitudinal bars, bearings on the lower faces of the longitudinal bars, a shaft having a cranked portion journaled on the bars, wheels on the outer ends of the shaft, means engaging the cranked portion of the shaft for raising and lowering the frame with respect to the wheels, side plates on the central longitudinal bar and provided at their front and rear ends with depending portions, the front depending portions being provided with a plurality of alined perforations projecting beyond the longitudinal bar, a doubletree engaging sundry of the perforations, side plates on the outer longitudinal bars and projecting beyond the front ends thereof, and having a curved depending portion at their rear ends, a tongue pivoted in the upper perforations of the first-named side plates, braces connecting the tongue with the projecting portions of the last-named side plates, an eyebolt on the tongue, a bar connected with the eyebolt and provided at its outer end with a plurality of perforations, brackets secured to the central longitudinal bar of the frame, a lever pivoted in the brackets and having one of its ends engaging the perforations in the bar, a toothed quadrant on the longitudinal bar of the frame, a spring-actuated catch on the lever for engaging the quadrant, knives connected at one end to the curved depending portions of the side plates on the outer longitudinal bars and at their front end to the rear depending portions of the side plates on the central longitudinal bar, and arranged at an acute angle with respect to each other, a vertical cutter secured to the rear depending portions of the side plates on the central longitudinal bar at the junction of the knives, finger-bars behind the knives, and upwardly and backwardly inclined fingers on the finger-bars.

3. In a weed-cutter and in combination, a frame comprising a plurality of longitudinal bars and cross-bars connecting the ends of the longitudinal bars, bearings on the lower faces of the longitudinal bars, a shaft having a cranked portion journaled in the bar, wheels on the outer eds of the shaft, gear-wheels on the cranked portions adjacent the outside longitudinal bars, brackets secured to said longitudinal bars, shafts journaled in the brackets and provided with worms engaging the gear-wheels, hand-wheels for manipulating the shafts, a tongue pivoted to the front of the frame, braces connecting the tongue with the sides of the frame, an eyebolt on the tongue, a bar connected with the eyebolt and provided at its outer end with a plurality of perforations, brackets secured to the central longitudinal bar of the frame, a lever pivoted in the brackets and having one of its ends engaging the perforations in the bar, a toothed quadrant on the frame, a spring-actuated catch on the lever for engaging the quadrant, a plurality of substantially horizontal knives connected at their front ends and diverging rearwardly and supported below the frame, a vertical cut ter at the junction of the knives, and means behind the knives for loosening the weeds from the soil.

4. In a weed-cutter and in combination, a plurality of longitudinal bars, and cross-bars connecting the ends of the longitudinal bars, bearings on the lower faces of the longitudinal bars, a shaft having a cranked portion journaled in the bearings, wheels on the outer ends of the shaft, gear-wheels on the cranked portion adjacent the outside longitudinal bars, brackets secured to said longitudinal bars, shafts journaled in the brackets and provided with worms engaging the gear-wheels, hand-wheels for manipulating the shafts, a tongue pivoted to the front of the frame, means for varying the angle of the tongue with the frame, means for fixing the parts in their adjusted position, a plurality of substantially horizontal knives connected at their front ends and diverging rearwardly, supported below the frame, a vertical cutter at the junction of the knives, and means behind the knives for loosening the weeds from the soil.

5. In a weed-cutter and in combination, a frame, wheels for supporting the frame, means for raising and lowering the frame with respect to the wheels, a tongue pivoted to the front of the frame, means for varying the angle of the tongue with the frame, means for fixing the parts in their adjusted position, a plurality of substantially horizontal knives connected at their front ends and diverging rearwardly and arranged below the frame, a vertical cutter at the junction of the knives, and means behind the knives for loosening the weeds from the soil.

6. In a weed-cutter and in combination, a frame, wheels for supporting the frame, means for raising and lowering the frame with respect to the wheels, a tongue pivoted to the front of the frame, means for varying the angle of the tongue with the frame, means for fixing the parts in their adjusted position, a plurality of substantially horizontal knives connected at their free ends and diverging rearwardly and supported below the frame, and means behind the knives for loosening the weeds from the soil.

7. In a weed-cutter and in combination, a frame, wheels for supporting the frame, means for raising and lowering the frame, a tongue pivoted to the frame, means whereby to fix the frame and the tongue at various inclinations with respect to each other, a plurality of substantially horizontal knives connected at their front ends and diverging rearwardly arranged below the frame and connected therewith, a vertical cutter at the junction of the knives, and means behind the knives for loosening the cut weeds from the ground.

8. In a weed-cutter and in combination, a frame, wheels for supporting the frame, means for raising and lowering the frame, a tongue pivoted to the frame, means whereby to fix the frame and tongue at various inclinations with respect to each other, a plurality of substantially horizontal knives connected by their front ends and diverging rearwardly and arranged below the frame, a vertical cutter at the junction of the knives, and means between the knives for loosening the cut weeds from the ground.

9. In a weed-cutter and in combination, a frame, wheels for supporting the frame, means for raising and lowering the frame, a tongue pivoted to the frame, means for varying the angle of the tongue to the frame, means for fixing the tongue and the frame in their adjusted position, a plurality of substantially horizontal knives connected at their front ends, a vertical cutter at the junction of the knives, and means behind the knives for loosening the weeds from the soil.

10. In a weed-cutter and in combination, means for cutting the weeds, a frame for supporting the cutting means, means for elevating and depressing the cutting means with respect to the frame, and means for throwing the weeds into windrows comprising a substantially triangular frame supported behind the cutting means with its apex adjacent thereto.

11. In a weed-cutter and in combination, means for cutting the weeds, means for supporting the cutting means, means for elevating and depressing the cutting means with respect to the supporting means, and means behind the cutting means for throwing the weeds into windrows.

847,126. PROCESS FOR THE TREATMENT OF BEET-ROOT, &c. CARL STEFFEN, Vienna, Austria-Hungary. Filed July 29, 1903. Serial No. 167,516.

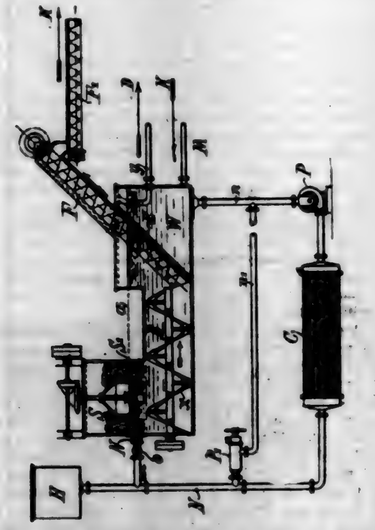

Claim.—1. A process consisting of disintegrating sacchariferous plants, and subjecting the same while being disintegrated to the action of a sacchariferous liquid.

2. A process consisting of disintegrating sacchariferous plants, and subjecting the same while being disintegrated to the action of a heated sacchariferous liquid.

3. A process consisting of disintegrating sacchariferous plants, and subjecting the same while being disintegrated to the action of hot beet juice.

4. A process consisting of disintegrating sacchariferous plants, subjecting the same while being disintegrated to the action of a sacchariferous liquid, and subsequently separating the solid and liquid matter.

5. A process consisting of disintegrating sacchariferous plants, subjecting the same while being disintegrated to the action of a sacchariferous liquid then separating the solid and liquid and finally utilizing the liquid to act upon a fresh supply of sacchariferous plants.

6. The herein-described process of treating sugar-beets and other plants for the purpose of extracting sugar or other substances therefrom, which consists in cutting or disintegrating said plants while they are surrounded by an extracting liquid.

7. The herein-described process of treating sugar-beets and other plants for the purpose of extracting sugar or other substances therefrom, which consists in heating and at the same time cutting or disintegrating said plants while they are surrounded by an extracting liquid.

8. The herein-described process of treating sugar-beets and other plants for the purpose of extracting sugar or other substances therefrom, which consists in cutting or disintegrating said plants while they are surrounded by a hot extracting liquid.

9. The herein-described process of treating sugar-beets and other plants for the purpose of extracting sugar or other substances therefrom, which consists in cutting or disintegrating said plants while they are surrounded by an extracting liquid, and returning the resulting liquid into contact with the plants undergoing disintegration.

10. The herein-described process of treating sugar-beets, and other plants for the purpose of extracting sugar or other substances therefrom, which consists in cutting or disintegrating said plants while they are surrounded by an extracting liquid, returning the resulting liquid into contact with the plants undergoing disintegration, and heating said liquid on its return-path.

11. The herein-described process of treating sugar-beets and other plants for the purpose of extracting sugar or other substances therefrom, which consists in cutting or disintegrating said plants while they are surrounded by an extracting liquid, then extracting the juice from the material, and returning the extracted juice into contact with the plants undergoing disintegraion.

12. The herein-described process of treating sugar-beets and other plants for the purpose of extracting sugar or other substances therefrom, which consists in cutting or disintegrating said plants while they are surrounded by an extracting liquid, then extracting the juice from the material, returning the extracted juice into contact with the plants undergoing disintegration, and heating said juice on its return-path.

13. The herein-described process of treating sugar-beets and other plants for the purpose of extracting sugar or other substances therefrom, which consists in cutting or disintegrating said plants while they are surrounded by an extracting liquid, and then separating the extracted juice from the remaining material.

14. The herein-described process of treating sugar-beets and other plants for the purpose of extracting sugar or other substances therefrom, which consists in cutting or disintegrating said plants while they are surrounded by an extracting liquid, then separating the extracted juices from the remaining material, and thereupon subjecting this remaining material to pressure.

15. The herein-described process of treating sugar-beets and other plants for the purpose of extracting sugar or other substances therefrom, which consists in cutting or disintegrating said plants while they are surrounded by an extracting liquid, then separating the extracted juice from the remaining material, subjecting this remaining material to pressure to extract a further amount of juice therefrom, and returning this juice into contact with the material.

847,127. WINDOW-LOCK. ADELIA Z. STEWART, Atlanta, Ga. Filed Oct. 8, 1903. Serial No. 176,232.

Claim.—As an article of manufacture a resilient keeper for a bolt, said keeper comprising an attaching-plate, and

a strip formed integral with the plate and provided with bolt-openings.

847,128. AUTOMOBILE. MICHAEL H. SULLIVAN, Poughkeepsie, N. Y., assignor to Alonzo Sedgwick, Poughkeepsie, N. Y. Filed May 17, 1906. Serial No. 317,367.

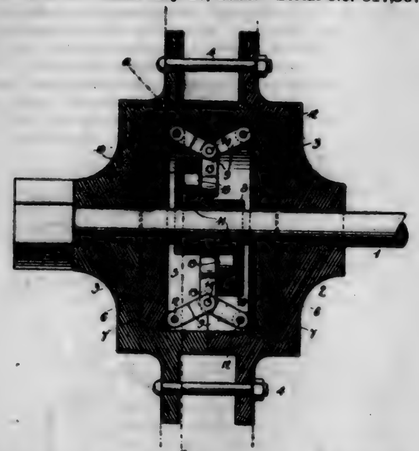

Claim.—1. The combination with a driving-shaft, a driven wheel loose thereon and having a friction member, a friction member movable longitudinally with relation to the shaft into and out of frictional engagement with the friction member of the driven wheel, a cam on and turned by the shaft, and means coacting with the cam and actuated by the angular movement thereof with respect to the wheel, to operate the longitudinally-movable friction member.

2. The combination of a driving-shaft, a driven wheel loose thereon and having a friction member provided with oppositely-disposed friction-surfaces, spaced apart, a cam on and turned by the shaft, friction members movable longitudinally with respect to the shaft into and out of frictional engagement with the friction-surfaces of the driven-wheel friction member, and means coacting with the cam and actuated by the angular movement thereof with respect to the wheel, to simultaneously move the longitudinally-movable friction members, for the purpose set forth.

3. The combination of a driving-shaft, a driven wheel loose thereon and having a friction member provided with opposing spaced friction-surfaces, friction members loose on and longitudinally movable with respect to the shaft into and out of engagement with the friction-surfaces of the driven-wheel friction member, a cam fast on the shaft and disposed between said longitudinally-movable friction members, toggle-jointed links connecting said members, and means, operated by the cam and connected to the said links, to operate said longitudinally-movable friction members when the shaft is turned angularly with respect to the wheel.

847,129. DISH-WASHING MACHINE. ROBERT H. SUMELS, Cleveland, Ohio. Filed June 10, 1905. Serial No. 264,879.

Claim.—1. A dish-washing machine comprising a plurality of tanks, a framework for supporting said tanks, a carriage movable longitudinally of the framework, a plunger mounted for reciprocation in the carriage, and an arm carried by the plunger and arranged above the tanks.

2. A dish-washing machine comprising a framework, a plurality of tanks carried thereby, a carriage movable lengthwise the framework, a reciprocable plunger carried by the framework, an arm movably mounted on the plunger, means for securing said arm in adjusted relation to the plunger, and means for reciprocating the plunger in the carriage.

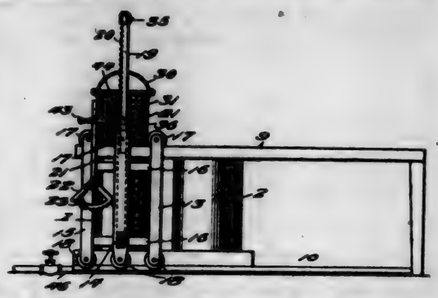

3. A dish-washing machine comprising a framework, a plurality of tanks carried thereby, a carriage movable longitudinally of the framework, dish-supporting means mounted on said carriage for vertical reciprocation and for a horizontal swinging movement relative to the carriage.

4. A dish-cleaning machine comprising a framework, a plurality of tanks supported by the frame, a carriage movable longitudinally of the framework, a plunger mounted for reciprocatory movement in the carriage, and an arm revolubly mounted on the upper end of the plunger.

5. In a dish-washing machine a framework, a plurality of tanks supported by the framework, a carriage movable lengthwise of the framework, a plunger mounted in the carriage, means supported on the carriage for imparting a reciprocating movement to the plunger, and an arm revolubly mounted on the upper end of the plunger.

6. In a dish-washing machine a framework, a plurality of tanks supported by the framework, a carriage movable lengthwise of the framework, a plunger mounted in the carriage, means supported on the carriage for imparting a reciprocating movement to the plunger, an arm revolubly mounted on the upper end of the plunger, and means for locking said arm in adjusted position with relation to the plunger.

7. A dish-washing machine comprising a framework, a plurality of tanks supported thereby, a carriage including a hollow standard mounted for movement longitudinally of the framework, a plunger mounted in said hollow standard, means for operating the plunger, and an arm revolubly supported on the plunger.

8. A dish-washing machine comprising a framework provided with track-rails, a plurality of tanks supported by said framework, a carriage having wheels supported on said track and including a hollow standard, a plunger mounted in said standard, means for reciprocating the plunger, an arm revolubly mounted on the plunger, and means for locking said arm with relation to the plunger.

9. A dish-washing machine comprising a framework provided with track-rails, a plurality of tanks supported by said framework, a carriage having wheels supported on said track and including a hollow standard, a plunger mounted in said standard, a spring-cushion within the standard, and means for reciprocating the plunger, an arm revolubly mounted on the plunger, and means for locking said arm with relation to the plunger.

847,130. RAIL-JOINT. ROBERT THATCHER and WILLIAM A. WEDDING, Cincinnati, Ohio. Filed July 7, 1906. Serial No. 325,159.

Claim.—1. A railroad-chair comprising a supporting-section designed to underlie the base-flanges of the rails, and a locking-section designed to overlie the base-flange of the rail and engage the supporting-section, and means formed on the supporting-section for engaging the upper edge of the locking-section.

2. A rail-chair comprising a supporting-section including a base-plate designed to underlie the base-flange of the rails and formed on one edge with an upwardly-extending lip, a plate projecting from the opposite edge of the base-plate and designed to overlie the base-flange of the rails and engage the webs thereof, a head formed on the supporting-section and conforming in contour and size to the rail, a locking-section designed to embrace the opposite side of the rail and engage beneath the lip of the supporting-section, and means formed on the head to engage the upper edge of the locking-section.

3. A rail-chair comprising a supporting-section including a base-plate designed to underlie the base-flanges of the rails and formed on one edge with an upwardly-extending lip, a plate projecting from the opposite edge of the base-plate and designed to overlie the base-flange of the rails and engage the webs thereof, a head formed on the supporting-section and conforming in contour and size to the rail, a locking-section designed to embrace the opposite side of the rail and engage beneath the lip of the supporting-section, and a lip depending from the head to engage the upper edge of the locking-section.

4. A rail-chair comprising a supporting-section including a base-plate designed to underlie the base-flanges of the rails and formed on one edge with an upwardly-extending lip, a plate projecting from the opposite edge of the base-plate and designed to overlie the base-flange of the rails and engage the webs thereof, a head formed on the supporting-section and conforming in contour and size to the rail, a locking-section designed to embrace the opposite side of the rail and engage beneath the lip of the supporting-section, a lip depending from the head to engage the upper edge of the locking-section, the supporting-section and locking-section being formed with spike-openings to register with spike-openings formed in the base-flanges of the rails.

847,131. STEAM-TRAP. CHARLES E. VANCE, Pittsburg, Pa. Filed Dec. 20, 1906. Serial No. 348,727.

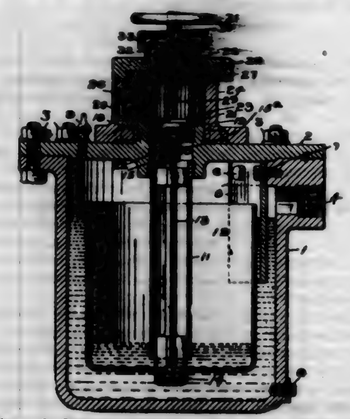

Claim.—1. In steam-traps, a discharge-opening in said trap, a tube communicating with said opening and downwardly depending within said trap, a bucket within said trap, a stem attached to said bucket and upwardly extending within said tube, a collar slidably mounted on said stem, a reversible valve-disk mounted on said collar and adapted to engage said opening, a valve-seat in said collar, a port in the wall of said collar beneath said valve-seat and a valve-plug rigidly mounted on said stem and adapted to engage said valve-seat.

2. In steam-traps, a discharge-opening, a tube communicating with said opening and downwardly depending within said trap, a bucket within said trap, a stem attached to said bucket and upwardly extending within said tube, a collar slidably mounted on said stem, a valve-disk mounted on said collar and adapted to engage said opening, a jam-nut engaging said collar and holding said disk in place, a valve-seat in said jam-nut, a port in the wall of said collar beneath said valve-seat and a valve-plug rigidly carried by said stem adapted to engage said valve-seat.

3. In steam-traps, a discharge-opening, a valve-seat in said opening, a tube communicating with said opening beneath said valve-seat and downwardly depending within said trap, a bucket within said trap, a stem attached to said bucket and upwardly extending within said tube, a collar slidably mounted on said stem, a valve-disk carried by said collar and adapted to engage said valve-seat, a jam-nut engaging said collar and holding said disk in place, a valve-seat in said nut, a port in the wall of said collar beneath said nut, a second valve-seat in said nut and a valve-plug rigidly mounted on said stem and adapted to engage said second valve-seat.

4. In steam-traps, a discharge-opening, a conical valve-seat secured in said opening, a tube communicating with said opening and downwardly extending within said trap, a bucket within said trap, a stem attached to said bucket and upwardly extending within said tube, a collar slidably mounted on said stem, a reversible valve-disk mounted on said collar and adapted to engage said opening, a valve-seat in said collar, a port in the wall of said collar beneath said valve-seat and a valve-plug rigidly mounted on said stem adapted to engage said valve-seat.

5. In steam-traps, a discharge-opening, a conical valve-seat secured in said opening, a tube communicating with said opening and downwardly depending within said trap, a bucket within said trap, a stem attached to said bucket and upwardly extending within said tube, a collar slidably mounted on said stem, a reversible valve-disk mounted on said collar and adapted to engage said valve-seat, a washer mounted on said collar and surrounding the lever portion of said valve-disk, a valve-seat in said collar, a port through the wall of said collar beneath said second valve-seat and a valve-plug rigidly mounted on said stem adapted to engage said second valve-seat.

847,132. AUTOMATIC WAGON-BRAKE. EVERETT F. VRATCH, Paico, Kans., assignor of one-half to George L. Trible, Paico, Kans. Filed Mar. 24, 1906. Serial No. 307,814.

Claim.—1. In an automatic wagon-brake, the combination with the front and rear axles, and the wheels thereon, of the reach connecting the axles and provided at approximately its center with a longitudinal vertical opening having pulleys journaled at each end, a transverse bar resting on the reach, a brake-beam depending from the bar and below the reach, brake-shoes on the end of the brake-beam, springs for normally retaining the shoes in contact with the peripheral surface of the rear wheels, a frame comprising a cross-bar having its ends turned downwardly and forwardly and secured to the ends of the brake-beam, and an arm connected centrally to the bar and extending forwardly therefrom, the free end of said arms being provided with a pulley, a tongue, a doubletree slidably mounted on the tongue, a roller journaled on the reach at the rear of the opening, and a flexible connection extending from the roller to the doubletrees, said connection being passed through the opening in the reach and over the pulley in the free end of the arm.

2. In an automatic wagon-brake, the combination with the front and rear axles, of a reach connecting the axles, a tongue connected to the front axle, a normally operative

braking mechanism, an arm connected by one end to the braking mechanism and having in its free end a pulley, a roller journaled on the reach, a pawl-and-ratchet mechanism connected with the roller, and a flexible connection secured to the roller, and extending to the doubletree, said connection being formed into an open loop passing downwardly and encircling the pulley of the arm.

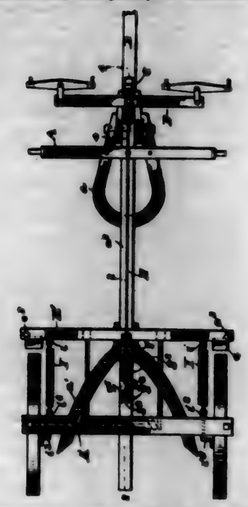

3. In an automatic wagon-brake, the combination with the front and rear axle, of the reach connecting the same, a tongue connected to the front axle, a doubletree slidably mounted on the tongue, a normally operative braking mechanism, a flexible connection between the doubletree and the braking mechanism whereby to release the same, and means for adjusting the length of the flexible connection comprising a roller to which one end of said connection is secured to wind thereon, and pawl-and-ratchet mechanism connected with the roller.

4. In an automatic wagon-brake, the combination with the front and rear axles, of the reach connecting the axles and having a longitudinal vertical opening therethrough provided at each end with pulleys, a tongue connected to the front axle, a doubletree slidably mounted on the tongue, normally operative braking mechanism, an arm connected by one end to the braking mechanism and having in the free end a pulley, and a cable connected with the reach and the doubletree, said cable being looped through the opening in the reach and over the pulley of the arm, whereby traction upon the doubletree will release the braking mechanism.

5. In an automatic wagon-brake, the combination with the front and rear axle, of a reach having a vertical opening therethrough, a tongue, a doubletree slidably mounted thereon, normally operative braking mehanism and a cable connected with the reach at the rear of the opening and extending to the doubletree, a loop of said cable passing through the opening in the reach and connected to the braking mechanism whereby traction upon the doubletree may release said mechanism.

847,133. TREPAN. RAMÓN VELASCO, Guadalajara, Mexico. Filed Oct. 28, 1905. Serial No. 284,918.

Claim.—1. The combination in a trepanning instrument, of a hollow cutter, an extractor passing through the cutter and having a screw, with a spring mounted on the extractor to withdraw said extractor and the severed portion of the skull after the cut has been made, substantially as described.

2. The combination in a cutter having a conical cutting-section with cutting-teeth on the edge and on the periphery, an extractor mounted on the cutter having a screw on one end and a button on the opposite end, with a spring mounted between the button and the end of the cutter so

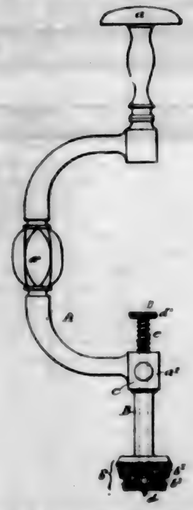

that when the cut has been made the spring will withdraw the extractor and the severed portion of the skull, and means for turning the cutter, substantially as described.

847,134. PROCESS FOR UTILIZING CLOSE-BURNING COAL-DUST FOR MAKING METALLURGICAL COKE OR OTHER KINDS OF COKE. GASTON DE VELNA, Paris, France, assignor to Arthur Stanley Riggs, East Orange, N. J. Filed Sept. 4, 1906. Serial No. 333,278.

Claim.—The process of making coke, which consists in mixing coal-dust deprived of volatile matter with dry tar, semifat coal, and coal-tar in the following proportions, from eighty-one to eighty-seven per cent of coal-dust, two to four per cent. of dry tar, three to five per cent of semifat coal, and eight to ten per cent. of coal-tar, thoroughly pulverizing and mixing the same in the cold without the addition of watery vapor, compressing the material into briquets under heavy pressure, and finally coking the same, substantially as described.

847,135. PASSENGER-CAR. WILLIAM VOSS, Wilmington, Del., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Nov. 10, 1906. Serial No. 342,824.

Claim.—1. A passenger-car comprising a metal underframe and a wooden body formed separate and distinct from the underframe and provided with members which rest on coöperating members on the underframe, and fastening devices extending through said members, the members at the ends of the body being provided with elongated slots to receive said fastening devices so that a slight longitudinal movement of the end portions of the body relatively to the underframe is permitted; substantially as described.

2. A passenger-car consisting of a body having side sills and end sills permanently connected together, platforms connected to said body and having transversely-extending platform members 3, an underframe comprising side sills, end sills and platform end sills permanently connected together, and means for detachably connecting the body to the underframe; substantially as described.

3. A car comprising a body having side sills and end sills permanently connected together, an underframe comprising side sills and end sills permanently connected together, laterally-projecting members on the side sills and end sills of the underframe to support the side and end sills of the body, and removable fastening devices passing through said coöperating parts to detachably connect the body to the underframe; substantially as described.

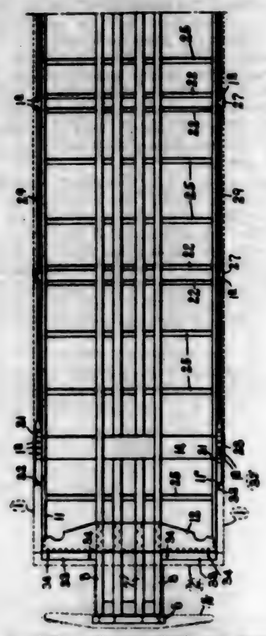

4. A car consisting of an underframe composed of side sills, end sills, and body-bolsters and cross-bearers which project laterally beyond the side sills, a body portion comprising side sills which rest on the projecting ends of the cross-bearers and body-bolsters of the underframe and end sills which are supported by the end sills of the underframe, and removable fastening devices extending through said coöperating members of the body and underframe; substantially as described.

5. A passenger-car consisting of a body which comprises end sills and side sills permanently connected together, an underframe formed separate and distinct from the body and comprising members which support the side sills and end sills of the car-body, the members which support the end sills of the car-body being provided with elongated slots, and fastening devices projecting downwardly from said end sills through said elongated slots; substantially as described.

6. A car having an underframe which consists of continuous center sills, continuous members extending parallel to the center sills, platform end sills connected to the ends of said members and center sills, side sills, end sills and bolsters comprising tension-plates which are supported by the center sills and extend underneath the side sills; substantially as described.

7. A car having an underframe which consists of center sills, members of less depth than the center sills and extending parallel thereto, side sills, a tension-plate extending over the center sills and beneath the side sills, said plate passing through slots in the members that extend parallel to the center sills, a compression-plate connected at its opposite ends to the tension-plate, and diaphragms interposed between said plates and constructed to support said parallel members; substantially as described.

8. A car having an underframe which consists of center sills, side sills, a tension-plate extending over the center sills and beneath the side sills, a compression-plate connected at its opposite ends to the tension-plate and passing underneath the center sills, spacing-blocks interposed between said plates, and bolts extending through said plates and blocks and also through side bearings for securing same to the compression-plate; substantially as described.

9. A car in which the underframe consists of center sills, side sills, a pair of members projecting laterally from each side of the center sills and connected to the side sills, and a continuous channel interposed between said members and extending beyond the side sills to form supports for the car-body; substantially as described.

10. A car in which the underframe consists of center sills, side sills, a pair of flanged members projecting laterally from each center sill, and a continuous channel arranged between the members of said pairs with its legs projecting downwardly and extending beyond the side sills to form supports for the car-body; substantially as described.

11. A car in which the underframe consists of end sills, side sills, center sills, bolsters and cross-bearers which project laterally beyond the side sills to form supports for the car-body, and angles secured to said end sills to form supports for the end sills of the car-body; substantially as described.

12. A car in which the underframe consists of center sills, side sills and body-bolsters, and cross-bearers having portions which project laterally beyond the side sills, queen-posts projecting downwardly from the projecting ends of the cross-bearers, tension-rods passing under said queen-posts, and anchor-plates pivotally connected to the opposite ends of said rods and mounted in blocks which are connected to the laterally-extending portions of the body-bolsters; substantially as described.

13. A car comprising an underframe which consists of side sills and end sills, a body having side sills which extend laterally beyond the side sills of the underframe, tension-rods connected to anchor-plates which are fastened to the side sills of the car-body, and queen-posts connected to the underframe and engaging said tension-rods; substantially as described.

847,136. FLOOR-CLEANING DEVICE. GEORGE J. WALLACE and FRANK J. HARHAGER, Scottdale, Pa. Filed Aug. 2, 1906. Serial No. 328,963.

Claim.—1. A cleaning-machine comprising an arched axle, a brush mounted to slide vertically on said axle, springs to yieldingly force said brush onto the surface to be cleaned, supporting means journaled on the ends of said axle, a box arranged on said brush to contain cleaning material, said box having discharge-apertures adapted to aline with similar apertures in the back of the brush, and a handle connected to the axle of the machine, substantially as described.

2. A machine of the character described comprising an arched axle, supporting-wheels journaled on the ends of said axle, a wire-bristle brush slidably mounted on said arched axle, springs connecting said brush with the axle and to force the brush into yielding engagement with the surface to be cleaned, a sand-box arranged on the back of the brush over said arched axle, said box having formed therein discharge-apertures adapted to aline with similar apertures in the back of the brush, and a handle connected to the axle of the machine, substantially as described.

3. A machine of the character described comprising an arched axle, supporting-wheels journaled on the ends of said axle, a brush comprising a back having guide notches or recesses formed on the side edges thereof to engage the arched portion of said axle, metallic bristles secured to the under side of said back, springs connected to said axle and to the brush to yieldingly force the same into engagement with the surface to be cleaned, a sand-box

having formed therein a transversely-disposed passage adapted to fit over the arched axle and to rest on the back of said brush, inclined bottom plates arranged in said sand-box to conduct sand or cleaning material to discharge-apertures formed in the bottom of the box, said apertures being alined with similar apertures in the back of the brush, and a handle connected to the ends of the axle between the wheels and the side of the brush, substantially as described.

847,137. METHOD OF MAKING DRAWING-KNIVES. WILLIAM S. WARD, Plantsville, Conn., assignor to H. D. Smith and Company, Plantsville, Conn., a Corporation. Filed Mar. 24, 1906. Serial No. 307,834.

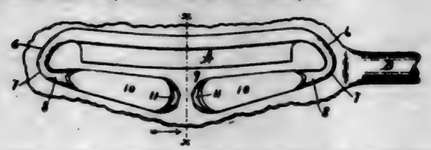

Claim.—The herein-described method of producing drawing-knives which consists in striking up a blank from a bar of metal by drop-forging in dies, with the blade, shanks and handle portions substantially doubled upon each other at each shank, then trimming off the fin or web, and finally straightening the shank portions to bring the handle portions into their proper position relatively to the blade.

847,138. WINDING MECHANISM FOR SPRING-MOTORS. CHARLES WARREN, Milan, Ill., assignor to Artista Piano Player Company, Milan, Ill., a Corporation of Illinois. Filed June 23, 1906. Serial No. 323,114.

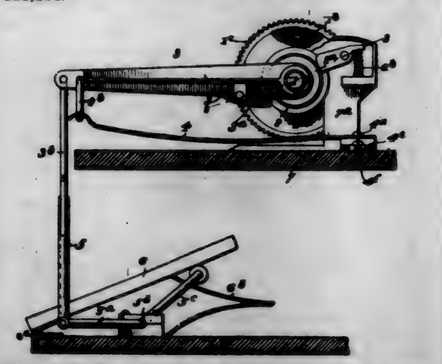

Claim.—1. In combination, a shaft, a drum loose thereon, a winding spring in the drum connected to the drum and shaft; a swinging lever pivoted on the shaft, devices actuated by the lever when moving in one direction for turning the shaft to wind the spring, a more powerful spring connected to the outer end of said swinging lever for moving it in the direction to turn the shaft, and a treadle and connections for positively moving said lever in the opposite direction and thereby tensioning the more powerful spring.

2. In combination, a shaft, a casing thereon, a winding spring in the casing connected to the casing and shaft, a disk on the shaft, a clutch device engaging said disk to prevent unwinding rotation of the shaft, a swinging lever pivoted on the shaft, a clutch device on said lever engaging said disk to impart winding motion to the shaft when the lever swings in one direction, a more powerful flat spring for moving the lever in the opposite or winding direction, and manually-operated means for moving the lever in opposition to the flat spring.

3. In combination, a motor-spring, a pivoted lever and connections for winding said spring when the lever is moved in one direction, a more powerful spring connected to the outer portion of the lever to move it in the direction to wind the spring; a treadle-actuated lever, and a connection between the latter lever and the winding-lever whereby the winding-lever may be positively moved in opposition to the more powerful spring.

4. In combination, a motor-spring, a lever and connections for winding said spring when the lever is moved in one direction, and a more powerful spring for moving the lever in the direction to wind the spring; with a treadle, a crank-lever operated thereby, and a telescopic connection between the crank-lever and the winding-lever, substantially as described.

5. In combination, a rotatable shaft, a casing rotatable thereon, a winding spring connected to the casing and shaft, a lever pivoted on the shaft, devices for turning said shaft upon the oscillation of the lever, and a more powerful spring for moving the lever in a direction to wind the shaft; with a treadle, a crank-lever operated thereby, a tube connected to the crank-lever, and a rod pivoted to the winding-lever and telescoping into said tube, for the purpose and substantially as described.

847,139. MEANS FOR PRODUCING AERIAL GYMNASTIC PERFORMANCES. JOSEPH J. WILLIAMS, Jackson, Miss. Filed Nov. 10, 1906. Serial No. 342,830.

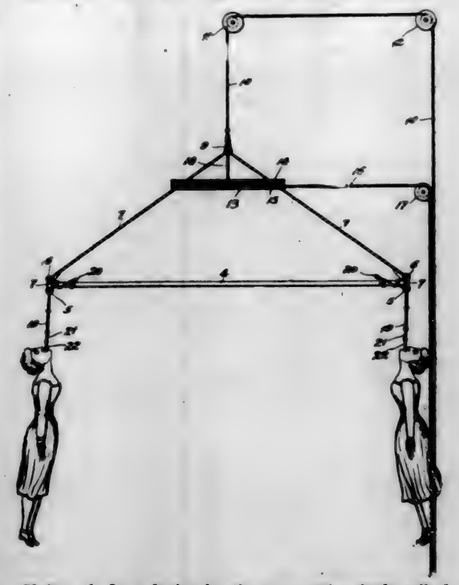

Claim.—1. In a device for the purpose herein described, a horizontal bar, means for raising the same to considerable elevation and lowering it therefrom, of depending suspensory devices and means for suspending the human body below the same through the action of the teeth together with the muscles of the jaws and neck, substantially as described.

2. In a device for the purpose described, a horizontal bar, devices for raising, lowering and suspending the same in mid-air, and means for revolving said bar horizontally on a vertical axis, substantially as described.

3. In a device for the purpose described, a horizontal bar, means secured directly thereto and projecting above the same, means for raising, lowering and suspending said bar in mid-air, a drum connected therewith, and a cord for actuating said drum to revolve the bar, horizontally about a vertical axis, substantially as described.

4. In a device for the purpose described a horizontal bar, a suspending device therefor converging to a point above the center of length thereof, a swivel, and a cable or rope secured to said swivel whereby said bar may be raised and lowered and revolved horizontally about a vertical axis bisecting the center of length thereof, substantially as described.

5. In a device for the purpose described, a horizontal bar, a cable attached at opposite ends of the bar and extending above the same, a swivel secured to said cable or rope with its axis bisecting the center of length of said bar, means for raising, lowering and suspending said bar in mid-air, a drum mounted upon said cable or rope and means for actuating said drum and thereby revolving the bar horizontally about the vertical axis, substantially as described.

6. In a device for the purpose described, a horizontal bar, means for raising, lowering and suspending said bar in mid-air, a drum, connected with said bar, means for actuating said drum and revolving the bar horizontally about a vertical axis, of suspending devices attached at or near the opposite ends of said bars, and depending below the same and means whereby performers may suspend themselves by their mouth in mid-air therefrom, substantially as described.

7. In a device for the purpose described, a horizontal bar, devices suspending the same in mid-air and means for revolving said bar horizontally about a vertical axis, substantially as described.

847,140. CAR-JOURNAL-BOX LID. LACEY Y. WILLIAMS and FRANK B. HARRISON, Toledo, Ohio. Filed Nov. 24, 1905. Serial No. 288,920.

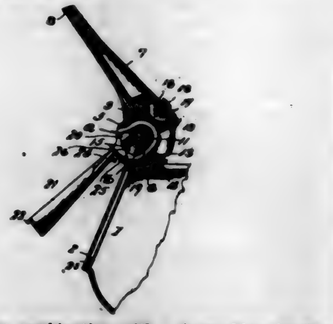

Claim.—1. The combination with a journal-box having an opening at the end, of two lids each of substantially the area of the opening and each hinged to the box at the edge of the opening so that when the lids are closed one will be covered by the other; the axes of the hinges being parallel with the planes of the lids.

2. The combination with a journal-box having an opening at the end, of two lids, each hinged to the box at the top edge of the opening, the axes of the hinges being parallel with the planes of the lids.

3. The combination with a journal-box having an opening at the end, of two lids each hinged to the box at the edge of the opening and one lid entirely covering the other when the lids are closed; said lids having flanges and the axes of the hinges being parallel with the planes of the lids.

4. The combination with a journal-box having an opening at the end, of two lids each hinged to the box at the edge of the opening, the axes of the hinges being parallel with the planes of the lids; and a spring for holding the lids in closed positions.

5. The combination in a journal-box having an opening at the end, of two lids, each hinged to the box at the edge of the opening, the axes of the hinges being parallel with the planes of the lids; a spring; and an element with a cam-shaped surface which the spring engages when the lids are closed.

6. The combination with a journal-box having an opening at the end, of two lids each hinged to the box at one side of the opening, the axes of the hinges being parallel with the planes of the lids; a spring for holding the outer lid closed; and means in connection with the two lids whereby when the outer lid is moved the inner lid is also operated.

7. The combination with a journal-box, of two pivoted lids; a bolt, and means in connection with the bolt for operating the inner lid.

8. The combination with a journal-box, of two hinged lids; a bolt located at the axis of the hinges, said bolt being movable with the outer lid; and means in connection with the bolt for holding the inner lid to its seat.

9. The combination with a journal-box, of two lids; a bolt; and a sleeve with a lug engaging an element with a cam-surface for holding the inner lid closed.

10. The combination with a journal-box of two lids, a bolt, a sleeve with a lug, and an arm with a cam-surface secured to the inner lid.

11. The combination with a journal-box of two lids, a bolt movable with the outer lid, a sleeve on the bolt having two lugs, and two arms with cam-surfaces secured to the inner lid.

12. The combination with a journal-box of an outer lid, two lugs with cam-surfaces, a spring, a bolt, a sleeve with lugs in connection with the bolt, and an inner lid with arms having cam-surfaces.

13. The combination with a journal-box of an outer lid, means for holding the same to its seat, an inner lid, each of said lids being hinged to the box, a bolt in connection with the lids, and means between the bolt and inner lid for operating and locking said inner lid to its seat.

14. The combination with a journal-box, of two lids; means for hinging each of the lids to the box; spring mechanism for holding the outer lid to its seat; and means for holding the inner lid to its seat.

15. The combination with a journal-box having an opening at the end, of two lids; a bolt located in a horizontal plane at the top edge of the opening for hinging said lids to the box; and means in connection with said bolt for locking the inner lid in a closed position.

16. The combination with a journal-box, of two lids; a bolt for pivoting said lids; said bolt being movable with the outer lid; and means operated by said bolt to open the inner lid and also to lock it in a closed position.

17. The combination with a journal-box having an end opening, of two lids each directly and separately hinged to the box, and means in connection with said lids whereby when the outer lid is opened the inner lid is also opened.

18. The combination with a journal-box having an end opening with an inwardly-extending flange 2 bounding the opening and forming a recess 23, of an inner hinged lid having a flange, as 22, which is adapted to engage the flange 2 and its edge lie in the recess 23; and an outer lid hinged to the side of the opening, independently of the inner lid and with the axis of the lid in a plane parallel with the lid; the flange 2 being so located that the outer lid when closed will frictionally engage the edge bounding the opening.

19. The combination with a journal-box having an end opening and a flange as 2 about the opening, of two lids, each being hinged one having a flange to fit the flange 2 about the opening, and the other lid hinged to the side of the opening and with the axis of the hinge in a plane parallel with the lid; a cam-shaped lug in connection with the box; and a spring adapted to engage the surface of the cam-shaped lug and lock the outer lid closed.

20. The combination with a journal-box having an opening at the end, of outer and inner lids; means for hinging each lid to the box at one side of the opening, the axes of the hinges being parallel with the planes of the lids, and means operated by the outer lid which forces and holds the inner lid to its seat.

21. The combination with a journal-box having an opening at the end, of two lids; means for hinging the outer lid to the edge of the opening, said means comprising two perforated lugs and a bolt secured to the lid so that both

said bolt and lid move together; and means carried and operated by the said bolt for forcing and holding the inner lid to its seat.

22. The combination with a journal-box having an end opening and perforated lugs, of an outer lid with perforated sides and a head; an inner lid; a bolt by which the outer and inner lids are hinged to the lugs; and means for holding the outer lid to its seat when closed.

847,141. METAL FENCE-POST. OTTO A. WILSON, Blythedale, Mo. Filed Aug. 8, 1906. Serial No. 328,270.

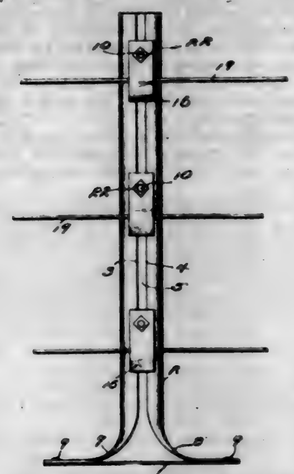

Claim.—1. A fence-post having a hollow body provided with a longitudinal slot, line-wire holders consisting of two clamping-plates provided with a lateral groove to receive the wire, and a hole through their upper part and a headed bolt, having the under sides of its head rounded and arranged in the hollow of the post with its shank extended through the said slot and hole in the clamping-plates and a nut turned on the outer end of the said shank.

2. A fence-post having a hollow body provided with a longitudinal slot, line-wire holders consisting of two clamping-plates having their meeting edges serrated vertically and provided with a lateral groove to receive the wire between them, and means for clamping them together on the line-wire and securing them adjustably on the post in the slot.

847,142. ADJUSTABLE CULTIVATOR. WILLIAM WOLF, Entiat, Wash. Filed May 7, 1906. Serial No. 315,657.

Claim.—1. In a device of the character described, the combination of a draw-bar, a plurality of frames carrying cultivating members and loosely connected to an intermediate portion of the draw-bar, and a cross-bar loosely connected to the draw-bar and engaging the before-mentioned frames to hold the cultivating members carried thereby to their work.

2. In a device of the character described, the combination of a draw-bar, a plurality of frames loosely connected to an intermediate portion of the draw-bar, and a cross-bar loosely connected to the rear portion of the draw-bar and bearing against the top of the frames whereby the cultivating members carried thereby are held to their work.

3. In a device of the character described, the combination of a draw-bar having one end thereof reduced in cross-section, a plurality of frames carrying cultivating members and loosely connected to an intermediate portion of the draw-bar, a yoke swiveled on the reduced end of the draw-bar, and a cross-bar carried by the yoke and engaging with frames to hold the cultivating members carried thereby to their work.

4. A harrow comprising a plurality of sections having teeth secured thereto, a draw-bar pivotally secured to said sections, a yoke pivotally mounted on one end of said draw-bar and a bar secured to said yoke for holding the harrow to its work.

5. In a device of the character described, the combination of a draw-bar, a pair of laterally-swinging frames pivotally connected to an intermediate portion of the draw-bar and carrying cultivating members, and a cross-bar loosely connected to the rear portion of the draw-bar and engaging with the frames to hold the cultivating members carried thereby to their work.

6. The combination of a draw-bar provided with a laterally-enlarged portion and having a laterally-disposed aperture passing through the said enlarged portion, a pin disposed within the aperture, and frames connected to opposite ends of the pin and pivoted upon the said enlarged portion so as to swing laterally.

847,143. WINDOW-BLIND. VINCENT WYSS, Pittsburg, Pa. Filed July 24, 1905. Serial No. 271,037.

Claim.—1. The combination with a frame and slats, of a series of braces comprising links pivoted in pairs to the ends of the adjacent slats and to each other, the uppermost pairs of braces being suspended from the frame, means upon the slats for causing the braces to close outwardly, and means upon the frame for raising and lowering the slats.

2. The combination with a frame and a series of slats, said slats being capable of angular adjustment about their longitudinal axes, of an endless flexible member carried in the frame and directly connected with one of said slats at its opposite ends for raising and lowering said slats.

3. The combination with a frame and a series of slats, said slats being capable of angular adjustment about their longitudinal axes, of an endless flexible member carried in the frame and directly connected with one of said slats at its opposite ends for raising and lowering said slats, and mechanism for actuating said flexible member.

4. The combination with a frame provided with a series of sprocket-pulleys and a sprocket-gear, of a sprocket-chain meshing with the sprocket-gear and guided by the pulleys, and a series of slats in the frame, said slats being capable of angular adjustment about their longitudinal axes, and one of said slats being connected at its opposite ends with the chain.

5. The combination with a frame having corners and provided with a groove extending around two corners of the frame and having pulley-boxes and pulleys therein at its opposite ends, of pulley-boxes in the corners of the frame provided each with a pair of pulleys, an actuating-gear and guide-pulleys upon opposite sides thereof, an endless chain bent around said pulleys and said gear, substantially in the manner specified, and a series of slats operatively connected with said chain.

6. The combination with a frame having corners and provided with a groove extending around two corners of the frame and having pulley-boxes and pulleys therein at its opposite ends, of pulley-boxes in the corners of the frame provided each with a pair of pulleys, an actuating-gear and pulleys upon opposite sides thereof, an endless chain bent around said pulleys and said gear substantially in the manner specified, and an independently-adjustable series of slats having its lowermost slat operatively connected with said chain.

7. The combination with a frame, of an endless flexible member provided with portions crossing each other and adapted to move in relatively opposite directions, slats directly connected at opposite ends to said oppositely-moving portions, respectively, and means located at the crossing of said portions for actuating said endless flexible member.

8. The combination with a frame, of a sprocket-chain provided with portions crossing each other and adapted to move in relatively opposite directions, slats directly connected at opposite ends to said oppositely-moving portions, respectively, and a sprocket-gear located at the crossing of said portions for actuating said sprocket-chain.

9. The combination with a frame provided upon its sides with a shallow groove, of an endless flexible member therein provided with portions closely adjacent to each other and adapted to move in relatively opposite directions, a separating-strip between said oppositely-moving portions, and a series of slats, one of said slats being directly connected at its opposite ends with said oppositely-moving portions, respectively.

10. The combination with a frame provided upon its sides with a shallow groove, of an endless flexible member therein provided with portions closely adjacent to each other and adapted to move in relatively opposite directions, a separating-strip between said oppositely-moving portions, a series of slats, one of said slats being directly connected at its opposite ends with said oppositely-moving portions, respectively, and means for actuating said endless flexible member.

11. The combination with a frame provided with a groove having pulley-boxes and pulleys therein at its opposite ends, of an endless flexible member bent around said pulleys, the portions of said member leading to each pulley being closely adjacent, coaxial guide-pulleys in the corners of the frame and parallel to the aforesaid pulleys, and a series of slats, one of said slats being directly connected with said flexible member.

12. The combination with a frame provided with a groove having pulley-boxes and pulleys therein at its opposite ends, said pulleys being mounted to rotate in a plane parallel to the plane of the frame, of an endless flexible member bent around said pulleys, the portions of said member leading to each pulley being closely adjacent, coaxial guide-pulleys in the corners of the frame and parallel to the aforesaid pulleys, and a series of slats, one of said slats being directly connected at its ends with the inner portions of said endless flexible member.

13. The combination with a frame provided upon its sides with a shallow groove, of pulleys in said groove, an endless flexible member in said groove and bent around said pulleys, the portions of said member leading to each pulley being closely adjacent, a separating-strip between said oppositely-moving portions, means for guiding said flexible member, and series of slats, one of said slats being directly connected with said endless flexible member.

847,144. STALK-CUTTER. TODD M. YARBROUGH and RICHARD C. BRADLEY, Bossier parish, La. Filed June 1, 1906. Serial No. 319,713.

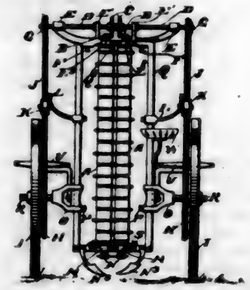

Claim.—1. A stalk-cutter, comprising two upright parallel shafts bearing horizontal rotary cutters throughout their length, the rotary cutters of one shaft alternating with and extending past the rotary cutters of the other shaft, wheels supporting the same and separate gears connecting the wheels to the shafts.

2. A stalk-cutter comprising two upright parallel shafts bearing horizontal rotary cutters through their length, horizontal shafts at the upper ends of said upright shafts and connected to and driving the same, a supporting-frame with running-wheels and separate chain belts connecting the running-wheels to the horizontal shafts.

3. A stalk-cutter, comprising two upright parallel shafts bearing horizontal rotary cutters throughout their length, the rotary cutters of one shaft alternating with and extending past the rotary cutters of the other shaft, a rectangular frame supporting the same, horizontally-adjustable bearings for each shaft to render them adjustable to and from each other, supporting and driving wheels and gears connecting said wheels to the shafts.

4. A stalk-cutter, comprising two upright parallel shafts bearing horizontal rotary cutters throughout their length, the rotary cutters of one shaft alternating with and extending past the rotary cutters of the other shaft, a frame supporting the same, wheels supporting the frame and having each an attached sprocket-wheel, chain belts connecting with the sprocket-wheels, and horizontal shafts at the top of the frame having their inner ends connected to the rotary cutter-shafts and their outer ends provided with sprocket-wheels connected with the chain belts.

5. A stalk-cutter having a pair of upright rollers constructed with alternating grooves and rotary cutters, the rotary cutters of one roller entering the grooves of the other roller, and driving-gears and supporting-wheels for operating the same.

6. A stalk-cutter having a pair of upright shafts with horizontal rotary cutters distributed along their length, the rotary cutters of one shaft alternating with and extending past those of the other shaft, a frame supporting the same, bearings for the upper and lower ends of the shafts and rotary cutters arranged on the lower ends of the shafts below their lower bearings, supporting-wheels for the frame and gears connecting the wheels to the cutter-shafts.

7. A stalk-cutter, comprising a pair of upright shafts with horizontal rotary cutters, an upright rectangular frame, axles each having a separate adjustable connection with the upright members of the frame and provided with supporting-wheels and gears connecting the said wheels to the cutter-shafts.

8. A stalk-cutter, comprising a pair of upright shafts with rotary cutters, an upright rectangular frame, axles connecting with the side members of said frame and bearing supporting-wheels, two upper journal-frames, each having two bearings for a horizontal shaft and a bearing for the upright cutter-shaft, means for adjusting said triple-bearing frames horizontally on the rectangular frame, and two horizontal shafts with gears connecting the supporting-wheels and upright cutter-shafts.

9. A stalk-cutter, comprising two upright shafts with rotary cutters, an upright frame having a rear offset or bend at a point between the cutter-shafts, supporting-wheels for the frame and means for driving the cutter-shafts from the supporting-wheels.

10. A stalk-cutter, comprising two upright rollers made in sections with rotary cutters clamped between the sections and means for driving the same.

11. A stalk-cutter having two upright parallel shafts with rotary cutters distributed along their length for cutting up the stalks into short bits, a frame supporting the same and a root-plow at the lower end of said frame for digging up the roots of the cut stumps of the stalks.

12. A stalk-cutter, comprising two upright shafts bearing rotary cutters along their length, an upright frame supporting the same, axles with supporting-wheels connected to the upright frame, gears connecting the wheels with the upright cutter-shafts, two tongues connected to the upright frame and having convergently-arranged guards or shields between them and draft connections secured to the outer sides of the tongues.

847,145. COMBINED HINGE AND FASTENING FOR DOORS. ALOIS ABZUG, Breslau, Germany. Filed Nov. 13, 1905. Serial No. 287,145.

Claim.—1. A door opening to right or left, provided with right and left side rods or hinge-pins, a cross-bar operatively connecting the rods, levers arranged to move the cross-bar, and door-latches so connected with said levers that after a side rod has been sufficiently drawn back by a lever, a latch can be moved by the same lever without further movement of the side bar or cross-bar.

2. A door having side rods or hinge-pins, mounted for longitudinal movement, a cross-bar mounted for movement across the door, said cross-bar having outwardly-diverging slots at its ends and said rods having rollers operating in said slots, latch-bolts at opposite sides of the door, and levers, each having a pair of arms coöperating respectively with the latch-bolts and the cross-bar and adapted when turned on its fulcrum to first operate the cross-bar and the side rods and then operate the latch-bolt without further operating the cross-bar and side bars, substantially as described.

3. In a combined hinge and fastening for doors which are hinged on both sides, the combination with the side rods carrying the hinge pieces or pivots, and a cross-bar adapted to move the rods longitudinally, of latch-bolts mounted adjacent to the outer ends of the cross-bar, and actuating-lever handles each carrying a pair of lever-arms coöperating respectively with the latch-bolts and the cross-bars and adapted when turned about its fulcrum to first operate the cross-bar and its connections and then operate the latch-bolt without further operating the cross-bar.

4. In a combined hinge and fastening for doors which are hinged on both sides, the combination with the side rods carrying the hinge pieces or pivots, and a cross-bar provided with shoulders or projections, of latch-bolts mounted adjacent to the outer ends of the cross-bar and provided with slots or openings, hand-operating levers, and a pair of lever-arms fixed to each operating-lever, one of said arms being adapted to coöperate with a projection

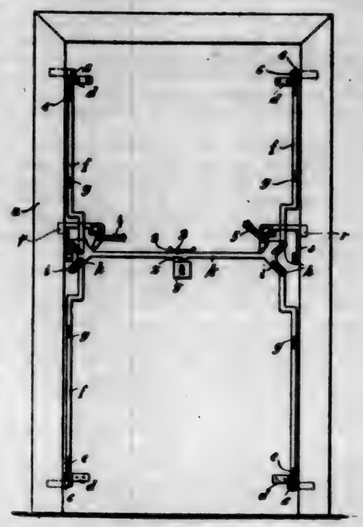

on the cross-bar to actuate it, and the other being adapted to engage in the slot of the latch-bolt in such a manner that a free motion of the latch-bolt lever can take place while the cross-bar is being operated by its companion lever, and a subsequent free motion of the said companion lever while the latch is operated.

847,146. CHECK-VALVE. EDWARD W. ALLEN, Napoleon, Ohio. Filed June 19, 1905. Serial No. 266,027.

Claim.—In a valve, the combination of a casing formed with a pair of coupling ends, and provided with an internal partition, the said partition having a horizontal portion provided with an aperture, and a valve positioned within the casing and normally closing the aperture through the horizontal portion of the partition, the said valve comprising a yielding disk, the edges of which bear against the portion of the partition in the casing surrounding the before-mentioned aperture, a metallic disk fitting against one side of the yielding disk, the said metallic disk being of substantially the same diameter as the yielding disk and serving as a guard to prevent the outward bending of the yielding disk, and a valve-stem fitting against the opposite side of the yielding disk, the said valve-stem being in the nature of a conical member provided upon its larger end with an annular, vertical surface, the tapering portion of the stem operating to bring about an accurate seating of the valve, while the before-mentioned annular, vertical surface fits closely within the before-mentioned aperture in the partition in the casing

and serves to prevent any lateral movement of the valve when subjected to back pressure.

847,147. TRAY. JAMES B. ARTHUR, Pittsburg, Pa. Filed Sept. 4, 1906. Serial No. 333,218.

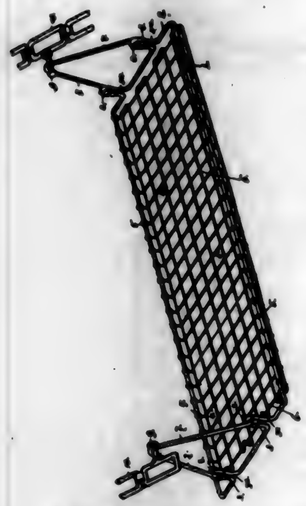

Claim.—1. The combination with conveyer-chains provided with projecting pins, of inverted-V-shaped hangers formed at their ends with hooks, and a tray comprising a rectangular wire frame, the ends of which are formed with upwardly-extending loops engaging the hooks of said hangers, and a body portion of interlaced wires supported by said frame.

2. The combination with conveyer-chains provided with projecting pins, of hangers suspended from said pins, and formed at their ends with hooks, and a tray comprising a rectangular frame the ends of which are formed with upwardly-extending contracted loops engaging said hooks, and a body portion of interlaced wires supported by said frame.

847,148. METALLIC TIE, RAIL-FASTENER, AND RAIL-JOINT COMBINED. EWALD E. BAHR, Blair Station, Pa., assignor of one-fourth to John P. Alles, McKeesport, Pa. Filed Oct. 26, 1906. Serial No. 340,743.

Claim.—1. The combination with rails, of channel-shaped beams having interlocking web portions and laterally-projecting flanges, clamps carried by the ends of said beams and adapted to overlie the adjoining beam, said beams having registering obliquely-disposed openings formed therein, brackets carried by said beams adjacent to said openings, a tie-bolt passing through said brackets and said openings, and rail-fasteners carried by the flanges of said beams, and embracing said rails, substantially as described.

2. In a railway cross-tie, rail-supporting members formed of channel-bars placed web to web, each bar having a vertical groove in its web intermediate its ends, and a vertical rib on each bar entering said groove, the web of one bar having an opening and provided on its inner face with an inclined wall leading into said opening, and a dowel-pin carried by the web of the other bar to engage in said opening.

3. In a railway cross-tie, rail-supporting members formed of channel-bars placed web to web, a clamp on the end of one bar engaging a beveled face on the corresponding end of the associate bar, said associate bar having a clamp on its opposite end engaging a beveled face on the corresponding end of the first-mentioned bar, each bar having a vertical groove, a rib formed on each bar for engagement in said grooves, a dowel-pin carried by the web of one bar to engage in the opening provided therefor in the web of the associate bar, and a tie-bolt passed through obliquely-disposed openings in the webs of the bars, substantially as described.

4. In a railway cross-tie, two rail-supporting members formed of channel-bars placed web to web, a rib on each bar engaging in a groove in the opposite bar, a clamp rigidly fastened to one end of each bar, said clamp engaging beveled faces on the corresponding ends of the associate bar, each bar having a vertically-disposed recess, the recess in one bar registering with the recess in the other bar, the web of each bar having obliquely-disposed openings registering with said vertical recesses, and a tie-bolt passed through said openings, substantially as described.

847,149. BULLET. JOHN H. BARLOW, New Haven, Conn. Filed Jan. 22, 1906. Serial No. 297,099.

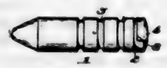

Claim.—1. A firearm-bullet having a gas-check frictionally held upon the base thereof with a compressible bottom, and provided with means to aid the gas-check in dropping off the bullet after the same has been ejected from the firearm-barrel.

2. A firearm-bullet having a gas-check frictionally held upon the base thereof with a compressible bottom, and provided with means to aid the gas-check in dropping off the bullet after the same has been ejected from the firearm-barrel, the outside diameters of said gas-check and bullet being substantially the same.

3. The combination with a firearm-bullet having a cylindrical base of reduced diameter; of a cup-shape gas-check having a concaved bottom attached to the outside of said base, with an open space of variable width between the ends of said base and the bottom of said gas-check, and designed to leave the bullet-body after the same has been ejected from the firearm-barrel, the outside diameters of said gas-check and bullet-body being substantially the same.

4. A firearm-bullet having a gas-check thereon with longitudinal wings or ribs upon the inside thereof, a compressible bottom and expansible sides, said gas-check being connected with said bullet so as to drop off the same when said bullet has been ejected from the barrel of the firearm, the outside diameters of said gas-check and bullet-body being substantially the same.

5. A firearm-bullet having a base of reduced diameter, in combination with a cup-shape gas-check frictionally held upon said base while the same is traveling through the firearm-barrel and dropping off said bullet after the same is ejected from the barrel, the outside diameters of said gas-check and bullet being substantially the same.

6. The combination with a firearm-bullet body of an expansible cup-shape gas-check connected therewith, said gas-check having a concaved closed end which is flattened by the force of the explosion and expands the sides of said gas-check to a diameter greater than the bullet-body, the attachment of said gas-check with said bullet-body being such that the gas-check will drop off the bullet-body after the same has been ejected from the firearm-barrel.

7. A gas-check for bullets made of metal harder than the bullet-body and of cup shape with a rounded bottom, an inwardly-beveled open end and having a plurality of wings or teeth upon the interior thereof, the outside diam-

ciers of said gas-check and bullet-body being substantially the same.

8. The combination with a bullet-body having a base of reduced diameter; of a cup-shape gas-check with a rounded bottom placed over said base, and of metal harder than said bullet-body, the outside diameters of said gas-check and bullet-body being substantially the same.

9. The combination with a bullet-body; of a gas-check having a plurality of lengthwise teeth upon the surface thereof which is in immediate contact with said bullet-body.

10. The combination with a bullet-body having a base of reduced diameter; of a gas-check, with a rounded bottom, attached to said base with an open space between the end of said base and the bottom of said gas-check and between the open end of said gas-check and the shoulder of the reduced portion of said base.

11. A gas-check for bullets made of metal harder than the bullet-body, and of cup shape with a rearwardly-projecting concaved bottom and an inwardly-beveled open end.

12. The combination with a firearm-bullet having a base of reduced diameter; of an independent gas-check provided with a compressible bottom placed over said base having means thereon to aid in stripping the same from said bullet after it has left the firearm-barrel, the outside diameters of said gas-check and bullet being substantially the same.

13. A firearm-bullet having a base of reduced diameter with a cup-shape gas-check on said base, the outside diameter of which is substantially the same as said bullet, said gas-check being formed so that pressure upon the end thereof will expand said gas-check to a diameter slightly larger than said bullet-body.

14. A firearm-bullet having a cup-shape gas-check over the base thereof, with a diameter substantially the same as the bullet and shaped so that the sides thereof will be swelled by a compression to a diameter greater than said bullet.

15. A firearm-bullet having an independent cup-shape gas-check over the base thereof with a rearwardly-inclined beveled edge at its open end.

16. A firearm-bullet with a cup-shape gas-check over the base thereof with a diameter substantially the same as said bullet, and shaped so that pressure upon the end thereof will expand the same whereby a portion thereof will act as a resistance-shield and aid in stripping said gas-check from said bullet after the same has been ejected from the firearm-barrel.

17. A firearm-bullet with a cup-shape gas-check over the base thereof with a diameter substantially the same as said bullet, and shaped so that pressure upon the end thereof will expand the same, and when so expanded the front edge thereof will project outside of said bullet and act as a resistance-shield and aid in stripping said gas-check from said bullet after the same has been ejected from the firearm-barrel.

18. A firearm-bullet with a cup-shape gas-check over the base thereof with a diameter substantially the same as said bullet, and shaped so that pressure upon the end thereof will expand the same, and when so expanded the front edge thereof will project outside of said bullet and present a rearwardly-inclined resistance-shield of greater diameter than said bullet, which shield will aid in stripping the said gas-check from said bullet after the same has been ejected from the firearm-barrel.

19. The combination with a firearm-bullet; of a cup-shape gas-check frictionally attached thereto, said gas-check having means whereby it may be secured to bullets of slightly-varying diameters.

20. A firearm-bullet with a base of reduced diameter, in combination with a gas-check having a compressible bottom covering the end of said base, and sides which project forwardly over said base parallel with the axis thereof and terminating at a point distant from the shoulder on said bullet formed by said reduced base, the outside diameters of said bullet and gas-check being substantially the same, and the parallel portion of said gas-check being expansible to a diameter greater than said bullet.

847,150. COMPOUND FOR CLEANING AND POLISHING METALS, PORCELAIN, GLASS, &c. CHARLES J. BARRENKOHL, New York, N. Y. Filed Aug. 13, 1906. Serial No. 330,315.

Claim.—The herein-described compound for cleaning and polishing, consisting solely of sal-soda, water, ammonia and whiting.

847,151. VENEER-CUTTER. EDWARD BECK, New York, N. Y. Filed Oct. 24, 1906. Serial No. 340,295.

Claim.—1. A reciprocating cutter rotating alternately in opposite directions, and provided with a beveled edge extending inward from the outer side of the cutter, having V-shaped cutting-teeth formed therein, and an unobstructed central portion on one side thereof, and means for operating said cutter.

2. The combination with a main frame provided with a toothed rack, of an auxiliary frame having a reciprocating movement on the main frame, an arbor journaled in the reciprocating frame and provided with a pinion connected with said cutter, mechanism connected with said auxiliary frame adapted to reciprocate said frame, and a cutter mounted on said arbor adapted to rotate alternately in opposite directions and provided with a beveled edge extending inward from the outer side of the cutter, having V-shaped cutting-teeth formed thereon, and an unobstructed central portion on one face thereof.

3. A reciprocating cutter rotatable alternately in opposite directions, and provided with a beveled edge extending inward from the outer side of the cutter having V-shaped cutting-teeth formed therein, and an unobstructed central portion on one side of said cutter, and means for adjusting the reciprocating movement of said cutter, substantially as shown and described.

4. The combination with a main frame, of an auxiliary frame having a reciprocating movement on the main frame, an arbor journaled in the reciprocating frame, mechanism connected with said auxiliary frame adapted to reciprocate said frame, and a cutter mounted on said arbor adapted to rotate alternately in opposite directions and provided with a beveled edge extending inward from the outer edge of the cutter, having V-shaped cutting-teeth formed thereon, and an unobstructed central portion on one face thereof.

847,152. SWIVEL. ROBERT H. BENES, Kalama, Wash. Filed Dec. 17, 1906. Serial No. 348,207.

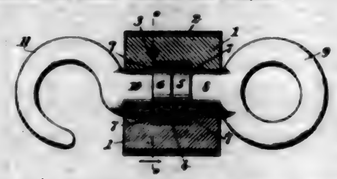

Claim.—1. A swivel comprising a split bearing-block provided with a central bore having an annular recess formed therein, attaching members provided with annular flanges on their inner ends journaled in said recess, a collar clamping the sections of said block together, and means for retaining said collar in position, substantially as shown and described.

2. A swivel comprising a sectional bearing-block provided with a central bore having an annular recess, attaching members provided with shanks journaled in said bore, and with annular flanges formed on their inner ends journaled in said recess, and means for detachably clamping said sections of the block together, substantially as shown and described.

3. A swivel comprising a sectional bearing-block provided with a central bore having an annular recess formed therein, an eye provided with a shank journaled in said bore, and with a flange held in said recess, a hook having a shank journaled in said bore and provided with a flange held in said recess, a collar clamping the sections of said block together, and means for retaining said collar in position, substantially as shown and described.

847,153. ALTERNATING-CURRENT MOTOR. ERNST J. BERG, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Dec. 19, 1903. Serial No. 185,792.

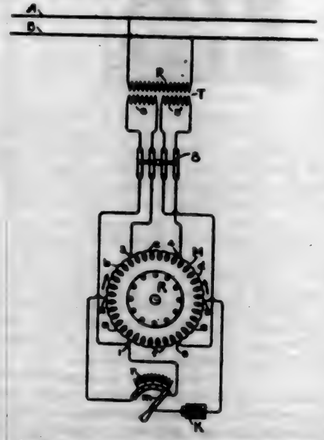

Claim.—1. In combination, an induction-motor having a continuous winding, a source of current connected to a part of said winding, a condenser connected in a certain relation to said winding at starting, and means for shifting the connections of said condenser to a part of said winding displaced ninety electrical degrees from the part of said winding connected to said source.

2. In combination, an induction-motor having a continuous winding, a source of current connected across one-third of said winding, a condenser connected across an adjacent third, and means for shifting the connections of said condenser to include half of the first-named third.

3. In combination, an induction-motor having a three-phase winding, a source of current connected to one phase of said winding, a condenser, and means for connecting said condenser to a second phase of said winding and for then shifting the connection of one terminal of said condenser from the end to the middle of the first-named phase.

4. In combination, an induction-motor having a continuous winding, independent sources of current connected to energize two parts of said winding displaced from each other one hundred and eighty electrical degrees, a condenser, and means for connecting said condenser to the middle of one of said parts and to the end of the other of said parts, and then connecting said condenser to the middle of both parts.

5. In combination, an induction-motor having a continuous winding, a single-phase source of supply, two independent supply-circuits derived therefrom and connected respectively to two parts of said winding displaced from each other one hundred and eighty electrical degrees, a condenser, and means for connecting said condenser variably to said windings.

6. In combination, an induction-motor, a single-phase source of supply, supply-circuits derived therefrom and connected to the windings of said motor, a phase-advancing device connected in a certain relation to said windings at starting, and means for changing the connections of said device to said windings when the motor is running.

7. In combination, an induction-motor having a winding in six sections connected to form a continuous winding, two independent supply-circuits each connected to a pair of adjacent sections and said pairs being displaced from each other one hundred and eighty electrical degrees, a condenser having one terminal connected to the middle point of one of said pairs, and means for variably connecting the other condenser-terminal to the end or to the middle point of the second of said pairs.

8. In combination, an induction-motor, a condenser having one terminal permanently connected to a point on the winding of said motor, means for connecting the other terminal of the condenser to one point on said winding when said motor is starting and to another point when said motor is running, and means for inserting a resistance in series with said condenser when changing the connection of said terminal.

9. In combination, an induction-motor, a single-phase source of supply, independent supply-circuits derived therefrom and connected to the windings of said motor, a condenser, and means for variably connecting said condenser to the windings of said motor.

10. The combination with an alternating-current machine, and a single-phase circuit connected therewith, of a quadrature device connected with the primary element of the machine, the connections thereof being at an angle to those of the single-phase circuit, and means for shifting the connections of the quadrature device.

11. The combination with an alternating-current machine, and a single-phase circuit connected therewith, of a condenser connected with the primary element of the machine, and means for shifting the connections of the condenser relative to the connections of the single-phase circuit.

12. The combination with an alternating-current machine, and a single-phase circuit connected therewith, of a quadrature device connected with the primary element of the machine, and means for shifting the connections of the quadrature device relative to the connections of the single-phase circuit.

13. The combination with an alternating-current machine, and a single-phase circuit connected therewith, of a quadrature device connected with the primary element of the machine, the connections thereof being at an angle to those of the single-phase circuit, means for shifting the connections of the quadrature device, and means for regulating the current taken by the quadrature device.

14. The combination with an alternating-current machine, and a single-phase circuit connected therewith, of a quadrature device connected with the primary element of the machine, means for shifting the connections of the

quadrature device relative to the connections of the single-phase circuit, and means for regulating the current taken by the quadrature device.

15. The combination with an alternating-current machine, and a single-phase circuit connected therewith, of a condenser connected with the primary element of the machine, the connections thereof being at an angle to those of the single-phase circuit, and means for shifting the connections of the condenser.

16. The combination with an alternating-current machine, and a single-phase circuit connected therewith, of a condenser connected with the primary element of the machine, the connections thereof being at an angle to those of the single-phase circuit, means for shifting the connections of the condenser, and means for regulating the current taken by the condenser.

17. The combination with an alternating-current machine, and a single-phase circuit connected therewith, of a condenser connected with the primary element of the machine, means for shifting the connections of the condenser relative to the connections of the single-phase circuit, and means for regulating the current taken by the condenser.

847,154. METALLIC RAILWAY-TIE. JOSEPH BERGER, South Columbus, Ohio, assignor to Charles M. Henley, Columbus, Ohio. Filed May 29, 1906. Serial No. 319,337.

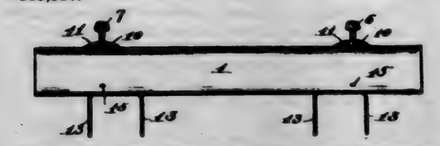

Claim.—1. A metallic railway-tie having a hollow body portion, triangular in cross-section, and provided adjacent to the apex of said triangular portion with track-rail-supporting members extending outwardly at right angles to a line drawn perpendicular to the base, the said body portion having the side walls thereof disconnected from each other at the top.

2. A metallic railway-tie having a hollow body portion, triangular in cross-section, and provided adjacent to the apex of said triangular portion with supporting members extending outwardly at right angles to a line drawn perpendicularly to the base, each of said supporting members provided near each end thereof with a pair of clamping-tongues, the two pairs of tongues of one member being parallel with the two pairs of tongues of the other member.

3. A metallic railway-tie having a hollow body portion, triangular in cross-section, and provided adjacent to the apex of said triangular portion with supporting members extending outwardly at right angles to a line drawn perpendicular to the base, each of said supporting members provided near each end thereof with a pair of clamping-tongues, the two pairs of tongues of one member being parallel with the two pairs of tongues of the other member, one of the tongues of each pair of tongues being of greater length than the other tongue.

4. A metallic railway-tie having a hollow body portion, triangular in cross-section, and provided adjacent to the apex of said triangular portion with supporting members extending outwardly at right angles to a line drawn perpendicular to the base, each of said supporting members provided near each end thereof with a pair of clamping-tongues, the two pairs of tongues of one member being parallel with the two pairs of tongues of the other member, one of the tongues of each pair of tongues being of greater length than the other tongue, the elongated tongues of one member in parallelism with the shorter tongues of the other member.

5. A metallic railway-tie having a hollow body portion, triangular in cross-section, and provided adjacent to the apex of said triangular portion with track-rail-supporting members extending outwardly at right angles to a line drawn perpendicular to the base, the bottom of said body portion provided with a plurality of bendable tongues adapted to prevent the shifting of the tie.

6. A hollow metallic railway-tie provided with a pair of supporting members, each of said members having two pairs of clamping-tongues, one of the tongues of each pair of tongues being longer that the other tongue of each pair of tongues.

7. A hollow metallic railway-tie provided with a pair of supporting members, each of said members having two pairs of clamping-tongues, one of the tongues of each pair of tongues being longer that the other tongue of each pair of tongues, the elongated tongues of one member in parallelism with the short tongues of the other member.

8. A metallic railway-tie having a hollow body portion triangular in cross-section and provided adjacent to the apex of said triangular portion with flanged supporting members extending outwardly at right angles to a line drawn perpendicular to the base, said members provided with openings to receive holdfast devices and said body portion provided with openings to receive holdfast devices.

9. A metallic railway-tie having a hollow body portion triangular in cross-section and provided adjacent to the apex of said triangular portion with flanged supporting members extending outwardly at right angles to a line drawn perpendicular to the base, said members provided with openings to receive holdfast devices and said body portion provided with openings to receive holdfast devices, each of said members further provided with a plurality of clamping means.

847,155. WASHER. VALERA BOEHM, West Bridgewater, Pa. Filed Sept. 6, 1906. Serial No. 333,447.

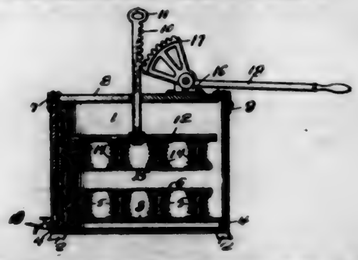

Claim.—In a washing-machine, a receptacle, a perforated plate supported within the receptacle adjacent the bottom of the latter, a plurality of springs mounted on said plate, a wire fabric on said springs, a perforated pounder-head, a plurality of coil-springs carried by said pounder-head, a wire fabric carried by the lower ends of said springs, and means for suspending the pounder-head and its springs within the receptacle and operating the same.

847,156. BRAKE-BEAM. EDMOND D. BRONNER, Detroit, Mich., assignor to Chicago Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed May 21, 1906. Serial No. 317,953.

Claim.—1. A brake-beam comprising a tension member, a strut, a compression member having beveled ends which extend approximately at right angles to the tension member, brake-heads having members projecting from their rear faces to form pockets to receive the ends of said compression member and abut against the beveled ends thereof, and means for securing said brake-heads to the brake-beam; substantially as described.

2. A brake-beam comprising a tension member, a strut, a compression member having beveled ends which extend approximately at right angles to the tension member, brake-heads provided on their rear faces with flanges which engage the lower and upper faces of the compression member and with diagonally-extending webs which bear against the beveled ends of the compression member, and means for securing said brake-heads in operative position; substantially as described.

3. A brake-beam comprising a tension member, a strut, an I-beam compression member having its ends cut at an angle and having its web slotted to receive the tension member, brake-heads provided with flanges, webs connecting said flanges and extending approximately at right angles to the tension member, thereby forming pockets in which the ends of the compression member fit snugly, openings in said webs through which the tension member passes, and nuts on the ends of said tension member and bearing against the webs on the brake-heads; substantially as described.

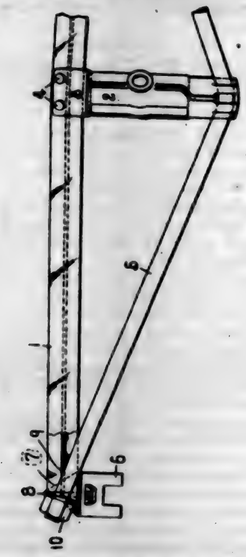

4. A brake-beam comprising an I-beam compression member, a tension member, a strut, and flanges on said strut for embracing the flanges of the I-beam, the rear end of said flanges being deflected to engage the edges of the flanges on the I-beam; substantially as described.

5. A brake-beam comprising an I-beam compression member, a tension member, a strut provided at its rear end with a yoke which entirely surrounds the compression member, and a key passing through the strut and engaging a portion of the compression member, whereby said strut is held securely in position; substantially as described.

6. A brake-beam comprising a tension member, a strut, an I-beam compression member, and brake-heads provided on their rear faces with diagonally-extending webs which are formed integral with horizontally-extending flanges connected at their rear edges by a vertical wall, said vertical walls being provided with legs which engage the web of the compression member and with ribs for engaging the inner faces of the flanges of said member; substantially as described.

7. A brake-beam comprising a tension member, a strut, a compression member having beveled ends which extend at approximately right angles to the tension member, and brake-heads applied to the ends of said compression member, said brake-heads being provided with housings which conform to the shape of the I-beam compression member and one wall of each housing butting against the end of the compression member; substantially as described.

847,157. SIGNALING APPARATUS. HAROLD G. BROWN, West Ealing, London, and ERNEST DE MERINDOL MALAN, Highgate, London, England, assignors of one-third to James Henry Neal, Boston, Mass. Filed Apr. 4, 1905. Serial No. 253,849.

Claim.—1. In signaling apparatus the combination with a transmitter of a magazine-receiver and an annunciator that exhibits the transmitted signals in the same sequence and individuality as that in which they were primarily despatched.

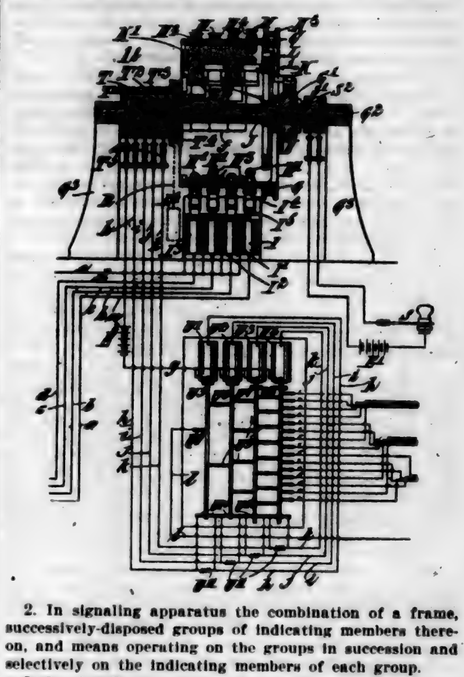

2. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members thereon, and means operating on the groups in succession and selectively on the indicating members of each group.

3. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members thereon, means for operating selectively upon the indicating members of each group and means whereby relative motion is produced between the selective devices and the groups of indicating members.

4. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members in a circle thereon, a device for acting selectively upon the indicating members of each group, and means to produce relative circular motion between the frame and the selective device.

5. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members thereon and electromagnetic mechanism operating on the groups in succession and selectively upon the indicating members of each group.

6. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members thereon, electromagnetic devices for operating selectively upon the indicating members of each group, and electromagnetic mechanism by which relative motion is produced between the selective devices and the groups of indicating members.

7. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members thereon, stationary electromagnetic devices for operating selectively upon the indicating members of each group, and electromagnetic mechanism by which the frame is rotated to produce relative motion between the selective devices and the groups of indicating members.

8. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members thereon, traveling electromagnetic devices for operating selectively upon the indicating members of each group, and electromagnetic mechanism by which the said devices are made to travel to produce relative motion between the selective device and the groups of indicating members.

9. In signaling apparatus the combination of a frame,

successively-disposed groups of indicating members thereon, means operating on the groups in succession and selectively on the indicating members of each group, an annunciator having sections adapted to coöperate with the indicating members of each group, and means by which relative motion is produced between the groups of indicating members and the annunciator-sections.

10. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members thereon, stationary electromagnetic devices for operating selectively upon the indicating members of each group, electromagnetic mechanism by which the frame is rotated to produce relative motion between the selective device and the groups of indicating members, an annunciator having sections adapted to coöperate with the indicating members of each group, and means to move the annunciator-sections from group to group of the indicating members.

11. In signaling apparatus the combination of a frame successively-disposed groups of indicating members thereon, means operating on the groups in succession and selectively on the indicating members of each group, and means for thereafter operating on the groups to restore the indicating members to their normal condition.

12. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members thereon, stationary electromagnetic devices for operating selectively upon the indicating members of each group, electromagnetic mechanism by which the frame is rotated to produce relative motion between the selective device and the groups of indicating members, and means for restoring the indicating members to their normal condition.

13. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members thereon, stationary electromagnetic devices for moving selectively the indicating members of each group in relation to the frame, electromagnetic mechanism by which the frame is rotated to produce relative motion between the selective device and the groups of indicating members, and means for replacing the members relatively to the frame.

14. In signaling apparatus the combination of a frame, successively-disposed groups of loaded indicating members thereon, means for moving selectively the indicating members of each group in relation to the frame, spring-operated catches for retaining the indicating members in their selected positions and means for disengaging the catches from the members to permit them to return to their normal position.

15. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members thereon, means for operating selectively upon the indicating members of each group and weight-actuated electromagnetically-controlled step-by-step driving mechanism whereby relative motion is produced between the selective devices and the groups of indicating members.

16. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members thereon, means operating on the groups in succession and selectively on the indicating members of each group, an annunciator having sections adapted to coöperate with the indicating members of each group, weight-actuated mechanism by which relative motion is produced between the groups of indicating members and the annunciator-sections and an electromagnetic escapement for controlling such motion.

17. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members thereon, means operating on the groups in succession and selectively on the indicating members of each group, weight-actuated electromagnetically-controlled step-by-step driving mechanism whereby relative motion is produced between the selective devices and the groups of indicating members, an annunciator having sections adapted to coöperate with the indicating members of each group, weight-actuated mechanism by which relative motion is produced between the groups of indicating members and the annunciator-sections and an electromagnetic escapement for controlling such motion.

18. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members thereon, stationary electromagnetic devices for operating selectively upon the indicating members of each group, weight-actuated electromagnetically-controlled step-by-step driving mechanism by which the frame is rotated to produce relative motion between the selective devices and the groups of indicating members, an annunciator having sections adapted to coöperate with the indicating members of each group, weight-actuated mechanism by which relative motion is produced between the groups of indicating members and the annunciator-sections and an electromagnetic escapement for controlling such motion to take place.

19. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members in a circle thereon, a device for acting selectively upon the indicating members of each group, an annunciator having sections adapted to coöperate with the indicating members of each group, means to produce relative circular motion between the frame and the selective device, means for locking together and unlocking the frame and the annunciator-sections and means by which relative angular motion can be produced between the groups of indicating members and the annunciator-sections.

20. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members in a circle thereon, a device for acting selectively upon the indicating members of each group, an annunciator having sections adapted to coöperate with the indicating members of each group, means to produce relative circular motion between the frame and the selective device, means for locking together and unlocking the frame and the annunciator-sections and a tension driving device operatively connected with the annunciator-sections and wound up by one of the two parts that coöperate in the production of the relative circular motion aforesaid.

21. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members thereon, stationary electromagnetic devices for operating selectively upon the indicating members of each group, an annunciator having sections adapted to coöperate with the indicating members of each group, driving mechanism by which the frame is rotated to produce relative motion between the selective devices and the groups of indicating members, a support for the annunciator-sections, ratchet-teeth on such support, a spring-controlled pawl pivoted to the frame and engaging with said teeth when the frame is moved by its driving mechanism, a weight tending to rotate the support and the annunciator-sections in a direction contrary to the motion of the frame and an electromagnet to disengage the pawl from the ratchet-teeth to allow such motion to take place.

22. In signaling apparatus the combination of a frame, successively-disposed groups of indicating members thereon, stationary electromagnetic devices for operating selectively upon the indicating members of each group, an annunciator having sections adapted to coöperate with the indicating members of each group, weight-actuated electromagnetically-controlled step-by-step driving mechanism by which the frame is rotated to produce relative motion between the selective devices and the groups of indicating members, a support for the annunciator-sections, ratchet-teeth on such support, a spring-controlled pawl pivoted to the frame and engaging with said teeth when the frame is moved by its driving mechanism, a weight tending to rotate the support and the annunciator-sections in a direction contrary to the motion of the frame and an electromagnet to disengage the pawl from the ratchet-teeth to allow such motion to take place.

847,158. WIRE STRETCHING AND TWISTING APPARATUS. SAMUEL E. BUNTON, Van Horn, Tex. Filed Sept. 2, 1905. Serial No. 276,806.

Claim.—A wire-stretching apparatus comprising a shank having arms at right angles therewith, one of said arms being constructed in wedge-shaped form and provided with a sharpened terminal serving to be driven into a support to provide a fulcrum, said arm being also provided with a plurality of openings for the reception of fence-wires, the other arm of the shank serving to swing the wedge-shaped arm to permit of the stretching of the wire, substantially as specified.

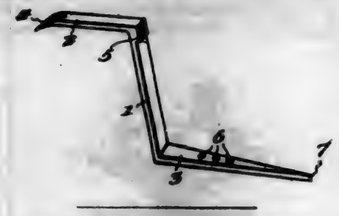

847,159. WAGON-BOLSTER AND STANDARD. OTTO H. BUNTROCK, Wausau, Wis. Filed Dec. 3, 1906. Serial No. 346,101.

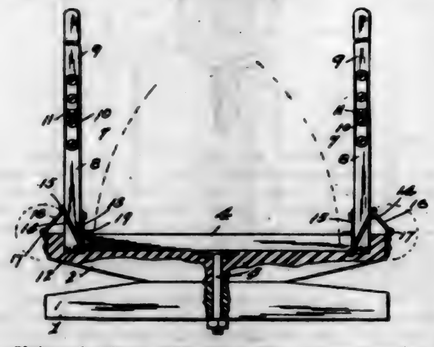

Claim.—1. The combination with a wagon-bolster, of a standard pivoted thereto, a clevis pivoted thereto and engaging said standard and a pivoted dog carried by said bolster and engaging said clevis.

2. The combination with a wagon-bolster provided with an enlarged recess in its upper surface, of a standard pivoted within said recess and foldable therein and dogs carried upon said bolster and engaging said standard on opposite sides thereof and in line with its pivotal movement.

847,160. FLUME-GATE. ALONZO E. CHAPMAN, Redlands, Cal. Filed Jan. 2, 1907. Serial No. 350,425.

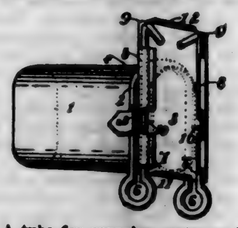

Claim.—1. A tube for carrying water or liquids, a movable gate for control of flow, spring-guides of wire secured to the tube as a means of holding the gate in contact with the end of the tube, the sides of the gate bent to fit the wire guides to retain it in position.

2. A tube for carrying water or liquids, a movable gate for control of flow, spring-guides of wire secured to the tube as a means of holding the gate in contact with the end of the tube, the sides of the gate bent to fit the wire guides to retain it in position, and a projection on the upper end of one or both of the wire guides for purpose set forth.

3. A tube for carrying water or liquids, a movable gate for control of flow, spring-guides of wire secured to the tube as a means of holding the gate in contact with end of the tube, sides of the gate bent to fit the wire guides to retain it in position, a projection on upper end of one or both of the wire guides and a lip on lower part of the gate to engage such projection for purpose set forth.

4. A tube for carrying water or liquids, a movable gate for control of flow, spring-guides of wire secured to the tube as a means of holding the gate in contact with end of the tube, sides of the gate bent to fit the wire guides to retain it in position, projections raised on sides of the body of the gate near center to equalise the pressure of the gate against end of the tube, a projection on upper end of one or both of the wire guides and a lip on lower part of the gate to engage such projection for purpose set forth.

5. A tube for carrying water or liquids, a movable gate for control of flow, spring-guides of wire secured to the tube as a means of holding the gate in contact with end of the tube, loops bent in the wire to form springs for the guides, sides of the gate bent to fit the wire guides to retain it in position, projections raised on sides of the body of the gate near center to equalise the pressure of the gate against end of the tube, a projection on upper end of one or both of the wire guides and a lip on lower part of the gate to engage such projection for purpose set forth.

6. A tube for carrying water or liquids, a movable gate for control of flow, spring-guides of wire secured to the tube as a means of holding the gate in contact with end of the tube, loops bent in the wire to form springs for the guides, sides of the gate bent to fit the wire guides to retain it in position, projections raised on sides of the body of the gate near center to equalise the pressure of the gate against end of the tube, a projection on upper end of one or both of the wire guides, and lips on upper and lower end of the gate for purposes herein set forth.

847,161. ATTACHMENT FOR NEWSPAPER-PRESSES. CHARLES E. CLARK, Chicago, Ill. Filed Oct. 4, 1905. Serial No. 281,360.

Claim.—1. A device of the kind described, comprising a block having a vertical flange along one edge, said flange terminating short of the ends of the block, inwardly-extending shoulders carried by the said flange, vertical and overhanging shoulders carried by the block at the ends of the flange, a coöperating block having a similar flange and adapted to bear against the inner face of the first-mentioned block, and the under face of the overhanging portions of the shoulders, a rubber strip to be held on the blocks between the flanges and the said overhanging shoulders and means for locking the said blocks together, for the purpose described.

2. A device of the kind described, a steel frame formed in two longitudinal coöperating sections, alining transverse apertures in each section, a portion of the said apertures being threaded, a vertical flange carried by each section, and shoulders carried by one section and adapted to project over the other section, a reversible rubber strip adapted to be held between the flanges and shoulders, and screws adapted to pass through apertures and engage the threaded portions, as and for the purpose described.

847,162. COTTON CLEANER AND DISTRIBUTER. JOHN CLEM, Jr., Malvern, Ark. Filed Nov. 17, 1906. Serial No. 343,385.

Claim.—1. In a device of the class described, a box or casing having inlet and outlet ports, a perforated screen arranged in the casing between said ports, a perforated table pivotally sustained in the casing at a point below

the screen and adapted to swing automatically to discharging position, means for automatically returning the table to receiving position and a cut-off valve operatively connected with the table for movement thereby and arranged for opening and closing the outlet.

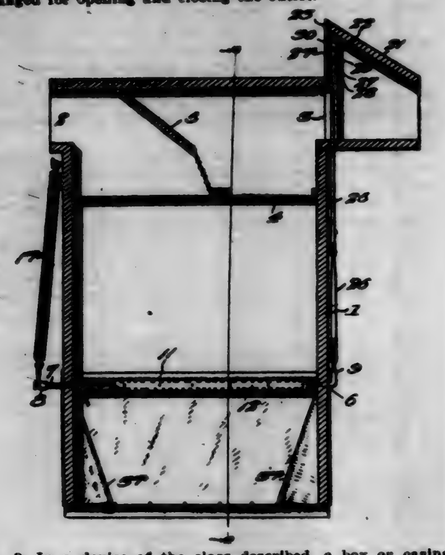

2. In a device of the class described, a box or casing having inlet and outlet ports, a perforated screen sustained in the casing between said ports, a shaft journaled in the casing and having its ends provided with crank-arms, a perforated table pivotally sustained upon the shaft at a point beneath the screen, a spring connected with one of the crank-arms to act on the shaft for holding the table in receiving position, a movable cut-off valve arranged for closing the outlet-port, and connections between said valve and the other crank-arm adapting the valve for movement with the shaft.

3. In a device of the class described, a box or casing having inlet and outlet ports, a perforated screen sustained in the casing between said ports, a valve-case attached to the casing around the outlet-port and having an air-inlet opening, a cut-off valve movably mounted in the case for normally closing the inlet-opening and adapted for movement to close the outlet-port, a perforated table pivotally sustained in the casing beneath the screen, and operative connections between the table and valve for moving the latter with the table.

4. In a device of the class described, a box or casing having inlet and outlet ports, a perforated screen arranged in the casing between said ports, a valve-case attached to the casing in communication with the outlet-port and having an air-inlet opening, a valve movably sustained in the casing for normally closing said opening and adapted for operation to close the outlet-port, a movable receiving-table sustained in the casing at a point beneath the screen and adapted to move automatically to discharging position, and means for automatically operating the valve simultaneously with the movement of the table to discharging position.

847,163. TROLLEY. THOMAS COPE, McKees Rocks, Pa. Filed Nov. 17, 1906. Serial No. 343,842.

Claim.—1. In a trolley, the combination with a pole, of a plate pivotally attached thereto, antifriction-balls mounted upon said plate, a cap mounted upon said balls, and adapted to revolve thereon, angularly-disposed arms carried by said cap and having recesses formed in their confronting faces, a U-shaped plate secured to the upper edges of said arms and partially closing said recesses, balls mounted in said recesses, screws extending into said recesses and contacting with said balls, a ball supported centrally of said U-shaped plate, and means to retain said cap in engagement with the bearing-plate, substantially as described.

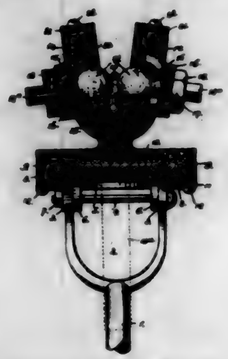

2. The combination with a trolley-pole, of a plate pivotally attached thereto, a cap revolubly mounted upon said plate, upwardly-extending arms carried by said cap and having recesses formed therein, balls mounted in said recesses, a U-shaped plate retaining said balls within said recesses, screws extending into said recesses, and a ball supported centrally of said U-shaped plate between said arms.

3. The combination with a trolley-pole, of a plate pivotally attached thereto, a cap revolubly mounted upon said plate, arms carried by said cap, balls revolubly supported in said arms, adjustable screws mounted in said arms and engaging said balls, and means to retain said cap upon said plate.

4. The combination with a trolley-pole, of a revoluble cap pivotally supported by said pole, arms carried by said cap, balls mounted in the confronting faces of said arms, a single retaining-plate for securing the ball in each arm, a ball mounted between said arms centrally of the first-mentioned balls, and means to adjust the first-mentioned balls.

847,164. STICK-PIN RETAINER. ROBERT CORN, New York, N. Y. Filed May 26, 1906. Serial No. 318,839.

Claim.—A stick-pin retainer, having the opposite side walls thereof converging toward the top of the casing, a tubular pin-receiving section movable longitudinally of the casing and provided near its upper end with a collar, said section having oppositely-arranged openings in the walls thereof above the collar, a spring between the collar and the bottom of the casing and normally retaining the pin-receiving section in its uppermost position, rollers in the opposite openings engaging the converging walls whereby to force said rollers inwardly to grip the pin when the pin-receiving section is moved upward by the spring, said pin-receiving section having means connected therewith, and extending outside of the casing, whereby to move said section against the resistance of the spring.

847,165. BULKHEAD-DOOR, HATCH, OR OTHER BARRIER. WILLIAM B. COWLES, Cleveland, Ohio, assignor to The Long Arm System Company, Cleveland, Ohio, a Corporation of Ohio. Filed Aug. 18, 1905. Serial No. 274,747.

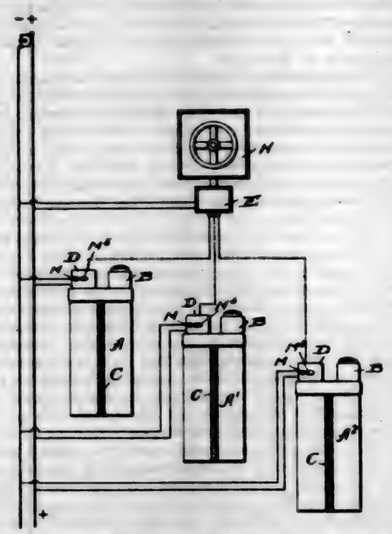

Claim.—1. In combination, a system of doors, a motor for operating each door, a controller for each motor, a control system comprising a distant station and operating means for the several controllers controlled from the distant station, and connection between each controller and its operating means, whereby each controller may be moved without disturbing the operating means, substantially as described.

2. In combination, a system of doors, an electric motor for operating each door, a controlling-switch for each motor, a control system comprising electroresponsive operating means for the several controlling-switches, control-wires extending to a distant station and switches at said distant station, and hand-operated mechanism, whereby each controlling-switch may be moved without disturbing the operating means or disturbing the connections of the control system, substantially as described.

3. In combination, an electric motor, a reversing-switch for said motor, an operating-handle for said switch, a switch-moving member arranged to maintain said switch normally in its off position and means adapted to be actuated from a distant point to move a portion of said switch from its off position into one of its operative positions, and yielding means normally maintaining said reversing-switch in a fixed position with reference to said switch-moving member, substantially as described.

4. In combination, a manually-operated switch having a plurality of operative positions, means for maintaining said switch normally in its off position, and means controllable from a distance and adapted to shift the position to which a portion of said switch is returned when manually released, substantially as described.

5. In combination, a manually-operated switch composed of two independently-movable parts with means for moving both parts simultaneously by hand, means for maintaining said switch normally in its off position, and means controllable from a distance and acting upon one of the parts of said switch to move the same independently of the hand-operated means, with automatic means for restoring said parts to the initial position when released from the distant control, substantially as described.

6. In combination, a switch, an operating-handle therefor, yielding means for maintaining said switch normally in its off position, and a distant-control system comprising electrically-operated means for shifting the point to which a portion of the switch tends to return when the operating-handle is released, substantially as described.

7. In combination, a switch, an operating-handle therefor, yielding means for maintaining said switch normally in its off position, a distant-control system comprising electromagnetically-actuated means for shifting the point to which a portion of the switch tends to return when the operating-handle is released, and a switch at a distant point for controlling the circuit of said electromagnet, substantially as described.

8. In an electrical system for the operation of watertight bulkhead-doors, hatches or the like, the combination with a door or hatch, of an electric motor geared to said door or hatch, a motor-controlling switch electrically connected to said motor, means for connecting said controller and motor to a source of current-supply, an electromagnet arranged to operate said motor-controlling switch, an emergency-circuit for energizing said magnet, and a switch located at a distance from said magnet for controlling said circuit, and means for operating said controller normally independently of the said magnet, substantially as described.

9. In an electrical system for the operation of watertight bulkhead-doors, hatches or the like, the combination with a door or hatch, of an electric motor geared to said door or hatch, a motor-controlling switch electrically connected to said motor, means for connecting said controller and motor to a source of current-supply, an electromagnet arranged to operate said motor-controlling switch, an emergency-circuit for energizing said magnet, a switch arranged to control said circuit, and a handle on said controller for operating it independently of the said magnet, substantially as described.

10. In an electrical system for the operation of watertight bulkhead-doors, hatches or the like, the combination with a door or hatch, of an electric motor geared to said door or hatch, a motor-controlling switch electrically connected to said motor, means for connecting said controller and motor to a source of current-supply, an electromagnet arranged to operate said motor-controlling switch, a circuit for energizing said electromagnet, a switch located at a distance from said magnet and arranged to control said circuit, and means for automatically returning said controller to its initial position after operation, substantially as described.

11. In an electrical system for the operation of watertight bulkhead-doors, hatches or the like, the combination with a door or hatch, of an electric motor geared to said door or hatch, a motor-controlling switch electrically connected to said motor, means for connecting said controller and motor to a source of current-supply, an electromagnet arranged to operate said motor-controlling switch, a circuit for energizing said electromagnet, a switch located at a distance from said magnet and arranged to control said circuit, a handle on said controller for operating it independently of said magnet, and a spring arranged to automatically return said controller to its initial position after operation, substantially as described.

12. In combination, a system of doors, an electric motor for operating each door, a controlling-switch for each motor composed of two members connected together, a control system comprising electroresponsive operating means for operating one of the members of the several controlling-switches, control-wires extending to a distant station and switches at said distant station, and a handle mechanically connected to the other member of each controlling switch and adapted to move both members independently of said control system and whether said operating means are energized or not, substantially as described.

13. In combination with an electric motor, a manually-operated reversing-switch for said motor, composed of two members connected together, means for maintaining one member of said switch normally in its off position, and means controllable from a distant point for moving said maintaining means into a position to bring the said switch into one of its operative positions, substantially as described.

14. In combination with an electric motor, a manually-

operated reversing-switch for said motor composed of two members connected together, means for maintaining one member of said switch normally in its off position, an electromagnet for moving said maintaining means into a position to close said switch, and means located at a distant point for controlling the circuit of said electromagnet, substantially as described.

15. In combination with an electric motor, a manually-operated reversing-switch for said motor composed of two members connected together, maintaining means constructed and arranged to maintain one member of said switch normally in its off position but to permit a free movement of the entire switch through its manually-operated means, means for moving said maintaining means into a position to close the switch, and means located at a distant point for controlling the operation of the latter means, substantially as described.

16. In combination, a manually-operated switch composed of a plurality of members having a plurality of operative positions, means for maintaining one member of said switch normally in its off position, and means controllable from a distance and acting upon said maintaining means to shift said member and thereby throw said switch to an operative position, substantially as described.

17. In combination, a manually-operated switch composed of a plurality of members and having a plurality of operative positions, means for maintaining one member of said switch normally in its off position, an electromagnet acting upon said maintaining means to shift said member and thereby throw said switch to an operative position, and a switch at a distant station controlling the circuit of said electromagnet, substantially as described.

18. In combination, a device to be moved, an electric motor for operating said device, a controlling-switch for said motor composed of a plurality of members, electroresponsive means controllable from a distance and adapted to operate one member and thereby throw said switch, connections between said switch and said means, and manually-operated means near said device for moving the entire switch independently of said electroresponsive means, substantially as described.

19. In combination, a device to be moved, a motor for operating said device, a controller for said motor composed of a plurality of members, means for operating one member of said controller from a distance, connections between said controller and said operating means, and manually-controlled means near said device adapted to move all the members of said controller independently of said operating means, substantially as described.

20. In combination, a device to be moved, an electric motor adapted to operate said device, a controlling-switch for said motor composed of a plurality of members connected together, a solenoid having its core positively connected to one member of said switch and adapted when energized to move said member and thereby said switch to one of its running positions, and means for moving all the members of said switch to another position without disturbing the circuit of said solenoid, substantially as described.

21. In combination, a device to be moved, an electric motor adapted to operate said device, a controlling-switch for said motor, composed of a plurality of members connected together, a solenoid adapted when energized to move one of said members and thus to bring said switch to one of its running positions, connections between said member of said switch and said solenoid, and means for manually moving said switch to another position without disturbing the current through said solenoid, substantially as described.

22. In combination, a device to be moved, a motor for operating said device, a controller for said motor, composed of a plurality of members connected together, means for operating one member of said controller from a distance, and thereby completing the circuit through the controller, connections between said controller and said operating means, and means near said device for moving said controller without disturbing said operating means, substantially as described.

23. In combination, a system of doors, a motor for operating each door, a controller for each motor, composed of a plurality of members connected together, a control system comprising a distant station and operating means for one member of each of the several controllers controlled from the distant station, whereby the circuit is closed through said controller, and connections between each controller and its operating means, whereby each controller may be moved without disturbing the operating means, substantially as described.

24. In combination, a system of doors, an electric motor for operating each door, a controlling-switch for each motor, composed of a plurality of members connected together, a control system adapted to operate one member of each of said switches, thereby throwing said switches simultaneously, and means at each door for moving the switch at that door independently of the control system and without disturbing the connections thereof, substantially as described.

25. In combination, a system of doors, an electric motor for operating each door, a controlling-switch for each motor, composed of a plurality of members connected together, a control system comprising electroresponsive operating means for one member of each of the several controlling-switches, control-wires extending to a distant station and switches at said distant station, and connections between each controlling-switch and its operating means, whereby one member of each controlling-switch may be moved and the switch thrown without disturbing the operating means or disturbing the connections of the control system, substantially as described.

26. In combination, an electric motor, a manually-operated reversing-switch therefor, means for holding said switch normally in one operative position, and a switch controllable locally or from a distance for completing the motor-circuit.

27. In combination, an electric motor, a manually-operated reversing-switch therefor, means for holding said switch normally in one operative position, and a switch controllable locally or from a distance for completing the motor-circuit when said reversing-switch is in said position, said reversing-switch being arranged in its other position to complete the motor-circuit independently of the other switch.

28. In combination, an electric motor, a reversing-switch therefor, means for holding said switch normally in one operative position, an operating-handle for said switch, a magnetically-operated switch adapted to complete the motor-circuit, and mechanical connections between said operating-handle and said magnetically-operated switch.

29. In combination, an electric motor, a reversing-switch therefor, means for holding said switch normally in one operative position, an operating-handle for said switch, a magnetically-operated switch adapted to complete the motor-circuit when said reversing-switch is in said position, said reversing-switch being arranged in its other position to complete the motor-circuit independently of the magnetically-operated switch, and mechanical connections between said operating-handle and said magnetically-operated switch.

30. In combination, an electric motor, a reversing-switch therefor, means for holding said switch normally in one operative position, a switch controllable from a distance and adapted to complete the motor-circuit, said reversing-switch being arranged in its other operative position to complete the motor-circuit independently of the second switch, an operating-handle, and operative connections between said handle and both of said switches whereby said reversing-switch is moved to its other position when said handle is moved in one direction, and the second switch is moved to its closed position when said handle is moved in the other direction.

31. In combination, an electric motor, a reversing-switch therefor, means for holding said switch normally in one operative position, a switch controllable from a distance and adapted to complete the motor-circuit, an operating-handle, and operative connections between said handle and both of said switches.

32. In a controller for electric motors, a manually-operated shaft, a reversing-switch loosely journaled thereon, means for holding said switch normally in one operative position, a switch controllable from a distance, a member loosely journaled on said shaft and adapted when moved to move the second switch to closed position, and operative connections between said shaft and both said reversing-switch and said member whereby said switch or said member is moved when said shaft is moved in one direction or the other.

33. In combination, a system of doors, a motor for raising and lowering each door, a reversing-switch for each motor, means for holding each switch normally in lowering position, a second switch for each motor adapted to complete the motor-circuit when the reversing-switch is in lowering position, means controllable from a distant point for operating the circuit-completing switches for the several doors, and means at each door for manually closing said circuit-completing switch or moving said reversing-switch to its raising position.

34. In combination, a system of doors, a motor for raising and lowering each door, a reversing-switch for each motor, means for holding each switch normally in lowering position, a second switch for each motor adapted to complete the motor-circuit when said reversing-switch is in lowering position, said reversing-switch being arranged in raising position to complete the motor-circuit independently of the second switch, an electromagnet for each circuit-completing switch, means at a distant point for controlling the circuits of the several electromagnets, and means at each door for manually closing the circuit-completing switch at that door or moving the reversing-switch to its raising position.

847,166. PAPER-FEEDING MECHANISM. EDWIN B. CRAM, Brooklyn, N. Y., assignor to New York Adding Typewriter Company, Orange, N. J., a Corporation of Missouri. Filed Apr. 28, 1904. Serial No. 205,305.

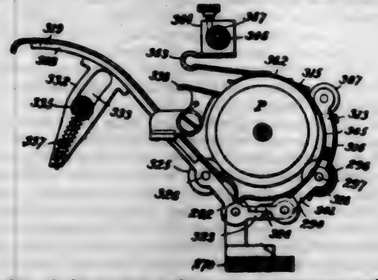

Claim.—1. In a type-writer, the combination with a platen, of a plurality of sets of rolls at one side of the platen, a jointed series of supports for said sets, and a spring secured to one of said supports and extending across the joint between said supports to bear upon another of said supports, substantially as set forth.

2. In a type-writer, the combination with a platen, of a plurality of sets of rolls, the supports of one set of rolls being jointed directly to the supports of the other set, and means normally pressing said supports toward said platen, substantially as set forth.

3. In a type-writer, the combinaiton with a platen, of a paper-shelf, a series of rolls about said platen, and means whereby pressure upon said paper-shelf operates to successively remove said rolls from said platen, substantially as set forth.

4. In a type-writer, the combination with a platen, of a paper-shelf, a series of rolls about said platen, means normally pressing said rolls toward said platen, means whereby the depression of said shelf operates to successively remove said rolls from said platen, and means tending to return said shelf to normal position, substantially as set forth.

5. In a type-writer, the combination with a platen, of a paper-shelf, a plurality of sets of rolls upon the opposite side of said platen from said shelf, and means whereby the said sets are successively removed from said platen upon the exertion of pressure upon said shelf, substantially as set forth.

6. In a type-writer, the combination with a platen, of a paper-shelf, a set of rolls secured to said shelf and other sets of rolls upon the opposite side of said platen, and means whereby pressure upon said shelf operates to successively move said sets away from said platen, substantially as set forth.

7. In a type-writer, the combination with a platen, of pivotally-mounted arms having their lower ends extending beyond their pivots and projecting beneath the platen, pressure-rollers mounted in said arms above their pivots and adapted to bear against the platen, and a pivotally-mounted paper-shelf having its lower end extending beneath the platen and adapted to engage the lower ends of said pivoted arms.

8. In a type-writer, the combination with a platen, of a paper-guide plate 290 fixed with relation to said platen and another paper-guide plate hinged to the fixed guide-plate and bearing on the platen, substantially as set forth.

9. In a type-writer, the combination with a platen, and means for guiding and feeding paper beneath the platen; of a hinged paper-guide shelf for receiving the paper as it comes from the platen, and means normally pressing said shelf toward said platen, substantially as set forth.

10. In a type-writer, the combination with a platen, and means for guiding and feeding paper beneath the platen; of a hinged paper-guide shelf for receiving the paper as it comes from the platen, said shelf being so curved as to discharge the paper upwardly, and means normally pressing said shelf toward said platen, substantially as set forth.

11. In a type-writer, the combination with a platen, of a paper-clamp, a spring secured to said clamp and tending to press it toward said platen, a block secured to said spring, a shaft having a notch, on which said block is rotatably mounted, and a screw in said block and entering said notch whereby said block may be turned about said shaft and the tension of said spring regulated, substantially as set forth.

847,167. PRESS. ELBERT R. DERBY, Leadville, Colo. Filed Jan. 4, 1907. Serial No. 350,710.

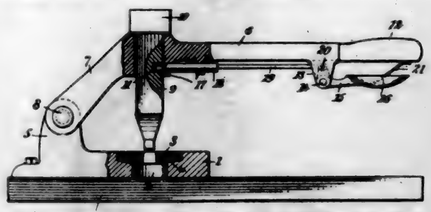

Claim.—1. A press comprising a hand-lever having a handhold at the outer end thereof, said lever having means for receiving a tool, and means operable at the handhold of the lever for locking the tool and lever together.

2. A press comprising a hand-lever having a handhold at the outer end thereof, said lever having means for receiving a tool, and a finger-grip pivotally connected to the lever adjacent to said handhold operable to lock the lever and tool together.

3. A press comprising a base, a hand-lever pivotally connected with the base having a handhold at the outer end thereof, and means opposed to said handhold operable to lock a tool to the lever.

4. A press comprising a base, a lever pivotally connected with the base having a vertical opening formed therein over the center of the base for receiving a tool, a locking-bolt slidably mounted on the lever, and means operable to project the bolt to lock the tool and lever together.

5. A press comprising a base having a recess therein

forming a seat for a stationary die, a lever pivotally connected with the base having a vertical opening therein arranged over said die, a locking-bolt slidably mounted on the lever, and a finger-grip pivoted to the lever and connected with the locking-bolt operable to project said bolt in said opening, for the purpose described.

6. A press comprising a base having a recess formed therein, a die seated in said recess, a lever pivotally connected with the base having an opening passing therethrough over the die, a tool constructed with a head and with a recess in the shank thereof passing through said opening, a locking-bolt slidable on the lever in alinement with the recess in the shank of the tool, and a finger-grip pivotally connected to the lever operating to project said bolt into the recess of the tool to lock the tool and lever together.

7. A press comprising a base, a lever pivotally connected therewith having a vertical opening passing therethrough and a handhold at its outer end, a locking-bolt slidably mounted underneath the lever, a bell-crank lever pivotally connected with the locking-bolt, a finger-grip carried by the bell-crank lever opposed to said handhold and operating to project the bolt into said opening, and means for withdrawing said bolt.

847,168. FISHING-TOOL. CHARLES E. DOWNS, Mannington, W. Va. Filed Dec. 5, 1905. Serial No. 290,448.

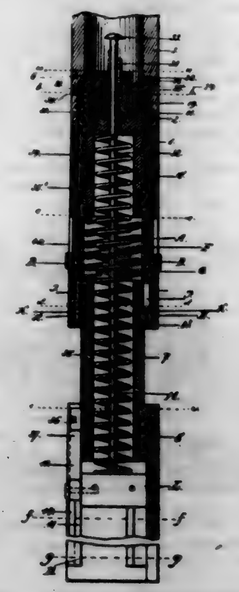

Claim.—1. In a tool of the character described, the combination with a working valve, a sleeve carried by the lower end of said working valve, a collar detachably connected to said sleeve, a socket slidably mounted in said collar, and embodying a plurality of resilient arms, of means carried by said sleeve to normally hold said arms in an elevated position, and means carried by said socket, and actuated by the lowering of said sleeve, to release the first-named means, substantially as described.

2. In a tool of the character described, the combination with a working valve, of a sleeve carried by the lower end of said working valve, a collar detachably connected to said sleeve, a socket slidably mounted in said sleeve, means carried by said socket to grip a standing valve, substantially as described.

847,169. WHISTLE-ORGAN. JAMES O. EARLEY, Jr., Richmond, Va. Filed May 11, 1906. Serial No. 316,404.

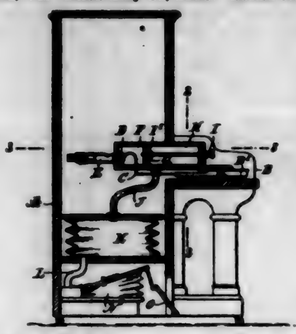

Claim.—1. A whistle-organ, comprising a main wind-chest extending through the front of the casing of the instrument over the keyboard, means for supplying air to the chest, an auxiliary wind-chest in rear of the main chest and having communication therewith, a stop controlling the communication between the said chests, said stop extending out through the front of the main chest, a plurality of whistles of varying lengths secured to the auxiliary chest with their ends projecting into the same, valves for closing the said ends of the whistles, and keys provided with rods extending into the auxiliary wind-chest and secured to the valves.

2. A whistle-organ, comprising a main wind-chest in the casing of the instrument with its front end adjacent to the keyboard, means for supplying air to the chest, an auxiliary wind-chest having communication with the main chest, a stop controlling the communication between the chests, said stop extending out through the front of the main wind-chest, a plurality of whistles of varying lengths secured to and communicating with the auxiliary wind-chest, valves for controlling the communication between the auxiliary wind-chest and whistles, and keys provided with rods extending into the auxiliary wind-chest and carrying the said valves.

3. A whistle-organ comprising a main wind-chest in the casing of the instrument with its end adjacent to the keyboard, a compensating reservoir connected with the said wind-chest for supplying the latter with air, bellows for pumping air into the said compensating reservoir, a whistle wind-chest adjacent to and communicating with the main wind-chest, stops controlling the communication between the said main wind-chest and the said whistle wind-chest, said stops extending out through the front of the main wind-chest, whistles having their entrance ends projecting into the said whistle wind-chest, means for normally closing the entrance ends of the whistles, and keys controlling the said means.

4. A whistle-organ comprising a main wind-chest in the casing of the instrument with its end adjacent to the keyboard, a compensating reservoir connected with the said wind-chest for supplying the latter with air, bellows for pumping air into the said compensating reservoir, a whistle wind-chest adjacent to and communicating with the main wind-chest, stops controlling the communication between the said main wind-chest and the said whistle wind-chest, said stops extending out through the front of the main wind-chest, whistles having their entrance ends projecting into the said whistle wind-chest, caps for normally closing the entrance ends of the said whistles, keys, and rods carrying the said caps and attached to the inner ends of the said keys.

847,170. TROLLEY-STAND. HARRY E. EASTMAN, Richmond, Va., assignor to Louis Goldback and Edward W. Krouse, Richmond, Va. Filed Jan. 5, 1906. Serial No. 294,718.

Claim.—1. A trolley-stand comprising a base, a slidable holding-arm carried thereby, a shiftable mechanism operated by the trolley and adapted to engage said lugs for shifting said arm, a trolley-retaining spring connected to said mechanism and to said arm, a catch device carried by the base, adapted to extend through the base and engage said arm for retaining it in operative position, and comprising an inverted-T-shaped free end, and a pair of wedged-shaped members carried and operated by said shiftable mechanism and adapted to engage the free end of the catch device for moving said catch device out of engagement with said arm.

3. A trolley-stand comprising a base, a slidable holding-arm carried thereby, a pair of shiftable carrying members adapted when operated to shift the arm, a shiftable lever-arm, a trolley-retaining spring connected to said slidable arm and to said lever-arm, a link attached at one end of said shiftable lever-arm and having a lost-motion connection between it and the forward end of said carrying members, a catch device for retaining said arm in operative position, and means operated by the carrying members for releasing said catch device.

4. A trolley-stand comprising a base, a slidable holding-arm carried thereby, a shiftable means for said arm, a trolley connected to said mechanism, a trolley-retaining spring attached to said mechanism and to said arm, a spring carried by the base and adapted to engage the holding-arm for retaining it in normal position, said spring having a depending portion substantially T-shaped in contour, a pair of wedge-shaped members operated by the shifting mechanism and adapted to engage said depending T-shaped portion of the spring for moving the spring out of the path of the said arm.

5. A trolley-stand comprising a base, a slidable holding-arm carried thereby and provided with a pair of laterally-extending lugs projecting from the base, a shiftable mechanism provided with inverted-U-shaped bars arranged in the path of said lugs, said bars when said mechanism is operated adapted to engage the lugs for shifting the arm, a trolley-retaining spring attached to said mechanism and to said arm, a spring carried by the base and projecting in the path of said arm for retaining it in its normal position, said spring provided with a depending inverted-T-shaped portion, and a pair of wedge-shaped members operated by said mechanism and adapted to engage the said inverted-T-shaped portion for moving the spring out of the path of the arm.

6. A trolley-stand provided with means for automatically dropping the trolley when the same is removed from the conductor, said means comprising a retaining element for the trolley, a shiftable holding element for said retaining element, a shiftable carrying element for said holding element, a securing element adapted to extend in the path of the holding element for retaining it in its shifted position, and a releasing element depending from the carrying element and adapted to engage the securing element for moving it out of the path of the holding element when the carrying element is moved in one direction and to release said holding element when the carrying element is moved in the opposite direction.

7. A trolley-stand provided with means for automatically dropping the trolley when the trolley is removed from a conductor, said means comprising the combination with the trolley and a base, of a lever-arm connected with the lower end of the trolley and pivotally mounted upon the base, a spring-retaining element for the trolley, connected at one end to one end of said lever-arm, a shiftable holding element for said spring-retaining element, said holding element mounted upon the base and connected to the other end of said spring-retaining element, a shiftable element mounted upon the base and connected to the other end of said lever-arm, said shiftable element adapted to engage said holding element for shifting it, a securing element carried by the base and adapted to extend in the path of said holding element for retaining it in its adjusted position, and a releasing element depending from said shiftable element and adapted during the movement of said shiftable element in one direction, to engage said securing element for moving it out of the path of said holding element and when the shiftable element is moved in the opposite direction to release said securing element.

847,171. FOLDING TRUNK. FREDERICK L. A. EICHELBERGER, McKees Rocks, Pa. Filed July 10, 1906. Serial No. 325,473.

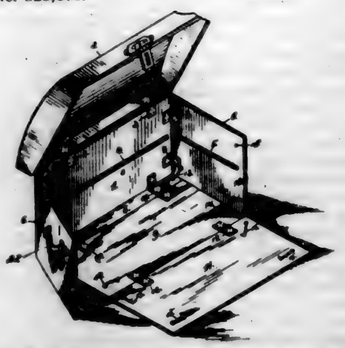

Claim.—1. A folding trunk comprising a back section having a longitudinal recess in its inner side, a lid hinged to the back, end sections hinged to the ends of the back and having cleats to fit said recess, a bottom hinged to the back, a front hinged to the bottom, fastenings for detachably connecting the ends to the bottom, and the front to the ends, and a removable tray.

2. A folding trunk comprising a back section, a lid hinged to the back, end sections hinged to the ends of the back, a bottom comprising two sections hinged to each other and to the back, a front section hinged to the front edge of the bottom, and fastenings for detachably connecting the ends to the bottom, and the front to the ends.

3. A folding trunk comprising a back section having a

longitudinal recess on its inner side, a lid hinged to the back, end sections hinged to the ends of the back and each having a tray-supporting cleat adapted to fit said recess, a bottom comprising two sections of different width hinged together, one of said bottom sections being also hinged to the back, a front section hinged to the bottom, means for detachably securing the ends to the bottom, and the front to the ends, and a removable tray having folding ends and sides.

847,172. CONTROLLING MEANS FOR SINGLE-PHASE MOTORS. AUGUSTINE R. EVERETT, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed June 22, 1905. Serial No. 266,431.

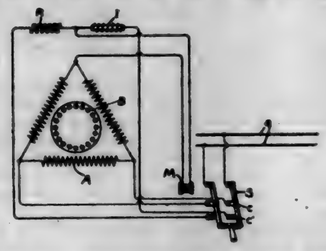

Claim.—1. In combination with a single-phase induction-motor, phase-splitting devices for starting said motor, a switch arranged to cut said devices out of circuit, and a magnet-winding connected in circuit with the motor and controlling said switch.

2. In combination with a single-phase induction-motor having different connections for starting and for running, a device controlling said connections and responsive to variations in the component of the electromotive force induced in the motor-windings in quadrature with the impressed electromotive force.

3. In combination with a single-phase induction-motor, a phase-splitting starting device, and means for breaking the circuit of said device responsive to variations in the component of the electromotive force induced in the motor-windings in quadrature with the impressed electromotive force.

4. In combination with a single-phase induction-motor, a phase-splitting starting device, and means for automatically breaking the circuit of said device when the cross field produced in said motor by the secondary current exceeds a predetermined value.

5. In combination with a single-phase induction-motor, having main circuit connections for running and different connections for starting, a switch adapted to change said connections from starting to running conditions, and a magnet controlling the said switch connected in quadrature to the main circuit connections.

6. In combination with a single-phase induction-motor, a main circuit connected to the primary winding, an auxiliary starting-circuit, a switch in the starting-circuit, and a magnet controlling the said switch connected to the primary winding in quadrature to the main circuit connections.

7. In combination with an induction-motor having a three-phase winding with two of its terminals connected to a single-phase source, two devices of different impedance factors connected in series with each other and in shunt to the motor, a connection from a point between said devices to the third motor-terminal, a magnet-winding in said connection, and a switch controlled by said magnet-winding and arranged to cut said devices out of circuit.

8. In combination with an induction-motor having different circuit connections for starting and running, a switch arranged to establish starting connections in one of its positions and running connections in another, a magnet-winding in circuit with said motor, means controlled by said magnet-winding for locking the switch in its first position, and means for moving said switch automatically to its other position when released by said locking means.

9. In combination with a single-phase induction-motor, phase-splitting devices for starting said motor, a switch arranged in one position to connect said devices in circuit with said motor and in another position to cut them out of circuit, a magnet-winding connected in circuit with said motor, means controlled by said magnet-winding for locking said switch in the first position, and means for moving said switch automatically to its other position when released by said locking means.

10. In combination with an induction-motor having a three-phase winding with two of its terminals connected to a single-phase source, two devices of different impedance factors connected in series with each other and in shunt to the motor, a connection from a point between said devices to the third motor-terminal, a magnet-winding in said connection, a switch in series with said devices, means controlled by said magnet-winding for locking said switch in closed position, and means for moving said switch automatically to break the circuit of said devices when said switch is released by said locking means.

11. In combination with a single-phase induction-motor, starting devices therefor, a switch-base, a knife-blade switch pivoted on said base and movable in a plane at right angles to said base, two sets of contacts of different lengths extending outwardly from said base, the longer set being connected to the primary winding of the motor and the shorter set to the starting devices, and means for moving said switch automatically out of engagement with the shorter set of contacts.

12. In combination with a single-phase induction-motor, starting devices therefor, a switch-base, a knife-blade switch pivoted on said base and movable in a plane at right angles to said base, two sets of contacts of different lengths extending outwardly from said base, the longer set being connected to the primary winding of the motor and the shorter set to the starting devices, and a spring-operated plunger adapted to move said switch out of engagement with the shorter set of contacts.

13. In combination with a single-phase induction-motor, phase-splitting devices for starting said motor, a switch manually movable to connect said motor to the source and to connect said phase-splitting devices to the motor, automatic means for moving said switch to cut said devices out of circuit, and a magnet-winding in circuit with said motor and controlling said switch.

847,173. PROCESS FOR PERMANENTLY REMOVING WALL-SALTPETER AND SIMILAR ERUPTIONS. MICHAEL FROSCHMAIER, Bad Aibling, Germany. Filed Feb. 11, 1907. Serial No. 356,874.

Claim.—1. The process which consists in applying heat to wall-saltpeter and similar eruptions until the surface scales off.

2. The process which consists in applying heat to wall-saltpeter and similar eruptions until the surface scales off and then applying thereto a waterproofing coating.

3. The process which consists in applying heat to wall-saltpeter and similar eruptions until the surface scales off and then applying thereto a water solution of potassium silicate and carbonate of lime.

4. The process which consists in applying heat to wall-saltpeter and similar eruptions until the surface scales off and then applying thereto a water solution of potassium silicate and finally painting.

5. The process which consists in progressively applying heat to wall-saltpeter and similar eruptions from the central portion to the outer boundary of the affected locality until the surface scales off with a crackling noise, then coating with a water solution of potassium silicate and carbonate of lime, and finally painting.

847,174. MECHANICAL STOKER. NORMAN E. GEE, Altoona, Pa. Filed May 7, 1906. Serial No. 315,542.

Claim.—1. In a stoker, a stoking-engine, a device so constructed as to operate the engine for feeding fuel to various parts of a fire-box, and a single device adapted to control the action of said first device and to select the part to be fed.

2. In a stoker, a stoking-engine, a device so constructed as to operate the engine for feeding fuel to various parts of the fire-box, and a manually-operated device adapted to control the action of said first device and to select the part to be fed.

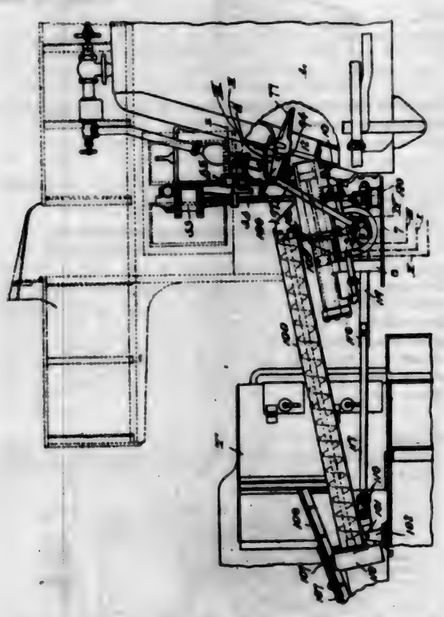

3. In a stoker, a stoking-engine, an operating-valve so constructed as to operate the engine for feeding fuel to various parts of a fire-box, and a single device adapted to control the action of said valve and to select the part to be fed.

4. In a stoker, a stoking-engine, a device so constructed as to operate the engine for feeding fuel to various parts of a fire-box, and a controlling-valve adapted to control the action of said device and to select the part to be fed.

5. In a stoker, a stoking-engine, an operating-valve so constructed as to operate the engine for feeding fuel to various parts of a fire-box, and a controlling-valve adapted to control the flow of the operating medium to the operating-valve and to select the part to be fed.

6. In a stoker, a stoking-engine, an operating-valve so constructed as to operate the engine for feeding fuel to various parts of a fire-box, and a separate manually-operated controlling-valve adapted to control the flow of the operating medium to the operating-valve and to select the part to be fed.

7. In a stoker, a stoking-engine, a device so constructed as to operate the engine for feeding fuel to various parts of the fire-box, a single device adapted to control the action of said first device and to select the part to be fed, and an automatically-adjusted deflector.

8. In a stoker, a stoking-engine, an operating-valve so constructed as to operate the engine for feeding fuel to various parts of a fire-box, a controlling-valve adapted to control the flow of the operating medium to the operating-valve and to select the part to be fed, and a deflector operated from said operating-valve.

9. In a stoker, a stoking-engine having an operating-valve, and a deflector operated from said valve.

10. In a stoker, a stoking-engine having an operating valve, a vertically-swinging and laterally-rocking deflector having an operative connection with said valve for imparting to the deflector its vertically-swinging movement, and means for imparting to the deflector its lateral rocking motion.

11. In a stoker, the combination with a furnace, of a stoking-engine having a rotary operating-valve, a deflector supported within the fire-door opening of the furnace and arranged to swing vertically on a horizontal axis, and to rock laterally on its longitudinal axis, an operating connection between the valve and said horizontal axis for the deflector, and an intermittently-operating connection with the longitudinal axial support for the deflector.

12. In a stoker, a stoking-engine having a rotary valve and strokes of constant force, ratchet driving mechanism for turning said valve, a deflector supported to swing vertically on a horizontal axis and to rock laterally on a longitudinal axis, a fixed operating connection between the valve-shaft and the horizontal axis for the deflector, and an intermittent ratchet-operating mechanism operatively connected with the longitudinal axial support for the deflector.

13. In a stoker, a fire-door frame arranged over the fire-door opening of the furnace, a stoking-engine discharging through said fire-door frame, a deflector supported within the fire-door frame and arranged to swing vertically on a horizontal axis and to rock laterally on a longitudinal axis, a synchronously-operating connection between the stoker and said horizontal axis for the deflector, and an intermittently-operating mechanism connected with the longitudinal axial support for the deflector.

14. In a stoker, a stoking-engine having a fuel-chute, a stoking-head operating in said chute and carried by the piston-rod, a single rotary operating-valve comprising means for feeding and exhausting both ends of the engine-cylinder, and a single controlling-valve comprising means for cutting in and out different fuel-feeding strokes of the stoker-head.

15. In a stoker, a stoking-engine having a piston-operated stoking-head and an operating-valve provided with a plurality of supply-ports arranged in a cycle of movement, and a controlling-valve having feeding-ports in complemental relation to said supply-ports, and also having means for selecting or blanking any of said ports.

16. In a stoker, a stoking-engine having a piston-operated stoking-head and a rotary single operating-valve provided with a plurality of supply-ports arranged in a cycle of movement for separately supplying steam for different forward strokes of the piston, said operating-valve also being provided with means for feeding and exhausting the forward end of the engine-cylinder, and a controlling-valve having feeding-ports in complemental relation to said supply-ports, and also having means for selecting or blanking any of said ports.

17. In a stoker, a stoking-engine having a fuel-chute provided with a steam-exhaust discharge, a piston-operated stoking-head working in said chute, and an operating-valve having a common exhaust through said exhaust-discharge and provided with a plurality of supply-ports for separately supplying steam for different forward strokes of the piston, said operating-valve being also provided with means for feeding and exhausting the forward end of the engine-cylinder, and a controlling-valve having feeding-ports in complemental relation to said supply-ports, and also having means for selecting or blanking any of said ports.

18. In a stoker, a stoking-engine having a piston-operated stoking-head, a rotary single operating-valve comprising means for feeding and exhausting both ends of the engine-cylinder, a valve balance-chamber covering the operating-valve, a valve balance-disk arranged at one side of the operating-valve within said chamber and adjustable in relation thereto, means for supplying steam between the valve balance-disk and the operating-valve, and a single hand-operated controlling-valve comprising means for cutting in and out different fuel-feeding strokes of the stoking-head.

19. In a stoker, the combination with a locomotive and tender, of a stoking-engine having a fuel-chute and a fuel-handling system comprising a conveyer-trough having a loose bearing-support over both the tender and the loco-

motive and arranged to deliver fuel into said chute, a pair of screw conveyers operating in said trough, a driving-engine, and a self-adjusting connection between the driving-engine and the conveyers.

20. In a stoker for locomotives, the combination with a tender, of a stoking-engine having a fuel-chute, and a fuel-handling system comprising a conveyer-trough extending from the tender to the locomotive-cab and feeding into said chute, conveyer-screws operating within the trough, an elevated conveyer-shield overhanging the receiving end of the conveyer-trough in the tender, a driving-engine, and a telescopic shaft-line operatively connected with the driving-engine and having a gimbal-joint connection with the rotating means for the screws.

21. In a stoker, a stoking-engine having a rotary operating-valve, a vertically-swinging and laterally-rocking deflector, an operating connection between the operating-valve and the horizontal axis for the deflector, a coal-handling system including a drive-shaft connection therefor, a driving-engine, a ratchet mechanism driven directly from said engine and operating said drive-shaft connection, a separate ratchet-operating connection between said driving-engine and the operating-valve, and another ratchet mechanism between the means for laterally rocking the deflector and said driving-engine.

22. In a stoker for locomotives, the combination with the tender, of a stoking-engine having an operating-valve, a coal-handling system extending from the tender to the stoking-engine, and including a drive-shaft connection, a driving-engine, a ratchet mechanism driven from the driving-engine and operating the drive-shaft connection, and a separate ratchet-operating connection between the driving-engine and the operating-valve.

847,175. HANDLE FOR COFFEE OR TEA POTS. PHILIP J. GODFREY, Taunton, Mass. Filed Feb. 26, 1906. Serial No. 303,023.

Claim.—A teapot or similar vessel having a supporting-base, and a bowl resting directly upon and connected to the base, a handle having its upper end secured to the upper portion of the bowl and its lower end secured to the base at a point near the extreme edge of the latter, the handle being spaced from the lower portion of the bowl.

847,176. GAGE. CHARLES A. GOOD, Jonesboro, Ark. Filed Oct. 2, 1906. Serial No. 337,067.

Claim.—1. A gage comprising a straight-edged blade having a downwardly-turned arm at each end with cut-out portions at each side thereof, forming projecting toes at each side of the extremities of the arms for the purpose described.

2. A gage comprising a blade having a downwardly-turned arm at each end at substantially right angles thereto, said arms having cut-out portions providing projecting toes at their extremities, for the purpose described.

3. A gage comprising a straight-edged sheet-metal blade downwardly turned at each end, providing arms at substantially right angles thereto, said arms being cut out at

each side forming projecting toes at their extremities for the purpose described.

847,177. COP-TUBE. EDMOND H. GUERIN, Woonsocket, R. I. Filed Nov. 19, 1906. Serial No. 344,136.

Claim.—A cop-tube composed of a sheet of pliable material coiled upon itself; one edge of said sheet extending longitudinally of the exterior of the tube and having tongues at intervals of its length which extend entirely around the tube and form rings for reinforcing the tube and holding yarn against longitudinal movement on the tube.

847,178. REELING DEVICE. CARL A. HADLAND, Bennington, Minn. Filed July 14, 1906. Serial No. 326,263.

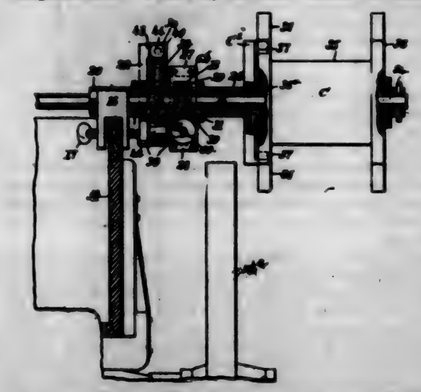

Claim.—1. In a reeling device, a wheel-supported frame, a shaft mounted upon said frame, a reel loosely mounted upon the shaft, a sleeve loosely mounted upon the shaft, a driving connection between the sleeve and the reel, a guide for the material on the reel and movable transversely thereof, a driving connection between the sleeve and the guide, and means for connecting and disconnecting the sleeve and the shaft.

2. In a reeling device, a wheel-supported frame, a shaft mounted upon said frame, a reel loosely mounted upon the shaft, a sleeve loosely mounted upon the shaft, a driving connection between the sleeve and the reel, a clutch device for coupling the sleeve and the drive-shaft or effecting an uncoupling thereof, a guide for the material on the reel, means for moving the said guide transversely of the reel which means include driving mechanism driven by the rotation of the said sleeve, and means for driving the drive-shaft from a supporting-wheel of the frame.

3. In a reeling device, a wheel-supported frame, a shaft mounted upon said frame, a reel loosely mounted on the shaft, a sleeve loosely mounted upon the drive-shaft, a driving connection between the sleeve and the reel, a clutch device for effecting a coupling between the drive-shaft and the sleeve, or an uncoupling of said parts, means for driving the drive-shaft from a supporting-wheel of the frame, a guide for the material carried by the reel, a mechanism for moving the said guide transversely of the reel, which mechanism comprises a reciprocating bar for the guide, a wheel-supported endless belt, a crank connection between said belt and said bar, a driving-gear for the said belt, and a shaft for the said gear driven by the rotation of said sleeve.

4. In a reeling device, a wheel-supported frame, a drive-shaft mounted to turn on said frame, a driving connection between a supporting-wheel of the frame and the said drive-shaft, a reel loosely mounted on the drive-shaft, a sleeve likewise loosely mounted on the drive-shaft, a connection between the sleeve and the reel, a guide device for the material on the reel, consisting of a support having end movement and a wheel mounted to revolve on the said support, and means for reciprocating said support, operated by the rotation of the said sleeve.

5. In a reeling device, the combination with a wheel-support, a drive-shaft mounted to revolve upon said support, a gear located on the drive-shaft, a driving-gear secured to the hub portion of one of the supporting-wheels for the frame, and a belt connection between the said driving-gear and the gear on the drive-shaft, of a reel loosely mounted on the drive-shaft, a sleeve also loosely mounted on the drive-shaft, an arm secured to the said sleeve, having engagement with the said reel, a guide device for material carried by the reel, and a mechanism for moving the guide device transversely of the reel, which mechanism receives its motion from the rotation of the said sleeve.

847,179. MOLDING APPARATUS. LARS HANSEN, Oshkosh, Wis. Filed Oct. 19, 1906. Serial No. 339,639.

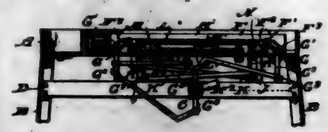

Claim.—1. The combination in a molding-machine substantially as described, of a mold-frame, guides at the opposite sides of and projecting above the mold-frame, a longitudinally-movable slide in the mold-frame and provided with a needle, and a depending arm, rock-shafts at the ends of the mold-frame and having hooks or pins movable into and out of the mold-frame, said shafts having depending crank-arms, a rod connecting one of said crank-arms with the depending arm of the slide within the mold-frame, a main shaft intermediate the rock-shafts and having crank-arms, and links connecting the same with the depending arms of the rock-shafts, levers pivotally supported at one end on opposite sides of the main shaft and extending thence over the main shaft and having at their free ends upwardly-projecting rods extending into the mold-frame and adapted to elevate or lift a die-plate therein, and means for operating said levers from the main shaft, substantially as set forth.

2. The combination in a machine substantially as described, of a mold-frame, a slide movable longitudinally therein and having on its upper side a needle adapted to pierce a die-plate and provided with a depending arm, rock-shafts at the ends of the mold-frame and having hooks or needles movable into and out of the mold-frame for piercing the material being molded therein, said rock-shafts having depending arms, a link between one of said arms and the depending arm of the slide, a main shaft between the crank-arms of the rock-shafts and provided with crank-arms, and links connecting the crank-arms with the main shaft and with the depending arms of the rock-shafts, substantially as set forth.

3. A machine substantially as described, comprising a molding-frame, rock-shafts at the ends of said frame and having hooks or pins movable into and out of the frame, and means for operating said rock-shafts to set the hooks or pins into and extract them from the frame, substantially as set forth.

4. The combination with a molding-frame, and a rocking main shaft below and midway between the ends thereof, of piercing devices at the ends of the mold-frame, and means for operating said piercing devices from the main shaft, substantially as set forth.

5. The combination with the mold-frame, and rock-shafts at the ends thereof and having piercing devices, of a main shaft located between the rock-shafts, and means for operating the rock-shafts from the main shaft, substantially as set forth.

6. The combination with a mold-frame, of piercing devices at the ends thereof, means projecting into the mold-frame from below for lifting a die-plate, a main shaft below the mold-frame and between the piercing devices, means whereby the piercing devices may be operated from the rock-shaft, and means for operating the die-plate-lifting devices from the rock-shafts, substantially as set forth.

7. The combination with the mold-frame, and the upright rods projecting thereinto for lifting a die-plate, of levers carrying said upright rods, and a shaft having crank devices for operating said levers, substantially as set forth.

8. A shaping and tamping tool for tamping, shaping and smoothing purposes, having its lower surface flat transversely and one side at a right angle to said lower surface for smoothing purposes and also having a beveled edge whereby to cut off the superfluous material, and having its lower surface longitudinally of the opposite contour to the upper surface of the tile or other object to be shaped, substantially as set forth.

9. The combination with a mold-frame, and piercing devices arranged at the ends thereof, including rock-shafts and hooks or pins projecting therefrom to operate in the mold-frame, and cover-plates at the ends of the mold-frame and extending over the said rock-shafts, and means for operating the rock-shafts, substantially as set forth.

10. The combination with a mold-frame, of guides along the opposite sides thereof and projecting above the same, a scraper to move along said guides and pins within the mold-frame for supporting a die-plate and adjustable vertically whereby they may be set up or down according to the thickness of the object to be molded and to compensate for the wear on the side guides by the operation of a tool thereon, substantially as set forth.

847,180. VETERINARY'S OPERATING-TABLE. WILLIAM HOUSAM, O'Fallon, Ill. Filed June 4, 1906. Serial No. 320,087.

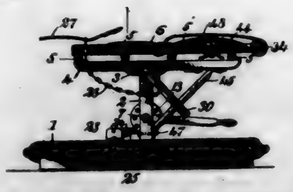

Claim.—In an operating-table, in combination, a platform, a table-top adapted to rock from a vertical to a horizontal position, means for supporting said table-top, an adjusting-shaft rotatably mounted on said platform, a connection from said shaft to said table-top for controlling the same, means for locking said adjusting-shaft in a fixed position, a lever loosely mounted on said adjusting-shaft, and means for locking said lever to said adjusting-shaft for rotating the same.

847,181. BALING-PRESS. WILLIAM D. IVY, Memphis, Tenn. Filed June 4, 1906. Serial No. 320,080.

Claim.—1. In a baling-press, in combination, a hay-box, a plunger reciprocating therein, a pivot-pin, a cross-head mounted on said pin and having a radially-disposed bar, a pin on said plunger and guided longitudinally upon

said bar, a spring tending to withdraw said plunger, means formed on said bar for engaging said pin to advance said plunger, and a buffer adapted to be struck by the ends of said bar and engaging the outer side of said head at the point struck by said plunger when said plunger is returned, whereby said buffer operates to cushion the return of said plunger.

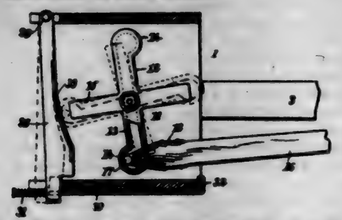

2. In a baling-press, in combination, a hay-box, a plunger reciprocating therein, a pivot-pin, a cross-head mounted on said pin and having a radial bar with a longitudinal slot having recesses in the ends thereof, said plunger having a pin adapted to be caught in said recesses successively and running in said groove, a spring tending to withdraw said plunger, and a spring-pressed buffer adapted to be struck by the ends of said bar and disposed opposite to said hay-box and pressing said head when said plunger is returned whereby said buffer relieves the shock on said pivot-pin when said plunger is returned by said spring.

847,182. AUTOMATIC VALVE. FREDERICK R. JACOBSEN, Portland, Oreg. Filed Apr. 12, 1906. Serial No. 311,335.

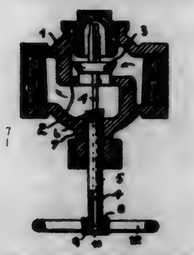

Claim.—1. A valve comprising a casing, a seat formed therein, a valve to engage said seat, a tubular valve-stem, a releasing-rod connected to said valve, and extending through said valve-stem, a fusible connection between said rod and said valve-stem, and a hand-wheel on the outer end of said stem whereby said valve-stem may be manually operated to open or close said valve, substantially as described.

2. A valve comprising a casing, a seat formed in said casing, a valve to engage said seat, a tubular valve-stem having at its outer end a tapering recess, a releasing-rod connected to said valve and extending through said tubular stem, a flaring head formed on the outer end of said rod to engage the recess in the outer end of said stem, a fusible plug to secure said head in said recess, and means whereby said valve-stem is manually operated to open and close said valve, substantially as described.

847,183. URINAL. ALLEN JOHNSON, Lincoln, Nebr. Filed Feb. 3, 1906. Serial No. 299,335.

Claim.—1. In a urinal, the combination with a flushing-tank, a flushing-pipe extending from the tank to the urinal, and an outlet-pipe extending from the urinal to the pivoted receptacle adapted to receive the liquid from said outlet-pipe, an inlet-pipe, a float-controlled valve therefor, a controlling device located within the tank between the inlet-pipe and the flushing-pipe, a connection between the pivoted receptacle and said controlling device, said controlling device being operated in one direction to cut off the supply to the tank and to open the exit therefrom, being operated in another direction to close the flushing-pipe and to open the inlet, as described.

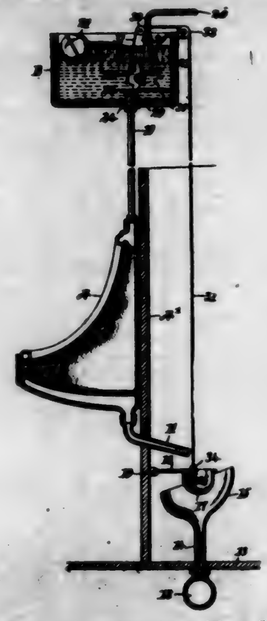

2. In a urinal, the combination with a flushing-tank, a flushing-pipe extending from the tank to the urinal and an outlet-pipe extending from the urinal to a pivoted receptacle adapted to receive liquid from said outlet-pipe, an inlet-pipe, a float-controlled valve therefor, a spring-controlled controller located within the tank between the inlet-pipe and the flushing-pipe, and means connecting the pivoted receptacle with said controller, which controller is operated to cut off the supply of water to the tank and the exit therefrom through the medium of the connection between the receptacle and the controller, being spring-controlled in another direction to open the flushing-pipe and to open the inlet-pipe.

3. The combination with a urinal, a support therefor, a flushing-tank, a flushing-pipe extending from the tank to the urinal, an outlet from the urinal, and a pivoted receptacle located below the outlet to receive liquid therefrom, of a water-supply pipe, a float-controlled valve located within said tank, a rocking controller-arm mounted in said tank, a connection between the said controller-arm and the said receptacle, the arm being adapted for alternate cut-off engagement with the inlet-pipe and the flushing-pipe, being spring-controlled in one direction, and controlled in the opposite direction by the downward movement of the said receptacle.

4. The combination with a urinal, a flushing-tank, a flushing-pipe connecting the tank and the urinal, an outlet for the urinal, and the pivoted receptacle mounted below the said outlet, of a water-supply pipe for the tank, a float-controlled valve for the said supply-pipe spring-operated in one direction, and means operated by and connected with the said receptacle for operating the said valve in a contrary direction.

5. In a urinal the combination with a flushing-tank, a flushing-pipe connecting the tank and the urinal, an outlet for the urinal and a pivoted receptacle mounted below the said outlet, a water-supply pipe for the tank, a float-controlled valve for the said supply-pipe, and means operated by the said receptacle for closing the water-inlet pipe and opening the flushing-pipe, which means are contained within said tank and compromise a rocking arm mounted between the inlet-pipe and the flushing-pipe, the terminals of the arm being adapted one for closing engagement with the inlet-pipe and the other for closing engagement with the flushing-pipe, such engagements being alternately made, of a spring connected with the tank and the said arm, whereby to open the inlet-pipe and close the flushing-pipe, and a connection between the said arm and the said receptacle, whereby, when the receptacle receives liquid, to open the flushing-pipe and close the supply-pipe.

6. In a urinal the combination with a support, a flushing-tank, a flushing-pipe extending from the flushing-tank to the urinal, an outlet for the urinal, a pivoted cup located beneath the outlet and provided with an aperture in its bottom portion, of a bowl located beneath the said cup, means for connecting the bowl with a sewer, an inlet-pipe leading into the tank, a float-controlled valve for the inlet-pipe, a controller-arm mounted to rock in the said tank, having its terminals arranged for alternate cut-off connection with the inlet-pipe and the flushing-pipe, the said controller-arm being spring-controlled in one direction, guide-pulleys carried by the tank, and a flexible connecting medium attached to the controller-arm at a point opposite that at which the spring acts thereon, which flexible connecting medium is passed over said pulleys and is attached to said cup.

847,184. LEDGER-INDEX. DUVAL JOHNSON, Pine Bluff, Ark. Filed July 11, 1905. Serial No. 269,238.

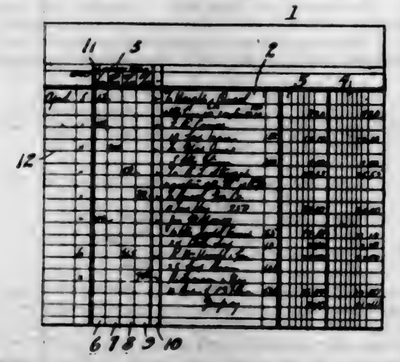

Claim.—An account-sheet ruled for use as a day-book, journal or the like provided with a ledger-folio index formed by vertical parallel columns, said columns having an appropriate general heading and being respectively appropriately designated to represent different portions of the ledger.

847,185. AIR COOLING AND HUMIDIFYING APPARATUS. JAMES KELLY, Providence, R. I., assignor of one-half to James D. Minto, Providence, R. I. Filed Sept. 15, 1905. Serial No. 278,651.

Claim.—1. In an apparatus of the character described, the combination of an air-forcing device, a plurality of pipes connected thereto and arranged in rectangular form, a stand-pipe connected at its lower end to said pipes, a water-supply pipe connected to said stand-pipe, a connection from the upper end of said rectangularly-arranged pipes to the upper part of said stand-pipe, a separator connected to said stand-pipe, and a distributer connected to said separator.

2. The combination with an air-forcing device, and a plurality of pipes arranged in rectangular form, of a stand-pipe connected at its lower end to said rectangularly-arranged pipes and connected at its upper end to the upper portion of said rectangularly-arranged pipes, a check-valve casing arranged at the upper connection of said rectangularly-arranged pipes, with said stand-pipe, and a flap-valve arranged in said casing and provided with projections on its face.

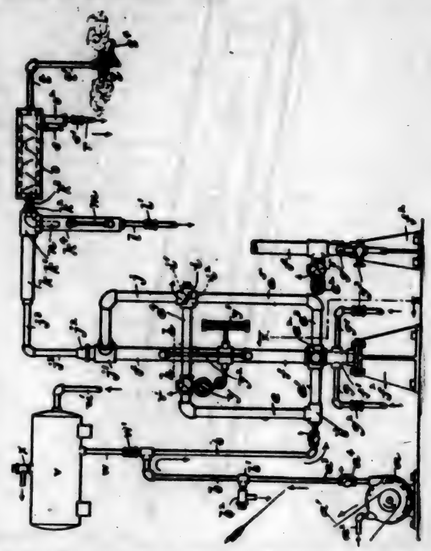

3. In an apparatus of the character described, the combination of a supporting-standard, a stand-pipe supported thereby, a coupling near the lower end of said stand-pipe, a water-pipe and a steam-pipe respectively leading into the lower end of said stand-pipe, horizontal pipes connected to said coupling, vertical pipes connected to said horizontal pipes, a horizontal pipe connected to said vertical pipes, an air-supply pipe leading into one of said vertical pipes at its juncture with one of said horizontal pipes, a check-valve casing arranged at the juncture of the other of said vertical pipes with the upper horizontal pipe, and a pipe leading from said valve-casing to the upper end of said stand-pipe.

847,186. DIE-HEAD. WILLIAM A. KERR, New Castle, Pa. Filed Oct. 16, 1905. Serial No. 283,045.

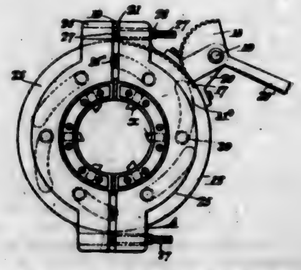

Claim.—In a device of the class described, the combination with a support, of a pair of parallel guide-bars carried thereby, a pair of die-carriers having slots for the reception of said guide-bars, said die-carriers being maintained in parallel relation, and being simultaneously movable toward and from each other, headed pins extending rearwardly from the die-carriers, and a cam-ring having undercut cam-slots for the reception of said pins, the inner edge of the cam-ring having an annular groove, a supporting-ring secured to the support and having a flange fitting within said groove to maintain the cam-ring in proper position.

847,187. RAILWAY-RAIL JOINT. WILLIAM H. T. KING, Dallas, Tex. Filed Nov. 6, 1906. Serial No. 342,254.

Claim.—1. As a new article of manufacture, a locking-key having a cleft extending partially therethrough transversely, whereby the portion released by the cleft is adapted to be bent with its longitudinal axis in alinement with the longitudinal plane of the key, subtsantially as described.

2. As a new article of manufacture, a locking-key provided with an enlarged head and having a cleft spaced from said head and extending partially through the key transversely, whereby the portion released by the cleft is adapted to be bent with its longitudinal axis in alinement with the longitudinal plane of the key on the opposite side of the bolt from the said head portion, substantially as described.

3. As a new article of manufacture, a locking-key having spaced clefts extending partially therethrough transversely, whereby the portion between said clefts is adapted to be bent with its longitudinal axis in alinement with the longitudinal plane of the key, substantially as described.

4. As a new article of manufacture, a locking-key provided with an enlarged head and having spaced clefts extending partially through the key transversely, whereby the portion between the clefts is adapted to be bent with its longitudinal axis in alinement with the longitudinal plane of the key, substantially as described.

5. As a new article of manufacture, a locking-key provided with an enlarged head on one end and with a longitudinal cleft in the other end and having spaced clefts spaced from said ends and extending partially through the key transversely, whereby the portion between the clefts is adapted to be bent with its longitudinal axis in alinement with the longitudinal plane of the key, and the cleft end of the key likewise bent transversely of the plane of the key, substantially as described.

6. In a device of the character described, the holding-bolt having a transverse aperture, a locking-key extending through said aperture and having a cleft extending partially therethrough transversely at one side of said bolt with the material of the key released by the cleft adapted to be bent with its longitudinal axis in alinement with the longitudinal plane of the key whereby the bent portion is presented endwise to the bolt, substantially as described.

7. In a device of the character described, spaced holding-bolts each having a transverse aperture, a locking-key extending through both of said apertures and formed with an enlarged head on one end and with a longitudinal cleft in the other end adapted to be bent transversely of the bolt, said key having spaced clefts extending partially therethrough transversely, and the portion of the key released by the clefts adapted to be bent with its longitudinal axis in alinement with the longitudinal plane of the key, whereby the bent portion is presented endwise to the bolt, substantially as described.

8. In a railway-rail joint, the adjacent rails having spaced transverse apertures, clamp-plates upon the opposite sides of said rails and having apertures registering with the apertures in said rails, bolts engaging said apertures and having heads upon one end in engagement with one of said clamp-plates and with transverse apertures in their other ends in advance of the other of said clamp-plates, in combination with locking-keys extending through said apertures and each having a cleft extending partially therethrough transversely, whereby the portion released by said cleft is adapted to be bent with its longitudinal axis in alinement with the longitudinal plane of the key with the end of the bent portion presented to the bolt, substantially as described.

9. In a railway-rail joint, the adjacent rails having spaced transverse apertures, clamp-plates upon the opposite sides of said rails and having apertures registering with the apertures in said rails, bolts engaging said apertures and having heads upon one end in engagement with one of said clamp-plates and with transverse apertures in their other ends in advance of the other of said clamp-plates, in combination with locking-keys extending through said apertures and each formed with an enlarged head upon one end and having a cleft extending partially therethrough transversely, whereby the portion released by said cleft is adapted to be bent with its longitudinal axis in alinement with the longitudinal plane of the key with the end of the bent portion presented to the bolt on the opposite side from said key-head, substantially as described.

847,188. TELEGRAPHY. ISIDOR KITSEE, Philadelphia, Pa. Filed June 18, 1906. Serial No. 322,330.

Claim.—1. In a telegraph system, the combination with a line-circuit, of a polarized receiving device, a local circuit controlled thereby, means included in said circuit for reversing the connections of said receiving device with respect to the line-circuit after each received impulse, a signal-translating instrument, a circuit including said translating instrument, and means for changing the condition of said circuit after each received impulse.

2. In a telegraph system, the combination with a line-circuit, of a polarized receiving device associated therewith, a local circuit controlled by said receiving device, and means included in said local circuit for reversing the connections of said receiver with respect to said line-circuit upon the receipt of each line impulse.

3. In a telegraph system, the combination with a line-circuit, of a polarized receiving device, a commutator intervening between said line-circuit and said receiving device, a local circuit controlled by said receiving device, and means included in said local circuit for actuating said commutating device, whereby the relation of said receiving device to said line-circuit is reversed after the receipt of each line impulse.

4. In a telegraph system, the combination with a line-circuit, of a receiving device associated therewith, means for normally holding said receiving device in zero position, a local circuit controlled by said receiving device and normally closed thereby, and means included in said local circuit for altering the connection of said receiving device with relation to the line-circuit for each movement of the movable part of said receiving device.

5. In a telegraph system, the combination with a line-circuit, of a receiving device associated therewith, means for changing the relation of said receiving device with respect to said line-circuit after each received impluse, and a signal-translating instrument included in a local circuit and controlled by said changing means.

6. In a telegraph system, the combination with a line-circuit, of a receiving device, a pole-changer intermediate said line-circuit and receiving device, a local circuit controlled by said receiving device, means in said circuit for operating said pole-changer, a signal-translating instrument, a second local circuit containing the same, and means associated with said pole-changer for controlling said second local circuit.

7. In a telegraph system, the combination with a line-circuit, of a polarized receiving device associated therewith, a pole-changer intermediate said line-circuit and said receiving device, means responsive to each impulse to shift said pole-changer, whereby said polarized receiving device responds similarly to alternate line impulses of different polarities.

8. In a telegraph system, the combination with a line-circuit having relatively great capacity, of a polarized receiving device associated therewith, a pole-changer intervening between said line-circuit and said receiving device, means controlled by said receiving device for actuating said pole-changer upon the receipt of each line impulse, whereby said receiving device responds to succeeding line impulses of alternate polarity.

9. In a telegraph system, the combination with a line-circuit having relatively great capacity, of a receiving device associated therewith, a pole-changer intervening between said line-circuit and said receiving device, and means controlled by said receiving device for actuating said pole-changer, whereby said receiving device has its connections automatically changed to respond alike to succeeding impulses of alternate polarity.

10. In a telegraph system, the combination with a line-circuit having relatively great capacity, of a polarized receiving device associated therewith, a pole-changer intervening between said line-circuit and said receiving device, a local circuit controlled by said receiving device and containing means for operating said pole-changer, a second circuit including a signal-translating instrument, and means for controlling said second circuit simultaneously with the movement of said pole-changer.

11. In a telegraph system, the combination with a line-circuit having relatively great capacity, of a polarized receiving device associated therewith, a pole-changing commutator intervening between said line-circuit and said receiving device, a local circuit controlled by said receiving device and including means for actuating said commutator, a signal-translating instrument, a second local circuit controlling the same, and means operated simultaneously with said commutator for controlling said second local circuit.

12. In a telegraph system, the combination with a line-circuit having relatively great capacity, of a polarized relay associated therewith, the movable member of said relay comprising a coil adapted to be traversed by line impulses, a pole-changer for reversing said coil with respect to the line-circuit, a circuit controlled by said coil including means for actuating said pole-changer, whereby said relay responds similarly to succeeding line impulses of alternate polarity.

13. In a telegraph system, the combination with a line-circuit, of a polarized electromagnetic receiving instrument, and means for automatically reversing the connections of said receiving instrument with respect to said line-circuit after each line impulse.

14. In a telegraph system, the combination with a line-circuit, of a polarized receiving instrument, and means intermediate said line-circuit and said receiving instrument for reversing the connections of said receiving instrument with respect to said line-circuit after each line impulse.

15. In a telegraph system, the combination with a line-circuit, of a polarized receiving instrument, and means vening between said line-circuit and said polarized receiving instrument for reversing the connections of said receiving instrument with respect to said line-circuit, said reversing means being controlled by each line impulse, whereby said receiving instrument will respond similarly to successive line impulses of alternate polarities.

16. The combination with a telegraph line-circuit, of a polarized receiver associated therewith, and means for sending successive line impulses through said receiver in the same direction, whereby successive line impulses of opposite polarities actuate said receiver in the same direction.

17. The combination with a telegraph line-circuit carrying successive impulses of opposite polarities, of a polarized receiver, and means for sending the line impulses through said receiver always in the same direction.

847,189. ELECTRIC TELEGRAPHY. ISIDOR KITSEE, Philadelphia, Pa. Filed Aug. 9, 1906. Serial No. 329,883.

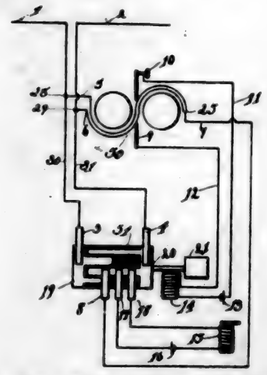

Claim.—1. A line of transmission in combination with a polarized relay provided with two coils, one terminal of each coil connected to the line and the junction of said coils connected locally to means adapted to alternately shunt one or the other of said coils.

2. In telegraphy, a receiving device or relay, two windings therefor, a commutating device adapted to be operated by said relay and means operatively related to said relay and communicating device to alternately shunt one or the other of said windings.

3. In telegraphy, means to receive impulses of alternate direction and translate the same into readable characters, said means comprising one polarized device, two windings for said device and means to alternately shunt alternate coils for each impulse received.

4. In telegraphy, a line of transmission, a receiving device for said line, means to make a local circuit only through the movement of the armature thereof in one direction and to break said circuit through the movement of the armature in the opposite direction, two coils for said receiving device and means to alternately shunt alternate coils of said device.

847,190. ABRADING MATERIAL. EZRA F. LANDIS, La Salle, N. Y. Filed June 16, 1905. Serial No. 265,587.

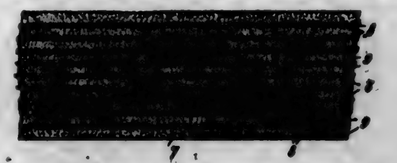

Claim.—An article of manufacture consisting of a suitable foundation having non-abrasive material applied to portions thereof, and abrasive material covering the por-

tions between the non-abrasive material, said abrasive and non-abrasive material constituting an abrading-surface.

847,191. PAPER-BAG MACHINE. WILLIAM A. LORENZ, Hartford, Conn., assignor to Union Paper-Bag Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Oct. 5, 1900. Serial No. 32,123.

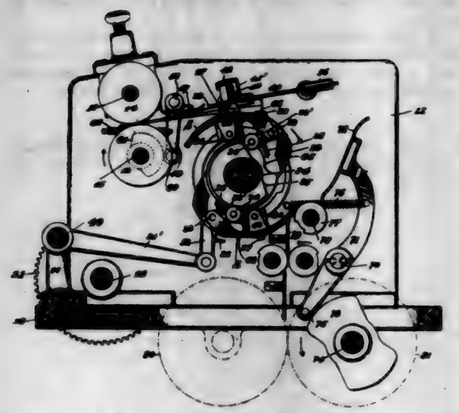

Claim.—1. The combination, with a movable blank-support, of an oscillatory blank-folding member having a defining edge, means for pivotally supporting said member on an axis remote from the edge, means for causing the advance movement of the blank-folding member, and of its supporting means, with the blank-support, and means independent of and extraneous to the blank-support for oscillating said member in its support.

2. The combination, with a movable blank-support; of an oscillatory blank-folding member having a defining edge; means for pivotally supporting said member on an axis remote from the edge; means for oscillating said member in its support; and means for advancing the pivot-support of the folding member with the blank-support during the diamond-forming operation.

3. The combination with a movable blank-support, of tuck-holders, a blank-folding member having a defining edge, means for supporting said member for oscillation upon an axis remote from said edge, means for moving the blank-folding member forward in the general direction of movement of the blank-support, means for oscillating said member on its axial support, and means for moving the blank-support to effect a substantial separation between the defining edge and the blank-support during the formation of the inner triangular folds.

4. The combination with a movable blank-support, of tuck-holders, a blank-folding member having a defining edge, means for supporting said member for oscillation on an axis remote from said edge, means for oscillating said member on its axial support, means for advancing the said axial support in the general direction of travel of the blank-support during the diamond-forming operation, and means for moving the blank-support to effect a substantial separation between the defining edge and the blank-support during the formation of the inner triangular folds.

5. The combination with a movable carrier having a relatively movable blank-support, of tuck-holders, a blank-folding member having a defining edge, means for supporting said member for oscillation on an axis remote from the defining edge, means for oscillating the said member in its support, means for moving and positioning said blank-support at a substantial distance from the defining edge during the formation of the inner triangular folds, and means for advancing the axial support relative to the direction of travel of the blank-support.

6. The combination, with a movable carrier; and a movable blank-support having tuck-holders; of an oscillatory blank-folding member having box-holders and a defining edge; means for pivotally supporting said member on an axis remote from the defining edge; means for oscillating said member in its support; and means for moving the pivotal support of the folding member forward relative to the direction of movement of the blank-support during the diamond-forming operation.

7. The combination, with a movable blank-carrier, of a movable blank-support controlled by the movement of the carrier, and having tuck-holders, an oscillatory blank-folding member having box-holders and a defining edge, means for pivotally supporting said folding member on an axis remote from its defining edge, means for oscillating said folding member in its support, and means for moving the pivotal support of the folding member forward relative to the direction of travel of the blank-support, during the blank-folding operation.

8. The combination with a blank-support having tuck-holders; of an oscillatory blank-folding member coöperative therewith and having a defining edge and box-holders; means for pivotally supporting said member on an axis remote from the defining edge; and a pivoted guide for guiding the oscillatory movement of said member.

9. The combination with a movable blank-support having tuck-holders, of an oscillatory blank-folding member coöperative with the blank-support, and having a defining edge and box-holders, arms mounted for oscillation and supporting said member for oscillation on an axis remote from the defining edge, and a pivot-guide for guiding the oscillatory movement of the folding member.

10. The combination with an axially-mounted carrier and a movable support having tuck-holders, of an oscillatory blank-folding member coöperative with the blank-support, and having a defining edge and box-holders, arms mounted for oscillation on an axis which is in eccentric relation to the axis of the carrier, and supporting the folding member for oscillation upon an axis remote from the defining edge, means for oscillating the arms, and a pivoted guide for guiding the oscillating movement of the blank-folding member.

11. The combination with an axially-mounted carrier, and a movable blank-support having tuck-holders, of a coöperating blank-folding member having a defining edge and box-holders, arms mounted for oscillation upon an axis eccentric to that of the carrier, and supporting the said folding member for oscillation on an axis remote from the defining edge, a cam for moving the said arms forward relative to the direction of travel of the carrier, and means for guiding the oscillatory movement of the folding member.

12. The combination with a blank-carrier having a relatively movable blank-support, of tuck-holders, an oscillatory folding member coöperative with the blank-support and having a defining edge, and means for moving the movable support to maintain a substantial degree of separation between said edge and the movable support during the folding operation.

13. The combination with a movable carrier, of a blank-support having tuck-holders, and movably supported on said carrier, a blank-folding member having a defining edge and box-holders, movable means supporting the blank-folding member for oscillation, and a cam for moving the blank-support in a path separated from that of the defining edge of the folding member during the operation of forming the inner triangular folds.

14. The combination with a movable carrier, of a movable blank-support having tuck-holders, a blank-folding plate having a defining edge and box-holders coöperative therewith, means for supporting said plate for oscillation upon an axis remote from said defining edge, means for guiding the oscillatory movement of said plate, and means for guiding the blank-support at a substantial distance from the defining edge during the formation of the inner triangular folds.

15. The combination, with a rotary carrier having a blank-support; and tuck-holders coöperative therewith; of an oscillatory blank-folding member having box-holders; means for operating the box-holders comprising a link having its axis substantially coincident with the axis of support of the folding member; and means for operating said link.

16. The combination, with a rotary blank-carrier having a blank-support; and tuck-holders coöperative therewith; of an oscillatory blank-folding member having box-holders; means for operating the box-holders comprising a link having its axis substantially coincident with the axis of support of the folding member; and a cam for operating said link.

17. The combination, with a rotary blank-carrier having a blank-support; and tuck-holders coöperative therewith; of an oscillatory blank-folding member having box-holders; and means for operating the box-holders comprising a lever and a link having its axis substantially coincident with the axis of support of the folding member and connected to said lever by a universal joint; and means for operating said lever.

18. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, including in combination a rotary folding-bed, tuck-holders, an arm, means for moving said arm with the bed during the folding operation on a blank, a hollow shaft journaled on said arm, folding mechanism including a box-holder mounted on said shaft, means for turning said shaft relative to said arm as the latter moves with the bed, and means for opening and closing said box-holder, including a lever supported on said arm, a link connecting said lever and box-holder, and cam mechanism for oscillating said lever as said arm moves with the bed.

19. In a bag-machine, mechanism for forming diamond folds on bellows-folded blanks, having in combination a rotary folding-bed, means for holding the lower ply of the bag-blank to the folding-bed oscillating arms moving about a center of oscillation located within the rotary path of the bed, cam mechanism for oscillating the arms, located outside of the rotary path of the bed, and connected to the arm by connecting-rods, folding mechanism moved by said arms through an oscillatory path above the rotary bed, and means for operating the folding mechanism to open the blanks during their movement with the bed.

20. In a bag-machine, mechanism for forming diamond folds on bellows-folded blanks, having in combination a rotary carrier, a blank-support mounted for oscillation upon and for revolution with the carrier, the blank-support being provided with means for engaging the lower ply of the bellows-folded blank, and folding mechanism mounted for oscillation upon an axis situated within the path of revolution of the blank-support; and also mounted for oscillation upon an axis situated outside of that path of revolution.

21. In a bag-machine, mechanism for forming diamond folds on bellows-folded blanks, having in combination a rotary carrier, a blank-support mounted for oscillation upon and for revolution with the carrier, and provided with devices for engaging the lower ply of the bellows-folded blank, oscillating arms moving about a center of oscillation located within the path of revolution of the blank-support, folding mechanism mounted for oscillation upon the said arms upon an axis situated outside of the said path of revolution, and including devices for engaging and turning back the upper ply of the blank as it is carried forward by the blank-support.

22. In a bag-machine, mechanism for forming diamond folds on bellows-folded blanks, having in combination a rotary carrier, a folding-bed mounted for oscillation upon and for revolution with the said carrier, provided with a diamond-holder 32 and tuck-holders 27 for engaging the lower ply of the bellows-folded blank, arms supported for oscillation upon an axis located within the path of revolution of the blank-support, and folding mechanism mounted for oscillation upon the said arms upon an axis situated outside of the said path of revolution, and provided with box-holders 42 for engaging and turning back the upper ply of the blank to form the diamond folds.

23. In combination with a movable blank-carrier having tuck-holders and with an oscillatory blank-folding member having a defining edge and box-holders, of supporting means pivotally supporting said member at a point remote from said edge and movable transversely of and also with the blank-carrier.

24. The combination, with a blank-carrier having tuck-holders, of an oscillatory blank-folding member having a defining edge and box-holders, said member being pivoted at an axis remote from said edge, a carrier supporting the blank-folding member, and for moving the pivot-axis of said member away from and toward the blank-carrier, and means independent of the blank-carrier for advancing said pivot-axis with the blank-carrier during the diamond-forming operation.

25. The combination, with a rotary blank-carrier having tuck-holders, of an oscillatory blank-folding member having a defining edge and box-holders, said member being pivoted at an axis remote from said edge, means independent of the blank-carrier for moving said pivot transversely relatively to and also with the blank-carrier during the diamond-forming operation.

26. The combination, with a movable blank-carrier having tuck-holders, of an oscillatory blank-folding member having a defining edge and box-holders, said member being pivoted at an axis remote from said edge, a movable carrier supporting the blank-folding member, means for oscillating said member in its carrier, and a cam-operated actuator for advancing said carrier with the blank-carrier during the diamond-forming operation.

27. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, including in combination a rotary folding-bed, means for securing a bag-blank thereon, an arm, means for oscillating said arm about a center of oscillation within the rotary path of the folding-bed, a hollow shaft journaled in said arm, folding mechanism supported by said arm and including a member for engaging the outer surface of the upper ply of the blank, and a coöperating gripping device entering the side tuck of the blank, means for causing said device and member to approach and separate from each other to grip and release the portion of the blank between them, said last-mentioned means including a lever pivotally supported on said arm and a coöperating member located in said hollow shaft, and means for turning said shaft relative to said arm as the latter oscillates.

847,192. PAPER-BAG MACHINE. WILLIAM A. LORENZ, Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Oct. 19, 1900. Serial No. 33,599.

Claim.—1. The combination, with a blank-support having a shiftable axis and provided with tuck-holders, of a folding member provided with means including a defining edge for engaging and turning back the ply of a bag-blank carried by the said support, and a movable carrier for pivotally supporting said folding member.

2. The combination, with a rotatable support having a shiftable axis and provided with tuck-holders, of a folding member provided with means including a defining edge for engaging and turning back the ply of a bag-blank carried by the support, and a movable carrier pivotally supporting said folding member.

3. The combination, with a rotatable blank-support provided with tuck-holders, of a folding member provided with means including a defining edge for engaging and turning back the ply of a bag-blank carried by the support, a movable carrier for pivotally supporting said folding member and means for shifting the axis of the blank-support toward and away from said folding member.

4. The combination, with a rotatable blank-support having a shiftable axis and provided with tuck-holders, of a folding-plate provided with means including a defining edge for engaging and turning back the ply of a bag-blank carried by the support, a movable carrier pivotally supporting said plate, and means for supporting said carrier for swinging movement.

5. The combination with a rotatable blank-support having a shiftable axis and provided with tuck-holders, of a folding-plate provided with means including a defining edge for engaging and turning back the ply of a bag-blank carried by the support, movable arms pivotally supporting

said folding-plate, and means for swinging the said arms in the general direction of travel of the blank-support.

6. The combination, with a blank-support having a shiftable axis and provided with tuck-holders, of a folding-plate having box-holders and a defining edge, a plate-carrier having a fixed pivot-axis and supporting the said plate for swinging movement, and means for swinging the said folding-plate in its carrier.

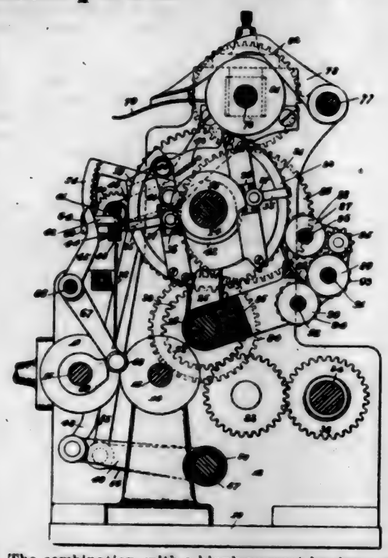

7. The combination, with a blank-support having a shiftable axis and tuck-holders, of a folding-plate having box-holders and a defining edge, a plate-carrier supported on a fixed pivot-axis and supporting the folding-plate for swinging movement, and gearing for swinging the plate.

8. The combination, with a blank-support having a shiftable axis and having tuck-holders, of a folding-plate having box-holders and a defining edge, a folding-plate carrier supported on a fixed pivot-axis and pivotally supporting the said folding-plate, and a cam-operated sector for swinging the said plate.

9. The combination, with a blank-support having a shiftable axis and having tuck-holders, of a folding-plate having box-holders and a defining edge, a plate-carrier supported on a fixed pivot-axis and pivotally supporting the said folding-plate, and a sector eccentrically pivoted relative to the blank-support axis for swinging the said folding-plate on the carrier.

10. The combination, with a rotary blank-support journaled in movable bearings and having tuck-holders, of a member having box-holders and a defining edge, means for moving the said bearings, and means for advancing the said folding member with the blank-support.

11. The combination with a rotatable blank-support having a shiftable axis, of a folding member provided with means including a defining edge for folding back the ply of a bag-blank carried by the support, and means for shifting the said axis to separate the surface of the blank-support from the said defining edge during the folding-back operation.

12. The combination, with a rotatable blank-support having a shiftable axis, of a folding member provided with means including a defining edge for folding back the ply of a bag-blank carried by the support, means for moving said edge forward in unison with the blank-support during its folding-back movement; and means for shifting the said axis to separate the surface of the blank-support from said defining edge during said folding-back operation.

13. The combination, with a blank-support having tuck-holders, of movable arms supporting the said blank-support for rotation, a folding member having means including a defining edge for folding back the ply of a bag-blank carried by the support, and means for moving said arms to separate the surface of said blank-support from the said defining edge during the folding-back operation.

14. The combination, with a blank-support having tuck-holders, of movable arms supporting said blank-support for rotation, a folding member provided with means including a defining edge for folding back the ply of a bag-blank carried by the support, and a cam for moving said arms to separate the surface of the blank-support from the defining edge during the turning-back operation.

15. The combination with a rotatable blank-support having tuck-holders, movable arms for supporting said blank-support, a folding member having a defining edge and box-holders, means carried by said arms for opening the box-holders, and means for moving the arms to carry the surface of the blank-support a substantial distance away from said defining edge during its operation.

16. The combination with a rotary blank-support having a shiftable axis and provided with tuck-holders, of a folding member provided with means including a defining edge for folding back the ply of a bag-blank carried by the support, means for shifting the axis of the blank-support to carry its surface a substantial distance away from the defining edge during the folding-back operation, and means for advancing the folding member in the direction of travel of the blank-support during the said folding-back operation.

17. The combination, with a rotary blank-support having a shiftable axis and provided with tuck-holders, of a folding-plate provided with means including a defining edge for folding back the ply of a bag-blank carried by the support, a movable carrier supporting the said folding-plate for swinging movement, means for shifting the said axis to separate the surface of the blank-support a substantial distance from the defining edge during the folding-back operation, and means for advancing the plate-carrier in the general direction of travel of the blank-support during the said operation.

18. A rotary blank-support constituting a folding-bed, means for holding the lower plies of successive blanks on the blank-support, a folding-plate provided with means including box-holders for folding back the upper ply of the successive blanks, an arm pivotally supporting the said plate and mounted for oscillation upon an axis located in eccentric relation to the circle of rotation of the blank-support, means including a sector for oscillating the folding-plate upon its pivot-axis, and means for oscillating the arm to move the said axis of the folding-plate forward relative to the direction of movement of the blank-support.

19. A rotating blank-support constituting a folding-bed, means for holding the lower plies of successive blanks upon the support, a blank-folding plate provided with means including box-holders for folding back the upper plies of the successive blanks carried by the support, a plate-carrier mounted for swinging movement on an axis located eccentric to the circle of rotation of the blank-carrier, means for swinging the plate-carrier on its axis, and means including a sector-gear for swinging the folding-plate upon the plate-carrier.

847,198. PAPER-BAG MACHINE. WILLIAM A. LORENZ, Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Nov. 1, 1900. Serial No. 35,086.

Claim.—1. In a bag-machine, mechanism for forming diamond folds on a bellows-sided bag-blank having in combination a folding-bed mounted to turn about an axis, a carrier, means for oscillating the carrier about a center of oscillation situated within the path of movement of the bed, means for engaging and turning back the upper ply of the bag-blank moved by said carrier through an oscillatory path above the rotary path of the bed, said turning-back means including a folding member mounted for oscillation relative to said carrier about an axis at one side of said member.

2. In a bag-machine, mechanism for forming diamond folds on a bellows-sided bag-blank, including in combination a rotary folding-bed, arms pivoted to turn about an axis within the rotary path of the bed, means for engaging and turning back the upper ply of the bag-blank pivotally supported by said arms to turn relative thereto about an axis, and means for oscillating said arms about their axis to carry the turning-back means through an oscillatory path above the rotary path of the bed, said turning-back means including a folding member disposed at one side of the axis of its movement relative to said arms.

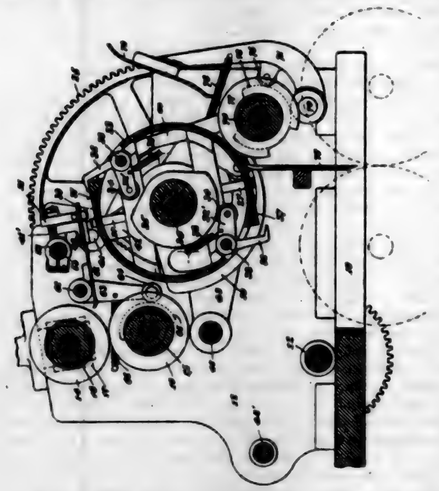

3. In a bag-machine, mechanism for forming diamond folds on a bellows-sided bag-blank, including in combination a folding-bed mounted to turn about an axis to carry a blank through a curved path, carrier-arms pivoted to turn about an axis substantially coincident with the first-named axis, means, for engaging and turning back the upper ply of the bag-blank, pivotally connected to said arms, and means for oscillating said arms on their pivotal axis to carry the turning-back means through an oscillatory path above the curved path of the blank, said turning-back means including a folding member disposed at one side of its pivotal connection to said arms.

4. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks including in combination a folding-bed turning about an axis to carry a blank through a curved path, carrier-arms pivoted to turn about an axis approximately coincident with the first-named axis, folding mechanism carried by said arms, means for oscillating said arms to carry said folding mechanism through an oscillatory path above said curved path, said folding mechanism including a folding member pivoted to said arms to turn relative thereto on an axis situated a substantial distance above said curved path, said folding member being disposed at one side of its axis of movement relative to said arms a distance approximately equal to the distance of that axis above said curved path, and means for oscillating said folding member on the arms as the latter are oscillated about their axis.

5. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, including in combination a folding-bed pivoted to turn about an axis to carry a blank through a curved path, carrier-arms pivoted to turn about an axis substantially coincident with the first-named axis, folding mechanism supported by said arms, and means for oscillating said arms about their pivot-axis, said mechanism including a folding member having a fold-defining edge, and being pivoted to said arms to turn about an axis laterally displaced from said fold-defining edge, said folding member extending substantially at right angles to the plane including said defining edge and said last-mentioned axis.

6. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, including in combination a folding-bed, means for turning it about an axis to carry a blank through a curved path, carrier-arms pivoted to turn about an axis substantially coincident with the first-mentioned axis, means for oscillating said carrier-arms, folding mechanism moved by the oscillation of said carrier-arms through an oscillatory path above the curved path of the blank, said folding mechanism including a folding member pivotally supported on said arms to turn about an axis disposed at one side of the blank-folding member, and means for oscillating said member upon the arms as the latter are oscillated about their axis.

7. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks including in combination, a folding-bed rotating about an axis, carrier-arms mounted for oscillation at opposite sides of the folding-bed about an axis located within the rotary path of the bed, and folding mechanism carried by said arms, including a blank-folding member having a fold-defining edge, said folding mechanism being pivoted to said arms to turn relatively thereto about an axis displaced from said edge, the folding member extending transversely to the plane including said edge and said last-mentioned axis.

8. The combination with a traveling blank-support and means for securing a bag-blank thereon, of a blank-folding member having a defining edge, means for supporting said member for oscillatory movement upon an axis at one side of the plane of the folding member, means for swinging said member upon its axis during the folding operation, and means for advancing said axis with the blank-support during the folding operation at a rate to carry the fold-defining edge at approximately the same speed as that of the movement of the blank.

9. The combination with a traveling blank-support and means for securing a bag-blank thereon, of a blank-folding member having a defining edge, means for supporting said member for oscillation upon an axis which is at one side of the blank-folding member, means for swinging the folding member on its axis during the folding operation to carry the defining edge toward and away from the surface of the blank-support, and means for advancing said axis with the blank-support to carry the fold-defining edge at approximately the same speed as the blank carried by said support.

10. The combination with a rotating blank-support and means for securing a bag-blank thereon, of a blank-folding member having a defining edge and provided with trunnions, the axis of said trunnions being at one side of the defining edge, a pair of arms mounted to swing about an axis coincident with the axis of rotation of the blank-support, said arms having said trunnions journaled in them, means for oscillating said arms about their axis, and means for oscillating the blank-folding member relatively to the arms.

11. The combination with a blank-support rotating about an axis and means for securing a bag-blank theron, of a blank-folding member having a defining edge and provided with trunnions, the axis of which is at one side of the plane of the folding member, arms mounted to swing about an axis located within the rotary path of the blank-support and pivotally supporting said trunnions, means for oscillating the blank-folding member on said arms, and means for oscillating said arms to carry the defining edge of the blank-supporting member at approximately the same angular velocity as the blank-support.

12. In a bag-machine, mechanism for forming diamond folds on bellows-sided bag-blanks, including in combination a rotating shaft, a blank-support secured thereto, a carrier journaled about said shaft, means for engaging and turning back the upper ply of the blank, supported by said carrier to turn relatively thereto about an axis, said means including a gear concentric with said axis, a stationary cam mounted upon and positioned by said shaft, and a lever pivoted to the carrier having a portion engaging said cam and having a gear-segment which meshes with said gear, a second shaft, gearing connecting said shafts, a

cam carried by said second shaft, and means connecting said carrier and said cam whereby a rotation of said second shaft produces an oscillation of said carrier.

13. In a bag-machine, the combination with a blank-support turning about an axis and having tuck-holders, of a blank-folding member having box-holders and a defining edge, a carrier mounted for oscillation on an axis substantially coincident with that of the blank-carrier and supporting the blank-folding member for oscillating movement thereon, means for oscillating said carrier on its axis, a stationary cam, and means intermediate the cam and the folding member for oscillating the folding member on the carrier.

14. In a bag-machine, mechanism for forming diamond folds on a bellows-sided bag-blank, including in combination a movable blank-support having tuck-holders, carrier-arms mounted for oscillation, means for engaging and turning back the upper ply of the blank about the primary transverse crease-line, said means including a blank-folding member mounted for oscillation on said arms about an axis laterally displaced from the plane of the member, means for oscillating said arms through a path such that said axis is maintained at an approximately constant distance from said support during the folding operation, and means for oscillating said blank-folding member relative to said arms through an arc such that the portion of the member adapted to engage the blank nearest said transverse crease-line approaches said blank-support during the folding operation.

15. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, including in combination a rotary blank-support, carrier-arms mounted to swing about an axis substantially coincident with the axis of rotation of the blank-support, means for swinging said arms on their axis, folding mechanism moved by said arms, including a folding member mounted for oscillation on said arms, and means including toothed gearing for oscillating said blank-folding member on said arms as it is carried forward and back by the arms.

16. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, having in combination a blank-support rotating about an axis, carrier-arms mounted to swing about an axis substantially coincident with the first-mentioned axis, means for swinging said arms about their axis, coactive folding mechanism moved by said arms including a folding member pivoted to said arms, and means for swinging said member relatively to said arms including a toothed gear and sector carried with and by the said arms, and a cam for operating said sector.

17. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks including in combination a blank-support having a blank-engaging surface generally cylindrical but provided with a tangential extension for supporting the lower ply of the flap end of the blank, a front diamond-holder mounted on the carrier for holding the flap end of the blank against the tangential extension, and means coöperating with the blank-support to engage and turn back the upper ply of the blank to form the diamond folds.

18. In a bag-machine, a cylindrically-curved support for the body portion of a bag-blank, means engaging the under surface of the flap end of the under ply of the blank to hold it above said support, a gripper for holding said flap end against said engaging means, and means coöperating with said support and the flap engaging and holding means to engage and turn back the upper ply of the bag-blank.

19. In a bag-machine, a pivoted support for the body of the blank having its surface engaged by said body cylindrical about the pivotal axis of the blank-support, means for turning said support about its pivotal axis, means for engaging the flap end of the lower ply of the blank and positively holding it in a position outside of, and substantially tangential to the path of travel of said surface, and mechanism coöperating with said blank-carrier to engage and turn back the upper ply of the blank to form diamond folds thereon.

20. In a bag-machine, a rotating blank-support having a folding-bed, means for securing the lower plies of successive blanks on the support, a carrier pivoted on an axis in substantial alinement with the axis of rotation of the blank-support, means for moving said carrier in the same direction as the folding-bed during the folding operation on one blank and then in a reverse direction to coöperative relation with a succeeding blank, folding devices carried by and moving with the carrier for engaging the upper ply of the blank and folding it back to form the diamond, and means including a sector-gear for oscillating the folding devices relative to the carrier.

21. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, including in combination a rotary folding-bed, carriers, means for oscillating them about a center of rotation within the rotary path of the bed, folding mechanism pivotally supported on said carriers, gear-wheels secured to said folding mechanism concentrically with the pivotal axis of said mechanism, levers pivoted on the carriers having racks which engage said gears, and cams arranged to engage and actuate said levers and racks and through them the folding mechanism as the carriers are oscillated.

22. In a bag-machine, a blank-carrier, pivoted to turn about an axis and provided with a cylindrical supporting-surface for the body of the blank, means for turning said carrier about its axis, means for securing the body of the blank against said surface, means for engaging the under surface of the flap end of the under ply of the blank at a position above said surface, and means for engaging and turning back the upper ply of the blank to form the diamond folds thereon.

23. The combination with a movable blank-carrier having tuck-holders and with an oscillatory blank-holding member having a defining edge and box-holders, of supporting means pivotally supporting said member at a point remote from said edge, a cam-operated rack for operating said member in its support and a cam for advancing said supporting means with the blank-carrier during the diamond-forming operation.

24. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks including in combination a blank-support mounted for rotation about a fixed axis, carriers, means for oscillating them, folding mechanism mounted on said carriers and moved by them through an oscillatory path above and in the general direction of the rotary path of the blank-support, said mechanism including a folding member mounted to move relatively to the carriers about an axis and having a defining edge situated at a distance from said last-named axis approximately equal to, but slightly less than the distance between said axis and the rotary path of the blank-support, whereby the said defining edge swings back and forth clear of the said rotary path.

25. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, including in combination a rotating blank-support constituting a folding-bed, means for holding the lower ply of successive blanks thereon, a guiding and supporting carrier pivotally mounted on an axis within the circle of rotation of the blank-carrier, means for oscillating said carrier on said axis to move said carrier in the same direction as the folding-bed during the formation of the diamond and thereafter in a reverse direction to coöperative relation with a succeeding blank, blank-folding devices carried by and moving with the oscillating carrier for engaging the upper ply of the blank and folding it back to form the diamond, and means including a cam-operated sector for oscillating said folding devices on said carrier.

26. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, including in combination a rotary blank-support constituting a folding-bed, a supporting and guiding carrier pivotally mounted on an axis mounted within the circle of rotation of the blank-support, means for moving said carrier about its axis in the same direction as the folding-bed during the formation of the diamond and thereafter in a reverse direction to coöperative relation with a succeeding blank, a folding device carried by and moving with the carrier for engaging the upper ply of a blank and folding it back to form the diamond, and a sector-gear pivoted eccentrically to the blank-carrier axis for oscillating the folding device on its carrier.

27. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, including in combination a rotating blank-support constituting a folding-bed, means for holding the lower plies of successive blanks thereon, an oscillating blank-folding plate, box-holders coöperating with said plate, an arm pivotally supporting said plate and mounted for oscillation on an axis located in concentric relation to the circle of rotation of the blank-support, means including a sector-gear for oscillating the folding-plate on the arm and means for oscillating the arm to move the pivot of the folding-plate forward relative to the direction of movement of the blank-support during the blank-folding operation.

28. In a bag-machine, a rotating blank-support constituting a folding-bed, means for holding the lower plies of successive blanks thereon, a folding plate-carrier having a fixed pivot-axis located within the circle of rotation of the blank-support, a blank-folding plate mounted for oscillation on said carrier, means for holding the upper ply of the blank to be folded against said folding-plate, means including a cam-operating sector for oscillating the folding-plate on its carrier and means for oscillating the folding-plate carrier.

29. In a bag-machine, a rotating blank-support constituting a folding-bed, means for holding the lower plies of successive blanks thereon, a folding-plate carrier having a fixed pivot-axis located within the circle of rotation of the blank-carrier, a blank-folding plate mounted for oscillation on said carrier, means for holding the upper ply of the blank to be folded against said folding-plate, a sector eccentrically pivoted relative to the blank-carrier axis for oscillating the folding-plate on the carrier, and means for oscillating the folding-plate carrier.

30. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks including in combination a shaft, a blank-support secured thereon, a pair of carrier-arms mounted to swing about said shaft and located one at each end of said rotary blank-support, means for rotating said shaft, means for swinging said arms, blank-folding mechanism pivotally supported by said arms, and means for oscillating said mechanism relatively to said arms comprising cams mounted on said shaft, gears carried by said folding mechanism, and a connection between said cams and said gears.

31. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks including in combination a rotating shaft, a rotating blank-support secured on the shaft, a carrier journaled about said shaft, means for rotating said shaft, means for swinging said carrier, folding mechanism pivotally connected to said carrier, and means for oscillating it relatively to the carrier as the latter is oscillated, comprising a stationary cam mounted on and positioned by the shaft, a gear secured to the folding mechanism and a lever mounted on the carrier, engaging the cam, and provided with gear-teeth engaging said gear-wheel.

32. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks including in combination a rotating shaft, a rotating blank-support secured on the shaft, a carrier journaled about said shaft, means for rotating said shaft, means for swinging said carrier, folding mechanism pivotally connected to said carrier, and means for oscillating it relatively to the carrier as the latter is oscillated, comprising a stationary cam, a gear secured to the folding mechanism, and a lever mounted on the carrier, engaging the cam, and provided with gear-teeth engaging said gear-wheel.

847,194. PAPER-BAG MACHINE. WILLIAM A. LORENZ, Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Nov. 12, 1900. Serial No. 36,177.

Claim.—1. In a bag-machine, mechanism for forming diamond folds on a bellows-sided bag-blank, including in combination a folding-bed, means for moving said bed to carry its blank-engaging surface through a path which is practically a continuation of said surface, means for holding a bag-blank against said surface, a carrier, folding devices pivotally supported by the carrier to turn relatively thereto about an axis, means for moving said carrier during the folding operation to carry said axis through a path concave toward the folding-bed and with such a velocity relative to that of the bed, that said axis travels in a substantially circular path about a second axis which is adjacent the blank-engaging surface of the folding-bed and has substantially the same movement of advance as the folding-bed, and means for turning the folding devices relatively to the carrier about the first-mentioned axis as the latter moves through said concave path.

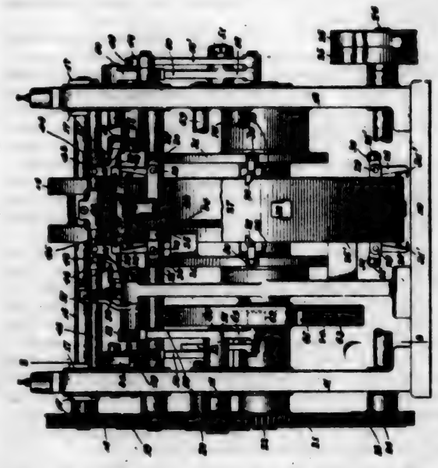

2. In a bag-machine, mechanism for forming diamond folds on a bellows-sided bag-blank, including in combination a folding-bed, means for moving said bed to carry its blank-engaging surface through a path which is practically a continuation of said surface means for holding a bag-blank against said surface, a carrier, folding devices pivotally supported by the carrier to turn relatively thereto about an axis, means for moving said folding devices during the folding operation to carry said axis through a path concave toward the folding-bed, said means comprising a pivotal support for the carrier located on the concave side of the path of said axis and means for oscillating said carrier about said pivotal support, and means for oscillating said folding devices on said carrier about said axis.

3. In a bag-machine, mechanism for forming diamond folds on a bellows-sided blank including in combination a rotary blank-support, means for holding the lower ply of the blank to the support, carriers, means for oscillating the carriers about a center adjacent to the rotary path of the blank-support, folding devices moved by said carriers with the support during the triangular-fold-forming operation through a curved path concave toward the rotary path of the bed, and means for operating said folding devices on their carriers to engage and open the blank.

4. In a bag-machine, mechanism for forming diamond folds on a bellows-sided blank including in combination a blank-support rotating about a fixed axis, means for holding the lower ply of the blank to the support, carrier-arms, means for oscillating them about a fixed axis remote from the axis of the blank-support, folding devices carried by said carriers during the diamond-folding operation with the support through a curved path concave toward the rotary path of the bed including a folding member mounted for oscillation upon the carrier-arms and having a defining edge at a distance from its axis less than the greatest distance to which the axis moves away from the rotary path of the bed whereby said defining

edge may be carried clear of the blank-support as it swings back and forth over that support.

5. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, including in combination a blank-support rotating about a fixed axis, carrier-arms, a blank-folding member having a defining edge and pivotally supported upon said carrier-arms to turn relatively to said arms about an axis remote from said defining edge, means for moving said carrier-arms to carry said blank-folding member during the diamond-forming operation, with the support through a curved path concave toward the blank-support, means for holding the lower ply of the blank to the support, a box-holder coöperating with the folding member, and means including toothed gearing for oscillating the blank-folding member upon its axis of movement relative to said arms.

6. The combination with a rotary blank-carrier having tuck-holders, of a carrier pivotally supported to turn about an axis adjacent the blank-supporting surface of the blank-carrier, a blank-folding member having a defining edge and box-holders pivotally supported by said carrier to turn relatively thereto about an axis remote from said edge, means for oscillating said carrier about its axis to move the blank-folding member with the support through a curved path concave toward the blank-carrier during the diamond-forming operation, and means for oscillating the blank-folding member about its axis of movement relative to the carrier during said operation.

7. In a bag-machine, mechanism for forming diamond tuck-holders, of a carrier pivotally supported to turn about tion a blank-support rotating about an axis, means for holding the lower ply of a bag-blank thereto, a carrier-arm mounted for oscillation about a fixed axis laterally displaced from the axis of the blank-support, folding devices pivotally supported by said arm, means including a toothed gear secured to said arms concentrically with its axis for swinging said carrier to move the folding devices with the support through a curved path concave toward the blank-support, and means including toothed gearing for oscillating said folding devices relative to said carrier.

8. In a bag-machine, mechanism for forming diamond folds on a bellows-sided bag-blank including in combination a blank-support rotating about a fixed axis, means for holding the lower ply of a bag-blank thereto, carrier-arms pivotally supported to turn about an axis remote from the axis of the blank-support, folding devices pivotally supported on said arms, means for oscillating said arms to carry said folding devices during the diamond-forming operation with the support through a curved path concave toward the blank-support, and means for oscillating said folding devices relatively to said arms during said operation, including a gear appurtenant to the blank-folding devices and concentric with their axis of oscillation relative to the arms, and coöperating gearing pivotally supported to turn about an axis in alinement with the axis of oscillation of the carrier-arms.

9. In a bag-machine, mechanism for forming diamond folds on a bellows-sided blank, including in combination a blank-support rotating about a fixed axis, means for holding the lower ply of a blank thereto, carrier-arms pivotally supported to turn about an axis remote from the axis of the blank-support, folding devices pivotally supported upon said arms and including means for engaging the upper ply of the blank, means including a gear appurtenant to the said carrier-arms for swinging them about their axis to carry the folding devices during the diamond-forming operation with the support through a curved path concave toward the blank-support, a gear appurtenant to the folding devices and concentric to the axis of oscillation thereof, and coöperating gearing journaled concentrically with the axis of oscillation of said arms for oscillating the folding devices relatively to the arms as the latter are moved forward and back.

10. In a bag-machine, mechanism for forming diamond folds on a bellows-sided blank including in combination a blank-support pivotally supported to rotate about a fixed axis, means for holding the lower ply of the blank to the blank-support, a carrier-arm mounted for oscillation about an axis remote from the axis of the blank-support, folding devices pivotally supported upon the said arm to turn about an axis situated outside of the rotary path of the blank-support, means including a cam for swinging said arm forward and back to carry the folding devices, during the diamond-forming operation, with the support through a curved path concave toward the blank-support and means for operating the folding devices on the arm as the latter is oscillated, comprising a member pivoted to turn about an axis in alinement with the axis of oscillation of said arm.

11. In a bag-machine, the combination with the blank-support, of means for holding the lower ply of the blank to the support, blank-folding mechanism, comprising a folding-plate and box-holders, a swinging carrier pivotally supporting said plate, means for pivotally supporting said carrier, means for swinging said carrier relatively to its support to move the folding-plate during the diamond-forming operation with the support through a curved path concave toward the blank-support, including a gear concentric with the pivotal support of the carrier, and means for oscillating the plate relatively to the carrier, including a gear secured to the plate, and a connecting driving-gear therefor situated concentric with the pivotal support of the carrier.

12. In a bag-machine, mechanism for forming diamond folds on a bellows-sided blank, including in combination a blank-support pivotally supported to turn about a fixed axis, means for holding the lower ply of the blank to the support, a carrier-arm, means pivotally supporting said arm for oscillation about an axis laterally displaced from the axis of the blank-support, a folding device pivotally supported on said carrier-arm, means for swinging said arm about its pivotal support to carry said folding device with the support through a curved path concave toward the blank-support, and means for oscillating said folding device relative to said carrier-arm during the movement in said path, including a gear secured to the device and a gear concentric with the pivotal support of said carrier.

13. In a bag-machine, mechanism for forming diamond folds on a bellows-sided blank, including in combination a rotary blank-support, means for holding the lower ply of the blank thereto, a carrier-arm, means pivotally supporting said arm, a box-holder pivotally supported by said arm, means for oscillating said arm including a toothed gear mounted concentrically with the pivotal support for said arm, and means for oscillating said box-holder relative to said arm including a toothed gear journaled concentrically with the pivotal support of said arm.

14. In a paper-bag machine, mechanism for forming diamond folds on a bellows-sided blank, including in combination a rotating folding-bed, means for securing the lower ply of the blank to the bed, an arm extending over the folding-bed, means pivotally supporting said arm, devices mounted on said arm for engaging the upper ply of the blank, said devices including a shaft journaled in said arm at one side of the axis of oscillation of the arm relatively to its pivotal support, means for oscillating said arm relative to its support, including a gear concentric with the axis of said pivotal support, and means for oscillating said shaft, including a gear also mounted concentrically with the axis of oscillation of said arm.

15. A rotary blank-support constituting a folding-bed, means for holding the lower plies of successive blanks on the blank-support, a folding-plate provided with means including box-holders for folding back the upper plies of the successive blanks, an arm pivotally supporting the said plate and mounted for oscillation upon an axis located in eccentric relation to the circle of rotation of the blank-support, means including a sector for oscillating the folding-plate upon its pivot-axis, and means for oscillating the arm to move the said axis of the folding-plate forward relative to the direction of movement of the blank-support.

16. A rotating blank-support constituting a folding-bed, means for holding the lower plies of successive blanks upon the support, a blank-folding plate, provided with means including box-holders for folding back the upper plies of the successive blanks carried by the support, a plate-carrier mounted for swinging movement on an axis located eccentric to the circle of rotation of the blank-carrier, means for swinging the plate-carrier on its axis, and means including a sector-gear for swinging the folding-plate upon the plate-carrier.

17. In a bag-machine, mechanism for forming diamond folds on a bellows-sided blank, including in combination a folding-bed rotating in a circular path about a fixed axis, means for holding a bag-blank against said bed, a carrier, folding devices pivotally supported by said carrier to turn relatively thereto about an axis, said devices including a folding-plate having a defining edge remote from the axis of the folding devices, means for moving the last-mentioned axis during the folding operation through such a predetermined path concave toward the path of the folding-bed that the maximum separation between said paths is not less than the distance between the axis and defining edge of the folding-plate, said means comprising a pivotal support for the carrier located between the axis of movement of the bed and said predetermined axis-path and means for turning the carrier during the folding operation about its pivotal support in the same direction as the folding-bed turns about its axis, and means for oscillating the folding devices relative to said carrier as the latter turns on its pivotal support.

847,195. PAPER-BAG MACHINE. WILLIAM A. LORENZ, Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Dec. 3, 1900. Serial No. 38,396.

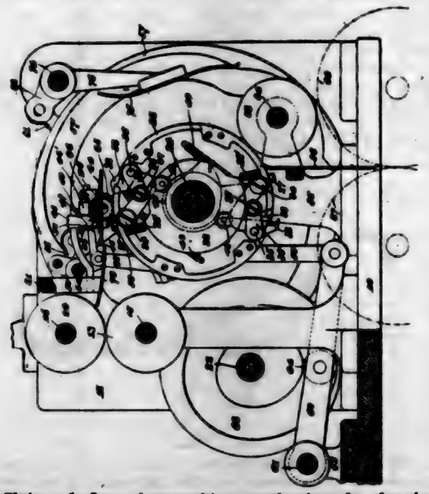

Claim.—1. In a bag-machine, mechanism for forming diamond-folded blanks from bellows-folded tubes including in combination a blank-carrier having tuck-holders, a blank-folding member having a defining edge and box-holders, a yoke pivotally supporting said blank-folding member, movable arms pivotally supporting said yoke, means for advancing said arms with the blank-carrier during the blank-folding operation, and means for swinging said yoke on said arms during such advancing movement to govern the path of the defining edge relative to the blank-carrier.

2. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks including in combination a rotary blank-support, means for securing a blank thereto, an oscillating carrier-arm moving on a center of oscillation situated within the rotary path of the bed, a yoke pivoted upon said arm, a blank-folding member pivotally connected to said yoke, means for oscillating the blank-folding member upon the yoke, means for turning the yoke relatively to the arm, and means for oscillating the arms about their center of oscillation.

3. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, having in combination a rotary folding-bed, means for securing bag-blanks thereto, oscillating arms moving on a center of oscillation situated within the rotary path of the bed, a yoke mounted to turn upon said arms, a blank-folding member mounted for oscillation upon the said yoke, means for oscillating the blank-folding member relative to the yoke, means for turning the yoke to carry the blank-folding member toward and from the surface of the blank-support, and means for oscillating the arms to move the yoke and the blank-folding member forward and back in the general direction of travel of the blank-support.

4. In a bag-machine, the combination with the folding-bed, of means for forming the diamond fold, and means for lifting the forward end of the lower ply of the bag-blank from the folding-bed during the formation of the diamond fold, substantially as described.

5. In a bag-machine, the combination with the folding-bed, and means for folding the bag-blank thereon, of a front gripper adapted to grip both sides of the forward end of the lower ply of the bag-blank, and means for elevating said gripper relatively to the folding-bed, substantially as described.

6. In a bag-machine, the combination with the folding-bed, of a front gripper consisting of upper and lower jaws, means for elevating said gripper relatively to the folding-bed, and means for opening and shutting the gripper, substantially as described.

7. In a bag-machine, the combination of a front gripper, a gripper-block to which the same is pivotally connected, the front gripper being adapted to open and close by movement about such pivotal connection, and the gripper-block being mounted for lifting or raising movement, and means for elevating and lowering the gripper-block, substantially as described.

8. In a bag-machine, the combination with the folding-bed, of a gripper-block pivotally connected to the same, a front gripper-support pivotally connected with the gripper-block and provided with a gripping-plate adapted to cooperate with the gripper-block so as to open and close relatively to the same, and means for swinging the gripper-block about its pivotal connection so as to elevate and lower it with respect to the folding-bed, substantially as described.

9. In a bag-machine, the combination of a front gripper, a swinging gripper-block to which said front gripper is pivotally connected, said gripper-block being mounted so as to permit it to swing to raise and lower the gripper, means for swinging the gripper-block, and means for swinging the gripper-support relatively to the gripper-block so as to open and close the gripper, substantially as described.

10. In a bag-machine, the combination with the folding-bed, of a front gripper comprising upper and lower gripping-jaws, said gripper being carried by the folding-bed and having a swinging movement relatively to the same to permit it to be raised and lowered relatively to the bed, means for forming the diamond fold while the bag-blank is engaged by the front gripper, and means for elevating the gripper during the formation of the diamond fold, substantially as described.

11. In a bag-machine, the combination with the folding-bed, of a front gripper comprising upper and lower gripping-jaws, said gripper being carried by the same and having a swinging motion relatively to the bed so as to permit it to be raised or lowered, means for forming the diamond fold while the bag-blank is engaged by the front gripper, and means for elevating the front gripper during the formation of the diamond fold and lowering the same before the completion of the fold, substantially as described.

12. In a bag-machine, the combination with the folding-bed and means for forming the diamond fold thereon, of a front gripper consisting of upper and lower gripping-jaws, means for elevating said gripper during the formation of the diamond fold, and means for closing and opening said gripper as required to engage and release the

forward end of the lower ply of the bag-blank, substantially as described.

13. In a bag-machine, the combination with a folding-bed, and side gripping devices, of means for folding the bag-blank, a front gripper comprising upper and lower gripping-jaws adapted to clasp the forward end of the lower ply of the bag-blank, and means for raising and lowering said gripper during the folding operation.

14. The combination, with a blank-carrier having tuck holders; and with a blank-folding member having box-holders coöperative therewith; of a movable device for holding the front diamond flap of the blank; and means for projecting said device beyond the surface of the blank-carrier during the blank-folding operation.

15. The combination, with a blank-carrier having tuck-holders; and with a blank-folding member having box-holders coöperative therewith; of a movable device for holding the front diamond flap of the blank; and a cam for projecting said device beyond the surface of the blank-carrier during the blank-folding operation.

16. In a bag-machine, mechanism for forming diamond-folded blanks from bellows-folded tubes, having in combination a rotating folding-bed provided with devices for holding the blank and assisting in the formation of the diamond, including a front gripper adapted to hold the front lower ply of the blank at an elevation above the bed during the distention of the diamond, oscillating arms pivoted within the path of the rotating bed, folding mechanism carried by said arms and moving therewith at times in the direction of movement of the bed and at times in the opposite direction, means for causing the oscillating folding mechanism to move also toward and away from the path of the bed and means for oscillating the said folding mechanism on an axis carried by the arms.

17. In a bag-machine, mechanism for forming diamond-folded blanks from bellows-folded tubes, having in combination a rotating folding-bed provided with devices for holding the blank and assisting in the formation of the diamond, a front gripper adapted to hold the front lower ply of the blank at an elevation above the bed during the distention of the diamond, means for moving said front gripper toward and away from the bed, oscillating arms pivoted within the path of the rotating bed, folding mechanism carried by said arms and moving therewith at times in the direction of movement of the bed and at times in the opposite direction, means for causing the oscillating folding mechanism to move also toward and away from the path of the bed and means for oscillating the said folding mechanism on an axis carried by the arms.

18. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, including in combination, a blank-support mounted for rotation about a fixed axis, means for securing blanks to said support, oscillating arms, a member pivoted thereto, folding mechanism including a folding member pivotally secured to the first-mentioned member to turn about an axis with respect thereto and having a defining edge, means for oscillating said arms to carry said folding mechanism through an oscillatory path above and in the general direction of travel of the blank secured to said support, means for moving said first-mentioned member relative to said arms to carry the axis of the folding member toward and away from the surface of said blank-support, said folding member having its defining edge situated at a distance from its axis somewhat less than the greatest distance to which that axis is carried away from the rotary path of the support, whereby the said defining edge swings back and forth clear of the said support.

19. In a paper-bag machine, mechanism for forming diamond folds on bellows-folded blanks, having in combination a rotating folding-bed, means for turning back the upper ply of the blank to form the diamond fold, a holder for holding down the front end of the lower ply of the blank, and means for raising the said holder during the diamond-folding operation to allow the said front end to be raised and relieve the strain incident to the said operation.

20. In a paper-bag machine, mechanism for forming diamond folds on bellows-folded blanks, having in combination a rotating folding-bed, means for turning back the upper ply of the blank to form the diamond fold, a holder moving in conjunction with the bed, and extending over the front end of the lower ply to hold it down, and means for raising the said holder during the diamond-folding operation to relieve the front end of the blank from strains incident to that operation.

21. In a paper-bag machine, mechanism for forming diamond folds on bellows-folded blanks having in combination a rotating folding-bed provided with a blank-supporting surface approximately conforming to the curvature of its path of rotation, means for turning back the upper ply of the blank to form the diamond fold, a holder appurtenant to and moving with the said bed, and extending over the front end of the lower ply of the blank to hold it down, and means for raising the said holder during the diamond-folding operation to relieve the front end of the blank from strains incident to that operation.

22. In a bag-machine mechanism for forming diamond folds on bellows-sided blanks, including in combination a rotary blank-support, a carrier-arm pivoted to oscillate about a center within the rotary path of the bed, a member pivoted to said arm, folding mechanism pivoted to said member, means for turning said arm about its center of oscillation, means for turning said member relative to said arm, and means for turning said folding mechanism on said member.

23. In a machine for forming diamond folds on bellows-sided bag-blanks, the combination of a rotary blank-support, means for securing the lower ply of a blank thereto, a yoke-carrier, a yoke pivotally connected thereto, blank-folding mechanism pivoted to said yoke, and mechanism for reciprocating the yoke-carrier, turning the yoke relative to the yoke-carrier and turning the folding mechanism relative to the yoke.

847,196. PLOW. ELBERT R. LOVELL, Brookhaven, Miss. Filed Aug. 21, 1906. Serial No. 331,534.

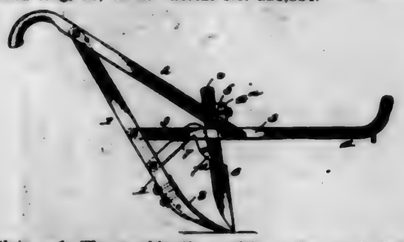

Claim.—1. The combination, with a plow-stock, beam, and colter, of means for securing the shank of the colter, and the device for bracing and supporting the lower portion of the same, consisting of a bar whose front end engages the colter, its rear portion being rigidly secured to the rear portion of the plow-frame, as described.

2. The combination, with a plow-stock, beam, and draft-bar which is secured to the beam, and has its rear end upturned, of a colter arranged in rear of said upturned ends of the draft-bar, a device for clamping the colter thereto, and a colter-brace arranged in rear thereof and constructed in angular form, it being secured at its apex and rear end to the beam, and plow-stock, respectively, as described.

3. The combination, with a plow-stock and beam, of a colter connected with the beam, and a brace for said colter, the same being a bar constructed in angular form its front end engaging the colter and the apex and rear end thereof being secured to the beam and plow-stock, respectively, as described.

4. The combination, with a plow-stock, beam and an upwardly-projecting part attached to said beam, of a colter arranged in rear of such upwardly-projecting part, a clamp for securing them together, and means for bracing and supporting the lower portion of the colter, as described.

5. The combination, with a plow-stock, beam, and a colter which is vertically adjustable, and means for clamping it in place, of a support for the blade, or lower portion, of the colter, the same consisting of a bar provided at its front end with a slot to receive the colter, and devices securing it rigidly to the beam and plow-stock, as described.

847,197. RELAY. RAY H. MANSON, Elyria, Ohio, assignor to The Dean Electric Company, Elyria, Ohio, a Corporation of Ohio. Filed May 25, 1904. Renewed Feb. 11, 1907. Serial No. 356,872.

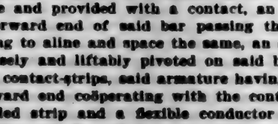

Claim.—1. A relay comprising an electromagnet having a flux-bar extending longitudinally thereof, an angular armature pivoted thereto, and contact members carried by said flux-bar, one of which is electrically connected to said armature, and the other of which makes electrical contact therewith.

2. A relay comprising an electromagnet, having a flux-bar extending longitudinally thereof, contact members carried by said flux-bar, means for connecting one of said contact members to said armature independent of the pivotal connection, and means on the other contact member which connects with the armature.

3. A relay comprising an electromagnet having a flux-bar extending longitudinally thereof, an angular armature removably pivoted to said flux-bar, a contact member, flexible means connecting said contact member to said armature, another contact member normally in electrical contact with said armature, and means supporting said last-named contact member and insulating it from said armature when the magnet is energised.

4. A relay, comprising an electromagnet having a soft-iron flux-bar extending along the top thereof, insulated contact-strips extending along said bar, one of said strips having an angular end provided with a contact, and an angular armature loosely and liftably pivoted on said bar and having a contact at its forward end coöperating with the contact on the angular-ended strip, substantially as described.

5. A relay, comprising an electromagnet, a soft-iron flux-bar extending along the top thereof, insulated contact-strips extending longitudinally of said bar, one of said strips having an angular end depending in front of the magnet-pole and provided with a contact, an insulating-stud on the forward end of said bar passing through said strip, serving to aline and space the same, and an angular armature loosely and liftably pivoted on said bar and between said contact-strips, said armature having a contact on its forward end coöperating with the contact on the angular-ended strip, substantially as described.

6. A relay, comprising an electromagnet, a soft-iron flux-bar extending along the top thereof, insulated contact-strips extending longitudinally of said bar, one of said strips having an angular end depending in front of the magnet-pole and provided with a contact, an insulating-stud on forward end of said bar passing through said strip serving to aline and space the same, an angular armature loosely and liftably pivoted on said bar and between said contact-strips, said armature having a contact on its forward end coöperating with the contact on the angular-ended strip and a flexible conductor connecting said armature and the other contact-strip, substantially as described.

7. A relay, comprising an electromagnet having a flux-bar extending longitudinally thereof, a pivot-pin on the forward end of said bar, an armature having a vertical and a horizontal member, the latter extending along said bar and serving to counterbalance said armature, and depending lugs on said armature having open slots engaging said pivot-pins, substantially as described.

8. A relay, comprising an electromagnet having a flux-bar extending longitudinally thereof, contact-springs mounted on said bar, insulation spacing said springs, and an armature pivoted to forward end of said bar and having a counterweight member extending rearwardly along said bar, said insulation between the springs having a shoulder extending in the path of the counterweight member to limit the movement of the armature toward the magnet-pole, substantially as described.

847,198. ROCKET APPARATUS. ALFRED MAUL, Dresden, Germany. Filed Feb. 15, 1906. Serial No. 301,190.

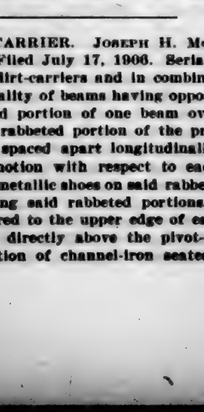

Claim.—1. In a rocket apparatus, the combination with a casing having a compartment, of a cover-plate for said compartment, a hollow cap, means for temporarily securing said cap to said casing, and time-controlled means for releasing said cap, substantially as set forth.

2. In a rocket apparatus, the combination with a casing having a compartment, of a cover-plate for said compartment, a parachute in said compartment, a hollow cap adapted to receive scientific instruments, means for temporarily securing said cap to said casing, time-controlled means for releasing said cap, straps connecting said parachute, said casing and said cap, and actuating said cap-releasing means, substantially as set forth.

3. In a rocket apparatus, the combination with a casing having a compartment, of a cover-plate therefor, time-controlled means for releasing said cover-plate, a hollow cap adapted to contain scientific instruments, means for temporarily securing said cap to said casing, comprising a shaft, locking-hooks at either end thereof and a lug extending into said casing, a parachute in said compartment, straps connecting said parachute, said casing and said cap, means for ejecting said parachute, and means for releasing said cap, comprising a ladder-lever controlling said locking-hooks, a braked drum, and a bell-crank lever coöperating with said lug, the parts being constructed, arranged, and coöperating substantially as set forth.

847,199. DIRT-CARRIER. JOSEPH H. MORAGNE, Honolulu, Hawaii. Filed July 17, 1906. Serial No. 326,574.

Claim.—1. In dirt-carriers and in combination, a track comprising a plurality of beams having oppositely-rabbeted ends, the rabbeted portion of one beam overlapping and resting upon the rabbeted portion of the preceding beam, the beams being spaced apart longitudinally whereby to permit angular motion with respect to each other in a horizontal plane, metallic shoes on said rabbeted portions, a pivot-pin traversing said rabbeted portions, a section of channel-iron secured to the upper edge of each beam, said sections abutting directly above the pivot-pins, a guard comprising a section of channel-iron seated beneath the

end of one of said sections and extending beneath the end of the adjacent section, said extended portion being flared outwardly whereby to permit angular movement of the sections in a horizontal plane, means for supporting said track, and means for adjusting said track with respect to said supporting means.

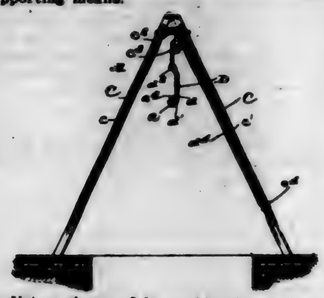

2. In dirt-carriers and in combination, a track comprising a plurality of beams arranged in longitudinal alinement and connected by a rabbet-joint, said beams being spaced apart whereby they may have angular movement in a horizontal plane, a section of channel-iron upon the upper edge of each of said beams, a guard comprising a U-shaped plate beneath the end of each of said sections and extending beneath the end of the adjacent section, said guard having flanged sides for engaging the first section, and having the extended portion flaring outwardly whereby to permit angular movement of the sections in a horizontal plane.

3. In dirt-carriers and in combination, a track comprising a plurality of beams arranged in longitudinal alinement, and pivotally connected for angular movement in a horizontal plane, a section of channel-iron upon the upper edge of each of the beams, the sections abutting directly above said pivotal connection, and a guard comprising a U-shaped plate beneath the end of each section and extending beneath the end of the adjacent section, the extended end of the guard flaring outwardly whereby to permit angular movement of the sections in a horizontal plane.

4. In dirt-carriers and in combination, a track comprising a plurality of beams arranged in longitudinal alinement and pivotally connected for angular movement in a horizontal plane, a section of channel-iron upon the upper edge of each of the beams, said sections abutting directly above the point of pivotal connection, and a guard between said sections.

5. In dirt-carriers, a track comprising a plurality of sections pivoted at their ends for horizontal motion with respect to each other, a channel-iron on the upper edge of the sections, the channel-iron being jointed in alinement with the pivotal connection, and means for supporting said track.

6. In dirt-carriers, a track comprising a plurality of sections pivoted at their ends for horizontal movement with respect to each other, means for supporting the track, means for elevating and depressing the track with respect to the said supporting means, and a channel-iron arranged on the upper edge of the sections, the channel-iron being jointed in alinement with the pivotal connection.

7. In dirt-carriers, a track comprising a plurality of sections pivoted at their ends for horizontal movement with respect to each other, means for supporting the track, and means for raising and lowering the track with respect to the supporting means.

8. In dirt-carriers, a track comprising a plurality of sections jointed at their ends for horizontal movement, a plurality of A-frames for supporting the track, and means for raising and lowering the track with respect to the frames.

9. In dirt-carriers, a track comprising a plurality of sections pivoted by their adjacent ends for horizontal movement with respect to each other, a hanger for the track comprising a bracket having a lower horizontal portion engaging the track, and an eye at its upper portion, a plurality of A-frames, blocks supported by the A-frames, and a rope connected with the eye of the hanger and passing over the block.

10. In apparatus of the class described, a track comprising a plurality of alined sections, means whereby said sections may have angular movement in a horizontal plane with respect to each other, means for supporting the track, and means for elevating and depressing the individual sections with respect to the supporting means.

847,200. LIFTING-TONGS. PHILIP NEDDO, Barre, Vt. Filed Apr. 17, 1906. Serial No. 312,203.

Claim.—1. In a device of the class described, a handle, a pair of coöperating gripping members carried thereby, one of said members being fixed and the other pivoted for swinging movement toward and from the fixed member and provided with a series of teeth, a longitudinally-movable rack-bar in mesh with said teeth, an operating-lever pivoted to the handle and a rigid element connecting the lever and rack-bar.

2. In a device of the class described, a tubular handle provided with a head of hollow formation, a pair of coöperating gripping members carried by the head, one of said members being fixed and the other pivoted for movement toward and from the fixed member and provided with teeth, a rack-bar movably disposed in the head in mesh with said teeth, an operating-lever pivoted to the handle and operative connections between the lever and rack-bar.

847,201. PUMP. CARY A. NEYLAND, Lewiston, Idaho. Filed Dec. 16, 1905. Serial No. 292,060.

Claim.—1. In pumps, a support, operating-arms pivoted upon said support, connected for simultaneous convergent movement at one of their ends and divergent movement at their opposite ends, two individual pumps coupled to form one complete pump, two plungers for each individual pump, operating in opposite directions, and pivotal connections between the plungers and the said operating-arms.

2. In pumps, a support, operating-arms pivoted upon said support, connected for simultaneous convergent movement at one of their ends and divergent movement at their opposite ends, two individual pumps coupled to form one complete pump, two plungers for each pump, operating in opposite directions, pivotal connections between the plungers of the individual pumps and the said operating-arms, which connection takes place at opposite sides of the pivotal portions of said arms, and means for automatically raising one arm and simultaneously dropping the opposing arm.

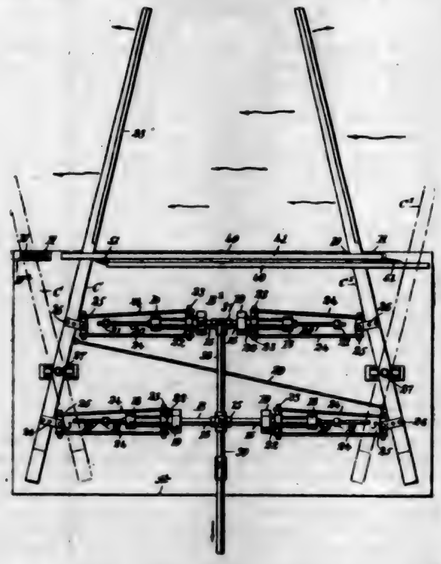

3. In pumps, a support, operating-arms provided with blades, which arms have pivotal and rocking movement upon the support, a link connecting the said arms, which link is connected with one arm at one side of its pivotal point and with the other arm at the opposite side of its pivotal point, whereby the said arms have a divergent movement at one of their ends and a simultaneously-convergent movement at their opposite ends, a set of pumps, a connection between the two pumps, rendering them as one, plungers for each individual pump, arranged to operate in opposite directions, pivotal connections between the plungers of the two individual pumps and the two said arms, the connection between the plungers of the said individual arms being at opposite sides of the pivotal supports for said arms, and means for automatically raising one of the said arms at its blade-carrying portion and lowering the opposing arm at the same portion.

4. In pumps, a support, operating-arms provided with blades, which arms have pivotal and rocking movement upon the support, a link connecting the said arms, which link is connected with one arm at one side of its pivotal point and with the other arm at the opposite side of its pivotal point, whereby the said arms have a divergent movement at one of their ends and a simultaneous convergent movement at their opposite ends, a set of pumps, a connection between the two pumps rendering them as one, plungers for each individual pump, arranged to operate in opposite directions, pivotal connections between the plungers of the two individual pumps and the two said arms, the connection between the plungers of the said individual pumps being at opposite sides of the pivotal supports for said arms, means for automatically raising one of the said arms at its blade-carrying portion and lowering the opposing arm at the same portion, an upright from the said support, a walking-beam connected with the upright and with said arms, a winding device carried by the upright, and cables attached to the said arms, having sliding movement relative to the walking-beam at its ends and connection with the said winding device.

5. In pumps, a support, operating-arms provided with blades, which arms have pivotal and rocking movement upon the support, a link connecting the said arms which link is connected with one arm at one side of its pivotal point and with the other arm at the opposite side of its pivotal point, whereby the said arms have a devergent movement at one of their ends and a simultaneous convergent movement at their opposite ends, a set of pumps, a connection between the two pumps, rendering them as one, plungers for each individual pump, arranged to operate in opposite directions, pivotal connections between the plungers of the two individual pumps and the two said arms, the connection between the plungers of the said individual pumps being at opposite sides of the pivotal supports for said arm, means for automatically raising one of the said arms at its blade-carrying portion and lowering the opposite arm at the same portion, an upright from the said support, a walking-beam connected with the upright, suspension rods and chains connecting the ends of the walking-beam with said arms, a winding device carried by the upright, cables attached to the said arms, having sliding movement relative to the walking-beam at its ends and connection with the said winding device, a cross-bar secured to the said upright, and spring connections between the ends of the cross-bar and the said arms, the spring connections being attached to the arms where the said cables are connected therewith.

847,202. PROCESS OF FORMING BUILDING MATERIAL. JOHANNES OLTMANNS, Rintheim, Baden, Germany. Filed June 11, 1906. Serial No. 321,196.

Claim.—The herein-described process of forming a slab, block or the like of building material, consisting in forming a binder of plaster-of-paris and dextrin or the like, then soaking in said binder a number of vegetable fibers, then removing the excess of binder from said fibers, whereby the individual fibers are but slightly covered with said binder, and then molding the covered fibers into an interstitial body, by slight pressure.

847,203. CENTRIFUGAL OILING DEVICE. HENRY G. REIST, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 7, 1905. Serial No. 273,003.

Claim.—1. In a machine having a rotating shaft and a bearing for said shaft, a centrifugal oil-distributer comprising an oil-receptacle substantially concentric with said bearing and receiving oil therefrom, a discharge-pipe leading to a part to be lubricated and connected to a passage-way in the wall of said receptacle, and a vane secured to said shaft and extending into said receptacle for forcing oil into said passage-way, said vane having its face arranged transversely to the direction of motion.

2. In a machine having a rotating shaft and a bearing for said shaft, a centrifugal oil-distributer comprising an oil-receptacle surrounding said bearing and receiving oil therefrom, a radial vane secured to said shaft and projecting into said receptacle, said vane having its face arranged transversely to the direction of motion, and a discharge-pipe leading to a part to be lubricated and connected to a passage-way located in the wall of said receptacle and arranged in the plane of rotation of said vane.

3. In a machine having a rotating shaft and a bearing for said shaft, a centrifugal oil-distributer comprising an oil-receptacle surrounding said bearing and receiving oil therefrom, a radial vane secured to said shaft and project-

ing across said receptacle, said vane having its face arranged transversely to the direction of motion, and a discharge-pipe leading to a part to be lubricated and connected to a passage-way located in the wall of said receptacle and arranged in the plane of rotation of said vane and at an angle to the radius passing from the axis of said shaft to the passage-way.

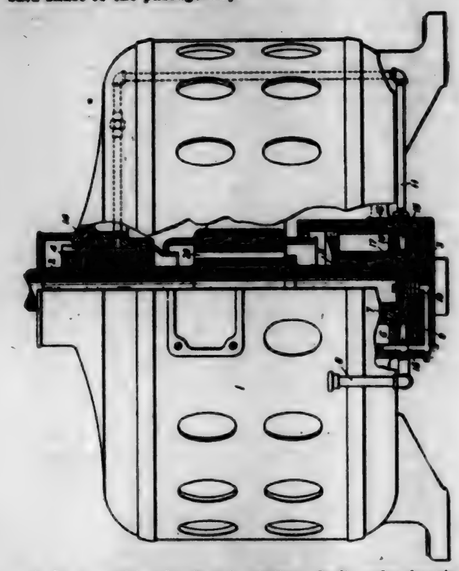

4. In a machine having a rotating shaft and a bearing for said shaft, a centrifugal oil-distributer comprising a receptacle concentric with said bearing and receiving oil therefrom, a discharge-pipe leading from a passage-way in the wall of said receptacle to a part to be lubricated, and a plurality of vanes secured to said shaft and extending across said receptacle, said vanes being arranged with their faces transverse to the direction of motion.

5. In a machine having a rotating shaft and a thrust and a side bearing for said shaft, a centrifugal oil-distributer comprising an oil-receptacle arranged at one end of said side bearing and surrounding said thrust-bearing, a discharge-pipe leading from a passage-way in said receptacle to a point above said side bearing, and a vane secured to said shaft and extending across said receptacle.

6. In a machine having a vertical rotary shaft with upper and lower bearings including a lower side bearing and a lower thrust-bearing, a centrifugal oil-distributer comprising an oil-receptacle arranged at the lower end of said lower side bearing and concentric with said thrust-bearing, a discharge-pipe leading from a passage-way in the wall of said receptacle to said upper bearing, and a vane or vanes secured to said shaft and extending across said receptacle.

7. In a machine having a shaft revoluble in either direction and a bearing for said shaft, a centrifugal oil-distributer comprising an oil-receptacle concentric with said bearing and in communication therewith, a vane secured to said shaft and extending across said receptacle, and a discharge-pipe leading to a point above said bearing and connected to a pair of passage-ways located in the wall of said receptacle in the plane of rotation of said vane and arranged at an angle to each other and to the radius extending therefrom to the axis of said shaft.

847,204. VEHICLE-FENDER. FRANCISCO ROMERO, Buffalo, N. Y. Filed Oct. 18, 1906. Serial No. 339,516.

Claim.—1. In a vehicle-fender, the combination of a relatively stationary frame, a slidable frame supported on said stationary frame and projecting slightly in advance of the latter, pivoted retainer-levers having upwardly-opening hooks engaging the slidable frame, and springs to force said slidable frame forward when released from said retainer-levers.

2. In a vehicle-fender, the combination of a relatively stationary frame secured to the vehicle; a slidable frame beneath said stationary frame and projecting in advance of the latter, guide-rods on which said slidable frame is guided, pivoted retainer-levers having automatically-detachable connection with said slidable frame, and springs surrounding said guide-rods and bearing at one of their ends against said slidable frame to project the same forward when said retainer-levers are disengaged therefrom.

3. In a vehicle-fender, the combination of a relatively stationary frame pivotally secured to a vehicle to permit of swinging said frame upward, a guide-rod at each side and underneath said frame, a slidable frame having hollow side bars into which said guide-rods enter, a spring surrounding each guide-rod and acting against said slidable frame to force the same forward, and automatically-releasable retaining means normally holding said slidable frame in its rear position and adapted to be released when said slidable frame is suddenly forced rearward by contact with an object in the path of the vehicle.

4. In a vehicle-fender, the combination of a relatively stationary frame pivotally secured to a vehicle to permit of swinging said frame upward, a guide-rod at each side and underneath said frame, a slidable frame having hollow side bars into which said guide-rods enter, a spring surrounding each guide-rod and acting against said slidable frame to force the same forward, and retainer-levers pivotally attached to the stationary frame and inclined downward and forward, said retainer-levers having hooks at their forward ends engaging the slidable frame.

5. In a vehicle-fender, the combination of a relatively stationary frame comprising side bars, a front cross-bar and a rear cross-bar, and having the space within said frame occupied by a flexible material, a guide-rod secured to said frame at each side and extending forward beneath the same, a guide secured to each side bar of said frame near the front end thereof, a slidable frame comprising a front cross-bar, a rear cross-bar, and hollow side bars guided in said guides and receiving the forward ends of said guide-rods, said slidable frame having a flexible material occupying the space between the bars forming the frame, springs surrounding the guide-rods and bearing with their front ends against said slidable frame, and retainer-levers pivotally secured to the rear cross-bar of the stationary frame and having upwardly-opening hooks at their forward ends engaging the rear cross-bar of the slidable frame.

6. In a vehicle-fender, the combination of a relatively stationary frame having curved side bars, a slidable frame beneath said stationary frame and projecting slightly in advance of the stationary frame, said slidable frame having also curved side bars, means for retaining said slidable frame in its rear position, and means for forcing the slidable frame forward when released from said retaining means, said fender forming a basket-like receptacle when the slidable frame is forced into its forward position.

847,205. STEP-LADDER BRACE. EDWARD ROWE, Indiana, Pa. Filed July 25, 1906. Serial No. 327,609.

Claim.—1. A step-ladder-leg brace consisting of a pair of links formed of wire, one of said links presenting a forwardly-projecting tongue formed of bars spread apart and connected by an integral transversely-disposed wrist-pin, the other of said links presenting a pair of arms twisted about said wrist-pin to form eyes, the extremities of said arms beyond said wrist-pin being bent upwardly and integrally united by a transverse shoe engaging said tongue.

2. A step-ladder-leg brace, consisting of a pair of links formed of wire, one of said links having oppositely-extending arms twisted together to form a forwardly-projecting tongue, said tongue presenting a transversely-disposed wrist-pin, the other of said links consisting of a pair of

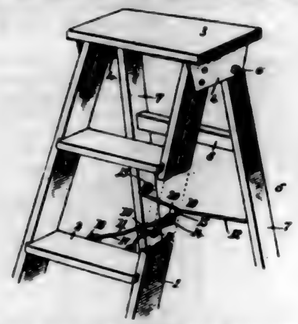

arms twisted about said wrist-pin to form eyes, said arms beyond said wrist-pin extending substantially parallel with each other, and having their extremities turned upwardly, forming a curved shoe engaging said tongue.

847,206. POCKET-KNIFE. SAUNDER SAUNDERSON, Northwood, N. D. Filed Sept. 7, 1906. Serial No. 333,588.

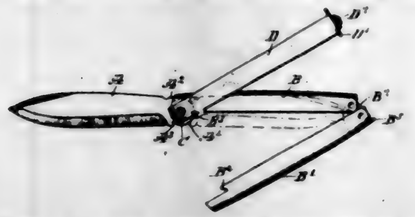

Claim.—1. A knife, comprising a handle made in sections pivoted together to swing toward and from each other and to have longitudinal movement relatively one to the other, means for locking the free ends of the sections together, and a blade pivoted to the free end of one of the sections and engaged by the sections when said sections are in a closed position, to hold it extended.

2. A knife, comprising a blade, a handle made in sections having a link connection at one end, the said blade being pivoted to the free end of one of the said handle-sections, and the latter are adapted to interlock at their free ends, the latter engaging the heel of the blade to lock the latter in an extended position.

3. A knife, comprising a blade, a handle made in sections hinged together, the said blade being pivoted to the free end of one of the said handle-sections, and the latter are adapted to interlock at their free ends, and a locking-stirrup fulcrumed on the pivot for the blade and adapted to swing over the handle-sections to hold the same against opening.

4. A knife, comprising a blade, a handle made in sections hinged together, the said blade being pivoted to the free end of one of the said handle-sections, and the latter are adapted to interlock at their free ends, and a locking-stirrup fulcrumed on the pivot for the blade and adapted to swing over the handle-sections to hold the same against opening, the middle portion fitting the hinged ends of the said handle-sections.

5. A knife, comprising a blade, a handle made in sections hinged together, the said blade being pivoted to the free end of one of the said handle-sections, and the latter are adapted to interlock at their free ends, and a locking-stirrup fulcrumed on the pivot for the blade and adapted to swing over the handle-sections to hold the same against opening, the middle portion fitting the hinged ends of the said handle-sections, one of the latter having a shoulder for the said middle portion to abut against.

6. A knife, comprising a pivoted blade having notches at its heel, a handle made in sections connected with each other by a link, the said blade-heel being pivoted on the free end of one of the said handle-sections, the said handle-sections being adapted to engage the said notches and the said handle-sections being provided at their free ends with interlocking grooves and tongues.

7. A knife, comprising a pivoted blade having notches at its heel, a handle made in sections connected with each other by a link, the said blade-heel being pivoted on the free end of one of the said handle-sections, the said handle-sections being adapted to engage the said notches, and the said handle-sections being provided at their free ends with interlocking grooves and tongues, and a locking-stirrup having its side arms fulcrumed on the blade-pivot and adapted to straddle the handle-sections, the middle portion of the stirrup fitting the ends of the said handle-sections adjacent to the link.

847,207. WATCH-GUARD. ALFRED SCHNEIDER, New York, N. Y. Filed Dec. 11, 1906. Serial No. 347,337.

Claim.—1. A watch-guard having clamping-arms curved longitudinally and transversely adapted to be attached to the bow of a watch, and frictional arms connected to said clamping-arms, substantially as shown and described.

2. A watch-guard having a yoke curved longitudinally and transversely, adapted to be secured to the bow of a watch by spring tension, and oppositely-disposed parallel frictional arms connected with said yoke, substantially as shown and described.

3. A watch-guard having a yoke curved longitudinally and transversely, adapted to be attached to a bow of a watch, and parallel arms spaced apart and connected with said yoke, substantially as shown and described.

4. A watch-guard having a yoke curved longitudinally and transversely adapted to be attached to the bow of a watch, and frictional members connected to said yoke provided with yielding material, substantially as shown and described.

5. A watch-guard having a yoke curved longitudinally and transversely, adapted to be attached to the bow of a watch, and frictional members connected with said yoke and adapted to be arranged on opposite sides of the stem of a watch and provided with frictional outer edges, substantially as shown and described.

847,208. SQUARE. LONELL V. SHEPHERD, Los Angeles, Cal. Filed Sept. 20, 1906. Serial No. 335,393.

Claim.—1. A square having detachable members, one of which is provided with a socket and the other with a tongue fitting into the socket, the tongue having a slot, a locking-cam within said socket and engaging the wall of the said slot to lock the tongue against movement in the socket, and a clamping-screw engaging the front and rear plates of the said socket and extending through the said tongue-slot, the said screw forming the fulcrum for the said locking-cam to swing on and also serving to

draw the plates of the socket toward each other to clamp the locking-cam in position.

2. A square having detachable members, one of which is provided with a socket and the other with a tongue fitting into the socket, the tongue having a slot, a V-shaped lug projecting from the member having the tongue and adapted to engage a recess on the entrance end of the said socket, and a locking-cam within the said socket and engaging the wall of the said slot to lock the tongue against movement in the socket.

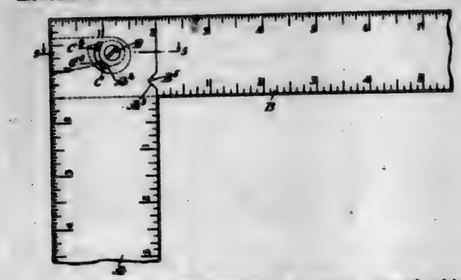

3. A square having detachable members one of which is provided with a socket and the other with a tongue fitting into the socket, the tongue having a slot formed lengthwise therein and extending from the outer end inward, and a locking-cam within the said socket and mounted to swing, the said cam engaging the wall of the said slot to lock the tongue against movement in the socket, the front face of the cam being provided with recesses adapted to be engaged by a tool to move the cam, and the front plate of the said socket having a segmental slot formed therein and through which the tool may be inserted to engage said recesses in the cam.

847,209. DRAFT-REGULATOR FOR STEAM-BOILERS. ALONZO J. SNOW, Fromberg, Mont. Filed Apr. 3, 1906. Serial No. 309,595.

Claim.—1. In an engine, the combination with a fire-box door, of a latch pivoted to the door, an arm pivoted to the door and having a notch at its upper end for engaging the latch, a bracket, levers pivotally supported on the bracket and adapted to be rigidly connected together, a pipe pivoted to the engine-stack, and rods connecting the levers with the latch and pipe, whereby when the latch is lifted it is engaged with the notch and the pipe is projected over the engine's exhaust.

2. In an engine, the combination with a fire-box door, of an extension for the exhaust-pipe, adapted to be swung into and out of alinement with the exhaust-pipe, a latch pivoted to the door, an arm pivoted to the door and having a foot, means for normally throwing the arm inwardly, and means intermediate the extension and latch whereby when the latter is raised the extension is projected into alinement with the exhaust-pipe.

3. In an engine, an extension for the exhaust-pipe adapted to be projected into and out of alinement therewith, a fire-box door, a latch for said door, a pair of levers supported on a pivot-bolt above the door, means for rigidly connecting the levers together and disconnecting them, and means connecting the levers with the extension and latch, whereby when the latch is raised the extension is projected into alinement with the exhaust-pipe.

4. In an engine, an extension for the exhaust-pipe adapted to be projected into and out of alinement therewith, a fire-box door, a weighted latch pivoted on the door, an arm pivoted to the door having a foot and a notch and normally forced inward by a spring, and means intermediate the door and extension, whereby when the latch is raised it engages the notch and the extension is carried in alinement with the exhaust-pipe, and when the door is closed the latch, by the action of the foot, is released and the parts returned to normal position.

5. In an engine, the combination with an exhaust-pipe, an extension movable into and out of alinement therewith, a fire-box door, means for fastening said door, and means intermediate of and connected to the extension and fastening means whereby as the latter is operated the extension is moved into and out of alinement with the exhaust-pipe.

6. In an engine, the combination with an exhaust-pipe, an extension movable into and out of alinement therewith, a fire-box door, a latch pivoted to the door, and means intermediate of and connected to the extension and latch whereby as the latter is operated the extension is moved into and out of alinement with the exhaust-pipe.

7. In an engine, the combination with an exhaust-pipe, an extension movable into and out of alinement therewith, a fire-box door, a latch pivotally mounted on said door, means intermediate of and connected to the extension and latch whereby as the latter is pulled upwardly the extension is moved into alinement with the exhaust-pipe, and means for holding the latch in an elevated position while the door is open.

8. In an engine, the combination with an exhaust-pipe, an extension movable into and out of alinement therewith, a fire-box door, a latch pivotally mounted on said door, means intermediate of and connected to the extension and latch whereby as the latter is operated the extension is moved into and out of alinement with the exhaust-pipe, and means adapting said extension to be operated independently of said latch.

847,210. GAS-BURNER. EDWARD S. SPRINGER and JOHN L. MALONEY, Leavenworth, Kans. Filed July 27, 1906. Serial No. 328,094.

Claim.—1. A gas-burner comprising a hollow body formed of divisible sections each being cast with reëntrant end walls and webs connecting the said end walls and provided with perforations, a longitudinal partition formed by webs in both sections for dividing the body into two compartments, gas-discharging ports in the body, independent inlets in one of the sections for supplying gas to each of the compartments, supply-pipes connected with the inlets, and means for holding the sections together, in combination with a burner-tube at each end of the body extending through one of the perforations of the said webs.

2. A gas-burner comprising a hollow body formed of divisible sections each being cast with reëntrant end walls and perforated webs connected with the said walls, a longitudinal partition formed by webs in both sections for dividing the body into two compartments, gas-discharging ports in the body, independent inlets in one of the sections for supplying gas to each of the compartments, supply-pipes connected with the inlets, means for holding the sections together, in combination with a burner-tube at each end of the body extending through one of the perforations of the said webs, and lid-burners attached to the upper ends of said tubes each comprising a hollow body formed of divisible sections with upwardly-inclined gas-discharging ports.

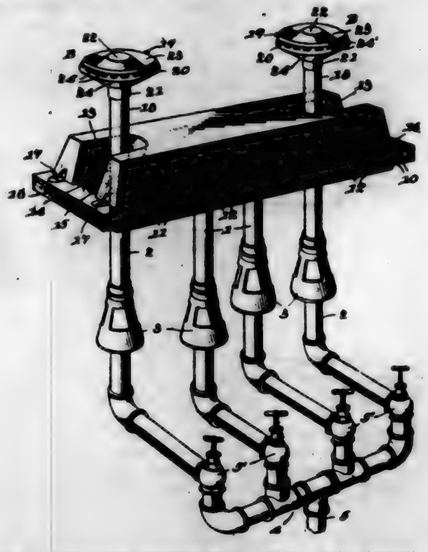

3. A gas-burner comprising a hollow body formed of divisible sections each being cast with reëntrant end walls and webs connecting the reëntrant walls and provided with perforations, gas-discharging ports in the body, and means for supplying gas to the body, in combination with a burner-tube at each end of the body extending freely through one of the perforations of the said webs.

847,211. GARMENT-HANGER. JACOB M. STEIN, Washington, D. C. Filed May 7, 1906. Serial No. 315,614.

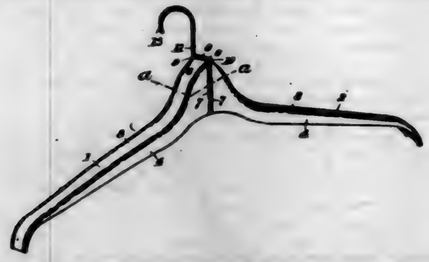

Claim.—1. A garment-hanger, comprising arms having their inner ends abutting, the arms being hingedly connected at their inner ends, and a suspending-hook forming the pintle of the hinge, the arms coöperating with the suspending-hook to hold the arms normally in unfolded position.

2. A garment-hanger comprising arms having their inner ends abutting and hingedly connected together, and a suspending-hook forming the pintle of the hinge, the arms depending upon the suspending-hook to hold them in unfolded position.

3. A garment-hanger comprising arms having their inner ends abutting and hingedly connected together at their upper surfaces, and a suspending-hook having a portion serving as the pintle of the hinge, the hook having movement independently of the arms to lock them together the arms depending upon the suspending-hook to hold them in unfolded position.

847,212. GARMENT-HANGER. JACOB M. STEIN, Washington, D. C. Filed Oct. 6, 1906. Serial No. 337,829.

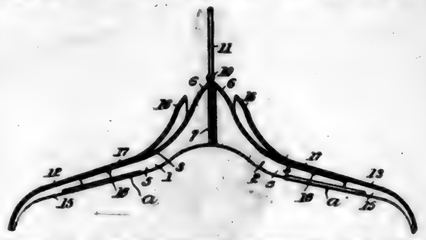

Claim.—1. A garment-hanger comprising arms having their inner ends abutting, the arms being hingedly connected at their inner ends, a suspending-hook forming the pintle of the hinge, the arms coöperating with the suspending-hook to hold the arms in unfolded position and a supplemental arm adjustably mounted upon each of the aforesaid arms to adjust the length of the arms and the size of the neck portion of the hanger.

2. A garment-hanger comprising arms having their inner ends abutting and hingedly connected together, a suspending-hook forming the pintle of the hinge, the arms depending upon the suspending-hook to hold them in unfolded position, and a supplemental arm mounted upon each of the aforesaid arms to adjust the length of the arms and the size of the neck portion of the hanger.

3. A garment-hanger comprising arms having their inner ends abutting and hingedly connected together at their upper surfaces, the suspending-hook having a portion serving as the pintle of the hinge, and a supplemental arm mounted upon each of the aforesaid arms to adjust the length of the arms and the size of the neck portion of the hanger.

4. A garment-hanger comprising arms having their inner ends enlarged and hingedly connected together, a suspending means and a supplemental arm mounted upon each of the aforesaid arms to adjust the length of the arms and the size of the neck portion of the hanger.

5. A garment-hanger comprising arms having their inner ends enlarged and hingedly connected together, a suspending means, and a supplemental arm adjustably mounted upon each of the aforesaid arms, the inner end of each of the supplemental arms being directed upwardly to provide the hanger with an adjustable neck portion.

6. A garment-hanger comprising arms, and supplemental arms slidably arranged upon the aforesaid arms, the supplemental arms being constructed to provide an adjustable neck portion.

7. A garment-hanger comprising arms hingedly connected together, and supplemental arms adjustably carried by the aforesaid arms and provided with means at their inner ends to provide for an adjustment of the neck portion of the hanger.

847,213. LAWN-MOWER. JOHN A. SWENSON, New York, N. Y. Filed Apr. 4, 1906. Serial No. 309,810.

Claim.—1. In a lawn-clipping device, the combination of a frame, a lever pivotally mounted thereon, a cutting-knife connected with said lever, a stud mounted on said lever, a disk having a cam-groove for receiving said stud, and means for oscillating said disk.

2. In a lawn-clipping device, the combination with a frame, a lever pivotally mounted thereon, a knife-blade on said lever, a stud connected with the lever, a disk journaled on the frame and having a cam-groove for receiving the stud, a pair of handles pivoted to the frame, and means whereby the rocking of the handles on their pivots will turn the disk.

3. In a lawn-clipping device, the combination of a

frame, a lever pivotally supported thereby, a cutting-blade connected with said lever, a rotatable element for oscillating said lever, a pair of handles pivotally mounted on said frame, and means for connecting said handles with said rotatable element for turning said element when the handles are turned on their pivots.

4. A lawn-clipping device comprising a frame having a perforation, a blade mounted on said frame, a roller, journaled on the lower side of said frame below the blade, for supporting the frame on the ground, a lever pivotally mounted on the frame and extending through said perforation, a blade mounted on said lever and located adjacent to the first-named blade, a disk journaled on the frame and having a cam-groove for manipulating said lever, a guard on said frame surrounding the disk, a pair of handles extending through said guard and guided thereby, said handles being pivotally mounted on said frame, and a pair of links, one pivotally connected with each handle and each pivotally connected with the disk at opposite sides of the center thereof, said handles being located on opposite sides of the center of the disk.

847,214. DISPLAY-RACK. JOHN E. TAYLOR, Jackson, Miss. Filed July 10, 1906. Serial No. 325,470.

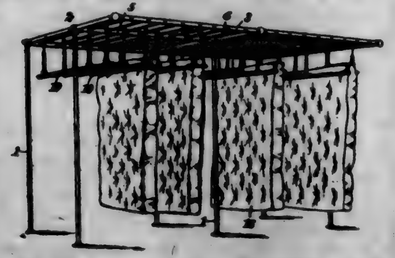

Claim.—In a display-rack, in combination, a frame presenting a plurality of substantially horizontal rails and a bar supporting said rails at an intermediate point on the length thereof, hangers comprising rollers running on said rails on opposite sides of said intermediate bar, whereby the innermost of said hangers may advance to said bar, and clamping members carried by said hangers.

847,215. MAIL-BAG CATCHER. JAMES H. TUDOR, Lexington, Ky. Filed Jan. 26, 1907. Serial No. 354,282.

Claim.—1. The combination with a pivotally-supported and endwise-cushioned crane, of a catcher-arm pivoted thereto, and means for locking said arm to the crane.

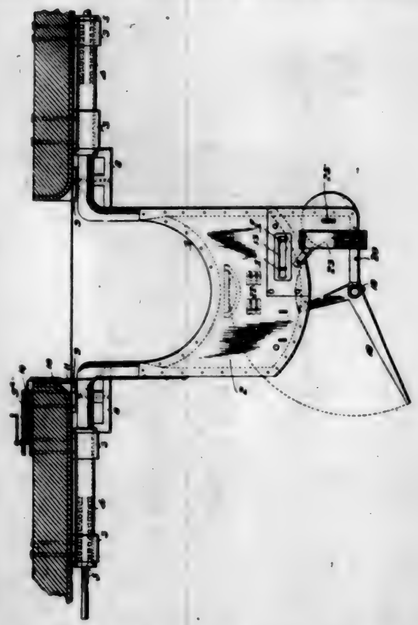

2. The combination with a pivotally-supported and endwise-cushioned crane, of a catcher-arm pivoted thereto, means for locking said arm to the crane, and a spring-buffer for catching the impact of the pouch.

3. The combination with a pivotally-supported and endwise-cushioned crane, of a catcher-arm pivoted to the crane, a pair of jaws connected with the crane between which one arm of the catcher extends when closed, and spring-latches for locking the catcher-arm in this position.

4. The combination with a pivotally-supported and endwise-cushioned crane, of an extension removably and reversibly connected with the crane and a catcher-arm pivotally connected with the extension.

5. The combination with a pivotally-supported and endwise-cushioned crane, of an extension removably and reversely connected with the crane, a catcher-arm pivotally connected with the extension, and an abutment for said arm and means for locking it.

6. The combination with a pivotally-supported and endwise-cushioned crane, of an extension removably and reversibly connected with the crane, a catcher-arm pivotally connected with the extension, and a spring-buffer carried by said extension.

7. The combination with a crane and means for raising and lowering the crane, of means for sustaining the pouch on its outer end and an adjustable arm extending from the crane and adapted to hook to the side of the pouch.

8. The combination with bearings and brackets, of a crane approximately U-shaped journaled in the bearings, and capable of sliding therein and adapted, when in its horizontal position, to rest upon the brackets, and springs for sustaining the endwise movement of the crane in its bearings.

9. The combination with bearings and brackets, of a crane approximately U-shaped journaled in the bearings, and capable of sliding therein and adapted, when in its horizontal position, to rest upon the brackets, springs for sustaining the endwise movement of the crane in its bearings, and means for raising and lowering the crane.

10. The combination with a crane composed of a bar or tube bent approximately U-shaped, and having a boiler-metal sheet secured thereto, of an extension removably and reversibly connected with the outer end of the crane, lugs thereon, and a wedge-key for locking the extension to the crane.

847,216. TUNING DEVICE. CHARLES S. WEBER, New York, N. Y. Filed Aug. 20, 1904. Serial No. 221,500.

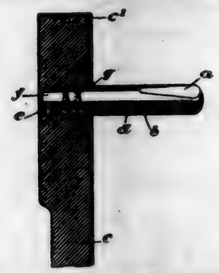

Claim.—1. In a stringed musical instrument, the combination of an all-metal plate having a thickened portion provided with a tapered hole, and a tuning-pin having a tapered portion polished to a reflecting-surface fitted in the said tapered hole, the taper of the hole and pin being less than one degree, said pin having a groove in the form of a screw-thread for holding and retaining a lubricant, and a lubricant being interposed between the engaging surfaces of the tuning-pin and its hole.

2. In a stringed musical instrument, the combination of an all-metal wrest-plate having a thickened portion provided with a hole tapering on an angle of less than one degree, and a tuning-pin having a portion tapered the same amount and fitting in said hole, said pin having a groove in the form of a screw-thread for holding and retaining a lubricant, a lubricant being interposed between the bearing-surfaces of the pin and the hole.

847,217. GARMENT-FASTENER. JAMES H. WHITE, Electra, Cal. Filed Jan. 3, 1906. Serial No. 294,361.

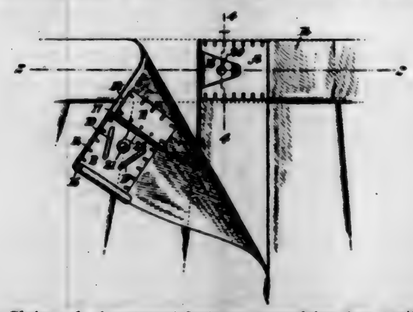

Claim.—1. A garment-fastener comprising two sections each of which is formed with an offset portion, a shoulder joining the offset portion to the main part of the section, the said offset portion serving to receive parts of the garment, one section of the fastener having a wedge-shaped or essentially triangular projection with overhanging side walls, and the other section having converging overhanging walls respectively adapted to engage and lock with the side walls of the said projection, and a spring-tongue carried on the second section and adapted resiliently to engage the other section, for the purpose specified.

2. A garment-fastener comprising a plurality of sections, having oppositely-offset portions for attachment to the garment, one of said sections having a substantially triangular projection with its base adjacent to the edge of the section, the sides of the projection overhanging the section, and the other section having walls for receiving the projection, and resilient means in connection with the sections for retaining them in position.

847,218. DROP-REGULATING BOTTLE. ALFRED WILKIN, New York, N. Y. Filed Nov. 6, 1906. Serial No. 342,200.

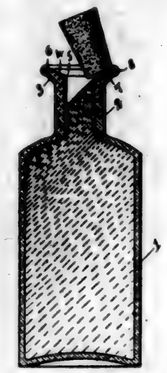

Claim.—1. A bottle having a flaring mouth, said mouth being provided with a radial groove of uniform width extending entirely across.

2. A bottle having a cylindrical neck and flaring mouth, said mouth being provided with a groove of uniform width and extending from the inner surface of said neck to the outer edge of said mouth.

3. A bottle having a flaring mouth, and an annular flange surrounding the outer edge of said mouth, said mouth and flange being provided with a radial groove.

4. A bottle, comprising a neck, a flaring mouth, and a cylindrical shoulder surrounding the outer end of said mouth, there being provided a radial groove extending from the inner surface of said neck to the outer edge of said shoulder.

5. A bottle, comprising a neck, a flaring mouth having a conical inner surface, and a vertical flange surrounding the outer edge of said mouth, said mouth and flange being provided with a radial groove of uniform width extending from the inner surface of the neck to the outer edge of the flange.

6. A bottle having a cylindrical neck, a flaring mouth provided with a conical inner surface, and a flange surrounding the outer edge of said mouth and having a cylindrical inner surface, said mouth and flange being provided with a groove of uniform width extending from the inner surface of the bottle-neck to the outer edge of the flange.

847,219. VALVE-CONTROLLING MECHANISM. CHARLES W. AKERS, Bluefield, W. Va. Filed Nov. 1, 1904. Serial No. 230,999.

Claim.—In a device of the class described, a pair of cylinders, pistons movable therein, a steam-chest having inlet and exhaust ports and provided with passages leading to the respective cylinders, a valve movable in the chest and adapted for bringing said passages alternately into communication with the exhaust, said valve being equipped with heads fitted in the chest, a duct leading from one end of the chest to the forward end of one of the cylinders, a second duct leading from the other end of the chest to the forward end of the other cylinder, valves disposed in the ducts for controlling communication between the same and the respective cylinders, and abutments carried by the piston-rods for automatically operating the controlling-valves at the completion of the

instroke of the piston, whereby steam from the cylinders is admitted to and for moving the valve in the chest.

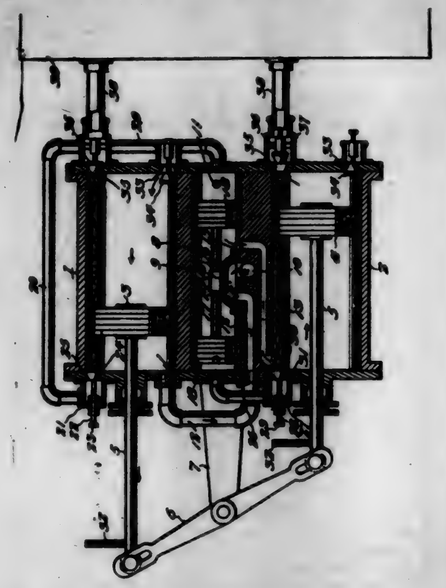

847,220. BUILDING-BLOCK MOLD. ALPHEUS ALEXANDER and JAMES FREDERICKSEN, Jewell, Iowa. Filed June 18, 1906. Serial No. 322,339.

Claim.—A mold of the class described, comprising a frame having longitudinal beams and standards rising from the ends thereof, movable trays on said beams, movable partitions between the ends of said trays, and movable side boards supported by the frame and having formers on their inner sides, for the purpose set forth.

847,221. MOLD. ALPHEUS ALEXANDER and JAMES FREDERICKSEN, Jewell, Iowa. Filed Aug. 6, 1906. Serial No. 329,430.

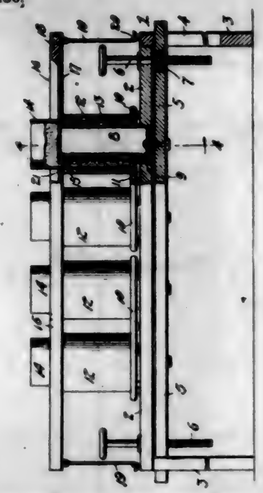

Claim.—1. A molding-machine having a vertically-movable carrier provided with a core projecting from its upper side, a bottom plate above said carrier and having an opening through which said core may project and move, relatively fixed means to support said bottom plate and permit of the removal thereof, a sand-mold casing upon said plate and a removable pattern element upon said plate between said core and said casing.

2. A molding-machine having a vertically-movable carrier provided with a core projecting from its upper side, a bottom plate above said carrier and having an opening through which said core may project and move, relatively fixed means to support said bottom plate and permit of the removal thereof, a sand-mold casing upon said plate, a removable pattern element upon said plate between said core and said casing, and projections upon said pattern element to engage said core and space the same therefrom.

3. A molding-machine having a vertically-movable carrier provided with a core projecting from its upper side, a bottom plate above said carrier and having an opening through which said core may project and move, relatively fixed means to support said bottom plate and permit of the removal thereof, a sand-mold casing upon said plate, a removable pattern element upon said plate between said core and said casing, and a top plate engaged with the top of said casing and formed with an opening through which said pattern element may project and move.

4. A molding-machine having a frame, a vertically-movable carrier provided with cores projecting from its upper side, a bottom plate supported by the frame above the carrier and having openings through which said cores may project and move, sand-mold casings upon said plate surrounding said cores, removable pattern elements supported upon said plate and spaced from said cores, and a top trough engaged with the tops of said casings and formed with openings through which said pattern elements may project and move.

5. A molding-machine having a frame, a vertically-movable carrier provided with cores projecting from its upper side, a bottom plate supported by the frame above the carrier and having openings through which said cores may project and move, sand-mold casings upon said plate surrounding said cores, removable pattern elements supported upon said plate and spaced from said cores, and a top plate adjustably connected to said frame and engaged with the tops of said casings, said top plate being formed with openings through which said pattern elements may project and move.

6. A molding-machine having a frame, a vertically-movable carrier provided with cores projecting from its upper side, a bottom plate supported by the frame above the carrier and having openings through which said cores may project and move, sand-mold casings upon said plate surrounding said cores, removable pattern elements supported upon said plate and spaced from said cores, a top trough engaged with the tops of said casing and formed with openings through which said pattern elements may project and move, hooks for detachably connecting said top trough to said frame and screws for raising and lowering said core-carrier in said frame.

847,222. PROPELLER. ALONZO L. AMES and BYRON S. AMES, Newberry, Pa. Filed Sept. 21, 1905. Serial No. 279,482.

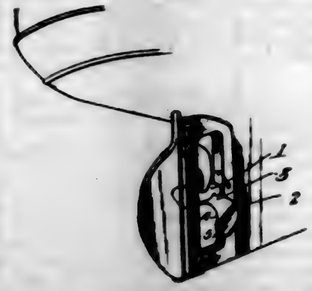

Claim.—1. A propeller comprising a hub and a blade, the latter being curved longitudinally from front to rear and having at its rear edge a reduced rearward extension disposed adjacent its outer end and presenting a restricted point at which the water is discharged rearwardly from the blade, said blade being also pitched at a transverse inclination on a line oblique to the axial line of the hub.

2. A propeller comprising a plurality of blades curved throughout their length from front to rear and spirally twisted from end to end, said blades being pitched at a transverse inclination on a line oblique to the axial line of the propeller and having their rear edges recessed to form reduced rearward extensions, said extensions being disposed adjacent the outer ends of the blades and presenting restricted points at which the water is discharged rearwardly from the blades.

847,223. PIANO-ACTION. JOHN AMMON, New York, N. Y. Filed June 28, 1906. Serial No. 323,819.

Claim.—1. In a piano-action, the hammer provided with a butt, a bearing therein, a cap over said bearing and the set-screw for attaching the cap to the bearing, the jack for engaging the butt and provided with a shoulder, the wippen to which the jack is pivoted said butt having openings in the front and the bottom thereof, a back-check comprising a portion received in the front opening of the butt and an angular portion terminating in a spoon which engages the front of the jack, a set-screw traversing the butt and engaging the back-check whereby to secure it in place, and a pull-back received in the bottom opening of the butt and retained in place by the set-screw of the cap, said pull-back having a forwardly-projecting portion for engaging beneath the shoulder of the jack.

2. In a piano-action, a hammer, a jack for engaging the butt of the hammer, said jack being provided with a shoulder, the wippen to which the jack is pivoted, said butt having openings in the front and the bottom thereof, a back-check comprising a portion received in the front opening of the butt and an angular portion terminating in a spoon which engages the front of the jack, a set-screw traversing the butt and engaging the back-check whereby to secure it in place, and a pull-back received in the bottom opening, and means for securing said pull-back in place, said pull-back having a forwardly-projecting portion for engaging beneath the shoulder of the jack.

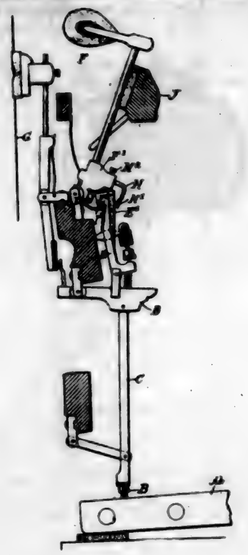

847,224. VEHICLE-BRACE. RUE ATON, Independence, Kans. Filed Jan. 20, 1906. Serial No. 297,044.

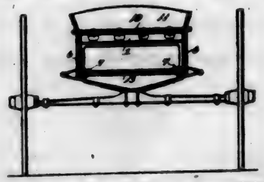

Claim.—1. A brace for vehicles comprising an upper horizontal member adapted to extend across the vehicle-body, said member comprising a vertical plate having horizontal top and bottom flanges, and depending legs formed with lateral flanges and inwardly-extending foot-pieces, the upper flange of the body portion and laterally-extending flanges of the legs being provided with openings for the passage of fastenings, whereby said plate and legs are adapted to be secured to the seat-bottom and sides of the vehicle-body, and bolts for connecting the foot-pieces to the sills of the vehicle-body.

2. A brace for vehicles comprising a vertically-disposed body-plate having horizontal top and bottom flanges, and depending legs formed with lateral flanges and inwardly-extending foot-pieces, the upper flange of the body portion and laterally-extending flanges of the legs and foot-pieces being provided with openings for the passage of fastenings.

847,225. COOKING UTENSIL. HENRY R. BARNARD, East Orange, N. J. Filed Sept. 13, 1905. Serial No. 278,306.

Claim.—1. A cooking utensil of the character described comprising a perforate vessel provided with interior guideways, a partition slidably mounted in said guideways, and a lid hinged to the partition and movable in reverse directions to close the compartments formed thereby, said lid being provided with a compound catch composed of reversely-extending members for attaching it to the vessel in either of its positions.

2. A cooking utensil of the character described, com-

prising a vessel having interior guideways, a partition slidably mounted in said guideways, a lid hinged to the partition to close either of the compartments formed thereby, and a catch carried by said lid and comprising oppo-

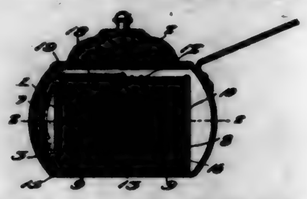

sitely-projecting hooks to engage the rim of the vessel at diametrically opposite sides thereof to hold the lid in either of its closing positions.

847,226. COMPOUND FOR CLEANING AND POLISHING WOOD SURFACES. CHARLES J. BARRENPOHL, New York, N. Y. Filed Dec. 19, 1906. Serial No. 348,504.

Claim.—1. The herein-described compound for cleaning, filling and polishing wood surfaces, containing whiting, lard-oil and crude oil, combined in substantially the proportions set forth.

2. The herein-described compound for cleaning, filling and polishing wood surfaces, consisting of whiting, lard-oil, crude oil and paraffin-wax, combined in substantially the proportions set forth.

847,227. RAIL-SPLICE. CHRISTOPHER BIGENHO, Verona, Pa. Filed Sept. 29, 1906. Serial No. 336,693.

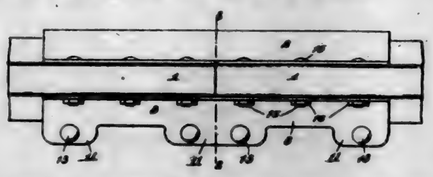

Claim.—1. A splice for the meeting ends of rails comprising a member having a vertical flange fitted to the side of the web of the rail and under the tread-surface of said rail, said member extending from said flange over the side edge of the rail-flange and under the bottom thereof and terminating at a point substantially in line with the opposite edge of said flange, a member fitted to the opposite side of the rail and provided with a similar vertical flange, an outwardly-extending portion terminating in line with the outer edge of the rail-flange, said two members provided each with outwardly-extending registering lugs having registering bolt-holes therein, and bolts for securing said members together.

2. A splice-bar for railway-rails comprising two members, one of which is provided with a vertical flange having an outwardly-extending upper end to bear against the lower surface of the tread portion of the rail and against the web thereon and a portion extending around the flange of the rail and under the same to the opposite side thereof, and the other member comprising a vertical flange, and an outwardly-extending portion, said members having registering lugs extending outward and provided with registering bolt-holes, bolts passing through said holes, on a line beyond the outer edge of the rail-flange, bolts passing through the vertical flanges of the members and through the web of the rail, and nuts fitted to the bolts.

847,228. BELTING. JOHN L. BIXBY, Jr., River Forest, Ill. Filed Aug. 1, 1906. Serial No. 328,672.

Claim.—1. Rope belt having, in combination, an inextensible and laterally-flexible member; a flexible covering therefor presenting a continuous unitary surface; and a wear-resisting protector interposed between said member and the covering.

2. Rope belt having, in combination, an inextensible and laterally-flexible member; a covering therefor presenting an integral surface; and a layer of fabric interposed between said member and the covering.

3. Rope belt having, in combination, an inextensible and laterally-flexible member; a continuous flexible covering to protect said member externally; and a layer of knitted fabric interposed between said member and the covering and supplying a continuous wear-resisting protector therebetween.

4. Rope belt having, in combination, a chain; an enveloping medium; and a layer of wear-resisting material embedded in said medium.

5. Rope belt having, in combination, an inextensible and laterally-flexible member; auxiliary strengthening means to reinforce said member; a yielding covering for the whole; and a wear-resisting protector interposed between the covering and said member.

6. Rope belt having, in combination, an inextensible and laterally-flexible member; an auxiliary strand to reinforce said member; a yielding covering for the whole; and a layer of fabric interposed between the covering and said member.

7. Rope belt having, in combination, a chain; auxiliary strengthening means to reinforce the chain; an enveloping medium for the whole; and a layer of knitted fabric embedded in said medium.

8. Rope belt having, in combination, inextensible means constituting the main body of the core; wear-resisting material encircling said means; and rubber in the interstices of said means and said material.

9. Rope belt having, in combination, a chain; a filler of pliable material; a wear-resisting protector encircling the filler; and a yielding covering for the whole.

10. Rope belt having, in combination, a chain; a covering therefor; a split link for connecting the ends of the chain; and a covering for the split link.

11. Rope belt having, in combination, a chain; a split link for connecting the ends of the chain; and removable means for covering said split link and preserving the continuity of the surface of the rope belt.

12. Rope belt having, in combination, a chain *a*; strands *b*; a filler *c*; and a layer *d*.

13. Rope belt having, in combination, a chain *a*; a plurality of layers *d*; and cushions *e*.

14. Rope belt having, in combination, a chain *a*; a plurality of layers *d*; and covering *f*.

15. Rope belt having, in combination, a chain *a*; an enveloping medium; and a layer *d* embedded therein.

16. Rope belt having, in combination, a chain *a*; pliable material enveloping the chain; and a plurality of layers *d* embedded in said material and spaced apart therein.

17. Rope belt having, in combination, a chain *a*; a rubber compound enveloping the chain; and a layer *d* embedded in said rubber compound.

18. A rope belt, having in combination a chain; a plurality of auxiliary strengthening-strands, and a wear-resisting protector to oppose the wear of the chain, and a continuous unitary outer covering.

19. A rope belt having in combination, an inextensible and laterally-flexible member, a wear-resisting protector, and a flexible covering contractible and expansible on opposite sides to suit the curvature of a pulley while preserving a continuous surface for the rope belt, the protector serving to reinforce the covering against disruption caused by such contraction and expansion.

847,229. PUMPING-JACK. JAMES M. BRANAM, Carrollton, Ill. Filed Apr. 10, 1905. Serial No. 254,859.

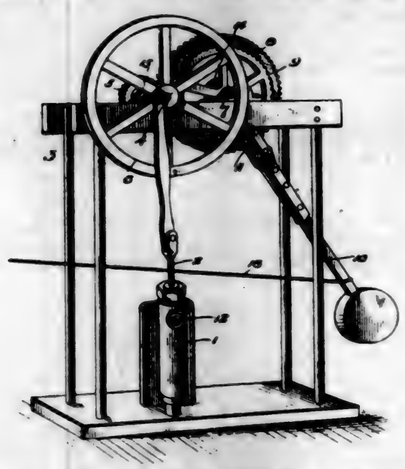

Claim.—The herein-described pumping-jack consisting of a frame, a crank-shaft 4 journaled on the frame, a pitman connected at one end to a crank-pin on said crank-shaft and at the opposite end to a connecting-rod 2, a fly-wheel 6 fixed to the crank-shaft, a pinion 5 fixed on said shaft, a power-shaft 7 journaled on said frame, a large gear-wheel 8 fixed to said power-shaft and in mesh with said pinion, a ratchet-wheel 9 fixed to the power-shaft at one side of said gear-wheel, a pendulum 10 provided with spaced arms pivoted to the power-shaft, and straddling said large gear-wheel and said ratchet-wheel, a pawl 11 pivoted between said arms and engaged with said ratchet-wheel to partially rotate it when the pendulum swings in one direction and a cord or cable 13 connected at a point near the lower end of the pendulum, and leading to a distance from the jack for operating the same, substantially as described.

847,230. APPARATUS FOR SORTING ARTICLES ACCORDING TO WEIGHT. LEOPOLD BROCKT, Breslau, Germany. Filed June 16, 1905. Serial No. 265,578.

Claim.—1. An apparatus for sorting articles according to weight, comprising a scale-beam, a pivotally-mounted, vertically-swinging feed-table having its free end supported by said scale-beam, and a plurality of superposed shelves arranged adjacent to the free or swinging end of said table to receive articles therefrom.

2. An apparatus for sorting articles according to weight comprising a scale-beam, a rising-and-falling feed-table mounted on one end of the beam, a series of weights adapted to be automatically imposed at intervals on the other end of the beam as the table is lowered more or less by articles of different weight, and means for receiving the articles from the feed-table at different heights according to their weight and conveying them away to separate piles.

3. An apparatus for sorting articles according to weight comprising a scale-beam, a rising-and-falling feed-table mounted on one end of the beam, and carrying an endless traveling band, a series of weights arranged above the other end of the scale-beam, means for supporting the weights at different heights above the scale-beam so that one or more act on the end of the beam according to the height to which it is raised, thus causing the feed-table to assume a series of definite positions according to the load upon it, a series of shelves arranged at different heights to receive the articles of different weight from the feed-table, and endless conveyers adapted to carry away the articles.

847,230.

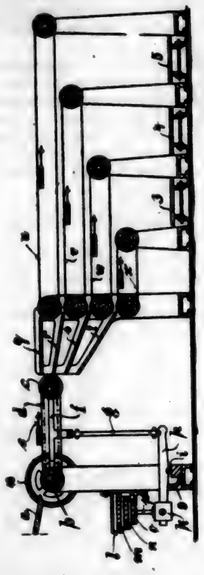

847,231. PNEUMATIC TIRE. ALEXANDER F. BRYCE, Chicago, Ill. Filed Jan. 30, 1906. Serial No. 298,624.

Claim.—1. In a pneumatic tire, the combination of an outer tube, a plurality of diaphragms dividing the interior of the tube into a plurality of compartments for containing pressure, and a collapsible and expansible conduit admitting pressure to a compartment and expanding the diaphragm, substantially as described.

2. In a pneumatic tire, the combination of an outer tube, a plurality of diaphragms dividing the interior of the tube into a plurality of compartments for containing pressure, and a plurality of collapsible and expansible conduits, each conduit having a hole for admitting pressure to a compartment and expanding the diaphragm, substantially as described.

3. In a pneumatic tire, the combination of an outer tube, a plurality of diaphragms dividing the interior of the tube into a plurality of compartments for containing pressure, a plurality of collapsible and expansible conduits, each conduit having a hole for admitting pressure to a compartment and expanding the diaphragm, and a pressure-supply tube for each conduit and diaphragm, substantially as described.

4. In a pneumatic tire, the combination of an outer tube, a plurality of diaphragms dividing the interior of the tube into a plurality of compartments for containing pressure, and a conduit bellows-foldable for admitting pressure to a compartment and expanding the diaphragm, substantially as described.

5. In a pneumatic tire, the combination of an outer tube, a plurality of diaphragms dividing the interior of the tube into a plurality of compartments for containing

pressure, and a plurality of conduits bellows-foldable, each conduit having a hole for admitting pressure to a compartment and expanding the diaphragm, substantially as described.

6. In a pneumatic tire, the combination of an outer tube, a plurality of diaphragms dividing the interior of the tube into a plurality of compartments for containing pressure, a plurality of conduits bellows-foldable, each conduit having a hole for admitting pressure to a compartment and expanding the diaphragm, and a pressure-supply tube for each conduit and diaphragm, substantially as described.

7. In a pneumatic tire, the combination of an outer tube, a plurality of diaphragms dividing the interior of the tube into a plurality of compartments for containing pressure, a plurality of conduits bellows-foldable for admitting pressure to a compartment and expanding the diaphragms of the compartment, and means for supplying pressure to each conduit and diaphragm independently, substantially as described.

847,232. APPARATUS FOR COOLING, MOISTENING, AND PURIFYING THE AIR IN ROOMS. DORA BUHLMANN, Kaiserslautern, Germany. Filed Feb. 23, 1905. Serial No. 246,918.

Claim.—1. An apparatus for cooling, moistening and purifying the air in rooms, consisting of an outer case *a* having double walls made of insulating material, the space between them containing an insulating medium, a cooling vessel *f* provided with openings in its bottom and divided into compartments by perforated partitions allowing a mingling of their contents, an air-passage *d* below this vessel, a tank *h* with a perforated bottom below this passage, a sliding device *n*, whereby the openings immediately above and below it may be stopped, or partly stopped, a perforated partition below this device, an open-sided receptacle *e* below this partition constructed to allow free ingress and egress of water and air, an air-passage *p* below this receptacle with a perforated floor, a tank *s* below this passage, a force-pump *u* and a pipe *t* for raising water from this tank to the vessel *h* and a rotary ventilating-pump *b* to draw air through one or more openings into the apparatus, the whole substantially as described and as shown in the accompanying drawings.

2. In an apparatus for cooling, moistening and purifying the air in rooms, the combination with an outer case *a* having double walls made of insulating material, the space between them containing an insulating medium, of a cooling vessel *f* provided with openings in its bottom and divided into compartments by perforated partitions, the outermost compartment *g* being destined to contain ice, the intermediate compartment *h* to contain water and the innermost compartment *i* to contain salt, ammonia nitrate, or other refrigerating substance, an air-passage *d* below the vessel *f*, a tank *h* with a perforated bottom destined to receive substances falling from the vessel *f* and to hold a layer of ice or other suitable refrigerating substances, a sliding device *n* for closing or partly closing the openings *m* immediately above and below it, an open-sided receptacle *e* below, a perforated partition *l* intervening between it and the tank *h*, said receptacle *e* containing portions of tree-branches, brambles, or an equivalent artificial structure and constructed to allow the free passage through it of water and air, an air-passage *p* below this receptacle, with a perforated floor on which may be deposited a layer of ice, a tank *s* below this passage, a force-pump *u* and a pipe *t* for raising water from this tank to the vessel *h* and a rotary ventilating-pump *b* to draw air through one or more openings into the apparatus, the whole substantially as described and as shown in the accompanying drawings.

847,233. PNEUMATIC-DESPATCHING-TUBE SYSTEM. CHARLES H. BURTON, New York, N. Y., assignor to John M. Thurston, trustee, Washington, D. C. Filed Dec. 19, 1906. Serial No. 348,622.

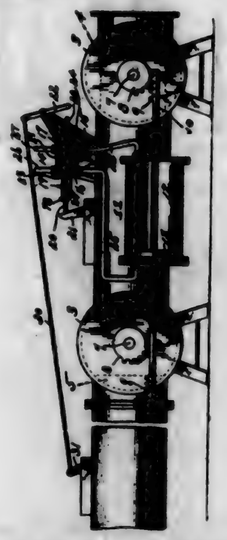

Claim.—1. In a pneumatic-despatch system, the transmission-tube, and a carrier-station comprising a trap-casing, opposite reversely-arranged trapping-valves each of which carries a gear, a reciprocating valve-shifting rod having opposite rack-sections respectively engaging the gears of the opposite valves, said rack-sections being spaced a greater distance apart than the opposite gears, and a pneumatic operating-motor for said rod.

2. In a pneumatic-despatch system, the transmission-tube, and a carrier-station comprising a trap-casing, opposite trapping-valves, a valve-shifting rod, a double-acting pneumatic operating-motor for said rod, a motor-controlling device having a shiftable valve comprising means for establishing a power and a relief connection with each end of the motor-cylinder, a carrier-actuated trigger within the trap-casing for operating said motor-controlling valve in one direction, and a valve-return trigger arranged beyond the trap-casing and adapted to actuate said motor-controlling valve in the opposite direction.

847,234. PNEUMATIC-DESPATCH CARRIER. CHARLES H. BURTON, New York, N. Y., assignor to John M. Thurston, trustee, Washington, D. C. Filed Dec. 19, 1906. Serial No. 348,623.

Claim.—1. In a carrier, the carrier-body having an opening, a door for the opening having a hasp connection at one side with the carrier-body, and a detachable locking device mounted on the door-body and having a bolting engagement with the carrier-body opposite said hasp connection.

2. In a carrier, a carrier-body having an opening, a door for the opening having a detachable hasp connection at one side with the carrier-body, and a detachable locking device having a detachable locking engagement with the door-body and a bolting engagement with the carrier-body.

3. In a carrier, the carrier-body having an opening, a door for the opening having a plurality of catch-openings and a plurality of keeper-openings, a fastener-bar having bolting-arms adapted to be inserted through said keeper-openings and behind one edge of the opening in the carrier-body, a sliding bolt coupled to the fastener-bar and having a series of locking-hooks adapted to engage within said catch-openings, and a spring-latch arranged to temporarily lock together said fastener-bar and securing-bolt.

4. In a carrier, the carrier-body having an opening, and near one edge of the latter a series of keeper-openings, the door carrying at one side a plurality of of hasp-bars having projecting ends adapted to be inserted through said keeper-openings, and a locking device having a detachable locking engagement with the door-body and a bolting engagement with the carrier-body.

847,235. DRIVE-CHAIN. WILLIAM M. BUTLER, Hartford, Conn., assignor to The Whitney Manufacturing Company, Hartford, Conn., a Corporation. Filed Oct. 27, 1906. Serial No. 340,852.

Claim.—1. In a sprocket-chain of the class described, means for securing certain links of the same together, said means including a toggle-link for engaging the adjacent chain-pins, and means for locking the toggle-link in place on said pins.

2. An improvement in sprocket-chain-fastening devices, the same consisting of toggle-links provided with passage-ways at their outer ends, pivotal means for securing the same together, there being means on one of the links of the chain for receiving the inner end of the pivot, as described.

3. An improvement in fastening means for sprocket-chains the same including toggle-links, the outer ends of the same having passage-ways, the adjacent chain-pins having an annular groove for receiving the passage-ways of the links, and means for holding the links in extended position, as described.

4. A sprocket-chain connector comprising a toggle-link having means to engage portions of the chain.

5. A sprocket-chain connector comprising pivoted toggle-links having means to engage portions of the chain.

6. A sprocket-chain connector comprising toggle-links, the ends of which are slotted to engage portions of the chain.

7. A sprocket-chain connector comprising toggle-links, the ends of which are provided with means for engaging the connecting-pins of the chain.

847,236. ORE-CONCENTRATOR. ALONZO C. CAMPBELL, Asheville, N. C. Filed Feb. 17, 1904. Renewed Sept. 14, 1906. Serial No. 334,599.

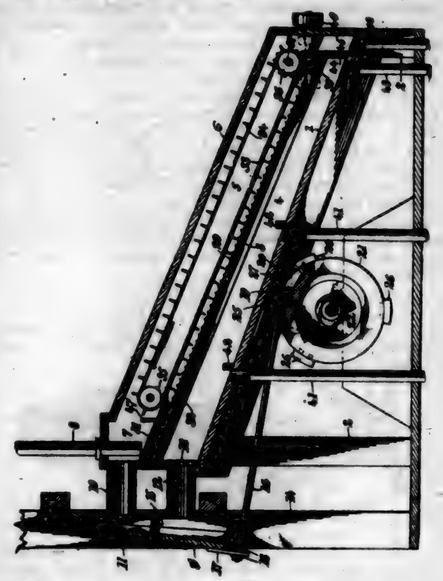

Claim.—1. An ore-concentrator comprising a casing, a series of riffles arranged at a downward incline in said casing, a compressor at one end of the casing having communication with the casing above and below the riffles, and oppositely-opening valves for controlling said communications.

2. An ore-concentrator comprising an air-tight casing, a series of overlapping riffles having a downward incline in said casing, a compressor at one end of the casing communicating with said casing above and below the riffles, a retarding-conveyer operating in the chamber above the riffles and a worm-gearing for operating the conveyer.

3. An ore-concentrator comprising an air-tight casing, a series of overlapping riffles having a downward incline in said casing, a compressor at one end of the casing communicating with said casing, above and below the riffles, and a retarding-conveyer operating in the chamber above the riffles with a slow motion.

4. A jig or concentrator having superimposed overlapping spaced perforated riffles.

5. A jig or concentrator having overlapping perforated riffles spaced one above another and having upturned portions at the outlet ends.

6. In a jig or concentrator, a series of riffles consisting of overlapping plates, the series being arranged at a downward angle toward the outlet end, and each riffle being inclined slightly upward toward its outlet end.

7. In a concentrator, a casing, a series of riffles in the casing, an air-compressor having communication with the casing above and below the riffles, an actuating-wheel having a peripheral channel, an abutment arranged in said channel, the channel being deepened at the engaging side of the abutment, and a compressor-actuating rod operated by engaging with the said abutment.

8. A concentrator comprising a casing, riffles in the casing, an air-compressor having communication with the casing, an actuating-wheel having a peripheral channel, a bolt extended across said channel and forming an abutment, a rod having a hook end for engaging with said abutment, a connection between the other end of said rod and the compressor, and means carried by said actuating-wheel for imparting vibratory motion to the concentrator.

9. A concentrator comprising a casing, a series of riffles in the casing dividing it into upper and lower chambers, an air-compressor, a pliable pipe providing communication between the compressor and the lower chamber, multiple valves at the end of said pipe within the chamber, a pliable pipe providing communication between the compressor and the upper chamber, and valves at the end of said pipe within the compressor.

10. A concentrator comprising a casing, a series of riffles arranged therein, an air-compressor having communication with the casing above and below the riffles, the said compressor consisting of a bellows, a rod extended from the movable part of said bellows and having a hook end, an actuating-wheel having a peripheral channel for receiving said hook end, an abutment in the channel for engaging with the hook end, tappet-blocks arranged at intervals on the periphery of the wheel, and a spring-plate secured to the bottom of the casing for engagement with said tappet-blocks.

847,237. PRINTING OR ENGRAVING BLOCK. CHARLES E. CARLSON, Chicago, Ill. Filed Oct. 17, 1905. Serial No. 283,157.

Claim.—As a new article of manufacture, a printing or engraving block comprising a backing, a plate secured to the backing and consisting of a paper-board having a bibulous body portion and a relatively hard-finished face, the face portion being cut down to the bibulous body portion to form an engraved printing-surface and being provided with a finishing-coating of a smooth-drying paste, a portion of the paste saturating the bibulous body portion at the bases of the incisions, and binding and hardening the edges of the latter, substantially as described.

847,238. VENTILATING SYSTEM FOR VEHICLES. SAMUEL C. CARROLL, Dallas, Tex. Filed July 8, 1905. Serial No. 268,807.

Claim.—1. In a vehicle, the combination with an air-pump and means actuated by the motion of the vehicle for operating said pump, of an inlet-pipe, an outlet-pipe and means for connecting said outlet-pipe with either the interior of the vehicle or the outer atmosphere, substantially as described.

2. In a vehicle, the combination with an air-pump and means actuated by the motion of the vehicle for operating said pump, of an inlet-pipe extending from said air-pump through the wall of said vehicle at a point near the bottom thereof, an outlet-pipe extending from said pump through the wall of the said vehicle near the top thereof, and a valve in said outlet-pipe intermediate the ends thereof for connecting said pump with either the outer atmosphere or the interior of said vehicle, substantially as described.

3. In a vehicle the combination with an air-pump, means for operating the same and an inlet and an outlet pipe, of a valve in said outlet-pipe comprising an outer cylinder extending across said pipe and beyond the periphery thereof, openings in the periphery of said cylinder in alinement with said pipe and openings in the outer end of said cylinder, an inner cylinder within said outer cylinder, openings in the periphery of said inner cylinder adapted to register with the openings in the periphery of said outer cylinder, openings in the outer end of said inner cylinder adapted to register with the opening in the end of said outer cylinder when the openings in the peripheries of said cylinders are out of alinement, and means for rotating said inner cylinder, substantially as described.

4. In a vehicle the combination with an air-circulating system, of an air-pump connected therewith and placed under the seat of the vehicle and adapted to be operated by the weight of the passenger in connection with the motion of the vehicle, substantially as described.

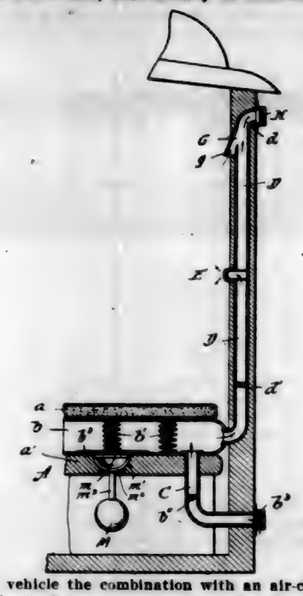

5. In a vehicle the combination with an air-circulating system, of a bellows connected therewith and adapted to carry the weight of the passenger and to be operated by the rise and fall of said weight due to the motion of the vehicle, substantially as described.

6. In a vehicle the combination with an air-circulating system and the vehicle-seat, of a bellows forming a part of said seat and connected with said circulating system, said bellows being actuated by the movement of the passenger due to the motion of the vehicle, substantially as described.

7. In a vehicle the combination with an air-circulating system, the vehicle-seat and the cushion therefor, of a bellows located between said seat and said cushion and connected with said circulating system, said bellows being actuated by the movement of the passenger occupying the seat due to the motion of the vehicle, substantially as described.

8. In a vehicle the combination with an air-circulating system and a two-part seat, of a collapsible bag located between the parts of said seat and connected with said circulating system, and springs for holding said bag in a distended position, said bag being actuated by the movement of the person occupying the seat due to the motion of the vehicle, substantially as described.

9. In a vehicle the combination with an inlet-pipe and an outlet-pipe extending through the wall of said vehicle near the top thereof, of an elongated hood secured to said vehicle and inclosing the end of said outlet-pipe, said hood being of a depth equal to the diameter of said outlet-pipe and of less diameter at the center than at the ends thereof, substantially as described.

10. In a vehicle the combination with an air-circulating system and the vehicle-seat, of a bellows forming a part of said seat and connected with said circulating system, said bellows being actuated by the movement of the person occupying the seat caused by the motion of the vehicle and additional means actuated by the movement of the vehicle for actuating the bellows.

11. In a vehicle the combination with an air-circulating system and the vehicle seat, of a bellows forming a part of said seat and connected with said circulating system, said bellows being actuated by the movement of the person occupying the seat caused by the motion of the vehicle and additional means actuated by the movement of the vehicle for actuating the bellows, said means consisting of a weight having a semispherical head carried by the seat, said head actuating the bellows when the weight oscillates.

847,239. VIBRATORY MASSAGE INSTRUMENT. BENJAMIN T. CASTLEMAN, St. Louis, Mo. Filed Apr. 9, 1906. Serial No. 310,787.

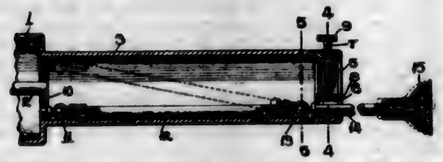

Claim.—1. In a device of the class described, the combination with a motor-shaft and motor-casing, of a tubular handle, an adjustable bearing in the outer end thereof, a shaft arranged for reciprocation in said bearing, an applicator carried by the outer end of said shaft, a disk carried by the end of the motor-shaft in the opposite end of the handle, and a shaft connected by the ball-and-socket joint to the rear end of the first-mentioned shaft and to the disk; substantially as specified.

2. In a device of the class described, the combination with a motor-shaft and motor-casing, of a tubular handle carried by the motor-casing, a disk carried by the end of the motor-shaft, a bearing arranged for transverse adjustment in the front end of the handle, a shaft arranged for longitudinal reciprocation in the bearing, an applicator carried by the outer end of said shaft, and a shaft connecting the rear end of the first-mentioned shaft with the disk of the motor-shaft; substantially as specified.

3. In a device of the class described, the combination with a motor-shaft and motor-casing, of a tubular handle carried by the motor-casing, there being a transverse slot formed in the forward end of the handle, a bearing-block arranged for movement in said slot, means whereby said bearing-block is adjustable in said slot, a shaft arranged for reciprocation in the bearing-block, an applicator carried by the forward end of the shaft, a disk carried by the end of the motor-shaft in the opposite end of the handle, and a shaft connecting the rear end of the first-mentioned shaft with the disk; substantially as specified.

4. In a device of the class described, the combination with a motor-shaft and motor-casing, of a handle, an adjustable bearing in one end thereof, a shaft arranged for reciprocation through said bearing, an applicator carried by the outer end of the shaft, a rotating member carried by the motor-shaft in the opposite end of the handle, and a connection between said member and the rear end of the reciprocating shaft whereby said shaft is reciprocated by the rotary motion of the member carried by the motor-shaft; substantially as specified.

847,240. AMUSEMENT DEVICE. EDWARD N. CHAMBERLAIN, Natchez, Miss. Filed Nov. 28, 1906. Serial No. 345,516.

Claim.—1. A sounding toy consisting of a collapsible and self-expanding bulb of normally greater vertical diameter than the height of an ordinary shoe-heel and of size to be accommodated between the heel and sole and having therein an opening in which is arranged an air-operated sounding device, and an attaching-band, to fit a shoe and connected to the bulb in such position as to bring the opening therein at the side of the shoe when the bulb is applied thereto.

2. As an improved article of manufacture, the sounding toy hereinbefore described, comprising a collapsible and self-expanding air-bulb having an air-inlet and an air-outlet provided with an air-operated sounding device, and means for attaching the bulb to a shoe said inlet and outlet being in the side of the bulb which is adjacent to the

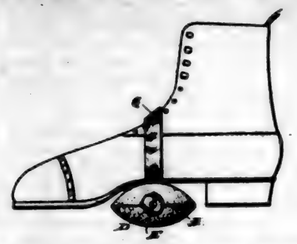

side of the shoe when the bulb is in use, as shown and described.

847,241. WAIST-SHIELD. MARY L. COCHRAN, Thomasville, Ga. Filed May 14, 1906. Serial No. 316,781.

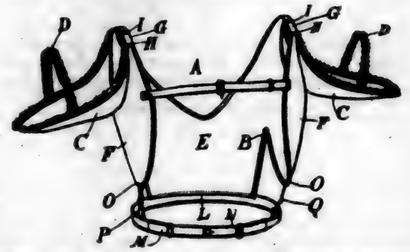

Claim.—1. In a device of the class described, integrally-formed back and side portions, there being a V-shaped notch at the junction of the said back and side portions, arm portions, adjustable elastic means for securing the back portions to the upper forward parts of the side portions, a chest-strap, and a waistband, all substantially as described and for the purpose set forth.

2. In a device of the class described, back, side and arm portions formed of waterproof material, adjustable elastic means connecting the back portion to the front of the side portions and adapted to extend over the shoulders of the wearer, a strap connecting the upper parts of the side portions together across the chest of the wearer, and an adjustable waistband secured to the lower part of the back portion, and means for connecting the waistband to the lower parts of the side portions.

847,242. AMUSEMENT DEVICE. HARRY F. CRICKLER, Wilkes-Barre, Pa., assignor to George K. Brown and Frank B. Brown, Wilkes-Barre, Pa. Filed Mar. 15, 1906. Serial No. 306,294.

Claim.—1. In a device of the class described, a frame, a rotatable article-carrier mounted upon the frame, a positively-driven member, a target, and means whereby the striking of the target causes the moving member to connect with and to operate the article-carrier.

2. In a device of the class described, a frame, an article-carrier mounted to rotate upon the said frame, and provided with a plurality of engaging lugs, a positively-driven member provided with means for engaging the lugs, a target, and means whereby striking the target operates the means for engaging the lug.

3. In a device of the class described, a frame, an article-carrier mounted to rotate upon the frame, and provided with a plurality of article-receiving apertures, a chute provided with an opening positioned to register with the apertures of the article-carrier, a positively-driven member, a target, and means whereby striking the target connects the driven member with and to rotate the article-carrier.

4. In a device of the class described, a frame, a disk

mounted to rotate upon the said frame and provided with a plurality of article-receiving apertures, a positively-driven member, a target, and means whereby striking the target connects the target member with and to rotate the disk.

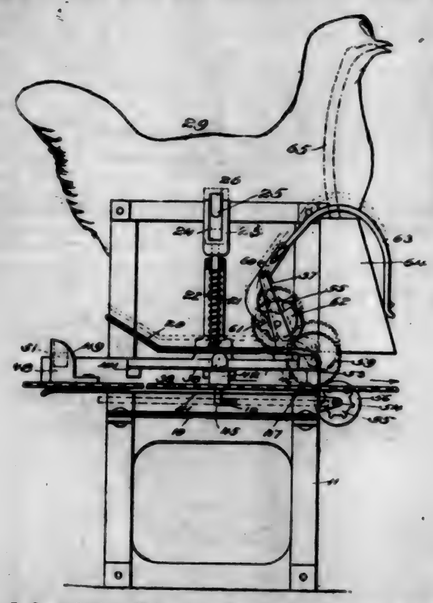

5. In a device of the class described, a movable article-carrier, a positively-driven member adjacent the article-carrier, detents carried by the driven member, a cam arranged to engage the detents, and to throw the said detents into engagement with the article-carrier, a plunger carrying the said cam, a trigger arranged to engage the plunger to hold the cam normally inoperative, and means to release the trigger.

6. In a device of the class described, a frame, an article-carrier mounted to rotate upon the said frame, and provided with a plurality of article-receiving apertures, a chute carried by the said frame and positioned to register with the apertures, a positively-driven member adjacent the article-carrier, means carried by the driven member to engage and rotate the article-carrier, and means to operate the engaging means.

7. In a device of the class described, a frame, a disk mounted to rotate upon the frame and provided with a plurality of article-receiving apertures, and a similar number of engaging lugs, a positively-driven member adjacent the disk, detents carried by the driven member and positioned to engage the lugs, a target, and means whereby the striking of a target operates the detents to engage the lugs.

8. In a device of the class described, a frame, an article-carrier mounted upon the frame, a positively-driven member adjacent to and arranged to operate the article-carrier, a plunger mounted upon the frame and arranged for longitudinal reciprocation, a cam carried by the plunger and arranged to throw the driven member into operative contact with the article-carrier, a trigger arranged to engage the plunger and to hold the cam in normally inoperative position, a target carried by the trigger, and means carried by the driven member to rotate the device.

9. In a device of the class described, an article-carrier, a positively-driven member disposed adjacent the article-carrier, detents carried by the driven member and positioned to engage and operate the article-carrier, a plunger mounted upon the frame, a cam carried by the plunger and positioned to engage and operate the detent, a trigger arranged to engage the plunger and retain the cam in inoperative position, a latch arranged to engage the trigger, and hold the same in inoperative position, a cam arranged to operate the latch, and a detent carried by the driven member to operate the cam, and to reset the parts.

10. In a device of the class described, a positively-driven member, an air-compressor, a plunger, means carried by the plunger to engage the driven member and to operate the compressor, a trigger arranged to hold the plunger in a normally inoperative position, and a target connected with the trigger.

11. In a device of the class described, a frame, an air-compressor mounted upon the frame, a positively-driven member mounted adjacent the air-compressor, a plunger mounted for movement adjacent the driven member, means carried by the plunger to engage the driven member, and to operate the air-compressor, a trigger carried by the frame arranged to engage and hold the plunger normally in inoperative position, and a target connected with the trigger.

12. In a device of the class described, a frame, an article-carrier mounted to rotate upon the frame, a positively-driven member adjacent the article-carrier, an air-compressor mounted upon the frame in juxtaposition to the driven member, a plunger mounted upon the frame, means carried by the plunger for engaging the driven member and operating the air-compressor, a cam carried by the plunger, means carried by the driven member for engaging the cam and operating the article-carrier, a trigger arranged to hold the plunger in a normally inoperative position, and a target carried by the trigger.

847,243. KNITTING-MACHINE. JOSEPH J. CURRY, Philadelphia, Pa. Filed May 22, 1906. Serial No. 318,218.

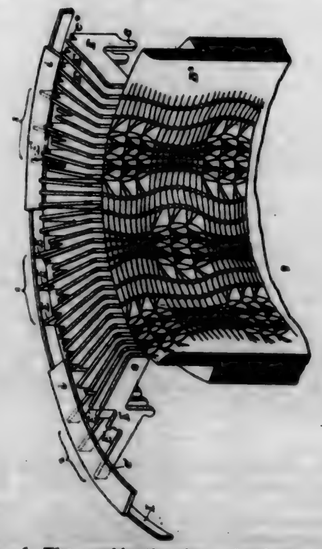

Claim.—1. The combination in a circular-knitting machine, of a series of needles, tucking-jacks and plain jacks operating upon the needles, a shogging-ring, a segmental plate intervening between the shogging-ring and the tucking-jacks, means for shifting said plate circumferentially, and means for vertically moving the shogging-ring to depress the plate, whereby certain tucking-jacks will be actuated by the shogging-ring through the intervention of the plate leaving other jacks free, substantially as described.

2. The combination in a circular-knitting machine, of needles, tucking-jacks, a plate-ring having segmental flanges extending over a portion of the jacks, a shogging-ring above the plate-ring, means for moving the shogging-ring vertically, and means for shifting the plate-ring so that a portion of the jacks will be actuated by the shogging-ring through the plate-ring while other portions will remain in their normal position, substantially as described.

3. The combination in a circular-knitting machine, of needles, a series of tucking-jacks arranged in groups, a plate-ring having a series of segmental flanges arranged to cover the alternate groups of tucking-jacks, means for shifting the said plate-ring from one group of jacks to the other, a shogging-ring, and means for raising and lowering the said shogging-ring to actuate the jacks covered by the segmental flanges of the plate-ring, substantially as described.

4. The combination in a circular-knitting machine, of a series of tucking-jacks and blind-jacks, the tucking-jacks being arranged in groups, a plate-ring having a series of segmental flanges extending over the rear portions of the tucking-jacks, means for shifting said ring to cover a certain group of jacks at one time and another group of jacks at another time, a shogging-ring mounted above the plate-ring, and means for imparting a reciprocating motion to the shogging-ring, and cams for converting the reciprocating motion into a vertical motion so as to actuate the tucking-jacks through the medium of the flanges of the plate-ring, substantially as described.

5. The combination in a circular-knitting machine, of the needles, tucking-jacks having rear extensions, a plate-ring having segmental flanges extending over the rear extensions of the tucking-jacks, the said segmental flanges being spaced a given distance apart, a shogging-ring mounted above the plate-ring, means for imparting a vertical movement to the shogging-ring, a pattern-wheel, a needle-carrier, means actuated by the needle-carrier for shifting the plate-ring, and means controlled by the pattern-wheel for throwing the operating means into and out of gear, substantially as described.

6. The combination in a circular-knitting machine, of the needles, tucking-jacks having rear extensions, a plate-ring having segmental flanges extending over the rear extensions of the tucking-jacks, said plate-ring made in halves, a shogging-ring mounted above the plate-ring and also made in halves, the halves of the shogging-ring aligning with the halves of the plate-ring when in central position, means for actuating the shogging-ring, and means for turning the plate-ring, substantially as described.

7. The combination in a circular-knitting machine, of the tucking-jacks, a plate-ring having flanges extending over the jacks, a shogging-ring mounted above the plate-ring, means for imparting vertical motion to the shogging-ring, a needle-carrier, a pivoted lever having an arm engaged by the needle-carrier, a pattern-wheel, a pawl on one of the arms of the lever engaging teeth on the pattern-wheel, a pawl on one of the other arms of the lever, a ratchet-wheel with which said pawl is arranged to engage, means connecting said ratchet-wheel with the plate-ring, and means for keeping the pawl out of engagement with the ratchet-wheel during certain portions of the movement of the machine, said means being controlled by the pattern-wheel, substantially as described.

8. The combination in a circular-knitting machine, of tucking-jacks, a plate-ring having segmental flanges extending over the tucking-jacks, a shogging-ring mounted above the plate-ring, means for imparting motion to the shogging-ring to actuate those jacks directly under the flanges of the plate-ring, a needle-carrier, a pattern-wheel, a rock-shaft, three arms on said rock-shaft, one arm engaging the needle-carrier so as to impart a rocking motion to said shaft, a pawl pivoted to another arm and engaging the teeth of the pattern-wheel, another pawl pivoted to another arm, a ratchet-wheel with which said pawl engages, a shaft on which said ratchet-wheel is mounted, a vertical shaft, gearing between said ratchet-wheel shaft and the vertical shaft, a disk on the vertical shaft, a crank-pin on the disk, a rod connecting the crank-pin with the plate-ring, a notched disk situated at the side of the ratchet-wheel so as to keep the pawl out of engagement with the ratchet during a certain portion of the operation of the machine, a lever connected to the said ratchet-disk, and a pin on the pattern-wheel arranged to actuate the lever and shift the notched disk so that the pawl will turn the ratchet-wheel and impart motion to the plate-ring, substantially as described.

9. The combination in an automatic circular-knitting machine, of the needle-cylinder, bearded needles mounted therein, a cylinder-head, tucking-jacks pivoted on said head arranged to act upon the beards of the needles and having rear extensions, a sinker-head, a shogging-ring mounted in the sinker-head, means for imparting combined reciprocating and vertical movement to the shogging-ring, a plate-ring mounted under the shogging-ring, said plate-ring having segmental flanges projecting into the space between the rear extensions of the tucking-jacks and the shogging-ring, means for turning the said plate-ring so that the plates can be shifted from one tucking-jack or sets of tucking-jacks to another tucking-jack or sets of tucking-jacks, substantially as described.

10. The combination in an automatic circular-knitting machine, of the needle-cylinder, bearded needles therein, a cylinder-head, tucking-jacks pivoted to the said head and arranged to act upon the beards of the needles, said tucking-jacks having rear extensions, a plate-ring having segmental flanges extending over the rear extensions of the tucking-jacks, a shogging-ring mounted above the plate-ring, means for imparting a vertical movement to the shogging-ring, needle-carriers, a pattern-wheel, connections between the pattern-wheel and the shogging-ring whereby the shogging-ring is actuated, a rock-shaft, an arm on the rock-shaft engaging a pin on one of the needle-carriers, another arm on the rock-shaft, a pawl pivoted to said arm and engaging the teeth of the pattern-wheel and through which motion is imparted to the pattern-wheel, a third arm on the rock-shaft, a pawl on said arm, a ratchet-wheel with which said pawl engages, a shaft carrying said ratchet-wheel, a vertical shaft, a disk on said shaft, gearing between the disk-shaft and the ratchet-wheel shaft, a crank-pin on the disk-shaft, a connecting-rod coupling the crank-pin to the plate-ring, a notched disk at one side of the ratchet so shaped that it will hold the plate out of engagement with the teeth of the ratchet-wheel when in one position and will allow the pawl to engage the teeth when in another position, a pivoted lever connected to the said disk, a spring connected to the lever for returning the lever and its disk to normal position, and a pin on the pattern-wheel for operating the lever to shift the disk, substantially as described.

847,244. BUTTER WEIGHING AND COMPUTING DEVICE. DAVID F. CURTIN, St. Louis, Mo. Filed July 7, 1906. Serial No. 325,152.

Claim.—1. A device for cutting, weighing and computing the price of butter, &c., comprising a tubular cup open at its lower end, a tubular piston or plunger, the side wall of which has a vertical slot, said plunger adapted to slide air-tight within said cup, and means coacting with said plunger and slot for regulating and governing the degree of movement of said piston or plunger.

2. A device for cutting, weighing and computing the price of butter, &c., comprising a tubular cup open at its lower end, a tubular plunger fitted to slide air-tight therein, and having a vertical slot in its side wall, a stop member connected with said slotted plunger to limit its downward movement, and another stop member slidably held in said vertical slot to limit the upward movement of the plunger, and graduations on said plunger indicative of weight and price.

3. A device for cutting, weighing and computing price of butter, &c., consisting of a tubular cup open at its lower end, a plunger fitted to slide air-tight therein, a stop member connected with said plunger to limit its downward movement, and another stop to limit its upward movement, and graduations on said plunger indicative of weight and price.

4. A device for cutting, simultaneously weighing and

computing the price of butter, consisting of a tubular cup open at its lower end, a piston fitted to slide air-tight therein, a piston-rod projecting through the top of said cup, and provided with graduations indicating weight and price on its outer face, a rod slidably fitted in one side of said piston-rod, said slidable rod having a projecting stop at its lower end, and secured to a ring slidably mounted on the piston-rod above the cup, said ring also provided with graduations indicating price.

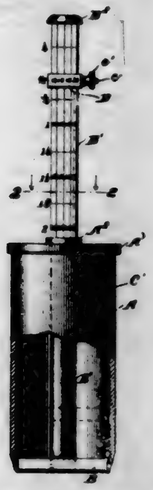

5. In a device for cutting, weighing and computing the price of butter, &c., and comprising a tubular cup open at its lower end and a tubular plunger fitted to slide air-tight in said cup, a graduated scale indicating weight and price delineated on the outer surface of said tubular plunger.

847,245. VEHICLE-WHEEL. PETER E. DAWSON, Hancock, Md. Filed Aug. 29, 1906. Serial No. 332,418.

Claim.—1. The improved wheel comprising an inner rigid wheel and an outer inclosing elastic rim consisting of a tire which is grooved interiorly, rigid metal plates secured to the sides of the felly of the inner wheel and projecting outwardly therefrom, a series of curved and overlapping plates pivoted to and between the side plates, and spring attachments connected with such curved plates and with the rim of the inner wheel, whereby the curved plates are pressed outward and serve to hold the elastic tire duly distended, substantially as described.

2. The improved wheel comprising an inner part having a concentric rim, an outer elastic part comprising a tire, a series of pivoted, curved, and overlapping plates pivotally connected with the rim of the inner wheel and bearing outward against the tire, and springs arranged between the pivoted plates and the rim of the inner wheel, for exerting pressure outward, substantially as described.

3. The improved wheel comprising a rigid inner portion having a concentric rim, an elastic outer portion comprising a grooved or trough-shaped tire, side plates secured to the rim of the inner portion and to the overlapping edges of the elastic tire, curved spring-plates pivoted to and between such side plates, springs applied between the curved plates and the rim of the inner portion, and antifriction-bearings comprising balls arranged in grooves between the overlapping plates, substantially as described.

4. In a wheel of the class indicated, the combination, with a rigid inner portion having a concentric rim, and annular side plates secured to the said rim, of curved plates pivoted to and between such side plates, an elastic tire which is grooved interiorly and applied over the overlapping plates and extended downward on the side plates and secured thereto, bolts attached to said curved plates and passing through the rim of the inner portion, and springs applied to such bolts exterior to said rim, substantially as described.

5. In a wheel of the class indicated, the combination, with the inner rigid wheel having a concentric rim provided with radial recesses and metal plates secured to the sides of said rim and projecting outwardly therefrom, of curved plates which are pivoted to and between said side plates, bolts attached to the said plates and passing through the rim of the inner wheel and two spiral springs applied to said bolts, one exterior to, and the other interior of, the inner wheel-rim, substantially as described.

6. In a wheel of the class indicated, the combination, with the rigid inner wheel, of annular plates secured to its concentric rim and extending outward and parallel, curved plates pivoted to and between such side plates, bolts connected with the curved plates and passing through the rim of the inner wheel, springs applied to such bolts, an elastic tire applied over the curved plates and extending inward and detachably connected with the outer portions of the side plates, and caps applied over the inner ends of the bolts, for excluding dust, substantially as described.

7. An improved wheel comprising a rigid inner portion having a concentric rim, a series of curved plates pivotally connected with said rim, bolts connected with the curved plates and the rim of the inner wheel, and springs applied to said bolts exteriorly and interiorly of the rim of the inner wheel, substantially as described.

8. In a wheel of the class indicated, the combination, with an inner rigid frame, of a series of curved spring-plates which are pivotally connected at one end with said frame and overlap each other as described, and a spring attachment comprising bolts and springs connected with the curved plates and the inner frame, substantially as described.

847,246. DUST-PROTECTOR FOR POOL AND BILLIARD TABLES. LOUIS J. DIRAND, Torrington, Conn. Filed Apr. 26, 1906. Serial No. 313,830.

Claim.—1. In dust-protectors for pool and billiard tables, brackets, arms pivotally mounted on the brackets, a spring-roller supported by the arms, a cover attached to the roller, and automatically-acting spring locking devices carried by the brackets and engaging with said arms.

2. In dust-protectors for pool and billiard tables, pivoted roller-carriers adapted to occupy an upper and a lower position, automatic means for locking the carriers in either position, a spring-roller mounted to turn in said carriers, and a cover an end of which is secured to the said roller.

3. In dust-protectors for pool and billiard tables, roller-carriers, brackets to which the roller-carriers are pivoted, the brackets limiting the movement of the roller-carriers, a spring-roller mounted between the said carriers, a cover attached to the said roller, and locking devices for the roller-carriers, which locking devices are located on said brackets and act automatically on the roller-carriers.

4. In dust-protectors for pool and billiard tables, brackets, arms pivotally mounted on the brackets, a frame supported by the said arms, a spring-roller mounted to turn in the said frame, a cover attached to the said roller, and automatically-acting spring locking devices carried by the brackets and engaging with said arms.

847,247. CAR-FENDER. JOHN H. DIXON, Pittsburg, Pa. Filed Aug. 3, 1905. Serial No. 272,601.

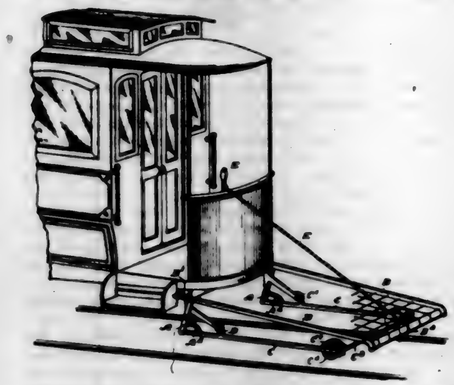

Claim.—1. A device of the class described having a controller pivotally mounted on levers above the fulcrum of the levers and a normally suspended fender pivotally mounted on said levers below their fulcrum, for the purpose and substantially as described.

2. A device of the class described having a controller pivotally mounted on levers above the fulcrum of said levers and normally supported against stops and a fender disposed below said controller and mounted on said levers below their fulcrum and having track-wheels near the ends of said fender, for the purpose and substantially as described.

3. A device of the class described having a controller pivotally mounted on levers above the fulcrum of said levers and a fender normally suspended below said controller and mounted on said levers below their fulcrum and having track-wheels near the ends of said fender, for the purpose and substantially as described.

4. A device of the class described having levers disposed in pairs and pivotally mounted in brackets, a controller pivotally connected with one end of said levers and a fender pivotally connected with the opposite end of said levers, for the purpose and substantially as described.

847,248. HORSE-COLLAR. HERMAN A. FONTEINE, Auburn, N. Y., assignor of one-half to Dan. W. Kellogg, Auburn, N. Y. Filed Jan. 22, 1906. Serial No. 297,292.

Claim.—1. A horse-collar having shoulder-pads; springs forming the base of said pads; the said pads being cloth covered; wires encompassed by the cloth, surrounding the edges of the collar, and the springs being reduced in width at their ends, which reduced portions are bent around the cloth-encompassed wires, nipping the same.

2. The combination, in a horse-collar, of cloth-covered shoulder-pads; springs, and an encircling band, forming the base of the pad; and wires encompassed by the cloth, and surrounding the collar at its edges; the springs being bent at their ends to nip the said cloth-encompassed wires.

3. The combination, in a horse-collar, of cloth-covered shoulder-pads; the springs and encircling band, forming the base of the pad; wires encompassed by the cloth, and surrounding the collar at its edges; the springs being bent at their ends to nip the said cloth-encompassed wires; and stuffing for the pad extending from the upper edge of the encircling band to a short distance back of the rear edge of the collar and ends of the springs.

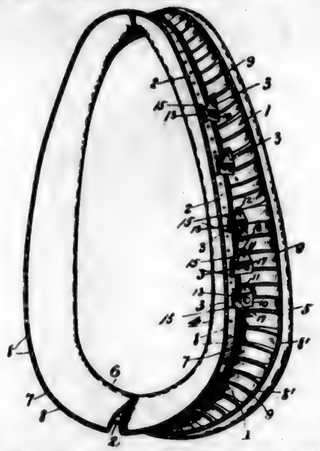

4. The combination, with springs, and encircling band, the ends of the latter being adapted to overlap where they meet; a clip encircling said overlapped parts of the band; a plate covering the clip, and extending at its ends on the spring behind it; and rivets passed through the spring, band, clip, and plate and riveted down to secure the parts in position.

5. The combination, in a horse-collar, of springs, and an encircling band; with a hames-rest having a supporting part extending at a right angle to the band; bracing portions extending at a right angle to the face, and at their inner ends resting against the springs; and a staple having the part between the legs connected with the rear end of the hames-supporting part; said legs being riveted to the band and springs.

6. The combination, with a horse-collar, of shoulder-pad springs and encircling band with a hames-rest having a pivotal connection with the springs and band.

7. The combination, with a horse-collar, of a hames-rest, a staple with which the hames-rest has a pivotal connection, the legs of the staple being square in cross-section and holes in parts of the collar through which said staple-legs pass, the holes corresponding in form to the cross-sectional form of the legs.

8. The combination, with a horse-collar of hames-rests having a pivotal connection with the collar, as hereinbefore set forth.

847,249. PULLEY. EMIL GRANSBERG, St. Louis, Mo. Filed Oct. 23, 1906. Serial No. 340,216.

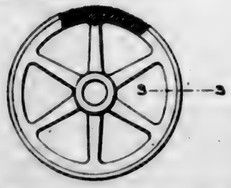

Claim.—1. A pulley-covering, comprising a section of flexible fibrous material saturated in a compound of pine tar, white resin, neat's-foot oil, and gum-arabic, combined in approximately the proportions herein specified.

2. A covering for pulleys, comprising a series of superimposed layers of flexible fibrous material arranged on the periphery of the pulley, which layers of material are saturated in a compound of pine tar, white resin, neat's-foot oil, and gum-arabic, combined in approximately the proportions stated.

847,250. COMBINED SQUEEGEE AND SCRUBBER. ADOLPH R. GACHWIND, Chicago, Ill., assignor of one-half to Guido Ranniger, Chicago, Ill. Filed Mar. 1, 1906. Serial No. 303,789.

Claim.—1. In a device of the class described, the combination of a metallic body forming a water-receptacle and provided near its front lower edge with a water-inlet slot, the edge of the metal adjacent to the slot being reversely bent or turned to form a U-shaped socket, a rubber strip entered into the socket, holes in the socket having burs entered into the rubber, the rubber normally closing the water-inlet slot and adapted to be drawn back therefrom by pressure, substantially as described.

2. In a device of the class described, the combination of a metallic body forming a water-receptacle and provided with a slot near its front lower edge, the metal adjacent to the slot being reversely bent or turned to form an inverted-U-shaped socket, a strip of rubber entered into the socket, bur-holes in the walls of the socket for clamping the rubber in place, and means for holding the rubber against the slot, substantially as described.

3. In a device of the class described, the combination of a metallic body forming a water-receptacle and provided with a slot near its front lower edge, the metal adjacent to the slot being reversely bent or turned to form an inverted-U-shaped socket, a strip of rubber entered into the socket, bur-holes in the walls of the socket for clamping the rubber in place, a longitudinally-extending clamping-bar bearing against the outer face of the rubber, clamping-rods secured to the draw-bar, and a spring within the body for normally retracting the draw-rods, substantially as described.

4. In a device of the class described, the combination of a metallic body forming a water-receptacle and provided with a slot near its front lower edge, the metal adjacent to the slot being reversely bent or turned to form an inverted-U-shaped socket, a strip of rubber entered into the socket, bur-holes in the walls of the socket for clamping the rubber in place, a longitudinally-extending clamping-bar bearing against the outer face of the rubber, clamping-rods secured to the draw-bar, and a scrubber secured to the body at substantially right angles to the squeegee-rubber, substantially as described.

847,251. CHUCK. JAMES HODSON, Portland, Oreg. Filed Nov. 10, 1905. Serial No. 286,719.

Claim.—1. The combination of a body, a plurality of shafts loosely mounted thereon, eccentric disks secured to the shafts and adapted to receive the work between them, for the purpose specified, each of said shafts being provided with an operating device.

2. The combination of a body, a plurality of shafts loosely mounted thereon, eccentric disks secured to the shafts and adapted to receive the work between them, for the purpose specified, and operating devices in connection with said shafts, said operating devices comprising pins projecting diagonally from the shafts.

3. The combination of a body, having a flat front face, a plurality of eccentric gripping-disks mounted to turn on the front face of the body and adapted to receive the work between them, whereby upon turning the body in either direction the disks are rolled into firm engagement with the work connecting it with the body, and a rigid stud projecting from the body and having a squared end adapted to be engaged by an operating-tool.

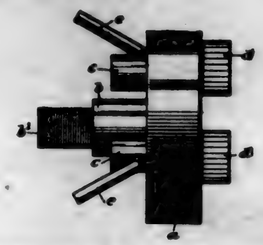

4. The combination of a body, a plurality of shafts revolubly mounted thereon, eccentric disks secured to the shafts at one end and lying at one side of the body, said disks being adapted to receive the work between them, for the purpose specified, operating-pins secured to the opposite ends of the shafts and projecting diagonally from the shafts, and a rigid stud projecting from the body and adapted to be engaged by the tool.

5. The combination with a body having flat front and rear faces, and a centrally-located stud projecting from the rear face of the body, of a plurality of shafts revolubly mounted in the body and projecting beyond the front and rear faces thereof, and eccentric grippers secured to the projecting front ends of the shafts, and adapted to receive the work between them.

6. The combination with a circular body having flat faces, and a centrally-located stud projecting from one face of the body and adapted to be engaged by a tool, of a plurality of stud-shafts revolubly mounted in the body and projecting beyond the faces thereof, eccentric disks secured to the projecting ends of the shafts at one face of the body and adapted to receive the work between them, and operating devices connected with the other ends of said shafts.

7. The combination with a body having a flat front face, of a plurality of shafts revolubly mounted in the body and projecting beyond the front face thereof, and eccentric grippers at the front face of the body and carried by the projecting ends of said shafts.

847,252. FOUNTAIN BLACKING-BRUSH. WILLMOT G. HOFFMAN, San Francisco, Cal. Filed May 14, 1904. Serial No. 208,025.

Claim.—A fluid polishing bottle comprising the bottle having its neck portion provided with interior and exterior screw-threads, a feeding-plug having a central flaring opening therein, a groove surrounding the central portion of the plug, an absorbent material, a previous covering inclosing the absorbing material, means applied to the bottom edge of the covering to force the same into said groove, said plug provided with an extended screw-threaded end to engage the internal screw-threads of the neck, said plug being further provided with a flat top portion and an oval-shaped periphery, and a cap or cover having internal screw-threads for engaging the extended screw-threads of the neck, substantially as specified.

847,253. SNAP-BUTTON. OLOF A. IVERSEN and HANS A. FINSRUD, Chicago, Ill. Filed Sept. 28, 1906. Serial No. 336,643.

Claim.—In a button of the class described, in combination with two companion sections of material, a stud adapted to outwardly project from one of the sections, an enlarged flat head on the stud adapted to be manipulated by the thumb and finger, a mounting for the stud comprising inner and outer washers on the opposite sides of the section through which the stud is passed, a spring between the head of the stud and the outer washer for normally holding the head and stud retracted, a transversely-extending pin in the end of the stud, a socket secured to the companion section of material and comprising an enlarged disk-shaped head adapted to abut against one side of the material, a body of less diameter than the disk-shaped head and passing through the material, a neck outwardly projecting beyond the body, a washer surrounding the neck and secured thereto and adapted to abut against the material and clamp the material between said washer and the disk-shaped head, the socket being provided with a circular hole of suitable diameter to permit the rotation of the cross-pin, said hole being provided with overhanging walls having therein a keyhole-slot, and the overhanging walls being further provided on their under face with recesses in transverse relation with respect to the keyhole-slot and of a size to receive the cross-pin when entered through the keyhole-slot and turned into transverse relation thereto, substantially as described.

847,254. KNIFE AND FORK CASE. ELIZA G. JACKSON, Washington, D. C., assignor of one-half to Laura W. Jackson. Filed Nov. 18, 1903. Serial No. 181,666.

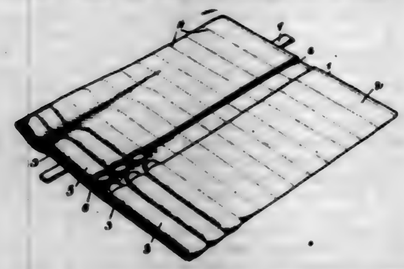

Claim.—1. A rolling portfolio for the purposes described comprising a piece of suitable flexible soft material having two of its edges turned over and upon itself, a suitable lining of smooth flexible material located under one of the turned-over edges, a series of pockets formed under the said two turned-over edges having their openings facing one another, the pockets in each series being parallel with one another; and each series of pockets being parallel with each other, one series of said pockets being adapted to be turned over and upon the other series of pockets, and the two series of pockets being adapted to be rolled lengthwise of the pockets.

2. A rolling portfolio for the purposes described comprising a piece of suitable flexible soft material, two series of pockets formed on said material, the pockets in one series opening toward the pockets in the other series, said two series of pockets being parallel, a piece of suitable flexible smooth material located in one series of said pockets for the purpose described, one series of said pockets being adapted to be turned over and upon the other series of pockets, and the portfolio being adapted to be rolled lengthwise of the two series of pockets.

847,255. VENTILATOR. FREDRICH J. KOBUSCH, St. Louis, Mo. Filed Aug. 27, 1906. Serial No. 332,154.

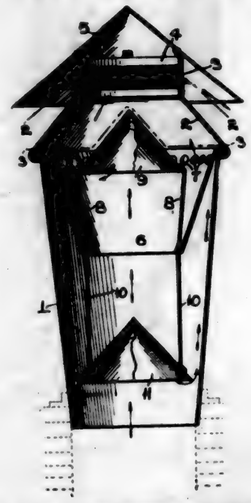

Claim.—1. A ventilator, constructed with a cylindrical body, a perforated ring fixed in the upper end thereof, conical baffle members arranged on the interior of the body, a truncated conical top fixed on the body, a reticulated section arranged at the upper end of said top, and a conical cap supported above the reticulated section; substantially as specified.

2. A ventilator, constructed with a cylindrical body, a ring arranged in the upper end thereof, there being a row of perforations formed in the upper end of said ring, conical baffle members concentrically arranged in the cylindrical body above and below the ring, a top arranged on the cylindrical body, having an open upper end, a reticulated section arranged around the open upper end of the top, and a cap arranged above the reticulated section; substantially as specified.

3. A ventilator, constructed with a cylindrical body, which gradually tapers toward its lower end, a ring fixed in the upper end of said cylindrical body, which ring tapers toward its lower end, there being a row of perforations formed in the upper end of the ring, conical baffle members supported above and below the ring, a truncated conical top for the cylindrical body, a reticulated section fixed to and surrounding the upper end of the truncated conical top, and a conical cap supported by the reticulated section and covering the upper end of the top of the cylindrical body; substantially as specified.

847,256. HEATING-DRUM. FREDRICH J. KOBUSCH, St. Louis, Mo. Filed Aug. 27, 1906. Serial No. 332,155.

Claim.—A heating-drum, constructed with a cylindrical body, a sheet-metal ring rigidly fixed within and to the top of said body, the bottom of which ring is smaller in diameter than the top, there being a row of perforations formed through the ring adjacent the top thereof, a conical deflector concentrically arranged in the drum beneath the ring, and a conical deflector concentrically arranged in

the drum above the ring, which deflectors are of the same size and shape.

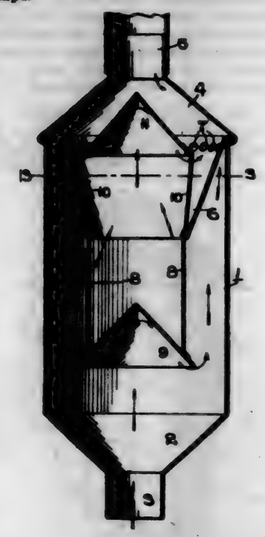

847,257. ROTARY CEMENT-KILN AND FUEL-FEEDER THEREFOR. CHARLES A. MATCHAM, Allentown, Pa. Filed Dec. 31, 1906. Serial No. 350,215.

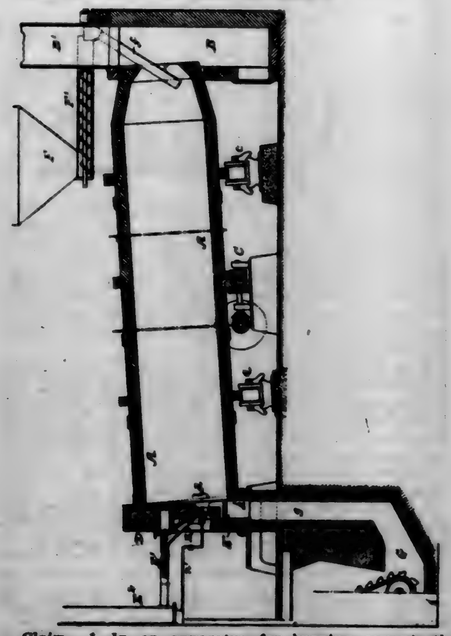

Claim.—1. In an apparatus for burning cement, the combination of a substantially horizontal kiln, means for feeding cement material into one end of the kiln, there being an outlet for the discharge of said material at the opposite end of the kiln, means for feeding powdered fuel into the discharge end of the kiln, means at the inlet end of the kiln for creating a draft therethrough from the discharge end to the inlet end thereof sufficient to draw into the kiln the powdered fuel and a volume of air, said kiln being free from obstructions so that the flame is drawn in a substantially straight path through it in contact with the cement material but with a minimum disintegrating action upon the lining of the kiln, substantially as described.

2. In an apparatus for burning cement, the combination of a substantially horizontal kiln, means for feeding cement material into one end of the kiln, a passage through which the material is discharged at the opposite end of the kiln, means for feeding a stream of powdered fuel into the discharge end of the kiln, there being an opening in the discharge end of the kiln for the admission of air, and a relatively large opening for the passage of heated air into the kiln, with means for creating at the inlet end of the kiln a draft through the kiln from the discharge end to the inlet end thereof so that powdered fuel and a limited volume of air, and a relatively larger volume of heated air will be drawn into the kiln, the flame being drawn through the kiln in contact with the cement material, but with a minimum of disintegrating effect upon the lining of the kiln, substantially as described.

3. In an apparatus for burning cement, the combination of a substantially horizontal kiln, means for feeding cement material into one end of the kiln, there being a passage for the discharge of said material at the opposite end of the kiln, means at the stack end of the kiln for creating a draft through the kiln from the discharge end to the stack end thereof, means for feeding powdered fuel into the kiln, there being an opening to admit a limited supply of air with the fuel, and a passage for the admission of a relatively larger volume of air, said passage being directly under the opening through which the incoming powdered fuel and air is introduced so that a combustible mixture will be immediately formed as the fuel enters the kiln, substantially as described.

4. The combination in a substantially horizontal kiln communicating at one end with a stack, of means for feeding material into the stack end of the kiln and discharging it at the opposite end of the kiln, means for feeding powdered fuel in a relatively dense mass directly into the discharge end of the kiln, there being a passage at the discharge end of the kiln through which a large volume of heated air is drawn in directly under the powdered fuel, so as to spread and support said fuel and carry it into the combustion zone of the furnace, substantially as described.

5. In an apparatus for burning cement, the combination of a substantially horizontal kiln, means for feeding cement material into one end of the kiln, said kiln having at its opposite end a passage through which the material is discharged, means for delivering pulverized fuel to a fuel-feed opening in the hood at the discharge end of the kiln, the hood having an opening for the passage of a limited quantity of air, there being a passage between the hood and the discharge end of the kiln for the admission of a relatively larger quantity of air, and means for creating at the inlet end of the kiln a draft through the kiln from the discharge end to the inlet end thereof, whereby the pulverized fuel and the air will be drawn into, and the flame drawn through the kiln in contact with the cement material but with a minimum disintegrating effect upon the lining of the kiln, substantially as described.

6. The combination in a kiln of the substantially horizontal type, of a front hood having a fuel-feed opening, means for feeding fuel into the kiln through said opening without previous admixture with air under pressure, and means for producing a draft to draw the fuel into the kiln, there being an enlarged flue formed in the hood under the fuel-feed opening and communicating with the clinker-pit, whereby a relatively large volume of heated air is drawn into the kiln simultaneously with the fuel, substantially as described.

7. The combination of the front hood of a cement-kiln having an opening, a fuel-feed chute extending into the opening, a plate under the fuel-feed chute having an extended lip turned down at such an angle that the pulverized fuel after lodging on the lip will pass off the same into the furnace, substantially as described.

8. The combination of a furnace provided with a front hood having a fuel-feed opening, with a chute for feeding pulverized fuel into the opening by gravity and without the aid of air under pressure, a fixed plate extending into the opening beyond the mouth of the chute, and a longitudinally-adjustable plate under the fixed plate capable of being projected beyond the edge of the fixed plate, substantially as described.

9. The combination with a cement-kiln of the substantially horizontal type, of a front hood having a fuel-feed opening therein, a frame built in the walls of the said front hood and terminating slightly back of the line of the inner wall thereof and a chute for feeding pulverized fuel by gravity through said opening, there being a relatively deep flue formed in the walls of the hood directly under the opening for the pulverized fuel, so as to permit of the passage of a relatively large body of heated air into the kiln directly under said fuel-feed opening, substantially as described.

10. The combination with a cement-kiln of the substantially horizontal type, of a front hood closing the outlet of the kiln and having a fuel-feed opening extending therethrough, a chute for feeding pulverized fuel into the said opening, and a plate upon which the powdered fuel is allowed to flow, said plate extending to such a point that the powdered fuel is discharged into the kiln before it is mixed with incoming air, there being a relatively deep flue formed in the front hood communicating with the clinker-pit and extending to a point directly under the fuel-feed opening, substantially as described.

11. The combination with a cement-kiln of the substantially horizontal type, of a front hood closing the end of the kiln and having a fuel-feed opening, a chute for feeding powdered fuel by gravity through said opening, there being air-passages at each side of the chute and another air-passage directly under the point of fuel-discharge for admitting air with the fuel into the kiln, with a deep flue formed in the walls of the front hood directly under the fuel-feed opening and communicating directly with the interior of the kiln and with the clinker-pit, substantially as described.

12. The combination with a cement-kiln, of a front hood having a fuel-feed opening, a chute, and a casing surrounding said fuel-feed opening and having two vertical partitions forming air-spaces at each side of the chute, said chute being secured to the said casing and having an integral plate extending past its outlet for the reception of the powdered fuel passing down the chute, substantially as described.

13. The combination of the end of a cement-kiln or other furnace having a hood provided with a fuel-feed opening, a casing surrounding the hood having two vertical partitions forming a central fuel-feed opening and side air-passages, a chute secured to the casing and having an integral plate with an inclined lip, a longitudinally-adjustable water-cooled plate directly under said lipped plate, the parts being so proportioned that air will be admitted under the plate as well as at each side thereof, substantially as described.

14. The combination of the front hood of a cement-kiln having a fuel-feed opening, a casing surrounding said opening and having two vertical partitions forming a central fuel-feed opening and side air-passages, a chute secured to the casing, a plate under the chute having an inclined lip, a longitudinally-adjustable plate under the first-mentioned plate, and a rocking frame on which the adjustable plate is mounted, substantially as described.

15. The combination of the end of a cement-kiln or other furnace having a fuel-feed opening, with a fuel-feed chute, a plate under the chute, and an adjustable plate under the first-mentioned plate having a beveled portion and side flanges at each side of the beveled portion, substantially as described.

16. The combination with a cement-kiln or other furnace having a fuel-feed opening in its front wall, of a casing in said opening, and extending to a point near the inner face of the wall, said wall being flared from this point, a chute, two plates under the chute, of which one is adjustable, there being an air-passage at each side of the chute, and a central air-passage under the plates, with means for regulating the flow of air through said passages, substantially as described.

17. The combination in a cement-kiln of the substantially horizontal type, of a front hood having a feed-opening, a casing surrounding the feed-opening and extending to a point near the inner face of the said hood, said inner face of the hood below the fuel-feed opening being cut away to form a relatively deep flue directly under the fuel-feed opening for the admission of the heated air from the clinker-pit, said opening communicating directly with the interior of the kiln, with a feed-chute for the fuel discharged through said feed-opening into the kiln, substantially as described.

18. The combination in a cement-kiln, of a front hood closing one end of the kiln and having a fuel-feed opening, a casing surrounding said fuel-feed opening and having two vertical partitions forming side air-passages and a central fuel-feed passage, a chute secured to the said casing and arranged to discharge fuel into the fuel-feed opening, an adjustable plate under the said chute, there being an air-passage under the said plate, and a relatively deep flue under the fuel-feel opening, said flue being formed in the hood and communicating with the clinker-pit and being connected to the fuel-feed opening at a point back of the line of the inner face of the hood, substantially as described.

19. The combination of the front hood of a cement-kiln having a fuel-feed opening therein, with a frame mounted in the said opening, two transverse beams in the hood, one mounted above and the other below the fuel-feed opening, braces connecting the upper portion of the frame to the upper beam and other braces connecting the lower portion of the frame with the lower beam, substantially as described.

20. The combination of the front hood of a cement-kiln having a fuel-feed opening, with a frame mounted in said opening, two transverse beams secured to the hood one above and the other below the fuel-feed opening, a brace connecting the upper end of the frame with the upper beam, and another brace connecting the lower end of the frame with the lower beam, a fuel-feed hopper secured to the frame, and a plate under the hopper, provided with an air-passage at each side of the hopper, there being an air-passage below the hopper, substantially as described.

21. The combination in a rotary cement-kiln, of a front hood having a fuel-feed opening and a rear hood, a stack communicating with the rear hood, means for feeding material into the kiln, there being a discharge-opening for the material at the front hood, a clinker-pit with which the discharge-opening communicates, a chute for powdered fuel extending into the fuel-feed opening, means for feeding a continuous stream of powdered fuel to said chute so that it will flow down the chute by gravity, there being passages for the admission of a limited volume of air, and the passage for the discharge of the material from the kiln being of relatively large cross-sectional area and formed in the hood directly under the fuel-feed opening, whereby a relatively large proportion of heated air is drawn into the kiln through said flue from the pit simultaneously with the fuel and the limited volume of air drawn in through the fuel-feed opening by the natural draft of the kiln, substantially as described.

22. In an apparatus for burning cement the combination of a substantially horizontal kiln, means for feeding cement material into one end of the kiln, there being an outlet for the discharge of said material and a fuel-feed opening at the opposite end of the kiln, a stack communicating with the inlet end of the kiln, said stack being of such a height as to create a draft through the kiln from the discharge end to the inlet end thereof, and constituting the sole means for drawing in the fuel and sufficient air to support combustion, said kiln being free from obstructions so that the flame is drawn in a substantially straight path through it in contact with the cement material, but with a minimum of disintegrating action upon the lining of the kiln, substantially as described.

847,258. CULTIVATOR. LOUIS PARENTI, Isleton, Cal. Filed June 19, 1906. Serial No. 322,482.

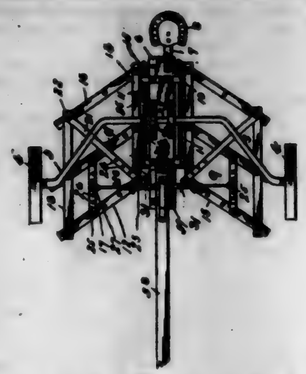

Claim.—1. A device of the type set forth embodying a longitudinal base, a wheeled support upon which said base is carried, rectangular frames pivotally depending from said base on each side thereof, each of said frames comprising bars having pivotal connection with one another at their ends, means for adjustably regulating the angular disposition of said bars and means for raising and lowering said frames to any selected fixed position.

2. A device of the type set forth embodying a base, a wheeled support upon which said base is carried, frames depending from said base on each side thereof and comprising interconnected pivoted bars, means for varying the angular relative disposition of said bars, means for adjustably positioning said frames with relation to said base, and a compensating element for said last-named means and adjustable with relation thereto, depending on the adjustment of said first-named means.

847,259. CAR-REPLACING FROG. LEON PLUARD, Chicago, Ill., assignor of one-half to Robert W. Anderson, Chicago, Ill. Filed Oct. 10, 1906. Serial No. 338,300.

Claim.—1. A replacing-frog for cars consisting of a metallic body having one side substantially parallel with the rail with the basal edge thereof rabbeted, and its upper portion provided with a laterally-projecting downturned hook-shaped finger, said body having its upper surface inclined longitudinally from its central portion toward its ends and transversely from its side farthest from said rail toward the latter, and a shallow channel extending longitudinally of said transversely-inclined surface and gradually increasing in depth toward the apex of said frog.

2. A replacing-frog for cars consisting of a metallic body having its upper surface inclined longitudinally from its central portion toward its ends and inclined transversely from its side farthest from the rail toward the latter, said body having one vertical side parallel with and provided with integral means to hold it against the rail, and having the basal edge of its opposite side serrated, and a shallow channel extending longitudinally of said transversely-inclined surface and gradually increasing in depth toward the apex of said frog.

3. A replacing-frog for cars consisting of a metallic body the upper surface of which is inclined longitudinally from its central portion toward its ends and inclined transversely from its side farthest from the rail toward the latter, said body having one vertical side parallel with and provided with a laterally-projecting downturned hook-shaped finger for holding it against the rail, and having the basal edge of its opposite vertical side serrated, and a shallow channel extending longitudinally of said transversely-inclined surface and gradually increasing in depth toward the apex of said frog.

4. A replacing-frog for cars consisting of a metallic body having its upper surface inclined longitudinally from its central portion toward its ends, having longitudinal channels therein and having a longitudinally-disposed ridge along the edge of said upper surface farthest from the rail.

5. A replacing-frog for cars consisting of a metallic body having its upper surface inclined longitudinally from its central portion toward its ends, having longitudinal channels therein, and having a longitudinally-disposed ridge along the edge of said upper surface farthest from the rail which upper surface being inclined from the base of the ridge toward the rail in such manner that the inclination is greatest at the summit and gradually disappears toward the ends of the frog.

847,260. ROLLER-BEARING. GUSTAF RENNERFELT, Scranton, Pa. Filed Dec. 21, 1905. Serial No. 292,696.

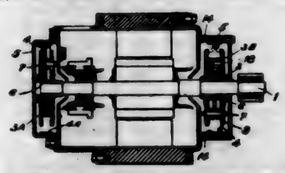

Claim.—1. The combination of a shaft, a plurality of rollers, a stationary track for the rollers and a frame having two parallel faces in contact with the ends of the rollers and arranged to hold the rollers in parallelism by virtue of said contact.

2. The combination of a shaft, a plurality of rollers in contact therewith, a casing surrounding the rollers and forming a track therefor, and a frame supported by the shaft, said frame having two parallel faces in contact with the ends of the rollers and arranged to hold the rollers in parallelism by virtue of said contact.

3. The combination of a shaft, a plurality of rollers in contact therewith, the rollers having finished ends at right angles to the axes, said rollers being longer near their outer circumference than at their axes, a casing surrounding the rollers and forming a track therefor, and a frame supported by the shaft, said frame having two parallel faces in contact with the ends of the rollers and arranged to hold the rollers in parallelism with the shaft by reason of said contact.

4. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track therefor, a guiding-frame having two faces rigidly connected by ribs, said faces being in contact with the ends of the rollers and arranged to hold the rollers in parallelism.

5. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track therefor, a frame having parallel faces in contact with the ends of the rollers and arranged to hold the rollers in parallelism and studs for the rollers loosely mounted in the frame.

6. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track therefor, a frame journaled upon the shaft, there being radially-disposed slots in said frame, and studs projecting from said rollers and extending into the slots.

7. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track therefor, a frame journaled upon the shaft, there being radially-disposed slots in said frame, studs projecting from said rollers and extending into the slots, and springs connecting said projecting studs to the frame.

8. The combination of a shaft, a plurality of rollers, a frame for guiding the rollers and flexible connections between the rollers and the frame.

9. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track therefor, a frame having parallel faces in contact with the ends of the rollers, studs for the rollers loosely mounted in the frame and flexible connections between the studs and the frame.

10. The combination of a shaft, a plurality of rollers, a guiding-frame for the rollers and a casing, a portion of said casing being constructed to form a dust-receptacle.

11. The combination with the associated parts of a roller-bearing, of means for automatically removing dust from the track of the rollers so as to facilitate the movement of the rollers.

12. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track for said rollers, a guiding-frame for the rollers and a dust-scraper attached to the frame.

13. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track for said rollers, a dust-receptacle in the casing, a frame for the rollers and means for removing dust from the track of the rollers.

14. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track for said rollers, a guiding-frame for the rollers, a dust-scraper attached to the frame and means for pressing the dust-scraper against the track.

15. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track for said rollers, a guiding-frame for the rollers, a dust-scraper attached to the frame and a spring for keeping the dust-scraper in contact with the track.

16. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track therefor, and a dust-scraper comprising a scraping edge and means for deflecting the dust.

17. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track therefor, and a dust-scraper placed obliquely across the track of the rollers.

18. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track therefor, a dust-scraper placed obliquely across the track of the rollers and means for deflecting the dust.

19. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track therefor, a dust-receptacle in said casing, a dust-scraper placed obliquely across the track of the rollers and means for deflecting the dust.

20. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track therefor, a frame journaled upon the shaft, there being slots in said frame, said rollers having studs materially smaller in diameter than the width of the slots arranged to project into the slots.

21. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track therefor, a frame journaled upon the shaft, there being radially-disposed slots in said frame, and studs running through the centers of the rollers and extending into the slots.

22. The combination of a shaft, a plurality of rollers in contact therewith, a casing surrounding the rollers and forming a track therefor, and a flexible ring interposed between and in frictional contact with each of the rollers.

23. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track therefor, a frame journaled on the shaft, said frame having a recess formed in its hub and a flexible ring in said recess and in contact with each of the rollers.

24. The combination of a shaft, a plurality of rollers in contact therewith, a casing surrounding the rollers and forming a track therefor, a continuous flexible ring of solid material interposed between and in frictional contact with each of the rollers, said ring having a diameter larger than the distance between the rollers.

25. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track therefor, said casing having a dust-receptacle, a frame having two parallel faces in contact with the ends of the rollers, flexible connections between the rollers and the framing, a dust-scraper attached to the frame and means for pressing the dust-scraper against the track and a flexible ring compressed between the rollers.

26. The combination of a shaft, a plurality of rollers, a casing surrounding the rollers and forming a track therefor, a dust-receptacle in said casing, a frame journaled upon the shaft, said frame having two parallel faces in contact with the ends of the rollers, flexible connections between the rollers and the frame, a flexible ring compressed between the rollers and arranged to frictionally gear the rollers together, a dust-scraper comprising a scraping edge and means for deflecting the dust, said dust-scraper being attached to the frame and placed obliquely across the track of the rollers.

27. The combination of a shaft, a plurality of rollers, a frame for guiding the rollers, springs interposed between the rollers and the frame forming flexible connections between the rollers and the frame.

28. The combination of a shaft, a plurality of rollers, and a casing forming a track for the rollers there being a recess on each side of the track of larger diameter than that of the track.

29. The combination of a shaft, a plurality of rollers, a track and a guiding-frame, said frame having a plurality of pockets of greater width than the length of the rollers, and two faces, the distance between said faces being equal to the length of the rollers.

30. The combination of a shaft, a plurality of rollers, a track therefor and a guiding-frame, said frame having a hub journaled on the shaft with openings in the hub for permitting contact between the rollers and the shaft, and having two finished faces at right angles to the axes of the rollers, said faces being in contact with both ends of the rollers and being joined together and to the hub by ribs.

31. The combination of a shaft, a plurality of rollers, a track and a guiding-frame, said frame having two faces in contact with both ends of said roller, said faces being finished in planes at right angles to the axes of the rollers, the faces being joined by ribs bearing on the shaft, the diameter across the ribs being smaller that the outer diameter of the faces.

32. The combination of a shaft, a plurality of rollers, a track and a guiding-frame, said frame having two faces cast integrally with the hub, the hub having a bearing on the shaft, and the faces being in contact with both ends of the rollers.

847,261. ROLLER-BEARING. GUSTAF RENNERFELT, Scranton, Pa. Filed Oct. 4, 1906. Serial No. 337,389.

Claim.—1. In a roller-bearing, the combination of a plurality of studs, a roller loosely mounted upon each of the studs and springs connecting the studs together.

2. In a roller-bearing, the combination of a plurality of studs, a roller loosely mounted upon each of the studs and a spring between each of two contiguous studs, said spring being arranged to connect all of the studs together.

3. In a roller-bearing, the combination of a plurality of studs, a roller loosely mounted upon each of the studs, a circular track for the rollers and a spring between each of two contiguous studs, said spring being arranged to hold the rollers against said track and apart from each other.

4. In a roller-bearing, the combination of a plurality of studs, a roller loosely mounted upon each of the studs, a shaft, a track for the rollers, and springs connecting the studs together, said springs being arranged to hold the rollers against the track and apart from each other.

5. The combination of a plurality of studs, a roller loosely mounted upon each of the studs, a shaft, a casing, a portion of the casing being constructed to form a circular track, springs connecting the studs together, a fixed plate on each side of and in contact with the rollers.

6. The combination of a plurality of studs, a roller loosely mounted upon each of the studs, a shaft, a casing, a portion of the casing being constructed to form a circular track, means connecting the studs together, a plate attached to each side of the casing, said plates being in contact with the ends of the rollers and arranged to hold the rollers in parallelism, said plates being also constructed to form a chamber for the ends of the studs and their connecting means.

7. The combination of a plurality of studs, a roller loosely mounted upon each of the studs, a shaft, a casing, a portion of the casing being constructed to form a circular track, springs connecting the studs together, a plate attached to each side of the casing, said plates having projecting annular portions with finished surfaces in contact with the ends of the rollers and arranged to hold the rollers in parallelism.

8. The combination of a plurality of studs, a roller loosely mounted upon each of the studs, a shaft, a casing, a portion of the casing being constructed to form a circular track, springs connecting the studs together, a plate attached to each side of the casing, said plates being in contact with the ends of the rollers and arranged to hold the rollers in parallelism, said plates being constructed to form a chamber for the studs and their connecting-springs.

9. In a roller-bearing, the combination of a shaft, a track, a plurality of rollers, each of said rollers having a rim flexible in a radial direction, and flexible means extending between and attached at the centers of contiguous rollers for keeping the rollers apart from each other.

10. A shaft, a track, a plurality of rollers between said shaft and track, each of said rollers having a rim flexible in a radial direction, a plate on each side of the rollers arranged to hold the rollers in parallelism, and flexible means attached at the centers of the rollers for keeping the rollers in contact with the track and apart from each other.

11. A shaft, a track, a plurality of rollers between said shaft and track, each of said rollers having a hub and a flexible rim, a plate on each side of the rollers arranged to hold the rollers in parallelism, and flexible means attached at the hubs of the rollers for keeping the rollers in contact with the track and apart from each other.

12. A shaft, a track, a plurality of rollers between said shaft and track, each of said rollers having a hub and a flexible rim separate from the hub, a plate on each side of the rollers arranged to hold the rollers in parallelism, and flexible means attached at the hubs of the rollers for keeping the rollers in contact with the track and apart from each other.

13. A plurality of studs, a roller loosely mounted upon each stud, each of said rollers having a rim flexible in a radial direction; a shaft, a casing, a portion of the casing being constructed to form a circular track for the rollers, a plate attached to each side of the casing in contact with the ends of the rollers and arranged to hold the rollers in parallelism, and springs connecting the studs together.

14. A plurality of studs, a roller loosely mounted upon each stud, each of said rollers having a hub and a flexible rim; a shaft, a casing, a portion of the casing being constructed to form a circular track for the rollers, a plate attached to each side of the casing, said plates having projecting annular portions with finished surfaces in contact with the ends of the rollers and arranged to hold the rollers in parallelism, and a spring between each of two contiguous studs, said springs being arranged to hold the rollers against the track and apart from each other.

15. A plurality of studs, a roller loosely mounted upon each stud, each of said rollers having a rim flexible in a radial direction; a shaft, a casing, a portion of the casing being constructed to form a circular track for the rollers, a plate attached to each side of the casing, said plates having projecting annular portions with finished surfaces in contact with the ends of the rollers and arranged to hold the rollers in parallelism, the casing and the plates being arranged to form dust-grooves at each side of the circular track; and a spring between each of two contiguous studs, said springs being arranged to hold the rollers against the track and apart from each other.

16. A plurality of studs, a roller loosely mounted upon each stud, each of said rollers having a rim flexible in a radial direction; a shaft, a casing, a portion of the casing being constructed to form a circular track for the rollers, a plate attached to each side of the casing, said plates having projecting annular portions with finished surfaces in contact with the ends of the rollers and arranged to hold the rollers in parallelism, the casing and the plates being arranged to form dust-grooves at each side of the circular track; a spring between each of two contiguous studs, said springs being arranged to hold the rollers against the track and apart from each other, and a dust-scraper connected to move with the rollers.

17. A shaft, a track, a plurality of rollers between said shaft and track, each of said rollers having a rim flexible in a radial direction, and a plate on each side of the rollers in contact with the rims, said plates having inwardly-projecting annular portions arranged to hold the rollers in parallelism.

847,262. ADJUSTABLE GAGE FOR SEWING-MACHINES. NATHAN ROGERS and LEO ROSENWASSER, New York, N. Y. Filed Apr. 6, 1905. Serial No. 254,244.

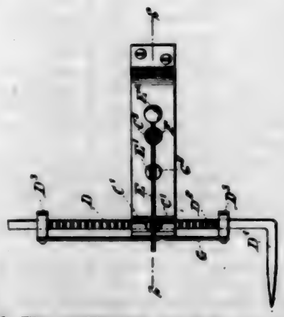

Claim.—1. The combination of a table, a support raised above the same, a gage-bar mounted to slide on said support and provided with teeth, a spring-pressed catch pivoted to the support and adapted to move about an axis parallel with the direction of movement of the gage-bar, and arranged to engage the teeth of said gage-bar and provided with a finger-piece, and a scale carried by the gage-bar.

2. The combination of a table, a support raised above the same, a gage-bar mounted to slide on said support and provided with teeth, a scale carried by said gage-bar, a spring-pressed catch pivoted to the support and adapted to move about an axis parallel with the direction of movement of the gage-bar and arranged to engage the teeth of said gage-bar, and a pointer on said catch extending in front of the scale.

3. The combination of a support, a toothed bar adjustable on said support, a scale carried by said bar, a catch pivoted to the support and provided with an operating means, a spring for maintaining the catch in engagement with the teeth of the bar, and a spring-housing split to guide that end of the catch which is opposite to the end which engages the teeth of the bar.

847,263. AXLE-LUBRICATING MECHANISM. HUGH W. SANFORD, Knoxville, Tenn. Filed Jan. 3, 1907. Serial No. 350,645.

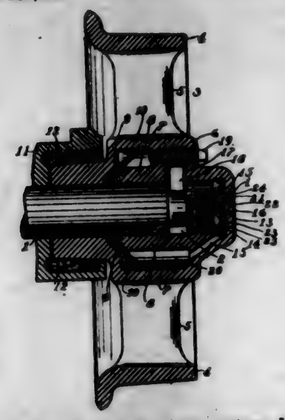

Claim.—1. In a structure of the nature described, an axle, a wheel having a hub extending around and over the end of said axle and having a port in the axial line of said axle, a valve extending over said port within said hub, and a spring bearing against said valve and having said axle for an abutment, substantially as described.

2. In a structure of the nature described, an axle having a socket in its end, a wheel having a hub extending around and over the end of said axle and having a port in the axial line of said axle, a valve extending over said port within said hub, and a spring bearing against said valve and extending into said socket, substantially as described.

3. In a structure of the nature described, an axle, a wheel having a hub extending around and over the end of said axle and having a port in the axial line of said axle, a valve extending over said port within said hub and having a stem, and a spring surrounding said stem and bearing against said valve and having said axle for an abutment, substantially as described.

4. In a structure of the nature described, an axle having a socket in its end, a wheel having a hub extending around and over the end of said axle and having a port in the axial line of said axle, a valve extending over said port within said hub and having a stem, and a spring surrounding said stem and bearing against said valve and the interior of said socket, substantially as described.

847,264. PAPER-BAG MACHINE. FREDERICK E. STRASBURG, Rumford Falls, Me., assignor to Continental Paper Bag Company, Rumford Falls, Me., a Corporation of Maine. Filed Oct. 8, 1906. Serial No. 337,971.

Claim.—1. The combination of a moving folding-bed which is provided with devices to hold the lower ply of a tucked paper tube thereon; a rotary folding mechanism, opposite to the moving folding-bed, and provided with devices to grip thereto the upper ply of the tucked paper tube; and differential mechanism, connected with the rotary folding mechanism, and adapted to impart thereto a series of rotations, each of which gradually varies in speed during different parts thereof, but is identical in aggregate time with one cycle of movement of the moving folding-bed, or with some divisor of that cycle; all coöperating to unfold a tucked paper tube, and to refold it into a paper-bag blank of a diamond form.

2. The combination of a moving conveyer; an oscillating folding-bed pivoted to the conveyer, and provided with devices to hold the lower ply of a tucked paper tube thereon; a rotary folding mechanism opposite to the moving conveyer; and provided with devices to grip thereto the upper ply of the tucked paper tube; and differential mechanism, connected with the rotary folding mechanism, and adapted to impart thereto a series of rotations, each of which gradually varies in speed during different parts thereof, but is identical in aggregate time with one cycle of movement of the moving conveyer, or with some divisor of that cycle; all coöperating to unfold a tucked paper tube, and to refold it into a paper-bag blank of a diamond form.

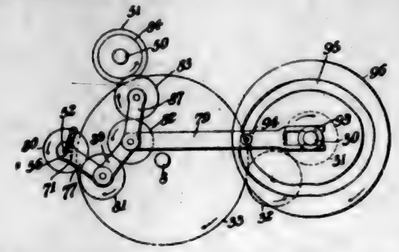

3. The combination of a rotary folding-bed, which is provided with devices to hold the lower ply of a tucked paper bag thereon; a rotary folding mechanism opposite to the rotary folding-bed, and provided with devices to grip thereto the upper ply of the tucked paper tube; and differential mechanism, connected with the rotary folding mechanism, and adapted to impart thereto a series of rotations, each of which gradually varies in speed during different parts thereof, but is identical in aggregate time with one rotation of the folding-bed, or with some divisor of that rotation; all coöperating to unfold a tucked paper tube, and to refold it into a paper-bag blank of a diamond form.

4. The combination of a rotary conveyer; an oscillating folding-bed pivoted to the conveyer, and provided with devices to hold the lower ply of a tucked paper tube thereon; a rotary folding mechanism opposite to the rotary conveyer and provided with devices to grip thereto the upper ply of the tucked paper tube; and differential mechanism, connected with the rotary folding mechanism, and adapted to impart thereto a series of rotations, each of which gradually varies in speed during different parts thereof, but is identical in aggregate time with one rotation of the rotary conveyer, or with some divisor of that rotation; all coöperating to unfold a tucked paper tube, and to refold it into a paper-bag blank of a diamond form.

5. The combination of a rotary folding-bed which is provided with devices to hold the lower ply of the tucked paper tube thereon; a rotary folding mechanism opposite to the rotary folding-bed and provided with devices to grip thereto the upper ply of the tucked paper tube; and differential mechanism connected with the rotary folding mechanism and consisting of two floating gears, and links to retain those gears in mesh, and means to so move those floating gears as to vary the speed of the rotary folding mechanism relatively to the speed of the rotary folding-bed; all coöperating to unfold a tucked paper tube, and to refold it into a paper-bag blank of a diamond form.

6. The combination of a rotary conveyer; an oscillating folding-bed pivoted to the conveyer and provided with devices to hold the lower ply of a tucked paper tube thereon; a rotary folding mechanism opposite to the rotary conveyer and provided with devices to grip thereto the upper ply of the tucked paper tube; and differential mechanism, connected with the rotary folding mechanism, and consisting of two floating gears, and links to retain those gears in mesh, and means to so move those floating gears as to vary the speed of the rotary folding mechanism relatively to the speed of the rotary folding-bed; all coöperating to unfold a tucked paper tube, and to refold it into a paper-bag blank of a diamond form.

847,265. SAFE. FRANK J. SUPER, Mount Tabor, Oreg. Filed July 14, 1904. Serial No. 216,560.

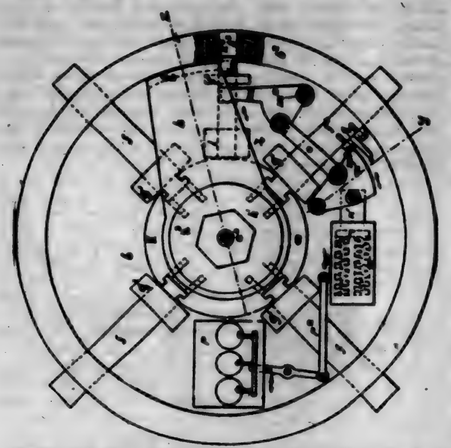

Claim.—1. In a safe or vault door locking mechanism, the combination of a rotatable spindle, radial sliding door-bolts, means connecting said spindle with said bolts and by which the latter are projected and retracted by rotating said spindle, a radial arm, fixedly mounted on said spindle and revolving therewith, and means for locking said arm against reverse rotation, after the door-bolts have been projected to lock the safe.

2. In a safe or vault door locking mechanism, the combination of a rotatable spindle, radial sliding door-bolts, means connecting said spindle with said bolts, and by which the latter are projected and retracted by rotating said spindle, a radial arm fixedly mounted on said spindle and revolving therewith, and means for locking said arm against reverse rotation, after the door-bolts have been projected to lock the safe, which arm-locking means are adapted to automatically follow any forward movement of the arm, caused by a forced rotation of the spindle after the safe has been locked, so as to lock said arm, and the door-bolt-actuating mechanism in the position to which the same may so be advanced.

3. In a safe or vault door locking mechanism the combination of a rotatable spindle, radial sliding door-bolts, means connecting said spindle with said bolts, and by which the latter are projected and retracted by rotating said spindle, a radial arm fixedly mounted on said spindle and revolving therewith, a spring-controlled bolt, positioned to be projected in front of said arm, to lock the same against reverse rotation after the door-bolts have been projected to lock the safe, and means to project and retract said arm-locking bolt, the extremity of the latter being made with an inclined bearing-face so as to adapt said arm-locking bolt to follow any forward movement of said arm, caused by a forced rotation of the spindle after the safe has been locked, and to lock said arm and the door-bolt-actuating mechanism in the position to which they may so be advanced.

4. In a safe or vault, the combination of a door-casing having a jamb and a door having a rim made with inclined abutting faces, and said door-casing having recesses made with inclined bearing-faces in which to receive the door-bolts, a centrally-positioned rotatable spindle, radial sliding door-bolts, the extremities of which are made with inclined bearing-faces, means connecting said spindle with said bolts, and by which the latter are projected and retracted by rotating said spindle, a radial arm fixedly mounted on said spindle and revolving therewith, and means for locking said arm against reverse rotation, after the door-bolts have been projected to lock the safe, which arm-locking means are adapted to automatically follow any forward movement of the arm, caused by a forced rotation of the spindle after the safe has been locked, so as to lock said arm and the door-bolt-actuating mechanism in the position to which the same may so be advanced.

5. In a safe or vault, the combination of a door-casing having a jamb and a door having a rim made with inclined abutting faces, and said door-casing having recesses made with inclined bearing-faces in which to receive the door-bolts, a rotatable spindle, radial sliding door-bolts, the extremities of which are made with inclined bearing-faces, means connecting said spindle with said bolts, and by which the latter are projected and retracted by rotating said spindle, a radial arm fixedly mounted on said spindle and revolving therewith, a spring-controlled bolt, positioned to be projected in front of said arm, to lock the same against reverse rotation after the door-bolts have been projected to lock the safe, and means to project and retract said arm-locking bolt, the extremity of the latter being made with an inclined bearing-face so as to adapt said arm-locking bolt to follow any forward movement of said arm, caused by a forced rotation of the spindle after the safe has been locked, and to lock said arm and the door-bolt-actuating mechanism in the position to which they may so be advanced.

6. In a safe or vault door mechanism, the combination of a rotatable spindle, a threaded collar on the spindle, a nut longitudinally movable on said threaded collar and made with a beveled periphery, radial sliding door-bolts made with beveled inner ends, which are operatively connected with the periphery of said nut, so that said door-bolts may be projected and retracted by rotating said spindle, a radial arm fixedly mounted on said spindle and revolving therewith, and means for locking said arm against reverse rotation after the locking-bolts have been projected to lock the safe, which arm-locking means are adapted to automatically follow any forward movement of the arm, caused by a forced rotation of the spindle after the safe has been locked, so as to lock said arm and the door-bolt-actuating mechanism in the position to which the same may so be advanced.

7. In a safe or vault, the combination of a door-casing having a jamb and a door having a rim made with inclined abutting faces, and said door-casing have recesses made with inclined bearing-faces in which to receive the door-bolts; a rotatable spindle, a threaded collar on the spindle, a nut longitudinally movable on said collar and made with a beveled periphery, radial sliding door-bolts, the extremities of which are made with inclined bearing-faces and the inner end of which are beveled and operatively connected with the periphery of said nut, so that said door-bolts may be projected and retracted by rotating said spindle, a radial arm fixedly mounted on said spindle and revolving therewith, a spring-controlled bolt positioned to be projected in front of said arm, to lock the same against reverse rotation, after the door-bolts have been projected to lock the safe, and means to project and retract said arm-locking bolt, the extremity of the latter being made with an inclined bearing-face, so as to adapt said arm-locking bolt to follow any forward movement of said arm, caused by a forced rotation of the spindle after the same has been locked and to lock said arm and the door-bolt-actuating mechanism in the position to which they may so be advanced.

8. In a safe or vault door mechanism, the combination of a rotatable spindle, a threaded collar on the spindle, a nut longitudinally movable on said threaded collar, and made with a beveled periphery and recesses e', radial sliding bolts made with beveled inner ends, adapted to be operatively inserted in said recesses of the nut e, so that said door-bolts may be projected and retracted by rotating said spindle, a radial arm fixedly mounted on said spindle and revolving therewith, a spring-controlled bolt positioned to be projected in front of said arm, to lock the same against reverse rotation, after the door-bolts have been projected to lock the safe, and means to project and retract said arm-locking bolt, the extremity of the latter being made with an inclined bearing-face, so as to adapt said arm-locking bolt to follow any forward movement of said arm, caused by a forced rotation of the spindle after the same has been locked and to lock said arm and the door-bolt-actuating mechanism in the position to which they may so be advanced.

9. In a safe or vault door locking mechanism, the combination of a movable spindle, radial sliding door-bolts, means connecting said spindle with said bolts and by which the latter are projected and retracted by movement of said spindle, and means for locking the bolts including an element carried by and movable with the spindle and a device to prevent movement of said element after the bolts have been projected to locking position by the spindle.

10. In a safe or vault door locking mechanism, the combination of a rotatable spindle, a reciprocal member having its periphery beveled, means between the spindle and the member to move said member when the spindle is rotated, radial sliding door-bolts operatively connected with and adapted to be moved by the beveled periphery of the member, so that said door-bolts may be projected and retracted by rotating the spindle, means for locking the bolts including a member carried by and movable with the spindle and a device for preventing movement of the latter member after the bolts are moved to locked position.

847,266. ARTIFICIAL BAIT AND WEED-GUARD. GEORGE W. UPTON, Warren, Ohio. Filed Aug. 16, 1906. Serial No. 330,882.

Claim.—1. An artificial bait composed of hair, peacock-harl on one side of the hair, and a feather or the like on the opposite side of such hair, the whole when wet having the appearance of a crayfish.

2. An artificial bait composed of a hook, hair attached thereto in separate masses, and objects of different colors secured on the exterior of said masses.

3. An artificial bait comprising a hook, hair secured thereto in a plurality of separate masses, harl attached to one of said masses, and a colored object also secured to said mass on the side opposite to the harl.

4. A fish-hook, hair secured thereto in separate bunches, each bunch being doubled back on itself, and means for retaining each bunch separately, the mass of hair being extended beyond the bend of the hook.

5. The combination with a fish-hook, of a guard lying in protective relation to the point of the hook, such guard being composed of springy rubber.

6. The combination with a fish-hook, of a guard lying in protective relation to the point of the hook, such guard being composed of springy non-metallic substance.

7. The combination with a fish-hook, of a guard extended over the point thereof and formed with a flexible tail.

8. The combination with a fish-hook, of a guard extended over the point thereof and having a flexible tail formed with narrowed portions.

9. A fish-hook having a guard formed with an opening and extended around the bend of the hook, the point of said hook normally lying within the plane of that portion of the guard formed with said opening.

10. A fish-hook having a guard composed of springy rubber and extending on opposite sides of the point of the hook, that portion of the guard above such point being formed with an opening, the end of the guard terminating in a tail of varying width.

11. In combination with an artificial bait, a fish-hook and a flexible body attached to the hook, said body being formed with a slit for the passage of the hook, the sides of the slitted portion being normally on either side of and as high as the point and barb of the hook.

12. In combination with an artificial bait, a hook, a flexible body attached at one end to the bend of said hook and curved to simulate a worm, a portion of said body protruding as high as the point of the hook above its shank.

13. An attachment for fish-hooks, made of elastic or resilient material and adapted to be fastened to the head of a hook, a portion of such attachment being thinner or narrower than its extremities.

847,267. PRODUCING METALLIC SILICIDS. THOMAS L. WILLSON, Ottawa, Ontario, Canada. Filed Apr. 11, 1904. Serial No. 202,636.

Claim.—1. Treating a compound containing sulfur, nickel, iron, silicon, and oxygen, by electrosmelting with lime and carbon and additional silica and fluor-spar, to combine with all sulfur, oxygen and other impurities, and to recover a compound of iron, nickel and silicon, and bessemerising to burn out the silicon and leave a compound of iron and nickel.

2. Treating a compound containing nickel and silicon with oxygen, sulfur or other impurities, by electrosmelting it with a basic compound and carbon, in such proportions as to combine with all oxygen, sulfur, or other impurities, and produce a nickel silicid.

3. Treating a compound containing nickel and silicon and impurities by electrosmelting with lime and carbon to produce a nickel silicid, the lime combining with the impurities.

4. Treating a compound containing nickel silicate and impurities by electrosmelting with a basic compound and carbon, to produce a nickel silicid, the lime combining with the impurities.

5. Treating a compound containing iron, nickel and silica, by electrosmelting it with a basic compound and carbon, to produce a ferro-silicid.

6. Treating a compound containing nickel and iron, by electrosmelting with a basic compound, silica, and carbon, to produce a ferro-nickel silicid, and bessemerising to burn out the silicon and form nickel-steel.

7. Treating a compound containing nickel and silicon, by electrosmelting with a basic compound and carbon, to produce a nickel silicid, and bessemerising to burn out the silicon and produce nickel.

8. Treating a compound containing nickel and silicon, by electrosmelting it with a basic compound and carbon, to produce nickel silicid, and introducing fluor-spar into the molten product and bessemerizing to burn out the silicon and form nickel.

847,268. AUTOMATIC HOSE-VALVE. REUBEN D. WIRT, Philadelphia, Pa. Filed Aug. 28, 1905. Serial No. 276,144.

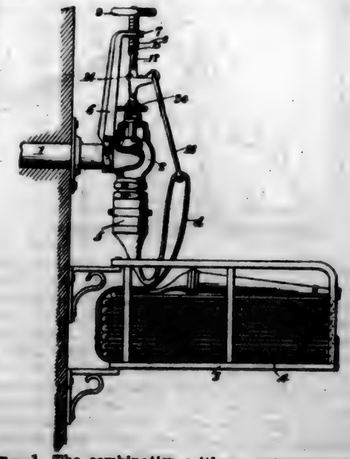

Claim.—1. The combination with an automatic-opening valve having a slidable valve-stem, of a support having a

seat in alinement with the valve-stem, a locking device interposed between the seat and the valve-stem, and freely detachable from both to permit opening movement of the valve, and a hose-receiving link carried by said locking device, the link being free to slide on the hose after release and serving then as a carrier for the locking device.

2. The combination with an automatic-opening valve having a slidable valve-stem, of a support having a seat in alinement with the valve-stem, a sectional locking device including hinged members, respectively, engaging the outer end of the stem and the seat of a support, and freely detachable from both to allow opening movement of the valve, one of said members having a laterally-directed hooked arm, and a hose-receiving link supported by said hooked arm, the link being free to slide on the hose after release and serving then as a carrier for the locking device.

3. The combination with an automatic-opening valve having a slidable valve-stem projecting externally of the case with its projecting portions threaded, of a nut upon the threaded portion of the stem for forcibly unseating the valve and a support extending from the case and having a seat in alinement with the valve-stem, a pair of hinged locking members respectively engaging the seat and the valve-stem to hold the valve closed, and a hose-receiving link carried by one of the locking members.

847,269. SAND-BLAST APPARATUS. FRANKLYN M. WISE, New York, N. Y., assignor to American Diamond Blast Company, New York, N. Y., a Corporation of New York. Filed Nov. 10, 1905. Serial No. 286,632.

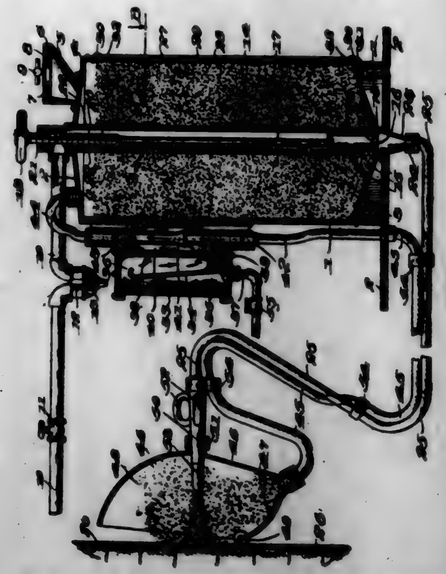

Claim.—1. In an apparatus of the character described the combination of a portable sand-reservoir, a sand-discharge pipe, air-compression means for driving the sand from the reservoir through said pipe, means for collecting and retaining the sand discharged from said pipe and means for automatically returning the sand to the reservoir.

2. In an apparatus of the character described the combination of a portable sand-reservoir, a sand-discharge pipe, air-compression means for driving the sand from the reservoir through said pipe, means for collecting and retaining the sand discharged from said pipe and suction means for automatically returning the sand to the reservoir.

3. In an apparatus of the character described the combination of a portable sand-reservoir, a sand-discharge pipe, air-compression means for driving the sand from the reservoir through said pipe, collecting and retaining means mounted on said pipe for collecting and retaining the sand discharged therefrom and means for automatically returning the sand from the collector to the reservoir.

4. In an apparatus of the character described a sand-suction means comprising a cylinder divided into a plurality of chambers, one of said chambers forming an air-inlet and another an air-outlet, means for deflecting air from one chamber into another and a suction-chamber into which the air-outlet chamber discharges.

5. In an apparatus of the character described a sand-suction means comprising a cylinder divided into a plurality of chambers, one of said chambers forming an air-inlet and another an air-outlet, means for deflecting air from one chamber into another, a suction-chamber into which the air-outlet chamber discharges, an auxiliary suction-pipe in said suction-chamber and means discharging into and from said auxiliary suction-pipe.

6. An apparatus of the character described including a portable sand-reservoir comprising a primary mixing-chamber, a secondary mixing-chamber, air-compression means connected therewith, a sand-discharge pipe connected thereto, a discharge-nozzle on said sand-discharge pipe, and means mounted on said discharge-nozzle for collecting and retaining the sand discharged therefrom.

7. An apparatus of the character described including a portable sand-reservoir comprising a primary mixing-chamber, a secondary mixing-chamber, air-compression means connected therewith, a sand-discharge pipe connected thereto, a discharge-nozzle on said discharge-pipe, means mounted on said discharge-nozzle for collecting and retaining the sand discharged therefrom, and means for automatically exhausting the said collecting and retaining means.

8. An apparatus of the character described including a portable sand-reservoir comprising a primary mixing-chamber, a secondary mixing-chamber, air-compression means connected therewith, a sand-discharge pipe connected thereto, a discharge-nozzle on said discharge-pipe, means mounted on said discharge-nozzle for collecting and retaining the sand discharged therefrom, means for automatically exhausting the said collecting and retaining means, and means for returning the sand to the primary mixing-chamber.

9. An apparatus of the character described including a sand collecting and retaining means comprising a hopper provided with a deflector-hood and a receiver adapted to surround a discharge-nozzle mounted on a sand-discharge pipe, and means for automatically exhausting said receiver of the contents thereof.

10. An apparatus of the character described including a sand collecting and retaining means comprising a hopper provided with a deflector-hood and a receiver adapted to surround a discharge-nozzle mounted on a sand-discharge pipe, means for automatically exhausting said receiver of the contents thereof and means for returning the contents to the main supply.

11. An apparatus of the character described including a sand collecting and retaining means comprising a hopper provided with a deflector-hood and a receiver adapted to surround a discharge-nozzle mounted on a sand-discharge pipe, means for automatically exhausting said receiver of the contents thereof, means for returning said contents to the main supply, and means mounted on said collecting and retaining means for rendering the same easy to handle.

12. An apparatus of the character described including a portable sand-reservoir adapted to be filled solid with sand, a means for observing the contents thereof comprising a metal frame having mounted therein a sheet of mica said metal frame and sheet of mica being suitably fastened to the casing of said sand-reservoir.

13. An apparatus of the character described including a sand-discharge nozzle comprising a reception member, handles mounted thereon, means for receiving the body of a sand collector and retainer and a detachable nose-piece.

847,270. SAND-BLAST APPARATUS. FRANKLYN M. WISE, New York, N. Y., assignor to American Diamond Blast Company, New York, N. Y., a Corporation of New York. Filed Nov. 23, 1905. Serial No. 288,641.

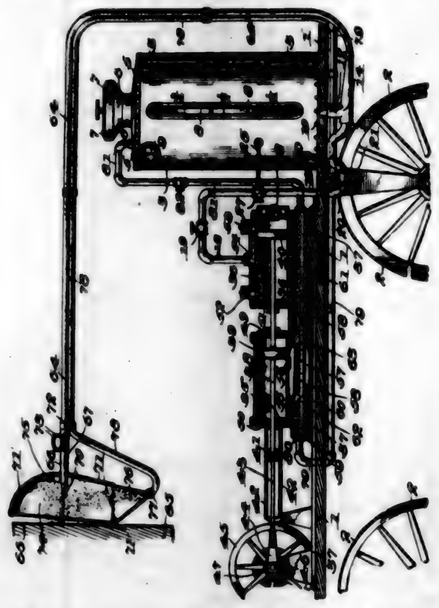

Claim.—1. An apparatus of the character described comprising a portable sand-reservoir, means for automatically controlling the discharge of sand from the sand-supply into a primary mixing-chamber, a secondary mixing-chamber, an air-passage adjacent thereto, means for automatically controlling said air-passage, and a sand-discharge pipe associated therewith having mounted on its extreme end a sand collecting and retaining means.

2. An apparatus of the character described comprising a portable sand-reservoir, means for automatically controlling the discharge of sand from the sand-supply into a primary mixing-chamber, a secondary mixing-chamber, an air-passage adjacent thereto, means for automatically controlling said air-passage, a sand-discharge pipe associated therewith having mounted on its extreme end a sand collecting and retaining means, and a sand-return pipe adapted to convey the used sand from said sand collector and retainer to the main sand-supply.

3. An apparatus of the character described comprising an air-tight portable sand-reservoir, an air-compression indicator in communication therewith, a sight mounted thereon, and an automatic controlling-valve adapted to control the passage of sand therefrom into primary and secondary mixing-chambers.

4. An apparatus of the character described including a sand-discharge nozzle detachably mounted on a sand-discharge pipe, a sand collecting and retaining hopper frame cast therewith, a covering for said hopper-frame having mounted therein a transparent observance member, and a collecting-receptacle formed on said frame adapted to have fastened therein a sand-return pipe.

5. An apparatus of the character described comprising a sand-reservoir, a primary mixing-chamber, a secondary mixing-chamber, air-compression means in communication with said chambers, means for automatically controlling the discharge of sand from said reservoir into said secondary mixing-chamber, a sand-discharge pipe connected thereto, a discharge-nozzle on said sand-discharge pipe, means for collecting the sand discharged therefrom, and means for automatically exhausting said collector of the contents thereof.

6. An apparatus of the character described comprising a sand-reservoir, a mixing-chamber, air-compression means in communication therewith, means for automatically controlling the discharge of sand from said reservoir into said mixing-chamber, a sand-discharge pipe connected thereto, a discharge-nozzle in communication therewith, means for collecting the sand discharged therefrom, and means for automatically returning the sand collected by said sand-collector to the main sand-supply.

7. An apparatus of the character described comprising a sand-reservoir, a mixing-chamber, air-compressing means in communication therewith, means for automatically controlling the discharge of sand from said reservoir into said mixing-chamber, a discharge-nozzle in communication with said mixing-chamber, a collector means adjacent thereto, and means for returning the sand from said collector means to the sand-reservoir.

8. An apparatus of the character described including a sand-reservoir and air-compressing means comprising a plurality of cylinders, one of said cylinders being adapted to act as a sand-suction means.

9. An apparatus of the character described including a sand-reservoir, air-compressing means, a mixing-chamber, a valve connecting said reservoir and said chamber, and a connection from said air-compressing means to said valve, said valve comprising a casing, a plunger-head therein, and a spring, the valve parts being so arranged that the air forces the plunger-head down to open said valve and the spring closes said valve when the air-pressure is released.

10. An apparatus of the character described including a sand-reservoir, outlet and inlet connections to said reservoir and an air-compressing means comprising a plurality of cylinders, one of said cylinders being adapted to exhaust into the outlet-pipe and another to exhaust into the inlet-pipe.

11. An apparatus of the character described including a sand-reservoir, an outlet therefor, an inlet thereto, a suction-chamber in connection with said inlet and an air-compressing means comprising a plurality of cylinders, one of said cylinders being adapted to exhaust into said outlet and another to exhaust into said suction-chamber.

12. An apparatus of the character described including a sand-suction means comprising a plurality of cylinders, a piston-rod having mounted thereon piston-heads adapted to generate in each of the respective cylinders air suction and compression means.

847,271. HOOK AND EYE. HELEN ATKINSON, Boston, Mass. Filed Sept. 26, 1906. Serial No. 336,351.

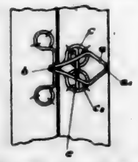

Claim.—1. A hook and eye of the invisible type composed of two parts, the eye part consisting of a bar and end loops joined by a quarter-bend approximately in a plane with the loops, the hook part consisting of the bill *a*, the neck *b*, the loops *c*, c^2, and the tongue *e*, the latter being slightly raised, all being formed from a short length of wire, and the bill *a* being bent in a substantially triangular shape.

2. A hook comprising opposite fastening-loops, and a bill connected with said loops by a relatively large bend and thence projecting forward and downward in two branches separated from each other to pass directly over and substantially in contact with said loops and thence converging together to form an approximately triangularly-pointed bill.

3. A hook, comprising opposite fastening-loops, and a

bill connected with said loops by a relatively large bend, the loops being substantially in line with the rear connecting end of the bend, and a bill extending from said bend forwardly and downwardly, and a tongue extending from one loop to the other transversely of said bend and having a raised portion arranged sufficiently close to the bill to retain the hook normally in hooked position, said bill having two branches separated from each other to pass directly over and close to said loops and thence converging together to form a pointed bill.

847,272. FLOOR-SET. ALVA AYERS, Payson, Okla. Filed Dec. 21, 1905. Serial No. 292,741.

Claim.—1. A floor-set comprising a body and a handle, the body being constructed with a block and with a poll set asiant thereon, said block being provided at one edge with a grooved face.

2. A floor-set comprising a bent block provided in its bend with a slanting handle-socket and provided on one edge with a grooved face.

3. A block provided on one edge with a hollow poll, and on the other edge with a groove.

4. A bent block provided on one side of the bend with a hollow poll, and on the other side of said bend with a grooved face, a buffer in said poll and a handle for handling the block.

5. A floor-set comprising a block having a base, a grooved face at one edge and a socketed poll at the other edge, a buffer in said poll, and a slanting handle.

6. A floor-set comprising a block having a base, a setting-face at one edge thereof, a poll at the other edge thereof, and a handle between the poll and the said face, the poll and base being asiant relative to each other.

7. A floor-set comprising a body and a handle, the body being constructed with a poll and a block, said block having a grooved face and a flat base at one edge, and the poll and the handle being asiant relative to said base.

847,273. PROCESS OF DRYING AIR FOR BLAST-FURNACES. NATHANIEL T. BACON, Peace Dale, R. I. Original application filed Jan. 25, 1905. Serial No. 242,697. Divided and this application filed Mar. 13, 1906. Serial No. 305,777.

Claim.—1. In the process of drying air or other gases for blast-furnaces and other uses, the improvement which consists in extracting the moisture from air or gas by lowering its temperature below the freezing-point by exposing it to a liquid chilled to a suitable temperature and with which water does not mix, and extracting the condensed moisture during the continuation of the process.

2. In the process of drying air or other gases for blast-furnaces and other uses, the improvement which consists in extracting the moisture from the air or gas by lowering its temperature below the freezing-point by exposing it to a liquid chilled to a suitable temperature with which water does not mix, causing the air to be chilled to mingle with the ice and chilled liquid so as to cause a preliminary cooling of the air to be chilled by melting the ice resulting from the chilling, and extracting the moisture wholly or partly in liquid form without interruption of the process.

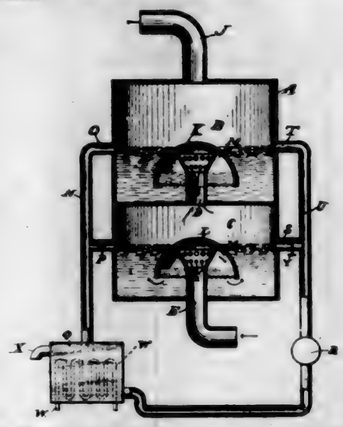

3. In the process of drying air or other gases for blast-furnaces and other uses, the improvement which consists in extracting the moisture from the air or gas supplied by lowering its temperature by exposing it to a relatively cold liquid, with which water does not mix, and extracting the condensed moisture during the continuation of the process.

4. In the process of drying air or other gases for blast-furnaces and other uses, the improvement which consists in extracting the moisture from the air or gas supplied by lowering its temperature by exposing it to chilled mercury, and extracting the condensed moisture during the continuation of the process.

847,274. ROLLER-BEARING. ELLSWORTH BELKNAP, Polo, Ill., assignor to William C. Ross, Chicago, Ill. Filed Jan. 23, 1906. Serial No. 297,520.

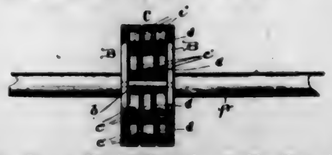

Claim.—In a roller-bearing, the combination of an inner hardened-metal trackway, an outer hardened-metal trackway, a plurality of hardened-metal sectional rollers between the two trackways, each section of each roller wider at the base than at the periphery and each roller formed of wide and narrow separated sections with the rollers arranged in staggered relation for wide and narrow sections to oppose each other on adjacent rollers, a pair of side plates between which the plurality of rollers are mounted, and a journal-pin of pliable metal for each roller and supported in the side plates and having the sectional roller fixed thereon, substantially as described.

847,275. SCAFFOLD. GEORGE BONENBERGER, Evansville, Ind., assignor to Handy Scaffold Co., Evansville, Ind., a Corporation of Indiana. Filed May 26, 1906. Serial No. 318,854.

Claim.—1. In a device of the character described, the combination of a scaffold-holder having a comparatively

thin flat supporting-arm adapted to extend between the overlapping edges of the usual weather-boards, and a supporting-bracket detachably connected to said arm.

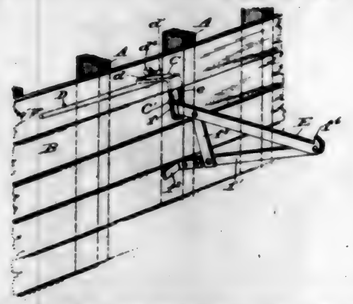

2. In a device of the character described, the combination of a scaffold-holder, means for securing it to the studding or upright of a building, said holder having a comparatively thin flat supporting-arm to extend between the overlapping edges of the usual weather-boards, and a supporting-bracket detachably connected to said arm.

3. In a device of the character described, the combination of a scaffold-holder comprising a comparatively thin flat arm adapted to extend between the overlapping edges of the usual weather-boards, a clamp for securing said holder to the inside of the usual studding or uprights, and a supporting-bracket detachably connected to said arm on the outside of the weather-boards, said supporting-bracket having a leg bearing on the weather-boards beneath the clamp.

4. In a device of the character described, the combination of a scaffold-holder comprising an arm adapted to extend downwardly between the overlapping edges of the usual weather-boards, a lever pivotally connected to the holder and adapted to clamp the same to the inside portions of the usual studding or uprights, and a supporting-bracket having a detachable connection with said arm on the outside of the weather-boards.

5. In a scaffold, the combination of a scaffold-holder, a lever pivotally connected thereto and adapted to bear upon the inside of adjacent studding or uprights, said holder having a downwardly-projecting arm to extend between the overlapping edges of the usual weather-boards, a bracket disposed on the outside of the weather-boards and a detachable connection between said bracket and downwardly-extending arm.

6. In a scaffold, the combination of a scaffold-holder, a lever pivotally mounted thereon, an adjusting-bearing on one end of said lever, said holder having a downwardly-projecting arm to extend between the overlapping edges of the usual weather-boarding, whereby said holder may be clamped in place, a supporting-bracket, and detachable connections between said bracket and downwardly-extending arm.

7. In a scaffold, the combination of a scaffold-holder, a lever pivotally mounted thereon, an adjusting-bearing on one end of said lever, said holder having a downwardly-projecting arm to extend between the overlapping edges of the usual weather-boarding, said downwardly-projecting arm having an undercut recess, and a supporting-bracket having a lug to detachably engage said undercut recess.

847,276. SEAL FOR BOXES. EDWARD J. BROOKS, East Orange, N. J. Filed Jan. 23, 1907. Serial No. 353,666.

Claim.—1. A seal part for sealing wooden boxes constructed with a circumferential rim having diametrically opposite slots adapted to admit the overlapped ends of a box-strap, and an upper portion having a central hole adapted to admit the head of a nail driven therethrough and a continuous downturned edge surrounding said hole and located above the plane of said slots.

2. A seal part for sealing wooden boxes constructed with a circumferential rim having diametrically opposite slots adapted to admit the overlapped ends of a box-strap and a lower edge constructed to be embedded in the wood, and an upper portion having a central hole adapted to admit the head of a nail driven therethrough.

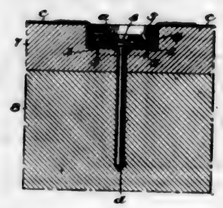

3. A seal part for sealing wooden boxes constructed with a circumferential rim having diametrically opposite slots adapted to admit the overlapped ends of a box-strap and a lower edge constructed to be embedded in the wood, and an upper portion having a central hole adapted to admit the head of a nail driven therethrough and a continuous downturned edge surrounding said hole.

4. In a seal for boxes, the combination with a flat box-strap and with a nail adapted to be driven through the overlapped ends of said box-strap, of a seal part constructed with a circumferential rim having diametrically opposite slots adapted to admit such overlapped ends, and an upper portion having a central hole adapted for the passage of the head of the nail therethrough and a continuous downturned edge surrounding said hole and located above the plane of said slots.

5. In a seal for boxes, the combination with a flat box-strap, and with a nail adapted to be driven through the overlapped ends of said box-strap, of a seal part constructed with a circumferential rim having diametrically opposite slots adapted to admit such overlapped ends and a lower edge constructed to be embedded in the wood, and an upper portion having a central hole adapted for the passage of the head of the nail therethrough.

6. In a seal for boxes, the combination with a flat box-strap, and with a nail adapted to be driven through the overlapped ends of said box-strap, of a seal part constructed with a circumferential rim having diametrically opposite slots adapted to admit such overlapped ends and a lower edge constructed to be embedded in the wood, and an upper portion having a central hole adapted for the passage of the head of the nail therethrough and a continuous downturned edge surrounding said hole, substantially as hereinbefore specified.

847,277. ADJUSTABLE KNIFE-GAGE. EDWARD COLEMAN, Minneapolis, Minn. Filed Nov. 21, 1906. Serial No. 344,472.

Claim.—1. A knife-gage, comprising a body portion providing clamping-jaws adapted to engage a cutting-blade, an arm extending laterally therefrom at a right angle and provided with a longitudinal slot, a gage-head adjustable lengthwise of said arm, and a screw operating in said slot for holding the gage-head in place on the arm, substantially as set forth.

2. A knife-gage, comprising a body portion providing clamping-jaws adapted to engage a cutting-blade, an arm extending therefrom laterally and at a right angle to the side of the blade, a flanged L-shaped gage-head slidable

on said arm, and a screw operating in said slot for holding the gage-head in place on the arm, substantially as set forth.

847,278. PNEUMATIC CLEANER. WILLIAM W. CONOVER, Toronto, Ontario, Canada, assignor to Sanitary Carpet Cleaner Co., a Company of New York. Filed Apr. 26, 1905. Serial No. 257,547.

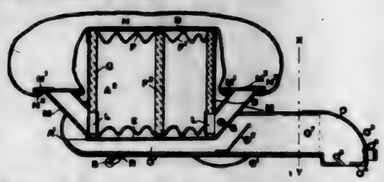

Claim.—1. A pneumatic cleaner comprising a casing open at its front end, and having a suction-chamber located toward the back of the casing and leaving a passage underneath the same, said passage communicating at opposite ends by valved inlet-openings with the suction-chamber, a double-acting suction-creating device located in the chamber, a drawer extending into the casing through the open front end and beyond the rear of the suction-chamber and having a deflecting-plate located thereon in front of the forward inlet-opening and a depending front mouthpiece, and valved outlet-conduits for the suction-chamber extending upwardly from the front and rear of the suction-chamber beyond the top of the casing.

2. A pneumatic cleaner comprising a casing open at its front end and having a suction-chamber located toward the back of the casing and leaving a passage underneath the same, said passage communicating at opposite ends by valved inlet-openings with the suction-chamber, a double-acting suction-creating device located in the chamber, a suitable mouthpiece in the front of the casing and valved outlet-conduits for the suction-chamber extending upwardly from the front and rear beyond the top of the casing, as specified.

3. A pneumatic cleaner comprising a casing open at its front end and having a suction-chamber located toward the back of the casing and leaving a passage underneath the same, said passage communicating at opposite ends by valved inlet-openings with the suction-chamber, a double-acting suction-creating device located in the chamber, a deflecting-plate located in the casing in front of the forward inlet-opening, a suitable mouthpiece in the front of the casing and valved outlet-conduits for the suction-chamber extending upwardly from the front and rear beyond the top of the casing, as specified.

847,279. CAKE-SOAP HOLDER. PAUL F. COX, Battle Creek, Mich. Filed Dec. 18, 1906. Serial No. 348,404.

Claim.—1. In a soap-holder, the combination of a casing constructed to be attached to a faucet, a rotatory annulus in the casing, a spring within the annulus and adapted to move it in one direction, a rod connected to said annulus, and a soap-suspending device connected to the outer end of the rod.

2. In a soap-holder, the combination of a bracket constructed and adapted to be detachably attached to a faucet, a casing attached to the bracket, a rotatable member in the casing, a spring within the member adapted to move the member to one position, a rod connected to said member, and a flexible soap-suspending device connected to the outer end of the rod.

3. In a soap-holder, the combination of a casing having a slot in its periphery, a hollow member within the casing provided with a finger projecting out of the slot, a coiled spring within the member having one end attached to the member and the other to the casing, a rod connected to the finger, a flexible device connected to the outer end of the rod, and means for attaching a cake of soap to the device.

4. In a soap-holder, the combination of a casing constructed and adapted to be removably attached to a faucet and having a slot in its periphery, a rotatable annulus within the casing provided with a finger projecting out of the slot, a coiled spring within the annulus having one

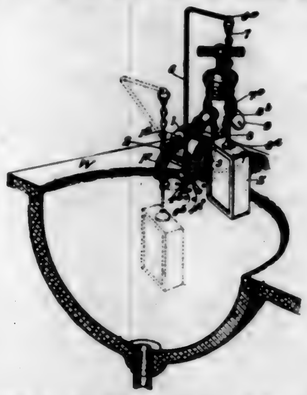

end attached to the annulus and the other end attached to the casing, a rod connected to the finger, a chain connected to the upper end of the rod, and means for attaching a cake of soap to the chain.

847,280. ATTACHMENT FOR BOTTLE-WASHING MACHINES. WILLIAM J. CUNNINGHAM, Philadelphia, Pa. Original application filed Apr. 13, 1906, Serial No. 311,514. Divided and this application filed Dec. 15, 1906. Serial No. 348,032.

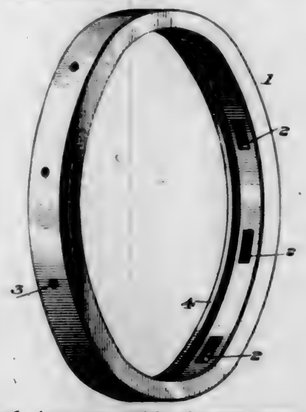

Claim.—1. As a new article of manufacture, a rubber band adapted for use in a bottle-washing machine or the like, having openings therethrough and having recesses or seats provided at intervals in its inner face.

2. As a new article of manufacture, a rubber band adapted for use in bottle-washing machines and the like, having openings therethrough at intervals, recesses in its inner face and a depending lip on one edge.

3. As a new article of manufacture, a rubber band adapted for use in bottle-washing machines or the like, having openings therethrough at intervals, and recesses adjacent said openings at intervals in its inner face.

847,281. CEMENT-MIXER. JAMES A. DEVINE, Zanesfield, Ohio. Filed Sept. 26, 1905. Serial No. 280,192.

Claim.—1. In a concrete-mixer, the combination of a platform with a cut-away portion at one end, a frame on said platform adjacent to said cut-away portion, an oscillating drum loosely mounted in said frame and having an opening in its periphery provided with chutes at opposite edges thereof a shaft journaled in said frame and having within said drum shovels thereon, and means for rotating said shaft independently of said drum, as and for the purpose set forth.

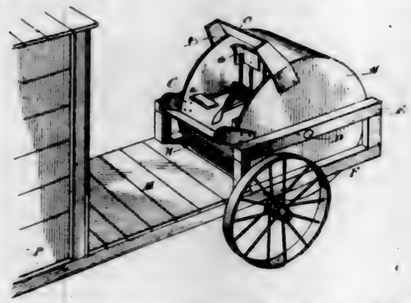

2. In a concrete-mixer a mixing-drum with shaft having thereon several series of shovels, each series extending around the shaft and having a flat shovel, the other shovels of the series being curved, and the shovels of each series being arranged so that the flat shovels of the several series are in different horizontal rows, as and for the purpose set forth.

847,282. PROCESS OF MAKING PITCH FOR COATING THE INTERIORS OF BEER AND ALE PACKAGES. HENRY C. DIPPEL, St. Louis, Mo., assignor to Busch-Freund Brewers' Supply Co., St. Louis, Mo., a Copartnership. Filed July 9, 1906. Serial No. 325,200.

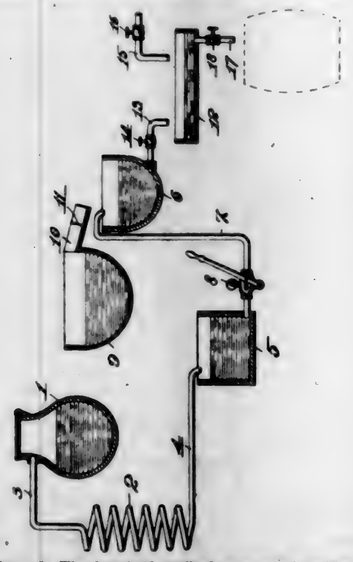

Claim.—1. The herein-described process of making pitch for coating the interior of beer and ale packages, which consists in mixing oil distilled from melted resin with melted resin in approximately the proportions herein specified, and then adding water to the oil and melted resin after the same are mixed.

2. The herein-described process of making pitch for coating the interior of beer and ale packages, which consists in mixing resin-oil, melted resin, and water in approximately the proportions herein specified.

847,283. TELEPHONY. HAROLD J. FISHER, Hotchkiss, Colo., assignor of one-half to George H. Duke, Hotchkiss, Colo. Filed Aug. 25, 1906. Serial No. 332,044.

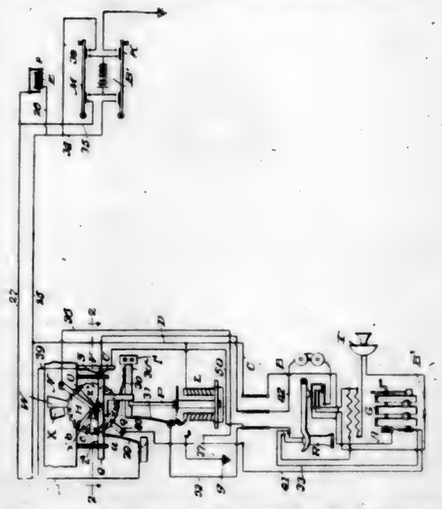

Claim.—1. In a selective telephone system, in combination, a central station, local stations, a selecting-wheel at each local station, a polarized magnet at each local station normally connected on one side to the central station, and having an armature operatively connected to the wheel and responsive to impulses in one direction to turn the wheel, means part of which are carried by the wheel to connect the magnet on the other side to central, normally open contacts in the talking-circuit of each station, and means operated by the armature and responsive to impulses in the opposite direction to close the contacts.

2. In a selective telephone system, in combination, a central station, local stations, a selecting-wheel at each local station, a polarized magnet at each local station, connected to and controlled from the central station and having a swinging armature, a slide operatively connected to the armature and to the wheel and adapted to turn the latter when the former swings one way, normally open contacts in the talking-circuit of each station, a slide connected to the armature and movable thereby when it swings the other way to close the contacts, and means actuated by the wheel, when restored to normal position, to retract the latter slide to open said contacts.

3. In a selective telephone system, the combination with a central station, and local stations, of a selective apparatus at each station comprising a toothed wheel having a conducting connection between two of its teeth, a spring connected to line and normally in contact with one of said teeth, a slide having a conducting connection to the generator at such station and having a spring normally in contact with the other of said teeth, a polarized magnet connected on one side to a selected tooth of the wheel and on the other side to the central station, means actuated by the magnet to move the slide and turn the wheel to contact the selected tooth with the said spring connected to line, and means actuated by the magnet, when said contact is made, to connect the telephone to the line.

4. In a selective telephone system, in combination, a central station, local stations, a selecting-wheel at each local station, signal and selective connections between the central and local stations, part of said connections being carried by the wheel, and means controlled at central sta-

tion to operate the wheel and connect selected local stations and to maintain the signal connections from the other stations to central during the time the selected stations are connected.

847,284. COMMUTATOR. JOHN R. GRINDROD, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Aug. 1, 1904. Serial No. 218,980.

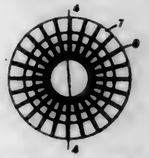

Claim.—1. A cylindrical commutator formed of conducting members separated by separable insulating members, the conducting members and insulating members being reversely tapered radially with respect to each other.

2. In a cylindrical commutator, conducting-segments and separable interposed layers of insulating material, the inner edges of said insulating-layers being wider than their outer edges.

3. In combination, a shaft, a plurality of segments arranged about said shaft and secured thereto, adjacent commutator-segments being shaped to form intervening spaces narrower at the periphery of the commutator than at points nearer the center of the commutator, and a separate piece of solid insulating material located in each of said spaces.

4. A cylindrical commutator comprising conducting members separated by strips of sheet-mica, the conducting members and strips of mica being reversely tapered radially with respect to each other.

5. A cylindrical commutator the brush-engaging portion of which is composed of strips or members of conducting material and interposed strips of insulating material, the strips of insulating material being separable from each other and tapered in cross-section with their outer edges narrower than their inner edges, and the conducting members being reversely tapered.

6. A cylindrical commutator formed of a plurality of independent conducting members separated from each other by separable insulating members, the conducting members and insulating members being reversely tapered with respect to each other.

7. A cylindrical commutator comprising a plurality of independent conducting members separated from each other by strips of sheet-mica, the conducting members and strips of mica being reversely tapered with respect to each other.

847,285. DOOR-CHECK. MARVIN L. HARRIS, Newport News, Va. Filed Dec. 19, 1906. Serial No. 348,583.

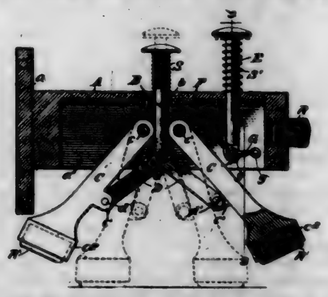

Claim.—1. In combination with a support adapted for attachment to a door, a pair of locking-feet pivotally depending from said support and inclining away from each other and normally tending to swing downward toward each other into engagement with the floor, foot-operated means between the arms for spreading and raising them against their normal tendency, and foot-operated means for normally locking the arms in their raised position.

2. In combination with a support adapted for attachment to a door, a pair of locking arms or feet pivotally depending from said support and adapted at their lower ends for engagement with the floor, spring-actuated means for normally swinging the arms downwardly toward each other to locking position, said means embodying a vertical push-rod extending above the top of the support, and a latching device for holding said means out of action, this latching device embodying a second push-rod extending above the support.

3. In combination with a support adapted for attachment to a door, a pair of floor-engaging legs depending from said support and inclining away from each other, a pair of toggle-links connected to the legs and to each other, a push-rod and a spring for normally raising it, said push-rod being provided with a locking-notch and being pivotally connected to the knuckle of the toggle, and a latching device for said push-rod embodying a second push-rod and means for normally holding it up.

847,286. WATER-SUPPLYING ATTACHMENT FOR ROCK-DRILLING MACHINES. HENRY HELLMAN and LEWIS C. BAYLES, Johannesburg, Transvaal. Original application filed July 12, 1905, Serial No. 269,406. Divided and this application filed July 24, 1906. Serial No. 327,471.

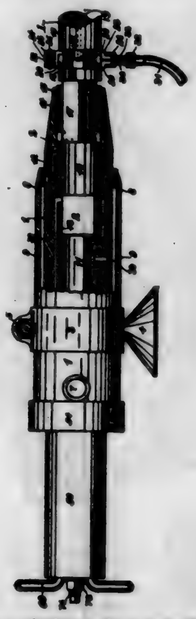

Claim.—1. In a device such as described, in combination, a drill-steel having a longitudinal hole therein and an annular recess and a transverse port communicating at its outer end with said recess and at its inner end with said longitudinal hole, a swivel-piece mounted in said recess, said swivel-piece consisting of two parts hinged together, means for detachably connecting said parts around the steel, and means for conducting water under pressure to said swivel-piece.

2. In a device such as described, in combination, a drill-steel having a longitudinal hole therein and an annular recess and a transverse port communicating at its outer end with said recess and at its inner end with said longitudinal hole, a swivel-piece mounted in said recess, said swivel-piece consisting of two parts hinged together, said swivel having an internal recess around the drill-steel which internal recess communicates with the transverse hole in the steel, the two parts of said swivel-piece being detachably connected in the recess in the steel, and means for introducing liquid under pressure to the cavity in the swivel-piece.

3. In a device such as described, in combination, a drill-steel having a longitudinal port therein and an annular recess and a transverse port communicating at its outer end with said recess and at its inner end communicating with said longitudinal hole, a swivel-piece comprising two parts hinged together, said swivel having an internal recess round the drill-steel in communication with the transverse port, means for detachably connecting the swivel in the recess in the drill-steel, and means for conducting liquid under pressure to the recess in the swivel-piece.

4. In a device such as described, in combination, a drill-steel having a longitudinal hole therein and an annular recess and a plurality of transverse ports communicating at their outer ends with said recess and at their inner ends with said longitudinal hole, a swivel-piece in two parts hinged together, said swivel-piece having an annular internal recess round the drill-steel and communicating with the transverse ports, means for detachably connecting the swivel-piece in the recess in the drill-steel, the swivel-piece having a hose-stem and a hose-pipe attached to said stem communicating with a source of liquid-supply under pressure, as set forth.

5. In a device such as described, in combination, a drill-steel having a longitudinal hole leading to the cutting end thereof and an annular recess forming round the drill-steel annular shoulders or projections and a plurality of transverse ports communicating at their outer ends with said recess and at their inner ends with said longitudinal hole, a swivel-piece mounted in the recess between the shoulders or abutments, said swivel-piece having an internal cavity in communication with the transverse holes in the drill-steel and comprising two parts hinged together, means for detachably connecting the swivel in the recess in the drill-steel, said means comprising a ferrule or nut, the swivel-piece having a hose-stem, a hose-pipe, a clamp fixing said pipe to the stem, the pipe communicating with a source of liquid-supply under pressure, as set forth.

6. In a device such as described, in combination, a power-cylinder having at its forward end an aperture of polygonal transverse section, a drill-steel having a longitudinal hole leading to the cutting end and its rear extremity of polygonal transverse section corresponding to the aperture in the front end of the cylinder in which it fits so that it is compelled to rotate therewith, a swivel-piece rotatable mounted on the rear end of said drill-steel and in communication with said longitudinal hole, and means for conducting liquid under pressure to said swivel-piece.

7. In a device such as described, in combination, a power-cylinder having at its forward end an aperture of polygonal transverse section, a drill-steel having longitudinal and transverse holes, and its rear extremity of polygonal transverse section corresponding to the aperture in the front end of the power-cylinder in which it fits so that it is compelled to rotate therewith, a swivel-piece on said steel in communication with the longitudinal and transverse holes in the latter, and means for conducting water under pressure to said swivel.

8. In a device such as described, in combination, a power-cylinder, a reciprocating percussive member therein, an impact-piece located in the forward end of the cylinder and adapted to receive and transmit the impacts of the percussive member to the drill-steel, the power-cylinder having an aperture of polygonal transverse section in front of said impact-piece, a drill-steel of polygonal transverse section at its rear extremity projected into the correspondingly-shaped aperture in the front end of the power-cylinder, said drill-steel having a longitudinal hole and transverse holes and an annular recess with which said transverse holes communicate, a swivel-piece located in said annular recess and means for conducting water under pressure to said swivel-piece.

9. In a device such as described, in combination, a power-cylinder, a reciprocating percussive member therein, an impact-piece located in the forward end of the power-cylinder and adapted to receive and transmit the impacts of the percussive member to the drill-steel, a bush fitted in the forward end of the power-cylinder in front of the impact-piece said bush being made with a hole of polygonal transverse section, a drill-steel of polygonal transverse section at its rear extremity projected into the correspondingly-shaped bush in the front end of the power cylinder, said drill-steel having a longitudinal hole and transverse holes and an annular recess with which said transverse holes communicate, a swivel-piece located in said annular recess having an internal cavity in communication with the transverse holes, and means for conducting water under pressure to said swivel-piece.

847,287. LIGHT-CONTROLLER. EDWIN P. KING, New York, N. Y., assignor, by mesne assignments, to George Murphy, Incorporated, New York, N. Y., a Corporation of New York. Filed Oct. 22, 1904. Renewed Oct. 22, 1906. Serial No. 340,071.

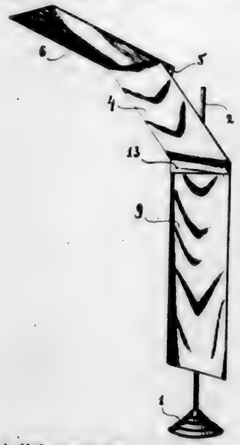

Claim.—1. A light-controller comprising a stand, a series of laterally-displaceable frames carried by said stand, and a covering carried by each frame.

2. A light-controller comprising a stand, a series of laterally-displaceable frames carried by said stand, and a transparent covering carried by each frame.

3. A light-controller comprising a stand, a series of laterally-displaceable frames carried by said stand, and a transparent colored covering carried by each frame.

4. A light-controller of substantially the class described, having one or more frames, each carrying a covering adapted to pass monochrome light only.

5. A light-controller comprising a stand, a plurality of laterally-displaceable frames, and movable links between each two abutting frames and adapted to connect the same.

6. A light-controller comprising a stand, a plurality of laterally-displaceable frames, a covering carried by each frame, and movable links between each two abutting frames and adapted to connect the same.

7. A light-controller comprising a stand, a plurality of laterally-displaceable frames, a transparent covering carried by each frame, and movable links between each two abutting frames and adapted to connect the same.

8. A light-controller comprising a stand, a plurality of laterally-displaceable frames, a transparent colored covering carried by each frame, and movable links between each two abutting frames and adapted to connect the same.

9. A light-controller comprising a stand, a plurality of

laterally displaceable frames, a covering carried by each frame and adapted to pass monochrome light only, and movable links between each two abutting frames and adapted to connect the same.

10. A light-controller comprising a stand, a frame slidably secured thereon, two or more frames laterally displaceable in relation to said slidable frame, and a covering carried by each frame.

11. A light-controller comprising a stand, a frame slidably secured thereon, two or more frames laterally displaceable in relation to said slidable frame, and a transparent covering carried by each frame.

12. A light-controller comprising a stand, a frame slidably secured thereon, two or more frames laterally displaceable in relation to said slidable frame, and a transparent colored covering carried by each frame.

13. A light-controller comprising a stand, a frame slidably secured thereon, a plurality of frames laterally displaceable in relation to said slidable frame, and a covering carried by each frame and adapted to pass monochrome light only.

14. A light-controller comprising a stand, a frame slidably secured thereon, a plurality of frames laterally displaceable in relation to said slidable frame, a covering carried by each frame, and movable links between each two abutting frames and adapted to connect the same.

15. A light-controller comprising a stand, a frame slidably secured thereon, a plurality of frames laterally displaceable in relation to said slidable frame, a transparent covering carried by each frame, and movable links between each two abutting frames and adapted to connect the same.

16. A light-controller comprising a stand, a frame slidably secured thereon, a plurality of frames laterally displaceable in relation to said slidable frame, a transparent colored covering carried by each frame, and movable links between each two abutting frames and adapted to connect the same.

17. A light-controller comprising a stand, a frame slidably secured thereon, a plurality of frames laterally displaceable in relation to said slidable frame, a covering carried by each frame and adapted to pass monochrome light only, and movable links between each two abutting frames and adapted to connect the same.

18. A light-controller comprising a stand, a plurality of frames, a covering for each frame, the covering of at least one of which extends beyond the lower end of its frame and is adapted to cover the space between abutting frames.

19. A light-controller comprising a stand, a plurality of frames, a transparent covering for each frame, the covering of at least one of which extends beyond the lower end of its frame and is adapted to cover the space between abutting frames.

20. A light-controller comprising a stand, a plurality of frames, a transparent colored covering for each frame, the covering of at least one of which extends beyond the lower end of its frame and is adapted to cover the space between abutting frames.

21. A light-controller comprising a stand, a plurality of frames, a covering for each frame and adapted to pass monochrome light only, the covering of at least one of which extends beyond the lower end of its frame and is adapted to cover the space between abutting frames.

22. A light-controller comprising in combination a stand, an inclined frame, a socket secured to said frame and adapted to move on said stand, a second frame arranged at the top of the first frame at an angle thereto and capable of lateral displacement, and an apron arranged at the bottom of said first frame and capable of lateral displacement.

847,288. AUTOMATIC STEAM AND AIR PIPE COUPLING. JAMES E. MARBLE, Albany, N. Y., assignor of one-third to John J. Layden, Albany, N. Y. Filed Jan. 2, 1907. Serial No. 350,459.

Claim.—1. In a railway-vehicle, the combination with a coupler, of a support therefor depending from the under side of the vehicle-body and including a universal joint, and connections between the coupler and the vehicle-truck, whereby the coupler follows the direction of the truck rather than that of the vehicle-body, substantially as described.

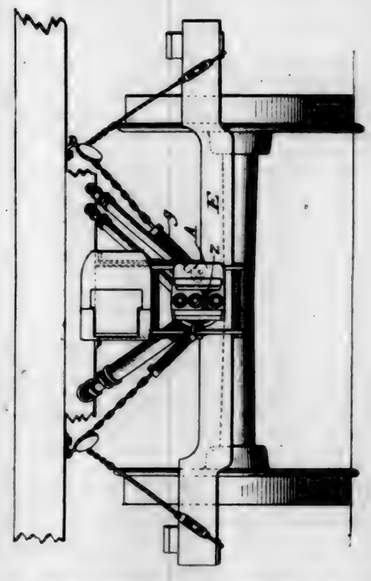

2. In a railway-vehicle, the combination with a coupler, of a support therefor depending from the under side of the vehicle-body and including a universal joint, and connections extending from the forward end of the coupler to the forward end piece of the vehicle-truck frame, whereby the coupler follows the direction of the truck rather than that of the vehicle-body, substantially as described.

3. In a railway-vehicle, the combination with a coupler, of a support therefor depending from the under side of the vehicle-body and including a universal joint, flexible connectors secured at one end to the forward end of the coupler, hangers depending from the vehicle-body through which the flexible connectors freely pass, and connections between the other ends of the flexible connectors and the vehicle-truck frame, whereby the coupler follows the direction of the truck rather than that of the vehicle-body, substantially as described.

4. In a railway-vehicle, the combination, with a coupler, of a support therefor depending from the under side of the vehicle-body and including a universal joint, flexible connectors secured at one end to the coupler-head, sheaves depending from the vehicle-body through which the flexible connectors freely pass, connections between the other ends of the flexible connectors and the forward end piece of the vehicle-truck frame, and springs interposed in the flexible connectors between the coupler-head and the sheaves, whereby the coupler-head follows the direction of the truck rather than that of the vehicle-body, substantially as described.

5. The combination with a coupler, of a hanger provided with a gimbal supporting said coupler, said gimbal being loosely journaled in elongated bearings, and yielding means tending to positively force the trunnions of said gimbal to the lower extremities of said bearings, substantially as described.

6. The combination with a coupler, of a hanger provided with a gimbal supporting said coupler, said gimbal being loosely journaled in elongated bearings inclined rearwardly from top to bottom, and a spring interposed between the coupler-head and the gimbal to yieldingly force the trunnions of said gimbal to the lower extremities of the bearings, substantially as described.

7. A coupler for train-pipes provided with a head having ports or channels, air and steam pipes connected to said ports and channels, an incasing tube for the pipes, an opening in said head cored out between the steam-port and the adjacent air-port, and an open or skeleton head in the rear end of the incasing tube supporting said pipes, substantially as described.

8. A coupler-head fluid-outlet port, having therein a shouldered bushing, a corresponding shouldered spring-seated hollow gasket of elastic material fitting within the bushing, and a ring of antifriction material on the inner surface of said bushing in position to contact with said gasket during its movement, substantially as described.

9. A coupler-head fluid-outlet port having therein a shouldered bushing, a corresponding shouldered spring-seated hollow gasket of elastic material fitting within the bushing, and a lining of antifriction material for said bushing extending throughout the range of movement of said gasket, substantially as described.

10. A coupler-head fluid-outlet port having therein a shouldered bushing, a corresponding shouldered spring-seated hollow gasket of elastic material fitting within the bushing, a lining of antifriction material for said bushing extending throughout the range of movement of said gasket, and an expander between the gasket and its spring, substantially as described.

11. A coupler-head for train-pipes having therein a port terminating in an enlarged cylindrical chamber, a bushing engaging the inner periphery of said chamber, an annular ring set into the rear wall of said chamber and having a beveled face engaging the rear end of the bushing, substantially as described.

12. A coupler-head for train-pipes having therein a port terminating in a cylindrical chamber having an enlarged portion at its forward end, a shouldered bushing in said enlarged portion, a gasket in said bushing, a spring on which the gasket is seated and having a range of movement within the reduced portion of the cylindrical chamber and the bushing, an annular countersunk recess in the shoulder between the reduced and enlarged portions of the cylindrical chamber, and an annular ring set in said recess and engaging the inner end of the bushing, substantially as described.

13. A coupler-head for train-pipes having therein a port terminating in a cylindrical chamber having an enlarged portion at its forward end, a shouldered bushing in said enlarged portion, a gasket in said bushing, an expander engaging the rear end of said gasket, a spring between the expander and the rear end of the cylindrical chamber, an annular countersunk recess in the shoulder between the reduced and enlarged portions of the cylindrical chamber, and an annular ring set in said recess and having a beveled outer face engaging the inner end of the bushing, substantially as described.

14. A coupler-head for train-pipes having therein separate ports for the steam, air-brake, and air-signal, connections, bushings in said ports having the same external diameter at the face of the coupler-head, and equally-spaced wrench-engaging recesses in all of said bushings, the internal diameters of the several bushings differing with respect to one another to accommodate different-sized contact-gaskets, substantially as described.

847,289. SIGNAL DEVICE FOR STREET-CARS. HARRY H. MILLER, St. Louis, Mo., assignor of three-eighths to George H. Watson, and one-fourth to J. F. Madden, St. Louis, Mo. Filed July 30, 1906. Serial No. 328,353.

Claim.—1. The combination with a car, of a movable visual signal located at the rear end thereof, operating connections for actuating said signal, and an audible signal controlled by said connections.

2. The combination with a car, of a pivoted arm normally in vertical position at the rear end thereof, operating connections for moving said arm into position to block the path to the adjacent track, and an audible signal controlled by said connections.

3. The combination with a car, of a vertical casing situated at the rear end thereof, a pivoted arm normally contained in said casing, a signal-flag carried by said arm, and operating connections for moving said arm into position to block the path to the adjacent track.

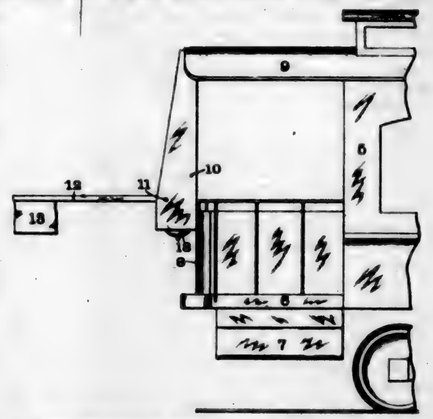

4. The combination with a car, of a vertical casing situated at the rear end thereof, a pivoted arm normally contained in said casing, a signal-flag carried by said arm, operating connections for moving said arm into position to block the path to the adjacent track, and an audible signal controlled by said connections.

847,290. END-GATE SEEDING-MACHINE. EMIL F. MOLCK, Sibley, Ill., assignor to Meadows Manufacturing Company, Meadows, Ill., a Corporation of Illinois. Filed July 14, 1904. Serial No. 216,506.

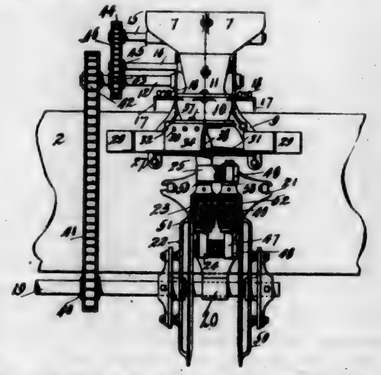

Claim.—1. In a device of the class described, the combination of a scattering-wheel provided with a series of blades and having an annular depression within the circle described by the inner ends of said blades, and an overlying feedway having portions projecting into the annular depression of the said wheel, substantially as specified.

2. In a device of the class described, the combination of a scattering-wheel provided with a series of blades and having an annular depression within the circle described by the inner ends of the said blades, a feedway overlying the said wheel having a depending semicircular wall extending into the depression of the said wheel, and a portion of the said wall having a deflecting portion, substantially as specified.

3. In a device of the class described, a scattering-wheel having an annular tapered portion, a series of blades ex-

tending radially from the outer circle of the tapered portion to the periphery of said wheel, and an overlying feedway disposed within the circle of the said tapered portion of the wheel, substantially as specified.

4. In a device of the class described, a scattering-wheel having an annular tapered portion, a series of blades extending radially from the outer circle of the said tapered portion, that portion of the scattering-wheel supporting the blades being lower than that portion of the wheel described by the outer circle of the tapered portion thereof, and a feedway overlying the tapered portion of the wheel, substantially as specified.

5. In a device of the class described, a scattering-wheel provided with a central tapered body portion, a depressed annular ring in the plate encircling said tapered portion, a series of blades on said plate extending radially from the peripheral edge thereof to a point adjacent to the annular depression, the body of the plate supporting the blades being lower than that portion of the wall described by the outer circle of the tapered portion thereof, and a feedway overlying said tapered portion with portions depending into the annular depression, and the said feedway provided with a deflecting portion, substantially as specified.

6. In a device of the class described, the combination with a casing supporting seed-feeding devices, a scattering-fan revolubly carried beneath the casing, and a semicircular shell supported by the casing and overlying the said fan, the said shell provided with a seed-opening and having a deflecting portion, substantially for the purposes specified.

7. In a device of the class described, the combination of a casing supporting seed-feeding devices, a fan revolubly supported beneath said casing having a series of radial blades and a depressed annular ring in the body thereof within the circle described by the inner ends of the said blades, and a semicircular casing adjustably supported by the casing and overlying the said fan, and having a depending wall extending into the annular depression of the fan, substantially for the purposes specified.

8. In a device of the class described, the combination of a casing supporting seed-feeding devices, a fan revolubly supported beneath the casing having a central tapered body portion and an annular depression in the body thereof, blades extending radially from the depression in the fan to the peripheral edge thereof, a casing adjustably supported by the first-mentioned casing and overlying the said fan, the said casing having a depending semicircular wall, the lower edge of which extends into the annular depression of the fan, and the said semicircular wall being provided with an outwardly and forwardly flared portion serving as a deflector, and with a series of perforations, substantially for the purposes specified.

9. In an end-gate, seeding-machine, the combination of a wagon-bed, an end-gate for supporting seeding devices, and means for detachably supporting said end-gate against the rear end of the wagon, consisting of threaded rods passed through the end-gate engaged by nuts, and the opposite ends of the said threaded rods having inturned hooked portions adapted to engage cleats secured to the outside of said wagon-bed, substantially for the purposes specified.

10. In a device of the class described, the combination of a casing supporting seed-feeding devices, a fan-shaft, a fan carried by said shaft and disposed beneath the casing, a driving-shaft, a friction-wheel on the driving-shaft, a friction-pinion on the fan-shaft yieldingly engaged by said driving-wheel, the friction-pinion consisting of a sleeve, suitable rings carried by said sleeve and compactly held thereon by means of a collar secured on one end of the sleeve, the said sleeve being flared outwardly to engage the collar for the purpose of locking the rings in position on the said sleeve, all substantially for the purposes herein described.

11. In a device of the class described, the combination of a casing supporting grain-feeding devices, and also grass-seed-feeding devices and the said casing provided with a depending spout forming a mixer for the grass and grain seed, a scattering-fan revolubly mounted beneath the spout of said casing, means for actuating said fan, a seed-delivery shell supported by the lower end of aforesaid spout, overlying the said fan and provided with a seed-opening communicating with the spout, the said shell formed with an outwardly-flared and depending semicircular wall provided on one side with a seed-deflecting portion, substantially for the purposes specified.

12. In a device of the class described, the combination with a casing supporting seed-feeding devices, a scattering-fan revolubly carried beneath the casing, and a semicircular shell supported by the casing and overlying the fan, the said shell provided with a seed-opening also a series of perforations in its upper wall and having a deflecting portion, substantially for the purpose specified.

13. In a device of the class described, the combination with a casing supporting seed-feeding devices, a scattering-fan revolubly carried beneath the casing, a semicircular shell having a seed-opening and a series of perforations in its upper wall, adjustably supported by the casing, and said shell having a vertical deflecting portion, substantially for the purpose specified.

847,291. SEPARABLE FASTENING. WILLIAM B. MURPHY, New York, N. Y. Original application filed June 7, 1906, Serial No. 320,588. Divided and this application filed Oct. 24, 1906. Serial No. 340,346.

Claim.—A device for the purpose specified, consisting of a resilient, laterally-compressible, globular stud, provided with a plurality of clenching-clips, an upper plate P, having an integral, bulbous portion *b*, within the hollow of the globular stud, and having apertures *a*, through which the clips on the stud extend, said clips being clenched on the back of the plate, and a separate eyelet E for securing the plate P to the material, said eyelet being closed at its clenching end which enters the bulb and provided at its lower end with a broad flange *f* to rest upon the back of the material.

847,292. HOSE-COUPLING. JAMES F. MCELROY, Albany, N. Y., assignor to Consolidated Car Heating Company, Albany, N. Y., a Corporation of West Virginia. Filed July 13, 1906. Serial No. 325,990.

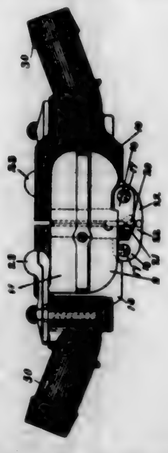

Claim.—1. Complementary coupler-halves having members forming a plurality of axes of rotation which come into operation successively during the relative angular movement of said halves.

2. A hose-coupler comprising two complementary halves provided with port-seats which are brought together by a pivotal movement of the halves, and having members forming successively-acting centers of pivotal movement.

3. A straight-port hose-coupler comprising two complementary halves provided with port-seats which are brought together and separated by a hinging movement of the halves, means forming a hinge-center of relatively short radius operative during the first part of the disconnecting movement of said halves, and means forming a second hinge-center of relatively long radius operative during the latter part of said disconnecting movement.

4. A hose-coupler comprising complementary coupler-halves having port-seats which are abutted and separated by a hinging movement about an axis approximating one edge of the seats, and means on the respective halves forming a second axis of hinging movement more remote from the longitudinal port axis.

5. Interlocking complementary coupler-halves adapted to connect and disconnect by a relative hinging movement, said halves having matching hinge members which are separated when the halves are fully coupled and are brought together to constitute a center of rotation by the preliminary uncoupling movement of the halves.

6. A hose-coupler comprising halves having interlocking members and port-seats and adapted to turn substantially upon one edge of the seats during the preliminary uncoupling movement of the halves, said halves having hinge members brought together by said preliminary movement and forming a second axis of rotation for the further uncoupling movement.

7. A hose-coupler comprising coupler-halves having interlocking members and port-seats, said halves being constrained by said members to a preliminary uncoupling movement about an axis relatively near to the longitudinal port axis before the interlocking members have unlocked, and turning about a more remote axis when said members have substantially unlocked.

8. A straight-port hose-coupler comprising complementary halves having interlocking members, and hinge members brought to a center of rotation when the interlocking members have substantially unlocked by the preliminary uncoupling movement.

9. A hose-coupler comprising complementary halves having interlocking lugs and wings and abutting port-seats parallel with the axis of uncoupling movement, and hinge members which are separated when the port-seats fully abut but are brought together by a preliminary uncoupling movement about an axis approximating one edge of said port-seats, when the lugs and wings have substantially unlocked.

10. A hose-coupler comprising complementary halves provided with interlocking members adapted to engage and disengage by a relative pivotal movement of the halves, each coupler-half being provided with a pivot-lug and a groove, adapted to match with the groove and pivot-lug of the opposite coupler-half, and each groove having a projecting toe on its lower side so disposed as to exert a prying action during the latter part of the disconnecting movement of the coupler-halves so as to assist in clearing the interlocking members.

11. A hose-coupler comprising complementary coupler-halves provided with port-seats brought together by a hinging movement of said coupler-halves, each coupler-half having a hinging-lug projecting forwardly from the lower edge of its port-face, and a groove to receive the hinging-lug of the opposite coupler-half, and further having a toe forming the lower side of said groove and projecting forwardly from the port-face of the coupler-half on which the toe is formed.

12. A member of a hose-coupler having a port-face parallel with the hinge axis about which said member turns in coupling and uncoupling with the complementary member, and two lugs projecting from the port-face and located at different distances from the longitudinal axis, the nearer lug being adapted to meet the farther lug on the complementary member and vice versa.

847,293. REFRACTORY MATERIAL AND PROCESS FOR PRODUCING IT. CHARLES L. NORTON, Manchester, Mass., assignor to Asbestos Wood Company, a Corporation of Maine. Filed June 7, 1906. Serial No. 320,670.

Claim.—1. The process of treating asbestiform fiber which consists in forming magnesium hydroxid in intimate mixture with the fiber, under pressure.

2. The process of treating asbestiform fiber which consists in making with the fiber a mixture of magnesium oxid and water, and compacting the solids under pressure while wet.

3. The process of treating asbestiform fiber which consists in making with the fiber a mixture of magnesium oxid and water, expressing the excess of water and compacting the solids under pressure while wet.

4. The process of treating asbestiform fiber which consists in making with the fiber a mixture of magnesium oxid and water under conditions conductive to the formation of magnesium hydroxid, and compacting the solid ingredients under pressure while wet.

5. The process of treating asbestiform fiber which consists in making with the fiber a mixture of magnesium oxid and water, and compacting the solids under pressure while hydration is in process.

6. The process of treating asbestiform fiber which consists in making with the fiber a mixture of magnesium oxid and water, and compacting the solids under pressure sufficient to produce therein a condition of flux.

7. The process of treating asbestiform fiber which consists in making with the fiber a mixture of magnesium oxid and water, compacting the solids under pressure while wet, until they assume a preliminary set, and thereafter supporting the resulting product until it sets permanently.

8. The process of treating asbestiform fiber which consists in making with the fiber a mixture of magnesium oxid and water, compacting the solids under pressure while wet until they assume a preliminary set, and thereafter subjecting the resulting product to reduced pressure until it sets permanently.

9. The process of treating asbestiform fiber which consists in making with the fiber a mixture of calcined precipitated magnesium carbonate, and water, and compacting the solids by pressure while wet.

10. The process of treating asbestiform fiber which consists in making with the fiber a mixture of calcined precipitated magnesium carbonate and water, and compacting the solids under pressure while hydration is in process.

11. The process of treating asbestiform fiber which consists in mixing a substantial preponderance (by weight) of fiber, with magnesium oxid and water, and subjecting the mixture to pressure.

12. The process of treating asbestiform fiber which consists in mixing about eighty per cent. (by weight) of fiber with about twenty per cent. (by weight) of magnesium oxid, and water, and subjecting the mixture to pressure.

13. A compacted felt of asbestiform fiber, bonded with magnesium hydroxid.

14. A compacted felt of asbestiform fiber bonded with hydrated calcined precipitated magnesium carbonate.

847,294. MEANS FOR THE PREVENTION OF FREEZING OF WATER-HYDRANTS. JAMES PYE, Chicago, Ill. Filed May 9, 1904. Serial No. 207,168.

Claim.—1. In a hydrant, the combination with the basin, of the hydrant-pipe connected with the water-mains extending upward therethrough, means for regulating the level at which the water in the pipe shall stand when the hydrant is not in use, a non-freezing liquid such as a solution of salt in the basin extending above the hydrant-pipe water-level, and the sewer drain-pipe extending upward in the basin and opening above the level of the brine.

2. In a hydrant, the combination with the basin, of the hydrant-pipe connected with the water-mains extending upward therethrough, means for regulating the level at which the water in the pipe shall stand when the hydrant is not in use, a protecting liquid in the basin extending

above the hydrant-pipe water-level, and the sewer drain-pipe extending upward in the basin and opening above the level of the protecting liquid.

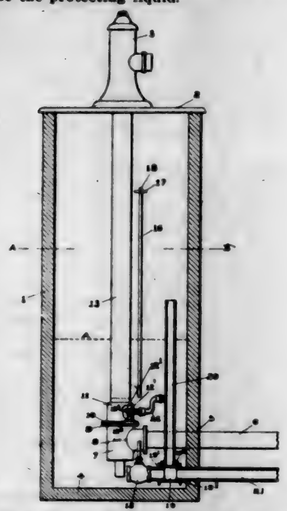

3. In a hydrant, the combination with the basin, of the hydrant-pipe connected with the water-mains extending upward therethrough, means for automatically regulating the level at which the water in the pipe shall stand when the hydrant is not in use, a non-freezing liquid such as a solution of salt in the basin extending above the hydrant-pipe water-level, and the sewer drain-pipe extending upward in the basin above the level of the brine.

4. In a hydrant, the combination with the basin, of the hydrant-pipe connected with the water-mains extending upward therethrough, means for automatically regulating the level at which the water in the pipe shall stand when the hydrant is not in use, a non-freezing liquid such as a solution of salt in the basin extending above the hydrant-pipe water-level, a sewer drain-pipe extending upward in the basin above the level of the brine solution, and a valve opening near the bottom of the basin and adapted to open the sewer drain-pipe to discharge the brine.

5. In a hydrant, the combination with the water-tight basin, of the sewer drain-pipe extending upward therein, the hydrant-pipe connected with the water-main, a valve in said hydrant-pipe near its lower end adapted to close automatically when the water is flowing upward in the hydrant-pipe and to open automatically when the water is at rest therein, connections between said valve and sewer drain-pipe, and a valve adapted to open the sewer drain-pipe and located beneath the level of the valve in the hydrant-pipe.

6. In a hydrant, the combination with the water-tight basin, of the sewer drain-pipe extending into the bottom thereof and having a branch extending vertically upward therein, the hydrant-pipe connected with the water-main, a valve in said hydrant-pipe near its lower end adapted to close automatically when the water is flowing upward in the hydrant-pipe and to open automatically when the water is at rest therein, an antifreezing liquid, such as a solution of salt adapted to fill the lower part of the basin and extending above the valve in the hydrant-pipe and to near the top of the vertical branch of the sewer drain-pipe, connections between the valve in the hydrant-pipe and the vertical branch of the sewer drain-pipe, said connections being located beneath the level of the brine, and a valve in the sewer drain-pipe located near the bottom of the basin and adapted to be opened to discharge the brine therefrom.

7. In a hydrant, the combination with the water-tight basin, of the sewer drain-pipe extending upward therein to about half the depth of the basin, the hydrant-pipe connected with the water-main, a valve in said hydrant-pipe near its lower end adapted to close automatically when the water is flowing upward in the hydrant-pipe and to open automatically when the water is at rest therein, a solution of salt or some similar non-freezing liquid in said basin extending to near the top of the sewer drain-pipe, and connections between said valve and sewer drain-pipe located far beneath the surface of the brine.

8. In a hydrant, the combination with the water-tight basin, of the sewer drain-pipe extending upward therein to about half the depth of the basin, the hydrant-pipe connected with the water-main, a valve in said hydrant-pipe near its lower end adapted to close automatically when the water is flowing upward in the hydrant-pipe and to open automatically when the water is at rest therein, a solution of salt or some similar non-freezing liquid in said basin extending to near the top of the sewer drain-pipe, connections between said valve and sewer drain-pipe located far beneath the surface of the brine, a valve adapted to open the sewer drain-pipe at its lowermost point in the basin to drain out the brine, and means for operating said valve located near the top of the basin.

9. In a hydrant, the combination with the basin, of the hydrant-pipe connected with the water-main extending upward therethrough, means for automatically regulating the level at which the water in the pipe shall stand when the hydrant is not in use, a protecting liquid in the basin extending above the hydrant-pipe water-level, and the sewer drain-pipe extending upward in the basin above the level of the protecting liquid.

10. In a hydrant, the combination with the basin, of the hydrant-pipe connected with the water-mains extending upward therethrough, means for automatically regulating the level at which the water in the pipe shall stand when the hydrant is not in use, a protecting liquid in the basin extending above the hydrant-pipe water-level, the sewer drain-pipe extending upward in the basin above the level of the protecting liquid, and a valve in the drain-pipe opening near the bottom of the basin and adapted to discharge the protecting liquid into the sewer.

11. In a hydrant, the combination with the basin, of the hydrant-pipe connected with the water-mains extending upward therethrough, means for regulating the level at which the water in the pipe shall stand when the hydrant is not in use, a non-freezing liquid such as a solution of salt in the basin extending above the hydrant-pipe water-level, a sewer drain-pipe opening near the bottom of the basin, and a valve connected with said drain-pipe and adapted to open it to discharge the brine.

847,295. FASTENER. ARTHUR F. RANDALL, Somerville, Mass. Filed Dec. 17, 1906. Serial No. 348,116.

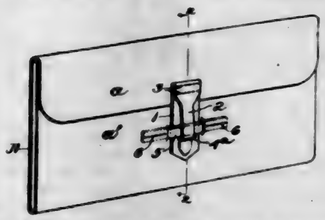

Claim.—1. A fastener of the character described comprising a pair of tongues adapted to be fixed to one of two members that are to be held together, one of said tongues being made with a hole through it for the passage of the end of the other tongue, and a strap adapted to be fixed to the other of said members in position to extend between the tongues when the latter are interlocked by passing the end of one tongue through the hole of the other tongue.

2. In a pocket-book or the like the combination with the flap and body thereof, of a pair of tongues each fixed at one end to the flap and adapted to be interlocked at their free ends, and a strap fixed at its ends to the body in position to extend between the two tongues when the latter are interlocked, substantially as described.

847,296. IGNITION APPARATUS FOR EXPLOSION-ENGINES. HENRY C. ROYER, Terminal Island, Cal. Filed Oct. 15, 1906. Serial No. 339,137.

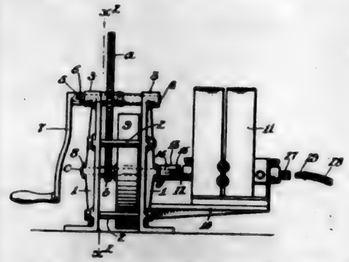

Claim.—1. In combination, an explosion-engine, a generator for normally supplying the spark, a magneto, and manually-operated means for storing up power in the form of momentum for driving the magneto.

2. In combination, an explosion-engine, an ignition-circuit therefor, a regular generator, a starting-magneto, a fly-wheel, a crank-operated train of gears for imparting considerable momentum to the fly-wheel, means for driving the magneto by the momentum of the fly-wheel, and means for connecting the regular generator or the starting-magneto in the ignition-circuit.

3. In combination, an explosion-engine, a generator for normally supplying the spark, a magneto and shaft, a fly-wheel shaft, pins on the respective shafts, a sleeve over the ends of both shafts and having notches in its ends which engage with pins on the shafts, a fly-wheel on its shaft, a pinion on the fly-wheel shaft, a gear meshing with the pinion, a shaft supporting the gear, a crank for operating the latter shaft, and a suitable frame for supporting said gearing and magneto.

4. In combination, an explosion-engine, a generator for normally supplying the spark, a starting-magneto and shaft, a fly-wheel shaft connected with the first shaft, a fly-wheel on its shaft, a pinion on the fly-wheel shaft, a gear meshing with the pinion, a shaft supporting the gear, a crank for operating the latter shaft, and a frame for supporting said gearing and magneto.

5. In combination, an explosion-engine, a generator for normally supplying the spark, a magneto, manually-operated means for storing up power in the form of momentum for driving the magneto, means for making electric connection between the engine and either the generator or magneto, and means for driving the magneto by the engine.

6. In combination, an explosion-engine, a generator for normally supplying the spark, a magneto, manually-operated means for storing up power in the form of momentum for driving the magneto, means for making electric connection between the engine and either the generator or magneto, a shaft driven by the engine, and means for detachably connecting said shaft to the magneto.

7. In combination, an explosion-engine, a generator for normally supplying the spark, a magneto, manually-operated means for storing up power in the form of momentum for driving the magneto, means for making electric connection between the engine and either the generator or magneto, a shaft adapted to be driven by the engine, and means for detachably connecting said shaft to the magneto while the magneto is operating under momentum, and permitting the magneto to be independently operated by hand when said shaft is disconnected from the engine.

8. In combination with an explosion-engine, a magneto, manually-operated means for storing up power in the form of momentum for driving the magneto, and means for driving the magneto from the engine after the engine has been started.

847,297. DRILLING-MACHINE. FRANCIS M. STAMBAUGH, St. Louis, Mo., assignor to The American Brake Company, St. Louis, Mo., a Corporation of Missouri. Original application filed Nov. 9, 1905, Serial No. 286,563. Divided and this application filed Aug. 1, 1906. Serial No. 328,758.

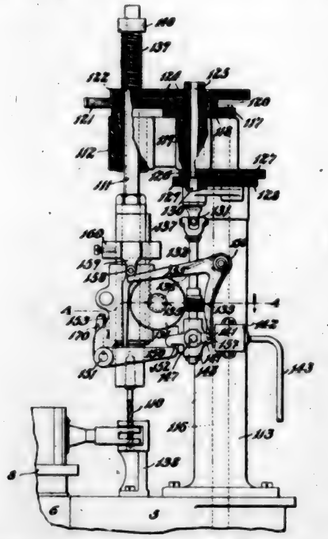

Claim.—1. A machine of the class described, comprising a rotatable tool-stock, a rack-and-pinion mechanism for imparting a movement in one direction to said stock, a worm for actuating said mechanism, means for rotating it, an air-controlled piston for moving said worm into engagement with said mechanism, means for positively holding said worm in engagement with its coöperating gear, means for disengaging said holding means, and means carried by the tool-stock for causing said piston to be returned to its normal position; substantially as described.

2. A machine of the class described, comprising a rotatable tool-stock, a rack-and-pinion mechanism for imparting movement in one direction to said stock, a worm for actuating said mechanism, means for rotating said worm, an air-controlled piston for moving said worm into engagement with said mechanism, a locking device for holding said worm in engagement with said mechanism, a lever for engaging said piston to return it to its normal position, an adjustable device carried by the tool-stock for releasing said locking device and adapted to actuate said lever, and means for moving the worm into its inoperative position; substantially as described.

3. A machine of the class described, comprising a rotatable tool-stock, a rack-and-pinion mechanism for imparting movement in one direction to said stock, a worm for actuating said mechanism, means for rotating the worm, an air-controlled piston provided with a yielding member which engages said worm and moves it into operative engagement with said mechanism, means for holding said worm in engagement with its operating gear, means for disengaging said holding means, and yielding means for moving the gear into inoperative position; substantially as described.

847,298. FISHING-ROD ATTACHMENT. CHARLES L. SULLIVAN, Chicago, Ill., assignor, by mesne assignments, of one-half to Mary Eliza Bennett Sullivan, Chicago, Ill. Filed Oct. 4, 1905. Serial No. 281,250.

Claim.—1. A fish hook holder comprising a stud adapted to receive a hook, and a co-operating plate pivoted in

position to swing over the hook on the stud in a plane at substantially right angles to the axis of the stud.

2. A fish hook holder comprising a stud adapted to receive a hook, and a co-operating plate mounted in position to move over the hook and stud in a plane at substantially right angles to the axis of the stud.

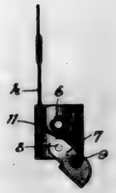

3. A fish hook holder comprising a stud, a pivot adjacent thereto and having an axis parallel to the axis of the stud, and a plate mounted to swing on such pivots over the top of the stud.

4. A fish-hook holder and guard comprising a sleeve having a stud thereon and a cover plate arranged to swing over the stud and guard the hook, substantially as described.

5. A fish hook holder comprising a stud, a pivot adjacent thereto and having an axis parallel to the axis of the stud, a plate mounted to swing on such pivot over the top of the stud, and means on the plate for releasably engaging the top of the stud.

6. A hook-guard comprising a ring 11 having a hook retaining stud thereon and a pivoted cover-plate provided with a guard flange and means to hold the guard in place on the stud or to readily release it to allow sidewise removal of the hook, substantially as described.

7. A fish hook holder comprising a stud, a pivot adjacent thereto and having its axis parallel to the axis of the stud, and a plate having a downwardly extending flange at one edge and mounted to swing on the pivot over the top of the stud.

847,299. CIRCUIT MAKING AND BREAKING DEVICE. FREDERICK I. WILLARD, New York, N. Y., assignor of one-half to George Weiderman, New York, N. Y. Original application filed Oct. 2, 1905, Serial No. 280,928. Divided and this application filed Feb. 14, 1906. Serial No. 301,033.

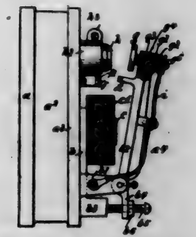

Claim.—In a circuit-breaking device, a base-plate, spring-contact devices connected therewith, an armature-lever pivoted below said spring-contact devices and adapted to swing in a vertical plane and provided with an inwardly-directed arm adapted to operate in connection with said spring-contact devices, means for limiting the outward movement of the armature-lever, a magnet placed between the support of the armature-lever and the spring-contact devices, a contact-block secured to the base-plate above the contact devices, and a spring-operated plate provided with a rod which passes through the end of the armature-lever and is adapted to operate in connection with said contact-block, said casing and the rod of the said spring-operated plate being provided with binding-posts.

847,300. PRODUCING METALLIC SILICID. THOMAS L. WILLSON, Ottawa, Ontario, Canada. Original application filed Apr. 11, 1904, Serial No. 202,636. Divided and this application filed Nov. 5, 1906. Serial No. 341,991.

Claim.—1. Treating a compound containing nickel sulfid by adding a basic compound, silica and carbon, and electrosmelting to form a basic sulfid which slags off, and a nickel silicid.

2. Treating a compound containing an iron-nickel sulfid by adding silica, a basic compound and carbon, and electrosmelting, to produce a ferro-nickel silicid.

3. Treating a compound containing sulfur, iron and nickel, by adding lime, silica and carbon, and electrosmelting, to produce a ferro-nickel silicid.

847,301. JOURNAL-BOX. GEORGE A. WOODMAN, Chicago, Ill. Filed Dec. 3, 1906. Serial No. 345,992.

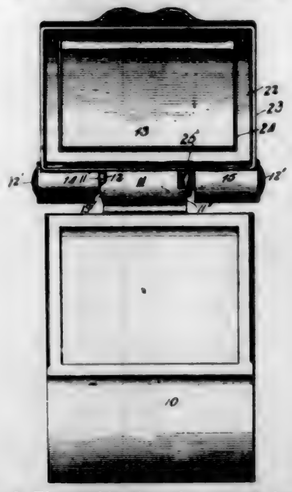

Claim.—1. The combination of a car-axle box having a lug thereon, a lid hinged to said box and movable sidewise, said lid having a sleeve on each side of said lug, a spring arranged within one of said sleeves and bearing against the adjacent end of the lug, there being a pair of cams on the other end of said lug located diametrically opposite each other, and a pair of complementary cams similarly located on the other sleeve to ride on the cams on the lug when the lid is opened and closed.

2. The combination of a car-axle box having a lug thereon, a lid hinged to said box and movable sidewise, said lid having a sleeve on each side of said lug, one of said sleeves having a head at its outer end and being open at its inner end, and an expansion-spring loosely confined within said sleeve between said head and the adjacent end of the lug, there being a pair of cams on the other end of the lug located diametrically opposite each other, and a pair of similarly-located complementary cams on the other sleeve to ride on the cams on the lug when the lid is opened and closed.

847,302. THILL-GUARD. JOHN WRIGHT, Chicago, Ill., assignor to Peter S. Washer, Litchfield, Ill. Filed Nov. 26, 1906. Serial No. 345,192.

Claim.—1. A thill-guard, comprising a pair of wire coils adapted to be frictionally engaged with the ends of the thills, and means to connect the ends of said coils in front of the thills.

2. A thill-guard, comprising a wire coil having a chain at one end, and a similar wire coil with a hook at one end, said coils adapted to be applied to the ends of the thills and their chain and hook ends respectively engaged in front of the thills.

3. A thill-guard, composed of a pair of spring-wire coils of helical form, adapted to be engaged with the ends of vehicle shafts or thills and to have their ends connected in front of the thills and across the front of an animal hitched between said thills.

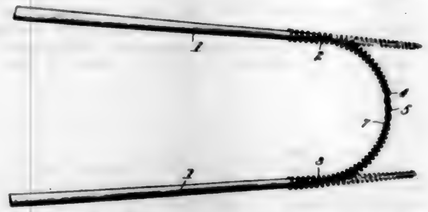

4. A thill-guard, composed of a pair of laterally-flexible coils of wire, adapted to engage the ends of thills or shafts, and means to connect their ends.

5. A thill-guard, composed of a pair of laterally-flexible coils of wire, adapted to be applied to the ends of thills or shafts, and adjustable means to connect the ends of the coils at pleasure.

847,303. ELECTRICAL CONDUCTOR. FREDERICK PLATT, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Aug. 4, 1904. Serial No. 219,536.

Claim.—1. In combination, a carbon brush formed with intersecting passages or channels in it, said channels entering said brush from opposite sides, a flexible conductor inserted in one of said channels, and solder for securing said brush and said conductor together inserted through the other channel.

2. In combination, a carbon brush having a channel or opening formed in one side, a flexible conductor having a portion inserted therein, said carbon brush being formed with a second channel or opening intersecting the first channel or opening at an angle, and solder inserted through said second channel or opening for securing the flexible conductor to the brush at a point remote from the side of said brush entered by the flexible conductor.

3. In combination, a brush having a recess formed in it in which one end of a flexible conductor is inserted, and means for soldering the flexible conductor to the brush only at a point remote from that at which the conductor leaves the brush.

4. In combination, a brush having a hole or recess formed in it, and a flexible conductor extending into said hole or recess and soldered to the brush at the bottom only of said hole or recess.

5. In combination, a brush having a hole or recess formed in one side of said brush, and a flexible conductor entering said hole or recess and soldered to said brush only at a point remote from the surface of the brush penetrated by said hole or recess.

6. A carbon brush having intersecting holes or passages extending from different sides into but not through said brush, a flexible conductor having a portion inserted in one of said channels, and solder for securing said brush and said conductor together inserted through said other channel.

7. In combination, a carbon brush formed with a channel or passage in it into which a flexible conductor is inserted, and a second passage intersecting the first-named channel or passage through which second passage solder may be inserted to secure the flexible conductor to the brush.

8. In combination, a brush having a hole or recess formed in it and a flexible conductor extending into said hole or recess and secured to the brush at the bottom only of said hole or recess.

9. In combination, a brush having intersecting holes or passages extending from different sides into but not through said brush, a flexible conductor having a portion arranged in one of said channels, and means in the other of said channels for securing said conductor to the brush.

REISSUES.

12,615. RAILWAY FREIGHT-CAR. WILLIAM R. MULOCK, Winnipeg, Manitoba, Canada. Filed Jan. 30, 1907. Serial No. 354,947. Original No. 820,240, dated May 8, 1906.

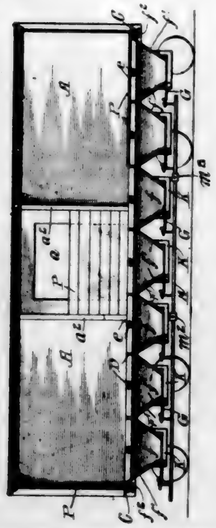

Claim.—1. A railway freight-car provided with a skeleton bottom, with a series of hoppers beneath said bottom and with a removable floor formed of interchangeable sections substantially equal in length to the distance between the car-walls.

2. A railway freight-car comprising a skeleton bottom, a flooring formed of removable sections and a plurality of conoidal hoppers located beneath the floor-line of the car, the sloping side walls of said hoppers extending substantially to the side walls of the car-body.

3. A railway freight-car provided with a skeleton bottom, with a floor formed of separate interchangeable sections substantially equal in length to the distance between the car-walls and with a plurality of conoidal hoppers located below the floor-line of the car, said hoppers having their sloping side walls extending substantially to the line of the side walls of the car-body, and the end hoppers having their sloping end walls extending substantially to the end walls of the car-body.

4. A railway freight-car provided with a skeleton bot-

tom formed of narrow, longitudinal and transverse metal bars, a plurality of conoidal hoppers located beneath said skeleton bottom, the sloping walls of adjacent hoppers being secured to transverse bars of the skeleton bottom and the sloping side walls of said hoppers extending substantially to the side walls of the car-body.

5. A railway freight-car having its lower portion formed of side and end sills of angle-bars and having a skeleton bottom comprising longitudinal and transverse bars united to said side and end sills, and having a plurality of conoidal hoppers located beneath said skeleton bottom, the side walls of said hoppers being united to the side sills, and a removable flooring formed of detachable sections adapted to rest upon said skeleton bottom.

6. A railway freight-car having a bottom portion formed of side and end sills and having a skeleton bottom formed of longitudinal and transverse metal bars riveted to said side and end sills, a removable floor formed of detachable sections adapted to rest upon said skeleton bottom, and a plurality of hoppers located entirely beneath said removable floor, the side walls of said hoppers being secured to the side sills of the car-bottom and the end walls of said hopper being secured to the transverse bars of said skeleton bottom.

7. A railway freight-car comprising a skeleton bottom and a floor formed of removable sections adapted to extend transversely of the car and substantially equal in length to the distance between the car-walls, the body of the car being formed with a doorway and with vertical battens at the sides of said doorway, the battens being separated a distance substantially equal to the length of the removable floor-sections, whereby one of said floor-sections will be set between said battens to serve as a door.

8. A railway freight-car comprising a skeleton bottom, a plurality of conoidal hoppers located beneath the floor-line of the car, each of said hoppers being provided at its discharge-opening with a slideway, individual gates for closing the hopper-bottoms, said gates fitting in said slideways, and an operating-rod whereby said gates can be shifted simultaneously.

9. A railway freight-car comprising a skeleton bottom, a plurality of conical hoppers located beneath the floor-line of the car, each of said hoppers being provided at its discharge-opening with a slideway, individual gates for closing the hopper-bottoms, said gates fitting in said slideways, a supporting-bracket extending beneath and across each of said hopper-bottoms, and an operating-rod connected to said several gates.

10. A railway freight-car comprising a skeleton bottom, a plurality of conical hoppers located beneath the floor-line of the car, each of said hoppers being provided at its discharge-opening with a slideway, and sliding gates, said gates fitting in said slideways and being provided with angular flanges at their front ends to close said slideways.

11. A railway freight-car having a plurality of hoppers located beneath the floor-line, each of said hoppers being provided at its discharge-opening with a slideway, individual gates arranged within said slideways, a common operating-rod for said gates and yielding or spring connections between said gates and said operating-rod.

12. A railway freight-car comprising a skeleton bottom, a plurality of hoppers located beneath the floor-line of the car, gates for closing the lower ends of said hoppers, a removable floor comprising a number of sections arranged to be supported upon said skeleton bottom and means for jamming said floor-sections together.

13. A railway freight-car comprising a skeleton bottom, a plurality of hoppers located beneath the floor-line of the car, gates for closing the lower ends of said hoppers, a removable floor comprising a number of sections arranged to be supported upon said skeleton bottom, a movable cross-bar at one end of the car for forcing the floor-sections together, screws for operating said cross-bar and common actuating means for said screws.

14. A railway freight-car comprising a plurality of conical hoppers located beneath the floor-line of the car, each of said hoppers being provided at its discharge-opening with a slideway, and sliding gates, said gates fitting in said slideways and being provided with angular flanges at their front ends to close said slideways.

15. A railway freight-car comprising a conical hopper provided at its bottom with a discharge-opening, three sides in said opening being provided with gate-supports serving also to prevent the escape of bulk material at the sides and one end of the gate and means for preventing the escape of bulk material at the front end of said gate.

16. A railway freight-car comprising a conical hopper provided at its bottom with a discharge-opening, a continuous angular depending gate-support extending around three sides of and beneath said discharge-opening and a sliding gate arranged to rest upon said support, said support serving to prevent the escape of bulk material at the sides and one end of the gate, and means for preventing the escape of bulk material at the front end of the gate.

17. A railway freight-car comprising a conical hopper provided at its bottom with a discharge-opening, three sides of said opening having gate-supports that serve to prevent the leakage of bulk material at the sides and one end of a gate and a sliding gate arranged to rest upon said supports and provided at its front with a guard-flange to prevent the escape of bulk material at such point.

18. A railway freight-car comprising a conical hopper provided at its bottom with a discharge-opening, three sides of said opening having gate-supports that serve to prevent the leakage of bulk material at the sides and one end of a gate and a sliding gate arranged to rest upon said supports and provided at its front with a guard-flange and end extensions to prevent the escape of bulk material at such point.

12,616. FIBER VESSEL. JOHN J. SHEA, Beverly, Mass. Filed July 17, 1905. Serial No. 270,154. Original No. 772,258, dated Oct. 11, 1904.

Claim.—1. A receptacle comprising a plain elliptical flexible concavo-convex bottom, a crease extending along the major axis of the elliptical bottom, a plaited side or wall extending at approximately right angles from the bottom and means for retaining the receptacle in assembled position, the bottom adapted to project below or be received within the receptacle as desired.

2. A receptacle comprising a plaited wall and an elliptical flexible bottom, creases at the point of connection of the bottom and wall, a crease formed across the bottom to permit it to protrude beneath or into the space inclosed by the wall as desired, and means for retaining the receptacle in assembled position.

3. A vessel comprising a bottom, a plaited wall, a folded reinforcing-band, the band embracing the upper edge of the plaited wall, and a handle formed integral with the folded band, the free end of the handle adapted to be received between the walls of the folded band.

4. A vessel comprising a bottom, a wall, a reinforcing-band embracing the upper edge of the wall and a handle formed integral with the band and having its free end received between the walls of the band.

5. A seamless collapsible vessel formed from a single piece of flexible material and comprising a bottom having a crease extending across the same to facilitate folding the bottom either inwardly or outwardly and a plaited side wall, a strip of reinforcing material binding the upper edge of said wall to strengthen the wall and retain the plaits in folded position, said wall and rim adapted to be folded upon lines extending longitudinally of the vessel from opposite extremities of the bottom crease, whereby the vessel may be collapsed for convenience when not in use.

DESIGNS.

38,474. BADGE OR SIMILAR ARTICLE. SHERWOOD B. ROBERTSON, New York, N. Y. Filed Jan. 16, 1906. Serial No. 296,429. Term of patent 14 years.

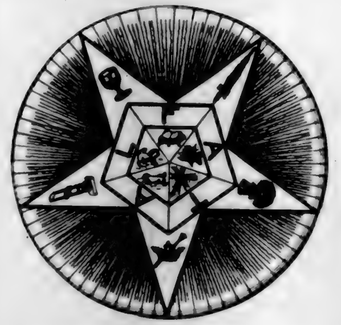

Claim.—The ornamental design for a badge or similar article, as shown.

38,475. LOCKET OR SIMILAR ARTICLE. FRANK W. ARNOLD, Providence, R. I., assignor to Wightman and Hough Company, a Corporation of Rhode Island. Filed Feb. 7, 1907. Serial No. 356,267. Term of patent 3½ years.

Claim.—The ornamental design for a locket or a similar article as shown.

38,476. LOCKET OR SIMILAR ARTICLE. FRANK W. ARNOLD, Providence, R. I., assignor to Wightman and Hough Company, a Corporation of Rhode Island. Filed Feb. 7, 1907. Serial No. 356,268. Term of patent 3½ years.

Claim.—The ornamental design for a locket or a similar article as shown.

38,477. ARTIFICIAL-LIGHT REFLECTOR. KRAFT BOOTH, Philadelphia, Pa., assignor to Gillinder & Sons, Inc., Philadelphia, Pa. Filed June 27, 1906. Serial No. 323,742. Term of patent 7 years.

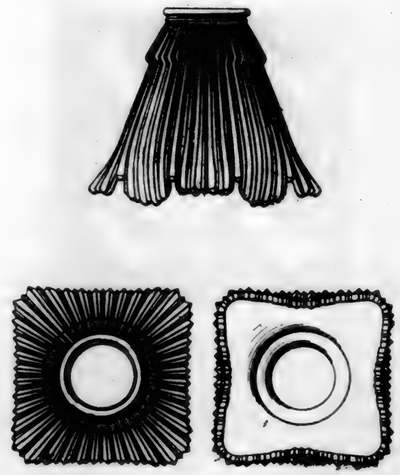

Claim.—The ornamental design for an artificial-light reflector, as shown.

38,478. HORN FOR TALKING-MACHINES. HORACE SHEBLE, Philadelphia, Pa., assignor to Hawthorne & Sheble Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Jan. 31, 1907. Serial No. 355,154. Term of patent 14 years.

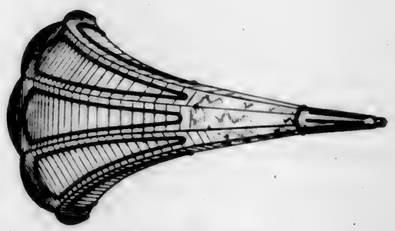

Claim.—The ornamental design for a horn for talking-machines as shown.

38,479. FABRIC FOR PINCUSHIONS. WILLIAM B. LAWRENCE, Columbus, Ohio. Filed Dec. 15, 1906. Serial No. 348,060. Term of patent 3½ years.

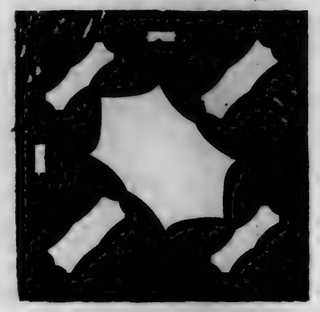

Claim.—The ornamental design for a fabric for a pincushion as shown.

38,480. TEA OR COFFEE POT. JOHN ROGERS, Raynham, Mass., assignor to Reed & Barton Corporation, a Corporation of Massachusetts. Filed Feb. 1, 1906. Serial No. 299,063. Term of patent 14 years.

Claim.—The ornamental design for a tea or coffee pot, as shown.

TRADE-MARKS

GRANTED MARCH 12, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 9604. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WEAVER'S PHARMACY, Phillipsburg, N. J. Filed Apr. 10, 1905.

Particular description of goods.—A Medical Tonic Preparation of Beef, Wine, and Iron.

Ser. No. 1,150. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) STERLING KNIT GOODS CO., Boston, Mass. Filed Apr. 11, 1905. Used ten years.

Sterling

Particular description of goods.—Knit Union or Combination Undergarments and Sweaters.

Ser. No. 3,211. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) J. H. FRIEDENWALD & CO., Baltimore, Md. Filed Apr. 27, 1905.

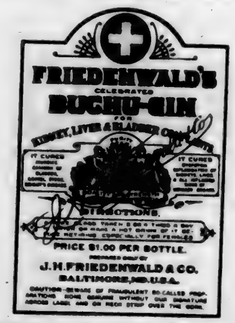

A cross which in use is colored red.
Particular description of goods.—Buchu Gin.

Ser. No. 6,050. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) ATLANTIC REFINING COMPANY, Franklin and Philadelphia, Pa. Filed May 18, 1905.

ACME

Particular description of goods.—Lubricating Oils.

Ser. No. 6,307. (CLASS 52. PACKING-HOUSE PRODUCTS.) PARKER, WEBB & CO., Detroit, Mich. Filed May 22, 1905. Used ten years.

SILDERMEDAL LEAF LARD

The panel on which appear the medals and the words "Leaf Lard" is blue.

Particular description of goods.—Leaf-Lard.

Ser. No. 6,502. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) NELSON DISTILLING CO., St. Louis, Mo. Filed May 24, 1905. Used ten years.

NELSON CO BOURBON

Particular description of goods.—Whisky.

Ser. No. 7,295. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) THE BROWN-HURLEY HARDWARE COMPANY, Des Moines, Iowa. Filed June 2, 1905.

I.O.A.

Particular description of goods.—Shovels, Spades, Hoes, Rakes, and Screw-Drivers.

Ser. No. 7,808. (CLASS 47. CONFECTIONERY.) STOLLWERCK BROS., New York, N. Y. Filed June 10, 1905. Used ten years.

STOLLWERCK

Particular description of goods.—Candy, Chocolate, Cocoa, Chewing-Gum, and Bonbons.

Ser. No. 9,163. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) THE WILL & BAUMER COMPANY, Syracuse, N. Y. Filed June 27, 1905. Used ten years.

PURISSIMA BRAND

Particular description of goods.—Candles.

Ser. No. 9,164. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) THE WILL & BAUMER COMPANY, Syracuse, N. Y. Filed June 27, 1905. Used ten years.

WILL O'THE WISP

Particular description of goods.—Candles.

Ser. No. 9,165. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) THE WILL & BAUMER COMPANY, Syracuse, N. Y. Filed June 27, 1905. Used ten years.

QUEEN

Particular description of goods.—Candles.

Ser. No. 9,166. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) THE WILL & BAUMER COMPANY, Syracuse, N. Y. Filed June 27, 1905. Used ten years.

Drawing Room

Particular description of goods.—Candles.

Ser. No. 9,167. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) THE WILL & BAUMER COMPANY, Syracuse, N. Y. Filed June 27, 1905. Used ten years.

ALTAR BRAND

Particular description of goods.—Wax Candles.

Ser. No. 9,680. (CLASS 71. TOBACCO PRODUCTS.) S. S. PIERCE CO., Boston, Mass. Filed July 3, 1905.

Particular description of goods.—Cigars.

Ser. No. 10,079. (CLASS 47. CONFECTIONERY.) ISAAC SAMUEL MORSE, Nashville, Tenn. Filed July 11, 1905.

Particular description of goods.—Candies.

Ser. No. 14,764. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) THE GLIDDEN VARNISH COMPANY, Cleveland, Ohio. Filed Nov. 17, 1905.

Particular description of goods.—Liquid Wood-Filler.

Ser. No. 14,924. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) LOUIS H. SCHAARSCHMIDT, Limbach, Saxony. Filed Nov. 23, 1905.

Particular description of goods.—Men's Knit Undershirts and Knit Drawers.

Ser. No. 15,054. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) THE CYCLONE DRILLING MACHINE CO., Orrville, Ohio. Filed Nov. 28, 1905.

CYCLONE

Particular description of goods.—Drilling-Machines.

Ser. No. 16,099. (CLASS 9. EXPLOSIVES.) THE SMOKELESS POWDER AND CARTRIDGE COMPANY, Cleveland, Ohio. Filed Jan. 10, 1906.

HERSCHELITE

Particular description of goods.—Gunpowder and Blasting-Powder.

Ser. No. 16,235. (CLASS 8. DETERGENTS.) A. & F. PEARS LIM'D, London, England. Filed Jan. 17, 1906.

A. & F. Pears

Particular description of goods.—Perfumed Fancy Soaps.

Ser. No. 16,500. (CLASS 12. MASONRY MATERIALS.) THE ATLAS PORTLAND CEMENT COMPANY, Northampton, Pa. Filed Jan. 25, 1906.

PASSO

Particular description of goods.—Hydraulic and other Building-Cement.

Ser. No. 16,896. (CLASS 9. EXPLOSIVES.) THE KING POWDER COMPANY, Cincinnati, Ohio. Filed Feb. 10, 1906. Used ten years.

SEMI-SMOKELESS

Particular description of goods.—Gunpowder.

Ser. No. 17,810. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) KENDRICK & DAVIS, Lebanon, N. H. Filed Mar. 14, 1906.

Particular description of goods.—Watchmakers' Hand-Tools, Not Including Those Having a Cutting Edge.

Ser. No. 18,255. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) STONE-ORDEAN-WELLS CO., Duluth, Minn. Filed Mar. 26, 1906.

Wampum

Particular description of goods.—Canned Fruit and Vegetables.

Ser. No. 18,512. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) GOODYEAR RUBBER COMPANY, New York, N. Y. Filed Apr. 4, 1906. Used ten years.

LINCOLN

Particular description of goods.—Rubber Boots and Shoes.

Ser. No. 18,773. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MARY S. BARKER, New York, N. Y. Filed Apr. 13, 1906. Used ten years.

HIRSUTUS

Particular description of goods.—Hair-Tonic.

Ser. No. 19,601. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) BLACKMAN STOCK REMEDY CO., Chattanooga, Tenn. Filed May 16, 1906.

Blackmanite

Particular description of goods.—Medicated Salt Brick for Live Stock.

Ser. No. 20,455. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) HARGADINE-MCKITTRICK DRY GOODS COMPANY, St. Louis, Mo. Filed June 21, 1906.

Particular description of goods.—Towels, Handkerchiefs, Bedspreads, Linings, Linen Curtains, Woolen and Silk Piece Goods, Ticking, Woven Brown Cotton Piece Goods, Woven Bleached Cotton Piece Goods, Ducks, Denims, Plaids, Cheviots, Cotton Flannels, and Outing-Flannels.

Ser. No. 20,518. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) REED & CARNRICK, Jersey City, N. J. Filed June 23, 1906.

(Nucleo Enzymes R. & C.)

Particular description of goods.—A Remedy for Dyspepsia.

Ser. No. 20,621. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) J. E. LINDE PAPER CO., New York, N. Y. Filed June 28, 1906.

The seal is printed red.

Particular description of goods.—Book-Papers, Cover-Papers, Flat Writing-Papers, Ruled Business-Headings, Envelops, Cardboards, Cut Cards, Wrapping-Paper.

Ser. No. 20,794. (CLASS 71. TOBACCO PRODUCTS.) ROBT. HARRIS & BRO., Reidsville, N. C. Filed July 9, 1906. Used ten years.

Capital

Particular description of goods.—Smoking-Tobacco and Plug and Twist Chewing-Tobacco.

Ser. No. 20,921. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) O. ROBINSON & CO., Kansas City, Mo. Filed July 13, 1906.

Particular description of goods.—A Dip for Animals.

Ser. No. 21,469. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) KATE MCMAHON, Washington, D. C. Filed Aug. 10, 1906.

Tor-Katon

Particular description of goods.—Pile-Ointment.

Ser. No. 21,562. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio. Filed Aug. 15, 1906.

BLUE JAY

Particular description of goods.—Washboards.

Ser. No. 21,591. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) TADEUS G. BALUCINSKI, Buffalo, N. Y. Filed Aug. 15, 1906.

PEWNIK

Particular description of goods.—Salves.

Ser. No. 21,592. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) TADEUS G. BALUCINSKI, Buffalo, N. Y. Filed Aug. 15, 1906.

TADEJKA

Particular description of goods.—Salves.

Ser. No. 21,740. (CLASS 8. DETERGENTS.) CARL J. RATH, New York, N. Y. Filed Aug. 25, 1906. Used ten years.

Allheal

Particular description of goods.—Soap.

Ser. No. 21,741. (CLASS 8. DETERGENTS.) CARL J. RATH, New York, N. Y. Filed Aug. 25, 1906. Used ten years.

Allcure

Particular description of goods.—Soap.

Ser. No. 22,215. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) INDIAN HEAD MILLS OF ALABAMA, Walker, Ala. Filed Sept. 21, 1906.

OPEN DOOR

Particular description of goods.—Cotton Piece Goods and Cotton Blankets.

Ser. No. 22,298. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) THE "NEW WAY" MOTOR COMPANY, Lansing, Mich. Filed Sept. 24, 1906.

"New-Way"

Particular description of goods.—Stationary and Marine Internal-Combustion Engines.

Ser. No. 22,587. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) ALBION MANUFACTURING COMPANY, New York, N. Y. Filed Oct. 8, 1906.

Particular description of goods.—A Polish for Black Shoes.

Ser. No. 22,866. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) RICE & HOCHSTER, New York, N. Y. Filed Oct. 23, 1906.

The seal is red.

Particular description of goods.—Copper and Brass Hair-Pins and Hair Ornaments.

Ser. No. 23,120. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) ROBERTS, JOHNSON & RAND SHOE COMPANY, St. Louis, Mo. Filed Nov. 5, 1906.

NOXALL

Particular description of goods.—Rubber Boots and Shoes.

Ser. No. 23,201. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) THE RED ROCK COMPANY, Jacksonville, Fla. Filed Nov. 9, 1906.

RARECO

Particular description of goods.—Cider and Soda-Water.

Ser. No. 23,316. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) VICTOR FRANÇOIS MERLE, Paris, France. Filed Nov. 13, 1906.

KLYTIA

Particular description of goods.—Toilet Lotions, Powders, Creams, Waters, Sachets, Oils, Rouges, Pencils, Pastes, Salves, Depilatories, Aromatic Vinaigres.

Ser. No. 23,409. (CLASS 47. CONFECTIONERY.) BISHOP & COMPANY, Los Angeles, Cal. Filed Nov. 16, 1906.

Particular description of goods.—Chocolate.

Ser. No. 23,449. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) GRACE BENNETT FEAHNEY, New Orleans, La. Filed Nov. 19, 1906.

MORNING STAR

Particular description of goods.—Coffee.

Ser. No. 23,851. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) CORTRIGHT METAL ROOFING COMPANY, Philadelphia, Pa. Filed Dec. 7, 1906.

VICTORIA

Particular description of goods.—Stamped-Metal Parts Used for Roofing and Wall-Covering Purposes.

Ser. No. 23,852. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) CORTRIGHT METAL ROOFING COMPANY, Philadelphia, Pa. Filed Dec. 7, 1906.

IMPERIAL

Particular description of goods.—Stamped-Metal Parts Used for Roofing and Wall-Covering Purposes.

Ser. No. 23,853. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) CORTRIGHT METAL ROOFING COMPANY, Philadelphia, Pa. Filed Dec. 7, 1906.

GOTHIC

Particular description of goods.—Stamped-Metal Parts Used for Roofing and Wall-Covering Purposes.

Ser. No. 24,004. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) JOHN E. THOMPSON, Worcester, Mass. Filed Dec. 13, 1906.

Particular description of goods.—Exercising-Machines, Dumb-Bells, and Hand-Grips.

Ser. No. 24,032. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) WILLIAM E. WOOD, Philadelphia, Pa. Filed Dec. 14, 1906. Used ten years.

Particular description of goods.—Toilet Articles, Flat Ware, Tableware, and Hollow Ware of Sterling Silver.

Ser. No. 24,035. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) RITZLIN, LEBSTEIN & NECHTOWITZ, Chicago, Ill. Filed Dec. 14, 1906.

UROPSHIN

Particular description of goods.—A Salve.

Ser. No. 24,137. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) R. BALLERSTEIN & COMPANY, Hartford, Conn. Filed Dec. 19, 1906.

CHARTER OAK

Particular description of goods.—Ribbons and Silk and Velvet Dress Goods.

Ser. No. 24,149. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ALBERT R. SAYLOR, Allentown, Pa. Filed Dec. 19, 1906.

Particular description of goods.—Cough Remedies, Remedies for Sore Throat, Remedies for the Treatment of Catarrhal Conditions of the Mucous Membranes, Liniments, Medicinal Ointments, Remedies for the Treatment of the Hair and Scalp, a Specific for Ivy Poison, a Remedy for the Treatment of Chafed, Sore, and Unhealthy Feet, Hair-Dye, Poultry and Condition Powders, Remedies for the Treatment of Disordered Conditions of the Stomach and Bowels, Remedies for the Treatment of Toothache, Remedies for the Treatment of Unhealthy Conditions of the Skin, Talcum Powder, Complexion-Cream, Antiseptic Tooth-Powder.

Ser. No. 24,159. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) FRITZSCHE BROTHERS, New York, N. Y. Filed Dec. 20, 1906. Used ten years.

Particular description of goods.—Essential Oils and Essences, the Following Constituents and Derivatives of Essential Oils: Carvol, Carven, Citral, Eucalyptol, Eugenol, Geraniol, Linalool, Menthol, Safrol, Thymen, Thymol, and Vanillin; and the Following Derivatives and Compounds of Aromatic Plants: Cumarin, Hyacinth Geraniol, and Reseda Geraniol.

Ser. No. 24,172. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) R. SCHIFFMANN COMPANY, St. Paul, Minn. Filed Dec. 20, 1906.

ASTHMADOR

Particular description of goods.—A Medical Compound for the Treatment for Asthma, Phthisic, Hay-Fever, Bronchitis, Catarrh, and Croup.

Ser. No. 24,206. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) THE CLIMAX REFINING COMPANY, Minneapolis, Minn. Filed Dec. 21, 1906.

Particular description of goods.—Illuminating-Oils and Lubricating Oils and Greases.

Ser. No. 24,208. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) THE CLIMAX REFINING COMPANY, Minneapolis, Minn. Filed Dec. 21, 1906.

Particular description of goods.—Illuminating-Oils and Lubricating Oils and Greases.

Ser. No. 24,238. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) THE BEST LIGHT COMPANY, Canton, Ohio. Filed Dec. 22, 1906.

Particular description of goods.—Gas, Gasolene, Kerosene, Naphtha, Petrol, and Alcohol Lamps and Mantles.

Ser. No. 24,251. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE CARTER-CRUME COMPANY, LIMITED, Toronto, Ontario, Canada, and Niagara Falls, N. Y. Filed Dec. 24, 1906.

TRI-PLIC

Particular description of goods.—Sales-Books.

Ser. No. 24,273. (CLASS 55. WINES.) J. CALVET & CO., Bordeaux, France. Filed Dec. 26, 1906.

Particular description of goods.—Claret, Burgundy, and Sauterne Wines.

Ser. No. 24,393. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) RALSTON PURINA COMPANY, St. Louis, Mo. Filed Jan. 2, 1907. Used ten years.

RALSTON

Particular description of goods.—Cereal Breakfast Food.

Ser. No. 24,428. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE MEDICINAL PRODUCTS CO., Denver, Colo. Filed Jan. 3, 1907.

KA-O-TOL

Particular description of goods.—Plasters and Salves.

Ser. No. 24,446. (CLASS 2. MINERAL.) THE LUHRIG COAL CO., Cincinnati, Ohio. Filed Jan. 4, 1907.

Particular description of goods.—Coal.

Ser. No. 24,477. (CLASS 19. BOATS AND ROAD-VEHICLES.) FRANK J. AUBEUF, Oneida, N. Y. Filed Jan. 7, 1907.

MERRIMAC

Particular description of goods.—Hand-Carts.

Ser. No. 24,478. (CLASS 19. BOATS AND ROAD-VEHICLES.) FRANK J. AUBEUF, Oneida, N. Y. Filed Jan. 7, 1907.

MONITOR

Particular description of goods.—Hand-Carts.

Ser. No. 24,502. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) ROTHSCHILD BROS. HAT CO., St. Louis, Mo. Filed Jan. 7, 1907. Used ten years.

Particular description of goods.—Felt and Straw Hats and Cloth Caps.

Ser. No. 24,512. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) COLLINS & COMPANY, New York, N. Y. Filed Jan. 8, 1907. Used ten years.

TIGER BRAND

Particular description of goods.—Cotton Shrunks.

Ser. No. 24,513. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) COLLINS & COMPANY, New York, N. Y. Filed Jan. 8, 1907.

ELEPHANT BRAND

Particular description of goods.—Cotton Shrunks.

Ser. No. 24,546. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) CHARLES A. MERRILL, Nora Springs, Iowa. Filed Jan. 9, 1907.

Particular description of goods.—Ointment or Salve for the Treatment of Gall and Wire Cut.

Ser. No. 24,582. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) UNITED STATES PAPER CUTTER CO., St. Louis, Mo. Filed Jan. 11, 1907.

QUEEN.

Particular description of goods.—Roll-Paper Holders and Cutters.

Ser. No. 24,585. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE RELIANCE EDGE TOOL COMPANY, Youngstown, Ohio. Filed Jan. 11, 1907.

Particular description of goods.—Chisels, Gouges, and Drawing-Knives.

Ser. No. 24,620. (CLASS 10. FERTILIZERS.) GERMOFERT MANUFACTURING COMPANY, Charleston, S. C. Filed Jan. 14, 1907.

GERMOFERT

Particular description of goods.—Fertilizers.

Ser. No. 24,637. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) THE WILL & BAUMER COMPANY, Syracuse, N. Y. Filed Jan. 15, 1907. Used ten years.

Particular description of goods.—Candles.

Ser. No. 24,638. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) THE WILL & BAUMER COMPANY, Syracuse, N. Y. Filed Jan. 15, 1907. Used ten years.

Particular description of goods.—Candles.

Ser. No. 24,657. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) FRANK BROS. & CO., New York, N. Y. Filed Jan. 15, 1907.

Particular description of goods.—Men's Shirts Made of Flannel Goods and Not Made of Knitted Goods.

Ser. No. 24,799. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) CENTURY PRESERVER CO., Chicago, Ill. Filed Jan. 21, 1907.

Crowfeather

Particular description of goods.—Liquid Coating Compositions for Preserving Metal, Wood, Concrete, and other Building Materials, and Insulating Paint Compounds.

Ser. No. 24,800. (CLASS 52. PACKING-HOUSE PRODUCTS.) THE COFFIN-FLETCHER PACKING CO., Indianapolis, Ind. Filed Jan. 21, 1907.

PRIMROSE

Particular description of goods.—Cured, Dressed, Cooked, and Canned Meats, Lard, and Sausage.

Ser. No. 24,807. (CLASS 19. BOATS AND ROAD-VEHICLES.) POPE MANUFACTURING COMPANY, Hartford, Conn. Filed Jan. 21, 1907.

Particular description of goods.—Self-Propelled Road-Vehicles.

Ser. No. 24,830. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) JAMES S. FALCK, Washington, D. C. Filed Jan. 22, 1907.

Borothymine.

Particular description of goods.—Antiseptic Powder.

Ser. No. 24,884. (CLASS 54. SEA FOODS.) HOWARD WINTER, Waterford, Wash. Filed Jan. 24, 1907. Used ten years.

Particular description of goods.—Canned Salmon.

Ser. No. 24,892. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) PEPSOL CHEMICAL COMPANY, Nashville, Tenn. Filed Jan. 25, 1907.

PEPSOL

Particular description of goods.—A Non-Alcoholic Carbonated Beverage.

Ser. No. 24,951. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) J. H. WELSH & CO., Philadelphia, Pa. Filed Jan. 28, 1907.

Particular description of goods.—Felt Hats, Stiff Hats, and Straw Hats.

Ser. No. 24,952. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) J. H. WELSH & CO., Philadelphia, Pa. Filed Jan. 28, 1907.

Particular description of goods.—Felt Hats, Stiff Hats, Straw Hats, Cloth Caps, Leather Caps, and Crash Caps.

Ser. No. 24,984. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) GEORGE EVANS, New York, N. Y. Filed Jan. 29, 1907.

Dentoxide

Particular description of goods.—An Antiseptic Mouth-Wash.

Ser. No. 25,000. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) C. C. SHAYNE & CO., New York, N. Y. Filed Jan. 29, 1907.

Particular description of goods.—Manufactured Furs Made Up for Wearing-Apparel.

Ser. No. 25,018. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) MIDDLETON BAKING CO., New Orleans, La. Filed Jan. 30, 1907.

Particular description of goods.—Bread.

Ser. No. 25,037. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) PARKER-CLARK ELECTRIC COMPANY, New York, N. Y. Filed Jan. 30, 1907.

Particular description of goods.—Incandescent Electric Lamps.

Ser. No. 25,074. (CLASS 64. MEDICAL AND SURGICAL APPARATUS, APPLIANCES, AND INSTRUMENTS.) JOHN EDWIN GARRATT, New York, N. Y. Filed Feb. 2, 1907.

VEEDEE

Particular description of goods.—Massage and Vibration Instruments for Curative Purposes.

Ser. No. 25,087. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) VALENTINE & COMPANY, New York, N. Y. Filed Feb. 2, 1907.

VALSPAR

Particular description of goods.—Varnish for the Finishing of Exterior Surfaces.

Ser. No. 25,120. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) MAX AMS, New York, N. Y. Filed Feb. 4, 1907.

The pail being blue in color.

Particular description of goods.—Pie-Fillings, Preserves, and Jellies.

Ser. No. 25,124. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) CRADDOCK-TERRY COMPANY, Lynchburg, Va. Filed Feb. 4, 1907.

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 25,126. (CLASS 47. CONFECTIONERY.) ENGLEWOOD CANDY COMPANY, Chicago, Ill. Filed Feb. 4, 1907.

BO-BO'S

Particular description of goods.—Candy.

Ser. No. 25,128. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) IDEAL MANUFACTURING COMPANY, Chicago, Ill. Filed Feb. 4, 1907.

Ideal

Particular description of goods.—Varnish-Removers.

Ser. No. 25,132. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) NEW JERSEY CAR SPRING & RUBBER CO., Jersey City, N. J. Filed Feb. 4, 1907. Used ten years.

RELIABLE

Particular description of goods.—Hose and Belting Made of Rubber Composition and Duck.

Ser. No. 25,140. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) SAMUEL M. WILLOCK, Pittsburg, Pa. Filed Feb. 5, 1907.

Particular description of goods.—Lubricating-Oils.

Ser. No. 25,141. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) SAMUEL M. WILLOCK, Pittsburg, Pa. Filed Feb. 5, 1907.

Particular description of goods.—Illuminating-Oils.

Ser. No. 25,142. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) SAMUEL M. WILLOCK, Pittsburg, Pa. Filed Feb. 5, 1907.

Particular description of goods.—Gasolene, Illuminating-Oils, Lubricating-Oils, and Greases.

Ser. No. 25,154. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) SMITH-BRISCOE SHOE COMPANY, INCORPORATED, Lynchburg, Va. Filed Feb. 5, 1907.

CITYCHAP

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 25,166. (CLASS 72. MERCHANDISE NOT OTHERWISE CLASSIFIED.) THE STAR INCUBATOR AND BROODER CO., Boundbrook, N. J. Filed Feb. 6, 1907.

Particular description of goods.—Incubators and Brooders.

Ser. No. 25,199. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) MARGARET BARRY, St. Louis, Mo. Filed Feb. 8, 1907.

M. B.

Particular description of goods.—Corsets.

Ser. No. 25,204. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed Feb. 8, 1907.

FOLLANSBEE
HONOR
OLD WELSH PROCESS

Particular description of goods.—Tin and Terne Plates.

Ser. No. 25,205. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) IVAN FRANK & CO., New York, N. Y. Filed Feb. 8, 1907.

TEDDY BEAR

Particular description of goods.—Suits for Boys and Children.

Ser. No. 25,207. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) WIEBUSCH & HILGER LT'D, New York, N. Y. Filed Feb. 8, 1907.

CHALLENGE

Particular description of goods.—Flat and Round Nose Pliers Without a Cutting Edge.

Ser. No. 25,219. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) JONAS F. BROWN & CO., Minneapolis, Minn. Filed Feb. 9, 1907.

Particular description of goods.—Rye and Bourbon Whisky.

Ser. No. 25,226. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE SAGINAW MILLING COMPANY, Saginaw, Mich. Filed Feb. 9, 1907.

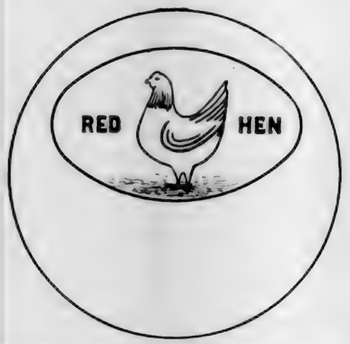

Particular description of goods.—Poultry Food.

Ser. No. 25,239. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GEDFORMOL MANUFACTURING COMPANY OF BALTIMORE CITY, Baltimore, Md. Filed Feb. 11, 1907.

GEDFORMOL

Particular description of goods.—Ointments.

Ser. No. 25,251. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) WILLIAM E. LEWIS, Joplin, Mo. Filed Feb. 11, 1907.

A Germicide
"Lewisine"
ANTISEPTIC WASH

Particular description of goods.—An Antiseptic Wash.

Ser. No. 25,253. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Feb. 12, 1907.

DRAGON

Particular description of goods.—Spool-Cotton and Thread.

Ser. No. 25,256. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Feb. 12, 1907.

LIBERTY

Particular description of goods.—Spool-Cotton and Thread.

Ser. No. 25,259. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Feb. 12, 1907. Used ten years.

IVERTON

Particular description of goods.—Spool-Cotton, Sewing-Cotton, and Thread.

Ser. No. 25,260. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Feb. 12, 1907. Used ten years.

WILLIMANTIC

Particular description of goods.—Spool-Cotton, Sewing-Cotton, and Thread.

Ser. No. 25,261. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) ABRAHAM & STRAUS, Brooklyn, N. Y. Filed Feb. 12, 1907.

PRISCILLA

Particular description of goods.—Baking-Powder.

Ser. No. 25,262. (CLASS 47 CONFECTIONERY.) ABRAHAM & STRAUS, Brooklyn, N. Y. Filed Feb. 12, 1907.

PRISCILLA

Particular description of goods.—Chocolate.

Ser. No. 25,267. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) CHARLES GULDEN, New York, N. Y. Filed Feb. 12, 1907. Used ten years.

Düsseldorfer Senf

Particular description of goods.—Prepared Mustard.

Ser. No. 25,285. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) PORTLAND MILLING COMPANY, Portland, Mich. Filed Feb. 13, 1907.

TEMPLE GARDEN

Particular description of goods.—Wheat-Flour.

Ser. No. 25,287. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) JAMES DONOVAN & Co., Everett, Mass. Filed Feb. 13, 1907.

Particular description of goods.—Boots, Shoes, and Slippers Made Wholly or in Part of Leather.

Ser. No. 25,310. (CLASS 47. CONFECTIONERY.) THE EARL MANUFACTURING COMPANY, Pittsburg, Pa. Filed Feb. 15, 1907.

CHU-CHU

Particular description of goods.—Popcorn and Mixed Popcorn and Peanuts Coated with Taffy.

Ser. No. 25,330. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) MABBS HYDRAULIC PACKING CO., Chicago, Ill. Filed Feb. 15, 1907. Used ten years.

MABBS

Particular description of goods.—Rawhide Packing.

TRADE-MARKS

REGISTERED MARCH 12, 1907.

61,214. HOMINY, HOMINY-GRITS, HOMINY-FLAKE, AND CORNMEAL. AMERICAN HOMINY COMPANY, Indianapolis, Ind.
Filed January 20, 1906. Serial No. 16,357. PUBLISHED JANUARY 15, 1907.

61,215. OLIVE-OILS. J. E. ATHANASSIADES SONS, New York, N. Y.
Filed June 11, 1906. Serial No. 20,222. PUBLISHED JANUARY 15, 1907.

61,216. CHOCOLATE. WILLIAM H. BAKER, Winchester, Va.
Filed July 15, 1905. Serial No. 10,373. PUBLISHED JANUARY 15, 1907.

61,217. WHEAT-FLOUR. CENTRAL KANSAS MILLING COMPANY, Lyons, Kans.
Filed December 17, 1906. Serial No. 24,085. PUBLISHED JANUARY 15, 1907.

61,218. WHEAT-FLOUR. THE CHAMPION ROLLER MILLING COMPANY, Richmond, Ind.
Filed December 3, 1906. Serial No. 23,729. PUBLISHED JANUARY 15, 1907.

61,219. CANNED VEGETABLES. CLINTON CANNING CO., Rome and Clinton, N. Y.
Filed December 5, 1906. Serial No. 23,764. PUBLISHED JANUARY 15, 1907.

61,220. CANNED FRUITS AND VEGETABLES. CLINTON CANNING CO., Rome and Clinton, N. Y.
Filed December 5, 1906. Serial No. 23,765. PUBLISHED JANUARY 15, 1907.

61,221. CURED, SMOKED, AND SWEET-PICKLED MEATS. THE CUDAHY PACKING COMPANY, Chicago, Ill., and South Omaha, Nebr.
Filed December 14, 1906. Serial No. 24,020. PUBLISHED JANUARY 15, 1907.

61,222. WHEAT-FLOUR. THE DAVIS MILLING COMPANY, St. Joseph, Mo.
Filed November 21, 1906. Serial No. 23,512. PUBLISHED JANUARY 15, 1907.

61,223. CHOCOLATES, CARAMELS, AND ALL KINDS OF CANDIES. GEORGE ZIEGLER CO., Milwaukee, Wis.
Filed December 18, 1906. Serial No. 24,124. PUBLISHED JANUARY 15, 1907.

61,224. CANNED CORN, SUCCOTASH, AND BEANS. H. F. WEBB COMPANY, Portland, Me.
Filed May 26, 1905. Serial No. 6,692. PUBLISHED JANUARY 15, 1907.

61,225. BUTTER. DAVID W. LEWIS & COMPANY, New York, N. Y.
Filed December 15, 1906. Serial No. 24,066. PUBLISHED JANUARY 15, 1907.

61,226. CHOCOLATE-COVERED CANDY. THE PHELPS CO., Meadville, Pa.
Filed April 16, 1906. Serial No. 18,836. PUBLISHED JANUARY 15, 1907.

61,227. LARD. RICHMOND ABATTOIR CO., Richmond, Ind.
Filed December 13, 1906. Serial No. 24,002. PUBLISHED JANUARY 15, 1907.

61,228. BEEF OIL OR FAT. SCHWARZSCHILD AND SULZBERGER CO., Chicago, Ill., and New York, N. Y.
Filed February 23, 1906. Serial No. 17,284. PUBLISHED JANUARY 15, 1907.

61,229. PREPARED TAPIOCA. WHITMAN GROCERY COMPANY, Orange, Mass.
Filed June 15, 1905. Serial No. 8,173. PUBLISHED JANUARY 15, 1907.

61,230. TROUSERS, COATS, VESTS, AND OVERCOATS. ARNOLD, LOUCHHEIM & Co., Philadelphia, Pa.
Filed December 5, 1906. Serial No. 23,769. PUBLISHED JANUARY 15, 1907.

61,231. ANTISEPTIC CLEANSER FOR ARTIFICIAL TEETH. ALBERT W. AUSTIN, Pittsburg, Pa.
Filed October 27, 1906. Serial No. 22,939. PUBLISHED JANUARY 15, 1907.

61,232. CERTAIN NAMED MEDICINAL AND TOILET PREPARATIONS. BARCLAY & BARCLAY, New York, N.Y.
Filed September 20, 1906. Serial No. 22,206. PUBLISHED JANUARY 15, 1907.

61,233. CORKS. ARTHUR BLUMER, La Varenne St. Hilaire, France.
Filed October 2, 1906. Serial No. 22,436. PUBLISHED JANUARY 15, 1907.

61,234. CANNED VEGETABLES. CLINTON CANNING CO., Rome and Clinton, N. Y.
Filed December 5, 1906. Serial No. 23,766. PUBLISHED JANUARY 15, 1907.

61,235. CANNED VEGETABLES. CLINTON CANNING CO., Rome and Clinton, N. Y.
Filed December 5, 1906. Serial No. 23,767. PUBLISHED JANUARY 15, 1907.

61,236. CANNED VEGETABLES. CLINTON CANNING CO., Rome and Clinton, N. Y.
Filed December 5, 1906. Serial No. 23,768. PUBLISHED JANUARY 15, 1907.

61,237. TALKING-MACHINE RECORDS, TALKING-MACHINES, AND SUPPLIES THEREFOR. COLUMBIA PHONOGRAPH COMPANY, New York, N. Y.
Filed December 6, 1906. Serial No. 23,820. PUBLISHED JANUARY 15, 1907.

61,238. HAIR-TONIC. CHAS. L. DU ROCHER, Annapolis, Md.
Filed December 12, 1906. Serial No. 23,960. PUBLISHED JANUARY 15, 1907.

61,239. RUBBER TIRES FOR AUTOMOBILES. H. M. & S. ARMORED TIRE CO., Pittsburg, Pa.
Filed December 14, 1905. Serial No. 15,424. PUBLISHED JANUARY 15, 1907.

61,240. COPYING-BATHS AND COPYING-CLOTHS. THE HOGGSON & PETTIS MANUFACTURING COMPANY, New Haven, Conn.
Filed October 31, 1906. Serial No. 23,057. PUBLISHED JANUARY 15, 1907.

61,241. STOCKINGS. LEVI STRAUSS & Co., San Francisco, Cal.
Filed July 2, 1906. Serial No. 20,698. PUBLISHED JANUARY 15, 1907.

61,242. CANNED VEGETABLES. ROSENSTEIN BROTHERS INC., New York, N. Y.
Filed October 20, 1906. Serial No. 22,708. PUBLISHED JANUARY 15, 1907.

61,243. HATS, NOT INCLUDING RUBBER HATS OR KNITTED HATS. SWANN ABRAM HAT CO., Louisville, Ky.
Filed November 15, 1906. Serial No. 23,368. PUBLISHED JANUARY 15, 1907.

61,244. MEDICINE FOR THE LUNGS. GEO. J. WEISENT, East Liverpool, Ohio.
Filed September 20, 1906. Serial No. 22,205. PUBLISHED JANUARY 15, 1907.

61,245. CERTAIN BELTING, HOSE, AND MACHINERY PACKING. THE B. F. GOODRICH COMPANY, Akron, Ohio.
Filed October 13, 1906. Serial No. 22,676. PUBLISHED JANUARY 15, 1907.

61,246. INSECTICIDES. HERMANN BENSMANN, Bremen, Germany.
Filed July 17, 1905. Serial No. 10,464. PUBLISHED JANUARY 15, 1907.

61,247. MASSAGE-CREAM AND ECZEMA CURE. BLANKE-BAER CHEMICAL COMPANY, St. Louis, Mo.
Filed November 3, 1906. Serial No. 23,094. PUBLISHED JANUARY 15, 1907.

61,248. CERTAIN WOOD MANUFACTURES. C. N. DIETZ LUMBER COMPANY, Omaha, Nebr.
Filed October 20, 1906. Serial No. 22,905. PUBLISHED JANUARY 15, 1907.

61,249. LEATHER SHOES. FRANK J. CURRIER, Lynn, Mass.
Filed September 25, 1906. Serial No. 22,319. PUBLISHED JANUARY 15, 1907.

61,250. MEDICINE FOR THE CURE OF RHEUMATISM. THE FATHER SCHUBERT RHEUMATIC CURE COMPANY, Chicago, Ill.
Filed June 20, 1906. Serial No. 20,439. PUBLISHED JANUARY 15, 1907.

61,251. TOOTH-PASTE. WILLIAM B. FLYNN, Fall River, Mass., and Providence, R. I.
Filed August 8, 1906. Serial No. 21,384. PUBLISHED JANUARY 15, 1907.

61,252. MONTHLY JOURNAL. FUNK & WAGNALLS COMPANY, New York, N. Y.
Filed December 13, 1906. Serial No. 23,995. PUBLISHED JANUARY 15, 1907.

61,253. FACE-LOTIONS. HEALALETTE CHEMICAL CO., New York, N. Y.
Filed May 29, 1906. Serial No. 19,947. PUBLISHED JANUARY 15, 1907.

61,254. PILLS FOR DISEASES OF THE STOMACH, LIVER, AND BOWELS. H. HERON JOHNSON CO., New York, N. Y.
Filed December 14, 1906. Serial No. 24,024. PUBLISHED JANUARY 15, 1907.

61,255. MEDICAL PREPARATION TO BE USED AS AN ANTIGONORRHEIC. KNOLL & CO., Ludwigshafen, Germany.
Filed October 6, 1906. Serial No. 22,571. PUBLISHED JANUARY 15, 1907.

61,256. LAGER-BEER. LEIDIGER BREWING CO., Merrill, Wis.
Filed December 5, 1906. Serial No. 23,774. PUBLISHED JANUARY 15, 1907.

61,257. REMEDY FOR CERTAIN DISEASES. MANHATTAN MEDICINE CO., New York, N. Y.
Filed December 12, 1906. Serial No. 23,965. PUBLISHED JANUARY 15, 1907.

61,258. LEATHER SHOES. THE MAY COMPANY, Cleveland, Ohio.
Filed December 10, 1906. Serial No. 23,906. PUBLISHED JANUARY 15, 1907.

61,259. CAEN-STONE CEMENT. CLIFFORD L. MILLER & CO., New York, N. Y.
Filed November 2, 1905. Serial No. 14,202. PUBLISHED JANUARY 15, 1907.

61,260. BITTERS. ISA MONHEIMER, Chicago, Ill.
Filed April 21, 1905. Serial No. 2,543. PUBLISHED MAY 22, 1906.

61,261. INSECTICIDES. NATIONAL COAL TAR COMPANY, Wilmington, Del., and Boston, Mass.
Filed December 1, 1906. Serial No. 23,701. PUBLISHED JANUARY 15, 1907.

61,262. SANDPAPER AND EMERY-PAPER. NEUSS, HESSLEIN & CO., New York, N. Y.
Filed October 23, 1906. Serial No. 22,846. PUBLISHED JANUARY 15, 1907.

61,263. WOMEN'S COATS, CLOAKS, RAIN-COATS, SUITS, AND OUTER SKIRTS. THE NEW YORK MACKINTOSH COMPANY, New York, N. Y.
Filed July 10, 1906. Serial No. 20,535. PUBLISHED JANUARY 15, 1907.

61,264. VARNISHES. THE PATTERSON SARGENT CO., Cleveland, Ohio.
Filed September 18, 1906. Serial No. 12,773. PUBLISHED JANUARY 15, 1907.

61,265. ALE. S. LIEBMANN'S SONS BREWING COMPANY, Brooklyn, N. Y.
Filed December 15, 1906. Serial No. 24,037. PUBLISHED JANUARY 15, 1907.

61,266. CERTAIN PAPER MANUFACTURES. SAFETY SYSTEMS CO., New York, N. Y.
Filed November 25, 1905. Serial No. 15,000. PUBLISHED JANUARY 15, 1907.

61,267. WATCHES, WATCH-MOVEMENTS, AND WATCH-CASES. BYRON L. STRASBURGER, New York, N. Y.
Filed December 13, 1906. Serial No. 24,003. PUBLISHED JANUARY 15, 1907.

61,268. ALTERATIVE, RESOLVENT, APERIENT MEDICINE. THE TILDEN COMPANY, New Lebanon, N. Y., and St. Louis, Mo.
Filed December 12, 1906. Serial No. 23,968. PUBLISHED JANUARY 15, 1907.

61,269. FINGER-COTS MADE OF LEATHER. PHILIP TOUSSAINT, New York, N. Y.
Filed October 29, 1906. Serial No. 22,993. PUBLISHED JANUARY 15, 1907.

61,270. DENATURED ALCOHOL. U. S. INDUSTRIAL ALCOHOL CO., New York, N. Y.
Filed December 4, 1906. Serial No. 23,763. PUBLISHED JANUARY 15, 1907.

61,271. LEATHER BOOTS, SHOES, AND OXFORDS. FERNS VALDES & CO., Havana, Cuba.
Filed November 23, 1906. Serial No. 23,547. PUBLISHED JANUARY 15, 1907.

61,272. MINERAL WATER. VIRGINIA ETNA LITHIA SPRINGS CO., Jersey City, N. J., and New York, N. Y.
Filed October 24, 1906. Serial No. 22,894. PUBLISHED JANUARY 15, 1907.

61,273. MILKY OR LACTEOUS MEAL FOR CHILDREN. ALFRED ADAM, Basel, Switzerland.
Filed May 5, 1905. Serial No. 4,403. PUBLISHED JANUARY 15, 1907.

61,274. CERTAIN MEDICINAL PREPARATION. JOHN T. COOMBS, Boston, Mass.
Filed November 22, 1906. Serial No. 23,555. PUBLISHED JANUARY 15, 1907.

61,275. CERTAIN COMPOSITION OF MATTER. ELECTROSE MANUFACTURING CO., New York, N. Y.
Filed May 20, 1905. Serial No. 6,127. PUBLISHED JANUARY 15, 1907.

61,276. HOSIERY. LORD & TAYLOR, New York, N. Y.
Filed June 21, 1905. Serial No. 8,062. PUBLISHED JANUARY 15, 1907.

61,277. MEDICINAL PREPARATIONS FOR THE RELIEF OF TOOTHACHE. LOUIS D. PIERCE, New York, N. Y.
Filed March 16, 1906. Serial No. 17,961. PUBLISHED JANUARY 15, 1907.

61,278. MINERAL WATERS. JACOB RIES, Shakopee, Minn.
Filed March 19, 1906. Serial No. 17,995. PUBLISHED AUGUST 28, 1906.

61,279. MEDICATED TABLETS FOR BATHS. WENZEL SEDLITZKY, Salzburg, Austria-Hungary.
Filed November 16, 1905. Serial No. 14,727. PUBLISHED JANUARY 15, 1907.

61,280. QUILTS. SHERMAN, REID & CO., New York, N. Y.
Filed June 26, 1905. Serial No. 9,040. PUBLISHED JANUARY 15, 1907.

61,281. SNAP-FASTENERS. ALMA MANUFACTURING COMPANY OF BALTIMORE CITY, Baltimore, Md.
Filed December 10, 1906. Serial No. 23,913. PUBLISHED JANUARY 15, 1907.

61,282. ANTIPYRETIC, STIMULANT, ANALGESIC, AND ANODYNE. CHARLES AMMEN, New Orleans, La.
Filed June 26, 1906. Serial No. 20,566. PUBLISHED JANUARY 15, 1907.

61,283. LUBRICATING-OILS. ATLANTIC REFINING COMPANY, Franklin and Philadelphia, Pa.
Filed May 18, 1905. Serial No. 6,049. PUBLISHED AUGUST 29, 1905.

61,284. LUBRICATING-OILS. ATLANTIC REFINING COMPANY, Franklin and Philadelphia, Pa.
Filed May 18, 1905. Serial No. 6,052. PUBLISHED AUGUST 15, 1905.

61,285. SOAP FOR TOILET AND MEDICINAL PURPOSES. BARCLAY & BARCLAY, New York, N. Y.
Filed November 7, 1906. Serial No. 23,147. PUBLISHED JANUARY 15, 1907.

61,286. SOAP. BARCLAY & BARCLAY, New York, N. Y.
Filed December 6, 1906. Serial No. 23,810. PUBLISHED JANUARY 15, 1907.

61,287. CIGARS, CIGARETTES, SMOKING AND CHEWING TOBACCO. CARLOWITZ & CO., New York, N. Y.
Filed October 2, 1906. Serial No. 22,437. PUBLISHED JANUARY 15, 1907.

61,288. FISHING-TACKLE. FRANK E. CHESTER, Providence, R. I.
Filed October 19, 1906. Serial No. 22,783. PUBLISHED JANUARY 15, 1907.

61,289. CREAM-SEPARATORS OF ALL KINDS. THE DE LAVAL SEPARATOR COMPANY, New York and Poughkeepsie, N. Y.
Filed June 30, 1905. Serial No. 9,448. PUBLISHED JUNE 5, 1906.

61,290. CERTAIN PARTS OF VEHICLES. THE EBERHARD MANUFACTURING COMPANY, Cleveland, Ohio.
Filed April 6, 1905. Serial No. 545. PUBLISHED JANUARY 15, 1907.

61,291. SHOE, LEATHER, AND HARNESS POLISHES, BLACKINGS, AND DRESSINGS. ECLIPSE CEMENT & BLACKING COMPANY, Philadelphia, Pa.
Filed November 27, 1906. Serial No. 23,631. PUBLISHED JANUARY 15, 1907.

61,292. FISH-HOOKS, RODS, REELS, AND ARTIFICIAL BAIT. EDW. K. TRYON COMPANY, Philadelphia, Pa.
Filed October 30, 1906. Serial No. 23,008. PUBLISHED JANUARY 15 1907.

61,293. BUNG-HOLE BORERS. THE ENTERPRISE MANUFACTURING CO. OF PENNSYLVANIA, Philadelphia, Pa.
Filed December 3, 1906. Serial No. 23,732. PUBLISHED JANUARY 15, 1907.

61,294. WHISKY. THE HOLLYWOOD COMPANY, New York, N. Y.
Filed December 15, 1906. Serial No. 24,073. PUBLISHED JANUARY 15, 1907.

61,295. LAUNDRY SOAP. JAMES S. KIRK & COMPANY, Chicago, Ill.
Filed July 12, 1906. Serial No. 20,873. PUBLISHED JANUARY 15, 1907.

61,296. LEATHER SHOES. WILLIAM S. JOHNSON, Putnam, Conn.
Filed July 21, 1906. Serial No. 21,073. PUBLISHED JANUARY 15, 1907.

61,297. SAUSAGES, HAMS, BACON, SALT PORK, AND LARD. THE JONES DAIRY FARM, Fort Atkinson, Wis.
Filed July 6, 1906. Serial No. 20,751. PUBLISHED JANUARY 8, 1907.

61,298. CERTAIN MEDICAL AND SURGICAL APPARATUS, APPLIANCES, AND INSTRUMENTS. THE KNY-SCHEERER COMPANY, New York, N. Y.
Filed October 23, 1906. Serial No. 22,861. PUBLISHED JANUARY 8, 1907.

61,299. WHISKY. THE KOHN DISTILLING CO., Montgomery, Ala.
Filed December 19, 1906. Serial No. 24,154. PUBLISHED JANUARY 15, 1907.

61,300. CERTAIN MEDICINAL PREPARATION. BENJAMIN O. LAMPHEAR, Wheeling, W. Va.
Filed July 11, 1906. Serial No. 20,855. PUBLISHED JANUARY 15, 1907.

61,301. PIANOS AND ORGANS. M. SCHULZ CO., Chicago, Ill.
Filed August 25, 1906. Serial No. 21,748. PUBLISHED JANUARY 15, 1907.

61,302. TOOTH AND NAIL BRUSHES. WILLIAM L. MARTIN, New York, N. Y., assignor to Deitsch Brothers, a Firm, New York, N. Y.
Filed March 1, 1906. Serial No. 17,454. PUBLISHED APRIL 3, 1906.

61,303. CIGARETTES. MASPERO FRÈRES, LIMITED, London, England.
Filed November 2, 1906. Serial No. 23,008. PUBLISHED JANUARY 15, 1907.

61,304. SOAP. MEXICAN AMOLE SOAP CO., Peoria, Ill.
Filed July 24, 1905. Serial No. 10,767. PUBLISHED JANUARY 15, 1907.

61,305. SOAP. MEXICAN AMOLE SOAP CO., Peoria, Ill.
Filed July 24, 1905. Serial No. 10,769. PUBLISHED JANUARY 15, 1907.

61,306. POLISH COMPRISING BLACK LEAD, PLUMBAGO, OR GRAPHITE, AND FOR STOVE-POLISH. FELICIA V. MORSE, Canton, Mass.
Filed September 24, 1906. Serial No. 22,269. PUBLISHED DECEMBER 25, 1906.

61,307. ILLUMINATING-OIL. THE NATIONAL REFINING COMPANY, Cleveland, Ohio.
Filed November 12, 1906. Serial No. 23,288. PUBLISHED JANUARY 15 1907.

61,308. TIME-RECORDERS, CLOCKS, AND WATCHES. NEWMAN CLOCK CO., Chicago, Ill.
Filed October 31, 1906. Serial No. 23,022. PUBLISHED JANUARY 15, 1907.

61,309. FIREWORKS. HENRY J. PAIN, New York, N. Y.
Filed December 17, 1906. Serial No. 24,081. PUBLISHED JANUARY 15, 1907.

61,310. WALL-PLASTERS. THE PLYMOUTH GYPSUM CO., Fort Dodge, Iowa.
Filed December 5, 1906. Serial No. 23,782. PUBLISHED JANUARY 15, 1907.

61,311. SILK DRESS GOODS IN THE PIECE. ROGERS & THOMPSON, New York, N. Y., assignor to Rogers & Thompson, New York, N. Y., a Corporation of New Jersey.
Filed July 21, 1905. Serial No. 10,671. PUBLISHED JANUARY 15, 1907.

61,312. CIGARETTES. JOHN G. SAFFA, St. Louis, Mo.
Filed November 13, 1906. Serial No. 23,323. PUBLISHED JANUARY 15, 1907.

61,313. SCRAP-TOBACCO, CHEWING-TOBACCO, AND SMOKING-TOBACCO. AUGUST SCHROER, Cincinnati, Ohio.
Filed December 12, 1906. Serial No. 23,967. PUBLISHED JANUARY 15, 1907.

61,314. CERTAIN MACHINERY AND PARTS THEREOF. TAYLOR IRON & STEEL CO., High Bridge, N. J.
Filed October 19, 1906. Serial No. 22,773. PUBLISHED JANUARY 15, 1907.

61,315. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
Filed March 22, 1906. Serial No. 18,115. PUBLISHED OCTOBER 30, 1906.

61,316. STEEL. S. & C. WARDLOW, New York, N. Y.
Filed March 29, 1906. Serial No. 18,344. PUBLISHED JANUARY 15, 1907.

61,317. CERTAIN NAMED TOILET ARTICLES. WILLIAM PRYM G. M. B. H., Stolberg, Germany.
Filed August 24, 1906. Serial No. 21,737. PUBLISHED JANUARY 15, 1907.

61,318. HORSESHOES AND MULE-SHOES. AMERICAN HORSE SHOE COMPANY, Phillipsburg, N. J.
Filed September 18, 1905. Serial No. 12,760. PUBLISHED JANUARY 15, 1907.

61,319. PLUGS FOR FILLING THE TEETH. EDW. F. ANDREWS, Chicago, Ill.
Filed May 27, 1905. Serial No. 6,828. PUBLISHED JANUARY 15, 1907.

61,320. FISHING-TACKLE. FRANK E. CHESTER, Providence, R. I.
Filed October 19, 1906. Serial No. 22,779. PUBLISHED JANUARY 15, 1907.

61,321. FISHING-TACKLE. FRANK E. CHESTER, Providence, R. I.
Filed October 19, 1906. Serial No. 22,781. PUBLISHED JANUARY 15, 1907.

61,322. INCANDESCENT ELECTRIC LAMPS. THE FRANKLIN ELECTRIC MFG. CO., Hartford, Conn.
Filed June 10, 1905. Serial No. 7,843. PUBLISHED JANUARY 15, 1907.

61,323. WASHING-MACHINES, WASHTUBS, WRINGERS, MANGLES, AND CLOTHES-DRIERS. GOTTLIEB W. FROELICH, St. Paul, Minn.
Filed October 17, 1906. Serial No. 22,740. PUBLISHED JANUARY 15, 1907.

61,324. SOAP FOR CLEANSING FINE LINEN AND EMBROIDERY. ELLA GOLTER, New York, N. Y.
Filed November 17, 1906. Serial No. 23,436. PUBLISHED JANUARY 15, 1907.

61,325. STOGIES. J. S. HAGGERTY CO., Fairmont, W. Va.
Filed December 13, 1906. Serial No. 24,005. PUBLISHED JANUARY 15, 1907.

61,326. PUMICE SOAP. HASKINS BROS. & CO., Sioux City, Iowa, and Omaha, Nebr.
Filed December 18, 1906. Serial No. 24,115. PUBLISHED JANUARY 15, 1907.

61,327. WINDMILLS, WINDMILL-TOWERS, PUMPS, AND PUMP-CYLINDERS. THE RED CROSS MFG. CO., Bluffton, Ind.
Filed June 8, 1905. Serial No. 7,719. PUBLISHED JANUARY 15, 1907.

61,328. WASHING-BLUE. THE SAWYER CRYSTAL BLUE COMPANY, Boston, Mass.
Filed July 17, 1905. Serial No. 10,441. PUBLISHED JANUARY 15, 1907.

61,329. METAL GRIPS FOR CABLES, ROPES, CHAINS, AND RODS. UNIVERSAL CABLE GRIP COMPANY, Syracuse, N. Y.
Filed November 16, 1906. Serial No. 23,425. PUBLISHED JANUARY 15, 1907.

61,330. WITHDRAWN.

61,331. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
Filed December 12, 1906. Serial No. 23,954. PUBLISHED JANUARY 15, 1907.

61,332. HAND-OPERATED FIRE-EXTINGUISHING ENGINES OR DEVICES. WALTER R. JOHNSTON MANUF'G. CO., New York, N. Y.
Filed November 23, 1906. Serial No. 23,558. PUBLISHED JANUARY 15, 1907.

LABELS

REGISTERED MARCH 12, 1907.

13,392.—*Title:* "EL INSPIRO." (For Cigars.) O. L. SCHWENCKE LITHOGRAPHIC CO., New York, N. Y. Filed February 18, 1907.

13,393.—*Title:* "LA ULTREZA." (For Cigars.) O. L. SCHWENCKE LITHOGRAPHIC CO., New York, N. Y. Filed February 18, 1907.

13,394.—*Title:* "REXALOS." (For Cigars.) O. L. SCHWENCKE LITHOGRAPHIC CO., New York, N. Y. Filed February 18, 1907.

13,395.—*Title:* "GET ROSY MALT." (For Malt Liquors.) PRESTON CLARK, Peoria, Ill. Filed February 16, 1907.

13,396.—*Title:* "PYORRONOL." (For Mouth-Wash.) THE PYORRONOL CO., Chicago, Ill. Filed February 13, 1907.

13,397.—*Title:* "TONSILLOL." (For Medicine.) JOHN NACHTIGALL, Cleveland, Ohio. Filed February 16, 1907.

13,398.—*Title:* "HIMMALIA TONIC." (For Medicine.) CARL O. F. BURKSTROM, Chicago, Ill. Filed February 18, 1907.

13,399.—*Title:* "BURN SALVE." (For Ointments.) HARRIS & HARRIS, Scranton, Pa. Filed February 15, 1907.

13,400.—*Title:* "KILFLEA." (For Dog-Soap.) GEO. W. CLAYTON, Chicago, Ill. Filed February 11, 1907.

13,401.—*Title:* "STAR RECORD." (For Records for Talking-Machines.) HAWTHORNE & SHEBLE MFG. CO., Philadelphia, Pa. Filed February 15, 1907.

13,402.—*Title:* "RECORDOL." (For Cleaning, Preserving Polishing, and Lubricating Preparation.) JOSEPH A. MANAHAN, New York, N. Y. Filed February 16, 1907.

13,403.—*Title:* "ANTI-WET WATERPROOF." (For Leather-Dressing.) CHARLES G. WINFIELD, Aberdeen, Wash. Filed February 18, 1907.

PRINTS

REGISTERED MARCH 12, 1907.

1,918.—*Title:* "THE BEST IN THE BASKET." (For Flour.) WASHBURN CROSBY COMPANY, Minneapolis, Minn. Filed February 16, 1907.

1,919.—*Title:* "DON'T DISCHARGE THE COOK." (For Flour.) WASHBURN CROSBY COMPANY, Minneapolis, Minn. Filed February 16, 1907.

1,920.—*Title:* "ARE YOU OPINIONATED?" (For Flour.) WASHBURN CROSBY COMPANY, Minneapolis, Minn. Filed February 16, 1907.

1,921.—*Title:* "GOOD BREAD—THE SECRET'S OUT." (For Flour.) WASHBURN CROSBY COMPANY, Minneapolis, Minn. Filed February 16, 1907.

1,922.—*Title:* "WE OUGHT TO CHARGE MORE THAN WE DO—." (For Flour.) WASHBURN CROSBY COMPANY, Minneapolis, Minn. February 16, 1907.

1,923.—*Title:* "IF YOU PLEASE—DON'T *Merely* ASK FOR *Flour*." (For Flour.) WASHBURN CROSBY COMPANY, Minneapolis, Minn. Filed February 16, 1907.

1,924.—*Title:* "THE PROFESSIONAL BAKER." (For Flour.) WASHBURN CROSBY COMPANY, Minneapolis, Minn. Filed February 16, 1907.

1,925.—*Title:* "MEN'S AND BOYS' APPAREL." (For Apparel.) H. C. Lytton, Chicago, Ill. Filed February 13, 1907.

1,926.—*Title:* "FALKER'S VELVET SUEDE." (For Suede Skins.) AUGUST FAULKER, Syracuse, N. Y. Filed February 16, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE BARRETT AND ALTER.

Decided January 18, 1907.

1. APPLICATION JOINT—PROSECUTION OF BY ONE APPLICANT WHERE COAPPLICANT REFUSES TO ACT.

Where one of two joint inventors seeks to cause the abandonment of their application by preventing amendment thereof, claiming that he is a sole inventor, and also files a written abandonment of the application, *Held* that permission will be given to the coinventor to prosecute the application through an attorney of his own selection.

2. ATTORNEYS—APPOINTMENT OF BY ONE OF TWO JOINT APPLICANTS.

Where the attorneys for joint applicants are prevented from amending the application by one of the joint inventors, who in order to cause the case to become abandoned also refuses to permit them to give an associate power of attorney to an attorney of the other joint applicant's selection, *Held* that an attorney appointed by the coinventor will be permitted to prosecute the application.

3. ABANDONMENT OF APPLICATION—MUST BE SIGNED BY ALL JOINT INVENTORS.

Where one coapplicant does not join in the written abandonment of an application, it can be given no effect.

ON MOTION.

CONVERTIBLE CUSHIONED AND NON-CUSHIONED SEAT.

Messrs. Poole & Brown for the applicants.

ALLEN, *Commissioner:*

This case comes before me on motion by Lute S. Alter, one of the joint applicants, that he be permitted, through his attorney, John H. McElroy, to amend the joint application above entitled. The motion is accompanied by a proposed amendment filed on October 31, 1906.

It appears from the record that the last official action was made on November 11, 1905. No action has been taken by the applicant since that time except the filing of the proposed amendment referred to above. If this amendment was not a proper action under the law, the application must be considered as having become abandoned on November 11, 1906. At the time of executing their application the joint inventors appointed the members of the firm of Poole & Brown their attorneys. In an affidavit in support of the motion Alter states that he has learned that Barrett is now exploiting another form of the invention described in the joint application and has expressed his intention of abandoning the joint invention and the application therefor. Alter has sold part of his interest in the invention to McElroy and has appointed him his attorney. In an affidavit by McElroy it is stated that Barrett has refused to join with Alter in giving him, McElroy, a power of attorney to prosecute the application and has refused to authorize the original attorneys, Poole & Brown, to give McElroy an associate power of attorney. McElroy also states that Poole & Brown refused to give him an associate power, for the reason that they were not authorized to do so by Barrett, and that Poole & Brown were unable to amend the application by reason of the fact that Barrett had possession of their copy of the application papers.

In an affidavit in opposition to the motion Barrett states that the invention disclosed in the application is not a joint invention, but is his sole invention, Alter having no interest or participation therein other than an agreement on his part to furnish funds to procure a patent. Inasmuch as in the oath accompanying the application both parties stated that they were joint inventors, it would be unjust in the absence of other evidence to base any action adverse to Alter's interest upon Barrett's subsequent affidavit to the contrary. A somewhat similar state of facts was presented in the case of *ex parte Benjamin and Bailey*, (C. D., 1892, 85,) in which a power of attorney given by one of the joint inventors and an assignee of the joint inventors was accepted.

Barrett has filed a written abandonment of the application; but as his coapplicant, Alter, does not join in the abandonment it can be given no effect.

The motion is granted.

EX PARTE BROOKS.

Decided January 18, 1907.

1. ABANDONMENT OF APPLICATION—WITHDRAWAL FROM ISSUE—FAILURE TO TAKE ACTION.

Where an application is withdrawn from issue at the request of the applicant to await the allowance of a related application and no action is taken therein until after the expiration of the statutory period allowed for taking action, which dates from the notice of allowance, the application is abandoned in the absence of special circumstances excusing the delay.

2. WITHDRAWAL FROM ISSUE DOES NOT EXTEND STATUTORY PERIOD FOR ACTION.

Rule 166 was intended to indicate to applicants that the withdrawal of an application from issue at their request would not operate to extend the period within which the statute requires that applications be prosecuted.

ON PETITION.

TYPE-WRITING MACHINE.

Messrs. Gifford & Bull for the applicant.

ALLEN, *Commissioner:*

This case comes before me for consideration of a petition that the application be passed to issue.

It appears from the record that the application was passed to issue on July 12, 1897. On January 12, 1898, the applicant made the following request:

In view of the pendency of a parent application for Letters Patent of applicant Serial No. 609,088, involving an invention related to that covered in this case, we respectfully request, in view of the decision of the Supreme Court of the United States in *Miller* v. *Eagle M'f'g. Co.*, that this case be withdrawn from the issue files pending the amendment and allowance of said other parent application.

In accordance with this request the application was on January 13, 1898, withdrawn from issue, and no action has been taken by the applicant since that date except the filing on October 10, 1906, of the petition now under consideration. Rule 166, in force at the time the application was withdrawn from issue and continuously since that time, provides that whenever the Commissioner shall direct the withdrawal of an application from issue on request of an applicant such withdrawal shall not operate to stay the period of one year running against the application, which begins to attach from the date of the notice of allowance. The application now under consideration was filed prior to January 1, 1898, and hence the applicant was entitled to a period of two years within which to respond to official actions. It appears, therefore, that in the absence of some special circumstances justifying the applicant's delay of eight years the application is abandoned.

The applicant's reasons for desiring to withdraw the application from issue in 1898 are not clear. In the case of *ex parte Drawbaugh*, decided in 1893, (C. D., 1893, 85,) it was held that there was no good ground for the practice then prevailing of requiring that divisional applications should issue simultaneously. There was nothing therefore in the mere fact that this application was a division of a prior application to necessitate or justify withholding it from issue until the issuance of the prior application or any other division thereof. In his request for withdrawal of the application from issue the applicant did not explain his grounds nor state what bearing the decision in *Miller* v. *Eagle Manufacturing Company* had upon his request. It is not apparent that it had any bearing whatever. However this may be, the Office granted his request and withdrew the application from issue. Withdrawing the case from issue could work no injury to the public or to other inventors, for the reason that under Rule 166, referred to above, the application would become abandoned two years after it had been passed to issue whether withdrawn from issue or left in issue and permitted to become forfeited. It is clear that Rule 166 was intended to indicate to applicants that the withdrawal of an application from issue would not operate to extend the period within which the statute requires that applications be prosecuted.

If it appeared that a valid patent could not have been issued upon this application at the time of its withdrawal from issue or at any time since until the present, there might be reason for holding the applicant's action justified and for finding that the application was not, in fact, abandoned; but there is nothing whatever in the record to show that the applicant contends that such is the case, and no ground for such a contention is apparent. It must be held, therefore, that this application became abandoned on July 12, 1899, two years after it was passed to issue.

The petition is denied.

EX PARTE BETTENDORF.

Decided March 1, 1907.

DESIGNS—PATENTABILITY—NEW APPEARANCE MUST BE ORNAMENTAL.

A design patent for an article will be granted only when there can be found in such article a new appearance created by inventive process which serves the purpose of embellishment. It is not enough that the design should possess features of utilitarian attractiveness which would commend it to persons familiar with the art because of its functional value; it must possess an inherent beauty.

APPEAL from Examiners-in-Chief.

DESIGN FOR SIDE FRAME FOR CAR-TRUCKS.

Mr. Frank D. Thomason for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the decision of the Examiners-in-Chief affirming the decision of the Examiner of Designs in the rejection of a design for side frames of car-trucks.

The Examiner found the design claimed devoid of patentable novelty in view of the following references: Smyser, October 24, 1899, No. 635,357; Symons, October 16, 1900, No. 659,903; Woods, August 7, 1900, No. 655,386.

Upon appeal the Examiners-in-Chief held that the design was not found in or suggested by the references and reversed the decision of the Examiner of Designs. Soon after this decision the Examiners-in-Chief of their own motion reheard the case and, arriving at the conclusion that the design was not ornamental, reversed their first decision and affirmed the decision of the Examiner of Designs. It is from the later decision of the Examiners-in-Chief that this appeal is taken, and inasmuch as they did not reverse their earlier finding that the design was not anticipated by the references the sole question to be determined is whether the design claimed is an ornamental design which required the exercise of the inventive faculties in its construction.

The decision of the Examiners-in-Chief is, in my opinion, correct.

The changes which distinguish the appellant's design for side frames of car-trucks from those of the prior art as summarized in his brief are as follows:

(*a*) The homogeneity and continuity of the design from one end of the side frame to the other including the journal-boxes.
(*b*) The relatively great height of the center of length of the side frame as compared to that of the ends thereof where said ends merge into the journal-boxes, which convey the impression of lightness and speed.
(*c*) The tapering of the upper arch and the lower arch from the journal-boxes to the column-guides, which help give the center of length of the side frame the appearance of power and strength.
(*d*) The relatively greater height of the journal-boxes than the ends of the side frame merging into the same, giving the side frame a festoon-like appearance hung from the centers of the wheels.
(*e*) The slanting appearance of the column-guides.
(*f*) The making of the web of the body of the side frame in the same plane and the distribution of flanges upon this web to produce a pleasing effect and appearance of advanced and depressed surfaces.

An analysis of these alleged changes discloses the fact that each is based upon well-recognized principles of machine design whose advantages are within the knowledge of skilled draftsmen and designers of machinery. (*a*) relates to integrability of structure. (*b*) and (*c*) disclose the standard form used to obtain greatest strength with the least material. (*d*) provides for lowering the support for the car-body to give it greater stability. (*e*) refers to the means for providing a broad seat for the springs supporting the car-body. (*f*) is for the ordinary means of laterally strengthening a webbed beam. Each of these alleged changes is clearly for a utilitarian effect. It is, however, contended that by combining these features Bettendorf has produced a design which would appeal to men who are connected with railroads. This fact was recognized by the Examiners-in-Chief in their decision upon rehearing, and the distinction between the attractiveness to the eye of persons familiar with side frames of cars of a device embodying well-recognized mechanical principles and an ornamental device is clearly stated in the folllowing extract from their decision:

We are of opinion that its attractiveness to such men lies wholly in the apprehension of its utility, in its superior adaptation of its shapes to utilitarian ends. They see that the design is compact lengthwise by reason of the location of the journal-boxes against the end of the frame. They see that it is lowered by making the inverted-arch tires farther down from the bearings than the upper tires are distant from those bearings. So made the side bar is not only lower but is stronger. They see that a minimum of weight is attained by skeletonizing the side bar by two openings near its ends and they see that in doing that the old upper truss and lower truss and the old guides are made with edge flanges which, as is well known, add strength to them. They also see here and there cross-webs, which, they well know, also add to the strength of the parts on which they are made and with which their ends are connected. All this makes the design attractive to them as practical men in the art.

But we are of opinion that this utilitarian attractiveness is far from ornamentation. We find nothing beautiful or esthetic in the structure.

This statement of the Examiners-in-Chief is entirely in accordance with my views. It is not enough that the design should comprise features which would commend it to persons familiar with the art because of its functional value; it must possess an inherent beauty.

The principle stated in my decision in *ex parte Knothe* (C. D., 1903, 42; 102 O. G., 1294) and reiterated in *ex parte Nickel and Crane* (C. D., 1904, 135; 109 O. G., 2441) applies to this case.

A new and ornamental design will be found in an article of manufacture when there can be found in such article a new appearance created by inventive process and serving the purpose of embellishment. Such new appearance may be superficially applied or it may rest more or less deeply in the structure of the parts, but it must be a creation of inventive genius, accomplishing the purpose of ornament and not used for its functional value. It will be found, weighed, and valued by the test of ornament. It will not be found in those articles whose visible forms are only modeled to develop function.

I find nothing in the appearance of the design claimed by the appellant which commends itself to the eye or even suggests the beautiful.

The decision of the Examiners-in-Chief is affirmed.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

COMPUTING SCALE COMPANY OF AMERICA *v.* THE AUTOMATIC SCALE COMPANY.

Decided February 26, 1907.

1. PATENTABILITY — INVENTION — REARRANGEMENT OF ELEMENTS OF COMBINATION.

Where a given combination of elements is old in an automatic computing-scale of the horizontal type and the prior art also shows a computing-scale arranged vertically, although it was not entirely automatic, a claim covering a rearrangement of the elements of the automatic horizontal scale to provide a vertical construction can be sustained only to a limited extent.

2. CONSTRUCTION OF CLAIMS—ACQUIESCENCE IN REJECTION OF PATENT OFFICE.

Where an inventor seeking a broad claim which is rejected, in which rejection he acquiesces, substitutes therefor a narrower claim, he cannot be heard to insist that the construction of the claim allowed shall cover that which has been previously rejected. (*Corbin Cabinet Lock Company* v. *Eagle Lock Company*, 150 U. S., 38-40, and cases there cited.)

Mr. Melville Church for the appellant.

Mr. H. P. Doolittle for the appellee.

Mr. Justice DAY delivered the opinion of the Court.

This is an appeal from the Court of Appeals of the District of Columbia, affirming a decree of the Supreme Court of the District dismissing the bill of the Computing Scale Company of America, appellant, against the Automatic Scale Company, based upon the alleged infringement of Letters Patent No. 700,919, granted to the complainant as the assignee of the inventor, Austin B. Hayden, said letters bearing date May 27, 1902, for an improvement in computing-scales.

The bill contained a prayer for an injunction and accounting. The answer denied the patentability of the alleged invention of the plaintiff, set up the alleged anticipating invention of one Christopher, and denied infringement.

The alleged improvement of Hayden is shown in the accompanying illustrations taken from the patent:

Fig. 1

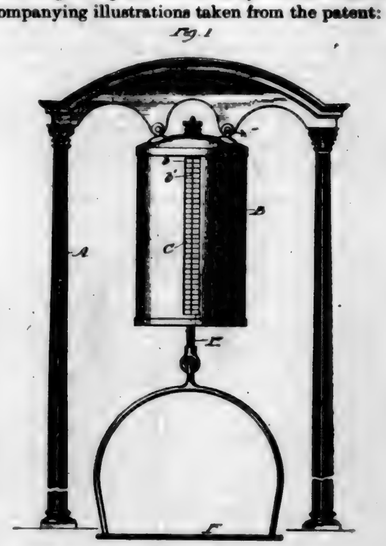

To understand these drawings they are to be viewed in the light of the description of the mechanism given by complainant's expert, which has the approval of the expert of the defendant, and was accepted as correct in the court of appeals. This description, somewhat abridged, is as follows:

The two principal parts of the mechanism are as follows: 1st, a vertically-arranged, non-rotating frame which comprises and includes a vertical cylindrical casing which incloses, conceals and protects the major portion of the operating portions of the scale, and upon which are marked the price indications which indicate the price per pound at which the articles weighed are to be sold. As clearly shown in the drawings this external casing or frame is provided with a vertically-disposed sight-opening through which the coacting mechanism is observable, and along one vertical edge

of this sight-opening are arranged the numerals indicating the price per pound.

Fig 2

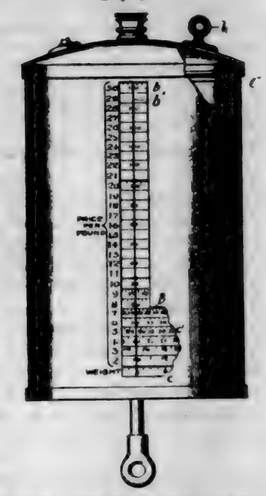

The second of these principal parts is a second cylinder located within the casing, this cylinder constituting a computing-cylinder or chart-drum upon which are placed indications indicating the weight in pounds of the article weighed, and also having other indications indicating the price of an article weighed corresponding to the weight and to the price per pound. This chart-drum or computing-cylinder extends vertically within the external casing and it is arranged to rotate on a vertical axis within the external casing. This casing is appropriately connected to the spring balancing mechanism and to the scale-pan so that when the spring balancing mechanism moves up and down on the placing or removing of a load on the scale-pan, the chart-drum will be rotated in one direction or the other within the external casing or frame.

Fig 3

As shown in Fig. 2, the weight and value indicating figures are placed in horizontal rows on the external surface or periphery of the rotatable chart-drum of the computing-cylinder, the weight indications being shown in a horizontal row at the bottom, and the price indications in horizontal rows above, there being as many of these horizontal rows of price-indicating figures as there are "price-per-pound" indicating figures on the fixed external casing. These value-indicating figures on the chart-drum are computed at different rates corresponding to the "price-per-pound" figures on the external casing. As indicated in Figure 3 of the drawings of the patent, there is supposed to be a weight on the scale-pan of five pounds, this weight being indicated on the weight-scale, and it will be seen that in such instance the various value indications on the chart-drum opposite the "price-per-pound" indications on the fixed casing, are in each illustrated instance, five times as great as the corresponding "price-per-pound" indications. The drawings illustrate only a portion of the indicating-figures on the chart-drum, but it will be understood in practice that this drum will be entirely covered on its external surface with figures corresponding to the weights multiplied by the figures indicating "price per pound" on the non-rotatable external casing. Accordingly whenever the interior chart-drum is turned a distance corresponding to the load placed on the scale-pan, the value of the load can be read at once opposite the figures on the external casing which correspond to the price per pound of the article weighed.

The various price indications on the chart-drum are visible through the sight-opening in the external casing.

The mechanism whereby the chart-drum is rotated a distance corresponding to the weight of the load placed on the scale-pan is as follows: The balancing mechanism is a spring-balance comprising two springs which are suspended from a suitable portion of the non-rotating frame of the scale. To the lower ends of these springs is attached a cross-bar in the middle of which depends a rod, this cross-bar and rod constituting the runner of the scale. (See Fig. 2.) The scale-pan is suspended from the lower end of this rod as illustrated in Figure 1. When a load is placed on the scale-pan the vertical runner moves vertically downward distending the spring to an extent proportional to the weight of the load. In order to indicate the weight this vertical movement of the spring-supported runner is converted or translated into a rotary movement of the chart-drum by suitable intervening mechanism. This intervening mechanism consists of a spiral groove of high pitch on the vertical rod and two rollers journaled in suitable bearings carried by the rotatable chart-drum, the bearings of one of these rollers being spring-pressed so that the rollers are held in yielding contact with the spiral groove on the rod. Consequently as the rod moves vertically the spiral groove thereof causes the chart-drum or computing-cylinder to rotate on its vertical axis.

Accordingly, the mechanism is such that the vertical movement of the runner is translated into rotary movement of the chart-drum and the chart-drum is rotated to an extent proportional to the vertical movement of the runner.

In his application, Hayden, having set forth a description of his invention, disclaiming any intention to limit his invention by the precise description of the specifications, except as appears from his claims, sets forth eleven (11) claims, which he alleges as new and desires to secure by Letters Patent.

The claims alleged to be infringed in this case are numbered 1, 2, 6, 7 and 8. Numbers 1 and 2 are practically alike, except that in No. 2 the spring-supported, load-bearing and cylinder-revolving rod is described as non-rotatably suspended. Claims 6, 7 and 8 have some trifling variations, but, in the view we take of this case, they are sufficiently embodied in claim No. 6. We shall, therefore, consider, in arriving at a decision, claims 1 and 6. They are as follows:

1. In a spring-balance computing-scale, the combination of a suitably-supported vertical non-rotatable casing provided with a price-index, a vertical rotatable computing-cylinder journaled in said casing, provided with cost computations, a spring-supported load-bearing and cylinder-revolving rod suspended from said casing and connecting means between rod and computing-cylinder, whereby by longitudinal movement of the rod rotary movement is imparted to said cylinder, substantially as and for the purpose set forth.

6. In a spring-balance, the combination of a non-rotating frame providing an external casing and having means for supporting it from above, weighing-springs secured at their upper ends to rigid parts of said frame, a vertically-movable runner which is suspended from the lower ends of said springs and is provided with depending means to support the load, a chart-drum rotatably mounted within said casing on a vertical axis and having external horizontal rows of value-indicating figures computed at different rates, said casing having a sight-opening through which portions of said value-indicating rows may be seen, and corresponding rate-indicating figures on the outer face of said frame adjacent to the value-indicating rows on the chart-drum, and mechanism for translating the vertical movement of the runner into the rotary movements of the chart-drum.

Hayden did not assume to be a pioneer in this field of invention, but he claims to have made an improvement in computing-scales of the spring-balance type, and states his object to be specially to increase the computing capacity of scales of that type.

An examination of the record discloses that computing-scales have been the subject of prior inventions and were well known at the time of Hayden's application. It is true that the scales disclosed in the prior art were generally those having a horizontal axis, case

and cylinder, although it was not new to arrange a scale vertically.

If we are to read the claims as broadly as is contended for and omit for the present vertical construction shown by Hayden, we shall find in the patent of Phinney, No. 106,869, of August 30, 1870, a computing-scale having the general elements of a non-rotatable casing, provided with a price-index and rotatable cylinder journaled in the case and having computations thereon, a suspended, spring-supported, load-bearing and cylinder-revolving rod, and connecting means between the rod and computing-cylinder, to impart rotary motion to the inner cylinder. This is perhaps more emphatically true in the invention of Smith, Patent No. 545,616, of September 3, 1895.

In the patent of Babcock, No. 421,805, February 18, 1890, a vertical construction is shown. It is true that Babcock's invention was not automatic in its operation, and required the intervention of the operator to complete the required process, but it serves to show that the idea of vertical construction was not new when Hayden entered the field. Taking the state of the art at that time, it is evident that there is little room to claim a broad construction of Hayden's improvement. It is well settled by numerous decisions of this Court that while a combination of old elements producing a new and useful result will be patentable, yet where the combination is merely the assembling of old elements producing no new and useful result, invention is not shown. (*Specialty Manufacturing Co.* v. *Fenton Metallic Manufacturing Co.*, 174 U. S., 492-498, and previous decisions of this Court there cited.)

It is true that many valuable inventions seem simple when accomplished, and yet are entitled to protection. The books abound in cases showing inventions involving only small departure from former means, yet making the difference between a defective mechanism and a practical method of accomplishing results. In such cases a decision in favor of invention as distinguished from mere mechanical improvement has not infrequently resulted, in view of the fact that the device has made the difference between an impracticable machine and a useful improvement displacing others theretofore occupying the field. (*Krementz* v. *The S. Cottle Co.*, 148 U. S., 556; *Consolidated Brake Shoe Co.* v. *Detroit Steel & Spring Co.*, 47 Fed. Rep., 894; *Star Brass Works* v. *General Electric Co.*, 111 Fed. Rep., 398.)

In the present case it nowhere appears in the testimony, nor is it claimed in the specifications of Hayden's patent, that the prior mechanisms of horizontal construction were impracticable or inefficient. There is no suggestion that Hayden's invention has been the last step between an inoperative machine and one practically operative and useful. There is no showing that it has been generally accepted in the trade and displaced the former machines used for the same purpose. Without resort to the record in the Patent Office, we think it is plain that the invention is but a small advance upon others already in use.

Broadly considered, the elements of Hayden's invention were in the horizontal machines, and the idea of vertical construction was old. Considering this invention in the light of what occurred in the Patent Office in connection with the other considerations already referred to, and the state of the art at the time, we think Hayden's invention can only be sustained to a limited extent.

Before taking up the record as disclosed in the file-wrapper and contents we may premise that it is perfectly well settled in this Court by frequent decisions that where an inventor, seeking a broad claim which is rejected, in which rejection he acquiesces, substitutes therefor a narrower claim, he cannot be heard to insist that the construction of the claim allowed shall cover that which has been previously rejected. (*Corbin Cabinet Lock Co.* v. *Eagle Lock Co.*, 150 U. S., 38-40, and cases there cited.)

A late statement of the rule, and one as favorable to the inventor as the previous cases would admit, is found in *Hubbell* v. *United States*, (179 U. S., 77, 80,) as follows:

An examination of the history of the appellant's claim, as disclosed in the file-wrapper and contents, shows that, in order to get his patent, he was compelled to accept one with a narrower claim than that contained in his original application: and it is well settled that the claim as allowed must be read and interpreted with reference to the rejected claim, and to the prior state of the art, and cannot be so construed as to cover either what was rejected by the Patent Office or disclosed by prior devices. (*Leggett* v. *Avery*, 101 U. S., 256; *Shepard* v. *Carrigan*, 116 U. S., 593; *Knapp* v. *Morss*, 150 U. S., 221, 227.)

It is quite true that where the differences between the claim as made and as allowed consist of the mere changes of expression, having substantially the same meaning, such changes, made to meet the views of the Examiners, ought not to be permitted to defeat a meritorious claimant. While not allowed to revive a rejected claim by a broad construction of the claim allowed, yet the patentee is entitled to a fair construction of the terms of his claim as actually granted.

Looking to the record in the Patent Office, we find that claim 1, as originally presented, read as follows:

1. In a spring-balance computing-scale, the combination of a suitably-supported vertical non-rotatable casing provided with a price-index, a vertical rotatable computing-cylinder journaled in said casing, provided with cost computations, a spring-supported load-pan supported from said casing, and means connected with said pan and cylinder for rotating the cylinder as the pan is lowered under pressure, substantially as and for the purpose set forth.

The Examiner rejected this claim upon the patent of Smith, No. 545,616, price-scales, and in view of the patent of Turnbull, No. 378,382, spring-scales, saying, "It would not involve invention to arrange upon Turnbull's scales a vertical stationary casing having within it a revolvable computing-chart, the axis being connected with the index-carrying shaft P shown in the Turnbull patent."

To this the applicant, through his attorneys, replied:

The first portion of the Examiner's letter is not understood, as there are no modifications referred to in lines 6 to 26 of page 3. A reconsideration of the claims is requested, for the reason that it is believed that the references cited do not anticipate any of the claims. In both of the references cited a rack-bar extending transversely of the center of rotation of the computing-chart serves, by means of engagement with a pinion at the axis of the computing-chart, to rotate the latter. This is entirely different from applicant's construction, and it is not seen that the references are pertinent to the issue. Certainly, the references neither singly nor taken together anticipate the structure set forth in the claims, and there can hardly be any question that the construction which applicant shows is a substantial improvement in the art. It is hoped that all the claims may be allowed.

But the Examiner again rejected claims 1, 8 and 9 upon the references of record, and held that it would not involve invention to arrange upon the vertical shaft of Turnbull's scale a computing-chart and inclosing case having the characteristics of Smith's scale. To this the attorneys for applicant answered:

These claims are canceled, not because considered unallowable, but because it is not desired to prosecute an appeal, in view of the fact that the allowed claims appear to cover the invention as it would be constructed in practice. The cancellation is made, therefore, without prejudice to the claims which remain.

The sixth claim was allowed upon the suggestion of the Examiner, as follows:

In a spring-balance, the combination of a non-rotating frame providing an external casing and having means for supporting it from above, weighing-springs secured at their upper ends to rigid parts of said frame, a vertically-movable runner which is suspended from the lower ends of said springs and is provided with means to support the load, a chart-drum rotatably mounted within said casing on a vertical axis and having external horizontal rows of value-indicating figures computed at different rates, said casing having a sight-opening through which portions of said value-indi-

eating rows may be seen, and corresponding rate-indicating figures on the outer face of said frame adjacent to the value-indicating rows on the chart-drum and mechanism for translating the vertical movement of the runner into the rotary movements of the chart-drum.

It was afterwards stated by the Examiner:

Upon consideration of claim 6 preparatory to the declaration of interference it is found that the claim does not clearly and patentably distinguish from the scale shown in the patent to Herr, No. 651,321, June 12, 1900, price-scales, and it is therefore necessary to reject the claim. It is believed, however, that the claim may be rendered allowable by inserting *depending* before "means" in line 6,

and, accordingly, the word "depending" was inserted in the claim, so as to make it in its present form. How this added anything to the patentability of the mechanism described it is difficult to perceive, in view of the presence of "depending means to support the load" in all scales of this class.

The general rule, as stated, as to the effect of a patentee striking out a broad claim and accepting a narrow one, is conceded by the learned counsel for appellant, but it is contended that if an inventor presents a broad claim and strikes it out and then presents and obtains an equally broad claim, he loses no right by such action, and may justly claim his allowed claim to be a broad one and have relief accordingly. But we think the action of the Department in this case cannot be thus eliminated. Claim 1, as presented, had contained the words "a spring-supported load-pan supported from said casing, and means connected with said pan and cylinder for rotating the cylinder as the pan is lowered under pressure," and as allowed there was inserted "a spring-supported load-bearing and cylinder-revolving rod suspended from said casing, and connecting means between rod and computing-cylinder, whereby by longitudinal movement of the rod rotary movement is imparted to said cylinder, substantially as and for the purpose set forth." This limitation to specific means is certainly a narrowing of the claim.

It was accepted, as the patentee said, "in view of the fact that the allowed claims appear to cover the invention as it would be constructed in practice."

We cannot think it was the intention of the Department, after requiring the insertion of "a spring-supported load-bearing and cylinder-revolving rod" and "connecting means between rod and computing-cylinder" to secure the rotary movement of the inner cylinder as a means of saving claim 1, to then permit the claim to be granted broadly in allowing other claims. And we believe it would be a more reasonable construction of the letter of the applicant to say that he recognised that his invention, "as constructed in practice," must have read into it to sustain the claim, the specific means shown for translating the vertical movement of the runner into the rotary movement of the chart-drum, rather than as saving a right to construe a claim broadly as including in one claim what had just been refused in another.

It is to be noted that Hayden, in his specifications, says:

The spiral rod passing through the lower ends of the casing and serving, by means of its connection with the two cylinders, to rotate the computing-cylinder is regarded as the essence of this feature of the invention, however, regardless of the precise details of connection between cylinders and rod.

In view of the action of the Patent Office in this case and the acquiescence of the applicant, considered also in view of the state of the art, in our opinion it is necessary to have this novel element of the invention read into them in order to save the claims of Hayden's patent.

Conceding that this spiral rod and its connections with the cylinder in the manner and for the purposes stated is a novel feature in the combination and entitled to protection, it is of that narrow character of invention which does not entitle the patentee to any considerable range of equivalents, but must be practically limited to the means shown by the inventor. The distinction between pioneer inventions permitting a wide range of equivalents and those inventions of a narrow character, which are limited to the construction shown, has been frequently emphasized in the decisions of this Court. (*Cimiotti Unhairing Co.* v. *American Fur Refining Co.*, 198 U. S. 399, 406, and cases therein cited.)

Thus limiting the invention, we do not think the construction of the defendant amounts to an infringement. Its mechanism, by means of which the downward movement of the load accomplishes the rotary movement of the cylinder, consists of a bar which has a rod extended upward and carrying a rack which meshes with a pinion on a shaft journaled in bearings on a crossbar of the frame of the machine. On this shaft is a gear meshing with the pinion, secured to an upright shaft journaled in bearings in the frame, and projecting above it so as to receive a light frame composed of cross-arms and a circular rim to which the chart-drum is secured. The downward movement of the load-supporting hook causes the rack to move in the same direction, rotating the horizontal shaft by means of the pinion, and this movement is communicated by means of the gearing to the upright shaft carrying the chart-drum. The cylinder-revolving rod with its connections, which, as we have seen, was made an essential element to accomplish invention in Hayden's device, is not found. The complainant's expert is of opinion that it is shown in the hook at the bottom of defendant's scale for holding the load-pan. We cannot agree to this conclusion; the hook is not the cylinder-revolving spiral rod and does not accomplish its function.

The court of appeals held the sixth claim void. We are of opinion that it cannot be allowed for the broad claim "mechanism for translating the vertical movement of the runner into the rotary movement of the chart-drum," but must be limited to Hayden's suspended rod with its spiral, engaging with the rollers, or similar devices on the cylinder, practically in the manner and for the purposes shown by him. If the claim be thus limited, for the reasons we have already stated, the mechanism of the defendant does not infringe.

We find no error in the decree rendered by the court of appeals, and it is affirmed.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 16, 1907.

James J. Six Dykstra, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Friedrich Adolf Richter, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to James J. Six Dykstra, of Chicago, Ill. The notices of declaration mailed by the Patent Office in the usual manner to the said James J. Six Dykstra at his known address, 94 South Market street, Chicago, Ill., and to his attorney of record have been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said James J. Six Dykstra, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 18, 1907.

Whitman & Welch, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Exposition Cotton Mills, of Atlanta, Ga., for registration of a trade-mark, an application and a registration of the Massachusetts Cotton Mills, of Lowell, Mass., and a trade-mark registered to Whitman & Welch, of New York, N. Y., and Hartford, Conn. It has been impossible to locate said Whitman & Welch, and registered letters addressed to this firm have been returned by the Post-Office Department unclaimed.

Notice is therefore hereby given to said Whitman & Welch, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 127—No. 3. TUESDAY, MARCH 19, 1907. PRICE—$5 per year.

CONTENTS.

	Page.
ISSUE OF MARCH 19, 1907	853
DISCLAIMER	853
INTERFERENCE NOTICE	853
APPLICATIONS UNDER EXAMINATION	854
INTERFERENCE NOTICE	854
PATENTS GRANTED	855
REISSUES	1212
DESIGNS	1228
TRADE-MARKS—REGISTRATION APPLIED FOR	1231
TRADE-MARKS—REGISTERED	1247
LABELS	1251
PRINTS	1251
COMMISSIONER'S DECISIONS—	
Kugele v. Blair	1253
In re Hunter	1253
DECISIONS OF THE U. S. COURTS—	
Bechman v. Southgate	1254
Blackford v. Wilder	1255
INTERFERENCE NOTICES	1258

ISSUE OF MARCH 19, 1907.

Patents	692	No. 847,304 to No. 847,995,	inclusive.
Designs	6	No. 38,481 to No. 38,486,	inclusive.
Trade-Marks	131	No. 61,333 to No. 61,463,	inclusive.
Labels	12	No. 13,404 to No. 13,415,	inclusive.
Prints	8	No. 1,927 to No. 1,934,	inclusive.
Reissues	6	No. 12,617 to No. 12,622,	inclusive.
Total issue	855		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	2	1	New Hampshire	....	1
Alaska, District of	....	....	New Jersey	39	7
Arizona Territory	....	....	New Mexico Ter't'y	1	....
Arkansas	1	....	New York	88	37
California	18	7	North Carolina	3	....
Colorado	12	1	North Dakota	....	....
Connecticut	31	2	Ohio	47	6
Delaware	....	....	Oklahoma Territ'y	4	2
District of Columbia	13	1	Oregon	3	....
Florida	4	....	Pennsylvania	55	15
Georgia	4	2	Philippine Islands	....	....
Hawaii Territory	....	....	Porto Rico	....	....
Idaho	2	....	Rhode Island	3	....
Illinois	84	17	South Carolina	3	....
Indian Territory	....	....	South Dakota	4	....
Indiana	17	1	Tennessee	5	....
Iowa	24	2	Texas	12	5
Kansas	7	....	Utah	1	....
Kentucky	6	2	Vermont	2	....
Louisiana	2	....	Virginia	7	1
Maine	3	1	Washington	8	2
Maryland	4	1	West Virginia	2	....
Massachusetts	28	18	Wisconsin	17	3
Michigan	25	2	Wyoming	1	....
Minnesota	10	....	U. S. Army	....	....
Mississippi	2	....	U. S. Navy	....	....
Missouri	18	6			
Montana	1	1	Total to citizens of the United States	633	166
Nebraska	9	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	1	....	Natal	....	....
Austria-Hungary	1	....	Netherlands	....	....
Belgium	1	....	Newfoundland	....	....
Brazil	....	....	New South Wales	....	....
British West Indies	....	....	New Zealand	....	....
Canada	10	....	Norway	....	....
Cape Colony	1	....	Queensland	1	....
Chile	....	....	Roumania	....	....
China	....	....	Russia	1	....
Costa Rica	....	....	Scotland	1	1
Cuba	....	1	South Australia	....	....
Denmark	....	....	Spain	1	....
Ecuador	....	....	Sweden	4	....
England	20	1	Tasmania	1	....
France	....	....	Switzerland	1	....
Germany	17	2	Transvaal, South Africa	2	....
Haiti	....	....	Victoria	1	....
Ireland	1	....	Western Australia	....	....
Italy	....	....			
Japan	....	....			
Java	....	....	Total to citizens of foreign countries	65	5
Mexico	....	....			

Disclaimer.

604,125.—*Joseph Schneible*, New York, N. Y. COLLECTING GAS FROM FERMENTING LIQUORS. Patent dated May 17, 1898.

Disclaimer filed March 9, 1907, by the patentee and assignee.

Enter their disclaimer—

"To that part of the claim in said specification which is in the following words, to wit:

"1. An apparatus for collecting the gas of fermentation comprising a collector, a compressor connected directly to the collector, a governor subject to the varying pressure of the gas-supply and means actuated by said governor to control the compressor.

"4. An apparatus for collecting the gas of fermentation comprising a collector, a compressor, a pipe to deliver gas from the collector to the compressor, a valve to control the compressor and a governor, subject to the varying pressure of the gas-supply and operatively connected to said valve."

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 23, 1907.

Wilson-Cass Company, its assigns or representatives, take notice:

An interference has been declared by this Office between an application of Frank Fuller, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to the Wilson-Cass Company, of Philadelphia, Pa. The notice of declaration mailed by the Patent Office in the usual manner to the said Wilson-Cass Company has been returned by the Post-Office Department undelivered, and the attorney of record for said company is dead.

Notice is therefore hereby given to the said Wilson-Cass Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business March 18, 1907.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Mar. 7	Mar. 7	55
327	XVIII. Steam-Engineering, etc ...	Mar. 1	Feb. 16	158
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Mar. 1	Feb. 14	216
303	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Mar. 1	Feb. 13	157
109	XVI. Telegraphy and Telephony..	Feb. 28	Feb. 13	142
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	Feb. 27	Feb. 15	169
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Feb. 27	Feb. 14	92
167	V. Bookbinding, Harvesters, Jewelry, and Music.	Feb. 26	Feb. 12	258
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	Feb. 26	Feb. 12	213
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Feb. 26	Feb. 11	132
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Feb. 26	Feb. 6	144
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Feb. 25	Feb. 14	240
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Feb. 25	Feb. 13	276
147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Woodworking.	Feb. 25	Feb. 4	189
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Feb. 23	Feb. 4	434
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Feb. 20	Feb. 11	298
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Feb. 20	Feb. 7	306
122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Feb. 19	Feb. 13	301
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Feb. 18	Feb. 15	228
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Feb. 18	Feb. 4	241
143	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sewerage.	Feb. 16	Feb. 13	366
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Feb. 15	Feb. 15	303
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Feb. 15	Feb. 13	274
378	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Feb. 15	Feb. 12	378

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
307	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	Feb. 15	Feb. 2	206
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Feb. 14	Feb. 14	538
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Feb. 13	Jan. 30	202
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Feb. 13	Jan. 26	283
382	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	Feb. 11	Feb. 11	371
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Feb. 11	Jan. 30	264
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Feb. 8	Feb. 11	244
332	X. Carriages and Wagons.....	Feb. 8	Feb. 9	445
175	III. Annealing and Tempering, Coating with Metal, Electro-chemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Feb. 7	Jan. 31	297
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Feb. 7	Jan. 21	299
329	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making, etc.	Feb. 5	Jan. 28	320
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Feb. 4	Jan. 30	422
343	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Feb. 2	Feb. 4	584
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Jan. 26	Feb. 2	293
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	Jan. 24	Jan. 24	315

Total number of applications awaiting action 10,702

Room No.		Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
189	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	Mar. 9	Mar. 7	183
	Designs	Mar. 11	Mar. 1	32
	Labels and Prints	.....	.....	....

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 8, 1907.

James M. McClave, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application for patent filed by Walter G. Swart, of Denver, Colo., and an application for patent filed by James M. McClave, of the same place. It appears from the record of the interference that the said James M. McClave has removed from his known address, No. 1034 Broadway, Denver, Colo., and his present whereabouts is unknown. Notice is therefore hereby given to the said James M. McClave, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN *Commissioner.*

PATENTS

PUBLISHED MARCH 19, 1907.

847,304. TOBOGGAN-SLIDE. ORCENITH F. ALLEN, Temple, Tex. Filed July 2, 1906. Serial No. 324,430.

Claim.—1. A toboggan-slide including a plurality of stationary inclined ways connected by an intermediate loop, the side walls of which are extended laterally beyond the adjacent longitudinal edges of the inclined ways and form a continuation thereof and a movable inclined way associated with the stationary ways and adapted to register with the free ends of the latter.

2. A toboggan-slide including a plurality of stationary inclined ways provided with antifriction-rollers and connected by an intermediate loop forming a continuation of said ways, and a movable way adapted to register with the free ends of the inclined ways.

3. A toboggan-slide including a plurality of parallel inclined ways having their lower ends connected by a loop the side walls of which are extended laterally beyond the adjacent longitudinal edges of the ways and form a continuation of said ways, and a movable way associated with the inclined ways and adapted to alternately register with the free ends of the latter.

4. A toboggan-slide including a plurality of inclined ways having their lower ends connected by a loop the side walls of which are extended laterally beyond the adjacent longitudinal edges of the ways and form a continuation of said ways, a platform supporting the elevated ends of the ways, a carriage mounted for lateral movement on the platform, and a movable inclined way secured to the carriage and adapted to alternately register with the free ends of the inclined ways.

5. A toboggan-slide including a plurality of inclined ways having their upper edges disposed in the same plane and their lower ends connected by a loop forming a continuation of said ways, a platform for supporting the elevated ends of the ways, a carriage mounted for lateral movement on the platform, a movable way secured to the platform and adapted to register with the adjacent ends of the inclined ways, means for propelling the carriage, and means for limiting the lateral movement of said carriage.

6. A toboggan-slide including a plurality of inclined ways formed in sections detachably secured together and having their lower ends connected by a loop constituting a continuation of said ways, a platform disposed at the elevated ends of the ways, and a movable way mounted for lateral movement on the platform and adapted to register with the adjacent ends of said ways.

7. A toboggan-slide including a plurality of inclined ways connected by a loop and each consisting of parallel longitudinal bars provided with laterally-extending tracks having recesses formed therein, rollers seated in the recesses and journaled in the tracks, and a plurality of spaced rollers journaled in the walls of said bars.

8. A toboggan-slide including an inclined way consisting of parallel side bars provided with laterally-extending tracks, rollers journaled in said tracks, a plurality of spaced rollers journaled in the adjacent walls of the side bars, and an overhanging guard-rail secured to the free ends of the side bars.

9. A toboggan-slide including a plurality of inclined ways adapted to receive the toboggan and having their lower ends connected by a loop forming a continuation of said ways, a movable way adapted to register with the adjacent ends of the inclined way to permit the passage of the toboggan, and means for locking the toboggan in position on the movable way.

10. A toboggan-slide including a plurality of inclined ways having their lower ends connected by a loop forming a continuation of said ways, a platform disposed at the elevated ends of the ways, a movable inclined way mounted for lateral movement on the platform and adapted to register with the adjacent ends of the inclined ways to permit the passage of the toboggan, and an endless belt for drawing the toboggan up one of said inclined ways in engagement with the movable way.

11. A toboggan-slide including a plurality of stationary inclined ways adapted to receive a toboggan and having their lower ends connected by a loop forming a continuation of said ways, a movable way adapted to register with the adjacent ends of the stationary ways to permit the passage of the toboggan, a spring locking member carried by the movable way and adapted to engage the toboggan, and means for releasing the locking member thereby to permit the passage of said toboggan.

12. A toboggan-slide including a plurality of inclined ways having their lower ends connected by a loop forming a continuation of said ways, a platform supporting the elevated ends of the ways, and secured to the platform, a carriage mounted for lateral movement on the track, a movable inclined way mounted on the carriage and adapted to register with the adjacent ends of the inclined ways, stops secured to the opposite ends of the platform for limiting the lateral movement of the carriage, and means for operating the carriage.

13. A toboggan-slide including a plurality of stationary inclined ways having their lower ends connected by a loop forming a continuation of said ways, a platform supporting the elevated end of the ways, a carriage mounted for

lateral movement on the platform, an inclined way secured to the carriage and adapted to register with the adjacent ends of the stationary inclined way and adapted to receive a toboggan, a spring locking member secured to the movable inclined way and having an inclined locking-lug the end of which is extended laterally beyond the side walls of said way to form a lip, and an operating-lever pivotally mounted on said way and adapted to engage the lip for moving the locking member to inoperative position thereby to release the toboggan.

14. A knockdown toboggan-slide including a plurality of stationary inclined ways formed in sections and detachably secured together, and a movable inclined way associated therewith and adapted to register with the stationary ways.

847,305. TELEPHONE SET. GEORGE F. ATWOOD, East Orange, N. J., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 12, 1906. Serial No. 305,551.

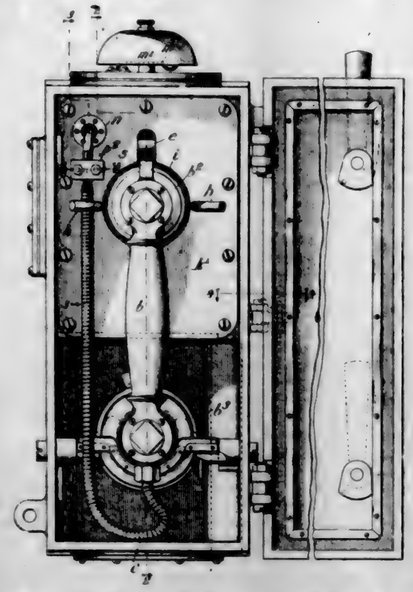

Claim.—1. The combination with a telephone set, of a containing-case therefor, a telephone within the case, a rocking member adapted to receive one end of said telephone, and a latch for the other end thereof.

2. The combination with a telephone set, of a containing-case therefor, a hand telephone set within the case, a rocking member adapted to receive one end of said hand set, and a spring-actuated latch for the other end of said hand set.

3. In a subscriber's set, the combination with a containing-case, of a hand telephone set therein carrying a receiver and transmitter at the ends thereof, mechanism within said case, a conductor-carrying cord connecting said hand telephone set therewith, a rocking member adapted to receive the transmitter end of said hand set, and a latch adapted to engage the receiver end.

4. In a subscriber's set, the combination with a containing-case for the mechanism of the set, of a telephone therein, a rocking member adapted to receive one end of said telephone, a latch for the other end of said telephone, and switching mechanism for the telephone controlled by said latch.

5. In a subscriber's telephone set, the combination with a containing-case for the mechanism of the set, of a hand telephone set therein, a rocking member adapted to receive one end of said hand set, a lug upon the other end of said hand set, a spring-actuated latch-finger within the case adapted to be engaged by said lug to hold said other end of the hand set, and switching mechanism for the hand set controlled by said latch-finger.

6. In a subscriber's telephone set, the combination with a containing-case, of a telephone therein, a rocking member adapted to receive one end of said telephone, a latch for the other end of said telephone, and guides adapted to direct the telephone into engagement with said latch.

7. In a subscriber's telephone set, the combination with a containing-case, of a chamber within the case adapted to receive the mechanism thereof, a cover for said chamber, a hand telephone set, a conductor-carrying cord connecting said hand set with the mechanism within the chamber, a rocking member adapted to receive one end of said hand set, a lug upon the other end of said hand set, a spring-actuated latch-finger projecting through an opening in said cover adapted to be engaged by said lug to hold said other end of the hand set, and switching mechanism for said hand set within said chamber, controlled by said latch-finger.

8. In a subscriber's telephone set, the combination with a containing-case, of a chamber within the case adapted to receive the mechanism thereof, a cover for said chamber, a telephone within the case, a conductor-carrying cord extending from said telephone to the mechanism within said chamber, a stuffing-box adapted to seal the point of entry of said cord into the chamber, a rocking member adapted to receive one end of said telephone, and a latch for the other end thereof.

9. In a subscriber's telephone set, the combination with a containing-case, of a chamber within the case adapted to receive the mechanism thereof, a cover for said chamber, a hand telephone set within the case carrying a receiver and transmitter at its ends, a conductor-carrying cord connecting said hand set with the mechanism within the chamber, a rocking member adapted to receive the transmitter end of said hand set, a lug upon the receiver end of the hand set, a latch-finger carried by said cover adapted to be engaged by said lug to hold said end, guide-rods carried by the cover adapted to direct said receiver end into position to cause said lug and latch-finger to engage, and an elastic mat for the receiver carried by said cover.

10. In a subscriber's set, the combination with a containing-case, of a hand telephone set therein, a water-tight chamber within said case containing the mechanism of the subscriber's set, a conductor-carrying cord leading from the hand set to the mechanism within said chamber, means for rendering water-tight the point of entry of said cord into the chamber, a rocking member within the case adapted to receive one end of the hand set, and a spring-actuated latch-finger having a water-tight bearing in one wall of said chamber and adapted to engage the other end of the hand set.

11. In a subscriber's set, the combination with a containing-case, of a hand telephone set therein, a water-tight chamber within said case containing the electrical mechanism of the subscriber's set, a conductor-carrying cord leading from the hand set to the mechanism within the chamber, a stuffing-box for rendering water-tight the point of entry of said cord into the chamber, a rocking member within the case adapted to receive one end of the hand set, a spring-actuated lever projecting through a hole in one wall of the chamber adapted to engage the other end of said hand set, means for sealing said hole against moisture, switching mechanism within the chamber for said set controlled by said lever, a gong on the outside of the containing-case, an electromagnet within said chamber, an armature therefor, and a rocking tapper-arm connected with said armature and passing through an opening in the wall of said chamber and case to operate said gong, said opening forming a water-tight bearing for said arm.

12. In a subscriber's telephone set, the combination with a containing-case, of a water-tight chamber therein containing the electrical mechanism of the set, a telephone in said case, a conductor-carrying cord leading from said telephone to the mechanism within said chamber, means for rendering water-tight the point of entry of said cord to the chamber, and line-wires for the case, a wall of said case being cored to form a covered passage leading from an opening in the base of the box to said chamber, through which said line-wires pass to the mechanism within the chamber.

847,306. VEGETABLE-CUTTER. HERBERT L. BAILEY, Ludington, Mich., assignor to Handy Things Company, Ludington, Mich., a Corporation of Illinois. Filed Oct. 19, 1905. Serial No. 283,365.

Claim.—1. A device of the class described, comprising a body having spaced arms, a cutter standing between the arms out of the plane of the body portion and remote from the end thereof, the ends of said cutters being bent around the arms, and teeth carried by the extremities of the said ends, said teeth being adapted to engage the arms for securing and holding the cutter in position.

2. As a new and useful article of manufacture, a cutter-blade for vegetable-cutters and the like, comprising a body portion provided with a cutting edge, said body being provided with teeth at the extremities of the sides and integral therewith for securing said blade to a support.

847,307. MUSICAL INSTRUMENT. JAMES W. BAILEY, Ottawa, Ill., assignor, by mesne assignments, of one-half to Rhoda A. Leach, Chicago, Ill. Filed Nov. 10, 1906. Serial No. 342,789.

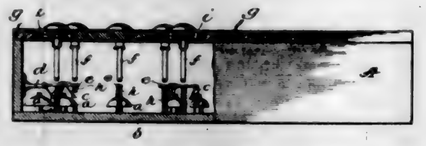

Claim.—1. The combination with a hollow platform having an inner floor and a top floor, of a number of differently-sized gongs mounted within the platform upon said inner floor, said gongs being tuned to a musical scale, and plungers projecting through the top floor of said platform for operating said gongs, said plungers being adapted to be played by the feet of a dancer dancing upon the outer surface of said top floor.

2. The combination with a hollow platform having an inner floor, of differently-tuned gongs mounted upon the inner floor of said platform, brackets within said platform, tappers supported by said brackets adapted to actuate said gongs, springs for maintaining said tappers away from said gongs, and plungers supported by the top wall of said platform adapted to be depressed by the feet of an operator to actuate said tappers.

3. The combination with a hollow platform, of differently-sized gongs tuned according to a musical scale, mounted upon the base of said platform, brackets within said platform, tappers for said gongs pivoted to said brackets, arms moving with said tappers, springs supported between said arms and the base of the platform tending to maintain said tappers away from said gongs, and spring-restorable plungers supported by the upper wall of said platform adapted to be depressed by the feet of an operator to engage said arms and cause said tappers to engage said gongs.

847,308. MULTIPLE-EDGE SAFETY-RAZOR. MALCOLM H. BAKER and FRANKLIN S. FRISBIE, Boston, Mass., assignors to Multiplex Safety Razor Company, Boston, Mass., a Corporation of Massachusetts. Filed Aug. 17, 1906. Serial No. 330,935.

Claim.—1. A safety-razor comprising a hexagonal blade every edge of which is sharpened to a cutting edge, a guard for the said blade provided with four toothed and two plain edges, a handle attached to and approximately parallel with the said guard, and means for relatively rotating the blade and guard.

2. A safety-razor comprising a hexagonal blade every edge of which is sharpened to a cutting edge, a guard for the said blade provided with four toothed and two plain edges, a handle attached to the said guard, a registering pin set in the face of the guard, and successively engaging corresponding openings in the blade, a clamping-screw passing through the center of the blade and guard and engaging a locking-nut at the back of the guard, together with means for rotating the blade relatively to the guard.

3. In a safety-razor, a hexagonal blade every edge of which is sharpened to a cutting edge, a guard for the said blade having four toothed and two plain edges, a handle removably attached to and approximately parallel with the said guard, means for rotating the blade relatively to the guard so as to bring the cutting edges into successive coöperation with the toothed edges of the guard, the said blade edges being successively marked for reference.

4. In a safety-razor, a hexagonal blade every edge of which is sharpened to a cutting edge, symbols marked upon the said blade in such a manner as to successively denote the cutting edges, a guard for the said blade having four toothed and two plain edges, a clamping-screw passing through the blade and guard and engaging a locking-nut at the back of the guard, a registering pin set in the face of the guard and engaging corresponding openings in the blade, a threaded block attached to the back of the guard near the junction of the two plain guard edges, and a handle adapted to engage either the threaded block or the locking-nut, substantially as described.

5. The safety-razor herein described, comprising a hexagonal guard every edge of which is sharpened to a cutting edge, coöperating with a guard having four toothed and two plain edges, a registering pin *j* set in the face of the guard and engaging successively corresponding openings *i*, *i*, in the blade, a screw *k* passing centrally through the blade and guard and engaging a locking-nut *l*, a threaded block *m* attached to the back of the guard near the junction of the two plain edges *b*, *c*, and a handle *n* provided with a threaded end *o*, the said threaded end being adapted to engage either the block *m* or the locking-nut *l*, as herein set forth.

6. In a safety-razor, a hexagonal steel blade every edge of which is sharpened to a cutting edge, a central opening in the said blade, a locking-stud passing through the central opening and clamping the blade to the guard, equidistant registering openings surrounding the central opening and adapted to successively engage a registering pin set in the face of the guard, and symbols marked upon the blade and successively denoting the cutting edges.

847,309. TRIPPER OR DELIVERER FOR CONVEYERS. CLARENCE K. BALDWIN and LINCOLN MOSS, New York, N. Y. Filed May 16, 1905. Serial No. 260,653.

Claim.—1. A tripper or deliverer for conveyers having an elongated base adapted to extend over and rest upon a

plurality of fixed spaced supports forming part of a series of such supports, over which the tripper may be moved in a longitudinal direction.

2. A tripper or deliverer for conveyers having an elongated base adapted to rest directly upon a plurality of fixed spaced supports, and means for moving the tripper longitudinally over such supports.

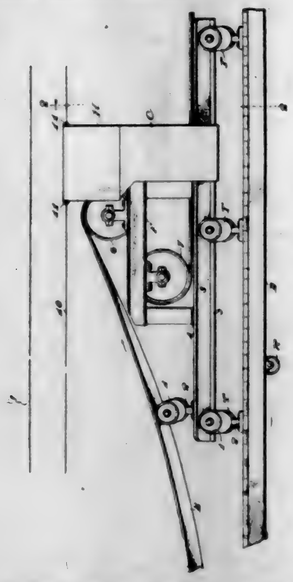

3. In a tripper or deliverer for conveyers, an elongated base adapted to extend over and rest upon several members of a series of fixed spaced supporting members, and means for imparting longitudinal movement to the tripper or deliverer from the conveyer.

4. The combination with a tripper or deliverer for conveyers having an elongated base adapted to extend over and rest upon several members of a series of fixed spaced supports, of mechanism for imparting movement to the tripper or deliverer in either direction from the conveyer without changing the direction of movement of the conveyer.

5. The combination with a tripper or deliverer for conveyers having an elongated base adapted to extend over and rest upon several members of a series of fixed supports, of means for transmitting movement in either direction to the tripper or deliverer from the conveyer, and means for automatically reversing the direction of movement of the tripper or deliverer without changing the direction of movement of the conveyer.

6. The combination with a series of fixed spaced supporting members, of a tripper or deliverer for conveyers having an elongated base adapted to extend over and rest upon a plurality of said supports.

7. The combination with a series of fixed spaced supports, each provided with an antifriction roller or pulley, of a tripper or deliverer for conveyers having an elongated base adapted to extend over and rest upon a plurality of said supports.

8. The combination with a conveyer having a series of spaced troughing idler-pulleys, of a tripper or deliverer for the conveyer having an elongated base adapted to extend over and rest directly upon a plurality of said troughing idler-pulleys.

9. A tripper or deliverer for conveyers having an elongated base adapted to extend over and rest upon several members of a series of fixed spaced supporting members over which the tripper or deliverer may be moved longitudinally, and means for preventing lateral shifting of the tripper or deliverer upon said supporting members.

10. The combination with a series of fixed spaced supporting members, of a tripper or deliverer for conveyers having an elongated base adapted to extend over and rest upon a plurality of said supporting members over which the tripper or deliverer may be moved longitudinally, and means for keeping the tripper or deliverer properly alined with reference to said supporting members.

11. The combination with a series of fixed spaced supporting members, each provided with one or more antifriction rollers or pulleys, of a tripper or deliverer for conveyers having an elongated base adapted to extend over and rest upon a plurality of said supporting members, and means carried by the tripper or deliverer for engaging the ends of one or more of the rollers carried by each supporting member to prevent lateral shifting of the tripper or deliverer.

12. A tripper or deliverer for conveyers having an elongated base adapted to extend over and rest upon a plurality of fixed spaced supporting members over which the tripper or deliverer is adapted to move longitudinally, said base being provided on its under side with longitudinal ribs or flanges to prevent lateral shifting of the tripper or deliverer upon its supports.

13. The combination with a series of fixed spaced supports, each having a plurality of antifriction rollers or pulleys arranged end to end and slightly separated, of a tripper or deliverer for conveyers having an elongated base adapted to extend over and rest upon a plurality of said supports, said base being provided on its under surface with longitudinal ribs or flanges extending between the rollers or pulleys provided on said supports.

14. The combination with a series of fixed spaced supports, each having a plurality of antifriction rollers or pulleys mounted upon axes slightly inclined to the horizontal, of a tripper or deliverer for conveyers having an elongated base adapted to extend over and rest upon a plurality of said supports, said base being provided on its under surface with longitudinal ribs or flanges arranged perpendicular to the inclined axes of said rollers or pulleys and adapted to engage the ends of said rollers or pulleys to prevent lateral shifting of said tripper or deliverer.

15. The combination with a tripper or deliverer for conveyers, of a drum carried thereby, a fixed cable wound one or more times around said drum, and means for rotating the drum to impart movement to the tripper or deliverer.

16. The combination with a conveyer of a tripper or deliverer for the conveyer, a drum carried by the tripper or deliverer, a fixed cable wound around the drum and mechanism operated by the conveyer for rotating the drum to impart movement to the tripper or deliverer.

17. The combination with a tripper or deliverer for conveyers, of a drum carried thereby, a cable fixed at one end and provided at the other with a tension device, said cable being wound around said drum, and means for rotating the drum to impart movement to the tripper or deliverer.

18. In operating mechanism for a tripper or deliverer for conveyers, the combination with a drum carried by the tripper or deliverer, of a cable wound around the drum and held stationary and under tension, and mechanism for rotating the drum.

19. In operating mechanism for a tripper or deliverer for conveyers, the combination with a fixed cable, of a drum carried by the tripper having the cable passed one or more times around it, a member also carried by the tripper or deliverer and driven by the conveyer, and means for transmitting movement to said drum from said member.

20. In operating mechanism for a tripper or deliverer for conveyers, a fixed cable, a drum carried by the tripper or deliverer and having the cable wound around it, mechanism driven by the conveyer for imparting rotation to said drum in either direction, means for automatically reversing the direction of rotation of said drum.

21. In operating mechanism for a tripper or deliverer for conveyers, a fixed cable, a drum carried by the tripper or deliverer and having the cable wound around it, means for imparting rotation to said drum, and a brake acting upon said drum to check the movement of the tripper or deliverer.

22. In operating mechanism for a tripper or deliverer for conveyers, a fixed cable, a drum about which the cable is wound, said drum being carried by the tripper or deliverer, mechanism driven by the conveyer for imparting rotation to said drum, means for throwing said mechanism into and out of driving connection with said drum, a brake for engagement with said drum, and means operative when said mechanism is thrown out of engagement to apply said brake.

23. In operating mechanism for a tripper or deliverer for conveyers, a fixed cable, a drum carried by the tripper or deliverer and having the cable passed around it, mechanism for imparting rotation to the drum, a brake adapted to act upon the drum, and means for simultaneously throwing said mechanism out of driving connection with the drum and applying the brake thereto.

24. In operating mechanism for a tripper or deliverer for conveyers, a fixed cable, a drum carried by the tripper or deliverer and having the cable passed around it, mechanism driven by the conveyer for imparting rotation to the drum, a rocker upon which said mechanism is mounted and by which it may be thrown into and out of operation, a brake adapted to engage the drum, and means carried by the rocker for throwing said brake into and out of engagement with the drum.

25. In operating mechanism for a tripper or deliverer for conveyers, the combination with a fixed cable, a drum carried by the tripper or deliverer and having the cable passed around it, of means for rotating the drum, a brake adapted to engage the drum to bring the tripper or deliverer to rest, a brake-actuating member having a cam thereon, and a shifting member adapted to engage said cam to apply and release said brake.

847,310. THERMO-ELECTRIC ANNUNCIATOR. SEVERIN O. BESTUL, Iola, Wis. Filed Oct. 12, 1906. Serial No. 338,610.

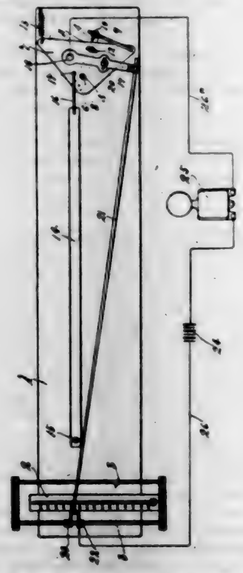

Claim.—1. In an apparatus of the kind described, the combination with a pivoted lever 4, of a carrier-plate 7 adjustably connected to said lever, a spring 13 acting on said plate and lever, an expansion-bar 14, anchored at one end and connected at its other end to said plate 7 and controlling the movements thereof, and an electric circuit arranged to be opened and closed by movements of said plate 7, said circuit including a battery and an electrically-actuated bell, substantially as described.

2. In an apparatus of the kind described, the combination with a thermometer and an electric contact 22 adjustably mounted adjacent thereto, of a pivoted lever 4, a carrier-plate 7 adjustably connected to said lever, a spring 13 acting on said plate, an expansion-bar 14, anchored at one end and connected at its other end to said plate 7, an arm 19 adjustably connected to said plate 7, a contact-arm 21 carried by said arm 19 and coöperating with said adjustable contact 22, and an electric circuit arranged to be opened and closed by said contact members 22 and 23, said circuit including a battery and a bell, substantially as described.

847,311. METATARSOPHALANGEAL PROTECTOR. JOSEPH BRONNENKANT, Racine, Wis., assignor to Fischer Manufacturing Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed Feb. 14, 1905. Serial No. 245,636.

Claim.—1. A metatarsophalangeal protector, consisting of an elongated body provided medially with an opening to admit therein the enlarged or swollen great-toe joint and extending in front of the opening to fit on and along the great toe and at the rear of the opening on and along the instep of the user, the bottom part of the body being below the opening and adapted, when the device is adjusted to the foot, to extend beneath the bottom of the foot, and the top part above the opening being shortened longitudinally by cutting the part transverse above the opening in two and drawing the ends together and overlapping and securing them to each other whereby the top part by the strain thereon is drawn together longitudinally and is depressed into concave form over the opening so as to fit the foot at the toe-joint.

2. A metatarsophalangeal protector, consisting of an elongated body provided medially with an opening to admit therein the enlarged great-toe joint and extending in front of the opening to fit on and along the great toe and at the rear of the opening on and along the instep of the user, the bottom part of the body being below the opening and adapted, when the device is adjusted to the foot, to extend beneath the bottom of the foot, and the top part above and inwardly of the opening being shortened longitudinally, whereby the top part is drawn together longitudinally and is depressed into concave form over the opening so as to fit the foot at the toe-joint.

847,312. MOLD. PRESTON T. BURKHOLDER, Fishersville, Va. Filed Dec. 4, 1906. Serial No. 346,257.

Claim.—1. A mold of the class described comprising detachable side and end walls, and a body, the latter formed of a plurality of sections arranged in parallelism and spaced a distance from each other, partitions disposed vertically intermediate the side walls and extending between the sections for entirely occupying the spaces formed thereby, said end walls provided with slots to receive the ends of said partitions and one end wall further provided with inclined surfaces intersecting the slots therein and means for detachably securing the mold in an organized condition.

2. A mold of the class described comprising detachable side and end walls, and a body, the latter formed of a plurality of sections arranged in parallelism and spaced a distance from each other, partitions disposed vertically intermediate the side walls and extending between the sec-

tions for entirely occupying the spaces formed thereby, said end walls provided with slots to receive the ends of said partitions, and one end wall further provided with inclined surfaces intersecting the slots therein, means for detachably securing the mold in an organized condition, and removable mold-pins carried by the bottom and side walls for forming openings in the substance acted upon.

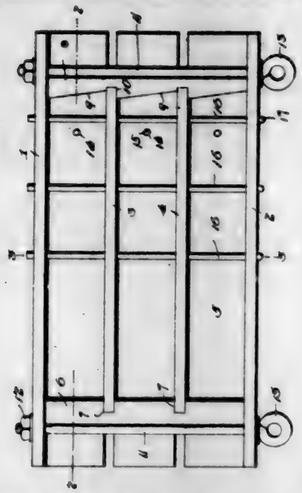

3. A mold of the class described, comprising detachable side and end walls and a body, the latter formed of a plurality of sections arranged in parallelism and spaced a distance from each other, partitions disposed vertically intermediate the side walls and extending between the sections for entirely occupying the spaces formed thereby, said end walls provided with slots to receive the ends of said partitions and one end wall further provided with inclined surfaces intersecting the slots therein, means for detachably securing the mold in an organized condition, removable mold-pins carried by the bottom and side walls for forming openings in the substance acted upon, and auxiliary detachable clamping members for the mold.

847,313. CLOTHES-PIN. PLEASANT W. BURLESON, Linden, Tex. Filed July 28, 1906. Serial No. 328,235.

Claim.—A clothes-pin comprising a slide having an eye to receive the clothes-line, and loops on opposite sides of the eye, and clasps connected to the slide, which clasps comprise opposite loops, outwardly and oppositely extending arms at one end of the loops, a cross-bar connecting said arms, and arms extending inwardly from the other ends of the loops above the aforesaid cross-bar, and hinged at their free ends to the loops of the slide.

847,314. BOX. JEREMIAH D. BURNS, Washington, D. C., assignor to The Columbia Folding Box Co., Washington, D. C. Filed Feb. 8, 1906. Serial No. 300,173.

Claim.—1. A box member provided with an integral corner fold and an integral corner overlap extended over two adjacent sides of the box member, one portion of the said overlap being integral with one portion of said corner fold and the other portion thereof integral with the adjacent side of the box.

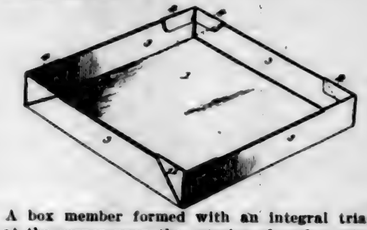

2. A box member formed with an integral triangular fold at the corner upon the exterior of said member, and an integral corner overlap integral with the one side of the box and with the adjacent portion of said triangular fold, said overlap being folded over two adjacent sides of the box and over the said fold.

3. A box member formed with an integral triangular fold at the corner and a corner overlap bent over adjacent side portions of said member and over the said triangular fold, one of said side portions having a tongue opposite one of the portions of the fold and the adjacent portion of the overlap having a slot to receive said tongue.

4. A box member formed with an integral triangular fold at the corner and a corner overlap one portion of which is integral with one portion of said fold bent over adjacent side portions of said member, one of said side portions having a tongue and the adjacent portion of the overlap having a slot to receive said tongue, one wall of said tongue being undercut.

5. A box formed from a single piece of material and comprising a bottom and four walls extending at an angle therefrom and connected at the corner by triangular folds, said box being formed at each corner with an integral overlap extending over the triangular fold and bent over the edge of two adjacent walls.

6. A box formed from a single piece of material and comprising a bottom and four walls extending at an angle therefrom and connected at the corner by triangular folds, said box being formed at each corner with an integral overlap extending over the triangular fold and bent over the edge of two adjacent walls, and a lock between said overlap and wall.

7. A folding-box blank having score-lines upon its four sides, rectangular portions at the corners with score-lines at right angles to each other, and additional diagonal score-lines, and extensions upon opposite sides of said blank opposite said rectangular portions at the corners and beyond the same to form corner overlaps to extend around the corners of the box, said extensions being scored substantially as and for the purpose specified.

847,315. TENSION AND REGULATING MECHANISM FOR TRAVELING FABRICS. JAMES A. CAMERON, Brooklyn, N. Y. Filed Aug. 2, 1905. Serial No. 272,299.

Claim.—1. In a machine of the character described, a tension-frame for the traveling fabric comprising the pivotally-mounted side arms, rods 18, 20 connecting said arms, means for locking said frame in its adjusted positions, means permitting the adjustment of one of said rods toward and from the other rod and also of inclining the same with respect thereto, and means for locking said adjustable rod in its given positions; substantially as set forth.

2. In a machine of the character described, a tension-frame for the traveling fabric comprising the pivotally-mounted side arms, rods 18, 20 connecting said arms and means for locking said frame in its adjusted positions, one of said rods being provided with parallel circumferential grooves to retard lateral movement in either direction of the traveling fabric, combined with a laterally-movable carriage carrying said frame, and means for moving said carriage; substantially as set forth.

3. In a machine of the character described, a tension-frame for the traveling fabric comprising the side arms having the guiding-flanges on their facing edges, rods 18, 20 connecting said arms, means for pivotally mounting said frame, and means for locking said frame in its adjusted positions, said rod 20 being recessed at its ends to engage and slide upon said flanges and having set-screws for locking it in its adjusted positions; substantially as set forth.

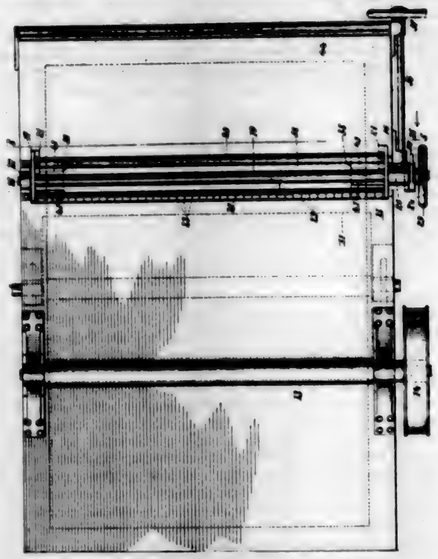

4. In a machine of the character described, a tension-frame for the traveling fabric comprising the side arms having the guiding-flanges on their facing edges, rods 18, 20 connecting said arms, means for pivotally mounting said frame, and means for locking said frame in its adjusted positions, said rod 20 being recessed at its ends to engage and slide upon said flanges and having set-screws for locking it in its adjusted positions, and said rod 20 also being capable of being inclined with respect to said rod 18; substantially as set forth.

5. In a machine of the character described, a tension-frame for the traveling fabric comprising the side arms, rods 18, 20 connecting the same, means for pivotally mounting said frame, and means for locking said frame in its adjusted positions, combined with a laterally-movable carriage carrying said frame, and means for moving said carriage; substantially as set forth.

6. In a machine of the character described, a tension device for the traveling fabric comprising rods 18, 20, said fabric passing over the rod 18, thence between said rods and thence over the rod 20, combined with a laterally-movable carriage from which said rods are supported, and means for moving said carriage; substantially as set forth.

7. In a machine of the character described, a tension-frame for the traveling fabric comprising the side arms, rods 18, 20 connecting said arms, means pivotally mounting said frame, and means for locking said frame in its adjusted positions, one of said rods being slidably mounted on said arms so that it may be adjusted toward and from the other rod and provided with means whereby it may be locked in its adjusted positions; substantially as set forth.

847,316. TELEPHONE SYSTEM. CHARLES L. CARR and THADDEUS P. CARR, Yellow Springs, Ohio. Filed Oct. 10, 1904. Serial No. 227,977.

Claim.—1. In a telephone system, the combination, with a central station, a metallic circuit including a source of direct current, and local stations having their instruments in said circuit, of a make-and-break device in said circuit at the central station, a step-up magnet in said circuit at each local station, a controlling device at each local station actuated by said step-up magnet, said controlling devices normally closing the talking-circuits and opening the same when moved from normal position, an alternating-current generator connected through one side of said circuit to ground at the central station and at each local station, said ground connections being through the local-station calling-signals, the controlling devices being provided with selective means for successively closing said ground connections at the local stations, separate and normally open shunt-circuits at each local station for the talking-circuit and ground connection, a relay-magnet in each local ground connection for closing both of said shunt-circuits, said relay-magnet being operated by the alternating current from said generator and means at the central station for there closing the generator-circuit simultaneously with the closing of the ground connection of the selected local station, substantially as described.

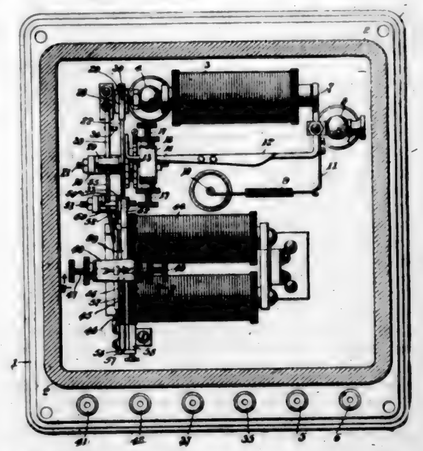

2. In a telephone system, the combination, with a central station, a metallic circuit including a source of direct current, and local stations having their instruments in said circuit, of a make-and-break device in said circuit at the central station, a step-up magnet in said circuit at each local station, a controlling device at each local station actuated by said step-up magnet, said controlling devices normally closing the talking-circuit and opening the same when moved from normal position, an alternating-current generator connected through one side of said circuit to ground at the central station and at each local station, said ground connections being through the local-station calling-signals, the controlling devices being provided with selective means for successively closing said ground connections at the local stations, separate and normally open shunt-circuits at each local station for the talking-circuit and ground connection, a relay-magnet in each local ground-connection for closing both of said shunt-circuits, said relay-magnet being operated by the alternating current from said generator and means at the central station for there closing the generator-circuit simultaneously with the closing of the ground connection of the selected local station to actuate the relay-magnet thereof to close the shunt-circuits, and for subsequently automatically closing the generator-circuit to actuate the calling-signal of said local station, substantially as described.

3. In a telephone system, the combination, with a central station, a metallic circuit including a source of direct current, and local stations having their instruments in said circuit, of a make-and-break device in said circuit at the central station, a step-up magnet in said

circuit at each local station, a controlling device at each local station actuated by said step-up magnet, said controlling device normally closing the talking-circuits and opening the same when moved from normal position, an alternating-current generator connected through one side of said circuit to ground at the central station and at each local station, said ground connections being through the local-station calling-signals, the controlling devices being provided with selective means for successively closing said ground connections at the local stations, separate and normally open shunt-circuits at each local station for the talking-circuit and ground connection, a relay-magnet in each local ground connection for closing both of said shunt-circuits, said relay-magnet being operated by the alternating current from said generator, means for locking said shunt-circuits in closed position, means at the central station for there closing the generator-circuit simultaneously with the closing of the ground connection of the selected local station, and means at the central station for moving the controlling devices at each local station to normal position, said controlling devices being provided with means for unlocking the shunt-circuits upon their return to normal position, substantially as described.

4. In a telephone system, the combination, with a central station, a metallic circuit including a source of direct current, and local stations having their instruments in said circuit, of a make-and-break device in said circuit at the central station, a step-up magnet in said circuit at each local station, a controlling device at each local station actuated by the said step-up magnet and comprising a rotating member, said controlling devices normally closing the talking-circuits and opening the same when moved from normal position, an alternating-current generator connected through one side of said circuit to ground at the central station and at each local station, said ground connections being through the local-station calling-signals, the controlling devices being provided with selective means for successively closing said ground connections at the local stations, normally open shunt-circuits at each local station for the talking-circuit and ground connection, a relay-magnet in each local ground connection provided with an armature controlling both of said shunt-circuits, said armature being actuated by the alternating current, said relay-magnet being provided with a second armature which is unaffected by the alternating current, said second armature being provided with means for engaging and holding the rotating member of the controlling device in a predetermined position, means at the central station for there closing the generator-circuit simultaneously with the closing of the ground connection of the selected local station, a second battery adapted to so energize the relay-magnet as to operate the second armature, said second battery being connected to ground through the same side of the metallic circuit as the generator at the central station and at each local station, and means at the central station for closing the grounded circuit which includes the second battery, substantially as described.

5. In a telephone system, the combination, with a central station, a circuit including a source of direct current, and local stations having their instruments in said circuit, of a circuit-breaking device located in said circuit and provided with a number of contacts greater than the number of local stations on the line, a step-up magnet in said circuit at each local station, a controlling device at each local station comprising a circuit-controlling member rotatable in one direction only, a pawl-and-ratchet mechanism whereby said step-up magnet actuates said controlling member, the ratchet being provided with a number of teeth greater than the number of contacts of the central circuit-breaking device, whereby, when said circuit-breaking device at the central station makes a complete operative movement, all of the controlling devices are moved beyond their circuit-closing positions, and means at the central station for closing said circuit, after the circuit-breaking device has operated, to advance the controlling devices at the local stations to their normal positions, substantially as described.

6. In a telephone system, the combination, with a central station, a metallic circuit, and local stations having their telephones in said circuit and calling-signals connected to one side thereof, said metallic circuit including a source of direct current and transmitting and selecting devices at the central and local stations respectively, one side of said metallic circuit being connected with an alternating-current generator and grounded at the central and local stations to operate the local-station signals, of a generator at each local station connected to ground and to the other side of the metallic circuit, said other side of said metallic circuit being connected at th central station through a calling-drop to ground, substantially as described.

7. In a controlling instrument for party-line telephones, a controlling member rotatable in one direction only, provided with selective means to close the signaling-circuit, and having a part which closes the talking-circuit only when the member is in normal position, and an electromagnet in the signaling-circuit provided with means for closing the talking and signaling-circuits, said part serving to open said talking and signaling circuits when the controlling member returns to normal position, substantially as described.

8. In a controlling instrument for party-line telephones, a controlling member, and means for imparting thereto an incomplete step-by-step rotatory motion in one direction, said member having a selective contact to close the signaling-circuit and a part which closes the talking-circuit when the member is in normal position, an electromagnet in the signaling-circuit provided with means for closing the signaling and talking circuits, a latch for holding said circuits closed, said part acting to trip the latch upon the return of the controlling member to normal position, and means for completing the rotation of the disk, substantially as described.

9. In a controlling instrument for party-line telephones, a controlling member having a selective device to close the signaling-circuit, and means for closing the talking-circuit when in normal position, separate normally open shunt talking and signaling circuits, and an electromagnet in the signaling-circuit provided with means for closing said shunt-circuits when the signaling-circuit is closed by the controlling member, said controlling member having means for opening the shunt-circuits upon its return to its normal position, substantially as described.

10. In a controlling instrument for party-line telephones, an electromagnet located in a grounded circuit, an alternating-current generator and a direct-current battery, and means for connecting either said generator or said battery with said circuit, said magnet being provided with an armature actuated by the alternating current, and with a second armature actuated only by the battery-current, a rotating controlling member and means actuated by said second armature for arresting the controlling member in a predetermined position, substantially as described.

11. In a telephone system, the combination, with a central station, a metallic circuit including a source of direct current and local stations having their instruments in said circuits, of a make-and-break device in said circuit at the central station, a step-up magnet in said circuit at each local station, a controlling device at each local station actuated by said step-up magnet, said controlling device normally closing the talking-circuits and opening the same when moved from normal position, an alternating-current generator connected through one side of said circuit to ground at the central station and at each local station, said ground connections being through the local-station calling-signals, the controlling device being provided with selective means for successively closing said ground connections at the local stations, separate normally open shunt-circuits at each local station for the talking-circuit and ground connection, a relay-magnet in each local ground connection for closing both of said shunt-circuits, and means at the central station for there automatically closing the generator-circuit simultaneously with the closing of the ground connection of the selected local station, substantially as described.

847,317. RECHARGING-VALVE FOR AIR-BRAKES. FRANCIS L. CLARK, Pittsburg, Pa., assignor to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Oct. 18, 1902. Serial No. 127,816.

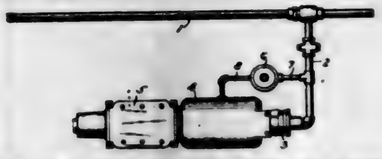

Claim.—1. A recharging-valve device for air-brakes, comprising a movable abutment exposed on one side to train-pipe pressure and on its opposite side to a variable fluid-pressure, means actuated by a slight movement of the abutment caused by a slow and gradual increase of train-pipe pressure to open communication from the train-pipe to the auxiliary reservoir, and means actuated by a further movement of the abutment in the same direction to close said communication.

2. A recharging-valve device for air-brakes comprising a movable abutment exposed on one side to train-pipe pressure and on its opposite side to auxiliary-reservoir pressure, and means actuated by a slight movement of the abutment to open communication from train-pipe to auxiliary reservoir, and by a further movement in the same direction to close such communication.

3. A recharging-valve device for air-brakes, comprising a valve for controlling communication from the train-pipe to the auxiliary reservoir, and a movable abutment subject to the opposing pressures from the train-pipe and auxiliary reservoir for operating said valve.

4. A recharging-valve device for air-brakes, comprising a valve for controlling communication from the train-pipe to the auxiliary reservoir, a movable abutment exposed on opposite sides to train-pipe and auxiliary-reservoir pressures respectively, means actuated by a slight movement of said abutment to open said valve and means actuated by a further movement of the abutment in the same direction for closing said valve.

5. A recharging-valve device for air-brakes, comprising a valve for controlling communication from the train-pipe to the auxiliary reservoir, a movable abutment exposed on opposite sides to train-pipe and auxiliary-reservoir pressures respectively, a light spring acting on the reservoir side of the abutment, means actuated by a slight movement of the abutment for opening said valve, and means actuated by a further movement of the abutment in the same direction to close said valve.

6. In a recharging-valve for air-brakes, the combination with a casing having a movable abutment therein provided with an opening or passage and exposed on one side to auxiliary-reservoir pressure, of means for opening said passage upon a slight movement of the abutment and means for closing said passage upon a further movement of the abutment in the same direction.

7. In a recharging-valve, the combination of a casing having a movable abutment therein provided with an opening or passage and oppositely-arranged valve-seats, valve-stems mounted in the chambers on opposite sides of said abutment and adapted to be engaged by said valve-seats respectively.

847,318. RACK OR HOLDER. ALONZO M. COPE, Chicago, Ill. Filed June 30, 1906. Serial No. 324,218.

Claim.—The combination with a chair having a removable head-rest, of an auxiliary holder for the head-rest, comprising a pair of spaced arms projecting from the back of the chair, said arms provided with a plurality of upwardly-projecting fingers on which the body of the head-rest is carried and a pin projecting from said back below and in line with the space between the said arms and adapted to contact with the shank of the head-rest to hold it in upright position.

847,318.

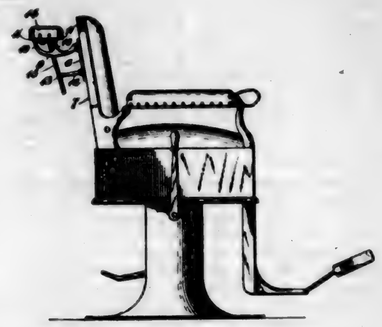

847,319. EMERGENCY-BRAKE FOR RAILWAY-CARS. PHILLIP W. COUNSELMAN, Toledo, Ohio. Filed Dec. 26, 1906. Serial No. 349,520.

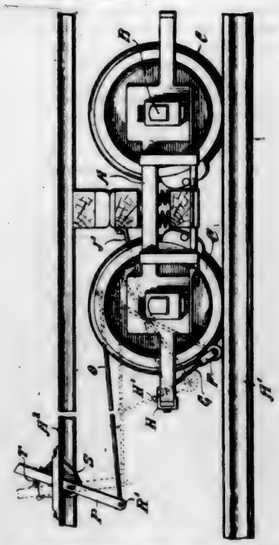

Claim.—1. An emergency-brake comprising, in combination with a car-truck, axles and car-wheels, tracks upon which the wheels rest, a crank-shaft, corrugated wheels journaled upon the ends of said shaft, an operating-lever, pivotal connections between same and said shaft whereby said corrugated wheels may be thrown in front of the car-wheels and between the same and track, as set forth.

2. An emergency-brake comprising, in combination with a car-truck, axles and car-wheels, tracks upon which the wheels rest, a crank-shaft, corrugated wheels journaled upon the ends of said shaft, adjusting-rods connected to the ends of the crank-shaft and held by a guide-plate upon the truck, an operating-lever, pivotal connections between same and the crank-shaft, as set forth.

3. An emergency-brake comprising, in combination with a car-truck, axles and car-wheels, tracks upon which the wheels rest, a crank-shaft, corrugated wheels journaled upon the ends of said shaft, a clevis mounted upon each end of the crank-shaft and between which the corrugated wheels rotate, an adjusting-rod carried by the truck and engaging said clevises, an operating-lever and connections between the same and said crank-shaft, as set forth.

4. An emergency-brake comprising, in combination with

a car-truck, axles and car-wheels, tracks upon which the wheels rest, a crank-shaft, corrugated wheels journaled upon the ends of said shaft, a clevis mounted upon each end of the crank-shaft and between which clevises said corrugated wheels rotate, each clevis being apertured, a threaded rod passing through the aperture of said clevis, a nut upon the threaded portion of the rod, a guide-plate upon the truck and through which said rods pass, nuts upon the upper threaded ends of said rods, pivotal operating-lever and connections between same and the crank-shaft, as set forth.

5. An emergency-brake comprising, in combination with the truck of a railway-car, axles and car-wheels, tracks upon which the wheels travel, a crank-shaft mounted upon the truck, corrugated wheels mounted upon the ends of said crank-shaft, a pivotal operating-lever mounted upon the platform of the car, connections between the same and the crank-shaft, a vertically-disposed plate, a spring-pressed pawl carried by the operating-lever and adapted to engage over the upper corner of said plate, as set forth.

6. An emergency-brake comprising, in combination with the truck of a car with axles and wheels thereto, a track, rods which are bent to form loops and fastened to the truck, a crank-shaft mounted in said loops, corrugated wheels mounted on the ends of said crank-shaft, adjusting-rods connected to the ends of said shafts, a pivotal operating-lever and connections between the same and the crank-shaft, as set forth.

847,320. FOLDING MUSHROOM-ANCHOR. CHARLES E. CRANE, Lake City, Minn. Filed Feb. 12, 1906. Serial No. 300,776.

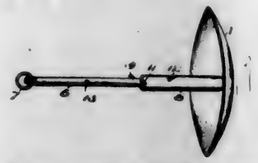

Claim.—1. In an anchor, a circular bowl, a jointed shank carried by the bowl, whereby the bowl may be folded into juxtaposition with the shank, and means movably mounted upon said shank for holding said bowl in its folded position.

2. In an anchor, an engaging member, a jointed shank carried by the engaging member and arranged to permit the engaging member to be folded into contact with the shank, and an apertured sleeve carried by the shank, said aperture being adapted to retain the engaging member in said contacting position.

3. In an anchor, a concavo-convex bowl, a stud extending axially from the concave side of the bowl, a shank pivoted to the extremity of the stud and arranged to permit the bowl to be folded into contact with the shank, a sleeve slidably mounted upon the shank and proportioned to be moved to span the joint and embrace the stud and provided with means to engage the peripheral edge of the bowl when in contact with the shank, and means to lock the sleeve against longitudinal movement to hold the bowl selectively in operative and folded positions.

847,321. CORN AND BRUSH KNIFE. DAVID B. DATE and AUGUST B. KUGELMANN, New York, N. Y., assignors, by mesne assignments, to Vortex Manufacturing Company, Brooklyn, N. Y., a Corporation of New York. Filed Jan. 24, 1906. Serial No. 297,581.

Claim.—1. A corn and brush knife comprising a body transversely and downwardly arched and provided at its longitudinal center with a V cut extending from its rear edge, forming oppositely-inclined cutting edges, said cutting edges having their under surfaces beveled, a longitudinal flange at one side edge, and a handle secured to said flange.

2. A corn and brush knife, comprising a body transversely and downwardly arched and provided at its longitudinal center with a V cut extending from its rear edge, forming oppositely-inclined cutting edges, said cutting edges having their under surfaces beveled, a straight longitudinal flange integral with one outer side edge of the body, and a handle secured to the said flange, having a straight outer section and an intermediate inclined section.

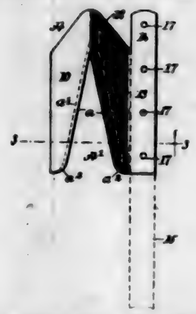

3. A corn and brush knife, comprising a body transversely and downwardly arched and provided with a V-shaped forward edge, the said body being likewise provided with a central longitudinal V cut extending from its rear edge and being widest at said rear edge of the body, the said body being also rounded at the outer end walls of said cut, thereby forming oppositely-inclined cutting edges, the said cutting edges being beveled on their under faces throughout their entire length, a straight flange integral with an outer side edge of the body, which flange extends forward to substantially transverse alinement with the forward point of the body, and a handle secured to said flange, provided with a straight outer portion and an intermediate inclined portion.

847,322. NUT-LOCK. HARRY DAY, Upper Sandusky, Ohio. Filed May 28, 1906. Serial No. 319,067.

Claim.—In a nut-lock, the combination with a bolt having a squared end and a threaded portion, the squared end of the bolt having a number of transverse holes, of a nut engaging the threaded portion of the bolt, a cap having formed through the top thereof a throat movably fitting the squared end of the bolt, the said cap having a mouth formed to movably fit the said nut, the said cap having also an additional cavity opening into the said throat and mouth and constructed to receive the threaded portion of the bolt, and a pin adapted to be passed through either of the holes in the said squared end of the bolt to retain the cap and lock the nut, substantially as described.

847,323. FERTILIZER-DISTRIBUTER. SAMUEL K. DENNIS and FRANK W. RICE, Chicago, Ill., assignors to International Harvester Company, a Corporation of New Jersey. Filed Oct. 12, 1906. Serial No. 338,548.

Claim.—1. In a fertilizer-distributer, in combination, a body, a distributing-cylinder mounted at the rear end thereof, an end-gate adapted to be moved to and from a position immediately in front of the distributing-cylinder, driving-chains for said cylinder extending forwardly from the ends thereof and arranged to be raised and lowered from and to engagement with the sprocket-wheels on the main wheels, driving sprocket-wheels mounted on the main wheels and a single lever for controlling the movement of said chains and end-gate.

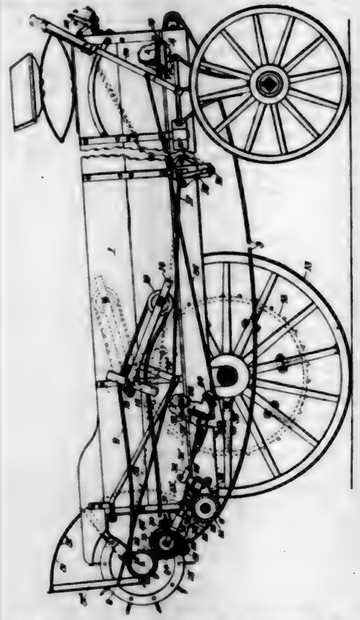

2. In a fertilizer-distributer, in combination, a body, a movable apron mounted in the bottom thereof, a distributing-cylinder mounted at the rear end of said body, rear supporting-wheels, driving sprocket-wheels secured thereto, means for moving the apron rearwardly, and an apron-return mechanism comprising a gear on the end of the apron-shaft, a stub-shaft having a gear and sprocket wheel mounted thereon, a swinging arm pivotally mounted on the stub-shaft and carrying at its free end an idler, a chain engaging the sprocket and the idler, the said chain arranged to swing into engagement with the driving sprocket-wheel on the main wheel and thereby impart return movement to the apron, and means for controlling the position of said swinging arm.

3. In a fertilizer-distributer, in combination, a body, a movable apron in the bottom thereof, means for driving the apron rearwardly, an apron-reversing mechanism, a lever-actuated rock-shaft mounted beneath said apron for controlling the apron-drive and the apron-reversing mechanism, upwardly-projecting longitudinally-compressible arms fixed on said rock-shaft, and depending lugs on said apron arranged to impinge said arms and thereby control the driving apron-moving devices.

4. In a fertilizer-distributer, in combination, a body, a movable apron in the bottom thereof, means for driving the apron rearwardly, an apron-reversing mechanism, a rock-shaft mounted beneath said apron for controlling the apron-drive and the apron-reversing mechanism, a hand-lever within reach of the operator, said lever having an operative connection with the rock-shaft, two angularly-disposed upwardly-projecting arms secured to said rock-shaft, and a depending lug on each end of the apron arranged to impinge said arms coincident with the apron reaching the limit of its travel rearwardly and forwardly, and thereby disengage, respectively, the apron-drive and the apron-reversing mechanism.

5. In a fertilizer-distributer, in combination, a body, a movable apron mounted in the bottom thereof, a distributing-cylinder mounted at the rear end of said body, mechanism for moving said apron toward the cylinder, said mechanism comprising a shaft connected with said bottom, a gear-wheel secured to said shaft, a worm adapted to engage with said wheel, said worm having a gear connection with a ratchet-wheel rotatably mounted upon a fixed part of the machine, a pawl and a pawl-carrying arm adapted to engage with said ratchet-wheel, the said pawl-arm having a toothed segment in connection therewith, an eccentric-link provided with a toothed rack and arranged to form an operative connection between the distributing-cylinder and the pawl-arms, and means for controlling the operation of said apron-driving mechanism.

6. In a fertilizer-distributer, in combination, a body, a movable apron mounted in the bottom thereof, a distributing-cylinder mounted at the rear end of said body, mechanism for moving said apron toward the cylinder, said mechanism comprising a shaft connected with said bottom, a gear-wheel secured to said shaft, a worm adapted to engage with said wheel, said worm having a gear connection with a ratchet-wheel rotatably mounted upon a fixed part of the machine, two oppositely-disposed pawl-carrying arms pivotally mounted on an axis coincident with the axis of said ratchet-wheel, said arms having toothed segments in connection therewith, pawls mounted on said arms and adapted to engage the ratchet-wheel, an eccentric-link driven from said cylinder and terminating at its lower end in opposite parallel toothed racks arranged to engage the toothed segment of the pawl-arms and vibrate same, and means for controlling the operation of said apron-driving mechanism.

7. In a fertilizer-distributer, in combination, a body, a movable apron mounted in the bottom thereof, a distributing-cylinder mounted at the rear end of said body, mechanism for moving said apron toward the cylinder, said mechanism comprising a shaft connected with said bottom, a gear-wheel secured to said shaft, a worm adapted to engage with said wheel, said worm having a gear connection with a ratchet-wheel rotatably mounted upon a fixed part of the machine, two oppositely-disposed pawl-carrying arms pivotally mounted on an axis coincident with the axis of said ratchet-wheel, said arms having toothed segments in connection therewith, pawls mounted on said arms and adapted to engage the ratchet-wheel, an eccentric link driven from said cylinder and terminating at its lower end in opposite parallel toothed racks arranged to engage the toothed segment of the pawl-arms and vibrate same, a cam-lever for controlling the effective movement of the said pawls, said cam-lever being provided with pawl-engaging cam-surfaces and a toothed segment, a gear-segment having connection with the controlling-lever for operating the said cam-lever, and a lever for controlling the operation of the apron-driving mechanism.

847,324. FOOT-TUB. ELLA Y. ELY, Belton, Tex. Filed May 8, 1906. Serial No. 315,827.

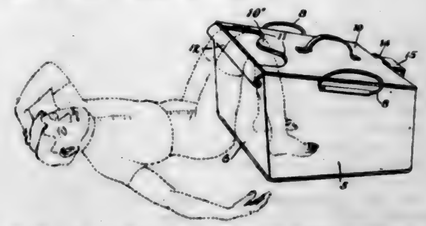

Claim.—1. A device of the class described, comprising a liquid-containing receptacle having one wall thereof curved laterally to form a terminal bearing-surface, and a cover having an opening formed therein and disposed at said bearing-surface.

2. A device of the class described, comprising a liquid-

containing receptacle, one wall of which is inclined toward the bottom of the receptacle and provided at its free edge with a curved bearing-surface, and a cover having an opening formed therein and disposed at said bearing-surface.

3. A device of the class described, comprising a liquid-containing receptacle having one wall thereof curved laterally to form a terminal bearing-surface, a feed-spout communicating with the interior of the receptacle, a cover having an opening formed therein and disposed at said bearing-surface, and an extension carried by the cover and forming a closure for the feed-spout.

4. A device of the class described, comprising a liquid-containing receptacle, having its upper edge inclined downwardly and one of its end walls curved laterally to form a bearing-surface, a feed-spout communicating with the interior of the receptacle, a cover having an opening formed therein and disposed at said bearing-surface, and an extension pivoted to the cover and forming a closure for the feed-spout.

5. A device of the class described, comprising a liquid-containing receptacle, the front wall of which is inclined toward the bottom of the receptacle and provided at its free edge with a curved bearing-surface, a cover having communicating recesses formed in one end thereof and defining a lateral projection the free end of which terminates short of the adjacent vertical wall of the receptacle, and a feed-spout communicating with the interior of the receptacle.

847,325. MACHINE FOR ATTACHING SHEETS OF PAPER TOGETHER. ARTHUR J. FARMER, Detroit, Mich. Filed July 19, 1906. Serial No. 326,868.

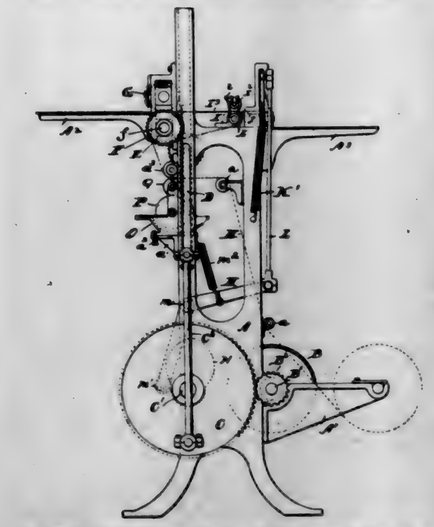

Claim.—1. In a machine of the class described, a frame, main feed-rolls, auxiliary feed-rolls, a gumming-roll, a knife pivoted at one end to the frame, a reciprocating rack-bar coöperating with one of the main feed-rolls, an operative connection between the main feed-rolls, a shaft, a gear upon the shaft, means for operating the shaft and its gear, a pitman connecting the gear and rack-bar, and means operated by said shaft to operate the knife.

2. In a machine of the class described, a frame, main feed-rolls, auxiliary feed-rolls, a gumming-roll, a knife pivoted at one end to the frame, a reciprocating rack-bar coöperating with one of the main feed-rolls, an operative connection between the main feed-rolls, a shaft, a gear upon the shaft, means for operating the shaft and its gear, a pitman connecting the gear and rack-bar, a rock-arm, a pitman connected to the free end of the knife and to one end of said rock-arm, a cam mounted upon said shaft to rock the rock-arm and to operate said knife.

3. In a machine of the character described, a frame, feed-rolls, a gumming-roll over which the paper to be coated is passed, the gumming material being applied to the edge of the paper, a knife pivoted upon the frame, a shaft, a gear upon the shaft, a rack-bar coöperating with the feed-rolls, a pitman connection between the rack-bar and gear, a rock-arm, a pitman having connection with the rock-arm and knife, and a cam upon said shaft to operate the rock-arm and knife.

4. In a machine of the character described, a frame, feed-rolls, a shoulder in one roll and a clutch mechanism associated with the other roll to coöperate with the said shoulder, a gear carried by the said roll, a shaft, a gear mounted upon said shaft, a reciprocating rack-bar for mesh with the gear of the said second roll, a pitman connection between the second-mentioned gear and said rack-bar, and means for operating the second gear to reciprocate the rack-bar and operate the feed-rolls.

5. In a machine of the character described, a frame, feed-rolls, a shoulder in one roll and a clutch mechanism associated with the other roll to coöperate with the said shoulder, a gumming mechanism, a gear carried by the said roll, a shaft, a gear mounted upon said shaft, a reciprocating rack-bar for mesh with the gear of the said second roll, a pitman connection between the second-mentioned gear and said rack-bar, and means for operating the second gear to reciprocate the rack-bar and operate the feed-rolls.

6. In a machine of the character described, a frame, feed-rolls, a shoulder in one roll and a clutch mechanism associated with the other roll to coöperate with the said shoulder, a gumming mechanism, a gear carried by the said roll, a shaft, a gear mounted upon said shaft, a reciprocating rack-bar for mesh with the gear of the said second roll, a pitman connection between the second-mentioned gear and said rack-bar, means for operating the second gear to reciprocate the rack-bar and operate the feed-rolls, a pivoted knife, a spring-controlled rock-arm carrying a friction-wheel at one end, a pitman connection between the knife and one end of the rock-arm, and a cam mounted upon the second shaft to engage the friction-wheel of the rock-arm to rock the latter to operate the knife.

7. In a machine of the character described, a frame, feed-rolls, a gumming-roll over which the paper to be coated along one edge is passed, a pivoted knife, a spring having connection with the knife at one end, a spring-controlled rock-arm, means carried by the frame to rock the arm, and a connection between the rock-arm and knife to operate the latter against the action of its spring.

8. In a machine of the character described, a frame, feed-rolls, one of the rolls having a shoulder forming a guide, the other roll having a clutch mechanism associated therewith, and means for throwing the clutch mechanism into operation to operate the rolls and to time the movement of said guiding-shoulder for coöperation with the paper fed through the machine.

9. In a machine of the character described, a frame, feed-rolls, one of the rolls having a shoulder forming a guide, the other roll having a clutch mechanism associated therewith, means for throwing the clutch mechanism into operation to operate the rolls and to time the movement of said guiding-shoulder for coöperation with the paper fed through the machine, a knife, and means for operating the knife.

10. In a machine of the character described, a frame, feed-rolls, one of the rolls having a shoulder forming a guide, the other roll having a clutch mechanism associated therewith, a gumming mechanism, means for throwing the clutch mechanism into operation to operate the rolls and to time the movement of said guiding-shoulder for coöperation with the paper fed through the machine, a knife, and means for operating the knife.

11. In a machine of the character described, a frame, feed-rolls, a gumming mechanism, means for operating the feed-rolls, a spring-controlled cutting-knife, a spring-controlled rock-arm, a connection between the rock-arm and knife and means carried by the frame to rock the arm against the action of its spring to operate the knife against action of the spring of the latter.

12. In a machine of the character described, a frame, feed-rolls, a gumming mechanism, a shaft mounted in the frame, a knife, and means having engagement with said shaft to operate the feed-rolls and knife automatically.

13. In a machine of the class described, a frame, feed-rolls, one of the rolls having a shoulder forming a guide, the other roll having a clutch mechanism associated therewith, means for throwing the clutch mechanism into operation to operate the rolls and to time the movement of said guiding-shoulder for coöperation with the paper fed through the machine, and a gumming mechanism operating upon the paper in its passage through the machine.

14. In a machine of the class described, a frame, feed-rolls, one of the rolls having a shoulder forming a guide, the other roll having a clutch mechanism associated therewith means for throwing the clutch mechanism into operation to operate the rolls and to time the movement of said guiding-shoulder for coöperation with the paper fed through the machine, auxiliary feed-rolls coöperating with the aforesaid rolls, and a gumming mechanism operating upon the paper in its passage through the machine.

15. In a machine of the class described, a frame, feed-rolls, a gumming mechanism, a knife, a reciprocating element for operating one of the feed-rolls, a coöperative connection between the feed-rolls, a shaft, means for operating the shaft, a connection between the shaft and reciprocating element, and means for operating the knife.

847,326. THROTTLE-VALVE. WALTER FERRIS and JEAN M. ALLEN, South Milwaukee, Wis., assignors to The Bucyrus Company, South Milwaukee, Wis., a Corporation of Wisconsin. Filed Apr. 4, 1906. Serial No. 309,820.

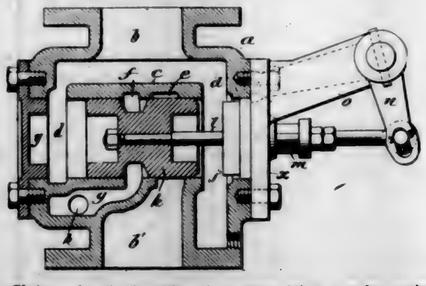

Claim.—1. A throttle-valve, comprising a valve-casing provided with inlet, outlet and exhaust openings, an interior cylindrical valve-seat provided with an annular port in the inner walls thereof, communicating with the exhaust-opening of the casing, and a piston-valve having a reduced portion intermediate the ends thereof coöperating with said valve-seat, whereby communication may be established between the outlet and the exhaust openings of the casing, said annular port being inclined with respect to the axis of the valve to effect a gradual opening or closing of said port.

2. A throttle-valve, comprising a valve-casing provided with inlet, outlet and exhaust openings, an interior cylindrical valve-seat provided with annular ports in the inner walls thereof communicating with the exhaust and outlet openings, respectively, of the casing, and a piston-valve coöperating with said valve-seat, said valve having a reduced intermediate portion to establish communication between the outlet and exhaust openings of the casing by way of one of said annular ports, said annular ports being inclined to the axis of the valve to effect a gradual opening or closing of said ports.

3. A throttle-valve, comprising a valve-casing provided with inlet, outlet and exhaust openings, a cylindrical valve-seat in said casing open at both ends and having in the inner walls thereof axially-inclined ports communicating with the outlet and exhaust openings, respectively, and a valve slidably mounted in said seat adapted to establish a throttling connection past the end thereof between the inlet and outlet openings, and having a reduced intermediate portion adapted to establish a throttling connection between the outlet-opening and the exhaust-opening.

4. A throttle-valve, comprising a valve-casing provided with inlet, outlet and exhaust openings, a cylindrical valve-seat in said casing open at both ends and having in the inner walls thereof axially-inclined ports communicating with the outlet and exhaust openings, respectively, and a valve slidably mounted in said seat adapted to establish a throttling connection past the end thereof between the inlet and outlet openings, the end of said valve being chamfered to coöperate with the axially-inclined port communicating with the outlet-opening, said valve having a reduced intermediate portion adapted to establish a throttling connection between the outlet-opening and the exhaust-opening.

847,327. PORTABLE AWNING. JOSEPH R. FITZGERALD, Springfield, Ohio. Filed Feb. 19, 1906. Serial No. 301,755.

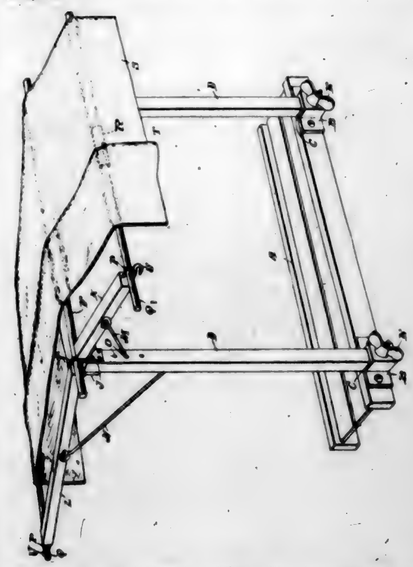

Claim.—1. In a portable awning, the combination, with a plurality of standards adapted to be removably secured to a fixed structure, of rafters hinged to the standards and having braces to secure them in different positions, sheathing-rods loosely supported from said standards and connecting the one standard and its rafters to the other standard and its rafters, and thus forming the interconnection between these two portions of the structure, and a canvas adapted to fit over and upon the sheathing-rods and rafters.

2. In a portable awning, the combination, with a plurality of standards adapted to be removably secured to a fixed structure, of rafters hinged thereto, braces to secure said rafters in different positions, sheathing-rods connecting one standard and its rafters with the other standard and its rafters said sheathing-rods being longitudinally adjustable on said standards, and a canvas supported upon said sheathing-rods.

3. In a portable awning, the combination, with clips adapted to be secured to a fixed structure, and standards removably secured in the clips, of rafters hinged to the standards, braces to adjustably support the rafters, extendible sheathing-rods made in sections and adjustably connecting the one standard and its rafters with the other standard and its rafters, and a canvas having means to attach it to the framing to prevent its dislodgement, adapted to overlie the said rods and rafters and having a fold to adapt it to be varied in width.

4. In a portable awning, the combination, with suitable removable clips, and standards removably secured in the clips, of rafters hinged to the standards and having supporting-braces to adjust their positions, sheathing-rods made in extendible sections carried by the standards and rafters, and a canvas supported by such framing, one set of rafters being relatively long and the other short, the one for the overhead canopy portion of the canvas and the other for the lower or side protecting portion of the canopy, and the canvas having a fold to permit of adjusting its width.

5. In a portable awning, the combination, with standards, and rafters hinged thereto, braces to adjustably support the rafters, rod-supports carried by said standards and said rafters, sheathing-rods removably mounted in said supports and connecting the one standard and its rafters with the other standard and its rafters, the rafters being adapted to fold down to the sides of the standards when the braces are disconnected, and the sheathing-rods to be removed to permit the two standards with their rafters to be placed together and they and the rods to be assembled into a transportable bundle.

847,328. VEGETABLE-PEELER. THOMAS FRANKLIN and GEORGE L. BELDING, West Point, N. Y. Filed Jan. 17, 1905. Serial No. 241,440.

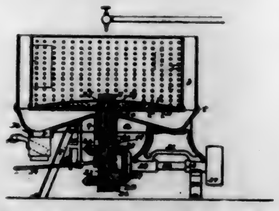

Claim.—1. In a peeling-machine, a base, an outer cylinder supported thereon provided with an opening in its side wall, an inner perforated rotatable cylinder spaced from the outer cylinder and provided with an opening in its side wall, a rotatable disk forming the bottom of the inner cylinder, closure-plates for each of said openings, and a driving-shaft for said disk disposed beneath the same.

2. In a peeling-machine, a base, an outer cylinder supported thereon provided with an opening in its side wall, an inner rotatable perforated cylinder spaced from the outer cylinder and provided with an opening in its side wall, a rotatable bottom disk within the inner cylinder, closure-plates for each of said openings, and means for rotating said disk in a direction opposite to the rotation of the inner cylinder or independent thereof.

3. In a peeling-machine, a base provided with a bearing, an outer cylinder supported upon said base, an inner perforated rotatable cylinder spaced from the outer cylinder, a rotatable disk forming the bottom of the inner cylinder, and a driving-shaft mounted in said bearing and carrying said disk at its upper end.

4. In a peeling-machine, a base having an annular dished portion and a central depending bearing, an outer cylinder supported at the periphery thereof, an inner cylinder spaced from the outer cylinder, a driving-shaft journaled at its upper end in said bearing, and a disk secured to said shaft at the bottom of the inner cylinder.

5. In a peeling-machine, a base, an outer cylinder supported thereby and provided with an opening therein, an inner cylinder provided with an opening therein and spaced from the outer cylinder, a closure for the opening of the inner cylinder, a rotatable disk within the inner cylinder, and means carried by the cylinders for supporting a contact-plate extended through said openings when in alinement.

6. In a peeling-machine, a base, an outer cylinder supported thereon provided with an opening in its side wall, an inner rotatable perforated cylinder spaced from the outer cylinder and provided with an opening in its side wall, a bottom disk within the inner cylinder, means for driving said disk, driving means for said inner cylinder, means for controlling the driving means of the inner cylinder, and an insertible member disposed within the openings in said walls.

7. In a peeling-machine, a base provided with a central bearing, an outer cylinder supported by said base, a sleeve rotatably mounted within said bearing, an inner cylinder carried by said sleeve, a spindle extending through said sleeve, a rotatable bottom disk carried by the upper end of said spindle within the inner cylinder, a driving-gear upon the lower end of said spindle, a driving-shaft geared to said spindle-gear, a gear loosely mounted upon said sleeve and meshing with the driving-shaft gear, and a clutch splined to the sleeve and adapted to engage the gear carried thereon.

8. In a peeling-machine, a concave base provided with an outlet-pipe having downwardly-inclined ways therein, and a screen-cup slidingly mounted upon said ways to normally lie diagonally to the vertical axis of the pipe whereby it is retained therein by gravity.

9. In a peeling-machine, a base having a central depending bearing-sleeve and a dishing bottom curving outwardly and downwardly from said sleeve and then upward above said sleeve and terminating in a cylinder-supporting flange, and an outlet connection with said bottom.

10. In a peeling-machine, a plurality of cylinders each provided with a side opening, a bar spaced from the side wall of the opening in the outer cylinder and extending vertically across the same, and a slide adapted for insertion between said bar and side wall.

847,329. GARMENT-HANGER. HEINRICH GEBHARDT, Munich, Germany. Filed Apr. 20, 1904. Serial No. 204,031.

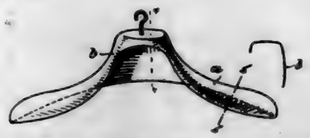

Claim.—A coat-hanger comprising a neck portion closed behind and open in front and corresponding substantially in shape to the human neck, said neck portion merging gradually into downwardly, forwardly and outwardly curving shoulder portions having a domed cross-section.

847,330. EXCAVATOR. ALFRED R. GROSSMITH, Corby, near Kettering, England. Filed July 23, 1906. Serial No. 327,407.

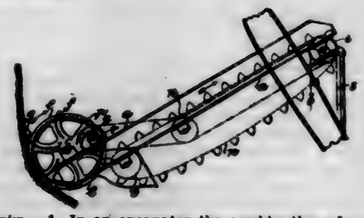

Claim.—1. In an excavator the combination of a drum, means for rotating it, tools carried by it, and means for causing the tools to protrude from the drum.

2. In an excavator the combination of a drum, a fixed axle, means for rotating the drum on the axle, a fixed crank on the axle, tools pivoted to the drum, and links connecting the tools to the crank.

3. In an excavator the combination of a conveyer, a drum situated at one end thereof and delivering material thereonto, means for rotating the drum, tools carried by the drum, and means for causing the tools to withdraw into the drum as they pass the conveyer.

847,331. EXCAVATING MACHINERY. ALFRED R. GROSSMITH, Corby, near Kettering, England. Filed July 23, 1906. Serial No. 327,408.

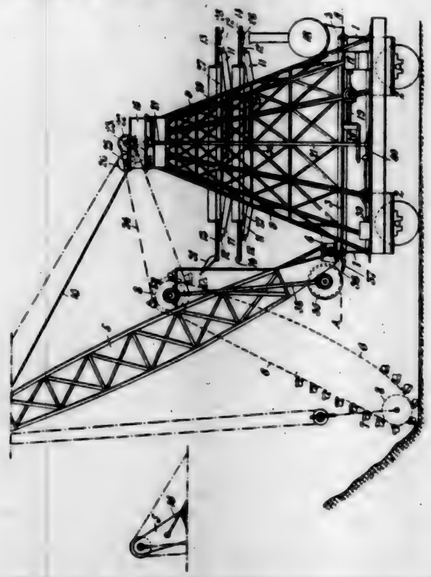

Claim.—1. In excavating machinery the combination of a circular frame, a carriage capable of movement around the frame, a tower supported by the frame, an annular platform carried by the tower, and means for revolving the platform substantially as described.

2. The combination of a circular frame, a carriage capable of movement around the frame, a jib on the carriage, a tower supported by the frame, an annular platform carried by the tower, a conveyer carried by the jib and adapted to deliver material onto the platform, and means for revolving the platform substantially as described.

3. The combination of a circular frame, a carriage capable of movement around the frame, a jib on the carriage, a tower supported by the frame, a perforated annular platform carried by the tower, an annular platform carried by the tower below the first, a conveyer carried by the jib and adapted to deliver material onto the upper platform, and means for revolving the platforms substantially as described.

4. In excavating machinery the combination of a circular frame, a carriage capable of movement around the frame, a tower supported by the frame, an annular platform carried by the tower, means for revolving the platform, wheels supporting the frame, and means for driving the wheels, substantially as described.

5. The combination of a circular frame, a carriage capable of movement around the frame, a jib on the carriage, a tower supported by the frame, an annular platform carried by the tower, a conveyer carried by the jib and adapted to deliver material onto the platform, means for revolving the platform, wheels supporting the frame, and means for driving the wheels substantially as described.

6. The combination of a circular frame, a carriage capable of movement around the frame, a jib on the carriage, a tower supported by the frame, a perforated annular platform carried by the tower, an annular platform carried by the tower below the first, a conveyer carried by the jib and adapted to deliver material onto the upper platform, means for revolving the platforms, wheels supporting the frame, and means for driving the wheels substantially as described.

7. The combination of a circular frame, a carriage capable of movement around the frame, a jib on the carriage, a tower supported by the frame, an annular platform carried by the tower, a conveyer carried by the jib and adapted to deliver material onto the platform, means for revolving the platform, a turn-table on the top of the tower connected to the jib, and means carried by the turn-table for operating the conveyer substantially as described.

8. The combination of a circular frame, a carriage capable of movement around the frame, a jib on the carriage, a tower supported by the frame, an annular platform carried by the tower, a conveyer carried by the jib and adapted to deliver material onto the platform, means for revolving the platform, a turn-table on the top of the tower connected to the jib, means carried by the turn-table for operating the conveyer, wheels supporting the frame, and means for driving the wheels substantially as described.

9. The combination of a circular frame, a carriage capable of movement around the frame, a jib on the carriage, a tower supported by the frame, a perforated annular platform carried by the tower, an annular platform carried by the tower below the first, a conveyer carried by the jib and adapted to deliver material onto the upper platform, means for revolving the platforms, a turn-table on the top of the tower connected to the jib, means carried by the turn-table for operating the conveyer, wheels supporting the frame, and means for driving the wheels substantially as described.

847,332. ADJUSTABLE CHAIR. JOEL T. HART, Independence, Mo. Filed Oct. 13, 1905. Serial No. 282,586.

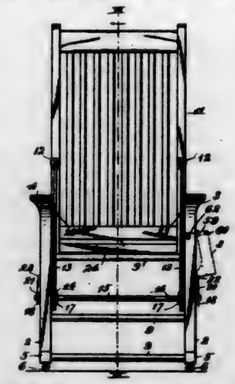

Claim.—1. In a chair, the combination with the legs connected by side rails and having upright extensions above said rails, and a seat and a back adjustably mounted between said rails; of an outwardly-folding arm, knuckle-joint hinges between it and said extensions, perforated lugs on the hinges, and pins adapted to engage the perforations when they register, whereby the arm may be adjusted independently of the adjustments of the other members.

2. In a chair, the combination with the legs having holes, side rails connecting them, and ordinary chair members; of a chair-arm, knuckle-joint hinges connecting it with the legs at one side, lugs on the hinges having perforations adapted to register when the arm is raised, and

pins in said holes in the legs and removably engaging the registering perforations in the hinges.

3. In a chair, the combination with upright legs, side rails connecting them in pairs, and a seat and back pivoted between said side rails; of an outwardly-folding arm mounted on upright extensions of the legs at one side, knuckle-joint hinges between said extensions and their legs, lugs adjacent the hinges having perforations adapted to register when each extension alines with its leg, and pins passing horizontally into the legs and removably engaging said registering perforations.

4. In a chair, the combination with a framework consisting of legs and side rails connecting them, a seat and a back adjustably mounted within the framework, a footrest also adjustably mounted therein, and a footboard carried by the rest; of extensions on the legs above the side rails, the arms, knuckle-joints connecting them with the extensions and having lugs with perforations adapted to register with each other when the arms are upright, and pins adapted to engage the registering perforations, whereby the arms can be raised or lowered independently of each other and independently of the adjustments of the remaining members.

847,833. SHAFT-COUPLING. JOSIAH P. HAYWARD, Malden, Mass., assignor, by mesne assignments, to Bradley Pulverizer Company, Boston, Mass., a Corporation of Maine. Filed Feb. 8, 1905. Serial No. 244,733.

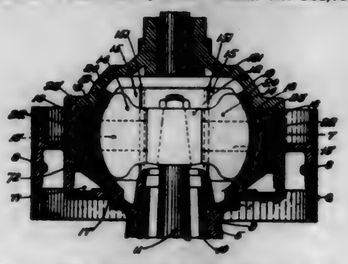

Claim.—1. In a universal shaft-coupling, the combination with oppositely-located segmental members, of removable bearing members coöperating with the curved faces of the said segmental members and furnishing the bearing-surface for the curved faces of the said segmental members, and removable side pieces coöperating with the side faces of the said segmental members.

2. In a universal shaft-coupling, the combination with oppositely-located segmental members, of removable bearing members coöperating with the curved faces of the said segmental members, removable side pieces coöperating with the side faces of the said segmental members and holding means for the said bearing members and side pieces.

3. In a universal shaft-coupling, the combination with oppositely-located segmental members, of removable bearing members coöperating with the curved faces of the said segmental members, removable side pieces coöperating with the side faces of the said segmental members, holding means for the said bearing members and side pieces, and wedges for the said bearing members and side pieces.

4. In a universal shaft-coupling, the combination with a driving member having a cavity therein, and oppositely-located segmental members within the said cavity, of removable bearing members coöperating with the curved faces of the segmental members, and removable side pieces coöperating with the side faces of the said segmental members, dovetailed into the walls of the cavity in the driving member.

847,334. BOTTLE. JOSEPH HEMINGWAY, Beulah, Wyo. Filed Nov. 30, 1906. Serial No. 345,710.

Claim.—1. As a new article of manufacture, a bottle provided with a longitudinal socket offset from and communicating with its mouth and provided in its mouth portion with an interior flange and provided with an opening designed to contract the communication between the body of the bottle and the mouth thereof, the said opening of the flange communicating with the socket, as and for the purpose set forth.

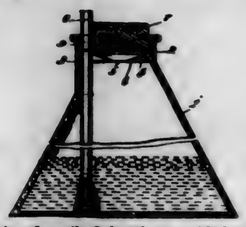

2. The herein-described bottle provided at its mouth portion with a longitudinal socket and with an interior ring-like flange having a side opening registering with the socket, and a brush, the handle of which is adapted to fit in said socket and is arranged to be withdrawn by shifting the handle laterally through the side opening of the flange.

3. The herein-described bottle provided with a longitudinal socket at its mouth portion, the socket being offset from and communicating with the interior of said mouth, a brush, the handle of which is adapted to be accommodated by the socket, and a sleeve encircling the handle and fitting in the socket whereby to form a tight joint between the handle and the socket.

4. The herein-described bottle provided with a socket offset from its mouth portion and communicating therewith, a brush, the handle of which is designed to be accommodated in said socket, and a packing secured to the handle and adapted to tightly fit the socket, one side of said packing being designed to fit against a cork inserted in the mouth of the bottle, as and for the purpose set forth.

847,335. TUBE-CLEANER. ERNST HEUBACH, Berlin, Germany, assignor to Benno Herman, Detroit, Mich. Filed Dec. 16, 1904. Serial No. 237,139.

Claim.—1. In a device of the character described, the combination, with a tubular casing, a cylinder formed therein, an elongated piston arranged within the cylinder with its greater diameter parallel to the axis of the casing and movable transversely of said casing, a valve-chamber formed within the casing, a wall separating the valve-chamber from the cylinder, an arm projecting from the piston and parallel to the axis of the casing, a slide-valve engaged by the arm, and channels for the motive fluid controlled by the valve and extending from one side of the valve-chamber to the opposite extremity of the cylinder.

2. In a device of the character described, the combination, with a tubular casing, a cylinder formed therein with its axis arranged transversely of the axis of the casing, a piston having an elliptical cross-section movably mounted within the cylinder with its major axis parallel to the axis of the casing, a valve-chamber within said casing, a wall separating the valve-chamber from the cylinder, an arm projecting rigidly from the piston at right angles to its line of travel, a slide-valve engaged by the arm, and motive-fluid channels extending helically through the wall from one side of the valve-chamber to the opposite extremity of the cylinder.

3. In a device of the character described, the combination, with a tubular casing, a cylinder formed therein with its axis arranged transversely of the casing, a piston having an elliptical cross-section movably mounted within the cylinder with its major axis parallel to the axis of the casing, a valve-chamber within said casing, a wall separating the valve-chamber from the cylinder, an arm projecting rigidly from the piston at right angles to its line of travel through a slot formed in said wall, a slide-valve engaged by the arm and spanning the slot, motive-fluid channels extending helically through the wall from one side of the valve-chamber to the opposite extremity of the cylinder, and an exhaust-channel extending from the slot around the piston to an exit-port on the opposite side thereof.

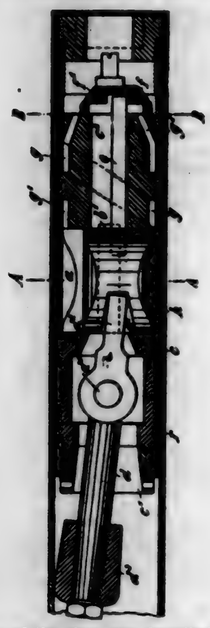

4. In a device of the character described, the combination, with a tubular casing, a cylinder formed therein with its axis arranged transversely of the casing, a piston having an elliptical cross-section movably mounted within the cylinder with its major axis parallel to the axis of the casing, a valve-chamber within said casing, a wall separating the valve-chamber from the cylinder, an arm projecting rigidly from the piston at right angles to its line of travel through a slot formed in said wall, a slide-valve engaged by the arm and spanning the slot, motive-fluid channels extending helically through the wall from one side of the valve-chamber to the opposite extremity of the cylinder, an exhaust-channel extending from the slot around the piston to an exit-port on the opposite side thereof, and mechanism mounted in the exhaust-port and actuated by the piston.

847,336. CHUCK. CHARLES G. HOLMBERG, New York, N. Y. Filed Oct. 12, 1905. Serial No. 282,472.

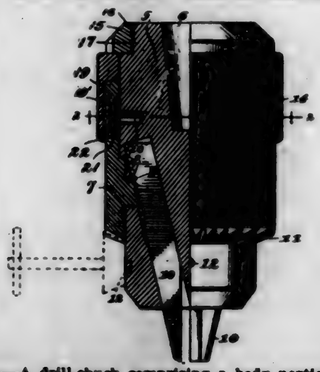

Claim.—A drill-chuck comprising a body portion, gripping-jaws formed with threaded faces and movable in said body portion, a sleeve carried upon said body portion and formed with extensions having threaded surfaces and projecting through said body portion into engagement with said threaded faces upon said jaws, said sleeve being adapted for limited movement upon said body portion, a second sleeve loosely mounted upon said body portion, the adjacent edges of said sleeves being formed with confronting gear-teeth and pinions rotatably journaled in said body portion and projecting laterally therefrom, said pinions engaging said gear-teeth on the confronting edges of said sleeves.

847,337. ELECTRICAL RAIL-BOND. ALONZO F. HOOTON, Greenfield, Ind. Filed May 24, 1906. Serial No. 318,455.

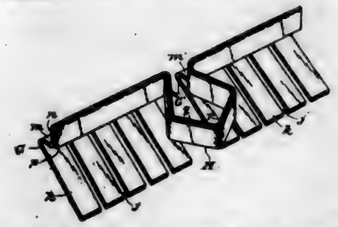

Claim.—1. A rail-bond comprising two contact-plates having each a curved portion and an angle-bar extending from the curved portion, and a loop extending from the angle-bars, all formed integral.

2. A rail-bond comprising two flat contact-plates having each a plurality of angle-bars laid together, all formed integrally, the angle-bars of the two plates being in alinement longitudinally and spaced apart, and a loop connecting adjacent ends of the angle-bars.

3. A rail-bond comprising two contact-plates each having an integral angle-bar flange, the plates being adapted to lie upon the tops of rail base-flanges, and the angle-bar flanges adapted to be supported by the plates under the base-flanges, a loop connecting the angle-bar flanges, and a cover for the contact-plates adapted to rest on the base-flanges for support.

4. A rail-bond comprising two plates having edge portions doubled over and forming angle-bar conductors having each a plurality of contiguous layers, and a loop formed integral with the layers of the angle-bar conductors and comprising a plurality of strips.

5. A rail-bond including a pair of contact-plates having each a curved portion to which is attached a flange composed of a plurality of plates, and a loop attached to the plurality of plates of both of the flanges.

6. A rail-bond including a pair of plates formed with openings therein and bent over to form angle-bars, portions of the angle-bars being doubled over and forming a plurality of thicknesses of material, and a loop formed of a plurality of separate plates integrally attached to the several parts of both of the doubled-over portions of the angle-bars.

7. A blank for forming a rail-bond comprising a flexible plate having two projections in which are openings to comprise contact-plates with augmented soldering edges, the body of the plate having a plurality of slits therein for forming separate looped conducting-plates, portions of the body being imperforate to form folded-over conductors connecting the looped conducting-plates with the contact-plates.

847,338. APPARATUS FOR MAKING FLAT TALKING-MACHINE RECORDS. WILLIAM H. HOYT, Wyoming, N. J. Filed Feb. 6, 1906. Serial No. 299,698.

Claim.—1. An apparatus for making flat talking-machine records, comprising two plates movable toward and from each other, a central guiding-pin on one of the plates, and an intermediate plate fitted on said pin, and forming spaces at each side of said intermediate plate for the reception of record material, one of the surfaces which bound each of such spaces having sound-record

grooves, while the other surface bounding the same space acts as a backing.

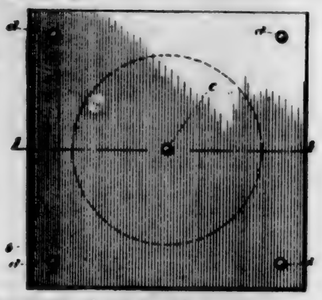

2. An apparatus for making flat sound-records, comprising opposing end plates movable relatively to each other, an intermediate plate located between said end plates and adapted to be spaced therefrom to accommodate the record material, one of the faces which engage the record material being a molding-surface while the other surface which engages the same record material acts as a backing.

3. An apparatus for making flat sound-records, comprising two end plates movable relatively to each other, matrices engaging said end plates and having molding-grooves on their opposing surfaces, and an intermediate plate located between said matrices and adapted to form a backing for the record material.

4. An apparatus for making flat sound-records, comprising two end plates, a center-pin secured to one of said end plates, matrices fitted on said center-pin and engaging the respective end plates, said matrices having molding-grooves on their opposing surfaces, and an intermediate plate likewise fitted on said center-pin and adapted to form a backing for the record material.

847,339. STONE-DRESSING MACHINE. ALBERT F. JONES, Salem, Mass. Filed May 21, 1904. Serial No. 208,999.

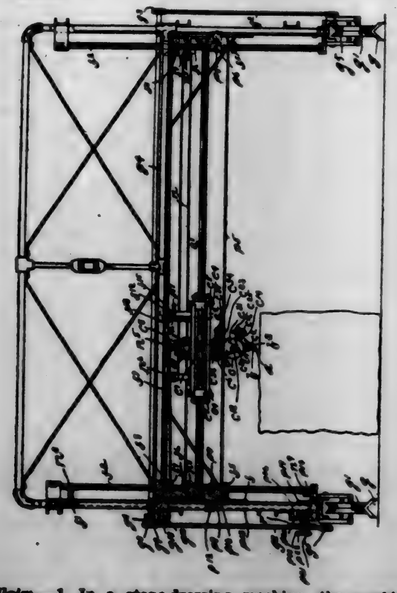

Claim.—1. In a stone-dressing machine, the combination of a tool-holder bearing a tool, a support therefor, one or more rebounding hammers for imparting blows to said tool, a carrier for said support, a turret bearing said carrier, a tool-carriage bearing said turret, and means for moving it back and forth, a main frame movable on tracks and bearing a pair of tracks on which the tool-carriage moves, which are disposed at right angles to the tracks on which it moves, and means for operating said hammers in any position of the turret and tool-carriage and main frame, substantially as described.

2. In a stone-dressing machine, the combination of a tool-holder bearing a tool, a support therefor, one or more rebounding hammers for imparting blows to said tool, a carrier for said support, adjustable on a horizontal axis, a turret bearing said carrier, a tool-carriage bearing said turret, and means for moving it back and forth, a main frame movable on tracks and bearing a pair of tracks on which the tool-carriage moves, which are disposed at right angles to the tracks on which it moves, and means for operating said hammers in any position of the carrier, turret, tool-carriage and main frame, substantially as described.

3. In a stone-dressing machine, the combination of a rebounding tool, a support for said tool, a carrier bearing said support, a turret bearing said carrier, a tool-carriage bearing said turret, means for moving it back and forth, a main frame movable on tracks and bearing a pair of tracks on which said tool-carriage moves, which are disposed at right angles to the tracks on which it moves, and means for operating said tool in any position of the turret, tool-carriage and main frame, substantially as described.

4. In a stone-dressing machine, the combination of a rebounding tool, a support for said tool, a carrier bearing said support, adjustable on a horizontal axis, a turret bearing said carrier, a tool-carriage bearing said turret, means for moving it back and forth, a main frame movable on tracks and bearing a pair of tracks on which said tool-carriage moves which are disposed at right angles to the tracks on which it moves, and means for operating said tool in any position of the carrier, turret, tool-carriage and main frame, substantially as described.

5. In a stone-dressing machine, the combination of a rebounding tool, a support therefor, a carrier bearing said support, a turret bearing said carrier, one or more rebounding hammers for said tool supported by said carrier, a tool-carriage bearing said turret, a main frame bearing tracks on which said tool-carriage moves, means for moving said tool-carriage back and forth, tracks on which said main frame moves, which are extended at right angles to the tracks borne by said frame, and means for operating said hammers in any position of the turret, tool-carriage and main frame, substantially as described.

6. In a stone-dressing machine, the combination of a rebounding tool, a support therefor, a carrier bearing said support, adjustable on a horizontal axis, a turret bearing said carrier, one or more rebounding hammers for said tool, supported by said carrier, a tool-carriage bearing said turret, a main frame bearing tracks on which said tool-carriage moves, means for moving said tool-carriage back and forth, tracks on which said main frame moves which are extended at right angles to the tracks borne by said frame, and means for operating said hammers in any position of the carrier, turret, tool-carriage and main frame, substantially as described.

7. In a stone-dressing machine, the combination of a rebounding tool, a striking-plate for said tool, a hammer for engaging said striking-plate, a carrier bearing the tool, a turret bearing the carrier, and means for operating said hammer in any position of adjustment of the turret, substantially as described.

8. In a stone-dressing machine, the combination of a tool-holder bearing a tool, a striking-plate for said tool, a rebounding hammer for engaging said striking-plate, a carrier bearing the tool, a turret bearing the carrier and means for operating said hammer in any position of adjustment of the turret, substantially as described.

9. In a stone-dressing machine, the combination of a tool-holder bearing a tool, a striking-plate for said tool, a yielding support for said striking-plate, an adjusting device for said support, a tool-actuator for engaging said striking-plate and means for operating said tool-actuator, substantially as described.

10. In a stone-dressing machine, the combination of a tool-holder bearing a tool, a pivoted striking-plate for said tool, a block to which said striking-plate is pivoted, a tool-actuator for engaging said striking-plate, means for operating said tool-actuator and means for moving said block to move the striking-plate into and out of the path of engagement with said tool-actuator, substantially as described.

11. In a stone-dressing machine, the combination of a tool-holder bearing a tool, a striking-plate for said tool, centrifugally-acting rebounding hammers for striking said plate, means for operating said hammers and means for moving said striking-plate into and out of the path of said hammers, substantially as described.

12. In a stone-dressing machine, the combination of a tool-holder bearing a tool, a striking-plate for said tool, a hammer for striking said plate, means for moving said striking-plate into and out of the path of engagement with said hammer, actuating mechanism for said hammer and means for moving the tool and hammer actuating mechanism over the stone, substantially as described.

13. In a stone-dressing machine, the combination of a tool-holder bearing a tool, a striking-plate for said tool, a rebounding hammer for striking said plate, means for operating said hammer, and means for moving the striking-plate into and out of the path of engagement with the said hammer, substantially as described.

14. In a stone-dressing machine, the combination of a rebounding tool, a support therefor, a striking-plate for said tool, one or more rebounding hammers for engaging said striking-plate, means for operating said hammers and means for moving said striking-plate into and out of engagement with said hammers, substantially as described.

15. In a stone-dressing machine, the combination of a rebounding tool, a support therefor, a striking-plate for said tool, a carrier bearing said support, a turret supporting said carrier, one or more rebounding hammers borne by said carrier and means for operating said hammers to engage said striking-plate, substantially as described.

16. In a stone-dressing machine, the combination of a rebounding tool, a support therefor, a striking-plate for said tool, a carrier bearing said support, an adjusting device for said carrier for adjusting it on a horizontal axis, a rotating shaft borne by said carrier, a hammer-support on said shaft, one or more hammers loosely connected to said hammer-support for engaging said striking-plate, a turret bearing said carrier movable on a vertical axis, a vertical driving-shaft extending through the turret, means connecting said vertical shaft with said hammer-operating shaft and means for moving the turret and parts borne by it over the stone, substantially as described.

17. In a stone-dressing machine, a turret turning on a vertical axis bearing a tool and means for operating it, combined with a brake-shoe movable into and out of engagement with said turret, and means for moving said brake-shoe, substantially as described.

18. In a stone-dressing machine, the combination of a rebounding tool, a support therefor, a carrier bearing said support, means for adjusting said carrier on a horizontal axis, a rebounding hammer for said tool, a rotating shaft for said hammer bearing a belt-pulley, a turret movable on a vertical axis bearing said carrier, a vertical driving-shaft extending through the turret-support having at its lower end a belt-pulley, a belt passing around said belt-pulley, and also around the belt-pulley on the hammer-operating shaft, substantially as described.

19. In a stone-dressing machine, the combination of a main frame movable on tracks and bearing a pair of tracks disposed at right angles to the tracks on which it moves, a tool-carriage movable on the tracks on said main frame, chains connected to the opposite ends of said tool-carriage, a shaft at each end of the machine, each bearing a pair of sprocket-wheels over which said chains pass, a worm-gear shaft connected with one of the sprocket-wheel-carrying shafts, a gear-shaft connected with the worm-gear shaft, a driving-shaft bearing two gears, and means for moving said gear-shaft into engagement with either gear on said driving-shaft to revolve said gear-shaft in opposite directions, and variable-speed gearing connected with said driving-shaft for revolving it at different speeds, substantially as described.

20. In a stone-dressing machine, the combination of a main frame movable on tracks and bearing a pair of tracks disposed at right angles to the tracks on which it moves, a tool-carriage movable on the tracks on said main frame, a turret borne by said carriage adapted to turn on a vertical axis, a carrier thereon bearing a tool, a tool-actuator, a shaft extending through the turret, and means for operatively connecting it with the tool-actuator, and an endless power-driven belt for rotating said shaft in any position of the turret, tool-carriage and main frame, substantially as described.

21. In a stone-dressing machine, the combination of a main frame movable on tracks and bearing a pair of tracks disposed at right angles to the tracks on which it moves, means for adjusting said tracks vertically on the main frame, a tool-carriage movable on the tracks on said main frame, a turret borne by said carriage adapted to turn on a vertical axis, a carrier thereon bearing a tool, a tool-actuator, a shaft extending through the turret, and means for operatively connecting it with the tool-actuator and an endless power-driven belt for rotating said shaft in any position of the turret, tool-carriage and main frame, substantially as described.

22. In a stone-dressing machine, a main frame movable on tracks, a tool-carriage movable on tracks supported by said main frame and disposed at right angles to the tracks on which said main frame moves, end supports for the tracks bearing the tool-carriage, vertical screws for moving said end supports and parts borne by them, a horizontal rotating shaft bearing gears which are connected with gears on said vertical screws, a worm-wheel splined on said horizontal shaft, a worm engaging it mounted on the tool-carriage, means for rotating said worm, and means connected with the tool-carriage for sliding said worm-wheel along on the shaft, substantially as described.

23. In a stone-dressing machine, a main frame bearing a tool-carriage, combined with sprocket-wheels mounted on a shaft supported by said main frame, sprocket-chains passing over said sprocket-wheels, supports, independent of the machine, for the opposite ends of said sprocket-chains, a power-driven shaft on the main frame, operatively connecting it with the sprocket-wheel-carrying shaft, and an endless power-driven belt for transmitting power to said power-driven shaft, substantially as described.

24. In a stone-dressing machine, a main frame bearing a tool-carriage, combined with sprocket-wheels mounted on a shaft supported by said main frame, sprocket-chains passing over said sprocket-wheels, supports, independent of the machine, for the opposite ends of said sprocket-chains, a power-driven shaft on the main frame, variable-speed gearing operated by it, means for operatively connecting said variable-speed gearing with said sprocket-wheel shaft, and an endless power-driven belt for transmitting power to said power-driven shaft, substantially as described.

847,340. KEY-CHANGING ATTACHMENT FOR CORNETS. MICHAEL B. KENDIS, Omaha, Nebr. Filed Dec. 15, 1906. Serial No. 348,070.

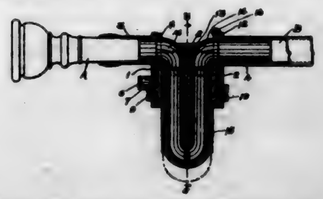

Claim.—1. In a key-changing attachment for wind instruments, parallel plane-surfaced plates, tubes carried by

each of said plates, one of said tubes being adapted for connection with a mouthpiece and the other being adapted for connection with the main tube of a wind instrument, a body movably held between said parallel plates, said body having parallel plane surfaces fitting against the said plates, there being passages of different lengths through said movable body between the parallel surfaces thereof, and means for bringing the outlets of either of said passages into alinement with the tubes carried by the parallel plates.

2. In a key-changing attachment for cornets, substantially parallel plates, means for yieldably pressing said plates toward each other, one of said plates having means for connecting the same with a mouthpiece and the other plate having means for connecting the same with the main tube of a cornet, and a body movably held between said plates, said body having passages of different lengths through the same, and said passages being so arranged that by movement of the body either of the passages may be made to form a part of the connecting air-duct between the parallel plates.

3. A key-changing attachment for cornets comprising parallel plates having tubular connections, the one adapted for connection with the mouthpiece of the instrument and the other adapted for connection with the main tube thereof, and a body pivotally held between said plates, there being a direct passage through said body and an indirect passage of variable length, said passages being so arranged that by tilting of the body on its pivots either of the passages may be made to form a part of the connection between the parallel plates.

847,341. CIGAR-HOLDER. JOHN KNAFF, Pueblo, Colo. Filed Dec. 12, 1906. Serial No. 347,498.

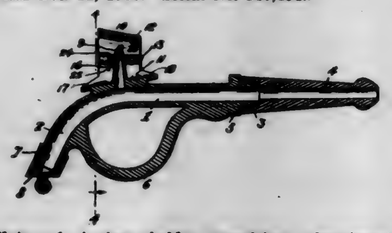

Claim.—1. A cigar-holder comprising a drawing-tube having its outer end curved downwardly to provide a saliva-receptacle, a brace arranged upon the bottom of said tube and connecting its curved outer end and its straight inner end, said brace being curved to provide a finger-loop, an annular reinforcing-flange formed upon said tube adjacent to its inner end, a mouthpiece secured upon the threaded inner end of said tube and engaged with said flange, a screw-cap engaged with threads upon the outer curved end of said tube, a hollow pin projecting vertically from the top of said tube and formed with a slot, a sectional, cigar-clamping band having upper and lower sections hingedly connected upon one side and adapted to be locked together upon their other side, the lower section of said band having said pin projecting from its center and being formed at its front and rear edges with extended portions or lips, said band being of greater width than said pin and of frusto-conical form to fit the pointed end of a cigar, substantially as shown and described.

2. A cigar-holder comprising a drawing-tube, a cigar-clamping band arranged upon said tube and consisting of a stationary section and a swinging section, said sections being formed at one end with alined pintle-receiving ears, a pintle extending through said ears, a coil-spring surrounding said pintle and having its ends bearing against the inner faces of said sections for swinging the upper section to its open position, a keeper projection upon the free end of the stationary section of the band, a pivotally-mounted hook-shaped latch upon the free end of the swinging section of the band and adapted to engage said keeper projection, and a hollow apertured pin projecting upwardly from the central portion of the stationary section of the clamping-band and in communication with said drawing-tube, substantially as shown and described.

847,342. COMBINATION CHEVAL-GLASS AND DESK OR THE LIKE. WILLIAM LA HODNY, Buffalo, N. Y. Filed Jan. 6, 1906. Serial No. 294,856.

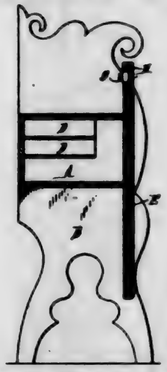

Claim.—1. The combination of a desk or the like having a body, and standards upon which the body is supported, and a mirror which is pivoted between its ends at or near the bottom of said body to swing from a substantially upright position in front of said body to a substantially horisontal position, said mirror when in the upright position hiding said body and extending for a considerable part of its length below said body, and when in the horisontal position extending beneath and projecting in front of said body, substantially as set forth.

2. The combination of a desk or the like having a body, and side standards upon which the body is supported, and a mirror which is pivoted between its ends at or near the bottom of said body to swing from a substantially upright position in front of said body to a substantially horisontal position between said supporting-standards, said mirror when in the upright position hiding said body and extending for a considerable part of its length below said body, and when in the horisontal position extending beneath and projecting in front of said body, substantially as set forth.

847,343. TYPE-WRITING MACHINE. EMMIT G. LATTA, Friendship, N. Y., assignor of one-half to Harvey A. Moyer, Syracuse, N. Y. Filed July 5, 1904. Serial No. 215,246.

Claim.—1. In a front-strike type-writing machine in which the type strike the front side of the platen, the combination of a laterally-movable carriage, a shift-frame which supports the carriage and is pivoted to the main frame in rear of the carriage to shift the carriage vertically, and a carriage-escapement arranged in part on the shift-frame and in part on the main frame with the operative connection between said parts substantially in the pivotal axis of the shift-frame, substantially as set forth.

2. In a type-writing machine, the combination of a laterally-movable carriage, a shift-frame pivoted to the main frame and supporting the carriage, and a carriage-escapement having one part supported by the main frame and another part supported by the shift-frame, with the working joint between said parts of the escapement on the pivotal axis of the shift-frame, substantially as set forth.

3. In a front-strike type-writing machine in which the type strike the front side of the platen, the combination with a main frame, and laterally-movable carriage and

platen, of a vertically-movable shift-frame for the carriage pivoted to the main frame in rear of the platen, the pivotal axis being on a horisontal plane midway between the upper and lower positions of the axis of the platen, substantially as set forth.

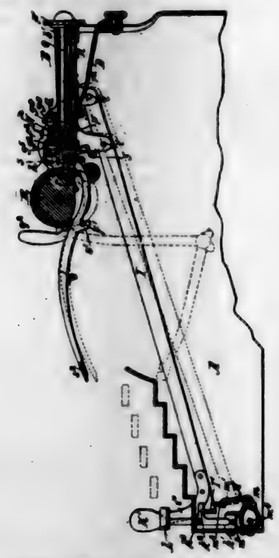

4. In a visible-writing type-writing machine in which the type-bars swing upwardly and rearwardly to the platen, the combination of a main frame, a laterally-movable platen-carriage, and a shift-frame which entirely supports the carriage and is pivoted to the main frame to swing up and down to place the platen in different printing positions, said shift-frame being connected to the main frame by separated pivots located in rear of the platen and parallel therewith, substantially as set forth.

5. In a visible-writing type-writing machine in which the type-bars swing upwardly and rearwardly to the platen, the combination of a main frame, a laterally-movable carriage supporting the platen, a carriage-shift frame which entirely supports the carriage and is pivoted to the main frame in rear of the platen and has an arm rigid therewith projecting forwardly under the carriage, and a device in front of the carriage for operating said arm to swing said shift-frame, substantially as set forth.

6. In a visible-writing type-writing machine in which the type-bars swing upwardly and rearwardly to the platen, the combination of a main frame, a laterally-movable platen-supporting carriage, and a shift-frame which is of substantially the same length as the carriage and entirely supports said carriage and is pivoted to the main frame to swing up and down to place the platen in different printing positions, said carriage and shift-frame being constructed to allow the carriage to move laterally on the shift-frame beyond the ends thereof, substantially as set forth.

7. In a visible-writing type-writing machine in which the type-bars swing upwardly and rearwardly to the platen, the combination of a main frame, a laterally-movable platen-supporting carriage, and a shift-frame which entirely supports said carriage and is pivoted to the main frame in rear of the carriage to swing up and down to place the platen in different printing positions, said carriage being movable laterally on the shift-frame in front of the pivotal connection between the shift-frame and the main frame, and said shift-frame and carriage being constructed to allow the carriage to move laterally beyond the ends of said shift-frame, substantially as set forth.

8. In a visible-writing type-writing machine in which the type-bars swing upwardly and rearwardly to the platen, the combination of a main frame, a laterally-movable carriage, and a shift-frame which is of substantially the same length as the carriage and entirely supports said carriage and is pivoted to the main frame substantially in the horisontal plane of the axis of the platen to swing up and down to place the platen in different printing positions, said carriage and shift-frame being constructed to allow the carriage to move on the shift-frame laterally past the pivotal connection of the shift-frame with the main frame, substantially as set forth.

9. In a type-writing machine in which the type-bars swing upwardly and rearwardly to the platen, the combination of a laterally-movable platen-carriage, a main frame, a rigid shift-frame provided with a carriage-supporting track along its front side, the shift-frame being pivotally connected to the main frame by two pivots at its rear, and an escapement-wheel supported on the shift-frame between the pivots thereof, substantially as set forth.

10. In a type-writing machine in which the type-bars swing upwardly and rearwardly to the platen, the combination of a laterally-movable platen-carriage, a main frame, and a rigid rectangular shift-frame pivoted at its rear portion to the main frame to swing up and down, and a track which entirely supports the carriage and is located wholly in front of said pivotal connection, substantially as set forth.

11. In a type-writing machine in which the type-bars swing upwardly and rearwardly to the platen, the combination of a laterally-movable platen-carriage, a main frame, a rigid rectangular shift-frame having a supporting-track for the carriage along its front, and a pair of separate independently-adjustable pivots connecting the rear of the shift-frame to the main frame, substantially as set forth.

12. In a type-writing machine, the combination with the keyboard, the type-bars, a platen, and a space key or bar, of a device which is located in the front central portion of the keyboard and projects upwardly above the space-bar and is normally held stationary to form a thumb rest or guide but which is movable sidewise of the machine, and means operated by the sidewise movement of said device for changing the printing relation of the platen and type-bars, substantially as set forth.

13. In a type-writing machine, the combination of the type-bars, a platen, a keyboard, a space bar or key in the front part of the keyboard, pivoted thumb rests or guides adjacent to and independent of the space-key on opposite sides of and near the front center of the keyboard, and means operated by said thumb-guides for changing the printing relation of the platen and type-bars, substantially as set forth.

14. In a type-writing machine, the combination of a keyboard, a space bar or key in the front part of the keyboard, pivoted upright thumb-guides adjacent to said space bar or key and independent thereof, and means independent of the space bar or key operated by said thumb-guides for actuating an operative part of the machine, substantially as set forth.

15. In a type-writing machine, the combination with type-bars, a platen, a keyboard, and a space key or bar, of a thumb-rest arranged adjacent to the space-key and movable sidewise of the machine, and mechanism operated by said thumb-rest to change the printing relation of the type-bars and platen, substantially as set forth.

16. In a type-writing machine, the combination with pivoted type-bars, a platen, a keyboard, and a space key or bar, of a pair of opposable thumb-rests arranged at the front of the keyboard and movable in opposite directions, and mechanism by which the printing relation of the type-bars and platen is changed by the movement of either or both of said thumb-rests, substantially as set forth.

17. In a type-writing machine, the combination with a shiftable carriage, and a keyboard, of a lever having an upright arm arranged at the front portion of the keyboard and forming a thumb rest or guide, said arm being movable sidewise of the machine, and mechanism operated

by said lever for shifting the carriage, substantially as set forth.

18. In a type-writing machine, the combination with a shiftable carriage, and an automatic detent for holding the carriage in shifted position, of a pair of levers having upwardly-extending laterally-movable arms located at the front central portion of the keyboard, and means controlled by said levers and operating to shift the carriage and prevent action of the detent when said levers are moved in concert and to shift the carriage and permit the detent to act when one lever is released prior to the other, substantially as set forth.

19. In a type-writing machine, the combination with a shiftable carriage, and an automatic detent for holding the carriage in shifted position, of a pair of levers having upwardly-extending laterally-movable arms located at the front central portion of the keyboard, means actuated by both of said levers for shifting the carriage, and means actuated by one of said levers for controlling the action of said detent, substantially as set forth.

847,344. CURTAIN-SUPPORTING ROD. LE ROY C. LATHAM, Chicago, Ill. Filed Oct. 27, 1906. Serial No. 340,903.

Claim.—1. A curtain-supporting rod comprising members lapped for sliding movement one upon the other and having reciprocal and engaged guiding means for holding them in relation while permitting such sliding movement, the opposite ends of the respective members having rearwardly-directed portions and fastening devices, adapted for location at opposite sides of a window or the like and engageable with said rearwardly-directed portions of the respective members and adapted, when so engaged, to hold said members against sliding movement one upon the other.

2. A curtain-supporting rod comprising members lapped for sliding movement one upon the other and having reciprocal and engaged guiding means for holding them in relation while permitting such sliding movement, said members being formed from flattened material and the opposite ends of the respective members having rearwardly-directed portions integrally formed from the flattened material of which said members are produced and having at their rear extremities curved portions forming eyes or sockets having vertically-extended apertures, and fastening devices, adapted for location at opposite sides of a window or the like and engageable with the vertically-extended apertures of said eyes or sockets of the rearwardly-directed portions of the members and adapted, when so engaged, to hold the said members against sliding movement one upon the other.

3. A curtain-rod comprising members lapped for extension sliding movement one upon the other, one member having a straight flattened edge portion forming a longitudinally-extended guide-surface and provided with a notch, and the other member having a locking device engaged for sliding movement along said guide-surface and adapted to hold the members in relation, and also adapted, when in registry with the notch in said guide-surface, to be detached therefrom to permit disengaging the members.

4. A curtain-rod comprising members lapped for extension sliding movement one upon the other, one member having straight and parallel flattened parts extended along its opposite edges and forming guide-faces and provided with alined notches and the other member having a locking device comprising parts extended across the edges of said first-named member and engaged over the lateral guide-faces thereof for sliding engagement along the same and adapted, when in registry with the alined notches in the flattened edge parts of the first-named member, to be passed through said alined notches to permit the members to be detached from each other.

5. The combination of a curtain-rod having a terminal socket, a supporting device having a member engaged in and projecting above said socket, and a curtain-retaining means held upon the projecting portion of said supporting device and having a hook for engagement with a curtain.

847,345. SASH-FASTENER. CHARLES LEACH, Kansas City, Kans. Filed Sept. 24, 1906. Serial No. 335,860.

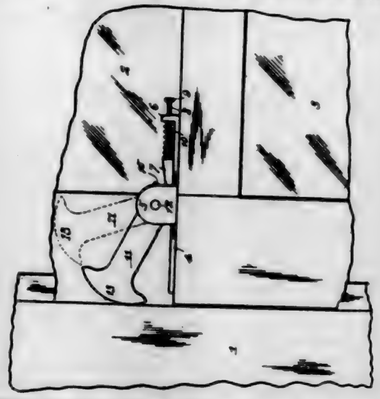

Claim.—1. A sash-fastener consisting of a base-plate, a cam pivotally secured to said base-plate, provided with a beveled rear terminal and an eccentric rear portion, and a wedge adapted to engage either the beveled end or the eccentric portion and lock the cam in an inoperative or operative position respectively.

2. A sash-fastener consisting of a base-plate, a cam pivotally secured to said base-plate provided with a beveled rear terminal and an eccentric rear portion, and a spring-actuated wedge adapted to engage either the beveled end or the eccentric portion, for the purpose described.

847,346. COLLAR-FASTENER. JOHN A. LINN, Gayville, S. D. Filed Feb. 26, 1906. Serial No. 303,031.

Claim.—1. A horse-collar fastener comprising two plates adapted to be attached to the ends of the collar, one of said plates having bayonet-slots, the other plate having headed studs adapted to engage said slots and means carried by said plate adapted to engage the other plate, for locking both plates against movement.

2. A horse-collar fastener comprising two plates, one of which is provided with bayonet-slots and a notch intermediate the slots, and the other with headed studs, and a catch-lever carried by the stud-plate and adapted to engage the notch produced in the edge of the slotted plate, intermediate the said slots.

3. A horse-collar fastener comprising two plates, each provided with corrugated slotted extensions through which bolts are adapted to be passed, the outer edge of one plate being provided with bayonet-slots and a notch intermediate said slots, the other plate having headed studs, and a catch-lever carried by said plate and adapted to engage the notched edge of the opposing plate, as set forth.

4. A horse-collar fastener comprising two plates, each having corrugated slotted extensions, one plate having bayonet-slots in its edge and a notch intermediate said slots, the other plate having headed studs for engagement with the slots, and a lever pivoted between the studs and adapted to engage the intermediate notch of the opposing plate, both ends of said lever being upset, the bolts for fastening the plates to the collar and the nuts having corrugated under faces adapted to engage the corrugated extensions, as set forth.

847,347. INTERLOCKING MECHANISM FOR VOTING-MACHINES. CARL F. LOMB, Rochester, N. Y., assignor to U. S. Standard Voting Machine Company, Rochester, N. Y., a Corporation of New York. Filed Aug. 25, 1904. Serial No. 222,037.

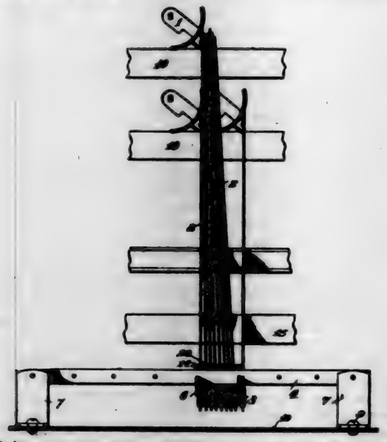

Claim.—1. In an interlocking mechanism, the combination with a plurality of movable members, of a support having abutments thereon between which a limited number of said members are operable said support being freely movable with and by said members in the plane of the abutments.

2. In an interlocking mechanism, the combination with a plurality of movable members, of a support having limiting-abutments thereon between which a limited number of the members are operable said support being freely movable with and by the members in a direction transversely to that of the movement of the members.

3. In an interlocking mechanism, the combination with a plurality of movable members, of a support having two or more relatively adjustable abutments secured thereto, between which a limited number of the members are operable, said support being adjustable in a direction transverse to that of the movement of the members and means for securing it in adjusted position.

4. In an interlocking mechanism, the combination with a plurality of series of movable members of different lengths, a support having limiting-abutments thereon between which the members are operable, said support being freely movable with and by said members transversely of the plane of their movement.

5. The combination with the longitudinally-movable interlocking rods having enlargements thereon, of limiting-abutments between which said rods are arranged, said abutments being adjustable transversely of the plane of movement of the rods without however, varying the distance between them and means for securing said abutments in adjusted position.

6. The combination with a plurality of series of interlocking rods, having enlargements thereon, of a freely-movable support separators on the support and limiting-abutments adjustably secured to the support between which the rods and separators are arranged.

7. The combination with a plurality of series of movable supports, interlocking rods connected to the supports and having enlargements thereon, of a support freely movable in a plane transversely of that of the series, adjustable abutments secured thereto between which the interlocking rods are arranged.

8. The combination with a series of indicators, each having a limited movement and interlocking rods connected thereto provided with enlargements, of a support having limiting-abutments secured thereto between which the rods extend, said support being adjustable transversely of the plane of movement of the rods and means for securing said support in adjusted position.

9. The combination with a series of movable indicators, interlocking rods connected thereto having enlargements thereon, of a freely-movable support having limiting-abutments thereon between which the rods are arranged.

10. The combination with a series of movable indicators interlocking rods of different lengths connected thereto and having enlargements thereon of a support movable freely in a plane transversely of that of the rods and limiting-abutments on said support between which the rods are movable.

11. The combination with a plurality of series of movable indicators, the indicators in each series having interlocking rods of different lengths connected thereto, each provided with enlargements, of a support freely movable transversely of the rods and adjustable limiting-abutments secured thereon between which the rods extend.

12. The combination with a series of indicators, interlocking rods of different lengths pivotally connected thereto and having enlargements thereon, of a support and limiting-abutments thereon between which the rods extend said support and abutments being freely movable by and with the rods transversely of the plane of the series of indicators.

13. The combination with the pivoted indicators and the interlocking rods connected thereto having the enlargements thereon, of a support freely movable transversely of the planes of the rods having the limiting-abutments between which the rods extend.

14. The combination with a plurality of series of indicators, a corresponding series of interlocking rods connected to the indicators, having enlargements thereon, each series comprising rods of different lengths, of a support and adjustable limiting-abutments thereon between which the rods extend, said support being freely movable by and with the rods transversely of their plane of longitudinal movement.

15. The combination with a plurality of series of pivoted indicators, each having an interlocking rod pivoted thereto provided with an enlargement thereon, and each series comprising rods of different lengths, of a support having adjustable limiting-abutments thereon between

which the rods extend, said support and abutments being freely movable longitudinally by and with the interlocking rods.

16. The combination with a plurality of longitudinally-movable interlocking rods having enlargements thereon, of a movable support and adjustable limiting-abutments thereon between which the rods are arranged, said support being freely movable by and with the enlargements on the rods and transversely of the normal plane of movement thereof.

17. The combination with the interlocking rods having the enlargements thereon, of a support, adjustable limiting-abutments thereon between which the rods extend and means for securing the support in different positions relatively to the machine-frame.

18. The combination with the interlocking rods having the enlargements thereon, of a movable support having the limiting-abutments adjustably secured thereto and the separating-plates between the rods carried by said support.

19. In a voting-machine, the combination with the interlocking rods having enlargements thereon, of a freely-movable support having the limiting-abutments thereon and the separating-plates between which the rods extend.

20. The combination with the pivoted indicators arranged in a plurality of rows, the interlocking rods pivoted thereto having enlargements thereon, of a support, the limiting-abutments adjustable thereon and the separating devices between the rods, said support being freely movable by and with the rods in a plane parallel with the rows of indicators.

21. The combination with the interlocking rods having the enlargements, of a stationary support, the movable channel, the limiting-abutments and the separating-plates in the channel and the brackets carrying the channel and adjustable upon the stationary support and means for securing the brackets to said support.

22. The combination with a plurality of rows of pivoted indicators, and interlocking rods having enlargements thereon and pivotally connected to the indicators, the rods in each row being of the same length and those in different rows of different lengths, of a support freely movable in a plane parallel with that of the rows having adjustable limiting-abutments thereon between which the rods extend and separating-plates said support being movable by and with the rods when acting upon the limiting-abutments.

23. In a voting-machine the combination with interlocking rods having enlargements thereon, of a freely-movable interlocking channel having adjustable limiting-abutments with which the enlargements coöperate.

24. The combination with the casing or support, the interlocking rods, having the enlargements, of the channel having the limiting-abutments, the brackets supporting the channel freely movable on the support and means for limiting the movements of the brackets.

847,348. PERMUTATION DOOR-KNOB. JOHN C. LYONS, McComb, Miss., assignor of one-half to M. D. Wilson, Buffalo, N. Y. Filed Apr. 26, 1906. Serial No. 313,816.

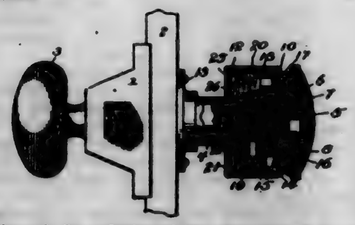

Claim.—1. In a device of the class described, a latch-spindle provided with a clutch connection at its free end, a rotatable knob slidably mounted on said spindle to engage said clutch, a casing surrounding said spindle, and tumblers disposed in said casing to be actuated by the rotary movement of the knob upon the spindle.

2. In a device of the class described, a latch-spindle provided with a clutch connection at its free end, a knob slidably mounted on said spindle to engage said clutch, a casing surrounding said spindle, rotatable tumblers provided with recesses adapted to be brought into alinement, and a projection carried by said knob and adapted to enter said recesses when so alined.

3. In a device of the class described, a latch-spindle provided with a clutch connection at its free end, a knob slidably mounted on said spindle to engage said clutch, a casing surrounding said spindle, rotatable tumblers provided with recesses adapted to be brought into alinement, a projection carried by said knob and adapted to enter said recesses when so alined, and operating-pins carried by each of the tumblers and disposed in the path of said projection.

4. In a device of the class described, a latch-spindle provided with a clutch connection at its free end, a knob slidably mounted on said spindle to engage said clutch, a casing surrounding said spindle, rotatable tumblers provided with recesses adapted to be brought into alinement, a projection carried by said knob and adapted to enter said recesses when so alined, an operating-pin upon one tumbler and a plurality of said pins upon an adjacent tumbler and disposed in the path of said projection, and a spring-catch carried by the periphery of said knob and adapted to engage recesses in said casing as the knob is rotated therein.

5. In a device of the class described, a latch-spindle provided with a clutch connection at its free end, a knob slidably mounted on said spindle to engage said clutch, a casing surrounding said spindle, rotatable tumblers provided with recesses adapted to be brought into alinement, a projection carried by said knob and adapted to enter said recesses when so alined, an operating-pin upon one tumbler and a plurality of said pins upon an adjacent tumbler and disposed in the path of said projection, a spring-catch carried by the periphery of said knob and adapted to engage recesses in said casing as the knob is rotated therein, and indicating characters carried by said knob upon its periphery relative to said catch.

6. In a device of the class described, a latch-spindle provided with a recessed clutching-head, a rotatable knob slidingly mounted upon said spindle and provided with a chamber to receive said head, a clutching member carried by the inner face of said knob within said chamber, a casing surrounding said spindle, and means carried by said casing to be actuated by the rotary movement of the knob upon the spindle.

7. In a device of the class described a latch-spindle provided with a recessed clutching-head, a knob mounted upon said spindle and provided with a chamber to receive said head, a clutching member carried by the inner face of said knob within said chamber, a casing surrounding said spindle, rotatable tumblers disposed within each other and within the casing each being provided with a recess adapted to be brought in alinement with the other, and a projection carried by the knob adapted to enter each of said recesses when in alinement.

8. In a device of the class described, a spindle provided with a clutching-head, a knob slidably mounted thereon and provided with a clutch member to engage said head, a casing surrounding said spindle, rotatable tumblers mounted upon the spindle and each provided with a recess, an operating-pin carried by the outer face of one of said tumblers and a plurality of pins upon an adjacent tumbler, and a projection carried by said knob and extending over the meeting-line of said tumblers to engage the pins of both thereof.

9. In a device of the class described, a spindle provided with a clutching-head, a knob slidably mounted thereon and provided with a clutch member to engage said head, a casing surrounding said spindle, rotatable tumblers mounted upon the spindle and each provided with a recess, an operating-pin carried by the outer face of one of said tumblers and a plurality of pins upon an adjacent tumbler, a projection carried by said knob and extending over the meeting-line of said tumblers to engage the pins of both thereof, a shoulder carried upon the inner tumbler to engage the seat upon the outer tumbler, and a retaining-shoulder upon the spindle adapted to engage the inner tumbler.

10. In a device of the class described, a latch-spindle having a clutching-head, a knob slidably mounted thereon and provided with a coöperating clutch member, a casing surrounding said spindle and knob and provided with a circumferential groove in its inner face and a series of sockets disposed in a parallel plane to said groove, and a spring-pressed catch carried by the periphery of the knob to engage said groove when the knob is pressed inward and said sockets when the knob is withdrawn.

11. In a device of the class described, a latch-spindle having a clutching-head, a knob slidably mounted thereon and provided with a coöperating clutch member, a casing surrounding said spindle and knob and provided with a circumferential groove in its inner face and a series of sockets disposed in a parallel plane to said groove, a spring-pressed catch carried by the periphery of the knob to engage said groove when the knob is pressed inward and said sockets when the knob is withdrawn, a projection carried by the inner face of said knob, and recessed tumblers one provided with two operating-pins and the other with one pin, and both disposed in the path of said projection when the knob is rotated.

12. In a device of the class described, a latch-spindle provided with a clutch connection at its free end, a knob slidably mounted on said spindle to engage said clutch, a casing surrounding the spindle, and movable means inserted within the casing to control the sliding movement of said knob and adapted to be moved in the rotary movement of said knob.

847,349. SWITCH MECHANISM. LOGAN L. MALLARD, Atlanta, Ga., assignor of one-half to B. Frank Bell, and one-third to Wm. A. Sims, Atlanta, Ga. Filed July 6, 1906. Serial No. 325,009.

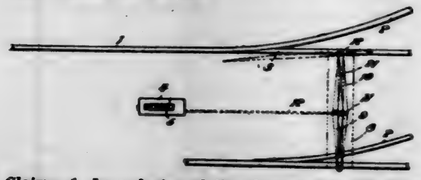

Claim.—1. In a device of the character described, the combination of a main track, a branch track, a movable switch-point for guiding the car from the main track to the branch track, a toggle-joint for operating the switch-point, an operating-wheel mounted upon a suitable support and provided with a number of outwardly-projecting teeth, a rod joining the toggle-joint and the operating-wheel and having an eccentric connection with the latter, a plunger adjustably mounted upon the car and provided at its lower end with a shoe, and means for holding the plunger normally in an inoperative position, the said plunger being adapted to be moved so as to throw the shoe into engagement with the teeth of the operating-wheel when it is desired to throw the switch.

2. In a device of the character described, the combination of a main track, a branch track, a movable switch-point for guiding the car from the main track to the branch track, a toggle-joint for operating the switch-point, an operating-wheel mounted upon a suitable support and provided with a series of outward projections, a rod joining the toggle-joint and the operating-wheel and having an eccentric connection with the latter, a pawl for preventing any backward movement of the latter, and a shoe carried by the car and adapted to engage with the teeth upon the operating-wheel in order to throw the switch.

3. In a switch mechanism, the combination of a main track, a branch track, a movable switch-point for guiding the car from the main track to the branch track, a toggle-joint for operating the switch-point, one of the members of the toggle-joint having a spring formation to enable the switch-point to have the required movement when the car passes from the branch track to the main track, an operating-wheel mounted upon a suitable support, a rod connecting the operating-wheel and the toggle-joint, and a shoe carried by the car and adapted to engage with the operating-wheel when it is desired to throw the switch.

4. In a switch mechanism, the combination of a main track, a branch track, a movable switch-point for guiding the car from the main track to the branch track, a toggle-joint comprising two link members extending transversely across the track, the inner ends of the link members being pivotally connected while the outer ends are loosely connected, respectively, to a suitable support and to the switch-point, a casing located between the rails of the main track, an operating-wheel mounted within the casing and having a series of V-shaped projections, a rod joining the toggle-joint and the operating-wheel and having an eccentric connection with the latter, a plunger adjustably mounted upon the car and provided with a shoe, and means for holding the plunger normally in an inoperative position, the said shoe being adapted to be forced into engagement with the projections upon the operating-wheel when it is desired to throw the switch.

5. In a switch mechanism, the combination of a main track, a branch track, a movable switch-point for guiding a car from the main track to the branch track, a toggle-joint comprising two link members, extending transversely of the track, the inner ends of the link members being pivotally connected together, while the outer ends are loosely connected, respectively, to a suitable support and to the switch-point, an operating-wheel mounted upon a suitable support, a rod connecting the operating-wheel and the toggle-joint and having an eccentric connection with the operating-wheel, and means carried by a car for turning said wheel, whereby to operate the toggle-joint.

6. In a switch mechanism, the combination of a main track, a branch track, a movable switch-point for guiding the car from the main track to the branch track, and means for intermittently moving said switch-point, said means inclosing a spring-retracted plunger carried by a car, other plungers mounted at the respective ends of the car, bell-cranks secured to the last-named plungers, other bell-cranks designed to press upon the first-named plunger to depress the same, and link-rods connecting the respective bell-cranks.

847,350. FISH-LINE REEL. WALTER E. MARHOFF, Kalamazoo, Mich., assignor to Marhoff Reel Co., Kalamazoo, Mich., a Corporation. Filed Mar. 6, 1906. Serial No. 304,514.

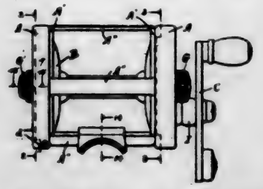

Claim.—1. In a fishing-reel, the combination of the head-caps having inturned flange-like rims thereon, each of said rims having a slot therein and inturned engaging flanges extending partially about the same; head-rings connected by pillars formed integrally therewith and located at the outer edges thereof, said head-rings having outturned flanges on their inner edges, with outwardly-facing grooves therein to receive the said engaging flanges of the head-caps; spring-catches secured to said head-caps arranged to bear against said head-rings; stops on said rings for said catches; finger-pieces arranged through said slots in the rims of said head-caps; and extensions on said catches adapted to normally close said slots, for the purpose specified.

2. In a fishing-reel, the combination of the head-caps having inturned flange-like rims thereon, each of said rims having a slot therein and inturned engaging flanges extending partially about the same; head-rings connected

by pillars formed integral therewith and located at the outer edges thereof, said head-rings having outturned flanges on their inner edges with outwardly-facing grooves therein to receive the said engaging flanges of the head-caps; spring-catches secured to said head-caps arranged to bear against said head-rings; stops on said rings for said catches; and finger-pieces arranged through said slots in the rims of said head-caps, for the purpose specified.

3. In a fishing-reel, the combination of the head-caps having inturned flange-like rims thereon, said rims having inturned engaging flanges extending partially about the same; head-rings connected by pillars formed integral therewith and located at the outer edges thereof, said head-rings having outturned flanges on their inner edges with outwardly-facing grooves therein to receive the said engaging flanges of the head-caps; spring-catches secured to said head-caps arranged to bear against said head-rings; and stops on said rings for said catches, for the purpose specified.

4. In a fishing-reel, the combination of the head-caps having inturned flange-like rims thereon, said rims having inturned engaging flanges extending partially about the same; and head-rings connected by pillars formed integral therewith and located at the outer edges thereof, said head-rings having outturned flanges on their inner edges with outwardly-facing grooves therein to receive the said engaging flanges of the head-caps, for the purpose specified.

5. In a fishing-reel the combination of a head-cap having a slot therein and an inturned flange-like rim thereon, said rim having inturned engaging flanges extending partially about the same; a head-ring having an outturned flange on its inner edge, with outwardly-facing grooves therein to receive the said engaging flanges of the head-cap; a spring-catch secured to said head-cap arranged to bear against the said head-ring; a stop on said ring for said catch; a finger-piece arranged through said slot in the rim of said head-cap; and an extension on said catch adapted to normally close said slot, for the purpose specified.

6. In a fishing-reel, the combination of a head-cap having a slot therein and an inturned flange-like rim thereon, said rim having inturned engaging flanges extending partially about the same; a head-ring having an outturned flange on its inner edge, with outwardly-facing grooves therein to receive the said engaging flanges of the head-cap; a spring-catch secured to said head-cap arranged to bear against said head-ring; a stop on said ring for said catch; and a finger-piece arranged through said slot in the rim of said head-cap, for the purpose specified.

7. In a fishing-reel, the combination of the head-cap having an inturned flange-like rim thereon, said rim having inturned engaging flanges extending partially about the same; a head-ring having an outturned flange on its inner edge, with outwardly-facing grooves therein to receive the said engaging flanges of the head-cap; a spring-catch secured to said head-cap arranged to bear against said head-ring; and a stop on said ring for said catch, for the purpose specified.

8. In a fishing-reel, the combination of a head-cap having an inturned flange-like rim thereon, said rim having inturned engaging flanges extending partially about the same; and a head-ring having an outturned flange on its inner edge, with outwardly-facing grooves therein to receive the said engaging flanges of the head-cap, for the purpose specified.

9. In a fishing-reel, the combination of a head-cap having an inturned flange-like rim with engaging members thereon; a head-ring having engaging members thereon adapted to be engaged by the said engaging member of said head-cap; a spring-catch secured to said head-cap arranged to bear against said head-ring; a stop on said head-ring for said catch; a finger-piece arranged through a suitable slot in the rim of said head-cap; and an extension on said catch adapted to normally close said slot, for the purpose specified.

10. In a fishing-reel, the combination of a head-cap having a slot therein and an inturned flange-like rim with engaging members thereon; a head-ring having an outturned engaging member on its inner edge with an outwardly-facing groove therein adapted to receive the said engaging member of said head-cap; a spring-cap secured to said head-cap, arranged to bear against said head-ring; a stop on said head-ring for said catch; and a finger-piece arranged through said slot in the rim of said head-cap, for the purpose specified.

11. In a fishing-reel, the combination of a head-cap having an inturned flange-like rim with engaging members thereon; a head-ring having an outturned engaging member on its inner edge with an outwardly-facing groove therein adapted to receive the said engaging member of said head-cap; a spring-catch secured to said head-cap, arranged to bear against said head-ring; and a stop on said head-ring for said catch, for the purpose specified.

12. In a fishing-reel, the combination of a head-cap having an inturned flange-like rim with engaging members thereon; and a head-ring having an outturned engaging member on its inner edge with an outwardly-facing groove therein adapted to receive the said engaging member of said head-cap, for the purpose specified.

13. In a fishing-reel, the combination of a head-cap having an inturned flange-like rim thereon, said rim having inturned spring-like flanges extending partially about the same; a head-ring having an outturned flange on its inner edge, with outwardly-facing grooves therein to receive the said engaging flanges of the head-cap; and a spring-catch for locking said cap in position, for the purpose specified.

14. In a fishing-reel, the combination of a head-cap having an inturned flange-like rim thereon, said rim having inturned spring-like flanges extending partially about the same; and a head-ring having an outturned flange on its inner edge, with outwardly-facing grooves therein to receive the said engaging flanges of the head-cap, for the purpose specified.

15. In a fishing-reel, the combination of a head-cap having an inturned flange-like rim with spring engaging members thereon; a head-ring having engaging members thereon adapted to be engaged by the said spring engaging members of said head-cap; and a spring-catch for locking said head-cap, for the purpose specified.

16. In a fishing-reel, the combination of a head-cap having an inturned flange-like rim with spring engaging members thereon; and a head-ring having engaging members thereon adapted to be engaged by the said spring engaging members of said head-cap, for the purpose specified.

17. In a fishing-reel, the combination of a head-cap; a crank-shaft; a gear thereon; a bridge-plate having an offset portion adapted to receive said gear; a spool-shaft having a pinion thereon with which said gear is arranged to mesh; a threaded bearing for said spool-shaft, having an extension on its inner end arranged to engage said bridge-plate, arranged through said head-cap; a cap threaded upon said bearing, whereby said bearing and bridge-plate are clamped in position; and inwardly-projecting lugs on said cap-plate, for the purpose specified.

18. In a fishing-reel, the combination of a head-cap; a crank-shaft; a gear thereon; a bridge-plate having an offset portion adapted to receive said gear; a spool-shaft having a pinion thereon with which said gear is arranged to mesh; a threaded bearing for said spool-shaft, having an extension on its inner end arranged to engage said bridge-plate, arranged upon said head-cap; and a cap threaded upon said bearing, whereby said bearing and bridge-plate are clamped in position, for the purpose specified.

19. In a fishing-reel, the combination of a head-cap; a crank-shaft; a gear thereon; a bridge-plate having an offset portion adapted to receive said gear; a spool-shaft having a pinion thereon with which said gear is arranged to mesh; and a bearing for said spool-shaft arranged to secure said bridge-plate in position, for the purpose specified.

20. In a fishing-reel, the combination of a head-cap; a crank-shaft; a gear thereon; a bridge-plate; a spool-shaft having a pinion thereon with which said gear is arranged to mesh; and a bearing for said spool-shaft arranged to secure said bridge-plate in position, for the purpose specified.

847,851. STOVE AND FURNACE. RUDOLF A. MAY, Akron, Ohio. Filed July 20, 1905. Serial No. 270,544.

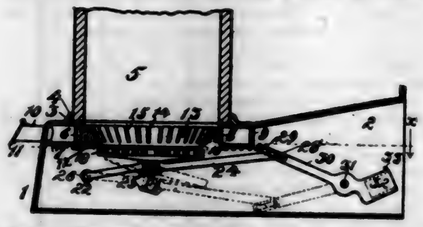

Claim.—The combination with the ash-pit of a stove or furnace provided with an opening for establishing communication between the ash-pit and a fire-pot, of a flange surrounding said opening, a perforated detachable member positioned within the ash-pit and forming in connection with the outer side wall and the flange of the ash-pit an air-passage surrounding the grate of the stove or furnace, said member having inwardly-extending protuberances for supporting a grate-section, and means for connecting said member to said flange.

847,352. PULP-SCREEN ROLL. ALFRED M. MEINCKE, Winchester, Mass. Filed Dec. 7, 1906. Serial No. 346,740.

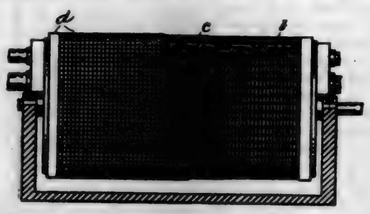

Claim.—1. A pulp-screen roll having an open-work screen-support extending entirely around it and from end to end of it, a screen of textile fabric arranged on said support and another open-work screen-support arranged on said screen, which entirely incloses it, substantially as described.

2. A pulp-screen roll adapted to operate in conjunction with suction and blowing devices, having a plurality of compartments, and having two concentrically-arranged cylindrically-formed screen-supports extending entirely around it and from end to end of it, and a screen of textile fabric interposed between said screen-supports, substantially as described.

847,353. BAG OR ENVELOP CLOSURE. JOHN B. MERKELS, Chicago, Ill. Filed July 25, 1906. Serial No. 327,643.

Claim.—1. A bag or envelop closure, comprising a strip secured to the side of the receptacle and having a free portion at the lower edge adapted to fold over the mouth of the receptacle, and a flexible metal fastener secured at one end under the strip and free at the other end to be bent over the said folds.

2. A bag or envelop closure comprising a strip secured to the side of the receptacle below the mouth thereof and having a lower free portion adapted to be folded together with the upper part of the receptacle, and a flexible metal fastener secured at its upper end under the strip and free at its lower end to be bent over the said folds.

3. A bag or envelop closure comprising a strip secured at its upper edge to the side of the receptacle and free at its lower edge to enfold the upper part of the receptacle, and a flexible sheet-metal fastener having a flared upper end secured under the strip and free below said end to be bent over said folds.

847,353.

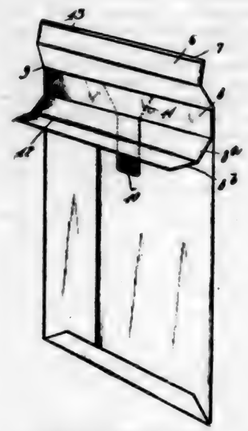

847,354. MACHINE FOR TREATING HIDES AND SKINS. JOHN A. METZLER, Newark, N. J. Filed Dec. 29, 1906. Serial No. 349,961.

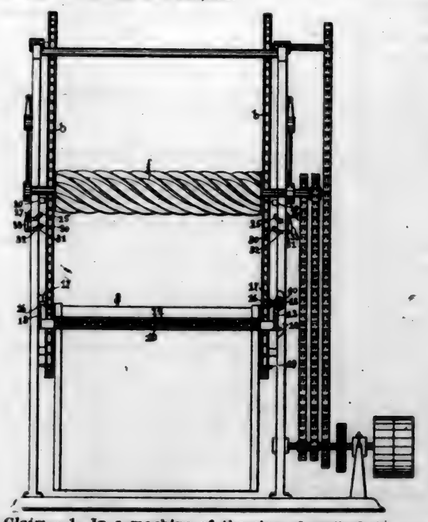

Claim.—1. In a machine of the class described, in combination, a table or work-support, an endless carrier therefor, operating-tools coöperating with said table or work-support to treat a hide or skin thereon, a spreader located on one side of the path of movement of said table and upon which the hide or skin is placed and from which it is removed by the said table, means movable with the table to bodily move said spreader toward the operating-tools, means to retain said spreader in its operative position, and means to release said spreader from its operative position, substantially as described.

2. In a machine of the class described, in combination, a table or work-support, an endless carrier therefor, operating-tools coöperating with said table or work-support to treat a hide or skin thereon, spreaders located on opposite sides of the path of movement of said table and upon which the hide or skin is placed, means to bodily move said spreaders toward said operating-tools, means to retain said spreaders in their operative position, and means to release said spreaders, substantially as described.

3. In a machine of the class described, in combination, a table or work-support, an endless carrier therefor, operating-tools coöperating with said table or work-support to treat a hide or skin thereon, a spreader extended transversely of the table and provided with vanes or ribs on its upper surface, upon which the hide or skin is placed, and means to move said spreader toward the operating-tools to bring the hide or skin into engagement with an operating-tool, substantially as described.

4. In a machine of the class described, in combination, a table or work-support, an endless carrier therefor, operating-tools coöperating with said table or work-support to treat a hide or skin thereon, a spreader located on one side of the path of movement of the table, slide blocks or pieces to which said spreader is secured, movable latches secured to said slide-blocks, lifting-pins movable with the table to engage said latches, cams to disengage said lifting-latches from said pins when said spreader has reached its operative position, retaining devices to engage said slide-blocks and retain the spreader in its operative position, and means to disengage said retaining devices from said slide-blocks, substantially as described.

5. In a machine of the class described, a table or work-support for the hide or skin to be treated movable in a substantially vertical plane, an operating-tool to treat the hide or skin while on the table, means to move said table, a spreader upon which the hide or skin is placed and from which it is removed by said table, said spreader being bodily movable in a plane substantially parallel with said table and toward said operating-tool, and means to bodily move said spreader toward said operating-tool, substantially as described.

847,355. SIGNALING APPARATUS FOR TELEPHONES. AUGUST A. MONSON, Minneapolis, Minn. Filed Mar. 31, 1906. Serial No. 309,201.

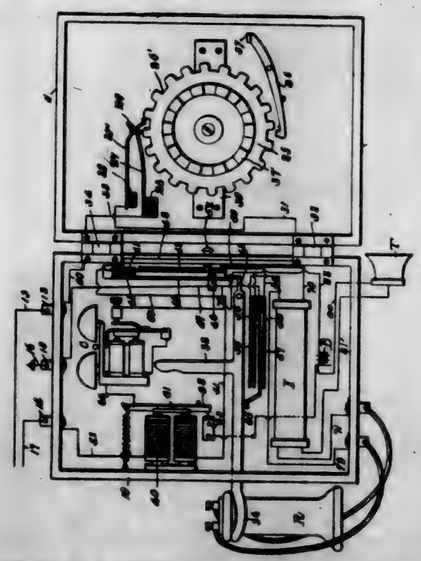

Claim.—1. In selective calling and signaling apparatus, a revoluble circuit-closing disk having a plurality of spaced circuit-closing means, a receiver-hook, a receiver-hook-controlled locking means for holding said disk from movement in either direction while the receiver-hook is down, a manually-operable means for turning the disk to effect make and break of the calling-circuit, said disk being movable at the completion of a calling operation to maintain the circuit closed, and means under the control of the receiver-hook for moving said disk to break circuit when the receiver is placed on the hook.

2. In telephony, a substation calling and selecting device, including a revoluble disk, having a notched periphery, a pair of contacts under the control of said disk, said disk being manually adjustable to remain at the end of a calling operation in circuit-closing position, and a receiver-hook-controlled means for moving said disk to break circuit when said receiver-hook is depressed.

3. In telephony, a substation calling and signaling mechanism comprising a revoluble disk having a notched periphery, a pair of spring-contacts, one of which is adapted for engagement with the periphery of the disk, means for limiting the movement of said contact in the direction of the disk, said disk being manually adjustable to remain in circuit-closing position at the end of the calling operation, and a receiver-hook-controlled means for moving the disk to break circuit.

4. In telephony, a substation calling and signaling means comprising a revoluble disk having a notched periphery, a spring-contact member arranged to engage the periphery of the disk, a stop-pin for limiting the movement of said member in the direction of the disk, a crown ratchet-wheel on one face of the disk, a receiver-hook, and an arm carried by the receiver-hook and arranged to engage said crown ratchet-wheel.

5. In telephony, a substation calling and signaling means, comprising a revoluble disk, a receiver, a receiver-hook, a disk-locking device movable into engagement with the disk when the receiver is placed on the hook, a crown ratchet-wheel on one face of the disk, and an arm carried by the receiver-hook and arranged to engage said ratchet-wheel.

6. In telephony, a substation calling and signaling device, comprising a revoluble disk having a notched periphery, a locking-lever having one end arranged to engage the disk and provided at its opposite end with a projecting arm, and a receiver-hook arranged to engage said arm when depressed and lock said disk from movement.

847,356. AUTOMATIC TELEPHONE-SWITCHBOARD. AUGUST A. MONSON, Minneapolis, Minn. Filed Apr. 2, 1906. Serial No. 309,402.

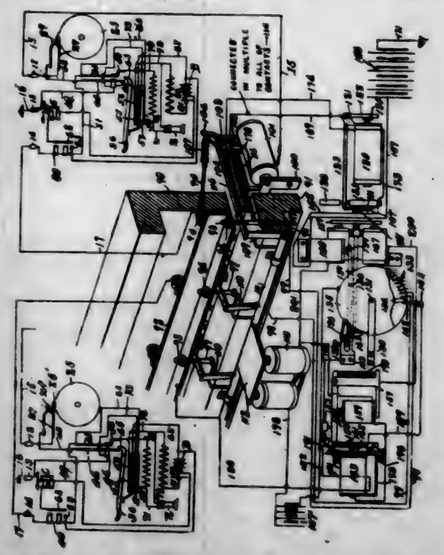

Claim.—1. In telephony, a number of substations, a central station, a selecting and circuit-closing means at the central station, means at each substation for operating the selecting means to connect a calling-station to a called station, signaling and talking wires connecting the substations and the central station, a switchboard at the central station, a series of contacts carried by the switchboard, there being an independent contact for each substation, an electromagnet controlling the movement of each contact, the signaling-wire being connected in multiple to all of said electromagnets, and contacts arranged to break such multiple connection on the sending of a signal by any substation, whereby circuit may be closed through but one of said electromagnets.

2. In an automatic central-telephone-exchange mechanism, a series of independent contacts, there being one contact for each substation, an independent electromagnet controlling the movement of each contact, a calling-circuit having a multiple connection with all of said electromagnets, and means for breaking the multiple circuit when any one electromagnet is energised, thereby preventing the energising of any of the remaining electromagnets.

3. In automatic central-station telephone mechanism, a switchboard having talking-circuit contacts for each substation, an electromagnet having an independent calling wiring connection with each substation, a movable contact under the control of said electromagnet and arranged to close the talking-circuit of a calling-station, a single calling-wire arranged at the central station and connected in multiple to all of the electromagnets, and means for breaking circuit through said single calling-wire after any one of the electromagnets has been energized.

4. In automatic central-exchange telephone systems, a switchboard, a plurality of movable circuit-closing members, an independent talking-wire connecting each circuit-closing member to a separate substation, an electromagnet controlling the movement of each circuit-closing member, an independent calling or selecting wire extending from each substation to the electromagnet, a central battery-wire connected to all of said electromagnets to complete the calling or signaling circuits, and an electromagnetically-controlled circuit-breaker for breaking the battery-wire when any one electromagnet has been energized to prevent the energising of any of the other electromagnets.

5. In automatic central-station telephone systems, a switchboard, movable circuit-closing devices carried thereby, there being an independent circuit-closing device for each substation, a talking-wire extending from the circuit-closing device to the substation, an electromagnet for controlling the movement of said circuit-closing device, an independent signaling-wire extending from each substation to its electromagnet, a conductor leading from a central-station battery to all of said electromagnets, said conductor including an armature-lever, and a pair of contacts, one of which is connected to, and moves with the movable circuit-closing device, the circuit being primarily broken when said circuit-closing device receives its initial movement, and a second circuit including an electromagnet arranged to operate said armature-lever, and through which the circuit is closed on movement of said circuit-closing device, thereby moving the armature-lever and breaking the initial calling-circuit to prevent the energising of more than one of said electromagnets at one time.

6. In an automatic central-station telephone system, a switchboard, a plurality of movable circuit-closing devices, of which there is one for each substation, talking-wires independently connecting the circuit-closing devices to the substation, a selecting means arranged at the central station and provided with a series of spaced contacts, contact members arranged adjacent to the circuit-closing devices and independently connected to the contacts of the selecting mechanism, a movable contact forming part of the selecting mechanism and arranged to engage the series of spaced contacts, an electromagnet for actuating said movable contact, a plurality of contacts arranged over the circuit-closing devices and having a multiple connection with the movable circuit-closer, an independent electromagnet controlling the movement of each circuit-closing device, and an independent calling and selecting circuit extending from each substation through both of said electromagnets.

7. In telephony, a central station, substations, independent talking and signaling wires connecting each substation to the central station, a movable circuit-closer connected to each independent talking-wire, a pair of contacts arranged one above and one below each circuit-closer, a selecting device including a series of contacts that are independently connected to the lower contacts, a revolubly-mounted contact-arm arranged to engage the series of contacts, said arm being connected electrically to all of the uppermost contacts, an electromagnet for actuating said revoluble contact-arm, an electromagnet for each circuit-closer, the signaling-wire of the substation being connected to both electromagnets, and the energising of the electromagnet of the circuit-closer moving the latter from a normal position in engagement with the lower contact to a position in engagement with the upper contact, whereby connection may be established from a calling-station through the circuit-closer, the upper contact, the selecting device, the lower contact of a called station, and through the circuit-closer and talking-wire of said called station.

8. In telephony, substations, and a central station, a switchboard at the central station, circuit-closers carried by the switchboard, an independent talking-wire leading from each substation to one of the circuit-closers, upper and lower contacts in alinement with the circuit-closer, the latter being normally in engagement with the lower contact, an electromagnet for operating each circuit-closer and moving the same from engagement with the lower contact into engagement with the upper contact, a selecting device including a movable contact-arm that is electrically connected to all of the upper contacts, a series of contact-points carried by the selecting device and each independently connected to one of the lower contacts, an electromagnet for moving the selecting device, a signaling-wire extending from each substation and connected to both electromagnets whereby the talking-wire of a calling-station may be connected through its circuit-closer to the upper contact, and from thence through the selecting device to the lower contact of a called station, and means for automatically breaking a portion of the signaling-circuit to prevent the energising of more than one of the electromagnets of the circuit-closers at any one time.

9. In telephony, substations and a central station, a switchboard, independent circuit-closers carried by the switchboard, a talking-wire connecting each substation to its circuit-closer, upper and lower contacts between which each circuit-closer may move, said circuit-closer being normally in engagement with the lower contact, an electromagnet for moving said circuit-closer from engagement with the lower contact into engagement with the upper contact, means for locking a raised circuit-closer in engagement with the upper contact, a selecting device including a series of contacts that are independently connected to said lower contacts, and a revoluble contact-arm that is electrically connected to all of the upper contacts, an electromagnet for actuating the selecting device, a calling and selecting circuit extending from each substation through both of the electromagnets, and means for moving the locking means to release position when the circuits are broken.

10. In telephony, substations and a central station, a switchboard, a plurality of electromagnetically-operated contacts, of which there is one for each of the substations, an independent talking-circuit for each substation, the talking-circuits being under the control of said contacts, an independent signaling and selecting wire extending from each substation to the electromagnet, a battery arranged at the central station, and one pole of which is connected to the ground, a single conductor leading from the opposite pole of the battery to all of the electromagnets, and means for breaking or shifting the circuit through said single conductor when any one of the electromagnets is energised to prevent the energising of any of the other electromagnets.

11. In a central-station mechanism for automatic telephone systems, a switchboard, a pair of alined upper and lower contacts supported thereby, an electromagnet, an armature-lever arranged to move between the two contacts, and normally in engagement with the lower con-

tact, a locking-strip for engaging and holding said armature-lever in elevated position, means for releasing the locking member, three superposed contact-strips, the central strip being connected in the circuit of the electromagnet and having one of its ends connected to and movable with the armature-lever, the remaining contacts being both connected to a source of energy, the central contact-strip normally engaging the lower contact-strip when the armature-lever is depressed, and thereby closing the electromagnet-circuit, said central contact-strip being arranged to engage and close circuit with the upper contact-strip as the armature-lever moves upward without abruptly breaking circuit with the lower contact-strip.

12. In central-station mechanism for automatic telephone systems, a circuit-controlling device comprising an electromagnet, an armature disposed within the field of force of the electromagnet, a lever carrying said armature, a contact with which said lever engages when the electromagnet is deënergised, a battery-circuit that is closed through said contact and armature-lever when the magnet is deënergised, a shunt-circuit extending through the electromagnet, and means for breaking the main battery-circuit, thereby directing the current through the shunt, and energising the electromagnet to effect disengagement of the armature-lever from the contact.

13. In central-station mechanism for automatic telephone systems, a switchboard, a plurality of movable circuit-closers, each arranged for connection to a separate substation, electromagnets for operating said circuit-closers, a locking-strip for automatically engaging and locking each circuit-closer after the latter has been moved, a rock-shaft, a plurality of arms carried thereby and arranged to engage said locking-strips, an armature carried by said rock-shaft, an electromagnet for said armature, and means for closing a circuit through said electromagnet to effect movement of all of said locking-strips to release position.

14. In telephony, substations and a central station, a series of circuit-closers arranged at the central station, independent talking-wires extending from the substations to the circuit-closers, a selecting means at the central station for closing the talking-circuits of calling and called stations, signaling and selecting lines, electromagnets arranged therein, one of said electromagnets controlling the operation of the circuit-closer, and the other the operation of the selecting means, a locking-strip for each of the circuit-closers, a rock-shaft, arms carried thereby and arranged to engage the locking-strips, an armature projecting from the shaft, an electromagnet adjacent to said armature, and means operable on return of the selecting means to initial position for closing a circuit through said electromagnet, and thereby moving the rock-shaft and the locking-strips to release position.

847,357. BUFFER. WILLIAM T. B. MCDONALD, Granby, Quebec, Canada, assignor of one-half to Robert Greene, London, Canada, and one-half to Alice Florence Greene McDonald, Granby, Canada. Filed Dec. 30, 1904. Serial No. 239,059.

Claim.—1. A railroad-buffer adapted to have the rolling-stock ride upon the same and consisting of a member resting permanently slidably upon the rails, such member supporting a buffer proper on a level with the body of the rolling-stock, and means bracing the said buffer against the shock of the rolling-stock.

2. A slidable railroad-buffer consisting of a member comprising a pair of longitudinals resting permanently slidably upon the rails, a bracket secured rigidly to one end of the said members and projecting upwardly to a point on a level with the body of the rolling-stock and to a point in a vertical line a short distance from the said end, means securing a buffer proper to the said bracket, and means bracing the bracket against shock from the rolling-stock.

3. A slidable railroad-buffer consisting of a member comprising a pair of longitudinals adapted to rest slidably upon the rails and means secured rigidly to the said members and projecting upwardly to a point on a level with the body of the rolling-stock and in vertical line with a point a short distance from the said end, such means supporting a buffer at its upper end and means bracing the said buffer against the shock of the rolling-stock.

4. A slidable railroad-buffer consisting of a member comprising a pair of longitudinals adapted to rest slidably upon the rails and a bracket secured rigidly to one end of the said members and projecting upwardly to a point on a level with the body of the rolling-stock, such bracket being formed at its upper end with a cylinder, having one end closed, a slidable block located in the opposite end and a spring bearing between such closed end and the slidable block.

847,358. REGULATOR FOR FLUID-OPERATED PUMPS AND MOTORS. BRYAN OBEAR and SILAS C. MARTIN, St. Louis, Mo., assignors to Montague Compressed Air Company, St. Louis, Mo., a Corporation of Missouri. Filed Oct. 21, 1905. Serial No. 283,862.

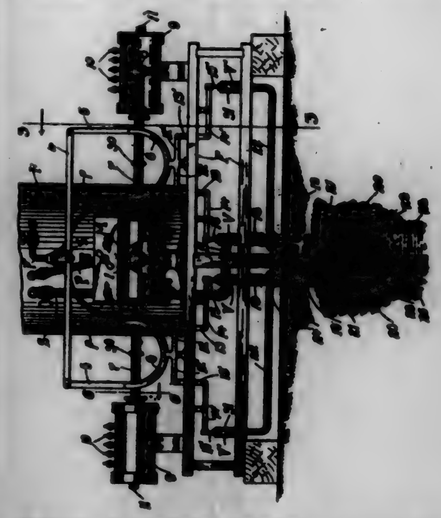

Claim.—1. In a regulator, a reservoir or source of fluid-pressure supply, a motor-cylinder, a piston therein, a piston-rod projecting from the piston-cylinder at each end thereof, tappets on the rod, yokes pivoted in proximity to the projecting ends of the piston-rod, valve-controlled fluid-supply pipes leading from the source of supply to opposite ends of the motor-cylinder, a pitman coupled at an intermediate point to the valve of the fluid-supply pipes, means for pivotally coupling the yokes to the pitman, suitable controlling and exhaust valves, link connections between the yokes and said valves, and fluid-pressure supply and exhaust pipes leading from the valve-casings, substantially as set forth.

2. In a regulator, a reservoir or source of fluid-pressure supply, a motor-cylinder, a piston therein, a piston-rod projecting from the piston-cylinder at each end thereof, tappets on the rod, yokes pivoted in proximity to the projecting ends of the piston-rod, fluid-supply pipes leading from the source of supply to opposite ends of the motor-cylinder, a valve at the meeting ends of said pipes, a pitman coupled at an intermediate point to said valve, and having its opposite ends pivotally secured to the outer ends of the yokes, suitable controlling and exhaust valves, link connections between the bases of the yokes and the said valves, and fluid-pressure supply and exhaust pipes leading from the valve-casings, substantially as set forth.

3. In a regulator, a motor-cylinder, a piston reciprocating therein, a piston-rod projecting from the piston-cylinder, a tappet on said rod, a source of fluid-pressure supply, a pipe having branches leading to opposite ends of the piston-cylinder, a valve at the meeting point of said branches, an oscillating yoke pivoted in proximity to the piston-rod and actuated by the tappet, a regulator-cylinder, a series of petcocks disposed along the walls thereof, a piston on the piston-rod operating in said regulator-cylinder, link connections between the yoke and the valve for the branch pipes aforesaid, suitable fluid-pressure controlling and exhaust valves actuated by the oscillations of the yoke, a supply-pipe leading from the source of supply to the controlling-valve, and fluid-pressure and exhaust pipes leading from the controlling and exhaust valves respectively to a common pump or equivalent motor, substantially as set forth.

4. In combination with a pump, a regulator, a source of fluid-pressure supply, a motor comprising a cylinder and piston reciprocating therein, a fluid-pressure pipe having branches leading to opposite ends of the cylinder, a controlling-valve, a supply-pipe connecting the casing of said valve with the source of fluid-pressure supply, an exhaust-valve, fluid-pressure and exhaust pipes leading respectively from the pump-cylinder to the controlling and exhaust valves aforesaid, an oscillating yoke pivoted in proximity to the piston-rod of the piston, a tappet on the rod for actuating the yoke, a valve for admitting fluid under pressure to the respective branches aforesaid, a pitman or link connecting said valve with the yoke, a regulator-cylinder having a piston therein coupled to the piston-rod aforesaid, and intermediate link connections between the yoke and the controlling and exhaust valves aforesaid, substantially as set forth.

847,359. FASTENING MEANS. GEORGE O. OLSON, Chicago, Ill. Filed Aug. 1, 1906. Serial No. 328,754.

Claim.—1. The combination, with two walls, of a strut having thereon lugs bent at an angle with the body of the strut, seats in said walls adapted to contain said lugs, and means for securing said lugs in their seats.

2. The combination, with two walls, of a shouldered strut having thereon lugs bent at an angle with the body of the strut, seats in said walls adapted to contain said lugs, and means for securing said lugs in their seats.

3. The combination, with two walls, of a shouldered strut provided at its ends with lugs, oppositely-facing seats in said walls for said lugs, and means for securing said lugs in their seats.

4. The combination, with two walls, of a strut having lugs thereon adapted to engage said walls and a tang punched through one of said walls and adapted to engage said strut.

5. The combination, with two walls, of a strut adapted to engage said walls and a tang pressed from one of said walls and adapted to engage said strut to hold it in place.

6. The combination, with two walls, of a strut having lugs extending at a right angle with the body of the strut; seats for said lugs formed in said walls by pressing the material of said walls inwardly; and means for securing said lugs in their seats.

7. The combination, with two walls, each of which walls has an opening therein and a seat at one side of said opening, of a strut having lugs thereon adapted to lie in said seats and said openings, and means for securing said lugs in their seats.

8. The combination, with two walls, each of which walls has an opening therein and a seat formed at one side of said opening by pressing the material of said walls inwardly, of a shouldered strut having lugs extending at a right angle with the body of the strut, and a tang punched from one of said walls at one side of the opening therein, said tang being adapted to lie at one side of said strut and hold it in place.

847,360. MASSAGING IMPLEMENT. FREDERICK J. OSIUS, Racine, Wis., assignor to United States Standard Electrical Works, Racine, Wis. Filed Sept. 25, 1905. Serial No. 279,910.

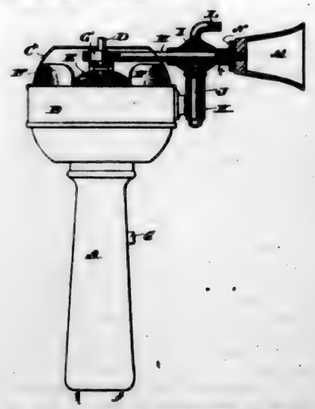

Claim.—1. In a massaging implement, a pitman, means in connection with one end of the pitman for actuating the same, a fixed bracket, a pitman-guide oscillative in connection with the bracket, and a manipulating device attachable to the other end of the pitman.

2. In a massaging implement, a motor having a shaft provided with an eccentric, a pitman having one end thereof engaged by the eccentric by which it is actuated, an oscillative guide through which the pitman is reciprocated, and a manipulating device attachable to the other end of said pitman.

3. In a massaging implement, a pitman, means for actuating the same, an oscillative guide for the pitman, and a manipulating device having interchangeable connection with said pitman and guide.

4. In a massaging implement an electric motor having its shaft provided with an eccentric, a pitman with which the eccentric has engagement, an oscillative guide for the pitman, and a manipulating device having interchangeable connection with said pitman and guide.

5. In a massaging implement, a pitman, means in connection with one end of the pitman for actuating the same, a fixed bracket, a pitman guide-sleeve having a shank for which the bracket constitutes a bearing, and a manipulating device attachable to the other end of the pitman.

6. In a massaging implement, a sleeve-bracket, a head having a pivot-shank loose in the bracket and provided with a stem, a pitman guided in the head, and a manipulating device having interchangeable connection with the pitman and head-stem, and means for actuating said pitman.

847,361. AUTOMATIC FLUSH-TANK. SCOTT A. PALMER and WILLIAM H. PALMER, San Diego, Cal. Filed June 12, 1906. Serial No. 321,373.

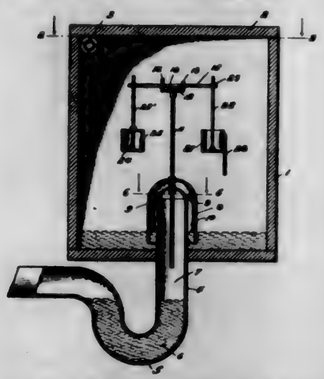

Claim.—1. In an apparatus of the class described, the combination with a tank, of an outlet-pipe secured to said tank, of an exhaust-pipe extending into said outlet-pipe, a horizontal bracket provided with pairs of posts, supported upon said exhaust-pipe, a bar pivoted upon one of said pairs of posts, means carried by the other pair for limiting pivotal movement of said bar, a valve in engagement with said bar and normally closing one end of said exhaust-pipe, and means for controlling movement of said bar and said valve.

2. In an apparatus of the character described, the combination with a tank, an outlet-pipe extending into said tank, an exhaust-pipe extending into said outlet-pipe, of a horizontal bracket supported upon said exhaust-pipe, near its upper end, vertically-extending posts formed upon said bracket, a bar pivotally mounted between said posts, means for limiting pivotal movement of said bar, means for automatically controlling movement of said bar, and a valve in engagement with said bar and normally closing the upper end of said exhaust-pipe.

3. In an apparatus of the class described, the combination with a tank, of a valve device positioned within said tank, said device comprising a pivotally-mounted bar, a valve member fixedly secured to said bar near its central portion, a vertical rod slidably mounted in and extending through said bar near each end, means securing each rod in an adjusted position, a siphon-bucket secured to the lower end of one of said rods, and a float secured to the lower end of the other rod.

4. In an apparatus of the class described, the combination with a tank and an exhaust-pipe, of a valve device positioned contiguous to said exhaust-pipe, said device comprising a horizontal bracket, a plurality of pairs of posts carried by said bracket, a bar pivotally mounted upon one pair of said posts, said bar extending between the other pair of said posts, means carried by the last-mentioned pair for limiting upward movement of said bar, a valve member secured to the bar between the pairs of posts and being capable of closing one end of said exhaust-pipe, and means for automatically actuating said bar for moving said valve member.

5. In an apparatus of the class described, the combination with a tank, of a valve device carried by said tank, said valve device comprising a support, a pivotally-mounted bar carried by said support, a valve member carried by said bar, a bucket, a rod adjustably secured to said bar and removably secured within and to the bottom of said bucket, a siphon extending through the side of said bucket, and a float secured to said bar.

847,362. APPARATUS FOR MANUFACTURE OF GAS. JAMES T. PARIS, Chicago, Ill. Filed Apr. 9, 1906. Serial No. 310,591.

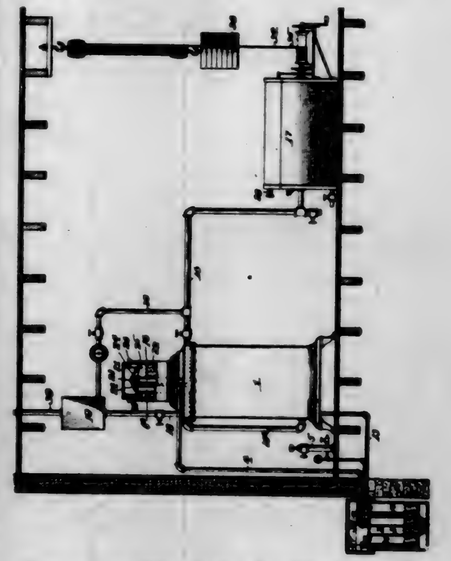

Claim.—1. In apparatus for the manufacture of gas, a carbureter having an interior space divided into alternate layers of multicellular chambers and absorbent material, the cells of each chamber being connected in series with each other and with the cells of the other chambers to form a continuous passage for air through the carbureter.

2. In apparatus for the manufacture of gas, a carbureter having an interior space divided into alternate superposed layers of multicellular chambers and absorbent material, the cells of each chamber being connected in series with each other and with the cells of the other chambers to form a continuous passage for air through the carbureter, the walls of said cells comprising absorbent material entirely surrounding the air-passage.

3. In apparatus for the manufacture of gas, a carbureter having an interior space divided into alternate layers of multicellular chambers and absorbent material, each of said cells having a covering of absorbent material adapted to be saturated with hydrocarbon held by said absorbent layers, the cells of each chamber being connected in series with each other and with the cells of the other chambers to form a continuous passage for air.

4. In apparatus for the manufacture of gas, a carbureter having an interior space divided into alternate superposed layers of multicellular chambers and absorbent material, each of the cells being composed of a reticulated wire body covered with cloth adapted to be saturated with hydrocarbon held by said absorbent layers, the cells of each chamber being connected in series with each other and with the cells of the other chambers to form a continuous passage for air from the bottom to the top of the carbureter.

847,363. PENCIL-SHARPENER. JOHN E. PARRISH, Johnson City, Tenn. Filed June 23, 1906. Serial No. 323,110.

Claim.—1. A pencil-sharpener comprising a slotted cap, a longitudinally-grooved core disposed within the cap, said core having a socket intersected by the groove, a blade insertible longitudinally into one end of the core and seated within the groove and projecting into the socket, and means upon one end of the blade for holding the blade against displacement.

2. A pencil-sharpener comprising a slotted cap, of a grooved core seated within the cap and having a socket intersected by the groove, a cutting-blade insertible longitudinally into one end of the core and seated within the groove and projecting into the socket, a guard integral with the cap and overlapping the point of the blade and means upon one end of the blade and core for holding the blade against displacement.

3. A pencil-sharpener comprising a slotted cap, a core within the cap and having a socket therein, and an inclined longitudinal groove intersecting the socket, a cutting-blade seated within the groove and insertible longitudinally into one end of the core and projecting into the socket, and means extending over one end of the blade and core for holding the blade against displacement.

4. A pencil-sharpener comprising a slotted cap, a core within the cap and having a socket therein and an inclined longitudinal groove intersecting the socket, a cutting-blade seated within the groove insertible longitudinally into one end of the core and projecting into the socket, means upon one end of the blade and core for holding the blade against displacement, and a guard integral with the cap and overlapping the point of the blade.

5. A pencil-sharpener comprising a slotted cap, a core within the cap and having a socket therein and an inclined longitudinal groove intersecting the socket, a cutting-blade seated within the groove and projecting into the socket, and a head integral with the blade and seated within the core said blade and head being preferably insertible into one end of the core.

6. A pencil-sharpener comprising a slotted cap, a core within the cap and having a socket therein and an inclined longitudinal groove intersecting the socket, a cutting-blade seated within the groove and projecting into the socket, a head integral with the blade and seated within the core, said blade and head being insertible into one end of the core and means overlapping said end of the head and core for securing the same together.

7. A pencil-sharpener comprising a cap having a longitudinal opening therein, a core molded within the cap and having a conical socket therein and an inclined groove intersecting the socket, a knife seated within the groove and projecting into the socket, a head integral with the knife and seated within the groove, said knife and head being insertible longitudinally into that end of the core containing the small end of the socket and holding means overlapping one end of the head and core.

847,364. LOOSE-LEAF BINDER. REES F. PARRY, Dallas, Tex. Filed Oct. 6, 1906. Serial No. 337,766.

Claim.—1. A loose-leaf binder comprising a back, a pair of covers suitably hinged to the back, a pair of casings connected with the back and covers adjacent to the hinges thereof, a locking-slide in each casing, said casings and slide being provided with correspondingly-located openings, a series of posts, each end of each post being adapted to enter an opening in the adjacent casing and slide and to interlock with the slide, and means for permanently securing each slide in engagement with the adjacent ends of the posts, whereby a permanently-bound book is secured when desired the leaves of which cannot be removed.

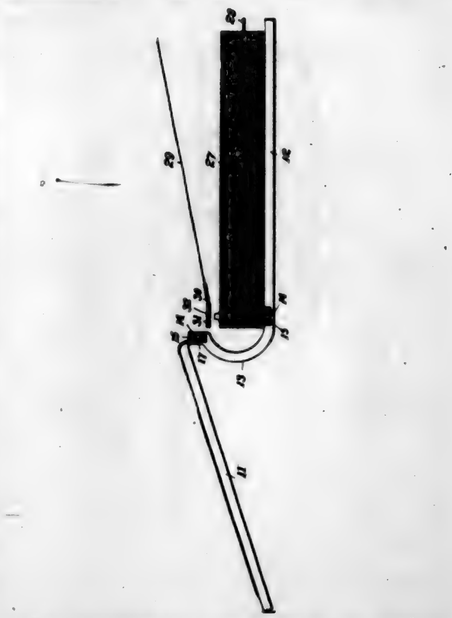

2. In a loose-leaf binder, the combination with a plurality of independent posts, of a pair of casings arranged longitudinally of the binder and having openings to receive the ends of the posts, means within the casings for locking the casings to the posts, and a common metal plate to which both casings are hinged.

3. In a loose-leaf binder, the combination with a plurality of independent posts, of a pair of casings arranged longitudinally of the binder and having openings to receive the ends of the posts, means within the casings for locking the casings to the posts, and a common curved plate to which the casings are hinged, said plate serving to hold the casings in the proper relation to each other and to stiffen the back portion of the book.

4. In a loose-leaf binder, the combination with a pair of covers and a suitable back connecting the covers, of a pair of casings connected respectively to the covers and each having openings to receive the ends of a series of posts, means within the casings for locking the posts to the casings, a series of posts adapted to enter the openings in the casings and engage with said locking means, independent register-plates having openings adapted to register with the openings in the casings, and fly-leaves connected to said register-plates, the said register-plates being adapted to receive the ends of the posts to cause them to register with the openings in the casings, substantially as set forth.

5. In a loose-leaf binder, the combination with a pair of covers and a suitable back connecting the covers, of a pair of casings connected respectively to the covers and each having openings to receive the ends of a series of posts, means within the casings for locking the posts to the casings, a series of posts adapted to enter the openings in the casings and engage with said locking means, and independent register-plates having openings adapted to register with the openings in the casings, the said

register-plates being adapted to receive the ends of the posts to cause them to register with the openings in the casings, substantially as set forth.

847,365. STEAM-BOILER FURNACE. GEORGE W. PHILLIPS, Buena Vista, Va. Filed Mar. 2, 1906. Serial No. 303,821.

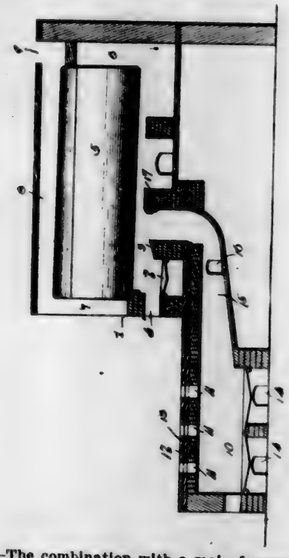

Claim.—The combination with a main furnace having a grate with a front feed-opening and a rear bridge-wall, a gas-generating furnace in advance of the front of the main furnace and having a flat roofing provided with vertical openings directly over grates in the said gas-furnace, the rear of the gas-generating furnace continuing in the form of a conduit to the bottom of the bridge-wall, the said conduit passing vertically through the bridge-wall and under the latter projecting upwardly at an angle of inclination and vertically contracted adjacent to the bridge-wall, the portion of the conduit passing through the bridge-wall being of greater dimensions than the said contracted portion thereof, whereby the gas may be driven upwardly through the bridge-wall in rear of the grate of the main furnace with greater force.

847,366. CANDY-SPINNING MACHINE. RALPH E. POLLOCK, Syracuse, N. Y. Filed June 13, 1906. Serial No. 321,537.

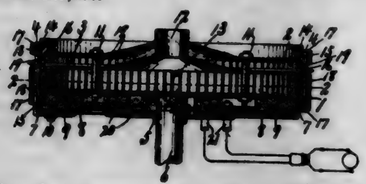

Claim.—1. A candy-spinning machine comprising bottom and top plates spaced apart forming an intervening chamber having an inlet in the top, an electric heater-band clamped to the plates and surrounding said chamber, a circular partition interposed between and spaced apart from said plates and of slightly less diameter than the inner diameter of the heater-band forming a narrow intervening annular space between the edge of the partition and heater-band, means to rotate the plates and parts attached thereto for centrifugally forcing the material which may be fed into the chamber against the heater-band, means for deflecting the heated product upwardly between the periphery of the intermediate plate or partition, and inner face of the heater-band, the portion of the heater-band between said partition and top plate being perforated to permit the escape of said product.

2. A machine for spinning candy and confections, consisting of a revolving receptacle having an inlet in its top and a circular band forming its sides, said band consisting of a thin strip of metal of high electric resistance forming a heater, and having a series of vertical slots therethrough for the escape of the spun candy, a body of insulating material secured to the receptacle to revolve therewith, separate annular rings of electric conducting material secured to said insulating-body and each connected electrically to one of the terminals of the heating-band, and contact devices fixed from rotation with the receptacle and each bearing upon one of the rings.

3. In a candy-spinning machine, a receptacle comprising bottom and top plates spaced apart forming an intervening chamber, a perforated electric heater-band encircling said chamber and insulated from said plates, means for clamping the heater-band to said plates, an intermediate plate of less diameter than the inner diameter of the heater-band, and a band of insulating material surrounding the space between the intermediate and lower plates, but terminating below the lower face of the upper plate.

4. A candy-spinning machine, comprising a receptacle having an inlet concentric with its axis of rotation, means for rotating said receptacle, the receptacle having a circular side wall consisting of an electric heater-band having transverse slots communicating with the interior of the receptacle, bands of insulating material between the heater-band and bottom and top of the receptacle, and means for deflecting the heated product from the bottom toward the top so as to issue through the upper sides of the slots.

5. In a candy-spinning machine, a receptacle and means for rotating it, said receptacle having an inlet in its top concentric with its axis, and having its sides circular and consisting of a thin metal band of high electric resistance slotted transversely, means to clamp said band to the bottom and top of the receptacle, means for deflecting the heated product upwardly along the sides of the heating-band so as to emerge to atmosphere through the upper ends of the slots.

6. In a centrifugal candy-spinning machine, a revoluble receptacle having a vertically-slotted circumferential band forming a retaining-screen, means for heating said screen and a band of insulating material surrounding the lower portion of the screen leaving portions of the upper ends of the vertical slots open.

7. In a centrifugal candy-spinning machine, a receptacle having lower and upper plates spaced apart forming an intervening chamber, a vertically-slotted band clamped to the plates and surrounding said chamber, means for heating said band, and an imperforate band of heat-resisting material surrounding the heater-band and lower portion of said chamber, said band terminating at its upper edge some distance above the bottom plate and also some distance below the top plate leaving a clear exit through the slots of the heater-band above the heat-resisting band for the escape of the spun candy.

847,367. TELEPHONE-SWITCH-OPERATING MECHANISM. FRANK M. POTTER, Jr., Rome, N. Y. Filed May 28, 1906. Serial No. 319,080.

Claim.—1. The combination of a telephone switch-box, a switch contained therein, a reversible telephone-supporting hook adapted to operate said switch, substantially as described.

2. The combination of a telephone switch-box, a switch contained therein, switch-actuating mechanism extended crosswise the box and a telephone-supporting hook adapted to be connected with either end of said switch-actuating mechanism for operating it in the same direction, substantially as described.

3. The combination with a telephone-switch, of a rock-shaft having a radially-extended arm for actuating said switch, a pivoted telephone-supporting hook constructed and arranged to engage either end of said shaft and turn it in the same direction, and supports for said hook at both sides of the box, to either of which said hook may be connected, substantially as described.

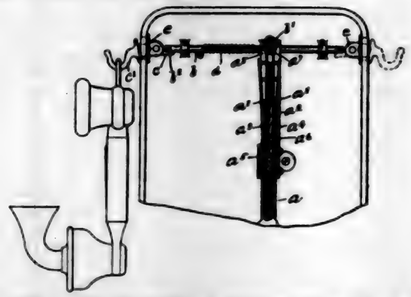

4. The combination with a telephone-switch, of a rock-shaft having a radially-extended arm for operating said switch and having radially-extended ends, a pivoted telephone-supporting hook having an extension and means for supporting it whereby said extension may engage either of said ends to turn the shaft in the same direction, and means for turning it in the opposite direction when the telephone is removed from the hook, substantially as described.

5. The combination with a telephone-switch, of a rock-shaft having a radially-extended arm for operating said switch and having a radially-extended end, a pivoted hook adapted to support the telephone, having an extension which engages said end to turn the shaft on its axis in one direction, and means for turning it in the opposite direction when the telephone is removed from the hook, substantially as described.

6. The combination with a telephone-switch, the actuating members of which have diverging ends, of a rock-shaft having a radially-extended arm for engaging the diverging ends of said actuating members, and having an angularly-formed end, a pivoted hook adapted to receive the telephone having an extension which engages said end to turn the shaft on its axis in one direction, and means for turning it in the opposite direction when the telephone is removed from the hook, substantially as described.

847,368. DRESS-SHIELD OR GARMENT FASTENER. GLADYS L. RAZA, Montreal, Quebec, Canada, and FRANKLIN S. FRISBIE, Boston, Mass. Filed Oct. 12, 1905. Serial No. 282,391.

Claim.—1. A dress-shield or garment fastener composed of two hinged members, one member having a portion provided with hinge-eyes at its extremity and a space between the hinge-eyes adapted to receive the hinge-eye of the operating member and a hinge-pin connecting the two members, the said portion at its base being slotted longitudinally so as to form two arms and having between and below the arms a center piece, connecting the upper portion with the lower portion or base, provided with a needle-point or prong, said arms being slightly turned up in the direction of the needle-point, so as to coöperate with the longitudinal portions or springs of the coöperating member, the other member being slotted longitudinally, so as to form three portions of the center piece or portion being provided with a receptacle or pocket adapted to receive and cover the said needle-point of the first-named member, and having at its extremity a hinge-eye, and each portion or spring on either side of the center piece being curved so as to press against the arms of the first-named member and hold the two hinged members of piece being curved so as to press against the arms of the said portions or springs being provided near its extremity with a receptacle to receive and hold the arms of the first-named member, when the fastener is open.

847,369. STEAM-ENGINE VALVE. GEORGE E. RIBLET, Erie, Pa. Filed Dec. 18, 1905. Serial No. 292,363.

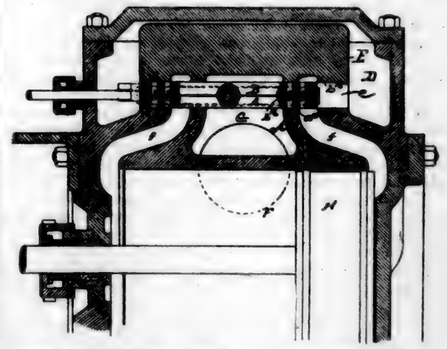

Claim.—1. A steam-engine valve comprising two parts having a series of overlapping surfaces forming closures along the faces of the parts, the overlapping surfaces of one part facing in one direction and those of the other part in the opposite direction whereby the steam-pressure tends to move one part in one direction and the other part in the opposite direction to effect a closure of overlapped surfaces.

2. A steam-engine valve comprising two parts having a series of corresponding ports therethrough and corresponding bridge-pieces at the sides of the ports said bridge-pieces having overlapping surfaces forming closures the overlapping surfaces of one part facing in one direction and those of the other in the opposite direction.

3. A steam-engine valve comprising two parts having corresponding bridge-pieces across them the bridge-pieces of one part having offsets and the corresponding bridge-pieces of the other part having oppositely-arranged offsets the offset portions of one part overlapping the corresponding offset portions of the other forming closures in the bridge-pieces, whereby the steam-pressure tends to move one part in one direction and the other part in the opposite direction to effect a closure along the overlap, being portions of the offsets.

4. A steam-engine valve comprising two parts having a series of corresponding ports therethrough and corresponding bridge-pieces at the sides of the ports, the bridge-pieces of one part having offsets in one direction and the bridge-pieces of the other part having offsets in the opposite direction, the offsets having overlapping surfaces forming closures at the sides of one of the ports and the walls of the ports in one part being approximately in line with the walls of the corresponding ports in the other part whereby the steam-pressure tends to move one part in one direction and the other part in the opposite direction to effect a closure along the bridge-courses.

5. A steam-engine valve comprising two parts having main ports therethrough near the ends of the valve forming bridge-pieces across the ends of the valve the bridge-pieces of one part having offsets and the pieces of the other part having oppositely-arranged offsets, the offsets having overlapping surfaces forming closures at the bridge-pieces said bridge-pieces also having auxiliary ports between the closures at the main ports and communicating with the main ports.

6. A steam-engine valve comprising the parts A and B

having the ports *a* and *a'* therethrough forming the bridge-pieces a^2, a^3, a^4, a^5, a^6, and a^7, in part A and corresponding bridge-pieces b^2, b^3, b^4, b^5, b^6, and b^7, in the part B the bridge-pieces on the part A having the offsets a^8, a^9, a^{10}, a^{11}, a^{12}, and a^{13}, all arranged at the same side of the bridge-pieces and the bridge-pieces on the part B having offsets b^8, b^9, b^{10}, b^{11}, b^{12}, and b^{13}, all on the same side of the bridge-pieces and arranged oppositely to those on the part A the sides of the offsets forming overlapping surfaces which close the bridge-pieces and the strips C for closing the sides of the valve.

7. In a steam-engine valve the combination of two parts arranged to permit a movement of the valve-surface to their seats said parts having ports therethrough and bridge-pieces at the sides of the ports and a means for effecting a closure along the bridge-pieces by contact of closure-surfaces and arranged to maintain said contact between said surfaces through the action of the steam-pressure.

8. A steam-engine valve comprising two parts, each having exterior seating-surfaces and surfaces between the parts exposed to steam-pressure for pressing the seating-surfaces outwardly, the seating-surfaces being greater than the exposed surfaces.

9. A steam-engine valve comprising two parts having a series of ports therethrough and bridge-pieces between the ports, said parts having outer exposed seating-surfaces and surfaces between the parts exposed to steam-pressure and tending to separate the parts, the seating-surfaces being greater than the exposed surfaces between the parts.

10. A steam-engine valve comprising two corresponding parts with ports continuing therethrough and bridge-pieces between the ports; the bridge-piece of the one part overlapping by the corresponding bridge-piece of the other part, the lapped portions being in contact and forming a closure at the sides of the ports, the parts of the valve having outer seating-surfaces; and surfaces exposed to the steam between the ports; the exposed surfaces tending to separate the parts, and the seating-surfaces being greater than the exposed surfaces.

11. A steam-engine valve comprising two parts having a series of overlapping surfaces forming closures along the faces of the parts, the overlapping surfaces of one part facing in one direction and those of the other part in the opposite direction, whereby the steam-pressure tends to move one part in one direction and the other part in the opposite direction to effect a closure of overlapped surfaces, the said parts of the valve having exposed seating-surfaces; and exposed surfaces between the parts tending to separate the parts, the seating-surfaces being greater than the exposed surfaces.

847,370. PASTE-RECEPTACLE. ROBERT R. RITS, Milwaukee, Wis. Filed Dec. 8, 1906. Serial No. 346,863.

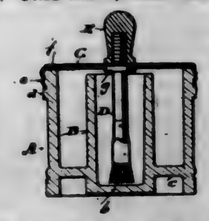

Claim.—1. A receptacle for paste or analogous adhesive material comprising an adhesive-chamber and a water-chamber, the bottom of the water-chamber being at a depth below that of the adhesive-chamber; a cover for the receptacle, and a brush in connection with the cover to depend therefrom in said water-chamber approximately the full depth of same when said cover is in place on said receptacle.

2. A receptacle for paste or analogous adhesive material having an upper outer screw-thread and comprising an adhesive-chamber and a water-chamber, the bottom of the water-chamber being at a depth below that of the adhesive-chamber, a cover having a screw-threaded rim engageable with the thread of the receptacle, and a brush in connection with the cover to depend therefrom in said water-chamber approximately the full depth of same when said cover is in place on said receptacle.

3. A receptacle for paste or analogous material comprising an adhesive-chamber and a water-chamber, the bottom of the water-chamber being at a depth below that of the adhesive-chamber, a cover for the receptacle, a brush having the shank thereof protruding upwardly through the cover and provided with a collar abutting the under side of said cover, and a handle in connection with the brush-shank above the aforesaid cover to abut the same and clamp it on said collar, said brush being of a length below its shank-collar to extend approximately the full depth of the aforesaid water-chamber.

4. A receptacle for paste or analogous material comprising an adhesive-chamber and a water-chamber, the bottom of the water-chamber being at a depth below that of the adhesive-chamber; a cover for the receptacle, a brush having a shank protruding through the cover and provided with a collar abutting the under side of said cover, and a handle in screw-thread connection with the protruding end of the brush-shank against said cover, the brush being of a length below its shank-collar to extend approximately the full depth of the aforesaid water-chamber.

847,371. APPARATUS FOR CONVERTING FEATHERS INTO DOWN. WILLIAM H. ROBINSON, New York, N. Y., assignor, by mesne assignments, to himself, and W. M. Hanes, Winston Salem, N. C. Filed Feb. 17, 1902. Serial No. 94,557.

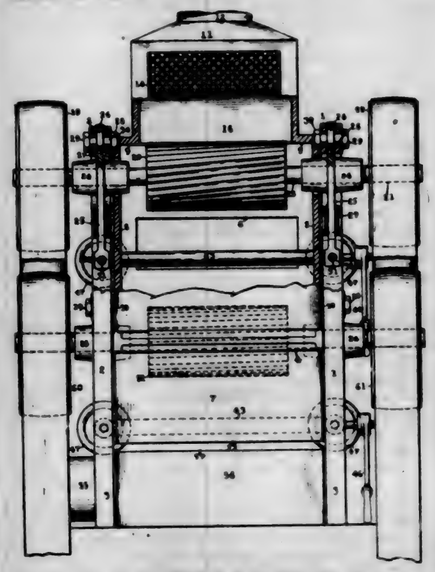

Claim.—1. An apparatus for converting feathers into down, comprising a pair of feather-mutilating cylinders having peripheral teeth and mounted close together, and means for running them in opposite directions at unequal surface speeds; one of said cylinders being yieldingly mounted.

2. An apparatus for converting feathers into down, comprising two cylinders, means for revolving them at unequal surface speeds, each cylinder having upon its periphery spirally-cut feather mutilating or shredding teeth extending longitudinally thereof, one cylinder being mounted so as to have a yielding action, and means for effecting relative adjustment between the cylinders.

3. An apparatus for converting feathers into down, comprising two cylinders and means for revolving them in opposite directions at unequal surface speeds, each cylinder having upon its periphery spirally-cut feather mutilating or shredding teeth extending longitudinally thereof, said teeth being cut out either left hand or right hand upon both cylinders; and the leading or advance corners of the teeth upon the fast cylinder being obtuse, and the following or back corners of the teeth being sharp.

4. In an apparatus for converting feathers into down, a pair of cylinders journaled side by side, each cylinder having upon its periphery a set of longitudinally-extending feather mutilating or shredding teeth, said teeth being cut spirally upon an inclination of about one inch to the running foot, and the advance or leading corners of said teeth upon the fast cylinder being obtuse, and means for revolving said cylinders in opposite directions at unequal speeds.

5. In an apparatus for converting feathers into down, a blade revolving upon an axis and extending in a spiral direction longitudinally of said axis, and an opposing spiral blade crossed by the first blade, one of said blades having an obtuse leading or advance corner and a sharp following or back corner, and means for rasping or scraping one blade along the other.

6. An apparatus for converting feathers into down, comprising a pair of cylinders, means for revolving them at unequal surface speeds, a set of spiral peripheral teeth extending longitudinally upon each cylinder, each tooth upon the fast cylinder having an obtuse leading or advance corner and a sharp following or back corner, said cylinders being set close together, and the teeth upon adjoining sides of the cylinders crossing.

7. An apparatus for converting feathers into down, comprising a pair of cylinders, means for revolving them in opposite directions at unequal surface speeds, and a set of spiral peripheral teeth extending longitudinally upon each cylinder; each tooth upon the fast cylinder having an obtuse leading or advance corner, the spirals upon both cylinders being formed either right hand or left hand, and said cylinders being set close together.

8. An apparatus for converting feathers into down, comprising two cylinders, means for revolving them at unequal surface speeds, each cylinder having upon its periphery spirally-cut feather mutilating or shredding teeth extending longitudinally thereof, and means for effecting fine adjustments of one of said cylinders bodily toward or away from the other.

9. An apparatus for converting feathers into down, comprising two cylinders, means for revolving them at unequal surface speeds, each cylinder having upon its periphery spirally-cut feather mutilating or shredding teeth extending longitudinally thereof, and means for effecting fine adjustments of one of said cylinders bodily toward or away from the other, and means for adjusting the axis of one of said cylinders into parallelism with the axis of the other cylinder.

10. An apparatus for converting feathers into down, comprising two cylinders, means for revolving them at unequal surface speeds, each cylinder having upon its periphery spirally-cut feather mutilating or shredding teeth extending longitudinally thereof, and means for effecting fine adjustments of one of said cylinders bodily toward or away from the other, and means for adjusting the axis of one of said cylinders into parallelism with the axis of the other cylinder, and means for adjusting one of said cylinders bodily away from the other.

11. An apparatus for converting feathers into down, comprising opposing cylinders each provided with feather mutilating or shredding teeth, at least one of said cylinders being mounted for a yielding action, and means for revolving said cylinders in opposite directions at unequal speeds; said teeth being blunt and extending along the cylinders in spiral direction, and all either left hand or right hand upon both cylinders.

12. An apparatus for converting feathers into down, comprising opposing cylinders each provided with feather mutilating or shredding teeth, means for enabling a bodily movement of one cylinder toward and away from the other, a spring for pressing said movable cylinder toward its mate, and means for revolving said cylinders at unequal speeds; said teeth being blunt and extending along the cylinders in spiral direction, and all either left hand or right hand upon both cylinders.

13. An apparatus for converting feathers into down, comprising opposing feather mutilating or shredding cylinders, each having peripheral feather-shredding teeth, and at least one thereof being mounted for bodily movement toward and away from the other, a spring for pressing said movable cylinder toward the opposing cylinder, and means for adjusting said movable cylinder toward or away from the other; said teeth being blunt and extending along the cylinder in spiral direction, and all either left hand or right hand upon both cylinders.

14. An apparatus for converting feathers into down, comprising a cylinder provided with longitudinally-extending feather shredding or mutilating teeth, swinging arms whereon said cylinder is journaled, and a cylinder having coöperating feather-shredding teeth; said teeth being blunt and extending along the cylinders in spiral direction, and all either left hand or right hand upon both cylinders.

15. An apparatus for converting feathers into down, comprising opposing cylinders each having feather-mutilating teeth, means for rotating said cylinders at unequal speeds in opposite directions, a lever or handle, and means connected to said lever for throwing said cylinders out of coöperative relation; said teeth being blunt and extending along the cylinders in spiral direction, and all either left hand or right hand upon both cylinders.

16. An apparatus for converting feathers into down, comprising opposing cylinders each provided with longitudinal feather-shredding teeth, one of said cylinders being journaled upon the framework, movable arms upon which the other cylinder is journaled, and a lever for controlling said arms; said teeth being blunt and extending along the cylinders in spiral direction, and all either left hand or right hand upon both cylinders.

17. A feather-mutilating cylinder having a shaft, a pair of pivoted arms in which said shaft is journaled, means for adjusting the pivot of one arm independently of the pivot of the other arm, means for adjusting the arms upon their pivots, and means for throwing said arms and cylinder together bodily out of operative position.

18. In an apparatus for converting feathers into down, the combination of feather-mutilating or shredding cylinders, 18 and 20, arms 25, pivoted upon eccentrics, rods 38, springs 37, eccentric device 42, 44, lever 46, rods 45, and adjusting-wheels 47.

19. In an apparatus for converting feathers into down, a cylinder having feather-mutilating teeth a pair of arms in which said cylinder is journaled, an opposing cylinder having corresponding teeth, and a transverse shaft connected to both arms and provided with means for moving said arms on their bearings; said teeth being blunt and extending along the cylinders in spiral direction, and all either left hand or right hand upon both cylinders.

20. In an apparatus for converting feathers into down, the combination of feather mutilating or shredding cylinders 18 and 20, arms 25, rods 33, springs 37, eccentric device 42, 44, lever 46, rods 45, adjusting-wheels 47, and springs 48.

21. An apparatus for converting feathers into down, comprising two sets of rotary feather mutilating or shredding cylinders having peripheral teeth, and so related that the mutilated feathers from one set may pass between the cylinders in the other set, and means for revolving the cylinders in each set at unequal surface speeds; the teeth upon each cylinder extending spirally and those upon the fast cylinder having obtuse advance or leading corners, and both cylinders in each set having either right-hand or left-hand teeth.

22. An apparatus for converting feathers into down, comprising two sets of feather mutilating or shredding cylinders having peripheral teeth, the teeth in the second set being finer or closer than the teeth in the first set, and the

cylinders in each set being arranged close together, and means for revolving the cylinders in each set at unequal surface speeds.

23. An apparatus for converting feathers into down, comprising two sets of feather mutilating or shredding cylinders, and means for throwing the cylinders in each set out of coöperative relation to each other.

24. An apparatus for converting feathers into down, comprising two sets of feather mutilating or shredding cylinders, at least one cylinder in each set being yieldingly supported, and means for revolving the cylinders in each set at unequal surface speeds.

25. An apparatus for converting feathers into down, comprising two sets of feather mutilating or shredding cylinders, and means for revolving the cylinders in each set at unequal surface speeds, one cylinder in each set being journaled upon swinging arms.

26. In an apparatus for converting feathers into down, the combination of means for shredding the feathers, a bin or box to receive the shredded feathers, and a suction-pipe communicating with said bin or box.

27. An apparatus for converting feathers into down, comprising a casing, a pair of feather-mutilating cylinders arranged in the upper part thereof, a pair of feather mutilating or shredding cylinders arranged in the lower part thereof, a box beneath said cylinders, and an opening in said box through which the descending shreds may be wafted.

28. In an apparatus for converting feathers into down, a pair of cylinders journaled side by side, each cylinder having upon its periphery a set of longitudinally-extending feather mutilating or shredding teeth, said teeth being cut spirally upon an inclination of about one inch to the running foot, and all the teeth upon both cylinders being either right hand or left hand, and means for revolving said cylinders in opposite directions at unequal speeds.

29. In an apparatus for converting feathers into down, a blade revolving upon an axis and extending in a spiral direction longitudinally of said axis, an opposing spiral blade crossed by the first blade, and means for revolving said blade in opposite directions at uneven surface speeds.

30. An apparatus for converting feathers into down, comprising a pair of cylinders, means for revolving them in opposite directions at unequal surface speeds, a set of blunt spiral peripheral teeth extending longitudinally upon each cylinder, said cylinders being set close together, and the teeth upon the adjoining sides of the cylinders crossing.

31. An apparatus for converting feathers into down, comprising a pair of cylinders, means for revolving them in opposite directions at unequal surface speeds, a set of blunt spiral teeth extending longitudinally upon each cylinder, the spirals upon both cylinders being formed either all right hand or all left hand, and said cylinders being set close together.

32. An apparatus for converting feathers into down, comprising a pair of cylinders, means for revolving them in opposite directions at unequal surface speeds, and a set of spiral teeth extending longitudinally upon each cylinder, the spirals upon both cylinders being formed either all right hand or all left hand, the teeth upon the fast cylinder having obtuse leading or advance corners and sharp back or following corners, and the teeth upon the slow cylinder having sharp leading or advance corners and obtuse back or following corners.

33. An apparatus for converting feathers into down, comprising a casing, a chute in the upper part of the casing, through which the feathers may be blown into the casing, the latter having openings to permit exhaust of the blast which introduces the feathers into the casing, a pair of cylinders within the casing provided with revolving means and coöperating to shred the feathers introduced by the blast, a receptacle beneath the cylinders into which the heavier portions of the shredded feathers may fall and accumulate, and an air and down duct below said cylinder and above said receptacle, for drawing off the lighter portions of the shredded feathers as they fall from the rolls, so as to separate the lighter from the heavier products of the rolls.

34. An apparatus for converting feathers into down, comprising a casing, a receiving-chute in the upper part of the casing, the latter having exhaust-openings for the blast which enters with the feathers through the chute, a pair of cylinders within the casing and provided with revolving means and coöperating to shred the feathers introduced by the blast, a second pair of cylinders below the first pair and provided with revolving means and constructed to shred more finely the product of the first pair of cylinders, and a duct below the second pair of cylinders for drawing off by an air-current the lighter portions of the product of the second cylinders as it falls therefrom, so that said lighter portions are segregated from the portions of said product which are too heavy to be drawn off by the air-current and which settle below said duct.

35. An apparatus for converting feathers into down, comprising a casing, a pair of cylinders within the casing and provided with revolving means and coöperating to shred the feathers received thereby, a second pair of cylinders below the first and provided with revolving means and coöperating to shred more finely the product of the first pair of cylinders, and means for segregating the lighter from the heavier portions of the product of the second pair of cylinders, as such product drops therefrom.

36. An apparatus for converting feathers into down, comprising a casing having an opening for the admission of feathers, a pair of cylinders within the casing and provided with revolving means and coöperating to shred the feathers, and means for segregating the lighter from the heavier portions of the product of the cylinders as it drops therefrom.

37. An apparatus for converting feathers into down, comprising a pair of cylinders coöperating to shred the feathers, a hopper for said cylinders, a casing in which the cylinders are confined, means for revolving the cylinders at unequal speeds in opposite directions, said cylinders having peripheral teeth so formed that the teeth on one cylinder cross those on the other along the line where the cylinders meet, a second pair of cylinders and means for guiding thereto the product of the first pair, the cylinders in the second pair having peripheral teeth so formed that the teeth on one cylinder cross those on the other along the line where the cylinders meet, but the teeth on the second pair being finer than those on the first pair, and means for revolving the second cylinders at unequal speeds but both faster than the cylinders in the first pair.

38. An apparatus for converting feathers into down, comprising a pair of cylinders, having peripheral teeth so formed that the teeth on one cylinder cross those on the other along the line where the cylinders meet, means for revolving the cylinders at unequal speeds, a second pair of cylinders placed to receive the product of the first pair, the cylinders in the second pair having peripheral teeth so formed that the teeth on one cylinder cross those on the other along the line where the cylinders meet, and means for revolving the second cylinders at unequal speeds but both faster than the cylinders in the first pair.

39. An apparatus for converting feathers into down, comprising a pair of cylinders having peripheral teeth so formed that the teeth on one cylinder cross those on the other along the line where the cylinders meet, means for revolving the cylinders at unequal speeds, a second pair of cylinders placed to receive the product of the first pair, the cylinders in the second pair having peripheral teeth so formed that the teeth on one cylinder cross those on the other along the line where the cylinders meet, means for revolving the second cylinders at unequal speeds but both faster than the cylinders in the first pair, and means for effecting segregation of the lighter from the heavier products of the second cylinders as said products fall from said cylinders.

40. In an apparatus for converting feathers into down, the combination with a feather-shredding mechanism, of a second feather-shredding mechanism placed to receive the product of the first and constructed and operating to shred said product more finely, and means for effecting segregation of the lighter from the heavier portions of the product of the second mechanism, as said product falls therefrom.

847,372. LIGHTNING-ARRESTER. CHARLES A. ROLFE, Adrian, Mich., assignor, by mesne assignments, to Rolfe Electric Co., Rochester, N. Y., a Corporation of New York. Filed Feb. 13, 1903. Serial No. 143,227.

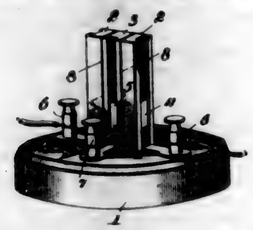

Claim.—1. In a lightning-arrester, the combination with suitable electrodes, of a suitable body or mass of material having the property of being a non-conductor when cold and a conductor when warmed or heated, said material being interposed between the electrodes, whereby when an arc passes between the electrodes, said material becomes a conductor, and when such arc desists the same becomes a non-conductor, substantially as described.

2. In a lightning-arrester, the combination with the electrodes thereof, of means for establishing a low-resistance electrical connection on the passage of an arc between said electrodes, and for disestablishing said connection on the cessation of the arc.

847,373. PHOTOGRAPHIC SHUTTER. CHARLES A. ROOT, Kalamazoo, Mich. Filed Mar. 1, 1906. Serial No. 303,690.

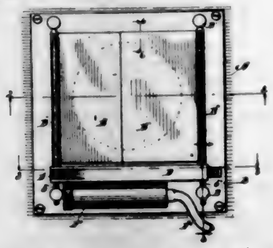

Claim.—1. In a photographic shutter, the combination of a shutter-plate; posts projecting therefrom; shafts journaled on said posts; wings carried by said shafts, having inturned flanges at their ends and rear edges; a lens-tube over which said wings are adapted to close; pinions on said shafts; a rack-bar having oppositely-facing racks thereon, arranged to engage said pinions on opposite sides respectively; a casing for said rack-bar formed of sheet metal; springs formed integral therewith, arranged to engage said rack-bar for holding the same against said pinions; a pneumatic engine consisting of a cylinder having an inlet-port at its outer end and a longitudinal slot in the side thereof; a check-valve for said inlet-port; a piston; and a pin arranged through the said slot in said cylinder for connecting said piston to said rack-bar, for the purpose specified.

2. In a photographic shutter, the combination of a shutter-plate; posts projecting therefrom; shafts journaled on said posts; wings carried by said shafts; pinions on said shafts; a rack-bar having oppositely-facing racks thereon, arranged to engage said pinions on opposite sides respectively; a casing for said rack-bar formed of sheet metal; springs formed integral therewith, arranged to engage said rack-bar for holding the same against said pinions; a pneumatic engine consisting of a cylinder having an inlet-port at its outer end and a longitudinal slot in the side thereof; a check-valve for said inlet-port; a piston; and a pin arranged through the said slot in said cylinder for connecting said piston to said rack-bar, for the purpose specified.

3. In a photographic shutter, the combination of a shutter-plate; posts projecting therefrom; shafts journaled on said posts; wings carried by said shafts, having inturned flanges at their ends and rear edges; a lens-tube over which said wings are adapted to close; pinions on said shafts; a rack-bar having oppositely-facing racks thereon, arranged to engage said pinions on opposite sides respectively; a casing for said rack-bar formed of sheet metal; springs formed integral therewith, arranged to engage said rack-bar for holding the same against said pinion; a pneumatic engine consisting of a cylinder having a longitudinal slot in the side thereof; a piston; and a pin arranged through the said slot in said cylinder for connecting said piston to said rack-bar, for the purpose specified.

4. In a photographic shutter, the combination of a shutter-plate; posts projecting therefrom; shafts journaled on said posts; wings carried by said shafts; pinions on said shafts; a rack-bar having oppositely-facing racks thereon, arranged to engage said pinions on opposite sides respectively; a casing for said rack-bar formed of sheet metal; springs formed integral therewith, arranged to engage said rack-bar for holding the same against said pinions; a pneumatic engine consisting of a cylinder having a longitudinal slot in the side thereof; a piston; and a pin arranged through the said slot in said cylinder for connecting said piston to said rack-bar, for the purpose specified.

5. In a photographic shutter, the combination of a shutter-plate; posts projecting therefrom; shafts journaled on said posts; wings carried by said shafts, having inturned flanges at their ends and rear edges; a lens-tube over which said wings are adapted to close; pinions on said shafts; a rack-bar having oppositely-facing racks thereon, arranged to engage said pinions on opposite sides respectively; a pneumatic engine consisting of a cylinder having an inlet-port at its outer end and a longitudinal slot in the side thereof; a check-valve for said inlet-port; a piston; and a pin arranged through the said slot in said cylinder for connecting said piston to said rack-bar, for the purpose specified.

6. In a photographic shutter, the combination of a shutter-plate; posts projecting therefrom; shafts journaled on said posts; wings carried by said shafts; pinions on said shafts; a rack-bar having oppositely-facing racks thereon, arranged to engage said pinions on opposite sides respectively; a pneumatic engine consisting of a cylinder having an inlet-port at its outer end and a longitudinal slot in the side thereof; a check-valve for said inlet-port; a piston; and a pin arranged through the said slot in said cylinder for connecting said piston to said rack-bar, for the purpose specified.

7. In a photographic shutter, the combination of a shutter-plate; posts projecting therefrom; shafts journaled on said posts; wings carried by said shafts, having inturned flanges at their ends and rear edges; a lens-tube over which said wings are adapted to close; pinions on said shafts; a rack-bar having oppositely-facing racks thereon, arranged to engage said pinions on opposite sides respectively; a pneumatic engine consisting of a cylinder having a longitudinal slot in the side thereof; a piston; and a pin arranged through the said slot in said cylinder for connecting said piston to said rack-bar, for the purpose specified.

8. In a photographic shutter, the combination of a shutter-plate; posts projecting therefrom; shafts journaled on said posts; wings carried by said shafts; pinions on said shafts; a rack-bar having oppositely-facing racks thereon, arranged to engage said pinions on opposite sides respectively; a pneumatic engine consisting of a cylinder having a longitudinal slot in the side thereof; a piston; and a pin arranged through the said slot in said cylinder for connecting said piston to said rack-bar, for the purpose specified.

9. In a photographic shutter, the combination of a pair

of shafts; wings carried by said shafts, having inturned flanges at their ends and rear edges; a lens-tube over which said wings are adapted to close; pinions on said shafts; a rack arranged to engage said pinions on opposite sides respectively; a casing for said rack, formed of sheet metal; springs formed integral therewith, arranged to engage said rack for holding the same against said pinions; and means for shifting said rack, for the purpose specified.

10. In a photographic shutter, the combination of a pair of shafts; wings carried by said shafts; pinions on said shafts; a rack arranged to engage said pinions on opposite sides respectively; a casing for said rack, formed of sheet metal; springs formed integral therewith, arranged to engage said rack for holding the same against said pinions; and means for shifting said rack, for the purpose specified.

11. In a photographic shutter, the combination of a pair of shafts; wings carried by said shafts, having inturned flanges at their ends and rear edges; a lens-tube over which said wings are adapted to close; pinions on said shafts; a rack arranged to engage said pinions on opposite sides respectively; springs arranged to engage said rack for holding the same against said pinions; and means for shifting said rack, for the purpose specified.

12. In a photographic shutter, the combination of a pair of shafts; wings carried by said shafts; pinions on said shafts; a rack arranged to engage said pinions on opposite sides respectively; springs arranged to engage said rack for holding the same against said pinions; and means for shifting said rack, for the purpose specified.

13. In a photographic shutter, the combination of a pair of shafts; wings carried by said shafts, having inturned flanges at their ends and rear edges; a lens-tube over which said wings are adapted to close; pinions on said shafts; a rack arranged to engage said pinions on opposite sides respectively; and means for shifting said rack, for the purpose specified.

14. In a photographic shutter, the combination of a pair of shafts; wings carried by said shafts; pinions on said shafts; a rack arranged to engage said pinions on opposite sides respectively; and means for shifting said rack, for the purpose specified.

15. In a photographic shutter, the combination of the shutter-wings; a pneumatic engine, consisting of a cylinder having an inlet-port at its outer end; a check-valve for said inlet-port; a piston; and connections between said piston and wings, for the purpose specified.

847,374. DEVICE FOR DETACHING BOX-COVERS. EDWARD S. SAVAGE, Brooklyn, N. Y., assignor to American Chemical Manufacturing & Mining Company, Rochester, N. Y. Filed July 12, 1905. Serial No. 269,800. (Model.)

Claim.—1. A device adapted to detach the cover from a box, consisting of a lever pivoted to the side of the box, beneath the cover, having a part that is adapted to enter between the box and its cover, and an offset forming a shoulder at one side of its pivot and adjacent to said part that enters between the box and cover, that is adapted to engage the lower edge of the cover, and thereby raise it.

2. A device adapted to detach the cover from a box, consisting of a lever pivoted to the side of the box, beneath the cover, having a portion that is adapted to enter between the box and its cover, and offsets forming shoulders on each side of its pivot and adjacent to the part that enters between the box and cover, both shoulders being adapted to engage the lower edge of the cover, and thereby raise it.

847,375. LIDS FOR COFFEE-POTS AND SIMILAR ARTICLES. ALBERT SCHAEFER, St. Louis, Mo., assignor to National Enameling & Stamping Company, St. Louis, Mo., a Corporation of New Jersey. Filed Dec. 20, 1906. Serial No. 348,793.

Claim.—1. A lid or cover consisting of a member provided at its edge with a flat ring-shaped portion, a ring having a flange which contacts with the underneath side of said portion, a hinge-piece clamped between said parts, and means on said member for securing the ring in position; substantially as described.

2. A lid or cover consisting of a member provided with a folded edge having a portion of its periphery removed, and a hinge-piece having a portion arranged between the layers which form the folded edge of said member and projecting on each side of the cut-out portion in the periphery of said member; substantially as described.

3. A lid or cover consisting of a member provided at its edge with a flat portion and an integral portion which is bent underneath the flat portion, a member having a flange that is arranged between said portions, and a hinge-piece clamped between said flange and the flat portion of the member first referred to; substantially as described.

4. A lid or cover consisting of a member provided at its edge with a flat portion, a hinge-piece having a part in contact with said flat portion, and means integral with the flat portion of said member for securing the hinge-piece in position; substantially as described.

5. A lid or cover consisting of a member provided at its edge with a flat ring-shaped portion, a ring having a flange which engages the underneath side of said flat portion and is held in position by a portion on said member which is bent under said flange, the bent-under portion of said member being provided with an opening, and a hinge-piece consisting of a part that is clamped in position by the flange on said ring, and a web that projects outwardly through the opening in the bent-under portion of the member first referred to; substantially as described.

6. A lid or cover consisting of two coöperating members placed together, one of said members being provided with an opening to receive a hinge-piece, a hinge-piece having a portion arranged between said members and extending on opposite sides of said opening, and means for securing said members together; substantially as described.

847,376. HAY-STACKER. GEORGE SCHEIHING, Riverdale, Nebr. Filed June 30, 1906. Serial No. 324,199.

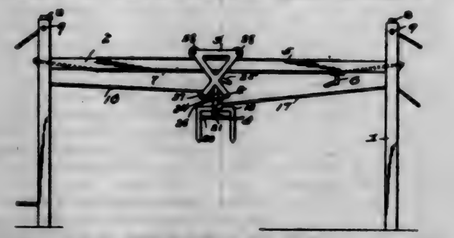

Claim.—1. A hay-stacker comprising uprights, rods uniting said uprights, adjustable brackets supported by said rods, a bar supported by said brackets, a truss-rod therefor, and a carriage mounted on said bar and provided with means for engaging the material to be stacked.

2. A hay-stacker comprising uprights, rods uniting the upper ends of said uprights, brackets supported by said rods, clevises carried by said brackets, a bar supported by said clevises, a carriage mounted on said bar, and a grapple carried by said carriage.

3. A hay-stacker comprising uprights, rods uniting said uprights, a bar supported by said rods, end caps for said bar, bolts for securing said end caps in position and provided with means for supporting pulleys, a carriage mounted on said bar and provided with means for supporting material to be stacked, and ropes connected to said carriage and passed over said pulleys.

4. A hay-stacker comprising uprights, rods uniting said uprights, brackets supported by said rods, a bar supported by said brackets and provided with wear-plates, end caps for said bar, eyebolts for securing said caps in position, pulleys supported by said eyebolts, a carriage mounted on said bar and provided with means for engaging the material to be stacked, and operating-ropes secured to said carriage and passed over said pulleys.

847,377. HAME-TUG. GODFRIED H. SCHMIDT, Lexington, Mo., assignor of one-half to C. W. Tobin, St. Louis, Mo. Filed June 15, 1906. Serial No. 321,920.

Claim.—An adjustable hame-tug comprising a bar having a recess therein provided with slots, the corresponding ends of which are laterally extended, transverse ribs upon the recessed face of the bar, a plate fastened over the recessed face of said bar, a tug-fastening plate having a convexed head having a curved shank portion with flanges projecting from the opposite edges of said head, said flanges being concaved upon their inner faces and adapted to contact with the convexed surfaces adjacent to the marginal edges of the slots in said bar, which convexed edges terminate at the lateral extensions of the slots, as set forth.

847,378. DRAFT AND VENT REGULATOR. JOSEPH A. SLOAN, Seattle, Wash. Filed Dec. 26, 1905. Serial No. 293,183.

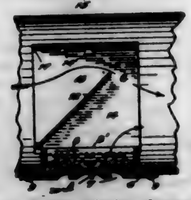

Claim.—1. In a device of the character described, an apertured curved plate connected to a frame, said frame, a valve-box having open ends and in communication with the frame-opening, and a valve positioned within said valve-box and pivotally connected to said plate.

2. In combination with a pipe, and a valve-box located therein and providing passages extending longitudinally of the pipe both exteriorly and interiorly of the valve-box, said valve-box being also in communication with the atmosphere exteriorly of the pipe, a valve pivotally mounted within said box so as to swing upon an axis extending through one of its edges, said valve being adapted to be swung so as to entirely or partially close the passage extending through the valve-box or the communication between the latter and the external atmosphere, and means extending exteriorly of the pipe whereby the action of the valve is regulated.

3. In combination with a smoke-pipe, a frame fitted in the side of the pipe and having a curved perforated plate, secured to said pipe and securing the frame in position, a valve-box fitted within the pipe and having an open end in communication with the frame-opening, and a valve carried by the plate, and so positioned as to close the openings in said plate when in one of its positions and the opening through the valve-box when in another position.

847,379. PRINTING-PRESS. WILLIAM H. SMILEY, Niles, Ohio. Filed Mar. 7, 1905. Serial No. 248,821.

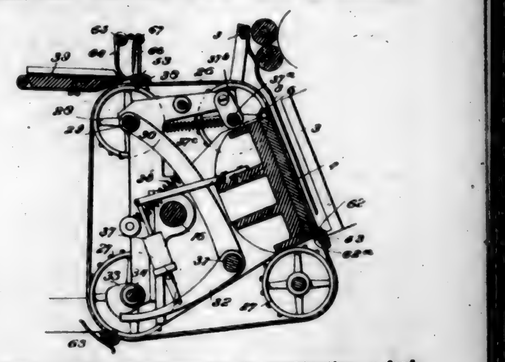

Claim.—1. In a printing-press, in combination, a feed-table, grippers, a conveyer therefor movable beneath and forward of said feed-table, and means for temporarily shifting the conveyer to allow the grippers to clear said feed-table as they pass forward thereof.

2. In a printing-press, in combination, a feed-table, grippers, conveyer-chains therefor, several sets of sprocket-wheels with which said chains engage, and means for shifting the position of one set of said wheels to lower said chains as a gripper passes beneath and forward of the feed-table.

3. In a printing-press, in combination, a feed-table, grippers, conveyer-chains therefor, several sets of sprocket-wheels with which said chains engage, means for shifting the position of the shaft at one set of sprocket-wheels, and a flexible support for the shaft of another set of sprocket-wheels for taking up any slack in the chains.

4. The combination with the feed-table, and a stationary frame, of the grippers, conveyer-chains therefor, several sets of sprocket-wheels with which said chains engage, means connected to the shaft of one set of sprocket-wheels for shifting the position of the latter, pivoted arms depending from said frame supporting the shaft of another set of sprocket-wheels, and springs acting on such latter shaft, as set forth.

5. The combination with the feed-table, of the grippers, conveyer-chains therefor, several sets of sprocket-wheels with which said chains engage, a rock-shaft, arms secured thereto supporting the shaft of one set of sprocket-wheels, means for actuating the shaft of another set of sprocket-wheels for imparting motion to the conveyer-chains, a cam carried by such shaft, and an arm on such rock-shaft with which said cam is designed to engage for shifting the position of the shaft supported by the arms of said rock-shaft, as set forth.

6. The combination with the feed-table, of the grippers, conveyer-chains therefor, several sets of sprocket-wheels with which said chains engage, a rock-shaft, arms secured thereto supporting the shaft of one set of sprocket-wheels, springs bearing against said arms, means mounted on the shaft of another set of sprocket-wheels comprising a gear-wheel designed to interlock with and effect the movement of such shaft when moved in one direction and a reciprocating rack-bar engaging said gear-wheel, a cam carried by said latter shaft, and an arm on said rock-shaft with which said cam engages.

7. The combination with the feed-table, of the grippers, conveyer-chains therefor, several sets of sprocket-wheels

with which said chains engage, means for actuating the shaft of one set of sprocket-wheels for imparting motion to the conveyer-chains comprising a gear-wheel and a longitudinally-reciprocating rack-bar meshing therewith, said gear-wheel operating said shaft when moved in one direction, and means for engaging such shaft for imparting a retrograde movement to said chains when such shaft is not being actuated by said gear-wheel.

8. The combination with the feed-table, of the grippers, conveyer-chains therefor, several sets of sprocket-wheels with which said chains engage, means for actuating the shaft of one set of sprocket-wheels for imparting motion to the conveyer-chains comprising a gear-wheel designed to interlock with and effect the movement of such shaft when moved in one direction, and a reciprocating rack-bar engaging said gear-wheel, a rotary shaft for actuating said rack-bar, a cam on the said sprocket-wheel shaft, and a rod actuated by said rotary shaft for engaging said cam and imparting a retrograde movement to said chains when said sprocket-wheel shaft is not being actuated by said gear-wheel.

9. The combination with the feed-table, of the grippers, conveyer-chains therefor, several sets of sprocket-wheels with which said chains engage, means for actuating the shaft of one set of sprocket-wheels for imparting motion to the conveyer-chains comprising a gear-wheel designed to interlock with and effect the movement of said shaft when moved in one direction and a reciprocating rack-bar engaging said gear-wheels, a rock-shaft supporting the shaft of another set of sprocket-wheels, said rock-shaft having an arm, a cam on the first-mentioned sprocket-wheel shaft for engaging such arm, a second cam on such shaft, a rod for engaging such latter cam for imparting a retrograde movement to such chains, and a rotary shaft for actuating said rod and said rack-bar, as set forth.

10. In a printing-press, the combination with a feed-table, of a series of gripper-bars, conveyer-chains for the latter, means for operating such chains, means for imparting a retrograde movement thereto for effecting a register between a gripper-bar and stock on such feed-table, each gripper-bar having a series of grippers and a rod passed longitudinally of each gripper-bar beneath the grippers for effecting the opening and allowing the closing of the latter, and means for partially turning such rod to close the grippers after they have registered with the stock, as set forth.

11. In a printing-press, the combination with the feed-table, of a series of gripper-bars, conveyer-chains for the latter, means for operating such chains, means for imparting a retrograde movement thereto for effecting the register between a gripper-bar and stock on such feed-table, each gripper-bar having a series of grippers, a rod for effecting the opening and closing of such grippers, such rod having a crank-arm at one end, a vertically-movable rod for engaging such crank-arm for effecting the closing of the grippers, and means for operating such vertically movable rod, as set forth.

12. The combination with the feed-table, of the grippers, conveyer-chains therefor, several sets of sprocket-wheels with which said chains engage, means for actuating the shaft of one set of sprocket-wheels comprising a gear-wheel designed to interlock with and effect the movement of such shaft when moved in one direction and a reciprocating rack-bar engaging said gear-wheel, means engaging said shaft for imparting a retrograde movement to said chains when said gear-wheel is not acting thereon, each gripper-bar having a series of grippers and a rod for actuating the latter, a crank on one end of such rod, a vertically-movable rod for engaging such crank, and means carried by said gear-wheel for operating said vertically-movable rod, as set forth.

13. The combination with the conveyer-chains and means for operating the latter, of the gripper-bars carried by said chains, a series of grippers adjustably mounted on such bars, each gripper consisting of a spring-plate designed to be raised and lowered at one end, a rod extended longitudinally of each gripper-bar beneath the grippers, and means for turning such rod for effecting the opening and closing of the grippers.

14. The combination with the conveyer-chains and means for operating the latter, of the gripper-bars carried by said chains, having longitudinal grooves in their upper surfaces, a series of grippers consisting of spring-plates secured at one end and free at the other, rods located in said grooves, said rods when turned axially in one direction effecting the opening of said grippers and when turned in the opposite direction allowing of the closing thereof, and means for acting on said rods.

15. The combination with a printing-press having a stationary platen, of a series of gripper-bars, chains therefor, means for operating said chains, stops on said platen with which said gripper-bars are designed to register, means for imparting a retrograde movement to said chains, and rollers carried by said gripper-bars for holding the latter out of engagement with the platen in their travel thereover.

16. In a printing-press having a feed-table, a series of gripper-bars, conveyers therefor, a series of stop-gages suspended vertically above said table at the delivery end thereof, and means designed to be engaged by said gripper-bars for moving said gages out of the way to permit of the passage of stock engaged by the grippers.

17. In a printing-press having a feed-table, a series of gripper-bars, conveyers therefor, a series of stop-gages suspended vertically above said table at the delivery end thereof, means designed to be engaged by said gripper-bars for elevating said gages out of the way to permit of the passage of stock, means for temporarily holding said gages elevated, and means for releasing such latter means for lowering of the gages, the timing thereof conforming to the size of the stock.

18. In a printing-press having a feed-table, a series of gripper-bars, conveyers therefor, a series of stop-gages suspended above said table at the delivery end thereof, a vertically-movable cross-rod from which said gages depend, means connected to said cross-rod designed to be engaged by said gripper-bars for elevating said gages out of the way, means for temporarily holding said gages when elevated, and means for releasing the last-mentioned means, as set forth.

19. The combination with the feed-table, of the vertically-movable cross-rod, a series of stop-gages depending from said cross-rod, means for elevating the latter, a rock-shaft having hooks designed to engage and hold said cross-rod in its elevated position, and means for acting on said rock-shaft to effect the release of said cross-rod, as set forth.

20. In a printing-press having a feed-table, a series of gripper-bars and conveyers therefor, a vertically-movable cross-rod, a series of stop-gages depending from said cross-rod and normally in close relation to the delivery end of said feed-table, fingers depending from said cross-rod designed to be engaged by said gripper-bars as they are located in front of said feed-table, such engagement effecting the raising of said cross-rod, pivoted hooks designed to engage and hold said cross-rod in its raised position, and means for releasing said hooks from said cross-rod.

21. The combination with a feed-table, of a series of gripper bars, conveyer-chains therefor, several sets of sprocket-wheels with which said chains engage, means for engaging the shaft of one set of sprocket-wheels for operating said chains, a cam adjustably mounted on such shaft, a vertically-movable cross-rod mounted above said table having a series of depending stop-gages and depending fingers, said cross-rod being elevated when said fingers are engaged by a gripper-bar, a rock-shaft, hooks depending therefrom for holding said cross-rod when elevated, a crank-arm on one end of said rock-shaft, and a rod connected to said crank-arm designed to be acted on by said cam.

22. A feed-table having stepped cut-outs in its top transverse to the line of travel of the stock which latter is designed to contact with the edges of the walls of the several cut-outs.

23. A feed-table having stepped cut-outs in its upper surface, each cut-out having an upright wall with the edge whereof the stock is designed to engage when positioned on the table a side-registering plate movable transversely of said table, and means for actuating the same.

24. A feed-table having stepped cut-outs in its upper surface, each cut-out having an upright wall with the edge whereof the stock is designed to engage when positioned on the table a side-registering plate having a series of cut-outs in its lower edge to conform to said table, and means for operating such plate.

25. The combination with the feed-table, of the longitudinally-movable bar set in the upper surface thereof, a side-registering device carried by said bar, a lever secured to one end of said bar having a transverse slot in its lower end, a vertically-movable rod having a slot in its upper end, means for securing such end to the slotted end of such lever, and means for actuating said rod, as set forth.

26. In a printing-press, the combination of a supporting-frame, a platen, a traveling conveyer adapted to conduct the sheets to be printed over said platen, printing mechanism, means for operating said printing mechanism to print the sheet on the platen, means for operating said conveyer, and elastic tension devices for said conveyer.

27. In a printing-press, the combination of a supporting-frame, a platen, a traveling conveyer adapted to conduct sheets over said platen, said conveyer being composed of link belts, sprocket-wheels upon which said belts are adapted to travel, rocking supports upon which said sprocket-wheels are carried, printing mechanism, means for operating said printing mechanism to print the sheet on the platen, and spring-tension devices for said rocking supports.

847,380. COTTON-CHOPPER. RUFUS T. STERLING, San Antonio, Tex., assignor of one-half to Alonzo J. Swearingen, San Antonio, Tex. Filed May 7, 1906. Serial No. 315,594.

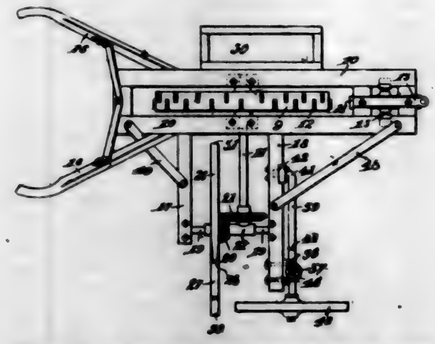

Claim.—1. In a cotton-chopper, spacer members formed of arms of resilient material and with cutting edges and mounted for rotation with the outer portions curved concentrically to the source of movement and thence curved eccentrically to the source of movement and with increasing radii and thence curved inwardly and attached to the source of movement.

2. In a cotton-chopper, spacer members formed of arms of resilient material and with cutting edges and mounted for rotation with the outer portions curved concentrically to the source of movement and thence curved eccentrically to the source of movement and with increasing radii and thence curving inwardly and attached to the source of movement, said inwardly-curving portion being twisted to cause the cutting edges thereof to operate at an angle to the remainder of the arm and to offer increased resistance to the strains.

3. In a cotton-chopper, a supporting-frame, an axle and ground-wheel mounted for rotation upon said frame, a drum mounted for rotation upon said frame, means for transmitting the motion of said axle to said drum, spacer members formed of arms of resilient material and with cutting edges with outer portions curved concentrically of said drum and thence curved eccentrically of said drum and with increasing radii and thence curved inwardly and attached to said drum.

4. In a cotton-chopper, a supporting-frame, an axle and ground-wheel mounted for rotation upon said frame, a drum mounted for rotation upon said frame, means for transmitting the motion of said axle to said drum, spacer members formed of arms of resilient material and with cutting edges with the outer portions curved concentrically of said drum and thence curved eccentrically of said drum and with increasing radii and thence curved inwardly toward said drum and with the terminal reversely curved and connected to said drum.

5. In a cotton-chopper, a supporting-frame, an axle and ground-wheel mounted for rotation upon said frame, a drum mounted for rotation upon said frame, means for transmitting the motion of said axle to said drum, spacer members formed of arms of resilient material and with cutting edges with the outer portions curved concentrically of said drum and thence curved eccentrically of said drum and with increasing radii and thence curved inwardly toward said drum with the terminal reversely curved and connected to said drum and adjusting means between said drums and arms.

6. In a cotton-chopper a supporting-frame, an axle and ground-wheel mounted for rotation upon said frame, a drum mounted for rotation upon said frame, means for transmitting the motion of said axle to said drum, spacer members formed of arms of resilient material and with cutting edges and connected at the inner ends to said drum and curving outwardly therefrom for intermittent engagement with the earth as the drum is rotated, and adjusting-screws operating in said drum and bearing against said spacers.

7. In a cotton-chopper a supporting-frame, a main axle and ground-wheel mounted for rotation upon said frame at one side and retained against vertical movement with relation to the frame spacers formed of curved arms of yielding material and carried by said frame, means for transmitting the motion of said main axle to said spacers, a supplemental axle swinging at the inner end from said frame, a ground-wheel upon the free end of said supplemental axle and adapted to engage the ground in advance of said spacers and yieldable means for supporting the movable end of said supplemental axle.

847,381. VENTILATOR. FREDERICK W. SIMMES, St. Matthews, S. C. Filed Dec. 16, 1905. Serial No. 292,073.

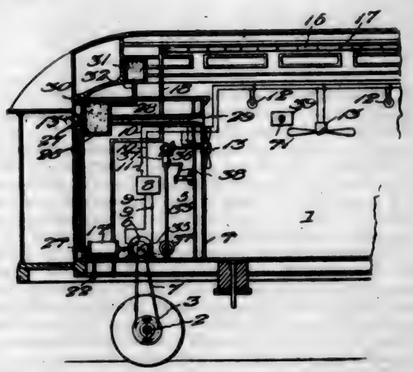

Claim.—1. A car-ventilating apparatus comprising a filtering-chamber open to the atmosphere, a perforated foul-air outlet-pipe arranged within the car, a pump within the car and in communication at one end with said outlet-pipe, said pump having an outlet to the atmosphere adjacent the communication with the outlet-pipe, the opposite end of the pump having an air-inlet and being in

communication with the filtering-chamber, and means for operating the pump.

2. A filtering-chamber fixed within a car-body and open to the atmosphere, a perforated foul-air pipe arranged within the car, a pump having communication with said perforated pipe and formed with an outlet to the atmosphere, the opposite end of the pump being formed with an air-inlet, and a pipe in communication with the pump at the inlet end and with the filtering-chamber.

3. A filtering-chamber mounted within the car-body and normally open to the atmosphere beyond the car-body, a perforated foul-air pipe mounted within the car, a pump fixed within the car and in comunication at opposite ends with the perforated pipe and with the filtering-chamber, an air-outlet leading from the pump at the end adjacent the communication with the perforated pipe, and an air-inlet leading to the pump at the end adjacent the communication with the filtering-chamber.

4. A filtering-chamber mounted in the tank-body and normally open to the atmosphere, a filtering medium within the chamber, a liquid-tank in communication with the chamber for supplying moisture to the filtering medium, a perforated foul-air pipe mounted within the car, a pump fixed within the car and in communication at opposite ends with the perforated pipe and with the filtering-chamber, an air-outlet leading from the pump at the end adjacent the communication with the perforated pipe, and an air-inlet leading to the pump at the end adjacent the communication with the filtering-chamber.

847,382. RAIL-JOINT. VALENTIN UEBELHOFEN, Lakeside, Ill. Filed Aug. 30, 1906. Serial No. 332,675.

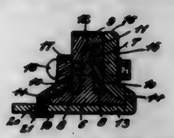

Claim.—1. A rail structure comprising a base-plate, a rail-base mounted thereon, side plates connected to the base-plate and overlying the rail-base, and a cap on the rail-base fitting between the upper parts of the side plates and removable without displacing the rail-base or side plates, the top of one of the said plates being flush with the top of the rail.

2. The combination with a base-plate having an opening therein, of a rail thereon, a side plate fastened to the rail and having a tongue extending through the opening, and a turn-button on the tongue under the base-plate.

847,383. APPARATUS FOR DRYING TEXTILE MATERIAL. OTTO VENTER, Chemnitz, Germany. Filed Jan. 16, 1907. Serial No. 352,589.

Claim.—1. An apparatus for drying textile material the combination of a drying-chamber, a perforated hollow cylinder provided therein, a pipe in communication therewith, means for producing a partial vacuum in said pipe, means for closing off said drying-chamber from the outside and a compressed-air pipe connected thereto.

2. In apparatus for drying textile material the combination of a drying-chamber closed off from the outside, a compressed-air pipe in communication therewith, a series of perforated hollow cylinders provided in said drying-chamber adapted to receive the material to be dried, a pipe in communication with said hollow cylinders and means for drawing air from said latter pipe.

3. In apparatus for drying textile material the combination of a drying-chamber closed off from the outside, a compressed-air pipe in communication therewith, a series of perforated hollow cylinders provided in said drying-chamber adapted to receive the material to be dried, a pipe in communication with said hollow cylinders, means for shutting off this communication, respectively, and a fan connected to said latter pipe.

847,383.

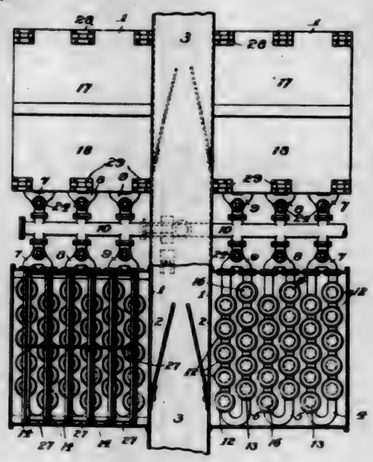

847,384. PAINT. JOHN F. VILLARD, Rexton, New Brunswick, Canada. Filed June 13, 1906. Serial No. 321,544.

Claim.—1. The herein-described composition of matter, which consists of whiting, flour, water and glue, cooked into a paste, rosin, Burgundy pitch, a drier, white lead, linseed-oil and coloring-matter.

2. The herein-described composition of matter, which consists of whiting, flour, water and glue, cooked into a paste, rosin, Burgundy pitch, beeswax, turpentine, white lead, linseed-oil, coloring-matter, and a drier.

847,385. TELEPHONE TRUNKING SYSTEM. HARRY G. WEBSTER, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 1, 1902. Serial No. 117,920.

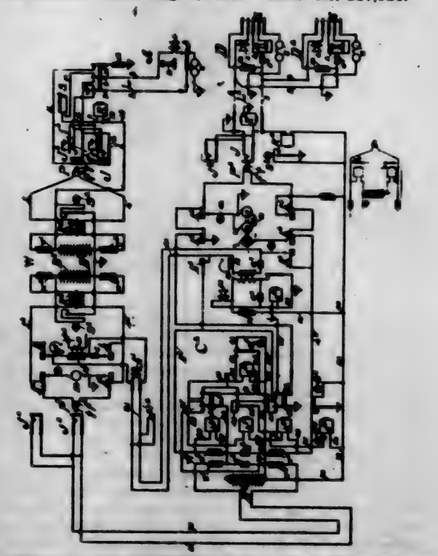

Claim.—1. The combination with a trunk-circuit adapted to connect telephone-lines together for conversation, of a supervisory signal associated with the outgoing end of the trunk placed in condition to operate by current over the tip side only of the trunk when connection is established at said end, and a relay at the incoming end of the trunk responsive to current in the line when the called party answers, said relay adapted when actuated to disconnect the trunk-relay from the trunk and to permit a flow of current over both sides of the trunk to thereby render said signal inoperative, substantially as described.

2. The combination with a trunk-circuit adapted to connect telephone-lines together for conversation, of a supervisory signal associated with the outgoing end of the trunk placed in condition to operate by current over the tip side of the trunk and ground, the metallic circuit of the trunk being open, and a relay at the incoming end of the trunk responsive to current in the line when the called subscriber answers, said relay serving to disconnect the ground from the trunk and to complete the metallic circuit thereof and thereby permit a flow of current over both sides of the trunk to render said supervisory signal inoperative, substantially as described.

3. The combination with a trunk-circuit adapted to connect telephone-lines together for conversation, of a supervisory signaling device associated with the outgoing end of the trunk having two differential windings placed in opposite sides of the talking-circuit, means for including one of said windings and the source of current in a circuit over the tip side of the trunk and ground when a connection exists at the outgoing end, and a relay at the incoming end responsive to current in the line when the called party answers to disconnect the ground at said end and complete the metallic circuit of the trunk to permit a flow of current over both sides of the trunk and through the other winding also of the differential supervisory signaling device whereby the signal is rendered inert, substantially as described.

4. The combination with a trunk-circuit adapted to connect telephone-lines together for conversation, of a relay at the incoming end actuated over a portion of the talking-circuit when a connection is established with the called line, a trunk-relay at said end actuated by current over the tip side only of the outgoing end of the trunk when the connection is established at the outgoing end, a relay at the incoming end responsive to current in the line when the called subscriber responds, said relay being adapted when actuated to disconnect the trunk-relay, and a signal at said end whose actuation depends upon said relays, substantially as described.

5. The combination with a trunk-circuit adapted to connect telephone-lines together for conversation, of a guard-signal at the incoming end of the trunk, a relay actuated over the tip side only of the outgoing end of the trunk-circuit when a connection is established at said end to place said signal in condition to operate, and a second relay at the incoming end actuated by current over a portion of the talking-circuit when a connection is established at the called line to render said signal inoperative, substantially as described.

6. The combination with a trunk-circuit adapted to connect telephone-lines together for conversation, of a signal at the incoming end, a relay actuated over a portion of the talking-circuit when connection is established with the called line and a trunk-relay actuated over the tip side only of said end of the trunk when connection is established at the outgoing end and when the called subscriber's telephone is not in use, said relay serving to control said signal so that a guard indication is given when the trunk-relay is energised and the first-named relay is deënergised and a disconnect indication is given when the first-named relay is energised and the other relay is deënergised and the called subscriber has returned his receiver to its hook, substantially as described.

7. The combination with a trunk-circuit extending between different switchboard-sections, of a signal at the incoming end thereof displayed when connection is made with a called line, of a trunk-relay at said incoming end operated by current over one limb only of the trunk when a connection is established at the outgoing end of said trunk to render said signal inoperative, a supervisory signal associated with the outgoing end thereof placed in condition to operate by current over the tip side of the trunk and through said trunk-relay, and means operated when the called subscriber responds to disconnect said trunk-relay from the trunk and to render the latter signal inoperative, substantially as described.

847,386. SYSTEM OF WASHING AND FILLING LOCOMOTIVE-BOILERS. WILLIAM WHITE and SPENCER OTIS, Chicago, Ill. Filed June 2, 1906. Serial No. 319,909.

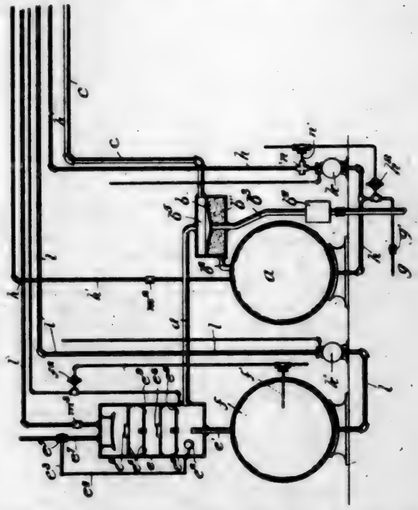

Claim.—1. A locomotive-boiler washing and filling system, comprising washout and filling water supply means, and means for separating the entire fluid contents of a locomotive-boiler and for mingling the separated contents with the washout and filling water respectively.

2. A locomotive-boiler washing and filling system, comprising a filling-water tank, a source of water-supply therefor, an open heater interposed between the tank and the source of water-supply, and means for separating the entire fluid contents of a locomotive-boiler and for conveying a part of the separated contents to the heater, wherein it is mingled with the incoming water.

3. A locomotive-boiler washing and filling system, comprising a pipe-line for conveying the blown-out contents from a locomotive-boiler, a washout-water tank connected thereto, a combined separator and filter in the pipe-line between the boiler and tank, a discharge-pipe line for conveying washout-water from the tank, and means in the discharge-pipe line for regulating the temperature of the washout-water.

4. A locomotive-boiler washer, comprising a washout-water tank, a pipe-line leading thereto, a combined filter and separator in this pipe-line, a discharge-pipe line leading from the washout-water tank, a cold-water-supply line connected to the discharge-pipe line, a thermostat in the discharge-pipe line, and a valve in the cold-water-supply line controlled by the thermostat.

5. A locomotive-boiler washing and filling system, comprising a washout-water tank, a pipe-line leading thereto, a combined filter and separator in the pipe-line exterior to the tank, said filter and separator comprising a casing having an upper chamber and a lower filtering device, a steam-pipe leading from the upper portion of the chamber, and a waste-pipe leading from the lower portion of the chamber.

6. A locomotive-boiler washing and filling system, com-

communication with the filtering-chamber, and means for operating the pump.

2. A filtering-chamber fixed within a car-body and open to the atmosphere, a perforated foul-air pipe arranged within the car, a pump having communication with said perforated pipe and formed with an outlet to the atmosphere, the opposite end of the pump being formed with an air-inlet, and a pipe in communication with the pump at the inlet end and with the filtering-chamber.

3. A filtering-chamber mounted within the car-body and normally open to the atmosphere beyond the car-body, a perforated foul-air pipe mounted within the car, a pump fixed within the car and in comunication at opposite ends with the perforated pipe and with the filtering-chamber, an air-outlet leading from the pump at the end adjacent the communication with the perforated pipe, and an air-inlet leading to the pump at the end adjacent the communication with the filtering-chamber.

4. A filtering-chamber mounted in the tank-body and normally open to the atmosphere, a filtering medium within the chamber, a liquid-tank in communication with the chamber for supplying moisture to the filtering medium, a perforated foul-air pipe mounted within the car, a pump fixed within the car and in communication at opposite ends with the perforated pipe and with the filtering-chamber, an air-outlet leading from the pump at the end adjacent the communication with the perforated pipe, and an air-inlet leading to the pump at the end adjacent the communication with the filtering-chamber.

847,382. RAIL-JOINT. VALENTIN UEBELHOFEN, Lakeside, Ill. Filed Aug. 30, 1906. Serial No. 332,675.

Claim.—1. A rail structure comprising a base-plate, a rail-base mounted thereon, side plates connected to the base-plate and overlying the rail-base, and a cap on the rail-base fitting between the upper parts of the side plates and removable without displacing the rail-base or side plates, the top of one of the said plates being flush with the top of the rail.

2. The combination with a base-plate having an opening therein, of a rail thereon, a side plate fastened to the rail and having a tongue extending through the opening, and a turn-button on the tongue under the base-plate.

847,383. APPARATUS FOR DRYING TEXTILE MATERIAL. OTTO VENTER, Chemnitz, Germany. Filed Jan. 16, 1907. Serial No. 352,589.

Claim.—1. An apparatus for drying textile material the combination of a drying-chamber, a perforated hollow cylinder provided therein, a pipe in communication therewith, means for producing a partial vacuum in said pipe, means for closing off said drying-chamber from the outside and a compressed-air pipe connected thereto.

2. In apparatus for drying textile material the combination of a drying-chamber closed off from the outside, a compressed-air pipe in communication therewith, a series of perforated hollow cylinders provided in said drying-chamber adapted to receive the material to be dried, a pipe in communication with said hollow cylinders and means for drawing air from said latter pipe.

3. In apparatus for drying textile material the combination of a drying-chamber closed off from the outside, a compressed-air pipe in communication therewith, a series of perforated hollow cylinders provided in said drying-chamber adapted to receive the material to be dried, a pipe in communication with said hollow cylinders, means for shutting off this communication, respectively, and a fan connected to said latter pipe.

847,383.

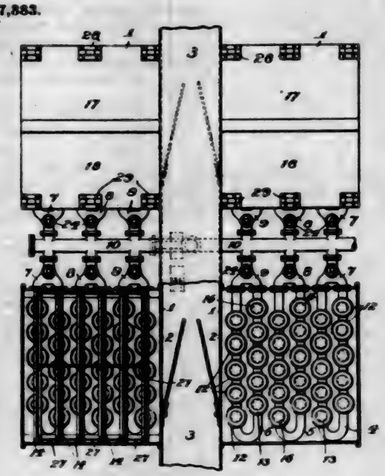

847,384. PAINT. JOHN F. VILLARD, Rexton, New Brunswick, Canada. Filed June 13, 1906. Serial No. 321,544.

Claim.—1. The herein-described composition of matter, which consists of whiting, flour, water and glue, cooked into a paste, rosin, Burgundy pitch, a drier, white lead, linseed-oil and coloring-matter.

2. The herein-described composition of matter, which consists of whiting, flour, water and glue, cooked into a paste, rosin, Burgundy pitch, beeswax, turpentine, white lead, linseed-oil, coloring-matter, and a drier.

847,385. TELEPHONE TRUNKING SYSTEM. HARRY G. WEBSTER, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 1, 1902. Serial No. 117,920.

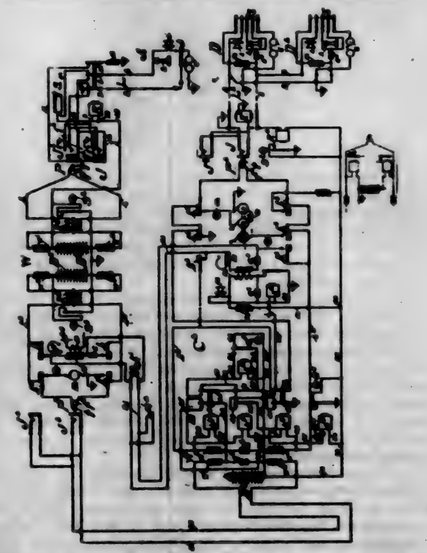

Claim.—1. The combination with a trunk-circuit adapted to connect telephone-lines together for conversation, of a supervisory signal associated with the outgoing end of the trunk placed in condition to operate by current over the tip side only of the trunk when connection is established at said end, and a relay at the incoming end of the trunk responsive to current in the line when the called party answers, said relay adapted when actuated to disconnect the trunk-relay from the trunk and to permit a flow of current over both sides of the trunk to thereby render said signal inoperative, substantially as described.

2. The combination with a trunk-circuit adapted to connect telephone-lines together for conversation, of a supervisory signal associated with the outgoing end of the trunk placed in condition to operate by current over the tip side of the trunk and ground, the metallic circuit of the trunk being open, and a relay at the incoming end of the trunk responsive to current in the line when the called subscriber answers, said relay serving to disconnect the ground from the trunk and to complete the metallic circuit thereof and thereby permit a flow of current over both sides of the trunk to render said supervisory signal inoperative, substantially as described.

3. The combination with a trunk-circuit adapted to connect telephone-lines together for conversation, of a supervisory signaling device associated with the outgoing end of the trunk having two differential windings placed in opposite sides of the talking-circuit, means for including one of said windings and the source of current in a circuit over the tip side of the trunk and ground when a connection exists at the outgoing end, and a relay at the incoming end responsive to current in the line when the called party answers to disconnect the ground at said end and complete the metallic circuit of the trunk to permit a flow of current over both sides of the trunk and through the other winding also of the differential supervisory signaling device whereby the signal is rendered inert, substantially as described.

4. The combination with a trunk-circuit adapted to connect telephone-lines together for conversation, of a relay at the incoming end actuated over a portion of the talking-circuit when a connection is established with the called line, a trunk-relay at said end actuated by current over the tip side only of the outgoing end of the trunk when the connection is established at the outgoing end, a relay at the incoming end responsive to current in the line when the called subscriber responds, said relay being adapted when actuated to disconnect the trunk-relay, and a signal at said end whose actuation depends upon said relays, substantially as described.

5. The combination with a trunk-circuit adapted to connect telephone-lines together for conversation, of a guard-signal at the incoming end of the trunk, a relay actuated over the tip side only of the outgoing end of the trunk-circuit when a connection is established at said end to place said signal in condition to operate, and a second relay at the incoming end actuated by current over a portion of the talking-circuit when a connection is established at the called line to render said signal inoperative, substantially as described.

6. The combination with a trunk-circuit adapted to connect telephone-lines together for conversation, of a signal at the incoming end, a relay actuated over a portion of the talking-circuit when connection is established with the called line and a trunk-relay actuated over the tip side only of said end of the trunk when connection is established at the outgoing end and when the called subscriber's telephone is not in use, said relay serving to control said signal so that a guard indication is given when the trunk-relay is energised and the first-named relay is deënergised and a disconnect indication is given when the first-named relay is energised and the other relay is deënergised and the called subscriber has returned his receiver to its hook, substantially as described.

7. The combination with a trunk-circuit extending between different switchboard-sections, of a signal at the incoming end thereof displayed when connection is made with a called line, of a trunk-relay at said incoming end operated by current over one limb only of the trunk when a connection is established at the outgoing end of said trunk to render said signal inoperative, a supervisory signal associated with the outgoing end thereof placed in condition to operate by current over the tip side of the trunk and through said trunk-relay, and means operated when the called subscriber responds to disconnect said trunk-relay from the trunk and to render the latter signal inoperative, substantially as described.

847,386. SYSTEM OF WASHING AND FILLING LOCOMOTIVE-BOILERS. WILLIAM WHITE and SPENCER OTIS, Chicago, Ill. Filed June 2, 1906. Serial No. 319,909.

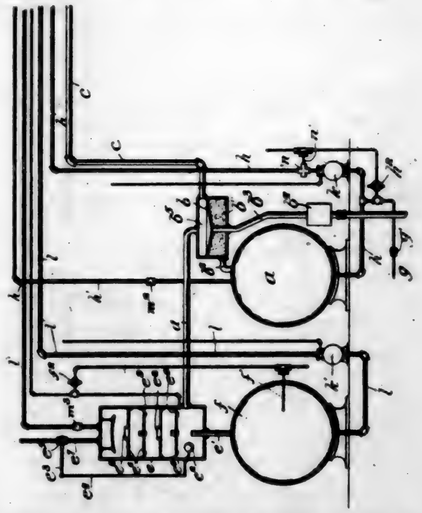

Claim.—1. A locomotive-boiler washing and filling system, comprising washout and filling water supply means, and means for separating the entire fluid contents of a locomotive-boiler and for mingling the separated contents with the washout and filling water respectively.

2. A locomotive-boiler washing and filling system, comprising a filling-water tank, a source of water-supply therefor, an open heater interposed between the tank and the source of water-supply, and means for separating the entire fluid contents of a locomotive-boiler and for conveying a part of the separated contents to the heater, wherein it is mingled with the incoming water.

3. A locomotive-boiler washing and filling system, comprising a pipe-line for conveying the blown-out contents from a locomotive-boiler, a washout-water tank connected thereto, a combined separator and filter in the pipe-line between the boiler and tank, a discharge-pipe line for conveying washout-water from the tank, and means in the discharge-pipe line for regulating the temperature of the washout-water.

4. A locomotive-boiler washer, comprising a washout-water tank, a pipe-line leading thereto, a combined filter and separator in this pipe-line, a discharge-pipe line leading from the washout-water tank, a cold-water-supply line connected to the discharge-pipe line, a thermostat in the discharge-pipe line, and a valve in the cold-water-supply line controlled by the thermostat.

5. A locomotive-boiler washing and filling system, comprising a washout-water tank, a pipe-line leading thereto, a combined filter and separator in the pipe-line exterior to the tank, said filter and separator comprising a casing having an upper chamber and a lower filtering device, a steam-pipe leading from the upper portion of the chamber, and a waste-pipe leading from the lower portion of the chamber.

6. A locomotive-boiler washing and filling system, com-

prising a filling-water tank, a source of water-supply therefor, an open heater interposed between the tank and the source of supply, a pipe-line leading to the heater and connected thereto at its lower end, and a combined separator and filter interposed in the pipe-line.

7. A locomotive-boiler washing and filling system, comprising a washout-water tank and a filling-water tank, a source of water-supply for the filling-water tank, an open heater between the source of water-supply and the filling-water tank, a pipe-line connected to the tank, and a combined separator and filter in the pipe-line.

8. A boiler washing and filling system comprising means for removing the entire fluid contents from the boiler, means for cleaning said fluid contents, and means for returning said entire fluid contents to the boiler.

847,387. SYSTEM OF WASHING AND FILLING LOCOMOTIVE-BOILERS. WILLIAM WHITE, Chicago, Ill. Filed Sept. 20, 1906. Serial No. 335,442.

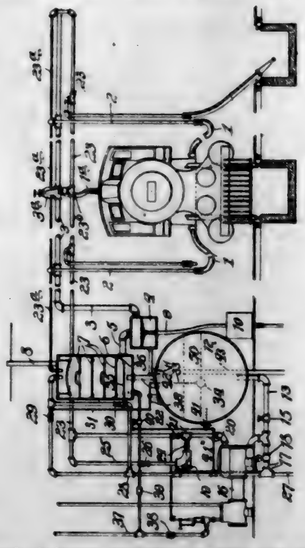

Claim.—1. A locomotive-boiler washing and filling system, comprising a washout and filling water supply reservoir, means for automatically regulating the temperature of the water therein, means for distributing the water from the supply-tank, and further means for regulating the temperature of the distributed water.

2. A locomotive-boiler washing and filling system, comprising means for separating the steam and water taken from the boiler, means for heating other water by the steam, means for storing such heated water with the boiler-water, and means for distributing this water for washing and filling boilers.

3. A locomotive-boiler washing and filling system, comprising means for separating the steam and water taken from the boiler, means for heating other water by the steam, means for automatically regulating the amount of water heated by such steam, means for storing such heated water with the boiler-water, and means for distributing this water for washing and filling boilers.

4. A locomotive-boiler washing and filling system, comprising means for separating the steam and water taken from the boiler, means for heating other water by the steam, means for automatically regulating the amount of water so heated, means for storing such heated water with the boiler-water, means for regulating the temperature of the stored water, and means for distributing this water for washing and filling boilers.

5. A locomotive-boiler washing and filling system, comprising means for separating the steam and water taken from the boiler, means for heating other water by the steam, means for automatically regulating the amount of water so heated, means for storing such heated water with the boiler-water, means for regulating the temperature of the water so stored, means for distributing this water for washing and filling boilers, and further means for regulating the temperature of the distributed water.

6. A locomotive-boiler washing and filling system, comprising a separator in which the steam and water from the boiler are separated, an open heater in which the steam is utilized for heating other water, a cold-water-supply opening for said open heater, means to govern the supply of cold water by the supply of steam, a storage-tank in which water from the heater and water from the separator are stored, means for regulating the temperature of the water in the storage-tank, a distributing-pipe leading from the storage-tank, a cold-water-supply pipe, and means for automatically admitting cold water to the water from the storage-tank in sufficient quantities to regulate the temperature of the distributed water for washing purposes.

7. A locomotive-boiler washing and filling system, comprising a separator for separating the steam and water taken from the boiler, an open heater in which the steam is adapted to be mixed with cold water, an automatically-controlled valve for regulating the supply of cold water by the supply of steam, a storage-tank in which the heated water and the water from the boilers are stored, a live-steam-supply pipe, means depending upon the temperature of the water in the storage-tank for admitting live steam to the open heater, means depending upon the depth of the water in the storage-tank for admitting cold water to the open heater, means for distributing water from the storage-tank to the different parts of the roundhouse, means for regulating the temperature of the distributed water, and means for maintaining a circulation of the distributed water about the roundhouse.

8. A locomotive-boiler washing and filling system, comprising a single pipe-line for washout and filling water, and means for delivering to the pipe hot, cold or tempered water.

847,388. SYSTEM OF WASHING AND FILLING LOCOMOTIVE-BOILERS. WILLIAM WHITE, Chicago, Ill. Filed Oct. 26, 1906. Serial No. 340,755.

Claim.—1. A locomotive-boiler washing and filling system, comprising a hot-water supply, means for maintaining the hot water at constant temperature and a cold-water supply, a distributing-pipe, and means for admitting to the distributing-pipe hot and cold water in fixed predetermined proportions.

2. A locomotive-boiler washing and filling system, comprising a hot-water supply, means for maintaining the hot water at constant temperature and a cold-water supply, a distributing-pipe, and means for admitting to the distributing-pipe hot and cold water in predetermined proportions and for varying the amount of cold water to vary the proportion of the mixture.

3. A locomotive-boiler washing and filling system, comprising a hot-water supply, means to maintain the water in the hot-water supply at substantially constant temperature and a tempering-water supply, a distributing-pipe connected with each, and means for limiting the tempering-water supply and for regulating such supply below the limit.

4. A locomotive-boiler washing and filling system comprising a hot-water supply, means for maintaining the water in the hot-water supply at substantially constant temperature, a distributing-pipe, means for admitting a fixed quantity of hot water to the distributing-pipe, a cold-water supply, and means for admitting a predetermined quantity of cold water to the distributing-pipe.

5. A locomotive-boiler washing and filling system, comprising a hot-water supply and a tempering-water supply, a distributing-pipe connected to each, a valve in connection with the tempering-water supply, and means for plac-

ing the control of the maximum opening of such valve under seal and for permitting the regulation of such valve below the maximum.

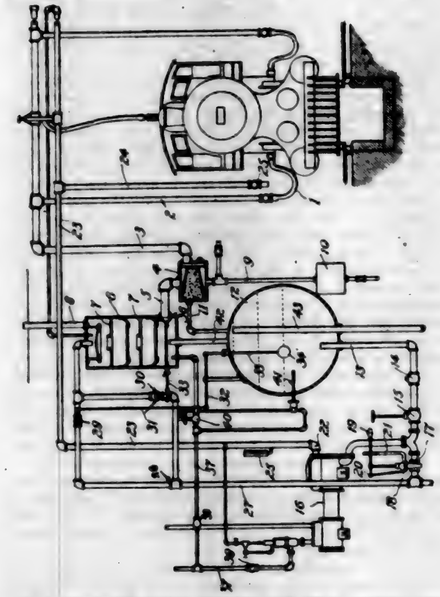

6. A locomotive-boiler washing and filling system, comprising a hot-water supply and a tempering-water supply, a distributing-pipe connecting with each, a valve in the connection with the hot-water pipe permitting a flow in one direction only therethrough, and a valve in the cold-water connecting-pipe, such latter valve having a predetermined maximum opening regulated according to the season of the year.

847,389. DRAFT-EQUALIZER. WILLIAM WILSON, Garfield, Kans. Filed Mar. 26, 1906. Serial No. 308,154.

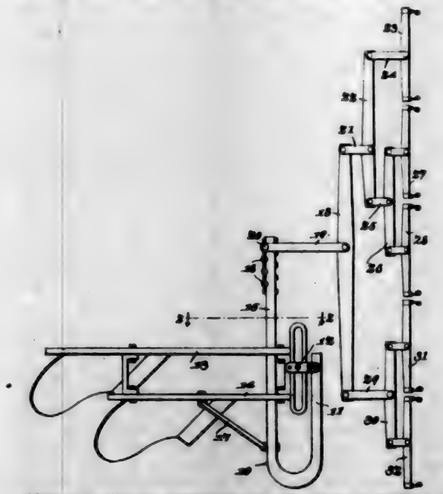

Claim.—1. In an apparatus of the class described, a clevis comprising a U-shaped member having arms of unequal length, means for coupling the structure to be drawn forward to the shorter arm of the clevis member, means for coupling the draft appliances to the longer arm of the clevis member, and a brace between said structure and clevis.

2. In an apparatus of the class described, a clevis comprising a U-shaped member having arms of unequal length, means for coupling the structure to be drawn forward to the shorter arm of the clevis member, means for coupling the draft appliances to the longer arm of the clevis member, and a brace connected at one end to said clevis near the juncture of the arms and at the other end to said structure.

847,390. PENHOLDER. LESTER P. WINCHENBAUGH, Hyde Park, Mass. Filed Dec. 5, 1906. Serial No. 346,408.

Claim.—1. A penholder having a stock with reduced end portion forming a shoulder, a barrel surrounding said reduced end portion, a sleeve of spring metal split throughout its length surrounding said barrel and forming a grip for the pen and abutting against the shoulder on said stock, said reduced end portion and sleeve being of less length than the shank of the pen to be inserted and said shoulder forming a positive stop for the shank end of the pen which is to be inserted between said barrel and split sleeve.

2. A penholder having a stock formed with a reduced end portion, a barrel surrounding said reduced end portion and abutting against the shoulder formed by said reduced end portion, a prong formed in said barrel which engages with said pen-stock and a split sleeve of spring metal which surrounds said barrel and abuts against said shoulder and forms a spring-grip for the pen when the pen is inserted between the said barrel and the split sleeve, said shoulder forming a positive stop for the shank end of the pen which is to be inserted between said barrel and split sleeve.

3. A penholder comprising a tubular barrel adapted to be attached to the end of a handle, a split sleeve of spring metal which surrounds said barrel between which and said barrel the pen is to be inserted, said split sleeve being expansible laterally, and locking means which retain said split sleeve in engagement with said barrel in both the expanded and unexpanded position of the sleeve with relation to the barrel.

4. A penholder having a stock formed with a reduced end portion, a barrel surrounding said reduced end portion and abutting against the shoulder formed by said reduced end portion, a split sleeve or spring metal which surrounds said barrel and abuts against said shoulder and forms a spring-grip for the pen when the pen is inserted between the said barrel and split sleeve, and interengaging locking means between said split sleeve and said barrel, said sleeve being laterally expansible upon said barrel, said locking mechanism including locking-slots whereby the sleeve may be expanded while locked to the barrel.

5. A penholder having a stock formed with a reduced end portion, a barrel surrounding said reduced end portion and abutting against the shoulder formed by said reduced end portion, a prong formed in said barrel which engages with said pen-stock, and a split sleeve of spring metal which surrounds said barrel and abuts against said shoulder and forms a spring-grip for the pen when the pen is inserted between the said barrel and split sleeve, said split sleeve being formed with slots and said barrel being formed with projections which engage with said slots to retain the sleeve on said barrel.

6. A penholder having a pen-stock formed with a reduced end portion, a barrel surrounding said reduced end portion and abutting against the shoulder formed by said end portion, a split sleeve of spring metal surrounding

said barrel and forming a spring-grip for the pen, a tubular finger-sleeve adapted to slip over said pen-grip and a portion of the penholder at the rear of said pen-grip, said finger-sleeve being formed with finger-grooves, guide-marks on said split sleeve and on said finger-sleeve adapted to register with each other to indicate the proper position to which said finger-sleeve and split sleeve are to be adjusted with relation to each other.

7. A penholder having a pen-stock provided with a reduced end portion, a split sleeve of spring metal surrounding said barrel and forming a spring-grip for the pen, a tubular finger-sleeve formed with finger-grooves and adapted to slip over said pen-grip, stops on said pen-stock for the rear ends of said split sleeve and finger-sleeve and guide-marks on said finger-sleeve and split sleeve which indicate the proper radial position to which said finger-sleeve is to be adjusted with relation to said split sleeve.

8. A penholder having a stock formed with a reduced end portion, a barrel surrounding said reduced end portion and abutting against the shoulder formed by said reduced end portion, a prong formed in said barrel which engages with said pen-stock, and a split sleeve of spring metal which surrounds said barrel and abuts against said shoulder and forms a spring-grip for the pen when the pen is inserted between the said barrel and split sleeve, said split sleeve being formed with slots and said barrel being formed with projections which engage with said slots to retain the sleeve on said barrel, said slots being elongated to permit expansion of the split sleeve.

847,391. STRAW-STOKER. ARNOLD E. WOODMANSEE, Woonsocket, S. D. Filed Feb. 26, 1906. Serial No. 303,006.

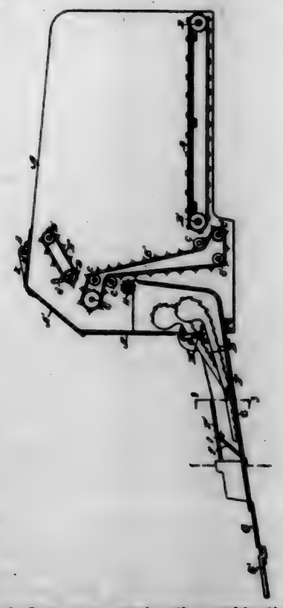

Claim.—1. In a straw-carrier, the combination of a hopper A, with a horizontal straw-carrier B" in the bottom thereof; an upwardly-delivering straw-carrier C" in front of the straw-carrier B", arranged around suitable guide-rolls so that a portion projects horizontally under the forward end of the straw-carrier B', and the upper end of which projects horizontally forward, the said carrier being provided with a canvas apron and the slats thereof being provided with projecting pins; a guide-carrier D" above the upper end of the elevating-carrier C" and arranged to travel in the opposite direction therefrom, the slats of which are also provided with suitable pins; means of adjusting said carrier D" to and from the carrier C"; a roller H in front of the vertical portion of the carrier C" and arranged to revolve in the opposite direction from the travel of said carrier; an auxiliary hopper A" to the front of the hopper A, having inclined sides; a crank-shaft E toward the lower front side of the auxiliary hopper, carrying alternate pairs of cranks; arms E" with rearwardly and upwardly curved flat heads thereon, provided with downwardly and forwardly projecting serrations on said heads and on the under sides of said arms; pivoted toes *e* on the front ends of said arms, provided with downwardly and forwardly projecting teeth on the under side; a chute F leading downwardly and forwardly from the said auxiliary hopper A" through which the said serrated arms deliver the straw from said hopper; a cover-plate F' over said chute, with a door *f'* hinged at *f* on the under side of the cover-plate F'; a plate G at the forward end of said chute, arranged to extend into the fire-box; detachable grate-bars G' with their free ends arranged to project forwardly into the fire-box; an engine I connected to drive the crank-shaft E by suitable means; suitable gears, sprocket wheels and chains connecting the various carriers, to be driven from said crank-shaft E; ratchet-wheel N' with a suitable sprocket-wheel connected to drive the shaft B' of the carrier B" in the bottom of the hopper A; a lever N" with a pawl to engage said ratchet; a slotted lever M adjustable on its fulcrum M' connected by a link M" to the lever B" at one end, and at its opposite end by the pitman K', to a wrist-pin on a wheel K, on the crank-shaft E; and an adjusting-lever P connected by the link P' to the lever M for shifting it on its fulcrum, whereby the motion of the carrier B" can be regulated, all coacting for the purpose specified.

2. In a straw-stoker, the combination of a hopper A, with a horizontal straw-carrier B" in the bottom thereof; an upwardly-delivering straw-carrier C" in front of the straw-carrier B", arranged around suitable guide-rolls so that a portion projects horizontally under the forward end of the straw-carrier B', and the upper end of which projects horizontally forward, the said carrier being provided with a canvas apron and the slats thereof being provided with projecting pins; a guide-carrier D" above the upper end of the elevating-carrier C" and arranged to travel in the opposite direction therefrom, the slats of which are also provided with suitable pins; means of adjusting said carrier D" to and from the carrier C"; a roller H in front of the vertical portion of the carrier C" and arranged to revolve in the opposite direction from the travel of said carrier; an auxiliary hopper A" to the front of the hopper A, having inclined sides; a crank-shaft E toward the lower front side of the auxiliary hopper, carrying alternate pairs of cranks; arms E" with rearwardly and upwardly curved flat heads thereon, provided with downwardly and forwardly projecting serrations on said heads and on the under sides of said arms; pivoted toes *e* on the front ends of said arms, provided with downwardly and forwardly projecting teeth on the under side; a chute F leading downwardly and forwardly from the said auxiliary hopper A" through which the said serrated arms deliver the straw from said hopper; a cover-plate F' over said chute, with a door *f'* hinged at *f* on the under side of the cover-plate F'; a plate G at the forward end of said chute, arranged to extend into the fire-box; and detachable grate-bars G' with their free ends arranged to project forwardly into the fire-box, for the purpose specified.

3. In a straw-stoker, the combination of a hopper A, with a horizontal straw-carrier B" in the bottom thereof; an upwardly-delivering straw-carrier C" in front of the straw-carrier B" arranged around suitable guide-rolls so that a portion projects horizontally under the forward end of the straw-carrier B", and the upper end of which projects horizontally forward, the said carrier being provided with a canvas apron and the slats thereof being provided with projecting pins; a roller H in front of the vertical portion of the carrier C" and arranged to revolve in the opposite direction from the travel of said carrier; an auxiliary hopper A" to the front of the hopper A, having inclined sides; a crank-shaft E toward the lower front side of the auxiliary hopper carrying alternate pairs of cranks; arms E" with rearwardly and upwardly curved flat heads thereon, provided with downwardly and forwardly projecting serrations on said heads and on the under sides of said arms; pivoted toes *e* on the front ends of said arms, provided with downwardly and forwardly projecting teeth on the under side; a chute F leading downwardly and forwardly from the said auxiliary hopper A" through which the said serrated arms deliver the straw from said hopper; a cover-plate F' over said chute, with a door *f'* hinged at *f* on the under side of the cover-plate F'; a plate G at the forward end of said chute, arranged to extend into the fire-box; detachable grate-bars G' with their free ends arranged to project forwardly into the fire-box; an engine I connected to drive the crank-shaft E by suitable means; suitable gears, sprocket-wheels, and chains connecting the various carriers to be driven from said crank-shaft E; a ratchet-wheel N' with a suitable sprocket-wheel connected to drive the shaft B' of the carrier B" in the bottom of the hopper A; a lever N" with a pawl to engage said ratchet; a slotted lever M adjustable on its fulcrum M' connected by a link M" to the lever N" at one end, and at its opposite end by the pitman K', to a wrist-pin on a wheel K, on the crank-shaft E; an adjusting-lever P connected by the link P' to the lever M for shifting it on its fulcrum, whereby the motion of the carrier B" can be regulated, all coacting for the purpose specified.

4. In a straw-stoker, the combination of a hopper A, with a horizontal straw-carrier B" in the bottom thereof; an upwardly-delivering straw-carrier C" in front of the straw-carrier B" arranged around suitable guide-rolls so that a portion projects horizontally under the forward end of the straw-carrier B", and the upper end of which projects horizontally forward, the said carrier being provided with a canvas apron and the slats thereof being provided with projecting pins; a guide-carrier D" above the upper end of the elevating-carrier C" and arranged to travel in the opposite direction therefrom, the slats of which are also provided with suitable pins; means of adjusting said carrier D" to and from the carrier C"; an auxiliary hopper A" to the front of the hopper A, having inclined sides; a crank-shaft E toward the lower front side of the auxiliary hopper carrying alternate pairs of cranks; arms E" with rearwardly and upwardly curved flat heads thereon, provided with downwardly and forwardly projecting serrations on said heads and on the under sides of said arms; pivoted toes *e* on the front ends of said arms, provided with downwardly and forwardly projecting teeth on the under side; a chute F leading downwardly and forwardly from the said auxiliary hopper A" through which the said serrated arms deliver the straw from said hopper; a cover-plate F' over said chute, with a door *f'* hinged at *f* on the under side of the cover-plate F'; a plate G at the forward end of said chute, arranged to extend into the fire-box; detachable grate-bars G' with their free ends arranged to project forwardly into the fire-box, all coacting for the purpose specified.

5. In a straw-stoker, the combination of a hopper A, with a horizontal straw-carrier B" in the bottom thereof; an upwardly-delivering straw-carrier C" in front of the straw-carrier B" arranged around suitable guide-rolls so that a portion projects horizontally under the forward end of the straw-carrier B", and the upper end of which projects horizontally forward, the said carrier being provided with a canvas apron and the slats thereof being provided with projecting pins; an auxiliary hopper A" to the front of the hopper A, having inclined sides; a crank-shaft E toward the lower front side of the auxiliary hopper carrying alternate pairs of cranks; arms E" with rearwardly and upwardly curved flat heads thereon, provided with downwardly and forwardly projecting serrations on said heads and on the under sides of said arms; pivoted toes *e* on the front ends of said arms, provided with downwardly and forwardly projecting teeth on the under side; a chute F leading downwardly and forwardly from the said auxiliary hopper A" through which the said serrated arms deliver the straw from said hopper; a cover-plate F' over said chute, with a door *f'* hinged at *f* on the under side of the cover-plate F'; a plate G at the forward end of said chute, arranged to extend into the fire-box; and detachable grate-bars G' with their free ends arranged to project forwardly into the fire-box, all coacting for the purpose specified.

6. In a straw-stoker, the combination of a hopper A, with a horizontal straw-carrier B" in the bottom thereof; an upwardly-delivering straw-carrier C" in front of the straw-carrier B" arranged around suitable guide-rolls so that a portion projects horizontally under the forward end of the straw-carrier B", and the upper end of which projects horizontally forward, the said carrier being provided with a canvas apron and the slats thereof being provided with projecting pins; a guide-carrier D" above the upper end of the elevating-carrier C" and arranged to travel in the opposite direction therefrom, the slats of which are also provided with suitable pins; means of adjusting said carrier D" to and from the carrier C"; a roller H in front of the vertical portion of the carrier C" and arranged to revolve in the opposite direction from the travel of said carrier; an auxiliary hopper A" to the front of the hopper A, having inclined sides; a crank-shaft E toward the lower front side of the auxiliary hopper carrying alternate pairs of cranks; arms E" with rearwardly and upwardly curved flat heads thereon, provided with downwardly and forwardly projecting serrations on said heads and on the under sides of said arms; pivoted toes *e* on the front ends of said arms, provided with downwardly and forwardly projecting teeth on the under side; a chute F leading downwardly and forwardly from the said auxiliary hopper A" through which the said serrated arms deliver the straw from said hopper, all coacting for the purpose specified.

7. In a straw-stoker, the combination of a hopper A, with a horizontal straw-carrier B" in the bottom thereof; an upwardly-delivering straw-carrier C" in front of the straw-carrier B" arranged around suitable guide-rolls so that a portion projects horizontally under the forward end of the straw-carrier B", and the upper end of which projects horizontally forward, the said carrier being provided with a canvas apron and the slats thereof being provided with projecting pins; a roller H in front of the vertical portion of the carrier C" and arranged to revolve in the opposite direction from the level of said carrier; an auxiliary hopper A" to the front of the hopper A, having inclined sides; a crank-shaft E toward the lower front side of the auxiliary hopper carrying alternate pairs of cranks; arms E" with rearwardly and upwardly curved flat heads thereon, provided with downwardly and forwardly projecting serrations on said heads and on the under sides of said arms; pivoted toes *e* on the front ends of said arms, provided with downwardly and forwardly projecting teeth on the under side; and a chute F leading downwardly and forwardly from the said auxiliary hopper A" through which the said serrated arms deliver the straw from said hopper, all coacting for the purpose specified.

8. In a straw-stoker, the combination of a hopper A, with a horizontal straw-carrier B" in the bottom thereof; an upwardly-delivering straw-carrier C" in front of the straw-carrier B" arranged around suitable guide-rolls so that a portion projects horizontally under the forward end of the straw-carrier B", and the upper end of which projects horizontally forward, the said carrier being provided with a canvas apron and the slats thereof being provided with projecting pins; a guide-carrier D" above the upper end of the elevating-carrier C" and arranged to travel in the opposite direction therefrom, the slats of which are also provided with suitable pins; means of adjusting said carrier D" to and from the carrier C"; an auxiliary hopper A' to the front of the hopper A, having inclined sides; a crank-shaft E toward the lower front side of the auxiliary hopper carrying alternate pairs of cranks; arms E" with rearwardly and upwardly curved flat heads thereon, provided with downwardly and forwardly projecting serrations on said heads and on the under sides of said arms; pivoted toes *e* on the front ends of said arms, provided with downwardly and forwardly projecting teeth on the under side; and a chute F leading

downwardly and forwardly from the said auxiliary hopper A" through which the said serrated arms deliver the straw from said hopper, all coacting for the purpose specified.

9. In a straw-stoker, the combination of a hopper A, with a horizontal straw-carrier B" in the bottom thereof; an upwardly-delivering straw-carrier C" in front of the straw-carrier B" arranged around suitable guide-rolls so that a portion projects horizontally under the forward end of the straw-carrier B", and the upper end of which projects horizontally forward, the said carrier being provided with a canvas apron and the slats thereof, being provided with projecting pins; an auxiliary hopper A" to the front of the hopper A, having inclined sides; a crank-shaft E toward the lower front side of the auxiliary hopper carrying alternate pairs of cranks; arms E" with rearwardly and upwardly curved flat heads thereon, provided with downwardly and forwardly projecting serrations on said heads and on the under sides of said arms; pivoted toes e on the front ends of said arms, provided with downwardly and forwardly projecting teeth on the under side; and a chute F leading downwardly and forwardly from the said auxiliary hopper A" through which the said serrated arms deliver the straw from said hopper, all coacting for the purpose specified.

10. In a straw-stoker, the combination of a hopper with a horizontal straw-carrier in the bottom thereof; an upwardly-delivering straw-carrier, the lower end of which is arranged beneath the horizontal carrier in the said hopper and the upper portion of which is extended horizontally; an auxiliary hopper into which the said upwardly-delivering carrier delivers; a chute leading downwardly and forwardly from the said auxiliary hopper; and means for passing the straw from such auxiliary hopper through the chute to a fire-box, for the purpose specified.

11. The combination of a hopper with suitable carriers arranged therein to deliver the straw therefrom; an auxiliary hopper to receive the straw; a chute leading from the auxiliary hopper; a crank-shaft arranged transversely tothe chute, with alternate pairs of cranks thereon; arms carried by the said cranks terminating at their rear ends in upwardly-turned flat heads and provided with serrations on said heads and under sides, pointing in the direction of said chute; pivoted toes on the front ends of said arms, said toes being serrated on their under sides, coacting for the purpose specified.

12. The combination of a hopper with suitable carriers arranged therein to deliver the straw therefrom; an auxiliary hopper to receive the straw; a chute leading from the said auxiliary hopper; a crank-shaft arranged transversely to the chute, with alternate pairs of cranks thereon; arms carried by the said cranks terminating at their rear ends in upwardly-turned flat heads and provided with serrations on said heads and under sides pointing in the direction of said chute, coacting for the purpose specified.

13. The combination of a hopper with suitable carriers arranged therein to deliver the straw therefrom; a chute leading from the said apparatus; a crank-shaft arranged transversely to the chute, with alternate pairs of cranks thereon; arms carried by the said cranks terminating at their rear ends in upwardly-turned flat heads and provided with serrations on said heads and under sides, pointing in the direction of said chute; and pivoted toes on the front ends of said arms, said toes being serrated on their under sides, coacting for the purpose specified.

14. The combination of a hopper with suitable carriers arranged therein to deliver the straw therefrom; a chute leading from the said apparatus; a crank-shaft arranged transversely to the chute, with alternate pairs of cranks thereon; arms carried by the said cranks terminating at their rear ends in upwardly-turned flat heads and provided with serrations on said heads and under sides pointing in the direction of said chute, coacting for the purpose specified.

15. The combination of a hopper with suitable carriers arranged therein to deliver the straw therefrom; a chute leading from the said apparatus; a crank-shaft arranged transversely to the chute, with alternate cranks thereon; arms carried by the said cranks terminating at their rear ends in upwardly-turned flat heads and provided with serrations on said heads and under sides pointing in the direction of said chute; coacting for the purpose specified.

16. In a straw-stoker, the combination of a suitable hopper with means for delivering straw therefrom; a chute to which the straw is delivered; a crank-shaft arranged transversely to the chute, with alternate cranks thereon; arms carried by the said cranks, provided with serrations on their under sides; and pivoted toes at the front ends of said arms, said toes being serrated on their under sides, for the purpose specified.

17. In a straw-stoker, the combination of a suitable hopper with means for delivering straw therefrom; a chute to which the straw is delivered; a crank-shaft arranged transversely to the chute, with alternate cranks thereon; arms carried by the said cranks, provided with serrations on their under sides; and pivoted toes at the front ends of said arms, coacting for the purpose specified.

18. In a straw-stoker, the combination of a suitable hopper with means for delivering straw therefrom; a chute to which the straw is delivered; a crank-shaft arranged transversely to the chute, with alternate cranks thereon; arms carried by the said cranks, provided with serrations on their under sides, coacting for the purpose specified.

19. In a stoker, the combination of a suitable chute; arms, with serrations on their under sides, arranged to reciprocate alternately in said chute; and pivoted toes on said arms, said toes being serrated on their under sides, for the purpose specified.

20. In a stoker, the combination of a suitable chute; arms, with serrations on their under sides, arranged to reciprocate alternately in said chute; and pivoted toes on said arms, for the purpose specified.

21. In a stoker, the combination of a suitable chute; arms, with serrations on their under sides, arranged to reciprocate alternately in said chute, for the purpose specified.

22. In a straw-stoker, the combination of a suitable hopper; a chute leading therefrom; means for delivering the straw from the said hopper; reciprocating serrated arms within the said chute; a cover-plate over the chute; a door hinged to the under side of the cover-plate, extending downwardly and forwardly in close relation with the reciprocating serrated arms and allowed to rest by its own weight on the straw passing through the chute; and means for clamping the door shut.

23. In a straw-stoker, the combination of a suitable hopper with a chute leading therefrom; means for delivering the straw from the said hopper; reciprocating serrated arms having pivoted toes, within the said chute; a cover-plate over the chute; a door hinged to the under side of the cover-plate, extending downwardly and forwardly in close relation with the reciprocating serrated arms and allowed to rest by its own weight on the straw passing through the chute.

24. In a straw-stoker, the combination of a suitable hopper with a chute leading therefrom; means for delivering the straw from the said hopper; reciprocating serrated arms within the said chute; a cover-plate over the chute; a door hinged to the under side of the cover-plate, extending downwardly and forwardly in close relation with the reciprocating serrated arms and allowed to rest by its own weight on the straw passing through the chute.

25. In a straw-stoker, the combination of a suitable hopper with a chute leading therefrom; means for delivering the straw from the said hopper; reciprocating serrated arms within the said chute; a door hinged in the upper part of said chute and extending downwardly and forwardly, adapted to rest upon the straw passing through the chute; and means for clamping the door shut, coacting as specified.

26. In a straw-stoker, the combination of a suitable hopper with a chute leading therefrom; means for delivering the straw from the said hopper; reciprocating serrated arms within the said chute; and a door with means for clamping the same upon the straw, within the chute.

27. In a straw-stoker, the combination of a suitable hopper with a chute leading therefrom; means for delivering the straw from the said hopper; reciprocating serrated arms within the said chute; and a door within the chute.

28. In a straw-stoker, the combination of a suitable hopper with a chute leading therefrom; means for delivering the straw from the said hopper through the said chute; forwardly-projecting detachable fingers on the said chute, adapted to be arranged within the fire-box, as specified.

29. In a straw-stoker, the combination of a suitable hopper with a chute leading therefrom; means for delivering the straw from the said hopper through the said chute; and forwardly-projecting fingers on the said chute, adapted to be arranged within the fire-box, as specified.

30. In a straw-stoker, the combination of a chute with suitable means of delivering the straw therethrough, and forwardly-projecting fingers on the end of the said chute, adapted to be arranged within the fire-box, as specified.

31. In a straw-stoker, the combination of a chute, the end of which is adapted to be inserted into the doorway of a fire-box; suitable means for delivering straw through said chute; and forwardly-projecting fingers on the end of said chute, the inner ends of which are free, for the purpose specified.

847,392. TROUSERS-PRESSER. GEORGE B. WOODMANCY, Randolph, N. Y. Filed Aug. 20, 1906. Serial No. 331,364.

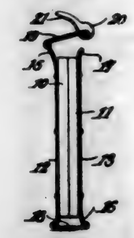

Claim.—1. A garment-compressing device comprising a pair of pressing-plates, of sufficient size to inclose the garment to be pressed, straps having yielding projecting ends disposed transversely of said plates, and connected thereto intermediate said ends, links movably connecting the yielding ends of said straps at one edge of said plate, and fastening devices swinging from the opposite ends of the straps of one of said plates and adapted to be detachably coupled to the adjacent straps of the other plate.

2. A garment-compressing device comprising a pair of pressing-plates, a plurality of straps of yielding material disposed transversely of each of said plates, and connected thereto intermediate their ends, said ends projecting beyond the edges of said plates and bent outwardly, links movably connecting said yielding straps at one end, links swinging from the opposite ends of the straps of one of said plates, and cams carried by the free ends of said swinging links and adapted to engage the adjacent straps at the other plate.

3. A garment-pressing device comprising a pair of pressing-plates, a plurality of straps of resilient material attached to each plate transversely thereof, yielding hinge connections between opposing straps at one edge of each plate, and yielding separable connections between opposing straps at the opposite edges of said plates.

4. A garment-pressing device comprising a pair of pressing-plates, a plurality of straps attached to each plate transversely thereof, and projecting beyond the respective edges of said plates, the projecting ends of said straps being resilient, links hinged to the projecting ends of opposing straps at one edge of each plate, and separable connections between the same opposing straps at the opposite edge of said plates.

847,393. PAPER-FEEDING DEVICE FOR WRAPPING-MACHINES. MILTON H. BALLARD, Lynn, Mass., assignor to Tripp Fruit Wrapping Machine Co., San Francisco, Cal., a Corporation of Maine. Filed Mar. 28, 1906. Serial No. 308,413.

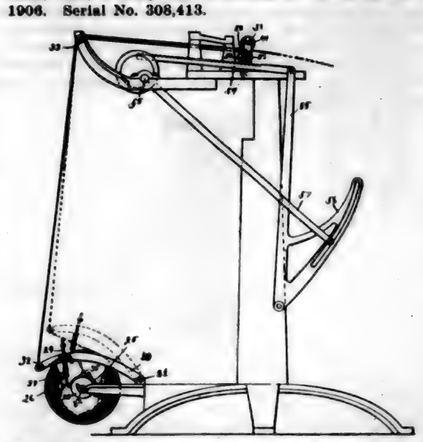

Claim.—1. In a wrapping-machine, the combination of a feeding device, means for operating it to feed forward a predetermined length of paper, a paper-carrying roll having a brake-wheel, a pull-off device for drawing from said roll a predetermined length of paper while the feeding device is at rest, a brake-band adapted to engage said brake-wheel, one end of which is attached to a fixed point and the other end is connected to said pull-off device, and a yielding pressure device bearing upon said brake-band to hold a portion thereof in constant engagement with said brake-wheel, substantially as described.

2. In a wrapping-machine, the combination of a feeding device, means for operating it to feed forward a predetermined length of paper, a paper-carrying roll having a brake-wheel, a pull-off device for drawing from said roll a predetermined length of paper while the feeding device is at rest, a brake-band adapted to engage said brake-wheel, one end of which is attached to a fixed point and the other end is connected to said pull-off device, and a yielding pressure device bearing upon said brake-band, to hold a portion thereof in permanent engagement with said brake-wheel, and means for adjusting said yielding pressure device, substantially as described.

3. In a wrapping-machine, the combination of a feeding device, means for operating it to feed forward a predetermined length of paper, a paper-carrying roll, a pivoted pull-off device which is operated by gravity to draw from the roll a predetermined length of paper while the feeding device is at rest and which is lifted by the action of said feeding device which the later operates to feed the paper, means for restraining the gravitating movement of the pull-off device, and a lifting-weight connected with said pull-off device which assists the feeding device in raising said pull-off device, substantially as described.

4. In a wrapping-machine, the combination with a feeding device, a pivoted arm having a paper-engaging roll, a paper-carrying roll having a brake-wheel, a brake-band engaging said brake-wheel, one end of which is attached to a fixed point, a sliding bar to which the other end is attached, a supporting-block for said bar pivotally connected to said arm, and a spring for thrusting said sliding bar in a direction away from the arm, substantially as described.

847,394. AIR-PUMP. JOHN C. BECK and JOHN A. BOWER, Chicago, Ill. Filed Aug. 11, 1906. Serial No. 330,117.

Claim.—1. In an air-pump, a base, cylinders secured to the base, a valve secured to the base and a valve secured

to one of the cylinders, a communicating passage from the chamber of the valve on the cylinder to the chamber of the valve on the base, a communicating way from the chamber of the valve on the base to the remaining cylinder, oppositely-placed pistons in the cylinders, piston-rods on the pistons and a handle, the valve and valve-seat of the several valves coacting to permit air to flow from the cylinders to the chambers of the valves and to not permit air to flow from such chambers to the cylinders; substantially as described.

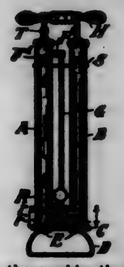

2. In an air-pump, the combination of a base, cylinders secured to the base, pistons oppositely placed in the cylinders, piston-rods to the pistons and a handle, a valve the valve-seat whereof communicates with one of the cylinders near the upper end thereof, such valve provided with a chamber, a valve in the chamber coacting with the valve-seat and a spring yieldingly holding the valve on the valve-seat, a passage-way from the valve-chamber to the valve-chamber of an additional valve, such additional valve provided with a valve-seat communicating with the remaining cylinder, with a valve coacting with the valve-seat and with a spring yieldingly holding the valve on its seat, and a flexible connection communicating with the chambers of the valves such a flexible connection arranged to be attached to a tire-stem; substantially as described.

3. In an air-pump a plurality of cylinders, oppositely-placed pistons in the cylinders, piston-rods on the pistons and a handle common to both pistons, in combination with a chamber, passage-ways from the respective cylinders to the chamber, check-valves arranged to permit the flow of air from the cylinders respectively to the chamber and to prevent the flow of air from the chamber to the respective cylinders, and a discharge-passage-way from such chamber; substantially as described.

847,395. LIGHT-TRANSMITTING AND LIGHT-DIFFUSING OBJECT. ERNEST BÖHM, London, England. Filed Apr. 30, 1906. Serial No. 314,384.

Claim.—As an article of manufacture, a lighting-globe consisting of a hollow body of transparent material having on its surface an integral rib comprising numerous bulbous irregularities on its outer surface which form separate lenses.

847,396. PROCESS FOR PRODUCING LIGHT-TRANSMITTING OBJECTS. ERNEST BÖHM, London, England. Filed Apr. 30, 1906. Renewed Feb. 12, 1907. Serial No. 357,068.

Claim.—1. The herein-described process of making light-transmitting and light-diffusing objects which consists in forming a rod having numerous surface irregularities or bulbs and uniting the same with a plain surface, substantially as described.

2. The herein-described process of forming or making light-transmitting and light-diffusing objects, which consists in winding upon a glass tube, a rod having numerous surface irregularities, raising the tube and rod to the required temperature for blowing, and blowing the bulb and rod to the desired shape and size, thereby forming on the surface of said globe a multiplicity of light-radiating lenses substantially as described.

847,397. STAMP-MILL STAMP-HEAD. MARTIN P. BOSS, San Francisco, Cal. Filed Jan. 12, 1905. Serial No. 240,716.

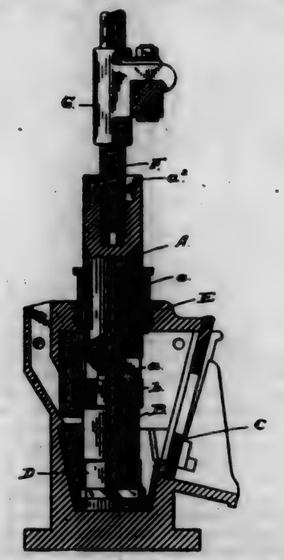

Claim.—In combination with a mortar, having a cover with an antisplashing housing, and a fixed guide above, a stamp-stem fitted in said guide, and a stamp-head fitted to the stem, and playing through the cover-housing, said stamp-head having an annular flange prolonging its upper end and adapted to pass over the fixed guide when the stamp-head is lifted.

847,398. CULTIVATOR. CLARENCE M. BOWEN, Bowens, Md. Filed Mar. 20, 1906. Serial No. 307,094.

Claim.—1. In a machine of the class described, a frame having an axle and supporting-wheels, pairs of brackets connected with the frame and with the axle and having coinciding apertures, a cross-beam having trunnions pivotally engaging said apertures, and earth-engaging blades carried by said cross-beam.

2. In a machine of the class described, a frame having an axle and carrying-wheels, pairs of brackets connected with the frame and with the axle and having coinciding

apertures, a cross-beam having trunnions pivotally engaging said apertures, earth-engaging blades carried by said cross-beam, and means for rocking the cross-beam and for securing it at various adjustments.

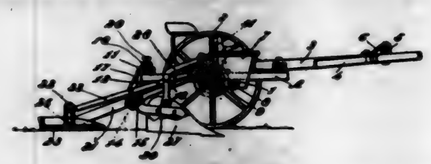

3. In a machine of the class described, a frame having an axle and carrying-wheels, pairs of brackets connected with the frame and with the axle and having coinciding apertures one pair of said brackets being pivotally connected with the frame and with the axle, a brace connecting said pivoted brackets, means for bracing the other pair of brackets in stationary relation to the frame, a cross-beam having trunnions pivotally engaging the apertures in the pairs of brackets, earth-engaging blades carried by said cross-beam, a rod connecting the blades, and a lever connected with said rod to effect adjustment of the blades.

4. In a machine of the class described, a frame having an axle and supporting-wheels, brackets connected with the frame and with the axle and having coinciding apertures, a cross-beam having trunnions pivotally engaging said apertures, links mounted upon the trunnions of the beam, and a leveling implement supported by said links.

5. In a machine of the class described, a wheel-supported frame having brackets connected therewith, a cross-beam having trunnions pivoted in said brackets, links pivoted upon the trunnions of the beam, and a leveling implement carried by the links.

6. In a machine of the class described, a wheel-supported frame having brackets, a cross-beam having trunnions pivoted upon said brackets, an adjusting-lever connected with the beam, links pivoted upon the trunnions of the cross-beam, a leveling implement supported pivotally by the links, and a link-bar connecting the leveling implement with a supporting-point said link-bar being connected with the adjusting-lever.

7. In a machine of the class described, a wheel-supported frame having an axle, brackets connected with the frame and with the axle and having coinciding apertures, a cross-beam having trunnions pivotally engaging the apertures in the brackets, an adjusting-lever connected with the beam, links pivoted upon the trunnions of the cross-beam, a leveling implement pivotally supported by the links and having an intermediately-disposed staple, a link-bar loosely engaging the staple at one end and connected at its opposite end with the axle, and means pivotally connecting said link with the adjusting-lever.

847,399. MERCURY RETORT AND FURNACE. CONRAD F. BROWN, San Jose, Cal. Filed Apr. 10, 1906. Serial No. 310,893.

Claim.—1. In a furnace of the character described, the combination of a combustion-chamber, a flue therefor, and a chute for the ore extending over said flue, the top of the flue forming the bottom of the chute, the walls of the flue and chute being formed at suitable intervals in their length with passages to permit the gases to pass from the former to the latter, and means for feeding the ore at the top of the chute, substantially as described.

2. In a furnace of the character described, the combination of a combustion-chamber, a flue therefor, and a chute forming the bottom of the chute, the walls of the flue and chute being formed at suitable intervals in their length with passages to permit the gases to pass from the former to the latter, abutments in the flue deflecting the gases into said passages, and means for feeding the ore at the top of the chute, substantially as described.

847,399.

847,400. RAIL-JOINT. STERLING H. CAMPBELL, Detroit, Mich., assignor of one-half to James M. Hopkins, Chicago, Ill. Filed Nov. 8, 1905. Serial No. 286,818.

Claim.—1. A rail-joint comprising a fish-plate, a combined fish-plate and chair-plate, the chair-plate extending beneath and entirely across the rail-base, a wedge-plate adapted to extend beneath the rail-base and between it and the chair-plate, and bolts extending through the fish-plates to draw them and the chair and wedge plates together.

2. A rail-joint comprising a combined fish-plate and chair-plate, and a wedge-plate adapted to be interposed between the chair-plate and the rail-base, said chair-plate and said wedge-plate being adapted to extend across the rail-base from side to side thereof.

3. A rail-joint comprising a fish-plate, a combined fish-plate and chair-plate, a wedge-plate adapted to be interposed between the chair-plate and the rail-base, said chair and wedge plates being adapted to extend from side to side of the rail-base, and bolts extending through the fish-plates to draw them and the chair and wedge plates together.

4. A rail-joint comprising a fish-plate, a combined fish-plate and chair-plate, a wedge-plate adapted to be interposed between the chair-plate and rail-base, and bolts extending through the fish-plates to draw the parts together, said chair and wedge plates being adapted to extend from side to side of the rail-base and having abutting inclined surfaces and said wedge-plate having an offset to lock it against movement when the chair-plate is shifted.

5. A rail-joint comprising a fish-plate; a combined fish-plate and chair-plate, a wedge-plate adapted to be interposed between the chair-plate and the base of the rails, the chair and wedge plates being shorter than the fish-plates and adapted to extend beneath the abutting ends of the

rails to be joined, and bolts extending through the fish-plates to draw the parts together.

847,401. VALVE. GEORGE C. DAVIS, Chicago, Ill., assignor to G. M. Davis Regulator Company, Chicago, Ill., a Corporation of Illinois. Filed July 2, 1906. Serial No. 324,617.

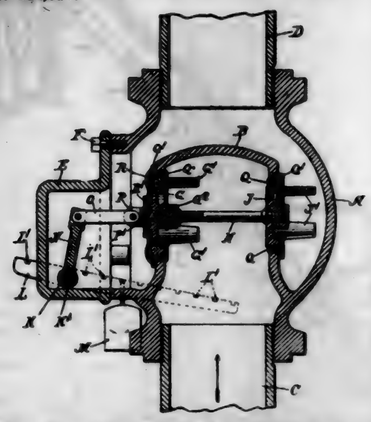

Claim.—In a valve device the combination of a valve-casing having two orifices in line with each other with two valves arranged on one stem and adapted to simultaneously slide back and forth in and through such orifices, the diameter of the valves being smaller than the diameters of their respective orifices, said valve and casing composed of hard metals having the same coefficients of expansion, and soft metal bushings or linings for the orifices of said casing of such thickness as to leave the orifices of substantially the same diameters as their respective valves.

847,402. FIRELESS COOK-STOVE OR COOKING-OVEN. PHILIP H. EBBS, Chicago, Ill. Filed May 31, 1906. Serial No. 319,521.

Claim.—A lining for a fireless cook-stove consisting of a coat of paint on the interior of the stove, mineral wool adhering to the paint, cellular asbestos board facing the mineral wool, and a smooth hard asbestos paint facing said board and constituting the interior finish of said lining.

847,403. RAILWAY-RAIL STAY. JENS J. O. FISCHER, Racine, Wis., assignor, by mesne assignments, to Lass & Sponenburg Co., a Corporation of Illinois. Filed Jan. 22, 1907. Serial No. 353,502.

Claim.—1. A rail-stay comprising a pair of jaws, a connecting member arranged to extend beneath the base of the rail and connect the said jaws, a rail-gripping member adapted to be interposed between one of said jaws and one edge of the rail-base and movable transversely of the rail, coengaging means on said rail-stay and said rail-gripping member to prevent the movement of said rail-gripping member lengthwise of the rail, and a wedge arranged to be interposed between said rail-gripping member and an abutment on the anticreeper so as to force said rail-gripping member into gripping engagement with the rail-base.

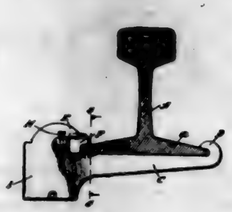

2. A rail-stay comprising a pair of facing jaws having fixed relation to each other, a connecting member adapted to extend beneath the base of the rail and connect said jaws, a rail-gripping member movable lengthwise of the rail-stay and arranged to be interposed between one of said jaws and one edge of the rail-base, coengaging abutments upon the rail-gripping member and the body of the rail-stay to prevent movement of the rail-gripping member lengthwise of the rail, and means for forcing the rail-gripping member into gripping engagement with the base of the rail.

3. A rail-stay comprising a connecting member extending across the lower side of the base of the rail, and having a jaw upon each of its ends, a rail-gripping member inserted in one of said jaws and movable transversely of the rail, and a wedge adapted to be inserted behind said rail-gripping member to force said member into engagement with the base of the rail.

4. A rail-stay comprising a connecting member extending across the lower side of the base of the rail and provided with means at one end for abutting a tie, and having also a jaw upon each of its ends, a rail-gripping member movably arranged in one of said jaws, said rail-gripping member being composed of harder material than the rail, and a tapered key adapted to be inserted into said jaw and to force said rail-gripping member into holding engagement with the rail-base.

5. A rail-stay comprising a connecting member extending across the lower side of the base of the rail and provided with means for abutting a tie, and having also a jaw upon each of its ends, a rail-gripping member movably arranged in one of said jaws, and a tapered key adapted to be inserted into said jaw and to force said rail-gripping member into holding engagement with the rail-base.

6. A rail-stay comprising a connecting member extending across the lower side of the base of the rail and provided with means at one end for abutting a tie, and having also a jaw upon each of its ends, a rail-gripping member movably arranged in one of said jaws, said rail-gripping member being composed of harder material than the rail, and a tapered key adapted to be inserted into said jaw and to force said rail-gripping member into holding engagement with the rail-base.

7. A rail-stay comprising a bar extending across the lower side of the base of the rail and provided with means for abutting a tie, said bar having also a jaw upon each of its ends, a rail-gripping member movably arranged in one of said jaws, and a tapered key adapted to be inserted into said jaw and to force said rail-gripping member into holding engagement with the rail-base, and means for locking said key in position.

8. A rail-stay comprising a bar extending across the lower side of the base of the rail and provided with means for abutting a tie, said bar having also a jaw upon each of its ends, a toothed rail-gripping member movably arranged in one of said jaws, and a tapered key adapted to be inserted into said jaw and to force said rail-gripping member into holding engagement with the rail-base.

847,404. DISK LAND-CULTIVATOR, HARROW, ROAD-MACHINE, AND FARM-WAGON. ABRAM L. FOOTE, Fayette, Iowa. Filed Aug. 1, 1906. Serial No. 328,767.

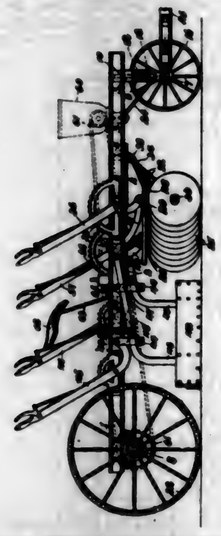

Claim.—1. A machine of the class described having a main frame and provided at opposite sides thereof with levers arranged in pairs, the levers at one side of the frame being provided with lower arms arranged in diagonal relation with and also at points diametrically opposite the lower arms of the levers at the opposite side of the frame, whereby cultivating devices may be hung from the frame either in a diagonal position or in parallelism with the median line of the machine.

2. In a machine of the class described, the combination with a frame and cultivating devices, of levers arranged in pairs at opposite sides of the frame and located in diagonal relation, the levers at one side of the frame being provided with supplemental arms arranged diametrically opposite the levers at the opposite side of the frame, and means for suspending the cultivating devices from the levers either in a diagonal position or in parallelism with the median line of the machine.

3. In a machine of the class described, the combination with a frame and cultivating means, of front and rear operating-levers arranged in pairs at opposite sides of the frame and having lower arms arranged in diagonal relation, the front lever at one side of the frame being also provided with a forwardly-extending supplemental arm, and the corresponding rear levers having a supplemental rearwardly-extending arm, the supplemental arms being disposed diametrically opposite the arms of the levers at the opposite side of the frame, and means for connecting the opposite levers with the cultivating means.

4. In a machine of the class described, the combination of a wheeled frame, operating-levers located at opposite sides of the main frame in diagonal relation, the levers at one side having supplemental arms arranged diametrically opposite the levers at the opposite side, and a harrow suspended from the supplemental arms and from the levers from the opposite side of the frame.

5. In a machine of the class described, the combination of a wheeled frame, operating-levers located at opposite sides of the main frame in diagonal relation, the levers at one side having supplemental arms arranged diametrically opposite the levers at the opposite side, and a harrow suspended from the supplemental arms and from the levers from the opposite side of the frame, and crossed-inclined chains extending from the sides of the main frame to the opposite sides of the harrow.

847,405. STEERING MECHANISM. HENRY FORD, Detroit, Mich. Filed June 21, 1905. Serial No. 266,254.

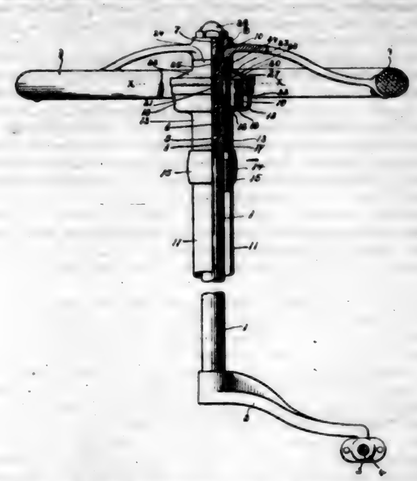

Claim.—1. The combination with a tubular steering-post formed with an enlargement at its upper end and a steering-shaft within said post, of a hand-wheel mounted upon the upper end of said enlargement and free to turn thereon, and means within said enlargement interposed between said wheel and the upper end of said shaft for transmitting from the wheel to the shaft a different rate of speed than that of the wheel.

2. The combination with a tubular steering-post and a steering-shaft within said post, of a hand-wheel on the upper end of said post, a stub-shaft in said wheel having a telescopic connection with the shaft, and gearing connecting said wheel and the upper end of the shaft.

3. The combination with a tubular steering-post and a steering-shaft within said post, of a casing on the upper end of said post, a steering-wheel supported by the casing and free to turn thereon, gears carried by the wheel and the casing, and pinions on the shaft engaging said gears to transmit motion from said wheel to the upper end of the steering-shaft.

4. The combination with a steering-shaft, of a stub-shaft in axial alinement with said shaft and having a telescopic engagement therewith, a hand-wheel secured to the stub-shaft, a gear on the stub-shaft, a stationary internal gear surrounding said gear, and an intermediate gear carried by the steering-shaft interposed between the gear on the stub-shaft and the internal gear.

5. The combination with a stationary steering-post and a steering-shaft within said post, of a casing secured to the upper end of the steering-post and provided with a bearing, a stub-shaft supported in said bearing in axial alinement with the steering-shaft and free to turn therein, a laterally-extending flange on the steering-shaft a hand-wheel fast on the outer end of said stub-shaft, and gearing within the casing for transmitting motion from said stub-shaft to the steering-shaft.

6. The combination of a steering-shaft having a socket in its upper end and a laterally-extending flange, a stub-shaft engaging said socket at one end and free to turn therein, a hand-wheel secured to the upper end of the stub-shaft, a gear on the stub-shaft, and gears in engagement with said gear to transmit motion therefrom to the steering-shaft.

7. The combination with a stationary post and a steering-shaft within said post, of a casing secured to the upper end of said post and provided with internal gear-teeth, a stub-shaft supported in axial alinement with the steering-shaft and having a telescopic engagement therewith, a gear on said stub-shaft within the casing, a hand-

wheel on the outer end of said stub-shaft, a bearing member secured to the upper end of the steering-shaft, and intermediate gears mounted on said bearing member and engaging the gear on the stub-shaft and the internal gear-teeth on the casing.

8. The combination with a stationary tubular post, of a steering-shaft within said post provided with a socket in its upper end, a stub-shaft in axial alinement therewith engaging said socket and free to turn therein, a gear on said stub-shaft adjacent to the end of the steering-shaft, a hand-wheel secured to the upper end of the stub-shaft, a casing secured to the upper end of the post and provided with internal gear-teeth, a bearing member secured to the upper end of the steering-shaft and provided with shafts forming bearings, gears having openings engaging said bearings and in mesh with the gear on the stub-shaft and the internal gear-teeth on the casing, and a cover detachably secured to the casing and provided with a bearing for the stub-shaft.

9. The combination with a stationary tubular post, of a steering-shaft within said post provided with a socket in its upper end, a circular casing secured to the upper end of the post and provided with an internal gear, a bearing member formed with a sleeve portion secured to the upper end of the steering-shaft, a laterally-extending flange on said member provided with pins forming vertical bearings, gears on said pins in mesh with the internal gear on the casing, a stub-shaft in axial alinement with the shaft having a reduced lower end engaging the socket in the steering-shaft, a gear on said stub-shaft adjacent to the end of the steering-shaft, a hand-wheel secured to the upper end of the stub-shaft and a cap screwed upon the casing and provided with a bearing engaging the stub-shaft between the gear thereon and the hub of the hand-wheel.

847,406. STOP AND WASTE COCK. HARRY J. GEUBINK, Cleveland, Ohio. Filed Aug. 13, 1904. Serial No. 220,600.

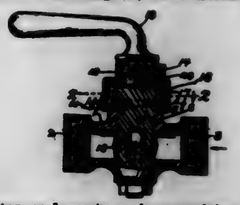

Claim.—A stop and waste cock comprising a valve-casing having a neck portion with two flat faces, a valve-plug arranged to fit into said casing and having a cylindrical portion projecting above the neck portion of the valve-casing, a cap having a circular opening to receive the cylindrical part of the valve-plug and arranged to extend down over the neck portion of the valve-casing and having a single flat face on its interior surface arranged to register with one of the flat faces on the neck portion, stops formed on the interior surface of said cap, and a lug formed on said valve-plug arranged to travel between the stops on said cap.

847,407. STEAM GENERATOR AND SUPERHEATER. FRANK A. HAUGHTON, Schenectady, N. Y. Filed Apr. 8, 1905. Serial No. 254,544.

Claim.—1. The combination with a boiler provided with fire-tubes, of a superheater provided with fire-tubes, the superheater being inclosed within the boiler and surrounded by the boiler-tubes.

2. The combination with a tubular boiler provided with a chamber surrounded by the tubes of the boiler, a superheater separate from the boiler and provided with fire-tubes, the tubes of the superheater registering with corresponding tubes of the boiler.

3. The combination with a tubular boiler having a chamber formed in one end thereof, a superheater provided with fire-tubes located in the chamber, the tubes of the superheater registering with corresponding tubes of the boiler.

4. A fire-tube boiler in combination with a tubular superheater independently separable from the boiler, the superheater inclosed within the tubular boiler, the tubes of the superheater registering with corresponding tubes of the boiler.

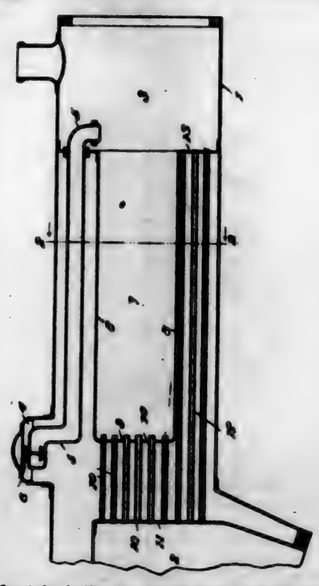

5. A fire-tube boiler in combination with a tubular superheater independently separable from the boiler, the superheater inclosed within the tubular boiler, the tubes of the superheater registering with corresponding tubes of the boiler, means to deflect the steam entering the superheater in contact with its radiating-surface.

6. A fire-tube boiler in combination with a tubular superheater independently separable from the boiler, the superheater being contained within the boiler, the tubes of the superheater registering with corresponding tubes of the boiler.

7. A boiler in combination with a tubular superheater independently separable from the boiler, the superheater being contained within the boiler, and means to deflect the steam entering the superheater in contact with its radiating-surface.

8. A tubular boiler provided with a cylindrical chamber extending inward from one end of the boiler, the inner end of said chamber terminating in a tube-head, said chamber being connected with the fire-box by fire-tubes extending from the fire-box to the head of said chamber, in combination with a superheater consisting of another chamber located within the aforesaid chamber and provided with fire-tubes which register with the aforesaid fire-tubes.

9. The combination with a tubular boiler having a chamber extending inwardly from the head of the boiler, of a superheater consisting of a chamber having a plurality of fire-tubes, the superheater being contained within the chamber in the boiler, the fire-tubes of the superheater registering with the fire-tubes of the boiler which enter the chamber.

10. The combination with a tubular boiler having a chamber extending inwardly from the head of the boiler, of a superheater consisting of a chamber having a plurality of fire-tubes, the superheater being contained within the chamber in the boiler, the fire-tubes of the superheater registering with the fire-tubes of the boiler which enter the chamber, the fire-tubes of the superheater exceeding the diameter of those of the boiler, the fire-tubes of both boiler and superheater extending beyond their respective heads and telescoping with each other, tube for tube.

11. The combination with a tubular boiler having a chamber extending inwardly from the head of the boiler, of a superheater consisting of a chamber having a plurality of fire-tubes, the superheater being contained within the chamber in the boiler, the fire-tubes of the superheater registering with the fire-tubes of the boiler, the superheater extending beyond the tube-head of the boiler with the steam inlet and outlet connections located on the extending portion of the superheater.

12. The combination with a tubular boiler having a chamber extending inwardly from the head of the boiler, of a superheater consisting of a chamber having a plurality of fire-tubes, the superheater being contained within the chamber in the boiler, a central longitudinal passage within the superheater embracing a portion of its fire-tubes through which the steam is conducted and outside of which the steam returns in the opposite direction to the outlet from the superheater.

13. The combination with a tubular boiler having a chamber extending inwardly from the head of the boiler, of a superheater consisting of a chamber having a plurality of fire-tubes, the superheater being contained within the chamber in the boiler, a central longitudinal passage within the superheater embracing a portion of its fire-tubes through which the steam is conducted and outside of which the steam returns in the opposite direction to the outlet from the superheater, said central passage having a wall of double thickness with insulating-space between the walls.

14. The combination with a tubular boiler having a chamber extending inwardly from the head of the boiler, of a superheater consisting of a chamber having a plurality of fire-tubes, the superheater being contained within the chamber in the boiler, and a movable damper to cover and uncover the outer end of the superheater-tubes.

15. The combination with a tubular boiler, having a chamber extending inwardly from the head of the boiler, of a superheater consisting of a chamber having a plurality of fire-tubes, the superheater being contained within the chamber in the boiler, and means within the superheater to circulate the steam completely in contact with the fire-tubes of the superheater.

16. A tubular boiler of the fire-tube type in combination with a superheater of the same variety, the generator being so constructed as to embrace within itself the superheater, the tubes of both registering and the two being independently separable.

17. A tubular boiler of the fire-tube type in combination with a superheater of the same variety, the generator being so constructed as to embrace within itself the superheater, the tubes of both registering and the two being independently separable, a portion of the generator-chamber being interposed between the fire-box and the superheater.

18. A tubular boiler of the fire-tube type in combination with a superheater of the same variety, the generator being so constructed as to embrace within itself the superheater, the tubes of both registering and the two being independently separable, a portion of the generator-chamber being interposed between the fire-box and the superheater, and means to deflect the steam entering the superheater in contact with its radiating-surface.

19. A tubular boiler of the straight-tube type in combination with a superheater of the same variety, the generator being so constructed as to embrace within itself the superheater, the tubes of both registering and the two being separable, a portion of the generator-chamber being interposed between the fire-box and the superheater, and means to deflect the steam entering the superheater in contact with its radiating-surface, the superheater extending sufficiently beyond the generator to allow for the intake and output steam connections.

20. The combination with a tubular boiler having a chamber extending inwardly from the head of the boiler, of a superheater consisting of a chamber having a plurality of fire-tubes, the superheater being contained within the chamber in the boiler, the fire-tubes of the superheater registering with the fire-tubes of the boiler which enter the chamber; a head for said superheater secured thereto and extending beyond the generator, said head being formed in one piece and in itself forming two chambers adapted to coöperate with the structure of the superheater, the one chamber having an inlet-port to receive the steam and the other chamber outlet-ports through which to discharge the same.

21. In a steam-boiler, the combination of a steam-chamber, a series of superheating-tubes passing through said steam-chamber and fire-tubes arranged on both sides of said steam-chamber, substantially as described.

847,408. CAR-COUPLING. GUSTAF A. HERMANSON, Chicago, Ill., assignor to James Munton, Maywood, Ill. Filed Nov. 28, 1906. Serial No. 345,431.

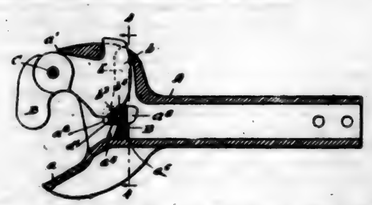

Claim.—1. In a car-coupler, the combination with a forked draw-head, of a knuckle having a rear arm or tail furnished with a knuckle-throwing cam or incline, and provided with a notch or recess at its front corner to permit the knuckle to partially open without dislodging the lock from its lock-set position, and a vertically-movable lock having a lock-set leg adapted to engage a lock-set ledge on the draw-head and provided with a knuckle-throwing foot or projection engaging said cam on the rear arm or tail of the knuckle to throw the knuckle open, and a projection on the front side of the lock engaged by the knuckle-tail after the knuckle swings partially open to dislodge the lock from its lock-set position, substantially as specified.

2. In a car-coupler, the combination with a draw-head having a lock-set ledge on its bottom web or floor, of a knuckle and a vertically-movable lock having a lock-set leg engaging said lock-set ledge on the draw-head, and provided with a shoulder fitting under and engaging the bottom web or floor of the draw-head to prevent creeping of the lock, substantially as specified.

3. In a car-coupler, the combination with a forked draw-head, of a knuckle having a rear arm or tail furnished with a knuckle-throwing cam or incline, and provided with a notch or recess at its front corner to permit the knuckle to partially open without dislodging the lock from its lock-set, and a vertically-movable lock having a lock-set leg provided with a knuckle-throwing foot or projection engaging said cam or incline on the rear arm or tail of the knuckle to throw the knuckle open, said lock-set leg of the lock being also provided on its front side with a lock-set-dislodging projection fitting in said notch or recess in the knuckle-tail to permit the knuckle to partially open before dislodging the lock from the lock-set and then engaging the knuckle-tail to cause the lower end of the lock to be pushed backward and dislodge the lock-set, substantially as specified.

4. The combination with a forked draw-head having a lock-set ledge, of a knuckle having a rear arm or tail furnished with a knuckle-throwing cam or incline, and a vertically-movable lock having a lock-set leg provided at its lower end with a knuckle-throwing foot and furnished with a shoulder engaging the bottom web or floor of the draw-head to prevent creeping of the lock, substantially as specified.

5. The combination with a forked draw-head having a lock-set ledge on the bottom web or floor of the draw-head, of a knuckle having a rear arm or tail furnished with a knuckle-throwing cam or incline, and a vertically-movable

lock having a lock-set leg provided with a knuckle-throwing foot at its lower end engaging said cam or incline on the knuckle-tail to throw the knuckle open, said lock being provided on its front side with a shoulder engaging the surrounding wall of the draw-head to tilt the upper end of the lock backward and its lower end forward to cause its lock-set leg to posttively engage the lock-set ledge on the draw-head, substantially as specified.

6. The combination with a forked draw-head having a lock-set ledge on the bottom web or floor of the draw-head, of a knuckle having a rear arm or tail furnished with a knuckle-throwing cam or incline, and a vertically-movable lock having a lock-set leg provided with a knuckle-throwing foot at its lower end engaging said cam or incline on the knuckle-tail to throw the knuckle open, said lock being provided on its front side with a shoulder engaging the surrounding wall of the draw-head to tilt the upper end of the lock backward and its lower end forward to cause its lock-set leg to positively engage the lock-set ledge on the draw-head, said lock-set ledge having also a shoulder engaging the bottom web or floor of the draw-head to prevent creeping of the lock, substantially as specified.

7. The combination with a forked draw-head having a lock-set ledge on the bottom web or floor of the draw-head, of a knuckle having a rear arm or tail furnished with a knuckle-throwing cam or incline, and a vertically-movable lock having a lock-set leg provided with a knuckle-throwing foot at its lower end engaging said cam or incline on the knuckle-tail to throw the knuckle open, said lock being provided on its front side with a shoulder engaging the surrounding wall of the draw-head to tilt the upper end of the lock backward and its lower end forward to cause its lock-set leg to positively engage the lock-set ledge on the draw-head, said lock-set ledge having also a shoulder engaging the bottom web or floor of the draw-head to prevent creeping of the lock, and said lock and knuckle-tail having interengaging recess and projection to permit the knuckle to partially open before the lock is dislodged from its lock-set position, substantially as specified.

847,409. HAT-BRIM SIZING AND PARING DEVICE. HENRY HERSTEIN, New York, N. Y. Filed June 18, 1906. Serial No. 322,129.

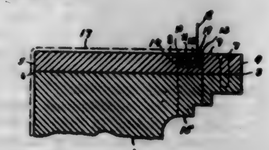

Claim.—1. In a support for sizing and pairing the brims of hats, the combination of a body, a flange-plate mounted thereon, a guide or groove formed on said flange-plate, and adjustable means mounted in said guide or groove for guiding a paring-knife while paring the brims of hats.

2. In a support for sizing and pairing the brims of hats, the combination of a body, a flange-plate secured to said body, a guide or groove formed on said flange-plate, guide-strips mounted in said guide or groove adapted to guide a paring-knife while paring and sizing the brims of hats.

3. In a support for sizing and paring the brims of hats, the combination of a body, a flange-plate mounted on said body, a guide or groove formed on the upper face of said flange-plate, and adjustable guide-strips mounted in said guide or groove adapted to be adjusted to various diameters from the center of the block or mold.

4. In a support for sizing and paring the brims of hats, the combination of a body, a flange-plate mounted on said body, a guide or groove formed on said flange-plate, and adjustable means mounted in said guide or groove adapted to guide a paring-knife while paring the brims of hats.

5. In a support for sizing and pairing the brims of hats, the combination of a body, a groove or guide formed around the upper face of said body, guide-strips mounted in said groove adapted to guide a paring-knife while paring the brims of hats.

6. In a support for paring and sizing the brims of hats, the combination of a body part, a guide or groove formed on said body part, and means for forming a series of guides or grooves mounted in said guide or groove.

7. In a support for sizing and paring the brims of hats, the combination of a body part, a flange-plate mounted on said body part, a guide or groove formed on the upper face of said flange-plate, adjustable guide-strips having one side angled mounted in said groove, said guide-strips being adapted to form a series of grooves in said guide or groove.

8. In a support for sizing and paring the brims of hats, the combination of a body part, a guide or groove formed on the upper face of said body part, a plurality of guide-strips having one side angled mounted in said guide or groove, adapted to guide a paring-knife while sizing and paring the brims of hats.

847,410. APPARATUS FOR DESULFURIZING AND AGGLOMERATING PYRITES-CINDER, &c. ROWLAND F. HILL, New York, N. Y., assignor to General Chemical Company, New York, N. Y., a Corporation of New York. Filed Dec. 20, 1905. Serial No. 292,557.

Claim.—1. An apparatus for the treatment of pyrites-cinder and other pulverulent material, comprising two inclined rotary kilns the lower one of which has a non-acid lining, and a connecting-pipe extending from one kiln to the other.

2. An apparatus for the treatment of pyrites-cinder and other pulverulent material, comprising two inclined rotary kilns arranged tandemwise and a movable connecting-pipe interposed between said kilns.

3. An apparatus for the treatment of pyrites-cinder and other pulverulent material, comprising two inclined rotary kilns arranged tandemwise, and a connecting-pipe interposed between said kilns and pivoted so as to be capable of swinging toward and away from the adjacent ends of said kilns.

847,411. AUTOMATIC CAR-LIFT. GRANT HOLMES, Danville, Ill., assignor to Robert Holmes & Brothers, Danville, Ill., a Corporation of Illinois. Filed Dec. 5, 1906. Serial No. 346,360.

Claim.—1. A car-lift of the character described, comprising a track-section, means for raising and lowering said track-section, and controlling means actuated by the car for causing said raising and lowering means to raise said track-section when the car enters the same and to lower said track-section when the car leaves the same, substantially as described.

2. A car-lift of the character described comprising a floating track-section and means for raising and lowering said track-section and for causing one end of said track-section to travel a greater distance than the opposite end thereof, substantially as described.

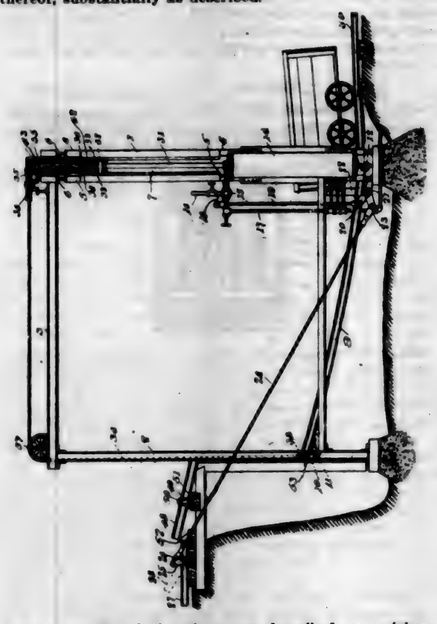

3. A car-lift of the character described comprising a floating track-section, means controlled by the movement of the car for raising and lowering said track-section, and means for causing one end of said track-section to travel a greater distance than the opposite end thereof, substantially as described.

4. A car-lift of the character described comprising a floating track-section, means for raising and lowering said track-section and for causing one end of said track-section to travel a greater distance than the opposite end thereof, and controlling means actuated by said car for causing said raising and lowering means to raise said track-section when the car enters the same and to lower said track-section when the car leaves the same, substantially as described.

5. A car-lift of the character described comprising a floating track-section inclined in one direction to receive a car, means for raising and lowering said track-section, and means for tilting the same in the opposite direction to discharge said car, substantially as described.

6. In a car-lift of the character described, the combination, with a frame and a floating track-section, of a cross-head adapted to reciprocate vertically of said frame, means for actuating said cross-head, means actuated by said cross-head for moving one end of said track-section a distance equal to the distance traveled by said cross-head, and means actuated by said cross-head for moving the opposite end of said track-section a greater distance than the distance traveled by said cross-head, substantially as described.

7. In a device of the character described, the combination, with a frame, a floating track-section and pulleys carried by said frame, of a cross-head adapted to reciprocate vertically of said frame, a cable directly connecting said cross-head with one end of said track-section and extending around certain of said pulleys, idle pulleys carried by said cross-head, and another cable secured to the opposite end of said track-section and extending over other pulleys on said frame and around the idle pulleys on said cross-head and having the other end secured to a fixed part of the frame, substantially as described.

8. A car-lift of the character described comprising a floating track-section having one end confined by a vertical guideway and its opposite end free, and means for raising and lowering said track-section and for causing the free end thereof to travel a greater distance than that traveled by the end confined by the guideway, substantially as described.

9. A car-lift of the character described, comprising a frame and a floating track-section, guideways at one end of said frame adapted to control the movement of the corresponding end of the track-section, and guideways at the opposite end of said frame adapted to prevent lateral movement of the corresponding end of the track-section but to allow the same free longitudinal movement, substantially as described.

10. A car-lift of the character described comprising a frame having vertically-extending guideways at one end thereof and guide-plates at the opposite end thereof, a floating track-section, a supporting-bar for one end of said section engaging said guideways to cause the corresponding end of the track-section to move in a vertical plane, a supporting-bar for the opposite end of said track-section having its ends in engagement with said guide-plates to prevent lateral movement of the corresponding end of said track-section but to allow the same free longitudinal movement, and means connected with said cross-bars for raising and lowering said track-section, substantially as described.

11. A car-lift of the character described comprising a floating track-section having its lowest point intermediate the ends thereof when in its normal position, and means for raising and lowering said track-section, substantially as described.

12. A car-lift of the character described comprising a floating track-section having its lowermost point intermediate the ends thereof when in all positions except its uppermost position, and means for raising and lowering said track-section, substantially as described.

13. A car-lift of the character described comprising a floating track-section having a downwardly-curved portion, and means for raising and lowering said track-section, substantially as described.

14. A car-lift of the character described comprising a floating track-section downwardly curved throughout its length, and means for raising and lowering said track-section, substantially as described.

15. A car-lift of the character described comprising a downwardly-curved floating track-section, means for raising and lowering said track-section, and means for causing one end of said track-section to travel a greater distance than the opposite end thereof, substantially as described.

16. A car-lift of the character described comprising a forwardly-inclined floating track-section having its lowest point near the forward end thereof, means for raising and lowering said track-section, and means for causing the forward end thereof to travel at a greater rate of speed than the rear end thereof, thereby causing the lowest point of said track-section to be moved toward the rear end thereof, substantially as described.

17. In a car-lift of the character described, the combination, with a floating track-section, and means for raising and lowering the same, of a pivoted track-section near the upper limit of travel of said floating track-section and adapted to be engaged by said floating track-section and moved into alinement therewith, substantially as described.

18. In a car-lift of the character described, the combination, with a floating track-section, and means for raising and lowering the same, of a pivoted track-section near the upper limit of travel of said floating track-section having its pivotal center in the rear of the longitudinal center of said track-section, and means carried by said floating track-section for engaging said pivoted track-section for moving the same into alinement therewith, substantially as described.

19. In a car-lift of the character described, the combination, with a floating track-section, means for raising and

lowering said floating track-section, a pivoted track-section near the upper limit of travel of said floating track-section, trunnions secured to said pivoted track-section, bearing-brackets having vertical slots adapted to receive said trunnions, and means carried by said floating track-section to engage said pivoted track-section and move the same into alinement therewith, substantially as described.

20. A car-lift of the character described comprising a forwardly-inclined floating track-section, means for retaining the car on said track-section, means for raising and lowering said track-section and for causing said forward end of said track-section to travel a greater distance than the rear end thereof, thereby tilting said track-section in the opposite direction, a pivoted track-section near the upper limit of travel of said floating track-section, and means carried by said floating track-section for engaging the pivoted track-section to move the same into alinement therewith when in its uppermost position, substantially as described.

21. In a car-lift of the character described, the combination, with a floating track-section, means for raising and lowering the same, and a fixed track near the upper limit of travel of said floating track-section, of a pivoted track-section adapted to connect said fixed track with said floating track-section and having its pivotal center intermediate its ends, and means for holding said pivoted track-section normally in a forwardly-inclined position, thereby causing the rear end thereof to extend above the fixed track and serve as a buffer, substantially as described.

22. A car-lift of the character described comprising a movable track-section having its lowermost point intermediate the ends thereof when in all positions except its uppermost position, and means for raising and lowering said track-section, substantially as described.

847,412. GAS-BURNER. PETER KELLER, Chicago, Ill., assignor of one-half to John M. Tierney, Chicago, Ill. Filed Apr. 4, 1906. Serial No. 309,772.

Claim.—1. A gas-burner having a gas-passage and provided with an annular inturned shoulder, a multiple screen extended across said passage and engaged with said shoulder, said screen comprising parallel wire-gauze screens of different diameter, the larger having a pendent edge flange engaged with the walls of the gas-passage and the smaller screen having edge portions engaged in the fabric of the pendent flange of the larger screen to hold the screens in relation and a fibrous packing interposed between said wire-gauze screens, a regulator-shell extended across the passage and having a central raised gas discharge or vent portion the apex of which has a central opening and the sides of which have slitted openings radiating from said central opening, and a valve having guiding means and adapted to seat on the apex of said vent portion to control the flow of gas through the opening at the apex of said vent portion.

2. A gas-burner having a body portion provided with a gas-passage, a regulator-shell extended across the passage and having a central raised gas discharge or vent portion the apex of which has a central opening and the sides of which have slitted openings radiating from said central opening, a valve having guiding means and adapted to seat on the apex of said vent portion to control the flow of gas through the opening of the apex thereof, and a disk-like gas-check extended across the gas-passage below the regulator-shell and having a central opening affording supply of gas to said shell, the wall of said gas-passage having an annular inwardly crimped or swaged portion forming an annular inturned shoulder below said disk-like gas-check and whereon the edge portions of the check are rested.

847,413. GAS-PRESSURE REGULATOR. PETER KELLER, Chicago, Ill., assignor of one-half to John M. Tierney, Chicago, Ill. Filed Apr. 4, 1906. Serial No. 309,773.

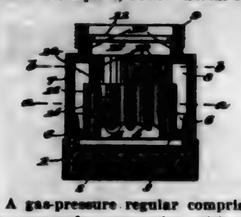

Claim.—1. A gas-pressure regular comprising an outer casing having means for connection with a service-pipe and having a gas-passage extended through it, a diaphragm extended across said passage within the casing and having a raised flange formed with a passage for the flow of gas, a cylindrical valve-seat carried by the casing above said flange, a shell having an imperforate top and pendent edge flange surrounding and covering said flange and adapted to be elevated by rise of gas-pressure, means carried by said shell for engagement with the walls of the flange to guide the shell in its movement and a cylindrical valve carried by the shell and engaged for sliding movement along said cylindrical valve-seat and provided with longitudinally-extended slitted ports for the flow of gas adapted to be gradually closed by the valve-seat in the sliding movement of the valve along the same.

2. A gas-pressure regulator comprising an outer casing having a diaphragm provided with a central raised flange having a passage for the flow of gas, a shell comprising an imperforate top and a longitudinally-corrugated flange pendent around the edges of the top and surrounding the flange of the diaphragm with inwardly-directed portions of its corrugations engaged longitudinally for sliding movement on said last-named flange to guide the shell in its movements, the spaces within said corrugated flange between its inwardly-directed portions being adapted for the flow of gas outwardly and downwardly from the passage within the flange of the diaphragm and a valve carried by the shell and movable in unison therewith for controlling the flow of gas through the casing.

3. A gas-pressure regulator comprising a casing having a diaphragm provided with a central raised flange having a passage for the flow of gas, a shell comprising an imperforate top and a corrugated flange pendent around the edges of the top and surrounding the flange of the diaphragm with inwardly-directed portions spaced apart and contacting on the flange of the diaphragm to guide the shell in its movements, the wall of said flange of the shell being provided with spaced notches at its lower edge portion to afford passages for the outward flow of gas and a valve carried by the shell and movable in unison therewith and adapted to control the flow of gas through the casing.

847,414. VEHICLE. JAMES P. LAIN, Chicago, Ill. Filed June 7, 1906. Serial No. 320,626.

Claim.—1. In a vehicle of the class described the combination with the front and rear rotative axles of antifriction-bearings therefor, a box connecting said axles, wheels on the forward axle, a wheel rigidly engaged on one end of the rear axle, a wheel journaled on the opposite end of said axle, a counter-shaft, a balance-wheel thereon and means connecting said axle and shaft adapted to lock the loose wheel to the axle.

2. In a vehicle the combination with the bolsters of a box thereon, antifriction-bearings on said bolsters, axles journaled therein, wheels on the forward axle, a loose and a fixed wheel on the rear axle, a counter-shaft journaled beneath the box, a balance-wheel thereon, means connecting said axle and shaft and adapted to rotate the shaft at a greater speed than the speed of the axle and means for locking the loose wheel to the axle.

3. In a vehicle the combination with the axles of antifriction-bearings therefor, a box carried on said axles, wheels on the forward axle, a fixed and a loose wheel on the rear axle, a counter-shaft journaled beneath the box, a balance-wheel thereon, sprocket-wheels rigidly engaged on both the axle and the shaft, a sprocket-chain thereon, a sprocket-wheel on the loose wheel, a sprocket-wheel slidably and rotatably engaged on said shaft, a sprocket-chain connecting the same with the sprocket on the loose wheel, clutch members on said slidable sprocket-wheel and shaft and means for throwing said members into and out of engagement.

4. In a device of the class described the combination with the axles, of a plurality of antifriction-bearings therefor spaced throughout their lengths, a box connecting said axles, a rigid and a loose wheel on each axle, a counter-shaft journaled beneath the box, a balance-wheel thereon, sprocket connections between said axle and shaft, means for locking the loose wheel on the rear axle to said axle, bounds on the forward axle, a shaft journaled thereon, sprocket-wheels on said shaft, sprocket-wheels on the forward axle and the loose wheel thereon in alinement therewith and sprocket-chains on said sprocket-wheels.

847,415. TYPE-WRITING MACHINE. EMMIT G. LATTA, Syracuse, N. Y., assignor of one-half to Harvey A. Moyer, Syracuse, N. Y. Filed June 14, 1905. Serial No. 265,217.

Claim.—1. In a type-writing machine, the combination of a platen and a type-support, one of which is adapted to be shifted to change the relation of the type and the printing-point, an actuating device for said shifting part, and an eccentric connected between said operating device and said shifting part and which is turned by said actuating device from one rest position to another to shift said shifting part, said eccentric automatically acting in its rest positions to positively hold said shifting part against vibration in either direction from either of the two positions to which it is moved by the eccentric, substantially as set forth.

2. In a type-writing machine, the combination of a platen and a type-support one of which is adapted to be shifted to change the relation of the type and the printing-point, an oscillatory eccentric, a connection between said eccentric and said shifting part arranged to prevent movement of the shifting part independently of the eccentric, and means for oscillating said eccentric from one to the other of its dead-center positions whereby the shifting part is shifted and positively held from vibration in both positions, substantially as set forth.

3. In a type-writing machine, the combination of a platen and a type-support one of which is adapted to be shifted to change the relation of the type and the printing-point, an oscillatory eccentric, a link connected to said eccentric and to said shifting part, and means for oscillating said eccentric from one to the other of its dead-center positions whereby the shifting part is shifted and positively held from vibration in both positions, substantially as set forth.

4. In a type-writing machine, the combination of a platen and a type-support one of which is adapted to be shifted to change the relation of the type and the printing-point, an oscillatory eccentric arranged in the machine centrally between the sides thereof, a connection between said eccentric and the middle portion of said shifting part arranged to prevent movement of the shifting part independently of the eccentric, and means for oscillating said eccentric from one to the other of its dead-center positions whereby the shifting part is shifted and positively held from vibration in both positions, substantially as set forth.

5. In a front-strike type-writing machine, the combination of a platen and a type-support one of which is adapted to be shifted vertically to change the relation of the type and the printing-point, an oscillatory eccentric, a link connected to said eccentric and to said shifting part, and means for oscillating said eccentric from one to the other of its dead-center positions whereby the shifting part is shifted by said eccentric and stationarily supported by the eccentric in either of two positions, substantially as set forth.

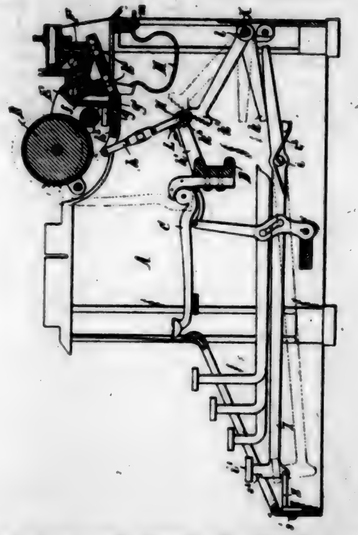

6. In a type-writing machine, the combination with a platen and a type-support, one of which is adapted to be shifted to change the relation of the type and the printing-point, of a shift-lever, a second lever having a rocking connection with said shift-lever, and an eccentric connection for transmitting motion from said second lever to the shifting part and for holding the shifting part from rebounding when shifted, substantially as set forth.

7. In a type-writing machine, the combination with a platen and a type-support, one of which is adapted to be shifted to change the relation of the type and the printing-point, of two shift-levers, a rock-shaft, two auxiliary levers secured to said rock-shaft and having rocking engagement with said shift-levers, and connections between said rock-shaft and shifting part which remain substantially centrally with respect to said rock-shaft and shifting part, substantially as set forth.

8. In a type-writing machine, the combination with a platen and a type-support, one of which is adapted to be shifted to change the relation of the type and the printing-point, of two shift-levers, a rock-shaft, two auxiliary levers secured to said rock-shaft and having rocking engagement with said shift-levers, and means connected to the central portions of said rock-shaft and shifting part for operating the latter, substantially as set forth.

9. In a type-writing machine, the combination with a support for a series of type-bars each having a plurality of printing characters, and a platen, one of which is

adapted to be shifted to change the relation of said support and platen, of a shift-key, an eccentric actuated by said shift-key, and a device positively connected to said eccentric and to the shifting part, said eccentric being arranged to rest substantially on a dead-center when in its normal position and hold the shifting part against change of position until the shift-key is moved, substantially as set forth.

10. In a type-writing machine, the combination with a support for a series of type-bars each having a plurality of printing characters, and a platen, one of which is adapted to be shifted to change the relation of said support and platen, of a shift-key, an eccentric actuated by said shift-key, and a device positively connected to said eccentric and to the shifting part, said eccentric being arranged to rest substantially on a dead-center when in its shifted position and hold the shifting part in shifted position until the shift-key is moved toward its normal position, substantially as set forth.

11. In a type-writing machine, the combination with a support for a series of type-bars each having a plurality of printing characters, and a platen, one of which is adapted to be shifted to change the relation of said support and platen, of a shift-key, an eccentric actuated by said shift-key, and a connection pivoted to said eccentric and to the shifting part, said eccentric being arranged to oscillate between two substantially dead-center positions and to change the position of the shifting part when moving from one dead-center position to the other, substantially as set forth.

12. In a type-writing machine, the combination with a support for a series of type-bars each having a plurality of printing characters, and a platen, one of which is adapted to be shifted to change the relation of said support and platen, of a shift-lever, and a connection between said lever and the shifting part constructed to move the shifting part with a slow starting motion increasing during the first part of its movement and decreasing during the last part of its movement, substantially as set forth.

13. In a type-writing machine, the combination with a support for a series of type-bars each having a plurality of printing characters, and a platen, one of which is adapted to be shifted to change the relation of said support and platen, of an eccentric or equivalent device, means for turning said eccentric through an arc of substantially one hundred and eighty degrees, a rod connecting said eccentric and said shifting part, and a stop against which the connecting-rod strikes to limit the movement of said eccentric and shifting part, substantially as set forth.

14. In a type-writing machine, the combination of a platen and a type-support, one of which is adapted to be shifted to change the relation of the type and the printing-point, an oscillatory eccentric, a link connected to said eccentric and to said shifting part, a gear-segment having a toothed engagement with said eccentric, and means for operating said gear-segment to turn said eccentric one-half revolution from one to the other of its dead-center positions, substantially as set forth.

15. In a front-strike type-writing machine, the combination of a platen and a type-support, one of which is adapted to be shifted up and down to change the relation of the type and the printing-point, an oscillatory eccentric arranged below said shifting part, a link connected to said eccentric and to said shifting part, a gear-segment having a toothed engagement with said eccentric, and means for operating said gear-segment to turn said eccentric one-half revolution from one to the other of its dead-center positions, substantially as set forth.

16. In a front-strike type-writing machine, the combination with a segment supporting a series of type-bars each having a plurality of printing characters, and a platen, of a shift-lever, a platen-shift frame mounted to oscillate vertically and having a rigid central arm projecting forwardly under the platen, and connections whereby the shift-lever acts on the front portion of said arm to shift the platen, substantially as set forth.

17. In a front-strike type-writing machine, the combination with a series of type-bars each having a plurality of printing characters, and a platen, of a platen-shift frame pivoted to move up and down, a counterbalancing-spring for said frame, an eccentric or equivalent for actuating said shift-frame, a shift-key for operating said eccentric, and a second spring acting to restore the eccentric to normal position, substantially as set forth.

18. In a front-strike type-writing machine, the combination with a main frame, the type-bars each having a plurality of printing characters, and a platen-carriage, of a carriage-shift frame which is pivotally connected to the main frame at each side of its center to swing up and down and supports said carriage, a shift-lever, and connections by which the lever acts on the center of the shift-frame to shift the platen, substantially as set forth.

19. In a type-writing machine, the combination with a main frame, a series of type-bars, a platen, and a carriage for the platen, of a shift-frame supporting the carriage and arranged transversely on the main frame and connected thereto by pivots at each side of the center of the main frame and at the rear of the shift-frame, and a vibrating support connecting the front central part of the shift-frame to the main frame, substantially as set forth.

20. In a type-writing machine, the combination with a support for a series of type-bars each having a plurality of printing characters, and a platen, one of which is movable to change the relative position of said support and platen, of a horizontal shift-lever pivoted between its ends, a horizontal auxiliary lever arranged over the shift-lever and having a rocking bearing thereon, and an eccentric connection between said auxiliary lever and shifting part whereby the relation of the type-bar support and platen is changed, substantially as set forth.

21. In a type-writing machine, the combination of a part adapted to be shifted to change the relation of the printing-point and the type, a shift-key, and an actuating device for said shifting part which is moved by said shift-key and is constructed to shift said shifting part with a slow-starting and slow-stopping motion and to automatically hold the same against vibration in either direction from either of two different positions, substantially as set forth.

847,416. VOTING-MACHINE. WILLIAM J. LAUSTERER, Jamestown, N. Y., assignor to U. S. Standard Voting Machine Company, Rochester, N. Y., a Corporation of New York. Filed Sept. 23, 1905. Serial No. 279,831.

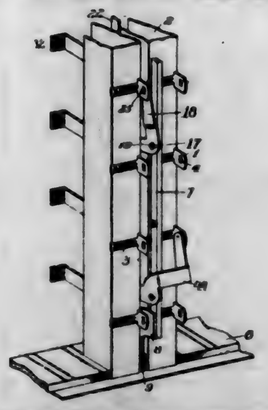

Claim.—1. In a voting-machine, the combination with a plurality of voting devices, of a support, a plurality of movable parts mounted thereon connected to the voting devices to move with them whenever said devices are moved and a coupling-bar connected to said parts for causing their simultaneous operation when one of them is operated.

2. In a voting-machine, the combination with a plurality of voting devices, of a support, a plurality of levers pivoted thereon connected to and moving with said devices whenever said devices are moved, and a coupling member connected to said levers for causing their simultaneous operation when any one of them is operated.

3. In a voting-machine, the combination with a plurality of voting devices, of a support, a plurality of bell-cranks pivoted thereon connected to and moving with said devices whenever said devices are moved and a coupling member connected to said bell-cranks for causing their simultaneous operation.

4. In a voting-machine, the combination with a plurality of voting devices, of a support, a plurality of independently-pivoted levers thereon connected at one end with said devices and moving with them whenever said levers are moved and connections between said levers for causing the simultaneous operation thereof and of said voting devices in the same direction when one of said devices is operated.

5. In a voting-machine, the combination with a plurality of voting devices, of means for coupling said devices for simultaneous operation embodying a support, a plurality of independently-pivoted levers mounted thereon one positively connected to each voting device, and positive connections for simultaneously operating said levers in the same direction when one of them is operated.

6. In a voting-machine, the combination with a plurality of voting devices, of a support, two sets of independently-pivoted levers mounted thereon, positively connected to the voting devices, independent connections for the levers of each set for causing the simultaneous operation thereof in the same direction when one of the levers is operated.

7. In a voting-machine, the combination with a plurality of registers and register-actuators movable relatively thereto, of a plurality of levers independently pivoted upon the register-support and connected positively to the actuators and coupling devices between said levers for causing their simultaneous operation when any one of them is operated.

8. In a voting-machine, the combination with a support, a plurality of registers therein and register-actuators movable relatively thereto, of a plurality of independently-pivoted bell-crank levers on the support connected positively at one end to the register-actuators and a coupling-bar connected to the ends of said bell-cranks for causing their simultaneous operation when one of them is operated.

9. In a voting-machine, the combination with a support, a plurality of registers thereon and register-actuators movable relatively thereto, of a plurality of independently-pivoted levers detachably mounted on the support and positively connected to the actuators and detachable connections between said levers for causing their simultaneous operation when one of them is moved.

10. In a voting-machine, the combination with a register-frame, a plurality of register-supports having registers and movable register-actuators, of a support on the frame, a plurality of bell-cranks pivoted on said support each having one arm connected to a register-actuator and the other extending between the register-supports and connections between said last-mentioned arms for causing the simultaneous movement of the register-actuators.

11. In a voting-machine, the combination with two rows of movable voting devices, of a support, a lever pivoted thereon and connected to a voting device in one row, a second lever connected to a voting device in an adjacent row and a connection between said levers for causing their simultaneous movement in the same relative direction when either one is operated.

12. In a voting-machine, the combination with two rows of movable voting devices, of a support, levers pivoted thereon and connected to a plurality of devices in one row, a second lever connected to a voting device in an adjacent row, and a connection between said levers for causing their simultaneous movement in the same relative direction when either one is operated.

13. In a voting-machine, the combination with two rows of movable voting devices, of a support, a bell-crank pivoted thereon having the vertically and longitudinally extending arm, the former being connected to a voting device in one row, and a second bell-crank pivoted on the support having its horizontal arm connected to the corresponding arm of the other bell-crank and having also a laterally and vertically extending portion connected to a voting device in the adjacent row.

14. In a voting-machine, the combination with a plurality of registers and actuators therefor movable in parallel planes, of a coupling-bar movable transversely to the planes of movement of the actuators and positive connections between said coupling-bar and the actuators for causing the simultaneous movements of the latter.

15. The combination with a plurality of registers and longitudinally-movable actuators therefor, of a coupling-bar movable transversely of the actuators and positive connections between said coupling-bar and the actuators for causing the simultaneous movement of the latter.

16. An attachment for voting-machines embodying a portable, independent support, a plurality of independently-pivoted levers mounted thereon adapted for attachment to register-actuators and connections between said levers for causing their simultaneous operation in the same direction when any one of said registers is operated.

17. An attachment for voting-machines embodying a portable, independent support, a plurality of independently-pivoted bell-cranks mounted thereon and adapted to be connected to register-actuators and connections between the corresponding arms of said bell-cranks for causing their simultaneous operation in the same direction when any one of the registers is operated.

18. An attachment for voting-machines embodying a portable, independent support, a plurality of independent levers detachably pivoted thereon and a coupling-bar detachably connected to one end of said levers.

19. An attachment for voting-machines embodying a support having detachable clamping devices thereon, of a plurality of independent bell-crank levers detachably pivoted thereon and adapted to be connected to register-actuators, and a coupling-bar detachably connected to one end of said levers.

20. An attachment for voting-machines embodying a portable, independent support, a plurality of independent bell-cranks pivoted thereon, each having on one arm a laterally-extending projection for connection with a register-actuator, and a connecting-bar detachably connected to the other ends of said levers.

21. An attachment for voting-machines embodying a portable, independent support, a plurality of independent bell-cranks pivoted thereon by slot-and-pin connections, and a coupling-bar connected to corresponding arms of said bell-cranks by slot-and-pin connections.

22. An attachment for voting-machines consisting of a support, a plurality of independent bell-cranks pivoted thereon by a keyhole-slot and headed-pin connection and a coupling-bar connected to corresponding arms of said bell-cranks by similar connections embodying keyhole-slots and headed pins.

23. An attachment for voting-machines consisting of a bar having the headed pivot-pins thereon, a plurality of levers having the keyhole-slots intermediate their length coöperating with said pins, and keyhole-slots at one end, and a coupling-bar provided with headed pins thereon coöperating with the slots on the ends of the levers.

24. An attachment for voting-machines embodying a support, a plurality of bell-cranks pivoted thereon having vertical and horizontal arms, a bar connecting the horizontal arms of said bell-cranks and a second plurality of bell-cranks pivoted on said support having their horizontal arms extending in the opposite direction from the first-mentioned ones and connections between said horizontal arms.

25. In an attachment for voting-machines, the combination with a bar or support having plates at opposite ends provided with vertically-extending lugs, one of said plates being movable and means for securing it in position, of levers pivoted on said support and connections between said levers for causing their simultaneous operation in the same direction.

26. In an attachment for voting-machines, the combina-

tion with a support, a plurality of levers and pivotal connections between said levers and the support permitting their lateral removal when in one position and locking them from lateral movement when in another, of a coupling-bar coöperating with one end of each of said levers and pivotal connections between said bar and levers permitting its lateral removal when in one position and locking them from lateral movement when in another.

27. As an attachment for voting-machines, the combination with a bar or support having headed studs thereon, of a plurality of bell-cranks having keyhole-slots coöperating with the studs, and a lateral projection on one arm and an aperture in the other arm and means for connecting the apertured ends of said arms.

28. In an attachment for voting-machines, the combination with the support, of a bell-crank pivoted thereon, a second bell-crank pivoted on said support having the lateral extension and means connecting corresponding arms of said bell-cranks.

29. In an attachment for voting-machines, the combination with a support having a headed pin, of a bell-crank having a keyhole-slot coöperating with the pin to secure it in position and permit its pivotal movement thereon and a laterally-extending pin on one arm of said bell-crank adapted to engage with a register-actuator.

30. In a voting-machine, the combination with the register-frame, the register-supports thereon each having a plurality of registers, each register embodying a reciprocable actuator, of a support connected to the register-frame, a plurality of bell-cranks pivoted thereon, each having one arm extending in the plane of the frame and connected to a register-actuator and connections between the other arms of the bell-cranks so that motion imparted to one actuator will be communicated to the others.

847,417. TRACE-FASTENING DEVICE. CHARLES M. LEHMAN, Middlebury, Ind. Filed Dec. 7, 1906. Serial No. 346,795.

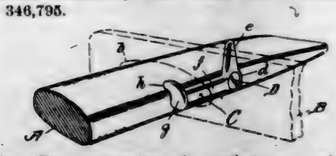

Claim.—The combination of a swihgletree, and a trace-fastening device arranged to swing vertically alongside one edge of the swingletree and comprising an intermediate portion pivotally connected to the edge of the swingletree, an arm adapted in one position of the device to extend upward from the intermediate portion and retain a trace on the swingletree and in another position of the device to rest parallel to the edge of the swingletree, an arm extending from the intermediate portion and at a right angle to the retaining-arm and arranged when said retaining-arm is upright to lie parallel to the edge of the swingletree, and a lateral enlargement *g* on said arm, arranged to hold the trace against undue inward movement and having an extension *h* arranged to bring up against the usual upper side of the swingletree to hold the arm against undue downward movement.

847,418. APPARATUS FOR REWINDING FABRICS. CHARLES LICHTENSTADT, Chicago, Ill. Filed Aug. 4, 1904. Serial No. 219,466.

Claim.—1. A rewinding device, comprising a rewinding-mandrel, guides in which said mandrel is adapted to travel, and auxiliary driving mechanism for rotating said mandrel, said driving mechanism being adjustable with the mandrel as the roll of fabric thereon increases in diameter, substantially as described.

2. In a rewinding device, comprising a mandrel, rotating cylinders above and below said mandrel and adapted to engage the fabric thereon for rewinding the same, one of said cylinders being movable toward and from the other, and positively-acting means for rotating said cylinders.

3. A rewinding device, comprising a mandrel, rotating cylinders above and below said mandrel and adapted to engage the fabric thereon for rewinding the same, means for moving said upper cylinder toward and from the other to compensate for increase in diameter of the roll of fabric, and positively-acting means for rotating said cylinders.

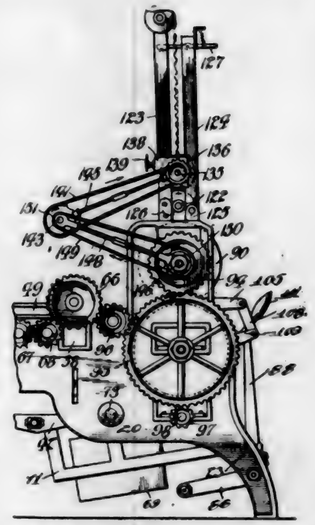

4. A rewinding device, comprising a mandrel, a vertically-movable rewinding-roll adapted to engage said mandrel for rotating the same, and positively-acting means for driving said roll in its different positions of adjustment, a roll engaging the opposite side of said mandrel, and means for driving the latter roll, substantially as described.

5. A rewinding device, comprising an arm pivotally supported near one end, an arm pivotally connected with the outer end portion of said first-mentioned arm, driving mechanism supported by said arms, rewinding mechanism, and means for driving said rewinding mechanism from the driving mechanism carried by said arms.

6. A rewinding device, comprising an arm pivotally supported near one end, an arm pivotally connected with the outer end portion of said first-mentioned arm, a wheel carried at the common axis of said arms, an outer wheel carried at the free end portion of said second arm, means operatively connecting said wheels, means for driving said first-mentioned wheel, rewinding mechanism, and means for driving said rewinding mechanism from said outer wheel.

7. A rewinding device, comprising a rewinding-mandrel, a roll arranged parallel therewith and movable toward said mandrel and away therefrom, a cylinder adapted to engage the fabric on said mandrel, and positively-acting means for driving said roll from said cylinder when in its different positions.

8. A rewinding device, comprising a rewinding-mandrel, a roll arranged parallel therewith and movable toward said mandrel and away therefrom, a cylinder adapted to engage the fabric on said mandrel, an intermediate shaft, links connecting said shaft with said cylinder, links connecting said shaft with said roll, driving devices carried by said shaft, means for rotating said shaft from said cylinder, and means for rotating said roll from said shaft, substantially as described.

9. A rewinding device, comprising a rewinding-mandrel, a roll arranged parallel therewith and movable toward said mandrel and away therefrom, a cylinder adapted to engage the fabric on said mandrel, positively-acting means for driving said roll from said cylinder, and means for vertically adjusting said roll, substantially as described.

10. A rewinding device comprising a mandrel, an outwardly and inwardly movable roll arranged parallel with said mandrel, means for driving said roll, guides for said roll, a movable support, friction clutch mechanism carried by said support and adapted to drive said mandrel axially, driving devices carried by said support for operating said friction clutch mechanism, and positively-acting means for actuating said driving devices from the driving means of said roll.

11. The combination of means for applying composition to fabrics, calendering-cylinders, a rewinding-mandrel adapted to engage one of said calendering-cylinders, a vertically-adjustable rewinding-roll at the opposite side of said mandrel, and means for driving said rewinding-roll, substantially as described.

847,419. PIPE AND MONKEY WRENCH. KIRBY S. LITTLE, Conover, N. C. Filed Jan. 31, 1907. Serial No. 355,122.

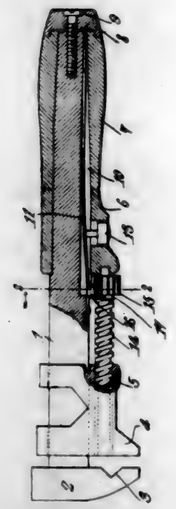

Claim.—1. A wrench comprising a stock having a fixed jaw at one end and at its opposite end a longitudinally-extending groove, a jaw slidably mounted upon said stock, a collar surrounding the stock, a screw journaled for rotation upon the collar and engaging said movable jaw and having a toothed head, a spring located in the groove of the stock and having an end which engages said head and a press-button passing through the collar and engaging said spring.

2. A wrench comprising a stock having a jaw fixed thereto at one end, a collar surrounding said stock, a movable jaw located upon the stock, a screw located between said collar and said movable jaw and having a toothed head, a spring located under the collar and engaging said head and a push-button passing through the collar and engaging said spring.

3. A wrench comprising a stock having a fixed jaw, a collar surrounding said stock, a jaw slidably mounted upon the stock, a screw located between the collar and the movable jaw and having a toothed head with an adjacent circular portion, a clip attached to the stock and engaging said circular portion for retaining the screw in position, a spring located under the collar and engaging said head and a press-button passing through the collar and engaging said spring.

847,420. FIREPROOF CONSTRUCTION OF BUILDINGS. TIMOTHY D. LYNCH, San Francisco, Cal., assignor of two-thirds to Michael C. Lynch and Peter J. Lynch, San Francisco, Cal. Filed May 31, 1905. Serial No. 262,972.

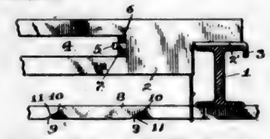

Claim.—1. In a fireproof construction for buildings in combination with an I-beam a slotted top member having an inwardly-projecting tongue and an end bent portion, and a bottom member having an angular notch, a cross-stay in engagement with the tongue of said top member, a cross-support secured in said angular notch, and means securing said top member to said bottom member.

2. A fireproof construction for buildings comprising plates for use in a horizontal position said plates having a plurality of longitudinal apertures with tongues projecting therein and having end bent portions for securing the same to the heads of I-beams, cross-stays having central slots for engaging said tongues, strips for contact with the bases of said beams constituting furring and having angular slots, the lower side of each slot terminating in a point adapted to be turned up, cross-stays having transverse slots in one of the side edges thereof for engaging said strips and means for securing said strips to said plates, substantially as described.

847,421. CARRIAGE-CURTAIN FASTENER. FREDRICK MARGGRAFF, Augusta, Ky., assignor to The F. A. Nelder Co., Augusta, Ky., a Corporation of Kentucky. Filed Nov. 3, 1904. Serial No. 231,190.

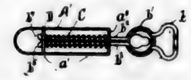

Claim.—A carriage-curtain fastener consisting of a casing to be secured to a curtain and having an elongated hole through one of its ends, a coiled spring in the interior of the casing, a sliding member consisting of a rod bent at its end into a finger-loop, then into an eyelet-loop, from whence it projects as two adjacent arms passing through the elongated hole and through the center of the spring, a disk of the contour of the inner periphery of the casing secured upon the inner end of the arms and an eyelet having a perforation in it secured to the eyelet-loop adapted to be secured on a stud adjacent to the curtain.

847,422. WINDING AND MEASURING MACHINE. CHARLES A. MARQUIS, St. Louis, Mo. Filed May 22, 1906. Serial No. 318,269.

Claim.—1. A winding and measuring machine comprising a frame, a spindle located upon said frame for receiving material to be wound, a measuring device, a lever mechanism, a clutch for transmitting motion to the machine, said clutch controlled by the lever mechanism, means communicating with the lever mechanism for automatically releasing the clutch to discontinue the operation of the machine, substantially as specified.

2. A device of the class described comprising a frame, endless carriers located upon the frame, spindles carried and supported by the endless carriers, said spindles provided with the friction-pinions, a friction-wheel for operating the friction-pinions, means for supporting the spindle while the material is being wound thereon, a measuring mechanism, and means for controlling the operation of the winding mechanism to regulate the number of feet of material to be wound upon the spindle, substantially as specified.

3. A device of the class described comprising a suitable

frame, standards mounted upon the frame, and a tilted frame supported by said standards, endless carriers located in the tilted frame, pockets located on the endless carriers, spindles supported in the pockets, arms pivotally connected to the frame and provided with pockets for supporting a spindle while the material is being wound thereon, a mechanism for releasing the spindle from the arms, a measuring mechanism operated by the driving mechanism, a means for automatically discontinuing the operation of the entire machine when the desired number of feet of material is wound upon the spindle, substantially as specified.

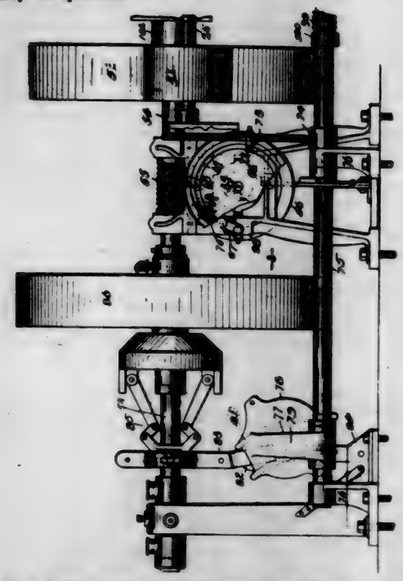

4. A device of the class described comprising a winding mechanism mounted upon a frame, a measuring mechanism including a revolving disk, an indicator adjustably located upon said disk to be set at any desired location to designate the number of feet of material to be wound by the winding mechanism and means for discontinuing the operation of the winding mechanism and simultaneously return the revolving measuring-disk to its normal position, substantially as specified.

5. A device of the class described comprising a winding mechanism mounted upon a frame, a measuring mechanism including a revolving disk, an indicator adjustably located upon said disk to be set at any desired location to designate the number of feet of material to be wound by the winding mechanism and means for discontinuing the operation of the various mechanisms by the revolving measuring-disk and means for simultaneously replacing the disk in normal position, substantially as specified.

6. A device of the class described comprising a winding mechanism and a measuring mechanism in combination with rollers through which the material is passed, clutches for controlling the operation of the mechanisms, a suitable lever mechanism operating the clutches, a contacting lug carried by the measuring mechanism and an operating-rod which is operated by the contacting lug to automatically release the clutches and stop the operation of the mechanisms, substantially as specified.

7. A winding and measuring machine comprising a slotted graduated measuring-disk, an indicator-plate adjustably mounted within the slot, means for releasing the measuring-disk and means for returning the measuring-disk to its normal position after the disk has revolved to its indicated position, substantially as specified.

8. A winding and measuring machine comprising rollers between which the material to be wound is passed, a spindle receiving the material, a revolving mechanism for revolving the spindle, a slotted graduated measuring-disk simultaneously operating during the winding of the material upon the spindle, means for releasing the measuring-disk, means for disengaging the operating mechanism when a specified amount is wound upon the spindle, and means for returning the measuring-disk to its normal position, substantially as specified.

9. A winding and measuring machine comprising rollers between which the material to be wound is passed, a tilted frame, an endless carrier mounted upon the tilted frame, a spindle carried by the endless carrier, arms carried by the frame and supporting the spindle, a revolving mechanism whereby said spindle is operated, a lever mechanism for placing the winding mechanism in and out of operation, a measuring-disk simultaneously operating with the winding mechanism to indicate the number of feet of material to be wound upon the spindle, and a mechanism for stopping the winding mechanism, substantially as specified.

847,423. PENCIL-SHARPENER. BENJAMIN F. MAYO, Salem, Mass., assignor of one-third to Cornelius J. Corcoran and one-third to James A. Brogan, Lawrence, Mass. Continuation of application Serial No. 317,670, filed May 19, 1906. This application filed Nov. 9, 1906. Serial No. 342,604.

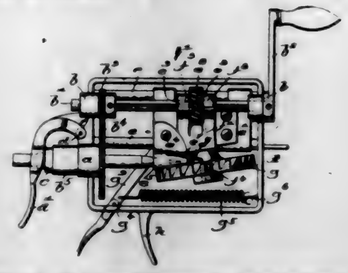

Claim.—1. In a pencil-sharpener, pencil-holding means, a shaft occupying a position in and at an angle to the longitudinal axis of the pencil and having a rotatable cutter provided with radial teeth, and means to move the shaft of the cutter in the direction of the length of the pencil held by the pencil-holding means.

2. In a pencil-sharpener, a carriage, means to sustain the same, a pencil-holder, means to revolve the same, a shaft sustained in said carriage and provided with a rotatable cutter having a series of radial teeth that cross the longitudinal axis of the pencil held by the pencil-holding means.

3. In a pencil-sharpener, a pencil-holder comprising a clutch to embrace and hold a pencil, a carriage having a shaft provided with a cutter and with an end guide for the pencil, a lever, and a spring, the spring acting normally to maintain said carriage and cutter in its inoperative position, the movement of the lever in opposition to the spring permitting the carriage to be put into its operative position.

4. In a pencil-sharpener, a rotatable shaft having splined thereon a spiral gear, a carriage having a shaft provided with a cutter, and a spiral pinion that is engaged and driven by said spiral gear, means to sustain said carriage, and means to move the same longitudinally, the carriage moving with it the spiral gear on its carrying-shaft, said spiral gear rotating said spiral pinion in any position of the carriage.

5. In a pencil-sharpener, a cutter-carrying shaft having a shoulder and a screw-threaded portion beyond said shoulder, combined with a cutter having radial teeth, the thread uniting the cutter to said shaft being in a direction reverse of the direction of rotation of said shaft.

6. In a pencil-sharpener, a cutter-carrying shaft having a shoulder and a screw-threaded boss beyond said shoulder, combined with a cutter having radial teeth at one of its faces, said cutter being screw-threaded to fit said boss, the center of the face of the cutter having radial teeth abutting said shoulder.

7. In a pencil-sharpener, a carriage, means to sustain and guide the same, a cutter-carrying shaft mounted in said carriage, said shaft being inclined with relation to the means for sustaining and guiding said carriage.

8. In a pencil-sharpener, pencil-holding means, means to revolve the pencil, a carriage, means to sustain and guide the same, a cutter-carrying shaft mounted in said carriage, said shaft being inclined with relation to the means for sustaining and guiding said carriage.

9. In a pencil-sharpener, a carriage, means to sustain the same, a cutter carried by said carriage, a horn and a lever, the movement of the lever toward said horn moving said carriage in a direction to cause the cutter to sharpen a pencil.

10. In a pencil-sharpener, a pencil-holder and a cutter-carrying shaft having a shoulder combined with a cutter having teeth at one side abutting said shoulder and means to confine said cutter on said shaft.

847,424. MEASURING APPARATUS FOR ELECTRICITY. EDUARDO MIER Y MIURA, Madrid, Spain. Filed Dec. 12, 1904. Serial No. 236,612.

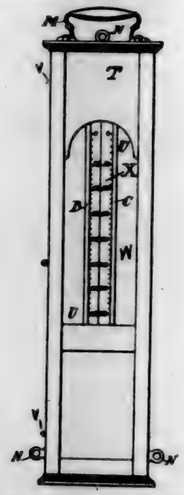

Claim.—1. In an apparatus for measuring electricity, the combination of an upright tube and electrodes constituting an electrolytic cell, an upright evaporating-tube immediately adjacent the first-named tube and adapted to receive a portion of the electrolyte without permitting such portion to be subjected to electrolytic action, an upright transparent indicating-tube connected with the first-named tube, a similar tube in communication with the evaporating tube, and a scale associated with said indicating-tubes.

2. In an apparatus for measuring electricity, the combination with a casing having a transparent front, of two upright tubes removed from said front and constructed and arranged to contain distinct bodies of electrolyte under the same conditions of temperature, means whereby a current is passed through the electrolyte in one of the tubes, and upright transparent indicating-tubes in communication with said other tubes and located adjacent said transparent front.

3. In an apparatus for measuring electricity, the combination of two concentric upright tubes constructed to receive isolated bodies of electrolyte, tubular electrodes within the space between said tubes, a pair of upright indicating-tubes, connections between the interior of the first-named tubes and said indicating-tubes whereby the electrolyte occupies the latter also, and a scale associated with the indicating-tubes.

847,425. COMBINED WATER-HEATER, SMOKE AND GAS CONSUMER, AND DAMPER-REGULATOR. JOHN MILLER, Orange, N. J. Filed Feb. 21, 1906. Serial No. 302,186.

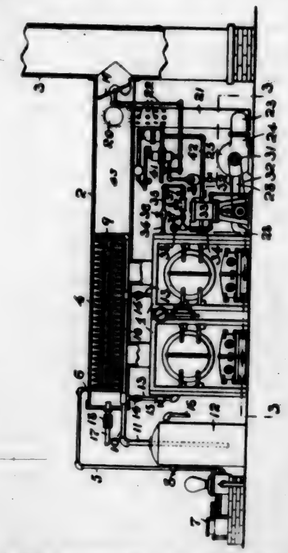

Claim.—1. The combination of a steam-boiler furnace, a smoke-flue, a damper in said smoke-flue, a return-flue communicating with said smoke-flue on the ingress side of said damper, and leading to a point below the grate of said furnace, an exhauster for said return-flue, a water-heating coil situated within said smoke-flue between the furnace and the return-flue, and automatic means for opening and closing said damper correspondingly, and for governing the rate of motion of said exhauster inversely, as the boiler-pressure falls below or rises above a predetermined degree, substantially as and for the purposes set forth.

2. The combination of a steam-boiler furnace, a smoke-flue, a damper in said smoke-flue, a return-flue communicating with said smoke-flue on the ingress side of said damper, and leading to a point below the grate of said furnace, an exhauster for said return-flue, a water-heating coil situated within said smoke-flue between the furnace and the return-flue, and automatic means for opening and closing said damper correspondingly, and for governing the rate of motion of said exhauster inversely, as the boiler-pressure falls below or rises above a predetermined degree, consisting of a steam-engine, a steam connection between said engine and boiler, a pressure-regulator in said steam connection, and a driving means between said steam-engine and the exhauster, substantially as and for the purposes set forth.

3. The combination of a steam-boiler furnace, a smoke-flue, a damper in said smoke-flue, a return-flue communicating with said smoke-flue on the ingress side of said damper, and leading to a point below the grate of said furnace, an exhauster for said return-flue, a water-heating coil situated within said smoke-flue between the furnace and the return-flue, said coil having an inlet and an outlet, a pipe connected with said inlet, a pump connected with said pipe, a second pipe connected with said outlet of the coil, and a feed-pipe connected with said second

pipe and the boiler for feeding the preheated water into the boiler, and automatic means for opening and closing said damper correspondingly, and for governing the rate of motion of said exhauster inversely, as the boiler-pressure falls below or rises above a predetermined degree, substantially as and for the purposes set forth.

4. The combination of a steam-boiler furnace, a smoke-flue, a damper in said smoke-flue, a return-flue communicating with said smoke-flue on the ingress side of said damper, and leading to a point below the grate of said furnace, an exhauster for said return-flue, a water-heating coil situated within said smoke-flue between the furnace and the return-flue, said coil having an inlet and an outlet, a pipe connected with said inlet, a pump connected with said pipe, a second pipe connected with said outlet of the coil, and a feed-pipe connected with said second pipe and the boiler for feeding the preheated water into the boiler, and automatic means for opening and closing said damper correspondingly, and for governing the rate of motion of said exhauster inversely, as the boiler-pressure falls below or rises above a predetermined degree, consisting of a steam-engine, a steam connection between said engine and boiler, a preasure-regulator in said steam connection, and a driving means between said steam-engine and the exhauster, substantially as and for the purposes set forth.

5. The combination of a steam-boiler furnace, a smoke-flue, a damper in said smoke-flue, a return-flue, communicating with said smoke-flue on the ingress side of said damper, and leading to a point below the grate of said furnace, said return-flue being provided with a means for conducting air into the same, an exhauster for said return-flue, a water-heating coil situated within said smoke-flue between the furnace and the return-flue, and automatic means for opening and closing said damped correspondingly, and for governing the rate of motion of said exhauster inversely, as the boiler-pressure falls below or rises above a predetermined degree, substantially as and for the purposes set forth.

6. The combination of a steam-boiler furnace, a smoke-flue, a damper in said smoke-flue, a return-flue communicating with said smoke-flue on the ingress side of said damper, and leading to a point below the grate of said furnace, said return-flue being provided with a means for conducting air into the same, an exhauster for said return-flue, a water-heating coil situated within said smoke-flue between the furnace and the return-flue, and automatic means for opening and closing said damper correspondingly, and for governing the rate of motion of said exhauster inversely, as the boiler-presure falls below or rises above a predetermined degree, consisting of a steam-engine, a steam connection between said engine and boiler, a pressure-regulator in said steam connection, and a driving means between said steam-engine and the exhauster, substantially as and for the purposes set forth.

7. The combination of a steam-boiler furnace, a smoke-flue, a damper in said smoke-flue, a return-flue communicating with said smoke-flue on the ingress side of said damper, and leading to a point below the grate of said furnace, said return-flue being provided with a means for conducting air into the same, an exhauster for said return-flue, a water-heating coil situated within said smoke-flue between the furnace and the return-flue, said coil having an inlet and an outlet, a pipe connected with said inlet, a pump connected with said pipe, a second pipe connected with said outlet of the coil, and a feed-pipe connected with said second pipe and the boiler for feeding the preheated water into the boiler, and automatic means for opening and closing said damper correspondingly, and for governing the rate of motion of said exhauster inversely, as the boiler-pressure falls below or rises above a predetermined degree, substantially as and for the purposes set forth.

8. The combination of a steam-boiler furnace, a smoke-flue, a damper in said smoke-flue, a return-flue communicating with said smoke-flue on the ingress side of said damper, and leading to a point below the grate of said furnace, said return-flue being provided with a means for conducting air into the same, an exhauster for said return-flue, a water-heating coil situated within said smoke-flue between the furnace and the return-flue, said coil having an inlet and an outlet, a pipe connected with said inlet, a pump connected with said pipe, a second pipe connected with said outlet of the coil, and a feed-pipe connected with said second pipe and the boiler for feeding the preheated water into the boiler, and automatic means for opening and closing said damper correspondingly, and for governing the rate of motion of said exhauster inversely, as the boiler-pressure falls below or rises above a predetermined degree, consisting of a steam-engine, a steam connection between said engine and boiler, a pressure-regulator in said steam connection, and a driving means between said steam-engine and the exhauster, substantially as and for the purposes set forth.

847,426. MACHINE FOR TREATING CYLINDRICAL MACHINE PARTS. JOHANN MOLL, Augsburg, Germany. Filed July 12, 1906. Serial No. 325,982.

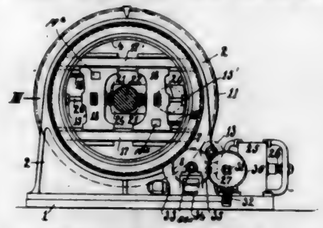

Claim.—A machine of the class described comprising an annular bearing, a ring rotatably inclosed thereby, a second ring surrounding said bearing and rotatable thereon, a slide-block adjustably mounted in said first-named ring, a shaft journaled in said slide-block and carrying at its free end a tool, said shaft having at its outer end slidable connection with a hollow shaft, but being rotatable therewith, said hollow shaft carrying at its free end a bevel-gear, said last-named ring being formed on one side thereof with beveled gear-teeth designed to intermesh with said bevel-gear, a motor, a train of gearing between said motor and said first-named ring and a train of gearing between said motor and said last-named ring, said last-named ring being adapted for rotation by its said gear-train at a greater speed than said first-named ring.

847,427. STEAM-BOILER. THOMAS F. MORRIN, Jersey City, N. J.; Thomas F. Morrin, Jr., administrator of said Thomas F. Morrin, deceased. Filed May 20, 1903. Serial No. 157,914.

Claim.—1. In a steam-boiler the combination of a group of steam-generating water-tubes, means for effecting circulation, a grate below the tubes and a baffle-plate or flame-bridge extending transversely of the boiler and dividing the boiler into two compartments, a superheater consisting of a series of tubes extending entirely across the path traveled by the products of combustion, in the compartment nearest the grate, and an economizer or feed-water heater composed of tubes similarly arranged in the other compartment, substantially as described.

2. In a steam-boiler the combination of a group of steam-generating water-tubes, extending longitudinally of the boiler, means for effecting circulation, a grate below the tubes and a baffle-plate or flame-bridge above the tubes, extending transversely of the boiler and dividing the boiler into two compartments, a superheater consisting of a series of tubes extending entirely across the path traveled by the products of combustion, in the compartment nearest the grate, and an economizer or feed-water heater composed of tubes similarly arranged in the other compartment, substantially as described.

3. In a steam-boiler the combination of a group of steam-generating water-tubes *f* extending longitudinally of the boiler, means for effecting circulation, a grate below the tubes, flame-bridge *e*, baffle-plate *j*, a baffle-plate *k* dividing the boiler into two compartments, transversely-arranged superheating-tubes extending entirely across the path of the heated gases and located above the steam-tubes *f*, in the compartment nearest the grate, flame-bridge *l*, and transversely-arranged feed-water-heating tubes extending entirely across the path of the heated gases, and connections for said tubes, substantially as described.

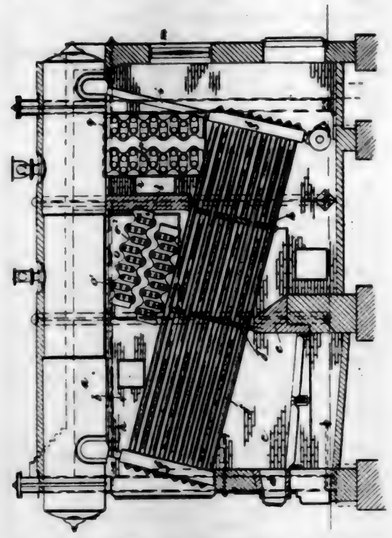

4. In a steam-boiler the combination of a group of steam-generating water-tubes extending longitudinally of the boiler, means for effecting circulation, a grate below the tubes and a baffle-plate or flame-bridge extending transversely of the boiler and dividing the boiler into two compartments, a superheater in the compartment nearest the grate and an economizer or feed-water heater composed of a series of tubes extending across the path traveled by the products of combustion in the other compartment; said superheater and economizer both being located over the steam-generating water-tubes, substantially as described.

5. In a steam-boiler the combination of a group of steam-generating water-tubes, extending longitudinally of the boiler, means for effecting circulation, a grate below the tubes, a flame-bridge adjacent to said grate, and a baffle-plate extending transversely of the boiler and dividing the boiler into two compartments, an economizer or feed-water heater composed of a series of horizontal tubes in superimposed parallel groups extending transversely across the path traveled by the products of combustion, located between the headers, all of said tubes being situated above said longitudinal steam-generating water-tubes and in the compartment farthest from the grate, substantially as described.

847,428. TYPE-WRITING MACHINE. HARRY S. McCORMACK, Providence, R. I., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 6, 1905. Serial No. 254,183.

Claim.—1. In a type-writing machine, the combination with a revoluble platen, of forward and rear pressure-rollers bearing against the under side of the platen, a gage between said rollers below the platen and normally separated from the latter, a key, means connected to said key for releasing said rollers simultaneously, and means for enabling the releasing movement of said key to cause an upward movement of said gage to the platen.

2. In a type-writing machine, the combination with a platen, of a pressure-roller, a key for effecting the release of the pressure-roller, means being provided whereby the key is detained in working position, a gage normally in a position of disuse, for squaring the leading edge of the paper relatively to the printing-point, and means for enabling said key by its roller-releasing movement to cause the movement of said gage to the platen; provision being made for further movement of the key after said gage reaches the platen.

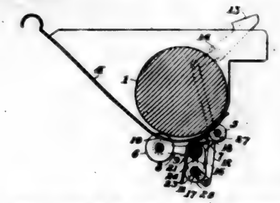

3. In a type-writing machine, the combination with a revoluble platen, of a roller for pressing paper against the platen, a key, means controlled by said key for camming said roller away from the platen, said camming means being constructed to detain said key in working position, a gage for squaring the leading edge of the paper relatively to the printing-line, yielding means tending constantly to move said gage to the platen, and a cam device normally holding said gage away from the platen, and including provision for further movement of the key idly after the gage reaches the platen.

4. In a type-writing machine, the combination with a revoluble platen, of a rod extending along the platen, a gage journaled upon the rod for squaring the leading edge of the paper relatively to the printing-line, a key, a rock-shaft to which said key is connected, said rock-shaft having means for camming said gage away from the platen, and constructed to permit the movement of said gage to the platen during the initial stroke of said key, a pressure-roller bearing against the under side of the platen, an arm supporting said pressure-roller and journaled upon said rod, and means controlled by said rock-shaft for causing the initial movement of said key to release said roller.

5. In a type-writing machine, the combination with a platen, a gage normally in a position of disuse, for squaring the leading edge of the paper relatively to the printing-point, a key, and means for enabling said key to cause the movement of said gage to the platen; provision being made for further movement of the key after said gage reaches the platen.

6. In a type-writing machine, the combination with a revoluble platen, of a gage for squaring the leading edge of the paper relatively to the printing-line, yielding means tending constantly to move said gage to the platen, a key, and a cam device controlled by said key and normally holding said gage away from the platen, and including provision for further movement of the key after the gage reaches the platen.

7. In a type-writing machine, the combination with a revoluble platen, of a rod extending along the platen, a gage journaled upon the rod for squaring the leading edge of the paper relatively to the printing-line, a key, and a rock-shaft to which said key is connected, said rock-shaft having means for camming said gage away from the platen, and constructed to permit the movement of said gage to the platen during the initial stroke of said key.

847,429. COLLAPSIBLE LANTERN. JOHN A. McCOY, Kennett, Cal. Filed June 27, 1906. Serial No. 323,712.

Claim.—1. In a collapsible lantern, the combination with a body having an open end and comprising folding walls, of an adjustable wind-shield movable over a portion of the open end.

2. In a collapsible lantern, the combination with a body having an open end and comprising folding walls, of adjustable wind-shields movably mounted on opposite sides

of the open end and movable partially across said open end.

3. In a collapsible lantern, the combination with a body having an open end, of adjustable shield-wings arranged on opposite sides of the open end and capable of swinging to positions partially across the same, said wings terminating short of each other.

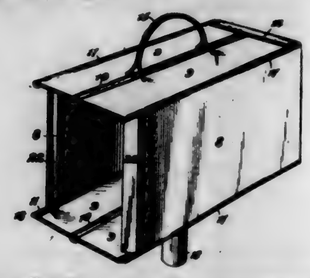

4. In a collapsible lantern, the combination with a body comprising side walls and collapsible top and bottom walls hinged thereto, said body having an open end, of shield-wings hinged to the edges of the side walls and capable of movement across the opposite side portions of the open end, said wings when disposed across said side portions terminating short of each other.

5. In a collapsible lantern, the combination with a folding body including side walls and a bottom, the bottom comprising sections hinged to each other centrally of the body and hinged to the side walls, said bottom having an opening located partially in each section and extending across the joint between them, the opening being provided with offset slots on its opposite sides and in line with the joint, of a light-holder that rotatably extends through the bottom opening and has outwardly-extending pins on its upper portion that are movable through and in alinement with the slots.

6. In a collapsible lantern, the combination with folding walls including a bottom having an opening therethrough, of a detachable light-holder comprising a cylindrical wall having loosely-overlapped margins, and a bottom secured to one side of one portion of the cylindrical wall, said holder passing through the bottom opening.

7. In a collapsible lantern, the combination with a body comprising side walls, and top and bottom walls hinged thereto, the top and bottom walls each comprising hingedly-connected sections and the bottom having an opening therethrough that is located partially in each section and extends across the hinge-joint between the sections, of a light-holder that engages in the opening.

8. In a collapsible lantern, the combination with a body comprising side walls, and top and bottom walls hinged thereto and consisting of hingedly-connected inwardly-folding sections, and a rear wall slidably associated with the rear ends of the side and top and bottom walls, said bottom wall having an open end therethrough located partially in each section and provided with outstanding slots, of an expansible and contractible light-holding tube that passes through the bottom opening and has outstanding pins on its upper portion that are movable through and out of alinement with the slots, and shield-wings hinged to the front edges of the outer side walls and movable partially across the open front end of the body, the top and bottom walls extending beyond the front edges of the side walls, said wings swinging between them.

847,430. CARRIAGE-CURTAIN FASTENER. FRED A. NEIDER, Augusta, Ky. Filed Sept. 26, 1906. Serial No. 336,222.

Claim.—1. In a carriage-curtain fastener a casing consisting of a hood having an opening at one end and a base-plate, the base-plate projecting beyond the hood at said end, a rod within the casing projecting through said end and having an eyelet at its end, a headed stud to be engaged by the eyelet and a spring within the casing to hold the rod normally in a position such that the opening in the eyelet projects beyond the base-plate a distance less than the diameter of the head of the stud.

2. A carriage-curtain fastener consisting of a casing having an opening at one end, a stud to be mounted adjacent to the casing, a rod within the casing projecting through said end and terminating in an eyelet and an elbow projecting inward from the eyelet to bear against the base of the stud.

3. In a carriage-curtain fastener the combination of a casing consisting of a hood having an opening at one end and a base-plate, the base-plate projecting beyond the hood at said end, a headed stud to be mounted adjacent to the projecting end of the base-plate, a sliding rod within the casing and projecting through said end of the casing, an eyelet at the end of the rod and an elbow projecting inward from the eyelet to bear against the base of the stud.

4. In a carriage-curtain fastener the combination of a casing consisting of a hood closed at one end and having an elongated opening in the opposite end, a base-plate, a rod within the casing projecting through the opening, its height being substantially that of the height of the opening and its width being less than the width of opening so as to permit a sidewise play of the rod, a piston upon the end of the rod, a coiled spring surrounding the rod, an eyelet at the outer end of the rod and a stud located adjacent to the eyelet to be engaged thereby.

847,431. CULTIVATOR. WILLIAM H. NESBITT, Roland, Manitoba, Canada. Filed Mar. 28, 1906. Serial No. 308,574.

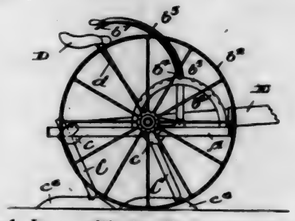

Claim.—1. In a cultivator the combination with the substantially horizontal share-supporting frame comprising parallel front and rear members, a plurality of transverse connecting members to which the share-supporting standards are adjustably secured, of two crank-shafts extending beyond the sides of the frame, bearings for the shafts, connected to the transverse members of the frame-supporting wheels rotatably secured to the end of the crank-shafts, operating-levers on the crank-shafts, means for holding the same adjustably in position, a shaft, brackets secured to the rear of the frame to which the shaft is pivoted, a bracket secured to the front part of the frame and extending around the shaft as and for the purpose specified.

2. In a cultivator the combination with a substantially horizontal share-supporting frame comprising parallel front and rear members, a plurality of transverse connecting members to which the share-supporting standards are adjustably secured, a shaft, brackets secured to the rear of the frame to which the shaft is pivoted and an inclosing bracket secured to the front member of the frame for holding said shaft in position, as and for the purpose specified.

847,432. BALL-JOINT-LUBRICATING APPARATUS. WILLIAM W. NUGENT, Chicago, Ill. Filed Jan. 20, 1906. Serial No. 296,965.

Claim.—1. In an oiling apparatus, the combination with a suitable receptacle from which the oil is delivered, of a tubular oil-conductor connected and communicating with said receptacle and a ball-joint in said conductor comprising a ball member provided with a connecting-terminal and having an oil-passage leading through the terminal and through the body of the member, a cup member receiving that part of the ball member remote from the connecting-terminal and also having a passage, communicating with the passage of the ball member, a union ring encircling and embracing that hemisphere of the ball member opposed to the part which fits within the cup member, diametrically-opposed partispherical extensions upon said ring member, means limiting axial rotation of the ball member relatively to the cup member, ears upon the cup member and union ring, respectively, and bolts uniting said ears.

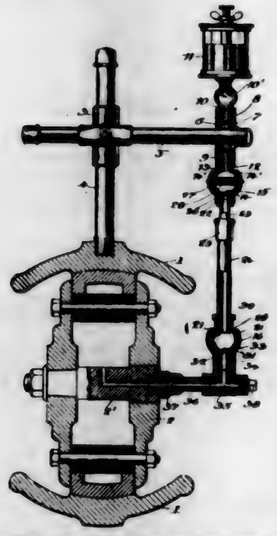

2. In an oiling apparatus, the combination with a suitable receptacle from which the oil is delivered, of a tubular oil-conductor connected with said receptacle and adapted to convey the oil to a moving part and a ball-joint in said conductor comprising a ball member provided with a connecting-terminal and an oil-passage leading through the terminal and body of the member, a cup member receiving that part of the ball member remote from the connecting-terminal and having a passage communicating with the passage of the ball member, the receiving end of which passage is enlarged, a union ring encircling that hemisphere of the ball member opposed to the part thereof which fits within the cup member, means uniting the union ring and cup member, and means limiting the extent of axial rotation of the cup member relatively to the ball member comprising a tubular member extending across the interior of the ball member and a through-pin inserted through said tubular member and having its ends seated in the union ring.

3. In an oiling apparatus, the combination, with a suitable receptacle from which the oil is delivered, of a tubular oil-conductor connected with said receptacle and adapted to convey the oil to a moving part, and a ball-joint in said conductor comprising a ball member provided with a connecting-terminal and an oil-passage leading through the terminal and body of the member, a cup member receiving that part of the ball member remote from the connecting-terminal and having a passage communicating with the passage of the ball member, the receiving end of which passage is enlarged, a union ring encircling that hemisphere of the ball member opposed to the part thereof which fits within the cup member, and journal connections between said ball and ring member permitting axial rotation of the cup member relative to the ball member and at the same time allowing limited oscillatory movement of the cup member in planes approximately at right angles to its axial rotation.

847,433. AIR LIFT-PUMP. BRYAN OBEAR, St. Louis, Mo., assignor to Montague Compressed Air Company, St. Louis, Mo., a Corporation of Missouri. Filed May 14, 1906. Serial No. 316,872.

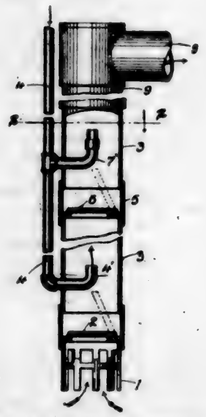

Claim.—1. In an air lift-pump, a suitable pump-cylinder, means for admitting thereinto the liquid to be pumped, a pipe leading into said cylinder and discharging air under pressure in a jet directed toward the discharge end of the cylinder, a check-valve located in the cylinder above the discharge end of the air-pipe, a branch leading into the cylinder from the air-pipe above the check-valve, a valve in said branch normally closed when said check-valve is open, and a suitable intake for the cylinder, substantially as set forth.

2. In an air lift-pump, a suitable pump-cylinder, means for admitting thereinto the liquid to be pumped, a pipe leading into said cylinder and discharging air under pressure in a jet directed parallel to the axis of the cylinder and toward the discharge end thereof, a check-valve located in the cylinder above the discharge end of the air-pipe, a branch leading into the cylinder from the air-pipe above the check-valve, an air-valve in said branch adapted to close under the air-pressure therein, and an intake-valve for admitting the liquid into the cylinder, substantially as set forth.

3. In an air lift-pump, a suitable pump-cylinder, means for admitting thereinto the liquid to be pumped, means for delivering air under pressure into the cylinder, a check-valve above the point of admission of the compressed air into the cylinder, an intake-valve below the point of admission of the air into the cylinder, a branch pipe leading from the source of compressed-air supply into the cylinder at a point above the check-valve aforesaid and a compressed-air-controlled check-valve operating in an opposite direction from the aforesaid-mentioned valves, located in said branch pipe, substantially as set forth.

847,434. DEVICE FOR HOLDING CHARTS OR THE LIKE. PATRICK A. O'BRIEN, Boston, Mass., assignor to William J. Carlin, Boston, Mass. Filed Jan. 15, 1906. Serial No. 296,080.

Claim.—1. A chart-holding device comprising a backboard, two separated but alined supporting members, each consisting of sheet metal having upper and lower overturned edges, and having formed integral therewith a series of horizontally-disposed corrugations, and a hanging member or bracket adapted to be received in each support

for longitudinal movement therein, and provided with means to engage with said corrugations.

2. A chart-holding device comprising a backboard, a pair of spaced but alined supporting members each formed of sheet metal and provided with overturned edges forming a trackway, and further provided with integral corrugations struck up from the body of said member, and a hanging bracket for each support adapted to receive a chart or map, and provided with a base adapted to be received in said overturned edges of the support, and further having a set-screw adapted to be adjustably engaged with the desired corrugations.

847,435. APPARATUS FOR FACILITATING THE REMOVAL OF DEPOSIT IN LOCOMOTIVE-BOILERS. GEOFFREY H. PEARSON, Swindon, England, assignor to Albert Charles Clark, Chicago, Ill. Filed Sept. 24, 1906. Serial No. 336,055.

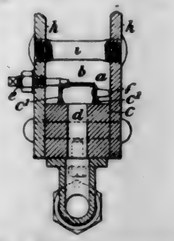

Claim.—1. A device of the kind described comprising an inverted-trough-shaped receptacle having its ends closed and having its side walls provided with apertures, substantially as described.

2. A device of the kind described comprising an inverted-trough-shaped receptacle having its side walls provided with series of vertical slits, said walls being bent adjacent to said slits to form apertures therein, substantially as described.

3. A device of the kind described comprising an inverted-trough-shaped receptacle having its side walls provided with series of vertical slits, said walls being bent adjacent to said slits to form inlet-ports all of said ports being directed toward a point midway between the ends of said trough-shaped receptacle, substantially as described.

4. The combination with a fire-box having a water-space provided with a foundation-ring, of inverted-trough-shaped receptacles resting upon said foundation-ring, and provided with apertures in the sides thereof, projecting portions on one side of said trough-shaped receptacle bearing against one wall of said water-space, set-screws in the other wall of said water-space for retaining said trough-shaped receptacle in position and means connected with said foundation-ring for blowing off sediment, substantially as described.

5. The combination with a fire-box having water-spaces provided with a foundation-ring, of inverted-trough-shaped receptacles resting directly on said foundation-ring, said receptacles having their ends closed and having their side walls provided with series of apertures, and blow-off means having ports directly under and midway between the ends of said receptacles, substantially as described.

6. The combination with a fire-box, having water-spaces provided with a foundation-ring, of inverted-trough-shaped receptacles resting on said foundation-ring, a blow-off port directly under each of said inverted receptacles, each of said receptacles having slits in the walls thereof and having its walls adjacent to said slits bent to form a series of inlet-ports, all of said ports being directed toward the blow-off port, substantially as described.

847,436. GRINDING-MILL. OSKAR PFEIFFER, Kaiserslautern, Germany. Filed Jan. 2, 1906. Serial No. 294,297.

Claim.—1. The combination with a grinding-mill having stepped grinding-faces and peripheral discharge-openings, of means for regulating the size of said openings, whereby said mill may be regulated to directly discharge ground material not exceeding any predetermined size, substantially as described.

2. The combination with a grinding-mill having stepped grinding-faces and peripheral discharge-openings, of adjustable plates constructed to project over said openings, whereby said mill may be regulated to directly discharge ground material not exceeding any predetermined size, substantially as described.

3. In a grinding-mill the combination with stepped grinding-faces, having discharge-openings between adjacent ends of adjacent stepped faces, of adjustable plates adapted to lap over said openings to regulate the size thereof, substantially as described.

4. In a grinding-mill, the combination with stepped grinding-faces having discharge-openings between the adjacent ends of adjacent stepped faces or sliding plates adapted to lap over said openings to regulate the size thereof, substantially as described.

847,437. CAR-FENDER. WILLIAM PICKETT, Lynn, Mass., assignor of one-half to William B. Marsh, Lynn, Mass. Filed Feb. 8, 1906. Serial No. 300,030.

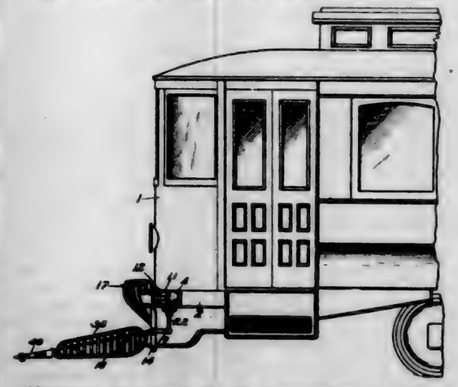

Claim.—1. In a car-fender, the combination of a frame, a pivot for supporting the frame at one end, a manually-actuated device for releasing the frame and permitting it to assume an operative position, and a yielding bottom for said frame comprising a hinged member arranged to yield in a downward direction, and a spring for normally holding the said member in a raised position.

2. In a car-fender, the combination of a cradle having a main frame, a pivot for supporting the cradle, an auxiliary frame carried by the front end of the main frame, a pivot for connecting the main and auxiliary frames, a spring tending to lift the auxiliary frame with respect to the main frame, and a stop for limiting the upward movement of the auxiliary frame.

3. In a car-fender, the combination of a cradle having a main frame, a pivot for supporting the frame, an auxiliary frame carried by the main frame, means for yieldingly supporting the auxiliary frame, a lock for holding the main and auxiliary frames in a raised position, and a means for releasing the lock and permitting the frames to drop into an operative position, the auxiliary frame riding over the surface of the road-bed.

4. In a car-fender, the combination of a pivotally-supported frame, side guards carried thereby, a bottom for the frame adapted to yield downwardly and comprising oppositely-hinged members, a spring for normally raising the members, and an auxiliary frame yieldingly supported by the front end of the main frame.

5. In a car-fender, a pivotally-supported frame, side guards carried thereby, in combination with a flexible buffer-strip secured to the pivot-bar at one extremity, the opposite extremity being attached to the main supports.

6. In a car-fender having a main supporting-strip with downwardly-extending arms integral therewith, in combination with a pivotally-secured frame having a suitable locking device.

7. In a car-fender having a main supporting-strip with downwardly-extending arms integral therewith, in combination with a pivotally-secured frame, one extremity of which is provided with an upwardly-extending arm adapted to engage with a latch held normally in position by a spring.

8. In a car-fender, a cradle having a frame, a pivot engaging the frame for supporting the cradle composed of opposite hinged members, said members coöperating with a transverse shaft or stop, said shaft being rigid with the frame and said frame having a suitable locking device.

847,438. COIN-SORTER. WILLIAM A. RALSTON, Rochester, N. Y., assignor, by direct and mesne assignments, of one-half to George R. Fuller and one-fourth to Frank T. Byrne, Rochester, N. Y. Filed Mar. 19, 1906. Serial No. 306,750.

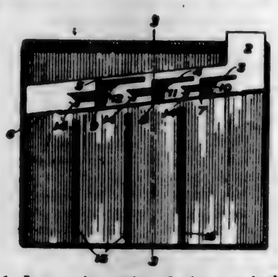

Claim.—1. In a coin-sorting device, an inclined guideway having substantially right-angled slots in one wall, one side of each slot being substantially parallel to the bottom of the guideway and at a distance therefrom slightly greater than the diameter of a particular coin, the other side of said slot extending to the bottom of the guideway and the free corner of the wall being bent outward from the guideway, the said slots being so arranged that the larger coins will be discharged through the vertical slots nearer the end of the guideway.

2. In a coin-sorting device, a guideway having a longitudinal and a transverse inclination and having substantially right-angled slots in the lower wall thereof, one side of each slot being substantially parallel to the bottom of the guideway and at a distance therefrom slightly greater than the diameter of a particular coin, the other side of said slot extending to the bottom of the guideway and the free corner of the wall being bent outward from the guideway, the said slots being so arranged that the larger coins will be discharged through the vertical slots nearer the end of the guideway, and a stop for the coins issuing from each vertical slot.

3. In a coin-sorting device, an inclined guideway having substantially right-angled slots in one wall, one side of each slot being substantially parallel to the bottom of the guideway and at a distance therefrom slightly greater than the diameter of a particular coin, the other side of said slot extending to the bottom of the guideway and the free corner of the wall being bent outward from the guideway, the said slots being so arranged that the larger coins will be discharged through the vertical slots nearer the end of the guideway, and a stop for the coins issuing from each vertical slot.

4. In a coin-sorting device, a guideway having a longitudinal and a transverse inclination and having substantially right-angled slots in the lower wall thereof, one side of each slot being substantially parallel to the bottom of the guideway and at a distance therefrom slightly greater than the diameter of a particular coin, the other side of said slot extending to the bottom of the guideway, and the free corner of the wall being bent outward from the guideway, the said slots being so arranged that the larger coins will be discharged through the vertical slots nearer the end of the guideway, and a stop for the coins issuing from each vertical slot.

847,439. UNIVERSAL JOINT. ALBERT RITTER, Boston, Mass. Filed Apr. 16, 1906. Serial No. 311,914.

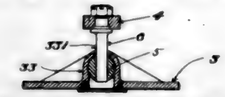

Claim.—1. In a universal joint or universal-angle coupling, the combination with two coupling-heads, of a longitudinally-slotted connector-swivel carried by one thereof and arranged to turn around a radial or diametrical axis, and a rigid connector-arm upon the other coupling-head, disposed eccentrically with relation to the axis of rotation of the latter, extending through the slot of the said swivel.

2. In a universal joint, or universal-angle coupling, the combination with a coupling-head provided with a rigid connector-arm extending in the direction of the length of the axis of rotation of the said coupling-head, of a second coupling-head, and a longitudinally-slotted connector-swivel connected therewith, arranged to turn around a radial or diametrical axis, and having the said connector-arm engaged in the slot thereof.

3. In a universal joint or universal-angle coupling, the combination with the coupling-heads, of oppositely-located connector-arms rigidly mounted upon one of the said heads and extending in the direction of the axis of rotation of such head, and a connector-swivel carried by the other of said heads, arranged to turn transversely upon an axis extending diametrically of the latter head, and having opposite slots extending lengthwise of the said axis and receiving the said connector-arms.

4. In a universal joint or universal-angle coupling, the combination with a coupling-head having connector-arms rigidly mounted thereon and extending in the direction of the length of the axis of rotation of the said coupling-head, of the second coupling-head provided with a diametrical connector-swivel mounted with capacity to turn transversely on the said second coupling-head and having the opposite ends thereof engaged with the respective connector-arms with capacity for relative movement in the direction of the length of the latter, and means to hold the said connector-swivel from movement in the direction of the axis thereof.

5. A universal joint or universal-angle coupling comprising opposite coupling-heads, a swivel connected with one thereof adapted to turn or roll transversely with relation to a radius or diameter of such coupling-head, and having a longitudinal slot with crowned or rounded inner end, and a rigid connector-arm upon the other coupling-

head, occupying the slot of the said swivel and contacting with the said inner end.

6. A universal joint or universal-angle coupling comprising opposite coupling-heads, a diametrical connector-swivel connected with one thereof and having the oppositely-located longitudinal slots with crowned or rounded inner ends, and the rigid connector-arms upon the other coupling-head, occupying the slots of the said connector-swivel.

7. A universal joint or universal-angle coupling comprising opposite coupling-heads, rigid connector-arms carried by one of the said coupling-heads and engaged with the other thereof to cause the two heads to rotate in unison, and a central projection in connection with one of the coupling-heads entering a socket in connection with the other thereof to keep the two coupling-heads properly centered with respect to each other.

8. A universal joint or universal-angle coupling comprising opposite coupling-heads, a diametrical connector-swivel carried by one thereof and having longitudinal slots, means to hold such connector-swivel from longitudinal displacement, and rigid connector-arms carried by the other of the said coupling-heads and making contact with the inner ends or bottoms of the said slots.

847,440. DRIVING MECHANISM. EDWARD RIVETT, Boston, Mass. Filed Nov. 2, 1905. Serial No. 285,526.

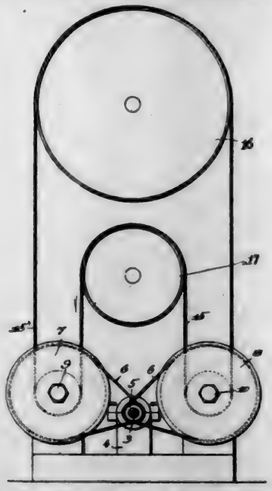

Claim.—1. In a device of the class described, the combination with a driven shaft of a plurality of driving-shafts belted thereto to both drive the driven shaft and balance or neutralize all lateral stresses thereon, and means to rotate the driving-shafts.

2. In a device of the class described, the combination with a driven shaft of symmetrically-arranged pulleys thereon, and a symmetrically-arranged driving mechanism including symmetrically-arranged belts for rotating said pulleys.

3. In a driving mechanism, the combination with a driven shaft of a pulley at each end thereof, a plurality of driving-shafts parallel with the driven shaft, driving-pulleys on each driving-shaft to correspond to those on the driven shaft, belts connecting each driving-pulley to the corresponding pulley on the driven shaft, and means to rotate the driving-shafts in unison.

4. In a driving mechanism, a driven shaft, a pulley thereon, a plurality of driving-shafts, a driving-pulley on each driving-shaft, and a plurality of elastic belts connecting each driving-pulley to the pulley on the driven shaft, said driving-shafts being so arranged that all lateral stresses on the driven shaft are balanced.

847,441. SHEET-METAL DISPLAY CAN OR BOX. FRANK RUDOLPHI, Chicago, Ill., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Sept. 23, 1905. Serial No. 279,806.

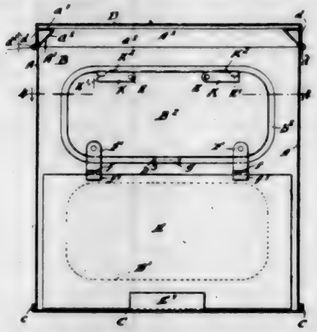

Claim.—1. In a display-can a sheet-metal front plate, and provided on the outside thereof with a countersink or recess to receive a sheet-metal sign-plate, and a removable externally-fitting sheet-metal sign-plate fitting in said recess or countersink of the front plate, and provided at one edge thereof with an integral holding device engaging the front plate, said front plate being provided on its inside wth a movable holding device adapted to project through the front plate and engage the opposite edge of the sign-plate from that bearing the integral holding device, substantially as specified.

2. A display-can having a front plate furnished on its outside with a countersink to receive a sign-plate, the angle-flange or wall of the countersink having slots therethrough to receive sign-plate-holding devices, a removable sheet-metal sign-plate provided with a fixed holding device thereon, and a movable holding device inserted on the inside of the front plate and provided with a lip projecting through a slot in the front plate and engaging the sign-plate, substantially as specified.

3. In a display-can, the combination with a front plate having a recess or countersink thereon surrounded by an angle-flange or wall furnished with slots through the same, of a removable sign-plate having an integral tongue projecting through one of said slots, and a movable holding device or latch pivoted on the inside of the recessed portion of the front plate and projecting through another of said slots to engage the sign-plate, substantially as specified.

4. In a glass front display-can, the combination with the sheet-metal front plate provided with a countersink or recess above its glass plate opening, of a removable external sheet-metal sign-plate fitting in said recess or countersink of the front plate, said sign-plate having a fixed holding device at one edge thereof, and said front plate having on the inside thereof a movable holding device engaging the opposite edge of the outside fitting sign-plate, substantially as specified.

5. In a display-can, the combination with the sheet-metal front plate having a display-opening and an external sign-plate seat surrounded by a marginal wall provided with an opening therethrough, of a removable external sign-plate fitting in said external seat of the front plate, and a movable holder mounted on the inside of the front plate, provided with a lip projecting through said opening in the marginal wall of the sign-plate seat and engaging and overlapping the edge of the sign-plate for holding it removably in place, substantially as specified.

6. In a display-can, the combination with the sheet-metal front plate having a display-opening and an external sign-plate seat surrounded by a marginal wall provided with an opening therethrough, of a removable external sign-plate fitting in said external seat of the front plate, and a movable holder mounted on the inside of the front plate, provided with a lip projecting through said opening in the marginal wall of the sign-plate seat and engaging and overlapping the edge of the sign-plate for holding it removably in place, said holder being pivotally connected to the front plate only, substantially as specified.

7. In a sheet-metal display-can, the combination with a front plate having a display-opening therein, and a countersink surrounded by a marginal wall to receive an externally-fitting sign-plate, of a removable external sign-plate fitting in said countersink of the front plate, and a movable holder for the sign-plate, having a member projecting through an opening in the marginal wall of the countersink of the front plate, and engaging the edge of the sign-plate, substantially as specified.

8. In a display-can, the combination with a front plate having a display-opening therein, and a countersink surrounded by a marginal wall to receive an external sign-plate, said marginal wall being provided with a slot through the same, of a removable external sign-plate fitting in said countersink on the front plate, and a movable latch or holder pivotally connected to the front plate on the inside thereof and provided with a lip or member which is projected through the slot in the marginal wall of said countersink to overlap and engage the edge of the sign-plate, substantially as specified.

9. In a display-can, the combination with a front plate having a recess to receive an external sign-plate, of a removable externally-fitting sign-plate, a movable latch or holder for removably securing the sign-plate on the front plate, said movable latch or holder being pivotally mounted on the inside of the recessed portion of the front plate and provided with a lip projecting through a slot in the front plate to engage the sign-plate, substantially as specified.

847,442. TIRE. JAMES M. SHEPARD, Findlay, Ohio. Filed Nov. 29, 1905. Serial No. 289,679.

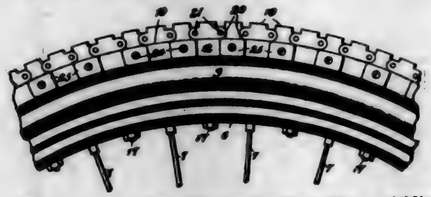

Claim.—1. In a tire, the combination with a yielding tire-body having an outer side provided with spaced sockets, of a tread member having spaced ears located in the sockets, and fastening devices passing transversely through the outer side of the body and through the ears, each fastening device passing through a plurality of the ears.

2. In a tire, the combination with a casing having an outer sectional side, of a tread member mounted on the outer side and comprising a series of pivotally-connected links, said tread member bringing the joint between the sections of the side and having certain links interlocked with both sections, other links between said interlocked links being disposed out of interlocking engagement with said sectional side and fastening devices extending transversely through the sectional side across the joint between the sections thereof and engaging the links of the tread member that are interlocked with said sections.

3. In a tire, the combination with a casing having an outer sectional side, the sections of said side being provided with sockets on opposite sides of the joint, of a tread member mounted on the outer side, said tread member bridging the joint between the sections thereof, and having ears engaging in the sockets on opposite sides of the joint, and means for fastening the tread member to the outer side.

4. In a tire, the combination with a casing having an outer sectional side, the sections of said side being provided with sockets on opposite sides of the joint, of a tread member mounted on the outer side, said tread member bridging the joint between the sections thereof, and having ears engaging in the sockets on opposite sides of the joint, and transverse locking-bolts passing through the sectional side across the joint between the sections thereof and engaging the ears that are located in the sockets.

5. In a tire, the combination with a yielding tire-body having an outer side provided with spaced sockets, of a tread member having spaced ears located in the sockets, and bolts passing transversely through the outer side of the body and through the ears.

6. In a tire, the combination with a casing having an outer sectional side, the sections of said side being provided with sockets, of a tread member comprising a series of pivotally-connected links, certain of said links having inwardly-extending ears that are located in the sockets, and fasteners passing transversely through the sections of the outer side and through the ears.

7. In a tire, the combination with a casing having an outer thickened side composed of sections, of an air-tube arranged within the casing and removable through the outer side thereof, a clamping-strip interposed between the inner side of the air-tube and the inner side of the casing and having bolts passing through said casing, the sections of the outer thickened side of the casing having sockets, a tread member comprising a series of pivotally-connected links, certain of said links having inwardly-extending ears arranged in the sockets, and bolts passing transversely through the sections of the outer side for securing the same together, said bolts also passing through the ears and thereby securing the tread member to the casing.

8. In a tire, the combination with a yielding tire-body having sockets in its outer side, of a tread member surrounding the body, said member comprising a series of links composed of transverse bars and ears extending on opposite sides of the bars, the ears of one link interfitting with and being pivoted to the ears of the link next adjacent, certain of said links also having inwardly-extending ears located in the sockets, and fasteners passing transversely through the tire-body and through the inwardly-extending ears that are fitted in the socket.

9. In a tire, the combination with a casing, of a tread member mounted thereon and comprising a series of links, each link consisting of a cross-bar extending the full width of the link and having oppositely-extending ears that project from the opposite edges of the cross-bar and terminate short of the outer side of said cross-bar, the ears of one link being pivotally interlocked with the ears of the next adjacent link, leaving the cross-bars spaced apart and projecting to provide an antislipping roughened surface on the tire.

10. In a tire, the combination with a casing having a sectional outer wall, of a tread member extending over said outer wall and comprising a series of links, each link consisting of a cross-bar having oppositely-extending ears that terminate short of the outer side of the cross-bar, the ears of one link being pivotally interlocked with the ears of the next adjacent link, leaving the cross-bars spaced apart and projecting outwardly to provide an antislipping roughened tread-surface on the tire, said cross-bars of the links having inwardly-extending ears between their ends that engage in the sections of the outer casing-wall, and means engaging said ears to hold the same in place and secure the sections of the wall together.

847,443. SHEET-METAL DOOR. NILS P. SJÖBRING, Jamestown, N. Y. Filed Dec. 14, 1906. Serial No. 347,845.

Claim.—1. A door comprising stile-sections, cross-sections interlocking with the stile-sections and extending transversely of the door, panel-sections interlocking with the stile-sections, and angle-iron pieces lying parallel with the panel-sections and having outwardly-extending flanges bearing edgewise against the inner sides of the cross-sections whereby the cross-sections are braced against pressure from the exterior.

2. A door comprising stile-sections, end sections interlocking with the stile-sections and extending transversely of the door, said stile-sections and end sections being pro-

vided with an ornamental molding along their inner edges, panel-sections interlocking with the stile-sections, and angle-iron pieces fixed to the panel-sections and interposed between said panel-sections and the end sections, said angle-iron pieces having outwardly-extending flanges which bear against the inner sides of the end sections and thereby form internal braces adapted to maintain the end sections in relative position.

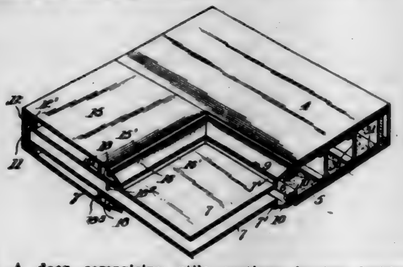

3. A door comprising stile-sections having locking-flanges, end sections having flanges interlocking with the stile-sections, panel-sections fashioned with molding portions which interlock with the stile-sections, said end sections having molding portions corresponding to the like portions of the panel-sections, the said molding portions of the end sections being provided with a concealed locking-flange, and angle-iron strips interposed between the end sections and the panel-sections and secured to the panel-sections, said strips each having outturned edges, one of said edges engaging with the said locking-flange of the molding portion of end section, and the other edge bearing edgewise against the inner side of the end section to form an internal brace and to maintain the end section in proper position.

4. In a sheet-metal door construction the combination with stile-sections, panel-sections, and end sections parallel with and spaced from the panel-section, of angle-iron strips interposed between the end sections and panel-sections, said strips being secured to the panel-sections and each having an edge portion turned substantially at right angles and bearing against the inner side of the adjacent end section whereby said end section is maintained in its normal position and inward pressure on said section is resisted.

5. In a sheet-metal door construction the combination with stile-sections, end sections, panel-sections, and interlocking connections between the stile-sections and the end sections and panel-sections, of a channel-iron or keeper secured between the outer edges of the stile-sections, said channel-irons having their flanges cut away at points, one for the application of the door-hinges and the other for the application of the door-lock.

6. In a sheet-metal door construction, the combination with hollow stiles and end sections, and a panel-section, of a lining of non-conducting material extending along the interior of the stiles, and a rigid backing between opposite members of the lining adapted to retain the lining in position.

7. In a sheet-metal door construction having hollow stiles and ends, and an intermediate panel, of an interior lining consisting of a sheet of non-conducting and indestructible material extending along each inner side of the stile, and a channel-iron intermediate of the sheets and having its flanges backing against the sheets to hold them against the inner sides of the stiles.

8. In a sheet-metal door construction the combination with stile-sections having locking-flanges along their inner edges, end sections, molding members extending along the inner edges of the stiles and end sections, the molding members of the stile-sections having flanges to interlock with the flanges of said stile-sections, a panel-section, said molding members of the stile-sections having recessed seats for the edges of the panel-section, and a supplemental molding-section coacting with a molding-section on one side of the door to complete the molding on that side, said supplemental molding-section having a vertical wall coacting with a similar wall on the opposite molding-section to form the recess for the edge of the panel, and having a latch member to spring into engagement with a catch member of said opposite molding-section.

847,444. MUSIC-HOLDER. GERTRUDE M. SNOW, Kalamazoo, Mich. Filed Oct. 17, 1905. Serial No. 283,137.

Claim.—1. The combination with a board, of a support therefor comprising a rod-like member having loop-like arms at its ends, pivotally secured to the rear side of said board by suitable clips, said member having kinks or bends therein which engage said board as said member is adjusted, thereby applying tension to said member for holding it in its adjusted positions; a way arranged vertically on the front side of said board, consisting of a strip of sheet metal with its edges turned upwardly and inwardly; a slide arranged in said way, having a cross-piece thereon; a set-screw for securing said slide in its adjusted positions in said way; screws for securing said way to said board, located at the ends of said way and arranged to form stops for retaining said slide therein; and a holder consisting of a rod pivotally secured to the cross-piece of said slide, side pieces depending from said rod, having outturned hooks at their lower ends, and a bottom piece resting in and secured to said hooks, for the purpose specified.

2. The combination with a board, of a support therefor comprising a rod-like member having loop-like arms at its ends, pivotally secured to the rear side of said board by suitable clips, said member having kinks or bends therein, which engage said board as said member is adjusted, thereby applying tension to said member for holding it in its adjusted positions; a way arranged vertically on the front side of said board, consisting of a strip of sheet metal with its edges turned upwardly and inwardly; a slide arranged in said way, having a cross-piece thereon; a set-screw for securing said slide in its adjusted positions in said way; and a holder consisting of a rod pivotally secured to the cross-piece of said slide, side pieces depending from said rod, having outturned hooks at their lower ends, and a bottom piece resting in and secured to said hooks, for the purpose specified.

3. The combination with a board, of a way arranged vertically on the front side thereof, consisting of a strip of sheet metal with its edges turned upwardly and inwardly; a slide arranged in said way, having a cross-piece thereon; a set-screw for securing said slide in its adjusted positions in said way; screws for securing said way to said board, located at the ends of said way and arranged to form stops for retaining said slide therein; and a holder consisting of a rod pivotally secured to the cross-piece of said slide, side pieces depending from said rod, having outturned hooks at their lower ends, and a bottom piece resting in and secured to said hooks, for the purpose specified.

4. The combination with a board, of a way arranged vertically on the front side thereof, consisting of a strip of sheet metal with its edges turned upwardly and inwardly; a slide arranged in said way, having a cross-piece thereon; a set-screw for securing said slide in its adjusted positions in said way; and a holder consisting of a rod pivotally secured to the cross-piece of said slide, side pieces depending from said rod, having outturned hooks at their lower ends, and a bottom piece resting in and secured to said hooks, for the purpose specified.

5. The combination with a board, of an adjustable support for said board arranged toward the top thereof; a way arranged vertically on the front side of said board, consisting of a strip of sheet metal with its edges turned upwardly and inwardly; a slide arranged in said way; a set-screw for securing said slide in its adjusted positions in said way; and a holder consisting of a rod pivotally secured to said slide, side pieces depending from said rod; and a bottom piece secured to said side pieces, for the purpose specified.

6. The combination with a board of a way arranged vertically on the front side thereof, consisting of a strip of sheet metal with its edges turned upwardly and inwardly; a slide arranged in said way; a set-screw for securing said slide in its adjusted positions in said way; and a holder consisting of a rod pivotally secured to said slide, side pieces depending from said rod, and a bottom piece secured to said side pieces, for the purpose specified.

7. The combination with a board, of an adjustable support for said board arranged toward the top thereof; a way arranged vertically on the front side of said board; a slide adjustably arranged in said way; and a holder consisting of a rod pivotally secured to said slide, side pieces depending from said rod, and a bottom piece secured to said side pieces, for the purpose specified.

8. The combination with a board of a way arranged vertically on the front side thereof; a slide adjustably arranged in said way; and a holder consisting of a rod pivotally secured to said slide, side pieces depending from said rod, and a bottom piece secured to said side piece, for the purpose specified.

9. The combination with a board adapted to rest upon the music-rack of a piano or the like, of an adjustable support for said board arranged toward the top thereof; a way arranged vertically on the front side of said board; a slide adjustably arranged in said way; and a holder pivotally secured to said slide so that its lower end may be swung out from said board, for the purpose specified.

10. The combination with a board adapted to rest upon the music-rack of a piano or the like, of a way vertically arranged on the front side of said board; a slide adjustably arranged in said way; and a holder pivotally secured to said slide so that its lower end may be swung out from said board, for the purpose specified.

847,445. MACHINE FOR POLISHING RINGS. HENRY A. STEARNS, Jr., Milford, Mass. Filed Jan. 4, 1907. Serial No. 350,767.

Claim.—1. In a machine for polishing rings, a holder for said rings, mechanism to rotate said holder, a shaft, and a polishing-pad fast to said shaft and eccentric thereto, said pad located inside said rings and adapted to bear against the inner faces thereof.

2. In a machine for polishing rings, a holder for said rings, a shaft, a polishing-pad fast to said shaft and eccentric thereto, said pad located inside said rings and adapted to bear against the inner faces thereof, and mechanism to rotate said holder and shaft in opposite directions.

3. In a machine for polishing rings, a holder for said rings, mechanism to rotate said holder, a shaft, and a polishing-pad fast to said shaft, said pad located inside said rings and adapted to bear against and extend partly around the inner faces of said rings.

4. In a machine for polishing rings, two driving-shafts, each terminating in a pointed end, a polisher-shaft resting at the opposite ends thereof upon said pointed ends, means to lock said polisher-shaft to one of said driving-shafts, a polishing-pad fast to said polisher-shaft, a holder for said rings, and means to lock said holder to the other of said driving-shafts.

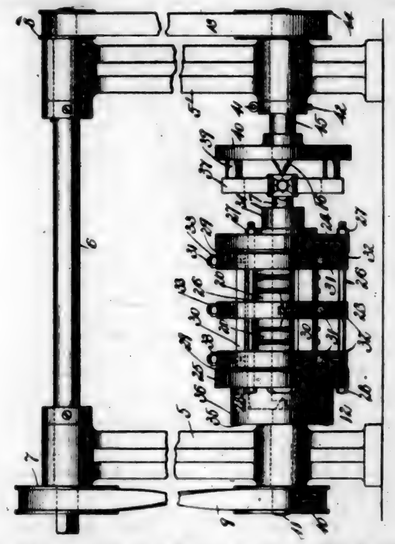

5. In a machine for polishing rings, a holder for said rings comprising two end plates, bolts connecting said end plates together, annular plates extending around said rings and supported on said bolts, adjusting-screws on said annular plates, and clamp-blocks adapted to bear against the peripheries of said rings and located between said annular plates and rings, against which blocks, the inner ends of said screws bear.

6. In a machine for polishing rings, a holder for said rings comprising two end plates, bolts connecting said end plates together, annular plates extending around said rings and supported on said bolts, adjusting-screws on said annular plates, and clamp-blocks adapted to bear against the peripheries of said rings and located between said annular plates and rings, against which blocks the inner ends of said screws bear; in combination with a polisher-shaft extending through said plates and rotatable therein, and a polishing-pad fast to said polisher-shaft and adapted to bear against the inner faces of said rings.

7. In a machine for polishing rings, a holder for said rings comprising two end plates, bolts connecting said end plates together, annular plates extending around said rings and suported on said bolts, adjusting-screws on said annular plates, and clamp-blocks adapted to bear against the peripheries of said rings and located between said annular plates and rings, against which blocks the inner ends of said screws bear; in combination with a polisher-shaft extending through said end plates and rotatable therein, a polishing-pad fast to said polisher-shaft and adapted to bear against the inner faces of said rings, and two driving-shafts, one of said driving-shafts adapted to be locked to said polisher-shaft, the other adapted to be locked to said holder.

847,446. EXPANSION-DRUM. JOHN A. STROM, Pullman, Ill. Filed Aug. 14, 1905. Serial No. 274,045.

Claim.—1. In a device of the kind described, a shell divided by parallel walls into two outer compartments constituting expansoin-chambers, and an inner compartment constituting a warming-reservoir, and independent pipe connections for the said compartments.

2. In a device of the kind described, a shell divided by vertical parallel walls into two outer compartments constituting expansion-chambers, and an inner compartment constituting a warming-reservoir, a single safety-valve connected and common to both expansion-chambers, and suitable pipe connections for the said compartments.

3. In a hot-water heating system, in combination, a pair of compartments constituting expansion-chambers, a storage warming-reservoir for hot water not in the heating system, arranged between, and connected to, the compartments, independent pipe connections for the reservoir and chambers, and means for introducing a part of the water from said warming-reservoir into said expansion-chambers.

4. In a hot-water heating system, a shell divided by substantially vertical parallel walls into two outer compartments constituting expansion-chambers, and an inner compartment constituting a warming-reservoir, the latter having a horizontal partition terminating short of one of its ends, said partition being adapted to give an indirect course to the water passing through the reservoir, and suitable pipe connections for the respective compartments.

5. In a device of the kind described, a shell divided by substantially parallel walls into two outer compartments, constituting a pair of expansion-chambers, and an inner compartment constituting a warming-reservoir, a baffle plate within said reservoir, said reservoir being provided with an inlet and outlet positioned on opposite sides of said plate, and suitable pipe connections for the several compartments.

6. A device of the kind described comprising a shell divided to form a plurality of expansion-chambers, and a warming-reservoir for water not in the circulating system, unconnected circulating-pipes leading to the respective chambers, the warming-reservoir having a valved communication with the respective chambers whereby water from the warming-reservoir may pass into either of said chambers.

7. In a device of the kind described, a shell divided by walls into two outer compartments constituting expansion-chambers, and an inner compartment constituting a warming-reservoir, suitable pipe connections for the several compartments, and means for discharging fluid from said reservoir directly into said outer compartments at will.

8. In a device of the kind described, a shell divided by walls into two outer compartments constituting expension-chambers, and an inner compartment constituting a warming-reservoir, a baffle-plate within said reservoir said reservoir being provided with an inlet and outlet positioned on opposite sides of said plate, and a connection between said outer compartments, suitable pipe connections to the several compartments, and means for discharging a fluid from the reservoir into said outer compartments at will.

9. In a device of the kind described, a pair of compartments constituting expansion-chambers, and an inner compartment located between the expansion-chambers constituting a warming-reservoir, means for connecting said expansion-chambers to a heating system, and said reservoir to a water-supply system, whereby the water in said supply system is heated by its proximity to said expansion-chambers while in said reservoir, and a communication between said expansion-chambers and reservoir for introducing water acted upon by the expansion-chambers thereinto.

10. A device of the kind described comprising a shell divided by parallel walls into two outer compartments constituting expansion-chambers, and an inner compartment constituting a warming-reservoir, the warming-reservoir being provided with suitable means for connecting the same with a water-supply system, and the expansion-chambers having suitable means for connecting the same to a heater, whereby the contents of the reservoir are heated by the radiation of the expansion-space.

847,447. COTTON CHOPPER AND CULTIVATOR. RICHARD C. TEEL, Clanton, Ala. Filed May 22, 1906. Serial No. 318,158.

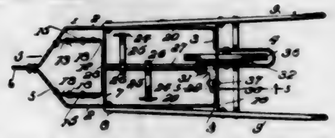

Claim.—1. A machine of the character described comprising side bars, front and rear cross-bars, a ground-wheel, a gear carried by said wheel, a fixed bearing upon said front cross-bar, a transversely-slidable bearing upon said rear cross-bar, a longitudinally-extending shaft having its front and rear ends mounted for rotation in said bearings, a pinion fixed upon said shaft to mesh with said gear, a chopping-hoe upon said shaft, and means for moving said slidable bearing laterally upon said rear cross-bar to move said pinion into and out of mesh with said gear.

2. A machine of the character described comprising side bars, front and rear cross-bars, a ground-wheel, a gear carried by said wheel, a fixed bearing upon said front cross-bar, a transversely-slidable bearing upon said rear cross-bar, a longitudinally-extending shaft having its front and rear ends mounted for rotation in said bearings, a pinion fixed upon said shaft to mesh with said gear, a chopping-hoe upon said shaft, handles projecting upwardly and rearwardly from said side bars, a cross-brace connecting said handles, a lever for moving said slidable bearing laterally upon said rear cross-bar to shift said pinion into and out of mesh with said gear, and means upon said lever for engaging said cross-brace to hold said slidable bearing in an adjusted position.

3. A machine of the character described comprising a frame having side bars and front and rear cross-bars connecting said side bars, a ground-wheel, a gear carried by said wheel, a bearing fixed upon said front cross-bar, a bearing slidable upon said rear cross-bar and having flanges to engage the upper and lower edges of said rear cross-bar, a longitudinal shaft mounted for rotation in said bearings, a pinion upon said shaft to mesh with said gear, a chopping-hoe upon said shaft, handles projecting upwardly and rearwardly from said side bars, a cross-brace connecting said handles and formed with apertures, an operating-lever pivotally mounted upon said frame and loosely connected to said slidable bearing, and a pin carried by said lever to enter the apertures in said cross-brace.

4. A machine of the character described comprising a frame formed by bending a bar of metal to provide parallel side bars, a connecting rear cross-bar formed with a rearwardly-extending loop, and converging front ends, a draft connection secured between said converging front ends, a front cross-bar connecting said side bars, a ground-wheel journaled in the loop in said rear cross-bar, a gear carried by said wheel, a stationary bearing upon said front cross-bar, a horizontally-slidable bearing upon said rear cross-bar, a longitudinal shaft having its front and rear ends rotatably mounted in said bearings, a pinion upon said shaft to engage said gear, a chopping-hoe upon said shaft, handles projecting upwardly and rearwardly from said side bars, a cross-brace connecting said handles and formed with apertures, a lever pivotally mounted upon said frame, a pin carried by said lever to enter the apertures in said cross-brace, and a spring connected to said lever to hold said pin in engagement with said apertures.

5. A machine of the character described comprising a frame formed by bending a bar of metal to provide parallel side bars, a connecting rear cross-bar formed with a rearwardly-extending loop, and converging front ends, a draft connection secured between said converging front ends, a front cross-bar connecting said side bars, a ground-wheel journaled in the loop in said rear cross-bar, a gear carried by said wheel, a stationary bearing upon said front cross-bar, a horizontally-slidable bearing upon said rear cross-bar, a longitudinal shaft having its front and rear ends rotatably mounted in said bearings, a pinion upon said shaft to engage said gear, a chopping-hoe upon said shaft, handles projecting upwardly and rearwardly from said side bars, a cross-brace connecting said handles and the loop in said rear cross-bar, and a pin upon said lever to enter the apertures in said cross-brace.

6. A machine of the character described comprising a frame formed by bending a bar of metal to provide parallel side bars, a connecting rear cross-bar formed with a rearwardly-extending loop, and converging front ends, a draft connection secured between said converging front ends a front cross-bar connecting said side-bars, a U-shaped bar having its parallel arms secured to the converging front ends of said frame and its connecting portion secured to said front cross-bar, angularly-adjustable legs upon the parallel arms of said U-shaped bar, cultivator-shovels upon said legs, angularly-adjustable legs upon said side bars, and cultivator-shovels upon the last-mentioned legs, handles projecting upwardly and rearwardly from said side bars, braces connecting said handles and the loop in said rear cross-bar.

7. A machine of the character described comprising a frame, a ground-wheel journaled therein, a gear carried by said wheel, a longitudinally-extending shaft, a stationary bearing for the front end of said shaft, a transversely-slidable bearing for the rear end of said shaft, a pinion fixed upon the rear portion of said shaft to mesh with said gear, and means for shifting said slidable bearing transversely or laterally to move said pinion into and out of mesh with said gear.

847,448. PROCESS FOR THE TREATMENT OF SILICATE OF COPPER. GEORGE H. WATERBURY, Denver, Colo., assignor to Los Angeles Metals Extraction Company, Los Angeles, Cal. Filed Oct. 29, 1906. Serial No. 341,140.

Claim.—1. The herein-described process for the treatment of ores containing silicates of copper, consisting in first subjecting the ore to a light roast and subsequently leaching by any of the ordinary methods.

2. The herein-described process for the treatment of ores containing silicates of copper, consisting in first roasting the ore and subsequently leaching the same by the use of sulfuric acid.

3. The herein-described process for the treatment of ore containing silicates of copper, consisting in first roasting the ore and finally leaching the same by the use of a dilute solution of sulfuric acid.

847,449. TRANSMITTER-FRONT. ALFRED H. WEISS, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 2, 1907. Serial No. 350,442.

Claim.—1. A transmitter-front having an integral fold forming a double portion, threads upon the inner part of said portion for securing the mouthpiece and a shoulder formed by the folds of the double portion against which the mouthpiece abuts, substantially as described.

2. A transmitter-front having an integral supporting-rim, supporting-lugs formed thereof in combination with a doubled portion forming the threaded ring for securing the mouthpiece, substantially as described.

3. A transmitter-front having a supporting-rim, integral dampening-spring supports formed thereon and integral bridge-supports formed of an inwardly-bent portion of the rim, substantially as described.

4. A transmitter-front having a rim-portion adapted to extend within the transmitter-inclosing shell, integral dampening-spring-supporting lugs upon the rim portion in combination with a doubled portion forming the securing-ring for the mouthpiece and the shoulder against which the mouthpiece abuts, substantially as described.

5. A transmitter-front having an inwardly-doubled portion, the outside of the fold of the doubled portion forming the shoulder against which the inclosing shell abuts and the rearwardly-extended part of the folded portion forming a rim for securing the front to the shell, substantially as described.

6. A transmitter-front having a folded portion, means for securing the mouthpiece thereto, and a shoulder formed by said folded portion against which the mouthpiece abuts, substantially as described.

7. A transmitter-front provided with a central opening, an annular folded portion of said front forming a reinforcement about the opening, and means to secure the mouthpiece thereto, substantially as described.

8. A transmitter-front having an annular folded portion thereof reinforcing its periphery, and a rim for securing the front to the inclosing shell, said rim being formed of the rearwardly-turned edge of said folded portion, substantially as described.

9. A transmitter-front having an annular folded portion reinforcing the periphery of the front, and an annular folded portion reinforcing the periphery of the mouthpiece-opening, substantially as described.

10. A transmitter-front having a supporting-rim consisting of a continuous rearwardly-extending part of the front, and supporting-lugs formed of continuous inwardly-extended parts of said rim, substantially as described.

847,450. FEED-HEAD FOR DRILLING-MACHINES. GRIFFITH D. WILLIAMS, Peckville, Pa. Filed Nov. 9, 1906. Serial No. 342,621.

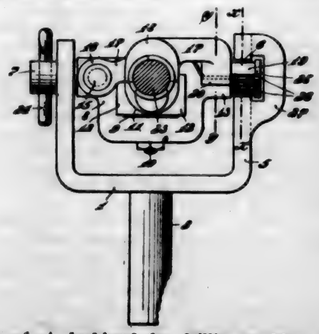

Claim.—1. A feed-head for drilling-machines provided with opposed nut-sections, in alternating arrangement, and means for automatically effecting the relative adjustment of said nut-sections.

2. In a feed-head for drilling-machines, the combination of a supporting-clevis, having a substantially V-shaped slot in one of its limbs, the hinged members pivotally mounted in said clevis, the nut-sections carried by said hinged members in alternating arrangement relative to each other, each of said members being provided with an arm extending through and bearing in said V-shaped slot of the clevis, substantially as and for the purpose set forth.

3. In a feed-head for drilling-machines, the combina-

tion of a supporting-clevis having a substantially V-shaped slot in one of its limbs, the hinged members pivotally mounted in said clevis, the nut-sections carried by said hinged members in alternating arrangement relative to each other, each of said members being provided with an arm, extending through and bearing in said V-shaped slot of the clevis, said arms being provided on their free ends with peripheral flanges, substantially as and for the purpose set forth.

4. In a feed-head for drilling-machines, the combination of a supporting-clevis having a substantially V-shaped slot in one of its limbs, the bridge-piece connecting the sides of the entrance to said slot, the hinged members pivotally mounted in said clevis, the nut-sections carried by said hinged members in alternating arrangement relative to each other, each of said members being provided with an arm of substantially semicircular cross-section, extending through said V-shaped slot of the clevis, substantially as and for the purpose set forth.

5. In a feed-head for drilling-machines, the combination of a supporting-clevis having a substantially V-shaped slot in one of its limbs, the bridge-piece connecting the sides of the entrance to said slot, the hinged members pivotally mounted in said clevis, the nut-sections carried by said hinged members in alternating arrangement relative to each other, each of said members being provided with an arm, substantially semicircular in cross-section, extending through said V-shaped slot of the clevis, said arms being provided on their free ends with peripheral flanges, and said bridge-piece being provided with a slot permitting the passage of said flanges, substantially as and for the purpose set forth.

6. In a feed-head for drilling-machines, the combination of a supporting-clevis, the hinged members carried thereby, said hinged members being provided with opposed half-nut sections in alternating arrangement, and with threaded sections opposite to said half-nut sections, said threaded sections being less than a half-nut, substantially as and for the purpose set forth.

7. In a feed-head for drilling-machines, the combination of a supporting-clevis, the hinged members carried thereby, said hinged members being provided with opposed half-nut sections in alternating arrangement, and with threaded sections opposite to said half-nut sections, said threaded sections being less than a half-nut, together with means for automatically effecting relative adjustment of said hinged members, substantially as and for the purpose set forth.

8. In a feed-head for drilling-machines, the combination of a supporting-clevis, the inner member having the trunnion extending from one end thereof, and journaled in the adjacent limb of said clevis, the opposite limb of said clevis being provided with a substantially V-shaped slot, the outer member hinged to said inner member, adjacent the trunnion-carrying end thereof, said members being provided respectively with nut-sections, and also being provided with oppositely-disposed arms, extending through and engaging the wall of said V-shaped slot, substantially as and for the purpose set forth.

9. In a feed-head for drilling-machines, the combination of a supporting-clevis, the inner member having the trunnion extending from one end thereof, and journaled in the adjacent limb of said clevis, the opposite limb of said clevis being provided with a substantially V-shaped slot, the outer member hinged to the said inner member, adjacent the trunnion-carrying end thereof, said members being provided respectively with nut-sections, and also being provided with oppositely-disposed arms, extending through and engaging the wall of said V-shaped slot, and means for preventing longitudinal movements of said members relative to each other, substantially as and for the purpose set forth.

10. In a feed-head for drilling-machines, the combination of a supporting-clevis, the inner member having the trunnion extending from one end thereof, and journaled in the adjacent limb of said clevis, the opposite limb of said clevis being provided with a substantially V-shaped slot, the outer member hinged to said inner member, adjacent the trunnion-carrying end thereof, said members being provided respectively with nut-sections, and also being provided with oppositely-disposed arms, extending through and engaging the wall of said V-shaped slot, the outer member being provided with inwardly-projecting lugs, adapted to straddle and engage a portion of said inner member, substantially as and for the purpose set forth.

847,451. MEANS FOR TURNING AND ARRANGING CAN-CAPS. JOHN T. WILMORE, Denver, Colo. Filed Aug. 7, 1905. Serial No. 273,009.

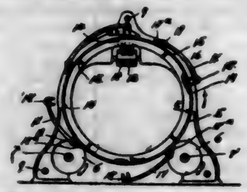

Claim.—1. The combination of a cylindrical receptacle, a magnet-carrying frame exteriorly mounted on and arranged to swing toward and away from the cylinder by gravity, a rib mounted on the inner surface of the cylinder and arranged with reference to the exteriorly-located magnet-carrying frame whereby when can-caps are in suitable position within the cylinder, they will be carried upwardly by the rib until they are brought within range of the magnetic influence and carried by the latter a predetermined distance.

2. In means for arranging can-caps, the combination of a cylindrical can-cap-containing receptacle, and magnet-carrying frames pivotally mounted thereon at suitable intervals, the receptacle being provided with interior ribs or rabbles arranged with reference to the position of the magnet-carrying frames.

3. In an apparatus of the class described, the combination of a cylindrical can-cap-containing receptacle provided with interior rabbles, and magnet-carrying devices mounted exteriorly on the cylinder and arranged to act on the can-caps carried by the rabbles while traveling a predetermined distance with reference to the position of the rabbles.

4. In means for arranging can-caps, the combination of a cylindrical can-cap-carrying receptacle, provided with interior rabbles, magnet-carrying devices mounted exteriorly on the cylinder and arranged with reference to the interior rabbles and so that the magnetic influence acting through the cylinder will act on the can-caps and cause them to be carried upwardly a predetermined distance, a conveyer entering the cylindrical receptacle, and means for automatically actuating the magnet-carrying devices whereby they are thrown far enough away from the cylinder to prevent their influence from acting on the caps whereby the latter are released at a point directly above the said conveyer.

5. An apparatus of the class described, the combination of a can-cap-containing cylinder mounted to rotate and provided on its inner surface with rabbles of different heights and arranged at suitable intervals, and magnet-carrying frames pivotally mounted exteriorly on the cylinder and arranged to act on the can-caps caught by the narrow rabbles after the latter have carried the caps a predetermined distance on the upwardly-moving side of the cylinder.

6. An apparatus of the class described, the combination of a can-cap-containing receptacle mounted to rotate and provided on its inner surface with rabbles, and magnet-carrying frames pivotally mounted exteriorly on the cylinder and adapted to swing toward and away from the cylinder by gravity as the latter rotates, the said frames being provided with means for limiting the outward movement of the frame, substantially as described.

7. An apparatus of the class described, the combination of a cylindrical receptacle mounted to rotate and provided with interiorly-projecting rabbles, magnet-carrying frames pivotally mounted exteriorly on the cylinder and consisting of parallel end arms connected by a rod upon which a series of magnets is mounted, and cams mounted above the cylinder and adapted to act on the magnet-carrying rod to throw the latter outwardly far enough to prevent the magnetic influence from acting on the contents of the cylinder.

8. The combination of a can-cap containing cylindrical receptacle mounted to rotate and provided at its inner surface with shallow ribs arranged at suitable intervals and also with ribs or strips of greater depth arranged intermediate the shallow ribs, magnet-carrying devices mounted exteriorly on the cylinder and arranged to swing toward and away from the latter according to their position during the rotation of the cylinder, means mounted in the path of the magnet-carrying devices for actuating the latter sufficiently to prevent the magnetic influence from acting on the contents of the cylinder, and a conveyer mounted within the cylinder for the purpose set forth.

9. Means for arranging can-caps and similar devices comprising a can-cap-containing receptacle mounted to rotate and having means adapted to carry certain of the can-caps upwardly on the upwardly-moving side of the receptacle farther than the other caps, before allowing them to fall, means for catching and removing the caps carried farther upwardly, and means for rearranging the caps carried upwardly the less distance after they have fallen downwardly into the receptacle.

10. In can-cap-assorting apparatus, the combination of a can-cap-containing receptacle mounted to rotate and having rabbles adapted to carry certain of the can-caps upwardly on the upwardly-moving side of the receptacle farther than the other caps before allowing them to fall, and a conveyer traveling through the receptacle and arranged to catch the falling caps that are carried farther upwardly.

11. Can-cap-assorting apparatus consisting of a rotary device having access to the caps, and provided with means for carrying certain of the caps upwardly farther than the other caps, means for catching and removing the caps carried farther upwardly, and means for rearranging the caps carried upwardly the less distance.

12. Can-capping-assorting apparatus comprising a rotary device having access to the caps and provided with means for carrying certain of the caps upwardly farther than the other caps, and means for catching and removing the caps carried upwardly the greater distance.

13. Means for arranging can-caps comprising a can-cap-containing receptacle mounted to rotate and provide with rabbles or interior projections, and means connected with the rotary receptacle for preventing the can-caps from falling downwardly by gravity for a time after the caps have reached the point where unassisted they would be no longer held by the rabbles.

14. Means for arranging can-caps comprising a can-cap-containing receptacle mounted to rotate, a rib or rabble for carrying the caps upwardly on the upwardly-moving side of the apparatus, means for preventing the caps from falling downwardly after they have reached the point on the upwardly-moving side of the receptacle where unassisted they would fall, and means for catching the falling caps and removing them from the receptacle which is sufficiently open for the purpose.

15. Means for arranging can-caps comprising a can-cap-containing receptacle mounted to rotate, an interior projection connected with the rotating receptacle for carrying can-caps upwardly on the upwardly-moving side of the receptacle farther than the other caps, and means for retarding the falling of the caps carried farther upwardly after they have reached a point where unassisted they would fall, and means for removing the caps carried farther upwardly.

847,452. SEWING DEVICE. ELBERT ASCUE, Blum, Tex., assignor of one-third to R. H. Crank, Cleburne, Tex. Filed Nov. 29, 1905. Serial No. 289,708.

Claim.—1. In a sewing device of the character described, the combination with an operating-handle grip, of a helical needle having a portion journaled in and surrounded by the grip.

2. In a sewing device of the character described, the combination with an operating-handle, of a helical needle having its rear end journaled in and surrounded by the handle, and thrust and draft-bearings carried by the handle and engaged by the needle upon the longitudinal movement thereof in opposite directions.

3. In a sewing device of the character described, the combination with an operating-handle, of a helical needle having an enlarged bearing-portion journaled in the handle, and thrust and draft bearings carried by the handle and located on opposite sides of the bearing portion of the needle.

4. In a sewing device of the character described, the combination with an operating-handle grip, of a helical needle having a straight rear end rotatably journaled in the handle-grip and extending longitudinally thereof, said grip and needle having substantially coincident axes.

5. In a sewing device of the character described, the combination with an operating-handle grip having a bore, of a helical needle having an axial stem at one end that is journaled in the bore, and a combined retaining device and bearing carried by the handle-grip and engaged by the needle-stem.

6. In a sewing device of the character described, the combination with an operating-handle grip having a bore, of a helical needle having an axial stem at one end that is journaled in the bore, and a combined bearing and retaining sleeve fitted in the bore and surrounding the stem.

7. In a sewing device of the character described, the combination with an operating-handle grip having a substantially axial bore, of a helical needle having an axial stem at one end that is journaled in the bore, said stem having an enlargement, and a combined bearing and retaining sleeve fitted in the bore and surrounding the stem, the enlargement of said stem bearing against the sleeve.

8. In a sewing device of the character described, the combination with an operating-handle grip having a substantially axial bore, of a helical needle having an axial stem at one end that is journaled in the bore and is provided with a bearing enlargement, the other end of the needle being pointed and provided with an eye and being furthermore disposed on a curve of greater radius than the main portion of the needle, and a combined bearing and retaining sleeve fitted in the outer portion of the bore,

and outside the enlargement of the needle-stem, said sleeve projecting beyond the grip and constituting a journal-bearing for the needle.

9. In a sewing device of the character described, a tubular helical needle having an open-pointed end, and a longitudinal channel opening through one side of its end and terminating short of said open end.

10. In a sewing device of the character described, the combination with a handle-grip having a thread-receiving channel, of a helical needle rotatably mounted on the grip and having a channel that moves into and out of alinement with the handle-grip channel.

11. In a sewing device of the character described, the combination with a handle-grip having an axial bore and a longitudinal thread-receiving channel communicating therewith, of a tubular helical needle rotatably mounted on the grip and having a longitudinal channel that moves into and out of alinement with the handle-grip channel, and a retaining-sleeve fitted in the bore of the handle-grip and surrounding the needle, said sleeve also having a longitudinal channel with which the needle-channel moves into and out of alinement.

12. In a sewing device of the character described, the combination with a handle-grip having a substantially axial bore and a longitudinal thread-receiving channel, of a retaining-sleeve fitted in the bore and projecting beyond one end of the grip, said sleeve having a longitudinal channel alined with the channel of the grip, and a tubular helical needle having a hollow stem at one end that is rotatably journaled in the sleeve, said needle having a pointed open free end disposed on a curve of greater diameter than the main body of the needle, said needle furthermore having a longitudinal channel terminating short of the pointed end of and movable into and out of alinement with the sleeve-channel upon the rotation of the needle.

847,453. ICE-REMOVER. GERALD P. AYERS, Chicago, Ill. Filed Apr. 30, 1906. Serial No. 314,393.

Claim.—1. In an ice-remover the combination with a car-truck of a power-operated hammer carried thereon directly above the third rail and means for operating said hammer to force it downwardly into close contact with the top of the rail.

2. In an ice-remover the combination with a car-truck of a hammer supported thereon above the third rail and having its ends rounded on the under face and means for reciprocating said hammer.

3. In an ice-remover for third rails, the combination with a car-truck of a vertically-reciprocating hammer carried thereon and adapted to break ice from the rail said hammer having an elongated roughened face curved upwardly at the ends.

4. In a device of the class described the combination with a car of a vertically-reciprocating hammer carried on the truck thereof an elongated head on said hammer extending longitudinally of the third rail and having its ends rounded on the under face and means for operating said hammer.

5. In a device of the class described the combination with a car of a pneumatic cylinder carried thereon, a reciprocating piston in said cylinder, an elongated hammer on the end thereof provided with a roughened face and upwardly-curved ends and a pressure-pipe adapted to supply power to said cylinder.

6. In a device of the class described the combination with a car and the trucks thereof, of a pneumatic cylinder engaged on the side of the trucks above the third rail, a reciprocating piston in said cylinder, an elongated hammer thereon extending longitudinally of the rail, means for supplying air to said cylinder and a valve controlling the air-supply.

847,454. MOLDING-MACHINE. NEWTON BALDWIN, Coldwater, Mich. Filed Jan. 8, 1907. Serial No. 351,377.

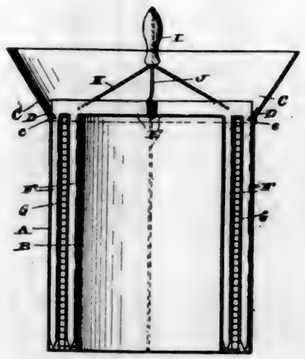

Claim.—1. In a molding apparatus for plastic products, mechanism for holding the parts of the mold in position and provided with means for holding reinforcing material in the mold while being filled, said mechanism being removable from the mold and the reinforcing material, substantially as shown and described.

2. In an apparatus for molding hollow plastic articles, a casing and a core, and a device for spacing said casing and core apart and for supporting reinforcing material in the mold while being filled, substantially as shown and described.

3. In a molding apparatus, a casing and a core, and a device for spacing said casing and core apart consisting of a plurality of two-forked arms adapted to receive reinforcing material therebetween and hold it in the mold, substantially as shown and described.

4. In a molding apparatus, a casing and a core, and a device for spacing said casing and core apart consisting of a plurality of arms arranged in pairs and spaced apart to receive reinforcing material therebetween and hold it in the mold, said arms approximating in length the length of the casing and core, substantially as shown and described.

5. In a molding apparatus, outer and inner forms, and a device for spacing said outer and inner forms apart comprising crossed arms to seat on top of the inner form, and two vertical arms depending from the ends of said crossed arms and spaced apart to receive reinforcing material therebetween and hold it in the mold, said arms approximating in length the length of the outer and inner forms, substantially as shown and described.

6. In a molding apparatus, collapsible outer and inner cylinders made of sheet metal, a funnel secured on the outer cylinder, and a spacing device consisting of crossed arms, a conical hood secured to said crossed arms, and two vertical arms depending from the ends of each crossed arm and spaced apart to receive reinforcing material therebetween and hold it in the mold, said arms approximating in length the length of the cylinders aforesaid, substantially as shown and described.

847,455. EXPANDING PISTON-PACKING. ARTHUR F. BALLARD, Sequndo, Colo. Filed July 6, 1906. Serial No. 325,012.

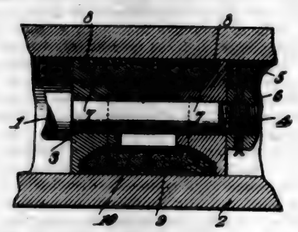

Claim.—1. A double-acting pressure-piston comprising heads of like contour, packing located between the heads and connecting means for the head upon which the heads are independently slidably mounted for limited movement.

2. A double-acting pressure-piston comprising heads, packing located between the heads and a rod upon which the heads are independently slidably mounted for limited movement.

3. A double-acting pressure-piston comprising conical heads, packing located between the heads and connecting means for the heads upon which the heads are independently slidably mounted for limited movement.

4. A pressure-piston comprising conical heads, a spring bearing at its ends upon the conical surfaces of the heads, packing located around the springs and between the heads and connecting means for the heads upon which the heads are slidably mounted for limited movement.

5. A pressure-piston comprising conical heads, a spring bearing at its ends upon the conical surfaces of the heads and overlapping at its edges, packing located around the spring and between the heads and connecting means for the heads upon which the heads are slidably mounted for limited movement.

847,456. RADIATOR VENT ATTACHMENT. EMMET D. BARNES, Traverse City, Mich. Filed Oct. 14, 1905. Serial No. 282,786.

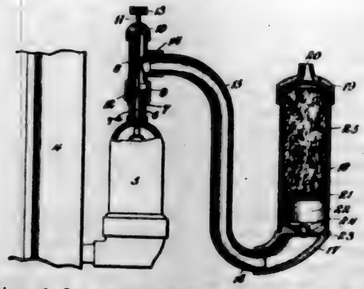

Claim.—1. In a vent attachment for radiators, the combination with a nipple provided with means for attachment to a radiator vent device, of a downwardly-extending conduit connected to the nipple, an upstanding casing carried by the lower end of the conduit, and an upwardly-opening valve located in the casing.

2. In a vent attachment for radiators, the combination with a nipple provided with means for attachment to a radiator vent device having vent valve mechanism, of means mounted in the nipple for adjusting the vent valve mechanism of the device to which such nipple is applied, a downwardly-extending conduit connected to an intermediate portion of the nipple, an upstanding casing mounted at its lower end on the lower end of the conduit, and an upwardly-opening valve located in the casing, said casing having an outlet in its upper end.

3. A vent attachment including a nipple comprising a substantially T-coupling, one end of which is threaded to screw upon the valved vent device of a radiator, a cap on the opposite end of the vent attachment, a screw-driver stem journaled in the cap and adapted to be operated to adjust the valve mechanism of the vent device, and a valve-controlled conduit connected to the intermediate portion of the coupling.

4. A vent attachment including a nipple comprising a substantially T-coupling, one end of which is threaded to screw upon the valved vent device of a radiator, a cap on the opposite end of the vent attachment, a screw-driver stem journaled in the cap and adapted to be operated to adjust the valve mechanism of the vent device, and a conduit connected to the intermediate portion of the coupling.

5. In a vent attachment for radiators, the combination with a nipple having means for attachment to a radiator vent device having a vent controlling-valve, of means for adjusting the vent valve mechanism, carried by the nipple and projecting through the top of the same, a casing located at one side of the nipple and connected to an intermediate portion thereof, and a valve operating in the casing.

6. In a vent attachment for radiators, a casing having a water-chamber in its lower end and an outlet in its upper end, a valve-seat arranged in the water-chamber, an outwardly-opening valve located in the chamber and cooperating with the seat, muffling means arranged in the casing above the water-chamber, a downwardly-extending conduit having its lower end connected to the lower end of the casing, and a nipple carried by the upper end of the conduit and constituting means for attaching the same to a radiator.

7. In a vent attachment for radiators, the combination with a nipple comprising a coupling, one end of which is arranged to be threaded upon a radiator vent device having a valve therein, of a screw-driver stem journaled in the nipple and arranged to engage the vent-valve, a downwardly-extending conduit having its upper end connected to the nipple, an upright casing secured to the lower end of the conduit, a perforated partition located transversely in the casing above its lower end, forming beneath the same a water-chamber, a valve-seat arranged in the water-chamber, an upwardly-opening valve operating in the chamber and coöperating with the valve-seat, a cap for the casing having an outlet, and a muffling body located in the casing and resting upon the partition.

847,457. POWER-TRANSMISSION DEVICE. JOHN J. BARTENSTEIN, Cleveland, Ohio, assignor of one-third to Frank A. Heiser, and one-third to Charles B. Kelley, Cleveland, Ohio. Filed Mar. 30, 1906. Serial No. 308,902.

Claim.—1. In a power-transmitting mechanism, the combination with a rotatable shaft, of a friction-wheel having conical side faces, a pair of friction-cones adapted to engage the side faces of said wheel respectively, operative connections between said rotatable shaft and said cones adapted to rotate said cones in opposite directions, and means for sliding said cones along the side faces of said wheels without varying the relative angles of the contacting surfaces thereof, substantially as set forth.

2. In a power-transmitting mechanism, the combination with a rotatable shaft, of a friction-wheel having conical side faces, a pair of friction-cones adapted to engage the side faces of said wheel respectively, operative connections between said rotatable shaft and said cones adapted to rotate said cones in opposite directions, means for sliding said cones along the side faces of said wheel without varying the relative angles of the contacting surfaces thereof, and means for moving said cones radially of said wheel, substantially as set forth.

3. In a power-transmitting mechanism, the combination with a rotatable shaft, of a friction-wheel having conical side faces, a pair of friction-cones adapted to engage the side faces of said wheel respectively, operative connections between said rotatable shaft and said cones adapted to rotate said cones in opposite directions, mechanism for reversing the motion of said cones, and means for sliding said cones along the side faces of said wheel without vary-

ing the relative angles of the contacting surfaces thereof, substantially as set forth.

4. In a power-transmitting mechanism, the combination with a rotatable shaft, of a friction-wheel having conical side faces, a pair of friction-cones adapted to engage the side faces of said wheel respectively, operative connections between said rotatable shaft and said cones adapted to rotate said cones in opposite directions, mechanism for reversing the motion of said cones, means for sliding said cones along the side faces of said wheel, and means for moving said cones into and out of contact with said wheel, substantially as set forth.

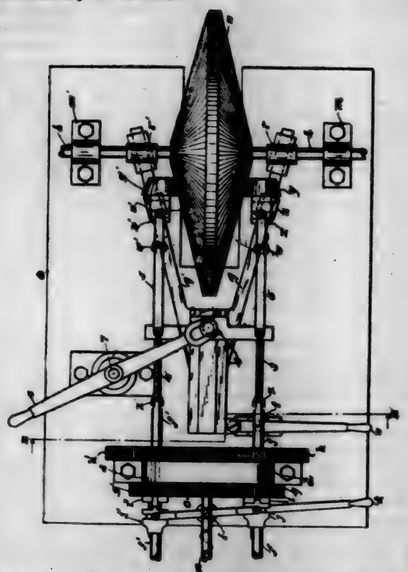

5. The combination with a rotatable friction-wheel having conical side faces, of a slide-block provided with arms extended parallel respectively with the side faces of said wheel, a slidable bearing upon each of said arms, friction-cones rotatably mounted respectively in said slidable bearings and fitted to engage the respective side faces of said wheel, means for reciprocating said slide-block toward and from said wheel, and means for rotating said friction-cones in opposite directions, substantially as set forth.

6. The combination with a rotatable friction-wheel having conical side faces, of a slide-block provided with arms extended parallel respectively with the side faces of said wheel, a slidable bearing upon each of said arms, friction-cones rotatably mounted respectively in said slidable bearings and fitted to engage the respective side faces of said wheel, means for reciprocating said slide-block toward and from said wheel, means for reciprocating said slidable bearings along the respective arms of said slide-block, and means for rotating said friction-cones in opposite directions, substantially as set forth.

7. The combination with a rotatable shaft, and a friction-wheel secured thereon having conical side faces, of a slide-block in front of said wheel provided with arms extended beyond said shaft and parallel respectively with the side faces of said wheel, hangers loosely mounted upon said shaft for slidably supporting said arms respectively, a bearing slidably mounted upon each of said arms, friction-cones rotatably mounted respectively in said bearings and fitted to engage the respective side faces of said wheel, means for reciprocating said slide-block toward and from said wheel, and operative connections to said friction-cones, substantially as set forth.

8. The combination with a rotatable shaft, and a friction-wheel secured thereon having conical side faces, of a slide-block in front of said wheel provided with arms extended beyond said shaft and parallel respectively with the side faces of said wheel, hangers loosely mounted upon said shaft for slidably supporting said arms respectively, a bearing slidably mounted upon each of said arms, friction-cones rotatably mounted respectively in said bearings and fitted to engage the respective side faces of said wheel, means for reciprocating said slide-block toward and from said wheel, means for sliding said bearings along said arms, and rotatable shaft connections to said friction-cones, substantially as set forth.

9. The combination with a rotatable friction-wheel having conical side faces, and a pair of friction-cones rotatably mounted one upon each side of said wheel, of means for moving said cones into and out of contact with said wheel, means for shifting said cones along the side faces of said wheel, a pair of parallel shafts geared together, universally-jointed and telescoping rotatable shaft connections between said friction-cones and said parallel shafts respectively, a driving-shaft, and suitable power-transmitting and clutch mechanism connecting said driving-shaft with said parallel shafts, substantially as set forth.

847,458. TOBACCO AND MATCH BOX. HOWARD A. BEHAM, Renfrow, Okla., assignor of one-third to Joseph A. Gregaire, Renfrow, Okla. Filed June 15, 1906. Serial No. 321,922.

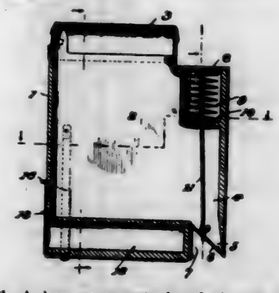

Claim.—1. A box or receptacle of the class described and comprising a body provided with a compartment adapted to receive tobacco or like material, said body being formed with an outlet-passage in communication with the compartment above mentioned and open at one end, a lid closing the open end of the passage, and a spring-actuated finger-piece connected with said lid to normally hold the latter closed, the body of the box being formed with a recess in longitudinal alinement with the outlet-passage and receiving the finger-piece with which the lid aforesaid is connected.

2. A box or receptacle of the class described comprising a body having a main compartment adapted to receive tobacco or like material, said body being formed with a longitudinal outlet-passage at one side of the compartment and communicating therewith, the outlet-passage being open at one end, a lid hinged to the body of the box and adapted to close the open end of the outlet-passage, the body being provided with a recess in longitudinal alinement with the outlet-passage, a spring-actuated finger-piece operating in said recess, and a rod connecting the finger-piece with the lid whereby the latter is normally held closed by the spring coöperating with the finger-piece.

3. A box or receptacle of the class described comprising a body having a main compartment adapted to receive tobacco or like material, said body being formed with a longitudinal outlet-passage at one side of the compartment and communicating therewith, the outlet-passage being open at one end, a lid hinged to the body of the box and adapted to close the open end of the outlet-passage, the body being provided with a recess in longitudinal alinement with the outlet-passage, a spring-actuated finger-piece operating in said recess, a rod connecting the finger-piece with the lid whereby the latter is normally held closed by the spring coöperating with the finger-piece, the main compartment aforesaid being provided with a supply-opening, and a cover for closing the supply-opening of the main compartment.

4. A box or receptacle of the class described comprising a body having a main compartment adapted to receive tobacco or like material, said body being formed with a longitudinal outlet-passage at one side of the compartment and communicating therewith, the outlet-passage being open at one end, a lid hinged to the body of the box and adapted to close the open end of the outlet-passage, the body being provided with a recess in longitudinal alinement with the outlet-passage, a spring-actuated finger-piece operating in said recess, a rod connecting the finger-piece with the lid whereby the latter is normally held closed by the spring coöperating with the finger-piece, the main compartment aforesaid being provided with a supply-opening, a cover for closing the supply-opening of the main compartment, the box having a transversely-arranged match-holding compartment adjacent to the main compartment, and a lid or cover for normally closing an open end of said match-holding compartment.

847,459. PLATE-GLASS-CUTTER'S TABLE. PETER J. BEHRINGER, Cleveland, Ohio. Filed Mar. 30, 1906. Serial No. 308,874.

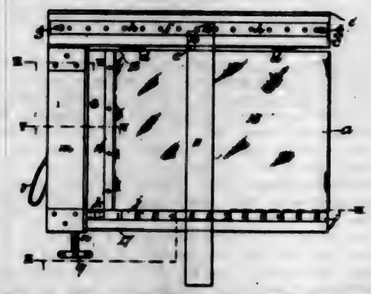

Claim.—1. The combination with a suitable board, of a scale longitudinally disposed at or near the forward edge of said board graduated for units of measurement and having fractional graduations in its left-hand interval, a transverse slidable gage upon said board, means for shifting said gage along the fractionally-graduated interval of said scale, means for clamping said gage to said board, and an extension hinged to the rearward side of said board provided with upright guides disposed in correspondence with the said graduated scale, substantially as set forth.

2. The combination with a suitable board, of a scale longitudinally disposed thereon at or near the forward edge thereof and graduated for units of measurement, fractional graduations in the left-hand interval of said scale, a transverse slidable gage upon said board, a removable strip upon the working edge of said gage, means for shifting said gage along the fractionally-graduated interval of said scale, means for clamping said gage to said board, and an extension suitably attached to the rearward side of said board provided with upright guides corresponding with the said graduated scale, substantially as set forth.

3. The combination with a suitable board, of a scale longitudinally disposed upon the forward portion of said board graduated to indicate units of measurement and having fractional graduations in its left-hand interval, a transverse slidable gage upon said board, means for shifting said gage along the fractionally-graduated interval of said scale, means for clamping said gage to said board, an extension hinged to the rearward side of said board provided with a plurality of upright guides ranged longitudinally thereof and disposed in correspondence with the said graduated scale, and a straight-edge having a projecting end adapted to fit between any contiguous pair of said guides, substantially as set forth.

4. The combination with an approximately rectangular board having a graduated scale longitudinally disposed upon its forward portion and upright guides corresponding to said scale upon its rearward portion, of a slidable gage extending transversely across said board having hangers depending therefrom, toothed racks secured respectively to said hangers, a transverse shaft mounted to be rotated in bearings upon the under side of said board, toothed pinions upon said shaft in mesh respectively with said racks, and means for clamping said gage to said board at any point of its travel, substantially as set forth.

5. The combination with an approximately rectangular board having a graduated scale longitudinally disposed upon its forward portion and upright guides corresponding to said scale upon its rearward portion, of a slidable gage extending transversely across said board, hangers depending from the ends of said gage overlapping the edges of said board, plates upon the edges of said board each having a horizontal slot therein, projections from said hangers adapted to engage the respective slots in the said edge plates, a toothed rack upon each of the said hangers, a transverse shaft rotatably mounted upon and beneath said board, and toothed pinions upon said shaft in mesh respectively with said racks, substantially as set forth.

6. The combination with an approximately rectangular board having a graduated scale longitudinally disposed upon its forward portion and upright guides corresponding to said scale upon its rearward portion, of a slidable gage extending transversely across said board, means for shifting said gage lengthwise of said board, an upright bolt loosely fitted in said board with its head adapted to engage the said gage, and means operatively connected with the lower part of said bolt for tightening and releasing the same, substantially as set forth.

7. The combination with an approximately rectangular board having a graduated scale longitudinally disposed upon its forward portion and upright guides corresponding to said scale upon its rearward portion, of a slidable gage extending transversely across said board having a groove in its under side, means for shifting said gage lengthwise of said board, an upright bolt loosely fitted in said board having its head in the groove in said gage, a plate secured to the bottom side of said gage having a slot therein fitted loosely to the shank of said bolt, means operatively connected with said bolt for tightening its head against said plate, and means for releasing said bolt, substantially as set forth.

8. The combination with an approximately rectangular board having a graduated scale longitudinally disposed upon its forward portion and upright guides corresponding to said scale upon its rearward portion, of a slidable gage extending transversely across said board, means for shifting said gage lengthwise of said board, an upright bolt loosely fitted in said board with its head adapted to engage the said gage, a spring set and adjusted to exert an upward pressure upon said bolt, and means operatively connected with said bolt for tightening its head against said gage, substantially as set forth.

9. The combination with an approximately rectangular board having a graduated scale longitudinally disposed upon its forward portion and upright guides corresponding to said scale upon its rearward portion, of a slidable gage extending transversely across said board, means for shifting said gage lengthwise of said board, an upright bolt loosely fitted in said board with its head adapted to engage the said gage, a hand-lever loosely fulcrumed upon the lower part of said bolt, and a plate secured underneath said board provided with surfaces adapted to be engaged by said hand-lever to tighten said bolt, substantially as set forth.

10. The combination with an approximately rectangular board having a graduated scale longitudinally disposed upon its forward portion and upright guides corresponding to said scale upon its rearward portion, of a slidable gage extending transversely across said board, means for shifting said gage lengthwise of said board, an upright

bolt loosely fitted in said board with its head adapted to engage the said gage, a hand-lever loosely fulcrumed upon the lower part of said bolt, an extension of said lever beyond said bolt, and inclined surfaces secured underneath said board upon opposite sides of said bolt adapted respectively to be engaged by said lever and its extension to tighten said bolt, substantially as set forth.

11. The combination of a plane-surfaced and approximately rectangular board, a slidable gage thereon, and a longitudinally-disposed graduated scale upon the forward portion of said board, of an extension hinged to the rearward side of said board, means for normally supporting said extension level with said board, and a longitudinal row of guides projecting above the surface of said extension, said guides being in correspondence with the graduations of said scale, substantially as set forth.

12. The combination of a plane-surfaced and approximately rectangular board, a slidable gage thereon, and a graduated scale-rule fitted in a longitudinal groove in the forward portion of said board, of an extension hinged to the rearward side of said board, means for normally supporting said extension level with said board, a longitudinal row of guides projecting above the surface of said extension and being in correspondence with the graduations of said scale, and a strip sunk in a groove extending transversely of said board, substantially as set forth.

847,460. SPEED-CHANGING MECHANISM. ROLLEN BLEITZ, Sandwich, Ill., assignor of one-half to Louis Bleitz, Sandwich, Ill. Filed Jan. 5, 1907. Serial No. 350,875.

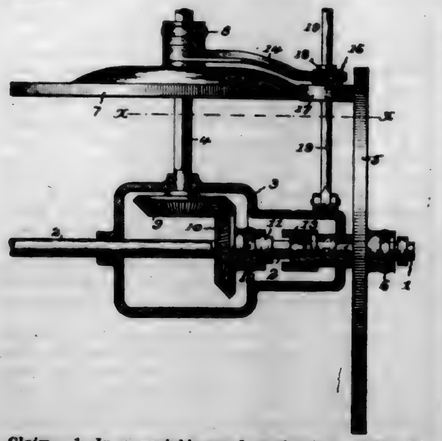

Claim.—1. In a variable-speed mechanism of the friction-drive type, the combination of a power-shaft, a friction-drive member carried by the power-shaft, an adjustable friction-driven member, a counter-shaft carrying the same, a driven shaft in axial alinement with the power-shaft, a pair of bevel-gears connecting the counter-shaft and driven shaft, the bevel-gear of the driven shaft having an axial adjustment on a non-circular portion of said shaft and provided with a clutch member at one end, a corresponding clutch member secured to the power-shaft, and means for moving the bevel-gear and clutch member of the driven shaft out of mesh with the bevel-gear of the counter-shaft and into clutch engagement with the power-shaft, and vice versa, substantially as set forth.

2. In a variable-speed mechanism of the friction-drive type, the combination of a power-shaft, a driving friction-disk carried by the power-shaft, a driven friction-disk adjustable to and from the axis of driving-disk, a counter-shaft carrying said driven disk, a driven shaft in axial alinement with the power-shaft, a pair of bevel-gears connecting the counter-shaft and the driven shaft, the bevel-gear of the driven shaft having an axial adjustment on a non-circular portion of said shaft and provided with a clutch member at one end, a corresponding clutch member secured to the power-shaft, means for moving the bevel-gear and clutch member of the driven shaft out of mesh with the bevel-gear of the counter-shaft and into clutch engagement with the power-shaft, and vice versa, substantially as set forth.

3. In a variable-speed mechanism of the friction-drive type, the combination of a power-shaft, a driving friction-disk carried by the power-shaft, a driven friction-disk adjustable to and from the axis of driving-disk, a counter-shaft carrying said driven disk, a driven shaft in axial alinement with the power-shaft, a pair of bevel-gears connecting the counter-shaft and the driven shaft, the bevel-gear of the driven shaft having an axial adjustment on a non-circular portion of said shaft and provided with a clutch member at one end, a corresponding clutch member secured to the power-shaft, means for moving the bevel-gear and clutch member of the driven shaft out of mesh with the bevel-gear of the counter-shaft and into clutch engagement with the power-shaft, and vice versa, a friction-roller formed with an axial bore and arranged in adjacent relation to the driving and driven disks, an arm mounted on the hub of the driven disk and having a slideway at its outer end for said friction-roller, and an adjusting-lever engaging in the axial bore of said friction-roller, substantially as set forth.

4. In a variable-speed mechanism of the friction-drive type, the combination of a power-shaft, a driving friction-disk carried by the power-shaft, a driven friction-disk adjustable to and from the axis of the driving-disk, a counter-shaft carrying said driven disk, a driven shaft in axial alinement with the power-shaft, a pair of bevel-gears connecting the counter-shaft and the driven shaft, the bevel-gear of the driven shaft having an axial adjustment on a non-circular portion of said shaft and provided with a clutch member at one end, a corresponding clutch member secured to the power-shaft, means for moving the bevel-gear and clutch member of the driven shaft out of mesh with the bevel-gear of the counter-shaft and into clutch engagement with the power-shaft, and vice versa, a friction-roller formed with an axial bore and arranged in adjacent relation to the driving and driven disks, an arm mounted on the hub of the driven disk and having a slideway at its outer end for said friction-roller, and an adjusting-lever engaging in the axial bore of said friction-roller, the driving friction-disk having a limited axial adjustment on the power-shaft, substantially as set forth.

847,461. TELEPHONE-CALL METER. CHARLES T. BRADSHAW, Philadelphia, Pa. Filed Sept. 27, 1904. Serial No. 226,142.

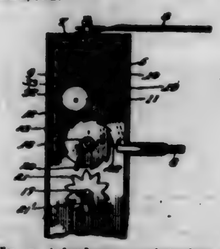

Claim.—1. In a telephone registering system, a subscriber's set including a receiver-support, in combination with an electromagnet, an audible signal, recording mechanism, an independent electric circuit having a circuit-closer therein at the exchange-station, a lever under the control of said magnet for operating said signal and recording mechanism and a locking device connected with the receiver-support for locking said lever against influence of said magnet when the telephone is not in use.

2. In a telephone system, a subscriber's set including a receiver-support, in combination with an electromagnet, recording mechanism, and an independent electric circuit having a circuit-closer therein at the exchange-station, means actuated by said magnet for operating said recording mechanism and a locking device with said receiver-support for preventing said recording mechanism from being operated when the telephone is not in use.

3. In a registering device for telephones a register at the subscriber's station, electromagnetic means for actuating said register from the central station, and means controlled from the subscriber's station for locking said actuating means when the telephone is not in use.

4. In a registering device for telephones, the combination with a subscriber's set, of a register attached to one part of said set, an audible signal carried by said register, electromagnetic means for operating said register and said signal from the central station without interfering with the transmission of said audible signal to the central station, and means for preventing said register from being operated when the telephone is not in use.

5. In a telephone system, a subscriber's set including a receiver-support, in combination with an electromagnet, recording mechanism, an alarm, an independent electric circuit, having a circuit-closer therein at the exchange-station, a bell-crank lever having one arm under the control of said magnet and its other arm carrying means to actuate said recording mechanism, the said lever being held normally away from said magnet by a spring and carrying a hammer for sounding the said alarm and a hook connected with said receiver-support to engage said last-mentioned arm for the purpose of holding the lever out of operation when the telephone is not in use.

6. In a registering device for telephones, the combination with a subscriber's set and a switch-arm therefor, a register, electromagnetic means for actuating said register from the central station, and a locking-lever connected to said switch-arm forming a stop to prevent the movement of said electromagnetic-operated means.

847,462. WIRE FENCE. EDWARD BRANCH, Moose Jaw, Saskatchewan, Canada. Filed June 8, 1906. Serial No. 320,872.

Claim.—1. In a fence the combination with the corner-posts and the longitudinal strands of an inverted-U-shaped winding-post, a base secured to the ends of the extending arms, opposing, downwardly-extending sets of slots, passing inwardly from the outer face of each arm, spindles removably supported within the slots, drums rigid with the spindles, drums revoluble upon the spindles, means for rotating individually the drums, and means for retaining the drums in such rotated position, as and for the purpose specified.

2. In a fence the combination with the corner-posts and the longitudinal strands of the inverted-U-shaped winding-post, a base secured to the outstanding ends, downwardly-extending sets of slots passing inwardly from the outer face of each arm, spindles extending transversely and bearing within the slots, said spindles having an arm extending beyond the post and squared, drums rigid with the spindles, drums revoluble on the spindles, and having their ends extending beyond the post and squared, a ratchet-wheel integral with the outer face of each individual drum, and gravity-pawls bearing upon the inner faces of the post, and designed to coöperate with the ratchet-wheels, as and for the purpose specified.

847,463. GRINDING-MACHINE. ARTHUR S. BUSSELLE and JESSE W. PEDIGO, Charlton, Iowa. Filed Oct. 30, 1906. Serial No. 341,270.

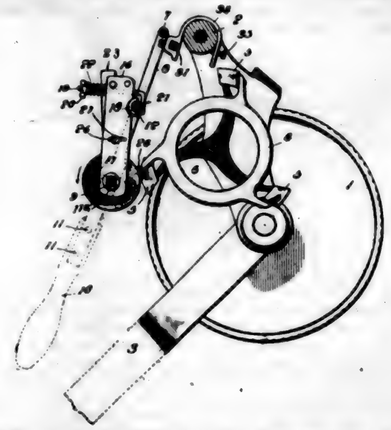

Claim.—1. In combination with a frame provided with means for pendent attachment to the wooden roller of a lawn-mower; a grinding-wheel mounted upon a rotatable shaft and longitudinally movable thereon; a rotatable feed-shaft mounted in the frame above the grinding-wheel; means intermediate the grinding-wheel and the feed-shaft for moving the grinding-wheel longitudinally upon its shaft; means for rotating the grinding-wheel shaft and the feed-shaft; and means connected with the grinding-wheel frame for embracing the edge of the lawn-mower blade and conveying the same into proper relation with the grinding-wheel, substantially as hereinbefore set forth.

2. In a grinding-machine such as described, and comprising a frame adapted to pendent attachment with the wooden roller of a lawn-mower; a rotatable feed-shaft and a rotatable grinding-wheel shaft mounted in said frame; a grinding-wheel mounted in a frame mounted upon the grinding-wheel shaft and longitudinally movable thereon; and adapted for connection with the feeding-shaft, and adjustable means for connecting the grinding-wheel frame with the cutting-blades of a lawn-mower, substantially as hereinbefore set forth.

3. In a grinding-machine such as described, in combination with a frame carrying the grinding and feeding devices, an auxiliary frame adjustably connected with the grinding-mechanism frame, and adapted to be secured to the wooden roller of a lawn-mower in the manner hereinbefore set forth.

4. In a grinding-machine such as described, in combination with a frame carrying the grinding and feeding devices, an auxiliary frame adjustably connected with the grinding-mechanism frame and provided with adjustable means for attachment with the wooden roller of a lawn-mower, substantially as set forth.

5. In a grinding-machine such as described, the grinding-wheel frame longitudinally and vibratively connected with the driving-shaft and provided with means for connection with a feeding-shaft and, means for presenting the cutting edge of a lawn-mower blade to the action of the grinding-wheel, adapted to vertical and vibrative adjustment, substantially as and for the purpose set forth.

6. In a machine such as described in combination with the grinding-wheel frame, a vertically and vibratively adjustable arm secured to the grinding-wheel frame and, terminating in a bifurcated lower extremity adapted to

embrace the cutting edge of a lawn-mower blade, substantially as and for the purpose set forth.

7. In a machine such as described provided with means for vibrative connection with the wooden roller of a lawn-mower and embodying a grinding-wheel, and means for rotating and longitudinally feeding said wheel mounted in a frame, a handle suitably located upon said frame, for holding the grinding-wheel and its frame in operative relation to the cutting-blade of a lawn-mower, substantially as hereinbefore set forth.

847,464. POWDER-DISTRIBUTER. CHARLES N. CHOATE, Woodstock, Ontario, Canada, assignor of one-half to Fred E. Atchison, Detroit, Mich. Filed March 26, 1906. Serial No. 308,187.

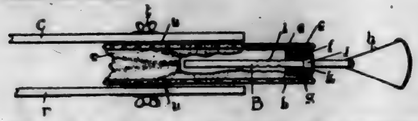

Claim.—1. In a powder-distributer, the combination with a bellows, of the operating-handles therefor, and connections between the handles and the bellows-plates permitting rotary adjustment of the bellows.

2. In a powder-distributer, the combination of a bellows, of operating-handles therefor arranged for extension relatively thereto and means for effecting a relative rotary adjustment of the bellows.

3. In a powder-distributer, the combination of the bellows, and an open-ended discharge-conduit therefor extending a considerable distance within the bellows and having one or more inlet openings or apertures formed in the sides in proximity to the bellows-front.

4. In a powder-distributer, the combination with the bellows-plates, of the operating-handles therefor formed each with a longitudinal series of openings, and a clamping member for each handle engaging one of the several apertures therein.

5. In a powder-distributer, the combination with the bellows-plates, of an apertured head-block interposed therebetween, a discharge-conduit extending through the block, and having a threaded engagement therewith, and an annular flange upon the conduit abutting against the block.

6. In a powder-distributer, the combination with a bellows-plate, having a counterbored fill-opening therein, of a threaded thimble fitting within the opening, of a marginal flange thereon fitting within the counterbore below or flush with the plate-face, and a closure engaging the thimble consisting of a hollow externally-threaded cap, and a cross-bar secured within the upper portion thereof.

7. In a powder-distributer, the combination with the bellows-plates, of friction-plates thereon, operating-handles for the bellows extending across said friction-plates, and clamping devices for holding the handles in engagement with the plates, substantially as described.

8. In a powder-distributer, the combination with the bellows-plates, of friction-plates thereon formed each with a central apertured housing, a nut within each housing opposite its opening, operating-handles for the bellows projecting diametrically across the friction-plates, and clamping members extending through the handles and housings into engagement with the nuts.

9. In a powder-distributer, the combination with the bellows-plates, of friction-plates thereon formed each with a central apertured housing and one or more circumferential ridges extending above the housing, a nut within each housing registering with its aperture, operating-handles for the bellows projecting diametrically across the friction-plates, and winged bolts extending through the handles and housings into engagement with the nuts.

10. In a powder-distributer, the combination with the bellows-plates, of friction-plates thereon formed each with a central apertured housing and one or more ribs extending above the housing, a nut within each housing registering with its aperture, operating-handles for the bellows projecting across the friction-plates, and means for holding the handles and the ribs in engagement with each other.

11. In a powder-distributer, the combination with a bellows, of operating-handles therefor and means for extending said handles relatively thereto.

847,465. BED. WILLIAM H. FRITTS, Tinton, S. D. Filed May 6, 1903. Renewed Sept. 22, 1906. Serial No. 335,779.

Claim.—In a bed, the combination of corner-posts, of upper and lower open frames spaced apart and provided at such intervening space with tubular bars having longitudinal slots, and a plate forming a closed panel arranged in the said space contiguous to the bedclothing to coöperate with the latter for holding the cover in place, said plate having its upper and lower edges extending through the said slots and provided with projecting flanges located within the tubular bars, substantially as described.

847,466. VEHICLE-TIRE. THOMAS GARE, New Brighton, England. Filed Apr. 17, 1905. Serial No. 256,085.

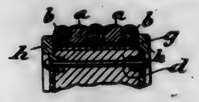

Claim.—1. In a vehicle-tire, a wearing-surface composed partly of rubber and partly of textile fibers in a manufactured form each of a uniform thickness arranged side by side to alternately bear against each other, the said textile fibers uniformly supporting the said rubber, all substantially as and for the purpose set forth.

2. In a vehicle-tire, a wearing-surface composed partly of rubber and partly of fibrous material both in rope form arranged longitudinally side by side, the india-rubber being situated between the said flexible material and thereby supported and prevented from spreading, substantially as and for the purpose set forth.

3. In a vehicle-tire, a wearing-surface composed partly of rubber and partly of flexible material, a core around which the said rubber and flexible material are jointly wound in rope form, the said rubber being supported and prevented from spreading by the said flexible material, all substantially as set forth.

847,467. COIN-POUCH. KATHERINE G. R. GOODLETT, Kansas City, Mo. Filed Jan. 8, 1907. Serial No. 351,312.

Claim.—1. In combination, a bag formed of flexible material and provided with an open mouth; a stiff elongated runner member; and means slidably engaging said runner member and securing a portion of the rim at the mouth of said bag to said member, so that the mouth of said bag may be closed or opened by a sliding movement of said means on said member.

2. In combination, a bag of textile fabric provided with an open mouth; a stiff elongated runner member; and means slidably engaging said runner member and securing a portion of the rim at the mouth of said bag to said member, said portion of the rim being puckered to allow the remaining portion of the rim to gap open; said puckered portion being extensible along said elongated member so as to take up the fullness of said gaping portion and close the mouth of the bag.

3. In combination, a bag formed of flexible material and provided with a circumferential rim at the mouth thereof; a stiff elongated runner member; means slidably securing one-half or more of said rim to said runner member; said bag capable of being opened by puckering the portion of said rim slidably secured to said runner member and capable of being closed by extending said portion secured to said runner member out along said member so as to cause the remaining portion of said rim to lie close against the portion secured to said runner member.

4. In combination, a wrist-bag comprising an open pouch of flexible material in combination with a bracelet forming a runner member; means slidably securing a portion of the rim at the mouth of said pouch to said bracelet; said portion of the rim secured to said bracelet being capable of being puckered so that the mouth of said pouch will open.

5. In combination, a bag formed of flexible material and provided with an open mouth; a stiff elongated runner member in the form of a torus; and means slidably engaging said runner member and securing a portion of the rim at the mouth of said bag to said member, so that the mouth of said bag may be closed or opened by a sliding movement of said means on said member.

6. In combination, a bag of textile fabric provided with an open mouth; a stiff elongated runner member in the form of a torus; and means slidably engaging said runner member and securing a portion of the rim at the mouth of said bag to said member, said portion of the rim being puckered to allow the remaining portion of the rim to gap open; said puckered portion being extensible along said elongated member so as to take up the fullness of said gaping portion and close the mouth of the bag.

7. In combination, a bag formed of flexible material and provided with a circumferential rim at the mouth thereof; a stiff elongated runner member in the form of a torus; means slidably securing one-half or more of said rim to said runner member; said bag capable of being opened by puckering the portion of said rim slidably secured to said runner member and capable of being closed by extending said portion secured to said runner member out along said member so as to cause the remaining portion of said rim to lie close against the portion secured to said runner member.

8. A combined supporting and closing means for a pouch, comprising a stiff runner member slidably secured to approximately one-half of the circumferential rim of said pouch.

9. A combined supporting and closing means for a pouch, comprising a stiff runner member in the form of a torus slidably secured to approximately one-half of the circumferential rim of said pouch.

10. In combination, a torus-shaped bracelet; a pouch of flexible fabric; and means slidably securing a portion of the rim of said pouch to said bracelet, the remaining portion of said rim overlying said portion secured to said bracelet.

11. In combination, a torus-shaped bracelet; a pouch of flexible fabric; a portion of the circumferential rim of said pouch being hemmed about said bracelet so as to be slidably secured thereto; and the remaining portion of said rim overlying said portion secured to said bracelet.

847,468. LIQUID-SEAL TRAP. THOMAS W. GOREAU, New Orleans, La. Filed Dec. 27, 1906. Serial No. 349,710.

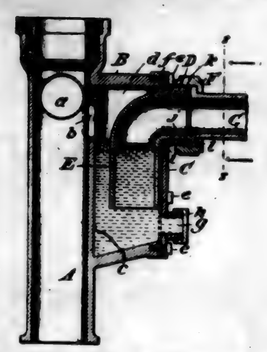

Claim.—1. A trap of the liquid-seal type, comprising a pipe, a seal-chamber arranged at one side of the pipe and having its upper portion connected through a passage with the interior of the pipe, and a reversible cover-plate detachably connected to the seal-chamber and provided adjacent to one of its ends with means for the connection of a pipe-section.

2. A trap of the liquid-seal type, comprising a pipe, a seal-chamber arranged at one side of the pipe and having its upper portion connected through a passage with the interior of the pipe, and a reversible cover-plate detachably connected to the seal-chamber and provided adjacent to one of its ends with means for the detachable connection of an elbow designed to extend down in the seal-chamber and also provided adjacent to said end with means for the connection of a pipe-section.

3. A trap of the liquid-seal type, comprising a pipe, a seal-chamber arranged at one side of the pipe and having its upper portion connected through a passage with the interior of the pipe, and a reversible cover-plate detachably connected to the seal-chamber and provided adjacent to one of its ends with an interiorly and exteriorly threaded nipple.

4. A trap of the liquid-seal type, comprising a pipe, a seal-chamber arranged at one side of the pipe and having its upper portion connected through a passage with the interior of the pipe, a reversible cover-plate detachably connected to the seal-chamber and provided adjacent to one of its ends with an interiorly and exteriorly threaded nipple, an exteriorly-threaded elbow engaging the interior thread of the nipple and extending down in the seal-chamber, and means engaging the exterior thread of the nipple for connecting a pipe-section thereto.

5. A trap of the liquid-seal type, comprising a pipe, a seal-chamber arranged at one side of the pipe and formed by a portion of the pipe-wall in connection with side walls extending laterally from the pipe; said seal-chamber having its upper portion connected through a passage in the pipe-wall with the interior of the pipe, and a reversible cover-plate detachably connected to the side walls of the seal-chamber and provided adjacent to one of its ends with means for the detachable connection of a pipe-section.

847,469. MEAT-TAG. FRANK E. GRAHAM, Washington, D. C. Filed Oct. 20, 1906. Serial No. 339,869.

Claim.—A meat-tag made of a single piece of flat metal having integral flattened spurs at the ends thereof, each spur having a recess formed in one edge thereof at locations diagonally opposite, the bottoms of said recesses

being inclined and terminating in angled shoulders, as set forth.

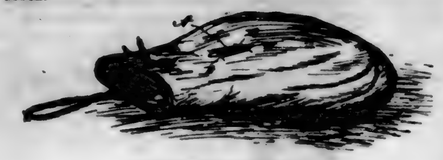

847,470. AIR-COMPRESSOR. WILLIAM E. GRAY, Vinton, Va., assignor of one-half to John B. Beard, Vinton, Va. Filed July 24, 1906. Serial No. 327,528.

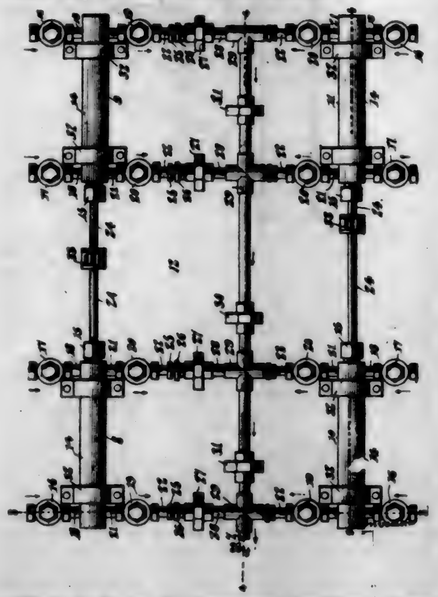

Claim.—1. In an air-compressing apparatus, a compressor-frame comprising a straight central discharge-pipe disposed longitudinally of the frame, straight lateral discharge-pipes disposed transverse to the frame at opposite sides of the central pipe and each having separate connection therewith, pump-cylinders disposed longitudinally of the frame at the respective corners thereof, each cylinder having each end of its inner side connected to a separate lateral pipe, an outlet-valve in each lateral pipe, inlet-valves located at each end of each pump-cylinder at the outer side thereof, and pistons within the cylinders, the several discharge-pipes and pump-cylinders being located throughout in the same horizontal plane to produce a flat rigid self-contained frame structure.

2. In an air-compressing apparatus, a compressor-frame comprising a straight central discharge-pipe disposed longitudinally of the frame, straight lateral discharge-pipes disposed transverse to the frame at opposite sides of the central pipe and each having separate connection therewith, pump-cylinders disposed longitudinally of the frame at the respective corners thereof, each cylinder having each end of its inner side connected to a separate lateral pipe, an outlet-valve in each lateral pipe, inlet-valves located at each end of each pump-cylinder at the outer side thereof, and pistons within the cylinders, the several discharge-pipes and pump-cylinders being located throughout in the same horizontal plane to produce a flat rigid self-contained frame structure and the central and lateral discharge-pipes each being made up of separable sections.

3. In an air-compressing apparatus, a compressor-frame comprising a straight central discharge-pipe disposed longitudinally of the frame, straight lateral discharge-pipes disposed transverse to the frame at opposite sides of the central pipe and each having separate connection therewith, pump-cylinders disposed longitudinally of the frame at the respective corners thereof, each cylinder having each end of its inner side connected to a separate lateral pipe, an outlet-valve in each lateral pipe, inlet-valves located at each end of each pump-cylinder at the outer side thereof, and pistons within the cylinders, the several discharge-pipes and pump-cylinders being located throughout in the same horizontal plane to produce a flat rigid self-contained frame structure, each lateral discharge-pipe comprising separable sections and the central discharge-pipe being made up of sections separable at a plurality of points to permit the separation of the frame into separate end sections or to permit the detachment of any one of the pump-cylinders without otherwise disorganizing the frame.

4. In an air-compressing apparatus, the combination with several pairs of double-acting pumps, of piston-rods each common to a pair of pumps, a crank-shaft provided with a plurality of cranks in angular relation, pitmen connecting said cranks to the piston-rods, and means for driving the crank-shaft.

847,471. PAVEMENT. FREEMAN F. GROSS, Chicago, Ill. Filed Oct. 12, 1904. Serial No. 228,093.

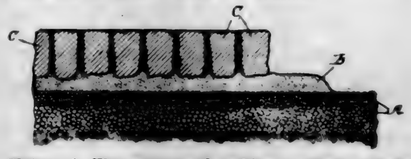

Claim.—1. The process of making a street-pavement which consists of laying a foundation which shall be substantially impermeable to liquid, covering such foundation with a cushion of dry relatively finely divided material containing cement, placing blocks of stone or the like generally rectangular and irregular in shape, upon such cushion in its dry state, and bringing their upper surfaces to a level by building up or hollowing such cushion beneath said blocks, then flooding such pavement with water after the blocks have been laid so that the water passes down through the interstices beneath the blocks and makes plastic the whole of such cementitious cushion and then allowing the same to harden.

2. The process of making a street-pavement which consists of laying a foundation which shall be substantially impermeable to liquid, covering such foundation with a cushion of dry relatively finely divided material containing cement, placing blocks of stone or the like generally rectangular and irregular in shape, upon such cushion in its dry state, and bringing their upper surfaces to a level by building up or hollowing such cushion beneath said blocks, then flooding such pavement with water after the blocks have been laid so that such water passes down through the interstices beneath the blocks and makes plastic the whole of such cementitious cushion and filling such interstices with a concrete filler.

847,472. PIPE-COUPLING. JASPER N. HAFER, Tacoma, Wash. Filed July 3, 1906. Serial No. 324,679.

Claim.—1. In a pipe-coupling, the combination of screw-threaded pipes, similar complementary dovetail extensions thereof, hollow collars screwed on said pipes and having cavities therein adapted to extend half-way over said extensions and to bind them together, and dowel-pins in the ends of said extensions and engaging in complementary slots in the ends of said pipes.

2. In a pipe-coupling, the combination of screw-threaded pipes, similar complementary dovetail extensions thereof, hollow collars screwed on said pipes and having conical cavities therein adapted to extend half-way over said extensions, and dowel-pins in the ends of said extensions

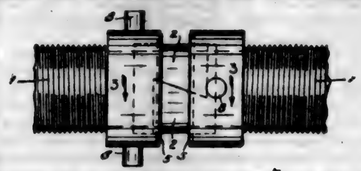

and engaging in complementary slots in the ends of said pipes.

847,473. MILK-CAN. CALVIN P. HARMISON, Rice Lake, Wis. Filed Oct. 31, 1905. Serial No. 285,287.

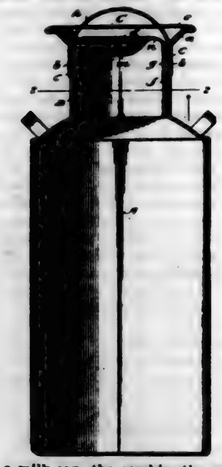

Claim.—In a milk-can, the combination with a body having a neck and also having gauze-covered openings at opposite points in the side of the neck; of a cap comprising a circular flange snugly occupying the neck and having openings arranged to be registered with the openings in the side of the neck, and a top having an annular flange *n* rounded upward in cross-section and also having a central depending bulge *m* which merges at its upper edge into said flange *n* and in combination with the same serves to guide or deflect the air in the can toward the openings as well as to prevent the collection of dirt in the cap.

847,474. POCKET-KNIFE. EDWIN H. HAWLEY, Washington, D. C. Filed Jan. 26, 1907. Serial No. 354,267.

Claim.—1. The combination with a knife having a handle and a pivoted blade, of a lever pivoted to the side of the blade at a point non-coincident with the blade-pivot, and abutting against a shoulder on said blade when opened; said lever shutting into the handle alongside of the blade when closed.

2. The combination with a knife having a handle and a pivoted blade, of a lever pivoted to the side of said blade at a point non-coincident with the blade-pivot, and having a laterally-projecting flange.

3. The combination with a knife having a handle and a pivoted blade provided with a recess in its side, of a lever pivoted in said recess and adapted to close down by the side of said blade.

4. The combination with a knife having a handle and a pivoted blade provided with a recess in its side having a circular portion and a straight back at right angles to the back of the blade, of a lever having a circular portion fitting said recess and a back adapted to abut against the back of the recess when opened.

5. The combination with a knife having a handle and a pivoted blade provided with a recess in its side having a circular portion and a straight back at right angles to the back of the blade, of a lever having a circular portion fitting said recess and a back adapted to abut against the back of the recess when opened, and a laterally-projecting flange.

847,475. HORSE-COLLAR ATTACHMENT. FRANK HAYS, Oskaloosa, Iowa. Filed Mar. 19, 1906. Serial No. 306,904.

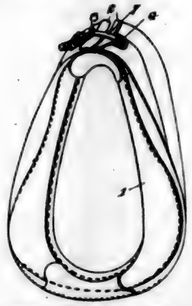

Claim.—1. A horse-collar, provided at its edges with binding-clasps clenched thereto each of said clasps being provided with a side extension-piece, and a buckle and strap connected to said side extension-pieces respectively.

2. A horse-collar provided at its edges with binding-strips formed with side extension-pieces integral therewith and one of which is provided with a slot, a strap inserted through said slot and fastened to the collar underneath one of the extension-pieces and a buckle secured to the other extension-piece.

3. Edge-binding clasps for the ends of horse-collars, constructed in pairs, both of said clasps being provided at their edges with clenching-tangs, one of said clasps being provided with a side extension-piece provided with a slot for the reception of a strap, and the other clasp provided with an extension-piece designed for the attachment thereto of a buckle.

847,476. BUILDING-BLOCK. EMERY C. HODGES, Bloomington, Ill. Filed Jan. 31, 1906. Serial No. 298,781.

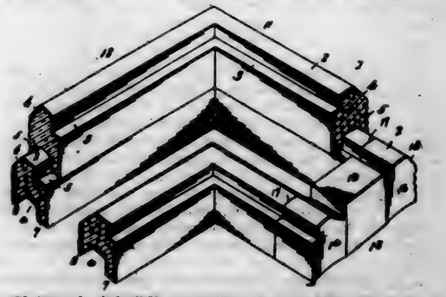

Claim.—1. A building construction consisting of an inner and outer wall composed of blocks having interlock-

ing right-angled fillets and shoulders, and interlocking flaring flange and wash, and spacing-blocks between the walls having complementary fillet and shoulder, and flange and wash.

2. A building-block formed on its upper inner corner with a right-angled shoulder and a complementary fillet on its lower corresponding corner, the outer upper edge of the block formed with a flaring wash, and the lower outer corner provided with a corresponding flaring flange concavo-convex ends to the blocks.

847,477. AUTOMATIC WINDOW. ORLA H. IMAN, Chicago, Ill., assignor to Voigtmann & Company, Chicago, Ill., a Copartnership. Filed Dec. 11, 1906. Serial No. 347,246.

Claim.—1. In combination, a window-frame, a sash pivoted therein, a pivoted gravity locking-bar held by the lintel of said frame, a coöperating locking projection extending longitudinally of the top rail of the sash, and means for lifting said bar to unlock the sash, said bar being arranged to drop behind said locking projection to hold the sash in closed position.

2. In combination, a window-frame, a sash pivoted therein, the under side of the lintel of the frame being provided with a recess, a longitudinally-disposed locking-bar pivoted in said recess, a locking projection carried by the top rail of the sash, an unlocking-lever mounted on the sash and an operating-cable connected thereto and adapted to operate the lever when pulled in a direction tending to open the sash.

3. In combination, a window-frame, a sash pivoted therein, the under side of the lintel and the under side of the lower sash-rail being each recessed, a gravity locking-bar pivoted within the lintel-recess, a second gravity locking-bar pivoted within the recess of the lower sash-rail, coöperating locking projections upon the top sash-rail and the lower frame member against which the lower rail of the sash closes, and means for lifting both of said bars to release the sash.

4. In combination, a window-frame, a sash pivoted therein upon an axis located outside the plane of the sash, whereby the latter tends to close automatically by gravity, a gravity-actuated locking-bar carried by the lintel, and in the closed position of the sash operating to lock the latter throughout its principal width, a second gravity locking-bar carried by the lower side of said sash, and in the closed position of the sash operating to lock said sash throughout its principal width, interconnected mechanism for holding both of said locking-bars retracted, and a fusible link associated with said holding mechanism.

5. In combination, a sheet-metal upper window-frame member provided with a recessed inclined lower face, and depending lips forming a recess beneath said face, a gravity locking-bar pivoted within said recess, a swinging sheet-metal sash having its top rail provided with a locking-flange, said flange and locking-bar extending the width of the sash, said lips and sash-rail being provided with stop-flanges, and a lever for disengaging said locking-bar from said locking-flange.

6. In combination, an upper sheet-metal swinging sash and a sheet-metal lower sash, the meeting-rail of the upper sash being provided with a longitudinal recess, a gravity locking-bar pivoted within said recess, the meeting-rail of the lower sash having a locking-flange, said flange and said locking-bar extending the width of the sashes, said meeting-rails being provided with stop-flanges, and means for disengaging said locking-bar from said locking-flange.

7. In combination, a sheet-metal swinging sash, and a fixed sash therebelow, a sheet-metal window-frame, said frame and swinging sash having stop-flanges to limit the closing movement of the latter, the top member of said frame and the meeting-rail of the swinging sash being each provided with a longitudinal recess of length equal to the width of the sash, two gravity-actuated locking-bars pivotally mounted within said respective recesses, locking-flanges held respectively by the top of the swinging sash and the meeting-rail of the fixed sash; said locking-bars engaging said locking-flanges when the sash is closed in such manner as to lock the sash in closed position.

8. In combination, a swinging sash, an outwardly and downwardly inclined sheet-metal plate underlying the bottom of said sash when the sash is in closed position, said plate being provided with a longitudinal, upstanding locking-flange: the base of said flange being perforated for carrying off water of condensation which drips from the sash upon said inclined plate when the sash is in closed position.

847,478. STEAM AND WATER SEPARATOR. ARCHIBALD J. IRVINE, DAVID MILLS, and WILLIAM H. WOOD, Johannesburg, Transvaal. Filed Oct. 30, 1905. Serial No. 285,164.

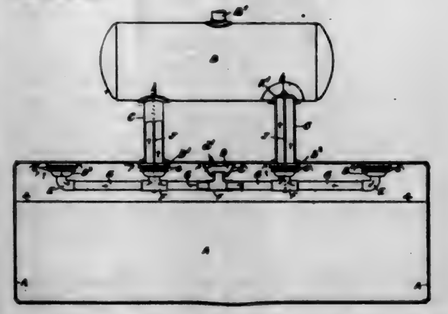

Claim.—1. In apparatus of the character specified, a circular hollow vessel adapted to fit the shell of the boiler on the inside, the rim or upper edge of said vessel having formed therein, serrations or indentations which permit the stream to pass into the vessel and means for conducting the steam from said vessel.

2. In apparatus of the character specified, a hollow vessel shaped to fit the shell of the boiler on the inside above the highest water-level and having formed round the edge fitting the shell, notches, teeth or serrations forming openings through which the steam passes into the vessel, and an upwardly-extending interior flange forming a socket through which the steam passes from the vessel, as and for the purpose set forth.

3. In apparatus of the character specified, a hollow vessel shaped to fit the shell of the boiler above the highest water-level, the upper edge or rim of said vessel having formed therein teeth, notches or projections forming openings or passages through which the steam enters the vessel, said teeth notches or projections being provided with jagged edges, for the purpose set forth.

4. In apparatus of the character specified, a hollow cylindrical vessel adapted to fit in the interior of the boiler-shell and formed with serrations in its top edge through which steam enters said vessel, an upwardly-extending interior flange at the bottom of said vessel forming a socket for the outlet of steam, vertical fins extending between said flange and the walls of the vessel and annular exterior projections on said vessel intermediate the socket and the upper rim, substantially as described.

5. In apparatus of the character specified, a hollow vessel adapted to fit the interior of the boiler-shell and formed with openings round or in proximity to the top through which the steam enters said vessel, and with fins, vanes or webs at the bottom on the inside, for the purposes set forth.

6. In apparatus of the character specified, a hollow vessel adapted to fit the interior of the boiler-shell and formed with openings round the top through which the steam enters said vessel and with external projections and internal fins, vanes or webs, as and for the purposes set forth.

7. In apparatus of the character specified, a plurality of hollow vessels adapted to fit the interior of the boiler-shell and formed with openings of varying size in or near the top through which the steam enters said vessels, tubular connections between said vessels and the steam-outlet, and means for retaining said vessels and tubular connections in position inside the boiler-shell, for the purpose set forth.

8. In apparatus of the character specified, a plurality of hollow vessels adapted to fit the interior of the boiler-shell and formed round their upper edges with teeth forming passages between them through which the steam enters the vessels, said passages being made of varying size, tubular connections between said vessels and means for fixing said vessels and the tubular connections in position comprising a bridge-piece and bolt, substantially as and for the purposes set forth.

9. In apparatus of the character specified, a plurality of hollow vessels adapted to fit the interior of the boiler-shell and formed round their upper edges with teeth forming passages between them through which the steam enters the vessels, said teeth being formed with jagged projecting edges on the outside, the vessels being also formed with external annular projections and with internal fins, vanes or webs, tubular connections between said vessels which place them in communication with each other and with the steam-outlet, substantially as described.

10. In apparatus of the character specified, a plurality of hollow vessels located inside the shell of the boiler above the highest water-level, said vessels being constructed with openings provided with sharp or jagged edges round the top through which the steam enters said vessels and with annular splash or drip flanges and internal fins, vanes or webs, tubular connections which place the several vessels in communication with each other and with the steam outlet or outlets, and means comprising a bridge-piece and bolt for fixing said vessels and their connections in position inside the boiler-shell, substantially as set forth.

847,479.

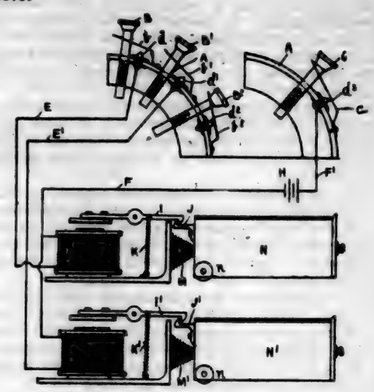

847,480. UNLOADING DEVICE. OSWALD F. JORDAN, Chicago, Ill. Filed June 18, 1906. Serial No. 322,227.

Claim.—1. In a car-unloader, the combination of a plow, having a pointed forward end, with a draft member loosely mounted in said forward end at a certain height and extending through said forward end to the rear end of the plow and fastened thereto at a higher point, whereby, draft being exerted upon said member to move the plow forward, a lateral force is exerted upon the plow-point by the draft member; as and for the purpose specified.

2. In a car-unloader, the combination of a plow, having a draft-member guide in its pointed forward end, with a draft member extending through said guide and fastened to the rear end of the plow at a point distant from the projected horizontal axis of said guide, substantially as and for the purpose specified.

3. In a car-unloader, a plow having a pointed forward end, in combination with a draft-member guide at said end, a plurality of draft-member fastenings at the rear end of said plow and a draft member secured in one of said fastenings and extending through said guide, substantially as described.

847,479. SYSTEM FOR ELECTRICALLY RELEASING DRAWERS IN CASH-REGISTERS, &c. ALFRED G. JACKSON, Brisbane, Queensland, Australia. Filed May 9, 1906. Serial No. 316,025.

Claim.—In a cash-register the combination with a cash-drawer and electromagnetic locking devices therefor, of a circuit including a source of electric energy for operating said electromagnetic devices, an initial-key, a normally open switch in said circuit arranged to be closed by the movement of said initial-key, an operating element, and a second normally open switch in said circuit adapted to be closed by the operating element, substantially as described.

4. In a car-unloader, a wedge-shaped plow having a draft-member guide at its forward end and provided with a plurality of draft-member fastenings at its rear end, in combination with a draft-rod held in said guide and adapted to be secured in any of said fastenings, as and for the purpose specified.

5. In a car-unloader, a wedge-shaped plow having a draft-member guide at its forward end, in combination with a draft member extending therethrough and attached to the rear end of the plow at a higher point, substantially as described.

6. In a car-unloader, a wedge-shaped plow having a draft-member guide at its forward end, in combination with a draft member extending therethrough and attached to the rear end of the plow at a higher point and guide-shoes attached to the forward end of the plow, substantially as described.

7. In a car-unloader, a wedge-shaped plow having a draft-member guide at its forward end, in combination with a draft member extending therethrough and attached to the rear end of the plow at a higher point and guide-shoes independently, pivotally attached to the forward end of the plow, substantially as described.

8. In a car-unloader, a wedge-shaped plow, in combination with two independent guide-shoes, independent arch-arms extending therefrom to the point of said plow and means pivotally attaching said arms to the plow-point, substantially as described.

9. In a car-unloader, the combination of a wedge-shaped plow with guide-shoes, arched arms extending from said shoes to the upper part of the plow-point, a pivot-pin and stops on said point for said arms, substantially as described.

10. In a car-unloader, a wedge-shaped plow, in combination with an auxiliary plow or trailer projecting within the rear end of said plow and pivotally attached thereto, substantially as described.

11. In a car-unloader, a main wedge-shaped plow, in combination with a wedge-shaped trailer and a link joining said trailer to the main plow within the body of the main plow, as and for the purpose specified.

12. In a car-unloader, a wedge-shaped plow having a draft-member guide at its forward end, in combination with the draft-plate upon the rear end of said plow, said plate provided with a plurality of draft-member openings and a sectional draft member secured to one of said openings and extending through said guide, substantially as described.

13. In a car-unloader, a main wedge-shaped plow having an opening in its rear end, in combination with a trailer extending through said opening and a pivotal trailer attachment within said main plow and adapted to permit relative vertical movement between the main plow and trailer, substantially as described.

14. In a car-unloader, the combination of a wedge-shaped plow with a draft member extending through said plow and means for securing said draft member at various angles in said plow, substantially as described.

15. A car-unloader, comprising a wedge-shaped plow having a bluntly-pointed or upwardly-curved forward end shoe as and for the purpose specified.

16. A car-unloader, comprising a wedge-shaped plow having an upturned and bluntly pointed or curved end shoe and bottom side rails having their forward ends joined to said shoe as and for the purpose specified.

847,481. PADDLE-WHEEL FOR BOATS. FRANCISCO D. JOY, Glendora, Cal. Filed May 31, 1906. Serial No. 319,610.

Claim.—1. A paddle-wheel for boats comprising a rotatable paddle-carrier, a series of paddles pivotally mounted in said carrier the pivots being intermediate the inner and outer ends of the blades, a fixed member extending parallel to and out of line with the axis of rotation of the carrier member, and levers pivoted on the carrier member and having an operating connection with the respective paddle-blades, said levers having a pivotal and sliding connection with said fixed member.

2. A paddle-wheel comprising two rotary members mounted to rotate on a horizontal axis, a series of paddle-blades pivotally mounted on said members the pivots being intermediate the inner and outer ends of the blades, a fixed member extending between said rotary members and out of line with the axis of rotation thereof, and a plurality of levers pivotally mounted on the rotary members and having operating connections with the respective paddle-blades, said levers having a pivotal and sliding connection with the said fixed member.

3. A paddle-wheel comprising two rotary members mounted to rotate on a horizontal axis, a series of paddle-blades pivotally mounted on said members the pivots being intermediate the inner and outer ends of the blades, a fixed member extending between said rotary members and out of line with the axis of rotation thereof, and a plurality of levers pivotally mounted on the rotary members and having operating connections with the respective paddle-blades, said levers having a pivotal and sliding connection with the said fixed member and extending in parallel vertical planes.

4. A paddle-wheel comprising two rotary members mounted to rotate on a horizontal axis, a series of paddle-blades pivotally mounted on said members the pivots being intermediate the inner and outer ends of the blades, a fixed member extending between said rotary members and out of line with the axis of rotation thereof, a plurality of levers pivotally mounted on the rotary members and having operating connections with the respective paddle-blades, said levers having a pivotal and sliding connection with the said fixed member and extending in parallel vertical planes, and means for adjusting the angular position of the controlling member.

5. The combination of two supporting-bearings and a paddle-wheel comprising a shaft member mounted to rotate in one of said bearings, and a disk carried by said shaft member, a journal member extending in line with the shaft member and fixed in the other of said bearings, a disk mounted to rotate on said journal member, tie-bolts secured to and extending between the said disks, arms extending from the said disks, paddle-blades pivoted in said arms, a controlling member extending parallel to and out of line with the axis of rotation of the paddle-wheel and provided with a supporting member extending through and secured to the said journal member, and levers pivotally mounted on the aforesaid tie-bolts and operatively connected to the respective paddle-blades, the inner ends of said levers being provided with slots which slide and turn on the aforesaid controlling member.

6. The combination of two supporting-bearings and a paddle-wheel comprising a shaft member mounted to rotate in one of said bearings, and a disk carried by said shaft member, a journal member extending in line with the shaft member and fixed in the other of said bearings, a disk mounted to rotate on said journal member, tie-bolts secured to and extending between the said disks, arms extending from the said disks, paddle-blades pivoted in said arms, a controlling member extending parallel to and out of line with the axis of rotation of the paddle-wheel and provided with a supporting member extending through and secured to the said journal member, and levers pivotally mounted on the aforesaid tie-bolts and operatively connected to the respective paddle-blades, the inner ends of said levers being provided with slots which slide and turn on the aforesaid controlling member, and means for adjustably holding said supporting member to adjust the angular position of the controlling member.

847,482. OVEN-BOTTOM. FRANK V. KNAUSS, Portsmouth, Ohio. Filed Mar. 19, 1906. Serial No. 306,825.

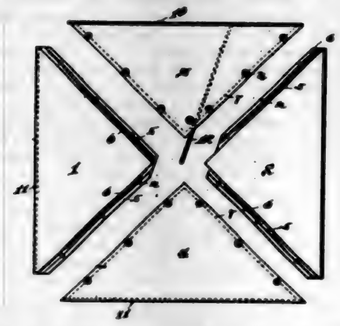

Claim.—1. An oven-plate comprising jointed triangular sections arranged in corresponding pairs oppositely disposed, the edges of one pair having grooved flanges adapted to receive the edges of the adjacent pair, and means for holding the sections together.

2. An oven-plate comprising jointed sections, the edge of one section having a grooved flange adapted to receive the edge of the adjoining section, means for holding the sections together, and means for holding the oven-plate in position.

3. An oven-plate comprising jointed sections, the edge of one section having a grooved flange, the edge of the adjoining section having a lip of less width than said groove and adapted to fit within the groove to permit of expansion of the sections, and means for holding the sections together.

4. An oven-plate comprising a plurality of triangular sections arranged in pairs oppositely disposed, the edges of one pair being provided with grooved flanges, the edges of the adjacent sections having lips of less width than said grooves and adapted to be secured within the grooves and permit of expansion of the sections, and the bases of said triangular sections being coextensive with the oven-walls and adapted to be secured thereto.

847,483. SEWING-MACHINE CABINET. THEODOR KUNDTZ and JOSEPH REHOR, Cleveland, Ohio; said Rehor assignor to said Kundtz. Filed Dec. 27, 1904. Serial No. 238,411.

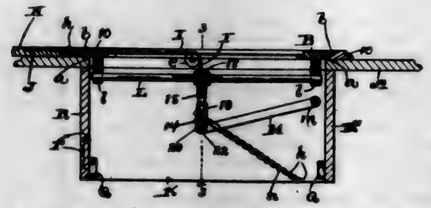

Claim.—1. In a sewing-machine table or cabinet, the combination, with a table-top having an opening therethrough; a hinged or pivotally-supported platform arranged to swing in a vertical plane and instrumental in closing the said opening in its upper position; a hinged leaf adapted to cover the said opening; a stationary back arranged vertically at and extending below the rear portion of the table-top rearward of the aforesaid opening, and a rod arranged in under and extending longitudinally of and supported from the platform, of a laterally-turnable bar connected with and extending rearwardly and downwardly from the rod centrally between the ends of the platform and pivotally mounted thereon to swing in a vertical plane; a lever arranged at and longitudinally of the inner side of the back and fulcrumed to the back near the right-hand end of the back horizontally and at a right angle to the axis of the platform; a connection between the free end of the lever and the aforesaid bar; a clevis straddling the said bar forward of but near the link, and a suitably-guided flexible connection between the clevis and the aforesaid leaf.

2. In a sewing-machine table or cabinet, the combination, with a table-top having an opening therethrough; a hinged or pivotally-supported platform arranged to swing in a vertical plane and instrumental in closing the said opening in its upper position; a hinged leaf adapted to cover the said opening; a stationary back arranged at and extending below the rear portion of the table-top rearward of the aforesaid opening, and a rod arranged in under and extending longitudinally of and supported from the platform, of a laterally-turnable bar connected with and extending rearwardly and downwardly from the rod centrally between the ends of the platform and pivotally mounted thereon to swing in a vertical plane; a lever arranged at and longitudinally of the inner side of the back and fulcrumed to the back near the right-hand end of the back horizontally and at a right angle to the axis of the platform; a connection between the free end of the lever and the aforesaid bar, and means whereby the lever is swung upwardly or downwardly according as the aforesaid leaf is actuated to uncover or cover the aforesaid opening.

3. In a sewing-machine table or cabinet, the combination, with a table-top having an opening therethrough; a hinged or pivotally-supported platform arranged to swing in a vertical plane and instrumental in closing the said opening in its upper position; a hinged leaf adapted to cover the said opening; a stationary back arranged at and extending below the rear portion of the table-top rearward of the aforesaid opening, and a rod arranged in under and extending longitudinally of and supported from the platform, of a laterally-turnable bar connected with and extending rearwardly and downwardly from the rod centrally between the ends of the platform and pivotally mounted thereon to swing in a vertical plane; a lever arranged at and longitudinally of the inner side of the back and fulcrumed to the back near the right-hand end of the back horizontally and at a right angle to the axis of the platform; a connection between the free end of the lever and the aforesaid bar, and means whereby the lever is swung upwardly or downwardly according as the aforesaid leaf is actuated to uncover or cover the aforesaid opening.

4. In a sewing-machine table or cabinet, the combination, with a table-top having an opening therethrough; a hinged or pivotally-supported platform arranged to swing in a vertical plane and instrumental in closing the said opening in its upper position; a hinged leaf adapted to cover the said opening; a stationary back arranged vertically at and extending below the rear portion of the table-top rearward of the aforesaid opening, and a rod arranged in under and extending longitudinally of and supported from the platform, of a laterally-turnable bar connected with and extending rearwardly and downwardly from the rod centrally between the ends of the platform and pivotally mounted thereon to swing in a vertical plane; a lever fulcrumed to the back and arranged to swing in a vertical plane; a connection between the free end of the lever and the aforesaid bar, and means whereby the lever is swung upwardly or downwardly according as the aforesaid leaf is actuated to uncover or cover the aforesaid opening.

5. In a sewing-machine table or cabinet, the combination, with a table-top having an opening therethrough; a hinged or pivotally-supported platform arranged to swing in a vertical plane and instrumental in closing the said opening in its upper position; a hinged leaf adapted, to cover the said opening; a stationary back arranged at and extending below the rear portion of the table-top rear-

ward of the aforesaid opening, and a rod arranged in under and extending longitudinally of and supported from the platform, of a laterally-turnable bar connected with and extending rearwardly and downwardly from the rod and pivotally mounted thereon to swing in a vertical plane; a lever fulcrumed to the back and arranged to swing in a vertical plane; a connection between the free end of the lever and the aforesaid bar, and means whereby the lever is swung upwardly or downwardly according as the aforesaid leaf is actuated to uncover or cover the aforesaid opening.

6. In a sewing-machine table or cabinet, the combination, with a table-top having an opening therethrough; a hinged or pivotally-supported platform arranged to swing in a vertical plane and instrumental in closing the said opening in its upper position; a hinged leaf adapted to cover the said opening, and a stationary back arranged vertically at and extending below the rear portion of the table-top rearward of the aforesaid opening, of a laterally-turnable bar pivotally connected with the platform to render the bar capable of swinging in a vertical plane and extending rearwardly and downwardly from the platform centrally between the ends of the platform; a lever fulcrumed to the back and arranged to swing in a vertical plane; a connection between the free end of the lever and the aforesaid bar, and means whereby the lever is swung upwardly or downwardly according as the aforesaid leaf is actuated to uncover or cover the aforesaid opening.

7. In a sewing-machine table or cabinet, the combination, with a table-top having an opening therethrough; a hinged or pivotally-supported platform arranged to swing in a vertical plane and instrumental in closing the said opening in its upper position; a hinged leaf adapted to cover the said opening, and a stationary back arranged at and extending below the rear portion of the table-top rearward of the aforesaid opening, with the arrangement of the parts such that the platform is in its depending position when the aforesaid opening is covered by the aforesaid leaf, of a laterally-turnable bar pivotally connected with the platform to render the bar capable of swinging in a vertical plane and extending rearwardly and downwardly from the platform; a lever fulcrumed to the back; a connection between the free end of the lever and the aforesaid bar, and means whereby the lever and the bar are actuated to swing the platform upwardly when the aforesaid leaf is actuated to uncover the aforesaid opening.

8. In a sewing-machine table or cabinet, the combination, with the stationary portion comprising a table-top having an opening therethrough; a platform hinged or pivotally supported from the stationary portion and arranged to be instrumental in closing the opening in its upwardly-swung position; a hinged leaf adapted to cover the opening; and a rod arranged in under and extending longitudinally of and supported from the platform, which rod is provided, centrally between the side edges of the platform, with a collar capable of turning movement about the same and having two vertically-spaced rearwardly-projecting lugs, of a laterally-turnable bar extending from between the lugs rearwardly and downwardly; such a connection between the bar and the lugs as to accommodate a turning of the bar between the lugs and comprising a pin extending through the bar and through the lugs, with the bar rounded at its upper and lower sides between the lugs and with the hole through which the pin extends in the bar flaring upwardly and downwardly; a lever arranged to swing in a vertical plane and supported from the stationary portion of the table or cabinet; such a connection between the lever and the bar as to accommodate the aforesaid turning of the bar, and means whereby the lever is swung upwardly or downwardly according as the aforesaid leaf is actuated to uncover or cover the aforesaid opening.

9. In a sewing-machine table or cabinet, the combination, with the stationary portion comprising a table-top having an opening therethrough; a platform hinged or pivotally supported from the stationary portion and arranged to be instrumental in closing the opening in its upwardly-swung position; a hinged leaf adapted to cover the opening, with the arrangement of the parts such that the platform is in its depending position when the opening is covered by the leaf, and a rod arranged in under and extending longitudinally of and supported from the platform, which rod is provided, centrally between the side edges of the platform, with a collar capable of turning movement about the same and having two vertically-spaced rearwardly-projecting lugs, of a laterally-turnable bar extending from between the said lugs rearwardly and downwardly; a connection between the bar and the lugs to accommodate a turning of the bar between the lugs and comprising a pin extending through the bar and through the lugs, with the bar rounded at its upper and lower sides between the lugs and with a hole through which the pin extends in the bar flaring upwardly and downwardly; a lever supported from the stationary portion of the table or cabinet; such a connection between the lever and the bar as to accommodate the aforesaid turning of the bar, and means whereby the lever and the bar are actuated to swing the platform upwardly when the aforesaid leaf is actuated to uncover the aforesaid opening.

10. In a sewing-machine table or cabinet, the combination, with the stationary portion comprising a table-top having an opening therethrough; a platform hinged or pivotally supported from the stationary portion and arranged to be instrumental in closing the said opening in its upwardly-swung position; a hinged leaf adapted to cover the opening, with the arrangement of the parts such that the platform is in its depending position when the opening is covered by the leaf, of a laterally-turnable bar pivotally connected with the platform to render the bar capable of swinging in a vertical plane and extending from the platform rearwardly and downwardly; a lever supported from the stationary portion of the table or cabinet; a connection between the lever and the bar, and means whereby the lever and the bar are actuated to swing the platform upwardly when the aforesaid leaf is actuated to uncover the aforesaid opening.

11. In a sewing-machine table or cabinet, the combination, with a table-top having an opening therethrough; a hinged or pivotally-supported platform arranged to swing in a vertical plane and instrumental in closing the said opening in its upper position; a hinged leaf adapted to cover the said opening; a wooden stationary back arranged vertically at and extending below the rear portion of the table-top rearward of the aforesaid opening; a laterally-turnable bar pivotally connected with the platform to render the bar capable of swinging in a vertical plane and extending rearwardly and downwardly from the platform; a lever fulcrumed to the back and arranged to swing in a vertical plane; a connection between the free end of the lever and the aforesaid bar, and means whereby the lever is swung upwardly or downwardly according as the aforesaid leaf is actuated to uncover or cover the aforesaid opening, of a metal rod partially embedded in and arranged diagonally of the inner side of the aforesaid back, which rod extends across the sweep of the aforesaid lever.

12. In a sewing-machine table or cabinet, the combination, with the stationary cabinet work comprising a table-top having an opening therethrough; a platform hinged or pivotally supported from the stationary cabinet work and arranged to swing in a vertical plane and instrumental in closing the said opening in its upper position; a hinged leaf adapted to cover the said opening; a laterally-turnable bar pivotally connected with the platform to render the bar capable of swinging in a vertical plane and extending rearwardly and downwardly from the platform; a lever arranged to swing in a vertical plane and supported from the stationary cabinet work; an operative connection between the lever and the aforesaid bar, and means whereby the lever is swung upwardly or downwardly according as the aforesaid leaf is actuated to uncover or cover the aforesaid opening, of a metal rod extending across the sweep of and arranged to afford bearing to the lever.

847,484. ARTICLE OF STORE FURNITURE. JOSEPH LANTAGNE, Central Falls, R. I. Filed Dec. 14, 1905. Serial No. 291,770.

Claim.—An article of furniture having a plurality of compartments disposed side by side and having a common bottom, the outer end of which projects from said compartments and is provided with recesses, T-shaped guides secured on the bottom, between the compartments, vertical guides at the outer ends of the T-shaped guides and also between the compartments, tables in the bottoms of the compartments, separated, and having their side edges partly overlapped by the T-shaped guides and each having a supporting-leg movable therewith and fitting in one of said recesses in the bottom, when the table is moved into its compartment, and vertically-movable doors for the compartments operating in the vertical guides, substantially as described.

847,485. SPREADING DEVICE FOR APPAREL-COLLARS. FLORENCE M. LILLEY, Ealing, England. Filed Jan. 23, 1906. Serial No. 297,514.

Claim.—1. In a detachable spreading device for collars and other articles of apparel, the combination with parallel members connected together, of movable catch-pieces supported in one of the members and projecting from the ends thereof and means on another of the parallel members for securing the projecting or free ends of the catch-pieces.

2. In a detachable spreading device for collars and other articles of apparel, the combination with parallel tubes connected together, of catch-pieces supported in one of the tubular members and projecting from the ends thereof and pointed ends on the catch-pieces adapted to enter another of the tubular members.

3. In a detachable spreading device for collars and other articles of apparel, the combination with parallel tubes connected together, of spring-controlled catch-pieces supported in one of the tubes and projecting from the ends thereof and pointed ends on the catch-pieces adapted to enter another of the tubes.

4. In a detachable spreading device for collars and other articles of apparel the combination with parallel tubes connected together, of catch-pieces movably supported in one of the tubes and projecting from the ends thereof, pointed ends on the catch-pieces adapted to engage with another of the parallel tubes and means for securing the catch-pieces together.

847,486. WINDOW-CLEANER. WILLIAM MABLE, Fort Collins, Colo. Filed Apr. 2, 1906. Serial No. 309,418.

Claim.—1. In a device of the class described, a receptacle having a peripheral aperture with the sides extending radially of the receptacle, and a trough-shaped member having spaced orifices and supported in said aperture with the edges bearing over the extended edges of the aperture.

2. In a device of the class described, a receptacle having a peripheral aperture and radial recesses in the ends in alinement with the aperture, and a trough-shaped member having spaced orifices and disposed in said receptacle and recesses with the edges bearing over the edges of the receptacle-aperture.

3. In a device of the class described, a receptacle having a peripheral aperture with the sides extending radially of the receptacle and the trough-shaped member having spaced orifices and extending through said aperture and between said extended sides and with its edges bearing over said extended sides.

4. In a device of the class described, a receptacle having a peripheral aperture with the sides extending radially of the receptacle and with recesses in the ends in alinement with said receptacle-aperture, and a trough-shaped member having spaced orifices and supported in said aperture and recesses and with the edges bearing over the extended edges of the aperture.

847,487. ANNULAR BALL-BEARING. JONATHAN D. MAXWELL, Tarrytown, N. Y. Filed Jan. 9, 1906. Serial No. 295,222.

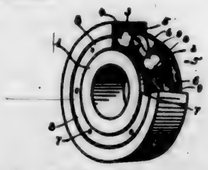

Claim.—1. In a bearing, the combination of a ring and a sleeve each integrally formed from a single piece and having opposing grooves in their adjacent faces, said grooves being uninterrupted throughout their circumference and said sleeve and ring being adapted to admit balls to the grooved space between them by their displacement eccentrically to each other, balls in said grooves, and spacing-rolls between the balls having a diameter equal to that of the balls and adapted to be inserted sidewise into the grooves through the space between the ring and sleeve, pins on which the rolls are journaled and spacing-rings to which the opposite ends of the pins are secured.

2. In a bearing, the combination of a bearing-sleeve and a ring having uninterrupted opposing grooves in their

adjacent faces, the sides of which grooves are adapted to engage balls to substantially prevent lateral movement and the sleeve and ring being adapted to admit balls to the grooved space between them by their displacement eccentrically to each other, balls within said grooves, mutilated balls the sides of which are flattened to permit their insertion between the sleeve and ring and forming spacing-rolls between the balls, and means upon which said rolls are journaled to hold the same in position within the grooves.

3. In a bearing, the combination of a bearing-sleeve and a ring each integrally formed from a single piece of metal and having uninterrupted opposing grooves in their adjacent faces and being adapted to admit balls to the grooved space between by their displacement eccentrically to each other, balls within said grooved space between the ring and sleeve, a series of rolls of a diameter equal to that of the balls interposed between the balls, the length of each of which rolls is less than the space between the sleeve and ring, and spacing-rings upon opposite sides upon which the rolls are journaled.

4. In a bearing, the combination of a bearing-sleeve and a ring having uninterrupted opposing grooves in their adjacent faces and being adapted to admit balls to the grooved spaces between by their displacement eccentrically to each other, balls within said grooved space between the ring and sleeve, a series of mutilated balls forming rolls, one dimension of each which is less than the space between the sleeve and ring, interposed between the balls to space the same apart, pins extending through said rolls, and spacing-rings at each side of the balls to which the pins are secured to journal the rolls and space the same apart.

5. In a bearing, the combination of a bearing-sleeve and a ring having uninterrupted opposing grooves in their adjacent faces and being adapted to admit balls to the grooved space between by their displacement eccentrically to each other, balls within said grooved space between the ring and sleeve, a series of mutilated balls of substantially the same diameter as the balls and having flattened sides to permit their insertion into the grooves through the space between the sleeve and ring and provided with axial openings to form spacing-rolls between the balls, a spacing-ring at each side of the balls within the space between the sleeve and ring, studs on said rings extending inward toward the flattened sides of the rolls and formed with axial holes, and pins extending through the rolls and provided with reduced ends forming shoulders engaging the studs and secured within the holes in the studs.

847,488. MECHANISM FOR OPERATING DOUBLE SLIDING DOORS. CARL METTERHAUSEN, Chicago, Ill. Filed July 2, 1906. Serial No. 324,318.

Claim.—1. In a double-door-actuating mechanism, the combination with suitable transversely-disposed spacing-frame members, of a pair of channel-guide members spaced apart, arranged parallel, having their channels opposed or facing each other and their corresponding edge faces in the same plane, a rack-bar confined and guided between said channel members, an operating-arm, one or more supporting-wheels mounted on said arm to traverse the edges of said channel members, operative connections between said rack and said wheel-supported operating-arm, and a transmission-gear operatively geared with said rack.

2. In a double-door-actuating mechanism, the combination with suitable transversely-disposed spacing-frame members, of two pairs of channel-guide members, the members of each pair being spaced apart, arranged parallel and with their channels facing each other and with their corresponding edge faces in the same plane, one pair of channels being spaced away from and substantially parallel with the other pair or channels, a rack-bar confined and guided between each of said pairs of channel members, operating-arms adapted to be connected with the respective doors and each carrying one or more supporting-wheels arranged to traverse the edge faces of one of said pairs of channels, operative connections between the respective operating-arms and corresponding rack-bars, and a transmission-gear intergeared with both of said rack-bars.

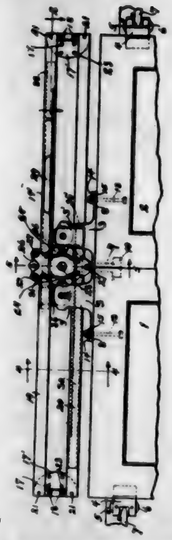

3. In a double-door-actuating mechanism, the combination of a front upper and front lower guide-frame member, a back upper and back lower guide-frame member, said upper and lower members being respectively arranged to register with each other, transverse spacing-frame members connecting said front members, other transverse spacing-frame members connecting said back members, means detachably connecting the front and rear halves of said frame structure, rack-bars mounted one upon the upper and another upon the lower pairs of frame members, an interposed transmission-gear intergeared with said rack members, and operative connections between the respective rack members and corresponding doors.

4. In a double-door-actuating mechanism, the combination with a pair of doors and an operating-arm connected with each, of a pair of parallel guide-frame members mounted to extend horizontally above the doors and having registering channels in their opposed faces and their proximate edges spaced uniformly apart, a rack-bar guided to reciprocate endwise between said guide-frame members, a supporting-roller operatively connected with one of said operating-arms and arranged to traverse said guide-frame members, and a connecting member pivotally mounted concentrically with the journal of said supporting-roller, extending thence through the slot-like opening between the proximate edges of the guide-frame members and operatively connected with said rack.

5. In a double-door-actuating mechanism, the combination with a pair of doors and an operating-arm connected with each, of a pair of upper parallel guide-frame members mounted to extend horizontally above the doors and having registering channels in their opposed faces and their proximate edges spaced uniformly apart, a lower pair of parallel guide-frame members parallel with the upper pair of members and also having registering channels in their opposed faces and their proximate edges spaced uniformly apart, a rack-bar mounted to reciprocate endwise between each pair of guide-frame members, a supporting-roller journaled upon each of said operating-arms and arranged to traverse the upper edges of the lower pair of guide-frame members, a yoke connection pivoted upon each of said operating-arms, one of said yoke connections extending downwardly through the slot-like space between the lower pair of guide-frame members and operatively connected with the rack therein and the other yoke connection extending upwardly through the slot-like space between the upper pair of guide-frame members and operatively connected with the rack therein, and a transmission-gear journaled between the upper and lower pairs of guide-frame members and intergeared with the respective racks therein.

6. In a double-door-actuating mechanism, the combination with a pair of doors and an operating-arm connected with each, of a pair of upper parallel guide-frame members mounted to extend horizontally above the doors and having registering channels in their opposed faces and their proximate edges spaced uniformly apart, a lower pair of parallel guide-frame members parallel with the upper pair of members and also having registering channels in their opposed faces and their proximate edges spaced uniformly apart, a rack-bar mounted to reciprocate endwise between each pair of guide-frame members, a supporting-roller journaled upon each of said operating-arms and arranged to traverse the upper edges of the lower pair of guide-frame members, a yoke connection pivoted upon each of said operating-arms, said yoke connections each comprising a yoke-bar mounted upon the journal member of the supporting-arm, and a U-bolt adjustably connected with said yoke-bar and extending thence through the slot-like space between one pair of the guide-frame members and through apertures in the corresponding rack-bar, substantially as described.

7. In a mechanism of the character described, the combination with a guide-frame arranged to extend horizontally above the door and a reciprocatory rack-bar mounted to move endwise upon said frame, of an operating-arm connected with the upper part of the door and provided with duplex arms extending respectively in front and in rear of said guide-frame, a journal-pin extending through said duplex arms, a pair of rollers journaled upon said pin and adapted to traverse the guide-frame, and a yoke connection mounted upon said pin between said rollers extending thence to and operatively connected with said rack-bar by means affording vertical movement of the rack-bar relatively to the yoke connection.

8. In a double-door-actuating mechanism, the combination of a front upper and front lower guide-frame member, a back upper and back lower guide-frame member, said upper and lower guide-frame members being respectively arranged to register with each other, transverse spacing-frame members connecting said several guide-frame members rigidly with each other, a rack-bar mounted to reciprocate upon said upper pair of guide-frame members, a rack-bar mounted to reciprocate upon said lower pair of guide-frame members, an interposed transmission-gear intergeared with both said rack-bars, and operative connections between the respective rack members and corresponding doors comprising actuating members extending vertically through the slot-like spaces between the respective opposed pair of guide-frame members, engaging the racks therein, and connected with the corresponding doors.

9. In a double-door-actuating mechanism, the combination of a front upper and front lower guide-frame member, a back upper and back lower guide-frame member, said upper and lower guide-frame members being respectively arranged to register with each other, transverse spacing-frame members connecting said several guide-frame members rigidly with each other, a rack-bar mounted to reciprocate upon said upper pair of guide-frame members, a rack-bar mounted to reciprocate upon said lower pair of guide-frame members, an interposed transmission-gear intergeared with both said rack-bars, and operative connections between the respective rack members and corresponding doors comprising operating-arms mounted upon the respective doors, rollers mounted upon said operating-arms and arranged to traverse the upper edges of the lower pair of guide-frame members and connecting members extending from said operating-arms vertically through the slot-like openings between the respective upper and lower pairs of guide-frame members and engaging the respective rack members therein.

847,489. ROTARY ENGINE. CHARLES H. MILLAR, Ervillagh, Foxrock, Ireland. Filed July 29, 1904. Serial No. 218,695.

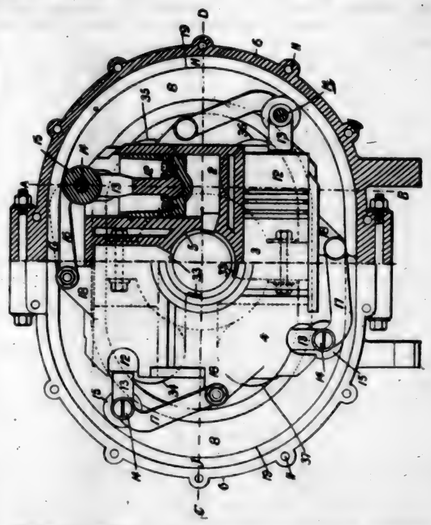

Claim.—A rotary internal-combustion engine comprising cylinders revolving with a hollow axle about a stationary plug or valve said cylinders being arranged tangentially in relation to the axle, said plug or valve having inlet ignition and exhaust ports and passages corresponding with a port in each of the cylinders, means for igniting the charge in the ignition-port said cylinders having pistons provided with rollers which work against elliptical tracks in the casing which contains said cylinders and cause each piston to make two outward and two inward strokes for each revolution of the cylinders, said ports and passages being so arranged as to obtain the proper cycle of induction of gaseous mixture into the cylinders, compression, ignition and exhaust for each cylinder in successive order, substantially as set forth.

847,490. STEAM-ENGINE. CHARLES H. MONROE, Searsport, Me., assignor of one-third to William E. Grinnell, Searsport, Me., and one-third to Henry B. Black, Everett, Mass. Filed Dec. 2, 1904. Serial No. 235,222.

Claim.—1. The engine above described comprising two parallel cylinders, each containing two pistons adapted to reciprocate toward and from each other, a valve-chest, a rotary valve, two crank-shafts, each connected to two of said pistons, and each carrying a gear, an intermediate gear, and means for rotating said rotary valve connected to said intermediate gear, as described.

2. The engine above described comprising two parallel adjacent cylinders, each containing two pistons, a valve-chest provided with a rotary conical valve having a steam-chamber located therein, and a shaft extending from the inner end of its interior outward through said chamber to afford means of supporting and operating said valve, the valve-chamber in said valve-chest being longer than said valve, and provided with a bearing at one end thereof, the other end of said valve being open to the free inlet of steam, whereby said valve is held in place against said bearing, as described.

3. The engine above described having two parallel cylinders, a pair of separating-pistons in each cylinder and means whereby said pistons are moved for substantially a quarter of their stroke under direct steam-pressure and the remainder of their stroke under expansion, said means

comprising a rotary valve having an inlet-port for each cylinder, each port extending for substantially an eighth of the circumference of said valve and having an exterior exhaust-chamber of substantially the operating length of the valve and of less than one-half the circumference thereof.

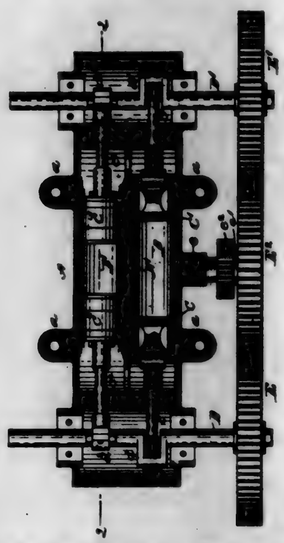

4. The engine above described having two parallel cylinders, a pair of separating-pistons in each cylinder and means whereby said pistons are moved for substantially a quarter of their stroke under direct steam-pressure and the remainder of their stroke under expansion, said means comprising a rotary valve having an inlet-port for each cylinder, each port extending for substantially an eighth of the circumference of said valve, said ports being located one-quarter of a circumference apart, and having an exterior exhaust-chamber of substantially the operating length of the valve and of less than one-half the circumference thereof, the exhaust-ports being connected to furnish a free exhaust common to both cylinders, as described.

5. The engine above described comprising two parallel cylinders, each containing two pistons adapted to reciprocate toward and from each other, two crank-shafts, each connected to two of said pistons, said crank-shafts being geared to an intermediate gear, a valve-chest, a valve therefor, means for driving said valve, said driving means being connected to said intermediate gear between said crank-shafts.

6. The engine above described, comprising two parallel cylinders, each containing two pistons adapted to reciprocate toward and from each other, two crank-shafts, each connected to two of said pistons, said crank-shafts being geared to rotate together, a valve-chest superimposed on said cylinders, a rotary valve therein at right angles to the axes of the cylinders, a shaft for said valve, a pinion on said shaft, said pinion being directly in gear with the crank-connecting gears aforesaid the axis of said valve being in a plane substantially parallel with the axes of said cylinders and lying at right angles thereto.

847,491. MECHANISM FOR USE IN EDGING WALL-PAPER. HENRY A. MORGAN and WILLIAM A. MORGAN, Birmingham, England. Filed May 4, 1905. Serial No. 258,900.

Claim.—A tool for use by hand for edging wall-paper and the like, consisting of a forked holder having a central longitudinal hole in each of its two fork-arms, two rollers having circular knife-edges formed upon them and grooved so that the corresponding knife-edges can enter the grooves, such knife-rollers being attached to the holder by means of spindles passing through their centers and into the central longitudinal holes in the arms of the forked holder to be secured therein by means of set-pins, with the rollers close together and the circular knife-

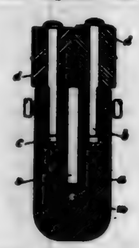

edges overlapping each other, a star-spring placed under the head of one of the spindles to bear upon the knife to keep the overlapping knife-edges in close contact with each other, a guide formed of a sheet of metal folded over and shaped as shown and provided with a sighting-slot, such guide being adjustably secured to the forked holder substantially as described.

847,492. MIXING-MACHINE. HENRY G. MORRIS, Philadelphia, Pa. Filed Feb. 25, 1905. Renewed Nov. 28, 1906. Serial No. 345,538.

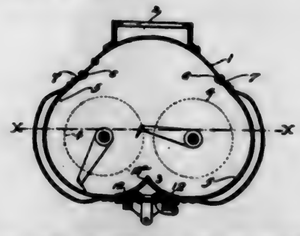

Claim.—1. The combination with the mixing-shell closed at its top near its ends and having an opening arranged intermediate of the closed portions of the top which opening is substantially shorter than the length of the shell, of sectional liners each narrower than the length of the casing and adapted to pass through said opening and of recessed or grooved members arranged axially of and movably connected with the interior of the curved wall of the shell and adapted to detachably receive the ends of the liners, substantially as described.

2. The combination of the mixing-shell having inlet and outlet openings shorter than the length of the shell so that the end portions of the same are covered, sectional liners adapted to pass through one of said openings and narrower than the length of the shell, grooved or recessed bars arranged axially of and movably secured to the interior of the curved wall of the shell and adapted to hold the upper ends of the liners, and members arranged at the base of the curved wall of the shell and provided with grooves or recesses for the lower ends of the liners, substantially as described.

3. The combination of a mixing-shell provided with inlet and outlet openings, sectional liners adapted to be passed through the inlet-opening, grooved or recessed bars bolted to the interior of the shell and adapted to hold the upper ends of the liners, castings bolted to the shell at the ends of the outlet-opening and provided with liner grooves or recesses, castings arranged at the sides of the outlet-openings and provided with liner grooves or recesses, and pin-and-groove connections between said castings, substantially as described.

847,493. LAUNDRYING DEVICE. RUDOLPH MOSKOWITZ, South Bend, Ind., assignor of one-half to Leo Moore, South Bend, Ind. Filed Nov. 26, 1906. Serial No. 345,199.

Claim.—1. A laundering device of the class described in which is combined a rubbing element having an uneven bottom, a handle for operating the same and a rearwardly-tilting soap-receptacle at the front.

2. A laundering device in which is combined a rubbing element having an uneven bottom, a soap-receptacle hinged to the forward end thereof, and means for holding the same in either of two predetermined positions.

3. A laundering device consisting of a manual rubbing element comprising a receptacle having an uneven bottom, a soap-holding element movably connected therewith, and means for maintaining it in different positions to hold the soap either in or out of direct contact with the article to be operated upon.

4. A laundering device comprising in combination a rubbing element the bottom of which is perforated and its under surface uneven, a soap-receptacle hinged thereto and adapted to be projected forwardly beyond the end thereof and swung to a position over said bottom, and means for maintaining said soap-receptacle in yielding contact with the surface and surfaces opposed thereto, substantially as described.

847,494. RAILWAY STAND-PIPE. JAMES F. MURPHY, Michigan City, Ind. Filed Mar. 16, 1906. Serial No. 306,817.

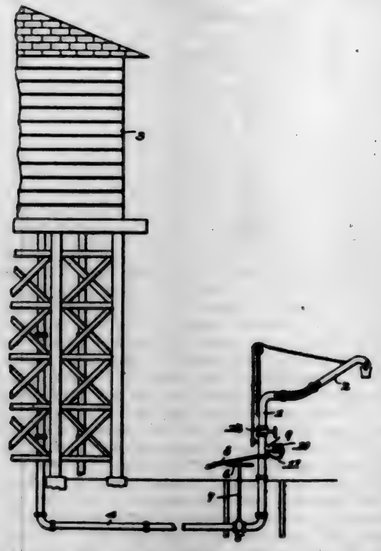

Claim.—In a railway stand-pipe, the combination of an upright stand-pipe body mounted to turn and having a discharge-gooseneck at its upper end, a controlling-valve at the bottom of the stand-pipe, a hose connection provided upon the stand-pipe body between the controlling-valve and the gooseneck, and another valve included in the stand-pipe body between the hose-coupling and the gooseneck.

847,495. DISH-WASHER. MARY M. MCKEE, Tacoma, Wash., assignor of one-half to Belle R. MCKEE, Tacoma, Wash. Filed June 23, 1905. Serial No. 266,618.

Claim.—1. A dish-washing cabinet having a compartment wherein dishes may be washed and stored, a removable panel on its upper side adapted to allow the steam to escape rapidly after the dishes are washed, a lower panel on the front side adapted to form an apron, an upper removable panel on the front side, removable racks within said compartment to hold the dishes in vertical position, a tank to hold the wash-water and to receive the drip-water from the dishes, a pump in communication with the water in said tank, and a hose and nozzle connected with said pump and adapted to direct the flow of water delivered thereby to the dishes stored within said cabinet.

2. A dish-washing cabinet having a lower front panel hinged at its lower end to form an apron, the remainder of the front thereof hinged so as to be withdrawn from the front whereby access may be had to the interior of said cabinet, and means for forcing a stream of water to any part of said cabinet whereby the dishes therein may be cleaned.

847,496. VAPOR-BURNER. REUBEN C. NELSON, Healdsburg, Cal. Filed Mar. 9, 1906. Serial No. 305,150.

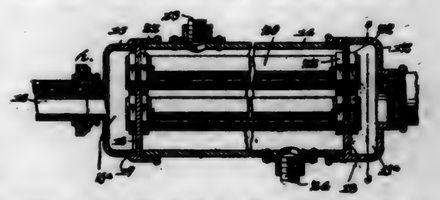

Claim.—In an apparatus of the character described a fuel-heater comprising a cylindrical shell having a steam-inlet and a steam-outlet within opposite portions thereof, a plate upon one end of the shell, a plurality of tubes secured within the plate and extending longitudinally within the shell, an internally-screw-threaded cap engaging one end of the shell and having an interior shoulder bearing upon the plate to clamp against the shell, a fuel-outlet extending from the center of said cap, said cap forming a shallow compartment into which one end of the tubes open, an internally-screw-threaded cap upon the opposite end of the shell, an integral partition within said cap in which one end of the tubes is secured, there being a shallow compartment within the cap into which the tubes open, and a

tubular inlet at the center of said cap, said tubes being disposed out of alinement with the inlet and outlet.

847,497. REGISTER AND VENTILATOR. FREDERIC G. NICOLAUS, Cleveland, Ohio, assignor to The Walworth Run Foundry Company, Cleveland, Ohio, a Corporation of Ohio. Filed Mar. 2, 1906. Serial No. 303,832.

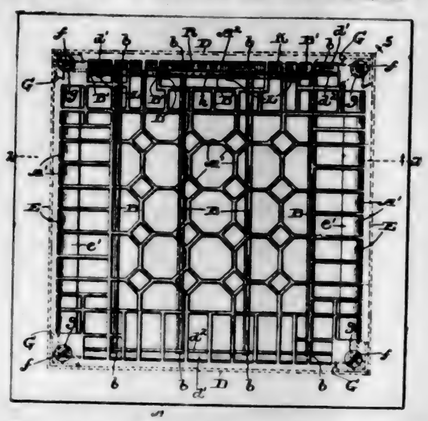

Claim.—1. A register or ventilator comprising a plurality of parallel slats provided with trunnions at the ends; a frame surrounding the space in which the slats are located and comprising two sheet-metal bars which are arranged at opposite ends respectively of the slats and have flanges which project first laterally and inwardly and then outwardly in the direction of the outer side of the aforesaid space, with the outwardly-projecting portions of the flanges provided with circular holes engaged by the aforesaid trunnions, and with the last-mentioned and trunnion-bearing portions of the flanges of both bars possessing enough springiness to render them capable of yielding laterally independently of the remaining portions of the bars.

2. A register or ventilator comprising a slat-bearing frame composed of four sheet-metal channel-bars arranged as required to form a quadrangular frame, with each bar provided at the inner side with two flanges projecting laterally and inwardly from the bar at the outer side and inner side respectively of the space surrounded by the frame, which flanges extend longitudinally of the bar; angle-plates arranged at the interior corners formed by the bars, with each angle-plate having its wings overlapping the inner sides of and secured to the two adjacent bars, said angle-plate extending between the flanges of each of the last-mentioned bars and provided with a laterally and inwardly projecting ear which is arranged at the outer side of the aforesaid space and at the inner sides of the flanges formed on the last-mentioned bars at the outer side of the said space, and a face-plate extending over the outer sides of the outer flanges of the bars and secured to the ears of the angle-plates.

3. A register or ventilator comprising a slat-bearing frame composed of four sheet-metal channel-bars arranged as required to form a quadrangular frame, with each bar provided at the inner side with two flanges projecting laterally and inwardly from the bar at the outer side and inner side respectively of the space surrounded by the frame, which flanges extend longitudinally of the bar; angle-plates arranged at the interior corners formed by the bars, with each angle-plate having its wings overlapping the inner sides of and secured to the two adjacent bars, said angle-plate extending between the flanges of each of the last-mentioned bars, and a face-plate extending over the outer sides of the outer flanges of the bars and secured to the angle-plates.

847,498. AUXILIARY PIANO-PEDAL. LEVI W. NORCROSS, Fort Worth, Tex. Filed Dec. 8, 1906. Serial No. 346,904.

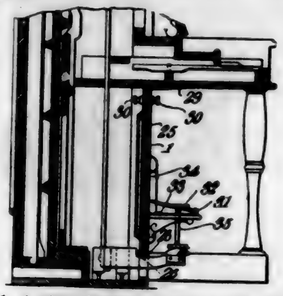

Claim.—1. A piano having pedals, a pair of brackets secured to the front of the piano-casing, auxiliary pedal members guided by said brackets and arranged to transmit motion to the pedals, and an adjustable foot-rest supported by the brackets.

2. A piano having pedals, a pair of brackets secured to the front of the piano-casing each having a guiding-opening, auxiliary pedal members having stems arranged in said openings, and disks secured to the upper and lower ends of said stems.

3. A piano having pedals, a pair of brackets having base members secured to the front of the piano-casing and provided with guiding-openings, auxiliary pedal members having stems fitted within said openings and provided with lower disks resting on the pedals, upper disks secured to the upper ends of the stems, a foot-rest bar, and links carrying said foot-rest bar and pivoted to the base portions of said brackets.

847,499. TOY. FRANK O'FLAHERTY, Franklin, Pa. Filed Nov. 19, 1906. Serial No. 344,083.

Claim.—1. In a device of the character described, the combination with a support, of a body movably mounted upon said support, a lever movably mounted upon said body, a leg movably mounted upon said body, means connecting said lever to said leg, an ear movably mounted upon said body, means connecting said ear to said lever, a tail movably mounted upon said body, means connecting said tail to said ear, and means for imparting movement to said lever, whereby said leg, ear, and tail are synchronously actuated for moving the same upon said body.

2. In a device of the character described, the combination with a support, of a body pivotally mounted upon said support, an ear pivotally mounted upon said body, a tail pivotally mounted upon said body, a leg pivotally mounted upon said body, and means for synchronously swinging said ear, tail, and leg upon said body, and swinging said body upon said support, when the ear, tail, and leg have reached the limit of their movement.

3. In a device of the character described, the combination of a pair of stationary front legs, a body pivotally mounted between said front legs, an ear pivotally mounted upon said body and adapted to swing forward, a leg pivotally mounted upon said body and adapted to be swung upward, means for moving said body upon the front legs and swinging its rear portion upwardly, and means for synchronously swinging said ear forwardly and said pivoted leg upwardly.

4. In a device of the character described, the combination with a support, of a pair of stationary legs fixedly secured to said support, a body pivotally mounted between said legs, a pair of legs pivotally mounted upon said body, and means for swinging said last-mentioned legs upwardly and swinging said body upon said first-mentioned legs.

5. In a device of the character described, the combination with a body, of ears positioned upon opposite sides of said body, a shaft connecting said ears, an arm fixedly secured to said shaft, a shaft journaled upon said body, a tail fixedly secured to said shaft, a depending extension secured to said tail, a rod connecting said arm and depending extension, and means connected to said arm and being capable of swinging the same for synchronously actuating said ears and tail.

6. In a device of the character described, the combination of a movable body, a pair of hind legs carried by said body, an arm, means connecting said arm to said legs, said arm extending through a portion of said body and adapted to limit upward movement of said legs, and means for swinging said arm, and thereby imparting movement to said hind legs and, subsequently, to said body.

7. In a device of the character described, the combination with a body, of a movable car carried by said body, a movable leg carried by said body, a movable tail carried by said body, a bell-crank lever carried by said body, means connecting said lever to said ear and to said leg, and means connecting the tail to said ear, whereby when movement is imparted to said lever, similar movement will be imparted to said ear, tail, and leg.

8. In a device of the character described, the combination with a support, of a body pivotally mounted upon said support, a bell-crank lever positioned within and pivotally mounted upon said body, a shaft secured at one of its ends to said bell-crank lever, a loop formed upon the opposite end of said shaft, a shaft, an ear fixedly secured to said shaft, an arm fixedly secured to said shaft, and a rod connecting said bell-crank lever and arm.

9. In a device of the character described, the combination with a body, of a bell-crank lever pivotally mounted upon said body, a series of members provided with depending portions or extensions, pivotally mounted upon said body, and means connecting said bell-crank lever to said extensions, whereby when said lever is actuated, synchronous movement will be imparted to said members.

10. In a toy, the combination with a horizontal body, a movable ear mounted upon said body, a movable tail mounted upon said body, of a horizontal rod positioned longitudinally of said body, means connecting one end of said rod to said ear, means connecting the opposite end of said rod to said tail, a lever, means connecting said lever to said rod, and means for actuating said lever for imparting movement to said rod and to said tail and ear.

11. In a toy, the combination with a body provided with an opening, a movable member carried by said body, of an arm extending downwardly through said opening, means connecting said arm to said movable member, lever means carried by said body, means connecting said lever means to said arm, and means for actuating said lever means for moving said movable member upon said body.

12. In a toy, the combination with a body, a movable member carried by said body and extending beyond the same, said body provided with an opening, of an arm extending through said opening, means connecting the inner end of said arm to said movable member, lever means connected to the outer end of said arm, and means for actuating said lever for imparting movement to said movable member.

13. In a toy, the combination with a support, a stationary leg fixedly secured to said support, of a body pivotally mounted near one end upon said stationary leg, a movable member carried by said body and extending beyond the same, lever means in said body, means connecting said lever means to said movable member, whereby when said lever means is actuated, said movable member will be swung upon said body and subsequently said body upon said stationary leg.

14. In a toy, the combination with a body, of a movable member carried by said body and extending beyond the same, a bell-crank lever pivotally mounted on said body, a rod connected at one of its ends to one end of the bell-crank lever, and means connecting the opposite end of said rod to said movable member, and a vertically-movable rod connected at its upper end directly to the opposite end of said bell-crank lever, whereby when said rod is reciprocated, said movable member will be swung upon said body.

847,500. ROOF CONSTRUCTION FOR PASSENGER-CARS. ALLEN E. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed June 2, 1906. Serial No. 319,912.

Claim.—1. In a hood for a passenger-car roof, a carline conforming in shape to the end carline of the roof proper, an end bow, angles extending from said carline to said end bow and connected thereto, vertically-disposed strengthening-plates connected to said angles, and laterally-extending lower-deck carlines secured to the lower edges of said plates; substantially as described.

2. In a hood for a passenger-car roof, a carline and an end bow, an angle extending from said carline to said end bow and connected thereto, a vertically-disposed strengthening-plate connected to said angle, and an angle connected to said plate and having deck-carlines fastened thereto; substantially as described.

3. In a hood for a passenger-car roof, an end bow, side plates connected to said end bow and diagonally-extending braces connected to the side plates and to the end bow; substantially as described.

4. In a passenger-car roof having upper and lower decks and side decks, a transversely-extending angle connected to the side plates of the car, a T-shaped carline forming part of the hood-framing and being connected at its ends

to said angle, purlins connected to said carline and to the end bow of the hood, and vertically-disposed strengthening-plates forming part of the hood-framing and being connected to the vertically-disposed parts of the T-shaped carline; substantially as described.

5. In a roof construction for passenger-cars, an end hood consisting of a T-shaped carline, a transversely-extending angle to which the ends of said carline are connected, Z-shaped connecting devices for fastening said transversely-extending angle to the side plates of the car, angles extending from the carline to the end bow of the hood and having strengthening-plates connected thereto which form the side decks of the hood, angles fastened to the lower edges of said plates, L-shaped connecting devices for securing said last-named angles to the carline, and brackets for securing the opposite ends of said angles to the end bow of the hood; substantially as described.

6. In a roof construction for passenger-cars, an end hood consisting of a carline and purlins connected to said carline and to the end bow of the hood, a carline forming part of the framing of the roof proper and arranged adjacent to the carline of the hood, spacing devices arranged between the carlines, and fastening devices passing through the spacing devices and through the carlines to connect them together; substantially as described.

7. In a passenger-car roof, side plates, an end bow connected to said side plates, supporting members secured to the end bow and side plates, a ceiling-plate fastened to the side plates, end bow and supporting members and provided in its center with a flanged opening, a dome-carrying plate covering said opening and provided with a flange which is connected to the flange of the plate first referred to and a dome fastened to said dome-carrying plate; substantially as described.

8. In a passenger-car roof, carlines and purlins which are connected together to form the framing for the roof of the car-body, continuous eaves-angles connected to said carlines, end hoods formed separately from the roof-framing of the car-body and consisting of carlines, purlins and strengthening-braces fastened together, angles comprising part of the hood construction and forming continuations of the eaves-angles of the roof, strengthening-plates connected to said angles, means for connecting said angles to the eaves-angles, and independent means for connecting the end hoods to the framing of the roof proper; substantially as described.

9. In a passenger-car-roof construction, a side plate and an end bow formed from angles, a corner-casting securing said members together, an angle arranged parallel to the side-plate angle and connected at one end to the end-bow angle, an angle arranged approximately parallel to the end-bow angle and connected at one end to the side-plate angle so that said four members form a rectangle, and a diagonal brace extending across said rectangle and connected to the end bow and to the side plate; substantially as described.

847,501. VESTIBULE TRAP-DOOR AND STEPS FOR PASSENGER-CARS. ALLEN E. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed June 13, 1906. Serial No. 321,573.

Claim.—1. In a passenger-car, a vestibule trap-door consisting of a metal plate having a central depressed portion with depressed portions radiating therefrom; substantially as described.

2. In a passenger-car, a vestibule trap-door consisting of a metal plate having a central depressed portion, and strengthening-ribs extending from said central portion toward the corners of the door; substantially as described.

3. In a passenger-car, a vestibule trap-door consisting of a metal plate having a continuous flange, a central depressed portion, and pressed tapered ribs extending from this central portion to the corners of the door; substantially as described.

4. In a passenger-car, a vestibule trap-door consisting of a metal plate having its edges flanged upwardly, strengthening-ribs pressed in said plate, and a covering arranged within the marginal flange of said plate; substantially as described.

5. In a passenger-car, a vestibule trap-door consisting of a metal plate having its edges flanged upwardly, strengthening-ribs pressed in said plate, a covering arranged within the marginal flange of said plate, and a metal tread at one edge of said door; substantially as described.

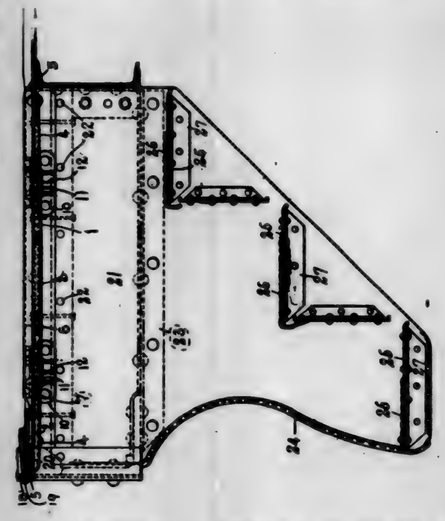

6. In a passenger-car, a vestibule trap-door consisting of a metal plate having its edges flanged upwardly, strengthening-ribs pressed in said plate, a covering arranged within the marginal flange of said plate, a metal tread at one edge of said door, said tread being supported by a wooden strip, and a flange which is formed integral with the tread; substantially as described.

7. In a passenger-car, step-hangers consisting of a plurality of sheet-metal plates, one of which is riveted to the end sill of the car and to an angle fastened to the underneath side of said end sill, the other of said plates being connected to a transversely-extending floor-support, angles secured to said step-hangers, and steps resting on the horizontal legs of said angles and being fastened thereto; substantially as described.

8. In a passenger-car, a vestibule trap-door having one member of a hinge connected thereto, a coöperating hinge member rigidly connected to a portion of the car-frame, and a lug on said rigid member for supporting the hinge member which is connected to the trap-door; substantially as described.

9. In a passenger-car construction, a trap-door comprising a metal plate provided with a continuous unbroken flange formed integral with the plate; substantially as described.

10. In a passenger-car construction, a trap-door comprising a metal plate provided on all sides with pressed flanges, and a filling covering said plate and arranged inside of said flanges; substantially as described.

11. In a passenger-car, step-hangers consisting of sheet-metal plates provided at their outer edges with integral flanges and being flared outwardly at their lower ends, and metal plates connected to said step-hangers to form the treads; substantially as described.

12. A passenger-car provided with step-hangers consisting of two continuous sheet-metal plates, independent metal supports connected to said plates, metal step-plates connected to said supports between the step-hangers, and a steel piece secured to each of said step-plates and provided with a lead filling and with a depending flange that covers the front edge of the step-plate; substantially as described.

847,502. SIDE DECK FOR PASSENGER-CAR ROOFS. ALLEN E. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed June 4, 1906. Serial No. 320,101.

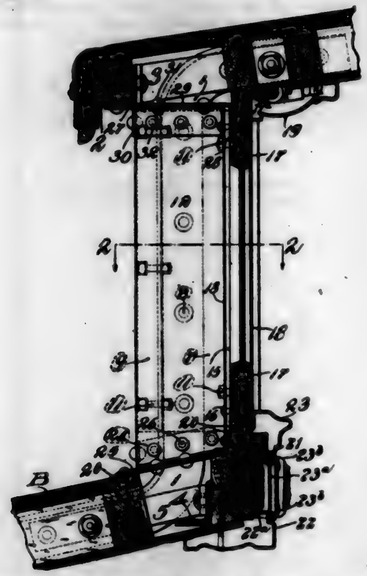

Claim.—1. In a passenger-car construction, a side-deck post consisting of a portion of a carline, members connected to said carline and to portions of the side deck, a metal sheathing incasing said members and the carline, and means for connecting said casing at its upper and lower ends to the upper and lower decks of the car-roof; substantially as described.

2. In a passenger-car construction, a side-deck post consisting of a portion of a carline, members connected to said carline and to portions of the side deck, a metal sheathing incasing said members and the carline, and flanged members connected to the upper and lower decks of the car-roof to which said sheathing is fastened; substantially as described.

3. In a passenger-car construction, a side-deck post consisting of an angle, a flanged member connected to the inwardly-projecting leg of said angle, a wood filler connected to the angle and to the flange of said member, and a metal sheathing surrounding all of said members and connected to the side deck and to the upper and lower decks of the car-roof; substantially as described.

4. In a passenger-car construction, a side-deck post consisting of an angle, an L-shaped member and a channel-shaped member connected to the inwardly-projecting leg of said angle, means for securing said members to a portion of the side deck and an approximately U-shaped sheathing surrounding said angle and the members connected thereto and having flanges which are connected to the sashes of the deck-windows between which the post is located; substantially as described.

5. In a passenger-car construction, a plate connected to the lower deck of the car-roof and provided with a flange on which the lower rail of the sash of the deck-window rests, an ornamental pressed-metal molding arranged along the lower sill of the side deck inside of the car and having a shoulder which contacts with the inner face of said lower rail, and a plate connected to the upper deck of the roof and provided with a flange which engages the outer face of the top rail of said window-sash; substantially as described.

6. In a passenger-car construction, a continuous carline forming part of the framing for the upper and lower deck and the side deck of the car-roof, an eaves-angle connected to the carline, an angle connected to the carline and forming the lower sill of the side deck, a hollow sheet-metal ornamental molding connected to said angle, a wood filler interposed between said angle and molding, a plate connected to the lower deck and extending over said wood filler to form a sill for the side-deck window, and a plate connected to the underneath face of the eaves-angle and provided with a flange which engages the outer face of the top rail of the sash of said deck-window; substantially as described.

7. In a passenger-car construction, a hollow pressed-metal molding connected to the lower sill of the side deck of the car-roof and having an ornamental face and a shoulder which is engaged by the inner face of the lower rail of the sash of the side-deck window; substantially as described.

847,503. CAR CONSTRUCTION. ALLEN E. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed June 14, 1906. Serial No. 321,774.

Claim.—1. In a car construction, a plate-girder wall consisting of longitudinally-extending upper and lower chords, a plate connected to said chords, posts arranged on the inside of said plate and recessed to receive said upper chord, and a bulb-angle extending longitudinally along the outside upper edge of the plate-girder; substantially as described.

2. In a car construction, a plate-girder wall consisting of longitudinally-extending upper and lower chords, a plate connected to said chords, posts arranged on the inside of said plate and recessed to receive said upper chord, and a bulb-angle extending longitudinally along the outside upper edge of the plate-girder and connected to said upper chord; substantially as described.

3. In a car construction, a plate-girder wall consisting of longitudinally-extending upper and lower chords, a plate connected to said chords, posts arranged on the inside of said plate and recessed to receive said upper chord, a bulb-angle arranged along the outside upper edge of said plate, and fastening devices passing through the vertical leg of said angle, the plate, the upper chord and the post; substantially as described.

4. In a passenger-car construction, vertically-arranged posts provided at approximately the centers thereof with offsets which extend inwardly to form recesses, a longitudinally-extending strengthening-bar arranged in these recesses and lying flush with the outer faces of the posts, and a side-wall plate connected to said strengthening-bar; substantially as described.

5. In a passenger-car construction, vertically-arranged posts provided at approximately the centers thereof with offsets which extend inwardly to form recesses, a longitudinally-extending strengthening-bar arranged in these recesses and lying flush with the outer faces of the posts, a side-wall plate connected to said strengthening-bar, and a longitudinally-extending angle arranged on the outer face of said plate and connected to said bar; substantially as described.

6. In a passenger-car construction, vertically-arranged posts provided with recesses, a longitudinally-extending strengthening-bar arranged in these recesses and lying flush with the outer faces of the posts, a side-wall plate connected to said strengthening-bar, a longitudinally-extending angle arranged on the outer face of said plate and connected to said bar, and a plate forming the upper portion of the car-wall and having its lower edge bent laterally to engage the horizontal leg of said angle; substantially as described.

7. In a passenger-car construction, a lower sill, vertically-extending angles connected to said sill to form the posts of the side wall of the car and provided with recesses intermediate their ends, side plates engaging the outer faces of said posts and connected to the lower sill, a longitudinally-extending strengthening-bar arranged in the recesses of the posts on the inside of the side plates, and a longitudinally-extending bulb-angle arranged on the outside of said side plates and connected to said strengthening-bar; substantially as described.

8. A car comprising a side wall, metal posts on the inside of said side wall and constructed to receive an approximately straight longitudinally-extending flat metal bar which is arranged between the side wall and said posts at the belt-rail of the car; substantially as described.

9. A car comprising a side wall, a longitudinally-extending strengthening member arranged on the inside of said wall, metallic posts on the inside of the side wall constructed to receive said strengthening member, and an angle extending parallel to said strengthening member and forming the belt-rail of the car; substantially as described.

10. A car comprising metallic posts constructed to receive an approximately straight strengthening member which extends longitudinally of the car, a side-wall plate connected to the outer faces of said posts and engaging said strengthening member, and a longitudinally-extending angle forming the belt-rail of the car and being connected to said strengthening member; substantially as described.

11. In a side-wall framing for a car, a plurality of vertical metal posts recessed at approximately their centers, and a straight metallic strengthening member extending transversely of said posts and arranged in the recesses thereof; substantially as described.

12. A side-wall framing for a car consisting of upper and lower sills, a plurality of vertical metallic posts offset inwardly at their upper and lower ends to receive said sills, and a strengthening member extending parallel to said sills and being connected to said vertical posts, said posts being recessed intermediate the upper and lower sills to receive said strengthening member; substantially as described.

847,504. PASSENGER-CAR. ALLEN E. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed June 21, 1906. Serial No. 322,740.

Claim.—1. In a passenger-car frame, continuous center sills extending from end to end of the car, and platform end sills connected to the center sills and consisting of a channel having a timber connected to the vertical web thereof, said timber being provided with a metal wear-strip; substantially as described.

2. In a passenger-car frame, center sills extending from end to end of the car, a platform end sill connected to the center sills and having a timber connected thereto which is provided with a metal wear-strip, side sills, an end sill, a body-bolster, an intermediate sill secured to the platform end sill and body-bolster, and a diagonally-extending brace connected to the side sill and center sill and intersecting the intermediate sill; substantially as described.

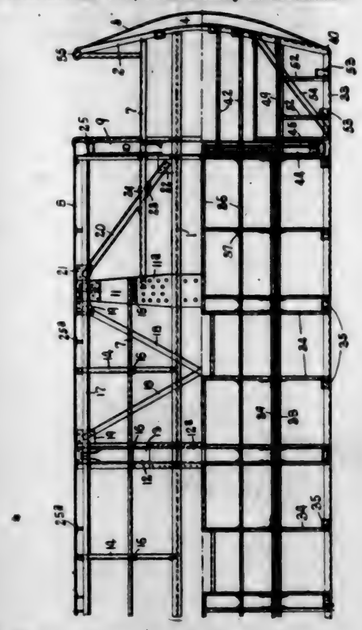

3. In a car-frame, an end sill, a body-bolster, a center sill and a side sill to which said members are connected, a diagonally-extending brace connected to the center sill and side sill, an intermediate sill arranged between the center sill and side sill, and means for connecting said intermediate sill to said diagonal brace; substantially as described.

4. In a car-frame, a channel having its legs severed and bent laterally to provide an opening to receive the vertical leg of a sill member which extends at an angle to the channel, and a casting arranged inside of said channel and having said sill member connected thereto; substantially as described.

5. In a car-frame, a channel having its legs severed and bent laterally to provide an opening to receive the vertical leg of a sill member which extends at an angle to the channel, a member arranged between and secured to the legs of said channel, fastening devices connecting the vertical leg of the sill to said member, and means for connecting the laterally-bent portions of the legs of the channel to the vertical leg of the sill member; substantially as described.

6. In a car-frame, a center sill, a side sill, a body-bolster and an end sill to which the side sill and center sill are connected, a plate secured to the center sill and end sill where they intersect, a diagonally-extending brace fastened to said plate and to the side sill and body-bolster, and a longitudinal beam intersecting said brace; substantially as described.

7. In a car-frame, center sills, side sills, an end sill, a body-bolster, a cross-bearer, diagonal braces arranged between the body-bolster and end sill, connecting-plates for fastening the inner ends of said braces to the end sill and center sills, and cross-braces connected to the side sills between the cross-bearer and body-bolster; substantially as described.

8. In a car-frame, a Z-shaped corner-post, a vertical angle arranged at the door-opening, braces connected to said post and angle, a door-post consisting of a corner-plate provided with a strengthening member, and braces connected to the corner-post and to said door-post; substantially as described.

9. In a car-frame, a post consisting of a curved corner-plate, and an interior strengthening member connected to said plate and consisting of a commercially-rolled channel bent to the desired shape and having its legs riveted to said plate; substantially as described.

10. In a car-frame, a post consisting of a curved corner-plate, bands connected to the inner face of said plate, and wooden furring-strips connected to said band and extending longitudinally of the corner-plate; substantially as described.

11. In a car-frame, a post consisting of a curved corner-plate provided with an interior strengthening member, a box-shaped band connected to the interior of said corner-plate, and furring-strips connected to said band and coöperating with the corner-plate to form a hollow post; substantially as described.

12. In a car construction, means for holding a furring-strip in place, consisting of a member having bolts projecting therefrom, said bolts extending through the furring-strip, and devices connected to the inner face of said member and engaging the heads of said bolts; substantially as described.

13. In a car construction, means for securing a furring-strip consisting of a member provided with non-circular-shaped openings to receive correspondingly-shaped portions on bolts which project therefrom, said bolts being adapted to project through the furring-strip, and a device connected to the inner face of said member and engaging the heads of said bolts; substantially as described.

14. In a car construction, posts spaced away from each other, a plate connected to said posts to form the sill of a window and provided with an upwardly-projecting flange that engages the bottom rail of the window-sash, and plates connected to said posts and engaging the outer faces of the side rails of said window-sash; substantially as described.

15. In a car-frame, an end sill, a platform end sill, longitudinal sills connected to said sills, a floor-plate connected to the end sill and to the longitudinal sills, a coöperating floor-plate connected to the longitudinal sills and to the platform end sill, and an angle connected to the underneath side of said last-named plate and to one of the longitudinal sills; substantially as described.

16. In a car-frame, end posts and side posts having side plates connected to their upper ends, two transversely-extending angles connected to the side plates and located at the ends of the car, and vertical posts forming part of the end wall and connected to said angles; substantially as described.

17. In a car-frame, a platform end sill, a bolster, platform-beams connected to said bolster and platform end sill, an end sill located approximately midway the platform end sill and bolster and comprising a truss member which extends beneath the platform beams and supports the same, and diagonally-extending braces intersecting said platform-beams and connected to the bolster and end sill; substantially as described.

18. In a passenger-car frame, a longitudinal sill connected to the end sill and to the bolster of the car, and a brace extending diagonally between the end sill and bolster and intersecting the longitudinal sill to which it is connected; substantially as described.

19. In a passenger-car frame, an end sill, a bolster, a longitudinal sill connected to said end sill and bolster, and a diagonally-extending brace arranged in approximately the same horizontal plane as the longitudinal sill and connected to the bolster and end sill, said brace intersecting the longitudinal sill and being connected thereto; substantially as described.

20. In a car frame, a sill, a brace extending at an angle to said sill and located in approximately the same horizontal plane, one of said members being constructed to permit the other member to intersect the same, and a casting connected to both of said members at the point of intersection; substantially as described.

21. In a car construction, an angle constituting a sill, a channel-shaped brace extending at an angle to said sill, and a connecting device arranged between the flanges of the brace for fastening said members together, one of said members having its flanges severed to permit the other member to intersect same; substantially as described.

22. In a car-frame, an end sill comprising diaphragms arranged back to back and spaced away from each other, and a corner-post extending between said diaphragms and being connected thereto; substantially as described.

23. In a car-frame, a hollow post, a dished member arranged inside of the lower end of said post and connected to the support on which the post is erected; substantially as described.

24. In a car-frame, a hollow-post, a dished member arranged inside of the post and connected to a support, bolts carried by the flange of said member and extending through the walls of the post, and a device connected to the inside of the flange of said member for preventing the bolts from being displaced when nuts are being applied thereto; substantially as described.

25. In a car-construction, a member through which bolts project, and a metal clip connected to the inner face of said member and extending over the heads of the bolts to prevent them from being displaced when nuts are being applied thereto; substantially as described.

26. In a car construction, a member provided with a non-circular opening to receive a correspondingly-shaped portion on a bolt that projects through said member, and a metal clip connected to the inner face of said member and extending over the head of the bolt to prevent it from being displaced when a nut is being applied thereto; substantially as described.

27. A passenger-car provided with twin windows, a semi-elliptical window arranged over said windows, and a vertical post extending between said windows and offset inwardly to extend back of the semi-elliptical window; substantially as described.

28. A passenger-car provided with twin windows, a window arranged over said twin windows, and a post arranged between said twin windows and extending from the lower side sill to the upper side sill of the car, and being bent inwardly to extend behind the window that is arranged over the twin windows; substantially as described.

29. A passenger-car having twin windows, a cripple-post connected to the lower side sill and the belt-rail of the car, and a vertical post arranged between said windows and connected to the cripple-post and upper side sill of the car; substantially as described.

30. A passenger-car having twin windows and a single window arranged above said twin windows, a cripple-post extending between the lower side sill and the belt-rail of the car, and a vertical post extending between the twin windows and offset inwardly to extend behind the single window, said vertical post being connected to the cripple-post and to the upper side sill of the car; substantially as described.

31. A passenger-car provided with twin windows and a single window arranged above the twin windows, and a post arranged between the twin windows and extending from the lower side sill to the upper side sill of the car; substantially as described.

32. In a passenger-car, a cripple-post extending between the lower side sill and belt-rail of the car and comprising two angles arranged in the form of a T, and a vertical post having a portion thereof extending between the angles which form the cripple-post and being connected thereto; substantially as described.

33. A passenger-car comprising a side wall, a floor, a seat-plank arranged on the inside of the car-wall adjacent the floor, and inwardly-projecting flanges at the upper and lower edges of said plank; substantially as described.

34. A passenger-car comprising a side wall, a floor, and a pressed-metal member arranged on the inside of the car-wall and being provided at its upper and lower edges with inwardly-extending flanges; substantially as described.

35. A car comprising a side wall, an inside sheathing-

plate, an inwardly-projecting flange at the lower edge of said plate, a seat-plank and an inwardly-projecting flange at the upper edge of said seat-plank which is secured to the flange at the lower edge of the inside sheathing-plate; substantially as described.

36. A car provided with an inside sheathing-plate, a sheet of fireproof material arranged on said plate, a strip of metal arranged on the other side of said fireproof material, and fastening devices extending through all of said members; substantially as described.

37. A car comprising a side wall, a sheathing-plate arranged inside of said wall, and a seat-plank located underneath said plate and provided at its upper and lower edges with angles; substantially as described.

38. A car comprising side posts, longitudinally-extending angles connected to said posts, an inside sheathing-plate connected at its upper and lower edges to said angles, a wooden filler connected to the upper angle, and a pressed-metal window-sill fastened to said filler; substantially as described.

39. A car comprising side posts, angles connected to said posts, an inside sheathing-plate secured to said angles, and a seat-plank fastened to one of said angles and to the floor of the car; substantially as described.

847,505. PASSENGER-CAR CONSTRUCTION. ALLEN E. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Nov. 19, 1906. Serial No. 344,022.

Claim.—1. In a passenger-car, a metal window-frame provided with a flange that is arranged on the outside of the wall of the car; substantially as described.

2. In a passenger-car, a metal window-frame provided with a flange that is arranged on the outside of the wall of the car, and a flange at the inner side of said frame which is engaged by the sash of the window; substantially as described.

3. In a passenger-car, an oval-shape metal frame arranged in the side wall of the car and having the sash of a window mounted therein; substantially as described.

4. In a passenger-car, an oval-shape metal frame arranged in the wall of the car and having a window-sash mounted therein, said frame being provided with a flange that extends on the outside of the wall of the car; substantially as described.

5. In a passenger-car, a metal window-frame of oval shape provided with an inwardly-extending flange, a window-sash arranged inside of said frame and engaging said flange, and a laterally-extending flange on said frame which is arranged outside of the car-wall in which the frame is mounted; substantially as described.

6. In a passenger-car, an oval-shape metal frame provided with an outwardly-projecting flange to receive the fastening devices which secure said frame in position, an inwardly-projecting flange on said frame, and a window-sash arranged inside of said frame and secured to the inwardly-projecting flange thereof; substantially as described.

847,506. ORNAMENTAL PRESSED-METAL MOLDING. ALLEN E. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Nov. 19, 1906. Serial No. 344,023.

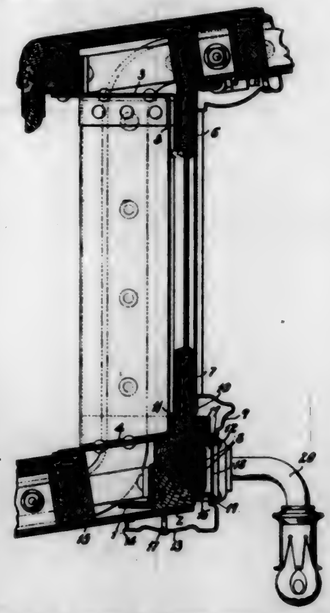

Claim.—1. A pressed or drawn metal molding consisting of an upper section having an ornamental portion, and a vertically-disposed shoulder adapted to engage a window-sash, a support to which said member is connected, a lower section spaced away from the upper section and having an ornamental portion and a flange which engages the support which said lower section covers, and a removable plate connected to said sections; substantially as described.

2. A sheet-metal molding consisting of an upper ornamental section provided at one edge with a laterally-extending attaching-flange and at its other edge with a depending flange, a support to which said member is connected, a lower ornamental section provided at one edge with a spacing-flange and at its other edge with an upwardly-projecting flange, and a plate detachably connected to the depending and upwardly-projecting flanges on said sections; substantially as described.

3. A sheet-metal molding consisting of an upper section having an ornamental portion, a depending flange at the lower edge of said portion, a shoulder at the upper edge of said portion, a flange projecting laterally from said shoulder, a support to which said section is connected, a lower section spaced away from the upper section and provided with an ornamental portion at one edge of which is an inverted-L-shaped flange and at the other edge of which is an inverted-channel-shaped part, means for fastening said lower section to the support, and a plate detachably connected to the depending flange of the upper section and to the inverted-channel-shaped part of the lower section; substantially as described.

847,507. INCUBATOR. LOUIS N. PORTER, Ponca, Nebr., assignor of one-half to John H. Kate, Wayne, Nebr. Filed Aug. 15, 1906. Serial No. 330,623.

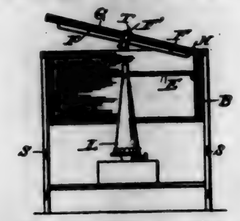

Claim.—1. In an incubator, a casing, a centrally-disposed stationary heater within the casing, a hinged cover for the latter having outlets at other points than its center, a hood at the center thereof adapted to fit over the heater when the cover is turned down into place, and flues carried by the cover and connecting said hood with the outlets.

2. In an incubator, the combination with a casing, and a heater directed upward through the center of the casing; of a hinged cover for the casing having a central transverse strip and corner-outlets, a hood supported by said strip and extending through the cover whereby it is adapted to fit over the heater, and flues carried by the cover and leading from the hood to the outlets.

3. In an incubator, the combination with a casing, and a heater directed upward through the center of the casing; of a cover for the casing comprising a frame with outlets in it and a central transverse strip, a hood carried by said strip and adapted to fit over said heater when the cover is closed, and flues carried by and beneath the cover and connecting said hood with said outlets, as and for the purpose set forth.

4. In an incubator, the combination with a casing, and a stationary heater directed upward through the center of the casing; of a hinged cover for the casing having outlets at its corners, a central hood carried by and opening through the cover and adapted to fit over said heater when the cover is closed, a thermostat on the cover for controlling the heat flowing from said hood, and flues carried by and beneath the cover and leading from said hood to said outlets, for the purpose set forth.

847,508. WATER-ELEVATING DEVICE. JAMES H. RALSTON, Snowmass, Colo. Filed Aug. 16, 1905. Serial No. 274,469.

Claim.—1. A water-elevating device, consisting of a hollow axle mounted on suitable bearings, said axle provided at its center with longitudinal slots for the inflow of water, leaving connecting-strips; a disk, secured between said strips, and a series of spiral buckets, their outer ends terminating in mouths, their inner ends secured to said connecting-strips, permitting the inflow of water to said axle, substantially as shown and described and for the purposes set forth.

2. A water-elevating machine, consisting of a wheel 1, provided with side walls 1'; a series of spiral buckets 2, secured to the inner faces of said walls, and terminating at the periphery of said wheel in mouths 5; an axle 4, provided with connecting-strips 3, and openings 3', said axle being hollow its entire length; caps 4' and 4^2, removably secured, one on each end of said axle; a disk, adapted to be secured near the middle of said axle; roller-bearings 5', supporting said axle, and rigidly connected to axles 6, journaled in bearings 7; longitudinal beams 8, provided with legs 9, said beams supporting said bearings

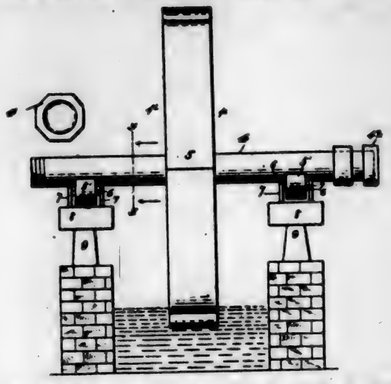

7, with means for revolving said axle and wheel, substantially as shown and described and for the purposes set forth.

847,509. CONVEYING APPARATUS. JOSEPH RILING and CHARLES W. SAGER, Philadelphia, Pa., assignors to Hero Fruit Jar Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed July 7, 1906. Serial No. 325,053.

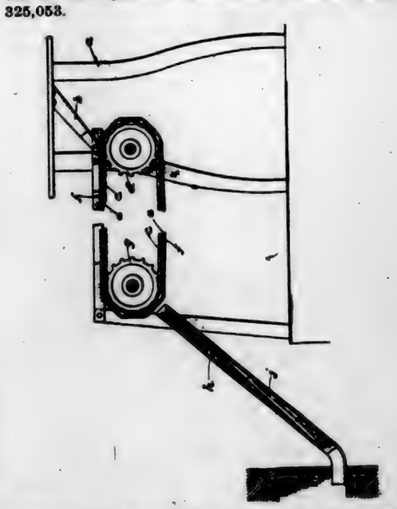

Claim.—1. In an apparatus for carrying glass tops from the press to the leer, in combination, a chute from a pressing-machine, a conveyer adapted to convey the tops having its flat surface in line with said chute and adapted to receive the tops delivered by the press-chute on the flat, wheels about which said conveyer turns, a chute in line with the conveyer at said point, a leer at a lower level than said conveyer to the mouth of which said chute extends, the bottom of said chute at the upper portion being on the flat, and on edge at the lower end.

2. In an apparatus for carrying glass tops from the press to the leer, in combination, a chute from a pressing-machine, a conveyer adapted to convey the tops having its flat surface in line with said chute and adapted to receive the tops delivered by the press-chute on the flat, wheels

about which said conveyer turns, a chute in line with the conveyer at said point, a leer at a lower level than said conveyer to the mouth of which said chute extends, the bottom of said chute at the upper portion being on the flat and inclining gradually to on edge at the lower end.

847,510. SASH-LOCK. ORIN J. ROGERS, Spokane, Wash. Filed Dec. 10, 1906. Serial No. 347,004.

Claim.—1. In a sash-lock of the character described, the combination of the box portion and the latch end extension, with the shaft extending horizontally through same from end to end and beyond the end portions of the box, one end being turned abruptly at right angles with the position of the shaft and forming a handle, the other end being first turned abruptly at right angles with the position of the shaft, extending a distance in that direction, then being turned abruptly at right angles and extending a distance forward at a position parallel with the position of the shaft and forming the latch, said shaft within the said box having encircling the same a coil-spring and at one end thereof a collar stationary with the said shaft and at either end a collar loosely encircling the same and stationary with the said box; a steel strip with a system of holes through the same and secured to the parting-strip between the upper and lower sash and a corresponding steel strip attached to the face of the upper sash with a system of holes through the same, corresponding with the holes in the steel strip secured to the parting-strip between the upper and lower sash, substantially as set forth.

2. In a sash-lock of the character described, the box portion with the front end extension in combination with the shaft extending through same, terminating in a handle at one end and a latch at the other end, the coil-spring within said box, encircling the said shaft, the stationary collar encircling the shaft, the two collars one at either end thereof encircling the shaft loosely and being stationary with the box, the steel portions or strips with the system of holes, secured to the strip parting the upper and lower sash and to the upper sash of the window, substantially as set forth.

847,511. ELEVATED CARRIER. FREDERICK E. SACKETT, Harvey, Ill. Filed Apr. 17, 1906. Serial No. 312,204.

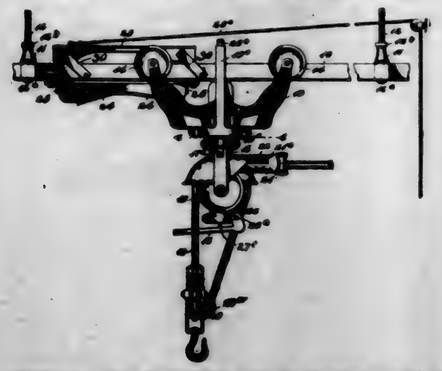

Claim.—1. The combination with an elevated track, of a carrier thereon having a rope-catch, a stop on the track, automatic means at the stop to operate the catch, and independent means at the stop to operate the catch, adapted for manual operation, comprising a plate supported on swinging links above the track and devices connected to the catch and engageable by the plate to operate the former.

2. In an elevated carrier, in combination, a carriage, a swiveling barrel carried thereby, a member slidable to a limited extent up and down in the barrel, a sheave supported on the member, a hoisting and hauling rope which runs over the sheave, a rope-catch on the sheave-frame actuated by the relative movement of the barrel and member to hold or release the rope, a latch mounted on the barrel and engageable with the member to hold the same in raised position, with the rope released, and means to release the latch, and allow the member to fall, to engage the rope-catch with the rope, comprising a block slidable up and down in the barrel and arranged to strike the latch, and means to raise or lower the block.

3. In an elevated carrier, in combination, a carriage, a swiveling barrel mounted therein, and having slots in its side and a laterally-projecting arm, a tube movable up and down in the barrel and having lateral arms extending through the slots, sheave-frames hung upon said arms, a fall-rope which runs over the sheaves, a rope-catch pivoted upon a sheave-frame, the head of which engages the rope and the tail of which rests upon the arm which projects from the barrel, means to raise or lower the tube with respect to the barrel, to engage or disengage the catch, a latch pivoted to the lower end of the barrel and which works through the side of the barrel to engage under the lower end of said tube when it is raised, and means to release the latch comprising a block under the end of said tube, within the barrel, a lever pivoted at the lower end of the barrel and extending thereunder and arranged to be struck by the running-sheave to lift said block and release the latch, a rod extending upwardly through the tube, arms operatively connected to the rod and extending upwardly above the carriage, and means to pull said arms upwardly, to lift the block.

4. In an elevated carrier, the combination of the barrel and the tube movable up and down therein, the latch pivoted to the barrel and engaging under the lower end of the tube, to hold the same in raised position, a rope-catch operated by the relative movement of the barrel and tube, and means operated from either above or below the barrel and to operate the latch.

847,512. PLOW-DEPTH REGULATOR. JOHN M. SAUSSER, Osnaburg, Ohio. Filed June 19, 1906. Serial No. 322,461.

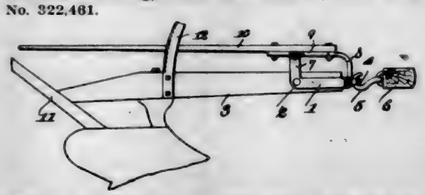

Claim.—1. A device for regulating the depth of furrow cut by a plow consisting of a clevis pivoted at its ends to the plow-beam and extending around the end of the same, said clevis being provided with means to which the draft-animal attachments may be applied, an arch member connecting with the clevis at the pivotal points thereof and extending over the plow-beam, a brace member connecting with said clevis at an intermediate point thereof and extending up over the end of the plow-beam and connecting with said arch member, a lever attached to said arch and brace members and extending back to within operating distance of the plow-handles, and a means located upon the plow-beam and adapted to retain the lever in temporary fixed positions.

2. A device for regulating the depth of furrow cut by a plow consisting of a clevis pivoted at its ends to the plow-beam and passing around the front end thereof and having at its intermediate point means adapted to receive the draft-animal attachments, an arch member fixed to the ends of the clevis and extending over the plow-beam, a brace member fixed at its end to an intermediate point of the clevis and extending over the end of the plow-beam and having a horizontal portion which connects with the arch member and projects in the rear thereof, a lever fixed to said horizontal portion of the brace member and extending back to within operating distance of the plow-handles, a means attached to the plow-beam and adapted to engage the lever to retain the same in temporary fixed positions.

3. A device for regulating the depth of furrow cut by a plow consisting of a clevis pivotally attached to the plow and having means to which the draft-animal attachments may be applied, an arch member attached to the clevis and being vertically disposed over the pivotal points thereof and passing over the plow-beam, a second arch member also attached to the clevis and being located in advance of the first said arch member and being spaced from the same, and a lever attached to said arch members.

847,513. SAND AND MINERAL DRIER. MARGUERITE SCHAEFFER, Indianapolis, Ind. Filed Nov. 30, 1906. Serial No. 345,611.

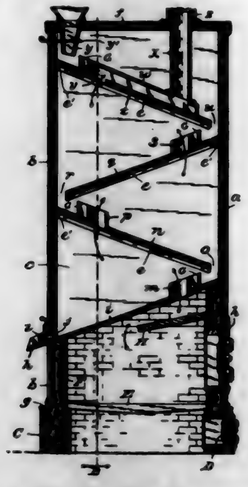

Claim.—1. A drier comprising a structure having a front wall, a rear wall and two side walls, the lower part of the structure forming a furnace-chamber, a slanting floor in the structure joining all of the walls thereof forming a roof for the furnace-chamber and provided with a flue-pipe remote from the walls, the wall at the lower portion of the floor having an outlet-opening therein, and a plurality of communicating drying-chambers arranged above the floor, each chamber above the lower one having an inclined floor joined at its higher end and sides to several of the walls and provided with a flue-pipe remote from the walls, the furnace-roof forming the floor of the lowermost drying-chamber.

2. A drier comprising a structure having a front wall, a rear wall, two side walls, the lower part of the structure forming a furnace-chamber, one of the walls provided with a door, a slanting floor in the structure forming a roof for the furnace and provided at its higher portion with a flue-pipe, there being an outlet-opening in a wall at the lower portion of the floor, and a plurality of communicating chambers arranged above the floor, each chamber above the lower one having an inclined floor provided at its higher portion with a flue-pipe, the uppermost chamber being provided with an inlet-opening for admission of substances to be dried, the furnace-roof forming the floor of the lowermost chamber.

3. A drier comprising a structure having a front wall, a rear wall, two side walls, the lower part of the structure forming a furnace-chamber, one of the walls provided with a door, a slanting floor in the structure forming a roof for the furnace and provided at its higher portion with a flue-pipe, the floor joining all of the walls of the structure, and the wall at the lower portion of the floor having an outlet-opening therein, and a plurality of communicating chambers arranged above the floor, each chamber above the lower one having an inclined floor provided at its higher portion with a flue-pipe for the passage of heat through the floors, the furnace-roof being the floor of the lowermost chamber, the uppermost chamber having an inlet-opening to receive substances to be dried, and a flue-pipe connected to the floor of the uppermost chamber in communication with the chamber beneath and extending through the uppermost chamber to the exterior of the structure.

4. A drier comprising a structure having a front wall, a rear wall, two side walls, and a roof at the tops of the walls, the lower part of the structure forming a furnace-chamber, a plurality of communicating chambers arranged above the furnace-chamber, the lowermost chamber having an inclined floor joining all of the walls of the structure and provided with a flue-pipe remote from the walls, one of the walls having an outlet-opening therein above the floor, the uppermost chamber being provided with an inlet-opening, each chamber above the lower one having an inclined floor joined at its sides and higher end to several walls and provided with a flue-pipe remote from the walls, each one of said flue-pipes except the uppermost one being remote from the lower ends of the floors next above them, and a flue-pipe connected to the floor of the uppermost chamber in communication with the flue-pipe thereof and extending to the exterior of the structure.

847,514. STARTING DEVICE FOR EXPLOSION-ENGINES. CHARLES SCHMIDT, Warren, Ohio, assignor to The Packard Motor Car Company, Warren, Ohio, a Corporation of West Virginia. Filed June 22, 1903. Serial No. 162,620.

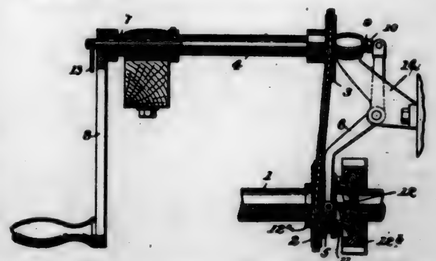

Claim.—1. In a mechanism for starting a hydrocarbon-motor, the combination with the engine-shaft and a normally open clutch for rotating said shaft, of a shaft adapted to be manually operated, connections between the latter shaft, and one of the clutch members, and means for engaging and releasing the clutch including a part mounted coaxially with the manually-operated shaft.

2. In a mechanism for starting a hydrocarbon-engine, the combination with the engine-shaft and a normally open clutch for rotating said shaft, of a shaft adapted to be manually rotated, connections between said manually-operated shaft and one of said clutch members for rotating the latter, and a rod extending through said manually-operated shaft and adapted to close the clutch.

3. A starting device for hydrocarbon-engines comprising in combination with the engine-shaft, fixed and movable clutch members on said shaft, a shaft adapted to be manually operated, connections between the manually-operated shaft and the movable clutch member for rotating the latter, a rod extending through the manually-operated shaft, a lever connecting said rod with the movable clutch member, and means for normally holding said clutch open.

847,515. STREET-CAR PROPULSION. GEORGE G. SCHROEDER, Washington, D. C. Filed Mar. 20, 1905. Renewed June 28, 1906. Serial No. 323,863.

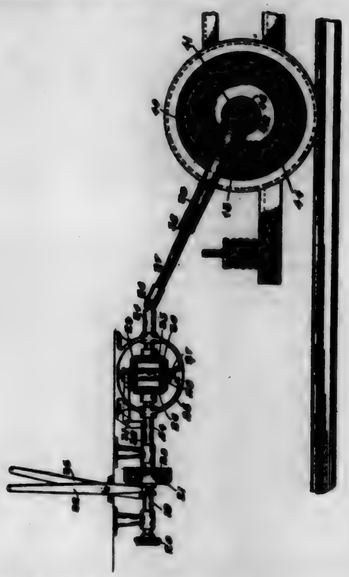

Claim.—1. An improvement in car propulsion comprising a sleeve adapted to surround the axle of a car to rotate the same, said sleeve being free to move longitudinally on said axle, the bore of said sleeve being constructed to permit the axle to swing horizontally, and means for rotating said sleeve.

2. An improvement in car propulsion comprising a sleeve adapted to surround the axle of a car to rotate the same, said sleeve being free to move longitudinally on said axle, the bore of said sleeve being constructed to permit the axle to swing horizontally, means for rotating said sleeve, and means for reversing the direction of rotation of said sleeve.

3. An improvement in car propulsion comprising a sleeve adapted to surround the axle of a car to rotate the same, said sleeve being free to move longitudinally on said axle, the bore of said sleeve being constructed to permit the axle to swing horizontally, driving means for rotating said sleeve, and means for permitting the driving means to be elevated or depressed with relation to said sleeve.

4. An improvement in street-car propulsion comprising a sleeve adapted to surround an axle of the car and impart movement thereto, said sleeve being constructed to permit said axle to swing horizontally, driving means for rotating said sleeve, and means connected to said sleeve for permitting the driving means to be elevated or depressed with relation to said sleeve.

5. An improvement in car propulsion comprising a sleeve adapted to surround an axle of the car and constructed to impart movement thereto, the bore of said sleeve being flared or enlarged at each end, and means for rotating said sleeve.

6. An improvement in car propulsion comprising a power-shaft, means for rotating the same, a sleeve adapted to surround an axle of the car to rotate the same, said sleeve being free to move longitudinally on said axle, its bore being constructed to permit said axle to describe a partial rotation on a horisontal plane, a telescoping shaft connected at one end to said power-shaft and supported at its other end by said sleeve, and means operated by said telescoping shaft to rotate said sleeve.

7. An improvement in car propulsion comprising a sleeve adapted to surround an axle of the car to rotate the same, said sleeve being free to move longitudinally on said axle, its bore being constructed to permit said axle to describe a partial rotation on a horisontal plane, a bearing supported by said sleeve, a shaft having one end mounted in said bearing, gearing connecting said shaft and sleeve, and means for rotating said shaft.

8. An improvement in car propulsion comprising a sleeve adapted to surround an axle of the car to rotate the same, the bore of said sleeve being flared or enlarged at each end, a bearing supported by said sleeve, a telescoping shaft having one end supported by said bearing, gearing between said shaft and sleeve, and means for rotating said shaft.

9. A car-body having at each end an engine-compartment, a freight-compartment located near one end of the body, and separated from the adjacent engine-compartment by a platform, and a passenger-compartment located between said freight-compartment and the other engine-compartment, and being separated from the last said engine-compartment by a platform.

10. A car-body having at each end an engine-compartment, a passenger-compartment located adjacent one of said engine-compartments, and being separted from the same by a platform, a freight-compartment located adjacent the other engine-compartment, and being separated from the same by a platform, and an aisle leading by the said freight-compartment from the platform adjacent thereto into the passenger-compartment of the car.

847,516. COMBINATION CEMENT AND METAL FENCE-POST. GEORGE G. SCHROEDER, Washington, D. C. Filed Aug. 22, 1906. Serial No. 331,600.

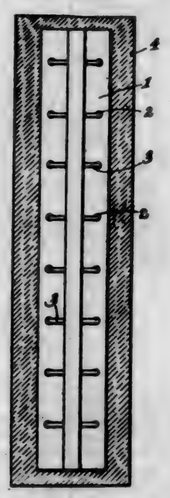

Claim.—1. A post of the character described comprising a cruciform metallic core incased within a body of plastic material, and means spanning the spaces between the arms of said core for binding the plastic material to said core.

2. A post of the character described comprising a cruciform metallic core incased within a plastic body, said core being provided with a plurality of independent wire binders extending from end to end thereof.

3. A post of the character as described comprising a cruciform metallic core, metallic links connecting the sides of the core, and a coating of plastic material enveloping said core and links.

4. A post of the character as described comprising a cruciform metallic core having perforated sides, metallic links passing through said perforations, and a coating of plastic material enveloping said core and the links.

847,517. CAR-COUPLING. WILLIAM S. SCHROEDER, Chicago, Ill. Filed Nov. 26, 1906. Serial No. 345,205.

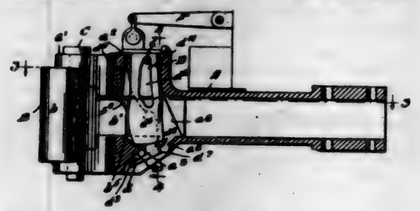

Claim.—1. In a car-coupler, the combination with a forked draw-head provided with an opening to receive a vertically-movable gravity-lock, and a lock-set ledge on the bottom wall of the draw-head, and a stop projection on the draw-head to prevent the lock from creeping or jumping upward, of a knuckle having a knuckle-throwing incline on its rear arm, and a vertically-movable gravity-lock provided with a forwardly and downwardly inclined knuckle-throwing foot having a front edge or toe serving as a lock-set and adapted to project under and engage said slot projection on the draw-head to prevent the lock from jumping upward or creeping, said lock having a guide-slot extending transversely through the same and provided with an upwardly and forwardly inclined front wall at its lower portion, a guide-pin in the draw-head extending through said guide-slot, said locking-pin also having a heel provided with a shoulder adapted to engage a stop-shoulder on the bottom web or floor of the draw-head to aid in preventing the lock from creeping and the lock having also at its front wall near its upper end a stop projection, and the draw-head having a coöperating-stop projection, substantially as specified.

2. In a car-coupler, the combination with a forked draw-head having a lock-set ledge and a stop projection on its bottom web, of a knuckle having a knuckle-throwing incline on its rear arm, and a vertically-movable gravity-lock provided with a forwardly and downwardly inclined knuckle-throwing foot having a front edge serving as a lock-set, said foot projecting under said stop projection on the draw-head to prevent jumping or creeping of the lock, said lock being provided with a guide-slot and a guide-pin in the draw-head extending through said guide-slot in the locking-pin, substantially as specified.

3. In a car-coupler, the combination with a forked draw-head having a lock-set ledge and a stop projection on its bottom web, of a knuckle having a knuckle-throwing incline on its rear arm, and a vertically-movable gravity-lock provided with a forwardly and downwardly inclined knuckle-throwing foot having a front edge serving as a lock-set, said foot projecting under said stop projection on the draw-head to prevent jumping or creeping of the lock, said lock being provided with a guide-slot and a guide-pin in the draw-head extending through said guide-slot in the locking-pin, said foot on the lock having a heel-like projection and the draw-head having a coöperating stop, substantially as specified.

4. In a car-coupler, the combination with a forked draw-head having a lock-set ledge and a stop projection on its bottom web, of a knuckle having a knuckle-throwing incline on its rear arm, and a vertically-movable gravity-lock provided with a forwardly and downwardly inclined knuckle-throwing foot having a front edge serving as a lock-set, said foot projecting under said stop projection on the draw-head to prevent jumping or creeping of the lock, said lock being provided with a guide-slot and a guide-pin in the draw-head extending through said guide-slot in the locking-pin, said lock having also a stop projection at its front near its upper end and the draw-head having a stop-shoulder coöperating therewith to prevent creeping of the lock, substantially as specified.

5. In a car-coupler, the combination with a forked draw-head having a lock-set ledge and a stop projection on its bottom web, of a knuckle having a knuckle-throwing incline on its rear arm, and a vertically-movable gravity-lock provided with a forwardly and downwardly inclined knuckle-throwing foot having a front edge serving as a lock-set, said foot projecting under said stop projection on the draw-head to prevent jumping or creeping of the lock, said lock being provided with a guide-slot and a guide-pin in the draw-head extending through said guide-slot in the locking-pin, said lock being provided with a curved enlargement at its front, substantially as specified.

6. In a car-coupler, the combination with a forked draw-head having a lock-set ledge, and a stop projection on its bottom web, of a knuckle having a knuckle-throwing incline on its rear arm, and a vertical movable gravity-lock provided with a forwardly and downwardly inclined knuckle-throwing foot having a front edge serving as a lock-set, said foot projecting under said stop projection on the draw-head to prevent jumping or creeping of the lock, said lock having a heel and the draw-head having a coöperating stop to aid in preventing creeping of the lock, substantially as specified.

7. In a car-coupler, the combination with a forked draw-head having a lock-set ledge, and a stop projection on its bottom web, of a knuckle having a knuckle-throwing incline on its rear arm, and a vertically-movable gravity-lock provided with a forwardly and downwardly inclined knuckle-throwing foot having a front edge serving as a lock-set, said foot projecting under said stop projection on the draw-head to prevent jumping or creeping of the lock, said lock and draw-head being furnished with coöperating guide devices to guide the lock in its forward and downward movement, said lock or its knuckle-throwing foot having a heel, and the draw-head having a coöperating stop to aid in preventing creeping of the lock, substantially as specified.

8. In a car-coupler, the combination with a forked draw-head having a lock-set ledge, and a stop projection on its bottom web, of a knuckle having a knuckle-throwing incline on its rear arm, and a vertically-movable gravity-lock provided with a forwardly and downwardly inclined knuckle-throwing foot having a front edge serving as a lock-set, said foot projecting under said stop projection on the draw-head to prevent jumping or creeping of the lock, said lock being provided on its front side near its upper end with a stop projection to prevent creeping of the lock, and the draw-head having a stop-shoulder coöperating therewith, substantially as specified.

9. In a car-coupler, the combination with a forked draw-head having a lock-set ledge, of a knuckle having a knuckle-throwing incline on its rear arm, and a vertically-movable gravity-lock having a recess or depression at its front on its right or knuckle-engaging side, the side wall of said depression or recess constituting the locking-face of the lock, the bottom wall of said depression being forwardly and downwardly inclined and constituting a knuckle-throwing foot, and the upper wall of said recess or depression being upwardly and forwardly inclined and serving as a shoulder to support the lock on the knuckle-tail and guide the lock as it drops to its lowermost position, substantially as specified.

10. In a car-coupler, the combination with a forked draw-head having a lock-set ledge, of a knuckle having a knuckle-throwing incline on its rear arm, and a vertically-movable gravity-lock having a recess or depression at its front on its right or knuckle-engaging side, the side wall of said depression or recess constituting the locking-face of the lock, the bottom wall of said depression being forwardly and downwardly inclined and constituting a knuckle-throwing foot, and the upper wall of said recess or depression being upwardly and forwardly inclined and serving as a shoulder to support the lock on the knuckle-tail and guide the lock as it drops to its lowermost position, and the draw-head having a stop projection on its bottom web engaging said knuckle-throwing foot to prevent creeping of the lock, substantially as specified.

11. In a car-coupler, the combination with the forked draw-head having a lock-set ledge and a stop projection on its bottom web, of a knuckle having a knuckle-throwing incline on its rear arm, and a vertically-movable gravity-lock provided with a forwardly and downwardly inclined knuckle-throwing foot having a front edge serving as a

lock-set, said foot projecting under said stop projection on the draw-head to prevent jumping or creeping of the lock, said lock and draw-head being furnished with coöperating guide devices to guide the lock in its forward and downward movement, said lock being provided on its front side near its upper end with a stop projection to prevent creeping of the lock and the draw-head having a stop-shoulder coöperating therewith, substantially as specified.

847,518. FILTER. CHARLES M. SHILTZ, Carrollton, Ohio. Filed May 14, 1906. Serial No. 316,652.

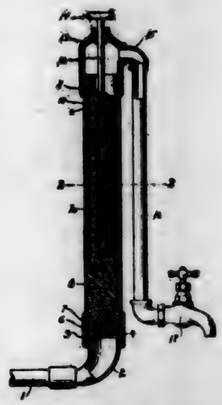

Claim.—The combination of a coupling provided with a perforated web located intermediate the ends of the coupling, a filter-casing secured to the coupling, a gauze disk located in contact and supported by the perforated web, a stratum of cotton located upon and in contact with the gauze disk, a stratum of charcoal located above and upon the cotton, a stratum of sand located above the charcoal, and a stratum of cotton located above the sand, an adjustable perforated pressure-disk provided with a gauze disk upon its under side, a chambered cap secured to the upper end of the filter-casing, a screw-threaded rod carried by the cap, said screw-threaded rod provided with a groove and tangs adapted to be bent into the groove, whereby the screw-threaded rod is rotatably connected to the pressure-disk, substantially as and for the purpose specified.

847,519. RIFFLE. JOHN B. SLOANE, Los Angeles, Cal. Filed Dec. 17, 1904. Serial No. 237,200.

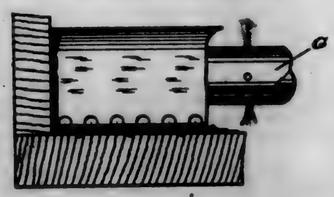

Claim.—The combination of the sluice, riffles therein having vertical members, flat-bottomed members, curved top members, said riffles being provided with perforations near the junction of the vertical and bottom members, also pipes in said sluice below the plane of the top of said riffles, said pipes having a series of perforations circumferentially spaced to project jets of water in opposite, that is to say, substantially vertical and horizontal directions.

847,520. CIRCUIT-BREAKER. EDWIN H. SMYTHE and EASTMAN A. BURROWS, Chicago, Ill., assignors to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 22, 1905. Serial No. 256,861.

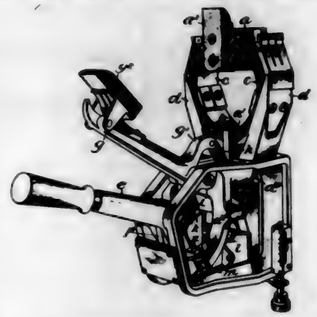

Claim.—1. In a circuit-breaker, the combination with a pair of levers pivoted intermediate their ends, of a switch-arm carried by each lever, contact-terminals adapted to be closed by said switch-arms, an operating-lever pivoted to swing in a plane perpendicular to the plane of movement of said pair of levers and a toggle actuated by said operating-lever and adapted to be wedged between the ends of said pair of levers to swing said switch-arms toward each other into engagement with the opposite faces of said contact-terminals.

2. In a circuit-breaker, the combination with a pair of switch-arms having lever extensions, of an operating-lever pivoted to swing in a plane perpendicular to the plane of movement of said switch-arms; a collapsible toggle actuated by said operating-lever and adapted to be wedged between said extensions to operate said switch-arms, a hammer for collapsing said toggle, and electromagnetic means for controlling the operation of said hammer.

3. In a circuit-breaker, the combination with a switch, of a collapsible toggle for holding said switch closed, an operating-lever for moving said toggle to close the switch, a spring-actuated hammer for collapsing said toggle, set in the movement of said operating-lever, and electromagnetic mechanism for tripping or releasing said hammer.

4. In a circuit-breaker, the combination with the base, of a pair of switch-arms having pivots about which said arms swing substantially parallel to said base, and an operating-lever pivoted to swing in a plane at an angle to the plane of said base, said lever being provided with means for actuating said switch-arms.

5. In a switch, the combination with a base and a contact-terminal projecting therefrom, of a pair of switch-arms adapted to engage opposite sides of said terminal, and a third switch-arm adapted to engage the face of said terminal.

6. In a circuit-breaker, the combination with a pair of contact-terminals, of bridging switch members adapted to engage the sides of said terminals to unite them, a carbon face for the outer face of one of said terminals, a third switch member arranged to operate in a plane at an angle to said bridging members and having a carbon face adapted to engage the said carbon face of said terminal, and a manual lever connected to all of said switch members to operate the same.

7. A circuit-breaker having a base, a copper switch-terminal projecting outwardly from said base, a pair of switch-arms adapted to engage the opposite sides of said terminal, a carbon face for the top of said terminal and a shunt switch-lever engaging said carbon face to take the arc.

8. In a switch, the combination with a pair of opposing levers pivoted intermediate their ends, of a pair of switch-arms oppositely mounted upon said levers, contact-terminals each adapted to have its opposite face engaged by said switch-arms, and a wedging member adapted to be inserted between the free ends of said levers to force the same apart and thereby to swing said switch-arms into engagement with the opposite faces of said contact-terminals.

9. In a circuit-breaker, the combination with a base, of contact-terminals projecting edgewise from said base, laminated bridging members adapted to span said contact-terminals on both sides thereof, said bridging members being fulcrumed to swing in a plane parallel with the plane of the base and a switch-arm adapted to engage the face of one of said terminals.

10. In a circuit-breaker, the combination with a movable switch member, a pivoted manual operating-lever, a collapsible connection between said operating-lever and said switch member, a spring-actuated collapsing hammer, a detent controlling the release of said hammer, and an electromagnet responsive to excessive current, having an armature adapted to move said detent to release the hammer, substantially as set forth.

11. In a circuit-breaker, the combination with a pair of opposed switch members, of a pivoted manual operating-lever carrying a collapsible toggle adapted to be wedged between said switch members to actuate the same, a spring-actuated hammer pivoted substantially concentric with said operating-lever and adapted when released to strike said toggle and collapse the same, independent of the position of said switch-arm, and electromagnetic tripping mechanism for said hammer.

12. In a circuit-breaker, the combination with two main-switch levers arranged to move reciprocally toward and from each other, of an auxiliary-switch lever, a bell-crank lever having its arms connected respectively to said auxiliary-switch lever and one of said main-switch levers, the fulcrum of said bell-crank being connected to the other main-switch lever; whereby in the movement of said main-switch levers a magnified movement is imparted to said auxiliary-switch lever.

13. In a circuit-breaker, the combination with a pair of reciprocally-acting main-switch levers, of an auxiliary-switch lever pivoted to swing in a plane at an angle to said main-switch levers, a pivoted manual operating-lever carrying a part adapted to engage said main-switch levers to actuate the same, and a magnifying-movement connection between one of said main-switch levers and said auxiliary-switch lever; whereby said auxiliary switch is actuated indirectly in the movement of said manual lever.

14. In a circuit-breaker, the combination with a switch-lever, of a pivoted manual operating-lever carrying at its ends a collapsible member adapted to engage said switch-lever to actuate the same, a hammer pivoted concentrically with said operating-lever and arranged to swing in the arc or path of said collapsible member, an electromagnetically-controlled detent adapted to hold said hammer from following said collapsible member, and a spring arranged to actuate said hammer connected with said operating-lever to be put under increasing tension as the switch is closed.

15. In a circuit-breaker, the combination with a pair of pivoted switch-arms having diverging cam-lever extensions, of a pivoted operating-lever swinging in a plane at an angle to said switch-arms, said cam-lever extensions being curved concentric with the pivot of said operating-lever, cam-rollers mounted in the plane of said operating-lever in position to engage said cam-lever extensions to move the same, said cam-rollers being mounted to move crosswise in the frame of said operating-lever, means for holding said cam-rollers against such crosswise movement, and electromagnetic means for releasing said cam-rollers.

16. In an electric switch, the combination with a contact-terminal, of a pair of switch-arms, and a toggle-lever for forcing said switch-arms into engagement with the opposite faces of said terminal.

17. In an electric switch, the combination with a contact-terminal, of a pair of switch-arms, a collapsible toggle for forcing said switch-arms into engagement with the opposite faces of said terminal, and electromagnetically-operated means for operating said toggle to open said switch.

18. In a circuit-breaker, the combination with contact-terminals, of a pair of pivoted switch-arms adapted to bridge said terminals, a manual operating-lever, a collapsible toggle carried by said operating-lever, and adapted to be wedged thereby between said switch-arms to force the same into engagement with the opposite faces of said terminals, and automatically-operated electromagnetic means for collapsing said toggle.

19. In a circuit-breaker, the combination with the base, of a pair of switch-arms, having pivots about which said arms swing substantially parallel to said base, an operating-lever pivoted to swing at an angle to the plane of said base, and a toggle carried on the end of said lever, the ends of said toggle being arranged to be brought into engagement with said switch-arms to operate the same.

20. In a circuit-breaker, the combination with a base, of two main contact-terminals one vertically above the other projecting edgewise from the base, two laminated bridging members fulcrumed to swing in a plane parallel with the base, said bridging members being arranged to engage opposite faces of said main contact-terminals, an auxiliary-switch arm, a shunt-contact carbon carried on the end of said arm, a coöperating shunt-carbon secured to the edge of the upper contact-terminal, downward extensions of the said main bridging members, an operating-handle fulcrumed to swing at right angles to the plane of the base, a collapsible toggle carried on the end of said operating-handle and adapted to be wedged between the downward extensions of the said main bridging members to close the same against their contact-terminals, a movement-multiplying connection between said bridging members and the aforesaid auxiliary-switch arm, a spring-actuated hammer fulcrumed concentrically with the operating-handle and adapted to collapse said toggle, a latch normally restraining said hammer from following said toggle as the operating-handle is moved to close the switch, a tripping-magnet having an armature arranged to move said latch and release said hammer, and an energizing-winding for said magnet consisting of a copper bar coiled about the core of said magnet, the said lower contact-terminal of the device being formed by the projecting end of said copper bar.

847,521. TURN-DOWN-COLLAR FOLDER AND SHAPER. WALTER A. STEBBINS and HILMER BERGSTROM, Denver, Colo., assignors to The American Specialty Company, Denver, Colo. Filed Mar. 14, 1904. Serial No. 198,136.

Claim.—1. In a folder for turn-down collars, the combination with a table, of a plate secured to the table and having its body portion raised a short distance therefrom to receive a turn-down collar, a portion of the plate beginning at its forward extremity being turned upwardly and over upon itself, the change in the position of the bent portion of the plate being gradual from its forward extremity to its rear extremity, the said bent part being discontinued or merging into its horizontal part at its rear extremity, another plate coöperating with the bent portion of the first-named plate, a space being left between the second plate and the bent plate part to receive the portion of the collar to be folded, and suitable means for causing the collar to travel through the said folding devices.

2. The combination with a table, of a plate secured thereto and having its body portion slightly raised from the table leaving the thickness of a collar beneath, the forward extremity of the said plate being parallel with the table, and a portion of the said plate extending from the forward extremity rearwardly, being bent upwardly from the table and gradually over upon the horizontal portion of the plate, the said bent portion being discontinued at the rear extremity of the plate, a plate part located adjacent the bent portion of the first-named plate and occupying a position parallel therewith whereby as the collar is fed through the folding-plates, the folding portion thereof passes between the bent portion of the first-named plate and the second plate, the rear extremity of the second plate occupying a position parallel with the horizontal portion of the first-named plate whereby the

collar as it is fed through the plates is folded as described, suitable means for feeding the collar through the folding devices, and suitable means for guiding the collar during its travel across the table during the performance of the folding function.

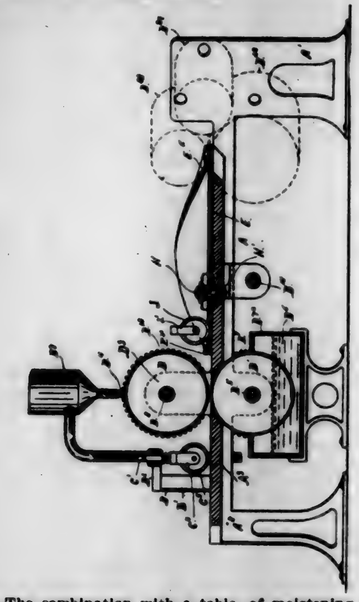

3. The combination with a table, of moistening wheels or rollers whose contact parts or parts which approach nearest each other are approximately in the plane of the upper surface of the table, means for applying moisture to the peripheries of the said wheels, a folding-plate mounted upon the table and having a shallow space between the said plate and the table, the forward extremity of the plate being parallel with the upper surface of the table, and a portion of the plate beyond its forward extremity extending to its rear extremity being bent upwardly and over toward itself until the rear extremity of the plate is reached where the said bent portion is discontinued, and a second plate coöperating with the bent portion of the folding-plate, substantially as described.

4. In a turn-down-collar folder, the combination with a table, of a roller journaled at the forward extremity of the table, a spring-held vertically-movable roller mounted above the table and coöperating with the first-named roller, a guide-wheel located at the inner extremity of the said rollers, moistening-wheels located in the rear of the said rollers and guide-wheel, and folding devices located in the rear of the moistening-rollers, substantially as described.

5. In a turn-down-collar folder, the combination with a table, of feed-rollers mounted at the head or forward extremity of the table, a guide-wheel located adjacent the feed-rollers and having its axis extending at an angle to the said rollers, moistening devices located in the rear of the said rollers and guide-wheel, coöperating folding-plates located in the rear of the moistening-wheels, and suitable means coöperating with the plates for feeding and guiding the collar therethrough, substantially as described.

6. In a turn-down-collar folder, the combination with feed-rollers mounted at the head of the table, moistening-wheels located in the rear of the feed-rollers, folding-plates located in the rear of the moistening-wheels, a pair of feed-rollers acting on the collar as it passes through the folding-plates, and a guide-wheel located between the last-named feed-rollers and the moistening-wheels.

7. In a turn-down-collar folder, the combination with suitable folding devices mounted on the table, feed-rollers mounted at the head of the table forward of the folding devices, moistening-rollers located between the feed-rollers and the forward extremity of the folding devices, a guide-roller located forward of the moistening-rollers, a second guide-roller located in the rear of the moistening-rollers and engaging the collar while the latter is passing through the folding devices, and a second pair of feed-rollers located in the rear of the last-named guide-roller and acting on the collar as it passes through the folding devices, the axis of both pairs of feed-rollers occupying positions at an angle to the axes of the guide-rollers, substantially as described.

8. In a turn-down-collar folder, the combination with a table, folding-plates mounted on the table, one of the plates having a shallow space between it and the upper surface of the table and having a portion turned upwardly and over upon itself and extending from its forward to its rear extremity, the said bent part constantly changing position from the front to the rear of the table and being discontinued at the rear extremity of the table, and a coöperating plate occupying a position parallel with the bent part of the first-named plate, a collar-space being left between the bent part of the first-named plate and the said coöperating plate, substantially as described.

9. In a turn-down-collar folder, the combination of feed-rollers mounted at the head of the table, a guide-wheel also mounted at the head of the table and engaging the collar from above, the axis of the guide-wheel forming an angle with the axes of the feed-rollers, moistening-wheels located in the rear of the said guide-wheel and adapted to engage the portion of the collar to be folded, folding-plates located in the rear of the moistening-wheels, and shaping-rollers located in the rear of the folding-plates, substantially as described.

847,522. COMBINED FAN AND SCORE-CARD. WILL STEEL, Texarkana, Ark. Filed Dec. 5, 1905. Serial No. 290,471.

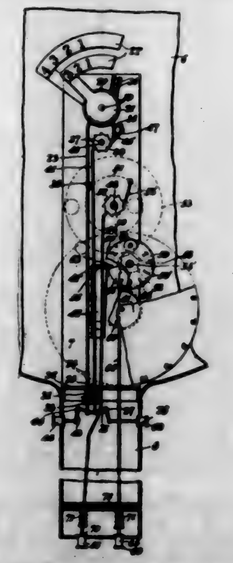

Claim.—1. In a game-register, a casing provided with a plurality of display-openings, registering-dials, and a pivoted spring-actuated operating member movable by gravity into engagement with the dials for displaying a numeral at said openings.

2. In a game-register, a casing provided with a plurality of display-openings, registering-dials, an operating member movable by gravity into engagement with the dials for displaying a numeral at said openings, and a guard interposed between said dials.

3. In a game-register, a casing provided with a plurality of display-openings, registering-dials, an operating member movable by gravity into engagement with the dials for displaying a numeral at said openings, a guard-plate interposed between the dials, and means for resetting the dials.

4. In a game-register, a casing provided with a plurality of display-openings, registering-dials carried by the casing, a push-rod movable by gravity into engagemnt with the dials for displaying a numeral at said openings, means for preventing backward movement of the dials, and means for resetting said dials.

5. In a game-register, a casing provided with a plurality of display-openings, registering-dials arranged within the casing, a pivoted push-rod movable by gravity into engagement with the dials for displaying a numeral at said openings, a bell-crank lever pivoted to the push-rod, means for preventing backward movement of the dials, and a spring for normally holding the push-rod out of engagemnt with the dials.

6. In a register, a casing provided with a plurality of display-openings, a plurality of registering-dials, an operating member movable laterally and alternately into engagement with the dials for successively displaying a numeral at said openings, and means for locking said member in engagement with each dial.

7. In a register, a casing provided with a plurality of display-openings, a plurality of registering-dials a laterally-movable spring-actuated dial-operating member movable alternately into engagement with the dials for successively displaying a numeral at said openings, and means for locking the member in engagement with each dial.

8. In a game-register, a casing provided with a plurality of display-openings, a plurality of sets of dials carried by the casing, operating members movable alternately into engagement with the dials of each set for successively displaying a numeral at said openings, a pointer carried by both dials of one set and movable over the face of the register, and means for locking said members in operative position.

9. In a game-register, a casing provided with a plurality of display-openings, a plurality of sets of dials carried by the casing, operating members movable alternately into engagement with the dials of each set for successively displaying a numeral at said openings, a pointer carried by both dials of one set and movable over the face of the register, and means for locking said members in operative position, said means also serving to prevent movement of one of the pointers during the movement of the other.

10. In a game-register, a casing provided with a plurality of display-openings, a plurality of sets of dials carried by the casing, push-rods mounted for lateral movement within the casing and adapted to alternately engage the dials of each set for displaying a numeral at said openings, means for locking said member in operative position, and means for preventing backward rotation of the dials.

11. In a game-register, a casing provided with a plurality of display-openings, a plurality of sets of dials, operating members movable alternately into engagement with the dials of each set, and a connection between two of the sets of dials whereby the movement of one set will return the adjacent set to zero.

12. In a game-register, a casing provided with a plurality of display-openings, a plurality of sets of dials, operating members movable alternately into engagement with the dials of each set, a pointer carried by each dial of one set and movable over the face of the casing, and a connection between the pointer-actuating dials and the adjacent dials whereby the movement of either pointer will automatically reset said dials.

13. In a game-register, a casing provided with a plurality of display-openings, a plurality of sets of dials, operating members movable alternately into engagement with the dials of each set, a pointer carried by each dial of one set and movable over the face of the casing, spring-pawls for preventing backward movement of the several sets of dials, and a flexible connection between the pawls of adjacent sets of dials whereby the movement of one set will automatically return the adjacent set to zero.

14. In a game-register, a casing provided with a plurality of display-openings, a plurality of sets of dials, operating members movable alternately into engagement with the dials of each set for successively displaying a numeral at said openings, and a spring-plate provided with openings for the reception of the operating members and serving to lock said members in operative position.

15. In a game-register, a casing provided with a plurality of display-openings, a plurality of sets of dials, a spring-plate secured to the casing and having its free end provided with guide-openings, and spring-actuated push-rods passing through the openings in the plate and adapted to alternately engage the dials of each set for successively displaying a numeral at the openings in the casing, said plate serving to lock the push-rods in operative position.

16. In a game-register, a casing provided with a plurality of display-openings, a plurality of sets of dials carried by the casing, operating members movable alternately into engagement with the dials of each set for successively displaying a numeral at said openings, means for holding the dial-operating members in operative position, and a cam for actuating the locking means to shift the locking members.

17. In a game-register, a casing provided with a plurality of display-openings, a plurality of sets of dials carried by the casing, a spring-pressed locking-plate arranged within the casing, push-rods engaging said plate and movable alternately into engagement with the dials of each set for successively displaying a numeral at said openings, and a cam adapted to depress the locking-plate for shifting the push-rods.

18. In a game-register, a casing provided with a plurality of display-openings, a plurality of sets of dials, a spring-pressed locking-plate arranged within the casing and provided with a locking-lip, push-rods engaging said plate and movable alternately into engagement with the dials of each set for successively displaying a numeral at said openings, and a cam adapted to depress the locking-plate for shifting the push-rods said plate being provided with a series of teeth for engagement with the locking-lip.

847,523. PAPER-RACK. JAMES E. STIRTON, Monroe, Wash. Filed Jan. 18, 1906. Serial No. 296,706.

Claim.—1. A folding rack consisting of a series of shelves, each formed of a single wire rod bent in the form of a bow, centrally-disposed eyes formed in the front of and side eyes formed in the ends of each shelf, central and side connecting-rods having eyes formed in their opposite ends, whereby the same are foldably attached to the central and side eyes of said shelves, upper and lower central and side supporting-rods, each having eyes connected to the eyes of the upper and lower shelves to permit the folding thereof at said points of connection, and means for connecting the outer ends of said supporting-rods with suitable supports.

2. A folding rack consisting of a series of shelves, each formed of a single U-shaped wire rod, centrally-disposed eyes formed in the front of and side eyes formed in the ends of each shelf, central and side connecting-rods having eyes formed in their opposite ends, whereby the same are foldably attached to the central and side eyes of the shelves, upper and lower central and side supporting-rods connected to the eyes of the upper and lower shelves, upper and lower supporting and holding rings connected to the eyes in the outer ends of said supporting-rods, and cords connected to the rings, whereby said rack may be attached to suitable supports.

3. A folding rack consisting of a series of open wire shelves arranged one above the other, front supporting-rods foldably connected to each of said shelves, foldable side supporting-rods composed of sections foldably con-

nected to each shelf, and front and side supporting-rods foldably connected to the upper shelf.

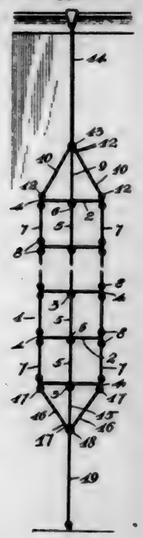

847,524. CENTRIFUGAL SEPARATOR. PER T. SUNDBERG, Stockholm, Sweden. Filed June 17, 1905. Serial No. 265,772.

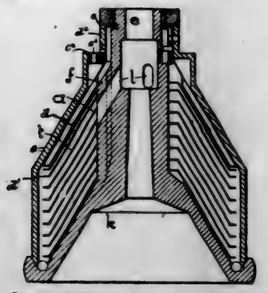

Claim.—1. In a centrifugal bowl provided with a liner, a plurality of superposed conical plates, the tubular shaft of said bowl being provided with vertical ribs engaging corresponding slots in said plates, said slots being enlarged in radial direction and said ribs having shoulders engaging the inner edges of the plates to form vertical channels.

2. In a centrifugal bowl provided with a liner, a plurality of superposed conical plates, the tubular shaft of said bowl being provided with vertical ribs engaging corresponding slots in said plates, said slots being enlarged in radial direction, and said ribs having shoulders engaging the inner edges of the plates to form vertical channels the upper part of said ribs being formed with radial channels, 1, affording communication between the inlet and each of said vertical channels.

3. In a centrifugal bowl provided with a liner a plurality of superposed conical plates, the tubular shaft of said bowl being provided with vertical ribs engaging corresponding slots in said plates, said slots being enlarged in radial direction, and said ribs having shoulders engaging the inner edges of the plates to form vertical channels, the upper part of said ribs being formed each with a radial channel 1, which channels communicate directly with the inlet and with the vertical channels.

847,525. WINDOW AND DOOR ALARM. JAMES SWAN, Seymour, Conn. Filed Dec. 6, 1906. Serial No. 346,631.

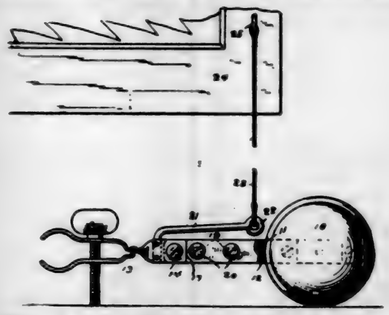

Claim.—1. A portable window and door alarm comprising a bell having an actuating member, a standard by which the bell is carried, a slide upon the standard which engages the actuating member, a clamp pivoted to the standard and abutting the slide, an operating-arm extending from the clamp and a cord connected to the operating-arm, the clamp, slide and arm being so connected that a pull on the cord will cause the weight of the device to actuate the slide by the clamp.

2. A portable window and door alarm comprising a bell having an actuating member, a standard by which the bell is carried, a clamp pivoted to the standard and adapted for attachment to a knob-shank, an operating-arm secured to the clamp and extending toward the bell, a cord connected to said arm and adapted for attachment to a window-sash, and a slide upon the standard which engages the actuating member and the clamp, the contiguous ends of said clamp and slide being provided with angular engaging faces so that the slide will be moved and the bell rung when the standard and clamp are oscillated relatively to each other, the clamp, slide and arm being so connected that a pull on the cord will cause the weight of the device to actuate the slide by the clamp.

847,526. BEAM-SHEAR. CLARENCE L. TAYLOR, Alliance, Ohio, assignor to The Morgan Engineering Company, Alliance, Ohio. Filed Mar. 22, 1906. Serial No. 307,439.

Claim.—1. In a beam-shear the combination with a shear or cutter, of a die-block having a slot therein for the entrance of the shear or cutter, dies carried by said block on opposite side of said slot, means for moving said die-block laterally, means for locking the die-block in position and adjustable clamping-blocks on said die-block for engaging the opposite flanges of the beam.

2. In a beam-shear the combination with a shear or cutter, of a support having a slot, dies within and on opposite sides of said slot, adjustable clamps for engaging the opposite flanges of the beam, each clamp having dies coincident with the dies in the support, a screw for adjusting one clamp, a wedge for moving the other clamp toward the beam, and means for moving said latter clamp outwardly as the wedge is withdrawn.

3. In a beam-shear the combination with a shear or cutter, of a support for the beam, two movable clamps, a screw for moving or adjusting one clamp and a reciprocating wedge-block for forcing the other clamp against the beam.

4. In a beam-shear the combination with a shear or cutter of a support on which the beam rests, two clamps adapted to engage the opposite flanges of said beam, a screw for adjusting one clamp, a wedge for moving the other clamp toward the beam and means for moving said latter clamp away from the beam.

5. In a beam-shear the combination with a shear or cutter, of a detachable die-block having a slot for the entrance of the shear or cutter, movable clamping-blocks

mounted in said die-blocks, a screw for adjusting one clamping-block and means for moving the other clamping-block toward and away from the beam.

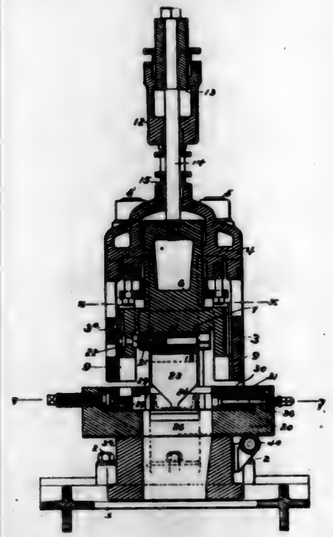

6. In a beam-shear the combination with a shear or cutter, of a slotted block on which the beam rests, two clamps movable toward and from the cutter and having slots coincident with the slot in the block, a screw for adjusting one clamp and means for moving the other clamp toward and away from the beam.

7. The combination with a housing, a cylinder carried thereby a plunger in the cylinder and a shear or cutter carried by said plunger, of a slotted die-block carried by the housing, movable clamps on said die-block, a screw for adjusting one clamp and a wedge for moving the other clamp toward the beam, and a spring and rod acting normally tending to move the clamp away from the beam.

8. The combination with a housing, a cylinder thereon, a plunger in said cylinder, a cross-head on the lower end of said plunger, a shear or cutter carried by said cross-head, and means for adjusting said shear or cutter laterally on said head, of a die-block coacting with the shear or cutter, and clamps carried by said die-block.

9. The combination with a housing, a cylinder thereon, a plunger in said cylinder, and a cross-head on the lower end of said plunger, of a shearing blade or cutter, clamps locking the latter to the cross-head and means for adjusting said blade laterally on the cross-head.

10. The combination with a housing, a cylinder thereon, a plunger within the cylinder and a shearing-blade adjustable laterally and detachably secured to the lower end of said plunger, of a die-block for supporting the beam, clamps carried by the die-block and adapted to engage the opposite edges of the beam to be cut, a screw for adjusting one clamp, and a wedge and spring for moving the other clamp toward and away from the beam.

847,527. TURNING ATTACHMENT FOR LATHES. ARTHUR E. THAYER, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Filed May 31, 1904. Serial No. 210,482.

Claim.—1. The combination, with a bored base-block, of a slide on said base-block; a nut carried by the base-block; a screw working in the nut; a sleeve rigid with the screw, and having a shoulder; a circumferentially-adjustable yoke mounted on the sleeve and bearing against the shoulder thereof, said yoke having a projection; a device for securing the yoke to the sleeve; a stop-screw adjustable in the projection of the yoke; means for locking said stop-screw; and a stop-rod adjustable in the bore of the base-block, said bore being parallel to the screw and with the end of which rod the stop-screw is adapted to engage.

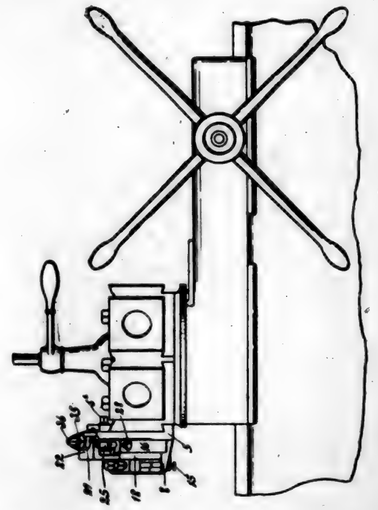

2. The combination, with a base-block having a bore, of a tool-slide on the base-block; a screw working in a nut of the base-block, said screw having a barrel portion; said nut; a yoke fitted upon the barrel portion of the screw and against a shoulder thereof, said yoke having a projection; a screw for securing the yoke in place; a headed stop-screw adjustable in the projection of the yoke; a jam-nut on the end of said screw; and a stop-rod adjustable in a bore of the base-block, parallel with the screw, and having a reduced outer end with which the head of the stop-screw is adapted to engage, said longitudinally-adjustable stop being located parallel to the screw.

847,528. COMBINED LADDER AND JACK. FREDERICK THOMAS, Newark, N. J. Filed Jan. 30, 1906. Serial No. 298,619.

Claim.—1. A combined ladder and jack, comprising a top piece or bar, a ladder member connected therewith, a brace pivotally connected with the side pieces of said ladder, a board secured to said brace, said board being provided with longitudinally-extending grooves, a channel-shaped rod or bar in each groove, and a retaining or holding hook at the end of each rod or bar adapted to be arranged over a window-sill or other object, and said ladder acting as a support, substantially as and for the purposes set forth.

2. A combined ladder and jack, comprising a top piece or bar, a ladder member connected therewith, a brace pivotally connected with the side pieces of said ladder, a board secured to said brace, said board being provided with longitudinally-extending grooves, a channel-shaped rod or bar in each groove, and a retaining or holding hook at the end of each rod or bar adapted to be arranged over a window-sill or other object, and said ladder acting as a support, and means connected with said rods or bars for adjustably securing each rod or bar in a groove, substantially as and for the purposes set forth.

3. A combined ladder and jack, comprising a top piece or bar, a ladder member connected therewith, a brace pivotally connected with the side pieces of said ladder, a board secured to said brace, said board being provided with longitudinally-extending grooves, a channel-shaped rod or bar in each groove, and a retaining or holding hook at the end of each rod or bar adapted to be arranged over a window-sill or other object, and said ladder acting as a support, and means connected with said rods or bars for adjustably securing each rod or bar in a groove, consisting of a series of perforations in each rod or bar, and bolts and nuts, all arranged substantially as and for the purposes specified.

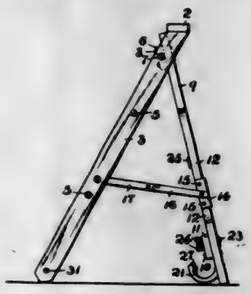

4. A combined jack and ladder, comprising a ladder member and a board, said board being provided with grooves, a means of pivotal connection between said ladder member and board, a channel-shaped rod in each groove, a retaining or holding hook upon the free end of each rod, adapted to be arranged over the round of another ladder, each rod being provided with a series of holes or perforations, bolts and nuts for securing said rods in their adjusted positions, and a supporting means connected with said ladder member adapted to be brought in supporting engagement with the side pieces of said other ladder, substantially as and for the purposes set forth.

5. A combined jack and ladder, comprising a ladder member and a board, said board being provided with grooves, a means of pivotal connection between said ladder member and board, a channel-shaped rod in each groove, a retaining or holding hook upon the free end of each rod, adapted to be arranged over the round of another ladder, each rod being provided with a series of holes or perforations, bolts and nuts for securing said rods in their adjusted positions, and a supporting means connected with said ladder member adapted to be brought in supporting engagement with the side pieces of said other ladder, consisting of a laterally-extending rod or bar, and a cap or head upon each end of said bar, substantially as and for the purposes set forth.

847,529. VERTICALLY-ADJUSTABLE STOOL. GEORGE T. TRUMBULL, Chicago, Ill. Filed July 14, 1905. Renewed Feb. 1, 1907. Serial No. 355,285.

Claim.—1. The combination in a vertically-adjustable stool, of a base, a seat, an intermediate vertical screw connecting the base and seat, a series of tubular telescoping sections surrounding the screw and connected respectively to the under surface of the seat and upper surface of the base, and a stop-sleeve interposed between the seat and base to limit the downward movement of the seat, substantially as set forth.

2. The combination in a vertically-adjustable stool, of a base, a seat, an intermediate vertical screw connecting the base and seat, a series of tubular telescoping sections surrounding the screw and connected respectively to the under surface of the seat and upper surface of the base, and a stop-sleeve interposed between the seat and base to limit the downward movement of the seat, the said telescoping sections having oppositely-projecting flanges on their respective ends to prevent disengagement, substantially as set forth.

3. The combination in a vertically-adjustable stool, of a base, a seat, an intermediate vertical screw connecting the base and seat, a series of tubular telescoping sections surrounding the screw, and a cup-shaped collar secured to the uppermost section and to the under side of the seat, the lowermost section having a flange or rim secured to the upper side of the base, substantially as set forth.

4. The combination in a vertically-adjustable stool, of a base, a seat, an intermediate vertical screw connecting the base and seat, a series of tubular telescoping sections surrounding the screw, a cup-shaped collar secured to the uppermost section and to the under side of the seat, the

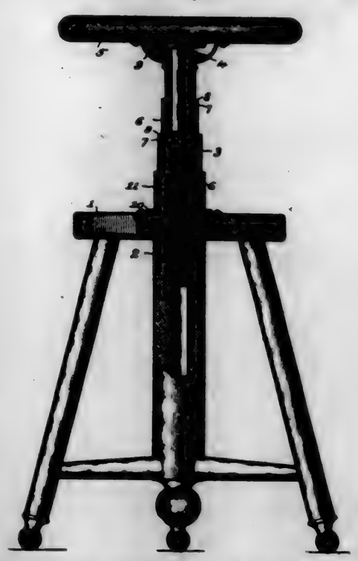

lowermost section having a flange or rim secured to the upper side of the base, and a stop-sleeve interposed between the seat and base to limit the downward movement of the seat, substantially as set forth.

847,530. LIME COLOR. JULIUS ULLRICH, Radebeul, near Dresden, Germany. Filed Jan. 26, 1906. Serial No. 297,982.

Claim.—The method of preparing a fast lime color consisting in adding acid to two hundred and fifty grains of human feces, as urine and human excrement mixed up together as it is by nature and containing solid matter, filtering, while stirring, adding to the filtrate seventy grains of crude glycerin and to each one hundred grains of this acid liquid adding one hundred and twenty grains of lime.

847,531. SOUVENIR POSTAL CARD. WALTER H. VILLERS, Chicago, Ill. Filed June 23, 1906. Serial No. 323,081.

Claim.—A postal card having a dial thereon, with holes therein corresponding to the marks on the dial, and hands pivoted on the dial and adapted to be fastened by inserting the ends thereof in the holes.

847,531.

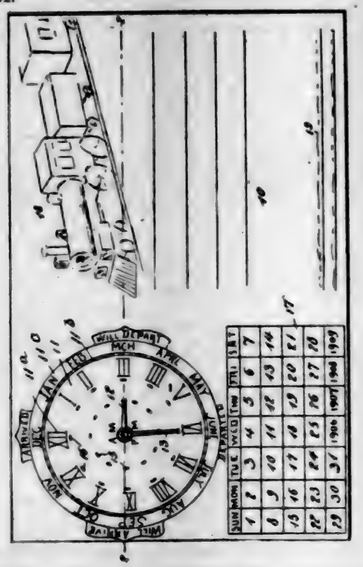

847,532. SLIP-SHEET ATTACHMENT FOR PRINTING-PRESSES. JOSEPH WATZELHAN, New York, N. Y. Filed Aug. 29, 1906. Serial No. 332,421.

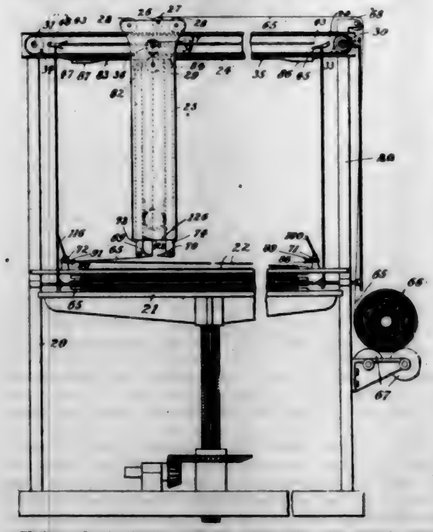

Claim.—1. A device of the character described, comprising means for folding a slip-sheet, and means for alternately grasping said sheet at opposite folds, substantially as specified.

2. A device of the character described comprising a reciprocating carriage adapted to engage a continuous slip-sheet, grippers at the ends of the carriage-run adapted to grasp said sheet, and means for operating said gripper, substantially as specified.

3. A device of the character described comprising a reciprocating carriage adapted to engage a continuous slip-sheet, grippers at the ends of the carriage-run adapted to grasp said sheet, and means for automatically operating said grippers, substantially as specified.

4. A device of the character described comprising a reciprocating carriage, grippers at the ends of the carriage-run adapted to grasp a slip-sheet, a pair of guides carried by the carriage and adapted to alternately engage the sheet, and means for alternately lowering and raising said guides to aline the sheet alternately with opposite grippers, substantially as specified.

5. A device of the character described comprising a carriage adapted to engage a slip-sheet, means for imparting an intermittent reciprocating movement thereto, and grippers at the ends of the carriage-run adapted to grasp said sheet, substantially as specified.

6. A device of the character described comprising a carriage adapted to engage a slip-sheet, means for imparting an intermittent reciprocating movement thereto, grippers at the ends of the carriage-run adapted to grasp said sheet and means for automatically operating the grippers, substantially as specified.

7. A device of the character described comprising a carriage adapted to engage a slip-sheet, means for imparting an intermittent reciprocating movement thereto, grippers at the ends of the carriage-run adapted to grasp said sheet, and means actuated by the carriage for alternately opening and closing the grippers, substantially as specified.

8. A device of the character described comprising an endless chain having an upper and lower run, a carriage adapted to engage a slip-sheet, and means for operatively connecting said carriage with said upper or lower run, substantially as specified.

9. A device of the character described comprising an endless chain having an upper and lower run, a carriage, a toothed disk carried thereby, and means for alternately throwing said disk into engagement with said upper and lower run, substantially as specified.

10. A device of the character described comprising a reciprocating carriage, grippers at the end of the carriage-run adapted to grasp said sheet, means on the carriage for actuating the grippers, and means for operatively connecting the grippers, substantially as specified.

11. A device of the character described comprising a reciprocating carriage, a pair of vertically-movable guides carried thereby, a pair of operatively-connected grippers at the ends of the carriage-run adapted to grasp said sheet, and means on the carriage for actuating the grippers, substantially as specified.

847,533. MACHINE FOR WEAVING WIRE FENCES. CHARLES A. WILLMARTH, Detroit, Mich., assignor to Benjamin W. Marvin, Detroit, Mich. Filed Sept. 11, 1905. Serial No. 277,973.

Claim.—1. In a fence-loom, the combination of a series of twisters having extended hub portions provided with longitudinal holes for the passage of the wires to be twisted, standards on the machine-frame, angle-bars secured to the standards with their adjacent faces in parallelism, a series of bearing-blocks adjustably supported between said angle-bars to receive the hubs of the twisters which turn freely therein, flanges on said blocks engaging the edges of the angle-bars, set-screws extending through said flanges and engaging the bars to adjustably secure the blocks in place, and a tail-piece secured to the end of each hub opposite the twister to engage the block and hold the hub therein and formed with grooves along its edges for the wires.

2. In a fence-loom, the combination with the supporting-frame, of a transverse shaft mounted in bearings on said frame, a series of twisters supported on the frame adjacent to said shaft, worm-gears to transmit motion from said shaft to the twisters, a pulley loosely mounted on said shaft, a clutch to connect the pulley with the shaft, a cam-shaft, gears for transmitting motion from the transverse shaft to the cam-shaft, and a cam on said shaft to operate the clutch.

3. In a fence-loom, the combination with the support

ing-frame, of a transverse shaft mounted on said frame, a series of twisters having teeth in their periphery, worm-gears on said shaft to engage the teeth on the twisters, two pulleys loosely mounted on said transverse shaft, a clutch movable longitudinally on the shaft into or out of engagement with either pulley, a shifting lever for the clutch, a cam-shaft extending parallel with the transverse shaft, gears on said shafts to transmit motion from one to the other, opposed cam-disks adjustably secured to the cam-shaft between which the end of the operating-lever projects, said cams being adapted to engage and move the lever to disconnect the clutch from the pulleys and stop the twisters, and a hand-lever for moving said clutch to throw the same into operative position.

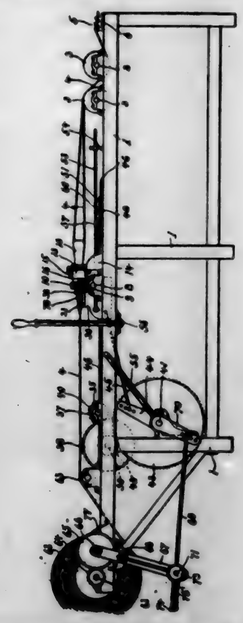

4. In a fence-loom, the combination with the supporting-frame and a series of twisters mounted thereon, of a carriage movable on the frame toward and from the twisters, a transverse driving-shaft on the frame, a rock-shaft, arms on the rock-shaft, rods connecting the ends of the arms with the carriage, a pinion loosely mounted on the driving-shaft, a clutch to connect said pinion to said shaft, gears for transmitting motion from the pinion to the rock-shaft, and means operated by the movement of the carriage for throwing the clutch out of engagement with the pinion to stop the movement of the carriage.

5. In a fence-loom, the combination with a series of twisters, of a shaft for transmitting motion to said twisters, a clutch for transmitting motion to the shaft, means for automatically moving the clutch to stop the transmission of motion to the twisters, a carriage adapted to move toward and from the twisters, means for moving said carriage away from the twisters, a clutch to transmit motion to said means, means moved by the movement of the carriage for throwing the last-named clutch to stop the carriage, and a shifting rod simultaneously operating each means for moving each clutch, to throw both clutches into operative position.

6. In a fence-loom, the combination with a series of twisters, of a shaft to transmit motion to said twisters, two pulleys loosely mounted on said shaft at a distance apart and formed with clutch-teeth on the adjacent ends of their hubs, a clutch splined on the shaft between said pulleys and adapted to be moved into engagement with either or out of engagement with both, a lever to shift said clutch, a cam-shaft extending parallel with the other shaft, a large gear on the cam-shaft in engagement with a pinion on the other shaft, opposed cam-disks on the cam-shaft, a cam projection in each disk to engage the projecting end of the lever and throw the clutch out of engagement with both pulleys, and an operating-rod to shift the lever, whereby the lever is prevented by the engagement of one of said projections, from being moved by the rod toward the disk carrying that lug and thus the clutch is prevented from being reëngaged with the pulley from which it has just been disengaged by said projection.

7. In a fence-loom, the combination with a supporting-frame, of a series of twisters and means for turning the same, a track on the frame, a carriage movable toward and from the twisters on said track, a transverse driving-shaft on the frame, a transverse rock-shaft, arms on the rock-shaft, rods connecting the ends of said arms with the carriage, a pinion loose on said driving-shaft, a train of gearing to transmit motion from the pinion to the rock-shaft, a clutch on the driving-shaft to secure the pinion to said shaft, a lever to move said clutch, a spring to normally hold the clutch in operative position, an operating-bar attached to the free end of the lever for moving the clutch, a rod attached to the carriage, and a hook on the rod to engage the operating-bar.

8. In a fence-loom, the combination with the supporting-frame, of a series of twisters, a transverse shaft, worm-gears on the shaft to turn the twisters, a clutch to transmit motion to the shaft, means for automatically moving said clutch out of operative position, a shifting-rod to move the clutch into operative position, a reciprocable carriage, means for moving said carriage, a clutch to control said means, a lever to move the clutch and stop the carriage, an operating-bar pivotally attached to the free end of said lever to move the lever, a spring to move the lever in the opposite direction, locking means for said bar, means on the carriage for moving the bar into locked position, and a lever connected to the shifting-rod turned thereby to unlock the operating-bar.

9. In a fence-loom, the combination with a series of twisters and means for turning the same, of a reciprocable carriage, a driving-shaft, a rock-shaft, a train of gears connecting said drive and rock shafts, a clutch to disconnect the gearing from the drive-shaft, upwardly-extending rocker-arms on the rock-shaft, rods connecting said arms with the carriage, a downwardly-extending connecting said drive and rock shafts, a clutch to dis- which the fence is adapted to be wound, a pinion on the shaft of said drum, a stub-shaft, a gear loose on said stub-shaft in engagement with the pinion, a swinging arm loose on the stub-shaft, a pawl carried by said arm to engage and turn the gear in one direction, a spring-pawl to prevent the gear from turning in the opposite direction, a block adjustably secured to the lower end of said arm, a rod passing through an opening in said block at one end and pivotally attached to the downwardly-extending rocker-arm at its opposite end, a nut on the projecting end of the rod and a nut to engage one side of the block, and a spring sleeved on the rod between the opposite side of the block and the nut on the end of the rod.

10. In a fence-loom, the combination with a supporting-frame, of a transverse shaft mounted in bearings intermediate the ends of the frame, standards on the frame adjacent to said shaft, parallel supporting-bars secured to said standards, bearing-blocks adjustably secured between said bars, twisters formed with peripheral teeth and having extended hubs to engage the bearings, worm-gears on the transverse shaft to engage said teeth, tail-pieces secured to the ends of the hubs and having grooves for the wires passing through the twisters, parallel shafts mounted in the forward end of the frame, gears connecting said shafts, sheaves on said shafts, tension devices on the forward end of the frame provided with two or more parallel friction-rolls, two pulleys loosely mounted on the transverse twister-shaft, a clutch splined on the shaft between said pulleys, a shifting-lever pivotally attached at one end to the frame and intermediate its ends to the clutch, a cam-shaft, cams on said shaft to engage the free end of the shifting-lever, a handled operating-rod attached to said shifting-lever and extending across the frame, tracks on the frame, a carriage on said tracks, a driving-shaft, a clutch on said driving-shaft, a pinion adapted to be engaged by the clutch, a rock-shaft, gears connecting the rock-shaft and pinion, upwardly-extending arms on the rock-shaft, rods connecting the arms with the carriage, a downwardly-extending arm on one end of the rock-shaft, a handle-lever on the rock-shaft, a drum mounted in bearings on the rear end of the frame, gears for turning the drum, a swinging arm, a pawl carried by said arm to engage and turn the gears, a rod adjustably attached at one end to said swinging arm and at its opposite end to the downwardly-extending rocker-arm, a long lever pivotally attached to the clutch on the driving-shaft, a spring to move said lever in one direction, an operating-bar attached at one end to said lever, a plate on the frame having a diagonal groove formed with an offset at one end, a pin on the operating-bar to engage the groove, a rod on the carriage, a hook on the rod to engage the operating-bar, and a lever pivoted intermediate its ends on the frame and attached at one end to the handled operating-rod and adapted to engage the operating-bar at its opposite end.

847,534. DIVIDED PIANISSIMO DEVICE. PHILIP WUEST, Jr., Philadelphia, Pa., assignor to The Auto-Manual Piano Action Company, Philadelphia, Pa., a Corporation of New Jersey. Filed June 6, 1904. Serial No. 211,273.

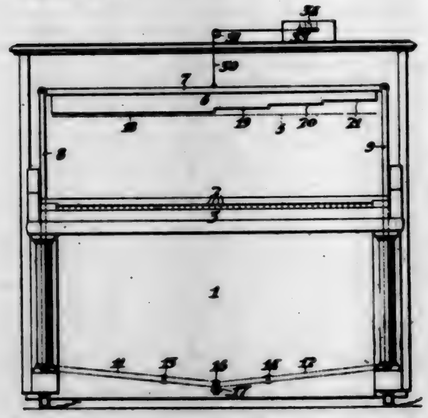

Claim.—1. The combination with a series of strings and playing mechanism comprising hammers for the same; of a device arranged to vary the effect of the playing mechanism on certain of said strings independently of the others, comprising a damping-strip extending between said strings and said hammers; means maintaining said strip in invariable angular relation with the striking-line of the hammers; and means arranged to shift said strip between the strings and hammers relatively to said striking-line, substantially as set forth.

2. The combination with a series of strings and playing mechanism comprising hammers for the same; of a device arranged to vary the effect of the playing mechanism on some of said strings, independently of the others, comprising a damping-strip extending between said strings and said hammers; means maintaining said strip with different regions of its edge at relatively different distances from the striking-line of the hammers; and, means arranged to shift said strip between the strings and hammers relatively to said striking-line, substantially as set forth.

3. A piano having a damping-strip extending between the hammers and the strings, said damping-strip having its edge shaped to vary the effect of the dampers on certain of said strings independently of the others; means for maintaining said strip with its edge in invariable angular relation with the striking-line of the hammers; means for changing the position of said damping-strip to vary the effect of the hammers upon the strings; and an indicator provided with an index-scale to indicate the portion of the strings upon which said damping-strip is effective, said indicator being mounted upon the piano-casing and in full view of the operator, whereby the latter may readily ascertain upon which portion of the strings said strip is effective.

4. In a piano, the combination wtih a damping-strip; of means continuously maintaining said strip with its edge invariably inclined with respect to the striking-line of the hammers; and, means arranged to shift said strip between the strings and hammers relatively to said striking-line, substantially as set forth.

5. In a piano, the combination with a damping-strip; of means maintaining said damping-strip with different regions of its edge at relatively invariable different distances from the striking-line of the hammers; and, means arranged to shift said strip between the strings and hammers relatively to said striking-line, substantially as set forth.

6. The combination with a series of strings and playing mechanism comprising hammers for the same; of a device arranged to vary the effect of the playing mechanism on certain of said strings independently of the others, including a damping-strip having an edge comprising regions at different distances from the striking-lines of the hammers; means supporting said strip, invariably maintaining the relative position of said regions of said strip with respect to said striking-line; and, means arranged to simultaneously shift to the same extent all of the regions of said strip, substantially as set forth.

7. In a piano, the combination with a damping-strip, the lower edge of which comprises regions at respectively different levels; of means supporting said strip, invariably maintaining the relative position of said different regions of its edge; and, means whereby said strip may be raised and lowered uniformly throughout its length, substantially as set forth.

8. In a piano, the combination with a damping-strip, the lower edge of which comprises regions at respectively different levels; of means supporting said strip, invariably maintaining the relative position of said different regions of its edge, comprising the vertical rods 8 and 9; and, means whereby said strip may be raised and lowered, comprising the levers 11 and 12, substantially as set forth.

9. The combination with a series of strings and playing mechanism, comprising hammers for the same; of a device arranged to vary the effect of the playing mechanism on certain of said strings independently of the others, including a damping-strip varying in thickness from top to bottom and varying in width from end to end; and, means arranged to shift said strip between the strings and hammers, relatively to the striking-line of the latter, substantially as set forth.

847,535. PUNCHING-MACHINE. JAN WETMAN, Avalon, Pa. Filed Mar. 10, 1906. Serial No. 305,290.

Claim.—1. In a machine of the character specified, the combination of a templet-support, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, independently-controllable mechanisms for moving the templet and wood supports in unison both laterally and longitudinally, and mechanism brought into operation by the index-pin for actuating the tool.

2. In machines of the character specified, the combination of a templet-support, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, independently-controllable mechanisms for moving the templet and work supports in unison both laterally and longitudinally, a circuit controlled by the index-pin, and tool-actuating mechanism controlled by said circuit.

3. In machines of the character specified, the combination of a templet-support, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, hand-controlled mechanism for moving the templet and work supports in unison, gearing in said mechanism for moving the templet-support slower than the work-support, and mechanism brought into operation by the index-pin for actuating the tool.

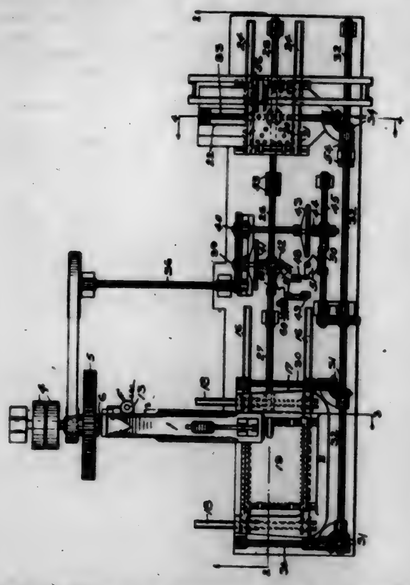

4. In machines of the character specified, the combination of a templet-support, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, independently-controllable mechanisms for moving the templet and work supports in unison both laterally and longitudinally, reducing-gearing in said mechanisms connected to the templet-support, and mechanism brought into operation by the index-pin for actuating the tool.

5. In machines of the character specified, the combination of a templet-support, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, mechanism for moving the templet and work supports in unison, means for controlling said support-moving mechanism, mechanism brought into operation by the index-pin for actuating the tool, and means controlled by the control means for the support-moving mechanism for withdrawing said index-pin.

6. In machines of the character specified, the combination of a templet-support, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, mechanism for moving said work and templet supports in unison, means for controlling said support-moving mechanism, an electric circuit controlled by the index-pin, tool-actuating mechanism controlled by said circuit, and a switch and electromagnet for withdrawing the index-pin.

7. In machines of the character specified, the combination of a templet-support, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, mechanism for moving said templet and work supports in unison, an electric circuit controlled by the index-pin, a tool-controlling magnet, a pin-withdrawing magnet, and circuit and switch connections arranged to energize said magnets in succession.

8. In machines of the character specified, the combination of a templet-support, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, mechanism for moving said supports in unison, an electric circuit controlled by the index-pin, tool-controlling mechanism in said circuit, a pin-withdrawing magnet, a switch for controlling said magnet, and means for operating said switch and controlling the work and templet support moving mechanism.

9. In machines of the character specified, the combination of a templet-support, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, mechanism for moving said supports in unison, means for controlling said support-moving mechanism, a tool-controlling magnet, an index-pin-withdrawing magnet, a switch and circuit connections for energizing said magnets in succession, said circuit being controlled by the index-pin, and connections between said switch and controlling means.

10. In machines of the character specified, the combination of a templet-support, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, mechanism for moving said supports in unison, an electric circuit, a tool-actuating magnet and a pin-withdrawing magnet connected to the circuit, and control mechanism so arranged that when the support-feeding mechanism is active the circuit will be broken and when said moving mechanism is inactive the circuit will be closed.

11. In machines of the character specified, the combination of a templet, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, mechanism for moving the templet and work support in unison, a hand-operated controller for said mechanism, an electric circuit closed by the pin when it registers with points on the templet, and tool-actuating mechanism controlled by said circuit.

12. In machines of the character specified, the combination of a templet, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, mechanism for moving the templet and work supports in unison, a controller for said mechanism, an electric circuit arranged to be closed by the pin when it registers with points on the templet, tool-actuating mechanism controlled by said circuit, and a switch in the circuit arranged to be closed only when the controller for the work-support and templet moving mechanism is brought to neutral position.

13. In machines of the character specified, the combination of a templet, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, mechanism for moving said templet and work support in unison, a controller for said mechanism, an electric circuit closed by the pin when it registers with points on the templet, a pin-withdrawing magnet, circuit connections thereto, and a switch for said circuit arranged to close the circuit only when the controller is in neutral position.

14. In machines of the character specified, the combination of a templet-support, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, independently-controllable mechanisms for moving the templet and work supports in unison both laterally and longitudinally, friction-gears in said mechanisms, and mechanism brought into operation by the index-pin for actuating the tool.

15. In machines of the character specified, the combination of a templet, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, mechanism for moving the templet and work support in unison, said mechanism including a friction-wheel movable over the face of a disk having a neutral zone, means for moving said wheel, mechanism controlled by the index-pin for actuating the tool, and pin-withdrawing means actuated from the wheel-moving means when said wheel is in the neutral zone on the disk.

16. In machines of the character specified, the combination of a templet, an index-pin coöperating therewith, a work-support, a tool coöperating therewith, mechanism for moving the templet and work support in unison, said mechanism including a friction-wheel movable over the face of a disk having a neutral zone, means for moving said friction-wheel, a circuit arranged to be closed by the index-pin when it registers with points on the templet, a tool-actuating magnet in said circuit, a pin-withdrawing magnet, and switch mechanism controlled from the friction-wheel-moving means and arranged to close said circuits only when the friction-wheel is in the neutral zone on the disk and to close the circuit through said magnets in succession.

847,536. APPARATUS FOR FEEDING AND CUTTING MULTIPLE FABRICS. HARRY ZIMMERMAN, Fremont, Ohio. Filed June 27, 1906. Serial No. 323,665.

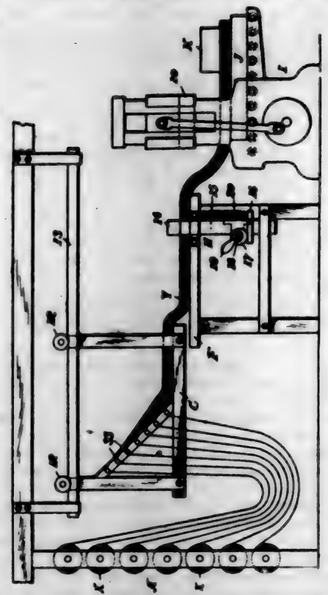

Claim.—1. In an apparatus for cutting multiple fabrics, the combination with the cutting-press, of supports for a series of rolls of fabric, and a carriage supporting the material between the rolls and press and movable back and forth between the two.

2. In an apparatus for cutting multiple fabrics, the combination with the cutting-press, of supports for a series of rolls of fabric, a carriage supporting the material between the rolls and press and movable back and forth between the two, and means for clamping the material to the carriage and for unclamping the same.

3. In an apparatus for cutting multiple fabrics, the combination with the cutting-press, of supports for a series of rolls of fabric, a carriage supporting the material between the rolls and press and movable back and forth between the two, and means for automatically clamping the material to the carriage and for unclamping the same.

4. In an apparatus for cutting multiple fabrics, the combination of the cutting-press, means for supporting a series of rolls of fabric, an intermediate carriage, and means for reciprocating the carriage between the rolls and the press.

5. In an apparatus for cutting multiple fabrics, the combination of the cutting-press, means for supporting a series of rolls of fabric, an intermediate carriage, means for clamping the material automatically to the carriage and releasing it, and means for reciprocating the carriage between the rolls and the press.

6. In an apparatus for cutting multiple fabrics, means for supporting rolls of fabric, a cutting-press, an intermediate carriage sliding between the two, and a supporting-table for the fabric between the carriage and press.

7. In an apparatus for cutting multiple fabrics, means for supporting rolls of fabric, a cutting-press, and intermediate carriage sliding between the two, a supporting-table for the fabric between the carriage and press, and means for clamping the material to the carriage and table.

8. In an apparatus for cutting multiple fabrics, means for supporting rolls of fabric, a cutting-press, and intermediate carriage sliding between the two, a supporting-table for the fabric between the carriage and press, and means for automatically clamping the material to the carriage and table.

9. The combination with the supports of a series of rolls of fabric, and with a cutting-press, of an intermediate carriage, supports upon which the carriage reciprocates, and a series of superposed separated supports on said carriage whereby to permit the separate lateral adjustment of the superposed strips of fabric.

847,537. FILTER. GEORGE A. ABBOTT, Melbourne, Victoria, Australia. Filed July 7, 1906. Serial No. 325,088.

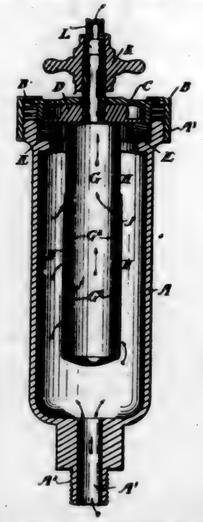

Claim.—1. In filters: in combination—a porous tube upon or around which are channels or grooves a sleeve of canvas or other suitable porous material a coating of kieselguhr or infusorial earth an outer casing means for securing an inlet-pipe to said casing and means for securing the said porous tube to the casing and a lead-away pipe for the filtered water substantially as and for the purposes set forth.

2. In filters: in combination—a casing A the upper portion of which is increased in diameter and provided with a screw-thread a circular nut as B a cap-piece as C a compressible sealing-ring as E, a collar D located between said ring and cap-piece, a filter-tube as G having its upper end secured to the collar I and having thereon a sleeve as H and a coating on such sleeve as J of kieselguhr or infusorial earth means for connecting the casing A with an inlet water-pipe and means for securing a lead-away pipe to the said tube G substantially as and for the purposes set forth.

847,538. RESILIENT SWITCH-STAND CONNECTION. ALFRED E. ANDERSON, Milwaukee, Wis. Filed Sept. 10, 1906. Serial No. 333,887.

Claim.—1. In a device of the described class, the combination with the switch-points of a railway-track, of a substantially upright jointed axially-movable bar; an actuating-lever connected to its upper end; motion-transmitting connections between the bar and switch-points, and springs holding the lower portion of the bar substantially in a normal upright position, together with an inclosing casing for the lower portion of the bar and springs.

2. In a device of the described class, the combination with the switch-points of a railway-track, of a substan-

tially upright axially-movable bar, universally jointed at an intermediate point, and provided with an offset arm at its lower end; a casing having bearings for the upper section of the bar and inclosing the joint and lower section; connections between said offset arm and the switch-points; and springs for holding the lower section of the bar normally in a vertical position.

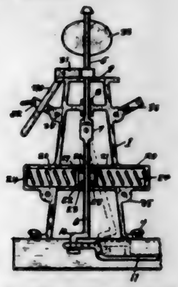

3. In a device of the described class, the combination with switch-points and track-rails of a railway-track, of a substantially upright axially-movable bar at one side of the track-rails universally jointed at an intermediate point and having an offset arm at its lower end, connected with the switch-points; a casing provided with a bearing for the upper section of the bar and guides for the lower section, adapted to permit said section to swing toward and away from the track-rails; and springs seated in the casing and arranged to resist the movement of the lower bar-section in said guides in either direction from a normal vertical position.

4. In a device of the described class, the combination with switch-points and track-rails of a railway-track, of a substantially upright axially-movable bar at one side of the track-rails, universally jointed at an intermediate point and having an offset arm at its lower end, connected with the switch-points; a casing provided with a bearing for the upper section of the bar and guides for the lower section, adapted to permit said section to swing toward and away from the track-rails; and springs seated in the casing and arranged to resist the movement of the lower bar-section in said guides in either direction from a normal vertical position, said springs being arranged to exert pressure on opposite sides of the bar in the plane of swinging movement, with interposed bearing-heads, and stops on the guides to prevent the bearing-heads from moving across the normal line of the bar.

5. In a device of the described class the combination with the switch-points and track-rails of a railway-track, of a substantially upright axially-movable bar at one side of the track-rails, universally jointed at an intermediate point and having an offset arm at its lower end connected with the switch-points; a casing provided with a bearing for the upper section of the bar above said universal joint; said casing having guides for the lower section adapted to permit said section to swing toward and away from the track-rails; compression-springs seated in the casing and arranged to resist the movement of the lower bar-section in said guides in either direction from a normal vertical position; bearing-heads interposed between said springs and the bar-section; and stops adapted to prevent the bearing-heads from being moved by the springs across the normal line of the bar.

6. In a device of the described class the combination with the switch-points and track-rails of a railway-track, of a substantially upright axially-movable bar at one side of the track-rails, universally jointed at an intermediate point and having an offset arm at its lower end connected with the switch-points; a casing provided with a bearing for the upper section of the bar above said universal joint, said casing having guides for the lower section adapted to permit said section to swing toward and away from the track-rails; compression-springs seated in the casing and arranged to resist the movement of the lower bar-section in said guides in either direction from a normal vertical position; bearing-heads interposed between said springs and the bar-section; and stops adapted to prevent the bearing-heads from being moved by the springs across the normal line of the bar; said casing being formed in vertically-separable sections adapted to be mounted respectively upon adjacent ties.

847,539. TARGET-TRAP-CONTROLLING MEANS. DAVID B. ANDERSON, St. Marys, Pa. Filed Feb. 5, 1906. Serial No. 299,547.

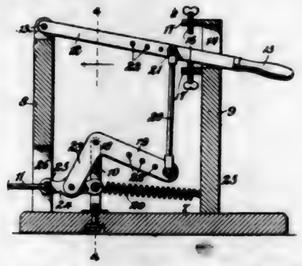

Claim.—1. In target-trap-controlling means, the combination with an operating-lever that moves in a substantially vertical direction and provided with a handle, of a substantially horizontally movable trap-actuating device, and mechanism connecting the operating-lever and device for effecting the substantially horizontal movement of the latter upon the substantially vertical movement of the former.

2. In target-trap-controlling means, the combination with an operating-lever that moves in a substantially vertical direction and is provided with a handle, of a substantially horizontally movable trap-actuating device, and mechanism connecting the operating-lever and device for effecting the substantially horizontal movement of the latter upon the substantially vertical movement of the former, said mechanism comprising connected angularly-disposed crank-arms, one of which has a connection with the lever, the other having a connection with the device.

3. In target-trap-controlling means, the combination with an operating-lever that moves in a substantially vertical direction and is provided with a handle, of a substantially horizontally movable trap-actuating device, and mechanism connecting the operating-lever and device for effecting the substantially horizontal movement of the latter upon the substantially vertical movement of the former, said mechanism comprising connected angularly-disposed crank-arms, one of which is movable in a substantially horizontal direction and has a connection with the device, the other being movable in a substantially vertical direction, and a link connecting the latter arm and the lever.

4. In target-trap-controlling means, the combination with a supporting-frame, of a substantially vertically movable manually-actuated lever fulcrumed therein, a bell-crank pivoted in the frame below the lever, a trap-actuating device connected to one arm of the bell-crank, and means connecting the other arm of the bell-crank and the operating-lever for transmitting motion from the latter to the former.

5. In target-trap-controlling means, the combination with a base, of spaced standards mounted thereon, a lever fulcrumed on one of the standards, the other standard having a guide-slot in which the lever operates, a supporting device mounted on the base, a bell-crank fulcrumed on the supporting device, a link connecting the lever and one arm of the bell-crank, and a trap-actuating device pivoted to the other arm of the bell-crank.

6. In target-trap-controlling means, the combination with an operating-lever, of a crank element, a connection between the lever and crank element adjustable longitudinally along one of the same, and a trap-actuating device having a connection with the crank element.

7. In target-trap-controlling means, the combination with an operating-lever, of a crank element, a link connected to the crank element and having a connection with the lever, said connection being adjustable toward and from the fulcrum of the lever, and a trap-actuating device connected to the crank element.

8. In target-trap-controlling means, the combination with an operating-lever, of a crank element, a link pivotally connected to the crank element and to the lever, said pivot connections being adjustable on both toward and from their axes of movement, and a trap-actuating device having a connection with the crank element.

9. In target-trap-controlling means, the combination with a supporting-frame, of an operating-lever fulcrumed thereon and having a handle, a bell-crank fulcrumed on the supporting-frame, a trap-actuating device connected to one arm of the bell-crank, a link, and pivotal connections between the link and the other arm of the bell-crank and between said link and the lever, said pivotal connections being adjustable on the lever and arm.

10. In target-trap-controlling means, the combination with a trap-actuating device, of a manually-actuated movable operating member for moving the same, connections between the member and device for transmitting motion from the former to the latter and adjustable means for varying the limit of movement of the operating member.

11. In target-trap-controlling means, the combination with a trap-actuating device, of a manually-actuated operating-lever for positively moving the same, and means for limiting the extent of manual movement of the lever, said means being adjustable to vary the limits of said movements.

12. In target-trap-controlling means, the combination with a trap-actuating device, of an operating-lever for moving the same, a guide for the lever and adjustable abutments mounted on the guide, said abutments being located on opposite sides and in the path of movement of the lever.

13. In target-trap-controlling means, the combination with a supporting-frame, of a trap-actuating device, an operating-lever fulcrumed on the supporting-frame and having a handle, connections between the lever and the trap-actuating device, and abutment-screws threaded upon the supporting-frame and located on opposite sides and in the path of movement of the lever.

14. In target-trap-controlling means, the combination with a supporting-frame, including spaced standards, one of which is provided with a guide-slot, of a trap-actuating device, a lever fulcrumed on one of the standards and having a sliding engagement in the slot of the other, connections between the lever and the trap-actuating device including a bell-crank, and abutment-screws mounted on the standard having the slot, said screws being located on opposite sides and in the path of movement of the lever.

15. In target-trap-controlling means, the combination with a crank element, of a trap-actuating device connected thereto, an operating member connected to the crank element, and a spring also connected to the crank element.

16. In target-trap-controlling means, the combination with a supporting-frame, of a bell-crank fulcrumed thereon, a trap-actuating device, a spring, an operating-lever, and means for connecting the trap-actuating device and the spring to one arm of the bell-crank and the operating-lever to the other arm of said bell-crank.

17. In target-trap-controlling means, the combination with a supporting-frame, of a bell-crank fulcrumed thereon, a yoke pivoted to one arm of the bell-crank, a trap-actuating device and a spring connected to the yoke, an operating-lever fulcrumed on the supporting-frame, and a link connecting the other arm of the bell-crank and the lever.

18. In target-trap-controlling means, the combination with a base, spaced standards mounted thereon, one of said standards having a slot in its upper end, an operating-lever fulcrumed on the other standard and movably engaging in the slot, means located on opposite sides of the lever for limiting the movements thereof, a bell-crank fulcrumed between the standards, a trap-actuating device pivotally connected to one arm of the bell-crank, a spring also connected to one arm of the bell-crank, and a link adjustably connecting the operating-lever and an arm of the bell-crank.

847,540. ELECTRIC METER. CLAUDE W. ATKINSON, Beckenham, England. Filed Dec. 29, 1904. Serial No. 238,805.

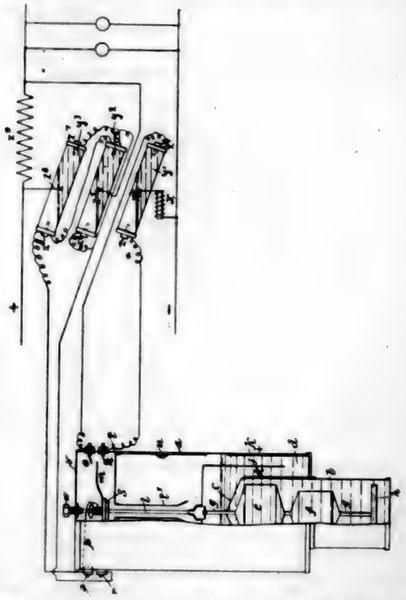

Claim.—1. An electrolytic meter comprising a cell containing the electrolyte and one stationary electrode, a float carrying the other electrode, two electrical contacts adapted to be closed by the float at its upper and lower positions, an electromagnetic relay adapted to be operated by a current controlled by the said contacts, and a reversing-switch adapted to reverse the polarity of the electrolytic cell in combination with an integrating mechanism operated by the electromagnetic relay, substantially as described.

2. An electrolytic meter comprising a cell containing the electrolyte and one stationary electrode, a float carrying the other electrode, two electrical contacts adapted to be closed by the float at its upper and lower positions an electromagnetic relay adapted to be operated by a current controlled by the said contacts, and a reversing-switch adapted to reverse the polarity of the electrolytic cell, and provided with mechanical means which are in a condition of unstable equilibrium at the center position, adapted to open the relay-circuit in use and make contact with the other relay-circuit ready for the next stroke of the float, in combination with an integrating mechanism operated by the electromagnetic relay, substantially as described.

3. An electrolytic meter comprising a cell containing the electrolyte and one stationary electrode, a float carrying the other electrode provided with means to compensate for the variation in the density of the electrolyte due to variation in temperature, two electrical contacts adapted to be closed by the float at its upper and lower positions, an electromagnetic relay adapted to be operated by a current controlled by the said contacts and a reversing-switch adapted to reverse the polarity of the electrolytic cell in combination with an integrating mechanism operated by the electromagnetic relay, substantially as described.

4. In an electrolytic meter, a cell containing the elec-

troiyte provided with two independent chambers in communication with one another at the upper part, one chamber containing a stationary electrode and the other chamber containing a float adapted to carry the movable electrode within the chamber containing the stationary electrode in combination with means for reversing the polarity of the cell and with means for indicating the number of such changes in polarity, substantially as described.

847,541. SHAFT-BEARING. JACOB F. AYERS, Kalkaska, Mich. Filed Nov. 2, 1906. Serial No. 341,800.

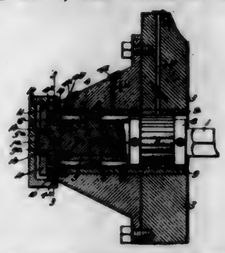

Claim.—1. The combination with a rotatable shaft, of a sleeve mounted thereon, screw-keys for locking said sleeve and shaft together, spaced rings mounted on said sleeve, bearing-rollers mounted between said rings, a fixed member having a bearing-aperture, a sleeve lining said bearing-aperture, and screw-keys connecting said last-named sleeve to said bearing member, and said bearing-rollers being held between said sleeves, substantially as shown and described.

2. The combination with a rotatable shaft, of a sleeve mounted thereon, screw-keys for locking said sleeve and shaft together, spaced rings mounted on said sleeve, bearing-rollers mounted between said rings, a fixed member having a bearing-aperture, a sleeve lining said bearing-aperture, and screw-keys connecting said last-named sleeve to said bearing-aperture, said bearing-rollers being held between said sleeve, said fixed bearing and said sleeve therefor have oil-apertures passing therethrough and communicating with the bearing-aperture substantially as shown and described.

3. The combination with a rotatable shaft, of a sleeve mounted thereon, spaced rings removably mounted on the sleeve, bearing-rollers mounted between the spaced rings, a fixed member having a bearing-aperture, and a sleeve lining said bearing-aperture, said bearing-rollers held between said sleeves, substantially as shown and described.

4. The combination with a rotatable shaft, of a bearing-sleeve removably secured thereto, spaced rings removably mounted on the sleeve, bearing-rollers mounted between said rings, a fixed member having a bearing-aperture, and a bearing-sleeve lining said aperture and removably held therein, said bearing-rollers being held between said sleeves, substantially as shown and described.

5. The combination with a rotatable shaft, of a sleeve mounted thereon, spaced rings mounted on the sleeve, bearing-rollers mounted between the spaced rings, a fixed member having a bearing-aperture, and a sleeve lining said bearing-aperture, said bearing-rollers held between said sleeves, and said fixed member and said lining-sleeve having oiling-passages communicating with the bearing-rollers substantially as shown and described.

6. The combination with a rotatable shaft, of a bearing-sleeve removably secured thereto, spaced rings removably mounted on the sleeve, bearing-rollers mounted between said rings, a fixed member having a bearing-aperture, and a bearing-sleeve lining said aperture, and removably held therein, said bearing-rollers being held between said sleeves, and said fixed member having oiling-passages communicating with the bearing-rollers, substantially as shown and described.

7. The combination with a rotatable shaft, of a sleeve mounted thereon, a series of spaced rings removably mounted on the sleeve, bearing-rollers mounted between the spaced rings, a fixed member having a bearing-aperture, a sleeve lining said bearing-aperture, said bearing-rollers held between said sleeves, and means mounted on the end of the rotatable shaft for retaining the shaft in its bearing, substantially as shown and described.

8. The combination with a rotatable shaft, of a sleeve mounted thereon, screw-keys for locking said sleeve and shaft together, spaced rings mounted on said sleeve, bearing-rollers mounted between said rings, a fixed member having a bearing-aperture, a sleeve lining said bearing-aperture, screw-keys connecting said last-named sleeve to said bearing member, said bearing-rollers being held between said sleeves, said shaft having a threaded end portion and a bur held on said threaded portion, substantially as shown and described.

9. The combination with a rotatable shaft, of a sleeve mounted thereon, screw-keys for locking said sleeve and shaft together, spaced rings mounted on said sleeve, bearing-rollers mounted between said rings, a fixed member having a bearing-aperture, a sleeve lining said bearing-aperture, screw-keys connecting said last-named sleeve to said bearing member, said bearing-rollers being held between said sleeves, said shaft having a threaded end portion and a bur held on said threaded portion, and a closure-cap on the end of the fixed member inclosing said bur, substantially as shown and described.

847,542. HINGE FOR SURGICAL AND OTHER INSTRUMENTS. GEORGE T. BARBER, Philadelphia, Pa., assignor to Frederick Dittmar, Philadelphia, Pa. Filed June 16, 1906. Serial No. 321,964.

Claim.—A surgical instrument, consisting of two members having handholds, each provided with a substantially semicircular groove and with depressions, a spool-like bearing adapted to hold the handholds in alinement with each other by engaging certain depressions thereof and having a projection at each end, said projections adapted to engage certain other depressions of the handholds and to serve as pivots on which said handholds are adapted to oscillate, a plate adapted to form an auxiliary bearing for said handholds by holding the same in engagement with said bearing, a pin having a flanged head passing through the bearing, the head of which by engaging the groove of each of said handhold members is adapted to lock the same to each other and to the projection of said bearing at one end and to hold the same in engagement with said projection at the end adjacent to said plate, and means for engaging the free end of said pin.

847,543. THERMALLY-OPERATED APPARATUS. EMILE BATAULT, Geneva, Switzerland. Filed May 14, 1902. Serial No. 107,236.

Claim.—1. The combination with a resilient arc or bow, of a chord of electric conducting material connecting the ends of said arc or bow and holding it under tension so that said chord must always be straight, insulation separating the chord electrically from the bow, circuit connections with said chord for changing its temperature by variations in the flow of an electric current therethrough, whereby the variations in the length of the chord will result in an amplified movement producing variations in the height of the arc or bow, a moving device operated by the variations in the height of the bow or arc and means for transmitting such amplified movement to the device to be operated thereby, substantially as set forth.

2. The combination with two resilient arcs or bows secured together at their ends, of a chord of electric conducting material connecting the ends of both arcs or bows and holding them under tension so that said chord must always be straight, insulation separating the chord electrically from the bows, circuit connections with said chord for changing its temperature by variations in the flow of an electric current therethrough, whereby the variations in the length of the chord will result in an amplified movement producing variations in the height of the arc or bow, a moving device operated by the variations in height of the bows or arcs and means for transmitting such amplified movement to the device to be operated thereby, substantially as set forth.

3. The combination of a plurality of resilient double arcs or bows, a chord of electric conducting material connecting the ends of each of said double arcs or bows and holding them under tension so that said chord must always be straight, insulation separating the chords electrically from the bows, circuit connections with said chords for changing their temperature by variations in the flow of an electric current therethrough, such double arcs or bows being connected together at the centers of the arcs or bows and producing an amplified movement which is resultant of the variations in height of all the arcs or bows, a moving device operated by the variations in height of the bows or arcs and means for transmitting such amplified movement to the device to be operated thereby, substantially as set forth.

4. A thermally-operated apparatus having in combination a resilient arc or bow, and a chord connecting the ends of the arc or bow and holding it under tension, said chord passing two or more times between the ends of the arc or bow, substantially as set forth.

5. A thermally-operated apparatus having in combination a resilient arc or bow, a chord connecting the ends of the arc or bow and holding it under tension, said chord passing two or more times between the ends of the arc or bow, and a roller at the bight of the chord to permit relative movement of, and equalize the strain upon, the lengths of the chord, substantially as set forth.

6. A thermally-operated apparatus having in combination a resilient arc or bow, a chord connecting the ends of the arc or bow and holding it under tension, said chord passing several times back and forth between the ends of the arc or bow, and independent sheaves at each end of the bow for receiving the bight of the chord so as to permit relative movement of, and equalize the strain upon, the several lengths of the chord, substantially as set forth.

7. A thermally-operated apparatus having in combination a resilient arc or bow, a chord of non-resilient material connecting the ends of the arc or bow and holding it under tension so that said chord must always be straight, an arc or bow perpendicular to the first arc or bow and connected to the center thereof, whereby variations in the length of the chord connecting the first arc or bow will produce variations in the height of the arc or bow, which will in turn produce variations in the height of the second arc or bow, and means connected with the center of the second arc or bow for transmitting the amplified movement to a device to be operated thereby, substantially as set forth.

8. A thermally-operated apparatus having in combination a resilient arc or bow, a chord of electric conducting material connecting the ends of the arc or bow and holding it under tension, said chord passing two or more times between the ends of the arc or bow, and a roller in the bight of the chord to permit relative movement of, and equalize the strain upon, the several lengths of the chord, substantially as set forth.

9. In a thermally-operated apparatus having in combination a resilient arc or bow, a chord of electric conducting material connecting the ends of the bow and holding it under tension, said chord passing several times back and forth between the ends of the arc or bow, independent sheaves at each end of the bow for receiving the bight of the chord so as to permit relative movement of, and equalize the strain upon, the several lengths of the chord, and circuit connections with said chord for changing its temperature by variations in the flow of an electric current therethrough, whereby the variations in the length of the chord will result in an amplified movement producing variations in the height of the arc or bow, substantially as set forth.

10. In a thermally-operated apparatus having in combination a pair of resilient arcs or bows, a chord of electric conducting material connecting the ends of the bows and holding them under tension, said chord passing several times back and forth between the ends of the arcs or bows, independent sheaves at each end of the bows for receiving the bight of the chord so as to permit relative movement of, and equalize the strain upon, the several lengths of the chord, and circuit connections with said chord for changing its temperature by variations in the flow of an electric current therethrough, whereby the variations in the length of the chord will result in an amplified movement producing variations in the height of the arcs or bows, substantially as set forth.

11. In a thermally-operated apparatus having in combination a pair of resilient arcs or bows, a chord of electric conducting material connecting the ends of the bows and holding them under tension, said chord passing several times back and forth between the ends of the arcs or bows, independent sheaves at each end of the bows for receiving the bight of the chord so as to permit relative movement of, and equalize the strain upon, the several lengths of the chord, circuit connections with said chord for changing its temperature by variations in the flow of an electric current therethrough, whereby the variations in the length of the chord will result in an amplified movement producing variations in the height of the arcs or bows, and electrical connections between said arcs or bows, substantially as set forth.

12. In a thermally-operated apparatus having in combination a pair of resilient arcs or bows, a chord of electric conducting material connecting the ends of the bows and holding them under tension, said chord passing several times back and forth between the ends of the arcs of bows, independent sheaves at each end of the bows for receiving the bight of the chord so as to permit relative movement of, and equalize the strain upon, the several lengths of the chord, circuit connections with said chord for changing its temperature by variations in the flow of an electric current therethrough, whereby the variations in the length of the chord will result in an amplified movement producing variations in the height of the arcs or bows, and series electrical connections between said arcs or bows, substantially as set forth.

13. In a thermally-operated apparatus having in combination a resilient arc or bow, a chord of electric conducting material connecting the ends of the bow and holding it under tension, said chord passing several times back and forth between the ends of the arc or bow, independent sheaves at each end of the bow for receiving the bight of the chord so as to permit relative movement of, and equalize the strain upon, the several lengths of the chord, circuit connections with said chord for changing its temperature by variations in the flow of an electric current therethrough, whereby the variations in the length of the chord will result in an amplified movement producing variations in the height of the arc or bow, and means for transmitting such amplified movement to a device to be operated thereby, substantially as set forth.

14. The combination with two resilient arcs or bows secured together at their ends, of a chord of electric conducting material connecting the ends of both arcs or bows, and holding them under tension so that said chord must always be straight, insulation separating the chord electrically from the bows, said chord passing two or more times back and forth between the ends of the arcs or bows, circuit connections with said chord for changing its temperature by variation in the flow of electric current therethrough, whereby the variations in the length of the chord will result in an amplified movement producing variations in the height of the arcs or bows, and means for transmitting such amplified movement to a device to be operated thereby, substantially as set forth.

847,544. LUBRICATING DEVICE. CHARLES S. BAVIER, New York, N. Y. Filed July 12, 1906. Serial No. 325,795.

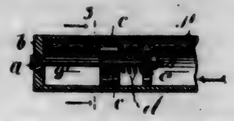

Claim.—1. The combination in lubricating apparatus of a steam-chamber, a conduit for a lubricant connected therewith, and an adjustable closure at the terminal of said conduit in said steam-chamber, substantially as described.

2. The combination in lubricating apparatus, of a steam-chamber, a conduit for supplying lubricant to said steam-chamber, and a terminal closure on said conduit in said steam-chamber arranged to open automatically by the pressure of the lubricant and admit atomized oil into said steam-chamber, substantially as described.

3. The combination in lubricating apparatus, of a steam-chamber, a conduit for delivering lubricant into said steam-chamber, and an adjustable closure at the extremity of said conduit in said steam-chamber adapted to atomize the lubricant as it enters the steam in said chamber, substantially as described.

4. The combination with a steam-chamber, of a conduit for lubricant operatively connected therewith, and a closure on the end of said conduit in said steam-chamber, adapted to open automatically according to the pressure of the lubricant, substantially as described.

847,545. PUZZLE. BANCROFT G. BRAINE, New York, N. Y. Filed Mar. 28, 1903. Serial No. 149,934.

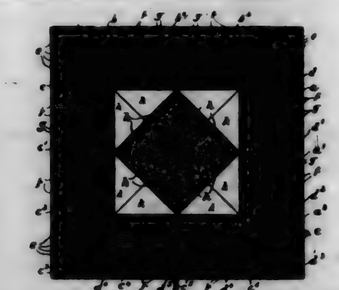

Claim.—1. As a new article of manufacture, a sheet of flexible material divided by fold-lines so as to be adapted to be folded on the fold-lines into various forms and bearing marks adapted to be brought into various arrangements according to the forms into which the sheet is folded, substantially as described.

2. As a new article of manufacture, a sheet of flexible material divided into squares and triangles by two series of fold-lines extending parallel to the edges of the sheet and at right angles to each other and two series of diagonal fold-lines extending at right angles to each other and at an angle of forty-five degrees to the lines of the first said two series of lines, each of the squares formed by the fold-lines of the first said two series of lines being divided into four triangles by two of the diagonal fold-lines crossing in the center of such square, said sheet being adapted to be folded on said fold-lines into various forms and bearing marks adapted to be brought into various arrangements according to the forms into which the sheet is folded, substantially as described.

3. As a new article of manufacture, a square sheet of flexible material divided into squares and triangles by two series of fold-lines extending parallel to the edges of the sheet and at right angles to each other and two series of diagonal fold-lines extending at right angles to each other and at an angle of forty-five degrees to the lines of the first said two series of lines, each of the squares formed by the fold-lines of the first said two series of lines being divided into four triangles by two of the diagonal fold-lines crossing in the center of such square, said sheet being adapted to be folded on said fold-lines into various forms and bearing marks adapted to be brought into various arrangements according to the forms into which the sheet is folded, substantially as described.

4. As a new article of manufacture, a sheet of flexible material divided into squares and triangles by two series of fold-lines extending parallel to the edges of the sheet and at right angles to each other and two series of diagonal fold-lines extending at right angles to each other and at an angle of forty-five degrees to the lines of the first said two series of lines, each of the squares formed by the fold-lines of the first said two series of lines being divided into four triangles by two of the diagonal fold-lines crossing in the center of such square, said sheet being adapted to be folded on said fold-lines into certain forms and having certain of said triangles on both sides of the sheet marked by being colored so that the colors of said triangles will be brought into various arrangements according to the forms into which the sheet is folded and with relation to such forms, substantially as described.

5. As a new article of manufacture, a sheet of flexible material divided into squares and triangles by two series of fold-lines extending parallel to the edges of the sheet and at right angles to each other and two series of diagonal fold-lines extending at right angles to each other and at an angle of forty-five degrees to the lines of the first said two series of lines, each of the squares formed by the fold-lines of the first said two series of lines being divided into four triangles by two of the diagonal fold-lines crossing in the center of such square, said sheet being marked with a plurality of colors so arranged that by folding the sheet on said fold-lines into various forms various arrangements of the colors with relation to the form of the folded sheet may be secured, substantially as described.

6. As a new article of manufacture, a square sheet of flexible material divided by two series of equidistant fold-lines extending parallel to the edges of the sheet and at right angles to each other and two series of equidistant diagonal fold-lines extending at right angles to each other and at an angle of forty-five degrees to the lines of the first said two series of lines, the sheet being adapted to be folded on said fold-lines into various forms and bearing on both sides thereof marks adapted to be brought into various arrangements according to the forms into which the sheet is folded, substantially as described.

847,546. INSULATOR FOR TENSION-GUYS. ALEXANDER E. BROWN, Cleveland, Ohio, assignor to The Brown Hoisting Machinery Company, Cleveland, Ohio. Filed Aug. 3, 1906. Serial No. 329,098.

Claim.—1. An insulator for tension-guys made up of a hollow insulating member, an axial pin, or part, passing through the same, with its center or axis substantially coincidental with that of said member, and firmly held or cemented in such relation to said member a substantially non-compressible material, together with an outer circumferential coating of like material, the said non-compressible material having sufficient spaces or areas in their sides to compensate or allow for any tendency on their part to creep when subjected to compression strains, all substantially as shown and described.

2. In an insulator for tension-guys, the combination of a hollow insulating member, carrying a coat of a substantially non-compressible material, and an axial supporting pin or part passing through the same with its center or axis substantially coincidental with that of said member and firmly cemented in such position by a surrounding coating or packing of like material, the said material, or coating, in each case containing spaces or areas sufficient to allow for or take up the tendency of the same to creep when under compression, substantially as shown and described.

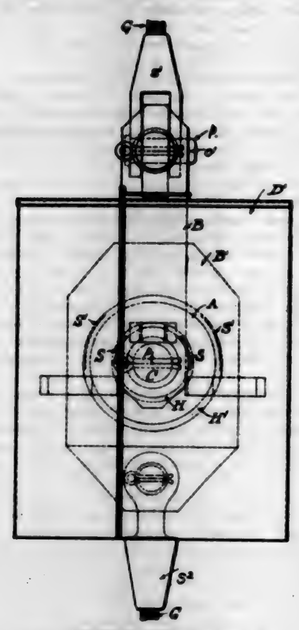

847,547. MERCURY-CONDENSER. CONRAD F. BROWN, San Jose, Cal. Filed Apr. 10, 1906. Serial No. 310,894.

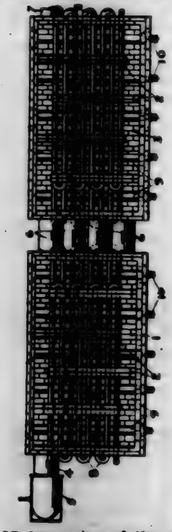

Claim.—1. In an apparatus of the character described, the combination of a chamber having transverse walls extending alternately from opposite sides only partly across the chamber to form a tortuous path, and a tortuous coil of water-pipe in the upper portion of the chamber extending transversely through said walls in succession, substantially as described.

2. In an apparatus of the character described, the combination of a chamber having transverse walls extending alternately from opposite sides only partly across the chamber to form a tortuous path, and a tortuous coil of water-pipe in successive layers extending transversely through said walls in succession in the upper portion of the chamber, substantially as described.

3. In an apparatus of the character described, a series of chambers each having transverse walls extending alternately from opposite sides only partly across the chamber to form a tortuous path, and a tortuous coil of water-pipe, in the upper portion of the chamber extending transversely through said walls in succession, and connections for the gases between adjacent chambers of the series, substantially as described.

4. In an apparatus of the character described, the combination of a chamber having transverse wall extending alternately from opposite sides only partly across the chamber to form a tortuous path, the bottoms of the compartments formed by the partition having transverse sloping troughs, and a coil of water-pipe in the upper portion of the chamber, substantially as described.

5. In an apparatus of the character described, the combination of a chamber having transverse walls extending alternately from opposite sides only partly across the chamber to form a tortuous path, the side walls of the chambers having windows with movable doors for admitting hose to the interior of the chambers, and a coil of water-pipe in the upper portion of the chamber, substantially as described.

847,548. VEHICLE-REACH. ANTHONY G. BRUNSMAN, Cincinnati, Ohio. Filed Oct. 19, 1906. Serial No. 339,661.

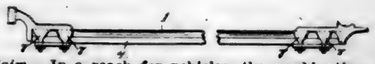

Claim.—In a reach for vehicles, the combination, with a wooden body provided with longitudinal grooves in its side faces, of a metal channel-bar, with reëntering flanges to engage said grooves, and secure the bar in place.

847,549. COIL-BENDER. JAMES A. BURNS, Homestead, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Jan. 20, 1904. Serial No. 189,866.

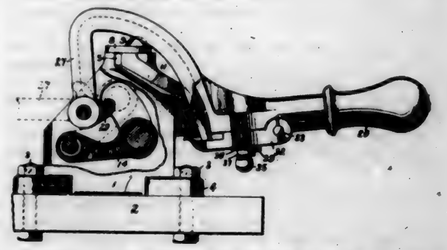

Claim.—1. A machine for bending wire coils comprising a base provided with means for retaining one side of a coil, a member hinged to said base and provided with means for retaining the other side of said coil, and arms hinged to said base and provided with means for retaining the ends of said coil.

2. A machine for bending wire coils comprising a base provided with means for retaining one side of a coil and with ledge-faces for shaping portions of the ends of said coil, a member hinged to said base and provided with means for retaining the other side of said coil and with faces for shaping other portions of the ends of said coil, and arms hinged to said base and provided with means for retaining and forming the remaining portions of the ends of said coil.

3. In a machine for bending wire coils, a base having a recessed portion for the reception of one side of a coil, in combination with a movable member for gripping the other

side of the coil and bending it into a different position with reference to the first side, and a movable member for gripping the ends of the coil.

4. In a machine for bending wire coils, a base having a recessed portion for the reception of one side of a coil and ledges adjoining the said recess at both ends thereof, in combination with a hinged member for gripping and bending the other side of the coil.

5. In a machine for bending wire coils, a base having a recess for the reception of one side of a coil, in combination with hinged members for gripping the other side and the ends of the coil independently of the base and bending them to the desired form.

6. In a machine for bending wire coils, a base having a recess for the reception of one side of a coil and means for retaining the coil in said recess, in combination with a movable member for gripping and bending the other side of the coil, and a movable member for gripping the ends of the coil.

7. In a coil-bending machine, the combination with a base having a recess for one side of a coil, of a member hinged thereto and having a ledge-face and means for gripping the other side of the coil.

8. In a coil-bending machine, the combination with a base having a recess and ledges branching from the ends thereof, of a member hinged to said base and having a ledge-face and ledges adjoining the aforesaid face at the ends thereof.

9. The combination with a base, of a member hinged thereto having a ledge-face parallel to the axis of the member, and a plate hinged to said member, said plate having a ledge-face adapted in conjunction with the aforesaid face, to form an aperture.

10. The combination with a base, of a member hinged thereto having a ledge-face parallel to the axis of the member, a plate pivoted to said member and adapted, in conjunction with the aforesaid face, to form an aperture, and means for clamping the plate to the hinged member.

11. In a coil-bending machine, the combination with a base having a coil-holding recess, of a member hinged to said base and having coil-gripping means and means for supporting the free end of said member normally in its uppermost position.

12. The combination with a base, of a member hinged thereto, means for supporting the free end of said member normally in its uppermost position, and a feathered shaft secured to the free end of said member and longitudinally-movable arms thereon provided with recesses at the free ends thereof.

13. The combination with a base, of a member hinged thereto, means for supporting the free end of said member normally in its uppermost position, and a feathered shaft secured to the free end of said member and longitudinally-movable arms thereon.

14. The combination with a base, of a member hinged thereto, means for supporting the free end of said member normally in its uppermost position, a feathered shaft secured to the free end of said member, longitudinally-movable arms thereon provided with recesses at the free ends thereof for the reception of the ends of a coil and means for securing the ends of the coil to said recesses.

15. The combination with a base, of a member hinged thereto, means for supporting the free end of said member normally in its uppermost position, a feathered shaft secured to the free end of said member, longitudinally-movable arms thereon provided with recesses at the free ends thereof, and resilient means for normally retaining said arms at the extremities of the said shaft.

16. In a machine for bending wire coils, a base having a recess for one side of a coil and a member hinged to said base and provided with means for gripping the ends of the coil independently of the base.

17. In a coil-bending machine, the combination with a base having a recess for one side of a coil, a coil-gripping member hinged to said base and a spring for normally supporting the said member in its uppermost position, of a second member hinged to said base which is provided with means for moving the said first-named member against the action of said spring.

18. In a coil-bending machine, the combination with a base having a recess for one side of a coil and a coil-gripping member hinged to said base, of a second member hinged to said base and having a projecting arm at its hinged end which engages with said first member so that the two members are moved simultaneously.

19. The combination with a base provided with means for retaining one side of a coil, and a member hinged to said base provided with means for retaining the other side of said coil, of means for locking the free end of said member to said base when in its closed position until the coil is released from said hinged member.

20. In a coil-bending machine, the combination with a base having a recess for one side of a coil and ledges to receive adjacent end portions, of a member hinged to the base and having recessed arms to receive the ends of the coil and a second hinged member having a recess for the other side of the coil and ledges to receive the adjacent end portions and having also means for engaging the first hinged member to move it to its closed position.

21. A coil-bending machine comprising a base and a hinged member for respectively gripping the opposite sides of a coil and a second hinged member for gripping the ends of the coil.

22. A coil-bending machine comprising a base having a forming-surface for approximately one-half of a coil, a hinged member having a forming-surface for approximately the other half of the coil and a second hinged member having recesses to form offset bends between the two halves of the coil.

23. A coil-bending machine comprising a base having a forming-surface for approximately one half of a coil, a coil, a hinged member having a recess and surfaces for approximately the other half of the coil and a second hinged member having recesses to form offset bends in the ends of the coil.

24. In a coil-bending machine, the combination with a base having a recess and means for locking one side of a coil therein, of a hinged member having a recess and means for locking the other side of the coil therein and a second hinged member having arms provided with recesses and means for locking the ends of the coil therein.

25. In a coil-bending machine, the combination with a base having a recess, means for locking one side of a coil therein and ledges to receive the adjacent end portions of the coil, of a hinged member having a recess, means for locking the other side of the coil therein and ledges to receive the adjacent end portions of the coil and a second hinged member having arms provided with recesses and means for locking the ends of the coil therein in order to form offset bends.

847,550. BED-REST FOR INVALIDS. GEORGE G. CAMPION, Manchester, England. Filed Feb. 6, 1906. Serial No. 299,815.

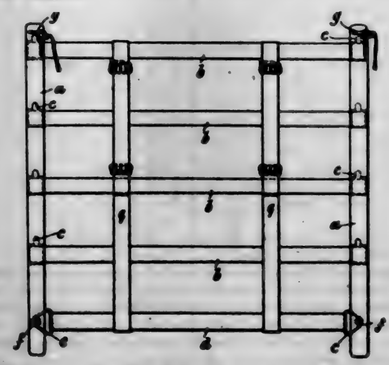

Claim.—A collapsible bed-rest comprising rigid uprights, a series of detachable flexible cross-strips connecting the uprights, a cross-band of cloth at the bottom, straps for holding a pillow on the bed-rest and means for supporting the frame at any desired inclination on the bed.

847,551. JAIL-BAR AND SIMILAR COMPOSITE METAL OBJECT. FERDINAND E. CANDA, New York, N. Y., assignor to Chrome Steel Works, Chrome, N. J., a Corporation of New Jersey. Filed Apr. 27, 1906. Serial No. 314,032.

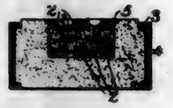

Claim.—1. As an article of manufacture, a composite metal object comprising a body of metal of one degree of hardness having interspersed through it, a plurality of cores of metal of a different degree of hardness, each completely surrounded by the first-mentioned metal.

2. As an article of manufacture, a composite steel object comprising a mass of soft steel having interspersed through its interior, a plurality of cores of harder steel each completely surrounded by the soft steel.

3. As an article of manufacture, a composite metal object comprising a body of metal of one degree of hardness having interspersed through it, a plurality of cores of metal of a different degree of hardness, each completely surrounded by the first-mentioned metal and welded thereto.

4. As an article of manufacture, a composite steel object comprising a mass of soft steel having interspersed through its interior, a plurality of cores of harder steel each completely surrounded by the soft steel and welded thereto.

5. As an article of manufacture, a composite metal object comprising a body of metal of one degree of hardness having interspersed through it, a plurality of cores of metal of a different degree of hardness and approximately outlining a closed figure including the central portion of said object.

6. As an article of manufacture, a composite steel object comprising a mass of soft steel having interspersed through its interior, a plurality of cores of harder steel and approximately outlining a closed figure including the central portion of said object.

7. As an article of manufacture, a composite metal object comprising a body of metal of one degree of hardness, said body of polygonal section, and having interspersed through it, a plurality of cores of metal of a different degree of hardness together approximately outlining a closed figure including the central portion of said object, and other cores located in the corners outside of the figure so outlined.

8. As an article of manufacture, a composite metal object comprising a soft-steel body of polygonal section, having interspersed through it, a plurality of cores of hard steel together approximately outlining a closed figure including the central portion of said object, and other hard-steel cores located in the corners outside of the figure so outlined.

9. As an article of manufacture, a jail-bar comprising a soft-steel bar having interspersed through its interior, a plurality of cores of harder steel each completely surrounded by the soft steel.

10. As an article of manufacture, a jail-bar comprising a soft-steel bar having interspersed through its interior, a plurality of cores of harder steel each completely surrounded by the soft steel, but placed close together and approximately outlining a closed figure including the central portion of the bar.

11. As an article of manufacture, a jail-bar comprising a soft-steel bar of polygonal section, having interspersed through its interior, a plurality of hard-steel cores each completely surrounded by the softer metal, but placed close together and approximately outlining a closed figure including the central portion of the bar, and other cores in the corners of the bar.

847,552. APPARATUS FOR MIXING FLUIDS. CHARLES A. CARLSON, Chicago, Ill. Filed Aug. 4, 1905. Serial No. 272,790.

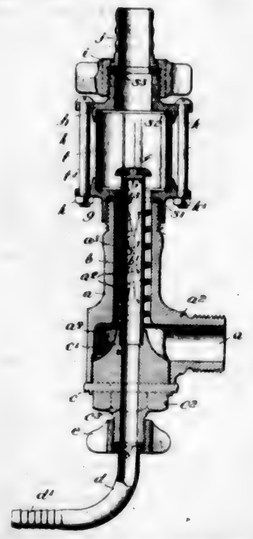

Claim.—1. A mixing apparatus comprising a body having a bore or passage for the water, a gas-tube arranged concentrically within such passage, and means for providing for the water a narrow straight path adjacent the tube and a spiral path therebeyond.

2. A mixing apparatus comprising a body having a bore or passage for the water, a gas-tube arranged concentrically within such passage, and means for providing for the water a narrow straight path adjacent the tube and a spiral path therebeyond, said tube having a series of openings in position to direct gas into the body of water circulating in said spiral path.

3. A mixing apparatus comprising a part having two channels communicating with each other through a plurality of passages, one of said channels which is a water-passage being tortuous and the other which is a gas-passage being straight, and a mixing-chamber arranged to communicate with one of said channels at a point beyond the initial commingling of the water and gas.

4. A mixing apparatus, comprising a part provided with two concentric channels communicating with each other through a plurality of passages, the outer one of said channels being in the form of an alternately right and left handled helix.

5. In a mixing apparatus, the combination with an outer tube adapted to be connected with a supply of fluid, of an inner tube adapted to be connected with a supply of another fluid, a helical ridge lying between the two tubes and adapted to cause the fluid in the outer tube to flow in a circuitous path, a plurality of perforations in the wall of the inner tube, and a part at the end of the other tube-passage adapted to spread the fluid flowing therethrough.

6. In a mixing apparatus, the combination with an outer tube provided with a tortuous passage in its inner wall, and an inner tube communicating with said passage through a plurality of perforations along its length, of a chamber at one end of the passage of the outer tube adapted to communicate with a source of fluid-supply, and provided with a substantially conical projection concentric

with the inner tube and having its apex presented toward the channel in the outer tube.

7. In a mixing apparatus, the combination with an outer tube provided with a tortuous passage on its inner wall, and an inner tube communicating with the passage in the outer tube through a plurality of perforations along its length, of a chamber at one end of the passage of the outer tube adapted to communicate with a source of fluid-supply, and provided with a substantially conical projection concentric with the inner tube, and having its apex presented toward the channel in the outer tube, and a chamber at the other end of the passage in said outer tube and in communication with the delivery-pipe, said chamber containing a part adapted to deflect and spread the fluid as it is delivered from the end of the channel in the outer tube.

8. In a mixing apparatus, the combination with an outer tube having a channel in its inner wall, of an inner tube communicating with the channel in the outer tube through a plurality of passages, and a device beyond the end of the channel in the outer tube adapted to cause fluid passing through said channel to be deflected back into proximity to the passage in the inner tube.

9. In a mixing apparatus, the combination with a part having a channel for the flow of fluid, of a deflector *f* arranged at the outer side of said channel to break up and turn back the flow and a tube having a perforation adjacent to said deflector and adapted to deliver a stream of another fluid into the stream of the first-mentioned fluid where it is broken up and turned back.

10. In a fluid-mixing apparatus, the combination with an outer tube *a* and an inner tube *b* having a channel a^3 therebetween, said inner tube being perforated at a number of points along said channel, of an extension a^2 of said outer tube carrying an extension a^5 of said channel, and a part *c'* of truncated conical form arranged at the bottom of said channel a^3 with its apex directed toward said channel.

11. In a fluid-mixing apparatus, the combination with an outer tube *a*, and an inner tube *b* concentric therewith and provided with a number of perforations *b'*, of a helical ridge arranged in the space between said tubes, a deflector *f* arranged at the end of the inner tube, said inner tube being provided with perforations b^3 adjacent to said deflector.

12. A mixing apparatus comprising a tubular portion made in separate sections, the inner walls of such sections respectively being in the form of alternately right and left hand helices, and a gas-tube arranged concentrically within said tubular portion and having a plurality of openings through which gas is discharged into the water passing through such tubular portion.

847,553. PACKING FOR DOORS AND LIKE CLOSURES, WILLIAM H. CARTER, Marshall, Tex. Filed Dec. 1, 1905. Serial No. 289,891.

Claim.—1. A structure of the class described having a doorway-opening provided with a surrounding recess, a packing appliance within said recess and formed of a flexible strip folded upon itself longitudinally and with a filling of yieldable material disposed within the fold, holding-strips attached to one wall of the recess and bearing upon the engaging edges of said strip and with one face presented toward the doorway-opening, and a door for closing said opening and adapted to enter the recess and engage both the holding-strip and the packing.

2. A structure of the class described having a doorway-opening provided with a surrounding recess, a packing appliance within said recess and formed of a flexible strip folded upon itself longitudinally and with a filling of yieldable material disposed within the fold, holding-strips attached to a wall of the recess and bearing upon the engaging edges of said strip and with one face beveled and presented toward the doorway-opening, and a door for closing said opening and adapted to enter the recess and engage both the holding-strip and the packing the edges of the door being beveled to correspond to and engage said beveled strips.

847,553.

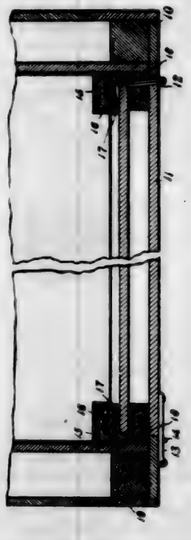

847,554. BRACELET, CHAIN, AND THE LIKE. ARCHIBALD C. COCKREN, Barnsbury, England, assignor to Johnson, Walker & Tolhurst, Ltd., London, England, a Corporation of Great Britain. Filed Aug. 31, 1906. Serial No. 332,737.

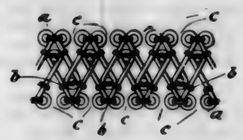

Claim.—A bracelet or similar article composed of a plurality of main and supplemental ring elements, the main elements being substantially triangular in form and being formed from spring-wire folded centrally to form one ring or eye and the separate parts thereof being crossed and extended to form spring-arms and having rings or eyes at their ends, said main elements being placed side by side and alternately arranged so that the single eye ends thereof overlap, the single eye ends of the alternate elements being connected with the spring-arms of the other alternate elements by the supplemental ring elements, and the adjacent ends of the spring-arms of the alternate main elements being also connected at the opposite side edges of the bracelet or chain by the supplemental ring elements.

847,555. ADJUSTING DEVICE FOR RELAYS. EDWARD B. CRAFT, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 5, 1906. Serial No. 299,415.

Claim.—1. The combination with a retractile spring, of a pliable tongue to which said spring is secured, and a bridge-piece to which one end of said tongue is rigidly secured; whereby said tongue may be conveniently bent to adjust the tension on said spring.

2. The combination with an electromagnet, of an armature therefor, a bridge-piece, a pliable tongue having one end rigidly secured to said bridge-piece, and a spring connecting said tongue with said armature; whereby the tongue may be bent to vary the retractive force of said spring.

3. The combination with an electromagnet, of an armature therefor, a U-shaped bridge-piece, a pliable tongue secured at one end to the yoke portion of said bridge-piece, and a coiled retractile spring connecting said armature with the other end of said tongue.

4. The combination with an electromagnet, of an armature therefor, an extension from the pole-piece of said magnet; a U-shaped bridge-piece secured to the under side of said extension, a pliable tongue secured at one end to said bridge-piece, and a coiled retractile spring connecting the other end of said tongue with said armature, said spring passing through an opening in said extension.

847,556. CURTAIN-STRETCHER FRAME. ELIZABETH DEACH, St. Paul, Minn. Filed Mar. 31, 1906. Serial No. 309,084.

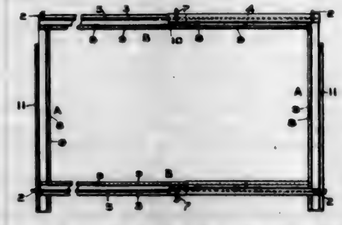

Claim.—1. A frame of the class described comprising top and bottom and side rails detachably connected together at their ends, strips hinged to the inner edges of said rails and normally extending outwardly therefrom, and curtain-supporting means carried by said strips.

2. A frame of the class described comprising top and bottom and side rails detachably secured together at their ends, slidable members composing said top and bottom rails, means for securing said slidable members in adjusted positions, strips hinged to the inner edges of said side rails and to the inner edges of the sections of said top and bottom rails, the strips of said sections normally standing in alinement, and all said strips normally extending from said rails toward the center of said frame, and curtain-engaging means carried by said strips.

3. A frame of the class described comprising in combination top and bottom and side rails, hinges securing said rails together at their ends, a pair of sections comprising each of said top and bottom rails, said sections being slidable one upon the other, means adjustably securing said sections together, strips hinged to the inner edges of said rails and normally extending toward the center of the frame, the supporting-hinges for the strips of the outer sections of said top and bottom rails being projected rearwardly to allow the strips of said sections to normally stand in alinement and curtain-engaging means carried by said strips.

847,557. MITER-BOX. PETER DOSCH, Bridgeport, Conn. Filed Oct. 24, 1905. Serial No. 284,132.

Claim.—1. The combination in a mitering apparatus of a stationary table, a frame pivoted to the stationary table, an A-frame pivotally connected to the pivoted frame at its separated ends, a device pivotally supported upon the other end of the A-frame provided with means which engage the back and sides of the saw at a distance from its teeth, means connected with said pivoted device and with the pivoted frame for maintaining the saw in a horizontal position at all positions of the A-frame and counterbalance-springs which coact with the A-frame.

2. In a mitering apparatus a saw supporting and guiding device provided on its interior with resilient bearing-plates adapted to immediate engagement with the sides of the saw at a distance from its teeth, the opposite ends whereof are independently adjustable toward and from the saw.

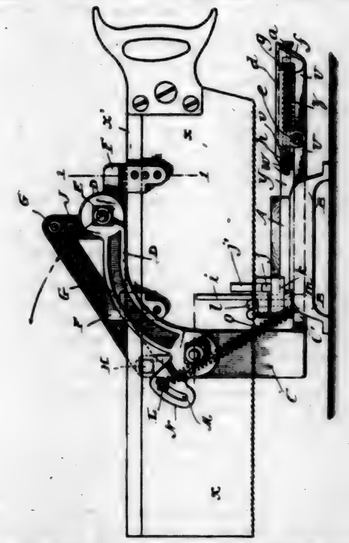

3. In a mitering apparatus a frame pivotally supported at one end in the axis or center of the apparatus, another swinging frame pivoted to the first-named frame at two points to the right and left of its axial line, a saw supporting and guiding device pivotally supported at the other end of the last-named frame in substantially the axial line of the device, and saw centering and controlling bearing-plates within the saw supporting and guiding device the opposite ends whereof are independently adjustable toward and from the saw-blade at a distance from its teeth.

847,558. CIGAR-MOLD. NAPOLEON DU BRUL, Cincinnati, Ohio. Filed May 7, 1906. Serial No. 315,585.

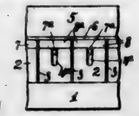

Claim.—1. A cigar-mold having its upper and lower members formed to produce a molding-chamber of substantially circular section throughout the greater portion of the length but gradually elongated in the direction in which pressure is exerted by the mold.

2. A cigar-mold in which the penetrating portion of the upper or cup member is of less vertical dimension at the end which corresponds to the point end of the cigar-bunch than the remaining portion of said member.

3. A cigar-mold having the portion of its upper member or cup which enters the lower cavity or matrix tapered in depth or vertical dimension from the large end of the molding-cavity to the point end thereof.

4. A cigar-mold comprising the lower member having a suitable number of cavities or matrices and an upper member resting upon said lower member and having cups projecting within the cavities or matrices; said projecting parts being tapered in the depth of their projection below the surface of the upper member which rests upon the lower member.

5. A cigar-mold comprising a lower member with one or more cavities or matrices, and an upper member carrying a corresponding number of cups projecting into said cavities or matrices; said cups being formed with flanges through which they are attached to the upper member and said flanges being tapered in thickness to cause the cup or cups to project into the lower cavities or matrices to a lesser extent at one end than at the other.

6. A cigar-mold comprising a lower member with one or more cavities or matrices, and an upper member carrying a corresponding number of cups projecting into said cavities or matrices; said cups being formed with flanges through which they are attached to the upper member and said flanges being tapered in thickness to cause the cup or cups to project into the lower cavities or matrices to a lesser extent at one end than at the other; the end of greater thickness and consequently the end of less penetration corresponding to the point end of the bunch to be formed.

7. A cigar-mold comprising a lower member with one or more cavities or matrices, and an upper member carrying a corresponding number of cups projecting into said cavities or matrices; said cups being formed with flanges through which they are attached to the upper member and said flanges being tapered in thickness to cause the cup or cups to project into the lower cavities or matrices to a lesser extent at one end than at the other; said upper member being constructed with a base or backing which tapers in vertical dimension inversely to the taper in the attaching-flanges of the cups whereby the upper surface of the mold is made parallel to its lower surface.

8. A cigar-mold comprising a lower member constructed with cavities or matrices, an upper member comprising a backing or top portion, an inner facing layer, and cups formed with attaching-flanges; said attaching-flanges being tapered in vertical dimension from one end to the other and said backing or top portion being tapered inversely as the attaching-flanges, for the purposes set forth.

9. In a cigar-mold, the combination of the lower member provided with cavities or matrices having separated walls, the upper member provided with cups coöperating with said matrices to form molding-cavities, and means between the walls of the lower cavities or matrices for maintaining their positions and preventing permanent spreading thereof.

10. In a cigar-mold, a lower member constructed with cavities or matrices with their side walls separated for a greater portion of their transverse dimension but having spacing portions between them at suitable points to retain the walls against permanent spreading.

11. A cigar-mold having the walls of its lower cavities or matrices divided by kerfs or spaces extending from the sides inward but not entirely across the mold.

12. In a cigar-mold of substantially the character described, a lower member formed with cavities or matrices divided by saw-kerfs extending inward from the sides toward but not reaching the center thereby forming walls for the cavities or matrices separated throughout a portion of their area but united along the middle line of the mold by integral tying and spacing portions of the material of which the mold is constructed.

847,559. BINDING FOR CAR TRAP-DOORS. OLIVER M. EDWARDS, Syracuse, N. Y. Filed Mar. 5, 1904. Serial No. 196,693.

Claim.—1. A binding for trap-doors tapering in thickness from one edge toward the other and adapted to be applied with the lessening thickness extending toward the under side of the platform.

2. A binding for trap-doors tapering in thickness from one edge toward the other and adapted to be applied to surfaces, which are at substantially right angles to the upper surface of the door, and with the lessening thickness extending toward the under side of the platform.

3. A binding for trap-doors tapering in thickness from one edge toward the other and provided with a flange to overhang a surface at an angle to the surface to which the binding is to be applied, with the lessening thickness extending toward the under side of the platform.

4. A binding for trap-doors tapering in thickness from one edge toward the other and provided with inclosing flanges adapted to receive the edge of the door and engage with portions adjacent to the upper and lower surfaces of the same, and with the lessening thickness extending toward the under side of the platform.

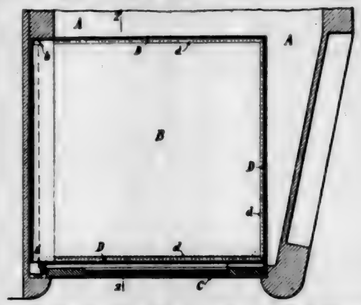

5. In a car-platform the combination, substantially as set forth, of a trap-door provided with edges substantially at right angles to its upper surface, and a binding therefor, tapering in thickness from one edge toward the other, whereby the exposed surface of the binding is at an angle to the surface to which the binding is applied, the apex of the angle being formed near to or below the under side of that portion of the platform in which the door is mounted.

6. In a car-platform the combination, substantially as set forth, of a trap-door mounted in the platform, a binding therefor, and a binding for the opening in which the door is mounted, one of which bindings taper in thickness from one edge toward the other, with the lessening thickness extending toward the under side of the platform.

7. In a car-platform the combination, substantially as set forth, of a trap-door mounted in the platform, a binding therefor, tapering in thickness from one edge toward the other, and two securing-flanges formed integral with the binding, whereby a portion of the door is received between the flanges and the binding is applied with the lessening thickness extending toward the under side of the platform.

8. In a car-platform the combination, substantially as set forth, of a trap-door mounted in the platform, a binding therefor, tapering in thickness from one edge toward the other, and two securing-flanges formed integral with the binding, one of which flanges is adapted to receive fastening-devices and the other flange is adapted to engage with the door, whereby a portion of the door is received between the flanges and the binding is applied with the lessening thickness extending toward the under side of the platform.

9. A binding for trap-doors tapering in thickness from one edge to the other and at its thickest edge provided with a rounded portion and adapted to be applied with the lessening thickness extending toward the under side of the platform.

10. A binding for trap-doors tapering in thickness from one edge to the other and at its thickest edge provided with a rounded portion and adapted to be applied to surfaces, which are at substantially right angles to the upper surface of the door with the rounded portion exposed and the lessening thickness extending toward the under side of the platform.

11. A binding for trap-doors tapering in thickness from one edge to the other and at its thickest portion provided with a rounded portion at one side and a flange at the other side and adapted to be applied with the lessening thickness extending toward the under side of the platform.

12. A binding for trap-doors tapering in thickness from one edge to the other and at its thickest portion provided with a flange at right angles to one side portion and a rounded corner portion at the opposite side portion and adapted to be applied with the lessening thickness extending toward the under side of the platform.

13. In a car-platform the combination, substantially as set forth, of a trap-door provided with edges substantially at right angles to its upper surface, and a binding therefor, tapering in thickness from one edge toward the other and having a rounded portion, in cross-section, whereby one of the exposed portions of the binding is at an angle to the surface to which it is applied and another portion forms an exposed rounded surface near the upper surface of the door with the lessening thickness of the binding extending toward the under side of the platform.

847,560. RAIL-JOINT. LORIAN M. ELKIN, Indiana, Pa. Filed June 13, 1905. Serial No. 265,043.

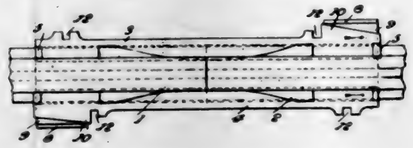

Claim.—1. In combination, rail ends, a joint therefor, one end portion of the joint having means for increasing the friction between it and one of the rail ends to positively secure said parts together, and the other rail end and opposite end portion of the joint being relatively movable.

2. In combination, rail ends, a joint therefor comprising a chair, means for attaching the chair to the rail ends, and means for effecting greater frictional or clamping action of one end of the joint with respect to the adjacent rail end than is effected between the opposite end portion of the joint and the other rail end.

3. In combination, rail ends, a joint therefor comprising a chair, means for securing said chair to the rail ends, the portions of one end of the chair abutting with one of the rail ends, being provided with corrugations transverse to the line of axis of the rails, while the similar portions of the chair engaging the other rail end are provided with longitudinal corrugations.

847,561. SWINGLETREE-HOOK. BENJAMIN F. EMERY, Thayer, Iowa. Filed Feb. 8, 1906. Serial No. 300,161.

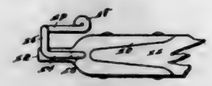

Claim.—1. A swingletree-hook, comprising an engaging device adapted to be mounted on a swingletree and be embraced by an eye, an arm formed on and rising from said engaging device, a top bar integral with and extending outward from said arm above the engaging device, an extension integral with and extending laterally from said top bar, a vertical member integral with and extending vertically from said extension, and a cross-arm integral with and extending from said vertical member parallel with said top bar, the vertical member crossing and laterally spaced from the engaging device.

2. A swingletree-hook, comprising a supporting device, such as a socket or stem adapted to be mounted on a swingletree, an engaging device, such as a pin or hook mounted on said supporting device, an arm formed on and rising from said supporting device adjacent the engaging device, a top bar, an extension, a vertical member and a cross-arm carried by said arm and successively connected and adapted to partially embrace a trace when said trace is on the engaging device.

847,562. METHOD OF TREATING BUTTER. ALPHEUS FAY, Louisville, Ky. Filed Oct. 8, 1906. Serial No. 338,035.

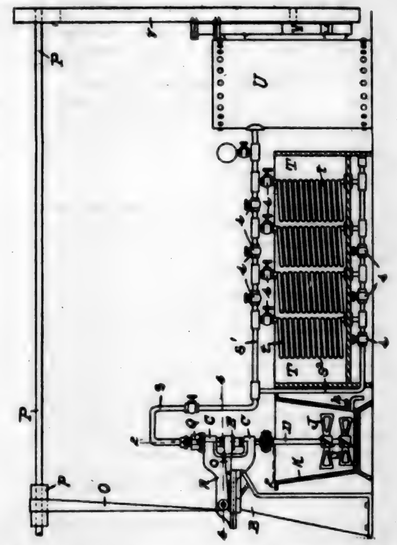

Claim.—1. The method of treating butter, which consists in placing the butter in a liquid containing pure milk elements and then mechanically agitating the mixture while it is maintained at a low temperature and air is being passed through it, substantially as specified.

2. The method of treating butter, which consists in placing the butter in a liquid containing pure milk elements; then mechanically agitating the mixture while it is maintained at a low temperature and air is being passed through it; and then increasing the temperature of the mixture and collecting the butter by gentle agitation, substantially as specified.

3. The method of treating butter, which consists in placing the butter in a liquid containing pure milk elements; then mechanically agitating the mixture while it is maintained at a low temperature and air under pressure is being passed through it; and then increasing the temperature of the mixture and collecting the butter by gentle agitation, substantially as specified.

4. The method of treating butter, which consists in placing the butter in a liquid containing pure milk elements; then mechanically agitating the mixture while cooled air is being passed through it; and then increasing the temperature of the mixture and collecting the butter by gentle agitation, substantially as specified.

5. The method of treating butter, which consists in placing the butter in a liquid containing pure milk elements; then mechanically agitating the mixture while cooled air under pressure is being passed through it, and then increasing the temperature of the mixture and collecting the butter by gentle agitation, substantially as specified.

6. The method of treating butter, which consists in placing the butter in a liquid containing pure milk elements; then mechanically agitating the mixture while cooled air is being passed through it; then increasing the temperature of the mixture by passing warmer air through it; and then collecting the butter by gentle agitation, substantially as specified.

7. The method of treating butter, which consists in placing the butter in a liquid containing pure milk elements; then mechanically agitating the mixture while cooled air is being passed through it; then increasing the temperature of the mixture by passing warmer air

through it; then discontinuing the supply of air; and then collecting the butter by gentle agitation, substantially as specified.

847,563. METHOD OF TREATING CREAM OR MILK AND BUTTER. ALPHEUS FAY, Louisville, Ky., assignor of one-half to W. N. Arterburn, Louisville, Ky. Filed Oct. 27, 1906. Serial No. 340,904.

Claim.—1. The method of treating milk or cream which consists in first removing butter from the same while fresh, and then remixing butter with the residue at a temperature below the melting-point of the butter, substantially as specified.

2. The method of treating milk or cream which consists in first removing butter from the same while fresh, and then remixing the same butter with the residue at a temperature below the melting-point of the butter, substantially as specified.

3. The method of treating milk or cream which consists in first removing butter from the same while fresh and kept at a cool temperature, and then remixing butter with the residue first at a warmer temperature below the melting-point of the butter and then at a cooler temperature, substantially as specified.

4. The method of treating milk or cream which consists in first separating the butter therefrom at a medium temperature; then collecting the butter for removal at a cooler temperature; and then remixing butter with the residue, substantially as specified.

5. The method of treating milk or cream which consists in first separating the butter therefrom at a medium temperature; then collecting the butter for removal at a cooler temperature; and then remixing butter with the residue first at a warmer temperature below the melting-point of the butter, and then at a cooler temperature, substantially as specified.

6. The method of treating milk or cream which consists in first agitating the same while air is being passed through it to remove the butter, and then agitating the residue with a suitable amount of butter while air is being passed through it, to remix the two, substantially as specified.

7. The method of treating milk or cream which consists in first agitating the same at a temperature of about 60° Fahrenheit while air is being passed through it, to remove the butter, and then agitating the residue with a suitable amount of butter while air is being passed through it, said agitation being performed first at a warmer temperature below the melting-point of the butter and then at a cooler temperature, substantially as specified.

8. The method of treating milk or cream which consists in mixing pure milk elements and butter together at a temperature below the melting-point of the butter, substantially as specified.

9. The method of treating milk or cream which consists in first removing butter from the same while fresh, and then remixing the butter with pure milk elements at a temperature below the melting-point of the butter, substantially as specified.

847,564. CONSTRUCTION OF SHOTGUNS. PASCUAL FITTIPALDI and FEDERICO SANTA LUCIA, Buenos Ayres, Argentina. Filed Dec. 1, 1905. Serial No. 289,929.

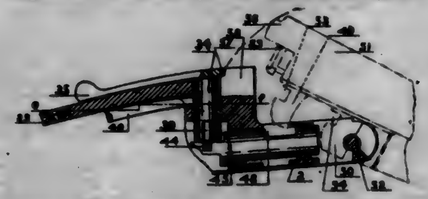

Claim.—In a shotgun the combination with the barrel having lugs on its rear end with notches therein, of a casing, a cylindrical vertical portion therein, an operating-lever secured thereto, said portion having a recess therein, a spring having its ends engaging in said recess to hold said portion in normal position, two diametrically opposite lateral projections on the lower end of said vertical portion, one of which is adapted to abut a stationary part of the casing, a depending crank-pin 39 on the other projection, a hollow cylindrical horizontal portion 45 having slots therein with which the barrel-lugs engage to lock the barrel and a projection at one end of said portion 45 having a groove therein with which the crank-pin 39 engages.

847,565. HANDLE FOR LAWN-MOWERS AND SIMILAR ARTICLES. JOHN FLEMING, Philadelphia, Pa., assignor to William P. M. Braun and John T. Braun, copartners, trading as John Braun & Sons, Philadelphia, Pa. Filed Dec. 14, 1906. Serial No. 347,803.

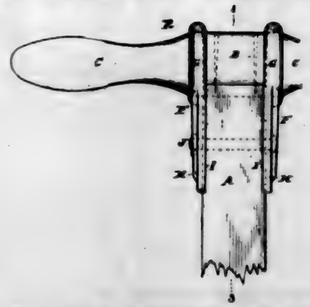

Claim.—1. A handle structure comprising a pole, a handle-bar arranged transversely to the pole and secured to its end by a tenoned joint, combined with metallic brackets bolted to the pole and having looped ends encircling the handle-bar.

2. A handle structure comprising a pole, a handle-bar arranged transversely to the pole and secured to its end by a tenoned joint, combined with brackets F F consisting of flat plates fitting the sides of the pole and looped portions fitting around the handle-bar, and a bolt J passing through the pole and clamping the brackets to it.

3. A handle structure comprising a pole, a handle-bar arranged transversely to the pole and secured to its end by a tenoned joint, combined with brackets F F consisting of flat flanged plates fitting the sides of the pole and clamping the corners thereof and looped portions fitting around the handle-bar, and a bolt J passing through the pole and clamping the brackets to it.

4. In a handle structure, the pole A having the tenon D and the curved shoulders E E, combined with a transverse handle-bar having a center part formed with a hole to receive the tenon and curved portions to fit the curved shoulders of the pole, and metallic devices for holding the handle-bar to the pole arranged upon each side of the pole and consisting of plates bolted to the pole and looped portions encircling the handle-bar.

5. In a handle structure, the pole combined with a transverse handle-bar arranged across its end, and metallic brackets bolted to opposite sides of the pole and having looped portions which encircle the handle-bar to hold it in position on the end of the pole.

847,566. ADJUSTABLE SUPPORT FOR VAPOR-LAMPS. STANWOOD E. FLICHTNER, Englewood, N. J., assignor to Cooper Hewitt Electric Company, a Corporation of New York. Filed July 28, 1904. Serial No. 218,473.

Claim.—1. In a printing apparatus, vapor electric-lighting apparatus mounted upon a plate, a hinge at one end of said plate, a hinged support at the opposite end thereof, and means whereby the said plate can be moved to an inclined position either above or below its normal operating position.

2. In a printing apparatus, vapor electric-lighting apparatus mounted on a suitable plate, a hinge at one end of the said plate, a hinged support at the opposite end of the said plate, means whereby the plate may be moved to

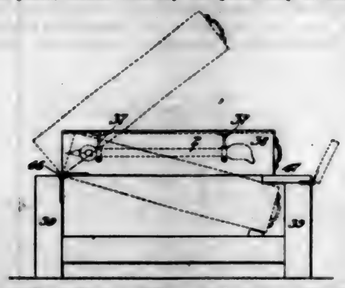

an upwardly-inclined position, and means whereby the support may be withdrawn for moving the plate to a downwardly-inclined position.

847,567. BLUE-PRINTING AND SIMILAR APPARATUS. STANWOOD E. FLICHTNER, Englewood, N. J., assignor to Cooper Hewitt Electric Company, a Corporation of New York. Filed July 28, 1904. Serial No. 218,474.

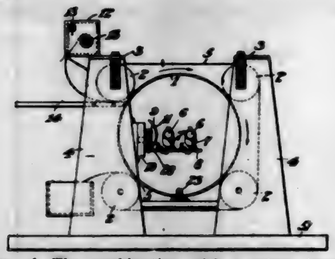

Claim.—1. The combination with a rotary transparent cylinder for photographic or printing purposes, of one or more lamps, a frame on which said lamp or lamps are mounted, and a base to which the said frame is pivoted.

2. The combination with a rotary transparent cylinder for photographic or printing purposes, of one or more lamps inside the cylinder, a frame supporting the lamp or lamps, a support for the said frame, a slotted base extending through the cylinder, and a pivot-pin connecting the said support and the said base.

3. The combination with a rotary transparent cylinder for photographic or printing purposes, of one or more lamps inside the cylinder, a frame carrying said lamp or lamps, a support for the said frame, a base to which the said support is pivoted, and means whereby the said support may be moved in either direction along the said base by a sliding movement.

4. The combination with a rotary transparent cylinder, of one or more lamps inside the cylinder, means for moving the said lamp or lamps to one end of the cylinder, and means for tilting the said lamp or lamps for starting the same into operation.

5. The combination with a rotary transparent cylinder, of one or more lamps inside the cylinder, means for moving the said lamp or lamps to one end of the cylinder, means for tilting the said lamp or lamps for starting the same into operation, and for restoring the lamps to the position of normal operation.

847,568. FENDER FOR HARVESTERS. MAX P. GERBIG, Wentworth, Mo. Filed Feb. 13, 1906. Serial No. 300,909.

Claim.—1. A harvester having a cutting apparatus, a fender applied to the finger-bar thereof and extending in an upwardly and rearwardly inclined position from the same, said fender having at its rear edge a horizontal portion resting on the frame of the harvester, an apron carried by the harvester and resting upon said horizontal portion.

2. A harvester having a cutting apparatus, a fender applied to the finger-bar thereof and consisting of a plate extending from said finger-bar and having an upwardly-extending rib, an apron carried by the harvester and guided by said rib.

3. A harvester having a cutting apparatus, a fender applied to the finger-bar thereof, and consisting of a plate having an upwardly-extending rib and a rearwardly-extending portion, an apron carried by the harvester and resting upon the rearwardly-extending portion and guided by the rib.

4. A harvester having a cutting apparatus, a fender applied to the finger-bar thereof and consisting of a plate extending over the said bar and having notches, sickle-bar clips located in said notches, said notches having horizontal hoods located at their edges.

847,569. MEANS FOR COMPRESSING AIR AND THE LIKE. JOHN GILL, Edinburgh, Scotland. Filed June 3, 1905. Serial No. 263,676.

Claim.—1. In an apparatus for compressing air or other elastic fluid by means of a descending column of incompressible liquid the combination of a downward pipe *a* and an upward pipe *b* and a closed pipe *c* connecting together the pipes *a* and *b* to their upper ends, an air-reservoir *g* having connected to it the lower ends of the pipes *a* and *b*, a pump *h* for circulating the water or other incompressible liquid, and a blower *i* for delivering the air to be compressed to the upper end of the downward pipe, substantially as described.

2. In an apparatus for compressing air or other elastic fluid by means of a descending column of incompressible liquid the combination of a downward pipe *a* and an upward pipe *b* and a closed pipe *c* connecting together the pipes *a* and *b* at their upper ends, an air-reservoir *g* hav-

ing connected to it the lower ends of the pipes *a* and *b*, a pump *h* for circulating the water or other incompressible liquid, and a blower *i* for delivering the air to be compressed to the upper end of the downward pipe and a reservoir *d* at the top of the upward pipe *b*, substantially as described.

847,570. PLAYING-CARD PACKAGE AND CRIBBAGE-BOARD. LORENZO O. GRANGER, Oakland, Cal. Filed Jan. 20, 1906. Serial No. 296,938.

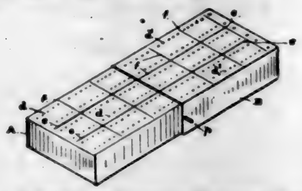

Claim.—A combined playing-card package and cribbage-board, comprising two box members arranged to slide or telescope together, the top of the outer member and the bottom of the inner or telescoping member being provided with perforations and lines to form a cribbage-board and each of said members being provided with an aperture on one of its vertical sides, the said apertures being on opposite sides of the card package when the two box members are in normal position, but on the same side and arranged to register with each other when the inner box member is inverted and extended to form a cribbage-board, and a detachable peg adapted to be inserted in said apertures when in register with each other to hold the two box members in extended position, substantially as set forth and described.

847,571. CALF-WEANER. JOHN R. GRICE and ORIE E. PIDCOCK, Deuel, Colo. Filed Mar. 29, 1904. Serial No. 200,623.

Claim.—1. A calf-weaner comprising two members, in combination with a threaded stem uniting said members, a nut upon said threaded stem, a spring interposed between said members, and button-provided pins extending from said members.

2. A calf-weaner comprising the combination of two counterpart members, each member being provided along one edge with a socket, in combination with a stem working within said sockets, an intermediate socket within each of said members, a threaded stem passing through said intermediate sockets, a nut upon said threaded stem, springs interposed between said members, and button-provided nose-pins extending from said members, all arranged substantially as and for the purpose set forth.

847,572. FLUID-ACTUATED CLUTCH. BENGT M. W. HANSON, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Filed Mar. 3, 1905. Serial No. 248,231.

Claim.—1. The combination, with an element having a clutch-surface, of a shaft; a carrier rigid with the shaft; a flexible clutch element; means for securing said flexible clutch element to the carrier so that it will assume a buckled form; and means for forcing the flexible element to engage the other clutch element.

2. The combination, with a rotary shaft, of a carrier rigid with said shaft; a flexible clutch element secured to the carrier so that it will assume a buckled form; an element loose on the shaft; and means for forcing the buckled flexible clutch element to engage the other element.

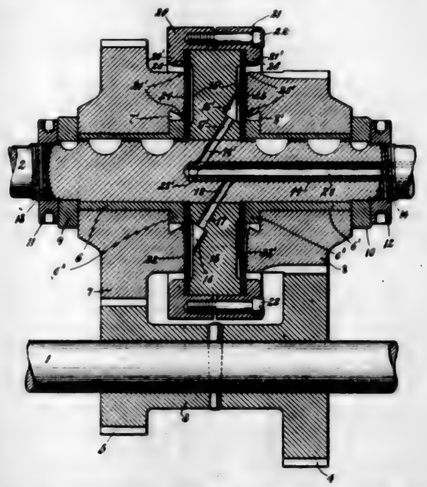

3. The combination, with a rotary shaft having passages for receiving fluid, of a carrier rigid with the shaft, and having a passage communicating with one of the passages in the shaft; a buckled diaphragm secured to the carrier; an element with which said diaphragm is adapted to engage; and means for supplying fluid to said shaft.

4. The combination, with a rotary shaft, of a carrier rigid with the shaft; buckled, flexible clutch elements secured to the carrier; driven elements loose on the shaft, and each having a clutch-surface; and means for forcing either flexible clutch element to engage the driven element with which it coöperates.

5. The combination, with a shaft having passages to receive fluid under pressure, of means for controlling the supply of fluid to said shaft; a carrier rigid with the shaft, and having a passage registering with one of those in the shaft; a buckled diaphragm secured to the carrier; and an element having a clutch-surface with which said diaphragm may be engaged.

6. The combination, with a rotary shaft having a bore and a passage leading from said bore, of a carrier rigid with the shaft, and having a passage; a buckled flexible diaphragm; an element with which said diaphragm is adapted to engage; and means for supplying fluid under pressure to said bore.

7. The combination, with a rotary shaft having a bore and a passage leading from said bore, of a carrier rigid with the shaft, and having a passage; a buckled flexible diaphragm; an element with which said diaphragm is adapted to engage; means for supplying fluid under pressure to said bore; and a valve for controlling the supply of said fluid.

8. The combination, with a rotary shaft having a bore and a passage leading from said bore, of a carrier rigid with the shaft, and having a passage; a buckled flexible diaphragm; an element with which said diaphragm is adapted to engage; means for supplying fluid under pressure to said bore; a valve for controlling the supply of said fluid; and means for actuating said valve.

9. In a clutch, the combination, with a rotary carrier, of a flexible diaphragm; means for securing said diaphragm to the carrier so that it will assume a buckled form; an element coöperating with the diaphragm and carrier, and having an engaging surface for the diaphragm; and means for supplying fluid under pressure, and for conveying it to a point where it will act against the buckled diaphragm.

10. The combination, with a shaft, of a pair of driven elements loose on said shaft; a carrier rigid with the shaft intermediate said elements; flexible diaphragms means for securing said diaphragms to the sides of the carrier so that they normally assume a bowed form; and means for alternately connecting said diaphragms with said driven elements.

11. The combination, with a carrier of a diaphragm secured thereto so that it will normally assume a buckled form; a clutch element with which the diaphragm may be engaged; and means for forcing the diaphragm against the clutch element.

12. The combination, with a rotary shaft, of a carrier rigid with said shaft; a clamping-ring having an inclined surface; a diaphragm secured to the carrier by said clamping-ring so that it will assume a buckled form; means for distending the diaphragm; and a clutch element with which the diaphragm may be engaged.

13. The combination, with a rotary carrier having an inclined surface, of a clamp also having an inclined surface; a flexible diaphragm secured to the carrier by the clamp so that it will normally assume a bowed form; a clutch element with which the diaphragm may engage; and means for distending said diaphragm and forcing it into straight engagement with said clutch element.

14. The combination, with a rotary carrier, of a flexible diaphragm secured thereto; a driven element having a rounded edge surface and a flat clutch-surface; and means for forcing the diaphragm against the flat clutch-surface.

15. The combination, with a rotary carrier having inclines on its sides, of clamping-rings fitted to the carrier and having inclined circumferential flanges; diaphragms attached to the sides of the carrier by said clamping-rings; means for alternately distending said diaphragms; and driven elements having clutch-surfaces adapted to be engaged by the diaphragms.

16. The combination, with a rotary shaft, of a carrier rigid therewith; flexible diaphragms; rings having inclined surfaces for securing said diaphragms to the carrier; fluid-pressure devices for distending the diaphragms; and exhaust devices for relieving pressure on one diaphragm when the other diaphragm is distended.

847,573. CHUCK. BENGT M. W. HANSON, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Filed May 22, 1905. Serial No. 261,669.

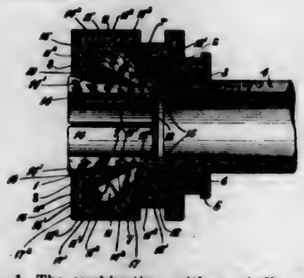

Claim.—1. The combination, with a spindle, of a chuck comprising a tubular head, chuck-jaws in the head; a ring loose within the head, bearing against the rear ends of the chuck-jaws, and having a bore of a diameter sufficient to receive stock passing through the spindle, means for actuating said ring; and means for closing the chuck-jaws when the ring is actuated.

2. A chuck comprising a slotted, tubular head having inclined and cylindrical surfaces on its inner wall, toggles mounted in the slots of the head, a sleeve movable on the head, and serving to actuate said toggles, a ring loose within the head, and engaged by the inner ends of the toggles, said ring being guided by the cylindrical part of the inner wall of the head, and chuck-jaws having inclines in engagement with the inclined part of said inner wall of the head, the rear ends of said chuck-jaws bearing against said ring.

3. The combination, with a spindle, of a tubular head having peripheral slots, and provided with inclined and cylindrical inner surfaces; chuck-jaws in said head; toggle-levers passing through said peripheral slots, and having inclined surfaces; a ring loose within the head beyond the spindle, said ring fitting the cylindrical inner surface of the head, and engaging the rear ends of the chuck-jaws, and being actuated by said toggle-levers; and a sleeve movable on the head, and having an inclined surface for operating the toggle-levers.

4. The combination, with a spindle, of a tubular head in engagement with the end of said spindle, said head having a series of slots; a grooved ring loose within the head beyond the end of the spindle; chuck-jaws bearing at their rear ends against said ring; toggle-levers extending through said slots, and seated at one end in the groove of the ring; an adjustable abutment for the heads of the toggle-levers; and means for actuating said toggle-levers, and thereby moving the ring.

5. The combination, with a spindle, of a tubular head having a series of slots and an inclined inner surface; toggles mounted in the slots, and having inclined outer ends; a grooved ring loosely mounted in the head, and with which the inner and rear ends of said toggles are in engagement; a sleeve slidable on the head, said sleeve having inclined and cylindrical inner surfaces engaging the toggles; and chuck-jaws in position within the head to be engaged at their rear ends by said ring.

6. The combination, with a tubular head having a series of inclined slots, and also having an inclined inner surface, of toggle-levers located in said slots, and having angular upper and rounded lower extremities; a movable ring located in the head, and having a groove in which the lower extremities of said toggle-levers are seated; a sleeve slidable on the chuck-body, and having an inclined surface for actuating the toggle-levers; an abutment for the heads of said toggle-levers; and chuck-jaws bearing at their rear ends directly against said ring.

7. A chuck comprising a tubular and slotted head, said head having inclined and cylindrical surfaces on its inner wall; toggles mounted in the head; a ring fitting the cylindrical inner surface of the head, and with which the rear and inner ends of said toggles are in engagement; chuck-jaws within the head, having inclined peripheries, and in position to be engaged by said ring and by the inner surface of the head; and a sleeve slidable on the head, said sleeve having an inner surface shaped to engage and actuate the toggles.

847,574. FLUID-TIGHT JOINT FOR ROTARY SHAFTS. BENGT M. W. HANSON, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Filed Nov. 21, 1905. Serial No. 288,427.

Claim.—1. The combination, with a rotary shaft having a longitudinal bore, and a port and a passage communicating with said bore, of an annulus surrounding the shaft, and having a passage leading to said port; a fluid-supply conduit engaging the annulus and in communication with the passage thereof; a washer rigid with the shaft, and engaging one side of the annulus; a collar rigid with the shaft, and engaging the other side of the annulus; and a clutch actuated by fluid delivered from the passage leading to the bore of the shaft.

2. The combination, with a tubular shaft having ports and passages, of rings loose on the shaft, and each having a circumferential passage communicating with the ports of the shaft; conduits for supplying fluid under pressure to said rings; a tube within the shaft, and having a port in

communication with the circumferential passage of one of the rings; clutch-surfaces controlled by the fluid received from the shaft and tube; and a collar rigidly secured to the shaft, and covering the inner opposing sides of the rings.

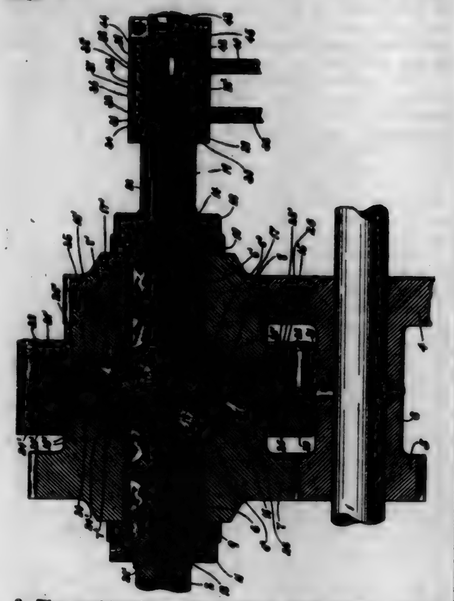

3. The combination, with a rotary shaft having a longitudinal bore, and passages leading from said bore, of a pair of rings mounted on said shaft, each of said rings having a circumferential passage; a collar rigid with the shaft, and located between the rings; means for forcing the collar and rings longitudinally of the shaft to thus form a fluid-tight joint between the parts; and fluid-supply conduits entering the rings and preventing said rings from rotation on the shaft.

4. The combination, with a rotary shaft having a longitudinal bore, of a pair of internally-grooved rings mounted on the shaft; fluid-supply conduits entering the rings, and preventing them from rotation with the shaft, said conduits communicating with the passages in said rings; a collar rigid with the shaft located between the rings, and bearing at its sides against said rings; a nut threaded upon the shaft; and a washer intermediate said nut and one of the rings.

5. A fluid-tight joint for a tubular and rotary shaft comprising a pair of internally-grooved rings; means for supplying fluid to said rings; a washer located between the rings and bearing against the opposing sides thereof; a second washer bearing against the side of one of the rings; a nut threaded upon the shaft, and in engagement with said second washer; and a screw-plug tapped into the shaft at the extremity thereof.

847,575. FRICTION-CLUTCH. BENGT M. W. HANSON, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Filed Oct. 13, 1906. Serial No. 338,865.

Claim.—1. The combination, with a shaft, and with a clutch member slidably connected thereto, and having clutch-surfaces, of a pair of elements loosely mounted on the shaft, one on each side of said clutch member; carriers rigid with the shaft-diaphragm carried by each of said carriers; and fluid-controlled devices for distending the diaphragms to cause the clutch member to be shifted into engagement with either of said loosely-mounted elements.

2. The combination, with a shaft, and with a clutch member slidably connected thereto, of disks on said shaft; diaphragms carried by the disks; elements loose on the shaft, and each having a clutch-surface; and means for admitting fluid under pressure to points where it will act upon either of said diaphragms.

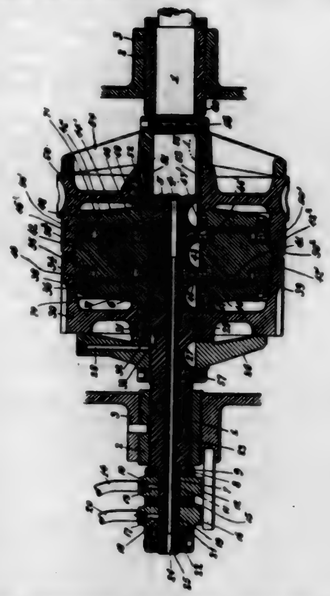

3. The combination, with a shaft, and with a clutch member keyed thereto, and movable longitudinally of said shaft, of carriers on each side of said clutch member; diaphragms connected to the carriers; elements loosely mounted on said shaft, one on each side of the respective carriers; and fluid connections for distending said diaphragms.

4. The combination, with a shaft, and with a member slidably connected thereto and having a peripheral clutch-surface, of a carrier; a diaphragm secured to the carrier; a complemental clutch element also having a clutch-surface to engage the clutch-surface of the slidable member; and fluid-pressure connections for expanding the diaphragm, and forcing the clutch member into contact with said complemental clutch element.

5. The combination, with a shaft, having a bore, and a passage leading from said bore, of a carrier rigid with the shaft; a diaphragm secured to the carrier; an element loose on the shaft, and having an overhanging clutch element; a sliding clutch member under control of said diaphragm and adapted to engage the overhanging clutch element; and fluid-pressure devices for actuating the diaphragm.

6. The combination, with a shaft having a bore, of passages leading from said bore, a clutch member slidably connected to said shaft; a pair of carriers one on each side of said clutch member, and having passages communicating with those of the shaft; diaphragms secured to said carriers; complemental clutch members loose on the shaft; fluid-pressure devices for distending the diaphragms, and connecting either of the loosely-mounted clutch elements to said clutch member.

7. The combination, with a shaft having a bore, and passages leading to said bore, of a tube within said shaft; fluid-presure devices for supplying pressure either to the tube or to the shaft; a clutch member slidably connected to the shaft; carriers on each side of the clutch member; diaphragms secured to the carriers and located opposite the passages; and complemental clutch elements coöperating with said clutch member, and loosely surrounding the shaft.

847,576. VEHICLE. MARTIN W. HEYENGA, Hartsburg, Ill. Filed Feb. 23, 1906. Serial No. 302,594.

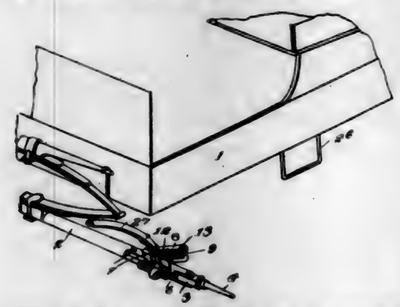

Claim.—1. A vehicle, provided with a thill-support, comprising two forwardly-extending arms, two spaced-apart cross-bars connecting said arms, said parts being notched on their upper surfaces, a thill-iron provided with a threaded shank inserted between said cross-bars, means for clamping said shank to said cross-bars, the shank being provided with lugs taking into the notches of the bars, and a washer provided with an aperture by which it may be received on said shank and having a portion designed to extend around the thill-iron whereby it will contact with the thill, as and for the purpose set forth.

2. A vehicle provided with a thill-support comprising two outwardly-extending arms, two spaced-apart cross-bars connecting said arms and notched on their upper surface, a thill-iron provided with a threaded shank inserted between said cross-bars and formed with oppositely-extending lugs taking into the notches on the upper surface of the said bars, a nut adapted to screw on the said shank underneath the cross-bars whereby to clamp the iron to said bars, a washer provided with an aperture by which it may be received on the said shank, said washer extending laterally underneath the thill-iron, thence forwardly and upwardly, and finally rearwardly around said thill-iron, the said returning portion being adapted for spring engagement with the thill received on said thill-iron, as and for the purpose set forth.

3. A vehicle provided with a thill-support comprising two outwardly-extending arms, two spaced-apart cross-bars connecting said arms and notched on their upper surface, a thill-iron provided with a threaded shank inserted between said cross-bars and formed with oppositely-extending lugs taking into the notches on the upper surface of the said bars, a nut adapted to screw on the said shank underneath the cross-bars whereby to clamp the iron to said bars, a washer provided with an aperture by which it may be received on the said shank, said washer extending laterally underneath the thill-iron, thence forwardly and upwardly, and finally rearwardly around said thill-iron, said last-named portion being adapted for spring engagement with the thill received on said thill-iron and having its side edge turned upwardly, for the purpose specified.

847,577. METALLIC REINFORCEMENT FOR CONCRETE STRUCTURAL WORK. CARL HORIX, Cleveland, Ohio. Filed Jan. 15, 1906. Serial No. 296,070.

Claim.—As a new article of manufacture, a reinforcement for concrete structural work comprising a tensile member consisting of a plurality of wires twisted into a single strand, and a continuous shear-wire interwoven with said strand by means of loops reaching beneath said wires and pressing against the same and bent between said loops to form a series of shear projections of substantially V shape between the loop engagements with said tensile member, said shear projections all extending in the same direction from said strand, whereby in use said shear projections will come above the strand.

847,578. PERFORATING AND MARKING MACHINE. WILLIAM H. HUDSON, Mount Vernon, N. Y., assignor to Peerless Fashion Company, a Corporation of New York. Filed Dec. 31, 1901. Serial No. 87,936.

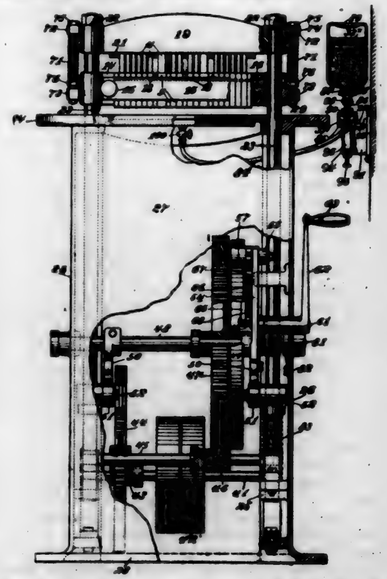

Claim.—1. A movable needle-type consisting of a right-angled shank, and a series of parallel sharp-pointed needles projecting from the end of the shank and grouped in the form of a letter or character; each of said needles having a three-sided spear-point and a longitudinal ink-groove.

2. A font of movable needle-types each consisting of a

shank, and a series of needles projecting from the end thereof; said needles being grouped in the form of a letter or character, the width of which approximates the width of said shank, so that a series of such needle-types may be assembled compactly to form a word; each of said needles having a three-sided spear-point and also having an ink-retaining groove.

3. In combination, a movable stripping needle-type consisting of a shank, a group of needles projecting therefrom and a stripper having a sliding engagement with said shank.

4. In combination, a movable stripping needle-type consisting of a shank and a group of needles projecting therefrom a stripper-plate perforated to receive said needles, and a sleeve mounted upon said shank and having at one end said stripper-plate.

5. In combination, a movable stripping needle-type consisting of a shank and a group of needles projecting therefrom a stripper-plate perforated to receive said needles, and a sleeve mounted upon said shank and having at one end said stripper-plate, said shank being right-angled in cross-section and said sleeve fitting closely thereon.

6. In combination, a movable stripping needle-type consisting of a shank having a group of needles projecting from its end, and a device telescoping upon said shank and locked thereto and having at one end a stripper-plate adapted for the passage of said needles.

7. In combination, a movable stripping needle-type consisting of a body and a series of needles projecting therefrom, and a stripper having a nick.

8. In combination, a movable stripping needle-type comprising a shank having a nick and a series of needles projecting therefrom, and a stripper having a nick.

9. In combination, a movable stripping needle-type consisting of a right-angled shank, a series of needles projecting therefrom, and a device telescoping said shank and having at one end a stripper-plate through which said needles may move; a nick in one side of said shank, and a nick in the same side of said telescoping device.

10. In combination, a movable needle-type consisting of a right-angled shank and a series of needles projecting therefrom; a device telescoping said shank and having at one end a stripper-plate through which said needles may move; a nick in one side of said shank, and a nick in the same side of said telescoping device; and means for locking said telescopic device to said shank.

11. In combination, a movable needle-type consisting of a right-angled shank and a series of needles projecting therefrom; a device telescoping said shank and having a stripping-plate for said needles; said telescoping device having a longitudinal slot and said shank having a locking-pin projecting into said slot; and one at least of said shank and telescopic elements having a nick.

12. In combination, shank 4 having near one end a nick 11, needles inserted in the end of said shank, sleeve 5 telescoping upon said shank and having a nick 12, stripping-plate 9 in one end of said sleeve and having perforations 10 adapted to said needles, slot 6 in said sleeve, and locking-pin 7 seated in hole 8 in said shank and projecting into said slot.

13. A movable stripper for use in combination with a needle group, said stripper having perforations grouped to form a letter or character, and also having a nick or the like, whereby it may be set or composed upon a key or support side by side with other strippers.

14. A needle-stripper consisting of a sleeve or tube having a stripping block or plate in one end and a nick in one side.

15. A needle-stripper consisting of a right-angled sleeve or tube having a perforated stripping-plate in one end and near its other end a nick.

16. A needle-stripper consisting of a sleeve or tube, and a plate or block in one end thereof having perforations grouped in the form of a letter or character, and having means whereby it may be assembled side by side with other strippers upon a common carrier.

17. In combination, a movable stripping needle-logotype consisting of a shank and a system of needles projecting therefrom and grouped in the form of a plurality of letters or characters, a stripper-plate perforated to receive said needles, and a sleeve loose upon said shank and having said stripper-plate at one end.

18. In combination, a movable stripping needle-logotype consisting of a shank and a system of needles projecting therefrom and grouped in the form of a plurality of letters or characters, a stripper-plate perforated to receive said needles, a sleeve loose upon said shank and having said stripper-plate at one end, a nick in said shank, and a nick in said sleeve.

19. A movable platen-section 37 adapted for use in a perforating-machine, a rabbet upon its opposite edges at 36, said section having a system of perforations therein grouped in the form of a plurality of letters or characters.

20. A perforating and marking machine having a head which is keyed for receiving a series of movable needles each having a three-sided spear-point and an ink-retaining means, said machine also including means for supplying ink to the needles automatically.

21. In a perforating-machine, the combination with a work-table of a head having a seat for a series of movable needle-types each needle being provided with a spear-point and ink-retainer, means for effecting a relative movement of said head and said work-table, and means for supplying ink automatically to said needle-types.

22. In a perforating-machine, the combination with a forcing-head having a key or spline and adapted to reciprocate a row of needle-types placed side by side and engaging said spline the needles of each type having a spear-point, of means for moving said forcing-head so as to thrust the needles through the work, and means for supplying ink automatically to said needle-types.

23. In a perforating-machine, the combination of a forcing-head having a key or spline, a series of movable needle-types having jogs whereby they are held upon said key or spline the needles having three-sided spear-points and ink-retainers, means for moving and guiding said forcing-head, and means for supplying ink automatically to said needle-types.

24. The combination of a series of movable needle-types, strippers for said types, a forcing-head, a stripper-support, and a work-support, said stripper-support including means for guiding said series of movable needle-types while in operative relation to said forcing-head; and also comprising means for effecting a relative movement of said forcing-head and said stripper-support, and also a relative movement between said work-support and each of said stripper-support and forcing-head elements.

25. In a perforating-machine, the combination of a work-table; a head having means for supporting needle-types and strippers the needles of each type having three-sided spear-points and ink-retaining means; a forcing-head having means for operating the types independently of the strippers; means for moving said stripper and type-holder away from said table; and means for moving said forcing-head independently of both said table and said stripper and type-holder.

26. In a perforating-machine, the combination of a forcing-head having a key or spline, a series of movable needle-types having jogs whereby they are held upon said key or spline, means for moving and guiding said forcing-head, stripping means moving with said forcing-head so as to clamp the work and then remaining stationary during the remainder of the advance movement of said forcing-head, and an ink-holder entered by the needle-types during the movement of said forcing-head.

27. A perforating-machine, having a compound head, the parts of said head being relatively movable, one part of said head being fitted for supporting and clamping the stripper portions of a series of movable stripping needle-types assembled therein, and the other part of said head being fitted to bear upon the needle-carrying portions of said needle-types so as to thrust the needles through the work while said stripper portions clamp the work.

28. A perforating-machine having a head, a series of movable stripping needle-types therein and a head which operates independently portions of said types; said heads being relatively movable.

29. A perforating-machine having a head provided with a key and clamp, a series of movable stripping needle-types having sleeves which are engaged by said key, said machine also having a head provided with a key coöperating with the shanks of such needle-types, said heads being relatively movable.

30. A perforating-machine having a head fitted to receive a series of needle-types and spacing blocks or quadrats, so that said types may be properly spaced in said head, and also having a head fitted to bear upon all of said types regardless of their order or position in the first head, and cause their needles to penetrate the work.

31. The combination with a series of movable stripping needle-types of a work-clamping head and a forcing-head, the stripping portions of said types being justified in said clamping-head, which causes said stripper portions to clamp the work, and said forcing-head controlling the needle-bearing bodies of the types.

32. The combination with a series of telescopic movable stripping needle-types, each consisting of a needle-holding shank and a stripper-holding sleeve, of a work-clamping head having a key or spline adapted to nicks formed in said slides, and a forcing-head adapted to bear upon the ends of said shanks opposite to said needles and also having a key or spline adapted to nicks in said shanks.

33. In a perforating-machine, the combination of a work-clamping head, a series of movable stripping needle-types justified and locked therein, and each consisting of a needle-bearing shank and a stripper-ended sleeve; and a forcing-head mounted so as to bear upon the portions of said shanks which project from said sleeves, so as to thrust the needles through the work while the latter is being clamped by the ends of said stripper-sleeves.

34. In a perforating-machine, the combination of a work-table; a work-clamping head supported over said table and consisting principally of a recessed bar; a key or spline extending along said bar; a series of movable telescopic stripping needle-types each consisting principally of a needle-bearing shank and a stripping-sleeve, and each of said sleeves having a nick fitting upon said key or spline; spacing blocks or quadrats also nicked so as to fit upon said key or spline and flush with the ends of said stripper-sleeves at the working ends of the latter; said spacing blocks or quadrats justifying said needle-types in said recess, a bar for locking or clamping said types and spacing-blocks against said bar; a forcing-head supported above said work-clamping head so that the under surface of the latter bears upon the upper ends of said type-shanks; a key or spline upon said forcing-head adapted to nicks in said shanks; and means for causing said work-clamping head to clamp said strippers upon the work and said forcing-head to thrust the needles through the work after the latter is clamped.

35. In a perforating-machine, the combination of a head, a series of movable needle-types each provided with a stripper portion which is fitted to said head, and each also having a body and a series of needles carried by said body, a forcing-head for operating said needle-carrying bodies, and a spring tending to separate said heads.

36. The combination of a series of movable needle-types each provided with a stripper, a head in which said strippers with their types are fitted, an independently-movable forcing-head for operating upon said types, and compression-springs working between said heads at their ends and tending to separate said heads.

37. The combination of a series of movable needle-types each provided with a stripper, a head in which said strippers with their types are fitted, an independently-movable forcing-head for operating upon said types, and means fixed to one of said heads for guiding the other thereof.

38. The combination of a series of movable needle-types each provided with a stripper, a head in which said strippers with their types are fitted, an independently-movable forcing-head for operating upon said types, and rods fixed upon the ends of said forcing-head and passing through guiding-perforations in the ends of said stripper-head.

39. The combination of a series of movable needle-types each provided with a stripper, a head in which said strippers with their types are fitted, an independently-movable forcing-head for operating upon said types, rods fixed to the ends of said forcing-head and passing through guiding-perforations in the ends of said stripper-head; means acting upon said rods for operating said forcing-head; and springs tending to separate said heads.

40. In a perforating-machine, the combination with a work-table of a head placed over said table and fitted for receiving the stripper portions of a series of movable stripping needle-types, a forcing-head placed over said stripper-head, rods fixed in said forcing-head and extending down through said stripper-head and said table, means below said table for moving said rods longitudinally, and a spring operating between said stripper-head and said forcing-head.

41. The combination of a series of needle-types each provided with a stripper, a head in which said strippers with their types are fitted, and a head for forcing said types; said heads being relatively movable.

42. In a perforating-machine, the combination with a forcing-head and a series of movable needle-types acting therewith of an independent head having a series of distinct and independent strippers each adapted to one of per-head to clamp the work and means for enabling said stripper-head to clamp the work.

43. The combination of a series of movable needle-types each provided with a stripper, a stripper-head in which said strippers are fitted, a forcing-head adapted to control said types, a work-table, a spring for causing said stripper-head to clamp the work, and means for enabling said forcing-head to thrust the needles into the work.

44. The combination of a series of needle-types each provided with a stripper, a head in which said strippers are fitted, a forcing-head adapted to control said types, means tending to separate said heads, means for limiting the separation of said heads, a work-table, and means for effecting relative movements of said forcing-head, said stripper-head and said work-table.

45. In a perforating-machine, the combination of a work-table, a forcing-head, a series of needle-types connected thereto, a stripper-head a series of independent strippers clamped thereon and adapted to said needle-types, means for moving said forcing-head, and means for pressing said stripper-head upon the work.

46. In combination, a work-table provided with a seat upon which may be adjusted a perforated plate, and also having an opening bridged by said plate; a head to which is fitted a detachable stripper; a head upon which is supported the body of a needle-type; said seat and said head being so constructed that the needles may be brought into register with the perforations in both stripper and plate; yielding means for clamping the work between the stripper and the plate; and means for effecting a relative movement of the work and the needle-head so as to force the needles through the work.

47. In a perforating-machine, the combination with a work-table, of a head having a seat for a series of movable needle-types, the needles thereof each being provided with ink-retainers, means for effecting a relative movement of said head and said work-table, and means upon said work-table for securing a series of movable platen-sections, and means for supplying ink to the needle-types.

48. In a perforating-machine, the combination of a head, means for supporting a series of movable needle-types in operative relation to said head, a work-support, means for moving said head so as to force the needles through the work, an opening in said work-table beneath said type-supporting means, and grooves upon opposite sides of said opening for receiving the top and bottom edges of a series of movable perforated platen-sections.

49. A perforating-machine comprising a forcing-head, a stripper-support, and a work-support; means being provided for supporting a series of movable needle-types in operative relation to said forcing-head the needles thereof each being provided with ink-retainers; and said machine also comprising means for effecting a relative movement of said forcing-head and said stripper-support, and also a relative movement between said work-support and each of said stripper and forcing-head elements; said work-table having means for rigidly holding a detachable platen hav-

ing perforations in register with the needles in said forcing-head.

50. In a perforating-machine, the combination of a work-support; a stripper-holder; a forcing-head having means for operating a plurality of movable needle-types; means for moving said stripper-holder toward and away from said table; means for moving said forcing-head independently of both said table and said stripper-holder; an opening in said table beneath said stripper-holder; grooves upon opposite sides of said opening for receiving a perforated work-supporting device; and means at the ends of said opening for locking said work-supporting device.

51. The combination with a series of needle-types, each provided with a stripper, of a double head, the portions whereof are relatively movable; the stripper portions of said types being clamped within one portion of said head, and the other portion of said head being fitted to bear upon the needle-carrying bodies of said needle-types, so as to force the needles through the work, while said stripper portions clamp the work; and a perforated support upon which the work is clamped.

52. A perforating-machine having a head in which is supported portions of a series of movable stripping needle-types, and also having a head which operates other portions of the same types, said heads being relatively movable; and a frame in which is supported a series of platen-sections having perforations corresponding to the grouping of the needles upon the needle-types.

53. The combination with a series of shanked needle-types, each provided with a stripper-sleeve, of a head provided with a key to which said stripper-sleeves are fitted, and also with means for clamping the sleeves, a head provided with a key for coöperating with the shanks of said needle-types, and a series of platen-sections secured below said sleeves and each perforated to match the overlying needle-type.

54. In a perforating-machine, the combination of a work-clamping head; a series of movable stripping needle-types justified and locked therein, and each consisting of a needle-carrying shank and a stripper-ended sleeve; a forcing-head mounted so as to bear upon the portions of said shanks which project from said sleeves so as to force the needles through the work while the latter is being clamped by said stripper-sleeves; and a series of movable perforated platen-sections upon which the work is clamped.

55. A movable perforating and inking type consisting of a body and a series of parallel needles projecting therefrom and grouped in the form of a letter or character, each of said needles being provided with a three-sided spear-point and an ink-retaining opening.

56. A movable perforating and inking type consisting of a body having a nick and a series of parallel needles projecting from said body and grouped in the form of a letter or character, each of said needles being provided with a three-sided spear-point and an ink-retaining channel.

57. A movable perforating and inking type consisting of a right-angled shank having a nick in one of its sides, and a series of parallel needles projecting from the end of the shank and grouped in the form of a letter or character, each of said needles having a three-sided spear-point and at its point a longitudinal ink groove or channel.

58. A movable perforating and inking type consisting of a shank and a series of needles projecting from the end thereof and grouped in the form of a letter or character, and provided with a stripping-plate perforated for the passage of said needles, each of said needles having a three-sided spear-point and an ink-retaining formation.

59. In combination, a perforated stripper attached to a movable needle-type, said needle-type consisting of a body and a series of needles projecting therefrom; said needles and stripper being relatively movable, and each of said needles having a three-sided spear-point and an ink-channel near its point.

60. In combination a group of needles each having a lateral ink-holding groove and a three-sided spear-point; a device for holding a supply of ink; a stripper; a work-holder; and means for effecting relative movements of said needle group, said ink-holder, said stripper, and said work-holder.

61. In combination, a group of needles each having a three-sided spear-point and an ink-channel; an ink-receptacle; means for dipping the points of said needles into said receptacle so as to supply ink to their grooves; a stripper; and a work-holder.

62. In combination, a group of needles each having a three-sided spear-point and an ink-channel; an ink-receptacle; a stripper; a perforated work-holder; means for clamping the work between said stripper and said work-holder; and means for forcing the needles through the work and through said stripper and work-holder and causing the needles to dip into said receptacle.

63. In combination, a group of needles each provided with a three-sided spear-point and an ink-channel; a stripper; a perforated work-holder; means for causing said stripper to clamp the work upon said work-holder; an ink-receptacle below said work-holder; and means for thrusting the needles through said stripper, said work and said work-holder and into said receptacle.

64. In combination, a series of needles grouped in the form of a letter or character and each provided with a three-sided spear-point and a longitudinal ink-holding groove; a stripper provided with perforations and correspondingly grouped; means for holding ink; and means for causing the ink to be supplied to said needles.

65. As a means for perforating and marking a thick package of sheets, the combination of a series of needles each being provided with a three-sided spear-point grouped in the form of a letter or character, a stripper conforming to said needle group, and means below said stripper for inking the needles.

66. As a means for perforating and marking a pack of sheets, the combination of a series of needles each being provided with a three-sided spear-point grouped in the form of a letter or character, a support for the sheets, said support being penetrable by said needles, and inking means; said support being arranged between said needles and said inking means.

67. As a means for perforating and marking a pack of sheets, the combination of a series of needles each being provided with a three-sided spear-point grouped in the form of a letter or character; a stripper conforming to said needle group; a support for the sheets, said support being penetrable by the needles; and means for inking the needles; said support intervening between said stripper and said inking means.

68. As a means for perforating and marking a pack of sheets, the combination of a series of needles each being provided with a three-sided spear-point grouped in the form of a letter or character; a stripper conforming to said needle group; a support for the sheets, said support being penetrable by the needles; means for inking the needles; said support intervening between said stripper and said inking means; and means for clamping the sheets between said stripper and said support.

69. The combination of a series of needles each having a three-sided spear-point and grouped in the form of a letter or character; a stripper; a support for a package of sheets, said support being penetrable by said needles; and an ink vessel beneath said support.

70. The combination of a series of needles each having a three-sided spear-point and grouped in the form of a letter or character; a stripper perforated to conform to said needles; a plate for supporting a pack of sheets, said plate being likewise perforated; and an ink vessel beneath said plate.

71. The combination of a group of needles; each having a three-sided spear-point and a stripper; a perforated work-supporting plate; an ink-holder; and means for effecting relative movements of said supporting-plate and said needle group, relative movements of said supporting-plate and said stripper, and relative movements of said stripper and said needle group.

72. The combination of a group of needles; each having a three-sided spear-point and a stripper; a perforated work-supporting plate; an ink-holder; and means for causing said stripper to clamp the work upon said supporting-plate and said needles to pass through the work and supporting-plate and into said ink-holder.

73. The combination of a group of needles; each having a three-sided spear-point and a stripper; a work-supporting table; a perforated plate substantially flush with said table; an ink-receptacle below said plate; and means for causing said stripper to clamp the work and said needles to pass through said plate and into said receptacle.

74. In a perforating and marking machine, the combination of means fitted for carrying a detachable needle-type having needles provided with spear-points and ink-retaining means and a detachable stripper; a device fitted for holding in place a detachable platen or work-support; and an ink-receptacle.

75. A perforating and marking machine having a detachable needle-type having needles provided with spear-points and ink-retaining means, a detachable plate for supporting the work, said plate being perforated in conformity with said needle-type, and an ink-receptacle.

76. In a marking-machine, the combination with means for detachably holding a needle-type having needles provided with spear-points and ink-retaining means and a coöperative stripper above the work, of a work-table having means for detachably securing a perforated plate in operative position relatively to the needle-type, so that the needles upon passing through the work may penetrate said plate; said table having an opening bridged by said plate; and an ink vessel supported below said opening.

77. In a marking-machine, the combination with a head and a group of needles supported thereby each having three-sided spear-points and ink-retaining means, of a work-table; a plate fixed thereon and having perforations in conformity with the grouping of the needles in said head; and an ink vessel.

78. In a marking-machine, the combination with a head and a group of needles supported thereby each having three-sided spear-points and ink-retaining means, of a work-table; a plate fixed thereon and having perforations in conformity with the grouping of the needles in said head; means above said plate for clamping the work thereon; and an ink vessel below said plate.

79. In a marking-machine, the combination with a head and a group of needles supported thereby each having three-sided spear-points and ink-retaining means, of a work-table; a plate fixed thereon and having perforations in conformity with the grouping of the needles in said head; means above said plate for clamping the work thereon, said clamping means having perforations registering with the perforations in said plates; and an ink-holder entered by the needles after passing through said plate.

80. In a marking-machine, the combination with a work-table, of a head having a seat for a series of movable needle-types the needles whereof are each provided with three-sided spear-points and ink-retaining means; means for effecting a relative movement of said head and said work-table; means upon said work-table for receiving a series of movable platen-sections; and means for supplying ink to the needle-types.

81. In a marking-machine, the combination of a head; means for supporting a series of movable needle-types in operative relation to said head; a work-support; means for moving said head so as to force the needles through the work; an opening in said work-table beneath said type-supporting means; and an ink-receptacle having opposite grooves for receiving the top and bottom edges of a series of movable perforated platen-sections.

82. In a marking-machine, the combination of a work-support; a stripper-holder; a forcing-head having means for operating a plurality of movable needle-types; means for moving said stripper-holder toward and away from said table; means for moving said forcing-head independently of both said table and said stripper-holder; an opening in said table beneath said stripper-holder; an ink-receptacle below said opening; grooves upon opposite sides of said opening for receiving a penetrable work-supporting device; and means at the ends of said opening for locking said work-supporting device.

83. In a marking-machine, the combination with a work-table of a head having a seat for a series of movable needle-types the needles whereof are each provided with ink-retaining means and three-sided spear-points; means for effecting a relative movement of said head and said work-table; stripping means adapted to said needle-types; a penetrable work-support or platen placed beneath said stripping means; an ink vessel; and means for causing said needles to penetrate the work and enter said vessel.

84. In a marking-machine, the combination of a forcing-head having a key or spline; a series of movable needle-types the needles whereof are each provided with three-sided spear-points and which types have jogs whereby they are held upon said key or spline; means for moving and guiding said forcing-head; stripping means first moving with said forcing-head, so as to clamp the work, and then remaining stationary during the remainder of the advance movement of said forcing-head; a perforated plate upon which the work is clamped; and an ink vessel covered by said perforated plate.

85. In a marking-machine, the combination of a head; means for supporting a series of movable needle-types the needles whereof are each provided with three-sided spear-points and ink-retaining means, and which types are in operative relation to said head; a perforated work-support; a supply of ink below said support; means for moving said head so as to force the needles through the work; and coöperative stripping means.

86. A marking-machine having a double head, the portions of said head being relatively movable, one portion being fitted for supporting and clamping the stripper portions of a series of needle-types the needles whereof are each provided with three-sided spear-points and ink-retaining means, and the other portion being fitted to bear upon the needle-carrying portions of said needle-types, so as to force the needles through the work, while said stripper portions clamp the work; a perforated support upon which the work is clamped; and means beneath said support for supplying the needles with ink.

87. A marking-machine having a head in which is supported portions of a series of movable stripping needle-types each needle whereof is provided with a three-sided spear-point, and also having a head which operates other portions of said types, said heads being relatively movable; and an ink vessel over which is supported a series of plates having perforations corresponding to the grouping of the needles upon the needle-types.

88. In a marking-machine, the combination of a clamping-head; a series of movable stripping needle-types justified and locked therein, and each consisting of a needle-containing shank and a stripper-ended sleeve; a forcing-head mounted so as to bear upon the portions of said shanks which project from said sleeves, so as to force the needles through the work while the latter is being clamped by said stripper-sleeves; a series of movable perforated platen-sections upon which the work is clamped; and an ink vessel covered by said sections.

89. In a marking-machine, the combination of means for supporting a package of sheets; a vessel for containing ink; a series of needles each having a three-sided spear-point and means for drawing ink from said vessel; said supporting means being penetrable by said needles; and means for thrusting the needles through the work and through said supporting means.

90. In a perforating and marking machine, the combination of an open vessel for containing a pool of ink or coloring liquid; a group of needles normally withdrawn from said vessel; and means for dipping the points of said needles into said vessel; said needles being provided with spear-points and ink-retaining means.

91. In a perforating and marking machine, the combination of similarly-perforated plates; means for clamping sheets between said plates; a group of needles provided with spear-points and ink-retaining means; a vessel for holding a pool of ink; and means for moving said needles through said plates and through the work and also causing said needles to dip their points into said vessel.

92. In a marking-machine, the combination of a group of needles having spear-points and ink-retainers; an ink vessel; means independent of said ink vessel for detachably retaining said needle group, so that it may be re-

moved from or replaced in the machine independently of said ink vessel; and means for effecting a relative movement of said needles and said ink vessel so as to supply ink to the needles.

93. In a marking-machine, the combination of a detachable group of needles having spear-points and ink-retainers; an ink vessel; a detachable stripper; said needle group and stripper being detachable independently of said ink vessel; and means for producing relative movements of said needle group and said ink vessel.

94. In a marking-machine, the combination of a detachable group of needles having spear-points and ink-retainers; an ink vessel; a detachable stripper; said needle group and stripper being detachable independently of said ink vessel; a perforated work-holder; means for clamping the work between said stripper and said work-holder; and means for thrusting said needles through the work and also causing them to dip into said ink vessel.

95. A marking-machine having a type-head adapted to receive a series of movable needle-types each needle thereof having a three-sided spear-point and ink-retainer and supported by its ends in operative relation to a work-table; said table having means for supporting movable perforated plates, and also being provided with an ink vessel below said plates.

96. In a marking-machine, the combination with a head fitted for receiving movable needle-types each needle thereof having a spear-point and ink-retainer, of a work-table having both an ink-receptacle and also means above said receptacle fitted for receiving movable perforated work-supporting sections.

97. In a marking-machine, the combination with a work-table, of a head mounted thereover and fitted for receiving movable needle-types each needle thereof having a spear-point and ink-retainer, means for supporting a detachable perforated platen flush with said table; an ink-receptacle below said platen; and means for depressing said type-head.

98. In a perforating-machine, the combination with means for detachably holding a needle-type the needles whereof are each provided with spear-points and ink-retainers and a coöperative stripper above the work, of a work-table having means for detachably securing a perforated plate in operative position relatively to the needle-type, so that the needles passing through the work may penetrate said plate; and an ink vessel beneath said opening.

99. In a perforating-machine, the combination with a head and a group of needles supported thereby each having three-sided spear-points and ink-retainers, of a work-table; a plate fixed thereon and having perforations corresponding to the grouping of the needles in said head; and an ink-holding device covered by said plate.

100. In a perforating-machine, the combination with a head and a group of needles supported thereby, of a work-table; a plate fixed thereon, and having perforations corresponding to the grouping of the needles in said head; means above said plate for clamping the work thereon; an ink-trough below said plate; and means for supplying ink to said trough.

101. In a perforating-machine, the combination with a head and a group of needles supported thereby, of a work-table; a plate fixed thereon and having perforations corresponding to the grouping of the needles in said head; means above said plate for clamping the work thereon, said clamping means having perforations registering with the perforations in said plate; a trough below said plate; a pipe leading to said trough; and an ink-receptacle opening into said pipe.

102. In a perforating-machine, the combination of a work-table; a trough supported beneath said table; longitudinal grooves in the upper edges of said trough; a perforated plate adjustable in said grooves and substantially flush with said table; a group of needles above said plate; and means for depressing said needles through said plate and into said trough.

103. In a perforating-machine, the combination of a work-support; a stripper-holder; a forcing-head having means for operating a plurality of movable needle-types; means for moving said stripper-holder toward and away from said table; means for moving said forcing-head independently of both said table and said stripper-holder; an opening in said table beneath said stripper-holder; grooves upon opposite sides of said opening for receiving a work-supporting device; means at the ends of said opening for locking said work-supporting device; and an ink-trough below said plates.

104. A perforating-machine having a double head, the portions of said head being relatively movable, one portion being fitted for supporting and locking the stripper portions of a series of needle-types, and the other portion being fitted to bear upon the needle-bearing bodies of said needle-types, so as to force the needles through the work while said stripper portions clamp the work; a perforated support upon which the work is clamped; an ink-receptacle below said perforated support; and means for feeding ink into said receptacle.

105. In a marking-machine, the combination of a device for holding a group of needles; an ink-receptacle; means for causing said needles to be supplied with ink from said receptacle; a reservoir from which ink is supplied to said receptacle; and means for maintaining the level of the ink in said receptacle.

106. In a marking-machine, the combination of a device for holding a group of needles; an ink-receptacle; means for dipping said needles into said receptacle; a reservoir communicating with said receptacle; an aperture in the top of said reservoir adapted to receive a funnel or nozzle; and an air-inlet, as 90.

107. In a marking-machine, the combination of a device for holding a group of needles; an ink-receptacle; means for inking said needles from said receptacle; a reservoir communicating with said receptacle; a nozzle or funnel dipping into said reservoir; and a supply-bottle inverted upon said nozzle or funnel.

108. In a marking-machine, the combination of a device for holding a group of needles; an ink-receptacle; means for inking said needles from said receptacle; and means for varying the relative heights of said receptacle and said reservoir.

109. In a marking-machine, the combination of a device for holding a group of needles; an ink-receptacle; means for inking said needles from said receptacle; and means for adjusting said reservoir to different levels.

110. In a marking-machine, the combination of a device for holding a group of needles; an ink-receptacle; means for inking said needles from said receptacle; a reservoir; a flexible pipe connecting said receptacle to said reservoir; and means for adjusting said reservoir so as to vary the level of the ink in said receptacle.

111. In a marking-machine, the combination of a device for holding a group of needles; an ink-receptacle; means for determining mechanically the height of ink in said receptacle; and means for inking said needles from said receptacle.

112. In a marking-machine, the combination of a group of needles each having an ink-channel; an ink-receptacle; means for dipping said needles into said receptacle; and means for determining mechanically the height of ink in said receptacle.

113. In a marking-machine, the combination with a group of needles and means for operating them, of an ink-receptacle; a flexible pipe connected thereto; a reservoir communicating with said pipe; a device whereon said reservoir is supported; and a screw for adjusting said reservoir to different heights upon said supporting device.

114. In a marking-machine, the combination with a group of needles and means for operating them, of an ink-receptacle; a flexible pipe 84 connected thereto; a reservoir 85 communicating with said pipe; a bracket 71 upon which said reservoir is mounted; a guide 93 upon said bracket; a device 92 upon said reservoir fitted to said guide; a stem 94 upon said reservoir; and a screw 96 threaded into said bracket and supporting said stem.

115. In a marking-machine, the combination of a device for holding a group of needles; an ink-receptacle; means for inking said needles from said receptacle; a reservoir communicating with said receptacle; means for adjusting said reservoir to different levels; and means for draining ink from said reservoir.

116. In a marking-machine, the combination of a device for holding a group of needles; an ink-receptacle; a reservoir communicating with said receptacle; means for adjusting said reservoir to different levels; and means for cutting off communication between said receptacle and said reservoir; and means for draining ink from said reservoir.

117. In a marking-machine, the combination with a group of needles and means for operating them, of an ink-receptacle; an adjustable reservoir communicating with said receptacle; a nozzle dipping into said reservoir; and a bottle inverted upon said nozzle.

118. In a marking-machine, the combination with a group of needles and means for operating them, of an ink-receptacle; an adjustable reservoir communicating with said receptacle; a funnel dipping into said reservoir; a bottle inverted upon said nozzle; and a stop-cock 98 in said nozzle.

119. In a marking-machine, the combination with a group of needles and a device for holding ink, of means for automatically supplying ink to said ink-holding device; and means for effecting relative movement of said needle group and said ink-holding device.

120. In a marking-machine, the combination with a group of needles and a vessel for holding ink, of means for automatically supplying ink to said vessel, and means for causing said needles to take ink from said vessel.

121. In a marking-machine, the combination with means for perforating fabric of an ink-receptacle; means for supplying ink from said receptacle to the perforations produced in said fabric; and means for automatically maintaining the level of ink in said receptacle.

122. In a marking-machine, the combination of a group of needles; a perforated work-holder; a stripper; means for clamping the work between said stripper and said holder; an ink vessel below said work-holder; means for carrying said needles down through said stripper, said work, and said work-holder into said vessel; and means for automatically maintaining the level of ink in said vessel.

123. In a marking-machine, the combination of a group of needles; a stripper; a work-table; means for enabling said stripper to clamp packs of paper of different thicknesses; an ink-receptacle; means for enabling said needles to dip into said receptacle; means for determining mechanically the height of ink in said receptacle; and means for automatically maintaining the level at any determined height.

124. In a perforating-machine, the combination of a detachable needle group; a detachable stripper; a frame having a work-table; a pair of draw-bars mounted to slide vertically in said frame and extending below said work-table; means conjointly carried by said draw-bars for securing said detachable needle group and said detachable stripper; a transverse operating-shaft mounted in said framework; and connections between said shaft and said draw-bars.

125. In a perforating-machine, the combination of a frame having a work-table; a pair of draw-bars mounted in said frame and extending below said work-table; a forcing-head conjointly carried by said draw-bars; a stripper-head yieldingly connected to said forcing-head and guided upon said draw-bars; means for forcing said draw-bars down; and a spring opposing the downward movement of said draw-bars.

126. In a perforating-machine, the combination with a group of needles each having three-sided spear-points and ink-retaining means, of power-driven manually-controlled means for forcing said needles gradually through the work.

127. In a perforating-machine, the combination with a group of needles and a forcing-head, of a power-driven friction-wheel, and manually-controlled means for maintaining connection between said friction-wheel and said forcing-head.

128. In a perforating-machine, the combination with a group of needles and a forcing-head, of a power-driven friction-wheel, and a manually-controlled lever for maintaining said clutch in operative engagement with said friction-wheel.

129. In a perforating-machine, the combination with a group of needles and a forcing-head, of a power-driven friction-wheel, a shoe contiguous to said wheel, a lever whereon said shoe is mounted, and a manually-controlled lever connected to said shoe-lever.

130. In a perforating-machine, the combination with a group of needles and a forcing-head, of a power-driven friction-ring, shoes adapted to fit the inner and outer peripheries of said ring, a lever whereon said shoes are mounted, a manually-controlled lever, and a link connecting said levers.

131. In a perforating-machine, the combination with a group of needles and a forcing-head, of a power-driven friction-wheel, a radius-arm whose axis is concentric with said wheel, a lever mounted upon the outer end of said radius-arm, a shoe mounted on said lever, and a manually-controlled lever also mounted on said radius-arm and connected to said shoe-lever.

132. In a perforating-machine, the combination with a group of needles and a forcing-head, of a power-driven friction-wheel, a radius-arm whose axis is concentric with said wheel; means for frictionally connecting said radius-arm to said wheel, a cam operated by said radius-arm, and means for enabling said cam to operate said forcing-head.

133. In a perforating-machine, the combination with a group of needles and a forcing-head, of a radius-arm whose axis is concentric with said wheel, means for frictionally connecting said radius-arm to said wheel, a cam operated by said radius-arm, means for enabling said cam to operate said forcing-head, and springs opposing operating of said radius-arm and said forcing-head.

134. In a perforating-machine, the combination with a group of needles and a forcing-head, of a stripper yieldingly connected to said forcing-head; a cam operatively associated with said forcing-head; a power-driven friction-wheel; and manually-controlled means for connecting said friction-wheel with said cam; the latter having a quick-working face for clamping said stripper upon the work, and a slow-working face for forcing said needles through the work.

135. In a marking-machine, the combination of a work-support; a group of needles; a forcing-head; a stripper yieldingly connected to said forcing-head; an ink-receptacle below said work-support; a cam for operating said forcing-head; a power-driven friction-wheel; and means for connecting said friction-wheel with said cam, the latter having a quick-working face for clamping said stripper upon the work, a slow-working face for forcing said needles through the work, and a quick-working face for dipping said needles into the ink.

136. In a marking-machine, the combination of a work-support; a group of needles; a forcing-head; a stripper yieldingly connected to said forcing-head; an ink-receptacle below said work-support; a cam operatively associated with said forcing-head and having a quick-working face for clamping said stripper upon the work, a slow-working face for forcing said needles through the work, and a quick-working face for dipping said needles into the ink.

137. In a marking-machine, the combination of a work-support; a group of needles; a forcing-head; a stripper yieldingly connected to said forcing-head; draw-bars conjointly acting upon said forcing-head; bearers upon said draw-bars, a transverse shaft; cams mounted upon said shaft and acting upon said bearers; and means for operating said shaft.

138. In a marking-machine, the combination of a work-support; a group of needles; a forcing-head; a stripper yieldingly connected to said forcing-head; draw-bars conjointly acting upon said forcing-head; bearers upon said draw-bars; a transverse shaft; cams mounted upon said shaft and acting upon said bearers; means for operating said shaft; and springs for returning said bearers and forcing-head to normal position.

139. In a marking-machine, the combination of a work-

support; a group of needles; a forcing-head; a stripper yieldingly connected to said forcing-head; draw-bars conjointly acting upon said forcing-head; bearers upon said draw-bars; a transverse shaft; cams mounted upon said shaft and acting upon said bearers; a radius-arm upon said shaft; a power-driven friction-wheel; and manually-controlled means for maintaining frictional connection between said radius-arm and said friction-wheel.

140. In a marking-machine, the combination of a work-support; a group of needles; a forcing-head; a stripper yieldingly connected to said forcing-head; draw-bars conjointly acting upon said forcing-head; bearers upon said draw-bars, a transverse shaft; cams mounted upon said shaft and acting upon said bearers; a radius-arm upon said shaft; a friction-wheel; power-driven movement-reducing gears for operating said wheel; a radius-arm upon said shaft; a lever upon said radius-arm; shoes upon said lever; a manually-controlled lever also mounted upon said radius-arm; a link connecting said levers; a returning-spring for said rock-shaft; returning-springs for said draw-bars; and a returning-spring for said radius-arm.

847,579. PENCIL. FRANK D. JACOBS, Canton, Mass. Filed June 28, 1906. Serial No. 323,837.

Claim.—As an improved article of manufacture, a lead-pencil angular in cross-section to form longitudinally-extended faceted surfaces, and having indentations or serrations extended across the meeting edges of adjacent faceted surfaces substantially at right angles thereto and on opposite sides thereof, said indentations or serrations extending but partially across said faceted surfaces.

847,580. ADJUSTABLE DROP-LIGHT. HENRIK T. JACOBSEN, Chicago, Ill. Filed May 21, 1906. Serial No. 317,875.

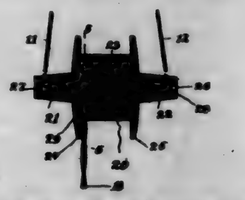

Claim.—In a device of the class described, the combination of a suitably-supported conducting-cord the two strands of which are untwisted throughout a portion of its length, a pair of drums about which said untwisted portions are wound, a larger centrally-located drum upon which the twisted portion of the cord may be wound, said drums having internal passages through which the cord can pass from the smaller drums to the larger one, flanges between the large and small drums and a lamp connected to and supported by the conducting-cord.

847,581. WRENCH. JOHN E. JENSON, Minneota, Minn. Filed Sept. 26, 1906. Serial No. 336,309.

Claim.—1. A wrench comprising a fixed jaw, a shank connected therewith having a coarse thread of quick pitch, a movable jaw guided on and prevented from rotation by the shank, a clamping member movable longitudinally of the shank and rotatably mounted on the movable jaw, a nut inclosed by the said member and engaging the thread of the shank, a means connected with the movable jaw and against which the nut is clamped by the said member for holding the nut in fixed position to lock the movable jaw, and a handle on the shank.

2. A wrench comprising a fixed jaw, a shank connected therewith having a thread of quick pitch, a movable jaw having a shank sleeved on the first-mentioned shank, a nut at the end of the shank of the movable jaw and engaging the thread of the first shank to receive a rotary movement therefrom, and a sleeve connected with the movable jaw by lost-motion connection for clamping the said nut against rotation.

3. A wrench comprising a fixed jaw, a shank connected therewith which is provided with a coarse thread of quick pitch, a nut threaded on the shank to move freely thereon, a movable jaw, and a member movable longitudinally to quickly adjust the movable jaw and rotatable for clamping the said nut and jaw together and in fixed relation to the shank.

4. A wrench comprising a fixed jaw, a shank connected therewith, a nut threaded on the shank to move freely thereon, a movable jaw, a non-rotatable sleeve connected with the movable jaw and exteriorly threaded throughout its length, and a clamping member threaded to the said sleeve and surrounding the nut for clamping the latter in fixed position and for releasing the nut to adjust the said movable jaw.

5. A wrench comprising a fixed jaw, a shank having a threaded portion, a nut engaging the said portion, a movable jaw having a hollow shank movable on the first shank, an exteriorly-threaded sleeve mounted on the hollow shank to have a limited longitudinal movement, and a clamping member threaded to the said sleeve and having a shoulder arranged to engage the nut to hold the same in fixed position and prevent movement of the movable jaw.

6. A wrench comprising a fixed jaw, a shank having a thread of quick pitch, a movable jaw having a hollow shank sleeved on the first-mentioned shank, a threaded sleeve movably mounted on the hollow shank, a stop-nut for retaining the sleeve in position, a clamping-sleeve having a threaded engagement with the threaded sleeve, and a nut engaging the thread of the first-mentioned shank and arranged to be clutched between the stop-nut and clamping-sleeve.

7. A wrench comprising a fixed jaw, a shank having a thread of quick pitch, a movable jaw on the shank having a transverse gripping-wall, a sleeve connected with the movable jaw to move therewith and to have an independent rotary movement, a transverse wall on the sleeve, and a nut engaging the thread of the shank and arranged between the said transverse walls to be gripped thereby for holding the movable jaw stationary.

8. A wrench comprising a fixed jaw, a shank connected therewith having a thread of quick pitch, a nut movable along the said thread and having flat parallel sides, a movable jaw, and clutching devices connected with the movable jaw which are adapted to be moved toward or away from each other to engage or disengage the sides of the said nut.

9. A wrench comprising a fixed jaw, a shank connected therewith having a threaded portion of round cross-section and an unthreaded portion of angular cross-section, a movable jaw guided on the angular portion of the shank and held from rotation thereby, a nut engaging the threaded portion of the shank for preventing movement of the movable jaw, a clamping member connected with the movable jaw for gripping and releasing the said nut, a handle, and a sleeve securing the handle to the shank and arranged in telescoping relation to the clamping member.

847,582. HOOP FOR WASHBOILERS AND THE LIKE. SYLVESTER A. JOHNSON, Lincoln, Nebr. Filed Dec. 6, 1906. Serial No. 346,655.

Claim.—A protective hoop for vessels comprising a strip having a horizontal and a vertical flange which lie in close proximity to the bottom and sides of the vessel, the horizontal flange meeting at its ends without overlapping, one end of the vertical flange being reduced in breadth the other end being perforated, the reduced end passing through said perforation, said perforated end having an outstanding portion under which said reduced end fits.

847,583. PLOW ATTACHMENT. JOHN E. KEARNS, Ottumwa, Iowa, assignor of one-half to Hokan S. Lindberg, Ottumwa, Iowa. Filed Jan. 10, 1907. Serial No. 351,697.

Claim.—A harrow attachment for riding-plows consisting of a bracket, clips adjustably clamping the bracket against the side of the beam, a clip secured adjustably against the side of the beam midway between the arms of the bracket and provided with a hole, a shaft *d* having its inner end journaled in said hole in the last-named clip and its outer end journaled on the outer end of the bracket, means for rotating this shaft and locking it in its adjusted positions, said shaft having a rearward rod-like extension, the rear extremity of this extension being bent outwardly, and a harrow-frame secured to this outward extension and carrying suitable harrow-teeth.

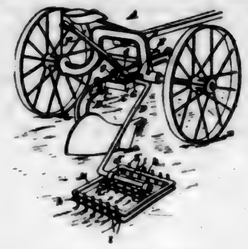

847,584. CURTAIN-FIXTURE. HERBERT E. KEELER, New York, N. Y., assignor to Curtain Supply Company, Chicago, Ill., a Corporation of New Jersey. Original application filed Mar. 7, 1902, Serial No. 97,105. Divided and this application filed Oct. 27, 1903. Serial No. 178,734.

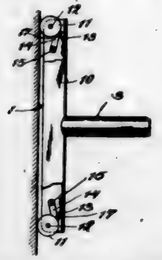

Claim.—1. In curtain-fixtures, a spring-actuated curtain, guideways adjacent said curtain, a curtain-tube secured in the lower end of said curtain, shoes mounted to reciprocate in either end of said tube and spring-pressed outward into coöperation with said guideways, rotating guiding members in said shoes to engage said guideways and spring-pressed pivoted grips in said shoes relatively movable toward said guiding members, said grips having an automatic toggle action on said guiding members to vary the freedom of movement of said guiding members along said guideways.

2. In curtain-fixtures, a spring-actuated curtain, guideways adjacent said curtain, shoes mounted to reciprocate in the lower end of said curtain and coöperate with said guideways, rotary guiding members in said shoes to engage said guideways and grips mounted in said shoes out of contact with said guideways and movable toward said guiding members to have an automatic wedging action on said guiding members to vary the freedom of movement of said guiding members along said guideways.

3. In curtain-fixtures, a curtain, guideways adjacent said curtain, shoes mounted in the lower end of said curtain to coöperate with said guideways, rotary guiding members in said shoes and grips mounted in said shoes movable toward said guiding members, said grips being out of contact with said guideways and having an automatic wedging action on said guiding members to vary their freedom of movement along said guideways.

4. In curtain-fixtures, a spring-actuated curtain, guideways adjacent said curtain, shoes mounted in said curtain to coöperate with said guideways, a plurality of guide-rolls mounted in each of said shoes to engage said guideways and grips mounted in said shoes to be movable toward said guide-rolls, said grips having an automatic wedging action on said guide-rolls to allow the leading guide-rolls to have a greater freedom of movement along said guideways than the trailing guide-rolls.

5. In curtain-fixtures, a shoe to coöperate with a guideway, rotary guiding members in said shoe to engage said

guideway and spring-pressed pivoted grips mounted in said shoe relatively movable toward said guiding members, said grips having an automatic toggle action on said guiding members to allow the leading guiding member to have a greater freedom of movement along said guideway than the trailing guiding member.

6. In curtain-fixtures, a shoe to coöperate with a guideway, rotary guiding members mounted in said shoe to engage said guideway and grips mounted in said shoe to be movable toward said guiding members, said grips having an automatic wedging action on said guiding members to allow the leading guiding member to have greater freedom of movement along said guideway than the trailing guiding member.

7. In curtain-fixtures, a shoe having guiding members to engage a guideway, said guiding members comprising a guide-roll mounted in said shoe and a pivoted spring-pressed grip in said shoe relatively movable toward said guide-roll to have an automatic toggle action on said guide-roll to allow said guide-roll to move more freely along said guideway in one direction than in the other direction.

8. In curtain-fixtures, a shoe having guiding members to engage a guideway, said guiding members comprising a rotary guiding member mounted in said shoe and a grip mounted in said shoe out of contact with said guideway movable toward said guiding member, said grip having an automatic wedging action on said guiding member to allow said guiding member to move more freely along said guideway in one direction than in the other direction.

9. In curtain-fixtures, a shoe having guiding members to engage a guideway, said guiding members comprising a rotary guiding member mounted in said shoe and a movable grip mounted in said shoe out of contact with said guideway to engage said guiding member, said grip having an automatic action to restrain the rotation of said guiding member more in one direction than in the other direction.

10. In curtain-fixtures, a shoe to coöperate with a guideway, a rotary guiding member mounted in said shoe to engage said guideway and be rotated thereby and a movable grip in said shoe out of contact with said guideway to engage said guiding member, said grip having an automatic wedging action on said guiding member to restrain the rotation of said guiding member more in one direction than in the other direction.

11. In curtain-fixtures, a shoe, a rotating guiding member mounted in said shoe to engage a guideway, a movable grip mounted in said shoe out of contact with said guideway to engage said guiding member, said grip having an automatic action on said guiding member to restrain its rotation in one direction more than in the other direction.

12. In curtain-fixtures, a curtain, shoes mounted in said curtain to coöperate with guideways adjacent said curtain, rotary guiding members in said shoes and movable grips mounted in said shoes to engage said guiding members, said grips being out of contact with said guideways and having an automatic action on said guiding members to restrain their rotation more in the one direction than in the other direction.

13. In a shade-holding device, in combination with a stick, a head at the end of the stick, a wheel journaled in said head having a brake in contact therewith at all times and adapted to prevent rotation of the wheel in one direction only, and a spring carried by the stick thrusting said head and wheel outwardly, for the purpose described.

14. In a shade-holding device, in combination with a stick, an elongated spring-pressed head at the end of the stick having a wheel journaled therein and a swinging member pivoted in said head adjacent to said wheel and adapted to be held in contact with the wheel and to normally prevent rotation of the wheel, whereby said wheel may act as a friction device to hold the shade against its upward tendency, and means for holding the said swinging member in contact with the wheel.

15. In a shade-holding device, the combination of a stick, a head at the end of the stick, a wheel journaled in said head, a brake in contact with the wheel having power to resist rotation of said wheel in one direction only, a spring carried by the stick for forcing the head outwardly, and a spring within said head for pressing the brake against the wheel, substantially as described.

847,585. PRESSURE-FAN. JAMES KEITH, London, England. Filed June 12, 1906. Serial No. 321,324.

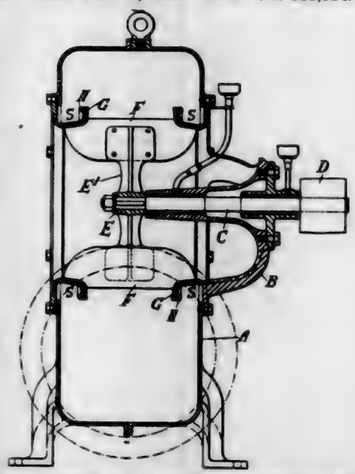

Claim.—The improved pressure-fan, comprising, in combination, a fan-casing having central intake-eyes, and a tangential outlet, and formed with annular guard-cheeks around said eyes, recesses being left between said cheeks and the internal walls of the casing, a blade-wheel formed with cheeks fitting said first-mentioned cheeks, a bracket bolted to the casing, and a shaft having a bearing in said bracket and protruding into said casing and carrying the blade-wheel.

847,586. THREAD-CUTTING TOOL FOR LATHES. PATRICK J. KELLY, Elizabeth, N. J. Filed Nov. 4, 1905. Serial No. 285,909.

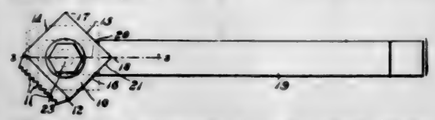

Claim.—1. The combination of a chaser-holder comprising a bar provided with a transverse wall having a right-angular groove intermediate its ends, with a chaser having cutting-teeth on one of its sides and a plurality of right-angularly-disposed walls, and means arranged to adjustably secure the chaser on the holder with any of its said walls or corners between the walls engaging respectively the transverse wall of the holder or the groove therein.

2. A thread-cutting tool embodying a rectangular chaser provided with cutting-teeth spaced along one side and with the other sides equidistant from a central opening, a holder comprising a bar provided at one end with a recess proportioned to accommodate the chaser and having a wall positioned for contact with either of the equidistant sides or the corners of the chaser and means passing through the central opening to hold the chaser in rigid contact with the wall.

3. A thread-cutting tool embodying a rectangular chaser provided with cutting-teeth spaced along one side and with the other sides equidistant from a central opening, a holder comprising a bar provided at one end with a re-entrant right-angular recess having a right-angular groove

formed in its side wall and a bolt through the central opening of the chaser and arranged to selectively hold either of the equidistant sides in contact with the wall and the corners within the groove.

847,587. ROCK-DRILL. BRADFORD H. LOCKE, New York, N. Y. Filed Apr. 16, 1906. Serial No. 312,046.

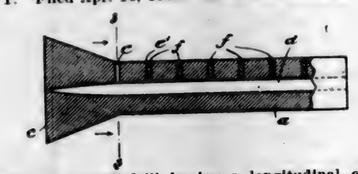

Claim.—1. A rock-drill having a longitudinal channel and a series of lateral openings therefrom at frequent intervals along its length back of the drill-head, whereby the drill can be successively sharpened without closing the openings other than that next the head.

2. A rock-drill having a longitudinal channel and a series of lateral openings therefrom at frequent intervals along its length back of the drill-head, the openings except that next the drill-head being temporarily plugged.

847,588. CASE-HARDENING. ADOLPH W. MACHLET, Elizabeth, N. J. Filed Apr. 13, 1905. Serial No. 255,355.

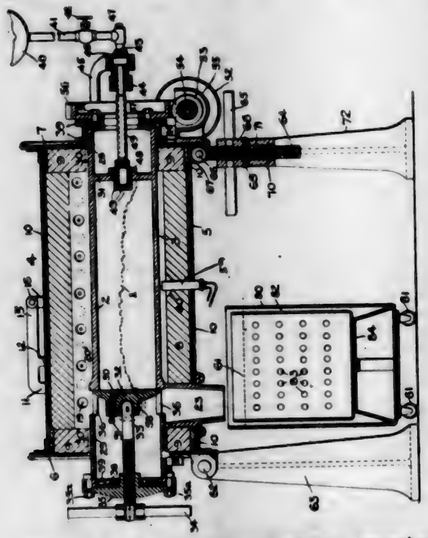

Claim.—1. The process of case-hardening low-carbon-steel articles to form thereon shells of uniform and exact predetermined thickness, consisting in placing the articles in a metal retort, closing the retort, filling the retort with carburizing-gas, uniformly heating the articles throughout by applying heat evenly to the exterior of the retort so as to heat the same uniformly throughout until its temperature reaches from about 1,500° to about 1,800° Fahrenheit, maintaining the heat substantially uniform and turning the retort during the cementation of the articles, and arresting the cementation at the expiration of a predetermined interval of such length that the articles are cemented to the predetermined depth.

2. The process of case-hardening low-carbon-steel articles to form upon each thereof a shell of uniform and exact predetermined thickness, consisting in placing the articles in a metal retort, closing the retort, filling the retort by carburizing-gas, applying heat uniformly to the exterior of the retort until the articles reach carburizing heat, maintaining the heat of the articles uniform while causing fresh carburizing-gas to circulate constantly through the retort, turning the retort to cause different sides of the articles to come uppermost during their cementation, and arresting the cementation at the expiration of a predetermined interval of such length that the articles are cemented to the predetermined depth.

3. The process of case-hardening with uniformity low-carbon-steel articles to form upon each thereof a shell of uniform and exact predetermined thickness, consisting in placing the articles in a metallic retort, closing the retort, filling the retort with carburizing-gas, applying heat uniformly to the exterior of the retort until the articles are heated uniformly above red heat but safely below the melting-point, maintaining the heat substantially uniform throughout the carburizing of the articles, maintaining a supply of fresh carburizing-gas during the cementing of the articles, turning the retort during the cementing operation to cause different sides of the articles to come uppermost, and arresting the cementation at the expiration of a predetermined interval of such length that the articles are cemented to the predetermined depth.

4. The process of case-hardening in bulk with uniformity low-carbon-steel articles to form upon each thereof a thin shell of a uniform and exact predetermined thickness, consisting in placing the articles in a metallic retort, closing the retort, filling the retort by carburizing-gas, applying heat evenly around the retort until the articles are uniformly heated to a predetermined carburizing heat, maintaining such temperature approximately uniform throughout the retort for a predetermined time, constantly displacing the vitiated gas by fresh supplies of carburizing-gas during the heating of the retort, agitating the articles during the carburizing operation, while the retort remains closed, and arresting the cementation at the expiration of a predetermined interval of such length that the articles are cemented to the predetermined length.

5. The process of case-hardening in bulk with uniformity low-carbon-steel articles to form upon each thereof a thin shell of a uniform and exact predetermined thickness, consisting in placing the articles in a metal retort, closing the retort, filling the retort with carburizing-gas, in a state of high compression, uniformly heating the articles throughout by applying heat evenly to the exterior of the retort so as to heat the same uniformly throughout until its temperature reaches from about 1,500° to about 1,800° Fahrenheit, maintaining the heat substantially uniform during the cementation of the articles, and withdrawing the articles in an incandescent condition at the expiration of a predetermined interval of such length that the articles are cemented to the predetermined depth.

6. The process of case-hardening in bulk with uniformity low-carbon-steel articles to form upon each thereof a thin shell of a uniform and exact predetermined thickness, consisting in placing the articles in a metallic retort, closing the retort, filling the retort with carburizing-gas under a pressure high above atmospheric pressure, applying heat uniformly around the exterior of the retort until the articles are uniformly heated above red heat but below the melting-point, maintaining the heat uniform throughout the carburizing operation, causing the vitiated gas to escape, maintaining a supply of fresh carburizing-gas under similar pressure during the heating of the retort, and arresting the cementation at the expiration of a predetermined interval of such length that the articles are cemented to the predetermined length.

7. The process of case-hardening steel or iron articles, consisting in confining the articles in an atmosphere of carburizing-gas with a closed retort, heating them while so confined to a temperature above red heat but below the melting-point, effecting agitation of the articles while being so confined and heated, and while the retort remains closed, to an extent to expose all surfaces of the articles to the gas, replacing the vitiated gas by fresh carburizing-gas during such heating and agitation, and arresting

the cementation as soon as shells are formed upon the articles.

8. The process of case-hardening small steel or iron articles, consisting in confining them in bulk in an atmosphere of carburizing-gas within a closed retort, heating them while so confined to a temperature above red heat, but below the melting-point, tumbling the articles while so confined and heated, and while the retort remains closed, and arresting the cementation as soon as shells are formed upon the articles.

9. The process of case-hardening small steel or iron articles, consisting in placing them in bulk in a metallic retort, filling the retort with carburizing-gas, within a closed retort, applying heat around the exterior of the retort until the articles are heated above red heat, maintaining the heat substantially uniform throughout the retort, effecting repeated movements of the retort so as to agitate the articles therein, permitting the vitiated gas to escape, maintaining a supply of fresh carburizing-gas, and arresting the cementation as soon as shells are formed upon the articles.

10. The process of case-hardening steel or iron articles, consisting in placing them in a metallic retort, closing the retort, substantially surrounding the retort by a series of controllable flames sufficient to heat the articles above red heat but below the melting-point, maintaining the flames substantially uniform, effecting rotation of the retort, passing a current of iron-carburizing gas through the retort while it remains closed, during such heating, and arresting the cementation as soon as shells are formed upon the articles.

11. The process of case-hardening steel or iron articles, consisting in confining them in an atmosphere of carburizing-gas, heating them while so confined to a temperature of about 1,800° Fahrenheit, arresting the cementation as soon as shells are formed upon the articles, causing the articles to cool gradually to a suitable degree for hardening and immediately subjecting them to a hardening cool bath.

12. The process of case-hardening steel or iron articles, consisting in confining them in bulk in a metallic retort, applying controllable flames to the exterior of the retort sufficiently to heat the articles uniformly to a carburizing temperature, passing a current of carburizing-gas through the retort during such heating, until the cementation has formed a shell on the articles, reducing said flames to an extent to permit the articles to cool gradually to a suitable degree for hardening, and immediately plunging the articles into a cooling-bath to harden them.

13. The process of case-hardening steel or iron articles, consisting in confining them in a metallic retort, applying controllable flames to the exterior of the retort sufficiently to heat the articles uniformly to a carburizing temperature, passing a current of carburizing-gas through the retort during such heating, until shells are formed on the articles, turning the retort during the cementation, to cause different sides of the articles to come uppermost in the retort, reducing the flames to an extent to permit the articles to cool gradually to a suitable degree for hardening, while the retort remains filled with the carburizing-gas, and immediately plunging the articles into a cooling-bath to harden them.

14. The herein-described process of case-hardening low-carbon-steel articles, consisting in confining them in bulk while heated uniformly throughout to a predetermined carburizing-point, in a current of compressed carburizing-gas, venting vitiated gas before it becomes incapable of burning brightly in air, maintaining the heat of the articles at a predetermined degree throughout substantially the entire period of cementation, and arresting the cementation after such predetermined duration as causes the shell of the exact thickness desired to be produced.

15. The process of case-hardening low-carbon-steel articles, consisting in confining them in bulk in a metallic retort, causing the current of compressed carbonized gas to flow through the retort during substantially the entire cementing operation, heating the retort with substantial uniformity throughout, maintaining the heat at a substantially uniform degree sufficient to heat the articles therein to a predetermined carburizing-point, until thin shells are formed on the articles, cooling the retort to a point where the articles are at suitable hardening temperature, and immediately plunging the articles into a hardening-bath.

16. The process of case-hardening low-carbon-steel articles, consisting in heating them uniformly throughout to a predetermined degree high above red heat, confining them in a current of compressed carburizing-gas and maintaining the temperature uniform at said degree while so confined, arresting the cementation at the completion of the predetermined length of exposure such that thin shells of a predetermined depth are formed upon the articles, causing the articles to cool gradually to a suitable degree for hardening, and immediately plunging them into a hardening-bath.

17. The process of case-hardening low-carbon steel or iron articles, consisting in heating them to a degree above redness but below the melting-point, confining them while so heated in an atmosphere of carburizing-gas, until thin shells are formed upon the articles, causing the articles to cool gradually to a suitable degree for hardening, and immediately plunging them into a hardening-bath.

18. The process of case-hardening steel or iron articles, consisting in making them sufficiently hot for cementation, confining them in a current of compressed carburizing-gas while so heated, until thin shells are formed upon the articles, causing the articles to cool gradually to a suitable degree for hardening, and immediately plunging them into a hardening-bath.

19. The process of case-hardening steel or iron articles consisting in heating them in bulk to a degree above redness but below the melting-point, confining them while so heated in a current of compressed carburizing-gas, until thin shells are formed upon the articles, agitating the articles during the process of cementation, gradually cooling the articles until they reach a hardening heat, and immediately subjecting them to a hardening-bath.

20. The process of case-hardening steel or iron articles, consisting in confining them in bulk in a metallic retort and in contact with the walls thereof, heating the retort with substantial uniformity throughout until the articles reach a uniform carburizing heat, passing a current of compressed carburizing-gas through the retort while so heated, agitating the articles during their cementation, and arresting the cementation as soon as thin shells are formed upon the articles.

21. The process of case-hardening steel or iron articles, consisting in confining them in bulk in a current of highly-compressed carburizing-gas, heating them uniformly throughout while so confined to a degree of heat sufficient to carburize them, effecting agitation of the articles while being so confined and heated, and arresting the cementation as soon as shells are formed upon the articles.

847,589. CURTAIN-POLE. HARVEY A. MAILLOUX, St. Albans, Vt. Filed July 15, 1904. Serial No. 216,706.

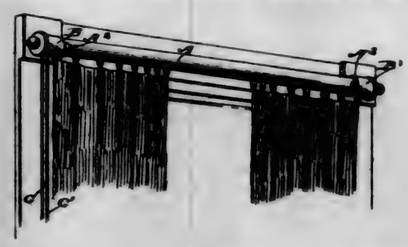

Claim.—In a device of the kind described comprising a shaft, rollers having their periphery curved to travel within a tube, said rollers being mounted upon said shaft and spaced apart, and an arm loosely mounted intermediate its ends upon the said shaft between the two rollers, the said arm being perforated at points above and below the said rollers, as and for the purpose set forth.

847,590. ROCK-DRILLING-MACHINE CHUCK. SIGISMUND R. J. MAYNARD, ALDROVAND V. T. MAYNARD, and FRANK GALE, Fordsburg, Transvaal. Filed Nov. 13, 1906. Serial No. 343,299.

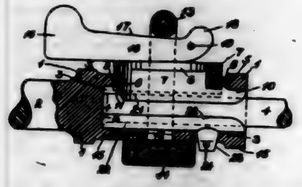

Claim.—1. In a rock-drill chuck, in combination, a head constructed with an axial bore, a longitudinal slot communicating with said bore and a transverse slot intersecting the axial bore and longitudinal slot, a strap in said transverse slot comprising the U-shaped piece 13 connected by the base portion 14, the latter exceeding the width of the slot 12 so that said part 14 engages the head along the edges of the slot 12, a key in the longitudinal slot, means for preventing said key falling into the bore of the chuck beyond a certain distance, a wedge between the strap and key for forcing the latter into the bore, and a half-bushing secured in the bore opposite said key.

2. In a rock-drill chuck, in combination, the head 1 constructed with the axial bore 3, longitudinal slot 9, transverse slot 12 and the hole opposite the forward end of the longitudinal slot, the strap in the transverse slot comprising the U-shaped piece 13 connected by the base portion 14, the width of the latter exceeding the width of the slot 12 so that it engages the head along the sides of said slot, the key 7 constructed with the longitudinal ribs 8 for preventing the key falling too far into the bore of the chuck and with the forwardly-inclined projection 10 rounded on the inside and forming a partial bushing for the front end of the axial bore, and beveled off at the rear end, the wedge 16 located between the strap and key and constructed with the hole 19, the pin 20 for preventing the wedge 16 disengaging the strap, the half-bushing 22 rounded on the inside at the forward end located in the bore opposite the key 7 and constructed with the projection 23 fitting the hole in the forward end of the axial bore, and the key 25 for retaining the projection 23 and half-bushing 22 in the bore, and the drill-steel 4 fitting the bore 3 between the key 7 and half-bushing 22, substantially as described and shown.

847,591. DENTAL HANDPIECE. HENRY S. MILLER, Rochester, N. Y. Filed June 22, 1904. Serial No. 213,583.

Claim.—1. In a dental handpiece, the combination with a casing and a spindle therein, of a tool coöperating with the spindle and a locking device in the latter adapted to engage the tool, means for moving said device into operative position and a sleeve extending exteriorly of the casing forming a bearing for the spindle and movable into engagement with the locking device to disengage it from the tool.

2. In a dental handpiece, the combination with a casing, a spindle journaled therein having jaws and a collar on the spindle for adjusting them relatively to each other, of a sleeve movably mounted in the casing and adapted to engage the collar and means for normally holding the sleeve out of engagement therewith.

3. In a dental handpiece, the combination with a casing, a rotatable spindle journaled therein having jaws and a collar carried on the spindle for adjusting the jaws relatively to each other, of a longitudinally-movable sleeve mounted in the casing and adapted to engage the collar, guides on the casing engaging the sleeve, means for normally holding the latter out of engagement with the collar.

4. In a dental handpiece, the combination with a casing, a rotatable spindle journaled therein having jaws and a collar carried on the spindle for adjusting the jaws relatively to each other, of a longitudinally-movable sleeve mounted in the casing and adapted to engage the collar to hold it stationary relatively to the spindle, means for preventing the rotation of the sleeve in the casing and means for normally holding it out of contact with the collar.

5. In a dental handpiece, the combination with a casing, a rotatable spindle journaled therein, clutch-jaws and a collar carried on the spindle and coöperating with the jaws to adjust them relatively to each other, of projections on the collar, a longitudinally-movable sleeve carried in the casing and projecting exteriorly thereof and provided with projections adapted to coöperate with those on the collar, means for preventing the rotation of the sleeve and means for holding the latter out of engagement with the collar.

6. In a dental handpiece, the combination with a casing, a spindle therein, devices on the spindle for engaging a burning-tool, of a member for adjusting said devices extending exteriorly of the casing and adapted to receive a plugging-tool and a hammer coöperating with the member.

7. In a dental handpiece, the combination with a casing, a rotatable spindle journaled therein and devices on the spindle for securing a tool thereto, of an operating-sleeve movable on the casing into engagement with said devices, said sleeve being adapted to support a tool, a hammer operated by the spindle and having a cam, means for moving the hammer in one direction and an actuating member coöperating with the cam to move the hammer in the other direction which engages the sleeve to prevent it from engagement with the tool-securing devices on the spindle.

8. In a dental handpiece, the combination with a casing, a hollow spindle and a projection therein, of a tool having a shank provided with a shoulder and an end projecting therefrom having a recess adapted to receive the projection, a locking device engaging the end of the shank, means for yieldingly holding the device in operative position, and a sleeve extending forwardly and exteriorly of the casing and coöperating with said means to move the locking device into the inoperative position.

9. In a dental handpiece, the combination with a casing, a rotatable spindle journaled therein having tool-engaging devices thereon, and an operating-sleeve movable on the casing into engagement with said devices, of a hammer carried on the spindle having a cam, a spring for moving the hammer in one direction and an actuating member having two projections, one engaging the cam on the hammer and the other extending in rear of the sleeve to prevent its longitudinal movement in the casing.

10. In a dental handpiece, the combination with a casing, a spindle journaled therein having tool-engaging devices thereon, and a tip-piece in the casing having a rearwardly-extending key, of a sleeve movable longitudinally in the tip-piece and provided with a collar in rear of the

tip-piece having a recess fitting the key, coöperating projections on the tool-engaging devices and the sleeve and means for normally holding them out of engagement.

11. In a dental handpiece, the combination with a casing, a hollow spindle journaled therein and having clamping-jaws, a collar on the spindle coöperating with the jaws to move them relatively to each other and a projection in the spindle, of a tool having a shank reduced at the end and provided with a recess adapted to receive the projection, a locking-piece in the spindle engaging the end of the shank and a sleeve movable longitudinally on the casing and coöperating with the collar and the locking-piece to disengage the latter and means for moving said locking-piece into operative position and normally holding the sleeve in the inoperative position.

847,592. TRIPLE ALTERNATING SIPHON. SIDNEY W. MILLER, Chicago, Ill. Filed Oct. 25, 1906. Serial No. 340,576.

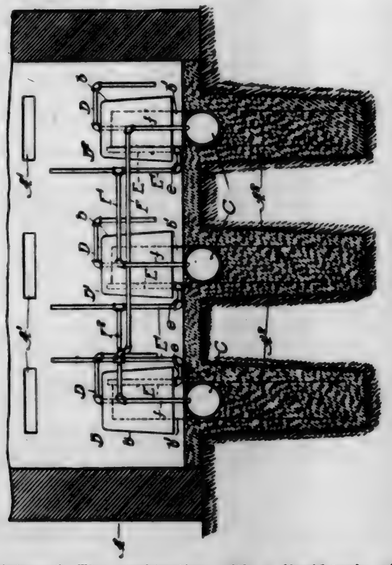

Claim.—1. The combination with a liquid-tank, of a plurality of deep-seal, trapped siphons for emptying the tank, blow-off traps therefor, and liquid-diverting pipes, each connected at one end with the blow-off trap of one siphon and discharging at its other end into the deep-seal trap of another siphon.

2. The combination with a liquid-tank, of a plurality of deep-seal, trapped siphons for emptying the tank, blow-off traps therefor, and liquid-diverting pipes located above the floor of the tank, each receiving liquid from the blow-off trap of one siphon and discharging the liquid into the deep-seal trap of another siphon.

3. The combination with a liquid-tank, of a plurality of deep-seal, trapped siphons for emptying the tank, blow-off traps therefor, liquid-diverting pipes each receiving liquid at one end from the blow-off trap of one siphon and discharging the liquid at its other end into the deep-seal trap of another siphon, the discharge end of said liquid-diverting pipes being connected rigidly with the deep-seal traps of said siphon and the receiving ends of the blow-off traps associated therewith having free or loose connection with their associated siphons.

4. The combination with a liquid-tank, of a plurality of deep-seal, trapped siphons for emptying the tank, a blow-off trap for each siphon comprising a leg which rises into the shorter leg of the siphon, and a vertical leg outside said shorter leg of the siphon connected at its lower end with the inner leg, and liquid-diverting pipes each connected at one end with the outer leg of the blow-off trap of one siphon and discharging at its other end into the deep-seal trap of another siphon.

5. The combination with a liquid-tank, of a plurality of deep-seal, trapped siphons for emptying the tank, a blow-off trap for each siphon comprising a leg which rises into the shorter leg of the siphon above the receiving end of the longer leg thereof, and a vertical leg outside said shorter leg of the siphon connected at its lower end with the inner leg; and liquid-diverting pipes each connected at one end with the outer leg of the blow-off trap of one siphon and discharging at its other end into the deep-seal trap of another siphon.

6. The combination with a liquid-tank, of a plurality of deep-seal, trapped siphons for emptying the tank, a blow-off trap for each siphon comprising an inner or receiving leg communicating with the air-space of the siphon and an outer or discharge leg which rises above the maximum liquid-level of the tank and liquid-diverting pipes each connected at one end with the outer leg of the blow-off trap of one siphon between the ends of said outer leg and discharging at its other end into the deep-seal trap of another siphon.

847,593. INDEX CLIP AND LABEL. LUCENA M. MORDEN, Waterbury, Conn. Filed Feb. 17, 1906. Serial No. 301,689.

Claim.—1. An index-clip formed in one piece of sheet metal, with the flaps *a* united by the fold *b* to embrace the edge of a sheet or card, and the opposed tongues *c* formed at the ends of the flaps and bent outwardly beyond the fold, the tongues being bent at their bases close to the fold and one of the tongues in each pair being made of greater length than the other, with the lip *d* bent therefrom transversely across the end of the opposed tongue, thus forming the label-holding jaws c' and c^2 with a definite capacity between the fold *b* and the lip *d*, to receive a label of corresponding width.

2. An index-clip formed in one piece of sheet metal, with the flaps *a* united by the fold *b* to embrace the edge of a sheet or card, and the opposed tongues *c* formed at the ends of the flaps and bent outwardly beyond the fold, to make pairs of label-holding jaws c' and c^2 with the lip *d* upon one of each pair of the jaws extended over the end of the other jaw, in combination with the label *e* fitted between the fold *b* and the lip *d* and removable by sliding endwise between the said jaws.

3. An index-clip formed in one piece of sheet metal with the flaps *a* united by the fold *b* to embrace the edge of a sheet or card, and the opposed tongues *c* formed at the ends of the flaps and bent outwardly beyond the fold, to make two pairs of label-holding jaws c' and c^2 with the lip *d* upon one of each pair of the jaws extended over the end of the other jaw, in combination with the label *c* fitted between the fold *b* and the lip *d*, the space between the two pairs of label-holding jaws being proportioned to expose all of the inscriptions desired upon the label, and the ends of the label wholly inclosed within the jaws to prevent contact with surrounding objects.

847,594. HOSE OR PIPE MENDER. GEORGE B. MCCREARY, Indianapolis, Ind. Filed Nov. 5, 1906. Serial No. 342,006.

Claim.—1. A mending-clamp for pipes, comprising a coacting pair of members adapted to receive the pipe, a threaded bolt adapted to draw said members together, said threaded bolt having a secondary threaded portion so arranged relative to the main threaded portion that a

member screwed thereon will tend to rotate the bolt in such direction as to draw the two members together.

2. A mending-clamp for pipes comprising a coacting pair of members adapted to receive the pipe, a threaded bolt adapted to draw said members together, said threaded bolt having a secondary threaded portion of opposite pitch formed at one end of the bolt, for the purpose set forth.

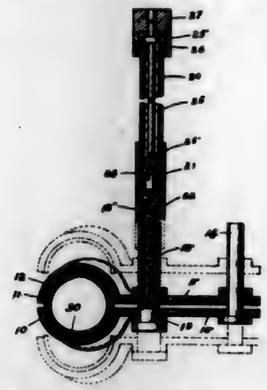

3. The combination, with a mending-clamp for pipes comprising a coacting pair of members adapted to receive the pipe, a threaded bolt adapted to draw said members together, said threaded bolt having a secondary threaded portion so arranged relative to the main threaded portion that a holder screwed thereon will tend to rotate the bolt in such direction as to draw the two members together, of a holder for said clamp, said holder having a threaded head adapted to receive secondary threaded portion of the bolt.

4. The combination, with a mending-clamp for pipes comprising a coacting pair of members adapted to receive a pipe, a threaded bolt adapted to draw said members together, said threaded bolt having a secondary threaded portion so arranged relative to the main threaded portion that a holder screwed thereon will tend to rotate the bolt in such direction as to draw the two members together, of a holder for said clamp, said holder having a threaded head adapted to receive the secondary threaded portion of the bolt, a movable abutment carried by said holder in position to receive the thrust from the secondary portion of the bolt, and means for backing said abutment away from said secondary portion.

5. The combination, with a mending-clamp for pipes comprising a coacting pair of members adapted to receive the pipe, and a threaded bolt adapted to draw said members together, said threaded bolt having a secondary threaded portion so arranged relative to the main threaded portion that a holder screwed thereon will tend to rotate the bolt in such direction as to draw the two members together, of a holder for said clamp, said holder having a threaded head adapted to receive the secondary threaded portion of the bolt, an abutment mounted within said holder in position to receive the thrust from the secondary portion of the bolt, a shaft journaled in the holder and having a threaded connection with said abutment whereby said abutment may be backed away from the bolt.

6. The combination, with a mending-clamp comprising a coacting pair of members adapted to receive the pipe, and a threaded bolt adapted to draw said members together, said threaded bolt having a secondary threaded portion of opposite pitch formed at one end of the bolt, of a holder having a threaded head adapted to receive said secondary threaded portion, for the purpose set forth.

7. The combination, with a mending-clamp comprising a coacting pair of members adapted to receive the pipe, and a threaded bolt adapted to draw said members together, said threaded bolt having a secondary threaded portion of opposite pitch formed at one end of the bolt, of a holder having a threaded head adapted to receive said secondary portion, a movable abutment carried by said holder in position to receive the thrust from said secondary threaded portion of the bolt, and means for backing said abutment away from the bolt.

8. The combination, with a mending-clamp comprising a coacting pair of members adapted to receive the pipe, and a threaded bolt adapted to draw said members together, said threaded bolt having a secondary threaded portion of opposite pitch formed at one end of the bolt, of a holder having a threaded head adapted to receive said secondary threaded portion, a movable abutment mounted within said holder in position to receive the thrust from the secondary portion of the bolt, and a shaft rotatably mounted within the holder and having a threaded connection with said abutment whereby the abutment may be backed away from the secondary portion of the bolt.

847,595. SPEED-TIMING DEVICE FOR VEHICLES. ALDEN L. MCMURTRY, New York, N. Y. Filed June 8, 1904. Serial No. 211,687.

Claim.—1. In a timing device for vehicles the combination of a strand adapted to be arranged under tension in the path of the vehicle, means for imposing a measured strain upon the strand, and an indicator controlled thereby to indicate when the vehicle comes in contact with the strand.

2. In a timing device for vehicles, the combination of a non-extensible strand adapted to be arranged under tension in the path of the vehicle, a spring-scale to one member of which an end of the strand is attached, means for adjusting the other member of the scale to impose upon the strand a determined tension, a pivoted trigger adapted to be operated by additional strain upon the strand due to impact of the leading wheels of the vehicle, a latch engaging a trigger and released when the latter is actuated and an electric circuit automatically completed by the latch when released.

3. In a timing device for vehicles, the combination of a non-extensible strand adapted to be arranged under tension in the path of the vehicle, a spring-scale to one member of which an end of the strand is attached, means for adjusting the other member of the scale to impose upon the strand a determined tension, a pivoted trigger adapted to be operated by additional strain upon the strand due to impact of the leading wheels of the vehicle, two latches engaging the trigger and released when it is actuated, an electric circuit automatically completed by one of the latches when so released and means whereby thereafter the other latch opens the electric circuit.

4. In a timing device for vehicles, a non-extensible strand adapted to be placed under tension in the path of the vehicle, a spring-scale to the endwise-movable member of which one end of the strand is attached, means for adjusting the other member of the scale to impose a determined tension on the strand, a pivoted trigger-arm, a device carried by the movable member of the scale adapted to be set against the trigger-arm, a latch engaged by the trigger-arm and an electric circuit automatically completed by the latch when released by the trigger-arm.

5. In a timing device for vehicles, the combination of a non-extensible strand adapted to be arranged under tension in the path of the vehicle, a spring-scale to one member of which an end of the strand is attached, means for adjusting the other member of the scale to impose upon the strand a determined tension, a pivoted trigger adapted to be operated by additional strain upon the strand due to impact of the leading-wheels of the vehicle, a latch engag-

ing the trigger and released when it is actuated, an electric circuit automatically completed by the latch when so released and means whereby thereafter the electric circuit is opened.

6. In a timing device for vehicles, a strand placed under tension in the path of the vehicle, an anchor connection by which the strand is centrally held deflected toward the road-bed, a spring-scale to which one end of the strand is attached, and means for adjusting the scale to impose upon the strand a determined tension.

7. In a timing device for vehicles the combination of a strand adapted to be arranged under tension in the path of the vehicle, means for imposing a determined strain upon the strand and an electric circuit automatically controlled when an additional strain is imposed upon the strand by the leading-wheels of the vehicle and an electro-magnet in the circuit adapted to control a stop-watch.

847,596. NUT-WRENCH. ALDEN L. MCMURTRY, New York, N. Y. Filed Nov. 14, 1906. Serial No. 343,314.

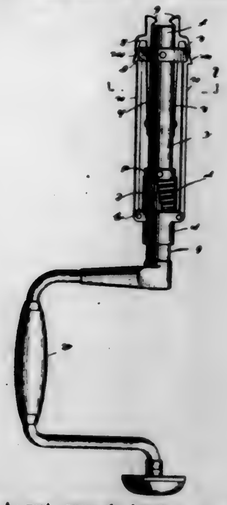

Claim.—1. A nut-wrench having a rotatable socket adapted to fit over and revolve nuts adapted to be used with it and of a depth to successively receive and retain a plurality of nuts as they are unscrewed by the wrench from their bolts and means for retaining such a plurality of nuts in the socket and permitting their successive application to bolts by the wrench.

2. A nut-wrench having a nut-engaging socket, a chamber which freely receives a plurality of nuts from the socket and which is provided with devices for holding the nuts in the chamber.

3. A nut-wrench having a chamber which receives a plurality of nuts from the nut-engaging end of the wrench, which is provided with devices for holding the nuts in the chamber and has means for releasing said devices.

4. A nut-wrench having a nut-engaging socket, a chamber which receives a plurality of nuts from the socket, and which is provided with devices engaging a nut in the socket for holding the remaining nuts in the chamber.

5. A nut-wrench having a nut-engaging socket, a chamber which freely receives a plurality of nuts from the socket, devices for holding the nuts in the chamber and means within the chamber tending to force the nuts outward against said holding devices.

6. A nut-wrench having a nut-engaging socket, a chamber which receives a plurality of nuts, means within the chamber tending to force the nuts outward, devices engaging a nut in the socket for holding the nuts in the chamber and means for releasing said holding devices.

7. A nut-wrench having a chamber holding a plurality of nuts, means for retaining the nuts in the chamber and means for automatically forcing the nuts successively into the nut-engaging portion of the wrench as other nuts are withdrawn therefrom.

8. A nut-wrench having a chamber which receives a plurality of nuts as they are withdrawn from bolts by the wrench, and means for supplying the contained nuts successively to the nut-engaging end of the wrench to be applied to bolts thereby.

9. A nut-wrench having a chamber which receives a plurality of nuts, a spring tending to force the nuts outward, nut-retaining jaws normally acting to retain the nuts in the chamber, and means for moving the jaws outwardly to permit the nuts to leave the chamber.

10. A nut-wrench having a chamber which receives a plurality of nuts, means for ejecting the nuts from the chamber, spring-acting jaws for retaining the nuts in the chamber, against the force of said ejecting means, the outer faces of which are inclined for the purpose specified.

11. A nut-wrench having a chamber which receives a plurality of nuts, means tending to eject the nuts from the chamber and spring-acting nut-retaining jaws, the outer faces of which are inclined inwardly while their inner faces are reversely inclined for the purpose specified.

847,597. GOVERNOR. PETER ONSUM, Jackson, Tenn., and HENRY R. DOHREN, Champaign, Ill. Filed Jan. 12, 1906. Serial No. 295,708.

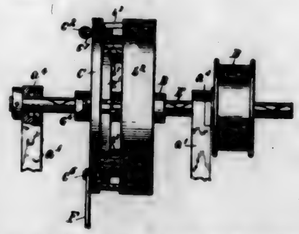

Claim.—1. In a governor of the class described, a rotatable wheel, magnets secured to said wheel, a disk rotatably mounted in close proximity to said wheel and having a portion extending into the field of said magnets and a tension device attached to said disk, and adapted to resist the rotation of the disk.

2. In a governor of the class described, a rotatable wheel, magnets secured to said wheel, a disk rotatably mounted in close proximity to said magnets and adapted to be affected thereby, yielding means for resisting the rotation of said disk, and means for preventing the backward movement of said disk.

847,598. DISJOINTABLE PACKING-CASE. THOMAS K. ÖVERGAARD, Örgryte, Gothenburg, Sweden. Filed Oct. 18, 1905. Serial No. 283,349.

Claim.—1. In disjointable packing-cases the combination of hinge-pieces mounted in rims in the edges of the case parts and extending along the same and inserted for such an extent in grooves extending into the case parts from the said rims, that the hinge-pieces at the edges of two adjacent case parts when put together engage each other only to such an extent that the channel for the connecting-rod is considerably narrower than the said rod, the rims of two adjacent case parts forming closed chambers for protecting the hinge, substantially as described and for the purpose set forth.

2. In disjointable packing-cases the combination of hinge-pieces mounted in rims in the edges of the case parts and extending along the same and inserted for such an extent in grooves extending into the case parts from the said rims, that the hinge-pieces at the edges of two adjacent case parts when put together engage each other only to such an extent that the channel for the connecting-rod is considerably narrower than the said rod, and barbs provided on the connecting-rod and directed toward the head of the rod, substantially as described and for the purpose set forth.

3. In disjointable packing-cases the combination of hinge-pieces mounted in rims in the edges of the case parts and extending along the same and inserted for such an extent in grooves extending into the case parts from the said rims that the hinge-pieces at the edges of two adjacent case parts when put together engage each other only for such an extent that the channel for the connecting-rod is considerably narrower than the said rod, and barbs provided on the connecting-rod and directed toward the head of the rod, the rims of two adjacent case parts forming closed chambers, protecting the hinge, substantially as described and for the purpose set forth.

847,599. MEANS FOR CLAMPING AND FILING SAWS. CHARLES H. PARKS and ROBERT S. BROWN, New Britain, Conn., assignors to The New Britain Machine Company, New Britain, Conn., a Corporation of Connecticut. Filed Aug. 9, 1905. Serial No. 273,448.

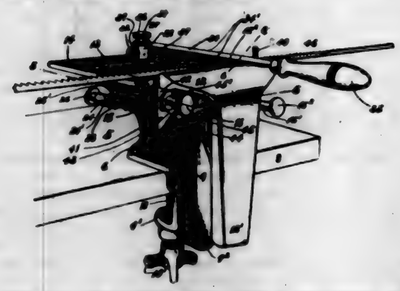

Claim.—1. The combination, with a saw-clamp, of a guiding-surface projecting from one of the jaws thereof; and a stop upon the guiding-surface, said stop serving to limit the movement of a saw-feeding device.

2. The combination, with clamping-jaws, one of which acts with yielding pressure, of a table projecting from one of said jaws; a gage between said jaws; and a stop upon the table for limiting the movement of a saw-feeding device.

3. A saw-clamp comprising a fixed jaw; a movable jaw; a pivoted lever; devices connecting the lever and said jaws; a spring attached to the lever, and serving to actuate said lever in one direction; and a rod to which the spring is also attached, said rod being removably mounted on the frame of one of the jaws.

4. A saw-clamp comprising a fixed jaw; a movable jaw; a device connecting the movable and the fixed jaws; means whereby said device may be actuated; a spring connected to said means; a sleeve having a device by which it is removably attached to the frame of one of the jaws; a rod in said sleeve, said rod being connected with the spring; and means for adjusting said rod to vary the tension of said spring.

5. The combination, with fixed and movable jaws, of a movable device; arms rigid with said device, and connecting the jaws; a lever rigid with the device; a spring connected to one end of said lever; a sleeve detachably connected to the frame of one of the jaws; a screw-threaded rod in said sleeve, and to which one end of the spring is attached; and a nut for adjusting said rod.

6. The combination, with a frame having a projecting side plate, and carrying a fixed jaw, of a sleeve having a projection hooked over said projecting side plate; a rod in said sleeve; means for adjusting said rod; a spring connected to the rod; a pivoted lever also connected to the spring; a movable jaw; and means operated by said pivoted lever for actuating said movable jaw.

7. A saw-clamp comprising a fixed jaw; a movable jaw; a pivoted lever; devices connecting the lever and said jaws; a spring attached directly to the lever, and serving to actuate said lever in one direction; a device to which the spring is also attached, said device being removably mounted on the frame of one of the jaws; and means for adjusting said device to alter the tension of the spring.

8. The combination, with fixed and movable jaws, of a frame comprising a shaft having a pair of arms rigid therewith, and projecting from opposite sides thereof; a rod connected to the frame of the fixed jaw, and upon which the inner ends of said arms are fulcrumed; a rod passing through the other ends of said arms, and entering parts of the movable jaw; a spring connected to the shaft, and serving to cause the same to close the movable jaw; and a device removably connected to the frame of the fixed jaw for regulating the tension of the spring.

847,600. SASH-LOCK. OKE PEARSON and CARL E. LINDQUIST, Chicago, Ill. Filed May 7, 1906. Serial No. 315,490.

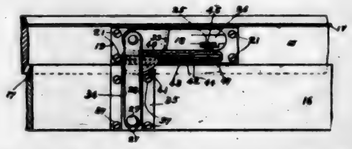

Claim.—1. In a window-sash lock, the combination with a base-block secured to a sash-rail and having in one of its sides a longitudinal slot open at one of its ends, of a lever pivoted to move horizontally on the upper surface of said block and having a transverse and beveled shoulder on its lower surface, a spring secured to the lower portion of the lever, another block secured to another sash-rail and having in its upper surface at one of its ends a longitudinal groove to engage the spring on said lever and at its other end a headed projection, a horizontally-disposed plate mounted on the last-named block and having a curved edge to engage the shoulder on the lever, and a jointed connection having one of its ends movably located in the slot of the lever-block and its other end loosely mounted on the headed projection of the other block, substantially as described.

2. In a window-sash lock, the combination with a base-block secured to a sash-rail, of a lever pivoted to move horizontally on the upper surface of said block and having on its lower surface a transverse and beveled shoulder, a spring on the lower portion of the lever, another block secured on another sash-rail and having a groove in its upper surface to engage the spring on said lever, a horizontally-disposed plate on the last-named block and having a curved edge to engage the shoulder on the lever, and an extensible connection uniting the two blocks, substantially as described.

3. In a window-sash lock, the combination with a base-block secured to a sash-rail, of a lever pivoted to move horizontally on the upper surface of said block and having on its lower surface a transverse and beveled shoulder, a spring on the lower portion of the lever, another block secured on another sash-rail and having a groove in its upper surface to engage the spring on said lever, a horizontally-disposed plate on the last-named block and having a curved edge to engage the shoulder on the lever, and an extensible connection detachably and movably secured at each of its ends to said blocks, substantially as described.

847,601. RATCHET-WRENCH. GEORGE B. PICKOP, New Britain, Conn. Filed Jan. 9, 1907. Serial No. 351,426.

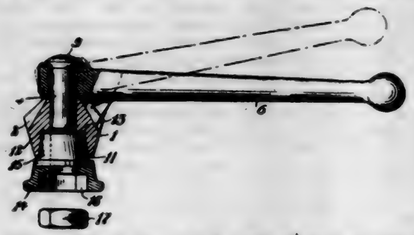

Claim.—1. In a device of the class specified, the combination of a body member provided with a socket and a series of peripheral teeth, a bearing-stud thereon, a one-piece handle surrounding said bearing, the opposite upper and lower sides of said stud-receiving aperture being cut away in a line with the center line of the handle to permit of a lifting movement thereof, and a lug depending from said handle adapted to engage the teeth to rotate the body member.

2. In a device of the class specified, the combination of the body member, a series of beveled teeth thereon, a stud thereon, an integral handle and bearing member loosely mounted on said stud, said mounting permitting a rotating and limited lifting movement of said handle, and a projection and the handle adapted to engage the teeth to rotate the body member.

3. In a device of the class specified, the combination of the body member, a handle provided with an integral bearing member rotatably mounted thereon, and having a lifting movement relatively thereto, a clutch member carried by said handle and coöperating clutch members carried by said body adapted to coact with the handle-clutch to lock said parts together for rotation.

4. In a device of the class specified, the combination of the body member, a series of beveled teeth thereon, an integral handle and bearing member rotatably mounted thereon, having a limited lifting movement, a lug on said handle adapted to engage said teeth, and a socket member detachably secured to said body member.

5. In a device of the class specified, the combination of the body member, a series of teeth thereon, a stud thereon, an integral handle and bearing member loosely mounted to rotate on said stud, and having a limited angular movement thereto, a lug on said handle adapted at one end of said movement to engage said teeth, said body member provided at its base with a conical clutch-aperture and the clutch member provided with a conical clutch projection secured in said body member.

847,602. END SILL FOR CARS. OSWALD S. PULLIAM, Pittsburg, Pa., assignor to Pittsburgh Equipment Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Feb. 26, 1906. Serial No. 302,995.

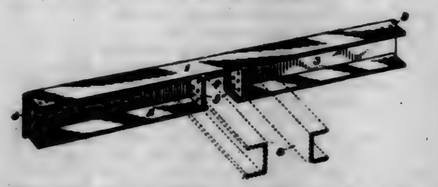

Claim.—1. An end sill for cars consisting of a cast-metal structure of channel form formed with a central recess and with vertical webs adjacent to the recess, said webs extending rearwardly from the vertical member of the sill and joining the top and bottom members and adapted to engage the center sills of the car.

2. An end sill for cars consisting of a cast-metal structure of channel form formed with a central recess, vertical webs adjacent to the recess and with end bearings or shoulders.

3. An end sill for cars consisting of a cast-metal structure of channel form having top and bottom members, a continuous front vertical member joining the top and bottom members, said structure formed with a centrally-disposed recess and with a web located on each side of the recess, said webs formed with holes and adapted to engage the center sills of the car.

4. An end sill for cars consisting of a cast-metal structure of channel form formed with a central recess, vertical webs adjacent to the recess, end bearings or shoulders, and with push-plates.

5. The combination, with center and side sills of channel form, of an end sill comprising a cast-metal structure of channel form formed with a central recess, vertical webs adjacent to the recess adapted to engage the center sills, and with end bearings for the side sills.

847,603. INK-WELL. JEPTHA B. RANDOLPH, Omaha, Nebr., assignor to Randolph Inkwell Company, Omaha, Nebr., a Corporation. Filed Feb. 7, 1906. Serial No. 299,938.

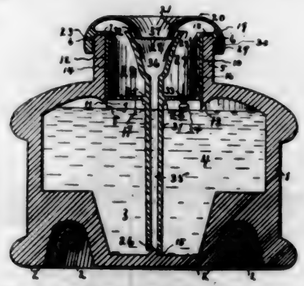

Claim.—1. An ink-well comprising an upper receptacle and a lower receptacle; said lower receptacle having an inner lower surface; a tube connecting said upper and lower receptacles; said upper receptacle being provided with a hood extending within said tube; means to lower said upper receptacle within said lower receptacle; and means to make a closure of said tube upon said inner lower surface of said lower receptacle.

2. An ink-well comprising an upper receptacle and a lower receptacle; said upper receptacle having a lower floor; said lower receptacle having an inner lower surface; a tube connecting said upper and lower receptacles; said upper receptacle being provided with a hood extending within said tube; means to lower said upper receptacle within said lower receptacle; means to make a closure of said tube upon said inner lower surface of said lower receptacle; and means to make an opening or closure, at will, in the lower floor of said upper receptacle.

847,604. COLLAR-SUPPORTER. CORA I. RANKIN, New York, N. Y. Filed May 31, 1906. Serial No. 319,452.

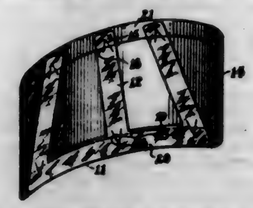

Claim.—1. A collar-supporter comprising a member running lengthwise of and adjacent to one edge of the collar, and means projecting transversely of such longitudinally-extending member for engaging and supporting the other edge of the collar, said supporter having a plurality of oppositely-disposed resilient prongs for engaging the collar.

3. A collar-supporter comprising a plurality of members lengthwise of and adjacent to one edge of the collar, a plurality of transversely-extending members for engaging and supporting the other edge of the collar, and prongs carried by said suporter for engaging the collar.

3. A collar-supporter comprising a plurality of members adapted to extend transversely of the collar, and a member running lengthwise of and adjacent to one edge of the collar and connected to such transversely-extending members at the ends thereof, said supporter having a plurality of sets of oppositely-disposed resilient prongs for engaging the collar adjacent to its upper and lower edges.

4. A collar-supporter comprising a member running lengthwise of and adjacent to one edge of the collar, a plurality of transversely-extending members, one of said transversely-extending members having its front edge inclined rearwardly, and means carried by the transversely-extending members for engaging the collar.

5. A collar-supporter comprising a member running lengthwise of and adjacent to one edge of the collar, a plurality of transversely-extending members, one of said transversely-extending members having its front edge inclined rearwardly, and said supporter having a plurality of resilient prongs for attaching the collar to the supporter.

6. A collar-supporter comprising a thin celluloid skeleton framework consisting of a member running lengthwise of the collar, a plurality of transversely-extending members, one located adjacent to each end thereof and one having its front edge inclined rearwardly, and a plurality of sets of resilient prongs for each of said transversely-extending members.

7. A collar-supporter comprising a body portion for sustaining the lower edge of a collar, and transversely-disposed stays for upholding the collar, and said body and stays being provided with openings having V-shaped ends, and a tongue in each of said openings having a V-shaped free end, the edge of each of said tongues lying adjacent to the edge of the end of the opening which it occupies.

847,605. STEAM-CONDENSER. GUSTAF RENNERFELT, Scranton, Pa., assignor of one-half to Axel Ekstrom, Albany, N. Y. Filed Apr. 10, 1906. Serial No. 310,948.

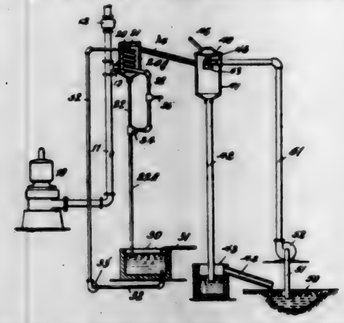

Claim.—1. In combination with a steam-engine, an exhaust therefor, a surface condenser, a jet-condenser in the exhaust, said jet-condenser being arranged to be operated by mine-water, and means for preventing the contamination of the exhaust-steam by the mine-water.

2. In combination with a steam-engine, an exhaust therefor, a jet-condenser operated by mine-water, and means intermediate the engine and the condenser for condensing and recovering a part of the exhaust-steam without contamination by the mine-water.

3. In combination with a steam-engine, an exhaust therefor, a feed-water heater, means for obtaining a vacuum in said heater, a jet-condenser operated by mine-water, and connections between the exhaust, the feed-water heater and the jet-condenser, said connections being so arranged as to prevent contamination of the feed-water by the mine-water, and means for preventing feed-water from being wasted with the mine-water.

4. In combination with a steam-engine, an exhaust therefor, a surface condenser operated by feed-water, a jet-condenser operated by mine-water, both of said condensers being in the exhaust, means for preventing the contamination of the feed-water by the mine-water, and means for preventing feed-water from being wasted with the mine-water.

5. In combination with a steam-engine, an exhaust therefor, a jet-condenser operated by mine-water, a feed-water heater intermediate the engine and condenser, said feed-water heater being arranged to condense and recover a part of the exhaust-steam, and means for preventing the contamination of the recovered portion of the exhaust-steam by the mine-water.

6. In combination with a steam-engine, an exhaust therefor, a feed-water tank, a feed-water heater above said tank, a tail-pipe between the feed-water heater and the feed-water tank, a jet-condenser operated by mine-water, connection between the exhaust, the feed-water heater and the condenser, and means for circulating water between the tank and the feed-water heater.

7. In combination with a steam-engine, an exhaust therefor, a feed-water tank, a feed-water heater above said tank, a tail-pipe between the feed-water heater and the feed-water tank, a jet-condenser operated by mine-water, said jet-condenser being situated at a lower level than that of the feed-water heater, a tail-pipe for the condenser, connection between the exhaust, the feed-water heater and the condenser, and means for circulating water between the tank and the feed-water heater.

8. In combination with a steam-engine, an exhaust therefor, a feed-water tank, a feed-water heater above said tank, a tail-pipe of small area between the feed-water heater and the feed-water tank, said tail-pipe arranged to contain a barometric column of water, a jet-condenser, a tail-pipe for the condenser, said tail-pipe arranged to contain a barometric column of water, and connections between the exhaust, the feed-water heater and the condenser.

9. In combination with a steam-engine, an exhaust therefor, a feed-water tank, a feed-water heater above said tank, a pipe-coil in the feed-water heater, a circulating-pipe connecting the feed-water tank and the pipe-coil, a pump in said circulating-pipe, a tail-pipe between the feed-water heater and the feed-water tank, the upper part of said tail-pipe having a small area, a connection between the circulating-pipe and the tail-pipe, the tail-pipe having a larger area below said connection, and a barometric column of water in the tail-pipe.

10. In combination with a steam-engine, an exhaust therefor, a feed-water tank, a feed-water heater above said tank, a pipe-coil in the feed-water heater, a circulating-pipe connecting the feed-water and the pipe-coil, a pump in said circulating-pipe, a tail-pipe between the feed-water heater and the feed-water tank, the upper part of said tail-pipe having a small area, a connection between the circulating-pipe and the tail-pipe, the tail-pipe having a larger area below said connection, a barometric column of water in the tail-pipe, a jet-condenser and connections between the exhaust, the feed-water heater and the condenser.

11. The combination of a steam-engine, a casing 20A, a pipe 21 within the casing, said pipe having a branch pipe 35 adapted to be connected to a boiler, a feed-water tank, connection between the engine and the casing, means for circulating water between the tank and the pipe, and means for maintaining a vacuum in the casing.

12. The combination of a steam-engine, a casing, a coiled pipe within the casing, a branch pipe connected with said coiled pipe and arranged to be connected to a boiler, a feed-water tank, connection between the engine and the casing, connection between the casing and the feed-water tank, means for circulating water between the tank and the coiled pipe, and means for maintaining a vacuum in the casing.

13. The combination of a steam-engine, a casing, a pipe within said casing, an independent feed-water tank, a jet-condenser, connection between the engine and the casing, connection between the casing and the jet-condenser, and means for circulating water between the tank and the pipe.

14. The combination of a steam-engine, a casing, a pipe within said casing, an independent feed-water tank, a jet-condenser, connection between the engine and the casing, connection between the casing and the jet-condenser, means for circulating water between the tank and the pipe, and a pipe for draining from the bottom of the casing into the tank.

15. The combination of a steam-engine, a feed-water heater, an independent feed-water tank, means for circulating water between the tank and the heater, means for draining from the bottom of the heater into the tank, a condenser, and connection between the heater and condenser.

16. The combination of a steam-engine, a condenser, a feed-water tank, means for circulating water between the tank and the condenser, means for diverting a part of said circulating water to a boiler, and means for conveying water of condensation from the condenser to the tank.

17. The combination of a steam-engine, a condenser, a feed-water tank, a pipe passing through the condenser, means for circulating water through said pipe between the tank and the condenser, and a branch pipe connected with said pipe and arranged to divert a part of the circulating water to a boiler.

18. The combination of a steam-engine, a condenser, a feed-water tank, means for circulating water between the tank and the condenser, and means located between the condenser and the tank for diverting a part of said circulating water to a boiler.

19. The combination of a steam-engine, a condenser, a feed-water tank, means for circulating water between the tank and the condenser, means for diverting a part of such circulating water to a boiler, a second condenser, connection between the engine and the first condenser, and connection between the first and second condensers.

20. The combination of a steam-engine, a condenser, an independent feed-water tank, means for circulating water between the tank and the condenser, a second condenser, connection between the engine and first condenser, a connection between the first and second condensers, and means for maintaining a vacuum in the condensers.

847,606. POTATO-DIGGER. JOHN REUTHER, Le Roy, and WILLIAM REUTHER, Marilla, N. Y. Filed Nov. 2, 1905. Serial No. 285,621.

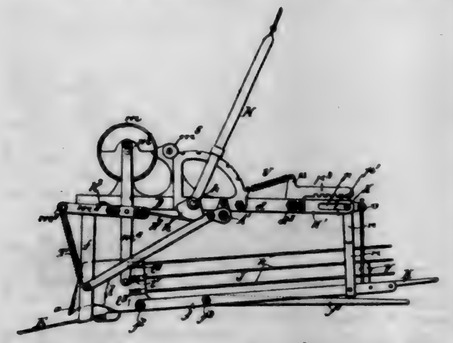

Claim.—1. The combination of a frame, a plow, a support mounted on the frame and adjustable lengthwise thereof, a vibrating separator arranged in rear of the plow, and suspension-links connecting the rear portion of the separator with said adjustable support, substantially as set forth.

2. The combination of a frame, a plow, a transverse rod mounted on the frame and adjustable lengthwise thereof, means for adjusting said rod, a vibrating separator arranged in rear of the plow, and suspension-links connecting the rear portion of the separator with said adjustable rod, substantially as set forth.

3. The combination of a frame having longitudinal slots, a plow, a transverse rod guided in said slots, means for adjusting the rod in the slots, a vibrating separator arranged in rear of the plow, and suspension-links connecting the rear portion of the separator with said rod, substantially as set forth.

4. The combination of a frame having longitudinal slots, a plow, longitudinal gear-racks mounted on said frame, a transverse shaft slidable in said slots and having gear-wheels which mesh with said gear-racks, a vibrating separator arranged in rear of the plow, and suspension-links pivoted at their upper ends to said shaft and at the lower ends to the rear portion of the separator, substantially as set forth.

5. The combination of a frame having longitudinal slots, a plow, longitudinal gear-racks mounted on said frame, a transverse shaft slidable in said slots and having a hand-lever, means for retaining said lever in different positions, gear-wheels mounted on said shaft and meshing with said gear-racks, a vibrating separator arranged in rear of said plow, and suspension-links connecting the rear portion of the separator with said shaft, substantially as set forth.

6. The combination of a main frame, a plow carried by the same, a vertically-adjustable frame arranged on the rear portion of said main frame, means for adjusting said vertically-movable frame, a rod capable of forward and backward adjustment on the last-named frame, means for adjusting said rod, and a vibrating separator arranged behind the plow and having its rear portion suspended from said rod, substantially as set forth.

7. The combination of a plow, a separating-surface arranged in rear of the plow, means for vibrating the separating-surface, and longitudinal tines fixed to and movable with the separating-surface, the front portions of said tines being substantially flush with the adjacent portion of the separating-surface and their rear portions inclining upwardly and rearwardly above the same, said tines being straight and free from jogs throughout their length, substantially as set forth.

8. In a potato-digger, the combination of a frame, a vibrating separator suspended therefrom, means for actuating the separator, and a counterbalancing-spring connected at its upper end to the frame and at its lower end to the front portion of the separator, said spring partly carrying the weight and load of the separator, substantially as set forth.

9. The combination of a frame, a plow, a separator arranged in rear of the plow, means for vibrating the separator, a vertically-adjustable member mounted on the frame and from which the rear end of the separator is suspended, and a counterbalancing-spring connecting said adjustable member with said frame, substantially as set forth.

10. The combination of a main frame, a plow, a separator arranged in rear of the plow, means for vibrating the separator, a vertically-swinging frame pivoted to the rear end of the main frame and having a hand-lever and an upwardly-extending arm, links connecting the rear portion of the separator with said swinging frame, and a counterbalancing-spring connecting said arm with the main frame, substantially as set forth.

11. In a potato-digger, the combination of the frame, the plow, and the vibrating separator arranged in rear of the plow and provided at its front end on opposite sides of the plow with means for picking up and directing the potato-tops onto the plow, substantially as set forth.

12. In a potato-digger, the combination of the frame, the plow, and the vibrating separator arranged in rear of the plow, the side walls of the separator having forwardly-inclined front edges for picking up the potato-tops and directing the same onto the plow, substantially as set forth.

847,607. WHEEL-MACHINE. CHARLES W. ROBINSON, Hamilton, Ontario, Canada, assignor to International Harvester Company, a Corporation of New Jersey. Filed Aug. 3, 1906. Serial No. 329,052.

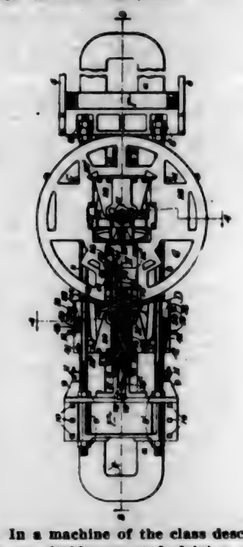

Claim.—1. In a machine of the class described, in combination, a base suitably mounted, driving-gears, two reciprocating cross-heads slidably mounted on said base and operated by said driving-gears, said cross-heads moving as a single piece, means fixed to the adjacent sides of said cross-heads for actuating the spoke-gripping jaws and for upsetting the spoke ends, and spoke-gripping jaws mounted on said base.

2. In a machine of the class described, in combination, a base suitably mounted, driving-gears journaled on one end thereof, two reciprocating cross-heads slidably mounted on said base and operated by said driving-gears, side bars for adjustably connecting the two cross-heads with each other, rams fixed to the adjacent sides of said cross-heads, spoke-heading tools in operative connection with said rams, and two pairs of spoke-gripping jaws mounted on said base and actuated by the rams.

3. In a machine of the class described, in combination, a base suitably mounted, driving-gears journaled on one end thereof, two reciprocating cross-heads slidably mounted on said base and operated by said driving-gears, side bars for adjustably connecting the two cross-heads with each other, two pairs of spoke-gripping jaws mounted on said base, a ram mounted on each of said cross-heads, one of said rams arranged to actuate one pair of said spoke-gripping jaws on the forward movement of the cross-heads, and the other ram to actuate the other pair on the return movement of same, and spoke-heading tools in operative connection with said rams.

4. In a machine of the class described, in combination, a base, driving-gears journaled on one end thereof, two pairs of spoke-gripping jaws mounted on said base, opposing spoke-heading tools, and single reciprocating means operated by said driving-gears and provided with devices for actuating said spoke-gripping jaws and heading-tools.

5. In a machine of the class described, in combination, a base, driving-gears journaled at one end thereof, two pairs of spoke-gripping jaws mounted on said base, a vertically-movable wheel-member support, opposing spoke-heading tools, and single reciprocating means actuated by said driving-gears and provided with devices for operating said spoke-gripping jaws, for positively raising said wheel-member support and permitting it to drop, and for actuating said heading-tools.

6. In a machine of the class described, in combination, a base, driving-gears journaled on one end thereof, two pairs of spoke-gripping jaws mounted on said base, a vertically-movable, longitudinally-yielding wheel-member support, opposing spoke-heading tools, and single reciprocating means actuated by said driving-gears and provided with devices for permitting the said wheel-member support to drop in its forward movement and for raising it in its return movement, and for operating the said jaws and the spoke-heading tools.

7. In a machine of the class described, in combination, a base, driving-gears journaled on one end thereof, two bed-pieces fixed to and longitudinally adjustable upon said base, a pair of spoke-gripping jaws mounted upon each bed-piece, cross-heads operated by the driving-gears and located outside the bed-pieces and slidably mounted thereon, jaw-actuating rams, and spoke-heading tools in operative connection with said cross-heads, and a wheel-member support.

8. In a machine of the class described, in combination, a base, driving-gears journaled on one end thereof, two pairs of spoke-gripping jaws mounted on said base, a vertically-movable, longitudinally-yielding wheel-member support elastically held normally in a central position by opposing springs, single reciprocating means actuated by said driving-gears for controlling the movement of the spoke-gripping jaws and the said wheel-member support, and opposing heading-tools in operative connection with said reciprocating means.

9. In a machine of the class described, in combination, mechanism for actuating the spoke-gripping jaws and heading-tools, spoke-gripping jaws, spoke-heading tools in operative connection with said mechanism, and a wheel-member support arranged to yield longitudinally independently of said spoke-gripping jaws and heading-tools, said wheel-member support being actuated in its longitudinal movement by the upsetting of the spoke.

10. In a machine of the class described, in combination, mechanism for actuating the spoke-gripping jaws and heading-tools, fixed spoke-gripping jaws, spoke-heading tools in operative connection with said mechanism movable with each other and coöperating with said jaws, and a vertically-movable, longitudinally-yielding platen for supporting the wheel members, said platen being actuated in its longitudinal movement by the upsetting of the spoke.

11. In a machine of the class described, in combination, spoke-fastening devices, means for actuating same a vertically-movable, longitudinally-yielding wheel-member support, and a yielding presser-head mounted on said wheel-member support and adapted to bear against the inside of the wheel-rim.

12. In a machine of the class described, in combination, a hub-end and rim-end spoke-fastening mechanism, each comprising a pair of fixed spoke-gripping jaws and a longitudinally-movable heading device, a wheel-member support, a yielding, inside presser-head mounted on said support, means for forcing said presser-head against the inside of the rim and an outside presser-head arranged to be actuated by the rim-end heading device.

13. In a machine of the class described, in combination, a hub-end and a rim-end spoke-fastening mechanism, each comprising a pair of fixed spoke-gripping jaws and a longitudinally-movable heading device, a wheel-member support, a yielding, inside presser-head mounted on said support, means for forcing said presser-head against the inside of the rim, and an outside presser-head operatively connected to said heading device and arranged to be actuated only during the initial forward movement thereof.

14. In a machine of the class described, in combination with a vertically-movable, longitudinally-yielding wheel-member support, a yielding presser-head mounted on said support and arranged to bear against and spring a segment of the rim outwardly, means for forcing said presser-head against the inside of the rim, hub and rim end spoke-fastening devices, each comprising fixed jaws and a heading-tool, an outside presser-head adapted to bear against and move the wheel-member support inward-

ly and bring the rim to position at a predetermined distance from the fixed jaws of the rim-end spoke-fastening device, and means for actuating the outside presser-head.

15. In a machine of the class described, in combination with a vertically-movable, longitudinally-yielding wheel-member support, a presser-head mounted on said support and arranged to bear against and spring a segment of the rim outwardly, hub and rim end spoke-fastening devices, each comprising fixed jaws and a heading-tool, means for actuating said spoke-fastening devices, an outside presser-head adapted to bear against and move the wheel-member support inwardly and bring the rim to position at a predetermined distance from the fixed jaws of the rim-end spoke-fastening device, and positive means for returning the said outside presser-head.

16. In a machine of the class described, in combination, a machine-frame, spoke-fastening devices mounted thereon, a vertically-movable, wheel-member support, and counterbalancing-springs interposed between said wheel-member support and the machine-frame.

17. In a machine of the class described, in combination, a machine-frame, spoke-fastening devices, a vertically-movable wheel-member support, an adjustable stop secured to the machine-frame for controlling the lower position of said support, and counterbalancing-springs interposed between the wheel-member support and the said machine-frame.

18. In a machine of the class described, in combination, a hub and a rim end spoke-fastening device, a hub and rim support arranged to yield longitudinally as the hub end of the spoke is being secured, an inside presser-head mounted on said support and constructed to bear against and spring a segment of the rim outwardly and yield inwardly as the rim-end spoke-fastening device secures the rim end of the spoke in place, and an outside presser-head actuated by the rim-end spoke-fastening device and operating to move the hub and rim support to a gage position with respect to the rim-end jaws.

19. In a machine of the class described, in combination with the heading-tool and spoke-gripping jaws, a longitudinally-yielding hub and rim support, means for forcing said support against the rim, an inside presser-head mounted on said support, an outside presser-head comprising a sliding plunger arranged to press against the hub and rim support, a lever pivotally mounted on the machine-frame, a link connecting said plunger and lever, and a spring operating to hold the plunger in its rearward position, and means in connection with said heading-tool for engaging the lever 4 actuating the said outside presser-head.

20. In a machine of the class described, in combination, a reciprocating cross-head, a jaw-actuating ram and a heading-tool fixed to said cross-head, spoke-gripping jaws, a cam-block mounted on said ram, a longitudinally-yielding hub and rim support, an inside presser-head mounted on said support, means for forcing said support against the rim, an outside presser-head comprising a sliding plunger arranged to press against the hub and rim-support, a lever pivotally mounted on the machine-frame, a link pivotally connecting said plunger and lever, a roller journaled at the pivotal connection thereof and adapted to be engaged by the cam on said ram, thereby positively moving said presser-head forwardly, and a spring operating normally to hold the plunger in its rearward position, and means for positively returning said presser-head, consisting of a downwardly-projecting arm, or hook, integral with the said lever of the presser-head, and a stop on said ram adjacent to the cam-block, the said stop lying in the path of said arm, or hook, when the said presser-head occupies its forward position.

21. In a machine of the class described, in combination with the spoke-fastening devices a vertically-movable, longitudinally-yielding wheel-member support comprising a circular rim-holding platen having longitudinally-extending guideways on its under side and a large central opening, a bridge secured to said platen and extending across said opening, a hub-mandrel mounted on said bridge, vertically-extending guides secured to the machine-frame, slides provided with transversely-extending guides at their upper ends which engage the longitudinally-extending ways on the under side of said platen, horizontally-arranged springs for holding the platen yieldingly in a central position, a vertically-adjustable block placed at the lower end of said vertically-extending guides for limiting the drop of said platen, springs for counterbalancing the weight of said platen, and means in connection with said spoke-fastening device for positively raising the platen.

22. In a machine of the class described, in combination with the reciprocating cross-heads and the side bars for connecting same, a platen provided with suitable guides for permitting both a horizontal and a vertical movement, springs acting to hold said platen in its central position horizontally, cam-blocks fixed to said side bars, and depending arms movable in one direction pivotally secured to said platen and arranged to engage said cam-blocks and lift the platen as the bars are reciprocated.

23. In a machine of the class described, in combination, a vertically-movable, longitudinally-yielding wheel-member support and an inside presser-head mounted thereon, said presser-head comprising a frame, a plunger longitudinally movable therein, a cylinder and piston pivotally mounted at the lower end of the frame, a vertically-arranged lever pivoted on the frame and connecting above with said plunger and below with said piston, and means for controlling the admission and release of air to said cylinder.

24. In a machine of the class described, in combination, a vertically-movable, longitudinally-yielding wheel-member support and an inside presser-head mounted thereon, said presser-head comprising a frame, a plunger longitudinally movable therein, a cylinder and piston pivotally mounted at the lower end of the frame, a vertically-arranged lever pivoted on the frame and connecting above with said plunger and below with said piston, a manually-operated valve for controlling the admission of air to said cylinder, and automatically-actuated mechanism for releasing the air-pressure at a predetermined time.

847,608. TAKE-UP MECHANISM FOR LOOMS. CHARLES F. ROPER, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Jan. 17, 1906. Serial No. 296,456.

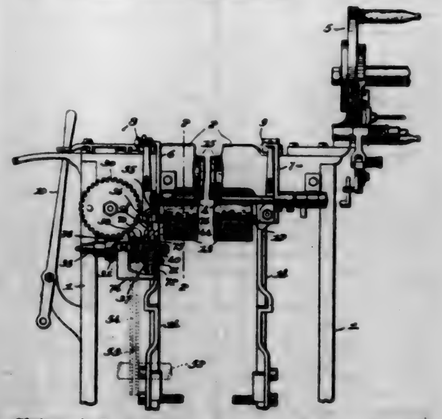

Claim.—1. In a loom, a take-up roll, driving means therefor, including a continuously-rotating driving member, and means to automatically reverse the rotation of said roll by or through said driving means when take-up is arrested, to effect positive let-back of the cloth.

2. In a loom, a take-up roll, means to positively rotate the same, including a continuously-rotating driving member, and means to automatically reverse the normal direction of rotation of the said roll when take-up is arrested to effect positive let-back of the cloth.

3. In a loom, a take-up roll, means to positively rotate the same, and controlling mechanism intermediate said roll and the means for rotating it, to reverse automatically the direction of rotation of said roll when take-up is arrested, to thereby cause positive let-back.

4. In a loom, take-up mechanism, including a take-up roll, a continuously-rotating driving member, and transmitting connections between it and the roll to normally effect rotation thereof in one direction and cause take-up of the cloth, said connections including an automatic controlling device to arrest take-up and reverse the direction of rotation of said roll, whereby positive let-back is effected.

5. In a loom, a filling-detector, take-up mechanism, including a take-up roll, a continuously-rotating driving member, a roll-reversing device actuated thereby, a clutch operatively connected with said take-up roll, and means operative by or through detection of filling failure by the detector to shift the clutch from coöperation with the driving member into coöperation with the reversing device, to reverse the rotation of the take-up roll and cause positive let-back.

6. In take-up mechanism for looms, a take-up roll, a rotatable shaft, positive transmitting connections between it and the said roll, a reversing member in continuous engagement with and oppositely rotated by the driving member, and a clutch to connect either the driving member or the reversing member and the shaft, to effect positive take-up or positive let-back of said roll.

7. In take-up mechanism for looms, a take-up roll, a rotatable shaft positively connected with and to rotate the roll, two continuously and oppositely rotating members, and means to connect either member with said shaft to thereby rotate the take-up roll, one of said members effecting positive take-up and the other positive let-back of the roll.

8. In take-up mechanism for looms, a take-up roll, a rotatable shaft, positive transmitting connections between it and the said roll, a continuously-rotating driving member loose on the shaft, and having an attached gear, a reversing-gear in mesh at one side of its center with said attached gear, and continuously driven thereby, and a clutch connected with the shaft and having a gear adapted to at times mesh with the reversing-gear at the opposite side of its center, movement of the clutch into coöperation with the driving member disengaging the clutch-gear and the reversing-gear, and vice versa, to effect take-up or let-back rotation, respectively, of the take-up roll.

9. In a loom provided with automatic filling-replenishing mechanism, and a filling-fork to effect the operation thereof upon filling failure, in combination, take-up mechanism, including a take-up roll, a continuously-rotating driving member, a reversing device, and means operative upon detection of filling failure to arrest take-up and bring into operation the reversing device to positively turn back the take-up roll while filling is being replenished.

10. In a loom, two filling-forks to detect on alternate picks, a take-up roll, a positively and continuously moving actuating device therefor, a clutch intermediate said device and roll, a reversing device for the latter, and means to render the clutch inoperative to effect take-up and to render operative the reversing device to cause positive let-back upon detection of absence of filling by either fork.

11. In a loom, two filling-forks to detect on alternate picks, take-up mechanism, including a take-up roll, a continuously-rotated driving member, an oppositely-rotated reversing member actuated thereby, transmitting-gearing connected with said roll, and means operative upon detection of absence of filling by either fork to disconnect the driving member and said transmitting-gearing arresting take-up, and connect said gearing and the reversing member, to effect positive let-back.

12. In take-up mechanism for looms, a take-up roll, a rotatable shaft, speed-reducing gearing operatively connecting it and said roll, a continuously-rotating driving member loose on the shaft, a reversing-gear continuously rotated by said member, a clutch to normally connect the shaft and said driving member, said clutch having a connected gear, and yieldingly-acting means to release the driving member and clutch and bring the connected gear of the latter into mesh with the reversing-gear, the latter remaining in mesh with the driving member to reverse the take-up roll and effect let-back.

13. In a loom, take-up mechanism, including a take-up roll, a continuously-rotating driving member, having a notch and an attached gear, a shaft on which said member is loosely mounted and operatively connected with the take-up roll, a reversing-gear in mesh with said connected gear, a clutch device rotatable with the shaft and having a lug to enter the notch of and connect the driving member and the shaft, to effect take-up, a gear on the clutch device movable into and out of mesh with the reversing-gear, and means operative automatically upon a predetermined change in the operation of the loom to withdraw the lug from the notch, releasing the shaft, and thereafter bringing into mesh the clutch and reversing gears, to reverse rotation of the take-up roll until the driving member has made one revolution.

14. In a loom, take-up mechanism, including a take-up roll, a continuously-rotating driving member, making one revolution for each pick, a reversing device actuated by said driving member, transmitting-gearing connected with the take-up roll, and means operative automatically upon a predetermined change in the operation of the loom to disconnect the driving member and said transmitting-gearing and operatively connect the latter and the reversing device, to arrest take-up and effect positive let-back during one revolution of the driving member.

847,609. RAZOR. GEORGE L. ROUX, Fernandina, Fla. Filed Sept. 10, 1906. Serial No. 334,033.

Claim.—1. A razor comprising a casing and a cutting-blade rotatably mounted with and bearing upon the inner surface of the casing, said blade having a spiral edge, said casing being provided with a plurality of parallel slots extending in the direction of movement of the blade.

2. A razor comprising a casing having openings therein, and a spring-blade rotatably mounted within and bearing upon the inner face of the casing, said blade having spiral cutting edges.

3. A razor comprising a casing having openings therein, a spring-blade detachably mounted and rotatable within the casing, the edges of said blade being spiral and bearing upon the inner face of the casing.

4. A razor comprising a casing having openings therein, a slotted shaft rotatably mounted within the casing, and a spring-blade detachably mounted within the slot and rotatable with the shaft, said blade bearing upon the inner face of the casing.

5. In a razor the combination with a casing having openings therein; of a handle detachably connected to and adapted to close one end of the casing, a shaft rotatably mounted within the handle and casing, said shaft having a longitudinal slot therein, and a transversely-curved spring-blade detachably mounted within the slot and exerting a constant pressure upon the inner surface of the casing.

6. In a razor the combination with a casing having openings therein; of a handle detachably connected to and adapted to close one end of the casing, a shaft rotatably mounted within the handle and casing, said shaft having a longitudinal slot therein, and a transversely-curved spring-blade detachably mounted within the slot and exerting a constant pressure upon the inner surface of the casing, the cutting edges of said blade being spiral.

847,610. MARKING APPARATUS. EDWIN M. SCHANTS, Zimmerman, Ohio. Filed Mar. 10, 1906. Serial No. 305,223.

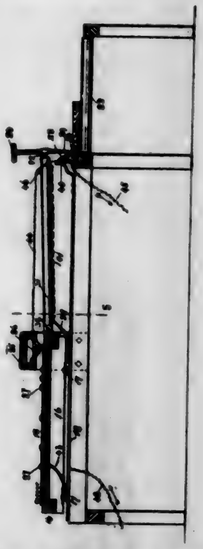

Claim.—1. In an apparatus for marking subdivided spaces on lumber, the combination of a member provided with plugs which may be arranged as to size of these spaces, a member by which one dimension of such a space is determined upon the lumber and whereby the position of the member first mentioned is adjusted with reference to such dimension, signals showing to the operator what sizes are wanted and intermediate means operated by the adjusted member for the purpose of actuating the signals.

2. In an apparatus for marking subdivided spaces on lumber, the combination of a carrier provided with plugs which may be arranged as to sizes of these spaces, a member whereby this carrier is adjusted with reference to one of the dimensions of such a space and as such dimension is determined by this member upon the lumber, signals showing by their position the other dimension of the particular space and intermediate means operating these signals due to the adjustment of the carrier.

3. In an apparatus for marking subdivided spaces on lumber, the combination of a carrier provided with plugs which may be arranged as to sizes of these spaces, an arm extending from this carrier whereby the same is adjusted with reference to one of the dimensions of such a space and to the extent as such dimension is controlled by the available width of the lumber, signals showing by their position the other dimension of this particular space and intermediate means operating these signals due to the adjustment of the carrier by the arm.

4. In an apparatus for marking subdivided spaces on lumber, the combination of a carrier provided with plugs which may be arranged as to sizes of these spaces, an arm jointed to this carrier and whereby the same is adjusted signals indicating sizes and means operated by the carrier to actuate the signals.

5. In an apparatus for marking subdivided spaces on lumber, the combination of a carrier provided with plugs which may be arranged as to sizes of these spaces, an arm connected to this carrier having a handle to be used for adjusting the position of the carrier, said handle being arranged to be independently adjustable with reference to the carrier signals indicating size and means operated by the carrier to actuate them.

6. In an apparatus for marking subdivided spaces on lumber, the combination of a support for this latter, an adjustably-supported carrier provided with plugs which may be arranged as to sizes of these spaces, a stationary scale having graduations which show length, a signal for each graduation, means whereby adjustment of the carrier causes operation of these signals and an arm for manipulating this carrier.

7. In an apparatus for marking subdivided spaces on lumber, the combination of a support for this latter, an adjustably-supported carrier provided with plugs which may be arranged as to sizes of these spaces, a scale having graduations which show length, a signal for each of these graduations, a stationary scale showing extent of adjustment of the carrier, means whereby such adjustment of this latter actuates the signals mentioned and an arm for manipulating the carrier.

8. In an apparatus for marking subdivided spaces on lumber, the combination of a support for this latter, two members with supplementary contact-pieces, which latter in one of these members are arranged to be interchangeable and removable, a general frame upon which these members are supported in a manner that one is adjustable with reference to the other, electric signals operated by the action of the contact-pieces due to the adjustment of one of the members and an arm to manipulate the adjustable member.

9. In an apparatus for marking subdivided spaces on lumber, the combination of a support for this latter, a scale which governs the placing of the lumber, electric lamps defining the graduations on this scale, two members with supplementary contact-pieces which in one of them are arranged to be interchangeable and removable, a general frame upon which these members are supported in a manner that one is adjustable with reference to the other, an electric circuit of which the contact-pieces and lamps mentioned form a part and an arm to manipulate the adjustable member.

10. In an apparatus for marking subdivided spaces on lumber, the combination of a support for this latter, a scale which governs the placing of the lumber, electric lamps defining the graduations on this scale, supplementary sets of contact-pieces, an electric circuit which includes them together with the lamps mentioned and an operatively-connected device to determine the width of the lumber and to simultaneously act upon one set of the contact-pieces.

11. In an apparatus for marking subdivided spaces on lumber, the combination of a support for this latter, a bridge with permanently-located contact-pieces an adjustably-supported carrier provided with plug-sockets, plugs detachably fitted to these sockets, electric lamps, one for each of the contact-pieces on the bridge mentioned, an electric circuit of which both form a part and a handle to operate the plug-carrier for the purpose specified.

12. In an apparatus for marking subdivided spaces on lumber, the combination of an adjustably-supported carrier provided with plugs which may be arranged as to size of these spaces, a handle for manipulating the carrier for the purpose of adjusting the same with reference to one of the dimensions of such a space, a pointer for determining this dimension, signals showing by their position the other dimension of this particular space and intermediate means operated by the adjustable carrier to actuate the signals.

13. In an apparatus for marking subdivided spaces on lumber, the combination of two members one of which is provided with plugs which may be arranged as to sizes of these spaces, a frame upon which both are supported in a manner that one is adjustable with reference to the other, a handle for manipulating the adjustable member, signals operated by the movement of the adjustable member and means operated by the adjustable member to actuate said signals.

14. In an apparatus for marking subdivided spaces on lumber, the combination of sets of members arranged in multiple, one set being adapted to receive prearranged orders, a frame upon which these sets are supported in a manner that one set is adjustable with reference to the other set, means for manipulating the adjustable set, signals operated by the movement of the adjustable set of members and means actuated by this set to so operate the signals.

15. In an apparatus for marking subdivided spaces on lumber, the combination of two members one of which is provided with plugs which may be arranged as to sizes of these spaces, a frame upon which both are supported in a manner that one is adjustable with reference to the other a set of electrical contact-pieces on one of these members, complementary sets of contact-pieces arranged in multiple on the other member, a handle for manipulating the adjustable member, a complementary set of signals operating due to this manipulation and when the set of contact-pieces of the one member come in contact with one of the sets of the other member, an electric circuit for each contacting set of contact-pieces and means controlling a circuit in a manner to change the action of the signals in such circuit to distinguish them from those of the other circuits.

16. In an apparatus for indicating orders on hand, the combination of a device provided with plugs which may be arranged corresponding to spaces to be found on the material to be subdivided, a member adjustable with reference to one dimension of such a space and whereby the device first mentioned is simultaneously adjusted, signals showing to the operator orders on hand corresponding to such a dimension and the actuation of which signals is caused by the adjustment of the device first mentioned and means operating due to such adjustment for actuating the signals.

847,611. MACHINE FOR TREATING FLAX. ROBERT SCHOFIELD, New Bedford, Mass., assignor to American Linen Company, New Haven, Conn., a Corporation of Maine. Filed Feb. 29, 1904. Serial No. 195,716.

Claim.—1. In a fiber-treating machine the combination with a pair of coacting belts, of rolls for successively bending said belts in opposite directions in their zone of coaction and tension devices for closing the coacting belts alternately about alternate rolls onto the fiber during the successive bendings of said belts and the fiber between them in alternate directions, and means for actuating the rolls at successively-increasing surface speeds respectively.

2. In a fiber-treating machine the combination with coacting running members, of means for successively bending said running members in opposite directions and in increasing sharpness of bends, and for closing the running members alternately about the bending means onto the fiber during the successive bendings of the running members and fiber between them in alternate directions.

3. In a fiber-treating machine a combined conveyer and disintegrator comprising a plurality of running members in combination with means for actuating and controlling said members for bending the fiber in alternate directions and in increasing sharpness of bends and subjecting the same to disintegration, substantially as described.

4. In a fiber-treating machine the combination with a pair of coacting endless belts, of means comprising successive rolls of successively-decreasing diameter for alternately supporting at successive points each of said coacting endless belts respectively, each of said belts being supported at intervening points by its coacting belt, and means to actuate the rolls.

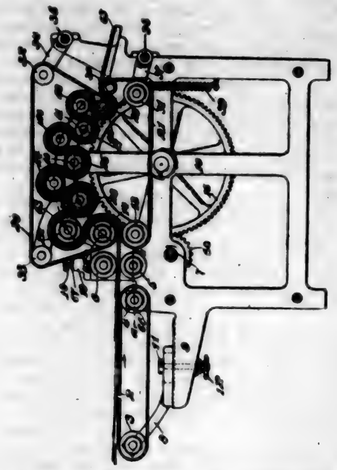

5. In a fiber-treating machine the combination with a pair of coacting running members, of means comprising successive rolls of successively-decreasing diameter for alternately supporting at successive points each of said coacting running members respectively, each of said running members being supported at intervening points by its coacting running member, and means for actuating the successive rolls at successively-increasing surface speeds respectively.

6. In a fiber-treating machine the combination with two coacting endless belts, of means for guiding and driving said belts in successive oppositely-disposed bends of successively-increasing sharpness, in their zone of coaction.

7. In a fiber-treating machine the combination with two coacting endless belts, of means comprising a series of rolls, said rolls being of successively-decreasing diameter respectively, for guiding and driving said belts in successive oppositely-disposed bends in their zone of coaction, and means for actuating the rolls.

8. In a fiber-treating machine the combination with two coacting endless belts, of means comprising a series of rolls, said rolls being of successively-decreasing diameter respectively for guiding and driving said belts in successive oppositely-disposed bends in their zone of coaction, and means for actuating each of the series of rolls at successively-increasing surface speeds respectively.

9. In a fiber-treating machine the combination of a plurality of coacting crushing-rolls, with oppositely-disposed conveying-belts mounted and adapted for bending and abrading in successively-increasing intensity fiber supplied therto, and means for actuating the rolls and the belts.

10. In a fiber-treating-machine the combination of a plurality of coacting crushing-rolls, with oppositely-disposed combined conveying bending and abrading continuous belts, mounted and adapted for treating fiber in successively-increasing intensity and means for directing said belts in successive oppositely-disposed bends, and means for actuating the rolls and the belts.

11. A machine for treating fibrous material embodying belts for carrying between them the material under treatment, and a series of rolls disposed alternately upon opposite sides of an arc of a circle in staggered arrangement and about which rolls the belts pass, making a turn of more than a half-circle about each roll.

12. In a fiber-treating machine the combination with an outer series of rolls arranged with the innermost points of their perimeters in an arc of a circle, of an inner series of rolls arranged with the outermost points of their

perimeters in the same arc, the rolls of the respective series being in relatively staggered positions, and a pair of belts passing alternately about the rolls of the respective series.

13. In a fiber-treating machine the combination with an outer series of rolls arranged with the innermost points of their perimeters in an arc of a circle, of an inner series of rolls arranged with the outermost points of their perimeters in the same arc, the rolls of the respective series being respectively staggered, and a pair of belts passing alternately about the rolls of the respective series, the belts and material carried between them in passing about the said inner rolls describing about two-thirds of a circle, and when passing about the outer rolls about three-fourths of a circle.

14. In a fiber-treating machine the combination with an outer series of rolls arranged with the innermost points of their perimeters in an arc of a circle, of an inner series of rolls arranged with the outermost points of their perimeters in the same arc, the rolls of the respective series being relatively staggered, and a pair of belts passing alternately about the rolls of the respective series, one belt contacting with the rolls of one series and the other belt with the rolls of the other series, the distance between the inner rolls being sufficient for permitting the passing of the plies of the belts while carrying material under treatment between them, the belts and material carried between them in passing about the said inner rolls describing about two-thirds of a circle, and when passing about the outer rolls about three-fourths of a circle.

15. In a fiber-treating apparatus, the combination with two series of rolls arranged in staggered relation, and a pair of belts passing alternately about the rolls of the respective series, the belts and the material carried between these in passing about the said rolls describing more than a half-circle, and the belts having a local relative movement.

847,612. COMBINATION CEMENT AND METAL FENCE-POST. GEORGE G. SCHROEDER, Washington, D. C. Filed Feb. 28, 1906. Serial No. 303,377.

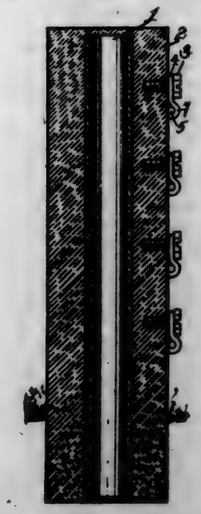

Claim.—A post of the character as described consisting of a metallic core and a coating of plastic material completely enveloping the same, a wire-securing screw adapted to enter the said plastic material, and a clip having an eye through which said screw passes, and a tang adapted to receive and bind the wire against the post.

847,613. CARRIAGE-CONTROLLING MECHANISM FOR TYPE-WRITING MACHINES. JEROME B. SECOR, Derby, Conn. Filed Mar. 2, 1904. Serial No. 196,172.

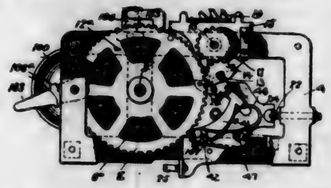

Claim.—1. In a type-writing machine, the combination with the machine-frame, a detachable frame, and carriage-controlling mechanism carried thereby, of guide pins or projections mounted on said main frame, bolsters for elevating said detachable frame to its operative position, and clamps for clamping said detachable frame in such position.

2. In a type-writing machine, the combination with the machine-frame, a detachable frame and carriage controlling mechanism mounted thereon, of projections on the machine-frame forming pockets to receive the corners of said detachable frame, of bolsters for elevating said detachable frame into its operative position, and suitable clamps for clamping the said frame in its operative position.

3. In a type-writing machine, the combination with the machine-frame, a detachable frame and carriage-controlling mechanism mounted thereon, of stop pins or projections on said machine-frame in position to abut said detachable frame and prevent rearward movement of the same, posts or projections on said machine-frame in position to abut and prevent sidewise movement of said detachable frame, means for elevating said detachable frame into its operative position, and means for clamping said detachable frame in such position.

4. In a type-writing machine, the combination with the escapement-wheel and a feed rock-arm mounted in juxtaposition thereto, of a space-dog rigidly mounted on said rock-arm, a trip-dog movably mounted on said rock-arm, spring means connected to and holding said trip-dog normally in a forward position and toward the teeth of the escapement-wheel, and an adjustable spring-resisted buffer-arm in position to engage and oppose the rearward movement of said trip-dog when carried back by engagement with the teeth of the escapement-wheel.

5. In a writing-machine, the combination with the machine-frame, of the detachable frame mounted therein, and means mounted on the machine-frame for elevating and clamping said detachable frame into its adjusted position.

6. In a type-writing machine, the combination with a toothed escapement device geared to the carriage, of a feed rock-arm mounted in juxtaposition thereto, of a space-dog rigidly mounted on said rock-arm, a trip-dog movably mounted on said rock-arm, spring means connected to and holding said trip-dog normally in a forward position and toward the teeth of the escapement-wheel, an adjustable buffer-arm in position to oppose the rearward movement of said trip-dog when carried back by engagement with the teeth of the escapement-wheel, and an adjustable spring resistance opposing said buffer-arm.

7. In a writing-machine, the combination with the machine-frame and the carriage mounted to travel thereon, of the detachable frame, the carriage-feed mechanism mounted thereon, and the means for elevating and clamping said detachable frame into adjusted position.

8. In a writing-machine, the combination with the detachable frame and the carriage-feed mechanism carried thereby, of a pin or projection carried by said mechanism to travel therewith, and a pivoted stop mounted on said frame adapted to be thrown into the path of said pin or projection to stop said mechanism.

9. In a writing-machine, the combination with the machine-frame, of the detachable frame, of the pivotally-mounted clamps in clamping engagement with said detachable frame, and the wedge-faced bolsters in engagement with the under side of said detachable frame, said clamps and bolsters coöperating to prevent vertical and endwise displacement of the detachable frame.

10. In a type-writing machine, the combination with the machine-frame, the carriage mounted to travel thereon, of a gear-wheel geared to said carriage, a feed-spring mounted to rotate said gear-wheel, an escapement-wheel, a pinion mounted to rotate said escapement-wheel and geared to the carriage, and a pinion engaging said gear-wheel and said escapement-wheel pinion.

11. In a type-writing machine, the combination with the machine-frame and the carriage mounted to travel thereon, having a feed rack-bar, of a gear-wheel meshing with said rack-bar, an escapement mechanism, a pinion mounted to rotate with the escapement-wheel and in mesh with said rack-bar, and a pinion meshing with the gear-wheel and with the pinion mounted to move with the escapement-wheel.

12. In a writing-machine, the combination with the machine-frame and a carriage mounted to travel upon said frame, an escapement device controlling the movement of said carriage, a feed rock-arm mounted upon said escapement device, a rigid dog on said arm, a spring-pressed independently-movable dog mounted on said arm, a depressible frame in engagement with said independently-movable dog, means for rocking said arm to throw said dogs alternately into and out of engagement with said escapement device and means carried by the carriage in slidable engagement with said depressible frame to depress said depressible frame and throw said independently-movable dog out of engagement with the escapement device independently of said rock-arm.

13. In a writing-machine, the combination with a detachable frame and the carriage-feed mechanism carried thereby, of a rigid stop device and a movable stop device, one of said devices being carried by said feed mechanism to travel therewith and the other of said stop devices being mounted on said frame, said movable device adapted to be thrown into engagement with the rigid stop device to stop said mechanism.

14. In a type-writing machine, the combination of a housing removable from the machine-frame, a feed spring-barrel mounted in said housing and means for locking said spring-barrel against rotation while out of the machine-frame.

15. In a type-writing machine, the combination of a removable housing carrying feed and escapement mechanism, means for securing said housing in the machine-frame or releasing it therefrom and a lifting device for said housing serving to advance the gearing carried thereby into mesh with the carriage-feed rack when the housing is restored to normal position.

16. In an escapement for type-writing machines, the combination with a member having teeth with beveled rear faces, of a pair of dogs controlling the movement of the toothed member, one of said dogs being provided with a beveled face; means providing both of said dogs with a simultaneous movement transverse to the plane of the said toothed member, and means providing said beveled dog with a movement in the plane of the toothed member and an independent movement transverse to said plane, said independent transverse movement being caused by the engagement of a beveled face on the toothed member with the beveled face on the dog.

17. In an escapement for type-writing machines, the combination with the carriage-spring, of the toothed member moved by the carriage-spring, a pair of dogs controlling the toothed member, means providing both of said dogs with a simultaneous movement transverse to the plane of said member, means providing one of said dogs with movement in the plane of the toothed member and an independent movement transverse to said plane, a spring causing a movement of the latter dog in one direction in the plane of the toothed member, and a separate spring causing the independent movement of the latter dog in one direction transverse of the plane of the toothed member.

18. In an escapement mechanism for type-writing machines, the combination with the escapement-wheel having the rear faces of the teeth beveled, of an arm rocking about an axis transverse of the axis of the escapement-wheel, a pair of dogs carried by said arm, one of said dogs having a beveled rear face, and means permitting said beveled dog to move relatively to the other in the plane of the escapement-wheel to produce the spacing and transversely of said plane when the beveled face on the dog is engaged by the beveled face of the wheel to permit said wheel to rotate in a reverse direction.

19. In an escapement mechanism for type-writing machines, the combination with the escapement member having teeth with beveled rear faces, of an arm rocking about an axis parallel to the direction of movement of the toothed member, a pair of dogs carried by said rocking arm, one of said dogs having a beveled rear face, and means permitting said beveled dog to move relatively to the other in the direction of movement of said toothed member to produce the spacing and in a direction transverse to said toothed member when the beveled face on the dog is engaged by the beveled teeth of the escapement member to permit said member to move in the direction opposed to the spacing movement.

20. In an escapement mechanism, the combination with a carriage-rack and a carriage-return spring, of a gear-wheel mounted on the spring-shaft, turned by the spring and meshing with the rack, a pinion geared to the gear-wheel and meshing with the rack, an escapement-wheel turned by the pinion and means for controlling the escapement-wheel.

21. In an escapement mechanism, a carriage-rack, a spring, a gear connecting the rack and the spring, and an escapement-wheel geared to the rack and to the gear connecting the rack and the spring.

22. In an escapement mechanism, a carriage-rack, a spring, a gear-wheel connecting the rack and the spring-shaft to transmit motion from the spring to the rack, an escapement-wheel, a pinion on the shaft of the escapement-wheel meshing with the rack, and a pinion meshing with the gear-wheel and the other pinion.

23. In a writing-machine, the combination with a machine-frame, and a carriage mounted to travel thereon and a rack mounted on the carriage, of a detachable frame, a feed-spring on said detachable frame, a gear-wheel mounted on the feed-spring meshing with said rack, a device for controlling the movement of said rack, a gear-wheel carried by said controlling device meshing with said rack, and means for maintaining the proper relative positions between the two gear-wheels.

24. The combination with the main frame, of a detachable frame carrying a carriage-return spring, the escapement-dogs and the escapement-wheel; and key-levers on the main frame having loose connection with the escapement-dogs through which the dogs are controlled.

25. In a type-writing machine, the combination of a detachable frame carrying the escapement-dogs, and the escapement-wheel; and a release-key mounted independently of the detachable frame and having a loose connection with the dogs to throw them out of engagement with the escapement-wheel.

26. In a type-writing machine, the combination with a detachable frame carrying the return-spring, the escapement-wheel and the dogs controlling the escapement-wheel; of key-levers mounted independently of the frame, and having a loose connection with the dogs to control them.

27. In a type-writing machine, the combination with a detachable frame carrying the return-spring, the escapement-wheel and the dogs controlling the escapement-wheel; of key-levers mounted independently of the frame and having a loose connection with the dogs to control them, and a release-key having a loose connection with the dogs to release the escapement-wheel.

28. In a type-writing machine, the combination with the carriage and the key-levers, of a detachable frame carrying a return-spring having a loose connection with the carriage, and an escapement mechanism having a loose connection with the carriage and the key-levers.

29. In a type-writing machine, a detachable frame carrying the return-spring, the escapement mechanism and the

signaling mechanism, all of said mechanisms having loose connection with the parts which they operate or by which they are operated.

30. In a type-writing machine, the combination with the machine-frame, a carriage mounted to travel thereon, a detachable frame, a carriage-controlling mechanism mounted on said detachable frame and movable plates provided with thumb-pieces mounted on one of said frames and movable into engagement with the other of said frames to hold said detachable frame in adjusted position.

31. In a type-writing machine, the combination with the machine-frame, and a carriage mounted to travel thereon, of a detachable frame, a carriage-controlling mechanism mounted on said detachable frame and with hand-operated movable plates mounted on one of said frames and movable into engagement with the other of said frames to hold said detachable frame in adjusted position.

847,614. COKE-FURNACE. SAMUEL B. SHELDON, Buffalo, N. Y. Filed Apr. 21, 1906. Serial No. 313,072.

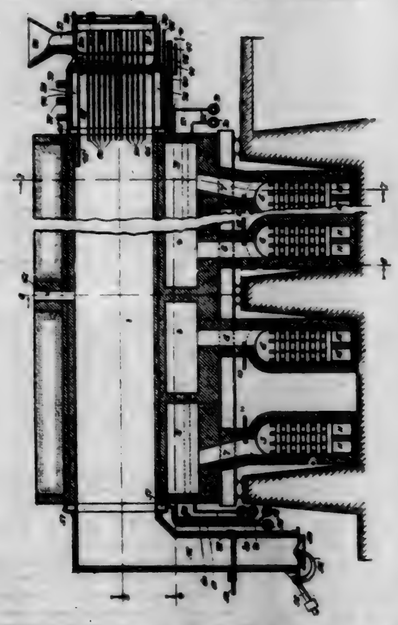

Claim.—1. The combination with a coking-chamber, of means for introducing coal into the coking-chamber in the form of a solid and continuous mass, embracing a passage having closed connection with the receiving end of said coking-chamber, means for applying pressure horizontally to the outer end of coal in said passage to compress the same into a compact mass and advance the mass from the passage into said coking-chamber and means for preheating the mass of coal while under compression and during its advance toward the coking-chamber to give solid and continuous character to the mass prior to its entrance into said coking-chamber.

2. The combination with a coking-chamber, of means for applying both endwise and lateral pressure to a mass of coal for the purpose of compressing the same and forcing it into said chamber, and means for preheating the mass during its movement toward said chamber.

3. The combination with a coking-chamber, of a preheating-chamber having closed connection with the receiving end of said coking-chamber, means for heating the walls of the preheating-chamber, and means for applying pressure horizontally to the outer end of a mass of coal to compress the same and force it into said preheating-chamber and from the same into the coking-chamber.

4. The combination with a coking-chamber, of a preheating-chamber, a receiving-chamber, and means for applying endwise pressure to the outer end of a mass of coal in said receiving-chamber to compress the same and force it from the receiving-chamber through the preheating-chamber into the coking-chamber.

5. The combination with a coking-chamber, of a preheating-chamber, a receiving-chamber, means for applying endwise pressure horizontally to the outer end of a mass of coal in the receiving-chamber and preheating-chamber to compress the same and force it from the receiving-chamber through the preheating-chamber into the coking-chamber, embracing a reciprocating plunger sliding in the said receiving-chamber.

6. The combination with a coking-chamber, of a preheating-chamber, means for applying horizontal, endwise pressure to the outer end of a mass of coal within the preheating-chamber, for compressing said coal and forcing the same through the preheating-chamber into the coking-chamber, and an outlet-passage for the coke at the discharge end of the coking-chamber provided with means adapted for the discharge of the coke without the admission of air to the coking-chamber.

7. The combination with a horisontal coking-chamber, of a preheating-chamber, means for applying pressure horizontally to the outer end of a mass of coal in said preheating-chamber to compress the coal and force the same through the preheating-chamber into the coking-chamber, and an outlet-passage for coke at the discharge end of the coking-chamber provided with two separated valves.

8. The combination with a horisontal coking-chamber, of a preheating-chamber, a receiving-chamber, means for applying horisontal, endwise pressure to the outer end of a mass of coal held in the preheating-chamber and receiving-chamber for compressing coal and forcing it from said receiving-chamber to said preheating-chamber into the coking-chamber, and an outlet-passage at the discharge end of the coking-chamber provided with means adapted for the discharge of the coke without the admission of air to the coking-chamber.

9. The combination with a coking-chamber, of means for compressing coal and introducing it into said coking-chamber, embracing a tapered passage which is larger at its inlet than at its discharge end and the discharge end of which has closed connection with the coking-chamber, and means for applying endwise pressure to coal introduced into the outer end of said tapered passage acting to force the coal in a continuous mass through said tapered passage and from the same into the coking-chamber.

10. The combination with a coking-chamber, of means for applying lateral pressure to a mass of coal and introducing it into the coking-chamber, embracing a tapered passage which is larger at its inlet than at its discharge end, and the discharge end of which has closed connection with the coking-chamber, and a reciprocating plunger acting intermittingly on coal introduced into the inlet end of said passage and acting to force said coal in a continuous mass through said tapered passage and from said passage into the coking-chamber.

11. The combination with a coking-chamber, of a receiving-chamber, a tapered passage between the receiving-chamber and coking-chamber, having closed connection with the latter, said passage being larger at its inlet than at its discharge end, and means for applying intermittent, endwise pressure to coal introduced into said receiving-chamber, acting to force the coal in a continuous mass through said tapered passage and from the same into the said coking-chamber.

12. The combination with a coking-chamber, of a receiving-chamber, a tapered passage between said receiving-chamber and coking-chamber, having closed connection with the latter, said passage being larger at its inlet than at its discharge end, and a reciprocating plunger in the receiving-chamber acting upon coal introduced into said receiving-chamber to force the said coal in a continuous mass through said tapered passage and from the same into the coking-chamber.

13. The combination with a coking-chamber, of a receiving-chamber having an inlet for coal at its top, a tapered passage between the said receiving-chamber and the coking-chamber, having closed connection with the latter, said passage being smaller at its inlet than at its discharge end and a reciprocating plunger in the receiving-chamber acting on coal introduced into said receiving-chamber to force said coal in a continuous mass through said tapered passage and from the same into the coking-chamber.

14. The combination with a coking-chamber, of a preheating-chamber, and means for compressing and feeding coal to the preheating-chamber embracing a tapered passage smaller at its discharge than at its inlet end, and means for forcing the coal through said tapered passage into the preheating-chamber.

15. The combination with a coking-chamber, of a preheating-chamber, a receiving-chamber, a tapered passage between the receiving-chamber and the preheating-chamber, said passage being smaller at its outlet than at its inlet end, and means for forcing coal from the receiving-chamber through said tapered passage into the preheating-chamber.

16. The combination with a coking-chamber, of a preheating-chamber, a receiving-chamber, a tapered passage between the receiving-chamber and the preheating-chamber, said passage being smaller at its outlet than at its inlet end, and means for forcing coal from the receiving-chamber through said tapered passage into the preheating-chamber embracing a plunger in said receiving-chamber.

17. The combination with a coking-chamber, of a preheating-chamber, a receiving-chamber having an inlet for coal at its top, a tapered passage between the receiving-chamber and the preheating-chamber, said passage being smaller at its outlet than at its inlet end, and a reciprocating plunger in the receiving-chamber.

18. The combination with a coking-chamber, of a passage having closed connection with the receiving end of said coking-chamber, means for applying endwise pressure to the outer end of a mass of coal in said passage for the purpose of compressing the same and forcing it through said passage into said coking-chamber without admitting air to the latter, means for perforating the mass of coal during its movement through said passage toward said coking-chamber, and an outlet-passage for the coke at the discharge end of said coking-chamber provided with means adapted for effecting the discharge of the coke without admitting air to said coking-chamber.

19. The combination with a coking-chamber, of means for applying both endwise and lateral pressure to a mass of coal for the purpose of compressing the same and forcing it into said chamber, and means for forming perforatons in the compressed mass during its movement toward said chamber.

20. The combination with a coking-chamber, of a preheating-chamber having closed connection with the receiving end of said coking-chamber, means for compressing coal preparatory to its introduction into the preheating-chamber and for forcing the compressed coal through the preheating-chamber into the coking-chamber, and means for forming perforations in the compressed coal.

21. The combination with a coking-chamber, of a passage having closed connection with the receiving end of said coking-chamber and means for compressing, perforating and preheating coal and forcing it through said passage into the coking-chamber.

22. The combination with a coking-chamber, of means for compressing, preheating and perforating coal preparatory to its introduction into said coking-chamber, said means comprising a passage in which the coal is compressed, perforated and preheated and which is directly connected with the receiving end of the coking-chamber, and means for forcing the coal through said passage into the coking-chamber.

23. The combination with a coking-chamber, of means for laterally compressing and for preheating coal preparatory to its introduction into the coking-chamber comprising a continuous passage in which the coal is compressed and preheated, which passage is directly connected with the receiving end of the coking-chamber, means for applying pressure to the outer end of a mass of coal in said passage to force the coal through said passage into the chamber, means for heating the walls of said passage, and means at the outer end of the coking-chamber for discharging the coke therefrom, without admitting air to the chamber.

24. In combination with a coking-chamber, means for compressing, perforating, and preheating coal preparatory to its introduction into said coking-chamber, comprising a continuous passage in which the coal is compressed, perforated and preheated, which passage is directly connected with the receiving end of the coking-chamber, means for forcing the coal through said passage into the said coking-chamber, and means at the outlet end of the coking-chamber for discharging the coke therefrom without the admission of air to said coking-chamber.

25. The combination with a coking-chamber, of a preheating-chamber having closed connection with the receiving end of said coking-chamber, means for compressing coal preparatory to its introduction into the preheating-chamber, means for forming perforations in the compressed coal and means for forcing the compressed and perforated coal through the preheating-chamber into the coking-chamber.

26. The combination with a coking-chamber, of a preheating-chamber, a receiving-chamber, a passage between the receiving-chamber and the preheating-chamber smaller at its outlet than at its inlet end, means for forcing coal from the receiving-chamber through the preheating-chamber into the coking-chamber, and means for forming longitudinal perforations in the compressed coal preparatory to its entrance into the coking-chamber.

27. The combination with a coking-chamber, of means for applying endwise pressure to the outer end of a mass of coal to compress the same and force it into the coking-chamber, and means for forming perforations in the compressed mass embracing a plurality of rods located in the space in which the coal is compressed, parallel with the path of movement of the coal in its movement toward the coking-chamber.

28. The combination with a coking-chamber, of a preheating-chamber, means for compressing coal preparatory to its introduction into the preheating-chamber, means for forcing the compressed coal through the preheating-chamber into the coking-chamber, and means for forming perforations in the compressed coal embracing a plurality of rods located within the space in which the coal is compressed and within the preheating-chamber, said rods being arranged parallel with the direction of movement of the coal in its passage through the preheating-chamber into the coking-chamber.

29. The combination with a coking-chamber, of a receiving-chamber, a preheating-chamber, a tapered passage between the receiving-chamber and the preheating-chamber, said passage being smaller at its outlet than at its inlet end, means for forcing the coal from the receiving-chamber through said tapered passage into the preheating-chamber, and means for forming perforations in the compressed coal comprising a plurality of rods extending through said tapered passage and into the preheating-chamber, said rods being parallel with the path of the coal in its movement through said tapered passage and the preheating-chamber.

30. The combination with a coking-chamber, of a receiving-chamber, a preheating-chamber, a tapered passage between the receiving-chamber and the preheating-chamber, said passage being smaller at its outlet than at its inlet end, a reciprocating plunger in the receiving-chamber, and a plurality of rods extending from the inner face of said plunger through the receiving-chamber and said passage into the preheating-chamber.

31. The combination with a coking-chamber, of a receiving-chamber, a tapered passage between the receiving-chamber and the coking-chamber, a reciprocating plunger in said receiving-chamber, and a plurality of rods extending from the inner face of the plunger through said tapered passage.

32. Means for compressing coal into a compact mass and forming perforations in said mass preparatory to the coking of the coal comprising a receiving-chamber, a tapered passage leading therefrom smaller at its outlet than at its receiving end, a reciprocating plunger in said receiving-chamber, a plurality of rods located within the receiving-chamber and said tapered passage parallel with the direction of movement of the coal, said rods passing through the said plunger, and a reciprocating head outside of said plunger to which said rods are attached.

33. Means for compressing coal into a compact mass, for preheating said mass, and for forming perforations in said mass preparatory to the coking of the coal comprising a receiving-chamber, a preheating-chamber, a tapered passage connecting the receiving-chamber with the preheating-chamber, said passage being smaller at its outlet than at its receiving end, a reciprocating plunger in said receiving-chamber, a plurality of rods extending through said tapered passage, said rods being parallel with the direction of movement of the coal, a reciprocating plunger in said receiving-chamber provided with apertures through which said rods extend, and a reciprocating head outside of said plunger to which said rods are attached.

34. The combination with a coking-chamber, of a preheating-chamber located at the inlet end of the coking-chamber, means for applying endwise pressure to the outer end of a mass of coal within said preheating-chamber to compress the coal within said chamber and force it therefrom into the coking-chamber, said preheating-chamber consisting of a metal shell, and walls surrounding said metal shell of the preheating-chamber and forming a heating-chamber.

35. The combination with a coking-chamber, of a preheating-chamber located at the receiving end of the coking-chamber, means for forcing coal through said preheating-chamber into the coking-chamber, and a hollow metal apron located below the top wall of the coking-chamber adjacent to the end of the preheating-chamber, and means for supplying a cooling medium to said hollow apron.

36. The combination with a coking-chamber, of a preheating-chamber located at the receiving end of the coking-chamber, means for forcing coal through said preheating-chamber into the coking-chamber, and a hollow metal apron located below the top wall of the coking-chamber adjacent to the end of the preheating-chamber, a hollow metal ring interposed between the coking-chamber and the preheating-chamber, and means for supplying a cooling medium to said hollow apron and hollow metal ring.

37. The combination with a coking-chamber, of a preheating-chamber located at the inlet end of the coking-chamber, a receiving-chamber exterior to the preheating-chamber, a tapered passage larger at its inlet than at its discharge end between the receiving-chamber and the preheating-chamber; said receiving-chamber and tapered passage being formed by a metal shell, and walls surrounding said preheating-chamber, tapered passage and receiving-chamber and forming with the said metal shell a heating-chamber.

38. The combination with a coking-chamber, of a preheating-chamber, a receiving-chamber, a tapered passage larger at its receiving than at its discharge end, between said receiving and preheating chambers, said preheating-chamber, receiving-chamber and tapered passage being formed by a metal shell and constituting a continuous passage, and means for applying endwise pressure to the outer end of a mass of coal in said chambers and passage for forcing the coal from the receiving-chamber through said tapered passage and the preheating-chamber into the coking-oven.

39. A coking-oven having a horizontally-arranged coking-chamber, of separately-controllable heating means for different parts or sections of said chamber, a preheating-chamber at the inlet end of said coking-chamber and means for forcing coal through said preheating-chamber into the coking-chamber.

40. A coking-oven having a horizontally-arranged coking-chamber, separately-controllable heating means for separate parts or sections of said chamber, a preheating-chamber at the receiving end of said coking-chamber, a receiving-chamber, and means for forcing the coal from the receiving-chamber through the preheating-chamber into the coking-chamber.

41. A coking-oven having a horizontally-arranged coking-chamber, separately-controllable heating means for separate parts or sections of said chamber, a preheating-chamber at the receiving end of said coking-chamber, a receiving-chamber, means for forcing the coal from the receiving-chamber through the preheating-chamber into the coking-chamber, and means at the outlet end of the coking-chamber for discharging the coke therefrom without admitting air to said coking-chamber.

42. A coking-oven having a horizontally-arranged coking-chamber, separably-controllable heating means for different parts or sections of said chamber, means at the receiving end of said coking-chamber for preheating and compressing coal and for forcing it into the coking-chamber, and means at the outlet end of the coking-chamber for discharging the coke therefrom without the admission of air to said coking-chamber.

43. A coking-oven having a horizontally-arranged coking-chamber, separably-controllable heating means for different parts or sections of said chamber, a preheating-chamber at the inlet end of said coking-chamber, means for forcing coal through said preheating-chamber into the coking-chamber, and a discharge-passage at the outlet end of the coking-chamber, said discharge-passage being downwardly directed at its exit end and being provided in its downwardly-directed portion with two vertically-separated valves.

44. A coking-oven having a horizontally-arranged coking-chamber, separably-controllable heating means for different parts or sections of said chamber, a preheating-chamber at the receiving end of said coking-chamber, a receiving-chamber, a reciprocating plunger in the receiving-chamber for forcing the coal from said receiving-chamber through the preheating-chamber into the coking-chamber and a discharge-passage at the outlet end of the coking-chamber, said discharge-passage being downwardly directed at its exit end and being provided in its downward-directed portion with two vertically-separated valves.

45. A coking-oven having a horizontally-arranged coking-chamber, separate heating means for separate parts or sections of said heating-chamber, embracing two separate sets of heating-passages in the walls of the oven and regenerators separately associated with said heating-passages.

46. A coking-oven having a horizontally-arranged coking-chamber, separate heating means for separate parts or sections of said chamber, embracing two separate sets of heating-passages in the walls of said oven, regenerators separately associated with said heating-passages, means at the inlet end of said coking-chamber for preheating coal and forcing the preheated coal into the coking-chamber and means at the outlet end of said coking-chamber for effecting the discharge of the coke therefrom without the admission of air to said coking-chamber.

47. The combination with a coking-chamber, of a passage having closed connection with the receiving end of said coking-chamber and means for compressing and for preheating coal and for forcing the compressed and preheated coal in a continuous mass through said passage into the coking-chamber.

48. The combination with a coking-chamber, of a passage having closed connection with the receiving end of said coking-chamber, means for laterally compressing coal and means for forcing the compressed coal in a continuous mass through the said passage into the coking-chamber.

49. The combination with a horizontal coking-chamber, of means for compressing and preheating coal preparatory to its introduction into the coking-chamber comprising a continuous horizontal passage in which the coal is compressed and preheated, which passage is directly connected with the receiving end of the coking-chamber, and means for applying pressure horizontally to the outer end of a mass of coal in said passage to force the coal through said passage into the coking-chamber.

847,615. SHEET-FEEDING MECHANISM. URA S. SMILEY, Monessen, Pa., assignor to American Sheet & Tin Plate Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Nov. 21, 1906. Serial No. 344,422.

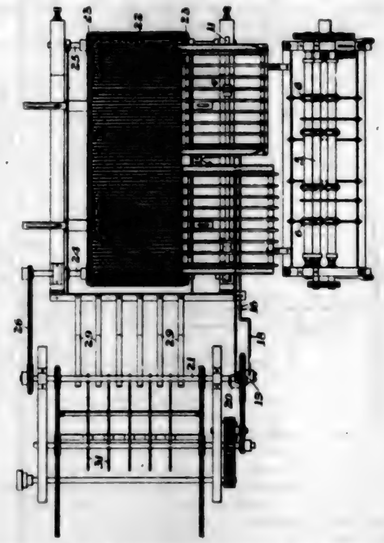

Claim.—1. In sheet-feeding apparatus, the combination with a coating apparatus and feed-out mechanism, of a plurality of receiving-tables arranged to receive the sheets from the feed-out mechanism, and mechanism for discharging the sheets successively from said tables; substantially as described.

2. In sheet-feeding apparatus, the combination with a coating apparatus and feed-out mechanism therefor, of a plurality of receiving-tables arranged to receive successive sheets from the feed-out mechanism, and a branner-feed mechanism controlled by the movement of the branner-feed for discharging the sheets successively from said tables; substantially as described.

3. In sheet-feeding apparatus, the combination with a coating apparatus and feed-out mechanism therefor, of a plurality of movable receiving-tables arranged to receive the sheets from the feed-out mechanism, and connections arranged to move the tables alternately to discharge the sheets successively from said tables; substantially as described.

4. The combination with a coating apparatus, of a feed-out device therefor, a plurality of tilting tables or chutes arranged to receive the sheets from the feed-out device, and connections arranged to tilt said chutes alternately; substantially as described.

5. In sheet-feeding apparatus, the combination with a coating apparatus and feed-out mechanism, of a pair of chutes arranged side by side to receive the sheets from the coating apparatus, and a transfer device to which the chutes lead; substantially as described.

6. The combination with a coating apparatus of a feed-out device therefor, a pair of tilting chutes arranged side by side, a conveyer to which the chutes lead, and mechanism for tilting said chutes alternately; substantially as described.

7. In branner-feeding apparatus, the combination with a coating pot or apparatus, of feed-out mechanism therefor, a pair of chutes arranged side by side, a common transfer system to which the chutes lead, and mechanism for causing said chutes to alternately discharge the sheets; substantially as described.

8. The combination with a branner-feeding device, of a pair of tilting chutes arranged side by side, and mechanism driven by the branner-feed device arranged to alternately tilt said chutes to discharge the sheets; substantially as described.

9. In sheet-feeding apparatus, a tinning-pot of double width, a feed-out device therefor, a pair of chutes arranged side by side to receive the sheets, and mechanism for discharging the sheets from said chutes alternately; substantially as described.

10. In sheet-feeding apparatus, a tinning-pot of double width, a feed-out device therefor, a pair of chutes arranged side by side to receive the sheets, mechanism for discharging the sheets from said chutes alternately, and a conveyer upon which both chutes discharge; substantially as described.

847,616. CYLINDER FOR HIDE-FLESHING MACHINES. EDWARD F. SMITH, Corry, Pa. Filed Apr. 5, 1906. Serial No. 310,192.

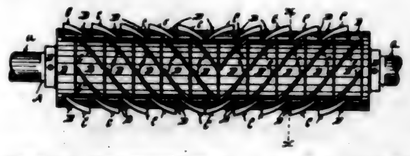

Claim.—1. The combination in a cylinder for hide-fleshing machines, of a shaft, cylinder-sections mounted thereon so as to be freely movable radially to said shaft by centrifugal force, and blades on the peripheries of said sections, substantially as set forth.

2. The combination in a cylinder for hide-fleshing machines, of a rectangular shaft, cylinder-sections mounted thereon so as to be capable of radial movement, blades on the peripheries of said sections, and means for securing the sections in place on the shaft; substantially as set forth.

3. The combination in a cylinder for hide-fleshing machines, of a rectangular shaft, a cylinder-section, blades on the periphery of said section, a shank or plate thereon having a rectangular opening therein laterally of a width to fit the shaft, and radially or longitudinally of greater length than the width of the shaft, substantially as set forth.

4. The combination in a cylinder for hide-fleshing machines, of a rectangular shaft, a series of segments or sections forming the circumferential surface or periphery of the cylinder, blades on the peripheries of said sections, and shanks on said sections connected with said shaft and movable radially thereon, substantially as set forth.

5. The combination in a cylinder for hide-fleshing machines, of a rectangular shaft, journals on the ends thereof, a series of segments or sections arranged on the shaft in rows so as to form the circumferential surface or periphery of the cylinder, and with the longitudinal meeting joints of one row substantially opposite the middle of its circumferentially-adjoining section, diagonal blades on the peripheries of said sections, shanks on said sections embracing said shaft and radially movable thereon, and means for securing said cylinder-sections longitudinally in place on the shaft, substantially as set forth.

847,617. MODE OF ATTACHING PUMP-TUBES TO BASES. WILLIAM S. STAPLEY, Bridgeport, Conn., assignor to Bridgeport Brass Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Dec. 13, 1906. Serial No. 347,640.

Claim.—1. The combination with a base having a socket and an undercut groove communicating therewith, of a tube closed at one end and flanged outward into the groove, whereby the tube is rigidly secured to the base.

2. The combination with a base having a socket, an undercut groove communicating therewith and depressions in the bottom of the socket, of a tube closed at one end and flanged outward into the groove and indented into

the depressions in the base, substantially as described, for the purpose specified.

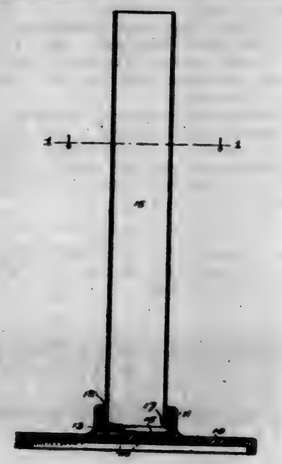

847,618. HAND BRICK-MACHINE. FREDERICK W. STEINHOFF, Eddyville, Iowa, assignor to Oscar H. Seifert, Eddyville, Iowa. Filed Nov. 23, 1905. Serial No. 288,729.

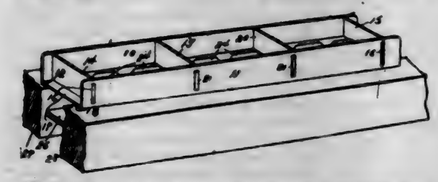

Claim.—1. A brick-molding machine comprising inwardly-flanged side walls, outwardly-flanged end walls resting upon the side flanges, partitions having tongues passing through the side walls, cross-rods connecting the side walls above the flanges thereof, movable bottoms between the partitions and adapted to normally rest on said cross-rods, blocks extending from said bottoms between the cross-rods and side-wall flanges, and an actuating-plate connecting said blocks.

2. In a molding-machine, a body comprising opposite side walls inwardly flanged at their lower edges, a movable mold-plate disposed within said walls, and tie-rods firmly connecting said side walls and forming a support for said mold-plate.

847,619. INVALID-BED. AIKEN C. TAYLOR, Charleston, S. C. Filed Sept. 29, 1906. Serial No. 336,749.

Claim.—1. In an invalid-bed, the combination with the bed-frame provided with slat-rails having recesses in their upper side, of a mattress-frame comprising three sections hingedly connected together and all lying between the slat-rails, pins projecting from the intermediate section and adapted to seat in the recesses in the slat-rails, bars pivotally connected to the outer sections of the mattress-frame and to each other, a lever connected to said bars for moving the same, and means for securing the lever.

2. In an invalid-bed, the combination with the bed-frame, of a mattress-frame comprising three sections hingedly connected together and supported upon the bed-frame by the intermediate section, bars pivotally connected to the outer sections, means for adjustably connecting the bars together, a lever connected to one of the bars for moving the same, and means for securing the lever.

3. In an invalid-bed, the combination with the bed-frame, of a mattress-frame comprising three sections hingedly connected together and supported upon the bed-frame by the intermediate section, bars pivotally connected to the outer sections of the mattress-frame, pins on one of the bars engaging slots in the other bar for adjustably and pivotally connecting said bars together, a lever connected to one of the bars, and means for securing said lever.

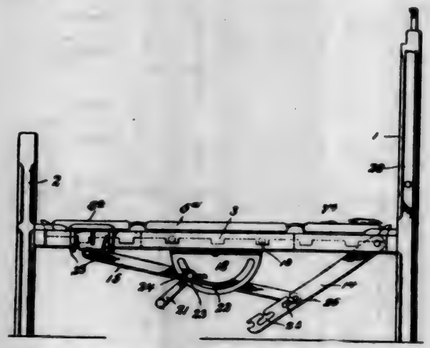

4. In an invalid-bed, the combination with the bed-frame, of a mattress-frame comprising three sections hingedly connected together and supported upon the bed-frame by the intermediate section, bars pivotally connected to the outer sections of the mattress-frame and to each other, a shaft carried by the intermediate stationary section, links fixed to the shaft and pivotally connected to one of the aforesaid bars, a lever connected to the shaft, and means for securing said lever, substantially as shown and described.

5. In an invalid-bed, the combination with the bed-frame, of a mattress-frame comprising three sections hingedly connected together and supported upon the bed-frame by the intermediate section, bars pivotally connected to the outer sections of the mattress-frame and to each other, bracket-plates secured to the intermediate section and one of said plates provided with a segmental slot, a shaft supported in the bracket-plates, links fixed to said shaft and pivoted at their outer ends to the bars connected to one of said outer sections of the mattress-frame, a lever connected to the shaft and having a movement in the rear of the slotted bracket-plate, said lever being provided with a pin projecting through the slot, and a winged thumb-nut threaded on said pin to impinge against the bracket-plate, substantially as shown and described.

6. In an invalid-bed, the combination with the bed-frame, of a mattress-frame comprising three sections hingedly connected together and supported upon the bed-frame by the intermediate section, bars pivotally connected to the outer sections and to each other, and means for moving said bars and securing them in an adjusted position; together with a commode having horizontal and vertical flanges forming engaging walls at right angles to each other adapted to engage the side rail of the bed-frame, and pins projecting from one of the flanges of the commode into said side rail, substantially as shown and described.

847,620. HOSE-CLAMP. CHANNING M. THOMPSON, Newark, Ohio. Filed May 26, 1906. Serial No. 318,940.

Claim.—1. A hose-clamp comprising a pair of arcuate members one member having a lug and a longitudinal slot terminating at the base of the lug, the other member being provided with a lug having a tongue stamped out therefrom and shaped to engage in the slot and under the lug of the first member, a bolt extending through the lugs of the members for drawing them together, and means on the members for connecting them together by a relative lateral movement at the ends opposite from those having the lugs, said means comprising radially-extending spaced hooks on one member, a head on the other member engaging under the hooks, and a portion adjacent the head extending between the hooks.

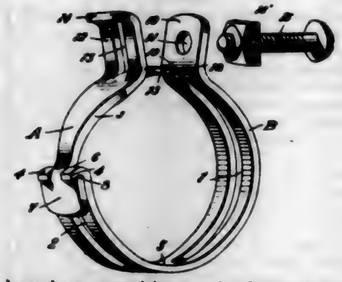

2. A hose-clamp comprising a pair of arcuate members, one having outwardly-projecting hooks and the other having a shank bent slightly outward to fit between the hooks, and a head extending beyond the shank and engaging the hooks.

3. A hose-clamp comprising a pair of arcuate members, one member having a lug and a longitudinal slot terminating at the base of the lug, the other member being provided with a lug having a tongue stamped out therefrom and shaped to engage in the slot and under the lug of the first member, and means extending through the lugs of the members for drawing the latter together.

4. A hose-clamp comprising a pair of arcuate members, one having a plurality of slightly-bent hooks arranged approximately at a right angle to the adjacent portion of the member, and the other having a shank and a head extending beyond and offset outwardly from the shank to engage the hooks.

847,621. SPINNING-FRAME. WILLIAM J. THOMPSON, Duke, N. C. Filed Mar. 21, 1906. Serial No. 307,225.

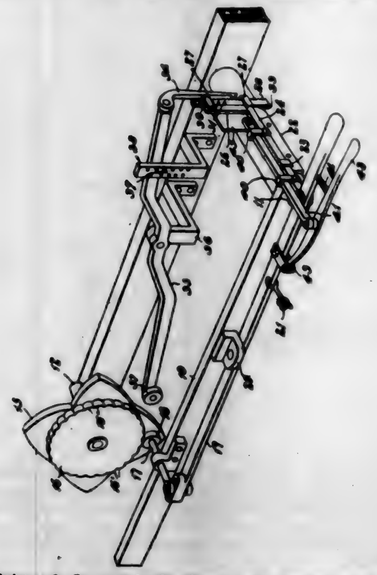

Claim.—1. In a spinning-frame, the combination with a builder-arm, of a builder-cam, a buncher-cam, a roller supported by the builder-cam and arranged to be operated upon first by the buncher-cam, and then by the builder-cam, and means under the control of the builder-cam for shifting the position of said roller from the buncher-cam to the builder-cam.

2. In a spinning-frame, the combination with a builder-arm, of a roller supported thereby, a buncher-cam and a builder-cam with which the roller successively engages, and means under the control of the builder-cam for automatically shifting the roller from engagement with the buncher-cam into engagement with the builder-cam.

3. In a spinning-frame, the combination with a builder-arm, of a builder-cam, a buncher-cam, an antifriction-roller arranged to engage first the buncher-cam and then the builder-cam, a longitudinally-movable stud supported by the builder-arm and carrying said roller, a spring-actuated lever pivoted to the builder-arm and connected to the stud, a toothed locking-bar for holding said lever from movement, a pawl engaging said locking-bar for effecting step-by-step movement thereof, and means operated from the builder-cam for actuating said pawl.

4. The combination with a spinning-frame, of a builder-arm, a buncher-cam, a builder-cam, an antifriction-roller for engaging first the buncher-cam and then the builder-cam, a longitudinally-movable stud carried by the builder-arm and supporting said roller, a spring-actuated lever engaging the stud, a slidable bar connected to said lever and having guiding-yokes at one end, a toothed locking-bar guided in said yokes, a fixed stop against which the locking-bar is held, a builder-cam-actuated pawl engaging the teeth of said bar, a manually-adjustable lever, and a slidable plate connected thereto and serving to disengage the pawl from the teeth of the locking-bar during readjustment of the parts to initial position.

5. In a spinning-frame, the combination with a builder-arm, of a buncher-cam, a builder-cam, a roller for successively engaging said cams, a roller-supporting stud slidably mounted on the builder-arm, a lever pivoted to the builder-arm and having one end connected to the stem, a spring for moving said lever in one direction, a slidable bar connected to the lever and having guiding-yokes at one end, a lock-bar mounted in said yokes and provided with ratchet-teeth, a fixed stop-bar with which the rear of the locking-bar engages, the latter being serrated to retain it in position against the stop-bar, a pawl engaging the ratchet-teeth, a lever carrying the pawl and having one end in the path of movement of the builder-cam, an adjustable means for limiting the movement of the pawl-carrying lever in one direction, a slidable plate for disengaging the pawl from the ratchet-teeth, and a manually-operable lever connected to said pawl.

6. In a spinning-frame, a builder-motion including a builder-arm, and a traverse-chain, a roller for guiding the traverse-chain, a slidable frame supporting said roller, a spring tending to draw said frame to a position to take up the traverse-chain, a hook or catch for retaining said frame in adjusted position, and a rod extending from the builder-arm to said hook and receiving slight motion during the formation of the bunch, said rod serving at the beginning of the main winding operation to engage with and release the hook and permit movement of the traverse-chain to normal position.

847,622. SHIRT-IRONING MACHINE. WILLIAM THURBER, Chicago, Ill., assignor to Sinclair Laundry Machinery Co., Chicago, Ill., a Corporation of Illinois. Filed Nov. 19, 1904. Serial No. 233,434.

Claim.—1. In an ironing-machine, a reciprocating ironing-board having a straight, upwardly-facing, ironing-surface, an ironing-roller above the board, ways on the machine for guiding said board in its travel and coacting means movable with the board and stationary with the machine-frame, respectively, permitting the board to be tilted downwardly about a pivotal axis located between the ends of the board.

2. In an ironing-machine, a reciprocating ironing-board having a straight, upwardly-facing, ironing-surface, an ironing-roller above the board, ways on the machine-frame for guiding said board in its travel, trunnions movable

with the board and means engaged by the trunnions at the outer limit of the movement of the board for tilting the outer end of the board downwardly.

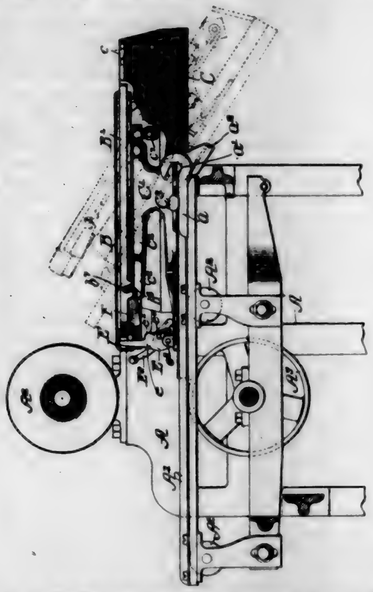

3. In an ironing-machine, a reciprocating ironing-board, laterally-extending trunnions traveling with the board, ways on the machine guiding said board in its travel, and sockets on the machine-frame located in the path of travel of said trunnions and adapted to receive the same and support said board in a tilted or inclined position.

4. In an ironing-machine, a tilting, reciprocating ironing-board, laterally-extending trunnions traveling with the board, ways on the machine guiding said board in its travel, and stationary hooks located at the end of the path of travel of said trunnions, said hooks being designed to receive the trunnions when the board is tilted.

5. In an ironing-machine, a reciprocating ironing-board, laterally-extending trunnions traveling with the board and having generally parallel upper and lower faces, ways on the machine guiding said board in its travel, and hooks located in the path of travel of said trunnions and adapted to receive the same, said hooks having parallel, inclined upper and lower surfaces adapted to engage the parallel upper and lower faces of said trunnion.

6. In an ironing-machine, a tilting, reciprocating ironing-board, laterally-extending trunnions traveling with the board, ways on the machine-frame guiding said board in its travel, said frame being provided with sockets located at the end of the path of the travel of said trunnions and adapted to receive the same when the board is tilted, and stationary brackets or supporting-surfaces for holding the board in its tilted position.

7. In an ironing-machine, a tilting reciprocating ironing-board, laterally-extending trunnions movable with the board, ways on the machine-frame guiding said board in its travel, stationary hooks located at the end of the path of travel of said trunnions and inclined with respect to said ways, said hooks receiving said trunnions when said board is tilted and inclined supports or brackets rigid with said hooks for holding the board rigidly in its inclined position.

8. In an ironing-machine, a reciprocating ironing-board having a straight, upwardly-facing, ironing-surface, an ironing device thereover, ways on the machine for guiding said board in its travel, coacting means movable with the board and stationary with the machine-frame, respectively, permitting the board to be tilted downwardly about a pivotal axis located between the ends of the board, the forward end of said ironing-board being arranged to overhang its support to provide beneath the board a space adapted to receive a portion of the garment not to be ironed.

9. In an ironing-machine, a reciprocating ironing-board, having a straight, upwardly-facing, ironing-surface, an ironing device thereover, guides on the machine for guiding said board in its travel, means whereby said board may be tilted downwardly at the outer limit of its travel about an axis located between the ends of the board, the forward end of said board overhanging its support to provide a forwardly-opening space between the board and support, and a clamping device coacting with the end of the board and mounted beneath the forward end of the board and above said space, between which and the end of the board the garment is adapted to be clamped.

10. In an ironing-machine, a reciprocating ironing-board, having a straight, upwardly-facing, ironing-surface, an ironing device thereover, guides on the machine for guiding said board in its travel, means whereby said board may be tilted downwardly at the outer limit of its travel about an axis located between the ends of the board, the forward end of said board overhanging its support to provide a forwardly-opening space between the board and support, a neckband-clamping device coacting with the forward end of the board and mounted on the overhanging part of the board above said space, and a shoulder-clamping device hinged to the support for the board and arranged to swing toward and away from the forward end of said board.

847,623. THROTTLE-VALVE SYSTEM. WILLIBALD TRINKS, Pittsburg, Pa., assignor to The William Tod Company, Youngstown, Ohio, a Corporation of Ohio. Filed Apr. 21, 1906. Serial No. 312,993.

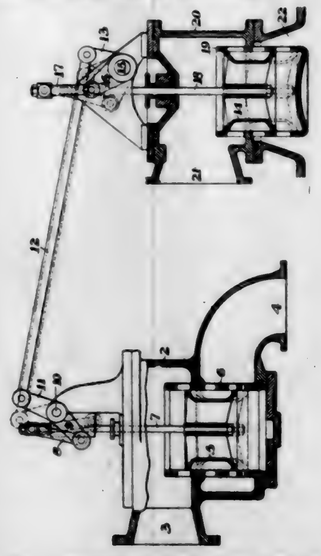

Claim.—1. A compound engine having throttle-valves for the high and low pressure cylinders and actuating connections for said valve arranged to close the low-pressure valve more rapidly than the high-pressure valve during the latter part of its closing movement; substantially as described.

2. A compound reversing-engine having throttle-valves for the high and low pressure cylinders, and actuating connections arranged to move the low-pressure throttle-valve slowly when it is in open position and increase the rapidity of motion as the low-pressure valve is closed; substantially as described.

3. A compound reversing-engine having throttle-valves for the high and low pressure cylinders, and actuating connections arranged to close the valves simultaneously and move the high-pressure valve more slowly than the low-pressure valve in closing; substantially as described.

4. A compound reversing-engine having throttle-valves for high and low pressure cylinders, having a link driving mechanism for the valves arranged to bring the high-pressure throttle-link near a dead-center position when the high-pressure valve is closed, and the low-pressure throttle-link near the dead-center position when the low-pressure throttle-valve is wide open; substantially as described.

5. A compound reversing-engine having throttle-valves for the high and low pressure cylinders, actuating link connections arranged to move the high-pressure throttle more rapidly in its more open positions, and the low-pressure throttle more rapidly in its closing positions; substantially as described.

6. A compound reversing-engine having throttle-valves for the high and low pressure cylinders, and admission-ports for the high-pressure throttle-valve arranged to give a constant inlet area for a predetermined movement of the valve; substantially as described.

7. A compound reversing-engine having throttle-valves for the high and low pressure cylinders, the high-pressure throttle-valve having a bridge arranged to maintain the port area constant through an opening portion of the valve movement; substantially as described.

8. A compound reversing-engine having throttle-valves for the high and low pressure cylinders, the high-pressure throttle-valve having small ports which are first opened, a bridge arranged to then maintain the area constant, and larger ports beyond the bridge to increase the opening area; substantially as described.

9. A compound reversing-engine having throttle-valves for the high and low pressure cylinders, the high-pressure throttle-valve having small ports which are first opened having an area equal approximately to one per cent. of the high-pressure-cylinder area, larger successive ports, and a bridge between the small and large ports arranged to maintain the port-opening substantially constant through a predetermined lift of the valve; substantially as described.

10. A compound reversing-engine having throttle-valves for the high and low pressure cylinders, actuating connections arranged to move the high-pressure throttle more slowly near its closing-point, connections arranged to move the low-pressure throttle-valve more quickly near its closing-point, the high-pressure throttle-valve having small ports at the first part of its travel, larger ports at the latter part of its travel, and means for maintaining the high-pressure opening substantially constant before the larger ports are reached; substantially as described.

847,624. ELECTRICAL MEASURING INSTRUMENT. THOMAS W. VARLEY, New York, N. Y. Filed Sept. 8, 1905. Serial No. 277,488.

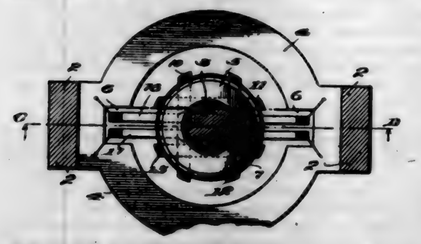

Claim.—1. In an apparatus of the character described, a substantially constant magnet for creating a field of force comprising an outer pole of one polarity and an inner pole of the opposite polarity, a stationary coil adapted to shift the lines of force of the constant magnetic field and a movable coil in the magnetic field normally in a balanced condition relative thereto but becoming unbalanced when the magnetic field is shifted.

2. In an apparatus of the character described, a substantially constant magnet for creating a field of force comprising opposite poles of the same polarity and a pole substantially concentric with the opposite poles and of the opposite polarity, a stationary coil adapted to shift the lines of force of the constant magnetic field and a movable coil in the magnetic field normally in a balanced condition relative thereto but becoming unbalanced when the magnetic field is shifted.

3. In an apparatus of the character described, a substantially constant magnet for creating a field of force comprising an outer pole of one polarity, a pole-piece within said pole, an inner pole of opposite polarity substantially concentric with said outer pole and pole-piece, a stationary coil adapted to shift the lines of force of the constant magnetic field and a movable coil in the magnetic field normally in a balanced condition relative thereto but becoming unbalanced when the magnetic field is shifted.

4. In an apparatus of the character described, a substantially constant magnet for creating a field of force comprising opposite poles of the same polarity, a pole-piece connecting said poles and a pole substantially concentric with said opposite poles and of the opposite polarity, a stationary coil adapted to shift the lines of force of the constant magnetic field and a movable coil in the magnetic field normally in a balanced condition relative thereto but becoming unbalanced when the magnetic field is shifted.

5. In an apparatus of the character described, a substantially constant magnet for creating a field of force, a stationary coil adapted to shift the lines of force of the constant magnetic field, a movable coil in the magnetic field normally in a balanced condition relative thereto but becoming unbalanced when the magnetic field is shifted and an adjusting-coil adapted to cause an initial unbalance of the movable coil.

6. In an apparatus of the character described, a substantially constant magnet for creating a field of force, a stationary coil adapted to shift the lines of force of the constant magnetic field, a movable coil in the magnetic field normally in a balanced condition relative thereto but becoming unbalanced when the magnetic field is shifted and means adapted to cause an initial unbalance of the movable coil.

7. In an apparatus of the character described, a substantially constant magnet for creating a substantially uniform field of force in a radial direction, a stationary coil adapted to shift the lines of force of the constant magnetic field and a movable coil in the magnetic field normally in a balanced condition relative thereto but becoming unbalanced when the magnetic field is shifted.

8. In an apparatus of the character described, a substantially constant magnet for creating a substantially uniform field of force in a radial direction, a stationary coil adapted to shift the lines of force of the constant magnetic field and a movable member in the magnetic field so wound as to produce a two-pole armature and normally in a balanced condition relative thereto but becoming unbalanced when the magnetic field is shifted.

847,625. BLANK-FEEDING ATTACHMENT FOR CAN-MAKING MACHINES. ADOLPH VELK, Chicago, Ill. Filed Aug. 29, 1906. Serial No. 332,442.

Claim.—1. In a device of the class described, the combination of an inclined galley for the blanks, a reciprocating slide adjacent the end of the galley, a yielding ejector-dog pivotally supported by the slide, means for normally projecting the dog beyond the face thereof, an adjustable stop adapted to be engaged by the dog, and means for reciprocating the slide.

2. In a device of the class described, the combination of a galley for the blanks, a slide adjacent one end of the

galley, means whereby the blanks will be advanced to the slide, means for moving the slide, a pivoted ejector-dog supported by the slide, means for yieldingly holding said dog in operative position, and adjustable means for varying the position of the dog.

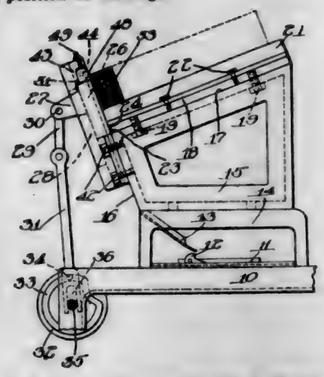

3. In a device of the class described, the combination of a galley for the blanks, a slide adjacent one end of the galley, means whereby the blanks will be advanced to the slide, means for moving the slide, a pivoted ejector-dog supported by the slide, a spring for holding said dog in operative position, and an adjusting-screw for varying the position of the dog.

4. In a device of the class described, the combination of a galley for the blanks, a slide adjacent one end of the galley, means for moving the slide, means whereby the blanks will be advanced to the slide, said slide being provided with an aperture, an ejector-dog pivotally supported within the aperture, means for holding said dog in operative position, and means for adjusting the position of the active portion of the dog with relation to the slide.

5. In a device of the class described, the combination of a galley for the blanks, a slide adjacent one end of the galley, means for moving the slide, said slide being provided with an aperture therethrough, a dog pivotily supported within the aperture, said dog being provided with an active edge, means for normally holding said edge beyond the face of the slide, and means for varying the distance said edge projects beyond the face of the slide.

6. In a device of the class described, the combination of a galley for the blanks, a slide adjacent one end thereof, means for moving the slide, said slide being provided with an aperture therethrough, an ejector-dog pivoted within the aperture, said dog being provided with an active edge, means adapted to hold said edge normally and yieldingly projected beyond the face of the slide for engaging and ejecting the blanks, and means for varying the extent of projection of said edge beyond the face of the slide.

7. In a device of the class described, the combination of a galley for the blanks, a slide adjacent one end thereof, means for moving the slide, said slide being provided with an aperture therethrough, an ejector-dog pivoted within the aperture, said dog being provided with an active edge, a spring supported by the slide and engaging the dog to hold the said edge normally and yieldingly projected beyond the face of the slide, for engaging and ejecting the blanks, and an adjusting-screw passing through the slide and into the aperture to engage the dog to vary the extent of projection of the said edge beyond the face of the slide.

8. In a device of the class described, the combination of a galley for the blanks, a slide adjacent one end thereof, means for moving the slide, said slide being provided with an aperture therethrough, an ejector-dog pivoted within the aperture, said dog being provided with two faces disposed at an angle to each other to form an edge projecting beyond one of the faces, means for normally and yieldingly holding said edge projected beyond the face of the slide, said edge being adapted to engage the edge of the blanks for ejecting the same and means for adjusting said edge with relation to the slide.

847,626. THREAD-CUTTING ATTACHMENT. LOUIS J. VOELS, Kenosha, Wis. Filed June 20, 1906. Serial No. 322,651.

Claim.—A thread-cutting attachment for spools substantially as described and consisting of a single blank bent to form the tapering expansible core 2, the upper end of said blank having an extension bent laterally from the core 2 to form a horizontal arm adapted to rest flatwise upon an end portion of a spool, the outer extremity of the arm 5 however being twisted so as to present a vertical blade or cutting portion 7, the upper edge of which is notched and sharpened as shown at 6.

847,627. SASH-LIFTER. ROBERT WASHBURN, Harriston, Ontario, Canada. Filed Sept. 4, 1906. Serial No. 333,081.

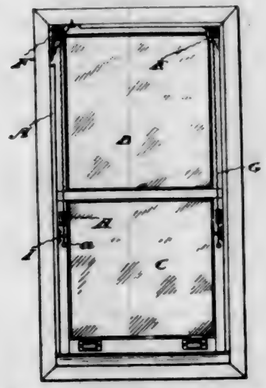

Claim.—1. In a sash-lifter the combination, with brackets attached to the sides of a window-casing; pulleys journaled in said brackets and each provided with a special groove; and chains each connected to the upper sash and passing over said pulleys, of bent springs each secured to a parting-bead of the window-frame, and each provided with two arms, one engaging the groove in one of the pulleys and the other adapted to engage the upper window-sash, substantially as described.

2. In a sash-lifter the combination, with a chain secured at one end to the upper sash, and a pulley over which the chain passes, suitably journaled at the upper part of the window-frame, of a bent spring secured to the window-frame and provided with two arms, one engaging the pulley, and the other adapted to engage the upper window-sash, substantially as described.

847,628. LOOSE-LEAF LEDGER. RALPH B. WILSON, Chicago, Ill. Filed Oct. 18, 1906. Serial No. 339,428.

Claim.—1. A loose-leaf binder embracing a centrally-curved back section, lateral clamping-plates slidably engaged thereon, impaling-posts secured thereto and slidable therewith, inturned overlapping ends on said clamping-plates, and a central transverse elongated casing engaged on each end of said back plate and affording a housing for said overlapped ends of the clamping-plates, said housings having an enlargement at the lower ends, a strengthening-bar extending through the housing, and means for actuating said clamping-plates.

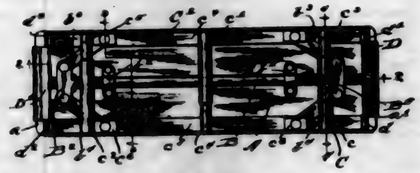

2. A ledger-binder of the class described embracing a curved back plate of sheet metal, a transverse reinforcing-bar rigidly engaged on each end thereof, a central elongated transverse casing, on each end of the back plate and integral therewith and adjacent the reinforcing-bar, oppositely-slidable clamping-plates laterally engaged on the back plate, inturned ends on said clamping-plates adapted to project approximately through and to overlap each other in said casing or housing, an actuating-shaft journaled longitudinally and centrally of said back plate, an angular end thereon projecting through one of said housings and the overlapped ends of said clamping-plates and mechanism operated by said shaft to shift said clamping-plates.

3. In a device of the class described a transversely-curved sheet-metal back plate having a length approximately equal to the length of the binder and in width approximately equal to the thickness of the binder in its most contracted form, a right and left end threaded shaft journaled longitudinally at the middle of said back plate, and reduced in diameter at equal distances from its ends, bearing-blocks adapted to support the same at the reduced portion, straps engaged around the shaft and bearing-blocks firmly securing the shafts from longitudinal movement, clamping-plates shaped to afford an inturned flange adjacent the back plate, inturned ends on the clamping-plates, interfitting impaling-posts carried on the clamping-plates, a traveling carriage on each end of said shaft, toggle-bars pivotally connected therewith and with the clamping-plates, transverse reinforcing-bars one at each end of the central back section, an elongated transverse housing or casing integral with the back plate and projecting into the binder and in which said ends of the binding-plate overlap.

4. In a ledger-binder a sheet-metal back section concave on the inner and convex on the outer side, rigidly-secured transverse reinforcing-bars one at each end of said section, and integral transverse housings at the ends of the back section and in which the reinforcing-bars are rigidly secured.

5. A pressed-metal back plate of the class described having transverse inwardly-directed housings integral therewith at each end, said housing provided with an enlargement at one end thereof and transverse bracing-bars engaged in said enlargements.

6. A pressed-metal back plate of the class described having at each end an integral transverse inwardly-directed casing having parallel walls, and a reinforcing-bar flush with the back on the outer side and permanently secured between said sides.

7. In a ledger-binder, a pressed-metal back plate having an integral housing at each end and the outer wall of said housing turned outwardly to form an enlargement and a bar closely fitting said enlarged portion of the housing to strengthen the ends of said binder.

8. A ledger-binder of the class described comprising a back plate concave on its inner side and convex on its outer side, a housing at each end of said back-section and a strengthening-bar rigidly inclosed within the walls of said housing.

9. In a binder of the class described the combination with a back plate of side plates having inturned ends, a housing rigidly engaged at each end of the binder of uniform width approximately the height of the end plates and affording an enlarged passage below the same and a strengthening-bar engaged therein and firmly riveted thereto.

10. The combination with a pressed-metal back plate of clamping-plates movable thereover, a housing at each end of the back and a strengthening-bar extending through each housing and providing a finish for each end of the back.

11. In a binder of the class described the combination with a back plate of clamping-plates movable thereon, a strengthening-block riveted to each housing and affording a finish for each end of the binder, a central shaft journaled on the back plate and having one end projecting through one of said housings and inturned ends on said clamping-plates extending into the housing and those on one side notched to clear the end of said shaft.

847,629. FLUX FOR WELDING COPPER. TURNER W. WILSON, Washington, D. C., assignor to William E. Wilson, Washington, D. C. Filed Jan. 17, 1907. Serial No. 352,786.

Claim.—1. A flux for welding copper, consisting essentially of approximately equal parts of a borate and a nitrate.

2. A flux for welding copper, consisting essentially of approximately equal parts of an alkali-metal borate and an alkali-metal nitrate.

3. A flux for welding copper, consisting essentially of approximately equal parts of sodium biborate and potassium nitrate.

847,630. SIGHT FOR FIREARMS. JAMES WINDRIDGE and GEORGE S. WILCOX, Middlefield, Conn., assignors to The Lyman Gun Sight Corporation, Middlefield, Conn., a Corporation of Connecticut. Filed Jan. 16, 1907. Serial No. 352,625.

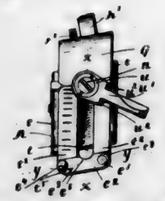

Claim.—1. In a sight for firearms the combination of a base, a movable slide mounted on the base and slotted in the direction of its adjustment for elevation, means for clamping the slide to the base through the slot, and a removable stop spanning the lower end of the slot and adapted to permit detachment of the slide from the base.

2. In a sight for firearms the combination of a base, a movable slide mounted on the base and forked or bifurcated from its lower edge in the direction of its adjustment for elevation, a stud mounted on the base between the respective limbs of the slide, clamping mechanism mounted on the stud for fastening the slide to the base, and a removable stop connecting the ends of the limbs of the slide and adapted to permit its detachment from the base without removal of the stud.

3. In a sight for firearms the combination of a base, a movable slide mounted on the base and slotted in the direction of its adjustment, a screw-threaded stud fixed in the base and projecting through the slot of the slide, a clamping-nut screwed on the stud for securing the slide to the base, and a removable stop spanning the lower end of the slot and adapted to permit detachment of the slide from the base.

4. In a sight for firearms the combination of a base, a movable slide mounted on the base and forked or bifurcated from its lower edge in the direction of its adjustment for elevation, a stud mounted on the base between the respective limbs of the slide, clamping mechanism mounted on the stud for fastening the slide to the base, and a removable stop hinged to one of the limbs of the slide and adapted to engage the opposite limb to connect

the limbs but permit the detachment of the slide from the base without removal of the stud.

5. In a sight for firearms, the combination of a base, a slide mounted on the base, a clamp to secure the base and slide together comprising a member that passes through a slot in one of said parts which extends in the direction of movement of the slide, and a movable closure for the slot whereby the base and slide may be separated without dismantling the clamp.

6. In a sight for firearms, the combination of a base, a movable slide mounted on the base and slotted in the direction of its adjustment for elevation, means for clamping the slide to the base through the slot, a stop movable into and out of a position crosswise of the slot, whereby the base and slide may be separated without dismantling the clamping means.

847,631. PHONOGRAPH. EDWARD L. AIKEN, East Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed Feb. 20, 1906. Serial No. 301,981.

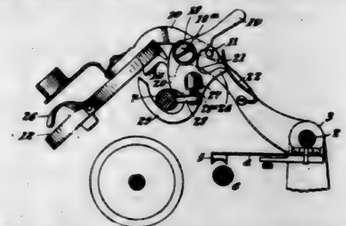

Claim.—1. In a phonograph, the combination with a carrier-arm and means for progressively moving the same when in a lowered position, of a guide for supporting the free end of the carrier-arm and a lift-lever applied to said arm so as to be capable of a simple pivotal movement in a plane and provided with a cam-surface which coöperates with said guide to lift the carrier-arm, and an extension which prevents the raising of said arm when the lift-lever is in its down position, substantially as set forth.

2. In a phonograph, the combination with a carrier-arm and means for progressively moving the same when in a lowered position, of a guide for supporting the free end of the carrier-arm, and a lift-lever applied to said arm so as to be capable of a simple pivotal movement in a plane and provided with a cam-surface which coöperates with said guide to lift the carrier-arm, and a hook or extension which is located immediately below said guide, when the lift-lever is in its down position, substantially as set forth.

3. In a phonograph, the combination with a carrier-arm and means for progressively moving the same when in a lowered position, of a guide for supporting the free end of the carrier-arm, and a lift-lever pivoted to said arm on a horizontal axis and provided with a cam-surface which coöperates with said guide to lift the carrier-arm and an extension which prevents the raising of said arm when the lift-lever is in its down position, substantially as set forth.

4. In a phonograph, the combination with a carrier-arm and means for progressively moving the same when in a lowered position, of a guide for supporting the free end of the carrier-arm, and a lift-lever pivoted to said arm on a horizontal axis and provided with a cam-surface which coöperates with said guide to lift the carrier-arm, and a hook or extension which is located immediately below said guide when the lift-lever is in its down position, substantially as set forth.

5. In a phonograph, the combination with a carrier-arm and means for progressively moving the same when in a lowered position, of a guide for supporting the free end of the carrier-arm, and a lift-lever pivoted to said arm, said lever being provided with a cam-surface normally below said guide which coöperates with said guide to lift the carrier-arm, and a shoulder beyond said cam-surface adapted to rest upon said rod when the lift-lever is in its up position, substantially as set forth.

6. In a phonograph, the combination with a carrier-arm and means for progressively moving the same when in a lowered position, of a guide for supporting the free end of the carrier-arm and a lift-lever pivoted to said arm and provided with a cam-surface normally below said guide which coöperates with said guide to lift the carrier-arm, and a spring applied to said lever to hold the same in its down position, substantially as set forth.

7. In a phonograph, the combination with a carrier-arm and means for progressively moving the same when in a lowered position, of a guide for supporting the free end of the carrier-arm, and a lift-lever pivoted to said arm and provided with a cam-surface normally below said guide which coöperates with said guide to lift the carrier-arm, and a spring applied to said lever to hold it in its up position, substantially as set forth.

8. In a phonograph, the combination with a carrier-arm and means for progressively moving the same when in a lowered position, of a guide for supporting the free end of the carrier-arm, and a lift-lever pivoted to said arm and provided with a cam-surface normally below said guide which coöperates with said guide to lift the carrier-arm, and a double-throw spring applied to said lever to hold it in either its up or down position, substantially as set forth.

9. In a phonograph, the combination with a carrier-arm and means for progressively moving the same when in a lowered position, of a guide for supporting the free end of the carrier-arm, and provided with a rack, and a lift-lever pivoted to said arm on a horizontal axis, said lift-lever being provided with a pawl adapted to engage with said rack at or near the end of the lifting operation of said lever so as to impart a lateral movement to the carrier-arm, substantially as set forth.

10. In a phonograph, the combination with a carrier-arm and means for progressively moving the same when in a lowered position, of a guide for supporting the free end of the carrier-arm and provided with a rack, a lift-lever pivoted to said arm on a horizontal axis, said lift-lever being provided with a pawl adapted to engage with said rack at or near the end of the lifting operation of said lever so as to impart a lateral movement to the carrier-arm, and a stop for limiting the pivotal movement of said lift-lever, substantially as set forth.

11. In a phonograph, the combination with a carrier-arm and means for progressively moving the same when in a lowered position, of a guide for supporting the free end of the carrier-arm and provided with a rack, a lift-lever pivoted to said arm on a horizontal axis, said lift-lever being provided with a pawl adapted to engage said rack at or near the end of the lifting operation of said lever so as to impart a lateral movement to the carrier-arm, and a stop for limiting the movement of said lift-lever in both directions, substantially as set forth.

12. In a phonograph, the combination with a traveling carrier-arm, of a pivoted spectacle-frame carried thereby and adapted to sustain a reproducer and recorder, and a support traveling with said carrier-arm and so located as to receive and sustain the floating weight of the reproducer or recorder when the spectacle-frame is turned so as to bring said reproducer or recorder into an inactive position, substantially as set forth.

13. In a phonograph, the combination with a carrier-arm and means for progressively moving the same when in a lowered position, of a guide for supporting the free end of the carrier-arm, a pivoted spectacle-frame carried thereby and a transverse support secured to said carrier-arm in position to receive and sustain the floating weight of the reproducer or recorder when the spectacle-frame is turned so as to bring said reproducer or recorder into an inactive position, substantially as set forth.

847,632. GLASS-MELTING FURNACE. WALTER O. AMSLER, Pittsburg, Pa. Filed Aug. 15, 1906. Serial No. 330,630.

Claim.—1. The combination with a regenerative glass-melting tank-furnace, of regenerators having throats or passages in communication with the tank, said regenerators and throats or passages all located on one side of the tank and means independent of the tank for supporting the throats or passages.

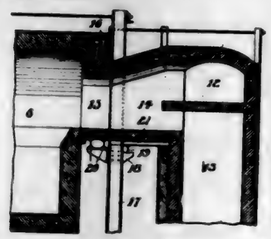

2. The combination with a regenerative glass-melting tank-furnace, of regenerators located near an end of the tank, throats leading from the regenerators to an end of the tank, and means independent of the tank for supporting the throats.

3. The combination with a regenerative glass-melting tank-furnace, of regenerators located near an end of the tank, throats leading from the regenerators to an end wall of the furnace and in communication with an end of the tank, and means independent of the tank for supporting the throats and end wall.

4. The combination with a regenerative glass-melting tank-furnace, of regenerators having passages in communication with the tank, all located on one side of the tank, and a metallic framework independent of the tank for supporting the passages.

5. The combination with a regenerative glass-melting tank-furnace, of regenerators all located on one side of the tank, passages leading from the regenerators and in communication with the tank, and means independent of the tank for supporting each passage comprising columns, located at the sides of the passage and cross members connecting the columns.

6. The combination with a regenerative glass-melting tank-furnace, of regenerators located near an end of the tank having throats in communication with an end of the tank, means independent of the tank for supporting the throats, and a central charging-opening in an end wall of the tank located between the throats.

7. The combination, with a regenerative glass-melting tank-furnace, of regenerators, passages connecting the regenerators and the tank, a bridge-wall dividing the tank into compartments, and a checker-work baffle-wall built upon the bridge-wall.

8. The combination with a regenerative glass-melting tank-furnace, of regenerators, passages connecting the regenerators and the tank, a bridge-wall dividing the tank into compartments having its upper portion formed of checker-work and extended to within a short distance of the roof of the furnace.

9. The combination with a regenerative glass-melting tank-furnace having its tank divided into two compartments by a bridge-wall, a checker-work baffle-wall built upon the bridge-wall, regenerators having throats or passages in communication with the tank, said regenerators and throats or passages all located on one side of the tank.

10. The combination with a regenerative glass-melting furnace having its tank divided into two compartments by a bridge-wall, a checker-work baffle-wall built upon the bridge-wall, regenerators having throats in communication with the tank, said regenerators and throats all located on the same side of the tank, and means independent of the tank for supporting the throats.

11. The combination with a regenerative glass-melting furnace having its tank divided into two compartments by a bridge-wall, a checker-work baffle-wall built upon the bridge-wall, regenerators located on the same side and near an end of the tank, throats leading from the regenerators to an end of the tank, a central charging-opening in an end wall of the tank, and means independent of the tank for supporting the throats.

847,633. GLASS-CUTTER. RUFUS ANDERSON, Southampton, Mass. Filed July 16, 1906. Serial No. 326,345.

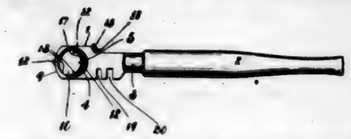

Claim.—1. In an instrument of the class described, the combination, with a body having a recess with grooved walls; of a disk having a groove in its periphery; cutter-wheels mounted in said groove; and means carried by the body, and applied to the periphery of said disk for adjustably securing it within the grooves in the wall of the recess.

2. In an instrument of the class described, the combination, with a notched body, having a rounded end, a cavity adjacent thereto, grooves in the wall of the cavity and an opening in the rounded end communicating with said grooves; of a circumferentially-grooved disk having tools mounted thereon; and means carried by the body and applied to the periphery of said disk for adjustably securing it in place.

3. The combination, with a support having an opening at its end, and having a recess with grooved walls, of a tool-carrying disk movable in said recess, and a device carried by the support, and serving to adjust said disk, and to lock it in position with a tool thereof passing through the opening in the support.

847,634. SEWING-AWL. SHERMAN ANSLEY, Portland, Oreg., assignor of one-half to William Hankens, Portland, Oreg. Filed Dec. 7, 1905. Serial No. 290,833.

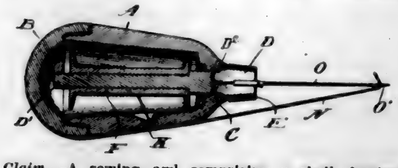

Claim.—A sewing-awl comprising a shell, having a chuck with a concaved shoulder adapted to engage the convexed portion of an aperture in the end of said shell, the shank portion of said chuck having an enlarged portion engaging the wall of the aperture in one end thereof and provided with a shoulder, a contracted portion of said shank extending longitudinally and centrally through the shell and projecting beyond the capped end thereof and designed to form a bearing for a reel, as set forth.

847,635. PRESS FOR FORMING TUBES, &c. WILAND ASTFALCK, Tegel, near Berlin, Germany. Filed Oct. 1, 1906. Serial No. 336,066.

Claim.—1. An improved press for forming tubes and tubular hollow bodies from a solid metal block, comprising a press-cylinder terminating in a matrix, a mandrel and a press-ram, the said mandrel being provided with a head-piece projecting above the mandrel and loosely connected therewith substantially as described and shown in the drawing.

2. An improved press for forming tubes and tubular hollow bodies from a solid metal block, comprising a press-cylinder terminating in a matrix, a mandrel provided with a loosely-mounted head-piece and a press-ram, the said head-piece of the mandrel having a working edge projecting above the mandrel, substantially as described and shown in the drawing.

3. An improved press for forming tubes and tubular hollow bodies from a solid metal block, comprising a press-cylinder terminating in a matrix, a mandrel provided with a loosely-mounted head-piece and a press-ram, the said head-piece of the mandrel having a working edge projecting above the mandrel and a diameter equal to the inside width of the matrix, substantially as described and shown in the drawing.

4. In a press for forming tubes and tubular bodies, a mandrel provided with a perforating-head loosely connected thereto.

5. In a press for forming tubes and tubular bodies, a mandrel provided with a perforating-head of greater diameter than the mandrel and adapted to be stripped off during the formation of a tube.

847,636. ORGAN-ACTION. JOHN T. AUSTIN, Hartford, Conn., assignor to Austin Organ Company, Hartford, Conn., a Corporation of Maine. Filed Feb. 20, 1905. Serial No. 246,384.

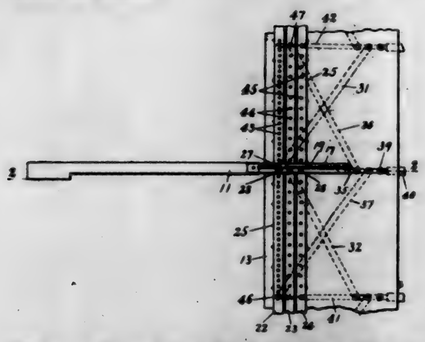

Claim.—1. In an organ, the combination with a key, of a port, an apertured slider for opening and closing the port, and means operated by the key for opening and closing the slider-aperture, and pressing the slider to its seat.

2. In an organ, the combination with a key, of a plurality of ports, a plurality of apertured sliders for independently opening and closing the ports, and means operated by the key for opening and closing the slider-apertures, and pressing the sliders to their seats.

3. In an organ, the combination with a key, of a plurality of ports, a plurality of apertured sliders for independently opening and closing the ports and a self-closing valve operatively connected with the key for closing the slider-apertures, and pressing the sliders to their seats.

4. In an organ, the combination with a key, of a series of ports, a series of apertured sliders for independently opening and closing the ports, a valve for the slider-apertures, operatively connected with the key and bearing directly against the sliders, and resilient means for closing the valve.

5. In an organ, the combination of a port, an apertured slider to open and close the port and a valve having an extended surface bearing directly against the slider to cover the slider-aperture while the latter is in communication with its port.

6. In an organ, the combination of a plurality of ports, a plurality of apertured sliders for independently opening and closing the ports, and a valve for the slider-apertures, the ports being located at one side of the longitudinal center of the valve.

7. In an organ, the combination of a series of keys, a plurality of corresponding series of ports, a plurality of sliders each provided with a series of apertures corresponding with one of the series of ports, and a series of valves bearing directly against the sliders, each valve being operatively connected with a key of the said series, and controlling the slider-apertures corresponding with that key.

8. In an organ, a duct-bar universal to a plurality of key-actions and having a combining-passage and a plurality of ports for each key-action, each of the said combining-passages being connected to one of the ports of its own key-action, connections joining the other parts of each key-action to the combining-passages of other key-actions, and means for opening and closing the ports, comprising apertured sliders resting against the ports, and key-valves resting against the sliders and covering the apertures thereof.

9. In an organ, a duct-bar universal to a plurality of key-actions and having formed within it a plurality of ports for each key-action, a combining-passage for each key-action also formed within the bar and extending into one of the ports, passages connecting the other ports of each key-action to the combining-passages of other key-actions, and means for opening and closing the ports, comprising apertured sliders resting against the ports, and key-valves resting against the sliders and covering the apertures thereof.

10. In an organ, a duct-bar universal to a plurality of the key-actions of one manual and having a combining-passage and a plurality of ports for each of the said key-actions, each of the said combining-passages being connected to one of the ports of its own key-action, connections joining the other ports of each key-action to the combining-passages of other key-actions of its own and other manuals, and means for opening and closing the ports, comprising apertured sliders resting against the ports, and key-valves resting against the sliders and covering the apertures thereof.

11. In an organ, a duct-bar universal to a plurality of key-actions, and having formed within it a plurality of ports for each key-action, a combining-passage for each key-action also formed within the bar and extending into one of the ports, passages connecting the other ports of each key-action to the combining-passages of other key-actions, and dually-controlled means for opening and closing the ports, comprising sliders resting against the ports, and key-valves resting against the sliders, and covering the apertures thereof.

12. In an organ, a duct-bar universal to a plurality of the key-actions of one manual, and having a combining-passage and a plurality of ports for each of the said key-actions, each of the said combining-passages being connected to one of the ports of its own key-action, connections joining the other parts of each key-action to the combining-passages of other key-actions of its own and other manuals, and dually-controlled means for opening and closing the ports, comprising sliders resting against the ports, and key-valves resting against the sliders and covering the apertures thereof.

13. In an organ, a duct-bar universal to a plurality of key-actions and having a combining-passage and a plurality of ports for each key-action, each of the said combining-passages being connected to one of the ports of its own key-action, connections joining the other ports of each key-action to the combining-passages of other key-actions, a plurality of apertured sliders opening and closing the ports, and a key-valve resting against a plurality of sliders and opening and closing the slider-apertures.

14. In an organ, a duct-bar universal to a plurality of key-actions and having formed within it a combining-passage and a plurality of ports for each key-action, each of the said combining-passages being connected to one of the ports of its own key-action, connections joining the other ports of each key-action to the combining-passages of other key-actions, a plurality of apertured sliders for opening and closing the ports, and a plurality of key-valves crossing and resting against the plurality of sliders, and closing their respective apertures therein.

847,637. METHOD OF MAKING WIRE-GLASS. ARTHUR J. BALDWIN, East Orange, N. J. Filed Jan. 17, 1905. Serial No. 241,468.

Claim.—1. The herein-described method of making wire-glass, which consists in forming a sheet of glass and simultaneously applying a wire fabric upon one side of the same; disposing the sheet, as it is formed, in juxtaposition to a rolling-surface, with the wired side of the sheet next to and spaced from said rolling-surface; depositing an unrolled mass of plastic glass upon the rolling-surface and against the wired surface of the said sheet; and simultaneously rolling the sheet first formed and the plastic mass upon the rolling-surface, whereby a homogeneous sheet of glass is formed with the wire fabric embedded therein; as set forth.

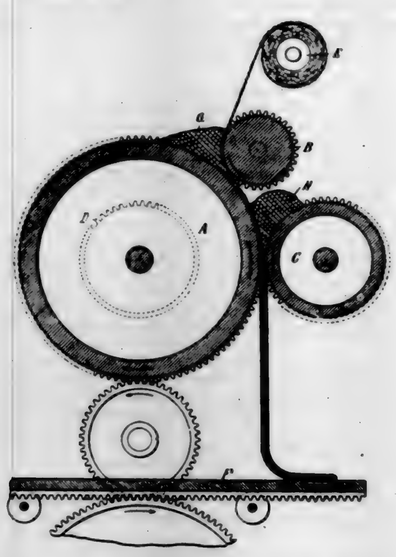

2. The herein-described method of making wire-glass, which consists in disposing a preliminary sheet of glass having a wire fabric on one side of the same, in juxtaposition to a rolling-surface with the wired surface of the said sheet next to but spaced from the rolling-surface, depositing on the rolling-surface, against the wired surface of the said sheet, a mass of plastic glass, and simultaneously rolling the said sheet and plastic mass upon the rolling-surface, whereby a homogeneous sheet of glass is formed with the wired fabric embedded therein, as set forth.

847,638. BOBBIN BROACH OR CREEL-PIN. EDWARD H. BOOCOCK, West Vale, near Halifax, and JOSEPH SUTCLIFFE, Cow Green, Halifax, England. Filed Oct. 20, 1906. Serial No. 339,757.

Claim.—1. A broach or creel-pin provided at its opposite ends with movable nipples, and a tensional device for holding said nipples in operative position.

2. A broach or creel-pin provided at its opposite ends with movable spring-supported nipples.

3. A broach or creel-pin provided at its opposite ends with movable nipples and a spring device which normally holds said nipples in operative position.

4. A broach or creel-pin provided at its opposite ends with movable nipples and a spring which normally holds said nipples in operative position, one of said nipples being movable longitudinally of the broach or creel-pin and the other being adapted to tilt laterally and also movable longitudinally of said broach or creel-pin.

5. A broach or creel-pin provided at one end with a cap or sleeve through which is outwardly passed a nipple provided with a head adapted to bear on the end of said cap or sleeve, a movable rod passed longitudinally through said broach or pin and one end of which projects through the opposite end of the broach or pin to form a nipple, and a spring placed between the head of the first-named nipple and said rod, said rod being provided with means for limiting its outward movement.

847,639. PIANO PEDAL-ACTION. EDWARD BORNHOEFT, New York, N. Y. Filed Dec. 18, 1906. Serial No. 348,396.

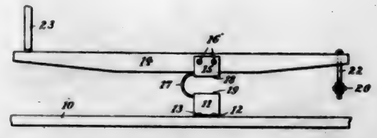

Claim.—1. In a piano pedal-action, a piano-base, an inverted-U-shaped frame mounted thereon, a pedal-lever, a second frame engaging the same and having a horizontal member, and a horizontal U-shaped spring having a lower shank that is secured to the top plate of the U-shaped frame, and an upper shank that is secured to the horizontal member of the second frame, substantially as specified.

2. In a piano pedal-action, a piano-base, a first frame mounted thereon and having a top plate, a pedal-lever, a second frame engaging the same and having a horizontal member, a horizontal U-shaped spring having lower and upper shanks, means for securing the end of the lower shank to the top plate of the first frame, and means for securing the end of the upper shank to the horizontal member of the second frame, substantially as specified.

847,640. JAR-CLOSURE. WALTER E. BOSTWICK, Algonac, Mich. Filed Dec. 26, 1905. Serial No. 293,180.

Claim.—An implement for use in extracting air from vessels, having in combination a tube provided with an unimpeded passage therethrough and a seating-rim, and a flexible disk adapted to coact with said tube as a valve and thereafter to remain as a closure to the aperture through which the air is withdrawn, substantially as described.

847,640.

847,641. NUT-LOCK. LEANDRE BOUDREAUX, Thibodaux, La. Filed Dec. 20, 1906. Serial No. 348,795.

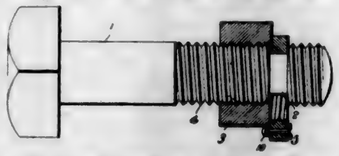

Claim.—A nut-lock comprising a bolt having its threaded portions provided with a reduced neck, a plate having a threaded perforation and adapted to screw upon the bolt, said threaded perforation having a recess adapted to receive the side of the reduced neck of the bolt when the thread of the perforation disengages the thread of the bolt.

847,642. RAIL-TIE. WILLIAM E. BOYLES, Grafton, W. Va. Filed July 11, 1906. Serial No. 325,702.

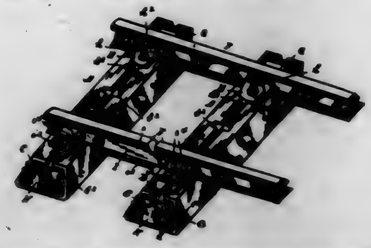

Claim.—1. In a cross-tie, two similarly-shaped longitudinal metal sections bolted together, a metal strip riveted on the inner side of each of said sections, said strips having horizontal portions which stand substantially parallel to the upper faces of said sections, a channel between said faces and said horizontal portions, a slot between the edges of said sections, and recesses in said faces which open into said slot.

2. A rail-tie comprising a casing having in the top thereof a longitudinal slot throughout its length, recesses in said top having communication with said slot, longitudinal strips secured on the inner sides of said casing, said strips having horizontal portions with bearing-faces which meet under said slot, said horizontal portions standing below said top and forming a channel between said portions and top, and means for securing rails on the ends of said tie.

3. A rail-tie comprising two metallic half-sections bolted together to form a casing, said sections having inwardly-extending meeting base portions and inwardly-extending top portions, said top portions approaching but not meeting, recesses in the edges of said top portions, and angular strips secured within said half-sections, the horizontal portions of said strips standing below said top portions and having bearing-faces, and means for securing track-rails upon said tie.

4. A railway-tie comprising two half-sections of angular form in cross-section bolted together to form a casing, said sections having inwardly-extending base portions which meet and inwardly-extending top portions which approach each other but do not meet, recesses in the edges of said top portions, a longitudinal strip, angular in cross-section, secured on the inner side of each of said sections, said strips having horizontal portions with downturned edges forming meeting bearing-faces, said horizontal portions standing below the top portions of said sections, and end plates secured within the ends of said casing.

5. In a rail-tie and a clamp for securing railway-rails thereon, a casing having a longitudinal slot in its upper face throughout the length thereof, recesses in the said upper face which communicate with said slot, bolts standing upright in said recesses, and clamps mounted on said bolts, each of said clamps comprising rail-web and rail-base embracing portions, an extension for lying upon the tie, and a rib on the base of said extension for engaging the slot in the casing.

6. The combination with the approaching ends of railway-rails, of rail-ties and means for securing said rails thereon, said ties each comprising a casing having a longitudinal slot in the top thereof and recesses in said top communicating with said slot, and said securing means comprising rail-holding clamps or fish-plates adapted to closely embrace the webs and tops of the bases of the rails, integral extensions carried by said fish-plates at each end thereof for resting upon the tops of the ties, bolts standing upright in the recesses in said ties and projecting through holes in said extensions, and lugs carried by said fish-plates which are bent under the bases of the rails between said rail-ties.

847,643. GUN-SIGHT. FRIEDRICH O. BROCKHAUS, Port Angeles, Wash. Filed July 18, 1906. Serial No. 326,668.

Claim.—1. A gun-sight comprising a chambered block adapted to be secured to a firearm, a standard extending upwardly from each end of the block, the front one of which extends to a greater height than the rear one and is provided in its upper edge with a longitudinal slot, a finger tiltably mounted in said block and extending to a height equal to that of the higher of said standards and of a width equal to the slot therein, a weight formed integral with said finger and tending to maintain the latter in a vertical position, and pivotal supports for the finger.

2. A gun-sight comprising a chamber-block adapted to be secured to a firearm, a standard at the front end of the block and provided with a longitudinal slot in its upper end, a standard at the rear of the block and of less height than the aforesaid one, a two-part cover for the chamber of said block, one of said parts being provided with standards corresponding respectively with the aforesaid ones, and a vibratory finger adapted to mask said slot when the sight is held in a vertical position.

3. In a gun-sight, the combination with a chambered block, a longitudinally-slotted standard integral with said block, a weighted indicator extending from within the block-chamber to some distance above the top surface of the block, pivotal pins for said indicator which terminate in conical ends, and adjustable bearings for said pins consisting of two screws each provided with an axial bore extending thereinto for a short distance from their inner ends and terminating in enlarged recesses.

4. In a gun-sight, the combination of a block provided with means for securing the same to the barrel of a gun, said block being provided with a chamber with two notched partitions extending thereacross and in proximity of its ends, two standards of unequal height projecting upwardly from the block, the longer of which is at the forward end and the other at the opposite end, said longer standard being provided in its top with a longitudinal slot, an indicator provided with a finger projecting upwardly, pivotal supports for the finger, adjustable bearings for said supports, and a weight tending to maintain said finger in a vertical position.

5. In a gun-sight, the combination of a block provided with means for securing the same to the barrel of a gun, said block being provided with a chamber, two standards of unequal height projecting upwardly from the block, the longer of which is at the forward end and the other at the opposite end, said longer standard being provided in its top with a longitudinal slot, an indicator provided with a finger projecting upwardly, pivotal supports for the finger, and a weight tending to maintain said finger in a vertical position.

6. In a gun-sight, the combination of a block provided with means for securing the same to the barrel of a gun, said block being provided with a chamber, two standards of unequal height projecting upwardly from the block, the longer of which is at the forward end and the other at the opposite end, said longer standard being provided in its top with a longitudinal slot, a two-part detachable cover for the chamber of said block and provided with two standards corresponding with the respective aforesaid ones of the block, an indicator provided with a finger projecting upwardly through an aperture in said cover, pivotal supports for the finger, and a weight tending to maintain said finger in a vertical position.

7. In a gun-sight, the combination of a block provided with means for securing the same to the barrel of a gun, said block being provided with a chamber with two notched partitions extending thereacross and in proximity of its ends, two standards of unequal height projecting upwardly from the block, the longer of which is at the forward end and the other at the opposite end, said longer standard being provided in its top with a longitudinal slot, a two-part detachable cover for the chamber of said block and provided with two standards corresponding with the respective aforesaid ones of the block, an indicator provided with a finger projecting upwardly through an aperture in said cover, pivotal supports for the finger, and a weight tending to maintain said finger in a vertical position.

8. In a gun-sight, the combination of a block provided with means for securing the same to the barrel of a gun, said block being provided with a chamber with two notched partitions extending thereacross and in proximity of its ends, two standards of unequal height projecting upwardly from the block, the longer of which is at the forward end and the other at the opposite end, said longer standard being provided in its top with a longitudinal slot, a two-part detachable cover for the chamber of said block and provided with two standards corresponding with the respective aforesaid ones of the block, an indicator provided with a finger projecting upwardly through an aperture in said cover, pivotal supports for the finger, adjustable bearings for said supports, and a weight tending to maintain said finger in a vertical position.

847,644. GARMENT-HOLDER. BENJAMIN J. BUCKINGHAM, Chicago, Ill. Filed Oct. 31, 1906. Serial No. 341,388.

Claim.—1. In a garment-holder, the combination with the supporting part of one or more compound fingers, each consisting of two or more spring-loops of varying lengths nested together.

2. In a garment-holder, the combination with the supporting part of one or more compound fingers comprising each a spring-loop and within the same one or more spring device to impinge upon the side of such loop and support it at intervals.

3. In a garment-holder, the combination with the supporting part of one or more compound fingers comprising each a spring-loop and means for supporting the same on its inside so as to divide the side of such loop into a series of clamping-sections.

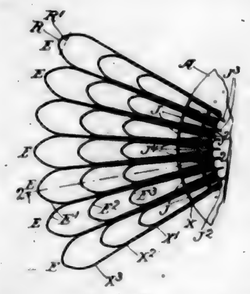

4. In a garment-holder, the combination with the supporting part of one or more compound fingers, each consisting of a spring-loop with one or more spring-bridges between the inner sides of said loop to divide such sides into a series of clamping-sections.

5. In a garment-holder the combination with the supporting part of one or more compound fingers consisting each of one or more spring-loops nested and distributed so that the arch of each forms a bridge within the sides of the other larger loops.

6. In a garment-holder, the combination with the supporting part of a series of spring-fingers supported on such part and projecting therefrom for varying distances to form clamping-spaces of unequal lengths, on approximately the same line.

7. In a garment-holder, the combination with the supporting part of three or more spring-pieces lying in a group in close proximity to each other so as to present a series of clamping-sections in close proximity to each other between them on approximately the same line.

8. In a garment-holder, the combination with the supporting part of three or more spring-pieces lying in a group in close proximity to each other so as to present a series of clamping-sections in close proximity to each other between them on approximately the same line, said pieces varying in length.

9. In a garment-holder, the combination with the supporting part of two or more nested spring-loops arranged so as to provide clamping-spaces between the outside of one loop and the inside of another.

10. In a garment-holder, the combination of a spring-loop finger with a spreading loop between its inner ends and the supporting device upon which the parts are secured.

11. In a garment-holder, the combination of a spring-loop finger device with a loop-spreading device between the ends of the finger, and a transverse wire which holds them together.

12. In a garment-holder, the combination of a spring-loop finger device with a loop-spreading device between the ends of the finger, a transverse wire which holds them together, and disks between which they are held.

847,645. FEEDING DEVICE FOR TEXTILE FABRICS, PAPER, &c. AUGUST BÜCKMANN and OTTO BÜCKMANN, Odenkirchen, Germany. Filed Nov. 1, 1905. Serial No. 285,309.

Claim.—A feeding device for textile and other fabrics comprising a pair of feed-rollers, a guide-roller back of the feed-rollers, means for setting the guide-roller at an inclination to the feed-rollers, and a delivery-roller above the guide-roller, the guide-roller and delivery-roller being mounted with their axes in perpendicular planes whose intersection passes through the center of the rollers, substantially as specified.

847,645.

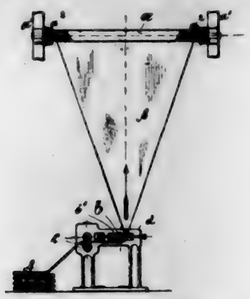

847,646. MARKING-MACHINE. JOHN D. CALDWELL, Seattle, Wash. Filed Mar. 23, 1906. Serial No. 307,699.

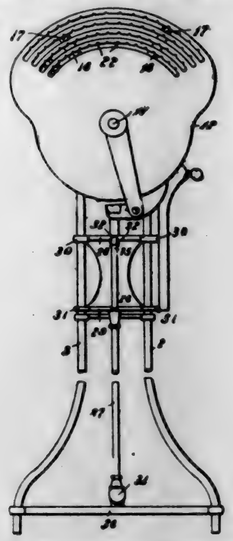

Claim.—1. A marking-machine comprising a printing member, a platen coöperating therewith, and a pivotally-mounted overbalanced ink-reservoir having an inking-pad communicating therewith, said reservoir being movable by gravity to cause the ink in the reservoir to flow toward the surface of the pad when the latter is moved away from inking position.

2. A marking-machine comprising a printing member, a platen coöperating therewith, an ink-reservoir mounted to swing into and out of operative relation with the printing member and provided with an ink-pad communicating with the ink-supply in the reservoir said reservoir being overbalanced to move by gravity to a position to cause the ink to flow to the inking-surface of the ink-pad, and means for moving the reservoir to a position to cause the ink in the reservoir to flow away from the surface of the ink-pad when in operative relation to the printing member.

3. A marking-machine comprising a printing member, a platen coöperating therewith, an ink-reservoir carrying an ink-pad communicating with the ink-receptacle of the reservoir and having a normal tendency to gravitate to a position to bring the ink to the inking-face of the pad, means for moving the ink-reservoir into alinement with the type to be inked and at the same time causing the ink to flow away from the inking-face of the ink-pad, and means for moving the inking mechanism to bring the ink-pad into contact with the face of the type.

4. In a device of the class described, the combination of a printing member, a platen movable toward and away from the printing member, an inking device normally interposed between the platen and the printing member, a swinging arm pivotally supporting the inking device, a tappet carried by the inking device, and a slide controlled by the movement of the platen and provided with means to first tilt the inking device upon its supporting-arm into engagement with the printing member, and then to swing the arm and move the inking device out of the path of the platen.

5. In a device of the class described, the combination of a printing member, a platen working toward and away from the printing member, an inking device normally interposed between the platen and the printing member, a swinging arm pivotally supporting the inking device, a tappet carried by the inking device, a rock-shaft to which the swinging arm is fixed, a tappet-arm upon the rock-shaft, a rock-bar having a cam for engagement with the tappet of the inking device and also provided with another cam, and a slide controlled by the movement of the platen and provided with means for engagement with said other cam of the rock-bar to turn the latter and tilt the inking device into engagement with the printing member, the slide also being provided with means for engagement with the tappet of the shaft to turn the latter and swing its arm to move the inking device out of the path of the platen.

6. In a device of the class described, the combination of a type-segment shiftable upon its center, a platen movable toward and away from the type-segment, a rock-shaft centrally piercing the segment, an arm carried by the rock-shaft, an inking device pivotally supported upon the arm and normally interposed between the platen and the segment, a tappet carried by the inking device, a rock-bar having a cam for engagement with the tappet, a slide controlled by the movement of the platen, spaced trips carried by the slide, a cam carried by the rock-bar for engagement by one of the trips, and a tappet-arm carried by the rock-shaft for engagement by the other trip after the actuation of the rock-bar.

7. In a device of the class described, the combination with an upright frame, of a substantially horizontal rock-shaft, an arm rigidly hung from the rock-shaft, a type-segment adjustably pivoted upon the rock-shaft, an inking device carried by the arm and extending across the peripheral portion of the type-segment, a platen located below and working toward and away from the type-segment, a substantially horizontal rock-bar located beneath the rock-shaft, a tappet upon the inking device, a cam upon the rock-bar in coöperative relation with the tappet, a vertically-movable slide actuated by the movement of the platen, upper and lower trips upon the slide, a cam upon the rock-bar and located in the path of the lower trip, and a tappet-arm upon the rock-shaft located in the path of the upper trip for engagement thereby after the actuation of the rock-bar.

8. In a device of the class described, the combination of an upright frame, a printing member carried thereby, a platen located below the printing member and provided with guides slidably engaging the frame, a foot-lever fulcrumed upon the frame and connected to the platen for elevating the same, a substantially horizontal rock-shaft mounted upon the frame, an arm rigidly hung from the rock-shaft, an inking device carried by the arm in coöperative relation with the printing member, a tappet-arm carried by the rock-shaft, and a vertically-movable slide connected to the platen and provided with a trip to engage the tappet-arm and swing the inking device out of the path of the platen.

9. In a device of the class described, the combination of a frame, a substantially horizontal rock-shaft carried by the frame, a tappet-arm on the rock-shaft, a substantially horizontal bracket carried by the frame, a back plate supported by the bracket and pierced by the rock-shaft, a sleeve rigidly carried by the back plate and embracing the rock-shaft, a front plate carried by the sleeve, a series of type-segments rotatably supported upon the sleeve and housed between the front and back plates, an arm rigidly hung from the rock-shaft, a projection carried by one of the plates to limit the swinging movement of the arm in one direction, an inking device carried by the arm in coöperative relation with the lower edges of the type-segments, a platen working vertically upon the rock-shaft, and a slide controlled by the platen and provided with a trip for engagement with the tappet-arm on the rock-shaft to swing the inking device out of the path of the platen.

10. In a device of the class described, the combination with a frame, of a printing member, a rock-shaft having a crank-arm, an inking device pivotally carried by the arm, a tappet carried by the inking device, a rock-bar, a tappet-engaging cam carried by the rock-bar, a platen working toward and away from the printing member, a slide controlled by the movement of the platen, another cam upon the rock-bar, a pivotal dog carried by the slide for engagement with said other cam, a tappet-arm provided upon the rock-shaft, and a trip upon the slide for engagement with the rock-shaft tappet-arm after the dog trips past the rock-bar cam.

847,647. GASOLENE-ENGINE TRUCK. ADDISON N. CALKINS, Quincy, Ill. Filed Apr. 16, 1906. Serial No. 312,002.

Claim.—1. In a truck for gasolene-engines, the combination with the longitudinal channel-iron beams, the rear axle rigidly connected with said beams and the front axle connected with said beams by a universal-joint connection, of a diagonal brace joined to the center of the front axle at its forward end and joined at its rear end to a transverse brace between the longitudinal beams; substantially as described.

2. In a truck for gasolene-engines, the combination with the longitudinal channel-iron beams and the rear axle rigidly connected with the bottom flanges of said beams, of the front axle, a king-bolt mounted in a vertical bearing in said front axle and having an extended plate at its upper end, angle-irons rigidly connected with said plate, a T-iron bolster rigidly secured to the beams and a horizontal bolt uniting said angle-irons and the web of the T-iron bolster to form a horizontal-joint connection; substantially as described.

3. In a truck for gasolene-engines, the combination with the axles embodying pressed-steel plates having their upper edges flanged outwardly, and an inverted channel-iron embracing and rigidly connected with said flanges, of longitudinal channel-iron beams rigidly connected at their rear ends with the inverted channel-iron of the rear axle and a universal-joint connection interposed between the forward ends of said longitudinal beams and the center of the front axle; substantially as described.

4. In a gasolene-engine truck, the combination with the axles each formed of two plates of sheet-steel centrally recessed for the reception of the axle proper and having their upper edges flanged outwardly, inverted channel-irons overlying and rigidly connected with said flanged edges of the axle-plates and reinforce-irons overlying said axle-plates, of longitudinal beams carried by said reinforce-irons and channel-irons; substantially as described.

5. In a gasolene-engine truck, the combination with the longitudinal iron beams, of an axle embodying pressed-steel plates secured together, reinforce-irons rigidly secured to the lower flanges of the beams and embracing the axle-plates, and diagonal braces secured to the lower ends of said reinforce-irons below the axle and to the lower flanges of the beams at a point remote from the axle; substantially as described.

6. In a gasolene-engine truck, the combination with the longitudinal channel-iron beams and T-iron bolster rigidly secured thereto transversely of said beams, of an axle embodying pressed-steel plates secured together, an extended bearing-plate rigidly mounted on the upper edge of said axle, reinforce-irons embracing the axle-plates and secured to said bearing-plate, a king-bolt passing vertically through said axle between the plates thereof, an extended bearing-plate at the upper end of said king-bolt resting on the bearing-plate of the axle, angle-irons secured to the upper face of the king-bolt plate and a fore-and-aft horizontal bolt uniting the angle-irons and web of the T-iron bolster; substantially as described.

7. In a gasolene-engine truck, the combination with the longitudinal channel-iron beams and T-iron bolster rigidly secured thereto transversely of said beams, of an axle embodying pressed-steel plates secured together, an extended bearing-plate rigidly mounted on the upper edge of said axle, reinforce-irons embracing the axle-plates and secured to said bearing-plate, a king-bolt passing vertically through said axle between the plates thereof, an extended bearing-plate at the upper end of said king-bolt resting on the bearing-plate of the axle, angle-irons secured to the upper face of the king-bolt plate, a fore-and-aft horizontal bolt uniting the angle-irons and web of the T-iron bolster, a diagonal brace jointed at its forward end to the lower end of the king-bolt and jointed at its rear end by a loose connection with the longitudinal beams at a point in rear of the axle; substantially as described.

847,648. EXPANSIBLE ENVELOP FOR VERTICAL FILES. CHARLES M. CARNAHAN, Newport, Ky., assignor to The Globe-Wernicke Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Jan. 27, 1906. Serial No. 298,257.

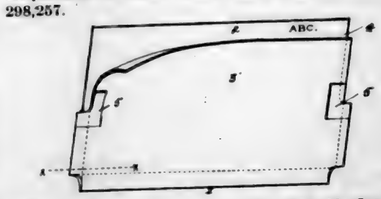

Claim.—A filing-envelop comprising two side flaps with bellows folds at their bottom edges and at their side edges below the middle portion thereof with the portions of the side flaps above the side bellows folds left open, and reinforcing-strips of tougher material than the substance of the envelop, secured on each side thereof and extending both above and below the lowest point at which the flaps are left open at their side edges, substantially as described.

847,649. PIE-CRUST-TRIMMING MACHINE. OLIVER COLBORNE, Chicago, Ill. Filed Aug 20, 1906. Serial No. 331,321.

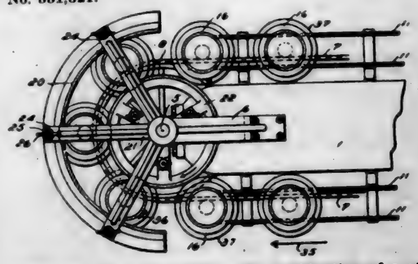

Claim.—1. In a pie-machine, the combination of a stationary crust-trimming surface, a rotatable support for a

pie-tin, and mechanism for moving said support along said surface, so as to cause the edge of the tin to roll against said surface for trimming a pie-crust on the tin.

2. The combination of a support for a pie-tin, mounted to rotate on a vertical axis and to travel in a substantially horizontal path, and a stationary crust-trimming surface extending along one side of the path of said support and adapted to have rolling contact with the edge of a pie-tin carried by said support.

3. The combination of a support for a pie-tin, mounted to rotate on a vertical axis and to travel in a substantially horizontal path and a stationary crust-trimming surface extending along one side of the path of said support and adapted to have rolling contact with the edge of a pie-tin carried by said support, said support being inclined so as to lean upward and inward across the edge of the pie-tin, and yielding means adapted to urge said support upward for causing the edge of the tin to bear on said surface.

4. The combination of a support for a pie-tin, mounted to rotate on a vertical axis and to travel in a substantially horizontal path and a stationary crust-trimming surface extending along one side of the path of said support and adapted to have rolling contact with the edge of a pie-tin carried by said support, said support being inclined so as to lean upward and inward across the edge of the pie-tin, a movable crust-trimming surface extending along the path of said support on the side opposite said stationary surface and being oppositely inclined, and yielding means adapted to urge said support upward for causing the edge of the tin to bear on said crust-trimming surfaces.

5. In a pie-machine the combination of a rotatable support for holding a pie-tin, a concave conical trimming-surface of greater diameter than the tin arranged to have contact with the edge of a pie-tin carried by said support, and mechanism for causing a relative rolling motion of the tin on said surface for trimming a pie-crust on the tin.

6. A pie-crust trimmer, comprising a trimming-wheel, a conveyer arranged to travel around said wheel, a support rotatably mounted on said conveyer and adapted to hold a pie-tin with its edge in rolling contact with the periphery of said wheel for trimming a pie-crust on the tin while the same is being carried along by said conveyer.

7. A pie-crust trimmer comprising a trimming-wheel, a conveyer arranged to travel around said wheel, a support rotatably mounted on said conveyer and adapted to hold a pie-tin with its edge in rolling contact with the periphery of said wheel for trimming a pie-crust on the tin while the same is being carried along by said conveyer, and means engaging the edge of the tin on the side opposite said wheel to prevent the tin from tilting on said support.

8. The combination of a pair of opposed oppositely-inclined concentric conical surfaces arranged to rotate relatively of each other, and a rotatable support arranged to travel between said surfaces and hold a pie-tin with its edges in rolling contact with both.

9. The combination of a pair of opposed oppositely-inclined concentric conical surfaces arranged to rotate relatively of each other, a rotatable support arranged to travel between said surfaces and hold a pie-tin with its edges in rolling contact with both, and yielding means adapted to cause the tin to bear on both of said surfaces.

10. The combination of a carrier arranged to travel in a horizontal direction, a support mounted to rotate on a vertical axis on said carrier and adapted to hold a pie-tin in a substantially horizontal position, a stationary inclined trimming-surface extending along one side of the carrier, and a movable inclined trimming-surface extending along the other side of the carrier, said support being adapted to rotate through contact of the tin with said stationary surface while the carrier is in motion, and said movable surface being driven through its contact with the tin.

11. A pie-crust trimmer, comprising a trimming-wheel, journaled on a vertical axis and having an inwardly-converging conical periphery, a conveyer arranged to travel around said wheel, a support rotatably mounted on said conveyer and adapted to hold a pie-tin with its edge in rolling contact with the periphery of said wheel, and a stationary upwardly-converging conical surface arranged concentrically of said wheel and adapted to be engaged by the opposite edge of the pie-tin while the same is in engagement with said wheel.

12. The combination of a frame, a support for pie-tins arranged to move in a circular path along said frame and adapted to rotate on an axis at right angles to said path, a stationary inclined track extending along the path of said support and having an inclined face arranged to have rolling contact with the edge of a pie-tin carried by said support and a wheel journaled concentrical of said circular path and having thereon an annular inclined rim adapted to engage the edge of the pie-tin at a point opposite its point of contact with said stationary track, all arranged to cause the pie-tin to have rolling contact with said stationary track and said rim while said tin is being carried along by the rotatable support.

13. In a machine, the combination of a horizontally-disposed conveyer arranged to travel in a substantially circular path over a portion of its length, a support for a pie-tin rotatably mounted on said conveyer and adapted to hold a pie-tin in a substantially vertical position, a wheel journaled concentrically of said circular portion of the path of the conveyer and having a conical rim adapted to engage the edge of a pie-tin on said support while said tin is being carried along, and an inclined track located concentrically of said wheel and having a surface of opposite inclination to the rim of said wheel and adapted to engage the opposite side of the pie-tin when the same is moved along, said wheel being arranged to move at the same peripheral speed as the pie-tin when said tin is rolled along said track.

14. In a device of the class described, the combination of a frame, a conveyer mounted on said frame and having thereon a series of supports each adapted to hold a pie-tin in a substantially horizontal position and being journaled on said conveyer so as to rotate about the axis of the tin, said conveyer being arranged to travel in a substantially circular path for a portion of its length, a wheel journaled concentrically of said portion of path of the conveyer and having an inclined rim adapted to have rolling contact with the edge of the tin when said tin is carried along by the conveyer, the rim of said wheel being readily removable from the hub for the purpose specified.

15. In a device of the class described, the combination of a frame, a conveyer mounted on said frame and having thereon a series of supports for pie-tins, each adapted to hold a pie-tin in a substantially horizontal position and being journaled on said conveyer so as to rotate on an axis concentric with the tin, said conveyer being arranged to travel in a substantially circular path for a portion of its length, a wheel journaled concentrically of said portion of path of the conveyer and having an inclined rim adapted to have rolling contact with the edge of the tin when said tin is carried along by the conveyer, said wheel having a rim formed of a plurality of detachable segments for the purpose specified.

847,650. COMBINED TABLET AND PENCIL-BOX. ADDISON B. CORBETT, Waldo, Wis. Filed July 18, 1906. Serial No. 326,760.

Claim.—1. A combined writing-tablet and receptacle having a base provided at one end with an open-mouthed receptacle of which the walls extend upwardly from the plane of the base, a tablet secured upon the base in a common plane with the receptacle with one end abutting against the adjacent wall of said receptacle, and a combined receptacle-closure and tablet-cover having hingedly-connected members, respectively, adapted to cover said receptacle and tablet and hingedly mounted upon the rear wall of the receptacle.

2. A combined writing-tablet and receptacle having a tablet, and a receptacle arranged in a common plane, said receptacle having its top open and in approximately the plane of the writing-surface of the tablet, and a combined receptacle-closure and tablet-cover consisting of a member hinged to the rear wall of the receptacle, and a second member hinged to the front edge of the first-named member, said second-named member consisting of a blotter.

847,650.

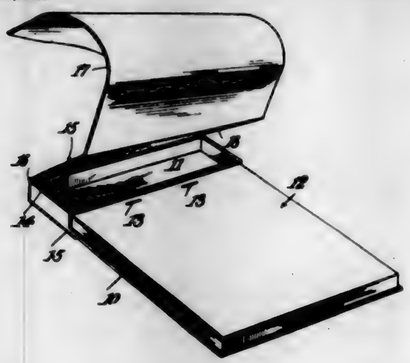

847,651. APPARATUS FOR RENOVATING, FINISHING, AND SMOOTHING RUGS. EDWARD S. CRADDOCK, New York, N. Y., assignor to John Boyajian, New York, N. Y. Filed July 6, 1905. Serial No. 268,590.

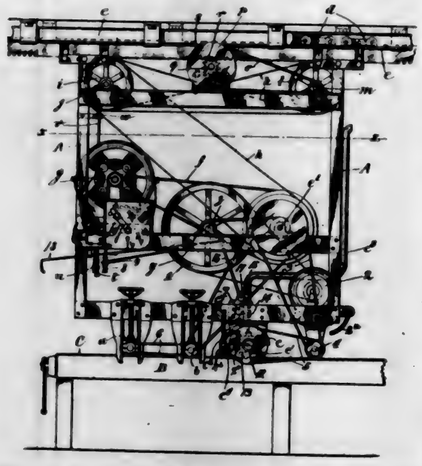

Claim.—1. In a machine for dressing rugs, the combination of a traveling carriage, rug-dressing device comprising a brushing-roll, a distributing-roll and a smoothing-roll carried thereby and a rug-support.

2. In a machine for dressing rugs, the combination of a traveling carriage, rug-dressing device comprising a brushing-roll, a distributing-roll and a smoothing-roll carried thereby, rug-support, and means for reversing the motion of the traveling carriage.

3. In a machine for dressing rugs, the combination of rug-dressing device comprising a brushing-roll, a distributing-roll and a smoothing-roll, a reciprocating carriage, means for reversing the motion of the carriage, and means for starting and stopping the rug-dressing device.

4. In a machine for dressing rugs, the combination of a traveling carriage suspended from above, rug-dressing devices comprising a brushing-roll, a distributing-roll and an ironing-roll carried thereby, and a source of power carried by the said carriage and adapted to drive the rug-dressing device and to traverse the carriage.

5. In a rug-dressing device, the combination of rug-dressing devices comprising a brushing-roll, a distributing-roll and an ironing-roll, a support therefor, support for the rug, a carriage and means carried by the carriage for effecting a reciprocal motion of translation between the rug-dressing devices and the rug-support.

6. In a dressing-machine, a carriage, a motor carried thereby for reciprocating said carriage, a movable dressing device comprising a brushing-roll, a distributing-roll and a smoothing-roll carried by said carriage, a driving connection from said motor to said dressing device, and means for disconnecting said device from said motor.

7. A dressing-machine, including a carriage, a motor carried thereby for moving said carriage, a dressing device comprising a brushing-roll, a distributing-roll and a smoothing-roll driven from said motor, and means for raising and lowering said dressing device.

8. A dressing-machine, including a carriage, guide-tracks therefor, means for reciprocating said carriage on said tracks, a dressing device comprising a brushing-roll, a distributing-roll and a smoothing-roll, and means for starting and stopping the movement of said carriage without stopping the movement of said dressing device.

9. A dressing-machine, including a reciprocating carriage, a motor carried thereby for reciprocating said carriage, a dressing device comprising a brushing-roll, a distributing-roll and a smoothing-roll, means of connection between said motor and said dressing device, and means for raising and lowering said dressing device independently of the movement of said carriage.

10. A dressing-machine, including a reciprocating carriage, an ironing-roll, means for rotating said roll, a burner for heating said roll, and an air-pump carried by said carriage for supplying air to said burner.

11. In a machine for dressing rugs, the combination of a traveling carriage and a stationary rug-support, means carried by said carriage for reciprocating it over the rug-support, a brushing-roll, and a heated ironing-roll carried by said carriage and operated by the said carriage-operating means.

12. In a machine for dressing rugs, the combination of a traveling carriage and a stationary rug-support, means carried by said carriage for reciprocating it over the rug-support, a distributing-roll comprised of felt disks, and an ironing-roll carried by said carriage and operated by the said carriage-operating means.

13. In a machine for dressing rugs, the combination of a traveling carriage and a stationary rug-support, means carried by said carriage for reciprocating it over the rug-support, a brushing-roll, and a felt distributing-roll carried by said carriage and operated by said carriage-operating means.

14. In a machine for dressing rugs, the combination of a traveling carriage and a stationary rug-support, means carried by said carriage for reciprocating it over the rug-support, and a dressing device comprising a brushing-roll, a felt distributing-roll, and a heated ironing-roll.

15. A machine for dressing rugs, including a reciprocating carriage, an ironing-roll, means for rotating said roll, a hood covering said roll, a burner between said hood and said roll directing its flame upon said roll, and an air-pump carried by said carriage for supplying air to said burner.

847,652. CALENDAR-BANK. SAMUEL E. CREASEY, Sanford, Me. Filed Dec. 20, 1906. Serial No. 348,726.

Claim.—1. A calendar-bank comprising a support, a calendar mounted thereon, a face-plate for said calendar provided with coin-receiving openings corresponding to the numbers of the calendar, means for locking the face-plate in position over the calendar and unlocking it to permit the coins to fall out at the back of the plate, a coin-receiving box below the calendar mounted on the support.

2. A calendar-bank comprising a support, a calendar mounted thereon, a face-plate for said calendar provided with coin-receiving openings corresponding to the numbers of the calendar, means for locking the face-plate in position over the calendar and unlocking it to permit the coins to fall out at the back of the plate, a coin-receiving box below the calendar mounted on the support, a swing-

ing door at the top of said box adapted to yield under the weight of the coins.

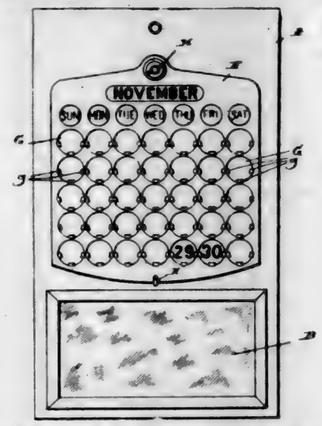

3. A calendar-bank comprising a support, a calendar mounted thereon, a face-plate for said calendar provided with coin-receiving openings corresponding to the numbers of the calendar, means for preventing the coins from falling out when inserted in the coin-receiving openings to cover the numbers, means for locking the face-plate in position over the calendar and unlocking it to permit the coins to fall out at the back of the plate, a coin-receiving box below the calendar mounted on the support.

4. A calendar-bank comprising a support, a calendar-pad mounted thereon, a face-plate for said calendar-pad provided with coin-receiving openings corresponding to the numbers on the calendar, means for preventing the coins from falling out when inserted in the coin-receiving openings to cover the numbers, means for locking the face-plate in position over the pad, and unlocking it to permit the coins to fall out at the back of the plate and to permit the change or removal of a sheet of the pad, a coin-receiving box below the calendar-pad mounted on the support.

5. A calendar-bank comprising a support, a calendar-pad mounted thereon, a face-plate for said calendar-pad provided with coin-receiving openings corresponding to the numbers on the calendar, means for preventing the coins from falling out when inserted in the coin-receiving openings to cover the numbers, means for locking the face-plate in position over the pad, and unlocking it to permit the coins to fall out at the back of the plate and to permit the change or removal of a sheet of the pad, a coin-receiving box below the calendar-pad mounted on the support, a swinging spring-controlled door at the top of the said box adapted to yield under the weight of the coins.

847,653. PROTECTOR MECHANISM FOR LOOMS. JOHN V. CUNNIFF, Fall River, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Sept. 26, 1906. Serial No. 336,266.

Claim.—1. In a loom, a lay provided with shuttle-boxes each having a binder, a rock-shaft having binder-fingers to coöperate with said binders, a bunter fixed with relation to the lay, a frog having a frog-lift movably mounted thereon, a lever fulcrumed on the frog, having one end extended under and adapted to move the frog-lift into the bunter-path, and a tripping-arm on said rock-shaft to engage the other end of and tilt the lever and thereby operatively position the frog-lift when a shuttle is improperly boxed.

2. In a loom, a sliding frog, a frog-lift movable thereon, a lever on the frog and extended rearwardly therefrom the front end of the lever extending under the frog-lift, a lay having a bunter movable therewith and fixed relatively thereto, a pivotally-mounted shuttle-binder on the lay, and a tripping-arm connected with the binder and adapted to engage and tilt the tripping-lever upon improper boxing of the shuttle to thereby rock said tripping-lever and raise the frog-lift into the bunter-path.

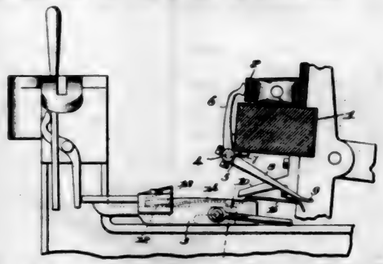

3. In a loom, a lay having a shuttle-box, a binder therefor, a binder-finger pivotally mounted on the lay, a tripping-arm connected with and longer than the binder-finger, whereby a slight binder movement will effect an increased angular movement of the said arm, a movable frog having a frog-lift thereon, a lever having one end extended under and adapted to operatively position the lift and having its other free end in the path of and to be moved by the tripping-arm when the shuttle is improperly boxed, and a bunter fixed with relation to the lay and adapted to engage the frog-lift and move the frog when the tripping-arm coöperates with the said lever to operatively position the frog-lift.

847,654. DEVICE FOR PRODUCING VIBRATIONS. JAY VAN TUYL DANIELS, London, England. Filed Apr. 30, 1906. Serial No. 314,573.

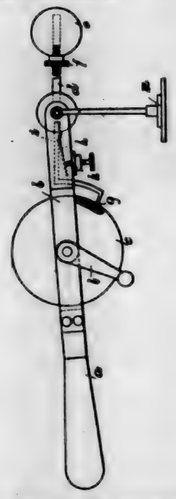

Claim.—1. An apparatus for producing vibrations comprising a pivoted lever, a weight on one end of the lever, means for rapidly oscillating said lever and means for transmitting the vibrations.

2. An apparatus for producing vibrations comprising a pivoted lever, a weight on one end of the lever, means for rapidly oscillating said lever, means for adjusting the weight relatively to said lever and means for transmitting the vibrations.

3. An apparatus for producing vibrations comprising a frame, a hand-grip thereon, a lever pivoted on said frame, a weight on said lever, means for rapidly oscillating said lever and means for transmitting the vibrations.

4. An apparatus for producing vibrations comprising a frame, a hand-grip thereon, a lever pivoted on said frame, a weight on said lever, means for rapidly oscillating said lever, a handle for operating said oscillating means and means for transmitting the vibrations.

5. An apparatus for producing vibrations comprising a frame, a hand-grip thereon, a lever pivoted on said frame, a weight on one end of the lever, hand-operated means for oscillating the lever, and means for transmitting said vibrations.

6. An apparatus for producing vibrations comprising a frame, a lever pivoted thereon, a weight on one end of the lever, a serrated wheel adapted to engage the outer end of said lever and means attached to the frame for transmitting the vibrations.

7. An apparatus for producing vibrations comprising a frame, a hand-grip thereon, a lever pivoted in said frame, a weight on one end of said lever, a roller on the other end, a serrated wheel engaging said roller, a handle for rotating said wheel and means for transmitting the vibrations.

8. An apparatus for producing vibrations comprising a frame, a hand-grip thereon, a lever pivoted in said frame, a weight on one end of said lever, a roller on the other end, a serrated wheel engaging said roller, a handle for rotating said wheel, a spring on said lever and an adjusting-screw on the frame engaging therewith for the purpose of adjusting the intensity of the vibrations.

847,655. CARD-TABLE. CHARLES G. DAVIDSON, New York, N. Y. Filed Oct. 3, 1905. Serial No. 281,120.

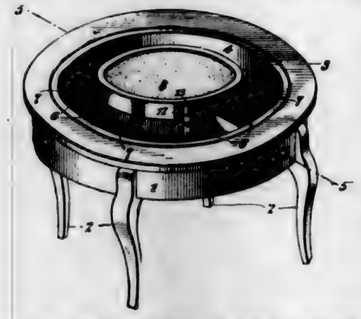

Claim.—1. In a card-table, a hinged clamping-ring swinging upwardly from the top surface of the table, a plurality of playing-boards beneath said ring and bearing upwardly thereagainst by their own resiliency, and means for holding said ring in clamping relation thereon.

2. In a card-table, a central platform having a plate, a clamping-ring having a flange above said plate, and a plurality of playing-boards beneath said flange and firmly included between said flange and plate by their own resiliency.

3. In a card-table, a clamping-ring having an inwardly-extending flange, a plurality of playing-boards beneath said flange having different designs upon both faces thereof, and means for releasing said ring to swing upwardly from the table to expose said playing-boards whereby they may be rearranged.

4. In a card-table, a central platform having a hinged plate, a plurality of playing-boards upon said plate, and a clamping-ring hinged to said plate for removably holding said playing-boards in position.

5. In a card-table, a reversible tablet having a central recess, a plate hinged to close over said recess, means for locking said plate in closed relation, a clamping-ring hinged to said plate, means for holding said clamping-ring in closed relation over said plate, and a plurality of playing-boards upon said plate and secured by said clamping-ring.

6. In a card-table, a reversible tablet swiveled upon a diametrical axis, pockets within said tablet, a central platform upon said tablet having a recess, a plate hinged to close upon said recess, means for locking said plate in closed relation, a clamping-ring hinged to said plate, means for locking said clamping-ring upon said plate, and a plurality of playing-boards clamped between said plate and ring.

847,656. TELEPHONE-RELAY. DILPERT S. DICKERT, Salt Lake City, Utah. Filed May 22, 1906. Serial No. 318,152.

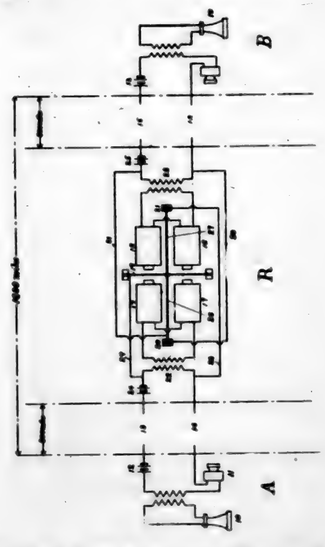

Claim.—1. In a relay for telephone-lines, two magnetically-operated transmitting devices respectively shunted across the incoming and outgoing lines, and means to increase the contact resistance of one of said transmitting devices when the other is in operation.

2. In a relay for telephone-lines, two magnetically-operated transmitting devices respectively shunted across the incoming and outgoing lines, and means to automatically increase the contact resistance of one of said transmitting devices when the other is in operation.

3. In a relay for telephone-lines, two magnetically-operated transmitting devices respectively shunted across the incoming and outgoing lines, and a common diaphragm operatively connected therewith and adapted to increase the contact resistance of one of said transmitting devices when the other is in operation.

4. In a relay for telephone-lines; two induction-coils; two transmitting devices; magnetically-controlled means operatively connected therewith; and two independent electromagnetic means included in closed circuits with the secondaries of said induction-coils.

5. In a relay for telephone-lines; two induction-coils; two transmitting devices; two electromagnetic means included in closed circuits with the corresponding secondaries of said induction-coils; and a common diaphragm operated by said electromagnetic means and controlling said transmitting devices.

6. A relay adapted to be inserted in a telephone-line, and comprising two induction-coils whose primaries are respectively in series with the incoming and outgoing lines; two electromagnets, included in closed circuits with the corresponding secondaries of said induction-coils;

a common diaphragm interposed between said electromagnets; and two transmitting devices controlled by said diaphragm and operated through said magnets.

7. A relay adapted to be inserted in a telephone-line, and comprising two induction-coils whose primaries are respectively in series with the incoming and outgoing lines; two electromagnets included in closed circuits with the corresponding secondaries of said induction-coils; a common diaphragm interposed between said electromagnets; a transmitter-circuit shunted across said outgoing line; a transmitter-circuit shunted across said incoming line; a source of electricity in series with said outgoing line; a source of electricity in series with said incoming line; a transmitting device in said transmitter-circuit shunted across the outgoing line; a transmitting device in said transmitter-circuit shunted across said incoming line, said transmitting devices being controlled by said diaphragm and operated through said electromagnets.

847,657. STEAM-TRAP. WILLIAM W. DOOLITTLE, Evanston, Ill., assignor to Crane Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 9, 1905. Serial No. 286,560.

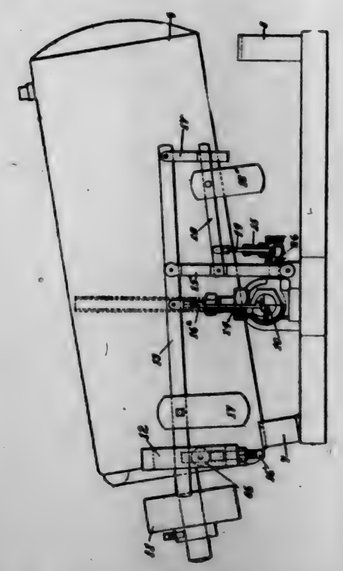

Claim.—1. In combination, a tank, an admission and exhaust axis beneath the tank and located nearer one end of the tank than the other, a counterweight at the end of the tank nearest the axis for holding the tank in tilted position when empty, direct connections from the bottom of the tank at a point adjacent the axis to the admission and discharge portions of the axis, and means operated by the tilting of the tank whereby the admission and discharge are controlled.

2. In combination a tank, an axis therefor provided with an admission valve for steam and an air valve, a fulcrum lever pivoted at the bottom and carrying a weighted lever having at one side of its fulcrum a connection with the admission valve and at the other side a depending link, a third lever pivoted at one end between the ends of the fulcrum lever, a weight on said third lever and a connection at one side of the weight with the depending link and at the other side with the air valve and means on the tank for operating the second lever.

847,658. PROCESS OF TREATING STARCH. FREDERICK DAFFLER, Rutherford, N. J., assignor to The Arabol Manufacturing Company, New York, N. Y., a Corporation of New York. Filed Mar. 9, 1906. Serial No. 305,154.

Claim.—1. The herein-described process for rendering starch capable of swelling in cold water, consisting in: first mixing the starch with a liquid hydrocarbon; and then adding caustic alkali.

2. The herein-described process for rendering starch capable of swelling in cold water, consisting in: first mixing the starch with a liquid hydrocarbon; then adding caustic alkali; and finally removing said hydrocarbon.

3. The herein-described process for rendering starch capable of swelling in cold water, consisting in: first mixing the starch with a liquid hydrocarbon; adding caustic alkali; removing said hydrocarbon; and finally neutralising said alkaline starch.

4. The herein-described process for rendering starch capable of swelling in cold water, consisting in: first mixing the dry starch with crude paraffin-oil; and then adding caustic alkali.

5. The herein-described process for rendering starch capable of swelling in cold water, consisting in: first mixing the dry starch with crude paraffin-oil; adding caustic alkali; and then removing said paraffin-oil.

6. The herein-described process for rendering starch capable of swelling in cold water, consisting in: first mixing the dry starch with crude paraffin-oil; adding caustic alkali; removing said paraffin-oil; and finally neutralising said alkaline starch.

7. Starch cells with unbroken epidermis, capable of swelling in cold water to form a viscous, paste-like mass.

8. Neutral starch cells with unbroken epidermis, capable of swelling in cold water to form a viscous, paste-like mass.

847,659. DOUBLE-BARRELED FIREARM. EDWARD H. ELDER, Chicopee Falls, Mass., assignor to J. Stevens Arms & Tool Company, Chicopee Falls, Mass., a Corporation. Filed Mar. 16, 1905. Serial No. 250,338.

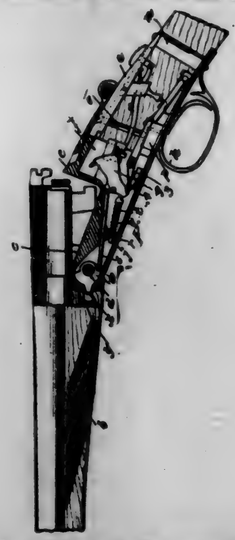

Claim.—1. In a firearm of the character described, a frame having parallel recesses extending from the under side thereof near each side of the frame into and from end to end of the latter in the plane of the axes of the barrels, said recesses being bridged transversely between the opposite ends thereof by the metal of the frame; a hammer, a mainspring, and a cocking-pin located in each

of said recesses, the bridged portions of the latter constituting supports for the longitudinal movement of the cocking-pins and the mainsprings.

2. In a firearm of the character described, a frame, barrels pivotally supported in the forward end of the latter, and a transversely-located pin in the frame on which the barrels may swing, the frame having parallel recesses extending from the under side thereof near each side of the frame into and from end to end of the latter in the plane of the axes of the barrels; a hammer, a mainspring, and a cocking-pin located in each of said recesses, a cam freely rotatable on the pivot-pin of the barrels and located in the forward end of each recess to engage said cocking-pins, there being a projection on said cams extending forwardly of the axis on which the barrels swing and engaging the latter, and a bridge-piece between said parallel recesses, a cocking-pin and mainspring supported by said bridge-piece.

3. In a firearm of the character described, a frame, barrels pivotally supported in the forward end thereof on an axis at right angles to the barrels, said frame having parallel recesses extending from the under side thereof into the frame, near each side of the latter, a hammer, a mainspring, and a cocking-pin located in each of said recesses, and a cam in the forward end of each recess supported on the axis on which the barrels swing and provided with a shoulder against which said cocking-pins bear, there being a forwardly-extending projection on the cam to engage the barrels, and a plate to cover the under side of the frame, a bridge-piece between said recesses, two openings therethrough, and said cocking-pins extending through said bridge-piece.

4. In a firearm of the character described, a frame, barrels pivotally supported in the forward end of the latter, and a transversely-located pin in the frame on which the barrels may swing, a frame provided with parallel recesses extending into the frame from the under side thereof and from end to end thereof, a hammer, a mainspring, and a cocking-pin located in each of said recesses, a cam freely rotatable on the pivot-pin of the barrels and located in the forward end of each recess to engage the cocking-pins, there being a projection on said cams extending into a recess in said fore-end, a bridge-piece integral with the frame between said recesses and having two openings therethrough, one of said openings supporting said cocking-pin and the other the mainspring for operating the hammer.

847,660. BUTTON. ALEXANDER E. FREEMAN, Orange, N. J., assignor of one-half to Alexander Effenberger, Orange, N. J. Filed March 7, 1906. Serial No. 304,636.

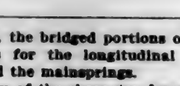

Claim.—1. A button and button-fastener, comprising, in combination with a button-head and its loop, a perforated plate into and through which said loop is inserted, said plate having a pair of outwardly-extending receiving-loops, said loops forming pin-receiving guides, and a holding-pin consisting of a pair of spring-arms removably arranged beneath and in holding engagement with the loops of said plate and with said loop of the button-head, substantially as and for the purposes set forth.

2. A button and button-fastener, comprising, in combination with a button-head and its loop, a plate provided with a rearwardly-extending hub, said hub having a perforation into and through which the loop of said button-head is inserted, said plate having also a pair of outwardly-extending receiving-loops, said loops forming pin-receiving guides, and a holding-pin consisting of a pair of spring-arms removably arranged beneath and in holding engagement with the loops of said plate and with said loop of the button-head, substantially as and for the purposes set forth.

3. A button and button-fastener, comprising, in combination with a button-head and its loop, a perforated plate into and through which said loop is inserted, said plate having a pair of outwardly-extending receiving-loops, said loops forming pin-receiving guides, and a holding-pin consisting of a pair of spring-arms removably arranged beneath and in holding engagement with the loops of said plate and with said loop of the button-head, said spring-arms being each provided with a downwardly extending and curved holding portion 22, arranged directly beneath the loop of said button-head and extending through the hub of said plate, and means connected with said spring arms for holding engagement with one of the said loops of said plate, substantially as and for the purposes set forth.

4. A button and button-fastener, comprising, in combination with a button-head and its loop, a plate provided with a rearwardly-extending hub, said hub having a perforation into and through which the loop of said button-head is inserted, said plate having also a pair of outwardly-extending receiving-loops, said loops forming pin-receiving guides, and a holding-pin consisting of a pair of spring-arms removably arranged beneath and in holding engagement with the loops of said plate and with said loop of the button-head, said spring-arms being each provided with a downwardly extending and curved holding portion 22, arranged directly beneath the loop of said button-head and extending through the hub of said plate, and oppositely-extending curved holding parts connected with the said spring-arms for engagement with one of the said loops of said plate, substantially as and for the purposes set forth.

847,661. REVERSIBLE MAIL-BAG CATCHER AND DELIVERER. JOHN L. GASH, Elmer, Mo. Filed May 26, 1906. Serial No. 318,874.

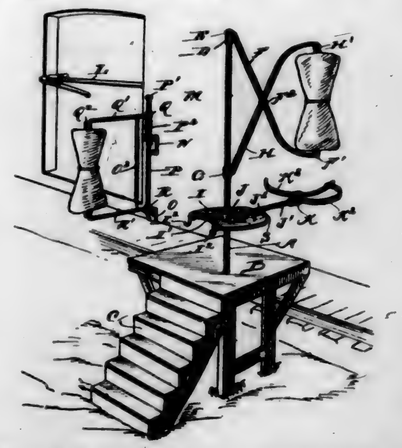

Claim.—1. In a mail-bag catcher and deliverer, the combination with a post provided with a longitudinally-swinging arm, of a socket provided with a catcher mounted on said arm, and means for securing said socket on said arm, for the purpose described.

2. In a mail-bag catcher and deliverer, the combination with a post having a disk secured thereon, provided with stops, of an arm mounted on said post provided with a hook adapted to engage said stops, and a reversible catcher mounted on said arm, for the purpose described.

3. In a device of the kind described, the combination with a post having a disk secured thereon provided with downwardly-projecting lugs, of an arm mounted on said post provided with a hook extending under said disk, a socket mounted on said arm provided with a bowed arm, a bowed arm pivoted on said socket and means for securing said socket on said arm for the purpose described.

4. In a device of the kind described, the combination with a post, of sleeves mounted on said post provided with arms pivoted together midway their length, having hooked ends, for the purpose described.

5. In a mail-bag catcher and deliverer, the combination with a vertical slidable and rotatable shaft mounted in brackets on the side of the car, of spring-actuated arms provided with hooked ends mounted on said shaft, and means for locking said arms at right angles to said car, for the purpose described.

6. In a mail-bag catcher and deliverer, the combination with apertured brackets secured to the side of the car, of a headed shaft mounted in said brackets, sleeves mounted on said shaft provided with arms having hooked ends connected together, a coil-spring surrounding said shaft between the upper bracket and the upper sleeve, one end being against said bracket, and the other against said arm, a recess formed in the upper edge of the lower bracket and a lug formed on the lower arm adapted to be held therein by the weight of the bag, for the purpose described.

7. In a mail-bag catcher and deliverer the combination with a post having a disk secured thereon, a bowed spring secured on the edge of the disk provided with depression, an arm pivoted on said post provided with a catcher and a hook carried by said arm adapted to fit in the depression of the bowed spring for the purpose described.

847,662. LIFTING-JACK. LEWIS O. HARA, Auburn, N. Y. Filed Sept. 8, 1906. Serial No. 333,791.

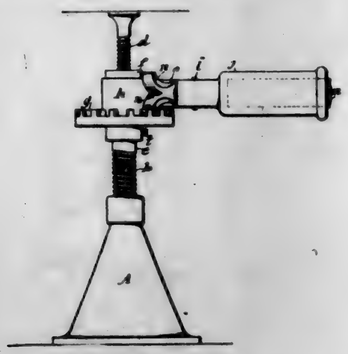

Claim.—The combination with the internally-threaded tubular screw receiving through it the externally-threaded screw, and the disk ratchet rigidly attached to said tubular screw and formed with upwardly-projecting teeth, of a collar loosely embracing the tubular screw above the disk ratchet and having a horizontal radially-extending stem formed integral with it, the pawl formed with a sleeve embracing the stem adjacent to the collar, and an arm formed with a socket in one end receiving the end portion of the stem, a fastening-pin passing transversely through said arm and stem, and a handle detachably secured to the opposite end of said arm substantially as set forth and shown.

847,663. SPEED-CONTROLLING DEVICE FOR ELECTRIC MOTORS. THADDEUS W. HEERMANS, Chicago, Ill. Filed Nov. 17, 1906. Serial No. 343,880.

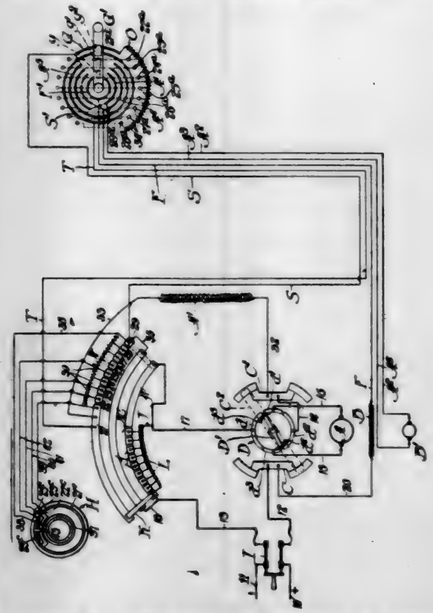

Claim.—1. A speed-controlling apparatus for electric motors comprising two sets of resistances arranged in steps and connected in parallel in the controlling-circuit of the motor, and means associated with each set and independently operable for cutting in and short-circuiting said resistances for the purpose set forth.

2. A speed-controlling apparatus for electric motors comprising two rheostats connected in parallel in the controlling-circuit of the motor, the arm of one of which is automatically operated and manually-operable means for operating the arm of the other rheostat.

3. A speed-controlling apparatus for electric motors comprising two sets of resistances arranged in steps and connected in parallel in the controlling-circuit of the motor, one being located at the motor and the other at a distant controlling-station, means for automatically cutting in and short-circuiting the set of resistances at the motor, and a manually-operable device for cutting in and short-circuiting the controlling-station resistances.

4. A speed-controlling apparatus for electric motors comprising two rheostats connected in parallel in the controlling-circuit of the motor, one located at the motor and the other at a distant controlling-station, the moving arm of the motor-rheostat being automatically operated to accelerate the motor, and the arm of the controlling-station rheostat being manually operated.

5. A speed-controlling apparatus for shunt-wound electric motors comprising two rheostats connected in parallel in the shunt-field of the motor, the arm of one of which is automatically operated and manually-operable means for operating the arm of the other rheostat.

6. In an electric engine for elevators and the like, the combination with an electric motor, of means for regulating the speed of the motor comprising two rheostats, connected in parallel in the controlling-circuit of the motor, one located at the motor and adapted to be automatically operated thereby, and the other at the controller in the elevator-car, and means designed to be operated at the terminal landings of the car for successively short-circuiting the coils of the motor-rheostat to gradually decrease the speed of the motor.

7. The combination with an electric elevator-engine embracing an electric motor, a controller for said motor, a main switch and a reversing-switch arranged in the motor-circuit, and a motor-magnet for operating said switches embracing a field and armature connected in series through said controller, of a speed-controlling apparatus comprising two rheostats connected in parallel in the controlling-circuit of the motor, one located at the motor and the other at the controlling-station, said motor-magnet circuit being completed from the controller through the terminal conductor of the controller-rheostat.

847,664. PROCESS OF DESULFURIZING AND AGGLOMERATING PYRITES-CINDER AND THE LIKE. ROWLAND F. HILL, New York, N. Y., assignor to General Chemical Company, New York, N. Y., a Corporation of New York. Original application filed Dec. 20, 1905, Serial No. 292,557. Divided and this application filed June 26, 1906. Serial No. 323,437.

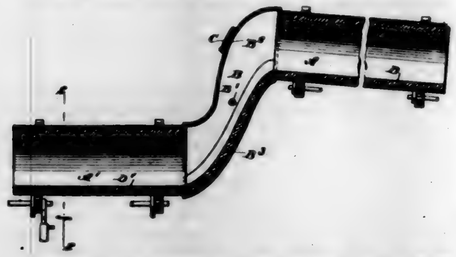

Claim.—1. The process of desulfurizing and agglomerating pyrites-cinder and the like, which consists in first subjecting the material to rotary agitation and to a heat below the fusion-point to desulfurize the material, then subjecting the desulfurized material to a gradually-increasing heat, but still below the fusion-point, and finally subjecting the desulfurized material to rotary agitation, in a kiln having a non-acid lining, and to a heat sufficient to fuse or partly fuse the material and cause it to form coherent masses or nodules.

2. The process of desulfurizing and agglomerating pyrites-cinder and the like, which consists in first subjecting the material to agitation in a desulfurizing atmosphere, below the fusion-point, then subjecting the desulfurized material to a gradually-increasing heat, but still below the fusion-point, and finally subjecting the desulfurized material to agitation in a kiln having a non-acid lining, and to a heat sufficient to fuse or partly fuse the material and cause it to form coherent masses or nodules.

3. The process of desulfurizing and agglomerating pyrites-cinder and the like, which consists in first subjecting the material to agitation in a desulfurizing atmosphere, below the fusion-point, and then subjecting the desulfurized material to agitation in a kiln having a non-acid lining, and to a heat sufficient to fuse or partly fuse the material and cause it to form coherent masses or nodules.

4. The process of desulfurizing and agglomerating pyrites-cinder and the like, which consists in first subjecting the material to rotary agitation in a desulfurizing atmosphere, below the fusion-point, and then subjecting the desulfurized material to rotary agitation in a kiln having a non-acid lining, and to a heat sufficient to fuse or partly fuse the material and cause it to form coherent masses or nodules.

847,665. WASHER. CHRISTIAN JENSEN, Philadelphia, Pa. Filed Nov. 4, 1905. Serial No. 285,841.

Claim.—1. In a washing-machine, the combination of a tub 1; screens 6, dividing said tub into three compartments, 3, 4 and 5; covers 9 covering said compartments 3 and 5, respectively; dasher-rods 11, located in said compartments 3 and 5; dasher-plates 12, adjustably and removably secured to said rods; substantially vertical frame 22, secured at its lower ends to said covers 9 and 9'; rod 41, secured vertically and at its upper end to the upper end of said frame 22; pulley 40, journaled to the lower end of said rod; a basket 38, located in said compartment 4; rope 39, secured at its lower end to said basket, its upper end adapted to pass over said pulley 40, with means for effecting a rectilinear reciprocating movement of said dasher-rods 11, substantially as shown and described and for the purpose set forth.

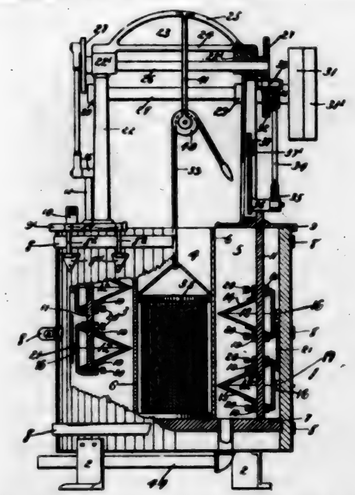

2. In a washing-machine, the combination of a tub 1; screens 6, dividing said tub into three compartments, 3, 4 and 5; covers 9 and 9', covering said compartments 3 and 5, respectively; dasher-rods 11, located in said compartments 3 and 5; dasher-plates, adjustably and removably secured to said dasher-rods; means for preventing lateral displacement of the dasher-rods and dashers; means for adjustably securing said dasher-plates to said dasher-rods, with means for effecting a rectilinear reciprocating movement of said dasher-rods, substantially as shown and described and for the purposes set forth.

3. In a washing-machine, the combination of a tub; wire screen fabric, dividing said tub into three compartments, a middle compartment, and outer compartments; covers, provided with central perforations, covering said outer compartments; dasher-rods, located in said last-mentioned compartments; dasher-plates, adjustably and removably secured to said dasher-rods; means for preventing displacement of the dasher-plates, with means for effecting a rectilinear reciprocating movement of the dasher-rods, substantially as shown and described and for the purposes set forth.

4. In a washing-machine, the combination of a tub; screens, dividing said tub into three compartments, a middle compartment and outer compartments; covers, covering said outer compartments; dasher-rods, located in said last-mentioned compartments; dasher-plates, adjustably secured to said dasher-rods; guide-plates, having outwardly-extending parallel flanges, secured to said dasher-plates; vertical guide-rods, secured to the inner periphery of said tub, with means for effecting a rectilinear reciprocating movement of said dasher-rods, substantially as shown and described and for the purposes set forth.

5. In a washing-machine, substantially as shown and described, dashers 12, each consisting of a curved outer wall 13 and an upper and lower slanting wall 14 and 15, respectively, their outer edges secured to the upper and lower edges of said curved wall, their inner edges converging to a point, forming a straight line, said dasher-plates being adjustably secured to dasher-rods 11, said dasher-rods being adapted to be operated by suitable mechanism, for the purposes set forth.

847,666. AUTOMATIC GLASS GATHERING AND BLOWING MACHINE. CHRISTIAN J. KOENIG, Alton, Ill. Filed Oct. 20, 1905. Renewed Jan. 24, 1907. Serial No. 353,907.

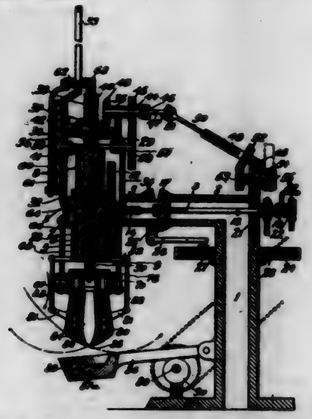

Claim.—1. In a machine of the class described, a frame, a block carried thereby, separable blank and blow molds hinged to the under side of said block, means whereby the parts of said molds are alternately opened and closed in pairs, means whereby a partial vacuum is created in the blank-mold when the same is closed to fill said mold with molten glass, and which means by its reverse motion blows the glass-blank in the blow-mold and a block adapted to fit against the under side of the blow-mold when the same is closed, substantially as specified.

2. In a machine of the class described, a frame, a block carried thereby, a separable blank and blow molds hinged to the under side of said block, means whereby the parts of said molds are alternately opened and closed in pairs and a block having a recess in its top adapted to fit against the under side of the blow-mold when the same is closed, substantially as specified.

3. In a machine of the class described, a frame, a block carried thereby, a separable blank and blow molds hinged to the under side of said block, means whereby the parts of said molds are alternately opened and closed in pairs, a block having a recess in its top adapted to fit against the under side of the blow-mold when the same is closed, and means whereby said block is elevated when the blow-mold is closed, substantially as specified.

4. In a machine of the class described, a frame arranged to swing vertically, a block carried thereby, separable blank and blow molds hinged to the under side of said block, a separable neck-ring arranged in the top of said block and a block having a recess in its top adapted to fit against the under side of the blow-mold when the same is closed, substantially as specified.

5. In a machine of the class described, a frame, a block supported thereby, a separable neck-ring arranged in the top of said block, separable blank and blow molds hinged to the under side of the block, means whereby the parts of said molds are alternately swung upwardly, means whereby the parts of the neck-ring are separated and a block having a recess in its top adapted to fit against the under side of the blow-mold when the same is closed, substantially as specified.

6. In a machine of the class described, a frame, a block carried thereby, separable blank and blow molds hinged to the under side of the block, means arranged above the block for creating a partial vacuum in the blank-mold to fill the same with molten glass and which last-mentioned means by its reverse motion blows the glass-blank in the blow-mold and a block having a recess in its top adapted to fit against the under side of the blow-mold when the same is closed, substantially as specified.

7. In a machine of the class described, a frame a block carried thereby, a separable neck-ring arranged in said block, a blowing-stem projecting through said neck-ring separable blank and blow molds hinged to the under side of the block and a block having a recess in its top adapted to fit against the under side of the blow-mold when the same is closed, substantially as specified.

8. In a machine of the class described, a frame, a block carried thereby, a separable neck-ring arranged in said block, a blowing-stem projecting through the neck-ring, means whereby said stem is continuously rotated, separable blank and blow molds hinged to the under side of the block and a block having a recess in its top adapted to fit against the under side of the blow-mold when the same is closed, substantially as specified.

9. In a machine of the class described, a frame arranged to swing vertically, a block carried thereby separable blank and blow molds hinged to the under side of said block, a block having a recess in its top adapted to fit against the under side of the blow-mold when the same is closed, a suction device vertically arranged for rotation above the first-mentioned block, means whereby said suction device is operated when the frame is swung vertically and means whereby the suction device is reversed in operation when the frame returns to its vertical position, substantially as specified.

10. In a machine of the class described, a frame, a block carried thereby, separable blank and blow molds hinged to the under side of said block, means whereby the parts of said molds are alternately closed and opened in pairs, means whereby a partial vacuum is created in the blank-mold when the same is closed to fill said mold with molten glass and which means by its reverse motion blows the glass-blank in the blow-mold, means whereby the frame is swung vertically at the time the blank-molds are closed and a block provided with a recess in its top adapted to fit against the under side of the blow-mold when the same is closed, substantially as specified.

11. In an apparatus for the manufacture of hollow glass articles, the combination with a mold; of a means cooperating with the mold which, under one movement operates to create a partial vacuum in the mold whereby to fill it under atmospheric pressure and which under another movement forces the exhausted air back into the mold for blowing the glass.

12. In a glass-shaping machine, the combination of a sectional parison-mold adapted to be dipped into a mass of molten glass, a means that first exhausts the air from the mold when dipped, whereby to fill the mold, and then blows the parison to the desired form.

13. In a machine of the character described, the combination of a forming-head, a mechanism for bringing the forming-head into operative relation to a mass of molten glass, means for first moving the glass from the mass into the forming-head whereby to fill the same and then blowing the filling whereby to expand the filling to the desired shape.

14. In a machine of the character described, a head having a blank-mold and a body-mold connected thereto, means for moving the blank-mold into operative relation to the body of molten glass, a pump operating under one movement to fill the blank-mold by air-pressure and under another movement to blow the parison thus formed in the body-mold.

15. In a machine of the character described, the combination of a neck-ring, a parison and a blowing mold cooperatively connected therewith, means for gathering the proper amount of metal for the article and forming the parison by forcing the glass under atmospheric pressure into the parison-mold and then blowing the said parison, as set forth.

16. A machine of the character described, comprising a mold-section open at the bottom and adapted to be moved into operative relation to a mass of molten glass, and means connected with the mold adapted under one movement to fill the mold by exhausting the air therefrom, and under another movement, to return the exhausted air under pressure whereby to blow the article into form.

17. The combination of a mold forming a holder for the parison, means for first filling the mold by gathering the material directly from the molten mass into the said holder, the same means then serving for subsequently shaping the parison while supported thereby.

18. The combination in a machine as described, with a mold having means for supporting the blanks when formed therein; of a means for directly filling the mold by gathering from the mass of molten glass under the operation of a vacuum and then compressing air within the vacuum and blowing it into the gathering whereby to blow it to its finished form while held by the supporting means.

19. In an apparatus for the manufacture of hollow glass articles, the combination of a mold comprising two independent pairs of sections, one of which serves as a parison-mold, the other set of which serves as a blowing or final-forming mold, a mechanism for alternately moving the two sets of sections into an operative position, and means, which under one operation draws the molten glass into the parison-mold when it is in its operative position, and which, under another operation, blows the parison when the final-forming-mold sections are in their operative position.

20. In an apparatus for the manufacture of hollow glass articles, the combination of a parison or fore-form mold and a final or true form mold, the two molds being cooperatively connected, and means adapted under one operation to draw the molten glass into the fore-form mold by suction action and then blowing the parison filling contained within the final-form-mold sections by forcing air therein.

21. In a machine of the character described, a single automatic mechanism adapted under one operation to gather the glass and shape it into a blowing-blank and under another operation to subsequently blow the blank.

22. In a glass-shaping means, the combination of a blank-mold and a blowing-mold, of mechanism for automatically inclosing the blank-form in the blank-mold for the blowing-mold, and means operated under one movement for gathering the glass into the blank-mold and under another movement adapted for expanding the blank when surrounded by the blowing-mold.

23. In a glass-shaping machine of the character described, a pump coöperatively connected with the blank-mold and the blowing-mold, adapted under one movement to create a partial vacuum for gathering the glass and shaping it in the blank-mold and under another movement to compress the air contained in the partial vacuum and force the same in the blank.

24. A glass gathering and shaping means, comprising an adjustable mold adapted under one adjustment to initially form the blank, said mold being open at the bottom and an air-controlling means connected with the mold, adapted under one operation to exhaust the air from the mold and fill it by suction and under another operation to expand the filling to its final shape by blowing the air under pressure therein.

847,667. HOISTING DEVICE. GEORGE F. KOENIG, Le Sueur, Minn. Filed Oct. 8, 1906. Serial No. 337,924.

Claim.—1. In a hoisting-machine, the combination of a truck; movable reaches, removably secured to the axles of said truck; main frame, consisting of vertical beams and a transverse beam at its front end, mounted on said truck; a platform, having side and end beams; doors, hinged in said platform; a rock-shaft, having extending from its periphery, near its ends, two pins, journaled in the side beams of said platform, adjacent the outer side of the rearmost of said trap-doors; a lever, secured to said rock-shaft near one end thereof; a block, secured longitudinally to the bottom of said platform, near the corner thereof adjacent said lever and rock-shaft; a spring, secured at its inner end to the periphery of said rock-shaft, and at its opposite end to one side of said block; a bearing, secured to the outer end of said block; a pulley, journaled in said bearing; a transverse controlling-rod, its inner end working through said bearing, and its opposite end through one of the side beams of said platform, near its rear end, and adapted to engage with said lever; a rope, secured at one end in the inner end of said controlling-rod and working over said pulley; plates, hinged longitudinally at their rear ends to the side beams of said platform; loops, secured in the free ends of said plates, and hooking over said pins of said rock-shaft; guide-wires, two secured near the inner face and rear end of each of said side beams of said platform, immediately over said plates; a transverse shaft, journaled to the rearmost of said vertical beams of said main frame; means for rotating and controlling said shaft; chains, secured at their inner ends to the ends of the foremost of said trap-doors, passing rearward over pulleys journaled near the inner faces of the side beams of said platform, then downward under pulleys journaled near the ends of the rearmost of said trap-doors, thence over pulleys journaled near the ends of the rearmost of said trap-doors, thence rearward between said clutches and said guide-wires, and thence upward, winding around said transverse shaft; a main shaft, journaled near the rear end of said machine, under said transverse shaft; chains, two secured at their front ends to the side beams of said platform near their front ends, passing upward over pulleys journaled over the top and near the front end of said frame, thence rearward over pulleys journaled over the top and near the rear end of said frame, and thence downward, winding around said main shaft, and two secured to the side beams of said platform near their rear ends, passing

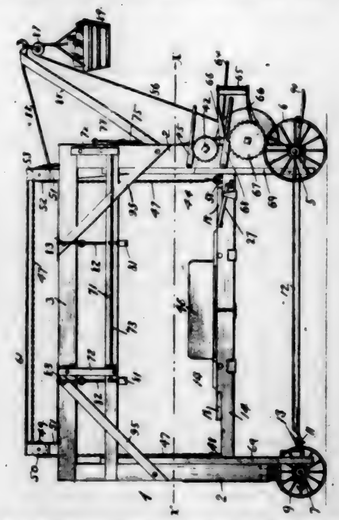

upward over pulleys journaled over the top and near the rear end of said frame, and thence downward, winding around said main shaft; drum, secured on said main shaft intermediate of its length; a guide, consisting of two vertical rollers, secured near the rear end of said machine rearward of and opposite said drum; a draft-rope, secured at one end to said drum and working between said guide; a pulley, secured on said main shaft near its front end; a tread-lever, fulcrumed at its inner end to the rear axle of said truck, immediately under said last-mentioned pulley; a chain, secured to the free end of said tread-lever, passed over said pulley and secured to said rear axle at its opposite end; vertical plates, having elongated perforations, adjustably secured to the vertical beams of said frame; horizontal rock-rods, one terminating at its rear end in an eyed arm and the other in a handle carrying an eyed arm, journaled near the upper end of said frame; a transverse connecting-rod, connecting the rear ends of said rock-rods; a coil-spring, secured at one end near the rear end of said connecting-rod, and at its opposite end to one of the vertical beams of said frame; transverse guard-dogs connected at their outer ends to said rock-rods, their inner ends held in movable suspension, the inner ends of said guard-dogs adapted to engage with the side beams of said platform when hoisted, substantially as shown and described.

2. In a hoisting-machine, the combination of a truck; movable reaches, removably secured to the axles of said truck; main frame, securely mounted on said truck; a platform, having side beams and transverse end beams; trap-doors, hinged in said platform; means for opening and closing said trap-doors; a main shaft, journaled, near the rear end of said machine; chains, two secured at their front ends to the side beams of said platform, passing over pulleys journaled near the front end and over the top of said frame, thence horizontally rearward over pulleys journaled over the top and near the rear end of said frame, and thence downward, winding around said main shaft, and two secured to the side beams of said platform near their rear ends, passing up over pulleys journaled over the top and near the rear end of said frame, and thence downward, winding around said main shaft; means for effecting the rotation of said main shaft; means for holding said main shaft against reverse rotation when said platform is hoisted; means for anchoring said machine in position; horizontal rock-rods, one terminating at its rear end in an eyed arm and the other in a handle carrying an eyed arm, journaled near the upper end of said frame; a transverse connecting-rod, connecting the rear ends of said rock-rods; a coil-spring, secured at its inner end near the rear end of said connecting-rod and at its opposite end to one of the vertical beams of said frame; transverse guard-dogs, connected at their outer ends to said rock-rods, their inner ends held in movable suspension; a rearwardly-extending support, secured to said machine at its rear end; a pulley, secured to the upper free end of said support; a cable, secured to said main shaft at one end and passing over said pulley, and a bucket loaded with rock or other such material, secured to the free end of said cable, substantially as shown and described.

3. In a hoisting-machine, the combination of a truck; movable reaches, connecting with the axles of said truck; main frame, securely mounted on said truck; a platform having side and end beams; trap-doors, hinged in said platform; means for opening and closing said trap-doors; a main shaft journaled near the rear end of said machine; chains, two secured at their front ends to the side beams of said platform, passing over pulleys journaled near the front end and over the top of said frame, thence rearward over pulleys journaled over the top and near the rear end of said platform, and thence downward, winding around said main shaft, and two secured to the side beams of said platform near their rear ends, passing up over pulleys journaled over the top and near the rear end of said frame, and thence downward, winding around said main shaft; means for effecting the rotation of said main shaft; means for holding said main shaft against reverse rotation when said platform is hoisted; means for anchoring said machine in position; horizontal rock-rods, one terminating at its rear end in an eyed arm and the other in a handle carrying an eyed arm, journaled near the upper end of said frame; a transverse connecting-rod, connecting the rear ends of said rock-rods; a coil-spring, secured at one end to said connecting-rod near its rear end, and at its opposite end to said frame; transverse guard-dogs, connected at their outer ends to said rock-rods, their inner end held in movable suspension, with means for maintaining a uniform velocity of said platform when descending, substantially as shown and described.

4. In a hoisting-machine, the combination of a truck; movable reaches, connecting with the axles of said truck; main frame, mounted on said truck; a platform, having side and end beams; trap-doors, hinged in said platform; means for opening and closing said trap-doors; a main shaft, journaled near the rear end of said machine; chains, two secured at their front ends to the side beams of said platform, passing over pulleys journaled over the top and near the front end of said frame, thence rearward over pulleys journaled over the top and near the rear end of said frame, and thence downward, winding around said main shaft, and two secured to the side beams of said platform near their rear ends, passing up over pulleys journaled over the top and near the rear end of said frame, and thence downward, winding around said main shaft; means for effecting the rotation of said main shaft; means for holding said main shaft against reverse rotation when said platform is hoisted; vertical plates, having elongated perforations, secured to said frame and adapted to anchor it in position; means for guarding against accidental dropping of the platform when hoisted, with means for maintaining a uniform velocity of said platform when ascending, substantially as shown and described.

5. In a hoisting-machine the combination of a truck; main frame, mounted on said truck; a platform; trap-doors, hinged in said platform; means for opening and closing said trap-doors; means for raising and lowering said platform; means for anchoring said machine in position; means for guarding against accidental dropping of the platform when hoisted, with means for maintaining a uniform velocity of said platform when descending, substantially as shown and described.

6. In a hoisting-machine, the combination of a truck; main frame, mounted on said truck; a platform; trap-doors, hinged in said platform; means for opening and closing said trap-doors; means for raising and lowering said platform; means for anchoring said machine in position; means for guarding against accidental dropping of said platform when hoisted, substantially as shown and described for the purposes set forth.

7. In a hoisting-machine, the combination of a truck; main frame, mounted on said truck; a platform; trap-doors, hinged in said platform; means for raising and lowering said platform with means for anchoring said machine in position, substantially as shown and described and for the purposes set forth.

847,668. HEATING-CARTRIDGE. ALBERT LANG, Karlsruhe, Germany. Filed May 10, 1904. Serial No. 207,320.

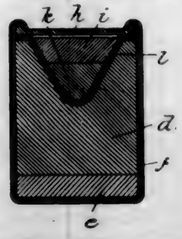

Claim.—1. A heating-cartridge comprising a casing, a base of slowly-fusible but freely-conducting material therein, a heating mass *d*, resting on said base, the priming composition *i*, extending into said mass *d*, a priming-cap *k* between the mass *d*, and the priming composition *i* and and a readily-combustible igniting means.

2. A heating-cartridge comprising a casing, a base of slowly-fusible but freely-conducting material therein, a heating mass *d* resting on said base, a copper cap *l* on said mass *d*, a priming-cap *k* on said copper cap *l*, the priming composition *i* on said priming-cap *k* and a plate of combustible material placed over the composition *i*.

847,669. ARTIFICIAL FLORAL DECORATION. BERNHARDT LEVI, New York, N. Y. Filed Apr. 12, 1906. Serial No. 311,203.

Claim.—An artificial festoon or runner comprising a closely-folded zigzag strip adapted to be extended, and having its marginal edges foliated, and a series of expansible petal-like members secured within the angles formed by the folds of said strip and expanded and contracted thereby.

847,670. PROCESS OF MAKING CALCIUM PEROXID. OTTO LIEBKNECHT, Frankfort-on-the-Main, Germany, assignor to The Roessler & Hasslacher Chemical Company, New York, N. Y., a Corporation of New York. Filed June 8, 1906. Serial No. 320,691.

Claim.—1. A process of making calcium peroxid consisting in reacting a solution of hydrogen peroxid with a solution containing calcium oxid in a non-precipitated state.

2. A process of making calcium peroxid consisting in reacting hydrogen peroxid with calcium salts in an ammoniacal solution.

847,671. BRAKE-BEAM. CHARLES A. LINDSTRÖM, Allegheny, Pa., assignor to Pressed Steel Car Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Sept. 20, 1906. Serial No. 335,367.

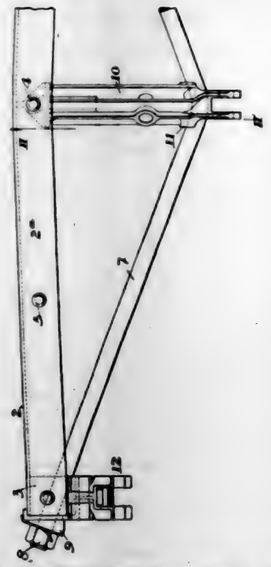

Claim.—1. A built-up brake-beam whose compression member has a greater effective area of material at its central portion than at its ends; substantially as described.

2. A brake-beam having its compression member constituted of separate angles separated at their central portion to increase their effective area; substantially as described.

3. A brake-beam having its compression member formed of separate angles, said shapes being separated to a greater extent at the central than at the end portions; substantially as described.

4. A brake-beam having its compression member formed by two angles whose vertical flanges extend inwardly toward the center of the member; substantially as described.

5. A brake-beam having its compression member formed by two spaced angles whose vertical flanges extend inwardly toward each other from the upper and lower sides of the member; substantially as described.

6. A brake-beam having its compression member formed by two rolled angle shapes, whose vertical flanges are separated by a space which gradually decreases toward the ends of the member; substantially as described.

7. A brake-beam whose compression member is formed by two symmetrical rolled angle shapes, whose horizontal flanges form the upper and lower sides of the member and whose vertical flanges extend inwardly toward each other, and spacers to which the shapes are secured; substantially as described.

8. A trussed brake-beam having a built-up compression member built up of angles and having an effective area of the material greater in the vertical than in the horizontal direction at the central portion of the member; substantially as described.

847,672. ACCOUNTING MECHANISM. ROBERT H. LITTLE, Chicago, Ill. Filed Apr. 14, 1905. Serial No. 255,625.

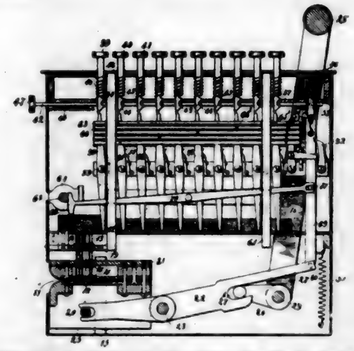

Claim.—1. A device of the class described, including a plurality of punches, a plurality of superposed plates, each adapted to select a different group of said punches, to effect operation thereof to form different characters, and mechanism for moving any of said plates longitudinally of the others into coöperative relation with its group of punches, said plates having non-corresponding slots, whereby each plate is adapted to engage some of the punches and to permit other punches to pass through said slots, whereby the desired selection of punches may be secured.

2. A device of the class described, including a plurality of punches, a plurality of plates, each adapted to select a different group of said punches, to effect the operation thereof to form different characters, and mechanism for placing any of said plates in coöperative relation with its group of punches, said plates having non-corresponding slots, whereby each plate is adapted to engage some of the punches and to permit other punches to pass through said slots, whereby the desired selection of punches may be secured, the plate-operating mechanism including character keys and levers connecting the keys with the plates, each plate being provided with such a key and lever.

3. A device of the class described, including a plurality of punches, a plurality of superposed plates, each adapted to select a different group of said punches, to effect operation thereof to form different characters, and mechanism for moving any of said plates longitudinally of the others into coöperative relation with its group of punches, said plates having non-corresponding slots, whereby each plate is adapted to engage some of the punches and to permit other punches to pass through said slots, whereby the desired selection of punches may be secured, the plate-operating mechanism including character keys and levers connecting the keys with the plates, each plate being provided with such a key and lever.

4. A device of the class described including a plurality of punches, a plurality of superposed plates each adapted to select a different group of said punches to effect operation thereof to form different characters, and mechanism for moving any of said plates in substantially parallel planes into coöperative relation with its group of punches.

5. A device of the class described including a plurality of punches, a plurality of superposed plates each adapted to select a different group of said punches to effect opera-

tion thereof to form different characters, and mechanism for moving any of said plates in substantially parallel planes into coöperative relation with its group of punches, said plates having non-corresponding slots or cut-away portions whereby each plate is adapted to engage some of the punches and to permit other punches to pass by other plates, whereby the desired selection of punches may be secured.

847,673. DETACHABLE HANDLE. JOHN C. LOWE, Cleveland, Ohio. Filed Sept. 18, 1905. Serial No. 278,882.

Claim.—1. In a coupling device for a detachable umbrella-handle the combination with the umbrella-stick and a metallic stem to which the handle is secured, of a sleeve upon the stick having a screw-threaded portion, and a conical outer extension separated by radial and longitudinal grooves into a series of spring-keepers, an annular groove in the said stem which said keepers engage when the stem is inserted into the sleeve, and a locking-sleeve having an inner screw-threaded portion adapted to engage the screw-threaded portion of the first-mentioned sleeve, and also having a tapered inner surface corresponding with the tapered surface of the said conical extension of the sleeve.

2. The combination with a metal stick, a sleeve upon the outer extremity thereof, a transverse pin securing the parts together, a screw-threaded portion on the exterior of said sleeve, a conically-extending outer end to said sleeve separated into spring-acting keepers by longitudinal slots, each portion having a radially-extending lug, of a stem provided with a forked extremity, and an annular groove on its periphery with which said lugs engage when the stem is inserted in said sleeve, and a coupling-sleeve screw-threaded to engage the screw-threaded portion of the aforesaid sleeve, and internally tapered to correspond with the conical taper of the spring-acting keepers, substantially as described.

847,674. DRAWING GLASS ARTICLES. JOHN H. LUBBERS, Allegheny, Pa., assignor to Window Glass Machine Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Apr. 12, 1905. Renewed June 25, 1906. Serial No. 323,349.

Claim.—1. The method of drawing glass articles, consisting in engaging the bait with glass in a receptacle and then moving the receptacle away from the bait; substantially as described.

2. The method of drawing glass articles, consisting in engaging a bait with a body of molten glass and then lowering the body of molten glass away from the bait; substantially as described.

3. The method of drawing glass articles, consisting in engaging the bait with a body of molten glass and then simultaneously moving the bait and the body of glass during the drawing operation; substantially as described.

4. The method of drawing glass articles, consisting in engaging a mass of molten glass, moving the mass of glass to draw the article, and inclosing said article at least partially during the drawing operation; substantially as described.

5. The method of drawing glass, consisting in engaging a bait with a mass of molten glass, moving the glass away from the bait during the drawing operation and heating the mass of glass during the drawing; substantially as described.

6. The method of drawing hollow glass articles, consisting in moving a mass of glass away from a bait engaged therewith and supplying air to the interior of the article during the drawing; substantially as described.

7. In glass-drawing apparatus, a glass-receptacle and mechanism for moving said receptacle away from the bait during the drawing operation; substantially as described.

8. In glass-drawing apparatus, a bait, a glass-receptacle beneath the same and means for lowering the receptacle during the drawing operation; substantially as described.

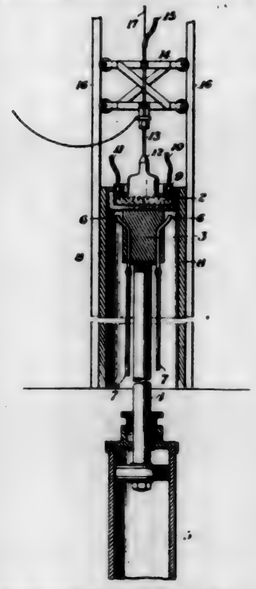

9. In glass-drawing apparatus, a bait, a glass-receptacle, means for moving the bait away from the receptacle, and means for moving the receptacle toward and away from the bait during the drawing operation; substantially as described.

10. The method of drawing hollow glass articles, which consists in moving a mass of glass away from a bait engaged therewith, supplying air to the interior of the article during the drawing, and controlling the air-supply; substantially as described.

11. The method of drawing glass articles, consisting in engaging the bait with glass in a receptacle, moving the receptacle away from the bait, and regulating the rate of such movement; substantially as described.

12. The method of drawing glass articles, consisting in engaging the bait with a body of molten glass, and independently moving the bait and the body of glass; substantially as described.

13. In glass-drawing apparatus, a bait, a glass-receptacle, means for moving the bait away from the receptacle, and means for independently moving the receptacle toward and away from the bait during the drawing operation; substantially as described.

14. In glass-drawing apparatus, a glass-receptacle, mechanism for moving the said receptacle away from the bait during the drawing operation, and means for supplying heat to the receptacle; substantially as described.

15. In glass-drawing apparatus, a glass-receptacle, mechanism for moving said receptacle away from the bait during the drawing operation, and means movable with the receptacle for supplying heat thereto; substantially as described.

847,675. DUMPING-WAGON. CHARLES LYNCH, Chicago, Ill. Filed Oct. 13, 1905. Serial No. 282,644.

Claim.—1. In a device of the character described, a dumping-box having means for the attachment of operating-chains thereto, in combination with a shaft, chains fastened to said shaft, and adapted to engage said attaching means of said box, and a pivoted support for said shaft, substantially as described.

2. In a device of the character described, a dumping-box comprising two open-mouthed receptacles hinged together at the top and having their mouths facing each other, means to lock the two halves of the box together, and means for the attachment of operating-chains to said box, in combination with an operating-shaft, chains fastened to said shaft, and adapted to engage the attaching means of said box, and a pivoted support for said shaft, substantially as described.

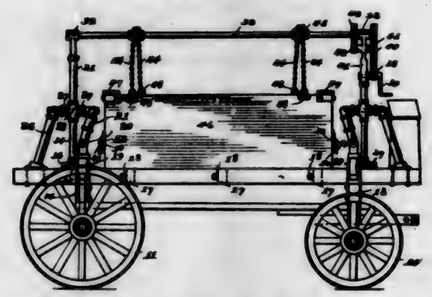

3. In a device of the character described, a wagon-frame, a dumping-box adapted to rest upon said frame, said box comprising two open-mouthed receptacles hinged together at the top and having their mouths facing each other, means to lock the two parts of the box together, and means for the attachment of operating-chains to said box, in combination with an operating-shaft rotatably mounted on said wagon-frame, and chains fastened thereto, adapted for engagement with said attaching means of the box, the turning of said shaft causing the chains to be wound thereupon and the box to be elevated, substantially as described.

4. In a device of the character described, a wagon-frame, a dumping-box adapted to rest upon said wagon-frame, said box having means for the attachment of operating-chains thereto, in combination with a shaft, chains fastened to said shaft, and adapted to engage said attaching means of said box, and a support for said shaft pivotally mounted on said wagon-frame, substantially as described.

5. In a device of the character described, a wagon-frame, a dumping-box adapted to rest upon said frame, said box comprising two open-mouthed receptacles hinged together at the top and having their mouths facing each other, means to lock the two parts of the box together, and means for the attachment of operating-chains to said box, in combination with an operating-shaft, chains fastened thereto and adapted for engagement with said attaching means of the box, and a support for said shaft pivotally mounted on said wagon-frame, the turning of said shaft causing the chains to be wound thereupon or unwound therefrom, thereby elevating or lowering said dumping-box, substantially as described.

6. In a device of the character described, the combination of a wagon-frame, a dumping-box supplied with means for the attachment of chains thereto, a shaft, a support for said shaft pivotally mounted on said wagon-frame, locking means for said support to hold the same in upright position, and chains fastened to said shaft and adapted to engage the attaching means of said dumping-box, substantially as described.

7. In a device of the character described, the combination of a wagon-frame, a pivoted support mounted upon said frame, means to lock said support in upright position, a shaft rotatably mounted in said support, chains fastened to said shaft, intermeshing gears, an operating-handle to actuate said shaft by means of said gears, and a dumping-box comprising two open-mouthed receptacles hinged together at the top and having their mouths facing each other, means to lock the two halves of said box together, and means for the attachment of said chains to said box, substantially as described.

847,676. WOOD-DISTILLING APPARATUS. ALFRED A. MACKETHAN, Fayetteville, N. C. Filed Dec. 22, 1905. Serial No. 292,992.

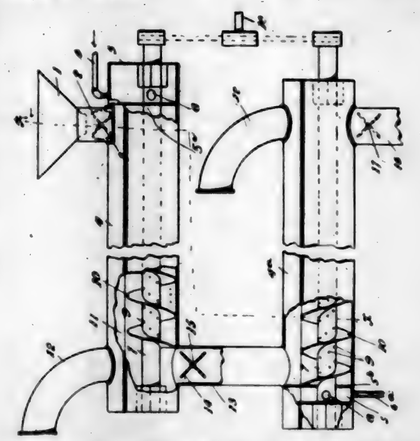

Claim.—The herein-described apparatus for effecting the destructive distillation of sawdust, comprising a plurality of casings each of which is of substantially semicircular form arranged horizontally, each casing being circular in cross-section below the horizontal plane at about its median line, and provided with substantially parallel walls above said horizontal plane whereby to produce a vertically-elongated structure, a perforated shaft journaled in each of said casings, said shafts being provided with a cöncentric spiral conveyer extending close to the lower curved wall of the casing, whereby a chamber 11 is produced above the spiral conveyer, a partition 5ª extending across each casing near one end thereof, a steam-inlet pipe entering the compartment produced by said partition, and a shaft being provided with a steam-inlet port in said compartment, a hopper mounted on one of said casings adjacent said partition, but on the opposite side thereof from the steam-inlet pipe, said hopper being provided with a valve to regulate the discharge of material into the casing, each casing being provided at its end opposite its partition with an upwardly-rising vapor-outlet pipe, and a valved pipe 13 connecting one casing with another, said pipe being located underneath and in direct vertical alinement with the vapor-outlet pipe of one casing at one end and adjacent the said partition of the adjoining casing.

847,677. SHIP CONSTRUCTION. GEORGE W. MAYTHAM, Buffalo, N. Y. Filed Jan. 19, 1905. Serial No. 241,900.

Claim.—1. A ship having a series of hoppers in its hold and diagonal bars extending from the bottom of the hold to the deck on which the inclined sides of the hoppers are supported, said bars being arranged in pairs and the bars of each pair being inclined in opposite directions.

2. A ship having a series of hoppers in its hold, and diagonal bars extending from the bottom to the top of the hoppers and being connected together at the upper ends of two adjacent hoppers.

3. A ship having a series of hoppers, a hatchway arranged over each hopper, and diagonal bars extending from the upper end of two adjacent hoppers to the deck, said bars being secured to the deck between said hatchways.

4. A ship having a series of hoppers, a hatchway arranged over the center of each hopper, and diagonal bars connected to the upper end of two adjacent hoppers and extending to the deck for connection near the sides of two adjacent hatchways.

5. A ship having diverging bars connected together and

to the deck, and a shifting-plate secured to the separated ends of said bars.

6. A ship having diverging bars connected together and to the deck, a shifting-plate secured to the separated ends of said bars, and a shifting-plate secured to the connected ends of said bars.

7. A ship divided by transverse bulkheads into a number of cargo-compartments and having one or more hoppers in the bottom of each compartment, diagonal bars extending from the bottom of the hoppers along the front and rear inclined walls of the latter to the deck and being connected together at the upper ends of said inclined walls, and a hatchway in the deck above each hopper.

8. A ship having a series of hoppers in the bottom of its hold, a hatchway centrally over each hopper, and diagonal bars on which the inclined walls of said hoppers are supported, said bars extending from the bottom of the hold to the deck and having their upper ends secured to the deck between said hatchways.

9. A ship having diagonal bars arranged in pairs and extending from top to bottom in the hold, and shifting-plates secured to said bars.

847,678. CLOSET-SEAT. HENRY MICHAEL, Hamburg, N. Y. Filed May 6, 1905. Serial No. 259,106.

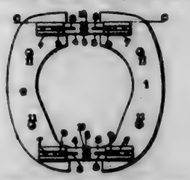

Claim.—1. An auxiliary closet-seat composed of susbtantially equal-sized curved sections, and hinges for securing said sections together at both of their respective ends; said sections being adapted to be folded upon each other when not in use and also to be adjusted toward or from each other in a straight direction at both ends transversely of the seat when open to vary the size of the seat.

2. An auxiliary closet-seat composed of two curved half-sections, and hinges for securing said sections together at both of their respective ends; said hinges being extensible whereby the two sections may be folded together when not in use and the size of the seat may be varied when open by adjustment of the sections at both ends toward or from each other in a straight direction transverse of the seat.

3. An auxiliary closet-seat which is divided longitudinally into sections, hinges for securing said sections to each other having means for locking the sections against folding in either direction when in open position comprising a socket in one member of the hinge and extensions projecting from another member and adapted to fit into said socket.

4. An auxiliary closet-seat which is divided longitudinally into two sections, hinges for securing said sections to each other means whereby the sections are adjustable transversely to enlarge or reduce the seat in size and extensions projecting from at least one of the hinge members and adapted to fit in a recess in another hinge member for locking the sections against folding when in open position.

5. An auxiliary closet-seat in sections, and hinges connecting said sections the members of which have limited range of movement to permit varying the size of the seat and are provided with interlocking extensions adapted to engage in recess in other hinge members, substantially as set forth.

847,679. SPEED-MEASURE. CHARLIE J. MILLIS, Pontiac, Mich., assignor of one-half to William J. Hartwig, Detroit, Mich. Filed Feb. 28, 1906. Serial No. 303,559.

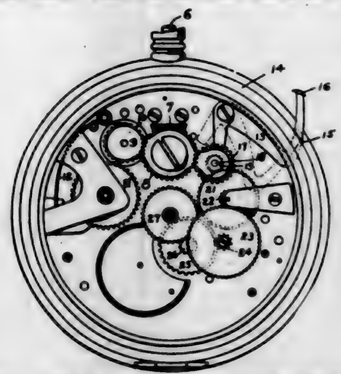

Claim.—1. In a combined speed-measure and watch, the combination of a case, a dial therein, a hand mounted to indicate seconds of time, watch mechanism to drive the same, a pendant on said case, a removable stem in engagement with said pendant, and a hand geared to said pendant, said dial having separate graduations for each of said hands.

2. The combination of a watchcase, a shaft or pendant and crown connected thereto, connecting means whereby a revolving body is adapted to turn said pendant, a dial having a ring graduated to hundredths, a hand, and gearing between said hand and pendant whereby one hundred revolutions of the pendant will turn the hand one revolution.

3. The combination of a watchcase, a pendant thereon, a dial on said case, a hand mounted over said dial, said dial having a series of concentric graduations, gearing between the pendant and hand, and means for controlling the operation of the hand whereby it may make one revolution at each one hundred revolutions of the pendant, and which may be disconnected from the pendant and be connected to the time-measuring mechanism, and mechanism to actuate the hand to measure time.

4. In a combined time-measure and revolution-counter, a case, a dial therefor, a hand over said dial, a clock mechanism to drive said hand to indicate the passage of time, a revoluble shaft to drive said hand, and means to connect and disconnect the hand and clock mechanism, and the hand and driving-shaft alternately, said dial having graduations to indicate the number of revolutions of the driving-shaft.

5. A combined watch and rotation-counter having ordinary hour and minute indicators, watch-graduations and supplemental rotation-graduations, and means for operating said indicators by a revolving shaft or from the watch-motor, whereby the ordinary time-indicator may be used as the indicator of a rotation-counter.

6. A combined watch and rotation-counter having the ordinary watch-motor and hour and minute hands, and a hand for indicating seconds connected to said motor, the usual graduations for time being supplemented by graduations for rotations, means for operating said hour and minute hands by a revolving shaft or from the watch-motor at will, whereby these hands may be used as the indicators of a revolution-counter while the seconds-hand indicates the time the revolutions are being counted.

847,680. CLAMP FOR CUTTERS OR BITS OF CUTTER-MACHINES. EMERSON T. MORRIS, Derwent, Ohio. Filed Mar. 10, 1906. Serial No. 305,385.

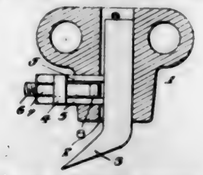

Claim.—The herein-described improved bit-holder, comprising a body formed with a bit-receiving socket, a clamp-receiving opening perpendicular to said socket, and oppositely-extending lateral openings leading from said clamp-receiving opening, the innermost walls of said lateral openings lying outside the plane of the adjacent wall of the said socket, a threaded stem having a rectangular head with a plane outer face, said head being designed to pass through the clamp-receiving opening and to have its end portions enter the lateral openings upon giving the stem a quarter-turn, said head being of a width equal to said openings, whereby it will snugly fit the same and be held solidly, but removably, in the body, always free from contact with the bit in the socket, a U-shape clamp slidable upon said stem with its legs embracing the latter and designed to project into the socket whereby to impinge against a bit mounted therein, and a nut upon said stem beyond the clamp, as and for the purpose set forth.

847,681. FLEXIBLE FIRE-RESISTING CURTAIN. EDWARD H. MCCLOUD, Columbus, Ohio. Filed Feb. 9, 1905. Serial No. 244,991.

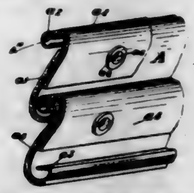

Claim.—1. A flexible fire-resisting curtain composed of a plurality of hinged metallic sections, the surfaces thereof being partly covered by a material, non-conductive of heat; said non-conductive material being divided into sections, means for connecting non-conductive material to the metallic sections and means whereby the non-conductive material and metallic sections can expand independently.

2. In a flexible fire-resisting curtain, composed of hinged metallic sections, the surfaces thereof being partly covered by a material, non-conductive of heat, means for securing to the metallic section, the non-conductive material, and means for permitting the unequal expansion of the non-conductive material and the metallic sections.

3. A flexible fire-resisting curtain composed of a plurality of hinged sections, each section having for its main body a metallic form with non-conductive material secured thereon by rivets in elongated holes.

4. In a device of the class described, in combination, metallic supporting means, a relatively refractory coating, and means adapted to secure said coating upon said supporting means and permit expansion of one of the same relative to the other.

5. A flexible fire-resisting curtain comprising a plurality of hinged metallic sections, the surfaces of said sections having secured thereto a refractory material, and means adapted to secure said refractory material to said sections and permit expansion of one of the same relative to the other.

6. A fire-resisting curtain comprising a plurality of hinged sections, each of which is composed of a metallic member and a refractory member joined together so that one may expand freely relative to the other.

7. In a device of the class described, in combination, a plurality of hingedly-connected metallic sections each comprised by a metallic part and a refractory part, and rivets extending through elongated openings in said refractory part for securing the same to the metallic member.

8. In a device of the class described, in combination, a metallic slat provided with means for joining it to other slats and having its body portion provided with a heat-resisting material, and means loosely connecting said material to said slat whereby unequal expansion of said material and said slat is freely permitted.

9. In a device of the class described, a metallic slat provided with means for joining it to other slats and having a heat-resisting material different from that of which the slat is constructed applied to one of its surfaces and means loosely connecting said material to said slat whereby unequal expansion of said material and said slat is freely permitted.

10. In a device of the class described, a metallic slat provided with means for joining it to other slats and having a heat-resisting material different from that of which the slat is constructed applied to its interior and exterior surfaces, and means loosely connecting said slat and said material whereby unequal expansion of said slat and said material is freely permitted.

11. In a device of the class described, in combination, a metallic slat provided at its edge with a hook, a heat-retarding material, portions of which are loosely applied to one of the sides of said slat and to the back of said hook and means loosely connecting said slat and said material whereby unequal expansion of said slat and said material is freely permitted.

12. In a device of the class described, in combination, a metallic slat provided at its edge with a hook and having a refractory material applied to both of its sides, said refractory material on one side extending over the back of said hook while the material upon the other side does not extend to the hook and means loosely connecting said slat and said material whereby unequal expansion of said slat and said material is freely permitted.

13. In a device of the class described, in combination, a plurality of metallic slats provided at their edges with oppositely-disposed hooks and at one of their edges with a shoulder and having a refractory material applied to both sides thereof, said refractory material upon one side thereof extending substantially to the hook and upon the opposite side thereof over the back of the hook and means loosely connecting said slat and said material whereby unequal expansion of said slat and said material is freely permitted.

14. In a device of the class described, in combination, metallic supporting means, a relatively refractory coating, and means adapted to secure said coating upon said

supporting means and prevent relative bodily movement therebetween while permitting movement of portions of one of the same relative to the other to compensate for unequal expansion.

15. In a device of the class described, in combination, metallic supporting means, a relatively refractory coating, means adapted positively to secure portions of said coating to said supporting means, and means adapted to secure other portions of said coating to said supporting means so that relative movement can take place therebetween.

16. In a device of the class described, in combination, metallic supporting means, a relatively refractory coating therefor, a plurality of rivets for securing portions of said coating positively to said supporting means, and a plurality of rivets for securing other portions of said coating to said supporting means so that relative movement can take place therebetween.

17. A device of the class described, comprising in combination, a plurality of sections, each of which is composed of materials having different coefficients of expansion joined to permit relative movement therebetween when they are subjected to heat.

847,682. APPARATUS FOR CATCHING AND DELIVERING MAIL-BAGS. ERIC A. NASLUND, Dunkirk, N. Y. Filed Apr. 10, 1905. Serial No. 254,807.

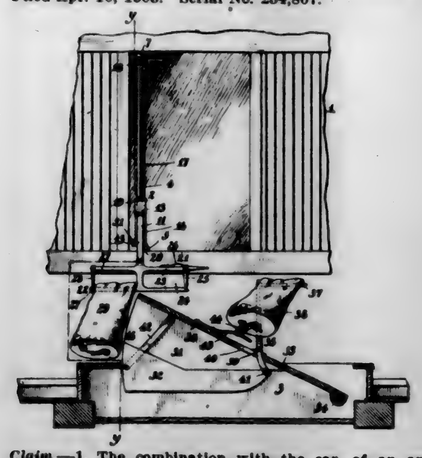

Claim.—1. The combination with the car, of an arm projecting therefrom and having at its outer end a pair of forwardly-projecting arms and a pair of rearwardly-projecting arms, serving respectively as a catching device and a delivering device the arms of each pair being arranged one above the other and separated by an intervening space.

2. The combination with the car, of an arm projecting therefrom and having at its outer end a pair of forwardly-projecting arms and a pair of rearwardly-projecting arms, and retaining devices between the free ends of each pair of arms.

3. The combination with the car, of an arm projecting therefrom and having at its outer end two forwardly-projecting arms and two rearwardly-projecting arms, an elbow lock-bar for the forwardly-projecting arms, and a retainer-loop for the rearwardly-projecting arms.

4. The combination with the car, of an arm projecting therefrom and having at its outer end two forwardly-projecting arms arranged one above the other and separated by an intervening space and two similarly-arranged rearwardly-projecting arms, an elbow lock-lever pivotally secured to the upper of the forwardly-projecting arms, and a loop pivotally secured to the upper of the rearwardly-projecting arms and adapted to engage the lower of said arms.

5. In a mail catching and delivering device, an arm having a pair of forwardly-projecting arms, an elbow lock-bar pivotally secured to one of the forwardly-projecting arms, a spring serving to hold said lock-bar against accidental movement, and a loop pivotally secured to one of the rearwardly-projecting arms and adapted to embrace the free end of the other of said arms.

6. The combination with the car, of a vertical support secured to the car, and a projecting arm slidable on said support and embodying means to deliver the mail while the car is in transit.

7. The combination with the car, of a vertical support secured to the car, and a projecting arm slidable on said support and embodying means to catch the mail while the car is in transit.

8. The combination with the car, of a vertical support secured to the car, an arm projecting from the car and being slidably and rotatably mounted on said support, and a mail-catching device at the outer end of said arm.

9. The combination with the car, of a support secured thereto, and a mail-bag arm secured to said support and comprising a sleeve slidable on said support and a pivoted arm portion.

10. The combination of a car, of a support secured thereto, and a mail-bag arm slidable and rotatable on said support and comprising a sleeve on said support and an arm portion pivotally secured to said sleeve.

11. The combination with the car having an opening, a support secured to the car, a mail-bag arm rotatable on said support, and means to lessen the distance in a horizontal plane between the support and the outer end of said arm to permit of conveniently swinging the latter through said opening.

12. The combination with the car having an opening, an upright secured to the car, a mail-bag arm rotatable on said upright and comprising a sleeve and an arm portion pivotally secured to said sleeve so as to swing in a vertical plane.

13. The combination with the car having an opening, of a cylindrical upright secured to the car and a mail-bag arm slidable and rotatable on said upright and comprising a sleeve on the latter having an extension providing a downwardly and outwardly opening pocket and an arm portion pivotally secured in said pocket and having its inner and upper sides arranged at a more acute angle than the angle of the top and inner walls of said pocket.

14. The combination with the car having an opening, of an upright secured to the car, a mail-bag arm slidable on said upright, and means for swinging said arm toward a horizontal plane when lowered on said upright.

15. The combination with the car having an opening, of an upright secured to the car, an inclined mail-bag arm slidable on said upright, and means for causing said arm to swing toward a horizontal plane as it approaches its lowermost point on the upright.

16. The combination with the car having an opening, of an upright secured to the car, a mail-bag arm slidable and rotatable on said upright and having a pivoted inclined portion adapted to come in contact with the floor of the car before said arm reaches its lowermost point, thereby forcing the free end of said arm upward and outward.

17. The combination with the car, of a vertical support secured to the car, a mail-bag arm slidable on the support, and a counterbalance connected with said arm.

18. The combination with the car, of a hollow upright secured to the car, a weight in said upright, a mail-bag arm slidable on said upright, and a cord connecting said weight with the mail-bag arm.

19. The combination with the car, of a hollow upright secured to the car and having an opening near its upper end and a pulley in said opening, a weight in said upright, a mail-bag arm slidable on said upright, and a cord passing over said pulley and having its ends connected to said weight and the mail-bag arm.

20. The combination with the car, of an upright removably secured to the car, a mail-bag arm rotatable and slidable on said arm, and a cushioning-buffer on the car against which said arm is held when lowered.

21. The combination with the car, of a mail-bag arm held to the car above the floor thereof and having its outer end extending below the level of said floor, and means for elevating said arm to bring the outer end above the floor and permit of drawing the same into the car.

22. The combination with the car, of a hollow upright, a gudgeon secured to the floor of the car over which said upright is placed, a socket secured to the car into which the upper end of the upright is removably held, and a mail-bag arm on said upright.

23. The combination with the car, of an upright secured to the car, a mail-bag arm slidable on said upright, and a cushioning-buffer comprising a horizontal portion and a vertical portion against which the bottom and one side of the mail-bag arm bear to relieve the same of jar.

24. A mail-bag receiver, comprising a receptacle, and a pivoted cover having depending sides.

25. A mail-bag receiver, comprising a receptacle and a hinged cover having collapsible sides.

26. A mail-bag receiver, comprising a receptacle, and a cover pivoted to the receptacle and having depending sides, each side comprising a rigid section and a movable section.

27. A mail-bag receiver, comprising a receptacle, a top pivoted between its ends to said receptacle and having collapsible depending sides formed in sections, and links connecting said sections.

28. A mail-bag receiver, comprising a receptacle, a top pivoted between its ends to said receptacle and having collapsible depending sides, each side comprising a rigid section and a movable section connected with said rigid section, and links connecting said sections and adapted to cause the movable sections to swing between the rigid sections when closing the receiver.

29. In a mail-bag receiver, the combination of a receptacle, a gate therefor, and a mail-bag support embodying means to hold said gate open when supporting a bag.

30. In a mail-bag receiver, the combination of a receptacle, a gate therefor, and a mail-bag support secured to said gate and embodying means to hold the latter open when supporting a bag.

31. In an apparatus for catching and delivering mail-bags, the combination with a catching device and a delivering device, of a receiver, means for supporting a mail-bag on said receiver and for automatically closing the receiver when the bag on the receiver is taken up by the catching device.

32. In a mail-bag receiver, the combination of a receptacle, a cover pivotally attached between its ends to said receptacle, a mail-bag support on said cover, means on said cover for retaining a mail-bag on said support, and means for causing said cover to close when the mail-bag is removed from said support.

33. In a mail-bag receiver, the combination of a receptacle, a cover pivotally attached to said receptacle, a mail-bag support pivotally held, connections between said support and the cover for opening the latter on swinging the support into an upright position, and for causing said support to swing into a horizontal position when the cover closes by gravity, and a mail-bag carried on said support and having its ends attached to the cover, said mail-bag serving to hold the support and said cover elevated.

34. In a mail-bag receiver, the combination of a receptacle, a cover pivoted between its ends to said receptacle and having depending sides comprising fixed sections and movable sections, links connecting the outer ends of the movable sections with the fixed sections of said sides, a rod connecting the inner ends of the movable sections, a mail-bag support pivotally affixed to the cover and having a depending portion attached to said rod and a yoke portion lying outside of the cover, a mail-bag on said support having its ends attached to the cover, said cover and said support being adapted to swing into a horizontal position on removing the mail-bag from said support.

35. In a mail-bag receiver, the combination of the receptacle, a cover pivotally secured to said receptacle and normally closed, and a mail-bag supported on the cover and serving to hold the same open.

36. In an apparatus for delivering mail, the combination with a mail-delivering device and a mail-catching device, of a receiver carrying a bag to be taken up by said catching device and comprising a receptacle and a movable cover for said receptacle, said cover when elevated providing a receiving-opening larger than the height of the receptacle.

37. The combination of a car having an opening in its side, and a mail-bag arm extending outward through said opening and having its outer end below the lower end of said opening.

38. The combination of a car having an opening in its side, and a mail-bag arm extending outward through said opening and having its outer end terminating in a plane below the floor of the car.

39. The combination with the car, of a horisontally-swinging arm having its outer end terminating in a plane below the floor of the car.

40. The combination of a car having an opening in its side, and a mail-bag arm having a mail-catching and a mail-delivering device, said arm being arranged for movement outward to bring said catching and delivering devices below the lower end of said opening.

41. The combination with a relatively stationary element provided with catching and delivering devices, of a traveling element provided with coacting catching and delivering devices, a vertically-movable frame on the traveling element carrying the catching and delivering devices thereof, and means for raising and lowering said frame.

847,683. CRIMPING-MACHINE. FRANK C. NEWELL and ALEXANDER ENGLAND, Wilkinsburg, Pa., assignors to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Apr. 24, 1902. Serial No. 104,468.

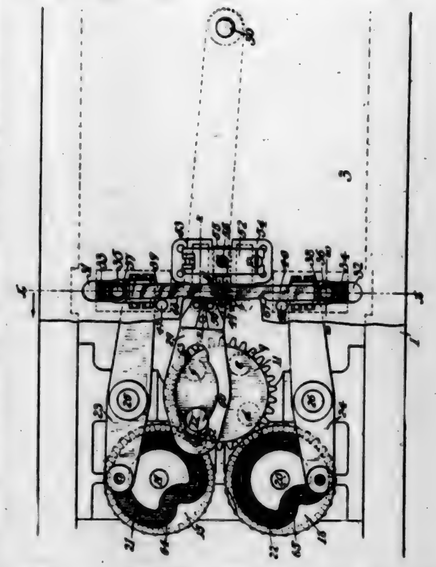

Claim.—1. A crimping-machine comprising means having an intermittent movement for clamping stationary one portion of the strip to be crimped, and a transversely-reciprocating member engaging both sides of the strip for alternately bending the same from one side to the other.

2. A crimping-machine comprising means having an intermittent movement for clamping stationary one portion of the strip to be crimped, and a transversely-reciprocating member loosely engaging both sides of the strip for bending the same.

3. In a crimping-machine, the combination of two arms having overlapping fingers for clamping the ribbon, means for alternately reciprocating said arms, a movable member loosely engaging the ribbon, and means for reciprocating said member.

4. In a crimping-machine, the combination of an arm for holding the ribbon, means for reciprocating and swinging said arm, a movable member loosely engaging the ribbon, and means for reciprocating said member.

5. In a crimping-machine, the combination of two arms having overlapping fingers, means for intermittently and alternately reciprocating said arms, a movable member for bending the ribbon, and means for reciprocating said member.

6. In a crimping-machine, the combination with two arms having overlapping fingers and means for intermittently and alternately reciprocating said arms, of a movable member for bending the ribbon, and means for causing an intermittent motion of said member between the movements of said arms.

7. In a crimping-machine, the combination of two arms having overlapping fingers, means for alternately reciprocating said arms, a movable member for bending the ribbon, and means for reciprocating said member.

8. In a crimping-machine, the combination of two arms having adjacent ends for holding the ribbon, said arms having an alternate and intermittent movement, a movable member carrying rollers in close proximity to the ends of said arms, and means for reciprocating said member.

9. In a crimping-machine, the combination of a pivotally-mounted arm, means for reciprocating said arm, a spring for swinging the arm during its reciprocatory movement, a movable member for bending the ribbon, and means for reciprocating said member.

10. In a crimping-machine, the combination of a pivotally-mounted arm, means for reciprocating said arm, a stop or roller, a spring pressing the arm against the roller, a movable member for bending the ribbon, and means for reciprocating said member.

11. In a crimping-machine, the combination of two arms having overlapping fingers, pivoted levers connected to said arms for reciprocating the same, cams for intermittently and alternately operating said levers, a movable member for bending the ribbon, and means for reciprocating said member.

12. In a crimping-machine, the combination with means having an intermittent movement for holding the ribbon, of a pivoted arm or lever for bending the ribbon and having a substantially elliptical-shaped opening therein, and a revolving disk having a pin projecting into said opening for oscillating said lever.

13. In a crimping-machine, the combination of a top plate, two reciprocating arms having overlapping fingers, a movable member with means for reciprocating the same, two blocks secured to the top plate and spaced apart, and a removable bridge-plate extending over the space between the blocks.

14. In a crimping-machine, the combination of two arms for holding the ribbon, slides on which said arms are mounted, levers pivotally connected to said slides for reciprocating the same, cams for alternately operating said levers, a movable member for bending the ribbon, and means for reciprocating said member.

15. In a crimping-machine, the combination of a pivotally-mounted arm having an inclined face or cut-away portion on one side, a stop or roller engaging this side of the arm, a spring for forcing the arm against the roller, a movable member for bending the ribbon, and means for reciprocating said member.

847,684. MACHINE FOR TREATING HIDES AND SKINS. GEORGE B. NORGRAVE, Peabody, Mass., assignor to Peabody Leather Machinery Company, Peabody, Mass., a Corporation of Maine. Filed Mar. 27, 1906. Serial No. 308,246.

Claim.—1. In a machine of the class described, in combination, a work support or table over which a hide or skin is placed, an endless carrier for said table, operating-tools to treat the hide or skin on said table, a separator coöperating with said table to loosen the hide or skin from one side of the same, a device to loosen the hide or skin from the opposite side of said table, an assembling device, and means to carry the hide or skin from the table to said assembling device, substantially as described.

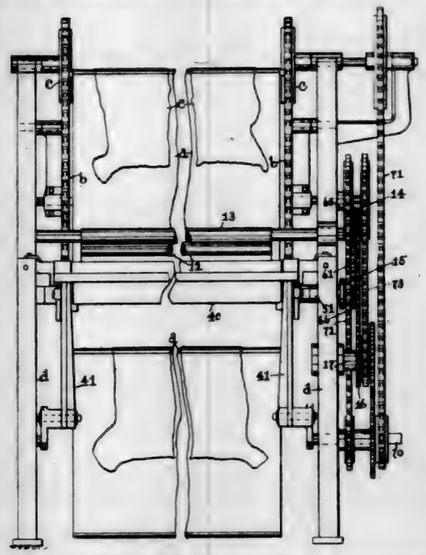

2. In a machine of the class described, in combination, a work support or table over which a hide or skin is placed, an endless carrier for said table, operating-tools to treat the hide or skin while on said table, an oscillating separator coöperating with said table and movable about a center having a fixed relation to the path of movement of the table to loosen the hide or skin from the side of the table adjacent to said separator, and means to automatically rock said separator a plurality of times while a work-support is moving past said device, substantially as described.

3. In a machine of the class described, in combination, a work support or table over which a hide or skin is placed, an endless carrier for said table, operating-tools to treat the hide or skin while on said table, a separator coöperating with said table to loosen the hide or skin from one side of the same, and a device movable across the path of movement of said table to loosen the hide or skin from the opposite side of said table, substantially as described.

4. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide or skin on said table, a vibrating separator coöperating with the table to loosen the hide or skin therefrom, and means to operate said separator and impart to it a plurality of vibrations while a work-support is moving past said separator, substantially as described.

5. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide while on said table, means to separate one side of the hide or skin from the table, and means to engage the hide or skin and separate it from the other side of said table after said hide has been separated from the first-mentioned side of the table, substantially as described.

6. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide while on said table, means to separate one side of the hide or skin from the table, means cooperating with said separator to engage the hide or skin as it is loosened from the table and carry it away from said table, substantially as described.

7. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide or skin while on said table, means to carry the hide or skin away from the table, and an assembling device movable with relation to said means to enable the hide or skin to be placed substantially one-half on each side of said device, substantially as described.

8. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide while on said table, a delivery device to carry the hide or skin away from the table, an upright assembling device to receive the hide or skin from said delivery device, and means to move said assembling device, for the purpose specified.

9. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide or skin while on said table, means to move the lower end of the hide or skin away from the table, and delivery-rolls coöperating with said means to receive the end of the hide therefrom, substantially as described.

10. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide while on said table, a device extended transversely of said table to engage the hide or skin, and pivoted supports for said device actuated by the endless carrier to impart to said pivoted supports and said device a plurality of oscillations while a work-support is moving past said device, substantially as described.

11. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide while on said table, a delivery device to carry the hide or skin away from the table, an upright assembling device to receive the hide or skin from said delivery device, a movable cam to actuate said assembling device, and means to intermittently move said cam, substantially as described.

12. In a machine of the class described, in combination, a movable work support or table over which a hide or skin is placed, means to move said work-support, means to treat the hide or skin on said table, an intermittently-movable upright assembling device, and means to carry the hide or skin from said table to said assembling device, substantially as described.

847,685. RAKE-TOOTH. REMY J. PAVERT, Baker City, Oreg. Filed Sept. 25, 1905. Serial No. 279,993.

Claim.—A horse-hay-rake tooth consisting of a continuous spring-steel piece formed into two equal-lengthed limbs converged at their lower ends and merged into a V form of point, said limbs, from the latter upward, being removed from each other in such direction that if a line were produced intersecting both of the same it would extend at right angles to the line of draft, said limbs also being both rounded in the same arc rearward, slightly upward and then downward, and finally curved forward to, and including said point.

847,686. MACHINE FOR GROOVING NEEDLES. JOHN O. PRITTY, Belvidere, Ill., assignor to National Sewing Machine Co., Belvidere, Ill., a Corporation of Illinois. Filed June 16, 1904. Serial No. 212,751.

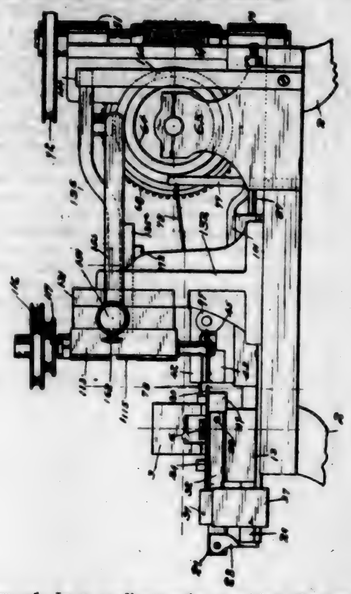

Claim.—1. In a needle-grooving machine, the combination with means for cutting the groove, means for carrying the needle toward and from said cutting means comprising two needle-jaws one of which is movable with relation to the other, and means for moving said movable jaw in one direction with relation to the other, of a pivoted tumbler and means with which said tumbler engages whereby the bodily movement of said jaws causes said tumbler to tumble and crowd said movable jaw in the opposite direction with relation to its companion jaw.

2. In a needle-grooving machine, the combination with means for cutting the groove, means for carrying the needle toward and from said cutting means comprising two needle-jaws one of which is movable with relation to the other, and means for moving said movable jaw in one direction with relation to the other, of a pivoted tumbler provided with an active and an inactive face and means with which said active face engages whereby the bodily movement of said jaws causes said tumbler to move about its pivot to cause the active face to crowd said movable jaw in the opposite direction with relation to its companion jaw.

3. In a needle-grooving machine, the combination with means for cutting the groove, means for carrying the needle toward and from said cutting means comprising two needle-jaws one of which is movable with relation to the other, and means for moving said movable jaw in one direction with relation to the other, of a pivoted tumbler, means with which said tumbler engages whereby the bodily movement of said jaws causes said tumbler to oscillate and crowd said movable jaw in the opposite direction with relation to its companion jaw, a stop for limiting the pivotal movement of said tumbler and yielding means for returning said tumbler against said stop.

4. In a needle-grooving machine, the combination with means for cutting the groove, means for carrying the

needle toward and from said cutting means comprising two needle-jaws one of which is movable with relation to the other, a pivoted tumbler provided with an active and an inactive face, means with which said active face engages comprising an incline, whereby the bodily movement of said jaws causes said active face to crowd said movable jaw in one direction with relation to its companion jaw, means for moving said movable jaw in the opposite direction, and means for causing the inactive face of the tumbler to stand adjacent the jaw to permit the last said means to move the jaw.

5. In a needle-grooving machine, the combination with means for cutting the groove, means for carrying the needle toward and from said cutting means comprising two needle-jaws one of which is movable with relation to the other, and means for moving said movable jaw in one direction with relation to the other, of a pivoted tumbler stationary with relation to said jaws and means with which said tumbler engages movable bodily with said jaws whereby the bodily movement of said jaws causes said tumbler to oscillate and crowd said movable jaw in the opposite direction with relation to its companion jaw.

6. In a needle-grooving machine, the combination with means for cutting the groove, means for carrying the needle toward and from said cutting means comprising two bodily-movable needle-jaws one of which is movable with relation to the other, and means for moving said movable jaw in one direction with relation to the other, of two pivoted oppositely-rotatable tumblers stationary with relation to the jaws, and means engaging with the tumblers for crowding the movable jaw in the opposite direction with relation to its companion jaw when the jaws undergo bodily movement.

7. In a needle-grooving machine, the combination with means for cutting the groove, means for carrying the needle toward and from said cutting means comprising two needle-jaws one of which is movable with relation to the other, and means for moving said movable jaw in one direction with relation to the other, of two pivoted oppositely-rotatable tumblers and means comprising two inclines engaging therewith for crowding the movable jaw in the opposite direction with relation to its companion jaw when the jaws undergo bodily movement.

8. In a needle-grooving machine, the combination with means for cutting the groove, means for carrying the needle toward and from said cutting means comprising two needle-jaws one of which is movable with relation to the other, and means for moving said movable jaw in one direction with relation to the other, of two pivoted oppositely-rotatable tumblers arranged in different planes, and means comprising two inclines arranged in different planes, engaging therewith for crowding the movable jaw in the opposite direction with relation to its companion jaw when the jaws undergo bodily movement.

9. In a needle-grooving machine, the combination with means for cutting the groove, means for carrying the needle toward and from said cutting means comprising two needle-jaws one of which is movable with relation to the other, and means for moving said movable jaw in one direction with relation to the other, of an operating-lever for said movable jaw and a pivoted tumbler engaging said lever for deflecting it when the lever moves bodily in one direction with the jaws.

10. In a needle-grooving machine, the combination with means for cutting the groove, means for carrying the needle toward and from said cutting means comprising two needle-jaws one of which is movable with relation to the other, and means for moving said movable jaw in one direction with relation to the other, of an operating-lever for said movable jaw having an incline, a double incline also carried by said lever and arranged in a different plane from said first incline, and two pivoted oppositely-rotatable tumblers stationary with relation to said lever and adapted to engage said inclines respectively for moving said movable jaw with relation to its companion jaw at different periods during the bodily travel of the jaws.

11. In a needle-grooving machine, the combination with means for cutting the groove, means for carrying the needle toward and from said cutting means comprising two needle-jaws one of which is movable with relation to the other, and means for moving said movable jaw in one direction with relation to the other, of a pivoted triangular tumbler having one corner rounded, a bracket to which said tumbler is pivoted having a stop against which one corner of the tumbler abuts but which stop said rounded corner passes, and means engaging said tumbler whereby the bodily travel of the jaws moves the movable jaw in the opposite direction with relation to its companion jaw.

12. In a needle-grooving machine, the combination with means for cutting the groove, means for carrying the needle toward and from said cutting means comprising two needle-jaws one of which is movable with relation to the other, and means for moving said movable jaw in one direction with relation to the other, of a pivoted triangular tumbler having one corner rounded, means for limiting the pivotal movement of said tumbler in one direction and means engaging with said rounded corner of the tumbler whereby the tumbler is caused to rotate when the jaws move bodily in one direction and to crowd said movable jaw toward its companion jaw when the jaws move bodily in the opposite direction.

13. In a needle-grooving machine, the combination with means for holding the needle, a grooving-cutter movable toward and from said first means and means for moving the cutter away from said first means, of yielding means for moving the cutter toward said first means and a positive stop for limiting the latter said movement.

14. In a needle-grooving machine, the combination with means for holding the needle, a grooving-cutter movable toward and from said first means and means for moving the cutter away from said first means, of yielding means for moving the cutter toward said first means and a positive adjustable stop for limiting the latter said movement.

15. In a needle-grooving machine the combination with means for holding the needle, a grooving-cutter and means for moving one of said means away from the other, of yielding means for moving the movable one of the first two said means toward the other and a positive stop for limiting the latter said movement.

16. In a needle-grooving machine, the combination with means for holding the needle and a grooving-cutter movable toward and from said first means, of a positively acting cam for moving the cutter away from said first means, yielding means for moving the cutter toward said first means and a positive stop for limiting the latter said movement and gaging the depth of cut.

17. In a needle-grooving machine, the combination with means for holding the needle, a grooving-cutter movable toward and from said first means and means for moving the cutter away from said first means, of yielding means for moving the cutter toward said first means, a positive stop for limiting the latter said movement, a movable member having an irregularity on its face against which said stop bears and means for moving said member with relation to said stop and thereby altering the position of the cutter with relation to said first means.

18. In a needle-grooving machine, the combination with means for holding the needle, a grooving-cutter, and means for moving the cutter away from said first means, of yielding means for moving the cutter toward said first means, a positive stop for limiting the latter said movement, a pivoted lever having a countersink in its face, with which said stop engages and means for oscillating said lever and thereby altering the position of the cutter.

19. In a needle-grooving machine, the combination of needle-grooving means and a carriage movable toward and from said grooving means, of a tongue or needle support fixed with relation to said carriage and adapted to support the needle, needle-jaws one of which is movable with relation to the other, mounted on said carriage, a grooved member movable with said jaws and arranged over said tongue, for receiving the needle, means for engaging the needle and forcing it longitudinally from said groove onto said tongue and means for opening and closing the jaws as the carriage reciprocates.

20. In a needle-grooving machine, the combination with needle-grooving means and a carriage movable toward and from said means, of a tongue or needle-support fixed with relation to said carriage and adapted to support the needle, needle-jaws mounted on said carriage at opposite sides of said tongue, said carriage being provided with a grooved member located over said tongue for receiving the needle, means for engaging the needle and forcing it from said groove longitudinally as the carriage reciprocates, means for closing the jaws upon the needle while resting on said tongue, and a needle-ejector on said tongue for engaging and dislodging the needle.

21. In a needle-grooving machine, the combination with a feed-hopper for the needles having a chute for leading the needles therefrom, a carriage movable under said chute and provided with a grooved member for receiving the needle from said chute, a tongue or needle-support fixed with relation to said carriage and located under said groove, the ends of said chute being extended downwardly for retaining the needle in said groove while said grooved member is under the chute and means for closing the jaws upon the needle when the needle falls from said grooved member upon the tongue as the grooved member recedes from under the needle.

22. In a needle-grooving machine, the combination of means for cutting the groove, means for holding the needle while being cut, a two-part arm for moving said cutting means with relation to said needle-holding means, means yieldingly connecting the parts of said arm together, and a cam acting on one part of said arm for oscillating it.

23. In a needle-grooving machine the combination of means for cutting the groove, means for holding the needle while being cut, a two-part arm for moving said cutting means with relation to said needle-holding means, means yieldingly connecting the parts of said arm together, means whereby the parts of said arm may be relatively adjusted, and a cam acting on one part of said arm for oscillating it.

847,687. PHONIC APPARATUS. ALEXANDER N. PIERMAN, Newark, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed Oct. 14, 1905. Serial No. 282,710.

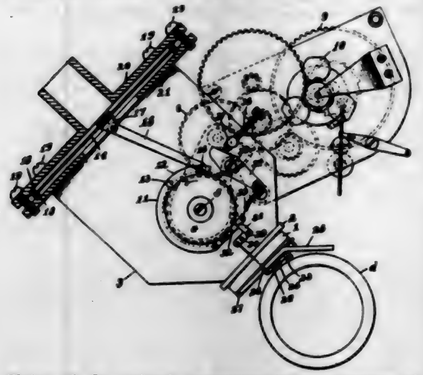

Claim.—1. In a phonic apparatus, the combination of a traveling carrier and means for progressively moving the same, a diaphragm, friction-wheel and motor carried by the carrier, a driving connection between said motor and friction-wheel, a friction member pressing against said friction-wheel, a connection between said friction member and diaphragm, and means representative of sound-vibrations for varying the amount of friction between the friction-wheel and friction member, substantially as set forth.

2. In a phonograph, the combination of a phonographic tablet, means for rotating the same, a carrier movable across said tablet, a stylus, diaphragm, friction-wheel and motor carried by said carrier, a driving connection between said motor and friction-wheel, a friction member pressing against said friction-wheel, and connections between said friction member and said stylus and diaphragm respectively, substantially as set forth.

3. In a phonograph, the combination with the mandrel, feed-screw, traveling carrier and means for driving the same, of a friction-wheel carried by said carrier and a motor traveling with and driving said friction-wheel, substantially as set forth.

4. In a phonograph, the combination of the mandrel, feed-screw, traveling carrier-arm extending over said mandrel and means for driving the same, of a friction reproducer attachment comprising a friction-wheel, friction member, diaphragm, reproducer-stylus, and a motor for driving said friction-wheel, said parts being mounted upon a base removably secured to said carrier-arm, substantially as set forth.

5. A friction reproducer attachment for phonographs and other talking-machines, comprising a frame or support adapted to be removably secured to the traveling carrier-arm of a talking-machine, said support carrying a friction-wheel, friction member, diaphragm, and motor for driving said friction-wheel, substantially as set forth.

847,688. TICKET-BOX. HORACE PLUMMER, Pittsboro, Ind. Filed May 18, 1906. Serial No. 317,474.

Claim.—1. A case for holding tickets provided with an exit-opening for the tickets the top, bottom, and sides being formed of a single sheet of metal having the meeting edges on the bottom of the case, an end having an inturned edge riveted to said meeting edges, a slot through the side of the case adjacent to the exit-opening, the material removed to form said slot being bent outwardly at the ends of the slot to form parallel ears, said ears being indented to form concavities on their adjacent sides, a spindle having conical ends mounted in said concave ears, and a roller mounted on said spindle making contact through the said slot with tickets contained within the case.

2. A case for holding tickets provided with an exit-opening for the tickets the top, bottom, and sides being formed of a single sheet of metal having the meeting edges on the bottom of the case, an end having an inturned edge riveted to said meeting edges, a slot through one of the walls of the case adjacent to said exit-opening, a roller mounted in said slot and projecting therethrough, a flat spring fastened to and connecting the meeting edges of the case and having a free end terminating between the roller and said exit-opening.

3. A case for holding tickets provided with an exit-opening the top, bottom, and sides being formed of a single sheet of metal having the meeting edges on the bottom of the case, an end having an inturned edge riveted to said meeting edges, a transfer-slot through the top of the case adjacent to said exit-opening, a roller covered with an elastic material mounted so as to project through said slot, a spring of strap-metal riveted near one end to the meeting edges of said case and terminating between the roller and the exit-opening adjacent to said roller at its free end and having its opposite end fastened to the bottom of the case and having that end bent into a roll to form part of a hinge, and a door or closure hinged to the last end of said spring.

4. A case for holding tickets provided with an exit-opening, the top, bottom and sides of said case being formed out of a single sheet of metal, the ends of which meet on the bottom of the case, a front end plate having a lower right-angled flange entering the case to which the two parts of the bottom are fastened, a spring of strap-metal within the case to which the two parts of the bottom at the opposite end of the case are fastened, the fixed end of said spring being bent into a roll to form a part of a hinge, an end closure to the case hinged to the last-mentioned end of the spring, the top of said case having a transverse slot adjacent to the said exit-opening, an ear at each end of said transverse slot dished to form concave inner sides, a spindle with conical ends mounted in said

ears, an elastic covering for said spindle, and covering extending within the case through said slot and the free end of said spring terminating between the roller and the exit-opening.

847,689. TIME-LIMIT CLOCK. WILSON E. PORTER, New Haven, Conn., assignor to New Haven Clock Co., New Haven, Conn., a Corporation. Filed Oct. 29, 1906. Serial No. 341,066.

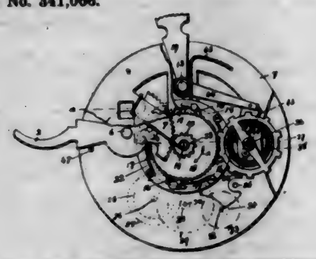

Claim.—1. In a time-limit clock, the combination with a train, of a center shaft carrying a hand or pointer, a pinion and a ratchet-wheel located thereon, a spring for turning the shaft the forward rotation of which drives the train, a combined winding and resetting lever formed with a rack meshing into the said pinion for reversely rotating the same and so winding the said spring and positioning the said hand, and means for coupling the shaft with the train when the spring is wound and the hand positioned.

2. In a time-limit clock, the combination with the center shaft thereof, of a pinion and a ratchet-wheel located on the said shaft and rotating therewith, a spring connected with the shaft, a combined winding and resetting lever formed with a rack meshing into the said pinion for reversely rotating the shaft and so winding the spring and positioning the shaft, a center-wheel within which the shaft turns, and means for coupling the said center and ratchet wheels.

3. In a time-limit clock, the combination with the center shaft thereof, of a pinion and a ratchet-wheel located thereon and rotating therewith, a spring connected with the shaft, a combined winding and resetting lever formed with a rack meshing into the said pinion for reversely rotating the shaft and so winding the spring and positioning the shaft, a center-wheel within which the shaft turns, and pawls for coupling the said center and ratchet wheels.

4. In a time-limit clock, the combination with the center shaft thereof, of a pinion and a ratchet-wheel located thereon and rotating therewith, a spring connected with the shaft, a combined winding and resetting lever formed with a rack meshing into the pinion for reversely rotating the shaft and so winding the spring and positioning the shaft, a center-wheel within which the said shaft turns, a disk turning with the said center-wheel, and pawls mounted upon the said disk and engaged with the said ratchet-wheel which turns under them when the shaft is being reversely rotated.

5. In a time-limit clock, the combination with the center shaft thereof, of a pinion and a ratchet-wheel located on the said shaft and rotating therewith, a spring connected with the shaft, a combined winding and resetting lever formed with a rack meshing into the said pinion for reversely rotating the shaft and so winding the spring and positioning the shaft, a center-wheel within which the shaft turns, means for coupling the said center and ratchet wheels, a time-train driven by the said center-wheel, and stop mechanism coacting with the said train for releasing and starting the same.

847,690. WALL-FASTENING FOR STOVEPIPES. CHARLES B. POST, New London, Ohio. Filed Aug. 8, 1904. Serial No. 219,827.

Claim.—1. The combination with a chimney having a stovepipe-opening, a stovepipe inserted therein, and a clamping-plate adapted to engage the inner face of the chimney-wall and extend outward over the stovepipe beyond said wall, of a split collar of frusto-conical form having overlapping ends and sleeved over said pipe and projecting end of the said clamping-plate, and means for contracting said collar whereby by the action of the collar as set forth the length of the axis of the frustum is increased and the parts are locked together.

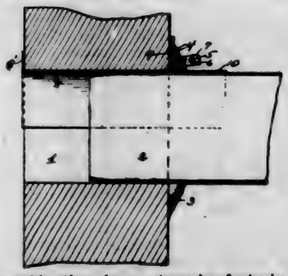

2. The combination in a stovepipe-fastener with the chimney and chimney-hole of a pipe, inserted in the chimney-hole, a curved plate having an inner flange adapted to engage the inner surface of the chimney, means upon the plate for adjustably engaging the outer surface of the chimney, a projecting portion of the plate lying upon the pipe, a split and frusto-conical collar about the pipe having overlapping ends, and means for reducing the diameter of the collar whereby by the action of the collar as set forth the parts are locked in position and its length of axis is increased, substantially as described.

3. The combination with a chimney-wall having an opening, a stovepipe therein and a locking-plate engaging the inner side of the chimney-wall, of a split collar of frusto-conical form, having overlapping ends and means for drawing the ends past each other to reduce the diameter and increase the height of the frustum, the said collar being sleeved over the pipe and outer end of said plate.

847,691. TELEPHONE ATTACHMENT. ALCORN RECTOR, New York, N. Y., assignor to himself, Daniel O. Sprague, and Arthur P. Smith, New York, N. Y. Filed Nov. 24, 1906. Serial No. 344,853.

Claim.—1. The combination with a single receiver having an earpiece, of a ring interposed between the earpiece and the body of the receiver, a cup having an earpiece, and a sound-tube leading from within the ring to the cup.

2. The combination with the single receiver having an earpiece, of a ring interposed between the body of the receiver and the earpiece, said ring having means for supporting the diaphragm of the receiver, a cup carrying an earpiece, a flexible tube extending from the ring to the cup, and means within the ring for diverting sound from the ring through the tube.

3. An apparatus of the kind described comprising a ring adapted for attachment to a telephone-receiver, said ring having a sound-tube with a restricted outlet adapted to register with the opening of the earpiece of the receiver, means for securing the ring to the receiver, a branch tube leading from said sound-tube laterally through the ring, a cup and earpiece, and a flexible tube leading from the aforesaid branch tube to the cup.

4. The combination with the receiver, of a ring adapted to be secured thereto, a sound-tube in the ring, a device in the tube to check sound-waves, a branch tube leading outward from the sound-tube, a cup and earpiece, and a flexible connection between the cup and the branch tube.

5. In a device of the kind described, the combination with the ring adapted for attachment to a telephone-receiver and provided with a longitudinal sound-tube, of a branch tube leading from the sound-tube, and a checking device in the sound-tube comprising a disk having an opening therethrough, and a bell-shaped device leading from the said disk-opening.

847,692. BUILDING CONSTRUCTION. CHARLES A. REED, New York, N. Y., and ALLEN H. STEM, St. Paul, Minn. Filed June 8, 1906. Serial No. 320,718.

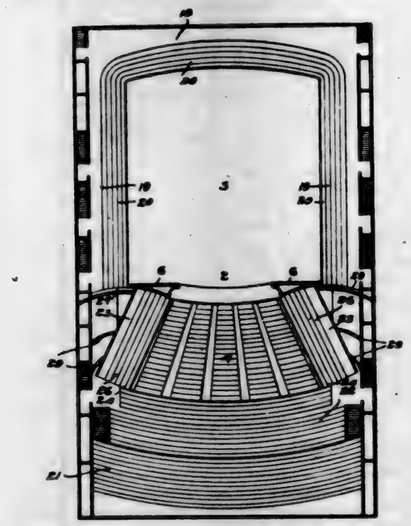

Claim.—1. The combination, in an auditorium or audience-room, of horizontally-movable seating-sections arranged upon opposite sides of the room and adapted to be moved toward or from each other, whereby the room may be divided into two parts with the space between said movable sections forming a stage or proscenium opening.

2. The combination, in an auditorium or audience-room, of horizontally-swinging seating-sections arranged upon opposite sides of the room and adapted to be moved toward or from each other whereby the room may be divided into two parts with the space between said movable sections forming a stage or proscenium opening.

3. The combination in an auditorium or audience-room, of horizontally-swinging seating-sections arranged upon opposite sides of the room and adapted to be moved toward or from each other, whereby the room may be divided into two parts with the space between said movable sections forming a stage or proscenium opening, and movable proscenium-walls provided in connection with said swinging seating-sections, substantially as described.

4. The combination in an auditorium or audience-room, with horizontally-movable seating-sections adapted to be moved toward or from each other to divide the room and form a comparatively small audience-room or amphitheater and a stage, the space between said movable sections forming a proscenium-opening, and movable proscenium-walls and an arch provided in connection with said movable seating sections.

5. The combination, in an auditorium or audience-room, with movable proscenium-walls, of horizontally-swinging balcony-sections adjacent to said walls, for the purpose specified.

6. The combination with an auditorium or audience-room having seating-sections around the room, two of the opposite sections being capable of movement toward one another and out of line with the contiguous seating-sections to divide the room into two parts and form a stage, and a comparatively small audience-room, the space between said movable sections forming a stage or proscenium opening, and vertically-movable proscenium-walls provided in connection with said seating-sections, and means for raising and lowering said walls.

7. The combination, with an auditorium or audience-room, of movable seating-sections arranged to be moved toward one another to divide the room into a smaller amphitheater and stage, the space between said movable sections forming a stage or proscenium opening, proscenium-walls and an arch provided in connection with said movable seating-sections and adapted to be moved vertically to an operative or inoperative position, and means for raising and lowering said walls and arch.

8. The combination, with an auditorium or audience-room of vertically-movable proscenium-walls dividing said room into two parts, a pit arranged beneath said proscenium-walls and forming an orchestra-pit when the walls are raised, and means for lowering said walls into said pit, for the purpose specified.

9. The combination, with an auditorium or audience-room, of vertically-movable proscenium walls and arch dividing said room into two parts, a pit arranged beneath said walls and arch and forming an orchestra-pit when the walls and arch are raised, and means for lowering said walls and arch into said pit and said arch when lowered closing the top of said pit, for the purpose specified.

10. The combination, with an auditorium or audience-room, of horizontally-movable seating-sections and movable proscenium-walls dividing said room into two parts, a level floor in the part of the room at the rear of said walls, and an inclined floor sloping toward said walls in the other part of the room and means for raising and lowering said walls, for the purpose specified.

11. The combination in an auditorium or audience-room with horizontally-movable seating-sections arranged upon opposite sides of the room and adapted to be moved toward or from each other to divide the room into a smaller audience-space and a stage, the space between said movable sections forming a stage or proscenium opening, and movable proscenium-walls provided in connection with said movable sections.

847,693. DUST-PAN. HARRY E. REEVES, Chicago, Ill. Filed Mar. 19, 1906. Serial No. 306,749.

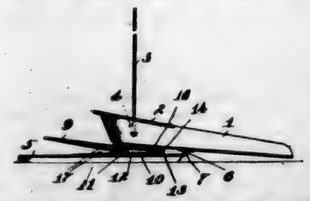

Claim.—1. In a dust-pan, in combination, a base; a pan pivotally mounted upon said base; and a foot-lever pivotally mounted intermediate its ends upon said base for pivotally moving said pan, one end of said lever being operatively connected with said pan, and the other end of said lever being adapted to receive the foot of the operator.

2. In a dust-pan, in combination, a base; a pan pivotally mounted on said base; and a foot-lever pivotally mounted between its ends upon said base and having a sliding connection at one end with said pan.

3. In a dust-pan, in combination, a base; a pan pivotally mounted on said base; a foot-lever pivotally mounted on said base; a pin attached to said foot-lever, the end portions of said pin extending at a right angle to the body of said pin; and bearings on said pan adapted to slidably support said angular ends of said pin.

4. In a dust-pan, in combination, a base; a pan pivotally connected near its middle portion with the forward

portion of said base, said base extending rearwardly beyond the rear end of said pan; a foot-lever pivotally mounted upon said base between its ends; the forward end of said foot-lever having a sliding engagement with said pan, the rear end of said lever extending beyond the rear end of said pan; and a spring normally retaining said foot-lever in operative position.

847,694. DRYING APPARATUS. KARL REYSCHER, Bielefeld, Germany. Filed Sept. 20, 1905. Serial No. 279,331.

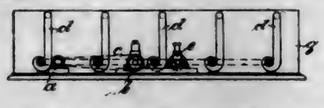

Claim.—A drying apparatus comprising in combination a drying-chamber, primary heating-tubes, secondary heating-tubes in communication with said drying-chamber, a primary heating-chamber and secondary heating-chambers, fans in communication with said secondary heating-chambers, a compressor in connection with said secondary heating-tubes, and supplying said primary heating-tubes with compressed and therefore heated air, an air-motor in communication with the primary heating-tubes, and a motor for actuating said compressor, substantially as described and for the purpose set forth.

847,695. VARIABLE-SPEED-TRANSMITTING DEVICE. ERNST RICHTER, Cincinnati, Ohio. Filed Apr. 17, 1905. Serial No. 255,935.

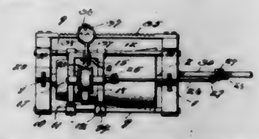

Claim.—1. In combination with a pair of spaced pulleys, an endless band passed around the same and having a portion thereof bent inwardly to extend in said space, a sliding carriage, a bracket adjustable on the carriage a pulley carried on said bracket and engaging said inbent band portion, an arm carried by said bracket, an eccentric rotatably supported from said arm, a stud carried by said eccentric, a pinion carried by said stud, and a stationary rack-bar in mesh with said pinion.

2. In combination with a pair of spaced pulleys, an endless band passed therearound and having a portion thereof bent inwardly to extend in said space, a sliding carriage, a bracket movable on said carriage, a pulley carried by said bracket and engaging said inbent portion of the band, mechanism connected to said bracket for moving the latter transverse of the direction of movement of the carriage, and stationary means to engage said mechanism and operate the same when the carriage is moved.

3. In combination with a pair of spaced pulleys, an endless band passed therearound and having a portion thereof bent inwardly to extend in said space, a sliding carriage, a bracket movable on the carriage a pulley on said bracket engaging said inbent portion of said band, a rack, a pinion supported from said bracket and engaging said rack, and means for mounting said pinion whereby when said carriage is moved said bracket will be moved therewith and in addition in a plane transverse to that of said carriage.

847,696. GLASS-FORMING MACHINE. JOSEPH RILING and CHARLES W. SAGER, Philadelphia, Pa., assignors to Hero Fruit Jar Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed July 7, 1906. Serial No. 325,052.

Claim.—1. In a machine of the character described, in combination, a rotary orificed table, a plate underlying a portion thereof, and a fixed guide, having an open-ended concave guiding-face overlying said table, said guiding-face adapted to substantially coincide with a portion of the upper edge of the orifices whereby the end of the gathering-tool with the glass may be entered between the ends of the guiding-face and the glass rest against said face, and means to produce a cutting action between the lower surface of the guide and the upper surfaces of the orifices.

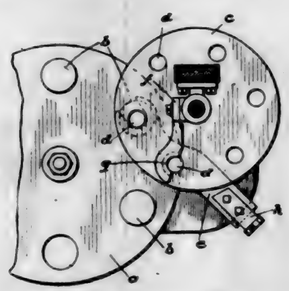

2. In a machine of the character described, in combination, a rotary orificed table, a plate underlying a portion thereof, and a fixed guide, having an open-ended concave guiding-face overlying said table, said guiding-face adapted to substantially coincide with a portion of the upper edge of the orifices whereby the end of the gathering-tool with the glass may be entered between the ends of the guiding-face and the glass rest against said face, the upper surface of the orifices, and the lower surface of the guide having cutting edges.

3. In a machine of the character described, in combination, a rotary orificed table, a plate underlying a portion thereof, and a fixed guide, having an open-ended concave guiding-face overlying said table, said guiding-face adapted to substantially coincide with a portion of the upper edge of the orifices whereby the end of the gathering-tool with the glass may be entered between the ends of the guiding-face and the glass rest against said face, and means to produce a cutting action between the lower surface of the guide and the upper surfaces of the orifices.

4. In a machine of the character described, in combination, a rotary orificed table, a plate underlying a portion thereof, a fixed curved guide, adapted to conform to a portion of the upper surfaces of the orifices, and a fixed support for the gathering-rod in line with the face of said guide.

5. In a machine of the character described, in combination, a rotary orificed table, a plate underlying a portion thereof, a fixed curved guide, adapted to conform to a portion of the upper surfaces of the orifices, and a fixed support for the gathering-rod in line with the front of said guide, the upper surfaces of the orifices and the lower surface of the guide having cutting edges.

6. In a machine of the character described, in combination, a rotary orificed table, a plate underlying a portion thereof, a fixed curved guide, adapted to conform to a portion of the upper surfaces of the orifices, and a fixed support for the gathering-rod in line with the front of said guide, and means to produce a cutting action between the lower surface of the guide and the upper surfaces of the orifices.

847,697. MANUFACTURE OF BUTTER IN CENTRIFUGAL APPARATUS. JOHANNES V. M. RISBERG, Söderteije, Sweden, assignor to Aktiebolaget Baltic-Separator, Stockholm, Sweden. Filed Mar. 2, 1906. Serial No. 303,923.

Claim.—The herein-described method of effecting and maintaining a constant churning temperature, in continual churning in a centrifugal apparatus, consisting in first cooling the cream, before it enters the churning vessel, to a suitable churning temperature, then, after the cream has been led into the churning vessel, maintaining this temperature thereof during the churning process by withdrawing the heat generated during the said process.

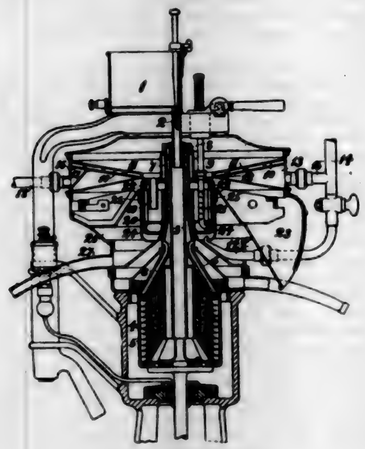

847,698. METHOD OF CURING TOBACCO. MAROON B. SARKEES, Philadelphia, Pa., assignor of one-third to John P. Carroll, Philadelphia, Pa., and one-third to Robert M. Cook, Washington, D. C. Filed July 19, 1906. Serial No. 326,936.

Claim.—1. The method of curing tobacco which comprises placing the freshly-cut leaves in an earthen inclosure, adapted to prevent the circulation of air through the tobacco, for a few days, thereby causing fermentation partial aging and coloring of the tobacco in said earthen inclosure, then removing the tobacco from said earthen inclosure and exposing it to the action of the sun and air for a few days, and then again placing the tobacco in a similar earthen inclosure for a few days to cause further fermentation aging and coloring of the tobacco therein.

2. The method of curing tobacco which comprises placing the freshly-cut leaves in an earthen inclosure, adapted to prevent the circulation of air through the tobacco, for a few days, thereby causing fermentation, partial aging and coloring of the tobacco in said earthen inclosure, then removing the tobacco from said earthen inclosure and exposing it to the action of the sun and air for a few days, then again placing the tobacco in a similar earthen inclosure for a few days to cause further fermentation aging and coloring of the tobacco therein, and then exposing the tobacco to the night air only for a few nights.

847,699. METAL STAIRCASE. PAUL SCHERBNER, New York, N. Y. Filed July 21, 1906. Serial No. 327,143.

Claim.—1. In a metal staircase, the combination of a series of risers and treads, each riser being made integral out of sheet metal with one tread and each riser being provided along its bottom with a flange and each riser being provided at the bottom with a curve forming a nosing and cove, substantially as set forth.

2. In a metal staircase, the combination of a series of risers and treads, each riser being made integral out of sheet metal with one tread and each riser being provided along its bottom with a flange and each riser being provided at the top with a curve forming a nosing and cove on the front of the riser, and each riser being also provided at the bottom with a curve forming a nosing and cove on the back of the riser, substantially as set forth.

847,699.

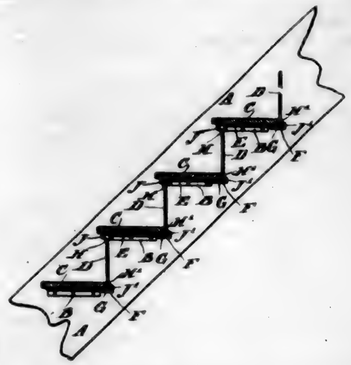

847,700. SIDEWALK OR CONCRETE CONSTRUCTION. JULIUS H. SCHLAFLY, Canton, Ohio, assignor to The Berger Manufacturing Company, Canton, Ohio, a Corporation of Ohio. Filed Oct. 19, 1905. Serial No. 283,447.

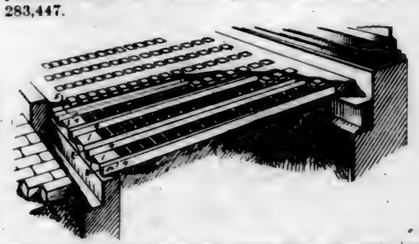

Claim.—In a structure for sidewalk or concrete construction, a series of metallic bars, the tops of said bars provided with a series of apertures, transparent, semi-transparent or translucent blocks adapted to fit in the apertures diverging flanges located upon opposite sides of the tops and extended downward therefrom, flanges located substantially at right angles to the tops and adapted to be connected together, substantially as and for the purpose specified.

847,701. TROLLEY AND CROSSOVER. FREDRICH SCHMUNK and PAUL B. SCHMUNK, Beaver Falls, Pa. Filed July 10, 1906. Serial No. 325,467.

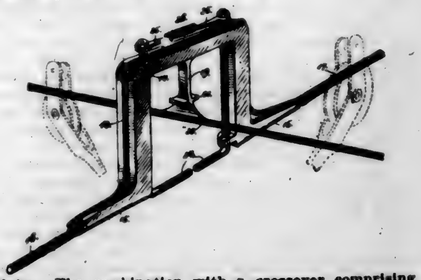

Claim.—The combination with a crossover comprising an arch-shaped frame having horizontal wire-supporting extensions, and a central depending guide provided with oppositely-projecting arms, of oppositely-disposed L-shaped arms supported in bearings of the frame, a spring connecting the upper ends of said L-shaped arms, and a trolley-guard comprising parallel spring-arms, cup-shaped plates

secured to the inner sides of the spring-arms, near their upper ends and beveled on their lower sides, antifriction-balls loosely supported by said plates and adapted to be struck by said depending guide to separate said spring-arms.

847,702. TYPE-WRITING MACHINE. JEROME B. SECOR, Derby, Conn., assignor to The Williams Typewriter Company, Derby, Conn., a Corporation of Iowa. Filed Aug. 10, 1904. Serial No. 220,244.

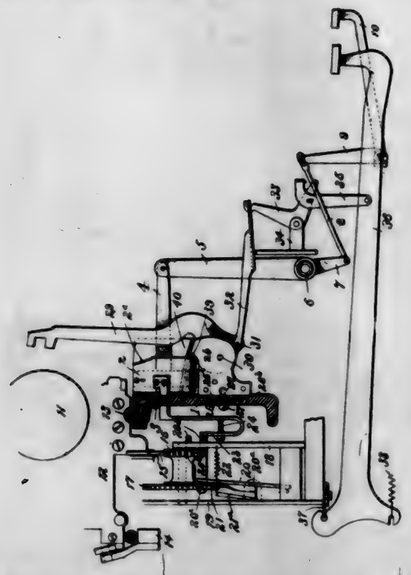

Claim.—1. In combination with the frame of a type-writing machine, a set of type-bars mounted on fulcrums arranged approximately in a vertical arc, with the central type-bar fulcrums in a vertical plane and with those near each end of the series approaching nearer the vertical plane of the carriage-track, a universal bar curved approximately on a vertical arc concentric with that of the type-bar fulcrums, mounted to slide back and forth in the machine-frame, having a front working face inclined backward at each end and adapted to receive impact from the several type-bars in their printing stroke and a suitable carriage-feed escapement device tripped by the sliding movement thereby imparted to the universal bar, substantially as described.

2. In a front-strike type-writing machine, the combination of a fixed frame-bridge, a set of type-bars on fulcrums in a vertical arc in hangers mounted on the front of said bridge, a universal bar curved on an arc substantially concentric with that of the type-bar fulcrums, mounted in front of said bridge and slidable back and forth relatively thereto, and actuated by impact of projections on heels of the type-bars, rigid guide-arms projecting backward from the universal bar through apertures in the bridge, a tappet-bar rigidly fixed to the universal bar and projecting backward therefrom through an aperture in the bridge and a suitable carriage-feed escapement actuated by said tappet-bar, substantially as described.

3. In a front-strike type-writing machine, the combination of a transverse bridge fixed in the machine-frame, a set of type-bars mounted on fulcrums in a vertical arc on hangers secured to the said bridge, a universal bar curved in a vertical arc substantially concentric with that of the type-bar fulcrums, mounted in front of the bridge, movable back and forth relatively thereto and actuated by impact of projections on the heels of the type-bars, rigid arms projecting forward from the universal bar, a release-key lever and connections therefrom to said forwardly-projecting arms, a tappet-bar projecting backward through apertures in the bridge and suitable carriage escapement mechanism actuated by said tappet, substantially as described.

4. In a type-writing machine the combination of a set of type-bars mounted on bearings arranged approximately in a vertical arc and with several of the fulcrums toward each end of the series approaching successively nearer to the vertical plane of the carriage-track, the type-bar heels having shoulders to actuate a universal bar in the printing stroke, a universal bar mounted to slide back and forth and actuated by the several type-bars in their printing stroke, said universal bar being formed with steps or notches toward its ends to correspond with the graduated position of the type-bar fulcrums, and an escapement mechanism actuated by the horizontal motion of the universal bar, substantially as described.

5. In combination with a type-writing-machine frame having a suitable bridge; a set of type-bars mounted on fulcrums arranged approximately in a vertical arc, a universal bar curved vertically in an arc substantially parallel with that of the type-bar fulcrums, a tappet-arm projecting rearward through an opening in the bridge, a horizontal slide guided at its forward end in position to receive the impact of the universal-bar tappet, a vertical plate pivoted by its lower part in the frame and pivoted by its upper end to the rear end of the horizontal slide to support the same while permitting its back-and-forth movement, and a spring restoring the slide to its normal front position after it has been pressed backward by the universal-bar tappet, substantially as described.

6. In combination with a type-writing-machine frame having a suitable bridge; a set of type-bars mounted on fulcrums in an approximately vertical plane, a universal bar mounted to move in an approximately horizontal direction and actuated by impact of the several type-bars, a tappet-arm mounted on said universal bar extending rearward through an opening in the bridge and having an elastic rear end of U shape, a horizontal slide guided in position to receive the impact of the U-shaped end of the tappet-arm, a spring tending to move and hold the said slide in its normal forward position and a set-screw in the elastic U-shaped end of tappet-arm serving to regulate the prominence of its operating end which engages the horizantal slide, substantially as described.

7. The combination of a series of type-bars mounted on fulcrums arranged in a vertical arc, a universal bar curved in an arc approximately parallel with the type-bar fulcrums actuated by the impact of the type-bars and having guide-arms and a tappet-arm projecting from its rear face and a machine-frame bridge having guide-openings in which the guiding-arms and tappet-arm of the universal bar slide in the reciprocating movement of said bar, substantially as described.

8. The combination of a series of type-bars mounted on brackets arranged approximately in a vertical arc a universal bar curved concentrically with the arc in which the type-bar brackets are mounted, actuated by contact of the several type-bars in their printing movement and carrying a tappet to actuate the carriage release mechanism and a dust-guard consisting of a curved plate carried by the universal bar inclined downward toward the front and extending over oblique shoulders on the type-bar brackets, substantially as shown and described.

9. A type-bar bracket comprising a pair of apertured check-plates and a central plate clamped between said check-plates, provided with lugs projecting from its opposite sides into apertures in the check-plates and protruding beyond the front edge of the check-plates so as to form a projecting tongue, and having a threaded aperture in its protruding edge to receive a clamp-screw; in combination with a clamp-screw and a bridge grooved and slotted to receive such projecting tongue and clamp-screw substantially as and for the purposes set forth.

847,703. DITCHING-MACHINE. FRANCIS L. SHENEFELT, Estherville, Iowa. Filed Dec. 21, 1906. Serial No. 348,939.

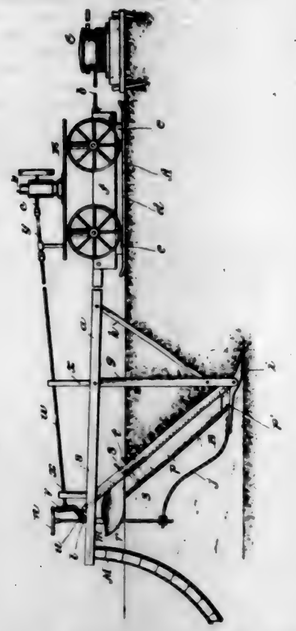

Claim.—1. In a ditching-machine, a plow comprising a beam, a combined standard and colter connected to and depending from the beam, and an elevating-conveyer for raising earth, arranged in rear of the combined standard and colter and connected with the same and the beam.

2. In a ditching-machine, a plow comprising a beam, a combined standard and colter connected to and depending from the beam, a knife or shoe carried on the lower portion of the combined standard and colter, and an elevating-conveyer for raising earth, arranged in rear of the combined standard and colter and connected with the same and the beam.

3. In a ditching-machine, a plow comprising a beam, a combined standard and colter connected to and depending from the beam, a knife or shoe carried on the lower portion of the combined standard and colter and extending forward thereof, and an elevating-conveyer having a casing open at its forward side, arranged in rear of the combined standard and colter and connected with the same and the beam, and an auger in the casing for raising earth that is forced into it as the plow is moved through the ground.

4. In a ditching-machine, a plow having a vertically-swinging knife or shoe, means for adjusting and adjustably fixing the same, a casing-section extending upward and rearward with respect to the knife or shoe and open at its forward side, a similar casing-section resting on the knife or shoe and movable in the lower portion of the first-mentioned casing-section, and an auger in the casing-sections arranged to raise the earth that is forced into it as the plow is moved through the ground.

5. In a ditching-machine, a plow comprising a beam, a combined standard and colter connected to and depending from the beam, a knife or shoe pivoted on the lower portion of said combined standard and colter and arranged to be swung vertically and having a rearwardly-extending arm, a rotary, threaded shaft-bearing in the beam and connected to said arm, and an elevating-conveyer extending upward and rearward from the knife or shoe and the lower portion of the combined standard and colter and arranged to raise the earth that is forced into it as the plow is moved through the ground.

6. In a ditching-machine, a plow comprising a beam, a combined standard and colter connected to and depending from the beam, a knife or shoe pivoted on the lower portion of said combined standard and colter and arranged to be swung vertically and having a rearwardly-extending arm, a rotary, threaded shaft-bearing in the beam and connected to said arm, a fixed casing-section extending upward and rearward from the lower portion of the combined standard and colter and open at its forward side and having deflectors at its upper end, a casing-section resting on the shoe or knife and adjustable in the first-mentioned section and also open at its forward side, and an auger in said casing-sections, arranged to raise the earth that is forced into it as the plow is moved through the ground.

7. In a ditching-machine, a plow having rearwardly-diverging elevating-conveyers for raising earth that is forced into them as the plow is moved through the ground.

8. In a ditching-machine, a plow having diverging casings open at their forward sides, and augers in said casings arranged to raise the earth that is forced into them as the plow is moved through the ground.

847,704. GAS COOKING-STOVE OR THE LIKE. WILLIAM D. SHEPPARD, Exeter, England. Filed Aug. 24, 1904. Serial No. 221,991.

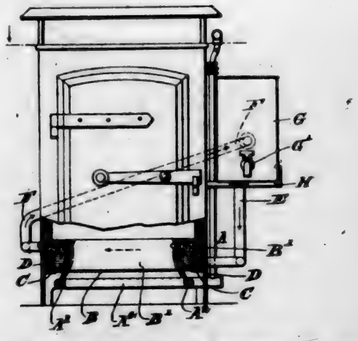

Claim.—1. In a cooking-stove, the combination, with a rectangular casing, of a boiler comprising a horizontal tube divided into portions extending along and supported on the side walls and the rear wall of said casing, said tube having a flat top surface and an upwardly and inwardly sloping inner surface which defines an opening for the passage of the products of combustion, and burner-tubes arranged parallel to and directly beneath the side and rear portions of said tube.

2. In a cooking-stove, in combination, a rectangular casing, a boiler comprising a tube divided into portions which extend along and are supported on the side walls and the rear wall of said casing, burners extending beneath the two side portions of said tube and connected with the same source of fuel, and an independent burner arranged beneath the rear portion of said tube.

3. In a cooking-stove, in combination, a rectangular casing, a boiler comprising a horizontal tube divided into portions extending along and supported on the side walls and the rear wall of said casing, said tube having a flat top surface and an upwardly and inwardly sloping inner surface which defines an opening for the passage of the products of combustion, a gas-supply tube extending across the front wall of said casing, burner-tubes connected to said supply-tube and arranged directly beneath and parallel to the side portions of the boiler, and an independent burner-tube arranged beneath and parallel to the rear portion of said boiler.

847,705. IRONING-BOARD. LINCOLN SMITH, Braddock, Pa. Filed Jan. 2, 1907. Serial No. 350,400.

Claim.—An ironing-board consisting of a foundation-plate, a bracket or standard carried thereby, a tilting tapering board hinged to said bracket or standard, a post carried by said foundation-plate, and supporting the tapering end of said board when in a horizontal position, a depending spring carried by the opposite end of said board, a yoke secured to said standard and said plate and engaging said spring for holding said board in a tilted position.

847,706. ANIMAL-SHEARS. WALTER P. SPARKS, St. Louis, Mo. Filed Mar. 26, 1906. Serial No. 308,125.

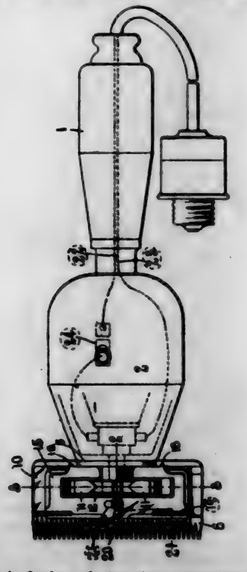

Claim.—1. A device of the class described, comprising a casing having a motor located therein, a handle connected to said casing, a stationary blade connected to said casing, a movable blade coöperating with said stationary blade, upwardly-projecting posts adjustably connected to said movable blade and provided with inverted-V-shaped guideways, a cross-head reciprocatingly mounted between said posts, and an eccentric located within said cross-head and carried by the armature-shaft of the motor for imparting a transverse reciprocating movement to the movable blade; substantially as described.

2. A device of the class described, comprising a casing provided with a closed end and having a motor located therein, a handle connected to said casing, a member connected to the end wall of the casing and having a stationary blade connected thereto, a movable blade resting on the stationary blade and provided with upwardly-projecting posts, an armature-shaft projecting through the end wall of the casing and the member which is connected thereto, an eccentric on said shaft for coöperating with the posts on the movable blade, and a housing for inclosing said posts and eccentric, said housing being provided with a flange which bears on the movable blade; substantially as described.

3. A device of the class described, comprising a shell having a motor located therein, a handle connected to said shell, a stationary blade connected to said shell, a movable blade mounted on said stationary blade and provided with an opening therein, posts adjustably connected to said movable blade at each side of the opening therein, a plurality of blocks forming a cross-head which is reciprocatingly mounted between said posts, an armature-shaft provided with an eccentric that is located within said cross-head, a housing for inclosing the posts and the parts coöperating therewith, a bolt carried by the stationary blade for holding said housing in operative position, vertical guide-ribs at the rear of the housing and a transversely-extending guide-rib at the front of the housing which projects into a groove in the movable blade; substantially as described.

847,707. FOLDING CHAIR. HENRY W. SPINDLER, Verona, Pa. Filed Oct. 17, 1906. Serial No. 339,320.

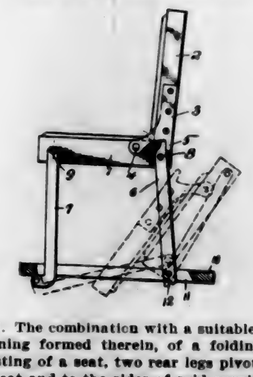

Claim.—1. The combination with a suitable support having an opening formed therein, of a folding chair, said chair consisting of a seat, two rear legs pivotally connected to said seat and to the sides of said opening, two front legs pivotally connected to said seat and to said support beneath said opening, a back pivotally connected to said seat and contacting with said rear legs, means to hold said seat in an elevated position, means to hold said back in a vertical position, and means to lock said chair in said opening, when folded therein, substantially as described.

2. In a folding chair, the combination with a support having an opening formed therein, of a chair-seat, a shaft carried by said seat adjacent its forward end, front chair-legs connected at their upper ends to the said shaft and at their lower ends pivoted to the support beneath the opening, a chair-back, a shaft extending through the chair-seat and to which the chair-back is pivoted, means connected to said chair-seat and said shaft for holding the chair-back in an elevated position, rear supporting-legs pivoted at their upper ends to the chair-seat and at their lower ends to the side walls of the opening in the support, and means connected to the shaft adjacent the front end of the chair-seat for securing the latter in an elevated position.

3. In a folding chair, a chair-seat, a shaft carried by said seat adjacent the forward end thereof, front supporting-legs connected at their upper ends to said shaft, rear supporting-legs pivoted at their upper ends to said seat, a support having an opening into which the lower ends of said legs extend, and to which they are pivoted at their lower ends, a second shaft extending through the chair-seat, a chair-back pivoted to said second shaft, means engaging said second shaft to hold the chair-back in an elevated position, and means engaging the first-mentioned shaft to hold the chair-seat in the elevated position.

4. In a folding chair, a support having an opening above which the chair is disposed when in its set-up form and into which the chair is received when in the folded form, a chair-seat, a shaft carried by said seat adjacent its forward end, two front legs connected at their upper ends to said shaft and pivoted at their lower ends to the support, two rear legs pivoted at their upper ends to the chair-seat and at their lower ends to the support, a chair-back carried by the chair-seat, spring-actuated means for holding the chair-back in an elevated position, spring means for holding the chair-seat in an elevated position, and means carried by the support for locking the chair within the opening in said support when folded therein.

847,708. CAR-ROOF CONSTRUCTION. GUSTAV STEINMEYER, Sr., St. Louis, Mo. Filed Mar. 1, 1906. Serial No. 303,722.

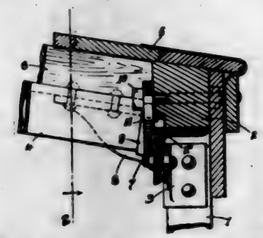

Claim.—In a car-roof construction, a composite side plate comprising a wooden member and an angle-bar member supporting the same, a carline anchor-plate secured to the wooden member and resting on the angle-bar member, and means for securing the anchor-plate to the carline, substantially as set forth.

847,709. STEAM-CONDENSER. SOREN THURSTENSEN, Louisville, Ky., assignor to Henry Vogt Machine Company, Louisville, Ky. Filed Dec. 10, 1906. Serial No. 347,048.

Claim.—1. A steam-condenser comprising a plurality of cylinders placed one above the other, longitudinally-extending plates supporting one of the cylinders above the other and providing a steam-tight intermediate chamber between adjacent cylinders, the cylinders being provided with holes into the intermediate chamber, and a water-discharge pipe above the topmost cylinder for cooling the condenser, substantially as described.

2. A steam-condenser comprising a plurality of cylinders placed one above the other, the lowermost cylinder being provided with a steam-inlet and the topmost cylinder being provided with an air-inlet, longitudinally-extending plates supporting one of the cylinders above the other and providing a steam-tight intermediate chamber between the adjacent cylinders, the cylinders being provided with holes opening into the intermediate chamber, and a water-discharge pipe above the topmost cylinder for cooling the condenser, substantially as described.

3. A steam-condenser comprising a plurality of cylinders placed one above the other and separated vertically from one another, longitudinally-extending inwardly-curved plates supporting one of the cylinders above the other, end plates connecting the inwardly-curved plates and forming in combination therewith and with the walls of the adjacent cylinders steam-tight intermediate chambers between adjacent cylinders, the cylinders being provided with holes opening into the intermediate chambers, and a water-discharge pipe above the topmost cylinder for cooling the condenser, substantially as described.

4. A steam-condenser comprising a plurality of cylinders placed one above the other and of substantially equal length, and of graduated diameter from bottom to top, connections affording communication between the cylinders and serving to support the cylinders one above the other, and a water-discharge pipe located above the topmost cylinder for discharging water upon the condenser, in position to flow down over the outside of said cylinder and thereafter over all of the cylinders of the condenser, substantially as described.

5. A steam-condenser comprising a plurality of cylinders placed one above the other and of substantially equal length, and of graduated diameter from bottom to top, connections affording communication between the cylinders and serving to support the cylinders one above the other, and a water-discharge pipe extending from end to end of the topmost cylinder and provided with a plurality of perforations for spraying water onto the topmost cylinder, in position to flow down over the outside of said cylinder and thereafter over all of the cylinders of the condenser substantially as described.

6. A steam-condenser comprising a plurality of cylinders placed one above the other, the cylinders being of graduated diameter from bottom to top, the lowermost cylinder being provided with a steam-inlet, and the topmost cylinder being provided with an air-inlet, longitudinally-extending plates supporting one of the cylinders above the other and providing a steam-tight intermediate chamber between adjacent cylinders, the cylinders being provided with holes opening into the intermediate chamber, and a water-discharge pipe above the topmost cylinder for cooling the condenser, substantially as described.

7. A steam-condenser comprising a plurality of cylinders placed one above the other, the cylinders being of graduated diameter from bottom to top, the lowermost cylinder being provided with a steam-inlet, and the topmost cylinder being provided with an air-inlet, longitudinally-extending plates supporting one of the cylinders above the other and providing a steam-tight intermediate chamber between adjacent cylinders, the cylinders being provided with holes opening into the intermediate chamber, a water-discharge pipe above the topmost cylinder for cooling the condenser, and a safety check-valve in one of the cylinders, substantially as described.

847,710. PROCESS OF MANUFACTURING CHANNEL-PINS. HENRY H. VAUGHAN, Cleveland, Ohio, assignor to The Railroad Supply Company, Chicago, Ill., a Corporation of Illinois. Filed June 21, 1902. Serial No. 112,682.

Claim.—1. The process of manufacturing channel-pins which consists in bending toward each other the edges of a suitable metal blank and simultaneously tapering the blank by compression, then sizing the channel between the edges by cutting the excess metal from its walls.

2. The process of manufacturing channel-pins from a rod of U-shaped cross-section which consists in tapering the exterior surface of the end of the rod by compression and tapering the thickness of the walls of the pin by cutting the channel to a predetermined depth and width.

3. The process of manufacturing channel-pins from a rod of U-shaped cross-section which consists in tapering the exterior surface of the end of the rod by compression,

shearing off a portion of the end of the rod the predetermined length of the pin, and tapering the thickness of the walls of the pin by cutting the channel to a predetermined depth and width.

4. The process of manufacturing channel-pins from a rod of U-shaped cross-section which consists in tapering the exterior surface of the end of the rod by compression, subsequently shearing off a portion of the end of the rod the predetermined length of the pin and coincidently beveling the adjacent end of the rod, and finally tapering the thickness of the walls of the pin by cutting the channel therein to a predetermined depth and width.

5. The process of manufacturing channel-pins from a rod of U-shaped cross-section which consists in beveling the under surface of the end of the rod, tapering the end of the rod by lateral compression, shearing off a portion of the end of the rod the predetermined length of the pin, and tapering the thickness of the walls of the pin by cutting the channel to a predetermined depth and width.

847,711. FLUID-PRESSURE BRAKE. HENRY H. WESTINGHOUSE, Pittsburg, Pa., assignor to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Apr. 1, 1903. Serial No. 150,591.

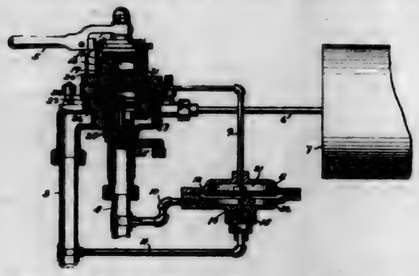

Claim.—1. In a fluid-pressure brake, the combination with an engineer's brake-valve having an equalizing-reservoir, train-pipe and main-reservoir pipe connection, and a train-pipe discharge-valve operated by the opposing pressures of the equalizing-reservoir and train-pipe, of a regulating-chamber, a regulating-valve operated by the opposing pressures of the train-pipe and said regulating-chamber for controlling the supply of fluid to the train-pipe, and means controlled by the brake-valve for opening communication from the regulating-chamber to the equalizing-reservoir in running position and in service position, and for closing such communication in lap position.

2. In a fluid-pressure brake, the combination with a main reservoir, engineer's brake-valve, train-pipe, equalising-reservoir, and train-pipe discharge-valve operated by the opposing pressures of the equalizing-reservoir and train-pipe, of a regulating-chamber, and a valve controlled by the pressure of the regulating-chamber for supplying fluid to the train-pipe, said brake-valve having ports for releasing fluid from the equalizing-reservoir and for opening communication from the regulating-chamber to the equalising-reservoir in service position and in running position, and for closing such communication in lap position.

3. In a fluid-pressure brake, the combination with an engineer's brake-valve having an equalising-reservoir, and train-pipe and main-reservoir connections, of a regulating-chamber, means governed by the pressure in the regulating-chamber for controlling the supply of fluid to the train-pipe when the brakes are applied, and means controlled by the brake-valve for opening communication between the equalizing-reservoir and the regulating-chamber in running position and in service position, and for closing such communication in lap position.

4. In a fluid-pressure brake, the combination with an engineer's brake-valve having main-reservoir and train-pipe connections, and an equalizing-reservoir for controlling the train-pipe discharge in service applications, of a regulating-chamber, and a valve device governed by the pressure in said chamber for controlling the supply of fluid to the train-pipe, said brake-valve having means for opening communication between the equalising-reservoir and the regulating-chamber in "running" and "service" positions.

5. In a fluid-pressure brake, the combination with an engineer's brake-valve having an equalising-reservoir and train-pipe and main-reservoir connections, of a regulating-valve for controlling communication from the main reservoir to the train-pipe, a movable abutment exposed on one side to train-pipe pressure and on the other side to pressure from a regulating-chamber for operating said valve, and a valve operated by the movement of the engineer's brake-valve handle for opening communication between the equalising-reservoir and the regulating-chamber when the brake-valve handle is moved to "service-stop" position and running position, and for closing such communication when in "lap" position.

6. In a fluid-pressure brake, the combination with an engineer's brake-valve having an equalising-reservoir and train-pipe and main-reservoir connections, of a regulating-valve for controlling communication from the main reservoir to the train-pipe, a movable abutment exposed on one side to train-pipe pressure and on the other side to pressure from a regulating-chamber for operating said valve, ports located in the seat of the engineer's brake-valve and connected to the equalising-reservoir and regulating-chamber respectively and a cavity located in the movable part of the brake-valve for connecting said ports when the brake-valve is placed in "service-stop" position and disconnecting said ports when placed in "lap" position.

847,712. CYLINDER STEAM-JACKET. GEORGE E. WILSON and WILLIAM J. FRAWLEY, Stillwater, Minn. Filed Feb. 6, 1906. Serial No. 299,802.

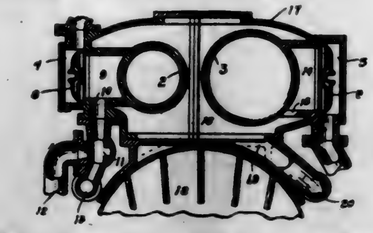

Claim.—The combination, with a traction-engine boiler, of a casing mounted thereon, high and low pressure cylinders arranged side by side in said casing and spaced from one another and from the walls of said casing, said cylinders having steam-chests and valves therefor in the outer side walls of said casing and cavities located between said valves and cylinders and communicating with said chests through said valves, the chamber or space within said casing extending partially around said cylinders and cavities, the cavity of said high-pressure cylinder having a pipe leading to the steam-chest of said low-pressure cylinder, and said low-pressure-cylinder cavity having a port leading to the interior of said casing whereby the exhaust of said low-pressure cylinder will be admitted to the chamber or space within said casing and conducted around said cylinders to reduce radiation and condensation thereof, and a pipe leading from said casing to the boiler-stack and whereto the exhaust is finally delivered, substantially as described and for the purpose specified.

847,713. REHEATER. GEORGE E. WILSON and WILLIAM J. FRAWLEY, Stillwater, Minn. Filed Feb. 6, 1906. Serial No. 299,803.

Claim.—1. The combination, with a traction-engine boiler, of a compound engine located above said boiler and comprising high and low pressure cylinders having steam-chests and valves therefor, said high-pressure cylinder having an exhaust-passage and a pipe communicating with said passage, said pipe having an inwardly-turned extension at its lower end projecting through the wall of said boiler into the fire-box, and the steam-chest of said low-pressure cylinder having a pipe communicating therewith at its upper end and provided with an inwardly-turned extension at its lower end also projecting through the wall of said boiler into the fire-box, and a receptacle located in the upper part of said fire-box and presenting a broad heating-surface to the flames and having a steam-passage with angled extensions at each end connected with the inwardly-turned extensions of said pipes, the walls of said extensions being opposite the open ends of said pipes whereby the exhaust-steam from said high-pressure cylinder will be retarded as it passes through said receptacle and reheated and dried before its delivery to said low-pressure cylinder, substantially as described.

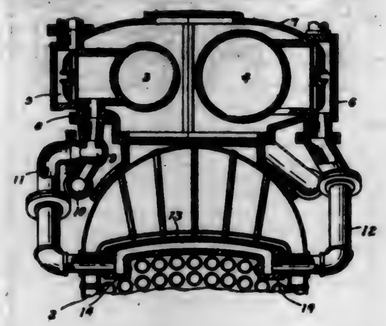

2. The combinaton, with a traction-engine boiler, of a compound engine arranged over said boiler and comprising high and low pressure cylinders having steam-chests and valves therefor, said high-pressure cylinder having a downwardly-extending exhaust-passage 8 and a valve 9 and pipe 11 communicating with said passage through said valve, said pipe 11 having an inwardly-turned extension at its lower end projecting through the wall of said boiler into the fire-box and the steam-chest of said low-pressure cylinder having a pipe 12 communicating therewith at its upper end and provided with an inwardly-turned extension at its lower end also projecting through the wall of said boiler into the fire-box and a hollow casting located in the upper part of said fire-box and presenting a broad heating-surface to the flames in said box and having holes in its ends wherein the inwardly-turned extensions of said pipes 11 and 12 are inserted whereby the exhaust-steam from said high-pressure cylinder will be reheated and dried before its delivery to said low-pressure cylinder, substantially as described.

847,714. WORK-GUIDING DEVICE. WILLIAM WILSON, Boston, Mass., assignor to Campbell Bosworth Machinery Company, Portland, Me., a Corporation of Maine. Filed Mar. 17, 1906. Serial No. 306,547.

Claim.—A work-guiding attachment for sewing-machines having, in combination with the base of the machine, an upwardly-extending support provided with a vertical socket and means for clamping a stem therein, a stem removably journaled in the support and carrying a work-guide, a collar fixed but vertically and rotatably adjustable on the stem and engaging the top of the support, and coöperating stops on the collar and the support for limiting in one direction, the rotation of the stem in the socket, substantially as described.

847,714.

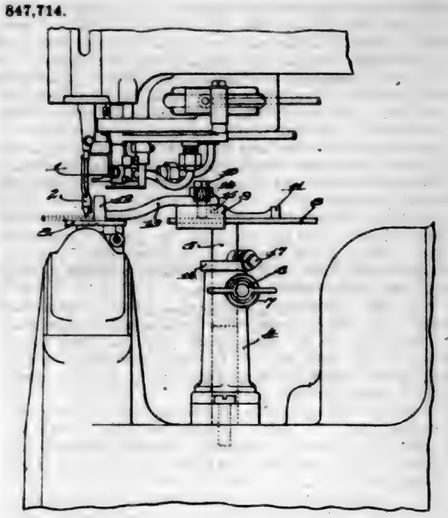

847,715. TOY. WILLIAM T. WOOD, Nashville, Tenn. Filed Feb. 10, 1906. Serial No. 300,484.

Claim.—1. A toy comprising a base, an elastic connection fixed at one end thereto, an inner figure connected to the elastic connection at an intermediate point, and an outer figure secured to the free end of the elastic connection.

2. A toy comprising a base, an elastic connection fixed at one end, an inner figure actuated by the elastic connection and connected with the same at a point between the ends thereof, and an outer figure also actuated by the elastic connection and secured to the free end thereof.

3. A toy comprising a base, an elastic connection fixed at one end, an inner figure actuated by the elastic con-

nection and connected with the same at a point between the ends thereof, an outer figure also actuated by the elastic connection and secured to the free end thereof, and means for setting and tripping the outer figure.

4. A toy comprising a support, an elastic connection fixed at one end, an inner figure actuated by the elastic connection, means for connecting the inner figure with the elastic connection at an intermediate point and for positively moving the said figure out of the prescribed course of the elastic connection, and an outer figure secured to the outer end of the elastic connection and actuated by the same.

5. A toy comprising a support, an oscillatory arm, an inner figure carried by the same, an elastic connection fixed at one end and secured at an intermediate point to the oscillatory arm, and an outer figure attached to the free end of the elastic connection.

6. A toy comprising a support, an elastic connection fixed at one end, an inner figure connected with the elastic connection at an intermediate point, an outer figure secured to the free end of the elastic connection, and a stop against which the outer figure abuts and into which the inner figure is carried.

7. A toy having a support, and an elastic connection provided with a tripping device comprising a ring actuated by the elastic connection, a fixed projection arranged to receive the ring, and a lever having an arm for disengaging the ring from the projection.

8. A toy comprising a base, an elastic connection fixed at one end, inner and outer figures actuated by the elastic connection, a stop against which the outer figure abuts, and means connected with the inner figure for moving the same in a prescribed course into and out of the said stop.

9. A toy comprising a support, an elastic connection, a plurality of figures connected with the elastic connection at different points on the same, said elastic connection serving as the means for actuating the said figures, and means for setting and tripping the figures.

10. A toy comprising a base, an elastic connection, a plurality of figures located at different points along the said connection and actuated by the same, setting and tripping mechanism arranged at one end of the base, and a stop located at the opposite end of the base.

11. In a toy, the inner figure, means for mounting the same so as to swing in the arc of a circle, means for automatically swinging the inner figure in one direction, the outer figure, and elastic means for connecting the outer figure with the inner figure to permit the inner figure to recede.

12. In a toy, the inner figure, means for mounting the same so as to move back and forth and causing the backward movement to be effected automatically, the outer figure, and an elastic cord for connecting the outer figure with the inner figure in spaced relation thereto.

13. In a toy, the box or casing, the inner figure arranged normally within the box or casing, means for mounting the inner figure so as to move back and forth, within and without the box or casing, and causing the backward movement to be automatically effected, the outer figure, and elastic means for connecting the outer figure with the inner figure in spaced relation thereto.

14. In a toy, the inner figure, means for mounting the same so as to move back and forth and causing the backward movement to be effected automatically, the outer figure, and elastic means connecting the outer figure with the inner figure in spaced relation thereto.

15. In a toy, the inner figure, means for mounting the same so as to move back and forth and causing the backward movement to be effected automatically, the outer figure, means for directly connecting the inner and outer figures together in spaced relation, and means for receiving the inner figure and excluding the outer figure when the inner figure moves backward.

16. In a toy, the combination of the inner figure, means for mounting the same so as to move back and forth and cause the backward movement to be effected automatically, the outer figure, spring-actuated means for connecting the inner and outer figures in spaced relation, means for receiving the inner figure and excluding the outer figure when the said inner figure moves backward, and setting and tripping mechanism for the outer figure.

17. A toy comprising a casing having an entrance-opening, an inner figure, a horizontally-movable member connected with the inner figure and arranged to move the same backward and forward through the said entrance-opening in a prescribed course, an outer figure, a flexible connection between the inner and outer figures, and an elastic connection for automatically moving the said member backward.

847,716. FLAT-CAR. THEODORE WOZNEY, Milwaukee, Wis. Filed Apr. 27, 1906. Serial No. 314,030.

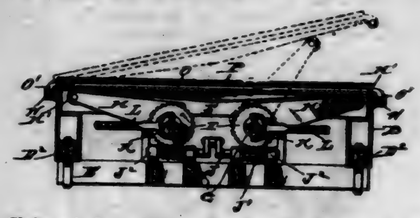

Claim.—1. In a flat-car, the combination with a platform, of means for pivoting said platform to either side of the car, arms pivoted under said platform and means connected to said arms for throwing the arms into engagement with said platform.

2. In a flat-car, the combination with a cross-bar carrying a platform, of means for pivoting said bars to said car, arms pivoted under said platform and means connected to said arm for throwing them into engagement with said cross-bars, for the purpose described.

3. In a bat-car, the combination with side sills, of cross-bars arranged on said sills carrying a platform, means for pivoting said cross-bars to said sills, arms arranged under said platform and means for throwing said arms into engagement with said cross-bars, for the purpose described.

4. In a flat-car, the combination with a detachable platform, of means for pivoting said platform to said car, shafts arranged under said platform provided with arms, gear-wheels mounted on said shafts, a crank-shaft provided with worm-gears, meshing with said gear-wheels, and an engine connected to said crank-shaft, for the purpose described.

5. In a flat-car, the combination with a platform, of means connected to said platform, for pivoting said platform to either side of the car, shafts arranged under said platform provided with arms, and means carried by said car for throwing said arm into engagement with said platform, for the purpose described.

6. In a flat-car, the combination with a platform, adapted to be pivoted to either side of said car, of shafts arranged under said platform provided with arms carrying rollers at their ends, gear-wheels loosely mounted on said shafts, a crank-shaft provided with worm-gears meshing with said gear-wheels, an engine connected to said shaft, and means for locking said gear-wheels to said shaft, for the purpose described.

7. In a flat-car, the combination with the side sills, provided with bifurcated lugs, of a platform carried by cross-bars provided with turned-down apertured ends, means for pivoting said ends in said lugs, arms pivoted under said platform, and means connected to said arms, for throwing them into engagement with said platform, for the purpose described.

8. In a flat-car, the combination with side sills having notches formed therein, of forked lugs secured in said notches, cross-bars provided with turned-down apertured ends adapted to be pivotally mounted in said lugs, a platform carried by said cross-bars, arms arranged under said platform and means for throwing said arms into engagement with said cross-bars, for the purpose described.

847,717. CONCEALED HINGE. OLOF ALTHIN, Boston, Mass. Filed May 28, 1906. Serial No. 319,089.

Claim.—A hinge, comprising a pintle and two flat straps lying in substantially the same plane when open; each of them having screw-holes and one of them being formed into an arch springing from and returning to its own plane between the screw-holes of such strap and the pintle, whereby the strap vaults the position occupied by the edge of the joined piece, without contact with such edge.

847,718. OUTLET-BOX AND WALL-PLATE. WALTER P. AMBOS, Cleveland, Ohio. Filed Mar. 5, 1906. Serial No. 304,165.

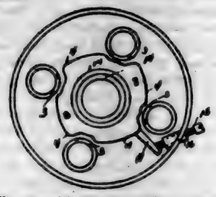

Claim.—1. The combination with a wall plate or box having openings adapted to receive flexible tubes, of collars about said openings, said collars having transverse slots in their walls, clutch members having edges adapted to enter said slots and engage said flexible tubing and adjustable mechanism, substantially as described, for simultaneously moving said clutch members in said slots to engage said flexible tubing.

2. The combination with a wall box or plate having openings arranged to receive the extremities of flexible tubes, of collars encircling said openings, said collars having transverse slots in their walls, clutch members having edges adapted to enter said slots and be guided thereby, and to engage said flexible tubing, a device operatively connecting said clutch members, whereby their movements are simultaneous, and an adjusting-screw mounted in said plate and engaging said connecting device.

3. The combination with a wall-plate provided with openings for the insertion of insulating-tubes, of raised collars about said openings, said collars having transverse slots, and means for securing said tubes simultaneously in said slots consisting of a rotatable disk upon said plate, and cam edges upon said disk, said cam edges being adapted to enter said slots and engage said tubes, and means for rotating said disk.

847,719. KNUCKLE-JOINT. CHARLES H. ARNOLD, New London, Ohio. Filed Jan. 8, 1906. Serial No. 295,127.

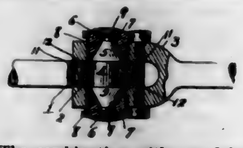

Claim.—1. The combination with a rod having a disk-shaped head and a central cylindrical opening, of a fork engaging the faces of the head, a pivot-pin filling said opening in the head, and having reversely-tapered extremities, caps adjustably secured within the sides of the fork and provided with inversely-tapered recesses corresponding with the tapered extremities of the pivot-pin, said recesses being covered on the outer ends, and said caps having each a crenelated edge and an adjusting-screw in each side of the fork, said screws having a mutilated side, substantially as described.

2. In a joint of the character described, having a disk-shaped head provided with a central cylindrical opening and a fork engaging the same on two sides and provided with screw-threaded openings larger than the opening in the head, the combination therewith, of a pin having a large central portion inserted in said opening and having reversely-tapered extremities, screw-threaded caps in said openings in said fork, said caps provided with tapered openings corresponding with the taper of the pin extremities, each cap having a closed outer end and a crenelated edge and means for preventing the caps from rotating, the said caps being arranged to exclude dust from the bearings of the fork and head, substantially as described.

847,720. ANGLE-MEASURING TOOL. MICHAEL BARBO, Butte, Mont. Filed Oct. 3, 1906. Serial No. 337,202.

Claim.—The combination with the bars 1 and 2, having slots 1^a and 2^a with intermediate enlargements 1^b and 2^b, of means for guiding said bars 1 and 2, and securing the same in different adjustments, comprising a nutted bolt 3, angle-bars 5 applied to the ends of said bars 1 and 2, and the nutted bolts 6 detachably and pivotally connecting said bars 5 to said bars 1 and 2, and which bolts 6 are insertible through the registered slot enlargements 1^b and 2^b to secure the parts in compact form but are too large to enter the slots 1^a and 2^a, substantially as described.

847,721. FENCE-MACHINE. JOHN S. BARNES, Detroit, Mich. Field Feb. 16, 1906. Serial No. 301,338.

Claim.—1. In a wire-fence machine, means for placing and holding the strands of wire constituting an extended section of the line-wires of the fence under tension, means for twisting said strands together from picket to picket inserted between the said strands while under tension, and means for bundling the finished product after the tension on the line-wires is released, substantially as described.

2. In a wire-fence machine, means for gripping and putting under tension an extended length of the strands constituting the line-wires of the fence, means for twisting said strands together from picket to picket, means for reversing the direction of the twist given to said strands between each alternate picket, and means for bundling the finished product when released by the tension mechanism, substantially as described.

3. In a wire-fence machine, means located between the

wind-up or bundling drum and the feed-wire reels of the machine for putting an extended section of the line-wires of a fence under tension, said means consisting of devices for gripping the line-wires at one end and provided with means for producing a dragging grip on the opposite end of the extended section, the construction being such as to permit the passage of wire to relieve the increasing strain caused by twisting the strands together, and means for twisting said strands together throughout the length of said extended section between and around the pickets, substantially as described.

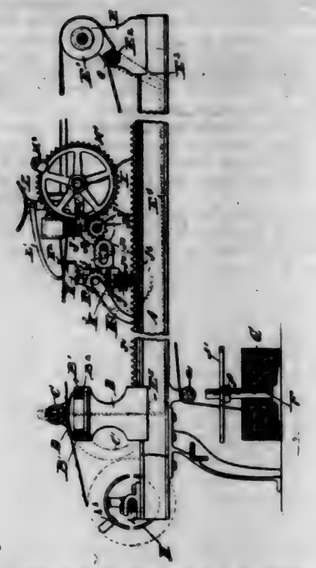

4. In a wire-fence machine, means for gripping one end of the line-wires of an extended section of fence consisting of a rocking cam-roll journaled in the frame of the machine, means for rocking said cam-roll, springs housed below said rocking cam-roll in the frame of the machine, the construction being such that the line-wires pass between said springs and the rocking cam whereby said cam when partially rotated will grip said wires between the cam and the springs, substantially as described.

5. In a wire-fence machine, means for gripping one end of the line-wires consisting of a rocking cam-roll journaled in the frame of the machine, means for rocking said cam-roll, springs housed within the frame of the machine below said cam-roll adapted for lateral adjustment, the construction being such that said springs may be set so that the line-wires may pass between the springs and the rocking cam however spaced, whereby said cam when partially rotated will grip said wires between the cam and the springs, substantially as described.

6. In a wire-fence machine, means located between the wind-up or bundling drum and the feed-wire reels of the machine for putting an extended section of the line-wires of the fence under tension, said means consisting of devices for gripping the line-wires at one end and providing a dragging grip on the opposite end of an extended section, substantially as described.

7. In a wire-fence machine, means located between the wind-up or bundling drum and the feed-wire reels of the machine for putting an extended section of the line-wires of the fence under tension, said means consisting of devices for gripping the line-wires at one end and providing a dragging grip on the opposite end of an extended section, a reciprocating carriage adapted to travel the length of said extended section provided with twisting-gears for twisting the strands of the line-wires together between and around the pickets, driving-gears for operating said twisting-gears and also the reciprocating carriage, substantially as described.

8. In a wire-fence machine, means located between the wind-up or bundling drum and the feed-wire reels of the machine for putting an extended section of the line-wires of the fence under tension, consisting of devices for securely gripping the line-wires at one end and provided with means for producing a dragging grip on the opposite end of an extended section, a reciprocating carriage on which are mounted twisting-gears designed to twist the strands forming the lateral wires together, suitable driving-gears to operate the twisting-gears and to control the movement of said carriage, substantially as described.

9. In a wire-fence machine, means located between the wind-up or bundling drum and the feed-wire reels of the machine for putting an extended section of the line-wires under tension, said means consisting of devices for securing the line-wires at one end and providing a dragging grip on the same at the opposite end of the extended section of line-wires, a reciprocating carriage on which are mounted twisting-gears for twisting together the strands between and around the pickets of the fence, and means for determining the distance between pickets in said twisted section, said means being adjustable to adapt it for varying conditions, substantially as described.

10. In a wire-fence machine, a reciprocating carriage on which are mounted twisting-gears for twisting the strands of the line-wires together between and around the pickets of the fence, means for reversing the direction of the twist between alternate pickets, and adjustable means for regulating the distance twisted between pickets, said means consisting of a movable stop secured to a gear driven by the driving-gear, the construction being such that the movement of the gear will cause the stop to come in contact with the driving-gear, thus stopping the rotation of the twisting-gears and indicating the predetermined distance between pickets, substantially as described.

11. In a wire-fence machine, a reciprocating carriage on which are mounted twisting-gears for twisting together the strands forming the line-wires of the fence, the construction being such that the gearing operating the twisting-gears will control the travel of the carriage, means for stopping the movement of the twisting-gears when the strands are twisted a predetermined distance between pickets consisting of an adjustable stop secured to one of the operating-gears arranged to limit the movement of said gear in any one direction, substantially as described.

12. In a wire-fence machine, a reciprocating carriage on which are mounted twisting-gears to twist together the strands forming the line-wires of the fence, the construction being such that the movement of the said carriage will be regulated by the predetermined travel of the twisting-gears, means for reversing the direction of the twist between alternate pickets, and means for regulating the number of times said strands are twisted together between pickets and the distance from one picket to the next, substantially as described.

13. In a wire-fence machine, means located between the wind-up or bundling drum and the feed-wire reels of the machine for putting an extended section of the line-wires of the fence under tension consisting of gripping devices at one end and tension devices at the other end of the machine to engage the extended section of the line-wires, a traveling carriage designed to reciprocate between the ends of said line-wires, said carriage provided with twisting-gears through which the strands of the line-wires pass, suitable gearing meshing with said twisting-gears and operated through a driving-gear meshing with the rack-bars over which the carriage travels, and means consisting of a suitable clutch mechanism for throwing the driving-gear in or out of engagement, substantially as described.

14. In a wire-fence machine, means for putting an extended section of the line-wires of the fence under tension, consisting of devices for gripping the line-wires at each end of the extended section, a reciprocating carriage adapted to travel the length of said extended section on which are mounted twisting-gears for twisting the strands forming the line-wires of the fence together between and around the pickets, said twisting-gears operated by means of gearing engaging a rack mounted on the frame of the machine, the construction being such that the movement of the carriage along the rack is controlled by the predetermined travel of the twisting-gears, substantially as described.

15. In a wire-fence machine, means located between the wind-up or bundling drum and the feed-wire reels of the machine for putting an extended section of the line-wires under tension, said means consisting of devices for securing the line-wires at one end and providing a dragging grip on the opposite end of the extended section, a reciprocating carriage on which are twisting-gears to twist together the strands forming the line-wires of the fence, and means for reversing the twist between alternate pickets, substantially as described.

16. In a wire-fence machine, a reciprocating carriage on which are mounted the twisting-gears for twisting together the strands forming the line-wires of the fence, means for holding the line-wires under tension by suitable gripping devices forming part of the machine, an auxiliary carriage mounted on said traveling carriage having a comb between the teeth of which the strands of the line-wires pass, said auxiliary carriage mounted on a rack and operated by a pinion meshing with the rack on the frame of the machine and controlled by a suitable operating-lever, substantially as described.

17. In a wire-fence machine, means for gripping an extended length of the strands constituting the line-wires of the fence, adjustable means for twisting said strands together from picket to picket, the construction being such that the twist may be regulated to the distance between pickets and the gages of wire employed, substantially as described.

18. In a wire-fence machine designed to hold extended lengths of wire strands under tension while twisting them together to form the line-wires of the fence, means for producing a dragging grip on the strands of wires, the construction being such that when it becomes necessary to change the distance between the line-wires they may be adjusted laterally without rethreading the machine, substantially as described.

19. In a wire-fence machine designed to hold an extended section of the strands forming the line-wires of the fence under tension, means for producing a dragging grip consisting of two bars mounted in adjacent relation between which the strands of the line-wires pass, said bars suitably mounted whereby they may be given a rocking movement producing a dragging grip on the wires, the construction being such that the strands forming the line-wires may be given a lateral adjustment without rethreading the machine, substantially as described.

847,722. LIQUID-SOAP CUP. EDWARD A. BENDER, Philadelphia, Pa., assignor to E. A. Bender & Company, a Corporation of Pennsylvania. Filed Mar. 9, 1906. Serial No. 305,028.

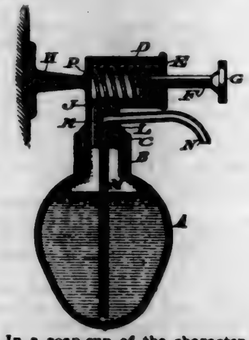

Claim.—1. In a soap-cup of the character stated, a receiving vessel, a ported stopper therefor, said vessel being suspended therefrom, a barrel superimposed on said stopper and communicating with said vessel through a port in said stopper, a piston in said barrel, a discharge-nozzle on the exterior of said stopper, a fluid-conveying pipe depending from the latter and entering said vessel, said pipe and nozzle being in communication through the other port of said stopper, and a bracket for sustaining and suspending the entire device, the same extending from and being secured to said barrel and provided with means for attachment to a place of suspension.

2. A soap-cup of the character stated, consisting of a receiving vessel, a ported stopper therefor, and from which said vessel is suspended, a barrel on said stopper, a piston in said barrel, a rod for said piston, said barrel and vessel being in communication through said stopper, a fluid-conveying pipe depending from said stopper into said vessel, a discharge-nozzle on the exterior of said stopper, said pipe and nozzle being in communication through said stopper, and a bracket, the said piston-rod and said discharge-nozzle extending laterally from their respective connected members, the terminal of said nozzle and the head of said rod being adjacent, and said bracket extending laterally from said barrel and adapted to sustain the entire device.

847,723. FLUSH-VALVE. BERNARD BERGMANN, Detroit, Mich. Filed May 11, 1906. Serial No. 316,272.

Claim.—1. In a flush-valve, the combination of a sleeve provided with threaded ends and lugs to prevent turning; a body portion comprising a mutilated disk having a threaded periphery, a projecting threaded portion adapted to fit said sleeve, and a valve-seat surrounding a central passage; and a dome-shaped cap having a projecting angular portion, a roughened periphery, an interior hub, a valve-disk, and a screw to secure said valve-disk to said hub; said cap having interior threads to engage the threaded portion of the body portion whereby the relative positions of the valve disk and seat may be determined.

2. In a flush-valve, the combination of a body portion comprising a mutilated disk having a threaded periphery, a projecting threaded portion, and a valve-seat surrounding a central passage; and a dome-shaped cap having an interior hub, and a valve-disk on said hub, said cap having interior threads to engage the threaded periphery of the body portion, whereby the relative positions of the valve disk and seat may be determined.

847,724. ILLUSION DEVICE. ANGELO F. BIONDI, New York, N. Y. Filed July 22, 1905. Serial No. 270,810.

Claim.—1. In an illusion device, an observation-car, a horizontally-disposed driving-shaft beneath said car, a plurality of pulleys carried by said shaft, said pulleys being of diameters decreasing toward the end of the shaft most remote from said car, horizontal shafts disposed above said first shaft, rollers carried by said last shafts, a plurality of belts adapted to drive said rollers and passing over said pulleys, and scenery-panels carried by said belts and projecting substantially vertically.

2. In an illusion device, an observation-car, horizontal shafts disposed transversely at the side of said car, a plurality of endless belts passing over said shafts, means for continuously driving said belts, removable scenery-belts carrying panels representing scenery and adapted to lie upon said endless belts, and interlocking means between said scenery-belts and said endless belts for advancing said scenery-belts.

3. In an illusion device, an observation-car having

wheels below the body thereof, rollers disposed in pairs and engaging the under sides of said wheels for supporting said car, a driving-shaft, pulleys carried by said shaft, belts passing over said pulleys and driving said rollers, a plurality of pulleys carried by said driving-shaft and diminishing in diameter toward the extremity of said shaft, a plurality of horizontal shafts disposed transversely at the side of said car, rollers mounted on said shafts, scenery-belts adapted to be advanced by said rollers, and a plurality of belts passing over said pulleys and driving said last rollers.

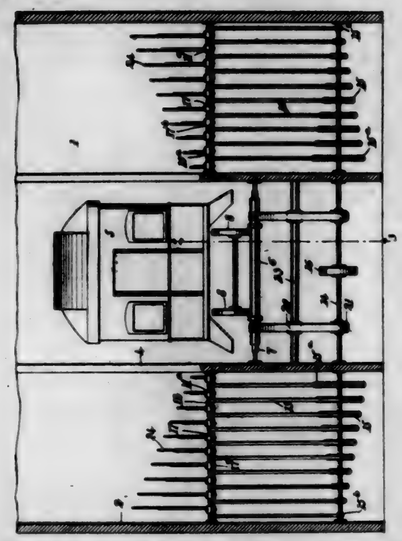

4. In an illusion device, a plurality of endless belts, means for guiding the same, and scenery-belts adapted to lie upon said endless belts and carrying scenery-panels, said endless belts having spurs on the upper faces thereof, and said scenery-belts having openings receiving said spurs whereby said scenery-belts may be advanced by said endless belts.

5. In an apparatus of the class described, an endless driving-belt, a scenery-carrier, scenery-panels on said carrier, and means for securing an interlocking connection between the scenery-carrier and the driving-belt.

847,725. ILLUSION APPARATUS. ANGELO F. BIONDI, New York, N. Y. Filed Mar. 1, 1906. Serial No. 303,590.

Claim.—1. In an apparatus of the character described, a vehicle or car, a movable scenery-carrier adjacent to said car or vehicle, and a plurality of successive disconnected scenery-panels coupled individually to said scenery-carrier, said panels being removable individually from said carrier.

2. In an apparatus of the character described, a vehicle or car, a movable scenery-carrier adjacent thereto, and a plurality of disconnected scenery-panels imposed on said carrier and extending upwardly therefrom.

3. In an apparatus of the character described, a vehicle or car, an endless scenery-carrier adjacent thereto, and a plurality of scenery-panels each coupled detachably to said carrier.

4. In an apparatus of the class described, a car, an endless scenery-carrier running alongside of the car, a plurality of scenery-panels adapted to be moved by the carrier alongside the car, and means for connecting the panels individually and detachably to the carrier, whereby the panels may be fed to one end of the carrier and discharged from the other end thereof.

5. In an illusion apparatus, a vehicle or car, an endless scenery-carrying apron, supporting and driving pulleys for said apron, the axes of said pulleys being horizontal and the faces of said apron being in horizontal planes, and a plurality of scenery-panels movable with the apron, said panels being coupled individually and detachably to the apron.

6. In an illusion apparatus, a vehicle or car, a plurality of endless scenery-carrying aprons, the faces of each apron being in horizontal planes, means for propelling said aprons at different speeds, and a plurality of scenery-panels for each of said aprons, said panels being coupled individually and detachably to their proper aprons.

7. In an illusion apparatus, a plurality of endless scenery-carrying aprons, a plurality of scenery-panels for each apron, said panels being coupled individually and detachably to their proper aprons, and means for propelling the aprons at different speeds.

8. In an apparatus of the class described, a car, a scenery-carrier movable alongside of said car, scenery-panels adapted to be loaded on said carrier at one end thereof and to be discharged from the carrier at the other end, and means for returning the panels to the loading-point.

9. In an apparatus of the class described, a car, and an endless scenery-carrier movable relative to the car, and scenery-panels having detachable interlocking engagement with said carrier, said scenery-carrier having a portion thereof running in an inclined path to facilitate the operation of loading scenery-panels thereon.

10. In an apparatus of the class described, an endless scenery-carrier, and a plurality of scenery-panels adapted to have interlocking engagement with said carrier, an end portion of said carrier being exposed and accessible for loading said panels thereon.

11. In an apparatus of the class described, an endless scenery-carrier, and a plurality of scenery-panels adapted to have interlocking engagement with said carrier, said carrier at its loading end running in an upwardly-inclined direction.

12. In an apparatus of the class described, a plurality of endless scenery-carriers, means for propelling said carriers at different speeds, and scenery-panels having detachable interlocking relation with certain of said scenery-carriers.

847,726. SALT AND PEPPER SHAKER. THOMAS J. BRANNON, Pittsburg, Pa. Filed Oct. 19, 1906. Serial No. 339,642.

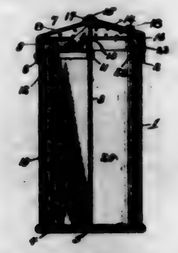

Claim.—In a condiment holder and receptacle, a partition dividing the receptacle into compartments, a perforated lid hinged to the receptacle, a shutter rotatably connected to said lid, and an auxiliary partition carried by said lid, the lower edge of which engages and matches with the upper end of the partition when the lid is closed, the ends of said auxiliary partition being cut away to clear the top of the receptacle when the lid is being closed, substantially as described.

847,727. METHOD OF CHARGING GAS-TANKS. RUDOLPH E. BRUCKNER, Mount Vernon, N. Y., assignor to The Commercial Acetylene Company, New York, N. Y., a Corporation of New Jersey. Filed Oct. 31, 1906. Serial No. 341,392.

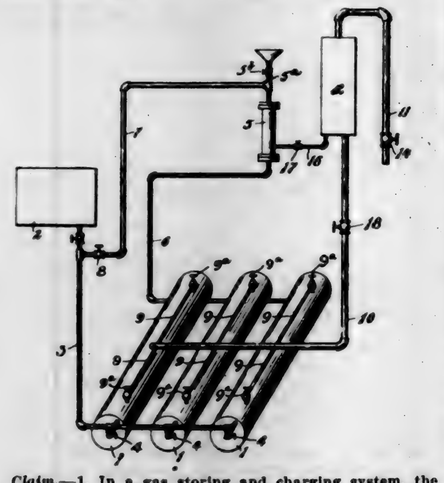

Claim.—1. In a gas storing and charging system, the method of charging portable tanks with gas consisting first in storing under pressure a reservoir with gas and a liquid absorbent, then transferring the gas under pressure to a portable tank, and abstracting the liquid absorbent contained in said gas during the transit of the same from said reservoir to said tank so that only substantially dry gas will be contained in the latter.

2. In a gas storing and charging system, the method of charging a tank with gas from a storage-reservoir consisting first in charging under pressure the reservoir with gas and a liquid absorbent, then conveying the same under pressure to a separating device, there abstracting from the gas any absorbent that is in a liquid state and conveying under pressure the gas thus obtained to the portable tank and returning the liquid absorbent thus extracted to the storage-reservoir.

847,728. X-RAY APPARATUS. EUGENE W. CALDWELL, New York, N. Y. Filed Apr. 11, 1906. Serial No. 311,017.

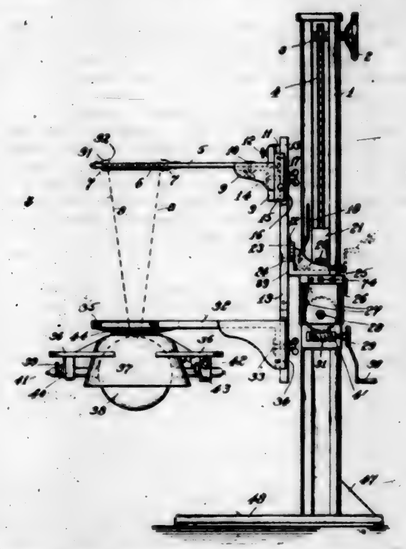

Claim.—1. In X-ray apparatus, a movable post and base, a block slidingly mounted in said post, a counterweight operating within said post, a sprocket-wheel, a sprocket-chain connecting said block and counterweight and operated by said wheel, a head revolubly connected with said block, a worm-wheel adjustment between said head and block, a carrier revolubly mounted on said head, means to lock said carrier in adjusted position, a holder mounted on said carrier, an arm and support mounted on said carrier and adjustable with respect to said holder, curved tracks in said support substantially concentric with said holder, a carriage mounted on said tracks and operating in an aperture in said support, a removable impervious diaphragm in said carriage and an impervious hood to receive an X-ray tube secured to said carriage.

2. In X-ray apparatus, a carrier, a plate-holder mounted on said carrier, a support mounted on said carrier and adjustable with respect to said holder, adjustable means to support said carrier, tracks in said support, a carriage mounted on said tracks to operate in an aperture in said support, a spring-operated escapement to move said carriage along said tracks, means to limit the movement of said carriage and means to support an X-ray tube from said carriage.

3. In X-ray apparatus, a carrier, a holder mounted on said carrier, a support mounted on said carrier, and adjustable with respect to said holder, a carriage movably mounted on said support, means on said support to automatically move said carriage with respect thereto and means to mount an X-ray tube on said carriage.

4. In X-ray apparatus, a support having an aperture, a carriage movably mounted on said support to operate in said aperture, an escapement to move said carriage with respect to said support and means to mount an X-ray tube on said carriage.

5. In X-ray apparatus, a support provided with an aperture, a carriage movably mounted on said support to operate within said aperture, a spring escapement to move said carriage with respect to said support, and a hood detachably connected to said carriage to support an X-ray tube.

6. In X-ray apparatus, a carrier, a holder mounted on said carrier, a support mounted on said carrier and adjustable with respect to said holder, a diaphragm detach-

ably mounted on said support, means to clamp an X-ray tube to said support, an alining-plate on said support provided with markings and a coöperating aliner on said X-ray tube.

7. In X-ray apparatus, a support, means to clamp an X-ray tube to said support, an alining-plate on said support having markings and an aliner on said tube to cooperate with said alining-plate and to receive alining markings therefrom.

8. In X-ray apparatus, a support, means to clamp an X-ray tube to said support, a transparent alining-plate provided with apertures and markings and an aliner on said tube to receive alining-markings from said holes.

9. In X-ray apparatus, a carrier, a holder mounted on said carrier, a support mounted on said carrier, means to mount an X-ray tube on said support, alining means to aline said tube with respect to said support and detachable impervious diaphragms mounted on said support in line with said holder.

10. In X-ray apparatus, a movable post and base, a block movably mounted on said post, a carrier revolubly mounted on said block, means to lock said carrier in adjusted position, a holder mounted on said carrier, a support mounted on said carrier, and adjustable with respect to said holder, an impervious hood mounted on said support, means to clamp an X-ray tube to said hood, alining means to aline said tube with respect to said hood and removable impervious diaphragms to be mounted on said support to limit the radiation issuing from said tube.

11. In X-ray apparatus, a support, an alining-plate on said support, clamps to secure an X-ray tube to said support comprising a self-centering clamp having jaws and a double-threaded screw to simultaneously move said jaws together and an aliner on said tube to coöperate with said alining-plate.

847,729. ATTACHMENT FOR VACUUM CLEANING SYSTEMS. GEORGE CLEMENTS and JAMES M. HOSTLER, Chicago, Ill., assignor to Hygienic Renovating Co., a Corporation of Illinois. Filed Apr. 4, 1906. Serial No. 309,801.

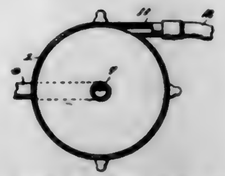

Claim.—1. A device of the character described comprising a base, a transparent dome carried by the base, an outlet-pipe opening at its upper end into the top of the dome and leading outwardly through the base, and an inlet arranged tangentially to the base.

2. A device of the character described comprising a chamber, the interior of which is adapted to be viewed from the outside, an outlet leading from said chamber, and an inlet communicating tangentially with the chamber.

3. A device of the character described comprising a vertically-disposed chamber, an outlet arranged in the axial line of the chamber and leading from the upper portion of the same downwardly and outwardly through the base thereof, and an inlet communicating tangentially with the base of the chamber.

4. A device of the character described comprising a base, a transparent dome carried by the base, an elbow outlet-pipe having one of its branches opening at its upper end into the top of the dome and leading downward from the base and its other branch extending outwardly beneath the base, and an inlet arranged tangentially to the base.

847,730. PHOTOGRAPHIC APPARATUS. WALTER E. COLWELL, Oakville, Ontario, Canada. Filed Mar. 26, 1906. Serial No. 308,156.

Claim.—1. As a new article of manufacture, a container or envelop made of material impervious to rays of light which cause chemical changes, provided with an end having a double fold whereby free passage may be had thereinto and thereoutof.

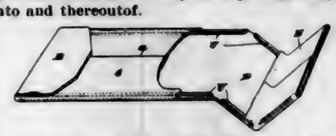

2. As a new article of manufacture, a container or envelop made of material impervious to rays of light which cause chemical changes, and having one end permanently closed and the other end folded with a double fold whereby free passage may be had thereinto and thereoutof.

3. As a new article of manufacture, a container or envelop made of material impervious to rays of light which cause chemical changes, and having one end permanently closed and the other end closed by a double fold, whereby free passage may be had thereinto and thereoutof.

4. As a new article of manufacture, a container or envelop made of suitable flexible black material impervious to rays of light which cause chemical changes, means along the edges of said container interior thereof to facilitate the passage of a plate, and having one end permanently closed and the other end closed by a double fold, whereby free passage may be had thereinto and thereoutof.

5. As a new article of manufacture, a container or envelop made of suitable flexible black material impervious to rays of light which cause chemical changes, and having one end permanently closed and the other end closed by a double fold whereby the sensitized plate therewithin may have free passage thereinto and thereoutof, and means located within the container along the edges thereof to facilitate the passage of a plate.

6. The combination with a receptacle for sensitized plates, of a container or envelop made of suitable flexible material impervious to rays of light which cause chemical changes, and having one end permanently closed; a means whereby the other end may be closed in such manner whereby a sensitized plate therewithin may have free passage thereinto and thereoutof, means whereby said container or envelop may be coupled to said receptacle so as to prevent said sensitized plate being injured by light when moved back and forth between said envelop or container and said receptacle, and means within the container to facilitate the passage of a plate therein.

7. The combination with a receptacle for sensitized plates, of a container or envelop made of suitable flexible material impervious to rays of light which cause chemical changes, and having one end permanently closed and the other end closed by a double fold whereby free passage may be had thereinto and thereoutof, and an outer member; a sensitized plate within said container or envelop, and a conductor provided with a central passage-way and connected with said receptacle so that when the outer member of said fold is coupled to said conductor a light-proof joint is made between said container or envelop and said receptacle.

847,731. COOKING AND WASHING APPARATUS. JOHN B. CONGER, New York, N. Y., assignor, by mesne assignments, to The Straw Pulp and Paper Company, New York, N. Y., a Corporation of Maine. Filed Aug. 1, 1905. Serial No. 272,159.

Claim.—1. An apparatus of the character described having an inclined support, a plurality of grooved rollers mounted on the support, means for rotating the rollers, an inclined receptacle having a removable lower end, a plurality of collars surrounding the receptacle and having ribs to receive the grooved rollers, a plurality of supply-pipes extending through the collars and arranged longitudinally on the outside of the receptacle, and one or more injectors leading from said supply-pipes into the receptacle.

2. An apparatus of the character described having an inclined support, a plurality of grooved rollers mounted on the support, means for rotating the rollers, an inclined receptacle having a removable lower end, a plurality of collars surrounding the receptacle and having ribs to receive the grooved rollers, a plurality of supply-pipes extending through the collars and arranged longitudinally on the outside of the receptacle, one or more injectors leading from said supply-pipes into the receptacle, and means for automatically opening said injectors at one point in the revolution of the receptacle and closing them during the remaining of the the revolution.

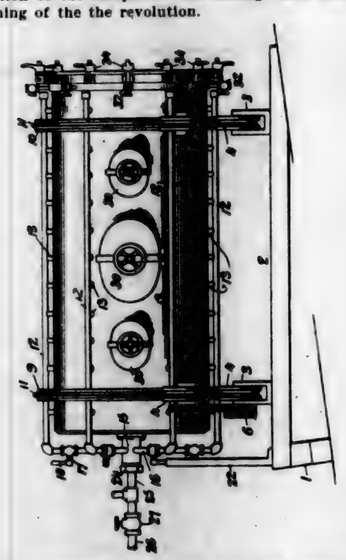

3. An apparatus of the class described, comprising a rotary washing and cooking cylinder of air-tight character mounted upon an incline, collars and rollers supporting the receptacles as set forth, a plurality of pipes extended longitudinally upon the outside of the receptacle with injectors extending from the pipes within the receptacle, and means for automatically feeding fluid, at a given point in the rotation, to a portion of said injectors.

4. An apparatus of the class described, comprising a rotary washing and cooking cylinder of air-tight character mounted upon an incline, collars and rollers supporting the receptacle as set forth, a plurality of pipes extended longitudinally upon the outside of the receptacle with injectors extending from the pipes within the receptacle, and means for automatically opening a plurality of the injectors at the same point in the rotation of the receptacle, and simultaneously closing the remainder of the injectors.

5. An apparatus of the character described, comprising a rotary washing and cooking receptacle arranged on an incline, a door in the side of the receptacle for inserting a charge, and the lower end of said receptacle being removable to withdraw the charge, a plurality of pipes extended longitudinally upon the outside of the receptacle with injectors extending from the pipes within the receptacle, and means for opening said injectors when at the lower part of the receptacle and closing the remainder of the injectors.

6. An apparatus of the character described comprising a rotary receptacle, a plurality of supply-pipes extending longitudinally along the outside of the receptacle, a plurality of injectors leading from each of said supply-pipes into the receptacle, a valve for controlling each of the supply-pipes, and means for closing each of the valves during a portion of the revolution of the receptacle.

7. An apparatus of the character described comprising an inclined rotary receptacle, a plurality of supply-pipes extending longitudinally along the outside of said receptacle, a plurality of injectors leading from each of the supply-pipes into the receptacle, a valve in each of the supply-pipes and means for closing each of the valves during a portion of the revolution of the receptacle.

8. An apparatus of the character described comprising a peripherally-supported, inclined rotary receptacle, having a removable end, a plurality of supply-pipes extending longitudinally along the outside of the receptacle, a plurality of injectors leading from each of the supply-pipes into the receptacle, a valve in each of the supply-pipes, and means for closing each of the valves at one point in the revolution of the receptacle.

9. An apparatus of the character described comprising an inclined support, a plurality of grooved rollers on the support, means for rotating the rollers, an inclined receptacle having a removable lower end, a plurality of collars surrounding the receptacle and having ribs to engage the grooved rollers, a plurality of supply-pipes extending through the collars and arranged longitudinally on the outside of the receptacle, a plurality of injectors leading from each of the supply-pipes into the receptacle, a valve in each of the supply-pipes, a handle for each of the valves a coil-spring for holding each of the valves normally in closed position, a hook for locking each of the valves in open position, a distributing-chamber on the closed end of the receptacle at the central portion thereof, said distributing-chamber being in communication with the supply-pipe, a steam-supply pipe communicating with the distributing-chamber, a water-supply pipe communicating with the distributing-chamber, and a plurality of valved outlets for the receptacle.

847,732. CAR-REPLACER. WILLIAM COOK, Hoboken, N. J. Filed Jan. 14, 1907. Serial No. 352,168.

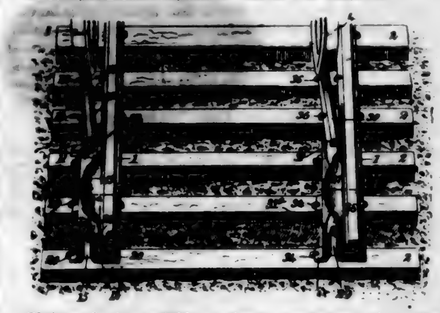

Claim.—1. An outside replacer consisting of a block adapted to be applied to the side of the rail and presenting an inclined face extending upwardly from the inner edge of the rail-head and having shoulders projecting upwardly from said face near the ends of said body, said shoulders being adapted to deflect a wheel off of said inclined face onto the rail-head, and means for guiding a wheel onto said block

2. An inside replacer consisting of a block adapted to be applied to the inside face of a rail and presenting a depressed face near the rail-head and an inclined face thereboyond, whereby a channel is formed adapted to guide a wheel-flange adjacent to the rail, said block having heads at the ends thereof with guide-faces on the upper side thereof adapted to receive a wheel-flange to guide the wheel onto said inclined face, and means for guiding the wheel onto said block.

847,733. PROCESS OF GENERATING GAS. GROVE COTHRAN, Chicago, Ill., assignor to Chicago Title and Trust Company, trustee, a Corporation of Illinois. Filed July 6, 1905. Serial No. 268,312.

Claim.—1. The process herein described of generating gas, which consists in initially vaporizing commingled liquid-hydrocarbon and superheated steam, downwardly drawing the produced vapor with the heavier residuum of the hydrocarbon into a mass of incandescent fuel, upwardly drawing into the same mass of incandescent fuel superheated steam and air for disintegrating the steam, combining within the upper portion of the mass of incandescent fuel the vapor of the hydrocarbon and the disin-

tegrated steam, and passing the gaseous vapor thus formed laterally from within the mass of incandescent fuel and finally fixing and transforming the gaseous vapor into a permanent gas, substantially as described.

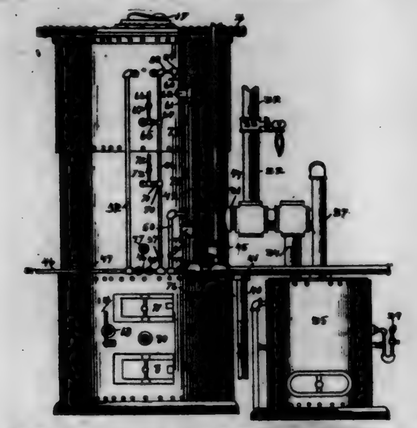

2. The process herein described of generating gas, which consists in drawing downwardly into a mass of incandescent fuel the vapor and residuum of a liquid hydrocarbon, drawing upwardly into the same mass of incandescent fuel superheated steam and air for disintegrating the steam, combining within the mass of incandescent fuel the vapor of the hydrocarbon and the disintegrated steam, withdrawing the gaseous vapor thus formed laterally from within the mass of incandescent fuel, and finally fixing the gaseous vapor thus formed and transforming the same into a permanent gas, substantially as described.

847,734. CORN-HUSKER. JOHN COVERT, Valparaiso, Ind. Filed July 14, 1906. Serial No. 326,291.

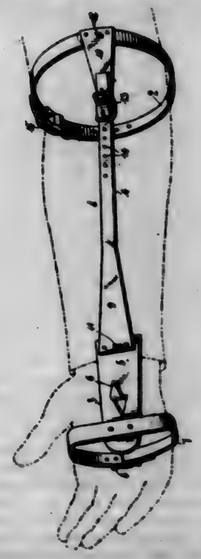

Claim.—The combination with a husking-tool comprising a plate having a hook thereon and a hand-strap attached thereto, of a strap to engage the arm above the elbow, a buckle for adjusting said strap, a two-part connecting-strap, one section of the latter being attached to said arm-strap and the other to the tool, and a buckle adjustably connecting the sections of said connecting-strap, substantially as described.

847,735. PUMP. WILLIAM Y. CRUIKSHANK, Freeland, Pa., assignor of one-half to Nixon Maley, Freeland, Pa. Filed Oct. 30, 1905. Serial No. 285,008.

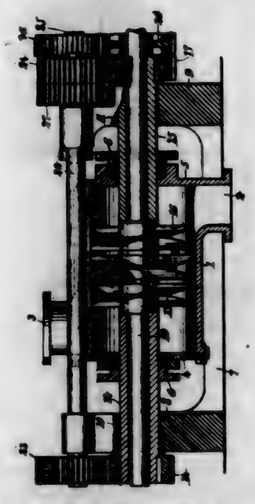

Claim.—In a pump, in combination, a barrel, a hollow shaft rotatably mounted in one head of said barrel, a second hollow shaft rotatably mounted in the opposite head of said barrel, screws carried by said shafts and having a pitch of like character, an inner shaft extending through said hollow shafts, a hub on said inner shaft between said hollow shafts and having a screw of an opposite pitch to said first screws, means for driving said inner shaft in one direction, gear-wheels carried rigidly respectively by said hollow shafts, a main driving-shaft extending longitudinally of said pump, gear-wheels carried thereby and meshing respectively with said first gear-wheels, and means for driving said inner shaft from one of said last gear-wheels.

847,736. TRACTION AND POWER ATTACHMENT FOR THRESHING-MACHINES. BENJAMIN DAHL, Bloomer, Wis. Filed Dec. 1, 1905. Serial No. 289,838.

Claim.—The combination, with a threshing-machine frame having forward and rear axles and traction-wheels, of a driving-shaft having sliding gears at its forward end and a fixed pinion at its rear end, a transverse shaft mounted in said frame, near the rear wheels and having pinions meshing with gears mounted on the rear axle, a compensating gear mounted on said transverse shaft and engaging the fixed pinion on said driving-shaft, an engine mounted on said frame and having a crank-shaft and fly-wheels, a loose pulley mounted on one end of said crank-shaft and belted to the threshing-cylinder, a locking-clutch for said loose pulley, a second clutch mounted on said crank-shaft and having a pinion adapted to engage one or the other of said sliding gears according to their position on said driving-shaft, levers having operative connections with said clutches, a lever having operative connections with said sliding gears to move the same back and forth on said driving-shaft, and a steering-post having operative connections with the forward wheels, substantially as described.

847,736.

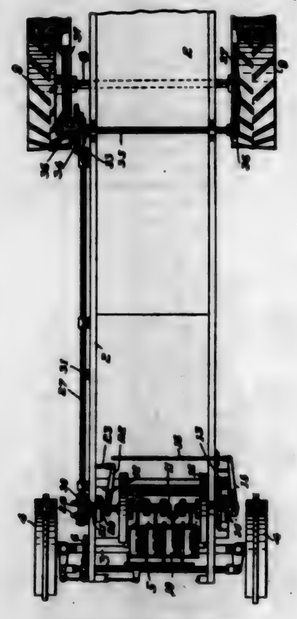

847,737. ICE-MAKING APPARATUS. BENJAMIN F. DALY, New York, N. Y. Filed Jan. 23, 1906. Serial No. 297,408.

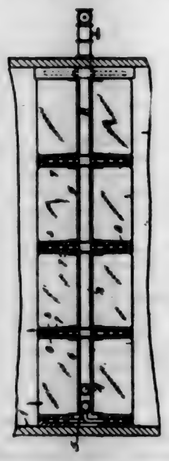

Claim.—1. In ice-making apparatus, a freezing-plate of heat-conductive material and provided with cooling means, and dividing-arms of material conducting heat with difficulty projecting therefrom at intervals.

2. In ice-making apparatus, a chambered freezing-plate provided with heat-conducting walls, and dividing-arms of material conducting heat with difficulty projecting outwardly from sides of the plate provided with such heat-conducting walls.

3. In ice-making apparatus, a freezing-plate comprising a chamber having within it pipe-coils and means for circulating cooling and heating fluids therethrough, said plate having dividing-arms projecting from its sides and comprising pipe-coils and sheathings of non-conducting material.

4. In ice-making apparatus, a freezing-plate comprising a chamber having within it pipe-coils and means for transmitting cooling fluid therethrough, said plate having dividing-arms projecting from its sides and comprising pipe-coils, means for transmitting either cooling or heating fluid through said latter coils at will and sheathings of non-conducting material for the coils of said arms.

5. In ice-making apparatus, a freezing-plate comprising a chamber having within it two pipe-coils and means for supplying heating fluid to one and cooling fluid to the other, said plate having dividing-arms projecting from its sides and comprising pipe-coils connected to one of the coils of said plate, and means for connecting the said coils of said plate, whereby either cooling or heating fluid may be passed through the coils of said arms at will.

6. In ice-making apparatus, a freezing-plate comprising main pipe-coils, plates forming the sides of said freezing-plate having flanges or webs, dividing-arms projecting from the sides of said plate and comprising pipe-coils and sheathing-pieces fitting between the flanges of said side plates, but leaving a space between said flanges, the main pipe-coils being formed in sections connected by joints located in said spaces, and the coils of said arms connected to main pipe-coils by joints located within said spaces.

847,738. HOG AND MEAT HANGER. MILTON T. DARNALL, Greencastle, Ind. Filed June 27, 1906. Serial No. 323,542.

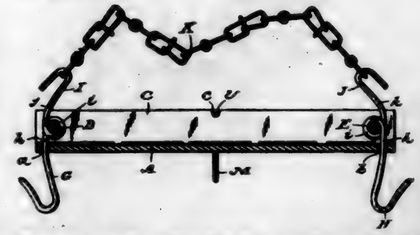

Claim.—1. A hog and meat hanger comprising a spreader having notches therein and provided with a pair of bolts, each bolt having a pair of integrally-formed hooks provided with an eye connected thereto, the hooks of each pair being at opposite sides of the spreader, and a hook having a crooked finger to be hung in the notches.

2. In a hanger, the combination of a spreader having a web part provided in each end thereof with a guide-opening and two side parts integral with the web part and having bolt-holes in the ends thereof, bolts in the bolt-holes, and a pair of double-end hooks secured to the spreader, one part of each double-end hook extending through a guide-opening, and each double-end hook having an eye common to both hook parts thereof connected to the bolt.

847,739. VALVE FOR PERCUSSIVE ROCK-DRILLS. ALBERT W. DAW and ZACHARIAS W. DAW, London, England. Filed Aug. 30, 1906. Serial No. 332,695.

Claim.—1. In combination, a main cylinder and piston, a valve-chest, a main supply and exhaust valve, separate cylinders with pistons abutting against each side of said main valve, the abutting ends of said separate pistons being of reduced diameter and always open to the live pressure in said valve-chest, so as to be returned to position, intermittently-open passages from said main cylinder to the rear of said separate pistons, and permanently-open passages from the front of said separate cylinders to the main exhaust-passage, substantially as specified.

2. In combination, a main cylinder and piston, a valve-chest, a main supply and exhaust valve, separate pistons abutting against each side of said main valve, being of

reduced diameter at their abutting ends, the outer ends of the cylinders of said separate pistons and the main cylinder connected by passages, said separate pistons being cylindrically cored, the anterior portions with enlarged bore, opening into the valve-chest, piston-like extensions on said main valve on each side, to work in said cored cylinders, said extensions having an enlarged portion to work in the enlarged bore, and a reduced intermediate portion, the valve-chest and said enlarged bore being connected by passages to intermittently admit live pressure to the latter, substantially as specified.

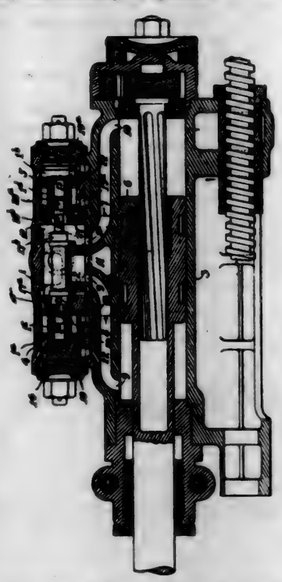

3. In combination, a main cylinder, a piston therein, a valve-chest, a main supply and exhaust valve, separate pistons abutting against each side of said main valve, being of reduced diameter at their abutting ends, the outer ends of the cylinders of said separate pistons and the main cylinder connected by passages, said separate pistons being cylindrically cored, the anterior portions with enlarged bore, opening into the valve-chest, piston-like extensions on said main valve on each side, to work in said cored cylinders, said extensions having an enlarged portion to work in the enlarged bore, and a reduced intermediate portion, the valve-chest and said enlarged bore being connected by passages to intermittently admit live pressure to the latter, said cored cylinder being open permanently at the rear to exhaust by-passages, and open intermittently to main exhaust by intermediate passages opposite said reduced portions of the piston extensions, substantially as specified.

4. The combination of a valve made in three parts and with the central portion or valve proper carrying an extension working in cylinders bored in the outer parts thereof, of a passage made in two portions one leading from the rear of the valve-piston to a point near the end of the cylinder in which said extension works, and the other from the rear of said cylinder to the front of said piston and opening to permanent exhaust, substantially as specified.

847,740. MEANS FOR PRODUCING EXPRESSION-MARKS ON MUSIC RECORD-SHEETS. BENJAMIN S. DEAN, San Francisco, Cal. Filed Feb. 21, 1906. Serial No. 302,179.

Claim.—1. In a machine for producing expression-marks on record-sheets, the combination with feeding means for a plurality of record-sheets, feeding means for a master or pattern sheet, synchronized in movements therewith, a set of pivoted hammers for each said record-sheet, a beam for connecting similar hammers of the several sets together, a yielding connection between the said hammers and beams, links pivoted to the beams for producing parallel movements thereof, electromagnets for operating the beams, and electric circuit-closing devices for the electromagnets controlled by the master-sheet.

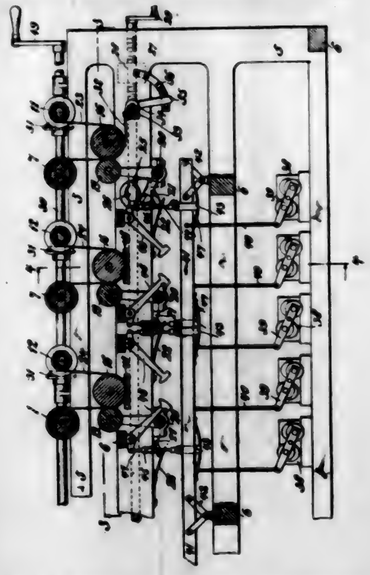

2. In a machine for producing expression-marks on record-sheets, the combination with a plurality of feed-rollers arranged in parallel relation in a plane, one of the said feed-rollers adapted to be engaged by a master or pattern sheet, the others of said rollers adapted to be similarly engaged by record-sheets, a longitudinal drive-shaft therefor arranged at right angles to the axis of the said feed-rollers, bevel-gearing between the said drive-shaft and the feed-rollers, presser-rolls for pressing the sheets against the feed-rollers, take-up means for the sheets comprising rollers having a frictional drive at a high rate of speed, and means for producing expression-marks upon the record-sheets, controlled by the pattern-sheet.

3. In a machine for producing expression-marks on record sheets, the combination with a plurality of feed-rollers arranged in parallel relation in a plane, one of the said feed-rollers adapted to be engaged by a master or pattern sheet, the others of said rollers adapted to be similarly engaged by record-sheets, a longitudinal drive-shaft therefor arranged at right angles to the axis of the said feed-rollers, bevel-gearing between the said drive-shaft and the feed-rollers, presser-rolls for pressing the sheets against the feed rollers, means for simultaneously forcing all of the presser-rolls away from their respective feed-rollers to relieve the sheets from feeding engagement with the feed-rollers, take-up means for the sheets comprising rollers having a frictional drive at a high rate of speed, and means for producing expression-marks upon the record-sheets, controlled by the pattern-sheet.

4. In a machine for producing expression-marks on record-sheets, the combination with a plurality of feed-rollers arranged in parallel relation in a plane, one of the said feed-rollers adapted to be engaged by a master or pattern sheet, and the others of said feed-rollers adapted to be similarly engaged by record-sheets, a drive-shaft arranged longitudinally opposite the ends of the said feed-rollers, bevel-gearing between the said drive-shaft and the said feed-rollers, presser-rolls for pressing the sheets against the said feed-rollers, take-up rollers for receiving the sheets from the respective feed-rollers, a longitudinal drive-shaft opposite the ends of the take-up rollers, bevel-gearing between the said longitudinal shaft and the take-up rollers, a frictional driving connection for the said take-up rollers, record and pattern sheet rollers for delivering the record and pattern sheets to the feed-rollers, a rewinding means for the said delivery-rollers comprising a longitudinal shaft opposite the ends of the said delivery-rollers, bevel-gearing between the said delivery-rollers and the said longitudinal shaft, and means for producing expression-marks upon the record-sheets, controlled by the pattern-sheet.

5. In a machine for producing expression-marks on record-sheets, the combination with feeding means for a record-sheet comprising a positively-fed roller which the sheet engages, and a presser-roll for pressing the sheet against the said roller, a take-up means for the sheet comprising a roller having a frictional drive at a high rate of speed, a master or pattern sheet similarly driven, and means for producing expression-marks upon the record-sheet controlled by the pattern-sheet.

6. In a machine for producing expression-marks on record-sheets, the combination with feeding means for a record-sheet comprising a positively-fed roller which the sheet engages, and a spring-pressed roll for pressing the sheet against the said roller, similar means for feeding a master or pattern sheet, means for simultaneously forcing all of the said presser-rolls away from their respective feed-rollers, marking devices for operating upon the record-sheets, and means controlled by the master-sheet for governing the marking devices.

847,741. ELECTRIC HAMMER. WINFIELD A. DENNY, Anderson, Ind., assignor of one-third to Benjamin D. Emanuel and one-third to Clement W. Hooven, Anderson, Ind. Filed July 26, 1906. Serial No. 327,894.

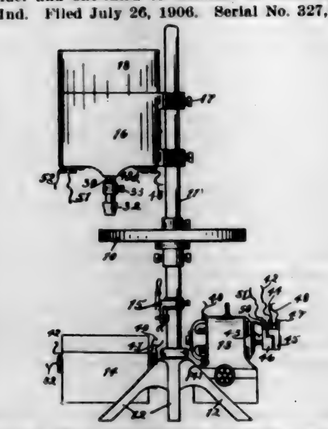

Claim.—1. The combination of a pair of solenoids or the like, parallel cores, a hammer between said cores and connected with them so as to be reciprocated longitudinally by them.

2. The combination of a pair of solenoids or the like, parallel cores, a rigid connection between said cores, and a hammer connected with said rigid connection so as to move therewith.

3. The combination of a pair of parallel solenoids, soft-iron cores, a soft-iron plate on which the solenoids are mounted at one end, a soft-iron connection between the other ends of the cores, and a hammer actuated by said connection, said parts being arranged so that the cores will approach said soft-iron plate as they approach their limit of movement.

4. A plurality of pairs of solenoids or the like, a core for each solenoid, a connection between the cores of each pair, and a hammer connected with each core connection, said hammers being associated so that they will act upon the same object.

5. A plurality of pairs of solenoids or the like, a core for each solenoid, a connection between the cores of each pair, and a hammer connected with each core connection, said hammers being associated so that they will act upon the same object, and means for energizing the different pairs of solenoids in succession.

6. The combination of two pairs of solenoids or the like, a core for each solenoid, a connection between the cores of each pair, a hammer connected with each core connection, said two hammers associated so as to act upon the same object, and means for alternately energizing said two pairs of solenoids.

7. The combination of two pairs of parallel solenoids, a core for each solenoid, a connection between each pair of cores, said connections being arranged at right angles to each other and being independent of each other, a hammer connected with each core connection, one of said hammers being movable centrally through the other, and means for energizing said two pairs of solenoids alternately.

847,742. BORING-TOOL. JOHN DOWLING, Olympia, Wash. Filed Feb. 28, 1906. Serial No. 303,366.

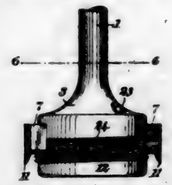

Claim.—1. In a boring-tool of the class described, in combination, a head, transversely-guided cutters mounted in said head, a cap carried by said head and having external threads adapted to engage the edge of an opening, and affording means for feeding said cutters and head forwardly and a movable thimble having internal threads engaging said first threads and having external threads adapted to engage the edge of an enlarged opening.

2. In a boring-tool of the class described, in combination, a head having a transverse slot therein, a pair of cutters mounted to slide on the side faces of said slot, and having teeth on their adjacent faces, a cap attached to the end of said head and retaining said cutters, said cap having an opening therethrough, a rotatable dial seating against the under side of said cap and having a pinion lying within said opening and meshing with said teeth, said dial having graduations indicating the amount of extension of said cutters, and means engaging the edge of said dial to lock the same rigidly to said cap.

3. In a boring-tool of the class described, in combination, a head having a transverse slot therein, a pair of cutters mounted to slide on the side faces of said slot, and having teeth on their adjacent faces, a cap seating on the end of said head, screws passing through said cap and attaching the same to said head to retain said cutters, said cap having an opening therethrough, a rotatable dial seating against the under side of said cap and covering the heads of said screws, said dial having a pinion lying within said opening and meshing with said teeth, said dial further having graduations on the outer face thereof indicating the amount of extension of said cutters for a given movement of said dial, and screws mounted in said cap around the edge of said dial and engaging said dial to lock the same rigidly to said cap.

847,743. CURRENT-CONTROLLER. RICHARD DUCKWORTH, Preston, England. Filed Jan. 3, 1906. Serial No. 294,358.

Claim.—1. In electric railways, a current-controlling device comprising a movable rail arranged in sections, a

slipper-rail arranged in sections insulated from each other, a feeder normally out of electrical contact with the slipper-rail, yielding terminals for said slipper-rail and feeder, and yielding means for making and breaking a circuit between said terminals, said means including a contact-plate and being operated by the movable rail.

2. In electric railways, a current-controlling device comprising a feeder, a sectional slipper-rail normally out of electric contact with said feeder, yielding terminals for said slipper-rail and feeder, a contact-plate movable in a manner to make and break a circuit between said terminals, and yielding means, operated by the passage of a portion of the car, for imparting movement to said contact-plate.

3. In electric railways, a current-controlling device comprising a movable rail arranged in sections having their ends in close proximity, and adapted to be moved in one direction by the wheel of a passing vehicle, a slipper-rail arranged in sections insulated from each other and of lengths approximately equal to those of the movable rail, a feeder normally out of electrical contact with the slipper-rail, and means, operated by said movable rail for making and breaking a circuit between said feeder and the section of slipper-rail corresponding with the section of movable rail being operated, said means comprising a pivotally-mounted lever having a contact-plate and operated by said movable rail, said lever being yieldingly mounted at its pivot-point, and insulated terminals located in the path of movement of said contact-plate, said plate and terminals being free from relative lateral movement.

847,744. STOPPER-EXTRACTOR. ALBERT DUDLY, Sr., Menominee, Mich. Filed Feb. 17, 1906. Serial No. 301,692.

Claim.—1. The stopper-extractor comprising a handle formed at one end with a curved arm, and two prongs mounted thereon and adapted to lie parallel with the handle and capable of adjustment so as to stand at right angles to the handle in position to be inserted one on each side of a bottle-cork, one of said prongs being formed with a claw so situated that when the prong lies parallel with the handle the claw is in position to coact with the curved arm to remove a bottle-cap, substantially as described.

2. The stopper-extractor comprising a handle having a curved arm at one end and provided adjacent to said arm with a pivoted prong adapted when moved into position at right angles to the handle to be inserted between a cork and neck of a bottle, and provided at one end with a claw so situated that when the prong lies parallel with the handle said claw is in position to coact with the curved arm of the handle to remove a bottle-cap, substantially as described.

3. In a stopper-extractor, a handle having sides spaced apart and formed at one end with an extending arm, a prong formed with a claw at one end and pivoted to the handle so as to be moved into position at right angles thereto or a position between the sides of the handle, in which position the claw is adapted to coact with the extending arm for the removal of bottle-caps, a second prong separable from the handle and adapted for adjustment therein at right angles thereto so as to coact with the first prong when at a similar position for drawing a cork, and also adapted to be inserted within the handle lengthwise thereof in position below the pivoted prong when folded into the handle, and means to lock the separable prong in the handle and thereby retain the claw of the pivotal prong in operative position.

4. A stopper-extractor, comprising a slotted handle, a pair of prongs, one of which is pivotally connected to the handle, the shank of said prong being extended beyond the pivot to form a claw, and a cross-bar extending across the slot of the handle in such position that the said claw is adapted to bear thereagainst to limit the movement of the prong at a position at right angles to the handle, the other prong being capable of adjustment on the handle at right angles thereto to coact with said pivoted prong to extract a bottle-cork.

5. In a stopper-extractor, a handle having an extension at one end thereof, a prong pivoted on said handle to be approximately parallel therewith or at substantially right angles thereto, the shank of said prong being extended beyond said pivot to form a claw which is positioned to coact with the extension of the handle to remove a bottle-cap when the prong is in folded position parallel to the handle, and adapted to contact with a portion of the handle to limit the movement of the prong to the position at right angles thereto, and a second prong adapted to be held on said handle at right angles thereto to coact with said pivoted prong to remove a bottle-cork.

847,745. METALLIC RAILWAY-TIE. ALEXANDER DURAND, Toledo, Ohio. Filed Dec. 24, 1906. Serial No. 349,284.

Claim.—1. A metallic tie inverted-U shape in cross-section having its top provided with an opening 3 and transverse recesses 4, 4 each having one wall grooved, and its interior divided into sections by webs 9, 9 which are disposed beneath the recessed portions, and clamps secured in the recesses and coöperating with the grooves to retain a rail therein.

2. A metallic tie inverted-U shape in cross-section having its top provided with an opening and formed with recesses of greater width than a rail-base, said recesses each having like walls thereof grooved to engage like flanges of different rails, and a clamp secured in each recess and coöperating with the groove to retain a rail in its seat in the recess.

3. A metallic tie inverted-U shape in cross-section having a portion of its top open and provided at the ends of the opening with rail-receiving recesses, said recesses having like walls grooved to receive rail-flanges, flat clamps secured in the recesses with the rails and coöperating with the grooves to retain the rails fixed to the tie, and a strengthening-web formed beneath each recess and dividing the base of the tie into a plurality of compartments.

847,746. ELECTRICAL WELDING APPARATUS. THOMAS A. EDISON, Orange, N. J. Filed July 21, 1904. Serial No. 217,538.

Claim.—1. Apparatus for welding metallic articles contiguous to a seam thereon, and comprising a carbon operatively mounted in the proper relation to establish an arc between the carbon and the article, and means for rapidly rotating the carbon about its center as an axis, as and for the purposes set forth.

2. Apparatus for welding metallic articles contiguous to a seam thereon, and comprising a carbon operatively mounted in the proper relation to establish an arc between the carbon and the article, means for rotating said carbon about its center as an axis, and means for independently adjusting the carbon toward and away from the article, substantially as set forth.

3. Apparatus for welding metallic articles contiguous to a seam thereon, comprising a fixed article-support, a carbon operatively mounted in the proper relation to establish an arc between the carbon and the article, and means for automatically causing the carbon to move along a closed non-circular path, as and for the purposes set forth.

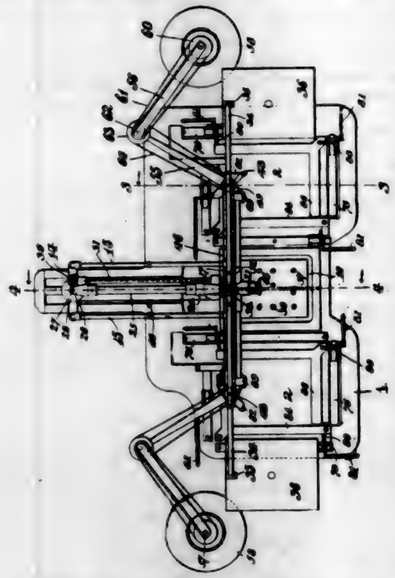

4. Apparatus for welding metallic articles contiguous to a seam thereon, comprising a carbon operatively mounted in the proper relation to establish an arc between the carbon and the article, means for progressively moving the carbon with respect to the article and means for rapidly rotating the carbon about its center as an axis as it progresses, as and for the purposes set forth.

5. Apparatus for welding metallic articles contiguous to a seam thereon, comprising carbon and article supports capable of relative movement with respect to each other, a carbon mounted in its support in the proper relation to establish an arc between the carbon and the article and means for independently heating the article in advance of the arc, substantially as set forth.

6. Apparatus for welding metallic articles contiguous to a seam thereon, comprising a carbon operatively mounted in the proper relation to establish an arc between the carbon and the article, means for rapidly rotating the carbon, and means for independently heating the article in the locality of the arc, as and for the purposes set forth.

7. Apparatus for welding metallic articles contiguous to a seam thereon, comprising a carbon operatively mounted in the proper relation to establish an arc between the carbon and the article, means for automatically causing the carbon to progress along the line of the seam, and means for independently heating the article progressively with the travel of the carbon, substantially as set forth.

8. Apparatus for welding metallic articles contiguous to a seam thereon, comprising a carbon operatively mounted in the proper relation to establish an arc between the carbon and the article, means for progressing the carbon along the line of the seam, means for rapidly rotating the carbon, and means for independently heating the article progressing along the line of travel of the carbon, substantially as set forth.

9. Apparatus for welding the metal contiguous to a seam in a metallic article, comprising in combination a carbon-support, a carbon carried thereby movable along the line of the seam, and a pattern by which the support is guided to cause the carbon to follow the seam, substantially as set forth.

10. Apparatus for welding the metal contiguous to a seam in a metallic article, comprising in combination a carbon-support, a carbon carried thereby movable along the line of the seam, a pattern by which the support is guided to cause the carbon to follow the seam, and means for automatically moving the support along the line of the pattern to cause the carbon to follow the line of the seam, substantially as set forth.

11. Apparatus for welding the metal contiguous to a seam in a metallic article, comprising in combination a carbon-support, a carbon carried thereby movable along the line of the seam, a pattern by which the support is guided to cause the carbon to follow the seam, and means for rotating the carbon during its travel, substantially as set forth.

12. Apparatus for welding the metal contiguous to a seam in a metallic article, comprising in combination a carbon-support, a carbon carried thereby movable along the line of the seam, a pattern with which the support engages, means for automatically moving the support along the line of the pattern to cause the carbon to follow the line of the seam, and means for rotating the carbon during its travel, substantially as set forth.

13. Apparatus for simultaneously welding the metal contiguous to the seams of a plurality of metallic objects, comprising supports for the objects, a plurality of carbons mounted in the proper relation to the objects to establish an arc between each carbon and the adjacent object, a common support for the carbons and means for moving the support, whereby the carbons will simultaneously progress along the line of the seams presented by the several objects, substantially as set forth.

14. Apparatus for simultaneously welding the metal contiguous to the seams of a plurality of metallic objects, comprising supports for the objects, a plurality of carbons mounted in the proper relation to the objects to establish an arc between each carbon and the adjacent object, a common support for the carbons and means for automatically moving the carbon-support, so as to cause the carbons to progress along the line of the seams, substantially as set forth.

15. Apparatus for simultaneously welding the metal contiguous to the seams of a plurality of metallic objects, comprising supports for the objects, a plurality of carbons mounted in the proper relation to the objects to establish an arc between each carbon and the adjacent object, a common support for the carbons and means for simultaneously rotating the carbons about their centers as axes, substantially as set forth.

16. Apparatus for simultaneously welding the metal contiguous to the seams of a plurality of metallic objects, comprising supports for the objects, a plurality of carbons mounted in the proper relation to the objects to establish an arc between each carbon and the adjacent object, a common support for the carbons, means for automatically moving the carbon-support so as to cause the carbons to progress along the line of the seams, and means for simultaneously rotating the carbons, substantially as set forth.

17. Apparatus for the purpose described, comprising in combination, a bridge or support, pantographic connections for simultaneously causing the ends of the bridge to follow the same paths, a carbon mounted at each end of the bridge, and a pattern by which the bridge is guided, substantially as described.

18. Apparatus for the purpose described, comprising in combination a bridge or support, pantographic connections for simultaneously causing the ends of the bridge to follow the same paths, a carbon mounted at each end of the bridge and a pattern by which the bridge is guided, and means for simultaneously rotating the two carbons, substantially as set forth.

19. Apparatus for the purpose described, comprising in combination a bridge or support, pantographic connections for simultaneously causing the ends of the bridge to follow the same paths, a carbon mounted at each end of the bridge, a pattern by which the bridge is guided,

and means for independently adjusting the two carbons, substantially as set forth.

20. Apparatus for the purpose described, comprising in combination a bridge or support, pantographic connections for simultaneously moving its two ends in the same paths, a carbon at each end of the bridge or support, a pattern, a rack surrounding the pattern, and a pinion carried by the bridge and engaging the said rack whereby the bridge is caused to follow the line of the pattern, substantially as set forth.

21. Apparatus for the purpose described, comprising in combination a bridge or support, a shoe carried by the bridge or support on each end, a fixed table with which each shoe engages for supporting the bridge, pantographic connections with the bridge, and two carbons carried by the bridge, substantially as set forth.

22. Apparatus for the purpose described, comprising in combination a bridge or support, a pair of carbons carried at the ends of the bridge or support, and means for simultaneously observing the arcs formed by the two carbons, as and for the purposes set forth.

23. Apparatus for the purpose described, comprising in combination a bridge or support, a pair of carbons at the end of the bridge or support, and a sighting device leading from the center of the bridge or support to points adjacent to the carbons whereby the arcs formed thereby may be simultaneously observed, substantially as set forth.

24. Apparatus for the purpose described, comprising in combination a bridge or support, a pair of carbons at the end of the bridge or support, a sighting device leading from the center of the bridge or support to points adjacent to the carbons whereby the arcs formed thereby may be simultaneously observed, and means for independently regulating the carbons, substantially as set forth.

25. In apparatus for welding the metal contiguous to the seam of metallic articles, the combination with the carbon arranged in the proper relation with the article to establish an arc between the carbon and the article, and a gas-burner movable with the carbon to heat the metal contiguous to the arc, substantially as set forth.

26. In apparatus for welding the metal contiguous to the seam of metallic articles, the combination with the carbon arranged in proper relation with the article to establish an arc between the carbon and the article, a gas-burner movable with the carbon to heat the metal contiguous to the arc, and a shield under which the burner travels, substantially as described.

27. Apparatus for welding the metal contiguous to the seam of a hollow metallic article, comprising a series of gas-burners movable successively along the sides of the articles, and a carbon movable along the line of the seam, and arranged to engage the burners to cause them to follow the carbon, whereby the metal of the article will be heated locally as the arc progresses along the seam, substantially as set forth.

28. Apparatus for welding the metal contiguous to the seam of a hollow metallic article, comprising a series of gas-burners movable successively along the sides of the articles, a carbon movable along the line of the seam and arranged to engage the burners to cause them to follow the carbon, whereby the metal of the article will be heated locally as the arc progresses along the seam, the connections being such that when the actuating devices engage each burner successively, the gas will be turned on within the same, substantially as set forth.

29. In an apparatus for the purpose described, the combination with the carbon movable along the seam, of a burner movable parallel to the seam, a connection between the carbon and the burner whereby the burner will be moved with the carbon, and means for releasing the burner to return it to its normal position, substantially as set forth.

30. In an apparatus for the purpose described, the combination with the carbon movable along the seam, of a burner movable parallel to the seam, a connection between the carbon and the burner, whereby the burner will be moved with the carbon, means for releasing the burner to return it to its normal position, and means for opening the burner prior to its movement with the carbon, substantially as set forth.

31. In an electric welding apparatus, the combination of carbon and article supports capable of relative movement with respect to each other, a carbon mounted in its support in the proper relation to maintain an arc between the carbon and article, and means for rotating the carbon about its center as an axis, substantially as set forth.

32. In an electric welding apparatus, the combination of carbon and article supports capable of relative movement with respect to each other, a carbon mounted in its support in the proper relation to maintain an arc between the carbon and article, and means for moving one of said supports in a closed, non-circular path, substantially as set forth.

33. In an electric welding apparatus, the combination of carbon and article supports capable of relative movement with respect to each other, a plurality of carbons mounted in proper relation to maintain an arc between each carbon and the article upon which it operates, a rheostat for regulating the strength of each arc, and means adjacent each rheostat-controller for varying the length of the arc controlled thereby, substantially as set forth.

34. In an electric welding apparatus, the combination of carbon and article supports capable of relative movement with respect to each other, a plurality of carbons, and a sighting device comprising tubes leading from a point opposite each carbon to a common center, substantially as set forth.

847,747. HOSE-SUPPORTER. JULIUS EISMAN, Toronto, Ontario, Canada. Filed May 10, 1906. Serial No. 316,194.

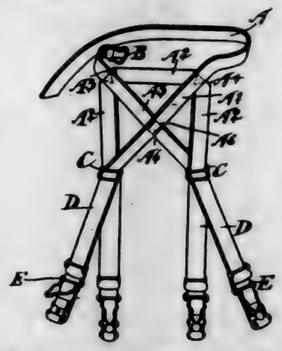

Claim.—A hose-supporter comprising a waistband having a portion extending diagonally downwardly then vertically upward, then horizontally, then vertically downwardly and finally diagonally upwardly, the ends of the horizontal portion being connected to the tops of the diagonal portions loops at the junction of the diagonal and vertical portions and fastening devices connected to said loops.

847,748. PROCESS FOR CHARRING OR CARBONIZING PEAT. MARTIN EKENBERG, Stockholm, Sweden. Filed May 14, 1903. Serial No. 157,177.

Claim.—1. The herein-described process of treating a substance which contains mechanically-suspended water and vesicular water, which process consists in subjecting the substance and water to a temperature sufficient to liberate the vesicular water, without permitting either the vesicular or mechanically-suspended water to evaporate during the heating operation, whereby the mechanically-suspended water acts as a heat-conductor during the heating operation for causing the liberation of the vesicular water.

2. The herein-described process for treating peat, and other substances which contain mechanically-suspended and vesicular water, which process consists in subjecting the peat and water to a temperature of not less than 150° centigrade for a period ranging from ten to forty minutes without permitting any water to evaporate, and finally separating the peat from the water, the mechanically-suspended water serving as a heat-conductor during the heating operation to liberate the vesicular water and to prevent ignition of the peat.

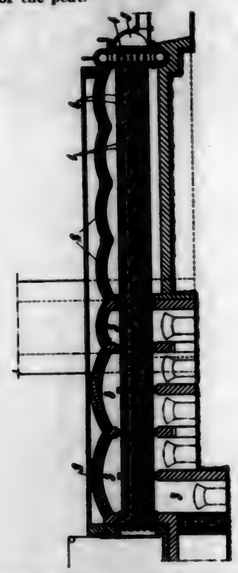

3. The herein-described process of carbonization, which consists in heating the substance to be treated in the presence of a liquid, such as water, without permitting any of the liquid to evaporate during the heating operation, whereby the liquid acts as a heat-conductor for transmitting heat to the substance to be treated.

847,749. FERTILIZER AND PROCESS OF MAKING SAME. CARLETON ELLIS, White Plains, N. Y. Filed Nov. 26, 1906. Serial No. 345,151.

Claim.—1. The process of making a fertilizer which consists in preparing a granular absorbent, transporting soluble fertilizers into the interior of the granules in a liquid vehicle, and finally superficially sealing said granules by depositing an insoluble material in their surface pores.

2. The process of making a fertilizer which consists in preparing a granular absorbent, forming a solution of soluble fertilizing bodies, impregnating the granules of the absorbent with said solution, drying the granules and finally superficially sealing said granules by closing the surface pores with an insoluble material.

3. The process of making a fertilizer which consists in preparing granulated peat, forming a solution of soluble fertilizing bodies, impregnating the peat granules with said solution, drying the granules and finally superficially sealing said granules by closing the surface pores with an insoluble material.

4. As a fertilizing material, a granular mass containing soluble fertilizing salts interiorly incorporated in its granules and sealed therein by insoluble matter closing the surface pores.

5. As a fertilizing material, a granular mass of peat having soluble fertilizing materials interiorly incorporated in its granules and sealed therein by insoluble matter closing the surface pores.

6. As a fertilizing material, a granular mass of peat having soluble fertilizing salts interiorly incorporated in its granules.

847,750. SLIDING JACK-SWITCH. GEORGE F. ESFF, Union Furnace, Pa. Filed Nov. 23, 1906. Serial No. 344,802.

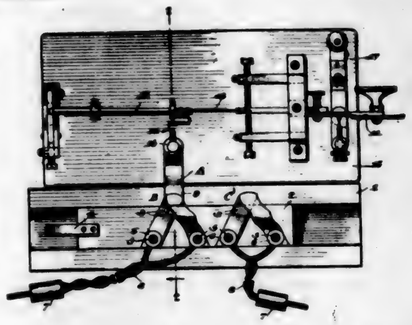

Claim.—1. A switch having a base comprising stationary and movable portions, a connector provided with separated contact members and carried by one of said base portions, pairs of coöperating contacts carried by the other base portion, and means for bringing said connector into engagement with any pair of contacts by actuating the movable base portion, substantially as set forth.

2. A switch having a base comprising stationary and movable portions, a connector having separated contact-plates carried by said stationary portion, a plurality of pairs of normally closed spring-contacts carried by the movable portion, said movable portion being arranged to slide in the path of said connector whereby said plates are brought successively into contact with and simultaneously separate said pairs of spring-contacts, substantially as set forth.

3. A switch adapted to connect a transmitter successively into circuit with different telegraphic circuits, comprising a base having stationary and movable portions, a connector mounted upon one of said base portions, having insulated contact-plates for connection with said transmitter, sets of contact-plates adapted to be connected respectively in said telegraphic circuits, mounted upon the other base portion, and means for moving one base portion longitudinally to cause the plates of said connector to contact with one or another set of contacts; substantially as described.

4. A switch adapted to connect a transmitter successively into circuit with different telegraphic circuits, comprising a base having a stationary member and a sliding member, a plurality of pairs of normally closed contacts carried by the sliding member provided with means for connecting any pair of contacts with any one of said circuits, and a connector mounted upon said stationary member, having contact-plates arranged to be connected with the transmitter and located in the path of said sliding member; substantially as set forth.

847,751. COMBINED LATCH OR BOLT AND HANDLE. JOHN FAIX, San Francisco, Cal. Filed Nov. 5, 1906. Serial No. 342,141.

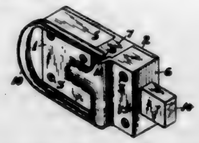

Claim.—1. A device of the character described, comprising the front and rear casing-sections, one of said sections having walls with sockets and the other having ears projecting into said sockets, said ears having recesses in their ends, and the other section having a transverse

groove, said groove and recess forming a bearing, a handle having a cross-bar in said bearing, a bolt, the cross-bar having means engaging said bolt to project the same, and a spring pressing said bolt against said means, substantially as described.

2. A device of the character described, comprising the front and rear casing-sections, one of said sections having walls with sockets and the other having ears projecting into said sockets, said ears having recesses in their ends, and the other section having a transverse groove, said groove and recess forming a bearing, a handle having a cross-bar in said bearing, a bolt, the cross-bar having a short arm substantially in the plane of the handle and a long arm at right angles thereto, both of said arms engaging said bolt to project the same, and a spring pressing said bolt against said means, substantially as described.

3. A device of the character described, comprising a bolt having a recess in one side, a loop-shaped handle having a cross-bar provided with a transverse extension entering said recess in the bolt to project and retract the same, a bearing for said cross-bar, and a spring pressing against the other side of the bolt to maintain said recess in engagement with said extension, substantially as described.

4. A device of the character described, comprising a bolt having recesses in one side, a loop-shaped handle having a cross-bar provided with lugs adapted to enter said recesses to project and retract the bolt, a bearing for the cross-bar, and a spring pressing against the other side of the bolt to maintain said recesses in engagement with said lugs, substantially as described.

847,752. SHOE-LACE. ADOLPH FINKENSIEPER, West Hoboken, N. J. Filed Nov. 10, 1906. Serial No. 342,880.

Claim.—1. A shoe-lace provided with metal tips, and with tufts passed through the lace immediately back of said tips and of such length as to overhang and conceal the latter.

2. A shoe-lace provided with fringed ends formed of tufts passed through the meshes of the lace near the metallic tip ends and with ferrules for holding the tufts of the fringes between the point of connection with the lace and the tips.

3. A shoe-lace provided with tips at the ends, tufts passed through the meshes of the lace back of the tips and extending beyond the same, and ferrules clenched to the tufts and lace at the point between the tips and the point of connection of the tufts with the lace.

847,753. ATTACHMENT FOR CLEANING COTTON-GIN SAWS. HENRY J. FITZPATRICK, Athens, Ga. Filed Apr. 6, 1906. Serial No. 310,283.

Claim.—In an apparatus of the character described, the combination of a gin-cylinder provided with revoluble saws, guides disposed adjacent to said gin-cylinder, bearings mounted within said guides and movable relatively thereto, adjustable limiting-stops connected with said guides for the purpose of stopping the movements thereof relatively to said gin-cylinder, arcuate members mounted upon said bearings, a rocking shaft disposed adjacent to said revoluble shaft and provided with cam-lugs engaging said arcuate members, and a hand-lever connected with said rocking shaft for actuating the same.

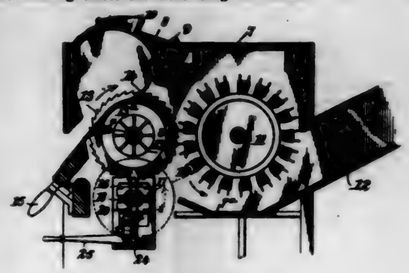

847,754. HOISTING-ENGINE. FREDERICK T. FLINCHBAUGH, York, Pa. Filed Oct. 11, 1906. Serial No. 338,477.

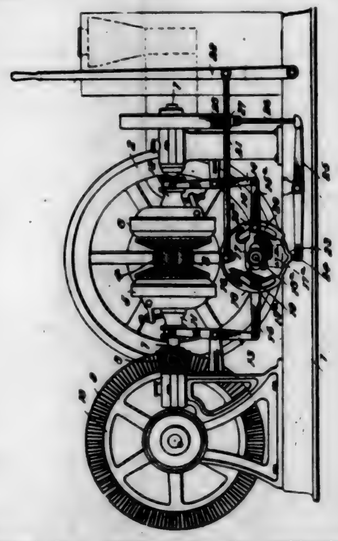

Claim.—1. In a hoisting-engine, the combination of a hoisting-drum, a main drive-shaft, a counter-shaft operatively connected to the drum, two clutch members loose on the counter-shaft and geared with the main drive-shaft so as to turn in opposite direction, clutch-spools mounted on the counter-shaft and adapted to engage with either one of the clutch members mounted on the counter-shaft, bars pivoted intermediate of their ends and connected to the clutch-spools at one end, beams connected to the other ends of the said bars and each beam provided with a stud, the said beams extending toward each other and provided with bifurcated ends, a support for the said ends upon which the beams are mounted to slide, a cam-disk centrally pivoted between the beams and provided with two diametrically opposite slots, each of which has a concentric portion and a cam portion, and the two concentric portions and the cam portions lying opposite each other, the beams being provided with studs working in said slots, and means for turning said cam-disk in either one direction or the other, the arrangement of the concentric portions and the cam portions of the slots providing that when the disk is turned in either direction motion will be communicated to either one of the sliding beams.

2. The combination with a prime mover and its shaft, of a counter-shaft, a part to be driven operatively connected to the counter-shaft, oppositely-driving clutch members on the counter-shaft and meshing with the shaft of the prime mover, a single clutch-disk arranged to couple either one or the other of said clutch members with the counter-shaft, a brake device for the counter-shaft, and means whereby the clutch-disk will operate the brake device.

3. The combination with a prime mover and its shaft, of a counter-shaft, a part to be driven operatively connected to the counter-shaft, oppositely-driving clutch members and a counter-shaft meshing with the shaft of the prime mover, a single clutch-disk arranged to couple either one or the other of said clutch members with the counter-shaft, a brake mechanism arranged for operatively engaging with the counter-shaft to brake the same, and means whereby the actuation of the cam-disk to couple either of the clutch members with the counter-shaft will be preceded by an automatic actuation of the brake mechanism upon turning the cam-disk.

4. The combination with a prime mover and its shaft, of a counter-shaft, a part to be driven operatively connected to the counter-shaft, oppositely-driving clutch members and a counter-shaft meshing with the shaft of the prime mover, a single clutch-disk arranged to couple either one or the other of said clutch members with the counter-shaft, a brake mechanism for the counter-shaft, and means whereby the turning of the cam-disk to couple either one or the other of the clutch members with the counter-shaft will be preceded by an actuation of the brake through the instrumentality of the cam-disk and whereby the reverse movement of the cam-disk to uncouple the clutch member of the shaft will be succeeded by the actuation of the brake mechanism.

5. The combination with a prime mover and its shaft, of a counter-shaft, a part to be driven operatively connected to the said counter-shaft, clutch members loosely mounted on said shaft and meshing with the shaft of the prime mover for rotation in opposite directions, a clutch-disk, clutch-spools arranged to be actuated by the said clutch-disk to couple either one or the other of said clutch members to the counter-shaft, a peripheral cam 23 on said disk, a brake-beam 25 arranged for engagement by said cam, a brake-rod 24 and shoe 27 operatively connected to said beam, a brake-band 28 mounted on the counter-shaft and designed for engagement with the brake-shoe, and a single operating-lever connected to said disk, the arrangement of the peripheral cam on the disk being such as to insure the positive actuation of the brake-beam and its brake-shoe subsequent to the uncoupling actuation of the clutch member by said disk and to also insure the release of the brake mechanism just preparatory to the coupling actuation of the clutch members by said disk.

847,755. PNEUMATIC TOY. JOHN H. FLORA, Tunnel Hill, Ill. Filed Oct. 18, 1906. Serial No. 339,532.

Claim.—1. A pneumatic toy provided with a tube through which air is adapted to be forced into the toy when inflating the same, and a string for closing said tube and serving to effect a return of the toy after jumping, said toy having a portion thereof adapted to be pressed inward to form a pneumatic rebounder and which when released causes the toy to jump or fly through the air.

2. A pneumatic toy adapted to be inflated and provided with a sack or pouch adapted to be pressed inward to form a pneumatic rebounder to produce a jumping or leaping effect when the toy is suddenly released after said pneumatic sack has been pressed inward.

847,756. ORE-ROASTING FURNACE. GEORGE H. FRANKLIN, Boulder, Colo. Filed Dec. 12, 1906. Serial No. 347,445.

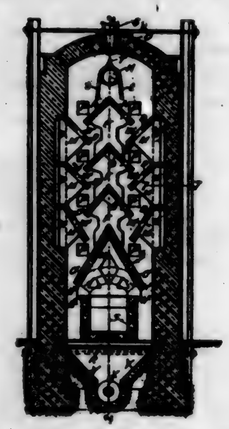

Claim.—1. In an ore-roasting furnace, the combination of a roasting-chamber, a series of inclined shelves, of successively greater inclination from top to bottom, arranged one above the other within and extending from end to end of the chamber; with oppositely-inclined shelves on the opposite sides of the chamber alternating with the central shelves, a feed-inlet at the upper end of the chamber, an outlet-pipe below the inlet and a divider and spreader interposed between the outlet-pipe and feed-inlet.

2. In an ore-roasting furnace, the combination of the roasting-chamber, a series of inclined shelves of successively greater inclination from top to bottom, arranged one above the other centrally within and extending from end to end of the chamber, with oppositely-inclined shelves on the opposite sides of the chamber alternating with the central shelves, and of successively greater inclination from top to bottom, a feed-inlet at the upper end of the chamber, an outlet below the inlet and a spreader interposed between the outlet and inlet.

3. In an ore-roasting furnace, the combination of a roasting-chamber, a superposed series of shelves disposed centrally in said chamber and extending from end to end thereof; and refractory supports for the several upper shelves mounted upon the several underlying shelves.

4. In an ore-roasting furnace, the combination of a roasting-chamber, a superposed series of shelves in said chamber and extending from end to end thereof; with refractory supports for the upper shelves mounted upon the underlying shelves, and provided with tenons engaging openings in the shelves.

5. In an ore-roasting furnace, the combination of a roasting-chamber, a combustion-chamber in the lower part thereof, angular supports mounted on said chamber, inclined shelves mounted on said supports, refractory supports mounted on the apex of such shelves, superposed shelves mounted on said supports, and oppositely-inclined shelves supported on the side walls of the furnace intermediate the central shelves.

6. In an ore-roasting furnace, the combination of a roasting-chamber, angular supports mounted in the lower part thereof, inclined shelves mounted on said supports, refractory supports mounted on the apex of the lower shelves, superposed shelves mounted on said supports, said supports having tenons engaging openings in the shelves, and oppositely-inclined shelves supported on the side walls of the furnace.

7. In an ore-roasting furnace, the combination of a roasting-chamber, oppositely-inclined shelves in the lower part thereof and a triangular refractory support for said shelves having tenons on its upper inclined edges engaging openings in the shelves.

8. In an ore-roasting furnace, the combination of a

roasting-chamber, oppositely-inclined shelves in the lower part thereof, and a triangular refractory support for said shelves having tenons on its upper inclined edges engaging openings in the shelves, said shelves being made in sections with their meeting edges resting upon the support.

9. In an ore-roasting furnace, the combination of inclined shelves, refractory supports having inclined portions underlying the shelves and provided with tenons on their upper edges engaging openings in the shelves, said shelves being in sections, the meeting edges of the sections resting upon the edges of the supports.

10. In combination in an ore-roasting chamber, a series of superposed oppositely-inclined shelves arranged centrally in said chamber, a refractory support for the lower shelf, refractory supports for the upper shelves, the supports for an upper shelf resting upon the next lower shelf, said supports being spaced apart and provided with devices interlocking with the shelves.

11. In an ore-roasting furnace, the combination of a fire-chamber, a combustion-chamber, a roasting-chamber above the combustion-chamber, a series of oppositely-inclined shelves arranged one above the other, refractory supports for the lower shelf upon the combustion-chamber walls, refractory supports for the upper shelves superposed upon the next lower shelf, side shelves arranged intermediate the central shelves at opposite sides of the roasting-chamber, inclined supports for the side shelves anchored in the walls of the chamber, a feed-inlet above the uppermost shelf, an outlet above the shelves, and a divider interposed between the feed-inlet and uppermost shelf.

12. In an ore-roasting furnace, the combination of a fire-chamber, a combustion-chamber, a roasting-chamber above the combustion-chamber, a series of oppositely-inclined shelves arranged one above the other, and extending longitudinally of the roasting-chamber, refractory supports for the lower shelf upon the combustion-chamber walls, refractory supports for the upper shelves superposed upon the next lower shelf, side shelves arranged intermediate the central shelves at opposite sides of the roasting-chamber, inclined supports anchored in the walls of the chamber, to support the side shelves, a feed-inlet above the uppermost shelf, an outlet above the shelves, a divider interposed between the feed-inlet and uppermost shelf, an ore-receiving chamber below the combustion-chamber, and means for removing the roasted ores therefrom.

13. In an ore-roasting furnace, the combination of a fire-chamber, a combustion-chamber, a roasting-chamber above the combustion-chamber, a series of oppositely-inclined shelves arranged one above the other, refractory supports for the lower shelf upon the combustion-chamber walls, refractory supports for the upper shelves superposed upon the next lower shelf, side shelves arranged intermediate the central shelves at opposite sides of the roasting-chamber, inclined supports for the side shelves anchored in the walls of the chamber, a feed-inlet above the uppermost shelf, an outlet above the shelves, and a divider interposed between the feed-inlet and uppermost shelf, said shelves being made in sections, the meeting edges of the sections resting upon the refractory supports; and sight-openings in the walls of the chamber adjacent the ends of the shelves.

847,757. WINDOW-MIRROR. SAMUEL S. FRETZ, Jr., and HILDEBERT VAN BUREN, Sr., Philadelphia, Pa. Filed Sept. 29, 1906. Serial No. 336,773.

Claim.—1. In a window-mirror, a mirror of angular form, a vertically-disposed plate connecting the opposite frames thereof at the angle thereof, and a tongue angularly continuous of and integral with said plate and secured to said frames at their angular portions.

2. In a window-mirror, an angular frame provided with mirror-engaging flanges and a ledge which is adapted to overhang the top of said frame at the front thereof and a vertically-disposed plate at the angle of said frame having a tongue angularly continuous of and integral with said plate and secured to said frame and ledge.

3. In a window-mirror, an angular frame provided with mirror-engaging flanges and a ledge which is adapted to overhang the top of said frame at the side ends thereof and a vertically-disposed plate at the angle of said frame having a tongue angularly continuous of and integral with said plate and secured to said frame and ledge.

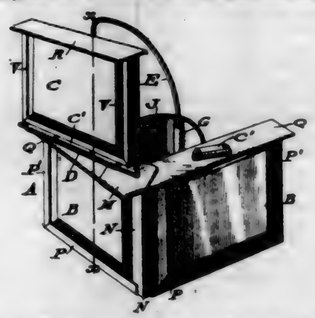

4. In a window-mirror, an angular frame provided with mirror-engaging flanges and a ledge which is adapted to overhang the top of said frame at the top and side ends thereof and a vertically-disposed plate at the angle of said frame having a tongue angularly continuous of and integral with said plate and secured to said frame and ledge.

5. In a window-mirror, an angular frame, having mirror-engaging flanges and a ledge at the top thereof integral therewith and a vertically-disposed plate at the angle of said frame having a tongue angularly continuous of and integral with said plate and secured to said frame and ledge.

6. In a window-mirror, a frame of angular form, and ledges at the tops of the members thereof integral therewith and a vertically-disposed plate at the angle of said frame having a tongue angularly continuous of and integral with said plate and secured to said frame and ledge.

7. A window-mirror, a frame of angular form, a stiffening-piece secured to said frame at the angle thereof, a tongue extending angularly from and integral with said piece and secured to said frame, and a ledge adapted to overhang said frame and being continuous and integral with the same.

847,758. SURGICAL APPLIANCE. CLARA C. FRYE, Tampa, Fla. Filed May 9, 1906. Serial No. 316,024.

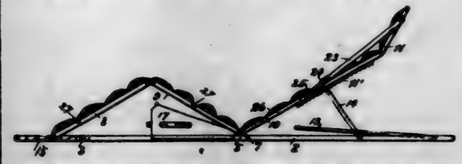

Claim.—In combination, a main frame, cross-strips carried by the main frame, ears on opposite sides of the main frame, a cross-strip secured in said ears and a secondary frame within the main frame, said secondary frame comprising sections pivotally secured one to the other and to the cross-piece of the main frame carried by the ears, one of the sections adjacent said cross-strip being provided with an opening, said main frame having a plurality of cross-strips positioned beneath the opening in said section, said cross-strips being intended to support a receptacle.

847,759. ADDING-MACHINE. ABRAHAM I. GANCHER, New York, N. Y., and ALBERT T. ZABRISKIE, Passaic, N. J., assignors to Automatic Adding Machine Company, New York, N. Y. Filed July 28, 1906. Serial No. 328,277.

Claim.—1. An adding-machine, comprising a series of number-wheels, each having a body provided with transverse and longitudinal recesses, and a removable rim comprising a strip having interlocking ends, manually-controlled means for turning the said number-wheels independently one of the other, a ratchet-wheel for each number-wheel, a pawl projecting sidewise from each number-wheel in the longitudinal slot therein, the pawl being fulcrumed in the longitudinal recesses of the number-wheel body, a spring held in the transverse recesses of the number-wheel body, and pressing the extension of the pawl, the latter being adapted to engage the ratchet-wheel of the next following number-wheel in the series, and fixed disk cams, one for each pawl, concentric with the number-wheels, each disk cam normally holding corresponding pawls out of engagement with the ratchet-wheel of the next following number-wheel, the disk cam having a cut-out portion for allowing the pawl to move into engagement with the ratchet-wheel when the number-wheel carrying the pawl completes a turn.

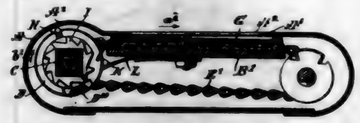

2. The combination with a stand having an inclined seat and a slot in one side, of an adding-machine having a casing shaped to correspond to the said seat, the adding-machine having a spindle extending through the said slot.

3. An adding-machine provided with a number-wheel having a body formed with intersecting slots, and a rim removably fitting the body and extending over the peripheral ends of the slots.

4. An adding-machine provided with a number-wheel having a body formed with intersecting slots, a rim removably fitting the body and extending over the peripheral ends of the slots, a pawl movable in one slot and having its fulcrum-pin fitting another slot, the said rim holding the fulcrum-pin in position, and a spring held in another of the slots and pressing the said pawl.

5. The combination with a stand having an inclined seat and a slot on one side, of an adding-machine having a casing shaped to correspond to the said seat, the adding-machine having a spindle extending through the said slot, and the stand having flanges overlapping the adding-machine on the front thereof, whereby to retain it in position.

847,760. SYRUP-DISPENSING APPARATUS. CARROLL E. GATES, New York, N. Y., assignor to Peter H. Fowler, East Orange, N. J. Filed June 16, 1906. Serial No. 321,965.

Claim.—1. A dispensing apparatus comprising a cylinder, a piston therein, an inlet-conduit below the cylinder, a discharge-spout connecting with the said inlet-conduit, an outwardly-opening check-valve for the discharge-spout, and a ball-valve at the junction of said discharge-spout and said inlet-conduit, arranged to alternately close against passage of fluid through the one and the other.

2. A dispensing apparatus comprising a cylinder, a piston therein, an operating-lever, an inlet-conduit beneath the cylinder, a discharge-spout connecting with said inlet-conduit, said discharge-spout inclined upwardly toward its discharge end, an outwardly-opening cap for normally closing the mouth of the discharge-conduit, and valve means arranged to alternately close against passage of fluid through the inlet-conduit and through the discharge-spout.

3. A dispensing apparatus comprising a cylinder 10, supported by a hollow standard 9 which forms an inlet-conduit having a straight run therethrough, said standard having a branch 11 constituting a discharge-spout, a pivoted flap constituting an outwardly-opening check-valve for the discharge end of the spout, a ball-valve 21 adapted to fit to a seat 22 in the inlet-conduit, and also to a seat 23 in the discharge-conduit, and a stop 24 limiting the upward movement of the ball-valve and directing it toward the seat 23.

4. A dispensing apparatus comprising a pump, and a removable reservoir arranged beneath same, a section of suction-pipe being movably secured to the reservoir, and means provided for forcing the suction-pipe section toward the pump with a yielding pressure, in order to normally maintain a substantially tight joint between the parts, but to permit relative yielding thereof to permit of the withdrawal of the reservoir.

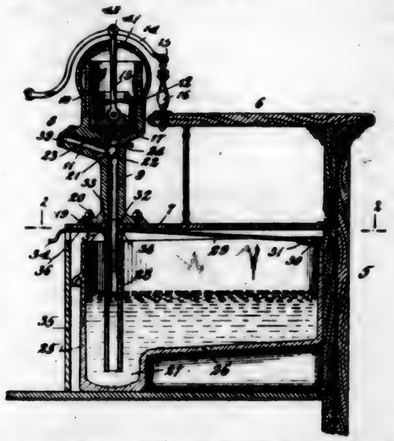

5. A dispensing apparatus comprising a pump and a removable reservoir housed beneath same, said reservoir provided with a suction-tube yieldingly forced upward and fitted at its upper end to a seat provided in a portion fast to the pump.

6. A dispensing apparatus comprising a pump and a reservoir arranged beneath same, said reservoir provided with a lever pivotally secured thereto, and a spring for forcing the said lever upward, a section of suction-pipe carried by said lever, the said suction-pipe having a spheroidal head fitted to a corresponding concavity in a part fixed with the pump.

7. A dispensing apparatus comprising a pump and a removable reservoir mounted beneath same, a lever 29 pivoted to the reservoir, a spring for forcing the lever upward, the said lever provided with a slot 37 and an enlarged opening 36, a tube 28 having an enlarged head of spheroidal form arranged to pass freely through the opening 36 and fitted to the slotted portion 37, the upper portion of the head having a bearing in a corresponding concavity in a fixed part of the pump.

8. In a dispensing apparatus, the combination with a pump, including a cylinder 10, a piston 12, a hollow supporting-standard 9 and an operating-lever 14, of a suitable casing for supporting the pump and comprising a housing beneath same, a tank 26 removably received within said housing, said tank carrying a suction member 28 accurately fitted at its upper end to a seat in the lower end of the standard 9, and means for depressing the suction member to disengage same therefrom at will, substantially as set forth.

847,761. ROTARY ENGINE. ALBERT GLIDIS, New York, N. Y. Filed Dec. 26, 1906. Serial No. 349,502.

Claim.—1. A rotary engine, comprising a curved chamber provided with a slot, a rotary member having a portion thereof adjacent its circumference entering and closing said slot, a piston carried by said rotary member and movable within said curved chamber, a flange carried by said rotary member and substantially parallel to the wall of the chamber adjacent the slot but spaced from said wall, and a packing intermediate said flange and said wall and in contact with the body of said rotary member.

2. A rotary engine, comprising a curved chamber pro-

vided with a slot, a rotary member having a portion thereof adjacent its circumference entering and closing said slot, a piston carried by said rotary member and movable within said curved chamber, a flange carried by said rotary member and substantially parallel to the wall of the chamber adjacent the slot but spaced from said wall, a packing intermediate said flange and said wall, and a packing-ring substantially L-shaped in cross-section carried by the wall of said chamber and adapted to force the packing into engagement with the body of the rotary member.

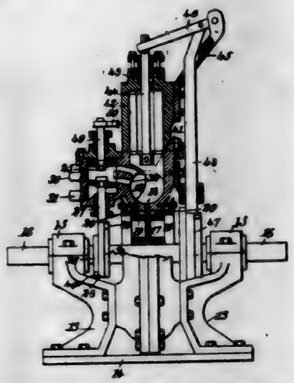

3. A rotary engine, comprising a casing having an annular chamber therein, a piston movable in said chamber, an abutment radially movable to close said chamber, said chamber being provided with an inlet-port adjacent one side of the abutment and an outlet-port adjacent the opposite side, means for controlling the inlet-port, comprising a reciprocating valve, means for rotating said valve to reverse the engine, and independent means for simultaneously withdrawing said abutment from the chamber and closing the inlet-port.

4. A rotary engine, comprising a casing having a curved chamber, a main shaft provided with a cam, a piston movable in said chamber, an abutment radially movable to close said chamber, said chamber being provided with an inlet-port adjacent one side of the abutment and an outlet-port adjacent the opposite side, a reciprocating valve for controlling said inlet-port, a valve-stem secured to said valve and in engagement with the cam on the main shaft, whereby said valve may be reciprocated, and a second valve-stem secured to said valve and provided with manually-controlled means for rotating the same, whereby the engine may be reversed.

5. A rotary engine, comprising a curved chamber, a main shaft concentric therewith, a piston carried by said shaft and movable in said chamber, an abutment movable to close said chamber, said chamber having an inlet-port adjacent one side of the abutment and an outlet-port adjacent the opposite side of said abutment, a reciprocating valve for controlling said inlet-port, means for simultaneously moving said abutment and reciprocating the said valve to control the inlet-port, a valve-stem secured to said valve, an arm secured to said valve-stem, a valve-lever, and means connecting said lever to said arm, whereby upon the movement of said lever the valve may be rotated to reverse the engine independent of the normal reciprocating movement of the valve.

847,762. FEED-WATER REGULATOR. PHILLIP W. GOOCH, Bessemer, Ala., assignor of one-third to Samuel M. Adler, Birmingham, Ala., and one-third to John F. Gammon, Bessemer, Ala. Filed June 19, 1906. Serial No. 322,376.

Claim.—1. A device of the character described, comprising a casing having a plurality of sections, an internal wall forming an inclosed chamber in the upper section through which passes the water from the pump to the boiler, an internal wall forming an inclosed chamber in another section through which passes the steam from the boiler to the pump, valves in both of said inclosed chambers, a float-chamber communicating with the boiler and independent of said first chamber, a float therein, and means connecting the float with the valves for operating the same.

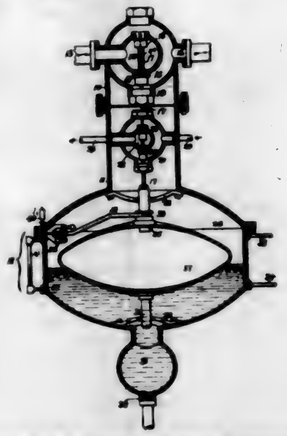

2. A device of the character described, comprising a casing having a plurality of sections, an internal wall forming an inclosed chamber in one of said sections through which passes the water from the pump to the boiler, an internal wall forming an inclosed chamber in another section through which passes the steam from the boiler to the pump, valves in both of said inclosed chambers, a float-chamber communicating with the boiler and independent of said other chambers, a float therein, and means connecting the float with the valves for operating the same, and a catch-basin below said float-chamber having an outlet at the bottom thereof.

3. A device of the character described, comprising a casing having a plurality of sections, an internal wall forming an inclosed chamber in one of said sections through which passes the water from the pump to the boiler, an internal wall forming an inclosed chamber in another section through which passes the steam from the boiler to the pump, valves in both of said inclosed chambers, a float-chamber communicating with the boiler and independent of the other chambers, a float therein, and means connecting the float with the valves for operating the same, said float-chamber having guides in its upper and lower parts for holding the float in place.

4. A device of the character described, comprising a casing having a plurality of superimposed sections, an internal wall forming an inclosed chamber in the upper of said sections through which passes the water from the pump to the boiler, an internal wall forming an inclosed chamber in another section through which passes the steam from the boiler to the pump, the steam and water passing through the respective chambers in opposite directions, valves in both of said inclosed chambers, a float-chamber communicating with the boiler and independent of said other chambers, a float therein, and means connecting the float with the valves for simultaneously operating the same, in combination with a signal means operated from said connecting means for warning the attendant of high or low water in the boiler.

847,763. AIR-COMPRESSOR. ADAM GOOD, Claflin, Kans. Filed Aug. 26, 1905. Serail No. 275,905.

Claim.—1. In a device of the character described, the combination of a cylinder, a piston movably mounted therein, revoluble plug-valves connected with the ends of said cylinder, a pair of pipes leading to said plug-valves, means admitting an aeriform body therethrough into said cylinder, a pair of pipes leading from said plug-valves, means connected with said last-mentioned pipes for receiving said aeriform body as delivered thereto from said cylinder, and means connected with both of said valves for reversing the same.

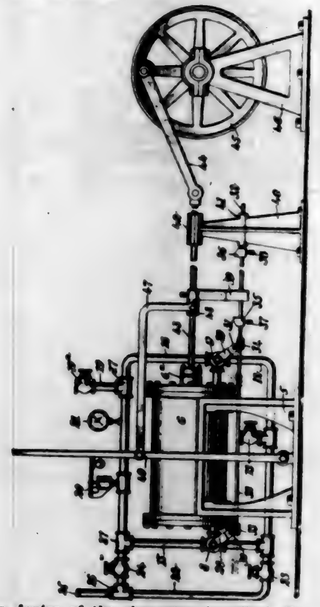

2. In a device of the character described, the combination of a cylinder, a piston movably mounted therein, revoluble plug-valves connected with the ends of said cylinder, a pair of pipes leading to said plug-valves, means connected with said pipes for admitting an aeriform body therethrough into said cylinder, a pair of pipes leading from said plug-valves, means connected with said last-mentioned pipes for receiving an aeriform body as delivered thereto from said cylinder, crank-arms connected with said revoluble plug-valves for actuating the same, a rod connecting said cranks together, stop-plugs mounted upon said rods, and means controllable by movements of said piston, for actuating said stop-plugs.

847,764. CONCRETE-BLOCK MACHINE. JOSEPH H. GRAHAM, Kempton, Ind. Filed Oct. 18, 1906. Serial No. 339,478.

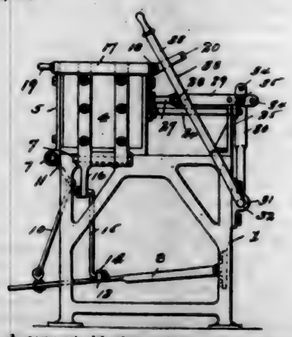

Claim.—A concrete-block machine comprising a supporting-table, a lever pivoted at its rear end to the rear portion of said table adjacent the floor and having its front portion projecting beyond the front portion of said table to afford a foot-piece, a mold supported on said table and comprising a stationary rear wall and pivoted front and side walls adapted for outward swinging movement, said front and side walls having depending extensions beyond their pivots, a rigid link having at its upper end pivotal connection with the extension of said front wall, and at its lower end pivotal connection with said lever adjacent the forward end thereof, a cross-bar provided upon said lever and having portions projecting on each side of said lever at substantial right angles thereto, and L-shaped links interposed between said cross-bar and said side walls, each of said links comprising horizontal portions pivoted to the extensions of said side walls and perpendicular depending portions pivoted to the ends of said cross-bar.

847,765. BREAD-MIXER. JULIUS C. HALL, Wallingford, Conn. Filed Nov. 26, 1906. Serial No. 345,030.

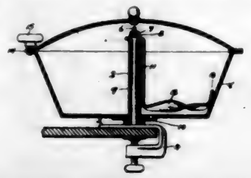

Claim.—1. The combination with a vertically-arranged stationary post, of a pan having a centrally-arranged vertical sleeve adapted to set over said post, a beater secured to the top of said post extending downward into said pan, and a handle at one side of said pan by which it may be rotated, substantially as described.

2. The combination with a vertically-arranged stationary post, of a pan having a centrally-arranged vertical sleeve adapted to set over said post, a beater secured to the top of said post and held stationary therewith, the said beater extending downward into said pan and provided at its lower end with a longitudinally-twisted arm extending outward therefrom, substantially as described.

3. The combination with a vertically-arranged stationary post, of a pan having a centrally-arranged vertical sleeve adapted to set over said post, a beater secured to the top of said post and held stationary therewith, the said beater extending downward into said pan and provided at its lower end with a longitudinally-twisted arm extending outward therefrom, and terminating in an upwardly-turned lip, substantially as described.

847,766. TRUCK. WILLIAM C. HANSON, Cedar Rapids, Iowa. Filed Mar. 29, 1906. Serial No. 308,757.

Claim.—1. In a device of the class described, a frame comprising spaced side members having transverse coupling members, lifting-toes extending laterally from said frame members at one end, brackets integral with said toes and extending laterally from said frame members at the opposite side and spaced from the adjacent ends of the same, braces swinging from said frame members and adapted to support the frame in an inclined position, and locking means operating to maintain said braces in extended position.

2. A truck comprising side members, strips attached to the upper edges thereof, said strips merging into upwardly-extending toes at the lower ends of the members and being continued into brackets the rear ends of which are attached to the under edges of the said members.

3. A truck comprising side members, strips attached to the upper edges thereof and merging into upwardly-extending toes at the lower ends of said members then being bent rearwardly below said members and continued into brackets the rear ends of which are attached to the under edges of the members.

847,766.

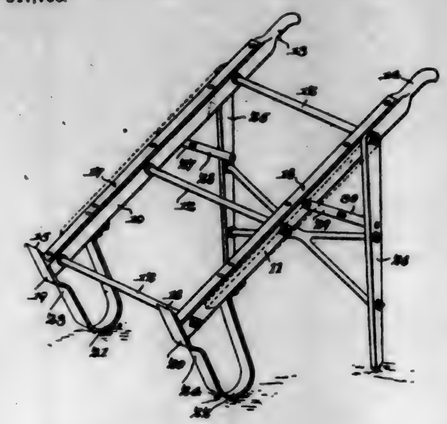

847,767. SECRET-CODE APPARATUS. MARTIN C. HARLAN, Stuart, Iowa. Filed Aug. 14, 1903. Serial No. 169,448.

Claim.—A secret-code apparatus, comprising a body portion formed of a single piece of sheet metal with its margins inclined inwardly over its top with their edges spaced apart, transverse lines on the margins, those on one margin in line with those on the other, a series of consecutively-arranged letters and numerals on one margin between the lines, a series of alphabetically-arranged symbols on the other margin between the lines, a sheet-metal slide formed with an upturned handle on one end and provided on its central portion with transverse lines spaced apart the same as those on the margins and a series of consecutively-arranged numbers and letters on the slide between the margins corresponding to the series on one of the margins, for the purposes stated.

847,768. BOLT-RETAINER. JOHN HARTMAN. Morral, Ohio. Filed July 2, 1906. Serial No. 324,315.

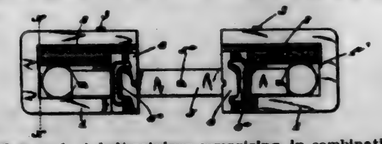

Claim.—1. A bolt-retainer comprising, in combination, a pair of retainer-frames having openings therein, a series of bars pivoted in said frames, and means connecting said frames whereby they are adjustable with respect to each other.

2. A bolt-retainer comprising, in combination, a pair of retainer-frames having openings therein, a series of bars pivoted in said frames, handles on said frames, and means connecting said frames whereby they are adjustable with respect to each other.

3. A bolt-retainer comprising, in combination, a pair of retainer-frames having openings therein, a series of bars pivoted in said frames, a bar connecting said frames whereby they are adjustable with respect to each other, said bar having stops to prevent the removal of the frames therefrom.

4. A bolt-retainer comprising, in combination, a pair of retainer-frames having openings therein, a series of bars pivoted to said frames, a bar connecting said frames and on which they are adjustable with reference to each other, said bar having a stop to limit the inward movement of the frames thereon, and said bar also having stops near its ends to prevent the removal of the frames therefrom.

847,769. TANDEM-SPRING FRICTION DRAFT-RIGGING. EDWARD W. HARTOUGH, Thayer, Mo. Filed Dec. 29, 1905. Serial No. 293,729.

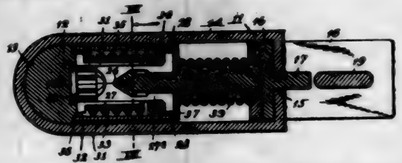

Claim.—1. In a draft-rigging, a drum, friction members movably arranged therein and having frictional engagement with each other, and a draft-spring encircling the friction members and adapted to be forced thereby into frictional engagement with the drum.

2. In a draft-rigging, a drum, friction members movably arranged therein and having frictional engagement with each other, chafing-irons embracing the friction members and adapted to be expanded thereby, and a draft-spring encircling the chafing-irons and adapted to be forced thereby into frictional engagement with the drum.

3. In a draft-rigging, a plunger, spreader-blocks frictionally engaging the same, a draft-spring encircling the spreader-blocks, and a drum inclosing the draft-spring so that the latter may be forced into frictional engagement therewith by the spreader-blocks.

4. In a tandem-spring friction draft-rigging, a drum, friction members movably arranged therein and having frictional engagement with each other, a draft-spring encircling the friction members and adapted to be forced thereby into frictional engagement with the drum, another draft-spring which abuts against the forward end of the drum, and means which coöperate with the drum and the friction members in simultaneously compressing the draft-springs either under compressive or tractive force.

5. In a tandem-spring friction draft-rigging, a drum, friction members movably arranged therein and having frictional engagement with each other, chafing-irons telescopically embracing the friction members and adapted to be expanded thereby, a draft-spring encircling the chafing-irons and adapted to be enforced thereby into frictional engagement with the drum, another draft-spring which abuts against the forward end of the drum, and means which coöperate with the drum and the chafing-irons in simultaneously compressing the draft-springs either under compressive or tractive force.

6. In a draft-rigging, a front follower-plate arranged to move backwardly and forwardly, means for moving said plate backwardly a limited distance, stops for limiting the forward movement of said plate, a plunger projecting rearwardly from said plate, spreader-blocks forming a pocket in which the rear end of said plunger is arranged, said plunger being adapted to spread said blocks apart and move them backwardly therewith a portion of its stroke, a drum inclosing the blocks and provided with a closed end against which the forward terminals of said blocks normally abut, and a helical spring interposed between the drum and the blocks for resisting both the spreading action and backward movement of the latter by frictionally engaging throughout its length the exterior of the blocks and the interior of the drum.

7. In a draft-rigging, a plunger arranged to move backwardly and forwardly, means for limiting the backward movement of said plunger, spreader-blocks forming a pocket in which the rear end of said plunger is arranged, said plunger being adapted to spread the blocks apart and move them backwardly therewith a portion of its stroke, a drum inclosing the blocks and provided with a closed end for limiting the forward movement of the blocks, a rear follower-plate against which said drum abuts, and resilient means interposed between said drum and the blocks for resisting both the spreading action and the rearward movement of the latter.

8. In a draft-rigging, a plunger arranged to move backwardly and forwardly, means for limiting the backward movement of said plunger, spreader-blocks forming a pocket in which the rear end of said plunger is arranged, said plunger being adapted to spread the blocks apart and move them backwardly therewith a portion of its stroke, a drum inclosing said blocks and adapted to limit their forward movement, a rear follower-plate provided with a recess for the reception of the rear ends of the blocks, an annular groove for the reception of the rear end of the drum, and a helical spring interposed between the drum and the blocks for resisting both the spreading action and backward movement of the latter by frictionally engaging, throughout its length, the exterior of the blocks and the interior of the drum.

9. In a draft-rigging, spreader-blocks forming a pocket and arranged to move backwardly and forwardly, a plunger having one end arranged in the pocket so that said blocks will be spread apart thereby when they move forwardly, a rear follower-plate arranged to move backwardly and forwardly, stops for limiting the backward movement of said plate, a drum inclosing the blocks and abutting against the plate so that it will move forwardly with the latter, and resilient means interposed between the plate, the drum, and the blocks for moving the latter forwardly and retarding said movement and the spreading action of the blocks by frictionally engaging the exterior of the latter and the interior of the drum.

10. In a tandem-spring friction draft-rigging, spreader-blocks forming a pocket and arranged to move backwardly and forwardly, a plunger having one end arranged in the pocket so that said blocks will be spread apart thereby when they move forwardly, a rear follower-plate arranged to move backwardly and forwardly, stops for limiting the backward movement of said plate, a drum inclosing the blocks and abutting against the plate so that it will move forwardly with the latter, a helical spring interposed between the drum and the blocks for resisting both the spreading action and longitudinal movement of the latter by frictionally engaging, throughout its length, the exterior of the blocks and the interior of the drum, and resilient means abutting against the forward end of said drum for resisting its forward movement.

11. In a draft-rigging, spreader-blocks forming a pocket and arranged to move backwardly and forwardly, a plunger having one end arranged in the pocket so that said blocks will be spread apart thereby when they move forwardly, a rear follower-plate arranged to move backwardly and forwardly, stops for limiting the backward movement of said plate, a loop for moving the plate forwardly, a drum inclosing the blocks and abutting against the plate so that it will move forwardly with the latter, and resilient means interposed between the plate, the drum, and the blocks for moving the latter forwardly and retarding said movement and the spreading action of blocks by frictionally engaging the exterior of the latter and the interior of the drum.

12. In a draft-rigging, a front follower-plate arranged to move backwardly and forwardly, a yoke for moving said plate backwardly a limited distance, stops for limiting the forward movement of said plate, a plunger projecting rearwardly from said plate, spreader-blocks forming a pocket in which the rear end of said plunger is arranged, said plunger being adapted to spread said blocks apart and move them backwardly therewith a portion of its stroke, and resilient means for resisting both the spreading action and the backward movement of said blocks.

13. In a tandem-spring friction draft-rigging, a front follower-plate arranged to move backwardly and forwardly, a plunger projecting rearwardly from said plate, spreader-blocks forming a pocket in which the rear end of said plunger is arranged, said plunger being adapted to spread said blocks apart and move them backwardly therewith a portion of its stroke, a drum inclosing the blocks and provided with a closed end against which the forward terminals of said blocks normally abut, a rear follower-plate arranged to move backwardly and forwardly, said plate abutting at its forward side against the rear end of the drum, a helical spring embracing the blocks to resist their spreading action and thus indirectly resist the backward movement of the front follower-plate and the forward movement of the rear follower-plate, and a draft-spring interposed between the front follower-plate and the forward end of the drum to coöperate with the helical spring in resisting said movements of the follower-plates.

14. In a draft-rigging, a plunger arranged to move longitudinally, spreader-blocks forming a pocket in which the rear end of said plunger is arranged, said plunger being adapted to spread said blocks apart and move them backwardly therewith a portion of its stroke, a follower-plate, chafing-irons telescopically mounted upon the spreader-blocks and abutting at their rear terminals against said plate, a drum inclosing the spreader-blocks and the chafing-irons and abutting at its rear end against the plate, and a spring embracing the chafing-irons for limiting the telescopic and spreading action of the spreader-blocks and the chafing-irons by being compressed longitudinally and forced into frictional contact, throughout its length, with both the drum and said chafing-plates, when the draft-rigging is under either tractive or compressive force.

15. In a draft-rigging, a plunger arranged to move longitudinally, spreader-blocks forming a pocket in which the rear end of said plunger is arranged, said plunger being adapted to spread said blocks apart and move them backwardly therewith a portion of its stroke, a follower-plate, chafing-irons embracing the spreader-blocks and arranged to telescope thereon, flanges integral with the rear ends of said chafing-irons which abut against the follower-plate, a drum inclosing the spreader-blocks and the chafing-irons and abutting at one end against the follower-plate, flanges integral with the forward ends of said spreader-blocks and normally abutting against the closed end of the drum, and a helical spring interposed between the flanges of the chafing-irons and the flanges of the spreader-blocks for resisting the telescopic action of said chafing-irons and spreader-blocks being compressed longitudinally and forced into frictional engagement with the chafing-irons and the drum.

16. In a draft-rigging for cars, a plunger arranged to move longitudinally, spreader-blocks forming a pocket in which the rear end of said plunger is arranged, said plunger being adapted to spread said blocks apart and move them backwardly therewith a portion of its stroke, a follower-plate, chafing-irons embracing the spreader-blocks and arranged to telescope thereon, flanges integral with the rear ends of said chafing-irons which abut against said plate, a drum inclosing the spreader-blocks and the chafing-irons and abutting at one end against the follower-plate, flanges integral with the forward ends of the spreader-blocks and normally abutting against the closed end of the drum, a ring abutting against the flanges of the spreader-blocks, and a helical spring interposed between said ring and the flanges on the chafing-irons to resist the telescopic action of the spreader-blocks and the chafing-irons by being compressed longitudinally, and forced into frictional engagement with the chafing-irons and the drums when the draft-rigging is under either tractive or compressive force.

17. In a draft-rigging, a plunger arranged to move longitudinally, spreader-blocks forming a pocket in which the rear end of said plunger is arranged, said plunger being adapted to spread said blocks apart and move them backwardly therewith a portion of its stroke, a follower-plate, chafing-irons embracing the spreader-blocks and arranged to telescope thereon, flanges integral with the rear ends of said chafing-irons which abut against the follower-plate, a drum inclosing the spreader-blocks and the chafing-irons and abutting at one end against the follower-plate, flanges integral with the forward ends of the spreader-blocks and normally abutting against the closed end of the drum, a helical spring interposed between the flanges to resist the telescopic action of the spreader-blocks and the chafing-irons by being both compressed and forced into frictional engagement with the chafing-irons

and the drum, and interlocking grooves and ribs for holding the chafing-irons and the spreader-blocks in longitudinal alinement.

18. In a tandem-spring friction draft-rigging, the combination with a coupler, of a pair of draft-arms provided with oppositely-disposed pockets, the ends of which form front and rear stops, a front follower-plate normally abutting against the front stops, a rear follower-plate normally abutting against the rear stops, a plunger projecting rearwardly from the front follower-plate, a yoke attached to the coupler, a loop encircling the rear portion of said yoke and the rear follower-plate, for moving the latter forward, a drum abutting against said rear follower-plate, a draft-spring abutting against the front follower-plate and the drum for resisting either the backward movement of the former or the forward movement of the latter, spreader-blocks slidingly arranged in the drum and forming a pocket in which the rear end of the plunger is arranged, the movement of said spreader-blocks being limited by the drum and the springs so they will be spread apart by the plunger when the draft-rigging is subjected to either compressive or tractive force, flanges on the front ends of said blocks, and a helical spring interposed between said flanges and the rear follower-plate which coacts with the draft-spring in resisting the movements of the front follower-plate and the drum.

19. In a draft-rigging, a pair of draft-arms provided with oppositely-disposed pockets forming front and rear stops, flanges closing one side of each pocket, front and rear follower-plates arranged to slide in said pockets, resilient means for normally holding said plates against their respective stops, a loop encircling the follower-plates and arranged between the draft-arms, and transverse strips detachably secured to the draft-arms for supporting said loop.

847,770. BRAKE FOR SELF-PLAYING MUSICAL INSTRUMENTS. JUSTUS HATTEMER, West New York, N. J., assignor to Hardman, Peck & Company, New York, N. Y., a Corporation of New York. Filed Nov. 6, 1906. Serial No. 342,277.

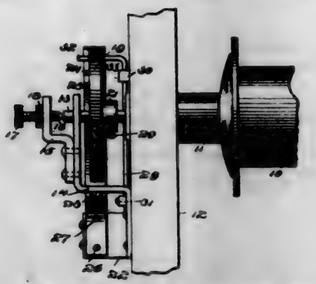

Claim.—1. In a mechanism of the class described, a cheek-plate, a take-up spool provided with a trunnion extending through the cheek-plate, a bracket secured to the cheek-plate and forming a bearing for the trunnion, an auxiliary bracket secured to the bracket, and a pointed screw extending through the auxiliary bracket, and engaging the axial extremity of the trunnion.

2. In a mechanism of the class described, a cheek-plate, a take-up spool having a trunnion extending through the cheek-plate, a bracket secured to the cheek-plate and forming a bearing for the trunnion, an auxiliary bracket secured to the bracket, a pointed screw inserted through the auxiliary bracket and engaging the axial extremity of the trunnion, a friction-disk disposed upon the trunnion, and a brake yieldingly engaging the friction-disk.

3. In a mechanism of the class described, a cheek-plate, a take-up spool provided with a trunnion extending through the cheek-plate, a bracket rigidly secured to the cheek-plate and embodying a bearing for the trunnion, an auxiliary bracket secured to the bracket, a pointed screw inserted through the auxiliary bracket, and engaging the axial extremity of the trunnion, a friction-disk carried by the trunnion between the bracket and the cheek-plate, a friction-shoe yieldingly engaging the friction-disk, and means to disengage the friction-shoe from the disk.

4. In a mechanism of the class described, a cheek-plate, a take-up spool provided with a trunnion extending through the cheek-plate, a bracket secured upon the cheek-plate, providing a journal-bearing for the trunnion, a friction-disk carried rigidly upon the trunnion within the bracket, a block secured to the cheek-plate, a spring secured to the block, a brake-shoe carried by the spring in yielding engagement with the periphery of the friction-disk, a shaft extending along and journaled upon the surface of the cheek-plate, and provided with an offset in engagement with the brake-shoe, and means to move the shaft angularly.

847,771. LUBRICATING-CUP. EBENEZER HILL, Norwalk, Conn. Filed Dec. 15, 1906. Serial No. 347,970.

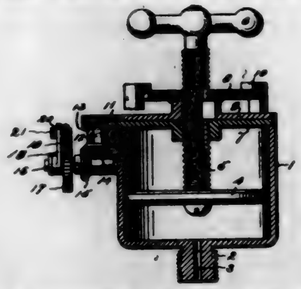

Claim.—A lubricating-cup having a piston movable in the cup, a threaded spindle supporting the piston, a gear threaded upon the spindle and forming a cover for the open end of the cup, a gear on and arranged to turn the spindle and resting upon and holding the threaded cover-gear in place, said gears having different numbers of teeth, fingers projecting from the cup, a yoke extending across and holding the outer gear in place and engaging the fingers attached to the cup, and gearing supported by the cup and meshing with the differential gears, substantially as specified.

847,772. LUBRICATOR. JOHN W. HINCHCLIFF, Jackson, Miss. Filed Aug. 31, 1906. Serial No. 332,734.

Claim.—1. In a lubricator, the combination with an inner tube provided with lateral perforations, of a body of felt surrounding the sides and lower end of said tube, an outer tube inclosing said felt and provided with a lateral aperture and a threaded end adapted to be secured to a journal-bearing, substantially as shown and described.

2. In a lubricator, the combination with an inner tube having open ends and provided with perforations, of a body of felt covering the perforations and lower end of said tube, an outer tube having an aperture and provided on its lower end with a thread, and an outer foraminated shell adapted to serve as a strainer, substantially as shown and described.

3. In a lubricator, the combination with an inner perforated tube having open ends, of a layer of felt covering the sides and lower end of said tube, an outer tube provided with an aperture flaring inwardly and adapted to be located at a point near the bottom of an oil-chamber, substantially as shown and described.

4. In a lubricator, the combination with a perforated inner tube having open ends, of a layer of felt bearing against the perforated portion and the lower end of said tube, and adapted to be located at a point near the bottom of an oil-chamber, substantially as shown and described.

5. In a lubricator, the combination with an inner tube having an open lower end, of a layer of felt surrounding the lower portion and end of said tube, and an outer tube inclosing said felt and provided with an aperture flaring inwardly and adapted to be located at a point near the bottom of an oil-chamber, substantially as shown and described.

847,773. SAFETY-CLUTCH FOR MINE CAGES, LIFTS, HOISTING-SKIPS, &c. WILLIAM M. HODGSON, Kimberley, Cape Colony. Filed June 19, 1905. Serial No. 266,026.

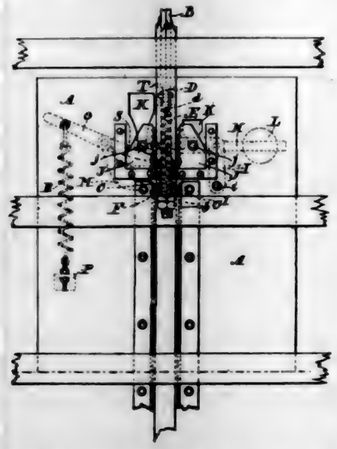

Claim.—1. In a safety-clutch for mine-cages and in combination a cage, a vertical guide therefor, suspensory means for the cage, a pair of dogs carried on the cage and arranged one on each side of the guide in close proximity thereto but not in contact therewith, a lever pivotally connected to the cage and operatively connected to the dogs so that when the lever is in horizontal position the dogs are held in normal position clear of the guide and when the lever is rocked the dogs engage the said guide, means to rock said lever and means controlled by the suspensory means to hold the lever in horizontal position while the suspensory means support the weight of the cage.

2. In a safety-clutch for mine-cages and in combination a cage, two vertical guides therefor, two pairs of dogs carried on the cage, and each pair arranged with one dog on either side of a vertical guide and in close proximity thereto but clear thereof, two levers pivotally connected to the cage and operatively connected each lever to one pair of dogs so that when the levers are in horizontal position the dogs are held in normal position clear of the guides but when the levers are rocked each pair of dogs engages its respective guide, means to rock the levers and means common to both levers controlled by the suspensory means to hold the levers in horizontal position when the suspensory means support the cage.

3. In a safety-clutch for mine-cages and in combination a cage, a guide therefor, a lever pivotally carried on the cage a pair of dogs pivotally carried on one end of a lever and arranged one on each side of the guide in close proximity thereto but clear thereof when the lever is in horizontal position, a weight on the lever adapted to raise the lever end carrying the dogs and cause the latter to grip the guide and means to normally hold the lever in horizontal position.

4. In a safety-clutch for mine-cages and in combination a cage, a guide therefor, a lever pivotally carried on the cage, a pair of dogs pivotally carried on one end of a lever and arranged one on each side of the guide in close proximity thereto but clear thereof when the lever is in horizontal position, a weight on the lever adapted to raise the lever end carrying the dogs and cause the latter to grip the guide, a second weight-controlled lever adapted to engage the first lever for the purpose described, and means to normally hold the lever in horizontal position.

5. In a safety-clutch for mine-cages and in combination a cage, a guide therefor, a draw-bar adapted to support the cage, a lever pivotally carried on the cage, a pair of dogs pivotally carried on one end of a lever and arranged one on each side of the guide in close proximity thereto but clear thereof when the lever is in horizontal position, a weight on the lever adapted to raise the lever end carrying the dogs and cause the latter to grip the guide and means controlled by the draw-bar to normally hold the lever in horizontal position.

6. In a safety-clutch for mine-cages and in combination, a cage, a draw-bar adapted to support the cage and capable of independent downward movement in relation to the same, a vertical guide for the cage, a lever fulcrumed intermediate its ends on a link pivoted on the car, a weight on one end of the lever, a pair of dogs pivotally carried on the other end of the lever and arranged one on each side of the vertical guide in close proximity thereto but clear thereof when the lever is in a horizontal position, and means controlled by the draw-bar to hold the lever in horizontal position when the draw-bar is supporting the car, and to release the lever to be rocked by the weight when the draw-bar moves downward in relation to the car.

7. In a safety-clutch for mine-cages and in combination, a cage, a draw-bar adapted to support the cage and capable of independent downward movement in relation to the same, vertical guides for the cage, two levers each fulcrumed intermediate its ends on a link pivoted on the car, a weight on one end of each lever, a pair of dogs pivotally carried on the other end of such lever and arranged one on each side of one of the vertical guides in close proximity thereto but clear thereof when the levers are in a horizontal position, and means controlled by the draw-bar to hold the levers in horizontal position when the draw-bar is supporting the car, and to release the levers to be rocked by their weights when the draw-bar moves downward in relation to the car.

8. In a safety-clutch for mine-cages the combination of a cage, a draw-bar adapted to support the cage and capable of independent downward movement in relation to said cage, vertical guides for the cage, dogs carried upon the cage and adapted to engage the guides, levers carrying the dogs and fitted upon opposite walls of the cage, a frame extending across the cage and carried by said levers, means engaging the frame to keep the dogs normally out of engagement with the guides, means for moving the draw-bar downward in relation to the cage when the tension caused by the weight of the latter upon the draw-bar is removed said means simultaneously releasing the frame, operating-arms engaging the frame and moving it upon its release to bring the dogs into engagement with the guides and means for actuating the operating-arms substantially as set forth.

9. In a safety-clutch for mine-cages the combination of a cage a draw-bar adapted to support the cage and capable of independent downward movement in relation to said cage vertical guides for the cage, dogs carried upon the cage and adapted to engage the guides, levers carrying the dogs and fitted upon opposite walls of the cage, a frame extending across the cage and carried by said levers, means for engaging the frame to keep the dogs out of engagement with the guides, means for moving the draw-bar downward in relation to the cage when the tension caused by the weight of the latter upon the draw-bar is removed said means simultaneously releasing the frame, a cross-

head secured to the cage, brackets mounted upon a crosshead, a rocking shaft carried by the brackets, operating-arms secured to the rocking shaft the outer ends of said arms engaging the frame, a rocking arm fixed on said rocking shaft and means for actuating the rocking arm, substantially as set forth.

847,774. SCREW-DRIVER. CLEMENCE E. HOFFMAN, Thomaston, Conn. Filed Feb. 16, 1906. Serial No. 301,369.

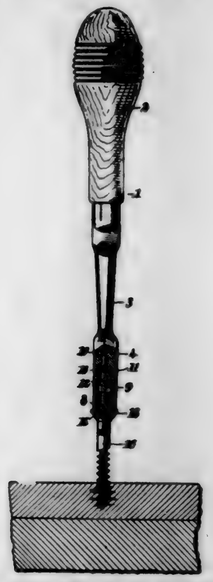

Claim.—1. A screw-driver having a slidable centering-pin mounted at the extremity thereof, and means for resiliently pressing said pin outwardly, said pin projecting beyond the tip of said screw-driver.

2. A screw-driver having a recess in the tip thereof, a depressible pin slidably mounted at said tip, and having a head normally projecting from said tip and adapted to pass inwardly into said recess, and a spring normally pressing said pin outwardly.

3. A screw-driver having a longitudinal cut in the extremity thereof, whereby a double tip is formed, said screw-driver having a substantially central recess at said tip, a slidable pin mounted in said screw-driver and having a head normally projecting beyond said tip, said head being adapted to be received within said recess when said pin is pressed.

4. A screw-driver having a head presenting a slot therein, a pin slidably mounted in said head and having a collar received in said slot, said pin further having a head projecting beyond the tip of said screw-driver, and a spring surrounding said pin, lying within said slot and thrusting against said collar, said spring affording means for normally maintaining said pin projecting beyond said tip.

847,775. TRUSS-PAD. WILLIAM H. HORN, JR., Philadelphia, Pa. Filed Dec. 15, 1905. Serial No. 291,928.

Claim.—1. A truss-pad having a mass of sponge-rubber, a casing confining said mass, an outer covering for the pad, said casing having a cover-sheet of waterproof material interposed between its outer surface and said outer cover of the pad, substantially as described.

2. A truss-pad consisting of an outer casing, a mass of sponge-rubber compressed within said casing, a cover for the casing composed of a sheet of waterproof material, a band secured to said sheet, and means for holding said band to the under side of the pad, substantially as described.

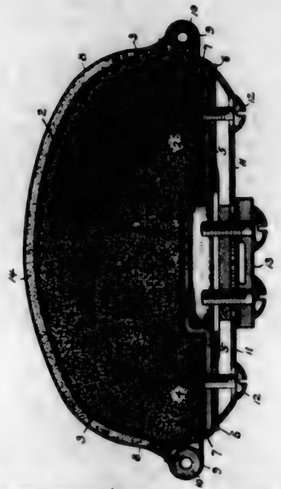

3. A truss-pad consisting of an outer casing, a mass of sponge-rubber compressed within the same, a facing-strip having a projecting welt, and a cover secured to said welt, substantially as described.

4. A truss-pad consisting of an outer casing, a body of sponge-rubber compressed within said casing, a facing-strip on the back of the casing having a projecting welt, an outer cover for the pad having a hem secured to the welt, with elastic material outside and independent of the sponge-rubber body and inclosed by said hem, substantially as described.

5. A truss-pad consisting of a casing, a mass of sponge-rubber compressed within said casing, inner and outer metal plates on the rear part of the pad, a facing-strip confined between said plates and having a projecting welt, with an outer cover for the pad secured to said welt, substantially as described.

6. A truss-pad consisting of a mass of sponge-rubber, a containing-casing for said mass, and a ring of rubber tubing encircling the sponge-rubber mass outside of said cover, substantially as described.

847,776. SEAL-PRESS. GARRETT H. HUISING, Chicago, Ill., assignor to Porter Safety Seal Co., Chicago, Ill., a Corporation of Illinois. Filed Mar. 23, 1906. Serial No. 307,588.

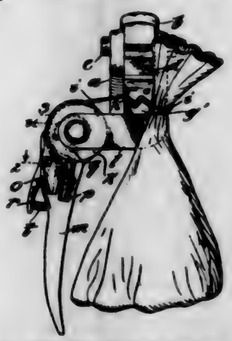

Claim.—1. A seal-press, in combination with a binder drawing or tightening device, said binder-drawing device including a lug and a moving post located in proximity to said lug, about which post said binder may be passed, said binder, as the tightening device is operated, serving to move the post toward the lug, whereby the binder and lug are engaged firmly to connect the binder with the tightening device, whereby upon continued operation of the tightening device the binder may be properly drawn.

2. A seal-press, in combination with a binder drawing or tightening device, said binder-drawing device including a lug and a swinging post located in proximity to said lug, about which post said binder may be passed, said binder, as the tightening device is operated, serving to move the post toward the lug, whereby the binder and lug are engaged firmly to connect the binder with the tightening device, whereby upon continued operation of the tightening device the binder may be properly drawn.

3. A seal-press, in combination with a binder drawing or tightening device, said binder-drawing device including a lug and a moving post located in proximity to said lug, about which post said binder may be passed, said binder, as the rotating tightening device is operated, serving to move the post toward the lug, whereby the binder and lug are engaged firmly to connect the binder with the rotating tightening device, whereby upon continued operation of the tightening device the binder may be properly drawn.

4. A seal-press, in combination with a binder drawing or tightening device, said binder-drawing device including a lug and a swinging post located in proximity to said lug, about which post said binder may be passed, said binder, as the rotating tightening device is operated, serving to move the post toward the lug, whereby the binder and lug are engaged firmly to connect the binder with the rotating tightening device, whereby upon continued operation of the tightening device the binder may be properly drawn.

5. A seal-press, in combination with a binder drawing or tightening device, said binder-drawing device including a lug and a moving post located in proximity to said lug, about which post said binder may be passed, said binder, as the tightening device is operated, serving to move the post toward the lug, whereby the binder and lug are engaged firmly to connect the binder with the tightening device, whereby upon continued operation of the tightening device the binder may be properly drawn, and mechanism for retaining the tightening device in the position to which it has been adjusted.

6. A seal-press, in combination with a binder drawing or tightening device, said binder-drawing device including a lug and a swinging post located in proximity to said lug, about which post said binder may be passed, said binder, as the tightening device is operated, serving to move the post toward the lug, whereby the binder and lug are engaged firmly to connect the binder with the tightening device, whereby upon continued operation of the tightening device the binder may be properly drawn, and mechanism for retaining the tightening device in the position to which it has been adjusted.

7. A seal-press, in combination with a binder drawing or tightening device, said binder-drawing device including a lug and a moving post located in proximity to said lug, about which post said binder may be passed, said binder, as the rotating tightening device is operated, serving to move the post toward the lug, whereby the binder and lug are engaged firmly to connect the binder with the rotating tightening device, whereby upon continued operation of the tightening device the binder may be properly drawn, and mechanism for retaining the tightening device in the position to which it has been adjusted, said mechanism including as elements a ratchet and a dog, one of said elements being stationarily mounted with respect to the stock of the seal and the other element moving with the binder-drawing device.

8. A seal-press, in combination with a binder drawing or tightening device, said binder-drawing device including a lug and a swinging post located in proximity to said lug, about which post said binder may be passed, said binder, as the rotating tightening device is operated, serving to move the post toward the lug, whereby the binder and lug are engaged firmly to connect the binder with the rotating tightening device, whereby upon continued operation of the tightening device the binder may be properly drawn, and mechanism for retaining the tightening device in the position to which it has been adjusted, said mechanism including as elements a ratchet and a dog, one of said elements being stationarily mounted with respect to the stock of the seal and the other element moving with the binder-drawing device.

9. A seal-press, in combination with a binder drawing or tightening device mounted thereupon, and mechanism for retaining the tightening device in the position to which it has been adjusted.

10. A seal-press, in combination with a binder drawing or tightening device mounted thereupon, and automatically-operated mechanism for retaining the tightening device in the position to which it has been adjusted.

11. A seal-press, in combination with a binder drawing or tightening device mounted thereupon, and mechanism for retaining the tightening device in the position to which it has been adjusted, said mechanism including a ratchet and dog.

12. A seal-press, in combination with a binder drawing or tightening device mounted thereupon, and mechanism for retaining the tightening device in the position to which it has been adjusted, said mechanism including a ratchet and dog, the ratchet being mounted upon the stock of the seal-press while the dog is carried by the tightening device.

847,777. TELEPHONIC REPEATING CIRCUIT AND APPARATUS. FERNAND EMILE DE FAUCHEUX D' HUMY, Englewood, N. J. Filed June 26, 1906. Serial No. 323,482.

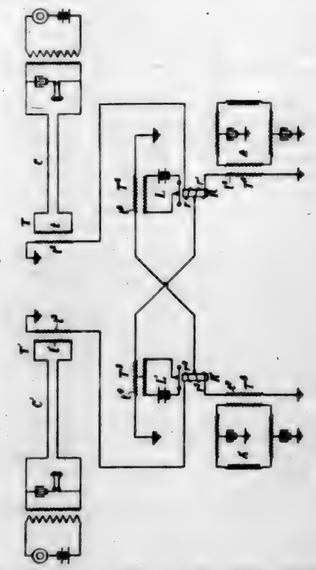

Claim.—1. In a reciprocal telephonic repeating system, in combination, a divided telephone-line, differential repeating devices, and artificial-line loads, the said artificial-line loads and the sections of the telephone-line being in multiple inductive relation to respective differential repeating devices, as set forth.

2. In a reciprocal telephonic repeating system, in combination, a telephone-line consisting of independent sections, repeating devices having differential windings, portions of their windings being in inductive relation to respective sections of the telephone-line, and artificial-line

loads in inductive relation to other portions of the windings of the repeating devices, as set forth.

3. In a telephonic repeating system, in combination, a telephone-line consisting of independent sections, a device having differential windings, one of the differential windings being connected inductively with one of the line-sections, means for producing in the said differential device currents corresponding to currents in the other line-section, and an artificial-line load connected inductively with another winding of the differential device, as set forth.

4. In a telephone repeating system, in combination, a telephone-line consisting of independent sections, a device having differential windings, one of the differential windings being connected inductively with one of the line-sections, an artificial-line load connected inductively with another winding of the differential device, and a circuit in inductive relation to the other line-section and connected to the neutral point of the winding of the differential device, as set forth.

5. In a telephonic repeating system, in combination, a telephone-line consisting of independent sections, a relay having a differentially-wound receiving-magnet, one of the differential windings being connected inductively with one of the line-sections, an artificial-line load connected inductively with the other differential winding of the relay receiving-magnet, and a circuit in inductive relation to the other line-section and adapted to produce currents in the relay corresponding to currents in the said line-section as set forth.

6. In a telephonic repeating system, in combination, a telephone-line consisting of independent sections, a relay having a differentially-wound receiving-magnet, one of the differential windings being connected inductively with one of the line-sections, an artificial-line load connected inductively with the other differential winding of the relay receiving-magnet, and a circuit in inductive relation to the other line-section and connected to the neutral point of the windings of the relay receiving-magnet, as set forth.

7. In a telephonic repeating system, in combination, a telephone-line consisting of independent sections, a relay having a differentially-wound receiving-magnet, one of the differential windings being connected inductively with the one of the line-sections, means for producing in the said differential device currents corresponding to currents in the other line-section, and an artificial-line load connected inductively with another differential winding of the relay receiving-magnet, as set forth.

8. In a reciprocal telephonic repeating system, in combination, a telephone-line consisting of independent sections, repeating-relays having differentially-wound receiving-magnets, portions of the differential windings being in inductive relation to respective sections of the telephone-line, and artificial-line loads in inductive relation to other portions of the differential windings of the relay receiving-magnets, as set forth.

9. In a reciprocal telephonic repeating system, a divided telephone-line, repeating-relays having differentially-wound receiving-magnets, and artificial-line loads, the said artificial-line loads and the sections of the telephone-line being in multiple inductive relation to respective relays, as set forth.

10. In a telephonic repeating system, in combination, a telephone-line, a differentially-wound relay having one of its differential windings inductively connected with the telephone-line, and an artificial line inductively connected with the other differential winding of the relay and in multiple inductive relation to the telephone-line, as set forth.

11. In a reciprocal telephonic repeating system, the combination with telephone-line sections, of repeating-relays, each inductively responsive to currents originated in its respective line-section and unresponsive to currents produced by it in the other line-section, as set forth.

12. In a telephonic repeating system, a relay having a differentially-wound receiving-magnet inductively connected with a transmission-line and an artificial line, as set forth.

847,778. TOOTH-SEPARATOR. JAMES W. IVORY, Philadelphia, Pa. Filed May 24, 1906. Serial No. 318,526.

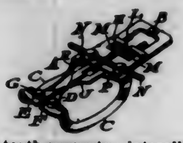

Claim.—1. In a tooth-separator, laterally-movable frames laterally-movable jaws at the free ends thereof and supplemental jaws mounted thereon adapted for longitudinal motions independently of each other.

2. A tooth-separator composed of a frame formed of laterally-movable members, jaws on said members adjustable in said frame both longitudinally and laterally and means for guiding the said jaws.

3. In a tooth-separator, a frame composed of laterally-movable members, jaws on the free ends of said members, additional jaws on said members and means for guiding and adjusting the last-named jaws both longitudinally and laterally.

4. A tooth-separator having a frame formed of laterally-movable members, jaws upon the free ends of said members and having means for adjustment slidable jaws mounted on said members and means for moving one jaw independently of the other.

5. In a tooth-separator, a frame composed of laterally-movable members, jaws mounted on said members, screw-threaded shafts connected with said jaws and nuts mounted on said members adapted to engage said threaded shafts of the jaws whereby motions in opposite directions may be imparted to the latter and relatively fixed jaws on the free ends of said members.

6. In a tooth-separator, a frame formed of laterally-movable members, means for operating said members in opposite directions, jaws mounted on said members and rotatable means swiveled on said members, the same engaging relative portions of said jaws, whereby longitudinal sliding motions may be imparted to said jaws, each jaw having its motion independent of the other and relatively fixed jaws on the free ends of said members.

7. In a tooth-separator, a frame formed of laterally-movable members, jaws on said members, a right and left screw-threaded shaft and means on said members with which shaft engages, whereby longitudinal motions may be imparted to said jaws the free ends of said members having rigid jaws thereon with connected means for adjustment thereof.

847,779. SUSPENSORY. JOHN R. JARRETT, Mishawaka, Ind. Filed June 7, 1906. Serial No. 320,647.

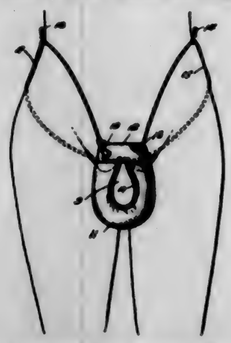

Claim.—In a suspensory, the combination with a bag, of suspending means therefor comprising an elastic cord secured at an end to one side of the front of the bag and slidably connected intermediate its ends to the rear of the bag, means for adjustably securing the cord to the side of the front of the bag, and independent suspending devices loosely slidable on those portions of the cord connecting the front of the bag and the rear of the bag.

847,780. RAILROAD-TIE. JOSEPH H. JENNINGS, Middleway, W. Va. Filed June 5, 1906. Serial No. 320,317.

Claim.—1. A tie comprising a top plate, depending walls carried by the sides of the top plate, inwardly-extending, overlapped flaps carried by the inner ends of the adjacent walls, filling-blocks disposed between the walls at each end of the tie, and tongues carried by the overlapped plates and extending into the filling-blocks, the tongues of the outer plates extending through the inner plates, said top plates having spike-receiving openings therein above the filling-blocks.

2. A tie comprising a piece of channel-iron, including a top plate and depending walls, said walls being cut away at their central portions to form recesses terminating short of the top plate, and being cut into longitudinally from the upper corners of the recesses to form flaps, the flaps at each end being bent inwardly and overlapped to form hollow end portions, a filling-block disposed at each end portion and spikes engaged through the top plate and extending into each filling-block.

3. A tie comprising a piece of channel-iron, including a top plate and depending walls, said walls being cut away at their central portions to form recesses terminating short of the top plate, and being cut into longitudinally from the upper corners of the recesses to form flaps, the flaps at each end being bent inwardly and overlapped to form hollow end portions, a filling-block disposed in each end portion, one of each pair of said flaps having a tongue struck therefrom and through the other flap.

4. A tie comprising a piece of channel-iron including a top plate and depending walls, said walls being cut away at their central portions to form recesses terminating short of the top plate, and being cut into from the recess to form flaps, the flaps at each end being bent inwardly and overlapped to form hollow end portions, and a filling-block disposed in each end portion.

5. A tie comprising a top plate having oppositely-disposed depending side walls at its ends, and inwardly-extending overlapped flaps carried by the walls, said overlapping flaps being punched one into the other to prevent separation thereof.

6. In a tie, the combination with a top plate and depending side walls, of inwardly-extending end flaps carried by the walls and terminating short of the top plate, and a filling-block between the walls.

7. A tie comprising hollow end portions and a connecting intermediate portion, said end portions having openings at the upper portions of their inner ends and being open at their bottoms and outer ends.

8. A tie comprising a top plate, depending side walls carried by the top plate, inwardly-extending end flaps carried by the walls, and a filling-block engaged between the walls.

9. A tie comprising a top plate, depending walls carried by each side of the top plate in spaced relation, inwardly-extending flaps carried by the inner ends of the walls, and filling-blocks disposed between the walls at each end of the tie.

847,781. SCALDER AND WASHER. EDWARD J. JUDGE and LOYD C. DIBERT, San Francisco, Cal. Filed Sept. 14, 1905. Serial No. 278,375.

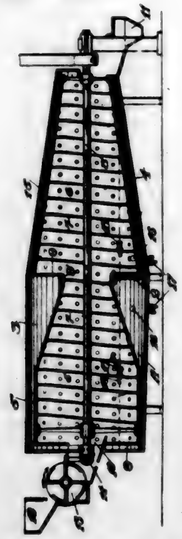

Claim.—1. A scalder comprising a substantially closed containing-tank having a transverse partition dividing its interior into a hot-water compartment and a hot-solution compartment, and a foraminous shell of double-cone form having the smaller end of one cone connected to the larger end of the other cone at a point above the level of the solution therein, each of said cones revolubly mounted in one of the compartments of the tank and having a spiral conveyer and one of said cones delivering its contents into the other cone.

2. A scalder comprising a liquid-containing tank, a hollow foraminous drum revolubly mounted therein and having one portion submerged in the liquid contents thereof, said drum having an internal conveyer, and an overflow-pipe having an adjustable nipple turnable in a vertical plane to vary the height of the liquid-level.

847,782. HAIR-TRIMMER. FREDERICK KAMPFE and OTTO KAMPFE, New York, N. Y. Filed Oct. 2, 1906. Serial No. 337,143.

Claim.—1. The combination with a handle, a body-frame, a removable razor-blade and holding means therefor, of guard-combs at each side of the cutting edge of the razor-blade and means for supporting the same.

2. The combination with a handle, a body-frame, a removable razor-blade and holding means therefor, of guard-combs at each side of the cutting edge of the razor-blade and adjustable means for supporting the same.

3. The combination with a handle, a body-frame, a removable razor-blade and holding means therefor, of guard-combs at each side of the cutting edge of the razor-blade, means for maintaining the teeth of said combs in proximity with the cutting edge of the blade but out of contact therewith and means for supporting the same.

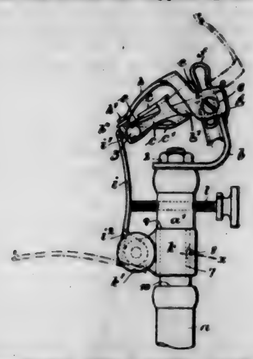

4. The combination with a handle, a body-frame, a removable razor-blade and holding means therefor, of guard-combs at each side of the cutting edge of the razor-blade, means for maintaining the teeth of said combs in proximity with the cutting edge of the blade but out of contact therewith and adjustable means for supporting the same.

5. The combination with a handle, a body-frame, a removable razor-blade and holding means therefor, of guard-combs at each side of the cutting edge of the razor-blade, means for supporting the same and means for adjusting one of said combs in opposite directions to the cutting edge of the blade.

6. The combination with a handle, a body-frame, a removable razor-blade and holding means therefor, of guard-combs at each side of the cutting edge of the razor-blade, adjustable means for supporting the same and means for adjusting one of said combs in opposite directions to the cutting edge of the blade.

7. The combination with a handle, a body-frame, a removable razor-blade and holding means therefor, of guard-combs at each side of the cutting edge of the razor-blade, means for maintaining the teeth of said combs in proximity with the cutting edge of the blade but out of contact therewith, adjustable means for supporting the same and means for adjusting one of said combs in opposite directions to the cutting edge of the blade.

8. The combination with a handle, a body-frame, a removable razor-blade and holding means therefor, of guard-combs at each side of the cutting edge of the razor-blade, means for pivotally connecting one comb to the body-frame, a spring for holding said comb in either of two positions, means for pivotally connecting the other comb to the handle structure and providing the same with a limited longitudinal adjustment thereon.

9. The combination with a handle, a body-frame, a removable razor-blade and holding means therefor, of guard-combs at each side of the cutting edge of the razor-blade, means for pivotally connecting one comb to the body-frame, a spring for holding said comb in either of two positions, means for pivotally connecting the other comb to the handle structure and providing the same with a limited longitudinal adjustment thereon and means for providing an adjustment on the pivot of the latter comb.

10. In a device of the character described, the combination with a handle, of a body member comprising a bent portion connected with the handle and broadened out from said point of connection to a width agreeing with the length of the razor-blade and so constructed as to form supports along the opposite ends of the razor.

11. In a device of the character described, the combination with a handle, of a body member comprising a bent portion connected with the handle and broadened out from said point of connection to a width agreeing with the length of the razor-blade and provided with bracket-arms b' b^3 on opposite ends and with a curved central brace b^3.

12. In a device of the character described, the combination with a handle, of a body member comprising a bent portion connected with the handle and broadened out from said point of connection to a width agreeing with the length of the razor-blade and provided with bracket-arms b' b^3 on opposite ends and with a curved central brace b^3, and with end supports or stops b^4 against which the respective end members of the guard-combs contact in use.

13. In a device of the character described, the combination with a handle, of a tubular support member at one end of the handle provided with a groove 7 and with shoulders 9 10, a guard-comb, a sleeve surrounding the said support member a' and a pivotal connection therefrom to the said guard-comb and a projection 8 formed with said sleeve k entering the groove 7 whereby the said sleeve k has a limited movement along said member a' between said shoulders and is prevented from turning by the said groove and projection, said parts forming adjusting devices for the said guard-comb.

14. In a device of the character described, the combination with a handle, of a tubular support member at one end of the handle provided with a groove 7 and with shoulders 9 10, a guard-comb, a sleeve surrounding the said support member a' and a pivotal connection therefrom to the said guard-comb and a projection 8 formed with said sleeve k entering the groove 7 whereby the said sleeve k has a limited movement along said member a' between said shoulders and is prevented from turning by the said groove and projection, said parts forming adjusting devices for said guard-comb, and a screw l passing transversely through the said member a' and at its free end bearing against the said guard-comb for providing a second means of adjusting the same.

15. In a device of the character described, the combination with a handle, a body-frame, a removable razor-blade and holding means therefor, of a guard-comb which in its initial position exteriorly overlies the razor-blade and in use comes between the razor-blade and the adjacent flesh and between the teeth of which the hair draws as cut.

16. In a device of the character described, the combination with a handle, a body-frame, a removable razor-blade and holding means therefor, of a guard-comb, a tubular support member at one end of the handle, a sleeve surrounding the support member and movable thereon and a pivotal connection from the sleeve to the guard-comb whereby a limited longitudinal movement and a swinging movement may be imparted to the guard-comb.

17. In a device of the character described, the combination with a handle, a body-frame, a removable razor-blade and holding means therefor, of a guard-comb, a tubular support member at one end of the handle, a sleeve surrounding the support member and movable thereon, a pivotal connection from the sleeve to the guard-comb and means for limiting the movement of said sleeve and preventing the same from turning.

847,783. RAILWAY-TIE. HENRY S. KILBOURNE, Nashville, Tenn. Filed Apr. 5, 1906. Serial No. 310,015.

Claim.—1. A railway-tie having a composition body presenting a reduced waist with substantially vertical side faces and having enlarged ends presenting inclined side faces, and a cover-plate inclosing the upper portion of said body, said cover-plate having substantially vertical side faces at its middle portion lying against the sides of said waist, and inclined side faces at its ends lying against said inclined side faces of said body.

2. A railway-tie having a composition body, a cover-plate upon the same, bolts passing up through said body and projecting above said cover-plate to secure the rails to said tie, said bolts being arranged in pairs the members whereof are displaced laterally with respect to each other, and diagonal anchor-plates embedded in the under side of said body, passing under the rails, and through which said bolts pass.

847,783.

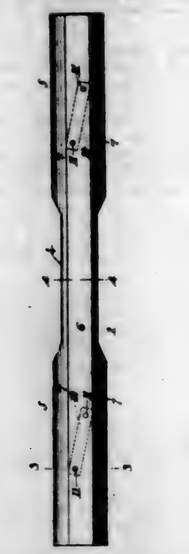

847,784. MACHINE-DRIVING MECHANISM. ROBERT P. KING, Indianapolis, Ind., assignor, by mesne assignments, to The Champion Lever Machine Company, Indianapolis, Ind., a Corporation of Indiana. Filed Aug. 30, 1906. Serial No. 332,591.

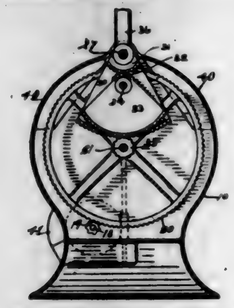

Claim.—A machine-driving mechanism of the kind described including the combination with a driven shaft, a pair of pinions loosely mounted thereon, and similarly-acting clutches for clutching said pinions on said shaft, a lever fulcrumed between its ends, a toothed segment secured to one end of said lever and engaging one of said pinions, and a toothed segment fulcrumed independently of said lever adapted to engage the other pinion, said lever having a series of teeth adapted to engage a series of teeth connected with the independently-mounted toothed segment, said series of teeth being curved concentrically with the fulcrums on the parts with which they are respectively connected.

847,785. AIR-PUMP. PAUL E. KLEINBERG, Croton Falls, N. Y. Filed Feb. 26, 1906. Serial No. 302,920.

Claim.—1. A pump of the compound type comprising the inner and outer tubes 1, 2 separated from each other by an air receiving and compression chamber 27, said inner tube having at its outer end a handle and an air-inlet and at its inner end a cup-piston, an air-outlet opening and a valve therefor, said piston having its vertical yielding sides extended upwardly into the lower end of said chamber 27 around the lower end of said inner tube, and said outer tube having an outlet-nozzle leading from said chamber, the construction described permitting the air under compression below said piston during the downstroke of said inner tube to force its way into said chamber, where it is further compressed during the succeeding upstroke of said inner tube, while at the same time an additional supply of air passes through said valved outlet-opening to the space below said piston; substantially as set forth.

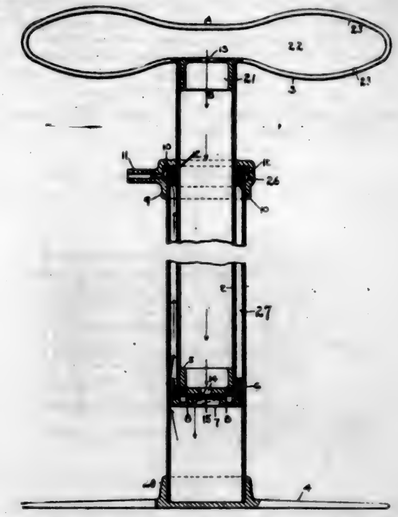

2. A pump comprising the inner and outer tubes, the former having at its outer end a handle and an air-inlet and at its inner end a piston, an outlet-opening and a valve therefor, and said outer tube being separated by a chamber from said inner tube and having upon its upper end the cap and packing, said cap having a space formed in it in communication with said chamber and a nozzle leading from said space, and said chamber around the lower end of the inner tube being occupied by the vertical yielding portion of said piston; substantially as set forth.

3. A pump of the compound type comprising the inner and outer tubes 1, 2 separated from each other by an air receiving and compression chamber 27, said inner tube having at its outer end a handle and an air-inlet and at its inner end the plug 5 containing an air-outlet, the cup-piston, the ring 7 securing said cup-piston and extending outwardly beyond the sides of said inner tube and not to the inner walls of said outer tube, and a valve for said outlet, said piston having its vertical yielding sides extended upwardly into the lower end of said chamber 27 around the lower end of said inner tube, and said outer tube having an outlet-nozzle leading from said chamber, the construction described permitting the air under compression below said piston during the downstroke of said inner tube to force its way into said chamber, where it is further compressed during the succeeding upstroke of said inner tube, while at the same time an additional supply of air passes through said valved outlet-opening to the space below said piston; substantially as set forth.

4. A pump of the compound type comprising an outer tube, an inner reciprocatory member having a handle at its outer end and a cup-piston at its inner end engaging the walls of said tube and said inner member being separated by a chamber from said outer tube, an outlet-nozzle for compressed air from said chamber, and means for admitting air below said piston during the upstroke of said inner member, whereby during each downstroke of said inner member the air admitted below the piston is com-

pressed and forces a passage around said piston into said chamber, and during each upstroke of said piston the air in said chamber is further compressed and additional air is admitted below said piston; substantially as set forth.

5. A pump of the compound type comprising an outer tube, an inner reciprocatory member having a handle at its outer end and a piston at its inner end engaging the walls of said tube and said inner member being separated by a chamber from said outer tube, an outlet-nozzle for compressed air from said chamber, means for admitting air below said piston during the upstroke of said inner member, and means for admitting the air under compression below said piston to said chamber and preventing the return of same, whereby during each downstroke of said inner member the air admitted below the piston is compressed and forced into said chamber, and during each upstroke of said piston the air in said chamber is further compressed and additional air is admitted below said piston; substantially as set forth.

847,786. DRYING APPARATUS. OTTO KOEPFF, Göppingen, Germany. Filed Apr. 10, 1905. Serial No. 254,878.

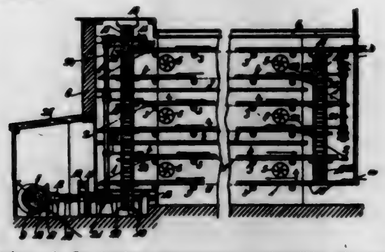

Claim.—1. In drying apparatus, a plurality of carriers having leads disposed in successive planes, means for elevating material to the successive leads, and means for transferring material from the elevating means to the succeeding leads.

2. In a drying apparatus, a plurality of endless conveyers having leads disposed in successive planes, means for elevating material to the successive leads, and means for transferring material from the elevating means to the succeeding leads.

3. In a drying apparatus, a plurality of carriers having leads disposed in successive planes, intermittently-operating means for elevating material to the successive leads, and means for transferring material from the elevating means to the succeeding leads.

4. In a drying apparatus, a plurality of carriers having leads disposed in successive planes, means for elevating material to the successive leads, means for transferring material from the elevating means to the succeeding leads, and means for applying heat to the material.

5. In a drying apparatus, a plurality of endless carriers having leads disposed in successive planes, a plurality of elevators provided with material-supporting members, and means for causing the movement of the elevators to be stopped as the supporting members reach the successive planes occupied by the leads of the carriers.

6. In a drying apparatus, a plurality of endless carriers having leads disposed in successive planes, a plurality of elevators provided with material-supporting members, means for causing the movement of the elevators to be stopped as the supporting members reach the successive planes occupied by the leads of the carriers, and means for transferring material elevated by the supporting members from preceding leads of the carriers to succeeding leads.

7. In a drying apparatus, a plurality of endless carriers having leads disposed in parallel successive planes, a plurality of elevators provided with material-supporting members, means for causing the movement of the elevators to be stopped as the supporting members reach the successive planes occupied by the leads of the carriers, and means for transferring material elevated by the supporting members from preceding leads of the carriers to succeeding leads.

8. In a drying apparatus, a plurality of endless carriers having leads disposed in successive planes, a plurality of elevators provided with material-supporting members, means for causing the movement of the elevators to be stopped as the supporting members reach the successive planes occupied by the leads of the carriers, means for transferring material elevated by the supporting members from preceding leads of the carriers to succeeding leads, and means for supplying a drying medium to the material being treated.

9. A drying apparatus embodying endless carriers disposed in a plurality of planes, and a plurality of elevators provided with material-supporting members coacting with the carriers.

10. In a drying apparatus embodying endless carriers disposed in a plurality of planes, a plurality of elevators provided with material-supporting members coacting with the carriers, and means for transferring elevated material from the supporting members onto the successive leads of the carriers.

847,787. SEESAW. GEORGE S. KYLE, Chambersburg, Pa., assignor of one-half to Quigley Hafer, Chambersburg, Pa. Filed Nov. 16, 1905. Serial No. 287,663.

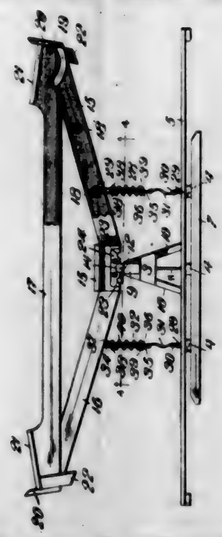

Claim.—1. In a seesaw, the combination of a support, an oscillatory seat-frame pivotally mounted thereon, and resilient devices upon said support to receive the feet of the operators upon said frame.

2. In a seesaw, the combination of a support, an oscillatory seat-frame pivotally mounted thereon, and spring-boards upon said support adapted to receive the feet of the operators upon said frame.

3. In a seesaw, the combination of a centrally-supported spring-platform, an oscillatory seat-frame pivotally mounted above the center of said platform, and elastic devices between said platform and said frame.

847,788. BORING-BAR. RAYMOND F. LACH, Columbus, Ohio. Filed Mar. 26, 1906. Serial No. 308,015.

Claim.—1. In a boring-tool, the combination of the bar, a right and left hand threaded screw mounted transversely therein, cutting-tools to be moved by said screw, oppositely-movable adjustment-blocks located between the screw and the tools, said adjustment-blocks engaged by the screw and engaging the tools, bearings for the adjustment-blocks integral with the bar and between the screw and the tool, and means for clamping the tool and blocks together against said bearings.

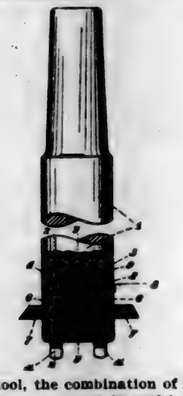

2. In a boring-tool, the combination of the bar provided with a transverse opening, a right and left hand threaded screw in said opening but unengaged with the walls thereof, means for securing said screw from longitudinal movement, said bar also provided with an opening below, parallel to, and communicating with the opening for the screw, and said opening being of greater width than the passage-way between said openings whereby bearings are afforded for the adjustment-blocks, oppositely-movable adjustment-blocks seated in the last-described opening, said adjustment-blocks being threaded to be engaged and moved by said screw inward and outward, a tool engaging each of said blocks and independently adjustable with reference thereto, and clamping-screws adapted to press upon said tools in a direction longitudinal to the bar to bind said adjustment-blocks against said seats and fix them and the tools in adjustable position.

847,789. ROLLER ATTACHMENT FOR SLED-RUNNERS. WILLIAM J. LA FLEUR, Northampton, Mass. Filed Apr. 19, 1906. Serial No. 312,542.

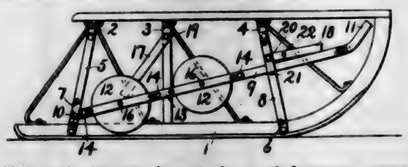

Claim.—1. An attachment, for a sled-runner, comprising confining-straps adapted to be suitably supported one in advance of the other lengthwise of the sled on the outside of the same, a lever pivoted at one end to one of said straps and guided by the other of said straps, and a roller carried by said lever outside of the runner.

2. The combination, in an attachment for sled-runners, with a sled, of confining-straps suitably supported one in advance of the other lengthwise of said sled on the outside of the same, a lever having one end pivoted to one of said straps and being guided by the other of said straps, a roller carried by said lever outside of one of the sled-runners, and means to retain the lever in its elevated position and to release it from such position.

3. The combination, in an attachement for sled-runners, with a sled, of confining-straps, suitably supported on the outside of said sled, a lever having one end pivoted to one of said straps and being guided by the other of said straps, a roller carried by said lever, and a keeper pivotally connected with one of the confining-straps and adapted to retain the lever in its depressed position.

4. The combination, in an attachment for sled-runners, with a sled, of confining-straps, suitably supported on the outside of said sled, a lever having one end pivoted to one of said straps and being guided by the other of said straps, a roller carried by said lever, a keeper pivotally connected with one of the confining-straps and adapted to retain the lever in its depressed position, and means for holding the free end of said keeper in place while the keeper is in operative engagement with the lever.

5. The combination, in an attachment for sled-runners, with a sled, of confining-straps, suitably supported on the outside of said sled, a lever having one end pivoted to one of said straps and being guided by the other of said straps, a roller carried by said lever, and a keeper pivoted at one end to a suitable support between the aforesaid straps and adapted to retain the lever in its depressed position.

847,790. DRILL-CHUCK. LAURITS LARSEN, San Francisco, Cal. Filed June 25, 1906. Serial No. 323,335.

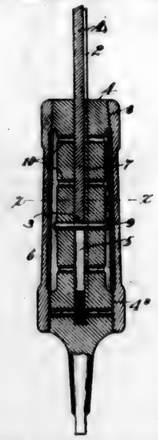

Claim.—1. A chuck consisting of a cylindrical centrally-slotted inner portion having holes made transversely therethrough, and a pin transferable to different holes, said pin serving as a base upon which the end of a drill rests and an exterior sleeve by which the inner portion is clamped upon the drill.

2. A chuck comprising a slotted central portion having transverse holes, and a pin upon which the rear end of a drill is supported, said slotted portion having a tongue adapted to engage a groove in the drill, and an exterior clamping-sleeve.

3. A chuck comprising an exterior sleeve having a portion tapered, and another portion screw-threaded, an interior portion also tapered and screw-threaded and having a longitudinally-disposed channel with a tongue fitting a groove in a drill, said central portion being compressed to clamp the drill by turning it within the exterior sleeve, said portion having holes made transversely therethrough, and a pin changeable in said holes to form a support for the base of the drill.

847,791. BOTTLE-STOPPER. JOHN W. LEE, Washington, D. C. Filed Aug. 31, 1906. Serial No. 332,823.

Claim.—The combination with a bottle-neck, of a lined cap adapted to have its peripheral flange bent around the outer surface of the bottle-mouth and have an annular in-

wardly-projecting ridge formed therein, said ridge projecting into the neck approximately parallel with the inner wall of the neck whereby an externally and internally clamping cap is formed.

847,792. CASK OR VESSEL FROM WHICH LIQUID IS DISCHARGED UNDER PRESSURE. GEORG LIEDNER, Karlsruhe, Germany, assignor to Deutsche Stemseng Waarenfabrik für Canalisation und Chemische Industrie, Friedrichsfeld, Germany. Filed Apr. 15, 1905. Serial No. 255,821.

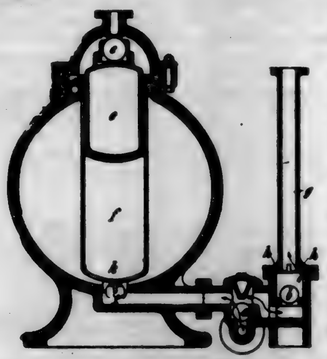

Claim.—1. Pressure-discharge devices for liquid-containing casks, comprising a pressure vessel having an inlet for liquid, an air-discharge and a compressed-air inlet, each controlled by a valve, a float for the valve of the air-discharge, and a second float for the valve of the compressed-air inlet, the said floats being in the same axial line.

2. Pressure-discharge devices for liquid-containing casks, comprising a pressure vessel having an inlet for liquid, an air-discharge and a compressed-air inlet, each controlled by a valve, a float for the valve of the air-discharge, and a second float for the valve of the compressed-air inlet, the said floats being in the same axial line and the two floats occupying a vertical position within the said pressure vessel.

3. Pressure-discharge devices for liquid-containing casks, comprising a pressure vessel having an inlet for liquid, an air-discharge and a compressed-air inlet, each controlled by a valve, a float for the valve of the air-discharge, and a second float for the valve of the compressed-air inlet, the said floats being in a vertical position and in the same axial line and the lowermost one thereof having a bell-recess in its bottom.

4. Pressure-discharge devices for liquid-containing casks, comprising a pressure vessel having an inlet for liquid, an air-discharge and a compressed-air inlet, each controlled by a valve, a float for the valve of the air-discharge, and a second float for the valve of the compressed-air inlet, one of said floats working within the other and the two being slidable with reference to each other.

5. Pressure-discharge devices for liquid-containing casks, comprising a pressure vessel having an inlet for liquid, an air-discharge and a compressed-air inlet, each controlled by a valve, a float for the valve of the air-discharge, and a second float for the valve of the compressed-air inlet, the said floats being in vertical position, and in the same axial line the lowermost one thereof having guides therefor working in the inlet for the liquid to the pressure vessel.

6. Pressure-discharge devices for liquid-containing casks, comprising a pressure vessel having an inlet for liquid, an air-discharge and a compressed-air inlet, each controlled by a valve, a float for the valve of the air-discharge, and a second float for the valve of the compressed-air inlet, the said floats being in the same axial line, the latter being slidable with reference to each other, the lowermost one thereof having a bell-recess in its bottom and provided with guides working in the inlet for the liquid to the pressure vessel.

7. Pressure-discharge devices for liquid-containing casks, comprising a pressure vessel having an inlet for liquid, an air-discharge and a compressed-air inlet, each controlled by a valve, separate floats for the valves for the air-discharge and compressed-air inlet, one of said valves working within the other telescopically and the two being disposed in a vertical position within the pressure vessel, the float for the said compressed-air inlet being provided with supporting means therefor at its upper edge seated upon the valve of the compressed-air inlet.

847,793. ROAD-GRADER. WINFIELD S. LIVENGOOD, Kansas City, Mo., assignor to Smith & Sons Mfg. Co., Kansas City, Mo. Filed June 18, 1904. Serial No. 213,066.

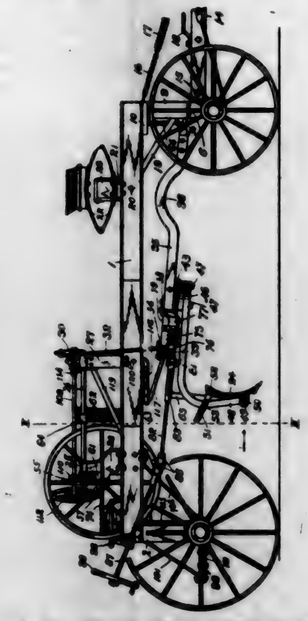

Claim.—1. In a wheeled grader, a scraper supported by two depending shafts, a horizontally-disposed gear-wheel supporting said shanks, a worm engaging the gear-wheel, and means for rotating said worm; substantially as described.

2. In a wheeled grader, a pair of rearwardly-diverging scraper-beams, means for raising and lowering their forward ends, a ring secured to their rearward ends, a geared ring rotatably mounted on said ring, self-locking means for operating said geared ring, two depending shanks supported by the geared ring, a scraper secured to the shanks, means for supporting the inner ring and also the ends of said beams, and means for laterally shifting the scraper, substantially as described.

3. In a wheeled grader, a pair of rearwardly-diverging scraper-beams connected at their forward ends to a shank, said shank being vertically movable, a chain connected to said shank and extending upwardly and rearwardly, and a windlass for lifting the shank by means of the chain; substantially as described.

4. In a wheeled grader provided at its rear portion with a platform, a pair of rearwardly-extending scraper-beams united at their forward ends, a cable for adjusting said ends vertically, and a windlass for adjusting the cable, said windlass being located near the platform so that it may be operated therefrom.

5. In a wheeled grader, a suitably-supported scraper, a large gear-wheel suitably connected to said scraper, a small gear-wheel intermeshing with the large wheel, means for raising and lowering the scraper, a shaft upon which the small gear is fixed, a telescopic shaft flexibly connected to the small gear-shaft, and means for operating the telescopic shaft.

6. In a wheeled grader, provided at its rear portion with a platform, a suitably-supported scraper, a large gear-wheel suitably connected to said scraper, a small gear-wheel intermeshing with the large wheel, means for adjusting the scraper longitudinally a shaft upon which the small gear is fixed, a telescopic shaft flexibly connected to the small gear-shaft, and an operating-shaft flexibly connected at its forward end to said telescopic shaft and terminating at its rear end near the platform.

7. In a wheeled grader, a transverse sway-bar, a scraper indirectly supported thereby, a shaft having a crank at its lower portion, a rod pivotally connected at its ends to the sway-bar and the crank, worm-gearing for operating the shaft, and means for operating said gearing.

8. In a wheeled grader provided at its rear portion with a platform, a transverse sway-bar, a scraper indirectly supported thereby, a shaft having a crank at its lower portion, a rod pivotally connected at its ends to the sway-bar and the crank, a gear-wheel fixed to the crank-shaft, a worm meshing therewith, a shaft fixed to said worm and extending rearwardly to a point near the platform, and means for operating said shaft.

9. In a wheeled grader, a pair of shanks, a scraper, knees carried by said scraper and pivoted to the shanks, arms pivotally secured to said scraper and provided with a plurality of holes, and pins adapted to extend through holes in the shanks and any of the holes in the arms, whereby the pitch of the scraper may be varied.

10. In a wheeled grader, the combination of a transverse bar, means for adjustably supporting the same, a scraper indirectly supported by said bar, a shaft provided with a crank, a rod 117 connected to the bar and the crank, a gear-wheel fixed to the crank-shaft, a worm intermeshing with said gear-wheel, and means for operating said worm.

11. In a four-wheeled grader, the combination, with a rear axle, of a slidable bolster mounted thereon and extending the full width of the grader-frame, an arch mounted on said bolster, a longitudinal frame, rearwardly supported by said arch, a rack rigidly secured to said axle, parallel thereto, a vertical shaft carried by said arch and bolster, a pinion thereon, engaging the rack, and a hand-wheel on said shaft, a vertically slidable and rotatable rod adapted to lock the pinion, and means for normally holding said rod in engagement with the pinion; substantially as, and for the purpose, described.

12. In a wheeled grader, the combination of a transverse bar, means for supporting the same, a scraper indirectly supported by said bar, a rod 117 connecting said bar to a crank which is fixed upon a shaft 115, a shaft 109 operatively connected to shaft 115, and a hand-wheel mounted on the shaft 109; substantially as described.

13. In a wheeled grader, a frame, a pair of rock-shafts, mounted thereon pivoted with arms, a scraper suitably connected to the arms, and means connected to the rock-shafts to assist in vertically adjusting the scraper.

14. In a wheeled grader, a frame, a pair of rock-shafts mounted thereon provided with arms, a scraper suitably connected to the arms, and springs suitably connected to the rock-shafts to assist in vertically adjusting the scraper.

15. In a wheeled grader, a frame, a pair of rock-shafts mounted thereon provided with arms, a scraper suitably connected to the arms, cams rigidly mounted upon the rock-shafts, and tension-springs connected at their opposite ends to the cams and the frame, substantially as shown.

16. In a wheeled grader, a frame, a pair of rock-shafts mounted thereon provided with arms, a scraper suitably connected to the arms, cams rigidly mounted upon the rock-shafts, tension-springs connected at their opposite ends to the cams and the frame, substantially as shown, worm-gearing for operating the rock-shafts, and independently-mounted hand-wheels for operating the worm-gearing.

17. In a wheeled grader, a scraper suitably supported, a horizontally-disposed gear-wheel suitably connected to the scraper, a sway-bar suitably connected to the scraper for imparting longitudinal movement thereto, a shaft carrying a worm meshing with the gear-wheel, a sleeve connected to the worm-shaft by a universal joint, an intermediate shaft slidingly connected to the sleeve and which rotates the latter, and an operating-shaft connected to the intermediate shaft by means of a universal joint.

847,794. ELECTRICAL APPARATUS. CHARLES N. LORD, Santa Fe, N. Mex. Filed Mar. 7, 1906. Serial No. 304,764.

Claim.—1. The combination with a source of electrical supply, of an insulating-handle provided with sockets insulated from each other, conductors leading from the source of supply to said sockets, and terminals of graphite or like material inserted in said sockets.

2. The combination with a source of electrical supply, of one or more dry-battery cells, lead-wires extending therefrom through the handle, metallic sockets in which said lead-wires terminate, and carbon or like elements inserted in said metallic sockets and projecting beyond the handle.

3. The combination with a source of electrical supply, of conductors leading therefrom, an insulating-handle in which said conductors are received, metal tubes projecting from the end of the handle and having the conductors electrically associated therewith, and carbon or like elements inserted in said metal tubes and having their extremities projecting therefrom, substantially as described.

847,795. BUCKLE. ALBERT K. LOVELL, New York, N. Y. Filed Dec. 24, 1900. Renewed May 14, 1906. Serial No. 316,633.

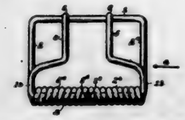

Claim.—1. In a buckle, the combination with a frame the sides of which are provided with inwardly-extending coils forming a support for an attaching-strap on the exterior of said coils, the extremities of said sides terminating at the inner ends of said coils, of a tongue portion journaled in said coils and closing upon said frame.

2. In a buckle, the combination with a frame the sides of which are provided with inwardly-extending coils forming a support for an attaching-strap on the exterior of said coils, said coils being alined and lying in parallel relation to the top rail of said frame, the extremities of said sides terminating at the inner ends of said coils, of a tongue portion journaled in said coils and closing upon said frame.

3. In a buckle, the combination with a frame the sides of which are provided with inwardly-extending coils forming a support for an attaching-strap on the exterior of said coils, the extremities of said sides terminating at the inner ends of said coils, of a tongue portion journaled in said coils and closing upon said frame, said tongue portion being provided with prongs which overlap the top rail of said frame.

4. In a buckle, the combination with a frame, the sides of which are provided with inwardly-extending coils forming a support for an attaching-strap on the exterior of said coils, the extremities of said sides terminating at the inner ends of said coils, of a tongue portion journaled in said coils and closing upon said frame, said tongue portion being provided with prongs having their extremities sharpened and bent at right angles, whereby the said extremities extend over and around the outer side of the top rail of the frame and occupy a position to reënter the strap engaging said prongs.

5. In a buckle, the combination with a frame, of a tongue portion journaled thereon and provided with prongs, the extremities of said prongs being sharpened and bent at right angles, whereby said extremities extend over and around the outer side of the top rail of the frame and occupy a position to reënter the strap engaging said prongs.

6. In a buckle, the combination with a frame the sides of which are provided with inwardly-extending coils forming a support for an attaching-strap on the exterior of said coils, the extremities of said sides terminating at the inner ends of said coils, of a tongue portion journaled in said coils and closing upon the frame, said tongue portion having a plurality of prongs spaced from each other to close upon the frame at separated points.

7. In a buckle, the combination with a frame the sides of which are provided with inwardly-extending coils forming a support for an attaching-strap on the exterior of said coils, the extremities of said sides terminating at the inner ends of said coils, of a tongue portion journaled in said coils and closing upon the frame, said tongue portion having a plurality of prongs spaced from each other to close upon the frame at separated points, and a loop-bar arranged upon the tongue portion and extending between the prongs thereof.

847,796. AUTOMATIC WAGON-BRAKE. JOSEPH H. LOWERY, Neola, Iowa. Filed Apr. 17, 1906. Serial No. 312,233.

Claim.—1. The combination with an axle, hounds connected thereto, and a brake-beam movably supported by the hounds; of a longitudinally-movable spring-pressed tongue pivotally mounted between the hounds, levers pivotally mounted upon the axle and adapted to swing in any direction, said levers being movably connected to and adapted to be operated by the movement of the tongue, and connections between the levers and brake-beam.

2. The combination with an axle, hounds thereon, and a beam movably supported by the hounds; of a casing pivotally mounted between the hounds, a tongue slidably mounted within and projecting from the casing, a slide mounted on the casing and movable with the tongue, a lever loosely engaging the slide and connected to the axle by a universal joint, and means for transmitting motion from the lever to the beam.

3. The combination with an axle, hounds thereon, and a beam movably supported by the hounds; of a casing pivotally mounted between the hounds, a tongue slidably mounted within and projecting from the casing, a slide mounted on the casing and movable with the tongue, oppositely-extending levers loosely engaging the slide, yokes pivotally connected to the axle and constituting bearings for the levers, and connections between the levers and beams.

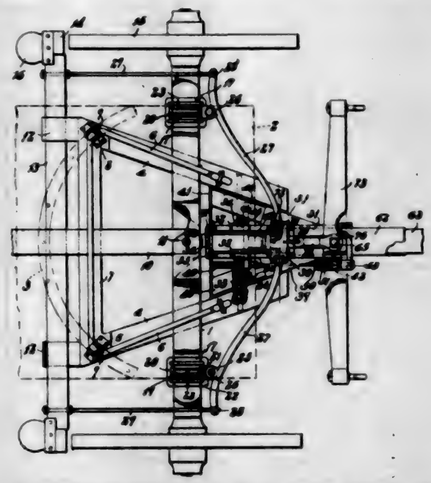

4. The combination with an axle, hounds thereon, and a beam movably supported by the hounds; of a tubular casing pivotally mounted between the hounds, a spring-pressed tongue within and extending from the casing, said tongue adapted to move longitudinally within the casing and to swing upon the pivot of the casing, and means actuated by the longitudinal movement of the tongue for moving the beam.

5. The combination with an axle, hounds thereon, and a beam movably supported by the hounds; of a casing pivotally mounted between the hounds, a tongue slidably mounted within the casing and movable therewith, a spring interposed between the tongue and rear end of the casing, and mechanism actuated by the sliding movement of the tongue for moving the beam.

6. The combination with an axle, hounds thereon, and a beam movably supported by the hounds; of a casing pivotally mounted between the hounds, a tongue slidably mounted within the casing and movable therewith, a spring interposed between the tongue and rear end of the casing, a slide mounted on the casing and connected to and movable with the tongue, and means actuated by the slide and operated by the longitudinal movement of the tongue for actuating the beam.

7. The combination with an axle, hounds thereon, and a beam movably supported by the hounds; of a casing pivotally mounted between the hounds, a tongue slidably mounted within the casing and movable therewith, a spring interposed between the tongue and rear end of the casing, a slide mounted on the casing and connected to and movable with the tongue, levers loosely engaging and extending in opposite directions from the slide, universal joints connected to the axle and constituting fulcrums for the levers, and connections between the levers and beam.

8. The combination with an axle, hounds, and a brake-beam movably carried by the hounds; of a casing pivotally mounted between the hounds, a spring-pressed tongue slidably mounted within and movable with the casing, oppositely-extending levers adapted to be operated by the longitudinal movement of the tongue, universal connections between the levers and axle and constituting fulcrums for the levers, connections between the levers and brake-beam, and means for locking the tongue against longitudinal movement.

9. The combination with an axle, hounds thereon, a brake-beam movably supported by the hounds; of a casing pivotally mounted between the hounds, a spring-pressed tongue slidably mounted within and movable with the casing, mechanism operated by the longitudinal movement of the tongue for actuating the beam, a locking-finger pivotally mounted upon the casing, and means for swinging said finger into the path of the tongue to hold it against longitudinal movement.

10. The combination with an axle, hounds thereon, a brake-beam movably supported by the hounds; of a casing pivotally mounted between the hounds, a spring-pressed tongue slidably mounted within and movable with the casing, mechanism operated by the longitudinal movement of the tongue for actuating the beam, a locking-finger pivotally mounted upon the casing, means for swinging said finger into the path of the tongue to hold it against longitudinal movement, and means for securing the locking-finger in the path of the tongue.

11. The combination with an axle, hounds thereon, and a brake-beam movably carried by the hounds; of a casing interposed between the hounds, tubular extensions thereon, tongue-hounds within the extensions, means for binding said tongue-hounds to the casing, bearing-pins detachably connected to the sides of the casing and extending through the tongue-hounds and into the axle-hounds, a removable head upon the casing, a tongue slidably mounted within the casing, a spring within the casing and interposed between the tongue and the head, and mechanism operated by the longitudinal movement of the tongue for actuating the brake-beam.

12. In a device of the character described the combination with an axle, and hounds, and a vehicle-body supported thereabove; of a casing mounted between the hounds, a tongue slidably mounted within the casing, a locking device for holding the tongue against movement within the casing, guides upon the body, a depressible slide mounted thereon, a flexible connection between said slide and locking-finger, resilient means for holding the locking device normally retracted and the slide normally raised, means for automatically locking the slide in lowered position, and a releasing-lever connected to said means.

13. The combination with an axle, hounds, and a brake-beam movably carried by the hounds; of a longitudinally-movable tongue pivotally connected to the hounds, oppositely-extending levers adapted to be actuated by the longitudinal movement of the tongue, universal connections between the levers and axle, said connections constituting fulcrums for the levers, and connections between the levers and brake-beam.

847,797. FILLING-FINGER. WILLIAM E. LYFORD, Thompsonville, Conn., assignor to The Hartford Carpet Corporation, Thompsonville, Conn., a Corporation of Connecticut. Filed June 28, 1906. Serial No. 323,805.

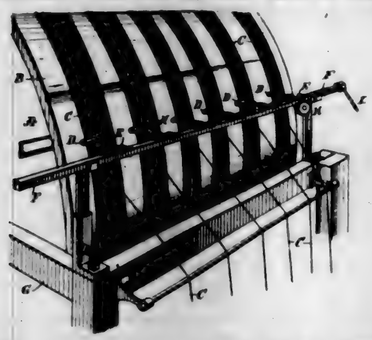

Claim.—1. A filling-finger for yarn-printing machines, provided with a yarn-guide, and having a portion for engagement with the yarn already laid on the printing-drum and a portion for engaging the last convolution to press the same sidewise against the preceding one.

2. A filling-finger for yarn-printing machines, having a yarn-guide and a presser-foot, arranged one adjacent to the other and forming a shoulder between them.

3. A filling-finger for yarn-printing machines, having a yarn-guide, and a presser-foot integral with the yarn-guide and having a flat surface for engagement with the yarn already laid on the printing-drum.

4. A yarn-printing machine provided with a printing-drum, a rail, and spring-pressed fingers each having a shank mounted to slide on the said rail, a yarn-guide, and a presser-foot, the latter having a flat face for engagement with the yarn already laid on the printing-drum.

5. A yarn-printing machine provided with a printing-drum, a rail, and spring-pressed fingers each having a shank mounted to slide on the said rail, a yarn-guide, and a presser-foot, the latter having a flat face for engagement with the yarn already laid on the printing-drum, the said yarn-guide and presser-foot forming a shoulder between them.

6. A filling-finger for yarn-printing machines, provided with a yarn-guide, and a presser-foot having a portion for engaging the last convolution to press the same sidewise against the preceding one.

7. A yarn-printing machine provided with a presser-foot having a flat face and a shoulder, the said flat face engaging a plurality of convolutions of the yarn already in position on the printing-drum, and the said shoulder engaging the last convolution to press the same sidewise against the preceding one.

847,798. SELF-PLAYING PIANO. HERMANN MEYER, New York, N. Y. Filed Aug. 3, 1905. Serial No. 272,499.

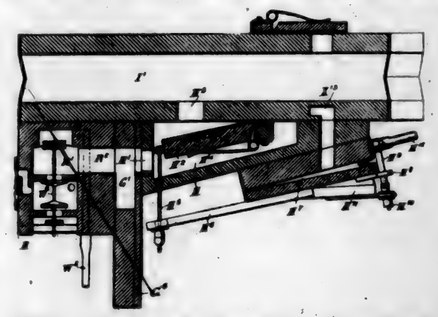

Claim.—1. A self-playing piano having a pianissimo device, a stopping device, and a rewinding device and means whereby it is controlled by the combined action of the said pianissimo device and the said stopping device.

2. A self-playing piano having a pianissimo device, a stopping device, a rewinding device and means whereby it is controlled by the combined action of the said pianissimo device and the said stopping device, a tracker-board connected with the said pianissimo device and the said stopping device, and a note-sheet having apertures for controlling the tracker-board openings to the said pianissimo device and the said stopping device.

3. A self-playing piano having a tracker-board, a note-sheet passing over the said tracker-board, an actuating device for a movable part of the piano-action, a stopping device for the piano, a rewinding device for the said note-sheet, and pneumatics, of which one releases the said controlling device and is connected with the said tracker-board, another pneumatic governs the said stopping device and is connected with the tracker-board, and the third pneumatic actuating the said rewinding device and controlled by the other two pneumatics.

4. A self-playing piano provided with a hammer-rail, of a pneumatic actuating device for throwing the said hammer-rail into an active position and holding it pneumatically therein, a pneumatic releasing device for releasing the said actuating device to allow the hammer-rail to return to its normal inactive position, a tracker-board and connections therefrom to the said pneumatic actuating device and independent connections therefrom to the said

2. In a buckle, the combination with a frame the sides of which are provided with inwardly-extending coils forming a support for an attaching-strap on the exterior of said coils, said coils being alined and lying in parallel relation to the top rail of said frame, the extremities of said sides terminating at the inner ends of said coils, of a tongue portion journaled in said coils and closing upon said frame.

3. In a buckle, the combination with a frame the sides of which are provided with inwardly-extending coils forming a support for an attaching-strap on the exterior of said coils, the extremities of said sides terminating at the inner ends of said coils, of a tongue portion journaled in said coils and closing upon said frame, said tongue portion being provided with prongs which overlap the top rail of said frame.

4. In a buckle, the combination with a frame, the sides of which are provided with inwardly-extending coils forming a support for an attaching-strap on the exterior of said coils, the extremities of said sides terminating at the inner ends of said coils, of a tongue portion journaled in said coils and closing upon said frame, said tongue portion being provided with prongs having their extremities sharpened and bent at right angles, whereby the said extremities extend over and around the outer side of the top rail of the frame and occupy a position to reënter the strap engaging said prongs.

5. In a buckle, the combination with a frame, of a tongue portion journaled thereon and provided with prongs, the extremities of said prongs being sharpened and bent at right angles, whereby said extremities extend over and around the outer side of the top rail of the frame and occupy a position to reënter the strap engaging said prongs.

6. In a buckle, the combination with a frame the sides of which are provided with inwardly-extending coils forming a support for an attaching-strap on the exterior of said coils, the extremities of said sides terminating at the inner ends of said coils, of a tongue portion journaled in said coils and closing upon the frame, said tongue portion having a plurality of prongs spaced from each other to close upon the frame at separated points.

7. In a buckle, the combination with a frame the sides of which are provided with inwardly-extending coils forming a support for an attaching-strap on the exterior of said coils, the extremities of said sides terminating at the inner ends of said coils, of a tongue portion journaled in said coils and closing upon the frame, said tongue portion having a plurality of prongs spaced from each other to close upon the frame at separated points, and a loop-bar arranged upon the tongue portion and extending between the prongs thereof.

847,796. AUTOMATIC WAGON-BRAKE. JOSEPH H. LOWREY, Neola, Iowa. Filed Apr. 17, 1906. Serial No. 312,233.

Claim.—1. The combination with an axle, hounds connected thereto, and a brake-beam movably supported by the hounds; of a longitudinally-movable spring-pressed tongue pivotally mounted between the hounds, levers pivotally mounted upon the axle and adapted to swing in any direction, said levers being movably connected to and adapted to be operated by the movement of the tongue, and connections between the levers and brake-beam.

2. The combination with an axle, hounds thereon, and a beam movably supported by the hounds; of a casing pivotally mounted between the hounds, a tongue slidably mounted within and projecting from the casing, a slide mounted on the casing and movable with the tongue, a lever loosely engaging the slide and connected to the axle by a universal joint, and means for transmitting motion from the lever to the beam.

3. The combination with an axle, hounds thereon, and a beam movably supported by the hounds; of a casing pivotally mounted between the hounds, a tongue slidably mounted within and projecting from the casing, a slide mounted on the casing and movable with the tongue, oppositely-extending levers loosely engaging the slide, yokes pivotally connected to the axle and constituting bearings for the levers, and connections between the levers and beams.

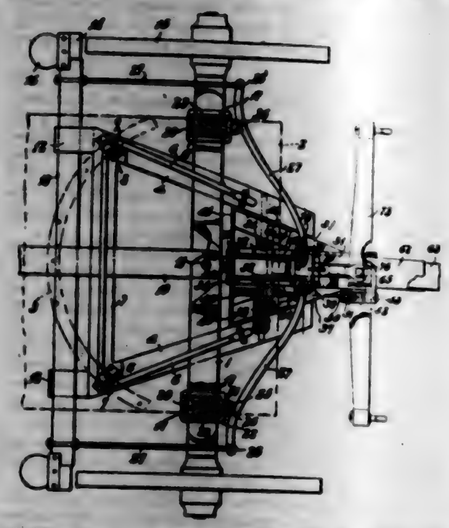

4. The combination with an axle, hounds thereon, and a beam movably supported by the hounds; of a tubular casing pivotally mounted between the hounds, a spring-pressed tongue within and extending from the casing, said tongue adapted to move longitudinally within the casing and to swing upon the pivot of the casing, and means actuated by the longitudinal movement of the tongue for moving the beam.

5. The combination with an axle, hounds thereon, and a beam movably supported by the hounds; of a casing pivotally mounted between the hounds, a tongue slidably mounted within the casing and movable therewith, a spring interposed between the tongue and rear end of the casing, and mechanism actuated by the sliding movement of the tongue for moving the beam.

6. The combination with an axle, hounds thereon, and a beam movably supported by the hounds; of a casing pivotally mounted between the hounds, a tongue slidably mounted within the casing and movable therewith, a spring interposed between the tongue and rear end of the casing, a slide mounted on the casing and connected to and movable with the tongue, and means actuated by the slide and operated by the longitudinal movement of the tongue for actuating the beam.

7. The combination with an axle, hounds thereon, and a beam movably supported by the hounds; of a casing pivotally mounted between the hounds, a tongue slidably mounted within the casing and movable therewith, a spring interposed between the tongue and rear end of the casing, a slide mounted on the casing and connected to and movable with the tongue, levers loosely engaging and extending in opposite directions from the slide, universal joints connected to the axle and constituting fulcrums for the levers, and connections between the levers and beam.

8. The combination with an axle, hounds, and a brake-beam movably carried by the hounds; of a casing pivotally mounted between the hounds, a spring-pressed tongue slidably mounted within and movable with the casing, oppositely-extending levers adapted to be operated by the longitudinal movement of the tongue, universal connections between the levers and axle and constituting fulcrums for the levers, connections between the levers and brake-beam, and means for locking the tongue against longitudinal movement.

9. The combination with an axle, hounds thereon, a brake-beam movably supported by the hounds; of a casing pivotally mounted between the hounds, a spring-pressed tongue slidably mounted within and movable with the casing, mechanism operated by the longitudinal movement of the tongue for actuating the beam, a locking-finger pivotally mounted upon the casing, and means for swinging said finger into the path of the tongue to hold it against longitudinal movement.

10. The combination with an axle, hounds thereon, a brake-beam movably supported by the hounds; of a casing pivotally mounted between the hounds, a spring-pressed tongue slidably mounted within and movable with the casing, mechanism operated by the longitudinal movement of the tongue for actuating the beam, a locking-finger pivotally mounted upon the casing, means for swinging said finger into the path of the tongue to hold it against longitudinal movement, and means for securing the locking-finger in the path of the tongue.

11. The combination with an axle, hounds thereon, and a brake-beam movably carried by the hounds; of a casing interposed between the hounds, tubular extensions thereon, tongue-hounds within the extensions, means for binding said tongue-hounds to the casing, bearing-pins detachably connected to the sides of the casing and extending through the tongue-hounds and into the axle-hounds, a removable head upon the casing, a tongue slidably mounted within the casing, a spring within the casing and interposed between the tongue and the head, and mechanism operated by the longitudinal movement of the tongue for actuating the brake-beam.

12. In a device of the character described the combination with an axle, and hounds, and a vehicle-body supported thereabove; of a casing mounted between the hounds, a tongue slidably mounted within the casing, a locking device for holding the tongue against movement within the casing, guides upon the body, a depressible slide mounted thereon, a flexible connection between said slide and locking-finger, resilient means for holding the locking device normally retracted and the slide normally raised, means for automatically locking the slide in lowered position, and a releasing-lever connected to said means.

13. The combination with an axle, hounds, and a brake-beam movably carried by the hounds; of a longitudinally-movable tongue pivotally connected to the hounds, oppositely-extending levers adapted to be actuated by the longitudinal movement of the tongue, universal connections between the levers and axle, said connections constituting fulcrums for the levers, and connections between the levers and brake-beam.

847,797. FILLING-FINGER. WILLIAM E. LYFORD, Thompsonville, Conn., assignor to The Hartford Carpet Corporation, Thompsonville, Conn., a Corporation of Connecticut. Filed June 28, 1906. Serial No. 323,805.

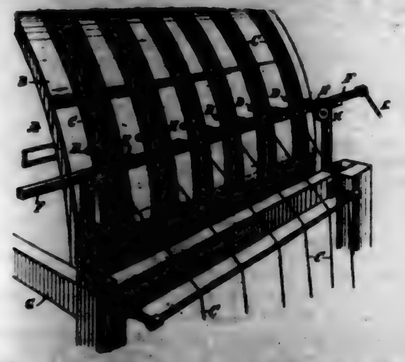

Claim.—1. A filling-finger for yarn-printing machines, provided with a yarn-guide, and having a portion for engagement with the yarn already laid on the printing-drum and a portion for engaging the last convolution to press the same sidewise against the preceding one.

2. A filling-finger for yarn-printing machines, having a yarn-guide and a presser-foot, arranged one adjacent to the other and forming a shoulder between them.

3. A filling-finger for yarn-printing machines, having a yarn-guide, and a presser-foot integral with the yarn-guide and having a flat surface for engagement with the yarn already laid on the printing-drum.

4. A yarn-printing machine provided with a printing-drum, a rail, and spring-pressed fingers each having a shank mounted to slide on the said rail, a yarn-guide, and a presser-foot, the latter having a flat face for engagement with the yarn already laid on the printing-drum.

5. A yarn-printing machine provided with a printing-drum, a rail, and spring-pressed fingers each having a shank mounted to slide on the said rail, a yarn-guide, and a presser-foot, the latter having a flat face for engagement with the yarn already laid on the printing-drum, the said yarn-guide and presser-foot forming a shoulder between them.

6. A filling-finger for yarn-printing machines, provided with a yarn-guide, and a presser-foot having a portion for engaging the last convolution to press the same sidewise against the preceding one.

7. A yarn-printing machine provided with a presser-foot having a flat face and a shoulder, the said flat face engaging a plurality of convolutions of the yarn already in position on the printing-drum, and the said shoulder engaging the last convolution to press the same sidewise against the preceding one.

847,798. SELF-PLAYING PIANO. HERMANN MEYER, New York, N. Y. Filed Aug. 3, 1905. Serial No. 272,499.

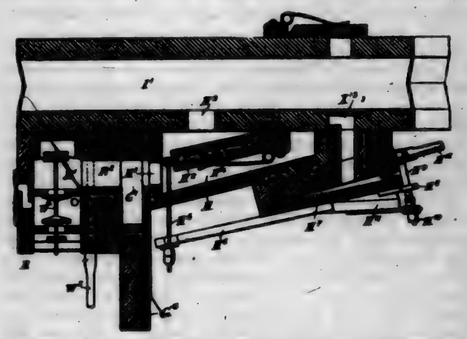

Claim.—1. A self-playing piano having a pianissimo device, a stopping device, and a rewinding device and means whereby it is controlled by the combined action of the said pianissimo device and the said stopping device.

2. A self-playing piano having a pianissimo device, a stopping device, a rewinding device and means whereby it is controlled by the combined action of the said pianissimo device and the said stopping device, a tracker-board connected with the said pianissimo device and the said stopping device, and a note-sheet having apertures for controlling the tracker-board openings to the said pianissimo device and the said stopping device.

3. A self-playing piano having a tracker-board, a note-sheet passing over the said tracker-board, an actuating device for a movable part of the piano-action, a stopping device for the piano, a rewinding device for the said note-sheet, and pneumatics, of which one releases the said controlling device and is connected with the said tracker-board, another pneumatic governs the said stopping device and is connected with the tracker-board, and the third pneumatic actuating the said rewinding device and controlled by the other two pneumatics.

4. A self-playing piano provided with a hammer-rail, of a pneumatic actuating device for throwing the said hammer-rail into an active position and holding it pneumatically therein, a pneumatic releasing device for releasing the said actuating device to allow the hammer-rail to return to its normal inactive position, a tracker-board and connections therefrom to the said pneumatic actuating device and independent connections therefrom to the said

pneumatic releasing device, a note-sheet having apertures controlling the tracker-board openings for the said devices, a rewinding mechanism for the said note-sheet, a stopping device for the piano and pneumatic means for actuating the rewinding mechanism, the said pneumatic means being controlled by the said pneumatic releasing device and the said stopping device.

5. A self-playing piano provided with a hammer-rail, of a pneumatic actuating device for throwing the said hammer-rail into an active position and holding it pneumatically therein, a pneumatic releasing device for releasing the said actuating device to allow the hammer-rail to return to its normal inactive position, a tracker-board and connections therefrom to the said pneumatic actuating device and independent connections therefrom to the said pneumatic releasing device, a note-sheet having apertures controlling the tracker-board openings for the said devices, a motor, a pneumatic stopping device for the said motor and connections between the said pneumatic stopping device and the tracker-board, a rewinding mechanism for the said note-sheet, and pneumatic means for actuating the rewinding mechanism, the said pneumatic means being controlled by the said pneumatic releasing device and the said stopping device.

6. A self-playing piano provided with suction-bellows having a suction-chamber, a valve-chamber having a valve normally open, a connection between the said chambers and controlled by the said valve, action-pneumatics, valve-chests for the said action-pneumatics and in communication with the said valve-chamber, pneumatic means for controlling the said valve, and a pneumatically-controlled locking device for holding the said valve normally open.

7. A self-playing piano provided with suction-bellows having a suction-chamber, a valve-chamber having a valve normally open, a connection between the said chambers and controlled by the said valve, action-pneumatics, valve-chests for the said action-pneumatics and in communication with the said valve-chamber, pneumatic means for opening the said valve and releasing it for the valve to close, and a pneumatically-controlled locking device for locking and unlocking the said pneumatic means.

8. A self-playing piano provided with suction-bellows having a suction-chamber, a valve-chamber having a valve normally open, a connection between the said chambers and controlled by the said valve, action-pneumatics, valve-chests for the said action-pneumatics and in communication with the said valve-chamber, pneumatic means for opening the said valve and releasing it for the valve to close, a pneumatically-controlled locking device for locking and unlocking the said pneumatic means, a tracker-board, and a note-sheet having apertures controlling the tracker-board openings to the said pneumatic means and the said pneumatically-controlled locking device.

9. A self-playing piano provided with suction-bellows having a suction-chamber, a valve-chamber having a valve normally open, a connection between the said chambers and controlled by the said valve, action-pneumatics, valve-chests for the said action-pneumatics and in communication with the said valve-chamber, pneumatic means for controlling the said valve, a tracker-board, and a note-sheet having apertures controlling the tracker-board openings to the said pneumatic means for opening the said valve for locking it in an open position and for releasing the said valve.

10. A self-playing piano provided with action-pneumatics, a valve-chest for the same, a suction-chamber, a spring-pressed valve normally open for establishing communication between the said suction-chamber and the said valve-chest, a pneumatic device normally collapsed and connected with the said spring-pressed valve, and a pneumatically-controlled locking device for the said pneumatic to lock the latter in a collapsed position.

11. A self-playing piano provided with action-pneumatics, a valve-chest for the same, a suction-chamber, a spring-pressed valve normally open for establishing communication between the said suction-chamber and the said valve-chest, a pneumatic device normally collapsed and connected with the said spring-pressed valve, a locking device for locking the said pneumatic device in a collapsed position, and a pneumatic releasing device for controlling the said locking device.

12. A self-playing piano provided with action-pneumatics, a valve-chest for the same, a suction-chamber, a spring-pressed valve normally open for establishing communication between the said suction-chamber and the said valve-chest, a pneumatic device normally collapsed and connected with the said spring-pressed valve, a locking device for locking the said pneumatic device in a collapsed position, a pneumatic releasing device for controlling the said locking device, a track-board, and a note-sheet having apertures controlling the tracker-board openings for the said devices.

847,799. MARKER FOR HATS. GEORGE L. R. MILLER, Oxford, Ohio. Filed Dec. 4, 1906. Serial No. 346,217.

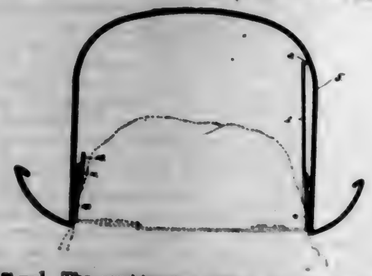

Claim.—1. The combination with a hat band or lining, of a metallic body portion fixed to one side of said band or lining, a fastening portion fixed to the opposite side of said band or lining, and adapted to support said body portion in a horizontal position, said body portion having angularly-disposed slots formed therein to receive the corners of an identification-card.

2. A marker for hats consisting of a body portion adapted to be secured to the perspiration-band thereof, a fastening portion secured to said band and adapted to support said body portion in a horisontal position, and means for securing a card to said body portion.

3. A hat-marker comprising a thin metallic strip constructed to receive identification means, and having integral tongues at one end interlocked with a portion of a hat, a tongue at the opposite end of said strip, and a fastening portion having tongues interlocked with said head-band and having a slot to receive the tongue at the free end of said strip.

4. A hat-marker comprising a thin metallic strip constructed to hold identification means, means carried by one end of said strip for fixedly securing said end of the strip to a portion of a hat, a tongue carried by the free end of said strip, and a fastening portion fixedly secured to a portion of the hat and having a slot to receive said tongue.

847,800. MEANS FOR HANGING KNITTED LEASED HARNESS FOR LOOMS. FRANCIS A. MILLS, Lawrence, Mass. Filed Mar. 24, 1905. Serial No. 251,787.

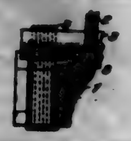

Claim.—1. In a harness, the heddles whereof are composed of a continuous cord, a rib or back-band to which it is fastened, a shaft and a rod for holding said harness, means straddling said rod and said rib or back-band of said harness, and fastened to said shaft.

2. In a knitted harness for looms and in combination a shaft having a groove in its inner edge, a rod in said groove and holding the harness and means for securing the rod and shaft together consisting of a strap passed around the rod and secured to the outside of the shaft.

3. In a knitted harness for looms and in combination a shaft having a groove in its inner edge, a rod in said groove and holding the harness, and means for securing the rod and shaft together consisting of a strap passed around said rod, and through a bore in the shaft and fastened to the outer part of said shaft.

4. In a knitted harness for looms, a shaft having a groove in its inner edge, a rod holding the harness, a strap passed around said rod and through a bore in the shaft, a metallic plate upon the outer edge of the shaft the ends of said strap being passed through and clenched over said metallic plate.

5. In a knitted harness for looms, a shaft having a groove in its inner edge and slotted at its ends, a rod holding the harness, the back-band the ends of which are secured within said shaft-slots and fastened to the rod substantially as described for the purpose stated.

6. In a harness all the heddles whereof are composed of one continuous cord, a shaft, a rod holding the harness, and means for securing said rod to said shaft consisting of a strap passed around said rod and secured to the shaft.

7. In a harness all the heddles whereof are composed of one continuous cord, a shaft, a rod holding the harness, and means securing said rod to said shaft at its outer edge and in line with the strain of the harness.

8. In a knitted harness for looms, a shaft, a rod holding the harness, and means securing said rod to said shaft, straddling the back-band of the harness and fastened to said shaft, whereby the back-band and its connected harness-threads are prevented from being cut or worn.

9. In a harness, all the heddles whereof are composed of one continuous cord, a shaft, a rod parallel with the inner edge thereof spaced slightly therefrom, and means for securing the rod and shaft together, consisting of a strap passed around the rod and secured to the shaft.

10. In a harness, the heddles whereof are composed of a continuous cord, rods and shafts, means for uniting the rods, the shafts, and said harness together, substantially as shown and described.

11. In a harness, the heddles whereof are composed of a continuous cord united to a back or rib band, a shaft, a rod to hold said harness parallel with said shaft, and spaced therefrom, and means passing between the heddles of said harness, and fastened to said rod and said shaft.

12. In a harness for looms, the heddles whereof are composed of a continuous cord knitted to a back or rib band, a shaft, a rod to hold said harness parallel with said shaft, and spaced slightly therefrom and means passing around said rod and fastened to said shaft.

13. In a harness for looms, the heddles whereof are composed of a continuous cord knitted to a back or rib band, a shaft, and a rod to hold said harness means passing between the heddles and crossing said rod to hold the rod and the harness to said shaft.

847,801. TUNNELING APPARATUS. FRANK A. MOFFITT, Chicago, Ill. Filed May 24, 1905. Renewed Sept. 4, 1906. Serial No. 333,096.

Claim.—1. A tunneling apparatus comprising a rotatable shaft, a head mounted thereon, and a bar provided with cutters and being movable in the head transversely of the shaft, the cutters being rigid with the bar and on opposite sides of the axis of the shaft, so that the transverse movement causes one cutter to approach and the other to recede from the center.

2. A tunneling apparatus comprising a rotatable shaft, a head mounted thereon and having a groove, and a bar provided with cutters and being movable in the groove, the cutters being rigid with the bar and on opposite sides of the axis of the shaft, so that the transverse movement causes one cutter to approach and the other to recede from the center.

3. A tunneling apparatus comprising a rotatable shaft, a head mounted thereon and having a groove, a bar provided with cutters and being movable in the groove, and a plate secured to the bar and extending over the head.

4. A tunneling apparatus comprising a rotatable shaft, a head mounted thereon and having a groove, a bar provided with cutters and being movable in the groove, and a plate secured to the bar and extending over the head and having flanges overlapping the sides of the head.

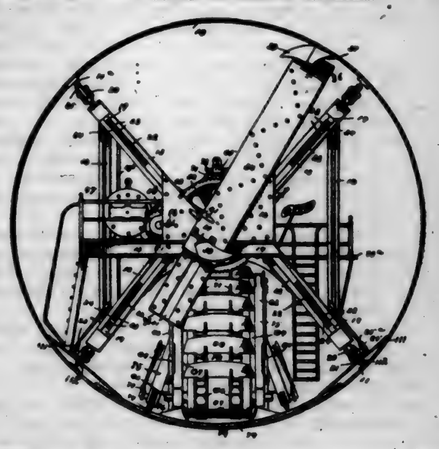

5. A tunneling apparatus comprising a rotatable shaft, a head mounted thereon, a bar provided with cutters and being movable in the head transversely of the shaft, a feed-shaft, and gearing connecting the bar and feed-shaft and arranged to move the bar transversely as the head rotates.

6. A tunneling apparatus comprising a hollow boring-shaft movable lengthwise, a head mounted thereon, a bar provided with cutters and being movable upon the head, a feed-shaft extending through the boring-shaft, and gearing connecting the feed-shaft and bar.

7. A tunneling apparatus comprising a hollow boring-shaft, a head mounted thereon, a bar provided with cutters and being movable upon the head, a rack fixed to the bar, a pinion journaled upon the head and meshing with the rack, and gearing connecting the feed-shaft and pinion.

8. A tunneling apparatus comprising a hollow boring-shaft, a head mounted thereon, a bar provided with cutters and being movable upon the head, a feed-shaft extending through the boring-shaft, gearing connecting the feed-shaft and bar, oppositely-rotatable gears mounted upon the feed-shaft beyond the boring-shaft at the end opposite the bar, and a clutch which may coact with either of said gears.

9. A tunneling apparatus comprising a rotatable and longitudinally-movable shaft, cutters mounted thereon, a feeding-plate coöperating with the shaft, screws projecting from the feeding-plate, pinions having threaded openings to receive the screws, and means for rotating the pinions.

10. A tunneling apparatus comprising a rotatable and longitudinally-movable shaft, cutters mounted thereon, a feeding-plate coöperating with the shaft, screws projecting from the feeding-plate, pinions having threaded openings to receive the screws, a gear-ring provided with internal teeth meshing with the pinions and also provided with external teeth, and gearing engaging the external teeth.

11. A tunneling apparatus comprising a rotatable and longitudinally-movable shaft, cutters mounted thereon, a feeding-plate coöperating with the shaft, a plurality of screws projecting from the feeding-plate, pinions having threaded openings to receive the screws, a gear-ring provided with internal teeth meshing with all of the pinions and also provided with external teeth, and gearing engaging said external teeth.

12. A tunneling apparatus comprising a rotatable and longitudinally-movable shaft, cutters mounted thereon, a feeding-plate coöperating with the shaft, screws projecting from the feeding-plate, pinions having threaded openings to receive the screws, a gear-ring provided with internal teeth meshing with the pinions and also provided with external teeth, oppositely-rotatable gears, one of which engages the external teeth, and a clutch which may coact with either of said gears.

13. The combination with a shield, of a boring-shaft rotatable therein, a bar movable transversely of the boring-shaft, and cutters mounted upon the bar and being separated by a distance greater than the radius of the shield.

14. The combination with a shield, of a boring-shaft rotatable therein, a bar movable transversely of the boring-shaft, cutters mounted upon the bar and being separated by a distance greater than the radius of the shield, and an intermediate cutter rotatable with the shaft and being mounted independently of the bar.

15. The combination with a shield, of tracks extending longitudinally thereof, a frame, blocks movable in the frame, wheels carried by the blocks, threaded stems extending from the blocks, and nuts operating upon the stems and coacting with the frame.

16. The combination with a shield, of a boring-frame supported therein and comprising inclined members converging toward a point at one side of the center of the shield, and conveying mechanism carried in the space between the inclined members.

17. The combination with a shield, of a movable boring-frame supported therein, an independently-movable frame situated within the shield, and conveying mechanism carried by the last-named frame.

18. The combination with a shield, of tracks extending longitudinally thereof, a boring-frame movable upon the tracks, tracks situated between those first named, and a conveying-frame movable upon these intermediate tracks.

19. The combination with a shield, of a frame comprising separated generally X-shaped portions, a boring-shaft journaled near the intersections of the X-shaped portions, bars extending from the frame at one side of the shaft, and a motor supported upon the bars.

20. The combination with a shield, of a movable boring-frame and a movable carrier-frame situated therein, a shaft journaled in each of the frames, a frame pivoted upon each of the shafts and to one another, and gearing carried by the shafts and connected frames.

847,802. DRIVING MECHANISM FOR CENTRIFUGAL SEPARATORS. THOMAS W. MORGAN, Waterloo, Iowa, assignor to Wilbur W. Marsh, Waterloo, Iowa. Filed Jan. 26, 1906. Serial No. 297,943.

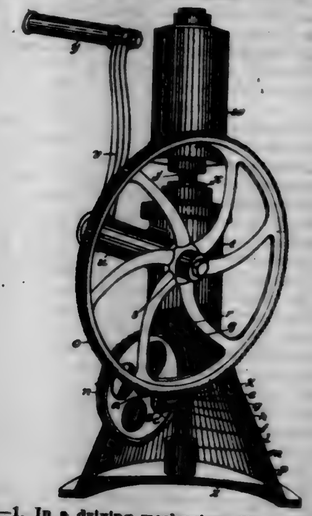

Claim.—1. In a driving mechanism, the combination of a partially-threaded shaft, a detent-bearing nut removably mounted on the threaded end of said shaft, a pinion mounted loosely on the said shaft and provided with a detent, and a spur-wheel adapted to engage with the said pinion, and means for causing the detent on said pinion to engage with the detent on said nut when said pinion is rotated in one direction.

2. In a driving mechanism, the combination of a shaft threaded at one end, a detent-bearing nut removably mounted on the threaded end of said shaft, a pinion mounted loosely on the said shaft and provided with a detent, a spur-wheel adapted to engage with the said pinion, a collar on said shaft, and a spring seated around said shaft between said collar and said pinion and adapted to cause the detent on said pinion to engage the detent on said nut when said pinion is rotated in one direction.

3. In a driving mechanism, the combination of a grooved shaft threaded at one end, a detent-bearing nut removably mounted on the threaded end of said shaft, a pinion mounted loosely on the said shaft and provided with a detent, a spur-wheel adapted to engage with the said pinion, a collar on said shaft, a split washer mounted in the groove of said shaft, and a spring seated around said shaft between said collar and said pinion and adapted to cause the detent on said pinion to engage with the detent on said nut when said pinion is rotated in one direction.

4. In a driving mechanism for centrifugal separators, a combination of a shaft threaded at one end, a detent-bearing nut removably mounted on the threaded end of said shaft, a pinion mounted loosely on the said shaft and provided with a detent, a spur-wheel adapted to engage with the said ratchet, means for causing the detent on said pinion to engage with the detent on said nut when said pinion is rotated in one direction, a spiral-gear wheel mounted fast on said shaft, a vertical shaft, and a spiral pinion mounted fast on said vertical shaft and adapted to engage with said spiral-gear wheel.

5. In a driving mechanism for centrifugal separators, the combination of a shaft threaded at one end, a detent-bearing nut removably mounted on the threaded end of said shaft, a pinion mounted loosely on said shaft and provided with a detent, a spur-wheel adapted to engage with the said pinion, a collar on said shaft, a spring seated around said shaft between said collar and said ratchet, and adapted to cause the detent on said pinion to engage with the detent on said nut when said pinion is rotated in one direction, a spiral-gear wheel mounted fast on said shaft, a vertical shaft, and a spiral pinion mounted fast on said vertical shaft and adapted to engage with said spiral-gear wheel.

6. In a driving mechanism for centrifugal separators, a combination of a grooved shaft threaded at one end, a detent-bearing nut removably mounted on the threaded end of said shaft, a pinion mounted loosely on said shaft and provided with a detent, a spur-wheel adapted to engage with the said pinion, a collar on said shaft, a split washer mounted in the groove in said shaft, a spring seated around said shaft between said washer and said pinion and adapted to cause the detent on said pinion to engage with the detent on said nut when said pinion is rotated in one direction, a spiral-gear wheel mounted fast on said shaft, a vertical shaft, and a spiral pinion mounted fast on said vertical shaft and adapted to engage with said spiral-gear wheel.

847,803. SPINDLE STEP-BEARING. THOMAS W. MORGAN, Waterloo, Iowa, assignor to Wilbur W. Marsh, Waterloo, Iowa. Filed Dec. 14, 1906. Serial No. 347,789.

Claim.—1. A spindle step-bearing, composed of the combination with a spindle having a conical bearing-point, of a conical bearing-seat whose angle to the axis is the same as that of the bearing-point, and antifriction-balls therebetween.

2. A spindle step-bearing, composed of the combination of a spindle, a removable bearing-point in said spindle having a conical bearing end, a conical bearing-seat of the same angle as the conical bearing end of said spindle, and antifriction-balls therebetween.

3. A spindle step-bearing, composed of the combination with a spindle having a conical bearing-point, of a vertically-adjustable conical bearing-seat whose angle to the axis is the same as that of the bearing-point, and antifriction-balls therebetween.

4. A spindle step-bearing, composed of the combination of a spindle, a removable bearing-point in said spindle having a conical bearing end, a vertically-adjustable conical bearing-seat of the same angle as the conical bearing end of said spindle, and antifriction-balls therebetween.

847,804. SAW-SHARPENING MACHINE. JOHN D. McAULAY, Baddeck, Nova Scotia, Canada. Filed Oct. 7, 1905. Serial No. 281,757.

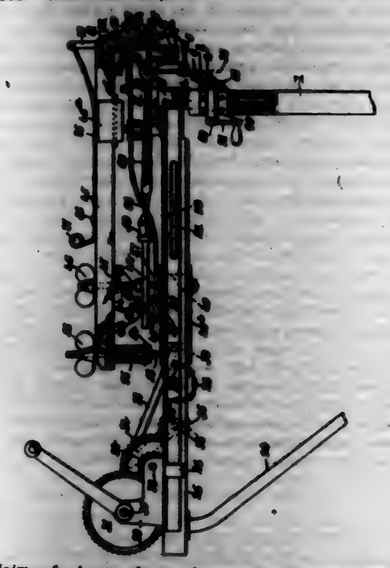

Claim.—1. A saw-sharpening machine comprising a supporting-stand, horizontal parallel members pivoted thereto, a slide located between said members, a block mounted for reciprocation upon the slide, and sharpening devices actuated by said block.

2. A saw-sharpening machine comprising a supporting-stand, a block mounted for reciprocation upon the stand, sharpening devices actuated by said block, said sharpening devices embodying a plate pivoted centrally upon said block and having adjustable file-holders connected therewith.

3. A saw-sharpening machine, comprising a supporting-stand, horizontally-shiftable parallel members pivoted thereto, said members having parallel slots therein, a slide located between the members, having pins working in said slots, a block mounted for reciprocation upon the slide, and sharpening devices actuated by said block.

4. A saw-sharpening machine, comprising a supporting-stand, horizontally-shiftable parallel members pivoted thereto, said members having parallel slots therein, a slide located between the members, having pins working in said slots, a block mounted for reciprocation upon the slide, and sharpening devices actuated by said block, the latter being provided with top and bottom plates moving along the upper and lower surface portions of the slide.

5. A saw-sharpening machine, comprising a supporting-stand, horizontal parallel members pivoted thereto, a slide located between said members, a block mounted for reciprocation upon the slide, and sharpening devices actuated by said block, said slide being provided at opposite sides thereof with clips, in which said members are movably guided.

6. A saw-sharpening machine comprising a supporting-stand, sharpening devices in connection with the stand, comprising a rotatable plate, one or more files supported thereby, a guide-plate, a retaining member for the files, a support for the two latter elements, and rods movably connecting said support with said plate.

7. A saw-sharpening machine, comprising a supporting-stand, horizontal parallel members pivoted thereto, a slide located between said members, a reciprocable block supported by the slide, sharpening devices actuated by said block, said parallel members and the slide being provided with openings adapted to being brought into registry with each other, and pins held by the members for insertion within the registering openings, for securing the members and slide together in the different positions to which the same may be shifted.

8. In a saw-sharpening machine, a reciprocable bar, a plurality of file-holders, hooks engaging the bar and having screw-threaded ends traversing openings in the file-holders, and nuts engaging the screw-threaded ends for securing the file-holders to the bar.

9. A saw-sharpening machine comprising a supporting-stand, a block mounted for reciprocating movement on the stand, files connected with the block, a longitudinally-extending beam pivotally mounted upon the block, a half-disk having a segmental slot and connected with the ends of the beam, a member having on the upper surface thereof a disk provided with a pin working in the segmental slot, and a supporting-plate for the files connected with said member.

847,805. UMBRELLA AND PARASOL. JOHN F. McAVOY, Baltimore, Md. Filed Mar. 21, 1906. Serial No. 307,140.

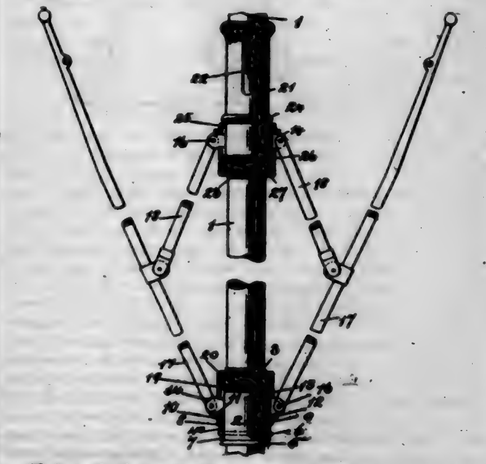

Claim.—1. An umbrella or parasol having a rod; a stationary sleeve near one end of said rod; ribs pivotally sustained about said sleeve; a runner having a screw-threaded end; a ring surrounding said runner and having an annular space between it and the runner; a retaining-collar also surrounding said runner and having an annular space between it and said runner; a plurality of removable plates seated in said annular spaces and clamped between said ring and collar and surrounding the runner; a screw-threaded collar engaging the threads on the runner for clamping the plates between the ring and retaining-collar; a stretcher-bar pivotally connected to each of said plates, and means for pivotally connecting the stretcher-bars and ribs.

2. An umbrella or parasol having a rod, a stationary sleeve near one end of the rod; a ring surrounding the sleeve and having a lateral flange which is provided with a plurality of vertical projections; independent retaining-plates surrounding the sleeve and each plate having lugs which project between two vertical projections of the ring-flange; a rib pivotally connected to the lugs of each of said plates; a runner also on the rod and stretcher-bars pivotally connected to the ribs and runner.

3. An umbrella or parasol having a rod, a stationary sleeve near one end of said rod; ribs pivotally sustained about said sleeve; a runner; a ring surrounding said runner and having a lateral flange which is provided with a plurality of spaced-apart vertical projections; a retaining-collar also around the runner; a plurality of removable plates curved to conform to the circumference of the runner and having laterally-projecting lugs, said plates being held at their upper and lower edges by the ring and collar; stretcher-bars pivotally connected to the lugs of the removable plates and also to the ribs.

847,806. STANCHION. JOHN H. MCGUIRE, Heuvelton, N. Y. Filed Sept. 18, 1906. Serial No. 335,072.

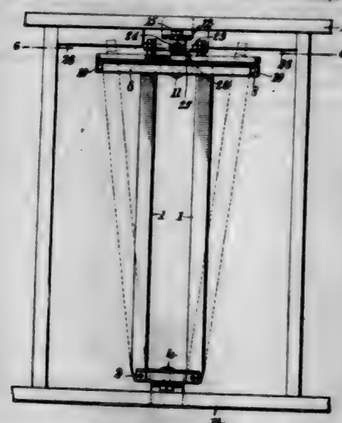

Claim.—1. A stanchion, comprising two substantially vertical bars, the upper ends of said bars being movable in the plane of the bars, means for supporting the lower ends thereof, guides between which the upper ends of said bars are moved, a locking-bar pivoted adjacent the guides and having notches in its opposite sides adapted to engage with the upper ends of the bars when the latter are in their closed position, and means whereby movement of one bar causes a simultaneous movement of the other.

2. A stanchion, comprising an upper support, a lower support, a member slidably secured to the lower support, stanchion-bars pivoted thereto, a member laterally movable in respect to the upper support, means connecting the upper ends of said stanchion-bars to said last-mentioned member, and oppositely-disposed members adapted to receive the upper ends of said bars and prevent lateral movement thereof when said bars are in their open position, each of said members having a V-shaped recess within which said bars operate and whereby the stanchions may be rotated as the bars are moved to their open position.

3. A stanchion, comprising two substantially vertical stanchion-bars, means for supporting the lower ends thereof, guides inclosing the upper ends, a pivot-pin supporting said guides, a locking-bar mounted on said guides and having notches on its opposite sides and adapted to engage with the upper ends of the stanchion-bars, and means for normally pressing said bars apart and forcing the locking-bar into engagement therewith.

4. A stanchion, comprising two stanchion-bars, means for supporting the lower ends thereof, guides inclosing the upper ends of said bars, a locking-bar pivotally mounted on said guides, a plate pivotally mounted upon said locking-bar, means connecting the opposite ends of the plate to the ends of the bar, and a spring in operative engagement with the plate and the bar and adapted to cause their relative rotation, so as to force the stanchion-bars apart and force the locking-bar into engagement therewith.

5. A stanchion, comprising a support having a slot therein, a pivot-pin mounted in said slot, whereby the pin may be moved in a lateral direction, guides mounted on the lower end of said pivot-pin, two stanchion-bars, each having one end thereof inclosed between said guides, means for supporting the opposite ends of said bars, a locking-bar pivotally mounted upon said pivot-pin and having notches in its opposite sides adapted to engage with the upper ends of the bars, a plate mounted on the pivot-pin, means connecting the ends thereof with the ends of the bars, and resilient means in engagement with the plate and locking-bar tending to force the upper ends of the bars apart and force the locking-bar into engagement therewith to prevent outward movement when in their closed position.

6. A stanchion, comprising two stanchion-bars having their upper ends movable in the plane of the bars, means for supporting the lower ends thereof, guides between which the upper ends of said bars are moved, a locking-bar pivoted upon the guides and having tapered ends and notches in its opposite sides adjacent said tapered portions, the tapered portions of said locking-bar adapted to engage with the ends of said bars to force them apart, and the notches of said locking-bar adapted to engage with said bars to hold them in their closed position, and means whereby the movement of one stanchion-bar causes a simultaneous movement of the other stanchion-bar.

7. A stanchion, comprising two stanchion-bars having their upper ends movable in the plane of the bars, means for supporting the lower ends thereof, guides between which the upper ends of said bars are moved, a locking-bar pivoted upon the guides and having tapered ends and notches in its opposite sides adjacent said tapered portions, the tapered portions of said locking-bar adapted to engage with the ends of said bars to force them apart, and the notches of said locking-bar adapted to engage with said bars to hold them in their closed position, means whereby the movement of one stanchion-bar causes a simultaneous movement of the other stanchion-bar, and resilient means tending to force said bars apart and force the locking-bar into engagement therewith.

847,807. MACHINE-DRIVING MECHANISM. HARRISON OSBORN, Indianapolis, Ind., assignor, by mesne assignments, to The Champion Lever Machine Company, Indianapolis, Ind., a Corporation of Indiana. Filed Aug. 4, 1906. Serial No. 329,172.

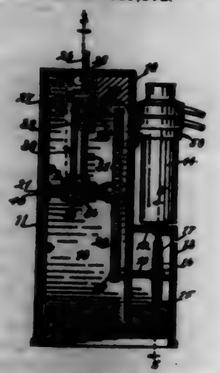

Claim.—1. In a driving mechanism, the combination with a shaft, a pair of pinions loosely mounted thereon, and reversely-operating clutches on the shaft engaging said pinions, of a pair of toothed segments independently

mounted side by side and with parallel toothed peripheral portions engaging said pinions, said sections being provided with a single means for simultaneously oscillating said segments in opposite directions.

2. In a driving mechanism, the combination with a shaft, a pair of pinions loosely mounted thereon, and reversely-operating clutches on the shaft engaging said pinions, of a pair of toothed segments fulcrumed independently at different distances from their toothed peripheral portions and engaging said pinions, one segment having means for oscillating it, and a connection between the segments intermediate their fulcrums, whereby one segment will oscillate the other simultaneously in an opposite direction.

3. In a driving mechanism, the combination with a shaft, a pair of pinions loosely mounted thereon, and reversely-operating clutches on the shaft engaging said pinions, of a pair of toothed segments fulcrumed independently at different distances from their toothed peripheral portions and engaging said pinions, one segment having a hand-lever rigidly secured thereto, and a connection between the segments intermediate their fulcrums, whereby one segment will oscillate the other simultaneously in an opposite direction.

4. In a driving mechanism, the combination with a shaft, a pair of pinions loosely mounted thereon, and reversely-operating clutches on the shaft engaging said pinions, of a pair of toothed segments fulcrumed independently at different distances from their toothed peripheral portions and engaging said pinions, means for oscillating one segment, and a pin in one segment intermediate the fulcrums of the segments, the other segment being slotted to receive said pin, substantially as set forth.

5. In a driving mechanism, the combination with a shaft, a pair of pinions loosely mounted thereon, and reversely-operating clutches on the shaft engaging said pinions, of a pair of toothed segments independently mounted side by side and with parallel toothed peripheral portions engaging said pinions, a single means for simultaneously oscillating said segments in opposite directions, and stops for limiting the movement of said segments so that no segment can at any time leave its pinion.

6. In a driving mechanism, the combination with a shaft, a pair of pinions loosely mounted thereon, and reversely-operating clutches on the shaft engaging said pinions, of a pair of toothed segments engaging said pinions, a single means for simultaneously oscillating said segments in opposite directions, whereby the shaft will receive a constant forward rotary movement, and means for maintaining the momentum of said shaft during the reversals of said segments.

7. A driving mechanism comprising a frame with a vertical plate therein, a hand-lever fulcrumed to said plate, stops to limit the movement of said lever, said hand-lever having a toothed segment forming a continuation of the hand-lever below its fulcrum, a second toothed segment fulcrumed between its ends in said plate beside the first segment and slotted in its upper end, a pin in the first segment entering the slot in the second segment, a shaft in said casing at a right angle to planes through said segments, a pinion loosely mounted on said shaft to engage each segment, and reversely-operating clutches on said shaft for clutching said pinions alternately thereto, substantially as shown and described.

847,808. FARE REGISTER AND RECORDER. WILFRED I. OHMER and ALBERT J. KIRCHNER, Dayton, Ohio, and JOHN W. HILL, Providence, R. I., assignors to The Recording and Computing Machines Company, Dayton, Ohio, a Corporation of Ohio. Filed Dec. 16, 1905. Serial No. 292,068.

Claim.—1. In a machine of the character described, the combination, with a plurality of alined counters, of an operating-shaft arranged parallel with said line of counters, means for rotating said shaft, an actuating member mounted on said shaft, rotating in unison therewith and movable longitudinally thereof, means for moving said actuating member longitudinally of said shaft to bring the same into operative relation with any desired counter, means for actuating said last-mentioned means, and detent mechanism for holding said actuating member in such relation, substantially as described.

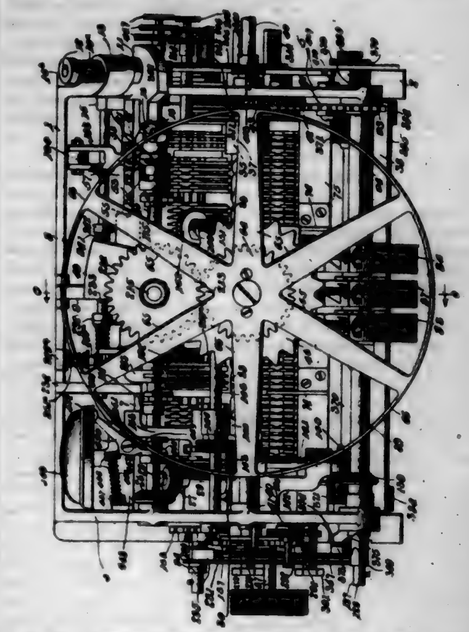

2. In a machine of the character described, the combination, with a plurality of alined counters, of an operating-shaft arranged parallel with said line of counters, operating mechanism for rotating said shaft, an actuating member mounted on said shaft, rotating in unison therewith and movable longitudinally thereof, means for moving said actuating member longitudinally of said shaft to bring the same into operative relation with any desired counter, means for actuating said last-mentioned means, and means controlled by said operating mechanism for positively locking said actuating member against longitudinal movement on the shaft during the operative period of said operating mechanism, substantially as described.

3. In a machine of the character described, the combination, with a plurality of alined counters, of an operating-shaft arranged parallel with said line of counters, means for rotating said shaft, an actuating member mounted on said shaft rotating in unison therewith and movable longitudinally thereof, means for moving said actuating member longitudinally of said shaft to bring the same into operative relation with any desired counter, detent mechanism for holding said actuating member in such relation, and means controlled by said operating mechanism for positively locking said detent to hold said actuating member against longitudinal movement on the shaft during the operative period of said operating mechanism, substantially as described.

4. In a machine of the character described, the combination, with a plurality of alined counters for different specific fares, of an operating-shaft arranged parallel with said line of counters, means for rotating said shaft, an actuating member mounted on said shaft, rotating in unison therewith and movable longitudinally thereof, means for moving said actuating member longitudinally of said shaft to bring the same into operative relation with any desired counter, a fare-indicator, and means for moving said indicator in unison with the longitudinal movement of the actuating member to cause said indicator to indicate the fare corresponding with the counter with which said actuating member is in operative relation, substantially as described.

5. In a machine of the character described, the combination, with a plurality of alined specific fare-counters, and a total-passenger counter, of an operating-shaft arranged parallel with said line of counters, an actuating member mounted on said shaft, rotating in unison therewith and movable longitudinally thereof, means carried by said machine for moving said actuating member longitudinally of said shaft to bring the same into operative relation with any one of the specific-fare counters, means for actuating said last-mentioned means, and a second actuating member fixed on said shaft in operative relation with the total-passenger counter, substantially as described.

6. In a machine of the character described, the combination, with a plurality of alined counters, of an operating-shaft arranged parallel with said line of counters, means for rotating said shaft, an actuating member mounted on said shaft, rotating in unison therewith and movable longitudinally thereof, means for moving said actuating member longitudinally of said shaft to bring the same into operative relation with any desired counter, means for actuating said last-mentioned means, a passenger-indicator, a second actuating member secured on said shaft, and means actuated by said second actuating member for operating said passenger-indicator, substantially as described.

7. In a machine of the character described, the combination, with a plurality of alined specific-fare counters, and a total-passenger counter, of a passenger-indicator, an operating-shaft arranged parallel with the alined counters, means for rotating said shaft, an actuating member mounted on said shaft, rotating in unison therewith and movable longitudinally thereof, means for moving said actuating member longitudinally of said shaft to bring the same into operative relation with any desired specific-fare counter, and two other actuating members fixed on said shaft, one in operative relation with the total-passenger counter, the other in operative relation with the passenger-indicator, substantially as described.

8. In a machine of the character described, the combination, with a plurality of alined counters, of an operating-shaft arranged parallel with said line of counters, means for rotating said shaft, an actuating member mounted on said shaft, rotating in unison therewith and movable longitudinally thereof, a screw-shaft arranged parallel with said operating-shaft, and a carriage engaging said screw-shaft and actuating member to move the latter longitudinally of its shaft when the screw-shaft is rotated, whereby said actuating member may be brought into operative relation with any desired counter, substantially as described.

9. In a machine of the character described, the combination, with a plurality of alined counters, of an operating-shaft arranged parallel with said line of counters, means for rotating said shaft, an actuating member mounted on said shaft, rotating in unison therewith and movable longitudinally thereof, a screw-shaft arranged parallel with said operating-shaft, and a carriage comprising a sleeve mounted to slide on the screw-shaft and having a threaded engagement therewith, and having arms fitted to slide on the operating-shaft and embrace between them the actuating member, substantially as described.

10. In a machine of the character described, the combination, with a plurality of alined specific-fare counters, of an operating-shaft arranged parallel with said line of counters, means for rotating said shaft, an actuating member mounted on said shaft, rotating in unison therewith and movable longitudinally thereof, a screw-shaft arranged parallel with said operating-shaft, a carriage actuated by said screw-shaft and engaging the actuating member to move the same longitudinally of the operating-shaft to bring said actuating member into operative relation with any desired counter, and a fare-indicator rotating in unison with said screw-shaft to indicate the fare corresponding with the counter with which said actuating member is in operative relation, substantially as described.

11. In a machine of the character described, the combination, with a plurality of alined counters, of an operating-shaft arranged parallel with said line of counters, means for rotating said shaft, an actuating member mounted on said shaft, rotating in unison therewith and movable longitudinally thereof, a screw-shaft arranged parallel with said operating-shaft, a carriage actuated by said screw-shaft and engaging the actuating member to move the same along the operating-shaft, a setting-shaft, and gearing connecting said setting-shaft and screw-shaft, whereby a single revolution of the setting-shaft will feed the carriage the entire length of the screw-shaft, substantially as described.

12. In a machine of the character described, the combination, with a plurality of alined specific-fare counters, of an operating-shaft arranged parallel with said line of counters, means for rotating said shaft, an actuating member mounted on said shaft, rotating in unison therewith and movable longitudinally thereof, a screw-shaft arranged parallel with said operating-shaft, a carriage actuated by said screw-shaft and engaging the actuating member to move the same longitudinally of the operating-shaft, a setting-shaft, a fare-indicator, and gearing connecting said screw-shaft and fare-indicator with the setting-shaft, whereby rotation of said setting-shaft operates the screw-shaft and fare-indicator in unison, substantially as described.

13. In a machine of the character described, the combination, with a plurality of alined specific-fare counters, of an operating-shaft arranged parallel with said line of counters, means for rotating said shaft, an actuating member mounted on said shaft, rotating in unison therewith and movable longitudinally thereof, a screw-shaft arranged parallel with said operating-shaft, a carriage actuated by said screw-shaft and engaging the actuating member to move the same longitudinally of the operating-shaft, a setting-shaft, a fare-indicator, and gearing connecting said screw-shaft and fare-indicator with the setting-shaft, whereby rotation of said setting-shaft operates the screw-shaft and fare-indicator in unison, said fare-indicator being provided with detent mechanism whereby it and the actuating member are held in proper operative position, substantially as described.

14. In a machine of the character described, the combination, with a plurality of alined counters, of an operating-shaft arranged parallel with said line of counters, means for rotating said shaft comprising an actuating-sector, a counter-actuating member mounted on said shaft, rotating in unison therewith and movable longitudinally thereof, a screw-shaft arranged parallel with said operating-shaft, a carriage actuated by said screw-shaft and engaging the counter-actuating member to move the same longitudinally of the operating-shaft, a toothed wheel rotating in unison with said screw-shaft, a yielding pawl engaging said toothed wheel, and a locking-bar operated by the actuating-sector to lock the pawl in engagement with the toothed wheel at the beginning of the stroke of said sector, said sector operating said locking-bar to release said pawl at the end of its stroke, substantially as described.

15. In a machine of the character described, the combination, with a plurality of horizontally-alined specific-fare counters, a selective operating mechanism for actuating any one of said counters, and setting mechanism comprising a rotary setting-shaft, of a fare-indicator consisting of a wheel rotating around a vertical axis, having fare-indicating characters on its periphery, and having a gear connection with said setting-shaft to rotate in unison therewith, substantially as described.

16. In a machine of the character described, the combination, with a plurality of horizontally-alined specific-fare counters, a selective operating mechanism for actuating any one of said counters, and setting mechanism comprising a rotatory setting-shaft, of a fare-indicator consisting of a wheel rotating around a vertical axis, having fare-indicating characters on its periphery, and having a gear connection with said setting-shaft to rotate in unison therewith, said indicator-wheel rotating in a horizontal plane at the top of the machine above the remaining mechanism, whereby it may be given a maximum circumference without materially increasing the dimensions of the machine, substantially as described.

17. In a machine of the character described, the combination, with two rows of counters, of two operating-shafts arranged parallel with the respective rows and provided with actuating members to operate the counters, means connecting said shafts to cause them to rotate in unison, and means for rotating one of said shafts, substantially as described.

18. In a machine of the character described, the combination, with a row of station-record counters, of a second row of counters comprising trip and daily-total counters, a primary operating-shaft arranged parallel with said second row of counters and having actuating members to operate the same, means for rotating said primary operating-shaft, a secondary operating-shaft arranged parallel with the row of station-record counters and provided with actuating members to operate the same, and means connecting said primary and secondary shafts to cause them to rotate in unison, substantially as described.

19. In a machine of the character described, the combination, with an alined row of counters, an operating-shaft parallel therewith, an actuating member rotating with and movable longitudinally of said shaft, means carried by said machine for moving said actuating member into operative relation with any desired counter and means for actuating said last-mentioned means, of mechanism controlled by the operator for imparting to said shaft a complete revolution for each operation of said mechanism, substantially as described.

20. In a machine of the character described, the combination, with a counter, of an operating-shaft provided with an actuating member, a pinion loosely mounted on said shaft, a ratchet-clutch connecting said pinion and shaft, and an actuating-sector meshing with said pinion and adapted to impart to said shaft a single revolution in one direction only, substantially as described.

21. In a machine of the character described, the combination, with a counter, of an operating-shaft provided with an actuating member, a pinion loosely mounted on said shaft, a ratchet-clutch connecting said pinion and shaft, and an actuating-sector meshing with said pinion and adapted to impart to said shaft a single revolution in one direction only, said sector moving in a plane parallel with the shaft, substantially as described.

22. In a machine of the character described, the combination, with a counter, of an operating-shaft provided with an actuating member, a pinion loosely mounted on said shaft, a ratchet-clutch connecting said pinion and shaft, and an actuating-sector meshing with said pinion and adapted to impart to said shaft a single revolution in one direction only, said sector being provided with means for limiting its movement in each direction, substantially as described.

23. In a machine of the character described, the combination, with a setting mechanism comprising a toothed detent-wheel, a pawl adapted to engage said wheel, a longitudinally-sliding locking-bar adapted to lock and release said pawl with relation to said wheel, a lever engaging said locking-bar to move the same longitudinally, said lever being provided with adjacent projections, an operating-shaft, and an actuating member for said operating-shaft moving first in one direction and then in the opposite direction, said actuating member having a projection which engages with one of the lever projections at the beginning of its movement to move the locking-bar in one direction, said projection engaging with the other lever projection at the close of its return movement to move the locking-bar in the opposite direction, substantially as described.

24. In a machine of the character described, a detent-wheel provided with V-shaped notches between its teeth, a pawl sliding radially with respect to the said wheel and having a correspondingly-shaped engaging end, a locking-bar engaging said pawl and having an inclined surface which acts to force the pawl positively into full engagement with the detent-wheel, and means for actuating said locking-bar, substantially as described.

25. In a machine of the character described, a plurality of specific-fare counters, some of which are cash-fare counters and others of which are counters for fares other than cash, selective mechanism for operating any one of said counters comprising an actuating member movable longitudinally of said counters, a totalizing-counter for fares other than cash, means for actuating said totalizing-counter when any one of the counters for fares other than cash is actuated, a total cash-adding counter, and means for adding on said cash-adding counter an amount equal to the specific cash fare of any one of the cash-fare counters when said cash-fare counter is actuated, substantially as described.

26. In a machine of the character described, a plurality of alined specific-fare counters, some of which are cash-fare counters, and others of which are for fares other than cash, an operating-shaft arranged parallel with said line of counters, an actuating member rotating with said shaft and movable longitudinally thereof, means for moving said actuating member along said shaft to bring it into operative relation with any one of the counters, means for rotating said shaft to cause said member to actuate said counter, a totalizing-counter for fares other than cash, and a gear operatively connected with said totalizing-counter and extending parallel with the operating-shaft coextensively with the portion thereof occupied by the actuating member in operating the counters for fares other than cash, whereby said actuating member will operate said totalizing-counter whenever one of the counters for fares other than cash is operated, substantially as described.

27. In a machine of the character described, a plurality of specific-fare counters, a selective operating mechanism whereby any one of said counters may be operated, said mechanism comprising a single-revolution operating-shaft and a setting mechanism having a rotatory setting-shaft, a cash-total-adding counter comprising an operating-pinion, a variable gear mounted on the operating-shaft, rotating in unison therewith and meshing with the pinion, and means connecting the setting-shaft and variable gear whereby the number of teeth projected from said gear will correspond with the specific-fare counter for which the setting mechanism is set, substantially as described.

28. In a machine of the character described, a plurality of specific-fare counters, a selective mechanism whereby any one of said counters may be operated, said mechanism comprising a single-revolution operating-shaft, and a setting mechanism having a rotatory setting-shaft, two cash-total-adding counters, an operating-pinion for said counters, ratchet-clutch connections between said pinion and counters whereby said counters are operated in unison but may be separately reset to zero, means for separately resetting to zero said counters, a variable gear mounted on the operating-shaft, rotating in unison therewith and meshing with the pinion, and means connecting the setting-shaft and variable gear whereby the number of teeth projected from said gear will correspond with the specific-fare counter for which the setting mechanism is set, substantially as described.

29. In a machine of the character described, an operating-shaft, in combination with a variable gear comprising two members, one fixed on said shaft and the other normally free to rotate relatively thereto, gear-teeth mounted to slide in the first-mentioned member, the other member having a cam engaging said gear-teeth to project and retract the same into and out of operative position, means for rotating said cam member, means for simultaneously disconnecting said cam member from its rotating mechanism and locking together the two members of the variable gear, and means for imparting to the operating-shaft a single rotation, said last-mentioned means controlling the mechanism whereby the cam member of the variable gear is released from its driving mechanism and locked to the other member, substantially as described.

30. In a machine of the character described, an operating-shaft, in combination with a variable gear mounted thereon and comprising two members, one secured on the shaft, having gear-teeth mounted to slide therein and having a radially-movable spring-actuated detent-pawl, the other member having a cam engaging said gear-teeth to

operate the same, and also having detent-teeth with which said pawl engages, a clutch for driving said cam member, a key-bar for locking said pawl in engagement with the teeth, and means for simultaneously operating said clutch and key-bar, whereby the one is released when the other is engaged, substantially as described.

31. In a machine of the character described, an operating-shaft, a variable gear mounted thereon and comprising two members, one secured on the shaft and having gear-teeth mounted to slide therein, the other normally free to rotate relatively thereto and having a cam to operate the gear-teeth, means for locking together said members when the operating-shaft is rotated, a sleeve mounted to rotate on the operating-shaft and driven from the setting mechanism, said sleeve having a clutch to engage the cam member of the gear, and means for disengaging said clutch when the operating-shaft is rotated, substantially as described.

32. In a machine of the character described, an operating-shaft having a longitudinal groove, a variable gear mounted on said shaft and comprising two members, one fixed on said shaft, having gear-teeth mounted to slide therein, and provided with a hub, a spring-actuated pawl mounted to slide radially in said hub and extending to the groove of the shaft, a key-bar mounted to slide in said groove and notched to receive the inner end of the pawl when in release position, the other member of the gear having a cam to operate the gear-teeth, and a central aperture provided with detent-teeth with which the pawl engages, a clutch for rotating said cam member, and means for simultaneously operating the clutch and key-bar, substantially as described.

33. In a machine of the character described, an operating-shaft and a gear-sector for imparting to the same a single revolution, in combination with a variable gear mounted on said shaft and comprising a member secured on the shaft and having sliding gear-teeth, and a second member rotatable relatively thereto and having a cam to operate the gear-teeth, a clutch for driving said cam member, a locking device locking the two gear members together, and means for simultaneously operating said clutch and locking device, said means comprising a spring-controlled sliding rod, and a projection on the gear-sector to operate said rod against its spring, a lever engaged by said rod to operate the clutch, and an arm secured on said rod and engaging the locking device to operate the same, substantially as described.

34. In a machine of the character described, an operating-shaft and a gear-sector for imparting to the same a single revolution, in combination with a variable gear mounted on said shaft and comprising a member secured on the shaft and having sliding gear-teeth, and a second member rotatable relatively thereto and having a cam to operate the gear-teeth, a clutch for driving said cam member, a locking device locking the two gear members together, and means for simultaneously operating said clutch and locking device, said means comprising a spring-controlled sliding rod, and a projection on the gear-sector to operate said rod against its spring, a lever engaged by said rod to operate the clutch, and an arm secured on said rod and engaging the locking device to operate the same, said arm being provided with a locking-pin and the fixed member of the gear being provided with a recess to receive said locking-pin at the end of the revolution of said gear, substantially as described.

35. In a machine of the character described, an operating-shaft, in combination with a variable gear comprising two members, one fixed on said shaft and the other normally free to rotate relatively thereto, gear-teeth mounted to slide in the first-mentioned member, the other member having a cam to operate said gear-teeth, a clutch for driving the camb member, means for locking the tooth-bearing member against movement when the cam member is free to rotate, and means for simultaneously disconnecting the clutch, locking the two clutch members together and releasing the tooth-bearing member, substantially as described.

36. In a machine of the character described, an operating-shaft and an oscillating gear-sector for imparting to said shaft a single revolution, said shaft having mounted thereon a variable gear comprising a member fixed to said shaft and having movable gear-teeth, and another member rotatable relatively thereto and having a cam to operate the gear-teeth, a clutch for driving said cam member, means for locking the two gear members together, and means for locking the tooth-bearing member against movement when the cam member is free to rotate, and a sliding rod actuated by the gear-sector prior to the beginning of the revolution of the operating-shaft, said rod acting to disconnect the clutch, release the tooth-bearing gear member and lock together the two gear members before the revolution of the operating-shaft begins, substantially as described.

37. In a machine of the character described, a counter having an actuating-pinion, a single-revolution operating-shaft having a variable gear mounted thereon to drive said pinion, a sliding bar provided with a tooth to engage said pinion to arrest its motion, a spring acting to hold said bar normally out of engagement, and a cam projecting on the variable gear arranged to engage said sliding bar toward the close of the revolution of said gear to bring the tooth of said bar into engagement with the pinion, substantially as described.

38. In a machine of the character described, a counter having an actuating-pinion, a single-revolution operating-shaft having a variable gear mounted thereon to drive said pinion, a sliding bar provided with a tooth to engage said pinion to arrest its motion, a spring acting to hold said bar normally out of said engagement, and a cam projection on the variable gear arranged to engage said sliding bar toward the close of the revolution of said gear to bring the tooth of said bar into engagement with the pinion, said cam projection passing clear of said engagement at the end of the revolution, to release the bar, substantially as described.

39. In a machine of the character described, a station-record-printing counter, a resetting-shaft therefor, a station-printing wheel, connecting mechanism between said resetting-shaft and station-printing wheel whereby said wheel is moved one step when said shaft is operated to reset the counter, and means controlled by the operator for setting said station-printing wheel to any desired initial position, substantially as described.

40. In a machine of the character described, a station-record-printing counter, a resetting-shaft therefor, a station-printing wheel, and connecting mechanism between said resetting-shaft and station-printing wheel whereby said wheel is moved one step when said shaft is operated to reset the counter, and means under the control of the operator for reversing at will the direction of movement of said station-printing wheel, substantially as described.

41. In a machine of the character described, a station-record-printing counter, a resetting-shaft therefor, a station-printing wheel, a station-indicator moving in unison with said station-printing wheel, connecting mechanism between the resetting-shaft and station-printing wheel whereby said wheel is moved one step when said shaft is operated to reset the printing-counter, and means under the control of the operator for setting said station-printing wheel and indicator to any desired initial position, substantially as described.

42. In a machine of the character described, a station-record-printing counter, a resetting-shaft therefor, a station-printing wheel, connecting mechanism between said resetting-shaft and station-printing wheel whereby said wheel is moved one step when said shaft is operated to reset the counter, and means under the control of the operator for reversing at will the direction of movement of said station-printing wheel, said means comprising a direction-indicator which visibly indicates the direction of movement of the station-printing wheel, substantially as described.

43. In a machine of the character described, a station-record-fare-printing counter, a resetting-shaft therefor, a station-printing wheel, mechanism for operating the station-printing wheel from said resetting-shaft comprising a shaft operatively connected with the station-printing wheel, a gear on said shaft, and a yoke or support pivoted on said shaft and having on one side a driving-gear directly meshing with the shaft-gear and on the other side a driving-gear and an intermediate idle gear meshing with the said driving-gear and the shaft-gear, an actuating-tooth on the resetting-shaft, and means for swinging said yoke or support so as to bring either one of the driving-gears into the path of said actuating-tooth, substantially as described.

44. In a machine of the character described, a station-record-fare-printing counter, a resetting-shaft therefor, a station-printing wheel, and mechanism for operating the station-printing wheel from said resetting-shaft comprising a shaft operatively connected with the station-printing wheel, a gear on said shaft, and a yoke or support pivoted on said shaft and having on one side a driving-gear directly meshing with the shaft-gear and on the other side a driving-gear and an intermediate idle gear meshing with said driving-gear and the shaft-gear, an actuating-tooth on the resetting-shaft, and means for swinging said yoke or support so as to bring either one of the driving-gears into the path of said actuating-tooth, said means comprising an eccentric, a rod connecting said eccentric and the yoke or support, and means for manually rotating said eccentric, substantially as described.

45. In a machine of the character described, mechanism for shifting the position of the reversing-gear train of the station-printing wheel, comprising a pivoted yoke or support supporting said gear-train, a gear provided with an eccentric, an eccentric-rod connecting said eccentric and the yoke or support, a direction-indicator moving with said gear, a manually-operated shaft, a spring-pressed sleeve mounted on said shaft and carrying a pinion meshing with the gear, and a detent mechanism coöperating with said sleeve, substantially as described.

46. In a machine of the character described, a station-record-fare-printing counter, a resetting-shaft therefor provided with an actuating-tooth, a station-number-printing counter loosely mounted on said shaft, a counter-shaft provided with a gear for actuating the station-number-printing counter, and having a second gear actuated from the actuating-tooth of the resetting-shaft, a station-number-indicating counter, a gear on said counter-shaft for actuating said indicating-counter, and means for manually rotating said counter-shaft, substantially as described.

47. In a machine of the character described, a wheel provided with a detent-wheel having V-shaped notches between its teeth, in combination with a radially-sliding spring-actuated detent-pawl, the engaging end whereof has inclined faces arranged at an angle more obtuse than the angle of the notches of the detent-wheel, substantially as described.

48. In a machine of the character described, an indicator-wheel having indicating characters upon its rim, and a detent-wheel connected with the side of the indicator-wheel and lying within the rim thereof, in combination with a radially-moving spring-actuated detent-pawl extending past the rim of the wheel and having its engaging end laterally offset to engage the detent-wheel, substantially as described.

49. In a machine of the character described, a group of counters for printing a conductor's record, a second group of counters for printing a cashier's record, a single-revolution operating-shaft for actuating said counters, an identifying mechanism comprising a conductor's key, and a locking-rod operated by said key to engage the operating-shaft and lock the same against rotation, substantially as described.

50. In a machine of the character described, printing-counters, in combination with setting, actuating and printing mechanisms, locking-bars for said mechanisms, a locking-lever actuating said bars, and an identifying mechanism comprising a rotatory key directly engaging and operating said locking-lever, substantially as described.

51. In a machine of the character described, two groups of printing-counters, a selective printing mechanism for printing a record from either of said groups, comprising a reciprocating printing-carriage having a central neutral position, locking-bars arranged to be projected on opposite sides of said carriage to prevent its movement in either direction, and separate conductors' and cashier's identifying-keys respectively controlling said locking-bars to project them into or withdraw them from the path of the printing-carriage, substantially as described.

52. In a machine of the character described, printing-counters for printing a conductor's record, a printing mechanism for printing a record from said counters, an identifying mechanism comprising a conductor's key, means for locking said key when moved into identifying position, and means controlled by the printing mechanism for releasing said key when a record is printed, substantially as described.

53. In a machine of the character described, two groups of printing-counters for printing a conductor's and a cashier's record respectively, a selective printing mechanism for printing a record from either group of counters, comprising a reciprocating printing-carriage having a central neutral position, locking mechanism for said printing mechanism comprising locking-bars adapted to be projected into and withdrawn from the path of the printing-carriage on opposite sides thereof, and conductors' and cashier's identifying-keys respectively controlling said locking-bars, said printing-carriage being provided with racks, a printing-shaft having pinions engaging said racks, and means for rotating said printing-shaft, substantially as described.

54. In a machine of the character described, a printing mechanism comprising a reciprocating carriage, and an impression-roller movable in said carriage in a direction transverse to the plane of reciprocation thereof, said impression-roller having guiding-journals provided with spring-pins, in combination with slideways in which said carriage moves, guiding-grooves formed in said slideways to receive the journals of the impression-roller, and cam-grooves formed in said guiding-grooves to receive the spring-pins and control the travel of the journals in the guiding-grooves, substantially as described.

55. In a machine of the character described, two printing-surfaces of different extent, a selective printing mechanism comprising a reciprocating carriage, and a printing-shaft rotatable in opposite directions to print a record from one or the other of the printing-surfaces, and a variable paper-feed comprising feed-rollers, a pinion for driving one of said rollers, a gear-segment meshing with said pinion, an eccentric-pin driven by the printing-shaft, and a cam-slot in said gear-segment engaged by said pin, said slot having portions extending from opposite sides of the normal position of said pin and so formed that the movement of said pin in one direction will impart a relatively extensive movement to the gear-segment and feed-rolls, while movement of the pin in the opposite direction will impart a relatively slight movement to said parts, substantially as described.

56. In a machine of the character described, printing-counters for printing a conductor's record, a printing mechanism for printing a record from said counters, an identifying mechanism comprising a conductor's key and a rotatable barrel to receive said key, means for locking said key comprising a locking-dog adapted to engage the barrel when the key is moved into identifying position, and mechanism actuated from a moving part of the printing mechanism to disengage said locking-dog when a record is printed, substantially as described.

57. In a machine of the character described, printing-counters for printing a conductor's record, a printing mechanism for printing a record from said counters, an identifying mechanism comprising a conductor's key and a rotatable barrel to receive the same, a locking-dog acting to engage the barrel when the key is turned to identifying position, and a cam-collar loosely mounted on said barrel and acting to disengage the locking-dog, the printing mechanism comprising a moving part engaging said cam-collar to actuate the same when a record is printed, substantially as described.

58. In a machine of the character described, printing-counters for printing a conductor's record, a printing mechanism for printing a record from said counters, an identifying mechanism comprising a conductor's key and a rotatable barrel to receive the same, a locking-dog acting to

engage the barrel when the key is turned to identifying position, and a cam-collar loosely mounted on said barrel and acting to disengage the locking-dog, the printing mechanism comprising a moving part engaging said cam-collar to actuate the same when a record is printed, said part consisting of a printing-shaft provided with a cam, said collar having a projection arranged in the path of the cam, substantially as described.

59. In a machine of the character described, a printing-counter for printing a conductor's record, a printing mechanism for printing a record from said counter, an identifying mechanism comprising a conductor's key and a rotatable barrel to receive the same, a locking-dog acting to engage said barrel when the key is turned to identifying position, a collar loosely mounted on said barrel and having a cam to disengage the locking-dog, means actuated by the printing mechanism for moving said collar in one direction to effect said disengagement, and means actuated by the rotation of the key for restoring said collar to its normal position, substantially as described.

60. In a machine of the character described, a printing-counter for printing a conductor's record, a printing mechanism for printing a record from said counter, an identifying mechanism comprising a conductor's key and a rotatable barrel to receive the same, a locking-dog acting to engage said barrel when the key is turned to identifying position, a collar loosely mounted on said barrel and having a cam to disengage the locking-dog, means actuated by the printing mechanism for moving said collar in one direction to effect said disengagement, means actuated by the rotation of the key for restoring said collar to its normal position, and a detent for holding said collar in said normal position, substantially as described.

847,809. ATTACHMENT FOR HATS. HARRY D. OLLARD, Tacoma, Wash. Filed Nov. 17, 1906. Serial No. 343,903.

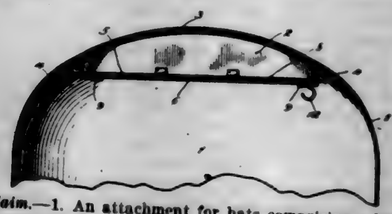

Claim.—1. An attachment for hats comprising a box or receptacle having a curved bottom designed to conform to the curvature of the inner wall of the crown portion of the hat, a lid secured to said box by spring-hinges, pockets at each end of the box, and a memorandum-card removably connected to said pockets, substantially as described.

2. An attachment for hats comprising a box, fabric tabs secured to the ends of the box and connected to the inner wall of the hat-crown, a spring-lid for the box, and means for detachably connecting a memorandum-card to said box.

3. In an attachment of the character described, a box, a spring-closed lid therefor, means for securing the box within the crown of the hat, strips extending across the ends of the box to provide pockets for a memorandum-card, said memorandum-card having reduced ends, and means for securing a pencil to one of the strips, substantially as described.

847,810. CIDER-MILL. CHARLES G. OMAN, Jonesboro, Ind. Filed Jan. 3, 1906. Serial No. 294,400.

Claim.—1. A device of the class described comprising a press element including an outer imperforate cylinder and an inner perforated cylinder, a mill element arranged to discharge into said press element, said mill element including a core, and a follower arranged to work in said inner cylinder and including a stem extending through said core.

2. A device of the class described comprising a press element, a bearing-bracket disposed above said press element, a mill element arranged to discharge into said press element, and a follower including a stem having a bearing in said bearing-bracket and extending through said core, said follower being arranged to work in said press element.

3. A device of the class described comprising a press element, a plate supported above said press element, a bearing-bracket supported by said plate, a mill element supported upon said plate and including a core, and a follower in said press element, said follower including a stem having a bearing in said bracket and extending through said core.

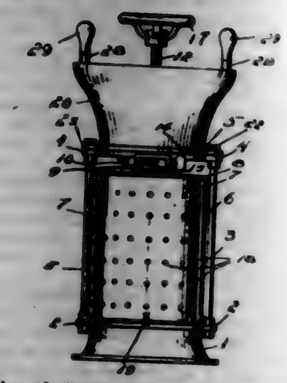

4. A device of the class described comprising a press element, a mill element arranged to discharge in said press element, said mill element being provided at its upper edge with an annular recess, and a core element including arms having their ends resting in said recess.

5. A device of the class described comprising a press element, a mill element arranged to discharge into said press element, and a core element including arms which sit at their ends upon the mill element to permit oscillatory movement of the core element.

847,811. SUSPENDER-BUCKLE. MORRIS PELLER, New York, N. Y., assignor to The Waterbury Buckle Company, Waterbury, Conn. Filed Jan. 8, 1902. Serial No. 88,854.

Claim.—1. In a rustless suspender-buckle, the combination with a frame having an upper and a lower side with an opening between the same, of a lever pivoted to the upper side of the frame in position to have its clamping edge coact with the upper edge or top of the lower side of the frame, and a piece of webbing having its lower reach attached to the lower side of the frame and its upper reach passed from front to rear through the said opening and engaged by the clamping edge of the lever which deflects it over or approximately over the upper edge or top of the lower side of the frame.

2. In a rustless buckle, the combination with a frame having an upper and a lower side with an opening between them, the lower side of the frame being wider than the upper side to form a finger-piece, of a lever pivoted to the smaller upper side of the frame in position to have its clamping edge coact with the upper edge or top of the wider lower side of the frame, and a piece of webbing having its lower reach attached to the lower side of the frame and its upper reach passed from front to rear through the said opening and engaged by the clamping edge of the lever which deflects it over or approximately over the upper edge or top of the lower side of the frame, whereby the upper reach of the webbing is brought into or approximately into line with the lower reach of the webbing on the back of the buckle when the webbing is under draft, as in use.

3. In a rustless suspender-buckle, the combination with a frame composed of a wire body and a sheet-metal strap extending between and attached to the ends thereof, an opening being formed between the upper portion of the said body and the upper edge of the said strap; of a lever pivoted to the upper part of the body in position to have its clamping edge coact with the upper edge of the strap, and a piece of webbing having its lower reach attached to the strap and its upper reach passed from front to rear through the said opening and engaged by the clamping edge of the lever which deflects it over or approximately over the upper edge of the strap.

4. The combination with a buckle-frame having a web-bing-opening, of a web-holding lever pivoted to the said frame in position to coact with the upper edge of that portion of the frame forming the lower side of the said web-bing-opening, and a piece of webbing having one end passed through the said webbing-opening and folded over the lower portion of the said frame to form a loop, the running portion of the webbing being passed from front to rear through the said webbing-opening and between the said web-holding lever and loop, whereby the said running portion of the webbing is held against the said loop by the said web-holding lever when the same is swung into its closed position.

5. The combination with a buckle-frame having a web-bing-opening, of a lever having a web-holding edge pivoted to the said frame in position to have its said edge swing over or substantially over the upper edge of that portion of the frame forming the lower side of the said webbing-opening, and a piece of webbing having one end passed through the said webbing-opening and folded over the lower portion of the said frame to form a loop, the running portion of the webbing being passed from front to rear through the said webbing-opening over the said loop and under the said web-holding edge which holds the said running portion of the webbing against the said loop.

6. The combination with a buckle-frame having a web-bing-opening, of web-holding means mounted upon the said frame in position to coact with the upper edge of that portion of the frame forming the lower side of the said webbing-opening, and a piece of webbing having one end passed through the said webbing-opening and folded over the lower portion of the said frame to form a loop, and the running portion of the webbing being passed from front to rear through the said webbing-opening over the said loop and under the said web-holding means which holds the said running portion of the webbing against the said loop.

847,812. TWINE-CUTTER. GUSTAVE R. PETERSON and WILLIAM E. MOSS, Red Jacket, Mich. Filed Oct. 13, 1906. Serial No. 338,760.

Claim.—1. A device of the character described comprising a sheet-metal body having one of its ends bent upon itself to form a spring finger-piece, the extremity of said finger-piece being bent to pass through a slot in said body, said extremity having an aperture through which twine or the like is adapted to be passed, and a knife carried by said body for cutting the twine.

2. A device of the character described comprising a sheet-metal body having one of its ends apertured and bent to pass through a slot in the body, said apertured end coacting with the body to bindingly engage or pinch twine or the like, and means carried by said body for cutting the twine.

3. A device of the character described comprising a sheet-metal body having means for bindingly engaging it to twine or the like, and a knife rigidly attached at one end of said body, the end of said body adjacent to said knife being downwardly turned in front of the cutting edge of the knife, providing a guard therefor.

4. A device of the character described, comprising a body, apertured means passing through said body for receiving twine or the like in the aperture thereof and bindingly engaging it against the body and means carried by said body for cutting the twine.

847,813. FLUE-CLEANER. ELWOOD C. PHILLIPS, Chicago, Ill. Filed Sept. 7, 1906. Serial No. 333,667.

Claim.—A flue-cleaner of the class described comprising a rod, an inner head secured thereto, an outer head and a plurality of resilient spirally-disposed blades having their ends crimped and embedded rigidly in the inner and outer heads, the outer head being supported solely by the said blades.

847,814. WATER-SHEDDING ATTACHMENT FOR CARRIAGES. JOHN PHILLIPS, Philadelphia, Pa. Filed Aug. 7, 1906. Serial No. 329,536.

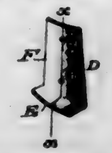

Claim.—1. The combination with the frame of the top of a vehicle of a water-shedding attachment, the same consisting of a shank which is connected with a member

engage the barrel when the key is turned to identifying position, and a cam-collar loosely mounted on said barrel and acting to disengage the locking-dog, the printing mechanism comprising a moving part engaging said cam-collar to actuate the same when a record is printed, said part consisting of a printing-shaft provided with a cam, said collar having a projection arranged in the path of the cam, substantially as described.

59. In a machine of the character described, a printing-counter for printing a conductor's record, a printing mechanism for printing a record from said counter, an identifying mechanism comprising a conductor's key and a rotatable barrel to receive the same, a locking-dog acting to engage said barrel when the key is turned to identifying position, a collar loosely mounted on said barrel and having a cam to disengage the locking-dog, means actuated by the printing mechanism for moving said collar in one direction to effect said disengagement, and means actuated by the rotation of the key for restoring said collar to its normal position, substantially as described.

60. In a machine of the character described, a printing-counter for printing a conductor's record, a printing mechanism for printing a record from said counter, an identifying mechanism comprising a conductor's key and a rotatable barrel to receive the same, a locking-dog acting to engage said barrel when the key is turned to identifying position, a collar loosely mounted on said barrel and having a cam to disengage the locking-dog, means actuated by the printing mechanism for moving said collar in one direction to effect said disengagement, means actuated by the rotation of the key for restoring said collar to its normal position, and a detent for holding said collar in said normal position, substantially as described.

847,809. ATTACHMENT FOR HATS. HARRY D. OLLARD, Tacoma, Wash. Filed Nov. 17, 1906. Serial No. 343,903.

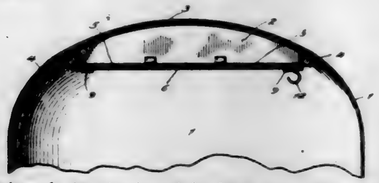

Claim.—1. An attachment for hats comprising a box or receptacle having a curved bottom designed to conform to the curvature of the inner wall of the crown portion of the hat, a lid secured to said box by spring-hinges, pockets at each end of the box, and a memorandum-card removably connected to said pockets, substantially as described.

2. An attachment for hats comprising a box, fabric tabs secured to the ends of the box and connected to the inner wall of the hat-crown, a spring-lid for the box, and means for detachably connecting a memorandum-card to said box.

3. In an attachment of the character described, a box, a spring-closed lid therefor, means for securing the box within the crown of the hat, strips extending across the ends of the box to provide pockets for a memorandum-card, said memorandum-card having reduced ends, and means for securing a pencil to one of the strips, substantially as described.

847,810. CIDER-MILL. CHARLES G. OMAN, Jonesboro, Ind. Filed Jan. 3, 1906. Serial No. 294,400.

Claim.—1. A device of the class described comprising a press element including an outer imperforate cylinder and an inner perforated cylinder, a mill element arranged to discharge into said press element, said mill element including a core, and a follower arranged to work in said inner cylinder and including a stem extending through said core.

2. A device of the class described comprising a press element, a bearing-bracket disposed above said press element, a mill element arranged to discharge into said press element, and a follower including a stem having a bearing in said bearing-bracket and extending through said core, said follower being arranged to work in said press element.

3. A device of the class described comprising a press element, a plate supported above said press element, a bearing-bracket supported by said plate, a mill element supported upon said plate and including a core, and a follower in said press element, said follower including a stem having a bearing in said bracket and extending through said core.

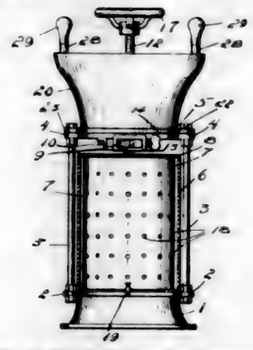

4. A device of the class described comprising a press element, a mill element arranged to discharge in said press element, said mill element being provided at its upper edge with an annular recess, and a core element including arms having their ends resting in said recess.

5. A device of the class described comprising a press element, a mill element arranged to discharge into said press element, and a core element including arms which sit at their ends upon the mill element to permit oscillatory movement of the core element.

847,811. SUSPENDER-BUCKLE. MORRIS PELLER, New York, N. Y., assignor to The Waterbury Buckle Company, Waterbury, Conn. Filed Jan. 8, 1902. Serial No. 88,854.

Claim.—1. In a rustless suspender-buckle, the combination with a frame having an upper and a lower side with an opening between the same, of a lever pivoted to the upper side of the frame in position to have its clamping edge coact with the upper edge or top of the lower side of the frame, and a piece of webbing having its lower reach attached to the lower side of the frame and its upper reach passed from front to rear through the said opening and engaged by the clamping edge of the lever which deflects it over or approximately over the upper edge or top of the lower side of the frame.

2. In a rustless buckle, the combination with a frame having an upper and a lower side with an opening between them, the lower side of the frame being wider than the upper side to form a finger-piece, of a lever pivoted to the smaller upper side of the frame in position to have its clamping edge coact with the upper edge or top of the wider lower side of the frame, and a piece of webbing having its lower reach attached to the lower side of the frame and its upper reach passed from front to rear through the said opening and engaged by the clamping edge of the lever which deflects it over or approximately over the upper edge or top of the lower side of the frame, whereby the upper reach of the webbing is brought into or approximately into line with the lower reach of the webbing on the back of the buckle when the webbing is under draft, as in use.

3. In a rustless suspender-buckle, the combination with a frame composed of a wire body and a sheet-metal strap extending between and attached to the ends thereof, an opening being formed between the upper portion of the said body and the upper edge of the said strap; of a lever pivoted to the upper part of the body in position to have its clamping edge coact with the upper edge of the strap, and a piece of webbing having its lower reach attached to the strap and its upper reach passed from front to rear through the said opening and engaged by the clamping edge of the lever which deflects it over or approximately over the upper edge of the strap.

4. The combination with a buckle-frame having a web-bing-opening, of a web-holding lever pivoted to the said frame in position to coact with the upper edge of that portion of the frame forming the lower side of the said web-bing-opening, and a piece of webbing having one end passed through the said webbing-opening and folded over the lower portion of the said frame to form a loop, the running portion of the webbing being passed from front to rear through the said webbing-opening and between the said web-holding lever and loop, whereby the said running portion of the webbing is held against the said loop by the said web-holding lever when the same is swung into its closed position.

5. The combination with a buckle-frame having a web-bing-opening, of a lever having a web-holding edge pivoted to the said frame in position to have its said edge swing over or substantially over the upper edge of that portion of the frame forming the lower side of the said webbing-open-ing, and a piece of webbing having one end passed through the said webbing-opening and folded over the lower portion of the said frame to form a loop, the running portion of the webbing being passed from front to rear through the said webbing-opening over the said loop and under the said web-holding edge which holds the said running portion of the webbing against the said loop.

6. The combination with a buckle-frame having a web-bing-opening, of web-holding means mounted upon the said frame in position to coact with the upper edge of that portion of the frame forming the lower side of the said webbing-opening, and a piece of webbing having one end passed through the said webbing-opening and folded over the lower portion of the said frame to form a loop, and the running portion of the webbing being passed from front to rear through the said webbing-opening over the said loop and under the said web-holding means which holds the said running portion of the webbing against the said loop.

847,812. TWINE-CUTTER. GUSTAVE R. PETERSON and WILLIAM E. MORN, Red Jacket, Mich. Filed Oct. 13, 1906. Serial No. 338,760.

Claim.—1. A device of the character described comprising a sheet-metal body having one of its ends bent upon itself to form a spring finger-piece, the extremity of said finger-piece being bent to pass through a slot in said body, said extremity having an aperture through which twine or the like is adapted to be passed, and a knife carried by said body for cutting the twine.

2. A device of the character described comprising a sheet-metal body having one of its ends apertured and bent to pass through a slot in the body, said apertured end coacting with the body to bindingly engage or pinch twine or the like, and means carried by said body for cutting the twine.

3. A device of the character described comprising a sheet-metal body having means for bindingly engaging it to twine or the like, and a knife rigidly attached at one end of said body, the end of said body adjacent to said knife being downwardly turned in front of the cutting edge of the knife, providing a guard therefor.

4. A device of the character described, comprising a body, apertured means passing through said body for receiving twine or the like in the aperture thereof and bindingly engaging it against the body and means carried by said body for cutting the twine.

847,813. FLUE-CLEANER. ELWOOD C. PHILLIPS, Chicago, Ill. Filed Sept. 7, 1906. Serial No. 333,667.

Claim.—A flue-cleaner of the class described comprising a rod, an inner head secured thereto, an outer head and a plurality of resilient spirally-disposed blades having their ends crimped and embedded rigidly in the inner and outer heads, the outer head being supported solely by the said blades.

847,814. WATER-SHEDDING ATTACHMENT FOR CARRIAGES. JOHN PHILLIPS, Philadelphia, Pa. Filed Aug. 7, 1906. Serial No. 329,536.

Claim.—1. The combination with the frame of the top of a vehicle of a water-shedding attachment, the same consisting of a shank which is connected with a member

of said frame, and a lip projecting forwardly from said shank, said lip being depressed forming a gutter.

2. A water-shedding attachment for a vehicle consisting of a lip, and a shank, said lip projecting angularly forward from said shank and being deflected downwardly forming a gutter whose discharge end is in front.

847,815. TOBACCO-KNIFE. WILLIAM A. PIGG, Fort Barrancas, Fla. Filed Nov. 14, 1906. Serial No. 343,432.

Claim.—1. A tobacco-harvesting knife comprising diverging shanks, a concave cutting edge on one side of one of said shanks, a convex cutting edge on the opposite side of said shank, a splitting-crotch, a concave and convex cutting-blade extending upon one side of said crotch, and a thumb-brace extending laterally from the handle in alinement with the splitting-crotch, substantially as described.

2. In a tool of the character described, a splitting-knife comprising diverging cutting edges, provided with intermediate splitting-crotch, and a thumb-brace provided with downturned lugs to embrace the end of the handle, and a thumb-bearing portion located in alinement with the splitting-crotch, substantially as described.

847,816. ADJUSTABLE MITER-BOX FOR COMMUTATOR-BRUSHES. WALTER S. POLLARD, Philadelphia, Pa. Filed Aug. 26, 1905. Serial No. 275,873.

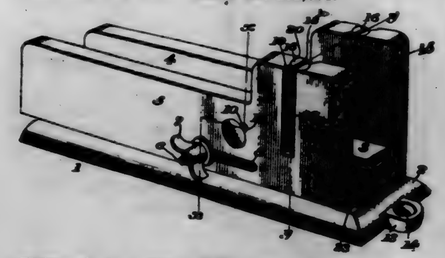

Claim.—1. In a device of the character described, a base having a work-seat and side angularly thereto, a sliding side also angular to said work-seat, said sides having cylindrical sockets therein and the sockets depressed below the level of the work-seat in combination with cylindrical spring-guides fitting to said sockets open at the upper ends and frictionally engaging the walls of said sockets.

2. In a device of the character described, a base having a work-seat, fixed and movable sides in proximity to said work-seat, sockets in said sides open toward and away from the work-seat in each side down to the level of said seat and depressed below the level of said seat, in combination with split guides open at the top and yieldingly engaging the limiting-surfaces of said sockets.

3. In a device of the character described, a base, fixed and movable sides in proximity thereto having sockets therein depressed below the level of the work-seat, means for permitting a saw to operate through said sides in line with said sockets down to the work-seat, and spring-guides normally flaring, pressing against the interior surfaces of said sockets and forming in place guide-slots of uniform width.

847,817. VEHICLE-WHEEL. JAMES A. POMEROY, Palo Alto, Cal. Filed June 7, 1906. Serial No. 320,604.

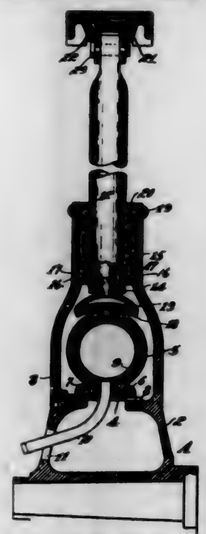

Claim.—1. In a vehicle-wheel, a hub having front and rear annular plates, an inflatable tube surrounding the hub and housed between said plates, pivotally-mounted cylinder portions supported by the plates, spokes sliding in the cylinders bearing on said inflatable tube, and a rim with which said spokes connect.

2. In a vehicle-wheel, a hub provided with front and rear annular plates, an annular inflatable tube surrounding the hub and housed between said plates, cylinders, trunnions between the plates, spokes slidable in the cylinders having their inner ends bearing on said inflatable tube, and a rim connected with the spokes.

3. In a vehicle-wheel, a hub provided with front and rear annular plates, an annular inflatable tube surrounding the hub and housed between said plates, cylinders, trunnions between the plates, spokes slidable in the cylinders having their inner ends bearing on said inflatable tube, and a rim connected with the spokes, said rim comprising a series of conjoined links.

847,818. GAS-REGULATOR. GUSTAV PORST, Baltimore, Md. Filed Dec. 30, 1905. Serial No. 293,951.

Claim.—1. A governor for gas-burners comprising a casing having inlet and outlet ports, a valve-chamber within the casing communicating at its lower end with the inlet-port and provided in its side with a plurality of ports communicating with the outlet-port, a guide-rod arranged within said chamber, and a hollow valve controlling the ports and slidably mounted on the guide-rod, said valve having openings in its walls for the passage of the rod and of greater size than the rod to form reduced gas-passages.

2. A governor for gas-burners comprising a casing having a bottom inlet and a side outlet, a ported head disposed below said outlet, a valve-chamber arranged within the casing and supported by said head and provided in its side opposite the outlet-passage with a vertical row

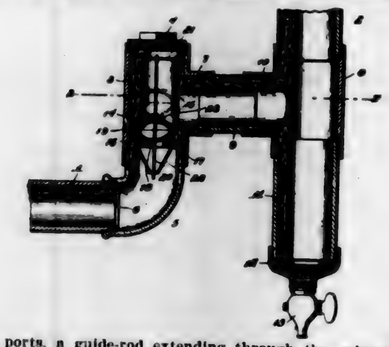

of ports, a guide-rod extending through the valve-chamber, a hollow valve guided by said rod and controlling the ports, and a weight seated upon the valve and about the guide-rod.

847,819. STEM-WINDING AND STEM-SETTING WATCH. WILSON E. PORTER, New Haven, Conn., assignor to New Haven Clock Co., New Haven, Conn., a Corporation. Filed Aug. 10, 1906. Serial No. 330,031.

Claim.—1. In a stem-winding and stem-setting watch, the combination with one of the movement-plates thereof, of a bridge, a main winding-wheel and a winding-hub mounted therein; and a washer applied to the outer face of the bridge and connected with the said hub for holding the wheel and hub in place.

2. In a stem-winding and stem-setting watch, the combination with one of the movement-plates thereof, of a bridge, a winding-wheel bearing upon the inner face of the bridge, a winding-hub carrying the said wheel and projecting above the outer face of the bridge, and a relatively large washer applied to the projecting end of the hub for securing the hub and wheel to the bridge.

3. In a stem-winding and stem-setting watch, the combination with one of the movement-plates thereof, of a bridge, a winding-wheel bearing upon the inner face of the bridge and carried thereby, and a ratcheting-back pinion also bearing upon the inner face of the said bridge and carried thereby and meshing into the said winding-wheel.

4. In a stem-winding and stem-setting watch, the combination with one of the movement-plates thereof, of a main bridge, a main winding-wheel bearing upon the inner face of the bridge, a winding-hub carrying the said wheel and projecting above the outer face of the said bridge, a washer applied to the outer face of the bridge and connected with the said hub for holding the wheel and hub in place, and a ratcheting-back pinion also bearing upon the inner face of the said bridge and carried thereby and meshing into the said winding-wheel, whereby the main winding-wheel, the winding-hub and the ratcheting-back pinion are all mounted in and carried by the bridge.

847,820. MECHANISM FOR MAKING SOUND-RECORDS. JOHN O. PRESCOTT, Summit, N. J. Filed Jan. 15, 1907. Serial No. 352,363.

Claim.—1. Mechanism for making sound-records comprising the combination of a pressing member having an annular groove therein, an annular matrix lying in said groove, a central projection on said member of greater height than the thickness of said matrix, its side wall forming the inner wall of said annular groove, and a second pressing member for pressing the composition against said matrix and the top of said projection, substantially as set forth.

2. Mechanism for making sound-records comprising the combination of a pressing member having an annular groove therein, an annular matrix lying in said groove, a concentric projection integral with said pressing member and of greater height than the thickness of said matrix, its side wall forming the inner wall of said annular groove, and a second pressing member for pressing the composition against said matrix and the top of said projection, substantially as set forth.

3. Mechanism for making sound-records comprising the combination of a pressing member having an annular groove therein, an integral circular flange whose inner wall forms the outer wall of said groove, a circular concentric projection integral with said pressing member and of greater height than the thickness of said matrix, its side wall forming the inner wall of said annular groove, a central stud on said member, and a second pressing member having a central opening therein to receive said stud adapted for pressing the composition against said matrix and the top of said projection, substantially as set forth.

4. Mechanism for making sound-records comprising the combination of two pressing members one having a central stud and the other a corresponding opening and each of said members having an annular groove therein, an annular matrix lying in each of said grooves, a circular projection on each of said members of greater height than the thickness of the matrix in the groove therein, the side wall of each projection forming the inner wall of one of the annular grooves, and a circular flange on one of the pressing members bounding the annular groove therein and against which the other member abuts when the two members are pressed together to form a record, substantially as set forth.

5. Mechanism for making sound-records comprising the combination of a pressing member having an annular groove therein, an annular matrix in said groove, a projection on said member concentric with said groove, its side wall forming the inner wall of said groove, a stud mounted on the top of said projection, and a second pressing member for pressing the composition against said matrix and the top of said projection, substantially as set forth.

6. Mechanism for making sound-records comprising the combination of a pressing member having a circular flange thereon, a matrix upon said member within said flange, a second pressing member for pressing the composition against said matrix, a stud, and means for securing said stud in various positions upon one of said members, substantially as set forth.

7. Mechanism for making sound-records comprising the combination of a pressing member having a circular flange thereon, a matrix upon said member within said flange, a second pressing member for pressing the composition

against said matrix, a stud, a plurality of openings in one of said members, means coacting with any one of said openings for securing the stud upon the member, and means for closing the other openings, substantially as set forth.

8. Mechanism for making sound-records comprising the combination of a pressing member having an annular groove therein, a circular flange thereon forming the outer wall of said groove, an annular matrix lying in said groove, a circular concentric projection integral with said member and of a height greater than the thickness of said matrix, its side wall forming the inner wall of said groove, a stud, means for securing the same in any one of a plurality of positions on the top of said projection, and a second pressing member for pressing the composition against said matrix and the top of said projection, substantially as set forth.

847,821. SUIT-CASE HANDLE. ALBERT RAFALSKY, Stapleton, N. Y., assignor to Philip Eckhardt & Co., New York, N. Y., a Firm. Filed Jan. 11, 1907. Serial No. 351,874.

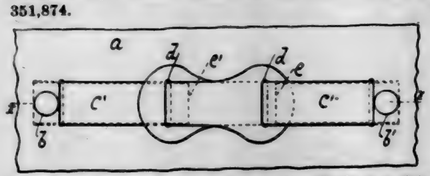

Claim.—1. A handle of the class described comprising sections slidingly engaging one another and elastics for moving the handle-sections to flat or contracted position.

2. A handle comprising sections made to engage one another, each section having one end secured or fixed and its other end connected to an elastic.

3. A handle comprising a section and elastic both secured to a fixed point, another section and elastic secured to another fixed point, the free ends of the sections slidably engaged to one another, and the free ends of each elastic connected to the oppositely-lying section.

4. A handle comprising sections each section having an attaching-point and an eye, elastics respectively secured at the attaching-point of each section and each elastic connected to the oppositely or non-adjacent section, said sections passed through the eye of each opposite section.

5. A handle comprising two flat extensibly-engaged members or sections, and two flat elastics engaging the members respectively so as to normally hold the handle to flat or alined position.

847,822. WASHING-MACHINE. NOLAND B. REES and NAPOLEON B. REES, Lincoln, Kans. Filed May 24, 1905. Serial No. 262,002.

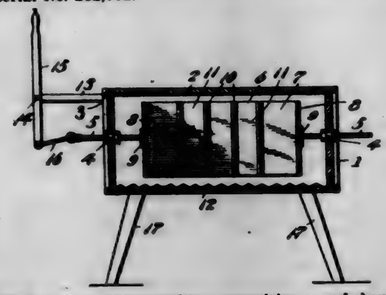

Claim.—A washing-machine comprising a suds-box having a corrugated bottom and provided with openings in its end walls, a clothes-receptacle mounted in the box and provided with solid side walls, and perforated end walls, guide-rods secured to the receptacle and projecting through the openings of the box, and vertical partitions spaced apart and secured to the side walls of the clothes-receptacle, said partitions being constructed in triangular-shape form and having curved inner edges, said guide-rods serving to maintain the clothes-receptacle in elevated position and one of said rods serving to reciprocate the same, substantially as specified.

847,823. REFRIGERATOR. CLIFFORD W. REYNOLDS, Omaha, Nebr. Filed Nov. 6, 1905. Serial No. 286,129.

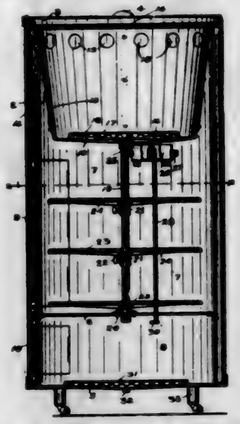

Claim.—1. In a refrigerator, a casing divided into an upper and a lower chamber, an ice-pan disposed near the top of the casing within the upper chamber, a cup adjacent the ice-pan and arranged to receive the drip therefrom, a siphon-tube leading from said cup to the lower chamber, means on said tube within the lower chamber for spraying the discharge therefrom into said chamber, and means permitting the escape from said chamber of the water sprayed therein.

2. In a refrigerator, a casing divided into an upper and a lower chamber, an ice-pan suspended within the upper chamber near the top thereof, revoluble perforate shelves within said chamber below the ice-pan, a cup held near the ice-pan and arranged to receive the drip therefrom, a siphon-tube leading from said cup to the lower chamber, said tube being adapted to intermittently discharge the contents of the cup, means carried on the lower end of the siphon-tube for spraying the discharge therefrom into the said lower chamber for the purpose set forth, and means for draining from said lower chamber the water discharged thereinto by the siphon-tube.

847,824. GAGE. GEORGE W. ROBERTS, Ravenna, Nebr. Filed Nov. 24, 1906. Serial No. 344,933.

Claim.—The herein-described gage-line holder, consisting of two members of like construction, each comprising a flat sheet-metal body portion having an extended portion, a spring-tongue cut from the extended portion, said tongue being corrugated and bent over against the body portion for securing the end of a gage-line, legs formed on one edge of the body portion and bent at right angles thereto, toes extending inward from the spaced legs, and a finger-piece formed integral with the body and extending at right angles to the body of the member between the legs, and at opposite sides of the body from said legs, essentially as described.

847,825. SHOE-LACE TIP. WILLIAM H. ROGERS, Camden, N. J. Filed April 14, 1906. Serial No. 311,731.

Claim.—The herein-described shoe-lace tip formed from a rectangular blank of sheet metal having an opening therein near one end thereof through which the terminal end of a shoe-lace is inserted, said blank being bent upon itself transversely on a line below said opening to clamp the end of the lace thereto between the two bent portions of the blank, and the shoe-lace being bent upon itself and inclosed within the tip by the sides of the blank which are bent over to inclose the end of the lace and said opening through the blank, with the edges of the blank meeting in the center of the tip, thus providing a doubled outer end for the tip having a smooth entering-point, flat sides and rounded edges, essentially as described.

847,826. TRUCK FOR WOOD-PRESERVING RETORTS. HENRY M. ROLLINS and ASA J. NEFF, Houston, Tex. Filed Nov. 24, 1905. Serial No. 288,900.

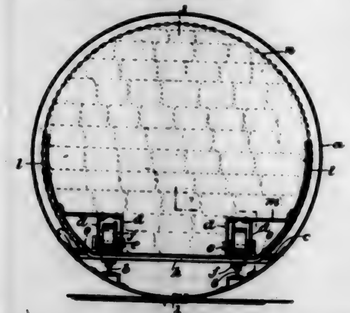

Claim.—1. In a wood-preserving plant, the combination with a retort provided with rails and with cleats upon the opposite sides thereof adjacent to the rails, of a car comprising cross-bars, one of said cross-bars having its ends extended to engage beneath the cleats, pairs of upwardly-extending side plates secured to the cross-bars near the ends thereof, wheels journaled between the members of each pair, and side extensions secured to the cross-bars and extending upwardly therefrom, said extensions being shaped to conform with the walls of the retort.

2. In a wood-preserving plant, the combination with a retort provided with rails and with cleats on the opposite sides thereof adjacent to the rails, of a car comprising cross-bars, one of said cross-bars having its ends extended to engage beneath the cleats, pairs of upwardly-extending side plates secured to the cross-bars near the ends thereof, and wheels journaled between the members of each pair.

847,827. COMBINED CURTAIN-POLE AND CURTAIN-SHADE-ROLLER BRACKET. ARTHUR L. RUTHERFORD, Tarentum, Pa. Filed Jan. 3, 1907. Serial No. 350,674.

Claim.—1. A curtain and shade supporting bracket formed from a blank of sheet metal which is shaped to form a body portion adapted to lie against a window-frame, and a rearwardly-extending longitudinal flange adapted to engage the top of a window-frame, the said blank having one end thereof bent outwardly at right angles to the body to form an extension constituting a curtain-pole bracket, said extension having parts struck out therefrom to engage with the window-frame, and said body having guides struck out therefrom to receive and hold a shade-roller bracket.

2. A window-fixture, comprising a bracket formed from a blank of sheet metal shaped to form a body portion to lie against a window-frame, and be secured thereto, and an outwardly-extending skeleton extension, lugs struck out from said extension to engage with the window-frame and secure the bracket thereto, and longitudinal guides struck out from the body to receive and hold a shade-roller bracket.

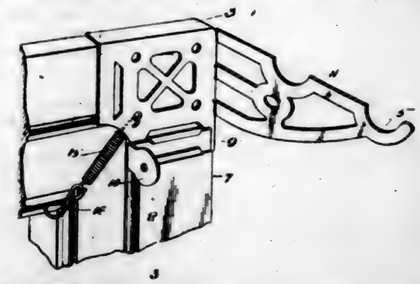

3

3. A window-fixture comprising a bracket formed from a blank of sheet metal shaped to form a body portion to lie against a window-frame and be secured thereto, and having a part thereof bent outwardly at right angles to the body portion to form an extension constituting a curtain-pole support, lugs struck out from said extension to engage with the window-frame and secure the bracket thereto, guides struck out from the body portion to receive and hold a shade-roller bracket, and a yielding fastening member also connecting the body portion of the bracket with the window-frame.

847,828. TOOTHPICK-HOLDER. WILHELM SANDLEBEN, Hamburg, Germany. Filed Mar. 20, 1906. Serial No. 307,040.

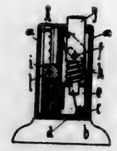

Claim.—1. In a device of the class described, the combination with a magazine and ejector mechanism, of a follower in the magazine, locking mechanism to lock the follower, and means to simultaneously operate the ejector and locking mechanism to eject a toothpick and release the follower, substantially as set forth.

2. In a device of the class described, the combination with a magazine and ejector mechanism, of a follower in the magazine, locking mechanism to lock the follower, a spring-held knob to simultaneously operate the ejector mechanism and withdraw the locking mechanism from the follower, said follower and locking mechanism returned to normal position when the knob is released.

3. The combination with a magazine and a follower therein having studs projecting from its ends; of ejector mechanism and racks movable into and out of engagement with the studs, and means to simultaneously operate the ejector mechanism and withdraw the racks from engagement with the studs, substantially as set forth.

4. The combination with a magazine and a follower therein, of pushers pivotally mounted, slotted levers on which the pushers are mounted, a knob, a rod secured thereto engaging the slots in the levers, movable racks to engage the follower having slots therein engaged by the ends of the rod.

5. A toothpick-holder comprising the combination of a magazine for holding toothpicks lying horizontally lengthwise upon one another and having a front wall not extending entirely to the bottom of the magazine and a back wall having openings therethrough, a weight resting on the toothpicks in the magazine, said weight having stud-like projections, two racks in said magazine with which said projections normally engage, means for disengaging the racks from said projections at the time of removal of a toothpick from the holder, said means being adapted to be operated by hand, a pusher adapted to slide through the opening in the back wall at the bottom of said compartment and to enter the magazine and engage the side of the lowermost toothpick, mechanism for operating said pusher, a knob for driving said mechanism by hand whereby when said knob is pushed the lowermost toothpick is pushed sidewise by the pusher out under the front wall of the front compartment.

6. A toothpick-holder consisting in the combination of a magazine for holding the toothpicks lying horizontally lengthwise upon one another and having a front wall not extending entirely to the bottom of the compartment and a back wall having openings at the bottom, a weight resting on the uppermost toothpicks, said weight having stud-like projections, two racks in said front compartment with which said projections normally engage, means for disengaging the racks from said projections at about the time of the removal of a toothpick from the holder, a pusher adapted to slide and to enter the magazine through the openings in the said back wall and engage the side of the lowermost toothpick, mechanism for operating said pusher, a knob for driving said mechanism by hand whereby when said knob is pushed the lowermost toothpick is pushed sidewise by the pusher out under the front wall of the front compartment, and a connection between the mechanism for operating the pusher and the means for disengaging the racks from the projections on the weight, whereby when a toothpick is ejected the weight is disengaged from the racks and feeds the toothpicks downward.

847,829. GOOSEBERRY-PICKER. KARL SCHAAL, Seward, Nebr. Filed Sept. 17, 1906. Serial No. 334,853.

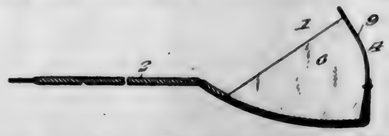

Claim.—A device of the class described comprising a handle and a receptacle carried thereby, said receptacle consisting of a skeleton frame formed integral with the handle and a fabric covering, said receptacle having its front wall provided with an upwardly-opening branch-receiving slot.

847,830. WIND-SHIELD. ERNEST SCHILDBACK, Elmhurst, Ill. Filed May 7, 1906. Serial No. 315,579.

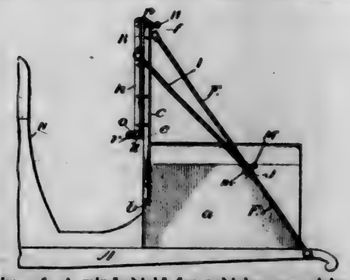

Claim.—1. A wind-shield for vehicles comprising a stationary lower sash having holes in its upper edge, an upper sash separable therefrom having pins extending down from its lower edge and hooks having downturned ends projecting from its upper edge, and means engaging said lower sash for holding said upper sash in engagement with said lower sash.

2. A wind-shield for vehicles comprising a stationary lower sash having holes in its upper edge, an upper sash separable therefrom having hooks with downturned ends projecting from its upper edge, and means engaging said lower sash for holding said upper sash in engagement with said lower sash.

3. A wind-shield for vehicles comprising a stationary lower sash having holes in its upper edge, brackets projecting rearwardly from the same having vertical openings therein, an upper sash separable from said lower sash having hooks with downturned ends projecting from its upper edge, and pins extending down from its lower edge, and means engaging said lower sash for holding said upper sash in engagement with said lower sash.

4. The combination with the body of a vehicle and the lower sash of a wind-shield placed transversely in front of the seat of said vehicle, of an upper sash removably connected thereto, fixtures attached to said upper sash for removably supporting it to the lower sash, means for holding said upper sash in engagement with said lower sash comprising braces connecting the sides of said lower sash with the body of said vehicle, and stay-rods pivotally connected to the sides of the upper sash at their upper ends and adjustably connected at their lower ends to said braces.

5. The combination with the body of a vehicle, and the lower sash of a wind-shield having holes in its upper edge and secured transversely in front of one of the seats of said vehicle, of an upper sash separable from said lower sash having pins extending down from its lower edge, and means for holding said upper sash in engagement with said lower sash comprising braces connecting the sides of said lower sash with the body of said vehicle, and stay-rods pivotally connected to the sides of the upper sash at their upper ends and adjustably connected to said braces at their lower ends.

6. The combination with the body of a vehicle, and the lower sash of a wind-shield secured transversely in front of one of the seats thereof and having holes in its upper edge, of an upper sash separable from said lower sash having pins extending down from its lower edge and having hooks with downturned ends projecting from its upper edge, and means for holding said upper sash in engagement with said lower sash comprising braces connecting the sides of said lower sash with the body of the vehicle, and stay-rods pivotally connected to the sides of the upper sash at their upper ends and adjustably connected to the braces at their lower ends.

7. The combination with the body of a vehicle, and the lower sash of a wind-shield secured transversely in front of one of the seats of the same and having holes in its upper edge, of an upper sash separable from said lower sash having hooks with downturned ends projecting from its upper edge, and means for holding said upper sash in engagement with said lower sash, comprising braces connecting the sides of the lower sash with the body of the vehicle, and stay-rods pivotally connected to the sides of the upper sash at their upper ends and adjustably connected to said braces at their lower ends.

8. The combination with the body of a vehicle, and the lower sash of a wind-shield secured transversely in front of one of the seats of the same having holes in its upper edge and provided with brackets projecting from the same which brackets have vertical openings therein, of an upper sash separable from said lower sash having hooks with downturned ends projecting from its upper edge and pins extending down from its lower edge, and means for holding said upper sash in engagement with said lower sash comprising braces connecting the sides of the lower sash with the body of the vehicle and stay-rods pivotally connected to the sides of the upper sash at their upper ends and adjustably connected to said braces at their lower ends.

9. A wind-shield for vehicles comprising a stationary lower sash and an upper sash removably mounted thereon, pins projecting from the edge of one of said sashes and adapted to engage holes in the adjacent edge of the opposite sash, and means engaging said pins for holding the same in engagement with said holes.

10. A wind-shield for vehicles comprising a stationary lower sash having openings in its upper edge, an upper sash separable therefrom having pins extending down from the lower edge thereof, and set-screws for holding said pins in engagement with said openings.

11. A wind-shield for vehicles comprising a stationary lower sash having openings in its upper edge, an upper sash separable therefrom having pins extending down from its lower edge and hooks having downturned ends projecting from its upper edge, and set-screws for holding said upper sash in engagement with said lower sash.

12. The combination with the body of a vehicle and the lower sash of a wind-shield placed transversely in front of the seat of said vehicle, of an upper sash removably connected thereto, fixtures attached to said upper sash for accomplishing said connection, and means for holding said upper sash in removable engagement with said lower sash comprising braces connecting the sides of said lower sash with the body of said vehicle, stay-rods pivotally connected at their upper ends to the sides of the upper sash, sleeves on said braces to which the lower ends of said stay-rods are pivoted, and set-screws for adjusting said sleeves to said braces.

13. The combination with the body of a vehicle, and the lower sash of a wind-shield having holes in its upper edge and secured transversely in front of one of the seats of said vehicle, of an upper sash separable therefrom having pins extending down from its lower edge, and means for holding said upper sash in engagement with said lower sash comprising braces connecting the sides of said lower sash with the body of said vehicle, and stay-rods pivotally connected to the sides of the upper sash at their upper ends, sleeves on said braces to which the lower ends of said stay-rods are pivotally connected, and set-screws for adjusting said sleeves on said braces.

14. The combination with the body of a vehicle, and the lower sash of a wind-shield secured transversely in front of one of the seats thereof and having holes in its upper edge, of an upper sash separable therefrom having pins extending down from its lower edge and having hooks with downturned ends projecting from its upper edge, and means for holding said upper sash in engagement with said lower sash comprising braces connecting the sides of said lower sash with the body of the vehicle, and stay-rods pivotally connected to the sides of the upper sash at their upper ends, sleeves on said braces to which the lower ends of said stay-rods are pivotally connected, and set-screws for adjusting said sleeves on said braces.

15. The combination with the body of a vehicle, and the lower sash of a wind-shield secured transversely in front of one of the seats of the same and having holes in its upper edge, of an upper sash separable therefrom having hooks with downturned ends projecting from its upper edge, and means for holding said upper sash in engagement with said lower sash, comprising braces connecting the sides of the lower sash with the body of the vehicle, and stay-rods pivotally connected to the sides of the upper sash at their upper ends, sleeves on said braces to which the lower ends of said stay-rods are pivotally connected, and set-screws for adjusting said sleeves on said braces.

16. The combination with the body of a vehicle, and the lower sash of a wind-shield secured transversely in front of one of the seats of the same having holes in its upper edge and provided with brackets projecting from the same which brackets have vertical openings therein, of an upper sash separable from said lower sash having hooks with downturned ends projecting from its upper edge and pins extending down from its lower edge, and means for holding said upper sash in engagement with said lower sash comprising braces connecting the sides of the lower sash with the body of the vehicle and stay-rods pivotally connected to the sides of the upper sash at their upper ends, sleeves on said braces to which the lower ends of said stay-rods are pivotally connected, and set-screws for adjusting said sleeves on said braces.

17. A wind-shield for vehicles comprising a stationary lower sash and a non-reversible upper sash removably mounted thereon and adapted to be removed therefrom in a plane substantially parallel to said lower sash; pins projecting from the edge of one of said sashes and adapted to engage holes in the adjacent edge of the opposite sash and means engaging said pins for holding the same in engagement with said holes.

847,831. VENTILATOR FOR HEAD-COVERINGS. HERMAN C. SCHLEE and MAX JACOBS, Cleveland, Ohio. Filed Mar. 20, 1906. Serial No. 307,054.

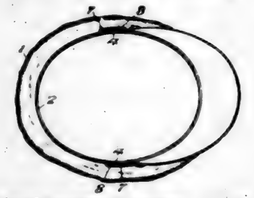

Claim.—A head-covering comprising a body portion having a ventilating-opening, a ventilating member composed wholly from a single length of sheet metal bent into shape to form a laterally and outwardly offset portion of a size to fit snugly within said opening and presenting an open-ended air-passage leading to the latter, the member being provided with terminal portions perforated for attachment to said body and the offset portion of the member being disposed externally of the body.

847,832. MACHINE FOR MAKING RECEPTACLES OF COMPRESSED PULP. WILLIAM E. SCHNEIDER, Washington, D. C. Filed June 30, 1906. Serial No. 324,212.

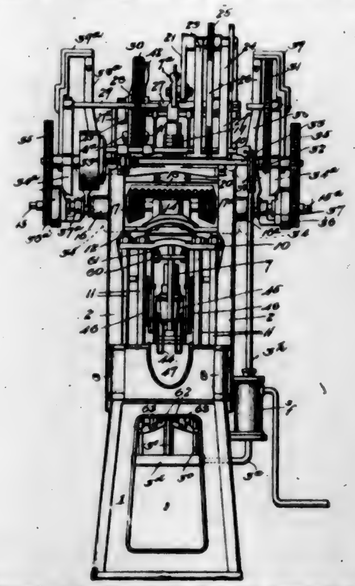

Claim.—1. A machine of the character described having a mold, and a shrinkable sectional mandrel adapted to be bodily lowered into and raised from said mold.

2. A machine of the character described having a contractible mold, and a shrinkable mandrel adapted to be bodily lowered into and raised from said mold.

3. A machine of the character described having a mold

and a shrinkable sectional mandrel adapted to be automatically lowered into and raised from said mold and shrunk when raised to release the receptacle.

4. A machine of the character described having a contractible mold and a shrinkable mandrel adapted to be automatically lowered into and raised from said mold and shrunk when raised to release the receptacle.

5. A machine of the character described having a mold, a shrinkable mandrel adapted to be automatically lowered into and raised from said mold and shrunk when raised to release the receptacle, and means to remove the completed receptacle.

6. A machine of the character described having a contractible mold, a shrinkable mandrel adapted to be automatically lowered into and raised from said mold and shrunk when raised to release the receptacle, and means to remove the completed receptacle.

7. A machine of the character described having a mold, means to feed material to said mold, a shrinkable mandrel adapted to be automatically lowered into and raised from said mold and shrunk when raised to release the receptacle, and means to remove the completed receptacle.

8. A machine of the character described having a contractible mold, means to feed material to said mold, a shrinkable mandrel adapted to be automatically lowered into and raised from said mold and shrunk when raised to release the receptacle, and means to remove the completed receptacle.

9. A machine of the character described having a mold, a shrinkable mandrel adapted to be automatically lowered into and raised from said mold and shrunk when raised to release the receptacle, and means to feed material to said mold in predetermined quantities.

10. A machine of the character described having a mold, a mandrel, a movable measuring-cup, and means to automatically actuate said cup to feed material to said mold.

11. A machine of the character described having a mold, a mandrel, a pipe leading from a source of supply of material for making receptacles, a movable measuring-cup mounted below the outlet of said pipe, means to automatically operate said cup to feed material to said mold, and means to close the opening at the outlet of said pipe while the cup is feeding the material contained therein to the mold.

12. A machine of the character described, having a mold, a mandrel, a pipe leading from a source of supply of material for making receptacles, a measuring-cup pivotally mounted below the outlet of said pipe, said cup having a plate extending therefrom adapted to close the outlet of said pipe while the cup is feeding the material contained therein to the mold.

13. A machine of the character described, having a mold, a mandrel, a pipe leading from a source of supply of material for making receptacles, a measuring-cup pivotally mounted below the outlet of said pipe, said cup having a plate extending therefrom, for the purpose specified, the upper edge of said cup, the outlet of said pipe, and the plate extending from said cup all forming arcs of the same circle having its center at the pivotal axis of said cup.

14. A machine of the character described having a mold, a mandrel, a pipe leading from a source of supply of material for making receptacles, a measuring-cup pivotally mounted below the outlet of said pipe, and cam-and-lever mechanism to turn said cup at proper intervals to feed material to the mold.

15. A machine of the character described having a mold, a mandrel, adapted to be raised out of the mold, means to collapse said mandrel, when raised, to release the completed receptacle and means to receive said receptacle and discharge it when released.

16. A machine of the character described having a mold, a mandrel adapted to be raised from said mold, means to collapse said mandrel, when raised, to release the completed receptacle, a basket mounted on pivoted arms, and means to swing said basket on said arms to a position below the mandrel and out from below said mandrel for the purposes described.

17. A machine of the character described having a mold, a mandrel adapted to be raised from said mold, means to collapse said mandrel, when raised, to release the completed receptacle, means to carry off the completed receptacle and means to feed material in predetermined quantities to said mold.

18. A machine of the character described, having a mold, a mandrel adapted to be raised from said mold, means to collapse said mandrel, when raised, to release the completed receptacle, means to carry off the completed receptacle, means to feed material in predetermined quantities to said mold, and common means to actuate the devices for carrying off the completed receptacle and feeding material to the mold.

19. A machine of the character described having a mold, a mandrel adapted to be raised from said mold, means to collapse said mandrel, when raised, to release the completed receptacle, a swinging basket for carrying off the completed receptacle, a pivoted feeding-cup, an arm secured to said cup, a link connecting said arm and basket, and means to oscillate said arm whereby said cup and basket are both actuated.

20. In a machine of the character described, the combination, with a contractible mold, of a shrinkable mandrel adapted to be inserted into said mold, said mandrel having an enlargement at its end forming a shoulder adapted to close the top of the mold when said mandrel is inserted therein.

21. In a machine of the character described, a collapsible mandrel comprising wedge-sections and intermediate sections having sliding connection with one another, and a cap fitting over the ends of said sections.

22. In a machine of the character described, a collapsible mandrel comprising wedge-sections, and intermediate sections having sliding dovetail connection with one another, and a cap fitting over the ends of said sections.

23. In a machine of the character described, a collapsible mandrel comprising wedge-sections and intermediate sections and a cap fitting over the ends of said sections the intermediate sections having vertical and horizontal movement with relation to said cap but said wedge-sections restricted to a horizontal movement therewith.

24. A machine of the character described having a mold, a collapsible mandrel comprising wedge-sections and intermediate sections, a cap fitting over the ends of said sections, a plunger-rod secured to said cap, and means to reciprocate said rod to insert the mandrel into the mold and remove it therefrom.

25. A machine of the character described having a mold, a collapsible mandrel comprising wedge-sections and intermediate sections having sliding interlocking connection with one another, a cap fitting over the ends of said sections, and means to reciprocate said rod to insert the mandrel into the mold and remove it therefrom.

26. A machine of the character described having a mold, a collapsible mandrel comprising wedge-sections and intermediate sections having sliding interlocking connection with one another, a cap fitting over the ends of said sections and connected thereto whereby the intermediate sections have vertical and horizontal movement with relation to said cap while the wedge-sections are restricted to a horizontal movement with relation thereto, and means to reciprocate said rod to insert the mandrel into the mold and remove it therefrom.

27. A machine of the character described having a mold, a plunger-rod, a collapsible mandrel secured to said rod, means to reciprocate said rod to insert said mandrel into the mold, and remove it therefrom, means to collapse the mandrel when it is removed from the mold and means to expand said mandrel before it enters the mold again.

28. A machine of the character described having a mold, a plunger-rod, a collapsible mandrel secured to said rod, means to reciprocate said rod to insert the mandrel into the mold and withdraw it therefrom, a spring arranged within the mandrel and normally holding it expanded, and means to collapse said mandrel against the energy of said spring.

29. A machine of the character described having a mold, a plunger-rod, a sectional mandrel mounted on said rod, means to reciprocate said rod to insert said mandrel into the mold and remove it therefrom, a ring arranged around the outside of said mandrel and attached to some of the sections thereof, a spring within the mandrel and normally holding it expanded, and a fixture adapted to engage said ring and collapse the mandrel against the energy of said spring.

30. A machine of the character described having a mold, a plunger-rod, a mandrel mounted on said rod and comprising wedge-sections and intermediate sections, means to reciprocate said rod to insert said mandrel into the mold and remove it therefrom, a ring arranged around the outside of said mandrel and attached to the intermediate sections thereof, a spring within the mandrel and normally holding it expanded, means to hold the wedge-sections of the mandrel always in the same relation horizontally with the plunger-rod, and a fixture adapted to engage said ring and collapse the mandrel against the energy of said spring.

31. A machine of the character described having a plunger-rod, a mandrel comprising wedge-sections and intermediate sections, a cap fitting over the ends of said sections and secured to said rod, said cap having radial slots in its horizontal portion and vertical slots in its vertical portion, headed bolts secured to the wedge-sections and extending through said radial slots, unheaded bolts secured to the intermediate sections and extending through said vertical slots, a ring around said cap and connected to the projecting portions of said unheaded bolts, a spring within said mandrel normally holding it expanded and a fixture adapted to engage said ring and collapse the mandrel against the energy of said spring.

32. A machine of the character described having a plunger-rod, a mandrel secured to said rod and comprising wedge-sections and intermediate sections, a portion of said rod extending into the mandrel, a spring arranged around the portion of said rod within the mandrel, means to retain the wedge-sections of the mandrel always in the same horizontal relation with the plunger-rod, means to move the wedge-sections vertically with relation to the intermediate sections to collapse the mandrel, and connections between said intermediate sections and the spring and between said spring and the plunger-rod whereby the collapsing of the mandrel will compress said spring.

33. A machine of the character described having a plunger-rod, a mandrel secured to said rod and comprising wedge-sections and intermediate sections, a portion of said rod extending into the mandrel, a nut on the end of said portion of said rod, a spring arranged around said rod and abutting at one end against said nut, means to retain the wedge-sections of the mandrel always in the same relation with the plunger-rod, means to move the wedge-sections vertically with relation to the intermediate sections to collapse the mandrel, a bottom piece arranged below the ends of the sections of the mandrel, and a tube secured to said bottom piece and extending over and forming a bearing for the other end of said spring.

34. A machine of the character described having a contractible mold comprising a plurality of interlocking jaw members and a shrinkable mandrel adapted to be bodily lowered into and raised from said mold.

35. A machine of the character described having a contractible mold comprising a plurality of interlocking jaw members, means to move said jaw members to open and close the mold, a collapsible mandrel adapted to be inserted into said mold and means to compress the material in the bottom of the mold from below.

36. A machine of the character described having a contractible mold comprising a plurality of interlocking jaw members, means to move said jaw members to open and close the mold, a collapsible mandrel adapted to be inserted into said mold, a vertically-movable piece arranged in the bottom of said mold, and means to move said piece to form the bottom of the receptacle.

37. A machine of the character described having a contractible mold comprising a plurality of interlocking jaw members, means to move said members to open and close the mold, a collapsible mandrel adapted to be inserted into said mold, a vertically-movable piece arranged in the bottom of the mold and normally arranged below the level thereof, and means to raise said piece to form the bottom of the receptacle.

38. A machine of the character described having a contractible mold comprising a plurality of interlocking jaw members, toggle-joints, one arranged between each of said jaw members and a fixture, a collapsible mandrel adapted to be inserted into said mold, a vertically-movable piece arranged in the bottom of the mold and normally arranged below the level thereof, levers supporting said piece, and vertically-movable rods having means to operate said toggles and said levers.

39. A machine of the character described having a contractible mold comprising a plurality of interlocking jaw members, toggle-joints, one arranged between each of said jaw members and a fixture, each toggle having one member provided with a laterally-offset finger extending in a line with the longitudinal axis of said member, a mandrel adapted to be inserted into said mold, a vertically-movable piece arranged in the bottom of the mold for forming the bottom of the receptacle, and vertically-movable rods having pins adapted to engage the fingers of the toggles to operate the same.

40. A machine of the character described having a contractible mold comprising a plurality of interlocking jaw members, toggle-joints, one arranged between each of said jaw members and a fixture, each toggle having one member provided with a laterally-offset finger extending in a line with the longitudinal axis of said member, a mandrel adapted to be inserted into said mold, a vertically-movable piece arranged in the bottom of the mold and normally standing below the level thereof, levers supporting said piece, and vertically-movable rods having pins adapted to engage the fingers of the toggles to operate the same, said rods also having means to engage the levers to raise the piece in the bottom of the mold.

41. A machine of the character described having a contractible mold comprising a plurality of jaw members, means to move said members to open and close the mold, a mandrel adapted to be inserted into the mold, a vertically-movable piece arranged in the bottom of the mold, levers supporting said piece and having rollers on their outer ends, and vertically-movable rods having collars adapted to engage said rollers.

42. A machine of the character described having a contractible mold comprising a plurality of jaw members, each jaw member having a straight tongue extending therefrom and engaging a groove in the adjacent member, the surfaces of said tongues which form the interior of the mold being arranged at right angles to each other and adapted to open and close upon one another.

43. A machine of the character described having a contractible mold comprising a plurality of jaw members, said members having chambers therein communicating with the interior of said mold, and means to carry off the water from said chambers as the material is compressed in the mold.

44. A machine of the character described having a contractible mold comprising a plurality of jaw members, said members having chambers therein communicating with the interior of the mold, and means to create a vacuum in said chambers to draw off the water as the material is compressed in the mold.

45. A machine of the character described having a contractible mold comprising a plurality of interlocking jaw members, said jaw members having chambers therein, one between each adjacent pair thereof, the inner walls of said members having perforations leading to said chambers and means to create a vacuum in said chambers and draw off the water pressed from the material as a receptacle is formed.

46. A machine of the character described having a contractible mold comprising a plurality of jaw members, said members having chambers therein, one between each adjacent pair thereof, the inner walls of said members having perforations leading to said chambers, a plate arranged below said members and having openings therein arranged below said chambers, pipes connected to said openings, and means to create a vacuum in said chambers and draw off the water pressed from the material through said pipes.

47. A machine of the character described having a contractible mold comprising a plurality of jaw members, said

members having chambers therein, one between each adjacent pair thereof, the inner walls of said members having perforations leading to said chambers, a plate arranged below said member and having countersunk openings therein connected by grooves, said openings being located below said chambers, pipes fitted in said openings, and means to create a vacuum in said chambers and draw off the water pressed from the material through said pipes.

48. A machine of the character described having a contractible mold comprising a plurality of jaw members, said members having chambers therein, said members having perforations leading to said chambers, a plate arranged below said members and having openings therein arranged below said chambers, an air-tight box arranged below said plate, pipes connecting said box with the openings in said plate and a pump connected up with said box for the purpose specified.

49. A machine of the character described having a contractible mold comprising a plurality of jaw members, each member having an extending tongue engaging a groove in the adjacent member, said members having chambers arranged between them, the inner walls of said members having perforations leading to said chambers which are closed at the sides and top by other tongues engaging other grooves and arranged parallel to the first-mentioned tongues, and means to draw water from the mold through said chambers.

50. A machine of the character described having a contractible mold comprising four jaw members, each member having two extending tongues, arranged parallel to each other, one on the inner surface of said mold and the other at the outer surface thereof, said members having chambers arranged between said inner and outer tongues and communicating with the interior of said mold, and means to draw water from the mold through said chambers.

51. A machine of the character described having a contractible mold comprising four jaw members, each member having two extending tongues arranged parallel to each other, one on the inner surface of said mold and the other at the outer surface of said mold, and a third tongue extending across between said parallel tongues at the top of said jaw members, said members having chambers arranged between said inner and outer parallel tongues and below said third tongues, said chambers communicating with the interior of said mold, and means to draw water from the mold through said chambers.

52. In a machine of the character described, a vertically-movable head-plate mounted on suitable guides, a screw connected to said head-plate and secured against rotation, a horizontal beveled gear interiorly screw-threaded and mounted around said screw, oppositely-extending shafts each carrying a beveled pinion, said pinions facing each other and meshing with said horizontal gear, and means to alternately revolve said shafts whereby said horizontal gear is revolved in opposite directions and the head-plate is raised and lowered.

53. In a machine of the character described, a contractible mold comprising a plurality of jaw members, means to open and close said jaw members including vertically-movable rods and a head-plate to which said rods are secured, a screw connected to said plate and secured against rotation, a horizontal beveled gear interiorly screw-threaded and mounted on said screw, oppositely-extending shafts each carrying a beveled pinion, said pinions facing each other and meshing with said horizontal gear, and means to alternately revolve said shaft whereby said horizontal gear is revolved in opposite directions and the head-plate and jaw-operating rods are raised and lowered.

54. In a machine of the character described, a vertically-movable head-plate mounted on suitable guides, a screw connected to said head-plate and secured against rotation, a horizontal beveled gear interiorly screw-threaded and mounted upon said screw, oppositely-extending shafts, each carrying a beveled pinion and a loose gear, said pinions facing each other and meshing with said horizontal gear, clutches on said shafts to engage said loose gears, and means to alternately throw in said clutches for the purpose specified.

55. In a machine of the character described, a vertically-movable head-plate mounted on suitable guides, a screw connected to said head-plate and secured against rotation, a horizontal beveled gear interiorly screw-threaded and mounted upon said screw, oppositely-extending shafts, each carrying a beveled pinion and a loose gear, said pinions meshing with said horizontal gear, clutches on said shafts to engage said loose gears, a gear-wheel having cams on the sides of its periphery, a longitudinally-movable rod having projecting rollers engaging said cams, pivoted levers engaging said clutches and adapted to be actuated by the longitudinal movement of said rod and means to revolve said cam-carrying gear for the purpose specified.

56. In a machine of the character described, a vertically-movable head-plate mounted on suitable guides, a screw connected to said head-plate and secured against rotation, a horizontal beveled gear interiorly screw-threaded and mounted upon said screw, oppositely-extending shafts, each carrying a beveled pinion and a loose gear, said pinions meshing with said horizontal gear, clutches on said shafts to engage said loose gears, a gear-wheel having cams on the sides of its periphery, a longitudinally-movable rod having projecting rollers engaging said cams, pivoted levers engaging said clutches and adapted to be actuated by the longitudinal movement of said rod and means to revolve said cam-carrying gear for the purpose specified.

57. In a machine of the character described, a vertically-movable head-plate mounted on suitable guides, a screw connected to said head-plate and secured against rotation, a horizontal beveled gear interiorly screw-threaded and mounted upon said screw, oppositely-extending shafts, each carrying a beveled pinion and a loose gear, said pinions meshing with said horizontal gear, clutches on said shafts to engage said loose gears, a gear-wheel having cams on the sides of its periphery, each cam having three surfaces which are arranged in inverse order on opposite sides of said gear, a longitudinally-movable rod having projecting rollers engaging said cams, pivoted levers engaging said clutches and adapted to be actuated by said longitudinally-movable rod, and means to revolve said cam-carrying gear for the purpose specified.

58. In a machine of the character described, a contractible mold comprising a plurality of jaw members, means to open and close said jaw members including vertically-movable rods and a head-plate to which said rods are secured, a screw connected to said plate and secured against rotation, a horizontal beveled gear interiorly screw-threaded and mounted upon said screw, oppositely-extending shafts, each carrying a beveled pinion and a loose gear, said pinions meshing with said horizontal gear, clutches on said shafts to engage said loose gears, a gear-wheel having cams on the sides of its periphery, a longitudinally-movable rod having projecting rollers engaging said cams, pivoted levers engaging said clutches and adapted to be actuated by said longitudinally-movable rod, and means to revolve said cam-carrying wheel for the purpose specified.

59. In a machine of the character described, a mold, a vertically-movable plunger-rod, a mandrel mounted on the end of said plunger-rod and adapted to enter said mold on the downward stroke of said rod, a crank-shaft carrying a crank adapted to reciprocate said plunger-rod, a gear with interrupted teeth on said shaft, another gear with interrupted teeth adapted at intervals during its rotation to mesh with said first-mentioned gear, and means to revolve said second gear whereby said plunger-rod is periodically raised and lowered.

60. In a machine of the character described, a contractible mold comprising a plurality of jaw members, means to open and close said jaw members including vertically-movable rods and a head-plate to which said rods are secured, a hollow screw connected to said plate and secured against rotation, a horizontal beveled gear interiorly screw-threaded and mounted on said screw, a plunger-rod extending up through said hollow screw, a mandrel secured to the end of said plunger-rod, means to periodically reciprocate said plunger-rod, and means to revolve said horizontal gear first in one direction, then in another and to leave said gear stationary at the times when said plunger-rod is being reciprocated.

61. In a machine of the character described, a contractible mold comprising a plurality of jaw members, means to open and close said jaw members periodically, a plunger-rod, a collapsible mandrel mounted on said rod and adapted to enter said mold on the downstroke of said rod and means to reciprocate said plunger-rod at intervals when the mold is open.

62. In a machine of the character described, a contractible mold comprising a plurality of jaw members, means to open and close said jaw members periodically, a plunger-rod, a mandrel mounted on said rod and adapted to enter said mold on the downstroke of said rod, means to reciprocate said plunger-rod at intervals when the mold is open, a cup for feeding material to the mold and means to automatically operate said cup while said mold is open and said mandrel is up.

63. In a machine of the character described, a contractible mold, means to open and close said mold periodically, a plunger-rod, a mandrel mounted on said rod, a crank-shaft carrying a crank adapted to reciprocate said plunger-rod, a cam on said shaft, a cup for feeding material to the mold, means of connection between said cam and cup whereby the former will operate the latter, and means to revolve the crank-shaft, at intervals when the mold is open to operate the cam for actuating the feeding-cup and turn said crank to lower and raise the mandrel.

64. A machine of the character described having a contractible mold comprising a plurality of interlocking jaw members, each member having an extending tongue engaging a groove in the adjacent member, each of said tongues having projecting lugs at the upper and lower extremities of its end extending into sockets in the adjacent jaw member for the purpose specified, and means to move said jaw members to open and close the mold.

847,833. AMMUNITION-BOX. GEORG SCHWARZ, Eisenach, Germany. Filed Mar. 26, 1906. Serial No. 308,141.

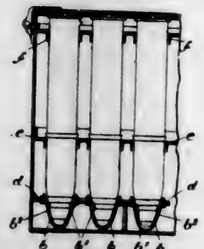

Claim.—An ammunition-box comprising a cup-shaped cap having spaced annular ribs forming an intermediate increased portion for receiving and entirely covering the top primer of the projectile, an elastic plate for supporting the cap to allow vertical and lateral movement of the projectile, and means for holding the plate in position in the box.

847,834. CONTROLLING MEANS FOR PLANER-PLATEN-DRIVING MECHANISMS. WILLARD T. SEARS, Philadelphia, Pa., GEORGE E. GREENLEAF, Plainfield, N. J., and GEORGE T. REISS, Hamilton, Ohio. Filed Sept. 18, 1906. Serial No. 335,075.

Claim.—1. Controlling apparatus for planer-platens consisting of two pneumatic clutches for moving the platen in opposite directions, a supply-pipe connected to a source of fluid under pressure, a pipe leading from each clutch, a distributing-valve for connecting either of the pipes with the supply-pipe or with the exhaust, and means for throttling or retarding the flow of fluid under pressure to the clutches, substantially as described.

2. Controlling apparatus for planer-platens consisting of two pneumatic clutches for moving the platen in opposite directions, a supply-pipe connected to a source of fluid under pressure, a pipe leading from each clutch, a distributing-valve for connecting either of said pipes with the supply-pipe or with the exhaust, and throttling means in each of the pipes connecting the distributing-valve with the respective clutches, substantially as described.

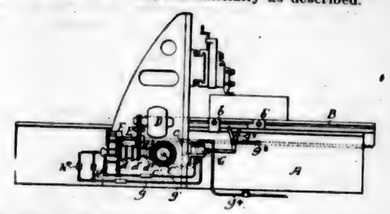

3. Controlling apparatus for planer-platens consisting of two pneumatic clutches for moving the platen in opposite directions, a supply-pipe connected to a source of fluid under pressure, a pipe leading from each clutch, a distributing-valve for connecting either of said pipes with the supply-pipe or with the exhaust, and a valve in each of the pipes connecting the distributing-valve with the respective clutches, said valves being placed to throttle the fluid flowing to said clutches, with means for adjusting each of the throttle-valves, substantially as described.

4. Controlling apparatus for planer-platens consisting of two pneumatic clutches for moving the platen in opposite directions, a supply-pipe connected to a source of fluid under pressure, a pipe leading from each clutch, a distributing-valve for connecting either of said pipes with the supply-pipe or with the exhaust, and a valve in each of said pipes connecting the distributing-valve with the respective clutches, said latter valves being constructed to throttle both the fluid flowing to the clutches as well as that flowing from the clutches, substantially as described.

5. Controlling apparatus for planer-platens consisting of two pneumatic clutches for moving the platen in opposite directions, a supply-pipe connected to a source of fluid under pressure, a pipe leading from each clutch, a distributing-valve for connecting either of said pipes with the supply-pipe or with the exhaust, and a valve in each of said pipes connecting the distributing-valve with the respective clutches, said latter valves being constructed to throttle the fluid flowing to the clutches and to a variable extent that flowing from the clutches, substantially as described.

6. Controlling apparatus for planer-platens consisting of two pneumatic clutches for moving the platen in opposite directions, a supply-pipe connected to a source of fluid under pressure, a pipe leading from each clutch, a distributing-valve for connecting either of said pipes with the supply-pipe or with the exhaust, and a valve in each of the pipes connecting the distributing-valve with the clutches, with adjustable means for each of said valves for holding it from its seat to any desired extent, and other means for adjusting the amount of its possible opening, substantially as described.

7. Controlling apparatus for planer-platens consisting of two pneumatic clutches for moving said platen in opposite directions, a supply-pipe connected to a source of fluid under pressure, a distributing-valve, pipes connecting said valves with the clutches, and means in said pipes for throttling fluid flowing therethrough in either direction, substantially as described.

847,835. TYPE-WRITING MACHINE. JEROME B. SECOR, Derby, Conn., assignor to The Williams Typewriter Company, Derby, Conn., a Corporation of Iowa. Filed Aug. 7, 1903. Serial No. 168,600.

Claim.—1. In a type-writing machine the combination of a key-bar having at its heel or fulcrum end, an upwardly and horisontally projecting jaw or lug 3 with a convex bottom surface forming a rocking bearing, and a bearing-plate 4 projecting horizontally beneath said lug 3, substantially as shown and described.

2. In a type-writing machine a key-bar having at its heel or fulcrum end an upwardly and horisontally pro-

jecting bearing-lug 3 and a downward projection 6; in combination with a plate 4 projecting horizontally beneath the lug 3 to form a bearing therefor, a support 9 to which the plate 4 is attached forming a shoulder against which the lug 3 rests, and a spring 7, connected to the downward projection 6, tending to restore the key-bar to normal position when depressed and to draw the bearing-lug 3 horizontally against the support 9, substantially as set forth.

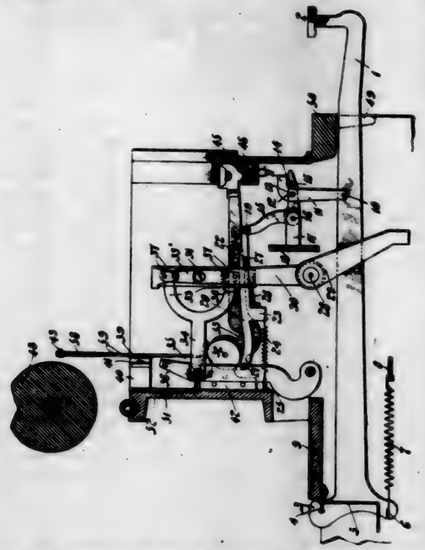

3. The combination of the key-bar 1 having at its heel or fulcrum end an upwardly and horizontally projecting bearing-lug 3 and a downward projection 6; the bearing-plate 4 on which the lug 3 rocks, the support 9 forming a vertical shoulder against which said lug rests, the spring 7 tending to restore the key to normal position and to press the lug 3 horizontally against the support 9 and the comb-plate 5 to retain the assembled key-bars against lateral movement, substantially as set forth.

4. In a type-writing machine the combination of a key-bar, a bell-crank lever and an L-shaped link formed of two leaves straddling the bell-crank lever and bearing thereon by its horizontal upper end and articulated by its lower end to the key-bar so as to be actuated thereby, substantially as set forth.

5. The combination of the key-bar 1, bell-crank lever 15, link 11 articulated by its lower end to the key-bar and having a forward extension 11ª bearing on the horizontal arm of the bell-crank near its forward end, and a slot-and-pin connection 12, 13 whereby after the first depression of said lever-arm it is depressed with an accelerated movement.

6. In a type-writing machine, the combination of a key-bar, a bell-crank lever, a link connecting said key-bar with said bell-crank lever and straddling said lever, with means of varying the point of application of power, substantially as set forth.

7. In a type-writing machine the combination of a key-bar, a type-bar, a bell-crank lever a link connecting the type-bar and the bell-crank lever, and a link connecting the key-bar and the bell-crank lever, the link connecting the key-bar and bell-crank lever being made to bear near the outer end of the bell-crank lever on the first depression of the key-bar, and in the latter part of its depression to act on said bell-crank lever at a point nearer its fulcrum, substantially as and for the purpose set forth.

8. The combination of the key-bar, bell-crank lever, link articulated by its lower end to the key-bar and having a forward extension the extreme end of which is unconnected with but is adapted to bear on the upper face of the horizontal arm of the bell-crank near its forward end, and a slot-and-pin connection whereby after the first depression of said lever-arm it is depressed with an accelerated movement.

9. In a writing-machine, the combination with a key-bar and a type-bar, of a sublever connected to said type-bar and a link connecting said key-bar with said sublever, straddling said sublever and varying in its point of application of power thereto.

10. In a writing-machine, the combination with a type-bar, of a pivot for supporting said type-bar and a type-bar bracket formed with two cheek-plates supporting said pivot, embracing the heel of the type-bar, and formed on their inner faces with circular recesses about said pivot, and annular flat bearing-surfaces surrounding said recesses and arranged in the plane of movement of the type-bar.

11. In a writing-machine, the combination with a type-bar, of a pivot supporting said type-bar, and a bracket comprising a separating-plate and extended cheek-plates for supporting said pivot formed with circular recesses surrounding said pivot and flat annular bearing-surfaces surrounding said recesses and arranged in the plane of movement of the type-bar.

12. The combination with the type-bar and the universal bar positioned beneath said type-bar intermediate its ends, when in normal position, of the link connected to the heel of said type-bar and extending toward the free end thereof, a hooked bar pivoted to the said link and adapted to engage with the universal bar near the end of the active movement of the said link.

13. The combination with the type-bar and the universal bar located beneath the type-bar intermediate its ends, when in normal position, of a link comprised of two leaves pivoted to the heel of the said type-bar, straddling said type-bar and extending toward its free end, and a hook pivoted between the said leaves and engaging the universal bar near the end of the active movement of the said link.

14. In a type-writing machine, the combination with the type-bars and their operating-links, of a universal bar comprising a lower horizontal member and an upper member curved to avoid the type-bars and their operating-link, and means carried by said links for engaging the upper member of said universal bar.

15. In a type-writing machine, the combination with the type-bars and their operating-links, of a rock-shaft, upwardly-extending arms on said rock-shaft, of yokes having rearwardly-extending horizontal arms and curved forward arms integral vertical arms pivoted to the upwardly-extending arms on said rock-shaft, of a universal bar connected at its ends to the forward parts of the said yokes and comprising a lower horizontal member and a curved upper member, and means carried by the type-bar-operating links for engaging the upper member of said universal bar.

16. In a writing-machine the combination with a type-bar and a guiding-link, of a universal bar comprising a curved upper engaging member disposed beneath said type-bar and actuating-link, and a lower horizontal bracing member, means carried by the actuating-link for engaging said curved member, guiding-yokes secured to each end of the two members of said universal bar, pivoted supports at the forward ends of said guiding-yokes and means for supporting said guiding-yokes at their rear ends.

17. In a writing-machine, the combination with a plurality of type-bars and a plurality of key-bars, of a series of plates, and a plurality of levers mounted in each of said plates and connected to said type-bars and key-bars, certain of said levers being bent at their ends to overlap the ends of adjacent levers.

18. In a type-writing machine, the combination with a pivoted "front-strike" type-bar mounted to lie in an approximately horizontal plane when at rest, of a forwardly-extending horizontal link formed of two members pivoted to opposite sides of the heel of the type-bar and receiving the type-bar between the members when in a position of rest, and a spring connected at one end to the link and at the other end to the frame of the machine.

19. In a type-writing machine, the combination with the pivoted "front-strike" type-bars, the pivoted key-levers arranged below the type-bars, and the horizontal links pivoted to the heels of the type-bars, of a universal bar operated by the links and located between the type-bars and the key-levers and between the ends of the links.

20. In a type-writing machine, the combination with the type-bars and the key-levers, of a plurality of independent bearing-plates arranged in various horizontal planes, and a plurality of bell-crank levers mounted on each bearing-plate, and forming a connection between the type-bars and the key-levers, some of the bell-crank levers on each bearing-plate overlapping other bell-crank levers on the same bearing-plate.

21. In a type-writing machine, the combination with the type-bars and the key-levers, of a plurality of shafts located in various horizontal planes, and a plurality of bell-crank levers journaled on each shaft and connecting the type-bars and the key-levers, some of said bell-crank levers on each shaft overlapping other of the bell-crank levers on the same shaft.

22. In a type-writing machine, the combination with the key-levers and the type-bars, of bell-crank levers connecting the key-levers and the type-bars, said bell-crank levers being divided into groups turning about various axes, some of the bell-cranks of each group overlapping other members of the same group.

23. In a type-writing machine, the combination of a type-bar, a key-bar, an actuating-link interposed between said type and key bars, said key-bar operating through said actuating-link to effect the printing stroke of said type-bar and a spring connected to said actuating-link for returning said type-bar upon the completion of said printing stroke, said type-bar, actuating-link and spring lying in substantially a horizontal plane when said type-bar is in its normal nested position.

847,836. CULTIVATOR. PLEZE M. SHERMAN, Sharon, Kans. Filed June 8, 1906. Serial No. 320,810.

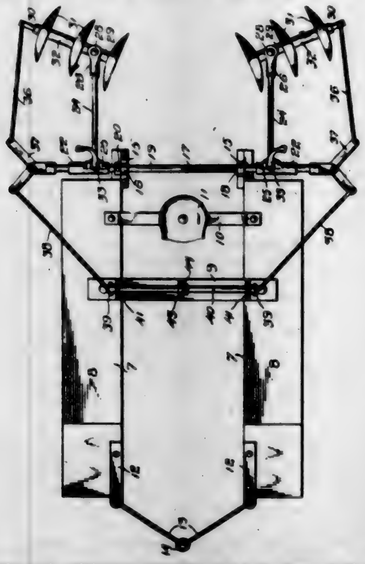

Claim.—A cultivator comprising a body formed of a pair of connected runners; a perforated bracket mounted upon the inner face of each runner adjacent the rear end thereof; a disk-frame pivotally mounted in said brackets; a pair of oppositely-disposed disk gangs connected with said frame; means connected with said frame, for raising or lowering the same as an entirety; an angle-lever pivotally mounted on each end of said frame; a link connecting each of said disk gangs with the adjacent arm of the corresponding angle-lever; an arch mounted upon said runners in advance of said brackets; a perforated rack-segment mounted upon the top of said arch; a rod mounted in said rack-segment intermediate its ends and having its opposite ends bent downwardly; a link connecting each of said bent ends with the opposite arm of the corresponding angle-lever; a lever secured to said rod and connected with said segment for simultaneously angling both disk gangs with respect to the line of draft; and separate means connected with each disk gang for adjusting the angle of inclination of the same with respect to the ground.

847,837. PISTOL. MILTON J. SHIMER, Freemansburg, Pa. Filed Nov. 16, 1906. Serial No. 343,655.

Claim.—1. In a pistol, the combination with a frame and a pivoted barrel, of a hammer, a trigger adapted for locking engagement with the hammer, a projection from the barrel adapted for locking engagement with the trigger when the barrel is open, and a spring in engagement with the trigger and the barrel.

2. In a pistol, a pivoted trigger, a pivoted barrel having a downward extension from its breech end for locking engagement with the trigger, and a spring bearing at one end against the barrel near its pivot and at the other end against the front of the trigger.

3. In a toy pistol, a frame, a barrel pivoted in said frame, a trigger for the barrel, and a spring in engagement with the trigger and the barrel, acting to hold the barrel in either open or closed position.

4. In a toy pistol, the combination with the frame, a barrel pivoted in the frame and a foot extending downward from the breech end of the barrel, of a spring-controlled hammer pivoted in said frame, a trigger also pivoted in said frame, a spring having bearing against the trigger and against the barrel at the trunnion therefor, which spring tends to force the trigger in direction of the hammer and also acts to hold the barrel in either closed or open position, a head for the trigger provided with a forwardly-extending spur and a sear-point at its rear, the sear-point being adapted for engagement with the foot extension of the barrel.

5. In a toy pistol, a frame, a barrel pivoted in the said frame, a foot extension from the bottom portion of the barrel at its breech, which extension is forwardly curved and is provided with a shoulder at its rear edge, a spring-controlled hammer pivoted in the frame, a trigger likewise pivoted in said frame, said trigger being provided with a head having a sear-point for engagement with the hammer and a projection for engagement with the extension from the barrel, the trigger having a recess in the forward edge of said head, and a spring having bearing at one end against the under side of the barrel adjacent to its pivot, the other end of said spring engaging the said recess in the forward edge of the head of the trigger.

6. In toy pistols, a frame, a barrel pivoted in the frame and a hood formed at the upper rear portion of the frame, adapted as a backing for the breech of the barrel when closed, said hood having an opening therein for the passage of the striking-head of the hammer, the hood being

provided with a forwardly-extending flange at its top, the said flange extending from side to side of the frame and tapering at its under face.

7. In toy pistols, a frame, a barrel pivoted in the frame, a hood having an opening therein formed at the upper rear portion of the frame, occupying a position at the rear of the breech of the barrel when closed, said hood having an upper forwardly-extending flange for the purpose described.

847,838. MACHINE FOR CUTTING WEB MATERIALS. WILLIAM D. SKIDMORE, Pelham, N. Y. Filed Apr. 19, 1906. Serial No. 312,652.

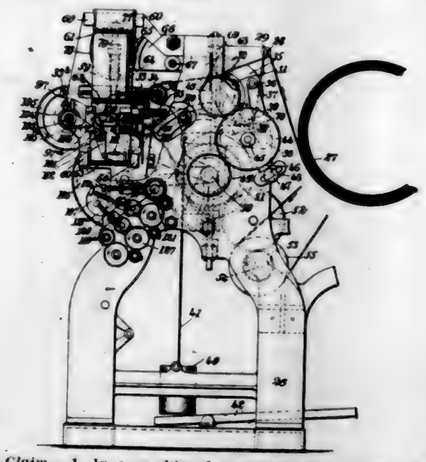

Claim.—1. In a machine for cutting web material, the combination of a ledger-blade, means for adjustably mounting the same, a shear-blade, a slide on which the same is pivotally mounted, and a spring pressing the shear-blade toward the ledger-blade.

2. In a machine for cutting web material, the combination of a ledger-blade, means for adjustably mounting the same, a shear-blade, a slide on which the same is pivotally mounted, a spring pressing the shear-blade toward the ledger-blade, and a finger attached to the shear-blade and continuously engaged with the ledger-blade.

3. In a machine for cutting web material, the combination of a means for feeding the material, a knife-carriage, means for moving the same in unison with the said material, a ledger-blade mounted on the knife-carriage, a shear-blade, a slide mounted on the carriage, and carrying the shear-blade, and means for periodically actuating the same.

4. In a machine for cutting web material, the combination of means for feeding the material, a knife-carriage, a knife and its operating means, a rack in connection with the carriage, a toothed sector meshed with the rack, a shaft on which the toothed sector is carried, a second toothed sector fastened to said shaft, a sliding rod having teeth thereon meshed with tae second toothed sector, and a cam adapted to impart reciprocal motion to said rod.

5. In a machine for handling web material, the combination of a feed-roll, pressure-rolls engaged therewith, a yoke in connection with the axes of said pressure-rolls, and means for exerting pressure against the yoke, for the purpose specified.

6. In a machine for handling web material, the combination of a feed-roll, pressure-rolls engaged therewith, a yoke in connection with the axes of said pressure-rolls, and means for exerting pressure against the yoke, for the purpose specified, said means comprising a rocking arm in connection with the yoke, a second arm in connection with the rocking arm, and a weight joined to the second arm.

7. In a machine for handling web material, the combination of a feed-roll, pressure-rolls engaged therewith, a yoke in connection with the axes of said pressure-rolls, a means for exerting pressure against the yoke, for the purpose specified, said means comprising a rocking arm in connection with the yoke, a second arm in connection with the rocking arm, a weight joined to the second arm, and means for raising the weight at will.

8. In a machine for cutting web material, the combination of a ledger-blade, a shear-blade, a spring pressing said shear-blade toward said ledger-blade, and mechanism including a tappet for periodically pressing against said spring.

847,839. CULINARY TONGS. CHARLES F. SMITH, New York, N. Y. Filed Nov. 17, 1906. Serial No. 343,846.

Claim.—1. The herein-described culinary tongs consisting of a single wire bent upon itself to form two arms normally tending to spring apart, said arms being outwardly bulged at a point intermediate their length to form inclined portions, pockets formed at the outer ends of said arms, and a device having a guide at its lower end embracing said arms intermediate the pockets and inclined portions, whereby when said device is drawn upwardly, the pockets are forced together, and when released the pockets are automatically separated.

2. The herein-described culinary tongs consisting of two arms connected together by a spring member tending to force them apart, holding means at the extremities of said arms, said arms having outwardly-inclined portions above said holding means, and a device having a guide embracing the arms between the holding means and inclined portions, whereby when said device is drawn in one direction, the holding means are forced together, and when released said holding means are automatically separated.

3. The herein-described culinary tongs consisting of a single wire bent upon itself to form two arms connected together by a spring-eye tending to force said arms apart, a pocket carried at the free end of each arm, said arms having outwardly-bulged portions above said pockets, a second wire having a guide formed at each end embracing said arms below and above said bulged portions, and a second eye formed on said second wire in the plane at right angles to said first eye, whereby when said eyes are drawn together, the pockets approach each other, and when said second eye is released, the pockets are automatically separated.

847,840. PORTABLE HUMIDIFIER. JOSEPH J. SMITH, New York, N. Y. Filed May 10, 1906. Serial No. 316,060.

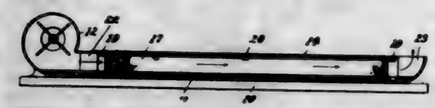

Claim.—1. A humidifier comprising an elongated trough adapted to contain a body of water, a removable cover for said trough having depending flanges extending to the bottom region of said trough so as to be sealed by the water therein, a series of capillary mantles mounted in said trough, and having their lower edges in said bottom region so as to be immersed in said water, an air-inlet and an air-outlet located respectively at opposite ends of the trough, and a blower adapted to create a current of air through the trough along the surface of the water and among the mantles.

2. A humidifier comprising an elongated horizontal trough adapted to contain a body of water and having an inlet at one end and an outlet at the other end, a blower at one end of the trough for creating an air-current therethrough, a removable cover forming the top wall of the trough, and a series of capillary mantles suspended from said cover and having their lower edges in the bottom region of the trough for moistening the air-current.

3. A humidifier comprising an elongated horizontal trough adapted to contain water, means for forcing an air-current through said trough, mantle-holding means in the upper region of the trough, and a freely-suspended mantle detachably secured to said means and having a weighted lower edge near the bottom of the trough.

4. A humidifier comprising an air-conduit, means for inducing a current of air therethrough, a mantle in the path of the air-current for moistening said current, a flexible rod attached to the upper edge of said mantle, sockets into which the ends of said rod are slipped, and a spring-clip sustaining the intermediate portion of the rod.

5. A humidifier comprising a horizontal trough adapted to contain a body of water and having an air-outlet at one end, an air-inlet at the opposite end, and a fan-blower in connection with said air-inlet, a removable cover forming the top wall of said trough and having rod-holders, a series of longitudinal vertical mantles freely suspended in said trough, rods detachably mounted in said rod-holders and attached to the upper edges of said mantles, and weighting-rods attached to the lower edges of said mantles for keeping said lower edges immersed.

847,841. PICKING-ROD. CLARENCE A. STANLEY, Cambridge, Md. Filed June 8, 1906. Serial No. 320,860.

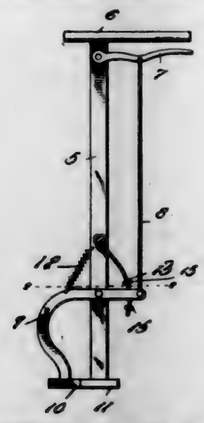

Claim.—1. A picking-rod, comprising, in combination, a shank, provided at one end with a horizontally-arranged jaw secured thereto, and at the other end with a horizontally-arranged handle; a curved rod pivoted intermediate its ends to the jaw end of said shank; a horizontally-arranged jaw secured to the outer end of said curved rod; a lever pivoted at one end to the handle end of said shank and in proximity to the handle; a link connecting said lever and curved rod; a spring connecting said curved rod and shank for normally holding said jaws in open position; and a gage connecting said shank and the inner end of said curved rod, for limiting the movement of said curved rod.

2. A picking-rod, comprising, in combination, a shank, provided at one end with a horizontally-arranged handle, and at the other end with a horizontally-arranged jaw; a curved rod pivoted intermediate its ends to the jaw ends of said shank, said curved rod having a horizontally-arranged jaw secured to its outer end, and being formed with a longitudinal slot at its inner end; an operating-lever pivoted at one end to the handle end of said shank; a link connecting said lever with the inner end of said curved rod; a spring connecting the jaw side of said curved rod with said shank for normally holding said jaws in open position with respect to each other; a gage-rod secured at one end to said shank and disposed with its opposite end extending through the slot in said curved rod; and a pair of nuts arranged on said gage-rod on opposite sides of said curved rod, for limiting the swinging movement thereof.

847,842. TELEPHONE-RECEIVER. LOUIS STEINBERGER, New York, N. Y. Filed Aug. 4, 1904. Serial No. 219,452.

Claim.—1. In a telephone-receiver, the combination of a metallic member provided with an enlarged end integral therewith, said enlarged end having mutilations disposed internally thereof and also being threaded externally, a member of insulating material molded into said metallic member and also into the internal mutilations thereof so as to prevent relative movement as between said metallic member and said member of insulating material, a cap of insulating material threaded internally and fitted upon said enlarged end, and magnetic mechanism supported by said member of insulating material and a diaphragm disposed adjacent to said magnetic mechanism.

2. In a telephone-receiver, a metallic casing provided with an enlarged end having mutilations disposed internally thereof, a member of insulating material encircled by said casing and provided with an enlarged end having portions extending into said mutilations, a diaphragm mounted upon said member of insulating material, and magnetic mechanism supported in proximity to said diaphragm by said member of insulating material.

847,843. LEGGING. FLOYD J. STEWART, Grinnell, Iowa. Filed June 18, 1906. Serial No. 322,640.

Claim.—1. The combination of a flexible legging-body portion, a rod having arms thereon, said arms projected toward one edge of the legging-body portion and pivotally connected thereto, a hook near the other edge of the legging-body portion and a fastening device secured to the legging-body portion adjacent to the hook to engage and hold the edge of the legging-body portion to which the rod is pivoted.

2. The combination of a flexible legging-body portion, a rod having arms therein, said arms projected toward one edge of the legging-body portion and pivotally connected thereto, a number of hooks secured near the other edge of the legging-body portion to engage said rod and a number of fastening devices secured to the legging-body portion beyond the hooks to engage and hold the edge of the legging-body portion to which the rod is pivoted.

3. The combination of a legging-body portion having one edge overlapping the other at the side and means for detachably securing the overlapping edge to the other part of the legging, comprising a fastening member hinged to the overlapping edge and capable of swinging to a position projecting beyond the overlapping edge or to a position

against the inner face of the legging away from the overlapping edge, a hook adjacent to the underlying edge and a fastening device on the underlying edge beyond the hook.

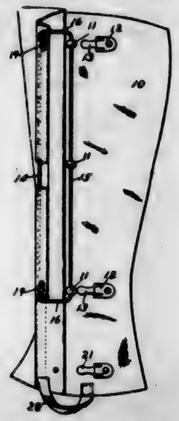

4. The combination of a legging-body portion formed with an overlapping edge at one side, two substantially parallel rods spaced apart and connected at their ends, one of said rods pivotally secured to the overlying edge of the legging, a number of hooks near the underlying edge to engage the free one of said rods and means for securing the overlying edge in position covering the said hooks and the said pivoted rod.

5. The combination of a legging-body portion having an overlapping edge, two substantially parallel rods connected at their ends and spaced apart, one of said rods pivotally secured to the overlapping edge and said overlapping edge formed with eyelets or openings adjacent to the pivoted rod on the side away from the edge, a number of hooks fixed near the underlying edge and a number of latch devices secured to the underlying edge beyond the hooks and each having a pivoted spring-lever to enter the eyelets or openings of the overlying edge and hold said overlying edge close to the underlying edge when the free rod is in said hooks.

6. The combination of a legging-body portion having an overlapping edge, two substantially parallel rods connected at their ends and spaced apart, one of said rods pivotally secured to the overlapping edge and said overlapping edge formed with eyelets or openings adjacent to the pivoted rod on the side away from the edge, a number of hooks fixed near the underlying edge, a number of latch devices secured to the underlying edge beyond the hooks and each having a pivoted spring-lever to enter the eyelets or openings of the overlying edge and hold said overlying edge close to the underlying edge when the free rod is in said hooks and an adjustable fastening device secured to the edge portions of the legging below said rod.

847,844. GARMENT-PATTERN. MILLICENT M. STILLMAN, New York, N. Y. Filed Feb. 13, 1907. Serial No. 357,150.

Claim.—1. A garment-pattern in a single piece having armholes indicated thereon, back and front body portions, back and front shoulder portions, the front shoulder-seam line being cut on a lower plane than the lowest point of the back shoulder-seam line and so formed that its opposite points as a will practically touch a horisontal line drawn at right angles from the middle vertical line of the back, and a waist-line describing a compound curve substantially as shown.

2. A garment-pattern in a single piece having armholes indicated thereon, back and front body portions, back and front shoulder portions, the front shoulder-seam line being on a lower plane than the lowest point of the back shoulder-seam line and so formed that its opposite points as a will practically touch a horizontal line drawn at right angles from the middle vertical line of the back, a waist-line describing a compound curve substantially as shown,

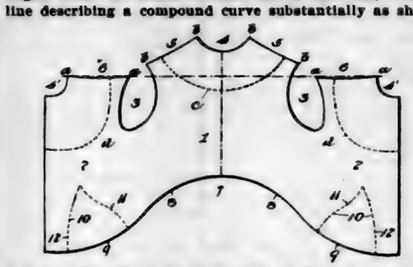

a dart indicated on the front body portion, the inner line of the dart describing a compound curve, and the outer line of said dart a single sweep or simple curve, all substantially as and for the purposes set forth.

847,845. SAWING-MACHINE. FRED C. STOBBS, Chicago, Ill. Filed May 1, 1905. Serial No. 258,253.

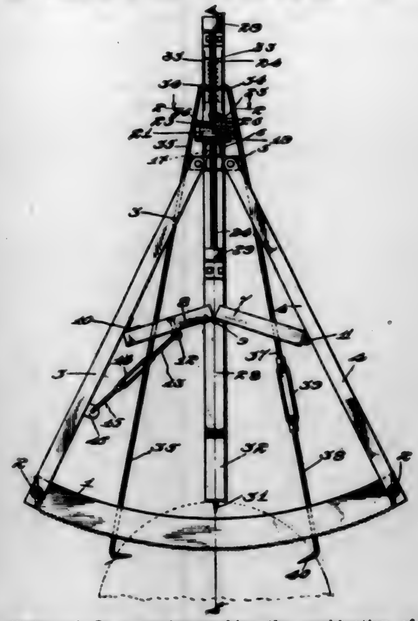

Claim.—1. In a sawing-machine the combination of a saw-blade, a saw-frame comprising arms secured at their lower ends to the blade and pivotally connected together at their inner ends, toggle-arms secured to one of the first arms and removably engaging the other arm for connecting the first said arms together, means for operating said toggle-arms to move the first said arms toward and from each other, a standard, and means pivotally supporting said saw-frame upon the standard.

2. In a sawing-machine the combination of a standard, a saw-frame comprising two arms having their inner ends arranged contiguous to each other and pivotally supported upon the standard, a saw-blade removably secured to the outer ends of said arms, and a cross-brace removably secured between said arms, whereby the said machine may be folded up.

3. In a sawing-machine the combination of a standard, a saw-frame comprising two arms having their inner ends arranged contiguous to each other and pivotally supported upon the standard, a saw-blade removably secured to the outer ends of said arms, a hinged cross-brace, one end of which is pivoted to one of the arms, the other end removably engaging the other arm, and adjustable means engaging one of the sections of the cross-brace and the adjacent arm, for varying the position of the arms.

4. In a sawing-machine the combination of a standard, a saw-frame comprising two arms having their inner ends arranged contiguous to each other and pivotally supported upon the standard, a saw-blade removably secured to the outer ends of said arms, a hinged cross-brace, one end of which is pivoted to one of the arms, the other end removably engaging the other arm, a rod pivotally connected to one section of the brace, a second rod pivoted to the adjacent arm and a turnbuckle connecting the free ends of the rods for varying the position of the brace members to adjust the arms.

847,846. WINDOW AND DOOR ALARM. JAMES SWAN, Seymour, Conn. Filed Dec. 12, 1906. Serial No. 347,479.

Claim.—A portable window and door alarm comprising a bell having an actuating member projecting therefrom, an operating-lever pivoted to the bell and having a short arm directly engaging the actuating member, a cord connected to the operating-lever and a clamp comprising members pivoted together and a thumb-screw for tightening them about a knob-shank, one of the clamp members having a shank for the attachment of the cord.

847,847. HAY-CARRIER. MATHIAS THURSTON, Stryker, Ohio, assignor to The Ney Manufacturing Company, Canton, Ohio, a Corporation of Ohio. Filed Aug. 11, 1906. Serial No. 330,209.

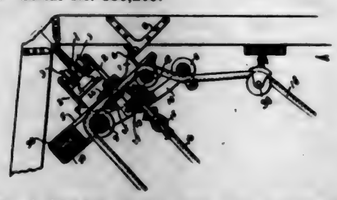

Claim.—1. The hay-carrier of the class described adapted to be mounted upon a track, said carrier consisting of upper and lower frame members, the lower member located at right angles to the upper frame member, a lever carried by the lower frame member, and provided with a catch, a catch-plate for the catch and means for releasing the catch by the downpull of the elevating-rope.

2. The combination of a traveling frame, a track or way for said traveling frame, a guide-track spaced from the track or way, a lateral extension located below the guide-track, a pivoted lever provided with a pulley at its free end, a spring-actuated rod carried by the lever, and one end of the elevating-rope secured to the spring-actuated rod, a pivoted catch carried by said lever and a catch-plate fixed to the frame, and clamping-jaws adapted to be actuated by the lever.

3. In a hay-carrier of the class described, the combination of a carrier-frame adapted to travel upon a track or way, said carrier-frame provided with a lever, a spring-actuated rod carried by said lever, an elevating-rope secured to the spring-actuated rod, a catch, and a catch-plate adapted to lock the lever to the frame, and rope-clamping jaws adapted to clamp the rope when the lever is released.

4. In a hay-carrier of the class described, the combination of a carrier-frame adapted to travel upon a track or way, said frame provided with a lateral extension and a counterweight, said lateral extension and counterweight located upon opposite sides of the track or way, an elevating-rope and means for clamping the rope.

5. In a hay-carrier of the class described, a carrier-frame adapted to travel upon a track or way, said frame provided with a lateral extension, a lever carried by the frame, and provided with a pulley at its free end, a pulley journaled to the frame, and located in a plane above the pulley carried by the lever, said pulley located in a different vertical plane from the one carried by the lever, an elevating-rope located under the pulley carried by the lever and over the pulley carried by the frame, and catch mechanism for the lever.

847,848. HAYSTACK-COVER. FRANK TILTON, McPherson, Kans. Filed Apr. 13, 1906. Serial No. 311,562.

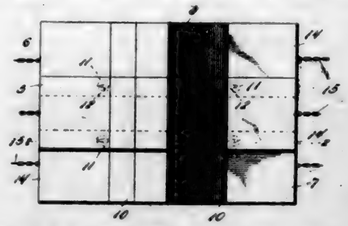

Claim.—1. A haystack-cover comprising a middle section and two end sections, each section being composed of detachably-connected parts, said middle section being disposed above said end sections with its side edges overhanging the side edges of the end sections, whereby said end sections may be telescoped bodily laterally beneath said middle section.

2. A haystack-cover comprising a middle section and a pair of end sections, each section comprising a top piece forming the gable thereof, a pair of central plates attached to the lower edges of the top piece, and a depending panel secured to the lower edge of each central plate, the middle section being disposed above the end sections with its side edges overhanging the side edges of the end sections, whereby said end sections may be telescoped bodily laterally beneath said middle section.

847,849. TROLLEY FOR TRAVELING CRANES. GEORGE A. TRUE, Detroit, Mich., assignor to Northern Engineering Works, Detroit, Mich., a Corporation of Michigan. Filed June 30, 1906. Serial No. 324,266.

Claim.—1. A traveling trolley comprising separated side members and a cross connection thereof, one of said side

members being hollow and constituting a housing for a gear-train.

2. A traveling trolley comprising separated side members and connecting cross-girders, track-wheels for supporting the side members and a motor mounted on said cross-girders, one of said side members being hollow and forming a housing for a gear-train.

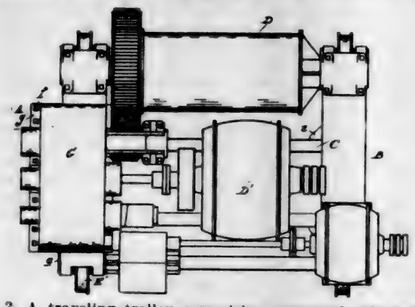

3. A traveling trolley comprising separated side members, each supported by track-wheels, the motor being located between said side members, a cross connection upon which said motor is mounted, and means of attachment between said cross connection and said side members whereby the height of the former may be varied.

4. A traveling trolley comprising separated side members and a cross connection thereof, said side members being formed with a hollow central portion forming a portion of a gear-housing and a removable cap forming a complementary portion of said housing.

5. A traveling trolley comprising side members and a cross connection, one of said side members being an inverted-U-shaped bar having track-wheels in the channel of the U and the central portion of said member being recessed on its upper side to form a gear-housing.

6. A traveling trolley comprising separated side members, track-wheels supporting the same, a motor and a cross connection between said side members forming a support of variable height for said motor.

847,850. TIMBER SEAT AND SUPPORT. JULIUS TUTEUR, Cleveland, Ohio. Filed Sept. 23, 1905. Serial No. 279,771.

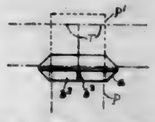

Claim.—1. In a device of the class described, the combination with a lower inverted channeled member, of braces provided thereon for staying the supporting-floor, and an upper channeled member extending parallel with said lower member and whose floor is substantially coincident with that of the lower member throughout their entire lengths; said parts being perforated by alined or registering rivet-holes and secured together to form the complete structure, substantially as set forth.

2. In a sectional or composite post-cap for accommodating timbers of varying sizes, the combination with a lower channeled member fitting the top of the supporting-post, the same being provided with braces or stays for its supporting-floor, and an upper channeled member of such size as to accommodate the supported timbers; said channeled members being superposed the one upon the other, with their floors affording a double thickness of metal substantially throughout their lengths, for sustaining the supported timbers, said floors having registering rivet-holes whereby the parts are securely fastened together, substantially as set forth.

3. In a sectional or composite support of the class described, the combination with upper and lower channeled members, united with their plane faces abutting, and having their floors substantially of equal lengths to afford a reinforced thickness of metal for carrying the supported timbers; one of said members subjected to the greater strain, being formed of a relatively massive casting, and stays or braces provided for the outwardly-extending portions thereof, adapted to assist in carrying the supported weight, both of said members being provided with fastening means for securing them together, substantially as set forth.

4. In a timber seat and support, the combination with an inverted lower member having a supporting-floor and side walls, of an upper channeled member also provided with a supporting-floor and side walls; the supporting-floors being superposed the one upon the other, to register with each other substantially throughout their entire lengths, fastening means for securing the upper and lower members together, and braces or stays provided upon the lower member for assisting in carrying the supported timbers, substantially as set forth.

5. In a sectional or composite timber seat or support, the combination with upper and lower channeled members secured together with their plane faces abutting, and with their supporting-floors substantially coinciding throughout their respective lengths; the major member of said support being formed of a relatively heavy casting for sustaining the greater share of the sustained weight, substantially as set forth.

847,851. REVOLVING MERCURY-DIP CURRENT-INTERRUPTER. FRANCIS M. C. USHER, Fulton, Ky., and CONSUELO A. SEOANE, Merrifield, Va. Filed Sept. 19, 1905. Serial No. 279,198.

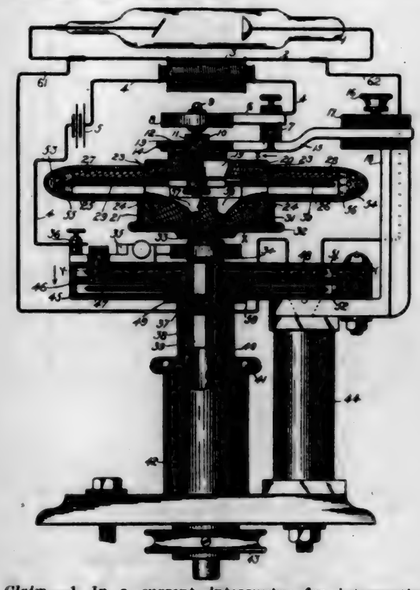

Claim.—1. In a current-interrupter for interrupting the primary and secondary currents of an induction-coil, the combination with sets of revolving needles arranged in the paths of said currents and having different centers of revolution, of means for revolving the said sets of needles, and devices arranged with relation to the paths of the said revolving needles and constructed to enable the said currents to flow by way of the needles of each of said sets of needles during a portion of their revolution.

2. In a current-interrupter for interrupting the primary and secondary currents of an induction-coil, the combination with sets of revolving needles arranged in the paths of said currents and having different centers of revolution, of means for revolving the said sets of needles, revolving, hollow, conducting devices and movable, conducting, fluid bodies contained by said devices permitting intermittent current discharges by way of one of the said sets of needles, and means permitting intermittent current discharges by way of another of the said sets of needles.

3. In a current-interrupter, the combination with revolving tubes, of needles arranged within the tubes and moved thereby, insulating needle-guards arranged about the needles to prevent lateral contact with the tubes, the said needles and tubes having different centers of revolution whereby the needles are reciprocated in the tubes, and means adapted to conductively connect the ends of the needles alternately with the tubes.

4. In a current-interrupter, the combination with revolving tubes, of needles arranged within the tubes and moved thereby, insulating needle-guards arranged about the needles to prevent lateral contact with the tubes, the said needles and tubes having different centers of revolution whereby the needles are reciprocated in the tubes and bodies of mercury in the tubes adapted to conductively connect the ends of the needles alternately with the tubes.

5. In a current-interrupter, the combination with revolving tubes, of needles arranged within the tubes and moved thereby, insulating needle-guards arranged about the needles to prevent lateral contact with the tubes, the said needles and tubes having different centers of revolution whereby the needles are reciprocated in the tubes, quantities of oil within the tubes, and bodies of mercury in the tubes adapted to conductively connect the ends of the needles alternately with the tubes.

6. In a current-interrupter, the combination with revolving contact-needles, of conducting devices having a different center of revolution from that of the needles whereby said needles are revolved, and means borne by said devices and arranged to conductively and alternately connect the ends of the needles and said conducting devices.

7. In a current-interrupter, the combination with revolving contact-needles, of conducting devices having a different center of revolution from that of the needles, the revolution of either of said elements causing the revolution of the other, and means borne by the conducting devices and arranged to conductively and alternately connect the ends of the needles and said conducting devices.

8. In a current-interrupter, the combination with revolving contact-needles, of conducting devices having a different center of revolution from that of the needles, the revolution of either of said elements causing the revolution of the other, one of said elements being adjustable toward or from the other and means borne by the conducting devices and arranged to conductively and alternately connect the ends of the needles and said devices.

847,852. RUNNER FOR UMBRELLAS AND THE LIKE. GUSTAVE V. VAN ROY, Brussels, Belgium. Filed May 22, 1905. Serial No. 261,561.

Claim.—1. The combination, with a runner arranged to slide on the umbrella-stick and provided with means for engagement with the umbrella-braces, of a slide inclosing the runner and having terminal stops to limit its movement relative to said runner.

2. The combination, with a runner arranged to slide on the umbrella-stick and provided with a notch for attachment to the umbrella-braces, of a tubular slide inclosing the runner and axially movable relative thereto, and provided at its terminals with means for limiting said movement.

3. The combination, with a runner, arranged to slide on the umbrella-stick and provided with a notch for the attachment of the umbrella-braces, of a tubular slide arranged to admit the upper end of the umbrella-handle thus to conceal the point of juncture between the stick and handle said slide being axially movable relative to the runner, and means for limiting the said movement.

4. As a new article of manufacture, an attachment for umbrellas comprising a sleeve provided with terminal stops, and a combined notch and runner housed thereby and movable relatively thereto.

5. As a new article of manufacture, an attachment for umbrellas comprising a sleeve, and a combined notch and runner housed thereby and movable relatively thereto, and means for limiting such movement.

6. As a new article of manufacture, an attachment for umbrellas comprising a sleeve having terminal stops, and a combined runner and notch housed by the sleeve and having parts to engage the stops.

7. As a new article of manufacture, an attachment for umbrellas comprising a sleeve provided with terminal stops, and a combined notch and runner housed thereby and having flanges to engage with the inner walls of the sleeve.

847,853. ICE-CREAM FREEZER. HERMANN VIEDT, Morristown, N. J. Filed Jan. 20, 1906. Serial No. 297,083.

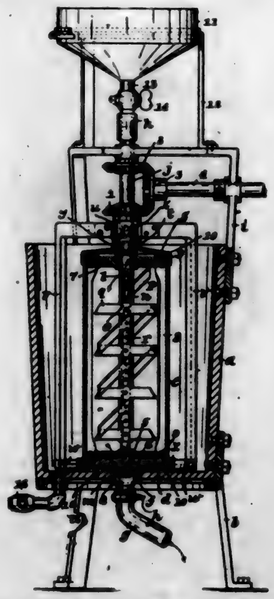

Claim.—1. In an ice-cream freezer or the like, the combination, with the receptacle for the freezing material, of a receptacle for the material to be frozen arranged therein, a rotary shaft arranged vertically in the last-named receptacle, agitators carried by said shaft, said shaft being hollow from its upper end to a point below the top of said last-named receptacle and having discharge-ports near the top of said receptacle, an outlet in the bottom of said receptacle, and a spider arranged in said outlet and forming a step-bearing for said shaft, substantially as described.

2. In an ice-cream freezer or the like, the combination

of a receptacle for the freezing material, a receptacle for the material to be frozen arranged therein, means, comprising a rotary shaft arranged axially of said last-named receptacle, for admitting to the last-named receptacle the material to be frozen, means for effecting the discharge of said last-named receptacle, agitators carried by said shaft, a collar penetrated by said shaft, arms carried by said collar and extending down into the first-named receptacle, a guiding-ring for the lower ends of said arms surrounding and having a bearing on said last-named receptacle and connected with said arms, and means for rotating said collar and the shaft, substantially as described.

3. In an ice-cream freezer or the like, the combination of a receptacle for the freezing material, a receptacle for the material to be frozen fixed therein against lateral movement, means, comprising a rotary hollow shaft arranged axially of said last-named receptacle, for admitting to the last-named receptacle the material to be frozen, a collar penetrated by said shaft, arms carried by said collar and extending down into the first-named receptacle, a guiding-ring for the lower ends of said arms surrounding and having a bearing on the last-named receptacle and connected with said arms, a frame carried by said first-named receptacle, and affording a bearing for said shaft, a hopper carried by the frame and discharging into said shaft, and means, comprising another shaft journaled in said frame, for rotating the shaft and said collar, substantially as described.

847,854. DIVISION-PLATE FOR EGG-CASES. CLARENCE J. VOORHORST, Chicago, Ill. Filed July 29, 1904. Renewed Aug. 21, 1906. Serial No. 331,521.

Claim.—1. As an improved article of manufacture, a pocketed division-plate for packing-cases composed of paper-pulp having its alternate pockets projecting from its opposite faces and having its curv ockets united each with the adjacent pockets by gradually-curved surfaces which curve in all directions on lines merging with the curvature of the pockets and in which no flat surface meets a curved surface throughout the pocketed area of the plate, the edges of the plate being waved longitudinally and curved transversely and forming protecting-lips for the border series of pockets and spacing projections at the edge of the plate, substantially as and for the purposes set forth.

2. A pocketed division-plate having similar pockets on both faces, and whose surface intermediate and uniting its pockets is curved in all directions on lines merging with the curvature of the pockets.

847,855. COMBINATION POWER-MACHINE. GARRETT M. VROOMB, Castleton Corners, N. Y. Filed Feb. 9, 1905. Serial No. 244,972.

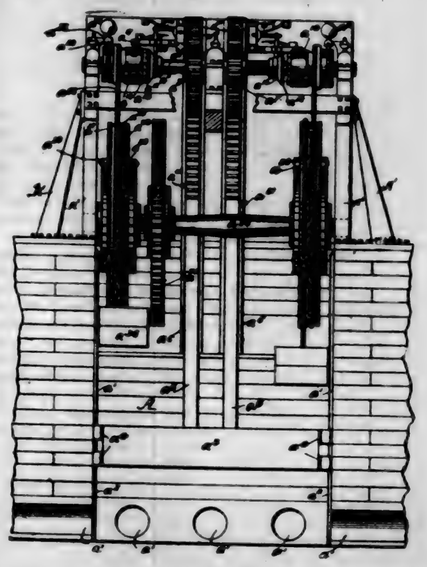

Claim.—1. In an apparatus of the class described, the combination of a float arranged to be acted upon by the rise and the fall of the tide, a rack-bar secured to the float, a shaft, a pinion secured thereto and meshing with the teeth of the rack-bar, a drum journaled on said shaft, a clutch for connecting the drum and said shaft, means whereby the rack-bar may operate the clutch to release the drum at the end of its upward movement, a driving-shaft below said first shaft, a pulley journaled on the driving-shaft, a pawl-and-ratchet connection between the pulley and the driving-shaft, means connecting the drum and the pulley for imparting rotary movement thereto, said pawl-and-ratchet connection releasing the shaft during said rotary movement, and a cable winding upon the pulley during said movement and having an attached weight whereby to rotate said pulley and driving-shaft in the opposite direction when the drum is released.

2. In apparatus of the class described, the combination with the float adapted to be acted upon by the rise and the fall of the tide, a shaft journaled above the float, means connected with the float, for rotating the shaft, a drum journaled on the shaft, clutch mechanism for connecting the drum to the shaft, means connected with the float for actuating said clutch to connect the drum and shaft when the float moves in one direction, and for releasing the connection when said float moves in the opposite direction, a driving-shaft, a pulley on said driving-shaft, a rope having an attached weight connected with said pulley for rotating the driving-shaft in one direction, and means for imparting the rotary movement of the drum to the pulley whereby to wind the rope thereon.

3. In an apparatus of the class described, the combination with the float adapted to be acted upon by the rise and the fall of the tide, a shaft journaled above the float, means connected with the float for rotating the shaft during the upward movement of said float, a driving-shaft, a pulley on said driving-shaft, a rope having an attached weight connected with said pulley for rotating the driving-shaft in one direction, and means for imparting the rotary movement of said first-named shaft to the pulley whereby to wind the rope thereon.

847,856. PROCESS OF TREATING SILICIOUS ORES CONTAINING LITHIA. WALTER E. WADMAN, Bayonne, N. J., assignor to Hygienic Chemical Company of New Jersey, a Corporation of New Jersey. Filed May 10, 1906. Serial No. 316,231.

Claim.—1. The within-described process of treating ores containing lithia, consisting in heating the ores with alkaline sulfates whereby the lithia is converted into sulfate and rendered soluble in water.

2. The within-described process of treating ores containing lithia, consisting in heating the ores with an alkaline sulfate, whereby the lithia is converted into sulfate and rendered soluble in water, and subsequently converting the lithia sulfate, by suitable reagents, into a commercially marketable salt.

3. The within-described process of treating ores containing lithia, consisting in heating the ores with alkaline sulfates whereby the lithia is converted into a sulfate and rendered soluble in water, and after the lithia is extracted, treating the insoluble residue with sulfuric acid whereby potash alum is obtained.

4. The within-described process of treating ores containing lithia, consisting in heating the ores with alkaline sulfates, whereby the lithia is converted into sulfate and rendered soluble in water, then precipitating the lithia from the solution by suitable reagents into a commercially marketable salt, and treating the insoluble residue with sulfuric acid after the extraction of the lithia, whereby potash alum is obtained.

5. The within-described process of treating ores containing lithia, consisting in heating the ores with sulfate of potash whereby the lithia is converted into sulfate and rendered soluble in water, and refined sulfate of potash is obtained as a by-product.

6. The within-described process of treating ores containing lithia, consisting in heating the ores with sulfate of potash whereby the lithia is converted into sulfate and rendered soluble in water, and after the lithia is extracted, treating the insoluble residue with sulfuric acid whereby potash alum is obtained and refined sulfate of potash is obtained as a by-product.

7. The within-described process of treating siliceous minerals containing lithia, consisting in heating the ores with alkaline sulfates whereby the lithia contained therein is converted into sulfate and rendered soluble in water.

8. The within-described process of treating siliceous minerals containing lithia, consisting in heating the ores with alkaline sulfates whereby the lithia contained therein is converted into sulfate and rendered soluble in water, and after the lithia is extracted, treating the insoluble residue with sulfuric acid whereby potash alum is obtained.

9. The within-described process of treating siliceous minerals containing lithia consisting in heating the ores with alkaline sulfate whereby the lithia contained therein is converted into a sulfate, and rendered soluble in water, and subsequently converting the lithia sulfate by suitable reagents into a commercially marketable salt.

10. The within-described process of treating siliceous minerals containing lithia consisting in heating the ores with alkaline sulfates whereby the lithia is converted into a sulfate, and rendered soluble in water, and after the lithia is extracted, treating the insoluble residue with sulfuric acid whereby potash alum is obtained and refined sulfate of potash is obtained as a by-product.

11. The within-described process of treating lepidolite containing lithia, consisting in heating the ores with alkaline sulfates whereby the lithia contained therein is converted into sulfate and rendered soluble in water.

12. The within-described process of treating lepidolite containing lithia, consisting in heating the ores with alkaline sulfates whereby the lithia contained therein is converted into sulfate and rendered soluble in water, and after the lithia is extracted, treating the insoluble residue with sulfuric acid whereby potash alum is obtained.

13. The within-described process of treating lepidolite containing lithia consisting in heating the ores with alkaline sulfate whereby the lithia contained therein is converted into a sulfate, and rendered soluble in water, and subsequently converting the lithia sulfate by suitable reagents into a commercially marketable salt.

14. The within-described process of treating lepidolite containing lithia consisting in heating the ores with alkaline sulfates whereby the lithia is converted into a sulfate, and rendered soluble in water, and after the lithia is extracted, treating the insoluble residue with sulfuric acid whereby potash alum is obtained and refined sulfate of potash is obtained as a by-product.

847,857. PAPER-MAKING MACHINE. JOHN B. WALKER and ALEXANDER R. BOND, New York, N. Y. Filed Feb. 1, 1907. Serial No. 355,195.

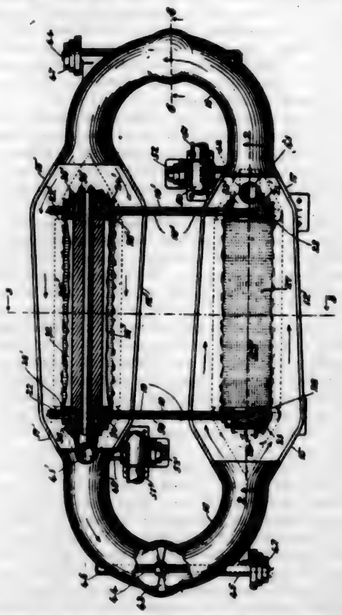

Claim.—1. A trough adapted to confine a stream of pulp, said trough having an inflow end and an outflow end and tapering from a larger cross-sectional area at said inflow end to a smaller cross-sectional area at said outflow end, a cylindrical screen mounted to rotate in said trough on an axis parallel with the general direction of said stream, and means for draining a portion of said pulp onto said screen.

2. A trough adapted to confine a stream of pulp, said trough having an inflow end and an outflow end and tapering from a larger cross-sectional area at said inflow end to a smaller cross-sectional area at said outflow end, a cylindrical screen mounted to rotate in said pulp on an axis parallel with the general direction of said stream, means for draining a portion of said pulp onto said screen, and means for diverting said pulp from the ends of said cylinder.

3. A trough adapted to confine a stream of pulp, said trough having an inflow end and an outflow end and tapering from a larger cross-sectional area at said inflow end to a smaller cross-sectional area at said outflow end, a cylindrical screen mounted to rotate in said pulp on an axis parallel with the general direction of said stream, said cylindrical screen being open at opposite ends, stationary guides adapted to divert said pulp from the ends of said screen, said guides being of conical form pointing outward from said screen, flaps adapted to prevent entrance of liquid between said screen and said guides, and an exhaust-pipe communicating with the interior of said screen.

4. A receptacle forming an endless channel for pulp, means for producing a flow of said pulp in said channel, a cylindrical screen mounted to rotate in said receptacle in a plane transverse to said flow of said pulp, means for draining a portion of said pulp onto said screen, and means for introducing fresh pulp into said receptacle, the latter being so proportioned as to insure a uniform rate of flow of said pulp throughout the entire extent of said receptacle.

5. In a paper-making machine, a receptacle formed with a truncated semiconical bottom and approximately vertical extensions at opposite sides, said receptacle being also formed at each end with funnel-shaped portions, a cylindrical screen mounted concentrically with said semiconical bottom, conical guides mounted respectively at opposite ends of said screen, and projecting into said funnels, an exhaust-pipe communicating with the interior of said cylindrical screen, and a feed-pipe communicating with the funnel-shaped portion at the smaller end of said receptacle, the mouth of said feed-pipe being formed in the outer end of the adjacent conical guide.

6. A pair of opposed cylindrical screens mounted to rotate on parallel axes, means for conveying pulp in axial but respectively opposite directions along said screens, means for draining pulp onto each of said screens, and a conveyer adapted to collect said drained pulp from both of said screens.

7. A plurality of opposed cylindrical screens mounted to rotate on parallel axes, means for conveying pulp in axial but alternately opposite directions past said screens, means for draining pulp onto each of said screens, and a conveyer adapted to collect said drained pulp from all of said screens.

8. A receptacle forming an endless channel for pulp, means for producing a continuous flow of said pulp throughout said channel, two cylindrical screens at opposite portions of said receptacle and mounted to rotate transversely of said flow of pulp, means for draining a portion of said pulp onto each of said screens, and a conveyer adapted to carry off said drained pulp from both of said screens.

9. A receptacle forming an endless channel for pulp, means for producing a continuous flow of said pulp throughout said channel, two cylindrical screens at opposite portions of said receptacle, mounted to rotate transversely of said flow of pulp, means for draining a portion of said pulp onto each of said screens, and a belt adapted to travel in engagement with both of said screens.

10. A receptacle forming an endless channel for pulp, means for producing a continuous flow of said pulp throughout said channel, two cylindrical screens at opposite portions of said receptacle, and mounted to rotate in a plane transverse to said flow of pulp, means for draining a portion of said pulp onto each of said screens, a belt adapted normally to travel in engagement with both of said screens, and means for moving said belt out of engagement with one of said screens when desired.

11. A plurality of receptacles for containing pulp, said receptacles being arranged in a mutually parallel relation, each receptacle having an inflow end and an outflow end, said inflow end of each receptacle lying adjacent to said outflow end of an adjacent receptacle, pipes connecting said ends successively to form an endless channel, a plurality of cylindrical screens mounted respectively in said receptacles, means for circulating said pulp in said endless channel, means connected with each of said screens for draining some of said pulp thereon, and a conveyer adapted to carry off said drained pulp from all of said screens.

12. A receptacle for pulp, a cylindrical screen mounted to rotate in said receptacle, means for producing a flow of said pulp in a general direction parallel to the axis of said cylindrical screen, means for diverting some of said pulp in a direction diagonally opposed to the direction in which said screen is adapted to rotate, and an exhaust-pump communicating with the interior of said screen.

13. A receptacle for pulp, a cylindrical screen mounted to rotate in said pulp, means for producing a flow of said pulp in the general direction of the axis of said screen, means for governing the rate of said flow, means for directing some of said pulp in a direction diagonally opposed to the direction in which said screen is adapted to rotate, an exhaust-pump communicating with the interior of said screen, and means for governing the speed of said exhaust-pump.

14. A trough adapted to confine a stream of pulp, said trough having an inflow and an outflow end and tapering from a larger cross-sectional area at said inflow end to a smaller cross-sectional area at said outflow end, a cylindrical screen mounted to rotate in said trough on an axis parallel with the general direction of said stream, baffle-plates projecting radially from said trough and positioned diagonally with respect to the axis of said trough so as to divert some of said pulp in a direction diagonally opposed to the direction in which said screen is adapted to rotate, and means for draining a portion of said pulp onto said screen.

15. A pair of opposed cylindrical screens mounted to rotate on parallel axes, means for conveying pulp in axial but respectively opposite directions along said screens, means for diverting some of said pulp from said axial directions of movement, means for draining pulp onto each of said screens, and a conveyer adapted to collect said drained pulp from both of said screens.

847,858. MECHANICAL MOVEMENT. RODNEY B. WARE, Brooklyn, N. Y. Filed Mar. 9, 1906. Serial No. 305,024.

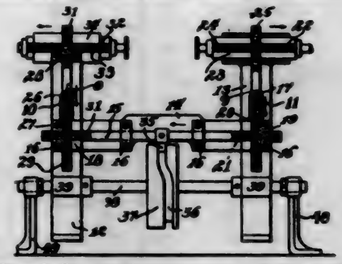

Claim.—1. In a mechanical movement, the combination of a member guided for rectilinear movement, a second member guided for rectilinear movement adjacent said member, a series of parallel abutments on each of said members arranged for successive engagement one or both of said series of abutments being inclined to the path of movement of its carrying member, whereby the reciprocation of the first member will reciprocate the second member, a third member supported for rectilinear movement adjacent the second member, said latter members being provided with a series of parallel abutments arranged for successive engagement, the series of abutments on one or both of such members being inclined to the path of movement of the member whereby the reciprocation of the second member will reciprocate the third member, a fourth member guided for rectilinear movement adjacent said first member, said first and fourth members being each provided with a series of parallel abutments arranged for successive engagement whereby the reciprocation of the first member will reciprocate the fourth member also, and a fifth member guided for rectilinear movement adjacent said fourth member, said fourth and fifth members being each provided with a series of parallel abutments, one or both of which latter series of abutments is inclined to the path of movement of its carrying member.

2. In a mechanical movement, the combination of a member guided for rectilinear movement, a second member guided for rectilinear movement adjacent said member, a series of parallel abutments on each of said members arranged for successive engagement, one or both of said series of abutments being inclined to the path of movement of its carrying member, whereby the reciprocation of the first member will reciprocate the second member, a third member supported for rectilinear movement adjacent the second member, said latter members being provided with a series of parallel abutments arranged for successive engagement, the series of abutments on one or both of such members being inclined to the path of movement of the member whereby the reciprocation of the second member will reciprocate the third member, a fourth member guided for rectilinear movement adjacent said first member, said first and fourth members being each provided with a series of parallel abutments arranged for successive engagement whereby the reciprocation of the first member will reciprocate the fourth member also, and a fifth member guided for rectilinear movement adjacent said fourth member, said fourth and fifth members being each provided with a series of parallel abutments, one or both of which latter series of abutments is inclined to the path of movement of its carrying member, and means for intermittently moving said first member in opposite directions.

3. In a mechanical movement, the combination of a member guided for rectilinear movement, a second member guided for rectilinear movement adjacent said member, a series of parallel abutments on each of said members arranged for successive engagement, one or both of said series of abutments being inclined to the path of movement of its carrying member, whereby the reciprocation of the first member will reciprocate the second member, a third member supported for rectilinear movement adjacent the second member, said latter members being provided with a series of parallel abutments arranged for successive engagement, the series of abutments on one or both of such members being inclined to the path of movement of the member whereby the reciprocation of the second member will reciprocate the third member, a fourth member guided for rectilinear movement adjacent said first member, above said first and fourth members being each provided with a series of parallel abutments arranged for successive engagement whereby the reciprocation of the first member will reciprocate the fourth member, and a fifth member guided for rectilinear movement adjacent said fourth member also, said fourth and fifth members being each provided with a series of parallel abutments, one or both of which latter series of abutments is inclined to the path of movement of its carrying member, and means for intermittently moving said first member in opposite directions.

4. In a mechanical movement, the combination of a member guided for rectilinear movement, a second member guided for rectilinear movement adjacent said member, a series of parallel abutments on each of said members arranged for successive engagement, one or both of said series of abutments being inclined to the path of movement of its carrying member, whereby the reciprocation of the first member will reciprocate the second member, a third member supported for rectilinear movement adjacent the second member, said latter members being provided with a series of parallel abutments arranged for successive engagement, the series of abutments on one or both of such members being inclined to the path of movement of the member whereby the reciprocation of the second member will reciprocate the third member, a fourth member guided for rectilinear movement adjacent said first member, said first and fourth members being each provided with a series of parallel abutments arranged for successive engagement whereby the reciprocation of the first member will reciprocate the fourth member also, and a fifth member guided for rectilinear movement adjacent said fourth member, said fourth and fifth members being each provided with a series of parallel abutments, one or both of which latter series of abutments is inclined to the path of movement of its carrying member, said third and fifth members being disposed in alinement, and said several engagement abutments being organized to cause approach of the third and fifth members upon movement of said first member in one direction, and to cause recession of said alining members upon movement of said first member in the opposite direction, and means for intermittently moving said first member in opposite directions.

5. In a mechanical movement, the combination of a member guided for rectilinear movement, a second member guided for rectilinear movement adjacent said member, a series of abutments on each of said members arranged for successive engagement, one or both of said series of abutments being inclined to the path of movement of its carrying member, whereby the movement of the first member in one direction will move the second member in one direction, a third member supported for rectilinear movement adjacent the second member, said latter members being provided with a series of abutments arranged for successive engagement, the series of abutments on one or both of such members being inclined to the path of movement of the member whereby the movement of the second member in one direction will move the third member in one direction, a fourth member guided for rectilinear movement adjacent said first member, said first and fourth members being each provided with a series of abutments arranged for successive engagement whereby the movement of the first member in one direction will move the fourth member in one direction, and a fifth member guided for rectilinear movement adjacent said fourth member, said fourth and fifth members being each provided with a series of abutments, one or both of which latter series of abutments is inclined to the path of movement of its carrying member, whereby the movement of the fourth member in one direction will move the fifth member in one direction, and means for moving all said members in the opposite direction.

6. In a mechanical movement, the combination of a member guided for rectilinear movement and provided with a plurality of sets of parallel abutments, a plurality of members each provided with a series of parallel abutments each member arranged to engage respectively by said abutments with the respective sets of abutments on said first-mentioned member, whereby the reciprocation of the first member will reciprocate the other said members, said plurality of members being provided with sets of parallel abutments, and members provided with parallel abutments arranged to engage with the parallel abutments on said latter members, whereby such members will be reciprocated from the reciprocation of their engaging members.

7. In a mechanical movement, the combination of a member guided for rectilinear movement and provided with a plurality of sets of parallel abutments, a plurality of members each provided with a series of parallel abutments each member arranged to engage respectively by said abutments, with the respective sets of abutments on said first-mentioned member, whereby the reciprocation of the first member will reciprocate the other said members, said plurality of members being provided with sets of parallel abutments, members provided with parallel abutments arranged to engage with the parallel abutments on said latter members, whereby such members will be reciprocated from the reciprocation of their engaging members, and means for reciprocating said first-mentioned member.

847,859. ROTARY KILN. WILLIAM R. WARREN, New York, N. Y. Filed Oct. 24, 1905. Serial No. 284,196.

Claim.—1. A rotary kiln having an inner partition and an intake extended through the shell and partition into the interior of the kiln.

2. A rotary kiln having an intake-opening into the kiln at a point removed from the wall of the body thereof and extended through and made to rotate with the shell of such kiln.

3. A rotary kiln having an intake, a rotary chamber-section made to communicate with said intake, and another chamber-section made to communicate with or supply material to the rotary chamber-section.

4. A rotary kiln having an intake at one end, a rotary chamber about said intake, and another intake or supply made to communicate with the chamber and to enter an intermediate portion of the kiln.

5. A rotary kiln having a tube or intake positioned exteriorly thereof and opening therein, a tire arranged around the periphery of the kiln and extending about the intake, said tire carrying the intake when the kiln

rotates, and a rotatable chamber-section communicating with a source of supply and carried upon the outer end of the intake.

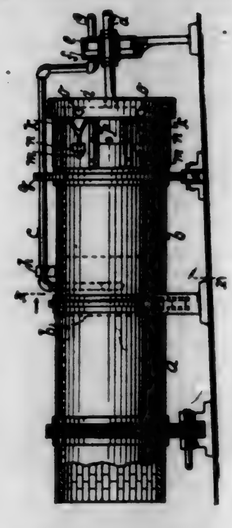

847,860. ROTARY KILN. WILLIAM R. WARREN, New York, N. Y. Filed Oct. 31, 1905. Serial No. 285,808.

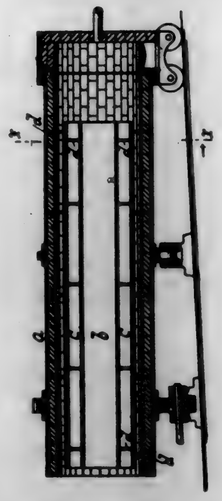

Claim.—1. A rotary kiln comprising outer and inner shells, all said shells being adapted to receive material to be treated so as to allow the same to be subdivided and rapidly heated said shells being made to feed the material in one direction while the heat or flame is made to travel in the opposite direction.

2. A rotary kiln comprising outer and inner shells, the latter being extended part of the length of the outer shell and all the shells being made to receive material so as to subdivide the same said shells being made to feed the material in one direction while the heat or flame is made to travel in the opposite direction.

3. A rotary kiln comprising outer and inner shells placed concentrically to one another and all made to receive material for subdividing and rapidly heating the same said shells being made to feed the material in one direction while the heat or flame is made to travel in the opposite direction.

4. A rotary kiln comprising an outer shell of imperforate material and shells concentrically arranged within said outer shell and all made to receive material for subdividing and rapidly heating the same.

847,861. ROTARY KILN. WILLIAM R. WARREN, New York, N. Y. Filed Nov. 11, 1905. Serial No. 286,937.

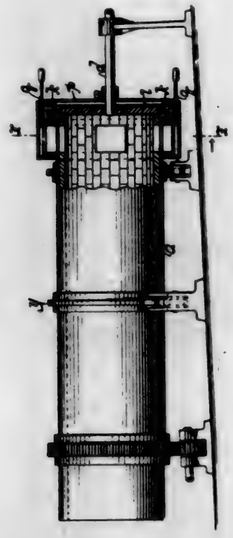

Claim.—1. A rotary kiln having a shield detachably connected to and rotating with the kiln and a second shield independent of and made to closely surround the first shield.

2. A kiln having an outlet and rotary and non-rotary shields made separate from the kiln and from one another and located at the outlet end of the kiln.

3. A kiln having an outlet and a shield made separate from the kiln at the outlet and a second shield placed about and made to regulate the outlet.

4. A kiln having an intake, a shield detachably mounted on the kiln and a shield mounted on the intake.

5. A rotary kiln with rotary shield detachably connected to the kiln and a stationary shield having dampers or regulators.

847,862. ROTARY KILN. WILLIAM R. WARREN, New York, N. Y. Filed Mar. 29, 1906. Serial No. 308,790.

Claim.—1. A kiln having a rocking support at the inlet or supply end, the latter end remaining at a uniform level.

2. A kiln having driving or rotating means, a rocking support at the supply end, the supply end of the kiln remains at a uniform level, and means for tilting or adjusting the inclination of the kiln.

3. A kiln having driving or rotary means, a rocking support at the inlet or supply end of the kiln, and screws for adjusting the remaining portion of the kiln to vary the inclination of the latter.

847,862.

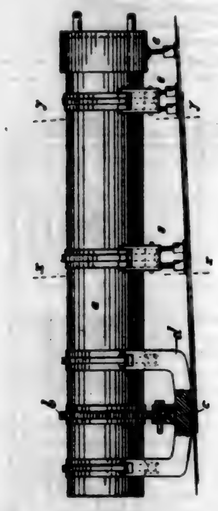

847,863. VENDING-MACHINE. THOMAS A. WATTS, Springfield, Ohio. Filed Apr. 19, 1906. Serial No. 312,677.

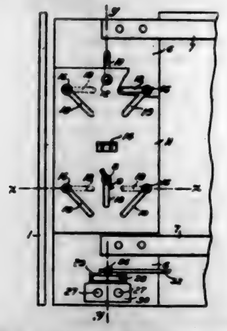

Claim.—1. In a vending-machine, the combination, with the casing forming a chute, a bottom for said chute, and a plunger adapted to work across the same, of outer walls for said casing adjustable one toward the other, and means for adjusting and securing the same in different positions, substantially as described.

2. In a vending-machine, the combination, with the casing forming a chute, a bottom for said chute, and a plunger adapted to work across the same, of end walls for said casing adjustable one toward the other, means for adjusting and securing the same in different positions, and front walls for said casing adjustably secured to said end walls, substantially as described.

3. In a vending-machine, the combination, with a chute-bottom, and a plunger adapted to work across the same, of adjustable end walls for the chute, an adjusting-plate mounted at the back of the chute, and connections between said plate and said end walls to adjust and hold the latter by means of the plate.

4. In a vending-machine, the combination, with a chute-bottom, and a plunger adapted to work across the same, of adjustable end walls for the chute, an adjusting-plate mounted at the back of the chute, connections between said plate and end walls to adjust and secure the latter by means of said plate, and adjustable front walls secured to the said walls and means to hold them in different adjusted positions.

5. In a vending-machine, the combination, with a chute-bottom, and a plunger adapted to work across the same, of a back plate for the chute, an adjusting-plate mounted on the back plate, end walls for the chute mounted on the back plate and connected with the adjusting-plate to be adjusted thereby, the connection between the back plate and the adjusting-plate being by means of vertical slots and connecting devices, and the connection between the adjusting-plate and the end walls being by means of oblique and horizontal slots and connecting devices.

6. In a vending-machine, a chute consisting of a back plate having vertical and horizontal slots, an adjusting-plate having oblique slots and connected to the back plate through the vertical slots and securing devices, and walls having wings fitted to the back plate with securing devices passing through the horizontal slots and through said oblique slots.

7. In a vending-machine, a chute comprising a back plate having horizontal and vertical slots, an adjusting-plate having oblique slots and a vertical slot, and secured to the back plate by means of securing devices passing through said vertical slots, end walls having wings fitted against the back plate and carrying securing devices which extend through said horizontal slots and said oblique slots, said end walls being horizontally slotted, and front walls having wings fitted to the end walls, and securing devices secured to the end walls and passing through the slots in the wings of the front walls.

847,864. NAIL-TRANSFERRING DEVICE. HAROLD L. WEAVER, Seymour, Conn. Filed Apr. 2, 1906. Serial No. 309,281.

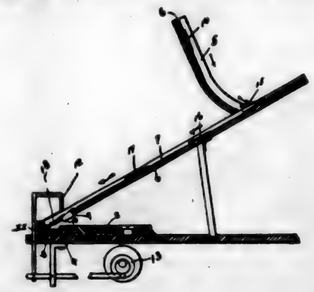

Claim.—1. In a nail-transferring device, the combination with a downwardly-inclined runway, a slot at the lower end of said runway, a latch pivoted at the upper end of said slot adapted to swing downward and to partially close the slot when in a raised position, and springs for holding the latch in the raised position, substantially as described.

2. In a nail-transferring device, the combination with a downwardly-inclined runway, a slot at the lower end of said runway, a latch pivoted at the upper end of said slot adapted to swing downward and to partially close the slot when in a raised position, springs for holding the latch in the raised position, and a vertically-movable finger arranged above the latch, means for forcing said finger downward whereby a nail resting on said latch will be forced downward through said slot, substantially as described.

847,865. WAGON-BRAKE. FREDERICK W. WERNKE, McKeesport, Pa. Filed Sept. 25, 1906. Serial No. 336,206.

Claim.—1. In a vehicle-brake, the combination with a vehicle-body, the axle, and the wheels, of a pair of hangers pivotally suspended at their upper ends from the vehicle-body a rod connecting said hangers near their lower ends, a brake-beam mounted in the hangers between said rod and

the upper ends of the hangers, brake-shoes carried on cranked ends of said brake-beam to engage the wheels, links connected to the lower ends of said hangers and to the vehicle-axle, an arm connected to the brake-beam intermediate its cranked ends, a brake-rod connected to said arm and extending forwardly of the vehicle-body, and a spring also connected to said arm and extending rearwardly of the vehicle body, with its rear end connected to said body.

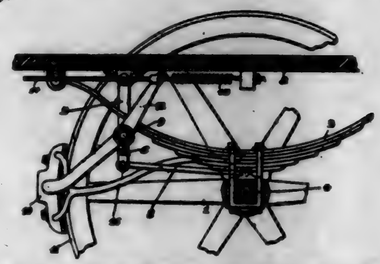

2. In a vehicle-brake, the combination with a vehicle-body, the axle, and the wheels, of a pair of hangers pivotally suspended at their upper ends from the vehicle-body, a rod connecting said hangers near their lower ends, a brake-beam mounted in the hangers between said rod and the upper ends of the hangers, brake-shoes carried on cranked ends of said brake-beam to engage the wheels, links connected to the lower ends of said hangers and to the vehicle-axle, an arm connected to the brake-beam intermediate its cranked ends, a brake-rod connected to said arm and extending forwardly of the vehicle-body, a spring also connected to said arm and extending rearwardly of the vehicle-body with its rear end connected to said body, and a guide and bearing-rod for each brake-shoe attached to said shoes near their upper and lower ends respectively.

847,866. STOPPER FOR VESSELS. GEORGE WEST, Godesberg, Germany. Filed July 6, 1906. Serial No. 325,038.

Claim.—1. A stopper adapted to be torn open, comprising in combination a cap adapted to engage the opening of a vessel, a plurality of tongues attached to said cap arranged at different angles to the grain of the material of which said cap is made, said tongues being adapted to tear said cap from the inside to the outside and thereby away from said vessel, substantially as described.

2. A stopper adapted to be torn open, comprising in combination a cap adapted to engage the opening of a vessel, a plurality of tongues in the cover of said cap arranged at different angles to the grain of the material of which said cap is made, said tongues being adapted to tear said cap from the inside to the outside and thereby away from said vessel, substantially as described.

3. A stopper adapted to be torn-open, comprising in combination a cap having an opening at the center adapted to engage the opening of a vessel, and a plurality of tongues at different angles to the grain of the material of which said cap is made, the free ends of said tongues reaching into said opening in said cap, said tongues being adapted to tear said cap from the inside to the outside and thereby away from said vessel, substantially as described.

847,867. SAFETY DEVICE FOR ELEVATORS. JOHN J. WHITBROOK, Danville, Va. Filed Oct. 22, 1906. Serial No. 340,083.

Claim.—1. In a safety device for elevators, the combination with the car and guide therefor, of clamping-levers on the car having devices for gripping the guide, a spring directly connected to said levers, for applying them to the guide, an actuating mechanism connected to said levers for positively applying them to the guide, said mechanism being constructed to hold said springs under compression when in inoperative condition, substantially as described.

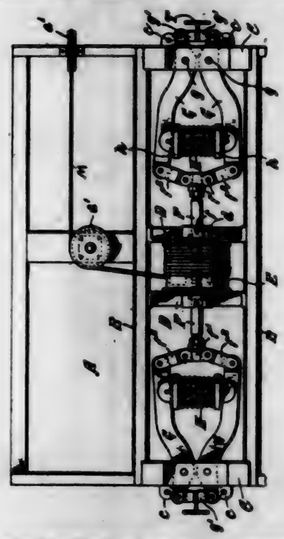

2. In a safety device for elevators, the combination with the car and guide therefor, of the clamping-levers carried by said car, having portions movable in opposite directions to cause them to clamp said guide, a spring interposed between said levers, and actuating devices for positively drawing said levers together to compress said spring when moved in one direction and forcing them apart when moved in the opposite direction, substantially as described.

3. In a safety device for elevators, the combination with the car, and guide therefor, of the clamping-levers, carried by the car, having portions movable in opposite directions to cause them to clamp said guide, a spring interposed between said levers, toggle-levers connected with said clamping-levers, a longitudinally-movable shaft, connected to said toggle-levers, and a rotary device having a screw connection with said shaft for effecting the longitudinal movement thereof in both directions, substantially as described.

4. In a safety device for elevators, the combination with the car, and guide therefor, of the clamping-levers, carried by the car, having portions movable in opposite directions to cause them to clamp said guide, a spring interposed between said levers, toggle-levers connected with said clamping-levers, a longitudinally-movable shaft connected to said toggle-levers, a projection on said shaft engaging a guiding-recess in a stationary part to hold said shaft from rotation, a drum having a threaded connection with said shaft, and means for rotating said drum in a direction to apply said clamping-levers to said guide, substantially as described.

5. In a safety device for elevators, the combination with the car and guide therefor, of a pair of clamping-levers carried by said car, for engaging said guide, toggle-levers, connected with said clamping-levers, a longitudinally-movable shaft connected with said toggle-levers, a drum having a threaded connection with said shaft for moving it in opposite directions, and a spring for forcing said clamping-levers into operative engagement with the guide, normally held under compression, by the engagement of said drum and shaft, substantially as described.

6. In a safety device for elevators, the combination with the car and guide therefor, of a pair of clamping-levers carried by said car for engaging said guide, a spring interposed between said clamping-levers for forcing the same to grip said guide, an actuating device, positive connections between said actuating device and said clamping-levers for positively causing the clamping-levers to grip said guide, when moved in one direction, said connections providing lost motion to permit the action of the spring to precede that of the said actuating device, said actuating device and connections being constructed to compress and hold said spring under compression when said actuating device is moved in the other direction, substantially as described.

7. In a safety device for elevators, the combination with the car and guide therefor, of a pair of clamping-levers carried by said car for engaging said guide, longitudinally-movable screw-shaft, operative connections between said shaft and said clamping-levers, having provision for securing lost motion, a spring interposed between said clamping-levers for applying them to said guide, a drum on said screw-shaft, a cable wound on said drum, and a governor-controlled device for stopping said cable when the speed of the car exceeds a predetermined speed, said drum, shaft and connections being constructed to normally hold said spring under compression when in inoperative position, substantially as described.

8. In a safety device for elevators, the combination with the car and vertical guides therefor, of a pair of clamp-levers secured to the car, for gripping each of said guides, longitudinally-movable screw-shafts, oppositely screw-threaded, a drum oppositely threaded and engaging each of said shafts, toggle-levers connecting each screw-shaft with one pair of said clamping-levers, and providing lost motion in the joints of said levers, a spring interposed between the clamping-levers of each pair, and held normally under compression and in inoperative position by the engagement of said drum with said screw-shafts, a cable having a part adjacent to one end wound on said drum and a governor-controlled device for automatically stopping said cable, the lost motion provided by said toggle-levers, permitting said springs to act in advance of said toggle-levers, in applying said clamping-levers to said guides, substantially as described.

847,868. CULTIVATOR. CLAUD H. WHEELER, Wills Point, Tex. Filed Dec. 4, 1905. Serial No. 290,210.

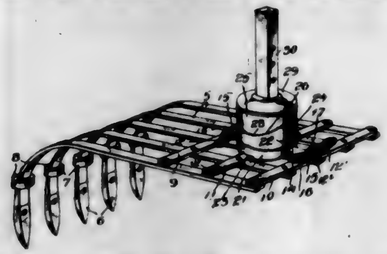

Claim.—1. A cultivating attachment for farm implements, comprising spaced longitudinally-extending arms, ground-treating devices carried by the rearward ends of the arms, longitudinally-spaced transverse beams pivoted to the forward portions of the arms, a transverse beam pivoted to the arms between the first-named beams, said first-named beams being movable longitudinally in opposite directions to vary the positions of the ground-treating devices with respect to each other, means for holding the ground-treating devices at different points of their movement with respect to each other, an attaching-shank, connections between said shank and the arms for rocking movement of the arms with respect to the shank and for pivotal movement of the arms with respect to the shank, and means for holding the arms at different points of their rocking and pivotal movements.

2. In a cultivator, the combination with a supporting member, of a disk carried by the lower end of the member and having a convex cylindrically-curved under surface, a disk disposed beneath the first-named disk and having its upper surface curved to conform to the curvature of the under surface of the first-named disk, intermeshing serrations carried by the curved faces of the two disks, connections between the disks arranged to permit of rocking motion thereof with respect to each other, ground-treating devices connected with the second-named disk for pivotal motion with respect thereto, and means for holding the devices against movement at different points of their pivotal motion and for holding the two disks against movement at different points of their rocking motion with respect to each other.

3. In a cultivator attachment for farm-machines, the combination with ground-treating devices arranged for movement to lie in different positions with respect to each other, of means for holding the devices at different points of their movement, an attaching-shank connected with the device for pivotal and rocking movement with respect thereto, and means for holding the shank against both movements.

847,869. SULFUR-SMELTING APPARATUS. EDWARD F. WHITE, Easton Pa. Filed July 11, 1906. Serial No. 325,622.

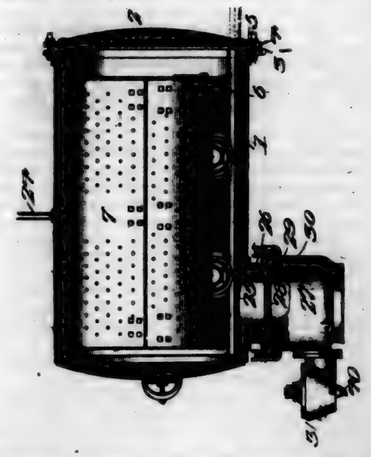

Claim.—1. The combination with an ore-smelting apparatus, of a smelting-cylinder, an ore-charging car arranged for travel within the cylinder, a sump in open communication with the interior of the cylinder, and a tap-valve in communication with the sump, and means for heating the sump and tap-valve.

2. The combination with a smelting-cylinder having a sump and a tap-valve leading therefrom, and means for heating the sump and tap-valve, of an ore-charging car adapted to be inserted within the cylinder and corresponding in contour to the contour of the cylinder and of less dimensions than the interior of the cylinder.

3. The combination with a smelting-cylinder having a sump and a tap-valve leading therefrom, and means for heating the sump and tap-valve, of an ore-charging car adapted to be inserted within the cylinder and constructed of perforated sections.

4. The combination with a smelting-cylinder having a sump and a tap-valve leading therefrom, and means for heating the sump and tap-valve, of an ore-charging car adapted to be inserted within the cylinder and constructed of perforated metallic sections, the bottom of the car being inclined from the longitudinal center toward the side edges.

5. The combination with a smelting-cylinder having a sump and a tap-valve leading therefrom, and means for heating the sump and tap-valve, of an ore-charging car

adapted to be inserted within the cylinder and constructed of perforated metallic sections, a plurality of said sections being mounted for independent movement to provide dumping-sections.

6. The combination with a smelting-cylinder having a sump and a tap-valve leading therefrom, and means for heating the sump and tap-valve, of an ore-charging car adapted to be inserted within the cylinder and comprising a plurality of connected metallic sections, supporting-wheels for the car and housings partially inclosing the wheels.

7. The combination with a smelting-cylinder having a sump and a tap-valve leading from the sump, and means for heating the sump and tap-valve, of an ore-charging car comprising a plurality of connected metallic sections, and supporting-wheels connected to one of the sections, one of the car-sections being integrally formed to provide housings for the wheels.

8. The combination with a smelting-cylinder having a sump and a tap-valve leading from the sump, and means for heating the sump and tap-valve, of an ore-charging car comprising a bottom section inclined downwardly in both directions from the longitudinal center toward the side edges, end sections secured to the respective ends of the bottom section, fixed side sections secured to the end sections, and dumping-sections movably connected to the fixed side sections.

9. The combination with a smelting-cylinder having a sump and a tap-valve leading therefrom, means for heating the sump and tap-valve, of an ore-charging car comprising a bottom section inclined downwardly in both directions from the longitudinal center toward the side edges, end sections secured to the respective ends of the bottom section, fixed side sections secured to the end sections, and dumping-sections hinged to the fixed side section, said hinge connections being secured on the relatively inner surface of the respective sections.

10. The combination with a smelting-cylinder having a sump and a tap-valve leading from the sump, means for heating the sump and tap-valve, of an ore-charging car comprising a bottom section inclined downwardly in both directions from the longitudinal center toward the side edges, end sections secured to the respective ends of the bottom section, fixed side sections secured to the end sections, dumping-sections hinged to the fixed side section, said hinge connections being secured on the relatively inner surfaces of the respective sections, and means for securing the dumping-section in closed position.

11. The combination with a smelting-cylinder approximately circular in cross-section and tracks secured in the relatively lower portion of the cylinder, a sump in communication with the cylinder, a tap-valve leading from the sump, of a metallic ore-charging car constructed of perforated sections arranged for travel on the track, the sectional area of the car conforming in contour with and being of slightly less dimension than the similar area of the cylinder.

12. The combination with a smelting-cylinder, an ore-charging car adapted for insertion within the cylinder, and a sump in communication with the cylinder, of a tap-valve for the sump, said valve being formed with an expansion-chamber.

13. The combination with a smelting-cylinder, an ore-charging car adapted for insertion within the cylinder, a sump in communication with the cylinder, means for heating the sump, of a tap-valve for the sump, and means for heating the valve.

14. The combination with a smelting-cylinder, an ore-charging car adapted for insertion within the cylinder, a sump in communication with the cylinder, and means for heating the sump, of a tap-valve for the sump, said valve being formed with an expansion-chamber and with a steam-jacket.

15. The combination with a smelting-cylinder, an ore-charging car adapted for insertion within the cylinder, a sump in communication with the cylinder, and means for heating the sump, of a tap-valve for the sump integrally formed to provide an expansion-chamber above the outlet from the valve.

16. The combination with a smelting-cylinder, an ore-charging car adapted for insertion within the cylinder, a sump in communication with the cylinder, and means for heating the sump, of a tap-valve for the sump, means for heating the valve, said valve comprising a hollow inverted-cone-shaped plug having a discharge-opening at the reduced end, the inlet to the plug being formed about midway its height, whereby to provide an expansion-chamber above said inlet.

17. The combination with a smelting-cylinder, an ore-charging car adapted for movement within the cylinder, a sump in communication with the cylinder, means for heating the sump, of a tap-valve in communication with the sump, said valve comprising a valve-body formed with an inverted-cone-shaped plug-seat, a lining of acid-resisting material for said seat, a valve-plug fitting the seat, and a steam-jacket surrounding the seat.

18. The combination with a smelting-cylinder, an ore-charging car adapted for movement within the cylinder, a sump in communication with the cylinder, means for heating the sump, of a tap-valve in communication with the sump, said valve comprising a valve-body formed with an inverted-cone-shaped plug-seat, the body between the plug-seat and side wall being hollow to provide a heating-jacket, a hollow valve-plug fitting the seat, means for securing the plug in the seat, and means for adjusting the plug relative to the seat.

19. The combination with a smelting-cylinder, an ore-charging car adapted for movement within the cylinder, a sump in communication with the cylinder, means for heating the sump, of a tap-valve in communication with the sump, said valve comprising a valve-body formed with a transversely-disposed port, a cone-shaped plug-seat opening through the body, a heating-jacket surrounding the seat, a valve-plug fitting the seat, said plug being formed with openings to register with the port in the body, a cover secured to the body and overlying the plug, and a gland-nut having threaded connection with the cover and bearing upon the plug.

847,870. STEAM-BOILER VALVE. FRANK YOUNG, Creston, Iowa. Filed Nov. 26, 1906. Serial No. 345,035.

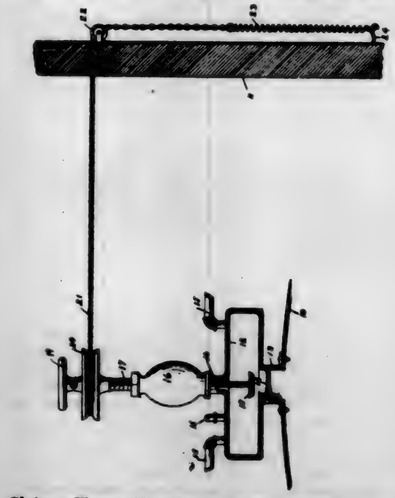

Claim.—The combination of a valve-casing having a narrow neck to communicate with the steam-boiler, a valve-seat formed in said narrow neck and an enlarged chamber above the valve-seat, a number of steam-pipes communicating with the enlarged chamber, a valve-stem screwed to the casing above the enlarged chamber and having a valve thereon in one position standing within the enlarged chamber and in another position standing on the valve-seat, a disk having an annular groove therein fixed to the valve-stem above the casing, a hand-disk fixed to the valve-stem above the grooved disk, a chain fixed to the grooved disk and wound upon it and a contractible coil-spring attached to the chain and to a stationary support, said spring being of sufficient resiliency to hold the chain taut and in the grooved disk but not of sufficient resiliency to turn a valve-stem within the casing.

847,871. WOVEN-WIRE FENCE. IRA J. YOUNG, St. Louis, Mo. Filed Aug. 2, 1906. Serial No. 328,945.

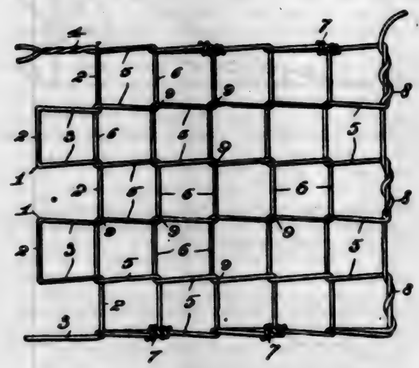

Claim.—1. As a new article of manufacture, a woven-wire fence, constructed of a single length of wire formed into vertical rows of alternately-arranged rectangular loops, and the loops of one row engaging the ends of the loops of the adjacent rows; substantially as specified.

2. As a new article of manufacture, a woven-wire fence, constructed of a single length of wire formed into vertical rows of alternately-arranged rectangular loops, the loops of one row engaging the ends of the loops of the adjacent rows, and the ends of the horizontal sections of the loops being curved laterally relative the vertical plane occupied by said horizontal sections to accommodate the ends of the engaging loops; substantially as specified.

3. A woven-wire fence, constructed of a single length of wire bent into rows of equal-sized open-ended rectangular loops, and each row of loops having their outer ends bent laterally relative the vertical plane occupied by the horizontal portions of said loops and engaging the ends of the adjacent row of loops; substantially as specified.

4. A woven-wire fence, constructed of a single length of wire which is formed into a series of rows of rectangular loops, the outer ends of each row of loops engaging the loops of the adjacent row, and ties located on the edges of the fence at the meeting-points of the loops; substantially as specified.

847,872. HAIR-DRIER. ISABELL ALLEN, Kansas City, Mo., and GEORGE HANLON, Shawneetown, Ill. Filed June 12, 1906. Serial No. 321,389.

Claim.—A hair-drier, constructed with a tubular handle, a hollow back comb detachably arranged on one end of the handle, an elongated electric-light bulb extending through the hollow back of the comb, electrical connections extending through the handle to the electric-light bulb, an air-conveying tube extending to the handle, a cone to which the end of the flexible tube is connected, a heating device arranged in the end of the cone, and a fan arranged in the front of the comb for forcing air therethrough; substantially as specified.

847,872.

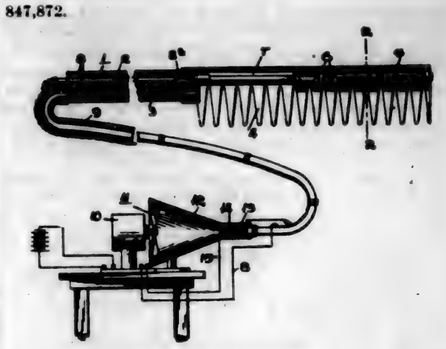

847,873. WEATHER-STRIP. EDWARD N. ANDERSON, Warren, Pa., assignor of one-fourth to Paul S. Horton, Warren, Pa. Filed Apr. 2, 1906. Serial No. 309,391.

Claim.—1. A weather-strip for doors comprising an adjustable member and a movable member carried by the door, a shiftable element having link connection with the respective members, a crank carried by the door and having connection with the shiftable element, a plate secured to a door-frame, a hinged arm carried by said plate, a chain connected to the arm and the crank for moving the shiftable element to cause one of the members to move in a direction away from the other of said members upon the closing of the door, and a spring connected to the shiftable element and one of the members for bringing the movable member toward the adjustable member when the door is being opened.

2. A weather-strip for doors comprising a relatively fixed but adjustable member and a freely-movable member, links having connection with the members, a spring-controlled bar connected to said links, and means carried by the door and operatively associated with said bar and having connection with a hinged member carried by the frame of a door for actuating said links against resistance of said spring in the movement in one direction of the door.

3. A weather-strip for doors comprising a fixed and a movable member, links connecting the said members, a spring-controlled bar connecting said links, a crank-pin rotatably mounted in the door, a crank on one end of said pin, a link pivotally connecting said crank and the bar, a second crank on the other end of said pin, a plate fixed to a door-frame, a hinged arm on said plate, and flexible means connected to the hinged arm and the bar for actuating the movable member upon movement of the door in one direction, said spring adapted to actuate the movable member in an opposite direction upon movement of the door in another direction.

4. A weather-strip for doors comprising members arranged in parallelism and supported by the door, one of the members being adjustably fixed to the door and the other movable relative thereto, shiftable means having link connection with the respective members, an oscillatory element carried by the door, a rod pivotally connected to the oscillatory element and the shiftable means, means hingedly associated with the door-frame, a flexible means connected to the hinged means and oscillatory element for causing a pull on the shiftable means to move one of the parallel members in a direction away from the other of

said members upon the closing of the door, and a spring connected to the shiftable means and the fixed member for bringing the movable member toward the said fixed member when the door is being opened.

847,874. FISH-REEL. FRANK W. ANDREE, Milwaukee, Wis. Filed Sept. 22, 1906. Serial No. 335,765.

Claim.—1. The combination with the crank-shaft of a reel, of a disk rigidly affixed to said shaft, a crank-arm revolubly connected with said disk, and automatic means for yieldingly connecting said crank-arm and said disk together, comprising an annular series of projections and depressions formed on said disk and a yielding contact-bearing carried by said crank-arm whereby said disk and the spool connected therewith may be caused to revolve both with and independently of said crank-arm.

2. The combination with a crank-shaft of a fish-reel, of a disk rigidly affixed to said shaft, a crank-arm revolubly connected with said disk, automatic means for yieldingly connecting said crank-arm and said disk together, additional means actuated by a lateral pressure upon the operating-handle produced by the manual act of the user for increasing the resistance between the crank-arm and said rigidly-affixed disk and means for automatically releasing said disk from engagement with said crank-arm, whereby said disk and the spool connected therewith may be caused to revolve both with and independently of said crank and may be controlled both automatically and at the will of the user.

3. The combination with the crank-shaft of a fish-reel, of a disk rigidly affixed to said shaft, an annular series of projections and depressions formed on the periphery of said disk, a crank-arm revolubly connected with said disk, a spring-pawl provided with a convex contact-bearing said spring-pawl being rigidly affixed at one end to said crank-arm and adapted to slidably bear at its opposite end against said series of projections, means for securing said crank-arm revolubly to said disk, means for rigidly securing said disk to said crank-shaft and means for revolving said shaft by the manual act of the user.

4. The combination with the crank-shaft of a fish-reel, of a disk rigidly affixed to said shaft, an annular series of projections and depressions formed on the periphery of said disk, a second annular series of projections and depressions formed upon the face of said disk, a crank-arm revolubly connected with said disk, a spring-actuated pawl affixed at one end to said crank-arm, having slidable contact-bearings against the projections and depressions on the periphery of said disk, a resilient plate connected at one end to said crank-arm, a pawl affixed at one end to said resilient plate and adapted to slidably bear against the projections and depressions formed upon the face of said disk, means for revolubly connecting the operating-handle to said crank-arm in contact with said resilient plate, whereby by the lateral movement of said handle, said last-named pawl will be caused to impinge against the projections and depressions formed on the face of said disk, and whereby the action of said disk and spool connected therewith may be controlled by the manual act of the user.

847,875. ATTACHMENT FOR THRESHING-MACHINES. GEORGE S. ANGIER, Schaller, Iowa. Filed June 13, 1906. Serial No. 321,478.

Claim.—An attachment for threshing-machines comprising a flexible sheet, a distending-bar for each end of said sheet, each of said bars having folded sections, and means carried by the threshing-machine for supporting the sheet,

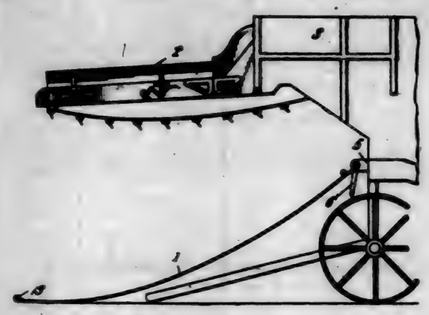

said means being operable to wind the sheet about said means.

847,876. SPARK-TIMING DEVICE FOR IGNITION SYSTEMS. VINCENT G. APPLE, Dayton, Ohio. Filed Nov. 9, 1903. Serial No. 180,466.

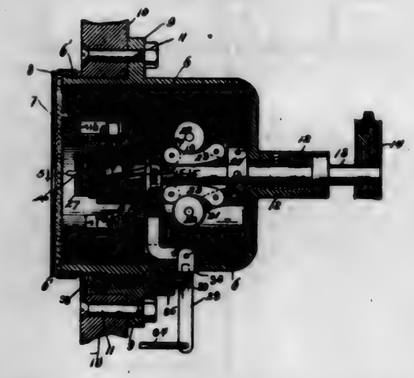

Claim.—1. In a device of the character described, the combination with a casing of a driven-shaft extending thereinto, circuit-controlling devices within the casing including a rotating conductor, a rotatively-adjustable carrier for said conductor mounted on the shaft, a governor, associated with the shaft, means for adjustively rotating the carrier, controlled by the governor, a spring arranged to resist the action of the governor, and means disposed relative to the casing to be accessible from the exterior thereof, for adjusting the tension of said spring to vary its resistance to the action of the governor.

2. In a device of the character described, the combination with a casing, of a shaft projecting thereinto, circuit-controlling devices arranged within the casing and including a rotatable conductor, a carrier for said conductor, rotatively adjustable on the shaft, a governor mounted on the shaft, means for adjusting the carrier actuated by the governor, and manually-operable means for adjusting said carrier extending to the exterior of the casing.

3. In a device of the character described, an actuating-shaft, circuit-controlling devices comprising a rotatable conductor, a longitudinally-slidable sleeve on the shaft, a connection between said sleeve and the conductor whereby longitudinal movement of the sleeve positively effects the rotary adjustment of the conductor relative to the shaft, a governor mounted on said shaft, and connected with the sleeve to longitudinally move the same, and a manually-operable means for moving said sleeve independently of the governor.

4. In a device of the character described, a casing, a shaft to be driven mounted therein, circuit-controlling devices within the casing including a rotating conductor, a rotatively-adjustable carrier for said conductor, a centrifugal governor operatively associated with the shaft, means arranged to be actuated by the governor for adjusting the carrier, a lever extending to the exterior of the casing, a connection between said lever and the carrier, adjusting means whereby the carrier may be manually adjusted, a spring arranged to bear upon the said lever to resist the adjusting movement of the carrier, and means accessible from the exterior of the device for adjusting the tension of the spring.

5. In a device of the character described, the combination with a casing, of a circumferentially-grooved shaft extending thereinto, a sleeve slidably mounted on the shaft and provided with a cam-slot therein, a conductor-carrier mounted on the slidable sleeve, a pin secured to the carrier and taking through the cam-slot into the groove of the shaft, a rotative conductor carried by the carrier, coacting circuit members arranged within the casing, and means for sliding the sleeve longitudinally of the shaft whereby the rotative conductor is rotatively adjusted.

6. In a device of the character described, a shaft to be driven, circuit-controlling devices including a rotating conductor, a carrier for said conductor rotatively adjustable on the shaft, a cam device associated with the carrier for adjusting the latter, an automatic governor operatively associated with the shaft, and a manually-operable device, said governor and manually-operable device being both operatively associated with the cam device to actuate the latter.

7. In a device of the character described, a shaft to be driven, circuit-controlling devices including a rotating conductor, a rotatively-adjustable carrier for said conductor, a movable sleeve having a cam-slot and pin engagement with said carrier for adjusting the latter, a centrifugal governor operatively associated with the shaft and a manually-operable device, said governor and manually-operable device being operatively associated with the movable sleeve to actuate the same.

8. In a device of the character described, a casing having an offset portion provided with an aperture therethrough, a rotatable shaft projecting into the casing, circuit-controlling devices within the casing including a rotatable conductor, a rotatively-adjustable carrier for said conductor, means for adjusting the carrier including a sliding sleeve, a lever associated with said sliding sleeve extending to the exterior of the casing, and arranged for manual operation, a spring arranged in the recess of the offset portion of the casing, tending to hold said lever normally in one position, and a centrifugal governor carried by the shaft arranged when in operation to oppose the action of said spring upon the lever.

847,877. ELECTRIC-CURRENT INTERRUPTING AND VARYING APPARATUS. EMILE BACHELET, New York, N. Y. Filed Jan. 9, 1906. Serial No. 295,213.

Claim.—1. The combination of a uniformly-operating interrupter, an electroreceptive device, and means for amplifying or changing the number of interruptions transmitted from the interrupter.

2. The combination of a uniformly-operating rotary current-interrupter, an electroreceptive device, and means for amplifying or changing the number of interruptions transmitted from the interrupter to said device.

3. In combination, an electroreceptive device, a source of electrical energy, a uniformly-operating interrupter interposed in the circuit between the electrical supply and the receptive device, and means interposed in the circuit between the interrupter and the electroreceptive device for varying the number of interruptions without varying the speed or regularity of operation of the interrupter itself.

4. In combination, a receptive device, an interrupter, means for operating the interrupter at uniform speed, electrical connections between the interrupter and the source of electrical supply and between the interrupter and the electroreceptive device, and means interposed in the circuit between the interrupter and the electroreceptive device whereby the number of interruptions transmitted to the receptive device may be increased or diminished without varying the speed of the interrupter.

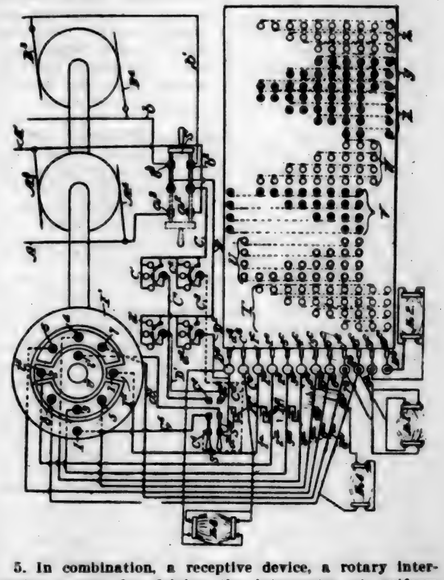

5. In combination, a receptive device, a rotary interrupter, means for driving the interrupter at uniform speed, electrical connections between the interrupter and the source of electrical supply and between the interrupter and the electroreceptive device, and a frequency-varying switch interposed in the circuit between the interrupter and the electroreceptive device whereby the number of interruptions transmitted to the receptive device may be increased or diminished.

6. In an electrical apparatus, the combination of a transformer for changing the current, an electroreceptive device through which the transmitted current is conducted, an interrupter interposed between the transformer and the receptive device, and means whereby the number of interruptions in the current transmitted to the receptive device may be varied without varying the interrupter.

7. In an electrical apparatus, the combination of a transformer for changing the current, an electroreceptive device through which the transmitted current is conducted, an interrupter interposed between the transformer and the receptive device, means for operating the interrupter at uniform speed, and a frequency-varying switch whereby the number of interruptions in the current transmitted to the receptive device may be varied without varying the speed of the interrupter or the current.

8. In combination, a source of electrical energy, an interrupter, a receptive device, means for transmitting one current direct through the receptive device, and means for directing another current through the interrupter to the receptive device.

9. In combination, a source of electrical energy, a uniformly-operating interrupter, a receptive device, means for transmitting part of the current direct through the

receptive device, and means for directing another branch of the current through the interrupter to the receptive device.

10. In combination, a source of electrical energy, an interrupter, a receptive device, means for transmitting a current direct through the receptive device, means for directing another current through the interrupter to the receptive device, and means for amplifying the number of interruptions transmitted from the interrupter to the receptive device.

11. In combination, a source of electrical energy, a uniformly-operating interrupter, a receptive device, means for transmitting part of the current direct through the receptive device, a means for directing another branch of the current through the interrupter to the receptive device, and means for amplifying the number of interruptions transmitted from the interrupter to the receptive device.

12. In combination, an electroreceptive device, a source of electrical energy, an interrupter interposed in the circuit between the electrical supply and the receptive device, a means for transmitting current direct from the source of energy to the receptive device, means for sending a current to the receptive device through the interrupter, and means interposed in the circuit between the interrupter and the receptive device for varying the number of interruptions without varying the speed of operation of the interrupter.

13. In combination, a transformer, an interrupter, an electroreceptive device and means interposed in the circuit between the interrupter and the electroreceptive device for varying the number of interruptions without varying the speed of operation of the interrupter.

14. The combination of a source of electrical energy, a transformer, an interrupter, electrical connections between the transformer and interrupter, an electroreceptive device, and means interposed between the interrupter and electroreceptive device for varying the number of interruptions of the current transmitted to the receptive device from the interrupter, without varying the speed of the interrupter or varying the current.

15. In combination, an interrupter, a receptive device, means for transmitting current from the interrupter to the receptive device, means for varying the polarity of the current transmitted from the interrupter to the receptive device, and means for varying the number of interruptions of the current transmitted from the interrupter without changing the speed of the latter.

16. The combination of a transformer, an interrupter, electrical connections between the transformer and interrupter, whereby either a direct or alternating current may be supplied to said interrupter, a receptive device adapted to be connected in circuit with the interrupter, and means for varying the number of interruptions transmitted to the receptive device without varying the speed of the interrupter.

17. The combination of a transformer, an interrupter, electrical connections between the transformer and interrupter, whereby either a direct or alternating current may be supplied to said interrupter, a receptive device adapted to be connected in circuit with the interrupter, and means for varying the number of interruptions transmitted to the receptive device without varying the speed of the interrupter.

18. The combination of a rotary transformer, an interrupter, electrical connections between the transformer and interrupter, whereby either a direct or alternating current may be supplied to said interrupter, a receptive device adapted to be connected in circuit with the interrupter, means for varying the number of interruptions transmitted to the receptive device without varying the speed of the interrupter, and means whereby the polarity of the current transmitted to the interrupter may be varied, substantially as described.

19. The combination with an interrupter in an electrical circuit, of a frequency-varying switch in said circuit provided with a series of contacts, whereby the number of interruptions produced by the interrupter can be amplified between the interrupter and receptive device.

20. The combination of an interrupter, a series of brushes contacting therewith, and a series of binding-posts electrically connected with said brushes; with a frequency-varying switch having a series of contacts adapted to be brought into the electric circuit to vary the number of interruptions transmitted to the electroreceptive device.

21. The combination of an interrupter, an electroreceptive device, a frequency-varying switch interposed in the circuit between the interrupter and the receptive device, and provided with a series of contacts whereby the number of interruptions produced by the interrupter can be changed or amplified between the interrupter and receptive device by shifting the switch.

22. In combination, an interrupter, a series of brushes contacting therewith and a series of binding-posts electrically connected with said brushes; with an electroreceptive device and a frequency-varying switch having a series of contacts which may be brought into operative relation with said binding-posts to vary the number of interruptions transmitted to the electroreceptive device.

23. In combination, a transformer, an interrupter operated at uniform speed, electrical connection between said transformer and the interrupter, an electroreceptive device, and a frequency-varying switch interposed in the circuit between the interrupter and the electroreceptive device, whereby the number of interruptions of the current transmitted through the interrupter to the receptive device can be varied or amplified without changing the speed of the interrupter.

24. In combination, a transformer, an interrupter operated at uniform speed, electrical connection between said transformer and the interrupter, an electroreceptive device, and a frequency-varying switch interposed in the circuit between the interrupter and the electroreceptive device, whereby the number of interruptions of the current transmitted through the interrupter to the receptive device can be amplified without changing the speed of the interrupter, and means whereby the polarity of the current can be varied.

25. In combination, a rotary transformer, an interrupter operated thereby at uniform speed, electrical connection between said transformer and the interrupter, whereby either direct or alternating currents can be transmitted to said interrupter, an electroreceptive device, and a frequency-varying switch interposed in the circuit between the interrupter and the electroreceptive device, whereby the number of interruptions of the current transmitted through the interrupter to the receptive device can be varied or amplified without changing the speed of the interrupter.

26. In combination, a rotary transformer, an interrupter operated thereby at uniform speed, electrical connection between said transformer and the interrupter, whereby either direct or alternating currents can be transmitted to said interrupter, an electroreceptive device, and a frequency-varying switch interposed in the circuit between the interrupter and the electroreceptive device, whereby the number of interruptions of the current transmitted through the interrupter to the receptive device can be varied or amplified without changing the speed of the interrupter, and means whereby the polarity of the current can be varied.

847,878. MACHINE FOR MAKING WIRE-GLASS. ARTHUR J. BALDWIN, East Orange, N. J. Filed Dec. 1, 1904. Serial No. 234,980.

Claim.—In a machine for the manufacture of wire-glass, the combination with a moving table, of a roll spaced therefrom a distance equal to the thickness of the finished sheet of wire-glass, and a second roll, over which a sheet of wire fabric is passed in contact therewith, said roll being out of direct operative relation to the table and spaced from the first-mentioned roll a distance equal to substantially half the thickness of the finished sheet of wire-glass; both rolls being adapted to revolve at the same peripheral speed as the lineal speed of the table, as set forth.

847,878.

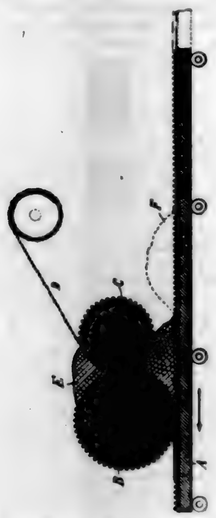

847,879. CULTIVATOR. AMOS M. BARKER, Franklin, Nebr. Filed Dec. 3, 1906. Serial No. 346,137.

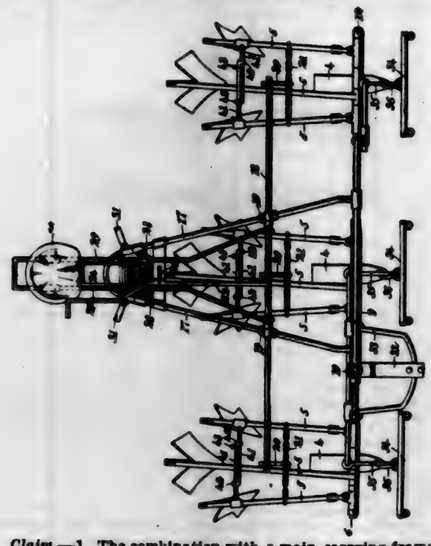

Claim.—1. The combination with a main carrying-frame, of an arched gang-frame secured thereto and provided with offset ends, an auxiliary gang-frame attached to the main gang-frame and provided with an offset end, an auxiliary carrying-frame supporting said auxiliary gang-frame, plow-beams pivotally mounted on the offset ends of said gang-frames, and mechanism adapted to raise and lower said plow-beams in unison, substantially as shown and described.

2. The combination of a main carrying-frame, comprising vertical bars connected together at their upper ends by means of a cross-bar, and a main gang-frame comprising an arched bar having offset ends adjustably secured to the uprights of the carrying-frame, an auxiliary carrying-frame, an auxiliary gang-frame adjustably mounted on said carrying-frame, a beam connecting the auxiliary and the main gang-frames, and plow-beams mounted on said gang-frames, substantially as shown and described.

3. The combination of a main carrying-frame, a main gang-frame vertically adjustable thereon, an auxiliary carrying-frame, an auxiliary gang-frame connected with the main gang-frames, a sulky-frame connected with the main and auxiliary gang-frames, and a carrying-wheel supporting said sulky-frame, substantially as shown and described.

4. The combination with a main frame, of a main gang-frame adjustably mounted thereon, an auxiliary carrying-frame, an auxiliary gang-frame adjustably secured thereto, plow-beams pivotally mounted on the gang-frames, a sulky-frame connected with the gang-frames, a rock-shaft mounted on said sulky-frame, a lever mounted on said shaft and connected with the gang-beams, and a carrying-wheel adapted to support the main frame, substantially as shown and described.

5. The combination with a main carrying-frame mounted upon shoes, of a main gang-frame vertically adjustable on said carrying-frame, an auxiliary carrying-frame supported on a shoe, an auxiliary gang-frame, plow-beams mounted on said gang-frames, a sulky-frame connected with said gang-frames, a rockshaft journaled on said sulky-frame, and means connected with said rock-shaft adapted to raise and lower the plow-beams connected with the main and auxiliary plow-frames, in unison, substantially as shown and described.

6. The combination with a main carrying-frame, of a main gang-frame mounted thereon, an auxiliary carrying-frame, and an auxiliary gang-frame secured thereto, a sulky-frame secured to said gang-frames, a carrying-wheel adapted to support said sulky-frame, plow-beams mounted on said gang-frames, and swingle-trees connected with the main and auxiliary carrying-frames respectively, substantially as shown and described.

7. The combination with a main carrying-frame, of a main gang-frame mounted thereon, an auxiliary carrying-frame, an auxiliary gang-frame secured thereto, shoes attached to the lower ends of the carrying-frames, whiffletrees connected with said shoes and carrying-frame, plow-beams pivotally attached to the gang-frames, a sulky-frame secured to the gang-frames, and a carrying-wheel adapted to support said sulky-frame, substantially as shown and described.

8. The combination with a main carrying-frame, a main gang-frame mounted thereon, an auxiliary gang-frame connected therewith, shoes fixedly attached to the lower ends of the carrying-frames, auxiliary shoes adapted to be detachably secured to the shoes of the carrying-frames, plow-beams mounted on the gang-frames, a sulky-frame connected with the gang-frames, and a carrying-wheel adapted to support said sulky-frame, substantially as shown and described.

847,880. CHAIR. LEWIS W. BARKER and JOHN JACKSON, Clinton, Iowa. Filed Apr. 2, 1906. Serial No. 309,390.

Claim.—1. A chair involving a tilting back, a movable seat and its frame, slidable means supported for movement by the frame of said seat and movable forward by said back on the rearward movement thereof, and means for elevating the fore part of the seat with respect to the rear part thereof on the forward movement of said slidable means.

2. A chair involving a tilting back and a seat, lever means to act against the seat, and means between said lever means and the back and operable by the latter to elevate the fore part of the seat with respect to the rear part thereof when the back is tilted rearward.

3. A chair involving a swinging back, a movable seat, slidable means movable forward by the back on the initial rearward movement thereof and means operable by said slidable means on the forward movment thereof for elevating the fore part of the seat with respect to the rear part thereof.

4. A chair involving a tilting back and a seat movable about a common axis which is located at the rear of the

seat, the back having a downward extension, horizontally-slidable means located below the seat and operable in a forward direction on the initial rearward tilting movement of the back, and means actuated by said sliding means on the forward movement thereof for elevating the fore part of the seat with respect to the rear part.

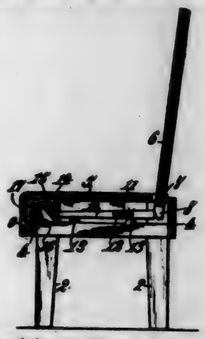

5. A chair involving a tilting back, and a seat having a common and stationary axis of motion located at the rear of the seat, the back having an extension below said axis, slidable means movable forward by said extension on the initial rearward movement of the back and means operable by said slidable means on the forward movement thereof for elevating the fore part of the seat.

6. A chair involving a tilting back and a seat, sliding means movable in a forward direction by the back when the same is swung rearward, and lever means operable by said sliding means when the latter moves forward for lifting the fore part of the seat.

7. A chair involving a tilting back and a seat, sliding means movable forward by the back when the latter swings rearward, and triangular lever means operable by said sliding means on the forward movement thereof for lifting the fore part of the seat.

8. A chair involving a tilting back and a seat, sliding means movable forward by the back when the latter swings rearward, triangular lever means operable by said sliding means on the forward movement thereof for lifting the fore part of the seat, and spring means acting against said lever means for returning the latter to the normal position thereof when the back moves toward its normal position.

9. A chair involving a tilting back and seat supported for movement about a common axis located at the rear of the seat, said back having an extension below said axis, sliding means movable forward by said extension when the back swings rearward, and lever means operable by said sliding means on the forward movement thereof for lifting the fore part of said seat.

10. A chair involving a tilting back and a seat, a pair of endwise-movable rods adapted to be moved forward by the back when the latter is tilted rearward, antifriction means for supporting the rods, connected levers to lift the seat and operable for doing the same by and on the forward motion of said rods, a spring acting against the connection between the levers in opposition to the rods, and stop means to limit the rearward motion of the back.

847,881. PROCESS OF COATING METAL. HANS H. BAUMGARN, Davenport, Iowa. Filed Nov. 28, 1906. Serial No. 345,545.

Claim.—The process of brass-coating metal, comprising heating the metal to be coated, then applying a thin coating or covering of dry, pulverized glass to the entire surface of the metal to be coated, then permitting said pulverized glass to melt upon the metal and enter all of the cracks and crevices and entirely glass-coat said cracks and crevices and outer surface, then applying brass to the glass-coated surface of the metal while the same is heated, and then permitting the metal to cool.

847,882. SHAFT-COLLAR. ELMER R. BEACH, Traverse City, Mich., assignor of one-third to George Perrine and one-third to John Nelson, Traverse City, Mich. Filed Apr. 17, 1906. Serial No. 312,220.

Claim.—1. A shaft-collar comprising a collar proper provided with an opening, a sleeve having threaded engagement with the opening and adapted to receive the shaft, said sleeve being provided with a flange, and means passing through the flange and engaging the collar proper to prevent the sleeve from being separated from the collar proper by the rotation of the shaft.

2. A shaft-collar comprising a collar proper, said collar proper being provided with an opening and consisting of sections having interlocking engagement at points beween the outer edge of the collar and said opening, a sleeve consisting of sections having threaded engagement with the opening in the collar proper, said sections being provided with flanges, and means passing through the flanges and engaging the collar proper to prevent the sleeve from being separated from the collar proper by the rotation of the shaft.

847,883. COMBINATION DOOR LATCH AND BOLT. EDWIN C. BELKNAP and ERSKINE H. JACKSON, Chicago, Ill. Filed May 1, 1906. Serial No. 314,664.

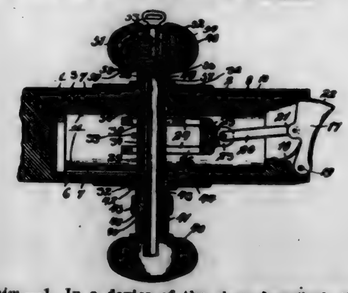

Claim.—1. In a device of the class described, the combination of a bolt, a beveled latch surrounded on all sides by and normally projecting outwardly from the end of the bolt, mechanism located immediately behind and in line with the head end of the bolt for moving the latch, and mechanism for moving the bolt, substantially as described.

2. In a device of the class described, the combination of a bolt, a latch normally projecting outwardly from the end of the bolt, a pair of knobs, knob-actuating mechanism located immediately behind and in line with the head end of the bolt for moving the latch, mechanism similarly located for moving the bolt, and a key-actuated shaft in line with the axes of the knobs for operating the last-named mechanism, substantially as described.

3. In a device of the class described, the combination of a bolt, a latch adapted to be outwardly projected from the end of the bolt, mechanism contained within the bolt for operating the latch, a knob engaging with the latch-actuating mechanism, and means for operating the bolt, substantially as described.

4. In a device of the class described, the combination of a bolt, a latch adapted to be outwardly projected from the end of the bolt, mechanism contained within the bolt for operating the latch, a knob engaging with the latch-actuating mechanism, and means for operating the bolt independently of the latch-operating mechanism, substantially as described.

5. In a device of the class described, the combination of a bolt, a latch adapted to be outwardly projected from the end of the bolt, mechanism contained within the bolt for operating the latch, a knob engaging with the latch-actuating mechanism, and a lock contained within the knob for moving the bolt-operating mechanism, substantially as described.

6. In a device of the class described, the combination of a bolt, a latch adapted to be outwardly projected from the bolt, means contained within the bolt for moving the latch, a bolt-operating mechanism, a transversely-extending shank upon which the bolt-operating mechanism is mounted, knobs surrounding the outwardly-projecting ends of the shank and provided with knob-shanks engaged with the latch-operating mechanism, a lock mechanism contained within one of the knobs and normally engaged with the bolt-shank, and means independent of the locking mechanism for turning the bolt-shank and disengaging the bolt-shank from the locking mechanism, substantially as described.

7. In a divice of the class described, the combination of a bolt, a latch mounted therein normally projecting outwardly from the end of the bolt, a spring for holding the latch in outwardly-projected position, a movable yoke located immediately behind the head end of the bolt and connected with the latch, a pair of independently-movable cams similarly located, either of which is adapted to actuate the yoke, inner and outer knobs, one connected with each of the cams and adapted to actuate the same, mechanism located immediately behind the head end of the bolt for moving the bolt and a key-operated shaft in line with the axes of the knobs for operating the last-named mechanism, substantially as described.

8. In a device of the class described, the combination of a bolt, a latch normally projecting outwardly from the end of the bolt, a spring for holding the bolt in outwardly-projected position, a movable yoke connected with the latch, a pair of independently-movable cams, either of which is adapted to actuate the yoke, inner and outer knobs, one connected with each of the cams and adapted to actuate the same, mechanism contained within the bolt for moving the same, a bolt-shaft in line with the axes of the knobs and adapted to operate the bolt mechanism and a lock within one of the knobs for actuating the bolt-shaft, substantially as described.

9. In a device of the class described, the combination of a bolt, a latch normally projecting outwardly from the end of the bolt, a spring for holding the latch in outwardly-projected position, a movable yoke connected with the latch, a pair of independently-movable cams, either of which is adapted to actuate the yoke, inner and outer knobs, one connected with each of the cams and adapted to actuate the same, mechanism contained within the bolt for moving the same, a transversely-extending bolt-shank upon which the bolt-actuating mechanism is mounted, a lock contained within one of the knobs and adapted to move the shank, and means independent of the lock combined with the other knob for moving the shank, substantially as described.

10. In a device of the class described, the combination of a cylindrical casing, a cylindrical bolt movable within the casing, a beveled latch surrounded by and normally outwardly projecting from the bolt, a spring for holding the latch in normally projected position, a longitudinally-movable yoke connected with the latch, a pair of knobs, means for imparting a longitudinal movement to the yoke by the turning of either of the knobs, and independent mechanism for moving the bolt, substantially as described.

11. In a device of the class described, the combination of a bolt, a latch normally projecting outwardly from the bolt, a spring for holding the latch in normally projected position, a longitudinally-movable yoke connected with the latch, a pair of knobs, means for imparting a longitudinal movement to the yoke by the turning of either of the knobs, mechanism for moving the bolt, a lock contained within one of the knobs for actuating the bolt-moving mechanism, and means combined with the other knob for disengaging the bolt-actuating mechanism from the lock and for actuating the bolt mechanism, substantially as described.

12. In a device of the class described, the combination of a casing adapted to be secured within a door, a bolt slidably mounted within the casing, a latch pivoted within the end of the bolt, a spring for normally projecting the latch outwardly, a longitudinally-movable yoke, a connection between the yoke and the latch, lugs or abutments on the yoke, independently-movable cams bearing against the lugs or abutments and adapted to retract the yoke, a transversely-extending bolt-shank, a bolt-actuating plate mounted upon the shank and provided with ears adapted to engage with the wall of the bolt for moving the same, inner and outer knobs provided with shanks engaging with the latch-actuating cams, locking mechanism contained within one of the knobs for turning the bolt-shank, and means combined with the other knob for disengaging the shank from the locking mechanism and independently turning the shank, substantially as described.

13. In a device of the class described, the combination of a symmetrical cylindrical casing adapted to be mounted either side up within a door, a cylindrical bolt slidably mounted within the casing, a latch movably mounted within the end of the bolt, mechanism contained within the casing and immediately behind and in line with the head of the bolt for moving the latch, inner and outer knobs adapted to be connected with either side of the casing and engage with the latch-actuating mechanism, either being adapted to actuate the latch mechanism, and independent mechanism for moving the bolt, located within the casing and immediately behind and in line with the head of the bolt, substantially as described.

14. In a device of the class described, the combination of a symmetrical casing adapted to be mounted either side up within a door, a bolt slidably mounted within the casing, a latch movably mounted within the end of the bolt, mechanism contained within the casing and immediately behind and in line with the head of the bolt for moving the latch, inner and outer knobs adapted to be connected with either side of the casing and engage with the latch-actuating mechanism, either being adapted to actuate the latch mechanism, a bolt-shaft extending transversely in the axial line of the knobs, means for turning the shaft, and mechanism actuated by the turning of the shaft for moving the bolt, said mechanism being located within the casing immediately behind and in line with the head of the bolt, substantially as described.

15. In a mechanism of the class described, the combination of a frame comprising a symmetrically-formed cylindrical tenon portion and a face-plate formed integrally therewith, a cylindrical bolt slidably mounted within the tenon portion and comprising a head having therein a recess and a hollow body portion, a latch mounted within the recess normally projecting outwardly therefrom, inner and outer door-knobs, mechanism entirely within the tenon portion of the casing and actuated by either of the door-knobs for retracting the latch, and mechanism for projecting the bolt, substantially as described.

16. In a mechanism of the class described, the combination of a frame comprising a symmetrical tenon portion adapted to be inserted either side up and a face-plate secured to the tenon portion, a bolt slidably mounted within the tenon portion and comprising a head having therein a recess and a hollow body portion, a latch mounted within the recess and normally projected outwardly therefrom, inner and outer door-knobs, mechanism within the body of the bolt and actuated by either of the door-knobs for retracting the latch, a key-cylinder in one of the knobs, a bolt-actuating shaft in engagement with the key-cylinder, and means actuated by the turning of the shaft for moving the bolt, substantially as described.

17. In a mechanism of the class described, the combination of a frame comprising a symmetrical tenon portion adapted to be inserted into a door either side up and a face-plate secured to the tenon portion, a bolt slidably mounted within the tenon portion and comprising a head having therein a recess, a latch mounted within the recess and normally projecting outwardly therefrom, inner and outer door-knobs, mechanism within the body of the bolt and actuated by either of the door-knobs for retracting the latch, a key-lock in one of the knobs, a bolt-shaft nor-

mally in engagement with the key-lock and adapted to be retracted out of engagement therefrom, and means within the body of the bolt actuated by the bolt-shaft for moving the bolt, substantially as described.

18. In a device of the class described, the combination of a lock-casing of cylindrical formation terminating at its outer end in a face-plate, a bolt of cylindrical formation slidably mounted within the casing, inner and outer knobs extending outwardly from the casing, a bolt-shaft, a key-lock in one of the knobs adapted to actuate the bolt-shaft, and mechanism carried by the bolt-shaft for actuating the bolt, substantially as described.

19. The combination of a cylindrical casing terminating at its forward end in a vertically-elongated face-plate, a cylindrical bolt slidable within the casing, a latch normally projecting outwardly from the bolt, inner and outer knobs extending transversely of the casing, mechanism contained within the casing and in engagement with the knobs for actuating the latch by either knob, a bolt-shaft in alinement with the axes of the knobs, a key-lock in one of the knobs for turning the bolt-shaft, a bolt-actuating mechanism contained within the casing and adapted to be operated by means of the bolt-shaft, substantially as described.

20. In a device of the class described, a casing consisting of a cylindrical tenon portion and a face-plate, a cylindrical bolt slidably mounted within the tenon portion, knobs entered through the casing, bolt-actuating mechanism contained within the casing, and an outer protective casing of cylindrical formation closed at its inner end and adapted to render the mechanism substantially dust-proof, substantially as described.

847,881. LOCKING LATCH AND BOLT MECHANISM. EDWIN C. BELKNAP and ERSKINE H. JACKSON, Chicago, Ill. Filed Oct. 19, 1906. Serial No. 339,729.

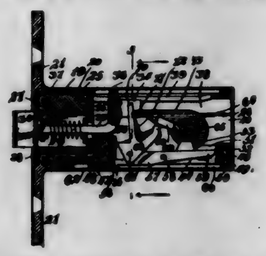

Claim.—1. In a mechanism of the class described, the combination of a lock-frame, a bolt slidably mounted within the frame, comprising a recessed head and a hollow body, a latch movable within the recess in the head, inner and outer door-knobs, mechanism contained within the body of the bolt and connected with the door-knobs for moving the latch, a bolt-shaft, mechanism within the body of the bolt and actuated by the bolt-shaft for moving the bolt, a key-lock in one of the knobs normally in engagement with one end of the bolt-shaft, a disk or plate pivoted to the other end of the bolt-shaft and normally lying flat against the end of the other knob, and adapted to be turned back on edge to retract the bolt-shaft out of engagement with the key-lock and thereafter serve as a handle for turning the shaft, substantially as described.

2. In a mechanism of the class described, the combination of a bolt, a bolt-shaft, means for moving the bolt adapted to be actuated by the bolt-shaft, inner and outer knobs, a key-lock in the outer knob normally in engagement with the end of the bolt-shaft, and means on the opposite side of the door for retracting the bolt-shaft out of engagement with the key-lock preventing the use of the key, substantially as described.

3. In a mechanism of the class described, the combination of a bolt, a bolt-shaft, means for moving the bolt adapted to be actuated by the bolt-shaft, inner and outer knobs, a key-lock in the outer knob normally in engagement with the end of the bolt-shaft, a disk or plate pivoted to the opposite end of the bolt-shaft and normally in flat contact with the inner knob, and adapted to be turned on edge to retract the bolt-shaft and thereafter serve as a handle for turning the shaft, substantially as described.

4. In a mechanism of the class described, the combination of a bolt, a latch normally projecting outwardly from the bolt, a latch-bar extending rearwardly from the latch and having on its rear end a cross-abutment, companion outer bell-crank levers in engagement with the abutment, inner and outer knobs, companion fingers connected with the two knobs and adapted to engage with the companion bell-crank levers, a bolt-bar provided with abutments, a finger adapted to move betwen the abutments for advancing and retracting the bolt, a bolt-shaft on which the finger is mounted, such shaft passing through the latch-actuating fingers, and a key-lock in one of the knobs for moving the bolt-shaft, substantially as described.

5. In a mechanism of the class described, the combination of a bolt, a latch normally projecting outwardly from the bolt, a latch-bar extending rearwardly from the latch and having on its rear end a cross-abutment, companion outer bell-crank levers in engagement with the companion bell-crank levers, a bolt-bar provided with abutments, a finger adapted to move between the abutments for advancing and retracting the bolt, a bolt-shaft on which the finger is mounted, such shaft passing through the latch-actuating fingers, a key-lock in one of the knobs for moving the bolt-shaft, and an intermediate bell-crank lever pivoted between the companion bell-crank levers and adapted to be actuated by the finger on the bolt-shaft, substantially as described.

6. In a mechanism of the class described, the combination of a bolt having a recess in its head and having a hollow body, a latch operating within the recess, a rearwardly-extending latch-bar terminating in its rear end in a yoke, a cross-abutment on the yoke, a bolt-bar provided on its inner edge with abutments, companion outer bell-crank levers, and an intermediate bell-crank lever pivoted to the bolt-bar, inner and outer knobs, independent fingers connected with the two knobs for actuating the companion outer bell-crank levers, a bolt-shaft passing through said fingers, a finger on the bolt-shaft adapted to operate between the abutments on the bolt-bar and adapted to be turned into position to actuate the intermediate bell-crank lever, and a key-lock in one of the knobs adapted to turn the bolt-shaft, a locking-lever pivoted to the bolt-bar and provided with a head adapted to be projected outwardly to lock the bolt in advanced position, the inner end of the lever being in position to be engaged by the finger on the bolt-shaft for retracting the head end of the lever and permitting movement of the bolt, substantially as described.

7. In a mechanism of the class described, the combination of a bolt having a recess in its head and having a hollow body, a latch operating within the recess, a rearwardly-extending latch-bar terminating in its rear end in a yoke, a cross-abutment on the yoke, a bolt-bar provided in its inner edge with abutments, companion outer bell-crank levers, and an intermediate bell-crank lever pivoted to the bolt-bar, an abutment for limiting the forward movement of the latch-bar, inner and outer knobs, independent fingers connected with the two knobs for actuating the companion outer bell-crank levers, a bolt-shaft passing through said fingers, a finger on the bolt-shaft adapted to operate between the abutments on the bolt-bar and adapted to be turned into position to actuate the intermediate bell-crank lever, and a key-lock in one of the knobs adapted to turn the bolt-shaft, a locking-lever pivoted to the bolt-bar and provided with a head adapted to be projected outwardly to lock the bolt in advanced position, the inner end of the lever being in position to be engaged by the finger on the bolt-shaft for retracting the head end of the lever and permitting movement of the bolt, substantially as described.

8. In a mechanism of the class described, the combination of a bolt, inner and outer knobs, a longitudinally-movable and rotatable bolt-shaft, a key-cylinder in one of the knobs having a revoluble socket-shank held against longitudinal movement and adapted normally to engage

the bolt-shaft for revolving the same, means contained within the other knob for retracting the bolt-shaft out of engagement with the key-cylinder, and mechanism actuated by the rotary movement of the bolt-shaft for moving the bolt, substantially as described.

9. In a mechanism of the class described, the combination of a bolt, inner and outer knobs, a longitudinally-movable rotatable bolt-shaft in line with the axes of the knobs, mechanism for moving the bolt by the rotation of the bolt-shaft, a key-cylinder in the outer knob having a revoluble socket-shank held against longitudinal movement and adapted to normally engage one end of the bolt-shaft for the purpose of revolving the same, and a thumb-disk in the face of the other knob for retracting the shaft to disengage it from the key-cylinder, substantially as described.

10. In a mechanism of the class described, the combination of a bolt, inner and outer knobs, a longitudinally-movable rotatable bolt-shaft in line with the axes of the knobs, mechanism for moving the bolt by the rotation of the bolt-shaft, a key-cylinder in the outer knob having a revoluble socket-shank held against longitudinal movement and adapted to normally engage one end of the bolt-shaft for the purpose of revolving the same, and a thumb-piece secured to the inner end of the bolt-shaft and projecting outwardly for moving the bolt-shaft into and out of engagement with the key-cylinder, substantially as described.

11. In a mechanism of the class described, the combination of a bolt, inner and outer knobs, a longitudinally-movable rotatable bolt-shaft in line with the axes of the knobs, mechanism for moving the bolt by the rotation of the bolt-shaft, a key-cylinder in the outer knob adapted to normally engage one end of the bolt-shaft for the purpose of revolving the same, and a thumb-piece pivoted to the inner end of the bolt-shaft and normally lying flat against the face of the inner knob and adapted to be turned up on edge to retract the bolt-shaft out of engagement with the key-cylinder, substantially as described.

12. In a bolt mechanism, the combination of a knob provided with a shank, a key-cylinder within the knob, a collar-plate secured to and revoluble with the knob-shank and adapted to permit the knob and key-cylinder to be adjusted either side up, and provided with companion recesses on opposite sides of the plate, a knob-locking bar adapted to be projected into either recess, and a thumb-piece for moving the bar, substantially as described.

13. In a bolt mechanism, the combination of a knob provided with a shank, a collar-plate secured to and revoluble with the shank, and provided with companion recesses on opposite sides, a flat spring bearing against the edge of the collar-plate and adapted to limit its rotation under ordinary circumstances, but adapted to permit the collar-plate to be swung around under tension for purposes of adjustment, a knob-locking bar adapted to enter either of the recesses, and a thumb-piece for actuating the bar, substantially as described.

14. In a bolt mechanism, the combination of a knob provided with a shank, a collar-plate secured to and revoluble with the shank, and provided with companion recesses on opposite sides, a flat spring bearing against the edge of the collar-plate and adapted to limit its rotation under ordinary circumstances, but adapted to permit the collar-plate to be swung around under tension for purposes of adjustment, and a knob-locking bar adapted to enter either of the recesses and provided on its end with a rack, a thumb-piece and a pinion adapted to be revolved by the thumb-piece and engaged with the rack for moving the bar into and out of engagement with the coacting recess, substantially as described.

15. In a locking mechanism, the combination of a frame comprising a face-plate and a cylindrical tension portion, the tenon portion being open on its rear end and provided in its sides with recesses cut back from the rear open end, slide-plates adapted to be entered into the slots to provide journal-bearings, and an outer cylindrical shell fitted over the tenon portion and open at its forward end and closed at its rear end and provided with holes adapted to register with the bearings for affording a substantially dust-proof casing, substantially as described.

847,885. TRUCK-BOLSTER. ARTHUR B. BELLOWS, Pittsburg, Pa. Filed Aug. 3, 1906. Serial No. 320,003.

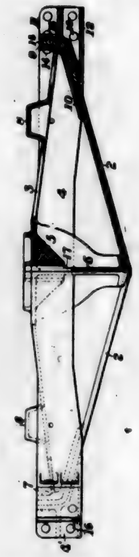

Claim.—1. In a truck-bolster, an upper cast compression member, and a tension member having upwardly-bent vertically-extending ends secured directly to the compression member; substantially as described.

2. In a truck-bolster, a cast compression member and a rolled tension member having bent ends secured directly to the compression member, and an endwise-inserted casting arranged to clamp the tension member in position; substantially as described.

3. In a truck-bolster, a cast compression member and a rolled tension member having bent ends secured directly to the compression member, an endwise-inserted casting arranged to clamp the tension member in position, and rivets extending through the inserted member, the bent end of the tension member and the vertical portion of the cast compression member; substantially as described.

4. In a truck-bolster, a cast compression member with horizontally-extending flanges, a tension member having bent ends within the flanges, an endwise-inserted clamping-casting between said flanges, and side rivets connecting the endwise-inserted clamping member to the flanges of the cast compression member; substantially as described.

5. In a truck-bolster, a cast compression member having open-ended pockets at its ends, a tension member having its ends secured directly to the compression member, and separate clamping members arranged to be secured in the pockets; substantially as described.

6. In a truck-bolster, a tension member having bent-up ends extending vertically and held between two transverse webs of a compression member, and rivets extending horizontally through the said three parts; substantially as described.

7. In a truck-bolster, a tension member having bent-up ends held between two transverse webs of a compression member, and rivets extending through the said three parts, the cross-webs extending along the tension member for a portion thereof below the bend; substantially as described.

8. In a truck-bolster, a cast compression member whose cross-section near its center is substantially that of a channel, while its cross-section near the end is substantially like an I-beam and a separate tension member with its ends connected to the end portions of the compression member; substantially as described.

9. In a truck-bolster, a cast compression member having vertical side flanges, and a web which is inclined from the

center portion downwardly and outwardly between the said flanges, the flanges extending above the web near the ends of said member and a separate tension member with its ends connected to the end portions of the compression member; substantially as described.

847,886. MEANS FOR SEPARATING AND ELIMINATING SMOKE-SUSPENDED MATTER. SAMUEL BENSON, Chicago, Ill. Filed Feb. 23, 1906. Serial No. 302,016.

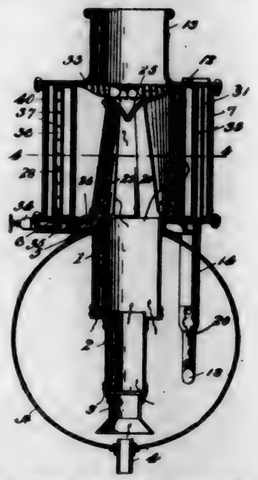

Claim.—1. A device of the type set forth comprising the combination with a furnace, of a smoke-separating cylinder in communication therewith, means for imparting spiral rotation to the gases of combustion from said furnace, means for separating the solid carbon particles from the gases of combustion and for discharging said particles and said gases severally through independent outlets and means for introducing a condensing agent into said separating-chamber.

2. A device of the type set forth comprising the combination with a furnace, of a smoke-separating cylinder in communication therewith, means for imparting spiral rotation to the gases of combustion from said furnace, means for separating the solid particles from the gases of combustion and for discharging said particles and said gases severally through independent outlets and means for introducing a liquid-condensing agent in a fine spray into said separating-chamber.

3. A device of the type set forth comprising the combination with a furnace, of a smoke-separating cylinder in communication therewith, means for imparting spiral rotation to the gases of combustion from said furnace, a plurality of foraminous sheets disposed within said chamber, means for separating the solid carbon particles from the gases of combustion and for discharging said particles and said gases severally through independent outlets, said sheets forming partitions between said outlets and serving as a filtering agent for the crude smoke.

4. A device of the type set forth comprising the combination with a furnace, of a smoke-separating cylinder communicating therewith, a free draft-discharge conductor leading from said cylinder, an auxiliary cylinder parallel to said first-named cylinder and communicating therewith by a longitudinal tangential passage and a longitudinal deflecting-blade in said first-named cylinder adjacent to said passage and overlapping the adjacent edge portion of said first-named cylinder.

5. A device of the type set forth, comprising the combination with a main separating-chamber, means in said chamber for separating the gases of combustion from the solid particles, a return draft-conduit leading to the furnace and serving as a passage for the return of said solid particles thereto, a valve-controlled branch pipe depending from said conduit, and a strainer interposed between said branch pipe and said conduit.

847,887. COTTON-BOLL-WEEVIL DESTROYER. BERTHA BERGMANN, Goliad, Tex. Filed Feb. 28, 1906. Serial No. 303,563.

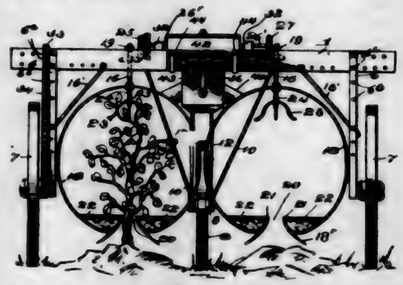

Claim.—1. A cotton-boll-weevil destroyer, comprising a support, casings carried by said support, a vertical casing carried by said support, a sieve positioned within said last-mentioned casing, pipes connecting said vertical casing with said first-mentioned casings, and a burner extending into said vertical casing.

2. A cotton-boll-weevil destroyer, comprising a support, primary casings carried by said support, an auxiliary casing carried by said support, said auxiliary casing provided with pipes, each pipe communicating with the primary casing, a burner connected to said auxiliary casing, means for supplying a fumigating material to said burner within said auxiliary casing.

3. In a cotton-boll-weevil destroyer, the combination with a support, of primary casings carried by said support, an auxiliary casing carried by said support, a burner positioned within the lower portion of said auxiliary casing, a sieve positioned within the upper portion of said last-mentioned casing, and pipe connecting said auxiliary casing to said first-mentioned casings.

4. In a cotton-boll-weevil destroyer, the combination with a support, primary casings carried by said support, of revoluble agitators carried by said support, and extending into said casings, an auxiliary casing carried by said support, pipes connecting said auxiliary casing to said primary casings, a burner positioned within the lower portion of said auxiliary casing, a revoluble sieve positioned within the upper portion of said casing, a hopper formed upon the upper portion of said casing contiguous to said sieve, and means for synchronously rotating said agitators and said sieve, said sieve being capable of feeding material to the flame of said burner.

5. A cotton-boll-weevil destroyer, comprising a portable support, an imperforate cylindrical casing carried by said support in position to embrace a plant, said casing provided with a slitted bottom, and receptacles formed in said casing contiguous to said slit.

6. A cotton-boll-weevil destroyer, comprising a portable support, an adjustable casing carried by said support, said casing provided with a longitudinally-extended slitted opening, and arranged to wholly embrace a plant, longitudinally-extending receptacles formed upon said casing contiguous to the slitted opening, and agitating means positioned wholly within said casing.

7. A cotton-boll-weevil destroyer, comprising a portable support, parallel, substantially cylindrical, imperforate casings carried by said support, and positioned to wholly embrace a plant, said casings each provided with a slitted bottom and with parallel receptacles formed adjacent said slits, and agitating means positioned wholly within each of said casings.

8. A cotton-boll-weevil destroyer, embodying a casing, an agitator disposed wholly within the casing, a receptacle within the casing and below the agitator, and means to apply a fumigant within the casing.

9. A cotton-boll-weevil destroyer, embodying a slitted casing, proportioned to wholly embrace a plant, receptacles formed adjacent the slit of the casing, and an agitator wholly within the casing and above the receptacles.

10. In a cotton-boll-weevil destroyer, a wheeled vehicle, a substantially cylindrical, slitted drum carried upon the vehicle, a casing carried upon the drum, means within the casing for igniting a fumigant, and a pipe leading from the casing to the cylinder adjacent its forward end.

847,888. NAIL. CHARLES A. BIRDSALL, Holden, Mo. Filed Aug. 18, 1906. Serial No. 331,129.

Claim.—A nail comprising a body portion having a head at one end thereof, and prongs extending from the opposite side of the head, said prongs having their extremities beveled outwardly and provided with scoring on the outer faces.

847,889. PIANO STRING-PLATE. WILLIAM L. BJUR, New York, N. Y. Filed Oct. 11, 1906. Serial No. 338,354.

Claim.—1. In a piano, the combination of a string-plate, a fastening for the string-plate adjacent to its upper edge, a name-plate separate from the string-plate, the name-plate having its lower edge overlapping the string-plate at its upper edge, the name-plate covering and concealing said fastening of the string-plate and a fastening for holding the name-plate in position, the name-plate by its engagement with the string-plate assisting in holding the latter in position.

2. In a piano, the combination of a string-plate having at its upper right-hand portion an edge extending obliquely from an intermediate point at the top of the string-plate, downward and outward to the right-hand side edge thereof, said edge extending approximately parallel to the top row of tuning-pins of the string-plate and the string-plate having directly adjacent to said oblique edge a hole adapted to receive a fastening, a string-plate fastening extending through said hole, a name-plate having top and right-hand side edges at right angles to each other and having an oblique lower edge extending from the right-hand side edge leftward and upward to the top of the name-plate, the oblique edge of the name-plate matching and overlapping the oblique edge of the string-plate to hide the said fastening extending through the said hole thereof, and a fastening-bolt extending through the name-plate into the back frame of the piano, to hold the name-plate in position and, through the name-plate, to assist in holding the string-plate in position.

3. In a piano, the combination with the frame, of a string-plate, means for securing the string-plate to the frame, a name-plate separate from the string-plate, and overlapping the string-plate at its upper edge, and means for fastening the name-plate to the frame independently of the string-plate and for clamping the name-plate against the string-plate to assist in holding the latter in place.

847,890. FISHING-REEL. GEORGE W. BLACKBURN, Sarasota, Fla. Filed Oct. 16, 1905. Serial No. 282,983.

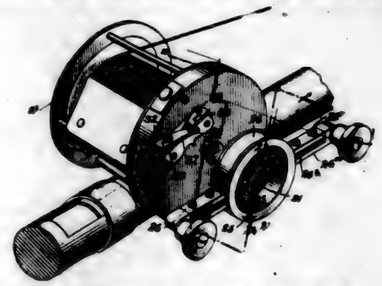

Claim.—1. A friction-reel carrying a main shaft, a rotatable handle connected with the shaft, and an automatic stop for the handle, said stop comprising a pivoted pawl adapted to project into the path of the handle.

2. A fishing-reel having a rotatable handle, and a stop therefor, said stop comprising a pivoted pawl adapted to project into the path of the handle, the pawl being provided with means for preventing its motion about its pivot in one direction beyond a certain point, and also provided with a spring for permitting the pawl to be depressed in the other direction.

3. A stop for a fishing-reel, comprising a pawl having an elongated slot, a stud passing through said slot for pivoting the pawl, a projection below said slot for limiting the motion of the pawl, and a spring for forcing the pawl into a position in which said projection is in limiting position.

4. An automatic stop for a fishing-reel, comprising a pawl having an elongated slot, a stud passing through said slot on which the pawl is pivoted, a spring for forcing the pawl in one direction, and a stud for limiting the motion of the pawl in that direction.

5. A stop for a fishing-reel, comprising a pawl mounted to move about a pivot and to move longitudinally.

6. A stop for a fishing-reel, comprising a pawl, resilient means for forcing the pawl into operative position, and means for engaging the pawl and holding it in inoperative position.

7. A stop for a fishing-reel, comprising a swinging and longitudinally-movable pawl, and a spring for forcing the pawl into operative position; said spring having means for engaging the pawl and holding it in inoperative position.

8. A fishing-reel having a drag, comprising a spool, a handle rotatably mounted on the spool, and a stop for the handle, comprising a spring-pawl adapted to engage and hold the handle when the handle turns in one direction.

9. A fishing-reel having a drag comprising a spool, a two-part handle, each part of the handle having a semicircular portion embracing one side of the spool and a projection, the projection of one part entering that of the other, a fibrous packing between said parts engaging the spool, and means for varying the distance between the parts of the handle to vary the friction on the spool.

10. A fishing-reel having a drag, comprising a spool, a handle adapted to be held on the spool by friction, and a fibrous packing between the handle and spool, for preventing the entrance of dirt and dust between them.

847,891. BOOKBINDING-MACHINE. WILLIAM E. BLAUVELT, New York, N. Y., assignor of one-half to Edward West, Brooklyn, N. Y. Filed July 12, 1904. Serial No. 216,204.

Claim.—1. In a machine of the character described, platen-carrying arms, means for moving the same, shafts having rocking motion in said arms, platen-sections fixed to said shafts, auxiliary platens, and spring-plates on said auxiliary platens for engaging on opposite sides of said shafts.

2. In a machine of the character described, vertically-

movable platen-carrying arms, rock-shafts supported by said arms, platens on said shafts, racks on the ends of said shafts, pawls carried by the arms for engaging with said racks, the said pawls having outwardly-extended lower ends, fixed cam-plates for engaging with said ends to release the pawls from the racks, and springs for moving the platen-shafts to normal position.

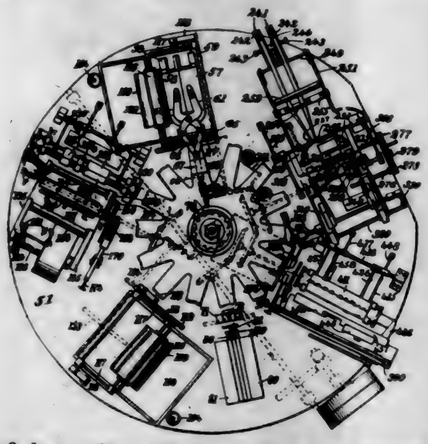

3. In a machine of the character describe, a head-banding mechanism comprising means for applying adhesive to the head-bandings, vertically-disposed idler-rollers for giving the bands a quarter-twist, and folding devices consisting of longitudinally-curved plates extended substantially to a point at the forward ends.

4. In a machine of the character described, a head-banding mechanism comprising means for applying an adhesive to the head-bandings, idler-rollers for giving the bands a quarter-twist, and folding devices consisting of longitudinally-curved plates extended substantially to a point at the forward end, each plate being provided with a perforation for the passage of a cord.

5. In a machine of the character described, a head-banding mechanism comprising pressing-rollers, a fixed cutting-blade forward of the pressing-rollers, a swinging cutting-blade, and a guide arranged between said blades and the pressing-rollers and having a movement with the moving-blade.

6. In a machine of the character described, a head-banding mechanism comprising pressing-rollers, a fixed cutting-blade forward of the pressing-rollers, a swinging cutting-blade, a cam-actuated rod for swinging said blade, a guide arranged between the cutting device and the pressing-rollers, a rod extended downward from said guide, means carried by the blade-actuated rod for moving said guide and rod upward, and means for moving said guide and rod downward.

7. In a machine for the purpose specified, a head-banding mechanism comprising platens, swinging holding-arms, rods extended downward from said arms, longitudinally-movable plates, guides on said plates, slide-bars arranged in said guides and having connection with said rods, each of said sliding plates being slotted, the lower wall of the slot being straight, the upper wall of said slot having reversely-inclined portions connected by a horisontal portion, a block having its upper surface parallel with said last-named horisontal portion, a switch-tongue arranged on one end of said block and held yieldingly at a downward incline, a switch-tongue mounted on the other end of said block and held yieldingly in an upward position, and a roller carried by the side-bars for engaging with said block and with the switch-tongues.

8. In a machine of the character described, a paste-applying device, adjustable guide for receiving material from the paste-applying device, means for feeding the material, a cutting mechanism comprising a fixed blade and a movable blade, means for causing the movements of said movable blade, means actuated by the movements of said blade for elevating said guide, and a spring for moving the guide downward.

9. In a machine of the character described, a paper-lining-applying mechanism comprising a cutter, platens forward of the cutter, a carriage movable lengthwise of the platens, a gripper-jaw rigidly connected to said carriage, a jaw mounted to swing on the first-named jaw, a flanged part adjustable lengthwise of the platens, a flanged part adjacent to the cutter, and a switch-tongue having swinging connection with said last-named flanged part.

10. In a machine of the character described, a paper-lining-applying mechanism comprising platens, a cutting device, a guide arranged lengthwise of the platens, a block adjustable along said guide, means for holding the block as adjusted, an inwardly-extended flange on said block, the inner end of said flange being inclined, a flanged block adjacent to the cutter, a switch-tongue mounted to swing on the inner end of said last-named block, a spring for holding said tongue yieldingly in normal position, a carriage movable lengthwise of the platens, a gripper consisting of a jaw rigidly connected to said carriage, a jaw mounted to swing on the first-named jaw, and a roller carried by said swinging jaw for engaging underneath the first-named flange and along the upper and lower sides of the last-named flange and of said tongue.

11. In a machine of the character described, a cutting device, means for operating the cutting device, platens arranged in line with said cutting device, a swinging lever, an arm extended from the lower end of said lever, a cam with which said arm engages, an arm pivoted to the upper end of the lever, a block having its inner end curved downward, a roller on said upper arm for engaging on said block, and a spring for holding the arm yieldingly in connection with the block.

12. In a machine of the character described, in combination with platens a cutting mechanism comprising a fixed blade, a swinging blade, a rod extended downward from the swinging blade, a cam for actuating said rod, a guide adjacent to the blades, a rod extended downward from said guide, a part carried by the first-named rod for moving the last-named rod upward, and a spring for moving said last-named rod downward.

847,892. BOTTLE-CAP PULLER. ALBA C. BOOTH, Burlington, Vt. Filed Aug. 29, 1906. Serial No. 332,516.

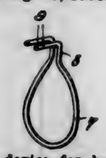

Claim.—A pulling device for bottle-caps comprising a looped wire having substantially parallel portions, and parallel ends extending therefrom at an angle thereto.

847,893. STOCK-WATERING TROUGH. BENJAMIN F. BOOTH, Indianola, Iowa. Filed Mar. 12, 1906. Serial No. 306,552.

Claim.—1. A stock-watering trough, comprising a trough-body, a valve-seat connected therewith, a valve to close against the seat, a valve-stem connected therewith and projected into the tank-body, a rock-shaft pivotally supported within the tank-body below the valve, an arm fixed to said rock-shaft and projected upwardly and inwardly, said arm having the valve-stem pivoted thereto, a spring having its ends coiled upon the rock-shaft and attached to the tank-body and formed with a loop at its central portion to engage said arm and normally hold it inwardly with the valve closed against its seat and a float pivoted above the valve and in engagement with said arm designed when lowered to force the arm outwardly as required to open the valve.

2. A stock-watering trough comprising a trough-body, a cylindrical valve-chamber formed with an annular shoulder near one end, a cylindrical flexible valve-seat mounted in said shoulder and spaced apart at its outer end from the interior of the valve-chamber, a valve in the chamber, a valve-stem connected therewith and projected inwardly, a flange at the outer end of the valve-chamber to be attached to the trough, a flange at the inner end of the valve-chamber formed with slotted lugs at its top, a rock-shaft mounted on the inner face of the inner flange near its bottom, a valve-arm fixed to the rock-shaft and projected upwardly and inwardly, a spring having coils on its ends and a loop at its central portion, said coils wound around the shaft and said loop engaging the valve-arm to yieldingly hold the valve-arm inwardly, said valve-stem also connected to the valve-arm, a float to engage the upper end of the valve-arm, two screw-threaded rods having right-angled projections, seated in the outer end of the float with said right-angled projections passed through the slotted lugs to pivotally, adjustably and detachably connect the float to the inner flange.

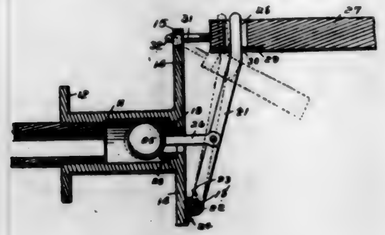

3. A stock-watering trough comprising a trough-body, a cylindrical valve-chamber formed with an annular shoulder near one end, a cylindrical flexible valve-seat mounted in said shoulder and spaced apart at its outer end from the interior of the valve-chamber, a valve in the chamber, a valve-stem connected therewith and projected inwardly, a flange at the outer end of the valve-chamber to be attached to the trough, a flange at the inner end of the valve-chamber formed with slotted lugs at its top, a rock-shaft mounted on the inner face of the inner flange near its bottom, a valve-arm fixed to the rock-shaft and projected upwardly and inwardly, a spring having coils on its ends and a loop at its central portion, said coils wound around the shaft and said loop engaging the valve-arm to yieldingly hold the valve-arm inwardly, said valve-stem also connected to the valve-arm, a float formed with an opening near its outer end and with a metal plate at the under surface of the opening, said plate formed with an opening to receive the upper end of the valve-arm, two screw-threaded rods having right-angled projections, seated in the outer end of the float with said right-angled projections passed through the slotted lugs to pivotally, adjustably and detachably connect the float to the inner flange.

847,894. SPARKING DEVICE FOR INTERNAL-COMBUSTION ENGINES. EDWARD F. BRADLEY, Tufnell Park, England. Filed Feb. 2, 1906. Serial No. 299,159.

Claim.—The combination, with an induction-coil, a circuit maker and breaker, and a battery; of a stationary contact 6 and a spring-plate having a contact 7 included in circuit with all the aforesaid parts; a condenser bridged between the said spring-plate and the contact 6, an electromagnet arranged in shunt-circuit with the said coil and the contact 6, a pivoted armature for the core of the said induction-coil having its free end portion arranged between the two pole-pieces of the said electromagnet, and a hook carried by the said armature and engaging with the free end portion of the said spring-plate.

847,894.

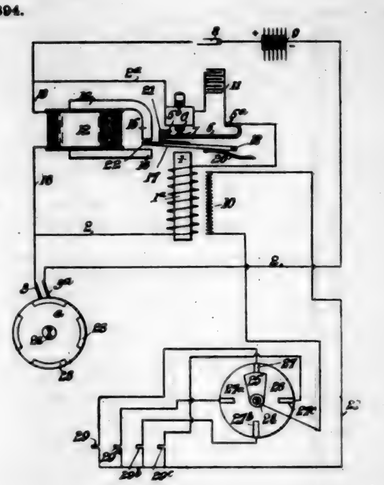

847,895. MECHANICAL MUSICAL APPARATUS. GEORGE P. BRAND, New York, N. Y. Filed Apr. 14, 1904. Serial No. 203,137.

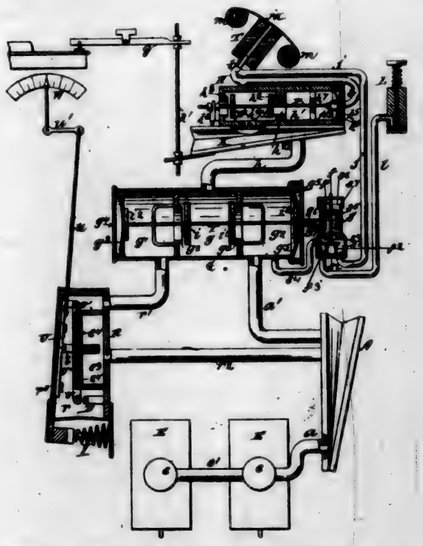

Claim.—1. In automatic players, the combination of an action-chest controlling the key-pneumatics, a normal-tension regulator and reservoir connected indirectly therewith and directly with a high-tension reservoir, adjustable means for prescribing the degree of tension in said normal-tension regulator and reservoir together with said high-tension reservoir connected directly with the exhaust mechanism and indirectly with said action-chest, means for opening and closing connection between said normal-tension reservoir and said action-chest, and means for opening and closing connection between said high-tension reservoir and said action-chest for the purpose set forth.

2. In automatic players, the combination of an action-

chest controlling the key-pneumatics, a normal-tension regulator and reservoir connected indirectly therewith and directly with a high-tension reservoir, adjustable means for prescribing the degree of tension in said normal-tension regulator and reservoir together with said high-tension reservoir connected directly with the exhaust mechanism and indirectly with said action-chest and means for simultaneously closing communication between said normal-tension reservoir and said action-chest and opening communication between the latter and said high-tension reservoir, and vice versa, for the purpose set forth.

3. In automatic players, the combination of an action-chest controlling the key-pneumatics, a normal-tension reservoir connected indirectly therewith and directly with a high-tension reservoir, means for varying and controlling the tension in said normal-tension reservoir, said high-tension reservoir connected directly with the exhaust mechanism and indirectly with the said action-chest, an intermediate variable-tension sheet interposed in the conduits between the said action-chest, valves in said variable-tension chest arranged to simultaneously close communication between one of the said tension-reservoirs and the said action-chest and to open communication between the latter and the other tension-reservoir, and vice versa, and means for operating said valves for the purpose described.

4. In automatic players, the combination of an action-chest controlling the key-pneumatics, a normal-tension regulator connected indirectly therewith and directly with a high-tension reservoir, means for varying and controlling the tension in said normal reservoir, said high-tension reservoir connected directly with the exhaust mechanism and indirectly with the said action-chest, a variable-tension chest formed with three chambers the central one of which is connected with said action-chest, and the end chambers of which are connected respectively with the said normal-tension regulator and the high-tension reservoir, valves in said middle chamber arranged to alternately open and close communication between it and said end chambers, and means for actuating said valves.

5. In automatic players, the combination of an action-chest controlling the key-pneumatics, a normal-tension regulator consisting of a pneumatic indirectly connected with said action-chest and formed with a port-chamber connecting directly with a high-tension reservoir, and an adjustable valve in said pneumatic arranged to control communication between it and the said port-chamber, said high-tension reservoir connected directly with the exhaust mechanism and indirectly with said action-chest, means for opening and closing communication between said normal-tension regulator and said action-chest, and means for opening and closing communication between said high-tension reservoir and said action-chest, for the purpose described.

6. In automatic players, the combination of an action-chest controlling the key-pneumatics, a normal-tension regulator consisting of a pneumatic indirectly connected with said action-chest and formed with a port-chamber connecting directly with a high-tension reservoir and an adjustable valve in said pneumatic arranged to control communication between it and the said port-chamber, means for controlling said adjustable valve manually, said high-tension reservoir connected directly with the exhaust mechanism and indirectly with said action-chest, means for opening and closing communication between said normal-tension reservoir and said action-chest, and means for opening and closing communication between said high-tension reservoir and said action-chest, for the purpose described.

7. In automatic players, an action-chest, an accentuating-reservoir connected with said action-chest, an interposed valved chest in said connection, an automatic variable-pneumatic-tension regulator in addition to and connected with said reservoir and embodying a pneumatic and a slide-valve within said pneumatic, said regulator being also connected with said action-chest through said valved chest, and means for exhausting the air from said reservoir.

8. In automatic piano-players the combination of an action-chest, an accentuating-reservoir, a variable-tension regulator controlling automatically said desired tensions, means for setting the same at any desired tension while in operation, exhausters for said regulator and reservoir and means for cutting off communication between the variable-tension regulator and action-chest and simultaneously putting the reservoir in communication with said action-chest.

9. In automatic piano-players, the combination of an action-chest, means therein for controlling a plurality of power-pneumatics, an accentuating-reservoir, a variable-tension regulator controlling automatically the desired tensions, means for setting the same at any desired tension while in operation, exhausters for said regulator and reservoir, a shunt-controller and coöperating means for cutting off communication between the variable-tension regulator and action-chest and simultaneously putting the reservoir in communication with said action-chest whereby the action-chest is connectible with the exhauster direct or with the regulator so that one is cut off when the other is on.

10. In automatic piano-players, the combination of an action-chest, means therein for controlling a plurality of power-pneumatics, an accentuating-reservoir, a variable-tension regulator controlling automatically the desired tensions, means for setting the same at any desired tension while in operation, exhausters for said regulator and reservoir, pneumatically-actuated means for cutting off communication between the variable-tension regulator and action-chest and simultaneously putting the reservoir in communication with said action-chest.

11. In automatic piano-players, the combination of an action-chest, means therein for controlling a plurality of power-pneumatics, an accentuating-reservoir, a variable-tension regulator controlling automatically the desired tensions, means for setting the same at any desired tension while in operation, exhausters for said regulator and reservoir, manually-actuated means for cutting off communication between the variable-tension regulator and action-chest and simultaneously putting the reservoir in communication with said action-chest.

12. In an automatic piano-player, the combination with an action-chest containing means for controlling a plurality of power-pneumatics, a variable-tension regulator, means for exhausting air from said regulator, said regulator embodying means for expanding said regulator and also mechanism adapted to control communication between said regulator and the exhaust means, said mechanism being actuated by the contraction and expansion of the regulator, an accentuating-reservoir, a shunt-controller and means interposed between said controller and reservoir and regulator for cutting off communication between the variable-tension regulator and action-chest and simultaneously putting the reservoir in communication with said action-chest.

13. In automatic piano-players, the combination of an action-chest containing means for controlling a plurality of power-pneumatics, a variable-tension regulator, means for exhausting air from said regulator, a shunt-controller controlled automatically or by hand for controlling communication between said action-chest and said regulator, an accentuating-reservoir, and means for cutting off communication between the variable-tension regulator and action-chest and simultaneously putting the reservoir in communication with said action-chest.

14. In automatic musical instruments, the combination of an action-chest, an accentuating-reservoir, connected with said action-chest, a variable-tension regulator, means situated between said action-chest and regulator for cutting off communication between said regulator and the action-chest and simultaneously putting the reservoir into communication with the action-chest, said controlling means being controlled automatically or by hand, and means for exhausting air from said reservoir and regulator.

847,896. SAFETY-STIRRUP. FRIEDRICH W. BREITENSTEIN, Mount Pleasant, Vancouver, British Columbia, Canada. Filed Oct. 28, 1905. Serial No. 284,878.

Claim.—A stirrup comprising a bail-shaped sectional frame formed of independent rounded side and base pieces, the upper ends of the side pieces terminating in flattened parallel cheek-plates, threaded couplings connecting the base and side pieces, a pair of bolts connecting the cheek-plates and arranged in superposed relation, a combined spacing and suspension roller or sleeve upon the upper bolt, balls revolubly mounted upon the lower bolt, a tread-block revolubly mounted upon the base-piece, and sets of

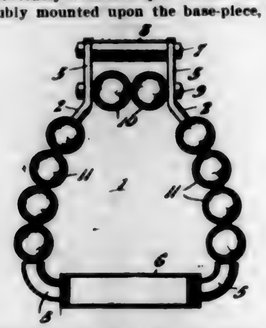

balls revolubly mounted upon the side pieces between the base and cheek-plates, the couplings forming shoulders to retain the tread-block and latter-named balls in proper relative position, whereby upon detaching said couplings the parts of the frame may be disassembled and the tread-block and sets of balls removed.

847,897. STEAM-ACTUATED VALVE FOR PUMPING-ENGINES. JULIUS F. BREITENSTEIN, Burlington, Iowa. Filed Sept. 28, 1906. Serial No. 336,579.

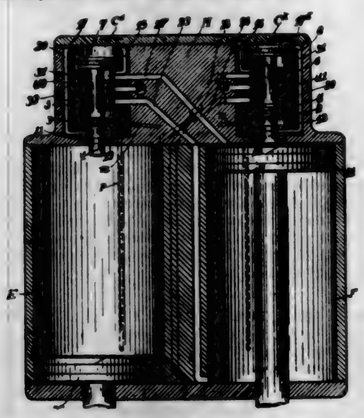

Claim.—1. In an engine, the combination with a cylinder, piston, valve-chest and live and exhaust ports leading from said valve-chest, of a slide-valve, pistons connected with said valve, and by-passes extending from the cylinder to the remote end of the valve-chest and the valve-chamber, the valve moved in one direction by the piston and having means for controlling both by-passes.

2. In an engine, the combination with a cylinder, piston, and a valve-chest in communication with the cylinder, of a slide-valve adapted to reciprocate in said valve-chest, the stem of the valve in the form of a tappet at one end adapted to be struck by the piston at one end of its stroke, said tappet having a cavity, and a by-pass leading from the cylinder to the valve-chest, and crossing the path of the tappet, the passage of steam or other motive agent through said by-pass being controlled by the tappet-cavity.

3. In an engine, the combination with a cylinder, piston, and a valve-chest in communication with the cylinder, of a slide-valve adapted to reciprocate in said valve-chest, the stem of the valve in the form of a tappet at one end adapted to be struck by the piston at one end of its stroke, said tappet having a cavity, and a by-pass leading from the cylinder to the remote end of the valve-chest, the passage of steam or other motive agent through said by-pass being controlled by the tappet-cavity, and a by-pass leading from the outer end of the valve-chest to the slide-valve chamber at a point where it is controlled by the slide-valve.

4. In an engine, the combination with a cylinder, a piston, a valve-chest and live and exhaust ports, of a slide-valve operating in a chamber formed in the valve-chest, differential pistons connected with the stem of the valve, and by-passes connecting said chamber with the outer end of the valve-chest and controlled by the valve, and a by-pass connecting the outer end of the valve-chest with the main cylinder and means connected with the slide-valve for controlling this last-mentioned by-pass, said means being controlled by the main piston.

5. In a duplex pumping-engine, the combination of two cylinders, the usual pistons therein, a valve-chest at the end of each cylinder, each having ports leading to opposite ends of the more remote cylinder, a tappet-rod extending into the adjacent cylinder in position to be actuated by the cylinder-piston, a slide-valve and pistons in each valve-chest, by-passes crossing the paths of the tappets and connecting the remote ends of the valve-chests and adjacent cylinders, said by-passes controlled by the tappets.

6. In a duplex pumping-engine, the combination of two cylinders, the usual pistons therein, a valve-chest at the end of each cylinder, each having ports leading to opposite ends of the more remote cylinder, a tappet-rod extending into the adjacent cylinder in position to be actuated by the cylinder-piston, a slide-valve and pistons in each valve-chest, by-passes crossing the paths of the tappets and connecting the remote ends of the valve-chests and adjacent cylinders, said by-passes controlled by the tappets, and a by-pass connecting the remote ends of the valve-chests with the valve-chambers and controlled by the slide-valves.

847,898. LUBRICATOR. THOMAS E. BROOKS, Chicago, Ill. Filed Apr. 9, 1906. Serial No. 310,875.

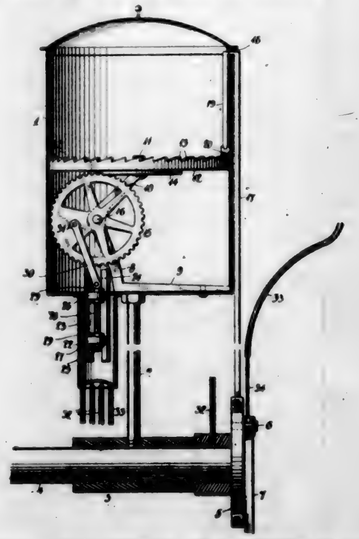

Claim.—1. In a lubricator, the combination of a reservoir, simultaneously-movable valves to control the discharge of lubricant therefrom, a gear-wheel in said reservoir, a connection between said gear-wheel and said valves to operate the latter, a disk in said reservoir having a worm engaging said gear-wheel and also provided with ratchet-teeth, a rocking element, and a dog carried thereby to engage said ratchet-teeth for the purpose set forth.

2. In combination with means to discharge a lubricant, a movable bearing, a tube leading from said lubricant-discharging means, and a spring-coil connecting the lower end of said tube to said bearing, for the purpose set forth.

3. In a lubricator, the combination of a reservoir, a cylinder extending downwardly therefrom, a tube with its upper end in the lower portion of the reservoir, its lower end in the cylinder, and having vertical slots in its upper and lower ends, a pair of valves in said tube, coacting with the slots thereof to permit oil to pass from the reservoir into the tube and from the latter into the cylinder, means to simultaneously reciprocate the said valves, and means to adjust the valves toward and from each other to vary the quantity of oil discharged by the lubricator.

847,899. TABLE. NICKOLAS E. BROWN, Marion, S. D. Filed May 23, 1905. Serial No. 261,835.

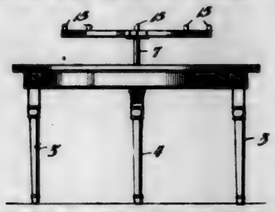

Claim.—A table comprising a fixed section having a central leg formed with a longitudinally-arranged opening and with diametrically-opposed recesses communicating with the opening, a movable section concentric with the fixed section and having a depending stem of smooth exterior, a rod terminally connected to the stem and snugly fitting within the longitudinally-arranged opening in the leg, said rod being formed with a series of circumferentially-arranged teeth, dogs pivotally mounted in the recesses on opposite sides of the rod, said dogs comprising normally horizontal members and arms projecting upwardly from the ends thereof and at an incline thereto, the upper surface of the members being normally horizontal and being adapted to bear beneath the horizontally-projected surface of any of said teeth, the lower edges of the members being arranged at an incline to the edge thereof and terminating coincident with the free end of said upper edge, whereby to provide a pointed end for the members to avoid frictional bearing against the sides of the teeth, springs secured within the recesses and bearing against the arms of the dogs to normally force said arms to maintain locking position of the horizontal members, the upward projection of the arms of the dogs serving to permit disengagement of said dogs by a downward movement of the horizontal members, thereby facilitating the adjustment of the table.

847,900. WHEEL-RUNNER FOR BABY-CARRIAGES. WILLIAM H. BUSSELL, Necedah, Wis. Filed Oct. 13, 1906. Serial No. 338,751.

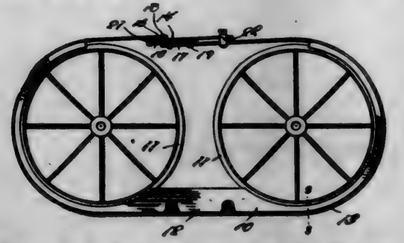

Claim.—1. A runner for vehicle-wheels, comprising a frame of wood, grooved to receive the tires of a pair of wheels, and extending from their tops about their outer sides and beneath and between their bottoms, and a strip of steel, forming the sole, extending around the frame and across from the top of one wheel to the other.

2. A runner for vehicle-wheels, comprising a frame of wood, grooved to receive the tires of a pair of wheels, and extending from their tops about their outer sides and beneath and between their bottoms, and a strip of steel, forming the sole, extending around the frame and across from the top of one wheel to the other, combined with means connected with the sole, at the top between the wheels, for opening and closing the runners to put them on and remove them from the vehicle-wheels.

3. A runner for vehicle-wheels comprising a frame of wood, grooved to receive the tires of a pair of wheels, and extending from their tops about their outer sides and beneath and between their bottom, and a strip of steel, forming the sole, adjustably connected at its ends extending about the frame and in connection therewith and inclosing the wheels.

847,901. PLANTER. JAMES P. CALDWELL, Winnsboro, S. C., and WARREN A. ROCKWELL, Harriman, Tenn. Filed Oct. 1, 1906. Serial No. 336,926.

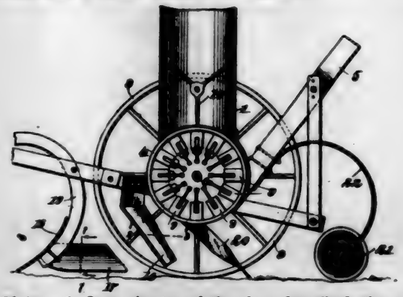

Claim.—1. In a planter of the class described, the combination with a seed-hopper and a seed-dropping wheel having a series of radial peripheral tubes constituting seed-receivers, and a series of radial slots extending inward from the inner ends of said tubes, of plungers which are slidable in the tubes and provided with extensions at their inner ends, and clamping-bolts arranged in the aforesaid slots and provided with nuts for clamping them in any required adjustment in the slots, the inner ends of the bolts being arranged for contact with the ends of the plungers, but which are thus freely slidable and may be set individually or collectively to form a larger or smaller seed-receptable or to close any selected receptacle entirely, substantially as described.

847,902. GEAR FOR PUMPS. CHARLES CANNELL, St. Mary's, Tasmania, Australia, assignor to James Alston, South Melbourne, Victoria, Australia. Filed Mar. 6, 1906. Serial No. 304,593.

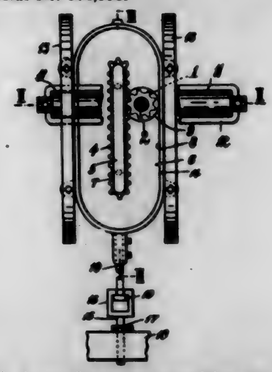

Claim.—1. A gear for pumps comprising an open-fronted casing formed with sides and with semicircular ends, a rack-bar secured to the back of said casing and formed parallel to the sides thereof, said bar having an endless row of teeth and recessed roller-tracks on each side of the teeth thereof, a pinion mounted on a rotatable shaft and geared with said teeth, friction-rollers on said shaft situated on each side of said pinion and adapted to roll between said tracks and the sides of the casing, in combination with vertical guides attached to said casing and arranged parallel to the front thereof and friction-rollers situate between said guides and the front of said casing substantially as set forth.

2. A gear for pumps comprising a casing, a rack-bar secured to the casing, having an endless row of teeth and adapted to be detachably connected to a pump-rod, a pinion mounted on a power-shaft and gearing with said teeth, recessed roller-tracks on each side of the teeth, frictional rollers on each side of said pinion, said rollers adapted to travel between said tracks and the sides of said casing, a bracket secured to a suitable support, a pair of horizontal rollers mounted in said bracket, and vertical guides carried by the casing and adapted to be engaged by said rollers.

847,903. WINDOW-SHADE ADJUSTER. NELLIE F. CAPPS, Red Bluff, Cal. Filed Jan. 31, 1906. Serial No. 298,777.

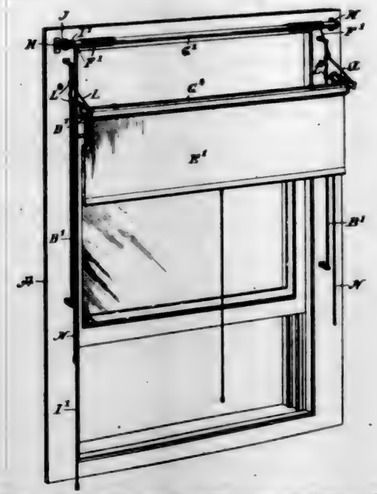

Claim.—1. A window-shade adjuster comprising a shade-roller support movable bodily sidewise, means for moving said support up and down and means for moving said support in a transverse direction.

2. A window-shade adjuster comprising a shade-roller support, means for moving said support transversely nearer to or farther from the window, and means whereby to shift said support bodily sidewise with respect to the window.

3. A window-shade adjuster comprising a shade-roller support, means for moving the same bodily up and down, and means for moving the said support transversely nearer to or farther from the window.

4. A window-shade adjuster comprising guideways for attachment to a window-casing, brackets mounted to slide on the said guideways, a shade-roller support supported by the brackets, and means for moving said support bodily toward and from the window-casing.

5. A window-shade adjuster comprising a support, a shade-roller support, means under the control of the operator whereby to move the said support bodily sidewise with respect to the window, and means for moving said support in a transverse direction on the support.

6. A window-shade adjuster comprising guideways on the window-casing, brackets mounted to slide and to turn on the said guideways, a hoisting and lowering drum having cords connected with the said brackets, means for operating the said drum, a locking and releasing device for the said drum, a support for carrying the shade-roller and supported on the said brackets, and manually-controlled means connected with the said support for adjusting the same transversely on the brackets.

7. A window-shade adjuster comprising guideways on the window-casing, brackets having corrugated members and mounted to slide and to turn on the said guideways, a hoisting and lowering drum having cords connected with the said brackets, means for operating the said drum, a locking and releasing device for the said drum, and a support for carrying the shade-roller and supported on corrugated members of the said brackets to allow of adjusting the support transversely and holding it in the adjusted position.

8. A window-shade adjuster comprising guideways on the window-casing, brackets having corrugated members and mounted to slide and to turn on the said guideways, a hoisting and lowering drum having cords connected with the said brackets, means for operating the said drum, a locking and releasing device for the said drum, a support for carrying the shade-roller and supported on corrugated members of the said brackets to allow of adjusting the support transversely and holding it in the adjusted position, and cords engaging the said support and passing through eyes on the brackets to allow of manually adjusting the support in a transverse direction on the said corrugated members.

847,904. SPRING-LOAD COMPUTER. FREDERICK K. CASWELL, Chicago, Ill., assignor to Railway Steel-Spring Company, a Corporation of New Jersey. Filed June 13, 1904. Serial No. 212,447.

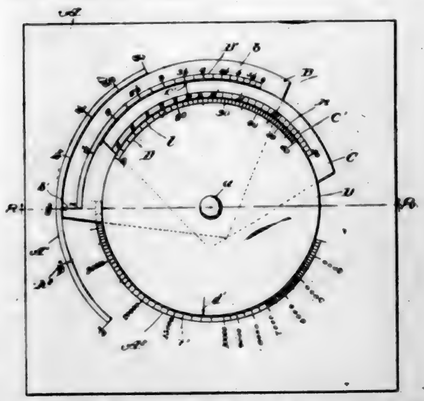

Claim.—1. In a computing device, the combination with a base having a curved scale thereon, of a sector rotatively mounted upon said base having a scale located adjacent to and concentric with the scale on said base, a disk rotatively mounted upon said base concentric with respect to said sector and having a scale thereon, and a pointer on the periphery of said disk coöperating with a scale on said base.

2. In a spring-load-computing device, the combination with a base having a curved scale thereon the graduations of which represent the thickness of the plates composing the spring, of a sector rotatably mounted upon said base having a scale located adjacent to and concentric with the scale on the base the graduations of which represent the width of the plates, a second sector rotatably mounted on the base concentrically with respect to the first sector and having a scale thereon representing the number of plates, and a disk rotatably mounted upon the base concentric with respect to said sectors and having a scale thereon representing the length of the spring, said disk having a pointer on its periphery coöperating with a scale on the base the graduations of which represent the load of the spring.

3. In a computing device, the combination with a base having a curved scale thereon, of a sector rotatively mounted upon said base having its scale located adjacent to and concentric with the scale on said base, a second sector rotatively mounted on said base concentrically with respect to the first sector and having a scale thereon, a disk rotatively mounted upon said base concentric with respect to said sectors having a scale thereon, and a pointer on the periphery of said disk coöperating with a scale on said base.

847,905. ELECTRIC SIGNAL SYSTEM. EUGENIO CHOUTEAU, Jr., St. Louis, Mo. Filed Oct. 24, 1906. Serial No. 340,292.

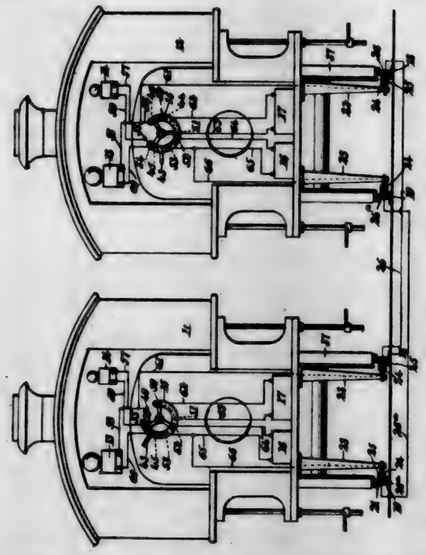

Claim.—The combination of wiring extending along a railway-track, a plurality of locomotives occupying said track, a sensitive electric alarm and an insensitive electric alarm carried by each locomotive, a powerful battery mounted upon each locomotive for energizing the insensitive bell of the other locomotive, a weaker battery upon each locomotive for energizing the sensitive bell of the other locomotive, and a single switch mounted upon each locomotive and provided with connections for establishing communication between the weaker battery of one locomotive, and the sensitive bell of the other locomotive, and further provided with connections for establishing communication from the powerful battery of one locomotive to the sensitive bell of the other locomotive.

847,906. HEATER. ALBERT M. CLARK, Marshalltown, Iowa. Filed Mar. 12, 1906. Serial No. 305,601.

Claim.—1. In a heater, the combination of a combustion-chamber, a smoke-burning chamber above the combustion-chamber and a radiating-chamber above the smoke-burning chamber, a smoke-igniting plate between the combustion-chamber and the smoke-burning chamber and an upright partition extended around the interior of the smoke-burning chamber, said partition open at one side, the igniting-plate having an opening adjacent to the closed side of the upright partition, the partition above the smoke-burning chamber having an opening above the open side of the upright partition, and means for introducing fresh air into the top of the smoke-burning chamber to supply the necessary oxygen for combustion and to force the smoke downwardly against the igniting-plate.

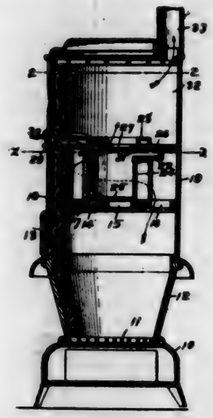

2. In a heater, a combustion-chamber, a smoke-igniting plate above the combustion-chamber having two openings therein, a partition above said plate forming a passage-way for directing products of combustion arising through one of said openings around the chamber above the plate, a horizontal plate forming a top for the compartment above the partition formed with an opening in line with the other opening of the igniting-plate and means for closing the openings in the igniting-plate.

3. In a heater, a combustion-chamber, a smoke-igniting plate above the combustion-chamber having two openings therein, a partition above said plate forming a passage-way for directing products of combustion arising through one of said openings around the chamber above the plate, a horizontal plate forming a top for the compartment above the partition and formed with an opening in line with the other openings of the igniting-plate, means for closing the openings in the igniting-plate and means for introducing currents of fresh air into the chamber above the igniting-plate.

4. In a heater, a combustion-chamber, an igniting-plate above it formed with two openings, a chamber above the plate formed with an indirect passage-way communicating with one of said openings and a direct passage-way communicating with the other opening and a damper capable in one position, of closing the direct passage-way through the igniting-plate and in another position of closing the indirect passage-way.

5. In a heater, the combination of a combustion-chamber, a smoke-igniting plate above it formed with two passage-ways, a smoke-burning chamber above the igniting-plate, a circular partition in the smoke-burning chamber spaced apart from the heater-wall and having its edges spaced apart from each other at the front and also having a damper-casing at the rear formed with an opening, a damper formed with two wings in one position covering one of the openings in the igniting-plate and the opening in the damper-casing and in its other position covering the other opening in the plate and also the opening in the damper-casing and a plate at the top of said chamber formed with a direct smoke passage-way communicating with the central portion of the chamber inside of the circular partition.

6. In a heater, the combination of a combustion-chamber, a smoke-igniting plate above it formed with two passage-ways, a smoke-burning chamber above it, a circular partition in the smoke-burning chamber spaced apart from the heater-wall and having its edges spaced apart from each other at the front and also having a damper-casing at the rear formed with an opening, a damper formed with two wings in one position covering one of the openings in the igniting-plate and the opening in the damper-casing and in its other position covering the other opening in the plate and also the opening in the damper-casing and a plate at the top of said chamber formed with a direct smoke passage-way communicating with the central portion of the chamber inside of the circular partition, said upper plate formed with an air-chamber having openings therein communicating with the outside atmosphere and having openings in its bottom to discharge air downwardly into the chamber beneath it.

7. In a heater, a combustion-chamber, smoke-igniting plate at its top formed with a central opening and an opening at its rear, said plate also formed with air-chambers and passage-ways leading from the exterior of the heater into said air-chambers, a circular vertically-arranged partition above the plate with its ends spaced apart at the front and inclined inwardly toward the center of the heater and also formed at its rear with a damper-casing, a damper formed with two wings, a shaft for operating the damper, said damper in one position closing both the central opening in the igniting-plate and the damper-casing and in its other position closing both the opening at the rear of the igniting-plate and the damper-casing, a horizontal plate above the smoke-igniting burning-chamber having a central opening in line with the opening in the smoke-igniting plate and also having a chamber surrounding the opening and extended to the heater front, said chamber formed with openings communicating with the outside atmosphere and with openings discharging downwardly into the smoke-burning chamber and a flue at the top of the heater.

847,907. ELEVATED CARRIER. LUIGI COLAVECCHIO, Middletown, Conn. Filed Feb. 5, 1906. Serial No. 299,562.

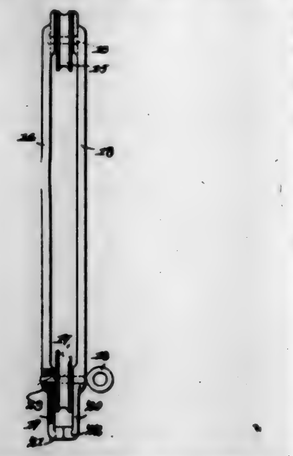

Claim.—1. A device of the class described comprising an elongated frame including parallel side bars and having their upper ends spaced apart and their lower ends connected, a stationary stud connecting the upper ends of the bars, a removable stud connecting the lower ends of said bars, and sheaves interposed between the side bars and mounted for rotation on the studs, one of said bars being movable laterally on the upper stud when the lower stud is removed.

2. A device of the class described comprising an elongated frame including parallel side bars having their upper ends spaced apart and their lower ends connected, a stationary stud extending transversely of the upper ends of the bars, a removable stud connecting the lower ends of said bars and having one end thereof provided with a terminal finger-piece and its opposite end extended beyond the adjacent side bar and provided with an aperture, a fastening device seated in said aperture, sheaves interposed between the side bars and mounted for rotation on the studs, one of said side bars being movable laterally on the upper stud when the lower stud is removed.

3. A device of the class described comprising an elongated frame including parallel side bars having their upper ends spaced apart and their lower ends provided with inwardly-extending lugs disposed in contact with each other and forming a closure for one end of said frame, a stationary transverse stud connecting the upper ends of said bars, a removable transverse stud connecting the lower ends of said bars, and sheaves interposed between the bars and mounted for rotation on the studs, one of said bars being movable laterally on the upper stud when the lower stud is released.

847,908. BORING-MACHINE. NATHANIEL A. COLLINS, Lela, Okla. Filed May 10, 1905. Serial No. 259,779.

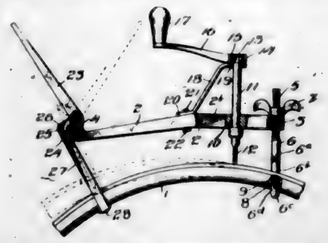

Claim.—A boring-machine comprising a beam having a perforation therein at one end and having an upwardly-turned arm at its opposite end, an angle-lever pivoted at its angle to said arm, a hooked arm carried by the angle-lever, a clamp-arm having a threaded stem engaged in the opening of the beam, a nut engaged with the stem above the beam, a drill-shank revolubly engaged in the beam between its ends, a drill carried by the lower end of the shank, and an operating-handle carried by the upper end of the shank, said clamp and hooked arms extending below the beam, and being adapted for engagement with a body to be bored, said angle-lever and nut being operable to move the beam downwardly.

847,909. DOOR CHECK AND TIGHTENER. EDWARD CONKLIN, Channahon, Ill. Filed May 9, 1906. Serial No. 316,043.

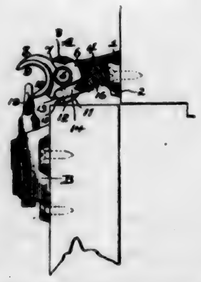

Claim.—In a door check and tightener, the combination with a spring-actuated plunger adapted for attachment to a door and having a broad flattened head at its upper end, of a pivoted block or lever, means for attaching the same to a door frame or casing, said block or lever having two jaws at one side of its fulcrum, forming a recess to receive the flattened head on the plunger, a spring connected with the block or lever normally at one side of the fulcrum of the latter, and a shoulder on the block or lever to limit its pivotal movement.

847,910. PROCESS OF MAKING ARTIFICIAL MICA SHEETS. EDWARD COOPER, Newton Lower Falls, Mass. Filed Jan. 10, 1907. Serial No. 351,688.

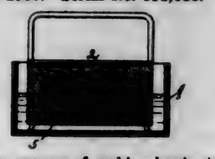

Claim.—1. The process of making laminated mica sheets which consists in first immersing the scales in a cement-bath, then draining the so immersed scales and arranging several thicknesses thereof in one operation on a perforated supporting-base, placing another layer of scales over the spaces of said first layer to break joint therewith, then tilting said perforated support into position to permit light to shine through thin or weak places in the sheet being formed and then placing reinforcing-scales over the weak places so discovered.

2. The process of making laminated mica sheets from scales which consists in first placing scales in a perforated basket and immersing it in a cement-bath, elevating said basket to drain surplus cement from the scales, then arranging them on a wire screen with their edges spaced apart and in the same plane and placing another layer of scales over the spaces of said first layer to break joint therewith.

847,911. CHOKE ATTACHMENT FOR GUNS. RANDOLPH P. CORY, St. Louis, Mo., assignor of forty-nine one-hundredths to Jules Baron, St. Louis, Mo. Filed Sept. 18, 1906. Serial No. 335,144.

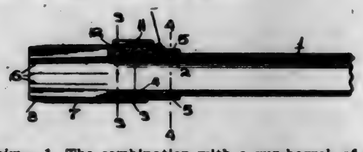

Claim.—1. The combination with a gun-barrel, of a cylinder detachably secured to the end of the gun-barrel, the outer portion of which cylinder is provided with a series of radially-disposed longitudinally-extending slots, and a sleeve inclosing the entire slotted outer end of said cylinder and arranged to simultaneously slide and rotate thereon; substantially as specified.

2. The combination with a gun-barrel, of a cylinder arranged upon the forward end thereof, the forward portion of which cylinder is longitudinally slotted, a sleeve arranged to slide and rotate upon the cylinder, there being an inclined slot formed through said sleeve, and an elongated sight member fixed to the cylinder, and one end of which member passes through the slot in the sleeve; substantially as specified.

3. The combination with a gun-barrel, of a cylinder detachably secured to the outer end of the gun-barrel, the outer portion of which cylinder is provided with a series of longitudinally-extending slots, a sleeve having its forward end contracted, and which sleeve is arranged to rotate and slide upon the cylinder, in which sleeve is formed a diagonally-arranged slot, and an elongated sight member fixed to the cylinder, one end of which passes through the slot in the sleeve; substantially as specified.

847,912. PRINTING-PRESS. PAUL F. COX, Battle Creek, Mich. Filed Nov. 17, 1906. Serial No. 343,922.

Claim.—1. In a printing-press, the combination of a type-bed, mechanism for reciprocating said bed, two cylinders adapted to coöperate with different forms on the bed each cylinder operating on but one form, means for continuously feeding a web forward between the bed and cylinders, and means for compensating the web for irregular travel of the bed during printing.

2. In a printing-press, the combination of a type-bed, mechanism for reciprocating said bed, two cylinders adapted to coöperate with forms on the bed, one cylinder printing parts of the web skipped by the other cylinder, means for feeding a web between the bed and cylinders, and means for compensating the web for irregular travel of the bed during the printing.

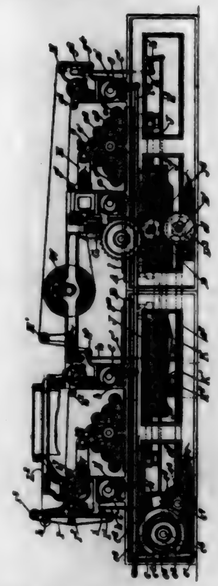

3. In a printing-press, the combination of a reciprocating type-bed, crank mechanism for driving said bed, two cylinders adapted to coöperate with different forms on the bed, one cylinder printing parts of the web skipped by the other cylinder, means for continuously feeding a web between the bed and cylinders, and means for compensating the web for irregular travel of the bed during the taking of impressions.

4. The combination of a reciprocating type-bed adapted to carry two forms, two impression-cylinders respectively coacting with one of the two forms, and adapted to simultaneously operate on their related forms, one cylinder and form printing the part of the web skipped by the other cylinder and form, means for continuously traveling a web through the press, and means for regulating the movement of the web during impressions in accordance with the movement of the type-bed.

5. The combination of a reciprocating type-bed adapted to carry two forms, two impression-cylinders adapted to simultaneously operate on the two forms each cylinder coacting with but one form, one cylinder and form printing part of the web skipped by the other cylinder and form, means for feeding a length of web between the cylinders and bed during impression and a corresponding length of web therebetween between impressions, and means for regulating the movement of the web during impressions in accordance with the movement of the type-bed.

6. In a printing-press, the combination of a reciprocating type-bed carrying two forms, two cylinders each cooperating with one of the forms on the bed, and one cylinder printing part of the web skipped by the other cylinder; means for guiding a web successively between the bed and cylinders, and means for throwing off impressions during the return stroke of the bed, and means for controlling the travel of the web during impressions to compensate for the irregular movement of the bed.

7. In a printing-press, the combination of a type-bed carrying two forms, two cylinders simultaneously coöperating with the forms on the bed, means for guiding a web successively between the bed and cylinders, means for throwing off impressions during one stroke of the bed, and means for traveling a web at a substantially uniform rate of speed between the bed and cylinders both during and after impressions; with an ink-fountain between the cylinder-rollers for supplying ink from the fountain to both forms on the bed, a mechanism for reciprocating the bed, and means for compensating the web during impressions for irregular movements of the bed.

8. In a web-perfecting press, the combination of two type-beds, means for reciprocating the beds in opposite directions, a pair of cylinders above and coacting with each bed, and means for directing a web between the first bed and first pair of cylinders, to be printed on one side, and then between the second bed and second pair of cylinders to be perfected.

9. In a web-perfecting press, the combination of two type-beds, means for reciprocating the beds in opposite directions, a pair of cylinders above and coacting with each bed, means for directing a web between the first bed and pair of coacting cylinders, and then between the second bed and pair of coacting cylinders, one cylinder in each pair printing part of the web skipped by the other cylinder, and means for moving the web continually between the beds and cylinders at substantially uniform speed.

10. In a web-perfecting press, the combination of two reciprocating type-beds, a pair of cylinders coacting with each bed, and means for directing a web between the first bed and its pair of coacting cylinders, and then between the second bed and its pair of coacting cylinders; with means for reciprocating the beds in opposite directions, an ink-fountain and ink-supplying rolls between the cylinders in each pair, and means for compensating the web for irregular travel of the beds during impressions.

11. In a web-perfecting press, the combination of two type-beds, means for reciprocating the beds in opposite directions, a pair of cylinders above and coacting with each bed, and means for directing a web between the first bed and first pair of cylinders, to be printed on one side, and then between the second bed and second pair of cylinders to be perfected; with means for regulating the travel of the web between the beds and cylinders during impressions.

12. In a web-perfecting press, the combination of a pair of reciprocating type-beds in substantially the same plane, a pair of stationary impression-cylinders coacting with each bed, one cylinder printing parts of the web skipped by the first cylinder, and means for directing a web between one bed and its cylinders, and then between the second bed and its cylinders to be perfected; with means for reciprocating the beds in opposite directions; an ink-fountain and ink-supplying roll between the cylinders in each pair, and means for compensating the web for irregular travel of the beds during impressions.

13. The combination of a type-bed, a plurality of impression-cylinders adapted to simultaneously coöperate with forms on the beds, page-forms arranged end to end on said bed, means for directing a web between the bed and cylinders, means for longitudinally slitting the web in the margins between the page impressions, and angle-bars over which the slitted portions of the web are given a quarter-turn and assembled; means for reciprocating the beds, and means for feeding the web between the bed and cylinders both during and after impressions.

14. The combination of a pair of type-beds, a plurality of impression-cylinders for and coacting with each bed, page-forms arranged end to end on said beds, means for directing the web successively between the beds and cylinders, means for longitudinally slitting the web in the margins between the adjacent page impressions, and angle-bars over which the slitted webs are assembled by giving them a quarter-turn; means for reciprocating the beds, and means for feeding the web between the beds and cylinders both during and after impressions.

15. The combination of a pair of type-beds, a plurality of impression-cylinders for and coacting with each bed, page-forms arranged end to end on said beds, means for directing a web successively between the beds and cylinders, means for longitudinally slitting the web in the margins between the adjacent page impressions, and angle-bars over which the slitted webs are assembled by giving them a quarter-turn; means for reciprocating the beds, and means for feeding the web between the beds and cylinders both during and after impressions; means for feeding the web continuously between the beds and cylinders both during and after impressions, and means for throwing off impressions on one stroke of the beds.

16. The combination of a pair of type-beds, a plurality of impression-cylinders for and coacting with each bed, page-forms arranged end to end on said beds, means for directing a web successively between the beds and cylinders, means for longitudinally slitting the web in the margins between the adjacent page impressions, and angle-bars over which the slitted webs are assembled by giving them a quarter-turn; means for feeding the web continuously between the beds and cylinders both during and after impressions, means for reciprocating the beds, and means for throwing off impressions on one stroke of the bed.

17. In a printing-press, the combination of a pair of type-beds, a pair of impression-cylinders coacting with each bed and adapted to simultaneously operate on different rows of forms carried by such beds, and print alternate spaces on the web; type page-forms arranged end to end transversely of the beds; means for feeding a web continuously between the beds and cylinders both during and after impressions; means for slitting the web longitudinally between the page margins, and angle-bars for giving the slit webs a quarter-turn and assembling them at the folder.

18. In a printing-press, the combination of a pair of reciprocating beds, a pair of stationary impression-cylinders coacting with each bed and adapted to simultaneously operate on different rows of forms carried by such beds and print alternate spaces on the web, one type-bed and its cylinders perfecting the web, type page-forms arranged end to end transversely of the beds; means for feeding a web continuously between the beds and cylinders both during and after impressions, means for throwing off impressions on one stroke of the beds, means for slitting the web longitudinally between the page margins, and angle-bars for giving the slit webs a quarter-turn and assembling them at the folder.

19. In a printing-press, the combination of a reciprocating bed, two stationary cylinders respectively adapted to coöperate with one-half of the forms on the bed, means for feeding approximately equal lengths of the web forward between the bed and cylinders both during and after impressions, and means for guiding the web so that the part of the web fed past the first cylinder and its coacting forms after impressions will be printed by the second cylinder and its coacting forms.

20. The combination of a reciprocating type-bed adapted to carry two forms, two impression-cylinders adapted to simultaneously operate on the related forms, each cylinder coacting with but one form, means for feeding a length of web forward between the cylinders and bed during impression and a corresponding length of web forward between the bed and cylinders after impressions, and means for regulating the movement of the web during impressions in accordance with the movement of the type-bed.

21. In a printing-press the combination of a type-bed carrying two forms, two cylinders simultaneously operating with the forms on the bed, each cylinder coacting with but one form, means for guiding a web successively between the bed and cylinders, means for throwing off impressions during one stroke of the bed, and means for traveling the web between the bed and cylinders at a substantially uniform rate of speed both during and after impressions.

22. In a printing-press, the combination of a type-bed carrying two forms, two cylinders each coöperating with but one of the forms on the bed, one cylinder and form printing part of the web skipped by the other cylinder and form, means for guiding a web successively between the bed and cylinders, means for throwing off impressions during the return stroke of the bed, and means for moving the web continuously forward and at a substantially uni-

form rate of speed between the bed and cylinders both during and after impressions.

23. In a printing-press, the combination of a bed adapted to carry two forms, two cylinders adapted to simultaneously coöperate with forms on the bed, each cylinder coacting with but one form, and one cylinder printing parts of the web skipped by the other cylinder, an inking mechanism arranged between the cylinders, adapted to supply ink to both sets of forms on the bed, web-guides and means for continuously traveling the web through the press and between the bed and cylinders both during and after impressions.

24. In a printing-press, the combination of a reciprocating type-bed, two cylinders adapted to coöperate with forms on the bed, each cylinder coacting with but one form, and an inking mechanism arranged between the cylinders, adapted to ink the forms for both cylinders; with web-guides and means for feeding a length of web through the press during impressions and for feeding a like length of web through the press and between the bed and cylinders after impressions, the web being continuously moved in one direction.

25. In a printing-press, the combination of a reciprocating bed carrying two transversely-arranged sets of forms, two cylinders above the bed each adapted to coöperate with one set of forms on the bed, said cylinders operating simultaneously on their respective forms; with web-guides, and means for feeding a length of web equal to the width of one form forward between the bed and cylinders during impressions, and for feeding a corresponding length of web forward between the bed and cylinders in the interval between impressions and luring the back strokes of the beds.

26. In a printing-press, the combination of a bed carrying transversely-arranged sets of forms, cylinders above the bed each adapted to coöperate with one set of forms on the bed, said cylinders operating simultaneously on their respective forms, web-guides, and means for continually feeding a web forward between the bed and cylinders both during impressions and between impressions; an ink-fountain above the bed and between the cylinders, and means for supplying ink from said fountain to the forms on the bed.

27. In a web-perfecting press, the combination of two reciprocating type-beds, a pair of cylinders coacting with each bed, one cylinder in each pair printing part of the web skipped by the other cylinder in such pair, guides for directing a web between the first bed and its pair of coacting cylinders, and then between the second bed and its pair of coacting cylinders; with means for moving the web continually forward between the beds and cylinders at substantially uniform speed both during and after impressions.

28. In a web-perfecting press, the combination of a pair of reciprocating type-beds, a pair of impression-cylinders coacting with each bed, and guides for directing a web between one bed and its cylinders, then between the second bed and its cylinders; with means for feeding half the length of web for a paper forward between the beds and cylinders during impressions and the remaining half of the length of web forward between the bed and cylinders after impressions.

847,913. PRINTING-PRESS. PAUL F. COX, Battle Creek, Mich. Filed Jan. 16, 1907. Serial No. 352,570.

Claim.—1. In a web-printing press, the combination of a bed, two traveling cylinders adapted to coöperate with different forms on the bed, the second cylinder and its form printing the parts of the web skipped by the first cylinder and its form; with means for reciprocating the cylinders over the bed, and means for feeding a web between the bed and cylinders.

2. The combination of a type-bed, and impression-cylinders adapted to simultaneously coöperate with different forms carried by the bed, and simultaneously print alternate spaces on the web; with means for reciprocating the cylinders, and means for feeding a web through the press and between the bed and cylinders after impressions.

3. In a printing-press, the combination of a bed, two reciprocating cylinders adapted to coöperate with different forms on the bed simultaneously, the second cylinder and its form printing the parts of the web skipped by the first cylinder and its form; and means for guiding a web successively between the cylinders and bed; with means for continuously feeding and delivering a web, and means for shifting the web forward between the bed and cylinders after impressions.

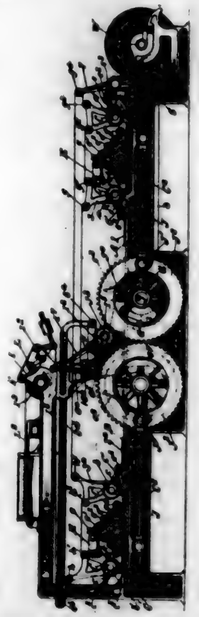

4. The combination of a stationary bed, two forms thereon, two reciprocating cylinders simultaneously and respectively coöperating only with the front and the rear forms, means for feeding a web between the bed and cylinders—after impressions—and means for guiding the web so that the unprinted parts of the web fed past the first cylinder and front form will be printed by the second cylinder and rear form.

5. The combination of a bed, two reciprocating impression-cylinders adapted to simultaneously coöperate with different forms on the bed, each cylinder coacting with but one form, means for directing a web between the bed and cylinders, means for continuously feeding and delivering the web, means for shifting the web between the bed and cylinders after impressions, and means for throwing off impressions during the return stroke of the cylinders.

6. In a printing-press, the combination of a stationary bed, two reciprocating cylinders respectively adapted to cooperate with one half of the forms on the bed and print the same side of the web, means for feeding the web forward between the bed and cylinders after impressions, and means for guiding the web so that the part of the web fed past the first cylinder and its coacting forms will be printed by the second cylinder and its coacting forms.

7. The combination of a stationary type-bed adapted to carry two forms, two traveling impression-cylinders adapted to simultaneously operate on the related forms each cylinder coacting with but one form, means for reciprocating the cylinders over the forms, means for throwing off impression on one stroke of the cylinders, means for feeding a length of web forward between the bed and cylinders while the impression is thrown off.

8. In a printing-press the combination of a type-bed carrying two forms, two traveling cylinders simultaneously coöperating with the forms on the bed, each cylinder coacting with but one form, means for throwing off impressions during one stroke of the cylinders, and means for guiding a web successively between the bed and cylinders, and means for shifting the web between the bed and cylinders when the impression is thrown off, one cylinder printing the portions of the web skipped by the other cylinder.

9. In a printing-press, the combination of a type-bed carrying two forms, two traveling cylinders each coöperating with but one of the forms on the bed, one cylinder and form printing part of the web skipped by the other cylinder and form, means for guiding a web successively between the bed and cylinders, means for throwing off impressions during the return stroke of the cylinders, and means for moving the web forward between the bed and cylinders after impressions.

10. In a printing-press, the combination of a stationary bed adapted to carry two forms, two traveling cylinders adapted to simultaneously coöperate with forms on the bed, each cylinder coacting with but one form, and one cylinder printing parts of the web skipped by the other cylinder, an inking mechanism adapted to supply ink to both sets of forms on the bed, web-guides, means for continuously feeding and delivering the web, and means for shifting an intermediate portion thereof through the press and between the bed and cylinders after impressions.

11. In a printing-press, the combination of a stationary type-bed, two reciprocating cylinders adapted to coöperate with forms on the bed, each cylinder coacting with but one form, and an inking mechanism, arranged between and traveling with the cylinders, adapted to ink the forms for both cylinders; with web-guides and means for feeding a length of web through the press and between the bed and cylinders after impressions.

12. In a printing-press, the combination of a bed carrying two transversely-arranged sets of forms, two reciprocating cylinders above the bed each adapted to coöperate with one set of forms on the bed, said cylinders operating simultaneously on their respective forms, and one cylinder printing parts of the web skipped by the other cylinder; with web-guides, and means for feeding the web forward between the bed and cylinders in the interval between impressions and during the back strokes of the cylinders.

13. In a printing-press, the combination of a bed carrying transversely-arranged sets of forms, cylinders above the bed each adapted to coöperate with one set of forms on the bed, said cylinders operating simultaneously on their respective forms, means for reciprocating the cylinders over the forms, web-guides, and means for continually feeding a web to and delivering it from the press, and means for shifting an intermediate portion of the web forward between the bed and cylinders between impressions; an ink-fountain above the bed and between the cylinders, and means for supplying ink from said fountain to the forms on the bed.

14. In a web-perfecting press, the combination of two type-beds, a pair of reciprocating cylinders coacting with each bed, one cylinder in each pair printing part of the web skipped by the other cylinder in such pair, guides for directing a web between the first bed and its pair of coacting reciprocating cylinders, and then between the second bed and its pair of coacting reciprocating cylinders; and means for moving the web forward between the bed and cylinders after impressions.

15. In a web-perfecting press, the combination of a pair of stationary type-beds, a pair of reciprocating impression-cylinders coacting with each bed, and guides for directing a web between one bed and its pair of cylinders, then between the second bed and its pair of cylinders; with means for continuously feeding and delivering the web, and mechanism for intermittently stopping the part of the web between the bed and cylinders during impressions and for moving such part forward after impression.

16. The combination of a stationary bed, a pair of reciprocating carriers, impression-cylinders respectively adapted to operate on different forms on the bed, means for reciprocating the cylinders, a continuously-operating feed-in mechanism, a continuously-operating feed-out mechanism, web-guides for directing a web from the feed mechanism to and between the bed and cylinders in succession and then to the delivery, and looping mechanism whereby the part of the web between the feed and delivery is stopped during impressions and moved forward after impressions.

17. The combination of a pair of stationary type-beds, and a pair of reciprocating impression-cylinders coacting with each bed, means for reciprocating the pairs of cylinders, mechanism for feeding web to the press, mechanism for delivering web therefrom, and fixed and movable web-guides whereby the web is conducted first between one bed and its pair of coacting cylinders, and then between the other bed and its pair of coacting cylinders.

18. The combination of a pair of stationary type-beds, a pair of reciprocating impression-cylinders coacting with each bed, means for reciprocating the pairs of cylinders, and means for throwing the cylinders off impression on one stroke; with means for feeding a web to the press, means for delivering the web therefrom, and stationary and movable web-guides whereby the web is led first between one bed and cylinder to be printed on one side, and then between the other bed and its coacting pair of cylinders to be perfected, and mechanism whereby the web is fed between the beds and cylinders while the impression is thrown off.

19. The combination with a stationary bed, a pair of reciprocating carriers beside the bed, a pair of impression-cylinders journaled in said carriers, respectively adapted to operate on different forms on the bed, means for reciprocating the carriers, and means for throwing the cylinders off impression on one stroke, with a continuously-operating feed-in mechanism, a continuously-operating feed-out mechanism, web-guides for directing a web from the feed mechanism to and between the bed and cylinders in succession and then to the delivery, and mechanism whereby the part of the web between the feed and delivery is stopped during impressions and moved forward while the impression is thrown off.

20. The combination of a pair of stationary type-beds, a pair of reciprocating impression-cylinders coacting with forms on each bed, means for reciprocating the pairs of cylinders simultaneously in opposite directions, mechanism for feeding web continuously to the press, mechanism for delivering web continuously therefrom, fixed and movable web-guides whereby the web is conducted first between one bed and its pair of coacting cylinders, and then between the other bed and its pair of coacting cylinders, and mechanism whereby the portion of the web between the feed and delivery mechanisms is stopped while being printed, and moved forward after impressions.

21. The combination of a pair of stationary type-beds, a pair of reciprocating impression-cylinders coacting with forms on each bed, means for reciprocating the pairs of cylinders in opposite directions, means for throwing the cylinders off impression on one stroke; with means for feeding a web continuously to the press, means for delivering the web continuously therefrom, stationary and movable web-guides whereby the web is led first between one bed and cylinder to be printed on one side, and then between the other bed and its coacting pair of cylinders to be perfected, and mechanism whereby the portion of the web between the feed and delivery is stopped during printing and shifted forward while the impressions are thrown off.

847,914. GEARING FOR AUTOMOBILES. WILLIAM I. CRAWFORD, St. Louis, Mo. Filed Apr. 30, 1906. Serial No. 314,577.

Claim.—1. In a gearing for automobiles, the combination with the engine-shaft, of a series of sliding gears arranged upon said shaft, a driving-shaft mounted for rotation in suitable bearings, a driven axle, connections whereby said driving-shaft imparts rotary motion to said axle, a series of gear-wheels mounted upon the driving-shaft and in mesh with the gear-wheels on the engine-shaft, and means whereby the sliding gears on the engine-shaft are locked together; substantially as specified.

2. The combination with the shaft of an engine, of a series of sliding gears arranged on said shaft, means whereby said gears are locked together, means arranged between said gears for normally holding them apart, a frame arranged to swing upon the engine-shaft, a driving-shaft journaled in said frame, a series of gears mounted on the driving-shaft within the frame and in mesh with the gears on the engine-shaft, an axle and a driving connection between the rear end of the driving-shaft and said axle; substantially as specified.

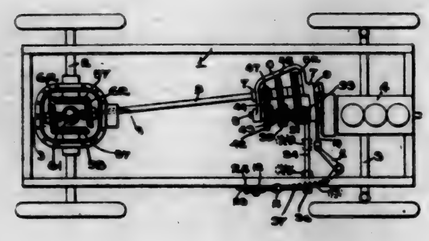

3. In an automobile, the combination with the rear axle, constructed in two parts, of beveled pinions mounted on the inner ends of the parts of said axle, a driving-shaft fulcrumed between the pinions, pinions loosely mounted upon the driving-shaft in which pinions are formed internal ratchet-teeth, collars fixed upon the driving-shaft, pawls carried by said collars for engaging with the ratchet-teeth, and means whereby the driving-shaft is shifted from one position to another to reverse the position of engagement of the two sets of beveled pinions; substantially as specified.

4. The combination with the shaft of an engine, of a series of different-sized gear-wheels mounted on said shaft certain of which gear-wheels are arranged to slide, means whereby said gear-wheels are locked together so as to rotate with the engine-shaft, an axle, a driving-shaft suitably journaled and arranged to impart rotary motion to said axle, a series of different-sized gear-wheels arranged upon the driving-shaft and which mesh with the gear-wheels on the engine-shaft, certain of which gear-wheels are loosely mounted on the driving-shaft, means whereby the loosely-mounted gear-wheels are locked so as to move with the driving-shaft, and means whereby the sliding gears on the engine-shaft are shifted from one position to another; substantially as specified.

847,915. WATER-HEATER FOR LOCOMOTIVES. DAVID W. CUNNINGHAM, Des Moines, Iowa. Filed July 6, 1906. Serial No. 325,395.

Claim.—1. In a heater of the class described, the combination of a heater-body having closed ends, partitions within the body spaced apart from the ends to form compartments at the ends, tubes extended through the body portion and communicating with the chambers at the ends, a blow-off pipe communicating with the chamber at one end, a steam-discharge pipe communicating with the chamber at the other end, and a drain-pipe communicating with the bottom of one of the chambers and extended upwardly to a point near the center of the heater-body and then downwardly and having a vent-opening near its upper portion.

2. In a water-heater for locomotive-boilers, the combination of a main heater-body and a superheater-body connected with each other and each having closed ends, partitions within each body portion spaced apart from the ends, tubes in each body portion communicating with the chambers beyond the partitions, a blow-off pipe communicating with the chamber at one end of the main body portion, a steam-pipe communicating between the ends of the main heater and the superheater-body portions opposite from the blow-off pipe, a steam-discharge pipe communicating with the chamber at the other end of the superheater, cleaning-out pipes communicating with the bottoms of the chambers at the ends of the main body, a water-inlet pipe communicating with the bottom of the main body, a pipe communicating between the body portions of the heater and the superheater, a water-discharge pipe communicating with the top of the superheater and a drain-pipe connected with one of the cleaning-out pipes extended upwardly to a point near the center of the heater body and then downwardly and formed with an air-vent opening at its upper portion.

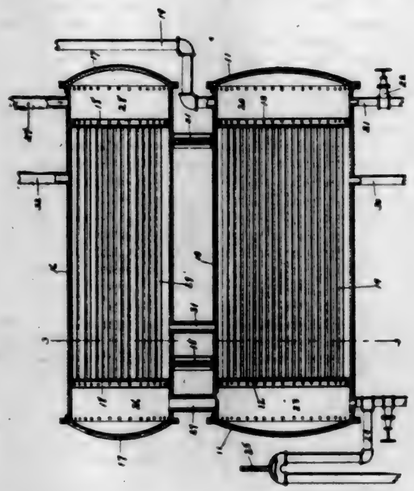

3. In a heater, of the class described, the combination of a heater-body having closed ends, partitions within the body spaced apart from the ends to form compartments at the ends, tubes extended through the body portion and communicating with the chambers at the ends, a blow-off pipe communicating with the chamber at one end and designed to conduct steam and water from a locomotive-engine to said chamber, a steam-discharge pipe communicating with the pipe at the other end and a drain device leading from one of said chambers and arranged to prevent the escape of water or steam from the chamber when the water-level is below the central portion of the chamber and to permit the escape of water when the water-level is above the central portion of the chamber.

847,916. WRENCH. JEFFERSON D. DANIEL, Pleasanthill, Ga. Filed June 27, 1905. Serial No. 267,254.

Claim.—A wrench comprising a shank having a fixed jaw, the lower end of the shank being formed with teeth, a sliding jaw provided with a shank-receiving opening and with a recess formed in the upper wall of the opening, said recess opening out through the lower end of the sliding jaw and having its upper wall outwardly and rearwardly inclined relatively to the shank to provide a flaring entrance, a lever pivotally secured to the sliding jaw and arranged to coöperate with the teeth and a leaf-spring secured at one end to the lever and having its free end disposed in the direction of the sliding jaw for entrance into the recess when the lever is swung into engagement with the teeth, the flaring entrance of the recess guiding the free end of the spring thereinto.

847,916.

847,917. AMMUNITION-HOISTING APPARATUS FOR ORDNANCE. ARTHUR T. DAWSON, Westminster, and JAMES HORNE, Barrow-in-Furness, England, assignors to Vickers Sons & Maxim Limited, Westminster, England. Filed Dec. 7, 1903. Serial No. 184,225.

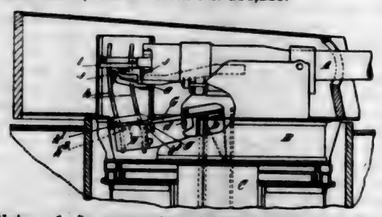

Claim.—1. In ammunition-hoisting apparatus for ordnance, the combination with the revolving trunk of the turn-table, of hoists conveying the shell and powder charges separately up said trunk to the gun-platform, from shell and powder rooms, waiting trays within the shell-room and arranged in operative relation with respect to the trunk and from which trays the shells are adapted to be supplied to the shell-hoist, shiftable receiving-trays arranged in operative relation with respect to the trunk and from which trays the shells are adapted to be supplied to the waiting trays, means for shifting the receiving-trays, an auxiliary lifting-cage situated at the rear of the gun, means for automatically transferring the shell from the shell-hoist to the said auxiliary lifting-cage, a swinging loading-tray carried by an oscillatory part of the gun-mounting, means for transferring the shells from the auxiliary lifting-cage to the swinging loading-tray, and means for actuating said swinging loading-tray to bring the shell it contains in alinement with the gun-breech, substantially as described.

2. In ammunition-hoisting apparatus for ordnance, the combination with the revolving trunk of the turn-table, of hoists for conveying the shell and powder charges separately up said trunk to the gun-platform, from shell and powder rooms, waiting trays within the shell-room and arranged in operative relation with respect to the trunk and from which trays the shells are adapted to be supplied to the shell-hoist, shiftable receiving-trays arranged in operative relation with respect to the trunk and from which trays the shells are adapted to be supplied to the waiting trays, means for shifting the receiving-trays, an auxiliary lifting-cage situated at the rear of the gun, a receiving-tray located on the gun-platform at a point between the shell-hoist and the auxiliary lifting-cage when these are respectively at their highest and lowest positions, means for regulating the passage of the shells from the shell-hoist to the receiving-tray and from the latter to the auxiliary lifting-cage, a swinging loading-tray carried by an oscillatory part of the gun-mounting, means for laterally tilting the loading-cage to deposit its shell into the said swinging loading-tray when opposite the latter, and means for actuating said swinging loading-tray to bring the shell it contains in alinement with the gun-breech, substantially as described.

3. In ammunition-hoisting apparatus for ordnance, the combination with the revolving trunk of the turn-table, of hoists for conveying the shell and powder charges separately up said trunk to the gun-platform, from shell and powder rooms, waiting trays within the shell-room and arranged in operative relation with respect to the trunk and from which trays the shells are adapted to be supplied to the shell-hoist, shiftable receiving-trays arranged in operative relation with respect to the trunk and from which trays the shells are adapted to be supplied to the waiting trays, means for shifting the receiving-trays, an auxiliary lifting-cage situated at the rear of the gun, a pivoted receiving-tray located on the gun-platform at a point between the shell-hoist and the auxiliary lifting-cage, when these are respectively at their highest and lowest positions, means for regulating the passage of the shells from the shell-hoist to the pivoted receiving-tray and from the latter to the auxiliary lifting-cage, a swinging loading-tray carried by an oscillatory part of the gun-mounting, means for laterally tilting the loading-cage to deposit its shell into the said swinging loading-tray when opposite the latter, and means for actuating said swinging loading-tray to bring the shell it contains in alinement with the gun-breech, substantially as described.

4. In ammunition-hoisting apparatus for ordnance, the combination with the revolving trunk of the turn-table, of an intervening floor between the shell-room and powder-room hoists whereby the shell and powder charges are conveyed separately up said trunk to the gun-platform from rooms situated one below the other, waiting trays permanently carried by the revolving trunk at a point within the shell-room and from which trays the shells are adapted to be supplied to the shell-hoists, and means for supplying the waiting trays with the shells.

5. In ammunition-hoisting apparatus for ordnance, the combination with the revolving trunk of a turn-table, of hoists whereby the shell and powder charges are conveyed separately up said trunk to the gun-platform from rooms situated one below the other, waiting trays carried by the portion of the trunk that extends into the shell-room and from which trays the shells are adapted to be supplied to the shell-cage, receiving-trays carried by bogies at the lower end of the trunk, means for transferring the shells from the shell-bins to the receiving-trays, and means for independently rotating the bogies relatively to the trunk or to the structure for the purpose specified.

6. In ammunition-hoisting apparatus for ordnance, the combination with the revolving trunk of the turn-table, of hoisting means whereby the shell and powder charges are conveyed separately up said trunk to the gun-platform from rooms situated one below the other, a waiting tray arranged in the shell-room and from which tray the shell is adapted to be supplied to the shell-cage, a shiftable receiving-tray arranged at the lower end of the trunk, means for transferring the shells from the shell-bins to the receiving-tray, and means for shifting the receiving-tray.

7. In ammunition-hoisting apparatus for ordnance, the combination with the revolving trunk of the turn-table, of hoisting means whereby the shell and powder charges are conveyed separately up said trunk to the gun-platform from rooms situated one below the other, waiting trays within the shell-rooms and arranged in operative relation with respect to the trunk and from which trays the shells

are adapted to be supplied to the shell-hoist, shiftable receiving-trays within the shell-room and arranged in operative relation with respect to the trunk, means for transferring the charges from the shell-bins to the receiving-trays, and means for suitably shifting the receiving-trays.

8. In ammunition-hoisting apparatus for ordnance, the combination with the revolving trunk of the turn-table, of hoists for conveying the shell and powder charges separately up said trunk to the gun-platform from rooms situated one below the other, waiting trays carried by that portion of the trunk that extends into the shell-room and from which trays the shells are adapted to be supplied to the shell-hoist, receiving-trays carried by bogies at the lower end of the trunk, means for transferring the shells from the shell-bins to the receiving-trays, means for independently rotating the bogie relatively to the trunk or to the structure, an auxiliary lifting-cage situated at the rear of the gun, means for automatically transferring the shells from the hoist to the said auxiliary lifting-cage, a swinging loading-tray carried by an oscillatory part of the gun-mounting, means for transferring the shells from the auxiliary lifting-cage to the swinging loading-tray, and means for actuating said swinging loading-tray to bring the shell it contains in alinement with the gun-breech, substantially as described.

9. In ammunition-hoisting apparatus for ordnance, the combination with the revolving trunk of the turn-table, of hoists for conveying the shell and powder charges separately up said trunk to the gun-platform from rooms situated one below the other, waiting trays carried by the portion of the trunk that extends into the shell-room and from which trays the shells are adapted to be supplied to the shell-hoist, receiving-trays carried by bogies at the lower end of the trunk, means for independently rotating the bogies relatively to the trunk, an auxiliary lifting-cage arranged in operative relation with respect to the gun, a receiving-tray located on the gun-platform at a point between the shell-hoist and the auxiliary lifting-cage when they are respectively at their highest and lowest positions, means for regulating the passage of the shells from the shell-hoist to the receiving-tray and from the latter to the auxiliary lifting-cage, a swinging loading-tray carried by an oscillatory part of the gun-mounting, means for laterally tilting the loading-cage to deposit its shell into the said swinging loading-tray when opposite the latter, and means for actuating said swinging loading-tray to bring the shells it contains in alinement with the gun-breech, substantially as described.

10. In ammunition-hoisting apparatus for ordnance, the combination with the revolving trunk of the turn-table, of hoists for conveying the shells and powder charges separately up said trunk to the gun-platform from rooms situated one below the other, waiting trays carried by the portion of the trunk that extends into the shell-room and from which trays the shells are adapted to be supplied to the shell-hoist, receiving-trays carried by bogies at the lower end of the trunk, means for transferring the shells from the shell-bins to the receiving-trays, means for independently rotating the bogies relatively to the trunk, an auxiliary lifting-cage arranged in operative relation with respect to the gun, a pivoted receiving-tray located on the gun-platform at a point between the shell-hoist and the auxiliary lifting-cage, when these are respectively at their highest and lowest positions, means for regulating the passage of the shell from the shell-hoist to the pivoted receiving-tray and from the latter to the auxiliary lifting-cage, a swinging loading-tray carried by an oscillatory part of the gun-mounting, means for laterally tilting the loading-cage to deposit its shell into said swinging loading-tray when opposite the latter, and means for actuating said swinging loading-tray to bring the shell it contains in alinement with the gun-breech, substantially as described.

847,918. HEADLIGHT-OPERATING DEVICE. WILLIAM H. DONALDSON, Joliet, Ill. Filed Jan. 10, 1906. Serial No. 295,446.

Claim.—1. The combination with the body of a motor-vehicle, the steering apparatus associated with said body including a rod extending between the steering-arms of the forward axle, a standard extending from said rod and having an irregular terminal stud provided with a longitudinal recess, a yielding catch connected to the said stud within said recess, an arm having a socket for receiving said stud and bearing beneath said catch, lamps movably connected to said body, and connecting means between said lamps and arm.

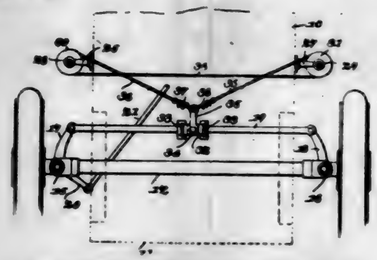

2. In combination with a vehicle provided with a steering-gear which embodies a transverse connecting-rod, a pair of vertical shafts journaled at the sides of the vehicle and each carrying a headlight at its upper end and a pulley at its lower end, the pulleys being below the bottom of the vehicle, a post supported on and detachably attached to said cross-rod about midway its length, a rearwardly-extending arm detachably connected to said post, a hook depending from the bottom of the vehicle and adapted to receive and hold said arm when the same is detached from the post, and a cable extending across under the vehicle and passing around the pulleys and having its end portions extending inwardly and attached to said arm, for the purposes herein set forth.

3. In combination with a vehicle provided with a front-wheel steering-gear embodying a transverse connecting-rod, a vertical shaft at each side of the vehicle carrying a headlight and a pulley, the pulley being on the lower end of the shaft, a post attached to the connecting-rod about midway its length and rising to a point about level with the pulleys, a cable extending across under the vehicle and passing freely around both pulleys and extending from the pulleys inwardly, and means connecting the inner ends of said cable to the top of the aforesaid post.

4. In combination with a vehicle provided with a steering-gear embodying an endwisely-shiftable transverse rod, a vertical shaft at each side of the vehicle carrying a headlight and a sheave or pulley, a cable extending transversely of the vehicle and carried around both of said pulleys and extending inwardly toward said connecting-rod, means detachably connecting the inner ends of the cable to said connecting-rod, and a device on the vehicle for locking the cable against movement when it is detached from the steering-gear.

847,919. COMBINED STEP-LADDER AND TABLE. JAMES D. DOUDS, Swissvale, Pa. Filed Nov. 25, 1905. Serial No. 289,141.

Claim.—1. A device of the class described comprising a step-ladder in two sections hingedly united, a board adapted to be detachably coupled at one end to said ladder and serving as a leg thereto when in one position and with a catch device at the other end adapted to engage the ladder when in another position, a brace swinging from said board and adapted to engage said ladder at its free end, and a flexible tie member adapted to be detachably connected between said ladder and board when the device is in one position and to couple said ladder-sections when the device is in another position.

2. A device of the class described comprising a step-ladder in two sections having lateral arms at their adjacent ends with the free ends of said arms hingedly united, a board adapted to be detachably coupled at one end to said ladder and serving as a leg thereto when in one position and with a catch device at the other end adapted to be detachably engaged with one of said lateral arms when in another position, a brace swinging from said board and adapted to detachably engage said ladder at its free end, and a flexible tie member adapted to be detachably connected between said ladder and said board when in one position and between said ladder-sections when in another position.

3. A device of the class described comprising a step-ladder in two sections hingedly united, one of said sections having a hinge member near its free end and the other section having a brace bearing near its free end, a board having a hinge member at one end adapted to be detachably connected to the hinge member of the ladder-section, a brace swinging from said board and adapted to detachably engage said brace-bearing at its free end, and a flexible tie member adapted to be detachably connected between said ladder-sections and board when in one position and to detachably couple said ladder-sections when in another position.

4. A step-ladder formed in two sections with lateral members at the adjacent ends and hingedly united at the free ends of said lateral members, a board constituting a supporting-leg and adapted to be connected at one end to said ladder, and a tie member adapted to connect between said leg device and ladder when said ladder is in one position and to be connected between said ladder-sections when said ladder is in another position, said board having means for detachably coupling to one of said lateral members when the ladder is in folded position.

5. A step-ladder formed in two sections with lateral members at the adjacent ends of the sections and hingedly united by the free ends of the lateral members, one of said lateral members having transverse sockets, a board constituting a supporting-leg and adapted to be detachably connected at one end to said ladder, and with a catch device at the other end, and a tie member adapted to connect said leg device and ladder when said ladder is in one position and to be connected between said ladder-sections when the ladder is in another position, and said board adapted to be supported from said ladder when the ladder is in folded position by inserting the catch device thereon in the sockets of said lateral member.

6. A step-ladder formed in two sections with lateral members at the adjacent ends of the sections and hingedly united at the free ends of the lateral members, a board constituting a supporting-leg and adapted to be detachably connected to one end of said ladder, and means whereby said board is detachably supported from one of said lateral members when the ladder is in folded position.

847,920. GLOVE-FASTENER. HENRY S. DYER, Milborne Port, England. Filed Mar. 5, 1906. Serial No. 304,384.

Claim.—The herein-described glove-fastening consisting of a hook member and an eye member, said hook member consisting of a cap having an opening in its under face, and a shank-piece having an outwardly-flaring eyelet, upset within the cap, with the cloth material between said cap and the hook of said member, and a hook secured to said shank-piece, said eye member consisting of an outer disk formed with a struck-up bar and with a slot at one side of said bar, and means to connect said disk to a glove, substantially as described.

847,921. OMNIGRAPH. JAMES W. EARLES, Fort Hancock, N. J. Filed Jan. 24, 1907. Serial No. 353,911.

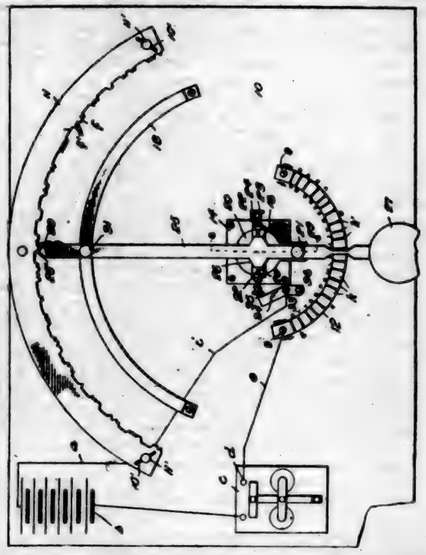

Claim.—1. In an omnigraph, in combination, an arcuate metal plate provided on its inner edge with a series of projections corresponding to the characters of a telegraphic alphabet; a pivoted key adapted to be moved into contact at one end with said projections; a sounder; and electrical connections between said key, plate, and sounder, and a source of power.

2. In an omnigraph, in combination, a flat arcuate metal plate provided on its inner edge with a series of projections corresponding to the characters of a telegraphic alphabet; a key pivoted for horizontal movement and adapted to contact at one end with said projections; a sounder; and electrical connections between said key, plate, and sounder, and a source of power.

3. In an omnigraph, in combination, a base-plate; an arcuate metal plate mounted thereon and provided with a series of inwardly-extending projections formed on its inner edge and corresponding to the characters of a telegraphic alphabet; a key movable horizontally across said base and adapted to contact at one end with said projections; a sounder; electrical connections between said key, plate, and sounder, and a source of power; and means for normally holding said key out of contact with said projections.

4. In an omnigraph, an arcuate metal plate provided with a series of inwardly-extending projections formed on its inner face, and corresponding to the characters of a telegraphic alphabet, and a horizontally-movable key adapted to contact at one end with said projections.

5. In an omnigraph, an arcuate metal plate provided with a series of inwardly-extending projections formed on its inner edge, and corresponding to the characters of a telegraphic alphabet; a horizontally-movable key disposed adjacent said plate; and a forwardly-extending member secured to one end of said key and adapted to contact with said projections.

6. In an omnigraph, in combination, a base-plate; a pair of oppositely-disposed arcuate plates mounted thereon, one of said plates having a series of inwardly-extending projections formed on its inner edge and corresponding to the characters of a telegraphic alphabet; a key pivoted between said arcuate plates and adapted to contact with both of said plates when in use; and means for normally holding said key out of contact with said arcuate plates.

7. In an omnigraph, in combination, a base-plate; a pair of oppositely-disposed concentric arcuate plates mounted thereon, one of said plates having a series of inwardly-extending projections formed on its inner face and corresponding to the characters of a telegraphic alphabet; a horizontally-movable key pivoted intermediate its ends to said base, and provided at opposite ends with means adapted to contact with the corresponding arcuate plates, when said key is in its operative position; and means for normally holding said key in inoperative position.

8. In an omnigraph, in combination, a base; a plate mounted thereon and provided with a series of projections corresponding to the characters of a telegraphic alphabet; a key pivotally mounted in said base for movement both horizontally and vertically with respect thereto, said key being adapted during its horizontal movement to contact with said projections; and means mounted on said plate and adapted to be moved into engagement with said key to prevent such horizontal movement.

9. In an omnigraph, in combination, a base, a plate mounted thereon and provided with a series of projections corresponding to the characters of a telegraphic alphabet; a key pivotally mounted upon said base for movement both vertically and horizontally with respect thereto, said key including a notched, pivotal support adapted to turn therewith during such latter movement; means secured to one end of said key and adapted to contact with said projections during such horizontal movement; and means mounted on said base and adapted to be moved into engagement in said notch, to prevent such horizontal movement.

10. In an omnigraph, in combination, a base-plate; a pair of oppositely-disposed, concentric arcuate plates mounted thereon, one of said plates having a series of inwardly-extending projections formed on its inner edge; a depressible key pivoted intermediate its ends to said base between said arcuate plates and adapted to be moved horizontally across the latter; resilient means secured to one end of said key adapted to hold said key normally in inoperative position; and means carried by the opposite end of said key and adapted to contact with said projections during the horizontal movement of the key when the latter is in its operative position.

847,922. MUSIC-LEAF TURNER. ERNEST R. ELDRIDGE, Sumpter, S. C. Filed Sept. 18, 1906. Serial No. 335,054.

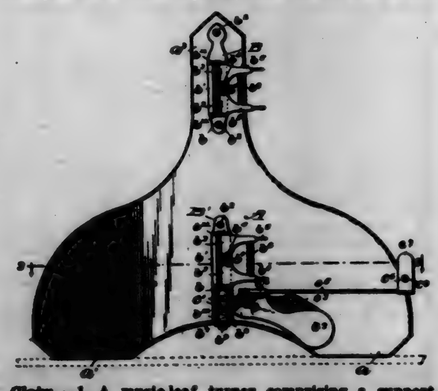

Claim.—1. A music-leaf turner comprising a support, clasps arranged in vertical alinement on the support, said clasps comprising each a base provided with a longitudinal rib, plates pivoted eccentrically to each end of the base, each being provided with a rib coöperating with one end of the rib on the base, whereby to grip the folio, a spring arranged between the plates and acting to normally retain the ribs in contact, one of said clamps being provided with an extension having an angular portion, a plurality of turning-arms, each of said arms comprising a plate pivoted to the angular projection and provided with a finger-piece whereby to manipulate the same, a rod secured to the plate and projecting laterally from the clasp, and a leaf-clamp on the free end of the rod, said clamp comprising a plate secured to the free end of the rod and bent upon itself to form opposing jaws, one of said jaws having a concavity and the other a convexity fitting into the concavity whereby to securely grip the leaf.

2. A music-leaf turner, comprising a support, clasps arranged in vertical alinement on the support, said clasps comprising each a base provided with a longitudinal rib, plates pivoted eccentrically to each end of the base, each being provided with a rib coöperating with one end of the rib on the base, a spring between the plates, and acting to normally retain the ribs in contact with each other, one of said clasps being provided with an angular projection, and a plurality of turning-arms pivoted to said angular projection.

3. A music-leaf turner, comprising a support, clasps for engaging the back of the folio arranged in vertical alinement on the support, one of said clasps being provided with an angular projection, a plurality of turning-arms, each comprising a plate pivoted to the angular projection, and provided with a finger-piece, a rod secured to the plate and projecting laterally from the clasp, and a leaf-clamp on the end of the rod, said clamp comprising a plate secured to the free end of the rod and bent upon itself to form opposing jaws.

847,923. MINER'S FUSE-TOOL. CHARLES ELLIOTT, Scammon, Kans. Filed Oct. 17, 1905. Serial No. 283,184.

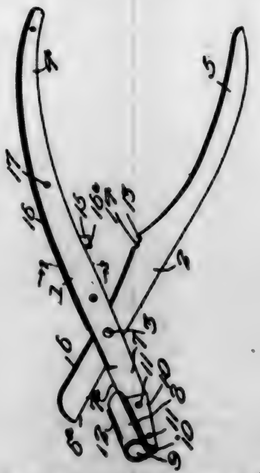

Claim.—A miner's fuse-tool comprising a pair of pivotally-connected members, those portions of the members located beyond the pivot forming cutting-blades, the cutting edge of one of the blades being offset to position it for coöperation with the cutting edge of the other blade, and a guide secured to and partially housing the cutting edge of one of the blades, said guide being constructed from a single blank of material bent to provide a fuse-receiving portion and attaching-flanges, the fuse-receiving portion being provided with an opening extending longitudinally through a portion of its length to permit the coöperation of the blades.

847,924. WALL-PAPERING MACHINE. EDWARD E. ETTER, Chambersburg, Pa. Filed May 9, 1906. Serial No. 316,010.

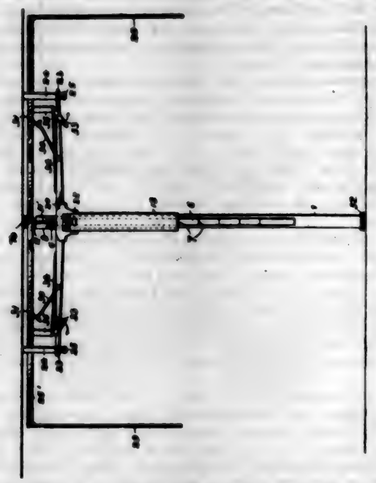

Claim.—1. In a papering-machine, the combination of an upright that is extensible, a table, and means for raising and lowering the table on the upright without disturbing the adjustment of the latter.

2. In a papering-machine, the combination of an upright, a vertically-movable rod having a block at its upper end, and a spring between said block and said upright, tending to force said block against the ceiling.

3. In a papering-machine, the combination of an upright consisting of sections slidable on each other, a rod slidably mounted on said upright, a block mounted on the upper end of said rod, a spring interposed between said upright and said block, and a paper-carrying table mounted on said upright.

4. In a papering-machine, the combination of an upright consisting of sections slidable on each other, a rod slidably mounted on said upright, a block mounted on the upper end of said rod, a spring interposed between said upright and said block, and a paper-carrying table mounted on said upright, said rod having a handle whereby it may be drawn downward.

5. In a papering-machine, the combination of an upright that is adapted to be extended between a floor and ceiling, a bracket slidably mounted on said upright, said bracket having a paper-carrying table, said upright being provided with a series of steps or notches that are adapted to be engaged by said bracket to hold the table against the ceiling.

6. In a papering-machine, the combination of an upright that is adapted to extend between the floor and the ceiling, a bracket slidably mounted on said upright, said bracket having a paper-carrying table, means for securing said bracket in position to hold said table near the ceiling, and a cam carried by said bracket and adapted to force said table against the ceiling.

7. In a papering-machine, the combination of an upright adapted to be secured between a floor and ceiling, a bracket vertically movable on said upright, a slide horizontally movable on said bracket, and a paper-carrying table mounted on said slide.

8. In a papering-machine, the combination of an upright that is adapted to be secured between a floor and ceiling, a bracket vertically movable on said upright, a slide horizontally movable on said bracket, an arm horizontally secured to said slide, table-holders detachably secured to the ends of said arm, and a table mounted on said holders.

9. In a papering-machine, the combination of an upright that is adapted to be secured between a floor and ceiling, a bracket vertically movable on said upright, a slide horizontally movable on said bracket, an arm horizontally secured to said slide, table-holders detachably secured on said bracket, and a table mounted on said holders, said table being provided with legs hinged thereto at each end.

10. In a papering-machine, the combination of an upright that is adapted to be secured between a floor and ceiling, a bracket vertically movable on said upright, a slide horizontally movable on said bracket, an arm horizontally secured to said slide, table-holders detachably secured to the ends of said arm, and a table mounted on said holders, said slide being provided with a movable support between said table-holders to support the middle of the table.

11. In a papering-machine, the combination of an upright that is adapted to be secured between a floor and ceiling, a bracket vertically movable on said upright, a slide horizontally movable on said bracket, an arm horizontally secured to said slide, table-holders detachably secured to the ends of said arm, and a table on said holders, said arm being provided with a hook adapted to be secured to said table to prevent longitudinal displacement.

12. In a papering-machine, the combination of an upright adapted to be secured between a floor and ceiling, a bracket vertically movable on said upright, and a paper-carrying table horizontally adjustable on said bracket.

13. In a papering-machine, the combination of an upright that is adapted to be extended between the floor and ceiling, a bracket slidably mounted on said upright, said bracket having a paper-carrying table, means for securing said bracket in a position to hold said table near the ceiling, a cross-bar supporting said table from said bracket, a flexible strip secured to said cross-bar near each end thereof, a cam on each end of said cross-bar under said strips, and lugs on said strips adapted to support said table.

847,925. SWITCH. ALFRED L. EUSTICE, Chicago, Ill. Filed Aug. 15, 1906. Serial No. 330,729.

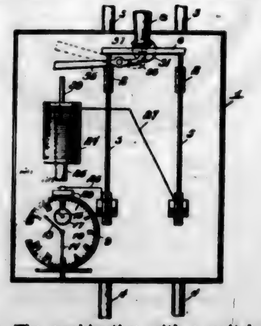

Claim.—1. The combination with a switch including a movable member, of spring-actuated means for moving the member in one direction, a locking-lever normally holding the member against the influence of the actuating means, a solenoid having the core thereof operative in the path of the lever, a circuit for energizing the solenoid to project the core into contact with the lever for operating the latter to release the switch member, and time-controlled means for closing the solenoid-circuit, whereby to operate the core of the solenoid at a predetermined time.

2. The combination with a switch including a movable member, of spring-actuated means for moving the member in one direction, a locking-lever normally holding the member against the influence of the actuating means, a solenoid having the core thereof operative in the path of the lever, a circuit for energizing the solenoid to project the core into contact with the lever for operating the latter to release the switch member, and time-controlled means for closing the solenoid-circuit, said solenoid-circuit being energized

from the load side of the switch, whereby said solenoid-circuit is deënergized upon the breaking of the switch.

3. The combination with a switch including a movable member, of spring-actuated means for moving the member in one direction, a pivoted lever having one end arranged to normally engage a recess in the movable member, a solenoid including a movable core arranged in the path of the opposite end of the lever and adapted to engage said end upon energization of the solenoid, conductors leading to the solenoid, one of said conductors including a fixed contact and a movable contact, a time-controlled mechanism including a manually-operable cam-disk formed with a recess, a gear in mesh with the timing-apparatus train and freely movable to and from the cam-disk, a pin carried by said gear and arranged to bear upon the surface of the cam-disk and enter the recess when alined therewith, and a spring-arm holding the gear under tension and carrying at its upper end the movable contact of the solenoid-conductor, whereby said spring operates to force the gear-pin into the recess in the cam-plate and simultaneously effect the engagement of the contacts in the solenoid-circuit.

847,926. SPRING-WHEEL. JACOB H. FAWERS, Detroit, Mich. Filed Jan. 5, 1906. Serial No. 294,752.

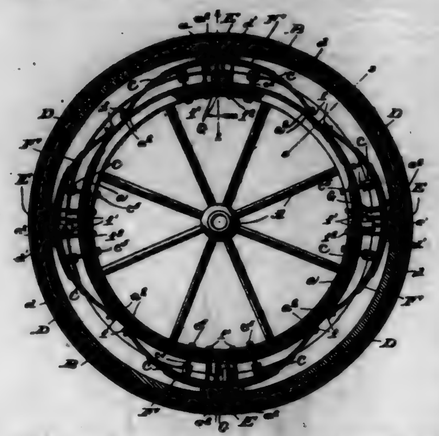

Claim.—1. In combination, a spring-wheel provided with a concave rim semicircular in cross-section, and having inwardly-flanged edges, a tire semicircular in cross-section and having outwardly-flanged edges for engaging the flanged edges of the rim, means for retaining the edges in interlocking relation, an inner metallic tire comprising a plurality of sections spaced apart from each other, bearing-plates on the ends of the sections, a bearing-block between the adjacent bearing-plates and provided with recesses for receiving the same, a leaf-spring secured by its center to the bearing-block, a pneumatic cushion between the bearing-block and the rim, means for limiting the outward movement of the bearing-block with respect to the rim, and rollers journaled on the rim for receiving the free ends of the spring.

2. In combination, a spring-wheel provided with a concave rim having inwardly-flanged edges, a tire having outwardly-flanged edges for engaging the edges of the rim, means for maintaining the edges of the rim and the tire in contact, an inner metallic tire comprising a plurality of sections spaced apart longitudinally from each other, bearing-plates on the ends of the sections, bearing-blocks between the sections having recesses to receive the bearing-plates, a leaf-spring secured to the bearing-blocks and extending upon each side thereof, the ends of the springs engaging the outer face of the rim.

3. In combination, a spring-wheel provided with a concave rim having inwardly-projecting flanged edges, a tire having outwardly-flanged edges for engaging the edges of the rim, means for maintaining the edges of the rim and the tire in contact, an inner metallic tire comprising a plurality of sections spaced apart longitudinally from each other, bearing-plates on the ends of the sections, bearing-blocks between the sections having recesses to receive the bearing-plates, and leaf-springs arranged between the bearing-blocks and the rim.

4. In combination, a spring-wheel provided with a concave rim having inwardly-flanged edges, a tire having outwardly-flanged edges for engaging the edges of the rim, an inner metallic tire comprising a plurality of sections spaced apart longitudinally from each other, bearing-plates on the ends of the sections, bearing-blocks between the sections having recesses for receiving the bearing-plates, and leaf-springs arranged between the bearing-blocks and the rim.

5. In combination, a spring-wheel provided with a concave rim having inwardly-flanged edges, a tire having outwardly-flanged edges for engaging the edges of the rim, an inner metallic tire comprising a plurality of sections spaced apart longitudinally from each other, bearing-plates on the ends of the sections, bearing-blocks between the sections having recesses for receiving the bearing-plates, and springs arranged between the bearing-blocks and the rim.

6. In combination, a spring-wheel provided with a concave rim having inwardly-flanged edges, a tire having outwardly-flanged edges for engaging the edges of the rim, an inner metallic tire comprising a plurality of sections spaced apart longitudinally from each other, bearing-plates on the ends of the sections, bearing-blocks between the sections having recesses to receive the bearing-plates, and cushioning devices between the bearing-blocks and the rim.

7. In combination, a spring-wheel provided with a concave rim having inwardly-flanged edges, a tire having outwardly-flanged edges for engaging the edges of the rim, an inner rim comprising a plurality of sections spaced apart longitudinally from each other, bearing-plates on the ends of the sections, bearing-blocks between the sections having recesses to receive the bearing-plates, cushioning devices between the bearing-blocks and the rim, and means for limiting the outward movement of the bearing-blocks with respect to the rim.

8. In combination, a spring-wheel provided with a concave rim having flanges at the edges thereof, a tire having flanges for engaging the flanges of the rim, and means for retaining the flanges in locking engagement comprising pairs of oppositely-arranged arms pivoted to the rim adjacent the flanges thereof, a toggle-lever connecting the arms, and a rod connected to the hinge of the toggle-lever and extending without the rim.

9. In combination, a spring-wheel provided with a concave rim having flanges at the edges thereof, a tire having flanges for engaging the flanges of the rim, and means for maintaining the flanges in locking engagement comprising pairs of oppositely-arranged arms pivoted to the rim adjacent the flanges thereof, a toggle-lever connecting the arms, and means for manipulating the toggle-lever.

847,927. HAND-CAR. JOHN W. FINCH, Elizabeth, Miss. Filed Dec. 27, 1906. Serial No. 349,647.

Claim.—1. A hand-car, comprising a frame, axles journaled thereon, wheels secured to the ends of the axles, a sprocket-wheel rigid with one of the axles, a counter-shaft journaled on the frame, a sprocket-wheel secured thereto, a sprocket-chain connecting said sprocket-wheels, a pair of spaced parallel arms journaled on the end of the counter-shaft, a gear-wheel secured to the counter-shaft between the arms, a stub-shaft journaled in the free ends of the arms, a gear-wheel rigid with the stub-shaft between the arms and meshing with the first-named gear-wheel, said stub-shaft having a squared portion outside of the arms, a pitman having a square opening to receive said squared portion, nuts threaded on the ends of the stub-shaft for retaining the parts in position, and means connected with the pitman for operating the same.

2. A hand-car comprising a frame, axles journaled thereon, wheels secured to the ends of the axles, a counter-shaft journaled on the frame, a pair of spaced parallel arms journaled on the counter-shaft, a gear-wheel secured to the shaft between the arms, a stub-shaft journaled in the free ends of the arms, a gear-wheel rigid with the stub-shaft between the arms and meshing with the first-named gear-wheel, a pitman rigidly secured to the stub-shaft outside of the arms, means connected with the pitman for operating the same, and a driving connection between the counter-shaft and one of the axles.

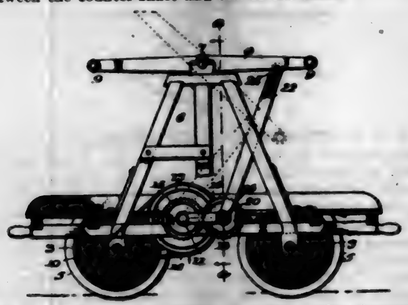

3. A hand-car comprising a frame, axles journaled thereon, wheels secured to the ends of the axles, a counter-shaft journaled on the frame, a pair of spaced parallel arms journaled on the end of the counter-shaft, a stub-shaft journaled in the free ends of the arms, a gear-wheel keyed to the counter-shaft, a gear-wheel secured to the stub-shaft, said gear-wheels being between the arms and meshing with each other, a pitman rigid with the stub-shaft, means for operating the pitman, and a driving connection between the counter-shaft and one of the axles.

847,928. PUMP-ROD COUPLING. HOMER M. FLETCHER, Sanco, Tex. Filed Oct. 2, 1905. Serial No. 280,997.

Claim.—A device of the class described, comprising a coupling member having an internally-threaded socket formed in its outer end and enlarged intermediate its ends to form an annular shoulder, said enlargement tapering inwardly toward the opposite end of said coupling member; and a second coupling member having an internally-threaded socket formed in its outer end and provided at its inner end with oppositely-disposed spring-arms having their free ends inwardly directed, said arms being adapted to fit against the tapering portion of said first-mentioned coupling member with their inbent ends in engagement with the shoulder formed thereon, to hold said members coupled.

847,929. WINDOW-VENTILATOR. EDWARD R. FORESTER, Chicago, Ill. Filed Jan. 22, 1906. Serial No. 297,000.

Claim.—1. The combination with a window-sash having a chamber therein and an air-passage therethrough, of a ventilator removably secured in said chamber of the window-sash over said air-passage comprising a face-plate having holes therethrough, and a screen removably supported upon said plate through which the air passes to said holes.

2. The combination with a window-sash having a chamber therein and an air-passage therethrough, of a ventilator removably secured in said chamber of the window-sash over said air-passage comprising a face-plate having holes therethrough, a screen removably supported upon said plate through which the air passes to said holes, and means for opening and closing said holes.

3. The combination with a window-sash having an air-passage therethrough, of a ventilator secured to said sash over said passages and comprising a base-plate having holes therethrough, a screen supported by said plate through which the air passes to said holes, and means for opening and closing said holes, the sash being cut to form an air-chamber at the rear of said screen with which a passage through the sash communicates.

4. In a ventilator, the combination with a face-plate having holes therethrough, means for opening and closing said holes, wings projecting from said face-plate, and a screen supported by said wings at the rear of the openings through the face-plate.

5. In a ventilator, the combination with a face-plate having passages therethrough, means for opening and closing said passages, wings projecting from said plate, a screen supported by said wings, and a flange projecting from said plate upon which the screen rests.

6. In a combined ventilator and finger-lift for window-sash, the combination with a face-plate having holes therethrough, means for opening and closing said holes, wings projecting from said face-plate, a screen supported by said wings at the rear of the openings through the face-plate, and a finger-lift formed integrally with the face-plate.

847,930. LOCK. HARVEY FRANCK, Chicago, Ill. Filed Sept. 17, 1906. Serial No. 334,828.

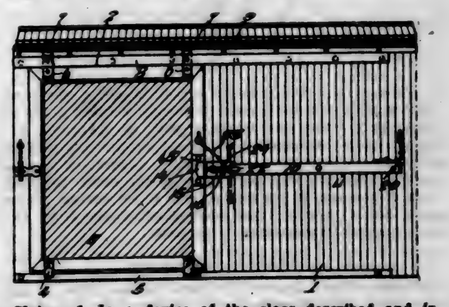

Claim.—1. In a device of the class described and in combination with a movable door, of a guide-rail extended in the rear thereof, a locking-bolt slidably mounted on said rail and adapted for engagement with the door, and a hasp carried by the bolt and operable for locking the same against movement on the rail.

2. In a device of the class described and in combination with a movable door, of a guide-rail extended in the rear thereof and provided with a keeper, a locking-bolt slidably mounted on said rail and a hasp carried by the bolt and having a portion for engagement with the keeper to lock the bolt against movement.

847,931. SWITCH. OSCAR S. GAGE, Tecumseh, Okla. Filed Apr. 24, 1906. Renewed Feb. 23, 1907. Serial No. 358,978.

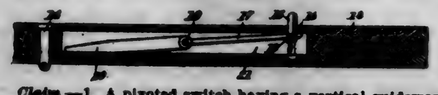

Claim.—1. A pivoted switch having a vertical guideway, a stud fitted to slide in said guideway, said stud being of substantially equal diameter throughout its length, and means for yieldingly holding said stud with its upper end projecting above the upper surface of the switch.

2. A pivoted switch having a recess or chamber in its under side and formed with a vertical hole at a point between its pivot and its free end, a stud movable in said hole and extending into said recess, said stud being of substantially equal diameter throughout its length and adapted to normally project above the surface of the switch, the recess in the switch being enlarged to correspond with the diameter of the hole and form a continuation thereof, and means located in the recess of the switch and connected with said stud to yieldingly hold the same raised.

3. A pivoted switch having a recess or chamber in its under side and formed with a vertical hole at a point between its pivot and free end, said hole leading into said recess, the latter having its walls formed to provide a continuation of the hole from the top to the bottom of the switch, a stud fitted to slide in said hole, and a weighted lever pivotally supported in the recess of the switch and pivotally connected with the lower end of said stud, the weight of said lever being adapted to normally hold the stud raised.

847,932. GATE-VALVE. JOHN H. GAY, Argyle, Ga. Filed Jan. 25, 1906. Serial No. 297,918.

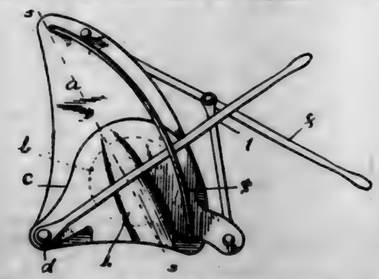

Claim.—In a tail-gate for turpentine-stills, the combination with the discharge-pipe having a trued outer surface surrounding the discharge-port in the same, of a pivoted gate arranged to be moved against the said surface to open and close the said port, a lever and link connected with the said gate to move the same, an incline cam on the face of the gate, a lever to act against the said cam, and a yoke or brace against which the latter lever may operate in opposition to the cam.

847,933. TOP. ELMER W. GIBBS, Canton, Ohio, assignor to The Gibbs Manufacturing Company, Canton, Ohio, a Corporation of Ohio. Filed Dec. 29, 1906. Serial No. 349,949.

Claim.—1. In a top, a top-body formed in sections, the upper section provided with recesses having inclined bottoms and apertures, a holder having connected thereto, a spring, said spring adapted to be connected at its free end to the top-body and a locking-pin, a spring adapted to actuate the locking-pin in one direction and a top-stem and a spindle connected together, said spindle and top-stem connected to the top-body, substantially as and for the purpose specified.

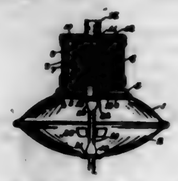

2. In a top, a top-body formed in sections and the sections adapted to form a hollow top-body, a disk spaced from the under side of the upper top-body section, a spindle provided with shoulders, said shoulders adapted to form supports for the top-body sections, a top handle or stem secured to the spindle and a holder provided with a spring, means for holding one end of the spring against rotation with the rotation of the holder and means for holding the holder against rotation in one direction and against the force of the spring, substantially as and for the purpose specified.

3. In a top of the class described, a hollow top-body provided with apertures, a spindle connected to said top-body, a disk located in the upper portion of the top-body and spaced from the under surface of the top-body, said disk adapted to atmospherically close the upper or top portion of the top-body, a top-handle secured to the spindle and its lower end seated upon the disk and extended below the top of the top-body and a holder provided with a spring adapted for connection with the top-body and means for holding the holder against rotation in one direction, substantially as and for the purpose specified.

4. In a top of the class described, the combination of a top-body formed in sections, a spindle provided with shoulders reinforcing-disks seated upon the shoulders and adapted to space the top-body sections, a top handle or stem connected to the spindle and a holder provided with a spring, a spring-actuated locking-pin carried by the holder and means for detachably connecting the spring to the top-body, and means for temporary engagement of the top-body with the spring-actuated locking-pin, substantially as and for the purpose specified.

847,934. HEATING SYSTEM. ROBERT L. GIFFORD, Chicago, Ill., assignor, by direct and mesne assignments, to Illinois Engineering Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 11, 1905. Serial No. 282,315.

Claim.—1. A heating system comprising one or more radiators or units of radiation, means for supplying steam to said radiator or radiators, a return-pipe, having its upper portion connected to said radiator or radiators through restricted, normally open orifices, and its lower end extending below said radiator or the lowest of said radiators, of such interior diameter that the water of condensation, from the radiator or radiators, falling therein forms one or more pistons of a pump, and mechanism adapted to maintain a water seal in the lower portion of said return-pipe for the purposes set forth.

2. A heating system comprising one or more radiators or units of radiation, means for supplying steam to said radiator or radiators, a return-pipe, having its upper part connected to said radiator or radiators through restricted, normally open orifices, and its lower end extending below said radiator or the lowest of said radiators, of such interior diameter that the water of condensation, from the radiator or radiators, falling therein forms one or more pistons of a pump, mechanism adapted to maintain a water seal in the lower portion of said return-pipe and an automatic check-valve between each radiator and the return-pipe adapted to prevent the passage of the contents of said return-pipe into the radiator for the purposes set forth.

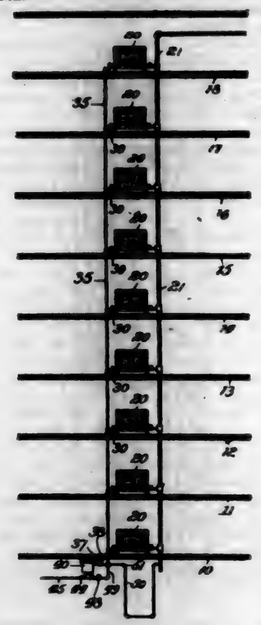

847,935. ELECTRICAL GROUNDING DEVICE. JOHN F. GOLDING, Washington, D. C., assignor to Monolith Steel Company, Incorporated, a Corporation of Virginia. Filed Nov. 18, 1905. Serial No. 288,047.

Claim.—1. In an electrical grounding device, the combination of a grooved driving-bar, and an electric conductor secured in the groove of the bar, substantially as set forth.

2. In an electrical grounding device, the combination of a driving-bar having compressible lips, and an electric conductor in permanent electric contact with said lips, substantially as set forth.

3. In an electrical grounding device, the combination of a grooved driving-bar, and an electric conductor looped at its middle and having its ends secured in the grooves of the bar, substantially as set forth.

4. In an electrical grounding device, the combination of a grooved driving-bar, and a conductor secured in a groove of the bar and protected by the lips of such groove from the bottom end of the conductor to the surface of the earth.

5. In an electrical grounding device, the combination of a grooved driving-bar, a conductor in a groove of the bar and protected by the lips of the same, and a solder connection between the conductor and the bar.

6. In an electrical grounding device, the combination of a grooved driving-bar, a conductor in a groove of the bar, and a solder connection between the bottom end of the conductor and the bar.

7. As an electrical grounding device, a grooved driving-bar adapted for the attachment of a line-wire and extending to the surface of the earth when in operative position so that it may be readily extracted and transported for use in other situations, the groove or grooves being formed in the integral body of the bar, substantially as described.

847,936. AIR-BRAKE MECHANISM. ALVA L. GOODKNIGHT, Council Bluffs, Iowa. Filed Nov. 21, 1906. Serial No. 344,495.

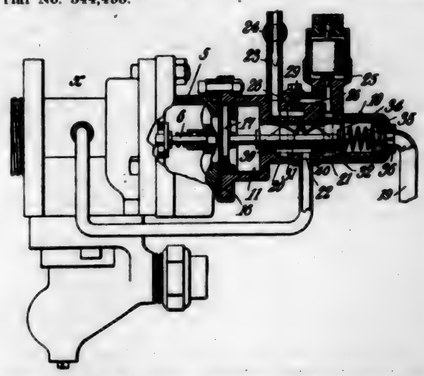

Claim.—1. In air-brake mechanism, an auxiliary valve-casing having ports communicating with the triple-valve exhaust, the outer air and a pressure-retaining device, and a valve arranged within the casing and movable under full-release pressure in the train-pipe to place the brake-cylinder exhaust in communication with the pressure-retaining device.

2. In air-brake mechanism, an auxiliary valve-casing having ports connected to the triple-valve exhaust, to the outer air, and to a pressure-retaining device, and a valve arranged in the casing and controlling the port, the valve being movable under full-release pressure from the train-pipe to place the triple-valve exhaust in communication with the pressure-retaining device and under auxiliary-reservoir pressure to place the triple-valve exhaust in communication with the port leading to the outer air.

3. In air-brake mechanism, an auxiliary valve-casing having ports connected to the triple-valve exhaust, the outer air and to a pressure-retaining device, a ported valve arranged within the casing, a piston connected to the valve and exposed on one side to train-pipe pressure, and on the other side to auxiliary-reservoir pressure, and a spring acting on the valve and tending to assist the auxiliary-reservoir pressure in moving said valve to free-exhaust position.

4. In air-brake mechanism, an auxiliary valve-casing, a valve arranged therein and movable under train-pipe

pressure to secure retarded exhaust from the brake-cylinder, and under auxiliary-reservoir pressure to secure free exhaust from the brake-cylinder, and a spring acting to assist movement of the valve to free-exhaust position.

5. In air-brake mechanism, an auxiliary valve-casing, a valve arranged therein and controlling the exhaust from the triple-valve casing, the casing being provided with two ports, one leading to the outer air, and the other to a pressure-retaining device, and the valve being provided with a port, whereby the brake-cylinder exhaust may be directed through the port leading to the outer air or to the pressure-retaining port, or both, the valve being movable under full-release pressure to the retaining or retarding position, and under auxiliary-reservoir pressure to free-exhaust position, and a spring tending to assist the movement to free-exhaust position, the springs of all of the valves in a train being compressed to different extents at different portions of the length of the train, thereby graduating the brake pressure from end to end thereof.

6. In air-brake mechanism, a valve controlling the brake-cylinder exhaust, and movable under full-release pressure, and a spring tending to resist such movement, said valve being provided with a port of graduated width or area, and the valves being arranged to assume different positions at different points in the length of the train in accordance with variations in train-pipe pressure, whereby the braking pressure throughout the train may be gradually increased from full-release position at the rear of the train toward the head of the train.

7. In air-brake mechanism, an auxiliary valve-casing having a port connected to the triple-valve exhaust and having two escape-ports, one leading to the air and the other to a pressure-retaining device, a valve arranged within the casing and movable under full-release pressure to place the brake-cylinder exhaust in communication with the pressure-retaining device, and a spring tending to resist the movement of the valve, said valve having a port tapering in width, so that its effective area will vary with variations in the train-pipe pressure to which said valve is responsive.

8. In air-brake mechanism, an auxiliary casing having a port in communication with the brake-cylinder exhaust and two escape-ports one leading to the outer air and the other to a pressure-retaining device, a valve arranged in said casing and controlling the ports, a piston connected to the valve and exposed on one side to train-pipe pressure, and on the opposite side to auxiliary-reservoir pressure, a check-valve controlling communication between the auxiliary reservoir and the casing, and a spring arranged between the two valves.

9. In air-brake mechanism, the combination with an auxiliary valve-casing having ported communication with the brake-cylinder exhaust and provided with two ports, one leading to the outer air, a pressure-retaining valve with which the second port communicates, a valve arranged in the port which leads to the outer air, said valve being adjustable to open or close the port, a spring-pressed check-valve by which said ports may be placed in communication with each other, a piston arranged within the casing and exposed on one side to train-pipe pressure, and on the other side to auxiliary-reservoir pressure, a valve controlling the ports, and a spring tending to assist the movement of the valve under auxiliary-reservoir pressure.

10. In air-brake mechanism, an auxiliary valve-casing, a valve arranged therein and movable under train-pipe pressure to secure retarded exhaust from the brake-cylinder and under auxiliary-reservoir pressure to secure free exhaust from the brake-cylinder, and springs exerting variable force at different points in the length of the train for assisting movement of the valve to free-exhaust position.

11. In air-brake mechanism, an auxiliary valve-casing having a port connected to the exhaust-port of the triple valve and provided with two ports, one of which leads to the retaining-valve and the other to a valved discharge, the valved discharge being in communication with said retaining-valve, an auxiliary retaining-valve arranged in the connection, a slide-valve controlling the ports, said slide-valve being exposed on one side to train-pipe pressure, and on the opposite side to auxiliary-reservoir pressure.

847,937. INSULATED RAIL-JOINT. GEORGE L. HALL, New York, N. Y., assignor to The National Railway Materials Company, New York, N. Y. Filed Oct. 22, 1906. Serial No. 339,959.

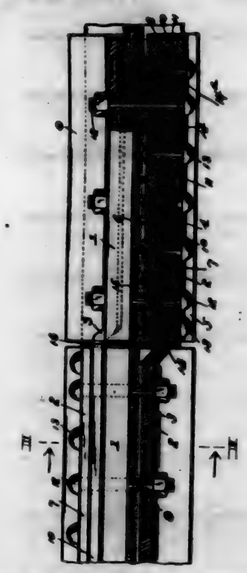

Claim.—1. An insulated rail-joint comprising a pair of splice-bars, each of said splice-bars being formed of a bridge member extending the full length of the splice-bar and forming for a portion of its length a rail-support, and a receiving member formed with a channel to receive a part of the bridge member, means for insulating the receiving member from the bridge member and fastening means connecting the opposed walls of the channel and extending through the inclosed portion of the bridge member, and means for insulating said connecting means from the bridge member.

2. An insulated rail-joint comprising a pair of splice-bars each of said splice-bars consisting of a bridge member and a receiving member, the receiving member being formed with a pocket having opposed side walls and adapted to receive a portion of the bridge member, and insulating material within said pocket to insulate the bridge member from said receiving member.

3. A splice-bar for an insulated rail-joint comprising a bridge member, a receiving member formed with a pocket having opposed walls and adapted to receive a portion of the bridge member, material within said pocket insulating the bridge member from the receiving member, means for rigidly connecting the bridge member and the two walls of the pocket of the receiving member, and means for insulating said connecting means.

4. A splice-bar for an insulated rail-joint comprising a bridge member, a receiving member provided with a pocket having opposed walls and adapted to receive a portion of the bridge member, material within said pocket to insulate the bridge member from the receiving member, means for rigidly and permanently connecting together the bridge member and the receiving member, and means for insulating the connecting means from the bridge member.

5. A splice-bar for an insulated rail-joint comprising a bridge member, a receiving member formed with a channel to receive a portion of the bridge member, means within the channel to insulate the bridge member from the receiving member, rivets passing through the interlocked parts of the bridge member and the two opposed walls of the channel of the receiving member, and means for insulating the rivets, whereby the two members of the splice-bar will be permanently and rigidly connected together and insulated from each other, and the insulated material will be protected and inclosed by the receiving member.

6. A splice-bar for an insulated rail-joint comprising two members and adapted on one side to fit between the base and head of the rails to be connected without electrically connecting said rails, insulating material between said members, said insulating material being surrounded and protected by one of said members, means for rigidly connecting said two members together, said means extending through opposed parts of one of the members, and through the insulation surrounded by said member, and the member inclosed by said insulation and means for insulating said connecting means.

7. A splice-bar for an insulated rail-joint comprising two members and adapted on one side to fit between the base and head of the rails to be connected without electrically connecting said rails, one of said members being formed with a vertical channel open along its upper edge and adapted to receive a portion of the other member, material within said channel insulating said members from each other, means for connecting together the said members, and means for insulating said connecting means, said insulating material being within the said channel, whereby the insulating material will be inclosed and protected by one of said members.

8. A splice-bar for an insulated rail-joint comprising two members, one of said members being formed of two vertical bars, one of which forms a rail-supporting bar, a vertical channel being formed between said bars and adapted to receive a portion of the other member of the splice-bar, material in said channel to insulate said bars from each other, means for rigidly connecting together the interlocked parts of the two members of the splice-bar, and means for insulating said connecting means.

9. A splice-bar for an insulated rail-joint comprising a bridge member and a receiving member, the bridge member for a portion of its length forming a rail-support and the receiving member forming a rail-support throughout its length and adapted to receive a portion of the bridge member, insulating material around the portion of the bridge member within the receiving member, means for rigidly connecting together the receiving member and the bridge member, and means for insulating said connecting means, whereby the two members will be insulated from each other.

10. A splice-bar for an insulated rail-joint comprising a bridge member formed for a portion of its length as a rail-supporting bar and for the remainder of its length as a vertical web, a receiving member formed with a base and two upward-extending longitudinal bars, the inner bar forming a rail-supporting bar and the two bars forming a longitudinal channel to receive the web of the bridge member, insulating material within said channel around the web of the bridge member, rivets extending through said receiving member and the web of the bridge member, insulating material surrounding said rivets, bolt-holes being formed through said receiving member and the inclosed web of the bridge member, and insulating material in said bolt-holes to insulate the bolts from the web.

11. An insulated rail-joint comprising in combination with the meeting end of two rails, a pair of splice-bars each consisting of a bridge member, a receiving member formed with a vertical channel to receive a part of the bridge member, insulating material within said channel and around the inclosed part of the bridge member, rivets extending through the receiving member and the inclosed part of the bridge member, means for insulating said rivets from the bridge member, bolts extending through the splice-bars and the rails, means for insulating said bolts from the inclosed portions of the bridge members, and insulating material interposed between the ends of the rails.

12. A splice-bar for an insulated rail-joint comprising a bridge member formed for a portion of its length as a web, a receiving member formed with a base and an upward-extending rail-supporting bar and a channel to receive the web of the bridge member, insulating material within said channel around the web therein, rivets extending through said receiving member and the web of the bridge member, insulating material surrounding said rivets, whereby the rivets will be insulated from the web and the web from the receiving member.

13. A splice-bar for an insulated rail-joint comprising a bridge member formed for a portion of its length as a web, a receiving member formed with a channel to receive the web of the bridge member, insulating material within said channel around the web therein, fastening means extending through said receiving member and the web of the bridge member, insulating material surrounding said fastening means, whereby the fastening means will be insulated from the web and the web from the receiving member.

14. An insulated rail-joint comprising in combination with the meeting ends of the rails, a pair of splice-bars each consisting of a bridge member formed for a portion of its length as a rail-support, and for the remainder of its length as a web, a receiving member formed with a channel to receive the web of the bridge member, insulating material within said channel around the web therein, fastening means extending through the rails and the splice-bars, and means for insulating said fastening means from the webs within the receiving members.

15. A splice-bar for an insulated rail-joint comprising a bridge member, a receiving member formed with a channel having opposite walls and adapted to receive a portion of the bridge member, insulating material within said channel around the bridge member therein and completely filling said channel, said insulation being in air-tight and moisture-proof contact with the receiving member and the bridge member and rigid fastening means permanently united with the opposed walls of the receiving member and extending through the bridge member, insulating material surrounding said fastening means and insulating said means from the bridge member, said fastening means and said insulation being hermetically sealed within the splice-bar.

16. A splice-bar for an insulated rail-joint comprising two members, one of said members extending the full length of the rail-joint and formed for a portion of its length as a rail-supporting bar, and the other member being half the length of the long member and forming a rail-supporting bar for its entire length, one of said members being provided with a web and the other with a channel to receive said web, insulation in said channel and surrounding said web whereby the two members are insulated from each other, fastening means extending through the opposed walls of the channel and through the inclosed web, and insulation surrounding said fastening means and insulating said fastening means from the web.

847,938. INDICATING AND LOCKING DEVICE FOR CHANGE-GEAR MECHANISM. BENGT M. W. HANSON, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Filed July 11, 1906. Serial No. 325,607.

Claim.—1. In change-gear mechanism, the combination, with variable-speed gearing, of a pinion adapted to be engaged with any member of said gearing; means for shifting said pinion; and a series of pins or projections each marked to indicate the number of teeth in the change-gear with which it coöperates; and means coöperating with the pins for locking the shiftable pinion after it has been engaged with the selected gear.

2. The combination, with variable-speed mechanism and

with an idler adapted to be engaged with any member of said mechanism, of means for rotating the idler; means for shifting said idler; a series of pins each having an indicating-mark; and a device carried by the frame of the shiftable idler, and coöperating with said pins to lock the parts when the idler is moved into engagement with a selected gear.

3. The combination, with a gear-cone, of a driving-pinion; a shiftable idler actuated by said pinion; a series of pins, each marked to indicate the number of teeth of the gear element with which it coöperates; and means carried by the frame of the idler, and adapted to secure said frame when shifted to the point selected.

4. Variable-speed mechanism comprising, a rotary shaft, a series of gears of different diameters rigid therewith; a series of pins located opposite said gears, one pin for each gear, and each pin having a mark to indicate the number of teeth in the gearing with which it coöperates; a shiftable frame; an idler journaled in said frame; and means for locking said frame to any of the pins.

5. Speed mechanism, comprising a gear-cone; a series of pins coöperating with said gear-cone, and each pin having a mark to indicate the number of teeth in the element of said gear-cone with which it coacts; a driving-pinion; a frame shiftable along and movable over said driving-pinion; an idler carried by the frame, and means also carried by the frame, and adapted to engage any of said series of pins.

6. In speed mechanism, the combination, with a frame, of a series of separated pins carried by the frame in which said mechanism is mounted, each pin having a numeral thereon to indicate the number of teeth in the elements of the speed mechanism with which the pins coöperate.

7. The combination, with a gear-box, and with a shaft journaled therein; of a gear-cone; a driven pinion also journaled in the gear-box; an idler in engagement with said driven pinion; means for shifting the idler to cause it to engage any element of the gear-cone; a series of pins, each having a mark to indicate the number of teeth in the element of the gear-cone with which it coöperates; means for engaging the pins, and thus locking the idler.

8. The combination, with framework, and with a series of separated pins, each bearing an indicating-mark, rigid with said frame, of variable-speed gearing; a shiftable idler adapted to engage any element of said variable-speed gearing; means for engaging any of the pins, and thus locking the idler when shifted; and means for driving the idler.

9. The combination, with a shiftable idler, of a device carrying said idler, and having a notched bearing; a spring-actuated plunger in said bearing, said plunger having a seat; a series of pins with any of which the seat of the plunger may be made to engage; and variable-speed gearing coöperating with the idler.

10. The combination, with a lever-arm comprising a bearing, of a driven pinion over which said arm is shiftable; a spring-actuated plunger in said bearing; the head of said plunger having a seat; an idler-gear carried by the lever-arm, and driven by said pinion; variable-speed gearing with any member of which the idler may be engaged; and a series of pins equal in number to the elements of the variable-speed gearing, and each being marked to indicate the number of teeth in the various members of said gears with any of which said idler may be shifted to engage.

847,939. COMBINED PULL AND KEY SOCKET. JOHN H. HANSON, Chicago, Ill. Filed July 16, 1906. Serial No. 326,330.

Claim.—1. In a combined pull and key socket, the combination of a contact-head, an actuating-shaft for said contact-head, a finger-key upon said shaft, a clutch member operatively associated with the contact-head to move the latter, an actuating clutch member rotatable and axially movable on the shaft, and a cord connected directly with said actuating clutch member and arranged when pulled to rotate said clutch member.

2. In a device of the character described, a base, a transverse shaft, a contact-head mounted for rotation with the shaft, a sleeve integral with said contact-head, a clutch member carried by said sleeve, an operating coacting clutch member, mounted on said shaft, and a spring 28 surrounding the shaft secured to said operating clutch member, and a pull-cord secured to said operating clutch member.

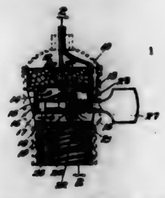

3. In a device of the character described, the combination of an insulating-base, frame members thereon, a transverse shaft mounted in said frame members, an oblong contact-head having its longer sides flat carried by said transverse shaft, a sleeve integral with said contact-head, a clutch member integral with said sleeve, a coacting clutch member, a cord secured to said coacting clutch member to actuate the same, a spring for effecting the return movements of the actuating clutch member, a spring 24 constantly coacting with the contact-head and a lamp-contact wherewith said head coacts only when turned to disengage spring 24 from its longer flat side.

4. In a lamp-socket, a socket-shell having therein a cord-guiding aperture, within the shell a contact-head, an actuating-shaft having lost-motion connection with said head, a conducting-spring constantly coacting with the contact-head to snap it to and hold it in predetermined positions, a lamp-contact wherewith said head coacts when in alternate positions, a clutch member associated for rotation with the contact-head, a coacting clutch member loose on the actuating-shaft, a spring normally holding the loose clutch member in engagement with the first said clutch member and in definite position of rotary movement, and a cord connected to the loose clutch member and arranged to rotate said member in direction to move the opposing clutch member when pulled, said cord extending at substantial right angles to the actuating-shaft through the aperture in the shell, whereby a pull upon said cord in any direction with respect to the shell functionally operates the parts to advance the contact-head to the next position.

847,940. SEWING-MACHINE. ALBERT J. HARTWICH, New York, N. Y., assignor of one-half to Leon Greenberg, New York, N. Y. Filed Dec. 1, 1905. Serial No. 289,865.

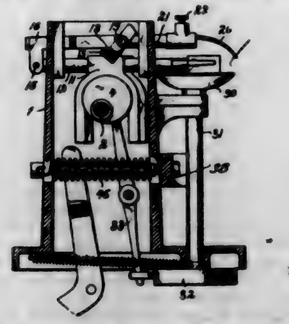

Claim.—1. In a sewing-machine, the combination of a main frame, a main shaft, a sliding operating-bar, a reciprocating looper-arm frame pivotally mounted to vibrate upon the bar, means for reciprocating the bar from the main shaft, a looper-arm shaft carried by the looper-arm frame, means actuated by the main shaft for oscillating said looper-arm shaft, and a transverse rock-shaft having its ends arranged below the plane of the looper-arm frame and journaled on the main frame and provided with an intermediate bend or crank projecting upwardly above and over the looper-arm frame, whereby said frame extends through the crank, the side portions of the bend or crank being pivotally connected to the sides of the looper-arm frame, whereby the said looper-arm frame as it reciprocates will directly rock said shaft and be vibrated thereby on its pivotal connection.

2. In a sewing-machine, the combination of a main frame, a pair of feeding-disks, one movable toward and from the other, a rod carrying said movable disk and extending below the same, a pair of sliding rods carried by the frame and coupled to the first-named rod, said sliding rods having projecting pins, a pivoted yoke engaging said pins and adapted to be operated to communicate forward movement to the rods, and a retracting-spring disposed between the pair of rods and operatively connected at one end therewith and at the other end to the main frame.

847,941. PNEUMATIC BUFFER. MELVILLE P. HAYWARD, Quincy, Mass. Filed Feb. 13, 1906. Serial No. 300,920.

Claim.—A buffer of the class described comprising a tubular sleeve, a tubular piston fitted telescopically therein for relative sliding movement, an inner barrel fixed in the cylinder and having a head forming a partition between the cylinder and piston, said barrel and cylinder being partly filled with liquid at one side of the partition and the piston being adapted to receive a fluid under pressure, a plunger-rod extended through the partition and connected with the piston and a plunger-head carried by the rod for movement through the liquid contained in the barrel.

847,942. MEDICINE-SPOON. GEORGE C. HOHEIN, Norfolk, Va. Filed Jan. 20, 1906. Serial No. 297,071.

Claim.—1. An attachment for a spoon embodying a bowl-shaped cover or lid having the point or end thereof notched to form an outlet or discharge orifice, and an attaching strap or band of soft metal having pivotal connection with the inner end of said cover and adapted to be bent around the handle of an ordinary spoon.

2. An attachment for a spoon embodying a cover or lid, and an attaching strap or band of soft metal having pivotal connection with the cover or lid and adapted to be bent around the handle of an ordinary spoon.

3. An attachment for spoons comprising a cover or lid, a soft-metal band or strap having said cover pivotally connected thereto, said attaching device being adapted to embrace the handle of a spoon to hold the cover connected therewith, a tongue on said cover, and a spring carried by the attaching device with which said tongue engages.

4. An attachment for spoons comprising a cover or lid, and an attaching device therefor consisting of a soft-metal strap adapted to be bent around the handle of the spoon, the cover being pivotally connected to said attaching device and the bowl being provided with a blower-hole.

847,943. DISPLAY-STAND. ADAM P. HOLLINGER, Lebanon, Pa. Filed May 7, 1906. Serial No. 315,586.

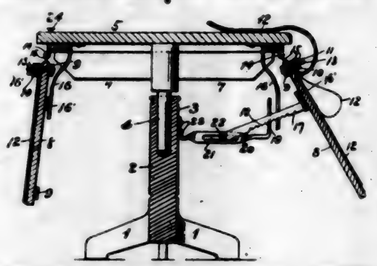

Claim.—1. A display-stand comprising a revoluble top having a plurality of sides, a plurality of laterally-swinging leaves detachably connected to the top adjacent to said sides and provided with a transverse clamping-bar for securing articles thereto, and means secured to the pedestal and common to all of said leaves for projecting and supporting the leaves and the articles at an angle to the perpendicular as they are rotated in position opposite said means.

2. A display-stand comprising a revoluble top having a plurality of sides, a plurality of laterally-swinging leaves detachably secured to the under side of the top adjacent to said sides by hooks and eyebolts and provided with a transverse clamping-bar and bolts extending through the leaves at the upper end for securing articles thereto, means secured to the pedestal and common to all of said leaves for projecting and supporting the leaves and the articles at an angle to the perpendicular as they are rotated in position opposite said means, and projections on the upper side of the top adjacent to and between the ends of said sides for suspending articles over said leaves and the articles secured thereto.

847,944. PRESSURE-REDUCING VALVE. JOSEF HÜBNER and ISIDOR MAYER, Vienna, Austria-Hungary. Filed Feb. 19, 1906. Serial No. 301,917.

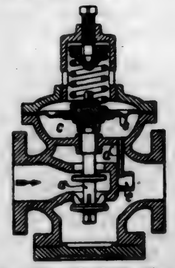

Claim.—1. A pressure-reducing valve having a loaded throttling element provided with a fluid-pressure-actuated element, a suction-chamber in which said fluid-pressure-actuated element operates, a high-pressure chamber, a

low-pressure chamber communicating therewith, and a suction-duct leading from the suction-chamber to the low-pressure chamber, for the purpose set forth.

2. A pressure-reducing valve having a loaded throttling element provided with a fluid-pressure-actuated element, a suction-chamber in which said fluid-pressure-actuated element operates, a high-pressure chamber, a low-pressure chamber communicating therewith, a suction-duct leading from the suction-chamber and a suction-nozzle forming the discharge end of said duct and discharging into the low-pressure chamber, for the purpose set forth.

847,945. MEANS FOR CONVERTING MOTION. GEORGE W. ILETT, Chicago, Ill. Filed Dec. 26, 1905. Serial No. 293,821.

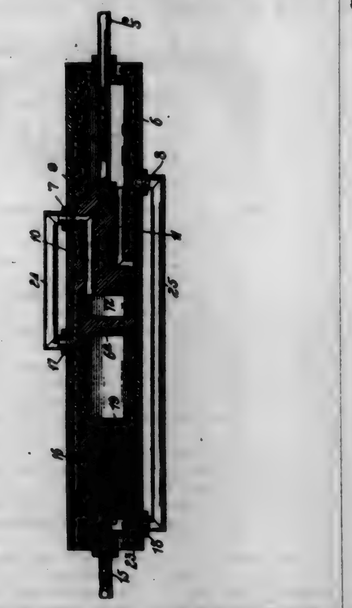

Claim.—1. In a device of the character described, the combination of a pressure-varying unit comprising a cylinder having compression-spaces, and a plurality of ports, a correspondingly-ported piston therein controlling the communication of the cylinder-ports with the compression-spaces, and means for moving said piston; of a fluid-pressure-utilizing unit, comprising a cylinder having ports, a piston therein, and a part extending to the exterior of the cylinder associated with the piston for movement therewith; and suitable connections for transmitting fluid-pressure, connecting the ports of the cylinders of the two said units.

2. In a device of the character described, a cylinder, a piston therein, means for reciprocating said piston, a second cylinder, a piston therein, and valveless passages for communication between the two said cylinders, controlled directly by the piston in the first said cylinder.

3. In a device of the character described, two cylinders, each having two ports therein, two open connections, each between two ports, which are respectively on opposite cylinders, a piston in one of said cylinders provided with conduits arranged, when said piston is at either end of its stroke to open communication between one port and the portion of the cylinder on one side of the piston and between the other port and the portion of the cylinder on the opposite side of the piston, means for moving said piston; in the other cylinder a piston arranged for reciprocation between the ports of said cylinder, and a working part extending to the exterior of the last said cylinder connected with the piston for movement therewith.

4. In a device of the character described, a cylinder 6 provided with ports 7 and 8, a piston 9 in said cylinder, provided with conduits 10 and 11 opening to opposite ends of the piston, and arranged each to communicate with one of the said ports 7 and 8, one when the piston is at one end of its stroke and the other when the piston is at the other end of its stroke, a piston-rod 5 connected with the piston 9; a cylinder 16 having adjacent its ends ports 17 and 18, a solid piston 19 arranged therein, a piston-rod 15 connected therewith, and connections 24 and 25 establishing communication between the two pairs of ports, whereof the ports of each pair are in opposite cylinders.

847,946. ROTARY AIR OR FLUID COMPRESSOR. CHARLES A. KAISER, Astoria, N. Y., assignor of one-third to Leo Flatow, New York, N. Y. Filed Feb. 10, 1905. Serial No. 245,157.

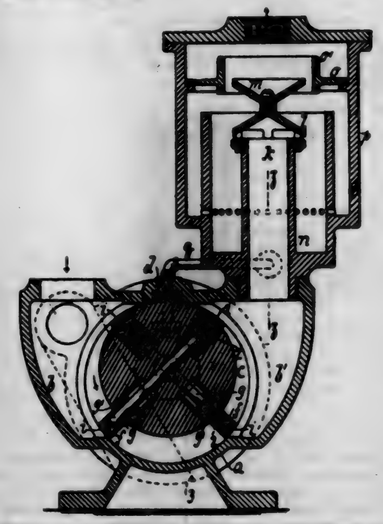

Claim.—1. A blower or compressor comprising a fixed cylinder with inlet and outlet portions, a packing between said inlet and outlet, an eccentrically-mounted rotary cylinder in permanent contact with the packing, diametrically-movable pistons in the rotary cylinder, and connecting-rods for the pistons, the latter being provided with adjusting-screws to set the same for maintaining permanent contact with the fixed cylinder during rotation the pistons having openings giving access to the screws without dismounting the parts.

2. A blower comprising a cylinder, a rotary drum with pistons, packings seated in the pistons and made to bear against the cylinder, connecting-rods extended into the pistons, and screws in the pistons and wedges adapted to be forced by the screws against the rods to spread or move the pistons away from one another.

3. A blower comprising a cylinder, a rotary drum in the cylinder, pistons in the drum, connecting-rods made to terminate in the pistons, wedges in the pistons, and screws for forcing the wedges against the ends of the rods in the pistons to slide or spread the latter on the rods.

4. A blower comprising a cylinder, a rotary drum in the cylinder, pistons in the drum, rods on which the pistons are adjustably mounted, screws in the pistons made to sit against one end of the rods and adjusting wedges and screws in the pistons for engaging the other ends of the rods, said pistons having openings giving access to the screws, and the cylinder having a tool-hole for allowing access to the pistons.

5. A blower comprising a cylinder, a rotary drum with oppositely-located sliding pistons, rods extended into and made to rigidly abut against both pistons to reciprocate simultaneously with the same during the operation of the device, adjusting-screws made to sit rigidly against one end of the rods, and adjusting wedges and screws for acting against the other ends of the rods, said rods being smooth or unthreaded so as to be capable of being set or adjusted in the pistons by the adjusting screws and wedges.

847,947. APPARATUS FOR REMOVING DUST. DAVID T. KENNEY, North Plainfield, N. J., assignor to Vacuum Cleaner Company, North Plainfield, N. J., a Corporation of New Jersey. Filed Nov. 29, 1901. Serial No. 84,058.

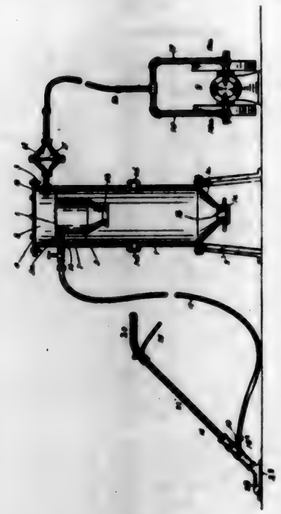

Claim.—1. In a suction-cleaning apparatus, the combination of a suction-nozzle adapted to be moved over the surface to which it is applied for cleaning and having a narrow inlet-slot, a suction-creating device capable of maintaining a sufficient vacuum, and impurities-collecting means between the nozzle and the suction-creating device and suitably connected therewith for removing the impurities from the air, substantially as described.

2. In an apparatus for removing dust or dirt, the combination of a suction-creating device capable of maintaining a sufficient vacuum, an inlet head or shoe having an unobstructed elongated slot and so constructed that the edges of the slot may be brought into contact with the surface of the object to be cleaned, and a separator intermediate of and suitably connected with the suction-creating device and the inlet head or shoe for removing the dust from the air, substantially as described.

3. In a suction-cleaning apparatus, the combination of a suction-nozzle adapted to be moved over the surface to which it is applied for cleaning and having a narrow inlet-slot, a power-operated suction-pump, and impurity-collecting means between said nozzle and pump adapted to remove the impurities from the air and prevent fouling the pump while permitting the working vacuum to be maintained at the nozzle, substantially as described.

4. A cleaner comprising a suction-chamber, provided with a narrow inlet-slot, the slot being bounded and defined by lips which lie in the contact-surface of the cleaner, with the outward mouth of the slot lying in the plane of this contact-surface, substantially as described.

847,948. APPARATUS FOR REMOVING DUST. DAVID T. KENNEY, North Plainfield, N. J., assignor to Vacuum Cleaner Company, North Plainfield, N. J., a Corporation of New Jersey. Filed Mar. 16, 1903. Serial No. 147,968.

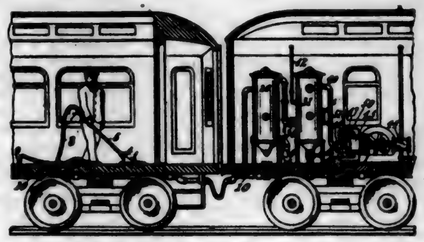

Claim.—In a suction cleaning apparatus, the combination of a suction-nozzle adapted to be moved over the surface to which it is applied for cleaning and having a narrow inlet-slot, a power-operated suction-pump, and impurity-collecting means between said nozzle and pump adapted to remove the impurities from the air and prevent fouling the pump while permitting the working vacuum to be maintained at the nozzle, said impurity-collecting means including a dry collecting device through which the air passes from the suction-nozzle and a liquid-separator between said device and the vacuum-pump, substantially as described.

847,949. WINDMILL. ALVA W. KETCH, Orlando, Okla. Filed Aug. 4, 1905. Serial No. 272,677.

Claim.—1. In a windmill, the combination with a turn-table, of a pivotally-shiftable vane carried thereby, a tensioned dog carried by the turn-table and located in the path of the vane for holding the latter when shifted, and means to release the dog.

2. In a windmill, the combination with a turn-table including a tubular stem, of a pivotally-shiftable vane carried by the turn-table, a tensioned dog carried by the turn-table for engagement by the vane to hold the latter when shifted, and a flexible connection engaged with the dog for releasing the same and extending downwardly through the tubular stem.

3. In a windmill, the combination with a turn-table, of a pivotally-shiftable vane carried thereby, a series of tensioned dogs carried by the turn-table and in the path of the vane to hold the latter in different shifted positions, guides carried by the turn-table, and a flexible dog-releasing connection having branches engaging the respective guides and connected to the respective dogs.

4. In a windmill, the combination with a turn-table having a laterally-offset rear extension, of a vane pivoted to the turn-table at one side of the extension, said extension constituting a stop to limit the swinging movement of the vane in one direction, a bar extending between the turn-table and the extension thereof and provided with a series of openings, tensioned dogs mounted in the openings and disposed in the path of a portion of the vane to lock the latter in different shifted positions, guides hung from the bar beneath the openings therein, and a dog-releasing element having flexible branches engaging the respective guides and connected to the respective dogs.

5. In a windmill the combination with a turn-table, of a wind-wheel mounted thereon and provided with a brake-rim, a shiftable vane carried by the turn-table, a brake-lever fulcrumed upon the turn-table, and having a brake-shoe coöperative with the brake-rim of the wheel, a trip-lever having one end overlapping the brake-lever and its other end located in the path of the vane for actuation thereby, a spring located between the overlapping ends of the lever and means for limiting the movement of the levers from each other.

6. In a windmill the combination with a turn-table, of a wind-wheel mounted thereon and provided with a brake-rim, a shiftable vane carried by the turn-table, a brake-lever fulcrumed upon the turn-table, and having a brake-shoe coöperative with the brake-rim of the wheel, a trip-lever having one end overlapping the brake-lever and its other end located in the path of the vane for actuation thereby, a yieldable element disposed between the overlapping ends of the levers, and means embracing said ends of the levers for limiting their movement from each other.

7. In a windmill, the combination of a wind-wheel having a drive-shaft, a rotary member driven by the shaft, a wrist-pin upon the rotary member, a longitudinally-slotted lever receiving the wrist-pin in its slot, a swinging post having the lever fulcrumed thereon, and a pump-rod connected to the lever.

8. In a windmill, the combination with a turn-table having a tubular stem, of a wind-wheel mounted upon the turn-table, a rotatable element carried by the turn-table and driven by the wheel, a wrist-pin upon the rotatable element, an upstanding post pivoted upon the turn-table to swing in a plane in substantial parallelism with the rotatable element, a vertically-swinging lever fulcrumed intermediate of its ends upon the post and engaged by the wrist-pin, and a pump-rod working through the tubular stem and connected to the lever.

9. In a windmill, the combination with a turn-table having a tubular-stem, of a wind-wheel mounted upon the turn-table and provided with a brake-band, a drive-shaft for the wheel, a pinion upon the shaft, a bracket carried by the turn-table and projected at one side of the shaft, a gear mounted upon the bracket and in mesh with the pinion, a brake-lever fulcrumed upon the turn-table with its rear portion disposed at the other side of the pinion, a brake-shoe carried by the lever, an upstanding swinging post mounted upon the turn-table, a lever fulcrumed intermediate of its ends upon the post, a wrist-pin carried by the gear and slidably engaging the lever, a rod working through the tubular stem and connected to the lever, a pivotally-shiftable vane carried by the turn-table, means to hold the vane when shifted, and a trip-lever connected to the brake-lever having its rear end portion disposed in the shiftable path of the vane to apply the brake when the vane is shifted.

10. In a windmill, the combination with a turn-table, of a wind-wheel mounted thereon and provided with a brake-rim, a vane having its arms pivoted one below and the other above said table and to the same, a brake-lever fulcrumed upon the said turn-table adjacent one of its ends, a brake-shoe carried by said lever and arranged for engagement with the said brake-rim, the other end of said brake-lever being provided with a vertical opening, a trip-lever fulcrumed to said frame and having one of its ends underlying the last-named end of the said brake-lever, the said end of the trip-lever being provided with an opening registering with the opening in the end of the brake-lever, a link loosely embracing the said ends of the levers and provided with an intermediate stem portion, a helical spring surrounding said stem portion and disposed between the said ends of said levers, the other end of said trip-lever being located in the path of the upper arm of said vane for actuation thereby to move the said brake-shoe in contact with the said brake-rim.

847,950. APPARATUS FOR SHIFTING CARS. FRANK I. KIMBALL, Herminie, Pa. Filed Sept. 20, 1906. Serial No. 335,449.

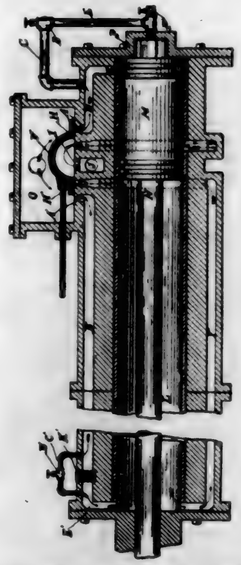

Claim.—1. The combination with a cylinder, piston, steam-chest and valve therein, said steam-chest having an orifice, and independent live and exhaust steam ports extending from opposite ends of the cylinder to the orifices in the steam-chest, said live-steam ports each having by-passes, each by-pass having a valve therein and a valve to permit the steam cushioning medium in the end of the cylinder to slowly escape.

2. The combination with a cylinder, piston, steam-chest and valve therein, said steam-chest having orifices, and independent live and exhaust steam ports extending from opposite ends of the cylinder to the orifices in the steam-chest one of the exhaust-ports leading from the extreme end of the cylinder and the other leading from the cylinder at a point an appreciable distance from the end of the cylinder, and a valve for bleeding this end of the cylinder of means within the control of the operator independent of the main slide-valve for controlling the amount of live steam discharging into the ends of the cylinder.

3. The combination with a cylinder, piston, steam-chest and valve, of live-steam ports leading from the steam-chest to the opposite ends of the cylinder and independent exhaust-ports leading from opposite ends of the cylinder to the steam-chest, one exhaust-port located at the extreme end of the cylinder and the other an appreciable distance from the end of the cylinder and the piston being of greater length than the distance between this latter exhaust-port and the end of the cylinder whereby the exhaust is closed by the piston in order to trap steam into the end of the cylinder to form a cushion.

4. The combination with a cylinder, piston, steam-chest, valve, live and exhaust ports, of a by-pass, discharging into the extreme end of the cylinder, a regulating-valve therein and a valve to permit the steam cushioning medium in the end of the cylinder to slowly escape.

847,951. BUGGY-TOP-PROP ATTACHMENT. GOLLADAY LAKE, Memphis, Tenn., assignor to H. B. Barber, Grenada, Miss. Filed Feb. 10, 1906. Serial No. 300,439.

Claim.—1. The combination with the top-prop of a buggy or other vehicle, of a sleeve mounted on said prop, the inner surface of said sleeve provided with cogs or teeth engaging said top-prop, and a curved spring secured at one end to said sleeve and projecting into the path of the top-bows and forming a resilient support for said bows.

2. The combination with the top-prop of a buggy or other vehicle, of a sleeve mounted on said prop, said sleeve having on its inner face a series of longitudinal cogs or teeth engaging said top-prop, and a curved spring secured at one end to said sleeve and extending around and to the rear of said sleeve, the free end of said spring being forked, the forks having slots therein to receive a strap, and means for clamping the sleeve to the top-prop.

3. A top-support for buggies or other vehicles, consisting of a sleeve adapted to be slipped over the top-prop stud, said sleeve having its inner surface provided with a series of longitudinal cogs or teeth, a curved spring secured at one end to the sleeve and extending around and to the rear of the sleeve, the free end of said springs adapted to receive and support resiliently the bows of a buggy-top.

4. A top-support for buggies or other vehicles, consisting of a sleeve adapted to be slipped over the top-prop stud, said sleeve having a transverse groove in its outer surface and a socket at the end of said groove, a curved spring fitted in said groove and having a bent end seated in said socket, said spring extending around and to the rear of the sleeve, and means for detachably securing said sleeve to the said top-prop stud.

847,952. SHUTTLE-MOTION FOR LOOMS. OTTO LAMWERS, Paterson, N. J. Filed July 15, 1905. Serial No. 269,830.

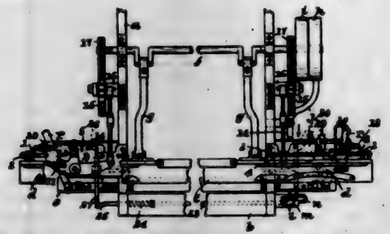

Claim.—1. The combination of the frame, the batten, means for reciprocating the batten, a picker movable longitudinally of the batten, means for actuating the picker having a running engagement therewith in a direction transverse of the batten, and supporting means, detached from the frame, for sustaining said picker-actuating means, substantially as described.

2. The combination of the frame, the batten, the shuttle, elastic means for throwing the shuttle, means for holding said shuttle-throwing means under tension, a lever movable in one direction to set said shuttle-throwing means in engagement with its holding means and in the other direction to release said shuttle-throwing means from the holding means, and means, comprising a going part, for vibrating said lever, substantially as described.

3. The combination of the frame, the batten, the shuttle, a picker-stick, a spring normally drawing the picker-stick inwardly, means for holding the picker-stick with the spring under tension, a lever movable in one direction to set said picker-stick in engagement with its holding means and in the other direction to release said picker-stick from the holding means, and means, comprising a going part, for vibrating said lever, substantially as described.

4. The combination of a frame, a batten, a shuttle, a picker-stick, a spring normally drawing the picker-stick inwardly, means for holding the picker-stick with the spring under tension, a lever movable in one direction to bring one portion thereof into engagement with and set said picker-stick in engagement with its holding means and in the other direction to bring another portion thereof into approximate, but not actual, contact with said picker-stick, a finger interposable between said picker-stick and said last-named portion of the lever and adapted, when interposed, to transmit the action of the lever to the picker-stick and release the latter from its holding means, and means for vibrating the lever, substantially as described.

5. The combination of the frame, the batten, the shuttle, a picker-stick, a spring normally drawing the picker-stick inwardly, means for holding the picker-stick with the spring under tension, a lever movable in one direction to bring one portion thereof into engagement with and set said picker-stick into engagement with its holding means and in the other direction to bring another portion thereof into approximate, but not actual, contact with said picker-stick, a finger interposable between said picker-stick and said last-named portion of the lever and adapted, when interposed, to transmit the action of the lever to the picker-stick and release the latter from its holding means, means for normally holding said finger out of interposition with respect to the picker-stick and said last-named portion of the lever and a controller-lever, said controller-lever being adapted to actuate said last-named means and thereby interpose said finger, substantially as described.

6. The combination of the frame, the batten, the shuttle, means for actuating the batten and the shuttle, the controller-lever, and means, controlled by said controller-lever, for rendering that portion of the said means which actuates the shuttle inoperative at will, substantially as described.

7. The combination of the frame, the batten, the shuttle, means for actuating the batten and the shuttle, means for rendering that portion of the said means which actuates the shuttle inoperative, and means for securing said last-named means in position to leave said portion operative, substantially as described.

847,953. GUN-SIGHT. ALFRED G. LA RIVIERE, Chicopee Falls, Mass., assignor to J. Stevens Arms and Tool Company, Chicopee Falls, Mass., a Corporation. Filed Jan. 20, 1906. Serial No. 297,033.

Claim.—1. A rear sight constructed from a cross-shaped blank, the wing portions thereof folded to form a supporting-base for the same, said base being substantially rectangular in shape, the opposite end of the blank in which the sight is located being folded at right angles to the body portion of the blank.

2. In a rear sight for firearms, a supporting-base there-

for formed by bending inward toward each other the wing portions of a cross-shaped blank, the supporting-base being substantially rectangular in cross-section, the opposite end of the blank being bent at right angles to the body portion of the same for receiving the sight proper.

847,954. SLEIGH. HERBERT A. LE BARON, Bidlonville, Me. Filed Jan. 31, 1906. Serial No. 298,888.

Claim.—A sleigh comprising runners, a cross-bar, plates secured to said cross-bar, and concaved on the under side, knees having top bars engaging in the concaves, clips extended from the plates around the lower portions of the said top bars, whereby the cross-bar may swing on the knees, braces extended from said top bars to the runners, metal blocks on the runners, with which the lower portions of the knees engage, and straps secured to the runners, the said straps passing over the blocks and over the lower portions of the knees.

847,955. SNATCH-BLOCK. JOHN N. LINDSAY, Fall Creek, Oreg. Filed Jan. 28, 1907. Serial No. 354,528.

Claim.—1. A snatch-block comprising two jaws or shells, a sheave or pulley disposed therebetween, and a shaft-pin for supporting the sheave and having threaded engagement, at each end, with the two shells.

2. A snatch-block comprising two jaws or shells, a sheave or pulley disposed therebetween, a shaft-pin for supporting the sheave and having threaded engagement, at each end, with the two shells, and a detachable bushing or collar keyed to the shaft-pin.

3. A snatch-block comprising two jaws or shells, a sheave or pulley disposed therebetween, a shaft-pin for supporting the sheave and having threaded engagement, at each end, with the two shells, a hollow spacing-collar disposed between the lower ends of the shells, and a pin passing through the collar and the two shells and having threaded engagement with one of the shells.

4. A snatch-block comprising two jaws or shells, the upper half of the front jaw being hinged so as to swing downward and forward, a shaft-pin for supporting the sheave and having threaded engagement, at each end, with the two jaws, a swinging cross-head for the jaws, provided with a side groove, and a spring-latch secured at one end to the front jaw and adapted to automatically engage the groove in the cross-head to lock the hinged jaw.

847,956. CAR-DOOR-SHAFT-OPERATING MECHANISM. CHARLES A. LINDSTRÖM, Allegheny, and JOHN F. STREIB, Avalon, Pa., assignors to Pressed Steel Car Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Oct. 5, 1906. Serial No. 337,530.

Claim.—1. In car-door-operating mechanism a creeping shaft, a lever, and a pawl-and-ratchet device operated by the lever and geared to the creeping shaft; substantially as described.

2. In car-door-operating mechanism, a creeping shaft, a gear-wheel thereon, a stub-shaft arranged to move with the creeping shaft, a pinion on the stub-shaft engaging the gear-wheel, an actuating-lever, and a pawl-and-ratchet mechanism operated by the lever for rotating the stub-shaft and pinion; substantially as described.

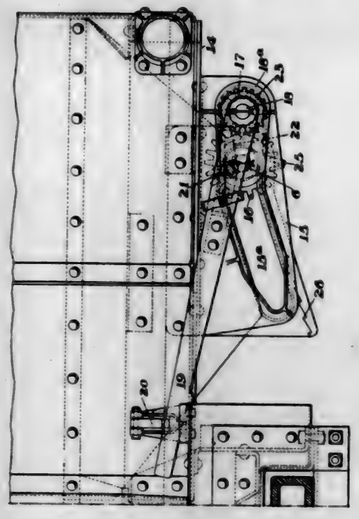

3. In car-door-operating mechanism, a creeping shaft having door-supporting means, a gear-wheel on the shaft, a stub-shaft mounted to move with the creeping shaft, a pinion on the stub-shaft meshing with the gear-wheel, an actuating-lever, and a pawl-and-ratchet device operated by said lever for rotating the pinion; substantially as described.

4. In car-door-operating mechanism, a creeping shaft, a slotted bracket in which said shaft is mounted at one end, a stub-shaft, bearings for said shafts arranged to move in the slot of the bracket, intermeshing gearing on said shafts, and lever-operated means for actuating the gearing; substantially as described.

5. In car-door-operating mechanism, a creeping shaft, a stub-shaft mounted to move with the creeping shaft and geared thereto, an actuating-lever fulcrumed to the stub-shaft, and pawl-and-ratchet means operated by the lever for rotating the stub-shaft and gearing; substantially as described.

6. In car-door-operating mechanism, a creeping shaft, a stub-shaft mounted to move with the creeping shaft and geared thereto, a slotted bracket in which said shafts are mounted to move, said bracket having teeth thereon, a pawl carried by the creeping shaft and arranged to engage in said teeth, and means for actuating said shafts; substantially as described.

7. In car-door-operating mechanism, a creeping shaft, a slotted bracket in which said shaft is mounted to move, a stub-shaft also mounted to move in the slot of the bracket, and geared to the creeping shaft, lever mechanism for moving the creeping shaft, and means for locking the creeping shaft at different positions; substantially as described.

8. In car-door-operating mechanism, a creeping shaft, a slotted bracket in which the shaft is mounted, an actuating-lever fulcrumed eccentrically of said shaft, intermediate gear between the lever and the shaft arranged to move with said shaft, and means for locking the creeping shaft at different positions; substantially as described.

847,957. PAPER-BAG MACHINE. WILLIAM A. LORENZ, Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Sept. 29, 1900. Serial No. 31,487.

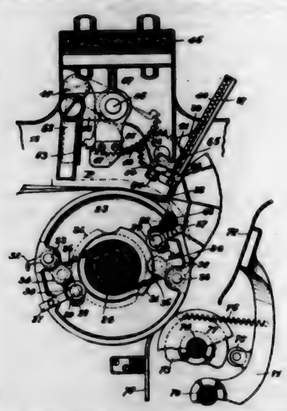

Claim.—1. The combination with a blank-support, of a supporting-guide mounted on a fixed axis adjacent to the blank-support, a blank-folding member mounted for sliding movement in the said guide, means independent of the blank-support for swinging the guide and sliding the blank-folding member in the guide in coactive relation to the blank-support, and means coacting with the blank-folding member to cause the upper ply of the blank to turn therewith.

2. The combination with a blank-support, of a supporting-guide mounted to swing on a fixed axis adjacent to the blank-support, a blank-folding member having a defining edge and mounted for sliding movement in the said guide, means independent of the blank-support for swinging the guide and sliding the blank-folding member in the guide to carry the said defining edge in coactive relation to the blank-support, and means, coacting with the blank-folding member, to cause the upper ply of the blank to turn therewith.

3. The combination with a blank-support, of a blank-folding member, provided with means for turning back the upper ply of a blank carried by the support, a guide mounted to swing on a fixed axis and supporting the said folding member for sliding movement, and means including toothed gearing concentric with the said axis for swinging the guide and for sliding the folding member in the guide.

4. The combination with a rotary blank-carrier, having tuck-holders coöperative therewith, of a slidable reciprocatory blank-folding member, box-holders coöperative therewith, means independent of the blank-support for oscillating the blank-folding member during its operating movement, and means for opening and closing the box-holders to grip and release the blank.

5. The combination with a rotary blank-support having tuck-holders coöperative therewith, of a blank-folding member mounted for sliding and oscillatory movements relative to a fixed axis and including box-holders, means including toothed gearing mounted eccentric with the said axis for effecting the said sliding and oscillatory movements, and means for opening and closing the box-holders to grip and release the blank.

6. The combination with a traveling blank-support, of a blank-folding member provided with means for turning back the upper ply of the blank, a guide mounted for swinging movement and supporting the said folding member for sliding movement, means for swinging the guide, and means including toothed gearing for sliding the folding member in the guide.

7. The combination of a traveling blank-support, of a blank-folding member provided with means for turning back the upper ply of a blank carried on the said support, a guide mounted for turning movement and supporting the said folding member for sliding movement, means for swinging the guide, and means including a gear mounted in substantially concentric relation with the axis of the swinging guide for sliding the folding member in coactive relation to the blank-support.

8. The combination with a traveling blank-support, of a blank-folding member having means, including a defining edge, for turning back the upper ply of a blank carried by the said support, a guide mounted for oscillation and supporting the folding member for sliding movement, means for oscillating the guide, gear-teeth appurtenant to the folding member, a driving-gear meshing with said teeth and mounted to turn in concentric relation to the axis of oscillation of the guide, and means for moving the said gearing to carry the said folding member in coactive relation with the blank-support.

9. The combination with a traveling blank-support, of a blank-folding plate, having means, including a defining edge, for turning back the upper ply of a blank carried by the said support, a guide mounted for oscillation and supporting the said folding-plate for sliding movement, toothed gearing for swinging the said guide including a gear mounted in concentric relation to the said guide, and means for sliding the folding member in the guide, including gear-teeth appurtenant to the said plate, and including a gear mounted in concentric relation with the first-named gear and with the axis of oscillation of the guide.

10. The combination with a rotary blank-support, of a blank-folding member provided with means, including a defining edge, for turning back the upper ply of a blank carried by the said support, a guide mounted for swinging movement adjacent to the said support, and supporting the said folding member for sliding movement, and means for swinging the guide and sliding the plate therein to carry the said defining edge in coactive relation to the blank-support and at a substantial distance therefrom during the folding movement.

11. The combination with a rotary blank-support, of a folding member, provided with means including a defining edge for turning back the upper ply of a blank carried by the said support, a guide mounted for swinging movement, and supporting the said folding member for sliding movement, means including toothed gearing for sliding the folding member in the said guide, and means including toothed gearing for swinging the said guide in coöperation with the said sliding movement to carry the said defining edge forward in coactive relation to the blank-support and at a substantial distance therefrom during the folding operation.

12. The combination with a rotary blank-support having tuck-holders, of a folding-plate having a defining edge and box-holders, a guide mounted for swinging movement and supporting the said folding member for sliding movement, gear-teeth appurtenant to the said folding member and to the said guide, and toothed gearing, including gears mounted in concentric relation to the axis of rotation of the guide for swinging the guide and for sliding the folding member in the guide.

13. The combination with a rotary blank-support, of means for turning back the upper ply of a blank carried by the support to form diamond folds therein, including a folding member having a defining edge mounted for sliding and oscillatory movements, means including toothed gearing for effecting the said oscillatory and sliding movements and coöperating to advance the said folding member in the direction of travel of the blank.

14. The combination with a rotary blank-support, of means for turning back the upper ply of a blank carried by the support, including a folding member having a defining edge and mounted for swinging and sliding movements, operating means including toothed gearing for swinging said folding member, operating means including toothed gearing for sliding said member, the two said operating means coacting to advance the said folding member in the general direction of travel of the blank, and to carry the defining edge of said member in a path which

diverges from the path of travel of the blank during the operation of turning back the said ply.

15. The combination with a rotary blank-support, of means for turning back the upper ply of a blank carried by the support, including a folding member having a defining edge and mounted for sliding and oscillatory movements, operating means including toothed gearing for effecting the said oscillatory movement, and operating means including a rack and pinion for effecting the said sliding movement, the two said operating means coacting to advance the said folding member in the general direction of travel of the blank during the folding-back operation.

16. The combination with a rotary blank-support, of means for turning back the upper ply of a blank carried by the support, including a folding member having a defining edge, a swinging guide in which the said folding member is mounted for sliding movement, operating means including toothed gearing for swinging the said guide, and operating means including a rack and pinion for sliding the said folding member in the guide, the two said operating means coacting to advance the blank-folding member in the general direction of travel of the blank and to carry the defining edge of the said folding member in a variant path relative to the rotary path of the blank-support.

847,958. PAPER-BAG MACHINE. WILLIAM A. LORENZ, Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Dec. 10, 1900. Serial No. 39,294.

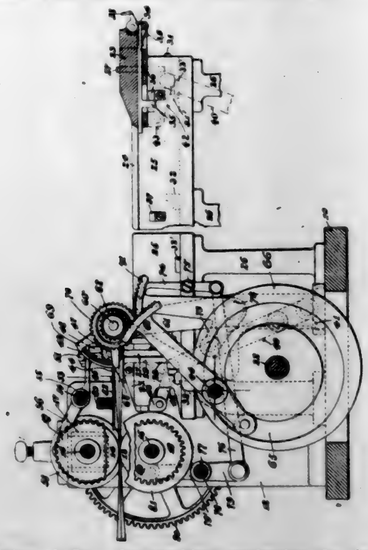

Claim.—1. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, having in combination a blank-support reciprocating in a straight line, means for turning back the upper ply of a bag-blank carried by said support, a carrier device mounted for oscillation and pivotally supporting the turning-back means, means for oscillating the carrier device to and fro with the blank-support as the latter reciprocates, and means for turning the turning-back means relative to the carrier in a direction opposite to that in which the carrier moves about its center of oscillation.

2. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, having in combination a blank-support reciprocating in a straight line, a carrier device mounted to oscillate about a fixed axis, means mounted for oscillation upon said device for engaging and turning back the upper ply of a bag-blank carried by the blank-support, and means for oscillating said device about its axis to carry the engaging and turning-back means through an arc concave toward the blank-support.

3. The combination with a blank-support reciprocating in a straight line and having tuck-holders, of carrier-arms mounted on opposite sides of the blank-support to oscillate upon a fixed axis, means pivotally supported upon said arms for engaging and turning back the upper ply of a bag-blank carried by the blank-support, means for oscillating said arms to and fro with the blank-support as the latter reciprocates, and means for oscillating the engaging and turning-back means relative to the carrier-arms with a direction of the angular movement at each instant opposite to that of the movement of the carrier-arms about the fixed axis.

4. The combination with a blank-support mounted to reciprocate in a straight line, and having tuck-holders, of a folding member provided with means including a defining edge for engaging and turning back the upper ply of a bag-blank carried by the support, carrier-arms mounted for oscillation upon a fixed axis and pivotally supporting said folding member, means for oscillating said arms to carry the axis of movement of the folding-plate relative to the carrier-arms through an arc concave toward the blank-support and means for oscillating said folding member relative to the carrier-arms as the latter oscillate.

5. The combination with a blank-support reciprocating in a straight line and having tuck-holders, of carrier-arms mounted on opposite sides of the blank-support to oscillate about a fixed axis situated approximately in the plane of the blank-supporting surface of the support, means including box-holders mounted for oscillation about an axis relative to said arms for engaging and turning back the upper ply of a bag-blank carried by the support, and means for oscillating said carrier-arms to carry said axis to and fro with the blank-support as the latter reciprocates, and through a path concave toward the blank-support.

6. The combination, with a blank-support reciprocating in a straight line, of carrier-arms mounted on opposite sides of the blank-support to oscillate upon a fixed axis situated substantially in the plane of the blank-supporting surface of the support, and a folding member mounted upon the arms for oscillation upon an axis located a substantial distance away from the axis of oscillation of the arms, and provided with means for engaging and turning back the upper ply of a bag-blank carried by the said support.

7. The combination, with a blank-support reciprocating in a straight line and provided with tuck-holders, of means for turning back the upper ply of a blank carried by the support including carrier-arms mounted for oscillation upon a fixed axis adjacent to the path of travel of the blank, and a folding member mounted for oscillation upon the carrier-arms upon an axis situated a substantial distance from the axis of oscillation of the arms, and means for oscillating the arms and folding member upon their respective axes in coactive relation to the reciprocating movements of the bed.

8. The combination, with a blank-support reciprocating in a straight line and provided with tuck-holders, of means for turning back the upper ply of a blank carried by the support, including a folding member provided with a defining edge, and means including carrier-arms for pivotally supporting said folding member for oscillation to carry the said defining edge a substantial distance away from the surface of the blank-support during its turning-back operation upon the blank, to separate the upper and lower plies of the blank during the said operation.

9. In a bag-machine, means for forming diamond folds on bellows-folded blanks, having in combination a folding-bed mounted for reciprocation in a straight line, and provided with tuck-holders, a folding-back member, provided with a defining edge and box-holders, a carrier device mounted for oscillation upon a fixed axis situated near the plane of the blank and pivotally supporting the folding member for oscillation upon an axis situated at a substantial distance from the said fixed axis, substantially greater than the distance from the supporting-axis of the folding-plate to its defining edge, to separate the two plies of the blank during the folding-back operation, means for reciprocating the blank-support, and means for oscillating the carrier device and the feeding member on their respective axes.

10. The combination, with a blank-support reciprocating in a straight line having tuck-holders; of an oscillatory blank-folding member having box-holders, means for opening and closing said box-holders near the blank-receiving end of the stroke, means for actuating the tuck-holders, a front diamond holder and reciprocatory rack operatively connected therewith, and means for engaging the said actuating-rack near each end of the stroke of the blank-support.

11. The combination, with a reciprocating blank-support having tuck-holders, of an oscillatory blank-folding member having box-holders, means for opening and closing said box-holders near the blank-receiving end of the stroke, means for actuating the tuck-holders, a front diamond holder, a reciprocatory actuating member connected with the diamond holder, means for engaging the said actuating member near each end of the stroke of the blank-support, and a spring for frictionally retaining said member in position during the movement of the blank-carrier.

12. The combination, with a blank-support mounted for reciprocation in a straight line, and provided with tuck-holders, of means for turning back the upper ply of a bag-blank carried by the support, including a folding member provided with box-holders and a defining edge, carrier-arms supporting the folding member for oscillation upon an axis located a substantial distance from the defining edge, fixed pivotal supports for the carrier-arms situated at the sides of the blank-support, and means for swinging the carrier-arms with their supported folding member forward and back synchronously with the forward-and-back movements of the reciprocating blank-support, to carry the folding member in operative relation to each blank during the folding-back operation, and to return the folding member for operative engagement with the succeeding bag-blank.

13. In a bag-machine, the combination with a blank-support mounted for reciprocation in a straight line and provided with tuck-holders, of means for folding back the upper ply of succeeding bag-blanks carried by the support including a folding member provided with box-holders and a defining edge, carrier-arms supported at the opposite sides of the bed for oscillation upon a fixed axis, and pivotally supporting the folding member for oscillation upon an axis situated above the supporting-surface of the blank-support, and a substantial distance from the defining edge, means for reciprocating the blank-support, and means for swinging the carrier-arms and the folding member upon their respective axes to move them forward and back synchronously with the forward-and-back movement of the blank-support, and in operative register with the succeeding bag-blanks.

14. In a bag-machine, the combination of a blank-support mounted for reciprocation in a straight line, means for turning back the upper plies of successive blanks carried by the support, said means including a folding-plate provided with blank-holders and a defining edge, carrier-arms supported at the opposite sides of the blank-support for oscillation upon a fixed axis and pivotally supporting the said folding-plate for oscillation upon an axis situated a substantial distance from the defining edge of the plate, means for oscillating the carrier-arms to carry the axis of the blank-folding plate through an arc, of which the straight-line movement of the blank-support describes a chord, said distance between the defining edge and the pivotal axis of the folding-plate being such that the defining edge of the folding-plate is enabled to swing forward clear of the blank-support when the pivotal support of the blank is substantially at the highest point of the said arc.

15. In a bag-machine, mechanism for forming diamond folds on bellows-folded blanks, having in combination a folding-bed reciprocating in a straight line, oscillating carrier-arms, means mounted for oscillation upon the carrier-arms and moved by said arms through an oscillatory path above the reciprocatory path of the bed, for turning back the upper ply of a blank carried by the support, means for oscillating the said arms, including a toothed gear concentric with the axis of oscillation of the arms, and means for oscillating the turning-back means upon the said arms, including another toothed gear also concentric with the axis of oscillation of the arms.

16. In a bag-machine, mechanism for forming diamond folds on bellows-sided blanks, having in combination a folding-bed reciprocating in a straight line, oscillating carrier-arms, means mounted for oscillation on the carrier-arms, and moved by said arms through an oscillatory path above the reciprocatory path of the bed, for turning back the upper ply of a blank carried by the support, means for oscillating the arms including a toothed gear mounted concentric with the axis of oscillation of the arms, means for oscillating the said ply-turning means including a toothed gear concentric with the axis of oscillation of the said ply-turning means, and a driving-gear therefor mounted concentrically with the axis of oscillation of the carrier-arms.

847,959. PAPER-BAG MACHINE. WILLIAM A. LORENZ, Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Dec. 17, 1900. Serial No. 40,069.

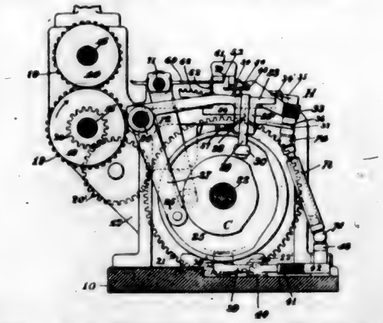

Claim.—1. The combination, with a blank-support having tuck-holders coöperative therewith, of folders mounted for oscillation upon a fixed axis, a guide-plate having a defining edge movable toward and from the axis of oscillation of the folders, and coöperative means for bringing said defining edge and the said axis into and out of substantial alinement, means for oscillating the folders, and means for moving the blank-support and the lower ply of the blank away from the said defining edge to maintain the sides of the blank in distended condition during the oscillation of the folders.

2. The combination, with a blank-support provided with tuck-holders for engaging the lower ply of the blank, of oppositely-disposed blank-folding members mounted for oscillation on a fixed axis and provided with grippers for engaging the upper ply of the blank, a member having a defining edge movable toward and from the said fixed axis of the blank-folding members, means for swinging the said folding members upon their axis while the said defining edge is in substantial coincidence with the said axis, and means for moving the blank-support and the lower ply away from the said axis to separate the side plies of the blank during the operation of the folding members.

3. In a paper-bag machine, the combination of a blank-support mounted for oscillation upon a fixed axis and provided with tuck-holders, means mounted above the blank-support for oscillation upon a fixed axis, for engaging the upper ply of the blank and turning it back to form the diamond fold, a transverse fold-defining member having a defining edge movable into and out of coincidence with the said fixed axis of the turning-back means, and means for moving the blank-support and its tuck-holders to carry the edges of the lower ply away from the said defining edge during the turning-back operation.

4. In a paper-bag machine, the combination of a blank-support mounted for oscillation upon a fixed axis and provided with tuck-holders, folders mounted above the blank-support for oscillation upon a fixed axis, a transverse fold-defining member having its defining edge movable to and from the said axis of oscillation of the folders, and means for moving the blank-support and its tuck-holders away from the axis of oscillation of the folders during the formation of the diamond fold.

5. In a paper-bag machine, mechanism for forming diamond folds on bellows-folded blanks, having in combination a blank-support mounted for rocking movement upon a fixed axis, and provided with tuck-holders for holding the lower ply of the blank upon the support, folders mounted above the blank-support for oscillation upon a fixed axis, a transverse fold-defining member having its defining edge movable to and from the pivot-axis of the folders, means for oscillating the folders while the defining edge is substantially coincident with their axis of oscillation, and a cam for moving the blank-support to carry the edges of the lower ply away from the defining edge and the coincident axis of oscillation of the folders during the diamond-forming operation.

6. In a paper-bag machine, mechanism for forming diamond folds on bellows-folded blanks, having in combination a blank-support mounted for rocking movement upon a fixed axis, tuck-holders carried by the blank-support, for holding the edges of the lower ply of the blank thereon, folders mounted above the folding-bed for oscillation upon a fixed axis, a transverse fold-defining member mounted for oscillation with its defining edge movable into and out of coincidence with the axis of oscillation of the folders, means for oscillating the folders to turn back the upper ply of the blank to form the diamond fold, and a cam for rocking the blank-support to drop the lower ply of the blank and distend the side tucks of the blank adjacent to the defining edge during the diamond-folding operation.

7. The combination, with a non-traveling blank-support, and tuck-holders coöperative therewith, of a member having a defining edge, a front diamond-holder, means for moving said front diamond-holder toward and from said support, and means for turning back the upper ply of a blank carried by the support.

8. The combination, with a non-traveling blank-support, and with tuck-holders coöperative therewith, of a member having a defining edge, folders, a plurality of fingers for engaging the front flap end of the blank, means for moving said fingers toward and from the support, and means for operating the other named members of the combination in coaction with the said fingers.

9. The combination, with a non-traveling blank-support, and with tuck-holders coöperative therewith, of a member having a defining edge, folders, a front diamond-holder for engaging the front flap end of the blank, a cam for moving said diamond-holder toward and from the support, and means coacting with the cam for operating the other named members of the combination.

10. The combination, with a non-traveling blank-support, and with tuck-holders coöperative therewith, of a member having a defining edge, folders, a plurality of fingers for engaging the front flap end of the blank, means for oscillating said fingers over the front flap end of the blank, means for moving said fingers toward and from the support, and means for operating the other named members of the combination to coact with the said fingers.

11. The combination, with a non-traveling blank-support, and with tuck-holders coöperative therewith, of a member having a defining edge, folders, a plurality of fingers for engaging the front flap of the blank, means for moving said fingers toward and from the support, cam-operated mechanism for oscillating said fingers over the front flap of the blank, and coöperating mechanism for actuating the other named members of the combination.

12. The combination, with a blank-support, and with tuck-holders coöperative therewith, of a member having a defining edge, folders, a plurality of fingers for engaging the front flap end of the blank, means for moving said fingers toward and from the support, extensible mechanism for oscillating said fingers over the front flap end of the blank, and coöperating mechanism for actuating the other named members of the combination.

13. The combination, with a non-traveling blank-support, and with tuck-holders coöperative therewith, of a member having a defining edge, folders, a plurality of fingers for engaging the front flap end of the blank, means for moving said fingers toward and from the support, a telescopic device for oscillating said fingers over the front flap end of the blank, and coöperating mechanism for actuating the other named members of the combination.

14. The combination, with an oscillatory blank-support having tuck-holders, of an oscillatory guide-plate having a defining edge, folders mounted for oscillation and cooperative therewith, means for moving the support to and maintaining it at a substantial distance from the defining edge during the diamond-forming operation, means for actuating said tuck-holders, means for moving said edge into alinement with the axis of the folders, and coacting means for operating the other named members of the combination.

847,960. MAIL-BAG EXCHANGER. DAVID MACK, Dana, Ind. Filed July 30, 1906. Serial No. 328,438.

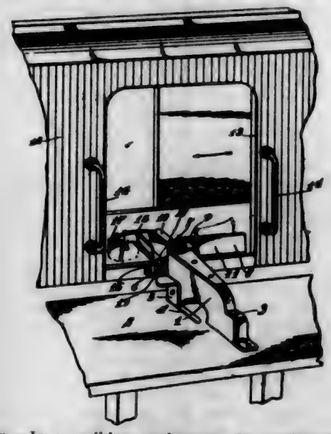

Claim.—In a mail-bag exchanger, the combination of a car having a pivotally-mounted mail-bag-throwing element having a tappet-arm to project beyond one side of the car, said car further provided with a tappet on said side, and a stand at one side of the track having a tappet to strike the tappet-arm of the said mail-bag-throwing element, and further provided with a pivotally-mounted mail-bag-throwing element having a tappet-arm in the path of the tappet carried by the car, for operation thereby, said stand being movable toward and from the track to put the said mail-bag-throwing element into and out of operation.

847,961. PROPELLER-WHEEL. JOSEPH DE LA MAR, New York, N. Y. Filed June 18, 1906. Serial No. 322,166.

Claim.—1. A propeller-wheel, comprising a shaft having thereon a spirally-formed rib, both ends of which are rigidly secured thereto, and having blades thereon.

2. A propeller-wheel, comprising a shaft having thereon a spirally-formed rib, both ends of which are rigidly secured thereto, and having a plurality of exterior blades thereon.

3. A propeller-wheel, comprising a shaft having thereon a spirally-formed rib, both ends of which are rigidly secured thereto, and having a plurality of interior blades thereon.

4. A propeller-wheel, comprising a shaft having thereon a spirally-formed rib, both ends of which are rigidly secured thereto, and having a plurality of exterior and interior blades.

5. A propeller-wheel, comprising a shaft having thereon a spirally-formed rib, both ends of which are rigidly secured thereto, and having blades thereon adapted to be adjusted at any desired pitch.

6. A propeller-wheel, comprising a shaft having thereon a spirally-formed rib, with its opposite ends rigidly secured thereto, having exterior blades and interior blades attached thereto, one set of blades being adapted to be adjusted at a different pitch from the other set.

7. A propeller-wheel, comprising a shaft having thereon, and rigidly secured thereto, the ends of a spirally-formed rib, a plurality of blades projecting outwardly from said rib, and a plurality of blades projecting inwardly from said rib, and attached thereto.

8. A propeller-wheel, comprising a shaft having thereon, and rigidly secured thereto, the ends of a spirally-formed rib, a plurality of inner and outer blades secured to said rib, said inner and outer blades being disposed in the same general direction to the rib.

847,962. FURNACE. HARRISON B. MEECH, New York, N. Y. Filed May 10, 1906. Serial No. 316,201.

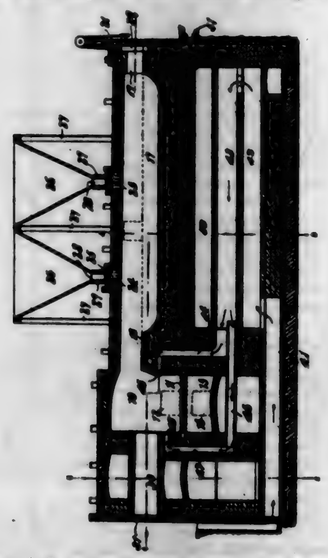

Claim.—1. In an ore-smelting furnace, the combination with a reverberatory furnace-bed, of a combustion-chamber, a bridge-wall separating the furnace-bed from the combustion-chamber, a retort having its discharge end opening through the front wall of the combustion-chamber, and air-heating flues arranged below the furnace-bed, there being air-discharge openings in the front wall of the combustion-chamber at a point below the retort, said openings being in communication with the air-heating flues.

2. In a furnace, a reverberatory furnace-bed, a combustion-chamber, a bridge-wall separating the furnace-bed from the combustion-chamber, a retort tapering in width and having its widest end opening through the front wall of the combustion-chamber, air-heating flues arranged below the furnace-bed, air-ducts leading from the flues and opening through the front and rear walls of the combustion-chamber, the openings in the front wall being immediately below the inner end of the retort, and escape-flues arranged adjacent to the air-heating flues and through which the products of combustion pass from the furnace-bed to and around the retort.

3. In a furnace, a reverberatory furnace-bed, a combustion-chamber, a bridge-wall spacing the furnace-bed from the combustion-chamber, a retort tapering in width and having its widest end opening through the front wall of the combustion-chamber, a plurality of vertical and horizontally-disposed partitions arranged below the furnace-bed and dividing the space into escape-flues for the products of combustion from the furnace-bed, and air-heating flues, a flue in communication with the escape-flue and surrounding the retort, and ducts leading from the air-heating flues and opening through the front and rear walls of the combustion-chamber.

847,963. SEPARABLE SPRING-HINGE. JOHN C. MILHOLLIN, Springfield, Ohio, assignor of one-half to C. W. Summerville, Springfield, Ohio. Filed May 26, 1906. Serial No. 318,792.

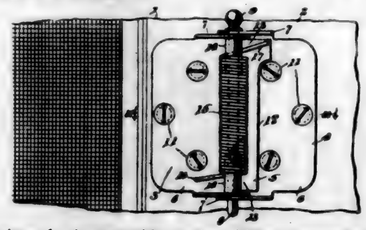

Claim.—1. A separable spring-hinge comprising two main members for attachment to the door and jamb respectively, and a removable pintle connecting the same, in combination with a spring supported by one of said members, and an auxiliary member pivoted to said spring-supporting main member and bearing against the other main member, the spring acting on said auxiliary member and on the main member to which it is pivoted, substantially as described.

2. A separable spring-hinge comprising two main members for attachment to the door and jamb respectively, and a removable pintle connecting the same, in combination with a spring supported by one of said members, and an auxiliary member pivoted to said spring-supporting main member and bearing against the other main member, the spring acting on said auxiliary member and on the main member to which it is pivoted, said last-mentioned main member being provided with a stop to limit the movement of the auxiliary member, substantially as described.

3. A separable spring-hinge comprising two main members for attachment to the door and jamb respectively, said main members being provided with overlapping apertured pivot-lugs, in combination with an auxiliary member adapted to bear on one of said main members and provided with sleeves engaging the apertures of the pivot-lugs of the other member, a removable pintle passing through said pivot-lugs and sleeves, and a spring coiled around said sleeves and pintle and bearing at one end on the auxiliary member, its other end bearing on the main member to which the auxiliary member is thus pivotally connected, substantially as described.

4. A separable spring-hinge comprising two main members for attachment to the door and jamb respectively, said main members being provided with overlapping apertured pivot-lugs, in combination with an auxiliary member adapted to bear on one of said main members and provided with sleeves engaging the apertures of the pivot-lugs of the other member, a removable pintle passing through said pivot-lugs and sleeves, and a spring coiled

around said sleeves and pintle and bearing at one end on the auxiliary member, its other end bearing on the main member to which the auxiliary member is thus pivotally connected, said last-mentioned main member having the inner margin of its base flanged to form a stop for the auxiliary member, substantially as described.

847,964. DUMPING-BODY FOR VEHICLES. CONRAD MILLER, Denver, Colo. Filed May 11, 1904. Serial No. 207,497.

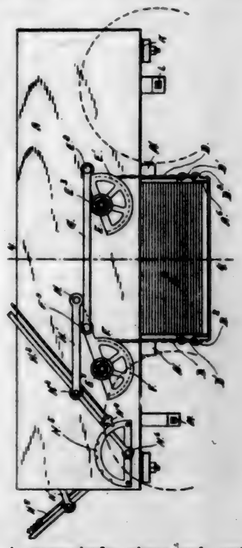

Claim.—1. A wagon-body whose end portions are provided with inclined bottom sections and whose middle portion between the end sections is composed of a transversely-tiltable central part extending entirely across the wagon-body, levers mounted on the wagon-body, a connection between the levers, and a connection between each lever and the tiltable part whereby the said part may be manipulated at will.

2. A wagon-body whose extremities are provided with bottom sections downwardly inclined toward the center of the wagon-body, the central portion of the wagon-body between the end sections of the bottom, being provided with a tiltable chute which when closed or raised at both ends forms the central part of the wagon-body, two levers mounted on each side of the wagon-body, flexible devices connecting each extremity of the chute with each pair of levers, a link connecting the two levers, a hand-lever connected with one lever of the chute, and a quadrant cooperating with the hand-lever, substantially as described.

3. A wagon-body whose end portions are provided with inclined bottom sections and whose middle portion between the end sections is composed entirely of a transversely-tiltable part, levers mounted on the wagon-body, a connection between the levers, and a connection between each lever and the said tiltable part whereby the said part may be manipulated at will.

4. A wagon-body whose bottom is provided with a centrally-located transversely-tiltable section extending entirely across the wagon-body, levers mounted on the wagon-body, a connection between the levers, and a connection between each lever and the tiltable section whereby the said section may be manipulated at will.

5. A wagon-body whose bottom is provided with a transversely-tiltable section extending entirely across the said body, vertical guides located on opposite sides of the tiltable section, whereby the contents of the wagon-body is prevented from escaping from the chute between the planes of the vertical sides of the wagon-body, levers mounted on the wagon-body, a connection between the levers, and a connection between each lever and the tiltable section whereby the said section may be manipulated at will.

6. A wagon-body whose end portions are provided with inclined bottom sections and whose middle portion between the end sections is provided with a transversely-tiltable part extending entirely across the wagon-body, levers mounted on the wagon-body, a connection between the levers, and a connection between each lever and the tiltable part whereby the said part may be manipulated at will.

7. A wagon-body whose end portions are provided with hinged sections adapted to be raised to a suitably-inclined position whereby the contents of the body is adapted to slide toward the central portion of the wagon-body bottom, the said central portion extending entirely across the wagon-body and being transversely tiltable for dumping purposes, levers mounted on the wagon-body, a connection between the levers, and a connection between each lever and the said tiltable portion whereby the said portion may be manipulated at will.

8. A wagon-body having a transversely-tiltable section, and levers mounted on the wagon-body, a connection between the levers, and a connection between each lever and the tiltable section whereby the said section may be manipulated at will.

9. A wagon-body provided with a centrally-located transversely-tiltable part, two levers fulcrumed on the wagon-body and connected with the transversely-tiltable section, a connection between the two levers, and a hand-lever connected with one of the first-named levers whereby the tiltable dumping-section may be manipulated for the purpose set forth.

10. A wagon-body whose extremities are provided with bottom sections downwardly inclined toward the center of the wagon-body, the central portion of the wagon-body between the end sections of the bottom, being provided with a transversely-tiltable chute which when closed or raised at both ends forms the central part of the wagon-body, two levers mounted on each side of the wagon-body and having grooved segmental parts, each segmental part describing a curve struck from the fulcrum of the lever, and a flexible device connected with the outer grooved edge of each segmental part of each lever and leading to the tiltable chute, a connection between each pair of levers on the same side of the wagon-body, and a hand-lever fulcrumed on each side of the wagon-body and connected with one of the chute-manipulating levers for the purpose set forth.

11. A wagon-body provided with a hinged section located at one extremity thereof, and means for supporting the hinged section in an inclined position, comprising a lever fulcrumed on the hinged section, and locking-rods connected with the lever and adapted to enter openings formed in the opposite sides of the wagon-body.

12. A wagon-body provided with end sections hinged at their inner extremities, means for supporting the outer extremities in such a position that the sections will be downwardly inclined in the said outer extremities, and means connected with each extremity of the wagon-body for supporting the hinged sections in the horizontal position when released from the means for supporting them in the inclined position.

13. A wagon-body provided with inclined end sections, their outer extremities being highest, and removable end-gates located in ways formed at the opposite ends of the wagon-body, the lower edges of the end-gates resting on the outer extremities of the inclined end bottom sections.

847,965. AIR-SHIP. JAMES M. MILLER, Washington, D. C. Filed Oct. 3, 1906. Serial No. 337,285.

Claim.—1. An air-ship comprising a balloon having a movable section, and a propelling means supported by and movable with the balloon-section, whereby the power of the propelling means is always directed in line with the balloon-section.

2. An air-ship comprising a balloon having a movable steering-section, means for operating said steering-section, and balloon-propelling means having a relatively fixed connection with the section, whereby the line of power is always fixed with relation to the balloon-steering section.

3. An air-ship having independent steering-sections, and independent ship-propelling means each supported by and operative with one of the balloon-sections, whereby any particular propelling means is always operative in line with the particular balloon-section with which it is connected.

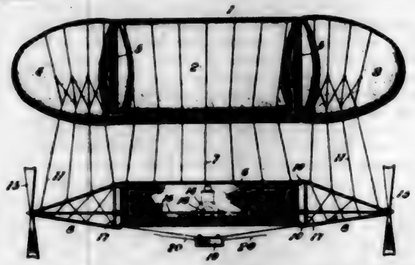

4. A balloon having independently-movable steering-sections, and a propelling means having fixed relation to each section, whereby the propelling power is always in line with the steering direction.

5. An air-ship comprising a balloon including movable sections, a car supported thereby and comprising movable sections connected to the movable sections of the balloon, and ship-propelling means carried by and movable with each car-section.

6. An air-ship comprising a balloon including movable sections, a car having movable portions connected to the respective sections of the balloon, and a ship-propelling means carried by and movable with each car-section, and means for adjusting the car-sections.

7. An air-ship comprising a balloon having movable end sections, a car supported by the balloon and having movable end sections connected to the respective end sections of the balloon, and simultaneously-operated propellers, each of said propellers being supported by and movable with one of the car-sections.

847,966. METHOD OF ADHERING ROUND FORMS AND APPARATUS FOR SAME. CHARLES W. MUNZ, Detroit, Mich. Filed July 14, 1906. Serial No. 326,199.

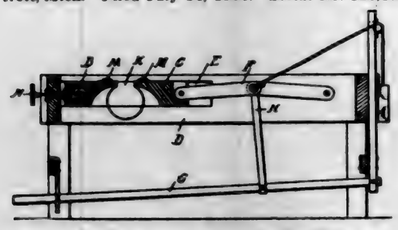

Claim.—1. The method of veneering round bodies, which consists in temporarily clamping the glued veneer strip about the body, and in securing the adjacent edges of the veneer and holding the same until the glue is dried.

2. The method of veneering round bodies, which consists in temporarily squeezing the glued veneer in close contact with the body, in clamping the adjacent edges of the strip while still held in the temporary clamping means and in retaining the edge clamped after removal from the temporary clamp and until the glue is dried.

3. The method of veneering round bodies, which consists in wrapping a sheath containing the glued veneer about the body, leaving a space adjacent to the opposite edges of the veneer, in clamping a longitudinally-extending strip to the body to hold the adjacent edges of the veneer, removing the sheath, and permitting the clamped strip to remain until the glue is dried.

4. A machine for veneering round bodies comprising a flexible sheath in which the glued veneer and the body may be placed, and means for causing the opposite ends of said sheath to be drawn toward each other until the veneer is in contact with the body, the parts being proportioned to leave a space between the ends of the sheath when clamped, for the purpose set forth.

5. A device for veneering round bodies, comprising a sheath of flexible material, jaws to which the opposite ends of said sheath are attached movable toward and from each other, a space being left between said jaws in the position of nearest approach, for the purpose described.

6. A machine for veneering round forms, comprising a pair of relatively movable jaws, and exchangeable sheaths detachably secured at their opposite ends to said jaws, for the purpose described.

847,967. RIFLE. HARRY M. NOECKER, Washington, Iowa. Filed Dec. 1, 1904. Serial No. 235,395.

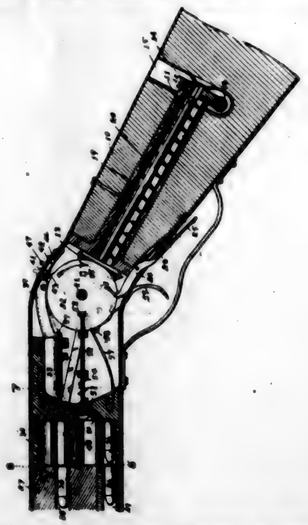

Claim.—1. In a rifle, a shaft extending longitudinally in the stock of the rifle, a bevel gear-wheel mounted on one end of said shaft, a spring mounted around said shaft and attached at one end to it, means for winding up said spring, and a second bevel gear-wheel in mesh with the first-mentioned gear-wheel, and means for maintaining said gear-wheel against rotary movement, for the purposes stated.

2. In a rifle, a shaft extending longitudinally in the stock of the rifle, a bevel gear-wheel mounted on one end of said shaft, a spring mounted around said shaft and attached at one end to it, means for winding up said spring, and a second bevel gear-wheel in mesh with the first-mentioned gear-wheel, means for maintaining said gear-wheel against rotary movement, and a breech-bolt pivotally connected with the second bevel gear-wheel and designed to be operated by it, for the purposes stated.

3. In a frame, a spring-actuated wheel, a breech-bolt pivotally connected with said wheel, so arranged that as the wheel is rotated, the breech-bolt will be moved forwardly and rearwardly, a firing-pin extending longitudinally of said breech-bolt, a spring-actuated hammer, a trigger for maintaining the hammer in a cocked position, a safety-lock designed to rest against the rear end of said breech-bolt when at its forward limit of movement, a forked forward portion on said safety-lock and means for

forcing the forward end of said safety-lock to a position where the forked forward portions extend around the firing-pin, for the purposes stated.

847,968. CIGARETTE-MAKING APPARATUS. WILHELM F. NOWITZKY, Riga, Russia, assignor to Hulsenfabrik A. Jaunsem, (Andreas Jaunsem.) Filed July 7, 1906. Serial No. 325,185.

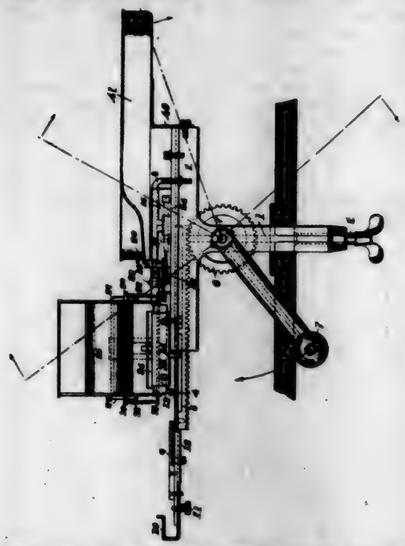

Claim.—1. In a cigarette-making apparatus, the combination of a hopper adapted to contain paper tubes, a tube-cylinder, feeding means for bringing said tubes one by one opposite to said cylinder, a slotted reciprocating plate, connections whereby the movement of said plate operates said feeding means, a tube-pusher on said plate adapted to push the fed tube onto the end of said cylinder, means for holding the tube onto the end of said cylinder, disengaging means carried by said plate operating to disengage said holding means from said tube, and means for operating said plate, substantially as described.

2. In a cigarette-making apparatus, the combination of a tube-cylinder, a hopper for containing paper tubes, means for feeding said tubes one by one to a position opposite said cylinder, spring-controlled levers provided with rollers adapted to hold the fed tube on the tube-cylinder, a slotted reciprocating plate, a tube-pusher on said plate, a separator to disengage said rollers from said paper tube, means for operating said plate, and connections whereby the movement of said plate operates said feeding means, substantially as described

3. In a cigarette-making apparatus, the combination of a tube-cylinder, a hopper adapted to contain paper tubes, means for feeding said tubes one by one to a position opposite to said cylinder, means for forcing the fed tube onto the end of said cylinder, movable dies having recesses adapted by their movement to form a rod of tobacco, a plunger for forcing said rod into said tube through said cylinder, a slotted reciprocating plate, said plunger being carried by said plate, means for reciprocating said plate, and connections whereby the movement of said plate effects the operations above indicated, substantially as described.

4. In a cigarette-making apparatus, the combination of a hopper adapted to contain paper tubes, a fixed plate carrying a tube-cylinder, means for feeding said tubes one by one into a position opposite said cylinder, spring-controlled rollers adapted to hold said tube on said cylinder, recessed dies located on said stationary plate, one fixed and one movable, and adapted to form a rod of tobacco in line with said tube-cylinder, a slotted reciprocating plate, a plunger carried by said plate in line with said tube-cylinder, means for operating said plate, and connections whereby the movement of said plate opens and closes the dies, feeds the paper tubes one by one from a hopper, forms a tobacco-rod, mounts the feed-tube on a tube-cylinder, forces the tobacco-rod into said tube, and removes the completed cigarette, substantially as described.

5. In a cigarette-making apparatus, the combination of a tube-cylinder, means for feeding a paper tube onto the end of said cylinder, spring-controlled rollers for holding said tube on said cylinder, a slotted reciprocating plate, a separator carried by said plate and adapted to disengage said rollers from the end of the paper tube, and means for operating said plate, substantially as described.

6. In a cigarette-making apparatus, the combination of a hopper adapted to contain paper tubes, and means for feeding said tubes one by one from said hopper, said means including a pivoted divider having a downwardly-projecting extension, a slotted plate, means for reciprocating said plate, said plate being also provided with a feather arranged in proximity to one of the slots of said reciprocating plate so arranged as to allow said extension to enter said slot on movement in one direction, and to prevent said extension from entering said slot on the reverse movement, substantially as described.

7. In a cigarette-making apparatus, the combination of a hopper adapted to contain paper tubes, a pivoted rod adapted to move in slots in said hopper, a wire having bent ends supported on said hopper, the ends of said wire engaging said rod, a retainer mounted on said wire and provided with a projecting lever, springs attached to the movable rod in said hopper, a pivoted divider provided with a downwardly-projecting extension, a slotted plate provided with one slot for governing the movement of said lever, and with another slot and feather for governing the movement of said divider, and means for reciprocating said plate, substantially as described.

847,969. KITCHEN IMPLEMENT. ALEXANDER C. POWERS, Louisville, Ky. Filed May 5, 1906. Serial No. 315,392.

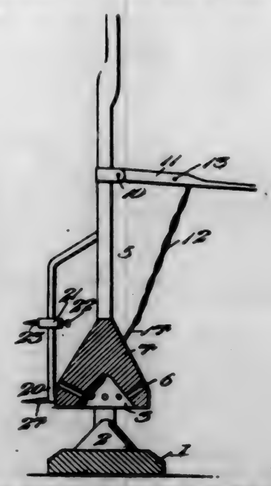

Claim.—1. A device of the class described comprising a base having upstanding guides, a squeesing-shell having runner extensions working up and down on said guides, a stock extending upward from the squeesing-shell, a lever pivotally connected to said stock, and a link interposed between said lever and guides, substantially as described.

2. A device of the class described comprising a solid base, a squeesing-shell movable toward and away from the base, a stock extending upward from the squeesing-shell a lever pivotally connected to said stock, a link interposed between said lever and the base, and fastening means for securing the lever to the stock.

847,970. VEHICLE-TOP. JOSEPH M. REBHOLZ, Troy, Ohio. Filed Jan. 18, 1907. Serial No. 352,966.

Claim.—1. The combination with a vehicle having front and rear brackets thereon; of a top consisting of hingedly-connected sections, front and rear supports slidably and pivotally connected to said sections, the rear supports being pivotally connected to the rear brackets and the front supports detachably connected to the front brackets, said rear supports having eyes to detachably engage the front supports when detached from their brackets, and a brace for connecting the vehicle and its top.

2. The combination with a vehicle having front and rear brackets; of rear supports pivotally connected to the rear brackets and having integral projections adjacent said brackets, supports pivotally and detachably connected to the front brackets, a top made up of sections hinged together, said sections being pivotally and slidably engaged by the front and rear supports respectively, said front supports being adapted when the top is folded to engage the projections on the rear supports, and means for bracing the top when in raised position.

3. The combination with a vehicle having front and rear brackets thereon; of rear supports pivotally connected to the rear brackets and having projections adjacent their brackets, front supports pivotally and detachably connected to the front brackets, a foldable top having its respective sections pivotally and slidably mounted upon the front and rear supports, said front supports adapted to engage projections on the rear supports when the top is folded, and a foldable brace pivotally connected to the top and to the vehicle.

4. A top for vehicles comprising rigid sections hinged together and having longitudinal grooves in their inner faces, a cross-strip within each section, flexible connections between the cross-strips of the two sections, means secured to each cross-strip for riding within the grooves, front and rear supports rigidly connected to the cross-strips, rear brackets pivotally connected to the rear supports, and front brackets pivotally connected to the front supports, said front supports being detachable from their brackets and movable to engagement with the rear supports when the top is folded.

5. A top for vehicles comprising rigid sections hinged together and having longitudinal grooves in their inner faces, a cross-strip within each section, flexible connections between the cross-strips of the two sections, means secured to each cross-strip for riding within the grooves, front and rear supports rigidly connected to the cross-strips, rear brackets pivotally connected to the rear supports, front brackets pivotally connected to the front supports, said front supports being detachable from their brackets and movable into engagement with the rear supports when the top is folded, and means for bracing the top when the same is raised.

6. A top for vehicles comprising oppositely-disposed similar sections, hinges connecting the same and having integral abutments, each of said sections having longitudinal grooves therein, a cross-strip within each section, flexible connections between said cross-strips, supports secured to the ends of the cross-strips, means carried thereby and pivotally and slidably mounted within the grooves, brackets adapted to be pivotally engaged by the rear supports, brackets adapted to be detachably and pivotally engaged by the front supports, means upon the rear supports adapted to be engaged by the front supports when the top is folded, and means for bracing the top when in raised position.

847,971. BUCKLE. ABRAHAM RITTER, New York, N. Y. Filed Nov. 19, 1906. Serial No. 344,081.

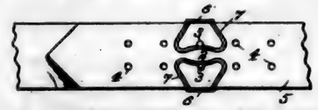

Claim.—1. A buckle comprising a plate, a pin located on one side of said plate in position to pass through a perforation in a belt or the like placed over said plate, and a clamping member movably connected to said plate; said pin and clamping member being provided with suitable means whereby they interlock; said interlocking means being constructed to automatically yield so that the parts may be pressed into and out of locking relation for opening and closing the buckle.

2. A buckle comprising a plate, a plurality of pins located on said plate in position to pass through perforations in a belt or the like, and constructed with approximately spherical heads, a clamping member hinged to the plate, and constructed with an automatically-yielding part adapted to interlock with or to be released from the heads of the pins, on applying pressure to the plate in the appropriate direction.

3. A detachable buckle for belts and the like, comprising a plate, a plurality of projections provided on said plate and positioned to be passed through perforations in the belt or the like, and a member movably secured to the plate and constructed to engage and interlock with the pins; the interlocking means on one of said parts being constructed to yield whereby the clamping member may be pressed into or out of the engaging and interlocking relation.

847,972. SHEET-METAL DISPLAY-CAN. FRANK RUDOLPHI, Chicago, Ill., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Original application filed Aug. 7, 1905, Serial No. 272,058. Divided and this application filed Sept. 24, 1906. Serial No. 335,957.

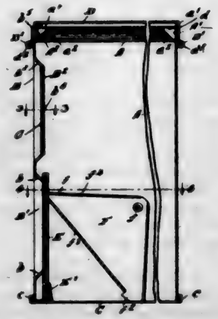

Claim.—1. In a display-can, the combination with a front plate having a display-opening therein, with a transparent plate closing said opening, and vertically-swinging glass-holders pivotally connected to the upright sides of the can adjacent to the front plate and swinging about their pivots in planes parallel to the upright sides of the can to which they are pivoted, substantially as specified.

2. In a display-can, the combination with a front plate having a display-opening therein, with a transparent plate closing said opening, and hinged glass-holders pivotally connected to the upright sides of the can adjacent to the front plate, and pivotal glass-holders having feet engaging the bottom plate of the can to limit the turning movement of the holders, substantially as specified.

3. In a display-can, the combination with the front plate and adjacent upright side plates, of a vertically-swinging glass-plate holders pivotally connected to said adjacent side plates and provided with flanges engaging the glass plate, said glass-holders swinging about their pivots in planes parallel to said upright side plates to which they are pivoted, substantially as specified.

847,973. SHEET-METAL DISPLAY CAN OR BOX. FRANK RUDOLPHI and EMIL BRÄUNINGER, Chicago, Ill., assignors to American Can Company, New York, N. Y., a Corporation of New Jersey. Original application filed Nov. 13, 1905, Serial No. 287,159. Divided and this application filed Sept. 24, 1906. Serial No. 335,958.

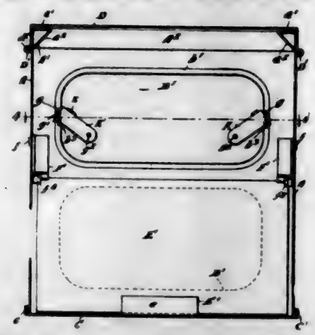

Claim.—1. In a sheet-metal display-can, having a front plate furnished with a display-opening therein, a removable glass plate on the inside of the front plate for closing said opening, and toggle-acting holders hinged to the upright sides of the can-body above the upper end of the glass plate and provided with a lip or shoulder engaging the upper edge of the glass plate, substantially as specified.

2. In a sheet-metal display-can, the combination with the front plate having a display-opening therein, an inside-fitting glass plate for closing said opening, and a toggle-acting holder hinged to the upright side of the can-body above and slightly back of the upper end of the glass plate, and provided with a shoulder overhanging the upper edge of the glass plate, and a depending lip engaging the rear face of the glass plate at the upper end thereof, substantially as specified.

3. In a sheet-metal display-can, the combination with the front plate having a display-opening therein, an inside-fitting glass plate for closing said opening, and a toggle-acting holder hinged to the upright side of the can-body above and slightly back of the upper end of the glass plate, and provided with a yielding shoulder overhanging the upper edge of the glass plate, and a depending lip engaging the rear face of the glass plate at the upper end thereof, substantially as specified.

847,974. ALTERNATING-CURRENT PLANT COMBINED WITH STORAGE BATTERY. LUDWIG SCHRÖDER and ADOLPH MÜLLER, Berlin, Germany. Original application filed Oct. 7, 1904, Serial No. 227,527. Divided and this application filed July 14, 1905. Serial No. 269,632.

Claim.—1. In an alternating-current plant the combination of a direct-current machine coupled with the prime mover a storage battery connected with the machine, converting device connected with the wires of the plant and producing a direct current in a separate winding on the field of the direct-current machine charging the storage battery or being driven by the current of this battery and regulating thereby automatically the charging and discharging of the battery in such a manner that the prime mover actuating the main generator works with constant load.

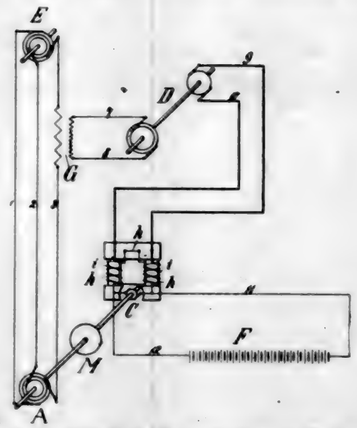

2. The combination of an alternating-current generator, an alternating-current motor, electrical connections from said alternating-current generator to said alternating-current motor, a direct-current generator geared positively with said alternating-current generator and provided with a pair of field-windings in opposition to each other, means for actuating said alternating-current generator and said direct-current generator as a unit, a storage battery, connections from said direct-current generator thereto, means connecting said last-mentioned connections with one of said windings of said direct-current generator, and electrical mechanism controllable by currents from said alternating-current generator for energizing the other of said windings of said alternating-current generator.

3. In an alternating-current plant the combination of a direct-current machine coupled with the prime mover, a storage battery connected with this machine a booster driven by suitable means and converting devices connected with the wires of the plant and producing a direct current in a separate winding on the field of the booster and regulating thereby automatically the charging and discharging of the battery in such a manner that the prime mover actuating the main generator works with constant load.

4. The combination of a direct-current generator provided with two field-windings in opposition to each other, a storage battery supplied by said direct-current generator and connected with one of said field-windings for energizing the latter, a separate generator connected mechanically with said direct-current generator, and electric mechanism controllable by said separate generator and connected with the other of said field-windings.

847,975. DETONATING BURGLAR-ALARM. ALBERT V. TODD, Denver, Colo. Filed May 17, 1905. Serial No. 260,755.

Claim.—In a detonating burglar-alarm for doors, the combination of a bar toothed at its lower extremity to engage the floor and provided with a cap or cartridge holder at its opposite extremity, a spring-actuated plunger mounted on the bar intermediate its extremities, the upper extremity of the plunger being hook-shaped, an exposed lug mounted on the bar on each side of the axis of the plunger, the said lug forming a stop for the hooked end of the plunger and adapted to hold the latter against the tension of its spring, and a device slidably mounted on the bar, one extremity of the slidable device being adapted to engage the door, while the other end is beveled and located adjacent the hooked extremity of the plunger whereby as force is applied to the slidable device its beveled end acts to disengage the hooked extremity of the plunger from the

said lug, the cartridge-holder being located in line with the plunger whereby the movement of the latter under the influence of its spring acts to explode the cartridge or cap.

847,976. FRUIT-JAR AND CAN CLOSURE. FREDERICK C. WARREN and WILLIAM H. PRESTON, Valley Junction, Wis.; said Preston assignor to said Warren. Filed Sept. 5, 1905. Serial No. 276,951.

Claim.—As a new article of manufacture, a vessel-closure clamp comprising a sheet-metal bridge member having downwardly-projecting legs for straddling the closure-cap of the vessel, said legs terminating in hook or anchor portions for engaging the vessel, said bridge member having centrally a rectangularly-formed bent portion, a nut held in said bent portion and prevented from turning thereby, an eyebolt passing through said bridge member and said nut, and having a threaded engagement with the nut, said eyebolt adapted to seat in a countersunk portion of the closure-cap, said bridge member composed of resilient material and the eye of the eyebolt serving as a finger-engaging portion, substantially as shown and described.

847,977. FEEDING DEVICE FOR PAPER. MILTON H. BALLARD, Lynn, Mass., assignor to Tripp Fruit Wrapping Machine Company, Lynn, Mass., a Corporation of Maine. Original application filed Feb. 13, 1904, Serial No. 193,392. Divided and this application filed Oct. 2, 1905. Serial No. 280,909.

Claim.—1. In a paper-feeding device, the combination of a paper-carrying roll having a brake-wheel, a brake-band attached at one end at a point near the brake-wheel, and means, connected with the free end of said band, for holding it taut, and for winding it, while thus held taut, upon said brake-wheel, to thereby retard the brake-wheel by a gradually-increasing force corresponding to the gradually-increasing area of the band in contact therewith, the operation of said means being controlled by the web of paper drawn from the roll, substantially as described.

2. In a paper-feeding device the combination of a paper-carrying roll having a brake-wheel, a brake-band attached at one end at a point near the brake-wheel, and means, connected with the free end of said band, for holding it taut, and for winding it, while thus held taut, upon said brake-wheel to thereby retard the brake-wheel by a gradually-increasing force corresponding to the gradually-increasing area of the band in contact therewith, and for subsequently applying a gradually-increasing pressure to said band, the operation of said means being controlled by the web of paper drawn from the roll, substantially as described.

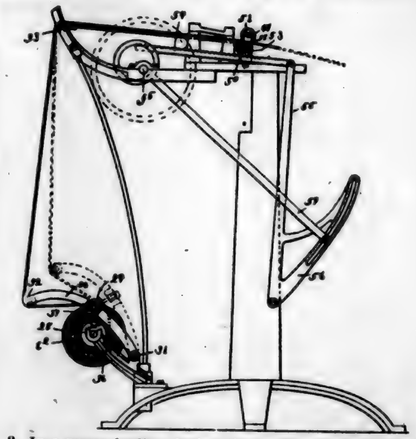

3. In a paper-feeding device, the combination of a paper-carrying roll having a brake-wheel, a brake-band attached at one end at a point near the brake-wheel and adapted to be wound upon said brake-wheel to thereby act with a gradually-increasing force, a pivoted arm to which the free end of said brake-band is attached and by which it is held taut and moved in a circular path about the brake-wheel while winding it thereon, and a paper-engaging roll borne by said arm adapted to engage the web of paper and thereby control the movement of said arm, substantially as described.

4. In a paper-feeding device, the combination of a paper-carrying roll having a brake-wheel, a brake-band attached at one end at a point near the brake-wheel and adapted to be wound on said brake-wheel to thereby act with a gradually-increasing force, a pivoted arm to which the free end of said brake-band is yieldingly connected and by which it is moved in a circular path about the brake-wheel while winding the brake-band thereon, and also by which a gradually-increasing pressure is applied to the brake-band when the latter is wound upon the brake-wheel and a paper-engaging roll borne by said arm adapted to engage the web of paper to thereby control the movement of said arm, substantially as described.

5. In a paper-feeding device, a paper-carrying roll having a brake-wheel, a brake-band, one end of which is attached to a fixed point close to the brake-wheel, and a rising-and-falling member to which the free end of said band is yieldingly connected, which is constructed and arranged to wind said band upon the brake-wheel when falling, and to unwind it therefrom when rising, and also to apply a gradually-increasing pressure to the free end of said band when the latter is wound upon the brake-wheel, and a paper-engaging roll borne by said member adapted to engage the paper drawn from the paper-carrying roll and thereby control the movements of said member, substantially as described.

6. In a paper-feeding device, a paper-carrying roll having a brake-wheel, a brake-band, one end of which is attached to a fixed point close to the brake-wheel, and a

rising-and-falling member to which the free end of said band is yieldingly connected, which is constructed and arranged to wind said band upon the brake-wheel when falling, and to unwind it therefrom when rising, and also to apply a yielding pressure to the free end of said band when the latter is wound upon the brake-wheel, and a paper-engaging roll borne by said member adapted to engage the paper drawn from the paper-carrying roll and thereby control the movements of said member, substantially as described.

7. In a paper-feeding device, a paper-carrying roll, having a brake-wheel, a brake-band attached at one end at a point near the brake-wheel, an arm extending from one side of said paper-carrying roll to the opposite side thereof having a paper-engaging roll at one end adapted to engage the web of paper near the paper-carrying roll and having its opposite end pivoted at a point remote from the brake-wheel and from the point of attachment of the brake-band, the free end of said brake-band being connected to said arm at an intermediate point whereby the brake-band is wound upon and unwound from said brake-wheel by the arm moving on its pivot and moving the free end of the brake-band in a circular path about the brake-wheel, substantially as described.

9. In a paper-feeding device, a paper-carrying roll having a brake-wheel, a brake-band, attached at one end to a point near the brake-wheel, an arm having a paper-engaging roll, pivoted at a point remote from the brake-wheel and from the point of attachment of the brake-band, to which the free end of said band is connected, and by which the brake-band is wound upon and unwound from the brake-wheel, substantially as described.

9. In a paper-feeding device, a paper-carying roll having a brake-wheel, means for drawing the paper from the roll, a pivoted arm bearing a take-up roll, a bar slidably connected with said arm, a brake-band for said brake-wheel, one end of which is attached to a fixed point and the other end to said bar, and a spring on said bar between the arm and the end of the bar, substantially as described.

10. In a paper-feeding device, a paper-carrying roll having a brake-wheel, means for drawing the paper from the roll, a pivoted arm bearing a take-up roll, a bar yieldingly supported by said arm, a brake-band for said brake-wheel, one end of which is attached to a fixed point and the other end to said bar, substantially as described.

11. In a paper-feeding device, a paper-carrying roll having a brake-wheel, a pivoted arm having a paper-engaging roll for engaging the web of paper drawn from the paper-carrying roll, a bar slidably connected with said arm, a spring acting to thrust said bar outward, and a brake-band for said brake-wheel, one end of which is attached to a fixed point and the other end is attached to said sliding bar, substantially as described.

847,978. COVERED BOX-CRATE. EDWARD F. BOESCHE, Evansville, Ind., assignor of three-eighths to William A. Borgschulze and one-fourth to Ernst Seufer, Evansville, Ind. Filed Jan. 12, 1906. Serial No. 295,790.

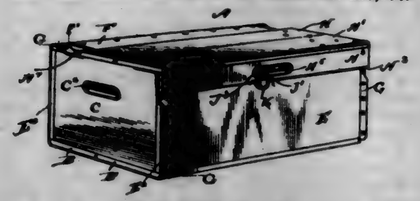

Claim.—1. In a covered box-crate, the combination with a box provided with sides of different height, the shortest side having a rabbeted upper edge, of a top member provided with an inner rabbeted edge secured to the other side, the ends of the top side and bottom section being reduced, of bands secured to the top of the end section, encircling the top, side and bottom sections in the reduced ends, and a removable top having rabbeted edges adapted to fit in the rabbeted edge of the top and side section, for the purpose described.

2. In a covered box-crate, the combination with an opened box having sides of different height, the upper edge of the shortest side being rabbeted and the ends cut away, of a top member secured to the other side provided with a cut-away portion at its ends and a rabbeted edge, bands having one end secured in the cut-away portion of the top member extending around the sides, bottom and top having their other ends secured in the cut-away portion of the side, and a top having a rabbeted edge fitting in the rabbeted edge of the top member and provided with a rabbeted downwardly-projecting side adapted to fit in the rabbeted edge of said side section, for the purpose described.

847,979. CHAIR-IRON. HARRY W. BOLENS, Port Washington, Wis. Filed Nov. 15, 1905. Serial No. 287,442.

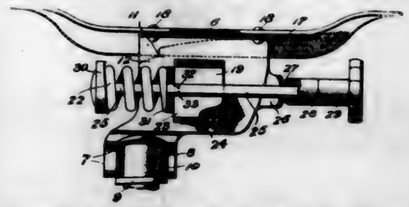

Claim.—1. The combination, in a chair-iron, comprising a spreader, of a yoke for supporting the same, said yoke comprising a pair of U-shaped sheet-metal yoke-frames arranged one within the other and with their lower cross-bars spaced apart and having alining holes, and a spacing-sleeve intermediate the cross-bars and surrounding said holes.

2. The combination, in a chair-iron, comprising a spreader, of a yoke for pivotally supporting the same, the yoke comprising two U-shaped sheet-metal yoke-frames, the upper terminals of the inner frame being inclined to form stops against which projections on the spreader are adapted to abut.

3. The combination, in a chair-iron, of a yoke, comprising two substantially U-shaped yoke-frames of different lengths arranged the shorter within the longer and having their lower transverse portions spaced apart and adapted to receive the upper end of the supporting-post and their vertical portions riveted together, the upper ends of said inner yoke-frame terminating short of those of the outer frame and constituting stops, and a spreader pivoted between the terminals of the yoke and extending above the stops and adapted when tilted to abut against the same.

4. The combination, in a chair-iron, of a spreader, projections upon its sides, a pair of U-shaped sheet-metal yoke-frames mounted one within the other to form a yoke, one of said frames provided at the upper edges with shoulders to coact with said projections, whereby the tilting of the spreader is limited, and a pivoting means between the yoke and spreader.

5. The combination, in a chair-iron, of a sheet-metal spreader-plate having depending sides, a U-shaped sheet-metal yoke comprising two U-shaped yoke-frames, said yoke embracing the depending sides of the spreader-plate, the upper ends of the terminals of the inner yoke-frame being inclined to form stop-shoulders, a pintle passing through the two yoke-frames and depending sides of the spreader, and angular spider-arms mounted on the spreader and having their vertical flanges adapted to abut against said stop-shoulders.

6. The combination, in a chair-iron, of a spreader, a supporting-yoke, a pintle connecting the two, and a tension-support bearing against the pintle whereby it is braced.

7. The combination, in a chair-iron, of a spreader, a supporting-yoke, a pintle connecting the two, and a tension-support having an intermediate depending portion bearing against and supported by the pintle.

8. The combination, in a chair-iron, of a spreader, a supporting-yoke, a pintle connecting the two, and a tension-support having a depending intermediate portion cut away at its lower end to receive and bear against said pintle.

9. The combination, in a chair-iron, of a transverse sheet-metal tension-support supported within the iron and provided with an intermediate bent portion, the compression-plate of the tension device bearing against the edges thereof, and the tension-rod passing through said bent portion of said support.

10. The combination, in a chair-iron, of an inverted-U-shaped spreader, a U-shaped yoke embracing the same and having at one side a support for one end of the tension device, a transverse sheet-metal tension-support having its ends riveted to the depending sides of the spreader, and between its ends shaped to receive the tension-rod and form a support for the compression-plate thereof.

11. The combination, in a chair-iron, of a U-shaped yoke having the front cross-piece connecting its terminals, a U-shaped spreader pivotally mounted between said terminals, the transverse tension-support having its terminals bent and secured to the opposite depending sides of the spreader and between its ends depressed, as at 23, and notched, and the tension device having its rod passed through said tension-support and cross-piece and its inner compression-plate ribbed and engaging the notches of the transverse tension-support.

12. The combination, in a chair-iron, of a front cross-piece supported by the yoke, a rear transverse tension-support supported by the spreader and having a pair of depending loops, a tension device of the two-spring variety having its tension-rod supported by the cross-piece and passed between the loops, and its inner compression-plate bearing against the rear edges of the loops and supported thereby.

847,980. CLIPPERS. GILES BOWLER, Cavendish, Idaho, assignor of one-third to Joseph A. Walker and one-third to John Bigley, Peck, Idaho. Filed Mar. 27, 1906. Serial No. 308,352.

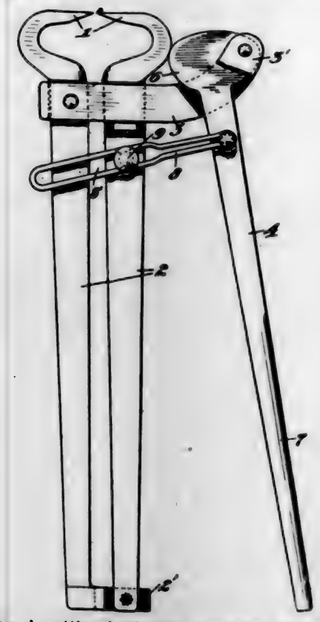

Claim.—A cutting implement consisting of shanks pivotally connected and provided with cutting-jaws at their upper end portions, a lever arranged at the outer side of one shank, a means in which said lever is pivoted fixed to the other shank and projecting beyond said first shank, the upper end portion of said lever being formed with a cam engaging the adjacent shank, a pin on said last shank, and a link pivoted to said lever below its fulcrum, said link being formed with a slot and having said pin arranged therein, for the purpose specified.

847,981. THERMOSTAT. PEABODY A. BROWN, Denver, Colo. Filed Dec. 8, 1905. Serial No. 290,991.

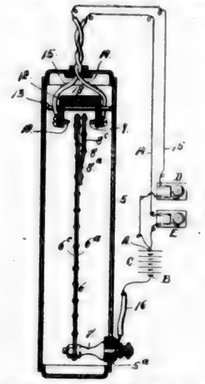

Claim.—1. A thermostat including a bar adapted to change its shape as the temperature varies, a support upon which the bar is mounted, contacts also mounted on the support on opposite sides of the bar, the free extremity of the bar being provided with an auxiliary member located on the side of the bar toward the cold contact and also being composed of two plates of material possessing the properties of expansion and contraction in unequal degrees, the plate of material possessing the said properties in the higher degree being on the side thereof farther from the cold contact for the purpose set forth.

2. A thermostat including a bar, a support to which one extremity of the bar is fixed, contacts located on opposite sides of the bar, distinct circuits in which the respective contacts are located, the bar being composed of two plates of material possessing the properties of expansion and contraction in unequal degrees, the said bar being provided with an auxiliary member fixed thereto at one extremity, the auxiliary member being located on the side of the bar toward the cold contact and being also composed of two plates of material possessing the properties of expansion and contraction in unequal degrees, the plate of material possessing the said properties in the higher degree, of the auxiliary member, being on the side thereof farther from the cold contact for the purpose set forth.

847,982. PROJECTING APPARATUS. EDWIN P. CROCKER and CHARLES A. WALHOF, Rock Valley, Iowa, assignors of one-third to I. S. Large, Rock Valley, Iowa. Filed Sept. 27, 1905. Serial No. 280,347.

Claim.—1. A projecting apparatus comprising a casing, an image-platform within the casing, a mirror arranged to direct rays of sunlight upon the image-platform, said mirror adjustable in a horizontal plane around the image-platform, a mirror for changing the direction of the projected image and a focusing-lens coacting with the latter mirror.

2. A projecting apparatus comprising a casing, an image-platform within the casing, a mirror arranged to direct rays of sunlight upon the image-platform said mirror adjustable in a horizontal plane around the image-platform, a mirror for changing the direction of the projected image, a focusing-lens coacting with the latter mirror and means for tilting the casing in a vertical plane.

3. A projecting apparatus comprising a casing designed to be placed upon a window-sill and to have a window-sash resting against its upper end for supporting it in position, adjustable window-screen sections fixed to the sides of the casing to fill the space between the sides of the casing and the sides of a window-sill below the sash, an image-platform within the casing, a mirror and a focusing-lens.

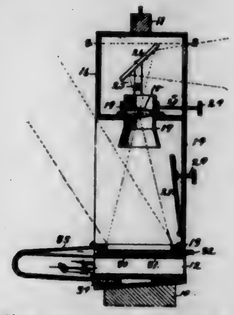

4. A projecting apparatus comprising a casing opened at its outer side, a base portion hinged to the casing, a strip adjustably connected with the base portion to rest on a window-sill whereby the casing may be tilted relative to a vertical line, a segmental top portion for the casing to be engaged by a window-sash, an image-platform in the casing, a mirror and a focusing-lens.

5. In a projecting apparatus, a casing, a horizontal partition in the casing having an opening therein, an image-platform below the partition, yielding pressure devices for holding the image-platform upwardly toward the partition and a screen-covering for the outer side of the space below the horizontal partition.

6. A projecting apparatus comprising a casing open at its outer side, a base portion hinged to the under surface of the casing, a cross-piece adjustably mounted beneath the outer end portion of the base, a number of coil-springs within the lower portion of the casing, an image-platform on top of the springs, a horizontal partition above the image-platform having an opening therein, a screen-covering for the outer end of the space between the partition and the bottom of the casing, a segmental frame on top of said horizontal partition, guides for supporting said frame to permit it to be rotated around the center of the image-platform, a number of mirrors supported by said frame, window-screen sections fixed to the sides of the casing, window-screen sections adjustably fixed to the said screen-sections, a mirror supported near the top of the casing and an adjustable lens adjacent to the mirrors, for the purposes stated.

847,983. SPROCKET-CHAIN. RAYMOND W. DULL, Aurora, Ill., assignor to Stephens-Adamson Mfg. Co., a Corporation of Illinois. Original application filed Oct. 15, 1906, Serial No. 339,006. Divided and this application filed Jan. 16, 1907. Serial No. 352,581.

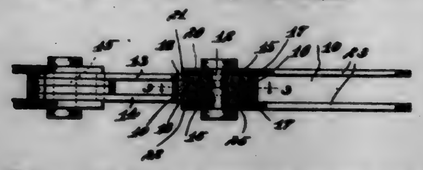

Claim.—1. In a chain, in combination, an inside and an outside link, the inside link comprising a metal bar and a filler each having a pivot-aperture and a second aperture adjacent thereto, the apertures of the bar and the filler being in register, a pivot, and an anchoring-pin passing through the second-named apertures in the bar and the filler of the inside link, the outside link covering the ends of the pin.

2. In a chain, in combination, an inside and an outside link, the inside link comprising a metal bar and a filler each having a pivot-aperture and a second aperture beyond the pivot-aperture from the adjacent end of the link, the apertures of the bar and the filler being in register, a pivot, and an anchoring-pin passing through the second-named apertures in the bar and the filler of the inside link, the outside link covering the ends of the pin.

3. In a chain, in combination, an inside and an outside link, the inside link comprising a metal bar and a filler each having a pivot-aperture and a second aperture adjacent thereto, the apertures of the bar and the filler being in register, a pivot fixed against rotation in the outside link and passing through the pivot-apertures of the bar and the filler of the inside link, and an anchoring-pin passing through the second-named apertures of the bar and the filler, the outside link covering the ends of the pin.

4. In a chain, in combination, two links having an overlapping end-to-end relation, one of the links comprising a metal bar and a filler each having a pivot-aperture and a second aperture adjacent thereto, the apertures of the bar and of the filler being in register, a pivot fixed against rotation in the other link and passing through the pivot-apertures of the bar and the filler, and an anchoring-pin passing through the second-named apertures of the bar and filler.

847,984. TELEPHONE TRUNKING SYSTEM. FRANCIS W. DUNBAR, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 25, 1902. Serial No. 120,878.

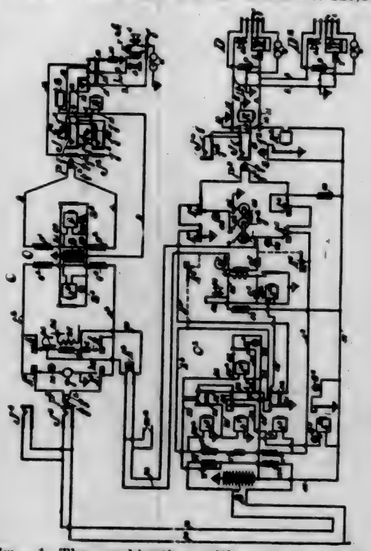

Claim.—1. The combination with a trunk-circuit extending between different switchboard-sections and adapted to connect subscribers' lines together for conversation, of a trunk-relay at the incoming end legged to ground from the outgoing end of the trunk and actuated by current thereover when connection exists at the outgoing end, a second relay at the incoming end of the trunk actuated by current over a portion of the talking-circuit when connection is established with the called line, and a signal at the incoming end whose actuation depends upon said relays, and means for disconnecting said trunk-relay from the outgoing end of the trunk when the called subscriber answers, substantially as described.

2. The combination with a trunk-circuit extending between different switchboard-sections and adapted to connect subscribers' lines together for conversation, of a relay at the incoming end of the trunk connected to ground from the outgoing end and actuated by current over the trunk when connection exists at the outgoing end but adapted to be disconnected therefrom when the called subscriber answers, a second relay at the incoming end actuated by current over a portion of the talking-circuit when connection is established with the called line, and a signal whose actuation depends upon said two relays, said signal being actuated when the connection exists at the outgoing end only to give a guard indication, and to act as a disconnect-signal when the called subscriber has hung up his receiver and connection has been severed at the outgoing end, substantially as described.

3. The combination with a trunk-circuit extending between different switchboard-sections and adapted to connect subscribers' lines together for conversation, of a disconnect-signal at the incoming end of the trunk placed in condition to operate by current over a portion of the talking-circuit when connection is established with the called line, and a trunk-relay connected between the outgoing end of the trunk and ground and actuated by current over the trunk when a connection exists at the outgoing end, said relay serving when actuated to prevent the operation of said signal, and means to disconnect said relay from the outgoing end when the called subscriber responds, substantially as described.

4. The combination with a trunk-circuit extending between different switchboard-sections and adapted to connect subscribers' lines together for conversation, of a disconnect-signal at the incoming end placed in condition to operate by current over a portion of the talking-circuit when connection is established with a called line, a trunk-relay adapted when energized to prevent the operation of said signal, said relay being actuated by current over both sides of the trunk with suitable return when connection is established at the outgoing end, and means for disconnecting said relay when the called subscriber responds, substantially as described.

5. The combination with a trunk-circuit extending between different switchboard-sections and adapted to connect subscribers' lines together for conversation, of a disconnect-signal for the incoming end of the trunk, a relay actuated over a portion of the talking-circuit when connection is established with a called line to place said signal in condition to operate, a trunk-relay adapted when actuated to prevent the operation of said signal, said relay being connected at the incoming office between the outgoing end of the trunk and ground, a source of current likewise connected at the outgoing office when the connection is established at said end, a third relay responsive to current in the line when the called subscriber answers to sever the connection of said trunk-relay with the circuit, said third relay being arranged to prevent the operation of said signal while the trunk-relay is disconnected, substantially as described.

6. The combination with a trunk-circuit extending between different switchboard-sections and adapted to connect telephone-lines together for conversation, of a disconnect-signal for the incoming end of the trunk, a relay placed in condition to operate by current over a portion of the talking-circuit when connection is established with the called line, a trunk-relay with its coil permanently connected to ground and adapted to be actuated over the two limbs of the outgoing end of the trunk in parallel and ground, when a connection is established at the outgoing end, said relay serving to prevent the operation of said signal, and a pilot-relay at the incoming end actuated simultaneously with said signal, substantially as described.

7. The combination with a trunk-circuit extending between different switchboard-sections and adapted to connect telephone-lines together for conversation, of a guard-signal at the incoming end, a trunk-relay actuated over both sides of the circuit of the outgoing end of the trunk and ground when the connection exists at said outgoing end, said relay serving to place said signal in condition to operate, and a second relay actuated by current over a portion of the talking-circuit when a connection is established with the called line to render said signal inoperative, substantially as described.

8. The combination with a trunk-circuit extending between different switchboard-sections and adapted to connect telephone-lines together for conversation, of a guard-signal for the incoming end of the trunk, a trunk-relay connected between both the outgoing ends of the trunk and ground and actuated by current thereover when a connection exists therewith at the outgoing end to place said signal in condition to operate, a second relay at the incoming end actuated by current over a portion of the talking-circuit when connection is established with the called line and normally completing the circuit of said signal, and a pilot-signal at the incoming end actuated simultaneously with said guard-signal, substantially as described.

9. The combination with a trunk-circuit extending between different switchboard-sections and adapted to connect telephone-lines together for conversation, of a cord-circuit at the outgoing end to connect with said trunk, a repeating-coil having its windings connected across said cord-circuit, a relay legged from the middle point of the windings connected with the trunk end of the cord-circuit to the live pole of a battery, a signal controlled by said relay, a trunk-relay at the incoming end of the trunk legged to ground from the outgoing end, and means to sever the connection of said trunk-relay with the trunk when the called subscriber responds, whereby both the trunk-relay and the supervisory relay at the outgoing end are rendered inoperative, substantially as described.

10. The combination with a trunk-circuit extending between different switchboard-sections and adapted to connect telephone-lines together for conversation, of a disconnect-signal at the incoming end of the trunk, a source of current at said end, a relay also at said end to place said signal in condition to operate and actuated by current from said source over a portion of the talking-circuit when connection is made with the called line, a trunk-relay at the incoming end connected between the outgoing end of the trunk and ground and actuated by current sent over the trunk from the outgoing end when connection is established at said end, said trunk-relay serving to prevent the operation of said signal when energized, a third relay at the incoming end responsive to current in the line when the called subscriber answers, said relay serving to disconnect the trunk-relay and to prevent the actuation of said signal when energized, said current source serving to charge the transmitters for talking as well as for the operation of some of said relays, substantially as described.

11. The combination with a trunk-line extending between different switchboard-sections, of a cord-circuit adapted to be connected with said trunk at its outgoing end, and a called subscriber's line with which its incoming end is adapted to be connected, a supervisory relay associated with the cord-circuit and a trunk-relay associated with the incoming end of the trunk-line, said relays being adapted to be actuated simultaneously by current over the outgoing end of the trunk, ground, and through their windings in series when connection is established at the outgoing end of the trunk, of signals associated, one with each of said relays and adapted to be displayed by the actuation thereof, a second relay associated with the incoming end of the trunk actuated when connection is established with the called line to render one of said signals inoperative and a third relay associated with the same end of the trunk actuated when the called subscriber responds to render the other of said signals inoperative, substantially as described.

12. The combination with a trunk-line extending between different switchboard-sections, of a cord-circuit adapted to be connected with said trunk at its outgoing end, and a called subscriber's line with which said trunk is adapted to connect at its incoming end, of a supervisory relay associated with the cord-circuit, and a trunk-relay associated with the incoming end of the trunk-line, said relays being in series with the two limbs of the trunk-line

in parallel, and having their circuit controlled by the position of the called subscriber's receiver-hook, substantially as described.

847,985. PROCESS OF TREATING STARCH. FREDERICK DRITTLER, Rutherford, N. J., assignor to The Arabol Manufacturing Company, New York, N. Y., a Corporation of New York. Original application filed Mar. 9, 1906, Serial No. 305,154. Divided and this application filed Aug. 23, 1906. Serial No. 331,687.

Claim.—1. The herein-described process for rendering starch capable of swelling in cold water, consisting in: first mixing the starch with a liquid derivative of a hydrocarbon, insoluble in water; and then adding caustic alkali.

2. The herein-described process for rendering starch capable of swelling in cold water, consisting in: first mixing the starch with a liquid derivative of a hydrocarbon, insoluble in water; then adding caustic alkali; and finally removing said derivative.

3. The herein-described process for rendering starch capable of swelling in cold water, consisting in: first mixing the starch with a liquid derivative of a hydrocarbon, insoluble in water; adding caustic alkali; removing said derivative; and finally neutralizing said alkaline starch.

4. The herein-described process of rendering starch capable of swelling in cold water, consisting in: first mixing the starch with a liquid-halogen substitution product of a hydrocarbon, insoluble in water; and then adding caustic alkali.

5. The herein-described process for rendering starch capable of swelling in cold water, consisting in: first mixing the starch with a liquid-halogen substitution product of a hydrocarbon, insoluble in water; then adding caustic alkali; and finally removing said halogen substitution product.

6. The herein-described process for rendering starch capable of swelling in cold water, consisting in: first mixing the starch with a liquid-halogen substitution product of a hydrocarbon, insoluble in water; adding caustic alkali; removing said halogen substitution product; and finally neutralizing said alkaline starch.

7. The herein-described process for rendering starch capable of swelling in cold water, consisting in: first mixing the starch with carbon tetrachlorid; and then adding caustic alkali.

8. The herein-described process for rendering starch capable of swelling in cold water, consisting in: first mixing the starch with carbon tetrachlorid; then adding caustic alkali; and finally removing said carbon tetrachlorid.

9. The herein-described process of rendering starch capable of swelling in cold water, consisting in: first mixing the starch with carbon tetrachlorid; adding caustic alkali; then removing the said carbon tetrachlorid; and finally neutralizing said alkaline starch.

847,986. GARMENT-CLASP. FREDERICK EGGE, Bridgeport, Conn. Filed Apr. 19, 1906. Serial No. 312,585.

Claim.—1. The herein-described garment-clasp, which consists of a base-plate having a hook rising from its forward end and open throughout its central portion and provided with a housing at the rear of said opening, and a toggle-jointed clamping-lever having its rear end pivoted within said housing and operated at its pivotal points with a spring action.

2. In a garment-clasp, the combination of the base-plate having a hook rising from its forward end and open at its central portion and provided at the rear of said opening with a housing in whose side edges are formed upper and lower V-shaped notches, the resilient rectangular wire frame whose ends extend within said housing and whose side bars engage with said notches when the frame is elevated and depressed, and the U-shaped frame whose ends are curled around the front bar of said rectangular frame and are provided with upper and lower V-shaped notches in their side edges with which notches the side bars of said rectangular frame engage when the U-shaped frame is moved upward or downward around its pivotal connection with said front bar.

847,987. PROCESS OF PRODUCING A DULL FINISH ON COATED LEATHER. LEON FEVAL, Newark, N. J., assignor, by mesne assignments, to Guardian Trust Company of New York, trustee, a Corporation of New York. Filed May 2, 1906. Serial No. 314,775.

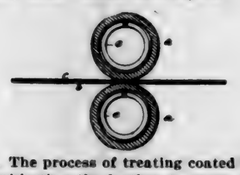

Claim.—1. The process of treating coated leather, which consists in subjecting the leather to pressure, with paper interposed between the coated side of the leather and the pressing-surface.

2. The process of treating coated leather, which consists in subjecting the leather to pressure by an embossed surface, and interposing paper between the surface and the coating of the leather.

3. The process of treating coated leather, which consists in subjecting the leather to pressure, and interposing paper betwen the coated side of the leather, and the pressing-surface in the presence of heat.

847,988. GREASE-CUP. ALMON J. GRAY, St. Paul, Minn., assignor, by mesne assignments, to William E. S. Strong, Chicago, Ill., and Frank V. Bartlett, Detroit, Mich. Filed Mar. 6, 1905. Renewed June 22, 1906. Serial No. 322,952.

Claim.—1. The combination, with a grease-cup having a revoluble cover, of a spring arranged within said cup and having ends projecting across the cup, said ends being free to be moved toward or from each other, and a finger carried by said cover and having a flattened lower end that depends between the ends of said spring, substantially as described.

2. The combination, with a grease-cup having a revoluble cover, of a spring device secured within said cup and having free ends that project into the cup-chamber, said ends being spaced from one another and held in parallel relation by the tension of said spring, and a finger carried by said cover and having a flattened lower end of greater width than the distance between the free ends of said spring and depending between said free ends, substantially as described.

3. A grease-cup comprising a fixed and a revoluble member, a spring device mounted on one of said members within said cup and means carried by the other member and embraced by said spring device and whereby said revoluble member is yieldingly held against premature movement, substantially as described.

4. The combination, with a grease-cup having a revoluble cover, of a spring device arranged within said cup and having ends free to be moved toward or from each other, and a finger carried by said cover and having an end depending between the ends of said spring.

5. The combination, with a grease-cup having a revoluble cover, of a spring device secured within said cup and having ends spaced from one another and held in yielding substantially parallel relation with one another, and a finger carried by said cover and depending between said free ends, the part of said finger between said ends being wider than the normal distance between said ends, for the purpose specified.

847,989. TROLLEY-WIRE CROSSING. JAMES N. HAYES, St. Louis, Mo. Filed Jan. 29, 1906. Serial No. 298,489.

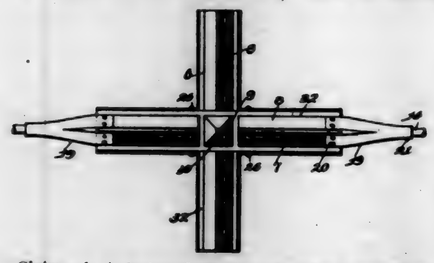

Claim.—1. A device of the class described comprising a crossing made of two sections, inclined surfaces formed on each of said sections, said inclined surfaces so arranged as to form shoulders for the operation of the flanges of a trolley-wheel, elongated slots formed in each of said sections for the insertion of a trolley-wire, the upper surface of each section being covered with a plate, clamps securing both sections in locked position, and a contact extending through the central inclined surface of the crossing communicating with one of the trolley-wires whereby current may be supplied to the passing trolley-wheel, substantially as specified.

2. A device of the class described comprising a crossing made of two sections, inclined surfaces formed on each of said sections, said inclined surfaces so arranged as to form shoulders for the operation of the flanges of a trolley-wheel, elongated slots formed in each of said sections for the insertion of a trolley-wire, the upper surface of each section being covered with a plate, clamps securing both sections in locked position, a contact extending through the central inclined surface of the crossing communicating with one of the trolley-wires whereby current may be supplied to the passing trolley-wheel, and shoes secured to the ends of the inclined surfaces, projecting upwardly and secured to the trolley-wires, substantially as specified.

847,990. TYPE-WRITING MACHINE. EMMIT G. LATTA, Friendship, N. Y., assignor of one-half to Harvey A. Moyer, Syracuse, N. Y. Original application filed July 5, 1904, Serial No. 215,246. Divided and this application filed Sept. 27, 1904. Serial No. 226,187.

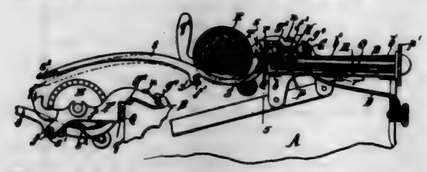

Claim.—1. In a type-writing machine, the combination with a platen-carriage, a supporting-frame therefor, and a step-by-step feed, of an auxiliary feed comprising a relatively fixed stop, and a combined releasing and stop bar mounted on the carriage in rear of the platen and between the platen and the carriage-supporting frame and movable to release the step-by-step feed and place a stop thereon in position to engage said fixed stop to arrest the carriage, the movable bar having a rigidly-connected forwardly-projecting lever by which it is actuated, substantially as set forth.

2. In a front-strike type-writing machine, the combination with a carriage, and a step-by-step feed, of an auxiliary feed mechanism comprising a relatively fixed stop, and a device supported by and movable with the carriage and having a horizontal bar which is movable vertically to place a stop thereon in position to engage said relatively fixed stop, and an operating finger-bar connected to said stop-bar and located in front of the carriage and parallel with the platen in position to allow the type-bars to swing between it and the platen, said finger-bar being of such length that some part thereof will be at the central portion of the machine in all positions of the carriage, substantially as set forth.

3. In a type-writing machine, the combination with a carriage, and a regular step-by-step feed, of an auxiliary feed device comprising a fixed stop on the carriage-supporting frame, a bar pivoted on the carriage, a detachable stop-strip having a series of stops supported by said bar, and a lever rigidly connected to said bar for swinging the bar to place the stops on the bar in line with the fixed stop on the frame, substantially as set forth.

4. In a type-writing machine, the combination with a carriage, and a regular step-by-step feed, of an auxiliary feed comprising a fixed stop and a rigid rectangular frame pivotally connected to the carriage and having a rear bar supporting a series of stops, and a front bar located forwardly of the carriage to serve as a finger-lever to actuate the frame, substantially as set forth.

5. In a type-writing machine, the combination with a carriage, and a regular step-by-step feed, of an auxiliary feed comprising a fixed stop and a rigid rectangular frame having ends centrally pivoted to the ends of the carriage, a rear bar supporting a series of stops, and a front bar located in front of the carriage and forming a finger-lever to actuate the frame, substantially as set forth.

6. In a type-writing machine, the combination with a carriage, and a regular step-by-step feed, of an auxiliary feed device comprising a fixed stop, a movable bar on the carriage having a longitudinal groove, a strip provided with stops detachably retained in said groove, and means to prevent lateral displacement of the stop-strip, substantially as set forth.

7. In a type-writing machine, the combination with a regular step-by-step feed, of an auxiliary feed device comprising a fixed stop, a swinging bar pivoted to the carriage, and an endwise detachable stop-strip supported on the swinging bar and arranged between parts at the ends of the carriage so that the stop-strip is held against endwise movement on the bar by the carriage when in operative position, substantially as set forth.

8. In a type-writing machine, the combination with a carriage, and a step-by-step feed, of an auxiliary feed mechanism including a device removably hung on the carriage beneath the platen to oscillate vertically and travel with the carriage, and adapted to be detached from and placed on the carriage when the platen is detached without the actuation of securing devices, substantially as set forth.

9. In a type-writing machine, the combination with a carriage, of feed mechanism for the carriage including a feed-bar having side arms extending beneath the platen and provided with hooks removably seated on parts of the carriage, said hooks forming pivotal supports for the feed-bar and enabling it to be readily attached to and detached from the carriage, substantially as set forth.

10. In a type-writing machine, the combination with a movable carriage, and a step-by-step feed, of a carriage-releasing bar, and an auxiliary carriage releasing and stop bar, said bars being arranged adjacent to each other and operating independently to release the step-by-step carriage-feed, substantially as set forth.

11. In a type-writing machine, the combination with a movable carriage, and a relatively stationary step-by-step carriage-feed, of a carriage-releasing bar, and an auxiliary carriage releasing and stop bar, said bars being mounted parallel with each other on the carriage and operating in-

dependently to release the step-by-step carriage-feed, substantially as set forth.

12. In a type-writing machine, the combination with a movable carriage, a relatively stationary step-by-step carriage-feed, and a carriage-stop, of a carriage-releasing bar, and an auxiliary carriage releasing and stop bar, said bars being arranged parallel with each other and movable with the carriage and being also movable independently to actuate the same part of the carriage-feed to release the carriage, substantially as set forth.

13. In a type-writing machine, the combination with a platen-carriage, a supporting-frame for the same, and a regular step-by-step feed, of auxiliary feed mechanism comprising a stop on said supporting-frame, a carriage releasing and stop bar located between the platen and said supporting-frame parallel with the platen, and arms rigidly connected to the ends of said stop-bar and pivoted to the carriage, one of said arms extending forwardly beneath the platen-shaft for operating said stop-bar, substantially as set forth.

14. In a type-writing machine, the combination with a platen-carriage, a supporting-frame for the same, and a regular step-by-step feed, of auxiliary feed mechanism comprising a stop on said supporting-frame, a carriage releasing and stop bar located between the platen and said supporting-frame parallel with the platen, and arms rigidly connected to the ends of said stop-bar and pivoted to the carriage, said arms extending forwardly beneath the platen-shaft and being connected by a horizontal operating finger-bar, substantially as set forth.

847,991. MANIFOLDING BOOK OR PAD. BERT C. MAXWELL, Canton, Ohio. Filed Nov. 23, 1906. Serial No. 344,722.

Claim.—1. In a manifolding-pad, the combination of a plurality of superposed sets of triplicating-slips, each set of slips being formed from a single sheet of paper, twice folded transversely intermediate its ends and perforated or weakened along the line of the lower one of said folds, each slip formed from the upper section of one of said sheets of paper being interposed between the slips formed from the intermediate and lower sections thereof, and the slip formed from said lower section being shorter than the one formed from said intermediate section, suitable transfer mediums interposed between the first and the second and the second and the third slips of each set, respectively, and means for binding said sets of slips together, said means engaging at their upper ends both of the slips formed from the upper and intermediate sections of said sheet of paper.

2. In a manifolding-pad, the combination of a plurality of superposed sets of triplicating-slips, each set of slips being formed from a single sheet of paper, twice folded transversely intermediate its ends and perforated or weakened along the line of the lower one of said folds, each slip formed from the upper section of one of said sheets of paper being interposed between the slips formed from the intermediate and lower sections thereof, and the slip formed from said lower section being shorter than the one formed from said intermediate section, and the under surface of the first two slips in each set being coated with a suitable manifolding substance, and means for binding said sets of slips together at their upper ends, at points above the upper ends of the slips formed from the lower section of each sheet of paper forming a set of slips.

3. In a manifolding-pad, the combination of a plurality of superposed sets of triplicating-slips, each set of slips formed from a single sheet of paper, twice folded transversely intermediate its ends and perforated or weakened along the line of the lower one of said folds, and also along transverse lines on both the upper and intermediate sections of each sheet at points adjacent to the transverse line of fold between them, a suitable manifolding substance on the under surface of the first two slips in each set, and means for binding the sets of slips together so as to form stubs arranged between the upper transverse line of fold of each sheet of paper from which a set of slips is formed and the said weakened or perforated lines on the upper and intermediate sections of the said sheet.

4. In a manifolding-pad, the combination of a plurality of superposed sets of triplicating-slips, each set of slips being formed from a single sheet of paper, twice folded transversely intermediate its ends, each slip formed from the uppermost section of one of said sheets of paper, being interposed between the slips formed from the intermediate and lower sections thereof, and means for binding the sets of slips together so as to form a double stub for each set of slips.

5. In a manifolding-pad, the combination of a plurality of superposed sets of triplicating-slips, each set of slips being formed from a single sheet of paper, twice folded transversely intermediate its ends, each slip formed from the uppermost section of one of said sheets of paper, being interposed between the slips formed from the intermediate and lower sections thereof, and the under surface of the first two slips in each set being coated with a suitable manifolding substance, and means for binding the sets of slips together, arranged to form a double stub for each set of slips, one stub for the slip formed from the intermediate section and the other stub for the slip formed from the upper section of the sheet of paper.

6. A manifolding-pad comprising a plurality of superposed sets of combined duplicating and triplicating slips, each set consisting of three slips of differing lengths, the shortest one of which is interposed between the other two, and the uppermost slip of the set lying directly upon both the shortest slip and a portion of the undermost slip of the set, and means for binding the sets of slips together.

7. A manifolding-pad comprising a plurality of superposed sets of combined duplicating and triplicating slips, each set formed from a single piece of paper twice folded transversely intermediate of its ends to form three slips of differing lengths of which the one formed from the intermediate section of the sheet is the longest and the others are folded over upon it, the shortest slip of each set being arranged to lie between the other two, and suitable transfer mediums interposed between the uppermost slip and portions of the second and third slips, and between the second slip and third slip of each set of slips.

8. A manifolding-pad comprising a plurality of superposed sets of combined duplicating and triplicating slips, each set formed from a single piece of paper twice folded transversely intermediate of its ends to form three slips of differing lengths of which the one formed from the intermediate section of the sheet is the longest and the others are folded over upon it, the shortest slip of each set being arranged to lie between the other two, the under surface of the topmost slip of each set of slips being coated with a suitable transfer material which contacts directly with portions of the upper surfaces of both the middle slip and the under slip of the set, and the under surface of the middle slip of the set being coated with a suitable transfer substance.

9. In a manifolding-pad, the combination of a series of superposed sets of combined duplicating and triplicating slips, each set formed from a single piece of paper twice folded transversely intermediate of its ends, and perforated or weakened along the line of the lower one of said folds, and also along transverse lines on both the upper and intermediate sections of said sheet of paper at points adjacent to the transverse line of fold between them, each slip formed from the upper section of said sheet of paper being shorter than and arranged to lie between the other two slips formed therefrom, and each slip formed from the lower section of said sheet of paper being shorter than the slip formed from the intermediate section of said sheet and arranged to have its under surface contact with portions of the upper surfaces of both of the other slips of the set, and means for binding said sets of slips together.

10. A manifolding-pad comprising a series of superposed sets of combined duplicating and triplicating slips, each set formed from a single sheet of paper twice folded transversely intermediate its ends and perforated or weakened along the line of the lower one of said folds, each slip formed from the lower section of said sheet of paper being shorter in length than the one formed from the intermediate section of said sheet, and each slip formed from the upper section of said sheet of paper being shorter than the other two slips formed therefrom and arranged to lie between them, and suitable transfer material interposed between the uppermost slip and portions of the middle and under slip of each set, and between the middle slip and portions of the under slip of the set.

11. In a manifolding-pad, the combination of a plurality of superposed sets of triplicating-slips, the uppermost and lowermost slips of each set being suitably connected together at their lower ends and the middle and lowermost slip of each set being suitably connected into the pad at their upper ends, and a cover for said pad arranged to fold over onto the sets of slips from the bottom of the pad and to leave exposed above its top edge a portion of the uppermost slip of the set of slips next beneath it.

12. A manifolding-book comprising a plurality of superposed sets of combined duplicating and triplicating slips, each set formed from a single sheet of paper twice folded transversely intermediate of its ends to form three slips all differing in length, of which a slip formed from one end of said sheet is shorter than the other two slips and in use lies adjacent to but a portion of the slip to which it is attached, suitable transfer medium between the adjacent surfaces of the slips of each set which lie, one upon the other, and means at one end of the sets of slips for holding them together in book form.

847,992. JOURNAL-BOX. MICHAEL P. NEWCOMB, Priest River, Idaho. Filed Oct. 13, 1905. Serial No. 282,682.

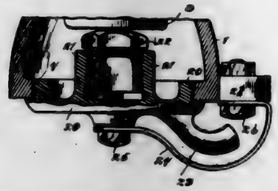

Claim.—1. A journal-box having a threaded opening, a cap within said opening, there being an interiorly-threaded sleeve carried by the cap, an abutment having a convex face and a threaded part engaging said threads of the sleeve, and a spring secured to the box and to said cap to prevent movement of the latter.

2. In combination with the axle, a journal-box having a threaded opening in its front end, a cap threaded into engagement with said opening, said cap having an inwardly-extending central sleeve on its inner face, said sleeve being threaded on its interior and extending adjacent the end of said axle eccentric thereto, and an abutment having a face of convex contour engaging said axle end and a screw-threaded inner end engaging said sleeve.

3. A journal-box having a threaded opening, a cap within said opening formed with a sleeve, an abutment engaging said sleeve, said box having a lug formed thereon, and a spring having one end secured to said lug and having its opposite end bent to overlie and be secured to the central outer portion of said cap.

847,993. MANIFOLD PAD OR BOOK. SAMUEL C. NUSLY, Canton, Ohio, assignor to Stewart S. Kurtz, Canton, Ohio. Filed Jan. 14, 1907. Serial No. 352,279.

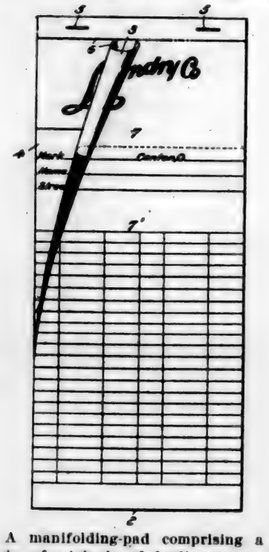

Claim.—1. A manifolding-pad comprising a series of superposed pairs of original and duplicate slips, the duplicate slips being shorter than the original slips and each one being suitably connected at its lower end to the lower end of the original slip above it, and the under surfaces of the original slips being coated with a suitable transfer substance, and means binding the original slips together near their upper ends.

2. In a manifolding-pad, a plurality of sheets of paper bound together at their upper free ends, each sheet being transversely folded and weakened intermediate of its ends to form an original slip and a duplicate slip of less length than the original slip and folded up thereunder, and a suitable transfer medium interposed between the under surface of the original slip and the upper surface of the duplicate slip.

3. A pair of manifolding-slips formed from a single sheet of paper, transversely folded and weakened intermediate of its ends to form an original slip and a duplicate slip of less length than the original slip and folded up thereunder, and the under side of said original slip being coated with a manifolding substance for substantially the length of the duplicate slip

4. In a manifolding-pad, a plurality of sheets of paper bound together at their upper free ends, each sheet being folded and weakened intermediate of its ends on a transverse line to form two slips, one shorter than the other, the shorter one being folded up under the longer one, the space upon the longer slip above the upper end of the shorter slip being adapted for the printing of subject-matter not necessary on the shorter slip, and the under side of the upper slip being coated with a suitable transfer substance.

847,994. BOTTLE-STOPPER. GOTTFRIED LIESSEM and JOSEPH BOMMER, San Francisco, Cal. Filed Nov. 14, 1906. Serial No. 343,406.

Claim.—A bottle-stopper comprising a disk, a thin metallic disk over the first disk and having a central protuberance or boss, a cap around the same adapted to be crimped

to the neck of the bottle, said cap being formed of thin metal which will readily tear, and said metal being made with corrugations forming an ornamental pattern and being divided into two wings, the line of division between the wings extending in the same direction as the lines of

corrugations to conform to the general pattern, each wing being connected to the base of the cap, and the two wings together completely covering the underlying disk, substantially as described.

847,995. GAS-DEMONSTRATION APPARATUS. JOHN E. CARROLL, Philadelphia, Pa. Filed Feb. 9, 1907. Serial No. 356,638.

Claim.—A gas-conduit embodying a pipe, a fiber lining therefor, and a fiber covering or jacket around the pipe, substantially as described.

REISSUES.

12,617. CHURN. THOMAS J. CHENEY, Lodi, Ohio, assignor to Frank D. Merrill, Seattle, Wash. Filed Oct. 24, 1906. Serial No. 340,407. Original No. 805,710, dated Nov. 28, 1905.

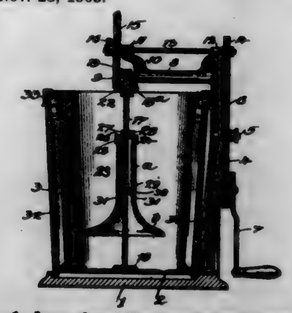

Claim.—1. In a churn the combination with a receptacle for the liquid, a combined agitator and aerator comprising a bell-shaped body portion, the walls of which present a smooth and unbroken surface to the liquid, said agitator being provided with air-inlets at a point above the surface of the liquid, and means for actuating said agitator about a fixed and unchangeable axis of rotation, whereby currents of air are induced through the agitator into the liquid, and the solids separated from the liquid without mechanical stirring up or agitating the entire mass thereof.

2. In a churn the combination with the receptacle for the liquid, a combined agitator and aerator comprising a bell-shaped body portion, the walls of which flare outwardly and present a smooth and unbroken surface to the liquid, said agitator being provided with air-inlets at a point above the surface of the liquid, and means for actuating said agitator about a fixed and unchangeable axis of rotation, whereby currents of air are induced through the agitator into the liquid, and the solids separated from the liquid without mechanical stirring up or agitating the entire mass thereof.

3. A combined agitator and aerator comprising a bell-shaped body, the walls of which present a smooth and unbroken surface to the liquid, and a tubular portion integral therewith, adapted to extend above the surface of the liquid, and provided with air-inlets toward its outer end, substantially as described.

4. A combined agitator and aerator comprising a bell-shaped body flaring outwardly at its lower end and having at its upper end a tubular projection provided with air-inlets at a point above the surface of the liquid, which said body portion presents a smooth and uniform surface to the liquid in which it is submerged, substantially as described.

12,618. PEGGING-MACHINE. WILLIAM W. KELLY, Hartland, Vt., assignor, by mesne assignments, to United Shoe Machinery Company, a Corporation of New Jersey. Filed Feb. 12, 1907. Serial No. 357,110. Original No. 559,532, dated May 5, 1896.

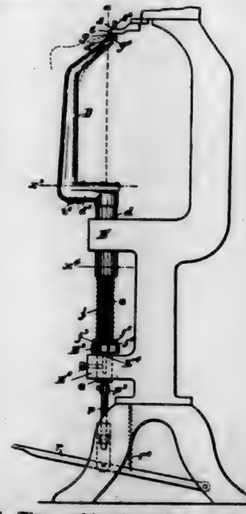

Claim.—1. The combination of the awl and peg-driving mechanism of a pegging-machine, with a rotatable horn presenting an effective support for the material between the point penetrated by the awl and the axis of rotation of the horn, the axis of rotation of the horn being offset with relation to the line of feed of the awl, which awl operates outside the exterior surface of said support, substantially as described.

2. The combination of the awl and peg-driving mechanism of a pegging-machine, with a rotatable horn the axis of rotation of which is offset with relation to the line of feed of the awl, and means for presenting an effective support for the material close to the point penetrated by the awl between the axis of rotation of the horn and the point of penetration of the awl, and an additional support beyond said point of penetration forming a bottomless working space for the awl between said supports.

3. The combination of the peg-driving mechanism of a pegging-machine, with a rotatable horn, the axis of rotation of which is offset with relation to the line of feed of the peg-driving mechanism, and an anvil-piece pivotally supported in the tip of said horn to support the material between the point penetrated by the awl and the axis of rotation of the horn, the awl operating on a tangent outside the periphery of said anvil-piece, substantially as described.

4. The combination of the peg-driving mechanism of a pegging-machine, with a rotatable horn, the axis of rotation of which is offset with relation to the line of feed of the peg-driving mechanism, and an anvil-piece pivotally supported in the tip of said horn to support the material between the point penetrated by the awl and the axis of rotation of the horn, the awl operating on a tangent outside the periphery of said anvil-piece, and means for holding said anvil-piece against rotation with the horn, substantially as described.

5. The combination with the awl and peg-driving mechanism of a pegging-machine, of a horn presenting a work-support between its axis of movement and the line of feed movement of the awl, such line of feed of the awl being offset with relation to the axis of the horn and the awl being arranged to work at the side of said support.

6. The combination of the rotatable horn, with an anvil-piece supported in the tip thereof, and projecting laterally beyond said horn-tip to afford a support for the material, and means for holding said anvil against rotation with the horn, substantially as described.

7. The combination of the peg-driving mechanism comprising an awl and peg-driver, with a rotatable horn, the axis of rotation of which is offset with relation to the said awl and driver which operate outside the periphery of the tip of said horn, and an anvil-piece supported in said horn-tip, and projecting over the periphery thereof toward the awl and driver, and means for holding said anvil-piece against rotation with the horn, substantially as described.

8. The herein-described anvil-piece for the horn of a pegging-machine comprising a pivotal shank and an overhanging head or supporting portion, having a lateral projection at one end thereof, substantially as described.

9. The combination of the rotatable horn, with a sprocket-wheel held against rotation in the axis of the horn, a second sprocket-wheel having its bearing in the rotating horn and a chain connecting said sprocket-wheels, an anvil-piece pivotally supported in the horn-tip and connection between the same and said sprocket-wheel and horn, substantially as and for the purpose described.

10. The combination with the rotatable horn and means for yieldingly pressing it upward, of a treadle and means for yieldingly pressing it upward, and a loose or slotted connection between said treadle and horn; said horn being movable downward independently of said treadle, substantially as described.

11. The combination of a rotatable horn with an anvil-piece supported in the tip thereof, gearing in said horn to prevent rotation of said anvil-piece therewith, and a shaft in the shank of said horn connected with said gearing; a fixed post below and in line with the said horn engaged with said shaft as described, whereby the latter can move longitudinally but without rotary movement in said post; substantially as and for the purpose set forth.

12. The combination of a rotatable horn, with a spring to press it upward; and an antifriction-bearing for the end of said spring comprising a collar; a series of balls contained therein; and bearing-surfaces for said balls at each side of said collar, substantially as and for the purpose described.

13. The combination of the horn having a hollow or tubular shank, and an anvil-piece supported in the tip thereof, and gearing in said horn to prevent rotation of said anvil-piece therewith; a post fixed below and entering the tubular shank of said horn; a shaft in said horn connected with the gearing therein, and engaged with said post as described; a spring to elevate said horn and a treadle connected to a shaft in said horn and provided with a stop to limit the upward movement thereof, substantially as described.

12,619. VENEERING-MACHINE. ROBERT H. LYNN, Bolivar, Pa. Filed Dec. 7, 1906. Serial No. 346,825. Original No. 814,382, dated Mar. 6, 1906.

Claim.—1. In a veneering-machine of the character described the combination, with a table or support, of means for applying a coating to a surface of a moving bar of clay comprising a yielding frame having an inclined cross member adjacent to the surface to be coated through which the bar is passed, and means for adjusting the frame.

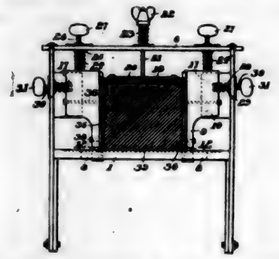

2. In a veneering-machine of the character described the combination, with a table or support, of a flexible engobe-applying die comprising independent movable side members and a cross member.

3. In a veneering-machine of the character described the combination, with a table or support, of a flexible engobe-applying die consisting of two independent side members and a cross member, and movable supporting means for the die members.

4. In a veneering-machine of the character described the combination, with a support for a moving bar of clay, of a flexible engobe-applying die consisting of two independent side members and a cross member, movable supporting members for the die members, and means for adjusting the supporting members.

5. In a veneering-machine of the character described the combination with a table, of uprights extending above the table, a cross-beam connecting the uprights, a flexible engobe-applying die consisting of two independent side members and a cross member, resilient die-carrying members, and means for adjusting the latter members.

6. The combination with a table supported by uprights, of yielding frames mounted upon said table and forming funnel-shaped openings in alinement with one another, means to vertically adjust said frames, means to horizontally adjust said frames to regulate the size of said openings.

7. In a veneering-machine of the character described the combination, with a support, of means for applying a coating to a surface of a moving bar of clay comprising a yielding frame having two side members formed with slots and a cross member having its ends located in the slots.

12,620. APPARATUS FOR TRANSFERRING METAL BLOOMS, &c. EDWIN E. SLICK, Pittsburg, Pa. Filed Jan. 23, 1907. Serial No. 353,978. Original No. 547,895, dated Oct. 15, 1895.

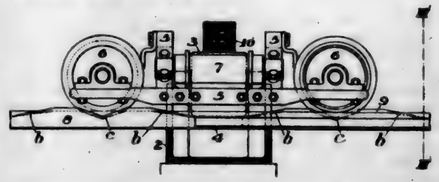

Claim.—1. The combination of a carriage provided with means for carrying a burden thereon, a track, and inclines arranged to move the carriage in parallel lines relatively to the track, said inclines affording an intermediate depression for the wheels; substantially as described.

2. The combination of a wheeled carriage provided with means for carrying a burden thereon, and a track having depressions provided with oppositely-facing inclines arranged to engage the wheels of the carriage and move

them simultaneously in a vertical direction; substantially as described.

3. The combination of a car provided with means for carrying a burden thereon, a track, and sets of inclines arranged to engage the wheels of the car and to raise and lower the same simultaneously, one set of inclines being inoperative upon one set of wheels; substantially as described.

4. The combination of a feed-table, a metal-carrying car mounted on a track extending across the table, and inclines adapted to cause the car to move vertically relatively to the track; substantially as described.

5. The combination of a feed-table, a metal-carrying car mounted on a track extending across the table, and inclines adapted to cause the car to move vertically above and below the table, said track being provided with separate inclines for the front and rear wheels of the car respectively; substantially as described.

6. The combination of a feed-table, a metal-carrying car mounted on a track extending across the table, and inclines adapted to cause the car to move vertically above and below the table, said track being provided with separate inclines for the front and rear wheels of the car respectively, and said inclines being situate on respectively opposite sides of the rails, the wheels of the car having flanges also situate on respectively opposite sides of the wheels and adapted to engage the inclines; substantially as described.

12,621. VENEER-GLUING MACHINE. ALFRED A. DENNIS, Grand Rapids, Mich., assignor of one-half to Royal Furniture Company, Grand Rapids, Mich., a Corporation. Filed Feb. 21, 1907. Serial No. 358,751. Original No. 838,089, dated Dec. 11, 1906.

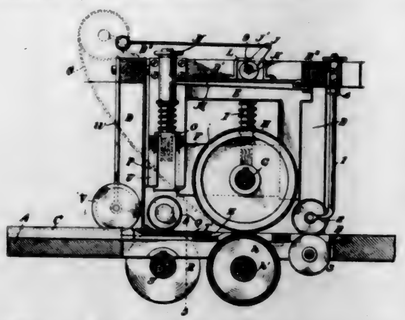

Claim.—1. In a machine for attaching veneers edge to edge, a main bed or table having means for disposing two strips of veneer at an angle with respect to the plane of said table, and means for bringing said strips to the plane of said table, pressure and feed rollers for feeding and carrying the veneer strips, means for feeding and applying an adhesive tape to the adjacent portion of the two veneer strips and means for heating the tape so as to make the same adhesive.

2. In a machine for attaching veneers edge to edge, a main bed or table having means for disposing two strips of veneer at an angle with respect to the plane of said table, and means for bringing said strips to the plane of said table, pressure and feed rollers for feeding and carrying the veneer strips, means for feeding an adhesive tape to the adjacent portions of the two strips and a heated pressure-roller for applying the tape to the two strips of veneer and for heating the tape so as to make the same adhesive.

3. In a machine for attaching veneers edge to edge, a main bed or table having a groove for a portion of the length thereof for receiving and holding at an angle to the plane of the table the adjacent parts of two strips of veneer, and without such groove for another portion of the length thereof, pressure and feed rollers for feeding and carrying the veneer strips, and means for applying to the adjacent portions of the two strips of veneer an adhesive tape.

4. In a machine for attaching veneers edge to edge, a main bed or table having a groove for a portion of the length thereof for receiving and holding at an angle to the plane of the table the adjacent parts of two strips of veneer, and without such groove for another portion of the length thereof, a longitudinal partition in such groove for separating the adjacent veneer edges, feed and pressure rollers for feeding and carrying veneer strips, and means for applying an adhesive tape to the adjacent portions of the two veneer strips.

5. In a machine for attaching veneers edge to edge, a main bed or table having a groove for a portion of the length thereof for receiving and holding at an angle to the plane of the table the adjacent parts of two strips of veneer, and without such groove for another portion of the length thereof, means for retaining the veneer strips in contact with the bottom of the groove as they move along the same, feed and pressure rollers for feeding and carrying the veneer strips, and means for applying an adhesive tape to the adjacent portions of the two veneer strips.

6. In a machine for attaching veneers edge to edge, a main bed or table, pressure and feed rollers for feeding and carrying the veneer strips, means for feeding an adhesive tape to its point of attachment, and a roller for applying the tape to the adjacent portions of the two strips of veneer and provided near its opposite ends with flange extensions guiding the tape passing between the same and making contact with the veneer strips beyond the edges of the tape.

7. In a machine for attaching veneers edge to edge, a main bed or table having a groove for a portion of the length thereof for receiving and holding at an angle to the plane of the table the adjacent edges of two strips of veneer, and without such groove for another portion of the length thereof, means for holding the adjacent portions of the veneer strips out of the plane of the table as they are moved along such groove, pressure and feed rollers for carrying and feeding the veneer strips, and means for applying an adhesive tape to the adjacent portions of the veneer strips.

8. A machine of the class set forth having a bed or table provided with means for holding two veneer strips as they are fed over a portion thereof at an angle to the plane of said table and with means for returning said strips to the plane of said table, and also provided with a flat portion over which the strips are fed after being returned to the plane thereof, means for feeding said strips and means for applying to the adjacent portions of said strips an adhesive tape.

9. In a machine of the class described, a bed or table having means for holding two veneer strips at an angle to the plane thereof, and also provided with a flat portion over which the strips are disposed in the plane thereof with their inner edges in close contact, mechanism for feeding and imparting pressure to the strips and applying means for securing the inner edges thereof.

10. In a machine of the class set forth, a bed or table having means for first maintaining two veneer strips at an angle with respect to the plane thereof, and for subsequently disposing said strips in the plane thereof with their inner edges in close contact, and mechanism for feeding and imparting pressure to the said strips and for applying to the adjacent portions thereof means for securing the same together.

12,622. DUPLICATING-MACHINE. HARRY C. GAMMETER, Cleveland, Ohio, assignor, by direct and mesne assignments, to The American Multigraph Co., Cleveland, Ohio, a Corporation of Ohio. Filed Aug. 20, 1904. Serial No. 221,585. Original No. 722,404, dated Mar. 10, 1903.

Claim.—1. The combination of a type-carrying member adapted to carry a page-form of individual assembled type said type being held loosely and individually on said type-carrying member, a coöperating platen forming with the type-carrying member a printing-couple whose surfaces roll one upon the other, and a ribbon adapted to pass between the type-carrying member and platen and receive an impression simultaneously from a multiplicity of type.

2. A rotatable member having a printing-surface adapted to print by rotary motion, and a transfer fabric mounted on and arranged to travel in unison with said surface, substantially as described.

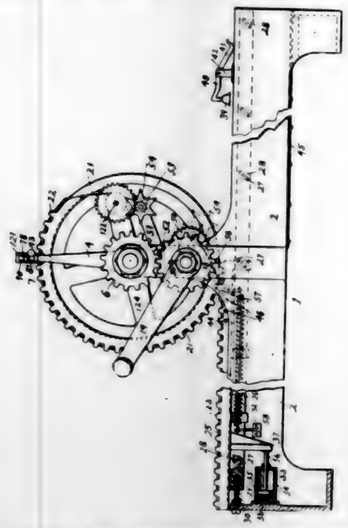

3. A rotatable drum having along its surface longitudinal, parallel type-holders adapted to hold individual type in separate rows, and a transfer fabric carried by said drum and adapted to pass across the type thereon, whereby the rotation of the drum may cause the type to print, substantially as described.

4. The combination of a rotatable drum having type-holders along its surface, a font of type from which individuals are adapted to be assembled on said drum and held therein during rotation, and a transfer fabric arranged to travel with the type on said holders at the moment of printing, substantially as described.

5. A member adapted to turn on an axis and having a printing-surface adapted to print by such motion, a pair of spools mounted on said member, and a transfer fabric carried thereby, substantially as described.

6. A printing-drum adapted to carry a printing-surface on a portion of its periphery and having a recess between the ends of such portion, a pair of spools mounted within such recess, and a transfer fabric carried by said spools and adapted to extend around the drum or directly from spool to spool, substantially as described.

7. The combination of a member having a plurality of parallel type-holders each adapted to hold a row of individual type whereby a page-form of type may be carried by the member said type being held loosely and individually on said member, a coöperating platen forming with the type-carrying member, a printing-couple whose surfaces roll one upon the other, and a ribbon of a width sufficient to cover such page-form and adapted to pass between the type-carrying member and platen and receive an impression simultaneously from types in a straight line extending across such page-form.

8. The combination of a printing-couple, one member of which is adapted to turn upon an axis, a plurality of type-holders carried parallel with said axis by one member of the couple and each adapted to hold a line of type said type being held loosely and individually on said type-holders, and an inked fabric adapted to pass with paper between the members of the couple, said paper receiving a rolling impression through said inked fabric simultaneously from the line of type in a holder and successively from the lines in different holders.

9. In combination, a rotatable member, means for carrying type upon the surface thereof, a second member, means for concurrently moving said members so that their surfaces may coöperate, a web of transfer material adapted to pass between said members, and means for automatically feeding said transfer material in addition to its movement during printing, substantially as set forth.

10. In combination, a rotatable drum, means for carrying type upon the surface thereof, a member having a surface adapted to coöperate with said type, a band of transfer material carried by said drum, and automatic means for feeding said band, substantially as described.

11. In combination, a rotary member, means for holding individual type assembled in lines of words in separate rows upon the surface thereof, said type being held in such rows loosely and individually, a second member, means for rotating said first member and concurrently moving said second member so that the surfaces of the two members may coöperate, and a web of transfer material adapted to pass between said members and be impressed simultaneously by a multiplicity of type, substantially as described.

12. In combination, a rotatable drum having longitudinal parallel channels for holding a plurality of assembled individual type upon the face thereof, said type being held loosely and individually in said channels, a band of transfer material adapted to pass in contact with said type and move with it while printing and be impressed simultaneously by the rolling motion of each line of type in the respective channels, and means for feeding material to be printed to the action of said type, substantially as described.

13. In combination, a rotatable drum adapted to carry assembled individual type upon the face thereof, a band of transfer material mounted on said drum and adapted to cover the faces of said type, and means including a movable platen for feeding paper to such type, substantially as described.

14. In combination, a rotatable member, means carried thereby for holding individual type in rows on the surface thereof, a coöperating movable impression member, and a band of transfer material mounted on one of said members, substantially as described.

15. In combination, a rotatable drum, means for holding individual type in separated, parallel, longitudinal rows upon the surface thereof, a band of transfer material adapted to pass in contact with said type and moving with it while printing, means for feeding material to be printed to the action of said type, and means for feeding said band while the type is not printing, substantially as described.

16. In combination, a rotatable drum, means for holding assembled individual type in rows upon the surface thereof, a band of transfer material carried by said drum in contact with the face of said type, means for rotating said drum, means for automatically feeding said band as the drum rotates, and means for feeding material to be printed to the action of said type, substantially as described.

17. In combination, a rotatable drum, means for carrying individual type in longitudinal rows upon a portion of the surface thereof, a member having a surface adapted to coöperate with said type, a band of transfer material carried by said drum across the face of said type, means for rotating said drum, and means for feeding said band at a time when the type on said drum are out of coöperation with said member, substantially as described.

18. In combination, a rotatable drum adapted to print by rotary movement, means for retaining individual type upon the surface thereof, a coöperating member geared to said drum, a band of transfer material lying between said member and said drum and movable with them as they move to print, and means for automatically feeding said band during the non-printing portion of the rotation of the drum, substantially as described.

19. The combination of a type-carrying member adapted to carry a page-form of individual assembled type said type being held loosely and individually by said type-carry-

ing member, a coöperating platen forming with the type-carrying member a printing-couple, one member of said couple being mounted to turn on a fixed axis and the other having concurrent movement, whereby the coöperating surfaces of said members may roll one upon the other, and an inked fabric adapted to pass between the members of the couple and receive an impression simultaneously from a multiplicity of type on the type-carrying member.

20. In combination, a rotatable drum, longitudinal channels along said drum for holding individual assembled type upon the face thereof, a second member, means for concurrently advancing such members so that their surfaces may bear upon each other as the drum rotates, a band of transfer material adapted to pass between said members, and automatic means for returning said second member to an extreme position, substantially as described.

21. In combination, a rotatable drum, means for retaining type upon the surface thereof, a second member, means for moving said members so that the surfaces thereof may bear upon each other, a band of transfer material lying between said surfaces, means for automatically feeding said band and means for normally constraining said second member to an extreme position, substantially as described.

22. In combination, a rotatable drum, means whereby said drum may carry type upon the face thereof, a member coöperating therewith, means for moving said members so that their surfaces may bear upon each other, a web of transfer material passing between the surfaces of said members, spools on said drum carrying the ends of said web, and automatic means for feeding said band between said spools, substantially as described.

23. In combination, two coöperating movable members, means for driving one of said members, means for transmitting movement between said members, one of said members comprising a rotary drum having longitudinal channels adapted to carry assembled individual type, and a web of transfer material passing between said members and mounted on said drum.

24. In combination, two coöperating movable members, means for driving one of said members, means for transmitting movement between said members, a transfer fabric passing between the said members and mounted on one of them and means for disconnecting the said members to arrest said transmitted movement, substantially as described.

25. In combination, two coöperating movable members, means for driving the first of said members, means for transmitting the driving force therethrough to the second of said members, means whereby one of said members may carry type on the face thereof, means for disengaging said members, a transfer fabric mounted on one of said members and adapted to pass between the surfaces of said members and automatic means for returning one of said members to an extreme position, substantially as described.

26. In combination, a rotatable drum, means for carrying type upon the face thereof, a movable flat carriage, means for concurrently moving said members so that the surface of said carriage may be impressed by the surface of said drum, means for returning said carriage to an extreme position, and a transfer material adapted to pass between said drum and said carriage and movable with one of them, substantially as described.

27. In combination, movable members, the surfaces whereof may coöperate, longitudinal channels in one of said members adapted to carry individual assembled type, said type being held loosely and individually in said channels, means for moving said members so that said surfaces may roll one upon the other, a web of transfer material adapted to pass between said surfaces and be impressed simultaneously by a multiplicity of type during such rolling motion and means for adjusting the relative position of said members whereby the degree of pressure between their surfaces may be regulated for different thicknesses of paper and for different amounts of ink carried by the transfer material, substantially as specified.

28. In combination, a rotatable drum, means for retaining type upon the surface thereof, a band of transfer material mounted on said drum and passing over said type, an elastic platen, means for moving such members so that the surface of said drum may roll upon said platen, and means for adjusting the position of the platen with respect to said drum, substantially as described.

29. In combination, a rotatable drum adapted to carry assembled individual type upon the face thereof, a band of transfer material adapted to cover the face of said type and mounted on said drum, an elastic platen, and means for simultaneously moving said drum and said platen to impress material between them, substantially as described.

30. In combination, a member adapted to turn on an axis and having on its surface carriers for individual type assembled into words, a transfer material adapted to cover the faces of said type while printing, means including a movable platen for feeding paper to such type, and means for moving the transfer material while the type is not printing to present a fresh face for the next impression.

31. In combination, a rotatable drum, means for retaining type upon the surface thereof, a band of transfer material passing over said type, a carriage having an elastic platen, means for moving said members so that the surface of said drum may roll upon said platen, means for guiding said carriage and means for adjusting the position thereof with respect to said drum, substantially as described.

32. In combination, a rotatable drum adapted to carry type upon the face thereof, a band of transfer material adapted to cover the face of said type, a carriage having an elastic platen, means for simultaneously moving said drum and said carriage so that said elastic platen may be impressed by the type upon said drum, a spring normally constraining said carriage to an extreme position and means for adjusting the plane in which said carriage moves, substantially as described.

33. In combination, a rotatable drum adapted to carry type upon the face thereof, a transfer material adapted to cover the faces of said type, a movable carriage, means for driving said rotatable drum, means whereby said carriage may engage with said rotatable drum whereby the former is advanced, means for disengaging the connection between said drum and said carriage, and means for automatically returning said carriage to an extreme position, substantially as described.

34. In combination, a rotatable drum adapted to carry type upon the face thereof, a transfer material adapted to cover the face of said type, a movable carriage adapted to pass adjacent to said drum, means for advancing said carriage so that the surface of said drum may roll upon said carriage, automatic means for returning said carriage to an extreme position, and a dash-pot to cushion the return of the same, substantially as described.

35. A pair of members, each provided with a plurality of longitudinal type-holders, type transferable from holder to holder, one of said members being adapted to turn about an axis, and an impression device coöperating with assembled type on said last-mentioned member during its movement, whereby said type may be assembled, printed from and distributed while in the machine, substantially as described.

36. A pair of members, each provided with a plurality of longitudinal type-holders, type transferable from holder to holder, mechanism for effecting such transfer, one of said members being adapted to turn about an axis, an impression device coöperating with assembled type on said last-mentioned member during its movement, whereby said type may be assembled, printed from and distributed while in the machine, substantially as described.

37. In a duplicating-machine, the combination of a pair of rotary members each provided with a plurality of longitudinal type-holders, type held by said holders and transferable thereamong, an impression device coöperating with the assembled type on one of said members while it is rotating, whereby said type may be assembled, printed from and distributed while in the machine, substantially as described.

38. In combination, a member, means for carrying type upon the face thereof, a second member coöperating therewith, one of said members having rotary motion to cause printing, a transfer material adapted to pass between said members and automatic means for feeding the type into an assembled line upon the face of said first member, substantially as described.

39. In combination, a member adapted to carry movable individual type upon the face thereof, a second member similarly adapted to carry type, means for moving said members so that said type may be in position to be fed from one to the other, automatic means for feeding said type a character at a time between said members to assemble or distribute such type, a third member having a surface coöperating with said first member, and a transfer material adapted to pass therebetween, substantially as described.

40. In combination, a rotatable printing-drum adapted to print by rotary movement, a rotatable supply-drum, movable type carried by said drums, mechanism for assembling said type on the printing-drum, a platen adapted to coöperate with said printing-drum, and a transfer material lying between said printing-drum and said platen, substantially as described.

41. In combination, a printing-drum, a rotatable supply-drum, movable type carried by said drums, means for feeding said type between said drums to assemble it on the printing-drum or to distribute it on the supply-drum, an impression-platen coöperating with said printing-drum during the latter's rotation, a transfer material passing between said printing-drum and said platen, and means for moving the transfer material at a time when it is not printing, substantially as described.

42. In combination, a rotatable printing-drum, a rotatable supply-drum, movable individual type carried by the faces of said drums, means for alining the type of one with the type of the other, means for feeding said type between said drums to assemble them into words on the printing-drum or distribute them on the supply-drum, a member coöperating with said printing-drum, the surface whereof is adapted to be borne against by the type on said printing-drum, and a transfer material adapted to pass between said member and said drum, substantially as described.

43. In combination, a printing-drum, a rotatable supply-drum, movable type carried by said drums, means for feeding said type between said drums, a carriage coöperating with said printing-drum and adapted to receive blank sheets, and a transfer material passing between said printing-drum and said carriage, substantially as described.

44. In combination, a rotatable printing-drum, a rotatable supply-drum, movable type carried by the faces of said drums, means for alining the type of one with the type of the other, said supply-drum having a limited lateral movement, means operated by said movement for feeding said type between said drums, a member coöperating with said printing-drum, the surface whereof is adapted to be impressed by the surface of said printing-drum and a transfer material adapted to pass between said member and said drum, substantially as described.

45. The combination of a pair of drums placed end to end, means on the surface of each drum for holding longitudinal rows of type, and type slidably carried by said holders and transferable from drum to drum, whereby selected type may be assembled in lines on either drum, substantially as described.

46. The combination of a pair of drums, means whereby said drums may carry longitudinal rows of type, and mechanism for transferring type from one drum to the other, whereby lines of selected type may be assembled on either drum without removal from the machine, substantially as described.

47. In combination, a supply member, a printing member, each adapted to carry individual type, means for moving such type from one member to the other, and a band of transfer material carried by the printing member and adapted to lie in contact with the face of the type thereon or to be removed therefrom to allow the type to be moved from one member to the other, substantialy as described.

48. In combination, a rotatable printing-drum adapted to carry individual type on its face, a supply member coöperating therewith, means for feeding type from the supply member to the printing-drum, and an inked ribbon carried by the printing-drum on spools and adapted to lie in contact with the type, or to be free therefrom to allow the type matter to be composed, substantially as described.

49. In combination, a rotatable supply-drum, a rotatable printing-drum, means whereby said drums may carry rows of type, and means for transferring type from one drum to the other, substantially as described.

50. In combination, a rotatable supply-drum, a rotatable printing-drum, means carried by said drums for holding rows of type, which may aline, and means for transferring type from either drum to the other, substantially as described.

51. In combination, a rotatable printing member having on its surface means for carrying longitudinal rows of assembled individual type, a movable supply member adjacent thereto, and hand-operated means for feeding type from one member to the other, substantially as described.

52. In combination, a rotatable printing-drum, a rotatable supply-drum, said drums being mounted with ends adjacent to each other, movable individual type carried by said drums, and means for transferring type individually from either drum to the other, substantially as described.

53. In combination, a rotatable printing-drum, a rotatable supply-drum placed end to end, each drum having on its surface means for carrying individual type in longitudinal rows, said drums being so placed that a row in one drum may aline with a row in the other, and means for transferring type from one of such rows to the other, substantially as described.

54. A combination, a pair of drums placed end to end, each drum having on its surface means for carrying longitudinal rows of individual type, and mechanism for transferring type from the end of either drum to the adjacent end of the other, substantially as described.

55. A combination, a pair of drums placed end to end, each drum having on its surface means for carrying longitudinal rows of individual type, and mechanism for transferring type from the end of either drum to the adjacent end of the other, and means in addition to the drum for supporting the type during the transfer, substantially as described.

56. In combination, a rotatable drum, means carried thereby for retaining type in rows, a rotatable supply-drum axially alined therewith, and means for transferring type from one drum to the other, substantially as described.

57. A combination, a pair of axially-alined drums, each having on its surface longitudinal means for carrying rows of individual type, means for bringing any row on either drum to aline with any row on the other, means for transferring type from one of such alined rows to the other, substantially as described.

58. In combination, a rotatable printing-drum and a rotatable supply-drum placed end to end on horizontal alined axes and having a vertical frame member between them, means for feeding type from one drum toward the other across the frame member, and means carried by the frame member for supporting the type in transit, substantially as described.

59. In combination, a printing-drum, a supply-drum, means carried thereby for retaining type, individual type adapted to be held on the printing-drum assembled in words, feeding mechanism for said type, and means for actuating said feeding mechanism, substantially as described.

60. The combination of a printing-drum, a supply-drum, a font of type, and mechanism for feeding the type one at a time from one drum to the other, substantially as described.

61. The combination of a printing member, a supply member, a font of type, the various individuals of which are all of the same width lengthwise of the line, means for feeding the type one at a time from one member to the other by movements individually equal to the width of the type, and a platen having a rolling contact with type on the printing member, substantially as described.

62. A pair of drums placed end to end and adapted to carry rows of individual type, combined with said type

in a font the individuals of which are of the same width lengthwise of the line, and mechanism for feeding the type from one drum to the other by movements individually equal to the width of a type, substantially as described.

63. In combination, a rotatable printing-drum, a rotatable supply-drum, axially alined therewith, movable type carried by said drums and automatic means for feeding said type, substantially as described.

64. In combination, a rotatable drum, means for retaining type upon the face thereof, a supply-drum axially alining therewith and having substantially similar means adapted to retain a supply of type, and means for advancing said type, substantially as described.

65. In combination, a rotatable printing-drum, a rotatable supply-drum mounted opposite the end of said printing-drum, said drums each having mechanism for carrying rows of type, and means for bringing such mechanisms into alinement, and means for locking them in such alinement, substantially as described.

66. In combination, a rotatable supply-drum, a rotatable printing-drum, means carried by said drums for holding rows of type, which may aline, one of said drums having a limited longitudinal movement, and means whereby said longitudinal movement may aline said rows of type, substantially as described.

67. In combination, a rotatable supply-drum, a rotatable printing-drum, means whereby said drums may carry rows of type, one of said drums having a limited lateral movement, and means whereby said lateral movement may advance said type, substantially as described.

68. The combination of a movable printing member having a plurality of type-holders, a type-storage member having a plurality of type-holders, a font of individual type forming a permanent part of the machine and transferable from the holders of the storage member to those of the printing member and vice versa without removal from the machine, and an impression-platen having a rolling contact with the type of the printing member while the latter is moving.

69. In combination, a rotatable drum, a supply-drum, means carried thereby for retaining type, movable type, feeding mechanism for said type, said supply-drum having a limited lateral movement, means actuated thereby for alining said drums and actuating said feeding mechanism, substantially as described.

70. In combination, a rotatable drum, means for retaining type upon the face thereof, a supply-drum axially alining therewith and having substantially similar means adapted to retain a supply of type, said supply-drum having a limited longitudinal movement, and means actuated by said longitudinal movement for advancing said type, substantially as described.

71. In combination, a rotatable printing-drum, a rotatable supply-drum mounted axially with respect to said printing-drum and having a longitudinal movement, said drums having corresponding rows of type and means whereby said longitudinal movement may bring the said rows of type into alinement, means actuated thereby for advancing the type of said rows, and a platen coöperating with said printing member, substantially as described.

72. In combination, a rotatable printing-drum having means for carrying longitudinal rows of individual type on its surface, an adjacent supply-drum having longitudinal rows of type, each row comprising the same letter or character, and means for indicating the characters in the various rows of the supply-drum, substantially as described.

73. In combination, a rotatable printing-drum having means on its surface for carrying longitudinal rows of individual type, an adjacent rotatable supply-drum having means on its surface for carrying type in rows, mechanism for transferring type from a row of the supply-drum to a row of the printing-drum, and means for indicating the character in that row of the supply-drum which is at the transfer position, substantially as described.

74. In combination, a rotatable printing-drum, a rotatable supply-drum, said drums having means for carrying type upon their faces, means for indicating substantial alinement of the type rows of said drums, and means for insuring accurate alinement of said rows, substantially as described.

75. In combination a rotatable printing drum, means for locking the same against movement, a rotatable supply-drum, said drums having means for carrying type upon their faces, means for indicating substantial alinement of the type rows of said drums, said supply-drum being capable of a lateral movement and means whereby said movement may effect an accurate alinement of said channels, substantially as described.

76. In combination, a rotatable printing-drum, means for holding the same against rotation, a rotatable supply-drum, said drums being adapted to carry type in rows, and feeding mechanism adapted to advance the type from one drum to the other, substantially as described.

77. In combination, a rotatable printing-drum, means for locking the same against rotation, a rotatable supply-drum, said drums being adapted to carry type in rows, means for indicating substantial alinement of the type rows of said drums, said supply-drum being capable of a limited lateral movement, means whereby said lateral movement may effect a complete alinement of said type-rows, and feeding mechanism adapted to move up the type and actuated by the said lateral movement of said supply-drum, substantially as described.

78. In combination, a rotatable printing-drum, a rotatable supply-drum, said drums having type-holding means, which may aline, longitudinally-extending members lying above said means and adapted to feed the type, and mechanism for actuating the same, substantially as described.

79. In combination, a rotatable printing-drum, a rotatable supply-drum, said drums having channels which may aline, said supply-drum having a limited movement along its axis, means for normally maintaining said drum in an extreme position, longitudinally-extending members lying above said channels and adapted to feed the type, and means whereby the longitudinal movement of said supply-drum may actuate the same, substantially as described.

80. In combination, a rotatable supply-drum, a rotatable printing-drum, type carried thereby, feeding mechanism adapted to advance said type, said feeding mechanism including a lever between the drums, and means for actuating said lever, substantially as described.

81. In combination, a supply member, a printing member, means whereby said members may carry type, said supply member having a limited lateral movement, means whereby said lateral movement may advance said type, and a platen having a rolling contact with type on the printing member, substantially as described.

82. In combination, a rotatable supply-drum, a rotatable printing-drum, type carried thereby, feeding mechanism adapted to advance said type, said feeding mechanism including a lever, said supply-drum having a limited lateral movement and means whereby said lateral movement may actuate said lever, substantially as described.

83. In combination, a rotatable supply-drum, a rotatable printing-drum, type carried thereby, feeding mechanism, a lever adapted to actuate the same, said supply-drum having a limited lateral movement, means whereby said lateral movement of said supply-drum may actuate said lever, and a spring normally constraining said supply-drum toward an extreme position, substantially as described.

84. In combination, a printing-drum, a supply-drum, means for carrying type upon the faces of said drums, a rocking member, feed-racks extending over said drums, movable type carried by said drums, means which may connect said racks with said rocking member, and means for rocking such member, substantially as described.

85. In combination, a rotatable printing-drum, a rotatable supply-drum, type carried in rows upon said drums, feed-racks extending over alining type rows of said drums, and means for actuating said feed-racks, substantially as described.

86. In combination a rotatable printing-drum, a rotatable supply-drum, type carried in rows upon said drums, feed-racks extending over the alining type-rows of said drums, a rock-wheel, means for connecting said racks therewith and means for actuating said feed-racks by a movement of said supply-drum, substantially as described.

87. In combination, a rotatable printing-drum, a rotatable supply-drum, feed-racks extending adjacent to the surface of said drums and longitudinally thereof, said drums having type rows, means for bringing said type rows into alinement substantially beneath said feed-racks, a movable member adapted to be connected with either of said feed-racks, and automatic means for actuating said movable member, substantially as described.

88. In combination, a pair of independently-movable members, each adapted to carry type in rows, feed-racks supported thereabove, said feed-racks having a limited movement, means for constraining said feed-racks to an extreme position, means whereby said feed-racks may advance the type in said type rows, and automatic means for actuating said feed-racks, substantially as described.

89. In combination, a rotatable printing-drum, a rotatable supply-drum, feed-racks supported thereabove, type carried in longitudinal rows upon said drums, means for bringing said type rows into alinement substantially beneath said feed-racks, said feed-racks having a limited movement, means for constraining said feed-racks to an extreme position, means whereby said feed-racks may advance the type in said type rows and automatic means for actuating said feed-racks, substantially as described.

90. In combination a member adapted to carry type in rows, a rack extending longitudinally of such rows, chasers behind said type adapted to be engaged by said rack, and means for moving said rack transversely of said member and toward a chaser to engage said chaser and for moving said rack parallel with said member to feed the engaged chaser and the type in advance thereof, substantially as set forth.

91. In combination a member adapted to have type set up thereupon, a member adapted to carry a supply of type, said type being carried in rows, means for bringing the type rows of said members into alinement, racks extending over said alining rows, chasers behind said type adapted to engage said racks, automatic means for actuating said racks, and means for adjusting the movement thereof, substantially as set forth.

92. In combination, a supply member, a printing member, rows of type carried by said members, which rows may aline, a fixed feed-bar extending substantially above said alining rows, feed-racks carried by said feed-bar and extending respectively over the alining rows of said members, and mechanism adapted to actuate said feed-racks, substantially as described.

93. In combination a rotatable supply-drum, a rotatable printing-drum, rows of type carried by said drums, which rows may aline, a fixed feed-bar extending substantially above said alining rows, feed-racks carried by said feed-bar and extending respectively over the alining rows of said drums, a movable member, and means for connecting the same so as to actuate either of said feed-racks, substantially as described.

94. In combination, a rotatable printing-drum, a rotatable supply-drum, members extending longitudinally of said drums and adjacent to the surfaces thereof, type carried in rows on said drums, means for locking said drums so that rows thereof may aline substantially beneath said members, said members having a limited longitudinal movement, means whereby said movement may effect an advance of said type, a rocking member, and operative connections between the same and said longitudinally-extending members, substantially as described.

95. In combination, a rotatable printing-drum, a rotatable supply-drum, means for mounting type in rows upon said drums, chasers carried behind said type in each drum, means for alining said rows of type, and feeding mechanism adapted to advance said chasers, substantially as described.

96. In a combination, a rotatable printing-drum, a rotatable supply-drum, type carried by said drums in rows, chasers carried behind said type, feeding mechanism adapted to advance said chasers, and means for supporting the type intermediately of the two drums, substantially as described.

97. In combination, a rotatable supply-drum, means for carrying type thereon in rows, a member having substantially similar means adapted to receive set-up type, means between said member and said supply-drum and adapted to support the type in transit, means for alining the type rows of said member and said supply-drum, and means for transferring type from the supply-drum to said member and vice versa, substantially as described.

98. In combination, a rotatable printing-drum, a rotatable supply-drum, type carried by said drums, in rows, chasers carried behind said type, feeding mechanism adapted to advance said chasers, and means whereby a lateral movement of said supply-drum may advance said feeding mechanism, substantially as described.

99. In combination, a rotatable supply-drum, means for carrying type thereon in rows, a member having substantially similar means adapted to receive set-up type, a second member between said first member and said supply-drum and normally adapted to prevent removal of type from said supply-drum, means for alining the type rows of said first member with the type rows of said supply-drum, said second member having an opening through which said type may pass, substantially as described.

100. In combination, a supply-drum, a printing-drum, said drums being rotatable and having means adapted to retain type, a disk lying between said drums and adapted to prevent removal of said type, means for locking said disk against rotation, said disk having an opening therethrough, and means for alining the channels of said drums, substantially as described.

101. In combination, a rotatable supply-drum, a rotatable printing-drum, a disk abutting the inner face of said supply-drum, said disk having a recess in an edge thereof, said drums having channels which may aline therewith, the edge of said disk being adapted to close the inner ends of the channels of said supply-drum, substantially as described.

102. In combination, a supply-drum, a printing-drum, a disk abutting the inner face of said supply-drum, means for locking said disk against rotation, said disk having a notch in an edge thereof through which type may pass, said drums having channels adapted to carry type and which may aline with said notch, and a spring constraining said disk against the face of said supply-drum, substantially as set forth.

103. The combination of a printing member adapted to turn about an axis and having a plurality of type-carrying channels, a movable supply member also having a plurality of type-carrying channels, means for transferring type from one member to the other, mechanism for locking the supply member in position preceding the transfer, and an impression-platen coöperating with the printing member during the movement of the printing member.

104. In combination with a rotatable supply-drum, a printing-drum, said drums having means adapted to carry type, means for transferring type from one drum to the other, and means for locking the supply-drum in definite position preceding such transfer, substantially as described.

105. In combination, a rotatable supply-drum, a printing-drum, said drums having means adapted to carry type, one of said drums having a series of recesses, a member with a tapered point adapted to engage any of said recesses to lock such drum in definite position, means for transferring type from one drum to the other, and means for causing such locking preceding the transfer, substantially as described.

106. In combination, a rotatable supply-drum, a printing-drum, said drums having means adapted to carry type, means for holding said printing-drums in definite position, said supply-drum having a series of recesses, and a member having a tapered point adapted to engage any of said recesses, substantially as described.

107. In combination, a rotatable supply-drum, a printing-drum, said drums having channels adapted to carry type, means for locking said printing-drums in fixed posi-

tions, means for indicating substantial alinement of channels of said drums, said supply-drum having a series of openings and a fixed member having a tapered point adapted to engage said openings, said supply-drum having a limited lateral movement which may effect said engagement, substantially as described.

108. In combination, a rotatable printing-drum, a rotatable supply-drum, an intermediate member having a slot, said drums having type-carrying means adapted to aline with said slot, there being means for supporting type in said slot and out of engagement with the two drums, substantially as described.

109. In combination, a rotatable printing-drum, a rotatable supply-drum, and a fixed member having a slot therethrough, said drums having channels which may aline with said slot, there being means for supporting the type in said slot and out of engagement with the two drums, substantially as described.

110. In combination, a rotatable printing-drum, a rotatable supply-drum, a fixed member therebetween, said fixed member having a slot therethrough adapted to pass type, and a lock mounted in said fixed member, said drums having longitudinal channels, said lock being adapted to engage with the channels of said printing-drum, substantially as described.

111. In combination, a rotatable printing-drum, type carried upon the face thereof, a band of transfer material carried by said drum and adapted to cover the faces of said type, a carriage coöperating with said drum and adapted to be impressed by said type, a vacuum-cup, and means for automatically depressing the same upon said sheet after it has passed beneath said drum, substantially as described.

112. In combination, a rotatable printing-drum, type carried upon the face thereof, a band of transfer material caried by said drum and covering the faces of said type, a carriage coöperating with said drum and adapted to be impressed by said type, means for indicating the position of the blank sheet upon said carriage, a vacuum-cup and means carried by said carriage for automatically depressing the same upon said sheet after it has passed beneath said drum, substantially as described.

113. A rotatable member having means on its surface for carrying individual assembled type in rows, said member being adapted to print by rotary motion, and a transfer fabric which is arranged to travel in company with said surface during the printing.

114. The combination of a rotatable member having type-holders, a font of type from which individuals are adapted to be assembled on said member and held thereon during rotation, a second member, means for concurrently moving said members so that their surfaces may coöperate, a web of transfer material adapted to pass between said members and traveling in the same general direction as the type during printing, and means for automatically feeding said web with reference to the type.

115. The combination with the two members of a printing-couple, one of said members having rotary motion by which it prints, of a supply member, a font of individual type adapted to be stored thereon, mechanism for transferring selected type and assembling them into words on the member of the printing-couple which has rotary motion, means for supplying ink to said type, whereby it may be assembled, printed from, and distributed while in the machine.

116. The combination with the two members of a printing-couple, one of said members having rotary motion during printing, of a supply member, a font of individual type adapted to be stored thereon, mechanism for transferring selected type and assembling them into words on one member of the printing-couple, a transfer fabric, and means for holding the same between the members of the printing-couple at the time of printing, said means allowing the unobstructed assemblage of type when the couple is not printing.

117. The combination of a rotatable drum adapted to carry type in longitudinal rows on its surface and print by rotary motion, an impression-platen coöperating therewith, a ribbon of transfer fabric of substantially the full effective width of the drum, extending between the drum and platen, and a pair of spools carrying the ends of said ribbon and journaled on axes parallel with the axis of rotation of the drum whereby the ribbon may move with the type at the moment of printing.

118. In combination, a platen and a coöperating printing member having means for carrying longitudinal rows of individual type, a type-supply, mechanism for transferring type from the supply to the printing member, and means for indicating the character of the type in position to be transferred.

119. The combination of a rotatable printing-drum having means for carrying longitudinal rows of individual type, supply mechanism adapted to carry rows of type, each row comprising the same letter or character, mechanism for transferring type from the supply to the printing-drum, and means for indicating the character in that row of the supply mechanism with which the transfer mechanism is coöperating.

120. In a combined setting, distributing and printing machine, the combination of a font of individual type each forming a permanent part of the machine, a supply mechanism, a printing mechanism comprising a pair of coöperating members one of which is adapted to turn on an axis during printing, the supply mechanism and one part of the printing mechanism each having rails with overhanging edges providing a plurality of channels adapted to confine such type, and means for transferring type from either of said mechanisms to the other.

121. The combination, in a unitary machine, of a font of individual type forming a permanent part of the machine, a printing-couple and means forming a permanent part of the machine for assembling characters thereof into parallel lines of desired words and printing therefrom by rolling impression of the couple and distributing such characters without removal from the machine.

122. The combination, in a unitary machine, of a pair of members each provided with a plurality of type-holders, a font of individual type on said holders, mechanism for transferring the type from a holder on one member to a holder on the other to assemble the type into words or distribute it, one of said members being adapted to turn about an axis and an impression device adapted to cooperate with assembled type on said last-mentioned member while the same is moving whereby said type may be assembled into words, printed from and distributed while remaining in the machine.

123. The combination, of a pair of members each provided with a plurality of type-holders, one of said members being a rotary drum, an impression-platen coöperating with said drum during its rotation, and a font of individual type held on said holders and transferable thereamong, whereby the type may be assembled, printed from and distributed while in the machine.

124. The combination, of a supply member and a printing member, each having a plurality of type-holders and each independently movable, type on said holders, mechanism for transferring type from a holder on one member to a holder on the other while the members are not moving, and an impression device adapted to coöperate with assembled type on the printing member, whereby said type may be assembled, printed from and distributed while in the machine.

125. The combination, of a movable supply member, an independently-rotatable printing-drum, mechanism for transferring individual type from said member to said drum and vice versa, an impression-platen coöperating with type on the cylindrical surface of said drum as it rotates, and means for inking the type on the drum.

126. The combination of a member adapted to carry a plurality of lines of type said type being held loosely and individually by said member, a coöperating platen forming therewith a printing-couple one member of which is adapted to turn on an axis, an inked fabric adapted to contact with paper between the members of the couple, whereby the paper is impressed by rolling motion simultaneously by a multiplicity of type acting through said fabric, and means for moving said fabric in the direction of its length when not printing to cause it to present a fresh face to the type.

127. The combination of a printing member, a font of individual type forming a permanent part of the machine, a storage member having respective repositories for different characters in the font, and mechanism forming a permanent part of the machine for feeding the type one at a time from either member to the other to assemble them into words on the printing member or to distribute them into repositories in the storage member.

128. In a duplicating-machine, the combination of two members, one of them being a drum and the other flat, one adapted to hold parallel rows of type and the other to act as a platen therefor, an impression fabric adapted to extend across the face of the several lines of type carried by such type-holder, a type-supply mechanism, and mechanism for transferring type therefrom to or from the type-holding member.

129. The combination of a type-holding member adapted to turn on an axis and having on its surface parallel open-ended grooves into which type may be shoved, a coöperating member having corresponding open-ended grooves for the type, and a font of type forming a permanent part of the machine and arranged to occupy said grooves and be transferable between them from either member to the other, and means coöperating with the member first mentioned while it is turning on its axis to print from the type on such member.

130. In a duplicating-machine, the combination of a member having a curved surface formed to carry rows of type, a font of individual type formed to be held on such surface, means for moving such surface about its center of curvature, a platen coöperating with such surface and arranged to be moved when such surface moves, whereby printing may be caused by the movement of such surface, and mechanism for assembling the type into desired words on such surface.

131. The combination of a movable printing member having a plurality of parallel type-holders, a supply member, a font of individual type forming a permanent part of the machine, mechanism for feeding the type from the supply to such holders to assemble parallel lines thereon, and an impression-platen coöperating with the printing member while the same is moving.

132. The combination of a printing member having a plurality of parallel type-holders, a supply member, a font of individual type forming a permanent part of the machine, and mechanism for feeding the type from the supply to such holders to assemble parallel lines thereon, mechanism for printing from such parallel lines by continuous movement, and mechanism for distributing the type back to the supply.

133. The combination of a printing member having a plurality of parallel type-holders, a supply member, a font of individual type forming a permanent part of the machine, and transferable from the supply to said holders, and mechanism for printing such plurality of lines by continuous movement.

134. The combination of supply mechanism, printing mechanism, means forming a permanent part of the machine for feeding type from either of said mechanisms to the other with its face end upward, and means for printing from said type while in the printing mechanism with its face end downward.

135. The combination of supply mechanism, a printing member adapted to turn about an axis and having along its surface a series of longitudinal rails with overhanging edges, type-grooved for the reception of said edges and transferable from said mechanism to said member whereby a page of type may be assembled on said member, and an impression-platen below said member with which the type may coöperate while said member is turning the type being held to said member by said grooves and rails.

136. In a duplicating-machine, a rotary drum having on its surface a series of longitudinal rails with overhanging edges, combined with type grooved on its sides to receive said edges, said rails being adapted to carry a plurality of parallel lines of type, said type occupying the channels between the rails and extending above their grooves onto the outer surface of the rails, and an impression-platen coöperating with assembled type on the drum while the same is rotating.

137. A rotary member having on its surface carriers for individual type assembled into lines of words parallel with the axis of rotation said type being held loosely and individually on said rotary member, a platen with which said member may coöperate while rotating, whereby said rotary member may present simultaneously a line of words to the platen and at the same time impress the platen with such line, a printing fabric passing between the member and platen, and means for shifting the fabric while all the lines of words are out of coöperation with the platen.

138. A type-carrying member which prints by turning on an axis, and an inking-ribbon mounted on such member.

139. A type-carrying member adapted to print by rotary movement, an inking-ribbon therefor, and means for shifting the ribbon while the member is not printing.

140. A rotary drum having on its surface a plurality of parallel longitudinal channels adapted to carry individual type assembled into lines of words, a platen with which said drum may coöperate while printing by rotary motion, said drum presenting simultaneously a line of words to the platen and the platen being adapted to hold a sheet of paper in coöperation therewith, a printing fabric passing between the drum and such paper, and mechanisms for regulating the time of presentation of the paper.

141. A rotary member having on its surface carriers for individual type assembled into words, a platen with which said member may coöperate while printing, and a printing fabric mounted on the rotary member and passing between it and the platen.

142. A member having on its surface carriers for individual type assembled into words, a platen with which said member may coöperate while printing by rolling motion, a printing fabric passing between the member and platen and moving with them at the time of printing, and means for changing the position of said ribbon while the member is not printing.

143. A type-carrying member which prints by movement, an inking-ribbon mounted on such member, and means for giving said ribbon a movement other than its movement with the member while printing.

144. A member adapted to turn on an axis and having on its surface carriers for individual type assembled into words, a platen with which said member may coöperate while printing by such motion of said member, an inking-ribbon mounted on such member and moving with it and the platen during printing, and means for shifting said ribbon across the type on the rotary member while the same is not printing.

145. A member adapted to turn on an axis while printing and having a type-carrying surface carried about by such axis, a coöperating impression-platen having a rolling contact with such surface, and an inked fabric passing between said member and platen and having one end at least mounted on said member.

146. A rotary member having on its surface carriers for individual type assembled into words, a platen with which said member may coöperate while rotating, a printing fabric passing between the member and platen, and movable mechanism for regulating the starting-point of the paper to be fed between the printing fabric and the impression-platen.

147. The combination of a printing-couple, one member of which is rotary, means on one member of the couple for carrying individual assembled type in parallel lines, a printing fabric adapted to pass between the members of the couple, and mechanism mounted in part upon one of the members of the couple to determine the starting-point of the paper to be fed thereto.

148. In a duplicating-machine, the combination of a drum, means for holding individual type in lines upon its face, a member movable in coöperation therewith and suitable to receive the impression of the type, a web of transfer material running between the two aforesaid members and traveling with them during the time of impression and having a movement transversely of the aforesaid lines

tions, means for indicating substantial alinement of channels of said drums, said supply-drum having a series of openings and a fixed member having a tapered point adapted to engage said openings, said supply-drum having a limited lateral movement which may effect said engagement, substantially as described.

108. In combination, a rotatable printing-drum, a rotatable supply-drum, an intermediate member having a slot, said drums having type-carrying means adapted to aline with said slot, there being means for supporting type in said slot and out of engagement with the two drums, substantially as described.

109. In combination, a rotatable printing-drum, a rotatable supply-drum, and a fixed member having a slot therethrough, said drums having channels which may aline with said slot, there being means for supporting the type in said slot and out of engagement with the two drums, substantially as described.

110. In combination, a rotatable printing-drum, a rotatable supply-drum, a fixed member therebetween, said fixed member having a slot therethrough adapted to pass type, and a lock mounted in said fixed member, said drums having longitudinal channels, said lock being adapted to engage with the channels of said printing-drum, substantially as described.

111. In combination, a rotatable printing-drum, type carried upon the face thereof, a band of transfer material carried by said drum and adapted to cover the faces of said type, a carriage coöperating with said drum and adapted to be impressed by said type, a vacuum-cup, and means for automatically depressing the same upon said sheet after it has passed beneath said drum, substantially as described.

112. In combination, a rotatable printing-drum, type carried upon the face thereof, a band of transfer material caried by said drum and covering the faces of said type, a carriage coöperating with said drum and adapted to be impressed by said type, means for indicating the position of the blank sheet upon said carriage, a vacuum-cup and means carried by said carriage for automatically depressing the same upon said sheet after it has passed beneath said drum, substantially as described.

113. A rotatable member having means on its surface for carrying individual assembled type in rows, said member being adapted to print by rotary motion, and a transfer fabric which is arranged to travel in company with said surface during the printing.

114. The combination of a rotatable member having type-holders, a font of type from which individuals are adapted to be assembled on said member and held thereon during rotation, a second member, means for concurrently moving said members so that their surfaces may coöperate, a web of transfer material adapted to pass between said members and traveling in the same general direction as the type during printing, and means for automatically feeding said web with reference to the type.

115. The combination with the two members of a printing-couple, one of said members having rotary motion by which it prints, of a supply member, a font of individual type adapted to be stored thereon, mechanism for transferring selected type and assembling them into words on the member of the printing-couple which has rotary motion, means for supplying ink to said type, whereby it may be assembled, printed from, and distributed while in the machine.

116. The combination with the two members of a printing-couple, one of said members having rotary motion during printing, of a supply member, a font of individual type adapted to be stored thereon, mechanism for transferring selected type and assembling them into words on one member of the printing-couple, a transfer fabric, and means for holding the same between the members of the printing-couple at the time of printing, said means allowing the unobstructed assemblage of type when the couple is not printing.

117. The combination of a rotatable drum adapted to carry type in longitudinal rows on its surface and print by rotary motion, an impression-platen coöperating therewith, a ribbon of transfer fabric of substantially the full effective width of the drum, extending between the drum and platen, and a pair of spools carrying the ends of said ribbon and journaled on axes parallel with the axis of rotation of the drum whereby the ribbon may move with the type at the moment of printing.

118. In combination, a platen and a coöperating printing member having means for carrying longitudinal rows of individual type, a type-supply, mechanism for transferring type from the supply to the printing member, and means for indicating the character of the type in position to be transferred.

119. The combination of a rotatable printing-drum having means for carrying longitudinal rows of individual type, supply mechanism adapted to carry rows of type, each row comprising the same letter or character, mechanism for transferring type from the supply to the printing-drum, and means for indicating the character in that row of the supply mechanism with which the transfer mechanism is coöperating.

120. In a combined setting, distributing and printing machine, the combination of a font of individual type each forming a permanent part of the machine, a supply mechanism, a printing mechanism comprising a pair of coöperating members one of which is adapted to turn on an axis during printing, the supply mechanism and one part of the printing mechanism each having rails with overhanging edges providing a plurality of channels adapted to confine such type, and means for transferring type from either of said mechanisms to the other.

121. The combination, in a unitary machine, of a font of individual type forming a permanent part of the machine, a printing-couple and means forming a permanent part of the machine for assembling characters thereof into parallel lines of desired words and printing therefrom by rolling impression of the couple and distributing such characters without removal from the machine.

122. The combination, in a unitary machine, of a pair of members each provided with a plurality of type-holders, a font of individual type on said holders, mechanism for transferring the type from a holder on one member to a holder on the other to assemble the type into words or distribute it, one of said members being adapted to turn about an axis and an impression device adapted to cooperate with assembled type on said last-mentioned member while the same is moving whereby said type may be assembled into words, printed from and distributed while remaining in the machine.

123. The combination, of a pair of members each provided with a plurality of type-holders, one of said members being a rotary drum, an impression-platen coöperating with said drum during its rotation, and a font of individual type held on said holders and transferable thereamong, whereby the type may be assembled, printed from and distributed while in the machine.

124. The combination, of a supply member and a printing member, each having a plurality of type-holders and each independently movable, type on said holders, mechanism for transferring type from a holder on one member to a holder on the other while the members are not moving, and an impression device adapted to coöperate with assembled type on the printing member, whereby said type may be assembled, printed from and distributed while in the machine.

125. The combination, of a movable supply member, an independently-rotatable printing-drum, mechanism for transferring individual type from said member to said drum and vice versa, an impression-platen coöperating with type on the cylindrical surface of said drum as it rotates, and means for inking the type on the drum.

126. The combination of a member adapted to carry a plurality of lines of type said type being held loosely and individually by said member, a coöperating platen forming therewith a printing-couple one member of which is adapted to turn on an axis, an inked fabric adapted to contact with paper between the members of the couple, whereby the paper is impressed by rolling motion simultaneously by a multiplicity of type acting through said fabric, and means for moving said fabric in the direction of its length when not printing to cause it to present a fresh face to the type.

127. The combination of a printing member, a font of individual type forming a permanent part of the machine, a storage member having respective repositories for different characters in the font, and mechanism forming a permanent part of the machine for feeding the type one at a time from either member to the other to assemble them into words on the printing member or to distribute them into repositories in the storage member.

128. In a duplicating-machine, the combination of two members, one of them being a drum and the other flat, one adapted to hold parallel rows of type and the other to act as a platen therefor, an impression fabric adapted to extend across the face of the several lines of type carried by such type-holder, a type-supply mechanism, and mechanism for transferring type therefrom to or from the type-holding member.

129. The combination of a type-holding member adapted to turn on an axis and having on its surface parallel open-ended grooves into which type may be shoved, a coöperating member having corresponding open-ended grooves for the type, and a font of type forming a permanent part of the machine and arranged to occupy said grooves and be transferable between them from either member to the other, and means coöperating with the member first mentioned while it is turning on its axis to print from the type on such member.

130. In a duplicating-machine, the combination of a member having a curved surface formed to carry rows of type, a font of individual type formed to be held on such surface, means for moving such surface about its center of curvature, a platen coöperating with such surface and arranged to be moved when such surface moves, whereby printing may be caused by the movement of such surface, and mechanism for assembling the type into desired words on such surface.

131. The combination of a movable printing member having a plurality of parallel type-holders, a supply member, a font of individual type forming a permanent part of the machine, mechanism for feeding the type from the supply to such holders to assemble parallel lines thereon, and an impression-platen coöperating with the printing member while the same is moving.

132. The combination of a printing member having a plurality of parallel type-holders, a supply member, a font of individual type forming a permanent part of the machine, and mechanism for feeding the type from the supply to such holders to assemble parallel lines thereon, mechanism for printing from such parallel lines by continuous movement, and mechanism for distributing the type back to the supply.

133. The combination of a printing member having a plurality of parallel type-holders, a supply member, a font of individual type forming a permanent part of the machine, and transferable from the supply to said holders, and mechanism for printing such plurality of lines by continuous movement.

134. The combination of supply mechanism, printing mechanism, means forming a permanent part of the machine for feeding type from either of said mechanisms to the other with its face end upward, and means for printing from said type while in the printing mechanism with its face end downward.

135. The combination of supply mechanism, a printing member adapted to turn about an axis and having along its surface a series of longitudinal rails with overhanging edges, type-grooved for the reception of said edges and transferable from said mechanism to said member whereby a page of type may be assembled on said member, and an impression-platen below said member with which the type may coöperate while said member is turning the type being held to said member by said grooves and rails.

136. In a duplicating-machine, a rotary drum having on its surface a series of longitudinal rails with overhanging edges, combined with type grooved on its sides to receive said edges, said rails being adapted to carry a plurality of parallel lines of type, said type occupying the channels between the rails and extending above their grooves onto the outer surface of the rails, and an impression-platen coöperating with assembled type on the drum while the same is rotating.

137. A rotary member having on its surface carriers for individual type assembled into lines of words parallel with the axis of rotation said type being held loosely and individually on said rotary member, a platen with which said member may coöperate while rotating, whereby said rotary member may present simultaneously a line of words to the platen and at the same time impress the platen with such line, a printing fabric passing between the member and platen, and means for shifting the fabric while all the lines of words are out of coöperation with the platen.

138. A type-carrying member which prints by turning on an axis, and an inking-ribbon mounted on such member.

139. A type-carrying member adapted to print by rotary movement, an inking-ribbon therefor, and means for shifting the ribbon while the member is not printing.

140. A rotary drum having on its surface a plurality of parallel longitudinal channels adapted to carry individual type assembled into lines of words, a platen with which said drum may coöperate while printing by rotary motion, said drum presenting simultaneously a line of words to the platen and the platen being adapted to hold a sheet of paper in coöperation therewith, a printing fabric passing between the drum and such paper, and mechanisms for regulating the time of presentation of the paper.

141. A rotary member having on its surface carriers for individual type assembled into words, a platen with which said member may coöperate while printing, and a printing fabric mounted on the rotary member and passing between it and the platen.

142. A member having on its surface carriers for individual type assembled into words, a platen with which said member may coöperate while printing by rolling motion, a printing fabric passing between the member and platen and moving with them at the time of printing, and means for changing the position of said ribbon while the member is not printing.

143. A type-carrying member which prints by movement, an inking-ribbon mounted on such member, and means for giving said ribbon a movement other than its movement with the member while printing.

144. A member adapted to turn on an axis and having on its surface carriers for individual type assembled into words, a platen with which said member may coöperate while printing by such motion of said member, an inking-ribbon mounted on such member and moving with it and the platen during printing, and means for shifting said ribbon across the type on the rotary member while the same is not printing.

145. A member adapted to turn on an axis while printing and having a type-carrying surface carried about by such axis, a coöperating impression-platen having a rolling contact with such surface, and an inked fabric passing between said member and platen and having one end at least mounted on said member.

146. A rotary member having on its surface carriers for individual type assembled into words, a platen with which said member may coöperate while rotating, a printing fabric passing between the member and platen, and movable mechanism for regulating the starting-point of the paper to be fed between the printing fabric and the impression-platen.

147. The combination of a printing-couple, one member of which is rotary, means on one member of the couple for carrying individual assembled type in parallel lines, a printing fabric adapted to pass between the members of the couple, and mechanism mounted in part upon one of the members of the couple to determine the starting-point of the paper to be fed thereto.

148. In a duplicating-machine, the combination of a drum, means for holding individual type in lines upon its face, a member movable in coöperation therewith and suitable to receive the impression of the type, a web of transfer material running between the two aforesaid members and traveling with them during the time of impression and having a movement transversely of the aforesaid lines

of type during the portion of the cycle where impression is not taking place, and means contained in part upon one of above members to determine the starting-point of the paper to be fed between the web of transfer material and the impression member.

149. In a duplicating-machine, the combination of a type-holding drum, an adjustable impression-receiving member, a web of transfer material running between the two members at substantially their peripheral speed during impression, automatic means for moving the web of transfer material transversely of the lines of type on the type-holding drum, and adjustable means for predetermining the starting-point of the paper to be fed between the web of transfer material and the impression-receiving member.

150. In a duplicating-machine, the combination of a rotary drum, channels therein for holding individual assembled type in parallel lines, a platen movable in coöperation therewith while the drum rotates, a web of transfer material traveling between the drum and platen in the common direction of their coöperating surfaces while printing, means for giving said web another movement between successive impressing operations, means for guiding the paper, and adjustable means for regulating the time of feeding the paper.

151. The combination of a rotary printing-drum having a plurality of parallel grooves, each groove having permanent walls between which individual type are seated, means extending parallel with the groove for engaging in common the type in that groove and holding them, a platen coöperating with said drum, and an inking-ribbon adapted to pass between the drum and platen.

152. The combination, in a unitary machine, of storage mechanism, printing mechanism, mechanism for feeding type from the storage mechanism into the printing mechanism face end upward, a platen coöperating with the type when face end downward in the printing mechanism, and an inking-ribbon carried by the printing member and being adapted to be passed across the face of the type thereon and travel with such type when impressing the platen.

153. A drum having along its surface longitudinal parallel grooves, means for holding individual type assembled into words in said grooves against radial displacement, resilient means of less height than the type, said means removably occupying the grooves at intermediate points in the length thereof for preventing longitudinal displacement of the type, a platen coöperating with the drum, and an inking-ribbon adapted to pass between said platen on one side and said type and resilient means on the other.

154. The combination with a printing-couple one member of which is adapted to turn on an axis of assembling mechanism, distributing mechanism, and an actuating mechanism movable in one direction to assemble and in the other to distribute.

155. In a type assembling and distributing and printing machine, the combination of a printing-couple one member of which is rotary a supply member, hand-actuated means for distributing type into it from the printing-couple, and hand-actuated means for assembling type from it onto the printing-couple.

156. The combination in a unitary structure of a printing-couple one member of which is adapted to turn on an axis; mechanism for assembling type on such member, mechanism for distributing type from such member, and hand-actuated means for operating either mechanism.

157. The combination in a unitary machine of a storage member, a movable printing member, each having a plurality of channels, type transferable between such channels, and an impression-platen coöperating with assembled type on the printing member while it is moving.

158. A storage member provided with a plurality of holders for carrying individual type arranged in the different holders according to the different characters, a printing-couple consisting of a printing member and an impression device, one of which is rotary, said printing member being provided with a plurality of type-holders parallel with each other, a font of individual type having the usual letters, figures and characters and transferable from holder to holder, and said impression device cooperating with assembled type on the printing member, whereby said type may be assembled, printed from, and distributed while in the machine.

159. The combination with a platen and a printing member, one of which is rotary, said printing member having a plurality of type-holders, of a storage member having a plurality of type-holders, a type-guide adapted to lead from one member to the other, and type adapted to be transferred along such guide.

160. A printing member having a plurality of type-holders, a storage member having a plurality of type-holders, a transfer-guide between the two, each member being adapted to have its presentation to said guide changed, and type formed to be held in the machine and adapted to be transferred along said guide without removal from the machine.

161. The combination of a pair of adjacent members, each having a plurality of type-holders and means for relatively moving said members to bring any holder of one member into alinement with any holder of the other, type transferable between alined holders, and means whereby one of said members may print by rolling contact.

162. A pair of drums placed end to end, each having a plurality of type-holding channels, and means for bringing any channel of either drum into coöperation with any channel of the other drum.

163. A pair of drums placed end to end, each having a plurality of type-holding channels, a guide for type passing between the drums, and means for selecting the channels of the respective drums with which said type-guide coöperates.

164. The combination of a printing member having a plurality of type-holders, a storage member having a plurality of type-holders, a type-guide for the transference of type from one member to the other, and means for selecting the particular holders of the two members with which such guide may coöperate.

165. The combination of a pair of members, each having a plurality of open-ended type-holding channels, and a transfer-channel between the members adapted to coöperate with the open ends of channels in the two members, with provisions for relative movement between each member and said transfer-channel, enabling each channel of one member to coöperate with any channel of the other member through the transfer-channel.

166. The combination of a pair of movable members each having a plurality of type-holding channels, a transfer-channel adapted to support type between the members and adapted to register with various channels on either member as they are moved.

167. The combination of a member adapted to print by rotary motion and having a plurality of type-holding channels on its surface, a movable storage member opposite the end of the printing member and having a plurality of type-holding channels, and a transfer-channel between said members adapted to register with any channel in one member and at the same time with any channel in the other member.

168. The combination of a rotary printing member having on its surface a plurality of holders for individual assembled type, a storage member having a plurality of type-holders, means for guiding the type from any holder of one member to any holder of the other, and an impression-platen coöperating with the printing member.

169. The combination of a pair of drums with their ends adjacent, each drum having a plurality of holders for individual type, and a guide for type passing from one drum to the other.

170. The combination of a pair of channeled drums with their ends adjacent, said drums being adapted to carry individual type transferable between them, and a platen coöperating with assembled type on one of the drums.

171. The combination of a supply member, a printing member, each adapted to carry individual type transferable from one member to the other, a band of transfer material carried by the printing member and adapted to be in contact with the face of the type thereon or to be removed therefrom to allow the type to be moved from one member to the other.

172. The combination of a member carrying individual assembled type and printing by rolling motion and an inking-ribbon mounted on such member.

173. The combination of a member carrying individual type assembled into words in parallel lines, said member having a curved surface whereby it may print by rolling motion, and an inking-ribbon mounted on such member.

174. The combination of a member carrying individual type assembled into words in parallel lines, said member having a curved surface whereby it may print by rolling motion, an inking-ribbon mounted on such member, and means governed by the movement of the member for feeding the ribbon transversely of the type.

175. The combination with a platen and a rotary printing member having a plurality of type-holders, of a storage member having a plurality of type-holders, a type-guide adapted to lead from one member to the other, type adapted to be transferred along such guide, and an inking-ribbon passing between the printing member and platen.

176. A printing member having a plurality of type-holders, a storage member having a plurality of type-holders, a transfer-guide between the two, each member being adapted to have its presentation to said guide changed, type adapted to be transferred along said guide, a movable platen for the printing member, and an inking-ribbon passing between the platen and printing member.

177. A movable printing member having a plurality of type-holding channels, a storage member having a plurality of type-holding channels, a transfer-channel between the two whose ends are adapted to register with any channel of either member, respectively, a platen for the printing member, and an inking-ribbon passing between the platen and printing member.

178. A pair of drums placed end to end, each having a plurality of type-holding channels, means for bringing any channel of either drum into coöperation with any channel of the other drum, a platen coöperating with one of the drums, and an inking fabric passing between such drum and platen.

179. A pair of drums placed end to end, each having a plurality of open-ended type-holding channels, a guide for type passing between the drums, means for selecting the channels of the respective drums with open ends of which said type-guide coöperates, a platen coöperating with one of the drums, and an inking fabric passing between such drum and platen.

180. The combination of a printing member having a plurality of type-holders, a storage member having a plurality of type-holders, a type-guide for the transference of type from one member to the other, means for selecting the particular holders of the two members with which such guide may coöperate, a platen coöperating with the printing member, and an inking-ribbon between said member and platen.

181. The combination of a pair of members each having a plurality of open-ended type-holding channels, a transfer-channel between the members adapted to coöperate with the open ends of channels in the two members, a platen coöperating with one of the members, and an inking-ribbon passing between such platen and member.

182. The combination of a pair of movable members each having a plurality of type-holding channels, a transfer-channel between the members adapted to register with various channels on either member as they are moved, a platen coöperating with one of the members, and an inking-ribbon passing between such platen and member.

183. The combination of a member adapted to print by rotary motion and having a plurality of type-holding channels on its surface, a movable storage member opposite the end of the printing member and having a plurality of type-holding channels, a transfer-channel between said members adapted to register with any channel in either member, a platen for said printing member, and an inking-ribbon passing between said platen and printing member.

184. The combination of a rotary printing member having on its surface a plurality of holders for individual assembled type, a storage member having a plurality of type-holders, means for guiding the type from any holder of one member to any holder of the other, an impression-platen coöperating with the printing member, and an inking-ribbon passing between the printing member and platen, and adjustable means for determining the starting-point on the paper of the impression.

185. The combination of a pair of drums with their ends adjacent, each drum having a plurality of holders for individual type, a guide for type passing from one drum to the other, a platen coöperating with one of said drums, and an inking-ribbon passing between the platen and such drum.

186. The combination of a pair of channeled drums with their ends adjacent, said drums being adapted to carry individual type transferable between them, a platen coöperating with one of the drums, and an inking-ribbon passing between said platen and its coöperating drum.

187. The combination with a platen and a rotary printing member having a plurality of type-holders, of a storage member having a plurality of type-holders, a type-guide adapted to lead from one member to the other, type adapted to be transferred along such guide, and an inking-ribbon for the type mounted on and carried by the printing member.

188. A movable printing member having a plurality of type-holding channels, a storage member having a plurality of type-holding channels, a transfer-channel between the two whose ends are adapted to register with any channel of either member, respectively, and an inking-ribbon for the type mounted on and carried by the printing member.

189. A pair of drums placed end to end, each having a plurality of open-ended type-holding channels, means for bringing any channel of either drum into coöperation with any channel of the other drum, a platen for one of the drums, and an inking-ribbon mounted on such drum.

190. A pair of drums placed end to end, each having a plurality of type-holding channels, a guide for type passing between the same, means for selecting the channels of the respective drums with which said type-guide coöperates, and an inking-ribbon mounted on one of the drums.

191. A pair of drums placed end to end, each having a plurality of type-holding channels, a guide for type passing between the drums, means for selecting the channels of the respective drums with which said type-guide coöperates, an inking-ribbon mounted on one of the drums, and means governed by the rotation of such drum for feeding said ribbon transversely of the type.

192. The combination of a printing member having a plurality of type-holders, a storage member having a plurality of type-holders, a type-guide for the transference of type from one member to the other, means for selecting the particular holders of the two members with which such guide may coöperate, and an inking-ribbon mounted on the printing member.

193. The combination of a pair of members each having a plurality of open-ended type-holding channels, a transfer-channel between the members adapted to coöperate with the open ends of channels in the two members, and an inking-ribbon adapted to be mounted on one of the members and adapted to leave that member uncovered for the assemblage of type thereon or to cover such type in printing.

194. The combination of a member adapted to print by rotary motion and having a plurality of type-holding channels on its surface, a movable storage member opposite the end of the printing member and having a plurality of type-holding channels, a transfer-channel between said members adapted to register with any channel in either member, a pair of spools set in the printing member, and an inking-ribbon carried by said spools and adapted to pass across the type on the printing member.

195. The combination of a pair of movable members each having a plurality of type-holding channels, a transfer-channel between the members adapted to register with various channels on either member as they are moved, a platen coöperating with one of the members, an inking-ribbon passing between such platen and the member last mentioned, and means for feeding the paper between said ribbon and platen, said last-mentioned means being adjustable, whereby the paper may be accommodated to the type-matter in the printing member.

196. The combination of a pair of channeled drums

with their ends adjacent, said drums being adapted to carry individual type transferable between them, a platen coöperating with one of the drums, an inking-ribbon passing between said platen and its coöperating drum, and means for feeding the paper between said ribbon and platen, said last-mentioned means being adjustable, whereby the paper may be accommodated to the type-matter in the printing-drum.

197. The combination of a pair of channeled drums with their ends adjacent, said drums being adapted to carry individual type transferable between them, a platen coöperating with one of the drums, and an inking-ribbon mounted on and carried by the drum with which the platen coöperates.

198. The combination of two drums each adapted to carry type, a type-guide between them by which type may be transferred, and mechanism for holding one of the drums against movement during such transfer.

199. The combination of a pair of channeled drums with their ends adjacent, said drums being adapted to carry individual type transferable between them, a platen coöperating with one of the drums, and means for temporarily holding that drum with which the platen coöperates during transfer of type to such drum.

200. The combination of a rotary printing-drum, a crank at one end for rotating it, a storage member at the other end adapted to carry type which may be transferred to the drum, and an inking fabric carried by the drum.

201. A drum formed to carry rows of individual type on its face, a coöperating platen below the drum, a driving-crank at one end of the drum, and a storage member at the other end of the drum.

202. A drum formed to carry rows of individual type on its face, a driving-crank at one end of the drum, a storage member formed to carry rows of individual type at the other end of the drum, and means whereby type may be transferred from the storage member to the drum.

203. A drum formed to carry rows of individual type on its face, a driving-crank at one end of the drum, a storage member at the other end, and a type-channel adapted to support type between the storage member and drum.

204. The combination of a pair of upright frame members, a rotary type-carrying drum journaled between said members, a platen below said drum, a crank on the outer side of one of said frame members for rotating said drum, a storage member on the outer side of the other frame member, said storage member being adapted to carry rows of type transferable to the printing-drum.

205. The combination of a rotary printing-drum, a crank at one end for rotating it and a storage member at the other end adapted to carry type which may be transferred to the drum, a platen coöperating with the printing-drum, and an inking-ribbon passing between the printing-drum and platen.

206. A drum formed to carry rows of individual type on its face, a driving-crank at one end of the drum, a storage member formed to carry rows of individual type at the other end of the drum, means whereby type may be transferred from the storage member to the drum, a platen coöperating with said drum, an inking-ribbon adapted to pass between the drum and platen, and means for feeding the paper to be printed between the platen and ribbon.

207. The combination of a supply member, a printing member, and feed-racks for feeding type from either member to the other.

208. The combination of a supply member having type-holders, a printing member having type-holders, a pair of feed-racks extending along such members, and mechanism for moving each rack in a direction to advance the type in the corresponding member toward the other member.

209. The combination of a printing member having means for carrying rows of individual type, a movable storage member, type transferable from one member to the other, and means for indicating the character of the type in the storage member in position to be transferred.

210. A type-carrying member and an impression-platen, one of which is adapted to turn on an axis while printing and the other of which has concurrent coöperative movement said type being held loosely and individually on said type-carrying member, and an inking-ribbon mounted on the type-carrying member.

211. A type-carrying member and an impression-platen, one of which is adapted to turn on an axis while printing and the other of which has concurrent coöperative movement said type being held loosely and individually on said type-carrying member, a spool mounted on the type-carrying member and an inking-ribbon having one end wound on such spool.

212. The combination in a unitary machine of a printing couple, one member of which is adapted to turn on an axis while printing, an inked fabric adapted to pass between the members of the couple, whereby the impression is produced through the fabric and by continuous rolling contact, and mechanism for assembling type on one member of the couple and for distributing type therefrom.

213. In a combined setting, distributing and printing machine, the combination of a font of individual type continuously carried by the machine, a storage member, a printing member, mechanism forming a part of the machine for transferring type from either member to the other, a platen coöperating with the printing member to produce therewith a printing couple, one member of said couple being adapted to turn on an axis while printing and the other member concurrently moving in coöperation therewith, and an inked fabric adapted to pass between the members of the couple whereby the printing is effected through the fabric and by rolling impression.

214. A rotary drum having on its surface parallel linear type-holders, type adapted to be assembled into a page of lines of words in said holders, a platen with which said drum may coöperate while rotating, a printing fabric passing between the drum and platen, such fabric being of a width corresponding to the length of the lines and of a length greater than the periphery of said drum, and means for carrying a wound-up end of said fabric.

215. A type-carrying drum adapted to print by rotary movement and having a series of parallel longitudinal type-holders, and inking-ribbon of a width as great as the length of the lines of type on said drum, the ribbon being adapted to be moved with the type while printing, and means for shifting the ribbon while the type is not printing.

216. The combination of a movable platen and a type-carrying member which prints by rolling contact therewith and is adapted to carry parallel rows of individual assembled type, and an inking-ribbon mounted on such member and covering a page form of type thereon.

217. The combination of a printing couple, one member of which is rotary and carries on its surface parallel rows of individual type assembled into page-form, spools carried on such member, and an inking-ribbon mounted on such spools and covering such page.

218. The combination of a type-carrying member which prints by movement about an axis and is adapted to carry parallel rows of individual type assembled into page form on the member, and an inking-ribbon extending across the type and having its ends carried by such member beyond the extremes of such page-form.

219. A rotary drum having on its surface means for carrying a page-form of parallel lines of individual type, an inking-ribbon mounted on such drum and extending part way around it and covering the type thereon, the ends of the ribbon being separately carried by the drum at points beyond the opposite ends of such page-form.

220. A printing member having on its surface carriers for individual type assembled into parallel lines of words, said type being held loosely and individually on said type-carrying member a platen with which such member may coöperate making therewith a printing-couple one member of which turns on an axis while the other is moving in coöperation therewith, a printing fabric a page wide passing between the member and platen, and a spool which carries one end of said fabric and around which the fabric is wound, said spool being rotatably mounted on an axis parallel with the axis first mentioned.

221. A rotatable member having on its surface a plurality of carriers for individual type assembled into parallel lines of words, a coöperating platen, whereby such member is adapted to print by rotary motion, a transfer fabric arranged to travel in unison with the type while printing and be impressed on one side by the type and thereby print on the opposite side, said transfer fabric having a width as great as the length of the lines on the member, and means mounted on the member for carrying the ends of said fabric.

222. The combination of a member carrying individual assembled type and printing by rolling motion, an inking-ribbon extending across such type, and means mounted on the member for holding the ends of the ribbon.

223. The combination of a member carrying individual type assembled into a page-form of parallel lines of words, said member having a curved surface whereby it may print by rolling motion, an inking-ribbon a page wide, and means for carrying the ends of the ribbon mounted on such member.

224. The combination of a movable member adapted to carry on its surface individual type assembled in a page-form of parallel lines of words, a ribbon of a width sufficient to cover such page, means for carrying an end of the ribbon, said means being mounted in a recess in the movable member beyond the end of such page, a platen, and means for feeding the ribbon when the type on the movable member are out of coöperation with the platen, substantially as described.

225. A printing-drum having on a portion of its surface parallel, longitudinal type-holders and having a recess between the ends of such portion, a transfer fabric of a width sufficient to cover a page of type mounted in lines on such holders, and means within said recess for carrying the ends of said fabric.

226. The combination of a rotatable drum having on its surface carriers for individual type assembled into a page of parallel rows of words, a platen with which said drum may coöperate while rotating, a fabric of a width as great as said page and passing between the drum and platen, means for feeding paper to be printed between the drum and platen, and adjustable means for determining the time of starting the feeding of the paper, whereby the paper may be properly timed with reference to the matter on the drum.

227. The combination of a type-carrying member mounted to turn on a fixed axis and print by such movement, a platen coöperating with said member, a transfer fabric passing between the member and platen, means for feeding paper between the member and platen, and movable means for governing the time of starting the paper.

228. The combination of a printing member, a supply member, mechanism for transferring type from one to the other, said mechanism being operated by an endwise shift to one of said members.

229. The combination of a rotary printing member, a movable supply member, mechanism for transferring type from the supply member to the printing member, said mechanism being actuated by a movement of the supply member.

230. The combination of a rotary printing member, an independently-rotatable supply member, transfer mechanism for transferring type from either member to the other, and means whereby said transfer mechanism may be operated by an endwise movement of the supply member.

231. The combination of a printing-drum adapted to carry on its surface parallel rows of individual assembled type, a pair of spools set into a recess in said drum, a ribbon mounted on said spools and passing around said drum, a platen with which the drum coöperates, and means for turning one of the spools on its axis during a non-printing portion of a rotation of the drum.

232. The combination of a member adapted to turn on an axis and formed to carry rows of individual assembled type, a platen coöperating with assembled type on said member, driving mechanism at one end of such member, and a storage member at the other end of such member.

233. The combination of a pair of type-holding members mounted end to end and each adapted to be turned about an axis, type transferable between the members, independent means at the distant ends of the members for so turning them, and a platen coöperating with one of the members during such turning.

234. The combination of a pair of drums mounted end to end in a unitary machine and each adapted to carry rows of individual type, means at the ends of such machine for rotating each drum independently, and a platen coöperating with one of the drums.

235. The combination of a pair of drums placed end to end and each adapted to carry rows of individual type, means on the distant end of each drum for rotating it, a platen coöperating with one of the drums, and mechanism for transferring type from either drum to the other.

236. The combination of a pair of drums placed end to end and each adapted to carry rows of individual type, means at the distant end of each drum for rotating it, a platen coöperating with one of the drums, and an inking-ribbon carried by the drum with which the platen coöperates.

237. The combination of a pair of rotatable drums placed end to end and each adapted to carry individual type, and means at the distant ends of the drums for independently rotating them, type transferable between the drums, mechanism for effecting such transfer, a platen coöperating with one of the drums, and an inking-ribbon mounted on said last-mentioned drum and adapted to pass between it and the platen.

238. A pair of members each provided with a plurality of type-holders, type transferable from holder to holder, one of said members being adapted to turn about an axis, an impression device coöperating with assembled type on one of said members, and an inking-ribbon movable with the type when in apposition to the impression device, whereby said type may be assembled, printed from, and distributed while in the machine.

239. A pair of members each provided with a plurality of type-holders, type transferable from holder to holder, one of said members being adapted to turn about an axis, an impression device coöperating with assembled type on one of said members, and an inking-ribbon mounted on the member which coöperates with the impression device, said ribbon being adapted to extend over the type of such member and being removable to allow assemblage of such type, whereby said type may be assembled, printed from, and distributed while in the machine.

240. A pair of members each provided with a plurality of type-holders, type transferable from holder to holder, one of said members being adapted to turn about an axis, an impression device coöperating with assembled type on one of said members, an inking-ribbon adapted to pass between the impression device and the member coöperating therewith, and means for feeding said ribbon to present a fresh face to the type, whereby said type may be assembled, printed from, and distributed while in the machine.

241. A pair of members each provided with a plurality of type-holders, type transferable from holder to holder, one of said members being adapted to turn about an axis, an impression device coöperating with assembled type on one of said members, the member which coöperates with the impression device having a recess, an inking-ribbon adapted to extend across the type on such member, and means mounted in the recess for holding the ends of the ribbon, whereby said type may be assembled, printed from, and distributed while in the machine.

242. A pair of members each provided with a plurality of type-holders, type transferable from holder to holder, one of said members being adapted to turn about an axis, an impression device coöperating with assembled type on one of said members, the member which coöperates with the impression device having a recess, a pair of ribbon-spools mounted in said recess, a ribbon mounted on said spools and adapted to extend from one spool to the other across the type on such member, and means for rotating one of the spools when the recess is passing the impression device, whereby said type may be assembled, printed from, and distributed while in the machine.

243. A pair of members each provided with a plurality of type-holders, type transferable from holder to holder, mechanism for effecting such transfer to assemble or dis-

tribute type, one of said members being adapted to turn about an axis, an impression device coöperating with type thus assembled on one of said members, and an inking-ribbon movable with the type when in apposition to the impression device, whereby said type may be assembled, printed from, and distributed while the machine.

244. A pair of members each provided with a plurality of type-holders, type transferable from holder to holder, manually-operated mechanism for effecting such transfer, one of said members being adapted to turn about an axis, an impression device coöperating with assembled type on one of said members, and an inking-ribbon mounted on the member which coöperates with the impression device, said ribbon being adapted to extend over the type of such member and being removable to allow said manually-operated mechanism to act on the type on such member, whereby said type may be assembled, printed from, and distributed while in the machine.

245. A pair of members each provided with a plurality of type-holders, type transferable from holder to holder, mechanism for effecting such transfer, one of said members being adapted to turn about an axis, an impression device coöperating with type on one of said members, an inking-ribbon adapted to pass between the impression device and the member coöperating therewith, and means for feeding said ribbon to present a fresh face to the type.

246. A pair of members each provided with a plurality of type-holders, type transferable from holder to holder, mechanism for effecting such transfer, one of said members being adapted to turn about an axis, an impression device coöperating with type on one of said members, the member which coöperates with the impression device having a recess, an inking-ribbon adapted to extend across the type on such member, and means mounted in the recess for holding the ends of the ribbon.

247. A pair of members each provided with a plurality of type-holders, type transferable from holder to holder, mechanism for effecting such transfer, one of said members being rotatable, an impression device coöperating with said rotatable member, said rotatable member having a recess, a pair of ribbon-spools mounted in said recess, a ribbon mounted on said spools and adapted to extend from one spool to the other across the type on such member, and means for automatically rotating one of the spools when the recess is passing the impression device.

248. In a duplicating-machine, the combination of a drum, means for rotating it, means for holding individual type in lines upon its surface, a movable platen suitable to receive the impression of the type, a web of transfer material having its ends mounted on the drum and being adapted to pass across the type thereon and move with the type in coöperation with the impression-platen, means for periodically moving said web across the face of the type to present a fresh portion of the web thereto, and adjustable means to govern the time of starting the printing impression with reference to the type matter on the drum.

249. In a duplicating-machine, the combination of a pair of channeled drums placed end to end, a font of type, the different individuals of which are of the same thickness, mechanism for feeding such type from one drum to the other by successive movements which are individually equal to the thickness of a type, a platen coöperating with one of the drums, an inking-ribbon adapted to pass between the platen and the drum coöperating therewith, and means for automatically and periodically giving said ribbon movement other than its movement with the drum while printing.

250. The combination in a unitary machine, of a rotary printing-drum, means at one end of the same for rotating it, a storage member at the other end of the drum, and a platen coöperating with assembled type on the periphery of the drum.

251. The combination in a unitary machine of a rotary printing-drum, means at one end of the same for rotating it, a storage-drum at the other end of the printing-drum, a platen coöperating with the periphery of the printing-drum, feed-racks extending along the drums respectively, and means for moving either rack toward the corresponding drum and along it to feed the type in that drum toward the other drum.

252. The combination of a supply member, another type-holding member, a font of type, the different individuals of which are of the same thickness, and means for feeding type from either member to the other by successive movements individually equal to the thickness of a type.

253. A printing member having a plurality of type-holding channels, a storage member having a plurality of type-holding channels, a transfer-channel between the two, there being provisions for relative movement between the printing member and transfer-channel, and relative movement between the storage member and transfer-channel, whereby said transfer-channel is adapted to register with any channel of either member respectively.

254. The combination of a pair of drums placed end to end, each drum being formed with longitudinal type-holders, a font of type, the different individuals of which are of the same thickness, mechanism for feeding type from either drum to the other by successive movements which are individually equal to the thickness of a type, means for independently rotating the two drums, an impression-platen coöperating with one of the drums, an inking-ribbon adapted to pass between the platen and the drum which coöperates with it, and automatically-acting means to feed said ribbon transversely of the line of contact between the platen and said coöperating drum.

255. The combination of a supply member and a printing member, each provided with longitudinal type-holders, a font of type, mechanism for feeding type one at a time from either member to the other, driving mechanism for turning the printing member about an axis, an impression-platen coöperating with said printing member, an inking-ribbon adapted to pass between the platen and the printing member, automatically-acting means to feed said ribbon transversely of the line of contact between the platen and said printing member, and means driven by the driving mechanism of the printing member for feeding paper between the platen and such member, the said means being adjustable to compensate for different positions of the printing matter on the printing member.

256. In a combined setting and distributing and printing machine, the combination of a font of individual type which form a permanent part of the machine and are grooved on their sides, of a supply mechanism and a rotary printing mechanism, each having rails with overhanging edges providing channels which such grooved type occupy, means forming a permanent part of the machine and adapted to convey type from one mechanism to the other, and a platen coöperating with the printing mechanism while rotating.

257. In a combined setting, distributing and printing machine, the combination of a font of individual type continuously carried by the machine, a storage member, a printing member, mechanism forming a part of the machine for transferring type from either member to the other and a platen coöperating with the printing member to produce therewith a printing-couple, one member of said couple being adapted to turn on an axis while printing and the other member concurrently moving in coöperation therewith, whereby the printing is effected by rolling impression.

258. In a duplicating-machine, in combination, mechanism for carrying a supply of type, printing mechanism adapted also to carry type, each mechanism having open-ended type-channels, a passage-way therebetween, and a limiting-wall opposite the ends of the various channels of the supply mechanism, such wall being interrupted at such passage-way.

259. The combination of printing mechanism, storage mechanism, mechanism for transferring type from either of said mechanisms to the other, and means for preventing an excessive movement of the transferring mechanism.

260. The combination in a unitary machine of a platen, a coöperating printing mechanism, mechanism for advancing a line of type to or from the printing mechanism and adjustable mechanism for preventing an excessive movement of the advancing mechanism.

261. The combination of a supply member, and a printing member, a type-channel leading from one to the other, mechanism for advancing a line of type in either of said members so that the forward end of the line may pass into said channel, and means for limiting the normal movement to one type at a time.

262. The combination in a unitary machine, of a platen, coöperating printing mechanism, mechanism for advancing a line of type to or from the printing mechanism, mechanism for preventing an excessive movement of the advancing mechanism, and manual mechanism for operating the advancing mechanism.

263. In a duplicating-machine, the combination with a font of type the different individuals of which are of the same thickness, of mechanism for carrying a supply of such type, printing mechanism adapted also to carry type, feeding mechanism adapted to convey type from either mechanism to the other and present it with its character standing in the same direction, and means adapted to limit the normal feeding movement to a distance equal to the thickness of a type.

264. In a duplicating-machine, in combination, mechanism for carrying a supply of type, printing mechanism adapted also to carry type, feeding mechanism adapted to convey type from one mechanism to the other with its character standing in the same direction, and adjustable means to prevent excessive movement of the feeding mechanism.

265. The combination in a unitary machine of a printing-couple, one member of which is adapted to turn on an axis while printing, whereby the impression is produced by continuous rolling contact, and mechanism for assembling type on one member of the couple and for distributing type therefrom.

266. The combination of a channeled storage member, a channeled printing member, a type-channel between them adapted to communicate therewith and adapted to support a plurality of individual type, and means for engaging the rear end of a line of type in one of said members and moving with it a distance equal to the thickness of a type to cause the forward type in such line to pass into the type-channel.

267. The combination of supply mechanism, printing mechanism, feeding mechanism adapted to feed type from either of said mechanisms toward the other, and means adapted to limit the movement of the feeding mechanism to a distance equal to the thickness of a type.

268. A type-carrying member a platen which coöperates to print by rolling impression and an inking-ribbon having separated ends which are mounted on such member.

269. A type-carrying member which prints by rotary movement and an inking-ribbon having one end at least removably carried by the type-carrying member to allow removal of the ribbon for installing the type on the member.

270. A printing-couple comprising a printing member and an impression-platen, one of which is rotary, and an inking-ribbon mounted on the printing member and movable with it and having one end removably carried by the printing member, whereby the ribbon may be displaced to allow installation of the type.

271. In a printing-couple comprising a printing member and an impression-platen, one of which is rotary, a pair of ribbon-spools carried by the printing member, a ribbon mounted on said spools and adapted to extend across the face of the type on said member and move with such type in coöperation with the platen, and means for actuating one of said spools to feed the ribbon.

272. In a duplicating-machine, the combination of a member adapted to carry on its surface parallel rows of individual type, whereby a page of matter may be carried on said member, a platen coöperating with such member and making therewith a printing-couple, one member of said couple having rotary movement while printing, and a transfer fabric of a width sufficient to cover the page of type, said fabric having separated ends which are carried by the member which carries the type, said fabric being arranged to lie between the members of the couple and be impressed on one side by the type and thereby print on the opposite side.

273. In a duplicating-machine, the combination of a member adapted to carry on its surface parallel rows of individual type, whereby a page of matter may be carried on said member, a platen coöperating with such member and making therewith a printing-couple, one member of said couple having rotary movement while printing, a transfer fabric of a width sufficient to cover the page of type matter, a pair of spools rotatably mounted on the member which carries the type, said spools carrying the ends of the transfer fabric, the fabric being arranged to lie between the members of the couple and be impressed on one side by the type and thereby print on the opposite side, and means periodically actuated for giving partial rotations to one of said spools.

274. A printing-couple comprising a type-carrying member and an impression-platen, one of which has rotary movement while printing, said type-carrying member having a series of parallel type-holders, an inking-ribbon of a width as great as a page of type matter carried on said member, said ribbon being adapted to be moved with the type while printing, and means for shifting the ribbon while the type is not printing.

275. A printing-couple comprising a type-carrying member and an impression-platen, one of which has rotary movement and the other movement in a substantial tangential plane, an inking-ribbon adapted to extend across the type on the type-carrying member and be moved with said member, means mounted on the type-carrying member for carrying the ends of said ribbon, and mechanism for shifting the ribbon while the type is not printing.

276. The combination of a printing-couple comprising a printing member and a platen, both of which are movable during printing and one of which is adapted to turn on an axis at such time, said member being adapted to carry on its surface individual type assembled in a page form in parallel lines of words, a ribbon of a width sufficient to cover such page, means for carrying the ends of the ribbon, said means being mounted on the printing member.

277. The combination of a printing-couple, one member of which is rotary, means for carrying individual type on one member of the couple, an inked fabric adapted to pass between the members of the couple and means on the member which carries the type for carrying the ends of the fabric, at least one of such fabric-carrying means being removable to allow the installation of the type.

278. The combination of a movable printing member, a movable and coöperating platen member, one of said members being rotary and the other flat, one of said members being adapted to carry type assembled in page form, and a ribbon a page wide carried by the type-carrying member and extending across the type thereon.

279. The combination of a movable printing member, a movable and coöperating platen member, one of said members being rotary and the other flat, one of said members being adapted to carry type assembled in page form, a pair of spools rotatably carried by the type-carrying member, a ribbon mounted on said spools, and means for automatically and periodically rotating one of said spools, consequent upon the movement of the printing member.

280. The combination of a printing-couple, one member of which is adapted to carry individual type, mechanism for assembling such type on said member, and an inking-ribbon mounted on said member and having one end at least removably carried thereby, whereby the ribbon may be displaced to allow the assemblage of the type.

281. The combination in a unitary machine, of a font of individual type forming a permanent part of the machine, means forming a permanent part of the machine for assembling characters thereon in parallel lines of desired words, a printing-couple, one member of which is rotary, means on one member of the couple for carrying such assembled characters, and means for distributing such characters without removal from the machine.

282. The combination in a unitary structure, of a printing-couple, one member of which is rotary and the other flat, a font of individual type forming a permanent part of the machine, means forming a permanent part of the machine for assembling characters into parallel lines of desired words on one member of the printing-couple, means for printing from such type by operation of the couple, and means for distributing such characters without removal from the machine.

283. A storage member provided with a plurality of holders for carrying individual type arranged with different holders according to the different characters, a printing-couple one member of which is rotary and the other flat, one member of such couple being provided with a plurality of type-holders parallel with each other, a font of individual type having usual letters, characters and figures and transferable from the holders of the storage member to those of the printing-couple, an inking fabric carried by the printing member and movable therewith, and means for feeding the fabric between printing impressions, whereby said type may be assembled, printed from and distributed while in the machine.

284. The combination with a type-storage member, of a printing-couple, one member of which is rotary, means for carrying the individual type on one member of the couple, means for transferring type from the storage member to such member of the couple, an inked fabric adapted to pass between the members of the couple and having one end at least removably carried by the member which carries the type, whereby the fabric may be displaced to allow the assemblage of the type and may be put in place to allow the printing to be effected.

285. The combination of a printing-couple comprising a type-carrying member and a platen, one of which has rotary movement while printing, a transfer fabric passing between the member and platen, means for feeding paper between the member and platen, and movable mechanism for governing the time of starting the paper.

286. The combination, of a printing-couple comprising a type-carrying member and a platen, the type being held loosely and individually on said type-carrying member, an inked fabric adapted to pass between the members of the couple and mounted on said type-carrying member, means for feeding paper between the members of such couple, and means for removing the paper after the printing is accomplished, substantially as described.

287. The combination of a printing-couple comprising a printing member and an impression-platen, one of which is rotary while printing, mechanism for assembling type on the printing member, an inked fabric adapted to move between the printing member and the impression-platen during the impression, whereby the paper may be printed by continuous rolling motion, and means for removing such paper after it is printed.

DESIGNS.

38,481. BADGE. FLORENCE O'SULLIVAN, Washington, D. C. Filed Feb. 13, 1907. Serial No. 357,232. Term of patent 3½ years.

Claim.—The ornamental design for a badge, as shown.

38,482. HAND-BAG, PURSE, OR SIMILAR ARTICLE. FRED D. KAHN, New York, N. Y., assignor to L. Wolf & Co., New York, N. Y. Filed Feb. 11, 1907. Serial No. 356,936. Term of patent 7 years.

Claim.—The ornamental design for a hand-bag, purse or similar article herein shown.

38,483. BOTTLE. EMMA ROBERTON, New York, N. Y. Filed Jan. 28, 1907. Serial No. 354,588. Term of patent 7 years.

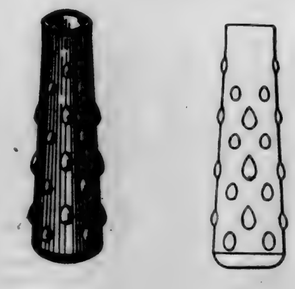

Claim.—The ornamental design for a bottle, as shown.

38,484. SOCKET FOR INCANDESCENT ELECTRIC LAMPS. JAMES A. MEBANE, South Boston, Va. Filed Feb. 11, 1907. Serial No. 356,937. Term of patent 7 years.

Claim.—The ornamental design for a socket for incandescent electric lamps, as shown.

38,485. STOVE ORNAMENT. FRED E. LEE, Dowagiac, Mich. Filed Feb. 8, 1907. Serial No. 356,490. Term of patent 14 years.

Claim.—The ornamental design for a stove ornament, as shown.

38,486. AUTOMOBILE-BODY. WILLIAM HOOKER ATWOOD, New Haven, Conn., assignor to Electric Vehicle Company, Jersey City, N. J., a Corporation of New Jersey. Filed Nov. 27, 1905. Serial No. 289,374. Term of patent 14 years.

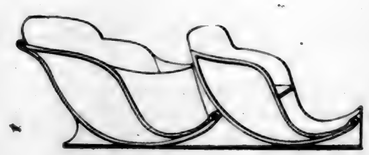

Claim.—The ornamental design for an automobile-body as shown.

283. A storage member provided with a plurality of holders for carrying individual type arranged with different holders according to the different characters, a printing-couple one member of which is rotary and the other flat, one member of such couple being provided with a plurality of type-holders parallel with each other, a font of individual type having usual letters, characters and figures and transferable from the holders of the storage member to those of the printing-couple, an inking fabric carried by the printing member and movable therewith, and means for feeding the fabric between printing impressions, whereby said type may be assembled, printed from and distributed while in the machine.

284. The combination with a type-storage member, of a printing-couple, one member of which is rotary, means for carrying the individual type on one member of the couple, means for transferring type from the storage member to such member of the couple, an inked fabric adapted to pass between the members of the couple and having one end at least removably carried by the member which carries the type, whereby the fabric may be displaced to allow the assemblage of the type and may be put in place to allow the printing to be effected.

285. The combination of a printing-couple comprising a type-carrying member and a platen, one of which has rotary movement while printing, a transfer fabric passing between the member and platen, means for feeding paper between the member and platen, and movable mechanism for governing the time of starting the paper.

286. The combination, of a printing-couple comprising a type-carrying member and a platen, the type being held loosely and individually on said type-carrying member, an inked fabric adapted to pass between the members of the couple and mounted on said type-carrying member, means for feeding paper between the members of such couple, and means for removing the paper after the printing is accomplished, substantially as described.

287. The combination of a printing-couple comprising a printing member and an impression-platen, one of which is rotary while printing, mechanism for assembling type on the printing member, an inked fabric adapted to move between the printing member and the impression-platen during the impression, whereby the paper may be printed by continuous rolling motion, and means for removing such paper after it is printed.

DESIGNS.

38,481. BADGE. FLORENCE O'SULLIVAN, Washington, D. C. Filed Feb. 18, 1907. Serial No. 357,232. Term of patent 3½ years.

Claim.—The ornamental design for a badge, as shown.

38,482. HAND-BAG, PURSE, OR SIMILAR ARTICLE. FRED D. KAHN, New York, N. Y., assignor to L. Wolf & Co., New York, N. Y. Filed Feb. 11, 1907. Serial No. 356,936. Term of patent 7 years.

Claim.—The ornamental design for a hand-bag, purse or similar article herein shown.

38,483. BOTTLE. EMMA ROBERTON, New York, N. Y. Filed Jan. 28, 1907. Serial No. 354,588. Term of patent 7 years.

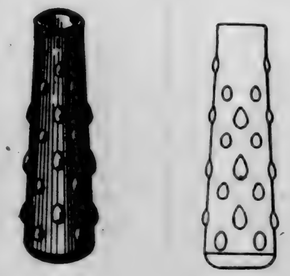

Claim.—The ornamental design for a bottle, as shown.

38,484. SOCKET FOR INCANDESCENT ELECTRIC LAMPS. JAMES A. MEBANE, South Boston, Va. Filed Feb. 11, 1907. Serial No. 356,937. Term of patent 7 years.

Claim.—The ornamental design for a socket for incandescent electric lamps, as shown.

38,485. STOVE ORNAMENT. FRED E. LEE, Dowagiac, Mich. Filed Feb. 8, 1907. Serial No. 356,490. Term of patent 14 years.

Claim.—The ornamental design for a stove ornament, as shown.

38,486. AUTOMOBILE-BODY. WILLIAM HOOKER ATWOOD, New Haven, Conn., assignor to Electric Vehicle Company, Jersey City, N. J., a Corporation of New Jersey. Filed Nov. 27, 1905. Serial No. 289,374. Term of patent 14 years.

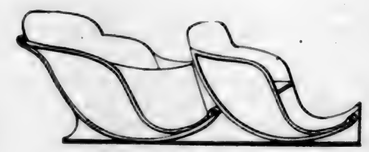

Claim.—The ornamental design for an automobile-body as shown.

TRADE-MARKS

GRANTED MARCH 19, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 68. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) K K K MEDICINE COMPANY, Keokuk, Iowa. Filed Apr. 1, 1905.

KKK

Particular description of goods.—Spices and Mustard.

Ser. No. 5,402. (CLASS 33. GLASSWARE NOT OTHERWISE CLASSIFIED.) AMERICAN BAR-LOCK COMPANY, Philadelphia, Pa. Filed May 13, 1905.

Arch Plain

Particular description of goods.—Illuminating-Prisms, Vault-Lights, Sidewalk-Lights, Door-Lights, and Skylights.

Ser. No. 5,639. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) THE F. F. DALLEY CO. OF HAMILTON, LIMITED, Hamilton, Ontario, Canada. Filed May 15, 1905.

Particular description of goods.—Shoe-Polish Paste.

Ser. No. 5,695. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) S. S. PIERCE CO., Boston, Mass. Filed May 15, 1905.

Particular description of goods.—Canned Vegetables, Canned Fruits, Canned Soups, Dried and Preserved Fruits, Eggs, Gelatin, (Used as Food,) Nuts, Spices, Soup-Tablets, Sauces, Pickles, Mustard, Tapioca, Sago, and Vinegar.

Ser. No. 9,825. (CLASS 30. CROCKERY, EARTHENWARE, AND PORCELAIN.) JOSIAH WEDGWOOD & SONS, LTD., Etruria, England. Filed July 6, 1905. Used ten years.

Particular description of goods.—Earthenware and Porcelain, but Not Including Any Article of the Form or Design Illustrated by the Mark.

Ser. No. 11,065. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) FRANK L. THORNTON, Providence, R. I. Filed July 31, 1905.

Particular description of goods.—Buckwheat, Self-Raising Flour, Whole-Wheat Flour, Graham Flour, Cornmeal, and Rolled Oats.

Ser. No. 12,422. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE TODD MANUFACTURING CO., New Albany, Ind. Filed Sept. 9, 1905.

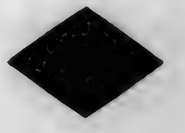

The outer diamond-shaped figure being displayed in green and the inner diamond-shaped figure in red.

Particular description of goods.—Hames.

Ser. No. 13,009. (CLASS 25. LOCKS AND SAFES.) THE H. B. IVES COMPANY, New Haven, Conn. Filed Sept. 25, 1905.

Crescent

Particular description of goods.—Sash-Fasteners.

Ser. No. 13,475. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE HOSTETTER COMPANY, Pittsburg, Pa. Filed Oct. 10, 1905. Used ten years.

HOSTETTER'S STOMACH BITTERS

Particular description of goods.—Stomach-Bitters.

Ser. No. 13,554. (CLASS 71. TOBACCO PRODUCTS.) FERNANDES, WODISKA Y CORRAL, Tampa, Fla. Filed Oct. 13, 1905.

Particular description of goods.—Cigars.

Ser. No. 14,335. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) S. STERNAU & CO., Brooklyn, N. Y. Filed Nov. 4, 1905. Used ten years.

S. STERNAU & CO. NEW YORK

Particular description of goods.—Chafing-Dishes, Fancy Kettles, Coffee-Machines, Trays, Towel-Racks, Soap-Dishes, Towel-Rings, Comb and Brush Racks, Soap-Racks, Sponge-Holders, Combination Soap-Racks and Sponge-Holders, Holders for Water-Carafes, Tooth-Brush Holders, Metal Baskets for Soiled Towels, Toilet-Paper Holders, Match-Holders, Robe-Hooks, Whisk-Broom Holders, Spray-Hooks, Bath-Brush Holders, Combination Soap-Dishes, Mug and Tooth-Brush-Vase Holders, Combination Mug and Tooth-Brush-Vase Holders, Combination Soap-Dish, Mug, Tooth-Brush-Vase and Tooth-Powder-Bottle Holders, Combination Mug and Soap-Dish Holder, Mug-Holders, Combination Soap-Dish and Tumbler Holders, Combination Soap-Dish, Tumbler, and Tooth-Brush Holders, Bath-Sprays, Spray-Brushes, Shower-Bath Rings, Bath-Yokes and Overhead Showers, Teapots, Coffee-Pots, Coffee-Servers, Coffee or Tea Pot Stands, Sugar-Bowls, Cream-Pitchers, Wine-Coolers, Salt and Pepper Sets, Percolating Coffee-Pots, Chafing-Dish Pans, Chafing-Dish Stands, Chafing-Dish Spoons, Tourists' Chafing-Dishes, Chafing-Dish Forks, Chafing-Dish Skimmers, Chafing-Dish Egg-Poachers, Chafing-Dish Omelet-Pans, Chafing-Dish Toasters, Alcohol-Flagons, Gas-Burners for Chafing-Dishes, Coffee-Machines, Teapots, and Travelers' Companions, Chafing-Dish Hangers, Wind-Shields, Alcohol-Lamps Forming a Part of Chafing-Dishes, Coffee-Machines, Teapots, and Travelers' Companions, Metal Trays, Tea-Kettles, Tea-Kettle Stands, Tea-Kettle Cranes, Hot-Water Urns, Baking-Dishes, Traveling Companions, Hot-Water Plates, Hot-Water-Plate Covers, Crumb Trays and Scrapers, Platters, Covers, Ash-Receivers, Ash-Receiver Stands, Candlesticks, Jardenières with Stands, and Candelabra.

Ser. No. 14,703. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) GRINNELL WILLIS & CO., New York, N. Y. Filed Nov. 16, 1905.

Diamond Hill

Particular description of goods.—Bleached and Unbleached Shirtings, Cambrics, and Long-Cloth.

Ser. No. 15,420. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOSEPH KUSKUNA, New York, N. Y. Filed Dec. 14, 1905.

Particular description of goods.—Hair-Tonics, Shampoo, and Hair-Restorers.

Ser. No. 15,612. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) GLIDDEN, HYDE & CO., Boston, Mass. Filed Dec. 23, 1905.

Boston Girl

Particular description of goods.—Hosiery.

Ser. No. 15,740. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) WILLIAM HUNT & SONS, THE BRADES, LIMITED, Brades Steel Works, near Birmingham, England. Filed Dec. 29, 1905. Used ten years.

BRADES C.

Particular description of goods.—Hoes, (Garden and Field,) Spades, Shovels, Scoops, Rakes, and Forks, (Digging, Manure, Hay, Garden, Potato, Coke.)

Ser. No. 15,903. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) CHICAGO CONSOLIDATED BOT CO., Chicago, Ill. Filed Jan. 2, 1906.

RED ELEPHANT

Particular description of goods.—Mineral Waters, Carbonated and plain; Medicinal Waters, and Distilled Water.

Ser. No. 17,955. (CLASS 60. INKS AND INKING MATERIALS.) NORDDEUTSCHE WOLLKÄMMEREI & KAMMGARNSPINNEREI, Bremen and Delmenhorst, Germany. Filed Mar. 16, 1906.

Sumatrol

Particular description of goods.—Inks.

Ser. No. 18,720. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MARY A. LUPTON, MILLARD F. CATTELL, and PHILIP S. HORTZ, executors and trustees of the estate of Lewis M. Green, Woodbury, N. J. Filed Apr. 12, 1906.

Particular description of goods.—A Preparation for the Treatment of Diseases of the Throat and Lungs.

Ser. No. 19,473. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) OHIO BOTTLING CO., Cincinnati, Ohio. Filed May 12, 1906.

BJB

Particular description of goods.—Mineral Waters, Seltzer, Ginger-Ale, and Lithia-Water.

Ser. No. 19,690. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) ABRAHAM & STRAUS, Brooklyn, N. Y. Filed May 19, 1906.

PRISCILLA

Particular description of goods.—Flavoring Extracts and Jams.

Ser. No. 20,303. (CLASS 33. GLASSWARE NOT OTHERWISE CLASSIFIED.) HOUDAILLE ET TRIQUET, Choisy-le-Roi, (Seine,) France. Filed June 15, 1906.

VERRE SILI-CHROME

Particular description of goods.—Glass Shades, Glass Globes, and Glass Chimneys of All Kinds.

Ser. No. 20,657. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) RICE, STIX DRY GOODS COMPANY, St. Louis, Mo. Filed June 29, 1906.

PRINCESS

Particular description of goods.—Percales.

Ser. No. 21,074. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) ALBERT RUBEN & CO., Chicago, Ill. Filed July 21, 1906.

THE BEST ALICE BRAND MAKE

Particular description of goods.—Ladies' Cloaks, Suits, and Dress-Skirts.

Ser. No. 21,659. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) PENN DRUG COMPANY, Chicago, Ill. Filed Aug. 18, 1906.

Particular description of goods.—Remedies for Constipation, Torpidity of the Liver, Biliousness, Jaundice, Pimples, Scrofula, Sour Stomach, Dysentery, Diarrhea, Cholera Morbus, Croup, Anemia, Rheumatism, Headache, Eczema, Erysipelas, Ringworm, Hives, Tetter, General Debility, Nervousness, Insomnia, Hemorrhoids, Colds, Grippe, Sore Throat, Tonsilitis, Catarrh, Kidney Troubles, Colic, Warts, Corns, Toothache, Cramps, Opium or Liquor Habit, Malarial Fevers, Ague, Loss of Hair and Dandruff, Worms, Leucorrhea, Palpitation and Weakness of the Heart, Weakness and Inflammation of the Eyes, Blood Poison, Sprains, and Bruises.

Ser. No. 21,665. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) CHARLES A. AHLSTROM, Jamestown, N. Y. Filed Aug. 18, 1906. Used ten years.

Ahlstrom.

Particular description of goods.—Pianos.

Ser. No. 21,790. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) ICHTHYOL GESELLSCHAFT CORDER, HERMANNI & CO., Hamburg, Germany. Filed Aug. 30, 1906.

Particular description of goods.—Medicinal Sulfonic Acids and Their Salts Derived from Mineral Shale.

Ser. No. 21,800. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) ICHTHYOL GESELLSCHAFT CORDES, HERMANNI & CO., Hamburg, Germany. Filed Aug. 30, 1906.

ICHTHYOL

Particular description of goods.—Medicinal Sulfonic Acids and Their Salts Derived from Mineral Shale.

Ser. No. 21,831. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) JACKSON COMPANY, Nashua, N. H. Filed Aug. 31, 1906.

INDIAN HEAD

Particular description of goods.—Cotton Piece Goods and Cotton Blankets.

Ser. No. 22,176. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) WILLIAM J. ROCHE, New Bethlehem, Pa. Filed Sept. 18, 1906.

Touring

Particular description of goods.—A Card Game.

Ser. No. 22,345. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) OAKMAN MANUFACTURING COMPANY, New York, N. Y. Filed Sept. 26, 1906.

LUZ

Particular description of goods.—Gas-Burners.

Ser. No. 22,425. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) STEINBERGER & KALISHER, San Francisco, Cal. Filed Sept. 29, 1906. Used ten years.

DERBY

Particular description of goods.—Kid Gloves.

Ser. No. 22,426. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) STEINBERGER & KALISHER, San Francisco, Cal. Filed Sept. 29, 1906.

MONARCH

Particular description of goods.—Kid Gloves.

Ser. No. 22,561. (CLASS 12. MASONRY MATERIALS.) J. A. & W. BIRD & Co., Boston, Mass. Filed Oct. 6, 1906.

Particular description of goods.—Felt and Paper for Roofing and Covering and for Insulation Against Heat and Cold.

Ser. No. 22,804. (CLASS 10. FERTILIZERS.) THE CANTON FERTILIZER AND CHEMICAL COMPANY, Canton, Ohio. Filed Oct. 20, 1906. Used ten years.

PEERLESS

Particular description of goods.—Fertilizers.

Ser. No. 23,099. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) SAMUEL H. FRENCH & Co., Philadelphia, Pa. Filed Nov. 5, 1906. Used ten years.

FRENCH'S

Particular description of goods.—Paints, Stains, Varnishes, Enamels, Coatings, Japans, Fillers, Driers, and Colors.

Ser. No. 23,102. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) SAMUEL H. FRENCH & Co., Philadelphia, Pa. Filed Nov. 5, 1906. Used ten years.

PEERLESS

Particular description of goods.—Paints, Stains, and Colors.

Ser. No. 23,257. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) THOMAS W. PANGBORN COMPANY, New York, N. Y. Filed Nov. 10, 1906.

Particular description of goods.—Cinder-Mills, Core-Machines, Core-Wire-Straightening Machines, Cranes, Crushing and Mixing Machines, Cupolas, Elevators, Exhaust-Fans, Magnetic Separating-Machines, Molding-Machines, Pressure-Blowers, Punching-Machines, Riveting-Machines, Sand-Blast Machines, Sand-Mills, Sand-Sifting Machines, Tube-Cutting Machines, Tumbling-Barrels, and Wood-Trimming Machines.

Ser. No. 23,346. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) FRIEND & MARKS, Milwaukee, Wis. Filed Nov. 14, 1906.

PROGRESSIVE

Particular description of goods.—Coats, Vests, Trousers, and Overcoats.

Ser. No. 23,583. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WILLIAM E. WILLIAMS, Philadelphia, Pa. Filed Nov. 24, 1906.

Particular description of goods.—A Medicine for the Cure of Indigestion or other Stomach Complaints and Liver Complaints.

Ser. No. 23,728. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) CHARLES C. BURRILL, Ellsworth, Me. Filed Dec. 3, 1906.

Kebo

Particular description of goods.—Spring-Water and Flavored Soda-Water.

Ser. No. 23,739. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) HERMAN WONDERLICH, Providence, R. I. Filed Dec. 3, 1906.

SIM PLEX SAD IRON

Particular description of goods.—Sad-Irons Heated Directly or Indirectly by Flame or Fire.

Ser. No. 23,828. (CLASS 54. SEA FOODS.) ROSENSTEIN BROTHERS INC., New York, N. Y. Filed Dec. 6, 1906. Used ten years.

ROYAL

Particular description of goods.—Preserved Fish.

Ser. No. 23,850. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) CORTRIGHT METAL ROOFING COMPANY, Philadelphia, Pa. Filed Dec. 7, 1906. Used ten years.

CORTRIGHT

Particular description of goods.—Stamped Metal Parts Used for Roofing and Wall-Covering Purposes.

Ser. No. 23,882. (CLASS 48. DAIRY PRODUCTS.) FRIEDRICK LUDER, Mount Horeb, Wis. Filed Dec. 8, 1906.

Particular description of goods.—Cheese.

Ser. No. 23,986. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) THE BLUE RIBBON MINING, MILLING, AND INVESTMENT CO., Idaho Springs and Denver, Colo. Filed Dec. 13, 1906.

The ribbon being printed in blue.

Particular description of goods.—Mineral Waters, Ginger-Ale, Root-Beer, and Natural Laxative Water.

Ser. No. 24,007. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) FRIES HARLEY CO., Gloucester, N. J. Filed Dec. 18, 1906.

Particular description of goods.—Rugs and Carpets.

Ser. No. 24,040. (CLASS 8. DETERGENTS.) ICHTHYOL GESELLSCHAFT CORDES, HERMANNI & CO., Hamburg, Germany. Filed Dec. 15, 1906. Used ten years.

ICHTHYOL

Particular description of goods.—Medicated Soap.

Ser. No. 24,268. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) GARNER & CO., New York, N. Y. Filed Dec. 26, 1906. Used ten years.

GARNER & CO.

Particular description of goods.—Calicoes, Printed and Dyed; Percales, Printed and Dyed, and Ducks and Drills, Printed and Dyed.

Ser. No. 24,387. (CLASS 5. ADHESIVES.) ROBESON PROCESS COMPANY, Camden, N. J. Filed Jan. 2, 1907.

GLUTRIN

Particular description of goods.—A Liquid Adhesive Employed as a Binder or Bonding Agent in the Manufacture of Cores, Blocks, Bricks, Briquets, and other Shapes or Masses from Finely-Divided Mineral Matter, Such as Sand, Earths, Cements, Ores, and Fuel.

Ser. No. 24,411. (CLASS 47. CONFECTIONERY.) GORDON, WOLF AND CO., New York, N. Y. Filed Jan. 3, 1907.

Particular description of goods.—A Sweetmeat or Confection Containing Tacheen or Sesame Oil, Sugar, and Corn Syrup, and Known as Halvah.

Ser. No. 24,466. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) AMERICAN STOVE COMPANY, Jersey City, N. J., and St. Louis, Mo. Filed Jan. 5, 1907.

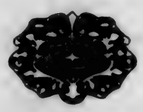

Particular description of goods.—Gas-Ranges or other Gas Stoves and Heaters, Vapor-Stoves, and Ovens.

Ser. No. 24,471. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) OSCAR HENRY KRAEGHE, New York, N. Y. Filed Jan. 5, 1907.

TRUE BLUE

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 24,508. (CLASS 71. TOBACCO PRODUCTS.) JOHN F. SUNTYCH, St. Paul, Nebr. Filed Jan. 7, 1907.

OUR MANAGER

Particular description of goods.—Cigars.

Ser. No. 24,516. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE ARABOL M'F'G CO., New York, N. Y. Filed Jan. 8, 1907.

AMYCOLLE

Particular description of goods.—Starch Sizes Used as a Stiffener and Finish on Lawns, Organdies, Muslin and Gauze Fabrics, Silk and Cotton Mixtures, Laces, Embroideries, Curtains, and Veilings.

Ser. No. 24,523. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) MARTIN ROMAN, New York, N. Y. Filed Jan. 8, 1907.

E-Z

Particular description of goods.—Hair Curlers or Wavers.

Ser. No. 24,588. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed Jan. 12, 1907.

Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 24,591. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed Jan. 12, 1907.

POW CHING

Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 24,611. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) RADIGAN, RICH & CO., New York, N. Y. Filed Jan. 14, 1907.

HUNTER

Particular description of goods.—Razors, Pocket-Knives, Scissors, Nail-Clippers, Steel Erasers, Files, Cuticle-Knives, Nail-Scrapers, Hair-Clippers, and Corn-Knives.

Ser. No. 24,656. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) THE FISK RUBBER CO., Chicopee Falls, Mass. Filed Jan. 15, 1907.

VICTOR

Particular description of goods.—Pneumatic Bicycle-Tires.

Ser. No. 24,674. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) PATTERSON-CABELL CO., New York, N. Y. Filed Jan. 16, 1907.

The mark being printed in red.

Particular description of goods.—Canned Soups and Bouillons in Liquid or Paste Form.

Ser. No. 24,683. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) AMERICAN FORK & HOE CO., Cleveland, Ohio. Filed Jan. 16, 1907.

TRUETEMPER

Particular description of goods.—Farm and Garden Hand-Tools, Consisting of Forks, Hoes, Rakes, and Potato-Hooks.

Ser. No. 24,696. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) CLAY WILSON, New York, N. Y. Filed Jan. 16, 1907.

Particular description of goods.—Metallic Clamps or Clasps for Wearing-Apparel.

Ser. No. 24,699. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) SANITATION & SUPPLY CO., Ballston Spa, N. Y. Filed Jan. 16, 1907.

NOSMELLEE

Particular description of goods.—Disinfectants and Deodorizers.

Ser. No. 24,709. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) THE CONTINENTAL IRON WORKS, Brooklyn, N. Y. Filed Jan. 17, 1907. Used ten years.

CONTINENTAL

Particular description of goods.—Turbine-Rotors, Turbine Cylindrical Shafting, Twyers.

Ser. No. 24,710. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) THE CONTINENTAL IRON WORKS, Brooklyn, N. Y. Filed Jan. 17, 1907. Used ten years.

CONTINENTAL

Particular description of goods.—Boiler-Headers, Boiler Manhole-Plates, Smelting-Furnaces, Steam and Water Tubes or Pipes for Boilers, Boilers, Corrugated Furnaces, Boiler-Shells, Boiler-Fronts, Boiler Bridge-Walls, Boiler-Drums, Boiler-Doors, Boiler-Furnaces, Boiler Down-Pipes.

Ser. No. 24,753. (CLASS 48. DAIRY PRODUCTS.) ALEXANDER E. LITTLE, Lynn, Mass. Filed Jan. 18, 1907.

Particular description of goods.—Milk, Cream, and Butter.

Ser. No. 24,777. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FREDERICK STEARNS & Co., Detroit, Mich. Filed Jan. 19, 1907.

Particular description of goods.—Perfumery, Toilet Water, Face-Powder, Bloom, and Talcum Powder.

Ser. No. 24,796. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) PETER SCHROEDER, Perham, Minn. Filed Jan. 21, 1907.

HEAD-LIGHT

Particular description of goods.—Wheat-Flour.

Ser. No. 24,797. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) PETER SCHROEDER, Perham, Minn. Filed Jan. 21, 1907.

ROBIN HOOD

Particular description of goods.—Wheat-Flour.

Ser. No. 24,812. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) VACUUM OIL COMPANY, Rochester, N. Y. Filed Jan. 21, 1907.

GARGOYLE

Particular description of goods.—Chemical Mixtures for Tanning.

Ser. No. 24,817. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) RICHARD MOORE, McKeesport, Pa. Filed Jan. 21, 1907.

Particular description of goods.—A Hair-Pomade.

Ser. No. 24,839. (CLASS 8. DETERGENTS.) ZARNITZ BROTHERS GROCERY COMPANY, Wheeling, W. Va. Filed Jan. 22, 1907.

HONEY-MOON

Particular description of goods.—Soap and Soap Powders.

Ser. No. 24,872. (CLASS 31. FILTERS AND REFRIGERATORS.) AMERICAN STOVE COMPANY, St. Louis, Mo. Filed Jan. 24, 1907.

QUICK COMFORT

Particular description of goods.—Refrigerators and Ice-Boxes.

Ser. No. 24,885. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED. FARBENFABRIKEN VORM. FRIEDR. BAYER & Co., Elberfeld, Germany. Filed Jan. 25, 1907.

SPIROSAL

Particular description of goods.—Coal-Tar Dyes, Disinfectants, Preservatives for Food, Photographic Developers, Chemicals Used in Printing and Dyeing.

Ser. No. 24,887. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FARBENFABRIKEN VORM. FRIEDR. BAYER & Co., Elberfeld, Germany. Filed Jan. 25, 1907.

MONOTAL

Particular description of goods.—An Analgesic.

Ser. No. 24,888. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FARBENFABRIKEN VORM. FRIEDR. BAYER & Co., Elberfeld, Germany. Filed Jan. 25, 1907.

Novaspirin

Particular description of goods.—An Analgesic and Antirheumatic.

Ser. No. 24,889. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED. FARBENFABRIKEN VORM. FRIEDR. BAYER & Co., Elberfeld, Germany. Filed Jan. 25, 1907.

MONOTAL

Particular description of goods.—Coal-Tar Dyes, Disinfectants, Preservatives for Food, Photographic Developers, Chemicals Used in Printing and Dyeing.

Ser. No. 24,890. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED. FARBENFABRIKEN VORM. FRIEDR. BAYER & Co., Elberfeld, Germany. Filed Jan. 25, 1907.

Novaspirin

Particular description of goods.—Coal-Tar Dyes, Disinfectants, Preservatives for Food, Photographic Developers, Chemicals Used in Printing and Dyeing.

Ser. No. 24,908. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) CHARLES A. ENGLISH, Ottumwa, Iowa. Filed Jan. 25, 1907.

I.P.CO.

Particular description of goods.—Eggs.

Ser. No. 24,926. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) HERMAN HILKES, New York, N. Y. Filed Jan. 26, 1907.

Hilkerella

Particular description of goods.—Cloth Made and Prepared for the Manufacture of Non-Filling Type-Writer Ribbons.

Ser. No. 24,957. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE CITIZENS' WHOLESALE SUPPLY CO., Columbus, Ohio. Filed Jan. 28, 1907.

Particular description of goods.—Bicarbonate of Soda.

Ser. No. 24,966. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) A. SCHWABACHER, Louisville, Ky. Filed Jan. 28, 1907.

COACHING CLUB

Particular description of goods.—Whisky.

Ser. No. 24,967. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) VACUUM OIL COMPANY, Rochester, N. Y. Filed Jan. 28, 1907.

GARGOYLE

Particular description of goods.—Floor and Linoleum Dressing Waxes, Coating Oils, Greases, and Waxes for Preserving Woods and Metals.

Ser. No. 24,978. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) DIXON-BARTLETT CO., Baltimore, Md. Filed Jan. 29, 1907.

CRUSADER

Particular description of goods.—Men's, Boys', and Youths' High-Top Leather Boots and Men's, Women's, Misses', and Boys' Leather Shoes.

Ser. No. 24,981. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) CHESTER H. BEANE, Gardiner, Me. Filed Jan. 29, 1907. Used ten years.

Particular description of goods.—Preparation for Treatment of Disorders of the Kidneys.

Ser. No. 25,025. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) CHARLES C. MCDONALD, Elyria, Ohio. Filed Jan. 31, 1907. Used ten years.

MOSS ROSE

Particular description of goods.—Canned Fruit, Canned Vegetables, and Canned Baked Beans.

Ser. No. 25,027. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) AIREDALE MILLS COMPANY, Boston, Mass. Filed Jan. 31, 1907.

AIREDALE MILLS CO. PITTSFIELD MASS

AIREDALE FABRIC.

Particular description of goods.—Broadcloth, Casket-Cloth, Carriage-Cloth, and Cap-Cloth.

Ser. No. 25,033. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) ALBERT R. SAYLOR, Allentown, Pa. Filed Jan. 31, 1907.

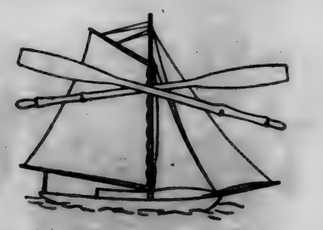

Particular description of goods.—Insecticides and Antiseptic Tooth-Wash.

Ser. No. 25,076. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) HOLMES AND BARNES LIMITED, Baton Rouge, La. Filed Feb. 2, 1907.

CAPITAL Highest Patent HOLMES & BARNES LIMITED BATON ROUGE, LA.

Particular description of goods.—Wheat-Flour.

Ser. No. 25,151. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) EDWARD Z. JEFFERSON, Pittsburg, Pa. Filed Feb. 5, 1907.

E.Z.

Particular description of goods.—Rubber Belting and Hose.

Ser. No. 25,156. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE BRENNEMAN BAKING COMPANY, Columbus, Ohio. Filed Feb. 5, 1907.

SQUARE DEAL

Particular description of goods.—Bread.

Ser. No. 25,159. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) BARRETT MANUFACTURING COMPANY, New York, N. Y. Filed Feb. 5, 1907.

Specification

Particular description of goods.—Coal-Tar Pitch.

Ser. No. 25,167. (CLASS 32. FURNITURE AND UPHOLSTERY NOT OTHERWISE CLASSIFIED.) L. & J. G. STICKLEY INC., Fayetteville, N. Y. Filed Feb. 6, 1907.

Particular description of goods.—Furniture, Consisting of Chairs, Settees, Tables, Desks, Sofas, Divans, Taborets, Bookcases, Portable Cabinets, China-Closets, and Buffets.

Ser. No. 25,172. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Feb. 6, 1907.

BOHEMO

Particular description of goods.—A Mixed Rye and Wheat Flour.

Ser. No. 25,186. (CLASS 72. MERCHANDISE NOT OTHERWISE CLASSIFIED.) DIAMOND TRADING STAMP COMPANY, Philadelphia, Pa. Filed Feb. 7, 1907.

Particular description of goods.—Trading-Stamps.

Ser. No. 25,200. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) W. W. BOYER & CO., Baltimore, Md. Filed Feb. 8, 1907.

MIDGET

Particular description of goods.—Canned Vegetables.

Ser. No. 25,234. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) BROADWALK SHOE COMPANY, Haverhill, Mass. Filed Feb. 11, 1907.

"Broadwalk"

Particular description of goods.—Leather Shoes.

Ser. No. 25,240. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) STUTLEY I. HENDERSON, West Allis, Wis. Filed Feb. 11, 1907.

Airopine

Particular description of goods.—Volatile Odoriferous Medicinal Paste for Use in Pulmonary Troubles.

Ser. No. 25,242. (CLASS 3. VEGETABLE.) A. T. LORCH & COMPANY, De Haven, Pa. Filed Feb. 11, 1907.

Particular description of goods.—Plants and Cut Flowers.

Ser. No. 25,244. (CLASS 47. CONFECTIONERY.) JAMES E. SCHAEFFER, Baltimore, Md. Filed Feb. 11, 1907.

J.E.S.

Particular description of goods.—Fudge, Italian Creams, and other Candies.

Ser. No. 25,246. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GEORGE F. SMITH, Woodsboro, Md. Filed Feb. 11, 1907.

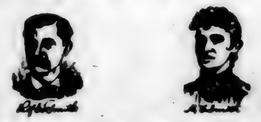

Particular description of goods.—A Remedy for the Treatment of the Hair and Scalp.

Ser. No. 25,257. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Feb. 12, 1907.

W.L.CO.

Particular description of goods.—Spool-Cotton and Thread.

Ser. No. 25,258. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Feb. 12, 1907.

INTRINSIC

Particular description of goods.—Spool-Cotton and Thread.

Ser. No. 25,272. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) PNEUMATIC CUSHION RUBBER HEEL COMPANY, Boston, Mass. Filed Feb. 12, 1907.

Particular description of goods.—Rubber Heels for Boots and Shoes.

Ser. No. 25,296. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) THE WIRE & TELEPHONE CO. OF AMERICA, Rome, N. Y. Filed Feb. 14, 1907.

Eagleburg

Particular description of goods.—Telephones.

Ser. No. 25,297. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) THE WIRE & TELEPHONE CO. OF AMERICA, Rome, N. Y. Filed Feb. 14, 1907.

Particular description of goods.—Wire.

Ser. No. 25,300. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) Z. & W. M. CRANE, Dalton, Mass. Filed Feb. 14, 1907. Used ten years.

KID FINISH

Particular description of goods.—Writing-Paper and Envelops.

Ser. No. 25,304. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) MAX KLAAS, New York, N. Y. Filed Feb. 14, 1907.

COMMANDER

Particular description of goods.—Razors, Knives, Scissors, and Shears.

Ser. No. 25,307. (CLASS 71. TOBACCO PRODUCTS.) THOMAS A. ROBINSON, North Baltimore, Ohio. Filed Feb. 14, 1907.

Particular description of goods.—Cigars.

Ser. No. 25,313. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) WILLIAM TREVOR, New York, N. Y. Filed Feb. 15, 1907.

"Wydera."

Particular description of goods.—Ladies' String-Ties.

Ser. No. 25,315. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) THE BALL CHEMICAL CO., Allegheny, Pa. Filed Feb. 15, 1907.

OXOLIN

Particular description of goods.—Paints, Varnishes, Paint-Colors, Stains, Fillers, Enamels, Painters' Driers, Painters' Japans, Paint-Oil, Linseed-Oil, Painters' Finishes, and Painters' Waxes.

Ser. No. 25,318. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) H. E. BUCKLEN & COMPANY, Chicago, Ill. Filed Feb. 15, 1907. Used ten years.

Particular description of goods.—Medicinal Preparations for the Relief of Coughs, Colds, and All Bronchial Affections of the Throat, Chest, and Lungs.

Ser. No. 25,320. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) FAHRIC METAL COMPANY, New York, N. Y. Filed Feb. 15, 1907. Used ten years.

FAHRIC

Particular description of goods.—Antifriction Bearing Metals.

Ser. No. 25,327. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE UNION BAG & PAPER COMPANY, New York, N. Y. Filed Feb. 15, 1907.

AUTOMOBILE

Particular description of goods.—Paper Bags, Paper, and Paper-Boards for Wrapping Purposes.

Ser. No. 25,339. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) HENRY C. BOMHARD, Milwaukee, Wis. Filed Feb. 16, 1907.

Particular description of goods.—Stove-Polish.

Ser. No. 25,344. (CLASS 55. WINES.) MICHAEL KOLASSA, Chicago, Ill. Filed Feb. 16, 1907.

Particular description of goods.—Bitter Wine.

Ser. No. 25,347. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) ROCK SPRING DISTILLING CO., Owensboro, Ky. Filed Feb. 16, 1907.

OLE KAINTUCKEE KERNEL

Particular description of goods.—Whisky.

Ser. No. 25,351. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) UNION WHOLESALE LIQUOR CO., Chicago, Ill. Filed Feb. 16, 1907.

Particular description of goods.—Bitters.

Ser. No. 25,353. (CLASS 12. MASONRY MATERIALS.) BARRETT MANUFACTURING COMPANY, New York, N. Y. Filed Feb. 16, 1907.

TOMB

Particular description of goods.—Deadening-Felt for Use in the Construction of Buildings.

Ser. No. 25,364. (CLASS 12. MASONRY MATERIALS.) THE ASSOCIATED PORTLAND CEMENT MANUFACTURERS (1900), LIMITED, London, England. Filed Feb. 18, 1907.

FERROCRETE

Particular description of goods.—Portland Cement.

Ser. No. 25,367. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) DIAMOND CHAIN AND MANUFACTURING COMPANY, Indianapolis, Ind. Filed Feb. 18, 1907.

DIAMOND

Particular description of goods.—Machine-Made Chains.

Ser. No. 25,380. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) PETERS SHOE CO., St. Louis, Mo. Filed Feb. 18, 1907.

TEDDY BEAR.

Particular description of goods.—Leather Shoes.

Ser. No. 25,386. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) VENTILATED CUSHION & SPRING COMPANY, Chicago, Ill. Filed Feb. 18, 1907.

Particular description of goods.—Cushion-Springs.

Ser. No. 25,387. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) TENNESSEE FIBRE COMPANY, Memphis, Tenn. Filed Feb. 18, 1907.

CREAMO

Particular description of goods.—Cotton-Seed Feed-Meal.

Ser. No. 25,391. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) LEWIS H. PFLEGHARDT, Fayette, Pa. Filed Feb. 18, 1907.

Particular description of goods.—Tooth-Powder.

Ser. No. 25,393. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La. Filed Feb. 19, 1907.

99
WESSON

Particular description of goods.—Cotton-Seed Oils.

Ser. No. 25,394. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La. Filed Feb. 19, 1907.

88
WESSON

Particular description of goods.—Cotton-Seed Oils.

Ser. No. 25,395. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La. Filed Feb. 19, 1907.

77
WESSON

Particular description of goods.—Cotton-Seed Oils.

Ser. No. 25,396. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La. Filed Feb. 19, 1907.

33
WESSON

Particular description of goods.—Cotton-Seed Oils.

Ser. No. 25,397. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La. Filed Feb. 19, 1907.

44
WESSON

Particular description of goods.—Cotton-Seed Oils.

Ser. No. 25,398. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La. Filed Feb. 19, 1907.

55
WESSON

Particular description of goods.—Cotton-Seed Oils.

Ser. No. 25,399. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La. Filed Feb. 19, 1907.

22
WESSON

Particular description of goods.—Cotton-Seed Oils.

Ser. No. 25,400. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La. Filed Feb. 19, 1907.

JESSAMINE

Particular description of goods.—Cotton-Seed Oils.

Ser. No. 25,409. (CLASS 32. FURNITURE AND UPHOLSTERY NOT OTHERWISE CLASSIFIED.) THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio. Filed Feb. 19, 1907. Used ten years.

Ideal

Particular description of goods.—Bookcases and Parts Thereof.

Ser. No. 25,422. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) NEUSS, HESSLEIN & CO., New York, N. Y. Filed Feb. 19, 1907.

Particular description of goods.—Printed Cotton Goods.

Ser. No. 25,425. (CLASS 47. CONFECTIONERY.) RUNKEL BROTHERS, INCORPORATED, New York, N. Y. Filed Feb. 19, 1907. Used ten years.

MANHATTAN COCOA & CHOCOLATE MILLS

Particular description of goods.—All Kinds of Chocolate and Cocoa.

Ser. No. 25,427. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Feb. 19, 1907.

AIR-CUSHION FINISH

Particular description of goods.—Playing-Cards.

Ser. No. 25,482. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) L. SONNEBORN SONS, INC., New York, N. Y. Filed Feb. 20, 1907.

Amalie

Particular description of goods.—Paint.

Ser. No. 25,495. (CLASS 71. TOBACCO PRODUCTS.) BUTLER-BUTLER INCORPORATED, New York, N. Y. Filed Feb. 21, 1907.

H.R.H.

THE PRINCE'S SIZE

Particular description of goods.—Cigarettes.

Ser. No. 25,509. (CLASS 71. TOBACCO PRODUCTS.) PETER GEORGE CROCOV, Pittsburg, Pa. Filed Feb. 21, 1907.

PHŒBUS

Particular description of goods.—Cigars.

TRADE-MARKS

REGISTERED MARCH 19, 1907.

61,333. VARNISHES, ENAMELS, ROUGH-STUFFS, PAINT-OIL, AND PIGMENTS USED FOR PAINT. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
Filed December 20, 1906. Serial No. 24,161. PUBLISHED JANUARY 22 1907.

61,334. VARNISHES, ENAMELS, STAINS, ROUGH-STUFFS, PAINT-OIL, AND PIGMENTS USED FOR PAINT. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
Filed December 20, 1906. Serial No. 24,162. PUBLISHED JANUARY 22, 1907.

61,335. CIGARS. DANIEL C. HITT, Indianapolis, Ind.
Filed August 3, 1906. Serial No. 21,322. PUBLISHED JANUARY 22, 1907.

61,336. SMOKING-TOBACCO. DUNCAN L. JACOWAY, Denver, Colo.
Filed December 21, 1906. Serial No. 24,193. PUBLISHED JANUARY 22, 1907.

61,337. CLEANSERS FOR GLASSWARE AND PORCELAIN. MICHAEL MCMAHON, Brooklyn, N. Y.
Filed November 27, 1906. Serial No. 23,634. PUBLISHED JANUARY 22, 1907.

61,338. LAUNDRY SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
Filed April 1, 1905. Serial No. 51. PUBLISHED JANUARY 22, 1907.

61,339. VARNISHES. NOAKE-WHEELER-CLOUGH COMPANY, Chicago, Ill.
Filed December 10, 1906. Serial No. 23,908. PUBLISHED JANUARY 22, 1907.

61,340. CERTAIN MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS. OELSCHLAGER BROS., New York, N. Y.
Filed May 11, 1905. Serial No. 5,107. PUBLISHED DECEMBER 18, 1906.

61,341. CIGARS AND CIGARETTES. PARK & TILFORD, New York, N. Y.
Filed December 21, 1906. Serial No. 24,198. PUBLISHED JANUARY 22, 1907.

61,342. SMOKING-TOBACCO. HYMAN RIPPEN, Perth Amboy, N. J.
Filed August 10, 1906. Serial No. 21,474. PUBLISHED JANUARY 22, 1907.

61,343. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
Filed December 20, 1906. Serial No. 24,167. PUBLISHED JANUARY 22, 1907.

61,344. TROWELS. WILLIAM HUNT & SONS, THE BRADES, LIMITED, Brades Steel Works, near Birmingham, England.
Filed December 29, 1905. Serial No. 15,741. PUBLISHED MAY 29, 1906.

61,345. CHEWING-GUM. AMERICAN CHICLE CO., New York, N. Y.
Filed June 15, 1906. Serial No. 8,159. PUBLISHED JANUARY 22, 1907.

61,346. MOLASSES. P. DUFF & SONS, Pittsburg, Pa.
Filed June 14, 1906. Serial No. 20,254. PUBLISHED JANUARY 22, 1907.

61,347. MOLASSES. P. DUFF & SONS, Pittsburg, Pa.
Filed June 14, 1906. Serial No. 20,255. PUBLISHED JANUARY 22, 1907.

61,348. CANDY, CHOCOLATES, AND BONBONS. HAWLEY & HOOPS, New York, N. Y.
Filed December 4, 1906. Serial No. 23,747. PUBLISHED JANUARY 22, 1907.

61,349. CANDY, CHOCOLATES, AND BONBONS. HAWLEY & HOOPS, New York, N. Y.
Filed December 4, 1906. Serial No. 23,748. PUBLISHED JANUARY 22, 1907.

61,350. CERTAIN FOOD PREPARATIONS. JONES BROS. & CO. INC., Louisville, Ky.
Filed November 2, 1906. Serial No. 23,049. PUBLISHED JANUARY 22, 1907.

61,351. MILK. THE LACTOBACILLINE COMPANY, New York, N. Y.
Filed November 30, 1906. Serial No. 23,666. PUBLISHED JANUARY 22, 1907.

61,352. MILK. THE LACTOBACILLINE COMPANY, New York, N. Y.
Filed November 30, 1906. Serial No. 23,667. PUBLISHED JANUARY 22, 1907.

61,353. MACARONI. ANTONIO MUSICA, New York, N. Y.
Filed September 27, 1906. Serial No. 22,356. PUBLISHED JANUARY 22, 1907.

61,354. CIGARS IN BOXES. MARY E. PALMER, New York, N. Y.
Filed November 24, 1906. Serial No. 23,579. PUBLISHED JANUARY 22, 1907.

61,355. CANNED VEGETABLES. ROSENSTEIN BROTHERS INC., New York, N. Y.
Filed October 20, 1906. Serial No. 22,800. PUBLISHED JANUARY 22, 1907.

61,356. PORK-ROLL. THE TAYLOR PROVISION CO., Trenton, N. J.
Filed October 22, 1906. Serial No. 22,841. PUBLISHED JANUARY 22, 1907.

61,357. RANGES AND STOVES. WROUGHT IRON RANGE COMPANY, St. Louis, Mo.
Filed April 21, 1906. Serial No. 18,970. PUBLISHED JANUARY 22, 1907.

61,358. BEER. ACTIENGESELLSCHAFT PAULANERBRÄU (SUM SALVATORKELLER), Munich, Germany.
Filed July 6, 1905. Serial No. 9,816. PUBLISHED JANUARY 22, 1907.

61,359. GLOVES, MITTENS, AND GAUNTLETS MADE OF HORSEHIDE. THE AMERICAN GLOVE CO., Chicago, Ill.
Filed April 15, 1905. Serial No. 1,735. PUBLISHED JANUARY 22, 1907.

61,360. WHISKY, BRANDY, GIN, RUM, PUNCH, COCKTAILS, AND GRAIN ALCOHOL. BOSTON WINE & SPIRITS CO., Boston, Mass.
Filed July 21, 1906. Serial No. 21,062. PUBLISHED JANUARY 22, 1907.

61,361. TEXTILE DRAPERIES. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.
Filed October 15, 1906. Serial No. 22,704. PUBLISHED JANUARY 22, 1907.

61,362. BEER. FRED MILLER BREWING CO., Milwaukee, Wis.
Filed September 17, 1906. Serial No. 22,148. PUBLISHED JANUARY 22, 1907.

61,363. SILK PIECE GOODS. HOME SILK MILLS, New York, N. Y.
Filed August 2, 1906. Serial No. 21,319. PUBLISHED JANUARY 22, 1907.

61,364. LAGER-BEER, ALE, STOUT, AND MALT EXTRACT. S. LIEBMANN'S SONS BREWING COMPANY, Brooklyn, N. Y.
Filed December 4, 1906. Serial No. 23,759. PUBLISHED JANUARY 22, 1907.

61,365. STOUT. S. LIEBMANN'S SONS BREWING COMPANY, Brooklyn, N. Y.
Filed December 15, 1906. Serial No. 24,096. PUBLISHED JANUARY 22, 1907.

61,366. SOLID AND PLATED SILVER KNIVES, FORKS, SPOONS, DISHES, AND CONDIMENT-RECEPTACLES. TOWLE MFG. COMPANY, Newburyport, Mass.
Filed June 13, 1906. Serial No. 20,344. PUBLISHED JANUARY 22, 1907.

61,367. SHERRY. W. A. ROSS & BROTHER, INCORPORATED, New York, N. Y.
Filed December 4, 1906. Serial No. 23,762. PUBLISHED JANUARY 22, 1907.

61,368. COTTON PIECE GOODS. BOOTT MILLS, Lowell, Mass.
Filed September 7, 1906. Serial No. 21,965. PUBLISHED JANUARY 22, 1907.

61,369. COTTON PIECE GOODS. BOOTT MILLS, Lowell, Mass.
Filed September 7, 1906. Serial No. 21,971. PUBLISHED JANUARY 22, 1907.

61,370. COTTON PIECE GOODS. BOOTT MILLS, Lowell, Mass.
Filed September 7, 1906. Serial No. 21,973. PUBLISHED JANUARY 22, 1907.

61,371. COTTON PIECE GOODS. BOOTT MILLS, Lowell, Mass.
Filed September 7, 1906. Serial No. 21,974. PUBLISHED JANUARY 22, 1907.

61,372. COTTON PIECE GOODS. BOOTT MILLS, Lowell, Mass.
Filed September 7, 1906. Serial No. 21,975. PUBLISHED JANUARY 22, 1907.

61,373. COTTON PIECE GOODS. BOOTT MILLS, Lowell, Mass.
Filed September 7, 1906. Serial No. 21,976. PUBLISHED JANUARY 22, 1907.

61,374. COTTON PIECE GOODS. BOOTT MILLS, Lowell, Mass.
Filed September 7, 1906. Serial No. 21,977. PUBLISHED JANUARY 22, 1907.

61,375. COTTON PIECE GOODS. BOOTT MILLS, Lowell, Mass.
Filed September 7, 1906. Serial No. 21,978. PUBLISHED JANUARY 22, 1907.

61,376. HOSIERY. CHAS. CHIPMANS SONS, Easton, Pa.
Filed October 22, 1906. Serial No. 22,821. PUBLISHED JANUARY 22, 1907.

61,377. ALE. FRANK JONES BREWING COMPANY, LIMITED, Portsmouth, N. H.
Filed July 5, 1906. Serial No. 20,741. PUBLISHED JANUARY 22, 1907.

61,378. WHISKY. FREIBERG & WORKUM, Cincinnati, Ohio.
Filed April 28, 1905. Serial No. 3,389. PUBLISHED OCTOBER 23, 1906.

61,379. WHISKY. PHILIP FREILER, Elgin, Ill.
Filed April 20, 1905. Serial No. 2,332. PUBLISHED MARCH 27, 1906.

61,380. FUR GARMENTS. HARGADINE-MCKITTRICK DRY GOODS COMPANY, St. Louis, Mo.
Filed December 13, 1906. Serial No. 23,980. PUBLISHED JANUARY 22, 1907.

61,381. CERTAIN CLOTHING. HARGADINE-MCKITTRICK DRY GOODS COMPANY, St. Louis, Mo.
Filed December 13, 1906. Serial No. 23,982. PUBLISHED JANUARY 22, 1907.

61,382. KNITTED UNDERSHIRTS AND DRAWERS. H. JACQUIN & COMPANY, New York, N. Y.
Filed June 30, 1906. Serial No. 20,670. PUBLISHED JANUARY 22, 1907.

61,383. CERTAIN CLOTHING. KERFOOT, MILLER AND COMPANY, Oklahoma, Okla. Ter.
Filed October 16, 1906. Serial No. 22,744. PUBLISHED JANUARY 22, 1907.

61,384. SILK PIECE GOODS AND SILK RIBBON. KING, BRINSMADE MERCANTILE COMPANY, St. Louis, Mo.
Filed November 6, 1905. Serial No. 14,376. PUBLISHED JANUARY 22, 1907.

61,385. MUSLIN UNDERGARMENTS FOR WOMEN. FRANCES S. KOLB, Columbus, Ohio.
Filed December 3, 1906. Serial No. 23,741. PUBLISHED JANUARY 22, 1907.

61,386. CERTAIN CLOTHING. PAULSON BROTHERS COMPANY, Pittsburg, Pa.
Filed October 1, 1906. Serial No. 22,407. PUBLISHED JANUARY 22, 1907.

61,387. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill.
Filed November 19, 1906. Serial No. 23,454. PUBLISHED JANUARY 22, 1907.

61,388. CORN WHISKY. R. M. ROSE CO., Atlanta, Ga.
Filed May 29, 1905. Serial No. 7,006. PUBLISHED JANUARY 22, 1907.

61,389. SCOTCH WHISKY. SLATER, RODGER & CO., LTD., Kinning Park, near Glasgow, Scotland.
Filed September 30, 1905. Serial No. 13,163. PUBLISHED JANUARY 22, 1907.

61,390. BEER. STANDARD BREWERY COMPANY OF BALTIMORE CITY, Baltimore, Md.
Filed January 5, 1906. Serial No. 15,934. PUBLISHED MAY 22, 1906.

61,391. PADLOCKS, TRUNK-LOCKS, CABINET-LOCKS, AND DOOR-LOCKS. EAGLE LOCK CO., Terryville, Conn.
Filed December 20, 1906. Serial No. 24,158. PUBLISHED JANUARY 22, 1907.

61,392. DENTAL ALLOY. LOUISVILLE DENTAL LABORATORY & MFG. CO., Louisville, Ky.
Filed December 21, 1906. Serial No. 24,195. PUBLISHED JANUARY 22, 1907.

61,393. GUN-SIGHTS. THE LYMAN GUN SIGHT CORPORATION, Middlefield, Conn.
Filed November 20, 1906. Serial No. 23,482. PUBLISHED JANUARY 22, 1907.

61,394. CERTAIN FOOD PREPARATIONS. CHAS. H. MONTANYE, New York, N. Y., assignor to W. H. Montanye & Company, a Corporation of New York.
Filed October 11, 1905. Serial No. 19,842. PUBLISHED JANUARY 22, 1907.

61,395. DRIED AND EVAPORATED FRUITS. NATIONAL GROCER COMPANY, Chicago, Ill.
Filed December 26, 1905. Serial No. 15,645. PUBLISHED FEBRUARY 6, 1906.

61,396. STEAM AND HOT-WATER BOILERS. THE PRUDENTIAL HEATING COMPANY, Akron, Ohio.
Filed October 20, 1906. Serial No. 22,807. PUBLISHED JANUARY 22, 1907.

61,397. LEATHER AND SHOE BLACKINGS, PASTE, POLISH, AND LEATHER AND SHOE VARNISH. S. M. BIXBY & CO., New York, N. Y.
Filed November 10, 1906. Serial No. 23,216. PUBLISHED JANUARY 22, 1907.

61,398. TEA. SCHWABACHER BROS. & CO., INC., Seattle, Wash.
Filed December 14, 1906. Serial No. 24,030. PUBLISHED JANUARY 22, 1907.

61,399. BUTTER, MILK, AND CHEESE. W. S. MOORE & CO., Chicago, Ill.
Filed December 6, 1906. Serial No. 23,805. PUBLISHED JANUARY 22, 1907.

61,400. COTTON PIECE GOODS. BOOTT MILLS, Lowell, Mass.
Filed September 7, 1906. Serial No. 21,979. PUBLISHED JANUARY 22, 1907.

61,401. CERTAIN MUSICAL INSTRUMENTS. ROBERT A. CHILDS, Syracuse, N. Y.
Filed November 7, 1906. Serial No. 23,156. PUBLISHED JANUARY 22, 1907.

61,402. MEDICINES FOR BLOOD DISEASES OF HORSES, MULES, AND CATTLE. C. F. CUTLER, Deep River, Iowa.
Filed September 27, 1906. Serial No. 22,352. PUBLISHED JANUARY 22, 1907.

61,403. BOILER-CLEANING COMPOUND IN LIQUID FORM. DAVIS AND DAY ENGINEERING COMPANY, Muscatine, Iowa.
Filed August 11, 1906. Serial No. 21,457. PUBLISHED JANUARY 22, 1907.

61,404. ENVELOPS FOR ADVERTISING PURPOSES. AUGUST DIETZ, Richmond, Va.
Filed November 23, 1906. Serial No. 23,554. PUBLISHED JANUARY 22, 1907.

61,405. REMEDY FOR COUGHS. DR. RAINEY MEDICINE CO., Chicago, Ill.
Filed November 24, 1906. Serial No. 23,566. PUBLISHED JANUARY 22, 1907.

61,406. REMEDY FOR CERTAIN DISEASES. EARLE G. HARRELL, Camilla, Ga.
Filed January 29, 1906. Serial No. 16,590. PUBLISHED JANUARY 22, 1907.

61,407. HATS AND CAPS. SIDNEY G. HIRSCHBERG, New York, N. Y.
Filed November 30, 1906. Serial No. 23,685. PUBLISHED JANUARY 22, 1907.

61,408. CANOES, ROW-BOATS, AND SAIL-BOATS, AND PARTS THEREOF, AND OARS AND PADDLES. J. H. RUSHTON, INCORPORATED, Canton, N. Y.
Filed August 25, 1906. Serial No. 21,747. PUBLISHED JANUARY 22, 1907.

61,409. BODY-BRACES AND CONFORMER-CORSETS. CHARLES MUNTER, New York, N. Y.
Filed December 8, 1906. Serial No. 23,835. PUBLISHED JANUARY 22, 1907.

61,410. MONTHLY MAGAZINE. NATIONAL SPORTSMAN, INCORPORATED, Boston, Mass.
Filed December 18, 1906. Serial No. 24,119. PUBLISHED JANUARY 22, 1907.

61,411. WAXED PAPER AND BUTTER-WRAPPERS. NEWARK PARAFFINE & PARCHMENT PAPER CO., New York, N. Y.
Filed December 17, 1906. Serial No. 24,097. PUBLISHED JANUARY 22, 1907.

61,412. INTERNAL REMEDY FOR THE TREATMENT OF TYPHOID FEVER. WHORTON SONS DRUG CO. Gadsden, Ala.
Filed November 21, 1906. Serial No. 23,523. PUBLISHED JANUARY 22, 1907.

61,413. PERIODICAL PUBLICATIONS. THE BROWNING PRESS, Collinwood, Ohio.
Filed December 12, 1906. Serial No. 23,958. PUBLISHED JANUARY 22, 1907.

61,414. MEDICINE. FREDERICK COLBERT, Butte, Mont.
Filed November 5, 1906. Serial No. 23,107. PUBLISHED JANUARY 22, 1907.

61,415. LOTIONS. CHARLES W. DAVIS, Allegheny, Pa.
Filed September 6, 1906. Serial No. 21,938. PUBLISHED JANUARY 22, 1907.

61,416. LEATHER BOOTS AND SHOES. THE E. Z. SHOE COMPANY, Hornell and Buffalo, N. Y.
Filed November 24, 1906. Serial No. 23,574. PUBLISHED JANUARY 22, 1907.

61,417. INCANDESCENT LAMPS. EAGLE LAMP COMPANY, Danvers, Mass.
Filed December 14, 1906. Serial No. 24,011. PUBLISHED JANUARY 22, 1907.

61,418. ELECTRIC-ARC LAMPS. FELIX HAMBURGER, New York, N. Y.
Filed October 24, 1906. Serial No. 22,884. PUBLISHED JANUARY 22, 1907.

61,419. TRUNKS. THE HARTMANN TRUNK COMPANY, Racine, Wis.
Filed December 8, 1906. Serial No. 23,879. PUBLISHED JANUARY 22, 1907.

61,420. MONTHLY MAGAZINE. ARTHUR D. HOSTERMAN, Springfield, Ohio.
Filed December 8, 1906. Serial No. 23,861. PUBLISHED JANUARY 22, 1907.

61,421. WOODEN COLUMNS. MEMPHIS COLUMN COMPANY, Benton Harbor, Mich., and Memphis, Tenn.
Filed December 8, 1906. Serial No. 23,884. PUBLISHED JANUARY 22, 1907.

61,422. LEATHER SHOES. MISTROT BROS. & CO., Galveston, Tex.
Filed December 18, 1906. Serial No. 24,118. PUBLISHED JANUARY 22, 1907.

61,423. CORSETS, BUST FORMS, AND SUPPORTERS. GUSTAV E. PEETZ, New York, N. Y.
Filed December 3, 1906. Serial No. 23,735. PUBLISHED JANUARY 22, 1907.

61,424. ORE-CONCENTRATORS. THE RISDON IRON & LOCOMOTIVE WORKS, San Francisco, Cal.
Filed November 24, 1906. Serial No. 23,580. PUBLISHED JANUARY 22, 1907.

61,425. MEN'S AND BOYS' COATS, VESTS, PANTS, JACKETS, AND OVERCOATS. ROTHGIESSER BROS., St. Louis, Mo.
Filed November 10, 1906. Serial No. 23,260. PUBLISHED JANUARY 22, 1907.

61,426. SALVE. JABEZ B. TANNEHILL, Wilzetta, Okla. Ter.
Filed December 10, 1906. Serial No. 23,909. PUBLISHED JANUARY 22, 1907.

61,427. FOOD-PRESERVATIVES. THOMAS THORKILDSEN & COMPANY, Chicago, Ill.
Filed October 10, 1906. Serial No. 22,639. PUBLISHED JANUARY 22, 1907.

61,428. REMEDY FOR SKIN DISEASES. THOMPSON AND TRIMBLE, Platteburg, Mo.
Filed September 19, 1906. Serial No. 22,195. PUBLISHED JANUARY 22, 1907.

61,429. WOMEN'S, MISSES', AND CHILDREN'S LEATHER BOOTS AND SHOES. FERNZ, VALDES & CO., Havana, Cuba.
Filed November 23, 1906. Serial No. 23,549. PUBLISHED JANUARY 22, 1907.

61,430. GRASS-SEEDS, GRAIN-SEEDS, TIMOTHY-SEED, AND CLOVER-SEED. THE ALBERT DICKINSON COMPANY, Chicago, Ill.
Filed June 17, 1905. Serial No. 8,398. PUBLISHED JANUARY 22, 1907.

61,431. GRASS-SEED, TIMOTHY-SEED, GRAIN-SEED, AND CLOVER-SEED. THE ALBERT DICKINSON COMPANY, Chicago, Ill.
Filed June 17, 1905. Serial No. 8,402. PUBLISHED JANUARY 22, 1907.

61,432. SLEDS. S. L. ALLEN & CO., Philadelphia, Pa.
Filed December 28, 1905. Serial No. 15,732. PUBLISHED JANUARY 22, 1907.

61,433. SLEDS. S. L. ALLEN & CO., Philadelphia, Pa.
Filed December 28, 1905. Serial No. 15,733. PUBLISHED JANUARY 22, 1907.

61,434. CERTAIN INSULATION MATERIALS. AMERICAN MICA COMPANY, Newton, Mass.
Filed January 30, 1906. Serial No. 16,624. PUBLISHED JANUARY 22, 1907.

61,435. MEDICINES FOR BRONCHIAL AND PULMONARY AFFECTIONS. THE CHOATE DRUG AND CHEMICAL COMPANY, Boston, Mass.
Filed December 30, 1905. Serial No. 15,773. PUBLISHED MAY 8, 1906.

61,436. FARM-WAGONS, DELIVERY-WAGONS, CARTS, AND DUMPING-WAGONS. THE COLUMBIA WAGON CO., Columbia, Pa.
Filed April 14, 1906. Serial No. 18,814. PUBLISHED OCTOBER 30, 1906.

61,437. PERIODICAL. THE CONFECTIONERS' JOURNAL PUBLISHING CO., Philadelphia, Pa.
Filed June 9, 1906. Serial No. 20,185. PUBLISHED JANUARY 22, 1907.

61,438. COTTON PIECE GOODS. CHARLES C. COPELAND & Co., New York, N. Y.
Filed May 19, 1906. Serial No. 19,696. PUBLISHED JANUARY 22, 1907.

61,439. CERTAIN CUTLERY AND EDGE-TOOLS. DUNHAM, CARRIGAN & HAYDEN COMPANY, San Francisco, Cal.
Filed August 7, 1905. Serial No. 11,338. PUBLISHED JANUARY 22, 1907.

61,440. CERTAIN CUTLERY AND EDGE-TOOLS. DUNHAM, CARRIGAN & HAYDEN Co., San Francisco, Cal.
Filed August 7, 1906. Serial No. 11,342. PUBLISHED JANUARY 22, 1907.

61,441. CERTAIN CUTLERY AND EDGE-TOOLS. DUNHAM, CARRIGAN & HAYDEN COMPANY, San Francisco, Cal.
Filed August 7, 1905. Serial No. 11,344. PUBLISHED JANUARY 22, 1907.

61,442. CERTAIN CUTLERY AND EDGE-TOOLS. DUNHAM, CARRIGAN & HAYDEN Co., San Francisco, Cal.
Filed August 7, 1905. Serial No. 11,345. PUBLISHED JANUARY 22, 1907.

61,443. INCANDESCENT LAMPS. EAGLE LAMP COMPANY, Danvers, Mass.
Filed December 14, 1906. Serial No. 24,010. PUBLISHED JANUARY 22, 1907.

61,444. CERTAIN WOOD MANUFACTURES. CHARLES ESTE, Philadelphia, Pa.
Filed March 20, 1906. Serial No. 18,062. PUBLISHED JANUARY 22, 1907.

61,445. TOOTH-POWDER. GERHARD MENNEN CHEMICAL Co., Newark, N. J.
Filed September 24, 1906. Serial No. 22,202. PUBLISHED JANUARY 22, 1907.

61,446. REMEDY FOR STOMACH AND BOWEL AFFECTIONS. ENOS J. HUGHES, Chicago, Ill.
Filed May 20, 1905. Serial No. 16,562. PUBLISHED SEPTEMBER 4, 1906.

61,447. LINIMENT FOR EXTERNAL APPLICATION. JOHN C. MILLS, Duke Center, Pa.
Filed May 17, 1905. Serial No. 5,912. PUBLISHED JANUARY 22, 1907.

61,448. FACE-POWDER, FACE-CREAM, AND HAIR-TONIC. HOWARD MOUNTAIN, San Francisco, Cal.
Filed August 22, 1906. Serial No. 21,710. PUBLISHED JANUARY 22, 1907.

61,449. CERTAIN GLASSWARE. PENN-AMERICAN PLATE GLASS Co., Pittsburg, Pa.
Filed September 7, 1905. Serial No. 12,319. PUBLISHED JANUARY 22, 1907.

61,450. HORSE AND MULE SHOES. PHOENIX HORSE SHOE Co., Chicago, Ill.
Filed July 17, 1905. Serial No. 10,491. PUBLISHED APRIL 24, 1906.

61,451. LEATHER SHOES. A. PRIESMEYER SHOE CO., Jefferson City, Mo.
Filed August 12, 1905. Serial No. 11,565. PUBLISHED AUGUST 14, 1906.

61,452. CHOCOLATE-MOLDS. ANTON REICHE, Dresden, Germany.
Filed April 19, 1906. Serial No. 18,930. PUBLISHED JANUARY 22, 1907.

61,453. LEATHER BELTING. CHAS. A. SCHIEREN & Co., New York, N. Y.
Filed August 16, 1906. Serial No. 21,899. PUBLISHED JANUARY 22, 1907.

61,454. REMEDY FOR RHEUMATISM. THE SMITH DRUG COMPANY, Baldwinsville, N. Y.
Filed June 13, 1906. Serial No. 20,252. PUBLISHED JANUARY 22, 1907.

61,455. POCKET-KNIVES. TOM RAY CUTLERY COMPANY, Kansas City, Mo.
Filed May 2, 1906. Serial No. 19,236. PUBLISHED JANUARY 22, 1907.

61,456. LEATHER BOOTS AND SHOES. UTZ & DUNN, Rochester, N. Y.
Filed December 21, 1906. Serial No. 24,199. PUBLISHED JANUARY 22, 1907.

61,457. PERIODICAL. WARE BROS. COMPANY, Philadelphia, Pa.
Filed December 21, 1906. Serial No. 24,186. PUBLISHED JANUARY 22, 1907.

61,458. PERIODICAL. WARE BROS. COMPANY, Philadelphia, Pa.
Filed December 21, 1906. Serial No. 24,187. PUBLISHED JANUARY 22, 1907.

61,459. REMEDIES FOR CERTAIN DISEASES. WORLDS DISPENSARY MEDICAL ASSOCIATION, Buffalo, N. Y.
Filed April 17, 1906. Serial No. 18,868. PUBLISHED JANUARY 22, 1907.

61,460. ALL KINDS OF WRITING-PAPER. WORONOCO PAPER COMPANY, Woronoco, Mass.
Filed July 11, 1906. Serial No. 10,013. PUBLISHED JUNE 12, 1906.

61,461. CERTAIN PHARMACEUTICAL PREPARATIONS. ANNA MARIE ELIZABETH WANDKA, New York, N. Y.
Filed August 5, 1905. Serial No. 11,294. PUBLISHED JANUARY 22, 1907.

61,462. METAL-POLISHES. THE HANSON & VAN WINKLE Co., Newark, N. J.; New York, N. Y., and Chicago, Ill.
Filed December 18, 1906. Serial No. 24,114. PUBLISHED JANUARY 22, 1907.

61,463. LEATHER FOBS OF ALL KINDS. WEISS M'F'G. Co., New York, N. Y.
Filed December 13, 1906. Serial No. 23,988. PUBLISHED JANUARY 22, 1907.

LABELS

REGISTERED MARCH 19, 1907.

13,404.—*Title:* "EL DORA." (For Cigars.) MAX GROSSMAN, Peoria, Ill. Filed February 5, 1907.

13,405.—*Title:* "BELMONT CLUB." (For Catchup.) N. O. HARVEY, Spokane, Wash. Filed February 20, 1907.

13,406.—*Title:* "BANQUET CAKE." (For Cake.) FRANK HUEBER, Cleveland, Ohio. Filed February 11, 1907.

13,407.—*Title:* "THE DOLLY MADISON HOME-MADE CANDIES." (For Candy.) GEORGE EDWARD DOOLITTLE, Washington, D. C. Filed February 26, 1907.

13,408.—*Title:* "3 IN ONE SOAP." (For Soap.) CHARLES R. HUTCHINSON, Springfield, Mass. Filed February 11, 1907.

13,409.—*Title:* "GROWDINA." (For Medicine.) SOPHIE KOPPEL, New York, N. Y. Filed January 10, 1907.

13,410.—*Title:* "MYERS' PA-PAY-A TABLETS." (For Medicine.) FRANK SIMPSON MYERS, Detroit, Mich. Filed February 21, 1907.

13,411.—*Title:* "ROSOINT." (For Medical Compound.) CALIFORNIA ROSOINT COMPANY, Alameda, Cal. Filed February 21, 1907.

13,412.—*Title:* "MEN'S APPAREL." (For Men's Apparel.) W. C. BOTH, Chicago, Ill. Filed February 21, 1907.

13,413.—*Title:* "RED DIAMOND." (For Boots and Shoes.) A. H. BERRY SHOE COMPANY, Portland, Me. Filed February 15, 1907.

13,414.—*Title:* "WATCH." (For Time-Recorders, Watches, and Clocks.) NEWMAN CLOCK Co., Wawarsing, N. Y., and Chicago, Ill. Filed February 19, 1907.

13,415.—*Title:* "ACCURATE RECORDERS." (For Time-Recorders, Watches, and Clocks.) NEWMAN CLOCK Co., Wawarsing, N. Y., and Chicago, Ill. Filed February 19, 1907.

PRINTS

REGISTERED MARCH 19, 1907.

1,927.—*Title:* "A CHARGE ON THE PICADOR." (For Medicine.) MI-CRO-LINE MEDICINE Co., Dallas, Tex. Filed February 25, 1907.

1,928.—*Title:* "THE BULL ENTERS THE ARENA." (For Medicine.) MI-CRO-LINE MEDICINE Co., Dallas, Tex. Filed February 25, 1907.

1,929.—*Title:* "THE BULL RING." (For Medicine.) MI-CRO-LINE MEDICINE Co., Dallas, Tex. Filed February 25, 1907.

1,930.—*Title:* "THE BULL RUSHES ON THE BANDER L-LERO." (For Medicine.) MI-CRO-LINE MEDICINE Co., Dallas, Tex. Filed February 25, 1907.

1,931.—*Title:* "BOSCHEE'S GERMAN SYRUP, AUGUST FLOWER." (For Medicines.) GEORGE G. GREEN, Woodbury, N. J. Filed December 26, 1906.

1,932.—*Title:* "HEALTHFUL NUCOA CONFECTIONERY." (For Confectionary Materials.) THE NUCOA BUTTER Co., Belleville, N. J. Filed February 8, 1907.

1,933.—*Title:* "DE LAVAL CREAM SEPARATORS." (For Cream-Separators.) THE DE LAVAL SEPARATOR Co., New York, N. Y. Filed February 19, 1907.

1,934.—*Title:* "ADLER'S STYLES FOR SPRING AND SUMMER 1907." (For Men's Apparel.) DAVID ADLER & SONS CLOTHING Co., Milwaukee, Wis. Filed February 23, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

KUGELE v. BLAIR.

Decided January 26, 1907.

INTERFERENCE—ACCESS TO OPPONENT'S APPLICATION PART OF WHICH IS CONCEALED UNDER RULE 105.

Where the interfering subject-matter of the application of one of the parties to an interference is disclosed to the other by means of a certified copy, as provided by Rule 105, an auxiliary invention which has been described and claimed by the former, but which might be omitted without destroying the operativeness of the invention in issue, will not be disclosed where the latter has presented no claim which includes this invention either broadly or specifically.

APPEAL on motion.

LAMP.

Mr. Nicholas M. Goodlett, Jr., for Kugele.
Messrs. Warfield & Duell for Blair.

ALLEN, *Commissioner:*

This is an appeal by Kugele from a decision of the Primary Examiner denying a motion to furnish him with copies of certain portions of Blair's application, which have been concealed in accordance with the provisions of Rule 105.

It appears that the Office inadvertently furnished Kugele with a copy of Blair's original drawing, and it is urged by Kugele that the elements which are shown in Blair's original drawing, but omitted from the certified copy furnished him, are a part of an integral indivisible invention which he is entitled to inspect in order to determine the propriety of certain actions which he is entitled to take under Rules 109 and 122.

The Primary Examiner has held that the matter omitted from the certified copy of Blair's application comprises a "distinctively divisible and independent invention," which Blair is entitled to conceal from his opponent. I am of the opinion that this conclusion is correct.

The subject-matter of Blair's application which has been disclosed to Kugele includes all the elements of the issue of this interference. The matter which is withheld comprises features which are auxiliary to the invention in issue, but might be omitted without destroying the operativeness of the main invention.

Where one of the parties to an interference shows, describes, and claims an auxiliary invention which is not essential to the operativeness of the invention in issue and the other party has presented no claim which includes this auxiliary invention either broadly or specifically, there appears to be no reason why it should be disclosed to him.

The decision of the Primary Examiner is affirmed.

IN RE HUNTER.

Decided February 28, 1907.

TRADE-MARK—ASSIGNMENT—MUST BE ACKNOWLEDGED TO BE RECORDABLE—SECTION 10 OF TRADE-MARK ACT OF FEBRUARY 20, 1905, CONSTRUED.

In order that an assignment of a trade-mark may be recordable in this Office, section 10 of the Trade-Mark Act of February 20, 1905, clearly provides that the assignment must not only be by an instrument in writing, but that it must be acknowledged according to the laws of the country or State in which the same is executed. If the laws of the country or State do not require assignments of trade-marks to be acknowledged or are silent on this point, it is believed to be necessary in order to comply with the section mentioned that there be an acknowledgment such as the laws of the country or State provide for other instruments in writing or legal documents of similar character.

Messrs. Wilkinson & Fisher for the petitioner.

ALLEN, *Commissioner:*

This is a petition from the refusal of the Chief of the Assignment Division to record a certain assignment.

Petitioner has filed for record in this Office an assignment of Trade-Mark No. 23,817, registered November 14, 1895, from Wailes Dove and Company, Limited, (the old company,) and Frank Herbert Hunter to Wailes Dove & Co., Limited, (the new company,) all of Newcastle-upon-Tyne, Northumberland, England. The assignment is not acknowledged, and for this reason the Chief of the Assignment Division refused to record it.

Section 10 of the Trade-Mark Act of February 20, 1905, which provides for the recording in this Office of trade-mark assignments, is as follows:

SEC. 10. That every registered trade-mark, and every mark for the registration of which application has been made, together with the application for registration of the same, shall be assignable in connection with the good-will of the business in which the mark is used. Such assignment must be by an instrument in writing and duly acknowledged according to the laws of the country or State in which the same is executed; any such assignment shall be void as against any subsequent purchaser for a valuable consideration, without notice, unless it is recorded in the Patent Office within three months from date thereof. The Commissioner shall keep a record of such assignments.

It appears from this section that in order to be recordable in this Office the—

assignment must be by an instrument in writing and duly acknowledged according to the laws of the country or State in which the same is executed.

According to the *American and English Encyclopædia of Law:*

Acknowledgment is the act of one who has executed a deed, in going before some competent officer or court and declaring it to be his act or deed.

The object of acknowledgment is twofold: first, to entitle a deed to be recorded; and, second, to make it competent evidence without further proof of its execution.

Petitioner states that the assignment is in full compliance with both the common and statute law of England and is sufficient to pass title, and he contends that it is therefore a full compliance with the statute quoted above. In this contention petitioner is clearly in error. It may not be necessary that the assignment should be acknowledged in order to pass title in England, as stated by petitioner; but in order to be recordable in this Office the act clearly provides that the assignment must not only be by an instrument in writing, but that it must be acknowledged according to the laws of the country or State in which the same is executed. If the laws of the country or State do not require assignments of trade-marks to be acknowledged or are silent on this point, it is believed to be necessary in order to comply with the section mentioned that there be an acknowledgment such as the laws of the country or State provide for other instruments in writing or legal documents of similar character. Inasmuch as the assignment in question contains no acknowledgment whatever, it clearly does not comply with said act.

The petition is denied.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

BECHMAN v. SOUTHGATE.

Decided December 4, 1906.

INTERFERENCE—PRIORITY—INTERFERENCE IN FACT—CONCLUSIONS BY PATENT OFFICE GENERALLY ACCEPTED BY COURT OF APPEALS.

Ordinarily where the point has been raised whether the application of one of the parties was broad enough in the terms of its specification and claims to embrace the invention of the other, and especially where the invention is one of elaborate and complicated mechanism, the decisions of the expert tribunals of the Patent Office in respect of identity have, for obvious reasons, been accepted as conclusive.

Mr. A. E. Dowell for the appellant.

Mr. Louis W. Southgate for the appellee.

ROBB, *J.*:

This is an interference proceeding between the above-named applicants for the invention of a traveling-cylinder web-printing press, comprising three printing-couples, the issue in said proceeding being expressed in five counts:

1. A printing-press comprising three printing-couples arranged in parallel planes, each couple consisting of a bed and coacting cylinder, and means for feeding webs through said couples, to be perfected thereby.

2. A printing-press comprising three stationary type-beds arranged in parallel planes, and three reciprocating cylinders coacting with the beds; with means for feeding webs through the press so that they shall be perfected thereby at each operation of the press.

3. The combination in a web-printing press of three stationary form-beds, a traveling impression-cylinder coacting with each of said form-beds, a single reciprocating mechanism for actuating all of said cylinders, web-guides, a deflector and web-manipulating mechanisms.

4. The combination of a web-printing press of three stationary form-beds, a traveling impression form-cylinder coacting with said bed, a reciprocating mechanism for actuating said impression-cylinders, connections whereby one of said impression-cylinders may be thrown out of operation and the other two kept in operation, web-guides and web-manipulating mechanisms.

5. The combination in a web-printing press of three stationary form-beds, a pair of carriers in which two impression-cylinders are journaled, a reciprocating mechanism for said carriers, a second set of carriers, in which a third impression-cylinder is journaled, means for connecting and disconnecting the two sets of carriers, and suitable web guides and manipulating mechanisms.

Southgate, the senior applicant, filed his application November 30, 1896; Bechman, the junior applicant, May 21, 1903. An interference was duly declared, testimony taken, and all the tribunals of the Patent Office concurred in awarding judgment of priority of invention to the senior applicant, Southgate. Bechman has appealed, but in his assignment of errors does not challenge the decision of the Commissioner on the question of priority of invention; "and to this extent he is to be presumed to have acquiesced in the decision against him." (*Bechman* v. *Wood*, 15 App. D. C., 487.) Bechman's contentions, as disclosed in his brief, are as follows:

First. That there is no invention common to the machines disclosed in the respective applications.

Second. The first and second issues (claims made by Bechman) are for a specific form of press not disclosed by Southgate; and the third, fourth and fifth issues (claims made by Southgate) are restricted to a construction not disclosed in Bechman's application.

Third. If Southgate has any patentable invention and Bechman has a patentable invention, there is nothing patentably novel in common between these two, and each can legally only procure a patent on his specific machine. Neither is entitled to a claim which will dominate the machine of the other.

His first and second contentions, in substance, challenge the ruling that there is an interference in fact between the two machines.

We have repeatedly held that, except in extreme cases, we will not go behind the declaration of interference in order to determine the question of identity of invention. (*Swihart* v. *Mauldin*, 19 App. D. C., 573.)

What are the facts in this case? Briefly stated, they are as follows: The Campbell Printing Press & Manufacturing Company, Southgate's original assignee, and the Duplex Printing Press Company, Bechman's assignee, were rival concerns, and from 1892 to 1902 engaged in litigation covering the broad patents on flat-bed web-printing presses of the style here involved. In June, 1902, an agreement was entered into between these rival concerns whereby the Campbell Company, in consideration of being paid a royalty on certain machines, withdrew from the field and assigned all patents and applications for patents included in the agreement to the Duplex Company. The Southgate application now in issue was one of the applications assigned and upon which, if adopted, a royalty was to be paid. Mr. Bechman, the mechanical expert and inventor for the Duplex Company, in the summer of 1902 saw the Southgate application and drawings and also the following memorandum in reference thereto:

Case 104.
Louis W. Southgate. Filed Nov. 30, 1896.
Serial No. 615,928.
This case covers the three-bed multipress for making ten and twelve page products. Good claims have been allowed, but not as broad as they should be. The case will probably have to be taken to the Board of Examiners-in-Chief, and must be appealed before Aug. 13, 1903.

Nothing further appears to have been done by the Duplex Company in respect of this application; hence its prosecution by the Campbell Company. The Bechman application was subsequently filed, and the specifications filed therewith read much like the original Southgate specifications.

The Patent Office, after careful consideration, has found that there is an interference in fact between these applicants. Without discussing the evidence further, we hold that the record does not disclose this

to be such a case as would warrant us in disturbing that finding.

The third contention is really a restatement of the first and second. It is fully answered, however, by the decision of this court in *Seeberger* v. *Dodge*, (24 App. D. C., 481,) where it is said that—

Ordinarily, where the point has been raised, whether the application of one of the parties was broad enough in the terms of its specification and claims to embrace the invention of the other, and especially where the invention is one of elaborate and complicated mechanism, the decisions of the expert tribunals of the Patent Office in respect of identity have, for obvious reasons, been accepted as conclusive. (*Stone* v. *Pupin*, 19 App. D. C., 396, 400; *Schupphaus* v. *Stevens*, 17 App. D. C., 548, 555; *Ostergren* v. *Tripler*, 17 App. D. C., 557, 559; *Luger* v. *Browning*, 21 App. D. C., 201, 204; *Herman* v. *Fullman*, 23 App. D. C., 260, 265.)

The decision will be affirmed, and this opinion certified to the Commissioner of Patents, as required by law, and it is so ordered. Affirmed.

Court of Appeals of the District of Columbia.

BLACKFORD v. WILDER.

Decided January 8, 1907.

1. INTERFERENCE—SECOND INTERFERENCE—RES ADJUDICATA.

Where a second interference is declared between the same applications on an issue relating to the same subject-matter of invention as that of a prior interference, of broader scope than the first issue, and the constructions relied on, respectively, as evidencing conception and reduction to practice of the invention of both issues are the same and the fundamental facts of both cases are the same, *Held* that the final decision in the first interference is conclusive and that the question of priority is *res adjudicata* unless it can be made to appear that the question upon which the determination of the second case rests is one that neither was nor could have been presented and determined in the first case.

2. RES ADJUDICATA—DOCTRINE STATED BY THE SUPREME COURT.

The doctrine of *res adjudicata*, or estoppel by former judgment, has been thus declared by the Supreme Court of the United States:

"When the second suit is upon the same cause of action, and between the same parties as the first, the judgment in the former is conclusive in the latter as to every question which was or might have been presented and determined in the first action; but when the second suit is upon a different cause of action, though between the same parties, the judgment in the former action operates as an estoppel only as to the point or question actually litigated and determined, and not as to other matters which might have been litigated and determined." (*Nesbit* v. *Riverside Independent District*, 144 U. S., 610, 618; *New Orleans* v. *Citizen's Bank*, 167 U. S., 371, 386; *S. P. R. R.* v. *U. S.*, 168 U. S., 1, 48)—

and the doctrine as thus laid down is applicable to adjudications made in the Patent Office.

Mr. A. S. Pattison and *Mr. Philip Mauro* for the appellant.

Mr. James M. Spear and *Mr. C. H. Duell* for the appellee.

SHEPARD, *J.*:

This is the second interference between the same parties declared on the same application.

The issue of the first was defined in four counts as follows:

1. In a burner the combination with a trough and perforated tubes situated thereabove and forming a combustion-chamber, said trough having at its bottom a liquid-containing portion, and an enlarged upper vapor-receiving space, and a vertically-disposed lighting member seated in the liquid-containing portion and extending upward between the walls of the enlarged vapor-receiving portion to form a vapor-space at the side of the lighting member.

2. In a burner the combination of a trough and perforated tubes situated thereabove and forming a combustion-chamber, a lighting member vertically disposed between the upwardly-disposed walls of the trough, said trough having a contracted lower portion in which the lighting member is seated, and a vapor-space above the contracted portion at the side of the vertically-disposed lighting member.

3. In a burner, the combination of a trough and perforated tubes situated thereabove and forming a combustion-chamber, said trough being contracted at its lower portion, and a vertically-disposed lighting member seated in said contracted portion and extending upward between the upwardly-disposed walls and constituting a vapor-space in the upper portion of the trough at the side of the said lighting member.

4. In a burner the combination of a trough and perforated tubes situated thereabove and forming a combustion-chamber, said trough being contracted at its lower portion and being provided with a wick seated in the contracted portion of the trough and extending upwardly between and distant from its upwardly-disposed walls.

The original applications contained numerous claims and were met from time to time with suggestions of amendments, rejections on references, and so forth, in the ordinary course of procedure. The Examiner finally suggested that the broadest allowable subject-matter of the invention, consisted:

In a burner, the combination of a trough and perforated tubes seated thereon forming a combustion-chamber, said trough being contracted at its lower portion and being provided with a wick seated in the contracted portion of the trough and extending upwardly between and distant from its upwardly-disposed walls.

This suggestion developed into the issue of the interference thereafter declared. The Examiner of Interferences and the majority of the Examiners-in-Chief decided the question of priority in favor of Blackford. The Commissioner made the final award of priority to Wilder. On appeal to this court that decision was reversed, and priority awarded to Blackford. (*Blackford* v. *Wilder*, C. D., 1903, 567; 104 O. G., 578; 21 App. D. C., 1.)

The issue turned, mainly, upon the point whether Wilder's "Exhibit E" showed the invention of the issue and as such had been reduced to practice. This exhibit had passed through the Patent Office and had been produced in this court on the hearing of the appeal. It had no lighting member in it, and attempt was made by Wilder, on a motion for rehearing, to introduce affidavits to show that it had, when presented in the Patent Office and considered by the several tribunals therein, a thin, vertical asbestos lighting member or kindler, answering the requirements of the issue. It appearing to the court from the recitals in the decisions of the Examiners-in-Chief and the Commissioner, that the lighter was not in the exhibit when considered by them, the motion was denied. (21 App. D. C., 11, 16.)

In coming to their conclusion, in the first case, the majority of the Examiners-in-Chief were of the opinion that the issue was "very specific;" and there was general concurrence in the fact that the subject-matter of the invention was a narrow one. In view of the preliminary proceedings in the Office, culminating in the communication of the Primary Examiner, before quoted, the conclusion was natural. As recited in the opinion on the former appeal:

In Blackford's answer to some of the objections of the Primary Examiner, on May 2, 1898, he asked a reconsideration on the ground of the combination of the V-shaped burner with his new form of wick; and this it was, he claimed, that enabled him to accomplish what former patented devices would not do.

He was finally informed on September 12, 1899, of the view of the Office in respect of patentability, as before stated.

Even in the narrow form, Wilder denied patentability, and moved the Examiners-in-Chief to report to the Commissioner, under Rule 126, that there was no patentable novelty in the issue. The Examiners, believing the issue, as defined, patentable, refused to make the suggestion. One of the Examiners-in-Chief, who dissented from the others as to priority, took a somewhat different view of the extent of the issue. He said:

This issue is broader than it is stated to be by my associates, and it is satisfied by any liquid-holding trough which is not

filled by the wick at its upper portion, and which is restricted at its lower portion so as to limit the evaporating-surface of the contained oil to approximately the requirements of combustion. It is immaterial whether or not the evaporation takes place from the surface of the oil or from the surface of the wick, or from both, as long as the surface which sustains the oil is duly limited in its area, and operates to expose to the heat of the flame only a relatively small surface of oil. An examination of the records of both parties shows that this is the breadth of the invention to which the interfering claims were intended to, and do apply. Viewed in this light, said claims and the corresponding counts of the issue are distinctly applicable to Wilder's Exhibit E.

The Commissioner, who reversed the decision of the Examiners-in-Chief, said:

Exhibit E consists of a V-shaped trough essentially like that shown in Blackford's application. If the ordinary lighting member shown in the other exhibits is placed in this trough and the ordinary combustion-tubes are used above, every element of the issue is present. There is no question but that the combustion-tubes were intended to be, and were in fact, used with it, but a question is raised as to the lighting member. There is no lighting member in the exhibit now, and the testimony upon that point is not very full, but it is obvious upon mere inspection that there must have been a lighting member when the device was used, for it is well understood by those familiar with this art that a lighting member is necessary to start the operation of a burner of this kind.

The different views upon those points were considered by the court, and that of the majority of the Board of Examiners-in-Chief was adopted. When the final decision was certified to the Commissioner, Wilder presented amended claims not specifically limited to the lighting member and the V-shaped trough of the original interference, but drawn, nevertheless, on his same Exhibit E, and requested an interference thereon with Blackford. Further proceedings resulted in the present interference with an issue defined as follows:

1. In an oil-burner, the combination with an oil-holding trough having a contracted lower part and an enlarged upper part, the lower part of the trough being adapted to contain a body or column of oil when in normal operation and the upper part forming a vaporizing-chamber to vaporize the oil from its free surface and means located in the trough for igniting or starting the vaporization of the oil, of perforated combustion-tubes forming an uninterrupted continuation of the vapor-chamber and adapted to cause the vapors arising from the surface of the oil to burn with a blue flame by admixture with the air.

2. In an oil-burner, the combination with an oil-holding trough, the lower part of the trough being adapted to contain a body or column of oil when in normal operation, and the upper part forming a vaporizing-chamber to vaporize the oil from its free surface and means located in the trough for igniting or starting the vaporization of the oil, of perforated combustion-tubes forming an uninterrupted continuation of the vapor-chamber and adapted to cause the vapors arising from the surface of the oil to burn with a blue flame by admixture with the air.

Blackford moved to dissolve the interference, the chief ground, stated in different forms, being that the subject-matter of the second interference was *res adjudicata;* that is to say, was embraced in, and concluded by the judgment of this court on the former appeal. This motion was denied by the Primary Examiner to whom it had been referred, in a lengthy decision; and his conclusion was adopted in turn by all of the tribunals of the Patent Office.

It was conceded that the doctrine of *res adjudicata* applies to proceedings in the Patent Office to the same extent as in the courts. The parties being the same, the ground of the decision was, necessarily, that the subject-matter was different; and is thus stated in the Examiner's decision:

The issues of this interference differ from the issues of the former interference in that they are not limited to any specific form of lighting device. Neither are they limited to the lighting member being seated in the contracted portion of the trough, nor are they limited to a lighting member seated in the contracted portion of the trough and extending upwardly so as to allow a vapor-space above the contracted portion of the trough on either or both sides of said lighting member.

The issues of the present interference are further distinguished from the former interference in that they are limited to "perforated combustion-tubes *forming an uninterrupted continuation of the vapor-chamber.*"

The limitation is material and was for the purpose of differentiating the contestant's structure from patent to Stacey, 473,858. Said patent discloses a trough covered by a perforated cap 9 which tends to prevent the vaporization of the oil from its free surface in the manner contemplated by the issues.

Further than this, the second count of the issue is differentiated from the matter of the former interference in that it is not limited to a trough having a lower *contracted portion* which was one of the essential qualifications of the issues in the other interference.

From this it appears that the present issues cover an entirely different structure from the structures which were held to be within the scope of the issues of the former interference and it is believed that they involve separate and distinctive inventive subject-matter.

The conclusion in respect of the patentability of the broader claims of the present issue seems rather inconsistent with the views apparently controlling the earlier proceedings in the Patent Office on each of the applications, as well as with the view of Wilder, himself, who, as has been seen, formerly denied the patentability of the narrower issue of the first interference. The patentability of the present issue, however, is not a question involved in this proceeding. Assuming patentability, therefore, the question to be determined is whether, in view of the former proceedings in the Office culminating in the first declaration of interference between these same applications, and the final decision therein in favor of Blackford, Wilder is now deprived of the right to go back and amend by inserting broader claims dominating those that were by that decision awarded to Blackford? In other words, is Wilder's right to make the amended claims and maintain the present interference thereon concluded by the former adjudication?

The doctrine of *res adjudicata*, or estoppel by former judgment, has been thus declared by the Supreme Court of the United States:

When the second suit is upon the same cause of action, and between the same parties as the first, the judgment in the former is conclusive in the latter as to every question which was or might have been presented and determined in the first action; but when the second suit is upon a different cause of action, though between the same parties, the judgment in the former action operates as an estoppel only as to the point or question actually litigated and determined, and not as to other matters which might have been litigated and determined.

(*Nesbit* v. *Riverside Independent District*, 144 U. S., 610, 618; *New Orleans* v. *Citizens Bank*, 167 U. S., 371, 386; *S. P. R. R.* v. *U. S.*, 168 U. S., 1, 48.)

The same rule applies to adjudications made in the Patent Office. (*In re Barratt's* appeal, C. D., 1899, 320; 87 O. G., 1075; 14 app. D. C., 255, 257; *in re Fay*, C. D., 1900, 232; 90 O. G., 1157; 15 App. D. C., 515, 517.) It is also declared in Patent Office Rule 127, that—

a second interference will not be declared upon a new application for the same invention filed by either party.

It is further provided in Rule 132, that whenever an award of priority has been rendered in an interference proceeding by any tribunal, and the limit of appeal therefrom has expired, the Primary Examiner shall advise the defeated party that the claims so involved in the issue stand finally rejected. In interpreting this rule, (A. D. 1891) Mr. Commissioner Mitchell held that the Examiner, after rejecting all claims which are or could be made by the prevailing party, may properly allow to the defeated party such other claims as are held to be patentable and which could not be made by the prevailing party; and that no claim should be allowed to the defeated party which could by any latitude of construction be held to embrace matter common to the structure of both parties to the interference. (C. D., 1891, 141; 56 O. G., 141.)

In *Corry & Barker* v. *Trout*, (C. D., 1904, 144; 110 O. G., 306,) Mr. Commissioner Allen reversed a decision of the Primary Examiner refusing dissolution of a second interference between the same parties. In doing so he said:

The prior interference included the application now involved and the claim in controversy was drawn upon the same structure as that now claimed. Corry and Barker contend that the present issue is not substantially different from that in the first interference, and Trout admits that they differ merely in scope. Trout, however, argues that the present issue being broader than the first cannot be regarded as substantially the same and that it can not be assumed that he will be unable to prove priority of invention on this issue merely because he failed on the specific issue. The declaration of a second interference between the same applications should be necessary only in rare cases and under very exceptional circumstances. It should not ordinarily be upon claims to the same device and differing from the first issue merely in scope. If a mere change in the scope of claims were considered good ground for a second interference, the number of successive interferences between the same parties would be practically unlimited and the interference procedure would become an intolerable burden to applicants. The Office is justified in taking the decision as to priority of invention as *prima facie* evidence that the successful party was the first inventor not merely of the particular issue in controversy, but of the invention common to the two cases, whether more broadly or more specifically stated. The burden is upon the defeated party to show special circumstances of the particular case which make it improper to apply the decision to the other claims presented. It is not sufficient that the claims differ and that it is theoretically possible for one party to be prior inventor as to the first, and the other party prior inventor as to the second, for this would apply in all cases where the claims are not identical. To justify a second interference, there must be some exceptional circumstances, such as were presented in *Sarfert* v. *Myer* (76 MS. Dec., 410) where the decision in the first interference was in favor of Sarfert upon the specific issue; but it appeared from the findings of fact that Myer was the first inventor of the broad invention common to the two cases.

(See also *Phelps* v. *Wormley*, 118 O. G., 1069, 1070; *ex parte Neischwanger*, C. D., 1890, 37, 38; 50 O. G., 1132.)

The foregoing decision is in substantial accord with the long-established doctrine of the Patent Office, that an interference in fact depends chiefly upon the subject-matter disclosed and not merely upon the language of the respective claims. (*Drawbaugh* v. *Blake*, C. D., 1885, 7, 11; 30 O. G., 259.) In that case Mr. Commissioner Butterworth said:

I have no doubt about the correctness of the rule laid down in *ex parte Upton*, (C. D., 1884, 26; 27 O. G., 99.) It is the substance of things and not the shadow with which we deal. * * *

(*Gray* v. *Robertson*, C. D., 1885, 1; 50 O. G., 165; *Bissell* v. *Roberts*, C. D., 1885, 77; 51 O. G., 1618. See also *Miller* v. *Eagle Mfg. Co.*, (C. D., 1894, 147; 66 O. G., 845; 151 U. S., 186, 198.)

In that case the question was as to the validity of two patents to the same party. The drawings in each patent were identical, and the specifications in each substantially the same, but the first patent covered both the lifting and depressing actions of the machine, while the second was limited to the lifting effect only. The second patent was held to be void. Mr. Justice Jackson, who delivered the opinion of the Court, said:

The result of the foregoing and other authorities is that no patent can issue for an invention actually covered by a former patent, especially to the same patentee, although the terms of the claims may differ; that the second patent, although containing a broader claim, more general in its character than the specific claims contained in the prior patent, is also void; but that where the second patent covers matter described in the prior patent, essentially distinct and separable from the invention covered thereby and claims made thereunder its validity may be sustained. * * * It is settled also that an inventor may make a new improvement on his own invention of a patentable character, for which he may obtain a separate patent, and the cases cited by the appellee come to this point, and to this point only, that a later patent may be granted where the invention is clearly distinct from, and independent of, one previously patented.

(*Porter* v. *Louden*, C. D., 1895, 707; 73 O. G., 1551; 7 App. D. C., 64, 69.)

It remains to apply the foregoing principles to the facts of this case which are substantially these: The applications of the two interferences are the same: The issue of each reads on Wilder's original Exhibit E, and Blackford's Exhibit D. It was on Exhibit E, and the evidence relating to its several parts, time of construction and operation that Wilder's right to priority was founded and determined in each case. That exhibit when produced before the Examiners-in-Chief, the Commissioner, and this court, in the hearing of the first interference, did not show the wick of the issue therein involved, and Wilder was denied the right to introduce additional evidence tending to show that the wick was in the device when constructed, and when offered for inspection in the Patent Office. He was confined to the evidence contained in the record. When the decision awarding priority to Blackford was certified to the Commissioner, Wilder presented the broader claims, and secured the declaration of a second interference with Blackford, supporting his claim to priority with his same Exhibit E and some additional evidence tending to show that the wick of the former issue was contained in it when constructed. The decisions of the several tribunals of the Patent Office in favor of Wilder were founded upon this exhibit and evidence as appears from the following extracts:

(1) From decision of Examiner of Interferences:

Wilder's Exhibit E was in the prior case held by the Board of Examiners-in-Chief and by the court of appeals to be a fatal defect. It is now satisfactorily established that this element was present when the device was tested in 1896 and also when it was filed as an exhibit in the first interference. A corresponding part has now been added to this exhibit, and the part which became misplaced has been recovered and filed as a separate exhibit, "Wilder's Lighting Medium, Exhibit E." With the exception of the testimony regarding the lost part of Wilder's Exhibit E, the state of facts in the present interference is almost identical with that prevailing when the case was previously considered by the several appellate tribunals, and for this reason the findings of the court of appeals in the prior case, so far as not affected by the introduction of new evidence, are considered binding in the present case. For the same reason, and for the further reason that Blackford in his brief seeks to derive the benefit of the findings of the court in the first interference, comment has been made in one instance upon the fact that certain of Blackford's testimony in the present case does not harmonize with that in the first interference.

* * * * * * *

Wilder has proved that the lighting member was present in Exhibit E when tested in 1896, and it appears from the testimony of Harlan P. Wilder (Q. 19) that combustion-section of the form specified in the issue was used at that time with Exhibit E, which in other respects embodies the issue of the present interference as fully as it did that of the first interference. Wilder must therefore be credited with the date of Exhibit E as his date of reduction to practice of the invention in issue. Inasmuch as none of the structures which Blackford alleges were made before Wilder's Exhibit E embodied the invention in controversy, Wilder must by reason of the construction and operation of that exhibit be considered the first inventor.

(2) From decision of Examiners-in-Chief:

The issue of the interference being thus a new one, it is clear that the decision of the court of appeals in the former proceeding does not, as contended by counsel for Blackford, render the question of priority *res adjudicata*. The court, however, determined certain questions of fact and their findings as to these matters will of course not be controverted. Thus it was decided that Blackford's Exhibit D embodies the subject-matter of the prior interference and was completed and successfully operated in November, 1896. If, as held by the court of appeals, this exhibit is an oil-bowl it necessarily contains also the issue of the present interference.

We have therefore as a starting-point in the present controversy the established fact that Blackford embodied the invention of the issue in a practical device as early as November, 1896, or prior to the date (April 19, 1897) of Wilder's application, and Wilder in order to prevail must overcome this reduction to practice by showing priority as to both conception and reduction to practice or, by showing a prior conception and a later reduction to practice coupled with reasonable diligence.

Wilder has offered in evidence an oil-bowl that is known to the record as Exhibit E. This exhibit when associated with perforated combustion-tubes, such as the testimony shows were used in connection with it, clearly embodies the issue of this interference. The exhibit was made and successfully operated in the early part of 1896, or prior to the date of Blackford's Exhibit D, and is a valid reduction to practice antedating the above-mentioned reduction of Blackford. The Examiner of Interferences holds that this Exhibit E was constructed some months prior to June, 1896, and we agree with this conclusion as to the date of its production. This agrees with the finding in the previous interference that the exhibit was made in April, 1896.

It appears that when Exhibit E was considered in the prior interference it was, on account of the absence therefrom of a lighting medium (a wick), held not to involve the issue of that interference. The Examiners-in-Chief and the court of appeals both concurred in this finding of fact, although while the case was pending before the court of appeals on a motion for rehearing it was shown that the wick with which the exhibit was originally provided had become separated from the exhibit and could not be found. Testimony introduced in the present case, however, shows that the ex-

hibit originally contained a wick similar to the one which now lies within its annular channel and that when it was operated a wick was employed as a starting or lighting member.

It is evident from the foregoing that Wilder by his proof concerning the production and operation of Exhibit E has established a conception and reduction to practice antedating the reduction to practice to which Blackford is entitled by virtue of his Exhibit D.

(3) From decision of Commissioner.

The applications involved in the present interferences were involved in a prior interference No. 20,427, upon a different issue, in which the Court of Appeals of the District of Columbia awarded priority to Blackford, (*Blackford* v. *Wilder*, C. D., 1903, 582; 104 O. G., 578.) In said prior interference the court agreed with the majority of the Examiners-in-Chief in the conclusion that Blackford was the first to reduce to practice the invention of that interference in his Exhibit D, in November, 1896. The Examiners-in-Chief and the court of appeals found that Wilder's Exhibit E, when the case was before them, was incomplete, and did not have a "vertically-disposed lighting member." Wilder claimed that Exhibit E when filed in the Patent Office contained a wick, but that it became displaced between the time the case was before the Examiner of Interferences and the time it was considered by the Examiners-in-Chief. He brought a motion before the court of appeals that an investigation be instituted as to the alleged loss and recovery of the missing member of Exhibit E, and that a rehearing be granted. In denying the motion, the court held (*Blackford* v. *Wilder*, C. D., 1903, 573; 104 O. G., 580) that the matter of the wick should have been settled in the Patent Office before appeal was taken to the court, also that the question of priority turned upon the fact whether Exhibit E contained a lighting member of the specific character called for by the issue at the time of the alleged reduction to practice in 1896, and not at the time it was introduced in evidence, and that the evidence failed to establish satisfactorily this essential fact.

Upon the conclusion of the interference and the resumption of *ex parte* proceedings in the Patent Office, Wilder presented a claim not limited to the specific form of igniting member of the former interference, but which he alleged was based on his Exhibit E and he requested the institution of an interference proceeding for the purpose of contesting the question of priority of the invention of said claim.

* * * * * * *

In the former interference the court of appeals based its decision in favor of Blackford on the finding that his Exhibit D was completed and successfully operated in November, 1896. If this exhibit has an oil-bowl and embodied that issue of that interference, it undoubtedly is a reduction to practice of the present invention. Starting with this exhibit, the burden is therefore on Wilder to establish either a prior reduction to practice or a prior conception coupled by due diligence with a subsequent reduction to practice.

The only exhibits alleged to have been made prior to November, 1896, when Exhibit D was completed, and the only ones which require consideration are for Wilder, Exhibit E, alleged to have been made in April, 1896, and on the part of Blackford, Exhibits C and A, alleged to have been made in January and February, 1896, respectively.

It has been found in both this and the prior interference that these exhibits were made at these dates as alleged. The dates of these exhibits are not contested but the controversy relates to whether these exhibits embody the invention and were successful reductions to practice of the invention on the dates they were made.

* * * * * * *

It thus appears that the court did not hold that Exhibit E had no igniting member, but that the evidence did not show that it had the one called for by the issue of that interference in April, 1896. It is to be noted that the present issue is broader than the issue of the former interference in respect to the igniting member. While the present issue is satisfied with "means located in the trough for igniting or starting the vaporization of the oil," count 1 of the issue of the former interference called for "a vertically-disposed lighting member seated in the liquid-containing portion and extending upward between the walls of the enlarged vapor-receiving portion to form a vapor-space at the side of the lighting-chamber." Counts 2, 3 and 4 of the former issue call for a lighting member of substantially similar character.

The testimony in this interference of Wilder and his corroborating witnesses conclusively establishes that Exhibit E was provided with the igniting member of the issue of this interference when operated in April, 1896.

To sum up—the parties are the same. The applications are the same and disclose the invention of each issue. The constructions relied on, respectively, as evidencing conception and reduction to practice of the invention of both issues are the same. The fundamental facts of both cases are the same. Applying the well-settled principle of estoppel by judgment, before stated, it follows inevitably that the final decision in the first interference is conclusive, unless it can be made to appear that the question upon which the determination of the second case rests is one that neither was, nor could have been presented and determined in the first case.

The contention is that this essential difference between the two cases lies in the fact that the claims of the second interference are broader in scope than those of the first, and cover an essentially separate and distinct invention. We are unable to concur in the decisions of the Patent Office tribunals maintaining this view. As pointed out in the cases heretofore cited, in declaring interferences in the Patent Office, identity of subject-matter is not determinable merely by the language of the claims preferred by the respective applicants. By the several decisions under review on this appeal it is shown that the later claims of Wilder might have been presented in the first instance, if so advised, and Blackford brought into interference with him then as he has been since; for, as they expressly hold, Blackford's Exhibit D, being an oil-bowl, necessarily contained the issue of the second interference. Instead, Wilder preferred to adopt the more specific claims of the first issue drawn as the present ones were upon the structure shown in his Exhibit E, and reading as well on Blackford's Exhibit D. That issue having been decided in favor of Blackford, Wilder has been permitted to make the new claims and has been awarded priority of invention over the claim of Blackford founded on the structures proved in the first case, on additional evidence to that introduced on the first trial tending to show that his Exhibit E did, in fact, have in it the wick of the first issue, notwithstanding that had been one of the questions expressly decided in the former case. Having had the right to make the broader claims in the earlier stages of the proceedings in the Patent Office, as well as the opportunity, in the first proceeding, to introduce all of his evidence relating to the construction and operation of his Exhibit E structure, his right, in both respects, terminated with that litigation.

Whether the former decision was right or wrong, or was induced by the want of the particular evidence that was offered in the present case, is not the question. However that might be it was final and put an end to the litigation in the first interference. It must be held, therefore, as conclusive of every question that not only was, but also might have been presented and determined in that case.

The motion to dissolve the second interference ought to have been sustained, and Wilder's claims finally rejected as provided in Rule 132.

The decision appealed from will therefore be reversed. It is so ordered; and that this decision be certified to the Commissioner of Patents as required by law. Reversed.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 15, 1907.

James J. Six Dykstra, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Friedrich Adolf Richter, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to James J. Six Dykstra, of Chicago, Ill. The notices of declaration mailed by the Patent Office in the usual manner to the said James J. Six Dykstra at his known address, 94 South Market street, Chicago, Ill., and to his attorney of record have been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said James J. Six Dykstra, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 15, 1907.

Whitman & Welch, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Exposition Cotton Mills, of Atlanta, Ga., for registration of a trade-mark, an application and a registration of the Massachusetts Cotton Mills, of Lowell, Mass., and a trade-mark registered to Whitman & Welch, of New York, N. Y., and Hartford, Conn. It has been impossible to locate said Whitman & Welch, and registered letters addressed to this firm have been returned by the Post-Office Department unclaimed.

Notice is therefore hereby given to said Whitman & Welch, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE. *Acting Commissioner.*

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[*BY AUTHORITY OF CONGRESS.*]

VOL. 127—No. 4. TUESDAY, MARCH 26, 1907. PRICE—$5 per year.

CONTENTS.

	Page.
ISSUE OF MARCH 26, 1907	1259
INTERFERENCE NOTICES	1259
APPLICATIONS UNDER EXAMINATION	1260
INTERFERENCE NOTICE	1260
PATENTS GRANTED	1261
REISSUES	1550
DESIGNS	1552
TRADE-MARKS—REGISTRATION APPLIED FOR	1555
TRADE-MARKS—REGISTERED	1571
LABELS	1576
PRINTS	1576
COMMISSIONER'S DECISIONS—	
Ex parte Midgley	1577
Adkins and Lewis v. Seeberger	1578
Ex parte Fowler, Jr.	1578
Bay State Belting Company v. Kelton-Bruce Manufacturing Company	1580
Ex parte Bullock	1580
DECISIONS OF THE U. S. COURTS—	
Kreag v. Geen	1581
NOTICE	1582
ATTORNEYS	1582
INTERFERENCE NOTICES	1582

ISSUE OF MARCH 26, 1907.

Patents	621—No.	847,996 to No. 848,616, inclusive.
Designs	13—No.	38,487 to No. 38,499, inclusive.
Trade-Marks	163—No.	61,464 to No. 61,626, inclusive.
Labels	11—No.	13,416 to No. 13,426, inclusive.
Prints	8—No.	1,935 to No. 1,942, inclusive.
Reissues	3—No.	12,623 to No. 12,625, inclusive.
Total issue	819	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	7	.....	New Hampshire	2	1
Alaska, District of	.....	.....	New Jersey	14	12
Arizona Territory	1	.....	New Mexico Ter't'y	.....	.....
Arkansas	1	.....	New York	90	44
California	27	2	North Carolina	1	3
Colorado	11	1	North Dakota	1	1
Connecticut	10	6	Ohio	37	22
Delaware	1	.....	Oklahoma Territ'y	2	.....
District of Columbia	10	.....	Oregon	3	.....
Florida	2	.....	Pennsylvania	46	18
Georgia	6	1	Philippine Islands	.....	.....
Hawaii Territory	2	.....	Porto Rico	.....	.....
Idaho	3	.....	Rhode Island	3	1
Illinois	55	15	South Carolina	1	1
Indian Territory	2	.....	South Dakota	2	.....
Indiana	17	2	Tennessee	2	1
Iowa	9	1	Texas	12	2
Kansas	2	.....	Utah	1	.....
Kentucky	11	3	Vermont	3	.....
Louisiana	3	.....	Virginia	4	2
Maine	2	.....	Washington	7	.....
Maryland	6	1	West Virginia	5	.....
Massachusetts	42	16	Wisconsin	7	4
Michigan	26	5	Wyoming	1	.....
Minnesota	14	1	U. S. Army	1	.....
Mississippi	3	.....	U. S. Navy	.....	.....
Missouri	21	1			
Montana	5	.....	Total to citizens of the United States	556	168
Nebraska	9	1			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Natal	.....	.....
Austria-Hungary	2	1	Netherlands	.....	1
Belgium	2	.....	Newfoundland	.....	.....
Brazil	.....	.....	New South Wales	1	.....
British West Indies	.....	.....	Nicaragua	1	.....
Canada	8	.....	Norway	2	.....
Cape Colony	.....	.....	Persia	.....	.....
Chile	.....	.....	Queensland	.....	.....
China	.....	.....	Roumania	.....	.....
Costa Rica	.....	.....	Russia	.....	.....
Cuba	.....	.....	Scotland	2	2
Denmark	1	.....	South Australia	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	16	3	Sweden	2	.....
France	8	2	Switzerland	7	1
Germany	22	4	Transvaal, South Africa	1	.....
Haiti	.....	.....	Victoria	.....	.....
Ireland	.....	.....	Western Australia	.....	.....
Italy	.....	.....			
Japan	3	.....	Total to citizens of foreign countries	78	14
Java	.....	.....			
Mexico	.....	.....			

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 16, 1907.

James H. Brookmire & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between the application of The Morgan Oyster Company, of San Francisco, Cal., for registration of a trade-mark and a trade-mark registered to James H. Brookmire & Company, of St. Louis, Mo., and a statement has been filed in the case to the effect that the said James H. Brookmire & Company are no longer in business.

Notice is therefore hereby given to James H. Brookmire & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 16, 1907.

James H. Brookmire & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Nininger & Frantz, of Daleville, Va., for registration of a trade-mark and a trade-mark registered to James H. Brookmire & Company, of St. Louis, Mo., and a statement has been filed in the case to the effect that the said James H. Brookmire & Company are no longer in business.

Notice is therefore hereby given to James H. Brookmire & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business March 19, 1907.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Mar. 14	Mar. 14	73
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Mar. 7	Feb. 19	100
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Mar. 6	Feb. 25	158
303	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Mar. 6	Feb. 20	136
109	XVI. Telegraphy and Telephony.	Mar. 6	Feb. 20	182
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	Mar. 6	Feb. 20	156
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Mar. 6	Feb. 20	199
327	XVIII. Steam-Engineering, etc.	Mar. 6	Feb. 19	178
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	Mar. 5	Feb. 19	208
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Mar. 5	Feb. 18	209
167	V. Bookbinding, Harvesters, Jewelry, and Music.	Mar. 4	Feb. 18	271
344	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Mar. 2	Feb. 9	409
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Mar. 1	Feb. 19	256
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Mar. 1	Feb. 13	338
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Feb. 28	Feb. 12	234
147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Woodworking.	Feb. 27	Feb. 4	227
122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Feb. 26	Feb. 20	285
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Feb. 26	Feb. 12	232
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Feb. 25	Feb. 13	310
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Feb. 23	Feb. 23	215
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Feb. 23	Feb. 21	261
307	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	Feb. 23	Feb. 2	228
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Feb. 21	Feb. 21	261

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sewerage.	Feb. 21	Feb. 18	280
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Feb. 20	Feb. 20	356
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Feb. 20	Feb. 4	195
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Feb. 19	Feb. 19	360
382	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	Feb. 18	Feb. 18	380
332	X. Carriages and Wagons.	Feb. 15	Feb. 19	440
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Feb. 14	Feb. 8	255
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Feb. 14	Jan. 31	306
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Feb. 13	Jan. 28	325
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Feb. 12	Feb. 4	303
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Feb. 11	Feb. 14	302
343	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Feb. 9	Feb. 9	602
329	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Feb. 6	Feb. 4	363
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Feb. 4	Feb. 2	427
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Jan. 29	Feb. 5	326
370	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	Jan. 24	Jan. 31	341
	Total number of applications awaiting action			10,978
180	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	Mar. 16	Mar. 14	126
	Designs	Mar. 12	Mar. 8	33
	Labels and Prints			

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 23, 1907.

Wilson-Cass Company, its assigns or representatives, take notice:

An interference has been declared by this Office between an application of Frank Fuller, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to the Wilson-Cass Company, of Philadelphia, Pa. The notice of declaration mailed by the Patent Office in the usual manner to the said Wilson-Cass Company has been returned by the Post-Office Department undelivered, and the attorney of record for said company is dead.

Notice is therefore hereby given to the said Wilson-Cass Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

PATENTS

GRANTED MARCH 26, 1907.

847,996. TAILOR'S MEASURING-WHEEL. ERNEST G. AGNELL, Chanute, Kans. Filed June 7, 1906. Serial No. 320,594.

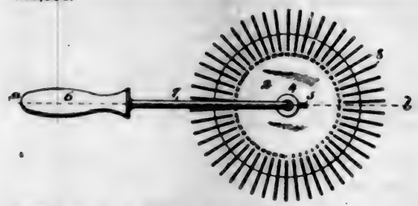

Claim.—1. A measuring device comprising a support, a shaft rotatively mounted on said support, two plates mounted on said shaft one plate being adjustable toward and from the other, and each plate having a series of peripheral radial slots registering with corresponding slots in the opposite plate, and a plurality of arcuate marking-plates mounted respectively in the slots of said plates, with their convex edges disposed inward, the arcuate plates being slidable in the notches of one plate and fixed against lengthwise movement in the slots of the other plate.

2. A measuring device comprising a support, a shaft rotatively mounted on said support, two plates mounted on said shaft one plate being adjustable toward and from the other, and each plate having a series of peripheral radial slots registering with corresponding slots in the other plate, and a plurality of marking-plates having convex inner edges and mounted respectively in said slots, said marking-plates being slidable lengthwise in one plate and not slidable in the other, one of the marking-plates having a series of graduations disposed so as to consecutively register with the said adjustable plate when said adjustable plate is moved lengthwise of said plates.

3. A measuring device comprising a support, a shaft rotative on said support, two plates mounted on said shaft one plate being adjustable toward and from the other plate, and each plate having a series of peripheral radial slots disposed opposite the slots of the other plate, and a plurality of marking-plates having inner convex edges and mounted respectively in said slots, said plates each being slidable relative to one plate and pivoted relative to the other plate, and means for holding said marking-plates in said slots.

4. A measuring device comprising a support, a shaft rotative on said support, two plates having radial peripheral slots, said plates being mounted on and rotative with said shaft and adjustable one toward and from the other, a plurality of marking-plates mounted respectively in said slots, said marking-plates having inner convex edges, and each marking-plate being slidable in the slots of one plate and pivoted relative to the other plate, and expansible means for retaining the marking-plates in said slots.

5. A measuring device comprising a support, a shaft rotative on said support, two plates having radial, peripheral slots, said plates being mounted on and rotative with said shaft and adjustable one toward and from the other, and a plurality of marking-plates mounted respectively in said slots, said marking-plates being convex on their inner edges, and each marking-plate being slidable in one plate and pivoted in the other, and resilient means for retaining the marking-plates in said slots.

6. A measuring device comprising a handle, a shaft rotatable on said handle, two supporting-plates one fixed to the shaft, the other plate being adjustable toward and from the other on said shaft, the adjustable plate having a plurality of radial peripheral slots, and a plurality of marking-plates convex in their inner edges, pivotally connected to the fixed plate and slidable respectively in said slots, and means for releasably securing the adjustable supporting-plate on the shaft in the position to which it may be adjusted.

7. A measuring device comprising a support, a shaft rotative on said support, two supporting-plates mounted on said shaft, one plate being adjustable toward and from the other and provided with a plurality of radial slots, releasable means for locking the adjustable plate in the position to which it may be adjusted, and a plurality of marking-plates pivotally connected to one supporting-plate and disposed in said slots and having convex inner edges.

8. A measuring device comprising a support, a shaft rotative on said support, two supporting-plates mounted on said shaft, one plate being adjustable toward and from the other and provided with a plurality of radial slots circularly arranged, marking-plates pivoted to one plate and slidable in said slots, one of the marking-plates having a longitudinal row of transverse graduations adapted to register with the adjustable supporting-plate.

9. A measuring device comprising a support, a shaft rotative on said support, two supporting-plates mounted on said shaft, one plate being fixed on the shaft and the other plate having a series of circularly-arranged radial slots, and adjustable toward and from the other plate, releasable means for locking the adjustable plate in the position to which it may be adjusted, a plurality of marking-plates pivoted to the fixed plate and slidably mounted respectively in said slots of the other plate, and expansible means for retaining said marking-plates in said slots.

10. A measuring device comprising a support, a shaft rotative on said support, two supporting-plates mounted on said shaft, one plate being fixed on the shaft and the other plate having a series of circularly-arranged slots, said slotted plate being adjustable toward and from the fixed plate, releasable means for locking the adjustable plate in position, and a plurality of marking-plates pivoted respectively to the fixed plate and slidable in the slots of the adjustable plate, one of said marking-plates having a longitudinal row of transverse graduations adapted to register with the adjustable plate.

11. A measuring device comprising a support, a shaft rotative on said support, two supporting-plates mounted on said shaft, one plate being adjustable toward and from the other which is fixed on the shaft, the adjustable plate having a circular series of radial slots, and a plurality of marking-plates pivoted to the fixed plate and disposed in the slots of the other plate, one of said marking-plates having a longitudinal series of transverse graduations adapted to register with the adjustable plate, and one of the supporting-plates having a circular series of distinguishing characters disposed respectively adjacent said marking-plates.

12. A measuring device comprising a support, a shaft rotative on said support, two plates mounted on said shaft, one plate being fixed on said shaft and the other plate being adjustable toward and from the fixed plate and having a circular series of radial slots, and a plurality of marking-plates having convex inner edges and pivoted to the fixed plate and slidable in said slots, one of the marking-plates having a longitudinal series of transverse graduations adapted to register with the adjustable plate, means being provided for distinguishing said marking-plates.

13. A measuring device comprising a support, a shaft rotative on said support, two supporting-plates mounted on said shaft, one plate being fixed on said shaft and the other being adjustable toward and from the fixed plate and having a circular series of radial slots, and a plurality of marking-plates pivoted to the fixed plate and slidable in the slots of the other plate and provided with convex inner edges, one of the marking-plates having a longitudinal series of transverse graduations adapted to register with the adjustable plate, and having also characters distinguishing said graduations respectively, one of said supporting-plates having characters disposed respectively adjacent to and distinguishing said marking-plates.

14. A measuring device comprising a support, a shaft rotative on said support, two supporting-plates rotative on said shaft, one plate being fixed on the shaft, the other plate being adjustable toward and from the fixed plate and having a circular series of radial slots, a plurality of marking-plates having convex inner edges and pivoted to the fixed plate and slidable in said slots, one of the marking-plates having a longitudinal series of transverse graduations adapted to register with the adjustable plate, one of the supporting-plates having consecutive numerals adjacent the marking-plates respectively, and a resilient band embracing the outer edges of said marking-plates.

15. A measuring device comprising a handle, a shaft rotative on said handle, two supporting-plates mounted on and rotatable with said shaft, one of the plates being fixed on said shaft and the other plate being adjustable toward and from the fixed plate, said adjustable plate having a circular series of radial slots, a plurality of arcuate marking-plates pivoted to the fixed plate and slidable in said slots of the other plate, the inner edges of said marking-plates being convex, one of said marking-plates having a longitudinal series of transverse graduations, characters distinguishing said graduations, one supporting-plate having consecutive numerals adjacent said marking-plates respectively, and expansible means for holding said marking-plates in said slots.

16. A measuring device comprising a support, a shaft rotative on said support, two supporting-plates mounted on said shaft and provided each with a plurality of peripheral radial slots, one plate being fixed on said shaft and the other plate being adjustable toward and from the fixed plate, a plurality of arcuate marking-plates having their inner edges convex and mounted respectively in said slots of said supporting-plates, the inner edges of the marking-plates being notched to receive the fixed plate to prevent lengthwise movement of the marking-plates in said plate yet permitting said marking-plates to swing, one of said marking-plates having a longitudinal series of transverse graduations having adjacent thereto suitable distinguishing characters and adapted to register with the adjustable plate, one of said supporting-plates having a circular series of consecutive numerals adjacent respectively said marking-plates, and means for retaining said marking-plates in said slots.

847,997. COMBINATION MERRY-GO-ROUND AND TEETER. JOHN W. ARNET, Menominee, Mich. Filed July 15, 1905. Serial No. 269,844.

Claim.—1. A device of the kind described comprising a central pivoted sweep, longitudinally slotted, a seat-standard extending through said slot and slidably adjustable along said slot, a seat carried by the said standard, a lever pivotally connected at its lower end to the said standard and also projecting upwardly through the said slot, and means connected to said lever for rotating the sweep.

2. The combination with a pivoted sweep, longitudinally slotted, a seat-standard extending in said slot, and slidably adjustable therein, a seat upon the standard, a fixed disk concentric with the pivot-point of the sweep, an arm pivoted upon said disk, a lever pivoted to the seat-standard, adjustable links connecting the lever to the arm and means carried by the arm adapted to engage the disk.

3. A device of the kind described comprising a base, a disk therein, a pivoted pin on the disk, a sweep pivotally resting upon the said pivot-pin, seats adjustably mounted upon the sweep, arms pivotally mounted upon the pivot-pin, means carried by the arms adapted to engage the periphery of the disk and means operatable from the seats for partially rotating said arms in opposite directions.

4. A device of the kind described comprising a base, a pivot-pin, a ratchet, a sweep pivotally mounted upon the pivot-pin adjacent the ratchet, pawls carried by the arms adapted to slide upon the ratchet in one direction and to hold the arms stationary during a pull in the opposite direction, seat-standards slidably adjustable in the slot of the sweep, seats carried by said standards, a lever pivotally connected to each of said standards, and adjustable links connecting said levers to the said arms, respectively, as and for the purpose set forth.

847,998. NUT-LOCK. ALONZO BAKER, Granbury, Tex. Filed Aug. 28, 1906. Serial No. 332,376.

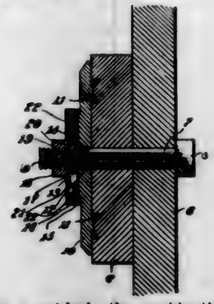

Claim.—1. In a nut-lock, the combination with a bolt-shank having threads, of a base that fits upon the bolt-shank, a nut that screws upon the shank, teeth located on the outer face of the base that is disposed in opposition to the inner face of the nut, a casing carried by the nut and extending over the teeth of the base, and a dog mounted on the inside of the casing and coacting with the teeth to prevent retrograde movement of the nut.

2. In a nut-lock, the combination with a bolt-shank having threads, of a base that fits upon the bolt-shank, a nut that screws upon the shank, an annular series of teeth projecting in the same direction from the outer face of the base that is disposed in opposition to the rear face of the nut, a casing carried by the nut and extending beyond the sides thereof, said casing inclosing the teeth of the base, and a yielding dog mounted wholly inside the casing and coacting with said teeth to prevent retrograde movement of the nut.

3. In a nut-lock, the combination with a base member having an opening, and a series of teeth surrounding the same and projecting in the same direction therefrom, of a nut member coöperating with the base member, said nut member having an outstanding casing that incloses the teeth and is provided on its inner side with a keeper-loop, and a yielding dog having one end engaged in the keeper-loop, and the other end coöperating with the teeth.

4. In a nut-lock, the combination with a base having a bolt-receiving opening, an outstanding boss surrounding the same, and an annular series of teeth projecting in one direction from the outer face of the base, said teeth being carried by the base and surrounding the boss, of a nut having a casing that incloses the teeth, and a yielding dog located inside the casing and coöperating with the teeth, a portion of said casing engaging the boss.

5. In a nut-lock, the combination with a base having an opening, and an annular series of teeth surrounding the same, of a nut coöperating with the base and having a casing that incloses the teeth, said nut and casing having a bolt-receiving opening, a boss surrounding the bolt-receiving opening and located in the casing, said boss being arranged to abut against the base, and a yielding dog arranged in the casing and coöperating with the teeth of the base.

6. In a nut-lock, the combination with a base having a nut-receiving opening, a boss surrounding the same, and an annular series of teeth surrounding the boss, of a nut, a casing carried by the nut and inclosing the teeth of the base, said casing and nut being provided with a bolt-receiving opening, a boss surrounding the bolt-receiving opening and located in the casing, said boss coöperating with the boss of the base, and keeper-dogs secured within the casing and having free terminals coöperating with the teeth of the base.

847,999. QUILTING-FRAME. SAMUEL C. BAUGHN, Bertrand, Mo., assignor of one-half to Henry L. Finley, Charleston, Mo. Filed June 21, 1906. Serial No. 322,754.

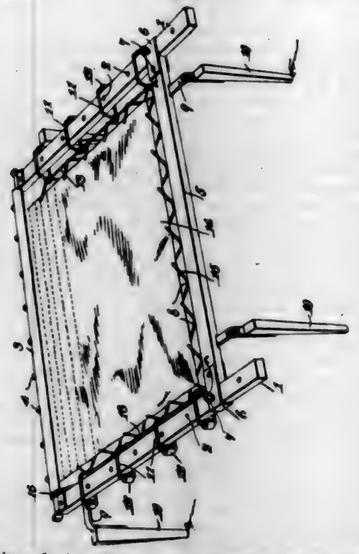

Claim.—1. A quilting-frame consisting of end rails, a shaft journaled at the ends thereof, a bar slidably mounted upon said rails, legs supporting the frame, and laterally-extending brackets connecting the upper ends of said legs with the frame.

2. A quilting-frame consisting of end rails, a shaft journaled at the ends thereof, a bar slidably located upon said rails, said bar and said shaft having quilting-engaging means, and links located upon said rails.

3. A quilting-frame consisting of end rails, a shaft journaled at the ends thereof, a bar slidably located upon said rails, and links located upon said rails and having friction-rollers which engage the outer edges of the rails.

4. A quilting-frame consisting of end rails, a shaft journaled at the ends thereof, a bar slidably located upon said rails, links located upon said rails, and hooks attached to said links and each adapted to engage the next adjacent link and space the links apart.

848,000. TOOL FOR TRIMMING THE EDGES OF SOLES AND HEELS FOR BOOTS AND SHOES. ZOTIQUE BEAUDRY, Lynn, Mass. Filed Nov. 19, 1902. Renewed Aug. 13, 1906. Serial No. 330,487.

Claim.—1. An edge-trimming machine comprising in its construction a rotary shaft, a cutter fast to said shaft and provided with a series of cutting-teeth, three concentric sleeves mounted upon said shaft and adjustable as one piece longitudinally thereof, said sleeves comprising a cutter-guard sleeve having a series of guard-fingers integral therewith and projecting between the teeth of said cutter; an auxiliary sleeve mounted upon said cutter-guard sleeve and adjustable longitudinally thereon, and a feather-edge-guard sleeve provided with fingers projecting between the teeth of said cutter and mounted upon said auxiliary sleeve; and a spring acting to hold said auxiliary sleeve and feather-edge-guard sleeve apart.

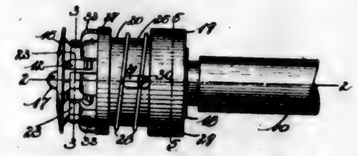

2. An edge-trimming machine comprising in its construction a rotary shaft, a cutter fast to said shaft and provided with a series of cutting-teeth, three concentric sleeves mounted upon said shaft and adjustable as one piece longitudinally thereof, said sleeves comprising a cutter-guard sleeve having a series of guard-fingers integral therewith and projecting between the teeth of said cutter; an auxiliary sleeve mounted upon said cutter-guard sleeve and adjustable longitudinally thereon, and a feather-edge-guard sleeve provided with fingers projecting between the teeth of said cutter and mounted upon said auxiliary sleeve; a spring acting to hold said auxiliary sleeve and feather-edge-guard sleeve apart, and a stop fast to one of said last-named sleeves adapted to limit their movement relatively to each other, said feather-edge-guard sleeve and auxiliary sleeve adjustable as one piece longitudinally of said cutter-guard sleeve.

3. An edge-trimming machine comprising in its construction a rotary shaft, a cutter fast to said shaft and provided with a series of cutting-teeth, a cutter-guard sleeve fast to said shaft having a series of guard-fingers integral therewith and projecting between the teeth of said cutter, an auxiliary sleeve fast to said cutter-guard sleeve and adjustable longitudinally thereof, a feather-edge-guard sleeve provided with teeth projecting between the teeth of said cutter outside said guard-fingers, said feather-edge-guard sleeve slidable longitudinally on said auxiliary sleeve, a spring interposed between said auxiliary sleeve and feather-edge-guard sleeve, and a stop fast on one of said last-named sleeves to limit their movement with relation to each other.

4. An edge-trimming machine comprising in its construction a rotary shaft, a cutter fast to said shaft and provided with a series of cutting-teeth, a cutter-guard sleeve fast to said shaft having a series of guard-fingers integral therewith and projecting between the teeth of said cutter, an auxiliary sleeve fast to said cutter-guard sleeve and adjustable longitudinally thereof, a feather-edge-guard sleeve provided with teeth projecting between the teeth of said cutter outside said guard-fingers, said feather-edge-guard sleeve slidable longitudinally on said auxiliary sleeve, a spring interposed between said auxiliary sleeve and feather-edge-guard sleeve, and a stop-screw having screw-threaded engagement with said auxiliary sleeve and projecting through a slot provided in said feather-edge-guard sleeve and limiting the movement of said sleeves with relation to each other.

5. An edge-trimming machine comprising in its construction a rotary shaft, a cutter fast to said shaft and provided with a series of cutting-teeth, a cutter-guard sleeve fast to said shaft having a series of guard-fingers integral therewith and projecting between the teeth of said cutter, an auxiliary sleeve fast to said cutter-guard sleeve and adjustable longitudinally thereof, a feather-edge-guard sleeve provided with teeth projecting between the teeth of said cutter outside said guard-fingers, said feather-edge-guard sleeve slidable longitudinally on said auxiliary sleeve, a spring interposed between said auxiliary sleeve and feather-edge-guard sleeve, and a stop-screw having screw-threaded

engagement with said auxiliary sleeve and projecting at one end thereof through a slot provided in said feather-edge-guard sleeve and at the other end into a groove provided in said cutter-guard sleeve.

848,001. HEAD-REST FOR BARBER AND OTHER CHAIRS. EUGENE BERNINGHAUS, Cincinnati, Ohio. Filed Feb. 20, 1905. Serial No. 246,449.

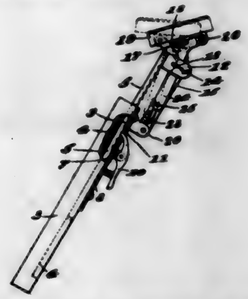

Claim.—1. A device of the character described comprising a longitudinally-adjustable stem, a supporting member pivotally connected with the stem, means to hold the supporting member from movement relative to said stem, a body portion movably mounted on the supporting member and adapted, when said supporting member is pivotally moved, to be swung into and out of position for use, and a brace one end of which has movable connection with the body portion while its opposite end has adjustable connection with the supporting member.

2. A device of the character described comprising a longitudinally-adjustable stem, a supporting member pivotally connected with the stem and provided with a longitudinal slotted opening, means to hold the supporting member from movement relative to said stem, a body portion movably mounted on the supporting member and adapted, when said supporting member is pivotally moved, to be swung into and out of position for use, a brace one end of which has movable connection with the body portion, and a set-screw having threaded connection with the opposite end of the brace, said set-screw being passed through and adapted for adjustment along the slotted opening of the supporting member and being provided with a head engageable upon said supporting member for holding the brace in adjusted position thereon.

3. A device of the character described comprising a longitudinally-adjustable stem having means for holding it in adjusted position and provided at its upper end with an arm having a series of perforations, a supporting member having pivotal connection with the stem below the arm thereof, a pin passed through one of the perforations of the arm and engaged with the supporting member to hold it from pivotal movement relative to said stem, a body portion movable upon the supporting member, and an adjustable connection between the body portion and the supporting member for moving the body portion relatively to said supporting member.

4. In a device of the character described, the combination of a chair-back having a guideway along its rear side, an escutcheon-plate extended over said guideway and provided with a slotted opening open at the upper end of the escutcheon-plate and alined with said guideway in the chair-back, a stem longitudinally adjustable in the guideway of the chair-back and having at its upper end a perforated arm adapted, when the stem is slid downward in the guideway, to traverse the slotted opening of the escutcheon-plate, means for holding the stem in adjusted position in the guideway, a supporting member having pivotal connection with the stem below the arm thereof, a pin passed through the perforation of the arm and engaged with the supporting member to hold it from pivotal movement relative to the stem, a body portion movable upon the supporting member, and an adjustable connection between the body portion and the supporting member for moving the body portion relatively to said supporting member.

848,002. SHUTTLE-BOX FOR LOOMS. JOSEF BIM, Vienna, Austria-Hungary, assignor to Union Bank, Vienna, Austria-Hungary. Filed Jan. 2, 1907. Serial No. 350,506.

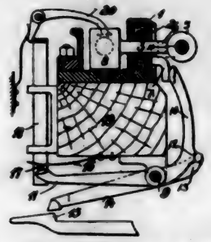

Claim.—1. A shuttle-box for looms having a swell movable on said box and provided with a slot, and a picker having a part fitting and guided by said slot.

2. A shuttle-box for looms having a swell movable on said box and provided with a slot, a picker for said box and having the waist of said picker fitting and guided by said slot, and a guide-rod for the picker.

3. A shuttle-box for looms having a swell movable on said box and provided with a slot, and a picker having a part fitting and guided by said slot, in combination with a loom-stopping mechanism comprising a lever in engagement with the movable swell aforesaid.

4. A shuttle-box for looms having a swell movable on said box and provided with a slot, and a picker having a part fitting and guided by said slot, in combination with a loom-stopping mechanism comprising two levers, one of which is in engagement with the swell aforesaid and one of which has a projection which engages the other lever.

5. A shuttle-box for looms having a swell movable on said box and provided with a slot, and a picker having a part fitting and guided by said slot, in combination with a loom-stopping mechanism comprising two levers, one of which is in engagement with the swell aforesaid and other of which levers is temporarily held out of stopping position by lever first named.

6. A shuttle-box for looms having a swell movable on said box and provided with a slot, and a picker having a part fitting in and guided by said slot, in combination with a loom-stopping mechanism comprising a lever in engagement with the movable swell aforesaid, and with a pivoted feeler for said box and a part movable by the aforesaid lever and operating upon said feeler.

848,003. SCREW. FRED W. BRAUNSCHWEIG, Watertown, Wis. Filed Feb. 21, 1906. Serial No. 302,314.

Claim.—1. A screw having a screw-driver seat in the head thereof with the bottom of the seat provided with diverged branches, and a cap having a pair of substantially parallel bendable ribs to enter the seat and the branches thereof for connecting the cap to the head.

2. A screw having a tapered head provided with a screw-driver seat, the bottom of which is provided with diverging branches, and a cap having substantially parallel bendable ribs to enter the seat and the branches thereof for connecting the cap to the head, the ribs approximating the diameter of the head and having their ends beveled corresponding to the taper of the head.

3. A screw having a separate cap of greater diameter than the head of the screw and provided with a diametrically-extending rib on the bottom of the cap which engages in the seat of the screw and pointed wings carried by the edge of the cap to be driven into the work.

4. A screw having a diametric screw-driver seat in its head with the bottom of the seat provided with diverging branches, and a separate cap exceeding the diameter of the head and provided with a pair of substantially diametric bendable ribs to enter the seat and the branches thereof to connect the cap to the screw, said cap also being provided with depending pointed wings carried by the edge of the cap at the ends of the ribs to enter the work.

5. A screw having a head provided with a driver's seat formed with locking-walls, of a cap provided with a rib on its bottom adapted to be forced into engagement with the said walls of the screw-driver seat for securing the cap to the screw.

6. A cap for screws comprising a head having a pair of depending substantially diametric parallel bendable ribs.

7. A cap for screws comprising a head having a pair of substantially diametric parallel bendable ribs depending therefrom with the ends of the ribs converged downwardly.

8. A cap for screws comprising a head having a pair of substantially diametric parallel bendable ribs depending therefrom with the ends of the ribs converged downwardly, and pointed wings depending from the edge of the head at the ends of the ribs.

848,004. WAGON END-GATE ROD. BERTINIUS BREAUM, Taylor, N. D. Filed Aug. 8, 1906. Serial No. 329,731.

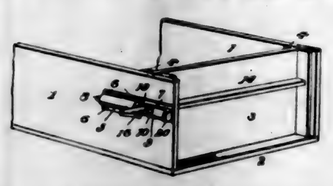

Claim.—1. An end-gate for vehicles comprising a slidably-mounted gate, a rod adapted to contact the rear side of the gate, one end of the rod being provided with a knob limiting its movement, and the other end having teeth or serrations, and a spring-actuated slidably-mounted thumb-latch adapted to engage the teeth and yieldingly hold the rod in place.

2. An end-gate rod for vehicles comprising a rod having one end provided with a knob and the other end with teeth or serrations, a thumb-latch adapted to engage the teeth or serrations on the rod, and a spring controlling the thumb-latch.

3. An end-gate rod for vehicles comprising a rod having teeth or serrations on one of its ends, a thumb-latch having an opening through which said serrated end of the rod is adapted to pass, a casing having the thumb-latch slidably mounted therein, and a spring within the casing adapted to hold the latch yieldingly in engagement with the serrated end of the rod.

4. An end-gate rod for vehicles comprising a rod having a knob formed integral with one end and the other end provided with teeth or serrations, a thumb-latch having an opening through which the serrated end of the rod passes, the teeth or serrations engaging one wall of said opening, a suitable casing for the other end of said thumb-latch which is slidably mounted therein, and a spring within the casing adapted to control the thumb-latch and hold it yieldingly in contact with said teeth or serrations.

848,005. METHOD OF HEADING SHEET-METAL CANS. JULIUS BERNINGER, Mount Vernon, N. Y., assignor to The Max Ams Machine Company, Mount Vernon, N. Y., a Corporation of New York. Filed Mar. 17, 1906. Serial No. 306,535.

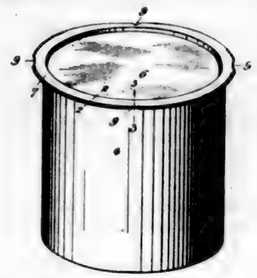

Claim.—Method of heading sheet-metal cans which consists in placing a flanged cover on a flanged can-body, clenching the cover-flange to the body-flange at spaced points, and then turning down both flanges along their entire circumference, to fold the cover-flange around the can-flange and interpose said cover-flange sidewise between the can-body and the can-flange, substantially as specified.

848,006. ELECTRIC CONTROLLER. ROY W. BROWN, Amsterdam, N. Y. Filed Apr. 19, 1906. Serial No. 312,615.

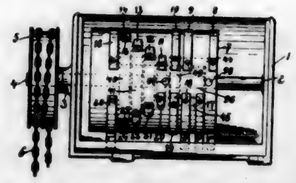

Claim.—1. In an electric controller the combination of a cylinder composed of Portland cement having contacts and resistance-bodies embedded therein and connected together by means of strips adapted to anchor the said contacts in the said cylinder.

2. In an electric controller the combination of a cylinder having contacts and a plurality of resistance-bodies embedded therein and strips adapted to anchor the said contacts in the said cylinder and to connect certain of the said contacts with each other and with the said resistance-bodies.

3. In an electric controller the combination of a cylinder composed of Portland cement and having a resistance-body covered with a non-absorbent paint embedded therein.

4. In an electric controller the combination of a resistance-body covered with soda silicate and lavite and embedded in Portland cement.

5. In an electric controller the combination of a movable body having a plurality of contacts and a resistance-body and a blow-out magnet located therein.

6. In an electric controller the combination of a cylinder having a plurality of contacts, a plurality of resistances and an electromagnet located in the said cylinder the said magnet having poles located in the vicinity of certain of the said contacts.

7. In an electric controller the combination of a movable body having a plurality of contacts, a plurality of resistances connected to the said contacts and a blow-out magnet located thereon, a plurality of fixed contacts adapted to make contact with the first-named contacts.

8. In an electric controller the combination of a cylin-

der having a plurality of contacts embedded therein, anchors for securing the said contacts, a plurality of resistances located in the said cylinder, a plurality of fixed contacts adapted to make contact with the first-named contacts and a blow-out magnet located in the said cylinder and adapted to prevent arcing between certain of the said contacts.

9. In an electric system the combination of a source of electric current, a controlled means, a cylinder having a plurality of contacts and a plurality of resistances mounted therein, brushes adapted to make contact with the said contacts and so arranged with respect to the said contacts as to cause a current to flow in varying quantities in one direction when the cylinder is moved in one direction and to flow in various quantities in the opposite direction when the cylinder is moved in the opposite direction.

10. In an electric controller a resistance-body embedded in cement covered by a moisture-proof heat-resisting paint.

848,007. CLAMP FOR BASE-BALL COVERS. FRED A. BRUSSEAU, Springfield, Mass. Filed Oct. 31, 1906. Serial No. 341,367.

Claim.—1. As a new article of manufacture, a clamp for base-ball covers consisting of a device of less area than a cover-section, conforming on its interior to the spherical shape of a ball and adapted to fit over and confine the cover-section while being sewed or stitched.

2. As a new article of manufacture, a clamp for base-ball covers consisting of a resilient member constructed and adapted to clasp over a cover-section and hold it in place while being sewed or stitched, such member having a smaller area than the section.

3. As a new article of manufacture, a clamp for base-ball covers consisting of a resilient member constructed and adapted to clasp over a cover-section and hold it in place while being sewed or stitched, the end portions of such member being larger than the middle connecting portion thereof.

4. As a new article of manufacture, a clamp for base-ball covers consisting of a resilient member constructed and adapted to clasp over a cover-section and hold it in place while being sewed or stitched, the terminal portions of such member being larger than the middle connecting portion thereof and the member as a whole having a smaller area than the section.

5. As a new article of manufacture, a clamp for base-ball covers consisting of a resilient concavo-convex member constructed and adapted to clasp over a cover-section and hold it in place while being sewed or stitched, such member having a smaller area than the section.

848,008. CORN-HUSKER. WILLIAM T. CALDWELL, Edgar, Nebr., assignor of one-half to himself and one-half to Albert John Lepper, Edgar, Nebr. Filed Oct. 31, 1906. Serial No. 341,487.

Claim.—A corn-husker, comprising a mitten; a curved, toothed, metal plate, secured to the face of the thumb portion; and a second metal plate secured to the face of the finger portion along the line of the first joint of the finger, and curved at one end over the forefinger portion and formed with a row of teeth punched from the metal with their heads or bases in the line of the length of the plate.

848,008.

848,009. GATE-VALVE. LEWIS D. CASTLE, Barberton, Ohio, assignor to Pittsburgh Valve and Fittings Company, Pittsburg, Pa., a Corporation of New Jersey. Original application filed Sept. 25, 1905, Serial No. 280,035. Divided and this application filed May 11, 1906. Serial No. 316,379.

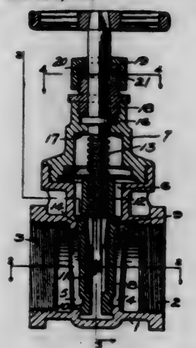

Claim.—1. In a valve, the combination of a bonnet or hood provided with an externally-threaded projection having an opening therethrough, a valve-actuating screw extending through said opening, a cap fitting on said threaded projection, and packing material inclosed by said cap, said projection having a bearing-block projecting beyond the same and of smaller diameter than the cap and being provided with curved faces non-concentric with the axis of the actuating-screw.

2. In a valve, the combination of a bonnet or hood having an externally-threaded projection having an opening therethrough, a valve-actuating screw extending through said opening, a packing-cap fitting on said threaded projection, and packing material inclosed by said cap, said threaded projection having a bearing-block projecting beyond the same and of smaller diameter than the interior of said cap and being provided with elliptical side faces.

848,010. LATHE TOOL-HOLDER. ROSCO E. COLTON, Easthampton, Mass., assignor of one-half to John L. Lyman, Easthampton, Mass. Filed July 31, 1905. Serial No. 271,963.

Claim.—In a tool-holder, the combination of a shank having a comparatively broad and thin outer end in which

is a circular opening, and also having a shoulder 25 extending throughout the width of said broad and thin outer end at the inner end thereof and adapted for the engagement of the rear ends of tools placed at various angles of inclination to the longitudinal median line of the shank, a post, of circular form in cross-section, arranged and

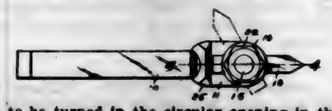

adapted to be turned in the circular opening in the broad and thin end of the shank and having a diametrical opening arranged above the same, and means on the post for holding a tool resting in the diametrical opening of the post.

848,011. MACHINE FOR SETTING LOCOMOTIVE-VALVES. JOHN J. CONOLLY and JOHN HERRON, Marquette, Mich. Filed Aug. 8, 1906. Serial No. 329,749.

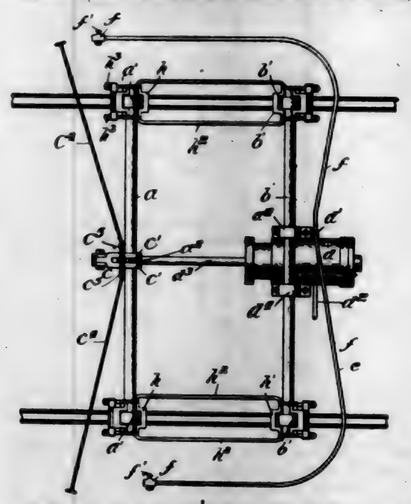

Claim.—1. In a machine for setting valves, the combination of a plurality of load-sustaining rollers, a fluid-pressure cylinder connected with the rollers to operate the rollers, and means for controlling the exhaust from the cylinder to control the operation of the machine.

2. In a machine for setting valves, the combination of a plurality of load-sustaining rollers, fluid-pressure cylinder mechanism for operating the rollers, an exhaust-pipe connected to the cylinder, and means in the pipe to connect the exhaust and thereby the operation of the machine.

3. In a machine for setting valves, the combination of parallel shafts, load-sustaining rollers mounted thereon, fluid-pressure operating mechanism comprising a cylinder having a piston and piston-rod mounted upon one shaft, and a connection between the end of the piston-rod and the other shaft whereby the rollers are operated by the operation of the fluid-pressure means.

4. In a machine for setting valves, the combination of shafts, rollers thereon, fluid-pressure operating means, a lever loosely mounted on one shaft connected to the fluid-pressure operating means, a pawl pivotally mounted on the lever, and a ratchet rigidly secured to the shaft and engaged by the pawl.

5. In a machine for setting valves, the combination of a plurality of load-sustaining rollers, means for operating the rollers, means for controlling the operating means, and means for reversing the direction of rotation of the rollers.

6. In a machine for setting valves, the combination of shafts, load-sustaining rollers mounted thereon, a fluid-pressure operating mechanism, and a ratchet-and-pawl mechanism connecting the operating mechanism with one shaft and reversing mechanism.

7. In a machine for setting valves, the combination of shafts, rollers supported thereon, an operating device, a ratchet secured to one shaft, a lever loosely mounted on the shaft, a double pawl pivoted on the lever, and means for throwing either one of the pawls in engagement with the ratchet.

848,012. STOP FOR TWISTER-BOBBINS. RICHARD H. COOK, Fall River, Mass., assignor to The American Thread Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 15, 1906. Serial No. 306,096.

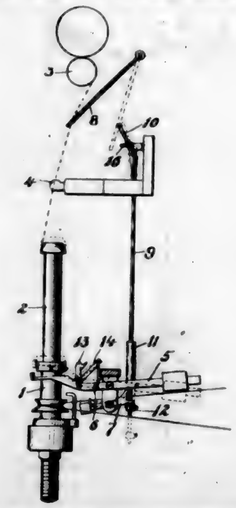

Claim.—1. In a twisting-machine, a winding-bobbin, a driving-spindle therefor, means on the spindle engaging the bobbin, a lever for disengaging the bobbin from the driving-spindle, a catch pivoted upon said lever adapted to engage said bobbin; a dog normally holding said lever, a rod for disengaging said dog, a latch normally sustaining said rod, and a swinging arm having a passage for the yarn or thread, said arm being adapted to disengage said latch from said rod when the yarn or thread breaks and a link connected to said catch for causing it to be thrown into position when said lever disengages the bobbin.

2. In a twisting-machine, a twisting-spindle, a bobbin, means on the spindle engaging the bobbin, a lever for disengaging the bobbin from the spindle, a catch pivoted upon said lever adapted to engage said bobbin; a dog normally sustaining the lever, means for forcibly striking said dog to disengage it from said lever, a swinging arm having a passage for the thread or yarn, and means set in operation by the movement thereof for releasing said striking means and a link connected to said catch for causing it to be thrown into position when said lever disengages the bobbin.

3. In a stop-motion for a bobbin, a bobbin, a driving-spindle adapted to carry a bobbin, means on the spindle engaging the bobbin means for disengaging the bobbin from said spindle, a catch pivoted upon said lever adapted to engage said bobbin; a swinging arm having a passage for the thread or yarn, and means set in operation by the movement thereof for bringing said disengaging means into operation when the yarn or thread breaks and a link connected to said catch for causing it to be thrown into position when said lever disengages the bobbin.

4. In a stop-motion for a bobbin, a bobbin, a driving-spindle, means on the spindle engaging the bobbin, a pivoted lever having one end adapted to engage said bobbin

having its opposite end overweighted, means for normally holding said lever disengaged from said bobbin, a catch-lever pivoted to said engaging lever also adapted to engage said bobbin, a link connected to said catch-lever for causing it to be thrown into position when said engaging lever operates, and means for releasing said engaging lever when the thread breaks.

848,013. STOP MECHANISM FOR BOBBINS. RICHARD H. COOK, Fall River, Mass., assignor to The American Thread Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 15, 1906. Serial No. 306,098.

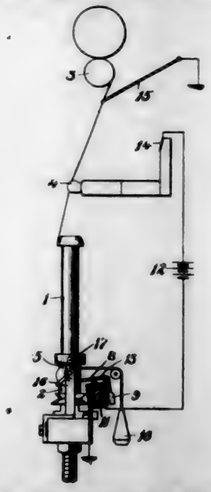

Claim.—1. In a stop mechanism for bobbins, a bobbin, a driving-spindle, means carried by the spindle to engage the bobbin, a rotatable hub, a cam carried thereby for disengaging the bobbin from the driving-spindle, a projection from said hub, a latch member normally engaging said projection, means for rotating said hub when released, and means for disengaging said latch member from said projection.

2. In a stop-motion for bobbins, a bobbin, a driving-spindle, means carried by the spindle to engage the bobbin, a rotatable hub, a cam carried thereby for disengaging the bobbin from the driving-spindle, a pin carried by said hub for positively engaging said bobbin when disengaged from said spindle, a latch normally engaging said hub, and means for disengaging said latch from said hub upon the breaking of the yarn.

3. In a stop-motion for bobbins, a bobbin; a driving-spindle, means carried by the spindle to engage the bobbin, means for disengaging the bobbin from the driving-spindle, comprising a cam mounted on a rotatable hub and a pin carried thereby positively engaging said bobbin when disengaged from said spindle; and electromagnetically-operable means for controlling said disengaging and engaging and stopping means including a stationary contact and a freely-pivoted arm having a passage surrounding the yarn, and held thereby out of engagement with said stationary contact.

4. In a stop mechanism for bobbins, a bobbin, a driving-spindle, means carried by the spindle to engage the bobbin, a rotatable hub, a cam carried thereby for disengaging the bobbin from the driving-spindle, a projection from said hub, a latch member normally engaging said projection, means for rotating said hub when released, and electromagnetically-operable means for disengaging said latch member from said projection including a stationary contact and a freely-pivoted arm having a passage for the yarn.

5. In a stop-motion for bobbins, a bobbin, a driving-spindle, means carried by the spindle to engage the bobbin, a rotatable hub, a cam carried thereby for disengaging the bobbin from the driving-spindle, a pin carried by said hub for positively engaging said bobbin when disengaged from said spindle, a latch normally engaging said hub, and electromagnetically-operable means for disengaging said latch from said hub upon the breaking of the yarn, including a stationary contact and a freely-pivoted arm surrounding the yarn and held thereby out of engagement with said stationary contact.

848,014. HYDRANT OR FIRE-PLUG. CHARLES E. COTTON, Bellaire, Mich., assignor of one-half to Leon G. Van Liew, Bellaire, Mich. Filed May 16, 1903. Serial No 157,458.

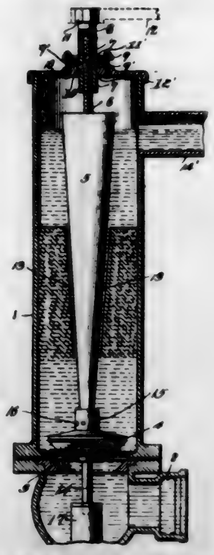

Claim.—1. A fire-hydrant so constructed that it may be readily opened when its contained liquid is frozen, consisting of a cylindrical barrel so shaped as to present an unobstructed passage for the removal of frozen material and having a liquid-inlet and a liquid-outlet, a valve seated at the inlet end of said barrel, a tapered stem fixed at its smaller end to the valve and extending longitudinally within the barrel, its larger end being located above the level of the lower surface of the liquid-outlet and means for removing the stem in the direction of the flow of water through the barrel.

2. A fire-hydrant so constructed that it may be readily opened when its contained liquid is frozen, consisting of a cylindrical barrel so shaped as to present an unobstructed passage for the removal of frozen material and having a liquid-inlet and liquid-outlet, a valve seated at the inlet end of the barrel, a tapered stem fixed at its smaller end to the valve and extending longitudinally within the barrel, its larger end being located above the level of the lowest surface of the liquid-inlet, a threaded pin concentrically located at the large upper end of the stem, a sleeve passing through the top of the barrel and having an intermediate annular flange which is confined at the top of the barrel and retains the sleeve against longitudinal movement but permits rotation thereof, said sleeve receiving said pin and means for rotating the said sleeve.

848,015. TOILET-POWDER SIFTER. FREDERICK S. DILWORTH, Welland, Ontario, Canada. Filed Dec. 2, 1905. Serial No. 290,026.

Claim.—The combination with the perforated rectangular top having a slot at one end, of a perforated rectangular slide having an S-shaped spring formed at one end and the opposite end extending through the slot and forming a pressure-handle as and for the purpose specified.

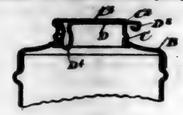

848,016. ELECTRIC ALARM. JACOB R. DONNENWORTH, Lacombe, Alberta, Canada. Filed Mar. 2, 1906. Serial No. 303,932.

Claim.—An electric alarm comprising a source of electric energy, a contact-plate, a circuit-closing spring-plate, a longitudinally-movable bar, means for supporting the latter above the floor, rollers carried thereby, a spring for normally forcing the bar away from the contact-plate, and an insulated head on the bar normally bearing against the circuit-closing plate, substantially as set forth.

848,017. VEHICLE-RIM. PETER EBNER, Columbus, Ohio. Filed Feb. 12, 1906. Serial No. 300,553.

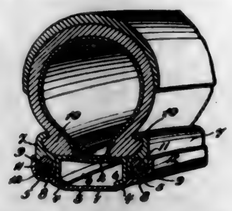

Claim.—1. A vehicle-rim comprising a lower portion formed with shouldered parts and having its sides bent to form gutters, an upper portion having inclined portions resting on the shouldered parts between the gutters, and removable flanges fitting in the gutters.

2. A vehicle-rim comprising a lower portion having its sides bent to form gutters, an upper portion resting on the lower portion, and removable flanges arranged in the gutters and having their tire-engaging portions formed solid from which extend portions bent together to exhibit in cross-section elongated vertical openings.

3. A vehicle-rim comprising a lower portion having its sides bent to form gutters, an upper portion resting on the lower portion, removable flanges arranged in the gutters and having their tire-engaging portions formed solid from which extend portions bent together to exhibit in cross-section elongated vertical openings, and plugs fitting in said openings adapted to receive turnbuckles.

848,018. MEAT-BROILER. STEPHAN A. ENGELHARD, Columbus, Ohio. Filed Apr. 16, 1906. Serial No. 311,870.

Claim.—1. In a broiler, the combination of a housing, a cup-shaped deflector supported below the same in a manner to provide an annular space between its side and the housing for the passage of heat, a drip-pan supported on the upper edge of this deflector so as to leave a space between the two, lateral flues whereby this space communicates with the outside and a meat-support above the drip-pan.

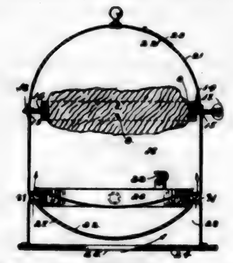

2. In a broiler, the combination of a housing, a deflector provided with lateral flues connecting the same to the housing for support, a drip-pan resting on the deflector with a space between the two, which space is ventilated by the flues mentioned and a meat-support above this pan.

840,010. GEOGRAPHICAL LOCATOR. SILVANUS F. ENOS, Mattoon, Ill., assignor of one-half to Joseph J. Hoag, Mattoon, Ill. Filed June 22, 1906. Serial No. 322,940.

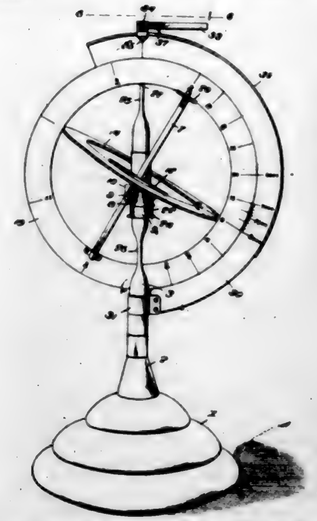

Claim.—1. An instrument of the class described comprising the combination with a post and means to support said post, of a band, a frame pivotally mounted upon said band and means carried by the frame to ascertain the location of a point from a given point.

2. The combination with a post having flattened portions and means to support said post, of a band surrounding said post, a frame pivotally secured to said band, and means carried by the frame to locate a point from a given point.

3. A device of the class described comprising the combination with a post having flattened portions, of a band rotatably mounted on said post, a frame pivotally secured to said band and arms integral with said frame and means carried by the frame and arms to locate a point from a given point.

4. A device of the class described comprising the com-

bination with a post having flattened portions and notches therein, of a band surrounding said post, means to normally hold said band stationary on the post, a frame pivotally secured to said band, means to lock said frame in its adjusted position, graduated plates carried by said frame whereby a point may be located from a given point and means to indicate the distance between the two points.

848,020. FRAME AND HANDLE STRUCTURE. SOLOMON B. FEUERSTEIN, Chicago, Ill., assignor to Cruver M'f'g. Co., Chicago, Ill., a Corporation of Illinois. Filed June 29, 1906. Serial No. 324,075.

Claim.—1. In a frame and handle structure, in combination, two frame ends arranged to abut; a plate, the ends of which overlie said frame ends; a handle; and a screw for securing said plate and said handle together.

2. In a frame and handle structure, in combination, a frame comprising flanges between which the object to be framed is held, the ends of said frame abutting; a plate adapted to lie at one side of said abutting frame ends within said flanges; a handle; and a screw for securing said plate and said handle together.

3. In a frame and handle structure, in combination, a frame comprising two flanges between which the object to be framed is held, the ends of said frame being brought relatively near each other; a plate overlying said frame ends within said flanges; a screw fixed to said plate; a handle turned on said screw; and a member overlying said frame ends between said frame and said handle.

4. A frame and handle structure comprising two frame ends arranged to abut, a member adapted to lie on one side of said frame ends, a handle adapted to lie upon the other side of said frame ends, and a screw fixed to said member for securing said member and handle together, said frame ends being notched to receive said screw between them.

5. A frame and handle structure comprising two frame ends, a plate adapted to lie on one side of said frame ends, a screw fixed to said plate, a handle on the other side of said frame ends adapted to be engaged by said screw, and a plate interposed between said frame ends and said handle.

6. A frame and handle structure comprising an annular frame the ends of which are adapted to abut, a clamping-plate adapted to lie on the inner side of said frame over said frame ends, said plate having a screw fixed rigidly thereto, a clamping-plate adapted to lie on the outer side of said frame and having an opening therein to receive said screw, and a handle adapted to be screwed upon said screw and to clamp said frame ends between said plates.

7. A frame and handle structure comprising two frame ends, a member adapted to lie on one side of said frame ends, a handle adapted to lie upon the other side of said frame ends, means for securing said plate and said handle together and clamping said frame ends between them, and means for forming a positive engagement between said frame ends and said clamping means.

848,021. STORE-LADDER. WALTER FICKETT, Portland, Me. Filed June 12, 1906. Serial No. 321,377.

Claim.—1. An attachment for store-ladders, comprising a guide-rail adapted to be secured to the side of the ladder, a slide comprising an elongated substantially horizontal head and an elongated member depending therefrom and lying along and having extended interlocking and slidable engagement with said rail, a substantially horizontal shelf, means connecting said shelf adjustably to said head to permit forward and backward tilting of the shelf, and means for securing the slide at different elevations.

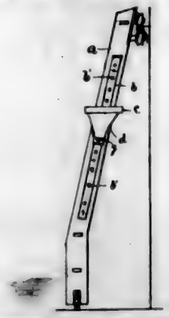

2. An attachment for store-ladders, consisting of a guide-rail adapted to be secured to the side of the ladder, a slide having interlocking and slidable engagement with said rail, an expanded substantially horizontal shelf having a vertical flange along its inner edge provided with a pair of remote substantially vertical slots, an inclined brace secured at its upper end to the shelf and having its lower end abutting against the slide and provided with a substantially horizontal slot, threaded clamping members passing through said slots and secured to the slide, and means for securing the slide at different elevations.

848,022. FENDER FOR VEHICLES. LEE A. FRAYER and WILLIAM J. MILLER, Columbus, Ohio, assignors to The Oscar Lear Automobile Company, Columbus, Ohio, a Corporation of Ohio. Filed May 7, 1906. Serial No. 315,527.

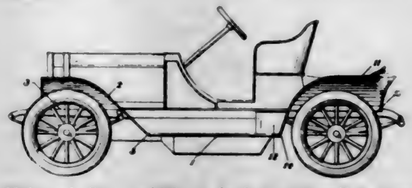

Claim.—1. In a vehicle, a fender construction secured continuously along one of its edges to one side of said vehicle, and constructed to protect the step and the entire side of the vehicle both adjacent the wheels and between the wheels from all dust and mud set in motion by the movement of the wheels.

2. In a vehicle, a member secured continuously along one of its edges to one side of said vehicle between the wheels, a plurality of integral fenders each secured continuously along one of its edges to the side of said vehicle and arranged thereon to be opposite a wheel and curved upwardly and outwardly to extend at the side of, above, and beyond said wheel, and curved downwardly at one end and adapted to be secured at said end to said member, whereby there is formed a complete protection for said vehicle from the dust and mud cast by the wheels when in motion.

3. A fender for vehicles composed of a metallic sheet formed to present a cover for a wheel, a side guard therefor, and an end guard therefor, said fender being secured to the body of the vehicle and engaging continuously therewith along one of the sides of said fender.

4. A fender for wheeled vehicles, composed of a metallic sheet having one of its edges secured to the body of the vehicle and engaging therewith continuously along said edge, and constructed to extend upwardly and outwardly from said edge at the side of and above the wheel, and to extend downwardly at one end thereof, a member secured continuously along one of its edges to the body of said vehicle and engaging continuously therewith, said fender being united at its downwardly-extending end to said member, whereby a continuous protection is afforded to said vehicle-body both at the sides of the wheels and above them, and between the wheels.

5. A rigid fender structure for vehicles formed to present a cover for a wheel, a side guard therefor, and an end guard therefor, said fender being secured along one of its edges to the body of the vehicle, and continuously engaging therewith.

848,023. SELF-FILLING FOUNTAIN-PEN. M Z L FULLER, Akron, Ohio. Filed May 16, 1906. Serial No. 317,182.

Claim.—1. In a fountain-pen, the combination with a barrel having an opening at its rearward end, of a pen, plug, and feeding device, and of a spirally-corrugated and torsionally-collapsible flexible tubular ink-reservoir having attached to its rearward end a hardened concave disk for the transmission of pressure to the flexible portion of the said ink-reservoir, substantially as described.

2. In a self-filling fountain-pen, the combination with a barrel having an opening at its rearward end, of a pen, plug, and feeding device, a spirally-corrugated longitudinally and torsionally collapsible elastic filling-reservoir, and at the rearward end of said tubular reservoir, of a vulcanized disk movably disposed within the said barrel and having at its outer side a conical recess with a small pivotal projection at its center, substantially as described.

848,024. ARMOR-PLATE. EMIL GATHMANN, Bethlehem, Pa. Filed Nov. 9, 1906. Serial No. 342,691.

Claim.—1. Armor-plate provided with integrally-formed ribs, the opposite faces thereof as compared to each other being inclined in different angular relations to the body of the plate, said ribs being wedge-like in shape and formed upon curved lines at their bases and apices, whereby fracture or cracking of the plate, either in the process of hardening or by the impact of a projectile, is prevented.

2. Armor-plate provided with a series of integrally-formed ribs, one face of each rib lying in an approximately horizontal plane, whereby the nose of a projectile is prevented from striking the plate a fair blow and coming into contact with the plate at the bottom of the depression formed between adjacent ribs, substantially as described.

3. Armor-plate provided with a series of integrally-formed ribs, each of said ribs having its uppermost face lying in a plane approximately at right angles to the longitudinal axis of the plate, while the under face thereof stands at approximately forty-five degrees thereto, whereby the nose of a projectile is prevented from striking the plate a fair blow and coming into contact with the plate at the bottom of the depression formed between adjacent ribs, substantially as described.

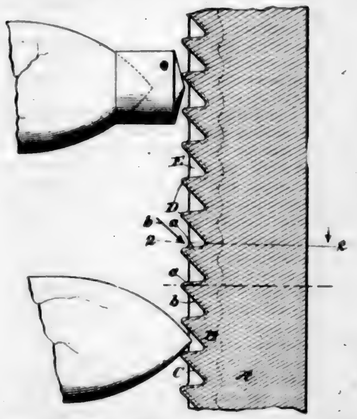

4. Armor-plate provided with a series of pyramidal pockets or recesses in its face, the angle of inclination of the uppermost face of each pocket being greater than that of the opposite side, whereby the nose of a projectile is prevented from striking the plate a fair blow, substantially as described.

5. Armor-plate provided with a series of pyramidal pockets or recesses in its face, said pockets being defined by a series of wedge-shaped ribs formed integrally with the plate, the angle of inclination of the uppermost face of each of the longitudinally-disposed ribs being approximately at right angles to the longitudinal axis of the plate.

6. Armor-plate provided upon its face with intersecting wedge-shaped ribs, the ribs running in one direction being higher than the others.

7. Armor-plate provided upon its face with intersecting wedge-shaped ribs, the longitudinally-disposed ribs being higher than the others.

8. Armor-plate provided with intersecting wedge-shaped ribs, the ribs running in one direction being higher than the others, and the ribs and adjacent portions of the body of the plate being hardened.

9. Armor-plate provided with a plurality of depressions encompassed by a series of ribs having a wedge-shaped cross-section, the ribs running in one general direction being higher than those running in the opposite direction.

10. Armor-plate provided with a plurality of depressions encompassed by a series of ribs having a wedge-shaped cross-section, the ribs running in one direction being wider at their bases than those running in the opposite direction.

11. Armor-plate provided with a plurality of depressions encompassed by a series of ribs having a wedge-shaped cross-section, the ribs running in one direction being lower and wider at their bases than those running in the opposite direction.

12. Armor-plate provided with a series of intersecting ribs formed integrally with the body of the plate, the distance between the ribs being proportioned to the thickness of the plate and the size of the projectile which it is primarily designed to resist.

13. Armor-plate provided with a series of integrally-formed, wedge-shaped ribs, said ribs being so disposed as to produce a series of pyramidal pockets in the face of the plate, the distance between said ribs being proportioned to the thickness of the plate and the size of the projectile which it is primarily designed to resist.

14. Armor-plate provided with a series of integrally-formed, longitudinally-disposed, wedge-shaped ribs, the

face of the body between each pair of such ribs having an undulating surface of a height less than that of the ribs.

15. Armor-plate provided with a series of integrally-formed ribs, said ribs being substantially wedge-shaped in cross-section with curved lines at their bases, one face of each rib lying in a plane at approximately right angles to the longitudinal axis of the plate, substantially as and for the purpose specified.

16. Armor-plate provided with a series of integrally-formed, wedge-shaped ribs, curved at their apices and bases, each of said ribs having one of its faces lying in a plane approximately at right angles to the longitudinal axis of the plate, while the opposite face thereof stands at an angle of less than forty-five degrees thereto, substantially as and for the purpose specified.

17. Armor-plate provided with a series of pyramidal pockets or recesses in its face, the sides or walls of the pockets being curved at their bottoms and apices, the angle of inclination of one of the faces of each pocket being greater than that of the opposite side.

18. Armor-plate provided with a series of pyramidal pockets or recesses in its face, said recesses being defined by a series of wedge-shaped ribs curved at their bases and formed integral with the plate, one face of each of the aforesaid ribs being inclined at approximately right angles to the longitudinal axis of the plate.

19. Armor-plate provided with a plurality of depressions encompassed by a series of ribs integrally formed with the plate, the angle made by the general contour of one of the faces of each rib being greater than that formed by the general contour of its opposite face as measured from a plane passing through the longitudinal axis of the plate, said ribs being curved at their bases and apices, substantially as and for the purpose specified.

20. Armor-plate provided with a plurality of integrally-formed ribs having major and minor sides or surfaces, the minor side of each rib being inclined at a greater angle, as measured from a plane passing through the longitudinal axis of the plate, than the major side, said sides being curved at their apices and bases.

21. Armor-plate provided with a plurality of integrally-formed ribs and depressions having major and minor sides or surfaces, the minor side of each rib being inclined at a greater angle, as measured from a plane passing through the longitudinal axis of the plate, than the major side, said sides being curved at their bases.

22. Armor-plate provided with a plurality of integrally-formed ribs and depressions having major and minor sides or surfaces, the minor side of each rib being inclined at a greater angle, as measured from a plane passing through the longitudinal axis of the plate, than the major side, said sides being curved at their apices, substantially as and for the purpose specified.

23. Armor-plate provided with wedge-shaped ribs integrally formed therewith, the angles made by opposite faces of said ribs, with reference to a plane passing through the longitudinal axis of the plate, being unequal, and the apices and bases of said ribs being curved, substantially as and for the purpose specified.

24. Armor-plate provided with two series of intersecting ribs, the ribs of one series being higher than those of the other, one face of each of said higher ribs standing at approximately right angles to the longitudinal axis of the plate.

25. Armor-plate provided with two series of intersecting wedge-shaped ribs, the ribs being formed upon curved lines at their apices and bases, and one series being higher than the other, the uppermost face of each of said higher ribs lying in a plane approximately at right angles to the longitudinal axis of the plate.

848,025. GEARING FOR CANE-MILLS. JOHN P. GOLDEN, Columbus, Ga. Filed July 26, 1904. Serial No. 218,230.

Claim.—In gearing for cane-mills, the combination with a bed-plate, of parallel driving and driven shafts mounted on said bed-plate, two bearings on the bed-plate for each of said shafts, a pinion on the driving-shaft between the bearings thereof, a gear on the driven shaft between the bearings thereof and meshing with said pinion, a housing inclosing said pinion and gear, an internally-toothed gear to be secured to the shaft of the large crushing-roll of the

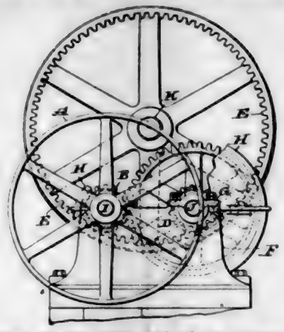

mill, a pinion on the inner end of the driven shaft and meshing with said internally-toothed gear, and a pulley on the outer end of the driving-shaft.

848,026. METHOD OF GENERATING POWER. ARTHUR B. GOODSPEED and BERNHARD BESKOW, New York, N. Y., assignors to Industrial Development Company, New York, N. Y., a Corporation of New York. Filed Apr. 8, 1903. Renewed Apr. 9, 1906. Serial No. 310,741.

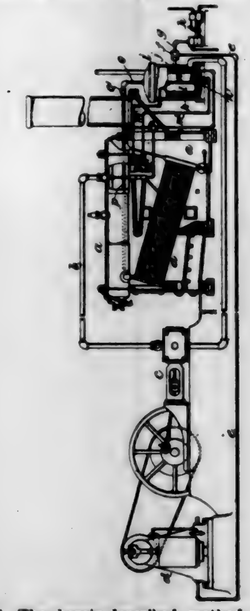

Claim.—1. The herein-described method of generating power which consists in generating steam and charging air with aqueous vapor and subsequently delivering the charged air into the steam-generator to be mingled therein with the steam.

2. The herein-described method of generating power which consists in generating steam and compressing air, charging it with aqueous vapor and subsequently delivering the charged air into the steam-generator to be mingled with the steam therein.

3. The herein-described method of generating power which consists in generating steam and heating air, charging the heated air with aqueous vapor and delivering the charged air into the steam-generator to be mingled therein with the steam.

4. The herein-described method of generating power which consists in generating steam and charging air with aqueous vapor, heating the charged air, further charging the air with aqueous vapor and delivering the charged air into the steam-generator to be mingled with the steam therein.

5. The herein-described method of generating power which consists in generating steam and charging air with aqueous vapor, heating the charged air with the exhaust-steam from the generator and delivering the charged air into the steam-generator to be mingled with the steam therein.

6. The herein-described method of generating power which consists in generating steam and charging air with aqueous vapor, heating the air with the waste heat from the furnace of the generator and delivering the charged air into the steam-generator to be mingled with the steam therein.

7. The herein-described method of generating power which consists in generating steam and mingling air and water to charge the air with aqueous vapor, heating the mingled air and water, separating the partially-charged air from the water, reheating the partially-charged air, further charging the heated air with aqueous vapor and discharging the charged air into the steam-generator to be mingled with the steam therein.

848,027. APPARATUS FOR INCREASING THE EFFICIENCY OF STEAM-GENERATING POWER PLANTS. ARTHUR B. GOODSPEED and BERNHARD BESKOW, New York, N. Y., assignors to Industrial Development Company, New York, N. Y., a Corporation of New York. Filed Apr. 27, 1903. Renewed Apr. 9, 1906. Serial No. 310,742.

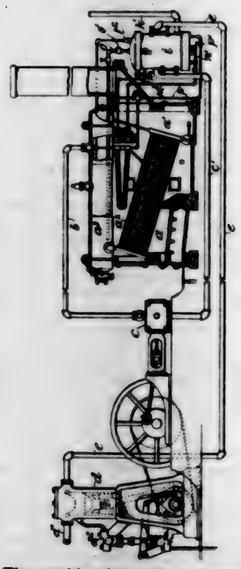

Claim.—1. The combination with a steam-boiler and an engine connected therewith, of means for delivering air under pressure to the boiler, means for heating the air before delivery to the boiler, and means for highly charging the air with aqueous vapor before delivery to the boiler, substantially as shown and described.

2. The combination of a steam-boiler and an engine connected therewith, of an air-compressor, connections therefrom to the boiler, means for heating the air before delivery to the boiler, and means for highly charging the air with aqueous vapor before delivery to the boiler, substantially as shown and described.

3. The combination with a steam-boiler and an engine connected therewith, of an air-compressor, connections therefrom to the boiler, means for heating the air before delivery to the boiler, means for highly charging the air with aqueous vapor before delivery to the boiler, and means for supplying water to the compressor to cool the same and for delivering the water heated in the compressor to the boiler, substantially as shown and described.

4. The combination with a steam-boiler and an engine connected therewith, of a wet air-compressor, means for supplying water to the compressor to cool the same, means for heating the air and water delivered by the compressor to cause the air to absorb aqueous vapor, and means for delivering the air charged with aqueous vapor and the water to the boiler, substantially as shown and described.

5. The combination with a steam-boiler and an engine connected therewith, of an air-compressor, a generator or charger to which the air is delivered in the presence of water, means for conducting the exhaust-steam from the engine to the generator or charger to heat the same, and means for delivering the air to the boiler, substantially as shown and described.

6. The combination with a steam-boiler and an engine connected therewith, of an air-compressor, a generator or charger to which the air is delivered in the presence of water, means for heating said generator or charger, a reheater located in proximity to the boiler, means for conducting the air from the generator or charger to the reheater and back from the reheater into the generator or charger in the presence of water, and means for conducting the air from the generator or charger to the boiler, substantially as shown and described.

7. The combination with a steam-boiler and an engine connected therewith, of a generator or charger comprising a separating-chamber, a recharging-chamber and means for heating the same, means for supplying air to the separating-chamber in the presence of water, a reheater located in proximity to the boiler, means for conducting the air from the separating-chamber to the reheater and back to the recharging-chamber in the presence of water, and means to deliver the air from the recharging-chamber to the boiler, substantially as shown and described.

8. The combination with a steam-boiler and an engine connected therewith, of a wet air-compressor, means for supplying water thereto, a generator or charger comprising a separating-chamber and a recharging-chamber, means to deliver air and water together from the compressor to the separating-chamber, a reheater located in proximity to the boiler, means to conduct the air from the separating-chamber to the reheater and back to the recharging-chamber in the presence of water, and means to deliver air from the recharging-chamber to the boiler, substantially as shown and described.

9. The combination with a steam-boiler and an engine connected therewith, of a generator or charger comprising a preheating-chamber, a separating-chamber, a recharging-chamber and a series of pipes and headers in the preheating-chamber, means to deliver exhaust-steam from the engine to the preheating-chamber, means to deliver air under pressure to said system of pipes and headers and thence to the separating-chamber in the presence of water, a reheater located in proximity to the boiler, means to conduct air from the separating-chamber to the reheater and back to the recharging-chamber in the presence of water, and means to deliver the air from the recharging-chamber to the boiler, substantially as shown and described.

10. A generator or charger for charging air with aqueous vapor, comprising a preheating-chamber, means for supplying steam to said preheating-chamber, a series of pipes and headers located in said preheating-chamber, means for supplying air and water to said system of pipes and headers, a separating-chamber to which said

series of pipes and headers is connected, a recharging-chamber, means to conduct water from the separating-chamber to the recharging-chamber, and means to conduct air from the separating-chamber to the recharging-chamber near the bottom thereof, substantially as shown and described.

11. The combination with a steam-boiler and an engine connected therewith, of a charger or generator, means to heat the same, means to deliver air under pressure to the generator or charger in the presence of water, means to conduct the air from said charger or generator to the boiler, and a check-valve incinded in said last-named means, substantially as shown and described.

848,028. ELECTRIC SWITCH. GERALD W. HART, Hartford, Conn., assignor to The Hart Manufacturing Co., Hartford, Conn., a Corporation of New Jersey. Filed June 25, 1906. Serial No. 323,194.

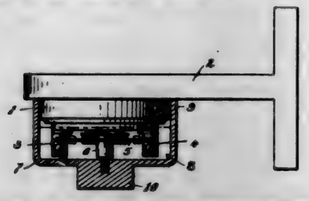

Claim.—1. An electric switch, comprising an insulating-piece, a terminal carried thereby, a rotatable switch-arm and an oil-containing receptacle surrounding the terminal and switch-arm and rotatable with the switch-arm.

2. In an electric snap-switch, a pair of terminals, a switch-arm, a rotatable pole-piece carrying said arm, and an oil-containing receptacle surrounding the terminals and switch-arm and rotatable with the switch-arm.

3. In an electric switch, an insulating-piece, a terminal carried thereby, a rotatable switch-arm rotatable in a substantially horizontal plane, an oil-containing receptacle surrounding the base, terminal and switch-arm, and arranged to hold oil to a level overstanding said horizontally-rotatable switch-arm, said receptacle being rotatably mounted and operatively connected with said switch-arm whereby when said receptacle is revolved, said switch-arm will be actuated.

848,029. INTERNAL-COMBUSTION ENGINE. FRIEDRICH A. HASELWANDER, Mannheim, Germany. Filed May 23, 1901. Serial No. 61,586.

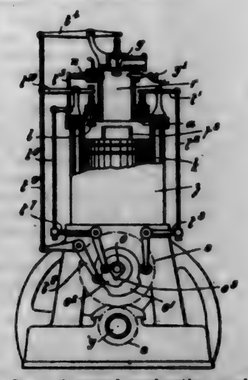

Claim.—1. In an internal-combustion engine, the combination with the working cylinder and piston of a charge-chamber open to the cylinder at one end, means for admitting working air and combustible, the one to the charge-chamber and the other to the cylinder, means for exhausting the waste gases, and further means for forming a separate and auxiliary mixture in the charge-chamber at the end thereof remote from the cylinder, the arrangement of the parts being such that by the explosion of the auxiliary mixture the separately-compressed air and combustible the one mainly in the cylinder and the other in the charge-chamber are mixed, substantially as described.

2. In an internal-combustion engine, the combination with the working cylinder and piston of a charge-chamber open to the cylinder at one end, means for admitting working air and combustible, the one to the charge-chamber and the other to the cylinder, means for exhausting the waste gases, further means for forming a separate and auxiliary mixture in the charge-chamber at the end thereof remote from the cylinder, and means for igniting said mixture, the arrangement of the parts being such that by the explosion of the auxiliary mixture the separately-compressed air and combustible, the one mainly in the cylinder and the other in the charge-chamber are mixed, substantially as described.

3. In an internal-combustion engine, the combination with the working cylinder and piston of a charge-chamber open to the cylinder at one end, means for admitting working air and combustible, the one to the charge-chamber and the other to the cylinder, means for exhausting the waste gases and further means for introducing to the charge-chamber at the end thereof remote from the cylinder a small quantity of a fluid such as will be capable of forming with a portion of the fluid already in said chamber separate and auxiliary explosive mixture, substantially as described.

4. In an internal-combustion engine, the combination with the working cylinder and piston of a charge-chamber open to the working cylinder at one end, means for admitting working air and combustible, the one to the charge-chamber and the other to the cylinder, means for exhausting the waste gases, further means for introducing to the charge-chamber at the end thereof remote from the cylinder a small quantity of fluid such as will be capable of forming with a portion of the fluid already in said chamber, a separate and auxiliary explosive mixture and means for igniting said mixture, substantially as described.

5. In an internal-combustion engine, the combination with the working cylinder and piston of a charge-chamber, means for admitting working air and combustible, the one to the charge-chamber and the other to the cylinder, means for exhausting the waste gases, a displacing device and means operatively connecting said displacing device with the working piston, and a passage leading from said displacing device to the charge-chamber, the arrangement and proportions of the parts being such that the fluid displaced by the displacing device is injected into the charge-chamber in which it forms an auxiliary explosive mixture with a portion of the fluid already in said chamber, substantially as described.

6. In an internal-combustion engine, the combination with the working cylinder and piston of a charge-chamber, means for igniting the mixture in said chamber, means for admitting working air and combustible, the one to the charge-chamber and the other to the cylinder, means for exhausting the waste gases, a displacing device and means operatively connecting said displacing device with the working piston, and a passage leading from said displacing device to the charge-chamber, the arrangement and proportions of the parts being such that the fluid displaced by the displacing device is injected into the charge-chamber in which it forms an auxiliary explosive mixture with a portion of the fluid already in said chamber, substantially as described.

7. In an internal-combustion engine, the combination with the working cylinder and piston of a charge-chamber, means for admitting working air and combustible, the one to the charge-chamber and the other to the working cylinder, means for exhausting the waste gases, a second or displacing cylinder and means connecting same to the working cylinder aforesaid, a piston in said second cylinder and means operatively connecting said piston to the working piston aforesaid, and means of communication between said second cylinder and the charge-chamber, the arrangement and proportions of the parts being such that fluid displaced by the second piston is injected into the charge-chamber in which it forms an auxiliary explosive mixture with the fluid already in said chamber, substantially as described.

8. In an internal-combustion engine, the combination with the working cylinder and piston of a charge-chamber, means for igniting gases in said chamber, means for admitting working air and combustible the one to the charge-chamber and the other to the working cylinder, means for exhausting the waste gases, a second or displacing cylinder and means connecting same to the working cylinder aforesaid, a piston in said second cylinder and means operatively connecting said piston to the working piston aforesaid, and means of communication between said second cylinder and the charge-chamber, the arrangement and proportions of the parts being such that fluid displaced by the second piston is injected into the charge-chamber in which it forms an auxiliary explosive mixture with the fluid already in said chamber, substantially as described.

9. In an internal-combustion engine, the combination with the working cylinder and piston of a charge-chamber, means for admitting working air and combustible, the one to the charge-chamber and the other to the working cylinder, means for exhausting the waste gases, a second or displacing cylinder and means connecting same to the working cylinder aforesaid, a piston in said second cylinder and means operatively connecting said piston to the working piston aforesaid, and means of communication between said second cylinder and the charge-chamber, the arrangement and proportions of the parts being such that fluid displaced by the second piston is injected into the charge-chamber in which it forms an auxiliary explosive mixture with the fluid already in said chamber, and that the exhausting means is opened shortly before the end of the working stroke and the waste gases are expelled by air admitted through the air-valve, substantially as described.

10. In an internal-combustion engine, the combination with the working cylinder and piston of a charge-chamber, a second or displacing cylinder and two passages connecting said two cylinders near the top and near the bottom respectively, a piston in said second cylinder and means operatively connecting said piston to the working piston aforesaid, means of communication between the second cylinder and the charge-chamber an air-inlet valve on the second cylinder, a combustible-inlet valve on the charge-chamber, and an exhaust-valve on the first cylinder, the arrangement and proportions of the parts being such that air displaced by the second piston is injected into the charge-chamber in which it forms an auxiliary explosive mixture with the combustible already in said chamber, and that the two pistons uncover the second opening between their cylinders at the end of the working stroke, at which time the air-inlet valve and the exhaust are opened, substantially as and for the object hereinbefore described.

11. In an internal-combustion engine, the combination with the working cylinder and piston of a charge-chamber, a second or displacing cylinder and two passages connecting said two cylinders near the top and near the bottom respectively, a piston in said second cylinder and means operatively connecting said piston to the working piston aforesaid means of communication between the second cylinder and the charge-chamber, an air-inlet valve on the second cylinder, a combustible-inlet valve on the charge-chamber, and an exhaust-valve on the first cylinder, and means for igniting the gases, the arrangements and proportions of the parts being such that air displaced by the second piston is injected into the charge-chamber in which it forms an auxiliary explosive mixture with the combustible already in said chamber, and that the two pistons uncover the second opening between their cylinders at the end of the working stroke, at which time the air-inlet valve and the exhaust are opened, substantially as and for the object hereinbefore described.

848,030. TOBACCO-POUCH. BENSON J. HEAD, Fort Worth, Tex., assignor of one-fourth to Charles J. Swasey, Fort Worth, Tex. Filed Aug. 13, 1906. Serial No. 330,363.

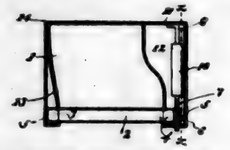

Claim.—1. A tobacco-pouch comprising a casing for containing tobacco, an oscillating trough journaled in the lower part of said casing and said casing opening into said trough, and a manually-operated push-plate for oscillating said trough to invert the same.

2. A tobacco-pouch comprising a casing for containing tobacco, an oscillating trough journaled in the lower part of said casing and said casing opening into said trough, means for oscillating said trough to invert the same, and a spring for returning said trough to its normal position.

3. A tobacco-pouch comprising a casing for containing tobacco, a trough journaled in the lower part of said casing, a pinion on one end of said trough, and a depressible rack for operating said pinion to invert said trough.

4. A tobacco-pouch comprising a casing for containing tobacco, a trough journaled in the lower part of said casing and said casing opening into said trough, a pinion on one end of said trough, a depressible rack for rotating said pinion to invert said trough, and means for returning said trough to its normal position.

5. A tobacco-pouch comprising a casing for containing tobacco, a trough journaled in the lower part of said casing and communicating with said casing, a pinion on one end of said trough, a vertically-movable rack engaging said pinion, a spring for holding said rack in its normal position, and means for preventing the tobacco from coming in contact with said spring and rack and pinion.

6. A tobacco-pouch comprising a casing for containing tobacco, a trough journaled in the lower part of said casing and said casing opening into said trough, a pinion on one end of said trough, a vertically-movable rack engaging said pinion, a spiral spring for holding said rack in its normally retracted position, a stationary casing and seat for said spring, said rack running through said spring-seat and casing and said spring being attached to said rack and resting on the bottom of its casing, a compartment for said rack and pinion, and a plate attached to the top of said rack and forming a cover for said compartment and movable vertically therein.

7. In a tobacco-pouch, the combination of a casing for containing tobacco, a trough journaled in the lower part of said casing, said casing opening into said trough, a rack and pinion for oscillating said trough for inverting the same, and a paper-pocket carried on the side of said casing.

848,031. PENCIL. ADOLF HENNIGER, Berlin, Germany. Filed Jan. 12, 1905. Serial No. 240,847.

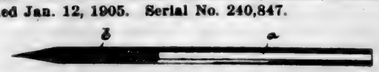

Claim.—1. A pencil for writing, drawing and similar purposes comprising a core and a mantle firmly inclosing same, said mantle containing starch containing vegetables in compressed condition preferably in combination with suitable cement and fibrous material.

2. A pencil for writing, drawing and similar purposes comprising a core and a mantle firmly inclosing same, said mantle containing dry residuum of vegetable bulbs in compressed condition preferably in combination with suitable cement and fibrous material.

3. A pencil for writing, drawing and similar purposes comprising a core and a mantle firmly inclosing same, said mantle containing dry residuum of potatoes in com-

pressed condition preferably in combination with suitable cement and fibrous material.

4. A pencil for writing, drawing and similar purposes comprising a core and a mantle firmly inclosing same, said mantle consisting of the compressed substance of potatoes in admixture with vegetable fibers of other origin and cementing material.

5. A pencil for writing, drawing and similar purposes comprising a core and a mantle firmly inclosing same, said mantle consisting of the compressed substance of potatoes in admixture with vegetable fibers of other origin and glue, wax, fat, oil or compounds.

6. A pencil for writing, drawing and similar purposes comprising a core and a mantle firmly inclosing same, said mantle consisting of the compressed substance of potatoes, at least a part of said potatoes being in boiled condition, in admixture with vegetable fibers of other origin and glue, wax, fat, oil or compounds.

848,032. DOUCHE-COT. JAMES H. HERMAN, Ambridge, Pa. Filed Feb. 6, 1906. Serial No. 299,846.

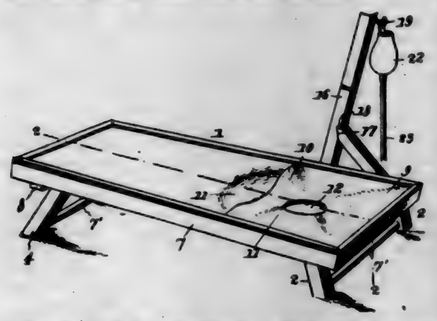

Claim.—1. The herein-described douche-cot comprising a frame consisting of rigid side bars connected by end bars, front and rear pairs of foldable legs for supporting said frame in an inclined position, a flexible covering for said frame having its surrounding edge attached to the side and end bars of said frame, said covering consisting of a rear section of fabric and a front section of waterproof material, the adjacent transverse edges of the two sections of said covering being united, said covering also having near its forward portion a concave depression and an aperture arranged in the bottom of said depression, and a transverse bar connecting and bracing the side bars of said frame and having its top formed with a depression to receive and support the depressed or concave portion of said covering, substantially as shown and described.

2. The herein-described douche-cot comprising a frame consisting of side bars connected by end bars, a suitable covering on said frame, foldable legs for supporting said frame, a supporting-standard pivoted at its inner or lower end upon the outer side of one of said side bars and formed with a V-shaped notch arranged intermediate its ends, a brace-bar pivoted at one of its ends upon the last-mentioned side bar of the frame and having a beveled or tapered end adapted to enter said V-shaped notch to support the standard in an upright position, a supporting-hook upon the upper end of said standard, and a hook arranged upon the last-mentioned side bar of the frame and adapted to support the free end of said standard when the latter is folded down parallel with the frame, substantially as shown and described.

848,033. APPARATUS FOR PROCESSING PACKAGED GOODS. ERNEST K. HOOD, Indianapolis, Ind., assignor of one-half to Arthur M. Hood, Indianapolis, Ind. Filed Dec. 4, 1906. Serial No. 346,302.

Claim.—1. In an apparatus for processing packaged goods, means for repeatedly moving the package axially and intermittently stopping the same suddenly so as to subject the same to axial shocks.

2. In an apparatus for processing packaged goods, means for repeatedly moving the package alternately in opposite directions and axially and intermittently stopping the same suddenly so as to subject the said package to alternate axial shocks.

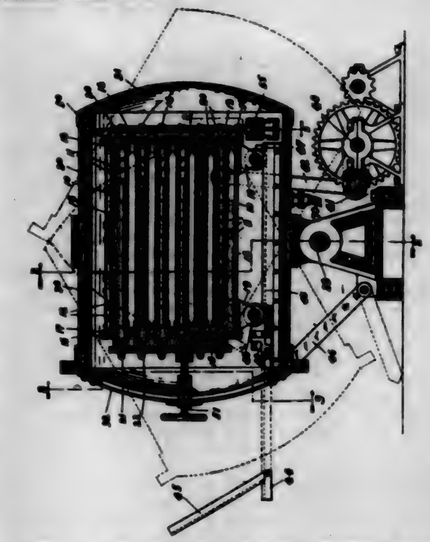

3. In an apparatus for processing packaged goods, means for alternately changing the axial inclination of the package and subjecting said package to axial shocks.

4. In an apparatus for processing packaged goods, means for intermittently changing the axial inclination of the package and subjecting said package to axial shocks alternately and in opposite directions.

5. In an apparatus for processing packaged goods, means for subjecting the package to a shock axially thereof, and means for rotating the package about its axis.

6. In an apparatus for processing packaged goods, means for subjecting the package to shocks axially thereof and alternating in direction, and means for rotating the package about its axis.

7. In an apparatus for processing packaged goods, means for intermittently changing the axial inclination of the package and subjecting said package to axial shocks, and means for rotating the package about its axis.

8. In an apparatus for processing packaged goods, means for intermittently changing the axial inclination of the package and subjecting said package to axial shocks alternately and in opposite directions, and means for rotating the package about its axis.

9. In an apparatus for processing packaged goods, the combination with a holder for receiving a package, of means for causing said package to slide axially in said holder and stop suddenly.

10. In an apparatus for processing packaged goods, the combination with a holder for receiving a package, of means for causing said package to slide axially in said holder and stop suddenly, and means for rotating the package about its axis.

11. In an apparatus for processing packaged goods, the combination with a holder for receiving the package and permitting same to slide axially, of abutments at the ends of said holder, means for varying the inclination of said holder whereby the package may slide axially in said holder and strike said abutments endwise.

12. In an apparatus for processing packaged goods, the combination with a holder for receiving the package and permitting same to slide axially, of abutments at the ends of said holder, means for varying the inclination of said holder whereby the package may slide axially in said holder and strike said abutments endwise, and means for rotating the package about its axis.

13. In an apparatus for processing packaged goods, the combination of a retort, means for rocking said retort vertically, a packaged holder in said retort and adapted to receive a package and permit the same to slide axially therein a material distance, and abutments arranged at the ends of said holder and adapted to suddenly arrest the sliding action of the package.

14. In an apparatus for processing packaged goods, the combination of a retort, means for rocking said retort vertically, a package-holder in said retort and adapted to receive a package and permit the same to slide axially therein a material distance, abutments arranged at the ends of said holder and adapted to suddenly arrest the sliding action of the package, and means for rotating said holder to cause a rotation of the package about its axis.

15. In an apparatus for processing packaged goods, the combination of a retort, a car adapted to be received in said retort, a plurality of package-holders carried by said car and adapted each to receive a series of packages end to end, abutments arranged at the ends of said carriers and adapted to suddenly arrest the axial sliding of the packages within the holders, and means for vertically rocking the retort.

16. In an apparatus for processing packaged goods, the combination of a retort, a car adapted to be received in said retort, a plurality of rotatable package-halders carried by said car and adapted each to receive a series of packages end to end, abutments arranged at the ends of said carriers and adapted to suddenly arrest the axial sliding of the packages within the holders, means for rotating said holders, and means for vertically rocking the retort.

848,034. DOOR-LATCH. CHARLES HUSEMANN, St. Louis, Mo. Filed Jan. 2, 1906. Serial No. 294,095.

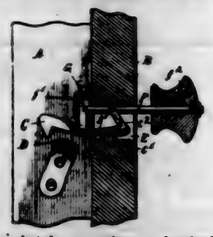

Claim.—1. In a latch, a casing, a hooked lever pivoted in the casing, a rod slidably arranged in the casing and connected with said lever, a dog pivoted on one end of said rod, and adapted to be turned to prevent the retraction of the rod and also to prevent the operation of the rod, means for manually operating said rod, and a keeper adapted to be engaged by said lever.

2. In a latch, a casing, a hooked and bent lever pivoted in the casing, a rod slidably mounted in the casing, a knob on said rod, a dog pivoted on and frictionally engaging said rod and adapted to bear against said casing, a link connecting said rod and lever and a spring engaging the bent portion of said lever.

848,035. TROLLEY-WIRE SLEEVE. CHARLES W. KETTEMAN, Dayton, Ohio. Filed Oct. 29, 1906. Serial No. 341,001.

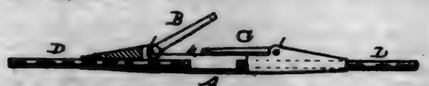

Claim.—The chambered sleeve with end orifices, the ears having inclines external to their tops, the eccentric-arms pivotally held within said ears, and when in engagement are nearly in line with said ears, substantially as and for the purpose set forth.

848,036. JOINER'S CLAMP. AUGUST KRÜGER, Köslin, Germany. Filed June 17, 1905. Serial No. 265,650.

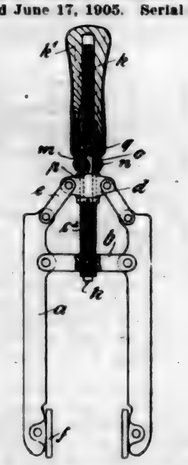

Claim.—1. A joiner's clamp comprising a collar smoothly bored, a pair of jaws or limbs, a pair of links pivotally connecting one end of each jaw to an opposite end of said collar, a single link connecting the jaws intermediate their ends, a handle, a hollow screw-spindle carried by the handle swiveled in the collar and threaded through the single connecting-link, a solid spindle within the hollow spindle and projecting beyond the end thereof, and means whereby the hollow spindle and solid spindle may be simultaneously actuated, or only the hollow spindle actuated, substantially as described.

2. A joiner's clamp comprising a collar smoothly bored, a pair of jaws or limbs a pair of links pivotally connecting one end of each jaw to an opposite end of said collar, a single link connecting the jaws intermediate their ends, a handle having a sleeve with teeth formed in its lower edge, a hollow screw-spindle carried by the handle swiveled in the collar and threaded through the single connecting-link, a solid spindle within the hollow spindle and projecting beyond the end thereof, a sleeve connected to the solid spindle and having teeth in its upper edge, and means for engaging or disengaging these teeth with those of the handle-sleeve, substantially as described.

848,037. CENTRIFUGAL MACHINE. BIRGER LJUNGSTRÖM, Stockholm, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden, a Company. Filed Sept. 22, 1905. Serial No. 279,650.

Claim.—A scraping device for centrifugal machines for separating solid matter from liquids comprising scoops and a rotary support therefor adapted to be inserted within the bowl, said scoops being held in permanent relation to

the rotary support in such position that relatively to a plane through the radius and the axis of rotation of the support their bottoms are situated respectively deeper than their edges.

848,038. BOOT TREE AND STRETCHER. FRANCIS A. MACKENZIE, Louisville, Ky. Filed Nov. 8, 1906. Serial No. 342,516.

Claim.—1. A combined boot tree and stretcher embodying a forward and a rear section; said forward section comprising a pair of movable members connected together, each of said members having its inner face provided with a longitudinally-extending groove having a beveled portion and a shoulder, a longitudinally-shiftable spreader-arm seated in said grooves, and adapted to engage the beveled portions and shoulders, a longitudinally-shiftable actuating-bar seated in said rear section, means for hinging the bar and arm together, and means engaging the bar for shifting it.

2. A combined boot tree and stretcher embodying a forward and a rear section, said forward section comprising a pair of movable members, a longitudinally-shiftable spreader-arm seated in said members, a longitudinally-shiftable toothed actuating-bar seated in said rear section, means for pivotally connecting the arm to the bar, means engaging with said bar for shifting it, and a stop for limiting the movement of the bar in either direction.

3. A combined boot tree and stretcher embodying a forward and a rear section, said forward section comprising a pair of movable members, longitudinally-shiftable spreader-arm seated in said members, a longitudinally-shiftable toothed actuating-bar seated in said rear section, means for pivotally connecting the arm to the bar, means engaging with said bar for shifting it and a stop for limiting the movement of the bar in either direction, means for connecting the said members together at the rear thereof, and a combined connecting means and stop for the forward end of said members.

4. A combined boot tree and stretcher embodying a forward and a rear section, said forward section comprising a pair of angularly-adjustable members, means for connecting the said members together at the rear thereof a combined connecting means and stop for the forward end of said members, a longitudinally-shiftable spreader-arm seated in said members, a longitudinal shiftable actuating-bar seated in said rear section, means for pivotally connecting the arm to the bar, and means engaging said bar for shifting it.

5. A combined boot tree and stretcher embodying a forward and a rear section, a spreader-arm for the forward section, said arm having a bifurcated rear end, an actuating-bar seated in the rear section and having its forward end extending in and pivotally connected to the bifurcated end of said arm, said bar having a toothed and bifurcated rear end, and means engaging with said rear end of said bar for shifting it in both directions.

6. A combined boot tree and stretcher comprising a forward and a rear section, a spreader-arm for said forward section, said arm having a spear-shape forward end and a bifurcated rear end, an actuating-bar seated in said rear section and having its forward end extending in and pivotally connected to the bifurcated end of said arm, said bar having a toothed and bifurcated rear end and means engaging with the rear end of said bar for shifting it in both directions.

7. A combined boot tree and stretcher embodying a forward and a rear section, a spreader-arm for the forward section, said arm having a bifurcated rear end, an actuating-bar seated in the rear section and having its forward end extending in and pivotally connected to the bifurcated end of said arm, said bar having a toothed and bifurcated rear end, and means engaging with said rear end of said bar for shifting it in both directions, and means for limiting the spreading movement of said forward section.

8. A combined boot and tree stretcher comprising a forward and a rear section, a spreader-arm for said forward section, said arm having a spear-shape forward end and a bifurcated rear end, an actuating-bar seated in said rear section and having its forward end extending in and pivotally connected to the bifurcated end of said arm, said bar having a toothed and bifurcated rear end and means engaging with the rear end of said bar for shifting it in both directions, and means for limiting the spreading movement of said forward section.

9. A combined boot tree and stretcher embodying a forward and a rear section, a spreader-arm for the forward section, said arm having a bifurcated rear end, an actuating-bar seated in the rear section and having its forward end extending in and pivotally connected to the bifurcated end of said arm, said bar having a toothed and bifurcated rear end, and means engaging with said rear end of said bar for shifting it in both directions, and a combined stop and retaining means for said bar.

10. A combined boot tree and stretcher comprising a forward and a rear section, a spreader-arm for said forward section, said arm having a spear-shape forward end and a bifurcated rear end of an actuating-bar seated in said rear section and having its forward end extending in and pivotally connected to the bifurcated end of said arm, said bar having a toothed and bifurcated rear end and means engaging with the rear end of said bar for shifting it in both directions, and a combined stop and retaining means for said bar.

848,039. SILK-RECLAIMING MACHINE. FREDERICK W. MIDGLEY, Jersey City, N. J. Filed Dec. 27, 1904. Serial No. 238,279.

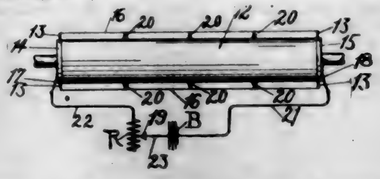

Claim.—1. In combination, a plurality of sections of card-clothing disposed at practically uniform intervals, and means adapted to cut the material held by said card-clothing, said means comprising a heated member, and means for moving said heated member into an interval between sections of card-clothing whereby the material is severed.

2. In combination, a plurality of sections of card-clothing disposed at practically uniform intervals, a heated member, and means for moving said member into an interval between sections of card-clothing, whereby the material held by said card-clothing is severed.

3. In combination, a plurality of sections of card-clothing disposed at practically uniform intervals, a heated member, means for moving said member into an interval between sections of card-clothing, and means for passing a current of electricity through said member to heat the same, whereby the material held by said card-clothing is severed.

4. In combination, a plurality of sections of card-clothing disposed at intervals, a heated member, and means for moving said member into an interval between sections of card-clothing, whereby the material held by said card-clothing is severed.

5. In combination, card-clothing for operating upon fibrous material, a heated member, and means for operating said member to bring the same into proximity to or contact with said material, whereby said material is severed.

6. In combination, a cylinder, card-clothing disposed upon the periphery of said cylinder for operating upon fibrous material, a heated member, and means for periodically bringing said member into proximity to or contact with the material held by said card-clothing, whereby said material is severed.

7. In combination, a cylinder, card-clothing disposed upon the periphery of said cylinder for operating upon fibrous material, a heated member, means for heating said member by electrical energy, and means for bringing said member into proximity to or contact with said material, whereby said material is severed.

8. In combination, a cylinder, sections of card-clothing disposed at intervals upon its periphery, a heated member, and means for moving said member into an interval between sections of card-clothing, whereby the material held by said card-clothing is severed.

9. In combination, a cylinder, sections of card-clothing disposed at intervals upon the periphery thereof, a wire, means for electrically heating said wire, and means for moving said wire into an interval between sections of card-clothing, whereby the material held by said card-clothing is severed.

10. In combination, a cylinder, sections of card-clothing disposed at intervals upon the periphery thereof, a co-operating cylinder, a heated member carried by said co-operating-cylinder, said coöperating cylinder being adapted to rotate said heated member to move the same into an interval between sections of card-clothing, whereby the material held by said card-clothing is severed.

11. In combination, a cylinder, sections of card-clothing disposed at intervals upon the periphery thereof, a co-operating cylinder, a heated member carried thereby, means for passing an electric current through said member to heat the same, said coöperating cylinder being adapted to move said heated member into an interval between sections of card-clothing, whereby the material held by said card-clothing is severed.

12. In combination, a rotating cylinder, sections of card-clothing disposed at intervals upon the periphery thereof, a coöperating cylinder, heated members carried thereby, said coöperating cylinder being adapted to move said heated members in succession into intervals between sections of card-clothing, whereby the material held by said card-clothing is severed into desired lengths.

13. In combination, a cylinder, sections of card-clothing disposed at intervals upon the periphery thereof, a co-operating cylinder, a plurality of wires supported thereby, means for passing electric current through said wires to heat the same, said coöperating cylinder being adapted to move said wires in succession into intervals between sections of said card-clothing, whereby the material held by said card-clothing is severed.

14. In mechanism for operating upon fibrous materials, a cylinder, a conductor thereon, yielding supports for said conductor, and means for passing an electric current through said conductor to heat the same.

15. In mechanism for operating upon fibrous materials, a cylinder, supports thereon, resilient means permitting movement of said supports with respect to said cylinder, a conductor carried by said supports, and means for passing an electric current through said conductor to heat the same.

848,040. STREET-SWEEPER. ARTHUR R. MONETTE, New York, N. Y. Filed Feb. 20, 1906. Serial No. 302,026.

Claim.—1. A street-sweeper having a brush and means for rotating and vibrating said brush, substantially as described.

2. A street-sweeper having a rotary brush means for vibrating said brush and means for raising and lowering said brush, without interfering with its rotary and vibratory movements, substantially as described.

3. A street-sweeper having a rotary brush and means for simultaneously rotating and vibrating said brush and elevating the sweepings collected by said brush, substantially as described.

4. A street-sweeper comprising a rotary brush, means for rotating said brush, and means independent from the means for rotating said brush for imparting a vibratory motion thereto, substantially as described.

5. A street-sweeper comprising a frame, a shaft mounted in said frame, arms pivoted to said shaft, levers pivoted to said arms, a brush having a shaft mounted in the ends of said levers, means for rotating said brush and means for imparting a vibratory movement to said brush through said levers, substantially as described.

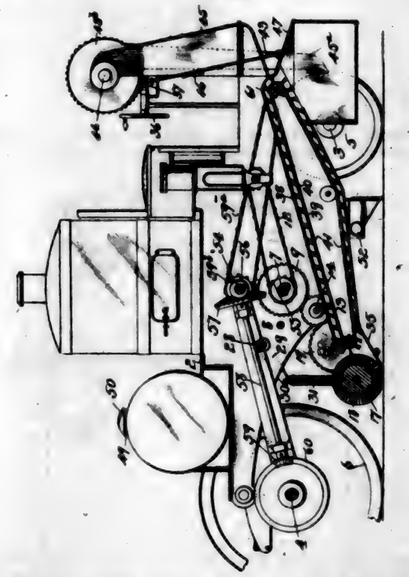

6. A street-sweeper comprising a frame, a shaft mounted in said frame, arms pivoted to said shaft having slots, levers pivoted to said arms, means for vibrating said levers, a brush provided with a shaft having its ends extending through said slots and mounted in the ends of said levers and means for operating said brush, substantially as described.

7. A street-sweeper comprising a frame, a shaft mounted in said frame, arms pivoted to said shaft, levers pivoted to said arms, a brush having a shaft mounted in the lower ends of said levers, means for operating said brush, a shaft having disks at each end with pins eccentrically arranged thereon, links operatively connecting the upper ends of said levers with the pins of the disks, and means for operating the shaft having the disks, substantially as described.

8. A street-sweeper comprising a frame, arms pivoted thereto having elongated slots through their ends, means for raising and lowering said arms, levers pivoted to said arms, a shaft carrying a brush mounted in the lower ends of said levers, means for operating said brush, links pivoted to the upper ends of said levers, eccentrics connected to said links, and means for operating said eccentrics and causing the brush to vibrate, substantially as described.

9. A street-sweeper comprising a brush, means for rotating said brush and means for imparting a vertical vibratory motion to said brush, substantially as described.

848,041. PLOWSHARE. EDWARD B. MURPHY, Blackwater, Mo. Filed June 8, 1906. Serial No. 320,834.

Claim.—A plowshare having a recess with a rear wall extending at an acute angle to the bottom thereof, and a blade fitted detachably in said recess and having a beveled back edge engaging the rear wall of the recess.

848,041.

848,042. CARD-TABLE. EDITH P. MUSGRAVE, Boston, Mass. Filed May 11, 1906. Serial No. 316,254.

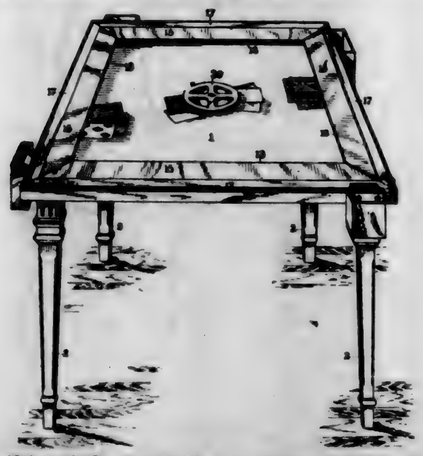

Claim.—1. In a card-table, the combination of the top surface of the table; a member which overlies the top surface of the table, along the edge portion thereof; and resilient means which are located between said member, and said top surface, and which permit the edges of a playing-card to be moved in flat position along the surface of the table, and beneath said overlying member, whereby a playing-card may be yieldingly retained upon the table.

2. In a card-table, the combination of the top surface of the table; a resilient member which overlies the top surface of the table; and elastic means mounted in the table-top, for the purpose of coöperating with the overlying resilient member, and thus yieldingly to retain a card upon the table-top.

3. In a card-table, the combination of the top surface of the table; a member which overlies the top surface of the table; and resilient means which are located between said member and said top surface, and which permit the edges of a playing-card to be moved in flat position along the surface of the table to be yieldingly retained thereby; and like means located at the center of the table beneath which the edges of the cards may be inserted and moved in like manner, and the card thus yieldingly retained at the center of the table.

4. In a card-table, the combination of the top surface of the table; a resilient member which overlies the top surface of the table; elastic means mounted in the table-top for the purpose of coöperating with the overlying resilient member, and thus yieldingly to retain a card upon the table-top; a member which is located at the center of the table, and which overlies the top surface of the table; and resilient means which are located between the said member and said top surface of the table, beneath which the edges of the playing-cards may be inserted, and the cards thus be yieldingly retained at the center of the table.

5. In a card-table, a top; a card-retaining member consisting of a resilient metal portion; a base portion, provided with slots; means engaging said slots whereby the base portion, and hence the resilient portion, may be so adjusted and secured to the table-top, that the resilient portion will engage the surface of the top with the tension desired to retain a card upon the table-top.

848,043. CLOSET-SEAT. RALPH MCCORD and CLARENCE O. CUNNINGHAM, St. Louis, Mo. Filed May 11, 1906. Serial No. 316,316.

Claim.—1. In combination with a closet-seat, a sheet-metal lid having a reinforcing bead or groove, the margin of the sheet being bent inward against the body of the sheet and brought with its free edge into the groove aforesaid, substantially as set forth.

2. A hollow sectional closet-seat composed of an upper convex member and a plane bottom member coupled thereto and forming a hollow shell therewith, and an inner corrugated stiffening member or filler for reinforcing the convex member of the shell, substantially as set forth.

848,044. BRACKET. CHARLES P. PATRICK, Boonton, N. J. Filed Oct. 25, 1906. Serial No. 340,537.

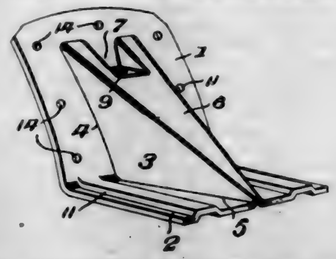

Claim.—1. A bracket of the class described formed of a single piece of metal comprising wings disposed at an angle to each other, and a substantially conical brace member formed on the surface of said wings the widest part of said brace being upon one wing and the narrowest part thereof on the opposite wing.

2. A bracket of the class described formed from a single piece of metal comprising wings disposed at an angle from each other, a brace-section formed by striking up a portion of said wings, the two sides and face of said brace converging to a point at one end, there being a pocket formed in said brace-section and means to reinforce said wings at each side of the brace-section.

3. A bracket of the class described comprising wings disposed at an angle to each other, a substantially conical brace-section formed by striking up a portion of said wings, there being a pocket formed in said brace-section, the floor of said pocket being substantially parallel with one of said wings, said floor having an opening therein to receive a bolt.

4. A bracket of the class described comprising wings, a hollow substantially conical brace-section integral with said wings, the side and upper walls of which are triangular in elevation, there being a pocket formed in the upper wall of said brace-section and having an opening therein to receive a bolt.

5. A bracket of the class described comprising angular wings, a brace-section integral with said wings, said brace-section being substantially rectangular in cross-section and having a pocket formed by depressing a portion of the face of said brace-section, the floor of which is in the same plane with one of said wings.

6. A bracket of the class described formed of a single piece of metal comprising angular wings, a tapered brace-section struck from the surface of said wings, there being a pocket formed at the base of said tapered brace-section, the floor surface of said pocket being at right angles to the surface of the wing containing the base of said brace-section, said floor having an opening therein to receive a bolt.

7. A bracket of the character described comprising angular wings, a hollow tapered brace-section integral with said wings, there being a pocket in the face of said brace-section, said pocket being substantially V-shaped in longitudinal section, and having an opening therein to receive a bolt.

848,045. LIGHTNING-ARRESTER. JAMES H. PEARSON, Bloomfield, Ind. Filed Jan. 9, 1906. Serial No. 295,291.

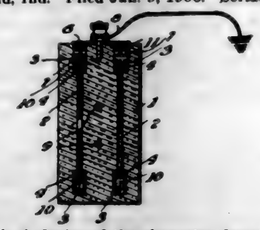

Claim.—1. A device of the character described, comprising a block of insulating material provided with line-terminals and columns of expansible conducting media connecting the same, and ground-terminals secured to said block, said ground-terminals being in communication with the said columns and normally spaced therefrom.

2. A device of the character described, comprising a fuse-block provided with longitudinally-extending capillary passages and chambers communicating therewith at both ends, line-terminals secured to said block and extending into said chambers, columns of expansible conducting media in said passages and chambers, and ground-terminals extending into said chambers and normally spaced from the columns of mercury therein.

3. A device of the character described, comprising a block of insulating material provided with two capillary passages enlarged at both ends whereby to form four chambers, columns of mercury in said passages and chambers, line-terminals secured to said block and each extending into one of said chambers in contact with the mercury therein, and a ground-plate secured to the top of said block and provided with two terminals each of which extends into the adjacent mercury-chambers with its ends normally spaced from the mercury therein, as and for the purpose set forth.

848,046. AUTOMOBILE-WHEEL. ELWOOD C. PHILLIPS, Chicago, Ill., assignor of one-half to Alvarado T. Benson, Chicago, Ill. Filed Nov. 23, 1906. Serial No. 344,695.

Claim.—1. In a pneumatic cushioned wheel for automobiles or other vehicles, the combination of a central hub having an annular guide-flange and a circular clamp-rib, of a clamp-ring having an annular guide-flange and a circular clamp-rib, a pneumatic casing between said central hub and clamp-ring and having its overlapping lips or meeting edges clamped between said circular clamp-ribs on the hub and clamp-ring, a movable spoke-ring fitting between said guide-flanges on the hub and clamp-ring and bearing against said pneumatic casing, said clamp-ring and spoke-ring having also provision for receiving between them a substitute solid supporting-ring, a sectional bearing-plate interposed between said pneumatic casing and said spoke-ring, and provided with projections engaging recesses in the spoke-ring, a wheel-rim, spokes connecting the wheel-rim with the spoke-ring, a rubber or elastic tire and a metallic flanged rim for the tire on the wheel-rim, substantially as specified.

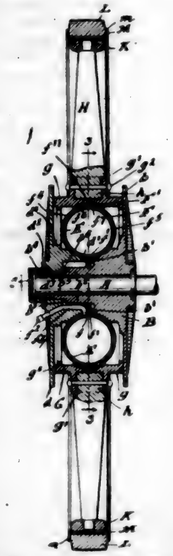

2. In a pneumatic cushioned wheel for automobiles or other vehicles, the combination of a central hub having a guide-flange and a circular clamp-rib, of a clamp-ring having an annular guide-flange and a circular clamp-rib, a pneumatic casing between said hub and clamp-ring having its overlapping lips or meeting edges embraced between said clamp-ribs and a movable spoke-ring fitting between said guide-flanges and bearing against the casing, substantially as specified.

3. In a pneumatic cushioned wheel for automobiles or other vehicles, the combination of a central hub having a guide-flange and a circular clamp-rib, of a clamp-ring having an annular guide-flange and a circular clamp-rib, a pneumatic casing between said hub and clamp-ring having its overlapping lips or meeting edges embraced between said clamp-ribs and a movable spoke-ring fitting between said guide-flanges and bearing against the casing, and a sectional bearing plate or ring interposed between said spoke-ring and said pneumatic casing, substantially as specified.

4. In a pneumatic cushioned wheel for automobiles or other vehicles, the combination of a central hub having a guide-flange and a circular clamp-rib, of a clamp-ring having an annular guide-flange and a circular clamp-rib, a pneumatic casing between said hub and clamp-ring having its overlapping lips or meeting edges embraced between said clamp-ribs and a movable spoke-ring fitting between said guide-flanges and bearing against the casing, the sections of said bearing plate or ring being secured to the casing, substantially as specified.

5. In a pneumatic cushioned wheel for automobiles or other vehicles, the combination of a central hub having a guide-flange and a circular clamp-rib, of a clamp-ring having an annular guide-flange and a circular clamp-rib, a pneumatic casing between said hub and clamp-ring having its overlapping lips or meeting edges embraced between said clamp-ribs and a movable spoke-ring fitting between said guide-flanges and bearing against the casing, the sections of said bearing plate or ring being secured to the casing, and provided with projections engaging recesses with which the spoke-ring is provided, substantially as specified.

6. In a pneumatic cushioned wheel for automobiles or other vehicles, the combination of a central hub having a

guide-flange and a circular clamp-rib, of a clamp-ring having an annular guide-flange and a circular clamp-rib, a pneumatic casing between said hub and clamp-ring having its overlapping lips or meeting edges embraced between said clamp-ribs and a movable spoke-ring fitting between said guide-flanges and bearing against the casing, said spoke-ring being composed of two parts or members riveted together and provided with spoke-sockets embracing the spokes, substantially as specified.

7. In a pneumatic cushioned wheel for automobiles or other vehicles, the combination of a central hub having a guide-flange and a circular clamp-rib, of a clamp-ring having an annular guide-flange and a circular clamp-rib, a pneumatic casing between said hub and clamp-ring having its overlapping lips or meeting edges embraced between said clamp-ribs and a movable spoke-ring fitting between said guide-flanges and bearing against the casing, said clamp-ring and spoke-ring being provided with annular shoulders for receiving a supplemental or substitute solid supporting-ring, substantially as specified.

8. In a pneumatic cushioned wheel for automobiles or other vehicles, the combination of a central hub having a guide-flange and a circular clamp-rib, of a clamp-ring having an annular guide-flange and a circular clamp-rib, a pneumatic casing between said hub and clamp-ring having its overlapping lips or meeting edges embraced between said clamp-ribs and a movable spoke-ring fitting between said guide-flanges and bearing against the casing, and a substitute or supplemental solid supporting-ring interposed between the clamp-ring and the spoke-ring, substantially as specified.

9. In a wheel, the combination with a central hub having a circular clamp-shoulder, of a clamp-ring having a circular clamp-shoulder and a pneumatic casing having its overlapping lips or meeting edges embraced between said circular clamp-shoulders on the hub and clamp-ring, substantially as specified.

10. In a wheel, the combination with a central hub having a circular clamp-shoulder, of a clamp-ring having a circular clamp-shoulder and a pneumatic casing having its overlapping lips or meeting edges embraced between said circular clamp-shoulders on the hub and clamp-ring and a movable spoke-ring fitting between the hub and clamp-ring and bearing against the pneumatic casing, substantially as specified.

11. In a wheel, the combination with a central hub having a circular clamp-shoulder, of a clamp-ring having a circular clamp-shoulder and a pneumatic casing having its overlapping lips or meeting edges embraced between said circular clamp-shoulders on the hub and clamp-ring and a movable spoke-ring fitting between the hub and clamp-ring and bearing against the pneumatic casing and a clamp-nut threaded upon the hub and bearing against the clamp-ring, substantially as specified.

12. In a pneumatic cushioned wheel for automobiles or other vehicles, the combination of a central hub having a guide-flange and a circular clamp-rib, of a clamp-ring having an annular guide-flange and a circular clamp-rib, a pneumatic casing between said hub and clamp-ring having its overlapping lips or meeting edges embraced between said clamp-ribs and a movable spoke-ring fitting between said guide-flanges and bearing against the casing and a clamp-nut threaded upon the hub and bearing against the clamp-ring, substantially as specified.

13. The combination with a central hub, of a clamp-ring, a pneumatic casing, a spoke-ring and a sectional bearing-plate interposed between the casing and the spoke-ring, substantially as specified.

14. The combination with a central hub, of a clamp-ring, a pneumatic casing, a spoke-ring and a sectional bearing-plate interposed between the casing and the spoke-ring, said sectional bearing-plate and said spoke-ring having interengaging holding devices to prevent one from slipping in respect to the other, substantially as specified.

15. The combination with a central hub, of a clamp-ring, a pneumatic casing, a spoke-ring, and a sectional bearing-plate interposed between the casing and the spoke-ring, said sectional bearing-plate and said spoke-ring having interengaging holding devices to prevent one from slipping in respect to the other, and said casing being secured to said sectional bearing plate or ring, substantially as specified.

16. The combination with a central hub, of a clamp-ring, a pneumatic casing comprising two strips having abutting edges at the outer periphery of the casing, a sectional bearing-plate secured to said casing-strips, and a spoke-ring bearing against the casing, substantially as specified.

17. The combination with a central hub, of a clamp-ring, a pneumatic casing comprising two strips having abutting edges at the outer periphery of the casing, a sectional bearing-plate secured to said casing-strip, and a spoke-ring bearing against the casing, said spoke-ring and bearing-plate having interengaging holding devices, substantially as specified.

18. In a wheel for automobiles or other vehicles, the combination of a hub provided with an annular flange or plate having a circular clamp rib or shoulder, of a movable clamp ring or plate having a circular clamp rib or shoulder, a pneumatic casing between said hub flange or plate and said clamp ring or plate, and having its overlapping connecting edges clamped between said circular ribs or shoulders, a movable spoke-ring fitting between said hub flange or plate and said clamp ring or plate and bearing aginst the pneumatic casing, a rim, a cushion-tire and a channel on the rim for the tire, substantially as specified.

848,047. ELECTRIC-CABLE SPLICING AND DISTRIBUTING BOX. HENRY E. PROCUNIER, Oak Park, Ill. Filed Feb. 6, 1905. Serial No. 244,315.

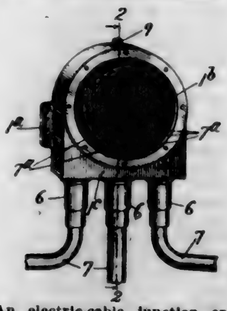

Claim.—1. An electric-cable junction or splicing box having at the bottom a plurality of cable-entrances and a pocket into which said entrances lead, and through which the cables may extend upwardly to their junctions, said box having a lateral aperture opposite the cable-junctions whose lower margin constitutes the upper limit of the pocket; nipples connected to the box at the cable-entrances having each at the upper part an annular solder-cavity opening at the upper end into the pocket and extending below the bottom of the box within an exteriorly-exposed portion of the nipple, the cable being attached to the nipple by solder in said cavity.

2. An electric-cable-splicing box having at the bottom a pocket and a plurality of cable-entrances leading into the bottom of the pocket and through which cables may extend up into the pocket, said box having a lateral opening above the pocket through which the cables are accessible for splicing, and an air-tight closure for such lateral opening, the box having at the upper part a vent-aperture and a removable plug for closing the same.

848,048. HAIR-PIN. ROSINA I. PRYCE-JONES, Newtown, England. Filed Feb. 24, 1906. Serial No. 302,761.

Claim.—The hair-pin herein described comprising two prongs parallel throughout their length, said prongs being straight from the top to a point near their extremities, where they are bent laterally at an obtuse angle and in such a manner that the bent extremities and body of the prongs are in the same plane.

848,049. FOLDING CLOTHES-REEL. WILLIAM H. RICHMOND, Mount Pleasant, Mich. Filed July 22, 1905. Serial No. 270,754.

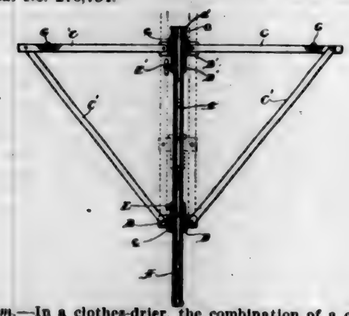

Claim.—In a clothes-drier, the combination of a central upright support consisting solely of a length of metal pipe of uniform diameter and adapted to be readily driven into the ground, said pipe being provided at its upper end with screw-threads and at a point remote from said end with a threaded aperture, an internally-threaded annulus screwed upon the threads of the pipe, an upper and a lower sleeve mounted on and slidable the full length of the central support, the upper sleeve being provided at its upper end with an annular flange designed to abut against the threaded annulus, and the lower sleeve being provided at its lower end with an annular flange, upper and lower hubs rotatably supported on the sleeves and arranged to abut against the annular flanges thereon, clothes-supporting arms pivoted to the upper hub, braces pivoted at their lower ends to the lower hub and at their upper ends intermediately to the arms, and set-screws passing through the sleeves, the lower set-screw being designed, when the arms are extended, to take into the threaded aperture in the central pipe.

848,050. VENTILATOR. WILLIAM D. ROBINSON, Traverse City, Mich. Filed May 9, 1906. Serial No. 315,944.

Claim.—1. In a ventilator the combination with a casing having an apertured outer wall and top constituting an inlet and an outlet respectively; of an inclined bottom within the casing having outlets at its lower edge, said bottom having an irregular surface, and means mounted upon the bottom for controlling communication between the inlet and outlet walls.

2. In a ventilator the combination with a casing having an apertured outer wall and top constituting an inlet and an outlet respectively; of an inclined bottom within the casing having outlets at its lower edge, said bottom having an irregular surface, and a damper movably mounted upon the bottom and adapted to control communication between the inlet and outlet walls.

3. In a ventilator the combination with a casing having an apertured outer wall and an apertured top constituting an inlet and an outlet respectively, of an inclined bottom within the casing having outlet-openings at its lower edge said bottom being provided with an irregular surface, a damper hinged upon the bottom and adapted to control communication between the inlet and outlet and manipulating means connected to the damper and extending from the casing.

4. In a ventilator the combination with a casing having an apertured outer wall and top constituting an inlet and an outlet respectively; of means within the casing for controlling communication between said inlet and outlet and heads detachably mounted upon the ends of the casing and adapted to engage the sides of a window-frame.

5. In a ventilator the combination with a casing having an apertured outer wall and top constituting an inlet and an outlet respectively; of means interposed between said inlet and outlet for controlling communication therebetween, a head slidably and detachably mounted upon each end of the casing and adapted to overlap said end and means upon each head for engaging the sides of a window-frame.

6. In a ventilator the combination with a casing having an apertured outer wall and top constituting an inlet and an outlet respectively; of a screen-lining for said top, an inclined bottom within the casing having outlet-openings at its lower edge, said bottom provided with an irregular upper surface, a damper hinged upon the bottom and extending longitudinally of the casing, means for manipulating the damper to control communication between the inlet and outlet, heads slidably mounted upon and overlapping the ends of the casing and means on said heads for engaging the sides of a window-frame.

848,051. TOOL FOR CUTTING AND GROOVING FLAT CHAIN-LINK BLANKS. WILLIAM SCHENK, Jersey City, N. J. Filed Nov. 17, 1906. Serial No. 343,808.

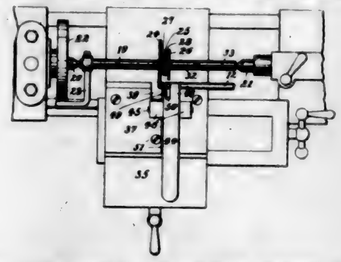

Claim.—1. In a tool of the character described, a spindle, a groove-cutter mounted thereon, a spaced saw mounted on the spindle at one side of the groove-cutter, and a spaced gage mounted on the spindle at the other side of said groove-cutter, substantially as specified.

2. In a tool of the character described, a spindle, a groove-cutter mounted thereon, a spaced saw mounted on the spindle at one side of the groove-cutter, a spaced gage mounted on the spindle at the other side of the groove-cutter, and washers intermediate the groove-cutter and the gage and saw, substantially as specified.

3. In a tool of the character described, a spindle, a groove-cutter mounted thereon, a spaced saw mounted on the spindle at one side of the groove-cutter, and a spaced gage mounted on the spindle at the other side of said groove-cutter, the diameter of the saw being greater than that of the groove-cutter, substantially as specified.

4. In a tool of the character described, a spindle, a groove-cutter mounted thereon, a spaced saw mounted on the spindle at one side of the groove-cutter, and a spaced gage mounted on the spindle at the other side of said groove-cutter, the diameter of the saw being greater than that of the groove-cutter, and the diameter of the gage being greater than that of the saw, combined with a work-holder having a slotted rear edge adapted to contact with the gage, substantially as specified.

5. In a tool of the character described, a spindle, a groove-cutter mounted thereon, a spaced saw mounted on the spindle at one side of the groove-cutter, and a spaced gage mounted on the spindle at the other side of said groove-cutter, the diameter of the saw being greater than

that of the groove-cutter, and the diameter of the gage being greater than that of the saw, combined with a work-holder having a slotted finger opposite the groove-cutter, and a slotted rear edge opposite the saw and gage, said edge being adapted to contact with said gage, substantially as specified.

848,052. MILLING-MACHINE. WILLIAM SCHENK, Jersey City, N. J. Filed Nov. 17, 1906. Serial No. 343,809.

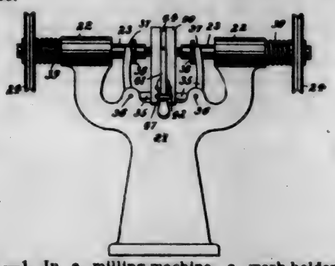

Claim.—1. In a milling-machine, a work-holder composed of a fixed jaw having a recess and a pair of perforations opening into said recess, and of a coöperating movable jaw, substantially as specified.

2. In a milling-machine, a work-holder composed of a fixed jaw having a recessed longitudinal groove and a pair of perforations opening into the recess of said groove, and of a coöperating movable jaw, substantially as specified.

3. In a milling-machine, a pair of opposed rotatable spindles and milling-tools secured thereto, combined with a work-holder having a seat for the blank, a pair of alined perforations adapted to receive the milling-tools, and means for limiting the advance of said tools within said perforations, substantially as specified.

848,053. MACHINE FOR SEAMING TOGETHER THE EDGES OF SHEET-METAL SECTIONS. ALBERT G. SCHERER, Chicago, Ill., assignor to A. W. Giessner, Chicago, Ill. Filed Dec. 18, 1902. Serial No. 135,799.

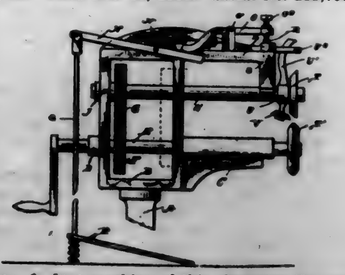

Claim.—1. In a machine of this character the combination of a frame, a lower shaft mounted therein, so that its relative position is stationary, another shaft located above and having its outer end free and its inner end pivoted, means for transmitting power from the lower shaft to the upper shaft, coacting crimping-wheels carried on the outer ends of said shafts, mechanism for moving the outer end of the upper shaft so that the upper crimping-wheel can be moved to or from the lower crimping-wheel, a lever having a collar intermediate of its ends loosely surrounding the portion of the upper shaft beside the crimping-wheel and adapted to be moved to and from the crimping-wheels, a crimping-disk carried by the lower end of said lever adapted to be projected between the crimping-wheels when they are coacting, and means carried by the top of the frame adapted to receive the upper end of the lever so that when the shaft is moved downward the crimping-disk is moved toward the coacting crimping-wheels, for the purpose set forth.

2. In a machine of this character, the combination of a frame, a shaft mounted in the lower portion thereof so that its relative position is stationary, an upper shaft pivotally mounted in the frame adapted to receive motion from the lower shaft, coacting crimping-wheels carried by the outer ends of said shafts, a lever provided with an enlarged collar intermediate of its ends loosely surrounding the end of the upper shaft near the crimping-wheel, a crimping-disk carried upon the lower end thereof adapted to be projected between the crimping-wheels when coacting, means carried by the frame adapted to surround the upper end of the lever, whereby as the upper shaft is raised or lowered the lever is tilted to withdraw or project the crimping-disk with relation to the crimping-wheels, and mechanism for forcing the crimping-wheels into engagement with each other and simultaneously moving the crimping-disk toward the junction of the coacting crimping-wheels.

3. In a machine of this character, the combination of a frame, a shaft mounted in the lower portion thereof so that its relative position is stationary, an upper shaft pivotally mounted in the frame adapted to receive motion from the lower shaft, coacting crimping-wheels carried by the outer ends of the shafts, a lever having a collar intermediate of its ends loosely surrounding the upper shaft and having an outwardly-curved upper end, a crimping-disk carried by the lower end of the lever, a slotted plate through which the curved end of the lever passes so that as the upper shaft is moved the curved end slides through the slot and causes the crimping-disk to move toward or from the junction of the wheels, and means for moving the upper shaft toward or from the lower shaft as set forth.

848,054. PLUNGER FOR BALING-PRESSES. GEORGE SCHUBERT, Fort Worth, Tex. Filed Sept. 2, 1905. Serial No. 276,797.

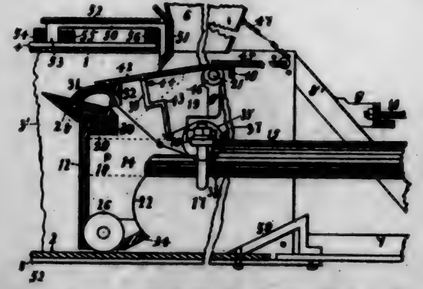

Claim.—1. In a baling-press, the combination, with a transverse bar supported by the plunger, a plate hinged thereon and a plate having its rear end supported by said transverse bar and its front portion pressed upward by a spring or springs, and stays a trip pivoted in the plunger and projecting upward, means to raise said trip, for the purpose specified.

2. In a plunger for a baling-press, the combination, with flanges and ribs, stays 44 between said flanges and ribs, a transverse bar carried by said ribs, a plate pivoted thereon, and a plate 42 resting thereon, stay-bars having an offset and pivoted in said plate 42, a trip pivoted in said plunger and projecting upward, springs arranged to raise said trip and plate 42, for the purpose specified.

3. In a plunger for a baling-press, the combination, with a trip pivoted in the front portion of said plunger to form an extended face of said plunger, a yielding plate back of said trip, for the purpose specified.

4. In a plunger for a baling-press the combination, with a trip pivoted in said plunger projecting upward, a yielding plate back of said trip, a tucker formed of side bars, a head thereon, heels on said bars resting between cross-bars on the press-body, boards on said bars, for the purpose specified.

5. In a plunger for a baling-press the combination, with a trip in said plunger projecting upward, heels on said plunger to engage an incline plane, for the purpose specified.

848,055. AIR-SHIP. GEORGE G. SCHWABEK, New York, N. Y., assignor to himself and Francis J. Nekarada, New York, N. Y. Filed Jan. 29, 1906. Serial No. 298,550.

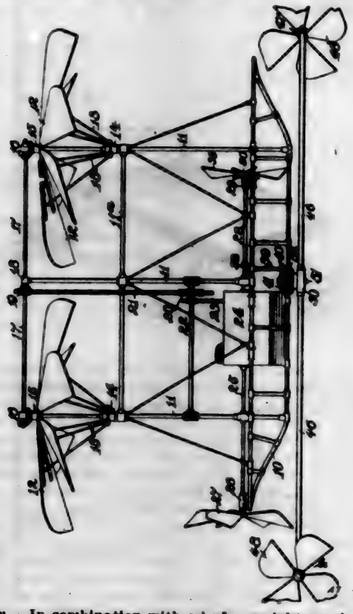

Claim.—In combination with a body, uprights projecting from the body, braces for the uprights extending longitudinally of the body and engaging the uprights intermediate the ends, spaced collars on the uprights, blades carried by the upper collars, braces for the blades engaging the blades and the lower collars, shafts engaging the upper collars mounted on the free ends of the uprights, means for rotating the shafts, means for propelling the body and means for deflecting the course thereof during its propulsion.

848,056. LUBRICATING DEVICE. WALTER SCOTT, Plainfield, N. J. Filed Feb. 2, 1904. Serial No. 191,664.

Claim.—1. The combination of a rotatable member, a spindle to be lubricated, a friction-roll thereon, and a source of supply of lubricant, both carried by the said rotatable member, and ducts leading from the source of supply to the spindle whereby the rotation of the rotatable member causes a flow of lubricant from the source of supply to the spindle.

2. The combination of a rotatable member, a spindle to be lubricated, a friction-roll thereon, and a source of supply of lubricant, both carried by the said rotatable member, and eccentrically disposed one with relation to the other, and ducts leading from the source of supply to the spindle whereby the rotation of the rotatable member causes a flow of lubricant from the source of supply to the spindle.

848,057. BREAD CUTTER AND BOX. HERMANN SECKENDORFF, Hanover, Germany. Filed Dec. 15, 1906. Serial No. 347,999.

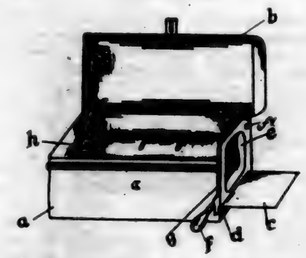

Claim.—1. The combination of a box having a lid and an aperture in one of its walls, a hinged member adapted to cover said aperture, said member being adapted to be held in such covering position when said lid is closed, and released when the lid is opened, and a knife pivoted adjacent said aperture substantially as described.

2. The combination of a box having a lid and an aperture in one of its walls, a hinged member adapted to cover said aperture, said member being adapted to be held in such covering position when said lid is closed, and released when the lid is opened, a knife pivoted adjacent said aperture, and a guide for said knife substantially as described.

3. The combination of a box having a lid and an aperture in one of its walls, a hinged member adapted to cover said aperture, said member being adapted to be held in such covering position when said lid is closed, and released when the lid is opened, an apertured guide adjacent the wall aforesaid and a knife pivoted between said guide and wall substantially as described.

848,058. WRENCH. JAMES H. SHEPHERD, Idaho Springs, Colo. Filed May 25, 1906. Serial No. 318,713.

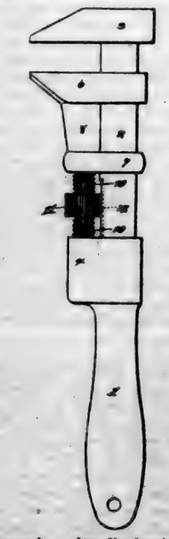

Claim.—In a wrench, a handle having a shank and a fixed jaw, a movable jaw, lateral extensions on said

handle and movable jaw having sockets with their threads interrupted in the direction of the length of the sockets, and a right-and-left screw engaged in the said sockets and provided with grooves extending lengthwise of the screws for coöperation with the interruption of the threads of the sockets whereby the threads automatically free themselves from dirt.

848,059. REMOVABLE BOTTOM FRAME FOR VEHICLE-TOPS. CHARLES SILCOTT, Henderson, Ky., assignor of one-half to Ralph W. Shirkey, Henderson, Ky. Filed Sept. 8, 1905. Serial No. 277,502.

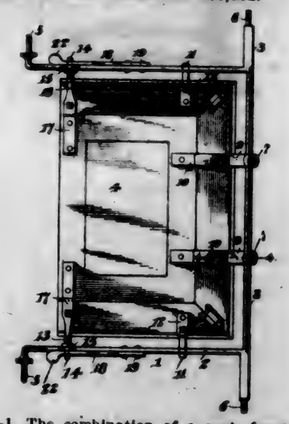

Claim.—1. The combination of a seat, front and rear arms extending from the seat, the front arms being provided with studs and the rear arms having openings, a bottom frame provided at opposite sides with transverse openings to receive the studs and having angular rear lugs extending through the openings of the rear arms and engaging the lower faces of the latter, and spring-actuated catches mounted on the bottom frame and engaging the front studs.

2. The combination with a seat, of front arms extending from the seat and having projecting studs provided with notches, rear arms extending from the seat, a bottom frame composed of sides and a back spaced from the sides and back of the seat, the sides being provided with transverse openings receiving the said studs, and resilient catches mounted on the sides of the bottom frame and engaging the notches of the studs.

3. The combination of a seat, front arms extending from the seat and having studs, rear arms extending from the said seat, a bottom frame composed of sides and a connecting portion, the sides having openings to receive the studs, and the connecting portion being provided with means for detachably interlocking it with the rear arms, and resilient catches extending longitudinally of the sides of the frame and secured at their rear ends to the same, and provided at their front portions with means for engaging the studs, whereby the sides of the frame are held against outward movement on the studs.

848,060. RACK FOR MEMORANDUM DESK-CALENDARS. WILLIAM S. SLOAN, Williamstown, Mass., assignor of one-half to Robert A. Stacey, Williamstown, Mass. Filed May 19, 1906. Serial No. 317,815.

Claim.—1. A calendar-holding rack having pins projecting therefrom at different levels, a diagonally-disposed ball-shaped member interposed between said pins, perforated sheets adapted to be mounted upon said ball-shaped member upon which they may be turned so that apertures in said sheets may be engaged by one or the other of said pins, as set forth.

2. A calendar-holding rack having pins projecting therefrom at different levels, a diagonally-disposed ball-shaped member interposed between said pins, perforated sheets adapted to be mounted upon said ball-shaped member upon which they may be turned so that apertures in said sheets may be engaged by one or the other of said pins, one end of said ball-shaped member adapted to swing free from the frame of the device and its other end pivoted, as set forth.

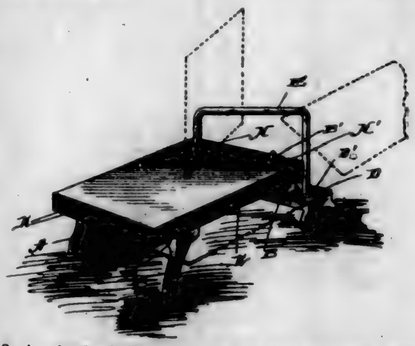

3. A calendar-holding rack having pins projecting therefrom at different levels, a diagonally-disposed ball-shaped member interposed between said pins, perforated sheets adapted to be mounted upon said ball-shaped member upon which they may be turned so that apertures in said sheets may be engaged by one or the other of said pins, one end of said ball-shaped member adapted to swing free from the frame of the device and its other end pivoted, an arm of said ball-shaped member being resilient and adapted to spring into a recess formed in the frame, as set forth.

4. A rack for holding calendar-slips comprising a metallic frame having lateral projections in different planes, a ball-shaped member pivotally mounted upon one of said projections and having a long arm adapted to engage a recess formed in the edge of one of said projections, a pin rising from a projection from each edge of the frame, calendar-sheets having each a plurality of perforations therein, said ball-shaped member passing through one set of perforations, and the other set adapted to be engaged by one or the other of said pins, as set forth.

848,061. AMUSEMENT APPARATUS. EDWARD A. SMITH, Yonkers, N. Y. Filed Sept. 18, 1905. Serial No. 278,890.

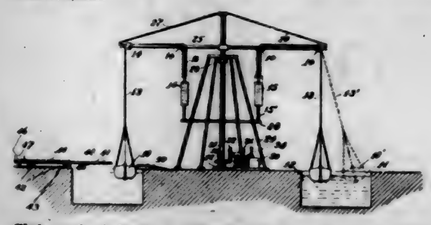

Claim.—1. A boat, a revoluble frame, a counterweight, a pulley on said frame, a rope or cable passing over the pulley and connecting the boat and the counterweight, and a spring supported by the frame and arranged to coact with the counterweight.

2. A plurality of boats, a revoluble frame, independent counterweights for each of the boats, guides for said counterweights, pulleys on said frame, and ropes or cables passing over said pulleys and connecting the boats and the counterweights.

3. A plurality of boats, a revoluble frame, means for connecting the boats to said frame, counterweights arranged to counteract the effect of centrifugal force on each of the boats when they are in motion.

4. A plurality of boats, a revoluble frame, a shaft therefor, a motor for driving the shaft and frame, movable counterweights for the boats, guides for the counterweights, said guides forming a part of the frame, pulleys on the frame, ropes or cables passing over the pulleys and connecting the boats and the counterweights, and spring in the path of the movement of the counterweights.

5. A plurality of boats, a tank therefor, a revoluble frame, independent counterweights for each of the boats, guides for the said counterweights, pulleys on said frame, and ropes or cables passing over said pulleys and connecting the boats and the counterweights.

6. A plurality of boats, a circular tank therefor, a revoluble frame, a shaft therefor, a motor for driving the shaft and frame, movable counterweights for the boats, guides for the counterweights, said guides forming a part of the frame, pulleys on the frame, ropes or cables passing over the pulleys and connecting the boats and the counterweights, and springs in the path of the movement of the counterweights.

7. A boat, a revoluble frame, pulleys upon said frame, a counterweight, and a rope or cable attached to one end of the boat and to the counterweight over one of the pulleys and another rope or cable connected to the other end of the boat and to the counterweight over another of the pulleys.

848,062. BURGLAR-ALARM. OLLIE F. SMITH, Valley Head, Ala. Filed Dec. 18, 1905. Serial No. 292,228.

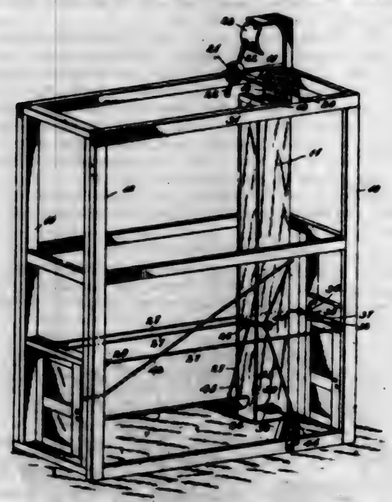

Claim.—1. An alarm comprising a shaft, a drum at the top thereof, a tappet-wheel on the drum, a bell in the path of said wheel, a rope wound on the drum and extending into the shaft, weights attached to both ends of the rope, one of said weights being heavier than the other, a trigger engaging the lighter weight for holding the other weight elevated, a cam-shaped plate pivoted to the trigger and in contact with the wall of the shaft, and means for actuating the cam to withdraw the trigger.

2. An alarm comprising a drum, a tappet-wheel mounted thereon, a bell in the path of said wheel, a rope wound on the drum, a weight on each end of the rope, one of said weights being heavier than the other one, releasable means engaging the lighter weight for holding the other weight elevated, and a sliding plate extensible over the lighter weight, and having an opening to permit the passage thereof, said opening having a contracted portion extensible over the weight to prevent its ascent.

848,063. INKING-PAD FOR RUBBER AND OTHER STAMPS. FELIX A. SOMMER, Twickenham, England. Filed Apr. 6, 1906. Serial No. 310,347.

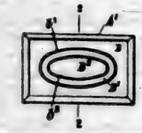

Claim.—1. A stamp-inking pad divided into sections by incisions therein, in combination with a frame adapted to removably fit within the incisions in the inking-pad so as to keep the sections of the pad separate during the inking and also adapted to be removed from the incisions before a stamp is applied to the pad whereby said stamp will make contact with the pad only, substantially as described.

2. A stamp-inking pad secured to a base and divided into sections by incisions therein, in combination with a frame formed of strips secured together and adapted to removably fit within the incisions in the inking-pad so as to keep the sections of the pad separate during inking and also adapted to be removed from the incisions before a stamp is applied to the pad whereby said stamp will make contact with the pad only, substantially as described.

848,064. PRINTING-MACHINE. HENRY STAMM, Rentzschmuhle, near Jocketa, Germany, assignor to Schnellpressenfabrik Actien-Gesellschaft, Heidelberg, Germany. Filed Oct. 12, 1906. Serial No. 338,663.

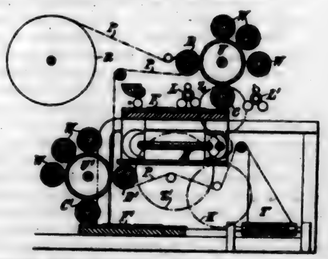

Claim.—1. The combination of a reciprocating flat form, a continuously-revolving transfer-cylinder which is in contact with the form when the latter is moving in one but not in the other direction, a printing-cylinder revolving in contact with the transfer-cylinder, and an impression-cylinder revolving in close proximity to the printing-cylinder and adapted to press the paper into contact with it.

2. The combination of a pair of reciprocating flat forms, a pair of continuously-revolving transfer-cylinders each in contact with one of the forms when the latter is moving in one but not in the other direction, and a pair of printing-cylinders revolving in contact with each other and each in contact with one of the transfer-cylinders.

3. The combination of a pair of reciprocating flat forms, a pair of continuously-revolving transfer-cylinders each in contact with one of the forms when the latter is moving in one but not in the other direction, a pair of printing-cylinders revolving in contact with each other and each in contact with one of the transfer-cylinders, and equalising-rollers revolving in contact with the printing-cylinders.

4. The combination of a reciprocating flat form, a revolving transfer-cylinder, part of the periphery of which comes into contact with the form, means for supplying ink to part of the surface of the cylinder, distributing-rollers spreading the ink on the surface, and means for transferring the ink from the surface to the form.

5. The combination of a pair of reciprocating flat forms, a pair of continuously-revolving transfer-cylinders each in contact with one of the forms when the latter is moving in one but not in the other direction, a pair of printing-cylinders revolving in contact with each other and each in contact with one of the transfer-cylinders, means for supply-

ing ink to part of the surface of the transfer-cylinders, distributing-rollers spreading the ink on the surfaces, and means for transferring the ink from the surfaces to the forms.

6. The combination of a pair of reciprocating flat forms, a pair of continuously-revolving transfer-cylinders each in contact with one of the forms when the latter is moving in one but not in the other direction, a pair of printing-cylinders revolving in contact with each other and each in contact with one of the transfer-cylinders, equalising-rollers revolving in contact with the printing-cylinders, means for supplying ink to part of the surface of the transfer-cylinders, distributing-rollers spreading the ink on the surfaces, and means for transferring the ink from the surfaces to the forms.

7. The combination of a reciprocating flat form, a continuously-revolving cylinder part of its periphery being of greater diameter than the remainder and having a surface adapted for receiving transfers such surface coming into contact with the form when the latter is moving in one but not in the other direction, a continuously-rotating printing-cylinder intermittently in contact with the said surface, means for supplying ink to the surface of part of the first cylinder which is of less diameter than the transfer-surface, distributing-rollers spreading the ink on the surface, and means for transferring the ink from it to the form.

8. The combination of a reciprocating flat form, a continuously-revolving cylinder part of its periphery being of greater diameter than the remainder and having a surface adapted for receiving transfers such surface coming into contact with the form when the latter is moving in one but not in the other direction, a continuously-rotating printing-cylinder intermittently in contact with the said surface, means for supplying ink to the surface of part of the first cylinder which is of less diameter than the transfer-surface, distributing-rollers spreading the ink on the surface, means for transferring the ink from it to the form, and an equalising-roller revolving in contact with the printing-cylinder.

9. The combination of a pair of reciprocating flat forms, a pair of continuously-revolving cylinders, part of their periphery being of greater diameter than the remainder and having a surface adapted for receiving transfers such surface coming into contact with one of the forms when the latter is moving in one but not in the other direction, continuously-rotating printing-cylinders in contact with each other and intermittently in contact with the transfer-surfaces, means for supplying ink to parts of the surfaces of the first cylinders which are of less diameter than the transfer-surfaces, distributing-rollers spreading the ink on these surfaces, and means for transferring the ink from them to the forms.

10. The combination of a pair of reciprocating flat forms, a pair of continuously-revolving cylinders, part of their periphery being of greater diameter than the remainder and having a surface adapted for receiving transfers such surface coming into contact with one of the forms when the latter is moving in one but not in the other direction, continuously-rotating printing-cylinders in contact with each other and intermittently in contact with the transfer-surfaces, means for supplying ink to parts of the surfaces of the first cylinders which are of less diameter than the transfer-surfaces, distributing-rollers spreading the ink on these surfaces, means for transferring the ink from them to the forms, and equalising-rollers revolving in contact with the printing-cylinders.

848,065. PRINTING-MACHINE. HENRY STAMM, Reutlschmuhle, near Jockets, Germany, assignor to Schnellpressenfabrik Actien-Gesellschaft, Heidelberg, Germany. Filed Oct. 12, 1906. Serial No. 338,664.

Claim.—1. The combination of a pair of reciprocating forms, a continuously-revolving segmental impression-cylinder provided with a pair of impression-surfaces coming successively into contact with the forms when they are moving in one but not in the reverse direction and a pair of continuously-revolving impression-cylinders each coming into contact with one of the forms when it is moving in the reverse direction.

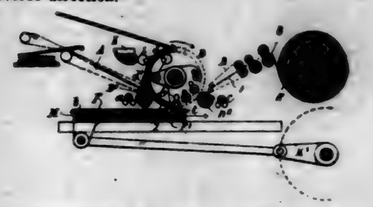

2. The combination of a pair of reciprocating forms, a continuously-revolving segmental impression-cylinder provided with a pair of impression-surfaces coming successively into contact with the forms when they are moving in one but not in the reverse direction and a pair of continuously-revolving impression-cylinders each of one-fourth the diameter of the first cylinder and each coming into contact with one of the forms when it is moving in the reverse direction.

3. The combination of a pair of reciprocating forms, a continuously-revolving segmental impression-cylinder provided with a pair of impression-surfaces coming successively into contact with the forms when they are moving in one but not in the reverse direction, a pair of continuously-revolving impression-cylinders each coming into contact with one of the forms when it is moving in the reverse direction, means for supplying ink to the inner surface of the said segmental cylinder, a distributing-roller spreading the ink on this surface and means for transferring the ink from the said surface to the forms.

4. The combination of a pair of reciprocating forms, a continuously-revolving segmental impression-cylinder provided with a pair of impression-surfaces coming successively into contact with the forms when they are moving in one but not in the reverse direction, a pair of continuously-revolving impression-cylinders each of one-fourth the diameter of the first cylinder and each coming into contact with one of the forms when it is moving in the reverse direction, means for supplying ink to the inner surface of the cylinder, a distributing-roller spreading the ink on this surface and means for transferring the ink from it to the forms.

848,066. STRAW-CUTTER. DAVID A. STEWART, JOHN F. STEWART, and ROBERT C. STEWART, Molesworth, Ontario, Canada. Filed May 10, 1904. Serial No. 207,230.

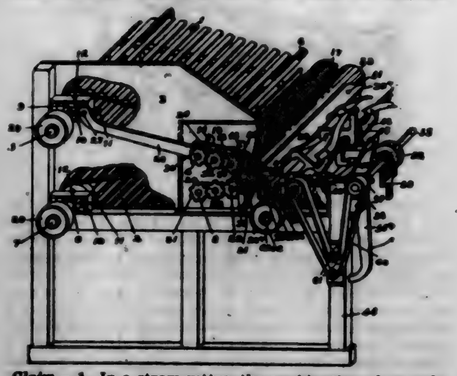

Claim.—1. In a straw-cutter, the combination of an endless apron, forward and rear shafts carrying the apron, the rear shaft being journaled in stationary bearings, a second endless apron, forward and rear shafts carrying said second apron and arranged parallel with the shafts carrying the first-mentioned apron, arms pivoted near the forward shaft of the second apron and provided near their free ends with bearings in which the rear shaft of the second apron is journaled, and means for adjusting the position of the free ends of said arms relative to the rear shaft of the first-mentioned apron.

2. In a straw-cutter, the combination of an endless apron, forward and rear shafts carrying the apron, the rear shaft being journaled in stationary bearings, and the forward shaft being carried in adjustable bearings, a second endless apron, forward and rear shafts carrying said second apron and arranged parallel with the shafts carrying the first-mentioned apron, the forward shaft of the second apron being carried in adjustable bearings, and arms pivoted near the bearings of the second apron, and provided near their free ends with bearings in which the rear shaft of the second apron is journaled.

3. In a straw-cutter, the combination of an endless apron, forward and rear shafts carrying the apron, the rear shaft being journaled in stationary bearings, and the forward shaft being carried in adjustable bearings, a second endless apron, forward and rear shafts carrying said apron, and arranged parallel with the shafts carrying the first-mentioned apron, the forward shaft of the second apron being carried in adjustable bearings, arms pivoted near the bearings of the second apron and provided near their free ends with bearings in which the rear shaft of the second apron is journaled, and means for adjusting the position of the free ends of said arms relative to the rear shaft of the first-mentioned apron.

4. In a straw-cutter, the combination of an endless apron, forward and rear shafts carrying the apron, the rear shaft being journaled in stationary bearings, a compression-roll journaled in stationary bearings in rear of and parallel with the rear shaft of the apron, a second endless apron, forward and rear shafts carrying said second apron and arranged parallel with the shafts carrying the first-mentioned apron, arms pivoted near the forward shaft of the second apron, and provided near their free ends with bearings in which the rear shaft of the second apron is journaled, and a second compression-roll in rear of and parallel with the rear shaft of the second apron, journaled in bearings carried by said arms, and means for adjusting the free ends of said arms relative to the rear shaft of the first-mentioned apron.

5. In a straw-cutter, the combination of side frames, an endless apron, forward and rear shafts carrying the apron, bearings for said shafts carried by the side frames, the bearings for the rear shaft being stationary, a second endless apron, forward and rear shafts carrying said second apron and arranged parallel with the shafts of the first-mentioned apron, bearings for the forward shaft of the second apron carried by the side frames, and arms pivoted near the bearings of the forward shaft of the second apron, and provided near their free ends with bearings in which the rear shaft of the second apron is journaled, the bearings of the forward shafts of both aprons, the bearings of the rear shaft of the first-mentioned apron and the arms carrying the bearings of the rear shaft of the second apron, being all located outside the side frames.

6. In a straw-cutter, the combination of side frames, an endless apron, forward and rear shafts carrying said apron, bearings for the shafts carried by the side frames, the bearings for the rear shaft being stationary, a second endless apron, foward and rear shafts carrying said second apron, and arranged parallel with the shafts of the first-mentioned apron, bearings for the forward shaft of said second apron carried by the side frames, and arms outside the side frames pivoted near the bearings of the forward shaft of the second apron, and provided near their free ends with bearings in which the rear shaft of the second apron is journaled, the side frames being provided with slots through which the ends of the rear shaft extend, and in which they are free to move.

7. In a straw-cutter, the combination of side frames, an endless apron, forward and rear shafts carrying said apron, bearings for the shafts carried by the side frames, the bearings for the rear shaft being stationary, a second endless apron, forward and rear shafts carrying said second apron and arranged parallel with the shafts of the first-mentioned apron, bearings for the forward shaft of said second apron carried by the side frames, and arms outside the side frames pivoted near the bearings of the forward shaft of the second apron, and provided near their free ends with bearings in which the rear shaft of the second apron is journaled, the side frames being provided with slots through which the ends of the rear shaft extend and in which they are free to move, and means for adjusting the position of the free ends of said arms relative to the rear shafts of the first-mentioned apron.

8. In a straw-cutter, the combination of an endless apron, forward and rear shafts carrying the apron, the rear shaft being journaled in stationary bearings, a compression-roll journaled in stationary bearings in rear of and parallel with the rear shaft of the apron, gearing connecting said rear shaft and the feed-roll, a second endless apron, forward and rear shafts carrying said second apron, and arranged parallel with the shafts carrying the first-mentioned apron, arms pivoted near the forward shaft of the second apron, provided near their free ends with bearings in which the rear shaft of the second apron is journaled, a second compression-roll in rear of and parallel with the rear shaft of the second apron, journaled in bearings carried by said arms, and gearing connecting the said second feed-roll and the rear shaft of said second apron.

9. In a straw-cutter, the combination of an endless apron, forward and rear shafts carrying the apron, the rear shaft being journaled in stationary bearings, a compression-roll journaled in stationary bearings in rear of and parallel with the rear shaft of the apron, gearing connecting said rear shaft and the feed-roll, a second endless apron, forward and rear shafts carrying said second apron, and arranged parallel with the shafts carrying the first-mentioned apron, arms pivoted near the forward shaft of the second apron, provided near their free ends with bearings in which the rear shaft of the second apron is journaled, a second compression-roll in rear of and parallel with the rear shaft of the second apron, journaled in bearings carried by said arms, and gearing connecting the said second feed-roll and the rear shaft of said second apron, and means for adjusting the free ends of said arms relative to the rear shaft of the first-mentioned apron.

10. In a straw-cutter, the combination of means for feeding the straw, a movable knife, a stationary knife, and means for moving the movable knife in a downward direction to coöperate with the stationary knife, a supporting-bracket for each end of the stationary knife, having its under surface adapted to receive the ends of the stationary knife, and a single bolt at each end of the knife securing it to the bracket, said bolts being adapted to permit the stationary knife to drop in case a substance which cannot be cut is presented to the knives.

848,067. KEY-FASTENER. ANDES A. SVENSEN, Evanston, Ill. Filed Apr. 4, 1906. Serial No. 309,798.

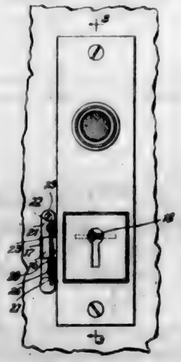

Claim.—1. In a locking device for association with door-locks or the like, the combination with a plate adapted to be secured rigidly with respect to the lock, said plate having a keyhole in register with the lock-keyhole, a movable

plate lying adjacent to the immovable plate and also having a keyhole, spring mechanism tending to move the movable plate at one side to hold the keyhole thereof out of register with the other keyholes to prevent insertion of a key in the lock, said keyhole when the plate is removed in the other direction coming in register to allow insertion of a key, a slot at one side of said keyhole for engaging the shank of the inserted key when said shank is flat upon return of the movable plate by the spring mechanism, gripping-teeth about the front edge of said slot and about the face of the keyhole in the immovable plate for engaging the shank of the inserted key when said shank is round upon return movement of the plate by the spring mechanism whereby an inserted key is locked against subsequent rotation or escape from the lock, and auxiliary locking means for engaging an extension on said movable plate and thereby locking said movable plate after actuation by the spring mechanism to hold the slot or teeth in firm engagement with the inserted key.

2. In a locking device for association with a door-lock or the like, the combination with a plate adapted to be secured with respect to the lock and having a keyhole in register with the lock-keyhole, of a movable plate mounted on the immovable plate and also having a keyhole, spring means tending to hold the movable plate and keyhole therein to one side to prevent insertion of a key in the lock, movement of the movable plate against the spring action causing the keyholes to come into register to allow insertion of a key, teeth at one side of the movable keyhole brought into engagement with the shank of the inserted key as the movable plate is returned toward its normal position by the spring, and a pivoted locking-lever provided with a handle and adapted to be swung into engagement with a slot in an extension of the movable plate after actuation thereof by the spring means to hold the teeth in firm gripping engagement with the key.

3. In a locking device for association with a door-lock or the like, the combination with a supporting-plate adapted to be secured with respect to the lock and having a keyhole in register with the lock-keyhole, a second plate mounted on said supporting-plate to be reciprocated thereon and also having a keyhole, a spring tending to hold said movable plate to one side and the keyholes out of register, movement of the plate in the other direction causing the keyholes to come into register to allow insertion of a key in the lock, locking-teeth along one side of the keyhole of the movable plate, locking-teeth along the opposite side of the keyhole of the supporting-plate, said teeth coöperating to form a clamping-jaw for engaging and gripping the shank of an inserted key upon return of the movable plate to its normal position by the spring whereby said key is prevented from subsequent turning or escape of the lock, and an auxiliary locking-lever pivoted adjacent to the supporting and movable plates and provided with a tooth for engaging a slot in the movable plate to rigidly lock the teeth in firm gripping engagement with the key.

848,068. SIDEWALK-CONDUIT. JOHN B. THACHER, Albany, N. Y. Filed Oct. 6, 1904. Serial No. 227,447.

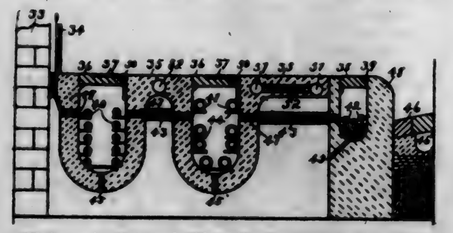

Claim.—An integral sidewalk structure having depending longitudinal troughs formed in the material thereof and constituting conduits, cross-tubes connecting the interiors of said conduits, and covers for giving access to the tops thereof.

848,069. FONT. JOSEPH M. THOMAS, Brookland, D. C. Filed Nov. 3, 1905. Serial No. 285,723.

Claim.—1. In a structure of the class described, the combination with a finger-receiver, of a conduit connected thereto, a valve controlling the conduit, and a movable hand-rest connected to the valve and located adjacent to the finger-receiver.

2. In a structure of the class described, the combination with a finger-receiver, of a conduit connected thereto, a valve controlling the conduit, and a movable hand-rest connected to the finger-receiver and located adjacent to and exteriorly of the finger-receiver.

3. In a structure of the class described, the combination with a reservoir, of a conduit communicating therewith and having a rearwardly-discharging outlet, a valve controlling the conduit, and a movable hand-rest located adjacent to the rearwardly-discharging outlet and constituting operating means for the valve.

4. In a structure of the class described, the combination with a reservoir, of a finger-receiver, a conduit communicating with the reservoir and having a rearwardly-discharging outlet in the finger-receiver, a valve controlling the conduit, and a movable hand-rest located outside and in advance of the finger-receiver, said hand-rest constituting operating means for the valve.

5. In a structure of the class described, the combination with a movable finger-receiver, of a conduit discharging thereinto, a valve controlling said conduit, and a hand-rest for moving the finger-receiver and the valve, said rest being located adjacent to the finger-receiver.

6. In a structure of the class described, the combination with a movable finger-receiver, of a conduit discharging thereinto, a valve controlling said conduit, and a movable hand-rest for moving both the receiver and the valve, said rest being located adjacent to the finger-receiver, said receiver and hand-rest moving in opposite directions.

7. In a structure of the class described, the combination with a reciprocatory movable finger-receiver, of a conduit discharging thereinto, a valve controlling said conduit, and swinging operating means for reciprocating the receiver and operating the valve, said means being located adjacent to the finger-receiver.

8. In a structure of the class described, the combination with a reciprocatory bowl, of a conduit discharging thereinto, a valve carried by and movable with the bowl; said valve controlling the conduit, and a movable hand-rest located adjacent to the bowl and connected thereto for reciprocating the same and thereby operating the valve.

9. In a structure of the class described, the combination with a reciprocatory finger-receiving bowl, of a conduit-stem connected thereto, the conduit of said stem discharging rearwardly into the front end of the bowl, a valve for the conduit mounted on the stem, and a swinging device surrounding the bowl for reciprocating the same.

10. In a structure of the class described, the combination with a pivotally-mounted bowl, of a conduit-stem pivotally connected thereto and constituting means for delivering liquid to the bowl, and a valve carried by the stem and controlling the conduit.

11. In a structure of the class described, the combination with a finger-receiving bowl, of a conduit discharging thereinto, a valve controlling the conduit, and a movable hand-rest surrounding the upper portion of the bowl and constituting actuating means for the valve.

12. In a structure of the class described, the combination with a finger-receiving bowl, of a conduit discharging thereinto, a valve controlling the conduit, and a waste-bowl surrounding the finger-receiving bowl and constituting actuating means for the valve.

13. In a structure of the class described, the combination with a movable finger-receiving bowl, of a conduit movable therewith and discharging thereinto, a valve controlling the conduit, and a waste-bowl surrounding the finger-receiving bowl and constituting actuating means for the valve.

14. In a structure of the class described, the combination with a reciprocatory finger-receiving bowl, of a stem carried thereby and having a conduit discharging into the bowl, a valve controlling the conduit, and a pivotally-mounted waste-bowl surrounding the finger-receiving bowl and having a pivotal connection with the stem.

15. In a structure of the class described, the combination with a liquid-holder, of a liquid-expelling plunger operating therein, means for admitting liquid into the holder, a conduit-stem movable in the plunger and having an inlet that is movable into and out of the plunger and is closed by the latter, said stem constituting actuating means for the plunger, and means for effecting the movement of the stem in the plunger and the combined movement of said plunger and stem.

16. In a structure of the class described, the combination with a liquid-holder, of a liquid-expelling plunger operating therein, means for admitting liquid into the holder, a stem having a limited sliding movement in the plunger and having a conduit provided with an inlet that is movable into and out of the plunger, said plunger constituting a closure for the inlet, said stem constituting actuating means for the plunger, a receiver into which the conduit discharges, and actuating means for the stem associated with the reservoir.

17. In a structure of the class described, the combination with a tubular liquid-holder having an inlet, of a plunger sliding in the holder and movable across the inlet, a stem having a limited movement in the plunger and having a conduit provided with an inlet that is exposed on said movement, a valve carried by the stem, a liquid-receiver connected to the stem, and actuating means also connected to the stem and disposed adjacent to the receiver.

18. In a structure of the class described, the combination with a reservoir, of a tubular holder having an inlet in said reservoir, a plunger operating in the holder and movable across the inlet, a stem having a limited movement in the plunger and having a conduit provided with an inlet that communicates with the holder upon said limited movement, a finger-receiving bowl connected to the stem and having rearwardly-discharging orifices in communication with the conduit, and a movable waste-bowl surrounding the finger-receiving bowl and connected to the stem, said waste-bowl constituting actuating means for the stem.

19. In a structure of the class described, the combination with a liquid-reservoir, of a pivotally-mounted bowl swinging in a substantially upright path, means for conveying liquid from the reservoir to the bowl, said means including a conduit pivoted to the bowl and movable with it, and a valve for controlling the passage of liquid through the conduit, said conduit constituting actuating means for the valve.

20. In a structure of the class described, the combination with a reservoir, of a movable finger-moistening device, a cylinder having an orifice communicating with the reservoir, a conduit connected to the finger-moistening device and having an inlet communicating with the cylinder, and an expelling-plunger movably mounted on the conduit and movably located in the cylinder, said plunger constituting a closure for the orifice of the cylinder and for the inlet of the conduit.

21. In a structure of the class described, the combination with a liquid-holder having an inlet-orifice, of a liquid-expelling plunger operating in the holder and movable across the orifice, a conduit having a limited movement in the plunger and having an inlet exposed on said limited movement, said conduit constituting means for operating the plunger, and a finger-moistening device connected to the conduit and having a discharge-orifice communicating therewith.

22. In a structure of the class described, the combination with a reservoir, of a liquid-holder having an inlet-orifice communicating with the reservoir, a liquid-expelling plunger operating in the holder and movable across the orifice, a conduit having a limited movement in the plunger and having an inlet exposed on said limited movement, said conduit constituting means for operating the plunger, and a finger-moistening device connected at its rear end to the conduit and having a channel communicating at its rear end with the conduit, said conduit having a discharge-opening in the front portion of the device and directing the liquid rearwardly thereinto.

848,070. CONVERTIBLE GAS AND OIL LAMP. MARINIUS S. THORUD, Chicago, Ill. Filed May 26, 1906. Serial No. 318,793.

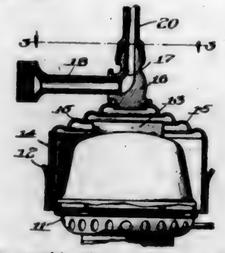

Claim.—1. In combination, a lamp, a burner, and a chimney or globe holder for the lamp, a cap adapted to receive and inclose the burner and to engage the holder when the chimney or globe is removed for securing the cap to the burner, and a supplemental burner supported by the cap, said supplemental burner having an independent means of supply.

2. In an oil-lamp, the combination of a burner, a lamp or globe support, a cap adapted to inclose the burner and engage the holder for removably securing the cap in position, and a supplemental burner supported by the cap, said supplemental burner having an independent means of supply, the central portion of the top of the cap being higher than the remaining portion to prevent its engagement with the wick of the first said burner when the cap is in place thereon.

848,071. BUNCHER FOR PEA-HARVESTERS. DAVID TOLTON, Guelph, Ontario, Canada, and GEORGE F. CONNER, Port Huron, Mich. Original application filed Feb. 7, 1905, Serial No. 244,526. Divided and this application filed Nov. 24, 1905. Serial No. 288,938.

Claim.—1. In a pea-harvester, the combination with the cutter-bar, of vine-gathering rods, an individual clamp for

each rod gripping the cutter-bar, and a vertically-vibratable compressor-bar pivoted to the outer end of one of the rods.

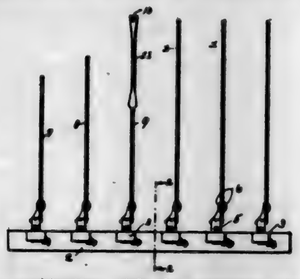

2. The combination with the cutter-bar of a mowing-machine of vine-bunching attachments comprising a plurality of spaced clamps adjustably secured to the cutter-bar, a plurality of parallel rods trailing behind the cutter-bar, each pivotally secured in one of said clamps, and having upturned outer ends, and a vertically-vibratable compressor-bar pivoted to the outer end of one of the intermediate rods.

3. The combination with the cutter-bar of a mowing-machine of vine-bunching attachments comprising a plurality of clamps adjustably secured at regular intervals to the cutter-bar, a plurality of parallel rods trailing behind the cutter-bar, pivoted in said clamps, the outer ends of the rods near the inner end of the cutter-bar being upturned in a plane parallel to the cutter-bar and the upturned ends of the two outer rods being stepped nearer the cutter-bar, and a vertically-vibratable presser-bar pivoted to the outer end of one of the intermediate, longer rods.

4. The combination with the cutter-bar of a mowing-machine of vine-bunching attachments, comprising a plurality of clamps adjustably and detachably secured at intervals to the rear margin of the cutter-bar, a plurality of rods trailing behind the cutter-bar, each removably pivoted at its forward end in one of said clamps, the rear ends of the rods near the machine end of the cutter-bar being upturned in a plane parallel to the cutter-bar, and the rear ends of the two rods near the outer end of the cutter-bar being stepped nearer to the cutter-bar, and a presser-bar hinged at its rear end to the upturned end of one of the intermediate, longer rods, having a weighted forward end vertically vibratable in the plane of and above said rod.

848,072. SPARK-CONTROLLER FOR EXPLOSIVE-ENGINES. LUKE W. TURNBULL, Port Huron, Mich., assignor to Wat Engine Company, Port Huron, Mich., a Corporation of Michigan. Filed Nov. 25, 1905. Serial No. 289,134.

Claim.—1. A spark-controller comprising in combination with a jump-spark plug one terminal of which is connected with the current-generator, and the other terminal of which is grounded on the engine, of a cam grounded on the engine, rotating in synchronism with the engine-cycle, a contact-point insulated from the engine and cam, intermittently contacting with the cam, a shifting-lever carrying the contact-point and insulated therefrom, adapted to shift the time of contact of the cam and point in relation to the moment of greatest compression of the engine, and a terminal connected with the current-generator in the other limb from the spark-plug, having sliding contact with the shifting-lever and cut-out points on which said lever rests when it has passed the positions corresponding to the moment of greatest compression of the engine-cycle.

2. A spark-controller comprising a cam-shaft rotating in unison with the engine, and grounded therewith, a cam secured on the shaft, a shifting-lever rotatable on the shaft, a contact-point carried by the lever, insulated therefrom, periodically contacting with the cam, a terminal having sliding contact with the shifting-lever, having cut-out points on which the lever rests when it has passed the positions corresponding to the moments of greatest compression of the engine, said sliding terminal being connected with the ground-limb of the generator-circuit, and said contact-point with the other limb.

3. A spark-controller comprising a cam-shaft rotating in synchronism with the engine, a cam secured near one end thereof, a bearing for the shaft near the cam secured to and grounded with the engine, a shifting-lever rotatable on the shaft and bearing, a spring-contact insulated from and carried by the lever, contacting periodically with the cam, an insulating-disk secured on the bearing, and electrically-connected segmental plates secured on the face of the disk having sliding contact with the shifting-lever, said cam, contact-point, a lever and segments being disposed so that the lever lies between adjacent segments when it has passed the position corresponding to the moment of greatest compression of the engine.

848,073. MODULATING TELEPHONE-RECEIVER. KELLEY M. TURNER, New York, N. Y. Filed Jan. 13, 1906. Serial No. 295,834.

Claim.—1. In a telephone-receiver having a diaphragm, a damping-pad having cam-lugs thereon and means whereby said cam-lugs are made effective to press the damping-pad into contact with the diaphragm.

2. In a telephone-receiver having a diaphragm, a damping-disk having a collar revolubly supported by the receiver and having lugs, cam-recesses operating with said lugs and a handle for turning said damping-disk whereby it is brought into contact with the diaphragm.

3. In a telephone-receiver having a diaphragm, a pad of yielding material in proximity thereto, and cam means for moving said pad into contact with the diaphragm.

4. In a telephone-receiver having a diaphragm, an annular pad of yielding or fibrous material in proximity to the central portion thereof, and cam means for moving said pad against the face of said diaphragm.

5. In a telephone-receiver having a diaphragm and having a cover-plate with the usual sound-orifice opposite said diaphragm, an annular pad of fibrous material engaging the orifice of said cover-plate and cam means for turning said pad, whereby it is moved into contact with the diaphragm.

848,074. ACETYLENE-GENERATING LAMP. ERNST WACHTER, Buchs, Switzerland. Filed Mar. 29, 1905. Serial No. 252,758.

Claim.—An improved acetylene-lamp, comprising in combination with a casing 13 with double bottom a frame 18, hingedly connected to the lower end of said casing 13 a carbid-box 3, springs 17 supporting said box and arranged to press the same against the lower bottom of the said casing a packing 22 between the top edge of the carbid-box 3 and the lower bottom of said casing a hook 24 on said frame 18, a water-receptacle 2 with means for introducing water, rigidly connected with said casing 13 a tube 19 extending from the water-receptacle 2 into the said carbid-box 3, a perforated bottom 16 fixed to said tube 19 covering the carbid-box 3, a valve 1^a adapted to regulate the outflow of water through said tube 19, a cylinder 6 vertically guided in said casing 13, means 10, 9, 8, and 7 for connecting said valve 1^a with said cylinder 6 in such a manner that upon the ascending of the cylinder 6 the valve 1^a closes the water-outflow through tube 19, a valve 11 arranged on said cylinder 6 a tube 5 extending from above the said carbid-box 3 into said cylinder 6 a

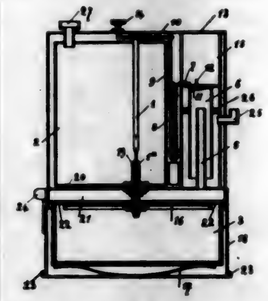

water seal for said cylinder, means 14 for shutting off the water-supply to the carbid by hand, a burner 4 fixed to the said casing 13 between the two bottoms of the same and means for purifying the gas substantially as described and shown and for the purpose set forth.

848,075. METAL NOSING FOR CONCRETE STEPS AND OTHER STRUCTURES. HENRY H. WAINWRIGHT, Philadelphia, Pa. Filed Feb. 7, 1906. Serial No. 299,879.

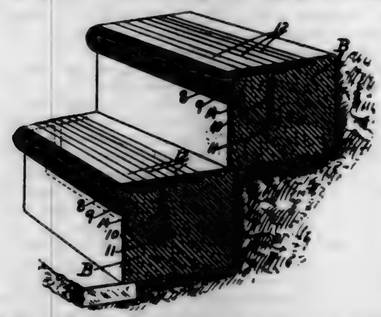

Claim.—1. A nosing for concrete steps and platforms consisting of the following members combined in one integral metal structure, viz. a body-plate adapted to protect the top of the concrete, a longitudinal corner-bar adapted to protect the top and front of the concrete, a longitudinal web adapted to enter the concrete mass at substantially right angles to said body-plate, and a head thereof adapted to anchor the nosing firmly to the concrete, substantially as described.

2. A nosing for concrete steps and platforms consisting of the following members combined in one integral metal structure, viz. a body-plate adapted to protect the upper surface of the concrete and provided with grooves adapted to receive strips of suitable material, a longitudinal corner-bar adapted to protect the top and front of the concrete, a longitudinal web adapted to enter the concrete mass at substantially right angles to said body-plate, and a head thereof adapted to anchor the nosing firmly to the concrete, substantially as described.

3. A nosing for concrete steps and platforms consisting of the following members combined in one integral metal structure, viz. a body-plate adapted to protect the upper surface of the concrete and provided with grooves adapted to receive strips of suitable material, a longitudinal corner-bar adapted to protect the top and front of the concrete, a longitudinal web adapted to enter the concrete mass at substantially right angles to said body-plate, and a head thereof adapted to anchor the nosing firmly to the concrete, combined with strips of non-slipping material in said grooves of the body-plate, substantially as described.

848,076. DUMP-WAGON. DAVID S. WATSON, Canastota, N. Y., assignor to Watson Wagon Company, Canastota, N. Y., a Corporation of New York. Filed Jan. 28, 1905. Serial No. 243,076.

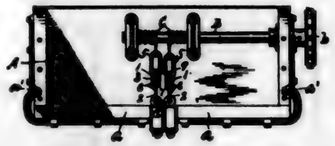

Claim.—In combination with the swinging bottom door of a dump-wagon, a normally distended coil-spring having one end connected to the door, a cable connected to the other end of the spring, and means to wind the cable to close the door, the continual winding of the cable after the door is closed operating to draw the helices of the spring against each other to prevent sagging of the doors, said helices spreading apart by their own tension as soon as the tension on the winding-cable is relieved to allow the door to open and to relieve the cable from sudden strain.

848,077. DUMP-WAGON. DAVID S. WATSON, Canastota, N. Y., assignor to Watson Wagon Company, Canastota, N. Y., a Corporation of New York. Filed July 17, 1906. Serial No. 326,618.

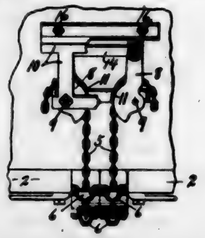

Claim.—1. In a dump-wagon, a dump-box having laterally-swinging bottom doors meeting near the transverse center of the box, a drum at the front end of the box above the front ends of the doors, a pair of rocking members at the rear end of the box and connected for simultaneous action, supports for said rocking members and separate cables having their front ends attached to the drum and their intermediate portions passed downwardly and under the meeting edges of the bottom doors, and their rear ends each adjustably attached to one of the rocking members.

2. In a dump-wagon, a box having laterally-swinging bottom doors, a rotary drum at one end of the box, rocking members at the rear end of the box and connected for simultaneous action, separate chains passed lengthwise under the doors and having their front ends attached to the drum and their rear ends detachably and adjustably connected to the rocking members.

3. In a dump-wagon, a dump-box having laterally-swinging bottom doors, a rotary drum at one end of the box, a pair of rock-arms at the rear end of the box, a rigid bar pivotally connected to said rock-arms to transmit motion from one to the other, said rock-arms having their adjacent faces curved and grooved, the curved faces terminating in hook-shaped extremities above the fulcrums of the rock-arms, separate chains each extending along the under side of one of the doors and having one end attached to the drum and its other end detachably and adjustably engaged with said hook-shaped extremities.

848,078. APPARATUS FOR FORMING TILES PROVIDED WITH FLANGED EDGES. ANDRÉ WEILL, Brussels, Belgium. Filed Nov. 6, 1906. Serial No. 342,219.

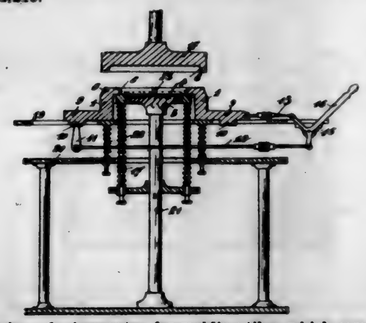

Claim.—1. Apparatus for molding tiles, which comprises in combination a mold formed of movable and fixed parts, a pressing device operating on said mold from above, and means for converting the downward pressure of said device into upward and inward pressure of the parts of the mold.

2. In apparatus for molding tiles the combination with a mold, comprising a fixed member and a movable member, together forming the base of the mold, and movable members forming the sides of the mold, of means for operating these parts so as to exert upward and inward pressure on under part of the mass to be molded.

3. In apparatus for molding tiles, the combination with a mold, comprising a fixed part and a movable part, together forming the base of the mold, and movable parts forming the sides of the mold, of a pressing device operating on said mold from above, and means for converting the downward pressure of said device into upward and inward pressure of the parts of the mold upon the under part of the mass to be molded substantially as described.

4. In apparatus for molding tiles the combination with a fixed member and a vertically-movable member, forming the base of the mold, and vertically and horizontally movable members, forming the sides of the mold, of means for simultaneously moving the side members inward and the side members and movable base member downward.

5. In apparatus for molding tiles the combination with a mold, comprising a fixed base member and a movable base member and vertically and horizontally movable side members, of means for simultaneously withdrawing the said side members, whereby after the molding operation the finished tile may be removed.

6. In apparatus for molding tiles, the combination of a mold comprising a fixed base member and a vertically-movable base member, and side members both vertically and horizontally movable, with means for supporting and guiding the horizontal movement of said side members and spring means for supporting said last-mentioned means and said movable base member.

7. In apparatus for molding tiles the combination with a mold comprising a fixed base part and a movable base part, movable side parts and inclined surfaces on said side parts of a pressing device operating from above and an inclined rim on said device corresponding to and adapted to engage with the inclined surfaces on the side parts of the mold substantially as and for the purpose set forth.

848,079. STEAM-CYLINDER DRAIN-VALVE. FRIEDRICH WEISS, Ricklingen, Germany. Filed Aug. 20, 1906. Serial No. 331,318.

Claim.—1. The combination with a steam-engine cylinder of a plurality of drain-valves, a pressure-piston for each drain-valve a single pressure-conduit containing all said pressure-pistons and means for controlling the pressure in said conduit whereby the pistons are operated.

2. The combination with a cylinder drain-valve of a spring for opening it, a piston adapted to open the valve against pressure in the cylinder, a pressure-conduit leading to said piston and a spring-controlled drain-valve to

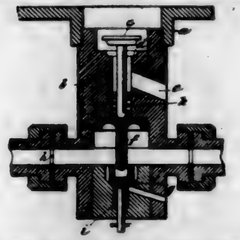

said conduit, said piston and drain-valves being all axially alined substantially as set forth.

848,080. NUT-LOCK. JOHN G. WENNINGER, Lancaster, Pa. Filed Oct. 5, 1906. Serial No. 337,582.

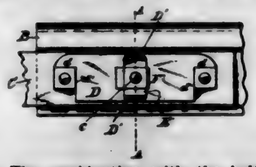

Claim.—1. The combination with the bolts and nuts clamping several parts of a mechanism together, of a locking-bar adapted to fit lengthwise between the vertical flat sides of said nuts adjacent to each other, and laterally-extending lugs integral with said locking-bar adapted to rest on the upper flat sides of said nuts, to assist in preventing them from turning, and a third bolt and nut adapted to clamp said locking-bar and the mechanism through which the former bolts are passed together, and a metallic washer F adapted to rest on said locking-bar between it and the lower face of said third bolt-nut, and lugs D' integral with said locking-bar adapted to prevent said washer from turning, and laterally-extending lugs *f' f'* integral with said metallic washer adapted to prevent said third bolt-nut from turning, substantially as described.

2. In a nut-locking device the combination with the bolts and nuts of a locking-bar adapted to rest on the upper and against the inner faces adjacent to each other of said nuts and a third bolt adapted to clamp the work and said locking-bar together and a metallic washer adapted to rest on said locking-bar between it and the lower face of the nut on the said third bolt and means provided to keep said washer from turning on the face of said nut-locking bar, and means integral with said washer adapted to rest against the side of said third bolt-nut to prevent it from turning.

848,081. STEAM-COOKER. ARTHUR S. WILT, New York, N. Y. Filed Feb. 8, 1905. Serial No. 244,686.

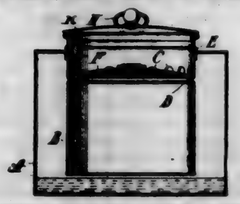

Claim.—A cooker comprising a boiler, having a mouth in the top thereof and a pot adapted to be snugly suspended in said mouth; said pot being provided with an inside horizontal upwardly-curved partition and means for removably retaining the same intermediate the top and bottom of said pot, and also provided with a series of holes extending completely around the pot and located so as to admit steam only above the said horizontal partition and at the same time act as vents for carrying off condensed steam from said partition.

848,082. MULTITUBULAR-BOILER-CLEANING DEVICE. JULIUS ALEXANDER, Stendal, Germany. Filed Sept. 4, 1906. Serial No. 333,269.

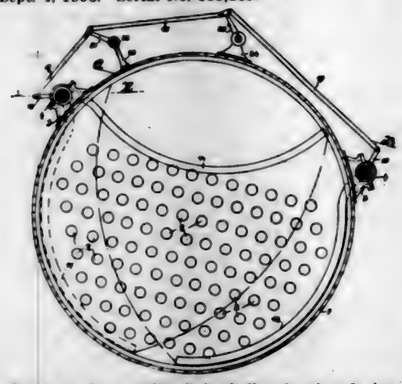

Claim.—1. In a multitubular-boiler-cleaning device, the combination with a plurality of casings on the boiler-shell, of a plurality of sweeping-tubes mounted to rock with their ends in said plurality of casings and to pass each other in parallel planes near the tube-plate, connections between said plurality of sweeping-tubes, means for supplying steam from the steam-space through said plurality of casings to said plurality of sweeping-tubes, and means for actuating said connections.

2. In a multitubular-boiler-cleaning device, the combination with a plurality of casings on the boiler-shell, of a plurality of hollow bodies mounted to rock in said plurality of casings, a plurality of sweeping-tubes secured with their ends in said plurality of hollow bodies and adapted to pass each other in parallel planes near the tube-plate, they being closed at their free ends and perforated on their sides facing the tube-plate for blowing steam through the tubes, a plurality of levers fastened on said plurality of hollow bodies, connections between said plurality of levers, means for supplying steam from the steam-space through said plurality of hollow bodies to said plurality of sweeping-tubes, and means for actuating said connections.

3. In a multitubular-boiler-cleaning device, the combination with two casings on the boiler-shell on two sides, of two hollow bodies mounted to rock in said two casings, two sweeping-tubes secured with their ends in said two hollow bodies and adapted to pass each other in parallel planes near the tube-plate, they being closed at their free ends and perforated on their sides facing the tube-plate for blowing steam through the tubes, two levers fastened on said two hollow bodies without said two casings, connections between said two levers whereby said two sweeping-tubes are coupled and balanced, means for supplying steam from the steam-space through said two hollow bodies to said two sweeping-tubes, and means for acttuating said connections.

848,083. ELECTROCAPILLARY DETECTOR AND RECORDING APPARATUS. JAMES T. ARMSTRONG and AXEL ORLING, London, England. Filed Aug. 31, 1904. Serial No. 222,909.

Claim.—1. In electrocapillary apparatus, the combination of an electrocapillary element with a second electrocapillary element and electric conductors constituting means of conducting a positive electric charge to the mercury-column of one of the said elements when the mercury-column of the other is negatively charged substantially as set forth.

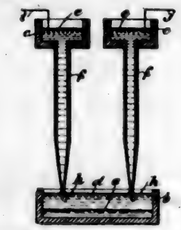

2. In electrocapillary apparatus the combination of an electrocapillary element with a second electrocapillary element, an electric conductor connected with the mercury-column of one of the said electrocapillary elements and the electrolyte of the other and a second electric conductor connected to the opposite terminals of the said electrocapillary elements substantially as set forth.

3. In electrocapillary apparatus, the combination of an electrocapillary element with a second electrocapillary element and electric conductors connected thereto constituting means of conducting an electric charge to the said elements to cause an electrocapillary flow of mercury from one or the other of them substantially as set forth.

4. In electrocapillary apparatus, a mercury-chamber a tubular part depending therefrom, a capillary end, a flexible tube to connect such capillary end to the mercury-chamber, a body of electrolyte with which the mercury in the capillary end makes contact, substantially as and for the purpose set forth.

5. In electrocapillary recording apparatus, the combination with a traveling sensitized surface and one or more beams of light which normally fall thereon with one or more electrocapillary elements adapted to intercept such beams of light when a displacement of the mercury takes place substantially as and for the purpose set forth.

6. In electrocapillary recording apparatus the combination of a light-proof chamber, one or more apertures therein, one or more beams of light adapted to pass through such apertures and a sensitized surface located within said light-proof chamber and fed past the apertures therein with one or more electrocapillary elements adapted to intercept such beams of light when a displacement of the mercury takes place to produce a record substantially as set forth.

7. In electrocapillary recording apparatus, the combination of a light-proof chamber, one or more apertures therein, a screen provided with corresponding apertures one or more beams of light adapted to pass through such apertures and a sensitized surface located within said light-proof chamber and fed past the apertures therein with one or more electrocapillary elements adapted to intercept such beams of light when a displacement of the mercury takes place to produce a record substantially as set forth.

8. In electrocapillary recording apparatus, the combination of a light-proof chamber, one or more apertures therein, a screen provided with corresponding apertures, one or more beams of light adapted to pass through such apertures and a sensitized surface located within said light-proof chamber and fed past the apertures therein with one or more electrocapillary elements adapted to intercept such beams of light when a displacement of the mercury takes place to produce a record, baths containing developing and fixing solutions and water respectively and means of drawing the sensitized tape therethrough, substantially as set forth.

9. In electrocapillary recording apparatus, the combination of a light-proof chamber, one or more apertures therein, a screen provided with corresponding apertures, one or more beams of light adapted to pass through such apertures, one or more reflectors lenses or prisms to direct and concentrate said beams of light, and a sensitized surface located within said light-proof chamber and fed past the apertures therein with one or more electrocapillary ele-

ments adapted to intercept such beams of light when a displacement of the mercury takes place to produce a record, baths containing developing and fixing solutions and water respectively and means of drawing the sensitised tape therethrough, substantially as set forth.

848,084. PALLET-SETTING IMPLEMENT. JEAN B. BOUCHARD, North Grosvenor Dale, Conn. Filed Dec. 23, 1905. Serial No. 293,135.

Claim.—1. In a pallet-setting implement, a supporting-body, a spring member carried on said body and forming therewith a clamp, means for adjusting the tension of said spring member, and a lever pivotally mounted on the supporting-body in engagement with said spring member, substantially as described.

2. In a pallet-setting implement, a supporting-body, a spring member carried on said body and forming therewith a clamp, means for adjusting the tension of said spring member, an upright arm on said supporting member, and a lever pivotally mounted on said upright arm and having a hooked end in engagement with said spring member, substantially as described.

3. In a pallet-setting implement, a supporting-body having an enlarged end and provided with openings, a spring member carried on said body and forming therewith a clamp, a squared bar disposed through one of said openings and in engagement with said spring member, a coiled spring disposed on the bar, means to vary the tension of said coiled spring, an upright arm disposed in another of said openings, and a lever pivotally mounted on said bar and having a hooked end, in engagement with said spring member, substantially as described.

848,085. SPRING-CLAMP FOR ELECTRIC TERMINAL WIRES. HORATIO J. BREWER, New York, N. Y. Filed Aug. 7, 1906. Serial No. 329,551.

Claim.—1. A clamp for electric terminal wires, consisting of spring metal formed with a hook and a terminal-wire holder, in combination with the article to which the terminal wire is clamped, said article being formed with a perforation for the reception of the said hook, and with a perforation for the reception of the terminal-wire holder.

2. A clamp for electric terminal wires, consisting of spring metal formed with a hook, a coiled portion, and a terminal-wire holder, in combination with the article to which the terminal wire is clamped, said article being formed with a perforation for the reception of said hook, and with a perforation for the reception of the terminal-wire holder.

3. A clamp for electric terminal wires consisting of spring metal formed with a hook and a terminal-wire holder, in combination with the article to which the terminal wire is clamped, said article being formed with a perforation for the reception of the said hook, and with a perforation for the reception of the terminal-wire holder, and a washer interposed between the article and the terminal wire.

4. A clamp for electric terminal wires consisting of a single spring-wire formed with a hook, a coiled portion and a terminal-wire holder, in combination with the article to which the terminal wire is clamped, said article being formed with a perforation for the reception of the said hook, and with a perforation for the reception of the terminal-wire holder, and a washer interposed between the article and the terminal wire.

5. A clamp for electric terminal wires, consisting of a spring-wire formed with a hook, and a terminal-wire holder, in combination with the article to which the terminal wire is clamped, said article being formed with a perforation for the reception of the said hook, and with a perforation for the reception of the terminal-wire holder, and a bearing-piece engaging the said hook and formed to admit the terminal-wire holder.

6. A clamp for electric terminal wires, consisting of a spring-wire formed with a hook, a coiled portion, and a terminal-wire holder, in combination with the article to which the terminal wire is clamped, said article being formed with a perforation for the reception of the said hook, and with a perforation for the reception of the terminal-wire holder, and a bearing-piece engaging the said hook and formed to admit the terminal-wire holder.

7. A clamp for electric terminal wires, consisting of spring metal formed with a hook, a coiled portion, and a terminal-wire holder, in combination with the article to which the terminal wire is clamped, said article being formed with a perforation for the reception of the said hook, and a bearing-piece engaging said hook and formed to receive the terminal-wire holder.

8. A clamp for electric terminal wires, consisting of a spring-lever having a coiled portion, a terminal-wire holder, and a bearing-piece formed with a loop for the reception of the terminal-wire holder, together with the article to which the terminal wire is clamped.

9. A clamp for electric terminal wires, consisting of a spring-lever having a terminal-wire holder and a finger extension, and a bearing-piece formed with a loop for the reception of the terminal-wire holder, together with the article to which said terminal wire is clamped.

10. A clamp for electric terminal wires, consisting of a spring-lever having a coiled portion, a terminal-wire holder and a finger extension, and a bearing-piece formed with a loop for the reception of the terminal-wire holder, together with the article to which the terminal wire is clamped.

11. In a clamp for electrical terminals, the combination of a spring-lever consisting of a spring-wire formed with a hook and a terminal-wire holder, the latter being formed by doubling the wire upon itself and bending it about the shank of the loop thus formed, together with the article to which the terminal wire is clamped.

12. In a clamp for electrical terminals, the combination of a spring-lever consisting of a spring-wire formed with a hook, a coiled portion, and a terminal-wire holder, the latter being formed by doubling the wire upon itself and bending it about the shank of the loop thus formed, together with the article to which the terminal wire is clamped.

13. In a clamp for electric wire terminals, the combination of a spring-lever consisting of a single piece of wire formed with a hook, a coiled portion, a loop for the terminal wire and a finger extension formed by doubling the wire upon itself and bending the end of the wire around the shank of the terminal-wire loop, together with the article to which the terminal wire is clamped.

14. In a clamp for electric terminal wires, a spring-lever consisting of a single piece of wire formed with a hook, a coiled portion, a loop for the terminal wire, the latter being formed by doubling the wire upon itself and bending it about the shank of the loop thus formed, in combination with a bearing-piece engaging with said hook and adapted to receive the terminal-wire holder, together with the article to which the terminal wire is clamped.

15. In a clamp for electric wire terminals, a spring-lever consisting of a single piece of wire formed with a hook, a coiled portion, a loop for the terminal wire, and a finger extension formed by doubling the wire upon itself and bending the end of the wire around the shank of the terminal-wire loop, in combination with a bearing-piece engaging with said hook and adapted to receive the terminal-wire loop, together with the article to which the terminal wire is clamped.

16. In a clamp for electric terminal wires, a spring-lever consisting of a single piece of wire formed with a hook, a coiled portion, and a terminal-wire holder, in combination with a bearing-piece consisting of an elongated loop of wire engaging with the hook and adapted to receive the terminal-wire holder, together with the article to which the terminal wire is clamped.

848,086. FLAT-CAR STANCHION. FRANK J. BUZBEE, Mobile, Ala. Filed July 31, 1906. Serial No. 328,559.

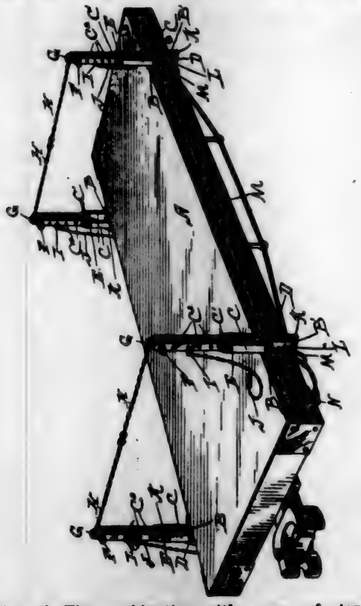

Claim.—1. The combination with a car, of standards pivoted to the car provided with adjustable stakes and supporting-arms carried by the standards, for the purpose described.

2. The combination with a car, of standards pivoted to the car provided with adjustable stakes, a supporting-arm pivoted to the standards and means for locking said arm to the car, for the purpose described.

3. In a device of the kind described, the combination with a car having brackets secured to the side of the car, of standards pivoted in said brackets provided with adjustable stakes, and supporting-arms pivoted to said standards, for the purpose described.

4. In a device of the kind described, the combination with a car provided with brackets, of standards pivoted to said brackets, supporting-arms pivotally connected to said standards, locking-pins extending through said brackets and supporting-arms and a cable connected to said pins, for the purpose described.

5. The combination with a car, of brackets secured to said car provided with apertured plates, a standard having a forked end pivoted over said plates, a slotted stake adjustably mounted in said standard, and a supporting-arm pivoted to said standard adapted to be locked in said bracket, for the purpose described.

6. The combination with a car, of brackets secured to said car provided with spaced vertical apertured plates, of strips pivoted to said plates, provided with a series of openings, a thumb-screw working in the opening at the top, a slotted stake mounted in said thumb-screw and supporting means connected to said standard, for the purpose described.

7. The combination with a car, of brackets secured to said car, standards pivoted to brackets, supporting-arms pivotally connected to said standards, locking-pins extending through said brackets and supporting-arms, and a cable connected to said pins, for the purpose described.

8. The combination with a car, of brackets secured to said car provided with spaced apertured plates, of strips pivoted to the upper ends of said brackets connected together by bolts, supporting-arms pivotally mounted on said bolts provided with openings in the lower ends, pins extending through the openings in the plates and arms, a cable arranged in said plates of the brackets connected to said pins, for the purpose described.

9. The combination with a car, of standards pivoted to said car provided with a series of openings in its upper end, a thumb-screw mounted in the openings at the top of the standards, slotted stakes mounted on said screws connected together by chains, pins extending through the opening and slots of the standards connected together by chains, and supporting means carried by the standards, for the purpose described.

10. The combination with a car, of brackets secured to the car provided with spaced vertical apertured plates, of strips pivoted to said brackets provided with a series of openings in their upper ends, thumb-screws connecting the upper ends of said strips, a bolt connecting the strip adjacent the other end, a supporting-arm carried by said standards, a slotted stake mounted on said thumb-screw between said strips, pins arranged in the openings in the standards, and means for locking said supporting-arms between said plates of the brackets, for the purpose described.

848,087. CROSSING-SIGNAL FOR RAILWAYS. JAMES CRUMLEY, Grand Rapids, Mich. Filed Aug. 6, 1906. Serial No. 329,332.

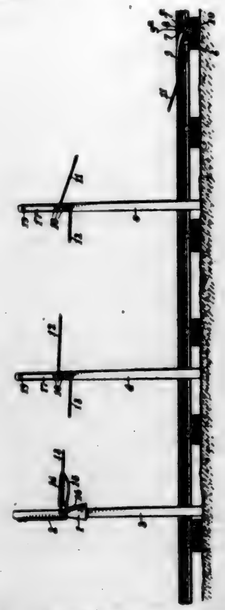

Claim.—1. In a signal of the class described, the combination of a bell, a lever engaged by the wheels of a passing train, a series of separate wires extending from the lever to the bell and pendulum-hangers to which the respective ends of the wires are attached at different distances from the pivots of the hangers to amplify the movement of the wires.

2. In a signal of the class described, the combination of a pivoted lever adjacent to the track of a railway, a bell located at a distance therefrom, a series of hangers between the bell and the lever, and a series of separate wires connected to the lever and to the bell, said wires being

connected to the respective hangers, with their ends nearest the bell at a greater distance from the pivots of the hangers and their ends nearest the lever at a less distance from said pivots, whereby the hangers operate as levers to amplify the longitudinal movements of the wires.

3. In a signal of the class described, a rock-shaft near the rail of a railway, a lever fixed on the shaft, and projecting above the plane of the said rail, stop-shoulders to limit the upward movement of the lever, an arm on the rock-shaft, a bell located at a distance from the rock-shaft, a series of separate wires connecting the arm and bell, a series of pivoted hangers to which the respective ends of the wires are attached at different distances from the pivots of the hangers, a tension-spring attached to the wires, and means for connecting the bell with one of the wires.

848,088. FAUCET. JOSEPH A. DESROSIERS, Montreal, Quebec, Canada. Filed Dec. 26, 1906. Serial No. 349,387.

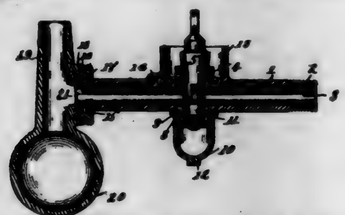

Claim.—1. In combination with a faucet having a longitudinal and a transverse bore and having a valve disposed in the transverse bore, means for catching the leakage from one end of the transverse bore, means for catching the leakage from the opposite end of the transverse bore and conducting the same into the longitudinal bore, and means at the end of the longitudinal bore for receiving the leakage.

2. In combination with a faucet having a longitudinal and a transverse bore and having a screw-threaded boss at one end of the transverse bore, and a valve disposed on the transverse bore, an interiorly-screw-threaded cup secured to the boss, means for conducting the leakage from the opposite end of the transverse bore into the longitudinal bore, and means at the end of the longitudinal bore for receiving the leakage.

3. In combination with a faucet having a longitudinal and a transverse bore and having a screw-threaded boss at one end of the transverse bore, an interiorly-screw-threaded cup secured to the boss and provided with an exterior faced boss, means for conducting the leakage from the opposite end of the transverse bore into the longitudinal bore, and means at the end of the longitudinal bore for receiving the leakage.

4. In combination with a faucet having a longitudinal and transverse bore and having a flange around one end of the transverse bore, and having a passage leading from within the flange to the longitudinal bore and having a valve disposed in the transverse bore, means for catching the leakage from the opposite end of the transverse bore, and means at the end of the longitudinal bore for receiving the leakage.

5. In combination with a faucet having a longitudinal and a transverse bore and having a valve disposed in the transverse bore, means for catching the leakage from one end of the transverse bore, means for catching the leakage from the opposite end of the transverse bore and conducting the same into the longitudinal bore, and rotatable means at the end of the longitudinal bore for receiving the leakage.

6. In combination with a faucet having a bore and a valve disposed therethrough, means for conducting the leakage from around the valve into the bore of the faucet and a spout rotatably secured at the end of the faucet and provided with a weighted closed end.

7. In combination with a faucet having a bore and a valve disposed therethrough, means for conducting the leakage from the valve into the bore of the faucet, a screw-threaded ring on the faucet, a packing-ring disposed on the screw-threaded ring, a collar rotatably disposed on the faucet and the packing-ring, and a spout secured to the collar and provided with an expanded receptacle at one end.

848,089. BEET-HARVESTING DEVICE. GEORGE R. DOTSON, Elbert, Colo. Filed Mar. 17, 1906. Serial No. 306,621.

Claim.—1. A beet-harvester comprising a wheeled supporting-frame, means arranged at the forward end of the frame for removing the beets from the ground, transverse conveyers mounted upon the frame at different elevations and one in rear of the plane of the other, an inclined conveyer for moving the elevated beets toward the upper transverse conveyer, said inclined conveyer being adapted to grip the beet-tops, cutting mechanism for detaching the beets from the tops at a point adjacent to said upper transverse conveyer, allowing the tops to be fed forward to said transverse conveyer, a shaking-screen arranged below the upper transverse conveyer and extending forwardly and rearwardly thereof to receive the detached beets dropping from the inclined conveyer and conduct the same to the lower transverse conveyer, and means for operating the conveyers and screen.

2. A beet-harvester comprising a wheeled supporting-frame, beet-unearthing means carried at the forward end of said frame, transverse conveyers arranged upon the frame, one above and in advance of the plane of the other, a shaking-screen arranged below the upper transverse conveyer and extending in front and rear thereof and adapted to discharge the harvested and topped beets onto the lower transverse conveyer, an inclined conveyer leading from a point in rear of the beet-unearthing means to the upper transverse conveyer and adapted to grip the tops of the beets, and a severing device arranged adjacent the front of the upper transverse conveyer and above the forward end of the screen to detach the beets from their tops and permit the detached beets to drop downward into the screen.

3. In a beet-harvesting device, the combination of a frame having front and rear wheeled axles, gathering mechanism at the forward end of the frame, upper and lower transverse conveyers at the rear of the frame, the upper conveyer being arranged in advance of the plane of the lower, an inclined conveyer leading from the gathering means to the upper transverse conveyer, said inclined conveyer being adapted to grip the beets by their tops, a shaking-screen arranged below the upper transverse conveyer and extending in front and rear of the plane thereof and adapted to discharge the topped beets into the lower transverse conveyers, a cutter arranged adjacent the front of the upper transverse conveyer and above the forward end of the screen to sever the beets from their tops, allowing the beets to drop into the screen and the tops to be carried by the inclined conveyer to the upper transverse conveyer, gearing for operating the conveyers from the rear axle, and mechanism for shaking the screen from the rear axle.

4. In a beet-harvester, the combination of a wheeled supporting-frame having a rear drive-axle, beet-harvesting means arranged at the front of the frame, upper and lower transverse conveyers arranged at the rear of the frame, the upper conveyer being arranged in advance of the plane of the lower, an inclined conveyer leading from the harvesting means to the upper transverse conveyer, said conveyer being adapted to grip the beets and to conduct the tops to the upper transverse conveyer, a shaking-screen extending longitudinally through the space below the upper transverse conveyer and extending in front and rear thereof and adapted to discharge the topped beets onto the lower transverse conveyer, means for operating the conveyers and screen from the rear axle, a support arranged in juxtaposition to the upper faces of the inclined conveyer, and a cutting-knife carried by the support to sever the beets from the tops and permit the detached beets to fall into the forward portion of the screen.

848,090. COMPUTING CHEESE-CUTTER. WALTER G. DOTY, Dayton, Ohio, assignor to The Heinz Manufacturing Company, Dayton, Ohio, a Corporation of Ohio. Filed Jan. 22, 1906. Serial No. 297,100.

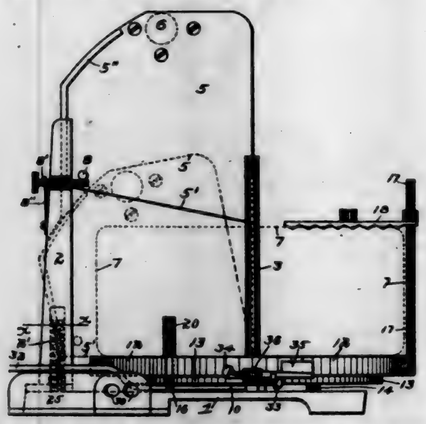

Claim.—1. In a computing cheese-cutter, a base, cheese-supporting board rotatably mounted upon said base, a protective shield for the cut surface of the cheese, a clamping device supported upon said cheese-board and embracing the upper surface of the cheese to hold said cheese in position, and means supported on said clamping device for holding the protective shield against the cut surface of the cheese.

2. In a computing cheese-cutter, a base, a cheese-board rotatably mounted thereon, a protective shield for the cut surface of the cheese, a clamping member supported upon said cheese-board and embracing the upper surface of the cheese, means carried upon the clamping member for pressing the protective shield against the cut surface of the cheese, and a pin insertible in an aperture in the cheese-board and coöperating with said clamping member to hold the cheese in position.

3. In a computing cheese-cutter, a base, a cheese-board rotatably mounted thereon, a slidable knife supported upon guides extending from said base, the cutting edge of said knife tapering outwardly and upwardly from the inner end thereof, and said knife having vertical and lateral movement in its cutting operations.

4. In a cheese-cutter, a base, a cutting-blade having vertical and outwardly-tilting movements in its cutting operations, the outer edge of said cutting-blade having marginal ribs, inner and outer guide-standards for said blade, the outer guide-standard permitting the cutting-blade to project through it in the final or tilting movement of said blade.

5. In a cheese-cutter, a base, guide-standards projecting from said base, and a cutting-blade slidably mounted in said guide-standards, said cutting-blade having its cutting edge tapered outwardly and upwardly so that the inner end of said cutting-blade acts as a pivot for an outward-tilting movement of the cutting-blade when said blade has reached the limit of its vertical movement.

6. In a cheese-cutter, the combination with a base, a guide-standard projected from the axis of said base, and a guide-standard projected from the circumference of said base, of a cutting-blade having its cutting edge tapered outwardly and upwardly from its inner end, said cutting-blade having a two-fold movement in its cutting operation, to wit—a downward vertical movement limited by the inner end of the cutting edge, and an outward and downward movement limited by the entire length of the cutting edge of said blade.

7. In a cheese-cutter, a base, a cheese-board rotatably mounted on said base, a guide-standard projecting from the center of said base and through the center of the cheese-board, a guide-standard projecting from the circumference of said base, and a cutting-blade slidably mounted in said standards, said cutting-blade having its cutting edge tapered outwardly and upwardly, and a handle projecting from said blade by means of which a downward vertical and an outward or lateral movement is imparted to the blade in the cutting operation.

8. In a cheese-cutter, a base, a guide-standard projecting from the center of said base, said guide-standard having a detachable needle at its upper end, a guide-standard projecting from the circumference of said base, and a cutting-blade slidably mounted in said guides.

9. In a computing cheese-cutter, a base, a slidable knife supported in guide-standards rising from said base, the cutting edge of said knife tapering outwardly and upwardly from the inner end thereof, a cheese-board rotatably mounted on said base, a clamping-arm supported from said cheese-board, additional means coöperating with said clamping-arm to hold the cheese, and means for rotating said cheese-board intermittently.

10. In a computing cheese-cutter, a base, a cheese-board rotatably mounted thereon, price and weight scales to indicate the value in money and the weight of segments of cheese severed from the cake, a frame pivotally mounted below the cheese-board, means on said frame for rotating the cheese-board, and means on said frame for indicating upon the scales the desired extent of movement of the cheese-board, and means for arresting the movement of the cheese-board upon each complete rotation thereof.

11. In a computing cheese-cutter, a base, a cheese-board rotatably mounted thereon, a vertically-movable knife having its cutting edge tapered outwardly and upwardly from its innermost point of contact with the cheese, upright guides inclosing the vertical edges of said knife, scales to indicate the value in money and the weight of the segments of cheese severed from the cake, a frame pivotally mounted below the cheese-board, a gripping device carried on said frame to impart movement to the cheese-board, a pointer on said frame to indicate on one or the other scale the extent of movement to be imparted to the cheese-board for each succeeding cut of cheese, and means engaging the upper surface of the cheese to hold it in position.

12. In a computing cheese-cutter, a base, a cheese-board

rotatably mounted on said base, computing-scales to indicate the values in money and the weight of the segments of cheese, a frame pivotally mounted below the cheese-board, a pointer carried on said frame, means to indicate the initial cut of the cheese, means for rotating said scales subsequently to the initial cut to adjust the same according to the weight or money value of said initial cut, and means on said frame for engaging the cheese-board to rotate the same to an extent as indicated upon the computing-scale.

13. In a computing cheese-cutter, a base, a cheese-board rotatably mounted on said base, a knife slidingly supported in guide-standards from said base, a clamping member supported on the cheese-board and engaging the top of the cheese to hold the same, a shield to inclose the cut surface of the cheese, and means extending from the clamping member and engaging said shield to hold it in contact with the cheese.

14. In a computing cheese-cutter, a base, a cheese-board rotatably mounted on said base, a knife slidingly supported in guides on said base, a clamping member engaging the upper surface of the cheese to hold the same, a removable pin on the cheese-board coöperating with said clamping member, computing-scales to indicate the values in money and the weights of the segments of cheese severed from the cake, an arbitrary indication adjacent to said scale by which the initial cut of cheese is measured, a frame pivotally mounted below the cheese-board, a scale-pointer on said frame, said pointer being movable to the indication on said scale, and also initially movable to the arbitary indication, and means on said frame for rotating the cheese-board at the same time with the movement of the frame in indicating the scale indications.

848,091. CONCRETE-BUILDING-BLOCK MACHINE. GEORGE W. DUNMORE, Sterling, Ill. Filed Mar. 2, 1906. Serial No. 303,745.

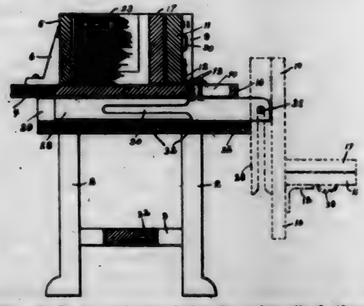

Claim.—1. In a machine of the class described, the combination with a frame, of a mold comprising a back and ends secured to the frame, a bottom plate slidable in said frame and carrying the mold-front, and means whereby said bottom plate may be slid from the mold and turned to assume a vertical position.

2. In a machine of the character described, a frame, a mold comprising a back and ends mounted on said frame, a bottom plate slidable in the frame and carrying the mold-front, and provided with a slot, said bottom plate being adapted to be slid from beneath the mold to bring the end of the slot into engagemnt with a portion of the frame upon which the bottom plate may be turned to a vertical position.

3. In a machine of the character described, a frame, a mold comprising a back and end plates thereon, a mold-bottom carrying the mold-front, a pivot member on the frame, and means whereby the mold-bottom may be slid from beneath the mold into engagement with the pivot member and turned to a vertical position thereon.

4. In a machine of the character described, a frame, a mold comprising a back and end plates thereon, a mold-bottom carrying the mold-front, a pivot member on the frame, and means whereby the mold-bottom may be slid from beneath the mold into engagement with the pivot member and turned to a vertical position thereon and supported solely thereby.

5. In a machine of the character described, a mold comprising a back and side walls secured together, and a bottom and front secured together, said bottom and front being adapted to be slid entirely from under said mold, and means limiting the outward movement thereof and means permitting the said bottom to be tilted to a vertical position upon said first means.

6. In a machine of the character described, comprising a mold, a sliding bottom therefor, the mold-front being secured to said bottom, a bed upon which said bottom slides, a bar beyond the front edge of said bed, and means permitting said bottom to be slid entirely from beneath the mold and into engagement with said bar, and means permitting said bottom to be tilted to a vertical position on said bar and into engagement with said front edge of said bed.

848,092. SEA-SOUNDING. ALBERT F. EELLS, Boston, Mass. Filed Feb. 23, 1907. Serial No. 358,924.

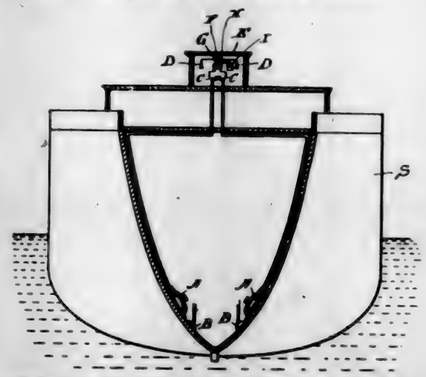

Claim.—1. The method of determining the depth of water which consists in generating sound-waves, receiving them on an electric transmitter and then noting the loudness to determine the depth.

2. The method of determining the depth of water, which consistu in generating sound-waves, receiving the same on an electric transmitter, and automatically indicating the depth.

3. The method of determining the depth of water, which consists in generating sound-waves, receiving them on an electric transmitter, automatically indicating the depth and automatically actuating a signal when a predetermined minimum depth has been reached.

4. A sea-sounding apparatus comprising means for generating sound-waves and means for electrically noting the volume of the sound to determine the depth of water.

5. A sea-sounding apparatus comprising a vessel, means therein for generating sound-waves, a hermetically-sealed electric transmitter within the submerged portion of said vessel and means for noting through said transmitter the volume of the sound and the depth of the water.

6. A sea-sounding apparatus comprising therein means for electrically generating sound-waves, an electric transmitter affixed to a submerged portion of said vessel, means for electrically indicating the depth and for sounding an alarm.

7. A sea-sounding apparatus comprising a vessel, means therein for generating sound-waves, a hermetically-sealed transmitter secured within the submerged portion of said vessel, a receiver electrically connected with said transmitter, and means for automatically indicating the depth of the water by volume of sound.

8. A vessel, a hermetically-sealed electric transmitter secured within and directly in contact with the submerged portion of said vessel and a receiver electrically connected with said transmitter.

848,093. GOVERNING MECHANISM FOR TURBINES. WILLIAM L. R. EMMET, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 25, 1906. Serial No. 327,599.

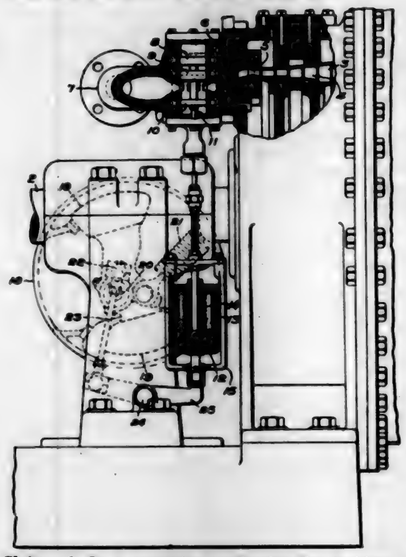

Claim.—1. In a governing mechanism for turbines, the combination of a valve whose region of movement varies for different loads, a speed-responsive device for changing the region of movement of the valve, and a means that acts to retard the movements of the valve in the opposite direction.

2. In a governing mechanism for turbines, the combination of a regulating-valve, a governor which imparts a certain number of strokes to the valve in a given unit of time, and a means which retards the movement of the valve in the opposite direction.

3. In a governing mechanism for turbines, the combination of a regulating-valve, a governor which positively imparts to the valve in one direction a given number of strokes per interval of time, and a device which moves the valve in the opposite direction and also retards it.

4. In a governing mechanism for turbines, the combination of a regulating-valve, a governor, a valve-actuator reciprocated directly by the governor in one direction at a speed and through a distance determined by the speed of the turbine, a retracting device for said actuator acting in opposition to said actuator, and means for retarding the effect of said retracting device.

5. In a governing mechanism for turbines, the combination of a regulating-valve, a governor responsive to speed changes, a lever actuated by said governor at a speed and through an angular distance depending upon the speed of the turbine, a valve-actuator operated by said lever to open said valve, a spring for closing said valve, and a retarding device controlling the rate of closing.

6. In a governing mechanism for turbines, the combination of a regulating-valve, a governor comprising a weight pivoted eccentrically to its axis of revolution, a lever connected to said weight, a valve-stem operated by said lever in one direction, a spring to move said valve in the opposite direction, and a dash-pot to control the rate of movement by said spring.

7. In a governing mechanism for turbines, the combination with a regulating-valve controlling two or more ports in succession during its travel, of a valve-stem, a governor responsive to speed changes, and intermediate mechanism whereby said governor will actuate said stem by an amount inverse to the speed of the turbine.

8. In a governing mechanism for turbines, the combination with a regulating-valve controlling two or more ports in succession during its travel, of a valve-stem, a governor comprising a revolving weight pivoted eccentrically to the axis of revolution, a wrist-pin on said weight, whose orbit of revolution varies in diameter inversely with the speed of the turbine, a lever connected to said pin and actuating said stem in one direction, and a retarded device for moving said stem in the opposite direction.

848,094. COMPOSITION OF MATTER. GEORGE H. FERLIN, San Diego, Cal. Filed Feb. 14, 1907. Serial No. 357,412.

Claim.—1. The herein-described composition of matter consisting of wood fiber and white lead substantially as described and for the purposes specified.

2. The herein-described composition of matter for manufacturing pencils and penholders consisting of wood fiber seven hundred and fifty pounds and white lead one hundred and fifty pounds, with sufficient water to form a paste for compressing under a pressure of ten thousand pounds to the square inch, substantially as described.

848,095. BOTTLE-FORMING APPARATUS. ANTON FREDERIKSEN, Copenhagen, Denmark. Filed Mar. 2, 1904. Serial No. 196,174.

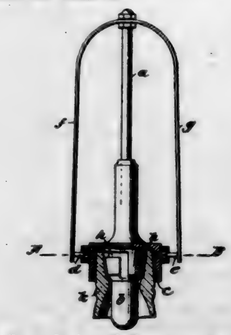

Claim.—1. In a device of the class described, a punch or inner forcing member having angle-shaped grooves formed in the periphery, and means located adjacent to the

grooves for forcing the plastic glass of the bottle-neck into a portion of the grooves from the exterior.

2. In a device of the class described, an interior former having angle-shaped grooves formed in the periphery, an exterior former the peripheral wall of which curtains the grooves of the interior former, pins reciprocating through the curtain of the exterior former in registry with a portion of the slots of the interior former and means for normally keeping the reciprocating pins retracted within the curtain-wall of the exterior former.

3. In a device of the class described, an interior former having angle-shaped grooves formed in the periphery, an exterior former the peripheral wall of which curtains the grooves of the interior former, pins reciprocating through the curtain of the exterior former in registry with a portion of the slots of the interior former, means for normally keeping the reciprocating pins retracted within the curtain-wall of the exterior former and a cylindrical punch or member extending from the end of the interior former.

4. In a device of the class described, a feather handle-bar the branches *f* and *g* of which carry the pins *d* and *e* reciprocating through the curtain-wall of the exterior former in such manner as to force the plastic glass of the bottle-neck inward.

5. A machine for forming the necks of protective bottles comprising a mandrel arranged to receive the neck of the bottle, said mandrel being provided with a depression extending partially around the circumference of the mandrel and means for forcing a portion of the bottle-neck into said depression to form a shoulder extending inwardly beyond the inside surface of the neck, substantially as described.

848,096. POWER-TRANSMISSION DEVICE. LEO FRITSCHKA and CARL KOCH, Chicago, Ill. Filed June 28, 1906. Serial No. 323,959.

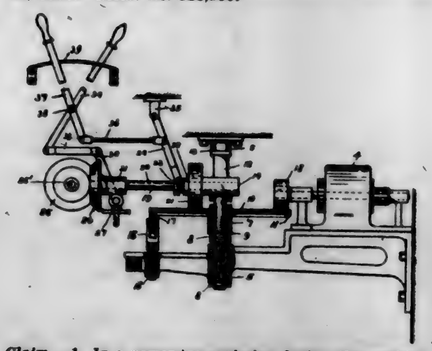

Claim.—1. In a power-transmission device, the combination with a friction-disk, a driving-gear therefor, of a driven gear in contact with the friction-disk and capable of radial movement thereon, a driven shaft and bevel-gear, a power-shaft, spaced bevel-gears thereon, and means for shifting the driven bevel-gear between the spaced bevel-gears.

2. In a power-transmission device, the combination with a friction-disk and a driving-gear therefor, of a driven gear radially slidable on the friction-disk, a driven bevel-gear, a power-shaft, spaced bevel-gears thereon, a rocker-shaft for shifting the driven bevel-gear between the spaced bevel-gears, and means for shifting the driven gear on the friction-disk.

3. A transmission device comprising a friction-disk, a driving-gear in engagement therewith, a driven gear radially movable on the disk, shifting means for said gear, a driven bevel-gear, a rocker-shaft for laterally shifting said bevel-gear, and spaced bevel-gears adapted for engagement with the driven bevel-gear.

4. The combination with a friction-disk, of means for supporting the disk, a driving-gear engaging the disk, a shaft pivoted centrally over the friction-disk, a driven gear on said shaft capable of radial movement on the disk, a driven bevel-gear, a rocker-shaft having threaded engagement to shift the driven shaft, a power-shaft, spaced bevel-gears thereon adapted for engagement with the driven bevel-gear.

5. The combination with a friction-disk, a pivotal post for the disk, means for supporting the edge of the disk, a journal-bearing pivoted on the post, a shaft in said bearing, a gear on the shaft radially slidable on the friction-disk, means for shifting said driven gear, and a bevel-gear on the driven shaft, of a rocker-shaft having threaded engagement and adapted to shift the driven shaft laterally, a power-shaft, and spaced opposing bevel-gears on said power-shaft adapted for engagement with the driven bevel-gear.

848,097. LONG-TOOTH FINDER FOR CUTTERS FOR EDGE-TRIMMING MACHINES FOR BOOTS AND SHOES. GEORGE E. FULLER, South Hanson, Mass., assignor to F. H. Poole, Brockton, Mass. Filed July 18, 1906. Serial No. 326,702.

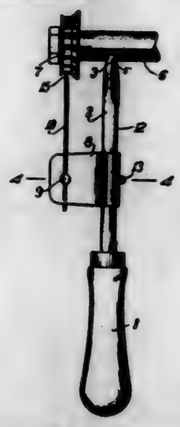

Claim.—1. A long-tooth finder, consisting of self-centering means for removably engaging a rotating cutter-shaft, said means being constructed and arranged to permit of swinging the finger angularly to the rotating shaft, and a spring-needle having a sharpened point at its forward end mounted in said shaft-engaging means in position to contact with the projecting tooth of the cutter when being swung toward the same by said engaging means.

2. A long-tooth finder, consisting of a spindle having a flared split end rounded at its extremities to engage a cutter-shaft and permit accurate angular swinging movement while the shaft is rotating, and marking means movable with said spindle, having a sharp deflected marking-point to engage a long tooth of the rotating cutter on said shaft.

3. A long-tooth finder, consisting of a spindle provided with self-centering means at its outer end to engage a rotating cutter-shaft, an adjustable slide mounted on said spindle, and a spring-finger carried by said slide at one side of said spindle to engage and mark a long tooth of the cutter.

4. A long-tooth finder, consisting of a spindle provided with self-centering means at its outer end to engage a rotating cutter-shaft, an adjustable slide mounted on said spindle, and a spring-finger adjustably carried by said slide at one side of said spindle to engage and mark a long tooth of the cutter.

5. A long-tooth finder, consisting of a spindle provided with self-centering means at its outer end to engage a rotating cutter-shaft, an adjustable slide mounted on said spindle, a perforated stud adjustably secured in said slide, and a spring-needle slidingly mounted in the perforation of said stud, said needle having a sharpened end to mark the cutter-teeth.

6. A long-tooth finder, consisting of a spindle provided with self-centering means at its outer end to engage a rotating cutter-shaft, an adjustable slide mounted on said spindle, a perforated stud adjustably secured in said slide, and a spring-needle slidingly mounted in the perforation of said stud, said needle having a sharpened end to mark the cutter-teeth, said end being deflected downwardly in the direction of rotation of the cutter.

7. A long-tooth finder, consisting of a spindle mounted in a handle at one end, and, at its other end, having flaring lips, smooth and outwardly curved on their inner faces and having their edges curved and rounded to a point, combined with a slender needle-like finger supported by said spindle at a considerable distance at one side thereof, and having its forward free end deflected below the medial line of said flaring lips.

848,098. PILE-DRIVER. HAROLD GEE, Kenilworth, Ill., assignor to Featherstone Foundry & Machine Company, Chicago, Ill., a Corporation. Filed Nov. 24, 1906. Serial No. 344,805.

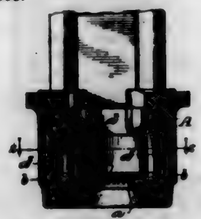

Claim.—1. A pile-driving machine comprising a chambered, open-ended head having materially-contracted end openings and a drift or impact plate that is wider in one direction than the width of one of said end openings, but is narrower in another direction than the width of said opening to permit the plate to pass through said opening and into the chamber of the follower-head.

2. A pile-driving machine comprising a chambered, open-ended head having materially-contracted end openings and having one or more guide-ribs upon its interior and a drift-plate within the chamber of said follower-head and engaging the guide rib or ribs upon the interior of the follower-head.

848,099. ENVELOP-MACHINE. FRANK GRANT, Westfield, Mass. Filed Mar. 1, 1905. Serial No. 247,878.

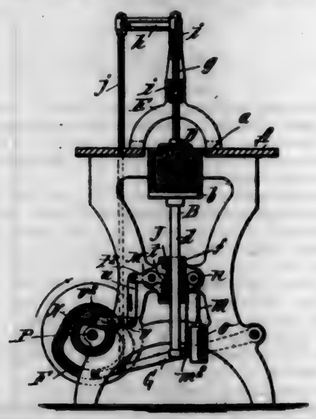

Claim.—1. In an envelop-machine in combination, a vertically-movable elevating-support for the blank pile, a plunger reciprocating thereover, and adapted to periodically dwell at the limit of its descending movement and to constitute a means of limitation relatively, and upwardly, to which the blank-pile support and blanks thereon may be moved, means for imparting intermittent reciprocatory movements to the plunger, means for imparting a lifting movement to such support, having capability of yielding relatively to the resistance of the lowered and temporarily-immovable plunger, and means intermittently operable for the retention of the blank-pile support at the required level at which it is constantly maintained by the lifting means.

2. In an envelop-machine in combination, a vertically-movable elevating blank-pile support, a plunger reciprocating thereover and adapted to periodically dwell at the limit of its descending movement and to constitute a means of limitation relatively and up to which the blank-pile support and blanks thereon may be moved, means for imparting the intermittent reciprocatory movements to the plunger, a shoe arranged alongside a vertical portion of the blank-pile support, a lever mounted for swinging movement adjacent said shoe and having a cam-shaped end operable to bind the shoe against, and permit its release from, the support, a cam having an actuating connection with the lever, a weight, and a flexible connection to a portion of which the weight is hung, intermediately sheave supported and guided, and having a portion thereof connected to the blank-pile support.

848,100. DISPLAY-RACK. DAVID F. GREENAWALT, York, Pa. Filed Mar. 24, 1906. Serial No. 307,898.

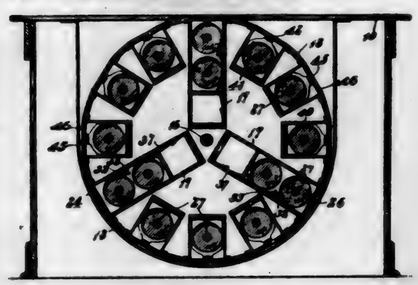

Claim.—1. The combination with a counter or casing having a top opening, the length of which is at a right angle to the width of the counter, or casing, a vertically-adjustable rack normally concealed below the counter and movable through the opening to display position, and article-supporting means carried by said frame.

2. The combination with a counter or casing having a top opening, the length of which is at a right angle to the width of the counter or casing, a vertically-movable rack normally concealed below the counter and movable through the opening to display position, and fabric-supporting rollers carried by said frame.

3. In apparatus of the class described, a counter or casing having a top opening, a revoluble drum having its axis in the vertical plane of the opening, a series of display-racks mounted in the drum and movable opposite the opening, said racks being adjustable through said opening to display position, and means for locking the racks in elevated position, and preventing their return by gravity to position within the drum.

4. The combination with a counter or casing having a top opening, of a revoluble drum arranged within the opening, casings carried by said drum, vertically-adjustable display racks or frames disposed within said casing, and means for locking the racks in elevated position and preventing their return by gravity to position within the drum.

5. The combination with a counter or casing having an opening, of a revoluble drum, a plurality of casings carried by the drum, display racks or frames mounted within

said casings and adjustable through the opening to display position, and bars carried by the frames and movable into alinement with the periphery of the drum to form closures for said casings.

6. The combination with a counter or casing, having a display-opening, of a revoluble drum, a plurality of casings carried by said drum, vertically-adjustable display racks or frames arranged within the casings and movable through the opening to display position, and a pair of bars carried by each rack, both bars being adjustable into alinement with the periphery of the drum, the upper bar serving as a closure for the casing in one position, and the inner bar serving as a closure when the rack is in display position.

7. In apparatus of the class described, a counter having an opening, a revoluble drum arranged below the opening, a vertically-adjustable display-rack carried by the drum and movable through the opening, and means for holding the rack in elevated position, the rack when in elevated position serving to prevent rotative movement of the drum.

848,101. APPARATUS FOR SUPPLYING FOOD TO FISH AND LAND ANIMALS. HENRY S. HALE, Philadelphia, Pa. Filed Feb. 28, 1903. Serial No. 145,463.

Claim.—1. In apparatus for supplying feed in measured quantities, the combination of a vessel to contain a quantity of feed, a moving conveyer having a measuring and discharging device arranged to travel through the feed in the vessel and having a continuous motion while in operation to remove and automatically discharge a measured quantity of feed with each completed movement, said measuring device being adjustable to regulate the measured quantity of feed discharged with each completed movement.

2. In apparatus for supplying feed in measured quantities, the combination of a vessel to contain a quantity of feed, a traveling arm having a continuous movement and provided with a scoop which travels through the feed with each completed movement of the arm and removes and automatically discharges a measured quantity of feed, and means to adjust the capacity of said scoop.

848,102. RECORDING WATER-GAGE. THORNTON S. HARDESTY, Rivesville, and SCOTT STEWART, Fairmont, W. Va. Filed Oct. 21, 1905. Serial No. 283,855.

Claim.—1. In a recording and indicating device of the character described, the combination with a casing, of a stem mounted in said casing, means controlled by the water-level of the boiler for imparting movement of said stem, a bearing member carried by the said casing and a collar carried by said stem, with which said bearing member is adapted to engage.

2. In a recording and indicating device of the character described, the combination with a casing, of a removable guide-frame mounted in said casing, a float, bars carried by said float and engaging a guide-frame, a stem mounted in said casing, a twisted-bar frame, a bar of said stem with which said float engages, a gage-glass, a recording-point, a clock mechanism carrying a rotative dial upon which said recording-point bears and a sliding and oscillatory connection between said stem and said recording-point.

3. In a recording and indicating device, the combination with a casing of a float therein, a rotative stem journaled in said casing, operative connections between said float and said stem, a movable recording element, an arm carried upon said stem and a sleeve loosely surrounding said arm and having positive connection with said element.

848,102.

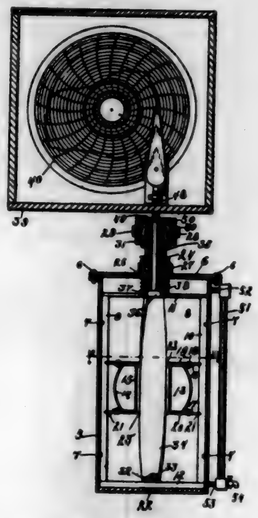

848,103. VEHICLE-STAKE. GEORGE L. HARVEY, Chicago, Ill. Filed Oct. 11, 1906. Serial No. 338,524.

Claim.—1. The combination with a gondola car, of a folding stake therefor comprising an open-ended pocket member secured to the upper portion of the car side, and a stake slidable through said pocket and through an alined aperture in the bottom of the car.

2. The combination with a gondola car, of a folding stake therefor comprising a rectangular open-ended pocket member secured to the upper portion of the side of the car, and a stake slidable through said pocket member and an alined aperture in the car-bottom.

3. A car-stake provided with a folding extension member, movable in a plane parallel to the side of the car and held from displacement transversely of said plane.

4. The combination with a vehicle-stake, of a vertical extension-section therefor folded within the dimensions of the cross-section of the stake.

5. The combination with a vehicle-stake, of a vertical extension-section therefor hinged thereto and confined in folded position within the dimensions of the cross-section of the stake.

6. The combination with a pocket member, of a stake telescopically engaging said pocket member and a folding extension for said stake adjustable therewith into said pocket member.

7. The combination with a gondola car, of a stake vertically extensible above the sides of said car at distance greater than the width of the sides, and means for collapsing said stake to store the same below the top of the car side and without projecting beneath the car.

8. The combination with a flanged car-stake, of an extension-section therefor hinged between the flanges of said stake to swing from an upwardly-projecting to a downwardly-projecting position, and means for locking said extension member from lateral movement when in its upwardly-projecting position.

9. The combination with a flanged car, of a stake therefor vertically adjustable through an aperture in the car-floor and a filler-block between the flanges of the stake for closing the aperture in said car-floor.

10. The combination with a pocket member, of a stake adapted to be lowered partially through said pocket member, and an extension folding end secured to said stake.

11. A vehicle-stake comprising a stake member with means for securing the stake in place, permitting of raising and lowering, and an extension folding end secured to the stake.

12. A vehicle-stake, means for securing said stake in a vertical position permitting of folding the same in a plane parallel with the side of the vehicle and an extension folding end secured to the stake also movable in a plane parallel with the side of the vehicle, and rigidly held from displacement transversely of said plane.

13. In a car-stake, the combination of telescopically-engaging and relatively vertical movable members, of a notched pin insertible through registering apertures in said members, and a portion on one of said members for engaging the notch of said pin by a downward movement.

14. The combination with a pocket member, of a stake movable through said pocket having an enlarged portion fitting the pocket when the stake is in raised position whereby clearance is provided for the stake in lowering through the pocket.

848,104. FORM-BED FOR PRINTING-PRESSES. FREDERICK J. HEADLE, Chicago, Ill. Filed Sept. 8, 1903. Serial No. 172,824.

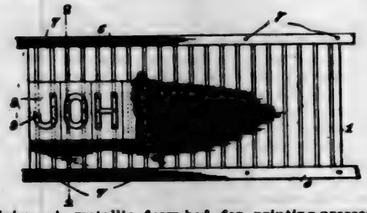

Claim.—A metallic form-bed for printing-presses having undercut grooves in its face extending from side to side, which grooves extend at substantially a right angle with the sides of said form-bed and are adapted to receive strips of wood or metal, interchangeably, as and for the purpose specified, said form-bed also being adapted at its upper side edges to receive facing-rails, which rails are adapted to prevent lateral movement of said strips, in combination with said strips and said rails and means for securing the rails to said form-bed.

848,105. STRUCTURAL REINFORCED CONCRETE. JOHN A. JONES, Cincinnati, Ohio. Filed June 22, 1905. Serial No. 266,386.

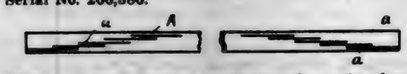

Claim.—A truss member consisting of a strip of metal having had longitudinal slits cut in its ends, the slits being cut at increasing distances from the ends and the lower edges of the strip and being then expanded to draw the slits into quadrilateral openings and concrete surrounding the strip and filling in the openings.

848,106. GOVERNING MECHANISM FOR TURBINES. OSCAR JUNGGREN, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 25, 1906. Serial No. 327,596.

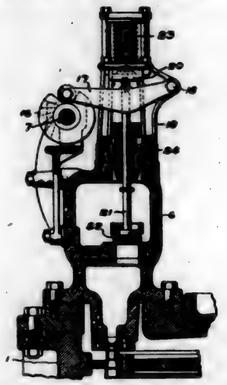

Claim.—1. In a governing mechanism for elastic-fluid turbines, the combination with the turbine, of sets of nozzle-valves, a cam-shaft for actuating each set of valves, a liquid-pressure motor located at about the level of said valves, connections between said motor and said cam-shafts, and speed-responsive devices controlling said motor.

2. In a governing device for elastic-fluid turbines, the combination with the turbine, of sets of nozzle-valves, a cam-shaft for actuating each set of valves, a horizontal cylinder located at about the level of said valves, a piston in said cylinder actuated by liquid-pressure, connections between said piston and said cam-shafts, and speed-responsive devices controlling the admission of liquid to said cylinder.

3. In a governing mechanism for elastic-fluid turbines, the combination with the turbine, of sets of nozzle-valves, a cam-shaft for actuating each set of valves, a transverse shaft geared to said cam-shafts, a liquid-pressure motor for rotating said transverse shaft, and controlling devices for said motor responsive to speed changes of the turbine.

4. In a governing mechanism for elastic-fluid turbines, the combination with the turbine-casing and the generator, of a stool interposed between them, two valve-chests on opposite sides of said stool, a cam-shaft on each chest, a transverse shaft geared to said cam-shafts and passing through said stool, a hydraulic motor mounted outside of and extending into said stool and connected with said transverse shaft, and controlling devices for said motor connected to the speed-governor of the turbine.

5. In a governing mechanism for elastic-fluid turbines, the combination with mechanically-operated nozzle-valves, of a liquid-pressure motor for operating them and means for causing said motor to operate by an intermittent motion instead of continuously.

6. In a governing mechanism for elastic-fluid turbines, the combination with mechanically-operated nozzle-valves, of a liquid-pressure motor for operating them, and means for periodically interrupting the escape of the liquid from the motor when working.

7. In a governing mechanism for elastic-fluid turbines, the combination with mechanically-operated nozzle-valves, of a liquid-pressure motor for operating them, means for causing said motor to operate by an intermittent motion instead of continuously, comprising a valve offering a predetermined resistance to movement, and an air-chamber.

848,107. TUNNELING-MACHINE. JOHN P. KARNS, Boulder, Colo., assignor to The J. P. Karns Tunneling Machine Co., Boulder, Colo. Filed Nov. 29, 1905. Serial No. 289,688.

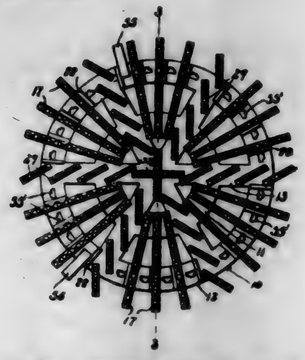

Claim.—1. In a tunneling-machine, the combination with a revoluble bit-carrying head, of a rifled shaft connected thereto, a casing surrounding the shaft at a point adjacent to the head and having diametrically-opposed projecting arms, jack-screws arranged in the arms and designed for engagement with the tunnel-wall, a ratchet-wheel arranged within the casing and having an opening for the passage of the rifled shaft, and a pawl carried by the casing and engaging the ratchet-wheel.

2. In a tunneling-machine, a revoluble head having radial slots in its forward face, and cutting-bits having their rear edges fitted within the slots, the forward face of the head having shoulders bearing against the sides of the bits.

3. In a tunneling-machine, a revoluble head having radial slots, cutting-bits having flanged rear edges fitting within said slots, the flanges being provided with recessed bolts extending through the head, and entering the slots of the flanges, and means for locking said bolts in position.

4. In a tunneling-machine, the combination with a revoluble head having bit-receiving slots, of cutting-bits, the rear edges of which are disposed within the slots, said bits having pocketed recesses, bolts extending through the head and having rectangular head members entered in said pocketed recesses, and clamping-nuts on said bolts.

5. In a tunneling-machine, a revoluble head having bit-receiving slots, cutting-bits disposed within the slots and extending beyond the peripheral line of the head, and radial flanges or lugs carried by the head and serving to reinforce or back the projecting portions of the bits.

848,108. FOLDING LADDER. PAUL A. M. LANIER, Paris, France. Filed Dec. 24, 1906. Serial No. 349,321.

Claim.—Means for the automatic engagement of folding ladders, comprising two levers each of which oscillates upon an axle fixed to an upright, one of said levers being pivoted to the center of the other, which latter at its free extremity carries a stud, which is adapted to enter an orifice formed in a spring fixed to that upright to which the lever carrying the stud is attached, substantially as described.

848,109. SPEED-REGULATING MECHANISM. GEORGE F. LEIGER, Oak Park, Ill. Filed Sept. 13, 1906. Serial No. 334,503.

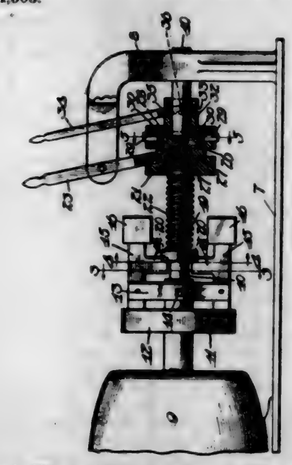

Claim.—1. The combination with a shaft, a loose pulley mounted thereon, a clutch member, a spring bearing on said clutch member and adapted to normally effect an engagement by means of said clutch member between said pulley and said shaft, and centrifugally-operated means adapted to effect a disengagement between said clutch member and said pulley and shaft when a predetermined speed of rotation is reached, of means adapted to be operated while the machine is running to vary the tension of the spring, and means adapted to automatically lock the tension of said spring at any desired point.

2. The combination with a shaft, a loose pulley mounted thereon, clutch members carried by said shaft and adapted to engage said pulley, a spring bearing on said clutch members and adapted to normally hold said clutch members in engagement with said pulley, and centrifugally-operated means adapted to automatically disengage said clutch members from said pulley when a predetermined speed of rotation is reached, of means adapted to be operated while the machine is running to vary the tension of the spring, and means adapted to automatically lock the tension of said spring at any desired point.

3. The combination with a shaft, a loose pulley mounted on said shaft, a support carried by said shaft and rotatable therewith, levers mounted on said support, clutch-bearings on said levers adapted to engage said pulley, a spring bearing on said levers and adapted to normally hold said clutch-bearings in engagement with said pulley, and weights carried on said levers and tending to throw said clutch-bearings out of engagement by centrifugal force when said shaft is rotated, against the action of said spring, of means adapted to be operated while the machine is running to vary the tension of the spring, and means adapted to automatically lock the tension of said spring at any desired point.

4. The combination with a shaft, a loose pulley mounted on said shaft, a support revoluble with said shaft, levers carried by said support, clutch-bearings carried by said levers and adapted to engage said pulley, and weights on said levers tending by centrifugal force when said shaft is rotated to effect a disengagement between said clutch-bearings and said pulley, of a sliding collar carried by said shaft and bearing upon said levers, a second sliding collar carried by said shaft, a spring bearing against said collars and tending normally, until a predetermined speed of rotation is reached, to force said clutch-bearings into engagement with said pulley, means for sliding said second collar to vary the tension of said spring and means adapted as said collar is moved to automatically lock it in any desired position.

5. The combination with a shaft, a loose pulley mounted on said shaft, a sleeve secured to said shaft and carrying a support, levers carried by said sleeve, clutch-bearings on said levers adapted to engage said pulley, weights on said levers tending by centrifugal force, when said shaft is rotated, to disengage said clutch-bearings from said pulley, of a collar slidingly mounted on said sleeve and bearing against said levers, a second collar slidingly mounted on said sleeve, a spring bearing against said collars and adapted to normally force said clutch-bearings into engagement with said pulley until a predetermined speed of rotation is reached, mechanism adapted to slide said second collar on said shaft to vary the pressure of the spring between said two collars, and means for locking said second collar in any desired position.

6. The combination with a shaft, a loose pulley mounted on said shaft, a sleeve secured to said shaft and carrying a support, levers carried by said sleeve, clutch-bearings on said levers adapted to engage said pulley, and weights on said levers tending by centrifugal force, when said shaft is rotated, to disengage said clutch-bearings from said pulley, of a collar slidingly mounted on said sleeve and bearing against said levers, a second collar slidingly mounted on said sleeve, a spring bearing against said collars and adapted to normally force said clutch-bearings into engagement with said pulley until a predetermined speed of rotation is reached, a lever engaging said second collar and adapted by its operation to slide said collar to and fro upon said shaft, a ratchet on said sleeve, spring-seated pins carried by said second collar and adapted to engage said ratchet, and means for disengaging said pins from said ratchet.

7. The combination with a shaft, a loose pulley mounted on said shaft, a sleeve secured to said shaft and carrying a support, levers carried by said sleeve, clutch-bearings on said levers adapted to engage said pulley, and weights on said levers tending by centrifugal force, when said shaft is rotated, to disengage said clutch-bearings from said pulley, of a collar slidingly mounted on said sleeve and bearing against said levers, a second collar slidingly mounted on said sleeve, a spring bearing against said collars and adapted to normally force said clutch-bearings into engagement with said pulley until a predetermined speed of rotation is reached, a lever engaging said second collar and adapted by its operation to slide said collar to and fro upon said shaft, a ratchet on said sleeve, spring-seated pins carried by said second collar and adapted to engage said ratchet, a third collar slidingly mounted on said sleeve and adapted when forced against the inner ends of said pins to force them out of engagement with said ratchet, and a lever adapted to operate said third collar.

848,110. SILO. WILLIAM H. LIMBERG, Plymouth, Wis. Filed Oct. 26, 1906. Serial No. 340,765.

Claim.—1. The combination with a silo having a door-opening; of an outer series of transversely-extending door-sections arranged within the opening, an inner series of transversely-extending door-sections within the opening, each section of the inner series being parallel with and lapping two of the sections of the outer series, the sections of both series being wedged between the walls of the opening.

2. The combination with a silo having a door-opening therein, and recesses extending longitudinally within the walls of the door-opening, said recesses increasing in width toward the interior of the silo; of an outer series of transversely-extending door-sections arranged within the door-opening, an inner series of transversely-extending door-sections extending across the door-opening, each section of the inner series being parallel with and lapping two of the sections of the outer series, the ends of both series of sections being beveled and adapted to wedge within the recesses, and moisture-excluding material disposed between the sections of the two series and between the ends of said sections and the walls of the door-opening.

848,111. RAIL-JOINT. FRANCISCO F. MARTINS, Gloucester, Mass. Filed June 21, 1906. Serial No. 322,795.

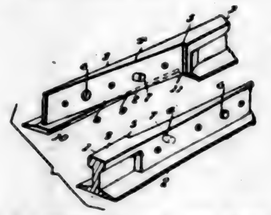

Claim.—1. In combination, rail ends having the head and web portions thereof cut away and scarfed on a diagonal line longitudinally of the same, each rail end being formed with a recess below the head and web portions thereof and with a flange projecting from the outer extremity thereof, the flange of one rail end being adapted to enter the recess of the other rail end, and the diagonally-scarfed portions being in abutting relation, means connecting said rail ends together, each rail end being provided with an opening adjacent to its outer extremity, and a projection or lug located near said opening, the projection or lug of one rail end being adapted to enter the opening of the other end.

2. In combination, rail ends embodying head and web portions cut away or scarfed on a diagonal line longitudinally thereof, such scarfed portion terminating at its inner end in a shoulder, each rail end being provided with an opening, a projection or lug located adjacent to said opening and adapted to enter the opening of the abutting rail end, the base of each rail end being scarfed or cut away on a line parallel with the outer edge portion of said base, whereby to form a recess adjacent to the inner extremity of the scarfed base, and a flange at the outer extremity of said base, the flange of the base of one rail end entering the recess of the other rail end, and fastenings passing through the abutting portions of the rail ends and securing the same together.

848,112. PROCESS OF MANUFACTURING BORING OR MILLING CUTTERS. JOHN G. MATTHEWS, Three Rivers, Mich. Filed June 22, 1904. Serial No. 213,718.

Claim.—1. The process of manufacturing a reamer or milling-tool, consisting of, first, forming the body and cutting seats therein; second, placing cutting-blades of high-speed or air-hardening steel in said seats and upsetting the metal against the inserted blades; third, arranging binding-wires about the blades; fourth, heating the tool with the binding-wires, to a proper temperature for hardening the blades and applying a suitable spelter to the tool to form a bond between the blades and the said body; fifth, cooling the said tool by a proper method, beginning at both ends of the blades, by an air-blast or by immersion in oil, or equivalent means, to contract the binding-wires and set the spelter and properly harden the blades, as specified.

2. The process of manufacturing a reamer or milling-tool, consisting of first, forming the body and cutting seats therein; second, placing cutting-blades of high-speed or air-hardening steel in the said seats and upsetting the metal against the inserted blades; third, heating the tool to a proper temperature for hardening the blades and applying a suitable spelter to the tool to form a bond between the blades and the said body; fourth, cooling the said tool by a proper method, beginning at both ends of the blades, by an air-blast or by immersion in oil, or equivalent means, to set the spelter and properly harden the blades, as specified.

3. The process of manufacturing a reamer or milling-tool, consisting of first, forming the body and cutting seats therein; second, placing cutting-blades of high-speed or air-hardening steel in said seats and upsetting the metal against the inserted blades; third, arranging binding-wires about the blades; fourth, heating the tool with the binding-wires, to a proper temperature for hardening the blades and applying a suitable spelter to the tool to form a bond between the blades and the said body; fifth, cooling the said tool by a proper method, by an air-blast or by immersion in oil or other equivalent means to contract the binding-wires and set the spelter and properly harden the blades, as specified.

4. The process of manufacturing a reamer or milling-tool, consisting of first, forming the body and cutting seats therein; second, placing cutting-blades of high-speed or air-hardening steel in said seats and upsetting the metal against the inserted blades; third, heating the tool to a proper temperature for hardening the blades and applying a suitable spelter to the tool to form a bond between the blades and the said body; fourth, cooling the said tool by a proper method, by an air-blast or by immersion in oil or equivalent means, to set the spelter and properly harden the blades, as specified.

5. The process of manufacturing a reamer or milling-tool, consisting of first, forming the body and cutting seats therein; second, placing cutting-blades of high-speed or air-hardening steel in said seats; third, arranging binding-wires about the blades; fourth, heating the tool, with the binding-wires, to a proper temperature for hardening the blades and applying a suitable spelter to the tool to form a bond between the blades and the said body; fifth, cooling the said tool by a proper method, beginning at both ends of the blades, by an air-blast or by immersion in oil, or equivalent means, to contract the binding-wires and set the spelter and properly harden the blades, as specified.

6. The process of manufacturing a reamer or milling-tool, consisting of first, forming the body and cutting seats therein; second, placing cutting-blades of high-speed or air-hardening steel in said seats; third, arranging binding-wires about the blades; fourth, heating the tool with the binding-wires, to a proper temperature for hardening the blades, and applying a suitable spelter to the tool to form a bond between the blades and the said body; fifth, cooling the said tool by a proper method, by an air-blast, or by immersion in oil, or equivalent means, to contract the binding-wires and set the spelter and properly harden the blades, as specified.

848,113. REAMER. JOHN G. MATTHEWS, Three Rivers, Mich. Filed Dec. 7, 1904. Serial No. 235,878.

Claim.—1. In an adjustable reamer, the combination of a tapered or conical head; a shell, split at one point at least conformed to embrace said head, having internal longitudinal kerfs therein partially severing the same at intervals; suitable cutting-blades; and means for adjustably securing said shell upon said head, for the purpose specified.

2. In an adjustable reamer, the combination of a tapered or conical head; a shell of soft metal, open at one side at least, adjustable on said head, to expand or contract to different sizes; and blades of high-grade steel inserted into said shell, for the purpose specified.

3. In an adjustable reamer, a shell of soft metal, open at one side at least; cutting-blades of high-grade steel carried by said soft-metal shell; and an adjustable means for expanding or contracting said shell, for the purpose specified.

848,114. GYMNASIUM-LADDER. FREDERICK MEDART, St. Louis, Mo. Filed Apr. 9, 1906. Serial No. 310,595.

Claim.—1. A gymnasium-ladder comprising pairs of side rails of circular shape in cross-section, tie-plates fitting between the rails at the inner side thereof and formed with flat outer faces and short segmental flanges fitting against the rounded faces of the rails and means for fastening the tie-plates by their short segmental flanges to the side rails.

2. A gymnasium-ladder comprising pairs of side rails of circular shape in cross-section, tie-plates fitting between the side rails at the inner side thereof so as to leave the outer sides and front and back of the side rails unobstructed, and formed with flat outer faces and short segmental flanges fitting against the inner sides of the rounded faces of the side rails, means for fastening the tie-plates by their short segmental flanges to the side rails, and rounds secured to the tie-plates between the front and back side rails of each pair of side rails.

848,115. CULTIVATOR-STANDARD. JOHN E. MERRILL, Garland, Tex. Filed Nov. 20, 1906. Serial No. 344,291.

Claim.—1. A cultivator-standard comprising knee members jointed together, a spring exerting its tension upon said members to maintain the same in extended positions, a shin slidably located upon one of the knee members and a lever fulcrumed upon said knee member and engaging said shin.

2. A cultivator-standard comprising knee members jointed together, a spring exerting its tension upon said knee member to maintain the same in extended positions, a shin slidably mounted upon one of the knee members, a lever fulcrumed to the said knee member and engaging said shin and means for adjusting the shin vertically with relation to the lever.

3. A cultivator-standard comprising knee members jointed together, a spring exerting its tension upon said members to maintain the same in extended positions, one of said members having a vertical slot, a shin slidably located in said slot, a plate having an opening which registers with said slot and gear-teeth, a lever fulcrumed to said plate and having a spring-actuated pawl for engaging the gear-teeth, said lever also having a lateral projection operating in the opening of the plate and a pin passing through said projection and the shin.

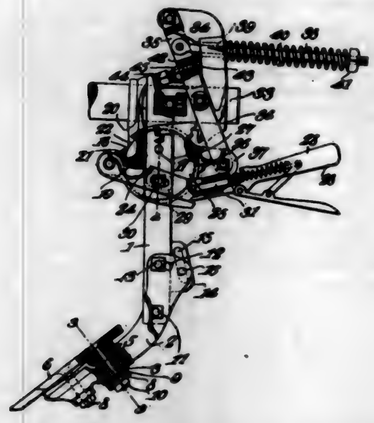

4. A cultivator-standard comprising knee members jointed together, a spring exerting its tension upon said members to maintain the same in extended positions, a shin attached to one of the knee members, a foot having a bifurcated end which receives said shin, the bifurcations of the foot having arcuate slots, a bolt passing through said slots and a registering perforation in the shin, a wedge-shaped block located between the foot bifurcations and having an elongated slot and bearing at its edge against the edge of the shin and a bolt passing through the foot bifurcations and the elongated slot of the wedge-shaped block.

5. A cultivator-standard comprising knee members jointed together, a spring exerting its tension upon said members to maintain the same in extended positions, a shin carried by one of the members, a bifurcated foot receiving the lower end of the shin, the bifurcations of the said foot having arcuate slots, a bolt passing through said slots and a registering perforation in the shin, a wedge-shaped block located between the bifurcations of the foot and having an elongated slot and bearing at its edge against the edge of the shin, said block being of greater transverse thickness than the shin and a bolt passing through the bifurcations and the elongated slot of said block.

848,116. TELEPHONE-BOOTH. BENJAMIN F. MERRITT, East Orange, N. J., assignor to New York Telephone Company, a Corporation of New York. Filed July 14, 1906. Serial No. 326,174.

Claim.—A booth having a roof or covering, a ceiling separated a fixed distance from said roof, and a suitable floor in combination with a door swinging and moving in a horizontal plane, guiding-grooves in the ceiling and in the floor, projections in the upper and lower edges of the door engaging said guiding-grooves, a pivoted, radial arm above the ceiling having its free end turned back to form a U-shaped terminal, a supporting-wheel supported on the free end of said arm and traveling on the upper side of said ceiling and a mechanical connection between the upper edge of said door and the free end of said arm consisting of a threaded bolt extending through the U-shaped terminal of the arm, means for fixing the bolt to the door and means for adjustably connecting said bolt with said arm.

848,116.

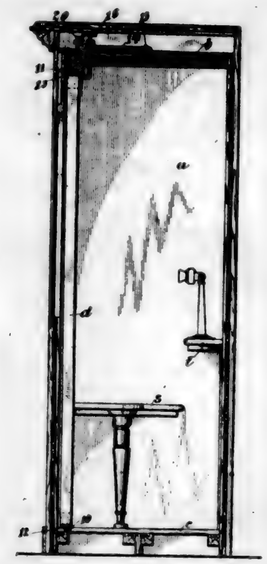

848,117. PROCESS FOR THE PRODUCTION OF AN INSULATING MATERIAL FOR ELECTRICAL PURPOSES. JOHANNES MEYENBERG, Baar, near Zug, Switzerland. Filed Dec. 4, 1905. Serial No. 290,298.

Claim.—1. The process of producing insulating material which comprises subjecting animal filaments to fermentation, then treating with an alkaline lye, precipitating the natural cements by a coagulant, removing resultant liquid therefrom, then mixing the residue and finally shaping the same.

2. The process of producing insulating material which comprises subjecting animal filaments to fermentation, mixing the fermented mass with an alkaline lye, treating the resultant mixture with a solution of a suitable sulfate to precipitate the natural cements, removing the resulting liquid from the mass, mixing the residue and molding the same under pressure.

3. The process of producing insulating material which comprises subjecting animal hair to fermentation and thereby generating heat, treating the heated fermented mass with an alkaline lye, mixing therewith sulfate of aluminium, removing the resulting liquid and adding to the same ozocerite mixed with a substance capable of raising the melting-point of the mixture and molding the resultant mixture and then pressing the same while heating them.

4. The process of producing insulating material which comprises subjecting animal hair and sponge cuttings to fermentation, treating the material with an alkaline lye, mixing therewith a coagulant, removing the liquid therefrom, mixing the residue with a resin mixture, molding the same, then compressing the molded mass at a temperature above normal, and treating the compressed mass with a fireproofing composition.

5. The process of producing insulating material comprising subjecting hair, sponge, silk or other animal filaments to fermentation, treating the fermented mass with an alkaline lye, mixing therewith a coagulant to precipitate the natural cements, pressing out the liquid and mixing the residue, adding thereto ozocerite mixed with a hardening vegetable resin, forming and compressing the formed mass at a temperature above normal and impregnating the product with a silicate solution mixed with a carbohydrate.

6. An insulating material comprising fermented animal fibers mixed with their coagulated natural cements, a resin mixture, and a fireproofing silicate.

848,118. GAS-PRODUCER. WILLIAM R. MILLER, Pittsburg, Pa., assignor to The Forter Miller Engineering Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Dec. 30, 1905. Serial No. 293,888.

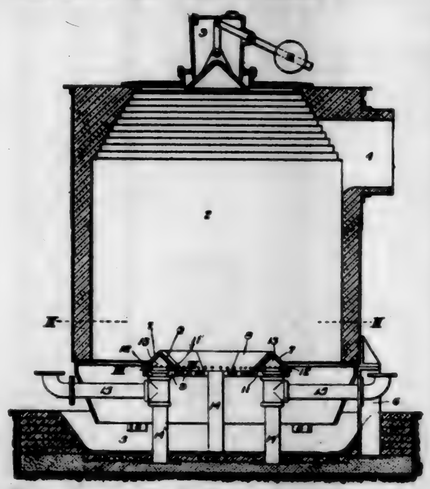

Claim.—1. A wind-box for gas-producers consisting of a hollow ring having an interior clearance-space, the surrounding hollow ring or box having outer and inner downwardly-diverging sloping walls provided with perforating air-supply openings, and means for furnishing a volume of air to the interior of the hollow ring, substantially as set forth.

2. A wind-box for gas-producers consisting of a hollow ring having an interior clearance-space, the surrounding hollow ring or box having outer and inner downwardly-diverging sloping walls and a horizontal lower closing-wall, said sloping walls having perforating air-supply openings, substantially as set forth.

3. A wind-box for gas-producers consisting of a hollow ring having an interior clearance-space, the surrounding hollow ring or box having outer and inner downwardly-diverging sloping walls and a horizontal lower closing-wall, said sloping walls having perforating air-supply openings located immediately above said lower closing-wall, substantially as set forth.

4. A wind-box for gas-producers consisting of a circularly-arranged series of connected hollow sections surrounding an interior clearance-space, said sections having outer and inner downwardly-diverging sloping perforated walls arranged to deliver the burden to the outer and inner areas adjacent to the box, with means for supplying a blast of air to the interior of the box, substantially as set forth.

5. A wind-box for gas-producers consisting of a hollow circular ring, the body portion of said ring consisting of a continuous triangular-shaped box having outer and inner downwardly-diverging sloping sides arranged to deliver the burden to the outer and inner adjacent areas and a flat horizontal bottom, said sloping sides being provided with air-circulation openings, with means for supplying a blast of air to the interior, substantially as set forth.

6. The combination with a gas-producer chamber, of a concentrically-arranged hollow ring located in the middle portion of the producer and surrounding an interior clearance-space, the body portion of said ring comprising a continuous hollow box having outer and inner downwardly-diverging sloping walls provided with air-circulation openings and a closing bottom, with means for supplying a volume of air to the interior of the box, substantially as set forth.

848,119. APPARATUS FOR HULLING COTTON-SEED. CHARLES MINER, Chester, S. C. Filed May 11, 1903. Serial No. 156,581.

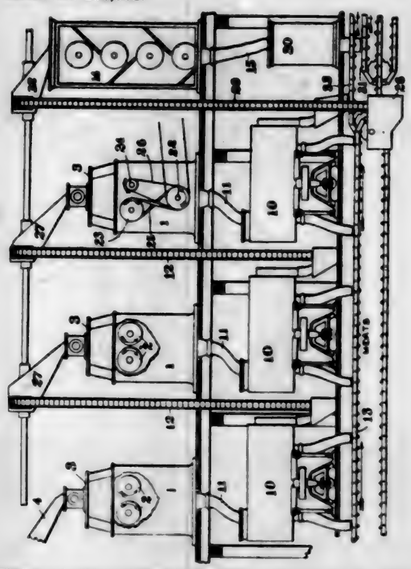

Claim.—1. In a cotton-seed-hulling apparatus, the combination of rolls rotating at differential speeds in opposite directions and provided with a spirally-disposed corrugations constituting hull-engaging surfaces adapted to engage the hulls of seeds passing between the rolls and exert thereon a twisting action of light pressure sufficient to rend the hulls, means for rotating said rolls at differential speeds in opposite directions and a separator connected therewith adapted to subject the stock from said rolls, to a separating action, and a second set of spirally-corrugated rolls rotating at differential speeds in the opposite directions adapted to act upon the tailings from said separator, means for rotating said second set of rolls at differential speeds in opposite directions, substantially as described.

2. In a cotton-seed-hulling apparatus, the combination of rolls rotating at differential speeds in opposite directions and provided with spirally-disposed corrugations constituting hull-engaging surfaces adapted to engage the hulls of seeds passing between the rolls and exert thereon a twisting action of light pressure sufficient to rend the hulls, means for rotating said rolls at differential speeds in opposite directions and a separator connected therewith adapted to subject the stock from said rolls to a separating action, successive sets of spirally-corrugated rolls rotating at differential speeds in opposite directions adapted to act upon the tailings from the preceding separators, means for rotating said successive sets of rolls at differential speeds in opposite directions and successive separators following each set of rolls and adapted to subject the tailings from the preceding set of rolls to a gentle separation, substantially as described.

3. In a cotton-seed-hulling apparatus, the combination of rolls rotating at differential speeds in opposite directions and provided with spirally-disposed corrugations constituting hull-engaging surfaces adapted to engage the hulls of seeds passing between the rolls and exert thereon a twisting action of light pressure sufficient to rend the hulls, means for rotating said rolls at differential speeds in opposite directions and a separator connected therewith adapted to subject the stock from said rolls to a separating action, and a second set of spirally-corrugating rolls having less clearance than the first set and rotating at increased differential speeds in opposite directions, and means for rotating said second set of rolls at differential speeds in opposite directions substantially as described.

4. In a cotton-seed-rolling apparatus, the combination of rolls rotating at differential speeds in opposite directions and provided with spirally-disposed corrugations constituting hull-engaging surfaces adapted to engage the hulls of seeds passing between the rolls and exert thereon a twisting action of light pressure sufficient to rend the hulls, means for rotating said rolls at differential speeds in opposite directions and a separator connected therewith adapted to subject the stock from said rolls to a separating action, and a second set of rolls of greater fineness of corrugations than the first set adapted to act upon the tailings from the said separator in a similar manner, and means for rotating said second set of rolls at differential speeds in opposite directions substantially as described.

5. In a cotton-seed-hulling apparatus, the combination of rolls provided with spirally-disposed corrugations constituting hull-engaging surfaces adapted to engage the hulls of seeds passing between the rolls and exert thereon a twisting action of light pressure to rend the hulls, means for rotating said rolls at differential speeds in opposite directions, and a separator connected therewith adapted to subject the stock from said rolls to a separating action, and a second set of rolls of greater fineness, less clearance, and greater differential speeds than the first set, substantially as described.

6. In a cotton-seed-hulling apparatus, the combination of rolls provided with spirally-disposed corrugations constituting hull-engaging surfaces adapted to engage the hulls of seeds passing between the rolls and exert thereon a twisting action of light pressure to rend the hulls, means for rotating said rolls at differential speeds in opposite directions, and a separator connected therewith adapted to subject the stock from said rolls to a separating action, and successive sets of rolls of increasing fineness and differential speeds and decreasing clearance, and separators cooperating with each set of rolls adapted to subject the stock from the preceding set of rolls to a separating action and to discharge the tailings to the next set of rolls, substantially as described.

7. In an apparatus for hulling cotton-seeds the combination of successive pairs of spirally-corrugated rolls with gradually-decreasing clearances, increasing fineness and rotating at gradually-increasing differential speeds, and separators in series with said rolls, each arranged to receive the stock from the preceding rolls and subject it to a gentle separating action, means for rotating said sets of rolls in opposite directions at differential speeds and means for conveying the tailings from the last separator of the series to a suitable place of deposit, substantially as described.

8. A system of apparatus for hulling cotton-seeds comprising a series of machines each consisting of a pair of corrugated hulling-rolls and a separator, a grinding-mill, conveying means placed to receive meats from each separator and deliver the same to the grinding-mill, and a conveyer for each separator placed to deliver the hulls therefrom to the hulling-rolls of the next succeeding machine, with a third conveyer placed to remove the hulls from the last of the separators, the hulling-rolls of succeeding machines being adjusted so that each pair of rolls is of less distance apart than the pair of the machine preceding it, substantially as described.

848,120. AUTOMATIC TRUNKING DEVICE AND SELECTIVE SIGNALING APPARATUS. AUGUST A. MOXSON, St. Paul, Minn. Filed Nov. 27, 1906. Serial No. 345,316.

Claim.—1. In telephony, a central station, a branch central station having a trunk-line connection therewith, a group of subscribers' stations connected to the branch central station, an electromagnet at the branch central station for each of the subscribers and under the sole control of the subscriber, contacts under the control of said electromagnets for closing connection between the trunk-line and the subscriber's station when the electromagnet is energized, and an additional electromagnet connected in multiple with the entire group of subscribers' stations, and contacts under the control of the additional magnet and through which all connections must be primarily made, the energizing of the additional electromagnet by any subscriber cutting out all of the remaining subscribers of the group.

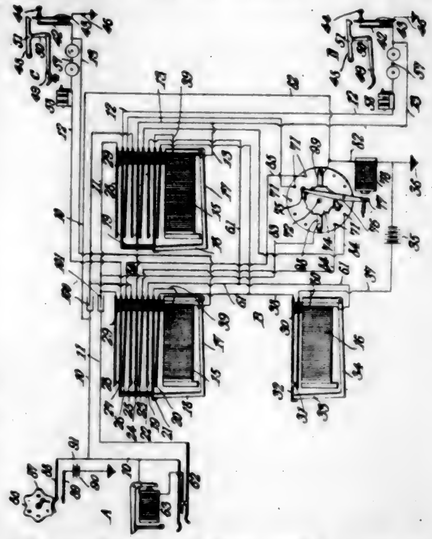

2. In telephony, a main central station, a branch central station connected thereto by a trunk-line, a series of circuit-closing electromagnets arranged at the branch central station, a group of subscribers' stations, each of which is individually connected to one of said electromagnets, a circuit-breaking electromagnet arranged at the branch central station and connected in multiple to an entire group of subscribers' stations, and contacts under the control of the electromagnets for closing connection between the trunk-line and any subscriber, and automatically breaking the circuits of the remaining subscribers of the group.

3. In trunk-line telephone systems, a group of subscribers' stations connected to a branch central station which forms one terminal of the trunk-line, electromagnetically-actuated contacts arranged at the branch central station and connected one to each of the subscribers' stations for closing a circuit between the trunk-line and the calling subscriber, and an electromagnetically-controlled circuit-breaking mechanism connected in multiple to the group of subscribers and operable by any subscriber making a call for cutting off communication between all of the other subscribers and the trunk-line.

4. In trunk-line telephone systems, a branch central station forming one terminal of the trunk-line, a series of electromagnets arranged at the branch central station, contacts arranged adjacent to each magnet and under the control of its armature, the terminals of the trunk-line being connected to two of the contacts of each set, a group of subscribers' stations connected each to one of the electromagnets and also to contacts under the control of the electromagnet to which it is connected, whereby energizing of the subscribers' line and electromagnet connects the subscribers' station to the trunk-line, and a circuit-breaking electromagnet having contacts under the control of said armature, the contacts being connected in multiple with the entire group of subscribers' stations, whereby on the energising of the circuit-breaking electromagnet

by any suberiber, the connections of the remaining subscribers of the group will be broken.

5. In telephony, a main central station, a branch central station, a trunk-line connecting them, an electromagnetically-operated selector-disk arranged at the branch central station and controllable from the main central station, a group of subscribers' stations connected to the branch central station and under the control of a selecting device, a circuit-closing electromagnet arranged at the branch central station for each subscriber's station, contacts under the control of said electromagnet for closing circuit between the subscriber's station and the trunk-line, and a circuit-breaking electromagnet arranged at the branch central station and common to all of the subscribers' stations for cutting out all of the group of subscribers except the one making a call.

848,121. MULTIPLY FABRIC. GEORGE D. MOORE, Worcester, Mass., assignor to Multiple Woven Hose & Rubber Co., New York, N. Y., a Corporation of New York. Filed May 23, 1904. Serial No. 209,245.

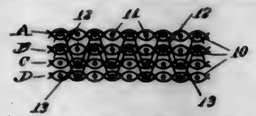

Claim.—1. As an article of manufacture, a plicated fabric for belting having binding-threads extending from the outside ply at each side of the fabric to an inner ply of fabric lying entirely on the further side of the central plane of the fabric, whereby the fabric will have a core consisting of two or more plies secured together by a greater number of sets of binding-threads than are employed to bind the core to either outside ply.

2. As an article of manufacture, a plicated fabric comprising flattened concentric tubes, the outer plies at each side of the fabric having binding-threads extending to an intermediate ply of the fabric located entirely at the opposite side of the central plane of the fabric, whereby the fabric will have a central core consisting of a plurality of plies united together by a plurality of sets of binding-threads.

3. As an article of manufacture, a plicated fabric for belting consisting of two flattened concentric tubes, the outside plies having binding-threads extending through to the intermediate ply at the other side of the central plane of the fabric, whereby the two inner plies will form a comparatively stiff core of great tensile strength, while the outside plies will be less firmly fastened.

848,122. SPLICE-BAR. EDWARD MCCORMICK, Duquesne, Pa. Filed Aug. 11, 1906. Serial No. 330,185.

Claim.—In a rail-joint, the combination with abutting rail-sections; of splice-bars connecting the sections, the bars having portions extending below the base-flange of the rail-sections and directed toward each other beneath the sections in substantially horizontal planes and in spaced relation to the under face of the base-flange, the longitudinal free edges of the substantially horizontal portions terminating short of each other and increased in thickness, the arrangement of said portions of the bars with respect to each other and their thickened edges causing the gravity of the bars to be concentrated and maintained in the center of the rails.

848,123. WORK-REVERSING MECHANISM FOR ROLLING-MILLS. EDWIN NORTON, New York, N. Y. Filed Apr. 19, 1905. Serial No. 256,450.

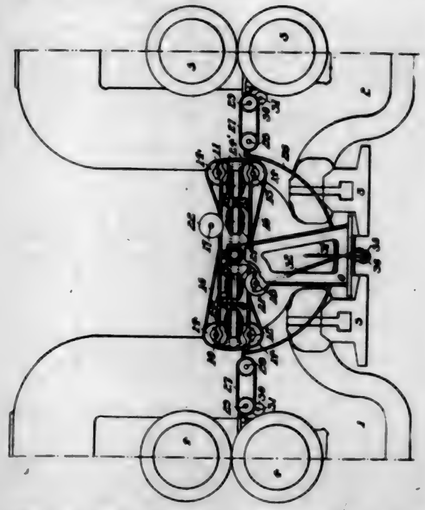

Claim.—1. In a rolling-mill, two sets of rolls, a table in line therebetween to receive the work from the first set of rolls, means to rotate the table with the work therein end for end and upside down, means to retain the work in the table during such rotation, and means to cause the work to pass from the first set of rolls to the table, and when so reversed from the latter to the second set of rolls.

2. In a rolling-mill, two sets of rolls, a table arranged in line therebetween to receive the work from the first set of rolls and constructed to retain the plate when the table is upside down, means for reversing the table end for end and upside down, and means to cause the work to pass from the table when so reversed into the second set of rolls.

3. In a rolling-mill, two sets of rolls having their passes in the same plane, a rotary carrier therebetween having its axis of rotation substantially in the said plane and conveyers in said table forming a pass therein in said plane to receive the work from the first set of rolls and to discharge the work toward the second set of rolls.

4. In a rolling-mill, a work-reversing table having therethrough a work-feeding passage, a conveyer on each side of the passage, means for rotating the table to cause each conveyer to be alternately at the bottom of each passage, and means for causing the travel of the conveyers alternately.

5. In a rolling-mill, two sets of rolls, a table between the same having therein a work-feeding passage, means for reversing said table end for end and upside down, and means in said table for feeding work into and from said passage when the table is in any one of a plurality of positions.

6. In a rolling-mill, two sets of rolls, a table between the same having therein a work-feeding passage, means for reversing the table end for end and upside down, means in said table for feeding work into and from said passage when the table is in any one of a plurality of positions, and means coöperating with said feeding means to assist the work through said passage.

7. In a rolling-mill, a table rotatable on a horizontal axis and having therein a passage, a conveyer each side of said passage, independent driving means on said table for said conveyers, fixed driving means for said independent driving means, the latter being adapted to be brought alternately into juxtaposition with said fixed driving means by the rotation of said table, and means for causing a temporary driving connection between said two driving means.

8. In a rolling-mill, two sets of rolls, a table between the same constructed to retain the plate when the table is upside down, means for reversing the table end for end and upside down, and means for feeding the work to and from the table in opposite directions relative to the table but in the same direction relative to the rolls.

848,124. LIFTER AND CARRIER. WARREN F. PEELER, Elwood, Ind., assignor of one-half to William C. Vanneman, Anderson, Ind. Filed July 31, 1906. Serial No. 328,625.

Claim.—1. A device of the class described comprising a longitudinal bar, a pair of brackets adjustable longitudinally thereon, and hangers depending from the brackets for engagement with a pallet-board, one of the hangers being rigid with its bracket, and the other hanger being swung from its bracket.

2. A device of the class described comprising a longitudinal bar, a pair of brackets adjustable longitudinally on the bar and provided with depending ears, and hangers bolted upon the ears of the respective brackets and having their lower portions provided with means for engagement with a pallet-board, one of the hangers being rigidly connected to its bracket and the other hanger being pivotally connected to its bracket.

3. A device of the class described comprising a longitudinal bar, the hangers depending from the bar, each hanger having upper and lower eyes, cross-bars extending through and projecting at opposite sides of the eyes, and claws provided with eyes receiving the cross-bars and adjustable longitudinally thereon.

4. A device of the class described comprising a longitudinal bar, hangers depending therefrom, a pair of cross-bars carried by each hanger and projecting at opposite sides thereof, and claws pierced by and adjustable upon the cross-bars.

5. A device of the class described comprising a longitudinal bar terminating at each end in a handle, a pair of brackets embracing the bar and adjustable thereon, each bracket having a set-screw for engagement with the bar and also provided with a pair of ears, a hanger depending from each bracket with its upper end received between the ears, a bolt piercing the ears and the hanger, one of the hangers being rigidly connected to its bracket, the other hanger being swung from its bracket, a pair of cross-bars piercing each hanger and projecting at opposite sides thereof, set-screws to hold the cross-bars upon the hangers, claws pierced by and adjustable upon the cross-bars, each claw having its lower end bowed upwardly and inwardly and terminating in an upstanding projection, and set-screws to adjustably hold the claws upon the cross-bars.

848,125. INSECT-TRAP. CHARLES W. PELTON, Hyannis, Mass. Filed Nov. 6, 1906. Serial No. 342,246.

Claim.—1. An insect-trap, comprising a cup having an opening at its top and another opening at its side, and a partition between the openings extending downward in the cup.

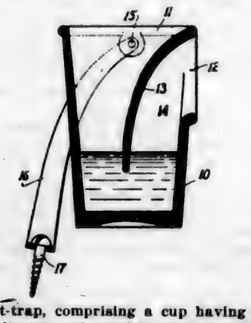

2. An insect-trap, comprising a cup having an opening for insects at its top and another opening at its side, and a partition between the openings extending downward in the cup, there being spaces for liquid on opposite sides of the partition and communication therebetween below the liquid-level.

848,126. ANASTOMOTIC CLAMP. GILES F. ROOSEVELT, Denver, Colo. Filed July 27, 1906. Serial No. 328,036.

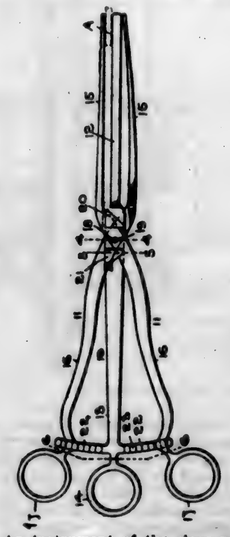

Claim.—1. An instrument of the class named, comprising a central jaw and two oppositely-disposed clamping members having a lateral movement in relation thereto.

2. An instrument of the class named, comprising a central member and two oppositely-disposed clamping members pivotally and individually detachably mounted thereon.

3. An instrument of the class named, comprising a central rigid jaw and two resilient, inwardly-curved blades, laterally movable in relation thereto.

4. In an instrument of the class named, a central member including a rigid jaw and an axially-alined shank, and two clamping members pivotally mounted upon the said shank on opposite sides thereof.

5. An instrument of the class named, comprising a central member, opposite clamping members pivotally connected therewith and means to hold the latter at any of a plurality of predetermined points.

6. A device of the class named, comprising a central member having oppositely-extending, toothed arms and two opposite clamping members pivotally mounted on the first-named member and having detents arranged to respectively engage the interdental spaces in the arms.

7. A device of the class named, comprising a central member having a rigid jaw and two clamping members pivotally connected therewith and having blades disposed on opposite sides of the jaw, and elastic sleeves on the said jaw and blades.

8. An instrument of the class named comprising a curved central jaw and two similarly-curved oppositely-disposed clamping members having a lateral movement in relation thereto.

9. A clamp of the class named comprising three pivotally-connected members, including a central jaw curved in a plane parallel to the longitudinal axis of the pivot, and two similarly-curved clamping members having a lateral movement in relation thereto.

848,127. COMBINATION TURBINE MOTOR AND MUFFLER. WILLIAM RUFF, New York, N. Y. Filed Sept. 14, 1906. Serial No. 334,571.

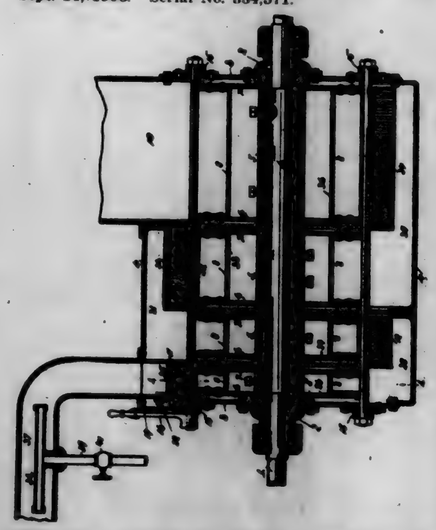

Claim.—1. A combined reversible expansion turbine motor and muffling device for pressure-fluid engines and operated by the exhaust from the same, having a steam-generating device placed within the exhaust-pipe of the pressure-fluid engine and whereby the combined gases thus generated can be introduced into a turbine-motor placed within the muffling-casing.

2. A combined reversible expansion turbine motor and muffling device for pressure-fluid engines, operated by means of the exhaust fluid entering the same from the exhaust-pipe of said pressure-fluid engine and having a turbine-motor set in motion by means of the direct impact obtained from the introduced exhaust-fluid, the latter being a mixture composed of steam generated by means of the heat inherent in the exhaust fluid and the remaining exhaust fluid.

3. In a reversible expansion turbine motor and muffling device, a series of turbine-wheels fastened to one common shaft and provided with conduits or passages within the turbine-casing whereby the impelling fluid taken from the exhaust of a pressure-fluid engine is successively brought to bear against the blades of each of the turbine-wheels and acting expansively and successively in each one of the series of wheels.

4. In a reversible expansion turbine motor and muffling device, a series of circular turbine-wheels fastened to one common shaft and operating within an elliptical casing and provided with passages whereby the impelling forces from the exhaust of a pressure-fluid engine is actuated successively and expansively against the blades of each turbine-wheel and transferred from one wheel to the next adjoining wheel by means of said passages after the completion of a one-half circumferential circuit of the impelling-gases in each wheel.

848,128. DEVICE FOR LOADING MANURE, EARTH, GRAVEL, &c. JOHN C. S. RUMSEY and HERBERT R. RUMSEY, Vinland, Kans. Filed Oct. 15, 1906. Serial No. 338,993.

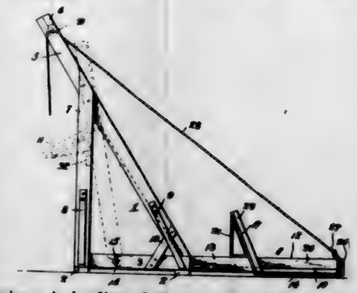

Claim.—A loading device of the character described comprising a frame consisting of transverse sills, a pair of spaced longitudinal beams connecting said sills, and connected uprights secured at their lower ends to said sills and beams, a dumping-table consisting of parallel arms having their inner ends pivotally mounted between said longitudinal beams, one of said arms being extended to form the side wall for said table, a longitudinal bar secured to the other of said arms, boards connecting the extended end of said arm and said bar, a triangular-shaped bar connected to the extended end of said extended arm and forming an outer wall for said table, an upwardly and rearwardly inclined inner wall for said table formed of boards, braces for supporting said inner wall, cleats connecting the ends of the boards of said inner wall, a cable for elevating said dumping-table, a cross-bar connecting said uprights for limiting the swinging movement of said table, and a spring connection between said table and the frame for returning the table to its lowered position.

848,129. BURGLAR-ALARM. EVA L. RYCRAFT, Denver, Colo. Filed Nov. 21, 1906. Serial No. 344,466.

Claim.—1. A burglar-alarm, comprising in combination, a casing, a shaft extending therethrough, a gong, a clapper in operative relation to the said gong, a spring-actuated mechanism arranged to impart a vibratory movement to the said clapper, an arm rigidly connected with the latter, and a lever fulcrumed upon the casing to engage the said arm with one extremity and having a downwardly-ranging elastic member at its opposite end.

2. A burglar-alarm, comprising in combination, a casing, a shaft extending therethrough, a gong, a clapper in operative relation to the said gong, a spring-actuated mechanism arranged to impart a vibratory movement to the said clapper, means adapted to release the spring by engagement with the upwardly-moving part of the window to which the device is attached, and a spring-clamp upon the said casing adapted to frictionally engage the opposite sides of a channel in the window-casing.

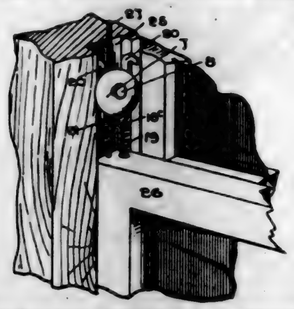

3. A burglar-alarm comprising in combination a casing, a shaft extending therethrough, a gong, a clapper in operative relation to the said gong, a spring-actuated mechanism arranged to impart a vibratory movement to the said clapper, means adapted to release the spring by engagement with the upwardly-moving part of the window to which the device is attached, and a U-shaped spring-clamp secured upon and spaced from the said casing.

848,130. DEVICE FOR PRODUCING FILLERS FOR CIGARS. PETER A. E. SCHEER, Hamburg, Germany. Filed Sept. 24, 1906. Serial No. 336,084.

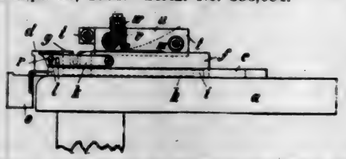

Claim.—1. A device of the character described, comprising a movably-mounted rolling-table, an apron attached thereto at one end, means to automatically clamp the free end of the apron to the rolling-table and release it therefrom, and a bunch-former hollowed out to suit the shape of the cigar operated by the apron.

2. A device of the character described, comprising a movably-mounted rolling-table, an apron attached thereto, a bunch-former movably mounted on the rolling-table and adapted to be moved along the table by the apron, and means to guide the bunch-former in a plane parallel to the table.

3. In a device of the character described the combination of a rolling-table constructed to slide on a suitable support, an apron attached to said table at one end, a frame carrying a bunch-former hollowed out to suit the shape of a cigar, a clamping-ledge pivotally attached to the rolling-table and adapted to clamp the other end of the apron against the front end of the rolling-table.

4. In a device of the character described, the combination with a supporting member, of a rolling-table adapted to slide thereon, a frame movably mounted on the rolling-table, and a bunch-former hollowed out to suit the shape of a cigar carried by the frame.

5. In a device of the character described, the combination with a supporting member having parallel guides mounted thereon, of a rolling-table adapted to slide between the guides, a frame having sides adapted to slide along the edges of the table, and a bunch-former hollowed out to suit the shape of a cigar transversely secured to the frame.

6. In a device of the character described, the combination with a supporting member having parallel guides mounted thereon, of a rolling-table adapted to slide between the guides, an apron attached to the rolling-table, a frame having sides parallel to and adapted to slide along the edge of the rolling-table, a bunch-former hollowed out to suit the shape of a cigar, transversely secured to the frame and adapted to be moved along the table by the apron.

7. In a device of the character described, the combination with a supporting member having a rounded end, of a grooved member adapted to slide on the supporting member, an end member having guides mounted in the grooved member, a trough interposed between the grooved and end members, means for locking said members to the trough, an apron secured to the grooved member adapted to project over the end member, a frame slidably mounted on the grooved member and a former carried by the frame.

848,131. WATCHCASE. GUSTAVUS A. SCHLECHTER, Reading, Pa. Filed May 16, 1906. Serial No. 317,126.

Claim.—1. A watchcase-lid having a comparatively large, central, circular opening, a retaining-ring secured in said opening and means for removably retaining an emblem or like device in said ring.

2. A watchcase-lid formed with a comparatively large, central, circular opening, a retaining-ring secured in said opening, a bead formed on the exposed end of said ring, and a plurality of flexible retaining-fingers formed on the inner edge of said ring adapted to removably retain an emblem or like device.

848,132. THEODOLITE OR SIMILAR INSTRUMENT. CHARLES P. E. SCHNEIDER, Le Creuzot, and EMILE RIMAILHO, Neuilly-sur-Seine, France. Filed Aug. 21, 1906. Serial No. 331,483.

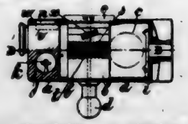

Claim.—1. In a theodolite or similar instrument, the combination of a supporting-box provided with sighting and directing parts, a rod provided with a two-part tangent screw-wheel, an operating-screw engaging said wheel for rotating said box, said rod and operating-screw carrying graduated scales to serve for indicating the amplitude of the movement of rotation.

2. In a theodolite or similar apparatus the combination of a telescope, a supporting-box and a sleeve formed therewith and adapted for containing a magnetised declination-needle, the said sleeve serving as the axis of rotation for the sighting-telescope, substantially as hereinbefore described for the purposes specified.

3. In combination, a spring-pressed two-part shaft having a two-part tangent screw-thread, a box or casing revolubly mounted on said shaft and provided with a telescope, and a drive-shaft having a worm-gear engaging said first shaft for rotating said casing.

848,133. WOOD SUBSTITUTE. FRANZ SCHNELL, Gutenstein, Austria-Hungary. Filed Sept. 20, 1906. Serial No. 335,482.

Claim.—1. The method of making wood substitute which comprises forming a thick pulp of cereal-flour and water

and mixing therewith a suitable fiber, adding a silicate of an alkali and kneading the same into a homogeneous dough, forming the desired articles from said dough and drying the same preparatory to finishing and polishing.

2. A wood substitute consisting of flour from cereals, fibrous material and an alkaline silicate.

3. A wood substitute consisting of flour from cereals, wood-dust, fibrous materials and an alkaline silicate.

4. A wood substitute consisting of flour from cereals, vegetable and animal fiber, and water-glass.

5. A wood substitute comprising about forty per cent. flour from cereals, forty per cent. vegetable fiber, two per cent. animal-hair and eighteen per cent. water-glass.

848,134. RAILWAY-CAR. CHARLES A. SCHROYER, Oak Park, Ill., assignor of one-half to William A. Gardner, Evanston, Ill. Filed Nov. 26, 1906. Serial No. 345,114.

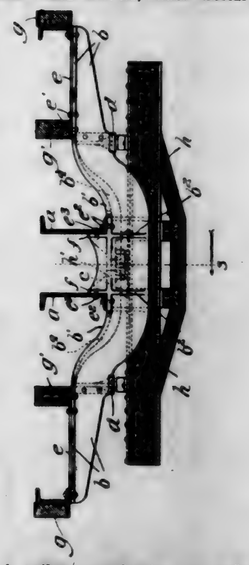

Claim.—1. A railway-car having an underframe comprising longitudinal center sills extending from end to end of the car, and a body-bolster having a depressed central portion to which the center sills are secured said body-bolster having also downwardly-curved side-plates.

2. In a railway-car, a bolster having its end portions in the same horizontal plane and its top central portion curved downwardly to form a depressed bearing for the center sills and downwardly-curved side plates integral with the top.

3. In a railway-car, a body-bolster having sides curved downwardly at their middle point, and a truck-bolster extending between the downwardly-curved portion of the sides.

4. A bolster for railway-cars, composed of an integral casting, said casting comprising end portions, a depressed central portion, downwardly-curved sides, seats for the center sills of the car, and a center plate, substantially as described.

848,135. SEED-PLANTER. SIMON R. SIKES and THOMAS R. SIKES, Ocilla, Ga. Filed Nov. 2, 1906. Serial No. 341,743.

Claim.—1. A planter comprising a movable frame, a seed-receptacle carried thereby and having an outlet-opening in the bottom portion thereof, a manually-operated slide normally closing said opening, a deflecting-tongue extending from the slide, and means within the receptacle for directing the seeds against the tongue.

2. In a planter the combination with a seed-receptacle having an elongated outlet-opening in its bottom portion; of a slide normally closing said opening, a deflecting-tongue upon the slide, and rotatable means within the receptacle for directing material against the tongues.

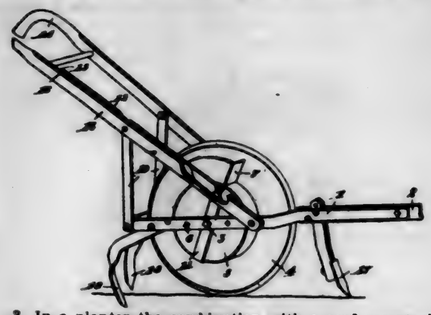

3. In a planter the combination with a seed receptacle having an elongated outlet-opening in its bottom portion; of a slide normally closing said opening, a deflecting-tongue upon the side, an oscillating arm connected to and adapted to operate the slide to open or close the opening, means for actuating the arm, and a locking device for said means.

4. In a planter the combination with a seed-receptacle having an elongated outlet-opening in its bottom portion; of a slide normally closing said opening, a deflecting-tongue upon the slide, an oscillating arm connected to and adapted to operate the slide to open or close the opening, means for actuating the arm, a locking device for said means, and rotatable means within the receptacle for directing material against the deflecting-tongue.

5. In a planter the combination with a seed-receptacle having an outlet-opening therein; of a slide normally closing said opening, a deflector movable with the slide for directing material through the outlet when open, and rotatable means for directing material against the deflector.

6. In a planter the combination with a receptacle having an inlet and an outlet, and a wheel supporting the receptacle and constituting one wall thereof; of means rotatable within the receptacle and with the wheel for directing material from the inlet toward the outlet.

848,136. EXERCISER FOR FELINES. WALTER E. SMITH, Salem, Mass. Filed Mar. 7, 1904. Serial No. 196,790.

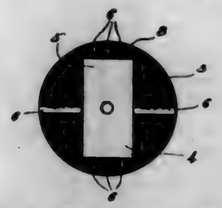

Claim.—1. As an article of manufacture, an exerciser for felines comprising a spherical body having a smooth exterior, provided with a central cavity or chamber extending axially thereinto and adapted to hold catnip, a removable plug closing one end of said chamber, and a series of apertures leading through the wall of said spherical body into said chamber through which apertures the feline gets the odor of the catnip.

2. As an article of manufacture, an exerciser for felines adapted to roll, and comprising a substantially spherical body having a cavity and an opening leading thereto to form an internal chamber adapted to contain catnip, and a plug to close said opening, said device also having a series of openings extending through the wall of the body and into said chamber, through which openings the feline gets the odor of the catnip.

848,137. STOP AND WASTE COCK. WILLIAM H. SMITH, Cleveland, Ohio, assignor of one-half to Michael F. Barrett, Cleveland, Ohio. Filed Mar. 2, 1906. Serial No. 303,833.

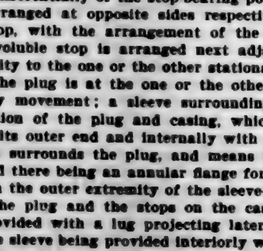

Claim.—1. In a stop and waste cock, a body or casing, a tapering plug seated in the casing and provided in its diametrically larger end with two holes arranged at or approximately at a right angle to each other and extending inwardly from the periphery of the plug; a stop-forming member revoluble with the rotation of the plug and engaging one of the said holes and projecting a suitable distance outwardly beyond the peripheral surface of the plug; two stationary stops on the casing, which stops are suitably spaced circumferentially of the stop-bearing portion of the plug and arranged at opposite sides respectively of the revoluble stop, with the arrangement of the parts such that the revoluble stop is arranged next adjacent or in close proximity to the one or the other stationary stop according as the plug is at the one or the other extremity of its rotary movement; a sleeve surrounding the stop-bearing portions of the plug and casing, which sleeve is provided at its outer end and internally with an annular flange which surrounds the plug, and means for turning the plug, and there being an annular flange formed on the plug between the outer extremity of the sleeve-surrounded portion of the plug and the stops on the casing, which flange is provided with a plurality of lugs spaced circumferentially of the plug, and the flange of the sleeve being provided in its inner side with an annular recess whose surrounding wall has notches engaged by the lugs on the plug, with the mutual engagement of the said lugs and notches establishing operative connection between the sleeve and the plug.

2. In a stop and waste cock, a body or casing, a tapering plug seated in the casing and provided in its diametrically larger end with two holes arranged at or approximately at a right angle to each other and extending inwardly from the periphery of the plug; a stop-forming member revoluble with the rotation of the plug and engaging one of the said holes and projecting a suitable distance outwardly beyond the peripheral surface of the plug; two stationary stops on the casing, which stops are suitably spaced circumferentially of the stop-bearing portion of the plug and arranged at opposite sides respectively of the revoluble stop, with the arrangement of the parts such that the revoluble stop is arranged next adjacent or in close proximity to the one or the other stationary stop according as the plug is at the one or the other extremity of its rotary movement; a sleeve surrounding the stop-bearing portions of the plug and casing, which sleeve is provided at its outer end and internally with an annular flange which surrounds the plug, and means for turning the plug, and there being an annular flange formed on the plug between the outer extremity of the sleeve-surrounded portion of the plug and the stops on the casing, which flange is provided with a lug projecting laterally of the plug, and the sleeve being provided interiorly with a notch engaged by the said lug so as to establish operative connection between the sleeve and the plug.

3. In a stop and waste cock, a body or casing; a tapering plug seated in the casing and provided in its diametrically larger end with two holes arranged at or approximately at a right angle to each other and extending inwardly from the periphery of the plug; a stop-forming member revoluble with the rotation of the plug and engaging one of the said holes and projecting a suitable distance outwardly beyond the peripheral surface of the plug; two stationary stops on the casing, which stops are suitably spaced circumferentially of the stop-bearing portion of the plug and arranged at opposite sides respectively of the revoluble stop, with the arrangement of the parts such that the revoluble stop is arranged next adjacent or in close proximity to the one or the other stationary stop according as the plug is at the one or the other extremity of its rotary movement; a sleeve surrounding the stop-bearing portions of the plug and casing, which sleeve is provided at its outer end and internally with an annular flange which surrounds the plug, and means for turning the plug, and there being several lugs formed on and spaced circumferentially of the plug between the outer extremity of the sleeve-surrounded portion of the plug and the stops on the casing, and the flange of the sleeve being provided in its inner side with notches which are engaged by the said lugs so as to establish operative connection between the sleeve and the plug.

4. In a stop and waste cock, a body or casing, a tapering plug seated in the casing and provided in its diametrically larger end with two holes arranged at or approximately at a right angle to each other and extending inwardly from the periphery of the plug; a stop-forming member revoluble with the rotation of the plug and engaging one of the said holes and projecting a suitable distance outwardly beyond the peripheral surface of the plug; two stationary stops on the casing, which stops are suitably spaced circumferentially of the stop-bearing portion of the plug and arranged at opposite sides respectively of the revoluble stop, with the arrangement of the parts such that the revoluble stop is arranged next adjacent or in close proximity to the one or the other stationary stop according as the plug is at the one or the other extremity of its rotary movement; a sleeve surrounding the stop-bearing portions of the plug and casing, which sleeve is provided at its outer end and internally with an annular flange which surrounds the plug, and means for turning the plug, and there being several lugs formed on and spaced circumferentially of the plug between the outer extremity of the sleeve-surrounded portion of the plug and the stops on the casing, and the flange of the sleeve being provided in its inner side with notches which are engaged by the said lugs so as to establish operative connection between the sleeve and the plug.

5. In a stop and waste cock, a body or casing, a tapering plug seated in the casing and provided in its diametrically larger end with two holes arranged at or approximately at a right angle to each other and extending inwardly from the periphery of the plug; a stop-forming member engaging one of the said holes and projecting a suitable distance outwardly beyond the peripheral surface of the plug; two stationary stops on the casing, which stops are suitably spaced circumferentially of the stop-bearing portion of the plug and arranged at opposite sides respectively of the stop-forming member of the plug; a sleeve surrounding the stop-bearing portion of the plug, which sleeve has a hole engaged by the stop-bearing member of the plug, and means for turning the plug, and there being a plurality of lugs formed on and projecting laterally and spaced circumferentially of the plug between the outer extremity of the sleeve-surrounded portion of the plug and the stops on the casing, which lugs are reduced in size toward their free ends, and the sleeve being provided at its outer end and centrally with a flange embracing the plug, which flange is provided in its inner side with notches engaged by the lugs on the plug.

848,138. BLEACHING-CABINET. WILMONT E. STRONG, Tacoma, Wash. Filed June 1, 1906. Serial No. 319,744.

Claim.—1. In a flour-bleaching cabinet, the combination of a mixing-chamber, separate cell-compartments connecting therewith, separate slides adapted to close the connections therebetween, electric fume-producing cells within said compartments, and short-circuiting switches mounted on said cabinet and connected to the terminals of said cells.

2. In a flour-bleaching cabinet, the combination of a mixing-chamber, separate cell-compartments connecting therewith, separate slides closing the connection therebetween,

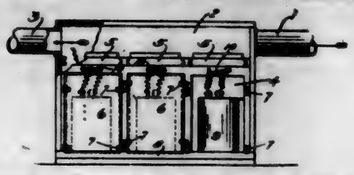

clamping-doors to each cell, and a shelf in line with the floor of said cell-compartments outside of said clamping-doors.

848,139. DEVICE FOR MENDING PIPES. GOTTFRIED STUPPAR, South Chicago, Ill. Filed Mar. 9, 1906. Serial No. 305,141.

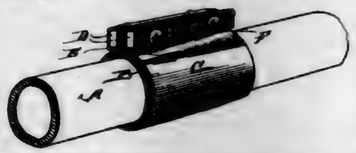

Claim.—1. A pipe-mending device comprising a strip of pliable metal, metal bars permanently secured to the ends of said strip adapted to be enfolded therein to adjust the length of the strip to pipes of various diameters, and means for locking said bars together, as set forth.

2. A pipe-mending device comprising a pair of metal bars, a strip of pliable metal firmly secured to and adapted to be wrapped around said bars to regulate the length of the strip to pipes of various diameters, a suitable packing material, and means for locking the bars, as set forth.

848,140. STEERING-WHEEL FOR AUTOVEHICLES. WILLIAM F. TOWNE, Los Angeles, Cal., assignor of one-half to Charles R. Sumner, Los Angeles, Cal. Filed Nov. 8, 1906. Serial No. 342,570.

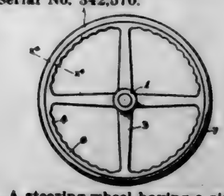

Claim.—1. A steering-wheel having a rim with a smooth outer surface and an indented inner surface for the purpose set forth.

2. A steering-wheel having a rim with a smooth outer surface and an indented inner surface to form a continuous finger-grip for turning the wheel.

3. A steering-wheel having a rim composed of inner and outer members, the outer member being supported in and by the inner member and having a smooth outer surface, and the inner member having an indented inner surface.

848,141. METAL SASH-BAR. FRED H. TREPTE, Chicago, Ill. Filed Oct. 17, 1906. Serial No. 339,387.

Claim.—1. A sash-bar comprising an outside bar, a covering thereon with its edges clamped under the edge of the bar, an inside bar between the edges of the glass panes, bolts connecting the outside and inside bars and extending through the latter, the heads of the bolts being under the covering and their threaded ends being provided with nuts bearing against the inside bar, and side bars removably attached to the opposite sides of the inside bar.

2. A sash-bar comprising a bar fixed at its ends to the sash-casing, a removable outside bar attached to said bar, and removable side bars attached to said fixed bar, panes being held between the outside and side bars and the attaching means for both the outside and the side bars being accessible and detachable from the inside of the sash, so that either the outside or the side bars can be removed and the panes inserted from either the outside or the inside without disturbing the fixed bar.

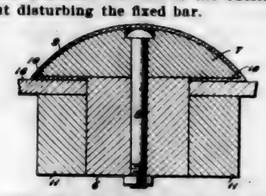

3. The combination of a pair of socket-plates adapted to be set in the casing, an inside bar the ends of which engage in the sockets, an outside bar and side bars attached to the inside bar, and glass panes clamped between the outside bar and the side bars.

848,142. WHEEL. GEORGE W. WALK, Pittsburg, Pa. Filed Feb. 28, 1906. Serial No. 303,509.

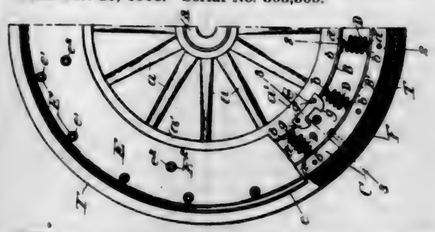

Claim.—1. In a wheel, the combination of a wheel-center having a hub and rim, a felly of larger internal diameter than the center, loops on the outer face of the rim and inner face of the felly, helical springs having bends on their ends detachably engaging said loops, and annular side plates fastened to the felly and overlapping the rim and preventing the springs disengaging the loops, substantially as described.

2. In a wheel, the combination of a wheel-center having a hub and rim, a felly of larger internal diameter than the center, a band on the outer face of the rim, a band on the inner face of the felly, each band provided with radially-disposed loops, and helical springs having bends on their ends detachably engaging said loops to retain the springs in place, substantially as described.

3. In a wheel, the combination of a hub and rim, a felly of larger internal diameter than the rim, springs attached to the inner face of the felly and outer face of the rim, annular face-plates attached to said felly and overlapping the rim, tie and spacing bolts between said plates, and notched plates attached to the rim and adapted to engage said bolts and limit the relative rotatorial movement of the felly and rim.

4. In a wheel, the combination of a hub and rim, a felly of larger internal diameter than the rim, annular bands attached to the inner face of the felly and outer face of the rim provided with radially-disposed loops, helical springs having bends on their ends engaging said loops, annular face-plates attached to said felly and overlapping the rim, tie-bolts and spacing-sleeves between said plates, and plates attached to the rim adapted to engage said bolts to limit the rotatorial play of the felly relatively to the rim, substantially as described.

5. The combination of a wheel-center, a felly of larger internal diameter than the center, springs interposed between the center and felly, side plates attached to the felly and projecting inwardly over the springs and also projecting outwardly beyond the outer face of the felly to retain a tire thereon, and a tire surrounding the felly.

6. The combination of a wheel-center, a felly of larger internal diameter than the center, helical supporting and suspending springs interposed between and connected to the center and felly, side plates attached to the felly and projecting inwardly over the springs and lapping onto the center, and also projecting outwardly beyond the outer face of the felly to retain a tire thereon, and a tire surrounding the felly.

7. The combination of a wheel, a corrugated band surrounding the wheel-felly, and a cushion-tire fitted over said band.

8. The combination with a wheel-center, a felly of larger diameter than the center, springs interposed between the center and felly and connected therewith, a roughened band surrounding the felly, laterally-projecting side plates attached to the felly, and a cushion-tire fitted around said band, substantially as described.

9. In combination, a wheel-center having a hub and rim, a felly of larger internal diameter than the rim, bands fitted to the outer face of the rim and inner face of the felly, helical springs interposed between the center and felly and fastened to said bands, annular side plates attached to the felly, a corrugated band on the outer face of the felly, and a tire attached thereto over said band.

10. The combination of a wheel-center, a felly of larger internal diameter than the center, springs interposed between the center and felly, side plates attached to the felly and projecting inwardly over the springs and also projecting outwardly beyond the outer face of the felly to retain a tire thereon, and a tire surrounding the felly; with stay-bolts between the annular plates adjacent the rim of the center, and notched wearing-plates attached to the center, substantially as and for the purpose described.

11. In a wheel, the combination of a wheel-center having a hub and rim, a felly of larger internal diameter than the rim, bands fitted to the outer face of the rim and inner face of the felly, and provided with inwardly-projecting loops, helical springs interposed between the center and felly and fastened to said loops, annular side plates attached to the felly and overlapping the rim, and projecting beyond the felly, and a corrugated band on the outer face of the felly, and a tire attached thereto over said band.

12. In a wheel, the combination of a wheel-center having a hub and rim, a felly of larger internal diameter than the center, loops on the outer face of the rim, and inner face of the felly, helical springs having bends on their ends engaging said loops, and annular side plates fastened to the felly and overlapping the rim; with stay-bolts between the annular plates, adjacent the rim of the center, and notched wearing-plates attached to the rim-center, substantially as and for the purpose described.

13. In combination, a wheel-center having a hub and rim, a felly of larger internal diameter than the rim, bands fitted to the outer face of the rim and inner face of the felly, helical springs interposed between the center and felly and fastened to said bands, annular side plates attached to the felly, a corrugated band on the outer face of the felly, and a tire attached thereto over said band; with stay-bolts between the annular plates adjacent the rim of the center, and notched wearing-plates attached to the rim-center, substantially as described.

848,143. METAL SHEET-PILING. JULIUS R. WEMLINGER, Brooklyn, N. Y. Filed Oct. 6, 1905. Serial No. 281,574.

Claim.—1. In metal sheet-piling, the combination of units having a web and sides, said sides having enlarged edges, means secured to said web for joining the said units together.

2. In metal sheet-piling, the combination of trough-shaped units, each having a web and sides, said sides having marginal enlargements, splices secured to said web for joining the said units.

3. In metal sheet-piling, units each having a flat web and sides, said sides being arranged with a marginal enlargement, means secured to said web for receiving and securing portion of the contiguous units.

4. In metal sheet-piling, the combination of units each having a flat web and sides, said sides being arranged with marginal enlargements, splices secured to said web adapted to lock the said units together.

5. In metal sheet-piling, the combination of units each having a flat web and sides, said sides having thick edges, splices secured to said web adapted to overlap and lock the said edges.

6. In metal sheet-piling, units each having a web and sides, said sides having thick edges, splices secured to the webs of said units and formed of strips having locking-flanges.

7. In metal sheet-piling, units of trough shape each having a web and flaring sides, said sides having marginal enlargements, splices secured to said units and formed of strips having locking edges which overlap the said marginal enlargements.

8. In metal sheet-piling, the combination of trough-shaped units, each having thick edges and arranged so that the sides of contiguous units overlap each other over their entire widths.

9. In metal sheet-piling, the combination of trough-shaped units having ribbed edges and arranged so that the sides of contiguous units overlap each other.

10. In metal sheet-piling, units each having a web and diverging sides, said sides having marginal enlargements and arranged so that the sides of contiguous units overlap each other over their entire widths, splices secured to said units for locking the same together.

11. In metal sheet-piling, the combination of units each having a web and diverging sides, said sides having marginal enlargements and arranged so that the sides of contiguous units overlap over their entire widths, locking-pieces secured to the said units and each formed of a strip having edges which overlap the said marginal enlargements.

848,144. METAL SHEET-PILING. JULIUS R. WEMLINGER, Brooklyn, N. Y. Filed Oct. 18, 1905. Serial No. 283,207.

Claim.—1. In metal sheet-piling, units of trough shape having resilient cylindrical edges.

2. In metal sheet-piling, units of trough shape having curved edges and resilient means for locking the said units together.

3. In metal sheet-piling, units of trough shape having resilient cylindrical edges and means for locking the said units together.

4. In metal sheet-piling, units of trough shape having compressible edges and means for joining the said units together.

5. In metal sheet-piling, the combination of units having compressible edges and elastic locking-splices for joining the said units together.

6. In metal sheet-piling, the combination of units each having a web and two sides, both said sides having resilient curved locking edges.

7. In metal sheet-piling, the combination of units each having a web and sides, said sides having cylindrical edges, resilient splices secured to said web for joining the said units together.

8. In metal sheet-piling, the combination of units each having a web and sides, said sides having resilient curved edges, means secured to said web for receiving and holding the said edges.

9. In metal sheet-piling, the combination of units each

having a web and sides, said sides having cylindrical extensions, resilient splices secured to said web for receiving and holding the said extensions.

10. In metal sheet-piling, the combination of units each having a web and sides, said sides having resilient cylindrical extensions, splices secured to said web having edges fitting over the said extensions.

11. In metal sheet-piling, the combination of units each having a web and sides, said sides having resilient curved edges, splices secured to said web having elastic extensions for receiving and compressing the said curved edges.

12. In metal sheet-piling, the combination of units each having a web and sides, said sides having curved edges, splices secured to said units and formed of strips having elastic locking extensions which fit over the said curved edges.

13. In metal sheet-piling, the combination of units each having a web and sides, said sides having resilient cylindrical edges and arranged so that the sides of contiguous units overlap each other, means for securing the said units together.

14. In metal sheet-piling, the combination of units each having a web and sides, said sides having cylindrical extensions and arranged so that the sides of contiguous units overlap each other, resilient means secured to said web for locking the said units.

15. In metal sheet-piling, the combination of trough-shaped units having compressible edges and arranged so that the sides of contiguous units overlap each other across their entire width, resilient means for locking the said units together.

16. In metal sheet-piling, the combination of trough-shaped units with splices formed of flat strips having elastic edges.

17. In metal sheet-piling, the combination of trough-shaped units having elastic edges and splices each formed of a flat strip having upturned elastic edges.

18. In metal sheet-piling, the combination of units each having a web and sides, said sides having compressible edges, splices secured to said units and each formed of a flat strip having upturned curved edges.

848,145. METAL SHEET-PILING. JULIUS R. WEMLINGER, Brooklyn, N. Y. Filed Nov. 1, 1905. Serial No. 285,371.

Claim.—1. In metal sheet-piling the combination of units each having a web and parallel flanges extending in opposite directions from the edges of said web, said flanges being of different length and locking members each secured to the web of a unit adjacent to the longer flange thereof so as to leave a space between the outer face of said flange and a portion of the locking member for the reception of the shorter flange of the contiguous unit.

2. In metal sheet-piling, units each having a web and parallel flanges extending in opposite directions from the edges of said web, said flanges being of different length, a locking member secured to said web and having its central portion parallel to and distant from the longer flange of said unit so as to provide a space for the reception of the shorter flange of the contiguous unit.

3. In metal sheet-piling, units each having a web and parallel flanges extending in opposite directions from the edges of said web, and a locking member comprising a flat portion parallel to the said flanges and two sides diverging from the edges of said flat portion, one of said sides being secured to the web of the unit.

4. In metal sheet-piling units each having a web and parallel flanges extending in opposite directions from the edges of said web, and a locking member comprising a flat portion parallel to said flanges and unequal sides projecting from the edges of said flat portion, the longer side of said locking member being secured to the said web, so as to leave a space between the flat portion and one of the flanges of the unit.

5. In metal sheet-piling, the combination of units each having a web and parallel unequal flanges extending in opposite directions from the edges of said web, the shorter flange of one unit being adjacent to the longer flange of the contiguous unit, a locking member secured to each unit and overlapping the shorter flange and portion of the web of the said contiguous unit.

6. In metal sheet-piling the combination of units each having a web and parallel unequal flanges extending in opposite directions from the edges of said web, the shorter flange of one being adjacent to the longer flange of the contiguous unit, and locking members each comprising a flat portion parallel to said shorter flange and sides of unequal extent, the longer of said sides being secured to the said web and the shorter one overlapping portion of the web of the contiguous unit.

848,146. END-GATE. JAMES L. WILLIAMS, Mount Hamil, Iowa. Filed Sept. 18, 1906. Serial No. 335,154.

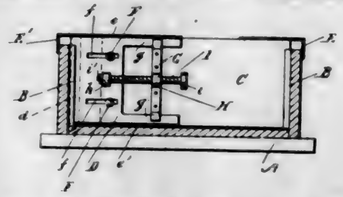

Claim.—1. The combination, with the main portion of an end-gate, and an extension-plate arranged at one end thereof, of a nut secured to one of the said parts, a revoluble screw engaging with the said nut and operatively connected with the other said part, and a wagon-body provided with guide-grooves in which the said end-gate is normally slidable, said screw affording a means for clamping the end-gate after its vertical position has been adjusted.

2. The combination, with a wagon-body provided with guide-grooves, of an end-gate provided with an extension-plate having a channel-shaped end portion, and means for adjusting the position of the said plate longitudinally of the body portion of the said end-gate.

3. The combination, with a wagon-body provided with guide-grooves, of an end-gate provided with an extension-plate and slidable in the said grooves, said extension-plate having a channel-shaped portion at one end, longitudinal projections at its other end, guide-slots in its middle part, and flanges at its top and bottom; a guide-bar secured to the body portion of the end-gate and engaging with the said projections, guide-pins also secured to the said body portion and engaging with the said slots, a nut secured to the said body portion, an arm secured to the said plate, and an adjusting-screw engaging with the said nut and operatively connected with the said arm.

848,147. WATER-TANK. CHARLES WILLMS, Baltimore, Md. Filed July 30, 1906. Serial No. 328,368.

Claim.—1. The combination of a water-containing tank, a condensation-collector surrounding it but leaving a clear air-space between the condensation-collector and the tank both at the bottom and at the sides, devices clamped to the bottom of the tank and to the bottom of the condensation-collector for supporting the tank rigidly within the collector and for holding it a suitable distance therefrom to provide said air-space, a flush-pipe communicating with the condensation-collector, and a valve-seat clamped to the bottom of the tank and having a downwardly-projecting extension passing into the space between the tank and the collector and discharging into the flush-pipe.

2. The combination of a water-containing tank, a condensation-collector surrounding it but leaving a clear air-space between the condensation-collector and the tank both at the bottom and at the sides, devices clamped to the bottom of the tank and to the bottom of the condensation-collector for supporting the tank rigidly within the collector and for holding it a suitable distance therefrom to provide said air-space, a thimble clamped to the bottom of the condensation-collector and receiving water therefrom, a flush-pipe clamped to the thimble, and a valve-seat clamped to the bottom of the tank and having a downwardly-projecting extension passing into the space between the tank and the collector and discharging into the flush-pipe.

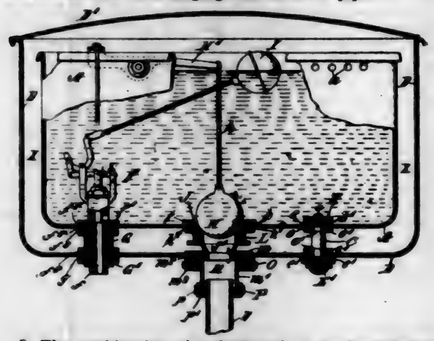

3. The combination of a flush-tank, a condensation-collector associated therewith, supporting devices for holding the tank and collector a suitable distance apart, devices for clamping these devices to both the tank and collector, a valve-seat clamped to the bottom of the tank between the supporting devices, a flush-pipe receiving water discharged through the valve-seat, a thimble arranged in a line with the axis of the valve-seat, devices for clamping the thimble to the collector and devices for clamping the thimble to the flush-pipe.

4. The combination of a flush-tank, a condensation-collector associated therewith, a supporting device for holding the tank and collector a suitable distance apart, means for clamping said supporting device to both the tank and the collector, a valve-seat clamped to the bottom of the tank, a flush-pipe receiving water through the valve-seat, and means for draining water from the condensation-collector.

5. The combination of a flush-tank, a condensation-collector associated therewith, a supporting device for holding the tank and collector a suitable distance apart, means for clamping this device to both the tank and the collector, an inlet-valve clamped to both the tank and the collector and carrying devices between the bottom of the tank and the bottom of the collector for holding them a suitable distance apart, a valve-seat clamped to the bottom of the tank, a flush-pipe receiving water discharged through the valve-seat and means for draining water from the condensation-collector.

6. The combination of a flush-tank, a condensation-collector surrounding it with an air-space between its bottom and the bottom of the tank, a drawn sheet-metal valve-seat clamped to the bottom of the tank, a drawn sheet-metal thimble having a flange inside the collector slotted or recessed down to the bottom surface of the condensation-collector, a nut on the thimble for clamping it to the tank, and a flush-pipe clamped to the thimble.

848,148. CIRCUIT-BREAKER. ALBERT C. WOEHRLE, New York, N. Y. Filed June 16, 1906. Serial No. 321,955.

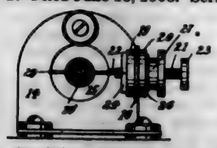

Claim.—1. A circuit-breaker composed of a spring having a resilient and magnetizable head that constitutes the armature, substantially as specified.

2. A circuit-breaker composed of a spring having a curved resilient and magnetizable head that constitutes the armature, substantially as specified.

3. A circuit-breaker composed of a convoluted resilient and magnetizable body, substantially as specified.

4. An induction apparatus provided with a circuit-breaker composed of a convoluted resilient and magnetizable body, substantially as specified.

5. In an induction apparatus, a core and a contact-pin, combined with an armature having resilient convolutions opposite the core, substantially as specified.

6. In an induction apparatus, a core and contact-screw, combined with a yielding bearing for said screw, and with an armature having resilient convolutions opposite the core, substantially as specified.

848,149. AUTOMATIC RECORDER FOR MACHINES. ROBERT A. WOOD, New York, N. Y. Filed Jan. 6, 1906. Serial No. 294,863.

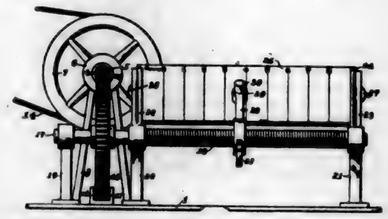

Claim.—1. The combination with a machine of a recording mechanism comprising a plurality of standards, a shaft mounted in said standards, a loose pulley on said shaft, means for engaging said pulley and rotating said shaft, a second set of standards, a screw-threaded shaft mounted in said second-named standards, a gear-wheel mounted on said second-named shaft, and having threaded engagement with said first-named shaft, and adapted to be operated thereby, and a marker threaded on said second-named shaft and adapted to move longitudinally thereof, substantially as described.

2. In combination with a metal-rolling machine, a recording mechanism comprising a plurality of standards, a shaft mounted in said standards, a pulley loosely mounted on said shaft a clutch mounted on said shaft and adapted to engage said pulley and impart motion to said shaft, and means for automatically operating said clutch, a worm-gear carried by said shaft, a second set of standards, a threaded shaft mounted in said second-named standards, a gear-wheel mounted on said second-named shaft, and a marker threaded on said second-named shaft, and adapted to be operated thereby, substantially as described.

3. A recording mechanism for metal-rolling machines, comprising a plurality of standards, a shaft mounted in said standards, a pulley loosely mounted on said shaft, a clutch carried by said shaft and adapted to engage said pulley, thereby operating said shaft, a second set of standards, a screw-threaded shaft mounted in said second set of standards, a gear-wheel mounted on said second shaft, a worm-gear mounted on said first-named shaft, and adapted to engage the gear-wheel on said second-named shaft, a marker threaded on said second-named shaft and through the medium of said threaded engagement adapted to move longitudinally thereof, and a bell-crank lever adapted to automatically operate said clutch, substantially as described.

848,150. FIRE-KINDLER. THOMAS D. BAUSHER, Reading, Pa. Filed Oct. 29, 1906. Serial No. 341,135.

Claim.—1. The herein-described composition of matter consisting of refined coal-oil, tallow, paraffin, rosin-soap, sawdust and pulverized charcoal substantially as described and for the purpose specified.

2. The herein-described composition of matter for use as a fire-kindler consisting of refined coal-oil one hundred gallons, tallow seventy pounds, paraffin twenty pounds,

rosin-soap eighty pounds, sawdust four bushels and pulverized charcoal one bushel, substantially as described.

848,151. TYPE-CLEANING DEVICE. WILLIAM T. BENTE and MARSHALL F. CAPRON, Elyria, Ohio. Filed Dec. 22, 1905. Serial No. 292,983.

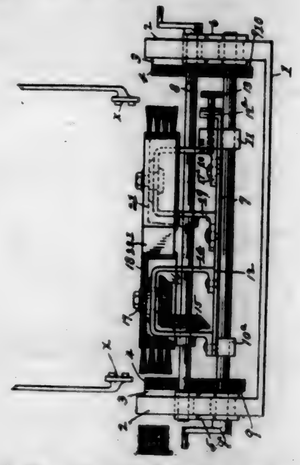

Claim.—1. In a type-cleaning device, the combination with a type-writer, of a cleaning-belt mounted in a suitable support, means for shifting said belt in its support and into the path of the type of the type-writer, and means for driving said belt.

2. In a type-cleaning device, the combination with a type-writer, of an endless belt mounted in a suitable support therein and normally out of the range of the type of the type-writer, means for shifting said belt into such range, and means for driving said belt.

3. In a type-cleaning device, the combination with a type-writer, of a pair of belt-wheels rotatably mounted in said type-writer and normally out of range of the type, a cleaning-belt driven thereby, means for shifting said belt into the range of said type, and means for driving said wheels and said belt.

4. In a type-cleaning device, the combination with a type-writer, of a frame mounted in said type-writer, a pair of belt-wheels carried by said frame and normally out of the range of the type, means for shifting said wheels in said frame to bring them into the range of said type, a cleaning-belt carried by said wheels, and means for driving said wheels.

5. In a type-cleaning device, the combination with a type-writer, of a frame mounted in the same, a pair of belt-wheels mounted in said frame and normally out of the range of the type, means slidably mounted in said frame for supporting said wheels, a cleaning-belt carried by said wheels, and means for driving said belt.

6. In a type-cleaning device, the combination with a type-writer, of a frame mounted within the same, sliding members mounted in said frame, a pair of belt-wheels carried by said sliding members, a cleaning-belt upon said belt-wheels said wheels and said belt being normally out of the range of the type, means for shifting said sliding members, and means for driving said belt.

7. In a type-cleaning device, the combination with the frame, of a sliding member mounted in the same, a pair of belt-wheels carried thereby, a belt mounted upon the same, said belt and said wheels being normally out of the range of the type, means for shifting said member to bring said belt into the range of said type, and means for driving said belt.

8. In a type-cleaning device, the combination with the frame, of a pair of sliding members mounted in the same, a pair of belt-wheels carried by said members, a cleaning-belt upon said wheels, means for shifting said members to raise and lower said cleaning-belt, and means for driving said belt.

9. In a type-cleaning device, the combination with the frame, of suitable guides upon said frame, sliding members operating in said guides, a pair of shafts mounted in said members, a pair of belt-wheels mounted upon said shafts, a cleaning-belt upon said belt-wheels, connections between one of said shafts and said wheels whereby the former will drive the latter, and suitable mechanism between the other one of said shafts and said sliding members whereby upon the operation of the former the latter will be raised or lowered.

10. In a type-cleaning device, the combination with the frame, of suitable guides upon said frame, sliding members operating in said guides, a pair of shafts mounted in said members, a pair of belt-wheels supported upon one of said shafts, a cleaning-belt upon said belt-wheels, beveled-gear connections between said shaft and the belt-wheels whereby the former drives the latter, and rack-and-pinion construction between the other one of said shafts and the frame whereby when the former is rotated the belt-wheels and the belt will be raised.

848,152. CLOSURE FOR BOTTLES AND THE LIKE. THOMAS C. BOOTH, New York, N. Y. Filed May 27, 1905. Serial No. 262,558.

Claim.—1. In a container, the combination of a stationary cap with an aperture therein, a cap having a corresponding aperture superimposed and rotatable on said stationary cap, the tops of said caps being in the form of interfitting spirals, and slightly-yielding means for preventing relative longitudinal movement of said caps.

2. In a container, the combination of a pair of superposed, interfitting caps having registering apertures, one rotatable upon the other and yieldingly held against relative longitudinal movement, corresponding portions of each cap being inclined to the direction of movement.

3. In a container, the combination of a pair of superposed, interfitting caps having registering apertures, one rotatable upon the other and yieldingly held against relative longitudinal movement, the tops of said caps being of corresponding helicoidal form.

4. In a container, the combination, with a neck having a reduced aperture therein, of a cap rotatable on said neck having a corresponding aperture and adapted to seal said container except when said apertures register, said cap and neck being provided with yielding means to check relative longitudinal movement and juxtaposed planes inclined to the direction of rotary movement.

5. In a container, the combination of a pair of superposed, interfitting caps having registering apertures therein, one rotatable upon the other and yieldingly held against relative longitudinal movement, the tops of said caps being in the form of juxtaposed spirals of one revolution with connected spiral ends.

6. A valve comprising a pair of contiguous, correspondingly-apertured plates having relative sliding movement one upon the other, said plates being inclined to the direction of movement and the apertured portions thereof being held in continuous contact.

7. A valve comprising a pair of contiguous, correspondingly-apertured plates having relative sliding movement one upon the other, said plates being helicoidal in form, means for retaining said plates continuously in slightly-yielding contact, and means for rotating one thereof upon the other.

848,153. ELECTRICAL BLASTING-MACHINE. LUCIEN W. BOWMAN, Reading, Pa., assignor of one-half to John H. Lewis, Reading, Pa. Filed Apr. 25, 1906. Serial No. 313,559.

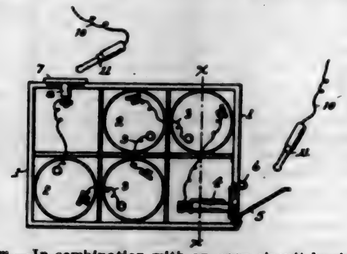

Claim.—In combination with an open circuit having terminals, a receptacle containing a battery and having in one of its sides an opening, a plate attached to one of the sides of said receptacle and being exposed, a jack-plug located within the receptacle and registering with the opening thereof, a battery located within the box and having one of its poles connected with said jack-plug and its other pole connected with said plate, said jack-plug adapted to receive one of the circuit-terminals and the other circuit-terminal being adapted to be brought manually in contact with said plate, a door hinged to the receptacle and adapted to close over the opening thereof, and means for securing said door in closed position over said opening.

848,154. COMBINED LISTER, PLANTER, AND ROLLER. MILLER BROWN, Richmond, Mo. Filed Nov. 5, 1906. Serial No. 342,082.

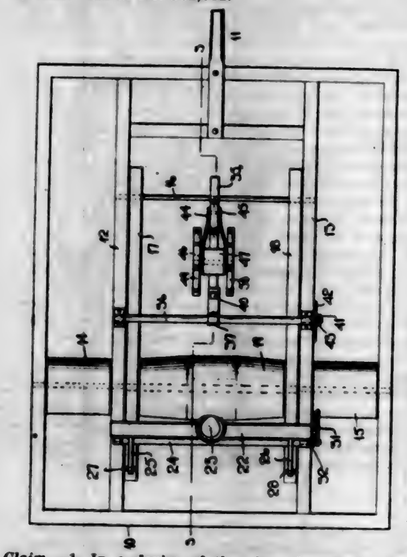

Claim.—1. In a device of the class described, a main frame carrying relatively small rollers spaced apart and adapted to travel upon the ridges at the sides of a listed furrow, an inner frame swinging from the main frame and carrying a relatively large roller adapted to operate within the listed furrow, means for adjusting said inner frame and the roller carried thereby vertically, a planter-shoe swinging from said main frame in advance of the large roller, feeding devices carried by said shoe, and means for adjusting the free end of said shoe vertically.

2. In a device of the class described, a main frame carrying relatively small rollers spaced apart and adapted to bear upon the ridges at the sides of a listed furrow, an inner frame swinging from said main frame and carrying a relatively large roller operating within said listed furrow, means for adjusting the rear end of said inner frame vertically, a furrow-opening shoe swinging from the main frame in advance of the large roller, seeding devices carried by said shoe, and means for adjusting the near end of said shoe and seeding devices vertically.

3. In a device of the class described, the combination with a main frame having relatively small spaced rollers for moving upon the ridges at the sides of a listed furrow, a relatively large roller between said smaller roller, and adapted to travel in said listed furrow, means for adjusting said larger roller vertically, seeding devices carried by said frame in advance of said larger roller, and means for adjusting said seeding devices vertically.

4. In a device of the class described, the combination with a main frame having relatively small spaced rollers for moving upon the ridges at the sides of a listed furrow, a relatively large roller between the said small rollers and adapted to move in said furrow, yieldable means for supporting said larger roller, means for adjusting said larger roller vertically, a seeding-shoe carried by said frame in advance of said larger roller, seeding devices associated with said shoe, means for yieldably supporting said shoe, and means for adjusting said shoe and the seeding devices associated therewith vertically.

5. In a device of the class described, a frame having longitudinal members spaced apart and at a distance from the sides of the frame, a roller journaled between each of said members and the sides of the frame, respectively, spaced bars suspended between said members, a roller journaled therein, and a furrow-opener in front of said last-mentioned roller.

6. In a device of the class described, a frame provided with spaced longitudinal members, rollers therein, spaced bars suspended between said members, a roller and a furrow-opener carried by said bars, two shafts journaled across the frame, means for adjustably connecting said shafts with the roller and the furrow-opener, respectively, and means for adjustably rotating each shaft.

7. In a device of the class described, a frame provided with spaced longitudinal members, rollers therein, a rod in said members, spaced bars and a furrow-opener pivotally connected with said rod, means for adjustably controlling the movements of the opener and the bars respectively, and a roller mounted in said bars to the rear of the furrow-opener.

8. In a device of the class described, a frame provided with rollers, a transversely-disposed rod secured to said frame, spaced bars and a furrow-opener, each pivotally secured at its forward end to said rod, two shafts across the frame, each provided with means for adjustably rotating it and with an arm, rods respectively connecting said arms to the said bars and the said furrow-opener, and springs on said rods and coacting therewith to form yieldable connections between said arms and said bars and furrow-opener.

848,155. REINFORCED CONCRETE CROSS-TIE. WILLIAM A. BRYANT, Wetumpka, Ala., assignor of one-fourth to Thomas W. Rouse, Wetumpka, Ala. Filed Jan. 14, 1907. Serial No. 352,240.

Claim.—1. A railway-tie including mating sections, and spaced reinforcing members embedded in said sections and each having one end thereof extended beyond the adjacent section and deflected laterally for engagement with the correspondingly-deflected end of the reinforcing member of the mating section.

2. A railway-tie including mating sections, and reinforcing-loops embedded in each tie-section and having their closed ends extended beyond the adjacent section and bent downwardly for engagement with the deflected end of the loop of a mating section.

3. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in each section and having their closed ends extended in opposite directions, and means for connecting said sections.

4. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections and having their closed ends extended in opposite directions, the closed end of one of the loops of each section being extended beyond the adjacent end of said section and deflected downwardly for engagement with the correspondingly-deflected end of the reinforcing-loop of the mating section.

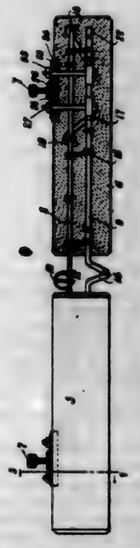

5. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections and having their closed ends extended in opposite directions, means for supporting said loops, and means engaging one of the loops of each section for detachably securing the same together.

6. A railway-tie including a plurality of detachable sections, spaced loops embedded in each section and having their closed ends extended in opposite directions, eyes formed in the open end of one of the loops of each section, and a pin extending through said eyes for detachably uniting said sections.

7. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections and having their closed ends extended in opposite directions, the open ends of the upper loops being provided with terminal eyes and the closed ends of the lower loops being deflected downwardly for engagement with each other, and a pin passing through the eyes for detachably uniting the sections.

8. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections, and a longitudinal truss-rod disposed between the walls of the loops and operatively connected therewith.

9. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections and having their closed ends extended in opposite directions, tie-wires connecting the walls of said loops, and a longitudinal truss-rod extending between the loops and having its opposite ends provided with hooks one of which engages the closed end of the adjacent loop and the other one of the tie-wires.

10. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections and having their closed ends extended in opposite directions, the open end of the upper loop of each tie being provided with coincident eyes and the open end of the lower loop being extended laterally to form anchoring members, the closed end of the anchor-carrying loop being deflected downwardly for engagement with the correspondingly-deflected end of the anchor-carrying loop of an adjacent section, and a pin passing through the eyes for detachably uniting said sections.

11. A railway-tie including a plurality of detachable sections, a reinforcing-loop embedded in each section and having its closed end extended beyond the adjacent end of said section and deflected downwardly for engagement with the correspondingly-deflected end of the loop of the mating section, perforated plates connecting the walls of the loops, cushioning members carried by the tie-sections, rail-engaging members mounted on the cushioning members and clamping-bolts extending through the transverse plates, cushioning members and tie-engaging members for locking the latter in position on the tie-sections.

12. A railway-tie including a plurality of detachable sections, reinforcing-loops embedded in said sections, perforated transverse plates connecting the walls of said loops, metallic housings embedded in their upper surface of the sections, cushioning members seated in said housings, rail-engaging members carried by the cushioning members, and clamping-bolts passing through the perforations in the transverse plates and engaging the cushioning and rail-engaging members for locking the same in position on the tie-sections.

13. A railway-tie including a plurality of detachable sections, a reinforcing-loop, embedded in each section, transverse plates connecting the walls of the loops, a truss-rod extending beneath the plates, cushioning-blocks embedded in the upper surface of the tie-sections, a rail-engaging member carried by the cushioning-block and having its opposite edges bent to form lugs adapted to engage the rails, and fastening devices carried by the plates for clamping the rail-engaging member and block in position on the tie.

14. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections and having their closed ends extended in opposite directions, the open end of the upper reinforcing-loop of each section being provided with coincident eyes and the lower reinforcing-loop being deflected downwardly for engagement with the correspondingly-deflected end of the lower reinforcing-loop of the adjacent section, transverse plates connecting the walls of the lower loop, cushioning-blocks embedded in the upper surface of the tie-sections, rail-engaging members carried by the cushioning-blocks, fastening devices extending through the transverse plates for clamping the cushioning-block and rail-engaging members in position on the tie, and coupling-pins extending through the eyes of the upper reinforcing-loops.

15. A railway-tie including a plurality of detachable sections, spaced reinforcing-loops embedded in said sections and having their closed ends extending in opposite directions, the open ends of the upper loops being detachably connected and the closed ends of the lower loops being deflected laterally for engagement with each other, a transverse plate connecting the walls of one of the loops, longitudinal truss-bars extending beneath the plates, cushioning-blocks embedded in the upper surface of the tie-sections, rail-engaging members carried by the blocks, and fastening devices extending through the transverse plate for clamping the cushioning-block and rail-engaging member in position on the tie-section.

848,156. RAIL-JOINT. BENJAMIN G. BUCHANAN, Ashland, Wis. Filed Mar. 20, 1906. Serial No. 307,072.

Claim.—1. A rail-joint chair composed of two sections, said sections engaging the base and sides of the rails, a longitudinal shoulder formed integral with each section and engaging the tread of the rails at the joint, said shoulders having a recess for the escapement of matter falling into said joint.

2. A rail-joint comprising a pair of abutting rails, one of said rails, having a groove provided with vertical walls, and said other rail, having a tongue engaging said groove, the side and end walls of said tongue being convergent toward the top, whereby foreign matter will be forced out, when the rails expand.

848,155.

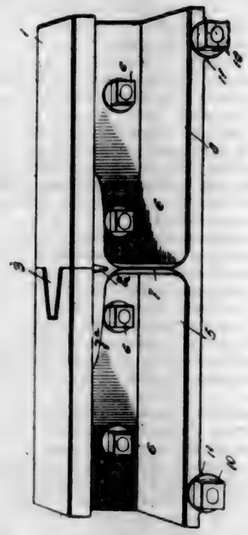

848,157. ELASTIC-FLUID TURBINE. JOHN G. CALLAN and HENRY J. HANZLIK, Lynn, Mass., assignors to General Electric Company, a Corporation of New York. Filed Aug. 20, 1906. Serial No. 331,273.

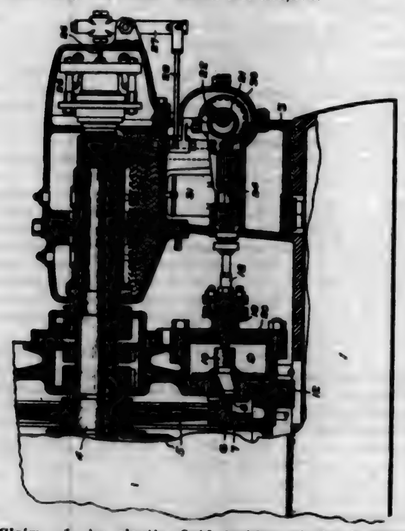

Claim.—1. An elastic-fluid turbine of the horizontal type, having a casing for the bucket-wheels divided in two on the plane of the shaft, a steam-chest at one end of the lower part of said casing, nozzles leading from said chest into said casing, and valves in said chest controlling said nozzles.

2. An elastic-fluid turbine of the horizontal type, having a casing for the bucket-wheels divided in two on the plane of the shaft, nozzles and nozzle-valves at one end of said casing in the lower part thereof, and an exhaust-pipe leading from the same part of said casing near its other end.

3. An elastic-fluid turbine, comprising a bed-plate, pillow-blocks secured thereto, a shaft journaled in said pillow-blocks, bucket-wheels on said shaft, a casing secured to said bed-plate between said pillow-blocks and surrounding said bucket-wheels, said casing being divided in half on the plane of the shaft, and one half only having a steam-chest and exhaust-pipe connected therewith.

4. An elastic-fluid turbine, comprising a bed-plate, pillow-blocks secured thereto, a shaft journaled in said pillow-blocks, bucket-wheels on said shaft, a casing secured to said bed-plate between said pillow-blocks, and surrounding said bucket-wheels, said casing being divided in half on the plane of the shaft, steam admission and exhaust connections entering one half of said casing, a stage-valve connected to the other half, and a small pipe for supplying steam to said stage-valve having a coupling to enable it to be disconnected to permit the removal of that half of the casing carrying the stage-valve.

5. An elastic-fluid turbine of the horizontal type, having its valve-operating mechanism housed in one of its pillow-blocks.

6. An elastic-fluid turbine of the horizontal type, having a casing for the bucket-wheels located between the pillow-blocks, valves having stems extending from said casing to one of said pillow-blocks, and valve-operating mechanism inclosed in said pillow-block.

7. In an elastic-fluid turbine of the horizontal type, the combination with a hollow pillow-block having openings in its walls, of valve-operating mechanism inclosed in said pillow-block, and valve-stems entering said pillow-block.

8. In an elastic-fluid turbine of the horizontal type, the combination with a hollow pillow-block, of valve-operating mechanism housed therein, a shaft journaled in said pillow-block, and a speed-responsive device mounted on said shaft and controlling said mechanism.

9. An elastic-fluid turbine of the horizontal type, having its steam connections and nozzle-valves below its main shaft, and its valve-operating mechanism housed in a pillow-block underneath one of the journal-bearings of said shaft.

10. In an elastic-fluid turbine, the combination with a mechanically-operated valve-gear including a driven shaft, of a rotary lubricating-pump actuated by said shaft.

11. In an elastic-fluid turbine of the horizontal type, the combination with a pillow-block, of a mechanical valve-operating-gear housed therein and comprising a transverse shaft, and a rotary oil-pump adjacent to said pillow-block and connected with said shaft.

848,158. OBLIQUE FEEDING ATTACHMENT FOR SAWING-MACHINES. JAMES B. CARR and FRANK M. SCHMITT, Portland, Oreg. Filed Mar. 24, 1906. Serial No. 307,914.

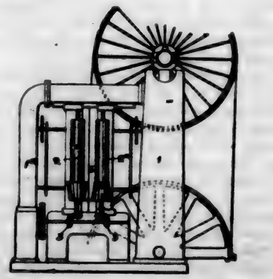

Claim.—1. The combination with the feed-rolls of a band resaw-machine, the latter comprising a frame in which the two ends of the feed-rolls are journaled in parallel alinement, of separable collars removably affixed to said feed-rolls said collars having inclined faces and whereby feed-rolls are adapted to feed the board run through the machine obliquely to the band-saw for the purpose set forth.

2. In a band resaw-machine, comprising a frame and a pair of feed-rolls journaled at both ends in such frame in parallel alinement separable collars adapted to be removably affixed to said feed-rolls said collars having inclined faces so as to adapt feed-rolls to feed the board run through the machine obliquely to the band-saw for the purpose set forth.

848,159. DISCHARGING-DOOR FOR DUMPING-CARS AND OTHER RECEPTACLES. WILLIAM L. COUGHTRY, Slingerlands, N. Y. Filed Dec. 27, 1906. Serial No. 349,733.

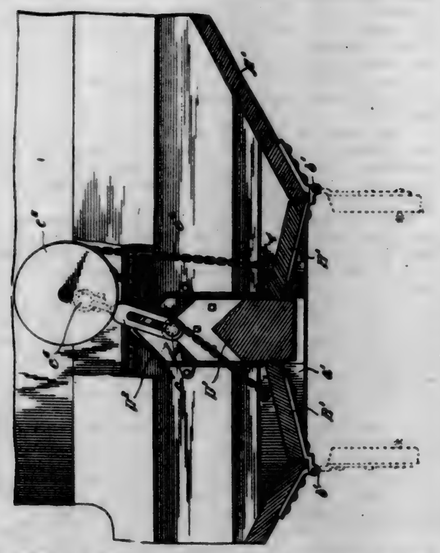

Claim.—1. The combination with a receptacle provided with a discharge-aperture, of a door of less width than said aperture hinged at one side thereof, and adapted to swing through said aperture, and a movable locking-block constructed to engage the edge of said door opposite to the hinged portion, the combined widths of the door and block being greater than the width of said aperture, substantially as described.

2. The combination with a receptacle provided with a discharge-aperture, of a pair of doors hinged to opposite edges of said aperture, and a movable locking-block adapted to be interposed between the adjacent edges of said doors, substantially as described.

3. The combination with a receptacle provided with a horisontally-disposed discharge-aperture, of a pair of doors adapted to swing entirely through said aperture and hinged at opposite edges of the same, and a vertically-movable locking-block adapted to be interposed between the adjacent edges of said doors, the combined widths of said doors and block being greater than the width of said aperture, substantially as described.

4. The combination with a receptacle provided with a discharge-aperture, of a pair of doors hinged to opposite edges of said aperture, a vertically-movable locking-block, located substantially centrally with respect to said aperture, and adapted to engage the adjacent edges of said doors, and mechanism for raising said locking-block to release said doors, substantially as described.

5. The combination with a receptacle provided with a discharge-aperture, of a pair of doors hinged to opposite edges thereof and having a combined width less than the width of said aperture, means for raising said doors, a vertically-movable locking-block, located substantially centrally with respect to said aperture, extending transversely thereof, and adapted to be interposed between the adjacent edges of said doors, and means for raising said block, substantially as described.

6. The combination with a receptacle provided with a discharge-aperture, disposed substantially horisontally, of a pair of doors hinged to opposite edges of said aperture, and having a combined width less than the width of said aperture, a vertically-movable locking-block disposed transversely of said aperture and adapted to be interposed between the adjacent edges of said doors, when in closed position, mechanism for raising said doors, and mechanism for raising and lowering said locking-block, substantially as described.

7. The combination with a receptacle provided with a discharge-aperture, disposed substantially horisontally, of a pair of doors hinged to opposite edges of said aperture, and having a combined width less than the width of said aperture, a vertically-movable locking-block disposed transversely of said aperture and adapted to be interposed between the adjacent edges of said doors, when in closed position, mechanism for simultaneously operating said doors and said locking-block, substantially as described.

8. The combination with a receptacle provided with a discharge-aperture, disposed substantially horisontally, of a pair of doors hinged to opposite edges of said aperture, and having a combined width less than the width of said aperture, a vertically-movable locking-block disposed transversely of said aperture and adapted to be interposed between the adjacent edges of said doors, when in closed position, a single hand-operated device and operative connections from said device to said doors and to said block for operating the same, substantially as described.

9. The combination with a receptacle provided with a discharge-aperture, disposed substantially horisontally, of a pair of doors hinged to opposite edges of said aperture, and having a combined width less than the width of said aperture, a vertically-movable locking-block disposed transversely of said aperture and adapted to be interposed between the adjacent edges of said doors, when in closed position, an operating-shaft, connections from said shaft to said doors for elevating the same, and connections providing lost motion from said shaft to said locking-block, substantially as described.

10. The combination with a receptacle having a horisontally-disposed discharge-aperture, of a pair of doors hinged to opposite sides of said aperture, and having a combined width less than that of said aperture to permit them to swing therethrough, and a vertically-movable locking-block extending transversely across said aperture and adapted to be interposed between the adjacent edges of said doors to hold them in closed position, the door-engaging portions of said block being tapered to facilitate the withdrawal of the block to release said doors, substantially as described.

11. In a dumping-car, the combination with the car-body having a horisontally-disposed discharge-aperture in its bottom, of a pair of doors, hinged to opposite edges of said aperture and having a combined width less than the width of the said aperture, and a vertical locking-block mounted in guides in said car-body and extending transversely across said aperture, and adapted to be interposed between the adjacent edges of said doors, and mechanism carried by said car-body and connected with said locking-block for raising said block out of engagement with the doors, substantially as described.

12. In a dumping-car, the combination with the car-body having a horisontally-disposed discharge-aperture in its bottom, of a pair of doors hinged to opposite edges of said aperture and having a combined width less than the width of the said aperture, and a vertical locking-block mounted in guides in said car-body and extending transversely across said aperture, and adapted to be interposed between the adjacent edges of said doors, mechanism carried by said car-body and connected with said block for raising said block out of engagement with said doors, and mechanism carried by said car-body for elevating said doors into position to permit the insertion of said block between them, substantially as described.

13. In a dumping-car, the combination with the car-body having a horisontally-disposed discharge-aperture in its bottom, of a pair of doors, hinged to opposite edges of said aperture and having a combined width less than the width of the said aperture, and a vertical locking-block mounted in guides in said car-body and extending transversely across said aperture, and adapted to be interposed between the adjacent edges of said doors, and a shaft extending transversely of the car-body and provided with cranks, and links connecting said cranks to the locking-block, substantially as described.

14. In a dumping-car, the combination with the car-body having a horisontally-disposed discharge-aperture in its bottom, of a pair of doors hinged to opposite edges of said aperture and having a combined width less than the width of the said aperture, and a vertical locking-block mounted in guides in said car-body and extending transversely across said aperture, and adapted to be interposed between the adjacent edges of said doors, a shaft extending transversely of the car-body and provided with cranks, links connecting said cranks to said locking-block, and means for elevating said doors into position to permit the insertion of the said locking-block between them, substantially as described.

848,160. FLOOR-SCRAPER. DAVID E. DAMPMAN, Reading, Pa. Filed Jan. 19, 1907. Serial No. 353,067.

Claim.—1. In a floor-scraper a truck provided with a frame mounted on a pair of wheels and having an operating-handle secured thereto, said frame having extension ends, a grooved scraper-bar pivotally mounted between said extension ends, a frame secured to said bar, an operating-handle secured to said frame, a removable double-edge scraper located in said groove and means for adjusting said scraper.

2. In a floor-scraper a frame mounted on a pair of wheels and provided with an operating-handle, said frame having its ends perforated, a grooved scraper-bar pivotally mounted between said perforated ends, a U-shaped frame secured to said bar near either end, an operating-handle secured to said frame, a double-edge scraper located in said grooved bar and means for adjusting said scraper.

848,161. PROCESS OF MANUFACTURING METAL-WORKING TOOLS. HERMAN H. DIEBIG, Dayton, Ky., assignor, by direct and mesne assignments, to John G. Matthews, Three Rivers, Mich. Filed June 22, 1904. Serial No. 213,715.

Claim.—1. The method of brazing a cutter of high-speed-steel alloy to an iron or carbon steel shank which consists of fitting a piece of high-speed-steel alloy to the softer metal, heating the two to the temperature at which the high-speed-steel alloy will harden when cooled, applying the brazing metal, the fusing-point of which brazing metal is somewhat below the temperature to which the high-speed-steel alloy is heated in the hardening operation, in such a manner as to utilize this same heat to form a hard solder joint or bond between the parts of the metal, and then so cooling as to harden the high-speed steel and secure the proper brazing at the same operation.

2. The method of brazing a cutter of high-speed-steel alloy to an iron or carbon steel shank which consists of fitting a piece of high-speed-steel alloy to the softer metal, heating the two to the temperature at which the high-speed-steel alloy will harden when cooled, applying the brazing metal in such manner as to utilize this same heat to form a hard solder joint or bond between the parts of the metal, and then so cooling as to harden the high-speed steel and secure the proper brazing at the same operation.

848,162. UNIVERSAL JOINT FOR PIPES. ROGER ENRIGHT, Los Angeles, Cal. Filed July 16, 1906. Serial No. 326,490.

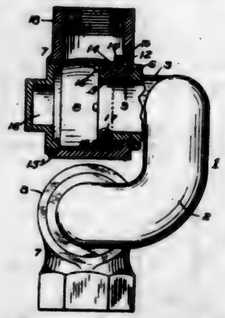

Claim.—1. A pipe-joint comprising a main or body portion having at each end right-angularly-formed portions which project in planes at right angles to each other, said portions being bent or curved so that the outer ends thereof project in planes at right angles to said portions, coupling-heads or pipe connections arranged on said ends and means whereby said coupling-heads are connected to said ends to turn thereon in planes at right angles to each other, substantially as described.

2. A pipe-joint comprising a main or body portion having at each end right-angularly-formed portions which project in planes at right angles to each other, said portions being bent or curved so that the outer ends thereof project in planes at right angles to said portions, coupling-heads or pipe connections arranged on said ends, couplings comprising cylindrical body portions having formed in one side circular openings to receive the ends of said main or body portion, packing-rings arranged on said ends around the circular openings in said couplings and jam-rings adapted to be screwed onto the projecting ends of said body portion which the cylindrical body of the pipe-couplings, and means to facilitate the engagement of said parts, substantially as described.

3. A pipe-joint of the character described comprising a main or body portion having at each end right-angularly-formed portions, which project in planes at right angles to each other, said portions being bent or curved so that the outer ends thereof project in planes at right angles to said portions, exterior screw-threads formed on said right-angularly-bent ends, annular flanges formed on said ends at a suitable distance from said threads, coupling-heads arranged on said threaded ends, said heads comprising a cylindrical body portion having formed in one side a circular opening to receive said threaded ends of the main or body portion, a packing-ring seat on the inner side of said cylindrical body of the coupling adjacent to the opening therein, a packing-ring arranged in said seat, a jam-ring adapted to be screwed onto the threaded ends of said main body-portions to hold said packing-ring in place, and a removable plug arranged in the opposite side of said coupling, substantially as described.

4. A pipe-joint of the character described comprising a main or body portion having at each end right-angularly-formed portions which project in planes at right angles to each other, said portions being bent or curved so that the outer ends thereof project in planes at right angles to said portions, exterior screw-threads formed on said right-angularly-bent ends, annular flanges formed on said ends at a suitable distance from said threads, coupling-heads arranged on said threaded ends, said heads comprising a cylindrical body portion having formed in one side a circular opening to receive said threaded ends of the main or body portion, an annular flange formed on the inner side of said coupling-head adjacent to and concentric with the opening therein to form a packing-ring seat, a packing-ring arranged in said seat around the projecting end of said main body portion, a jam-ring adapted to be screwed onto the threaded end of the latter, a washer arranged between said jam-ring and packing-ring, a set-screw adapted to be screwed through alined openings in the threaded end of said main or body portion and in said jam-ring to hold the latter in place, a screw plug or cap adapted to be screwed into a threaded opening in the opposite side wall of said coupling-head, and an interiorly-threaded, laterally-projecting socket to receive the threaded ends of pipes connected to said joint, substantially as described.

848,163. ELECTRIC HEATING. SAMUEL S. EVELAND, Philadelphia, Pa. Filed Sept. 13, 1904. Serial No. 224,342.

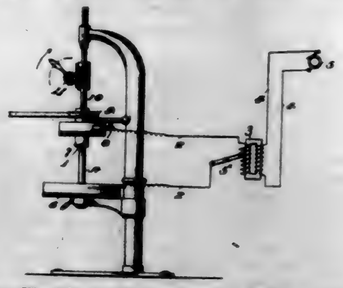

Claim.—Electric heating apparatus which consists in means for establishing electrical contact between substantially coextensive surfaces including a surface of the object to be heated, devices for passing current through said contact, and provisions for rubbing the same coextensive surfaces of contact together to localise the incandescent heating effect, substantially as described.

848,164. STOVEPIPE. MICHAEL A. FLANNERY, Newport, Ky., assignor to The E. H. Huenefeld Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Dec. 24, 1906. Serial No. 349,206.

Claim.—1. A stovepipe having a longitudinal inward fold and a longitudinal outward fold at its respective longitudinal mating edges for forming a pair of pockets having inner and outer walls, one end of said pockets being separated from the adjacent side web of the pipe whereby a tongue is formed, the said tongue being bent upon the seam for locking said seam.

2. A stovepipe having reversely-bent longitudinal mating edges lapping each other for forming a seam, one end of said seam being laterally separated from the adjoining web of said pipe, said separated portion of said seam being bent upon itself for locking said seam and forming a recess at the end of said pipe.

3. A stovepipe having mating reversely-bent longitudinal edges resting one within the other for forming a seam, one of said edges having its end portion cut away for forming a rabbet, the other of said edges having an incision therein adjacent said folded mating ends for forming a tongue composed of a less number of thicknesses than the seam of said pipe, said tongue being bent upon said seam for forming a recess in the edge of said pipe, substantially as described.

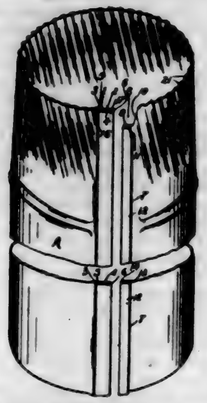

4. A stovepipe having a longitudinal inward fold and a longitudinal outward fold at its respective longitudinal mating edges for forming a pair of pockets having inner and outer walls forming a seam, the end of one of said pockets being cut away for forming a rabbet merging into a depending laterally-sloping wall 11, the other of said pockets having its end laterally separated from the adjoining web of said stovepipe for forming a tongue, said tongue being bent upon said seam, said sloping wall being received by one of said pockets in forming said seam, and said pocket being crushed adjacent said sloping wall when said tongue is bent upon said seam, substantially as described.

848,165. NON-REFILLABLE BOTTLE. WILLIAM F. FRECKMANN, Philadelphia, Pa., assignor of one-half to Thomas P. Lowry, Philadelphia, Pa. Filed May 23, 1906. Serial No. 318,414.

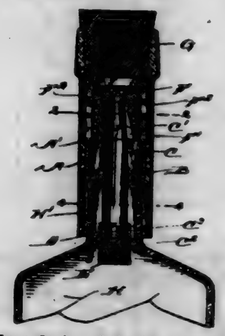

Claim.—1. In a device of the kind described, the combination with a bottle, of a neck secured thereon provided with a flange carrying a tube and sliding means for closing and opening said tube, for the purpose described.

2. In a device of the kind described, the combination with a bottle, of a neck secured thereon provided with a flange carrying a tube provided with openings, and a sliding sleeve working on said tube, for the purpose described.

3. In a device of the kind described, the combination with a bottle, of a neck arranged thereon having an inwardly-projecting flange carrying a tube provided with openings adjacent its ends, a partition formed in the lower end of the tube, and a sleeve working on the lower end of said tube, over said openings.

4. In a device of the kind described, the combination with a bottle, of a neck secured on said bottle provided with an inwardly-projecting tube having openings adjacent its ends, a partition formed in the lower end of said tube, a plug arranged in the neck over the upper end of said tube, a sleeve arranged on the lower end of said tube, and a flanged plug secured in the end of said tube, for the purpose described.

5. In a device of the kind described, the combination with a bottle having a ribbed neck, of a neck secured over said ribbed neck provided with an inwardly-projecting flange carrying a tube provided with a valve adjacent its lower end, and a plug provided with zigzag grooves arranged in the upper portion of said neck over the end of said tube, for the purpose described.

6. In a device of the kind described, the combination with a bottle, of a neck secured on said bottle provided with an inwardly-projecting flange carrying a tube provided with openings adjacent each end, a plug provided with a tapering recess secured in the neck over the upper end of the tube and having zigzag grooves formed in its sides and a sleeve mounted on the lower end of the tube working over said openings, for the purpose described.

848,166. PILE-DRIVING MACHINE. HAROLD GEE, Kenilworth, Ill., assignor to Featherstone Foundry & Machine Company, Chicago, Ill., a Corporation. Filed Nov. 24, 1906. Serial No. 344,804.

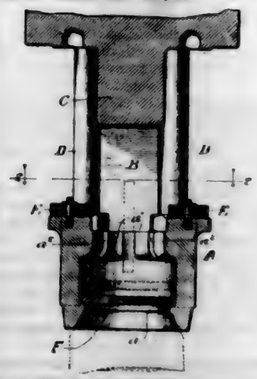

Claim.—1. A pile-driving machine comprising a chambered, open-ended follower-head and a drift or impact plate within the chamber of said follower-head, said head being provided adjacent its top and bottom with interior projections arranged to permit the drift-plate to be inserted into the head when said plate is in vertical position and to retain said plate against displacement when turned to horizontal position.

2. A pile-driving machine comprising a chambered, open-ended follower-head provided with upper and lower interior projections to retain a drift-plate in position, the projections in the upper part of said follower-head being arranged at a distance apart to permit the drift-plate to be inserted into the chamber of the follower-head.

848,167. ADJUSTABLE HANGER FOR ELECTRIC DROP-LIGHTS. ALLEN J. GOWAN, Norwich, Ontario, Canada. Filed Apr. 19, 1906. Serial No. 312,687.

Claim.—1. The combination of a stationary vertical disk; a rotatable drum concentric with the disk; a plurality of inwardly-facing cam-surfaces formed therein; balls between the disk and the cam-surfaces; and recesses formed at each end of each cam-surface to receive the balls when the drum is rotating, substantially as described.

2. The combination of a stationary vertical disk, provided with an undulated surface; a rotatable drum concentric with the disk; a plurality of inwardly-facing cam-surfaces formed therein; balls between the disk and the cam-surfaces; and recesses formed at each end of each cam-surface to receive the balls when the drum is rotating, substantially as described.

3. The combination of a stationary vertical disk; a rotatable drum concentric with the disk; a plurality of inwardly-facing cam-surfaces formed therein; balls between the disk and the cam-surfaces; recesses formed at each end of each cam-surface to receive the balls when the drum is rotating; a spring adapted to rotate the drum in a direction to cause the balls to grip between the cam-surfaces and the disk; and means wound on the drum whereby the latter may be revolved in the reverse direction, substantially as described.

4. The combination of a stationary vertical disk; a rotatable drum concentric with the disk; a plurality of inwardly-facing cam-surfaces formed therein; balls between the disk and the cam-surfaces; and recesses formed at each end of each cam-surface to receive the balls when the drum is rotating, the recesses at the ends of the cam-surfaces nearest the disk being deeper tangentially than the other recesses, substantially as described.

5. The combination of a stationary vertical disk, provided with an undulated surface; a rotatable drum concentric with the disk; a plurality of inwardly-facing cam-surfaces formed therein; balls between the disk and the cam-surfaces; and recesses formed at each end of each cam-surface to receive the balls when the drum is rotating, the recesses at the ends of the cam-surfaces nearest the disk being deeper tangentially than the other recesses, substantially as described.

6. The combination of an inner vertical stationary disk; an outer rotatable drum concentric therewith; a plurality of inwardly-facing cam-surfaces formed thereon; recesses formed in each end of each of said cam-surfaces, the recesses at the ends of the cam-surfaces nearest the disk being deeper tangentially than the other recesses; balls alternately occupying the larger and smaller recesses when the drum is rotated in a forward direction and when the movement of the latter is quickly reversed; and a spring adapted to rotate said drum in a reverse direction whereby the balls are normally caused to drop from their recesses and to grip between the cam-surfaces and the disk, substantially as described.

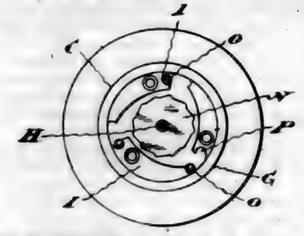

848,168. GAME APPARATUS. FERDINAND P. DE GRANDCHAMP, Mount Bethel, Pa. Filed Dec. 29, 1906. Serial No. 349,959.

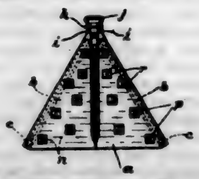

Claim.—1. In a game apparatus, the combination with an inclined board of approximately triangular shape having one apex elevated with respect to the opposite edge, of hooks projecting from the face of the board, a pole extending upwardly and forwardly from the apex of the board, a cord depending from the pole, and a hook-engaging device carried by the cord, substantially as described.

2. In a game apparatus, the combination with a table comprising a board of approximately triangular shape, legs hinged respectively to two corners of the board and foldable against the board along its edges, a leg hinged to the other corner of the board and foldable against the bottom of the board, of a pole hinged to the corner of the board to which the last-named leg is hinged and foldable against the top of the board, devices projecting from the face of the board, and a device suspended from the pole, adapted to be swung into engagement with the devices on the board, substantially as described.

3. In a game apparatus, the combination with a table comprising a board of approximately triangular shape, legs hinged respectively to two corners of the board and a third leg hinged to the other corner of the board, of an extensible pole hinged to the corner-board to which the third leg is hinged, devices projecting from the face of the board, a device suspended from the pole, adapted to be swung into engagement with the devices on the board, eyes at the corner of the table to which the pole is hinged, and a pin adapted to engage said eyes and hold the pole in its operative position, substantially as described.

4. In a game apparatus, the combination with an inclined board provided with recesses in its face, of a pole projecting above the top of the board, a cord depending from the pole, a hook-actuating device carried by the cord, hooks inserted in said recesses, and slotted plates overlying the recesses, through the slots of which said hooks project, substantially as described.

5. In a game apparatus, the combination with an inclined board provided with recesses in its face, of a pole projecting above the top of the board, a cord depending from the pole, a hook-actuating device carried by the cord, slotted plates overlying said recesses, and hooks, each comprising a member lying wholly within one of said recesses and a member projecting through the corresponding slot, substantially as described.

6. In a game apparatus, the combination with an inclined board provided with recesses in its face, of a pole projecting above the top of the board, a cord depending from the pole, a hook-actuating device carried by the cord, slotted plates overlying said recesses, hooks, each comprising a member lying wholly within one of said recesses, and a member projecting through the corresponding slot, the first-named member being rotatable in its recess and having a shank capable of passing through the slot and a head incapable of passing through the slot, substantially as described.

7. In a game apparatus, the combination with an inclined board provided with recesses, of a pole extending upwardly and forwardly from the elevated end of the table, slotted plates closing said recesses, said slots extending in a direction substantially parallel to the direction of inclination of the board, and hooks, each comprising a member having a narrow shank and wide head turnable within its corresponding recess and normally lying wholly within said recess, and a member extending through, and projecting above, such recess, substantially as described.

848,169. FLEXIBLE FLUID-JOINT. CHARLES G. HAWLEY, Chicago, Ill., assignor, by mesne assignments, to The United States Flexible Joint Company, Chicago, Ill., a Corporation of South Dakota. Filed May 6, 1905. Serial No. 259,189.

Claim.—1. A ball-and-socket joint of the class described, comprising ball-and-socket members, the latter having a follower and being provided with a tapered gasket recess or socket, in combination with a non-metallic gasket that is normally cylindrical, said gasket occupying said tapered socket and providing a socket or bearing for said ball, substantially as described.

2. The combination, in a ball-and-socket joint of the class described, of a ball member with a socket member, a follower upon said socket member, said socket member having a tapered gasket socket or recess terminating in a shoulder, and a non-metallic normally cylindrical gasket held between said follower and said shoulder and fitting the inner end of said gasket-recess, substantially as described.

3. In a ball-and-socket joint of the class described, a ball member, in combination with a socket member having a ball-follower and provided with a tapered gasket recess or socket, a non-metallic normally cylindrical gasket arranged in said tapered socket and adapted to expand therein when heated, said gasket being provided with a socket-surface fitting the ball of said ball member, substantially as described.

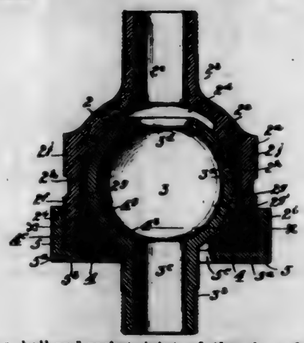

4. In a ball-and-socket joint of the class described, a socket member provided with an internal rib or shoulder, 2^a, and a groove, 2^b, in combination with a ball member adapted to engage said rib, 2^c, a follower upon said socket member, said socket member having an internal rib, 2^g and a gasket-socket, a gasket arranged in said socket and having a socket-surface engaging said ball member, substantially as described.

5. In a ball-and-socket joint of the class described, a socket member, provided with internal ribs, 2^a, and 2^g, and internal grooves or recesses, 2^b and 2^i, the latter being tapered as described, in combination with a ball member having a ball portion within the socket member, a follower upon said socket member and a normally cylindrical gasket, 4, fitting the tapered recess of the socket member at its one end and having a socket-surface, 4^a, which fits the ball portion of said ball member, substantially as described.

6. In a ball-and-socket joint of the class described, a ball member having a ball portion, 3^a, in combination with a socket member having an internal rib, 2^a, to fit the inner portion of said ball member, said socket member also having a sediment-collecting groove, 2^b and an internal rib, 2^g, a socket-gasket arranged in the outer end of said socket member, and gasket-holding means upon said socket member, substantially as described.

7. In a ball-and-socket joint of the class described, a socket member provided with a gasket-socket of greatest diameter at its outer end, in combination with a non-metallic gasket having an armored inner end to fit the inner end of said gasket-socket, the outer end of said gasket being normally of less diameter than the outer end of said gasket-socket, a gasket-follower upon said socket member, and a ball member contained within the socket member and seated in said gasket, substantially as described.

848,170. CARBURETER. CARL O. HEDSTROM, Springfield, Mass. Filed July 14, 1905. Serial No. 269,747.

Claim.—1. A carbureter consisting of a body portion having an air-passage therethrough, a fuel-supply nozzle in said passage, and a spiral rib extending for a short distance from the inlet end of said body portion into said passage at an angle to the axis thereof, the spiral rib being secured to the inner wall of the body portion and circular in cross-section whereby the inlet area of the body under normal suction is reduced, and under abnormal suction is increased.

2. A carbureter consisting of a body portion having an air-passage therethrough, a fuel-supply nozzle axially arranged in said passage with relation to the body portion, and spirally-arranged ribs in the passage whereby the effective cross-sectional area of said passage will be varied by a variation of the velocity of the air-current moving through said passage.

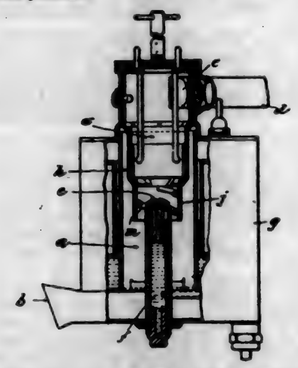

3. A carbureter consisting of a body portion having an air-passage therethrough and a spirally-disposed rib secured to the inner wall of the air-passage and extending into said passage at an angle to the axis thereof, whereby the effective area of the air-passage depends upon the velocity of air therethrough.

4. A carbureter consisting of a body having an air-passage therethrough, a fuel-supply nozzle in said passage, a rib spirally disposed on the inner wall of said passage at an angle to the axis thereof, said rib occupying a comparatively small portion only of the air-passage when considered transversely of the axis of the body.

5. A carbureter consisting of a body having an air-passage therethrough, a fuel-supply nozzle in said passage and concentric with the air-passage, a rib spirally disposed on the inner wall of the latter and extending above and below the delivery-orifice of said nozzle, the rib occupying a small portion only of the air-passage when considered transversely of its axis.

6. A carbureter consisting of a body having an air-passage therethrough, a fuel-supply nozzle arranged in the axis of the air-passage, a spirally-disposed internal rib at the lower end of the air-passage whereby the effective area of the passage-way is varied in proportion to the velocity of air therethrough.

7. A carbureter consisting of a body portion having an air-passage therethrough, a spirally-disposed rib on the interior portion of the air-passage and adjacent the outlet of the fuel-supply but leaving a free unobstructed passage-way between the same and the fuel-supply nozzle.

8. In a carbureter of the class described, a body portion having an air-passage extending therethrough, a liquid-fuel supply located in the air-passage, a spiral rib on the interior of the air-passage and extending toward the axis of the air passage-way but leaving a free unobstructed passage-way therethrough between the rib and the fuel-supply whereby a rotary effect proportional to the velocity of air is given to the fuel admixture of air and liquid.

848,171. PRESS FOR MOIST MATERIALS. JOSEF HENMERLING, Dresden, Germany. Filed May 22, 1906. Serial No. 318,123.

Claim.—1. A press, for moist materials, provided with a plate for insertion therein, said plate having chambers communicating with the main chamber of the press for receiving and retaining the liquid pressed out of the moist material, substantially as described.

2. A press provided with a main chamber for receiving moist materials and a plate having chambers therein and adapted to be placed upon said materials in said main chamber, said chambers in the plate communicating with the main chamber, substantially as described.

3. A press for moist materials provided with a chamber to receive moist materials, and a plate adapted to rest upon said moist materials in the press, said plate having chambers in its upper surface communicating with the main chamber, substantially as described.

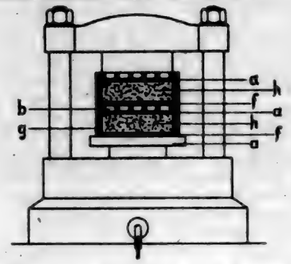

4. A press provided with a main chamber to receive moist materials, and a plate to rest upon said materials in the press, said plate being provided with chambers in its upper surface and having vertical perforations, substantially as described.

5. A press provided with a main chamber to receive moist materials and a plate to rest upon said materials in the press, said plate being provided with chambers in its upper surface and with vertical perforations and transverse grooves substantially as described.

848,172. WIND-STACKER. ROBERT R. HOWELL, Minneapolis, Minn. Filed May 31, 1904. Serial No. 210,374.

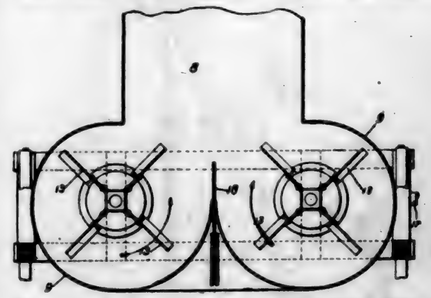

Claim.—1. In a separator, the combination, with a straw-rack, of a trunk arranged to receive straw therefrom, a stacker-tube communicating with said trunk, a fan-casing having a hopper-feed opening and a discharge throat or passage leading into said trunk opposite the opening in said stacker-tube, blast-fans provided on the same level in said casing and revolving toward each other, and an adjustable slide interposed between said fans in said casing.

2. In a separator, the combination, with a straw-rack 3 and shaker 5 located beneath said rack, of a trunk 6 arranged to receive the straw from said rack, a stacker-tube communicating with said trunk 6, a fan-casing having a discharge throat or passage leading into said trunk 6 opposite the opening to said stacker-tube, said fan-casing being substantially horizontal and having an opening in its top beneath the discharge end of said shaker to receive the chaff therefrom, and blast-fans operating side by side in said casing and revolving toward each other to direct the chaff through said throat or passage and into said stacker-tube, substantially as described.

3. The combination, with a fan-casing having a discharge throat or passage, of a stacker-tube communicating with said throat, fans arranged in said casing side by side revolving toward each other to direct the material toward the center of said throat and tube, and means for delivering the straw into the path of the air-blast between said

throat and tube and means for delivering the chaff to said fan-casing whereby it will be passed through the fans and be discharged thereby through said throat or passage and mingled with the straw in said tube, substantially as described.

4. In a separator, the combination, with a straw-rack and a shaker located beneath the same, of a trunk arranged to receive the straw from said rack, a stacker-tube communicating with the lower portion of said trunk, a fan-casing arranged in a substantially horizontal plane and having a throat or passage leading into said trunk opposite the passage to said stacker-tube, and said casing having also a hopper-opening in its top extending transversely thereof the full width of said shaker and in position to receive the chaff from said shaker, blast-fans arranged in said casing and revolving toward each other to discharge the chaff delivered thereto centrally with respect to said throat or passage, substantially as described.

848,173. FRACTURE APPARATUS. SAMUEL G. HUBBELL, Milwaukee, Wis. Filed Apr. 16, 1906. Serial No. 311,822.

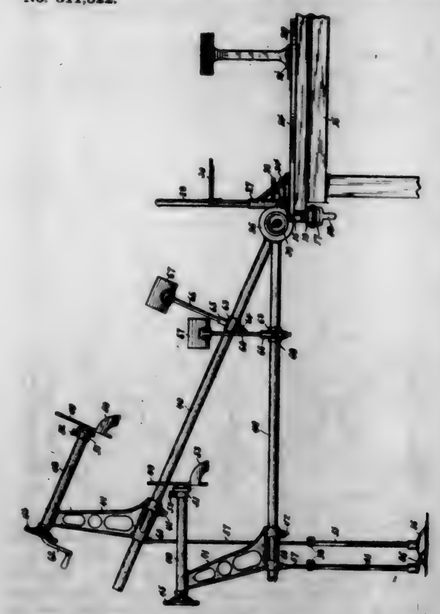

Claim.—1. In a device of the character described, a frame, a pelvic-support post mounted thereon, an extension-rod pivotally connected to the frame, and a forcibly-adjusted foot-support on the extension-rod capable of forcibly moving toward or away from the pelvic-support post.

2. In a device of the character described, a frame, a pelvic-support post mounted thereon, an extension-rod pivotally connected to the frame, a bracket adjustable on the extension-rod, a foot-support mounted on the bracket, and a screw for moving the foot-support toward or away from the pelvic-support post.

3. In a device of the character described, a frame, a pelvic-support post mounted thereon, a pair of extension-rods pivotally connected with the frame, and foot-supports on the extension-rods capable of being fed toward or away from the pelvic-support post.

4. In a device of the character described, a frame, a pelvic-support post mounted thereon, a pair of extension-rods having universal-joint connections with the frame, and foot-supports on the extension-rods adapted to be fed toward or away from the pelvic-support post.

5. In a device of the character described, a frame, means on the frame for holding a human body in position, a pair of extension-rods connected to the frame and capable of movement in vertical and horizontal planes, and foot-supports carried by the extension-rods, one of said foot-supports being capable of forcibly moving toward or away from the frame.

6. In a device of the character described, a frame, a pelvic-support post mounted thereon, a pair of extension-rods pivotally connected with the frame, and foot-supports adjustably mounted on the extension-rods and being capable of forcibly moving toward or away from the pelvic-support post.

7. In a device of the character described, a frame, a pelvic-support post mounted thereon, a pair of extension-rods having universal connection with the frame, foot-brackets adjustably mounted on the extension-rods, a screw-spindle threaded through each foot-bracket, and a foot-support carried by each screw-spindle, said screw-spindles serving to feed the foot-supports toward or away from the pelvic-support post.

8. In a device of the character described, a frame, a pelvic-support post mounted thereon, a pair of extension-rods having universal connection with the frame, foot-brackets adjustably mounted on the extension-rods, screw-spindles threaded in the foot-brackets, a slotted tubular casing surrounding each screw-spindle with the foot-bracket passing through the slot thereof, and a foot-support carried by the screw-spindle adapted to be forced toward or away from the pelvic-support post by the turning of the screw-spindle.

9. In a device of the character described, a frame, a pelvic-support post mounted thereon, a pair of extension-rods having universal connection with the frame, brackets adjustably mounted on the extension-rods, screw-spindles threaded through the brackets, a slotted tubular casing surrounding each screw-spindle and mounted to move longitudinally therewith, the bracket slidable in the slot thereof preventing rotation of the tubular casing, and a foot-support adjustably swiveled to the tubular casing and adapted to be moved toward or away from the pelvic-support post by the turning of the screw-spindle.

10. In a device of the character described, a frame, a pelvic-support post mounted thereon, a pair of extension-rods having universal connection with the frame, a bracket adjustably mounted on each extension-rod, a headed screw-spindle threaded through the bracket, a hand-wheel on the screw-spindle by which it may be turned, a flanged bushing on the screw-spindle, a slotted tubular casing surrounding the screw-spindle with the bracket passing through the slot, one end of the tubular casing fitting in a groove of the hand-wheel and the other end thereof fitting on the flanged bushing, a foot-support receiving the head of the screw-spindle, a collar on the foot-support fitting on the tubular casing, and a set-screw on the collar engaging the tubular casing for holding the foot-support in its angular adjustments, the foot-support being movable toward or away from the pelvic-support post by the turning of the screw-spindle.

11. In a device of the character described, a frame, a pelvic-support post mounted thereon, extension-rods pivotally connected to the frame, foot-supports on the extension-rods adapted to be forced toward or away from the pelvic-support post, and extensible supports for the extension-rods comprising telescopic sections connected with the foot-supports and provided with means for locking them in their adjustments.

12. In a device of the character described, a frame, a pelvic-support post mounted thereon, extension-rods pivotally connected to the frame, foot-supports mounted on the extension-rods and adapted to be forced toward or away from the pelvic-support post, and extensible supports for the extension-rods comprising telescopic sections pivotally connected with the foot-supports with means for locking them in their adjustments, the pivotal connection between the extensible supports and the foot-supports being of a flat pin-and-slot construction by which the extensible supports may be quickly disconnected when in a position approximately parallel with the extension-rods.

13. In a device of the character described, a frame, a pelvic-support post mounted thereon, a pair of extension-rods having universal connection with the frame, and foot-supports carried by the extension-rods and adapted to be forcibly moved toward or away from the pelvic-support post, the universal connections of the extension-rods comprising cup-shaped members with annular flanges fitting in corresponding seats in the frame with vertical clamping-screws passing through said members and the frame, and pairs of parallel vertical disks on said cup-shaped members with disks on the ends of the extension-rods therebetween and pivotally mounted on horizontal clamping-screws passing therethrough.

14. In a device of the character described, a frame, a pelvic-support post adjustably movable on the frame, extension-rods pivotally connected to the frame, and foot-supports on the extension-rods adapted to be forcibly moved toward or away from the pelvic-support post, the movements of the pelvic-support post on the frame being toward or away from the foot-supports.

15. In a device of the character described, a frame having a grooved guide, a pelvic-support post having a flanged base slidably fitting in the guide of the frame, a spring-pressed bolt on the base of the pelvic-support post adapted to enter openings in the frame for locking the pelvic-support post in its adjustments, said pelvic-support post having a slotted end fitting in a socket of the base with the slot receiving a stationary pin to prevent the post turning, a pubic-support plate carried by the pelvic-support post, extension-rods pivotally connected to the frame, and foot-supports on the extension-rods adapted to be forcibly moved toward or away from the pelvic-support post.

16. In a device of the character described, a frame, a shoulder-rest mounted thereon, a pelvic-support post carried by the frame, extension-rods pivotally connected with the frame, and foot-supports on the extension-rods adapted to be fed toward or away from the pelvic-support post.

17. In a device of the character described, a frame, a shoulder-rest slidable on the frame, a pelvic-support post mounted on the frame, extension-rods pivotally connected with the frame, and foot-supports carried by the extension-rods and adapted to be forcibly moved toward or away from the pelvic-support post.

18. In a device of the character described, a frame adapted to rest on a table and be clamped thereto, a shoulder-rest slidably mounted on the frame, a pelvic-support post adjustably mounted on the frame, extension-rods pivotally connected to the frame, and foot-supports carried by the extension-rods and adapted to be forcibly moved toward or away from the pelvic-support post.

19. In a device of the character described, a frame having means for clamping it on top of a table, an adjustable shoulder-rest slidable on the frame, a pelvic-support post adjustably mounted on the frame, extension-rods having universal connections with the frame on either side of the pelvic-support post, brackets adjustably mounted on the extension-rods, screw-operated foot-supports carried by the brackets, extensible supports for the extension-rods, and adjustable knee-rests adjustably mounted on the extension-rods.

848,174. BOTTLE-STOPPER. FRIDTJOF JENSEN, Bergen, Norway, assignor of one-half to Georg Kirkegaard, Brooklyn, N. Y. Filed Dec. 9, 1905. Serial No. 291,061.

Claim.—1. A stopper comprising a cap with depending fingers and intermediate walls having ribs thereon, and a clamping-ring supported by said fingers and ribs.

2. A stopper comprising a cap having depending fingers with intermediate walls having annular lips or flanges thereon constituting ribs, and a clamping-ring held in proper relation by said ribs and fingers.

3. A stopper comprising a cap having depending outwardly-resilient fingers, and a clamping-ring having eccentric cam surfaces and additional notches for receiving the fingers.

4. A stopper comprising a cap having depending fingers, and intermediate walls with projections thereon, and a clamping-ring having a depending peripheral flange milled on its exterior surface and held in position by said projections and fingers.

5. A stopper comprising a cap having depending fingers, and a clamping-ring having a depending peripheral flange and supported against vertical movement by said fingers but capable of rotary movement thereon to clamp the cap in place on a bottle.

6. A stopper comprising a cap having depending fingers, a clamping-ring having a horizontal portion provided with circumferential grooves adapted to engage said fingers and with a vertical peripheral flange, substantially as described.

848,175. WINDOW-SHADE FASTENER. GEORGE E. JOHNSTON, Denver, Colo. Filed Apr. 12, 1906. Serial No. 311,389.

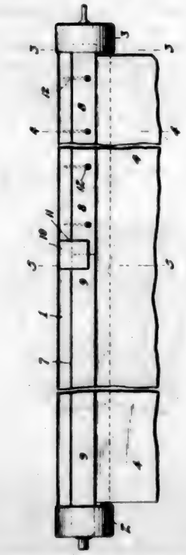

Claim.—In combination with a roller having a longitudinal groove in one side, extending from end to end thereof, a shade-retaining strip in said groove, beveled on its outer side at one end, bands or ferrules on the ends of the roller, one engaged by the beveled end of the strip and the other also engaging said strip and having a flanged portion bearing on the end of the strip and preventing casual endwise movement thereof, and a clip secured to and partly encircling and bearing on the roller and strip, substantially as described.

848,176. NUT-RETAINER FOR VEHICLE-AXLES. ORIE F. JORDAN, Los Angeles, Cal. Filed Feb. 26, 1906. Serial No. 302,894.

Claim.—1. In a device of the character described, a spindle having a threaded stud, an axle-box on the spindle, the outer end of the axle-box terminating short of the spindle end, the end of the spindle having a notch, a hollow nut screwed on the stud, the nut having internal radial serrations, a circular spring-detent surrounding the stud and having a lug which engages a serration of the nut, and a washer on the spindle end between the spring-detent and outer end of the axle-box, the spring-detent having a lug which engages the notch in the spindle end and also the washer.

2. In a device of the character described, a spindle having a threaded stud, an axle-box on the spindle, the outer end of the axle-box terminating short of the spindle end, the end of the spindle having a notch, a hollow nut screwed on the stud, the nut having internal radial serrations, a circular spring-detent surrounding the stud and having a lug which engages a serration of the nut, and a washer on the spindle end between the spring-detent and

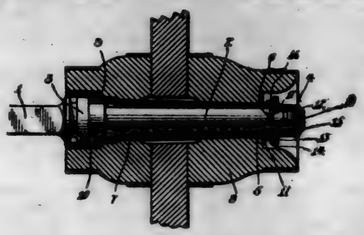

outer end of the axle-box, the spring-detent having a lug which engages the notch in the spindle end and also the washer, the spring-detent having a tapered end which permits the nut to be screwed up flat against the face of the detent and yet allows the tapered end of the detent to spring back when the nut is turned and forces the detent-lug out of engagement with a serration.

848,177. TIRE-PROTECTOR. CHARLES E. KIMBALL, Dunning, Nebr. Filed Nov. 14, 1905. Serial No. 287,339.

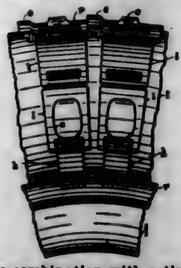

Claim.—1. The combination with a tire including a rim; of a series of tread-plates arranged upon the periphery of the tire, each tread-plate having oppositely-disposed slots formed in its body, the tread-plates being independent of one another, interlocking plates engaging the sides of the tire, one of each of the side plates having a tongue for interlocking engagement in the corresponding slot of the tread-plate, and the other plates having interlocking connection with each set of side plates and secured to the rim of the tire, the transversely-alining tread and interlocking plates having their body portions spaced from the bodies of the adjacent transversely-alining plates.

2. The combination with a tire including a rim; of a series of metallic tread-plates arranged upon the periphery of the tire, each tread-plate having oppositely-disposed slots formed in its body, the tread-plates being disconnected from one another, interlocking plates engaging the sides of the tire, one of each of said plates having a reduced end forming a tongue for interlocking engagement in the corresponding slot of the tread-plate and the other plates having interlocking connection with each set of side plates and secured to the rim of the tire, the transversely-alining tread and interlocking plates having their body portions spaced from the bodies of the transversely-alining plates.

3. The combination with a tire including a rim; of a series of overlapping tread-plates, each having oppositely-disposed slots and a raised portion intermediate the slots, side plates interlocking with each other and with the tread-plates, and other plates interlocking with the side plates and with the rim.

4. A tire-protector comprising a tread-plate provided with a slot at each end, a plate having a reduced end forming a tongue for engagement one in each slot of the tread-plate, the body portion of each of the second plate being out of contact with the tread-plate and each having a slot in it, and an element engaging the slot of each second plate and constructed to secure the tread and second plates upon the tire.

5. A tire-protector comprising a tread-plate provided with a slot at each end, a plate having a reduced end forming a tongue for engagement one with each slot of the tread-plate, the body portion of each of the second plates being out of contact with the tread-plate and each having a slot in it, a third plate having a reduced end forming a tongue for engagement one in each slot of the second plate, the body portion of each of the third plates being out of contact with the body of the second plates, each third plate having a slot in it, and an element engaging the slot of the third plate and constructed to secure all the plates upon the tire.

848,178. VACUUM-VALVE. FRANK E. KINGSLEY, Everett, Mass. Filed July 2, 1906. Serial No. 324,442.

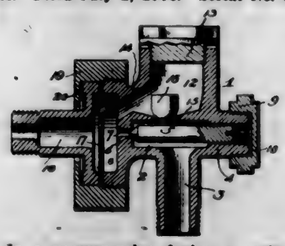

Claim.—In a vacuum-valve device, a casing having a main chamber and a receiving-chamber provided with a communicating passage between them, and an auxiliary chamber having communicating passages respectively with said receiving-chambers and main chamber, an adjustable valve for controlling the passage between said receiving-chamber and main chamber, and a float-valve within said auxiliary chamber and adapted to seat upon the passage between the auxiliary chamber and main chamber.

848,179. METHOD OF MOLDING SOAP. GEORGE KLINGER, Leipzig, Germany. Filed Oct. 12, 1906. Serial No. 338,654.

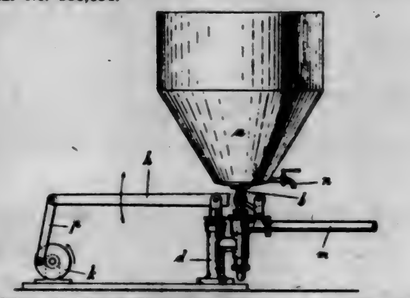

Claim.—1. The method of molding soap consisting in forcing the fluid soap from the boiler directly into a long molding-pipe not artificially cooled and causing the soap mass to move continuously through the same.

2. The method of molding soap consisting in drawing the fluid soap directly from the boiler by means of a pump and forcing it into a long molding-pipe not artificially cooled and causing the soap mass to move continuously through the same.

3. The method of molding soap consisting in drawing the fluid soap directly from the boiler by means of a continuously-operative pump and forcing it into a long molding-pipe not artificially cooled and causing the soap mass to move continuously through the same.

4. The method of molding soap consisting in forcing the fluid soap from the vessel in which the soap has been made directly into a long molding-pipe not artificially cooled and causing the soap mass to move continuously through the same.

848,180. SCENERY. JOHN M. LEAVITT, New York, N. Y., assignor to Washington B. Reed and Charles Sumner Burroughs, New York, N. Y. Filed Feb. 23, 1906. Serial No. 302,388.

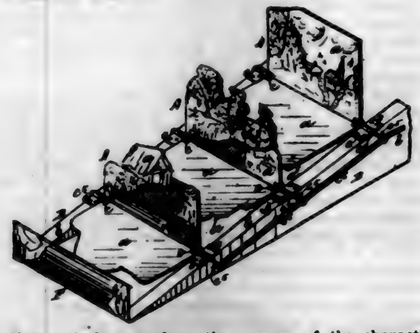

Claim.—1. In transformation-scenery of the character designated, the combination of a plurality of rotatably-mounted members disposed in groups each group mounted on an individual horizontal axis, said members being disposed in successive order with each member excepting the front hidden by the member in front thereof, said members representing portions of scenes arranged to simultaneously present to view, with the lines of perspective coinciding and blending, the component parts of a composite scene, and means for simultaneously moving said members to effect a change of scene by bringing other portions of said members into view.

2. In transformation-scenery of the character designated, the combination of a plurality of members each swinging on an individual horizontal axis and each representing a portion of a scene, said members being disposed in successive order one behind another with each excepting the front partially hidden by the one in front thereof, and unitedly representing a complete scene, and means for simultaneously turning said members in the same direction in the arc of a circle to effect a change of scene.

3. In transformation-scenery of the character designated, the combination of a plurality of members representing portions of scenes, said members arranged in groups with each group mounted on an individual horizontal axis with its members extending radially from said axis, the members of the different groups being arranged to be exposed in successive order one behind another, and means for turning said members to effect a change of scene.

4. In transformation-scenery of the character designated, the combination of a plurality of members representing portions of scenes, said members arranged in groups with each group mounted on an individual horizontal axis with its members extending radially from said axis, the members of the different groups being arranged to be exposed in successive order one behind another, and means for turning said members to effect a change of scene, said axes being disposed on different horizontal planes.

5. In transformation-scenery of the character designated, the combination of a plurality of axes, members in series arranged on each axis, representing portions of scenes, said members being arranged at angles to each other for simultaneous movement about their axis, and means for actuating said axes in unison.

6. In transformation-scenery of the character designated, the combination of a plurality of axes, members in series arranged on each axis representing portions of scenes, said members being arranged at angles to each other for simultaneous movement about their axis, means for actuating said axes in unison and a support for said axes and between the side portions of which said members are movable.

7. In transformation-scenery of the character designated, the combination of a plurality of groups of members representing portions of scenes, said groups being disposed from front to rear with the members thereof so arranged as to expose only one member of each group at a time with each member excepting the front partially hidden by the member in front thereof, the exposed members combining to represent a complete scene, and means for moving them simultaneously to bring different members of each group into operative position.

848,181. STRENGTH-TESTING MACHINE. WILLIAM H. LEHMAN, Detroit, Mich. Filed Mar. 31, 1906. Serial No. 309,142.

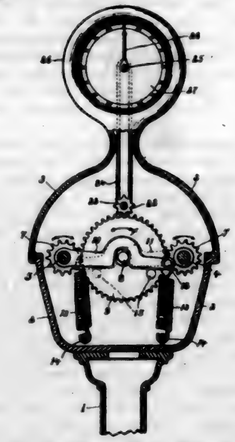

Claim.—1. In a strength-testing machine, the combination of rotatable handles, and means for transmitting motion from one to the other of said handles, whereby the turning of one handle may be resisted by grasping the other handle.

2. In a strength-testing machine, the combination of rotatable shafts adapted to be turned by hand, means for transmitting motion from one to the other of said shafts, and an indicator actuated by the turning of each of said shafts to indicate the direction in which each is turned and the amount of force applied to one over that applied to the other.

3. In a strength-testing machine, the combination of rotatable shafts, pinions on said shafts, a gear interposed between said pinions to transmit motion from one to the other of said shafts, and means for resisting the turning of said gear in either direction.

4. In a strength-testing machine, the combination of rotatable shafts, a pinion on each of said shafts, a gear engaging said pinions to transmit motion from one shaft to the other, means for resisting the turning of said shafts, and means for preventing one of said shafts from turning in one direction and similar means for preventing the other shaft from turning in the other direction.

5. In a strength-testing machine, the combination with a casing, of horizontal shafts mounted in bearings in said casing with their ends extending from the sides of the casing, handle-grips on said projecting ends, pinions on the shafts, a gear interposed between said pinions, and springs to resist the turning of said shafts.

6. In a strength-testing machine, the combination of parallel shafts, pinions on said shafts, a gear interposed between said pinions, means for resisting the turning of said gear, an indicator, and means for transmitting motion from said gear to turn the indicator in both directions.

7. In a strength-testing machine, the combination with parallel shafts, of pinions on said shafts, a large gear interposed between said pinions, arms extending adjacent to said gear, means on the gear adapted to engage the arms when the gear is turned and coiled springs acting upon said arms to resist their movement.

8. In a strength-testing machine, the combination with parallel shafts, of pinions on said shafts, a gear interposed between said pinions, an arm mounted upon each of said shafts to turn freely thereon, springs attached to the free ends of said arms, means for limiting the downward movement of said arms, and means on the gear for engaging the under sides of the arms and lifting the same when the gear is turned.

9. In a strength-testing machine, the combination with a casing, of transverse shafts mounted in said casing and projecting therefrom at each end, handle-grips on the projecting ends of said shafts, pinions on the shafts, a stub-shaft mounted on the casing between the said shafts, a gear on the stub-shaft in mesh with the pinions, an arm on each shaft to turn freely thereon and extending past said gear at each side thereof over the stub-shaft, coiled springs attached to the free ends of said arms, and pins on the gear to engage the lower sides of said arms when the gear is turned.

10. In a strength-testing machine, the combination with parallel shafts adapted to be turned by hand, pinions on said shafts, a gear interposed between said pinions, a member on each shaft provided with a shoulder, dogs to engage said shoulders and prevent the turning of each of said shafts in one direction, and means for operating said dogs.

11. In a strength-testing machine, the combination with a casing, of parallel handle-shafts mounted in said casing and projecting at each end therefrom, handle-grips on the projecting ends of said shafts, pinions on the shafts, a stub-shaft, a gear on the stub-shaft engaging said pinions, springs to resist the turning of said gear, a head on the casing, a dial in the head, an indicator-shaft, an indicator-hand on said shaft, a transverse shaft in the casing, a pinion on said transverse shaft in engagement with the said gear, and means for transmitting motion in either direction from said transverse shaft to the indicator-shaft.

848,182. BRUSH-HOLDER FOR MOTORS AND GENERATORS. JOHN LINDALL, Boston, Mass. Filed Aug. 18, 1905. Serial No. 274,704.

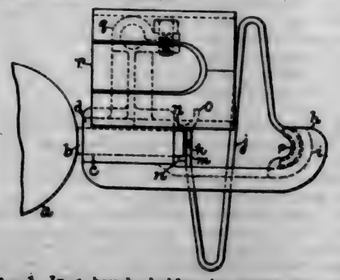

Claim.—1. In a brush-holder, in combination, a body portion provided with a guideway for the reception of the brush, arms extended from said body portion and separated from each other to form an opening, means connecting said arms at their rear end to form an abutment substantially in line with said guideway, and a spring extended through said opening above and below said arms and having one end engaged with the brush in said guideway and its other end engaged with the said abutment, whereby the expansion of said spring exerts a direct thrust upon said brush, substantially as described.

2. In a brush-holder, in combination, a body portion provided with a guideway for the reception of a brush, said brush movable in said guideway, an abutment attached to said holder and located substantially in line with said guideway, and a spring interposed between said brush and abutment and comprising a plurality of substantially V-shaped connected sections having adjacent sections extended on opposite sides of said line and above and below said abutment, substantially as described.

3. In a brush-holder, in combination, a body portion having provision for bodily movement of a brush carried thereby, an abutment attached to said body portion, and a spring interposed between said body portion and said abutment and loosely connected therewith and automatically retained in its operative position by its elasticity, said spring having sections extended above and below said abutment, substantially as described.

4. In a brush-holder, in combination, a body portion provided with a guideway for the reception of a brush, an abutment substantially in line with said guideway, and a spring having substantially V-shaped sections interposed between said abutment and said guideway to engage the brush therein and electrically connect it with said abutment, said spring being detachable from said brush and abutment by its compression and having sections extended above and below said abutment, substantially as described.

5. In a brush-holder, in combination, a body portion provided with a guideway for the reception of a brush, an abutment substantially in line with said guideway, and a spring interposed between said abutment and said brush and having its sections extended above and below said abutment and retained in its operative position solely by its elasticity, substantially as described.

6. In a brush-holder, in combination, a body portion provided with a guideway for the reception of a brush, arms extended from said body portion and separated to leave an opening, a cross-bar connecting said arms at their outer end substantially in line with said guideway, and a spring interposed between said cross-bar and said guideway and having one end engaging said cross-bar and its other end engaging a brush in said guideway to exert a direct thrust thereon, said spring having sections extended above and below said cross-bar, substantially as described.

7. In a brush-holder, in combination, a body portion provided with a guideway for the reception of the brush, arms extended from said body portion and separated from each other to form an opening, a cross-bar connecting said arms substantially in line with said guide to form an abutment, and a substantially flat spring electrically connecting said brush and abutment and having its opposite ends located on opposite sides of a line substantially through the guideway and said abutment and having the portion intermediate said ends extended across said line between said arms, for the purpose specified.

8. In a brush-holder, in combination, a body portion provided with a guideway for the reception of a brush, said brush being movable in said guideway, arms extended from said body portion and separated from each other to form an opening, a curved abutment joining the said arms and located substantially in line with said guideway, and a spring comprising a plurality of substantially V-shaped connected sections interposed between said brush and abutment to electrically connect the same, and having its rear end curved to fit the curved abutment, substantially as described.

848,183. CLUTCH FOR BELT-PULLEYS. ABRAHAM LUKE, Elkhart, Ind. Filed May 31, 1905. Serial No. 263,062.

Claim.—1. In a device of the class described, the combination of a drive-shaft, a drive-pulley rotatable with said shaft, a loose pulley arranged at one side of the drive-pulley and freely movable toward and from the same, and an adjustable thimble so connected as to force the loose pulley into clutch with the drive-pulley as specified.

2. In a device of the class described, the combination of a drive-shaft, a drive-pulley mounted thereon for rotation therewith, said drive-pulley being provided with a hub extension, the exterior portion of which is smooth save for threads at the outer extremity, a loose pulley rotatable upon the hub extension of the drive-pulley and freely slidable longitudinally of said hub extension so as

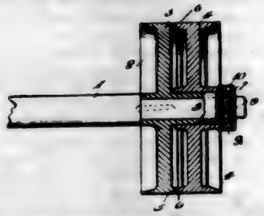

to move toward and from the drive-pulley, and a threaded thimble applied to the threaded portion of the hub extension aforesaid and overlapping the hub portion of the loose pulley, said thimble being adapted by rotation thereof to force the loose pulley into clutch engagement with the drive-pulley.

848,184. FOOT-ACTUATED LANTERN. FRED C. LYON, Evanston, Ill. Filed Mar. 12, 1906. Serial No. 305,706.

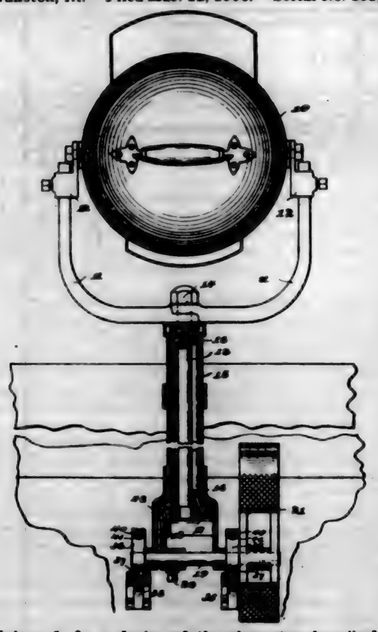

Claim.—1. In a device of the character described, the combination of an upright rotatable shaft adapted to be secured to a vehicle and to turn a lantern, a horizontal shaft, means connecting said horizontal and upright shaft whereby the rotation of the former is transmitted to the latter, one or more bearings for said horizontal shaft, caps for said bearings contacting with said shaft, screw-threaded means for regulating the friction of said caps on said horizontal shaft, and a treadle on said horizontal shaft whereby the latter may be turned by the foot, substantially as described.

2. In a device of the character described, the combination of an upright rotatable shaft adapted to turn a lantern, a support for said shaft to which the latter is hinged, a second support for said shaft from which the latter is detachable whereby the shaft may be turned on said hinge, substantially as described.

3. In a device of the character described, the combination of an upright rotatable shaft adapted to support and turn a lantern, a support for said shaft with which the latter has a hinged connection, a horizontal shaft, means connecting said horizontal and upright shafts whereby the rotation of the former is transmitted to the latter, one or more bearings for said horizontal shaft from which said shaft may be readily removed, substantially as described.

4. In a device of the character described, an adjustable support for a shaft comprising a bracket, said shaft having a hinged connection therewith, and a plurality of supporting-rods on which said bracket is longitudinally adjustable, substantially as described.

5. In a device of the character described, a hinged support for a shaft comprising a bracket, a plurality of rods, and means affording adjustment of said bracket on said rods, substantially as described.

848,185. THREAD-GUARD AND SPOOL-HOLDER FOR SEWING-MACHINES. SARAH L. LYON, Philadelphia, Pa. Filed Apr. 19, 1906. Serial No. 312,620.

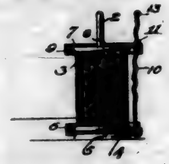

Claim.—1. A thread-guard and spool-holder for sewing-machines comprising a lower guard-plate, an upper guard-plate, each having a central opening therein to clear the spool-spindle of a sewing-machine, and a spring-rod rising from the lower plate and provided with adjusting-notches to engage the upper plate and permit vertical adjustment of the latter, substantially as described.

2. A thread-guard and spool-holder for sewing-machines comprising upper and lower guard plates or disks having centrally-disposed spindle-engaging apertures, an annular downwardly-projecting flange formed on said upper disk, an annular upwardly-projecting flange formed on said lower disk, and a corrugated spring supporting-rod secured at its lower end to said lower disk and projecting upwardly through an aperture near the flange of said upper disk, whereby the latter will be adjustably supported in frictional engagement with the spindle of the machine above and adjacent to the upper end of a spool, substantially as described.

848,186. MEANS FOR FASTENING THE MOVEMENTS OF WATCHES IN THE CASES. EDGAR J. MARTEL, Ware, Mass. Filed Nov. 21, 1906. Serial No. 344,378.

Claim.—1. In an improvement of the class described, a rear plate, a face-plate, a spring element carried by the rear plate, means on its outer end for engaging the carrying-case, and means for operating the spring element to move the last-mentioned means into and out of engagement with the case.

2. In an improvement of the class described, a spring element secured to the movement, a locking element carried thereby for securing the movement to the case, and means for moving the spring element into locking and unlocking position.

3. As an improvement in means for securing the movement of a timepiece to its case, a locking-bolt supported by the movement, and adjusting means for moving the said bolt into and out of engagement with the case.

4. As an improvement in means for securing the movement of a timepiece to its case, a locking-bolt supported by the movement, and adjusting means for moving the said bolt into and out of engagement with the case, said means comprising an element secured in the rear plate and supporting the locking-bolt, and an adjusting element for operating the last-named element.

5. As an improvement in means for securing the movement of a timepiece to its case, a spring element secured to the rear plate, a locking-bolt pivotally mounted in the free end of the spring element, an operating-screw threaded into the face-plate and provided with a shoulder portion for engaging the spring element, the locking-bolt being provided with a portion for engaging the case whereby when the operating-screw is turned or threaded into the face-plate, the shouldered portion of the same will force the free end of the spring element inward and draw the locking portion of said bolt into engagement with the case, as described.

848,187. CUTTER. GEORGE MEYERS, New York, N. Y. Filed Jan. 13, 1905. Serial No. 240,868.

Claim.—1. The combination with a cutter-bar having a plurality of perforations therein, of a cutter-blade, a plurality of perforated blocks having an adjustable sliding connection with said cutter-blade at the upper or blunt edge thereof and being arranged with a space between each other, means for holding each of said blocks in stationary adjusted position relatively to the cutter-blade, and means for detachably connecting each of the said blocks with the cutter-bar through the perforations of the respective parts.

2. The combination with a cutter-bar having a plurality of perforations therein, of a cutter-blade, a plurality of perforated blocks having an adjustable sliding dovetailed connection with said cutter-blade at the upper or blunt edge thereof and being arranged with a space between each other, means for holding each of said blocks in stationary adjusted position relatively to the cutter-blade, and means for detachably connecting each of the said blocks with the cutter-bar through the perforations of the respective parts.

3. The combination with a perforated cutter-bar, of a cutter-blade, a perforated block connected with said cutter-blade at the upper or blunt edge thereof and being diagonally divided with one section thereof movable relatively to the other whereby the width of the block may be adjusted, means for adjustably securing together the two sections of the block, and means for detachably securing the block in connection with the cutter-bar through the perforations of the respective parts.

4. The combination with a perforated cutter-bar, of a cutter-blade, a perforated block having an adjustable sliding dovetailed connection with said cutter-blade at the upper or blunt edge thereof and being diagonally divided with one section thereof movable relatively to the other whereby the width of the block may be adjusted, means for adjustably securing together the two sections of the block, and means for detachably connecting the block with the cutter-bar through the perforations in the respective parts.

848,188. CAR AND COACH WASHING MACHINE. HENRY MILLER and GUSTAF MILLER, St. Paul, Minn. Filed Aug. 24, 1906. Serial No. 331,843.

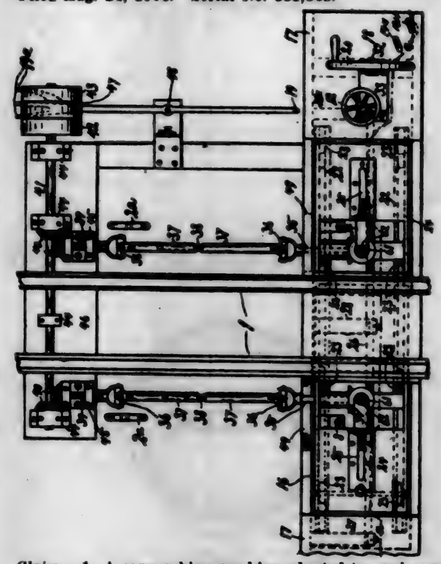

Claim.—1. A car-washing machine adapted to wash cars while they move on a track, the same comprising vertically-disposed rotary brushes adapted to rub against opposite sides of the car, wheeled frames or trucks carrying said brushes, tracks supporting said trucks, and means for moving said trucks simultaneously to or from both sides of the car by a single operator stationed at one side of the moving car.

2. A car or coach washing machine adapted to wash a car while it moves on a track, the same having vertically-disposed rotary brushes adapted to rub against the sides of the moving car the entire height of the sides in one operation; wheeled trucks carrying said brushes, tracks supporting the trucks, means carried by the trucks for sprinkling water on the car and the brushes, and means for adjusting the trucks simultaneously toward both sides of the car while operated only from one side thereof, and means for readily detaching the brushes, for the purpose set forth.

3. In a machine adapted to wash cars while they move upon a main track, the combination with cross-tracks arranged transversely to and lower than the main track, wheeled trucks standing on the cross-tracks, means extending under the main track for moving the trucks to and from the sides of the car; hand-operated means at one side of the main track for thus moving the trucks at both sides thereof, rotary brushes and perforated water-pipes carried by said trucks for cleaning the sides of the cars, and means for rotating the brushes.

4. In a machine adapted to wash cars while they move upon a main track, the combination with cross-tracks arranged transversely to and lower than the main track, wheeled trucks standing on the cross-tracks, means extending under the main track for moving the trucks to and from the sides of the cars; hand-operated means at one side of the main track for thus moving the trucks at both sides thereof, rotary brushes and perforated water-sprinklers carried by the trucks for cleaning the sides of the cars, and means for rotating the brushes; the latter means comprising two shafts, each of which drives with one end the brush or brushes carried by one truck, extends normally about parallel to the main track, has universal joints, a slidable joint, and a bevel-gear fixed at the other end; a main drive-shaft journaled in transverse position to and below the main track, bevel-gears fixed on said shaft and driving the bevel-gears on the shafts with the universal joints.

5. In a car-washing machine, the combination with a frame or bracket having two arms pointing toward the car to be washed, a rotary brush having its shaft journaled to said arms; a rotating angular socket in one of the arms and a journal-pointed screw in the other arm, and a jam-nut holding said screw against accidental turning, said brush-shaft having at one end an angular taper stem adapted to be detachably set into the socket, and at the other end a piece forming a journal-joint with the end of the said screw.

848,189. TUBULAR FABRIC AND METHOD OF MAKING THE SAME. GEORGE D. MOORE, Worcester, Mass., assignor to Multiple Woven Hose & Rubber Co., New York, N. Y., a Corporation of New York. Filed Sept. 6, 1904. Serial No. 223,375.

Claim.—1. As an article of manufacture, a multiply belting fabric comprising flattened tubes which interlock with each other to form the same character of selvage at each edge of the fabric.

2. A four-ply belting fabric comprising two flat tubes which interlock with each other and form the same character to selvage at each edge of the fabric, and binder-warps fastening together the top three plies of the fabric and other binding-warps fastening together the bottom three plies of the fabric.

3. The method of weaving multiply fabric which consists in arranging warp-threads to open a number of sheds inserting one weft-thread through a shed which forms an outside ply of the completed fabric, inserting a second weft-thread through a shed which forms an intermediate ply adjacent to the first-named outside ply, returning the first-named weft-thread through a shed which forms a second intermediate ply of the completed fabric, and returning the second-named weft-thread through a shed forming the other outside ply of the completed fabric, so that the completed fabric comprises two interlocked flattened tubes.

4. The method of weaving a four-ply belting fabric consisting in arranging warp-threads to open a number of sheds inserting a weft-thread through a shed which forms an outside ply of the completed fabric, inserting a second weft-thread through a shed which forms an intermediate ply of the completed fabric adjacent to the first-named outside ply, returning the first weft-thread through a shed which forms the other intermediate ply of the completed fabric, returning the other weft-thread through the shed which forms the other outside ply of the completed fabric, and connecting the plies of the completed fabric by binder-warps.

848,190. SHAPER FOR CROWNING AND FINISHING DRIVING-BOXES ON LOCOMOTIVES, &c. MATTHEW MORTON and HENRY E. MORTON, Muskegon, Mich. Filed May 15, 1905. Serial No. 260,538.

Claim.—1. In a draw-cut shaper the combination of a hollow reciprocatory ram, a hollow arbor therewithin adapted to be rotated, a removable head engaged in one end of the arbor and projecting forward of the ram and rotatable with the arbor, a rod extending through the arbor engaged with said head to longitudinally adjust the head in the arbor, and means engaging the opposite end of the rod to longitudinally adjust the rod in the arbor.

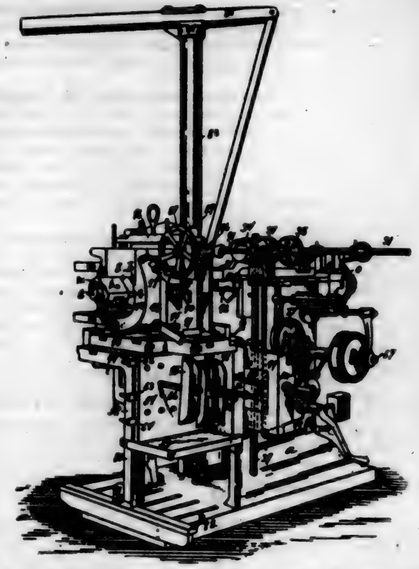

2. In a draw-cut shaper the combination of a hollow reciprocatory ram, a hollow arbor therewithin adapted to be rotated and provided at one end thereof with a tapered recess, a removable head rotatable with the arbor provided with a tapered shank to fit into the corresponding recess of the arbor, a separately-constructed tool-holder engaged in said head, an adjusting-rod extending through the arbor and engaging said head, and means engaging the opposite end of the rod to draw the rod longitudinally of the arbor.

3. In a draw-cut shaper the combination of a hollow reciprocatory ram, a hollow arbor therewithin adapted to be rotated, a removable head engaged in one end of the arbor and rotatable therewith, an adjusting-rod passing through said arbor engaged at one end with said head, a separately-constructed tool-holder engaged in said head, and means engaging the opposite end of the rod to longitudinally adjust said head in said arbor.

4. In a draw-cut shaper the combination of a hollow reciprocatory ram, a hollow arbor therewithin adapted to be automatically rotated provided with a conical recess in one end thereof extending longitudinally of the arbor, a removable head provided with a conical shank engaged in the recessed end of the arbor, a separately-constructed tool-holder engaged in said head, and adjusting mechanism to tighten the shank of said head in the recess of said arbor, whereby the head and the arbor will be simultaneously rotated.

5. In a draw-cut shaper the combination of a rotatable head, a tool-holder engaged with said head, a tool in said holder, said head provided with a hub projecting forward of the tool-holder, and index mechanism engageable upon said hub for setting said cutting-tool.

6. In a draw-cut shaper the combination of a rotatable head, a tool-holder engaged with said head, a tool in said holder, said head provided with a hub projecting forward of the tool-holder, and index mechanism removably engaged upon said hub and projecting under the lower end of the cutting-tool to set the cutting-tool.

7. In a draw-cut shaper the combination of a chambered rotatable head, a separately-constructed tool-holder

pivotally engaged in the chamber in said head provided with a separately-constructed supplementary slotted holder extending lengthwise therethrough, and a cutting-tool engaged in the slot of the supplementary holder to rotate circumferentially together with the head, the slot of the supplementary holder extending therethrough at an acute angle to the perpendicular to hold the cutting-tool, whereby the cutting-tool may be set to cut to the right or to the left of the longitudinal center of the head at the will of the operator.

8. In a draw-cut shaper the combination of a reciprocatory ram, a tool-holder engaged with said head, said head provided with a hub projecting forward of the tool-holder, a depending arm provided with a scale removably engaged upon said hub, a bracket vertically adjustable upon said arm and extending underneath the cutting-tool, and a micrometer-screw carried by said bracket for adjusting the position of the cutting-tool.

9. In a draw-cut shaper the combination of an arbor, a head engaged in said arbor, a tool-holder pivotally engaged in said head to oscillate longitudinally of the head, an interchangeable supplementary holder engaged in said head provided with an upright slot, and a cutting-tool engaged in the slot of the supplementary holder, whereby the cutting-tool will relieve from the work on its return stroke.

848,191. ATTACHMENT FOR DRAW-CUT SHAPERS. MATTHEW MORTON and HENRY E. MORTON, Muskegon, Mich. Filed May 15, 1905. Serial No. 260,539.

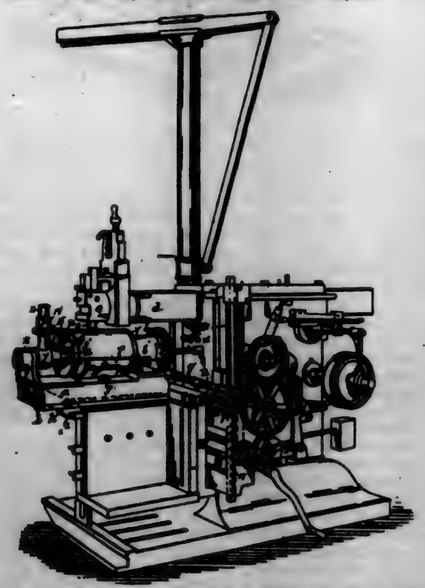

Claim.—1. An attachment to a shaper having in combination a support, an arbor journaled upon the support, a chuck provided with heads at opposite ends thereof in which the arbor is rigidly engaged, and with an outwardly-projecting flange at one extremity thereof, and means adjustable longitudinally upon the arbor coacting with the chuck to clamp the extremities of the work upon the arbor.

2. An attachment to a shaper provided with a cutting-tool having in combination a support engaged upon the shaper, an arbor automatically rotatable in operation, bearings for said arbor upon said support, means adjustable longitudinally upon the arbor to clamp the extremities of the work thereupon and index mechanism carried upon one of said bearings provided with a scale and with a pointer to be set by said scale by which to govern the setting of the cutting-tool of the shaper, said index mechanism arranged to be swung out of the way when not in use.

3. An attachment to a shaper provided with a cutting-tool having in combination a support, an arbor automatically rotatable in operation, bearings for said arbor upon said support, means longitudinally adjustable upon the arbor to clamp the extremities of the work thereupon, and index mechanism provided with an arm which may be swung radially of the arbor and with an adjustable pointer upon said arm by which to govern the setting of the cutting-tool of the shaper, said index mechanism being arranged to be swung out of the way when not in use.

4. An attachment to a shaper provided with a cutting-tool having in combination a support, an arbor, bearings for said arbor upon said support, means longitudinally adjustable upon the arbor to clamp the extremities of the work thereupon, and index mechanism sleeved upon one of said bearings provided with an arm and an adjustable pointer upon said arm, by which to govern the setting of the cutting-tool of the shaper, said index mechanism being arranged to be swung out of the way when not in use.

848,192. APPARATUS FOR HOLDING CONNECTING-ROD BRASSES FOR LOCOMOTIVES, &c. MATTHEW MORTON and HENRY E. MORTON, Muskegon, Mich. Filed May 15, 1905. Serial No. 260,540.

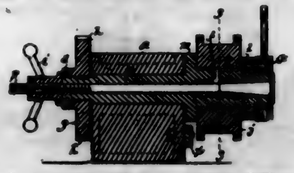

Claim.—1. A work-holding apparatus of the nature described comprising a support, a rotatable arbor upon which the work is to be held, extending through said support and journaled therein, said arbor provided with a laterally-projecting flange abutting against one end of the support to engage against one end of the work, and means upon the arbor to engage against the opposite end of the work to hold the work from longitudinal movement upon the arbor, and expansible mechanism carried by said arbor to be expanded within the work to center the work and to hold the work from revolving upon the arbor.

2. A work-holding apparatus of the nature described comprising a support, a rotatable arbor upon which the work is to be held, extending through said support and journaled in said support, said arbor provided with a laterally-projecting flange abutting against one end of the support to engage against one end of the work, and means upon the arbor to engage against the opposite end of the work to hold the work from longitudinal movement upon the arbor, expansible jaws radially projecting through said arbor, and a bolt longitudinally movable within said arbor constructed with a tapered portion to contact with and to expand said jaws to center the work and to hold the work from revolving upon the arbor, and an index-wheel upon the arbor abutting against the support to hold the arbor in position.

3. A work-holding apparatus of the nature described comprising a support, a rotatable arbor upon one end of which the work is to be held, extending through said support and journaled therein, said arbor provided with a laterally-projecting flange abutting against one end of the support to engage against one end of the work, and means upon the arbor to engage against the opposite end of the work to hold the work from longitudinal movement upon the arbor, expansible mechanism carried by said arbor to be expanded within the work to center the work and to hold the work from revolving upon the arbor, and an index-wheel rigidly engaged upon the opposite end of such arbor to govern the rotation of the arbor, said index-wheel also serving as a flange to hold the arbor in position.

848,193. SCRIBING DEVICE. MATTHEW MORTON and HORACE MANN, Muskegon Heights, Mich. Filed Dec. 8, 1906. Serial No. 346,934.

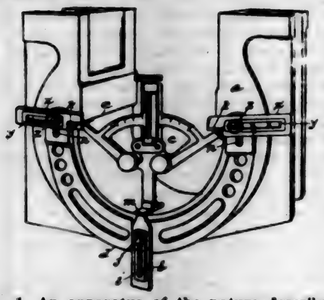

Claim.—1. An apparatus of the nature described comprising an arc-shaped frame having in combination therewith transversely-extended arms made adjustable laterally and longitudinally of the frame.

2. An apparatus of the nature described comprising an arc-shaped frame having in combination therewith transversely-extended arms made adjustable laterally and longitudinally of the frame, and an additional transversely-adjustable arm located intermediate the extremities of the frame.

3. An apparatus of the nature described comprising an arc-shaped frame provided toward its extremities with adjustable arms, and with an adjustable arm intermediate the extremities of the frame, the arms at the extremities of said instrument each provided with a shoulder projecting inward at right angles therefrom and with a scribing-shoulder.

4. An apparatus of the nature described comprising an arc-shaped frame herein described having in combination therewith transversely-extended adjustable arms toward the extremities thereof, and an additional adjustable arm intermediate the extremities thereof.

848,194. MAGAZINE-SOCKET NUT-WRENCH. ALDEN L. MCMURTRY, New York, N. Y. Filed Dec. 11, 1906. Serial No. 347,387.

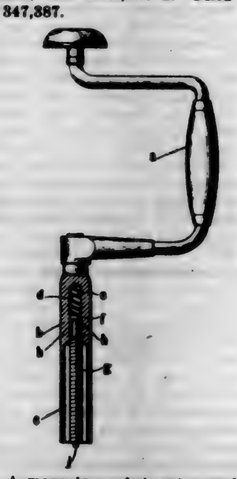

Claim.—1. A magazine-socket nut-wrench comprising a straight hollow body constituting the nut-magazine interiorly shaped to receive and hold the nuts against independent rotation, a centrally-arranged threaded stem adapted to receive the nuts, one of said parts being movable relatively to the other in the line of their axes and a projection on the threaded stem adapted to engage a recess in the bolt to hold the stem against rotation.

2. A magazine-socket nut-wrench comprising a hollow body constituting the nut-magazine interiorly shaped to hold the nuts against independent rotation and an elastically-supported yielding threaded stem mounted centrally in the nut-magazine and formed on its end face to engage with a bolt from which a nut is to be removed.

848,195. COMBINED SHADE-BRACKET AND CURTAIN-ROD SUPPORT. CHARLES H. NELSON, Iola, Wis. Filed Sept. 4, 1906. Serial No. 333,168.

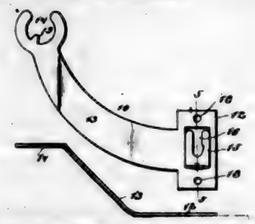

Claim.—A combined shade-bracket and curtain-rod support comprising a plate adapted to be secured to the side of a window-casing, a tongue struck up from the plate and extending parallel thereto, said tongue having an opening to receive the shade-roller spindle, and an arm extending outwardly from the front edge of the plate, and having a curtain-rod seat.

848,196. MAIL-BAG CATCHER. GEORGE H. NICHOLS, Norwalk, Conn., assignor of one-fourth to William T. Ainley, Norwalk, Conn. Filed Feb. 18, 1907. Serial No. 357,822.

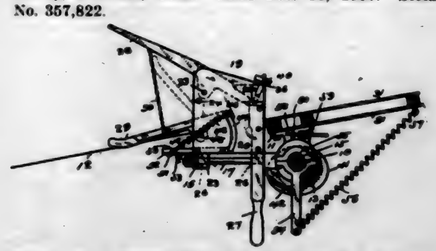

Claim.—1. A device of the character described comprising a horizontally and vertically swinging catcher, means for automatically releasing the catcher from its horizontal position and for locking it in the receiving position from which it is released by engagement with a mail-bag, means for automatically releasing the catcher from its horizontal position as it is swung inward and means for automatically releasing a mail-bag that has been caught.

2. A device of the character described comprising a horizontally and vertically swinging catcher, a latch 61 for automactically locking the catcher in the horizontal position, a latch 58 for automatically locking the catcher in the receiving position from which it is released by engagement with a mail-bag, means for automatically actuating latch 61 to permit the catcher to drop to the vertical position as it is swung inward, and means for automatically releasing a mail-bag that has been caught.

3. A device of the character described comprising a horizontally and vertically swinging catcher, a latch 61 for automatically locking the catcher in the horizontal position, a latch 58 for automatically locking the catcher in the receiving position from which it is released by engagement with a mail-bag, a spring for swinging the catcher inward when released, means for automatically actuating latch 61 to permit the catcher to drop to the vertical position as it is swung inward, and means for automatically releasing a mail-bag that has been caught.

4. A device of the character described comprising a horisontally and vertically swinging catcher provided with means for gripping a suspended mail-bag, means for locking the catcher in the receiving position, and means for automatically releasing a mail-bag that has been caught.

5. A device of the character described comprising a horizontally and vertically swinging catcher provided with means for gripping a suspended mail-bag, means for locking the catcher in the receiving position, a spring for drawing the catcher inward, and means for automatically releasing a mail-bag that has been caught.

6. A device of the character described comprising a horizontally and vertically swinging catcher provided with means for gripping a suspended mail-bag, means for normally retaining the catcher within a car, a balanced hook-ended latch for retaining the catcher in the receiving position, means for releasing the catcher from the horizontal position, and means for releasing a mail-bag that has been caught.

7. A device of the character described comprising a horisontally and vertically swinging catcher, means for locking the catcher in the horisontal position and for locking it in the receiving position, means for releasing the catcher so that it will drop to the vertical position, and means for releasing a mail-bag.

8. In a device of the character described the combination with a horisontally and vertically swinging catcher and means for retaining said catcher in the receiving position, of a gripping-lever and an engaging lever pivoted to the catcher, means for retaining the gripping-lever in the receiving and gripping positions, means for locking the engaging lever in the receiving position and a chain connecting said levers which is taut in the receiving position, said chain acting to draw the gripping-lever to the gripping position when engaged by a mail-bag and the shock releasing the catcher which may then be swung inward.

9. In a device of the character described the combination with a horisontally and vertically swinging catcher having arc slots 47 and means for retaining the catcher in the receiving position, of a gripping-lever and an engaging lever pivoted to the catcher, a pin at the inner end of the gripping-lever which engages the arc slots, springs connected to said pin and to the catcher back of the pivotal point of said lever, whereby said lever is retained in either the receiving or gripping positions, means for locking the engaging lever in the receiving position and a chain connecting said levers which is taut in the receiving position, said chain acting to draw the gripping-lever to the gripping position when engaged by a mail-bag and the shock releasing the catcher which may then be swung inward.

10. In a device of the character described the combination with a horisontally and vertically swinging catcher and means for retaining said catcher in the receiving position, of a gripping-lever and an engaging lever pivoted to the catcher, means for retaining the gripping-lever in the receiving and gripping positions, a chain connecting said levers which is taut in the receiving position, and a spring-actuated latch for locking the engaging lever in the receiving position.

11. In a device of the character described the combination with a horisontally and vertically swinging catcher and means for retaining said catcher in the receiving position, of a gripping-lever and an engaging lever pivoted to the catcher, means for retaining the gripping-lever in the receiving and gripping positions, a chain connecting said levers which is taut in the receiving position, a latch for locking the engaging lever in the receiving position, a lever engaging said latch and carrying a roller, a spring acting to retain the latch in the engaging position and a cam which is engaged by the roller to actuate the latch and release the engaging lever.

12. In a device of the character described the combination with a horisontally and vertically swinging catcher, and means for retaining said catcher in the horisontal position and in the receiving position, of gripping and engaging levers pivoted to the catcher, means for retaining the gripping-lever in the receiving and gripping positions, a chain connecting said levers which is taut in the receiving position, a latch for locking the engaging lever in the receiving position, a spring-controlled lever engaging the latch and carrying a roller, means for releasing the catcher from its horisontal position as it is swung inward and a cam engaged by the roller which actuates the latch and releases the engaging lever permitting it to drop to the releasing position and release a mail-bag.

13. In a device of the character described the combination with a horisontally and vertically swinging catcher, a latch 61 for locking the catcher in the horisontal position, and a latch 58 for locking the catcher in the receiving position, of gripping and engaging levers pivoted to the catcher, means for retaining the gripping-lever in the receiving and gripping positions, a chain connecting said levers which is taut in the receiving position and which draws the engaging lever to the receiving position when the gripping-lever is moved to said position, a latch 35 for locking the engaging lever in the receiving position, a lever engaging said latch and carrying a roller, a cam engaged by latch 61 for releasing the catcher from its horizontal position as it is swung inward and a cam engaged by the roller for actuating latch 35 and releasing the engaging lever.

14. A device of the character described comprising a horisontally and vertically swinging catcher, means for locking the catcher in the horizontal position and for locking it in the receiving position, means for releasing the catcher so that it will drop to the vertical position, a spring for drawing the catcher inward and means for releasing a mail-bag.

15. In a device of the character described the combination with a horisontally and vertically swinging catcher having arc slots 47 and means for retaining the catcher in the receiving position, of a gripping-lever and an engaging lever having bosses upon one side, fulcrum-studs extending through said bosses, a pin carried by the gripping-lever and engaging the arc slots, springs connected to said pin and to the catcher back of the pivotal point of said lever, for the purpose set forth, means for locking the engaging lever in the receiving position, and a chain connecting said levers, substantially as shown for the purpose specified.

16. In a device of the character described the combination with a horisontally and vertically swinging catcher having arc slots 47 and means for retaining the catcher in the receiving position, of a gripping-lever and an engaging lever pivoted to the catcher, a pin at the inner end of the gripping-lever which engages the arc slots, an adjustable plate upon the catcher back of the pivotal point of said lever, a U-shaped hanger pivoted to said plate, springs connected to said pin and to the hanger, for the purpose set forth, means for locking the engaging lever in the receiving position, and a chain connecting said levers.

17. In a device of the character described the combination with a horisontally and vertically swinging catcher, engaging and gripping levers pivoted thereto, means for retaining said levers in the receiving position and means for locking the catcher in the receiving position, of means for releasing the catcher and permitting it to drop to the horisontal position as it is swung inward and means for releasing a mail-bag that has been gripped.

18. In a device of the character described the combination with a horisontally and vertically swinging catcher, engaging and gripping levers pivoted thereto, means for retaining the gripping-lever in the receiving position, and a latch 35 for locking the engaging lever in the receiving position, of means for locking the catcher in the receiving position, a latch 61 for locking the catcher in the horisontal position, a cam 41 engaging said latch as the catcher is swung inward, to release the catcher and permit it to swing to the vertical position, and a cam 42 engaging latch 35 to release the engaging lever, substantially as described, for the purpose specified.

19. In a device of the character described the combination with a horizontally and vertically swinging catcher, engaging and gripping levers pivoted thereto, a chain connecting said levers, means for retaining the gripping-lever in the receiving position, a latch 35 for locking the engaging lever in the receiving position, a latch 61 for locking the catcher in the horisontal position, and means for locking the catcher in the receiving position, of a cam 41, engaging latch 61 as the catcher is swung inward, and a cam 42 engaging latch 35, substantially as described for the purpose specified.

20. In a device of the character described the combination with a vertically and horisontally swinging catcher, engaging and gripping levers pivoted thereto, a chain connecting said levers, means for retaining said levers in the receiving position, and means for locking the catcher in the receiving position, from which it is released by engagement with a mail-bag, of a cam 41 acting as the catcher is swung inward to release it and permit it to swing to the vertical position and a cam 42 acting to release a mail-bag that has been gripped.

21. In a device of the character described the combination with a vertically and horisontally swinging catcher, and engaging and gripping levers pivoted thereto, of a chain connecting said levers, means for locking the engaging lever in the receiving position, means for retaining the gripping-lever in the receiving position and retaining the chain taut, and means for locking the catcher in the receiving position, the engagement of a mail-bag with the chain acting to draw the gripping-lever to the gripping position and grip a mail-bag between itself and the engaging lever, and the shock acting to release the catcher which may then be drawn inward.

22. In a device of the character described the combination with a vertically and horisontally swinging catcher, engaging and gripping levers pivoted thereto, a chain connecting said levers, a latch 35 for locking the engaging lever in the receiving position, means for retaining the gripping-lever in the receiving position and retaining the chain taut, a latch 61 for locking the catcher in the horisontal position, and means for locking the catcher in the receiving position, the engagement of a mail-bag with the chain acting to draw the gripping-lever to the gripping position and grip a mail-bag between itself and the engaging lever and the shock acting to release the catcher which may then be drawn inward, of a cam engaging latch 61 as the catcher swings inward to release it and permit it to drop to the vertical position, and a cam engaging latch 35 to release the engaging lever and a mail-bag that has been gripped.

23. In a device of the character described the combination with a vertically and horisontally swinging catcher provided with means for gripping a mail-bag, and means for locking the catcher in the receiving position from which it is released by engagement with a mail-bag, of a latch 61 for locking the catcheg in the horisontal position, a cam which is engaged by said latch as the catcher is swung inward to release the catcher and permit it to drop to the vertical position, and means for automatically releasing a mail-bag that has been gripped.

848,197. RAILWAY-TIE. PARSHALL D. NICOLS, Edgeworth borough, Pa.; Elizabeth A. Nicols administratrix of said Parshall D. Nicols, deceased. Filed Dec. 11, 1905. Serial No. 291,297.

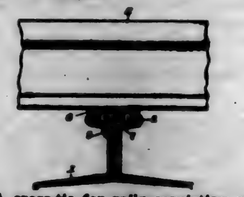

Claim.—1. A cross-tie for rails consisting of a rail-section having one of its members spread laterally to form the base-plate and having portions of its opposite members spread laterally to form seats for the rails.

2. A cross-tie for rails consisting of a rail-section having one of its members spread laterally to form the base-plate and having in its opposite member recesses for the rail-flange, said recesses being provided with pockets, in combination with rails arranged in said recesses, insulating material interposed between the rails and the tie and extending up onto the rail-flange, clamping-plates and means for securing the clamping-plates to the ties.

848,198. EXTRACTOR FOR FIREARMS. VICTOR A. ORAMOON, Bluefields, Nicaragua. Filed Dec. 26, 1905. Serial No. 293,268.

Claim.—1. An extractor of the class described, comprising a rod and two opposite diverging cutting-arms embodying flat plates having beveled cutting edges, said arms extended from one end of the rod and located diametrically opposite each other, substantially as shown and described.

3. An extractor of the class described, comprising a rod and two opposite laterally-adjustable cutting-arms embodying flat plates having beveled cutting edges, extended from one end of the said rod, substantially as shown and described.

3. An extractor of the class described, comprising a rod and two opposite laterally-adjustable arms embodying flat plates integral with said arm and movable by their resilience, said arms each having a beveled edge on its free end, substantially as shown and described.

848,199. SHOCKER ATTACHMENT FOR GRAIN HARVESTERS AND BINDERS. JOHN OSTRUM, Traer, Iowa. Filed Apr. 5, 1906. Serial No. 310,157.

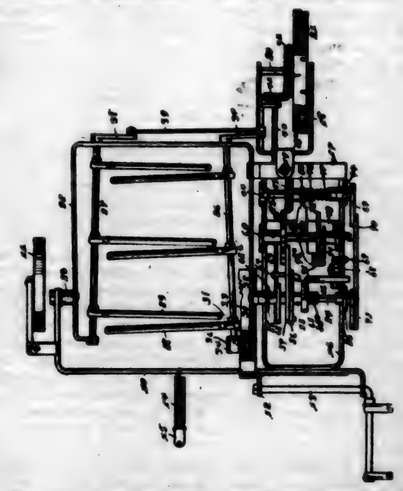

Claim.—1. A grain-shocking attachment, comprising a frame, a clevis articulating on an upright axis at the rear of said frame, a yoke fixed to said clevis, a traction-wheel journaled in said yoke, bevel-gearing journaled in said yoke and driven by said traction-wheel, a rocking frame mounted for oscillation on the first frame, grain receiving and dumping mechanism on said rocking frame, actuating mechanism connected to said rocking frame and geared to said bevel-gearing, and gear connections between the first frame and the grain receiving and dumping mechanism.

2. A grain-shocking attachment, comprising a suitable frame, a rocking frame mounted for oscillation thereon, rocker-shafts mounted for oscillation on and adapted for oscillation with said rocking frame, gear connections between one of said shafts and the first frame, bars mounted on said rocker-shafts, traction mechanism pivoted to and trailing behind the first frame, dumping mechanism acting on said rocking frame, a clutch between said traction

and dumping mechanisms, and manually-operated step-by-step mechanism controlling said clutch.

8. A grain-shocking attachment, comprising a suitable frame, a bundle-carrying frame mounted for oscillation thereon, traction mechanism pivoted to and trailing behind the first frame, dumping mechanism geared to said bundle-carrying frame and also geared to the traction mechanism, a clutch in said dumping mechanism, a cam controlling said clutch, and a manually-operated tripping mechanism for rotating said cam.

4. A grain-shocking attachment, comprising a suitable frame and means for attaching said frame to a harvester, a curved mutilated rack on said frame, a bundle-carrying frame mounted on the first frame and arranged for oscillation on an axis transversely of the path of travel of the harvester, shafts mounted for oscillation in said bundle-carrying frame, crank-and-rod connections between said shafts, arms on said shafts opposite each other, a mutilated pinion on one of said shafts engaging said rack, traction mechanism on the main frame, dumping mechanism between said traction mechanism and the bundle-carrying frame, a clutch between said traction and dumping mechanisms, a lever controlling said clutch, a cam acting on said lever, and manually-operated devices for rotating said cam.

5. In a grain-shocking attachment, a rocking frame, connected shafts in said rocking frame, a mutilated rack, a mutilated pinion on one of said shafts engaging said rack, and arms on said shafts and adapted to receive and deposit bundles of grain.

6. In a grain-shocking mechanism, bundle-carrying mechanism mounted for oscillation, a fixed rack, a pinion in said bundle-carrying mechanism engaging said rack, traction mechanism, clutch-controlled gearing between said mechanisms, a lever controlling the clutch, a cam controlling said lever, step-by-step mechanism controlling said cam, and a lever actuating said step-by-step mechanism, said lever adapted for manual actuation coincident with the deposit of successive bundles on the carrying mechanism.

7. In a shocking attachment, a frame, means for attaching said frame to a harvester, a traction-frame pivoted to and trailing behind the first frame, a shaft 24 mounted transversely of the first frame, a bundle-frame fixed to said shaft, shafts journaled in the bundle-frame, crank-and-rod connections between the shafts in the bundle-frame, curved arms on the shafts in the bundle-frame, a mutilated rack on the main frame, a mutilated gear connecting one of the shafts in the bundle-frame and the mutilated rack, a counter-shaft journaled in the main frame, a clutch-gear on the counter-shaft adapted to engage and rotate said counter-shaft at times, traction mechanism in the traction-frame acting on said clutch-gear, crank-and-rod connections between the counter-shaft and shaft 24, tripping mechanism acting on said clutch-gear, and step-by-step mechanism on the first shaft arranged for manual actuation to operate said tripping mechanism.

848,200. CLOSET-SEAT. PETER J. PAULY, Jr., St. Louis, Mo. Filed July 5, 1906. Serial No. 324,855.

Claim.—1. In combination with the walls of a niche, a closet-seat having a central opening, and a marginal rim extending upwardly and engaging the walls of the niche to a suitable distance, to prevent contact of the body of the person on the seat with said niche-walls, substantially as set forth.

2. In combination with the walls of a niche in a prison-cell, a closet-seat comprising a lower section forming the bottom of the niche, and an upper section having an upwardly-extending marginal rim engaging the side and the back walls of the niche to prevent contact of the body of the person seated on the upper section, with said niche-walls, substantially as set forth.

3. In combination with the walls of a niche, a closet-seat located in the niche, and having a portion extending upwardly from the seating-surface to a suitable distance and engaging the adjacent wall of the niche to prevent contact of the body of the person seated, with the niche-wall, substantially as set forth.

4. In combination with the back and side walls of a niche in a prison-cell, a plate forming the bottom wall of the niche and having a central opening, a bowl located below the opening, a seat-section superposed over said plate and having bosses secured directly to said plate, the walls of said seat-section sloping toward the central opening and terminating in a depending flange overlapping the bottom plate, marginal rims extending upwardly from said sloping walls and engaging the back and side walls of the niche, and a front depending apron, the whole being coated with a layer of enamel, substantially as set forth.

848,201. CAR-SEAT. CHARLES K. PICKLES, Philadelphia, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed Mar. 17, 1905. Serial No. 250,579.

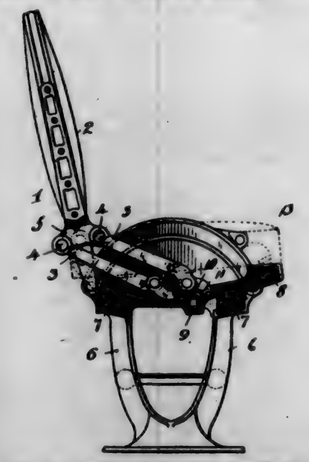

Claim.—1. In a device of the class described, a support, rockers slidably mounted thereon, a shaft pivotally mounted on said support, a cushion slidably mounted on said rockers, and projections fixed to said cushion and straddling said shaft.

2. In a device of the class described, a support, rockers slidably mounted thereon, a shaft pivotally mounted on said support, a cushion slidably mounted on said rockers, projections fixed to said cushion and straddling said shaft, a back and means for supporting said back.

848,202. POP SAFETY-VALVE. JOHN POSTBOUS, Cincinnati, Ohio. Filed Apr. 30, 1906. Serial No. 314,395.

Claim.—1. In a safety-valve, the combination of a valve-housing, a valve-seat within the housing, a valve consisting of a disk with an annular groove in its face and perforations leading into the groove, a regulating-disk seating against the valve-disk to vary the size of the perforations, an actuating-arm journaled in the casing and engaging the regulating-disk and extending from the interior to the exterior of the housing for regulating the relative position of the regulating-disk and a spring for holding the valve to its seat.

2. In a safety-valve of the character described a housing, a valve-disk with perforations therein, a regulating-disk with external teeth and a worm journaled in the

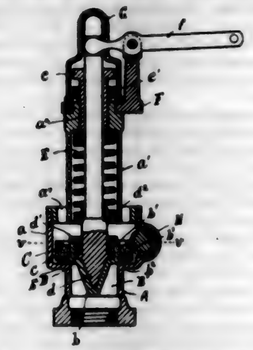

housing and engaging the teeth on the regulating-disk for varying its position relatively to the valve-disk.

848,203. APPARATUS FOR PULLING UP RODS, PILES, PICKETS, AND THE LIKE FROM THE GROUND. JOSEF RICHTER, Diespeck-on-the-Aisch, Germany. Filed Dec. 4, 1906. Serial No. 346,216.

Claim.—1. In apparatus of the character described, a stand, a lever pivoted thereto, tongs connected to this lever and adapted to move along the stand, and chains connecting the tongs with the said stand, substantially as herein set forth.

2. In apparatus of the character described, a stand, a lever pivoted to the upper end of the stand, tongs adapted to move along this stand, links connecting the upper ends of the tongs with the said lever, and chains connecting the lower ends of the tongs with the said stand, substantially as herein set forth.

3. In apparatus of the character described, a stand, a lever pivoted to the upper end of the stand, tongs adapted to move up and down along this stand, links connecting the upper ends of the tongs with the said lever, arms secured to the sides of the stand, and chains connecting the lower ends of the tongs with the said arms, substantially as herein set forth.

4. In apparatus of the character described, a stand, a lever pivoted to the upper end of the stand, tongs having forwardly-bent jaws and adapted to move up and down along the stand, links connecting the upper ends of the tongs to the said lever, a bar for guiding the pivot of the tongs in their up and down movements, arms secured to the sides of the stand, and chains connecting the lower ends of the tongs with the said arms, substantially as herein set forth.

848,204. ADJUSTING MEANS FOR MONKEY-WRENCHES. SOLOMON V. REHART, Piru, Cal. Filed Aug. 2, 1906. Serial No. 328,925.

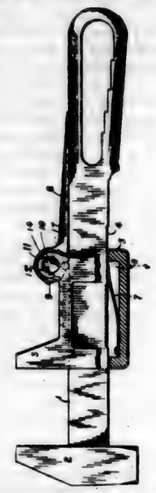

Claim.—1. In a monkey-wrench of the described character, the combination with the body or shank thereof, of a movable jaw slidably mounted thereon, of a lock-lever provided with a cam-head, of an eccentric bearing-pin for securing the head of the lock-lever to the movable jaw, and means for adjusting the eccentric bearing-pin to vary the throw of the cam portion of the lock-lever.

2. In a monkey-wrench of the described character, the combination with the body or shank thereof, of a movable jaw slidably mounted thereon, of a lock-lever provided with a cam-head, of a bearing-roller held within a seat in the cam-head of the lock-lever, of an eccentric bearing or pivot pin for securing the lock-lever to the movable jaw and on which pin the cam-head of the said lever turns, and of means for adjusting the position of the eccentric pin to vary the throw of the cam portion of the lock-lever.

3. In a monkey-wrench of the described character, the combination with the shank or body thereof, of a movable jaw slidably mounted thereon, of a lock-lever provided with a cam-head, of an eccentric bearing or pivot pin for securing the said lever to the movable jaw and on which the cam-head of the lever turns, of ears projecting from the movable jaw within which the eccentric pin is held, a series of projections on an enlarged end of the said pin, of a series of depressions in one ear of the movable jaw with which the projections of the eccentric pin register, and a device for holding the said eccentric pin within the ears against lateral displacement.

848,205. SAFETY-PLUG. BLISS W. ROBINSON, Boston, Mass. Filed Jan. 5, 1907. Serial No. 350,887.

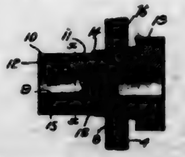

Claim.—1. A safety-plug comprising a body of non-fusible material provided with a bore containing fusible material, and means to cover a portion only of the fusible material at the inner end of the plug.

2. A safety-plug comprising a body of non-fusible material provided with a bore containing fusible material, and means within the bore to cover a portion only of the fusible material.

3. A safety-plug having a bore containing fusible material, and a member forming an integral part of the plug and situated within the bore to cover a portion of the fusible material.

4. A safety-plug having at one end longitudinally-extending inner and outer walls spaced from each other, and fusible material filling the space between said walls.

5. A safety-plug having at one end longitudinally-extending inner and outer walls spaced from each other, and fusible material filling the space between said walls, the space surrounded by the inner wall constituting a water-space.

6. A safety-plug having at one end annular inner and outer walls rigidly connected together by fins, and fusible material filling the space between said walls.

7. A safety-plug having at one end an inner and an outer wall spaced from each other, and fusible material filling the space between said walls, said outer wall being perforated.

8. A safety-plug having a bore containing fusible material and provided at its inner end with a water-chamber.

9. A safety-plug having a bore containing fusible material and provided at its inner end with an axially-extending water-chamber.

10. A safety-plug comprising an outer exteriorly-screw-threaded member provided with a bore, an inner annular resistance-wall 9 at the inner end of the member 8 and forming with said inner member an annular space, and fusible material filling said annular space.

11. A safety-plug comprising an annular exteriorly-screw-threaded member 8 provided with a central bore and having an annular resistance-wall 9 within the bore at the inner end thereof and connected to the member 8 by fins 11, and fusible material filling the bore around the resistance-wall 9.

848,206. SAFETY-PLUG. BLISS W. ROBINSON, Boston, Mass. Filed Jan. 7, 1907. Serial No. 351,084.

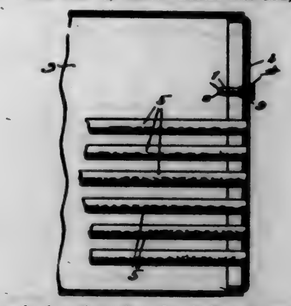

Claim.—1. A safety-plug for boilers provided with a chamber containing fusible material and another chamber constituting a water-space surrounding the first-named chamber.

2. A safety-plug provided with an exterior screw-threaded portion for screwing into a flue-sheet of a boiler, and a shell portion extending therethrough and containing fusible material, said screw-threaded portion and shell portion being spaced from each other.

3. A safety-plug having an annular screw-threaded bushing portion and a shell portion concentric therewith and extending therethrough but spaced therefrom, and fusible material within the shell portion.

4. A safety-plug comprising a bushing adapted to be screw-threaded into a flue-sheet, and a shell portion containing fusible material removably carried by the bushing portion and removable from the outer end thereof.

5. A safety-plug comprising a bushing adapted to be screw-threaded into a flue-sheet, and a shell portion containing fusible material screw-threaded to the bushing portion and removable from the outer end thereof.

6. A safety-plug comprising a bushing adapted to be screw-threaded to a flue-sheet, a shell portion screw-threaded to the bushing and containing fusible material, said shell portion and bushing being spaced from each other at the inner end of the bushing to form an annular water-chamber.

7. A safety-plug comprising a shell portion provided with perforations in its sides and fusible material contained within the shell portion and exposed through said perforations.

8. A safety-plug comprising a shell, fusible material within the shell, and means to anchor said fusible material to the shell by the material itself.

9. A safety-plug comprising a bushing portion provided with interior screw-threads and a seat, and a shell portion extending through the bushing portion and having a shoulder to engage said seat, and exterior screw-threads to engage the interior screw-threads of the bushing, said seat being situated between the screw-threaded portion of the shell and the portion projecting into the water.

10. A safety-plug comprising a bushing portion having interior screw-threads at its outer end, and a shell portion to contain fusible metal extending through the bushing portion and provided with an exteriorly-screw-threaded end to engage the interior screw-threads of the bushing, and means to make a water-tight joint between the bushing and shell at a point between the screw-threaded portion of the shell and the inner end thereof.

848,207. AUTOMATIC PIANO. ROBERT A. RODESCH, Dixon, Ill., assignor to Rodesch Piano and Player Co., a Corporation of Illinois. Filed Sept. 11, 1905. Serial No. 277,814.

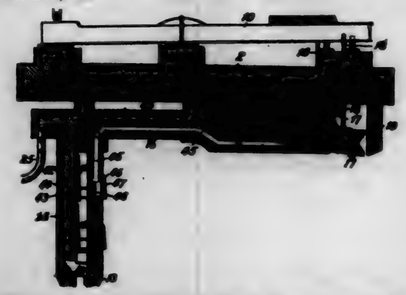

Claim.—1. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics, having movable members approximately parallel with the action-keys, and arranged below said table, pull connections extending in a direct manner between the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, and means for automatically operating said motor-pneumatics.

2. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics, having movable members approximately parallel with the action-keys, arranged below said table and attached to the under side of the same, pull connections extending in a direct manner between the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, and means for automatically operating said motor-pneumatics.

3. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics, having movable members approximately parallel with the action-keys, and arranged below said table, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, and means for automatically operating said motor-pneumatics.

4. In an automatic piano, the combination of a piano-

casing, action-keys, a supporting key-table, motor-pneumatics, having movable members approximately parallel with the action-keys, arranged below said table and attached to the under side of the same, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, and means for automatically operating said motor-pneumatics.

5. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics, having movable members approximately parallel with the action-keys, and arranged below said table, pull connections extending in a direct manner between the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

6. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics, having movable members approximately parallel with the action-keys, arranged below said table and attached to the under side of the same, pull connections extending in a direct manner between the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

7. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics, having movable members approximately parallel with the action-keys, and arranged below said table, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

8. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics, having movable members approximately parallel with the action-keys, arranged below said table and attached to the under side of the same, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

9. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics arranged below said table, the movable members of said motor-pneumatics having a position approximately parallel with the action-keys, and the fixed members of said motor-pneumatics having an inclined position, pull connections extending in a direct manner between the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, and means for automatically operating said motor-pneumatics.

10. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics arranged below said table and attached to the under side of the same, the movable members of said motor-pneumatics having a position approximately parallel with the action-keys, and the fixed members of said motor-pneumatics having an inclined position, pull connections extending in a direct manner between the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, and means for automatically operating said motor-pneumatics.

11. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics arranged below said table, the movable members of said motor-pneumatics having a position approximately parallel with the action-keys, and the fixed members of said motor-pneumatics having an inclined position, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, and means for automatically operating said motor-pneumatics.

12. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics arranged below said table and attached to the under side of the same, the movable members of said motor-pneumatics having a position approximately parallel with the action-keys, and the fixed members of said motor-pneumatics having an inclined position, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, and means for automatically operating said motor-pneumatics.

13. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics arranged below said table, the movable members of said motor-pneumatics having a position approximately parallel with the action-keys, and the fixed members of said motor-pneumatics having an inclined position, pull connections extending in a direct manner between the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

14. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics arranged below said table and attached to the under side of the same, the movable members of said motor-pneumatics having a position approximately parallel with the action-keys, and the fixed members of said motor-pneumatics having an inclined position, pull connections extending in a direct manner between the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

15. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics arranged below said table, the movable members of said motor-pneumatics having a position approximately parallel with the action-keys, and the fixed members of said motor-pneumatics having an inclined position, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

16. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics arranged below said table and attached to the under side of the same, the movable members of said motor-pneumatics having a position approximately parallel with the action-keys, and the fixed members of said motor-pneumatics having an inclined position, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

17. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics, having movable members approximately parallel with the action-keys, and arranged below said table, pull connections extending in a direct manner between the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics arranged within the interior of the piano-casing and controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

18. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics, having movable members approximately parallel with the action-keys, arranged below said table and attached to the under side of the same, pull connections extending in a direct manner between the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics arranged within the interior of the piano-casing and controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

19. In an automatic piano, the combination of a piano-

casing, action-keys, a supporting key-table, motor-pneumatics, having movable members approximately parallel with the action-keys, and arranged below said table, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics arranged within the interior of the piano-casing and controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

20. In an automatic piano the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics, having movable members approximately parallel with the action-keys, arranged below said table and attached to the under side of the same, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics arranged within the interior of the piano-casing and controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

21. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics arranged below said table, the movable members of said motor-pneumatics having a position approximately parallel with the action-keys, and the fixed members of said motor-pneumatics having an inclined position, pull connections extending in a direct manner between the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics arranged within the interior of the piano-casing and controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

22. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics arranged below said table and attached to the under side of the same, the movable members of said motor-pneumatics having a position approximately parallel with the action-keys, and the fixed members of said motor-pneumatics having an inclined position, pull connections extending in a direct manner between the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics arranged within the interior of the piano-casing and controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

23. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics arranged below said table, the movable members of said motor-pneumatics having a position approximately parallel with the action-keys, and the fixed members of said motor-pneumatics having an inclined position, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics arranged within the interior of the piano-casing and controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

24. In an automatic piano, the combination of a piano-casing, action-keys, a supporting key-table, motor-pneumatics arranged below said table and attached to the under side of the same, the movable members of said motor-pneumatics having a position approximately parallel with the action-keys, and the fixed members of said motor-pneumatics having an inclined position, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the main bodies of the movable members of the motor-pneumatics, primary pneumatics arranged within the interior of the piano-casing and controlling the motor-pneumatics, and means for moving a traveling music-sheet controlling the primary pneumatics.

848,208. AUTOMATIC PIANO. ROBERT A. RODESCH, Dixon, Ill. Filed July 30, 1906. Serial No. 328,403.

Claim.—1. In an automatic piano, of the type herein described, the combination of a piano-casing, a main exhaust-pump of the bellows type arranged in the interior of said casing with the free end of the movable member of said pump in adjacent relation to the bottom board of said casing, a pedal-lever pivoted within the piano-casing and provided with a forwardly-extending pedal end, an intermediate depending arm and an upturned angular inner end, and a link connecting said inner end of the pedal-lever with the movable member of the exhaust-pump.

2. In an automatic piano of the type herein described, the combination of a piano-casing, a main exhaust-pump of the bellows type arranged in the interior of said casing with the free end of the movable member of said pump in adjacent relation to the bottom board of said casing, a pedal-lever pivoted within the piano-casing and provided with a forwardly-extending pedal end, an intermediate depending arm and an upturned angular inner end, a roller mounted on the forward end of said pedal-lever, and a link connecting the inner end of said lever with the movable member of the exhaust-pump.

848,209. COOKING UTENSIL. JESSIE ROSSIGER, Golconda, Ill. Filed Nov. 12, 1906. Serial No. 343,049.

Claim.—1. A cooking utensil comprising a pot, a perforated plate inside the pot near the bottom thereof, and a stirrer below the plate.

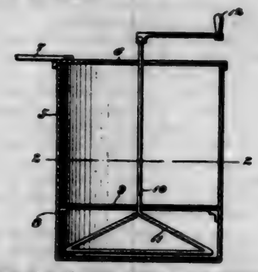

2. A cooking utensil comprising a pot having a lid, and a screen inside the pot near the bottom thereof, in combination with a stirrer comprising a shank extending through the lid and screen, and having beater-arms below the latter.

3. A cooking utensil comprising a pot having a lid, brackets inside the pot, and a perforated plate removably supported on the brackets, in combination with a stirrer comprising a shank extending through the lid and plate, and having beater-arms below the latter.

848,210. PROCESS OF TREATING CITRON-PEEL. HEINRICH SCHNEIDER, Altona-Ottensen, Germany. Filed Jan. 19, 1906. Serial No. 296,787.

Claim.—Process for treating citron-peel, which consists in impregnating the peel with brine, subdividing the impregnated peel into small pieces, washing and drying the pieces, and then candying them, substantially as specified.

848,211. NAIL-PULLER. ADOLPH P. SCHNYDER, Poag, Ill. Filed Apr. 30, 1906. Serial No. 314,440.

Claim.—1. A nail-puller comprising a casing having its upper end formed on the arc of a circle and provided with a rigid and a movable jaw, a lever pivotally connected to the casing for actuating said movable jaw, a curved shoulder on said lever which bears on the upper end of the casing, a heel-piece connected to the casing and located close to the jaws, and a ram for imparting a blow to the end of said jaw-actuating lever; substantially as described.

2. A nail-extractor comprising a casing having a rigid and a movable jaw mounted therein, a lever pivotally connected to said casing at a point above the pivot of said movable jaw, an arm on said movable jaw which engages the lever at a point above the pivot which connects said lever to the casing, a fulcrum-piece carried by the casing and arranged very close to the jaws, and a ram for imparting a blow to the end of said lever for forcing the jaws into the material in which the nail is located; substantially as described.

3. A nail-puller comprising a casing having its upper end formed on the arc of a circle and provided with a rigid jaw and a heel-piece, a movable jaw pivotally connected to the casing and arranged between said rigid jaw and heel-piece, said movable jaw being provided with an upwardly-extending arm, a lever pivotally connected to said casing and being adapted to engage the upwardly-projecting arm on the movable jaw to actuate said jaw, a curved shoulder on said lever which bears on the upper end of the casing, and a ram for imparting a blow to the end of said jaw-actuating lever; substantially as described.

848,212. SKIRT-SUPPORTER. LAWSON B. SHELTON, Denver, Colo. Filed May 9, 1904. Serial No. 207,081.

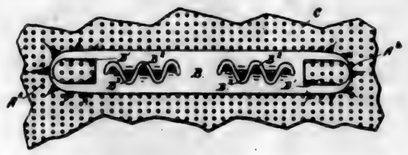

Claim.—1. As an improved article of manufacture, a skirt-supporter consisting of two independent members adapted to engage the shirt-waist on opposite sides, one member having transverse end projections provided with lips extending lengthwise of the member, the latter being resilient or elastic, and the other member having metal-surrounded openings adapted to receive the projections, the openings being larger than the transverse projections to allow the fabric to enter with the projections, the part having the lipped projections being retained in position on the other part by virtue of its elasticity or resilience, one of the members being provided with skirt-supporting hooks.

2. A skirt-supporter consisting of two independent members, one having transverse projections provided with lips extending beyond the projections and lengthwise of the member, the other member having openings larger than the transverse projections and adapted to receive the projections of the first-named member together with the fabric of the garment, the two members being interlocked by virtue of the resilience or elasticity of the lipped member, one of the members being provided intermediate its extremities with projecting hooks for the purpose set forth.

3. A skirt-supporter comprising two independent members, one being provided with transverse projections at its extremities, having lips extending beyond the body of the projections and lengthwise of this member, the other member having metal-surrounded openings adapted to receive the projections, the openings being larger than the transverse projections so as to permit the fabric of the garment to be pushed through the openings by said projections, the lipped member being resilient and being adapted to maintain its position on the member having the openings by virtue of its elasticity or resilience, one of the members being provided intermediate its extremities with skirt-supporting hooks.

4. In a skirt-supporter, the combination of two independent members, one of which is provided with metal-surrounded openings at its extremities and the other with transverse projections having lips extending lengthwise of the member, the openings of the one member being larger than the transverse projections of the other member to allow the projections to enter the openings with the fabric of the garment, the lipped member being resilient, and the two parts being securely connected by virtue of the elasticity of the lipped member, one of the members being provided with a skirt-supporting hook.

5. In a skirt-supporter, the combination of two independent members, one having transverse projections provided with lips extending lengthwise of the member, the other member having apertures larger than the projections and adapted to receive the projections with the fabric of the garment, the lipped member being resilient or elastic, and the two members being interlocked by virtue of the elasticity or resilience of the lipped member, one of the members being provided intermediate its extremities with exteriorly and interiorly projecting hooks, one set of the said hooks projecting upwardly and the other set downwardly for the purpose set forth.

848,213. PULVERIZER. NICHOLAS SPURGIN, Ottawa, Ill., assignor of one-half to Benjamin B. Holland, Ottawa, Ill. Filed Nov. 24, 1905. Serial No. 288,980.

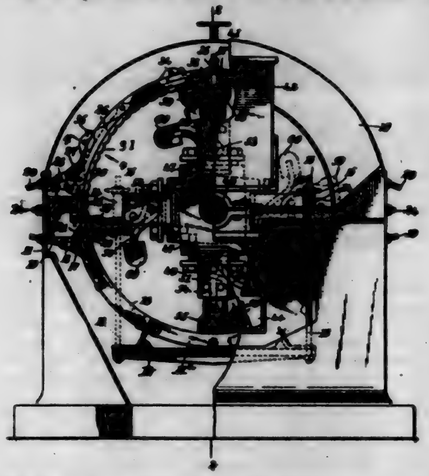

Claim.—1. A pulverizer comprising a sectional casing, composed of a vertically-movable bottom section, two side sections connected therewith, and means for engaging the upper ends of said side sections to move them toward the center of the casing when the bottom section is elevated.

2. A pulverizer comprising a casing made up of a plurality of sections, including a vertically-movable bottom section, a plurality of pivoted side sections on each side of the casing, said side sections having outwardly-beveled edges at their ends opposite the ends at which they are pivoted, and a cam for coöperating with said beveled edges whereby the upward movement of the bottom section will force the side sections inwardly.

3. A pulverizer comprising a casing having pivoted side sections provided with outwardly-beveled ends, a cam for coöperating with the beveled ends and an intermediate section between said beveled ends and adjustable toward and from the center of the casing, and means for moving the pivoted ends of the sections toward and from the center of the casing.

4. A pulverizer comprising a casing having pivoted side sections provided with outwardly-beveled ends, an intermediate section between said beveled ends and adjustable toward and from the center of the casing, and a stationary frame having inclined surfaces engaging the inclined ends of the side sections and located above and below said intermediate section, and means for moving the pivoted ends of the sections toward and from the center of the casing.

5. A pulverizer comprising a casing having pivoted side sections provided with outwardly-beveled ends, a fixed cam for coöperating with the beveled ends, an intermediate section between said beveled ends and adjustable toward and from the center of the casing, one of said side sections having a lining provided with projections extending outwardly through the surface of the section, means for securing the lining to the section, and means for moving the pivoted ends of the sections toward and from the center of the casing.

6. A pulverizer comprising a casing having a movable section, a lining for said section comprising a plurality of sections, each having projections extending through the wall of said movable section, said projections being provided with perforations, rods passing through the perforations of corresponding projections on the sections, and wedges inserted between the rods and the outer wall of the movable section of the casing for securing the lining of said movable section.

7. A pulverizer, comprising a shaft, a bar connected therewith, said bar having brackets, each bracket being provided with three perforations, two at the same distance from the shaft and the other located nearer the shaft and between the first two perforations, rods extending through said perforations, and pulverising-hammers pivotally mounted on the rod extending through the third series of perforations.

8. A pulverizer, comprising a shaft, a bar connected therewith, said bar having brackets, each bracket being provided with three perforations, two at the same distance from the shaft and the other located nearer the shaft and between the first two perforations, rods extending through said perforations, and pulverising-hammers pivotally mounted on the rod extending through the third series of perforations and bearing upon one of the rods extending through the other perforations.

9. A pulverizer, comprising a series of brackets mounted in alinement and each provided with three perforations, rods extending through the perforations in the several brackets, and two series of pulverising-hammers pivotally mounted on one of said rods, certain of said hammers being confined between other two rods, and other hammers being free to move with respect to the other two rods.

10. A pulverizer comprising a shaft, a set of hammers rigidly mounted with respect thereto, and a set of hammers pivotally mounted with respect to the shaft.

11. A pulverizer comprising a rotatable shaft, hammers pivotally mounted with respect thereto and adapted to pulverize material when moved into operative position by the centrifugal force of the rotating shaft, and means for limiting the motion of said hammers in a forward direction, said hammers each being provided with a beveled operating-surface.

848,214. SWING POWER TRANSMISSION. ANDREW M. STARR, Hollywood, Cal. Filed May 24, 1905. Serial No. 262,019.

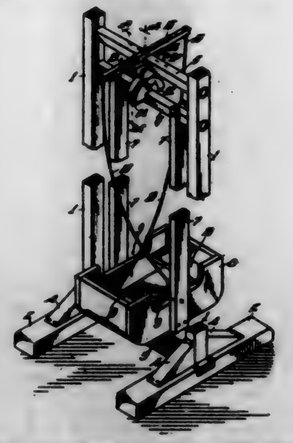

Claim.—1. In a swing a carriage, rigid hanger means fixed thereto and pivoted to swing, a member in fixed relation to said hanger means and pivoted coaxially therewith and provided with an upwardly-extending semicircular face, another pivoted member having a downwardly-extending semicircular face, in juxtaposition with said upwardly-extending semicircular face, a pair of flexible connections between said faces, connected to opposite sides of each member, a beam extending from the upper member, and a line fastened to and extending down from said arm within reach from the carriage.

2. A swing comprising a support, a pair of parallel shafts pivoted to the support, a semicircular disk attached to each shaft, the disks being in the same plane; a pair of flexible connections connected to opposite corners of the disks, a walking-beam carried by the upper shaft, a pair of hangers attached to the lower shaft, a carriage attached to the lower ends of the hangers, and a pair of lines attached to opposite ends of the walking-beam and extending down within reach from the carriage.

3. A swing comprising a support, a pair of upper and lower parallel shafts pivoted to said support, a carriage fixed to and suspended from the lower shaft, a disk attached to each shaft, the disks being in the same plane, a pair of flexible straps connected to opposite sides of each disk, a walking-beam carried by the upper shaft, the upper disk being semicircular, and said upper disk and walking-beam fitting against each other from opposite sides of said shaft, and a flexible connection attached to an end of the walking-beam and extending down within reach from the carriage.

848,215. FOLDING STRETCHER. WERNER UTZINGER, Zurich, Switzerland. Filed Apr. 11, 1906. Serial No. 311,186.

Claim.—An improved foldable ambulance-litter comprising in combination poles made in two separated halves, hook-joints for hingedly connecting said pole-halves, a leg hinged to each pole-half, two cross-stays pivoted with one end to the corresponding leg, a vertical middle stay to which the inner ends of the cross-bars are pivoted, a slide on the top cross-bars for securing the stays in stretched position and movable rings on the legs for covering the hinges of the legs and securing same in vertical position, substantially as described and shown and for the purpose set forth.

848,216. AWNING. PHILIP WALGER and WILLIAM WALGER, Chicago, Ill. Filed June 19, 1905. Serial No. 265,944.

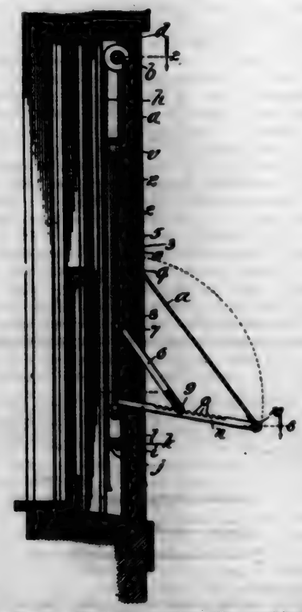

Claim.—In an adjustable awning, the combination with a window-frame of slotted tracks secured to the frame, a vertically-movable body portion slidable in said slots, notched extending arms pivotally secured to the lower part of the movable portion each provided with a shoulder upon the lower side of its free end, a cross-arm extending between the rods and held against said shoulders, a brace-arm pivotally secured to the track portion above the first arm and adapted at its free end to mesh with notches of the first arm, a bearing-roller carried upon said track portion above the pivot of the second arm, a winding-roller carried at the upper end of the window-frame, a curtain around said winding-roller extending downwardly back of the bearing-roller and attached to the cross-rod, a spool portion on one end of the winding-roller, an adjustable cord passing around the spool in the direction opposite to that of the curtain, and means to secure the cord in any desired position whereby the position of the awning body portion may be adjusted and maintained, the weight of said body portion serving to keep the curtain portion taut and the pull upon the curtain serving to keep the notched rod in contact with the brace-arm, and means for readily removing the cross-rod from its retaining-shoulders to allow the curtain to be entirely wound upon the roller, substantially as described.

848,217. BEET-HARVESTING MACHINE. JOHN L. WEBB and MARCELLUS H. WEBB, Thornton, Idaho. Filed Mar. 13, 1906. Serial No. 305,854.

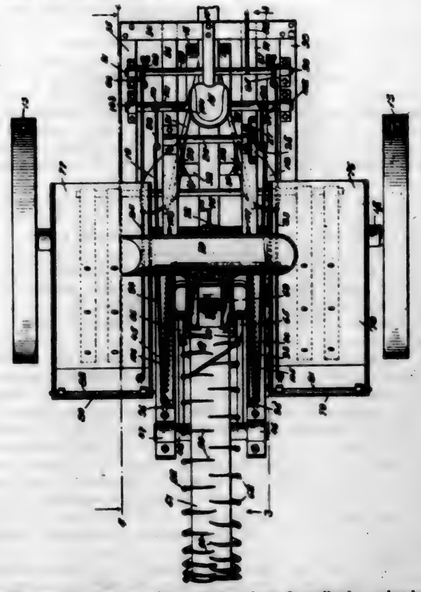

Claim.—1. In a machine of the class described, a wheeled vehicle, a pulling-wheel journaled upon the vehicle in the rear of the vehicle-axle, a receptacle carried by the vehicle forwardly of the pulling-axle, gripping members carried by the pulling-wheel, and means for separating the gripping members adjacent the receptacle.

2. In a machine of the class described, a wheeled vehicle, a pulling-wheel journaled upon the vehicle in the rear of the vehicle-axle, a receptacle carried by the vehicle forwardly of the pulling-wheel axle, gripping-fingers carried by and extending transversely from opposite sides of the pulling-wheel, and means for separating the gripping members adjacent the receptacle.

3. In a machine of the class described, a wheeled vehicle, a pulling-wheel journaled upon the vehicle in the rear of the vehicle-axle, a receptacle carried by the vehicle forwardly of the pulling-wheel axle, gripping-fingers curved about the periphery of the pulling-wheel, and means for separating the gripping-fingers adjacent the receptacle.

4. In a machine of the class described, a wheeled vehicle,

a pulling-wheel journaled upon the vehicle in the rear of the vehicle-axle, a receptacle carried by the vehicle forwardly of the pulling-wheel axle, gripping-fingers curved about the periphery of the pulling-wheel, resilient means arranged to hold the gripping-fingers in gripping position, and means for separating the gripping-fingers adjacent the receptacle.

5. In a machine of the class described, a wheeled vehicle, a pulling-wheel journaled upon the vehicle in the rear of the vehicle-axle, a receptacle carried by the vehicle forwardly of the pulling-wheel axle, gripping-fingers curved about the edges of the pulling-wheel and extending transversely from opposite sides, resilient means arranged to hold the gripping-fingers in gripping position, and means for separating the gripping-fingers adjacent the receptacle.

6. In a machine of the class described, a wheeled vehicle, a pulling-wheel journaled upon the vehicle in the rear of the vehicle-axle, a receptacle carried by the vehicle forwardly of the pulling-wheel axle, gripping members carried by the pulling-wheel, a knife adjacent the receptacle, means adjacent the knife for discharging into the receptacle, means beneath the vehicle for discharging at one side of the pulling-wheel, and means for separating the gripping-fingers adjacent the knife.

7. In a machine of the class described, a wheeled vehicle, a pulling-wheel journaled upon the vehicle in the rear of the vehicle-axle, a receptacle carried by the vehicle forwardly of the pulling-wheel axle, gripping-fingers curved about the edge of the pulling-wheel and extending transversely from opposite sides, a knife adjacent the receptacle, means adjacent the knife for discharging into the receptacle, means beneath the vehicle for discharging at one side of the pulling-wheel, resilient means arranged to hold the gripping-fingers yieldingly in gripping position, and means for separating the gripping-fingers adjacent the knife.

8. In a machine of the class described, a wheeled vehicle, a pulling-wheel journaled upon the vehicle in the rear of the vehicle-axle, a receptacle carried by the vehicle forwardly of the pulling-wheel axle, gripping-fingers curved about the edges of the pulling-wheel and extending transversely from opposite sides, a knife disposed adjacent the periphery of the pulling-wheel and adjacent the receptacle, a discharge arranged to discharge material from the knife into the receptacle, a discharge beneath the vehicle arranged to discharge material at one side of the pulling-wheel, resilient means arranged to hold the gripping-fingers yieldingly in gripping position, means carried by the frame for separating the gripping-fingers after passing the knife.

9. In a machine of the class described, a wheeled vehicle, a pulling-wheel journaled upon the vehicle, a receptacle carried by the vehicle, means positioned to discharge material from the periphery of the pulling-wheel into the receptacle, means disposed beneath the vehicle arranged to discharge material at one side of the pulling-wheel, and means connected with the vehicle-wheels for shaking the lower discharge.

10. In a machine of the class described, a wheeled vehicle, a pulling-wheel journaled upon the vehicle, means carried by the pulling-wheel for engaging and lifting material from the ground, a receptacle carried by the vehicle, means arranged to discharge material from the periphery of the pulling-wheel into the receptacle, a chute arranged beneath the vehicle and positioned to receive material from the periphery of the pulling-wheel, and means connected with the vehicle-wheels for imparting a shaking movement to the chute.

11. A machine of the class described, comprising a wheeled vehicle, a pulling-wheel journaled upon the vehicle in the rear of the vehicle-axle, a receptacle carried by the vehicle forwardly of the pulling-wheel axle, gripping-fingers curved about the edges of and extending transversely from opposite sides of the pulling-wheel, a knife disposed adjacent the periphery of the pulling-wheel and the receptacle, means disposed adjacent the knife for discharging into the receptacle, resilient means arranged to hold the gripping-fingers yieldingly in gripping position, means carried by the vehicle for separating the fingers after passing the knife, a chute disposed beneath the vehicle and positioned to receive material from the periphery of the pulling-wheel and below the knife, and means connected with the vehicle-wheels for imparting a shaking movement to the chute.

12. In a machine of the class described, a wheeled vehicle, a pulling-wheel journaled upon the vehicle and embodying a broad peripheral band arranged for contact with and rotation by the ground, gripping members carried by the rim, means to hold the gripping members in gripping position, and means for releasing the gripping members.

13. In a machine of the class described, a wheeled vehicle, a pulling-wheel journaled upon the vehicle and embodying a broad peripheral band arranged for contact with and rotation by the ground, gripping-fingers curved about opposite edges of the peripheral band and extending transversely thereof, resilient means arranged to hold the gripping-fingers yieldingly in gripping position, and means carried by the vehicle for separating the gripping-fingers.

14. A machine of the class described, comprising a wheeled vehicle, a pulling-wheel journaled upon the vehicle and rearwardly of the vehicle-axle, and embodying a broad peripheral band arranged for contact with and rotation by the ground, a receptacle carried by the vehicle forwardly of the pulling-wheel axle, fingers curved about the edges of the peripheral band and extending transversely thereof, resilient means arranged to hold the gripping-fingers in gripping position, and means carried by the vehicle for separating the gripping-fingers adjacent the receptacle.

15. A machine of the class described, comprising a wheeled vehicle, a pulling-wheel journaled upon the vehicle rearwardly of the vehicle-axle and embodying a broad peripheral band arranged for contact with and rotation by the ground, gripping-fingers curved about the edges of the peripheral band, resilient means arranged to hold the fingers yieldingly in gripping position, a receptacle carried by the vehicle forwardly of the pulling-wheel axle, a knife carried by the vehicle adjacent the receptacle, means arranged to discharge material from the knife into the receptacle, and means carried by the vehicle for separating the gripping-fingers adjacent the knife.

16. A machine of the class described, comprising a wheeled vehicle, a pulling-wheel journaled upon the vehicle rearwardly of the vehicle-axle and embodying a broad peripheral band arranged for contact with and rotation by the ground, a receptacle carried by the vehicle forwardly of the gripping-wheel axle, a knife adjacent the receptacle and the periphery of the pulling-wheel, means arranged to discharge material from the knife to the receptacle, gripping-fingers curved about the edges of the peripheral band of the pulling-wheel and extending transversely thereof, resilient means arranged to hold the gripping-fingers yieldingly in gripping position, means carried by the vehicle for separating the gripping-fingers adjacent the knife, a chute disposed beneath the vehicle adjacent to and in position to receive material from the periphery of the pulling-wheel, and means connected with the vehicle-wheels arranged to impart a shaking movement to the chute.

848,218. POCKET-BANK. JOHN B. WEIR, IRA D. PERRY, and JOHN MERCKENS, Chicago, Ill., assignors to J. B. Weir & Co., Chicago, Ill. Filed Nov. 13, 1905. Serial No. 287,201.

Claim.—1. A flat pocket-bank, consisting of a pair of shallow telescoping members each consisting of an end wall and an elastic annular wall and an annular outward-extending rigid flange at the juncture of the end wall with the annular wall, the annular walls being provided with an annular interlocking bead or groove, said annular walls and interlocking bead and groove having a sufficiently tight fit to render manual separation of the sections impossible and said flanges affording a hold for the jaws of an opening and closing machine and being sufficiently rigid to withstand the entire strain of repeatedly and forcibly separating the sections and jamming them together, the inner annular wall terminating short of the end wall of the other member, and the outer member being provided with a coin-slot in its annular wall at a point between the end of the inner wall and the end wall of the outer member.

2. A flat pocket-bank, consisting of a pair of shallow telescoping members each consisting of an end wall and an elastic annular wall and an annular outward-extending rigid flange at the juncture of the end wall with the annular wall, the annular walls being provided with an annular interlocking bead and groove, said annular walls and interlocking bead and groove having a sufficiently tight fit to render manual separation of the sections impossible and said flanges affording a hold for the jaws of an opening and closing machine and being sufficiently rigid to withstand the entire strain of repeatedly and forcibly separating the sections and jamming them together, the inner annular wall terminating short of the end wall of the other member, one of the members being provided with a coin-slot.

3. A flat pocket-bank, consisting of a pair of shallow members each consisting of the circular end wall and an annular fastening-wall and an annular outward-extending flange, said annular walls being adapted to telescope into each other and being provided with an interlocking bead and groove, said annular walls and bead and groove having a tight frictional fit and the inner wall being terminated short of the end wall of the other member, and the outer member being provided with a coin-slot in its annular wall at a point between the end of the inner wall and the end wall of the outer member, for the purposes set forth.

848,219. WASHING-MACHINE. ROBERT WOERNER, Mannheim, Germany. Filed Feb. 28, 1906. Serial No. 303,400.

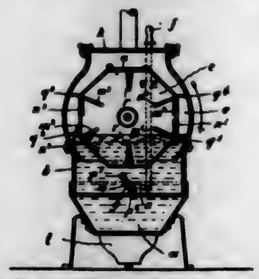

Claim.—1. In a washing-machine, the combination with a casing, of a horizontal drum perforated and mounted in said casing to turn, means for driving said horizontal drum alternately in two directions, a plurality of flaps mounted in corners of said horizontal drum to rock and each composed of two adjoining boards, of which the one is placed approximately radially, if the other rests on a wall of the drum, a plurality of fingers secured alternately on said plurality of flaps in two planes at right angles to said drum and projecting to without, a horizontal shaft mounted to turn in said casing without said horizontal drum, two arms fastened on said horizontal shaft and carrying two pins, two rollers disposed in the two planes of said plurality of fingers and mounted to turn on the pins of said two arms respectively, they being adapted to alternately strike the fingers and thereby to turn the flaps for wringing the clothes, and means for reversing said horizontal shaft.

2. In a washing-machine, the combination with a casing, of a horizontal drum polygonal in section and perforated and mounted in said casing to turn, means for driving said horizontal drum alternately in two directions, said drum being adapted to dip water in said casing, a plurality of flaps mounted in corners of said horizontal drum to rock and each composed of two adjoining boards, of which the one is placed approximately radially, if the other rests on a wall of the drum, a plurality of radial plates on the inside of said horizontal drum between said plurality of flaps and adapted for lifting the clothes, a plurality of fingers secured alternately on said plurality of flaps in two planes at right angles to said drum and projecting to without, a horizontal shaft mounted to turn in said casing beneath said horizontal drum, two arms fastened on said horizontal shaft and carrying two pins, two rollers disposed in the two planes of said plurality of fingers and mounted to turn on the pins of said two arms respectively, they being adapted to alternately strike the fingers and thereby to turn the flaps for wringing the clothes, and means for reversing said horizontal shaft.

848,220. HOT-AIR HEATER. JAMES E. ALBINSON, Washington, D. C. Filed June 7, 1906. Serial No. 320,672.

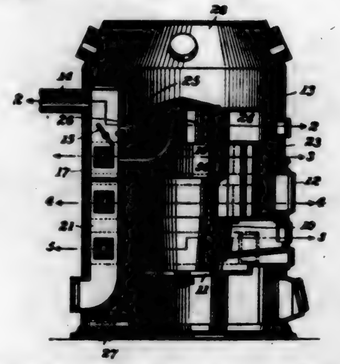

Claim.—1. In a hot-air heater, the combination with a combustion-chamber and an outer casing between which the air circulates, of a flue through which the combustion-gases are circulated in a downward direction, a flue through which the gases pass in an upward direction, and a reheating-flue above said combustion-chamber for reheating the gases to preserve the chimney-draft, the lower wall of said reheating-flue constituting the upper wall of the combustion-chamber.

2. In a hot-air heater, the combination with an outer casing and a combustion-chamber, of a series of flues within the casing through which the combustion-gases are circulated and about which the air to be heated circulates, and a reheating-flue above the combustion-chamber through which the combustion-gases are passed after circulating through said flues, whereby the said gases are reheated and the chimney-draft maintained, said reheating-flue and combustion-chamber having a common intermediate wall.

3. In a hot-air heater, the combination with the combustion-chamber and an outer casing, of a vertical series of horizontally-arranged flues within the casing, means for passing the combustion-gases downward and through said horizontal flues successively, a reheating-flue above the combustion-chamber, means for conducting the combustion-gases from the lowermost of said flues to said reheating-flue, and a damper adapted to permit the combustion-gases to pass directly to the smoke-pipe or to cause said gases to circulate through said horizontally-arranged flues, said reheating-flue and combustion-chamber having a common intermediate wall.

4. In a hot-air heater, the combination with a combustion-chamber and an outer casing between which the air circulates, of a plurality of horizontally-arranged flues

within the casing, said flues being circular and substantially concentric with the casing, passages or openings between said flues in staggered arrangement, a damper for directing the combustion-gases through said flues and passages, a reheating-flue over the fire-pot and above said flues, means for conducting the combustion-gases from the lowermost of said flues to said reheating-flue, a passage from said reheating-flue to the smoke-pipe, and a passage from the combustion-chamber to the smoke-pipe, said reheating-flue and combustion-chamber having a common intermediate wall.

848,221. TELEGRAPHY. JOHN C. BARCLAY, New York, N. Y. Filed Mar. 19, 1906. Serial No. 306,792.

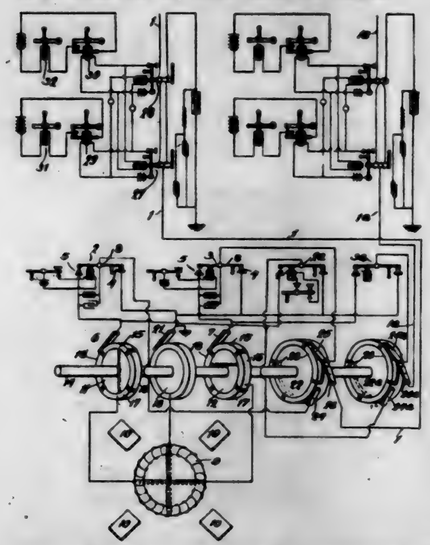

Claim.—1. In a telegraph system, the combination with a plurality of transmitting sets for different lines, each set comprising two transmitters, for currents of different polarity respectively, means for supplying an alternating current, and distributing means controlling the supply of current therefrom to said transmitters, of means for preventing mutual interference with transmission by one of said transmitting sets through simultaneous operation of instruments of another of said transmitting sets.

2. In a telegraph system, the combination with a plurality of transmitting sets for different lines, each set comprising two transmitters, for currents of different polarity respectively, an alternating-current generator, and distributing means controlling the supply of current therefrom to said transmitters, of means for preventing mutual interference with transmission by one of said transmitting sets through simultaneous operation of instruments of another of said transmitting sets.

3. In a telegraph system, the combination with a plurality of transmitting sets for different lines, each set comprising two transmitters, for currents of different polarity respectively, means for supplying an alternating current, and distributing means controlling the supply of current therefrom to said transmitters, of commutating means for each set of such transmitters, operated synchronously with the distributing means, and comprising means which disconnects each transmitter of the corresponding set from its line during transmission through such line of current of polarity opposite to that controlled by the transmitter so disconnected.

4. In a telegraph system, the combination with a plurality of transmitting sets for different lines, each set comprising two transmitters, for currents of different polarity respectively, an alternating-current generator, and distributing means controlling the supply of current therefrom to said transmitters, of commutating means for each set of such transmitters, operated synchronously with the generator and comprising means which disconnects each transmitter of the corresponding set from its line during transmission through such line of current of polarity opposite to that controlled by the transmitter so disconnected.

5. In a telegraph system, the combination with a plurality of transmitting sets for different lines, each set comprising two transmitters, for currents of different polarity respectively, of an alternating-current generator, distributing means controlling the supply of current therefrom to said transmitters, and commutating means for each set of such transmitters operated synchronously.

6. In a telegraph system, transmitting means comprising in combination an alternating-current generator, distributing means operated synchronously therewith and arranged to direct positive pulses through a circuit of one of two transmitters and negative pulses through a circuit of the other of such transmitters, and commutating means likewise operated synchronously with the generator and comprising means for disconnecting each of such transmitters from the line during the production by such generator of a current pulse of the direction opposite that to which the transmitter so disconnected corresponds.

848,222. FARM-GATE. STEPHEN D. BEUM, Columbus, Ohio. Filed Nov. 5, 1906. Serial No. 342,101.

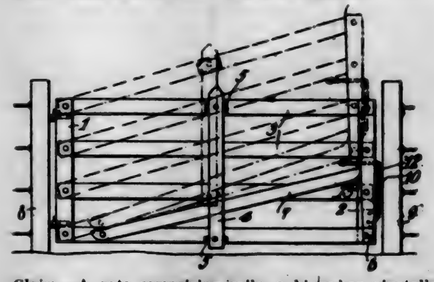

Claim.—A gate comprising rails, a hinge-bar pivotally connected to said rails, a free end bar pivotally connected to said rails, said free end bar having its inner edge extending from the top to the bottom of the gate and pitched at an incline to a perpendicular, a prop pivoted at one end to one of said rails and having its opposite end rounded at the lower portion thereof, the curvature of the said end describing an arc, the center of which is located above the longitudinal axis of the prop, said prop being located upon the same side of the gate as the free end bar thereof and adapted to engage at its rounded end the inclined edge of said bar, a guide pivoted to the rails and lying over said prop, a latch-block attached to said free end bar and a latch attached to said block.

848,223. ELBOW PIPE-JOINT. WILLARD B. CAMPBELL, Jackson, Mich. Filed Mar. 29, 1906. Serial No. 308,812.

Claim.—1. A knuckle pipe-joint comprising adjacent pipe-terminals, a cylinder transversely affixed to the extremity of one pipe-terminal, a similarly-disposed cylinder closely but rotatably fitted therein, the other pipe-terminal being inserted crosswise through said inner cylinder and having its inner end substantially flush with the interior walls of the outer cylinder, said outer cylinder having a segmental slot to accommodate the last-named pipe-terminal and allow adjustment of the angular relations between the pipe-terminals, the contiguous ends of the pipe-terminals being in registration in one position of the pipes and out of registration in another position.

2. An angularly-adjustable pipe comprising hinged pipe-sections having a water-tight joint which affords a conduit therethrough when the pipe-sections are in alinement but cuts off communication when said pipe-sections are arranged at a certain angle, said joint comprising an outer cylindrical casing fixed on the end of one pipe-section, and an inner cylinder completely transfixed by the contiguous end of the other pipe-section, the inner cylinder being rotatably fitted in said casing.

3. A knuckle pipe-joint comprising adjacent pipe-sections, and interfitting cylinders transversely affixed to the contiguous ends thereof, the outer cylinder being fixed on the extremity of the one pipe-section and having a segmental slot to accommodate the other pipe-section, and the inner cylinder having a short tube transfixing it and extending from side to side thereof, the end of said other pipe-section being detachably connected to said tube.

4. A knuckle pipe-joint comprising adjacent pipe-terminals, and interfitting cylinders transversely affixed on the contiguous ends thereof, there being a passage through said cylinders, the outer surface of the inner cylinder being slightly tapered and the inner surface of the outer cylinder being correspondingly tapered to fit therewith, and means whereby the fit of the cylinders can be tightened.

5. A knuckle pipe-joint comprising adjacent pipe-terminals, and interfitting cylinders transversely affixed on the contiguous ends thereof, there being a passage through said cylinders, the outer surface of the inner cylinder being slightly tapered and the inner surface of the outer cylinder being correspondingly tapered to fit therewith, one cylinder having an end projecting slightly beyond the end of the other, and a cap engaging the said ends of both cylinders in such manner as to force or draw the cylinders oppositely in such direction as to tighten them.

6. A knuckle pipe-joint comprising adjacent pipe-terminals, and interfitting cylinders transversely affixed on the contiguous ends thereof, there being a passage through said cylinders, the outer surface of the inner cylinder being slightly tapered and the inner surface of the outer cylinder being correspondingly tapered to fit therewith, the thicker end of the outer cylinder projecting slightly beyond the corresponding and thinner end of the inner cylinder, and a cap abutting said end of the outer cylinder and having a reduced threaded boss screwing into said end of the inner cylinder.

7. A knuckle pipe-joint comprising adjacent pipe-terminals, and interfitting cylinders transversely affixed on the contiguous ends thereof, there being a passage through said cylinders, the outer surface of the inner cylinder being slightly tapered and the inner surface of the outer cylinder being correspondingly tapered to fit therewith, the thicker end of the outer cylinder projecting slightly beyond the corresponding and thinner end of the inner cylinder, and a cap abutting said end of the outer cylinder and having a reduced threaded boss screwing into said end of the inner cylinder, the opposite end of the inner cylinder projecting slightly beyond the corresponding end of the outer cylinder, and a cap screwed on said end of the outer cylinder and abutting said end of the inner cylinder, said end of the inner cylinder and the abutting inner face of the cap being roughened to provide a frictional lock.

8. A knuckle pipe-joint comprising adjacent pipe-terminals and interfitted cylinders affixed on the contiguous ends thereof, there being a passage through said cylinders, the outer surface of the inner cylinder being slightly tapered and the inner surface of the outer cylinder being correspondingly tapered to fit therewith, one cylinder having an end projecting slightly beyond the end of the other, and a cap screwed to one cylinder and abutting the corresponding end of the other cylinder.

9. A knuckle pipe-joint comprising adjacent pipe-terminals, and interfitting cylinders transversely affixed on the contiguous ends thereof, there being a passage through said cylinders, and caps attached to and covering the opposite ends of the joint, one of said caps having means for locking the cylinders together.

10. A knuckle pipe-joint comprising adjacent pipe-terminals, and interfitting cylinders transversely affixed on the contiguous ends thereof, there being a passage through said cylinders, and frictional means for locking the cylinders rigidly together.

11. A knuckle pipe-joint comprising adjacent pipe-terminals, and interfitting cylinders transversely affixed on the contiguous ends thereof, there being a passage through said cylinders, the outer surface of the inner cylinder being slightly tapered and the inner surface of the outer cylinder being correspondingly tapered to fit therewith, caps attached to and covering opposite ends of the cylinders, one cap engaging both cylinders in such manner as to draw them tightly together, the other cap having means for locking the cylinders rigidly together.

12. A knuckle pipe-joint comprising adjacent pipe-terminals, interfitting cylinders transversely affixed on the contiguous ends of said pipe-terminals, the outer cylinder having a segmental slot to accommodate the pipe-terminal carrying the inner cylinder, said pipe-terminal having a passage through said inner cylinder to the other pipe-terminal, the contacting surfaces of said cylinders being tapered.

848,224. ADJUSTABLE BEARING. EDWIN S. CLOUGH, Seattle, Wash. Filed Mar. 27, 1906. Serial No. 308,366.

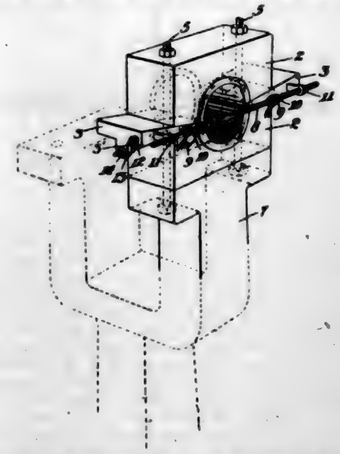

Claim.—1. The combination of the brasses of the journal-box, wedges arranged between said brasses for movement toward and from the journal-opening thereof, means for adjusting said members, said wedges being provided with lugs, said lugs having unthreaded openings, stems fixed to one of said brasses, the outer end portions of said stems being threaded and projecting through the openings of said lugs, and nuts on the threaded portions of said stems engaging the opposite faces of said lugs for the purpose specified.

2. The combination of the brasses of the journal-box, wedges arranged between said brasses for movement toward and from the journal-opening thereof and provided with lugs having screw-threaded apertures, one of said brasses being provided with lugs each having an unthreaded opening, a member mounted for rotation in said second-named lugs and having shoulders engaging the same so as

to be prevented from lengthwise movement, the end portion of said member being screw-threaded and engaged in the first-named lugs as specified.

3. The combination of the brasses of the journal-box, one of said brasses being formed on each side of the journal-opening therein with a groove, wedges arranged between said brasses for movement toward and from the journal-opening thereof and provided with ribs engaged in said grooves, a screw-rod engaging the sides of the wedges for simultaneously moving the same toward and away from each other, a rod fixed to each side of the brasses and passing through the wedges and coöperating with the said ribs and grooves to guide the wedges, and locking means on said last-named rods for the wedges.

848,225. TIMBER-FRAMING MACHINE. JAMES DOULL, Butte, Mont. Filed Jan. 10, 1906. Serial No. 295,348.

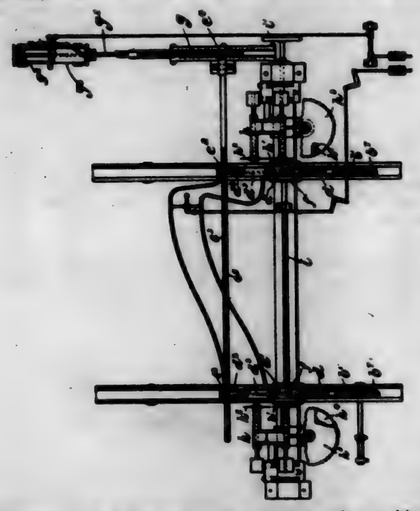

Claim.—1. In a timber-framing machine, the combination of a framing-head, a timber-supporting carriage, a guideway fixed with relation to the framing-head and upon which said carriage is free to travel, a rack on the under side of said carriage, a shaft mounted on said guideway and having a gear to engage said rack and another gear, a stationary power-cylinder, a rack actuated by the piston of said cylinder and engaging the last-named gear on the shaft, a timber-chuck mounted rotatably on said carriage and provided with a rack, a power-cylinder mounted on said carriage and a rack actuated by the piston of said power-cylinder and engaging the rack on the timber-chuck.

2. In a timber-framing machine, the combination of two framing-heads adapted to act simultaneously upon the ends of a timber, timber-supporting carriages, guideways fixed with relation to said heads and upon which said carriages are free to travel, racks on the under sides of said carriages, a shaft mounted on said guideways and having gears to engage said racks and a third gear, one of the first-named gears being slidable on the shaft, a stationary power-cylinder, a rack actuated by the piston of said cylinder and engaging the third gear on the shaft, timber-chucks mounted rotatably on said carriages and provided with racks, power-cylinders mounted on said carriages, racks actuated by the pistons of said power-cylinders and engaging the racks on the timber-chucks, one of said guideways with the corresponding carriage-chuck and framing-head being movable toward and from the other, and means to shift said guideway, with its associated parts, toward and from the other guideway and its associated parts.

3. In a timber-framing machine, the combination of a framing-head, a guideway, a carriage mounted on said guideway, means to reciprocate said carriage, and a timber-chuck mounted rotatably on said carriage, said chuck comprising a segmental holder having a seat for the timber, a clamping-jaw hinged to the holder at one end and adapted to engage the holder at the other end, and a radial clamping-screw carried centrally by said jaw.

4. In a timber-framing machine, the combination of a framing-head, a guideway, a carriage mounted on said guideway, means to reciprocate said carriage, a chuck-frame mounted on the carriage, a rack sliding in said frame, a segmental holder mounted rotatably in said frame and having a gear engaged by said rack, a clamping-jaw hinged to the holder at one end and adapted to engage the holder at the other end and a radial clamping-screw carried centrally by said jaw.

848,226. CHUCK FOR TIMBER-FRAMING MACHINES. JAMES DOULL, Butte, Mont. Filed Jan. 10, 1906. Serial No. 295,349.

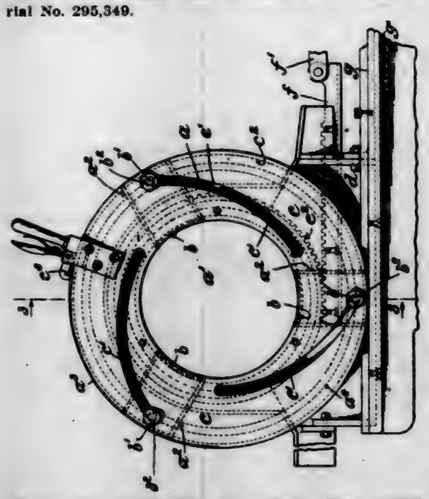

Claim.—The combination of a chuck-frame provided with a longitudinal guideway and a segmental groove, a jaw-plate having a segmental rib to engage said groove, a central aperture and radial recesses, jaws sliding in said recesses and having each a stud, a ring-like cam-plate having eccentric slots engaging the studs of the jaws and having a flange to enter an annular recess in the cam-plate, locking means to hold the cam-plate in relative position to the jaw-plate, a second ring secured to the jaw-plate and forming therewith an annular recess, the chuck-frame having a segmental rib to engage said recess and said ring being formed with gear-teeth, and a rack sliding in the guideway in the chuck-frame and engaging said gear-teeth.

848,227. CORE-DRILL. ROBERT M. DOWNIE, Beaver Falls, Pa., assignor to Keystone Driller Co., Beaver Falls, Pa., a Corporation of Pennsylvania. Filed Feb. 26, 1906. Serial No. 303,096.

Claim.—1. A percussion or reciprocatory core-cutter comprising a body having a plurality of depending tooth members, the members of each set being diametrically opposite, and the members of the different sets being disposed on the body at points substantially ninety degrees apart, the tooth members of one set of members extending inwardly and those of the other set extending outwardly.

2. A percussion or reciprocatory core-cutter comprising a body having a plurality of depending tooth members, the members of each set being diametrically opposite and the members of the different sets being disposed on the body at points substantially ninety degrees apart, the tooth members of one set of members extending inwardly and those of the other set extending outwardly, said tooth members each having a group of teeth.

3. A percussion or reciprocatory core-cutter comprising a tubular body having depending tooth members located at points substantially ninety degrees apart, said members being alternately set inwardly and outwardly.

4. In a percussion or reciprocatory core-drill, the combination with a core-receiving barrel, of a drill surrounding the same and laterally movable with respect thereto, and core-trimming teeth carried by the lower end of the drill and having cutting edges at their lower ends that operate beneath the core-barrel upon the lateral movement of the drill.

5. In a percussion or reciprocatory core-drill, the combination with a core-receiving barrel, of a drill surrounding the same and laterally movable with respect thereto, and inwardly-set pointed core-trimming teeth carried by the lower end of the drill and having cutting edges at their lower ends that operate beneath the barrel, the inward movement of the teeth being limited by the core-barrel.

6. A percussion or reciprocatory core-cutter, comprising a body having a plurality of depending sets of tooth members, the members of each set being diametrically opposite, and the members of the different sets having their central portions disposed substantially ninety degrees apart, the tooth members of one set extending inwardly and those of the other set extending outwardly, said tooth members each having a plurality of teeth, and the teeth of each member extending in the same direction.

7. A percussion or reciprocatory core-cutter, comprising a tubular reciprocatory stem, a core-barrel member slidably mounted therein, said stem being capable of a lateral movement with respect to the barrel, and a percussion-cutter carried by the lower end of the stem and having inwardly-extending teeth that are capable of lateral movement with said stem to positions beneath the lower end of the core-barrel to trim the core beneath the said barrel.

8. The combination with a tubular reciprocatory stem, of a core-barrel slidably mounted therein, said stem being capable of a lateral movement with respect to the barrel, and a percussion-cutter carried by the lower end of the stem and including a tubular body having diametrically opposite inwardly-extending teeth that are capable of lateral movement with the stem and with respect to the barrel to positions beneath the lower end of the core-barrel to trim the core beneath said barrel.

9. The combination with a tubular reciprocatory stem, of a core-barrel slidably mounted therein, said core-barrel being of less diameter than the bore of the stem, said stem thus being capable of a lateral movement with respect to the barrel, and a percussion-cutter carried by the lower end of the casing and including a tubular body having diametrically opposite tooth members, each member including a plurality of adjacent teeth inclined inwardly and capable of lateral movement with the stem to positions beneath the lower end of the core-barrel to trim the core beneath the same.

10. The combination with a tubular reciprocatory stem, of a core-barrel slidably mounted therein, said stem being capable of a lateral movement with respect to the barrel, and a percussion-cutter carried by the lower end of the stem and comprising a body having a plurality of depending sets of tooth members, the members of each set being diametrically opposite and the members of the different sets having their central portions disposed substantially ninety degrees apart, the tooth members of one set extending inwardly and being capable of a lateral movement with the stem and with respect to the barrel to positions beneath the lower end of the core-barrel, the members of the other set extending outwardly.

11. The combination with a stem, of a cutter threaded on the stem and having depending teeth, said teeth having substantially vertical sides and inclined sides, the latter sides being inclined in an opposite direction to the threads of the joints.

12. The combination with a reciprocatory tubular stem, of a cutter comprising a tubular body threaded on the stem and having depending inwardly and outwardly extending teeth, said teeth having substantially vertical sides, and inclined sides, the latter sides being inclined in an opposite direction to the threads, and a core-barrel slidably mounted in the stem, said stem and teeth being capable of a lateral movement with respect to the barrel.

13. In a percussion or reciprocatory core-drill, the combination with a core-barrel, of a reciprocatory drill-stem surrounding the same and laterally movable with respect thereto, cutting-teeth carried by the lower end of the stem, and inset core-trimming teeth also carried by the lower end of the stem and swinging beneath the core-barrel on the lateral movement of the stem.

14. In a percussion or reciprocatory core-drill, the combination with a core-barrel, of a reciprocatory drill-stem surrounding the same and laterally movable with respect thereto, outside cutting-teeth carried by the lower end of the stem, and inset core-trimming teeth also carried by the lower end of the stem and swinging beneath the core-barrel on the lateral movement of said stem.

15. In a percussion or reciprocatory core-drill, the combination with a core-barrel, of a reciprocatory drill-stem surrounding the same and laterally movable with respect thereto, outside cutting-teeth carried by diametrically opposite portions of the lower end of the stem, and inset core-trimming teeth disposed between the cutting-teeth and also carried by the lower end of the stem, said inset teeth swinging beneath the core-barrel on the lateral movement of the stem.

16. In a percussion or reciprocatory core-drill, the combination with a core-receiving barrel, of a reciprocatory stem surrounding the same and capable of lateral movement with respect thereto, and teeth rigidly carried by the lower end of the stem and operating beneath the core-barrel to trim a core to pass into said barrel.

17. In a percussion or reciprocatory core-drill, the combination with a core-receiving barrel, of a reciprocatory stem surrounding the same and capable of lateral movement with respect thereto, outstanding teeth rigidly carried by the lower end of the stem, and inset teeth rigidly carried by the lower end of the stem and operating beneath the core-barrel to trim a core to pass into said barrel.

18. In a percussion or reciprocatory core-drill, the combination with a core-barrel, of a reciprocatory drill-stem surrounding the same and laterally movable with respect thereto, outside cutting-teeth carried by diametrically opposite portions of the lower end of the stem, said teeth having rear edges that are disposed at an inclination to produce a rotary movement of said cutter upon its impact with the bottom of the bore-hole, and inset core-trimming teeth carried by the lower end of the stem and swinging beneath the core-barrel on the lateral movement of said stem.

848,228. COOLER FOR BEER OR OTHER BEVERAGES. JOHANN ETTEL, Brooklyn, N. Y. Filed Oct. 18, 1906. Serial No. 339,435.

Claim.—In a cooler for beverages, the combination with outer and inner receptacles of waved metal, the upper end of said outer receptacle being formed with an inner flange and having indentations on its outer circumference, an outer flange on the said inner receptacle to overlap the said flange of the outer receptacle, downwardly-extending ears hinged to said outer flange, catches pivoted to said ears and adapted to engage with the notches or indenta-

tions of the outer receptacle and an elastic packing-ring between the overlapping flanges of the said both receptacles, substantially as and for the purpose specified.

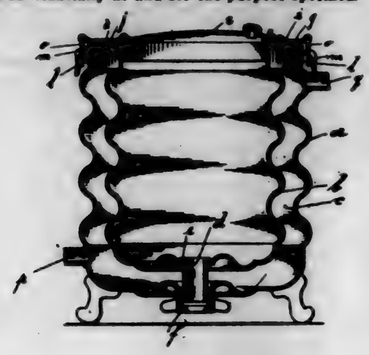

848,229. CLOSET-SEAT. HUGH FARLEY, Washington, D. C. Filed Jan. 3, 1906. Serial No. 294,425.

Claim.—1. A closet-seat and cover each comprising a core having a casing, the said casing consisting of enameled sheets of metal bent to conform to the contour of the core; the edges of one section overlapping the edges of the other section, the said overlapping portions having coinciding apertures, and retaining devices extending through said apertures and engaging the core.

2. A closet-seat and cover each comprising a core having a casing, the said casing consisting of enameled sheets of metal bent to conform to the contour of the core; the edges of one section overlapping the edges of the other section, the said overlapping portions having coinciding apertures and retaining devices extending therethrough and through the core.

848,230. BROMIN DERIVATIVE OF FATTY ACIDS. EMIL FISCHER, Berlin, Germany, assignor to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany, a Corporation of Germany. Filed June 23, 1906. Serial No. 323,037.

Claim.—1. The herein-described alkaline-earth salts of monobromin-substituted derivatives of high-molecular fatty acids, of the following general formula, in which A E means an alkali earth:

$$\left.\begin{matrix} C_nH_{2n-4}O_2Br \\ C_nH_{2n-4}O_2Br \end{matrix}\right\rangle A\,E$$

obtainable by the action of hydrogen bromid on acids of the oleic series and transformation of the resulting compounds into the salts of the alkaline earths, which salts are solid bodies, tasteless, colorless, insoluble in water and being valuable substitutes for potassium bromid, substantially as hereinbefore described.

2. The herein-described calcium salt of monobromobehenic acid of the following formula: $(C_{22}H_{42}O_2Br)_2Ca$, obtainable by treating monobromobehenic acid with calcium hydroxid, which calcium salt is a solid body, tasteless, colorless and insoluble in water and which is a valuable substitute for potassium bromid, substantially as hereinbefore described.

848,231. GRAPPLE. JOHN K. FLYNN, Duluth, Minn. Filed Nov. 27, 1906. Serial No. 345,324.

Claim.—In combination with a derrick having a swinging boom, a V-shaped plate secured to the free end of the boom, a pulley journaled in the end of the boom, a pulley journaled intermediate the ends of the boom, a grapple having arms shaped to engage the V-shaped plate aforesaid, links pivotally secured to said arms, a double block secured to said links, and a cable having one end secured to the outer end of the boom, then around one of the pulleys in the block, then around the pulley journaled intermediate the ends of the boom, then around the other pulley in the block, then around the pulley on the end of the boom, and the free end of the cable provided with a draft appliance, substantially as shown and described.

848,232. INDICATING MECHANISM. JESSE H. FORSYTHE, Washington, Pa. Filed Sept. 18, 1906. Serial No. 335,157.

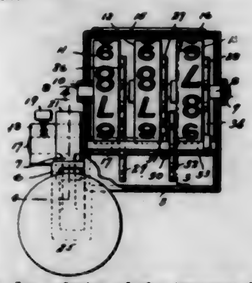

Claim.—1. In a device of the type set forth, a main shaft, a float-lever mounted thereon a pawl-and-ratchet connection between said float-lever and said main shaft, a second shaft, number-wheels rotatably mounted thereon, a third shaft, connections between said main shaft and one of said number-wheels, whereby each movement of the former is imparted to the latter, a connection between said main shaft and another of said number-wheels whereby said last-named number-wheel is actuated once upon ten actuations of said main shaft, a pinion carried by said third shaft, a finger carried by said main shaft and engaging said pinion, a pinion carried by the last of said number-wheels and a finger carried upon said third shaft and engaging said last-named pinion.

2. In a device of the type set forth, a casing, a main shaft, number-wheels loosely mounted thereon, and arranged in series of denary mathematical progression, said number-wheels being provided on one side thereof with pinions, a second shaft, a master-pinion thereon meshing with the pinion on the units number-wheel of said denary series, a tooth on said second shaft designed to engage the pinion on the tens-wheel of said denary series, a second tooth on said second shaft spaced away from said first-named tooth, a third shaft, a pinion on said third shaft, said second tooth engaging said last-named pinion, a tooth on said third shaft engaging the pinion on the hundreds-wheel of said denary series and means for actuating said second shaft.

848,233. EXTENSION-TABLE. BERTRAM G. FOSTER, Washington, D. C., assignor to The Long Furniture Co., Hanover, Pa., a Corporation of Pennsylvania. Filed July 11, 1906. Serial No. 325,694.

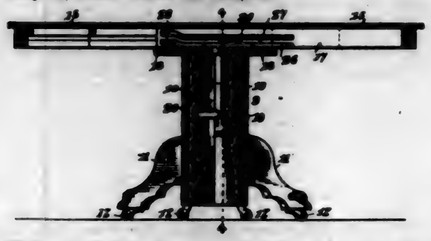

Claim.—1. In an extension-table, the combination with a support including relatively movable sections, of a top including a section movable on the support independently of the relative movement of the sections thereof, a lock for holding the support-sections against relative movement, and means for effecting the automatic locking movements of said lock upon the said independent movement of the top-section on the support.

2. In an extension-table, the combination with a support including relatively movable sections, of top-sections movably mounted on and movable independently of the support-sections, a lock for holding the support-sections against relative movement, and means for effecting the automatic locking movement of said lock upon the movement of the top-sections independently of the support-sections toward each other.

3. In an extension-table, the combination with a support including relatively movable sections, of top-sections mounted on the support and having a limited relative movement thereon independently of the relative movement of the support-sections, a lock connecting the support-sections for holding them against relative movement during the said limited relative movement of the top-sections, means for moving said lock to an inoperative position to permit the separation of the support-sections on the further movement of the top-sections, and means for automatically effecting the movement of the lock to an operative position upon the inward movement of the top-sections when the support-sections are together.

4. In an extension-table, the combination with a pedestal comprising separable sections, of relatively movable top-sections, each being slidable on one of the pedestal-sections, a lock for holding the pedestal-sections against relative movement, and automatic means for effecting the movement of the lock on the relative movement of the top-sections toward each other.

5. In an extension-table, the combination with a support comprising separable sections, of a top-section movable thereon independently of the movement of the support-sections, a lock for holding the support-sections against separation, and means for transmitting motion from the top-section to the lock, whereby said lock is moved by the top-section on the movement of the said top-section independently of said support-sections.

6. In an extension-table, the combination with a support comprising separable sections, of top-sections relatively movable on the support independently of the relative movement of the support-sections, a lock for holding the support-sections against separation, and means for transmitting motion from one of the top-sections to the lock, whereby said lock is moved by said top-section on the relative movement of the top-sections independently of the support-sections.

7. In an extension-table, the combination with a support comprising separable sections, of a lock for holding the sections against separation, a top-section movably mounted on the support and movable thereon independently of the movement of the support-sections, and means carried by the top-section for transmitting motion from said top-section to the lock, whereby said lock is automatically moved by the top-section on the movement of said top-section with respect to the support-sections.

8. In an extension-table, the combination with a support comprising separable sections, of a lock for holding the sections against separation, a reciprocatory top-section movably mounted on the support and movable independently of the support-sections, and means carried by the top-section for automatically moving the lock in opposite directions upon the movement of the top-section in opposite directions independently of the support-sections.

9. In an extension-table, the combination with a support comprising separable sections, of a lock for holding the sections against separation, a top-section mounted on the support and movable thereon in opposite directions, and means carried by the top-section for transmitting motion from the top-section to the lock for automatically moving the lock to inoperative position on the movement of the top-section in one direction.

10. In an extension-table, the combination with a support comprising separable sections, of a lock for holding the sections against separation, a top-section mounted on the support and movable thereon in opposite directions, and means carried by the top-section for automatically moving the lock to operative position on the movement of the top-section in one direction.

11. In an extension-table, the combination with a support comprising separable sections, of a lock for holding the sections against separation, a reciprocatory top-section movably mounted on the support, and means carried by the top-section for moving the lock to an inoperative position on the movement of the top-section in one direction and to an operative position on the movement of the top-section in an opposite direction.

12. In an extension-table, the combination with a support comprising separable sections, of a lock for holding the sections against separation, a top-section movable on the support independently of the movement of the support-sections, and means carried by the top-section for moving the lock both to an operative and to an inoperative position during such independent movement.

13. In an extension-table, the combination with a support comprising separable sections, of top-sections movable toward and from each other upon the support independently of the movement of the support-sections, a lock for holding the support-sections against separation, means carried by one of the top-sections to effect the locking and unlocking movements of the lock on such independent movements of the top-sections toward and from each other.

14. In an extension-table, the combination with a supporting-pedestal comprising separable sections, of top-sections, each slidably mounted on one of the pedestal-sections, said top-sections being movable toward and from each other upon the support, a latch carried by one of the pedestal-sections, an eye carried by the other pedestal-section and detachably engaged by the latch to hold said pedestal-sections against separation, and means carried by one of the top-sections to move the latch into and out of engagement with the eye on the movement of the top-sections toward and from each other.

15. In an extension-table, the combination with a supporting-pedestal comprising separable sections, of top-sections each slidably mounted on one of the pedestal-sections, said top-sections having a limited relative movement on the pedestal-sections independently of the relative movement of said pedestal-sections and having a further relative movement with the pedestal-sections, a lock for holding the pedestal-sections against relative movement during the limited relative movement of the top-sections, and means for automatically effecting the unlocking of the pedestal-sections when the top-sections move beyond said limit, and relocking said pedestal-sections when the same are together and the top-sections return to said limit.

16. In an extension-table, the combination with a supporting-pedestal comprising separable sections, of top-sections each slidably mounted on one of the pedestal-sections,

said top-sections having a limited relative movement on the pedestal-sections independently of the relative movement of said pedestal-sections and having a further relative movement with the pedestal-sections, a lock for holding the pedestal-sections against relative movement during the limited relative movement of the top-sections, and means carried by one of the sections and engaging the lock for automatically effecting the unlocking of the pedestal-sections when the top-sections move beyond said limit, and relocking said pedestal-sections when the same are together and when the top-sections return to said limit.

17. In an extension-table, the combination with a support, comprising separable sections, of a latch mounted on one section and detachably engaging the other to hold the sections against separation, a top comprising sections mounted respectively on the support-sections, the top-section that is mounted on the support-section having the latch, being movable thereon, and means carried by said movable top-section for automatically effecting the movement of the latch into and out of engagement with the support-section on the movement of said top-section.

18. In an extension-table, the combination with a support comprising separable sections, of a latch mounted on one section and detachably engaging the other section to hold said sections against separation, a top comprising sections mounted respectively on the support-sections, the top-section that is mounted on the support-section having the latch, being provided with a slide movable on said support-section, and a device carried by the slide for automatically effecting the movement of the latch into and out of engagement with said other support-section on the movement of said top-section.

19. In an extension-table, the combination with a support comprising separable sections, of a latch mounted on one section and detachably engaging the other section for holding said sections against separation, a top comprising sections mounted respectively on the support-sections, the top-section that is mounted on the support-section having the latch, being provided with a slide movable on said support-section, a positioning device connected to the latch, and an actuating element carried by the slide, said element having portions located in different planes and engaged by the positioning device on the movement of the top-section.

20. In an extension-table, the combination with a support comprising separable sections, of a latch movably mounted on one section and detachably engaging the other section to hold the sections against separation, a positioning device for said latch having an upright movement, a top comprising sections mounted respectively on the support-sections, the top-section that is mounted on the support-section having the latch, being movable thereon, and an actuating-track carried by said top-section, said track having portions of its edges disposed in different horizontal planes and engaging the positioning device to effect its upright movement on the movement of the top-section upon its support-section.

21. In an extension-table, the combination with a support comprising separable sections, of slidable connections between the sections, a latch movably mounted on one section and detachably engaging the other sections, a top-section associated with each support-section, the top-section that is associated with the support-section having the latch mounted thereon, being provided with slides movable upon said support-section, a track carried by one of said slides, and positioning means for the latch connected to said latch and operating against the track when the top-section is moved with respect to the support-section.

22. In an extension-table, the combination with a support, comprising separable sections, of a latch movably mounted on one section and detachably engaging the other section, a top-section carried by each support-section, the top-section that is carried by the support-section having the latch, being provided with slides movable upon said support-section, tracks secured to the inner sides of said slides, and a positioning-shaft connected to the latch and having its ends operating against the tracks when the top-section is moved with respect to the support-sections.

23. In an extension-table, the combination with a supporting-pedestal comprising sections movable to and from an abutting position, of a top comprising sections movable independently of the pedestal-sections to and from an abutting position over the pedestal, a lock for holding the pedestal-sections against movement, a track movable with one of the top-sections on its movement independent of the pedestal-section, and means operating against the track and connected to the lock for moving said lock upon a predetermined relative movement of the top-sections independently of the pedestal-sections.

24. In an extension-table, the combination with a pedestal comprising sections movable to and from an abutting position, of a top comprising sections, each top-section being supported by one of the pedestal-sections and having slides that are slidably mounted thereon, a latch mounted on one pedestal-section and engaging the other to hold said sections against separation, tracks carried by the slides of the top-section that is slidably supported on the section having said latch, and a positioning device connected to the latch and operating against said tracks when the top-section is moved with respect to the pedestal-sections.

25. In an extension-table, the combination with a supporting-pedestal comprising separable sections, of slidably-associated slides secured to the pedestal-sections, top-sections having slides that are slidably engaged with the slides of the pedestal-sections, said various slides permitting a limited relative movement of the top-sections independently of the relative movement of the pedestal-sections, said top-sections having a further relative movement with the pedestal-sections, a latch mounted on one of the pedestal-sections and detachably engaging the other pedestal-section to hold said pedestal-sections against relative movement during the said limited relative movement of the top-sections, tracks carried by the top-sections, a cross-shaft that operates against the tracks, said tracks having portions located in different planes, and a connection between the cross-shaft and the latch.

26. In an extension-table, the combination with a support comprising separable sections, of a lock for holding the support-sections against separation, a movable top-section mounted on the support, and means operated by the top-section to positively move the lock to an operative and to an inoperative position upon the opposite movements of the top-section.

27. In an extension-table, the combination with a support comprising separable sections, of a latch carried by one section and movable into and out of engagement with the other section, a movable top-section mounted on the support, and actuating means carried by the top-section for positively moving the latch both into and out of said engagement.

28. In an extension-table, the combination with a support comprising separable sections, of a latch carried by one section and movable into and out of engagement with the other section, a top-section movably mounted on and supported by the support-section having the latch, said top-section having upper and lower tracks, and a positioning device connected to the latch and operating between the tracks.

848,234. EXPANSION-COUPLING. ERNEST B. FREEMAN, Dedham, Mass., assignor to B. F. Sturtevant Company, Boston, Mass., a Corporation of Massachusetts. Filed Apr. 12, 1905. Serial No. 255,185.

Claim.—1. An expansion-coupling consisting of a pipe having a curved body portion and provided with joint-seats constructed to rotatably engage the parts to be coupled and arranged with their axes at substantially right angles to the plane of the body portion of the pipe, whereby a rotary movement of said joint-seats is permitted when the pipe is bent in the plane of its body portion.

2. An expansion-coupling consisting of a pipe having a curved body portion and provided with joint-seats constructed to rotatably engage the parts to be coupled, and arranged with their axes angularly disposed with relation to the plane of the body portion of the pipe, whereby a rotary movement of said joint-seats is permitted when the pipe is bent in the plane of its body portion.

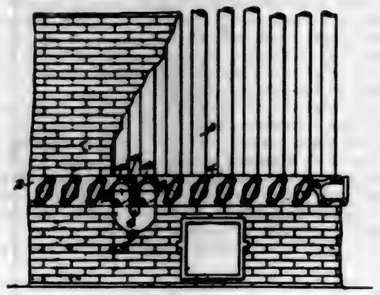

3. An expansion-coupling consisting of a pipe having a curved body portion and end portions angularly disposed with relation to the plane of the body portion, provided with joint-seats constructed to rotatably engage the parts to be coupled, whereby a rotary movement of said joint-seats is permitted when the pipe is bent in the plane of its body portion.

4. An expansion-coupling consisting of a substantially U-shaped pipe having its end portions disposed at substantially right angles to the plane of its body portion.

5. An expansion-coupling consisting of a pipe having a curved body portion, end portions angularly disposed with relation to the plane of the body portion, and tapered joint-seats in said end portions.

6. An expansion-coupling consisting of a pipe having a curved body portion, end portions angularly disposed with relation to the plane of the body portion, and flanges on said end portions provided with elongated slots to receive securing-bolts.

7. An expansion-coupling consisting of a substantially U-shaped pipe having its end portions disposed at substantially right angles to the plane of its body portion, tapered joint-seats on said end portions, and flanges on said end portions provided with elongated slots to receive securing-bolts.

848,235. FIRE-ESCAPE. CHARLES L. GARLAND, Sydney, and GEORGE PROUDFOOT and MARION BOWEN, Balmain, near Sydney, New South Wales, Australia, assignors to The Empire Inventions Company Limited, Sydney, New South Wales, Australia. Filed July 3, 1905. Serial No. 268,191.

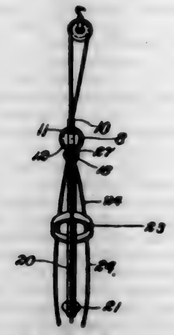

Claim.—1. A device of the class described embracing in its construction a traveler-frame, a supporting-rope therefor, said traveler-frame being provided with means for securing the two ends of said rope to itself, said traveler-frame having snubbing-lugs disposed on opposite sides of the rope to deflect the rope from a straight line, a sheave secured to the frame beneath said snubbing-lugs and provided with a runway for the rope, a retarding device for engaging that portion of the rope beneath the sheave, and a curved saddle-bar secured to the lower end of the traveler-frame for supporting the person of the operator, substantially as described.

2. A device of the class described embracing in its construction a traveler-frame constructed to travel upon a supporting-rope, a rope for supporting the same, said traveler-frame being provided with a sheave having a peripheral runway for the rope, retarding devices for engaging the rope disposed both above and below said sheave, the lower end of said frame being provided with an upturned hook disposed below the sheave and between the depending rope and the back of the frame, a carrier device comprising a bar bent to form a saddle for the support of the operator, said carrier device being provided with means for engaging said hook between the depending rope and the traveler-frame, substantially as described.

848,236. APRON-CONVEYER. HENRY G. GINACA, Honolulu, Hawaii. Filed Aug. 31, 1905. Serial No. 276,638.

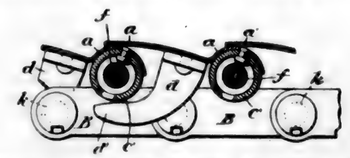

Claim.—1. In an apron conveyer, the combination of a plurality of link belts, and slats extending clear across the conveyer above the belts, each slat being pivoted along one edge only and having the other edge overhanging the edge of the adjacent slat.

2. In an apron conveyer, the combination of a plurality of link belts, and slats extending clear across the conveyer above the belts, each slat pivoted along one edge to the links, and having its other edge overhanging the pivoted edge only of the adjacent slat.

3. In an apron conveyer, the combination of a plurality of link belts, slats extending clear across the conveyer, each slat pivoted at one edge to the links and having its other edge overhanging the edge of the adjacent slat, and a horn or finger on the under side of each slat, projecting beyond the pivoted edge of the adjacent slat.

4. In an apron conveyer, the combination of a plurality of link belts, and overlapping slats extending clear across the conveyer above the belts, said slats being pivoted along one edge only, and having their pivoted edges curved substantially concentric with their pivots, the remaining portion of the slats being curved on single long arcs of greater radius, whereby a groove is formed at the junction of the curved portion that extends across the conveyer.

5. In an apron conveyer, the combination of a plurality of link belts, and overlapping slats extending clear across the conveyer above the belts, each slat being pivoted along one edge and provided with a horn or finger projecting past the pivot of the adjacent slat to limit the upward movement of its free end.

6. In an apron conveyer, the combination of a plurality of link belts, and overlapping slats extending clear across the conveyer, each slat being pivoted at one edge to a link coincident with the pintle at one end of said link, and having a horn or finger projecting under the pintle at the other end of the link to limit the upward movement of the free edge of the slat.

7. In an apron conveyer, the combination of a plurality of link belts, and overlapping slats extending clear across the conveyer above the belts, said slats being secured to tubes or pipes extending between the belts, and pintles passing through the tubes and secured in the links of the belts, the pipes or tubes being trunnioned on the pintles.

8. In an apron conveyer, the combination of a plurality of link belts, and overlapping slats extending clear across the conveyer above the belts, said slats being trunnioned to turn about an axis or pintle secured to the links of the belt above and parallel to the pintles of said links.

848,237. DISPLAY-STAND. WILLIAM H. GLENN, El Paso, Tex., assignor of one-half to Bradford Hardie, El Paso, Tex. Filed Aug. 16, 1906. Serial No. 330,822.

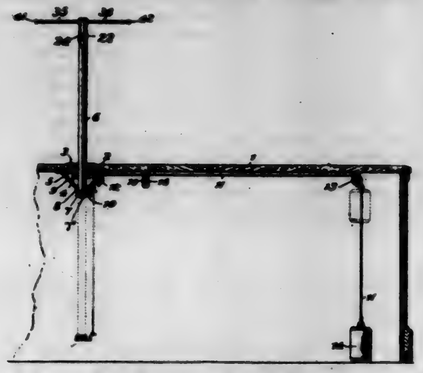

Claim.—1. The combination with a store-counter, of a tubular guideway made fast to and extending through the top of said counter, an elongated metal tube mounted for vertical movement in said guideway, supporting means carried near the upper end of said elongated tube to hold the goods to be displayed, and mechanism acting to cause said elongated tube to travel upward from the top of said counter.

2. The combination with a store-counter, of a tubular guideway made fast to and extending through the top of said counter, an elongated metal tube mounted for vertical movement in said guideway, supporting means to hold the goods to be displayed, said means movably mounted on said elongated tube near its upper end to be inclosed within said tube to allow the same to pass unobstructed into said guideway, and to extend outward from said upright in supporting the goods, means comprising a cord attached to the upright and a weight attached to the cord to impart vertical movement to said upright, and a catch coöperating with said cord to hold said upright against the downward pull of said weight.

3. The combination with a store-counter, of a display-stand comprising an upright mounted for movement up and down through the top of said counter, a supporting device carried by said upright near its upper end to hold the goods to be displayed, means comprising a cord attached to the upright at its lower end and a weight depending from said cord and movable to raise said upright, and a catch to engage said cord and hold said upright against the downward pull of said weight.

4. In a display-stand, the combination with a stationary guide, an upright made hollow at one end and mounted for movement longitudinally through said guide, a spring-clamp hinged within the hollowed end of said upright, supporting-rods movably mounted in said end of said upright to coöperate with said spring-clamp in holding the goods to be displayed, said spring-clamp and said rods adapted when not supporting goods to be inclosed in said hollowed end of said upright so as to not form an obstruction on the exterior of said upright to the movement of said upright through said guide, and mechanism to impart upward movement to said upright.

5. The combination with a store-counter, of a display-stand, comprising an upright mounted for movement up and down through the top of said counter so as not to extend above the counter-top when at its lower limit, means comprising a clamping device and supporting-rods to hold the goods to be displayed, said clamping device and rods being mounted on the said upright near its upper end to be inclosed in said upright to allow the same to pass unobstructed through said counter, and to extend outward therefrom in supporting the goods, means comprising a cord and falling weight to impart upward movement to the said upright, and a catch to hold said upright against the downward pull of said weight.

6. A display-stand, comprising a hollowed upright having apertures through its sides and top communicating with said hollowed portion, a rod passing through each of said apertures, a stop on each of said rods to limit the extent to which said rods may pass outward through said openings, and an enlargement on each of said rods to support the same from the top of said upright in a depending position within said hollowed portion.

7. The combination with stationary supporting means comprising a surface adapted and arranged for the support and display of dry goods, of a display-stand mounted for movement longitudinally up and down through said surface, means to automatically impart upward travel to said stand and to retain said stand in desired positions in its longitudinal travel, goods-retaining means mounted on said stand and collapsible thereinto to permit said stand to pass unobstructed through said supporting-surface.

848,238. METALLIC HOSE. EDWIN T. GREENFIELD, Kiamesha, N. Y. Filed Nov. 6, 1905. Serial No. 286,060.

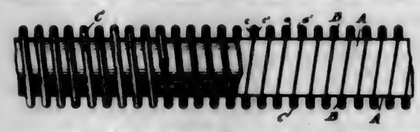

Claim.—1. A series of metallic spirals having adjacent circumferential flanges, a gasket between said flanges and means inclosing said adjacent flanges and securing them together, substantially as described.

2. A series of metallic spirals having circumferential flanges adjacent but not in contact, a gasket between said flanges and means inclosing said adjacent flanges and securing them and said gasket together, substantially as described.

3. A series of metallic spirals having circumferential flanges, a gasket between said flanges and another series of metallic spirals extending over said flanges, substantially as described.

4. A series of metallic spirals having circumferential flanges provided with corrugations, a gasket between said flanges and coacting with said corrugations and means inclosing said flanges and securing them together, substantially as described.

5. A series of metallic spirals having adjacent circumferential flanges, a gasket of compressible material between said flanges and means inclosing said flanges and securing them together, substantially as described.

6. A series of metallic spirals having adjacent, corrugated, circumferential flanges, a gasket between said flanges and coacting with the corrugations thereof and another series of metallic spirals extending over said flanges, substantially as described.

7. A series of metallic spirals having adjacent circumferential flanges, a gasket between said flanges and another series of metallic spirals extending over said flanges and holding the same together under pressure, substantially as described.

8. A series of metallic spirals having adjacent corrugated, circumferential flanges, a gasket between said flanges and coacting with the corrugations thereof and another series of metallic spirals extending over said flanges and coacting with said corrugations to hold said flanges together, substantially as described.

9. A series of metallic spirals having radially-disposed non-overlapping flanges at the edges thereof, a gasket between said flanges, and means for securing said flanges together, substantially as set forth.

10. A series of metallic spirals having corrugated radially-disposed non-overlapping flanges at the edges thereof, a gasket between said flanges and entering the corrugations therein, and means for securing said flanges together, substantially as set forth.

11. A series of metallic spirals having radially-disposed non-overlapping flanges at the edges thereof, a gasket between said flanges, and a second series of metallic spirals securing said flanges together, substantially as set forth.

848,239. HOSE-REEL. LUCAS A. GRIMSRUD, Spokane, Wash. Filed July 26, 1906. Serial No. 327,926.

Claim.—1. A hose-reel comprising a drum having a spiral groove, and a hose-guide movable along the drum and actuated by the groove, which also receives the hose.

2. A hose-reel comprising a drum having a spiral hose-receiving groove, and means arranged to follow the groove for automatically guiding the hose to the same, said means being actuated by the groove, which receives the hose.

3. A hose-reel comprising a drum having a spiral hose-receiving groove, and a hose-guide provided with means for engaging the groove, whereby it is adapted to follow the same and automatically guide the hose thereto.

4. A hose-reel comprising a drum having a spiral groove, a fixed guide disposed longitudinally of the drum, and a hose-guide movable along the fixed guide and provided with means for engaging the spiral groove, whereby it is adapted to automatically feed a hose to the same.

5. A hose-reel comprising a frame, a vertically-disposed drum mounted on the frame and having a spiral hose-receiving groove, and a vertically-movable hose-guide actuated by the groove of the drum and adapted to automatically guide a hose to the said groove.

6. A reel comprising a frame provided at opposite sides with vertical standards having guides, a reel mounted between the standards and having a spiral groove, and a hose-guide slidable on the standards and extending across the space between the same and engaging the spiral groove of the reel.

7. A hose-reel comprising a frame provided at opposite sides with guides, a reel mounted between the guides, and a hose-guide slidable on the said guides and provided with a curved portion extending across the frame and arranged at an inclination, said curved portion being engaged by the groove of the drum, whereby the hose-guide is actuated by the same.

8. A reel comprising a frame provided at opposite sides with fixed guides, a drum mounted between the guides and provided with a spiral groove, a hose-guide slidable on the said guides and fitting in the spiral groove of the drum and provided at one side with a casing, a roller mounted in the casing, and means carried by the hose-guide for confining the hose on the roller.

9. A reel comprising a frame provided with vertical guides, a drum mounted between the guides and having a spiral groove, a hose-guide slidable on the said guides and engaging the spiral groove of the drum and provided with a casing, a roller arranged within the casing, and a spindle receiving the roller and provided with an arched extension for confining a hose on the roller.

10. A hose-reel comprising a frame provided at opposite sides with vertical standards, cross-pieces connecting the upper and lower portions of the standards, a vertical shaft journaled in the cross-pieces, a drum mounted on the shaft and having a spiral groove, and means actuated by the groove of the drum for feeding a hose to the same.

11. A hose-reel comprising a frame composed of opposite sides and a connecting upwardly-extending front portion forming a handle, said sides being also provided with spaced upwardly-extending portions forming fixed guides, cross-pieces having their terminals secured in the space between the said upwardly-extending portions, and a drum mounted between the cross-pieces and adapted to receive a hose.

848,240. END-GATE. JOHN M. GROFF, North Lawrence, Ohio. Filed Apr. 13, 1906. Serial No. 311,443.

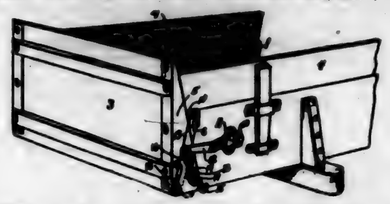

Claim.—1. In a wagon end-gate the combination of a wagon-box, and an end-gate therefor, straps pivotally connected at their bottom or lower ends to the end-gate, and at their top or upper ends to plates and the plates connected to the side-boards of the wagon-box independent of the connection of the straps, substantially as and for the purpose specified.

2. In an end-gate the combination of a wagon-box, and an end-gate therefor, said end-gate provided with side plates and the side plates provided upon their outer faces with studs or buttons spaced from each other, bars located upon the sides of the wagon-box, and provided with pivoted hooked rods at their free ends and the hooks of the rods adapted to engage the spaced studs or buttons and straps pivotally connected to the end-gate at their lower ends, substantially as and for the purpose specified.

3. In a wagon end-gate the combination of a wagon-box, and an end-gate therefor provided with side plates, said end-gate hinged to straps, and the straps pivotally connected at their top or upper ends in fixed relation to adjustable plates, arms pivotally connected and means for limiting their pivotal movement, said arms provided at their free ends with hooked rods and the hooked rods formed of spring material and spaced studs or buttons secured to the side plates of the end-gate, substantially as and for the purpose specified.

4. In a wagon end-gate the combination with a wagon-box, and an end-gate provided with side plates, straps connected to the side plates of the end-gate and pivoted at their upper ends to plates fixed to the side-boards of the wagon-box, said plates adapted to be adjusted to and from the ends of the side-boards of the wagon-box independent of the pivoted attachment of the straps to the plates, and means for holding the plates in fixed adjustment, pivoted arms provided with hooked rods, studs or buttons formed upon the side plates of the end-gate, said studs or buttons adapted to engage the hooked ends of the rods, substantially as and for the purpose specified.

848,241. PHOTOGRAPHIC-PLATE HOLDER. ARTHUR C. HAYDEN, Brockton, Mass. Filed Jan. 31, 1906. Serial No. 298,863.

Claim.—1. A photographic-plate holder having a plate-guideway intersecting one edge of the holder, a closure for the open end of the guideway, and means carried wholly within the frame of the holder for controlling the closure.

2. A photographic-plate holder having a plate-guideway intersecting one edge thereof, a slotted closure for the open end of the guideway, and means carried wholly within the frame of the plate-holder for bringing the slotted portion of the closure into and out of alinement with the guideway.

3. A photographic-plate holder having a plate-guideway intersecting one edge thereof, a rotary closure for the open end of the guideway, and means carried wholly within the frame of the holder for controlling the closure.

4. A photographic-plate holder having a plate-guideway intersecting one edge thereof, a slotted rotary closure for the open end of the guideway, and means carried wholly within the frame of the holder for rotating the closure to bring its slot into and out of alinement with the guideway.

5. A photographic-plate holder having a plate-guideway intersecting one edge thereof, a rotary slotted closure for

the open end of the guideway, a crank carried by the closure, and a push-rod connected to the crank and carried by the plate-holder.

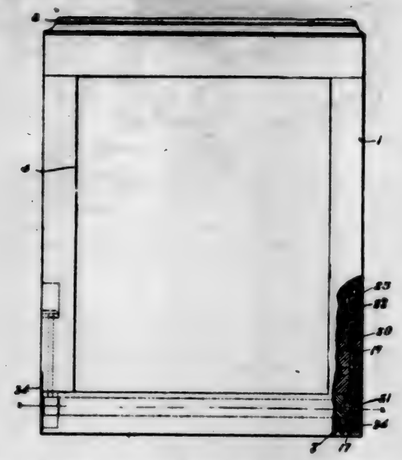

6. A photographic-plate holder having a plate-guideway intersecting one edge thereof, a closure for the open end of the guideway, a push-rod working in the frame of the plate-holder and connected to the closure, the frame of the plate-holder having an opening exposing the push-rod, and a finger-piece carried by the push-rod and accessible through the opening.

7. A photographic-plate holder having a plate-guideway intersecting one edge thereof, a rotary closure for the open end of the guideway, a crank-arm carried by the closure, a push-rod working in a guideway in the frame of the plate-holder and connected to the crank-arm, the frame of the plate-holder having an opening exposing a portion of the push-rod, and a finger-piece carried by the push-rod and accessible through the opening formed in the holder.

8. A photographic-plate holder having a pair of plate-guideways intersecting one edge thereof, rotary slotted closures for the respective guideways, a terminal crank upon one of the closures, another crank upon the opposite end of the other closure, push-rods working in opposite sides of the plate-holder and connected to the respective cranks, the frame of the plate-holder being provided with openings exposing portions of the push-rods to permit actuation thereof.

9. A photographic-plate holder having a plate-guideway, a rotary closure therefor, a slotted crank carried by the closure, and a push-rod having a reduced portion working in the slot of the crank and forming shoulders for respective engagement with opposite sides of the crank-arm.

848,242. TEMPORARY-BINDING DEVICE. ADOLPH G. HOELSCHER, Boston, Mass., assignor to Alfred T. Palmer, Boston, Mass. Filed Aug. 26, 1905. Serial No. 170,864.

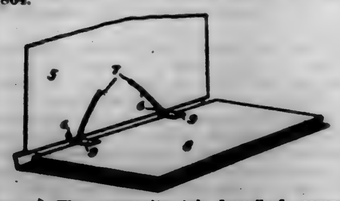

Claim.—1. The composite tab described, composed of three superposed leaves of gummed textile fabric, permanently united at one end by a centrally-arranged eyelet, the two outer leaves being gummed on opposite surfaces and adapted at their free ends to adhere to the outer sheets of a folio, the free end of the central leaf being of suitable stiffness and adapted for insertion through a slit in the folded edge of said folio, for the purpose of adhesion to a central sheet, whereby intermediate folios may be held in place, substantially as set forth.

2. A carrying device for sheet-music or other folios, comprising a flexible cover, composite tabs suitably secured to said cover and having gummed leaves each adapted for adhesion to a separate sheet or folio, and fastening devices applied to the flexible covers, in position to engage and disengage repeatedly when one cover is folded with the sheets or folios in one direction, and the other cover is folded over them in the opposite direction, substantially as set forth.

3. The combination of an inclosing cover adapted to receive a number of sheets or folios to be bound into said cover, and gummed tabs each consisting of a plurality of superposed leaves permanently fastened together at one end by a centrally-arranged eyelet, each of said leaves being adapted to adhere at its free end to a sheet or folio, the folded edge of said folio being provided with slits for the passage through the same of some of said leaves, and means for securing said tabs to said cover, substantially as set forth.

848,243. FISHING-ROD. ERNEST HOLZMANN, New York, N. Y. Filed Mar. 16, 1906. Serial No. 306,358.

Claim.—1. A butt for fishing-rods, decreased in diameter between its ends, substantially as set forth.

2. A butt for fishing-rods provided with a hand-grip at each end and decreased in diameter between said hand-grips, substantially as set forth.

3. A butt for fishing-rods, provided with a hand-grip at each end and gradually decreased in diameter for the upper hand-grip to the lower hand-grip, substantially as set forth.

4. A butt for fishing-rods, composed of two sections and means for uniting them, one section forming the upper part of the butt and the other section the lower end of the butt, the lower section being much shorter than the upper section, substantially as set forth.

5. In a butt for a fishing-rod, the combination with an upper section *a* and a lower section *b*, the upper section being provided at its upper end with a hand-grip and the lower section being provided at its lower end with a hand-grip, and means for holding the two sections together, the upper section being much longer than the lower section, substantially as set forth.

6. In a butt for a fishing-rod, the combination with an upper section *a* and a lower section *b*, of a screw *d* and socket *e* for holding the two sections together, the upper section being provided with a hand-grip at its upper end and the lower section being provided with a hand-grip at its lower end, substantially as set forth.

848,244. VARIABLE-SPEED GEAR AND REVERSING MECHANISM. WILLIAM H. HORSTMANN, Philadelphia, Pa. Filed June 27, 1906. Serial No. 323,589.

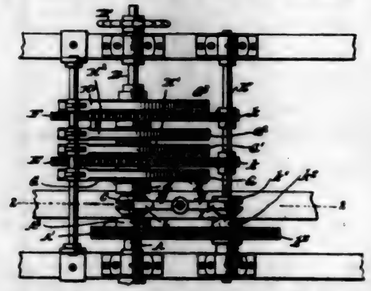

Claim.—1. In a reversing mechanism, the combination of the driving-shaft, the driven shaft, means for detachably connecting said shafts, a sleeve loosely mounted on the driven shaft, means for detachably connecting said sleeve to the driven shaft, a spur-gear fast to said sleeve, a gear-wheel loosely mounted on said sleeve, means for operating said gear-wheel, a reversing-train of orbital pinions mounted on stud-axles on said gear-wheel and in mesh with said spur-gear, a brake-drum loosely mounted on said sleeve provided with an internal gear meshing with said orbital pinions and a brake for said drum.

2. In a change-speed and reversing mechanism, the combination of the driving-shaft, the driven shaft, means for detachably connecting said shafts, a sleeve loosely mounted on the driven shaft, means for detachably connecting said sleeve to the driven shaft, a plurality of spur-gears fast to said sleeve, a gear-wheel loosely mounted on said sleeve between said spur-gears, means for operating said gear-wheel, a reversing-train of orbital pinions mounted on stud-axles to one side of said gear-wheel and in mesh with one of said spur-gears, a change-speed orbital pinion mounted on a stud-axle on the opposite side of said gear-wheel and in mesh with the spur-gear on that side, brake-drums loosely mounted on said sleeve upon opposite sides of said gear-wheel provided with internal gears in mesh with the orbital pinions upon the corresponding side of said gear-wheel and brakes for said drums.

3. In a change-speed gear, the combination of the driving-shaft, the driven shaft, means for detachably connecting said shafts, a sleeve mounted loosely on the driven shaft, a plurality of spur-gears fixed to said sleeve, gear-wheels mounted loosely upon said sleeve between said spur-gears provided upon each side with stud-axles, orbital pinions mounted upon said stud-axles meshing with said spur-gears, internally-geared brake-drums mounted loosely upon said sleeve on opposite sides of said gear-wheels and meshing with said spur-gears, brakes for said drums, a counter-shaft, spur-gears mounted on said counter-shaft in mesh with said gear-wheels, means for detachably connecting the counter-shaft to the driving-shaft.

4. In a change-speed gear, the combination of the driving-shaft, the driven shaft, the counter-shaft, a spur-wheel keyed to the driving-shaft provided with a clutch member, a pinion loose on the counter-shaft in mesh with said spur-wheel and provided with a clutch member, a sleeve loosely mounted on the driven shaft having a clutch member, a double-faced clutch member splined to the driven shaft, a clutch member splined to the counter-shaft, a pivoted shift-arm adapted to operate said splined clutch members, spur-gears fast to said sleeve, gear-wheels mounted loosely on said sleeve, spur-gears mounted on the counter-shaft in mesh with said gear-wheels, orbital pinions mounted on said gear-wheels and in mesh with the spur-gears on said sleeve, the internally-geared brake-drums mounted loosely on said sleeve meshing with said orbital pinions, and band-brakes for said drums.

5. In a change-speed gear, the combination of the driving-shaft, the driven shaft, the counter-shaft, the sleeve loosely mounted on the driven shaft, spur-gears fast to said sleeve, the gear-wheels loosely mounted on said sleeve, orbital pinions mounted on opposite sides of said gear-wheels meshing with said spur-gears, internally-geared brake-drums loosely mounted on said sleeve meshing with said orbital pinions, brakes for said drums, spur-gears on the counter-shaft meshing with said gear-wheels, means for detachably connecting said sleeve to the driven shaft, means for detachably connecting the driving and driven shafts, means for detachably connecting the driving and counter shafts.

6. In a change-speed gear, the combination with the driving-shaft, driven shaft, counter-shaft, power-transmitting sleeve loosely mounted on the driven shaft provided with a clutch member, of the clutch member on the driving-shaft, the double-faced sliding clutch on the driven shaft adapted to engage said clutches, the pinion loosely mounted on the counter-shaft having a clutch member, the sliding clutch member splined to the counter-shaft registering with said pinion's clutch member, and the pivoted shift-arm adapted to actuate said clutch members.

848,245. FILE-BOOK, &c. JACOB H. HORWITZ, New York, N. Y. Filed Nov. 30, 1906. Serial No. 345,685.

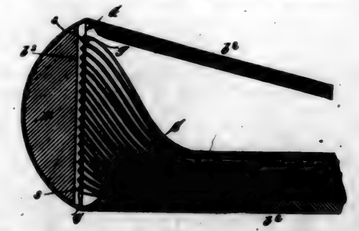

Claim.—1. In a book of the character designated, the combination of a signature-holder consisting of a grill having parallel bars adapted to fit within the bights of the signature-folds, said signatures formed with slots in the bights of their folds, and a key extending through said slots and secured in such position, for the purpose described.

2. In a book of the character designated, the combination of a signature-holder consisting of a grill formed of a single piece of flat metal with parallel bars adapted to fit into the bights of the signature-folds, said signatures formed with slots in the bights of their folds, a key extending through said slots and secured in such position, a cover formed with a rigid back, and means for securing said grill to said rigid back of the cover, for the purpose described.

3. In a book of the character designated, the combination of a signature-holder consisting of a grill having parallel bars adapted to fit within the bights of the signature-folds, said signatures formed with slots in the bights of their folds, and a key extending through said slots and attached to the grill, for the purpose described.

4. In a book of the character designated, the combination of a signature-holder consisting of a grill having parallel bars adapted to fit into the bights of the signature-folds, said signatures formed with slots in the bights of their folds, a key extending through said slots and attached to the grill, a rigid back, and means for attaching said grill thereto, for the purpose described.

5. In a book of the character designated, the combination of a signature-holder consisting of a grill having parallel bars adapted to fit within the bights of the folds of the signatures, said signatures, and a rigid back attached to said grill by means of grooves on said back adapted to receive the ends of the grill, for the purpose described.

6. In a book of the character designated, the combination of a signature-holder consisting of a grill having parallel bars adapted to fit within the bights of the folds of the signatures, said signatures, and a rigid back attached to said grill by means of grooves on said back adapted to receive the ends of the grill, each of said grooves being closed at one extremity, for the purpose described.

7. In a book of the character designated, the combination of a signature-holder consisting of a grill having parallel bars adapted to fit within the bights of the folds of the signatures, said signatures formed with slots in the bights of their folds, a key extending through said slots and attached to the grill, and a rigid back attached to said grill by means of grooves on said back adapted to receive the ends of the grill, for the purpose described.

8. In a book of the character designated, the combination of a signature-holder consisting of a grill having parallel bars which are triangular in cross-section and are adapted to fit within the bights of the signature-folds, said signatures formed with slots in the bights of their folds, a key extending through said slots and attached to the grill, and a rigid back attached to said grill and formed with a flat surface parallel to the grill and opposed to the bights of the signatures, for the purpose described.

848,246. MEANS FOR FILLING LUBRICATORS. ELMORE C. JORDAN, Los Angeles, Cal. Filed Nov. 25, 1904. Serial No. 234,256.

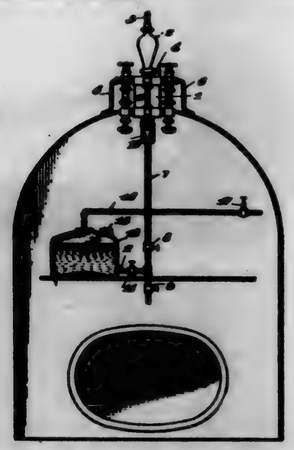

Claim.—1. In a lubricator, the combination with a distributing-reservoir, of a storage-reservoir, a pipe connecting the two reservoirs, means secured to the top of the storage-reservoir for conveying compressed air or steam thereinto for forcing the lubricant in the storage-reservoir into the distributing-reservoir.

2. In a lubricator, the combination with a distributing-reservoir, of a storage-reservoir, a pipe connecting the two reservoirs, and means secured to the top of the storage-tank for conveying thereinto pressure means for forcing lubricant into the distributing-reservoir.

3. In a lubricator, the combination with a distributing-reservoir, of a storage-tank, a pipe connected with the distributing-reservoir, and a supplemental pipe connected to the first-named pipe and the bottom of the storage-tank, and means connected to the top of the storage-tank for conveying thereinto pressure means for forcing the oil from the storage-tank into the distributing-reservoir.

4. In a mechanism for filling lubricators, the combination with a storage-reservoir, a distributing-reservoir, and a pipe connecting the two, of means secured to the top of the storage-reservoir for conveying thereinto pressure means for forcing the contents of the storage-reservoir into the distributing-reservoir, independent means for forcing the contents of the distributing-reservoir therefrom and means for cutting off the communication between the two reservoirs while the contents of the distributing-reservoir is being discharged therefrom.

848,247. SWITCH-POINT LOCK. WILLIAM I. KAISER, Seattle, and WILLIAM H. OAKES, Georgetown, Wash. Filed Jan. 11, 1906. Serial No. 295,653.

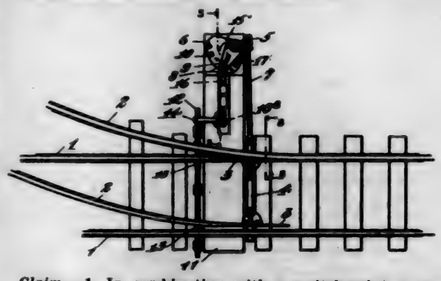

Claim.—1. In combination with a switch-point, means for securing the same from movement, mechanism related to said securing means for operation thereof including a slidable member provided with a plurality of fingers, and means for engagement with one or another of said fingers to effect sliding of said member, whereby said mechanism will be operated.

2. The combination with a switch-point, means normally yieldingly held in position for securing said point from movement, and mechanism for shifting said point, of means connected with said securing means for controlling the operation thereof and operatively related to said mechanism for releasing the switch-point, said last means including a part which is adjustable relatively to different positions of said shifting mechanism for holding the securing means when the shifting mechanism is at one or another of said positions.

3. The combination of a switch-point, means for securing the same from movement, means connected with the securing means for operating the same including a slidable member provided with a plurality of fingers, and mechanism for shifting the switch-point including means for engaging a finger to lower said member when the switch-point-shifting mechanism is in any one of its set positions.

4. The combination with the switch-points, and the mechanism for shifting the same, including a swing-arm, of means for securing the switch-points from movement, and mechanism for controlling said means including a slidable member, and means carried by said arm for securing said member from movement, said last means being adjustable for holding said member when said arm is in one or another of its positions.

5. The combination with the switch-points, and the mechanism for shifting the same including a swing-arm, of means normally securing the switch-points from movement, and mechanism for controlling said means including a slidable member provided with a plurality of fingers projecting into the path of movement of said swing-arm, means for sliding said member, and means carried by said arm and being adjustable relatively to the different positions thereof for engaging one finger or another for holding said rod from movement.

6. The combination with the switch-points, and the mechanism for throwing the same including an arm which is shiftable for opening and closing said switch-points, means securing said switch-points from movement a rod mounted for movement and being operatively connected to said means, a plurality of fingers connected with said rod and projecting into the path of movement of said arm, means for sliding said rod, and adjustable means on said arm for engaging said fingers and thereby holding said rod when said arm is in one or another of its positions.

7. The combination with the switch-points, and the mechanism for throwing the same including an arm which is shiftable for opening and closing said switch-points, means engaging said and thereby locking the switch-points from movement, a lever having an end portion weighted for normally holding said means in locking position, a rod connected to the unweighted end portion of said lever and having its upper end portion provided with fingers lying in the path of movement of said arm, means for lowering said rod, and means for holding said rod depressed, said means being adjustable so as to engage one finger or another.

8. The combination with the switch-points, and the mechanism for shifting the same including a swing-arm, of means for normally locking the switch-points, and mechanism for controlling said means including a slidable member provided with a plurality of spaced-apart fingers normally projecting into the path of movement of said arm, a lever on said arm for engaging a finger and thereby lowering said member when said arm is in any one of its set positions, and a means on said arm for engaging the fingers and holding said member lowered, said last means being adjustable so as to be capable of being set at either side of the arm.

848,248. TYPE-BAR BEARING FOR TYPE-WRITING MACHINES. OSCAR C. KAVLE, Syracuse, N. Y., assignor to Harvey A. Moyer and Emmit G. Latta, Syracuse, N. Y. Filed Nov. 9, 1906. Serial No. 342,607.

Claim.—1. The combination of a type-bar member and a hanger member, one of which is bifurcated to embrace the other member, a pivot connecting said members and having a reduced part rigidly secured to one branch of said bifurcated member, and means detachably connecting said pivot to the other branch of said bifurcated member, substantially as set forth.

2. The combination of a type-bar member and a hanger member, one of which is bifurcated to embrace the other member, a pivot connecting said members and having a cylindrical part between the branches of said bifurcated member and a reduced end rigidly secured in a hole in one of said branches, and means connecting said pivot to the other branch of said bifurcated member, substantially as set forth.

3. The combination of a type-bar member, and a hanger member, one of which is bifurcated to embrace the other, a pivot having a cylindrical body arranged between the branches of said bifurcated member and having a reduced portion rigidly secured in a hole in one of said branches, and a screw passing through a hole in said other branch into said pivot, substantially as set forth.

4. The combination of a type-bar member, and a hanger member, one of which is bifurcated to embrace the other, a pivot having a cylindrical body arranged between the branches of said bifurcated member and having a reduced portion permanently secured in a hole in one of said branches, and a screw passing through a hole in said other branch into a threaded hole in said pivot, substantially as set forth.

5. The combination of a type-bar body and a hanger-body, one of which is slightly thicker than the other, two separate side plates rigidly secured to the thicker body, and a pivot connecting said side plates to the other body and having a cylindrical portion rigidly secured to one side plate and detachably secured to the other side plate, substantially as set forth.

6. The combination of a type-bar body and a hanger-body, one of which is slightly thicker than the other, two separate side plates rigidly secured to the thicker body, a pivot connecting said side plates to the other body and having a cylindrical portion between said side plates equal in length to the thickness of said thicker body and a reduced end permanently secured in a hole in one side plate, and a screw connecting said pivot to said other side plate, substantially as set forth.

7. A pivot for type-bars having a cylindrical body with a reduced securing extension at one end and a screw-threaded hole in the other end, substantially as set forth.

8. A pivot for type-bars having a cylindrical body with a hardened surface, a reduced malleable extension at one end and a screw-threaded hole in the other end, substantially as set forth.

9. A pivot connection for type-bars and their hangers, comprising a cylindrical stud having a reduced securing extension at one end and a screw-threaded hole in its other end, and a headed screw with its threaded shank seated in said hole, substantially as set forth.

848,249. STREET AND STATION INDICATOR. ORLANDO E. KELLUM, Longbeach, Cal. Filed Dec. 26, 1905. Serial No. 293,390.

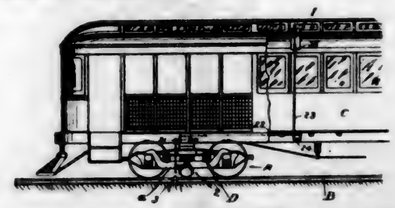

Claim.—1. A spring-actuated exhibiter, an escapement for controlling the same, a vertically-moving slide, a connecting-rod connected to operate the escapement and a clutch operated by the slide to operate the connecting-rod.

2. An exhibiter, means to cause the operation of the exhibiter step by step, a slide, a connecting-rod for controlling the operation of said exhibiter, a pivotally-mounted clutch for operating the connecting-rod, and means pivotally connecting said clutch with said slide.

3. An exhibiter, a connecting-rod to permit the operation of said exhibiter, a cramping member for the connecting-rod, a pivoted clutch-lever for operating the cramping member, a clutch-rod carried by the lever to engage the connecting-rod and a lever pivotally connected with the clutch-lever and with the clutch-rod for operating said clutch-rod.

4. Reversely-arranged exhibiting devices, spur-wheels, one for each exhibiting device, a shiftable spring-driven gear adapted to alternatively drive one and the other of said spur-wheels, a shaft and pinions thereon connecting said spur-wheels, an escapement to allow step-by-step operation of the spur-wheels, and means for operating the escapement.

848,250. AUTOMATIC WAGON-BRAKE. HERBERT A. KENNARD, Hazlehurst, Miss. Filed Nov. 19, 1906. Serial No. 344,135.

Claim.—1. The combination with a wagon comprising a front axle equipped with wheels, a rear axle also equipped with wheels, a pole connected with the front axle, hounds fixed on the rear axle, and a reach-rod connected with the front axle and arranged between and adjustably connected with the hounds; of a cross-bar fixed on the hounds, a rock-shaft journaled in bearings on said cross-bar and having a depending bail at its middle provided with apertures in its sides and also having upwardly and outwardly reaching arms at its ends, shoes carried by said arms and arranged to engage the peripheries of the rear wheels, a lever fulcrumed on the pole, a rod connected to and

extending rearward from one arm of the lever, a rod flexibly connected with the first-mentioned rod and having a flattened portion in which are a plurality of apertures arranged at intervals in the length of the rod, a spring interposed between and connecting the rear end of the second-mentioned rod and the rear axle, and a connecting-bolt removably arranged in the apertures in the sides of the bail and one of the apertures in the second-mentioned rod.

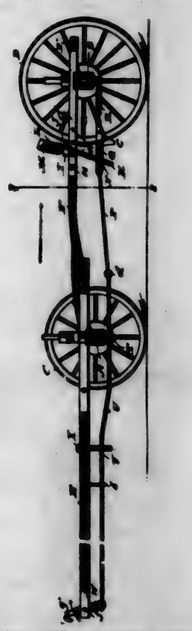

2. The combination with a wagon comprising a front axle equipped with wheels, a rear axle also equipped with wheels, a pole connected with the front axle, hounds fixed on the rear axle, and a reach-rod connected with the front axle and arranged between and adjustably connected with the hounds; of a transverse rock-shaft carried by the hounds and having a depending bail and also having arms on which are brake-shoes arranged to engage the rear wheels, a rod having apertures at intervals of its length, a bolt removably arranged in the bail and one of the apertures of the rod, a spring interposed between and connected to the rear axle and the rod, a lever fulcrumed on the pole, and a rod connected to one arm of said lever and flexibly connected at its rear end to the forward end of the first-mentioned rod.

848,251. CUTLERY. EDWARD J. KILLIAN, Los Angeles, Cal. Filed Mar. 8, 1906. Serial No. 304,865.

Claim.—1. The combination with a knife-handle, tips

and rib, of a detachable handle-section provided on its inner face with a slab of abrasive material and provided with slots at its ends, said ends being beveled; said tips being beveled to overhang the beveled ends of said section, and catches for said slots, one of said catches being in the form of a spring.

2. The combination with a knife-handle, tips, and rib, of a detachable handle-section provided on its inner face with a slab of abrasive material and provided with slots at its ends, said ends being beveled; said tips being beveled to overhang the beveled ends of said section, and catches for said slots, one of said catches being in the form of a spring-tongue bent from the rib.

3. A knife provided with a handle having a seat, a slab seated in said seat and provided with an abrasive face and a slot, a tongue bent from the rib of the handle to enter said slot, and a push-button on said tongue.

848,252. RIVET-DISPLACING DEVICE. JEROME KITTERMAN, Chillicothe, Iowa. Filed Dec. 27, 1906. Serial No. 349,712.

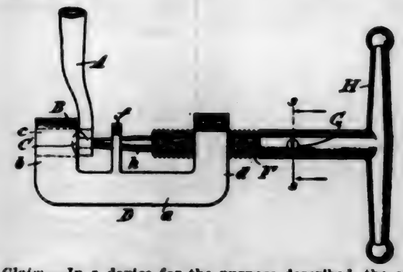

Claim.—In a device for the purpose described, the combination with a frame comprising a main portion, an arm reaching laterally from one end of the main portion and having a longitudinal bore, an arm reaching laterally from the opposite end of the main portion and having a longitudinally-disposed, threaded aperture alined with the bore in the first-mentioned arm, and a guide reaching laterally from the main portion, at a point intermediate the arms, and having a smooth aperture comparatively small in diameter alined with the longitudinal centers of the bore and threaded aperture; of a screw bearing in the threaded aperture of the frame and having a longitudinal central bore extending rearward from its forward end and closed at its inner end, a smooth pin, of slightly less diameter than the smooth aperture of the guide on the frame arranged in said aperture and in the bore of the screw and having its rear end arranged to abut against the closed inner end of said bore and coöperating means on the screw and the pin for connecting the screw and the pin while permitting the former to turn independent of the latter.

848,253. STREET-DISPLAY SIGN. JOHN KRAUS, Oakland, Cal. Filed May 28, 1906. Serial No. 319,113.

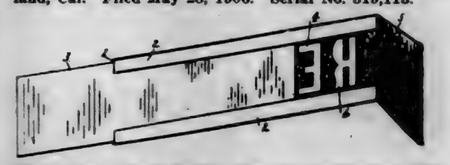

Claim.—In a street-display sign, the combination with an enameled face-plate having its upper and bottom edges rearwardly flanged to form longitudinally-extending guideways, of a series of outlined letters or figures indicative of the street to be designated cut through the face-plate, of a back-plate slidable in the guideways of the face-plate, said back-plate being of a color contrasting to the color of the face-plate to form a solid background for the outlined letters or figures of the face-plate, and an end flange rearwardly projecting from the face-plate at a right angle thereto, said projecting flange being to embrace the corner of a building.

848,254. COIL FOR STEAM-GENERATORS. HARRY D. LANGTON, Cleveland, Ohio. Filed Nov. 7, 1906. Serial No. 342,389.

Claim.—1. A steam-generator comprising a plurality of vertically-arranged coils, means for delivering a fluid to the center of one of the end coils and for successively passing the said fluid through coils arranged upon opposite sides of a central line, and a horisontally-arranged superheater adapted to receive steam from the central coil.

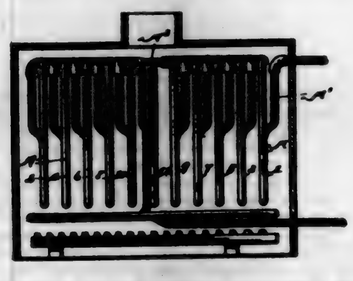

2. A device of the kind described, comprising a plurality of coils arranged vertically and parallel to each other, the end coils being connected together, a horisontally-arranged superheater-coil arranged below the vertical coils, a central coil adapted to discharge steam to said superheater, and means for alternately passing water or steam through the coils arranged upon opposite sides of the central coil.

3. A device of the kind described, comprising a generator formed of vertically-arranged end coils, a central coil midway the end coils and parallel thereto, intermediate coils arranged upon opposite sides of the central coil, means for feeding water into the center of an end coil, means for conveying water from said end coil to the opposite end coil, and means for conveying steam from the last-mentioned coil alternately to coils arranged upon opposite sides of the central coil and finally to the center of the said central coil, as and for the purpose set forth.

4. A device of the kind described, comprising a generator consisting of a plurality of vertical coils connected together, means for feeding water to the center of an end coil, and for passing the water successively through the remaining coils so that it gradually approaches the center of the generator, a horizontally-arranged superheater-coil, said coil being below the vertical coils, and means for conveying steam from the central coil of the generator and delivering the same to the superheater, as and for the purpose set forth.

848,255. PNEUMATIC ENGINE. EDWARD LEICHTER, Nevada City, Cal., assignor of one-fourth to J. C. Campbell, Nevada City, Cal., and one-fourth to John Bender, Hamilton, Ohio. Filed Jan. 24, 1906. Serial No. 297,544.

Claim.—A pneumatic engine comprising a cylinder having a major bore and a minor bore and having a first annular enlargement in the major bore contiguous to the minor bore and having a second annular enlargement in the major bore at a further distance from the minor bore and having a third annular enlargement in the major bore at a still further distance from the minor bore, the first and second of said annular enlargements being in free communication with the source of fluid-supply, and a two-diameter piston fitting said bore and having the extremity of its smaller portion projecting out of the minor bore of the cylinder, said piston having an axial cavity extending within it from its larger end to a point near its smaller end, said piston being provided with a set of radial ports placing its axial cavity in communication with the first of the annular enlargements of the major bore of the cylinder and having a second set of radial ports placing said cavity at the same time in communication with the second of said annular enlargements and having a third set of radial ports leading from said cavity and closed by the inwall of the major bore of the cylinder when the first two sets of ports are in said relationship with the first and second annular bores of the cylinder, combined substantially as set forth.

848,255.

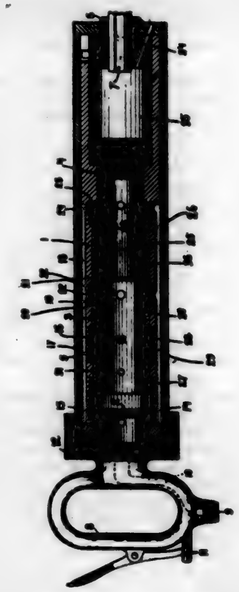

848,256. LOCK FOR RAILWAY-TRUCKS. CORNELIS MAASKANT, Waterval Boven, Transvaal. Filed Nov. 27, 1905. Serial No. 289,348.

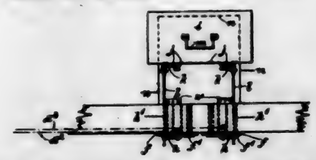

Claim.—1. An apparatus of the nature indicated comprising an electrically-operated lock fitted to the door of the truck or vehicle, switches and a switchboard located inside the truck or vehicle, said switchboard providing a plurality of contacts for each switch, conductors between the switches and the lock, an electric battery the terminals of which are revoluble and adapted to carry contact-pins, which pins are adapted to pass through holes formed in the truck to make contact with any of the contacts of the switchboard, substantialy as described.

2. An apparatus of the nature indicated comprising an electrically-operated lock fitted to the door of the truck or vehicle, revoluble switches and a switchboard located inside the truck or vehicle said switchboard being constructed to provide a plurality of contacts for each switch, conductors between the switches and lock, and an electric battery the terminals of which are revoluble and adapted to carry contact-pins, which pins are adapted to pass through holes formed in the truck to make contact with any of the contacts of the switchboard, substantially as described.

3. An apparatus of the nature indicated comprising an electrically-operated lock fitted to the door of the truck or vehicle, switches and a switchboard located inside the truck or vehicle, the switchboard providing a plurality of contacts for each switch, conductors between the switches and the lock, a case or box which serves for inclosing an electric battery the front of which case or box is marked to correspond with the positions of the contacts of the switchboard, and terminals revolubly mounted in the case

which are adapted to be placed in position to make contact with any of the contacts of the switchboard, and conductor-pins fitted to the revoluble terminals which serve for making contact with said contacts, substantially as described.

4. An apparatus of the nature indicated comprising an electrically-operated lock fitted to the door of the truck or vehicle, switches and a switchboard located inside the truck or vehicle, the switchboard providing a plurality of contacts for each switch, the truck having formed through it holes coinciding with the contacts of the switchboard, and a plate attached to the outside of the truck which serves as a platform for the battery-case and is adapted to be raised to cover the holes in the truck, conductors from the switches to the lock and a case or box which serves for inclosing an electric battery connected to revoluble terminals attached to the box or case which terminals are adapted to be placed in positions corresponding to those of the switches on the switchboard, and conductor-pins removably connected to the revoluble terminals which are projected through the holes in the truck to make contact with the contacts of the switchboard to close the circuit, substantially as described.

5. In an apparatus of the nature indicated a case or box which serves for inclosing an electric battery, said case having formed in its exterior notches corresponding in position to the contacts of the switchboard, revoluble terminals which are adapted to be placed in said notches and conductor-pins fixed to said revoluble terminals, an electrically-operated lock, switches and a switchboard inside the truck the latter having formed in it holes coinciding with the contacts of the switchboard through which the conductor-pins of the revoluble terminals may pass to make contact with those contacts of the switchboard upon which the switches have been placed to close the circuit, substantially as described.

6. An apparatus of the nature indicated consisting of an electrically-operated lock comprising a revoluble catch which is adapted to engage a spring-catch fixed to the truck, the revoluble catch having projections at each end, two spring-controlled levers adapted to engage said projections to lock the revoluble catch, a bar which serves as a stop for said levers, an armature which engages the ends of said levers and an electromagnet which attracts the armature, releases the levers and allows the revoluble catch to rotate and the door to be opened, two switches and a switchboard located inside the truck or vehicle said switchboard providing a plurality of contacts for each switch, conductors between the switches and the lock and a case or box which serves for inclosing an electric battery which is connected to revoluble terminals attached to the box or case which terminals are adapted to be placed in corresponding positions to those of the switches on the switchboard, and conductor-pins detachably connected to the revoluble battery-terminals, which pins are adapted to pass through holes in the truck to make contact with the contacts of the switchboard to close the circuit to release the lock, substantially as described.

7. An apparatus such as described comprising an electrically-operated lock fitted to the door of the vehicle, switches and a switchboard located inside the vehicle, said switchboard providing a plurality of contacts for each switch, conductors between the switches and the lock, an electric battery and detachable contact-pins constituting the terminals therefor which pins are adapted to pass through holes formed in the truck to make contact with any of the contacts of the switchboard to close the circuit.

848,257. SNAP-HOOK. ARNO MIDLER, VALENTIN HARTUNG, and WILHELM GRIESING, Cassel, Germany. Filed Nov. 20, 1905. Serial No. 288,144.

Claim.—1. The combination of a hook, a mousing pivoted thereto and having a locking-recess, a catch attached to the shank of the hook and engaging in said recess when the mousing is closed, and means for holding said catch in engagement with said recess, substantially as set forth.

2. The combination of a hook, a mousing pivoted thereto, and a spring-catch which is rigidly secured to the shank of the hook and projects therefrom toward the mousing, said catch being adapted to yield laterally in closing the mousing and to engage the free end thereof when the mousing is closed, substantially as set forth.

3. The combination of a hook, a mousing pivoted thereto, and a spring-catch secured to the shank of the hook and comprising arms which project beyond the shank of the hook and bear against opposite sides of the mousing when the latter is closed, substantially as set forth.

4. The combination of a hook, a mousing pivoted thereto and having a locking-recess in its side, and a spring-catch which is secured to the shank of the hook and projects toward the mousing and which is provided with a locking-lug which engages in the recess of the mousing when the latter is closed, substantially as set forth.

5. The combination of a hook having a curved bill end which is provided in its concave side with a longitudinal recess, and a mousing pivoted to the bill end of the hook and having a curved bearing-piece adapted to bear with its convex side against the concave side of the hook and provided on its convex side with a longitudinal rib which is seated in said recess when the mousing is closed, substantially as set forth.

848,258. COMBINED DESK, TABLE, AND BOOK-REST. JOHN W. MEAKER, Detroit, Mich., assignor to Meaker Sales Company, Detroit, Mich., a Corporation of Michigan. Filed Jan. 23, 1907. Serial No. 353,638.

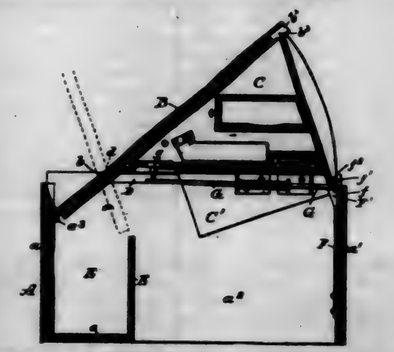

Claim.—1. A combined desk, table and book-rest, comprising a stand provided with a pivotally-mounted, reversible top adapted to open out for converting the device from a table into a writing-desk; a movable desk-cabinet, normally below the level of said top, and adapted to be elevated when said top is moved from its position as a table-top, said cabinet being constructed to permit of its being covered when in its elevated position by said reversible top, the latter in this position forming an inclined book-rest.

2. A combined desk, table and book-rest, comprising an open main or stand frame, a reversible top mounted in the frame upon pivots located at a distance back of the front edge of the top and of the frame-front, said top closing said frame when serving as a table-top, and being adapted to swing outwardly on its pivotal supports to convert the table into an open writing-desk; a vertically-movable desk-cabinet within the frame and normally below said top, said cabinet being constructed to be engaged and elevated by said top when the latter is swung from its position as a table-top to its outwardly-extended position, and means for supporting said cabinet in its elevated position independently of said top, whereby the latter may be closed back upon the elevated cabinet to form an inclined book-rest.

3. A combined desk, table and book-rest, comprising a substantially rectangular main stand-frame made up of front, rear and side rails; a pivotally-mounted, reversible top which, when serving as a table-top, has one edge resting on the rear rail with its opposite edge substantially coincident with the upper, inner edge of the front rail, said top having its pivotal supports located at a distance from its last-mentioned edge and being adapted to turn upon said supports for converting the table into a writing-desk; a desk-cabinet mounted movably in the frame and normally below said top, the cabinet being arranged to be engaged and lifted by the top when said top is swung over outwardly from its position as a table-top, and means for supporting the desk-cabinet in its elevated position independently of said top.

4. A combined desk, table and book-rest, comprising a stand-frame provided with a pivotally-mounted, reversible top adapted to open outwardly for converting the table into a writing-desk; a movable desk-cabinet normally below the level of said top, said cabinet being constructed to be engaged and elevated by said top when the latter is opened outwardly; means for supporting said cabinet in its elevated position independently of said top, and means for releasing said supporting means, said releasing means being accessible only when said top is practically in its fully-opened position.

5. A combined desk, table and book-rest, comprising a table or stand provided with a pivotally-mounted, reversible top, said top having its pivotal supports located at a distance from its front edge and being constructed to open outwardly for converting the device from a table into a writing-desk; a pivotally-mounted desk-cabinet normally below said top and having its pivotal axis practically coincident with the axis of said top, said cabinet being constructed to be engaged and lifted by the top when the latter is moved from its closed to its open position, and a latch for supporting said cabinet in its elevated position.

6. A combined desk, table and book-rest, comprising a stand provided with a pivotally-mounted, reversible top adapted to open outwardly for converting the device from a table into a desk, a movable desk-cabinet normally below the level of said top and adapted to be engaged and elevated by said top when the latter is moved from its closed to its fully-opened position, a spring-pressed bolt mounted on said cabinet and a latch attached to the stand adapted to engage said bolt when the cabinet is in its elevated position, said bolt being located and constructed to be engaged and moved up by said top from an inaccessible to an accessible position.

7. A combined desk, table and book-rest comprising a rectangular stand-frame the front rail of which is beveled at its inner upper portion, a reversible top pivoted to the stand back of the beveled front rail thereof so that, in the swinging movement of said top, its adjacent edge approximates the beveled surface of the rail, a vertically-movable desk-cabinet having an upwardly and rearwardly inclined front, when raised, and sustained in this position independently of the pivoted top, whereby the top may be swung backwardly against the desk-cabinet to form a book-rest, and whereby the book-rest so formed will have a foot consisting of the beveled portion of the front stand-rail.

8. In combination with the main frame, a vertically-movable desk-cabinet and an independently-movable pivoted top, of a double latch for both the cabinet and the top, adapted to hold the cabinet in its elevated position and to hold the swinging top in its closed position, substantially as described.

848,259. DRAINAGE-FITTING. FRED B. MORTON, Pasadena, Cal. Filed Aug. 13, 1906. Serial No. 330,307.

Claim.—1. A fitting comprising two pipes having circular passages therethrough and having a common top and bottom and provided with inlets on opposite sides thereof.

2. A fitting comprising two oppositely-curved pipes having circular passages therethrough and having a common top and bottom and provided with inlets on opposite sides thereof.

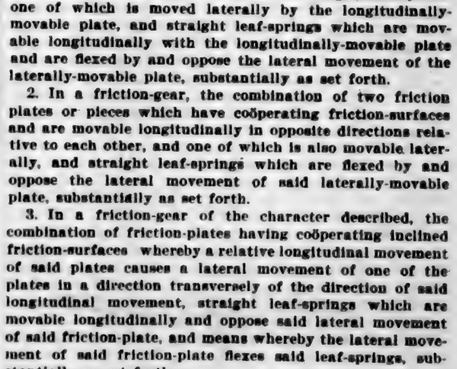

3. A fitting comprising a casing provided with two circular passages, said passages having a common top and bottom and two opposed inlets on said passages, one on each passage at points where said passages are separated.

4. A fitting comprising two oppositely-curved pipes having circular passages therethrough, said pipes being united at the top and bottom and provided with inlets on the opposite sides thereof, the whole being cast in one piece.

848,260. FRICTION DRAFT AND BUFFING GEAR. THOMAS L. MCKEEN, Easton, Pa. Filed Sept. 7, 1905. Serial No. 277,402.

Claim.—1. In a friction-gear, the combination of two friction plates or pieces having coöperating friction-surfaces, one of which plates is movable longitudinally and one of which is moved laterally by the longitudinally-movable plate, and straight leaf-springs which are movable longitudinally with the longitudinally-movable plate and are flexed by and oppose the lateral movement of the laterally-movable plate, substantially as set forth.

2. In a friction-gear, the combination of two friction plates or pieces which have coöperating friction-surfaces and are movable longitudinally in opposite directions relative to each other, and one of which is also movable laterally, and straight leaf-springs which are flexed by and oppose the lateral movement of said laterally-movable plate, substantially as set forth.

3. In a friction-gear of the character described, the combination of friction-plates having coöperating inclined friction-surfaces whereby a relative longitudinal movement of said plates causes a lateral movement of one of the plates in a direction transversely of the direction of said longitudinal movement, straight leaf-springs which are movable longitudinally and oppose said lateral movement of said friction-plate, and means whereby the lateral movement of said friction-plate flexes said leaf-springs, substantially as set forth.

4. In a friction-gear of the character described, the combination of friction-plates having coöperating inclined friction-surfaces whereby a relative longitudinal movement of said friction-plates causes a lateral movement of one of the plates in a direction transversely of the direction of said longitudinal movement, straight leaf-springs which are movable longitudinally and bear between their

ends against a part movable with said laterally-movable plate, and bearings for the ends of said springs, substantially as set forth.

5. In a friction-gear of the character described, the combination of a wedge and friction-plate provided with coöperating friction-surfaces, said wedge being movable longitudinally of the friction-plate and being caused to move laterally by engagement with said friction-plate, straight leaf-springs which are movable longitudinally with said wedge and oppose the lateral movement thereof, said wedge bearing against said leaf-springs between their ends only, and bearings for the ends of the leaf-springs, substantially as set forth.

6. In a friction-gear of the character described, the combination of a longitudinally-movable wedge having an inclined friction-surface, a friction-surface against which the inclined surface of the wedge slides, whereby the wedge is moved laterally, straight leaf-springs which move longitudinally with said wedge and oppose the lateral movement of the wedge, and means coöperating with said wedge and leaf-springs whereby the lateral movement of the wedge flexes the leaf-springs, substantially as set forth.

7. In a friction-gear of the character described, the combination of a longitudinally-movable wedge having an inclined friction-surface, a friction-surface against which the inclined surface of the wedge slides, whereby the wedge is moved laterally, straight leaf-springs which move longitudinally with said wedge and oppose the lateral movement of the wedge, means coöperating with said wedge and leaf-springs whereby the lateral movement of the wedge flexes the leaf-springs, and one or more springs for restoring the parts to normal position, substantially as set forth.

8. In a friction-gear of the character described, the combination of oppositely-arranged longitudinally-movable wedges having inclined outer friction-surfaces and convexed inner faces, friction-surfaces against which the inclined surfaces of the wedges slide, whereby the wedges are moved laterally toward each other, two sets of straight leaf-springs arranged between said wedges, each set bearing centrally against the convexed face of one wedge, means between said sets of leaf-springs on which they bear at their ends, and one or more springs for restoring the parts to normal position after movement, substantially as set forth.

9. In a friction-gear of the character described, the combination of oppositely-arranged longitudinally-movable wedges having inclined outer friction-surfaces and convexed inner faces, friction-surfaces against which the inclined surfaces of the wedges slide whereby the wedges are moved laterally toward each other, two sets of straight leaf-springs arranged between said wedges, each set bearing centrally against the convexed face of one wedge, and a centering-block between said sets of leaf-springs having ends thicker than its central portion against which ends the ends of the leaf-springs bear, substantially as set forth.

848,261. SEAT FOR WAGONS. WILLIAM P. NORRINGTON, Greenpoint, N. Y. Filed Apr. 4, 1906. Serial No. 309,738.

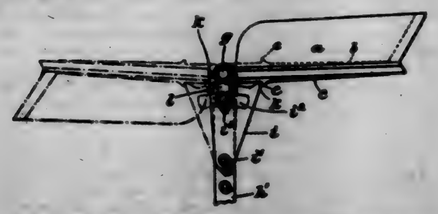

Claim.—1. The combination of a reversible wagon-seat, a support therefor, a brace mounted to swing on the support and coöperating with the under side of the seat in its normal position and with the upper side of the seat when reversed.

2. The combination of a reversible wagon-seat, a support therefor and a triangular brace mounted to swing on the support and having at its upper angles toes to coöperate respectively with the under side of the seat in its normal position and with the upper side of the seat when reversed.

3. The combination of a manager, a reversible seat mounted to swing thereon and a triangular brace mounted on the manager and having toes at its upper angles to coöperate respectively with the under side of the seat in its normal position and with the upper side of the seat when reversed.

4. The combination of a reversible wagon-seat, a support therefor, straps secured respectively to the upper and lower sides of said seat and having each a lug, and a triangular brace mounted to swing on the support and having toes at its upper angles to coöperate with said straps and lugs.

5. The combination of a reversible wagon-seat, straps secured respectively to the upper and lower sides thereof and having lugs and alined eyes at the edge of the seat, a manager having a supporting-bolt to enter said eyes, and a triangular brace mounted to swing on the manager and having toes at its upper angles to coöperate with the lugs on said straps.

848,262. FARE-REGISTER. WILFRED I. OHMER, DAVID B. WHISTLER, and JOHN E. MCALLISTER, Dayton, Ohio, assignors to The Recording and Computing Machines Company, Dayton, Ohio, a Corporation of Ohio. Filed Nov. 20, 1906. Serial No. 344,258.

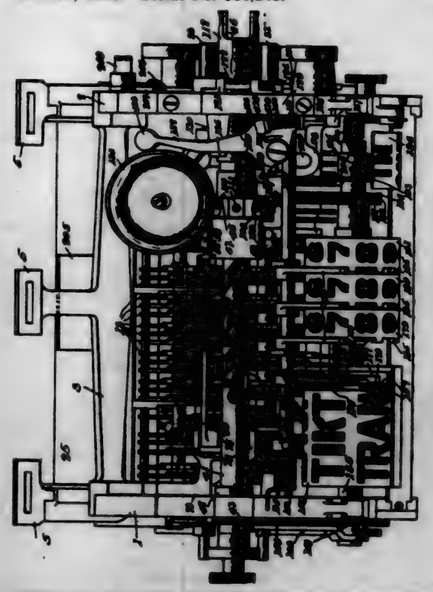

Claim.—1. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto, an actuating member movable longitudinally of said shaft and rotatable therewith a second shaft parallel to said actuating-shaft, and a member mounted to move longitudinally on said second shaft and connected to said actuating member, of a single mechanism for moving said member on said second shaft to move said actuating member into operative relation with one of said counters and for rotating said actuating-shaft to cause said actuating member to actuate said counter, substantially as described.

2. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending longitudinally thereof, an actuating member mounted on said shaft, movable longitudinally thereof and rotatable therewith, a screw-shaft, and means carried thereby and engaging said actuating member to move the same longitudinally of said actuating-shaft, of a single mechanism for rotating said screw-shaft to move said actuating member into operative relation with one of said counters and for rotating said actuating-shaft to cause said actuating member to actuate said counter, substantially as described.

3. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto, and an actuating-gear movable longitudinally of said shaft and rotatable therewith, of a screw-shaft extending parallel to said actuating-shaft, a nut mounted on said screw-shaft and adjustable lugs extending through the sides of said nut and engaging a thread in said screw-shaft, means for connecting said nut to said actuating-gear, means for rotating said screw-shaft to move said actuating-gear into operative relation with one of said counters, and means for rotating said actuating-gear to actuate said counter, substantially as described.

4. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto, and an actuating-gear movable longitudinally of said shaft and rotatable therewith, of a shaft extending parallel thereto and having a spiral groove therein, a nut mounted on said shaft having a T-shaped slot in the side thereof, said slot having an aperture in the rear wall thereof, a guide-plate in said T-shaped slot, a bolt having one end extending through the apertures in said guide-plate and in the wall of said slot and engaging the groove in said shaft, a nut on the outer end of said bolt, means for rotating said shaft to move said actuating-gear into operative relation with one of said counters, and means for rotating said actuating-gear to actuate said counter, substantially as described.

5. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto, a four-toothed actuating-gear movable longitudinally of said shaft and rotatable therewith, of a screw-shaft extending parallel to said actuating-shaft, a nut carried by said screw-shaft and connected with said actuating-gear, means for rotating said screw-shaft to move said actuating-gear into operative relation with one of said counters, and means for rotating said shaft through one-quarter of a revolution to move said actuating-gear forward the space of one tooth, substantially as described.

6. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto, and an actuating-gear movable longitudinally of said shaft and rotatable therewith, of a screw-shaft extending parallel to said actuating-shaft, a nut mounted thereon and connected with said actuating-gear, and means carried at one end of said screw-shaft for rotating the same to move said actuating-gear into operative relation with one of said counters and to rotate said actuating-gear and actuate said counter, substantially as described.

7. In a machine of the character described, the combination, with a plurality of alined counters, and an actuating member movable longitudinally of said counters, of an operating mechanism adapted to be rotated to move said actuating member into operative relation with one of said counters and to be reciprocated to cause said member to actuate said counter, substantially as described.

8. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto, and an actuating member movable longitudinally of said shaft and rotatable therewith, of an operating member adapted to be rotated to move said actuating-gear longitudinally of said shaft to bring the same into operative relation with one of said counters and to be reciprocated to rotate said actuating-gear and actuate said counter, substantially as described.

9. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending longitudinally thereof, and an actuating-gear movable longitudinally of said shaft and rotatable therewith, a screw-shaft extending parallel with said actuating-shaft, and a nut carried thereby and connected with said actuating-gear, of an operating member adapted to be rotated to rotate said screw-shaft and move said actuating-gear into operative relation with one of said counters and to be reciprocated to impart rotatory movement to said actuating-shaft to cause said actuating-gear to actuate said counter, substantially as described.

10. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto, and actuating-gear movable longitudinally of said shaft and rotatable therewith, a screw-shaft extending parallel with said actuating-shaft, and a nut mounted thereon and connected with said actuating-gear, of a sleeve mounted on said screw-shaft and adapted to be rotated to impart a rotatory movement to said screw-shaft and move said actuating-gear into operative relation with one of said counters and to be reciprocated longitudinally of said shaft to impart a rotatory movement to said actuating-shaft to cause said actuating-gear to actuate said counter, substantially as described.

11. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft having a pinion at one end thereof, an actuating-gear movable longitudinally of said shaft and rotatable therewith, a screw-shaft, and a nut carried by said screw-shaft and connected with said actuating-gear, of a rack meshing with said pinion, a sleeve on the outer end of said screw-shaft adapted to impart a rotatory motion to said screw-shaft to move said actuating-gear into operative relation with one of said counters and to be reciprocated to move said rack transversely of said shaft to rotate the same and cause said actuating-gear to actuate said counter, substantially as described.

12. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto and having a pinion at one end thereof, an actuating-gear movable longitudinally of said shaft and rotatable therewith, a screw-shaft extending parallel to said actuating-shaft, and a nut carried by said screw-shaft and connected with said actuating-gear, of a plate movable transversely of said actuating-shaft, a rack carried by said plate and meshing with said pinion, a sleeve mounted on one end of said screw-shaft and adapted, when rotated, to impart a rotatory movement to said screw-shaft to move said actuating-gear into operative relation with one of said counters, and, when reciprocated, to move said plate and rack transversely of said actuating-shaft, imparting a rotatory movement thereto and causing said actuating-gear to actuate said counter, substantially as described.

13. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto and having a pinion at one end thereof, and an actuating-gear movable longitudinally of said shaft and rotatable therewith, of a screw-shaft, a nut mounted on said screw-shaft and connected with said actuating-gear, a plate having a slot therein extending diagonally of said actuating-shaft, a rack carried by said plate and meshing with said pinion, a sleeve mounted on the end of said screw-shaft and rotatable therewith, and means carried by said sleeve for engaging the slot of said plate and causing said rack to move transversely of the actuating-shaft and rotate said actuating-gear, thereby actuating said counter, substantially as described.

14. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto and having a pinion near one end thereof, an actuating-gear movable longitudinally of said shaft and rotatable therewith, a screw-shaft extending parallel with said actuating-shaft, and a nut carried thereby and connected with said actuating-gear, of a plate movable transversely of said screw-shaft and having

a slot extending diagonally thereof, a rack carried by said plate and meshing with said pinion, a sleeve mounted on one end of said screw-shaft to rotate therewith and reciprocate thereon, a pin carried by said sleeve and a bearing-sleeve mounted on said pin and adapted to engage the slot in said plate when said sleeve is reciprocated and cause said rack to move transversely of said actuating-shaft to impart a rotatory movement thereto, substantially as described.

15. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto and having a pinion at one end thereof, an actuating-gear movable longitudinally of said shaft and rotatable therewith, a screw-shaft, and a nut carried by said screw-shaft and connected with said actuating-gear, of a plate movable transversely of said actuating-shaft and having a slot extending diagonally of said screw-shaft, a rack carried by said plate and engaging said pinion, a sleeve movable longitudinally of said screw-shaft and rotatable therewith, a substantially triangular block carried by said sleeve, lugs mounted on each face of said block and adapted to engage said diagonal slot to reciprocate said plate when said sleeve is reciprocated on said screw-shaft, thereby rotating said actuating-gear, substantially as described.

16. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto and having a pinion at one end thereof, an actuating-gear movable longitudinally of said shaft and rotatable therewith, a screw-shaft extending parallel to said actuating-shaft, and a nut carried thereby and connected with said actuating-gear, of a plate movable transversely of said actuating-shaft and having a slot extending diagonally thereof, a rack carried by said plate and meshing with said pinion, a sleeve movable longitudinally of said screw-shaft and rotatable therewith, a pin carried by said sleeve and adapted to engage said slot, and a plurality of independent bearing-sleeves mounted on said pin, substantially as described.

17. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto and having a pinion at one end thereof, an actuating-gear movable longitudinally of said shaft and rotatable therewith, a screw-shaft extending parallel to said actuating-shaft, and a nut carried by said screw-shaft and connected to said actuating-gear, of a stationary plate, a second plate movable longitudinally on said first-mentioned plate, one of said plates having a slot extending parallel to said screw-shaft and the other plate having a slot extending at an angle to said first-mentioned slot, a rack carried by said movable plate and meshing with said pinion, a sleeve movable longitudinally of said screw-shaft and rotatable therewith, a pin carried by said sleeve and adapted to engage both of said slots, whereby, when said pin is moved longitudinally of the straight slot, it engages the side of the inclined slot of said movable plate and moves said plate transversely of said actuating-shaft, substantially as described.

18. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto, an actuating-gear movable longitudinally of said shaft and rotatable therewith, and means for moving said actuating-gear into operative relation with one of said counters, of a fixed plate mounted in said machine, a second plate movable on said fixed plate in a direction transverse to said actuating-shaft and having a rack meshing with said pinion, one of said plates having a slot extending parallel to said actuating-shaft and the other of said plates having a slot extending at an angle to said first-mentioned slot, a member reciprocating longitudinally of said actuating-shaft, and a lug carried by said reciprocating member adapted to engage both of said slots, thereby causing said movable plate to be actuated in a direction transversely to said shaft when said reciprocating member is actuated, substantially as described.

19. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto, an actuating-gear movable longitudinally of said shaft and rotatable therewith, and means for moving said actuating-gear into operative relation with one of said counters, of a fixed plate mounted in said machine and having a slot extending parallel with said actuating-shaft, a plate slidably mounted on said fixed plate and movable in a direction transverse to said shaft and having a slot extending at an angle to said first-mentioned slot, an operating member reciprocating longitudinally of said actuating-shaft and a projection carried by said reciprocating member and adapted to engage both of said slots, whereby said second plate is moved transversely of said shaft when said operating member is reciprocated, and a rack carried by said movable plate and meshing with said pinion, substantially as described.

20. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto and having a pinion near one end thereof, an actuating-gear moving longitudinally of said shaft and rotatable therewith, and means for moving said actuating-gear into operative relation with one of said counters, of a rack movable transversely of said shaft and meshing with said pinion, an actuating member reciprocating longitudinally of said actuating-shaft and operatively connected with said rack, substantially as described.

21. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto and having a pinion near one end thereof, an actuating-gear movable longitudinally of said shaft and rotatable therewith, and means for moving said actuating-gear into operative relation with one of said counters, of a rack movable transversely of said actuating-shaft and meshing with said pinion, an actuating member operatively connected with said rack and having a rotatory movement to operate said means for moving said actuating-gear into operative relation with one of said counters and a reciprocatory movement to move said rack transversely of said actuating-shaft to rotate the same and cause said actuating-gear to actuate said counter, substantially as described.

22. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto, a sleeve near one end of said shaft, a pinion carried by said sleeve, a ratchet mechanism connecting said sleeve with said shaft, an actuating-gear movable longitudinally of said shaft and rotatable therewith, and means for moving said actuating-gear into operative relation with one of said counters, of a rack movable transversely of said shaft and meshing with said pinion, and an operating mechanism operatively connected with said rack, substantially as described.

23. In a machine of the character described, the combination, with a plurality of alined counters, a sleeve rotatably mounted in said machine, a pinion at one end of said sleeve and pawls at the opposite end of said sleeve, an actuating-shaft extending longitudinally of said counters and journaled in said sleeve, one end of said shaft extending beyond said sleeve and having a ratchet thereon adapted to be engaged by said pawls, an actuating-gear movable longitudinally of said shaft and rotatable therewith, and means for moving said actuating-gear into operative relation with one of said counters, of a rack movable transversely of said shaft and meshing with said pinion, and an operating mechanism operatively connected with said rack, substantially as described.

24. In a machine of the character described, the combination, with a plurality of alined counters, an operating-shaft extending parallel thereto and having a pinion near one end thereof, an actuating-gear movable longitudinally of said shaft and rotatable therewith, and means for moving said actuating-gear into operative relation with one of said counters, of a rack movable transversely of said shaft and meshing with said pinion, an actuating member operatively connected with said rack, a detent-wheel mounted on said shaft and having recesses in the periphery thereof, and a pawl adapted to engage said recesses to prevent the overthrow of said shaft, substantially as described.

25. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto and having a pinion near one end thereof, an actuating-gear movable longitudinally of said shaft and rotatable therewith, and means for moving said actuating-gear into operative relation with one of said counters, of a rack movable transversely of said shaft and meshing with said pinion, an operating member reciprocating longitudinally of said shaft and operatively connected with said rack, detent-teeth extending longitudinally of said reciprocating member, and a detent carried by said machine and adapted to engage said teeth, substantially as described.

26. In a machine of the character described, the combination, with a main frame, a plurality of alined counters mounted therein, an actuating-shaft extending parallel thereto and having a pinion near one end thereof, an actuating-gear movable longitudinally of said shaft and rotatable therewith, and means for moving said gear into operative relation with one of said counters, of a rack movable transversely of said shaft and meshing with said pinion, an actuating member slidably mounted in said frame having detent-teeth extending longitudinally thereof, a detent pivotally mounted in said frame and adapted to engage said detent-teeth, substantially as described.

27. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto and having a pinion near one end thereof, an actuating-gear movable longitudinally of said shaft and rotatable therewith, a screw-shaft extending parallel to said actuating-shaft, and a nut carried thereby and connected to said actuating-gear, of a rack movable transversely of said actuating-shaft and meshing with said pinion, a sleeve movable longitudinally of said screw-shaft and rotatable therewith, means for operatively connecting said sleeve with said rack, annular grooves near the opposite ends of said sleeve, detent-teeth formed in the periphery thereof, between said annular grooves, a detent adapted to engage said annular grooves when said sleeve is at either the inner or outer limit of its movement and to engage said detent-teeth on said sleeve when said sleeve is in a position intermediate said limits of movement, substantially as described.

28. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-shaft extending parallel thereto and having a pinion near one end thereof, an actuating-gear movable longitudinally of said shaft and rotatable therewith, a screw-shaft extending parallel to said actuating-shaft, and a nut carried by said screw-shaft and connected with said actuating-gear, of a rack extending transversely of said actuating-shaft and meshing with said pinion, a sleeve movable longitudinally of said screw-shaft and rotatable therewith, annular grooves near the opposite end of said sleeve, detent-teeth formed in the periphery of said sleeve extending between said grooves, a spring-held detent normally in engagement with one of said annular grooves and adapted, when said sleeve is moved outward, to engage said detent-teeth and prevent the backward movement thereof and to engage the other of said annular grooves when said sleeve has reached the outer limit of its movement and to ride over said teeth in the opposite direction when said sleeve is returned to its normal position, substantially as described.

29. In a machine of the character described, the combination, with a plurality of individual fare-counters, a total-cash counter in alinement with said individual counters, an actuating-shaft extending parallel to said counters, an actuating-gear for said individual counters mounted on said actuating-shaft and movable longitudinally thereof and rotatable therewith, and means for moving the same into operative relation with one of said counters, of an actuating-gear for said total-cash counters mounted on said actuating-shaft movable longitudinally thereof and rotatable therewith, means for moving said actuating-gear into operative relation with the total-cash counters when said individual actuating-gear is moved into operative relation with the cash-counter, and means for rotating said actuating-shaft to actuate said counters, substantially as described.

30. In a machine of the character described, the combination, with a plurality of individual cash-fare counters, a total-cash counter in alinement with said individual counters, an actuating-shaft extending parallel to said counters, an actuating-gear for the individual counters movable longitudinally of said shaft and rotatable therewith, and means for moving said actuating-gears into operative relation with one of said counters, of a plurality of actuating-gears for said total-cash counters movable longitudinally of said shaft and rotatable therewith, and means for bringing one of said actuating-gears into operative relation with said total-cash counter when said individual actuating-gear is in operative relation with one of said cash-fare counters, substantially as described.

31. In a machine of the character described, the combination, with a plurality of individual cash-fare counters, a total-cash counter in alinement therewith, an actuating-gear for said individual fare-counters, and means for moving said actuating-gear into operative relation with one of said counters, of a plurality of gears of different diameters secured to said total-cash counter and rotatable therewith, a plurality of actuating-gears of different diameters adapted to mesh with the counter-gear respectively, and means for moving said actuating-gear into engagement with the respective counter-gear when said actuating-gear for the individual counters is moved into operative relation with one of said cash-counters, substantially as described.

32. In a machine of the character described, the combination, with a plurality of individual cash-fare counters, a total-cash counter in alinement therewith, an actuating-shaft extending parallel to said counters, an actuating-gear movable longitudinally of said shaft and rotatable therewith, a screw-shaft extending parallel to said actuating-shaft, and a nut carried by said screw-shaft and connected with said actuating-gear, of a second actuating-gear movable longitudinally of said actuating-shaft and rotatable therewith, a bell-crank lever pivotally mounted above said actuating-shaft and having one end operatively connected to said last-mentioned actuating-gear, and means carried by said nut to engage the other arm of said bell-crank lever and move said actuating-gear into operative relation with said total-cash counter when said nut has been advanced to move said first-mentioned actuating-gear into operative relation with one of said individual cash-fare counters, substantially as described.

33. In a machine of the character described, the combination, with a plurality of individual cash-fare counters, an actuating-shaft extending parallel thereto, an actuating-gear movable longitudinally of said shaft and rotatable therewith, a screw-shaft extending parallel with said actuating-shaft, a nut carried by said screw-shaft and connected with said actuating-gear, and a pin carried by said nut, of a total-cash counter, an actuating-gear therefor movable longitudinally of said actuating-shaft and rotatable therewith, a rock-shaft having one arm operatively connected to said last-mentioned actuating-gear, a second arm pivotally secured to said rock-shaft and provided with a cam-shaped slot adapted to be engaged by the pin on said nut, whereby said rock-shaft is operated to move said actuating-gear into operative relation with said total-cash counter when said nut has been advanced to move said individual actuating-gear into operative relation with one of said cash-fare counters, substantially as described.

34. In a machine of the character described, the combination, with a plurality of alined fare-counters, an actuating-shaft extending parallel thereto and having a pinion in one end thereof, an actuating-gear movable longitudinally of said shaft and rotatable therewith, and means for moving said actuating-gear into operative relation with one of said counters, of a rack movable transversely of said actuating-shaft and meshing with said pinion, a reciprocating member operatively connected with said rack, a bell mounted on said machine, a bell-hammer pivoted near said reciprocating member, a spring holding said hammer normally in its foremost position, and a part carried by said reciprocating member adapted to engage said hammer and move the same against the tension of said spring, whereby said hammer is released and is moved violently into contact with said bell, substantially as described.

35. In a machine of the character described, the combi-

nation, with a plurality of alined fare-counters, an actuating-gear and a reciprocating member adapted to move said actuating-gear into operative relation with one of said counters, of a bell mounted on said machine, an inwardly-extending arm carried by said machine, a lever pivoted at one end to said arm and having a bell-hammer at the opposite end, a spring holding said lever normally in its forward position, a spring-held pawl pivoted to said lever, a stop for holding said pawl against movement in one direction, and a part carried by said reciprocating member adapted to engage said pawl and move said lever against the tension of said spring as said member is reciprocated in one direction and to move said pawl about its pivot when reciprocated in the other direction, substantially as described.

36. In a machine of the character described, the combination, with a plurality of alined counters, an actuating-gear therefor, a reciprocating member adapted to move said actuating-gear into operative relation with one of said counters, and a bell carried by said machine, of a bracket secured to said machine having two inwardly-extending arms, a lever pivoted to one of said arms and having a hammer at its outer end adapted to engage said bell, a stop on the second arm of said bracket adapted to limit the outward movement of said lever, a spring holding said lever normally in contact with said stop, a pawl pivoted to said lever, a stop limiting the movement of said pawl in one direction, a spring normally holding said pawl in engagement with said stop, and a part carried by said reciprocating member adapted to engage said pawl to move said lever against the tension of said spring when said member is moved outward and to engage said pawl and move the same about its pivot as said member is moved inwardly, substantially as described.

37. In a machine of the character described, the combination, with a plurality of individual cash-fare counters, an actuating-gear therefor, means for moving said actuating-gear into operative relation with one of said counters, a total-cash counter in alinement with said cash-fare counters, an actuating-gear therefor, and means for moving the same into operative relation therewith when said first-mentioned actuating-gear is moved into operative relation with one of said cash-fare counters, of means for resetting said counters to their zero position, and means for locking said resetting mechanism against operation when said last-mentioned actuating-gear is in operative relation with said total-cash counter, substantially as described.

38. In a machine of the character described, the combination, with a resetting-shaft, a plurality of individual cash-fare counters mounted on said shaft, an actuating-gear, means for moving the same into operative relation with one of said cash-fare counters, a total-cash counter mounted on said resetting-shaft, an actuating-gear for said total-cash counter, and means for moving said actuating-gear into operative relation with said total-cash counter when said first-mentioned actuating-gear is moved into operative relation with one of said cash-fare counters, of printing mechanism in operative relation with said counters, means actuated by said printing mechanism for controlling the movement of said resetting-shaft, and means for locking said printing mechanism against movement when said actuating-gear is in operative relation with said total-cash counter, substantially as described.

39. In a machine of the character described, the combination, with a resetting-shaft, a plurality of counters mounted on said resetting-shaft, and means for actuating said counters, of printing mechanism in operative relation with said counters, means carried by said printing mechanism controlling the movement of said resetting-shaft, a lever controlling said printing mechanism, a pin carried by said lever, a bell-crank lever having a recess in one arm thereof in alinement with said pin, a spring holding said recess normally out of engagement with said pin, a gear driven from said counter-actuating mechanism, a pin carried by said gear and adapted to engage the other arm of said bell-crank lever to move said recess into engagement with said pin and thereby lock said printing mechanism against movement, substantially as described.

40. In a machine of the character described, the combination, with a plurality of counters, an actuating member therefor, and operating mechanism for moving said actuating member into operative relation with one of said counters and for operating said actuating member to actuate that counter, of a shaft actuated from said operating mechanism, an indicator-drum rigidly mounted on said shaft, a shield adapted to cover the indication on said drum when said mechanism is being operated, and means for moving said shield away from said indication to expose the same to view when said operation has been completed, substantially as described.

41. In a machine of the character described, the combination, with a plurality of counters, an actuating member therefor, and operating mechanism for moving said actuating member into operative relation with one of said counters and for operating said actuating member to actuate that counter, of a shaft actuated from said operating mechanism, an indicator-drum rigidly mounted on said shaft, an arm pivoted on said shaft, a shield carried by said arm and extending across the face of said indicator-drum, a spring tending to hold said shield normally in its elevated position, and means controlled by said operating mechanism for moving said shield to its lowermost position when the operation thereof has been completed, substantially as described.

42. In a machine of the character described, the combination, with a plurality of counters, an actuating member therefor, and operating mechanism for moving said actuating member into operative relation with one of said counters and for operating said actuating member to actuate that counter, of a shaft actuated from said operating mechanism, an indicator-drum carried by said shaft, an arm journaled on said shaft, a shield carried at one end of said arm and extending across the face of said drum, a spring connected to the other end of said arm tending to hold said shield normally in its elevated position, a pin carried by said arm, and a hook carried by a movable part of said machine and controlled by said operating mechanism for engaging said pin to move said shield to its lowermost position when the operation of said mechanism has been completed, substantially as described.

43. In a machine of the character described, the combination, with a plurality of counters, an actuating member, and operating mechanism for moving said actuating member into operative relation with one of said counters for operating said actuating member to actuate said counter, of a shaft actuated from said operating mechanism, an indicator-drum mounted on said shaft, an arm journaled on said shaft, a shield carried at one end of said arm and extending across the face of said drum, a spring secured to the other end of said arm tending to hold said shield normally in front of the indication on said drum, a pin carried by said arm, a shaft extending parallel to said drum, an arm carried by said shaft, a member carried by said arm and adapted to engage said pin, a spring tending to rotate said shaft to move the member carried by said arm into engagement with said pin when said operating mechanism is actuated, and means for rotating said shaft in the opposite direction to actuate said member, thereby moving the shield away from the indication when the operating mechanism has returned to its normal position, substantially as described.

44. In a machine of the character described, the combination, with a plurality of counters, an actuating member therefor, and operating mechanism for moving said actuating member into operative relation with one of said counters and for operating said actuating member to actuate that counter, of a shaft actuated by said operating mechanism, a drum mounted thereon, a bell-crank lever journaled on said shaft, a shield carried by one arm of said lever and extending across the face of said drum, a pin carried by the opposite end of said lever, a spring engaging said lever and tending to hold said shield normally in its elevated position, a shaft extending parallel to said drum, an arm carried by said shaft, a hook carried by said arm, a projection carried by said shaft and adapted to be engaged by a moving part of said operating mechanism when the same is in its normal position, a spring engaging said shaft and tending to rotate the same to move said arms downwardly and bring said hook into engagement with said pin when said moving part of the operating mechanism has moved out of engagement with said projection and adapted to be rotated to raise the same, thereby depressing said shield when said moving part again engages said projection upon its return to normal position, substantially as described.

45. In a machine of the character described, the combination, with a plurality of counters, an actuating member therefor, and operating mechanism for moving said actuating member into operative relation with one of said counters and for operating said actuating member to actuate that counter, of a shaft actuated from said operating mechanism, an indicator-drum mounted on said shaft, an arm journaled on said shaft, a shield carried by said arm and extending across the face of said drum, means for operating said arm to move said shield away from the indication on the drum and to hold the same in such position, means for releasing said holding means when said shaft begins to rotate, and a spring for moving said shield in front of said indication, substantially as described.

46. In a machine of the character described, the combination, with a plurality of counters, an actuating member therefor, and operating mechanism for moving said actuating member into operative relation with one of said counters and for operating said actuating member to actuate that counter, of a shaft actuated from said operating mechanism, an indicator-drum mounted on said shaft, a series of projections carried by said drum, an arm journaled on said shaft, a shield carried by said arm and extending across the face of said drum, a spring tending to hold said shield normally in front of said indication on said drum, a pin carried by said arm, a bell-crank lever carried by a movable part of said machine, one arm of said lever having a hook adapted to engage said pin and move said shield away from said indication and hold the same in such position when the operating mechanism is in its normal position, the other arm having a projection lying in the path of the projections on said drum and adapted to be engaged thereby when said operating mechanism is actuated to move said lever and release said hook from said pin and allow said shield to move in front of the indication on said drum, substantially as described.

47. In a machine of the character described, the combination, with a resetting-shaft, a plurality of counters thereon and operating mechanism for said counters, of a second shaft parallel to said resetting-shaft, an indicator-wheel mounted on said shaft, means actuated from said operating mechanism for rotating said indicator-wheel, and means controlled by the movement of said operating mechanism to prevent the overthrow of said indicator-wheel, substantially as described.

48. In a machine of the character described, the combination, with a resetting-shaft, a plurality of counters thereon, and operating mechanism for said counters, of an indicator-wheel journaled in said machine, a series of projections carried thereby, a shaft extending parallel with said indicator-wheel, a stop carried by said shaft and having its free end in alinement with the projections on said indicator-wheel, a spring engaging said shaft and tending to move said stop into the path of said projections, and an arm on said shaft engaging a movable part of said operating mechanism and normally holding said stop out of the path of said projections, whereby, when said movable part is moved out of engagement with said arm, said stop is moved into the path of the projections on said indicator-wheel, substantially as described.

49. In a machine of the character described, the combination, with a resetting-shaft, a plurality of counters mounted thereon and operating mechanism for said counters, of a shaft parallel to said resetting-shaft, an indicator-wheel mounted on said shaft and operated from said operating mechanism and operatively connected with said resetting-shaft, of means controlled by said resetting-shaft for preventing the overthrow of said indicator-wheel when it is reset to zero, substantially as described.

50. In a machine of the character described, the combination, with a resetting-shaft, a plurality of counters mounted thereon, and operating mechanism for said counters, of an indicator-wheel mounted in said machine and having a series of projections thereon, an arm pivotally supported near said wheel, a plate having a tooth carried by said arm, and means actuated from said resetting-shaft for moving said plate to bring said tooth in the path of the projection on said indicator-wheel, substantially as described.

51. In a machine of the character described, the combination, with a resetting-shaft, a plurality of counters thereon and means for operating said counters, of an indicator-wheel mounted in said frame and having a series of projections thereon, means actuated from said resetting-shaft for resetting said indicator-wheel to zero, a shaft extending parallel to said indicator-wheel, an arm loosely mounted thereon, a tooth carried by said arm, a lever pivotally supported in said machine and extending in the rear of said tooth, a projection carried by said lever and a finger rotating in unison with said resetting-shaft and adapted to engage the projection on said lever to move said lever into engagement with said tooth and move said tooth into the path of the projection on said indicator-wheel, substantially as described.

52. In a machine of the character described, the combination, with a resetting-shaft, a plurality of counters mounted thereon and means for operating said counters, of an indicator-plate pivotally mounted in said machine, a spring tending to move said indicator-plate into one position, and means actuated from said resetting-shaft for moving said plate in the other position against the tension of said spring, substantially as described.

53. In a machine of the character described, the combination, with a resetting-shaft, a plurality of counters mounted thereon, and means for operating said counters, of a shaft, an arm journaled on said shaft and having an indicator-plate at one end thereof, a spring engaging said arm and tending to hold said indicator-plate in one position, a gear having a pin in alinement with said arm, and means actuated from said resetting-shaft for moving said pin into engagement with said arm, thereby moving the indicator-plate into the other position and holding the same against the tension of said spring, substantially as described.

54. In a machine of the character described, the combination, with a resetting-shaft, a plurality of counters mounted thereon, and operating mechanism for said counters, of a shaft, a sleeve journaled in said shaft, an arm carried by said sleeve, an indicator-plate at one end of said arm, a spring engaging said sleeve and tending to hold said indicator-plate in one position, said arm extending beyond said sleeve and having a projection thereon, a gear having a pin in alinement with said arm, and means actuated from the resetting-shaft to move said gear through one-half of a revolution for each complete revolution of the resetting-shaft, thereby bringing the pin into engagement with the arm on every second revolution of said shaft, substantially as described.

55. In a machine of the character described, the combination, with a resetting-shaft, a plurality of counters mounted thereon and operating mechanism for said counters, of a shaft, an arm journaled on said shaft, an indicator-plate carried by said arm, a spring tending to hold said plate normally in one position, a gear having a pin in alinement with said arm and adapted to engage the same to move said plate into its other position against the tension of said spring, a mutilated gear carried by said resetting-shaft and so connected with the first-mentioned gear that a complete revolution of said resetting-gear moves said first-mentioned gear through one-half of a revolution, substantially as described.

848,263. VIBRATING-LEVER-OPERATING MECHANISM. LANSING ONDERDONK, New York, N. Y., assignor to Union Special Machine Company, Chicago, Ill., a Corporation of Illinois. Filed July 8, 1904. Serial No. 215,791.

Claim.—1. The herein-described mechanism for imparting vibrating movement to a lever, comprising a driving-

shaft having arranged thereon two oppositely-disposed eccentrics, a lever pivoted upon a suitable support, which support is itself pivoted to a stationary part of the apparatus, and connections between the two eccentrics and the lever upon opposite sides of the fulcrum-point whereby a compensating fulcrum-bearing for the lever is afforded; substantially as described.

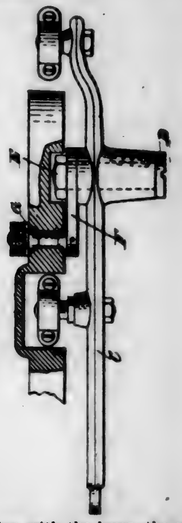

2. In combination with the lever, the stud on which the same is pivoted, a swinging arm supporting the stud, said arm being pivoted to a stationary part of the machine and power connections for oscillating said lever, applied upon opposite sides of its pivot; substantially as described.

3. In a sewing-machine, the combination with the rotating shaft thereof, two oppositely-disposed eccentrics thereon, a needle-lever, a stud upon which the same is pivoted, an arm to which the stud is secured, said arm being pivotally secured to the gooseneck of the sewing-machine, and connections between the eccentrics and the needle-lever upon opposite sides of its pivot; substantially as described.

848,264. RANGE. RICHARD S. QUINN, Washington Court-House, Ohio, assignor to The Wonder Manufacturing Company, Washington Court-House, Ohio, a Corporation of Ohio. Filed Feb. 3, 1906. Serial No. 299,233.

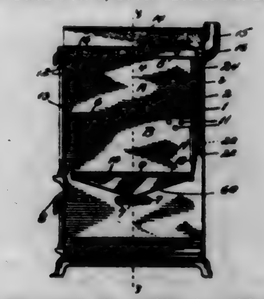

Claim.—In a range, the combination with an oven forming with the range a vertical flue, a partition in the oven dividing the same into separate compartments each having communication with the flue, and a burner arranged beneath the oven supplying heat to the oven and the flue, of a damper arranged to cause the heat passing up the flue to enter the upper compartment and adapted to be moved into the flue to obstruct the passage of the heat to the upper compartment and deflect the same into the lower compartment.

848,265. TRUCK-BOLSTER. WILLARD F. RICHARDS, Buffalo, N. Y., assignor to Gould Coupler Company, New York, N. Y. Filed May 28, 1906. Serial No. 318,996.

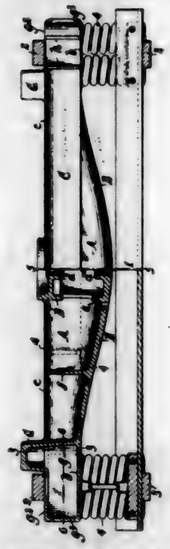

Claim.—1. A bolster or the like consisting of an integral casting of substantially M shape in cross-section, substantially as set forth.

2. A bolster or the like comprising substantially vertical spaced webs connected at their lower edges, and substantially vertical flanges arranged outside of said webs and connected to the upper edges of said webs, substantially as set forth.

3. A bolster or the like comprising substantially vertical spaced webs, a tension member arranged between and joining said webs, and compression members located outside of and spaced from but joined to said webs, substantially as set forth.

4. A bolster or the like comprising substantially vertical spaced webs which decrease in depth from the center toward the ends of the bolster, a tension member arranged between and joining said webs, and compression members of substantially uniform depth throughout located outside of and spaced from but joined to said webs, substantially as set forth.

5. A bolster or the like consisting of an integral casting having substantially vertical spaced webs which decrease in depth from the center toward the ends of the bolster, a bottom joining said webs, substantially vertical side flanges of approximately the depth of the end portions of said webs located outside of and joined to said webs, and a central strut between said bottom and the upper portions of said webs, substantially as set forth.

6. A bolster or the like consisting of an integral casting having substantially vertical spaced webs which decrease in depth from the center toward the ends of the bolster, a transversely-curved bottom joining said webs, substantially vertical side flanges of approximately the depth of the end portions of said webs located outside of and joined to said webs by transversely-curved top portions, and a central strut between said bottom and the upper portions of said webs, substantially as set forth.

7. A cast-metal bolster or the like having integral substantially vertical spaced webs, a bottom connecting the lower portions of said webs, and flanges substantially parallel with said webs and joined to the upper portions thereof, substantially as set forth.

8. A cast-metal bolster or the like having integral substantially vertical spaced webs connected by a transversely-curved bottom, and flanges substantially parallel with said webs and joined to the upper portions thereof by transversely-curved portions, substantially as set forth.

9. A cast-metal bolster or the like of substantially trough shape having webs connected by a bottom, and flanges spaced from said webs and connected to the upper portions thereof, substantially as set forth.

10. A cast-metal truck-bolster having integral substantially vertical spaced webs, a bottom connecting the lower portions of said webs, flanges substantially parallel with said webs and joined to the upper portions thereof, and center and side bearings, substantially as set forth.

11. A cast-metal truck-bolster or the like of substantially trough shape having webs connected by a bottom, and flanges spaced from said webs and connected to the upper portions thereof, said bolster having hollow box-like end portions, substantially as set forth.

12. A cast-metal truck-bolster or the like of substantially trough shape having webs connected by a bottom, and flanges spaced from said webs and connected to the upper portions thereof, said bolster having hollow box-like end portions with upward extensions forming side bearings, substantially as set forth.

13. A truck-bolster or the like having four substantially parallel spaced longitudinal walls or portions, two of which are connected to each other at the bottom of the bolster and to the remaining two walls or portions at the top of the bolster, substantially as set forth.

14. A truck-bolster or the like having four substantially parallel spaced longitudinal walls or portions, the two inner walls or portions being connected together at the bottom of the bolster and to the two outer walls or portions at the top of the bolster, substantially as set forth.

848,266. PIPE-COUPLING. EDWARD J. ROBBINS, Boston, Mass. Filed Mar. 14, 1906. Serial No. 306,031.

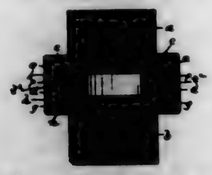

Claim.—In a pipe-coupling, a pair of pipes one of which is provided near its end with two flanges whereby an external groove is produced, and the other of which is provided at its end with a flange which when the pipes are joined faces the outer flange of the first-named pipe; a sleeve embracing all three said flanges and provided with pairs of openings, each pair being on a chord of the circle described by the sleeve and consisting of openings of different sizes, and the opening of each pair being connected by an internal groove; wedges adapted to be inserted in said pairs of openings and in the portion of the groove between the openings of each pair; and a flange extending inward from the sleeve and overlapping the farther surface of the single flange in one pipe, whereby the wedges are forced between the farther edges of the openings and the end flange on the pipe which is provided with two flanges, for the purpose set forth.

848,267. MOTOR-DRIVEN VEHICLE. IDA W. SCHMIDT, Detroit, Mich., and HENRY B. SCHWEINLER, Brooklyn, N. Y.; said Schweinler assignor to said Schmidt. Filed Oct. 23, 1905. Serial No. 283,919.

Claim.—1. In a motor-vehicle the combination of a rigid frame-body, forwardly-inclined rear struts rising from the same, rearwardly-inclined struts rising from an intermediate portion of the frame-body and having their upper ends joined rigidly to the upper ends of the rear struts, a horizontal connection rigidly joining the upper ends of the struts at each side of the frame, a seat sustained on said horizontal connection, a horizontal tubular frame member extending between the rear struts below their upper ends, an axle extending through said tubular frame member, traction-wheels on the axle, a motor also sustained on said tubular frame member and means for driving the axle from said motor.

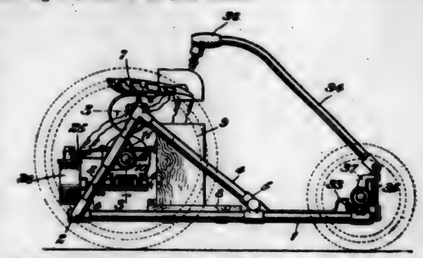

2. In a motor-vehicle the combination of a frame-body extending essentially horizontally, an inverted-V-shaped frame structure mounted on the rear portion of the body and rising therefrom, a seat sustained at the upper part of said frame portion, a tubular frame member, carried horizontally by said inverted-V-shaped frame structure, an axle extended through said tubular frame member and gearing for driving the axle from said motor.

848,268. MEANS FOR PREVENTING THE ESCAPE OF NOXIOUS VAPORS AND GASES FROM RENDERING-TANKS INTO THE ATMOSPHERE. CARLTON L. SMITH, Chicago, Ill., assignor to Armour & Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 25, 1906. Serial No. 332,064.

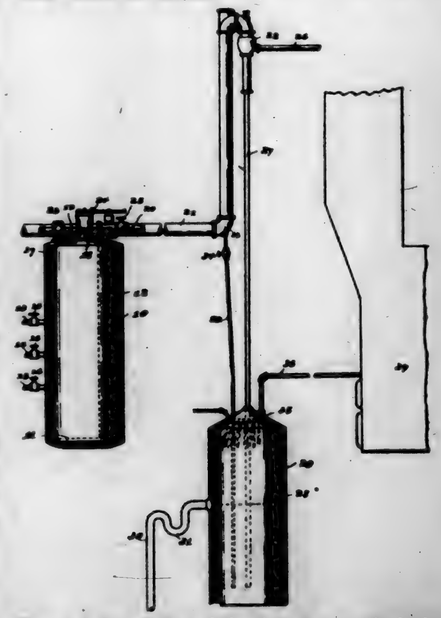

Claim.—1. In a device of the character described, the combination of a rendering-tank, a condenser, means for conveying condensing-water thereto, a pipe connecting

said rendering-tank and condenser to conduct noxious vapors and gases from the former to the latter, a tank provided with a water seal, and a pipe forming the sole outlet of said condenser directly connecting said condenser to said water-seal tank and extending below the surface of the water therein, said pipe conducting the condensing-water, the condensed vapors and gases, and the entrained vapors and gases from said condenser to said water-seal tank below the surface of its water, substantially as described.

2. In a device of the character described, the combination of a rendering-tank, a condenser, means for conveying condensing-water thereto, a pipe connecting said rendering-tank and condenser to conduct noxious vapors and gases from the former to the latter, a tank provided with a water seal, the surface of the water in said tank being lower than said condenser, and a pipe forming the sole outlet of said condenser directly connecting said condenser to said tank and extending below the surface of the water therein, said pipe conducting the condensing-water, the condensed vapors and gases, and the entrained vapors and gases from said condenser to said water-seal tank below the surface of its water, substantially as described.

3. In a device of the character described, the combination of a rendering-tank, means for supplying steam thereto, a siphon-condenser, means for conveying condensing-water thereto, a pipe connecting said rendering-tank and condenser to conduct noxious vapors and gases from the former to the latter, a tank provided with a water seal, the surface of the water in said tank being lower than said condenser, a pipe forming the sole outlet of said condenser directly connecting said condenser to said tank and extending below the surface of the water therein, said pipe conducting the condensing-water, the condensed vapors and gases and the entrained vapors and gases from said condenser to said water-seal tank below the surface of its water, and a vent communicating with said water-seal tank above the surface of its water to convey away the non-condensable vapors and gases for destruction, substantially as described.

4. In a device of the character described, the combination of a rendering-tank, means for supplying steam thereto, a siphon-condenser, means for conveying condensing-water thereto, a pipe connecting said rendering-tank and condenser to conduct noxious vapors and gases from the former to the latter, a tank provided with a water seal, a pipe forming the sole outlet of said condenser connecting said condenser to said tank and extending below the surface of the water therein, the surface of the water in said water-seal tank being lower than said condenser an amount at least equivalent to the height of a column of water corresponding to the maximum vacuum produced in said condenser, said latter pipe conducting the condensing-water, the condensed vapors and gases and the entrained vapors and gases from said condenser to said water-seal tank below the surface of its water, and a discharge-pipe connected with said water-seal tank which maintains the water-level therein substantially constant, substantially as described.

5. In a device of the character described, the combination of a rendering-tank, means for supplying steam thereto, a siphon-condenser, a pipe for conveying condensing-wafer to said condenser, a pipe connecting said rendering-tank with said condenser to conduct noxious vapors and gases from the former to the latter, means in said latter pipe for intermittently opening and closing said pipe, a water-seal tank adapted to contain a supply of water, and a pipe connected to said condenser and extending below the surface of the water in said water-seal tank, said latter pipe being adapted to discharge the condensing-water of the condenser, the condensed vapors or gases, and entrained vapors or gases into said water-seal tank, substantially as described.

6. In a device of the character described, the combination of a rendering-tank, means to supply steam thereto, a siphon-condenser, means for conveying condensing-water thereto, a pipe connecting said tank and condenser to conduct noxious vapors and gases from the former to the latter, a safety-valve associated with said pipe controlling the passage therethrough, a water-seal tank adapted to contain a supply of water, an overflow-pipe connected to said water-seal tank through which a surplus of water or condensed vapors or gases in said water-seal tank may pass, and a pipe connected to said condenser and extending below the surface of the water in said water-seal tank, said latter pipe being adapted to discharge the condensing-water of the condenser, the condensed vapors or gases, and entrained vapors or gases into said water-seal tank, substantially as described.

7. In a device of the character described, the combination of a rendering-tank, means to supply steam thereto, a siphon-condenser, a pipe to convey condensing-water thereto, a pipe connecting said tank and condenser and adapted to convey noxious vapors and gases from the tank to the condenser, a water-seal tank lower than said condenser and adapted to contain a supply of water, a pipe communicating with said condenser and extending below the surface of the water in said water-seal tank, said latter pipe being adapted to discharge the condensing-water of the condenser, the condensed vapors or gases, and entrained vapors or gases into said water-seal tank, a vent-pipe communicating with said water-seal tank above the surface of its water to convey away the vapors and gases which have not been condensed, and means in the upper part of said water-seal tank for spraying the vapors or gases therein with water to condense those subject to condensation, substantially as described.

8. In a device of the character described, the combination of a rendering-tank, means for supplying steam thereto, a siphon-condenser, a pipe for conveying condensing-water thereto, a valve-controlled pipe connecting said tank and condenser and adapted to convey noxious vapors and gases from said tank to said condenser, a water-seal tank below said condenser, an overflow-discharge pipe connected to said water-seal tank to convey away a surplus of liquid therein, a pipe connected to said condenser and extending below the surface of the water in said water-seal tank, said latter pipe being adapted to discharge the condensing-water of the condenser, the condensed vapors or gases, and the entrained vapors or gases into said water-seal tank, a vent-pipe connected to said water-seal tank to carry away vapors or gases which have not been condensed, and means for spraying with water the gases in said water-seal tank above the water therein, substantially as described.

9. In a device of the character described, the combination of a rendering-tank, means for supplying steam thereto, a siphon-condenser, a pipe having two branches connecting said tank and condenser to conduct noxious vapors and gases from the former to the latter, a safety-valve in one of said branches, a manually-controlled valve in the other branch, a water-seal tank, an overflow-pipe communicating with said latter tank and determining the height of water therein, a trap in said overflow-pipe, a pipe connected to said condenser and extending below the surface of the water in said water-seal tank, means for supplying a water-spray within said water-seal tank above the water therein, and a vent-pipe connected to the upper part of said water-seal tank for conveying away the non-condensed vapors or gases, substantially as described.

848,269. CROSSTREE FOR SUPPORTING ELECTRIC CONDUCTORS. HARRY W. SMITH, Worcester, Mass. Filed July 31, 1906. Serial No. 328,505.

Claim.—1. A device for supporting electric conductors, comprising a metal crosstree and insulator-supports projecting from said tree and formed integral therewith.

2. A crosstree for supporting electric conductors, said tree formed of metal flanges arranged at an angle to each other, and insulator-supports formed integral with one of said flanges and projecting therefrom.

3. A crosstree for supporting electric conductors, said tree formed of metal, and an insulator-support formed by a portion of said metal bent to project therefrom.

4. A crosstree for supporting electric conductors, said tree formed of metal and an insulator-support formed by a portion of said metal bent to project therefrom, said insulator-support being provided with means for securing the insulator thereto.

5. A crosstree for supporting electric conductors, said tree formed of metal, and an insulator-support formed by a portion of said metal bent to project therefrom, said insulator-support being provided with screw-threads for connecting the insulator thereto.

848,270. ASH-SIFTER. PATRICK M. STANTON, Troy, N. Y. Filed Oct. 16, 1906. Serial No. 339,180.

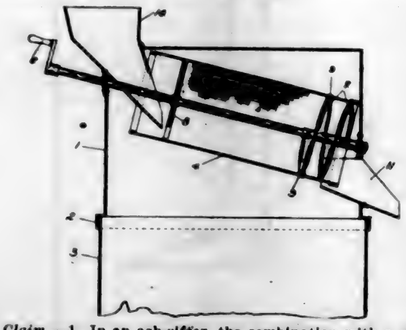

Claim.—1. In an ash-sifter, the combination with a sifting-cylinder rotatively mounted in inclined position and having in its upper end a sifting-chamber; of a worm occupying the lower open end of the cylinder; and means for rotating the cylinder in opposite directions.

2. In an ash-sifter, the combination with an inclosure; of a sifting-cylinder rotatively mounted in inclined position within the inclosure, and having in its upper end a sifting-chamber; a worm occupying the lower open end of said cylinder; and means for rotating the cylinder in opposite directions.

3. In an ash-sifter, the combination with an inclosure; of a sifting-cylinder rotatively mounted in inclined position within the inclosure, and having in its upper end a sifting-chamber; a worm occupying the lower open end of said cylinder; means for rotating the cylinder in opposite directions; a feed-hopper extending interiorly of the inclosure and within the open upper end of the cylinder; and a delivery-chute extending from a point below the lower open end of the cylinder, exteriorly of said inclosure.

848,271. VALVE CONTROL FOR PNEUMATIC ELEVATORS. GEORGE F. STEEDMAN, St. Louis, Mo. Filed Mar. 12, 1906. Serial No. 305,654.

Claim.—1. A valve control for pneumatic elevators, consisting of a valve, mechanism for operating said valve, means on the valve-operating mechanism, and a part on the elevator-cage coöperating with said means for moving the valve in a desired position and being so arranged that it passes out of engagement with the valve-operating means before the cage comes to rest, said valve being so constructed that air can enter or escape therethrough, depending upon the direction of movement of the cage, after the valve-operating means has been actuated; substantially as described.

2. In a pneumatic elevator, a valve for admitting and exhausting air to and from the operating-cylinder, means for actuating the valve, and a part on the elevator-cage which engages said means to move the valve into a desired position and being so arranged that it passes out of engagement with said means before the cage reaches its limit of movement, said valve being so constructed that air can enter or escape therethrough, depending upon the direction of movement of the cage, after the valve-operating means has been actuated; substantially as described.

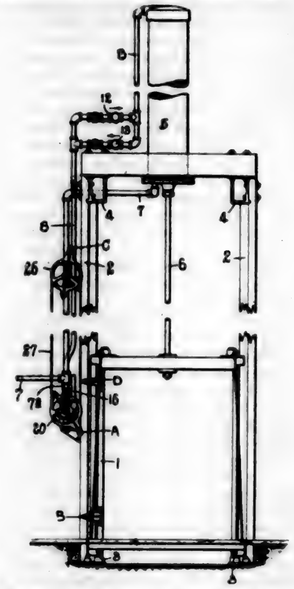

3. In a pneumatic elevator, a cage and an operating-valve controlling the admission and exhaust of air to and from the operating-cylinder, valve-operating devices adjacent to the upper and lower limits of travel of the cage, and a part on the cage adapted to coöperate with said valve-operating devices to turn the valve, said part being so arranged relatively to said devices that it passes out of engagement with same before the cage reaches its upper and lower limits of travel, said valve being so constructed that air can enter or escape therethrough, depending upon the direction of movement of the cage, after the valve-operating means has been actuated; substantially as described.

4. In a pneumatic elevator, a valve for admitting and exhausting air to and from the operating-cylinder, means for actuating the valve, a part on the cage automatically actuating said means and being so arranged that it passes out of engagement therewith as the cage nears its limits of travel, said valve being so constructed that air can enter or escape therethrough, depending upon the direction of movement of the cage, after the valve-operating means has been actuated; substantially as described.

5. In a pneumatic elevator, a valve for admitting and exhausting air to and from the operating-cylinder, means adjacent to the lower limit of travel of the cage for actuating said valve, means adjacent to the upper limit of travel of the cage for actuating said valve, and a part on the cage automatically actuating said means and being so arranged that it passes out of engagement with said means as the cage nears its limit of travel, said valve being so constructed that air can enter or escape therethrough, depending upon the direction of movement of the cage, after the valve-operating means has been actuated; substantially as described.

6. In a pneumatic elevator, a valve for admitting and exhausting air to and from the operating-cylinder, means for actuating the valve, and an adjustable part on the cage for automatically actuating said means and being so arranged that it passes out of engagement therewith as the cage nears its limits of travel, said valve being so

constructed that air can enter or escape therethrough, depending upon the direction of movement of the cage, after the valve-operating means has been actuated; substantially as described.

7. In a pneumatic elevator, a valve for admitting and exhausting air to and from the operating-cylinder, means adjacent to the lower limit of travel of the cage for actuating said valve, means adjacent to the upper limit of travel of the cage for actuating said valve, and an adjustable part on the cage for automatically actuating said means and being so arranged that it passes out of engagement therewith as the cage nears its limit of travel, said valve being so constructed that air can enter or escape therethrough, depending upon the direction of movement of the cage, after the valve-operating means has been actuated; substantially as described.

8. In a pneumatic elevator, a valve for admitting and exhausting air to and from the operating-cylinder, an auxiliary port in said valve, means for actuating the valve, a part on the cage automatically actuating said means to move the auxiliary port into a desired position and passing by said means as the cage nears its limit of travel; substantially as described.

9. In a pneumatic elevator of the class described, a valve for admitting and exhausting air to and from the operating-cylinder, an auxiliary admission-port and an auxiliary exhaust-port in said valve, means for actuating said valve, a part on the cage automatically actuating said means to move the auxiliary exhaust-port into a desired position and passing by said means as the cage nears one limit of its movement, and a part on the cage for automatically actuating said means to move the auxiliary admission-port into desired position and passing by said means as the cage nears its other limit of movement; substantially as described.

10. In a pneumatic elevator of the class described, a valve for admitting and exhausting air to and from the operating-cylinder, an auxiliary admission-port and an auxiliary exhaust-port in said valve, means for actuating said valve, a part on the cage automatically actuating said means to move the auxiliary exhaust-port into a desired position as the cage nears one limit of its movement, and a part on the cage for automatically actuating said means to move the auxiliary admission-port into desired position as the cage nears its other limit of movement; substantially as described.

848,272. EXERCISING-MACHINE. ALBERT J. THORNLEY, Pawtucket, R. I. Filed June 30, 1905. Serial No. 267,778.

Claim.—1. In an exercising-machine, a guide for a weight-carriage consisting of a vertical tube inclosing the weight-carriage and means for preventing the weight-carriage from striking or rubbing on the interior of the tube, as described.

2. In an exercising-machine, a wall-board having a vertical groove, a vertical tube, a weight-carriage in the tube, pulleys on the upper end of the tube, the weight-carriage and the wall-board, a cord engaging with the several pulleys, handles and stops on the ends of the cord, whereby the weight-carriage and the cord are protected from external injury and the tube forms a guide for the weight-carriage, as described.

3. An exercising-machine comprising a weight-carriage, a pulley on the weight-carriage, a vertical tube inclosing the weight-carriage and forming a guide for the same, pulleys above and below the vertical tube, means for supporting the vertical tube and pulleys, a cord engaging with the several pulleys and handles on the ends of the cord, whereby the weight-carriage and cord are protected from external injury, as described.

4. An exercising-machine comprising a wall-board having a vertical groove, a vertical cylindrical tube, fittings at the top and bottom of the tube adapted to secure the tube to the wall-board, a weight-carriage in the cylindrical tube, weights detachably secured to the weight-carriage, a pulley on the weight-carriage, a pulley rotatably and pivotally secured to the upper fitting, a pulley rotatably secured to the wall-board above the upper fitting, pulleys rotatably and pivotally secured to the wall-board below the lower fitting, a cord connecting the several pulleys, stops on the cord, and handles in the ends of the cord, whereby the cylindrical tube forms a guide for the weight-carriage and the weight-carriage and the cord are protected from external injury, as described.

5. In an exercising-machine, a guide for a weight-carriage consisting of a cylindrical tube *b* having the opening *b'* adjacent its lower end, and means for supporting the tube consisting of a fitting *c* having the flanged base *c'* adapted to receive the upper end of the tube *b* and a fitting *d* having the open top *d'*, the rectangular openings d^2 d^2 in the front and the closed bottom d^3 supporting the lower end of the tube *b*, as described.

6. In an exercising-machine, a weight-carriage *e* having the opening *e'* adjacent its upper end, the pulley *f* rotatably secured to the carriage in the opening *e'*, the washers e^2 e^2 constructed of leather or similar material and secured to the weight-carriage above and below the pulley *f*, the two oppositely-disposed downwardly-extending hook-shaped lugs e^3 e^3 on the bottom of the carriage, a plurality of weights e^4 e^4 each weight having the two oppositely-disposed hook-shaped lugs e^5 e^5 on their under side, the coinciding openings e^6 e^6 in the top of the weights for the lugs e^5 e^5, a locking-plate e^7 having the two oppositely-disposed semicircular openings e^8 e^8 in its periphery and the finger-piece e^9 extending into an opening e^{10} in the weight, and means for pivotally securing the locking-plate e^7 to the weight consisting of the rivet e^{11}, as described.

7. In an exercising-machine, the combination of a wall-board *a*, a vertical cylindrical tube *b*, a top fitting *c*, a bottom fitting *d*, a weight-carriage *e* in the tube *b*, a pulley *f* on the weight-carriage, a pulley *g* on the upper fitting, a pulley *h* on the wall-board above the upper fitting, two pulleys *i i* on the wall-board below the lower fitting, a cord *k* connecting the several pulleys, stops *k'* and *k²* on the cord and handles *l* and *m* secured to the ends of the cord, whereby the tube *b* forms a guide for the weight-carriage *e* and the weight-carriage *e* and the cord *k* are protected from external injury, as described.

848,273. PULVERIZER. HERBERT J. TRAVIS, New York, N. Y. Filed May 19, 1905. Serial No. 261,127.

Claim.—The combination with a beater-arm provided with a seat in its outer end for retaining a beater, of a beater having a sliding movement in said seat, a screw connected with the beater and extending into a socket in the arm and an adjusting-nut engaged with the screw and having a bearing in the arm, the said adjusting-nut serving to lock the screw to the arm, and also serving to adjust the beater with respect to the arm.

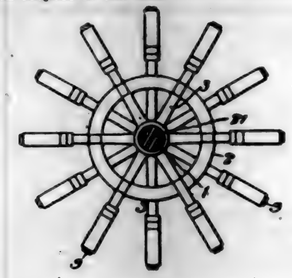

848,274. TYPE-WRITING MACHINE AND THE LIKE. FRANZ X. WAGNER, New York, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed June 18, 1903. Serial No. 162,027.

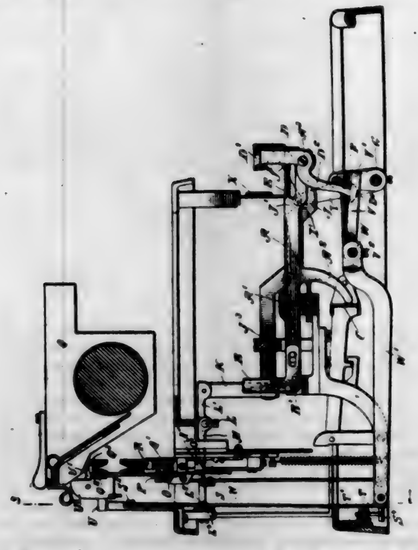

Claim.—1. In a type-writer or the like, a lever, a key member carried by said lever and movable toward and from the fulcrum thereof, impression mechanism operated by the movement of said lever, and tabulating mechanism operated by moving the key member toward the fulcrum of the lever.

2. In a tabulating device, a series of key members, mounted to rock about horizontal axes, and provided with downward extensions, a rock-shaft extending parallel with the axes of said key members, a series of arms mounted on said shaft and provided with pins at different distances from the respective key-member extensions, which are adapted to engage said pins, and stop devices comprising a stop connected with said rock-shaft and adjustable to different denominational positions according to the movement of said shaft.

3. In a tabulating device, a series of key members mounted to rock about horizontal axes, and provided with downward extensions, a rock-shaft extending parallel with the axes of said key members, a series of arms mounted on said shaft and provided with pins at different distances from the respective key-member extensions which are adapted to engage said pins, a carriage-release device operated by the rocking movement of any one of said key members, and stop devices comprising a stop connected with said rock-shaft and adjustable to different denominational positions according to the movement of said shaft.

4. In a tabulating device, stop devices comprising a stop adjustable to different denominational positions, a tabulating-key for throwing said stop to its chief or column-stop position, a carriage-release device connected with said tabulating-key, a series of pivoted keys for moving said stop to different denominational positions, and mechanism operated by the pivotal movement of any one of said series of keys, for transmitting such movement to the tabulating-key and through its medium to the carriage-release mechanism.

5. In a type-writer, a series of impression-key levers, key members pivoted thereto, and stop devices comprising a stop adjustable to different denominational positions by the pivotal movement of the key members relatively to the said levers.

6. In a type-writer or like machine, a lever, impression mechanism operated by the movement of said lever, a key member pivoted to said lever, and tabulating mechanism operated by the pivotal movement of the key member relatively to the lever.

7. In a type-writer or like machine, a lever, a key member pivoted thereto, impression mechanism operated by the movement of said lever, carriage-feed mechanism also operated by the said movement of the lever, and spacing mechanism for moving the carriage in a manner different from that effected by the carriage-feed mechanism, said spacing mechanism being operated by the pivotal movement of the key member relatively to the lever.

8. In a type-writer or like machine, a lever, a key member carried by said lever and movable toward and from the fulcrum thereof, impression mechanism operated by the movement of said lever, carriage-feed mechanism also operated by the movement of said lever at the same time that the impression mechanism is operated, and spacing mechanism for moving the carriage in a manner different from that of the carriage-feed mechanism, said spacing mechanism being operated by moving the key member toward the fulcrum of the lever.

848,275. FLOOR BRUSHING AND WAXING MACHINE. CYRA B. WATTLES, Providence, R. I., assignor to Surfacing Machine Company, Providence, R. I., a Corporation of Rhode Island. Filed Feb. 5, 1906. Serial No. 299,596.

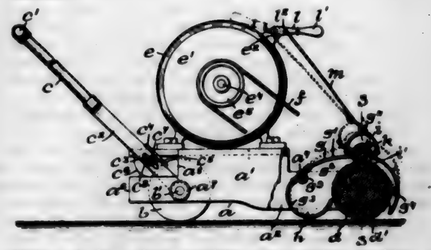

Claim.—1. In a floor brushing and waxing machine, a frame, wheels rotatably secured to the frame, a handle pivotally secured to the axle of the wheels, means for adjusting the handle relative to the frame, a motor secured to the frame, a roller-brush rotatably secured in bearings in the frame, means for operatively connecting the motor with the brush to revolve the brush, a casing pivotally secured to the frame over the brush and having a dirt-compartment and a wax-receptacle in the under side of which is a slot.

2. A floor brushing and waxing machine comprising a frame, an axle rotatably secured in bearings in the frame, wheels secured to the axle, a handle pivotally secured to the axle, means on the handle adapted to engage with the frame to adjust the handle relative to the frame, a motor

secured to the frame, a roller-brush rotatably secured in bearings in the frame, means for operatively connecting the motor with the brush to revolve the brush, a casing pivotally secured to the frame over the brush and having a dirt-compartment and a wax-receptacle in the under side of which is a slot, and means for lifting the casing and the wax-receptacle out of engagement with the roller-brush.

3. In a floor brushing and waxing machine, the combination of a frame *a*, wheels *b b* secured to an axle *b'* which is rotatably secured in bearings in the frame, a handle *c* pivotally secured to the axle *b'*, means for adjusting the handle relative to the frame, a roller-brush *d* rotatably secured in bearings in the frame, a motor *e* secured to the frame, means for operatively connecting the motor with the roller-brush to revolve the brush, a casing *g* having the dirt-compartment *h* and the wax-receptacle *i* with the slot *i'* in its under side, means for pivotally securing the casing *g* to the frame *a* in a position for the roller-brush *d* to frictionally engage with the bar *k* of wax through the slot *i'* in the receptacle, and means for raising the casing *g* consisting of the lever *l'* pivotally secured to the motor *e* and the cord *m* connected to the lever *l'* and to the casing *g*, as described.

4. In a floor brushing and waxing machine, a casing *g* constructed to have the curved top *g'* with the upwardly-extending lip g^2, the downwardly and then upwardly extending semicircular rear portion g^3 forming the dirt-compartment *h*, the curved front portion g^4 having the upwardly-extending lip g^5, the wax-receptacle *i* having the longitudinal slot *i'* in its under side, and secured to the lips g^2 and g^5 intermediate the same, the closed ends g^6 g^6 shaped to conform to the contour of the casing, means for pivotally securing the casing to the frame of the machine, and means for lifting the casing, as described.

5. In a floor brushing and waxing machine, a casing *g* constructed to have the curved top *g'* with the upwardly-extending lip g^2, the downwardly and then upwardly extending semicircular rear portion g^3 forming the dirt-compartment *h*, the curved front portion g^4 having the upwardly-extending lip g^5, the cylindrical wax-receptacle *i* having the longitudinal slot *i'* in its under side and secured to the lips g^2 and g^5 intermediate the same, the closed ends g^6 g^6 shaped to conform to the contour of the casing, the front portion of the casing with the wax-receptacle *i* being constructed separate and pivotally secured to the rear portion of the casing by the hinges g^{10} g^{10}, means for securing the casing in the frame of the machine and means for raising the front portion of the casing with the wax-receptacle, as described.

6. In a floor brushing and waxing machine, a frame *a* having the rearwardly-extending arm a^3, a handle *c* having the T-shaped upper end *c'* and the yoke c^2 on its lower end in the side of which is the slot c^3, a slide c^4 having the recess c^5 for the arm of the yoke, the semicircular lower edge c^6 and the central bolt c^7 which extends through the slot c^3, in the arm of the yoke, means for adjustably securing the slide c^4 to the arm of the yoke consisting of the thumb-nut c^8 on the bolt c^7, and means for pivotally securing the yoke of the handle to the frame *a* in a position for the semicircular edge c^6 on the slide to engage with the upper edge of the arm a^4 on the frame, whereby the handle is adjustable relative to the frame, as described

---

848,276. WATERING DEVICE FOR CONCRETE BLOCKS. JOSEPHINE WELCH and SAMUEL R. MINNICH, Nicholasville, Ky. Filed Apr. 25, 1906. Serial No. 313,715.

Claim.—1. The combination with a water-discharge device; of an absorbent suspended therebelow and adapted to absorb water discharged therefrom, and means for exerting a lateral pressure upon the absorbent.

2. The combination with a water-discharge device; of a folded strip suspended therefrom and adapted to receive the water from the discharge device, and resilient spreading means interposed between the folds of the strip.

3. The combination with a water-discharge device; of a folded absorbent strip suspended thereby and adapted to receive moisture therefrom, and resilient spreading devices interposed between the folds of the strips.

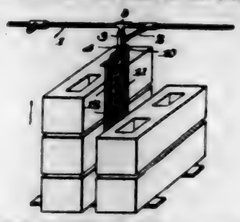

4. The combination with a discharge-nozzle and means for regulating the discharge of liquid therethrough; of a folded absorbent strip supported by the nozzle, and resilient spreading means interposed between the folds of the strips.

5. The combination with a discharge-nozzle and means for regulating the discharge of liquid therethrough; of a loop engaging the nozzle, an absorbent strip folded upon the loop and adapted to receive moisture from the nozzle.

6. The combination with a discharge-nozzle and means for regulating the discharge of liquid therethrough; of a loop engaging the nozzle, an absorbent strip folded upon the loop and adapted to receive moisture from the nozzle and resilient spreading devices interposed between the folds of the strips.

7. The combination with a discharge-nozzle and means for regulating the discharge of liquid therethrough; of a loop engaging the nozzle, an absorbent strip folded upon the loop and adapted to receive moisture from the nozzle, plates secured to the adjoining faces of the strip, and spring-arms connecting the plates constituting resilient spreading devices.

8. The herein-described method of curing cement products consisting of stacking said products, suspending an absorbent therebetween, supplying moisture to the absorbent by capillary attraction and pressing said absorbent against the products while in a moist condition.

848,277. GAS-PUMP. RICHARD WHITAKER, New Brunswick, N. J., assignor, by direct and mesne assignments, to Brunswick Refrigerating Company, a Corporation of New Jersey. Filed Jan. 11, 1904. Serial No. 188,612.

Claim.—1. An improved pump which comprises in combination, a casing with a cylinder-opening, a cylinder having a shoulder and engaging with the cylinder-opening, baffling-grooves between the cylinder and casing, a valve-support engaging with the other extremity of the cylinder, baffling-grooves between the support and cylinder, a valve-cap engaging with the valve-support, baffling-grooves between the cap and support, a tie-bar engaging with the valve-cap and tie-bolt connecting the tie-bar with the casing, and means for imparting tension to the tie-bolts, whereby the cylinder, valve-body and valve-cap will be connected to the casing.

2. An improved pump which comprises in combination, a casing with a cylinder-opening, a cylinder having a shoulder and engaging with the cylinder-opening, baffling-grooves between the casing and cylinder, a valve-support engaging with the other extremity of the cylinder, baffling-grooves between the support and cylinder, a valve-cap engaging with the valve-support, baffling-grooves between the cap and support, a tie-bar engaging with the valve-cap and tie-bolts connecting the tie-bar with the casing, the tie-bolts being secured to the casing, and having nuts on their free ends, which engage with the tie-bar, and force it into engagement with the valve-cap, whereby the cylinder, valve-body and valve-cap will be connected to the casing.

3. An improved pump which comprises in combination, a casing with a cylinder-opening, a cylinder having a shoulder and engaging with the cylinder-opening, baffling-grooves between the casing and cylinder, a valve-support engaging with the other extremity of the cylinder, baffling-grooves between the support and cylinder, a valve-cap engaging with the valve-support, baffling-grooves between the cap and support, and of spherical shape, a tie-bar engaging with the valve-cap, and tie-bolts connecting the tie-bar with the casing, and means for imparting tension to the tie-bolts, whereby the cylinder, valve-body and valve-cap will be connected to the casing.

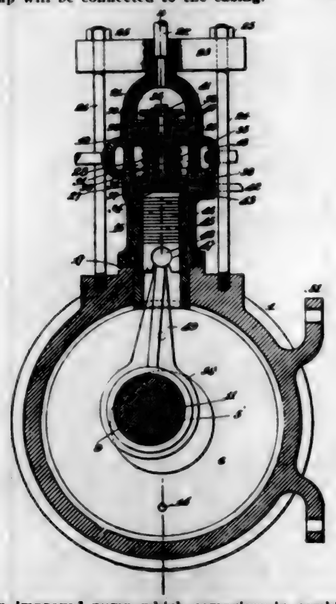

4. An improved pump which comprises in combination, a casing with a cylinder-opening, a cylinder having a shoulder and engaging with the cylinder-opening, baffling-grooves between the casing and cylinder, a valve-support engaging with the other extremity of the cylinder, baffling-grooves between the support and cylinder, a valve-cap engaging with the valve-support, baffling-grooves between the cap and support, and of spherical shape, a tie-bar engaging with the valve-cap, and tie-bolts connecting the tie-bar with the casing, the tie-bolts being secured to the casing, and having nuts on their free ends, which engage with the tie-bar, and force it into engagement with the valve-cap, whereby the cylinder, valve-body and valve-cap will be connected to the casing.

5. An improved pump which comprises in combination, a casing with a cylinder-opening, a cylinder having a shoulder and engaging with the cylinder-opening, baffling-grooves between the casing and cylinder, a valve-support engaging with the other extremity of the cylinder, baffling-grooves between the support and cylinder, a valve-cap engaging with the valve-support, baffling-grooves between the cap and support, and of spherical shape, an entrance-pipe communicating with the valve-cap in the center, a tie-bar surrounding the entrance-pipe and engaging with the valve-cap, and tie-bolts connecting the tie-bar with the casing, and means for imparting tension to the tie-bolts, whereby the cylinder, valve-body and valve-cap will be connected to the casing.

6. An improved pump which comprises in combination, a casing with a cylinder-opening, a cylinder having a shoulder and engaging with the cylinder-opening, baffling-grooves between the casing and cylinder, a valve-support engaging with the other extremity of the cylinder, baffling-grooves between the support and cylinder, a valve-cap engaging with the valve-support, baffling-grooves between the cap and support, and of spherical shape, an entrance-pipe communicating with the valve-cap in the center, a tie-bar surrounding the entrance-pipe and engaging with the valve-cap and tie-bolts connecting the tie-bar with the casing, the tie-bolts being secured to the casing, and having nuts on their free ends, which engage with the tie-bar, and force it into engagement with the valve-cap, whereby the cylinder, valve-body and valve-cap will be connected to the casing.

7. An improved pump which comprises in combination, a casing with a shaft-bearing, and cylinder and cover openings, a cover carrying a bearing and engaging with the casing, a cylinder having a shoulder and engaging with the cylinder-opening, baffling-grooves between the casing and cylinder, a valve-support engaging with the other extremity of the cylinder, baffling-grooves between the support and cylinder, a valve-cap engaging with the valve-support, baffling-grooves between the cap and support, and of spherical shape, an entrance-pipe communicating with the valve-cap in the center, a tie-bar surrounding the entrance-pipe and engaging with the valve-cap and tie-bolts connecting the tie-bar with the casing, the tie-bolts being secured to the casing, and having nuts on their free ends, which engage with the tie-bar, and force it into engagement with the valve-cap, whereby the cylinder, valve-body and valve-cap will be connected to the casing.

8. An improved pump which comprises in combination, a casing with a shaft-bearing, and cylinder and cover openings, a cover carrying a bearing and engaging with the casing, a cylinder having a shoulder and engaging with the cylinder-opening, baffling-grooves between the casing and cylinder, a valve-support engaging with the other extremity of the cylinder, baffling-grooves between the support and cylinder, a valve-cap engaging with the valve-support, baffling-grooves between cap and support, and of spherical shape, an entrance-pipe communicating with the valve-cap in the center, a tie-bar surrounding the entrance-pipe and engaging with the valve-cap and tie-bolts connecting the tie-bar with the casing, the tie-bolts being secured to the casing, and having nuts on their free ends, which engage with the tie-bar, and force it into engagement with the valve-cap, whereby the cylinder, valve-body and valve-cap will be connected to the casing.

9. An improved pump which comprises in combination, a casing with a shaft-bearing, and cylinder and cover openings, a cover carrying a bearing and engaging with the casing, an eccentric within the casing, with stub-shafts mounted within the bearings, a connecting-rod and eccentric-strap engaging the eccentric, the rod having a cylindrical head, the head being substantially as long as the diameter of the piston, a cylinder having a shoulder and engaging with the cylinder-opening, a piston, the said piston having a central bearing within which is carried the head of the connecting-rod, the ends of the head engaging with the cylinder-walls and held in position by such means, a valve-support engaging with the other extremity of the cylinder, a valve-cap engaging with the valve-support, a tie-bar engaging with the valve-cap and tie-bolts connecting the tie-bar with the casing, and means for imparting tension to the tie-bolts, whereby the cylinder, valve-body and valve-cap will be connected to the casing, and the connecting-rod held in position.

10. An improved pump which comprises in combination, a casing with a shaft-bearing, and cylinder and cover openings, a cover carrying a bearing and engaging with the casing, an eccentric within the casing, with stub-shafts mounted within the bearings, a connecting-rod and eccentric-strap engaging the eccentric, the rod having a cylindrical head, the head being substantially as long as the diameter of the piston, a cylinder having a shoulder and engaging with the cylinder-opening, a piston, the said piston having a central bearing within which is carried the head of the connecting-rod, the ends of the head engaging with the cylinder-walls and held in position by such means, a valve-support engaging with the other extremity of the cylinder, a valve-cap engaging with the valve-support, a tie-bar engaging with the valve-cap and tie-bolts connecting the tie-bar with the casing, and having nuts on their free ends, which engage with the tie-bar, and force it into engagement with the valve-cap, whereby the cylinder, valve-support and valve-cap will be connected to the casing, and the connecting-rod held in position.

11. An improved pump which comprises in combination,

a casing with a shaft-bearing, and cylinder and cover openings, a cover carrying a bearing and engaging with the casing, an eccentric within the casing, with stub-shafts mounted within the bearings and held in position by the casing and cover, a connecting-rod and eccentric-strap engaging the eccentric, the rod having a cylindrical head, the head being substantially as long as the diameter of the piston, a cylinder having a shoulder and engaging with the cylinder-opening, a piston, the said piston having a central bearing within which is carried the head of the connecting-rod, the ends of the head engaging with the cylinder-walls and held in position by such means, a valve-support engaging with the other extremity of the cylinder, a valve-cap engaging with the support, and of spherical shape, an entrance-pipe communicating with the valve-cap in the center, a tie-bar surrounding the entrance-pipe and engaging with the valve-cap and tie-bolts connecting the tie-bar with the casing, and means for imparting tension to the tie-bolts, whereby the cylinder, valve-support and valve-cap will be connected to the casing, and the connecting-rod held in position.

12. An improved pump which comprises in combination, a casing with a shaft-bearing, and cylinder and cover openings, a cover carrying a bearing and engaging with the casing, an eccentric within the casing, with stub-shafts mounted within the bearings and held in position by the casing and cover, a connecting-rod and eccentric-strap engaging the eccentric, the rod having a cylindrical head, the head being substantially as long as the diameter of the piston, a cylinder having a shoulder and engaging with the cylinder-opening, a piston, the said piston having a central bearing within which is carried the head of the connecting-rod, the ends of the head engaging with the cylinder-walls and held in position by such means, a valve-support engaging with the other extremity of the cylinder, a valve-cap engaging with the valve-support, and of spherical shape, an entrance-pipe communicating with the valve-cap in the center, a tie-bar surrounding the entrance-pipe and engaging with the valve-cap and tie-bolts connecting the tie-bar with the casing, the tie-bolts being secured to the casing, and having nuts on their free ends, which engage with the tie-bar, and force it into engagement with the valve-cap, whereby the cylinder, valve-support and valve-cap will be connected to the casing, and the connecting-rod held in position.

848,278. PIANO-PLAYING ATTACHMENT. ARTHUR WILHELMJ, San Francisco, Cal. Filed Aug. 4, 1903. Serial No. 168,140.

Claim.—1. In a pneumatic music-playing instrument, the combination with a series of power-pneumatics and key-operating devices individual to the notes of the instrument; of two sources of pneumatics tension of different degrees of exhausting power, and means for shifting and varying the communication between the said sources of exhausting power and the power-pneumatics, comprising a box having a principal exhausting-chamber common to both sources of pneumatic tension, a compartment with which the power-pneumatics of the treble-notes communicate through a common conductor, a second compartment with which the power-pneumatics of the bass-notes similarly communicate, a valve adjusted to control at will the communication of the principal exhausting-chamber with either source of pneumatic tension, a valve controlling communication between the principal exhausting-chamber and the said exhausting-compartments, means connecting both exhausting-compartments directly with the source of low-tension exhausting power around the valves, and means for separately operating said valves.

2. In a pneumatic music-playing instrument the combination of key-operating devices individual to the notes of the instrument, and power-pneumatics adapted to actuate the same; of a source of high-tension exhausting power, a source of low-tension exhausting power, and means for shifting and controlling the communication of the power-pneumatics that actuate the bass-notes in the scale of the instrument with either the high-tension or the low-tension source of power separately of the power-pneumatics actuating the treble-notes, comprising a principal exhausting-chamber common to both sources of exhausting power, an exhausting-compartment common to all the power-pneumatics of the bass-notes in the scale, a second exhausting-compartment common to all the treble-notes in the scale, a valve for closing communication of the principal chamber with one source of pneumatic tension and opening the chamber to the other source of tension, a valve controlling communication between said principal chamber and either of said exhausting-compartments, a conductor connecting said compartments directly with one source of pneumatic tension around the said controlling means, a hand-lever, and means connecting said lever with both valves for operating the same simultaneously.

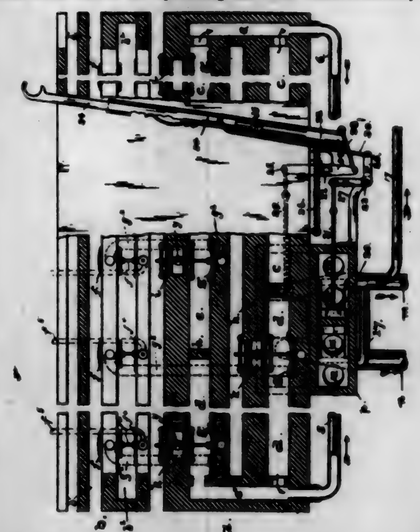

3. In a pneumatic music-playing instrument, the combination with pneumatically-actuated key-operating devices individual to all the notes within the scale of the instrument, of a source of high-tension exhausting power, a source of low-tension exhausting power, an accentuating-box having a principal chamber, conductors connecting both sources of power with said chamber, and a valve operating to control the communication thereof with said sources of power, and means for simultaneously increasing the action of the exhausting power upon one set of the key-operating devices and reducing the action of said exhaust power upon another set of said key-operating devices, comprising a box having an exhausting-compartment common to the key-operating devices contained in one set a second and similar compartment common to the key-operating devices contained in the other set, an intermediate compartment connecting said exhausting-compartments with the accentuating-box having a valve adapted to control communication between both compartments and said box, and a conductor connecting both of the exhausting-compartments directly with one source of exhausting power around the valves, and means for operating said valves at will.

4. In a pneumatic music-playing instrument the combination with a series of key-operating devices individual to the notes in the scale of the instrument, of a source of high-tension and a separate source of low-tension exhausting power, a principal exhausting-chamber common to both sources of power, a valve adapted to open communication of the chamber with one source of power and close communication thereof with the other source, and comprising a box having a separate exhausting-compartment for the key-operating devices of each of the sets into which the whole number is divided, a conductor connecting each set of key-operating devices with its separate compartment, a valve-controlled passage connecting each compartment with the exhausting-chamber, and a conductor connecting both compartments directly with the low-tension exhausting power around the said chamber.

5. In a pneumatic music-playing instrument the combination with a valve-chest containing key-operating pneumatics individual to the notes in the scale of the instrument, of a high-tension exhausting-bellows, a low-tension exhausting-bellows, an accentuating-box having valve-controlled apertures, conductors separately connecting the high-tension bellows and the low-tension bellows to said apertures, and a box interposed between the accentuation-box and the valve-chest comprising two exhausting-compartments to which the pneumatics actuating the bass-notes and the pneumatics actuating the treble-notes of the instrument are separately connected, a chamber having direct communication with the accentuating-box, a chamber having direct communication with the low-tension bellows only, and valve-controlled means for connecting either of said exhausting-compartments at will with the accentuating-box and shutting off the other exhausting-compartment.

6. The combination with two sources of exhaust tension of different powers, of the accentuation-box having a principal chamber with which both sources of power are connected, and a valve adapted to open communication with one and close communication with the other source of power, and a box *p* having two separate exhausting-compartments, valve-controlled passages through which either of said compartments is thrown at will into communication with the chamber of the accentuation-box, a conductor connecting the compartments of the box *p* directly with the source of low tension, an operating-lever and means operatively connecting said lever with the valves of both boxes.

7. The combination with an accentuation-box having a controlling-valve, and a box having a controlling-valve, of an operating-lever comprising a rocking member, a slidable member movable with the rocking member and also slidable thereon, means operatively connecting the rocking member with one valve, and means similarly connecting the slidable member with the other valve.

848,279. APPARATUS FOR SEWAGE DISPOSAL. BURTON J. ASHLEY, Chicago, Ill. Filed Sept. 18, 1906. Serial No. 335,109.

Claim.—1. In an apparatus for the purification of sewage the combination of a temporary receiving-tank, provided with an inlet-duct, and having an outlet-duct below the level of said inlet-duct, and aerating and purifying means adapted to receive the overflow from said tank, said means comprising a perforated passage surrounded by a bed of filtering and purifying material and means for supplying air to said perforated passage.

2. In an apparatus for the purification of sewage the combination of a temporary receiving-tank, provided with an inlet-duct, and having an outlet-duct below the level of said inlet-duct, a baffle-wall within said tank between said inlet and said outlet ducts and operating to delay the flow of liquids between said ducts, and aerating and purifying means adapted to receive the overflow from said outlet-duct, said means embodying a perforated passage surrounded by a bed of filtering and purifying material and being provided with means for thoroughly aerating said perforated passage.

3. In an apparatus for the purification of sewage the combination of a liquid-receiving tank provided with inlet and outlet pipes piercing the walls thereof, the normal level of said outlet-pipe being lower than the normal level of said inlet-pipe, a downwardly-extending branch on said inlet-pipe terminating below the normal level of said outlet-pipe and an upwardly-extending branch communicating with said downwardly-extending branch and terminating within said tank and above the normal level of the liquid therein, a downwardly-extending branch on said outlet-pipe terminating within the tank, and purifying means adapted to receive the overflow from said tank.

4. In an apparatus for the purification of sewage the combination of a liquid-receiving tank provided with inlet and outlet pipes piercing the walls thereof, the normal level of said outlet-pipe being lower than the normal level of said inlet-pipe, a downwardly-extending branch on said inlet-pipe, terminating below the normal level of said outlet-pipe, and an upwardly-extending branch terminating within said tank and above the normal level of the liquid therein, a downwardly-extending branch on said outlet-pipe terminating within the tank, a baffle-wall within the tank interposed between said inlet and said outlet pipes and adapted to delay the flow of liquids between said pipes, and purifying means adapted to receive the overflow from said tank.

5. In an apparatus for the purification of sewage the combination of a liquid-receiving tank provided with inlet and outlet pipes piercing the walls thereof, the normal level of said outlet-pipe being lower than the normal level of said inlet-pipe, a downwardly-extending branch on said inlet-pipe terminating below the normal level of said outlet-pipe and an upwardly-extending branch communicating with said downwardly-extending branch and terminating within said tank above the normal level of the liquid therein, a downwardly-extending branch on said outlet-pipe terminating within the tank, an upwardly-extending branch communicating with said outlet-pipe and its downwardly-extending branch, said upwardly-extending branch being continued through the wall of said tank, forming a means of communicating with the air on the exterior of the tank, and purifying means adapted to receive the overflow from said tank.

6. In an apparatus for the purification of sewage the combination of a liquid-receiving tank, provided with inlet and outlet pipes piercing the walls thereof, the normal level of said outlet-pipe being lower than the normal level of said inlet-pipe, and a filtration and nitrification means adapted to receive the overflow from said tank, embodying a perforated pipe or passage buried below the surface of the soil, the said pipe or passage being surrounded by a bed of filtering and purifying material and provided with one or more aerating-pipes leading to the surface of the soil.

7. In an apparatus for the purification of sewage, the combination of a liquid-receiving tank provided with inlet and outlet pipes piercing the walls thereof, the normal level of said outlet-pipe being lower than the normal level of said inlet-pipe, and a filtration and nitrification means

adapted to receive the overflow from said tank, said means embodying a series of perforated pipes or passages buried below the surface of the soil, each of said pipes or passages lying in different horizontal planes as they progress from said tank outwardly, said pipes or passages being provided with aerating pipes or ducts leading to the surface of the soil, and being surrounded by beds of purifying and filtering material.

8. In an apparatus for the purification of sewage, the combination of a liquid-receiving tank provided with inlet and outlet pipes piercing the walls thereof, the normal level of said outlet-pipe being lower than the normal level of said inlet-pipe, and filtration and nitrification means adapted to receive the overflow from said tank, said means embodying a perforated pipe or passage buried below the surface of the soil, and provided with one or more aerating-pipes leading to the surface of the soil.

9. In an apparatus for the purification of sewage, the combination of a liquid-receiving tank provided with inlet and outlet pipes piercing the walls thereof, the normal level of said outlet-pipe being lower than the normal level of said inlet-pipe, and a filtration and nitrification means adapted to receive the overflow from said tank, embodying a series of perforated pipes or passages buried below the surface of the soil, said pipes or passages extending outwardly from said tank in the same general direction, each pipe or passage being situated in a lower horizontal plane than the preceding member as they progress outwardly and away from said tank, and a series of aerating ducts or passages leading therefrom to the surface of the soil.

10. In an apparatus for the purification of sewage, the combination of a tank and pipe adapted to receive the overflow therefrom, a filtration and nitrification means embodying a series of perforated passages formed of farm-tiles buried beneath the surface of the earth and provided with aerating-passages leading upwardly therefrom, and communicating with the air at the surface of the soil.

11. In an apparatus for the purification of sewage the combination of a tank and pipe adapted to receive the overflow therefrom, and filtration and nitrification means embodying a series of perforated passages formed of farm-tiles buried beneath the surface of the earth in beds of clinkers, crushed stone or burned earth, and provided with aerating-passages leading to the earth's surface.

12. In an apparatus for the purification of sewage, the combination of a tank, a pipe adapted to receive the overflow therefrom, a flushing-pipe entering said tank above the normal level of said outlet-pipe, and filtration and nitrification means embodying a series of perforated passages beneath the earth's surface adapted to receive the liquid contents of the tank from the overflow-pipe thereof, and being provided with a series of upwardly-extending air ducts or passages communicating with the atmosphere at the surface of the soil.

13. In an apparatus for the purification of sewage, the combination of a liquid-receiving tank provided with inlet and outlet pipes piercing the walls thereof, the normal level of said outlet-pipe being lower than the normal level of said inlet-pipe, a downwardly-extending branch on said inlet-pipe terminating below the normal level of said outlet-pipe, an upwardly-extending branch on said inlet-pipe communicating with said downwardly-extending branch and terminating within said tank and above the normal level of the liquid therein, a downwardly-extending branch on said outlet-pipe terminating within the tank, an upwardly-extending branch on said outlet-pipe communicating with said downwardly-extending branch and extending into the outer air on the exterior of said tank, a baffle-wall situated between said inlet and said outlet pipes and adapted to retard the flow of liquids therebetween, a flushing-pipe entering said tank at a point above the normal level of said outlet-pipe, and means adapted to receive the overflow from said tank.

14. In an apparatus for the purification of sewage, the combination of a receiving-tank, and aerating and purifying means adapted to receive the overflow from said tank, said means comprising a pipe or passage extending beneath the surface of the earth being provided with perforated walls and embedded in a body of filtering material having direct contact with the surrounding soil.

15. In an apparatus for the purification of sewage, the combination of a receiving-tank and aerating and purifying means adapted to receive the overflow from said tank, said means comprising a pipe or passage provided with perforated walls extending beneath the surface of the soil and surrounded by a bed of filtering and purifying material the said filtering and purifying material having direct contact with the surrounding soil.

16. The combination in an apparatus for the purification of sewage, of a perforated pipe or passage buried below the surface of the soil, a body of filtering material in contact with said perforated pipe or passage, the said filtering material having direct contact with the surrounding soil and means for supplying air to the perforated pipe or passage.

17. The combination in an apparatus for the purification of sewage, of a perforated pipe or passage buried below the surface of the soil, a body of filtering material in contact with said perforated pipe or passage, the said filtering material having direct contact with the surrounding soil, and an aerating-pipe leading from said perforated pipe or passage to the surface of the soil.

18. In an apparatus for the purification of sewage, the combination of a temporary receiving-tank, provided with an inlet-duct, and having an outlet-duct below the level of said inlet-duct, and aerating and purifying means adapted to receive the overflow from said tank, said means comprising a perforated passage extending beneath the surface of the earth and embedded in a body of filtering material having direct contact with the surrounding soil.

848,280. AUTOMATIC TEMPERATURE-REGULATOR. FRANK A. BECKWITH, Evanston, Wyo., assignor of one-third to Rudolph Dumbeck, Salt Lake City, Utah. Filed Aug. 25, 1906. Serial No. 331,978.

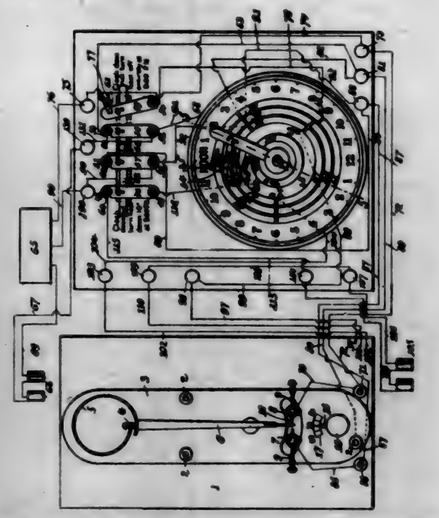

Claim.—1. In a temperature-regulating system, the combination with means for maintaining an unvaried predetermined temperature for a predetermined period of time, including a thermostat, and means for periodically and automatically adjusting the thermostat to cause subsequent automatic and successive variations of temperature at the expiration of successive predetermined periods of time.

2. In a temperature-regulating system, the combination with means for maintaining a predetermined temperature, including a thermostat, of means for automatically and periodically adjusting said thermostat to cause it to maintain a different temperature.

3. In a temperature-regulating system, the combination with means for maintaining a predetermined temperature for a predetermined time, including a thermostat, and means for automatically and periodically adjusting said thermostat to cause it to maintain a different temperature during another period of time.

4. In a temperature-regulating system, the combination with means for controlling the temperature including a thermostat, of means for periodically and automatically adjusting the thermostat to cause the temperature to be changed from a higher to a lower degree and vice versa.

5. In a temperature-regulating system, the combination with means including a thermostat for maintaining a desired degree of temperature during a predetermined period of time, and automatic means for causing successive variations of temperature at predetermined intervals of time.

6. In a temperature-regulating system, the combination with means including a thermostat for maintaining a desired degree of temperature during a predetermined period of time and automatic means for causing successive variations of temperature of predetermined amount at predetermined times.

7. In a temperature-regulating system, the combination with means for controlling the temperature including a thermostat said thermostat comprising an arm adapted to oscillate under variations of temperature, a pair of posts between which the arm is adapted to oscillate and with each of which the arm may make contact, means for varying the position of the posts in relation to the arm, a clock mechanism and means operated by said clock mechanism for automatically changing the position of the posts periodically, whereby the temperature is changed from a higher to a lower degree and vice versa.

8. In a temperature-regulating system, the combination with means for controlling the temperature including a thermostat comprising an arm adapted to oscillate under variations of temperature, a pair of posts between which the arm is adapted to oscillate and with each of which the arm may make contact and means whereby the contact of the arm with one post will raise the temperature and with the other post will lower the temperature, means for varying the position of the posts, said means including an armature and a pair of electromagnets, one of said electromagnets being adapted to move the posts in one direction, the other electromagnet to move the posts in the other direction, a clock mechanism and circuit connections between said clock mechanism and said electromagnets, whereby said electromagnets can be alternately operated to change the position of the posts in relation to the thermostatic arm.

9. In a temperature-regulating system, the combination with a thermostat and means under the control of the thermostat for regulating the temperature, of a clock mechanism, circuit-changing devices under the control of the clock mechanism, circuit connections between the circuit-changing devices and the thermostat whereby the changes in the circuit will cause the temperature to be changed from a higher to a lower degree and vice versa.

848,281. VEHICLE RUNNING-GEAR. JOHN W. BENTLER, Erlanger, Ky. Filed May 9, 1906. Serial No. 315,917.

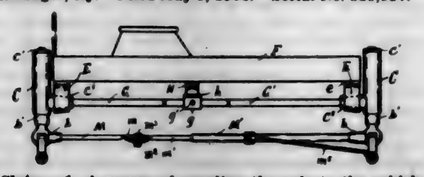

Claim.—1. A means of coupling the axle to the vehicle-body consisting of a pivot-post secured centrally to the axle, a collar carried by the pivot-post, a housing surrounding the pivot-post and having a horizontal stud, a spring within the housing bearing at one end against the housing and at the other end against the collar of the pivot-post, and a bracket mounted upon the stud and adapted to be secured to the vehicle-body.

2. In a vehicle running-gear the combination of a front and rear axle, vertical pivot-posts secured centrally to each axle, housings mounted upon each of the pivot-posts, springs for supporting the housings on the pivot-posts, said housings having inwardly-projecting studs, a perch-pole connecting the studs, brackets mounted rotatably upon the studs and a means carried by the perch-pole for bearing against the vehicle-body to prevent the side tilting thereof.

3. In a vehicle running-gear the combination of a front and rear axle, vertical pivot-posts secured centrally to each axle, housings mounted upon each of the pivot-posts, springs for supporting the housings on the pivot-posts, said housings having inwardly-projecting studs, a perch-pole connecting the studs, brackets mounted rotatably upon the studs, means carried by the perch-pole for bearing against the vehicle-body to prevent the side tilting thereof, the front and rear pivot-posts having inwardly-projecting horizontal studs, the front stud carrying a horizontal rod, terminating at its inner end in a perforated disk, the rear stud carrying an inwardly-projecting tube, a sliding rod within the tube terminating at its inner end in a perforated disk, and a pivot-bolt coupling the said disks.

848,282. EDUCATIONAL GAME. ESTELLA BERG, Cleveland, Ohio, assignor of one-half to Emil Berg, Cleveland, Ohio. Filed Mar. 3, 1905. Serial No. 248,287.

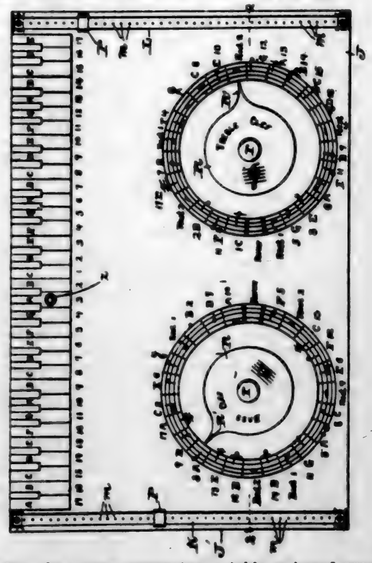

Claim.—In a game apparatus, a table or board provided upon its upper portion with a picture or representation of a keyboard of a piano or organ, which board is also provided upon its upper side with a musical notation; a pointer or indicator adapted to point to characters of the musical notation; means for changing the relative positions of the indicator and musical notation, and a movable checker *x*.

848,283. SWITCHING DEVICE. JULES A. BIRSFIELD, Rochester, N. Y., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Feb. 13, 1905. Serial No. 245,524.

Claim.—1. In a telephonic switching device, the combination with an operator's key, of a plurality of selective keys, switch mechanism for each selective key, independ-

ent switch mechanism for said operator's key, said independent switch mechanism forming means for locking said operator's key upon actuation thereof, and means upon actuation of one of said selective keys for automatically causing the restoration of said operator's key.

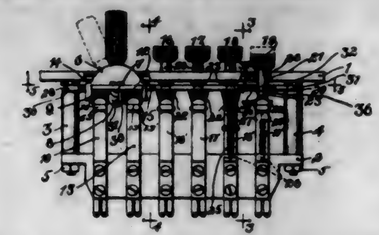

2. In a telephonic switching device, the combination with an operator's key, of a plurality of selective keys combined with said operator's key in a unitary structure, switch mechanism for said selective keys, independent switch mechanism for said operator's key, said independent switch mechanism forming means for locking said operator's key upon actuation thereof, and means associated with said selective keys for automatically causing the restoration of said operator's key upon the actuation of one of said selective keys.

3. In a telephonic switching device, the combination with an operator's key, of a plurality of selective keys combined in a unitary structure, means for locking any one of said keys upon actuation thereof, independent means for locking said operator's key upon actuation thereof, means upon actuation of said operator's key for automatically causing restoration of actuated selective keys, and means upon actuation of selective keys for automatically causing restoration of the operator's key.

4. In a telephonic switching device, the combination with an operator's ringing and listening key, of selective keys associated with said operator's key in a unitary structure, means for locking said selective keys upon actuation thereof, independent means for locking said operator's key when actuated to its listening position, means upon actuation of said operator's key to its listening position for automatically causing restoration of selective keys, and means upon actuation of selective keys for automatically restoring the operator's key from its listening position to its normal position.

5. In a telephonic switching device, the combination with an operator's key, of a plurality of selective keys combined with said operator's key in a unitary structure, means for locking any one of said selective keys upon actuation thereof, independent means for locking said operator's key upon actuation thereof, and means upon actuation of any one of said keys for causing the restoration of the actuated key.

6. In a telephonic switching device, in combination with an operator's key, of a plurality of selective keys combined therewith in a unitary structure, switch mechanism for each key adapted for actuation thereby, the switching mechanism of the operator's key causing said key to be locked, means upon actuation of any one of said selective keys for locking said key in its actuated position, means upon actuation of any other selective key for causing restoration of the actuated key, and means upon actuation of any selective key for automatically causing the restoration of said operator's key.

7. In a telephonic switching device, the combination with an operator's key, of a plurality of actuating-buttons associated therewith, switching mechanism for each actuating-button, a locking-bar common to said actuating-buttons, a cam-detent on each button, the depression of a button causing engagement of said locking-bar with the detent of said button to lock said button in its depressed position, means independent of said locking-bar adapted upon actuation of the operator's key for locking said key in its actuated position, and means upon the depression of any of said buttons for causing actuation of said locking-bar to restore said operator's key to its normal position.

8. In a telephonic switching device, the combination with an operator's key, of a plurality of actuating-buttons associated therewith, switching mechanism for each actuating-button and for said operator's key, said operator's key being locked into position by its switching mechanism upon actuation of the key, a common locking-bar for the actuating-buttons, depression of any actuating-buttons causing said button to be locked in its actuated position by said actuating-bar, connecting means between said operator's key and said locking-bar actuation of said operator's key causing said locking-bar to release the actuated buttons, and actuation of any button after actuation of the operator's key causing said locking-bar to be actuated to return said operator's key to its normal position.

9. In a telephonic switching device, the combination with an operator's key, of a plurality of selective keys associated therewith in a unitary structure, switching mechanism for each selective key and for said operator's key, the switch mechanism for said operator's key serving to lock said key upon actuation thereof, a common locking-bar for said selective keys, a cam-detent for each key adapted to pass through a corresponding opening in said locking-bar upon depression of the key, means tending to normally hold said locking-bar to one side of the structure, actuation of any selective key causing the corresponding cam-detent to pass through the corresponding opening in the lock-bar whereupon the lock-bar engages the cam-detent to lock the depressed key, a connection between said operator's key and said locking-bar actuation of said operator's key causing movement of said locking-bar to allow the escape of the cam-detent through the corresponding opening in the bar, and actuation of any selective key after actuation of the operator's key causing said selective key to be locked in its depressed position by said locking-bar and to move said bar to release the operator's key.

10. In a telephonic switching apparatus, the combination with an operator's key, of a plurality of selective keys combined therewith in a unitary structure, switching mechanism for each key adapted to be actuated thereby, the switch mechanism for said operator's key causing said key to be locked upon actuation thereof, a locking-bar associated with said operator's key and with said selective keys, an extension from said operator's key, a lug extending from said locking-bar, a cam-detent for each selective key, an opening in the locking-bar for each cam-detent, depression of a selective key causing said locking-bar to engage the cam-detent and prevent restoration of the actuated key, actuation of the operator's key causing movement of said locking-bar to release the actuated selective key and actuation of the selective key after actuation of the operator's key causing the corresponding cam-detent to move the locking-bar to restore the operator's key to its normal position.

11. In a telephonic switching apparatus, the combination with a plurality of switch-spring groups comprising actuating-springs and inner and outer contact-springs, of a plunger for engaging said actuating-springs, and a separator-plate for normally retaining said outer and inner springs in proper adjustment independently of the plunger.

12. In a telephonic switching device, the combination with an operator's key, of a plurality of selective keys, switch-contacts for said selective keys, means for locking said operator's key upon actuation thereof, means upon actuation of one of said selective keys for automatically causing the restoration of said operator's key, a plunger connected with each selective key for engaging with said switch-contacts, and means for limiting the upward motion of said plunger to a fixed distance.

13. In a telephonic switching device, the combination with an operator's key, of a plurality of selective keys, switch means for said operator's key, said switch means forming means for locking said operator's key upon actuation thereof, switch-contacts for each selective key, a plunger connected with each selective key for engagement with said switch-contacts, means upon actuation of one of said selective keys for automatically causing the restoration of said operator's key, and a collar upon said plunger for engaging said switch-contacts for limiting its upward motion to a fixed distance when said selective keys are restored.

14. In telephonic switching apparatus, the combination with an actuating-button of a stem, a wedge-shaped plunger secured to said stem, switching mechanism disposed below said plunger, actuating-springs for said switching mechanism engaging said plunger, inner contact-springs normally engaged by said actuating-springs, outer springs adapted to be engaged by said actuated springs upon depression of the plunger, and a separator-plate for adjusting the positions of said springs independently of the plunger, the inner springs resting against shoulders of said separator-plate, and the outer springs resting against the ends of extensions from said separator-plate.

15. In telephonic switching apparatus, the combination with an actuating-button, of a stem extending therefrom, a wedge-shaped plunger secured to said stem, switching mechanism disposed below said plunger, actuating-springs for said switching mechanism engaging said plunger, inner contact-springs for said switch mechanism normally in engagement with said actuating-springs, outer contact-springs for said switch mechanism normally disengaged from said actuating-springs, depression of said plunger causing said actuating-springs to become disengaged from said inner springs and to be engaged with the outer springs, a spring surrounding said stem below said plunger for returning said plunger to its normal position upon depression thereof, a separator-plate of insulating material having a central opening for receiving said spring, the inner springs resting against the shoulders of said separator-plate and the outer contact-springs resting against the end of extensions from said separator-plate, said inner springs being thereby entirely disconnected from said plunger.

848,284. METAL-WORKING APPARATUS. JOHN R. BLAKESLEE, Jr., Cleveland, Ohio. Filed June 24, 1905. Serial No. 266,722.

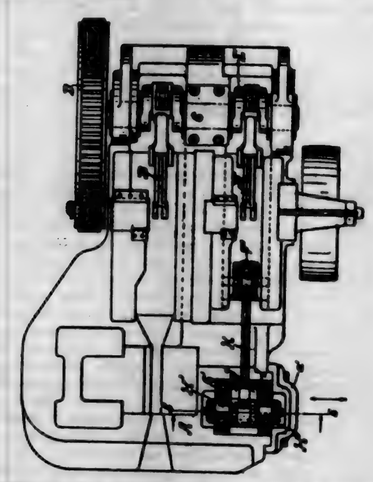

Claim.—1. In a press, the combination of die-blocks; a reciprocatory cross-head; a lever-arm mounted in one of said die-blocks, and connected to both of said die-blocks, and adapted to reciprocate the same relatively to each other; and means connecting said cross-head and arm.

2. In a press, the combination of two relatively vertically reciprocable die-blocks, the lower of said blocks having a transverse recess; a shaft journaled in said recessed die-block and bearing a lever-arm disposed within said recess; arms connecting the other die-block with said shaft, said arms being eccentrically attached to the respective ends of the latter; and reciprocatory actuating means connected with said lever-arm.

3. In a press, the combination of two die-blocks, one of said blocks having a transverse recess; a shaft journaled in said recessed die-block and bearing a lever-arm disposed within said recess; arms connecting the other die-block with said shaft, said arms being eccentrically attached to the respective ends of the latter; and means for rocking said shaft, such means comprising a reciprocatory cross-head, and a connecting-rod attached at one end in said cross-head, and at the other to said lever-arm.

4. In a press, the combination of die-blocks; a reciprocatory cross-head; a crank-shaft journaled in one of said die-blocks; two arms connecting opposite sides of the other die-block and the ends of said crank-shaft, respectively; and a connecting-arm journaled at one end in said cross-head and at the other end upon said crank-shaft.

5. In a press, the combination of die-blocks; a reciprocatory cross-head; a transverse shaft journaled in one of said die-blocks; means connecting the other die-block and said shaft; two arms eccentrically located upon said shaft and formed integral therewith; and connecting means journaled at one end in said cross-head and at the other end between said eccentric arms.

848,285. BLANK-SUPPORT FOR TUBE-MILLS. GEORGE H. BLAXTER, Beaver, Pa., assignor to Pittsburgh Seamless Tube Company, Beaver Falls, Pa., a Corporation of Pennsylvania. Filed Sept. 19, 1905. Serial No. 279,094.

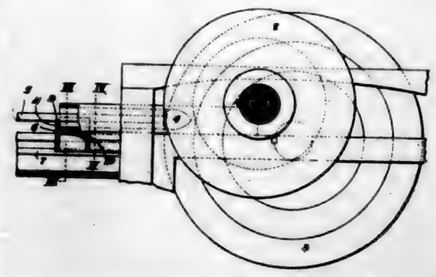

Claim.—1. In combination with the supporting-bar for the plug or point of a piercing-mill, a bearing slidingly mounted parallel with and underneath the bar, and provided with an open top and a lower portion adapted to engage and support the hollow billet.

2. In combination with the supporting-bar for the plug, or point of a piercing-mill, a track parallel with the bar and a bearing slidingly mounted thereon provided with an open top and a lower portion adapted to engage and support the hollow billet.

3. In combination with the supporting-bar for the plug or point of a piercing-mill, a bearing slidingly mounted parallel with and underneath the bar and provided with an interior tapered bearing and a shoulder adapted to engage and support the hollow billet.

4. In combination with the supporting-bar for the plug or point of a piercing-mill, a bearing slidingly mounted parallel with and underneath the bar and provided with an interior tapered bearing and a shoulder adapted to engage and support the hollow billet, and a bearing for the bar.

5. A device for the purpose described consisting of a slidable bearing having an open top and a lower concave interior tapered wall, and a shoulder for the end of the hollow billet.

6. A device for the purpose described consisting of a slidable bearing having interior tapered walls, a shoulder for the end of the hollow billet and a neck-bearing for the mandrel-bar.

7. In combination with the disks or rolls of a piercing-mill, a plug or point, a bar therefor, and guiding-tracks parallel with the bar; an interiorly-tapered open top concave bearing slidably mounted upon the tracks and adapted to support the hollow billet.

848,286. TANK-CAR. THOMAS R. BROWN, New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Nov. 15, 1906. Serial No. 343,577.

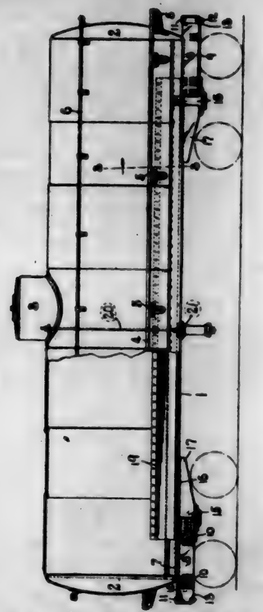

Claim.—1. A tank-car in which the buffing and pulling stresses are transmitted to and borne by a longitudinal box-girder located wholly within the liquid-compartment of the tank, the interior of said box-girder communicating with the tank; substantially as described.

2. A tank-car in which the buffing and pulling stresses are transmitted to and borne by an interiorly-arranged longitudinal tank-brace secured substantially throughout its length to the tank; substantially as described.

3. A tank-car in which the buffing and pulling stresses are transmitted to and borne by a tank-brace secured substantially throughout its length to the tank; substantially as described.

4. In a tank-car, the combination with a tank, of a longitudinal tank-brace arranged in the liquid-compartment of the tank and comprising members spaced apart and united with the bottom of the tank to form a box-girder; substantially as described.

5. In a tank-car, the combination with a tank, of a longitudinal tank-brace arranged in the liquid-compartment of the tank and comprising members spaced apart and united with the bottom of the tank to form a box-girder in which the bottom of the tank is a tension member; substantially as described.

6. In a tank-car, the combination with a tank, of a longitudinal sill located in the liquid-compartment of the tank and riveted throughout its length to the tank; substantially as described.

7. In a tank-car, the combination with a tank, of a longitudinal sill located in the liquid-compartment and riveted substantially throughout its length to the bottom of the tank; substantially as described.

8. In a tank-car, the combination with a tank, of a longitudinally-extending girder arranged in the liquid-compartment of said tank and riveted substantially throughout its length to said tank; substantially as described.

9. In a tank-car, the combination with a tank, of body-bolsters connected to an interiorly-arranged tank-brace; substantially as described.

10. In a tank-car, the combination with a tank, of an interiorly-arranged longitudinal tank-brace, and exteriorly-arranged body-bolsters riveted to said tank-brace; substantially as described.

11. In a tank-car, the combination with a tank, of body-bolsters and draft-sills secured under the ends of the tank and arranged to transmit the buffing and pulling stresses to an interiorly-arranged tank-brace located in a horizontal plane above the draft-sills; substantially as described.

12. In a tank-car, the combination with body-bolsters, of a tank provided with a bottom sheet which connects said body-bolsters; substantially as described.

13. In a tank-car, the combination with draft-sills, of a tank provided with a bottom sheet which connects said draft-sills; substantially as described.

14. In a tank-car, the combination with a tank, of exteriorly-arranged body-bolsters riveted to a bottom tank-sheet which connects said body-bolsters, and an interiorly-arranged tank-brace connecting the body-bolsters; substantially as described.

15. In a tank-car, the combination with a tank, of a longitudinal tank-brace riveted substantially throughout its length to the bottom of the tank and located within the liquid-compartment of the tank, and exteriorly-arranged draft-sills provided with a curved top portion arranged under and riveted to the tank, said draft-sills being connected to said interiorly-arranged brace; substantially as described.

16. In a tank-car, the combination with a tank, of frangible running-board brackets riveted to said tank; substantially as described.

17. In a tank-car, the combination with a tank, of chilled-cast-iron running-board brackets riveted to said tank; substantially as described.

18. In a tank-car, a stiffener arranged in the bottom of the tank, the interior of which stiffener communicates with the liquid-compartment of the tank, and a discharge leading from the interior of said stiffener.

19. In a tank-car, hollow means connected to the bottom of the tank and communicating with the liquid-compartment thereof, said hollow means transmitting the pulling and buffing strains, and a discharge leading from said hollow means for emptying the tank.

848,287. HOISTING APPARATUS. VICTOR R. BROWNING, Nottingham, Ohio. Filed May 10, 1904. Serial No. 207,226.

Claim.—1. In a device of the character described, a bucket, a closing and a dumping cable connected with said bucket, drums for said cables, a motor for turning said drums, and means requiring a positive operation of the motor for turning the drums in either direction.

2. In a device of the character described, a bucket a pair of drums, cables connected with said drums for operating the bucket a motor for driving said drums in one direction, and means requiring a positive backward operation of the motor before the drums can turn in the other direction.

3. In a device of the character described, a bucket, a motor, and means requiring a positive operation of the motor either to open or to close the bucket.

4. In a device of the character described, a bucket, means for closing, hoisting, opening and lowering the bucket, and a single lever for controlling all of said means.

5. In a device of the character described, a bucket, a motor, a closing and a dumping drum for said bucket, trains of gearing connecting said drums and the motor, and safety lowering devices in each of said trains, whereby the motor must be positively driven to turn the drums in either direction.

6. In a hoisting device, a bucket, a bucket-closing drum, a cable connecting said bucket and drum, a dumping-drum that is made in two parts, said parts being separated by the bucket-closing drum, and cables connecting the dumping-drum and frame of the bucket, the points of attachment of the cables on the said bucket-frame being separated substantially as far as the distance between the parts of the dumping-drum.

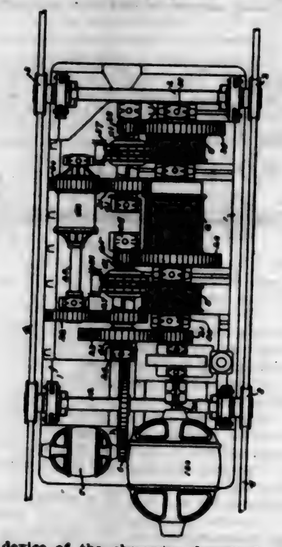

7. In a device of the character described, a motor, a pair of drums, a train of gearing connecting the motor with one of the drums so as to drive the same therewith, a second train of gearing connecting the motor with the other drum, a lost-motion device interposed in said train, and means whereby the motor must be positively driven in order to turn the drums in either direction, said lost-motion device permitting one of the drums to remain stationary for a predetermined time after the other has turned in either direction.

8. In a device of the character described, a motor, a shaft 23, a gear 27 loose on said shaft and a pinion 25 fixed thereto, a drum having a gear thereon meshing with the said pinion, a shaft 32, a gear 31 loose thereon and a pinion 33 fixed thereto, a second drum driven from said pinion 33, gearing connecting said gears 27 and 31, and a lost-motion device interposed in said gearing, for the purpose specified.

9. In a device of the character described, a motor, a shaft 23, a gear 27 loose on said shaft and a pinion 25 fast thereto, a safety lowering device connected with said shaft, a drum having a gear thereon meshing with said pinion, a shaft 32 in axial alinement with the shaft 23, a gear 31 loose thereon, and a pinion 33 fast thereto, a second safety lowering device connected with the shaft 32, a second drum driven from the pinion 33, gearing connecting the said gears 27 and 31, and a lost-motion device interposed in said gearing, all of which is so combined as to necessitate the positive operation of the motor in order to turn either drum in either direction, and to move the first drum a predetermined extent before the second is turned.

848,288. SIGN. HJALMAR CHRISTENSEN, Seattle, Wash. Filed Feb. 16, 1906. Serial No. 301,457.

Claim.—1. In a sign, a chamber having an opening forming a letter or symbol, electric lamps in said chamber, there being rearwardly-diverging reflecting-surfaces at opposite sides of said opening, between which said lamps project.

2. In a sign, an extensible frame comprising sections in the form of a letter or symbol fitting one within another.

3. In a sign, an extensible frame, electric lights removably supported therein, and a facing carried by said frame having an opening in the form of a letter or symbol.

4. In a sign, a chamber formed with extensible and contractible side walls, and an end wall having an opening forming a letter or symbol, and electric-light bulbs removably supported in said chamber.

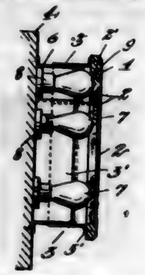

5. In a sign, an extensible frame, electric lights removably supported therein, and a facing in the form of a letter or symbol carried by said frame having an opening forming a second letter or symbol.

6. In a sign, a backing, a facing in the form of a letter or symbol, and extensible means to movably support said facing for adjustment relatively to said backing.

7. In a sign, a backing, electric lights removably mounted thereon, and an extensible letter-frame embracing said lights.

8. In a sign, a backing, a letter-frame projecting therefrom, a facing at the outer edge of said frame in the form of a letter or symbol, said facing projecting laterally from the outer sides of the frame and having an opening forming a letter or symbol, and illuminating means supported in said frame.

9. In a sign, a backing, a frame projecting therefrom, electric-light bulbs supported in said frame, and a facing on said frame in the form of a letter or symbol having an opening forming a letter or symbol, said opening being of less width than the diameter of said bulbs.

10. In a sign, a backing, an extensible letter-frame projecting therefrom, electric-light bulbs removably supported in said frame, a facing on said frame in the form of a letter or symbol having an opening forming a second letter or symbol, said opening being of less width than the diameter of said bulbs, there being rearwardly-diverging reflecting-surfaces at opposite sides of said opening.

11. In a sign, a facing in the form of a letter or symbol having an opening forming a letter or symbol, there being reflecting-surfaces at opposite sides of said opening diverging rearwardly.

848,289. ATTACHMENT FOR BURIAL-CASKETS. WILLIAM COLE, St. Louis, Mo. Filed Nov. 24, 1905. Renewed Oct. 25, 1906. Serial No. 340,593.

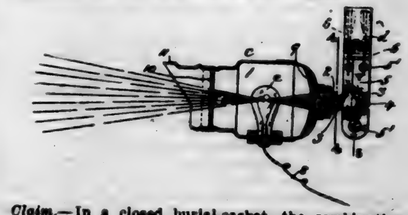

Claim.—In a closed burial-casket, the combination of a tube containing an electric-light bulb, a wire connecting the said bulb with an electric circuit, a reflector within the tube behind the said bulb, a colored transparent disk within the tube in front of the said bulb, a ball projecting from one end of the tube, a bracket adapted to be removably attached to the lining of the casket, and a plate removably fixed to the face of the bracket, the said bracket and plate having a socket in their meeting faces

adapted to receive and hold the said ball and tube in any adjusted position thereof, substantially as described.

848,290. REFRIGERATOR TUB OR BUCKET. JESSE D. COLLINS, Chicago, Ill. Filed Oct. 15, 1904. Serial No. 228,492.

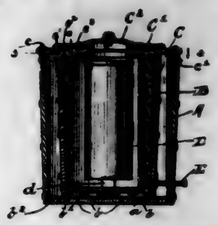

Claim.—In a device of the class described the combination with an outer tub of insulating material on the bottom thereof, an inner tub adapted to rest on the insulated bottom of said outer tub and having a notched lower flange, a can, a plurality of concentrically-arranged supports in said inner tub having their upper surfaces notched to center said can in the tub, an apertured cover adapted for engagement with said outer tub and having its inner circumference flush with the inner tub, insulating material engaged to the bottom of said cover and closely fitting between the inner and outer tubs, a second cover adapted to partly close said inner tub and comprising a flanged upper part adapted to rest on the aforesaid cover, a lower part adapted to fit closely within the inner tub and a plurality of circular parts between said upper and lower parts and forming an air-space therein, a central lid or cover concave on its inner surface and having a flange integral with the upper edge adapted to rest on the second cover, a partition in said lid affording an air-chamber and extending approximately to the middle of the flanged cover of the inner tub thereby allowing an air-space between the can and cover and completing the passage around the can and an outlet from the inner tub.

848,291. SCRAPER FOR DISK DRILLS. SPENCER E. DAVIS, Minneapolis, Minn. Filed July 23, 1906. Serial No. 327,262.

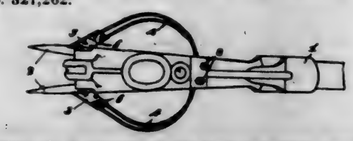

Claim.—1. A scraper of the kind described, comprising a scraper-blade, and a pair of spring-arms attached thereto on opposite sides of the longitudinal center thereof, substantially as described.

2. A scraper of the kind described comprising a scraper-blade 3, and a pair of curved spring arms or rods 4 having bent ends 5 passed through perforations formed in said blade inward of its rear edge and on opposite sides of its longitudinal center, the said ends 5 being upset or riveted, substantially as described.

3. The combination with a boot and a disk journaled thereto, of a scraper comprising a scraper-blade and a pair of spring-arms, the said spring-arms at their free ends, being attached to said scraper-blade on the opposite sides of its longitudinal center, the other ends of said spring-arms being attached to said boot and said spring-arms serving to press said scraper-blade against said disk, substantially as described.

4. The combination with a boot and a disk journaled thereto, of a scraper comprising a scraper-blade 3 and curved spring-arms 4, the free ends of said arms being passed along the inner surface of said scraper-blade and terminating in laterally-bent ends 5 that are passed outward through perforations in the opposite sides of said blade, and are riveted or upset at 6, the other ends of said arms 4 being secured to said boot, substantially as described.

848,292. AUTOMATIC SPEED-CONTROLLED CIRCUIT-CLOSURE FOR ELECTRIC GENERATORS. CHARLES E. DAWSON, Indianapolis, Ind., assignor to Artemus W. Fisher, South Bend, Ind. Filed Aug. 11, 1906. Serial No. 330,253.

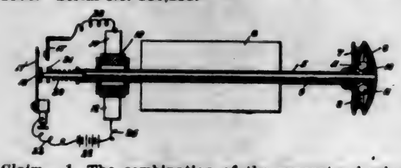

Claim.—1. The combination of the generator having a hollow armature-shaft, a centrifugal governor on said shaft, a spindle extending through said shaft and moved by the governor, and a circuit-closer in circuit with the generator, and operated by the spindle.

2. The combination of the generator having a hollow armature-shaft, a centrifugal governor on said shaft, a spindle extending through the shaft and moved by the governor in one direction, a spring moving the spindle in the other direction, and a circuit-closer normally held open by the spindle.

3. The combination of a base of a permanent magnet of horseshoe formation secured to the base, bearing-blocks arranged at opposite sides of the magnet, an armature having a hollow shaft, journaled in the bearing-blocks, a governor at one end of the shaft, a circuit-closer at the other end of the shaft, and a spindle extending through the shaft, and moved by the governor to move the circuit-closer.

848,293. SYSTEM FOR OPERATING SWITCH-POINTS AND SIGNALS. ALBERT DESCUBES, Paris, France. Filed Aug. 27, 1904. Serial No. 222,451.

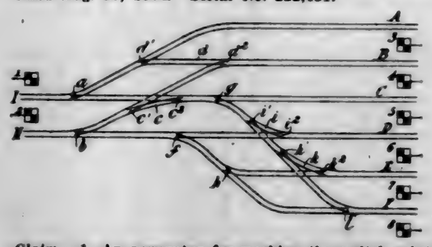

Claim.—1. An apparatus for working the switch-points and signals of a route having switches at and intermediate of its ends, including in combination two levers corresponding respectively to the opposite ends of said route, and means controlled by said two levers for operating all the switches of said route.

2. An apparatus for working the switch-points and signals of a route having switches at and intermediate of its ends, including in combination two levers corresponding respectively to the opposite ends of said route, bars each of which corresponds to one of the switches of said route, and a circuit-controller carried by each of said bars for controlling the position of its switch, all said bars being controlled by said two levers.

3. An apparatus for working the switch-points and signals of a plurality of routes having the same ends, including in combination a lever at one end and a plurality of levers at the opposite end, one corresponding to each of said routes, and means controlled by the single lever at one end or by the corresponding one of the plurality of levers at the opposite end for operating all the switches of each of said routes.

4. In an apparatus for working switch-points and signals, an indication-circuit arranged so as to allow only the extremities of the routes and the points which lead to duplicate routes, to be indicated in the cabin.

5. An apparatus for working switch-points and signals, including in combination an indication-circuit connecting in succession circuit-controllers corresponding to all the switches of a route, so that the current cannot pass through the control-motors except when all the switches of said route are in their desired positions.

6. An apparatus for working switch-points and signals, including mechanism for operating a signal at each end of a route, and a circuit controlling said mechanisms and connecting in succession circuit-controllers corresponding to all the switches of said route so that the current cannot pass except when all the switches of said route are in their desired positions.

7. In an apparatus for working switch-points and signals in combination, an indication-circuit, and devices in the cabin controlled by said circuit and showing the positions of all the points of any route set.

8. In an apparatus for working switch-points and signals in combination, an indicator-circuit connecting in succession circuit-controllers corresponding to all the points of a route and passing by means of fixed connections through the cabin, and devices in the cabin controlled by said circuit for indicating the actual positions of all the points of said route.

9. In an apparatus for working switch-points and signals, in combination an indication-circuit, means controlled thereby for indicating the positions of the points, and means controlled by said circuit to hinder the sending of a train into any particular route.

10. An apparatus for working switch-points and signals, including mechanism for operating a signal at each end of a route, and a circuit controlling said mechanisms and connecting in succession circuit-controllers corresponding to all the switches of said route so that the current cannot pass except when all the switches of said route are in their desired positions, and a supplementary interrupter in said circuit for preventing the setting of a signal to send a train onto a determined track.

11. In an apparatus for working switch-points and signals, double clearance-bars operatively connected onto a special circuit or onto the indication-circuit.

848,294. RIBBON MECHANISM FOR TIME-RECORDERS, &c. JOHN DEY, Syracuse, N. Y., and ALEXANDER DEY, Glasgow, Scotland, assignors to Dey Time Register Company, Syracuse, N. Y., a Corporation of New York. Filed July 14, 1903. Serial No. 165,520.

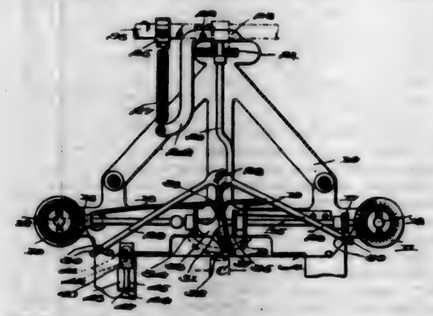

Claim.—1. In ribbon-guiding mechanism, a roller over which the ribbon is adapted to pass, said roller being pivotally mounted to swing substantially in the plane of the ribbon, and means for holding the ribbon in contact therewith, the inclination of the axis of said roller with respect to the longitudinal center line of the ribbon being controlled by the relative areas of contact between the ribbon and the roller upon the two sides of the pivot of the latter.

2. In ribbon-guiding mechanism, in combination, a pivotally-mounted supporting member, and two rollers journaled therein adapted to receive therebetween the ribbon, the entire surface of said rollers within the range of contact of said ribbon being substantially parallel, and said pivotally-mounted supporting member being free from contact with said ribbon.

3. In ribbon-guiding mechanism, in combination, a pivotally-mounted supporting member, and two rollers journaled therein adapted to receive therebetween the ribbon, the entire surface of said rollers within the range of contact of said ribbon being substantially parallel, and the effective length of said rollers exceeding the width of said ribbon.

4. In ribbon-guiding mechanism, in combination, a pivotally-mounted supporting member, and two spring-pressed rollers journaled therein adapted to receive therebetween the ribbon, the entire surface of said rollers within the range of contact of said ribbon being substantially parallel, and said pivotally-mounted member being free from contact with said ribbon.

5. In ribbon-guiding mechanism, in combination, a pivotally-mounted supporting member, and two spring-pressed rollers journaled therein adapted to receive therebetween the ribbon, the entire surface of said rollers within range of contact with said ribbon being substantially parallel, and the effective length of said rollers exceeding the width of said ribbon.

6. In ribbon-guiding mechanism, a pivotally-mounted roller, a second spring-pressed roller adjacent thereto, the surfaces of said rollers being substantially parallel and the ribbon being adapted to pass therebetween, and means whereby the inclination of the axis of said first-mentioned roller with respect to the longitudinal center line of said ribbon is controlled by the relative areas of contact between said ribbon and roller upon the two sides of the pivot of the latter.

7. In ribbon-guiding mechanism, in combination, a pivotally-mounted supporting member and two rollers journaled thereon adapted to receive the ribbon therebetween, the entire surface of said rollers within range of contact with said ribbon being substantially parallel, and the effective length thereof exceeding the width of said ribbon, and said pivotally-mounted member being free from contact with said ribbon.

8. In a ribbon-guiding mechanism, in combination, a pivotally-mounted supporting member, two rollers journaled thereon adapted to receive the ribbon therebetween, the entire surfaces of said rollers within range of contact with said ribbon being substantially parallel, and springs arranged to hold said rollers in contact with the ribbon, the inclination of the axis of said rollers with respect to the longitudinal center line of said ribbon being controlled by the relative areas of contact between said ribbon and said rollers upon the two sides of the pivot of the same.

9. In a ribbon-guiding mechanism, in combination, a pivotally-mounted frame, a pair of rollers journaled in said frame, the surfaces of said rollers being substantially parallel and the ribbon being adapted to pass therebetween, and a pair of springs, one arranged at each end of said rollers and adapted to hold the same in contact with said ribbon, the inclination of the axis of said pivotally-mounted frame being determined by the relative areas of contact between said ribbon and the rollers upon the two sides of the pivot of the frame.

10. In a ribbon-guiding mechanism, in combination, a pivotally-mounted frame, means upon which said frame is pivoted, a pair of rollers journaled within said frame, and springs for pressing the ends of each of said rollers in the direction of the other, said rollers being adapted to receive the ribbon therebetween, the entire surface of said rollers within range of contact with said ribbon being substantially parallel and the length of said rollers exceeding the width of said ribbon, the inclination of the axis of said rollers with respect to the longitudinal center line of said ribbon being controlled by the relative areas of contact between said ribbon and said rollers upon the two sides of the pivot of the frame.

11. In a ribbon-guiding mechanism, in combination, a

pivotally-mounted roller over which the ribbon is adapted to pass, spring-pressed means for engaging and holding the ribbon throughout its width in contact therewith, and means whereby the inclination of the axis of said roller with respect to the longitudinal center of the ribbon is controlled by the relative areas of contact between the ribbon and the roller upon the two sides of the pivot of the latter.

848,295. ANIMAL-TRAP. JAMES M. DUBOIS, Bagwell, Tex. Filed Dec. 20, 1906. Serial No. 348,796.

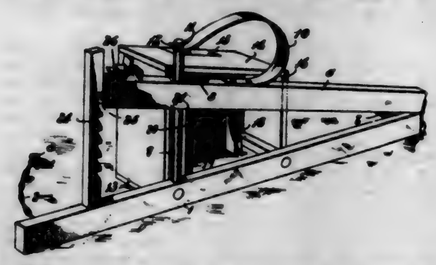

Claim.—1. An animal-trap comprising a bait-receptacle which is open at its front, a stationary jaw across the lower portion of the open front of the receptacle, a vertically-movable jaw working across the open front of the receptacle above the stationary jaw, a trigger mounted within the receptacle for supporting the movable jaw in an elevated position, and a bait-holder mounted within the receptacle and removably associated with the trigger to hold the latter in its jaw-supporting position.

2. An animal-trap comprising a bait-receptacle having an open front, a stationary jaw across the lower portion of the open front, a vertically-movable jaw working across the open front of the receptacle above the stationary jaw, a vertically-swinging trigger mounted within the receptacle and disposed for supporting the movable jaw in an elevated position, a pair of reversely-disposed upright hooks within the receptacle, and a bait-stick for detachable engagement with the hooks and the trigger.

3. An animal-trap comprising a bait-receptacle which is open at its front, a stationary jaw across the lower portion of the open front of the receptacle, a vertically-movable jaw working across the front of the receptacle and above the stationary jaw, a post within the receptacle, a trigger pivoted intermediate of its ends upon the post with its front end disposed for supporting the movable jaw in an elevated position, reversely-dipsosed hooks rising from the bottom of the receptacle, and a bait-stick removably engaged with the hooks and engaging across the upper side of the rear end portion of the trigger.

4. An animal-trap comprising a lower stationary jaw, an upright movable jaw provided with an upright opening, a guide-post rising from the stationary jaw and passing through the opening in the movable jaw, a spring bearing in opposite directions against the movable jaw and the post to depress the jaw, and a trigger mechanism for supporting the movable jaw against the tension of the spring.

5. An animal-trap comprising a stationary jaw, a movable jaw having an opening, a post carried by the stationary jaw and extending through the opening in the movable jaw, trigger mechanism for supporting the movable jaw, projections extending at opposite sides of the post, and a bowed spring carried by the movable jaw with its free end bifurcated to straddle the post and engaging the projections thereof.

6. An animal-trap comprising a stationary jaw, a movable jaw coöperating therewith, trigger mechanism for supporting the movable jaw and means to prevent movement of the movable jaw away from the stationary jaw after the trap has been sprung.

7. An animal-trap comprising a stationary jaw, a movable jaw, trigger mechanism for supporting the movable jaw and ratchet mechanism to prevent movement of the movable jaw away from the stationary jaw after the trap has been sprung.

8. An animal-trap comprising a stationary jaw, a movable jaw, trigger mechanism for supporting the movable jaw, a rack carried by the stationary jaw, and a spring-latch carried by the movable jaw in coöperative relation with the rack to lock the movable jaw after the trap has been sprung.

9. An animal-trap comprising a bait-receptacle which is open at its front, a stationary jaw carried by the front of the trap and projecting at opposite sides thereof, a movable jaw hinged to the stationary jaw and working across the front of the receptacle, a post rising from the stationary jaw and passing through the movable jaw, a spring carried by the movable jaw and bearing against the post to depress the movable jaw, a rack-bar rising from the stationary jaw, a spring-latch carried by the movable jaw and associated with the rack, a trigger mounted within the bait-receptacle for supporting the movable jaw in an elevated position, and a bait-holder movably mounted in the receptacle and engaging the trigger to lock the same when the trap is set.

848,296. CAN-MAKING MACHINE. THOMAS J. DUGAN, Cleveland, Ohio, assignor to Martin J. O. Donnell, Cleveland, Ohio. Filed Aug. 14, 1905. Serial No. 274,038.

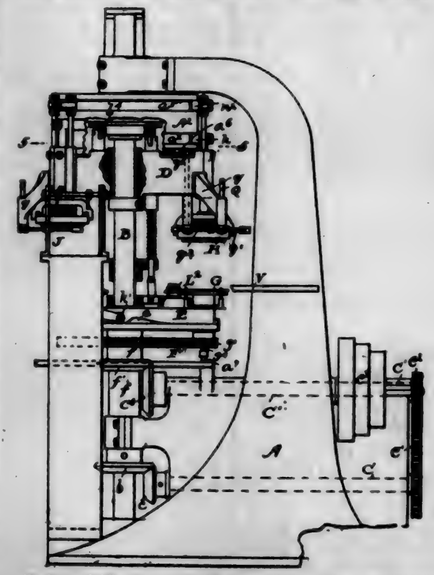

Claim.—1. In a can-making machine, the combination of an inclined chute adapted to convey to the machine can bodies and bottoms, a rotatable and bodily-traveling chuck adapted to receive the can body and bottom, and a seaming-roller adapted to act on such parts while the chuck is traveling.

2. In a can-making machine, the combination of a rotatable support, a series of chucks carried thereby, means for forming a seam on materials carried on one of the chucks, and means for false-wiring material carried by another chuck, said operations being performed simultaneously while the support is rotating.

3. The combination of a rotatable support, a chuck consisting of two members rotatably mounted upon said support in axial alinement, means for rotating one of said chuck members, means for moving the chuck members relatively toward and from each other to grasp and release a can-body, a seaming-roller movably mounted upon the support, and mechanism for moving it into and out of engagement with a can-body held between said chuck members while both the chuck and support are rotating.

4. The combination of a rotatable support, a series of chucks each consisting of two members rotatably mounted upon said support in axial alinement, means for rotating one member of each pair of chuck members while the support travels, forming-rollers which are severally associated with each chuck and are mounted upon the rotatable support, and mechanism for automatically moving said rollers into operative engagement with the can-bodies severally held in the chucks, and for holding them in engagement therewith during a portion only of the rotation of the support.

5. The combination of two supporting members rotatable simultaneously upon the same vertical axis, a series of lower chucks rotatably mounted upon the lower supporting member on vertical axes, a corresponding series of upper chucks rotatably mounted upon the upper supporting member, the corresponding chucks of the two series being adapted to engage the cans between them, a false-wiring device associated with each chuck, and means for bringing the same into action at a certain period of the rotation of the two supports.

6. In a can-making machine, the combination of means for feeding the can bodies and bottoms to the machine, mechanism for then seaming the same together, mechanism for then curling over the top of the body, and mechanism for then placing a cover on the can.

7. The combination of a rotatable horizontal support, a series of chucks mounted thereon, and rotatable on vertical axes, an inclined chute for the can bodies and bottoms, a receiving member adapted to receive cans and bodies discharged from said chute and adapted also to turn upon a horizontal axis, mechanism for then moving said body and bottom out of said receiving member onto an adjacent chuck.

8. The combination of a series of chucks, a chute for the can bodies and bottoms, a receiving member adapted to receive the same, mechanism for causing said member to turn the body and bottom onto an adjacent chuck, and a stop in the chute operating correspondingly with said receiving member.

9. In a can-forming machine, the combination of a rotatable support, mechanism thereon for carrying a can body and bottom, means for feeding the can body and bottom to such mechanism, and a stationary guard for holding the can body and bottom in place on such mechanism.

10. The combination of a rotatable support, a series of individual chucks carried thereby, forming-rollers carried by the support and movable toward the chucks, mechanism for so moving them, and a stationary cam for operating such mechanism.

11. The combination of a support, a chuck individually journaled in the support, means for rotating the support and for individually rotating the chuck, a forming-roller carried by the support and shiftable toward the chuck, mechanism for so shifting it while the support is traveling and the chuck rotating.

12. The combination of a rotatable support, a series of chucks journaled therein and individually rotatable, a series of forming-rollers, a slide for each roller, toggle-links for forcing said slides toward the chucks, a series of rods connected with said toggle-links, and a stationary cam adapted to operate said rods.

13. In a can-making machine, the combination of an upper and lower rotatable support, individually-rotatable chucks mounted in said lower support, heads carried by the upper support above the chucks, said heads being slidable toward and from the chucks, a roller carried adjacent to each head and traveling with it and the supports, and means for moving such roller toward the can independently of the head.

14. In a can-forming machine, the combination of a rotatable chuck adapted to carry the lower end of the can, a rotatable head to engage the upper end of the can, a forming-roller carried adjacent to said head and movable with the head as it rotates, means for pressing such roller against the upper end of the can while the can is rotating, and a clutch for holding this head stationary at such time.

15. In a can-making machine, the combination of an upper and lower rotatable support, individually-rotatable chucks mounted in said lower support, heads carried by the upper support above the chucks, said heads being slidable toward and from the chuck, wiring-rollers, a yoke carrying such rollers, a plunger for depressing the same, a stationary cam having two peripheral grooves, and rollers in said grooves connected respectively with the support for said head and with said plunger.

16. In a can-making machine, the combination of a rotatable chuck adapted to support the can-bottom and a surmounted body, means for seaming the two together while on such chuck, a discharge-plate carried by the chuck, and means for forcing it toward the can to force the same off of the chuck.

17. In a can-making machine, the combination of means for feeding to the machine can bodies and bottoms, traveling means for carrying such parts in the machine, mechanism acting on such parts while they are traveling to seam them together, and mechanism subsequently acting upon the can-body while it is traveling to curl its upper edge.

18. In a can-making machine, the combination of means for feeding to the machine can bodies and bottoms, traveling means for carrying such parts in the machine, mechanism acting on such parts while they are traveling to seam them together, means for feeding can-covers to the machine, and mechanism for placing the same on the traveling can after the can bodies and bottoms have been seamed together.

19. In a can-making machine, the combination of means for automatically supplying the machine with can bodies and bottoms, means for causing the same to travel through the machine, means for seaming the same together during such traveling, means for thereafter curling the upper edge of the can during such traveling, means for feeding can-covers to the machine, means for placing the same on the can during its travel in the machine, and means for finally discharging the completed can.

848,297. MEANS FOR RETARDING THE MOVEMENTS OF VESSELS. JOHN ENGLUND, Minneapolis, Minn. Filed July 25, 1906. Serial No. 327,697.

Claim.—1. The combination with a boat-body and a plurality of retarding-wings applied thereto below the water-line, and adapted to be moved into positions to retard the movement of the boat, of a sliding tripping-plunger normally projecting in front of the boat, and connections between said tripping-plunger and the several retarding-wings whereby the latter are rendered operative when said plunger is engaged with an obstacle, substantially as described.

2. The combination with a boat-body, of a plurality of retarding-wings hinged thereto and movable into positions to retard the movement of the boat, upper and lower tripping-plungers slidably mounted in front of the boat, and connections between said two tripping-plungers and the several retarding-wings, whereby the latter will be rendered operative when either of said tripping-plungers is engaged with an obstacle, substantially as described.

3. The combination with a boat-body and plurality of retarding-wings applied thereto below the water-line and adapted to be moved into positions to retard the movement of the boat, of a tripping-arm mounted on a sliding plunger, and connections between said tripping-arm and the several retarding-wings, whereby the latter will be rendered operative when said tripping-arm is engaged with an obstacle, substantially as described.

4. The combination with a boat-body and a plurality of retarding-wings applied thereto below the water-line and adapted to be moved into positions to retard the movement of the boat, of a tripping-arm mounted on a sliding plunger, a lock normally holding said plunger in an extended position, and connections between said tripping-arm, said lock and said retarding-wings, whereby the lock will release the sliding plunger and the retarding-wings

will be rendered operative when said tripping-arm is engaged with an obstacle, substantially as described.

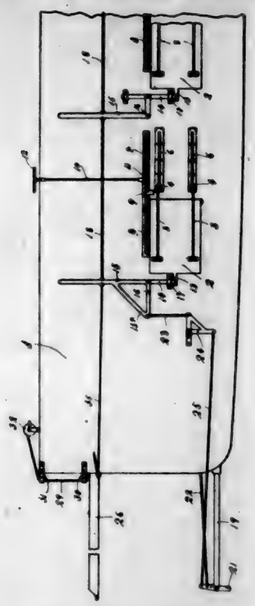

848,298. STATION-INDICATOR. WILLIAM P. ENNIS, U. S. Army. Filed Sept. 14, 1906. Serial No. 334,560.

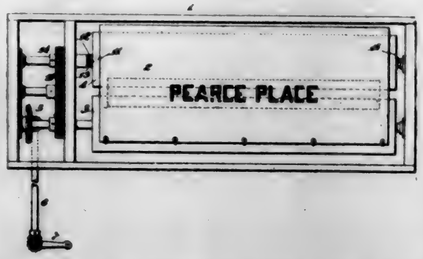

Claim.—1. A station-indicator having a roller for supporting the station-indicating sheet, a shaft within the roller and a reel on the shaft, a spring connecting the reel and shaft, the said reel having a slot therein, and a pin on the shaft engaging with the slot for limiting the extent of rotary movement of the reel.

2. A station-indicator having a roller for supporting the station-indicating sheet, the said roller having a shaft and reel thereon, a spring connecting the reel and shaft, a stop for limiting the extent of rotary movement of the reel upon the shaft, and a lug on the reel engaging within a longitudinal groove formed on the inside of the roller to prevent the reel from rotating independently of the roller.

3. A station-indicator having a flexible sheet, two rollers for the sheet, means for positively rotating both rollers, a spring under tension within one of the rollers for keeping the sheet under tension, and means for permitting the removal of that roller from the indicator without completely unwinding the spring.

848,299. METHOD OF MAKING CHAINS. CHARLES FEID, North Attleboro, Mass. Filed Feb. 27, 1906. Serial No. 303,289.

Claim.—The herein-described method of making chains consisting in interposing charged links between uncharged links, and then subjecting the chain to a predetermined heat which will fuse the charging of said charged link.

848,300. BELT STRETCHER AND TIGHTENER. ALBERT Y. FOLTZ, Salem, Ohio. Filed Dec. 18, 1906. Serial No. 348,397.

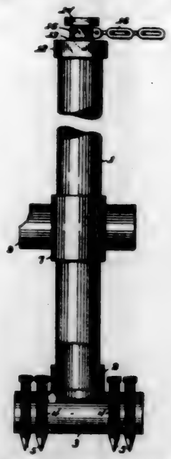

Claim.—1. In a belt-stretcher, a stock, a tubular detachable head carried by said stock, and adjustable pointed screws carried by said head substantially parallel to said stock.

2. In a belt-tightener, a tubular head, a stock screwed within said head at right angles thereto, and belt-engaging means carried by said head.

3. In a belt-stretcher, a stock, a tubular head carried by one end of said stock at substantially right angles thereto, belt-engaging means carried by said head, and a rest-bar carried by said stock.

4. In a belt-stretcher, a stock, a head carried by said stock, belt-engaging means carried by said head, and an arcuate rest-plate adjustably and pivotally carried by said stock.

5. In a belt-tightener, a stock, a head carried by said stock, belt-engaging means carried by said head, a collar slidable upon said stock, and a rest-plate carried by said collar.

6. In a belt-tightener, a stock, a head carried by said stock, belt-engaging means carried by said head, a collar slidable upon said stock, and a rest-plate pivoted to said collar.

7. In a belt-tightener, a stock, a head carried by said stock, belt-engaging means carried by said head, a collar slidable upon said stock, and a rest-plate, arcuate in cross-section, pivotally attached to said collar and adapted for standing transversely of the stock.

8. In a belt stretcher and tightener, a stock, a belt-engaging head carried by said stock, a rest-plate adjustably mounted upon said stock, a cap on the outer end of said stock, said cap having an integral stem, a loose collar carried by said stem, and a chain attached to said collar.

9. In a belt stretcher and tightener, a stock or lever, a head detachably mounted on one end of said lever, said head being tubular in form and standing at right angles to said lever, adjustable screws mounted in said head, said screws having belt-engaging points, a collar slidably mounted on said lever, a rest-bar pivotally mounted on said collar, and means carried by the outer end of the lever whereby the latter may be secured in adjusted position.

10. In a belt stretcher and tightener, a tubular lever, a head carried by said lever, said head being tubular in form and standing at right angles to said lever, a plurality of screws projected through said head, said screws having belt-engaging points, an arcuate rest-bar adjustably and pivotally carried by said lever, a cap on the outer end of said lever, said cap having a stem, a loose collar on said stem, and a chain attached to said collar, substantially as described.

848,301. THIN LEAF OR FABRIC. HENRY R. GREGORY, New York, N. Y., assignor to Walter A. Ker, Brooklyn, N. Y. Filed July 21, 1906. Serial No. 327,236.

Claim.—1. A thin leaf or fabric formed by combining a volatile solvent, a fiber which acts as a binder, and a coloring-matter and pouring the same onto a liquid heavier than the volatile solvent.

2. A thin leaf or fabric composed entirely of soluble cotton and a coloring-matter incorporated therein.

3. A thin leaf or fabric formed by dissolving soluble cotton in a volatile solvent, adding a coloring-matter thereto and pouring the same onto a liquid heavier than the volatile solvent.

4. A thin leaf or fabric formed by dissolving soluble cotton in a volatile oil, adding a coloring-matter thereto and pouring the same onto a liquid heavier than the oil.

5. A thin leaf or fabric formed by dissolving soluble cotton in amyl oil, adding a coloring-matter thereto and pouring the same onto a liquid heavier than the amyl oil.

848,302. POCKET COIN-BANK. WATSON P. HARVEY, Omaha, Nebr. Filed Mar. 22, 1905. Serial No. 252,091.

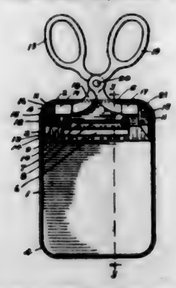

Claim.—1. A pocket savings-bank of thin, flat form, comprising a body part and a cover part, the outside of said bank presenting a surface unbroken save by the line of the juncture between said parts and by a slot for the admission of the coins, said coin-slot being located in the cover part parallel with the broad sides of the bank, spring-pressed latches located inside the bank at each of the narrow sides, pivoted on one part and locking into the other part, a key device adapted to be inserted in the coin-slot and expanded lengthwise thereof to press said latches and unlock the cover and body parts.

2. A pocket savings-bank of thin, flat form, comprising a body part and a cover part, the outside of said bank presenting a surface unbroken save by the line of the juncture between said parts and by a slot for the admission of the coins, said coin-slot being located in the cover part parallel with the broad sides of the bank, spring-pressed latches located inside the bank at each of the narrow sides, pivoted on one part and locking into the other part, a flat key consisting of two angular levers pivoted together and adapted to be inserted in the coin-slot to press with their ends the said latches and unlock the cover and body parts.

3. A pocket savings-bank of thin, flat form, comprising a body part and a cover part, the outside of said bank presenting a surface unbroken save by the line of the juncture between said parts and by a slot for the admission of the coins, said coin-slot being located in the cover part parallel with the broad sides of the bank, a plurality of spring-pressed latches located inside the bank at each of the narrow sides, pivoted on one part and locking into the other part, said latches being provided with edges of varying height and configuration, a flat key consisting of two angular levers pivoted together, the heads of said levers being shaped to coöperate with the edges of the latches, whereby when the key is inserted in the slot and expanded the latches are pressed to unlock the cover and body parts.

4. A pocket savings-bank of thin, flat form, comprising a body part and a cover part, the outside of said bank presenting a surface unbroken save by the line of the juncture between said parts and by a slot for the admission of the coins, said coin-slot being located in the cover part parallel with the broad sides of the bank, a deflector device located in said cover part and mounted to allow the passage of a coin into the body part but to prevent the passage of a coin from the body part into the cover part, spring-pressed latches pivoted on the cover part at each end thereof and normally engaging the body part to lock the parts together, a flat expansible key adapted to be inserted through the coin-slot to engage the latches and unlock the same, said key forming in addition a handle by which the cover part may be pulled from the body part while the latches are held in unlocked position.

5. A pocket savings-bank comprising a body part of suitable form, a cover part fitted thereto, there being in said bank a slot through which coins may be passed thereinto, a latch arranged adjacent to each end of said coin-slot, said latches being adapted to retain the cover part upon the body part, and a two-part key adapted to be inserted through the coin-slot to engage and release the latches to permit removal of the cover part from the body part.

6. A pocket savings-bank comprising a body part of suitable form, a cover part fitted thereto, there being in said bank a slot through which coins may be passed thereinto, a plurality of latches arranged adjacent to each end of said coin-slot, said latches being adapted to retain the cover part upon the body part, and a two-part key adapted to be inserted through the coin-slot to engage and release the latches to permit removal of the cover part from the body part.

7. A pocket savings-bank comprising a body part of suitable form, a cover part fitted thereto, there being in said cover part a slot through which coins may be passed into the body part, means adapted to prevent removal of coins from the bank through the slot, a spring-actuated latch carried on the cover part adjacent each end of the slot and normally engaging the body part to retain the cover part thereon, and a two-part key adapted to be passed through the coin-slot to engage the latches and disengage the same from the body part, said key forming in addition a handle by which the cover part may be pulled from the body part while the latches are held thereby in disengaged position.

8. A pocket savings-bank comprising a body part of suitable form, a cover part fitted thereto, there being in said cover part a slot through which coins may be passed into the body part, means adapted to prevent removal of coins from the bank through the slot, spring-actuated latches carried on the cover part adjacent to each end of the slot, and normally engaging the body part to retain the cover part thereon, and a two-part key adapted to be passed through the coin-slot to engage the latches and disengage the same from the body part, said key forming in addition a handle by which the cover part may be pulled from the body part while the latches are held thereby in disengaged position.

9. A money-receptacle comprising a pair of sections which when secured together form a closed receptacle, a lock for securing the sections together comprising a pair of yielding parts, and a key comprising a pair of members

adapted to be spread after the key has been inserted and to shift said parts.

10. A money-receptacle comprising a pair of sections which when secured together form a closed receptacle, a lock for securing the sections together comprising a pair of yielding parts, and a key comprising a pair of members adapted to be spread after the key has been inserted and to shift said parts, said parts being oppositely arranged in the receptacle.

11. A pocket savings-bank of suitable form comprising a body part and a cover part, the outside of said bank presenting a surface unbroken save by the line of juncture between said parts and by a slot for the admission of the coins, said coin-slot being located in the cover part parallel with the broad sides of the bank, means located entirely in the interior of the bank and including a spring-pressed member for holding the cover part upon the body part, a key device adapted to be inserted through the coin-slot to operate the spring-pressed member to release the cover part from the body part.

12. A pocket savings-bank of suitable form comprising a body part and a cover part formed with a slot opening into the interior of the bank for the admission of coins, means located entirely in the interior of the bank and including a spring-pressed latch for holding the cover part upon the body part, a key device insertible into the interior of the bank only through the coin-slot and adapted to operate the spring-pressed latch to release the cover part from the body part.

848,303. WINDOW-STOP. WILLIAM A. HEARTT, New York, N. Y., assignor to Frank Voigtmann, Chicago, Ill., and Silas H. Pomeroy, New York, N. Y., composing the firm of Voigtmann and Company, Chicago, Ill. Filed Oct. 9, 1905. Serial No. 281,885.

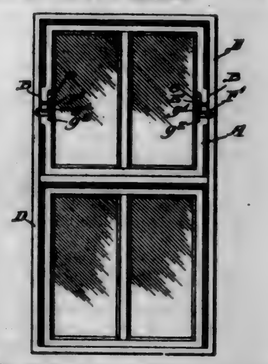

Claim.—In windows, the combination of a frame, a sash, pivot-bearings for the sash, providing a horizontal axis about which the sash tilts when opened and closed, a bracket secured to the sash, a stop-bracket secured to the frame, a rod swingingly secured to the bracket on the sash, and an enlargement on the free end of said rod, the said bracket on the frame having an opening in which the said rod slides and tilts at the same time, said enlargement being too large to pass through said opening, said rod disposed at an angle to the frame when the window is open, and said opening being adapted to permit the lateral removal therefrom of said rod, whereby the sash can then be opened more than the distance prescribed by the length of said rod.

845,304. SECTIONAL DERRICK. JOHN S. HINES, Portland, Ind. Filed Dec. 3, 1906. Serial No. 346,069.

Claim.—1. A sectional derrick formed entirely of metal, comprising a base-section and a plurality of collapsible sections extended and arranged one above the other in pyramidal form, means for raising and lowering the upper sections to and from said positions, hinges for connecting the sections together on one side and means for connecting the sections together on the side opposite said hinges whereby when the sections are all connected they form a complete unit, all substantially as shown and described.

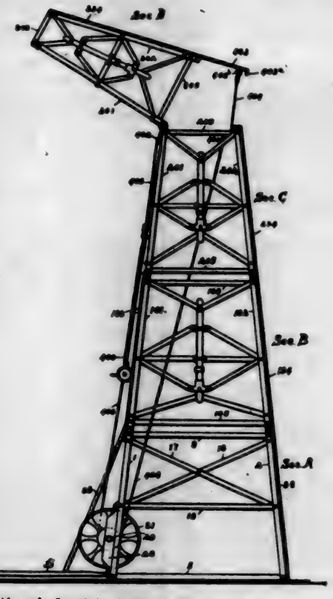

2. A sectional derrick formed of metal, comprising in combination, a base-section adapted to be taken apart and assembled, a plurality of collapsible sections extending upward and arranged one above the other and disposed upon said base-section, means for raising the collapsible sections to position by power, means for allowing a drill-stem to be taken within the derrick after the sections are assembled, and means for hinging and securing all of the sections rigidly together to form a complete unit, all substantially as shown and described and for the purposes set forth.

3. A standard derrick comprising a base-section to be assembled at the point where it is intended to rest, a plurality of upwardly-extending collapsible sections resting on the base-section and disposed one above the other, means for hinging all of the sections together, means for detachably securing all of the sections together, means for raising and positioning the upper sections which means, when reversed, provide the means for disassembling and lowering the upper sections, all substantially as shown and described.

4. A standard-rig derrick composed of a plurality of upwardly and convergently constructed sections each section being of substantially the same dimensions at its base as is the next section therebelow at its apex, means for elevating the sections into position, and means for collapsing the sections for storage or transportation, all substantially as shown and described and for the purposes set forth.

5. A standard-rig derrick formed of sections of upwardly-decreasing dimensions, the corner-posts of each section being securable to the corresponding corner-posts of the adjoining section to form practically rigid corner-posts from bottom to top of the derrick, a plurality of ties and braces extending between each two of the corner-posts of each section, means whereby the four corner-posts of each section may be brought together to collapse the section, and means for detaching an end of certain of said ties and braces whereby they may be turned to one side to form a comparatively large aperture for taking in a drill-stem whereby it may be suspended inside the derrick, all substantially as described.

6. A standard-rig derrick formed of a plurality of metal sections, comprising Section A, Section B, Section C, Section D, the former being composed of four corner-posts arranged convergently upward and connected together by removable ties and crossing braces, and each of the other sections being formed of four corner-posts arranged convergently upward and connected by removable ties and means whereby the four corner-posts may be brought together to occupy a small amount of space, means for arranging the sections one above the other, and means for disassembling the sections, all substantially as described.

7. A standard derrick comprising in combination, a base-section, a plurality of upper sections of upwardly-decreasing dimensions placed one upon the other and all supported by the base-section, means for rigidly securing the sections together, means for detaching the sections one from the other, a pair of hinges for connecting each two of the sections together, means for turning the upper sections back on their hinges, means for lowering the upper sections after being turned back, and means whereby the upper sections may be folded, all substantially as shown and described.

8. A standard derrick composed of Sections A, B, C and D placed one upon the other in pyramid form, means for detachably hinging together Sections A and B, B and C, C and D, and means for collapsingly assembling each of the Sections B, C and D before they are placed in position, all substantially as shown and described and for the purposes set forth.

9. A deep-well derrick composed of a plurality of metal sections divided horizontally one from the other with means whereby they may be secured together at their corners, hinges for connecting the sections together detachably and independent of the said securing means, a ladder for each of said sections with the members of the ladder arranged in alinement with each other, a track extending from the rear of the base-section inwardly and thence upwardly and secured to certain of the sections, a truck for operating on said track, means for operating the truck, means for carrying certain of the sections on said truck, and means for inverting certain of the sections into operative position after having been raised by the truck, all substantially as shown and described.

10. A derrick composed of a number of separable sections of substantially the same height and of upwardly-decreasing horizontal dimensions, means for collapsing the sections into a space equal to the combined space occupied by their respective corner-posts, a detachable ladder extending from the base to the apex of the derrick, a track extending up a portion of the way on one side of the derrick, a truck for operating on said track, means for raising and lowering the truck, means for elevating certain of the sections by said truck, means for inverting certain of the sections whereby each will rest on the section next below and at same time lowering the truck, all substantially as shown and described.

11. A derrick comprising in combination, a base-section, a plurality of upper sections constructed identical with each other but of upwardly-decreasing horizontal dimensions, means for detachably assembling the base-section in the position it is to occupy for service, means for hinging the second section to the base-section after the former has been assembled in an inverted position, means for turning the second section on its hinges whereby it will rest on the base-section, means for locking the base-section and the second section together, means for elevating the assembled and inverted third section, hinges for connecting the second and the third sections, means for turning the third section on its hinges whereby it will rest on the second section, means for locking the second section and the third section together, means for elevating the assembled and inverted fourth section, hinges for connecting the third and fourth section, means for turning the fourth section on its hinges whereby it will rest on the third section, and means for locking the third and fourth sections together, all substantially as shown and described.

12. In combination with a derrick composed of a plurality of sections, a track extending up one side of the derrick and also extending outward from the base thereof, a truck adapted to travel on said track, and means for operating the truck on said track, all substantially as set forth.

13. A derrick comprising a base-section, a plurality of collapsible sections, a track connected to certain of the sections and extending out from the lower portion of the base, a truck adapted to travel on said track, means for assembling certain of the sections in an inverted position on said truck, means for connecting certain of the sections to said truck, means for moving the truck to bring the section contained thereon up even with the section on which it is to rest, means for turning the last-mentioned section to an upright position on top of the preceding section and at same time lowering the truck, all substantially as set forth.

14. In combination, the base-section, a horizontal bull-wheel reel mounted to the base-section, a second section to be assembled in an inverted position at the side of the base-section, hinges for connecting said sections together, a lever extending up from the inverted section, a double pulley-block attached to the upper part of the base-section, a cable extending from around said bull-wheel reel through said pulley with its free end attached to said lever to provide means whereby as the bull-wheel reel is turned the cable will draw said lever upward thereby turning the second section on said hinges and bringing it to an upright position on top of the base-section, and means for securing said sections together.

15. In combination, the base-section, the second section positioned thereon, a reel mounted to the base-section, a track extending down one side of the base-section and then outward, a truck mounted on said track, a third section of the derrick to be assembled in an inverted position on said truck, means including a cable for elevating said truck to bring the base end of the third section even with the upper end of the second section, hinges for connecting the second and third sections, a lever extending up from the inverted third section, a pulley attached to the upper part of the second section, a cable extending from the outer end of said lever through said pulley and thence to the reel on which it is wound reversely from that of the first-named cable whereby as the reel is revolved reversely to that by which the third section was elevated the third section will be turned on its hinges to an upright position on top of the second section and at same time the truck will be lowered, all substantially as shown and described and for the purposes set forth.

16. In combination, the base-section, the second section positioned on the base-section, the third section positioned on the second section, a track extending down one side of the second and the base sections and then outward, a truck mounted on the outwardly-extending portion of said track, a pulley attached in the upper portion of the third section, a cable attached to said truck from which it extends through said pulley and then down to said reel, a fourth section assembled in an inverted position on said truck, hinges for connecting the third and fourth section, after the fourth section has been elevated to a point even with the upper end of the third section, a lever extending up from the inverted section, a second pulley attached to the upper part of the third section, a cable extending from the outer end of said lever through said second pulley and then to the reel on which it is wound reversely from that of the first-named cable whereby as the reel is revolved reversely to that by which the third section was elevated the third section will be turned on its hinges to an upright position on top of the second section and at same time the truck will be lowered, all substantially as described.

17. A base-section adapted to be assembled in an upright position, a plurality of collapsible sections adapted to be assembled each independent of the others and in an inverted position, a lever adapted to be attached to either

of the upper sections, a reel revolubly mounted in the base-section, a pulley adapted to be attached to the upper portion of either of the sections, a cable extending from said reel through said pulley to said lever, a track secured to the side of the base-section and extending out therefrom, tracks secured to certain of the upper sections, and connecting with the track of the base-section, a truck operable on said track, a pulley attachable to the upper portion of either of the upper sections, a cable extending from said reel through the second-named pulley to said truck, and means for detachably hinging the sections together.

18. In a derrick comprising a plurality of collapsible metal sections disposed one above the other and all supported by a disassemblable base-section, means for hinging all of the sections together, means for securing all of the sections together, means for positioning all of the sections above the base-section, means whereby all of the sections may be disassociated, and means for packing the several parts of the derrick into a comparatively small space, all substantially as set forth.

19. A derrick having a plurality of collapsible sections, each consisting of four corner-posts formed of angle-irons, end ties for connecting the four posts at their upper and lower ends whereby said posts will be an equal distance apart, folding means connected between each two of said posts which folding means is operable only when said end ties are removed whereby the four posts may be brought together parallel with each other, all substantially as set forth.

20. In combination with a derrick formed of a plurality of metal sections, the four angle-iron corner-posts for each section, and removable end ties for connecting said posts, a folding means attached between each two of the said posts and comprising in combination: the two-part tie 113 connecting each two of the posts near their centers, an inverted-U-shaped clip for holding together the overlapping inner portions of said two-part tie, an eyelet passing centrally across the space between the sides of said clip, means for pivotally mounting the inner end portions of the tie 113 on said eyelet, the contacting vertical bars 116 and 117 located parallel with each other, the downwardly and inwardly extending arms 118 119 to which the upper end of the bar 116 is pivoted, the upwardly and inwardly extending arms 120 and 121 to which is pivoted the lower end of the bar 117, means for pivotally securing the outer ends of said arms 118 119 and 120 121 to the corner-posts, a winged clip 122 slidably mounted around the lower portion of the bar 116, a winged clip 123 slidably mounted around the upper portion of the bar 117, the arms 124 and 125 pivoted to the wings of the winged clip 122 and to the corner-posts, the arms 126 and 127 pivoted to the wings of the winged clip 123 and to the corner-posts, a band-clip slidable over and contacting the bars 116 and 117, means for retaining the folding means extended, and means whereby said folding means may be contained in the space formed by the corner-posts when they are brought together after having first removed the end ties, all substantially as shown and described.

848,305. SOFA-BED. GUSTAV E. HOLMES, AXEL G. BOSTROM, and JOHN M. BOSTROM, Milwaukee, Wis. Filed Apr. 25, 1906. Serial No. 313,543.

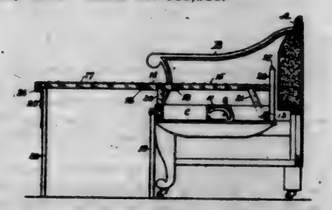

Claim.—1. A sofa-bed, comprising a body including a rigid back and arms, a seat pivoted at its ends and reversible rotatably on the body, and a bed-bottom in three longitudinal sections hinged to each other, the medial section being pivoted in unvarying pivotal relation to and supported medially on the sofa-seat.

2. In a sofa-bed, a pivoted and overturning seat, and a bed-bottom in three sections hinged to each other adapted to be folded to form a clothes-receptacle under the seat and to be unfolded to form an expanded bed-bottom in a plane above the seat.

3. In a sofa-bed, a pivoted and revolubly-overturning seat, a bed-bottom in three longitudinal sections, the two marginal sections being wider than the medial section and being hinged at the side edges thereof to the respective edges of the medial section, means for supporting the distant edges of the two marginal sections, and means for supporting the medial section at its ends medially pivotally and in unvarying relation pivotally to said supporting means.

4. In a sofa-bed, a pivoted and revolubly-overturning seat, a bed-bottom in three longitudinal sections, the two marginal sections being comparatively wide and the medial section being comparatively narrow, means supporting the medial section pivotally whereby it can be swung to horizontal position and in the same plane with the marginal sections and also can be swung to vertical position and the two marginal sections to opposite and parallel positions at a distance apart substantially equal to the width of the medial section.

5. In a sofa-bed, a rigid body-frame, a sofa-seat pivoted at its ends and reviubly reversible on the frame, a bed-bottom in three longitudinal sections hinged together, means to which the medial bed-section is medially pivoted and thereby supported tiltingly, and means supporting in connection with the medial bed-section the distant portion of one marginal bed-section movably and shiftably in a plane constantly parallel to the plane of the sofa-seat.

6. In a sofa-bed, a rigid body-frame, a sofa-seat pivoted at its ends overturningly on the frame, a bed-bottom in three longitudinal sections, the two wider marginal sections hinged respectively to the medial narrower section, legs fixed on the sofa-seat to which the medial section is medially pivoted, and folding legs hinged to one outer bed-section and to the seat adapted with the medial section to support that section shiftably in a plane constantly parallel with the sofa-seat.

7. In a sofa-bed, a rigid body-frame, a sofa-seat pivoted at its ends overturningly on the frame, a bed-bottom in three longitudinal sections the two wider marginal sections hinged respectively to the medial narrower section, legs fixed on the sofa-seat to which the medial section is pivoted medially, folding legs hinged to one outer bed-section and to the seat adapted with the medial section to support that section shiftably in a plane constantly parallel with the sofa-seat, and folding legs on the free edge of the outer bed-section adapted to support the section in the plane of the two other bed-sections that are mounted and supported directly and entirely on the sofa-seat.

8. In a sofa-bed, a reversible seat, bed-sections hinged to the sofa-seat and adapted to be unfolded into an expanded bed-bottom, legs hinged to the extended section adapted to unfold and rest on the floor, and means for locking the legs in unfolded position comprising a plate with each leg, to which the leg is pivoted and having a socket into which the end of the leg is received, and a spring adapted to hold the leg releasably in the socket.

9. In a sofa-bed, a sofa-seat having a depending front apron, a headed pin in the apron, a sectional folding bed-bottom mounted on the seat, a folding leg on a section, and a latch pivoted on the rail of the section adapted to swing over the folded leg and also onto the edge of the said apron and engage the pin therein locking the parts in relative position.

10. In a sofa-bed, a means for pivoting the sofa-seat revolubly and shiftingly on the sofa-frame, comprising a supporting-block having an elongated horizontal slot with a medial enlargement laterally of the slot-aperture and a stud-pin projecting from its side above one end of the slot, and a seat-hinge plate having a headed pivot-pin adapted to enter and travel in the slot in said block and provided with a curved slot eccentric to the headed pin adapted to receive therein the stud-pin on the block.

848,306. FARM IMPLEMENT. LYCURGUS E. HULL, Great Falls, Mont. Filed Mar. 17, 1906. Serial No. 306,667.

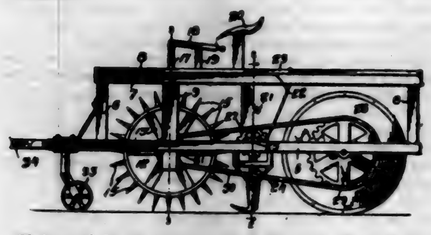

Claim.—1. In an implement of the class described, the combination with sills, of a seeding mechanism located between the sills, a sprocket-wheel carried by the seeding mechanism for operation thereof, a harrow-roller mounted revolubly between the sills for vertical movement independently of the seeding mechanism, a sprocket-wheel carried by the harrow-roller, a presser-roller journaled between the sills rearwardly of the seeding mechanism, a sprocket-wheel carried by the presser-roller, a single chain engaged with the three sprocket-wheels for simultaneous operation thereof, and means for moving the harrow-roller vertically to bring the chain into and out of engagement with the sprocket of the seeding mechanism.

2. In an implement of the class described, the combination with spaced sills, of vertical guide members secured to the sills, pillow-blocks slidably mounted in the guide members, a harrow-roller having trunnions journaled in the pillow-blocks, a yoke connected with the pillow-blocks, a frame mounted above the sills, a lever pivotally connected with the frame and with the yoke, a seeding mechanism located rearwardly of the harrow-roller and including an operating-shaft, a sprocket for the operating-shaft, a presser-roller journaled between the sills rearwardly of the seeding mechanism, sprockets carried by the harrow and presser rollers, and a chain engaged with the sprockets of the rollers and arranged for movement into and out of engagement with the sprocket of the seeding mechanism when the harrow-roller is moved vertically.

848,307. NUT-LOCK. JOSIAH JACOBY, Lodi, Ohio. Filed Aug. 6, 1906. Serial No. 329,291.

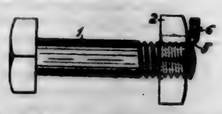

Claim.—1. A nut-lock, consisting of a bolt, a nut provided with a threaded opening mounted thereon, an auxiliary opening formed in said nut adjacent to said threaded opening, a revoluble locking-bar mounted in said opening and provided at one side with fragmentary threads registering with the threads of said threaded opening when in its unlocked position, a short arm formed at the outer end of said locking-bar, and a riveted head formed at the inner end of said locking-bar and flush with the friction bearing-surface of said nut.

2. A nut-lock, consisting of a threaded bolt, a nut mounted thereon by means of a threaded opening, a small opening formed therein adjacent to said threaded opening, a cylindrical locking-pin mounted in said small opening and provided at one side with fragmentary threads meshing with the threads of said bolt when the locking-pin is in unlocked position, an operating-arm formed with the outer end of said locking-pin whereby said locking-pin is revolved to embed itself in locking contact with the threads of said bolt.

848,308. LINOTYPE-MACHINE. DAVID S. KENNEDY, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Aug. 17, 1906. Serial No. 330,988.

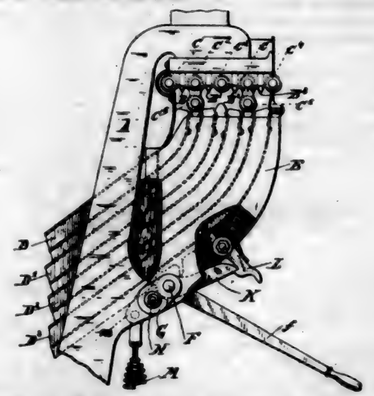

Claim.—1. In a typographic machine, the combination of a distributer and a normally stationary receiving-throat thereunder, the throat movable at will directly away from the distributer in the direction in which the matrices descend; whereby the release of lodged or interlocking matrices may be effected.

2. In a typographic machine, a distributer and a receiving-throat thereunder, said throat mounted for movement directly away from the distributer and also for a distinct movement around a pivot.

3. In a typographic machine, the combination of a distributer B, a magazine D, an intermediate throat for guiding the matrices from the distributer to the magazine, a pivotal support around which the throat may swing away from its operative position, and means for moving the throat toward and from the distributer lengthwise of the matrices independently of the pivotal motion.

4. In combination with a distributer, a receiving-throat, and cranked supports for said throat serving to move the same to and from the distributer and also to admit of its swinging away from its operative position.

5. In combination with a fixed distributer, a receiving-throat E, a shaft or pivot-rod F around which the throat may turn, cranked supports for said rod to effect the raising and lowering of the throat, and means for turning and locking said rod.

6. In combination with an overlying distributer, a receiving-throat E, a shaft F whereon the throat is pivoted, supporting-cranks for said rod, an arm K on said shaft, and means for locking said arm.

7. In combination with the throat E, the shaft F on which it is free to turn, supporting-cranks for said shaft, means for turning and fixing said cranks, and springs connected with the throat, tending to hold the same upward, substantially as described.

8. In a linotype-machine, a distributer, a receiving-throat thereunder, a pivot around which said throat is mounted to swing, and means for moving the pivot toward and from the distributer; whereby the throat may be given a movement bodily away from the distributer independent of its swinging motion.

848,309. LINOTYPE-MACHINE. DAVID S. KENNEDY, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Aug. 17, 1906. Serial No. 330,989.

Claim.—1. In combination with guides for delivering matrices thereto, a fixed distributer-bar having its receiving end movable in relation to said guide to permit the removal of lodged matrices.

2. In combination with guides B B, for directing matrices thereto, a stationary distributer-bar having a movable section at the receiving end whereby access is given to lodged matrices in advance of the distributer without releasing them and without disturbing the distributer or the matrices thereon.

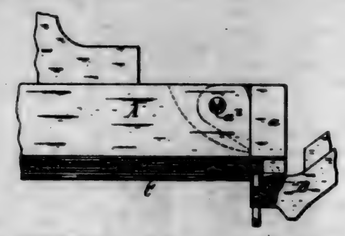

3. A fixed distributer-bar provided with a pivoted section at one end.

4. A distributer-bar for a linotype-machine, divided transversely and having its sections connected for instantaneous separation at will.

5. In combination with the downwardly-inclined rails B B, having their ends adapted to sustain matrices and guide them upon the distributer-bar, the distributer-bar A, having its receiving end located between the rails and pivoted to swing upward substantially as described and shown.

848,310. LINOTYPE-MACHINE. DAVID S. KENNEDY, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Sept. 5, 1906. Serial No. 333,341.

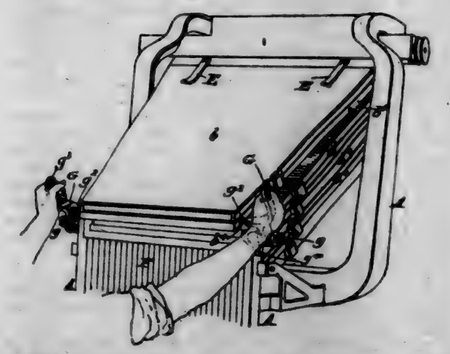

Claim.—1. In a linotype-machine, the combination of a main frame, a removable inclined magazine, and mechanism for positively lifting the end of the magazine and moving the same forward.

2. In combination with an inclined removable magazine, pivoted lifting-arms arranged to engage the magazine and remove the same endwise to and from its operative position.

3. In a linotype-machine, a main frame, a removable magazine thereon, and confining means to hold the magazine down in place, in combination with mechanism for moving the magazine endwise into and out of engagement with the confining means.

4. In combination with a sustaining-frame and an inclined removable magazine thereon, swinging arms arranged to move the magazine endwise from its operative position, and also to suspend the same, substantially as described.

5. In combination with the main frame and the removable magazine thereon, the arms G, pivoted to swing forward and backward, and mounted to move laterally into and out of engagement with the magazine; whereby they are adapted to lift the magazine and also to move the same endwise.

6. In combination with a series of superposed magazines, independently-removable means for raising and lowering them bodily and means for moving the successive magazines endwise to and from their operative position.

7. In a linotype-machine, the combination of an inclined removable magazine and means adapted to raise the end of the magazine and move the same endwise, and thereafter suspend the magazine adjacent to the machine.

848,311. DOUBLE VALVE. JOHN C. KITTON, Detroit, Mich. Filed Nov. 27, 1905. Serial No. 289,264.

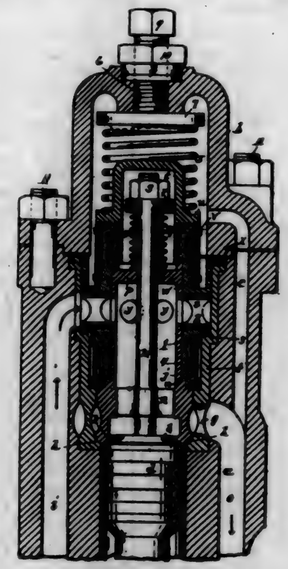

Claim.—1. In a valve the combination of a case, a piston-cylinder, a piston within the cylinder, a discharge-channel communicable with the cylinder, a hollow discharge-valve to control the communication of the cylinder with the discharge-channel, an inlet-channel communicable with the cylinder, an inlet-valve to control the communication of the cylinder with the inlet-channel, sealing means about the discharge-valve located above the communication of the inlet-valve with the cylinder additional sealing means located about the discharge-valve below the communication of the inlet-valve with the cylinder to seal the pressure within the discharge-valve from the outer pressure upon the discharge-valve, and means to admit condenser-pressure upon the upper end of the discharge-valve to seat the discharge-valve, the discharge-valve being unseated by the piston-pressure when the piston-pressure overcomes the condenser-pressure.

2. In a valve the combination of a case, a piston-cylinder, a piston within the cylinder, a discharge-channel communicable with the cylinder, a hollow discharge-valve to control the communication of the cylinder with the discharge-channel, an inlet-channel communicable with the cylinder, an inlet-valve to control the communication of the cylinder with the inlet-channel, an elastic diaphragm about the discharge-valve located above the communication of the inlet-valve with the cylinder additional elastic diaphragm located below the communication of the inlet-valve with the cylinder to seal the pressure within the discharge-valve from the outer pressure upon the discharge-valve, and means to admit condenser-pressure upon the upper end of the discharge-valve to seat the discharge-valve, the discharge-valve being unseated by the piston-pressure when the piston-pressure overcomes the condenser-pressure.

inlet-valve with the cylinder to seal the pressure within the discharge-valve from the outer pressure upon the discharge-valve, and means to admit condenser-pressure upon the upper end of the discharge-valve to seat the discharge-valve, the discharge-valve being unseated by the piston-pressure when the piston-pressure overcomes the condenser-pressure.

3. In a valve the combination of a case, a piston-cylinder, a piston within the cylinder, a discharge-channel communicable with the cylinder, a hollow discharge-valve to control the communication of the cylinder with the discharge-channel, an inlet-channel communicable with the cylinder, an inlet-valve to control the communication of the cylinder with the inlet-channel, an elastic diaphragm about the discharge-valve located above the communication of the inlet-valve with the cylinder, an additional elastic diaphragm located below the communication of the inlet-valve with the cylinder, to seal the pressure within the discharge-valve from the outer pressure upon the discharge-valve, and means to admit condenser-pressure upon the upper end of the discharge-valve above the upper diaphragm to seat the discharge-valve, the discharge-valve being unseated by the piston-pressure when the piston-pressure overcomes the condenser-pressure.

4. In a valve the combination of a case, a piston-cylinder, a piston within the cylinder, a cage resting upon one end of the cylinder, a hollow discharge-channel communicable with the cylinder, a discharge-valve seated upon the cage to control the communication of the cylinder with the discharge-channel, an inlet-channel communicable with the cylinder, an inlet-valve seated within the discharge-valve to control the communication of the cylinder with the inlet-channel, sealing means about the discharge-valve located above the communication of the inlet-valve with the cylinder additional sealing means located about the discharge-valve below the communication of the inlet-valve with the cylinder to seal the pressure within the discharge-valve from the outer pressure upon the discharge-valve, and means to admit condenser-pressure upon the upper end of the discharge-valve to seat the discharge-valve, the discharge-valve being unseated by the piston-pressure when the piston-pressure overcomes the condenser-pressure.

5. The combination with a case, of a cylinder, a piston reciprocatory in said cylinder, a cage resting upon the adjacent end of the cylinder, a hollow discharge-valve within the cage seated upon one end of the cage and provided with an inner seat, an inlet-valve seated upon the seat of the discharge-valve, a discharge-channel communicable through the cage into said cylinder, an inlet-channel communicable through the discharge-valve into said cylinder, sealing means about the discharge-valve located above the communication of the inlet-valve with the cylinder additional sealing means located about the discharge-valve below the communication of the inlet-valve with the cylinder to seal the pressure within the discharge-valve from the outer pressure upon the discharge-valve, and means to communicate condenser-pressure upon the upper end of the discharge-valve to seat the discharge-valve, the inlet-valve being seated by the pressure within the cylinder, the discharge-valve being unseated by the piston-pressure when the piston-pressure overcomes the condenser-pressure.

6. In a valve the combination of a case, a piston-cylinder, a piston reciprocatory within the cylinder, a discharge-channel communicable with the cylinder, a hollow discharge-valve to control the communication of the cylinder with the discharge-channel, an inlet-channel communicable with the cylinder, an inlet-valve seated within the discharge-valve and movable longitudinally of the discharge-valve to control the communication of the inlet-passage with the cylinder, sealing means about the discharge-valve located above the communication of the inlet-valve with the cylinder additional sealing means located about the discharge-valve below the communication of the inlet-valve with the cylinder to seal the pressure within the discharge-valve from the outer pressure upon the discharge-valve, means whereby condenser-pressure may be communicated upon the upper end of the discharge-valve to seat the discharge-valve, and means to seat the inlet-valve when the pressure of the piston is removed, the discharge-valve being unseated by the piston-pressure, when the piston-pressure overcomes the condenser-pressure.

7. A fluid-compressor valve comprising a cylinder, a piston therewithin, an inlet-channel communicable with the cylinder, an inlet-valve to control the communication of the cylinder with the inlet-channel, a discharge-channel communicable with the cylinder, a discharge-valve to control the communication of the cylinder with the discharge-channel, an elastic diaphragm above the communication of the inlet-channel with the cylinder engaged at its lower end with a stationary part of the device and at its upper end engaged with the discharge-valve, an additional elastic diaphragm below the communication of the inlet-channel with the cylinder engaged at its lower end with the discharge-valve and at its upper end with a stationary part of the device, and means to admit condenser-pressure upon the upper end of the discharge-valve, the inlet-valve opened by the exhaust stroke of the piston, and the discharge-valve opened by the advance stroke of the piston, the discharge-valve being unseated by the piston-pressure when the piston-pressure overcomes the condenser-pressure thereupon.

8. In a valve the combination of a case, a piston-cylinder, a piston within the cylinder, a discharge-channel communicable with the cylinder, a hollow discharge-valve to control the communication of the cylinder with the discharge-channel, an inlet-channel communicable with the cylinder, an inlet-valve to control the communication of the cylinder with the inlet-channel, sealing means about the discharge-valve located above the communication of the inlet-valve with the cylinder additional sealing means located about the discharge-valve below the communication of the inlet-valve with the cylinder to seal the pressure within the discharge-valve from the outer pressure upon the discharge-valve, and means to admit condenser-pressure upon the upper end of the discharge-valve to seat the discharge-valve, the discharge-valve being unseated by the piston-pressure when the piston-pressure overcomes the condenser-pressure, the discharge-valve movable from its seat beyond the advance stroke of the piston.

9. In a valve the combination of a case, a piston-cylinder, a piston within the cylinder, a discharge-channel communicable with the cylinder, a hollow discharge-valve to control the communication of the cylinder with the discharge-channel, an inlet-channel communicable with the cylinder, an inlet-valve to control the communication of the cylinder with the inlet-channel, sealing means about the discharge-valve located above the communication of the inlet-valve with the cylinder additional sealing means located about the discharge-valve below the communication of the inlet-valve with the cylinder to seal the pressure within the discharge-valve from the outer pressure upon the discharge-valve, means to admit condenser-pressure upon the upper end of the discharge-valve to seat the discharge-valve, the discharge-valve being unseated by the piston-pressure when the piston-pressure overcomes the condenser-pressure, and means to limit the unseating of said valve.

848,312. CARPET-STRETCHER. CHARLES H. LAMSON, Elston, Mo. Filed Aug. 9, 1905. Serial No. 273,447.

Claim.—In a carpet-stretcher, the combination with a head having recesses therein, of spaced parallel arms engaged in the recesses, straps secured to the arms at one side thereof and bridging the space between the arms, a second head having a recess therein, a member having a tongue engaged in the recess of the second head and having a reduced elongated arm movably disposed between the first-named arms, a pivot-bolt engaged in the several arms for pivotal movement of the first-named arms with respect to the second-named arm, said arms having longitudinal series of alining perforations adapted for interchangeable reception of the pivot-bolt, a latch pivoted to one of the first-named arms at the side opposite from the

straps and movable into and out of position to extend across the second-named arm, carpet-engaging pins carried by the heads, and braces secured one at each end of each head, the braces of the first-named head being secured also one to each of the first-named arms, and the braces of the second head being secured to the member.

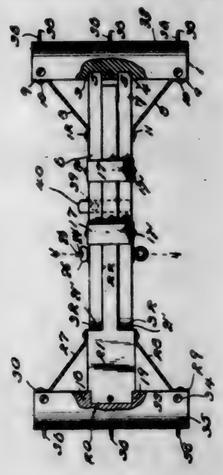

848,313. HEATING SYSTEM FOR INCUBATORS. JOHN V. LINDSEY, Fairfield, Nebr. Filed Dec. 7, 1905. Serial No. 290,772.

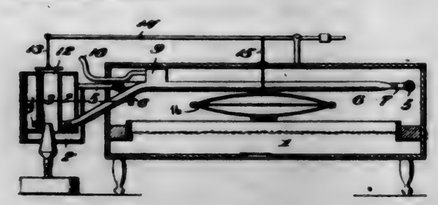

Claim.—1. In an incubator-heating system, the combination with a heating-tank comprising a heating-tube and an outer heat-conducting sleeve, of hot-water-circulating pipes communicating with said tank and extending into the incubator, a return-pipe extending into the tank and having therein diverging branches in communication therewith, obliquely-disposed pipes, each communicating at one end with one of the circulating-pipes and at the other end with the return-pipe, a steam-dome on the return-pipe, a steam-discharge pipe leading from said dome to prevent excess steam-pressure in said pipes, a damper arranged on said heating-tank to retain the heat therein and a thermostatic damper-operating mechanism to automatically raise said damper and thereby regulate the heat in said tank, substantially as described.

2. In an incubator-heating system, the combination with a heating-tank comprising a centrally-disposed heating-tube and a heat-conducting sleeve or jacket arranged around the same, of hot-water-circulating pipes communicating with said tank and extending into the incubator, a return-pipe extending into the tank and having therein diverging branches in communication therewith, obliquely-disposed pipes each communicating at one end with one of the circulating-pipes and at the other end with the return-pipe, a steam-dome on the return-pipe, a steam-discharge pipe leading from the dome, a damper-plate disposed above said tank, a lever connected to said damper-plate, and a thermostatic heat-regulating device in the incubator and connected to said lever, substantially as described.

848,314. FORAMINOUS-LEDGE STOVE. PATRICK J. MOONEY, Brazil, Ind. Filed Aug. 16, 1906. Serial No. 330,928.

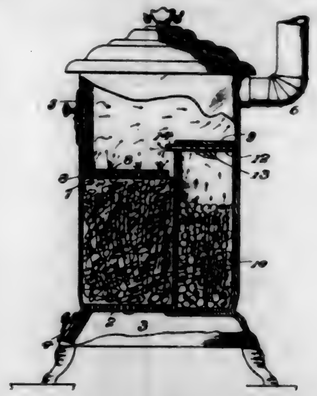

Claim.—1. In a stove, the combination of a fire-box, a foraminous fire-plate adapted to be superposed on the bed of fuel in said fire-box for the purpose specified, and a retort connected to said stove in sufficient proximity to said fire-box to be heated by the fuel therein, and there being provided a passage from the retort to the fire-box, at a point above the foraminous fire-plate.

2. In a stove, the combination of a fire-box, a foraminous fire-plate adapted to be superposed on the bed of fuel in said fire-box for the purpose specified, and a retort connected to said stove in sufficient proximity to said fire-box to be heated by the fuel therein, and there being provided a passage from the retort to the fire-box, at a point above the foraminous fire-plate, and a check-valve in said passage.

3. In a stove, the combination of a fire-box, a retort in sufficient proximity to said fire-box to be heated by the fuel therein, a foraminous fire-plate adapted to be supported on the bed of fuel in said fire-box, and a foraminous ledge constituting the top of the retort and providing a passage opening in the fire-box at a point above the fire-plate.

4. In a stove, the combination of a fire-box, a retort contiguous to said fire-box, a foraminous fire-plate adapted to be superposed on the bed of fuel in said fire-box, a tube provided with apertures in its walls, said apertures opening into the retort and one end of said tube projecting into the fire-box at an elevation above the foraminous fire-plate.

848,315. DEVICE FOR CONSTRUCTING TUNNELS UNDER WATER. ISAAC T. MCCOMAS, Baltimore, Md. Filed Dec. 14, 1906. Serial No. 347,764.

Claim.—In a device for constructing tunnels under water the combination with a cylinder-section provided with a water-tight head secured on one end thereof, of a threaded hook, secured within the head, with a portion of the said hook extending without the said head, a hook secured to the end of the said hook within the cylinder, a trench, a track within the trench, a cable secured to the hook portion extended without the said head, whereby the cylinder-sections are drawn along the said track, substantially as described.

848,315.

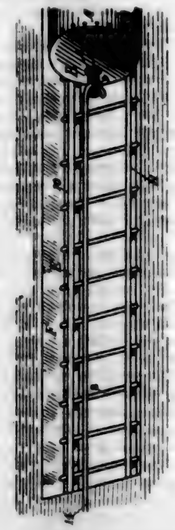

848,316. TYPE-WRITING MACHINE. JOHN C. MCLAUGHLIN, New York, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed July 13, 1906. Serial No. 325,991.

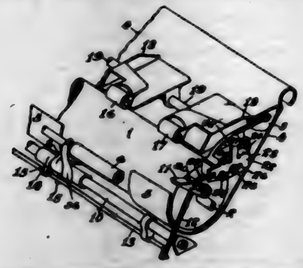

Claim.—1. In a type-writing machine, the combination with a platen, of rolls mounted to press separately upon the platen, a finger-piece connected to means to release one of said rolls, and means for connecting the other of said rolls to said releasing means and disconnecting it therefrom at will, to enable said finger-piece either to release the rolls together or to release one roll while the other remains in normal position against the platen.

2. In a type-writing machine, the combination with a platen, of rolls bearing separately upon the platen, a key for releasing one of said rolls, a release-arm for the other of said rolls, and means for connecting said arm to said key, and disconnecting it therefrom at will, to enable said key either to release the rolls together or to release one roll while the other remains in normal position against the platen.

3. In a type-writing machine, the combination with a platen and rolls mounted to bear separately thereon, of a key having means to release one of said rolls, the other of said rolls being releasable independently of said key, and a connecting device movable to a position to connect the last-mentioned roll to said key at will to be released thereby, and also movable to a position to disconnect the last-mentioned roll from said key, to enable the latter to be operated while the last-mentioned roll remains in normal position against the platen.

4. In a type-writing machine, the combination with a platen, of rolls mounted to bear separately against the platen, a key for releasing one of said rolls, an arm for releasing the other of said rolls, and a sliding device movable upon said arm from a position to connect said arm to said key, to a position to disconnect the arm from the key.

5. In a type-writing machine, the combination with a platen, of rolls mounted to bear separately against the platen, a key for releasing one of said rolls, an arm for releasing the other of said rolls, a sliding device upon said arm for connecting said arm to said key, or disconnecting it therefrom at will, a finger-piece upon said sliding device for shifting the same, and a yielding detent for retaining said slide in different positions.

6. In a type-writing machine, the combination with a platen, of rolls mounted to bear separately against the platen, a key for releasing one of said rolls, an arm for releasing the other of said rolls, a sliding device upon said arm for connecting said arm to said key, or disconnecting it therefrom at will, and a yielding detent for retaining said slide in different positions, said detent being constructed to bear upon said slide in a direction to press the roll against the platen.

7. In a type-writing machine, the combination with a platen, of rolls mounted to bear separately against the platen, a key for releasing one of said rolls, an arm for releasing the other of said rolls, a sliding device upon said arm for connecting said arm to said key, or disconnecting it therefrom at will, a finger-piece upon said sliding device for shifting the same, and a yielding detent for retaining said slide in different positions, said detent being constructed to bear upon said slide in a direction to press the roll against the platen; said finger-piece being movable to release its roll when disconnected from the first-mentioned release-key.

8. In a type-writing machine, the combination with a platen, and a roll pressing against the same, of a key for releasing said roll, a rock-shaft, rolls mounted upon the rock-shaft and adjustable therealong, an arm upon said rock-shaft, a slide upon said arm movable into and out of engagement with said release-key, a spring for retaining said slide in different positions to which it is shifted, said spring bearing upon said slide in a direction to press said adjustable rolls against the platen, and a finger-piece for shifting said slide.

9. In a type-writing machine, the combination with a platen, and a roll pressing against the same, of a key for releasing said roll, a rock-shaft, rolls mounted upon the rock-shaft and adjustable therealong, an arm upon said rock-shaft, a slide upon said arm movable into and out of engagement with said release-key, a spring for retaining said slide in different positions to which it is shifted, said spring bearing upon said slide in a direction to press said adjustable rolls against the platen, and a finger-piece projecting from said slide for shifting the same, and also for rocking said shaft in opposition to the tension of said spring for lifting said adjustable rolls from the platen.

848,317. WITHDRAWN.

848,318. LOGOTYPE-MACHINE. DAVID PETRI-PALMEDO, Hoboken, N. J., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Jan. 11, 1907. Serial No. 351,780.

Claim.—1. In a machine for casting logotypes, a mold variable in length, in combination with a composed line of matrices and intervening spaces representing a plurality of words, and means for repeatedly joining the mold and the undivided line in different relations; whereby logotypes may be cast successively in the one mold against different portions of the matrix-line.

2. In a machine for casting logotypes, a composed line of matrices representing a number of words and intervening spaces, in combination with a mold variable in length, means for advancing the line step by step past the mold,

and means for adjusting the mold according to the length of each word group of matrices presented thereto.

8. In a mechanism for producing justified lines of logotypes, the combination of a composed line including matrices for a number of words and intervening justifying-spaces, a mold variable in length, means for advancing the undivided line to present the word groups of matrices successively to the mold, and automatic means for adjusting the mold to correspond with the length of the word groups and the adjacent spaces; whereby a series of logotypes may be produced with integral spaces adapted to give the line composed of such logotypes a predetermined length.

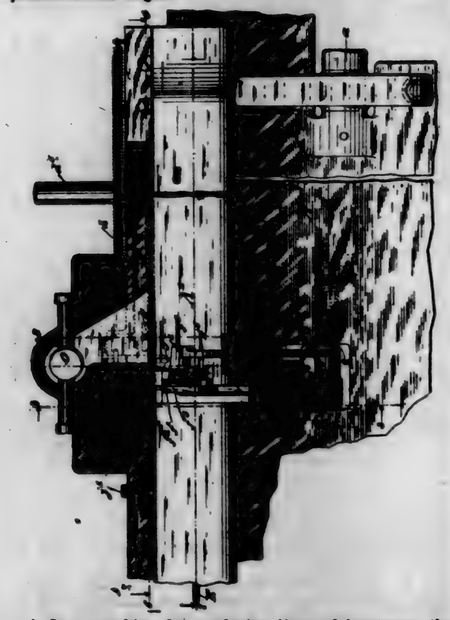

4. In a machine for producing lines of logotypes, the combination of a mold variable in length, a composed line including word groups of matrices and intervening spaces, means for presenting the line in different relations to the mold, and means controlled by said line for adjusting the mold according to the length of the words.

5. In a mechanism for casting lines of logotypes, a mold variable in length, a composed line including matrices for a number of words and intervening spaces, means for advancing the line past the mold to present the successive word groups of matrices thereto, and means controlled by the line for controlling its advance step by step.

6. In a machine for producing logotypes, the combination of a mold variable in length, a composed line including matrices for a number of words and intervening justifying-spaces, means for advancing the line step by step past the mold, means controlled by the line for limiting its advance to present the successive words to the mold, and means controlled by the line for adjusting the mold to correspond with the word and space presented thereto.

7. In a machine for casting logotypes, the combination of a mold variable in length, a composed line including word groups of matrices and intervening spaces, means for advancing the line intermittingly past the molds, and means controlled by the spacers for limiting the advance of the line.

8. In a logotype-machine, and in combination with a composed line including word groups of matrices and intervening spaces, means for advancing the integral line to different casting positions, means coöperating with the spaces in the line to determine its advance; whereby the line is caused to advance equal distances to the length of the successive words and spaces.

9. In a machine for casting logotypes, the combination of a mold variable in length, a composed line including word groups of matrices and intervening spaces, each having a definite thickness in excess of that required for justification, means for advancing the line to present the successive word groups and the justifying portion of the spaces to the mold, and means for adjusting the mold to correspond therewith; whereby the integral line is utilized to produce a series of logotypes each with a justifying-space thereon, the excessive space at the same time overlapping the face of the mold to prevent the leakage of metal.

10. In a logotype-machine, a mold variable in length, a composed line of matrices and intervening spaces, means for advancing the line endwise past the mold, and escapement devices engaging the spaces to determine the successive advances of the line.

11. In a machine for casting logotypes, a composed line including word groups of matrices and intervening justifying-spaces, a mold variable in length, means for advancing the line to present the successive word groups to the mold, power-driven devices to adjust the length of the mold, and means controlled by the spacers and in turn controlling the adjustment of the mold to correspond with the length of the respective words plus the width of the adjacent justifying-spaces.

12. The combination of a mold variable in length, power-driven devices for adjusting the same, a composed line of matrices and spacers movable in relation to the mold and acting to control said power-driven devices.

13. In combination, a slotted mold including a movable member for changing its length, the continuously-driven screw, and intermediate means for connecting the screw with and disconnecting it from the mold member.

14. In combination, the mold variable in length, a composed line of matrices and spaces, movable jaws confining said line and limiting its length, means for advancing the jaws and the confined line past the mold, escapement devices operating with the line to control its advance step by step past the mold, and means controlled by the line to determine the adjustment of the mold.

15. In combination, the connected sliding jaws, the intermediate line of matrices and spacers, means urging the jaws in one direction, and escapement devices coöperating with the spaces to limit the advance of the line.

16. In combination with the traveling jaws and the intermediate line of matrices and spacers, alternating escapements *f* and *f'*, substantially as described.

17. The combination with the composed line of matrices and spacers and means for advancing the same endwise, a pawl *g* to engage the successive spaces, a traveling support H therefor, a mold variable in length, and means controlled by the support H for determining the adjustment of the mold.

18. In combination with the composed line of matrices and spacers and means for advancing the line endwise, a pawl *g* to engage the successive spacers, a movable pawl-support H, a mold variable in length, means controlled by the pawl-support to determine the length of the mold, and means also operated by the pawl-support disengaging the pawl from the spacers; whereby the pawl is adapted to coöperate with the successive spacers in order to cause the adjustment of the mold to the length of the successive words.

19. In a logotype-machine, an adjustable mold, its supporting-frame, the constantly-rotated screw and the movable nut for imparting motion from the screw to the mold, in combination with the movable frame A', means mounted therein for advancing the composed line of matrices and spacers past the mold, means actuated by the line to cause the engagement of the nut and determine its time of disengagement; whereby the mold may be set automatically to correspond with the length of the successive words presented.

20. In a logotype-machine, the combination with a mold variable in length, the composed line including word groups of matrices and expansible justifying-spacers, each arbitrarily increased in thickness beyond the justifying requirements, and means for presenting the line repeatedly to the mold with the word group of matrices and the justifying portion of the space opposite the mold-opening and the excess portion of the space overlapping the face of the mold; whereby the logotypes are produced with integral spaces and the leakage of molten metal prevented by the excess portion of the space overlapping the face of the mold.

21. In a logotype-machine, a mold variable in length, a composed line of matrices and spaces longer than the maximum length of the mold, means for presenting different portions of the integral line successively to the mold, and means for adjusting the mold to correspond with the presented portions; whereby logotypes of different length may be produced in succession from the one line of matrices.

22. In a logotype-machine, a mold variable in length, and means for supplying the same with molten metal, in combination with a justified line of matrices and spaces representing a number of words, means for presenting the word groups of matrices and spaces successively to the mold, and means controlled by the line to adjust the mold to correspond with the respective groups and spaces; whereby a line of logotypes of predetermined length may be produced.

23. A composed line of matrices including the characters for several words and intervening spaces, in combination with a mold variable in length, means for advancing the line to present the word groups of matrices successively to the mold, and means controlled by the line to determine the adjustments of the mold for successive words.

24. In a mechanism for producing justified lines of logotypes, a composed line of matrices including word groups of matrices and intervening justifying-spaces, in combination with a mold variable in length, means for presenting the word groups and adjacent spaces successively to the mold, and means for filling the mold with molten metal; whereby a series of logotypes with justifying-spaces thereon may be produced.

848,319. SILO. WILLIAM M. PHILLIPS, Northville, Mich. Filed Oct. 9, 1905. Serial No. 281,903.

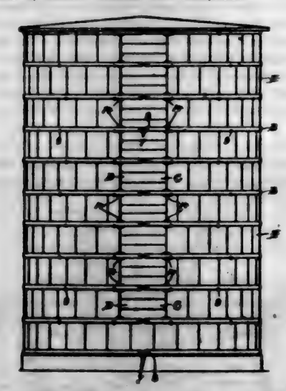

Claim.—A silo composed of a wall formed of independent segmental blocks the adjacent faces of adjacent blocks each being provided with a depression at the horizontal outer edges thereof whereby said depressions will register to form a continuous circumferential groove, clamping-hoops within said grooves, said hoops engaging each of the adjacent blocks, said wall being provided with a vertical door-opening, a series of sheet-metal doors engaging the inner face of the wall and being disposed with the horizontal edges of abutting doors in engagement with one another, and downwardly-extending fingers carried by the lower end of each door to engage the opposite face of the adjacent door.

848,320. REVERSIBLE DUPLEX PLANER-TOOL HOLDER. EUGENE PIERCE, Ilion, N. Y. Filed Jan. 6, 1906. Serial. No. 294,868.

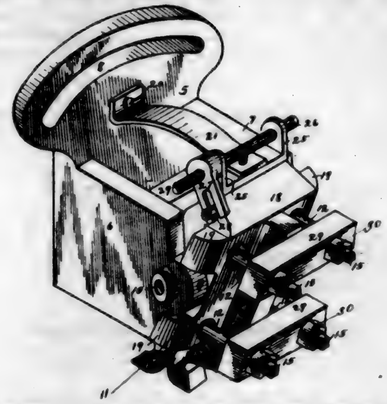

Claim.—1. In a device of the character described, the combination with a supporting-frame, of a tool-block pivotally mounted in said frame and having oppositely-beveled faces, a detent comprising a yieldably-mounted spring-pressed shoe having faces inversely beveled to the faces of said block, one of the faces of said detent being designed to frictionally engage the corresponding face of said block and means carried by said shoe and operatively connected to said block whereby the latter may be rocked on its pivot at selected intervals.

2. In a device of the character described, the combination with a supporting-frame, of a tool-block pivotally mounted in said frame and having oppositely-beveled faces, a detent comprising a yieldable spring-pressed shoe having faces inversely beveled to the faces of said block, one of the faces of said detent being designed to frictionally engage the corresponding face of said block, and means whereby said block may be rocked on its pivot, said means comprising a rock-shaft journaled in said shoe, a laterally-extending pin carried upon said block and a yoke carried upon said shaft and straddling said pin.

848,321. SMOKE-CONSUMER. JEMIMA W. PINNEY, Salt Lake City, Utah, executrix of William Pinney, deceased. Filed Mar. 22, 1906. Serial No. 307,548.

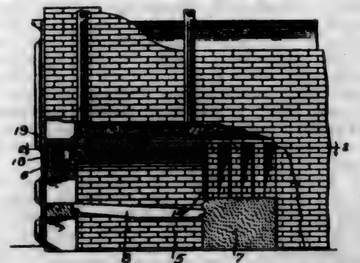

Claim.—1. A furnace of the class described including front and side walls, a bridge-wall, a grate, an arch located above said grate, baffle-piers located upon said bridge-wall, means for admitting air to each side of said grate and above the same and in advance of the said baffle-piers, and means for admitting air beneath said

arch, said last-named means being located within the front and side walls and opening through the said front wall.

2. A furnace of the class described including front and side walls, a bridge-wall, a grate, an arch located above said grate, and baffle-piers located upon said bridge, said side walls being provided with passages for admitting air to each side of said grate and above the same and in advance of the said baffle-piers, said passages opening through the front wall of the furnace, and the front wall being provided with passages for admitting air beneath the said arch.

848,322. FLOOR-SURFACING MACHINE. AUGUST POELKE, Detroit, Mich. Filed Mar. 13, 1905. Serial No. 249,807.

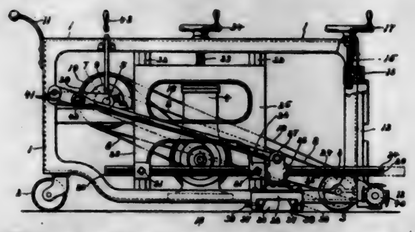

Claim.—1. In a traveling floor-surfacing machine, the combination with the frame, of a motor supported upon said frame, a counter-shaft mounted in bearings on the frame, means for transmitting motion directly from the motor to said shaft, a traction-roll mounted in bearings on the frame near the forward end thereof, a vertically-adjustable frame attached to the forward end of the machine-frame and provided with bearings, a horizontally-extending cylindrical cutter mounted in said bearings, means for adjusting the adjustable frame to raise or lower the cutter, a horizontally-extending guide mounted on the frame, a sanding and polishing head supported on said guide, and means for transmitting motion from the counter-shaft to the roll, cutter, and shaft.

2. In a traveling floor-surfacing machine, the combination with the frame, of a motor supported upon said frame, a counter-shaft mounted in bearings on the frame, means for transmitting motion directly from the motor to said shaft, a traction-roll mounted in bearings on the frame near the forward end thereof, a pulley on said roll, caster-wheels to support the rear end of the frame, a pulley loose on the counter-shaft, a friction-clutch one member of which is attached to said loose pulley and the other to the shaft, a lever for moving the parts of the clutch into contact to transmit motion from the shaft to the pulley, a vertically-adjustable frame attached to the forward end of the machine-frame and provided with bearings, a horizontally-extending cylindrical cutter mounted in said bearings, means for adjusting the adjustable frame to raise or lower the cutter, a pulley attached to the cutter, a pulley on the end of the counter-shaft, a belt engaging said pulleys, a horizontally-extending guide supported on the frame at one side thereof and projecting forwardly past the front end of said frame, a guide-block movable longitudinally of said guide, a sanding or polishing head secured to said block, and means for reciprocating the block on the guide from the counter-shaft.

3. A traveling floor-surfacing machine, comprising a frame, of a horizontally-extending cylindrical cutter-head mounted upon a shaft journaled in bearings on said frame, means for rotating said cutter, and an auxiliary cutter-head detachably secured to one end of said shaft outside of its bearings and extending outward therefrom.

4. A traveling floor-surfacing machine, comprising a frame, of a rotary cutter mounted in bearings on the frame and projecting laterally from one side of said frame, a reciprocating sander-head supported by the frame at one side thereof and at the rear of the cutter, and means for actuating said cutter and sander head.

5. In a floor-surfacing machine, the combination with the machine-frame, of a horizontally-extending rotary cutter mounted in bearings at the forward end of said frame, a horizontally-extending guide adjustably secured in bearings in the frame and adapted to be projected beyond the forward side of said cutter, a guide-block movable on said guide, a sander-head secured to said block and adapted to be reciprocated therewith upon the projecting end of said guide, and means mounted on said frame for actuating the cutter and sander head.

6. In a floor-surfacing machine, the combination with the machine-frame, of a horizontally-extending shaft mounted in bearings at the forward end of the frame, a cylindrical cutter-head on said shaft between the bearings, an auxiliary cutter-head detachably secured to one end of said shaft outside its bearing and to project laterally outward from the machine-frame, a horizontal guide extending longitudinally of the frame at the side thereof from which the auxiliary cutter projects and adjustably secured in bearings, a sander-head guided by said guide and adapted to be projected forwardly of the machine-frame, a counter-shaft, a crank-arm on said counter-shaft a connecting-rod attached to said arm and sander-head, means for varying the length of stroke of the connecting-rod, and means for actuating the counter-shaft and the cutter-head shaft.

7. In a floor-surfacing machine, the combination with the machine-frame, of a motor supported upon the frame, a counter-shaft mounted in bearings on the frame, a belt for transmitting a constant speed from the motor to the shaft, a traction-roll mounted in fixed bearings on the frame, a pulley secured to said roll, a pulley loosely mounted on the counter-shaft, a belt engaging said pulleys, a friction-clutch on the counter-shaft to transmit motion to the loose pulley, a vertically-adjustable frame on the forward end of the machine-frame, an adjusting-screw to raise and lower said adjustable frame, a cylindrical cutter-head mounted in bearings on the adjustable frame, a belt engaging a pulley fixed on the cutter-head and a loose pulley on the counter-shaft, a clutch to secure said loose pulley to the shaft, a vertically-adjustable frame attached to the side of the machine-frame, a screw to adjust said frame vertically, a longitudinally and horizontally extending guide-rod adjustably secured in bearings on said last-named adjustable frame and provided with a longitudinal groove, a guide-block slidable on the projecting forward end of said rod and having a rib engaging said groove, a crank-arm on the counter-shaft having openings near its end, a connecting-rod pivotally attached at one end to the guide-block and having openings near its opposite end, a crank-pin to engage the openings in the ends of the arm and rod, and a sander-head secured to the guide-block.

848,323. METHOD OF PREPARING ROLLS FOR ROLLING. AMBROSE RIDD, Newport, Ky. Filed Aug. 1, 1905. Serial No. 272,206.

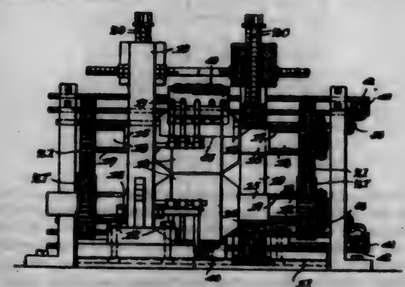

Claim.—1. The herein-described method of treating rolls for the manufacture of sheet metal, said method consisting in hammering the rolls during the rolling operation in such manner as to slightly indent the same.

2. The herein-described method of treating rolls, said method consisting in continuously hammering the rolls during the rolling operation in such manner as to slightly indent the same.

848,324. BICYCLE ATTACHMENT. JAMES H. SAGER, Rochester, N. Y. Filed Nov. 10, 1906. Serial No. 342,871.

Claim.—1. A bicycle having, in addition to the fork, a second fork with hollow branches, springs in said hollow branches and means for controlling them, and links connecting the two forks pivotally with the axle of the wheel and with each other.

2. A bicycle having, in addition to the fork, a second fork with hollow branches, springs in said hollow branches and means for controlling them, and links connecting the two forks pivotally with the axle of the wheel and with each other, said spring-carrying fork being independent of the other fork at its upper end, and means for holding it in place on the bicycle.

3. A vehicle, as a bicycle, having a fork and a wheel, and pivotal connectors for said fork and the axle of the wheel, a second fork with hollow branches joined to said connectors, springs in said hollow branches, a plunger in each of the branches adapted to move longitudinally therein, and a member on the first-mentioned fork engaging the plungers to act against the springs.

4. A vehicle, as a bicycle, having a fork and a wheel, independent links connecting the branches of the fork with the wheel, a second fork with slotted tubular branches connected with the links, springs in said hollow branches, plungers in the branches having parts projecting coaxially outward through the slots, and a member adjustable on the said first-mentioned fork joining said projecting parts of the plungers.

5. A vehicle, as a bicycle, having a fork and a wheel, independent links connecting the branches of the fork with the axle of the wheel, a second fork having tubular branches connected with the wheel-axle, springs in said branches, longitudinally-cavitied plungers in the branches above the springs, thimbles in the plungers to press the springs, and means in the branches to longitudinally adjust the thimbles.

6. A vehicle, as a bicycle, having a fork and a wheel, independent links connecting the branches of the fork with the axle of the wheel, a second fork having tubular branches open at the top connected with the wheel-axle, springs in said branches, longitudinally-cavitied plungers in the branches above the springs, thimbles adapted to move longitudinally in the cavities of the plungers to press the springs, adjusting-screws in said tubular branches threaded in the thimbles and projecting out at the upper ends of the branches.

7. A bicycle having two forks one forward of the other connected with each other and with the forward axle by independent links, the branches of the forward fork being tubular and open at the top, springs in the tubular branches, plungers in said hollow branches over the springs and means to move them toward the springs, caps to cover the open ends of the hollow branches, and buffing-springs in the branches between the respective caps and the plungers.

8. A bicycle having two forks connected with each other and with the wheel one fork having tubular branches, springs in said tubular branches, plungers in the branches, coacting with the springs and having parts projecting laterally out from the branches and coaxial, an axial connector for said projecting parts, and an element on the other fork joining said projecting parts and controlling the plungers.

9. A bicycle having a fork and a wheel, and connectors for the fork and the axle of the wheel, a second fork with tubular slotted branches joined to said connectors, springs in the branches, plungers in said hollow branches having parts projecting laterally through the slots, a member on said first-mentioned fork to engage said projecting parts of the plungers, and members carried by said plungers within the branches to cover the slots.

10. A vehicle, as a bicycle, having a forward wheel and coacting fork, links connecting the branches of the fork with the axle of the wheel, a second fork connected with said links at its lower end and indirectly connected with the primary fork near its upper end, the links having thickened parts and bolts held rigidly to the branches of said primary fork and adapted to turn in said thick parts of the links, said thickened parts being offset in opposite directions with the body of each link substantially in the plane of the connected branch of the fork.

11. A bicycle having the lower ends of the branches of the fork connected with the axle of the wheel by pivotal links, a pair of tubular members connected to form a second fork with their lower ends pivotally joined to said respective links, plungers adapted to move in said tubular members having cylindrical parts projecting laterally therefrom, a yoke on the primary fork formed with a head between said tubular members and chambered to receive said cylindrical parts, and an axial tie for the cylindrical parts.

12. A bicycle having a secondary fork connected pivotally with the forward axle, carrying-springs in the branches of the secondary fork, plungers in said branches above the springs, and an element on the primary fork to control the plungers, there being short buffing-springs in said branches above the plungers.

848,325. WHEEL. BERTON H. SILLS, Belleville, Ontario, Canada, assignor of one-fourth to William S. Conger and one-fourth to Stanley E. Carman, Belleville, Ontario, Canada. Filed Nov. 4, 1905. Serial No. 285,920.

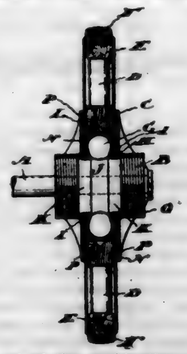

Claim.—1. In a wheel the combination of an inner cylindrical hub having a central annular groove formed therein, and an annular groove at each side of the central groove; a pneumatic cushion having its inner side lying in said central groove and provided with side flanges engaging the side grooves; clamping-bands adapted to clamp the side flanges in the grooves; an outer hub grooved to engage the outer side of the pneumatic cushion; and means for holding the parts of the hub in alinement, substantially as described.

2. In a wheel the combination of an inner cylindrical hub having a central annular groove formed therein, and an annular groove at each side of the central groove and a pneumatic cushion provided with side flanges engaging the side grooves; clamping-bands adapted to clamp the side flanges in the grooves; an outer hub provided with a V-shaped groove to engage the outer side of the pneumatic cushion; and means for holding the parts of the hub in alinement, substantially as described.

3. In a wheel the combination of an inner cylindrical hub having a central annular groove formed therein; a pneumatic cushion having its inner side lying in said central groove and provided with side flanges engaging the side grooves; clamping-bands adapted to clamp the side flanges on the hub; an outer hub grooved to engage the outer side of the pneumatic cushion; and means for holding the parts of the hub in alinement, substantially as described.

4. In a wheel the combination of an inner cylindrical hub having a central annular groove formed therein, and an annular groove at each side of the central groove; a pneumatic cushion having its inner side lying in said central groove and provided with side flanges engaging the side grooves; clamping-bands adapted to clamp the side flanges on the hub; an outer hub provided with a V-shaped groove to engage the outer side of the pneumatic cushion; and means for holding the parts of the hub in alinement, substantially as described.

5. In a wheel the combination of a hub divided into two concentric portions; an annular pneumatic cushion normally substantially circular in cross-section interposed between the two parts and secured to the inner part, the other part being provided with an acute V-shaped groove to engage the cushion at each side of the tread of the latter, substantially as described.

6. In a wheel the combination of a hub divided into two concentric portions; an annular pneumatic cushion substantially circular in cross-section interposed between the two parts, one part being provided with an acute V-shaped groove; and side flanges on one part engaging the outer sides of the other part to prevent side play, substantially as described.

848,326. SAFETY-FUSE. EDWARD STEINMANN, Bettendorf, and JOSEPH W. SCHORNDELEN, Davenport, Iowa. Filed Oct. 10, 1906. Serial No. 338,294.

Claim.—1. A safety-fuse comprising a tubular case of insulating material having an opening in its side of sufficient dimensions to permit access to its interior, metallic plugs closing the ends of said casing, a fuse-wire connecting said plugs, a frictionally-retained removable cover for closing said opening, and means for removably securing said cover in place.

2. A safety-fuse comprising a tubular case of insulating material having an opening in its side of sufficient dimensions to permit access to its interior, metallic plugs closing the ends of said casing, a fuse-wire connecting said plugs, a frictionally-retained removable cover for closing said opening, and circumferentially-disposed clips for removably securing said cover in place.

3. A safety-fuse comprising a tubular case of insulating material having a longitudinally-elongated opening therein, a removable cover fitted in said opening, circumferentially-disposed spring-clips located at each end of said cover and frictionally retaining the same in said opening, metallic plugs closing the ends of said casing having lugs extending from their inner ends, contact-screws tapped into said lugs and a fuse-wire the ends of which are removably connected to the lugs by said screws.

848,327. ADJUSTABLE SAWING-MACHINE. CHARLES THOMAS, Sr., Tecumseh, Okla. Filed Aug. 4, 1905. Serial No. 272,680.

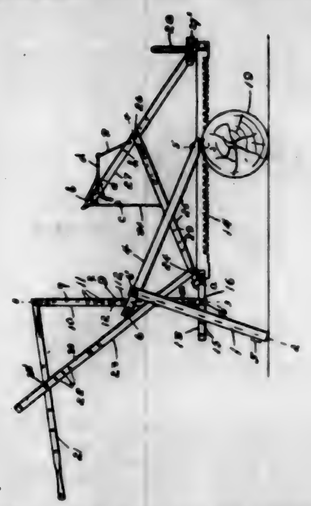

Claim.—1. A device of the character described, comprising a frame, a saw, means for reciprocating said saw, truss-bars associated with said saw and means for bracing said bars.

2. A device of the character described, comprising a frame, a saw, truss-bars connected to the ends of said saw and to each other, and means for bracing said bars.

3. A device of the character described, comprising a frame, a saw, truss-bars connected to the ends of said saw and to each other, a rod carried by one of said truss-bars, a connection between said rod and the other of said truss-bars, and means for moving said rod to brace the said truss bars.

4. A device of the character described, comprising a frame, a saw, truss-bars connected to the ends of said saw and to each other, a rod carried by one of said truss-bars, a connection between said rod and the other of said truss-bars, and a second rod connected to the first-named rod and to the first-named truss-bar adjustably to hold said first-named rod in position to brace the said truss-bar.

848,328. CEMENT AND PROCESS OF MANUFACTURING SAME. MAXIMILIAN TOCH, New York, N. Y. Filed Oct. 23, 1906. Serial No. 340,144.

Claim.—1. The new cement, obtainable from ordinary cement in combination with a resinate of an acid resin and silicate of alumina, free from voids or pores in the cement-concrete, from which bisulfid of carbon extracts resinous matter, substantially as hereinbefore described.

2. The new cement, obtainable from ordinary cement in combination with the lime resinate of an acid resin and silicate of alumina, free from voids or pores in the cement-concrete, from which bisulfid of carbon extracts resinous matter, substantially as hereinbefore described.

3. The new cement, obtainable from ordinary cement in combination with the lime resinate of Manila copal and silicate of alumina, free from voids or pores in the cement-concrete, from which bisulfid of carbon extracts resinous matter, substantially as hereinbefore described.

4. The process of making a new cement by combining a resinate of an acid resin with silicate of alumina and ordinary Portland cement, substantially as hereinbefore described.

5. The process of making a new cement by combining the lime resinate of an acid resin with silicate of alumina and ordinary Portland cement, substantially as hereinbefore described.

6. The process of making a new cement by combining the lime resinate of Manila copal with silicate of alumina and ordinary Portland cement, substantially as hereinbefore described.

7. The new compounds, obtainable from a resinate of an acid resin, in combination with a silicate of alumina which, when added to Portland cement, gives a cement-concrete, free from voids and pores, and from which bisulfid of carbon extracts resinous matter, substantially as hereinbefore described.

8. The new compounds, obtainable from the lime resinate of an acid resin, in combination with a silicate of alumina which, when added to Portland cement, gives a cement-concrete, free from voids and pores, and from which bisulfid of carbon extracts resinous matter, substantially as hereinbefore described.

9. The new compound, obtainable from the lime resinate of Manila copal, in combination with a silicate of alumina which, when added to Portland cement, gives a cement-concrete, free from voids and pores, and from which bisulfid of carbon extracts resinous matter, substantially as hereinbefore described.

10. The process of producing a new composition of matter by combining a resinate of an acid resin with silicate of alumina, substantially as hereinbefore described.

11. The process of producing a new composition of matter by combining the lime resinate of an acid resin with silicate of alumina, substantially as hereinbefore described.

12. The process of producing a new composition of matter by combining the lime resinate of Manila copal with silicate of alumina, substantially as hereinbefore described.

848,329. RECORDING INSTRUMENT. CHARLES E. VAWTER, Jr., Blacksburg, Va. Filed June 27, 1906. Serial No. 323,600.

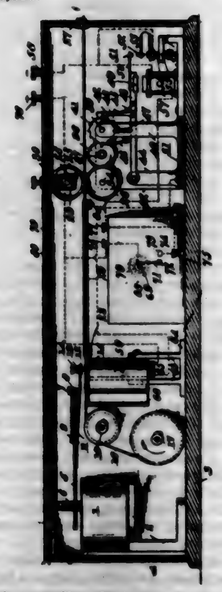

Claim.—1. A recording instrument, comprising an angularly-movable index-arm, a marking device carried by said arm, and an electromagnet for operating said marking device, said magnet comprising two concentrically-curved pole-pieces, a core of magnetic metal connecting the two, a magnet-coil on said core, and a central filling of non-magnetic material inserted in the "air-gap" between said pole-pieces and extending in a curve to conform to the path of travel of the point of the marking device.

2. A recording instrument, comprising an angularly-movable index-arm, a marking device carried by said arm, and an electromagnet for operating said marking device, said magnet comprising two concentrically-curved laminated pole-pieces, a core of magnetic metal connecting the two, a magnet-coil on said core, and a curved pole face-piece over the upper edges of said concentric pole-pieces consisting of laminated magnetic metal with a central filling of non-magnetic material the latter extending in a curve to conform to the path of the travel of the point of the marking device.

3. A recording instrument, comprising an angularly-movable index-arm, a marking device carried by said arm, an electromagnet to operate said marking device, record-sheet-feeding mechanism, electrical contacts operated thereby and controlling the operation of said magnet, an electromagnet to operate said mechanism, and a periodic contact device to control the operation of said last-named magnet.

4. A recording instrument, comprising an angularly-movable index-arm, a marking device carried thereby, an electromagnet to operate said marking device, record-sheet feed-rollers, ratchet-and-pawl mechanism to operate said feed-rollers, an electromagnet to operate said mechanism, electrical contacts in circuit with the coils of the feed-roller-operating magnet, independent periodically-acting means to make and break the electrical continuity between said contacts, and contacts operated by said last-named magnet to periodically connect in an electric circuit the coils of the electromagnet which operates the marking device.

5. A recording instrument, comprising an angularly-movable index-arm, a marking device carried thereby, an electromagnet to operate said marking device, record-sheet feed-rollers, rachet-and-pawl mechanism to operate said feed-rollers, an electromagnet to operate said mechanism a yielding electric contact device also operated by said last-named electromagnet to control the operation of the first-mentioned magnet, clock mechanism, and a periodic contact device operated thereby to control the operation of the paper-feed-operating magnet.

6. A recording instrument, comprising a magnet having juxtaposed pole-pieces with an "air-gap" therebetween, means to vary said "air-gap" to produce a uniform field, and recording means operated by said magnet.

7. A recording instrument, comprising a magnet having juxtaposed pole-pieces with an "air-gap" therebetween, a non-magnetic filling in said "air-gap," an armature movable in proximity to said pole-pieces over said "air-gap," and a recording device operatively connected to said armature.

8. A recording instrument, comprising a magnet having juxtaposed pole-pieces curved to form two substantially concentric arcs with an "air-gap" therebetween, non-magnetic material inserted in and spanning said "air-gap," and recording means operated by said magnet.

9. A recording instrument, comprising a magnet having juxtaposed pole-pieces, an armature mounted to travel laterally of said pole-pieces in proximity to the same, and also in a direction substantially at right angles to the said lateral travel, the said magnet being adapted to exert a pull on the said armature to move it in the latter direction, means to equalise the said pull of said magnet on the armature to prevent the same from being pulled unequally laterally by said magnet, means independent of said magnet to impart said lateral travel to said armature, and recording means operatively connected to said armature.

10. A recording instrument, comprising a magnet having elongated juxtaposed pole-pieces with an "air-gap" therebetween, an armature mounted to travel laterally of said elongated pole-pieces in proximity thereto and vertically with respect to the pole-faces thereof, the said magnet being adapted to exert a pull on said armature to move it in the latter direction, means independent of said

magnet to impart said lateral movement to said armature, means to regulate said "air-gap" to produce a uniform field along the lateral travel of said armature, whereby the said pull on said armature by the magnet will be equalized and recording means operatively connected to said armature.

11. A recording instrument comprising a maget-core, pole-pieces secured to opposite ends of said core and comprising two segmental plates curved to form two substantially concentric arcs, said plates extending above said core, and to opposite sides thereof to form lateral wings, each of said plates having a lateral inwardly-extending projection and therebetween an elongated "air-gap," non-magnetic material inserted and spanning said "air-gap," an armature movable in proximity to said magnet laterally of the pole-pieces thereof and also in a direction substantially at right angles to said movement, and recording means operatively connected to said armature.

848,330. PRINTING-PRESS. FELIX A. VENNEY, Dallas, Tex. Filed Apr. 20, 1905. Serial No. 256,544.

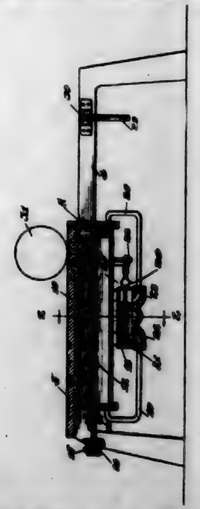

Claim.—1. In a printing-press the combination with a bed-plate, a power-cylinder secured thereto, a fixed piston and piston-rod therefor, a valve mechanism, means connecting said mechanism with each end of the cylinder, a rod secured to said valve mechanism, a lever pivoted to said rod, and stops in the path of said lever, substantially as described.

2. In a printing-press the combination with a bed-plate, a power-cylinder secured to said bed-plate, a fixed piston and piston-rod therefor, a sliding-valve mechanism, pipes connecting said mechanism, respectively with each end of said cylinder, a rod secured to said valve mechanism, a lever pivoted to said rod and stops in the path of said lever, whereby the valve mechanism is actuated mechanically at the limit of both the forward and back movement of the bed-plate, substantially as described.

848,331. ACETYLENE-GAS MACHINE. ROBERT H. WALTER, Los Angeles, Cal. Filed Feb. 8, 1906. Serial No. 300,141.

Claim.—1. In an acetylene-gas machine, a carbid-hopper; a feed-valve chamber below said hopper and connected therewith, said feed-valve chamber being divided into a valve-compartment, a lever-compartment and a carbid-runway compartment; a generator below said feed-valve chamber and connected therewith; a valve vertically movable in said valve-compartment; a gate movable to close the runway-compartment near the center thereof; a connection between said valve and gate whereby the movement in one direction of the valve causes the movement in the reverse direction of the gate, said movement when opening the carbid-runway being from the bottom up and when closing the same being down from the top.

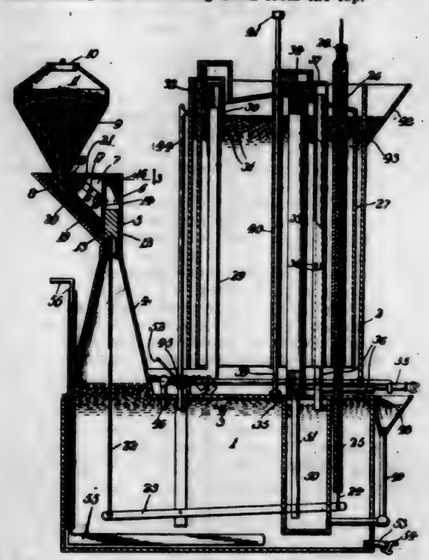

2. In an acetylene-gas machine, a carbid-hopper; a feed-valve chamber below said hopper and connected therewith, said feed-valve chamber being divided into a valve-compartment, a lever-compartment, and a carbid-runway compartment; a generator below said feed-valve chamber and connected therewith; a valve vertically movable in said valve-compartment; a gate vertically movable to close the runway-compartment near the center thereof; a connection between said valve and gate whereby the movement in one direction of the valve causes the movement in the reverse direction of the gate, said movement when opening the carbid-runway being from the bottom up and when closing the same being down from the top; and means operated by the bell to open said valve on the descent of the bell.

3. In an acetylene-gas machine, a generator-chamber; a carbid-hopper above said generator-chamber; a runway connecting said hopper and generator; a valve and a gate controlling the passage of carbid through said runway; and mechanism to move said valve and gate simultaneously in reverse directions, said movement when opening the carbid-runway being from the bottom up and when closing the same being down from the top.

4. In an acetylene-gas machine, a generator-chamber; a water-tank located upon a portion of the top of said generator-chamber; a gas-bell vertically movable in said water-tank; a feed-valve chamber above said generator-chamber and opening thereinto, said feed-valve chamber being divided into a valve-compartment, a lever-compartment and a carbid-runway compartment, said carbid-runway compartment opening into the valve-chamber compartment at the bottom thereof; a valve in said valve-compartment vertically movable therein; a gate vertically movable from the valve-chamber into the carbid-runway; a lever in said lever-compartment connecting said gate and valve, whereby the movement of the valve in one direction causes the movement of the gate in the reverse direction; a carbid-chamber opening into said runway; a pivoted lever in said generator; a rod pivotally connected at one end of said lever and terminating below the valve and in contact therewith; a guide-tube; a rod pivotally connected to the other end of said lever and extending upwardly through a guide-tube; a sealing-tube surrounding said guide-tube, said sealing-tube being connected to the gas-bell and having a removable cap thereon, which cap will engage said rod upon the descent of the bell to cause the opening of the valve in the valve-chamber.

848,332. TRUCK FOR BAGGAGE, &c. BENJAMIN L. WESTERVELT, New York, N. Y. Filed Dec. 17, 1906. Serial No. 348,099.

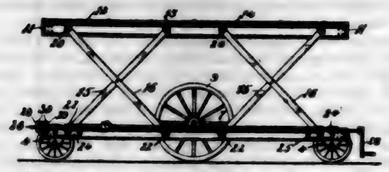

Claim.—1. In a truck, the combination of a base supported on wheels, a base-frame composed of side beams and end braces, said side beams provided with upper and lower inturned members, a platform composed of side beams provided with upper and lower inturned members and end braces, a plurality of corresponding pairs of lazy-tongs connecting the corresponding side beams of the base-frame and platform, means connecting the corresponding members of each pair of lazy-tongs on the same side and means for simultaneously opening or closing said pairs of lazy-tongs.

2. In a truck, the combination of a base-frame provided with side beams having inturned members, a platform provided with similar side beams and inturned members, a plurality of corresponding pairs of lazy-tongs on each side, carrying rollers adapted to operate between the said inturned members of said side beams, means connecting the corresponding members of each pair of lazy-tongs on the same side and means to operate said lazy-tongs to elevate or depress said platform.

3. In a truck, the combination of a base-frame, a platform, a plurality of corresponding lazy-tongs on each side connecting the platform and base-frame, means on each side connecting the lower ends of the corresponding members of each pair of lazy-tongs on the same side and additional means to operate said lazy-tongs to elevate or depress the platform.

4. In a truck, the combination of a base-frame, a platform, a plurality of corresponding lazy-tongs on each side connecting the platform and base-frame, shafts connecting the extremities of the corresponding members of each opposing pair of lazy-tongs, means on each side connecting the lower ends of the corresponding members of each pair of lazy-tongs on the same side, a longitudinal shaft passing above the lower connecting-shafts provided at the ends with right and left handed screw-threaded portions engaging correspondingly screw-threaded blocks secured to the shafts joining the outer lower lazy-tong members.

5. In a truck, the combination of a base-frame provided with side beams having inturned members, a platform provided with similar side beams having inturned members, a plurality of corresponding lazy-tongs on each side, each member of said lazy-tongs provided with a bushing, a shaft passing through the bushing of each correspondingly opposing member, rollers mounted on the ends of said shafts adapted to operate between the said inturned members of the said side beams, means provided on each side to connect the lower corresponding shafts of each pair of lazy-tongs, a longitudinal shaft provided at either end with a right and left hand screw-threaded portion engaging a similarly screw-threaded block secured to the outer lower lazy-tong members and a crank to operate said shaft.

6. In a truck, the combination of a base-frame provided with side beams having inturned members, a platform provided with similar side beams having inturned members, a plurality of corresponding lazy-tongs on each side, shafts passing through the corresponding opposing extremities of each member of said lazy-tongs, rollers mounted on each of said shafts passing through the upper extremities of the lazy-tong members adapted to operate between the inturned members of the side beams of the platform, a bracket secured to each end of the shaft passing through the lower outer lazy-tong member, said bracket supporting two rollers adapted to operate between the inturned members of the side beams of the base-frame, rollers mounted on the shafts passing through the lower inner lazy-tong members adapted to operate between the said inturned members of the said side beams of the base-frame and means to operate said lazy-tongs to elevate or depress said platform.

848,333. COIN-HOLDER. ELMER V. WILLIAMS, Glendale, Cal. Filed Sept. 10, 1906. Serial No. 334,012.

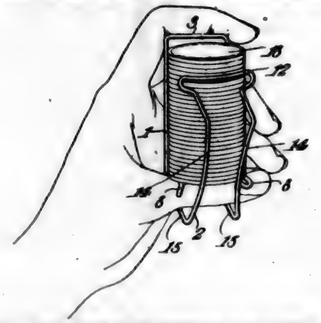

Claim.—A coin-holder comprising two members made of wire one of which has an intermediate horizontal portion provided with a bow, vertical portions depending from the same and having loops at their lower ends, horizontal portions extending from said loops and terminating in inclined portions, the ends of said wire extending transversely and being secured together, the second member comprising an intermediate portion having a bow with bows formed at the ends of said intermediate portion, horizontal portions extending from the last said bows, vertical portions extending from said horizontal portions, horizontal portions located at the lower ends of said vertical portions and having bows which receive the vertical portions of the first said member, the ends of the second said member passing through the loops of the first said member and extending transversely and being secured together.

848,334. COMBINATION DENTAL PLUGGER. PERCY E. WILLIAMS, Savannah, Ga. Filed June 9, 1905. Serial No. 264,534.

Claim.—1. A dental plugger comprising in its construction, a casing having a side opening through its front end portion, a longitudinally-movable tool-holder in the casing, a coiled spring in the casing acting on said holder to force the same to its limit of outward movement, a circumferentially-grooved collar on said holder with its groove normally opposite said opening, a finger-piece at the exterior of the casing having an inwardly-extending locking projection adapted to project through the opening into said groove to lock the casing and holder against independent longitudinal movement, and a spring normally holding said finger-piece and projection outwardly from locking position.

2. A dental plugger comprising in its construction, a casing, a longitudinally-movable tool-holder arranged within the casing, opposing springs within the casing and both acting on said holder to yieldingly maintain the same in normal position, and means for locking the casing and holder against independent longitudinal movement comprising a finger-piece at the exterior of the casing having

an inwardly-extending locking projection adapted to be moved inwardly into locking position when the holder is in its said normal position and a spring yieldingly holding said projection outwardly from locking position.

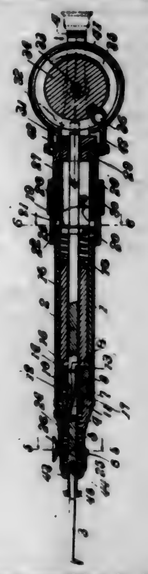

3. A dental plugger comprising in its construction, a casing having a front end nipple, a cap on the outer end of the nipple, a reciprocatory tool-holder arranged longitudinally within said casing, a spring within said nipple and acting on said holder to yieldingly press the same forwardly, an opposing spring in said cap and acting on said holder to yieldingly press the same rearwardly, and a holder operating hammer, substantially as described.

4. A dental plugger, comprising in its construction, a casing, a sleeve 7, therein, an adjustable pin 10, extending through the sleeve and projecting into the interior thereof, a reciprocatory tool-holder longitudinally arranged in the casing and passing through said sleeve, a spring-pressed reciprocatory hammer in said casing and on said holder, said holder having an anvil to be engaged by said hammer, and a trip carried by said holder to set and release said hammer, said trip adapted to be engaged and rocked by the inner end of said pin, substantially as described.

5. A dental plugger comprising in its construction, a casing, a spring-held tool-holder in the casing and having a variable longitudinal movement therein, a rotary power-actuated hammer for acting on said holder when the same is in one position, a spring-hammer and trip mechanism within the casing and acting on said holder when the same is in another longitudinal position, and a finger-actuated lock operative from the exterior of the casing and adapted to lock said holder, when in its normal position, against longitudinal movement with respect to the casing.

6. A dental plugger comprising in its construction, a casing, a spring-held tool-holder in the casing and having a variable longitudinal movement therein, a rotary power-actuated hammer for acting on said holder when the same is in one position within its range of longitudinal movement, a spring-hammer and trip mechanism within the casing and acting on said holder when the same is in another longitudinal position, and a spring within said casing and acting on said holder to yieldingly hold the same in its normal position and out of operative position with respect to said hammer mechanisms, substantially as described.

7. A dental plugger comprising in its construction, a casing, a rotary power-actuated hammer arranged at the rear end thereof and comprising a rotary wheel having an annular circumferential groove and a striking projection, a reciprocatory tool-holder extending longitudinally through the casing and having a limited range of rearward movement to bring its rear end into operative position with respect to said striking projection, and having an extended range of rearward movement with its rear end extended rearwardly into said groove and beyond operative relation to said striking projection, a spring in the casing and acting on said holder to yieldingly hold the same outwardly beyond said extended range of rearward movement, and a trip and spring-hammer mechanism within the casing and acting on said holder when in its extended range of rearward movement.

8. A dental plugger comprising in its construction, a casing, a reciprocatory tool-holder arranged longitudinally of the casing and having a variable longitudinal movement therein, a rotary power-actuated hammer for operatively acting on said holder when the same is in one longitudinal position, and a spring-hammer and trip mechanism arranged within the casing and acting on said holder when the same is in another longitudinal position with respect to the casing.

848,335. PROCESS OF MANUFACTURING BIFOCAL LENSES. JOHN WIMMER, Indianapolis, Ind.; The Indiana Trust Company executor of said Wimmer, deceased. Filed Nov. 19, 1906. Serial No. 344,053.

Claim.—1. The process of manufacturing bifocal or multifocal integral lenses by forming in a larger piece of glass of a selected index of refraction a concave depression, and forming a convex surface on a smaller piece of glass having a different index of refraction, the radii of the curvature of the concave depression of the one and of the convex surface of the other being the same and uniting them by then placing in said concave depression a quantity of powdered-glass flux which fuses at a temperature below that required to make either of said pieces of glass flexible and subjecting the piece of glass with the powdered flux in its depression to sufficient heat to liquefy said flux and heating the other piece of glass to about the fusing temperature of said flux, and placing it with its convex surface down into the boiling flux in said concave depression and uniting the two pieces of glass by pressing the latter piece of glass into said depression and working it around and about therein, so as to force out all of the air-bubbles and most of said flux from between the surfaces of said pieces of glass and then solidifying said flux by slowly cooling said blank lens.

2. The process of manufacturing bifocal or multifocal integral lenses by forming a piece of glass of a required index of refraction to a convex surface on one side of such a radius as to make a lens of the required focal distance and forming in a larger piece of glass of a lower index of refraction than the first mentioned, a concavity of such a radius as to fit the convex surface of the said first-mentioned piece of glass and uniting them by placing a powdered-glass flux, such as described, in such depression and heating said piece of glass, with the glass flux in its depression, sufficiently hot to melt said flux and then placing the convex surface of the first piece of glass on said melted flux and by pressing and working it around and about in said depression and thereby forcing the air and the greater portion of said flux from between the surfaces of said pieces of glass, and leaving only a very thin film of said flux between the surfaces of said pieces of glass, and then solidifying said flux by slowly cooling said blank lens, and then grinding the surfaces of said lens to the desired form.

3. The process of manufacturing bifocal or multifocal integral lenses by forming a piece of glass of a required index of refraction to a convex surface on one side of such a radius as to make a lens of the required focal distance and forming in a larger piece of glass of a lower index of refraction than the first mentioned, a concavity of such a radius as to fit the convex surface of the said first-mentioned piece of glass and uniting them by placing a powdered glass flux, such as described, in such depression and heating said piece of glass, with the glass flux in its depression, sufficiently hot to melt said flux and then placing the convex surface of the first piece of glass on said metal flux and by pressing and working it around and about in said depression and thereby forcing the air and the greater portion of said flux from between the surfaces of said piece of glass, and leaving only a very thin film of said flux between the surfaces of said pieces of glass, and then slowly cooling the blank integral lens thus united by placing it in an oven heated to about the temperature of the fused glass flux and so constructed as to cool slowly and so arranged that its temperature is at all times under the control of the operator, and then permitting said oven and its contents to slowly cool, thereby solidifying the said glass flux.

848,336. DELIVERY-CRATE. HENRY N. BACKUS, Detriot, Mich. Filed Apr. 19, 1904. Serial No. 203,824.

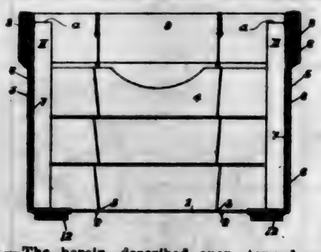

Claim.—The herein-described open-topped crate, the same comprising a bottom and ends and sides of woven material consisting of slats and wires, runners secured beneath the bottom transverse to the slats thereof and of such size and location that their outer sides and their ends shall stand just inside the planes of the inner faces of the sides and ends of the crate, and upright posts within the corners of the latter terminating short of the upper edge thereof by just the distance of the thickness of said runners; whereby when two crates are nested the lower edges of the sides and ends of one will rest upon the upper edges of the same members of the other, the runners will prevent lateral movement in any direction, and the extremities of the runners of the upper crate will rest upon the upper ends of the posts of the lower crate.

848,337. MANICURING-TOOL. CYRUS BAILEY, Chicago, Ill. Filed Oct. 12, 1905. Serial No. 282,364.

Claim.—1. A manicuring-tool consisting of a ring provided with an annular file-groove, the said tool being disk-like and provided at its center with a round perforation adapted to engage the end of a finger or thumb to permit the tool to turn or rotate thereon, provided also with a flat annular margin of metal outside and around said file-teeth, substantially as set forth.

2. A manicuring-tool consisting of a flat ring having its face provided, close to its central opening, with an annular file-groove, the said tool consisting of a flat or substantially flat piece of thin sheet metal with the file-teeth located in the plane thereof, substantially as set forth.

3. A manicuring-tool consisting of a body having a depression and having also an annular row of file-teeth encircling said depression, the said tool being disk-like and provided at its center with a round perforation adapted to engage the end of a finger or thumb to permit the tool to turn or rotate thereon, and provided also with a flat annular margin of metal outside and around said file-teeth, substantially as set forth.

4. A rotary nail-file having an annular line of file-teeth, the said tool consisting of a flat or substantially flat piece of thin sheet metal with the file-teeth located in the plane thereof, substantially as set forth.

5. A rotatable manicuring-tool provided with an annular roughened edge adapted to enter and remove foreign substance from beneath the nail, the said tool being disk-like and provided at its center with a round perforation adapted to engage the end of a finger or thumb to permit the tool to turn or rotate thereon, and provided also with a flat annular margin of metal outside and around said file-teeth, substantially as set forth.

6. A manicuring-tool having a circular nail-file and a peripheral notch providing one or more prongs for removing foreign substances from beneath the nails, the said tool consisting of a flat or substantially flat piece of thin sheet metal with the file-teeth located in the plane thereof, substantially as set forth.

7. A thin sheet-metal manicuring-tool provided with a hole and a curved file-groove along the edge of said hole.

848,338. LINOTYPE-MACHINE. RICHARD M. BEDELL, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Nov. 1, 1906. Serial No. 341,559.

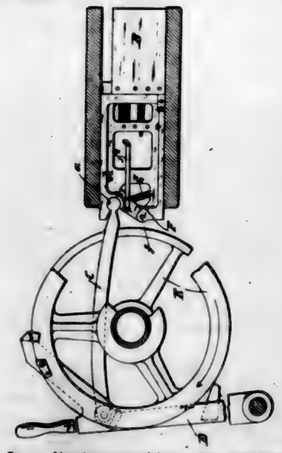

Claim.—1. In a linotype-machine, the combination of the reciprocating ejector-slide, its operating-link, the latch, substantially as shown, for holding the link in operative connection; whereby the instantaneous release of the slide is permitted.

2. In a linotype-machine, the ejector-slide in combination with an actuating-cam, a lever moved thereby, the link extending from the lever to the slide, and a latch permitting instantaneous disconnection of the link from the slide.

3. In a linotype-machine, the combination of the ejector-slide, the link having one end seated therein, and a movable latch or locking device holding the link in operative position; whereby instantaneous disconnection of the link is permitted.

4. In a linotype-machine, the ejector-slide movable forward and backward, the actuating-cam, connections from the cam to the slide, and means operative from the front of the machine for effecting instantaneous disconnection and release of the slide at will; whereby the operator at the

front of the machine is enabled to move the slide forward at will without changing the position of the cam.

848,339. LUMBER-CART. ADOLPH W. BENSON, Minneapolis, Minn., assignor to A. W. Benson Manufacturing Company, Minneapolis, Minn., a Corporation of Minnesota. Filed Dec. 16, 1905. Serial No. 292,046.

Claim.—In a cart, the combination with a center-bearing member 4 rigidly secured to the cart-frame and having concentric bearing portions 6 and 9, of the segmental bearing 18 also rigidly secured to said frame, the movable bearing member 5 having the concentric portions 10 and 11 fitting respectively the bearing-surfaces 9 and 6 of said member 4, the rearwardly-extended arm 12 secured to said member 5 and having a bearing-surface 12ª engaging with said bearing-segment 18, and a pole 14 rigidly secured to said bearing member 5, substantially as described.

848,340. METHOD OF MOISTENING AIR. HARRY BENTZ, Larchmont, N. Y. Filed Dec. 3, 1906. Serial No. 346,035.

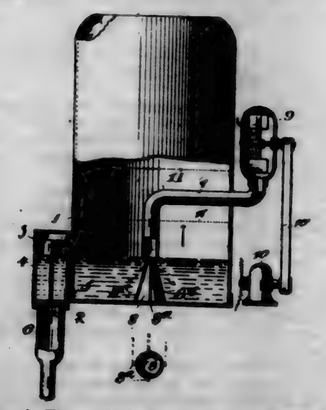

Claim.—1. The method hereinbefore described of moistening air which consists in driving the air in comparatively large volume and under pressure downwardly directly into a body of confined water with sufficient force to create a violent distribution of the air in and agitation of the water and cause portions of the water to shoot upwardly in the form of sprays, said air ascending through the water and falling sprays and passing off under initial pressure.

2. The method hereinbefore described of moistening air which consists in driving the air in comparatively large volume and under pressure downwardly directly into a body of confined water and causing the air to travel laterally therein with sufficient force to create a violent distribution of the air in and agitation of the water and cause portions of the water to shoot upwardly in the form of sprays, said air ascending through the water and falling sprays and passing off under initial pressure.

848,341. APPARATUS FOR MOISTENING AIR. HARRY BENTZ, Larchmont, N. Y. Filed Jan. 18, 1907. Serial No. 352,868.

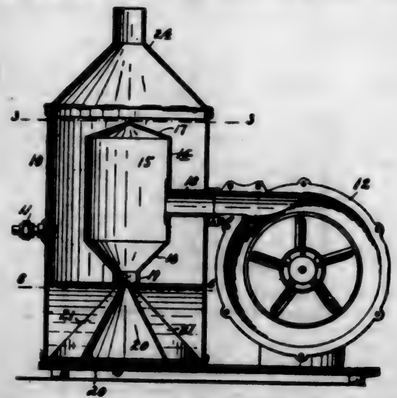

Claim.—1. An apparatus for moistening air comprising a receptacle adapted to contain a body of water, a pipe for delivering air downwardly into the body of water, means for forcing air through said pipe and downwardly into the water, and a deflector for causing the air to travel laterally while moving downwardly through the water, said deflector being in the form of a cone with its apex at the discharge end of said pipe; substantially as set forth.

2. An apparatus for moistening air comprising a receptacle adapted to contain a body of water, a pipe for delivering air downwardly into the body of water, means for forcing air through said pipe and downwardly into the water, and a deflector for causing the air to travel laterally while moving downwardly through the water, said deflector being in the form of a cone having blades on its sides and its apex at the discharge end of said pipe; substantially as set forth.

3. An apparatus for moistening air comprising a receptacle adapted to contain a body of water, a pipe for delivering air downwardly into the body of water, means for forcing air through said pipe and downwardly into the water, and an inverted cone surrounding said pipe close to the upper surface of the water; substantially as set forth.

4. An apparatus for moistening air comprising a receptacle adapted to contain a body of water, a pipe for delivering air downwardly into the body of water, means for forcing air through said pipe and downwardly into the water, an upright cone-shaped deflector directly below said pipe for causing the air to travel laterally while moving downwardly through the water, and an inverted cone surrounding said pipe close to the upper surface of the water; substantially as set forth.

5. An apparatus for moistening air comprising a receptacle adapted to contain a body of water, a pipe for delivering air downwardly into the body of water, a commodious air-pressure chamber interposed in said pipe, and means for forcing air into said chamber and therefrom downwardly into the water; substantially as set forth.

6. An apparatus for moistening air comprising a receptacle adapted to contain a body of water, a pipe for delivering air downwardly into the body of water, a commodious air-pressure chamber interposed in said pipe, and means for forcing air into said chamber and therefrom downwardly into the water, combined with a deflector for compelling the air to travel laterally while moving downwardly through the water; substantially as set forth.

7. An apparatus for moistening air comprising a receptacle adapted to contain a body of water, a pipe for delivering air downwardly into the body of water, a commodious air-pressure chamber interposed in said pipe, and means for forcing air into said chamber and therefrom downwardly into the water, combined with a deflector for compelling the air to travel laterally while moving downwardly through the water, and an inverted cone surrounding the discharge for air into the water and located close to the upper surface of the water; substantially as set forth.

8. An apparatus for moistening air comprising a receptacle adapted to contain a body of water, a casing within said receptacle forming a commodious air-chamber having a discharge at its lower end, and means for forcing air into said chamber and therefrom downwardly into the water, combined with a deflector for compelling the air to travel laterally while moving downwardly through the water; substantially as set forth.

9. An apparatus for moistening air comprising a receptacle adapted to contain a body of water, a casing within said receptacle forming a commodious air-chamber having a discharge at its lower end, and means for forcing air into said chamber and therefrom downwardly into the water, combined with a deflector for compelling the air to travel laterally while moving downwardly through the water, the lower end of said casing being close to the upper surface of the water and in the form of an inverted cone; substantially as set forth.

10. An apparatus for moistening air comprising a receptacle adapted to contain a body of water, a casing within said receptacle forming a commodious air-chamber having a discharge at its lower end, and means for forcing air into said chamber and therefrom downwardly into the water, combined with a cone-shaped deflector below the discharge from said chamber and having directing-blades on its surface for compelling the air to travel laterally while moving downwardly through the water; substantially as set forth.

848,342. BUNG-TIN. EDWARD J. BROOKS, East Orange, N. J. Filed Oct. 6, 1906. Serial No. 337,762.

Claim.—A bung-tin having an annular main part of suitable sheet metal constructed with a downturned outer edge and a hollow bead extending around its inner edge, to stiffen it, drivable prongs integral with said downturned outer edge and clenched prongs cut from holes in the face of the ring, in combination with an underlying part of stiff paper or the like attached to the ring within said outer edge by said clenched prongs and adapted to receive writing stamp impressions or the like upon its outer surface at the center of the bung-tin, substantially as hereinbefore specified.

848,343. BLOWER AND SUCTION DEVICE. HARRY M. BROWN and HARRY M. DAHL, El Campo, Tex. Filed Dec. 3, 1904. Serial No. 235,415.

Claim.—1. A fan-blower comprising a casing, fans mounted for rotation within the casing, an air-supply spout extending through the bottom of the casing and partially within the same, an auxiliary air-supply located in one side of the casing adjacent the said spout.

2. A fan-blower comprising a casing, fans mounted for rotation within the casing, an air-supply pipe extending through the bottom of the casing and within the same, said casing being provided with an opening in one of its

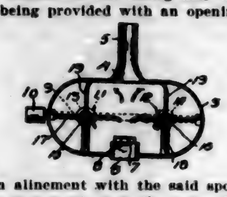

side walls in alinement with the said spout, and a plate mounted for movement upon the outer face of the said wall of the casing in position to entirely or partially close said opening.

848,344. CANDY-WRAPPING MACHINE. MAXIMILIAN E. BUHSE, WALTER W. BUHSE, HENRY L. BUHSE, and ALEXANDER F. BUHSE, Minneapolis, Minn. Filed Aug. 29, 1906. Serial No. 332,458.

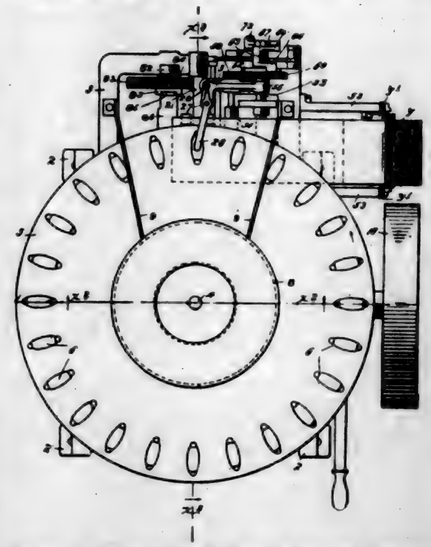

Claim.—1. In a machine of the kind described, the combination with an intermittently-moyable carrier having pockets to receive the parcels and wrappers, of a vibratory tucker operative to force the wrapper over the positioned parcel, an abutment coöperating with said carrier to hold the wrapper around the positioned parcel, and a pair of twisters located one on each side of said carrier and operative on the ends of the wrapper to twist the same, while subject to said abutment, substantially as described.

2. In a machine of the kind described, the combination with an intermittently-movable carrier-wheel having pockets to receive the wrappers and parcels, an intermittently-movable vibratory arm having a segmental tucker-flange working adjacent to the periphery of said carrier-wheel and operative to force the wrapper over the parcel, a yielding abutment coöperating with said carrier-wheel to hold the wrapper applied around the parcel, and a pair of intermittently-operative twisters operative on the ends of the folded and applied wrapper, substantially as described.

3. In a machine of the kind described, the combination with an intermittently-movable carrying-wheel having pockets to receive parcels and applied wrappers, of means for feeding a continuous web of wrapping-paper to said carrying-wheel, and for cutting the same to form the

wrappers, means for applying the parcels in succession to the pockets of said carrier-wheel, a tucker movable circumferentially of said carrier-wheel to force the several wrappers over the positioned parcel, an abutment coöperating with said carrier-wheel to hold the parcel and applied wrapper in position for the twisting of its ends, and a pair of twisters located on opposite sides of said carrier-wheel, and operative to twist the ends of said wrapper, substantially as described.

4. In a machine of the kind described, the combination with an intermittently-movable carrier-wheel having peripheral pockets to receive the parcels and wrappers, of means for supplying a web of wrapping-paper in succession to the pockets of said wheel, comprising intermittently-movable feed-rollers, a web-cutter intermittently operative to sever the web, an intermittently-movable vibratory tucker operative to force the severed side of the wrapper over the positioned parcels, a yielding abutment coöperating with said carrier-wheel to force the other side of the wrapper over the parcel, and a pair of twisters located one on each side of said carrier-wheel and operative on the ends of the wrapper to twist the same, substantially as described.

5. In a machine of the kind described, the combination with means for applying wrappers to the parcels, a pair of rotary twisters operative to twist the opposite ends of the applied wrapper, of a parcel-feeding device comprising a rotary table having a plurality of parcel-receptacles, a parcel-supporting table underlying the parcel-receptacles of said rotary table, but having a parcel-passage at one point, and a parcel-positioning device operating intermittently to force the parcels from the receptacles of said rotary table through an opening in said supporting-table and to the said wrapper-applying means, substantially as described.

6. In a machine of the kind described, the combination with a wrapper-applying mechanism, of a fixed table having a yielding parcel-support, a rotary table overlying said fixed table and having parcel-receptacles movable in succession, to a point above said yielding parcel-support, and a reciprocatory parcel-positioning device operative to force the parcel positioned above said yielding support from thence to said wrapper-applying mechanisms, substantially as described.

7. In a machine of the kind described, the combination with an intermittently-movable carrier-wheel having pockets to receive the parcels and wrappers, of a fixed table overlying said carrier-wheel, a yielding parcel-support positioned directly above said carrier-wheel, a rotary table overlying said fixed table and provided with a plurality of parcel-receptacles movable in succession into alinement with said yielding support, a reciprocatory parcel-positioning device operative to force the parcels from said yielding support into the underlying pocket of said carrier-wheel, and twisters located one on each side of said carrier-wheel and operative to twist the ends of the applied wrapper, substantially as described.

8. In a machine of the kind described, the combination with an intermittently-movable carrier-wheel having a peripheral pocket to receive the parcels and wrappers, a fixed table overlying said carrier-wheel and provided with a yielding support located directly above said carrier-wheel, and intermittently-movable rotary table overlying said fixed table and provided with a parcel-receptacle movable in succession into alinement with said yielding support, a reciprocatory parcel-positioning device operative to force the parcel from said yielding support and to the underlying pocket of said carrier-wheel, a yielding abutment coöperating with said carrier-wheel, and a pair of twisters located one on each side of said carrier-wheel and operative on the ends of the applied wrapper, to twist the same, substantially as described.

9. In a machine of the kind described, the combination with an intermittently-movable carrier-wheel having peripheral pockets to receive the parcels and wrappers, of means for supplying the wrappers to the pockets of said carrier-wheel from a continuous web of paper, a yielding abutment coöperating with said carrier-wheel, a vibratory tucker operative to force the wrappers over the positioned parcels, a fixed table overlying said carrier-wheel and provided with a yielding parcel-support located directly above said carrier-wheel, an intermittently-movable rotary table overlying said fixed table, and provided with parcel-receptacles movable in succession into alinement with said yielding support, and an intermittently-movable reciprocatory parcel-positioning device operative to force the parcels from said yielding support into the underlying pocket of said carrier-wheel, substantially as described.

10. In a machine of the kind described, the combination with an intermittently-movable carrier-wheel having peripheral pockets adapted to receive the parcels and wrappers, of an intermittently-operative feed device for supplying the web of paper to said carrier-wheel, an intermittently-operative cutter for severing the wrappers from said web, a vibratory tucker for forcing the cut side of the wrapper over the positioned parcel, a yielding abutment coöperating with said carrier-wheel to hold the wrapper onto the positioned parcel, a pair of intermittently-operative twisters, one on each side of said carrier-wheel, a fixed table overlying said carrier-wheel and provided with a yielding parcel-support located directly above said carrier-wheel, an intermittently-movable rotary table overlying said fixed table and provided with a plurality of parcel-receptacles movable, in succession, into alinement with said yielding support, and a reciprocatory parcel-positioning device operative to force the parcels from said yielding support into the underlying pocket of said carrier-wheel, substantially as described.

11. In a machine of the kind described, the combination with means for applying wrappers to parcels, of a pair of yieldingly-mounted parcel-supporting dogs, and a reciprocatory parcel-positioning device having a pronged head 26 adapted to directly engage and to press said dogs and to force the parcel therefrom to the wrapper-applying mechanism, substantially as described.

12. In a machine of the kind described, a wrapper-twisting device comprising a pair of rotary jaws, means tending to press the said jaws together, cam-lugs on the said jaws, a stem having cam-lugs operative on the cam-lugs of said jaws, to force the jaws apart, under rotary movements of the latter, and means for oscillating said stem in the one direction to accelerate the closing of said jaws and for moving the said stem and its cam-lugs in the opposite direction to delay the opening of the jaws, substantially as described.

848,345. NAIL-POLISHER. ERNEST L. BUZZELL, Lynn, Mass. Filed July 11, 1905. Serial No. 269,167.

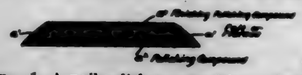

Claim.—1. A nail-polisher comprising a flexible cushion or body portion formed of a single integral piece of fibrous material, provided upon one side with a polishing compound laid upon and impregnating the fibrous body portion and having upon another side a finishing polishing surface, substantially as described.

2. A nail-polisher comprising a flexible cushion or body portion, formed of a single piece of fibrous material, having upon one side a polishing compound adhesively applied thereto and impregnating the fibrous body portion, and upon its opposite side a polishing-strip of chamois skin or other suitable material, substantially as described.

3. A nail-polisher comprising a flexible cushion or body portion formed of a single piece of fibrous material provided with beveled edges, and having upon one side a polishing compound impregnating the fibrous body portion, and upon its opposite side a finishing polishing surface, substantially as described.

848,346. METALLIC RAIL-TIE AND FASTENER THEREFOR. JOHN W. CALDER, Parnassus, Pa. Filed Dec. 28, 1906. Serial No. 349,700.

Claim.—1. The combination of a rail, a metal tie having a plane slotted upper surface, a depressed rest at one end of the slot, and a rail-fastener seated in the slot, having one end on said rest and the other end in engagement with the rail, whereby the rail may be adjusted laterally on the tie by the employment of a fastener of the required length.

2. The combination of a rail, a metal tie having a plane upper surface slotted each side of the rail-flange, and a rail-fastener in each slot, having one end abutting the end of its respective slot and the other end in engagement with the rail, whereby the rail may be adjusted laterally on the tie by employing coöperating fasteners of the proper relative lengths.

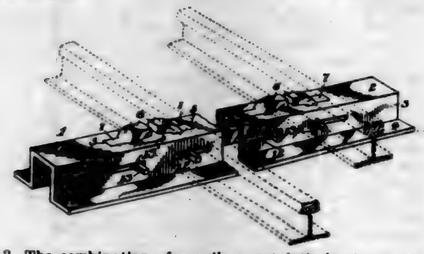

3. The combination of a rail, a metal tie having a slot in its upper surface, a rail-fastener seated in said slot and having one end against the end of the slot and the other end in engagement with the rail, a perforated lug depending from the fastener, and a pin extending through the perforation in the lug and opposite holes in the sides of the tie, said holes being elongated longitudinally of the tie, whereby lugs at different places longitudinally of the tie may be secured by a pin in the said slots.

4. The combination of abutting rails, having slots extending longitudinally thereof, a slotted metal tie, a fastener in the slot at each side of the rails to prevent lateral movement of the rails, one of the fasteners having lugs in the said slots, the lugs being narrower than the length of the slots, whereby the rails may creep without strain on the lugs.

5. The combination of a metal tie having a slot therein, traction-rails secured to the tie, a pair of guard-rails between the traction-rails, and a clamp seated in said slot and engaging both guard-rails to prevent the movement of one toward the other.

6. The combination of a metal tie having a slot therein, traction-rails secured to the tie, a pair of guard-rails between the traction-rails, a clamp seated in said slot, said clamp having a shoulder at each end in engagement with the end of the slot, and a rail-flange to prevent the movement of the guard-rails laterally.

7. The combination of rails extending in the same direction, a metal tie having a slot between said rails, a rail-fastener in the slot and having its opposite ends in engagement with the respective rails.

8. The combination of a rail, a metal tie having a slot in its upper surface, a slotted rail-fastener in the slot in the tie, a locking-key for said fastener, having a neck portion in the fastener-slot, a head above the said neck and resting on the fastener, a slotted wing below the neck, and a pin extending through the wing-slot and slots in the sides of the tie.

9. The combination of a rail, a tie having a slot in its upper surface, a rail-fastener having a slot therein, a detachable securing device for said fastener having a head above the slot and a slotted wing below the slot, and a pin extending through the wing-slot and holes in the sides of the tie.

848,347. AUTOMATIC SPRINKLER-HEAD. JAMES A. CASS, Syracuse, N. Y. Filed Nov. 6, 1906. Serial No. 342,256.

Claim.—1. In a sprinkler-head, a base having an opening therethrough and arms diverging upwardly from opposite sides of the base and united at the top, a screw in the top, a glass stopper for the opening, a cap for the stopper, and a strut between the screw and cap, said strut comprising two furcated plates, and a clamp inserted in the furcated ends of the plates and provided with end heads held by a fusible bond, and means for forcing the plates apart when the bond is fused.

2. In a sprinkler-head, a base having an opening therethrough and opposite arms converging upwardly and united at the top, a screw in the top, a stopper for the opening, a strut between the screw and stopper, said strut comprising opposite furcated plates, an interposed spring tending to force the plates apart, and a clamp inserted in the furcated ends of the plates, including a fusible element for holding said plates against the pressure of the spring.

3. In a sprinkler-head, a base having a central lengthwise opening therethrough and a frame rising from the base, a stopper for the opening, an adjusting-screw and a strut between the screw and stopper, said strut comprising opposite slotted plates engaging each other, one of the plates being engaged by the screw and the other plate holding the stopper in place, a bar inserted through the slots in the plates and provided with heads engaging the outer faces of said plates, fusible means for tying the heads to the bar, and a spring interposed between the plates tending to force the latter against the heads.

4. A sprinkler-head consisting of a frame having an opening in its base and a screw in its top, a glass stopper in the opening, a lead seat for the stopper, a cap fitting over the stopper, a yielding cushion between the cap and stopper, a strut between the screw and cap, said strut comprising opposite plates one of which is seated on the cap and provided with a shoulder at one side of the vertical plane of the seat, the other plate having its lower end seated on said shoulder and its upper end engaged with the screw, a spring between the plates tending to press them laterally, and fusible means for tying the plates together.

5. In an automatic sprinkler, a frame having an opening in its base, a glass stopper having a reduced lower portion fitting in the opening and its upper end enlarged forming an annular shoulder of greater diameter than the opening, a lead seat for said annular shoulder, a cap fitted over the upper end of the stopper, a yielding cushion between the cap and stopper, a screw in the top of the frame, a strut between the screw and cap and comprising opposite upright plates, one of said plates having its lower end seated on the cap and provided with a laterally-projecting shoulder, the other plate having its lower end seated on the shoulder and its upper end bearing against the screw, a spring between the plates tending to force them apart and a clamp for holding said plates against the action of the spring and including fusible parts adapted to be melted by heat to release the clamp, and thereby permit the spring to force the plates apart for the purpose of releasing the stopper when the strut is broken.

848,348. POTATO-DIGGER. EDWIN B. CHURCH, Sattley, Cal. Filed Dec. 11, 1906. Serial No. 347,347.

Claim.—1. A potato-digger, comprising a pair of runners provided with converging beveled front ends, a shovel supported on and secured to said beveled front ends, upwardly-extending bars connecting said runners together near their rear ends, a plow-beam supported by said bars and extending over the shovel, handles secured to said beam, and separating-bars extending upwardly and rearwardly from said shovel and through and in rear of the said bars.

2. A potato-digger, comprising a pair of runners, a shovel supported on the front end of said runners, arched

bars secured to the respective runners near their rear ends and the same projecting upwardly therefrom, said bars being curved outwardly and thence inwardly, a curved cross-brace 3^b connecting said arched bars together and forming a ring in said bars, a plow-beam secured near the upper ends of said bars, handles for the said beam, and separating-bars extending from said shovel to the said ring and secured at their ends to the shovel and ring respectively, as and for the purpose set forth.

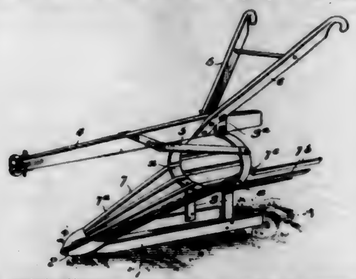

3. A potato-digger, comprising a pair of runners, a shovel supported on the front end of said runners, arched bars secured to said runners near their rear ends and projecting upwardly therefrom, said bars being curved outwardly and thence inwardly, a curved brace connecting the curved portions of said arched bars together, thereby to produce a ring, a plow-beam supported by said bars, handles for said beam, and separating-bars extending upwardly and rearwardly from said shovel and through the said ring and provided with outwardly offset rear ends in the rear of said ring.

848,349. LINOTYPE-MACHINE. ROBERT G. CLARK, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Sept. 7, 1906. Serial No. 333,625.

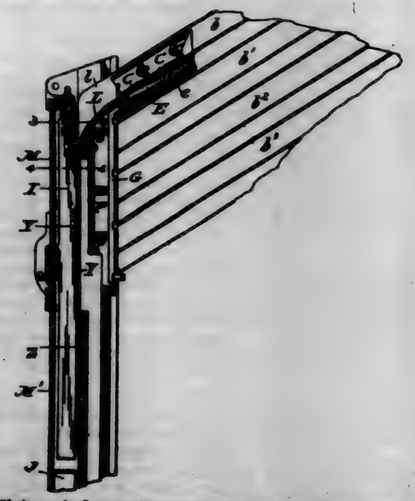

Claim.—1. In combination, superposed magazines, an upright raceway having channels open on the side nearest to the magazines to admit matrices therefrom, an intermediate vertically-movable shelf or bridge to carry the matrices from the magazine to the raceway, and a vertically-movable plate below the shelf to confine the descending matrices within the raceway.

2. In a linotype-machine, and in combination with superposed magazines b, b', &c., a face-plate or raceway I having channels open at the inner side to receive the matrices, an intermediate vertically-movable bridge L, and a vertical plate Y attached thereto.

3. In a linotype-machine and in combination, the superposed magazines and their escapements, the vertically-movable frame containing the escapement-actuating bars G, and provided with a shelf L and plate Y, the channeled raceway I, the assembler-belt J, and the fixed plate Z; whereby the matrices may be delivered from either magazine at will through a continuous channel to the assembler-belt.

4. In a linotype-machine, a raceway having fixed vertical channels adapted to admit matrices at different points in their height, in combination with a vertically-movable plate Y; whereby the channels may be closed and the matrices guided below their points of admission.

5. In a linotype-machine, the fixed superposed magazines, the vertically-channeled face-plate containing the vertical partitions *i* and closed at the front, in combination with the intermediate vertically-movable bridge L, having partitions *l* thereon, and the vertical plate Y movable with the bridge; whereby smooth undisturbed passages are provided for guiding the matrices from the respective magazines to the assembling mechanism.

848,350. FRUIT-CLEANING APPARATUS. FRANKLIN A. COREY, Santa Paula, Cal. Filed June 1, 1905. Serial No. 263,335.

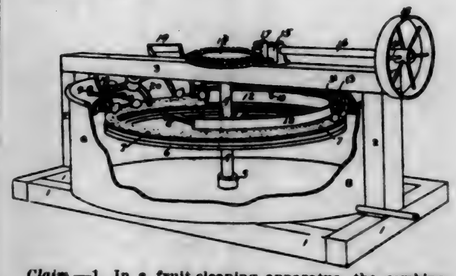

Claim.—1. In a fruit-cleaning apparatus, the combination of a rotatable horizontal substantially continuous brush upon which the fruit is designed to rest, an upright annular stationary substantially continuous brush along which the fruit is designed to be carried by the centrifugal action set up by said rotatable brush, a simple upright concentric guard within said annular brush, and a substantially continuous stationary yielding horizontal brush overlying and opposed to said rotatable brush, said brushes and guard together inclosing a continuous annular fruit-passage.

2. In a fruit-cleaning apparatus, the combination of a rotatable horizontal substantially continuous brush upon which the fruit is designed to rest, an upright annular stationary substantially continuous brush along which the fruit is designed to be carried by the centrifugal action set up by said rotatable brush, an upright concentric guard within said annular brush, and a substantially continuous stationary yielding horizontal brush overlying and opposed to said rotatable brush, said brushes and guard being so positioned as to inclose between them a continuous annular fruit-passage of greater width than depth.

848,351. BASE-BALL-GAME BOARD. WILLIAM T. DE WALT, Homestead borough, Pa. Filed Aug. 3, 1906. Serial No. 329,051.

Claim.—1. In base-ball-game boards, a pivoted, rotatable disk, a concentric, annular depression on said disk and an annular, staggered, double row of ball-seats in close contiguity around said depression, substantially as described.

2. In base-ball-game boards, a disk marked by colors to represent different results of "times at bat," one colored panel representing a "home run" as a unit, and additional panels of different colors being provided to represent the other results of "times at bat" in number substantially equal to their respective probability in proportion to a single "home run," and chance means for indicating one of said panels, substantially as and for the purpose set forth.

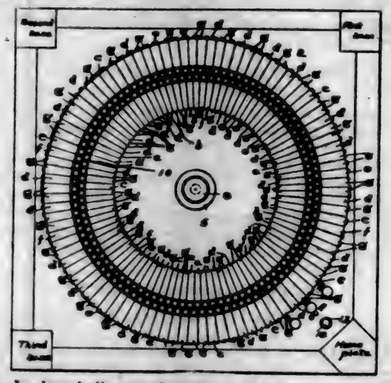

3. In base-ball-game boards, a disk provided with a concentric annular depression, colored panels occupying said depression, a ball-seat in each of said panels, a single panel being colored to represent a "home run" and the remaining results of a "time at bat" being represented by panels of different colors, respectively in numbers substantially equal to their respective probability in proportion to a single "home run," means for rotating said disk and a spinning ball adapted to be thrown upon said disk and settle in one of said seats, substantially as and for the purpose set forth.

4. In base-ball-game boards, a disk provided with a concentric annular depression, colored panels occupying said depression, a ball-seat in each of said panels, a single panel being colored to represent a "home run" and the remaining results of a "time at bat" being represented by panels of different colors, respectively, in number substantially equal to their respective probability in proportion to a single "home run," means for rotating said disk, a spinning ball adapted to be thrown upon said disk and settle in one of said seats, a flat-topped box containing said disk having an aperture in the top thereof to expose the upper face of said disk, a base-ball "diamond" marked off on said flat top of said box and counters to be moved on said diamond in accordance with the result of "times at bat" to represent the base-runners, substantially as and for the purpose set forth.

848,352. TYPE-CASTING MACHINE. ROBERT DRUMMOND and WILLIAM C. LIEBERKNECHT, New York, N. Y.; said Lieberknecht assignor to said Drummond. Filed Oct. 31, 1903. Serial No. 179,290.

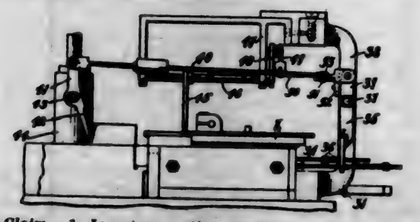

Claim.—1. In a type-casting machine, a matrix, a mold having its slot leading to the face of the matrix, main and auxiliary blades, a wedge for operating the blades to determine the width of the slot, means for operating the blades to form a low quad or space, of a predetermined width, comprising a lock, a cam, a rocking lever controlling the movements thereof, a second rocking lever connected to the first-named rocking lever and a wedge connected to the second rocking lever.

2. In a type-mold such as described provided with a divided mold-blade and in combination therewith a latch mounted upon one mold-blade section in position to engage a shoulder on the other section when their casting faces are in alinement, and an actuating connection or cross-pin coupled with one section.

848,353. DROP-TABLE. WILLIAM ELMER, Jr., Altoona, Pa. Filed Aug. 18, 1906. Serial No. 331,208.

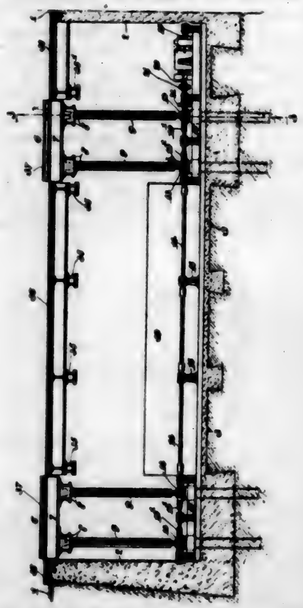

Claim.—1. In combination, a main working floor having a pit formed in it, a pair of vertically-movable platforms or tables located one at each end of said pit, a runway in said pit, means beneath the floor-level for moving said platforms from the main-floor-level to the level of the runway and vice versa, rails carried by each platform, rails in alinement therewith carried by the main platform and connecting the adjacent ends of the rails of the different movable platforms when the latter are in their floor-level position.

2. In combination, a working floor having a pit formed in it, a pair of vertically-movable platforms located in said pit and spaced apart from each other; means for moving said platforms from the floor-level to a sublevel beneath the floor-level, a runway between the platforms at the same level therewith when the latter are in their sublevel position, a pair of parallel rails carried by each platform, the rails on each platform being in alinement with the corresponding rails of the other platform, rails carried at the floor-level connecting with the adjacent ends of the rails of the two platforms when the latter are at the floor-level and other rails at the floor-level connecting with the opposite ends of the rails carried by the platforms when the latter are at the floor-level.

3. In combination, a working floor having a pit in it and a runway at the bottom of the pit, a pair of movable platforms or tables located in said pit and spaced apart

from each other, and means for simultaneously moving said platforms from the level of said working floor to the level of the runway and back, said means including a single prime mover for operating both tables.

4. In combination, a working floor having a pit in it and a runway at the bottom of the pit, a pair of movable platforms or tables located in said pit and spaced apart from each other, means for moving said platforms from the level of said working floor to the level of the runway and back, said means including an electric motor for operating both tables, a brake normally holding said motor stationary, and an electromagnetic device for releasing said brake.

5. In combination, a working floor having a pit in it and a runway at the bottom of the pit, a pair of movable platforms or tables located in said pit and spaced apart from each other and means for moving said platforms from the level of said working floor to the level of the runway, said means including an electric motor for operating both tables, a brake normally holding said motor stationary, and an electromagnetic device for releasing said brake, said device including a winding in series with the motor.

6. In combination, a main working floor having a pit formed in it, a pair of movable platforms located in said pit and spaced apart from each other, a pair of abutments spaced apart from each other, located in said pit, and extending between the platforms, means for moving the platforms from the main-floor level to the level of the abutments and back, including a shaft passing between said abutments.

848,354. HALOGENATED RED DYE AND PROCESS OF MAKING SAME. GADIENT ENGI, Basel, Switzerland, assignor to The Firm of Society of Chemical Industry in Basle, Basel, Switzerland. Filed Jan. 9, 1907. Serial No. 351,442.

Claim.—1. The described process for the manufacture of red vat-dyeing dyestuffs by heating the metahalogenated salicylthioacetic acid

$$C_6H_3\begin{cases}COOH & (1)\\ S.CH_2COOH & (2)\\ Halogen & (4)\end{cases}$$

with aromatic nitrohydrocarbons.

2. As a new article of manufacture, the herein-described yellowish-red, vat-dyeing dyestuff constituting a reddish crystalline powder, very difficultly soluble in alcohol, ether and chloroform, soluble in warm benzene with a bluish-red coloration and a yellowish-pale fluorescence, soluble in boiling nitrobenzene with a lively red coloration, soluble in concentrated sulfuric acid with a green coloration and soluble in fuming sulfuric acid with a red coloration.

848,355. RED-HALOGEN VAT-DYE AND PROCESS OF MAKING SAME. GADIENT ENGI, Basel, Switzerland, assignor to The Firm of Society of Chemical Industry in Basle, Basel, Switzerland. Filed Jan. 9, 1907. Serial No. 351,443.

Claim.—1. The process for the manufacture of red vat-dyeing dyestuffs by treating with a halogen, in presence of an indifferent diluent, the products resulting from the condensation of one molecule of alphaoxythionaphthene (thioindoxyl) with one molecule of an isatin compound.

2. As new products, the halogenated red vat-dyeing dyestuffs derived from the herein-specified condensation products of alphaoxythionaphthene (thioindoxyl) with isatin compounds, the said dyestuffs constituting in dry state brown-red to yellow-red crystalline powders, difficultly soluble in hot alcohol and in hot benzene, easily soluble in hot nitrobenzene with a red coloration, soluble in concentrated sulfuric acid with brown to dirty brown-black coloration and soluble in fuming sulfuric acid with red-violet coloration becoming clear brown-red on addition of water.

848,356. RED-VIOLET TO BLUE VAT-DYES AND PROCESS OF MAKING SAME. GADIENT ENGI, Basel, Switzerland, assignor to The Firm of Society of Chemical Industry in Basle, Basel, Switzerland. Filed Jan. 9, 1907. Serial No. 351,444.

Claim.—1. The herein-described process for the manufacture of red-violet to blue vat-dyeing dyestuffs, by treating with a halogen in presence of an indifferent diluent the products obtained by the condensation of alphaoxythionaphthene (thioindoxyl) with alphaisatinarylids of the general formula

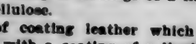

2. As new products, the halogenated red-violet to blue vat-dyeing dyestuffs derived from the condensation products of alphaoxythionaphthene (thioindoxyl) with alphaisatinarylids, the said dyestuffs being sparingly soluble in alcohol, sufficiently soluble in hot benzene and easily soluble in nitrobenzene with a blue-violet coloration, giving with sulfuric acid blue solutions from which a precipitate is separated by addition of water and dissolving in fuming sulfuric acid with a bright-blue coloration which is not changed on heating.

848,357. LEATHER AND PROCESS OF MAKING THE SAME. LEON FEVAL, Newark, N. J., assignor, by mesne assignments, to Guardian Trust Company of New York, trustee, a Corporation of New York. Filed May 2, 1906. Serial No. 314,773.

Claim.—1. The process of coating leather which consists in coating the leather with a plurality of coatings of a liquid containing a soluble nitrocellulose and a non-drying oil, one at least of the inner coatings containing oil at the rate of at least three and one-fourths pounds of oil to each pound of nitrocellulose.

2. The process of coating leather which consists in coating the leather with a coating of a liquid containing a soluble nitrocellulose and a non-drying oil, the said coating containing oil at the rate of at least three and one-fourth pounds of oil to each pound of nitrocellulose, then coating the leather with a superposed coating or coatings of a liquid containing a soluble nitrocellulose.

3. The process of coating leather which consists in coating the leather with a coating of a liquid containing a soluble nitrocellulose and a non-drying oil, the said coating containing oil at the rate of at least three and one-fourth pounds of oil to each pound of nitrocellulose, then coating the leather with a superposed coating or coatings of a liquid containing a soluble nitrocellulose and a smaller proportion of oil.

4. The process of coating leather which consists in coating the leather with a plurality of coatings of a liquid containing a soluble nitrocellulose and a non-drying oil, one at least of the inner coatings containing oil at the rate of as much as six pounds of oil to each pound of nitrocellulose.

5. The process of coating leather which consists in coating the leather with a coating of a liquid containing a soluble nitrocellulose and a non-drying oil, the said coating containing oil at the rate of as much as six pounds of oil to each pound of nitrocellulose, then coating the leather with a superposed coating or coatings of a liquid containing a soluble nitrocellulose.

6. The process of coating leather which consists in coating the leather with a coating of a liquid containing a soluble nitrocellulose and a non-drying oil, the said coating containing oil at the rate of as much as six pounds of oil to each pound of nitrocellulose, then coating the leather with a superposed coating or coatings of a liquid containing a soluble nitrocellulose and a smaller proportion of oil.

7. As a new article of manufacture, leather coated with a plurality of superposed coatings formed of a liquid containing a soluble nitrocellulose and a non-drying oil, the said leather being flexible, one at least of the inner coatings containing oil at the rate of at least three and one-fourth pounds of oil to each pound of nitrocellulose, the leather when heated giving off a slight odor of the non-drying oil, and not cracking when sharply bent.

8. As a new article of manufacture, leather coated with a plurality of superposed coatings formed of a liquid containing a soluble nitrocellulose and a non-drying oil, the said leather being flexible, one at least of the inner coatings containing oil at the rate of as much as six pounds of oil to each pound of nitrocellulose, the leather when heated giving off a slight odor of the non-drying oil, and not cracking when sharply bent.

848,358. LIME-HYDRATING MACHINE. PETER C. FORRESTER, Tacoma, Wash. Filed Oct. 4, 1906. Serial No. 337,341.

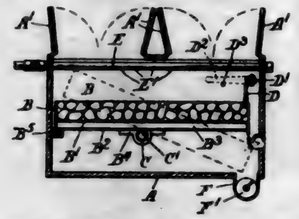

Claim.—1. In hydrating apparatus, the combination of a hydrating-chamber, with a tilting pan, means for supplying water to the material in the pan, and a conveying device for conveying the hydrated products from the chamber.

2. In hydrating apparatus, the combination of a hydrating-chamber, with a tilting pan, means for supplying water to the material in the pan, a trough below one end of said pan, and a conveyer in said trough.

3. In hydrating apparatus, the combination of a hydrating-chamber, with a tilting pan mounted on an axis to one side of its center line, means for tilting and raising said pan, a trough in the chamber into which said pan discharges when tilted, and a conveyer in said trough.

4. In hydrating apparatus, the combination of a hydrating-chamber, with a tilting pan mounted on an axis to one side of its center line, a windlass device for supporting the long end of the pan, a trough in the chamber into which said pan discharges when tilted, and a conveyer in said trough.

5. In hydrating apparatus, the combination of a hydrating-chamber, with a pan in said chamber, a screw conveyer to convey the material from the chamber, and a screening-chamber to receive the material from the conveyer.

6. In hydrating apparatus, the combination of a hydrating-chamber, with a pan in said chamber, a screw conveyer to convey the material from the chamber, a cylindrical screening-chamber to receive the material from the conveyer, and rotating spokes in the screening-chamber.

7. In hydrating apparatus, the combination of a hydrating-chamber, with a pan having double bottoms, the upper one being perforate and a pipe to discharge a hot fluid into the space between the bottoms of the pan.

8. In hydrating-apparatus, the combination of a hydrating-chamber, with a pan having a double bottom, and a steam-pipe on which the pan is mounted so as to tilt thereon, said steam-pipe being perforated so as to discharge steam between the bottoms of the pan.

848,359. TRACE-FASTENER. ALBURNEY W. FRYE, Newark, and FRANCIS S. GREEN, Irvington, N. J. Filed Aug. 2, 1906. Serial No. 328,849.

Claim.—1. A trace-detacher comprising a casing having a recess, a lever journaled in the casing and arranged in the recess, a stud on the end of the casing, an eye on the stud, and a shank on the eye projecting into the recess and engaging the end of the lever, a nose on the free end of the lever to cover the end of the stud when the eye is drawn back, a recess in the lever surrounding its pivotal pin, and a spring in the recess bearing against the casing and the lever.

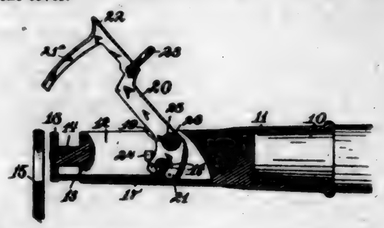

2. A trace-detacher comprising a casing having a recess open on one side and having a perforation in the end, a stud on the end of the recess, a lever pivoted in the recess and having its inclosed end forked, an eye sliding on the stud, and having a shank bearing on one side of the recess, and having an end bent to engage the forked end of the lever, a nose on the lever arranged to cover the end of the stud when the eye is slid back, a finger-piece on the end of a lever for manually operating it, and a spring arranged on the lever to bear against one wall of the recess in the casing to cause a friction between the parts.

848,360. ADJUSTABLE PLATFORM FOR TREE-SAWING DEVICES. HENRY FUNK, Tawas City, Mich. Filed May 21, 1906. Serial No. 317,939.

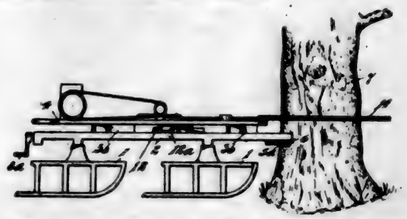

Claim.—1. A movable platform for a timber-sawing device, having in combination with a part adapted to be anchored to the tree, a frame adapted to be swung thereon in a position of substantial concentricity with respect thereto and to the tree, and a platform supported by said frame and similarly adjustable with respect to said frame and to the anchored piece, substantially as described.

2. A movable platform for a timber-sawing device, having in combination with a frame adapted to be supported by runners, a portion adapted to be anchored to the tree, means for actuating the frame about the tree and concentrically with respect thereto and to the anchored portion, and an engine-supporting platform adapted to be moved alone with respect to said frame and to be moved with it with respect to the anchored portion and about said tree-trunk.

3. An adjustable support for a timber-sawing machine, having in combination with a platform adapted to support said machine, a main frame, a trunk-engaging piece with respect to which said frame and the platform carried by it are adapted to be moved with said tree-trunk as a center, means whereby this movement may be controlled, and means whereby the relative position of the platform and supporting-frame may be regulated, substantially as described.

848,361. PRODUCTION OF WHITE PULP. ALBERT GAGEDOIS, Don, near Annœullin, France. Filed Feb. 2, 1906. Serial No. 299,154.

Claim.—1. The herein-described process of treating a neutral, cleansed, vegetable pulp for paper and the like, which consists in mixing the pulp with alkalin peroxid, and neutral alkalin silicate as a retarder, the pulp, peroxid and silicate being in about the proportions specified, then

heating the mixture gradually, for decomposing the peroxid, up to about 80° centigrade, and finally soaping and chlorinating the pulp so treated.

2. The herein-described process of treating vegetable pulps for paper and the like, which consists in first washing the pulp thoroughly with lye, then chlorinating, then washing it to produce a neutral pulp, then heating the pulp gradually up to about 80° centigrade in a mixture of neutral alkalin silicate and an alkalin peroxid, and finally soaping and chlorinating the material treated.

848,362. DRIER. CHARLES E. GEIGER, Louisville, Ky., assignor of one-third to himself, one-third to William E. Koop, and one-third to G. Walter Fiske, Louisville, Ky. Filed Nov. 8, 1906. Serial No. 342,447.

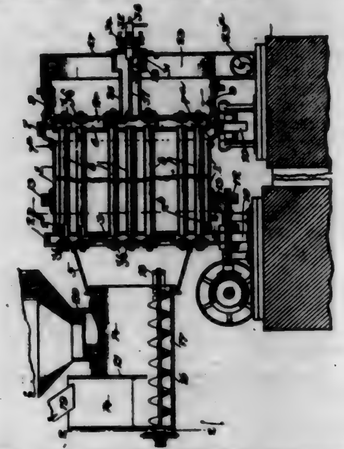

Claim.—1. A steam-drier comprising an approximately horizontal cylinder mounted for rotation about its axis, having its head consisting of chambered manifolds; steam-pipes connecting said manifolds, the latter being apertured between the groups of steam-pipes for entrance and discharge of the material to be treated; a cone frustum at the receiving end secured at the outer side of the manifold encompassing all said apertures for gathering and directing material to the latter; a fixed feed-chamber having a terminal coaxial with the cylinder and protruding into the cone-frustum; a conveyer at the bottom of said chamber, and a vapor-discharge pipe leading from the top of the chamber.

2. A steam-drier comprising a horisontal rotary cylinder having apertured heads for receiving and delivering the material to be treated; a circular vestibule-piece at the outer side of the receiving-head encompassing all the apertures therethrough; a fixed chamber having a terminal mouth coaxial with the cylinder and protruding into the vestibule-piece, said chamber having a partition extending from the upper side downward toward the bottom; a conveyer in the bottom of said chamber extending past the lower edge of said partition; a vapor-escape pipe leading from the top of said chamber between the partition and the cylinder, and a connection for supplying material to be treated above the conveyer at the outer side of said partition.

3. A steam-drier comprising a cylinder having its heads hollow for steam-chambers; longitudinally-extending pipes within the cylinder connecting the corresponding chambers of the opposite heads, such pipes being distributed in an inner group and an outer group, one of the heads being formed in two sections seating one within the other with freedom of relative movement axially with respect to the cylinder, the two groups of pipe being connected to said two sections respectively.

4. A steam-drier consisting of a cylinder having chambered heads; steam-pipes connecting the two heads distributed in two groups, one within the other, the shell inclosing all the steam-pipes having an extension at one end within which the head at that end seats with freedom of movement longitudinally with respect to the cylinder, the head at the other end consisting of an annular and a central section, the two groups of pipes being connected with said two sections respectively, the outer or annular section being joined rigidly to the shell, and the inner section being free to move relatively to the outer longitudinally of the cylinder.

848,363. ADJUSTABLE CROSS-BAR FOR PRINTERS' CHASES. JAMES E. GILBERT, Chicago, Ill., assignor to Gilbert, Harris & Company, Chicago, Ill., a Corporation of Illinois. Filed July 13, 1906. Serial No. 326,080.

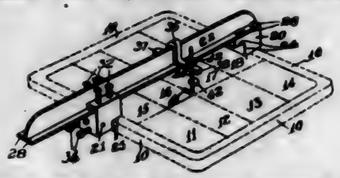

Claim.—1. In mechanism of the class described, an adjustable cross-bar for printers' chases consisting of two blocks notched to rest upon and bear against opposite sides of a chase, a connecting-bar between said blocks, detachably connected to one block, said bar being at such a height above the notches in the block that when the blocks are in proper position the bar clears the type in the chase, and means for detachably securing the bar to the adjustable block.

2. In mechanism of the class described, an adjustable cross-bar for printers' chases consisting of two blocks notched to rest upon and bear against opposite sides of a chase, a connecting-bar rigidly secured to one of said blocks and detachably connected to the other block, at such a height that when the blocks are in proper position the bar clears the type in the chase, means for detachably securing the bar to the adjustable block, and means in one of said blocks for securing pressure against the adjacent side of the chase.

3. In mechanism of the class described in combination with an adjustable bar adapted to be secured to opposite sides of a printer's chase, a rider adjustably movable along said bar and means for detachably securing a portion of the type-form within the printer's chase to said adjustable rider.

848,364. MULTIPLE-BEADING PLANE. PAUL HARDING, Long Island City, N. Y. Filed May 25, 1906. Serial No. 318,633.

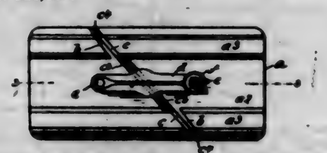

Claim.—1. A beading-plane comprising an oblong flat body member having longitudinal grooves and beads in the top and bottom thereof, and two bits mounted in the opposite sides of said member and diagonally thereof and in diagonal grooves formed therein, the cutting edges of said bits extending in opposite directions, and means for locking said bits in position, consisting of plates bolted longitudinally of the opposite sides of said body member and ranging transversely of the shanks of said bits.

2. A beading-plane comprising an oblong flat body member having grooves arranged diagonally in the opposite side portions thereof and extending through the top and bottom faces thereof, two bits mounted in the grooves in said opposite side portions of said member and provided with overlapping shanks and the cutting edges of which extend in opposite directions, and means for locking said bits in position, consisting of plates secured longitudinally of the central body portion and in the opposite sides of said member transversely of the shanks of said bits.

848,365. SIPHON. JOHN F. HARRIGAN, Boston, Mass. Filed Sept. 9, 1905. Serial No. 277,642.

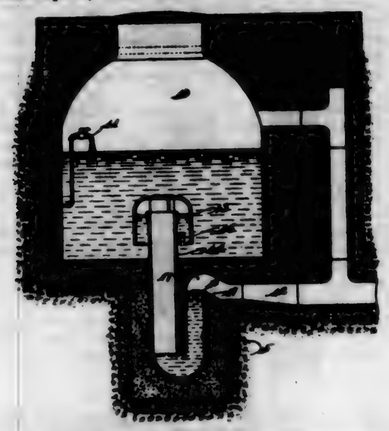

Claim.—1. A siphon comprising a siphon intake or bell, and a trap having a seal, the surface-level of the contents of the trap being controlled by pressure from without the intake or bell, the area of the surfaces of the liquid contents of said trap being unequal, the area at the discharge or outlet end of the trap being less than that at the inlet end thereof, the liquid-surface area being unvaried throughout the length of that portion of the trap between its inlet and its lowest part.

2. A siphon comprising a siphon intake or bell, and a trap formed of a long and a short limb with a bend or seal connecting said limbs, the surface-level of the contents of the trap being controlled by pressure from without the intake or bell, the diameter of the longer limb at its juncture with the bend being greater than is the diameter of the shorter limb, the area of the liquid-surface being greater in said longer limb than in the shorter limb, the liquid-surface area of the longer limb being unvaried throughout the length of that portion thereof between the inlet end and the lowest part of the trap, whereby an increased and compact body of air is forced into and through the contents of the trap at the instant the liquid-surface of the longer limb passes below the top of the seal of the trap.

3. A siphon comprising a siphon intake or bell and a trap provided with a bend that connects the long and short limbs thereof, the surface-level of the contents of the trap being controlled by pressure from without the intake or bell, the longer limb of the trap being of greater diameter than the short limb of the trap, the diameter of the straight portion of each of said limbs being unvaried from end to end.

4. A siphon comprising a siphon intake or bell, and a trap provided with a bend or seal that connects the long and short limbs of the trap, the surface-level of the contents of the trap being controlled by pressure from without the intake or bell, the longer limb of the trap and that side of the bend connecting with said longer limb, being of greater diameter than the short limb of the trap, the diameter of the straight portion of each limb being unvaried from end to end.

5. A siphon comprising a siphon intake or bell, and a trap having a continuous unbroken channel with smooth sides, said trap having two arms and an intermediate bend or seal, the surface-level of the contents of the trap being controlled by pressure from without the intake or bell, the diameter of said two arms being unequal, the diameter of the discharge end of the trap being less than that of the inlet end thereof, the diameter of the inlet-arm being the same from its highest point to the lowest part of the trap within the bend and the diameter from said lowest part of the trap to the point of juncture of the bend and outlet end of the trap gradually diminishing to meet and coincide with the diameter of the outlet-arm, the diameter of the latter remaining the same throughout its entire length.

6. A siphon comprising a siphon intake or bell, and a trap formed of a long and short limb with a bend or seal connecting said limbs, the surface-level of the contents of the trap being controlled by pressure from without the intake or bell, the diameter of the longer limb being unvaried throughout its length and greater than that of the shorter limb which also is unvaried throughout its length, the area of the liquid-surface being greater in said longer limb, whereby an increased and compact body of air is forced into and through the contents of the trap at the instant the liquid surface in the longer limb passes below the top wall of the seal of the trap.

7. A siphon having the invert of the pipe leading from the seal or trap formed with a shoulder extending horizontally across the invert, said shoulder conforming to the inner edge of a cross-section of the outlet-arm of the seal or trap, the portion of the invert above the horizontal plane of the shoulder being curved in a manner to retain the shape and size of the outlet-arm to a point beyond the shoulder, whereby the uniformity of the water-surface area in the outlet-arm of the seal or trap will be preserved.

8. A siphon having the invert of the pipe leading from the seal or trap formed with a shoulder extending horizontally across the invert at a point above the normal bottom level of the horizontal portion of the invert, said shoulder conforming to the inner edge of a cross-section of the outlet-arm of the seal or trap, the portion of the invert above the horizontal plane of the shoulder being curved in a manner to retain the shape and size of the outlet-arm to a point beyond the shoulder.

9. A siphon having the invert of the pipe leading from the seal or trap formed with a shoulder extending horizontally across the invert, said shoulder conforming to the inner edge of a cross-section of the outlet-arm of the seal or trap, the portion of the invert above the horizontal plane of the shoulder being curved in a manner to retain the shape and size of the outlet-arm to a point beyond the shoulder, and an inclined portion leading from said shoulder to the normal bottom level of the invert.

10. A siphon having the invert of the pipe leading from the seal or trap formed with a shoulder and extending horizontally across the invert at a point above the normal bottom level of the invert, said shoulder conforming to the inner edge of a cross-section of the outlet-arm of the seal or trap, whereby the uniformity of the water-surface area in said outlet-arm will be preserved, and an inclined portion leading from said shoulder toward the normal bottom level of the invert, that portion of the invert above the plane of the shoulder being curved to connect the outlet-arm and the portion of the invert at the lower end of the inclined portion, such intermediate portion of the invert being substantially arched in cross-section, and merging into and coinciding with the shape of the invert at the lower end of the inclined portion.

848,366. PEDAL-ACTION FOR PIANO-PLAYERS. CARL G. HERMANSON, Derby, Conn. Filed Sept. 12, 1906. Serial No. 334,262.

Claim.—1. A device of the character described comprising a folding pedal, a U-shaped arm pivoted to the rear end of the pedal and receiving said rear end in the folded position of the pedal, a lever to whose mid-length the opposite end of the U-shaped arm is pivoted and a link pivoted to said lever.

2. A device of the character described comprising a folding pedal, a U-shaped arm pivoted to the rear end of the pedal and receiving said rear end in the folded position of the pedal, a lever one end of which is pivoted to a

fixed part and to whose mid-length the opposite end of the U-shaped arm is pivoted, and a link pivoted to the free end of the lever.

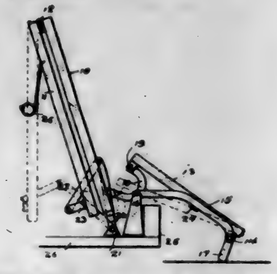

3. A device of the character described comprising pedals, a cross-rod on which the front ends of the pedals are pivoted, arms 15 by which the cross-rod is carried and whose rear ends are pivoted to fixed parts, U-shaped arms pivoted to the rear ends of the pedals which receive said pedals in the folded position, levers to whose mid-length the opposite ends of the U-shaped arms are pivoted and which are pivoted to fixed parts, bellows and links connecting the free ends of the levers to the bellows respectively.

4. A device of the character described comprising pedals, a cross-rod on which the front ends of the pedals are pivoted, arms 15 by which the cross-rod is carried and whose rear ends are pivoted to fixed parts and whose front ends are provided with supports for the pedals in the operative position, U-shaped arms pivoted to the rear ends of the pedals and receiving said pedals in the folded position, levers to whose mid-length the opposite ends of the U-shaped arms are pivoted and which are pivoted to fixtures, bellows and links connecting the free ends of the levers to the bellows respectively.

5. A device of the character described comprising pedals, a cross-rod on which the front ends of the pedals are pivoted, arms 15 by which the cross-rod is carried and whose rear ends are pivoted to fixed parts, stop-lugs extending from the pedals and engaging the arms to limit the upward movement of the pedals, U-shaped arms pivoted to the rear ends of the pedals and receiving said pedals in the folded position, levers to whose mid-length the opposite ends of the U-shaped arms are pivoted and which are pivoted to fixed parts, bellows and links connecting the free ends of the levers to the bellows respectively.

6. A device of the character described comprising folding pedals, U-shaped arms pivoted to the rear ends of the pedals and receiving them in the folded position of the pedals, levers to whose mid-length the opposite ends of the U-shaped arms are pivoted, bellows having arms 23 extending therefrom and links pivoted to said arms and to the levers.

848,367. GAS-BURNER. HARRY H. HIPWELL, Allegheny, Pa., assignor to Hipwell Manufacturing Company, Allegheny, Pa., a Corporation of New Jersey. Filed May 26, 1906. Serial No. 318,805.

Claim.—A gas-burner for incandescent gas-lighting comprising an inverted-U-shaped mixing-tube having a rib and a mantle at its lower end, a sleeve above the mantle having a recess fitting on said rib and also having a flange at its upper end with another flange above the first-named flange, a ring fixed permanently between said flanges, arms on said ring, and a shade-holding ring at the outer end of said arms.

848,368. TRANSMISSION MECHANISM. JOHN O. HOBBS, Chicago, Ill. Filed Oct. 25, 1905. Serial No. 284,300.

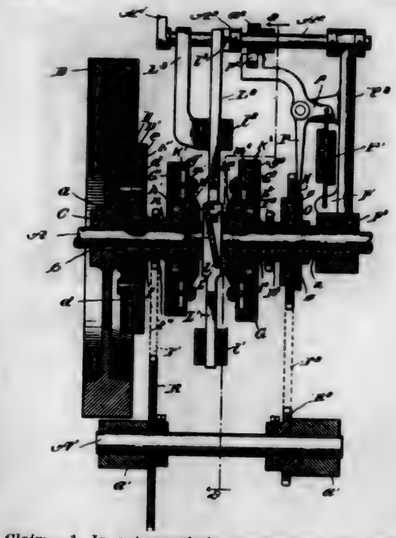

Claim.—1. In a transmission mechanism, the combination with a driving-shaft, of a pinion fixed thereon, an internal gear loosely mounted on said shaft, a pinion-carrier also loosely mounted on said shaft, one or more pinions journaled on said carrier in mesh with said pinion and internal gear, means for locking said carrier against rotation, a counter-shaft, means for rotating said counter-shaft from said internal gear, a driven element, and means for imparting the reverse rotary motion of said counter-shaft to the driven element.

2. In a transmission mechanism, the combination with a driving-shaft, of a pinion fixed thereon, an internal gear loosely mounted on said shaft, a pinion-carrier also loosely mounted on said shaft, one or more pinions journaled on said carrier in mesh with said pinion and internal gear, a pair of clutch members mounted upon said shaft, one member rigidly connected to said internal gear and the other member connected to rotate with said shaft, means for locking said carrier against rotation, means for engaging and disengaging the members of said clutch, a gear-wheel interposed between and rigidly united to said internal gear and the clutch member loose on said shaft, a counter-shaft, speed-reducing mechanism between said last-mentioned gear and said counter-shaft, a driven element, and speed-reducing mechanism between said counter-shaft and the driven element.

3. In a transmission mechanism, the combination with a driving-shaft, of a pinion fixed thereon, an internal gear-wheel loosely mounted on said shaft, a pinion-carrier also loosely mounted on said shaft, one or more pinions journaled on said carrier in mesh with said pinion and internal gear, means for locking said carrier against rotation, a driven element loosely mounted on the driving-shaft, speed-reducing mechanism interposed between said internal gear and said driven element, means for disconnecting said driven element from said speed-reducing mechanism, and means for locking said driven element directly to the driving-shaft.

4. In a transmission mechanism, the combination with a driving-shaft, of a pinion fixed thereon, an internal gear-wheel loosely mounted on said shaft, a pinion-carrier also loosely mounted on said shaft, one or more pinions journaled on said carrier in mesh with said pinion and internal gear, means for locking said carrier against rotation, a pair of clutch members mounted upon said shaft, one member rigidly connected to said internal gear and the other member connected to said shaft to rotate therewith, means for engaging and disengaging the members of said clutch, a driven element loosely mounted on the driving-shaft, speed-reducing mechanism interposed between said internal gear and said driven element, means for disconnecting said driven element from said speed-reducing mechanism, and means for locking said driven element directly to the driving-shaft.

5. In a transmission mechanism, the combination with a driving-shaft, of a pinion fixed thereon, an internal gear loosely surrounding said shaft, a pinion-carrier also loosely surrounding said shaft, one or more pinions journaled on said carrier in mesh with said pinion and internal gear, a pair of clutch members mounted upon said shaft, one member rigidly connected to said internal gear and the other member connected to rotate with said shaft, means for locking said carrier against rotation, means for engaging and disengaging the members of said clutch, a gear-wheel rigidly united to said internal gear and the clutch member loose on said shaft, a counter-shaft, speed-reducing mechanism between said last-mentioned gear and said counter-shaft, a driven element, and means for transmitting rotary motion from said counter-shaft to said driven element.

848,369. LOCOMOTIVE-TENDER AND TANK-CAR FRAME. CLARENCE H. HOWARD, St. Louis, Mo., assignor to Locomotive Tender Frame Company, St. Louis, Mo., a Corporation of Delaware. Filed Dec. 17, 1906. Serial No. 348,219.

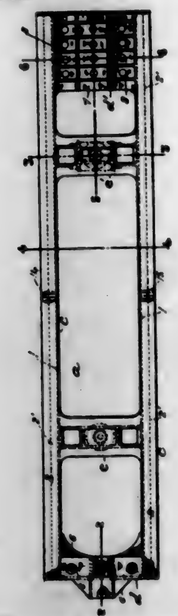

Claim.—The combination with a cylindrical locomotive-tender or tank-car body, of a cast-metal underframe, comprising, two longitudinal side members, two transverse end members, and two transverse members intermediate to the end members and adapted to form the body-bolsters of the said frame, the said side and intermediate members being conformable at the top to the outer cylindrical surface of the said body and adapted thereat to support the same, one of the said intermediate members being adapted for applying a suitable draft-gear thereto, and the adjacent said end member having a channel in its under side for the passage therethrough of the draw-bar, and a series of webs uniting the walls of the said channel to the said side members, substantially as described.

848,370. CAR-UNDERFRAME. CLARENCE H. HOWARD, St. Louis, Mo., assignor to Cast Steel Platform Company, St. Louis, Mo., a Corporation of Delaware. Filed Jan. 22, 1907. Serial No. 353,464.

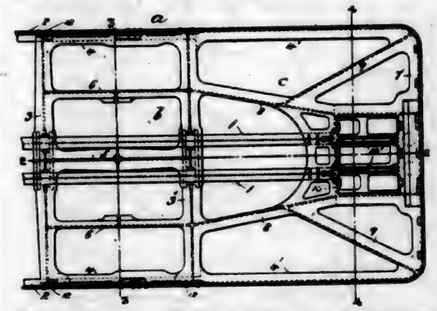

Claim.—In a car-underframe of the class described, the combination with the middle longitudinal sills and side members or girders, of a cast-metal end frame integral throughout and arranged horizontally in the plane of the said sills, the inner end part thereof between the said members being adapted to form a body-bolster having openings for the passage therethrough of the said sills, and the outer end part of the said frame having an upright web adapted to bear against the ends of the said sills, and means for fixing the end frame to the said sills and members, substantially as described and for the purpose set forth.

848,371. GAME APPARATUS. GUSTAV A. HUBEN, Chicago, Ill. Filed Mar. 31, 1906. Serial No. 309,105.

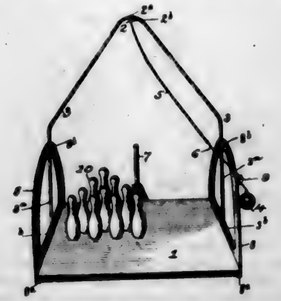

Claim.—1. In a game apparatus, the combination of a stationary bed, an arched member attached thereto, a ball, a flexible connection attached at its upper end to said arched member and at its lower end to said ball, the said connection comprising an upper section of rope and a lower section of chain, a segmental side brace secured to the bed and formed with a forwardly-extending arm providing a horizontal catching-hook, and a post arranged centrally beyond said ball, substantially as and for the purpose set forth.

2. A game apparatus comprising a stationary bed, segmental side braces having flanges whereby they are secured to the bed, an arched member having legs secured to the

segmental side braces, a hanger secured over the bed to the crown of the arched member, and providing a suspension-point, a ball having a flexible connection whereby it is suspended from the hanger, and a fixed post located a distance back of the ball.

3. A game apparatus comprising a stationary bed, segmental side braces having clamping-eyes and secured to the bed, an arched member having legs passed through the clamping-eyes and formed with outturned ends inserted into the side braces, a hanger secured over the bed to the crown of the arched member, and providing a suspension-point, a ball having a flexible connection whereby it is suspended from the hanger and a fixed post located a distance back of the ball.

4. A game apparatus comprising a bed, segmental side braces having flanges and clamping-eyes, an arm located upon one of the side braces providing a horizontal catching-hook, an arched member having legs secured by the clamping-eyes, and outturned ends inserted in the side braces, a hanger secured over the bed to the crown of the arched member, a ball having a flexible connection whereby it is suspended from the hanger, and a fixed post located a distance back of the ball.

848,372. ELECTRIC HOISTING SYSTEM. JOHN D. IHLDER, New York, N. Y., and RUMSEY W. SCOTT, Washington, D. C., assignors to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed July 29, 1905. Serial No. 271,823.

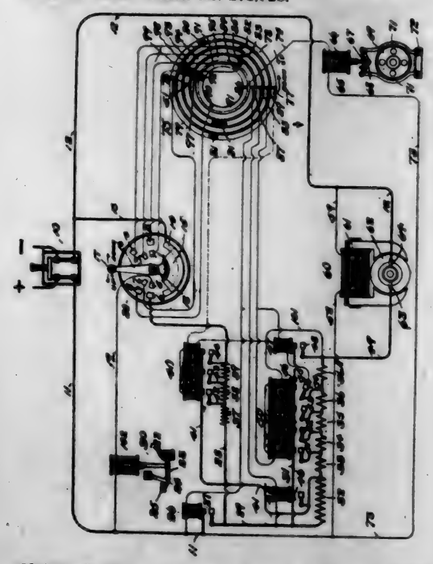

Claim.—1. The combination with a car, of hoisting means therefor, an electric motor for operating said hoisting means, means for causing the motor acting through said hoisting means to hold said car at the upper limit of its travel, a safety device for preventing the car from falling, and means for electrically actuating said safety device so that the car may descend when desired.

2. The combination with a car, of means for hoisting said car, a stationary device for preventing said car from descending, and electric means for releasing said device so that the car may descend when desired.

3. The combination with a car, of means for hoisting said car, a self-locking device permitting free movement of the car in an upward direction but preventing the car from descending, and electric means for unlocking said locking device so that the car may descend.

4. The combination with a car, of means for hoisting said car, a catch normally in the path of a part of the car, and electromechanical means for actuating said catch, so constructed and arranged that the car may have a free upward movement but is stopped in its downward movement unless or until the catch is actuated.

5. The combination with a car, of operating means for the same, a catch for preventing movement of the car in one direction but permitting free movement in the other direction, an electroresponsive device, and connections between said electroresponsive device and said catch whereby the catch can be so moved as to allow the car to move freely past the same in either direction when the electroresponsive device is energized.

6. The combination with a car, of hoisting means for the same, a catch for preventing descent of the car but allowing free upward movement thereof, electromechanical means for operating said catch, and an electric switch on the car for closing a circuit to said electromechanical means to actuate said catch so that the car may descend.

7. The combination with a car, of hoisting means for the same, a self-locking device for allowing free upward movement of said car but preventing its downward movement, an electroresponsive device for operating said self-locking device, and an electric switch on the car for controlling the circuit to said electroresponsive device, whereby when the latter is energised said self-locking device is actuated so that the car may move downwardly.

8. The combination with a car, of hoisting means for the same, a holding device having a part extending into the path of travel of the car for preventing the car from descending after having reached its upper limit of travel, and electric means for actuating said holding device so that the car may descend.

9. The combination with a car, of hoisting means for the same, a self-locking device near the upper limit of travel of said car for preventing the same from descending, and an electroresponsive device controlled from the car for operating said self-locking device.

10. The combination with a car, of hoisting means for the same comprising an electric motor and main lines, a self-locking device near the upper limit of travel of said car for preventing the same from descending, an electric switch in the car, and an electromagnet arranged to be placed across said mains and to actuate said self-locking device when energized so that the car may descend.

11. The combination with a car, of hoisting means for the same, means for automatically reducing the speed of said car as the same approaches the upper limit of its travel, a self-locking device near said limit of travel, and electric means controlled from the car for operating said self-locking device, the aforesaid parts being so constructed and arranged that the car may be held electrically by said hoisting means at said upper limit and if the car should fall it shall be caught by said self-locking device.

12. The combination with a car, of means for hoisting said car, an electric motor for driving said hoisting means, means for automatically slowing down the speed of the car as it approaches its upper limit of travel, a safety device near the said upper limit of travel for preventing the car from falling, an electroresponsive device for actuating said safety device so that the car may descend when desired, an electric switch for controlling the automatic slow-down means and for controlling said electroresponsive device the aforesaid parts being so constructed and arranged that when the car reaches the top it shall be held there by said electric motor acting through the said hoisting means.

13. The combination with a car, of hoisting means for the same, means comprising a stop-motion switch arranged to be automatically rotated, for reducing the speed of said car as it approaches the upper limit of its travel and for holding the car at said limit, a safety device near the upper limit of travel of said car for catching the car if it should fall, an electroresponsive device for operating said safety device, and manually-operable switching mechanism for controlling the current to said automatically-rotatable switch and to said electroresponsive device.

14. The combination with a car, of means for hoisting said car, an electric motor for driving said hoisting means, switching mechanism arranged to be automatically rotated to control the circuits to said motor as the car approaches its upper limit so that the latter shall be reduced in speed but sufficient current allowed to flow through the motor to enable the same to cause the car to be held at its upper limit of travel, a self-locking device near the said upper limit so constructed and arranged that the car can move upwardly past the same but shall be obstructed in its downward movement, an electromagnet for actuating said self-locking device so that the car may move downwardly when desired, and a manually-operable switching device arranged to close circuits to said automatic switching mechanism when in one position and to close the circuit to said electromagnet when in another position.

15. The combination with a car, of means for hoisting same, an electric motor for driving said hoisting means, means comprising circuits and connections for automatically and gradually reducing the speed of the car as it approaches its upper limit of travel, the said circuits and connections being so constructed and arranged that the car shall be held at its upper limit by said motor acting through said hoisting means, means for automatically reducing the speed of the car before stopping as said car approaches its lower limit and varying such reduction of speed in accordance with the load, and a manually-operable switch for controlling when in one position current to said automatic means for reducing the speed of the car as it approaches its upper limit and for controlling when in another position current to the lower-limit automatic means for slowing down the speed of the car.

16. The combination with a car, of means for hoisting same, an electric motor for driving said hoisting means; means, comprising an automatically-rotatable limit-switch and circuits and connections, for gradually reducing the speed of the car as it approaches its upper limit and cause the motor to hold said car at that limit and for automatically reducing the speed of the car as it approaches its lower limit by reason of its own load and varying such reduction of speed in accordance with the load, means for stopping the car at its lower limit of travel, a safety device near the upper limit for catching or holding the car should the hoisting means become inoperative, an electroresponsive device for actuating said safety device so that the car may descend, and a manually-operable switch for controlling when in one position the upper-limit slow-down means and when in another position closing the circuit to said electroresponsive device and controlling the lower-limit slow-down means.

848,373. SAFETY-CATCH FOR ELEVATORS. JOHN D. IHLDER, New York, N. Y., and RUMSEY W. SCOTT, Washington, D. C., assignors to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed July 29, 1905. Serial No. 271,824.

Claim.—1. In a hoist, the combination of means comprising interlocking toggles for preventing movement of a carrier in one direction, and means for actuating said toggles.

2. In a hoist, the combination of means comprising interlocking toggles for preventing movement of the carrier in a predetermined direction, and an electroresponsive device for actuating said toggles.

3. In a hoist, the combination of means for preventing movement of the carrier in one direction only, said means comprising toggles, and an electroresponsive device for actuating said toggles.

4. In a hoist, the combination of a catch normally projecting into the path of a part of the hoist-carrier, and a plurality of toggles associated with said catch, and so constructed and arranged that said carrier shall be resisted in its movement in one direction but not in another.

5. The combination with the guideways of a hoist, of a catch normally projecting into the path of a part of the hoist-carrier, a substantially L-shaped lever provided with a cam-surface and fulcrumed to said catch, and toggles so constructed and arranged that said part of the hoist-carrier can move in one direction in the guideways but not in the other.

6. In a hoist, the combination with a catch normally projecting into the path of a part of the hoist-carrier, of a lever pivoted to said catch and having a cam-surface also projecting into the path of said part of the hoist-carrier, and interlocking toggles connected to said catch and associated with said lever.

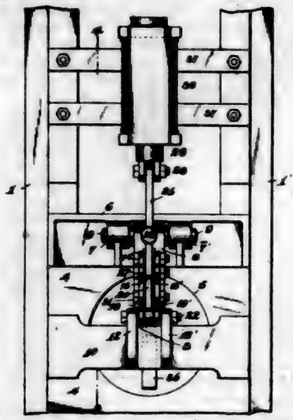

7. In a hoist, the combination with a catch normally projecting into the path of a part of the hoist-carrier, of interconnected toggles connected to said catch to hold the latter in fixed position when the carrier is supported by said catch, and electromagnetic means for actuating said toggles and releasing the catch to permit the hoist-carrier to move past said catch.

8. In a hoist, a catch, an L-shaped lever provided with a cam-face, said cam and lever projecting normally into the path of a part of the hoist-carrier, and interconnecting toggles connected to said catch to hold the latter in fixed position to prevent said part from moving in one direction, but permitting the catch to be released when said part engages said cam-surface in moving in the opposite direction.

9. The combination in a hoist, with means for preventing movement of the carrier in one direction; said means comprising a locking device; of a lever, part of which normally projects into the path of part of the carrier, and another part of which is constructed and arranged to unlock said locking device when the carrier moves in another direction.

10. The combination, in a hoist, with a catch, of an L-shaped lever, one leg of which has a cam-surface and with said catch projects into the path of a part of the carrier of the hoist, and interconnecting levers and links connected to said catch, and comprising a locking device to hold the catch in fixed position and prevent movement of said part of the carrier in one direction, said lever being arranged to actuate said locking device to release said catch and permit free movement of said part in the opposite direction.

11. The combination with guideways of a hoist, of a base-plate mounted thereon, levers pivotally connected to said base-plate, intermediate levers, one of which is a locking-lever pivotally connected to the first-named levers, a catch, an additional lever connected to the aforesaid levers and carrying said catch at its outer end in the path of a part of a carrier of the hoist, and a cam-shaped lever pivoted to said catch and having one leg thereof projecting with said catch into the pathway of said part of the carrier, and having the other leg thereof associated with said locking-lever to actuate the same and effect the release or lateral movement of the catch when said part of the carrier engages the cam in its upward movement.

12. The combination with guideways of a hoist, of a base-plate mounted thereon, a pivoted lever having a catch at its end projecting normally into the path of a part of

the carrier, a double set of toggles connected between said base-plate and said lever, means for normally holding the toggles in locking position, and a bell-crank lever pivoted to said catch and having one arm cam-faced and projecting with the catch into the path of said part of the carrier, said bell-crank lever having its other arm associated with said toggles to unlock the same when said cam-faced arm is engaged by said part of the carrier.

13. In a latch device, the combination with a pivoted lever having a catch at its end, of a fixed support, a double set of toggles connected between said lever and fixed support, means for limiting the downward movement of said toggles, and a bell-crank lever associated with said toggles to move the same and release the catch.

14. In a latch device, the combination with a pivoted lever having a catch at its end, of a fixed support, toggle mechanism connecting said lever to said support, a bell-crank lever adapted to be actuated to unlock the toggle mechanism and release the catch, means for limiting the downward movement of the toggle mechanism, and an electroresponsive device for actuating said means to move said toggle mechanism upwardly and said catch laterally.

15. The combination with the guideways of a hoist, of a pivoted lever having a catch at its lower end normally projecting into the path of a part of a hoist-carrier to prevent downward movement thereof, a double toggle, means acting on said toggle to hold said catch in fixed position, a stop for limiting the downward movement of said toggle, a cam-lever actuated by said part of the carrier in its upward movement to operate said toggle and move said catch out of said path of travel.

16. In a hoist, the combination with a pivoted lever having a catch rigid therewith and projecting normally in the path of a part of said carrier to prevent its downward movement, of toggle mechanism for holding said catch in fixed position, means for holding said toggle mechanism in locking position, and a manual device for actuating said toggle mechanism to release the catch.

17. In a hoist, the combination with a pivoted lever having a catch fixed thereto and projecting into the path of a movable body to prevent movement thereof in a predetermined direction, of toggle mechanism for locking said catch in fixed position, means for holding said toggle mechanism in locking position, and an electroresponsive device for actuating said toggle mechanism to release the catch.

848,374. CATTLE-GUARD. CHARLES O. JENKS, Havre, Mont. Filed July 9, 1906. Serial No. 325,198.

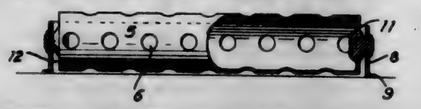

Claim.—1. A cattle-guard comprising a frame adapted to rest on the ties and having flanged lower edges to be engaged by the spikes, and a series of rollers journaled in said frame transversely with respect to the track, said rollers having a series of holes therein and trunnions at each end.

2. A cattle-guard comprising a series of rollers having holes therein and trunnions at each end, and frames wherein said rollers are journaled transversely with respect to the track.

3. The combination, with the track-rails and ties, of a cattle-guard composed of frames, there being one frame outside the rails on each side of the track and two frames side by side between the rails, said frames having flanged lower edges adapted to rest on the ties and be secured by the spikes thereon, and hollow rollers journaled in said frame transversely with respect to said track-rails, said rollers being cast cylindrical in form and provided with integral trunnions at each end.

4. The combination with the track-rails and ties, of frames comprising side plates having right-angled end extensions, the extensions of one side plate being secured to those of the opposite side plate, means securing said plates to the ties and a series of rollers journaled in said plates transversely with respect to the track-rails.

848,375. FENCE-STRETCHER. MOSES E. JOHNSON, Pittsburg, Pa. Filed June 25, 1906. Serial No. 323,375.

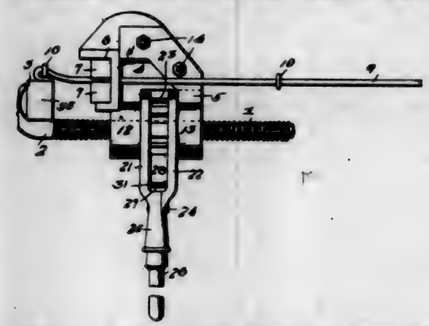

Claim.—1. A fence-stretcher embodying a nonrevoluble screw carrying a post-engaging jaw, a revoluble member having a threaded engagement with said screw and provided with reduced end portions forming oppositely-arranged annular shoulders, a movable fence-engaging jaw embodying sections provided with sleeves which embrace the reduced end portions of the revoluble member at opposite sides of the ratchet-teeth, and a lever-carrying ratchet mechanism for turning said revoluble member to feed the same lengthwise of the screw.

2. A fence-stretcher embodying a nonrevoluble screw carrying a post-engaging jaw, a revoluble member having a threaded engagement with said screw and provided with centrally-arranged ratchet-teeth, a sectional fence-engaging jaw, the members of which are provided with sleeves embracing the opposite ends of the revoluble member, a hand-lever embodying separable members which embrace the revoluble member at opposite sides of the ratchet-teeth, and one or more pawls carried by said lever and movable into and out of engagement with said ratchet-teeth, substantially as described.

3. A fence-stretcher embodying a nonrevoluble screw carrying a post-engaging jaw with one or more inwardly-projecting teeth, a revoluble member having a threaded engagement with said screw, hand-operated means for turning said revoluble member in either direction to move the same lengthwise of the screw, and a fence-engaging jaw journaled on said revoluble member, the teeth of the stationary jaw being located in line with the center of the movable jaw, substantially as and for the purpose set forth.

848,376. VENTILATOR. ARTHUR KONSALIK, Allegheny, Pa. Filed Oct. 22, 1906. Serial No. 339,910.

Claim.—1. In a ventilator, an exit-pipe, a rotatable conical cap over said exit-pipe, a rotatable hood mounted on said cap and communicating therewith through an opening in the top of said cap, and an air-supplying device leading into said hood and carried by said conical cap, said hood and device projecting from each other and opening in opposite directions.

2. In a ventilator, an exit-pipe, a rotatable conical cap over said exit-pipe, a communicating rotatable hood thereover, an air-supplying device leading into said hood and carried by said cap, said hood and device projecting from each other and opening in opposite directions, and a chute in the hood extending from said device, and opening in the hood toward the outlet end thereof, over the inlet-passage thereof.

3. In a ventilator, an exit-pipe, a rotatable conical cap thereover, a communicating outlet-hood carried by said cap, an inwardly-acting air-deflector on said pipe beneath said cap, and an auxiliary air-supplying device above said cap and entering said hood.

4. In a ventilator, an exit-pipe, a communicating outlet-hood, a rotatable conical cap carrying said hood and having an opening communicating therewith rotatable over said exit-pipe, an air-supplying device adapted to enter the said hood, and an air-directing chute leading from said device into the hood and overhanging the communicating passage between said hood and pipe.

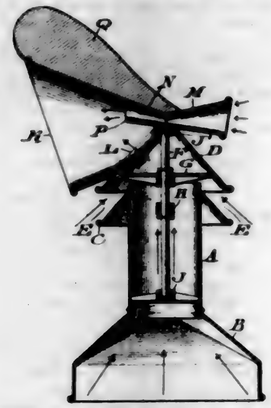

5. In a ventilator, an exit-pipe, an outlet-hood, a conical cap rotatable over said pipe and carrying said hood and having communication therewith, an air-supplying device rotatable with said cap and adapted to enter the hood above its communication with said cap.

6. In a ventilator of the character stated, a pipe, a deflector in communication with said pipe, one of the members of said deflector being rotatable, an outlet-hood connected with the rotatable member, and being in communication therewith, means for supporting said rotatable member, and an air-supplying device leading into said hood and extended in both directions beyond the axis thereof, said air-supplying device being tapered in opposite directions.

7. In a ventilator, a rotatable outlet-hood, an air-supplying device connected with the inner end of said hood, a cap with which said hood is connected and with which it is in communication by a suitable passage and a chute within said hood extending from said device, and projected over said passage, said air-supplying device and chute being oppositely tapered.

8. In a ventilator, a rotatable outlet-hood, an air-supplying device connected with the inner end of said hood, a cap with which said hood is connected, and with which it is in communication by a suitable passage, a pipe below said cap, means for rotatably supporting said cap on said pipe, and an auxiliary cap on said pipe below the rotatable cap forming a deflector therewith.

9. In a ventilator, an exit-pipe, a rotatable hood, a spindle, the latter being adapted to support said hood, and having both ends freely mounted on said pipe and hood, permitting its rotation independent of the hood and an air-supplying device and chute rotatable with said hood and mounted above and independent of said spindle.

848,377. CLOTH-STEAMING BRUSH. JAROSLAV KUDELE and LAWRENCE SVOBODA, Chicago, Ill. Filed Dec. 18, 1905. Serial No. 292,401.

Claim.—1. In a cloth-steaming brush, the combination of a casing provided with an opening for directing steam against the goods under treatment, a brush device rotatably mounted in said casing to sweep against the surface of goods through said opening, means for rotating said device, and means for introducing steam into said casing and against the goods through said opening, whereby the steam and brush device coact against the goods, for the purpose set forth.

2. In a cloth-steaming brush, the combination of a casing provided with an opening, brushes rotatably mounted in said casing to sweep against the goods through said opening, steam-actuated means for rotating the brushes, and an exhaust-passage leading from said steam-actuated means to the interior of the casing to discharge the exhaust-steam, through said opening, whereby the steam and brushes coact against the goods, for the purpose set forth.

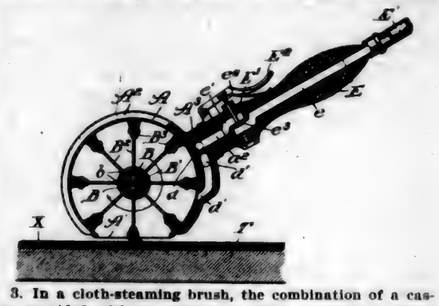

3. In a cloth-steaming brush, the combination of a casing provided with an opening, a shaft rotatably mounted in the casing, brushes extending radially from said shaft and adapted to sweep against the surface of goods through said opening, a steam-operated turbine connected with said shaft to rotate the brushes, and an exhaust-passage leading from the turbine to the interior of the casing for directing exhaust-steam therethrough and through said opening against the goods, for the purpose set forth.

4. In a cloth-steaming brush, the combination of a cylindrical casing provided with an opening, a shaft journaled therein, blades extending radially on said shaft and equipped at their outer ends with brushes adapted to sweep against the surface of goods through said opening, a steam-turbine on the shaft at one end of the casing for rotating the brushes, a handle provided with a valved steam-supply pipe connected with the turbine, and an exhaust-passage leading from said turbine to the interior of the casing for directing steam therethrough and through said opening against the goods, for the purpose set forth.

848,378. APPARATUS FOR TELEPHONE TOLL-LINES. THADDEUS R. LAING, Chicago, Ill., assignor to Kraft Combination Telephone Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 4, 1902. Serial No. 88,387.

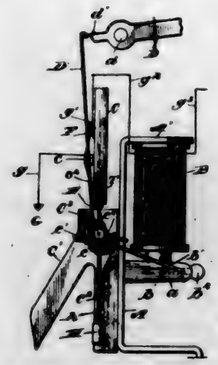

Claim.—1. In a toll-telephone system, the combination with a telephone instrument comprising the usual receiver and supporting-hook therefor, of a chute normally in uninterrupted communication with a point accessible to the user, means actuated by the removal of the receiver

from its supporting-hook to intercept the passage of a toll-piece through the chute and actuated by the return of the receiver to its supporting-hook to direct the toll-piece to a position accessible to the user, substantially as described.

2. In a toll-telephone system, the combination with a telephone instrument comprising a receiver and supporting-hook therefor, of a chute for receiving a toll-piece, a switch located relatively to said chute to intercept the passage of the coin or to direct the coin to one side or the other, the portion of said chute above the switch constituting a free and uninterrupted passage-way for the deposited coin, means controlled by the operator at central for moving said switch to one side, and means actuated by the return of the receiver to its supporting-hook for moving said switch to the other side, substantially as described.

3. In a toll-telephone system, the combination with a telephone instrument comprising a receiver and supporting-hook therefor, of a chute normally in uninterrupted communication with a point accessible to the user, a switch located in position to intercept the passage of a coin through said chute, an electromagnet the energisation of which is controlled by the operator at central, operative connections between said magnet and said switch for swinging said switch so as to direct the toll-piece to a position within the instrument, and means connecting said switch to the receiver's supporting-hook whereby the switch is swung so as to direct the toll-piece to a position accessible to the user, substantially as described.

4. In a toll-telephone system, the combination with a telephone instrument, of a signal-circuit connecting said instrument with a signal at a central station, contacts controlling said signal-circuit operated by a toll-piece, electrical connections for continuing said signal-circuit through a second signal at central upon telephonic connection being established with another instrument, and means for transferring the toll-piece from its operative engagement with the circuit-controlling contacts and thereby discontinuing the second signal, substantially as described.

5. In a toll-telephone system, the combination with a telephone instrument, of a signal-circuit connecting said instrument with a signal at a central station, contacts controlling said circuit operated by a toll-piece, a lead connecting said signal-circuit to a jack at the central station, a lead connected to a plug, a signal in last-mentioned lead whereby upon the insertion of the plug in the jack the signal-circuit is completed through the signal connected to the plug, and means for transferring the toll-piece from its operative engagement with the circuit-controlling contacts and thereby discontinuing the second signal, substantially as described.

6. In a toll-telephone system, the combination with a telephone instrument comprising the usual receiver and supporting-hook therefor, of a signal-circuit connecting said instrument with a signal at a central station, contacts adapted to be engaged by a toll-piece to close said circuit, means actuated by the return of the receiver to its supporting-hook to transfer the toll-piece from its operative engagement with the circuit-controlling contacts, electrical connections for continuing said signal-circuit to a second signal at central upon telephonic connection being established with another instrument, and means actuated by the operator at central for transferring the toll-piece from its engagement with the circuit-controlling contacts, substantially as described.

7. In a toll-telephone system, the combination with a telephone instrument comprising the usual receiver and supporting-hook therefor, of a signal-circuit connecting said instrument with a signal at a central station, contacts engaged by a toll-piece to close said signal-circuit, a lead connecting said signal-circuit to a jack at the central station, a lead connected to a plug, a signal in said last-mentioned lead whereby upon the insertion of the plug in the jack the signal-circuit is completed through the signal connected to the plug, means for transferring the toll-piece from its operative engagement with the circuit-controlling contacts and thereby discontinuing the second signal, and means operatively connected to said means whereby the latter is actuated either by the return of the receiver to its supporting-hook or by the operator at central, substantially as described.

8. In a toll-telephone system, the combination with a telephone instrument, of a chute for receiving a toll-piece, means actuated by the operator at central for storing the toll-piece within the instrument, and means actuated by the establishing of telephonic connection with another instrument to indicate to the operator the failure to store the toll-piece.

9. In a toll-telephone system, the combination with a telephone instrument, of a chute for receiving a toll-piece, a switch located in position to intercept the passage of the toll-piece through the chute, means for transferring the toll-piece from said switch to a point inaccessible to the user, and means actuated upon the establishing of telephonic connection with another instrument to indicate to the operator the presence of a toll-piece upon said switch.

10. In a toll-telephone system, the combination with a telephone instrument comprising a receiver and supporting-hook therefor, of a chute for receiving a toll-piece, a switch located in position to intercept the passage of a coin through said chute, the portion of said chute above the switch constituting a free and uninterrupted passage-way for the deposited toll-piece, means for moving said switch so as to direct a toll-piece to a position within the instrument, and means actuated by the return of the receiver to its supporting-hook for moving said switch so as to direct the toll-piece to a position accessible to the user.

848,379. FRICTION-CLUTCH. SIMON LAKE, Berlin, Germany. Filed Mar. 2, 1906. Serial No. 303,741.

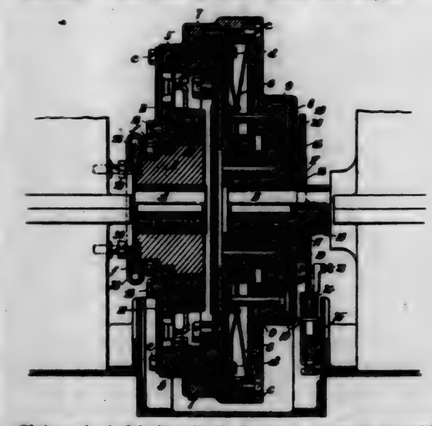

Claim.—1. A friction-clutch, having an axially-movable member, and a yielding medium controlling the extent of said movement, and a complemental member, an axially-movable piston arranged in a fluid-pressure chamber in said complemental member, the clutching-face carried by said piston, means to admit fluid-pressure into the pressure-chamber to force one member into engagement with the other under a yielding action of the first-mentioned member, and spring connections between the piston and its member to disengage the clutching parts upon withdrawal of fluid-pressure.

2. The improved friction-clutch, comprising, in combination with the drive and the driven elements, an axially-movable piston carried by one element and adapted under the action of fluid-pressure to bring together the friction-surfaces, and resilient means for taking up end thrust on said elements.

3. The improved friction-clutch, comprising, the combination with two rotary shafts of a disk carried by one shaft, an axially-slidable piston carried by said disk, a diaphragm connected to the piston and the disk and forming a fluid-tight space between said piston and said disk,

and friction devices rotating with said shafts and brought into engagement by the axial movement of the piston.

4. The improved friction-clutch, comprising, in combination with two rotary shafts, a disk carried by one shaft, an axially-slidable piston carried by said disk, a diaphragm connected to the piston and the disk and forming a fluid-tight space between said piston and said disk, a friction-cone carried by said piston, a friction-bush slidable relative to the other shaft, and a flanged ring carried by said disk limiting the axial movement of said bush.

5. A friction-clutch, having a disk and a piston slidably mounted thereon and connected therewith by a diaphragm and retracting-springs, a clutch-ring carried by said piston, means to admit fluid-pressure between the disk and piston, and a complemental clutch member having a yielding clutching-piece engaged by the clutch-ring.

6. The improved friction-clutch, comprising, in combination with two rotary shafts, a disk carried by one shaft, an axially-movable piston carried by said disk, a diaphragm forming a fluid-tight space between said piston and said disk, a friction-cone carried by said piston, a friction-bush slidable relative to the other shaft, a flanged ring carried by said disk limiting the axial movement of said bush, bolts secured to the piston and entering said disk, and springs surrounding said bolts and pressing together said piston and said disk.

7. A friction-clutch, having a disk and a piston slidably mounted thereon and connected therewith by a diaphragm and retracting-springs, a clutch-ring carried by said piston, means to admit fluid-pressure between the disk and piston, including a ring movably fitted in a groove in the disk, and a carrier-piece to which the ring is fitted and through which the pressure-fluid is supplied, and a complemental clutch member having a yielding clutching-piece engaged by the clutch-ring.

8. A friction-clutch, having a disk and a piston slidably mounted thereon and connected therewith by a diaphragm and retracting-springs, a clutch-ring carried by said piston, means to admit fluid-pressure between the disk and piston, including a ring movably fitted in a groove in the disk, and a carrier-piece to which the ring is fitted and through which the pressure-fluid is supplied, a carrier for the carrier-piece and springs connecting them, and a complemental clutch member having a yielding clutching-piece engaged by the clutch-ring.

848,380. FRICTION-CLUTCH. SIMON LAKE, Bridgeport, Conn. Filed Nov. 16, 1906. Serial No. 343,758.

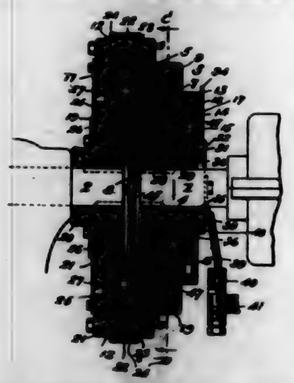

Claim.—1. A friction-clutch, having a male and a female member, one of which is fixed to its shaft, a piston slidably mounted upon one of the members and movable relatively to both of such members, complemental clutch-rings carried by the piston and opposite clutch member, springs connecting the piston with the member by which it is carried and serving normally to bring the male and female members into operative engagement, and means to supply fluid-pressure to the piston to move it against the pull of its springs and thereby effect the disengagement of the male and female members.

2. A friction-clutch, comprising a fixed driving member, and a driven member, a piston movable within the driving member and driven member and having a sliding movement upon the driving member, complemental clutch-rings carried by the piston and driven member, expansion-springs connecting the piston with the driving member and serving normally to engage the two members of the clutch for operative purposes, and means to supply fluid-pressure to the piston to disengage the two members from active co-operation.

3. A friction-clutch, comprising a male and a female member, a piston movable within the male member and female member and carried by the male member, expansion-springs connecting the piston with the male member and serving normally to engage the male and female members of the clutch for operative purposes, means to supply fluid-pressure to the piston to disengage the male and female members from active coöperation, and means for dogging the piston and retaining it in its position of disengagement.

4. A friction-clutch, comprising a male and a female member, a piston movable within the male member and female member and carried by the male member, expansion-springs connecting the piston with the male member and serving normally to engage the male and female members of the clutch for operative purposes, means to supply fluid-pressure to the piston to disengage the male and female members from active coöperation, and friction-blocks interposed between adjacent vertical surfaces of the male and female members to insure a gradual engagement of these members and to augment the tractive force in the movement of the clutch.

5. A friction-clutch, comprising a male and a female member, a piston movable within the male member and female member and carried by the male member, expansion-springs connecting the piston with the male member and serving normally to engage the male and female members of the clutch for operative purposes, and means to supply fluid-pressure to the piston to disengage the male and female members from active coöperation, the said female member including a ring, a disk for supporting it, a hub on which the disk is capable of an axial sliding movement and spring-plates connecting the disk and hub and permitting a yielding movement to the female member.

6. A friction-clutch, comprising a female member having a clutch-ring, and a male member having a complemental clutch-ring and a hub fast to the driving-shaft, a web, a rim on the web and a vertical flange on the rim, a piston packed within the said male member, expansion-springs connecting the piston and male member, said piston normally projecting the said clutch-ring into engagement with the clutch-ring of the female member, and a pressure-chamber interposed between the piston and the hub, web and rim aforesaid and adapted to receive fluid-pressure to act against the piston for disengaging the clutch-rings.

7. A friction-clutch, comprising a female member having an axially-yielding clutching-surface, and a male member having a hub, a web, a rim on the web and a vertical flange on the rim, a piston packed within the said male member, expansion-springs connecting the piston and male member, said piston carrying the active male clutching device and normally projecting the said device into engagement with the female member of the clutch, and a pressure-chamber interposed between the piston and the hub, web and rim aforesaid, and adapted to receive fluid-pressure to act against the piston for withdrawing the male member out of engagement with the female member.

848,381. FLUSHING-TANK FOR WATER-CLOSETS. LOUIS LIPP, Millcreek township, Hamilton county, Ohio. Filed May 12, 1906. Serial No. 316,434.

Claim.—In a flushing-tank for closets, the combination of a float-controlled inlet-valve having a valve-stem, a

housing for this valve having an upwardly-extending neck and an external shoulder thereon, a band-shaped base supported on this shoulder in a manner to be free for rotary adjustment thereon and about this neck, two posts on

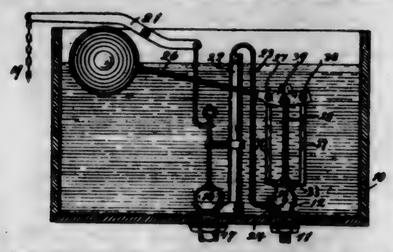

this base diametrically opposite each other, a float-operated lever pivotally supported on one of these posts and connected to the valve-stem between them and a link also connected to the valve-stem and to the other post.

848,382. OVERHEAD TROLLEY. ALLEN P. LORD and NATHANIEL WILKINS, Bradford, Pa. Filed Oct. 29, 1906. Serial No. 341,093.

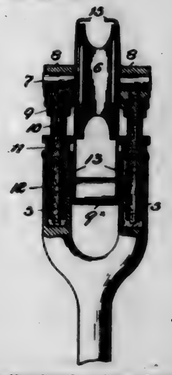

Claim.—In a trolley-head, a harp having tubular arms, wick-tubes extending into said arms, bushings detachably holding said tubes to the arms, coupling members at the upper ends of the tubes, bearings carried by said coupling members, a trolley-wheel having its axle journaled in said bearings, said bearings and coupling members having openings in line with the bore of the tubes, and wicks in said tubes extending into contact with the axle substantially as described.

848,383. WHIP-SOCKET. GUY B. MANKINS, Rowlesburg, W. Va. Filed June 2, 1906. Serial No. 319,988.

Claim.—1. Locking-jaws for a whip-socket consisting of two jaws pivotally joined at their heels and having their free ends provided with holes and adapted to overlap to receive a pin through the holes when they are brought to register.

2. In a whip-socket, the combination, with a casing having a vertical socket therein for the reception of the whiphandle, and a horizontal slot, of a pair of pivoted jaws adapted to operate therein and to engage the whiphandle on opposite sides thereof, the free ends of the jaws being constructed to overlap and provided with holes adapted to be brought into registering position, a second vertical socket in the casing, a pin arranged to operate therein and to engage the holes in the overlapping ends of the jaws.

3. In a whip-socket, the combination, with a casing having a vertical socket therein for the reception of the whiphandle, and a horizontal slot, of a pair of pivoted jaws adapted to operate in said horizontal slot and to engage the whiphandle on opposite sides thereof, the free ends of the jaws being constructed to overlap and having holes in their overlapping ends, a spring arranged to act on the jaws to separate them, a second vertical slot in

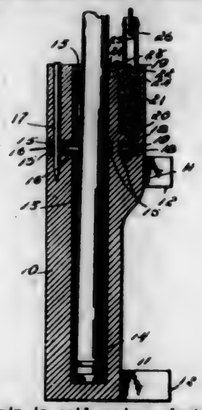

the casing, a pin in said casing adapted to enter the holes in the overlapping ends of the jaws, a spring adapted to operate on said pin to press it through said holes, and a key to engage the pin, and disengage it from said holes.

848,384. OIL-BURNER. CHARLES N. MOORE, Douglas, Ariz. Filed Mar. 20, 1906. Serial No. 307,103.

Claim.—1. The combination in an oil-burner, of an interior steam-pipe and jet-nozzle, an exterior oil-pipe having a contracted jet-nozzle, an exterior tubular chamber with which said pipes are concentric, an enlarged spherical chamber within said outer tube within which the mixed jets of steam and oil are first expanded and atomized, said oil and steam jet nozzles being anterior to the spherical mixing-chamber, a second spherical head within which the temperature of the mixed steam and oil is raised, and a gas produced, means within that portion of the tubular chamber between the two chambers for further mixing and atomizing the mixed oil and steam delivered from the mixing-chamber, and a burner-nozzle opening from said head, said burner-nozzle having a deflecting-lip which overhangs the discharge-opening thereof.

2. In an oil-burner, an outer tube having a hollow spherical gas-generating head, with a burner-nozzle, said nozzle having a deflecting lip or lug projecting above it, a second spherical atomizing-chamber, means forming a connecting-passage between the outer and inner heads, said passage being fluted between its ends anterior to the generating-head, and oil and steam jet nozzles located within the outer tube and anterior to the spherical mixing-chamber.

3. In an oil-burner, an exterior tube having a hollow spherical head with burner-nozzle and deflecting-lip at the outer end, a second spherical atomizing and mixing chamber, and a fluted passage connecting the two spheres, a pipe located within the outer pipe having a jet-nozzle at its front end adapted to discharge into the first of the mixing-chambers, a steam-pipe concentric with and anterior to the oil-supply pipe having a jet-nozzle in line with the nozzle of the oil-pipe, and means whereby the varying pressure of the stream controls the admission of the oil.

4. In an apparatus for burning oil, an interior steam-pipe, an oil-pipe concentric therewith and forming an annular passage between the two, a collar sleeve located in the length of said passage, a jet-nozzle at the front of the steam-pipe, and a second jet-nozzle in the front of the oil-pipe through which the steam is discharged, and by which an increase of steam-pressure reacts through the oil-passage to check the flow of oil, an exterior pipe concentric with said steam and oil pipes, an enlarged atomizing and mixing chamber located in front of the oil-jet, a fluted passage extending forwardly from said mixing-chamber, a spherical heating-head into which the mixed products are delivered, and a burner-nozzle through which the vaporized products are discharged.

848,385. COTTON-CHOPPER. WILAU E. MOUNCE and SAMUEL L. SOUTHERN, Alberta, La. Filed Nov. 19, 1904. Serial No. 233,533.

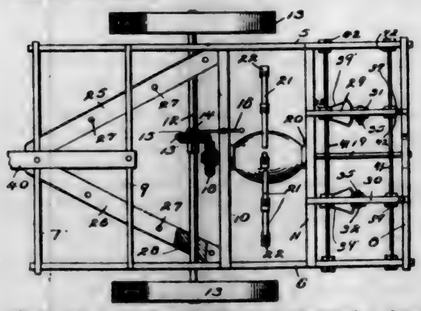

Claim.—In a machine of the class described a frame structure including side members or sills and cross-pieces connecting the same and affording bearings for the chopper-shaft, plow-carrying beams gained into two of the cross-pieces in which the chopper-shaft is journaled, binding-rods extending transversely through the sills of the frame and through the plow-beams, and tightened nuts upon said rods adjacent to the sills and to the plow-carrying beams.

848,386. TREATMENT OF LEAVES. GEORGE R. MCGAHAN, Paisley, Scotland, assignor to James Logan Benjamin Hamilton, Los Angeles, Cal. Filed Sept. 10, 1906. Serial No. 334,003.

Claim.—1. The process of preparing skeletonized natural leaves by subjecting them to the beating action of a brush-like implement to break up and remove the pulpy portion substantially as described.

2. The process of preparing skeletonized natural leaves showing words, designs or the like by protecting portions of same and subjecting the remainder to the beating action of a brush-like implement to break up and remove the pulpy portions substantially as described.

848,387. MARKING-GAGE FOR RULES. CORFITE NIELSEN, Sacramento, Cal. Filed Dec. 24, 1906. Serial No. 349,218.

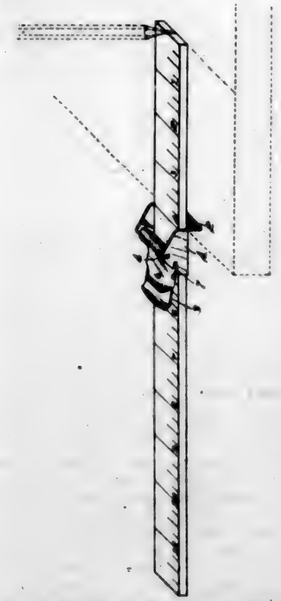

Claim.—1. A marking-gage for rules consisting of a plate extending across one side having upturned sides inclosing the edges of the rule, said sides being provided with notches, a gage-plate extending outwardly at right angles with the device and adapted to register with the markings of the rule, a curved elastic plate pivoted between the sides having an extended arm whereby it may be compressed upon the surface of the rule, and a means engageable with the notches in said sides, for locking the parts in position.

2. In a gage for rules and the like, a plate having upturned sides fitting across one side and inclosing the edges of the rule, said sides being provided with notches, a gage-plate or part registering with the markings of the rule, and extending at right angles from the gage-piece, a pivot-pin by which one end is fulcrumed between the upturned

sides of the gage so that the apex of the curve may rest upon the rule-surface, said plate being capable of depression to bind against the surface of the rule, and a slidable locking-plate movable upon said depressible arm and adapted to engage with notches in the upturned sides of the gage.

3. In a rule-gage, a box-shaped structure, with upturned sides slidably inclosing the edges of the rule and having a gage-plate extending at right angles, and registering with the markings of the rule, a curved elastic plate, a pivot by which it is secured between the upturned sides of the first-named device, with the apex of curvature adapted to rest upon the surface of the rule, notches made in opposite edges of the upturned sides, and a locking-plate slidably connected with the curved plate and adapted to enter the notches and locking the device at different points of adjustment.

848,388. HORSE-DETACHER. JOHN E. NILSSON, Sioux Falls, S. D. Filed Oct. 17, 1905. Serial No. 283,095.

Claim.—1. A device of the character described, in combination, comprising a vehicle-axle having inclosing cases mounted thereon; a resiliently-mounted sliding rod seated in each inclosing case and having thill-engaging outer ends; a vertically-disposed apron secured upon the vehicle-axle between the inclosing cases and having an extended part below said axle; an upwardly-extending operating-bar having an angularly-formed shaft upon its lower end pivotally mounted upon the extended part of said apron; a double-ended link transversely disposed with reference to said operating-bar and rigidly mounted upon said shaft, and having a link connection between each of its ends and the inner ends of said resiliently-mounted sliding rods.

2. In combination, a device as described, comprising a vehicle-axle and inclosing cases; said inclosing cases being secured upon the axle by means of clip 9, and by axle-clip 10 having arms 11 and 12 transversely encircling the axle and inclosing cases; a resiliently-mounted sliding rod seated in each inclosing case and having thill-engaging outer ends; a vertically-disposed apron secured upon the vehicle-axle between the inclosing cases and having an extended part below said axle; an upwardly-extending operating-bar having an angularly-formed shaft upon its lower end pivotally mounted upon the extended part of said apron; a double-ended link transversely disposed with reference to said operating-bar and rigidly mounted upon said shaft, and having a link connection between each of its ends and the inner ends of said resiliently-mounted sliding rods.

3. A device of the character described, in combination, comprising a vehicle-axle having inclosing cases mounted thereon; a resiliently-mounted sliding rod seated in each inclosing case and having thill-engaging ends; a vertically-disposed apron having arms 15 and 16 passing transversely and secured upon the vehicle-axle between the inclosing cases, and having an extended part below said axle; an upwardly-extending operating-bar having an angularly-formed shaft upon its lower end pivotally mounted upon the extended part of said apron; a double-ended link transversely disposed with reference to said operating-bar and rigidly mounted upon said shaft, and having a link connection between each of its ends and the inner ends of said resiliently-mounted sliding rods.

848,389. VALVE AND VALVE-SEAT FOR STEAM-TRAPS. JOHN E. L. OGDEN, Liscard, England. Filed Jan. 5, 1905. Serial No. 239,786.

Claim.—1. In steam-traps, the combination consisting of an element expansible by heat, a valve having inner and outer seating-surfaces with an intervening chamber and connections between the said valve and the said expansible element permitting of a preliminary movement of the said valve respectively by the contraction and expansion of said expansible element under varying temperatures, substantially as described.

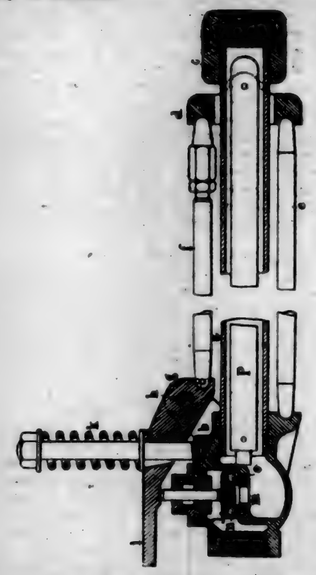

2. In steam-traps, the combination consisting of a valve having inner and outer seating-surfaces with an intervening chamber, a spring-loaded lever acting upon the said valve, an expansion-tube provided with a thrust-piece and a connecting-rod between the said thrust-piece and the said lever, substantially as described.

848,390. STEAM-TRAP. JOHN E. L. OGDEN, Liscard, England. Filed Nov. 17, 1906. Serial No. 343,867.

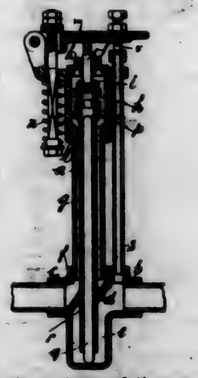

Claim.—1. In steam-traps of the expansion type, the combination with a water-discharge valve and an expansion-tube effecting the opening and closing of the said valve, of a fitting provided with inlet and outlet chambers and having a sump-like or water-collecting chamber formed integrally with the said inlet-chamber and an extension from the said expansion-tube projecting within the said water-collecting chamber, substantially as described.

2. In steam-traps of the expansion type, the combination consisting of a water-discharge valve, an expansion-tube, a valve-seating for the said valve secured integrally with the said expansion-tube, a loaded lever acting to press the valve against its seating, a fitting provided with inlet and outlet chambers, and a sump-like or water-collecting chamber into which the said expansion-tube projects, substantially as described.

3. In steam-traps of the expansion type, the combination consisting of a water-discharge valve, an expansion-tube, a valve-seating for the said valve secured integrally with the said expansion-tube, a loaded lever acting to press the valve against its seating, adjustable means limiting the said action of the loaded lever, a fitting provided with inlet and outlet chambers, and a sump-like or water-collecting chamber into which the said expansion-tube projects, substantially as described.

848,391. LOCKING DEVICE FOR CHAIR-TRAYS. WALTON F. OLIVER, Templeton, Mass. Filed Dec. 15, 1905. Serial No. 291,840.

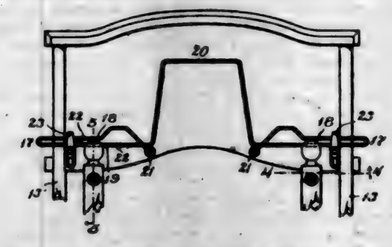

Claim.—1. A locking device for a chair-tray, having a compressible loop, one arm of which is attached at one end to the tray, and constitutes an anchoring member, the other arm constituting a locking member adapted to engage a complemental locking member on a chair, and means for yieldingly expanding the loop to normally hold the locking member separated from the anchoring member and in its locking position, the free end of the loop having a finger-engaging extension adapted to receive pressure to compress the loop and disengage the locking member from the chair.

2. A locking device for a chair-tray having a compressible loop the inner arm of which is attached to the tray, while the outer arm constitutes a locking member adapted to engage a complemental locking member on a chair and a stop adapted to engage the inner arm to prevent disengagement of the locking member from the chair by bodily displacement of the loop, and means for yieldingly maintaining the loop with the outer arm in its locking position, the said outer arm having a finger-engaging rest or extension adapted to receive loop-compressing and outer-arm-displacing pressure.

3. A locking device for a chair-tray having a resilient wire rod bent at its end portions to form two compressible loops each having an inner arm attached to the tray and an outer arm constituting a locking member adapted to engage a complemental locking member on a chair, and an intermediate resilient U-shaped portion connecting the outer arms of the loops and yieldingly maintaining the loops with their outer arms in locking position, the said intermediate portion constituting a finger-rest adapted to receive loop-compressing pressure.

4. As an article of manufacture a resilient tray-locking rod bent at its end portions to form two compressible loops each having an inner arm provided with an eye for engagement with an attaching device, and an outer arm constituting a locking member adapted to engage a complemental locking member on a chair, and an intermediate resilient U-shaped portion connecting the outer arms of the loops and constituting a finger-rest.

5. A locking device for chair-trays comprising two locking-arms anchored to the tray and movable sidewise on their anchorages to and from their locking positions, and a resilient finger-engaging member located between and connecting said arms, and adapted to simultaneously retract the same, said member normally holding the arms in their locking position.

848,392. ERASER-HOLDER. MEDORA M. OLMSTEAD, Lawrence, Mass. Filed July 14, 1906. Serial No. 326,288.

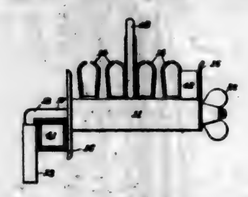

Claim.—1. An eraser-holder for type-writers, comprising a block with a longitudinal perforation, elastic holders carried thereby, a clamp-plate rigidly attached at one end thereof and provided with a square opening, a squared bar passed through said square opening and the perforation in the block and comprising an arm at one end and a screw-threaded shank at its other end, and a member comprising a thumb-piece and a shoulder adapted to bear against the end of said block together with screw-threads adapted to fit the threads on the squared bar whereby the arm on the squared bar and the clamp-plate may be clamped upon any convenient part of the type-writer.

2. An eraser-holder for type-writers, comprising a block with a longitudinal perforation, elastic holders carried thereby, a clamp-plate attached at one end thereof and provided with a square opening, a squared bar passing through said square opening and the perforation in the block and comprising an arm at one end and at its other end a screw-threaded shank, a rubber covering for said arm, and a thumb-screw carried by said screw-threaded shank whereby said clamp-plate and arm may be clamped upon any convenient part of the type-writer.

848,393. LOCK FOR SWING-SASHES. MAX PETROVICS, New York, N. Y. Filed May 9, 1906. Serial No. 315,867.

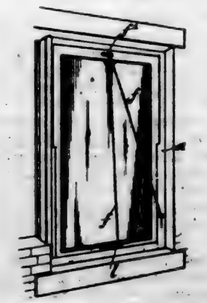

Claim.—1. The combination, with a vertically-swinging window-sash arranged to be normally held in closed position by gravity, of a latch carried by the lower rail of said sash, a catch attached to the window-sill and coöperating with said latch, a guiding device attached to the upper rail of said sash, and a chain connected to said latch and passing upwardly and downwardly over said guiding device.

2. The combination, with a swing-sash pivoted intermediately of its height and arranged to be normally held in closed position by gravity, of a gravity-operated latch pivoted to said sash, a catch on the window-sill, a guide-roller carried by the upper rail of said sash, and an operating-chain for said latch passing upwardly and downwardly over said guide-roller.

848,394. SHELL-WINDING MACHINE. GEORGE H. POOR, Chicago, Ill., assignor, by mesne assignments, to Raymond Concrete Pile Company, Chicago, Ill., a Corporation of New Jersey. Filed Apr. 30, 1904. Serial No. 205,740.

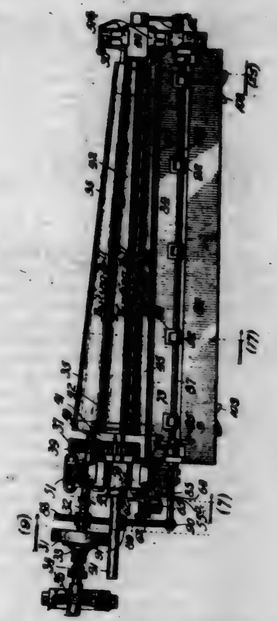

Claim.—1. In a shell winding machine the combination with appropriate rollers for applying paste and pressure to the shell, of a winding roll mounted with one end in a vertically adjustable pivoted bearing, adapted to permit elevation of one end to slide the shell off when completed, substantially as described.

2. In a shell forming machine, the combination with a pasting roll and a pressing roll, of a winding roll resting thereon by gravity and having vertically movable bearings mounted in eccentric sleeves, whereby the roll may be thrown against either of the other two with varying pressure as desired.

3. In a shell winding machine a winding roll mounted in eccentric bearings, one of said bearings being removable from its support and the other of said bearings being pivotally mounted, whereby the roll can be tilted with one end free.

4. In a shell forming machine a winding roll mounted in eccentric bearings at its two ends, means for moving the eccentrics to shift the position of the roll, and means for elevating both bearings, one of said bearings being mounted upon a pivotal support, substantially as and for the purposes described.

5. In a shell forming machine a winding roll mounted in eccentric bearings at its two ends, means for moving the eccentrics to shift the position of the roll, and means for elevating both bearings.

6. In a shell winding machine the combination with a winding roll, of a pasting roll and a pressure roll supporting said winding roll, and mounted each at their respective ends in ball and socket bearings, and guides wherein the sockets of said bearings are laterally movable, said rolls being tapered; substantially as described.

7. In a shell winding machine, a mechanism for raising and lowering the winding roll, consisting in a series of toggle links engaging the bearing of the roll, and mechanism for operating said links to raise the bearings at the two ends together.

8. In a shell winding machine, a winding roll mounted in eccentric bearings, and means for shifting the position of the roll both laterally and vertically by means of said eccentric bearings, consisting in a crank arm attached to the eccentric, and a lever and link mechanism for rotating the eccentric about its axis, substantially as described.

9. In a shell winding machine the combination with two tapering supporting rolls, having adjustable bearings at the two ends, of a tapered winding roll resting upon the supporting rolls by its own weight, and means for supporting the end bearings of the said winding roll at the two ends allowing for a vertical movement, and means for raising the said bearings simultaneously.

10. In a shell winding machine the combination with two stationary rolls, of a winding roll resting between the same and upon them by gravity, means for driving the winding rolls from the driving means of one of the stationary rolls, and an adjustable bearing for throwing the pressure of the winding roll upon either one or both of the supporting rolls differentially, substantially as described.

11. The combination with a set of tapered rolls, of a feeding mechanism comprising a shaft arranged in line with the contact line of the feeding rolls, a series of eccentrics fixed on the shaft, a roller on each eccentric and a justifying finger fixed to the shaft, and a coöperating presser roll engaging the rolls on the eccentrics, whereby the material is justified in line with the rollers, and the fingers released when the eccentrics bring the feeding device into operation on the material.

12. The combination with a set of tapered shell winding rolls, of means for starting the material in the rolls in a predetermined position, and thereafter allowing the material to feed at varying speeds lengthwise of the rolls, comprising a revolving shaft, a stationary shaft having justifying fingers and fixed eccentrics thereon, and loose roller rings on the eccentrics, the parts being so arranged that the eccentrics make contacts of the roller rings on the revolving shafts immediately as the justifying fingers are raised by turning the stationary shaft, substantially as described.

13. In a shell winding machine a pair of tapered supporting rolls having independent horizontally adjustable bearings at each of their ends, and a tapered presser roll resting by gravity on said rolls and having a pivoted bearing, whereby rolls of varying taper may be used with one set of bearings, substantially as described.

14. In a shell forming machine, the combination with a pasting roll and a pressing roll, of a winding roll resting thereon by gravity, vertically movable bearings for said winding roll, and means for laterally shifting said bearings, whereby the winding roll may be caused to rest on the other two rolls with varying pressure.

15. In a shell winding machine a forming roll having a circular slot and an elliptical bar in said slot for clamping the edge of a sheet therein.

16. In a shell forming machine, the combination with two supporting rolls, of a winding roll resting thereon by gravity, and means for shifting the winding roll between the two supporting rolls to apportion its weight between them, whereby the pressure on the rolls is varied.

848,395. PILE-CORE. ALFRED A. RAYMOND, Chicago, Ill., assignor to Raymond Concrete Pile Company, Chicago, Ill., a Corporation of New Jersey. Filed Sept. 11, 1905. Serial No. 277,954.

Claim.—1. A pile-core adapted to sink a pile-shell and provided at its lower end with a collapsible point or shoe, said core and shoe being withdrawable from the shell.

2. A pile-core adapted to sink a pile-shell and insertible therewithin in the sinking operation, such core being provided at its lower end with a shoe formed of a plurality of parts arranged to collapse and being withdrawable together with its shoe from the shell.

3. A pile-core adapted to sink a pile-shell and insertible therewithin in the sinking operation, such core being provided at its lower end with an expansible and contractible shoe expanded by the act of pressing the core downwardly and contracted by the act of withdrawing the same upwardly, said core and shoe being withdrawable from the shell.

4. A pile-core adapted to sink a pile-shell and insertible therewithin in the sinking operation, such core being provided at its lower end with a collapsible point or shoe on which the lower end of the pile-shell fits, said core and shoe being withdrawable from the shell.

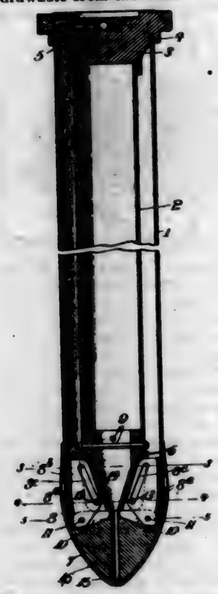

5. A pile-core adapted to sink a pile-shell and insertible therewithin in the sinking operation, such core being provided at its lower end with a point or shoe having collapsible segments arranged to be expanded against the lower end of the pile-shell in the sinking operation.

6. A pile-core adapted to sink a pile-shell and provided at its lower end with a collapsible point or shoe, comprising a point proper, a block secured to the core proper and a series of expansible and contractible segments coöperating with the point proper and the block.

7. A pile-core adapted to sink a pile-shell and provided at its lower end with a collapsible point or shoe, comprising a point proper, a block secured to the core and a series of expansible and contractible segments pivoted upon the point proper and having independent movement with respect to the block.

8. A pile-core adapted to sink a shell and provided at its lower end with a collapsible point or shoe, comprising a point pooper, a block secured to the core proper and a series of expansible and contractible segments pivoted upon the point proper and arranged to collapse inwardly upon the block.

9. A pile-core adapted to sink a pile-shell and provided at its lower end with a collapsible point or shoe, comprising a point proper, a block secured to the core proper and a series of expansible and contractible segments coöperating with the point proper and the block, said point having its greatest diameter less than the internal diameter of the pile-shell.

10. A pile-core adapted to sink a pile-shell and provided at its lower end with a collapsible point or shoe, comprising a point proper, a block secured to the core proper and a series of expansible and contractible segments pivoted upon the point proper and having a pin-and-slot connection with the block.

11. A pile-core adapted to sink a pile-shell and provided at its lower end with a collapsible point or shoe, comprising a point proper, a block secured to the core proper and a series of expansible and contractible segments having radial flanges or webs pivoted upon the point proper and coöperating with the block to permit a movement of the latter longitudinally and independently of the segments.

12. A pile-core adapted to sink a pile-shell and provided at its lower end with a collapsible point or shoe, comprising a point proper, a block secured to the core proper and a series of expansible and contractible segments having radial flanges provided upon the point proper and having a pin-and-slot connection with the block.

13. A pile-core adapted to sink a pile-shell and provided at its lower end with a collapsible point or shoe, comprising a point proper, a block secured to the core proper and a series of expansible and contractible segments having radial flanges pivoted upon the point proper and having annular slots, and pins on the block and movable in the slots.

14. A pile-core adapted to sink a pile-shell and provided at its lower end with a collapsible point or shoe, comprising a point proper, a block secured to the core proper and a series of expansible and contractible segments having radial flanges pivoted at their lower ends to the upper end of the point proper and having toward their upper ends a pin-and-slot connection with the block.

15. A pile-core adapted to sink a pile-shell and provided at its lower end with a collapsible point or shoe, comprising a point proper, a block secured to the core proper and a series of expansible and contractible segments having radial flanges pivoted upon the point proper and having angular slots, said block having lateral flanges formed by sockets or grooves inclined downwardly and inwardly to receive the flanges of the segments, and pins in the block-flanges received by said slots.

16. A pile-core adapted to sink a pile-shell and provided at its lower end with a collapsible point or shoe, comprising a point proper, a block secured to the core proper and a series of expansible and contractible segments having radial flanges pivoted upon the point proper and having angular slots and inner edges inclined downwardly and inwardly, said block having pairs of lateral flanges and sockets therebetween corresponding in inclination with the inner edges of the segments, and pins in the block-flanges and received by said slots.

17. A pile-core adapted to sink a pile-shell and provided at its lower end with a collapsible point or shoe comprising a point proper, a block secured to the core proper, and a series of collapsible segments coöperating with the point and block, said segments being reduced at the upper ends to receive the pile-shells.

18. A pile-core adapted to sink a pile-shell and provided at its lower end with a collapsible point or shoe comprising a point proper whose greater diameter is less than the internal diameter of the pile-shell, a block secured to the lower end of the core proper, and a plurality of segments reduced at their upper ends to receive the pile-shell and having shoulders 8^a upon which the lower end of the pile-shell rests.

19. A pile-core adapted to sink a pile-shell and insertible therewithin in the sinking operation, said core comprising a body portion having a collapsible shoe or point at its lower end, and a driving-head at its upper end.

20. A pile-core adapted to sink a pile-shell and insertible therewithin in the sinking operation, said core comprising a body portion having a collapsible shoe or point at its lower end and at its upper end a driving-head arranged to fit over the upper end of the shell.

21. A pile-core adapted to sink a pile-shell and insertible therewithin in the sinking operation, said core comprising a tubular body portion having affixed to its lower end a collapsible shoe or point on which the lower end of the pile-shell fits and having at its upper end a driving-head.

22. A pile-core adapted to sink a pile-shell and insertible therewithin in the sinking operation, said core comprising a hollow tubular body portion having affixed to its lower end a collapsible shoe or point provided with a jetting-passage, and means for supplying jetting fluid to the tubular body portion.

23. A pile-core adapted to sink a pile-shell and insertible therewithin in the sinking operation, said core comprising

a hollow tubular body portion having affixed to its lower end a collapsible shoe or point provided with a jetting-passage, and having at its upper end a driving-head having a jet-inlet passage for supplying the jetting fluid to the tubular body portion.

24. A pile-core adapted to sink a pile-shell and comprising a pipe arranged within and concentric of the shell, and a collapsible shoe at the lower end of the pipe.

25. A pile-core adapted to sink a pile-shell and comprising a pipe arranged within and concentric of the shell, and a collapsible shoe at the lower end of the pipe and consisting of a point proper, a block and a plurality of segments operatively connected therewith, said block and point being of less diameter than the shell and the segment being arranged to be expanded radially against the lower end of the shell.

26. A pile-core adapted to sink a pile-shell and insertible therewithin in the sinking operation, said core comprising a hollow tubular body portion having affixed to its lower end a collapsible shoe or point consisting of a point proper provided with a jetting-passage, collapsible segments or sections operatively connected with said tubular body portion, and a jetting-pipe extending longitudinally of said body portion of the core and secured in the jetting-passage of the point.

27. A pile-core adapted to sink a pile-shell and insertible therewithin in the sinking operation, said core comprising a hollow tubular body portion having affixed to its lower end a collapsible shoe or point consisting of a point proper provided with a jetting-passage, a hollow block secured to the lower end of said tubular body portion, collapsible segments connecting the block to the point, and a jetting-pipe extending longitudinally of said body portion and arranged within the jetting-passage of the point.

28. A pile-core adapted to sink a pile-shell and insertible therewithin in the sinking operation, said core comprising a hollow tubular body portion having affixed to its lower end a collapsible shoe or point consisting of a point proper provided with a jetting-passage, collapsible segments or sections operatively connected with said tubular body portion, a jetting-pipe extending longitudinally of said body portion of the core and secured in the jetting-passage of the point, a cap arranged on the upper end of said body portion and provided with a jetting-passage, and a flexible jetting connection between said jetting-pipe and the jetting-passage in said cap.

29. A pile-core adapted to sink a pile-shell and insertible therewithin in the sinking operation, such core being provided at its lower end with a collapsible point or shoe on which the lower end of the pile-shell fits, and a covering fitting over said point or shoe.

30. A pile-core adapted to sink a pile-shell and provided at its lower end with a collapsible point or shoe, comprising a point proper, a block secured to the core proper, a series of expansible and contractible segments coöperating with the point proper and the block, and a covering fitting over said point proper and the segments.

31. A pile-core adapted to sink a pile-shell and insertible therewithin in the sinking operation, said core being provided at its lower end with a collapsible point or shoe comprising a point proper having a central jetting-passage, a hollow block secured to the core proper, a series of expansible and contractible segments coöperating with the point proper and the block, a jetting-pipe extending centrally and longitudinally of the core proper and communicating at its lower end with the jetting-passage in the point proper, said jetting-pipe extending part way of the length of the core proper, a driving-cap secured to the upper end of the core proper and provided with a jetting-passage, and a flexible pipe connecting said jetting-passage and the jetting-pipe.

32. A pile-core adapted to sink a pile-shell and provided at its lower end with a collapsible point or shoe, comprising a point proper, a block secured to the core, a series of expansible and contractible segments pivoted upon the point proper and having independent movement with respect to the block, and a covering fitting over the point proper and said segments and the lower end of the pile-shell.

848,396. EMBROIDERY ATTACHMENT FOR SEWING-MACHINES. CHARLES E. RHARDON, Kansas City, Mo. Filed Dec. 7, 1905. Serial No. 290,702.

Claim.—1. A device of the character described consisting of a single piece of wire provided at its lower portion with a foot comprising two parallel members united at their outer ends by an upwardly-bent loop, an upwardly-extending oblique member communicating with the inner end of one of said foot members, an arm communicating with the upper terminal of said oblique member, a resilient coil communicating with the inner terminal of said arm, another arm communicating with said coil, an eye communicating with the outer terminal of the last-mentioned arm, a shank communicating with said eye, and a hand-hold communicating with the upper terminal of said shank.

2. The combination with a needle-bar, a needle secured therein, and a boss on said needle-bar, of a device consisting of a single piece of metal provided at its lower portion with a foot consisting of two parallel members with upturned terminals arranged in the rear of and entirely to one side of the needle, an upwardly-extending oblique member communicating with said foot, an arm communicating with the upper terminal of said oblique member, a resilient coil communicating with the inner terminal of said arm, another arm communicating with said coil and bearing against the under side of the needle-bar, an eye communicating with the inner terminal of the last-mentioned arm and embracing the upper portion of the needle, a shank communicating with said eye and embracing one side of the lower end of the needle-bar, and a finger-hold communicating with the upper terminal of said shank and embracing said boss.

848,397. RAIL-JOINT. GEORGE J. RICHARDSON, West Charleston, W. Va. Filed Sept. 1, 1906. Serial No. 332,919.

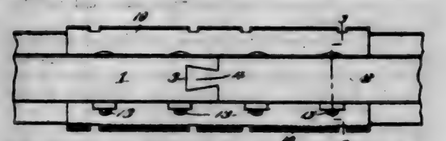

Claim.—In a rail-joint, abutting rail ends having interengaging dovetailed mortises and tenons, in combination with channel-shaped fish-plates having bolt-holes and locking-lugs adjacent thereto, bolts extending through the fish-plates and through the webs of the rails, nuts having radial grooves in their inner faces for engagement with the locking-lugs, and springs upon the bolts interposed between the rail-webs and the fish-plates.

848,398. AUTOMATIC-EXCHANGE SELECTOR. JOHN G. ROSBURG, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed June 18, 1906. Serial No. 322,145.

Claim.—1. In an automatic telephone-exchange, the combination with multiple line-terminals arranged in rows across an arc-shaped field, of a switch having a series of terminals corresponding to said rows, means for bringing any one of said terminals into operative relation to its corresponding row, and means for rocking said switch to bring said selected terminal into connection with the desired line-terminal in its corresponding row.

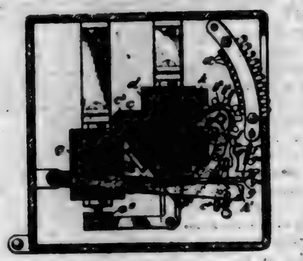

2. In an automatic telephone-exchange, the combination with multiple line-terminals arranged in rows in an arc-shaped field, of a switch having a series of terminals corresponding to said rows, means for rotating said switch to bring any terminal into operative relation to its corresponding row, and means for oscillating said switch to bring said selected terminal into connection with the desired line-terminal in its corresponding row.

3. In an automatic telephone-exchange selector, the combination with multiple line-terminals arranged in rows in an arc-shaped field, of a selector-switch comprising a rotatable shaft, a series of contact-points arranged longitudinally on said shaft, one for each row of terminals, electromagnetic mechanism for rotating said shaft into position in which any desired contact-point is in operative relation to its corresponding row of terminals, a pivoted frame for said switch, and electromagnetic mechanism for advancing said frame to move said switch over the terminals until the selected contact reaches the desired terminal in its row.

4. In a selector for an automatic telephone-exchange the combination with a rotatably-mounted switch member, of a stepping-pawl and a retaining-pawl controlling the rotation of said member, a pivoted frame carrying said switch member, a stepping and a retaining pawl controlling the advance of said frame, a lever controlling the engagement of said retaining-pawls with said switch member and frame, electromagnetic mechanism controlling said lever, and electromagnetic mechanism controlling said stepping-pawls.

5. In a selector for an automatic telephone-exchange, the combination with a rotatably-mounted switch member, of a stepping-pawl and a retaining-pawl controlling the rotation of said member, a pivoted frame carrying said switch member, a stepping and a retaining pawl controlling the advance of said frame, a lever carrying the retaining-pawl of the frame, a lug carried by said lever adapted to engage the retaining-pawl of said switch and hold the same away from said member, an electromagnetically-controlled arm adapted to move said lever to maintain both retaining-pawls away from said frame and switch member, a spring adapted when said arm is removed to move said lever to render operative said retaining-pawls, and electromagnetic mechanism controlling said stepping-pawls.

848,399. ATTACHMENT FOR SQUARES. WILLIAM F. ROWELL, Salem Depot, N. H. Filed July 12, 1906. Serial No. 325,874.

Claim.—1. The combination with a square, of a plate disposed thereupon and having a flange extending beyond the edge of the square and provided with marker-receiving openings, a lip carried by the plate and extending beneath the square, an attaching-band engaged with the square and plate and extending beyond the under surface of the square to form a guide, and means carried by the band for holding it and the plate against movement upon the square.

2. In combination with a square, a plate having an edge portion bent at right angles thereto and then outwardly to form a flange, said flange being provided with a marker-receiving opening, a lip carried by the plate and extending downwardly therefrom and then therebeneath, a band engaged with the plate and adapted to receive a square-arm therewithin, said band and plate having registering openings therein, and a set-screw engaged in the openings.

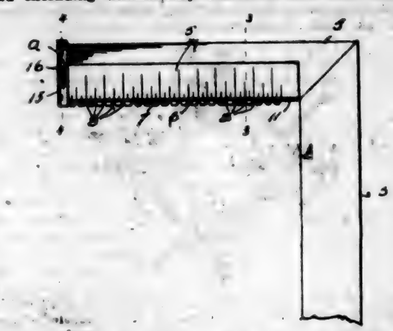

848,400. SHEET-WINDER. HENRY K. SANDELL, Chicago, Ill., assignor to Mills Novelty Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 5, 1906. Serial No. 299,488.

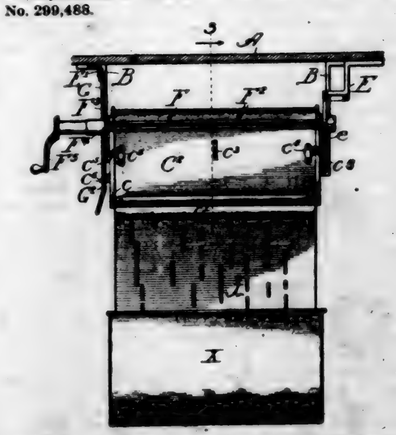

Claim.—1. In combination with a music-playing machine employing a perforated sheet for its operation, a sheet-winder comprising a spindle consisting of a pair of rods forming a space between them to receive the edge of the sheet to be wound upon said spindle, a head on one end of said rods and a hub extending beyond said head, a stationary bearing on the machine adapted to releasably receive and journal the two spaced ends of the spindle, and means for releasably journaling the winder at said hub on the machine.

2. In combination with a music-playing machine employing a perforated sheet for operating it, a sheet-winder comprising a spindle provided with a longitudinal slot open at one end of the spindle to adapt a sheet to be introduced therein and wound about said spindle, a head near one end of the winder, and a crank on said spindle, a bracket on said machine provided with a disk-shaped extremity containing a socket to receive the open end of the spindle, and a spindle-journaling arm pivoted to the machine to swing on its pivot and releasably hold the winder in journaled position for winding the sheet upon it, where-

by the winder is adapted to be removed from the machine and the spindle to be withdrawn from the rolled sheet.

848,401. DIE-STOCK. CHARLES F. SCHULTIS, Warren, Ohio, assignor to James B. King, Mantua, Ohio. Filed Mar. 29, 1906. Serial No. 308,714.

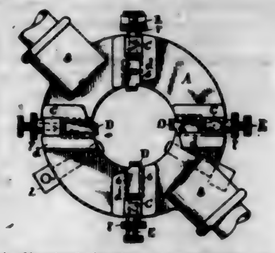

Claim.—A die-stock having a head with an externally-threaded hub and die-boxes open at both ends, a work-holder threaded on said hub and having an outwardly-projecting flange about its inner end and a beveled surface, and arms pivoted nearest one end on said head and having their short ends exposed at the rear of said die-boxes and their longer ends adapted to engage said flange and limit the movement of said head and work-holder and to traverse said beveled surface.

848,402. TYPE-WRITING MACHINE. ROBIE SEIDELINGER, Philadelphia, Pa., assignor to Union Typewriter Company, Jersey City, N. J., a Corporation of New Jersey. Filed Oct. 22, 1902. Serial No. 128,287.

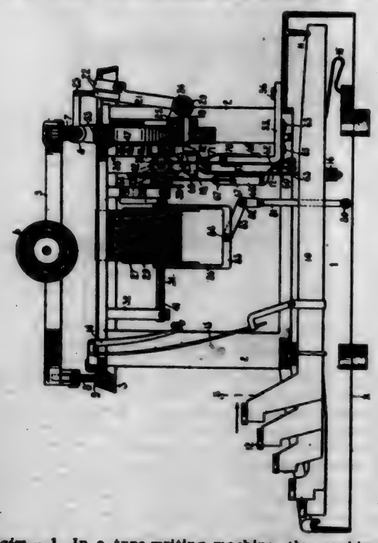

Claim.—1. In a type-writing machine, the combination with a platen and a series of types, of ribbon-spools, an ink-ribbon that passes from one spool to the other, means for intermittently rotating said ribbon-spools, a band operatively connected to move as the ribbon-spools are rotated, and means controlled by said band for automatically reversing the direction of the feed of the ribbon, said reversing mechanism being situated at one side of said series of types.

3. In a type-writing machine, the combination with a platen and a series of types, of ribbon-spools, an ink-ribbon that passes from one spool to the other, means for feeding said ribbon, a band that travels with and in the same direction as the ribbon, and means controlled by said band for automatically reversing the direction of longitudinal feed of the ribbon, said reversing mechanism being situated at one side of said series of types.

4. In a type-writing machine, the combination with a platen and a series of types, of spools for an ink-ribbon, pulleys operatively connected to rotate with said spools, a band connected to and extending from one of said pulleys to the other, and means controlled by said band for automatically changing the direction of rotation of said spools, said reversing mechanism being situated at one side of said series of types.

5. In a type-writing machine, the combination with a platen and a series of types, of spools for an ink-ribbon, gearing adapted to rotate said ribbon-spools, means for shifting said gearing to throw it into coöperative engagement with one ribbon-spool and out of coöperative engagement with the other of said ribbon-spools, and a band which travels when the ribbon is fed and which controls said shifting means to automatically reverse the direction of the feed of the ribbon, said reversing mechanism being situated at one side of said series of types.

6. In a type-writing machine, the combination with a platen, a series of types, an ink-ribbon, and feed mechanism therefor, of a reversing device, and a movable band which passes through said reversing device and is adapted to actuate it to automatically change the direction of the feed of the ribbon, said reversing mechanism being situated at one side of said series of types.

7. In a type-writing machine, the combination of a power-driven carriage, a platen mounted on said carriage, a series of type-bars, a ribbon interposed between said platen and said series of type-bars, feed mechanism therefor, a reversing device situated on one side of said series of type-bars, and a movable band which passes through said reversing device and is adapted to be moved by the power applied to the carriage to actuate the reversing device and thereby automatically change the direction of the feed of the ribbon.

8. In a type-writing machine, the combination of a power-driven carriage, a platen mounted on said carriage, a series of type-bars, a ribbon interposed between said platen and said series of type-bars, feed mechanism therefor, a reversing device situated on one side of said series of type-bars, a band which is moved by the carriage, and abutments on the band which coöperate with the reversing device to move it in either of two directions depending upon the direction in which the band is moving, to alternately and automatically shift the reversing device first in one direction and then in the opposite direction to effect a reversal in the direction of the feed of the ribbon.

9. In a type-writing machine, the combination with a platen and a series of types, of spools for an ink-ribbon, a shaft for each ribbon-spool and with which an associated ribbon-spool rotates, a pulley on each shaft, a band that extends from one of said pulleys to the other, gearing that is adapted to drive either of said shafts, and a reversing device that coöperates with said gearing and with said band to automatically shift the gearing to effect a reversal in the direction of the feed of the ribbon, said reversing device being situated at one side of said series of types.

10. In a type-writing machine, the combination with a platen and a series of types, of ribbon-spools, a shaft for each ribbon-spool and with which an associated ribbon-spool rotates, a gear on each spool-shaft, a rotatable and longitudinally-movable driving-shaft, gears thereon which are adapted to mesh with the gears on the spool-shafts, a pulley on each spool-shaft, a band that extends from one of said pulleys to the other, and a reversing device that coöperates with said driving-shaft and with said band to automatically shift the driving-shaft longitudinally to effect a reversal in the direction of the feed of the ribbon, said reversing device being situated at one side of said series of types.

11. In a type-writing machine, the combination of a carriage, a spring-drum therefor, a platen mounted on said carriage, a series of type-bars, a gear that is turned by said spring-drum, ribbon-spools, pulleys that rotate with said ribbon-spools, a band that extends from one pulley to the other, gearing that is actuated by the gear of the spring-drum, and a reversing device with which the band coöperates and which coöperates with the gearing to shift it and thereby automatically reverse the direction of the feed of the ribbon, said reversing device being situated at one side of said series of type-bars.

12. In a type-writing machine, the combination of a carriage, a spring-drum therefor, ribbon-spool shafts with which the ribbon-spools rotate, a gear on each of said shafts, a rotatable and longitudinally-movable driving-shaft having gears thereon that are adapted to mesh with the gears on the spool-shafts, pulleys that rotate with said ribbon-spool shafts, said pulleys being mounted on the same ends of said shafts as said gears, a band that extends from one pulley to the other, gearing interposed between the driving-shaft and the spring-drum, and a reversing device with which the band coöperates and which coöperates with the driving-shaft to shift it longitudinally, and thereby automatically reverse the direction of the feed of the ribbon.

13. In a type-writing machine, the combination of a carriage, a spring-drum for said carriage, a ratchet-wheel that is adapted to be turned in one direction by said drum, ribbon-spools, a ribbon that passes from one ribbon-spool to the other, means controlled by said ratchet-wheel for rotating either of said ribbon-spools, a reversing device, and a band that travels as the ribbon is fed from one spool to the other and which coöperates with the reversing device to automatically effect a reversal in the direction of the feed of the ribbon, said band and reversing device being situated at one side of said ribbon.

14. In a type-writing machine, the combination of ribbon-spools, a ribbon that passes from one spool to the other, ribbon-feed mechanism, a band that travels with the ribbon, and a reversing device that coöperates with said band and is actuated thereby, said reversing device comprising a pivoted lever which is moved on its pivot by said band, and a secondary lever controlled by the first-mentioned lever and coöperating with the ribbon-feed mechanism to effect a reversal in the direction of the feed of the ribbon.

15. In a type-writing machine, the combination of ribbon-spools, a ribbon that passes from one spool to the other, ribbon-feed mechanism, a band that travels with the ribbon, abutments on said band, and a reversing device that coöperates with said band and is actuated thereby, said reversing device comprising a lever pivoted to a fixed portion of the machine and which is moved on its pivot by said abutments, and a secondary lever pivoted to a fixed portion of the machine and controlled by the first-mentioned lever and coöperating with the ribbon-feed mechanism to effect an automatic reversal in the direction of the feed of the ribbon.

16. In a type-writing machine, the combination of ribbon-spools, a ribbon that passes back and forth from one spool to the other, ribbon-feed mechanism, a band that travels with the ribbon, a reversing device that coöperates with said band and is actuated thereby, said reversing device comprising a lever which is moved on its pivot by said band and a secondary lever controlled by the first-mentioned lever and coöperating with the ribbon-feed mechanism to effect a reversal in the direction of the feed of the ribbon, and spring-pressed means coöperating with said device and adapted to assist in completing the throw of the parts when they are shifted by the band and for maintaining them against accidental displacement in the shifted position.

17. In a type-writing machine, the combination of a power-driven carriage, ribbon-spools, a ribbon that passes from one spool to the other, ribbon-feed mechanism that is actuated by the power applied to move the carriage, a band that travels with the ribbon and is moved by the power applied to the carriage, abutments on said band, and a reversing device that coöperates with said band and is actuated thereby, said reversing device comprising a lever pivoted to a fixed portion of the machine and which is moved on its pivot by said abutments and a secondary lever pivoted to a fixed portion of the machine and controlled by the first-mentioned lever and coöperating with the ribbon feed mechanism to effect an automatic reversal in the direction of the feed of the ribbon.

18. In a type-writing machine, the combination of ribbon-spools, a ribbon that passes from one ribbon-spool to the other, ribbon-spool shafts with which said spools turn, pulleys fixed to said spool-shafts, a band connected to and extending from one pulley to the other, means for rotating said spool-shafts, and a reversing device coöperating with said band to afford a shifting of the rotating means and thus effect an automatic reversal in the direction of the feed of the ribbon, said reversing device comprising a frame that is moved by said band and a pivoted lever that is controlled by the movable frame and connected to the ribbon-spool-rotating means.

19. In a type-writing machine, the combination of a carriage, a spring-drum therefor, ribbon-spools, a ribbon that extends from one spool to the other, intermediate gear connections between said ribbon-spools and the spring-drum and which are effective to coöperate with either ribbon-spool, pulleys that are turned with the ribbon-spools, a band that extends from one pulley to the other, abutments on said band, a movable frame that is actuated by said abutments, and a lever that is moved by said frame and is effective to shift the gear connections so as to connect them with one spool and disconnect them from the other.

20. In a type-writing machine, the combination of a carriage, a spring-drum therefor, ribbon-spools, ribbon-spool shafts, a ribbon that extends from one spool to the other, intermediate gear connections between said ribbon-spools and the spring-drum and which are effective to coöperate with either ribbon-spool to intermittently rotate it during the travel of the carriage from right to left and to permit the spools to remain at rest during the travel of the carriage from left to right, pulleys that are fixed to the ribbon-spool shafts, a band that extends from one pulley to the other, abutments on said band, a movable frame that is actuated by said abutments, and a lever that is moved by said frame and is effective to shift the gear connections so as to connect them with one spool-shaft and disconnect them from the other spool-shaft.

21. In a type-writing machine, the combination with a platen and a series of types, of ribbon-spools, an ink-ribbon that extends from one spool to the other, a rotatable and longitudinally-movable shaft that transmits movement to said ribbon-spools, means for rotating said shaft, a traveling band that moves as the ribbon is fed from one spool to the other, and intermediate connections between said band and shaft to automatically effect a longitudinal movement of the latter, said band and intermediate connections being situated on the same side of said ribbon as said shaft.

22. In a type-writing machine, the combination with a platen and a series of types, of ribbon-spools, an ink-ribbon that extends from one spool to the other, a rotatable and longitudinally-movable shaft that transmits movement to either of said ribbon-spools depending on the longitudinal position of the shaft, means for rotating said shaft, a traveling band that moves as the ribbon is fed from one spool to the other and in the direction of the feed of the ribbon, and intermediate connections between said band and shaft to automatically effect a longitudinal movement of the latter, in order to automatically reverse the direction of the feed of the ribbon, said band and intermediate connections being situated on the same side of said ribbon as said shaft.

23. In a type-writing machine, the combination with a platen and a series of types of ribbon-spools, means for turning said ribbon-spools, an ink-ribbon that extends from one spool to the other, a band that travels as the ribbon

is being fed, abutments adjustably connected to said band, and means coöperating with said adjustable abutments to effect a reversal in the direction of the feed of the ribbon, said band and reversing means being situated at one side of the series of types.

24. In a type-writing machine, the combination of a carriage, a spring-drum therefor, a driving-gear that is adapted to be turned in but one direction by said drum, a rotatable and longitudinally-movable driving-shaft, intermediate gear connections between said driving gear and shaft, ribbon-spools, a ribbon that extends from one spool to the other, gear connections between said shaft and said ribbon-spools, pulleys that are connected to rotate with said ribbon-spools, a band that is connected to said pulleys, abutments on said band, a movable frame having apertures therein for the passage of said band and which is adapted to be automatically actuated by said abutments, and a lever controlled by said frame and connected to the said driving-shaft to effect a longitudinal movement thereof.

25. In a type-writing machine, the combination of a carriage, a spring-drum therefor, a ratchet-wheel, a pawl on the drum for turning the ratchet-wheel in one direction, a driving-gear that is connected to said ratchet-wheel, a rotatable and longitudinally-movable driving-shaft, intermediate gear connections between said driving gear and shaft, ribbon-spools, ribbon-spool shafts, a ribbon that extends from one spool to the other, gear connections between said driving-shaft and said ribbon-spool shafts, pulleys that are carried by and rotate with said ribbon-spool shafts, a band that is connected to said pulleys, abutments on said band, a movable frame having apertures therein for the passage of said band and which is adapted to be automatically actuated by said abutments, and a lever controlled by said frame and connected to the said driving-shaft to effect a longitudinal movement thereof.

26. In a type-writing machine, the combination of a carriage, a spring-drum therefor, a ratchet-wheel, a pawl on the drum for turning the ratchet-wheel in one direction, a driving-gear that is connected to said ratchet-wheel, a rotatable and longitudinally-movable driving-shaft, intermediate gear connections between said driving gear and shaft, ribbon-spools, ribbon-spool shafts, a ribbon that extends from one spool to the other, gear connections between said driving-shaft and said ribbon-spool shafts, pulleys that are carried by and rotate with said ribbon-spool shafts, a band that is connected to said pulley and travels in the same direction as the ribbon, abutments on said band, a pivoted frame having apertures therein for the passage of said band and which is adapted to be automatically turned on its pivot by said abutments, a lever pivoted to a fixed portion of the machine and controlled by said frame, the lever being connected to the said driving-shaft to effect a longitudinal movement thereof and thereby automatically effect a reversal in the direction of the feed of the ribbon.

27. In a type-writing machine, the combination with a platen and a series of types, of ribbon-spools, a ribbon that passes from one ribbon-spool to the other, a band which is operatively connected to said ribbon-spools, mechanism controlled by said band for automatically reversing the direction of the longitudinal feed of the ribbon, and means for automatically feeding the ribbon in a direction transverse to the length thereof, said band and reversing mechanism being situated at one side of said series of types.

28. In a type-writing machine, the combination with a platen and a series of types, of ribbon-spools, pulleys operatively connected to rotate with said spools, a band connected to and extending from one of said pulleys to the other, means controlled by said band for automatically changing the direction of rotation of said spools, and means for automatically feeding said ribbon in a direction transverse of its length, said band and reversing means being situated on one side of said series of types.

29. In a type-writing machine, the combination with a platen and a series of types, of ribbon-spools, gearing adapted to rotate said ribbon-spools, means for shifting said gearing to throw it into coöperative engagement with one ribbon-spool and out of coöperative engagement with the other of said ribbon-spools, a band which travels when the ribbon is fed and controls said shifting means to automatically reverse the direction of longitudinal feed of the ribbon, and means for automatically moving the ribbon widthwise first in one direction and then in the other, said band and shifting means being situated at one side of said series of types.

30. In a type-writing machine, the combination with a platen and a series of types, of ribbon-spools, a ribbon that extends from one spool to the other, a driving-shaft that is adapted to be connected to turn either spool, means controlled by said shaft for moving the ribbon widthwise, a band that moves as the ribbon-spools are turned, and means controlled by said band for connecting the driving-shaft with one ribbon-spool and disconnecting it from the other, said band and said connecting and disconnecting means being situated at one side of said series of types.

31. In a type-writing machine, the combination with a platen and a series of types, of ribbon-spools, shafts to which the ribbon-spools are fixed, a ribbon that extends from one spool to the other, a driving-shaft that is adapted to be geared to turn either spool-shaft, means controlled by said driving-shaft for moving the ribbon widthwise, a band, the movement of which is controlled by said ribbon-spool shafts, and means controlled by said band for connecting the driving-shaft with one ribbon-spool shaft and disconnecting it from the other, said band and said connecting and disconnecting means being situated at one side of said series of types.

32. In a type-writing machine, the combination of ribbon spools, a ribbon that passes from one spool to the other, means for rotating said ribbon-spools, a traveling band, means controlled by said band for reversing the longitudinal feed of the ribbon and means for moving said ribbon widthwise and which comprises a rock-shaft, means for rocking said rock-shaft, which rocking means are connected to the spool-rotating means, and connections between the rock-shaft and the ribbon-spools.

33. In a type-writing machine, the combination of ribbon-spools, a ribbon which passes from spool to spool, a longitudinally-movable rotatable driving-shaft for rotating either of said spools, the spool rotated depending on the longitudinal position of the driving-shaft, an eccentric on said driving-shaft, means controlled by said eccentric for moving said ribbon-spools back and forth on their axial centers, a traveling band, and means controlled by said band for automatically shifting said driving-shaft longitudinally to effect an automatic reversal in the direction of the longitudinal feed of the ribbon.

34. In a type-writing machine, the combination of a power-driven carriage, ribbon-spools, a ribbon which passes from spool to spool, a longitudinally-movable rotatable driving-shaft for rotating either of said spools through the power applied to drive the carriage, the spool rotated depending on the longitudinal position of the driving-shaft, an eccentric secured to said driving-shaft, means controlled by said eccentric for moving said ribbon-spools back and forth on their axial centers, a traveling band which is moved by the power applied to drive the carriage, and means controlled by said band for automatically shifting said driving-shaft longitudinally to effect an automatic reversal in the direction of the longitudinal feed of the ribbon.

35. In a type-writing machine, the combination of a power-driven carriage, ribbon-spools, a shaft for each ribbon-spool, a pulley on each spool-shaft, a ribbon which passes from spool to spool, a longitudinally-movable rotatable driving-shaft for rotating either of said spool-shafts through the power applied to drive the carriage, the spool-shaft rotated depending on the longitudinal position of the driving-shaft, an eccentric secured to said driving-shaft, a strap for said eccentric, a link connected to said strap, a rock-shaft connected to and rocked by said link, a yoke for each ribbon-spool, connections from said yokes to the rock-shaft, whereby said ribbon-spools may be moved back and forth on their shafts, a traveling band which is connected to said pulleys and is moved by the power applied to drive the carriage, and means controlled by said band for automatically shifting said driving-shaft longitudinally to effect an automatic reversal in the direction of the longitudinal feed of the ribbon.

36. In a type-writing machine, the combination of ribbon-spools, a ribbon that passes from one spool to the other, ribbon-feed mechanism, a band that travels with the ribbon, and a reversing device that coöperates with said band and is actuated thereby, said reversing device comprising a spring which is put under tension by said band and which coöperates with the ribbon-feed mechanism to effect a quick reversal of the direction of the feed of the ribbon.

37. In a type-writing machine, the combination of ribbon-spools, a ribbon that passes from one spool to the other, ribbon-feed mechanism, a band that travels with the ribbon, and a reversing device that coöperates with said band and is actuated thereby, said reversing device comprising a member which is actuated by said band and which has a lost-motion connection with said ribbon-feed mechanism, and a spring which is put under tension by said member during a portion of the motion thereof and which completes the motion of said member to effect a quick reversal of the direction of the feed of the ribbon.

38. In a type-writing machine, the combination with a platen, a series of types, two ribbon-spools, an ink-ribbon which passes from one spool to the other, a gear connected to each of said ribbon-spools, and pinions for engaging said gears, of automatic feed-reversing means comprising a member having lost-motion connection with said pinions, a spring that is put under tension by said member during a portion of the movement of the latter and that completes said movement, thus quickly effecting the reverse in the direction of the feed; and means for actuating said member.

848,403. DENTAL OBTUNDOR. PERRY R. SKINNER, Amsterdam, N. Y. Filed Aug. 11, 1906. Serial No. 330,121.

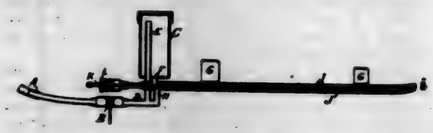

Claim.—1. A device for spraying a tooth with an anesthetic while the tooth is being operated upon by a drill in dentistry, consisting of a tube having a delivery-point at, or near the point of the drill and the other end having an opening provided with screw-threads; an inner tube contained within the first-mentioned tube having a delivery-point near the delivery-point of the first-named tube; a tank adapted to contain anesthetic mounted on said tube; and having an outlet in said inner tube; a pipe having two outlets, one extending into and near the top of said anesthetic-tank, and the other terminating in said outer tube adapted to admit compressed air into said tank and said tube; a long needle-like rod with a fine point on one end and screw-threads at the other adapted to pass through the inner tube, the screw-threads meshing with the screw-threads on the head of said outer tube, and the point adapted to fit the opening in said inner tube whereby the screwing of said rod in the screw-threads of said tube will open or close the outlet at the end of said inner tube, substantially as described, and for the purposes set forth.

2. A dental device for spraying a tooth with an anesthetic while being operated upon by a drill, consisting of two tubes, one contained within the other, having delivery-points near each other at one end and a common head with interior screw-threads at the other end, a tank mounted on said tubes adapted to contain liquid anesthetics, an outlet from said tank to said inner tube, a pipe having two outlets, one at or near the top of said tank, and the other within the outer tube, a needle-like rod with a fine point at one end adapted to fit into the opening of the delivery end of the inner tube and having screw-threads at the other end to mesh with the screw-threads of said head whereby the opening at the end of said inner tube may be opened or closed by turning said rod in said screw-head, and two or more sleeves attached to said tubes, adapted to hold the handpiece of a dental drill, whereby the drill mounted in said sleeves may be operated by power and the point of the drill be located near the delivery ends of said tubes, substantially as described, and for the purpose set forth.

848,404. MIDDLINGS-PURIFIER. GEORGE T. SMITH, Minneapolis, Minn., assignor of three-fourths to Minneapolis Steel and Machinery Company, Minneapolis, Minn., a Corporation. Filed Nov. 20, 1904. Serial No. 234,700.

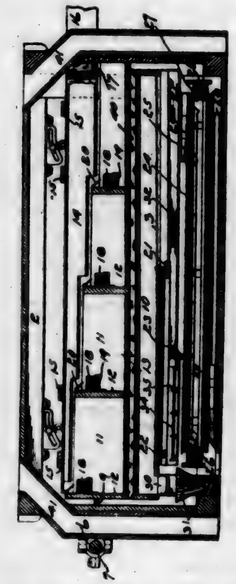

Claim.—1. In a machine of the class described, the combination with a suitable casing, of a reciprocating sieve arranged in said casing, a series of partitions above said sieve, and a longitudinally-reciprocating air-trunk having openings arranged above said partitions, said air-trunk being reciprocable in the direction of travel of material over the sieve from the head to the tail end thereof, substantially as described.

2. In a machine of the class described, the combination with a suitable casing, of a reciprocating sieve arranged in said casing, a series of partitions above said sieve, a horizontal longitudinally-reciprocating air-trunk having openings arranged above said partitions, said air-trunk being reciprocable in the direction of travel of material over the sieve from the head to the tail end thereof, substantially as described.

3. In a machine of the class described, the combination with a suitable casing, of a reciprocating sieve arranged in said casing, a series of partitions above said sieve forming a series of compartments, and a longitudinally-reciprocating air-trunk arranged above said partitions, said air-trunk decreasing in size from the head toward the tail end of the sieve and having openings arranged adjacent to said partitions, substantially as described.

4. In a machine of the class described, the combination with a suitable casing, of a reciprocating sieve arranged in said casing, a series of partitions above said sieve forming a series of compartments, and a reciprocating air-trunk arranged above said partitions, said air-trunk having openings adjacent to said partitions, and said openings facing in the direction of the length of the air-trunk, substantially as described.

5. In a machine of the class described, the combination with a suitable casing, of a reciprocating sieve arranged in said casing, a series of partitions of varying heights above said sieve forming a series of compartments of different dimensions, and a reciprocating air-trunk arranged above said partitions and having openings communicating with said compartments, substantially as described.

6. In a machine of the class described, the combination with a suitable casing, of a reciprocating sieve arranged in said casing, a series of partitions of varying heights above said sieve forming a series of compartments of different dimensions, and a reciprocating air-trunk above said partitions and having openings communicating with said compartments, said air-trunk being of varying dimensions, with its progressively-smaller dimensions above the progressively-larger compartments formed by the partitions, substantially as described.

7. In a machine of the class described, the combination with a suitable casing, of a reciprocating sieve arranged in said casing, a series of partitions above said sieve, a longitudinally-reciprocating air-trunk having openings arranged above said partitions, said air-trunk being reciprocable in the direction of travel of material over the sieve from the head to the tail end thereof, and open troughs supported upon said partitions below the openings in the air-trunk, substantially as described.

8. In a machine of the class described, the combination with a suitable casing, of a reciprocating sieve arranged in said casing, a series of partitions above said sieve, a longitudinally-reciprocating air-trunk having openings above said partitions, said air-trunk being reciprocable in the direction of travel of material over the sieve from the head to the tail end thereof, and valves arranged upon said partitions below said openings, substantially as described.

9. In a machine of the class described, the combination with a suitable casing, of a reciprocating sieve arranged in said casing, a series of partitions above said sieve, a longitudinally-reciprocating air-trunk having openings above said partitions, said air-trunk being reciprocable in the direction of travel of material over the sieve from the head to the tail end thereof, open troughs supported upon said partitions below said openings, and valves arranged upon said partitions between said troughs and said openings.

10. In a machine of the class described, the combination with a suitable casing, of a reciprocating sieve arranged in said casing, an endless carrier below said sieve, inclined plates below a portion of said sieve, and the oppositely-inclined cut-off plates below the remaining portion of said sieve, substantially as described.

11. In a machine of the class described, the combination with the brackets 4 supported upon swinging hangers 5, of the sieve and the horizontal air-trunk both supported upon said brackets, one on the upper portion and the other on the lower portion of the brackets, said air-trunk having openings above said sieve, a stationary air-trunk and a flexible connection between said horizontal air-trunk and said stationary air-trunk for the purpose set forth.

12. In a machine of the class described, the combination, with a suitable casing, of a reciprocating sieve arranged in said casing, an endless carrier arranged below said casing, a reciprocating brush arranged below and in engagement with said sieve and means carried by said carrier for moving said brush, substantially as described.

13. In a machine of the class described, the combination, with a suitable casing, of a reciprocating sieve arranged in said casing, a reciprocating air-trunk arranged above said sieve reciprocable in the direction of travel of material over the sieve from the head to the tail end thereof, and having a series of openings, a stationary air-trunk and a flexible connection between said air-trunks, substantially as described.

14. In a machine of the class described, the combination, with a suitable casing, of a reciprocating sieve arranged in said casing, a series of vertical partitions arranged above said sieve, a reciprocating air-trunk having openings arranged above said partitions, a stationary air-trunk, and a flexible connection between said reciprocating air-trunk and said stationary air-trunk, substantially as described.

848,405. CURRENT-CONTROLLING APPARATUS. AUGUST SUNDH, Yonkers, N. Y., assignor to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed June 12, 1905. Serial No. 264,772.

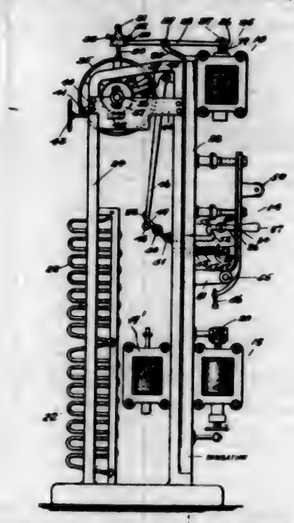

Claim.—1. The combination in an elevator of a motor-controlling board with switching apparatus mounted thereon, a rotary floor-controller operatively connected to said switching apparatus, and single means for supporting the aforesaid parts.

2. In elevator apparatus, the combination of a controller-board, with switching apparatus mounted thereon, a floor-controller operatively connected to said switching apparatus, and framework for supporting all of the aforesaid parts in adjacent relation.

3. In elevator systems, the combination of a controller-board with electromagnetic switches mounted thereon, a floor-controller mounted back of the said board, and a single frame for supporting the aforesaid parts.

4. In an elevator, the combination with a main-line switch, of floor-controlling apparatus and means coacting with said floor-controller for positively throwing said switch upon the elevator-car running beyond a predetermined limit of travel.

5. The combination in an elevator with an electric switch, of means for holding said switch in closed position, a floor-controller, a cam movable with a part of said floor-controller, and means coacting with said cam for releasing said holding means to open said switch.

6. The combination in an elevator with an electric switch, of means for holding said switch in closed position, a floor-controller, a rotary cam carried by a part of said floor-controller, and means coacting with said cam for releasing said holding means to open said switch.

7. The combination in an elevator with an electric switch, of means for retaining said switch in closed position, floor-controller, a cam moving with a part of said floor-controller, means coacting with said cam for releasing said retaining means, and means for throwing said switch to open position.

8. The combination in an elevator with a switch, of a latch for holding said switch in closed position, a floor-controller, a rotary cam carried by a part of said floor-controller, and means coacting with said cam for releasing said latch to open said switch.

9. The combination in an elevator with an electric switch, of means for holding said switch in closed position, a floor-controller, a rotary cam carried by a part of said floor-controller, a cam-lever coöperating with said rotary cam, and means connected with said cam-lever for releasing said holding means.

10. The combination with an electric switch, of means for holding said switch in closed position, a pivoted lever having a cam-face, means connected to said lever for releasing said holding means, and a cam acting on said cam-face to actuate said lever.

11. The combination in an elevator with an electric switch, of means for retaining said switch in closed position, a floor-controller, actuating means for releasing said retaining means, and a plurality of rotatably-mounted cams for operating said actuating means and movable with a part of said floor-controller.

12. The combination in an elevator with an electric switch, of automatic means for holding said switch in closed position, a floor-controller, a cam carried by a rotating part of said floor-controller, and means coacting with said cam for releasing said holding means.

13. The combination with an electric switch, of means for holding said switch in closed position, a lever pivoted at its upper end, a projection on the lower end of said lever, and a cam for actuating said lever and projection to effect a release of said holding means.

14. The combination with an electric switch, of automatic means for holding said switch in closed position, a pivoted lever, a cam at the end thereof, means coöperating with said automatic holding means for releasing the same, and an additional cam for actuating said lever.

15. The combination with an electric switch, of means for locking the same in closed position, a pivoted lever, and means connected to said lever and coacting with said locking means for unlocking the same, means for limiting the movement of said lever in both directions, and means for actuating said lever.

16. The combination with an electric switch, of locking means therefor, a lever connected thereto, a pivoted lever, a cam at the lower end of said pivoted lever and coacting with said first-named lever, means on the first-named lever for limiting the outward movement of said pivoted lever, and means for actuating said last-named lever.

17. The combination with an electric switch, of automatic locking means for holding said switch in closed position, a lever connected thereto, an additional lever pivoted at its upper end, a cam at the lower end of said additional lever and arranged to actuate said first-named lever to effect the unlocking of said holding means, and a cam rotatably mounted adjacent the upper end of said additional lever for actuating the latter.

18. The combination in an elevator with an electric switch, of manual means for closing said switch, means for holding said switch in closed position, means coacting with said holding means for releasing the same, means for throwing said switch to open position upon release of the holding means, a floor-controller, and a cam coacting with said floor-controller for actuating said releasing means.

19. The combination with a floor-controller of an elevator system, of electromagnetic switches coöperating therewith, a supplemental switch, means for holding said last-named switch in closed position, and means actuated by said floor-controller for releasing said holding means.

20. The combination with an electromagnetic relay comprising a rotatable contact-carrier, an electric switch, means for holding said switch in closed position, relaying mechanism, an actuating device, and means for rotating said contact-carrier and actuating device to cause the latter to actuate said relaying mechanism to effect the opening of said switch at a predetermined time.

21. The combination with a floor-controller of an electric elevator system, said controller comprising electromagnetic relays and a rotatable drum, of a cam connected to rotate with said drum, an electric switch, means for holding said switch in closed position, and means coacting with said cam for releasing said holding means.

22. The combination with a floor-controller of an elevator system comprising a rotatable part, of cam-arms rigidly connected to move with said rotatable part, a main-line switch, means for holding said switch in closed position, and means coacting with said cam-arms for releasing said holding means to throw the main-line switch upon the rotatable part exceeding the predetermined limits of its normal rotation.

23. The combination with reversing-switches of a motor-controlling system, of means for preventing the closing of both of said switches at the same time, and automatic means for positively actuating the closed switch to open the same.

24. The combination with reversing-switches of a motor-controlling system, of electromagnetic means for holding said switches in closed position, mechanical means for preventing the closing of both of said switches at the same time, and means for positively actuating one of said switches when closed to open the same.

25. The combination with the reversing-switches of an electric elevator system, electromagnetic means for closing said switches, a floor-controller, and means coacting with said floor-controller for positively actuating said switches to open the same.

26. The combination with reversing-switches of an electric elevator system, of electromagnets for holding said switches in closed position, a floor-controller, and means coacting with said floor-controller for positively opening the closed reversing-switch upon the movement of said controller to a predetermined limit.

27. The combination with reversing-switches of an electric elevator system, of a floor-controller rotatably mounted, electromagnets for closing and holding closed said switches, and means coacting with said floor-controller for positively actuating said reversing-switches to move the same to open position at or near the limits of rotation of said controller.

28. The combination with reversing-switches, of electromagnets for operating same, means for preventing the closing of more than one switch at a time, a rotatable floor-controller, cams rigidly connected to said floor-controller to move therewith, and connections between said cams and reversing-switches and arranged to be actuated by said cams to positively open said switches at or near the limits of travel of said controller and cams.

29. The combination with reversing-switches of an electric elevator system, of electromagnets for operating said switches, means for throwing said switches to open position upon deënergization of said magnets, means preventing the closing of more than one switch at a time, a floor-controller rotatably mounted, cams secured thereto to move therewith, and means actuated by said cams for opening a closed switch upon the approach of one of said cams to a predetermined limit corresponding to a predetermined limit of travel of the elevator-car.

30. The combination with reversing-switches of motor-controlling apparatus, of electromagnets for operating said switches, plungers pivoted to the movable part of said switches, a pivoted lever having its ends adjacent the ends of said plungers to prevent the closing of more than one switch at a time, additional levers each having its lower end adjacent one end of said first-named lever, a floor-controller, and means connected to said floor-controller for actuating said additional levers to effect the opening of said reversing-switches.

31. The combination with reversing-switches of motor-controlling apparatus, of electromagnets for operating said switches, plungers pivoted to the lower portions of the movable parts of said switches, a lever horizontally pivoted and having its ends adjacent the ends of said plungers, pivoted suspended levers having their lower ends adjacent the ends of said horizontal lever, and a rotatable cam actuating said suspended levers to open said switches when said cam arrives at a predetermined point in its travel.

848,406. TOOTHPICK-MACHINE. WILLIS W. TAINTER and GEORGE P. STANLEY, Dixfield, Me. Filed Nov. 6, 1905. Serial No. 285,953.

Claim.—1. A toothpick-finishing machine comprising a fixed abrading member and rotating abrading members having different circumferential speeds and coöperating therewith.

2. In a toothpick-finishing machine, the combination with a fixed member provided with abrading surfaces, one for each end of the toothpick, of rotating abrading members having different circumferential speeds and coöperating with the said fixed members.

3. In a machine for finishing toothpicks, the combina-

tion of abrading members rotating with different circumferential speeds and a fixed member provided with an abrading-surface overlapping the space between the said moving members.

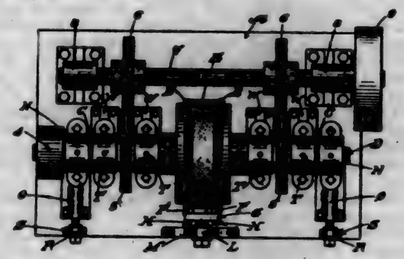

4. A toothpick-finishing machine comprising a fixed abrading member and rotating abrading members having different circumferential speeds and coöperating therewith, the contours of said abrading members forming a space between the same corresponding in shape to the shape of the toothpick.

5. In a toothpick-finishing machine, the combination of a shaft having an abrading-wheel thereon, a pair of sleeves about the said shaft on opposite sides of said abrading-wheel, abrading members upon the said sleeves and adjacent the said abrading-wheel, means for rotating said abrading-wheel and means for rotating said sleeve-supported abrading members independently of the said abrading-wheel, and a fixed abrading member coöperating with the before-mentioned abrading members.

6. In a toothpick-finishing machine, the combination of a shaft having an abrading-wheel thereon, a pair of sleeves about the said shaft having an interior diameter greater than the diameter of the shaft, abrading members upon the said sleeves and adjacent the said abrading-wheel, an abrading-shoe coöperating with the before-mentioned abrading members, means for actuating the moving abrading members, and means for adjusting the axes of the said sleeve and shaft relatively to each other.

7. In a toothpick-finishing machine, the combination of a shaft having an abrading-wheel thereon, a pair of sleeves about the said shaft having an interior diameter greater than the diameter of the shaft, abrading members upon the said sleeves and adjacent the said abrading-wheel, an abrading-shoe coöperating with the before-mentioned abrading members, means for actuating the moving abrading members with different circumferential speeds, and means for adjusting the axes of the said sleeve and shaft relatively to each other.

8. In a toothpick-finishing machine, the combination of a shaft having an abrading-wheel thereon, a pair of sleeves about the said shaft on opposite sides of said abrading-wheel and having an interior diameter greater than the diameter of the shaft, abrading members upon the said sleeves and adjacent the said abrading-wheel, means for rotating said shaft-supported wheel, means for rotating said sleeve-supported abrading members independently of the shaft-supported abrading-wheel, an abrading-shoe coöperating with the before-mentioned abrading members, and means for independently adjusting said rotary abrading members relatively to each other and to the shoe.

9. In a toothpick-finishing machine, the combination of a shaft having an abrading-wheel thereon, a pair of sleeves about the said shaft on opposite sides of said abrading-wheel and having an interior diameter greater than the diameter of the shaft, abrading members upon the said sleeves and adjacent the said abrading-wheel, means for rotating said shaft-supported wheel and said sleeve-supported abrading members independently of each other, an abrading-shoe coöperating with the before-mentioned abrading members and means for adjusting the axes of said rotary abrading members relatively to each other.

10. In a toothpick-finishing machine, three rotating abrading members, the axial contours of which are in line with each other, comprising two end members and an intermediate member, the two end members rotating independently of the intermediate member, the said intermediate member operating to abrade the body portion of the toothpicks and the two end members operating to abrade the portions of the toothpicks at each end of the body portion and a fixed member coöperating with all of said rotating members.

11. In a toothpick-finishing machine, a rotary shaft having an abrading-wheel thereon, two sleeves surrounding said shaft, one on each side of said abrading-wheel, an abrading-wheel fixed to each of said sleeves, means for rotating said sleeves and abrading-wheels carried thereby independently of the abrading-wheel on the said shaft, and a fixed abrading member coöperating with all of said abrading-wheels.

12. In a toothpick-finishing machine, a series of three rotating abrading members, the two end members rotating independently of the intermediate member, the axial contour of the combined rotating members forming a concave, the intermediate member of which engages to abrade the body portion of the toothpicks and the two end members of which are adapted to abrade the portions of the toothpicks on each side of the body portion and a fixed abrading member coöperating with all of said rotating members.

13. In a toothpick-finishing machine, a series of three rotary abrading members, one on each side of an intermediate member and adjacent thereto, means for rotating the two end members independently of the intermediate member, an opposing fixed abrading member having two abrading-surfaces with a clear space between them, one of the abrading-surfaces on the fixed member coöperating with the rotary abrading member at one end of the series and with a portion of the abrading-surface of the intermediate rotary abrading member and the other abrading-surface on the fixed member coöperating with the rotary abrading member at the other end of the series and with a portion of the abrading-surface of the intermediate rotary abrading member.

14. In a toothpick-finishing machine, a series of rotating abrading members whose peripheries are transversely in line with and adjacent to each other, and an opposing abrading member having thereon two abrading-surfaces with a clear space between them.

848,407. OVERHEAD TRAVELING CRANE. CLARENCE L. TAYLOR, Alliance, Ohio, assignor to The Morgan Engineering Company, Alliance, Ohio. Filed June 8, 1906. Serial No. 320,771.

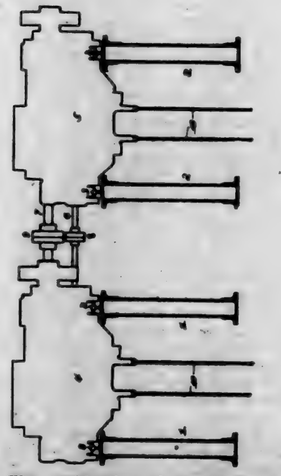

Claim.—1. The combination of two trolleys, parallel tracks in which the trolleys travel, and means for coupling up the hoist mechanism of both trolleys.

2. The combination of two trolleys, parallel tracks on which the trolleys travel and means for coupling up the hoist and travel mechanisms of the two trolleys.

3. The combination with a bridge having four girders and rail on each girder, of two trolleys mounted on said rails, each adapted to travel throughout the length of the bridge, and means for coupling up the hoist mechanisms of both trolleys.

4. The combination with a bridge having four girders forming two trackways, of a trolley on each trackway and means for coupling up the hoist and travel mechanisms of the two trolleys.

848,408. ROUNDABOUT OR CAROUSEL. JAMES M. TAYLOR, Omaha, Nebr., assignor of one-seventh to William J. Schafer, one-seventh to Afton G. Reynolds, one-seventh to John E. Stockham, one-seventh to Jacob L. Kaley, one-seventh to Clair E. Goddard, Omaha, Nebr., and one-seventh to Edwin T. Reid, South Omaha, Nebr. Filed Sept. 26, 1906. Serial No. 336,272.

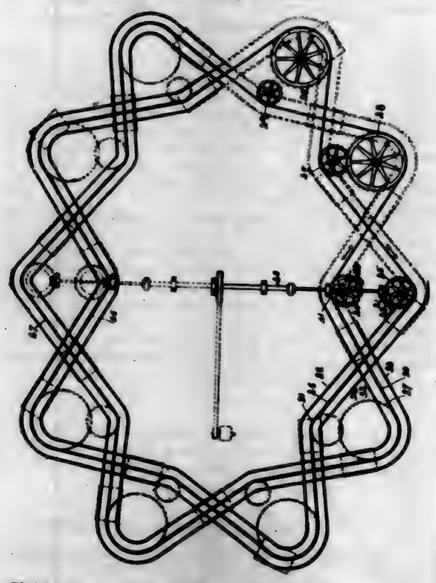

Claim.—1. In a device of the character described, two continuous and oppositely-driven chains maintained one above the other and crossing at intervals, a platform having therethrough slots which are located above the chains, passenger-carriers for each drive-chain, means for positively connecting the upper one of the carriers to one of the drive-chains and means for connecting the other passenger-carrier to the other drive-chain at two separate and distinct points so that the carriers will both be in constant engagement with their drive-chains.

2. In a device of the character described, two sinuously-supported endless chains maintained on different planes and guided to cross at intervals, means for driving the chains at the same speed, a platform above the chains, slots through the platform, passenger-carrying trucks that travel on the platform above the slots, chain-engaging means attached to the trucks and means attached to the under side of the platform with which the chain-engaging means for the lower chain contacts to successively release the same adjacent to the crossings.

3. In a device of the character described, a platform having two sinuous intersecting tracks or ways thereon, slots through the platform between the tracks or ways, a pair of drive-chains below the slots, means for driving the chains in opposite directions at the same rate of speed, passenger-carriers mounted on the tracks or ways and provided with chain-engaging devices and means adjacent to each crossing for successively disconnecting the chain-engaging devices of one of the passenger-carriers from its drive-chain.

4. In a device of the character described, a platform having thereon two sinuous sets of tracks or ways, two sinuous slots through the platform between the tracks or ways, two continuous chains that are driven in opposite directions and are maintained on different planes below the slots, passenger-carriers that travel on the tracks or ways and means for maintaining each of the passenger-carriers in engagement with the continuous chains.

5. In a device of the character described, a platform having thereon a plurality of sinuous and intersecting ways, slots between the ways, continuous chains maintained one above the other and beneath their respective slots, means for driving the chains in opposite directions and at the same speed, passenger-carriers that travel on the ways and means attached to the passenger-carriers for engagement with the continuous chains.

6. In a device of the character described, a platform having therethrough sinuous and intersecting slots, continuous chains below the slots, passenger-carrying trucks that travel on the platform and are provided with chain-engaging means that extend through the slots, and means for disconnecting and holding raised the chain-engaging means of one of the trucks before the same reaches a crossing.

7. In a device of the character described, two continuous drive-chains mounted to travel in opposite directions and to cross on different planes, two trains of passenger-carrying trucks; means for positively coupling the trucks of one of the trains to the upper chain, two coupling devices on each of the trucks of the other train for detachable engagement with the lower chain, and means adjacent to where the chains cross for successively disconnecting the couplings from the lower chain.

8. In a device of the character described, two continuous chains, driving and guiding mechanism for said chains, the driving and guiding mechanism for one of the chains being on a different plane from the driving and guiding for the other chain; the guide mechanism being arranged to carry the chains in sinuous and crossed routes, a platform having slots therethrough in line with the chains, and two series of trucks that travel in trains upon the platform the trucks of one train having means for connecting the same to one of the chains and the trucks of the other train having duplicated coupling means for engagement with the lower chain, and means for automatically and successively disconnecting the couplings that engage the lower chain therefrom and holding such couplings above the plane of the upper chain.

9. In a device of the character described, a drive-shaft, sprocket-wheels maintained on different horizontal planes and in gear with the drive-shaft, two continuous chains that engage and are driven in opposite directions by the sprocket-wheels, a plurality of guide-sprockets for each of the chains, a platform having therethrough slots which are in line with the chains, two trains of passenger-carriers that are adapted to travel upon the platform; one train over each slot, chain-engaging means which depend from the trucks of one of the trains for engagement with the upper driven chain, and two chain-engaging devices having movable lower sections attached to the trucks of the other passenger-carriers for engagement with the lower chain, and fixed means for elevating the movable sections of such chain-engaging devices.

10. In a device of the character set forth, a platform or floor having ways or tracks for two trains of passenger-trucks, sinuous slots between the ways, a plurality of sprocket-wheels arranged on different horisontal planes beneath the platform and between the points of intersection of the slots, two continuous chains that engage the sprocket-wheels and cross each other at points corresponding with the points of intersection of the slots and means

for connecting the passenger-carrying trucks to the chains and maintaining them in fixed relation thereto.

11. In a device of the character set forth, two continuous chains, mechanism for supporting and driving the chains in sinuous and intersecting paths and in opposite directions at the same rate of speed; the chains being maintained on different horizontal planes, a platform with tracks or ways and slots above the chains, a train of passenger-carrying trucks each truck thereof having attached thereto a single chain-engaging device for connecting the same to the upper chain, a second train each of the trucks thereof having a pair of vertically-movable chain-engaging devices for connecting the trucks to the lower chain, and means below the platform for consecutively engaging and elevating above the plane of the upper chain the chain-engaging devices for the lower chain.

12. In a device of the character described, passenger-carrying trucks having front and rear bolsters to which are attached supporting-wheels, forwardly-extending portions attached to the bolsters and provided with depending members, and movable chain-engaging parts carried by and depending below such members.

13. In a device of the character described, passenger-carrying trucks having bolsters with depending portions, vertically-movable chain-engaging members attached to the depending portions of the bolsters, springs for depressing the chain-engaging members and rollers attached to the movable members above their lower ends, for the purpose set forth.

848,409. COMBINED PINCUSHION AND SPOOL-HOLDER. LUDVIG THOMPSON, Denver, Colo. Filed Jan. 24, 1906. Serial No. 297,665.

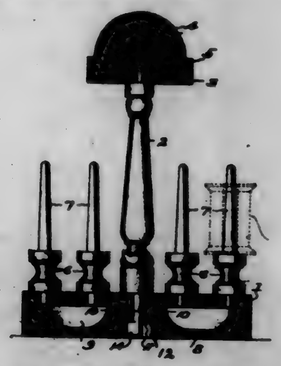

Claim.—1. In a device of the character described, a circular base, having a circular chamber surrounding a central hub; a revoluble disk forming a cover for said chamber and provided centrally with a depending pin having an elongated head which passes through a correspondingly-shaped hole in the hub, and is inclosed by a surrounding recess formed in the bottom of the base, a plurality of spool-spindles arranged around the disk adjacent to its periphery; a standard projecting centrally from said disk, having a circular plate upon its upper end, a pincushion secured upon said plate, and a ring surrounding said cushion and secured to said plate.

2. In a device of the character described, a circular base having a circular chamber surrounding a central hub, said hub being provided with an elongated hole which opens into a circular recess in the bottom of the base; a revoluble disk forming a cover for the chamber; a pivot-pin depending from said disk, having an elongated head which extends through and below the hole in said hub, and engages the lower end of the hub to prevent the accidental withdrawal of the pin; spool-holding spindles on said disk, and a central standard having a pincushion upon its upper end.

848,410. STORAGE-BIN. JESSE H. THOMANHAUSER, Minneapolis, Minn. Filed Oct. 15, 1904. Renewed Jan. 29, 1907. Serial No. 354,674.

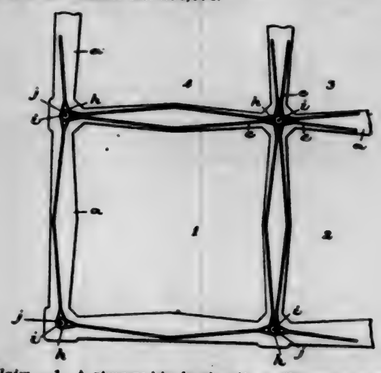

Claim.—1. A storage-bin having its walls constructed of concrete material, truss-rods embedded in the walls, anchor-loops at the ends of the truss-rods positioned at the corners of the walls to embrace a considerable quantity of concrete material, said anchor-loops being vertically alined and separated by intervening intervals, and concrete columns extending through the anchor-loops and uniting at the intervals between the latter with the concrete material forming the walls.

2. A storage-bin having its walls constructed of concrete material, truss-rods embedded in the walls, anchor-loops at the ends of the truss-rods positioned at the corners of the walls to embrace a considerable quantity of concrete material, said anchor-loops being vertically alined and separated by intervening intervals, concrete columns extending through the anchor-loops and uniting at the intervals between the latter with the concrete material forming the walls and comparatively diminutive centering-rods extending through the concrete columns.

848,411. BALING-PRESS. JOSIAH S. TUTTLE, Kansas City, Mo., assignor to The Ohio Cultivator Co., Bellevue, Ohio, a Corporation of Ohio. Filed Apr. 27, 1906. Serial No. 313,942.

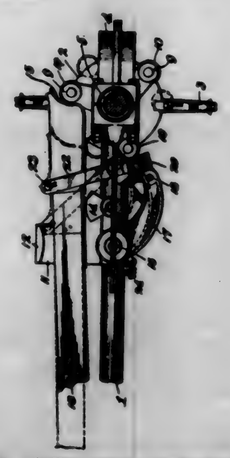

Claim.—1. In a baling-press, a trip-lever, a plunger-beam, a movable head having a tread-surface for the trip-lever, a link connecting said head pivotally to the plunger-beam, and movable means for guiding said head when moved by the trip-lever.

2. In a baling-press, a trip-lever, a plunger-beam, a movable head having a tread-surface for the trip-lever, a link connecting said head pivotally to the plunger-beam, and movable means pivotally carrying said head.

3. In a baling-press, a trip-lever, a plunger-beam, a movable head having a tread-surface for the trip-lever, a link rigidly secured at one end to said head and pivotally secured at the other to the plunger-beam, and means pivotally supporting said head and guiding it in the movement imparted to it by the trip-lever.

4. In a baling-press, a trip-lever, a plunger-beam, a movable head having a tread-surface for the trip-lever, a link rigidly secured at one end to said head and pivotally secured at the other to the plunger-beam, and movable means pivotally carrying said head.

5. In a baling-press the combination of a power-shaft having trip-arms, a plunger-beam, a swing-arm, and a link pivotally connecting said swing-arm with the plunger-beam and having a head in the plane of movement of and adapted to be engaged by one of said trip-arms to impart preliminary movement to the plunger-beam.

6. In a baling-press the combination of a power-shaft having trip-arms, a plunger-beam, a swing-arm, a link pivotally connecting said swing-arm with the plunger-beam and having a head in the plane of movement of and adapted to be engaged by one of said trip-arms to impart preliminary movement to the plunger-beam, and means to effect the recoil of the plunger-beam and restore the head to its initial position.

7. In a baling-press, the combination of a suitable frame, a vertical power-shaft journaled therein and provided with trip-arms, a plunger-beam, a swing-arm pivoted on said frame, a trip-off lug rigid with said frame, a shelf rigid with the frame and underlying the beam, a head pivoted to said swing-arm and provided with a tread-surface adapted to occupy the path of movement of the trip-arms, and links secured rigidly to said head and pivotally to said beam.

848,412. BALING-PRESS. JOSIAH S. TUTTLE, Kansas City, Mo., assignor to The Ohio Cultivator Co., Bellevue, Ohio, a Corporation of Ohio. Filed May 8, 1906. Serial No. 315,755.

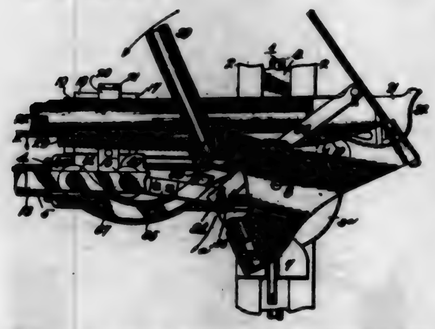

Claim.—1. A power mechanism for baling-presses, comprising a power-shaft having a plurality of trip-arms, a plunger-beam, a swing-frame pivoted to the framework of the press rearward of the power-shaft and extending toward the latter, a link connecting the swing-frame with the plunger-beam, and a curved swinging track-arm pivoted to the framework rearward of the swing-frame and extending through the latter and having a tread portion at its end for successive engagement by the trip-arms and adapted under the pressure of said trip-arms to swing away from the plunger-beam and impart like movement to the swing-frame.

2. In a baling-press, a suitable framework, a power-shaft journaled therein and provided with a sweep, a brace-bar secured to and extending rearwardly from the framework, a pair of vertical bolts mounted in the framework and said bar, a swing-frame pivoted for horizontal movement on the foremost bolt and projecting forwardly therefrom and provided with a roller, a curved swinging track-arm pivoted on the other of said bolts and having its convex edge engaging said roller and provided at its extreme end with a tread portion, a plunger-beam, links connecting the plunger-beam with the swing-frame, and a plurality of trip lever-arms movable with the power-shaft and adapted to successively engage the tread portion of and operate the swinging track-arm and cause the same to operate the swing-frame.

848,413. SELF-FEED MECHANISM FOR BALING-PRESSES. JOSIAH S. TUTTLE, Kansas City, Mo., assignor to The Ohio Cultivator Co., Bellevue, Ohio, a Corporation of Ohio. Filed May 8, 1906. Serial No. 315,756.

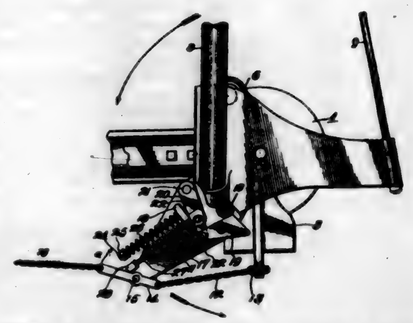

Claim.—1. A self-feed mechanism, comprising a swing-frame, a lever pivoted thereto, and a break-joint brace pivotally connecting said frame and lever.

2. A self-feed mechanism for baling-presses, comprising a swing-frame, a lever pivoted thereto, a break-joint brace pivotally connecting said frame and lever, and means for returning the break-joint brace to normal position after each breaking operation.

3. A self-feed mechanism, comprising a swing-frame, a lever pivoted thereto, a break-joint brace pivotally connecting said frame and lever, and a spring holding said break-joint brace in unbroken condition.

4. A self-feed mechanism for baling-presses, comprising a swing-frame, a lever pivoted thereto, a break-joint brace pivotally connecting said frame and lever, a rod suitably guided and pivoted to said break-joint brace, and a spring for exerting pressure on said rod to hold the break-joint brace unbroken.

5. A self-feed mechanism comprising a suitable framework, a swing-frame mounted thereon, a lever pivoted thereto, a break-joint brace pivotally connecting said frame and lever, an apertured lug on the spring-frame outward of said brace, a rod extending slidingly through said lug and pivoted at its inner end to said brace, a nut secured on the outer end of said rod, and a spiral spring encircling said rod and exerting pressure at its opposite ends against the outer side of said lug and the inner side of said nut.

6. A self-feed mechanism, comprising a suitable framework, a swing-frame mounted thereon, a lever pivoted to said frame, a break-joint brace pivotally connecting said frame with said lever and a flexible connection between the framework and said swing-frame to limit the forward movement of the latter.

7. A self-feed mechanism, comprising a suitable framework, a swing-frame mounted thereon, a lever pivoted thereto, a break-joint brace pivotally connecting said frame and lever, an apertured lug on the swing-frame outward of said brace, a rod extending slidingly through said lug and pivoted at its inner end to said brace, a nut secured

on the outer end of said rod, a spiral spring encircling said rod and exerting pressure at its opposite ends against the outer side of said lug and the inner side of said nut, and a flexible connection between the swing-frame and said framework.

8. A self-feed mechanism, comprising a suitable framework, a swing-frame mounted thereon, a lever pivoted on said frame, a break-joint brace pivotally connecting said frame and said lever, a clevis pivoted on the outer end of said frame, and a slide-rod suitably guided and adapted to be caused by said clevis to break said brace.

9. A self-feed mechanism, comprising a suitable framework, a swing-frame mounted thereon, a lever provided on said frame, a break-joint brace pivotally connecting the frame and lever, means for holding the break-joint brace yieldingly unbroken, and means as said frame swings forwardly, to break said break-joint brace inwardly.

10. A self-feed mechanism, comprising a suitable framework, a swing-frame mounted thereon, a lever pivoted on said frame, a break-joint brace pivotally connecting the frame and lever, means for holding the break-joint brace yieldingly unbroken, a clevis pivoted to the outer end of said frame, and a slide-rod adapted as the swing-frame swings forwardly, to be moved inward by said clevis and break said break-joint brace inwardly.

11. A self-feed mechanism, comprising a suitable framework, a swing-frame mounted thereon, a lever pivoted on said frame, a break-joint brace pivotally connecting the frame and lever, means for holding the break-joint brace yieldingly unbroken, a clevis pivoted to the outer end of said frame, a slide-rod adapted as the swing-frame swings forward, to be moved inward by said clevis and break said break-joint brace inwardly, and a flexible connection between said clevis and said framework.

12. A self-feed mechanism comprising a rotating power-shaft provided with a boss, a swing-frame mounted on the power-shaft, a lever pivoted on the swing-frame, a break-joint brace pivotally connecting said frame and said lever, and means holding said brace yieldingly unbroken with the inner end of said lever in the path of said boss.

13. A self-feed mechanism, comprising a suitable framework, a power-shaft journaled thereon and provided with a sweep-head having bosses, a swing-frame mounted on the shaft, a lever pivoted on the swing-frame, a break-joint brace pivotally connecting said frame and lever, means for holding the break-joint brace unbroken and the inner end of the lever in the path of said bosses, and a flexible connection between the outer end of the lever and said framework.

14. A self-feed mechanism, comprising a suitable framework, a power-shaft journaled therein and provided with a sweep-head having depending bosses, a swing-frame mounted on the power-shaft below the sweep-head and resting on said frame, a lever pivoted on the swing-frame, a break-joint brace pivotally connecting said lever with the frame, means holding the break-joint brace yieldingly unbroken, a clevis pivoted on the outer end of said frame, and a slide-rod carried and guided by the swing-frame and adapted to be caused by said clevis to break said break-joint brace inwardly.

848,414. CULTIVATOR. SIDNEY F. VANCE, Salmon, Tex., assignor of one-half to John M. Pelham, Salmon, Tex. Filed Apr. 19, 1906. Serial No. 312,667.

Claim.—1. In an agricultural implement of the character set forth, the combination with a beam having handles attached thereto, forward and rear tooth-carrying bars that are pivoted directly to the beam, toothed segments attached to the sides of the beam to overlie the rear tooth-carrying bars, and spring-actuated bolts attached to the rear tooth-carrying bars, substantially as shown.

2. In an agricultural implement of the character set forth, the combination with a beam and its handles, of toothed segments fixedly attached to the beam to extend laterally therefrom, forward and rear tooth-carrying bars which are movably attached at their inner ends to the beam, bolts carried by the rear tooth-carrying bars for engagement with the segments, and spring-teeth which are pivotally secured to the tooth-carrying bars, substantially as shown.

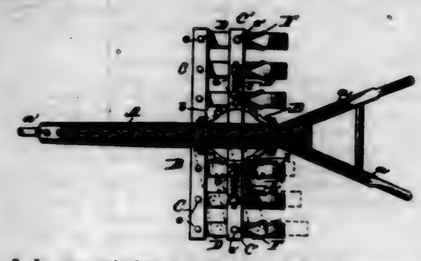

3. In an agricultural implement of the character set forth, comprising a beam and its handles, forward and rear tooth-carrying bars which extend beyond each side of the beam, toothed segments that overlie the rear tooth-carrying bars, bolts carried by the rear tooth-carrying bars for engagement with the segments, means for connecting the forward and rear bars to each other so that they will be maintained parallel, and pivoted loops attached to the rear bars to encircle the teeth, substantially as shown.

848,415. SMOKING-PIPE. ARTHUR VOGELSANG, Waterbury, Conn. Filed Oct. 26, 1906. Serial No. 340,667.

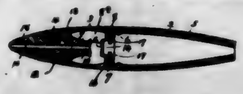

Claim.—1. In a cigar-like smoking-pipe, the combination with a container, of a sheet-metal lining therefor having both of its ends contracted for the retention of the tobacco, but its outer end being smaller than its inner end, and a chambered strainer applied to the inner end of the container and furnished with a mouthpiece.

2. In a cigar-like smoking-pipe, the combination with a container, of a lining therefor having both of its ends contracted, its inner end being larger than its outer end, of a strainer having a chamber closed at its inner end and open at its outer end and provided with a mouthpiece, and a removable stopper located in the open outer end of the said chamber and therefore adjacent to the contracted inner end of the said lining.

848,416. MACHINE FOR BIASING CLOTH. FRANCISQUE VOLAND and ALBERT MARCHAND, Lyon, France, assignors to G. R. De Montlord, New York, N. Y. Filed Oct. 26, 1905. Serial No. 284,504.

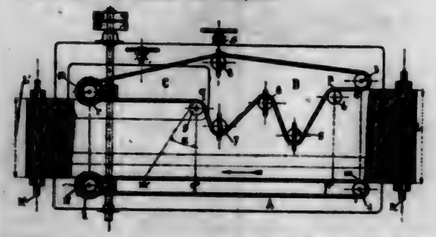

Claim.—1. In a machine for biasing cloth, coöperating gripper-chains the gripping portions of which are of different lengths but traverse the same distance in the direction of movement of the cloth.

2. In a machine for biasing cloth, coöperating endless gripper-chains the gripping-runs of which are of different lengths though traversing the same distance in a longitudinal direction.

3. In a machine for biasing cloth, coöperating gripper-chains the gripping-runs of which are of different lengths though traversing the same distance in longitudinal direction, one of said gripping-runs being partially sinuous.

4. In a machine for biasing cloth, a gripper-chain the gripping-run of which is disposed throughout its length in a right line, and a second gripper-chain, to coöperate with the first, having a sinuous gripping-run.

5. In a machine for biasing cloth, a gripper-chain having its gripping portion disposed throughout its length in a right line, and a second gripper-chain, to coöperate with the first, having a gripping portion which initially moves in a right line and then sinuously.

6. In a machine for biasing cloth, a gripper-chain the gripping-run of which lies in a right line throughout its length, and a coöperating gripper-chain having a gripping-run one end portion of which lies in a right line parallel to said first-named gripping-run, and which is sinuous intermediately of its length.

7. In a machine for biasing cloth, coöperating gripper-chains and means to drive said chains so that their gripping portions move at different speeds in the direction of movement of the cloth.

8. The combination, with coöperating gripper-chains the gripping portions of which are of different lengths but traverse the same distance in the direction of movement of the cloth, of means to drive said chains so that their gripping portions move in such direction at different speeds.

9. In a machine for biasing cloth, gripper-chains, and means to drive said chains so that their coöperating gripping portions, during a part only of their movement, move at different speeds in the direction in which the cloth is moved.

10. The combination of two coöperating gripper-chains, and means to drive said chain so that their gripping portions move at the same speed in the direction of movement of the cloth during the initial part of their movement and then move at different speeds in such direction.

11. The combination of two coöperating gripper-chains of which the gripping portion of one is partially parallel with that of the other and partially out of parallelism therewith, and means to drive said chains so that the gripping portions thereof when parallel move at the same speed in the direction of movement of the cloth, and move at different speeds in such direction when out of parallelism.

12. In a machine for biasing cloth, a gripper-chain having a straight gripping portion, a gripper-chain having a sinuous gripping portion to coöperate with said straight portion, and mechanism for driving said chains so that said sinuous gripping portion moves in the direction of movement of the cloth at a slower rate than said straight portion.

13. In a machine for biasing cloth, an endless gripper-chain having its gripping portion throughout movable in a straight line, and a second endless gripper-chain the gripping portion of which is movable partly in parallelism and partly out of parallelism with said first-named portion.

14. In a cloth-biasing machine, an endless gripper-chain the gripping-run of which lies in a straight line throughout the length of the same, and a second endless gripper-chain the gripping-run of which is partially sinuous or zigzag, said gripping-runs extending the same distance in the direction of movement of the cloth.

15. In a cloth-biasing machine, a gripper-chain having a straight gripping-run, and a second gripper-chain having a gripping-run of variable sinuosity.

16. In a machine for biasing cloth, a gripper-chain having a straight gripping-run, and a second gripper-chain movable over rollers which are so disposed as to impart a sinuous run to said last-named chain, said rollers being adjustable to vary the sinuosity of said run.

17. In a cloth-biasing machine, the combination of a frame, an endless gripper-chain arranged longitudinally of said frame at one side thereof and having a straight gripping-run, a second gripper-chain at the other side of the machine, and rollers over which the intermediate portion of the gripping-run of the last-named chain travels; said rollers imparting a zigzag movement to such run and being adjustable transversely of said frame.

18. In a machine for giving an oblique lie to the weft of a cloth web, the combination of two main frames adjustable toward and away from each other, an auxiliary frame adjustable in the same direction upon one of said frames, an endless gripper-chain mounted on one of said main frames and having a straight inner run, rollers mounted on said auxiliary frame, rollers mounted on the other main frame, and a gripper-chain guided by all of said rollers, those on said auxiliary frame guiding said last-named gripper-chain so that a portion of its inner run is parallel to the inner run of said first-named chain, and the rollers on the other main frame being so disposed as to impart a zigzag movement to another portion of the inner run of said last-named chain.

848,417. TURBINE-MOTOR. WILLIAM A. WARMAN, New York, N. Y., assignor to Keller Mechanical Engraving Company, New York, N. Y., a Corporation of New York. Filed Dec. 2, 1905. Serial No. 289,942.

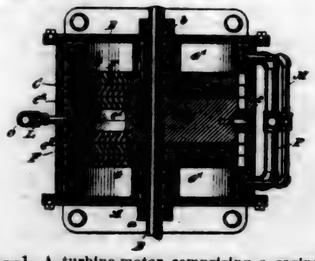

Claim.—1. A turbine-motor comprising a casing, a pair of parallel, spaced, stationary disks therein, and provided with vanes, the outermost of said disks being spaced from the ends of the casing to form chambers, a rotatable disk between the pairs of stationary disks and provided with vanes, and means for supplying an elastic fluid to said vanes from either side of the stationary disks whereby the direction of travel of the rotatable disk may be changed.

2. A turbine-motor comprising a suitable casing, a rotating disk located therein and having curved vanes on its periphery and means, including stationary vanes, located on either side of said rotating disk for the admission of an elastic fluid to the latter, and whereby the direction of travel of said rotating disk may be governed, said stationary disks having curved vanes on their peripheries communicating with the vanes of the rotatable disk, substantially as described.

3. A turbine-motor comprising a suitable casing, a stationary disk therein, said disk having a circumferential groove or channel with peripheral vanes at the sides thereof, a stationary disk between each side of the first-named disk and the corresponding end of the casing, and spaced from said first-named disk, rotatable disks in the interspaces between the stationary disks, each of said disks provided with vanes, and means for directing an elastic fluid in either direction through said vanes, whereby the direction of travel of the rotatable disk may be governed, substantially as described.

4. A turbine-motor comprising a suitable casing, a shaft journaled therein, a rotating disk secured to said shaft and having curved vanes around its peripheries, a stationary disk located on each side of said rotating disk and having curved vanes around its periphery, and means provided for the admission and exhaust of an elastic fluid on either side of said rotating disk, whereby the direction of travel of the latter may be changed, substantially as described.

5. A turbine-motor comprising a suitable casing, a rotating shaft journaled therein, a stationary wheel provided with a chamber and having vanes on each side of the latter, a rotating disk provided with vanes secured on each side of said stationary wheel and fastened to said shaft, and stationary disks provided with vanes located on the outside of said rotating disks, an inlet and outlet pipes for admitting and exhausting an elastic fluid on either side of said rotating disks, whereby the direction of travel of the latter may be changed, substantially as described.

848,418. CHECKREIN-HOLDER. FREDERICK S. WEATHERHEAD and GEORGE O. ABBOTT, Springfield, Vt. Filed Mar. 30, 1905. Serial No. 252,863.

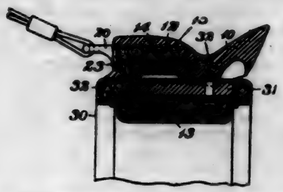

Claim.—1. A checkrein-holder comprising two telescoping members adapted to be rotated one with relation to the other, one of said members being adapted to be attached to a suitable part of the harness and the other to be attached to the checkrein and to enter into the first-mentioned member in a rearward direction; a movable latch on one of said members adapted to engage the other member to lock them together; and a projection on said other member to engage said latch and unlock it when said members are rotated one with relation to the other.

2. A checkrein-holder comprising two telescoping members of which one is adapted to be attached to a suitable part of the harness and is provided with a chamber extending from the front toward the rear thereof, a cam-groove in said chamber, and a latch on the other member adapted to automatically project into said groove to lock said members together and to be moved to inactive position by the wall of said groove when said members are relatively rotated.

3. A checkrein-holder comprising a member adapted to be affixed to a suitable part of the harness, and having a chamber extending from the front toward the rear thereof, a member adapted to be attached to the checkrein and to enter said chamber, and to rotate in said chamber, and means adapted to automatically prevent the withdrawal of said checkrein member when said member is at any position between two predetermined points of rotation, and to release said checkrein member when said member is rotated beyond either of said predetermined points.

4. A checkrein-holder comprising a member adapted to be fixed to a suitable part of the harness, and having a chamber extending from the front of said member toward the rear thereof, a member of which one end is adapted to be attached to the checkrein and of which the other end is adapted to be inserted into said chamber when said checkrein member is at any position of rotation about an axis extending longitudinally thereof, and to rotate in said chamber, and means for automatically locking said checkrein member to said fixed member when said checkrein member is at any position of rotation between two predetermined points, and for releasing said checkrein member when the latter is rotated beyond either of said points.

5. A checkrein-holder comprising two separable members of which one is adapted to rotate in the other, means for affixing the outer member to a suitable part of the harness, so that the axis of rotation extends longitudinally thereof, means for locking said rotatable member against withdrawal from said outer member when said rotatable member is between two predetermined points of rotation, and for unlocking said rotatable member when said member is rotated beyond either of said points, and means on said rotatable member adapted to be attached to the checkrein and to normally hold said rotatable member in locked position by reason of the direction of tension of the checkrein.

6. A checkrein-holder comprising a member adapted to be affixed to a suitable part of the harness, and having a chamber open at one end, a spring-pressed follower adapted to normally fill the mouth of said chamber and to be forced inwardly against the spring-pressure, a complemental member adapted to be inserted into said chamber against said follower, said complemental member being also adapted to be connected to the checkrein, and means for locking and unlocking said complemental member in said chamber.

848,419. AUTOMATIC CLOSURE FOR CANS, BOTTLES, &c. DANIEL WEBSTER, Jr., Philadelphia, Pa. Filed Mar. 14, 1906. Serial No. 305,951.

Claim.—In a dispensing-receptacle, the combination of a neck portion, the upper end of which is closed, an annular outwardly-extending offset formed around the upper part of said neck, an aperture in said offset, a vertical groove also in said offset, a cap slidably fitting on said neck, a depression on the flange of the cap fitting in the groove of the offset, an inturned edge on the flange of the cap, a spring between the cap and the closed end of the neck so as to raise said cap and cause the inturned edge part to abut against the lower margin of the offset, and an aperture in the flange of the cap adapted to register with the aperture in the offset part when the cap is depressed.

848,420. BALING-PRESS. CHARLES E. WEHRENBERG, Mound City, Ill. Filed Oct. 24, 1906. Serial No. 340,312.

Claim.—1. The combination with a baling-press, said press having a baling-chamber, a plunger, and a plunger-rod, of a lever pivoted intermediate its ends, the said lever angled, the lower end of the lever being pivotally connected to the plunger-rod, a pitman pivotally connected to the upper end of the lever, a feeder-arm pivotally mounted upon said lever adjacent the central pivot-point of the lever, and a coil-spring connecting the said feeder-arm and the upper end of the lever.

2. In a baling-press, a baling-chamber, a plunger, a shaft, an angled lever mounted on the shaft, a pitman-rod pivotally connected to one end of the lever, a plunger-rod pivotally connected to the other end of the rod, a feeder-arm provided with a feeder-foot, said feeder-arm being pivotally connected to the lever adjacent the shaft, a bolt pivotally connected to an end portion of the lever adjacent the pitman, a plate adapted to engage the feeder-arm, the bolt working loosely through the plate, and a coil-spring connected at one end to the bolt and at the opposite end to the plate, as and for the purpose set forth.

848,421. RAILROAD SWITCH-STAND AND SWITCH-LOCK. JOHN R. WYATT, McGowan, Ky. Filed Dec. 8, 1906. Serial No. 346,888.

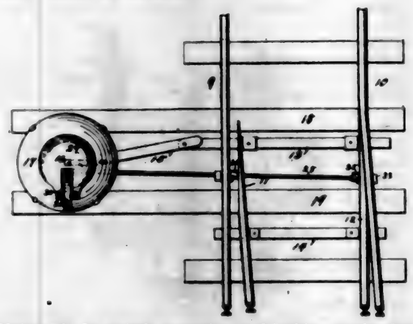

Claim.—1. In switch operating and locking mechanism, a switch-stand having a switch throw-shaft, a movable lever-carrying member fast upon the shaft, a bar that is spring-actuated in one direction and is adapted to be moved against the action of the spring by the lever, a rock-shaft that engages the vertically-movable bar, switch-point-engaging means attached to the rock-shaft, the parts being organized so that the spring-actuated bar when unrestrained will lock the lever-carrying member of the switch-stand and will move the switch-point-engaging means between a fixed rail and the switch-point.

2. In switch locking and operating mechanism, a switch-stand having a fixed base, a cap having a plurality of recesses and an open-ended slot, a lever pivoted between the walls of the slot, a switch-point throw-shaft attached to the cap, a rock-shaft having a switch-point lock, a spring-actuated bar that is connected to the rock-shaft, and pins attached to and movable with the bar to engage the cap to simultaneously lock the switch-point throw-shaft and the switch-point.

3. In a switch-stand, a base having journals for a switch-point throw-shaft, a bar carried by the base and maintained to one side of the switch throw-shaft, means for projecting the upper portion of the bar above the base, a rock-shaft operatively connected to the bar and provided with a lug or plate that is adapted to be positioned between the switch-point, a cap or top member for the switch-stand that is rigidly connected to the switch-point throw-shaft, a lever pivoted to the cap and positioned so that when the lever is raised it will engage the bar and depress its end below the upper end of the base the bar when depressed operating the rock-shaft to move the lug or plate attached thereto beneath the plane of the bottom of the switch-point.

4. In a switch-stand, a hollow base, a centrally-located and vertically-maintained switch-point throw-shaft carried by the base, a vertically-movable bar maintained to one side of the switch-point throw-shaft, a spring for moving the bar upward, a plate attached to the bar, pins carried by the plate, a cap mounted on the base, a plurality of recesses in the cap and a lever pivoted to the cap and adapted to engage the upper end of the spring-actuated bar or one of the pins carried thereby to depress the bar and pins below the cap and a rock-shaft having a lug or switch-point lock that is operatively connected to the vertically-movable bar.

5. In a switch-stand, a switch-point throw-shaft, a cap for the stand which is rigidly attached to the switch-point throw-shaft, a plurality of recesses in the cap, a lever pivoted to the cap, an upwardly-projected bar maintained by the base of the switch-stand which is adapted to move to engage and lock the cap, and pins carried by the bar to move therewith, for the purpose set forth.

6. In a switch-stand, a base, a cap mounted thereon, a lever-receiving slot in the cap, a plurality of recesses concentric with the center of the cap, a switch-point throw-shaft operatively connected to the switch-points, a lever pivoted to the cap, a plurality of apertures through the upper end of the base, a bar and a plurality of pins attached to the bar to be movable above the upper face of the base to enter the slot and the recesses, a rock-shaft and switch-point lock operatively connected to the bar, the parts being organized so that the bar and the pins may be depressed below the plane of the top of the base by the lever and will be moved to hold the cap against movement when the switch-points are thrown to the limit of their movement in either direction.

848,422. METHOD OF MAINTAINING OR INCREASING THE FLUIDITY OF MOLTEN OR SEMIMOLTEN MATERIALS BY MEANS OF ELECTRICITY. FRANK WYNNE, Westminster, London, England. Filed June 23, 1905. Serial No. 266,667.

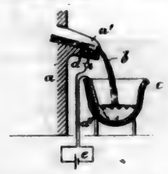

Claim.—1. A method of heating a stream of red-hot molten or semimolten material electrically while falling from one place to another through a gaseous medium, said method consisting in causing an electric current to flow continuously lengthwise through the portion of the falling stream that is surrounded by and in contact with the gaseous medium.

2. A method of maintaining or increasing the fluidity of a stream of red-hot molten or semimolten material while falling from one place to another through a gaseous medium, said method consisting in opposing the ohmic resistance of a length of the stream surrounded by and in contact with the gaseous medium to the passage of a continuous electric current applied to the different points in the length of the stream and of a strength to effect the required electrical heating thereof.

3. A method of maintaining the fluidity of a stream of red-hot molten or semimolten material, said method consisting in leading an electric current of the required strength into and from and so as to cause it to flow continuously in a lengthwise direction through a continuous portion of the stream that is falling from one place to another and is surrounded by and is in contact with a gaseous medium.

4. The hereinbefore-described method of increasing the fluidity of a stream of red-hot molten or semimolten material, said method consisting in causing an electric current of suitable strength to flow continuously in a lengthwise direction through a continuous length of the stream that is falling from one place to another through and is surrounded by and in contact with a gaseous medium.

5. The hereinbefore-described method of maintaining the fluidity of a stream of red-hot molten or semimolten material, said method consisting in causing a regulated continuous current of electricity to flow lengthwise through a portion of the stream that is falling from one place to another through and is closely surrounded by and in contact with a gaseous medium, and leading away the electrically-heated material as a continuous molten stream to the place where it is to be utilized.

6. The hereinbefore-described method of increasing the fluidity of a stream of red-hot molten or semimolten material, said method consisting in causing a regulated current of electricity to flow lengthwise through a portion of the stream that is falling from one place to another through and is surrounded by a gaseous atmosphere and conducting the electrically-heated and liquefied material as a continuous stream to a place where it is to be further dealt with while in a liquid state.

7. The hereinbefore-described method of maintaining or

increasing the fluidity of a stream of a molten or semimolten silicate, said method consisting in causing an electric current to flow lengthwise through a continuous portion of the stream that is falling from one place to another through and is surrounded by and is in contact with a gaseous atmosphere.

8. A method of heating a stream of red-hot molten or semimolten material electrically while falling from one place to another, said method consisting in causing an electric current to flow continuously lengthwise through the portion of the falling stream.

9. A method of heating a stream of red-hot molten or semimolten material electrically while flowing from one place to another, said method consisting in causing a continuous electric current to flow through the entire falling portion of the stream.

848,423. SURGICAL-TABLE TOP. MARSHAL I. YOUNG, Fort Dodge, Iowa. Filed Jan. 15, 1906. Serial No. 296,175.

Claim.—1. In a top for surgical tables, a frame forming the edges thereof, a metal sheet supported by and extending completely across said frame, said sheet having numerous and widely-distributed perforations, a second metal sheet supported by and extending completely across said frame below and spaced from said perforated sheet, said under sheet being somewhat concave in form to form a trough, and having an outlet-opening.

2. In a top for surgical and embalmers' tables, a thick frame forming the edges thereof and having a groove formed in its inner edge, a metal sheet supported by and extending completely across said frame, the edge of said sheet inserted into said groove in the frame and held therein by a calking-strip driven into and completely filling the remaining space of the groove, whereby a water-tight joint is formed between the sheet and frame.

3. In a top for surgical or embalming tables, a thick frame forming the edges thereof, and having a groove formed in its inner edge a distance from the top surface thereof, and having a rabbet formed at its lower inner corner, two metal sheets supported by and extending completely across said frame, one of said sheets being perforated and having its edges inserted and fastened into said groove, the other sheet having its edges inset and fastened in the rabbet, said latter sheet having a drain-opening.

848,424. SMOKING-PIPE. AMEEN G. ABISAID, Washington, D. C. Filed Dec. 15, 1906. Serial No. 348,037.

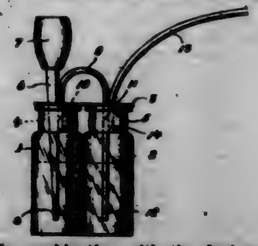

Claim.—The combination with the dual receptacle, of the bridge-plate having short tubes secured to the under side and near the ends of the bridge-plate; of the system of tubes comprising a pipe-bowl tube, a semicircular tube having long and short vertically-depending extensions of the same and curvilinear tubular mouthpiece, said long and short vertically-depending extensions of the semicircular tube and mouthpiece passed through the short tubes of the bridge-plate and within the receptacle substantially as described and for the purposes set forth.

848,425. CARBURETER FOR GASOLENE-ENGINES. LAURITZ ANDERSON, Quincy, Ill. Filed Aug. 13, 1906. Serial No. 330,426.

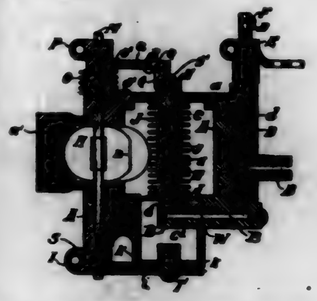

Claim.—1. In a carbureter, a casing provided with a chamber therein and with an air passage-way and provided with an air-inlet communicating with the chamber through such air passage-way, and provided with a gasolene-inlet the discharge end whereof communicates with the air passage-way, and a movable member to the air-inlet, and provided with a discharge-passage from the chamber, in combination with a movable valve coacting with a valve-seat to control the admission of gasolene to the gasolene-inlet, means to adjust the valve relative to its seat and means to move such adjusted valve from and back to its adjusted position, a valve coacting with a valve-seat to control the discharge end of the gasolene-inlet, means to limit the movement of the valve at the discharge end of the gasolene-inlet, a disk secured to the stem of such valve, such disk positioned in the air passage-way to substantially close the same when the valve is seated and to unseat such valve when moved by the flow of air through such air passage-way into the chamber, means to throttle the discharge passage-way from the chamber in the casing and means to vary the area of the air-inlet, and connections between the valve controlling the admission of gasolene to the gasolene-inlet, the means to limit the movement of the valve controlling the discharge of gasolene from the gasolene-inlet, the means to throttle the discharge passage-way and the movable member of the air-inlet so that movement of one thereof will produce corresponding movement of the remaining ones thereof; substantially as described.

2. In a carbureter, a casing provided with a chamber therein and with an air passage-way to the chamber and a discharge passage-way from such chamber, and provided with an air-inlet communicating with the air passage-way to the chamber, and provided with a gasolene-inlet the discharge end whereof communicates with the air passage-way to the chamber, and a movable member to the air-inlet, in combination with a movable valve coacting with a valve-seat to control the admission of gasolene to the gasolene-inlet, means to adjust the valve relative to its seat and means to move such adjusted valve from and back to its adjusted position, a valve coacting with a valve-seat to control the discharge end of the gasolene-inlet, adjustable means to limit the movement of the valve at the discharge end of the gasolene-inlet, a disk secured to the stem of such valve, such disk positioned in the air passage-way to the chamber to substantially close the same when the valve is seated and to unseat such valve when moved by the flow of air through such air passage-way into the chamber, means to throttle the discharge passage-way from the chamber in the casing and means to move the movable member of the air-inlet, and connection between the means to move the valve controlling the admission of gasolene to the gasolene-inlet from and back to its adjusted position, the means to limit the movement of the valve controlling the discharge of gasolene from the gasolene-inlet, the means to throttle the discharge passage-way and the movable member of the air-inlet so that movement of one thereof will produce corresponding movement of the remaining ones thereof; substantially as described.

3. In a carbureter, a casing provided with a chamber therein, and with an air passage-way to the chamber and a passage-way from the chamber, and provided with an air-inlet communicating with the chamber through such air passage-way, a movable member to the air-inlet and provided with a gasolene-inlet the discharge end whereof communicates with the air passage-way, in combination with a movable valve coacting with a valve-seat to control the admission of gasolene to the gasolene-inlet, means to adjust the valve relative to its seat and means to move such adjusted valve from and back to its adjusted position, a valve coacting with a valve-seat to control the discharge of gasolene from the discharge end of the gasolene-inlet, a disk secured to the stem of such valve, such disk positioned in the air passage-way to substantially close the same when the valve is seated and to unseat such valve when moved by the flow of air through such air passage-way into the chamber, means to restrict the air-discharge passage-way from the chamber and connections between the mechanism by means of which the valve which controls the admission of gasolene to the gasolene-inlet is moved from and back to its adjusted position, the valve restricting the air-discharge passage-way and the movable member of the air-inlet so that movement of one thereof will produce corresponding movement of the remainder thereof; substantially as described.

4. In a carbureter, a casing provided with a chamber therein and with an air passage-way to the chamber and a discharge passage-way from such chamber, and provided with an inlet communicating with the air passage-way to the chamber, and provided with a gasolene-inlet the discharge end whereof communicates with the air passage-way to the chamber, a movable member to the air-inlet, a movable valve coacting with a valve-seat to control the admission of gasolene to the gasolene-inlet, and means to adjust the valve relative to its seat and means to move such adjusted valve from and back to its adjusted position, in combination with a valve coacting with a valve-seat to control the discharge end of the gasolene-inlet, a movable rod, a lever on the rod, a table on the under side of the lever, such table in a plane at an angle to a plane at right angles to the axis of the rod, to limit the movement of the valve at the discharge end of the gasolene-inlet, a disk secured to the stem of such valve, such disk positioned in the air passage-way to the chamber to substantially close the same when the valve is seated and to unseat such valve when moved by the flow of air through such air passage-way into the chamber, a valve on the vertical rod to throttle the discharge passage-way from the chamber in the casing, a connection between the vertical rod and the movable member of the air-inlet, and a connection between the means to move the valve controlling the admission of gasolene to the gasolene-inlet from and back to its adjusted position and the movable rod so that movement of one thereof will produce corresponding movement to the remainder substantially as described.

848,426. BURNER-BLOCK AS APPLICABLE TO FURNACES. ISAAC H. BACON and NELS NELSON, Salem, N. J., assignors to Salem Glass Works, a Corporation of New Jersey. Filed Sept. 29, 1906. Serial No. 335,372.

Claim.—1. In a burner-block, the combination of a chamber open at its front, means for delivering fuel and air through the rear of said chamber toward the front thereof, an air-intake opening upward through the floor of the chamber, and a baffle-plate extending from the rear of the chamber beneath said delivery means downward and forward over said air-intake.

2. In a burner-block, the combination of a rectangular chamber open at its front end and provided with an aperture in its rear end and an air-intake through the rear of its floor, and otherwise imperforate, a fuel-duct exterior to the chamber terminating adjacent but not filling said aperture so as to deliver fuel and entrained air therethrough, and a baffle-plate extending from the rear of the chamber beneath said aperture downward and forward over said air-intake.

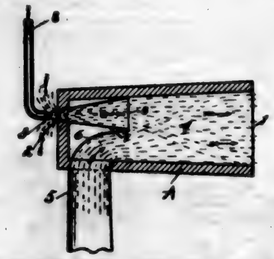

3. In a burner-block, the combination of a chamber open at its front end and provided with an aperture in its rear end and an air-intake through the rear of its floor, a fuel-duct exterior to the chamber terminating adjacent but not filling said aperture so as to deliver fuel and entrained air therethrough, and a baffle member extending forward from the rear wall of the chamber in alinement with said aperture and having side walls flaring laterally substantially to the side walls of the chamber, and a bottom wall inclined forward and downward over said intake at an angle considerably less than the flare of the side walls of said member.

4. In a burner-block, the combination of a chamber open at its front, means for delivering fuel and air through the rear of said chamber toward the front thereof, an air-intake opening upward through the floor of the chamber, a baffle-plate extending from the rear wall of the chamber beneath said delivery means downward and forward over said air-intake, and a second baffle-plate extending upward and forward from in rear of said intake into proximity with said other baffle-plate.

848,427. LOCOMOTIVE BUFFER-BEAM. JOSHUA B. BARNES, Springfield, Ill., assignor to Davis Locomotive Wheel Company, St. Louis, Mo., a Corporation of Delaware. Filed Dec. 26, 1906. Serial No. 349,536.

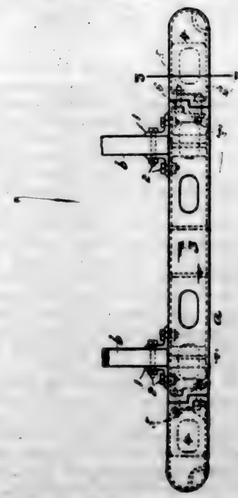

Claim.—1. A buffer-beam for a locomotive-engine or car underframe, having its body divided transversely into

three parts separably fixed endwise to each other, substantially as described and for the purpose set forth.

2. A buffer-beam for a locomotive-engine or car underframe, having its body divided transversely into three parts, namely, a middle part adapted to be attached to, and extending beyond the longitudinal members of the said frame, and two end parts adapted respectively to engage with the corresponding end of the middle part, and means for separably fixing the said parts endwise to each other, substantially as described.

848,428. OIL-CAKE TRIMMER. JOHN D. BELANGER, Chicago, Ill. Filed June 2, 1906. Serial No. 319,837.

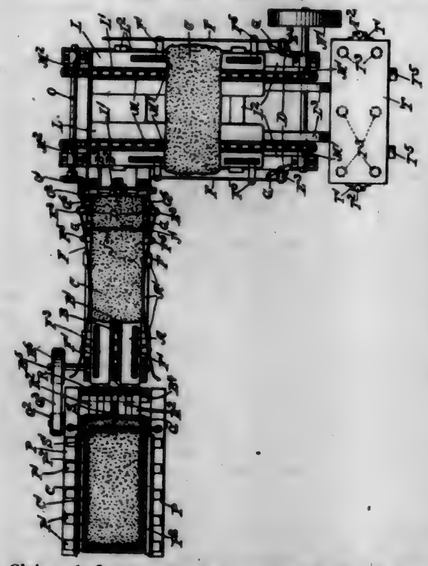

Claim.—1. In a machine for trimming oil-cake, the combination of a spring-arm with a cutting device pivotally mounted upon said arm, and a spring connected with said cutting device and adapted to be put under tension when the same is turned on its pivot.

2. In a machine for trimming oil-cake, the combination of a cutting-table, an elastic guiding-piece associated with said table, and a movable cutter on the table adapted to force the elastic guiding-piece into contact with the cake.

3. In a machine for trimming oil-cake, the combination of a cutting-table, elastic guiding-pieces associated with said table, and movable cutters on the table adapted to force the elastic guiding-pieces into contact with the cake.

4. In a machine for trimming oil-cake, the combination of means for supporting and moving the cake, a movable cutter, and a longitudinally-placed spring associated with the cutter and adapted to be put under tension by the cutter against the cake to guide the cake in its travel.

5. In a machine for trimming oil-cake, the combination of means for supporting and moving the cake, a movable cutter, and a longitudinally-placed spring on which the cutter is mounted and adapted to be put under tension against the cake to guide the cake in its travel.

6. In a machine for trimming oil-cake, the combination of means for supporting and moving the cake, a flexible arm lying along the travel of the cake, and a cutter pivoted on the flexible arm, said flexible arm consisting of a long strip which lies along the side of the cake and parallel therewith and which responds to the inequalities in the edge of such cake for the purposes specified.

7. In a machine for trimming oil-cake, the combination of a cutting-table, means for conveying the cake across said table, a flexible arm connected with the table at one side of the cake, and a cutter mounted on said flexible arm, said flexible arm consisting of a long strip which lies along the side of the cake and parallel therewith and which responds to the inequalities in the edge of such cake for the purposes specified.

8. In a machine for trimming oil-cake, the combination of a cutting-table, means for conveying the cake across said table, a flexible arm connected with the table at one side of the cake, and a cutter mounted on said flexible arm, said flexible arm consisting of a long strip which lies along the side of the cake and parallel therewith and which responds to the inequalities in the edge of such cake for the purposes specified.

9. In a machine for trimming oil-cake, the combination of a table, with means for moving the cake across the table, a flexible arm secured at one end to the table, a cutter associated with the other end of the flexible arm, and an engaging device against which the flexible arm is put under tension when the cutter is moved.

10. In a machine for trimming oil-cake, the combination of a flat flexible arm, means for limiting the movement of a portion of the flexible arm, and a pivoted cutter mounted on the free end of the flexible arm, said flexible arm consisting of a long strip which lies along the side of the cake and parallel therewith and which responds to the inequalities in the edge of such cake for the purposes specified.

11. In a machine for trimming oil-cake, the combination of means for supporting and moving the cake, and a cutter against which the cake is carried, comprising coacting circular cutting-blades.

12. In a machine for trimming oil-cake, the combination of means for supporting and moving the cake, and a yieldingly-mounted cutter against which the cake is carried, comprising coacting circular cutting-blades.

13. In a machine for trimming oil-cake, the combination of means for supporting, and moving the cake and a yieldingly-mounted pivoted cutter against which the cake is carried, comprising coacting circular cutting-blades.

14. In a machine for trimming oil-cake, a cutter comprising a rocking frame, upper and lower cutting-blades on said frame, and a guide to receive the edge of the cake.

15. In a machine for trimming oil-cake, a cutter comprising a rocking frame, upper and lower cutting-blades on said frame, and a guide to receive the edge of the cake.

16. In a machine for trimming oil-cake, a cutter comprising a rocking frame, upper and lower cutting-disks on said frame, a guide to receive the edge of the cake, and means for yieldingly mounting the frame.

17. In a machine for trimming oil-cake, a cutter comprising a rocking frame, upper and lower cutting-disks on said frame, a guide to receive the edge of the cake, and a spring on which the cutter is mounted.

18. In a machine for trimming oil-cake, a cutter comprising a rocking frame, upper and lower cutting-disks on said frame, a guide to receive the edge of the cake, a spring on which the cutter is mounted, and an elastic device to normally hold the blades oblique to the direction of travel of the cake.

19. In a machine for trimming oil-cake, the combination of a cutting-table, with a conveyer-chain, and a runway in the table for the chain, a portion of such runway being depressible.

20. In a machine for trimming oil-cake, the combination of a cutting-table, with a conveyer-chain, a runway in the table for the chain, a portion of such runway being depressible, and a gate over the table.

21. In a machine for trimming oil-cake, a feeder and stripper comprising stripping-rolls to engage the cloth on the cake, and means for carrying the end of said cloth between the rolls.

22. In a machine for trimming oil-cake, a feeder and stripper comprising stripping-rolls to engage the cloth on the cake, means for carrying the end of said cloth between the rolls, and means for preventing the cloth from winding around said rolls.

23. In a machine for trimming oil-cake, a feeder and stripper comprising stripping-rolls to engage the cloth on the cake, means for carrying the end of said cloth between the rolls, one of said rolls being grooved, and fingers lying in said grooves.

24. In a machine for trimming oil-cake, the combination of a feed-table, stripping-rolls associated with said table, a conveyer for the cloth, and a finger to press the end of the cloth onto the conveyer.

25. In a machine for trimming oil-cake, the combination of a receiving-table comprising a movable receiving part and an elastic support on which the same is mounted, with a stop at the back of the table pivoted to a stationary part of the table substantially as and for the purpose described.

26. In a machine for trimming oil-cake, the combination of a flexible arm fastened at one end and free at the other, with a cutting device mounted on the free end of said arm, said flexible arm consisting of a long strip which lies along the side of the cake and parallel therewith and which responds to the inequalities in the edge of such cake for the purposes specified.

27. In a machine for trimming oil-cake, the combination of a flexible arm fastened at one end and free at the other, with a cutting device pivotally mounted on the free end of said arm, said flexible arm consisting of a long strip which lies along the side of the cake and parallel therewith and which responds to the inequalities of the edge of such cake for the purposes specified.

28. In a machine for trimming oil-cake, the combination of means for supporting and moving the cake, with a cutter against which the cake is carried comprising a vertical circular rotatable cutting-blade.

29. In a machine for trimming oil-cake, the combination of a rotatable circular cutting-blade against which the cake is carried, with a grinding-wheel arranged so as to be constantly in contact with the edge of the cutting-blade, and a spring to maintain the contact between the wheel and the cutting-blade.

848,429. COMBINATION CHECK-BOOK. MARK H. BERRY, New York, N. Y. Filed Mar. 29, 1906. Serial No. 308,810.

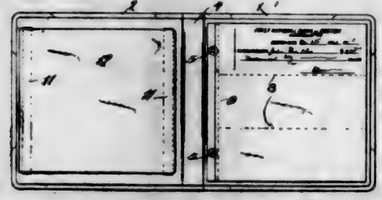

Claim.—1. A binder for a combination check-book comprising front and back covers connected by a flexible back, and a metallic strip or band secured at its ends to an edge of the front cover.

2. A binder for a combination check-book comprising front and back covers connected by a flexible back, binding-posts attached to the inner edge of the back cover, and a metallic strip or band secured at its ends to the outer edge of the front cover.

3. In a combination check-book the combination with front and back covers connected by a flexible back of a block of checks, means for attaching said block of checks to the inside of the back cover, a metallic strip or band secured at its ends to the front cover and a record-book or register having one of its covers held in place by said metallic strip.

4. In a combination check-book the combination with front and back covers connected by a flexible back of a block of checks, a binding-post for attaching said block of checks to the inside of the back cover, a metallic strip or band secured at its ends to the front cover and a record-book or register having one of its covers held in place by said metallic strip.

5. In a combination check-book the combination with a binder consisting of front and back covers joined by a flexible back, of binding-posts secured to said back cover near said flexible back, a block of checks secured by said binding-posts, a metallic strip and a register having its back cover held by said metallic strip to the front cover, the top edges of said register and of said block of checks being at right angles to said flexible back.

848,430. HEN'S NEST. JOHN H. BLANK, Chicago, Ill. Filed Apr. 12, 1906. Serial No. 311,310.

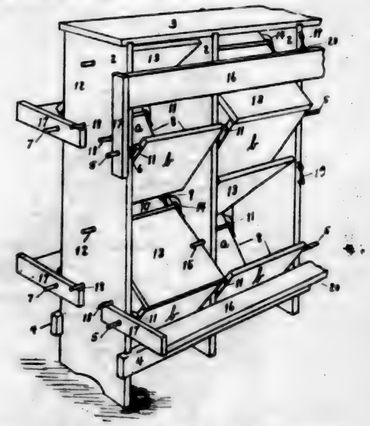

Claim.—1. In a nest, a frame comprising vertical ends and partitions, a top section and strips extending along the sides near the bottom of said frame, metallic rods horizontally disposed across the front and back of said frame, nest-receptacles mounted on said rods between said partitions, said receptacles consisting of two sections, lugs and eyes at the lower edge of said sections detachably connecting them together, and hooks on said sections, near the upper corners thereof for supporting said receptacles on the rods, substantially as described.

2. In a nest, a frame, a series of compartments in said frame, nest-receptacles in said compartments, rods centrally disposed in said compartments above said receptacles, lids or shutters for the receptacles, hooks near the upper corners of the shutters engaging the rods, the lower end of each shutter resting upon one edge of the receptacles, substantially as and for the purpose specified.

848,431. DISPLAY-BOX. MOSES BLUMBERG, St. Louis, Mo. Filed Dec. 14, 1905. Serial No. 291,743.

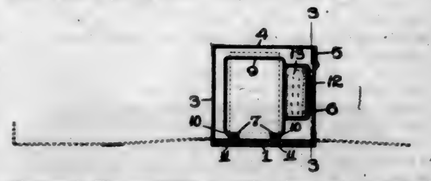

Claim.—1. The combination with a base, of a series of inverted-U-shaped frames adjustably arranged on said base, auxiliary frames integral with one side of each adjustable frame, and plates hinged in the auxiliary frames; substantially as specified.

2. The combination with a folding display-box, of a series of inverted-U-shaped frames longitudinally adjustable on the base of the box, an auxiliary rectangular frame integral with each of the adjustable frames, and a plate hinged in each of the auxiliary frames, substantially as specified.

3. A display-box, constructed with a base, folding walls secured thereto, a pair of strips arranged longitudinally

on top of the base, a series of inverted-U-shaped frames having their lower ends loosely engaged beneath the strips, a rectangular frame integral with one side of each of the first-mentioned frames, and a plate hinged to each of the rectangular frames; substantially as specified.

848,432. STEAM-TURBINE. ALFREDO BONOM, New York, N. Y. Filed Oct. 6, 1906. Serial No. 337,727.

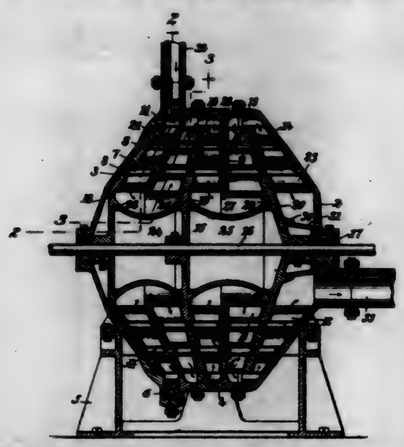

Claim.—1. A turbine-engine having a rotor having outwardly-converging cones and vanes carried thereby, and a stator having bucket-plates projecting into the spaces between said cones and carrying buckets adapted to deflect the steam onto said vanes.

2. In a turbine, in combination, a rotor having cones projecting outwardly therefrom and converging toward their outer edges, a stator having bucket-plates projecting into the space between said cones, means for directing the steam inwardly and outwardly with respect to the axis of said turbine and between said plates and said cones, the arrangement being such that the steam-spaces formed between said plates and cones are of increased width near the axis of the said turbine, and buckets and vanes carried respectively by said plates and said cones.

3. In a turbine, in combination, a rotor having outwardly-projecting plates, a stator having a plurality of plates projecting into the spaces between said first plates, buckets and vanes carried by said plates, said plates being inclined with respect to each other whereby courses of enlarging cross-section are presented to the steam, and means for directing the flow of steam inwardly and outwardly between said plates, and buckets and vanes carried by said plates.

4. In a turbine, in combination, a rotor having cones converging toward their outer edges, a stator having plates projecting inwardly between said cones whereby steam-spaces are formed, said plates having buckets, said cones having vanes receiving the steam from said buckets whereby the steam may be directed inwardly and outwardly in said steam-spaces, and guiding means at the inner edges of said plates and directing the steam between said steam-spaces.

5. In a turbine, in combination, a rotor having outwardly-projecting cones, a stator having inwardly-projecting plates forming steam-spaces between said cones, means for causing the steam to flow inwardly and outwardly alternately in said steam-spaces, drums connecting said cones near the axis of said rotor and rigid with said stator, said drums affording means for guiding the stream between said steam-spaces.

6. In a turbine, in combination, a rotor having outwardly-projecting cones, a stator having inwardly-projecting plates forming steam-spaces between said cones, means for causing the steam to flow inwardly and outwardly alternately in said steam-spaces, drums connecting said cones near the axis of said rotor and rigid with said stator, said drums affording means for guiding the steam between said steam-spaces, and guide-vanes on said drums and receiving the steam from a forward steam-space and directing the same toward the rearwardly-disposed steam-spaces.

848,433. MIXED WHALEBONE FOR BODICES. EMILE M. BOSSUET, Paris, France. Filed Aug. 23, 1905. Serial No. 275,407.

Claim.—A stiffener composed of two strips of resilient flexible material acting as a spring and a thin sheet of cork of a width and length equal to said strips, and interposed therebetween and to which the same are glued.

848,434. CIGAR-MOISTENER. LOUIS F. BRADLEY, Washington, D. C. Filed Jan. 10, 1907. Serial No. 351,656.

Claim.—1. A humidifier for cases consisting of a head having a top for attachment to the case and a reduced plug having engaging projections, and a perforated shell adapted to fit said plug and having recesses to engage the projections of the plug.

2. A humidifier for cases consisting of a top for attachment to the case and a reduced plug, and a perforated shell fitting said plug, the plug and shell having interlocking recesses and projections.

3. A humidifier for cases consisting of a head having a recessed top for attachment to the case and a reduced plug, and a perforated shell fitting said plug; the shell and plug being respectively screw-threaded.

848,435. FOOT-REST. HENRY F. L. BROOKS, Sheldon, Iowa. Filed Aug. 25, 1906. Serial No. 332,060.

Claim.—1. A foot-rest comprising corresponding guides, a foot-support having at its ends corresponding side bars each fitted in one of said guides, said side bars each having in one edge a series of holes, spring-drums supported by said guides, cords or chains connected to said drums and to said side bars, horizontally-disposed retaining-pins mounted in said guides and designed to project into corresponding holes of said side bars, springs for normally holding said retaining-pins in engagement with said side bars, and means for simultaneously disengaging each of said retaining-pins, said drums effecting the raising of said foot-support when said pins are disengaged from the side bars thereof.

2. The combination with the guides composed of corresponding uprights, of retaining-pins fitted in said guides, spring-plates secured to said retaining-pins, a cross-rod having arms for engaging with said spring-plates, a foot-lever connected to said cross-rod, a foot-support having corresponding side bars fitted in said guides and designed to be held by said retaining-pins, and means connected to said side bars for effecting the automatic raising of said support when the retaining-pins are disengaged from said side bars.

848,436. CLAMP-SETTING MACHINE. BONIFACE A. GRASBERGER, Richmond, Va. Filed July 11, 1906. Serial No. 325,585.

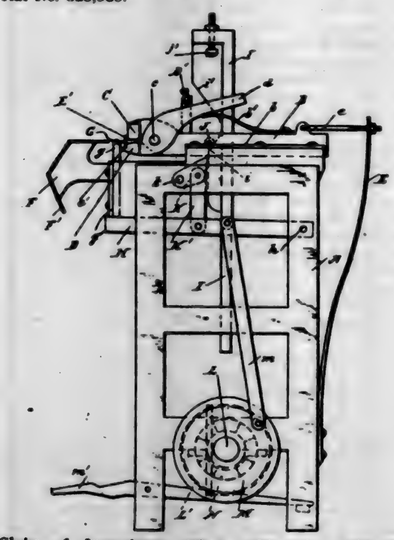

Claim.—1. In a clamp-setting machine, the combination, with an article-support, and a pair of jaws pivotally connected and provided with means for supporting a binding-strip; of a bending-blade, means for moving the said blade into and out of the space between the said jaws and support, driving mechanism for sliding the said jaws crosswise of the said blade so as to bend the strip over the blade and apply it to the article, and means for closing the said jaws on their pivot to clamp the strip in place.

2. In a clamp-setting machine, the combination, with an article-support, and a pair of jaws slidable toward and away from the said support; of a bending-blade slidable into and out of the space between the said jaws and support in a path crosswise of the said path of the pair of jaws, and driving mechanism for sliding the said pair of jaws and blade and for pressing the said jaws together.

3. In a clamp-setting machine, the combination, with an article-support, and a pair of jaws slidable toward and away from the said support; of a bending-blade slidable into and out of the space between the said jaws and support in a path crosswise of the said path of the pair of jaws, tappet mechanism for sliding the said pair of jaws and blade respectively in one direction and for pressing the said jaws together, and means for moving the said parts automatically in the reverse directions.

4. In a clamp-setting machine, the combination, with an article-support, and a pair of jaws slidable toward and away from the said support; of a stop limiting the opening of the said jaws, a spring holding the said jaws open while they are being slid back and forth, a bending-blade slidable into and out of the space between the said jaws and support in a path crosswise of the said path of the pair of jaws, and driving mechanism for sliding the said pair of jaws and blade and for pressing the said jaws together.

5. In a clamp-setting machine, the combination, with a frame provided with a horizontal guide and a vertical guide, of an article-support, a pair of jaws slidable in the said horizontal guide toward and away from the said support, a bending-blade slidable in the said vertical guide into and out of the space between the said jaws and support, and driving mechanism for sliding the said pair of jaws and blade and for pressing the said jaws together.

6. In a clamp-setting machine, the combination, with a frame provided with a guide, of a pair of jaws slidable in the said guide and provided with means for supporting a binding-strip, a bending-blade slidable crosswise of the path of the said jaws, means for sliding the said blade, a reciprocatory bar provided with two tappets for sliding the said jaws into two positions in one direction, and means for pressing the said jaws together.

7. In a clamp-setting machine, the combination, with a frame provided with a guide, of a pair of jaws slidable in the said guide and provided with means for supporting a binding-strip, a bending-blade slidable crosswise of the path of the said jaws, a lever pivoted to the said frame and operatively connected with the said blade, a reciprocatory bar provided with a tappet for sliding the said jaws to the full extent in one direction and having also a tappet for closing the said jaws when thus slid and having also a tappet for sliding the said jaws to a less extent in the same direction, and lever mechanism engaging with two of the said tappets and operatively connected with the said lever.

8. In a clamp-setting machine, the combination, with a frame provided with a horizontal guide, of a pair of pivoted jaws, the upper of the said jaws having a slide which is slidable in the said guide and the lower jaw having a lip for supporting a binding-strip, a bending-blade slidable crosswise of the path of the said jaws, and driving mechanism for sliding the said jaws and blade and for pressing the said lower jaw toward the upper jaw.

848,437. MATTRESS. MAE BROWN, Nampa, Idaho. Filed Sept. 7, 1906. Serial No. 333,710.

Claim.—1. A mattress made up of coverings which are formed into pockets, cork fillings in one series of pockets, the coverings containing the cork-filled pockets being disposed at right angles to the pockets of the layers of sponge, as set forth.

2. A mattress comprising coverings having pockets formed therein, cork fillings for one layer of pockets, the pockets containing cork fillings being disposed at right angles to the pockets containing the sponge, the edges of the outer layers being perforated and cords passing through said perforations and designed to hold the layers together, as set forth.

848,438. ROLLING-MILL. WILLIAM H. BROWN, Pittsburg, Pa. Filed Mar. 19, 1906. Serial No. 306,758.

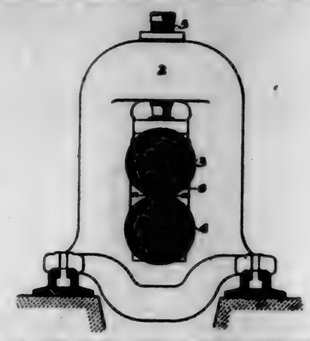

Claim.—A mill having rolls provided with plain faces throughout their working length and arranged to feed through and roll sheet metal at right angles to their axes, one of said rolls being reduced in diameter for its entire working length on one side thereof, said mill having roll-adjusting mechanism; substantially as described.

848,439. TREATMENT OF CORUNDUM. MAX BUCHNER, Mannheim-Waldhof, Germany. Filed Jan. 15, 1906. Serial No. 296,211.

Claim.—1. A method of treating corundum with a cementitious binding material, which hardens with water, for the manufacture of ceramic masses, such method consisting in mixing the corundum with the cementitious material, shaping it and burning the same, substantially as described.

2. A method of treating corundum with a cementitious binding material, which hardens with water, for the manufacture of ceramic masses, such method consisting in mixing the corundum with cement, shaping the mass and burning the same, substantially as described.

3. A method of treating corundum with a cementitious binding material, which hardens with water, for the manufacture of ceramic masses, such method consisting in mixing the corundum with Portland cement, shaping the mass and burning the same, substantially as described.

848,440. ROTARY ENGINE. GEORGE F. BURTON, Woodlawn, Ala. Filed Sept. 14, 1906. Serial No. 334,619.

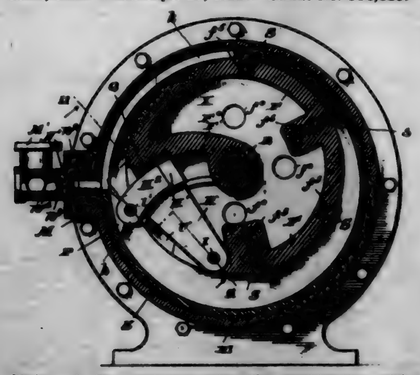

Claim.—1. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell, a substantially steam-tight piston pivotally connected to said disk and to said inner shell, and linking the two together, and a steam-port adapted to register with said elongated port during a portion of the rotation of the inner shell, substantially as described.

2. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell and provided with an inner chamber connected to the exhaust, a substantially steam-tight piston pivotally connected to said disk and to said inner shell, and linking the two together, and a steam-port adapted to register with said elongated port during a portion of the rotation of the inner shell, substantially as described.

3. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell and provided with an inner chamber connected to the exhaust, packing-blocks mounted radially in said disk and normally closing the passage to the exhaust, a substantially steam-tight piston pivotally connected to said inner shell, and linking the two together, and a steam-port adapted to register with said elongated port during a portion of the rotation of the inner shell, substantially as described.

4. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell and provided with an inner chamber connected to the exhaust, packing-blocks mounted radially in said disk, and normally closing the passage to the exhaust, means for limiting the radial travel of said packing-blocks relative to said disk, a substantially steam-tight piston pivotally connected to said inner shell, and linking the two together, and a steam-port adapted to register with said elongated port during a portion of the rotation of the inner shell, substantially as described.

5. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell, a substantially steam-tight piston pivotally connected to said disk and to said inner shell, and linking the two together, a steam-pipe and a steam-port therefrom, and a bushing mounted in said steam-port and automatically pressed toward said inner shell, substantially as described.

6. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell and provided with an inner chamber connected to the exhaust, a substantially steam-tight piston pivotally connected to said disk and to said inner shell, and linking the two together, a steam-pipe and a steam-port leading to the exterior of the inner shell in the plane of said elongated port, with a bushing mounted in said steam-port and automatically pressed toward said inner shell, substantially as described.

7. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell and provided with an inner chamber connected to the exhaust, packing-blocks mounted radially in said disk, and normally closing the passage to the exhaust, a substantially steam-tight piston pivotally connected to said disk and to said inner shell, and linking the two together, a steam-pipe and a steam-port leading to the exterior of the inner shell in the plane of said elongated port, with a bushing mounted in said steam-port and automatically pressed toward said inner shell, substantially as described.

8. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell and provided with an inner chamber connected to the exhaust, packing-blocks mounted radially in said disk, and normally closing the passage to the exhaust, means for limiting the radial travel of said packing-blocks relative to said disk, a substantially steam-tight piston pivotally connected to said disk and to said inner shell, and linking the two together, a steam-pipe and a steam-port leading to the exterior of the inner shell in the plane of said elongated port, with a bushing mounted in said steam-port and automatically pressed toward said inner shell, substantially as described.

9. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell, a substantially steam-tight piston pivotally connected to said disk and to said inner shell, and linking the two together, a wedge-shaped saddle held between said piston and said inner shell, and a steam-port adapted to register with said elongated port during a portion of the rotation of the inner shell, substantially as described.

10. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell, a substantially steam-tight piston pivotally connected to said inner shell, and linking the two together, a steam-pipe and a steam-port leading to the exterior of the inner shell in the plane of said elongated port, with a spring-impressed bushing of soft metal mounted in said steam-port and automatically pressed toward said inner shell, substantially as described.

11. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell and provided with a curved recess, a piston having a curved head adapted to swing into and out of said recess, said piston being pivotally connected to said disk and to said inner shell, and linking the two together, and a steam-port adapted to register with said elongated port during a portion of the rotation of the inner ring, substantially as described.

12. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell and provided with a curved recess, a piston having a curved head adapted to swing into and out of said recess, said piston being pivotally connected to said disk and to said inner shell, and linking the two together, a steam-pipe and a steam-port leading to the exterior of the inner shell on the plane of said elongated port, with a bushing made of soft metal mounted in said steam-port and automatically pressed toward said inner shell, substantially as described.

13. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell and provided with radial L-shaped recesses, L-shaped packing-blocks adapted to have a limited play in said recesses, an exhaust-passage uncovered by said radial packing-blocks at a predetermined position of the disk, a substantially steam-tight piston pivotally connected to said disk and to said inner shell, and linking the two together, and a steam-port adapted to register with said elongated port during a portion of the rotation of the inner shell, substantially as described.

14. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell and provided with radial L-shaped recesses, L-shaped packing-blocks adapted to have a limited play in said recesses, an exhaust-passage uncovered by said radial packing-blocks at a predetermined position of the disk, a substantially steam-tight piston pivotally connected to said disk and to said inner shell, and linking the two together, a steam-pipe and a steam-port leading to the exterior of the inner shell on the plane of said elongated port, with a bushing mounted in said steam-port and automatically pressed toward said inner shell, substantially as described.

15. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, a plurality of inner shells revolubly mounted in the outer shells and each provided with an elongated port, the said ports being symmetrically disposed about said shaft, a series of disks fast to said shaft and inclosed in said inner shells, a substantially steam-tight piston pivotally connected to each disk and to its inclosing inner shell, and linking the two together, and a steam-chest having ports adapted to register with the elongated port during a portion of the rotation of the corresponding inner shell, substantially as described.

16. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, a plurality of inner shells revolubly mounted in the outer shell and each provided with an elongated port, the said ports being symmetrically disposed about said shaft, a series of disks fast to said shaft and inclosed in said inner shells, each disk being provided with an inner chamber connected to the exhaust, packing-blocks mounted radially in each disk and normally closing the passage therethrough to the exhaust, a substantially steam-tight piston pivotally connected to each disk and to its inclosing inner shell, and linking the two together, and a steam-chest having ports adapted to register with the elongated port during a portion of the rotation of the corresponding inner shell, substantially as described.

17. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, a plurality of inner shells revolubly mounted in the outer shells and each provided with an elongated port, the said ports being symmetrically disposed about said shaft, a series of disks fast to said shaft and inclosed in said inner shells, each disk being provided with an inner chamber connected to the exhaust, packing-blocks mounted radially in said disk, and normally closing the passage therethrough to the exhaust, means for limiting the radial travel of said packing-blocks relative to said disk, a substantially steam-tight piston pivotally connected to each disk and to its inclosing inner shell, and linking the two together, and a steam-chest having ports adapted to register with the elongated port during a portion of the rotation of the corresponding inner shell, substantially as described.

18. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, a plurality of inner shells revolubly mounted in the outer shell and each provided with an elongated port, the said ports being symmetrically disposed about said shaft, a series of disks fast to said shaft and inclosed in said inner shells, a substantially steam-tight piston pivotally connected to each disk and to its inclosing inner shell, and linking the two together, a steam-chest provided with a series of steam-ports leading to the exterior of the inner shells in the plane of said elongated ports, with a bushing mounted in each steam-port and automatically pressed toward said inner shell, substantially as described.

19. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, a plurality of inner shells having axial flanges, revolubly mounted in the outer shells, and each provided with an elongated port, the said ports being symmetrically disposed about said shaft, stationary spac-

ing-plates mounted between said inner shells and partially engaging said axial flanges, a series of disks fast to said shaft and inclosed in said inner shells, a substantially steam-tight piston pivotally connected to each disk and to its inclosing inner shell, and linking the two together, and a steam-chest having ports adapted to register with the elongated port during a portion of the rotation of the corresponding inner shell, substantially as described.

20. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, a plurality of inner shells having axial flanges, revolubly mounted in the outer shells, and each provided with an elongated port, the said ports being symmetrically disposed about said shaft, stationary spacing-plates mounted between said inner shells and partially engaging said axial flanges, with packing-rings between said spacing-plates and said inner shells, a series of disks fast to said shaft and inclosed in said inner shells, a substantially steam-tight piston pivotally connected to each disk and to its inclosing inner shell, and linking the two together, and a steam-chest having ports adapted to register with the elongated ports during a portion of the rotation of the corresponding inner shell, substantially as described.

21. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, a plurality of inner shells having axial flanges, revolubly mounted in the outer shells, and each provided with an elongated port, the said ports being symmetrically disposed about said shaft, stationary spacing-plates mounted between said inner shells and partially engaging said axial flanges, the said spacing-plates being perforated axially, a series of disks fast to said shaft and inclosed in said inner shells, each disk being provided with an inner chamber connected to said axial perforations and connected to the exhaust, packing-blocks mounted radially in each disk and normally closing the passage therethrough to the exhaust, a substantially steam-tight piston pivotally connected to each disk and to its inclosing inner shell, and linking the two together, and a steam-chest having ports adapted to register with the elongated ports during a portion of the rotation of the corresponding inner shell, substantially as described.

22. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, a plurality of inner shells having axial flanges, revolubly mounted in the outer shells, and each provided with an elongated port, the said ports being symmetrically disposed about said shaft, stationary spacing-plates mounted between said inner shells and partially engaging said axial flanges, the said spacing-plates being perforated axially, a series of disks fast to said shaft and inclosed in said inner shells, each disk being provided with an inner chamber connected to said axial perforations and connected to the exhaust, packing-blocks mounted radially in each disk and normally closing the passage therethrough to the exhaust, packing-rings between said spacing-plates and said inner shells, exterior to said inner chamber and said axial passages, a substantially steam-tight piston pivotally connected to each disk and to its inclosing inner shell, and linking the two together, and a steam-chest having ports adapted to register with the elongated ports during a portion of the rotation of the corresponding inner shell, substantially as described.

23. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, a plurality of inner shells revolubly mounted in the outer shell and each provided with an elongated port, the said ports being symmetrically disposed about said shaft, a series of disks fast to said shaft and inclosed in said inner shells, a substantially steam-tight piston pivotally connected to each disk and to its inclosing inner shell, and linking the two together, a steam-chest provided with a series of steam-ports leading to the exterior of the inner shells in the plane of said elongated ports, with a bushing mounted to slide in each steam-port, and a spring normally pressing said bushing toward said inner shell, substantially as described.

24. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell and provided with radial L-shaped recesses, L-shaped packing-blocks made in two parts with interposed springs, adapted to have a limited play in said recesses, and exhaust-passage uncovered by said radial packing-blocks at a predetermined position of the disk, a substantially steam-tight piston pivotally connected to said disk and to said inner shell, and linking the two together, and a steam-pipe and a steam-port leading to the exterior of the inner shell in the plane of said elongated port, substantially as described.

25. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a driving-disk carried by said shaft and inclosed in and linked to said inner shell, a steam-port adapted to register with said elongated port during a portion of the rotation of the inner shell, and a bushing mounted to slide in said steam-port, and to bear against said inner shell in the plane of said elongated port, substantially as described.

26. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a driving-disk carried by said shaft and inclosed in and linked to said inner shell, a steam-port adapted to register with said elongated port during a portion of the rotation of the inner shell, and a bushing mounted to slide in said steam-port, and to bear against said inner shell in the plane of said elongated port, substantially as described.

27. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell and provided with a curved recess, a piston having a curved head adapted to swing into and out of said recess, with curved shoulders abutting against the face of said recess, said piston being pivotally connected to said disk and to said inner shell, and linking the two together, and a steam-port adapted to register with said elongated port during a portion of the rotation of the inner shell, substantially as described.

28. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with an elongated port, a disk carried by said shaft and inclosed in said inner shell and provided with a curved recess, a piston having a curved head adapted to swing into and out of said recess with curved shoulders abutting against the face of said recess, said piston being pivotally connected to said disk and to said inner shell, and linking the two together, a steam-pipe and a steam-port leading to the exterior of the inner shell in the plane of said elongated port, with a bushing made of soft metal mounted to slide in said steam-port, and a spring normally pressing said bushing toward said inner shell, substantially as described.

29. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, a plurality of inner shells having axial flanges, revolubly mounted in the outer shells and each provided with a steam-port, the said ports being symmetrically disposed about said shaft, stationary spacing-plates mounted between said inner shells and partially engaging said axial flanges, a series of disks fast to said shaft and inclosed in said inner shells, a substantially steam-tight piston pivotally connected to each disk and to its inclosing inner shell, and linking the two together, and a steam-chest having ports adapted to register with the ports in the inner shells, during a portion of the rotation of the corresponding inner shell, substantially as described.

30. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, a plurality of inner shells having axial flanges, revolubly mounted in the outer shells, and each provided with a steam-port, the said ports being symmetrically disposed about said shaft, stationary spacing-plates mounted between said inner shells and partially engaging said axial flanges, with packing-rings between said spacing-plates and said inner shells, a series of disks fast to said shaft and inclosed in said inner shells, a substantially steam-tight piston pivotally connected to each disk and to its inclosing inner shell, and linking the two together, and a steam-chest having ports adapted to register with the ports in the inner shells during a portion of the rotation of the corresponding inner shell, substantially as described.

31. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, a plurality of inner shells having axial flanges, revolubly mounted in the outer shells, and each provided with a steam-port, the said ports being symmetrically disposed about said shaft, stationary spacing-plates mounted between said inner shells and partially engaging said axial flanges, the said spacing-plates being perforated axially, a series of disks fast to said shaft and inclosed in said inner shells, each disk being provided with an inner chamber connected to said axial perforations and connected to the exhaust, packing-blocks mounted radially in each disk and normally closing the passage therethrough to the exhaust, a substantially steam-tight piston pivotally connected to each disk and to its inclosing inner shell, and linking the two together, and a steam-chest having ports adapted to register with the ports in the inner shells during a portion of the rotation of the corresponding inner shell, substantially as described.

32. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, a plurality of inner shells revolubly mounted in the outer shell and each provided with a raised rib slotted to form a steam-port, the said ports being symmetrically disposed about said shaft, a series of disks fast to said shaft and inclosed in said inner shells, a substantially steam-tight piston pivotally connected to each disk and to its inclosing inner shell, and linking the two together, a steam-chest provided with a series of steam-ports leading to the exterior of the inner shells in the plane of said steam-ports, with a removable bushing mounted to slide in each steam-port, and a spring normally pressing said bushing toward said rib on said inner shell, substantially as described.

33. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with a raised rib slotted to form an elongated port, a driving-disk carried by said shaft and inclosed in and linked to said inner shell, a steam-port adapted to register with said elongated port during a portion of the rotation of the inner shell, and a removable bushing mounted to slide in said steam-port, and to bear against said raised rib on the inner shell in the plane of said elongated port, substantially as described.

34. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with a raised rib slotted to form an elongated port, a driving-disk carried by said shaft and inclosed in and linked to said inner shell, a steam-port adapted to register with said elongated port during a portion of the rotation of the inner shell, and a spring-impressed removable bushing mounted to slide in said steam-port and to bear against said raised rib on the inner shell, substantially as described.

35. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with a steam-port, a disk carried by said shaft and inclosed in said inner shell and provided with a curved recess, a piston having a curved head adapted to swing into and out of said recess, with curved shoulders abutting against the face of said recess, said piston being pivotally connected to said disk and to said inner shell, and linking the two together, and a steam-port adapted to register with said port on the inner shell during a portion of the rotation of said inner shell, substantially as described.

36. In a rotary engine, the combination with an outer shell or casing, of a shaft eccentrically mounted in said outer shell or casing, an inner shell revolubly mounted in the outer shell and provided with a steam-port, a disk carried by said shaft and inclosed in said inner shell and provided with a curved recess, a piston having a curved head adapted to swing into and out of said recess with curved shoulders abutting against the face of said recess, said piston being pivotally connected to said disk and to said inner shell, and linking the two together, a steam-pipe and a steam-port leading to the exterior of the inner shell in the plane of said steam-port in the inner shell, with a removable bushing made of soft metal mounted to slide in said steam-port, and a spring normally pressing said bushing toward said inner shell, substantially as described.

848,441. CHECK-LOCK FOR MINING-CARS. CHARLES A. CABELL, Carbon, W. Va. Filed Aug. 25, 1906. Serial No. 332,062.

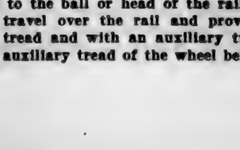

Claim.—1. In a device of the character described, a lock having a corrugated key-recess, and a curved groove extending into said recess, in combination with a corrugated key, said key having a curved slot, and a ball in said groove.

2. In a device of the character described, a lock having a corrugated key-recess and a curved groove, a spring within the lock, a ball in said groove, a check having a projecting corrugated key provided with a slot having a curved upper wall, and a flange to stop the key, substantially as described.

3. In a check-lock for mining-cars, a lock comprising two sections having an intermediate corrugated key-recess and a curved groove, a spring, a ball in said groove, a key having a check connected thereto, said key being corrugated and provided with an oppositely-beveled end and a slot, substantially as described.

848,442. TRACTION WHEEL AND RAIL. MATT C. CARR and CHARLEY R. BOHANNON, Easy Gap, Ky. Filed Oct. 5, 1905. Renewed Aug. 22, 1906. Serial No. 331,625.

Claim.—1. In combination, a rail comprising the usual head or ball provided with an auxiliary tread at a side thereof, said auxiliary tread embodying a smooth surface longitudinally thereof and a toothed surface adjacent to such smooth surface, the auxiliary tread being elevated with regard to the ball or head of the rail, and a wheel adapted to travel over the rail and provided with the usual main tread and with an auxiliary tread at a side thereof, the auxiliary tread of the wheel being adapted to

travel along that of the rail and also having smooth and toothed surfaces for contact with like surfaces of the auxiliary tread of the rail.

2. In combination, a rail comprising the usual head or ball provided with an auxiliary tread at a side thereof, said auxiliary tread embodying a smooth surface longitudinally thereof and a toothed surface adjacent to such smooth surface, the auxiliary tread being elevated with regard to the ball or head of the rail, and a wheel adapted to travel over the rail and provided with the usual main tread and with an auxiliary tread at a side thereof, the auxiliary tread of the wheel being adapted to travel along that of the rail and also having smooth and toothed surfaces for contact with like surfaces of the auxiliary tread of the rail, the auxiliary tread of the rail being elevated with regard to the main tread thereof a distance greater than the distance between the auxiliary tread of the wheel and the main tread of said wheel whereby when the auxiliary tread of the wheel is traveling along that of the rail, the main tread of the wheel is not in contact with the ball or head of the rail.

3. As an article of manufacture, a rail comprising the usual ball or head portion and having an integral lateral enlargement projecting upwardly therefrom to form a flange, the upper surface of said flange forming an auxiliary tread and being partially smooth longitudinally thereof and partially toothed, for the purpose specified.

848,443. LAMP-JACK. FREDERICK CONRATH, St. Paul, Minn. Filed July 12, 1906. Serial No. 325,798.

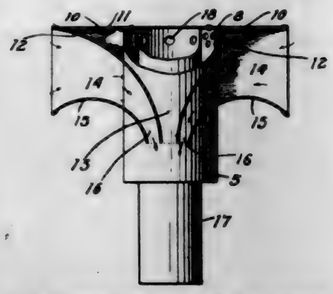

Claim.—1. A lamp-jack comprising a tube having an open lower end and adapted to be placed above an illuminating-flame, said tube being closed at the top and having perforations in its vertical upper walls and a chamber inclosing said perforations below the upper end of said tube and having a warm-air passage leading downwardly to the open air, and a cold-air passage having one end extending forward horizontally and open to the entrance of cold air and its opposite end also open and near the outlet of said warm-air passage, whereby a draft or suction will be established across the outlet of said warm-air passage and the hot air and products of combustion will be drawn from said chamber and tube, substantially as described.

2. A lamp-jack having a chamber provided with a warm-air passage leading to the open air, and a flue leading from the space above the illuminating-flame to said chamber and cold-air passages provided on each side of said warm-air passage and projecting out horizontally in front and in the rear of said passage, and having intake-openings in substantially vertical planes, the inner ends of said cold-air passages being near the outlet of said warm-air passage and adapted to establish a draft or suction across said passage, for the purpose specified.

3. A lamp-jack comprising a tube having an open lower end and adapted to be fitted over an illuminating-flame, said tube having a closed upper end and perforations in its walls, and said jack having a chamber inclosing the upper portion of said tube and said chamber having downwardly-extending warm-air passages on each side of said tube leading to the open air and forming exits from said chamber, and cold-air passages open at each end and located in front and in the rear of said chamber and near the exits of said warm-air passages, whereby drafts of air will be established across the said exits and the entrance of cinders and dirt therein will be prevented, substantially as described.

4. The combination, with a railway-car, of a lamp-jack mounted on the roof thereof, and comprising a tube having an open lower end and perforations in its upper walls and a chamber inclosing the upper portion of said tube and having downwardly-extending warm-air passages communicating with the open air and forming exits from said chamber, and cold-air passages having open ends extending outwardly from said tube the openings leading into said passages being in substantially vertical planes and into which the cinders and dirt pass when the car is in motion, and the lower ends of said cold-air passages being also open and near the outlet of said warm-air passages to direct the cinders and dirt collected in said cold-air passages past the outlet of said warm-air passages, substantially as described.

5. A lamp-jack comprising a tube having an open lower end and perforations in its upper walls, a plate closing the top of said tube, curved walls secured to said plate and having recesses in their ends to fit the curved surface of the tube, spaces being formed between the walls at their lower ends leading to the open air, and forming exits from said chamber, and cold-air passages also curved and located below the said walls and forming therewith cold-air passages on each side of said tube, said cold-air passages gradually decreasing in area and having open ends opposite the exits between said walls, whereby drafts of air will be established across said exits to prevent the entrance of cinders and dust therein, and to draw the hot air and products of combustion from said tube, substantially as described.

6. The combination, with a railway-car roof, of a lamp-jack mounted thereon and comprising a tube having an open lower end within the car, and perforations in its upper walls and a chamber inclosing the upper portion of said tube and having a downwardly-extending warm-air passage leading to the open air above the roof, and a cold-air-intake passage having an outer end opening in the direction in which the car is moving and its inner or discharge end being near the discharge end of said warm-air passage whereby a strong current of air will be formed across the mouth of said warm-air passage and the hot air withdrawn from said tube, and the entrance of cinders and dirt therein prevented and a second tube inclosed by said first-named tube and spaced therefrom and extending to the top thereof and having perforated upper walls and the lower end of said second tube depending below the corresponding end of said first-named tube.

7. A lamp-jack comprising a tube having an open lower end adapted to be placed over an illuminating-flame, said tube being closed at the top and having a series of perforations and a chamber inclosing the perforated portion of said tube, and said chamber having a warm-air flue leading downwardly therefrom and open at its lower end, and a cold-air passage extending forwardly and having an inlet-opening adapted to receive horizontal currents of air, the discharge end of said cold-air passage being contiguous to the outlet of said warm-air passage and adapted to direct the cold-air currents transversely with respect to said outlet, whereby a downdraft will be established in said warm-air passage and the hot air and products of combustion will be withdrawn therefrom and the entrance of cinders and dust therein prevented and a second tube inclosed by said first-named tube and spaced therefrom and extending to the top thereof, and having perforated upper walls and the lower end of said second tube depending below the corresponding end of said first-named tube.

848,444. GAS-BURNER. WILLIAM W. COBINS, Hadley, Pa. Filed Sept. 4, 1906. Serial No. 333,103.

Claim.—An acetylene-gas burner comprising a triangular gas-chamber having a central opening therethrough, an inlet and valve at the apex of the triangular chamber, and burner-tubes mounted in staggered series on the chamber and having threaded engagement therewith.

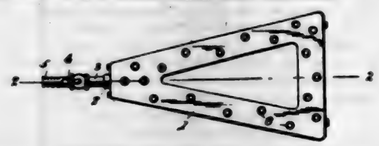

848,445. LEATHER-FINISHING COMPOSITION AND PROCESS OF MAKING THE SAME. WILLIAM W. CROOKER, Lynn, Mass., assignor to Crooker Blacking Company, Lynn, Mass., a Corporation of Maine. Filed Feb. 6, 1906. Serial No. 299,781.

Claim.—1. As a composition of matter, a powdered, emulsifiable, desiccated blacking or coloring composition containing an intimate mixture of wax, and an emulsifying ingredient.

2. As a composition of matter, a powdered, emulsifiable, desiccated blacking or coloring composition containing an intimate mixture of wax, a suitable gum-like substance, an emulsifying ingredient, and coloring-matter.

3. The process hereinbefore described of making an emulsifiable, desiccated blacking or coloring composition, the same consisting in emulsifying a vegetable wax by the use of alkaline matter to form a liquid emulsion, mixing therewith a liquid solution of a suitable gum-like substance and coloring-matter, evaporating the liquid constituents of the composition to produce a dry residuum, and powdering the said residuum.

4. In the process of making an emulsifiable desiccated blacking or coloring composition, the improved step which consists in emulsifying wax by the use of a suitable alkaline matter in water, drying the same by evaporation, and powdering the residuum.

5. In the process of making an emulsifiable desiccated blacking or coloring composition, the improved step which consists in making an alkaline solution of shellac by the use of a suitable alkali, drying the same by evaporation, and powdering the residuum.

848,446. LUBRICATING SYSTEM. GILMER CROWELL, Brooklyn, N. Y.; Jane H. Crowell executrix of said Gilmer Crowell, deceased. Filed Dec. 10, 1904. Serial No. 236,312.

Claim.—1. The combination, with an air-pump, of an oil-reservoir through which the compressed air is deflected, and an oilway leading from said reservoir to the compression-chamber through the bearings of the machine.

2. The combination, with an air-pump and its discharge-conduit, of a sealed oil-reservoir in said conduit through which the compressed air is deflected, and an oilway leading from said reservoir to and terminating in the compressing-chamber, said oilway including the bearings of the machine.

3. The combination, with an air-compressor and its discharge-conduit, of a sealed oil-reservoir communicating with said conduit, and an oilway from said reservoir having branches leading direct to the bearings of the machine and therefrom to and terminating in the compressing-chamber.

4. The combination, with an air-pump, of an oil-reservoir, a pipe from the compressing-chamber leading thereinto, a final discharge-pipe leading therefrom, and suitable oilways leading from said reservoir to and terminating in the compressing-chamber, said oilways including the bearings of the machine.

5. The combination, with an air-pump and its discharge-conduit, of a sealed oil-reservoir located in said conduit and communicating therewith, an open oilway leading from said reservoir to the compressing-chamber through the bearings of the machine, and means for trapping the oil which is conveyed by the air in said conduit and returning the same to said reservoir.

6. The combination, with an air-pump, of an oil-reservoir, a pipe leading from the compressing-chamber to the upper portion of said reservoir, said pipe having a closed end and side apertures whereby the air-current is laterally deflected into said reservoir, a final discharge-pipe leading from said reservoir, and suitable oil-ducts leading from said reservoir to the compressing-chamber through the bearings of the machine.

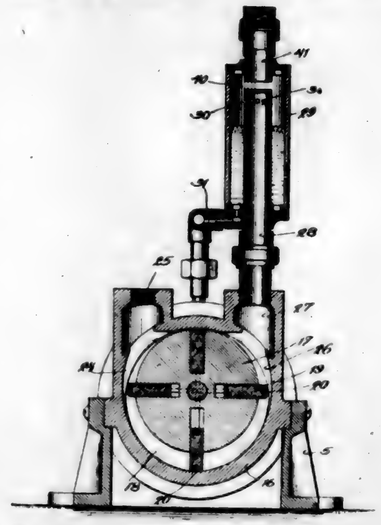

7. The combination with the compressing-chamber of an air-pump and its discharge-pipe, of an oil-reservoir within which the discharge-pipe terminates, an air-pipe leading from the reservoir, oilways leading from the reservoir through the bearings of the machine to the compressing-chamber, means for forcing the oil with air from the compressing-chamber through the discharge-pipe into the reservoir, and means for causing the separation of the oil from the air within the reservoir.

8. The combination with the compressing-chamber of an air-pump and its discharge-pipe, of an oil-reservoir within which the discharge-pipe terminates, an air-pipe leading from the reservoir, oilways leading from the reservoir through the bearings of the machine to the compressing-chamber, means for forcing the oil with air from the compressing-chamber into the discharge-pipe and means for deflecting the air and oil from the discharge-pipe against the walls of the reservoir to effect their separation.

9. In an air-compressor, the combination of a cylinder provided with bearings, oil-ducts leading from said bearings to the inner faces of the ends of the cylinder, a shaft journaled in said bearings, sliding pistons carried by the shaft within the cylinder, oil-ducts leading from the sides of said pistons to their outer ends, said ducts being arranged to register with those in the ends of the cylinder when the shaft is rotated, an oil-reservoir, and ducts leading from said reservoir to those in the bearings.

10. In an air-compressor, the combination of a cylinder provided with bearings, oil-ducts leading from said bearings to the inner faces of the ends of the cylinder, a shaft journaled in said bearings, sliding pistons carried by the shaft within the cylinder, oil-ducts leading from the sides of said pistons to their outer ends, said ducts being arranged to register with those in the ends of the cylinder when the shaft is rotated, whereby the oil will pass from the ends of the pistons into the cylinder, an oil-reservoir, ducts leading from said reservoir to those in the bearings, a duct leading from the cylinder to the reservoir for conveying oil and air thereto, and means for effecting the separation of the oil and air within the reservoir.

848,447. VALVE MECHANISM FOR ROTARY ENGINES. WILLIAM R. DAWE, Sheffield, England. Filed July 6, 1906. Serial No. 325,001.

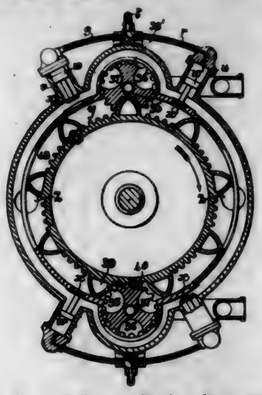

Claim.—1. In reversing mechanism for rotary-piston engines, in combination, a reversing-lever, a controlling-valve adapted to be operated from said reversing-lever, pistons adapted to be acted on by steam supplied by said controlling-valve and relief-valves controlled by said pistons, substantially as described.

2. In reversing mechanism for rotary-piston engines in combination, a reversing-lever, a controlling-valve adapted to be operated from said reversing-lever, auxiliary steam-valves also adapted to be operated from said reversing-lever, pistons adapted to be acted on by steam supplied by said controlling-valve and relief-valves controlled by said pistons, substantially as described.

3. In reversing mechanism for rotary engines, in combination, a reversing-lever, auxiliary steam-valves operated by said reversing-lever, a controlling-valve also operated by said reversing-lever, cylinders having steam and exhaust connections which are opened and closed by said controlling-valve, pistons within the said cylinders and relief-valves controlled by said pistons, substantially as described.

4. In reversing mechanism for rotary-piston engines, in combination, a reversing-lever, auxiliary steam-valves operated by said reversing-lever, a controlling-valve also operated by said reversing-lever, cylinders having steam and exhaust connections which are opened and closed by said controlling-valve, steam-pipes connecting together said cylinders in two sets, pistons working in said cylinders and relief-valves actuated by said pistons, substantially as described.

848,448. TELEPHONE-TOLL-LINE SYSTEM. WILLIAM W. DEAN, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 14, 1902. Serial No. 89,065.

Claim.—1. The combination with two united telephone-lines, of a toll-box at the substation of one of the lines, said toll-box having an electromagnetic coin-distributing apparatus for controlling the disposition of a deposited coin, a circuit for said coin-distributing apparatus, including a source of current, means at the substation for closing said circuit, an electromagnetic switch for changing the direction of flow of said current in the circuit, to cause the operation of the coin-distributing apparatus, and means, controlled through the agency of the telephone-switch at the substation of the other line, for actuating said electromagnetic switch, substantially as set forth.

2. The combination with a telephone toll-line extending from a substation to a central office, of a toll-box associated with the line at the substation, said toll-box associating a coin-chute leading through the same, and a cash-box in the interior, a polarized electromagnet having a tilting armature and mechanism operated thereby to stop the coin or to direct it into the cash-box, according to the direction of movement of the armature, said magnet being connected with the line, a line-signal at the central office, a line-battery, switch-contacts, actuated by a deposited coin in the toll-box, for closing the line-circuit, whereby current is directed through the polarized magnet in a direction to cause the same to stop the falling coin, a plug and plug-circuit for making connection with the line, a battery in the plug-circuit, normally connected therewith so that when the plug-current is connected with the line current will flow in the same direction as current from the line-battery, an electromagnetic switch for reversing the connections of the battery in the plug-circuit, whereby the polarized electromagnet is actuated to throw the coin into the cash-box, means for connecting the line with another line, and means, controlled through the agency of the telephone-switch at the substation of the last-mentioned line, for operating said electromagnetic switch, as set forth.

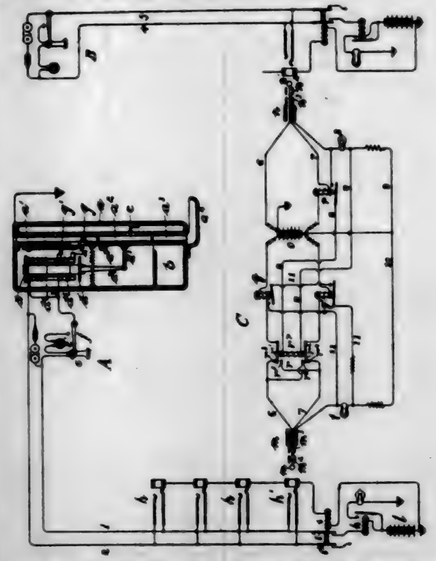

3. The combination with two telephone-lines extending from substations and united at a central office, of a toll-box at the substation of one of said lines, a polarized electromagnet connected with said line, distributing mechanism operated by said magnet adapted to control the disposition of a deposited coin, a source of current at the central office connected with the toll-line, electromagnetic switching mechanism adapted when operated to reverse the connection of said source of current with the toll-line to energize said polarized electromagnet and operate said coin-distributing mechanism to throw said deposited coin into the toll-box, and circuit connections controlled through the agency of the telephone-switch at the substation of said other line, for operating the said electromagnetic switching mechanism.

4. The combination with two telephone-lines extending from substations and united at a central office, of a toll-box at the substation of one of said lines, an electromagnetic coin-distributing apparatus in the toll-box controlling the disposition of a deposited coin, a circuit for said electromagnetic coin-distributing apparatus, a source of current in said circuit adapted to operate said coin-distributing apparatus to dispose of a deposited coin, electromagnetic mechanism at the central office controlling said circuit, and circuit connections for said electromagnetic mechanism controlled by the telephone-switch at the substation of said other line; whereby the disposition of the deposited coin at said first-mentioned substation is dependent on the response of the subscriber at the other substation.

5. The combination with a telephone toll-line, of a toll-box at the substation thereof, said toll-box having a coin-chute, a battery in the circuit of the line, an electromagnet in the toll-box connected in the circuit, a movable contact-piece and a contact-anvil therefor associated with the coin-chute, said contact-piece being adapted to be engaged by a deposited coin and pushed into engagement with the anvil, said contact-piece having an armature portion which is moved into engagement with the magnet-pole when the contact is closed, and adapted to be held by the magnet-pole to maintain the circuit closed independent of the coin, as described.

6. The combination with a telephone toll-line extending from a substation to a central office, of a toll-box associated with the line at the substation, said toll-box having a coin-chute leading through the box to the exterior thereof, a line-signal and a source of current connected with the line at the central office, switch-contacts associated with the coin-chute adapted to be actuated by a coin therein, said switch-contacts controlling the flow of current in the line-circuit to actuate said line-signal, an electromagnetic coin-distributing device actuated by current from said central source in said circuit, adapted to stop said coin, and means for subsequently operating said device by current from said source to direct the coin within the box.

7. The combination with a metallic-circuit telephone-line having a polarized magnet in the line-circuit at the substation, of a return-conductor, means for connecting either side of the line to said return-conductor, a switch for opening one side of the line at the substation, a plug-circuit at the central office adapted to be connected with the line, a source of current, a bridge of the plug-circuit including said source of current, one pole of said source of current being connected to the third conductor aforesaid, a switch for reversing the connection of the limbs of the plug-circuit with the telephone-line, two supervisory relays, one in each limb or side of the plug-circuit, and a supervisory signal controlled jointly by said relays, substantially as set forth.

8. The combination with a toll-box, of a chute leading through the box to the exterior thereof, whereby a deposited coin may pass through and be refunded to the depositor, a cash-box, mechanism actuated through the agency of a deposited coin for stopping the coin in its passage through the box, means for operating said mechanism to release and refund the coin, and means for operating said mechanism to direct the coin into the cash-box.

9. The combination with a calling and a called telephone-line, each extending from a substation to a central office, of means at the central office for connecting the lines together, a toll-box at the substation of the calling-line, a coin-distributing apparatus in said toll-box responsive to current in the line, a source of current, an electromagnetic switch at the central office adapted to change the flow of current in the calling-line to operate said coin-distributing apparatus, a telephone-switch at the substation of the called line for determining the flow of current in said called line, and a relay in the circuit of the called line, controlling said electromagnetic switch, whereby the operation of the telephone-switch at the called station automatically brings about the operation of the electromagnetic coin-distributing apparatus at the calling-station, as set forth.

10. The combination with a telephone-line extending in two limbs from a substation to a central office, of a toll-box for the line at the substation having a coin-distributing electromagnet therein, said electromagnet having two windings, a bridge of the line including one of said windings, and a telephone-switch for controlling said bridge, a branch circuit from the winding in said bridge to earth including the second winding and a contact controlling said branch circuit, the telephone-switch being located between the point of connection of the two windings and the limb 1 of the telephone-line, a line-battery at the central office normally connected with the limb 1 of the telephone-line, a plug and plug-circuit for making connection with the line, means associated with the plug-circuit for cutting off the line-battery from the limb 1, and a grounded battery *o* in the plug-circuit, said battery *o* being connected with the other limb 2 of the telephone-line when the plug-circuit is united therewith, whereby the circuit through the coin-distributing magnet at the substation is made independent of the telephone-switch thereat when the plug-circuit is connected with the line, substantially as set forth.

11. The combination with a telephone-line extending from a substation to a central office, of a toll-box associated with the line at the substation having a coin-chute leading through the box to the exterior thereof, a source of current and a line-signal connected with the line at the central office, a switch associated with a coin-chute and actuated by a coin therein, adapted to complete the line-circuit to operate said line-signal, and electromagnetic mechanism actuated by current from said source in the circuit to stop a coin falling through said chute; whereby the coin is stopped in the interior of the box when the line-circuit and apparatus is normal and operative, but is refunded to the depositor if the same is out of order.

848,449. WATCHMAKER'S TOOL. DE ROY DEKLE, McRae, Ga. Filed Nov. 19, 1906. Serial No. 344,035.

Claim.—1. A watchmaker's tool comprising pliers having coacting jaws, having alining channels on the inner faces thereof, one jaw having an undercut seat, and the other jaw having a wedge-point formed with shoulders at its base in alinement with the seat.

2. A tool comprising coacting jaws, one jaw formed with a wedge-shaped point, the opposing jaw having an undercut, shouldered seat on its inner face to coact with the wedge-point.

3. A tool comprising coacting jaws, one jaw formed with a wedge-shaped point, the opposing jaw having an undercut shouldered seat to coact with the wedge-point, and alining grooves extending inward from the wedge-point and shouldered portion respectively.

848,450. FISH CUTTING AND DRESSING MACHINE. EDWARD G. DELOE, Roaring Spring, Pa. Filed July 27, 1906. Serial No. 328,065.

Claim.—1. In a fish cutting and dressing machine, a fish-carrier, a rotatable transfer-drum carrying fish-clamps, means for opening said clamps at different points, means for holding the fish below the drum, a dissecting-knife arranged to move in two paths, an intestinal rake arranged beyond the knife, and an operating mechanism comprising means for rotating the drum, moving the fish-carrier, and reciprocating the knife.

2. In a fish cutting and dressing machine, an endless fish-carrier having a series of fish-holding pockets and spacing-blocks adjacent thereto, a rotatable transfer-drum carrying a series of U-shaped spring fish-clamps having gripping edges, fixed spreaders arranged at different points and adapted to pass through said clamps for opening the same, a series of stationary receiving-chutes arranged to receive the fish from the carrier and adapted to hold the fish in position for being caught up by the clamps, guiding-cams having upright and horizontal sections, a reciprocating knife movable upon said cams and directed thereby for severing the head and a bottom strip from the fish-body, and an operating mechanism comprising a swinging handle having operating connections with said knife, a ratchet engagement with the drum for rotating the same, and a pull-rod connection with the endless carrier for moving the latter.

3. In a fish cutting and dressing machine, a fish-carrier, a rotatable transfer-drum carrying fish-clamps, spreaders for opening said clamps at different points, a shutter for holding the fish in the chutes, adapted to be automatically

opened and closed with the revolution of the drum, a spring for operating the shutter, means whereby the shutter is not opened until the fish are clamped, a dissecting-knife arranged to move in two paths, an intestinal rake

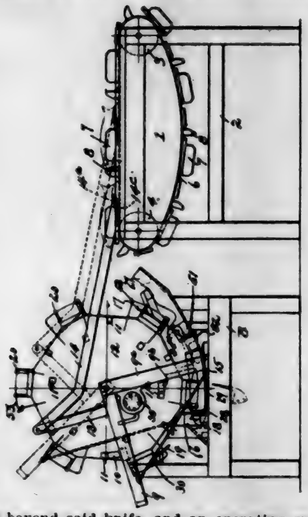

arranged beyond said knife, and an operating mechanism comprising means for rotating the drum, moving the fish-carrier, and reciprocating the knife.

848,451. SLIDING-DOOR FASTENER. JOSEPH DIERICKX, Uccle, Belgium. Filed Jan. 24, 1906. Serial No. 297,694.

Claim.—A fastener for sliding doors comprising stops, a catch mounted upon the door and engaging the stops, a rod slidably mounted upon the door and having an eye formed therein, connecting means between the rod and the catch, a pair of movable handles pivotally mounted upon opposite sides of the door, an inwardly-projecting extension upon one of the handles, the said extension passing through the eye in the sliding rod, and an extension upon the opposite handle engaging the said extension passing through the eye.

848,452. WASHING-MACHINE. EDWARD G. ELLIS and PINKNIE E. AVETT, Alto Pass, Ill. Filed Mar. 15, 1906. Serial No. 306,228.

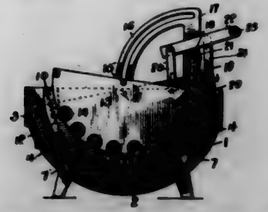

Claim.—1. In a washing-machine, a tank, an oscillating frame therein provided with rotating rubbing-rollers having gears thereon, a stationary frame inserted within said oscillating frame and provided with a segmental rack disposed above said gears, and an upper rubbing-frame provided with rotatable rubbing-rollers disposed above the driven rubbing-rollers.

2. In a washing-machine, a tank, an oscillating frame therein provided with rotating rubbing-rollers having gears thereon, a stationary frame inserted within said oscillating frame and provided with a segmental rack disposed above said gears, and an upper rubbing-frame provided with rotatable rubbing-rollers disposed above the driven rubbing-rollers, and means for oscillating said roller-frames simultaneously in opposite directions.

3. In a washing-machine, a tank, an oscillating frame therein provided with rotating rubbing-rollers having gears thereon, a stationary frame inserted within said oscillating frame and provided with a segmental rack disposed above said gears, an upper rubbing-frame provided with rotatable rubbing-rollers disposed above the driven rubbing-rollers said rubbing-rollers being provided with undulatory surfaces coöperating with each other, an operating-lever, and links extending from the opposite sides of the pivot of said lever to the frames of the rubbing-rollers.

4. In a washing-machine, a tank, an oscillating frame therein provided with rotating rubbing-rollers having gears thereon, a stationary frame inserted within said tank and provided with a segmental rack disposed above said gears, an upper rubbing-frame provided with rotatable rubbing-rollers disposed above the driven rubbing-rollers each series of said rubbing-rollers being provided with undulatory surfaces coöperating with each other, an operating-lever, links extending from the opposite sides of the pivot of said lever to the frames of the rubbing-rollers, and a hanger depending from said pivot for retaining the rack and frame from movement.

5. In a washing-machine, a tank, a lower rubbing-roller frame pivotally mounted in the walls of said tank and provided with means for oscillating said frame, gears carried upon the axis of each of said rubbing-rollers, a rack-frame pivotally mounted upon the axis of said rubbing-roller frame and provided with a rack meshing with the gears upon said rollers, means for retaining said rack-frame against oscillatory movement, and a coöperating frame provided with rubbing-rollers disposed within the rack-frame.

6. In a washing-machine, a tank, a lower rubbing-roller frame pivotally mounted in the walls of said tank and provided with means for oscillating said frame, gears carried upon the axis of each of said rubbing-rollers, a rack-frame pivotally mounted upon the axis of said rubbing-roller frame and provided with a rack meshing with the gears upon said rollers, means for retaining said rack-frame against oscillatory movement, a coöperating frame provided with rubbing-rollers disposed within the rack-frame, means for oscillating said coöperating frame in opposition to the frame carrying the driven rollers, and a segmental slotted standard within which the pivot of the coöperating frame is adapted to travel.

7. In a washing-machine, a tank, a standard provided at opposite sides thereof, a rock-shaft pivoted in said standards, concentrically-disposed rubbing-frames within said tank, an operating-lever carried by said rock-shaft, links extending from said lever at opposite sides of its pivot and connected to said rubbing-frames, a rack-frame disposed in said tank, and hangers pivotally mounted upon said rock-shaft and connected to said rack-frame to retain the same against oscillation.

8. In a washing-machine, an oscillating frame, a rubbing-roller mounted therein, a journal for said roller provided with an attaching-plate at one end, a gear spaced from said plate intermediate the opposite end of said journal, a fixed rack-frame mounted between said gear and plate, and a rack carried by one face of said frame to mesh with said gear.

848,453. ELEVATOR-ROPE CLAMP. FRED L. EMERSON, Denver, Colo. Filed Nov. 20, 1905. Serial No. 288,295.

Claim.—1. In a device of the class described, the combination of a plate folded upon itself to inclose the shifting cable of an elevator, and means for producing a gripping action between the folds and upon said cable.

2. In a device of the class described, the combination of a plate adapted to be fixed to an elevator-cage and folded to form spring-jaws positioned and proportioned for embracing the shifting cable of an elevator, and means carried by the plate adapted to draw the folds toward each other, for producing a gripping action on the cable.

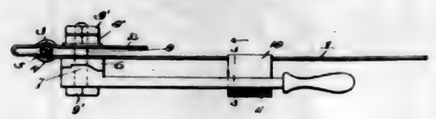

3. In a device of the class described, the combination with a plate, bent into a spring-jaw, a bolt passed through said plate and jaw, and a cam engaging said bolt for moving the same longitudinally for drawing the jaw into a clamping position, said jaw being adapted to clamp the shifting cable of an elevator.

4. In a device of the class described, the combination with a folded plate adapted to be carried by an elevator-cage and arranged to engage the shifting cable thereof, of a lever, a cam carried by said lever, a second cam interposed between the first cam and the plate, and a bolt extending through the cams and the folds of the plate.

848,454. CAR-COUPLING. CHRISTOPHER FANCHER, McCool, Miss., assignor of one-fourth to Noah H. Fancher and one-fourth to Dionysus Landrum, McCool, Miss. Filed Aug. 4, 1906. Serial No. 329,183.

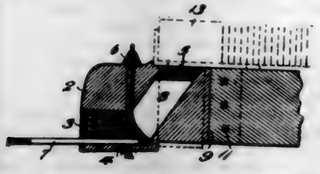

Claim.—1. In a car-coupling, the combination with a draw-head, of a plate secured to the sill of the car and provided with an angle-head engaging one corner of said sill, a yoke embracing the draw-head and provided with flanges, and means passing through the flanges and engaging the plate to secure the yoke in applied position.

2. In a car-coupler, the combination with the sill of a car, of a draw-head provided with a guideway and secured upon the car to position the entrance to the guideway below the sill.

3. In a car-coupler, the combination with a draw-head provided with a guideway, of means adapted to secure the draw-head in applied position, said means including a plate which is positioned to close the entrance to the guideway in the draw-head.

848,455. RAILROAD-RAIL JOINT. JAMES J. FEENY, Saltville, Va. Filed Aug. 4, 1906. Serial No. 329,182.

Claim.—In a rail-joint, a pair of mutually-engaging splice-plates of twin character, having vertical perforated portions embracing the web of the rail, each plate having at one end a tapering upward and inward flanged portion overlying the top of the base of the rail, and at the other end a tapering lower portion underlying the base of the rail and provided with a tapering downward-extending flange at the opposite side of the plate from said tapering upward and inward flanged portion, said tapering lower portion having an oblique transverse edge extending across the joint of the rails from the inner end of said tapering downward-extending flange to the inner end of said tapering upward and inward flanged portion, the tapering upward and inward extending portions and tapering downward-extending flanges of the plates being adapted to have a cramping engagement with each other and with the rail-bases.

848,456. CAN-OPENER. FREDERICK GARRECHT, Idaho City, Idaho. Filed June 7, 1906. Serial No. 320,569.

Claim.—1. In combination with a can, a can-opener comprising a handle having guide-grooves on its under face, means pivoted at the center of the can-top and slidable in the grooves, a blade slidable in the grooves and projecting from the handle, and a tongue projecting from the handle, said blade and tongue providing means for engaging the can at opposite sides and holding the handle against movement.

2. In a can-opener of the class described, a handle, a blade slidably connected with the handle, and means carried by the handle coöperating with the blade adapted to engage a can-body at opposite sides and hold the handle against movement.

3. In a can-opener of the class described, the combination of a handle, a blade slidably connected with the handle, means slidably connected with the handle adapted to pivotally connect it with a can-top, and means projecting from the handle coöperating with said blade adapted to engage a can-body at opposite sides and hold the handle against movement.

4. In combination with a can, a can-opener comprising a handle having its longitudinal edges bent over to form guide-grooves, a blade slidable in the guide-grooves, a plate pivoted to the center of the can-top and slidable in the guide-grooves and disconnected from said blade, and means at each end of the handle for limiting the sliding movement of the blade and plate.

5. In combination with a can, a can-opener comprising a handle having its longitudinal edges bent over to form guide-grooves, a blade slidable in the guide-grooves, a plate pivoted at the center of the can-top slidable in the guide-grooves and disconnected from said blade, a downwardly-turned end at the end of the handle for limiting the movement of the blade and plate in one direction, means for limiting their movement in the opposite direction, and a projecting tongue carried by the handle coöperating with said blade for engaging the can-body at diametrically opposite points, for the purpose described.

848,457. BOAT PROPULSION. HARRY E. GRACE, Baltimore, Md., assignor of one-half to Thomas F. Fitzberger, Jr., Baltimore, Md. Filed Feb. 13, 1906. Serial No. 300,904.

Claim.—A boat having a water flume or passage-way extending fore and aft therethrough and having the forward portion of said flume branched to form starboard and port forks which open out through the bow of the boat and leave an intervening engine-space closures for the forward and rear ends of the flume and branches thereof, a propeller-shaft extending through the stern portion of the flume, and a plurality of propellers mounted on said shaft, one operating within the flume and the other in rear of the discharge end of the flume the rear closure being located between said propellers, substantially as described.

848,457.

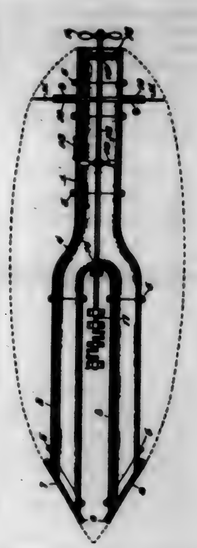

848,458. CLINICAL THERMOMETER. WALTER P. GRAFTON, Old Charlton, England. Filed June 9, 1906. Serial No. 320,952.

Claim.—1. A casing in which is held a clinical thermometer, provided with oppositely-arranged arms, upon one of which is loosely mounted a sleeve.

2. A holder for a clinical thermometer, having oppositely-arranged arms, one of which is provided with a bearing in which the arm is adapted to turn.

3. A case for a clinical thermometer provided with a pair of arms, one of which is rigidly attached to the case, said arms projecting in alinement with one another at opposite sides of and at right angles to the axis of the instrument, for the purpose specified.

4. A case for a clinical thermometer provided with a pair of arms, both of which are rigidly attached to the case, said arms projecting in alinement with one another at opposite sides of and at right angles to the axis of the instrument, for the purpose specified.

5. A casing in which is held a clinical thermometer, provided with oppositely-arranged arms, one of which is roughened and the other having a sleeve loosely mounted thereon.

6. A case for a clinical thermometer having one end weighted and provided with oppositely-arranged arms, upon one of which is loosely mounted a sleeve.

7. A case for a clinical thermometer, having one end weighted and provided with oppositely-projecting integral arms, one arm having a sleeve loosely mounted thereon and the other being roughened.

848,459. CHIPPING-MACHINE. CHARLES E. GRANT, Allendale, Cal. Filed Aug. 20, 1906. Serial No. 331,297.

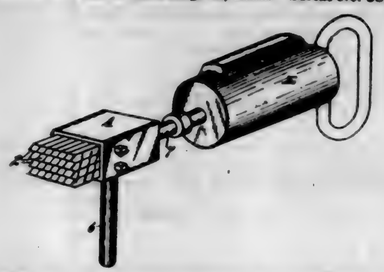

Claim.—1. In a chipping-machine, the combination with a unitary head of a series of chippers having rear portions incased in the head, said chippers being in contiguous relation and having reduced inner ends, said head having sockets for the reduced ends of the chippers, springs on the reduced ends of the chippers and operating to maintain the cutting edges of the chippers in substantially the same plane, said chippers having channels through them and keys passing through the channels and allowing the chippers independent reciprocation, and means for operating the chippers in unison in the same direction.

2. In a chipping-machine, the combination with a unitary head of a plurality of spring-pressed chippers slidably mounted therein, said chippers having channels in their adjacent sides, keys passing through said head and channels whereby the chippers are allowed an independent reciprocation, and means for operating the chippers.

3. The combination with a pneumatic hand-tool, of a head connected therewith, a plurality of spring-pressed chippers slidably mounted in the head, and means whereby each of said chippers is capable of a limited independent movement.

4. The combination with a pneumatic hand-tool, of a head and means whereby it is swivelly connected therewith and provided with spring-pressed chippers, means whereby said chippers are allowed a limited independent movement in the head, and a handhold by which the chippers are directed over the surface to be cleaned.

848,460. SPOOL-HOLDER. WILLIAM GREEN, Honolulu, Hawaii. Filed Aug. 2, 1906. Serial No. 328,862.

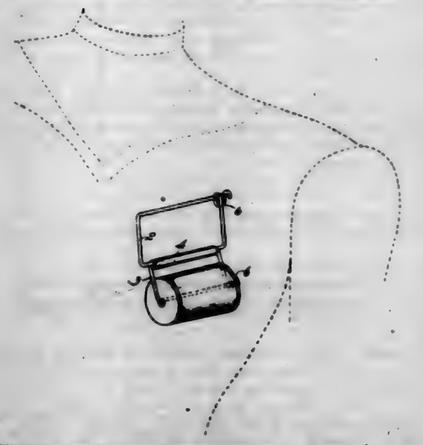

Claim.—An improved reversible spool-holding device said device consisting of two open rectangular wire frames, a band or sleeve embracing the contiguous longer

sides of said frame and by which the frames are flexibly connected, pins forming the outer long sides of each of the frames, each of said pins designed to detachably receive a spool and also to serve to attach the device to a garment, and a locking attachment upon the contiguous shorter sides of both of said frames, adapted to engage said pins.

848,461. VEHICLE-WHEEL. WILLIAM S. HADLEY, San Antonio, Tex., assignor of one-fourth to John H. Benson, Cleburne, Tex. Filed Mar. 21, 1906. Serial No. 307,246.

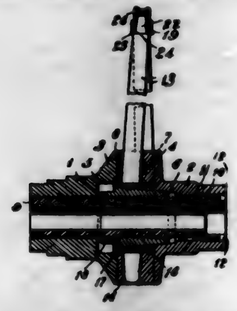

Claim.—1. A wheel-hub comprising opposite tubular internally-threaded hub ends having their inner terminals adapted to embrace spokes and provided with internal terminal enlargements, an externally-threaded hub-box upon which the hub ends are threaded, an internally-threaded tubular wedge fitting the box and received within the enlarged portions of the hub ends, a split ring engaging the wedge for forcing the spokes outwardly, and a member supported on the ring and located between the hub ends for coöperating therewith to hold the spokes.

2. A hub comprising tubular internally-threaded hub ends provided with internal terminal enlargements, the inner extremity of one of the hub ends being provided with an annular series of substantially radial spoke-sockets which contract in an outward direction and are closed by the other hub end, an externally-threaded hub-box upon which the hub ends are fitted, and an internally-threaded tubular wedge carried by the middle portion of the hub-box within the enlargements of the hub ends and adjustable upon the box across the inner open ends of the spoke-sockets to move the latter outwardly and wedge them in their sockets.

3. A hub comprising opposite hub ends, the inner terminal of one of the hub ends being provided with an annular series of substantially radial spoke-sockets, and a ring interposed between the hub ends and provided with shoulders entering certain of the sockets.

4. A hub comprising opposite hub ends, one of which is provided at its inner terminal with an annular series of substantially radial spoke-sockets intersecting the inner and outer peripheries of the hub end and its inner terminal, with alternating sockets deeper than the other sockets, and a ring interposed between the hub ends and provided with an annular series of shoulders entering and closing the open outer ends of the deep socket.

5. A hub comprising an externally-threaded hub-box, and opposite tubular internally-threaded hub ends fitted upon the threaded box, the inner face of one of the hub members being provided with radial and outwardly-contracting spoke-sockets which are tapered transversely and are open throughout their outer sides and outer ends, and the other hub member being adapted to close the open sides of the sockets.

6. A hub comprising an externally-threaded hub-box, opposite internally-threaded hub ends fitted upon the box, the inner face of one of the hub ends being provided with radial open-ended sockets which are tapered longitudinally and transversely with their outer sides open, the other hub end being adapted to close the open sides of the sockets, and means between the hub ends which enter alternate sockets and are tapered to correspond with the latter.

848,462. SELF-LOCKING SEAL. WILLIAM F. HARRIS, South Bend, Ind. Filed Oct. 28, 1905. Serial No. 284,800.

Claim.—1. In a seal, in combination with a tubular housing having overlapping lateral edges, a strip of metal having a forked end extending therethrough and about said lateral edge portions, the forked end of the strip being inserted in the same end of said housing as that entered by the body portion of the strip closely adjacent to the inner one of the lateral edges and in a position of substantial parallelism with the adjacent engaging portions of the strip, said strip terminating at its other end in a hooked portion adapted to be forced within said housing at the same end as that entered by the forked portion and into locking engagement with said forked end, substantially as described.

2. In a seal, in combination with a housing, a strip of metal of uniform width adapted to be passed therethrough, having one of its ends split and bent upon itself to engage entirely around one longitudinal wall of said casing and to extend into said housing, the other end of said strip being bent to form a hook and being forced into said housing at the same end thereof as that entered by said split end and into interlocking engagement therewith, substantially as described.

3. In a seal, the combination of a housing formed from a plate folded to tubular form with the edges overlapping, and with the overlapping edges at one end bent slightly inward, and a strip passing through the housing and extending over said overlapping edges, one end being split and bent upon itself and extending within said housing and the other end being bent to form a hook and inserted in the opposite end of the housing from the inwardly-bent edge portions, and interlocking with the split end already therewithin, substantially as described.

848,463. CAN AND MEANS FOR VENTING AND CLOSING SAME. JAMES W. HEARN, New Orleans, La. Filed Mar. 7, 1906. Serial No. 304,688.

Claim.—1. A can comprising a can-body having a filling-opening, a cap for closing the filling-opening, and provided with a vent-opening, and a cover fitting the cap, said cover and cap fitting closely at their edges, but spaced apart at their centers to form a solder-containing recess therebetween.

2. A can comprising a can-body having a filling-opening, a cap for closing the filling-opening and having a vent-opening, solder closing the vent-opening, a pry-cover removably fitting the said cap and covering up the said solder, a solder-containing recess being formed between the said cap and the said cover for the latter to snugly fit the cap without interference by the said solder.

3. A can comprising a can-body having a filling-opening, and a cap for closing the said filling-opening and provided with a vent-opening, a cover fitting the cap the said cover having an upwardly-pressed portion directly above the said filling-opening.

4. A can comprising a can-body having a filling-opening, and a cap for closing the said filling-opening and provided with a vent-opening, a cover fitting the cap the said cover having a depression in its under side directly above the said filling-opening, and the said cap having a depression in which the said vent-opening is formed.

848,464. VINE AND WEED-CUTTER. CHARLES F. HIPPARD, Minonk, Ill. Filed Aug. 10, 1906. Serial No. 330,015.

Claim.—1. The combination with a cultivator, of knives supported parallel with the shovels on the cultivator, and a guard located at the upper edge of each knife and spaced from said edge.

2. In a cultivator, knives adapted for engagement with the ground and supported substantially parallel with the shovels of the cultivator, the said knives being spaced from the outer edges of the shovels and extending beyond the forward and the rear shovels, and means for adjusting said knives vertically and laterally.

3. In a cultivator, knives adapted for engagement with the ground located substantially parallel with the side gangs of shovels of the cultivator a distance from the outer edges of said shovels, and means for adjusting said knives vertically and laterally.

4. In a cultivator, knives adapted for engagement with the ground, located substantially parallel with the outer edges of the side gangs of shovels for the cultivator, supports for the knives connected with the shovel-beams of said cultivator, and means for vertically and laterally adjusting said supports.

5. In cultivators, the combination with the beams, thereof and the shovels carried by the beams, said shovels being arranged in side gangs, of a knife for each gang of shovels, located outside of said shovels and substantially parallel with their outer edges, supports for said knives connected with the shovel-beams, and a guard located at the upper edge of each knife and spaced from said edge.

6. In a cultivator, the combination with the draft-beam and the shovel-beams, the shovels on the said beams being arranged in side gangs, of a knife for each side gang of the cultivator-shovels and adapted for engagement with the ground, said knives being spaced from the outer edges of said shovels and having a downward and outward inclination, supports for said knives, and devices for adjustably attaching said supports to the knives and to the shovel-beams.

7. In a cultivator, the combination with the draft-beam and the shovel-beams, the shovels on the said beams being arranged in side gangs, of a knife for each side gang of cultivator-shovels and adapted for engagement with the ground, said knives being spaced from the outer edges of said shovels and having a downward and outward inclination, supports for the said knives, devices for adjustably attaching the said supports to the knives and to the shovel-beams, and a guard for each of the knives, secured at their forward edges and extending parallel with the upper edges of said knives to their rear edges, a space intervening between the guards and the knives, for the purpose described.

8. In a cultivator, the combination with the draft-beam and shovel-beams connected therewith, the shovels on the said shovel-beams being arranged in side gangs, of knives adapted for engagement with the ground and located opposite the outer side edges of the said shovels and practically parallel with the gangs of shovels, keepers secured to the said knives, bolts mounted to slide in the said keepers, being held from turning therein, supports for the knives secured to the keepers by said bolts, bearings fitted to the shovel-beams, which bearings are provided with grooves to receive the upper ends of said supports, and clips passed through said bearings, extending over the top and beneath the bottom edges of the beams to which said bearings are applied.

9. In a cultivator, a knife adapted for engagement with the ground, means for supporting the knife at the outer side of the shovels of the cultivator, and a guard carried by the knife and spaced from its upper edge.

10. In a cultivator, a knife adapted for engagement with the ground, and supports for said knife adapted for connection with the cultivator-beams, the said supports being adjustable laterally on the said knife.

11. In a cultivator, a knife supported parallel with the shovels on the cultivator, supports for said knife, and devices for adjustably securing said supports to the knife and to the shovel-beams.

848,465. CHAIR AND THE LIKE. CHRISTIAN H. HOMEYER, Bremen, Germany, assignor to Christoph Heims & Sohn Gesellschaft mit Beschränkter Haftung, Berlin, Germany. Filed Mar. 23, 1906. Serial No. 307,648.

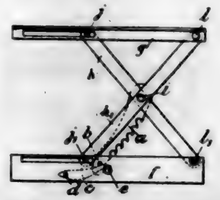

Claim.—In a chair, the combination with a seat portion and an under frame, of means for elevating and lowering the seat portion, said means comprising two pairs of obliquely-extending levers, one of the levers of each pair extending in an opposite direction with respect to the other lever of each pair, a bar for pivotally connecting the levers at their centers, means for pivotally connecting the upper end of one of the levers of each pair to the front of the seat portion, means for pivotally connecting the end of the other lever of each pair to the front of the under frame, means for slidably connecting one end of the levers of each pair to the rear of the seat portion, means for slidably connecting the levers of each pair to the rear of the under frame, a pair of ratchets depending from said bar and each provided with a laterally-extending pin at the lower end, a bar secured to the under frame and adapted to be engaged by said ratchets, and pawls carried by the under frame and resting upon the bar secured to the under frame and constituting tracks for the pins of the pawls.

848,466. MAIL-ASSORTING TABLE. CHARLES A. KENDALL, Concord, N. H., assignor of one-half to Horace Merrill, Boston, Mass. Filed Nov. 24, 1906. Serial No. 344,911.

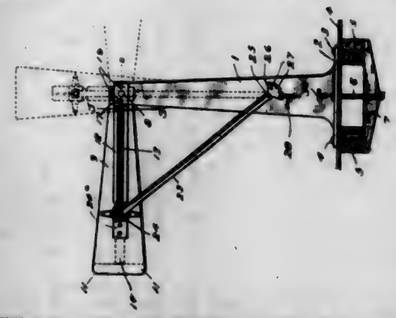

Claim.—1. A table of the character described comprising a standard, a table-top, a guideway secured to one side of said table-top, a plate pivoted to said standard and carrying rollers mounted in said guideway, a plate secured to the side of the table-top, a brace-rod pivoted at one end to said plate and pivoted at its opposite end to said standard, a sector formed on said brace-rod, and a foot-lever for engaging notches in said sector for holding the table in adjusted position.

2. A table of the character described comprising a standard, a table, a guideway upon said table, a plate pivoted to said standard and provided with rollers mounted to move in said guideway, a brace-rod, a plate secured to the table, said brace-rod being pivoted to said plate at one end and having its opposite end pivoted to said standard, and means for holding the table in adjusted position.

3. In a table of the character described, the combination of a standard, a table-top, a plate pivoted to said standard and connected to said table-top, and means for holding said table-top in adjusted positions, said means comprising a guideway on the table-top, a plate provided with rollers mounted in said guideway, a plate secured at the side of said table-top, a brace-bar pivotally connected to said plate and pivoted to said standard, and a foot-lever for holding said brace-rod in adjusted position, substantially as described.

848,467. HAT-FRAME MACHINE. AUGUST KINDERMANN, Cincinnati, Ohio. Filed May 8, 1906. Serial No. 315,771.

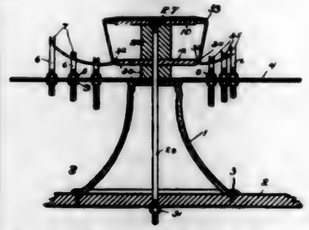

Claim.—1. In a hat-frame machine, a horizontal plate, with a series of openings therethrough, arranged in concentric circles, vertical posts mounted in said openings, with nuts for holding same at the desired height, and horizontal arms secured above the plane of the horizontal plate to hold the crown-wires.

2. In a hat-frame machine, a horizontal plate, with a series of openings therethrough, arranged in concentric circles, vertical posts mounted in said openings, with nuts for holding same at the desired height, a disk mounted above said plate, a cam-plate thereon, with horizontal arms to receive the crown-wire, and means for rotating the cam-plate to extend said horizontal arms for bell-crown shapes.

3. In a hat-frame machine, a horizontal plate, with a series of openings therethrough, arranged in concentric circles, vertical posts mounted in said openings, with nuts for holding same at the desired height, a flanged disk mounted above said plate, a cam-plate with a series of cams thereon, mounted within the flange of said disk, and radial arms extended by said cam-plate as same is rotated with springs to return the arms to normal position.

848,468. ELECTRIC RECORDER. DAVID J. KLEPFER, Philadelphia, Pa.; Sarah L. Klepfer administratrix of said David J. Klepfer, deceased. Filed Mar. 28, 1902. Serial No. 100,359.

Claim.—1. The combination with an automatic sprinkler system including a valve normally obstructing the flow of fluid in said system; of a recording device, comprising mechanism arranged to chronologically progress a record-strip; a plunger arranged to imprint said strip; a spring arranged to normally retract said plunger from the path of said strip; an electromagnet; an armature for said magnet distinct from said plunger, arranged to operate said plunger to imprint said strip; an electric circuit connecting said valve with said electromagnet; an electric signaling device comprising an electromagnet bridged across said circuit in parallel relation with the electromagnet of said recording device; an armature for said magnet of the signaling device; a battery in said circuit between said bridge and said valve; whereby when said circuit is closed by said valve, said signaling device contemporaneously interrupts the circuit leading to said recording device and produces an audible signal; a casing comprising two chambers, one inclosing said recording mechanism and the other arranged to receive the imprinted portion of said strip; and means normally maintaining closed, the chamber containing said recording mechanism; said chamber for the imprinted portion of the strip being normally accessible, substantially as set forth.

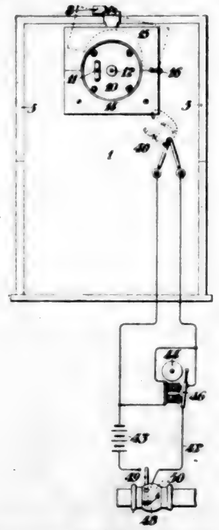

2. The combination with an automatic sprinkler system including a valve normally obstructing the flow of fluid in said system; of a recording device comprising mechanism arranged to chronologically progress a record-strip; a plunger arranged to imprint said strip; a spring arranged to normally retract said plunger from the path of said strip; an electromagnet; an armature for said magnet distinct from said plunger, arranged to operate said plunger to imprint said strip; an electric circuit connecting said valve with said electromagnet; an electric signaling device comprising an electromagnet bridged across said circuit in parallel relation with the electromagnet of said recording device; an armature for said magnet of the signaling device; and, a battery in said circuit between said bridge and said valve; whereby when said circuit is closed by said valve, said signaling device contemporaneously interrupts the circuit leading to said recording device and produces an audible signal, substantially as set forth.

3. The combination with an automatic sprinkler system including a valve normally obstructing the flow of fluid in said system; of a recording device comprising mechanism arranged to chronologically progress a record-strip; an electric circuit connecting said recording device with said valve, arranged to be opened and closed in correspondence with the movement of the latter; and, an electric signaling device bridged across said circuit in parallel relation with said recording device, comprising means arranged to contemporaneously interrupt said circuit including the recording device, and thereby contemporaneously produce an audible signal and a chronological record of the same, substantially as set forth.

4. The combination with an automatic sprinkler system including a valve normally obstructing the flow of fluid in said system; of an electrical alarm-circuit arranged to be opened and closed by the movement of said valve; an electric bell in said alarm-circuit; mechanism located apart

from said bell arranged to record the operation of the latter, comprising a clock and mechanism arranged to chronologically progress a record-strip; a plunger arranged to imprint said strip; a spring arranged to normally retract said plunger from the path of said strip; an electromagnet connected across said alarm-circuit in parallel relation with said bell; an armature for said magnet, distinct from said plunger, arranged to operate said plunger to imprint said strip; a casing comprising two chambers, one inclosing said recording mechanism and the other arranged to receive the imprinted portion of said strip; and, means normally maintaining closed the chamber containing said recording mechanism; said chamber for the imprinted portion of the strip being normally accessible, substantially as set forth.

3. The combination with an automatic sprinkler system including a valve normally obstructing the flow of fluid in said system; of a recording device comprising mechanism arranged to chronologically progress a record-strip; an electric circuit connecting said recording device with said valve, arranged to be opened and closed in correspondence with the movement of the latter; and, an electric signaling device comprising a coil included in said circuit and means arranged to automatically interrupt said circuit, and thereby contemporaneously produce an audible signal and a chronological record of the same, substantially as set forth.

848,469. ADJUSTABLE TABLE. ERNEST KOHLER, San Francisco, Cal. Filed Nov. 20, 1906. Serial No. 344,192.

Claim.—1. An adjustable table having in combination a hollow column, a socket member having a depending leg adjustable in said column, means for locking the leg to the column in any of its adjusted positions, a ball fitting said socket member said ball being made hollow and being provided on its inside with outwardly-spring-pressed radial pins, and said socket member being provided with radial rows of perforations to receive said pins, a table-top mounted on the ball, and unitary means on the table and operable from the several sides thereof to coördinately withdraw the pins to allow the table-top to assume varied positions.

2. In an adjustable table, the combination of a table-leg, a spherical socket member carried thereby, a joint-ball fitting within the bearing, one of said joint members provided with a plurality of radial perforations, the other of said members being hollow and containing on its interior a plurality of spring-actuated locking devices coacting with said perforations, a table-top carried by said joint-ball, a single cord movably connected with the under side of the table-top and extending around the joint and connections between said cord and the several locking devices, whereby said locking devices may be simultaneously released from either side of the table by pulling on said cord.

3. In a table, the combination with a hollow standard and a table-top having a ball member fixed to its under side, of a socket member having a depending leg adjustable in said standard, means for locking the leg in any of its adjusted positions, said socket member having rows of radial perforations and said ball member having outwardly-pressed locking-pins engageable with the perforations of the socket member, and means connecting with the inner ends of the locking-pins and extending to outside the ball member for withdrawing said pins coördinately to allow the table-top to assume varied positions.

848,470. APRON-SUPPORTER. JACOB G. KOUNTS, Wellsville, Ohio. Filed Sept. 14, 1906. Serial No. 334,635.

Claim.—1. An apron-supporter constructed with a flexible loop adapted for arrangement around the apron-wearer's neck, means adapted for attachment of the apron to said loop, a rigid brace adapted for spacedly holding the attached ends of the loop, and a belt with means for attachment to the side edges of the apron.

2. An apron-supporter comprising a flexible neck-loop, supporting-hooks on the neck-loop, a rigid brace adapted for spacedly holding the loop ends, means adapted to be attached to an apron, the apron attachment means being adapted for holding engagement with the hooks on the neck-loop, and a belt with means adapting its attachment to the apron.

3. An apron-supporter comprising a flexible neck-loop constructed of a series of links, supporting-hooks on end links of the loop, a rigid brace adapted for spacedly holding the loop ends, means adapted to be attached to an apron, the apron attachment means being adapted for holding engagement with the hooks on the neck-loop, and a belt with means adapting its attachment to an apron.

4. An apron-supporter constructed with a neck-loop, means adapted for attachment of the apron to said loop, a brace adapted for spacedly holding the attached ends of the loop, the brace being constructed and adapted for lengthwise adjustment, and a belt with means for attachment to the side edges of an apron.

848,471. KEYBOARD FOR TYPE-WRITING MACHINES AND PIANOFORTES. JEAN H. LAUDENBACH, Paris, France. Filed July 25, 1906. Serial No. 327,744.

Claim.—1. A keyboard for type-writing machines involving supports, a plurality of key-heads, axes associated with said supports and key-heads, the axis of each key-head having a position different with respect to the remaining axes, and means for holding the key-heads in a normal operative position.

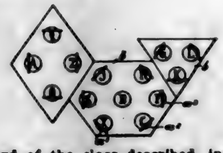

2. A keyboard of the class described, involving a supporting-bar, a key-head, an axis for connecting the key-head to the bar to allow oscillatory movement of said key-head, said axis being arranged eccentrically in said key-head, and a resilient means for holding the face of the key-head in a substantially horizontal plane.

3. A keyboard involving a plurality of keys having suitable characters thereon, supports for the keys, means for connecting the keys with the supports to allow the said keys to oscillate on the supports, said means for each key being arranged on an axial line and in a different position relative to the adjacent key, and tension means operative on the keys to hold the same normally in a substantially horizontal plane.

4. A keyboard involving a plurality of keys, supports for the keys, said keys arranged in a manner to form geometrical figures, supports for the keys, an axis connecting each of the keys to the supports, said axis of each key being arranged in the keys a distance removed from the center thereof to allow said keys to oscillate toward the center of the geometrical figures, and tension means operative on the keys to hold the same normally in a substantially horizontal plane.

848,472. DEVICE FOR SMOOTHING WAGON-ROADS. FREDERICK W. LECHNER, Wenona, Ill. Filed June 30, 1906. Serial No. 324,186.

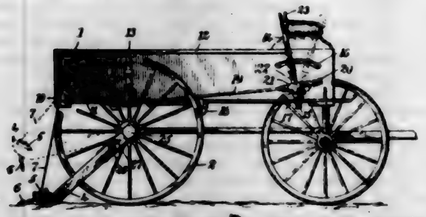

Claim.—1. A vehicle having an axle, wheels mounted thereon, arms screw-threaded to the ends of the axle, a smoothing means connecting the ends of the arms, and means for raising and lowering the smoothing means.

2. A vehicle having an axle, an arm secured to the end of said axle, said arm comprising two sections detachably secured together, one of said sections having a collar screw-threaded to the end of the axle and adapted to hold the wheel in place.

3. A vehicle, arms each having one end pivotally connected to the wagon and the other adapted to rest on the ground, a platform connecting the lower ends of said arms, and supported thereon and means secured to the lower ends of the arms and adapted to drag on the ground behind said platform.

4. An improved road smoothing and dragging device, comprising arms each adapted to have one end pivotally connected to the end of the axle of a vehicle and hold the wheel thereon, and the lower ends of said arms rest on the ground, a platform or beam resting on the lower ends of said arm, means for securing the arms to the beam at varying distances apart, a chain also secured to the lower end of the arms and adapted to rest on the ground, and means for raising and lowering said device.

5. A vehicle having an axle, wheels mounted thereon, an arm secured to each end of said axle and adapted to rest upon the ground, a smoothing means connecting the ends of the arms and supported upon the upper sides thereof, and means for adjusting the distance between the ends of said arms upon which the smoothing means rests.

6. A vehicle, having an axle, wheels mounted thereon, arms secured to the ends of said axle and having their lower ends adapted to rest upon the ground, and a smoothing device connecting the lower ends of said arms, each of said arms comprising two members detachably secured together and one of said members being provided with a nut adapted to be screw-threaded to the end of the axle to hold the wheel in place, and the remainder of said member adapted to serve as a handle by which said nut may be turned.

848,473. INSULATING-CLAMP. THOMAS B. LEE, Charlotte, N. C. Filed May 15, 1906. Serial No. 316,905.

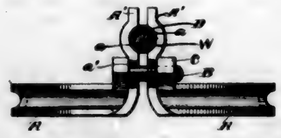

Claim.—1. An insulator-clamp comprising two separate inflexible sections adapted to clamp a transmission-wire and engage the neck of an insulator, and means for securing said sections together.

2. An insulator-clamp comprising two separate semicircular inflexible sections adapted to clamp a transmission-wire and engage the neck of an insulator, and means for securing said sections together on the insulator.

3. An insulator-clamp comprising two separate semicircular inflexible sections adapted to engage the neck of an insulator, lugs at the ends of said sections adapted to clamp a transmission-wire, and means for drawing said lugs together to clamp the wire and secure the clamp to the insulator.

4. An insulator-clamp comprising two separate semicircular inflexible sections adapted to engage the neck of an insulator, vertical lugs at each end of each section, said lugs having semicircular grooves in their opposing faces to receive a transmission-wire, and means for drawing the opposing faces of said lugs together to clamp the wire and secure the clamp to the insulator.

5. An insulator-clamp comprising two separate semicircular sections adapted to clamp a transmission-wire, and engage the neck of an insulator, and means for securing said sections together.

6. The combination with an insulator, of a clamp comprising two separate body portions encircling said insulator, and wire-holding means projecting from said body portions, and a bushing fitting in said wire-holding means and surrounding the wire.

7. The combination with an insulator, of a clamp comprising two separate body portions encircling said insulator, and wire-holding means projecting therefrom, and a separable bushing held by said wire-holding means and surrounding the wire.

8. The combination with an insulator, of a clamp comprising two separate body portions encircling said insulator, and wire-holding means projecting therefrom, a double-tapered bushing held by said wire-holding means and surrounding the wire.

9. The combination with an insulator, of a clamp comprising two separate body portions encircling said insulator, and wire-holding means projecting therefrom, a separable double-tapered bushing held by said wire-holding means and surrounding the wire.

10. The combination with an insulator, of a clamp comprising two separate semicircular sections having lugs projecting upwardly from each end, said lugs constituting wire-holding means, a separable bushing held by said lugs and surrounding the wire, and means for forcing the opposing faces of the lugs toward each other.

11. The combination with an insulator, of a clamp com-

prising two separate semicircular sections having lugs projecting upwardly therefrom, said lugs consisting of wire-holding means, a bushing held by said lugs, said bushing flaring toward each end from its center, and means for forcing the opposing faces of the lugs toward each other.

12. The combination with an insulator, of a clamp comprising two separate semicircular sections having lugs projecting upwardly therefrom at each end, said lugs having grooves in their opposing faces, a separable bushing held in said grooves, and flaring toward each end from its center, and means for forcing the opposing faces of the lugs toward each other.

848,474. LOADING-FRAME. WILLIAM LICHTE, Bigspring, Mo. Filed Dec. 5, 1906. Serial No. 346,503.

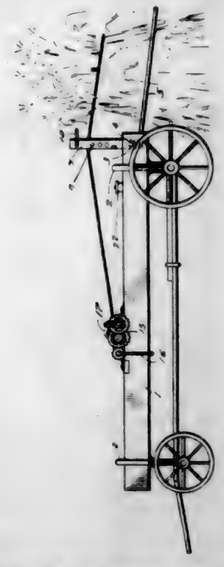

Claim.—1. A loading device comprising a main frame, a rock-shaft journaled in one end of said frame, fork-arms extending outwardly from said shaft, a tilting frame carried by the shaft and having a roller (or pulley) journaled thereon, hoisting means including a cable passing over said roller (or pulley), whereby the shock may be elevated and deposited upon the frame, and a latch (or hook) for holding the tilting frame against outward movement when said tilting frame is swung inwardly.

2. A loading device comprising a main frame, a rock-shaft journaled in one end of the main frame, a tilting frame carried by said shaft and extending upwardly therefrom, a cross-rod at the top of the tilting frame and projecting rearwardly therefrom, fork-arms projecting rearwardly from the rock-shaft, hoisting means including a cable guided by the tilting frame and having a permanent loop adapted to engage the shock, and a latch (or hook) to engage the tilting frame to hold the same when swung forward against rearward movement.

3. A loading device comprising a main frame, a tilting frame mounted upon one end thereof and having a roller journaled therein, fork-arms carried by said frame, a latch (or hook) upon the main frame to hold the tilting frame when swung forward against rearward movement, hoisting means including a cable having a permanent loop to embrace the shock, and a spear adapted to be passed through the shock above the loop, said spear having a handle at one end and threaded at its opposite end to receive a confining-nut.

848,475. APPLIANCE FOR SLIDING DOORS. MARSHALL LOGAN, Plymouth, Ind., assignor of one-half to Sylvester Logan, Plymouth, Ind. Filed Aug. 21, 1906. Serial No. 331,482.

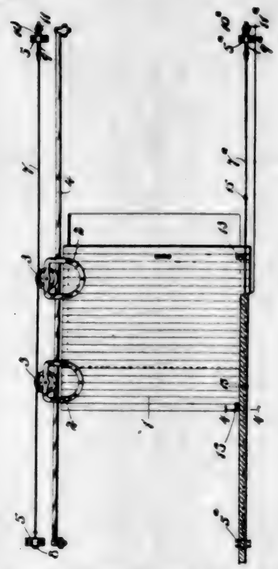

Claim.—1. The combination of a movable door and a track secured above the doorway, brackets secured to the upper end of the door, grooved wheels rotatably mounted in said brackets, brackets secured to the lower end of the door having oblong alining openings therein with inclined slots communicating therewith, a wire passing through said openings, means for supporting the wire, and means for adjusting the tension of the wire.

2. In combination with a sliding door, a wire carried by suitable supports, means slidably connecting the door with the wire, and means for adjusting the tension on the wire.

3. The combination with a movable door and a track secured above the doorway, grooved wheels carried by the door in engagement with said track, a wire in engagement with the rollers, and means for supporting the wire.

4. The combination with a movable door and a track secured above the doorway, of brackets secured to the upper end of the door, grooved wheels rotatably mounted in said brackets, a wire in engagement with said wheels, means for supporting said wire, and means for adjusting the tension and vertical height thereof.

5. A sliding door having brackets secured thereto, said brackets being provided with alining openings, a wire passing through the openings, means for supporting the wire, means for adjusting the tension and the height of the wire, and means adapting the wire to yield, for the purpose described.

6. A sliding door having brackets secured to the lower end thereof, said brackets having alining openings with inclined slots communicating therewith, a wire passing through the openings, means for supporting the wire at each end, and means for supporting the wire intermediate its length.

848,476. BOILER-FEED-REGULATING MECHANISM. WILLIAM LOUDON, Seattle, Wash. Filed Mar. 1, 1906. Serial No. 303,724.

Claim.—1. In a mechanism of the class described, the combination with an expansible member of stay-rods connecting the major axis of said expansible member, said stay-rods being positioned at an incline to said axis, adjustable means connecting the outer ends of said stay-rods to said expansible member for adjusting the length of said rods, means connecting the inner ends of said stay-rods, and a valve connected to said expansible member and operated thereby.

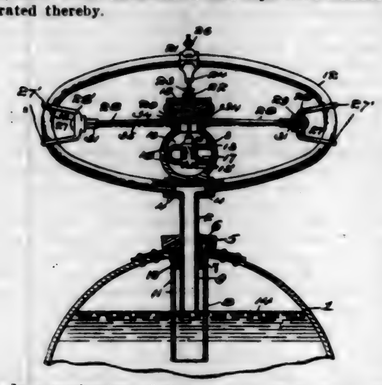

2. In a mechanism of the class described, the combination with an expansible member, of stay-rods, means connecting said stay-rods near their outer ends to diametrically opposite portions of said expansible member, means connecting the said stay-rods near their inner ends, said stay-rods extending slightly upwardly from their outer to their inner ends, and valve means connected to said expansible member, the slanting position of said stay-rods causing considerable movement of said valve means relative to a slight expansion of the expansible member.

3. In a mechanism of the class described, the combination of a polygonal extension, a hollow base portion integral with said extension, a plurality of tubes connected to said extensions and extending into the boiler, a valve-casing integral with said base portion, expansible means carried by said valve-casing and base portion, a valve positioned within said valve-casing, and means connecting said valve to said expansible means.

4. In a mechanism of the class described, the combination of a hollow base portion, a valve-casing integral with and positioned above said base portion, hollow extensions extending upon opposite sides of and integral with said valve-casing, expansible means connected to said extensions, a valve positioned within said casing, and means connecting said valve to said expansible means.

5. A mechanism of the class described, comprising an elliptical expansible tube, upwardly-slanting connecting-rods secured to the widest portion of said expansible tube, valve means connected to said expansible tube, a hollow support secured to said expansible tube and connecting the said tube with the boiler, and reciprocating means connected to the narrowest part of said expansible tube for operating said valve.

848,477. REGISTERING-TARGET. JOHN N. MICHEL, New York, N. Y. Filed July 19, 1906. Serial No. 326,850.

Claim.—1. In a device of the class described, in combination, an objective target having a plurality of cushions adapted to be struck by a projectile, a registering-target having a plurality of dials, electric circuits respectively connecting said dials with said cushions, and means whereby said circuits may be closed by said cushions, said dials affording means for indicating the force of the blow given to said cushions.

2. In a device of the class described, in combination, an objective target having a plurality of cushions thereupon adapted to be struck by a projectile, inclined channels disposed respectively behind said cushions, balls respectively guided in said channels and adapted to be advanced therein by the actuation of said cushions, a registering-target having a plurality of dials corresponding in position to said cushions, contact-plates carried by said channels and adapted to be bridged by said ball, and circuits connecting said contact-plates with said dials.

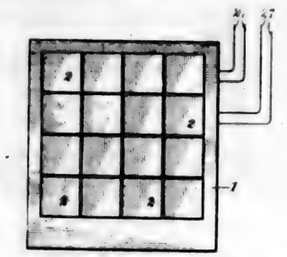

3. In a device of the class described, in combination, an objective target having a pneumatic cushion on the face thereof, a spring normally holding said cushion in an inflated condition, a nipple communicating with the interior of said cushion, a ball seating against said nipple and adapted to be thrown from said nipple by the collapsing of said cushion, a support constituting a guide for said ball, contact-plates carried by said support, circuits leading from said contact-plates, a registering-target having a plurality of dials, and electric circuits connecting said dials respectively with said contact-plates and adapted to be closed by the movement of said ball along said contact-plates.

4. An objective target comprising a board having a plurality of pneumatic cushions on the face thereof adapted to be struck by a projectile, nipples mounted in said board and communicating with the interior of said cushions respectively, balls respectively seating on said nipples and adapted to be projected therefrom when said cushions are struck, inclined guides for said balls, and means for indicating the point to which said balls may roll.

5. A target having a member adapted to be struck by a projectile, a plunger behind said member and adapted to be advanced when said member is struck, an inclined guide behind said plunger and having a plurality of contacts, a ball adapted to roll on said guide to close said contacts and normally lying adjacent to said plunger, and means for indicating the point to which said ball may roll along said guide controlled by said contacts.

6. In combination, a board having a pneumatic cushion attached on the forward face thereof, a nipple back of said cushion and communicating with the interior thereof, a plunger guided in said nipple, a ball seating on said nipple and adapted to be advanced by said plunger, an inclined guide for said ball along which the same may roll, and means for indicating the point to which said ball may roll on said guide.

7. In a target, in combination, a board, a bag attached on the face thereof, means for normally holding said bag in an inflated condition, a buffer attached to the forward side of said bag and having a guide-neck, a plate attached over said bag and having a guide-opening receiving said neck, and means for indicating the force of the blow struck upon said buffer.

8. In a target, in combination, a board, a bag mounted upon the face thereof, a spring for normally holding said bag in an inflated condition, a buffer attached to the outer side of said bag and having a guide-neck, a face-plate covering said bag and having an opening receiving said guide-neck, and means for indicating the force of the blow delivered by a projectile on said buffer.

848,478. BOTTLE-CAPPING MACHINE. HERMAN MÜLLER, Astoria, and EUGENE ZIPPRICH, New York, N. Y., assignors to Budde & Westermann, New York, N. Y., a Corporation of New York. Filed Sept. 15, 1906. Serial No. 334,765.

Claim.—1. A capping-machine having jaws, an actuating toggle-joint therefor, a bearing or pivot for one link of

the toggle-joint, a stem for the pivot, a compression-spring surrounding the stem, an elastic block for the stem, and an adjustable cap or thimble for the pad.

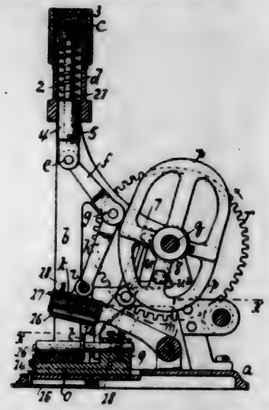

2. A capping-machine having lined jaws and jaw-actuating means, and a disk forming an abutment for the lining and for an inserted bottle, said disk having a stem and the respective jaw having a seat with screw for adjustably mounting the stem and disk.

3. A pair of bottle-capping jaws, an actuating-cam therefor, a driver or pulley for the cam, a clutch for connecting the driver and the cam, a lever for freeing or uncoupling the clutch and allowing it to engage, a stud on the cam to actuate the lever for uncoupling the clutch, and means for setting the lever to allow the clutch to engage, said lever having an arresting-shoulder for the lug to prevent repeating or improper engagement of the clutch.

4. In a machine for capping bottles and the like the combination with jaws, of actuating-cams and suitable connections for conveying motion from the cam to one of the jaws, one of the cams having a yielding portion.

5. In a machine for capping bottles and the like the combination with jaws of actuating-cams and driving-clutch connection for the cams one of the jaws being made slidable to actuate the clutch connection and a spring-pressed or releasable stop for the sliding jaw.

848,479. BODY-CONFORMER. CHARLES MUNTER, New York, N. Y. Filed Jan. 16, 1906. Serial No. 296,324.

Claim.—A body-conformer constructed of pliable material and consisting of a body-section shaped to fit the body of the wearer above the waist-line and extending to a point just below the breast, a skirt-section shaped to fit the body below the waist-line and extending over the hips and the lower part of the abdomen, the sections being secured together, forming a corset-like garment adapted to fit the body skin-tight and having an opening in its front extending from the top to the bottom and a rear opening extending from the bottom to a point near the upper edge the rear opening being provided along its edges with eyelets extending from the bottom to within a short distance of the waist-line, strengthening stay-strips on either side of each row of eyelets and being the only stays in the garment, fastening devices for the front opening, a series of individual laces graduated in length and laced through the eyelets at the sides of the rear opening, the lowermost lace being the longest and the uppermost one the shortest, and belt-straps, one of which is provided with a buckle at its front end and to the rear ends of each of which an end of each lace is attached, the belt-straps being adapted to be pulled upwardly and forwardly toward the waist-line, passes around the waist and buckled together at the front.

848,480. MOLD FOR SASH-WEIGHTS, &c. WILLIAM S. MYERS, Ashland, Ky., assignor of one-half to Banning Gray, Ashland, Ky. Filed June 22, 1906. Serial No. 322,903.

Claim.—1. A mold comprising two sections with coinciding molding-cavities having a gate at one end, one of the sections having a seat and an opening in the center thereof and also a seat at the end opposite the location of the gate and partially formed in both sections, a core device to removably engage the seat at one end of the interior portions of the sections and also the seat in one of the sections, and a removable filling-piece also applicable to the seat formed solely in one of the sections, whereby the mold may be used for casting either a solid or a partially-tubular weight.

2. A mold comprising two sections with coinciding molding-cavities extending longitudinally thereof, the cavities having a gate communicating therewith and extending through one end of the sections and a receiving-seat at the opposite ends of the cavities terminating at a distance inwardly from the outer ends of the sections, the said seat being formed partially in the end portions of the two sections and located at the point of said sections, and a core device movably held within the mold and having one extremity reduced and adapted to be engaged and inclosed within the said seat and the opposite extremity bearing upon the wall of one of the cavities at a point between the extremities of the said cavities.

3. In a mold of the class set forth, the combination of mold-sections having cavities therein provided at one end with semicircular recesses, one of the cavities having a central seat and an opening, and both cavities having communication with a gate or pouring-opening, and a core removably mounted within the mold and provided with an enlarged extremity having a dowel-pin to engage the seat and opening and a reduced stem engaging and partially inclosed within the end portions of the mold-sections at the joint of the latter.

848,481. ATTACHMENT FOR BAGS. LEE MCCANN, Pittsburg, Pa., assignor of one-half to David Kimes, Braddock, Pa., and one-twentieth to Eugene E. Lasch and one-twentieth to Frank C. Blessing, Pittsburg, Pa. Filed Mar. 1, 1905. Serial No. 247,966.

Claim.—The herein-described discharge-nozzle and cap therefor comprising a sleeve having a central opening extending entirely through the same and of equal diameter, flanges spaced apart near the base of the sleeve and providing an intermediate groove into which the mouth of the bag is secured by a draw-string, the outer surface of said sleeve being gradually reduced in thickness toward its upper edge to provide a smooth tapering surface for the connection of the cap, and a cap having an internal bore to frictionally fit the outer surface of the sleeve, said internal bore being of a size to fit the outer surface of the sleeve by friction and to allow a space between the bottom edge of said cap and the flange on the sleeve, and to allow a space between the upper edge of said sleeve and the upper wall of said cap, when the cap is fitted upon the sleeve, and a knob on said cap for operating the same, substantially as described.

848,482. SIGNALING DEVICE. ROBERT H. MCCRACKIN, Storms, Ohio. Filed July 14, 1906. Serial No. 326,215.

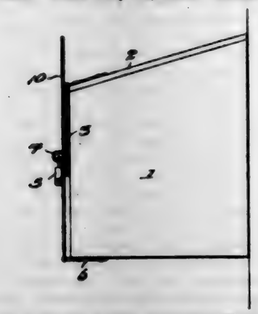

Claim.—In a device of the class described and, in combination with a box having a cover, a hasp attached to the cover, a staple secured to the box for engagement by the hasp, a horizontal support attached to the bottom of the box and projecting forwardly thereof, a signaling-blade hinged to the forwardly-projecting portion of the support for movement to and from vertical signaling position, said blade being provided with an opening to receive the staple, and a locking member adapted for engagement with the staple to lock the box and hold the signaling-blade in signaling position.

848,483. REGISTERING DEVICE. ADDISON C. MCEWEN, Brooklyn, N. Y. Filed Oct. 19, 1905. Serial No. 283,519.

Claim.—1. A registering device comprising a motor, a pair of winding-rolls, gearing connecting said motor with said winding-rolls, means for moving said gearing into engagement with one or the other of said winding-rolls, a worm-shaft connected with said gearing and having a bevel-wheel on one end thereof, a pair of bevel-wheels adapted to be thrown into and out of engagement with the bevel-wheel on said worm-shaft, a pair of slotted disks operated by the pair of bevel-wheels, a sliding member having a spring-catch adapted to contact with the periphery of one or the other of the slotted disks, and means for simultaneously shifting the pair of bevel-wheels, the sliding member, and gearing for rotating the winding-rolls.

2. A registering device comprising a motor, a pair of winding-rolls operated thereby, a belt connecting said rolls, a manually-controlled device included in the motor-circuit, and a disk operated by the motor and carrying a series of notches to receive said controlling device, said notches being arranged peripherally of the disk to gradually decrease the duration of each successive operation of the motor.

848,484. APPARATUS FOR EXTRACTING BY-PRODUCTS FROM WOOD. THOMAS NEWNHAM, White Springs, Fla. Filed Sept. 6, 1906. Serial No. 333,434.

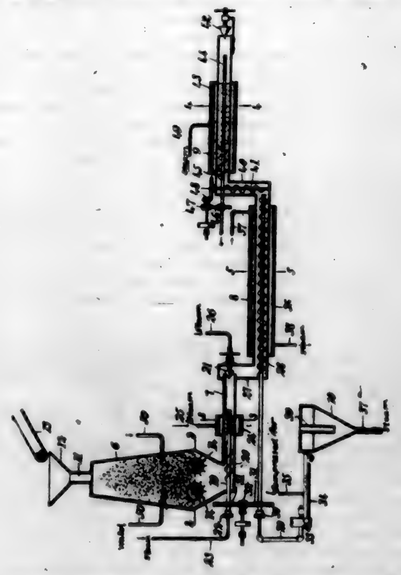

Claim.—1. An apparatus of the character described, comprising a receiving-bin, a chamber connected thereto, means controlling the feed to said chamber, means for compressing the material within said chamber, means for controlling the outlet therefrom, and means carried by said controlling means for injecting a heating medium into said material.

2. A device of the character described, comprising a receiving-bin, a chamber connected thereto, means for regulating the size of the outlet-opening, means for pressing the material within the said chamber, and means for simultaneously heating said material.

3. An apparatus of the character described, comprising a receiving-bin, a chamber connected thereto, a hollow shaft located therein, a screw conveyer carried by said shaft, means for rotating said shaft, means for admitting steam to said chamber through said shaft, and an adjustable cone located at the discharge end of said chamber and adapted to close said end.

4. An apparatus of the character described, comprising a receiving-bin, a chamber connected thereto, a screw conveyer within said chamber, a steam-box surrounding said chamber and separated therefrom by a perforated wall, means for rotating said conveyer, means for admitting steam to said steam-box and chamber, whereby the material within the chamber is compressed and simultaneously heated, and an adjustable cone located adjacent the discharge end of the chamber and by which the pressure within the chamber may be controlled.

5. An apparatus of the character described, comprising a chamber, means for delivering a heated and compressed material thereto, a hollow perforated shaft located within said chamber, a screw conveyer carried by said shaft, means surrounding said chamber for heating the same, and means connected to said hollow shaft for creating a partial vacuum within said chamber.

6. An apparatus of the character described, comprising a chamber, means for heating said chamber, means for agitating the material located therein, means for creating a partial vacuum, whereby the fluid contents are removed, a compressed-air pipe adapted to deliver compressed air to said fluid contents at the discharge end of the vacuum-creating means, and a condenser adapted to separate the liquid from the gaseous products.

7. An apparatus of the character described, comprising a chamber, means surrounding said chamber and adapted to deliver a fluid through perforations in the walls thereof, a hollow tube within said chamber and provided with perforated walls, and means carried by said tube whereby the material within the chamber may be compressed and the fluid contents extracted through said tube.

8. An apparatus of the character described, comprising a chamber, a hollow perforated shaft located in said chamber, a screw conveyer carried by said shaft, an adjustable cone located at the discharge end of said chamber, means for delivering material to said chamber, and a steam-jacket surrounding said chamber and separated therefrom by a perforated wall, whereby the material within said chamber may be compressed and superheated steam admitted to the chamber from the jacket and drawn off together with certain of the fluid constituents of the material, through the hollow perforated shaft and the remaining solid material permitted to escape around the adjustable cone.

848,485. ELASTIC-FLUID TURBINE. DEN-ICHIRO NISHIZAKI, Tokyo, Japan. Filed Aug. 9, 1906. Serial No. 329,940.

Claim.—1. In two-stage expansion elastic-fluid turbines, a turbine-wheel on one face of which one or more rings of blades are affixed in relation to high-pressure nozzles and to guide-vanes, and on the other face of which one or more rings of blades are affixed in relation to low-pressure nozzles and to guide-vanes, in combination with special passage or receiver having non-return valves and guide-vanes next to the final high-pressure blades, so situated as to lead elastic fluid, exhausting from high-pressure side to low-pressure side, said non-return valves being made to keep closed so long as no fluid rushes under to open them, substantially as and for the purpose described.

2. In two-stage expansion elastic-fluid turbines, a turbine-wheel on one face of which one or more rings of blades are affixed in relation to high-pressure nozzles and to guide-vanes, and on the other face of which one or more rings of blades are affixed in relation to low-pressure nozzles and to guide-vanes, in combination with special passage or receiver having non-return valves and guide-vanes next to the final high-pressure blades and with said low-pressure nozzles outside to low-pressure blades so situated as to lead elastic fluid exhausting from high-pressure side to low-pressure side, substantially as and for the purpose described.

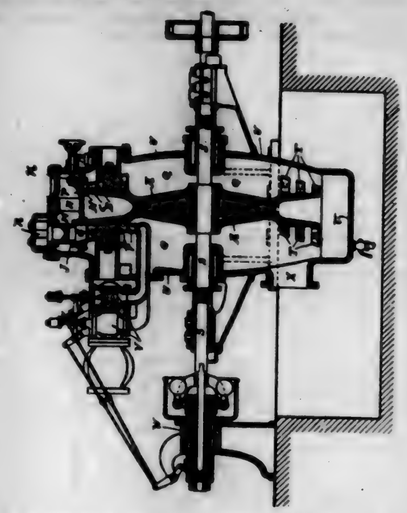

3. In two-stage expansion elastic-fluid turbines, a turbine-wheel on one face of which one or more rings of blades are affixed in relation to high-pressure nozzles and to guide-vanes, and on the other face of which one or more rings of blades are affixed in relation to low-pressure nozzles and to guide-vanes, in combination with special passage or receiver having non-return valves next to the final high-pressure blades and with said low-pressure nozzles outside to low-pressure blades so situated as to lead elastic fluid exhausting from high-pressure side to low-pressure side, said rings of blades being fitted with concentric rings or shrouds on the side opposite the wheel itself and said guide-vanes fitted with segments of concentric rings or shrouds on the side toward the wheel and kept quite clear from the wheel, to secure balance of pressure on faces of the wheel, substantially as and for the purpose described.

4. In two-stage expansion elastic-fluid turbines, a turbine-wheel on one face of which one or more rings of blades are affixed in relation to high-pressure nozzles and to guide-vanes, and on the other face of which one or more rings of blades are affixed in relation to low-pressure nozzles and to guide-vanes, in combination with special passage or receiver having non-return valves next to the final high-pressure blades and with said low-pressure nozzles outside to low-pressure blades so situated as to lead elastic fluid exhausting from high-pressure side to low-pressure side; said wheel being secured on a shaft mounted on bearings made to oscillate laterally a little round an axial line at bottom of bearing metal, sliding in contact with bearing-cover on top, and secured on its position with piled-up sheet-steel buffers on both sides, so arranged as to absorb shock of vibrating wheel substantially as and for the purpose described.

5. In two-stage expansion elastic-fluid turbines, a turbine-wheel on one face of which one or more rings of blades are affixed in relation to high-pressure nozzles and to guide-vanes, and on the other face of which one or more rings of blades are affixed in relation to low-pressure nozzles and to guide-vanes, in combination with special passage or receiver having non-return valves next to the final high-pressure blades and with said low-pressure nozzles outside to low-pressure blades so situated as to lead elastic fluid exhausting from high-pressure side to low-pressure side; said wheels being secured on a shaft fitted with graphite bushing, which is tapered on interior and forced in with nuts, on the portion rotating in stuffing-box, substantially as and for the purpose described.

6. In single-pressure stage elastic-fluid turbines, a turbine-wheel on one face of which one or more rings of shrouded blades are affixed concentric with center of shaft and in relation to nozzles and shrouded guide-vanes, said wheel being secured on a shaft mounted on bearings made to oscillate laterally a little round an axial line at bottom of bearing metal, sliding in contact with bearing-cover on top, and secured on its position with piled-up sheet-steel buffers on both sides, so arranged as to absorb shock of vibrating wheel, substantially as and for the purpose described.

848,486. ELASTIC-FLUID TURBINE. DEN-ICHIRO NISHIZAKI, Tokyo, Japan. Filed Aug. 9, 1906. Serial No. 329,941.

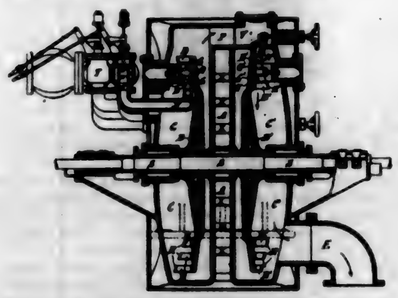

Claim.—1. In elastic-fluid turbines with two or more pressure stages, running-wheels on one face of which one or more shrouded blade-rings are affixed concentric with center of shaft and in relation to nozzles, and shrouded guide-vanes in combination with double walls between successive-stage rooms, and made fluid-tight about running-shaft between successive-stage rooms with split and flanged graphite packings, with annular rubber packings around the flanges and with a flat rubber packing fitted on one of the flange-faces toward the higher-pressure-stage room, substantially as and for the purpose described.

2. In elastic-fluid turbines, with two or more pressure-stage rooms, split and flanged graphite packings provided with annular rubber packings around the flanges, said packings being arranged in bearing-recesses in the division-walls between successive-stage rooms, and being provided on the flange-face toward the high-pressure-stage room with a flat rubber packing, all substantially as and for the purpose set forth.

848,487. TURBINE-REGULATOR. DEN-ICHIRO NISHIZAKI, Tokyo, Japan. Filed Aug. 9, 1906. Serial No. 329,942.

Claim.—1. In elastic-fluid turbines, a speed-regulator comprising a cam, a balanced throttle-valve, a lever connected with the valve and acted upon by the cam, said speed-regulator being immersed in the working-fluid chamber of the turbine, substantially as and for the purpose described.

2. In an elastic-fluid turbine, a speed-regulator comprising a plurality of balanced throttle-valves, a cam for each valve, a lever connected with each throttle-valve and acted upon by the cam, all of said speed-regulator being immersed in the working chamber of the turbine, the cams being arranged to open or close the throttle-valve in succession, substantially as and for the purpose described.

3. In elastic-fluid turbines, the combination with the working-fluid chamber and the nozzle for admitting fluid thereto, of a double-seated valve controlling the nozzle and a speed-regulator within the chamber, said speed-regulator comprising a bell-crank having one arm connected with the stem of the valve, the other arm being provided with a roller, a cam whose periphery engages the roller, whereby to operate the valve.

4. In elastic-fluid turbines, the combination with the working-fluid chamber and the nozzles for admitting fluid thereto, of double-seated valves controlling the nozzles, and a speed-regulator within the chamber, said speed-regulator comprising a shaft provided with a cam for each nozzle, bell-crank levers having in one arm thereof a roller for engaging the respective cam, the other arm being connected with the valve-stem.

5. In elastic-fluid turbines, a speed-regulator consisting of a cam and a roller acting upon a double-seated nozzle-valve, said roller being held on one arm of a bell-crank, the other arm of which acts upon a collar at top of stem of said nozzle-valve only when the valve is open, and gets out of contact with the collar when the valve is closed, the whole system being immersed into a working-fluid chamber, substantially as and for the purpose described.

6. In elastic-fluid turbines, a speed-regulator consisting of cams and rollers acting upon double-seated nozzle-valves, each of said rollers being held on one of the arms of bell-crank, the other arm of which acts upon collar at top of stem of said nozzle-valve only when that valve is open and gets out of contact with the collar when that valve is closed, the whole system being immersed into a working-fluid chamber, and said cams and rollers being so situated that the nozzle-valves may open or close one by one successively when they are in operation substantially as and for the purpose described.

848,488. MANUALLY-PROPELLED SLED. FRANK T. NOBLES, McCloud, Cal. Filed June 2, 1906. Serial No. 319,916.

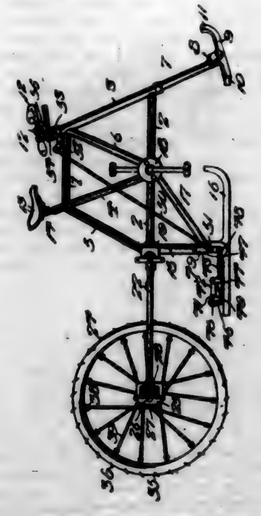

Claim.—1. A manually-propelled sled comprising a main frame, supporting and steering runners therefor, a driving-

wheel, a fork or frame-piece connecting said driving-wheel with the main frame, a universal joint between said fork or frame-piece and the main frame, and a driving-shaft for transmitting motion from the pedal-shaft to the driving-wheel, said driving-shaft having a universal joint in line with the joint between the rear fork and main frame, substantially as described.

2. A manually-propelled sled embodying a main frame, pivotally-mounted main supporting and steering runners connected therewith, a driving-wheel and a driving-shaft therefor both connected with the machine-frame by universal joints to permit the driving-wheel to accommodate itself to the surface upon which the machine is moving without interfering with the driving mechanism, and a brake mounted on one of said runners and provided with operating connections embodying a hand-lever located adjacent to the handle-bar of the machine.

3. A manually-propelled sled embodying a main frame, main supporting and steering runners therefor, a fork extending rearward from the main frame and having a universal-joint connection therewith, a driving-wheel carried by said fork, a driving-shaft for said wheel having a universal joint intermediate its ends, a crank-shaft geared to said driving-shaft, and traction-ribs projecting from the rim of said driving-wheel and set at an oblique inclination so as to incline forward toward their outer edges at the bottom of the driving-wheel, substantially as described.

848,489. THREADING-TOOL. THOMAS W. NURSE, Derby, Vt. Filed June 9, 1906. Serial No. 321,062.

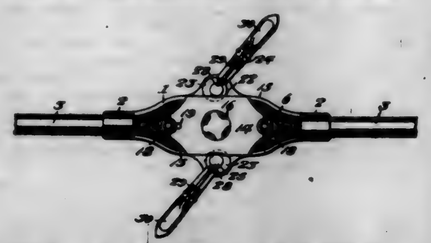

Claim.—1. In a threading-tool, the combination of a stock having a chamber, dies movably mounted in the chamber, supporting-posts having threaded portions, spring-actuated retracting devices associated with said posts and arranged to act upon the dies, means for projecting the dies against the resistance of said retracting devices, a cover-plate having openings for the passage of the threaded portions of the posts, and nuts engaging the posts and clamping the cover-plate in position.

2. A threading-tool comprising a stock having a chamber, dies movably mounted therein, the inner faces of the dies being notched at the outer side edges thereof, supporting-posts upon the stock beyond the ends of the chamber, retracting devices carried by said posts and each provided with a pair of fingers projecting into the chamber and notches in the dies, springs between the pairs of fingers to spread them apart and retract the dies, and means for projecting the dies against the pressure of said springs.

3. A threading-tool comprising a stock, dies movably mounted thereon, means for projecting the dies, supporting-posts, retracting members mounted on the posts and provided with fingers engaging the dies, and a spring interposed between the fingers of each retracting device to normally force the same apart to retract the dies.

4. A threading-tool comprising a stock having a casing provided with slots in opposite side walls thereof, dies movably mounted in the casing, means for projecting the dies, supports upon the stock outside of the chamber, retracting devices held by said supports and having fingers projecting through the slots into the chamber and engaging the dies, and springs for spreading said fingers.

5. A threading-tool comprising a stock having a chamber, a closure for the chamber, dies mounted in the chamber, spring-actuated retracting devices operating on the opposing faces of the dies, and fastening devices forming common supports for the retracting devices and securing means for holding the cover-plate in position.

6. A threading device comprising a stock provided with supporting-lugs, dies movably mounted on the stock, cams mounted on the lugs and provided with operating-handles, said cams being adapted to engage and project the dies, and locking means carried by the cams to engage the lugs and secure said cams in adjusted position.

848,490. TRIMMER FOR SEWING-MACHINES. ALBERT H. PARKER, New York, N. Y. Filed Aug. 8, 1906. Serial No. 329,769.

Claim.—1. In a trimming attachment for sewing-machines, a base-plate, a vertically-disposed blade connected to said plate and provided with an upstanding lug, a movable blade pivoted upon the lug and provided with a curved upper surface, and an operating-lever pivoted upon the lug and having an ogee-shaped lower edge adapted to engage the correspondingly-shaped upper edge of the movable blade, and an offset handle hinged to said lever.

2. A trimming attachment for sewing-machines comprising a base-plate having a vertically-disposed stationary blade, a movable blade pivoted upon the stationary blade, an operating-lever pivotally supported adjacent to the movable blade adapted to engage the latter, and a jointed handle member hingedly connected with the operating-lever and including a laterally-offset portion and a slotted arm.

848,491. ALARM ATTACHMENT FOR SELF-BINDERS. LEWIS J. PHILLIPS, Foss, Okla. Filed Oct. 13, 1906. Serial No. 338,759.

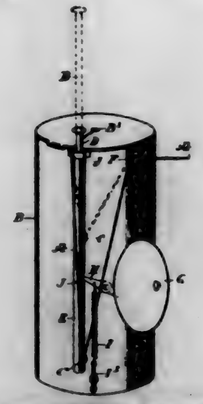

Claim.—1. An alarm attachment for self-binding harvesters comprising a twine-holding receptacle, a rod mounted to slide on the outside of the said receptacle, the rod having an eye for the passage of the twine from the said twine-holding receptacle to the binding mechanism of the harvester, said eye being out of the direct line of the passage of the twine from the twine-holding receptacle to the binding mechanism, an alarm, and means whereby it is actuated by the said rod on the latter being moved by the twine at the time the latter is held against movement in the twine-holding receptacle.

2. An alarm attachment for self-binding harvesters comprising a twine-holding receptacle, a rod mounted to slide on the outside of the said receptacle, the rod having an eye for the passage of the twine from the said twine-holding receptacle to the binding mechanism of the harvester, and an alarm comprising a bell and a spring-pressed hammer for the same, and adapted to be engaged by a projection on the said rod.

848,492. POULTRY FEEDER AND WATERER. ABRAM REES, Bunker Hill, Ind. Filed June 13, 1906. Serial No. 321,486.

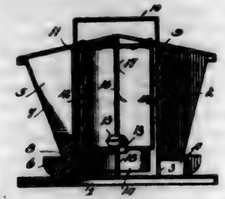

Claim.—1. A device of the character described comprising a base, a reservoir-tube rising therefrom and provided at its lower end with outlets, feed-troughs formed independently of the reservoir and arranged in spaced relation on the exterior thereof, drinking-troughs communicating with said outlets and grouped with the feed-troughs in alternation around the reservoir, said troughs being arranged in the spaces between the feed-troughs, a cover for closing the reservoir, and a fountain fixed to and applicable and removable with said cover to initially hold a supply of water for passage to the reservoir and thence to the drinking-troughs.

2. A device of the character described comprising a base, a reservoir rising therefrom, said reservoir being open at its upper end and provided at its lower end with outlets, feed-troughs vertically arranged upon the exterior of the reservoir, said troughs being independent of said reservoir and grouped around the same in alternation with the drinking-troughs, a cover for closing the reservoir and feed-troughs, and a fountain fixed to said cover and adapted to fit within the reservoir.

3. A device of the character described comprising a base, a reservoir rising therefrom, said reservoir being open at its upper end and provided at its lower end with outlets, drinking-troughs on the exterior of the reservoir and communicating with said outlets, feed-troughs formed independently of the reservoir and grouped upon the base around the reservoir in alternation with the drinking-troughs, said feed-troughs being provided at their lower ends with outlets and having their outer walls downwardly and inwardly inclined to form contracted throats communicating with said outlets, a cover for closing the reservoir and feed-troughs, and a fountain fixed to said cover and adapted when the latter is applied in position to be received into the reservoir.

4. A device of the character described comprising a base, a reservoir rising therefrom and provided at its lower end with an outlet, a drinking-trough communicating therewith through said outlet, a cover for closing the reservoir, a fountain connected to and suspended from the cover and provided in its bottom with an outlet and a contracted shield extending below the outlet, a gravity-valve controlling the outlet, and a stem carrying said valve and operative to engage the top of the fountain to limit the opening movement of the valve when the fountain is inverted and to engage the base and force the valve open when the fountain is inserted in the reservoir for use.

848,493. PIPE-STOPPER OR TEST-PLUG. ADAM REDENBAUGH, Pittsburg, Pa. Filed Mar. 29, 1906. Serial No. 308,698.

Claim.—1. A pipe-stopper comprising an elastic cup having its inner side walls tapering, and having a central opening in the bottom, a stem threaded at each end passing through the opening of the cup, jam-nuts on the stem on each side of the cup, and engaging the bottom whereby to retain the cup in position upon the stem, an expander slidable on the stem and tapered to correspond with the side walls of the cup, an operating-nut threaded on the stem for forcing the expander into the cup, lugs on the expander, and set-screws traversing the lugs at right angles to the stem and adapted to engage the walls of the pipe whereby to retain the stopper in place.

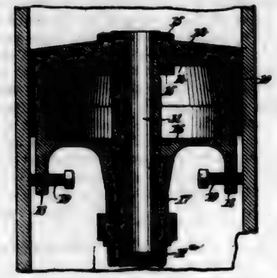

2. A pipe-stopper comprising an elastic cup having its inner side walls tapering, and having a central opening in the bottom, a stem threaded at each end passing through the opening of the cup, jam-nuts on the stem on each side of the cup, and engaging the bottom whereby to retain the cup in position upon the stem, an expander slidable on the stem and tapered to correspond with the side walls of the cup, means in connection with said stem and expander whereby to operate the same, lugs on the expander, and set-screws traversing the lugs at right angles to the stem and adapted to engage the walls of the pipe whereby to retain the stopper in place.

848,494. SPEED-CHANGING MECHANISM. LOUIS RENAULT, Billancourt, France. Filed Apr. 28, 1904. Serial No. 205,419.

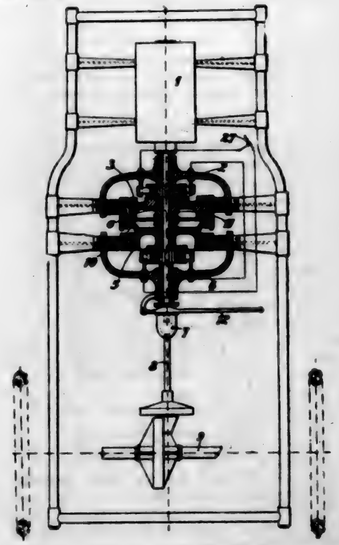

Claim.—1. A driving and speed-changing mechanism for motor-vehicles comprising a motor and its shaft, a dynamo embodying a stationary inductor and an armature fixed to and rotating with the shaft of the motor, said armature constituting a fly-wheel for the motor-shaft, a driven shaft

provided with a socket in which extends the motor-shaft, an electric motor embodying a fixed inductor and an armature mounted on the driven shaft, a friction-clutch embodying two members, one of which is fixed to the armature of the dynamo and the other of which is fixed to the armature of the motor, and means for moving the members of the clutch into and out of engagement.

2. A driving and speed-changing mechanism for motor-vehicles comprising a motor and its shaft, a dynamo embodying a stationary inductor and an armature fixed to and rotating with the shaft of the motor, said armature constituting a fly-wheel for the motor-shaft, a driven shaft provided with a socket in which extends the motor-shaft, an electric motor embodying a fixed inductor and an armature mounted on the driven shaft, a friction-clutch embodying two members, one of which is fixed to the armature of the dynamo and the other of which is fixed to the armature of the motor, means for moving the members of the clutch into and out of engagement, and means for fixing the inductors to the frame of the vehicle.

848,495. SHADE-ROLLER ATTACHMENT. WILLIAM B. REYNOLDS and ELISHA B. MCCARTHY, Fulton, N. Y. Filed Dec. 26, 1906. Serial No. 349,434.

Claim.—1. In combination with a spring shade-roller, and a spindle and its spear, a flat disk-like plate on said roller, said plate having a central opening for the spear and having a slot extending radially from said opening and a saddle member adapted to extend on each side of said plate and slidingly mounted in said slot, said spear having a slot and said saddle member having a corner portion adapted to engage said spear-slot, substantially as described.

2. In combination with a spring shade-roller, and a spindle and its spear, a ferrule mounted on the end of said roller and having a flat disk-like plate portion at its outer end, an opening to admit the spear and a radial slot extending from said opening and a sliding catch device adapted to extend on each side of said plate and mounted on said plate in said slot, substantially as described.

848,496. MEANS FOR PROMOTING CIRCULATION IN STEAM-BOILERS. SIDNEY J. ROSS, London, England, assignor of one-third to Harry Schofield and one-third to Oliver Prescott Macfarlane, London, England. Filed Sept. 25, 1905. Serial No. 280,071.

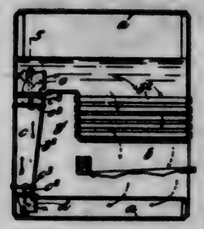

Claim.—1. A wet-back marine boiler having its wet-back space inclosed at the sides, and provided at top with means for discharging water therefrom in a forward direction, so as to set up longitudinal circulation in the boiler, substantially as described.

2. A wet-back marine boiler, having its wet-back space inclosed at the sides and provided at the top and bottom with forwardly-directed outlet and inlet means, for the purpose of setting up longitudinal circulation in the boiler, substantially as described.

3. In a wet-back marine boiler, the combination of means for inclosing the space behind the combustion-chamber, and means opening below the water-level for discharging the water from the inclosed space in a forward direction, substantially as described.

4. In a wet-back marine boiler, the combination of means for inclosing the space behind the combustion-chamber, an outlet from said space opening below the water-level and discharging water in a forward direction, and an inlet at the bottom of said space to admit the water in a backward direction, for the purpose of setting up a longitudinal circulation in the boiler, substantially as described.

5. In a steam-boiler, the combination of a combustion-chamber an inclosed water-space at one end of said chamber, and a corresponding inclosed water-space in front of said chamber, said spaces being in communication at top and bottom with the main water-space of the boiler, substantially as described.

6. In a steam-boiler the combination of a combustion-chamber, an inclosed water-space at one end of said chamber, a corresponding inclosed water-space in front of said chamber, nozzles for directing the water ascending from spaces in a forward direction and means for admitting water to the lower part of either of said chambers from a point near the front of the boiler, substantially as described.

848,497. CORN-HUSKING MACHINE. WILLIAM S. RUSH, Twin Bluffs, Wis. Filed Sept. 21, 1906. Serial No. 335,588.

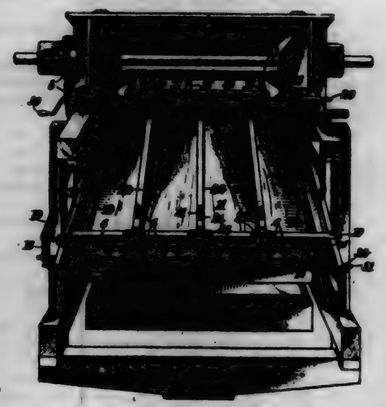

Claim.—1. In combination with the rolls of a corn-husking machine, a sheet of flexible fabric supported above said rolls, and means for moving said fabric back and forth across said rolls.

2. In combination with the rolls of a corn-husking machine, a fabric supported above said rolls, and means for moving said flexible fabric back and forth across said rolls and simultaneously varying the distance between said fabric and rolls.

3. A corn-husking machine having in combination husking-rolls, a fabric supported above said rolls, having the ends thereof attached to rollers eccentrically mounted, whereby as the fabric-supporting rollers are rotated the fabric is moved across said husking-rolls and simultaneously raised therefrom.

4. In combination with the rolls of a corn-husking machine, a flexible fabric supported above said rolls, and means secured to said fabric at a plurality of points for simultaneously moving said fabric across the rolls and varying its distance therefrom.

5. In combination with the rolls of a corn-husking machine, a fabric supported adjacent thereto, means for moving said fabric back and forth across said rolls, a plurality of springs carried by said fabric and adapted to press the material operated upon against said rolls, and means for moving said fabric.

6. A corn-husking machine having in combination husking-rollers, a fabric supported above said rolls, the ends of said fabric being attached to rollers eccentrically mounted, means attached to the upper side of said fabric and pivoted to the machine, and a plurality of springs carried by the under side of said fabric, whereby as the eccentrically-mounted rollers are rotated the springs are moved across the rolls and the distance between said springs and said rolls simultaneously varied.

7. In combination with a corn-husking machine, a rectangular frame carried thereon, means for adjusting the position of said frame in relation to said machine, a fabric carried within said frame, springs carried by the under side of said fabric, means for moving said fabric across said frame, means for guiding the material to be operated upon beneath said fabric, and means for moving said guiding means simultaneously with the movement of the fabric.

8. A corn-husking machine having in combination a plurality of husking-rolls, a fabric supported upon said rolls, means for continuously moving said fabric back and forth across said rolls and simultaneously varying the distance between said fabric and the said rolls, said means including two eccentrically-mounted rollers secured to the ends of said fabric, a plurality of rods secured to the upper surface of said fabric and pivotally mounted at their opposite ends, and coiled springs surrounding said rods for forcing the fabric into engagement with the rolls.

9. A corn-husking machine having in a plurality of husking-rolls, a fabric supported upon said rolls, the ends of said fabric being attached to rollers eccentrically mounted, a plurality of strips secured to the outer surface of said fabric, a plurality of bolts secured to each of said strips, means for pivotally and slidably supporting the outer ends of each of said bolts, coiled springs surrounding each of said bolts and pressing said fabric into engagement with said rolls, and a plurality of springs carried by the under side of said fabric and adapted to press the material operated upon into engagement with the husking-rolls.

848,498. TILTING GATE. JOSEPH A. SCHERTZ, Marquette, Nebr. Filed Dec. 28, 1906. Serial No. 349,910.

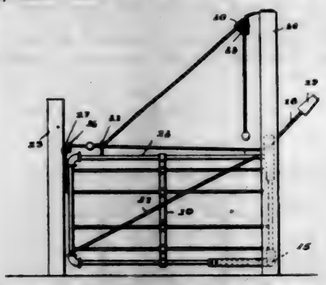

Claim.—A tilting gate pivoted at its lower rear corner, and having a resilient weighted arm extending outward and rearward from the rear upper corner, at substantially an angle of forty-five degrees to the plane of the top of the gate, whereby when the gate falls back when fully opened the said weighted arm will yield, cushioning the fall of the gate, and by the tendency of the said resilient arm to resume its straight position, it will assist the effort to start the gate in the movement to close it.

848,499. LIFTING-JACK. AUGUST E. SCHOCKE, Williams, Nebr. Filed Sept. 13, 1906. Serial No. 334,480.

Claim.—A lifting-jack comprising a rack-standard, a jack proper consisting of side plates and spacing bars or strips between them, and between certain of which the standard is adapted to pass, an operating-lever fulcrumed in the jack, a lifting-pawl pivoted on the operating-lever and adapted at its free end to engage the teeth of the standard, a laterally-extended trigger connected with said pawl, a holding-pawl pivoted in the jack and also adapted to engage the teeth of the standard, a spring between the pawl of the lever and the tail of the holding-pawl to keep

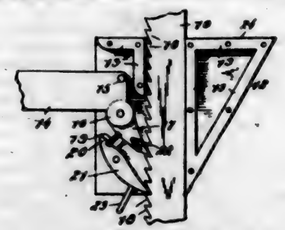

said pawls in engagement with the teeth of the standard, and a trigger connected with the holding-pawl and extending downward below the plates of the jack, to enable said trigger to be readily engaged by the toe of the boot and operated.

848,500. CASE FOR HOLDING AMMUNITION. GEORG SCHWARZ, Eisenach, Germany. Filed Mar. 26, 1906. Serial No. 308,142.

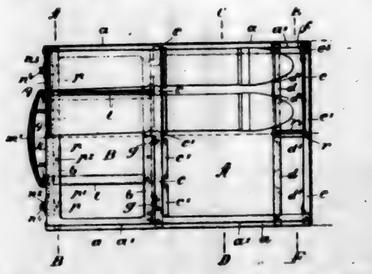

Claim.—1. A box of the class described including a skeleton frame having a solid bottom, a partition having a series of openings fixed to the skeleton frame and arranged in proximity to the bottom, a partition having openings fixed to the frame at the mouth thereof, skeleton-frame sections hinged to opposite walls of the first-mentioned frame and being adapted to open laterally and when in a closed position forming a closure for the box, brackets fixed to the hinged frame-sections, and an elastic covering for the brackets.

2. A box of the class described including a skeleton frame having a solid bottom, a partition having a series of openings fixed to the skeleton frame and arranged in proximity to the bottom, a partition having openings fixed to the frame at the mouth thereof, skeleton-frame sections hinged to opposite walls of the first-mentioned frame and being adapted to open laterally and when in a closed position forming a closure for the box, brackets fixed to the hinged frame-sections, an elastic covering for the brackets, handles fixed to the exterior of the hinged frame-sections, and means for locking the said hinged sections in a closed position.

3. A box of the class described including a skeleton frame having a solid bottom, hinged skeleton-frame sections associated with the said frame and having connection at the uppermost portion thereof, each of said hinged sections being adapted to open laterally in opposite directions, and forming a closure for the box when brought together, handles mounted exterior of each of said hinged sections, means for locking the sections together, partitions arranged within the box below the hinged sections and being provided with a plurality of openings adapted to be in alinement with each other for receiving projectiles, depending flanges integral with the partitions sur-

rounding the openings therein, brackets fixed to the frame of each hinge-section, a cover for the brackets to form elastic supports, a stiffening means connected with the lowermost partition and the bottom, and guideways formed in opposite end walls throughout the longitudinal extent of the box.

4. A box of the class described, including a skeleton frame having a solid bottom, hinged skeleton-frame sections associated with the said frame and having connection at the uppermost portion thereof, each of said hinged sections being adapted to open laterally in opposite directions, and forming a closure for the box when brought together, handles mounted exterior of each of said hinged sections, means for locking the sections together, partitions arranged within the box below the hinged sections and being provided with a plurality of openings adapted to be in alinement with each other for receiving projectiles, depending flanges integral with the partitions surrounding the openings therein, brackets fixed to the frame of each hinged section, a cover for the brackets to form elastic supports, a stiffening means connected with the lowermost partition and the bottom, and guideways formed in opposite end walls throughout the longitudinal extent of the box, said bottom provided with a depression throughout its extent.

848,501. OIL-WELL CLEANER. FRED N. SCOFIELD, Kern, Cal. Filed Nov. 21, 1906. Serial No. 344,475.

Claim.—1. A well-cleaner comprising a tube forming a passage for a liquid and having an outlet, said tube being also provided with means for closing it below the said outlet, and spaced means mounted on the tube and engaging with the wall of the well for confining the liquid within a section or portion of the said well.

2. A well-cleaner comprising a tube forming a passage for a liquid and having an outlet and provided also with means for closing it below the outlet, and valves for confining the liquid within a portion or section of the well.

3. A well-cleaner comprising a tube forming a passage for oil or other fluid and having an outlet and provided also with means for closing it below the outlet, and valves located above and below the outlet and arranged to close the well for confining the oil or other fluid within a portion or section of the same.

4. A well-cleaner comprising a tube forming a passage for oil or other fluid and having an outlet and provided also with means for closing it below the outlet, and valves located above and below the outlet for closing a well above and below the said outlet and confining the oil or other fluid, said valves having openings and provided with means for covering and uncovering the same.

5. A well-cleaner comprising a tube forming a passage for oil or other fluid and having an outlet and provided also with means for closing it below the outlet, valves located above and below the outlet and arranged to close a well above and below the said outlet, said valves having openings and provided with movable members for covering and uncovering the said openings, and means connected with the members for frictionally engaging the walls of the well for holding the said members stationary when the tube is moved.

6. A well-cleaner comprising a tube having its lower end closed and provided with a perforated portion, and valves located above and below the perforated portion for closing a well.

7. A well-cleaner comprising a tube closed at the lower end and provided with a perforated portion, valves located at the ends of the perforated portion and arranged to close a well above and below the said perforated portion, said valves having openings and relatively movable members arranged to cover and uncover the said openings and provided with springs for engaging the walls of the wells, whereby the relatively movable members are adapted to be operated through the movement of the tube.

8. A well-cleaner comprising a tube having a perforated portion and provided with means for closing it below the same, valves located above and below the perforated portion for closing a well, said valves being provided with openings, relatively movable members arranged to cover and uncover the openings, said members having slots, and projections mounted on the valves and operating in the slots for limiting the relative movement of the members.

9. A well-cleaner comprising a tube having a perforated portion and provided with means for closing it below the same, and exterior valves carried by the tube above and below the said perforated portion, said valves being constructed to engage the wall of the well, for the purpose set forth.

10. A well-cleaner device provided with a passage for a liquid and having an outlet for the same, and spaced means located above and below the outlet and engaging the wall of the well for confining the liquid within a section or portion of the well.

848,502. CHURN-DRILL. JOSIAH B. SCOVELL, Duluth, Minn. Filed Sept. 22, 1906. Serial No. 335,821.

Claim.—1. A drill comprising a heavy solid-metal block, and a plurality of downwardly-extending cutting-bits secured within the lower face of said block.

2. A drill, comprising a heavy solid-metal block, and a plurality of downwardly-extending cutting-bits removably secured within the lower face of said block.

3. A drill, comprising a heavy metal solid block, and a plurality of downwardly-extending cutting-bits screwed within the lower face of said block.

4. A drill, comprising a heavy metal block, and a plurality of downwardly-extending cutting-bits secured within the lower face of the block, and the bits adjacent the edges of the block having their cutting-surface extending beyond the plane of the side wall of the block adjacent thereto.

5. A drill, comprising a heavy metal block and a plurality of downwardly-extending cutting-bits secured within the lower face of the block, and having enlarged cutting-surfaces and the bits adjacent the edges of the block having a portion of the enlarged cutting-surface extending beyond the plane of the side wall of the block adjacent thereto.

6. A drill, comprising a heavy metal block having a flat lower face provided with a series of screw-threaded openings, and independent drills screwed within said openings.

7. A drill, comprising a heavy metal block having a flat lower face provided with a series of screw-threaded openings, and independent drills having reduced screw-threaded portions screwed within the openings.

8. A drill, comprising a heavy metal block having a flat lower face provided with a series of screw-threaded openings, and independent drills having a square shank portion and reduced upper screw-threaded ends adapted to enter the screw-threaded openings, and the lower end of said shank having radially-extending enlarged cutting edges in a plane with the corners of the shanks.

9. In a churn-drill, the combination of a heavy metal block, of a plurality of downwardly-extending cutting-bits removably secured in its lower face, the upper end of said block being cone-shaped, and a flexible operating means secured within the apex of said cone.

10. A churn-drill, comprising a heavy metal block having a flat lower face provided with a series of screw-threaded openings, independent drills having reduced shanks screwed into said openings, and the upper end of said block beveled to a central point, and having a horizontal opening therein and a flexible operating means secured within said opening.

11. A drill, comprising a heavy solid-metal block having a flat lower face provided with a series of screw-threaded openings, and independent drills having a square shank portion, and reduced upper screw-threaded ends adapted to enter the screw-threaded openings, and the lower ends of said shanks having radially-extending enlarged cutting edges extending in a plane with the corners of the shanks and the cutting edges of the drills adjacent the edges of the block extend beyond the plane of the side wall of the block adjacent thereto, and the upper edge of the blocks having beveled faces.

848,503. MACHINE FOR MAKING COMPRESSED BUNGS. CHARLES SEYMOUR, Defiance, Ohio, assignor to The Defiance Machine Works, Defiance, Ohio. Filed Oct. 18, 1905. Serial No. 283,270.

Claim.—1. A machine for making compressed bungs from a wooden stick, provided with an intermittent feed mechanism for the said stick and comprising a feed-table, a roller engaging one face of the said stick, a feed-arm for engaging the other face of the said stick approximately opposite the said roller, a link in which the said feed-arm is fulcrumed, a revoluble shaft, an arm on the said shaft engaging friction-rollers on the said feed-arm for imparting a longitudinal rocking motion to the said feed-arm, a cam on the said shaft engaging a fixed part on the said feed-arm, means for cutting the stick into square blanks, and means for forming the blanks into bungs.

2. A machine for making compressed bungs from a wooden stick, provided with an intermittent feed mechanism for the said stick and comprising a feed-table, a roller engaging one face of the said stick, a feed-arm for engaging the other face of the said stick approximately opposite the said roller, a link in which the said feed-arm is fulcrumed, a revoluble shaft, an arm on the said shaft engaging friction-rollers on the said feed-arm, for imparting a longitudinal rocking motion to the said feed-arm, a cam on the said shaft engaging a fixed part on the said feed-arm, the said fixed part being adjustably secured on the feed-arm, means for cutting the stick into square blanks, and means for forming the blanks into bungs.

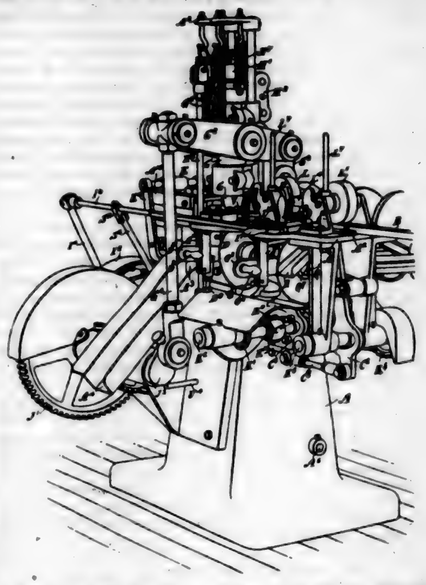

3. A machine for making compressed bungs, provided with a combined cutting and compressing device, a feed mechanism for carrying a square blank to the said cutting and compressing device and comprising a reciprocating cross-head, spring-pressed arms fulcrumed thereon having angular clamping members for engaging opposite corners of the square blank, and spring-pressed cam-levers having cams engaging cams on the said arms to open the latter for releasing the blank, to keep the arms open during return movement, and to allow the arms to close for its clamping members to engage another square blank.

4. A machine for making compressed bungs from a stick of wood, provided with a feed mechanism for feeding the stick intermittently forward, the feed mechanism comprising a feed-arm, a pivoted link on which the feed-arm is fulcrumed, friction-rollers on the said feed-arm, a revoluble shaft carrying an arm for alternately engaging the said feed-arm, a spring-pressed lifting-arm fulcrumed on the said link, stop-pins on the feed-arm and between which oscillates the said lifting-arm, a cam on the said shaft for engaging the said lifting-arm to raise the latter, means for cutting the stick into square blanks, and means for forming the blanks into bungs.

5. A bung-making machine, comprising an anvil and a combined die and cutter coöperating therewith, means for cutting a strip of wood into square blanks, means for feeding the blank into the anvil, said means comprising a cross-head, means for reciprocating the cross-head, arms pivoted to the cross-head and projecting therebeyond, a spring normally pressing the arms toward each other, fingers on the arms for engaging the rear faces of the blanks, spring-pressed pins for engaging the sides of the blanks, means for opening the arms during the movement of the cross-head from the anvil, and a spring-pressed catch on the cross-head for locking the same when the block is centered on the anvil.

6. A bung-making machine, comprising an anvil and a combined die and cutter coöperating therewith, means for cutting a strip of wood into square blanks, means for feeding the blanks onto the anvil, comprising a cross-head, means for reciprocating the cross-head, arms pivoted to

the cross-head and projecting therebeyond, a spring normally pressing the arms toward each other, fingers on the arms for engaging the rear faces of the blanks, means for opening the arms during the movement of the cross-head from the anvil, and a spring-pressed catch on the cross-head for locking the same at each end of its reciprocation.

7. A bung-making machine, comprising an anvil and a combined die and cutter coöperating therewith, and means for feeding blanks onto the anvil, comprising a cross-head, means for reciprocating the cross-head, arms pivoted to the cross-head and projecting therebeyond, a spring normally pressing the arms toward each other, fingers on the arms for engaging the rear faces of the blanks, means for opening the arms during the movement of the cross-head from the anvil, and a spring-pressed catch on the cross-head for locking the same when the block is centered on the anvil.

8. A bung-making machine, comprising an anvil and a combined die and cutter coöperating therewith, means for feeding blanks onto the anvil, comprising a pair of reciprocating arms normally spring-pressed toward each other, fingers on the arms for engaging the rear faces of the blanks, spring-pressed pins for engaging the sides of the blanks, means for opening the arms during their movement from the anvil, and a spring-pressed catch in connection with the arms for locking them when the block is centered on the anvil.

9. A bung-making machine, comprising an anvil and a combined die and cutter coöperating therewith, and means for feeding blanks onto the anvil, comprising a pair of reciprocating arms normally spring-pressed toward each other, fingers on the arms for engaging the rear faces of the blanks, means for opening the arms during their movement from the anvil, and a spring-pressed catch in connection with the arms for locking them at each end of their reciprocation.

848,504. SPEED INDICATOR AND RECORDER. HENRY SOAR, Goodmayes, England. Filed Oct. 13, 1905. Serial No. 282,642.

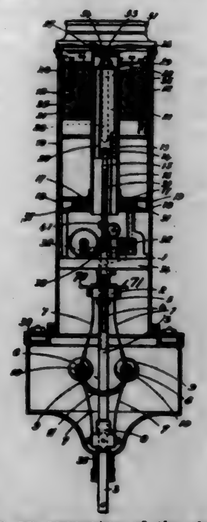

Claim.—1. In an apparatus of the class described, a governor, a rotatable shaft supporting the same, a swiveled jointed rod rotatable with said shaft and vertically movable thereon, a pinion carried at the free terminal of said rod, a fixed rack in engagement with the pinion, a marker element having a rack in engagement with the pinion and actuated thereby, a chart having a supporting means, gear mechanism coöperative with said rotatable shaft for imparting rotary movement to the marker, and indicator mechanism actuated by the gear mechanism.

2. In an apparatus of the class described, a revoluble shaft, a casing surrounding the same, a spring-controlled governor having one end fixed to said shaft and the other end slidable thereon, a rod connected to the slidable end of the governor having a pinion, rotatable elements having rack-bars operated upon by the pinion to move the same to and from each other, a marker device carried by one of the elements and movable therewith, a chart in engagement with the marker, gear mechanism coöperative with the rotatable shaft for imparting rotary movement to the element supporting the marker, an indicator coöperative with the gear mechanism, and means for resetting the indicator mechanism.

848,505. INTERLOCKING TERMINAL BASE. LOUIS STEINBERGER, New York, N. Y. Filed June 18, 1903. Serial No. 161,993.

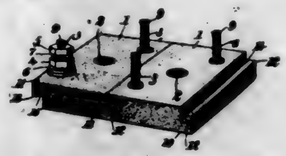

Claim.—As an article of manufacture, an interlocking terminal-base section consisting of a body portion of insulating material provided with interlocking edges, and metallic binding-posts mounted upon said body portion, each of said binding-posts being provided with an enlarged end embedded within said body portion, and further provided with a threaded stem projecting therefrom, said binding-posts being staggered relatively to the general position of said body portion, and said body portion being provided with a central aperture to be engaged by a screw for holding the same in position.

848,506. INSULATOR-PIN AND SUPPORT THEREFOR. LOUIS STEINBERGER, New York, N. Y. Filed July 24, 1905. Serial No. 270,986.

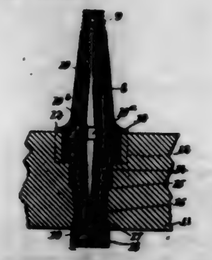

Claim.—1. The combination of a cross-arm provided with a frusto-conical aperture, a body member provided with a portion projecting into said aperture, a metallic member connected with said portion and extending therefrom, said metallic member being threaded, and a frusto-conical nut fitting said aperture and threaded so as to engage said member thus projecting.

2. The combination of a cross-arm provided with a wedge-like sloping top and with an aperture, an insulator-pin provided with a portion entering said aperture and also provided with integral portions partially overlapping the top of said cross-arm and extending beyond the edges of said aperture, said insulator-pin being provided with means for supporting an insulator.

3. As an article of manufacture, an insulator-pin having an enlarged body portion, and reduced end portions, one of said end portions being provided with threads, and a metallic rod embedded within said body portion, said metallic rod being enlarged at its middle and provided with reduced end portions.

4. The combination of a cross-arm provided with an aperture, said aperture being large at the top and bottom of the cross-arm and small at a point intermediate of said top and bottom, an insulator-pin mounted within the top of said cross-arm and provided with a projecting portion, and a frusto-conical nut engaging said projecting portion and fitting within the bottom of said aperture for the purpose of wedging said pin and said nut into close engagement relatively to said cross-arm.

5. The combination of a cross-arm provided with an aperture, said aperture being large at its extremities and small at the points intermediate of said extremities, an insulator-pin mounted upon said cross-arm and extending into said aperture so as to fit into the portion thereof adjacent to one edge of said cross-arm, and a nut engaging a portion of said insulator-pin and provided with a portion of suitable conformity to wedge into the portion of said aperture opposite said portion where said pin enters the same.

6. The combination of a cross-arm having an aperture, a body member provided with a portion projecting into said aperture and further provided with a sheltering portion extending beyond the limits of said aperture so as to shelter the same, and means for forcing said body member firmly into said cross-arm.

7. The combination of a cross-arm provided with an aperture, a body portion provided with a portion extending into said aperture and further provided with portions extending beyond the points of said aperture so as to prevent the entrance of water thereinto, a metallic rod connected with said body portion, and a locking member engaging said rod and said cross-arm so as to form a water-tight joint therebetween.

848,507. UNDERGROUND ELECTRIC RAILWAY. SYLVESTER M. SULLIVAN, San Francisco, Cal. Filed May 7, 1906. Serial No. 315,562.

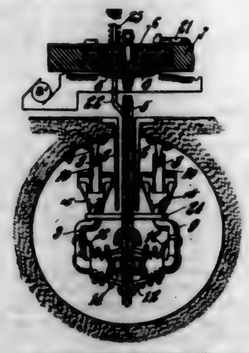

Claim.—1. In an electric railway, the combination of two conducting-wires, a turn-table carried by the car, a standard adjustable vertically in said turn-table, two independently-operating trolley-arms, said arms being hollow and being pivotally mounted on the standard, current-collecting means carried by the arms, and conductors passing through the hollow of said arms and along the standard.

2. In an electric railway, the combination of two conducting-wires, a turn-table carried by the car, a standard adjustable vertically in the turn-table, said standard being formed of spaced plates, hollow trolley-arms pivotally mounted on the standard said arms having their interior passages communicating with the space between the plates of the standard, current-collecting means carried by the arms and engageable with the trolley-wire, and conductors leading from the current-collecting means through said arms and standard.

3. In an electric railway, the combination with a slotted conduit, of a trolley-wire in the conduit, a hollow standard carried by the car, a hollow trolley-arm pivotally mounted on the standard and having suitable water-proof joints therewith, insulated current-collecting means on the arm engaging said trolley-wire, and a suitable conductor housed in said standard and hollow arm and electrically connected with said current-collector.

4. In an electric railway, the combination with a slotted conduit, of a trolley-wire in the conduit, a hollow standard carried by the car, a hollow trolley-arm pivotally mounted on the standard and having suitable waterproof joints therewith, insulated current-collecting means on the arm engaging said trolley-wire, a suitable conductor housed in said standard and hollow arm and electrically connected with said current-collector, and means operative from the car for depressing said trolley-arm.

5. In an electric railway, the combination of a pair of conductors, a standard carried by the car, a pair of independently-operating spring-actuated current-collectors carried by the standard and engageable with said conductors, and means including a lever having a shiftable fulcrum said lever being operative from the car for disconnecting said collectors from the conductors.

6. In an electric railway, the combination of a pair of conductors, a standard carried by the car, a pair of independently-operating spring-actuated current-collectors carried by the standard and engageable with said conductors, and a single operating means including a lever and a shiftable fulcrum between the same and the standard for disconnecting said current-collectors from their conductors.

7. In an electric railway, the combination with a slotted conduit, of a current-conductor on each side of the slot in said conduit, a standard carried by the car and operative in said slot, a pair of independently-movable current-collectors on the standard engageable with respective of said conductors, and means including a longitudinally-slotted lever and a shiftable fulcrum therefor and connecting the lever with the standard, said lever being operative from the car for disengaging said current-collectors from their respective conductors.

8. In an electric railway, the combination with a slotted conduit, of a trolley-wire in the conduit, a standard supported from the car, a spring-actuated movable current-collector on the standard and engageable with said conductor, means including a slotted lever and a shiftable fulcrum between the same and the standard, said lever being operative from the car and independent of the movement of the standard to disengage the current-collector from said conductor, and means carried by the car permitting said current-collector to be reversed.

848,508. COMBINED SHOVEL-SCRAPER AND DUMP-WAGON. CHARLES F. THOMAS, Buckeystown, Md., and EWALD SCHMITT, Washington, D. C. Filed Jan. 26, 1907. Serial No. 354,338.

Claim.—1. In a combined shovel-scraper and dump-wagon, the combination with a suitable frame, of a scraper-shovel, and means for raising, lowering, tilting and opening the rear of the shovel from a single station on the machine.

2. In a combined shovel-scraper and dump-wagon, the combination with a suitable frame of a plurality of scrapers supported by the frame, and means located at the rear within reach of the operator for raising, lowering and tilting the scraper-shovels and for opening and closing the rear ends thereof for dumping the contents.

3. In a combined shovel-scraper and dump-wagon, the combination with a suitable frame, of a scraper-shovel, rack-bars having vertical sliding connection with the frame, to the lower ends of which the shovels are suspended and two sets of draw-bars having pivotal connection with the frame, and pivotal sliding connection with the shovel at different points.

4. In a combined shovel-scraper and dump-wagon, the combination with a suitable frame, of a scraper-shovel, rack-bars having vertical sliding connection with the frame, to the lower ends of which the shovels are suspended and two sets of draw-bars having pivotal connec-

tion with the frame, and pivotal sliding connection with the shovel at different points and means for tilting the shovel.

5. In a combined shovel-scraper and dump-wagon, the combination with a suitable frame, of a scraper-shovel, rack-bars having vertical sliding connection with the frame, to the lower ends of which the shovels are suspended and two sets of draw-bars having pivotal connection with the frame, and pivotal sliding connection with the shovel at different points, and guide-channels in which the rack-bars slide up and down.

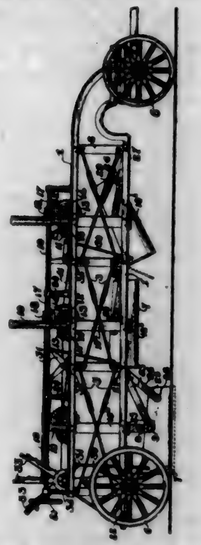

6. In a combined shovel-scraper and dump-wagon, the combination with a suitable frame, of a scraper-shovel, rack-bars having vertical sliding connection with the frame, links pivoted to the lower ends of the rack-bars and to which the shovels are suspended and two sets of draw-bars having pivotal connection with the frame and pivotal sliding connection with the shovel at different points and guide-channels in which the rack-bars slide up and down, having bell-mounted openings at their lower ends.

7. In a combined shovel-scraper and dump-wagon, the combination with a suitable frame, of a scraper-shovel and double rack-bar to the lower end of which the shovel is suspended, pinions intermeshing with the teeth on both sides of said rack, a shaft and stub-shaft carrying said pinions, and gear-wheels secured on said shafts for transmitting motion from one to the other.

8. In a combined shovel-scraper and dump-wagon, the combination with a suitable frame, of a scraper-shovel and double rack-bar to the lower end of which the shovel is suspended, pinions intermeshing with the teeth on both sides of said rack, a shaft and stub-shaft carrying said pinions, gear-wheels secured on said shafts for transmitting motion from one to the other, a worm-gear on the shaft, a worm engaging said gear and a shaft on which the worm is located extending to a point within easy reach of the operator.

9. In a combined shovel-scraper and dump-wagon, the combination with a suitable frame, of a scraper-shovel vertically-movable rack-bars to which the shovel is pivotally suspended, a tilting rod connected with the shovel and means extending to a common point on the machine for raising and lowering the racks and the tilting rod.

10. In a combined shovel-scraper and dump-wagon, the combination with a suitable frame, of a scraper-shovel suspended therefrom, means for raising, lowering and tilting said shovel, a plate hinged to the rear and a latch for automatically closing said plate when the shovel is placed in its normal position.

11. In a combined shovel-scraper and dump-wagon, the combination with a suitable frame, of a scraper-shovel suspended therefrom, means for raising, lowering and tilting said shovel, a plate hinged to the rear, a latch for automatically closing said plate when the shovel is placed in its normal position, and means extending within reach of the operator for opening said plate when the shovel is tilted to the dumping position.

848,509. AWNING. FREDERICK THOMS, San Francisco, Cal. Filed Mar. 13, 1906. Serial No. 305,861.

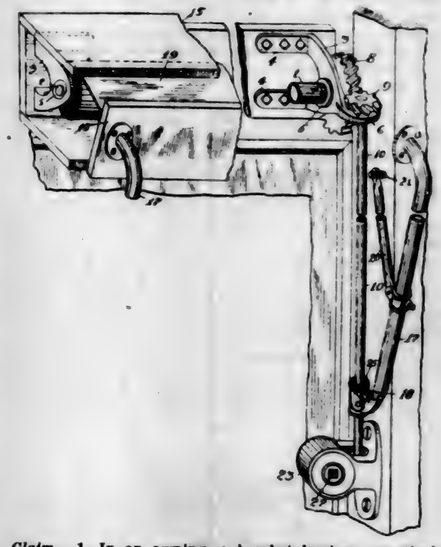

Claim.—1. In an awning, a bracket having a vertical part and a forwardly-extending horisontal part, an awning-shaft journaled in the vertical part, a spiral gear on said awning-shaft, a vertical operating-rod passing through the horizontal part and carrying an intermeshing spiral gear, and means for rotating said operating-rod; the location of said rod being in front of and substantially in line with the end of the awning-shaft.

2. In an awning, an awning-shaft, an operating-rod geared thereto, an awning-supporting arm, a hinged brace-rod connected thereto, and a slide having a hinge connection with the lower part of said supporting-arm and movable vertically upon said operating-rod.

848,510. HYDRAULIC CLUTCH. BENJAMIN T. L. THOMSON, Clapham Common, England. Filed Jan. 29, 1906. Serial No. 298,563.

Claim.—1. In a hydraulic clutch of the character described, the combination with the driving member, of a hollow casing connected thereto, a driven member projecting into said casing, an annular chamber formed within said casing, a fluid therein, a member carried by said driven member and adapted to be projected into said annular chamber, a sliding member, and means for automatically projecting said sliding member into said annular chamber, substantially as described.

2. In a hydraulic clutch of the character described, the combination with the driving member, of a hollow casing connected thereto, a driven member projecting into said casing, an annular chamber formed within said casing, a fluid therein, a member carried by said driven member and adapted to be projected into said annular chamber, a sliding member, and means for automatically projecting and withdrawing said sliding member into and from said annular chamber, substantially as described.

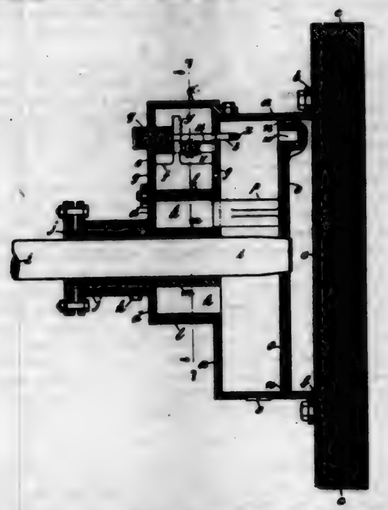

3. In a hydraulic clutch of the character described, the combination with the driving member, of a hollow casing connected thereto, a driven member projecting into said casing, an annular chamber formed within said casing, a fluid therein, a piston carried by said driven member and adapted to be projected into said annular chamber, a sliding member, means for projecting said sliding member within said annular chamber, and means for momentarily and automatically withdrawing said sliding member to clear said piston, substantially as described.

4. In a hydraulic clutch of the character described, the combination with the driving member, of a main casing connected thereto, a driven member projecting into said casing, an annular chamber formed within said main casing, a fluid therein, a member carried by said driven member and adapted to be projected into said annular chamber, a supplemental casing, a sliding member arranged therein and adapted to be projected into said annular chamber, and means for automatically withdrawing said sliding member from said annular chamber, substantially as described.

5. In a hydraulic clutch of the character described, the combination with the driving member, of a main casing connected thereto, a driven member projecting into said casing, a disk mounted on the inner end of said driven member, an annular chamber formed within said main casing, a fluid therein, a piston carried by said disk and adapted to be projected into said annular chamber, a supplemental casing, a sliding member arranged therein, mechanism actuated by said disk to project said sliding member into said annular chamber when said piston is within said chamber, and means for automatically withdrawing said sliding member upon the withdrawal of said piston, substantially as described.

6. In a hydraulic clutch of the character described, the combination with the driving member, of a main casing connected thereto, a driven member projecting into said casing, a circular disk mounted on the inner end of said driven member, an annular chamber formed within said main casing, a fluid therein, a piston carried by said disk and adapted to be projected into said annular chamber, a supplemental casing, a sliding member arranged therein, a rack carried by said sliding member and engaging a toothed wheel, a rack-bar arranged at right angles to said first-mentioned rack and engaging a toothed wheel mounted on a shaft with said first-named wheel, the inner end of said last-named rack-bar being adapted to normally project within the main casing, whereby when the said driven member is moved to project the said piston within the said annular chamber, the said disk will actuate said rack-bar to project said sliding member within said chamber, and means for automatically withdrawing said sliding member, substantially as described.

7. In a hydraulic clutch of the character described, the combination with the driving member, of a main casing connected thereto, a driven member projecting into said casing, a circular disk mounted on the inner end of said driven member, an annular chamber formed within said main casing, a fluid therein, a piston carried by said disk and adapted to be projected into said annular chamber, a supplemental casing, a sliding member arranged therein, a rack carried by said sliding member and engaging a toothed wheel, a rack-bar arranged at right angles to said first-mentioned rack and engaging a toothed wheel mounted on a shaft with said first-named wheel, the inner end of said last-named rack-bar being adapted to project within said main casing and to be actuated by said disk on said driven member to project said sliding member into said annular chamber, an antifriction-roller mounted in the projecting end of said rack-bar, a spring arranged at the other end of said rack-bar to withdraw said sliding member, substantially as described.

8. In a hydraulic clutch of the character described, the combination with the driving member, of a main casing connected thereto, a driven member projecting into said casing, a circular disk mounted on the inner end of said driven member, an annular chamber formed within said main casing, a fluid therein, a piston carried by said disk and adapted to be projected into said annular chamber, a supplemental casing, a sliding member arranged therein, a rack carried by said sliding member and engaging a toothed wheel, a rack-bar arranged at right angles to said first-named rack and engaging a toothed wheel mounted on a shaft with said first-named wheel, the inner end of said last-named rack-bar being adapted to project within said main casing and to be actuated by said disk on said driven member to project said sliding member into said annular chamber, an antifriction-roller mounted in the projecting end of said rack-bar, a spring arranged at the other end of said rack-bar to withdraw said sliding member, said actuating-disk being provided with a recess above and extending a short distance on both sides of the said piston, whereby the said rock-bar will enter said recess as the main casing moves around and the sliding member will be momentarily withdrawn to clear the said piston and then again projected into the annular chamber, substantially as described.

848,511. EMERGENCY STOP MECHANISM. HUGH R. TOOKER, Oilcenter, Cal. Filed Sept. 17, 1906. Serial No. 334,976.

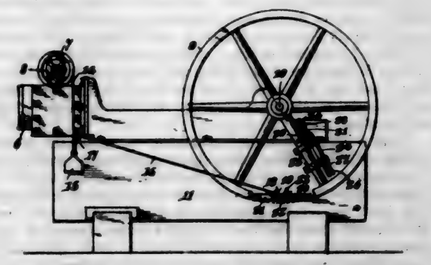

Claim.—1. In a mechanism of the character set forth, the combination with an engine, of a supply-controlling valve and a fly-wheel therefor, a motor for actuating the valve, a movable hook located adjacent to the fly-wheel, a device movable with the motor and detachably engaged with the hook for holding said motor against movement,

and means mounted on the fly-wheel and movable therein to a position to engage the hook and move the same to disengage it from the device and thereby permit the operation of the motor.

2. In a mechanism of the character set forth, the combination with an engine, of a supply-controlling valve and a fly-wheel therefor, a motor for actuating the valve, a hook pivoted adjacent to the fly-wheel, a cable having a connection with the motor and detachably engaged with the hook for holding the motor against movement, and means mounted on the fly-wheel and movable thereon to a position to engage the hook and move the same to positively disengage it from the cable.

3. In a mechanism of the character set forth, the combination with an engine, of a supply-controlling valve and a fly-wheel therefor, a pulley mounted on the valve, a weight having a cable connection with the pulley, a hook pivoted between its ends adjacent to the fly-wheel and having an offset finger, a cable connected to the weight and detachably engaged with the hook, and means mounted on the fly-wheel and movable to a position to engage the finger of the hook to swing said hook and thereby disengage it from the cable.

4. In mechanism of the character set forth, the combination with an engine, of a supply-controlling valve and a fly-wheel therefor, a motor for actuating the valve, means for holding the motor against movement, and means mounted on the fly-wheel for releasing the motor, said latter means including a carrier, clamps connected to the carrier and embracing a spoke of the fly-wheel for securing said carrier to the fly-wheel, and a centrifugally-actuated operating device movably mounted on the carrier and movable to a position to coöperate with the holding means.

5. In a mechanism of the character set forth, the combination with an engine, of a supply-controlling valve and a fly-wheel therefor, a motor for actuating the supply-controlling valve, means for holding the motor against movement, mechanism mounted on the fly-wheel for releasing the motor, said mechanism comprising a casing, spoke-embracing clamps for securing the casing to the spoke of the fly-wheel, a stem slidably mounted in the casing and projecting beyond the opposite ends thereof, the outer end of the said stem having a cross-head that engages the holding means, a weight mounted on the stem within the casing, and a spring mounted on the inner projecting end of the stem and bearing against the casing.

6. In a mechanism of the character set forth, the combination with an engine, of a supply-controlling valve and a fly-wheel therefor, a pulley mounted on the supply-controlling valve, a weight-motor having a cable connection with the pulley, a hook pivoted between its ends adjacent to the fly-wheel, said hook having an offset terminal bill and an offset terminal finger, a cable connected to the weight-motor and detachably engaged with the offset terminal bill, a tubular casing, spoke-embracing clamps securing the casing to a spoke of the fly-wheel, a stem slidably mounted in the casing and having a cross-head at its outer end that is movable into and out of engagement with the finger of the hook to swing said hook and disengage the bill thereof from the cable, a weight mounted on the stem, a spring bearing against the inner end of the casing and surrounding the stem, and means mounted on the inner end of the stem and bearing against the spring, said means being adjustable to vary the tension of the said spring.

7. In mechanism of the character set forth, the combination with an engine, of a supply-controlling valve and a fly-wheel therefor, a motor for actuating the valve, a hook pivoted between its ends, a cable having a connection with the motor and detachably engaged with one end of the hook for holding the motor against movement, and means mounted on the fly-wheel and movable thereon to a position to engage the other end of the hook to swing said hook and disengage it from the cable in order to permit the motor to operate.

8. In mechanism of the character described, the combination with an engine, of a supply-controlling valve and a fly-wheel therefor, a motor for actuating the valve, a bracket having a pair of spaced plates, a hook pivoted to and between the plates, a device for holding the motor against movement, said device having a detachable engagement with the hook, and means mounted on the fly-wheel and movable thereon to a position to engage said hook to swing the same and positively disengage it from the holding device in order to permit the motor to operate.

9. In mechanism of the character described, the combination with an engine, of a supply-controlling valve and a fly-wheel therefor, a motor for actuating the valve, means for holding the motor against movement, and means mounted on the fly-wheel for releasing the motor, said releasing means comprising a casing secured to the fly-wheel, a centrifugally-operating stem slidably mounted within the casing and having an exposed cross-head that coöperates with the holding means, and means for resisting the centrifugal action of the stem and cross-head.

10. In mechanism of the character described, the combination with an engine, of a supply-controlling valve and a fly-wheel therefor, a motor for actuating the valve, means for holding the motor against movement, and means mounted on the fly-wheel for releasing the motor, said releasing means comprising a casing, a spoke-embracing clamp carried by the casing and engaging a spoke of the fly-wheel to secure the same thereon, and a centrifugally-actuated operating device mounted in the casing and including a head projecting therefrom and movable to a position to engage the holding means.

848,512. DEVICE FOR INSERTING EXPLOSIVE CHARGES. ROSENDO TORRAS, Brunswick, Ga. Filed June 26, 1906. Serial No. 323,473.

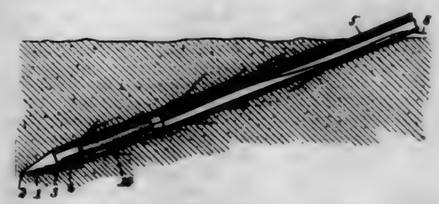

Claim.—1. A device for inserting explosive charges, comprising a tube having a groove the entire length thereof, a pointed head detachably connected to one end of the tube, and a cap detachably secured to the other end thereof.

2. A device for inserting explosive charges, comprising a long cylindrical tube having a groove or slit extending the entire length thereof, a head having a sharp point, a cylindrical shank portion fitting within one end of the tube and a shoulder fitting the end of the tube, and a cap adapted to be inserted in the other end of the tube.

3. A cylindrical tube having a slit or groove extending the entire length thereof, a detachable means for closing the end of the said tube, an explosive charge having a fuse or wire secured thereto, and means for inserting said charge within the tube, whereby the tube may be removed without displacing the charge or necessitating the cutting of the wire.

848,513. STEP-LADDER. MATTHEW E. TRAFTON, Los Angeles, Cal. Filed Jan. 29, 1906. Serial No. 296,524.

Claim.—1. In a step-ladder, supporting-uprights having strut-engaging hooks rigidly secured thereto; cylindrical supporting-struts chamfered on their inner upper ends pivotally secured to said uprights; cross-braces having their upper ends pivotally secured to the supporting-struts and having on their lower ends loops adapted to slidingly engage said struts; a locking-clamp carried by the cross-braces at their point of crossing; and a set-screw carried by said locking-clamp adapted to hold the cross-braces in frictional engagement.

848,513.

848,514. SHIFTING THILL. JOHN TRIESTRAM, Kalamazoo, Mich. Filed Mar. 23, 1905. Serial No. 251,565.

Claim.—1. In a shifting thill, the combination of the attaching-clips having threaded sockets therein adapted to receive the draft-rods; a relatively stationary draft-bar secured to said clips; a shifting bar formed of an angle-iron arranged to embrace said stationary bar and to slide thereon; bearing-plates on said stationary bar for said shifting bar; clips embracing said bars for securing them together, one of which is secured to each bar; a pair of oppositely-arranged projecting catches carried by said shifting bar; and a spring-latch carried by said stationary bar adapted to automatically engage said catches as said shifting bar is adjusted, for the purpose specified.

2. In a shifting thill, the combination of the attaching-clips having threaded sockets therein adapted to receive the draft-rods; a relatively stationary draft-bar secured to said clips; a shifting bar; clips for securing said bars adjustably together; a pair of catches carried by the said shifting bar; and a spring-latch carried by the said stationary bar adapted to automatically engage said catches as said shifting bar is adjusted.

3. In a shifting thill, the combination of a relatively stationary draft-bar; a shifting bar formed of angle-iron arranged to embrace said stationary bar and slide thereon; loop-like clips embracing said bars for adjustably securing the shifting bar to the fixed bar, one of which is secured to each bar; a catch carried by said clip secured to the said shifting bar; and a spring-latch carried by the stationary bar, adapted to automatically engage said catch when said shifting bar is adjusted, substantially as described.

4. In a shifting thill, the combination of a relatively stationary bar; a shifting bar formed of angle-iron arranged to embrace said stationary bar and to slide thereon; loop-like clips encircling said bars for securing them together, one of which is secured to each bar; and means for securing said shifting bar in its adjusted position.

848,515. LATCH: HERBERT TYSINGER, Little Rock, Ark. Filed June 2, 1906. Serial No. 319,917.

Claim.—A latch comprising a bracket, a bolt pivoted thereto and provided with an arrow-shaped locking-head, a keeper-casing having an opening for the insertion and withdrawal of the locking-head, a locking-spring secured at one end to the casing and having its free end formed with a locking member to engage said locking-head, a spring-retracted arm pivotally mounted in the casing and adapted to be operated to retract said locking member, and means for operating the arm.

848,516. JACK. WALTER UMSTEAD, Jerseytown, Pa. Filed June 25, 1906. Serial No. 323,255.

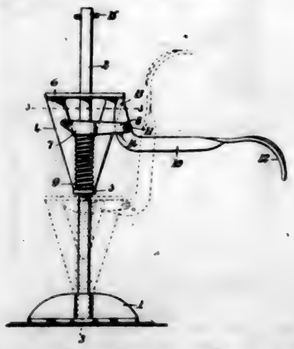

Claim.—1. A jack comprising an upright, a lifting-bracket and a block slidably mounted upon said upright, a lever pivoted upon said block and adapted to raise said bracket, said block being jammed upon said upright by the downward pressure of said lever, and means for normally pressing said block toward the upper part of said bracket.

2. A jack comprising an upright, a lifting-bracket and a block slidably mounted upon said upright, means for pressing said block toward the upper end of said bracket, and a lever pivotally mounted upon said block near the side thereof, and adapted to raise said bracket, said lever being further adapted to jam said block upon the said upright when the lever is depressed.

3. A jack comprising an upright, a block slidably mounted upon said upright and having a fork extension, a lever pivotally mounted on said fork extension, and a lifting-bracket slidably mounted upon said upright and having a spring adapted to force said block toward the top of said bracket, said lever being adapted to raise said bracket and to jam said block upon said upright when the lever is depressed.

4. A jack comprising an upright, a lifting-bracket hav-

ing lateral extensions slidably mounted upon said upright, a block slidably mounted upon said upright and having a pivoted lever, and a spring adapted to force said block toward an extension of said bracket, said lever being adapted to raise said bracket and to jam said block upon said upright.

5. A jack comprising an upright, a bracket having the ends laterally disposed and slidably mounted upon said upright, a block having a fork extension and being slidably mounted upon said upright between the ends of said bracket, a spring adapted to force said block toward the upper end of said bracket, and a lever pivotally mounted in said fork extension, adapted to raise said bracket and jam said block upon said upright, said lever having a stop adapted to rest against said fork extension when said lever is depressed.

848,517. MAIL-TRANSPORTATION SYSTEM. ERN S. UPRIGHT, Ord, Nebr. Filed Sept. 20, 1906. Serial No. 335,490.

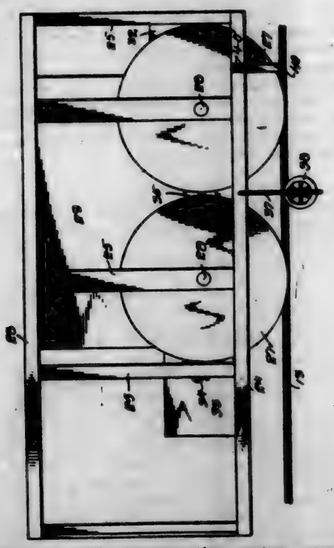

Claim.—1. A mail-transportation system comprising traffic-wires, and means for supporting the same; a carrier adapted to travel upon said wires; means located within the carrier for automatically propelling the same; means secured to the front end of said carrier and operatively connected with said propelling means; and means secured to said traffic-wire-supporting means and adapted to automatically trip said connecting means, for throwing said propelling means out of action as the carrier passes thereover.

2. A mail-transportation system comprising traffic-wires and poles for supporting the same; a carrier adapted to travel upon said wires; a motor located within said carrier, and operatively connected with the carrier-wheels; a switch-rod operatively connected with said motor and provided with a depending end; and a rod secured between said wires for engagement with the depending end of said rod to automatically trip the latter and throw the motor out of action as the carrier passes thereover.

3. A mail-transportation system comprising poles; brackets secured to the upper portions thereof; traffic-wires secured to opposite ends of said brackets; a carrier adapted to travel upon said wires and including oppositely-flanged wheels; a battery located in the rear end of the carrier; a motor located at the front end of the carrier and driven by said battery; a gear connection between said motor and the shafts of said wheels; a depending switch operatively connected with the motor; and a rod secured to the brackets of the station-posts, between the wires, and adapted to engage and trip said switch when the carrier passes thereover, to throw the motor out of action.

4. In a mail-transportation system, including traffic-wires and means for supporting the same, a carrier adapted to travel upon said wires and comprising a cigar-shaped frame, the bottom section of said frame having a pair of alining longitudinal openings adjacent its side edges; transverse shafts journaled in the side sections of the frame; wheels mounted on opposite ends of said shafts and extending through said openings; a receptacle mounted within said frame, and having its bottom corrugated at opposite ends, to permit the passage therebeneath of said shafts; and means mounted within said frame for automatically propelling said carrier.

5. A mail-transportation system comprising main and switch tracks and poles for supporting the same; a carrier adapted for travel upon said tracks; means for automatically propelling said carrier; means connected with said tracks for automatically throwing said propelling means out of action; means secured to said carrier for automatically opening said switches; and means for normally holding said switches in closed position.

6. A mail-transportation system comprising main and switch tracks, and supporting-poles; a carrier adapted to travel on said tracks; means located within the carrier for automatically effecting its propulsion; means secured to the carrier for automatically opening said switch; means for closing said switch when the carrier has passed therebeyond; and means secured to said main track for automatically throwing said propelling means out of action.

848,518. ELECTRIC MEDICAL APPARATUS. CARLOS VAN BERGH, Winnipeg, Manitoba, Canada. Filed Dec. 1, 1906. Serial No. 345,909.

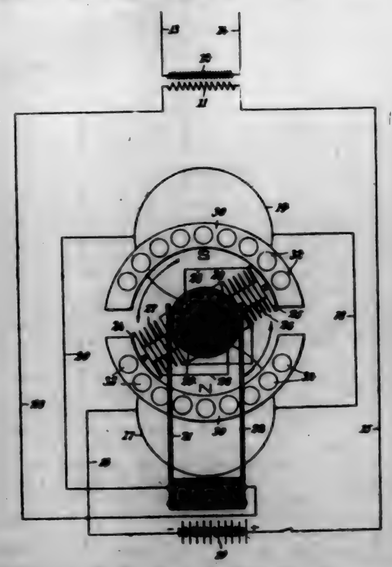

Claim.—1. An electric circuit including a suitable source of electrical energy, an induction-coil, and an interrupter, said interrupter comprising a motor having a rotary armature and powdered steel for retarding said armature.

2. An electric circuit including a suitable source of electrical energy, an induction-coil, and an interrupter, said

interrupter comprising a motor having a rotary armature, powdered steel for retarding said armature, and a commutator adapted to deliver a current to said armature during only approximately one-half of each revolution.

3. An electric circuit including a suitable source of electrical energy and an interrupter, said interrupter comprising a motor having a rotary armature, a commutator adapted to deliver a current to said armature during only approximately one-half of each revolution, and means for retarding said armature during a portion of each revolution.

4. An electric circuit including a suitable source of electrical energy, and a noiseless interrupter, said interrupter comprising a motor having a rotary armature, magnets surrounding said armature, means within said magnets for retarding the rotation of the armature, and a commutator adapted to deliver a current to said armature during only approximately one-half of each revolution.

5. An electric circuit including a suitable source of electrical energy and an interrupter, said interrupter comprising a motor having a rotary armature, a commutator adapted to deliver a current to said armature during only approximately one-half of each revolution, and means for retarding the armature during the remainder of each revolution.

6. An electric circuit including a suitable source of electrical energy and an interrupter, said interrupter comprising a motor having a rotary armature, and means for retarding said armature during a portion of each revolution.

7. An electric circuit including a suitable source of electrical energy and an interrupter, said interrupter comprising a motor having a rotary armature, a commutator adapted to deliver a current to said armature during only approximately one-half of each revolution, magnets surrounding said armature, said magnets being provided with pockets or recesses, and a finely-subdivided metal within said recesses for retarding the armature.

848,519. INDICATOR. CHESTER VERSTEEG, Ashton, S. D. Filed Nov. 14, 1906. Serial No. 343,386.

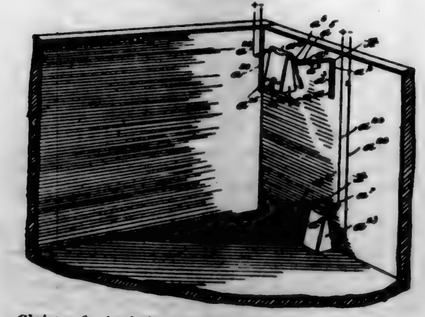

Claim.—1. An indicator for grain-bins comprising a support having a vertical portion for attachment to the wall of the bin, and a horizontal portion provided with a threaded post, a rod having a flattened portion resting upon the horizontal portion of the support and provided with an opening through which passes the post, such rod being slotted at its opposite end, a thumb-screw engaging with the post for securing the rod in its adjusted position, a closed box pivotally mounted upon the rod and insulated therefrom, a shield having a reduced portion passing through the slot of the rod and within the box, the portion of the shield outside the box being arranged substantially parallel with the side thereof and spaced apart therefrom, said box depending normally substantially vertical from the rod, and being provided on its inner face with a plate of insulating material having a binding-post for coacting with the reduced portion of the shield, an electric circuit having its terminals connected with the binding-post and with the reduced portion of the shield respectively, said circuit including a signal operated by the contact of the binding-post with the reduced portion of the shield.

2. An indicator for grain-bins comprising a support arranged in the bin, a rod adjustably secured to the plate and having its free end slotted, a shield comprising a reduced portion passing through the slot of the rod, the body portion of the shield lying alongside the reduced portion and spaced apart therefrom, a box mounted for rotation upon the rod and insulated therefrom, said box inclosing the reduced portion of the shield, a binding-post extending into the box and insulated therefrom, an electric circuit having its terminals in the binding-post and in the reduced portion of the shield, respectively, and an electric circuit having a signal operated by the contact of the binding-post with said reduced portion of the shield.

3. An indicator for grain-bins comprising a support within the bin, a rod adjustably connected with the support, a box pivotaly mounted on the rod and insulated therefrom, a shield having a reduced portion within the box, the body portion of said shield lying outside of the box and spaced apart therefrom, a binding-post extending through the box and insulated therefrom, and an electric circuit having its terminals in the binding-post and the reduced portion of the shield, respectively, and including a signal operated by the contact of the binding-post with said reduced portion of the shield.

4. An indicator for grain-bins, comprising a box, a shield arranged alongside the box and spaced apart therefrom, said shield having a reduced portion extending into the box, the box being movable with respect to said reduced portion, said box having a contact-point for coacting with the reduced portion of the shield, and an electric circuit having its terminals in the reduced portion of the shield and the contact-point of the box, respectively, said circuit including a signal operated by the contact of the contact-point and the shield.

848,520. TYPE-WRITING MACHINE. HERMAN L. WAGNER, Mount Vernon, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed May 28, 1906. Serial No. 319,100.

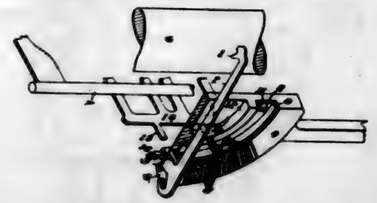

Claim.—1. In a type-writing machine, the combination with a system of type-bars pivoted below the platen to strike against the front side thereof, of a segment in which the type-bars are pivoted, said segment having slots to receive the type-bars, a segmental shelf projecting forwardly from the front wall of said type-bar segment, a segmental shield overlying the type-bar slots and having at its rear edge a flange extending up to said shelf and directly beneath the same, and means for moving said shield back at the type-bar strokes.

2. In a type-writing machine, the combination with a system of type-bars pivoted below the platen to strike against the front side thereof, of a segmental vertical wall having slots in its under edge to receive the type-bars, a segmental shelf projecting forwardly from the front wall of said type-bar segment, a universal bar mounted in rear of said type-bar segment, and having lugs projecting forwardly through said segment, and a curved dust-shield in front of the type-bar segment and mounted upon said lugs, and overlying the type-bar slots, and having at its rear edge a flange extending up to said shelf and directly beneath the same.

848,521. BOTTLE-CLOSURE. WILLIAM R. WARNER, Vergennes, Vt. Filed Nov. 21, 1906. Serial No. 344,457.

Claim.—The combination of a bottle, a closure therefor, a hinge pivotally connecting the closure to the bottle, an arm forming a continuation of the hinge member connected to the closure, a link connected to said arm, a guide for the link secured to the bottle near the center, and a hook on the link below the guide whereby the link may be pulled longitudinally of the bottle by one of the fingers of the hand grasping the bottle to open the closure.

848,522. WIND OR WATER POWER WHEEL. JOSEPH N. WHITNER, Sanford, Fla. Filed May 31, 1906. Serial No. 319,567.

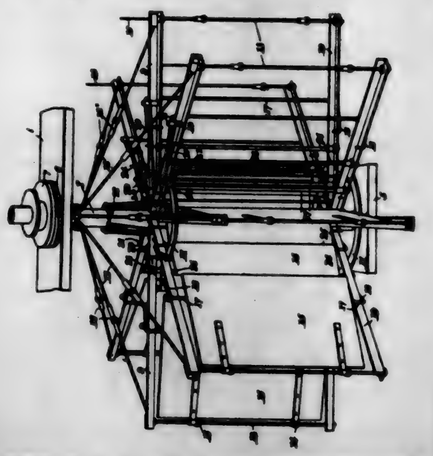

Claim.—1. In a device of the character described the combination with a rotatable shaft, and upper and lower arms radiating therefrom; of wings pivotally mounted between the arms, an oscillatory stay device for each wing and adapted to be overlapped thereby, and means for simultaneously moving the stay devices into engagement with the wings.

2. In a device of the class described the combination with a rotatable shaft, and upper and lower arms radiating therefrom and arranged in pairs; of a wing pivotally mounted between the arms of each pair, an oscillating stay connected to each pair of arms, and means for moving the stays simultaneously into the paths of the wings.

3. In a device of the character described the combination with a rotatable shaft, and upper and lower arms radiating therefrom and arranged in pairs; of a wing pivotally connected to the arms of each pair and adapted to swing therebetween, a stay-rod for each wing, arms extending from the rods and pivoted to the respective radial arms, and means for simultaneously swinging the stays and their arms to bring said stays into the paths of the wings.

4. In a device of the character described the combination with a rotatable shaft, and upper and lower arms radiating therefrom and arranged in pairs; of a plurality of wings pivotally mounted between the arms of each pair, an oscillatory stay device for each wing, and means for simultaneously moving said devices into the paths of the wings.

5. In a device of the character described the combination with a rotatable shaft, and arms radiating from the shaft; of a plurality of wings pivotally connected to each arm, an oscillatory stay device for each wing, and means for simultaneously moving the stay devices into the paths of the wings to hold them against movement in one direction.

6. In a device of the character described the combination with a rotatable shaft, and arms radiating therefrom; of a plurality of wings pivotally connected to each of the arms, a stay device for each wing, said stays adapted to swing upon the arms, an actuating device slidably mounted on the shaft, and means connecting said device with the stays for simultaneously swinging said stays into the paths of the wings.

7. In a device of the character described the combination with a rotatable shaft, and arms radiating therefrom; of a plurality of wings pivotally connected to each arm, and oscillatory means carried by each arm and separate from the wings for holding one of the wings thereon against movement in one direction, and oscillatory means carried by each arm and separate from the wings for holding the other wings against movement in one direction.

848,523. NUT-LOCK. CURTIS S. WILSON, Forest, Ohio, assignor of one-half to L. A. Conklin, Forest, Ohio. Filed Apr. 24, 1906. Serial No. 313,499.

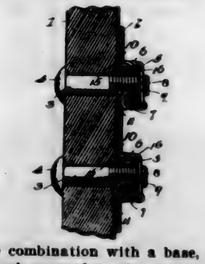

Claim.—1. The combination with a base, of a threaded bolt and nut, a lock secured to the nut and surrounding the bolt above the nut, and means carried by the lock for engaging said base, thereby preventing rotation of said lock and nut.

2. The combination with a base, of a threaded bolt and nut, a lock upon the nut provided with means for surrounding the bolt above the nut, means carried by the lock for positively engaging said base, and means for securing the lock to the nut.

3. The combination with a base, of a threaded bolt and nut, a lock provided with ends upon opposite sides of the nut and with a loop adapted to surround the bolt above the nut, means carried by the lock for engaging said base, and means for securing the lock to the nut.

4. The combination with a base provided with apertures, of a threaded bolt and nut, a lock provided with ends upon opposite sides of the nut and with a loop adapted to surround the bolt above the nut, a detent upon one of said ends adapted to enter said apertures one at a time, and means for securing the lock to the nut.

5. The combination with a base provided with apertures, of a threaded bolt, a nut provided with recesses, a lock provided with ends upon opposite sides of the nut and with a loop adapted to surround the bolt above the nut, a detent upon one of said ends adapted to enter said apertures one at a time, and projections upon the ends fitting said recesses.

6. The combination with a base provided with apertures, of a threaded bolt, a nut provided upon its under surface with recesses, a lock upon the nut provided with a loop adapted to surround the bolt, a detent carried by the lock adapted to enter said apertures one at a time, and projections upon the lock fitting said recesses.

7. As an article of manufacture, a nut-lock composed of a plurality of wires intertwisted to form a loop and provided one with a detent and both with projections, extending from the extremities of said wires.

8. As an article of manufacture, a nut-lock composed of a plurality of spring-wires intertwisted to form a loop and provided one with a detent and both with projections, extending from the extremities of said wires.

848,524. LIFTING-JACK. EARNEST C. YEAGER, Thorndale, Tex. Filed Nov. 23, 1906. Serial No. 344,769.

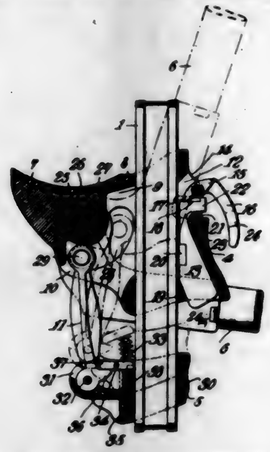

Claim.—1. In a lifting-jack, the combination of a standard, a pair of runners movable thereon, a handle fulcrumed on the upper runner, a pitman connected with the handle and lower runner, a clamping member movably mounted on the upper runner, means engaging the member for moving the same out of contact with the standard, and means on the handle arranged to engage the said means on the downward stroke of the handle and release the means from the clamping member.

2. In a lifting-jack, the combination of a standard, a pair of runners movable thereon, a handle fulcrumed on the upper runner, a pitman connected with the handle and lower runner, a clamping member movably mounted on the upper runner, a dog engaging the member to move the same in a direction parallel with the standard, an inclined abutment on the upper runner for moving the member laterally simultaneously with its movement along the standard for moving it out of engagement with the latter, and a spring arranged to return the clamping member to its operative position when the dog is released.

3. In a lifting-jack, the combination of a standard, a pair of runners movable thereon, a handle fulcrumed on the upper runner, a pitman connected with the handle and lower runner, a clamping member movably mounted on the upper runner, a dog engaging the member to move the same away from the standard, means for holding the member in engagement with the standard when the dog is released, a lever on the dog, and means on the lever and handle arranged to strike one on the other when the handle is actuated for automatically releasing the dog.

4. In a lifting-jack, the combination of a standard, a pair of runners movable thereon, a handle fulcrumed on the upper runner, a pitman connected with the handle and lower runner, a clamping member movably mounted on the upper runner, a serrated gripping-block on the member for gripping one edge of the standard, means for guiding the member to move in a direction inclined to the standard, a dog engaging one end of the member for moving the latter in one direction, a spring arranged to move the member in the opposite direction, a pivotal mounting on the upper runner for the dog, a lever connected with the dog, and lugs arranged on the operating-handle and lever to actuate the latter to release the dog by the downward movement of the handle.

5. In a lifting-jack, the combination of a standard, a pair of runners movable thereon, a handle fulcrumed on the upper runner, a pitman connected with the handle and lower runner, gripping-teeth arranged on the lower runner, and means actuated by the pitman and coöperating with the teeth to clamp the lower runner to the standard.

6. In a lifting-jack, the combination of a standard, a pair of runners movable thereon, a handle fulcrumed on the upper runner, a pitman connected with the handle and lower runner, gripping-teeth arranged on the lower runner, a dog pivoted on the lower runner, a spring tending to release the dog, and means between the pitman and dog for actuating the latter to grip the standard.

7. In a lifting-jack, the combination of a standard, an upper and lower runner movable thereon, a clamping means on the upper runner, an operating-lever fulcrumed on the upper runner, a pitman between the lever and the lower runner, a dog on the lower runner disposed between the pitman and standard for gripping the latter, a spring on the lower runner which engages one end of the dog to move it away from the standard, and means on the pitman for actuating the dog.

848,525. HARROW. HALE V. ABBOTT and NATHAN W. ABBOTT, Lawton, Mich. Filed Apr. 9, 1906. Serial No. 310,756.

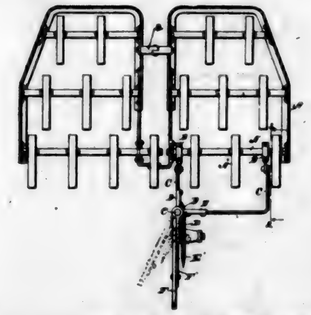

Claim.—1. An attachment for a harrow consisting of the clip-pieces B arranged to attach to one of the crossbars of the harrow; a frame pivoted by horizontal pivots to said clip-pieces; a standard arranged to swing on a vertical pivot, carried by the said frame; a steering disk-like wheel on the horizontal journal on said standard; and a steering-handle secured to said standard, coacting for the purpose specified.

2. An attachment for a harrow, consisting of a frame supported on a horizontal pivot; a vertical pivot carried by the frame; a standard arranged to swing on said vertical pivot; a disk-like wheel on a horizontal journal on said standard; and a rearwardly-extending steering-handle secured to said standard by which it may be raised from the ground or thrown into the ground and pressure applied thereto, or turned on its pivot, coacting for the purpose specified.

3. The combination of a harrow made up of sections hinged together; a pair of upwardly and rearwardly projecting arms secured to the frame of one of said sections; a rectangular frame secured to said arms by horizontally-arranged pivots; a standard secured at the inner rear corner of said frame, by a vertical pivot; a disk-like wheel

journaled on said standard; and an upwardly and rearwardly projecting handle secured to said standard, for the purpose specified.

4. The combination of a harrow made up of sections hinged together; a pair of upwardly and rearwardly projecting arms secured to the frame of one of said sections; a frame secured to said arms by horizontally-arranged pivots; a standard secured to said frame, by a vertical pivot; a disk-like wheel journaled on said standard; and a handle for said standard, for the purpose specified.

5. The combination with a float-harrow, of a frame connected to said harrow by a horizontally-arranged pivot; a vertical pivot; a standard journaled on said pivot and secured to said frame thereby; a disk-like wheel journaled on said standard; and a rearwardly-extending steering-handle for said standard by which it may be raised from the ground or thrown into the ground and pressure applied thereto, or turned on its pivot, for the purpose specified.

848,526. WIRE-FENCE MACHINE. AXEL F. BACKLIN, Worcester, Mass., assignor to American Steel & Wire Company, Worcester, Mass., a Corporation of New Jersey. Filed Feb. 20, 1906. Serial No. 302,149.

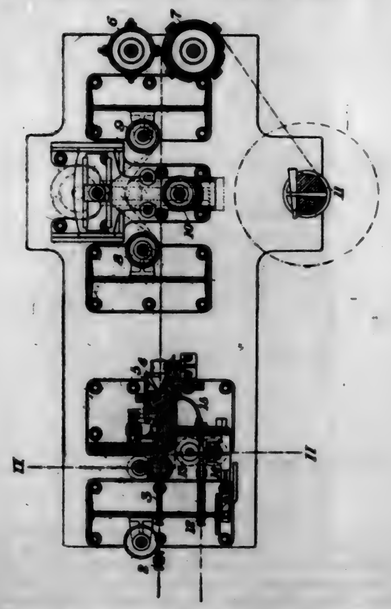

Claim.—1. In a wire-fabric machine, continuously-operating strand-wire-feeding mechanism, and intermittently-operating stay-wire-feeding mechanism having means whereby its periods of operation may be varied without affecting the operation of the strand-wire feed; substantially as described.

2. In a wire-fabric machine, stay-wire-feeding mechanism, gearing for actuating the mechanism, and means for preventing the action of such gearing except at predetermined times, said gearing having a removable member; substantially as described.

3. In a wire-fabric machine, the combination with strand-wire-feeding means, stay-wire-feeding devices, and coiling mechanism, of means for preventing the operation of the stay-wire-feeding mechanism except at predetermined intervals, without interfering with the operation of the strand-wire-feeding means and the coiling mechanism, and means whereby the intervals between the times of action of the stay-wire-feeding mechanism may be varied; substantially as described.

4. A wire-fabric machine having a continuously-operating feed-roll, and intermittently-operating coilers, a vibratory take-up device located between the coilers and the feed-roll, stay-wire-feeding mechanism, gearing for actuating the stay-wire-feeding mechanism, means for preventing the operation of such gearing except at predetermined intervals, and means whereby the length of such intervals may be varied; substantially as described.

5. In a wire-fabric machine, strand-wire-feeding mechanism, gearing for operating the same to feed the strand-wires continuously, stay-wire-feeding devices, intermittently-operating gearing for actuating said devices, and means for varying the periods of action of the last-named gearing; substantially as described.

6. In a wire-fabric machine, the combination with continuously-operating strand-wire-feeding mechanism, of a series of stay-wire-feeding wheels or rollers, a ratchet for actuating the same, a pawl for engagement with the ratchet, and a secondary or false ratchet arranged to prevent the engagement of said pawl with the first-named ratchet except at intervals determined by the conformation of the false ratchet; substantially as described.

7. In a wire-fabric machine, the combination with continuously-operating strand-wire-take-up mechanism, of a series of stay-wire-feeding wheels or rollers, and gearing for actuating the same intermittently, said gearing having a removable controlling member by changing which the intervals of operation of the gearing and the consequent spacing of the stay-wires may be varied; substantially as described.

848,527. HASP-FASTENER. CHARLES L. BAILEY, Morris, Ind. Ter. Filed Dec. 9, 1905. Serial No. 291,108.

Claim.—1. In a hasp-fastener, a hasp having a bow extension, and a latch pivoted to the extension, the said latch comprising a weighted handle, and a latch-finger extending rearwardly and upwardly from the pivot portion of the handle, and on the opposite side from the connection of the handle with the extension.

2. A hasp and a staple for the same, the said hasp being provided with a longitudinal slot to receive the staple, a bow extension from the said hasp, the limbs of which extension are at the end portions of the said slot, a latch-handle pivoted at its upper end upon the said bow extension, the said handle being provided with a rearwardly and upwardly curved locking-finger adapted to enter the staple when the latch-handle is in its normal or perpendicular position.

3. A hasp and a staple for the same, said hasp having a longitudinal slot to receive the staple, a bow extension from the hasp, the limbs of the extension being at the end portions of the slot, and a latch engaging the staple and the bow, whereby to lock the parts.

848,528. COOKER. CASSIUS U. BARLOW, Oakland, Cal. Filed June 2, 1906. Serial No. 319,886.

Claim.—A cooker comprising a plurality of walls of which the outer wall is composed of wood, the adjoining wall of a layer of tarred paper, the next wall of a layer of cork, and the inner wall of a layer of plaster, substantially as and for the purpose described.

848,528.

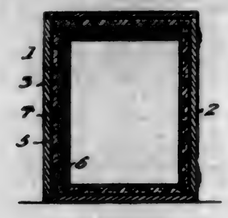

848,529. NON-REFILLABLE BOTTLE. JAS. H. BARNES, Baltimore, Md. Filed July 6, 1906. Serial No. 325,002.

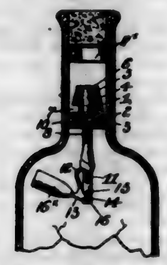

Claim.—1. In combination, the head having an opening therethrough, a valve for closing the said opening, a weight, a frame having side bars beveled on the inner side to prevent lodgment of the weight and means connecting the weight with the valve and with the frame loosely, substantially as described.

2. In combination, a head tapered upwardly and having an axial opening and a lateral opening communicating therewith, a tapered valve in said axial opening, adapted to close the lateral opening, a frame depending from the head, a weight adapted to move laterally of the said frame, a loose connection between the weight and the valve, and a loose connection between the weight and the frame, substantially as described.

3. In combination, the head having an opening, a valve, a weighted link connected with the valve, a frame depending from the head and a weighted bell-crank pivoted to the frame and connected to the weighted link, substantially as described.

4. In combination, a head having a perforation, a valve to close the same, a frame, a weighted link pivotally connected to the valve and having an elongated opening, a bell-crank detachably and pivotally connected with the frame and having a hooked end passing through the elongated opening in the weighted link, substantially as described.

848,530. THIMBLE. EUGENE BARNETT, Atlanta, Ga. Filed Jan. 3, 1907. Serial No. 350,624.

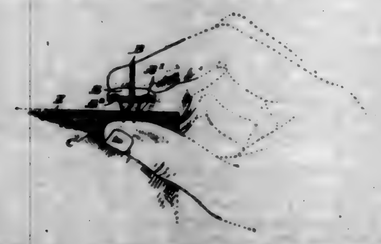

Claim.—1. A thimble or finger-shield having a body for attachment to a finger and having its outer face provided with clenching means for engaging the terminals of a pin on a pin-ticket to clench the same.

2. A thimble comprising a body for engagement with the pins of a pin-ticket, and a bail hinged at its ends on the said body and extending across the back of the body.

3. A thimble having a body for attachment to a finger and provided at its outer face with a clenching-groove, the bottom of which is curved in the direction of the length of the groove.

4. A thimble having a body for attachment to a finger and provided at its outer face with a clenching-groove, increasing in depth from the middle toward the ends, the bottom of the groove being curved in the direction of the length of the groove.

5. A thimble having a body for attachment to a finger and provided at its outer face with a clenching-groove, increasing in depth from the middle toward the ends, the bottom of the groove being curved in the direction of the length of the groove in a serpentine line.

6. A thimble having a body for attachment to a finger and provided at its outer face with a clenching-groove increasing in depth from the middle toward the ends, the bottom of the groove being curved in the direction of the length of the groove in a serpentine line and extending from one end of the body to the other end thereof.

848,531. PENCIL. JOHN C. BAUR, St. Louis, Mo. Filed Nov. 19, 1906. Serial No. 344,085.

Claim.—1. In a pencil of the character specified the combination of a handle having an opening to receive a lead and provided with gripping-prongs, a clamp member mounted upon the prongs and adapted to cause the same to grip the lead and secure the same in an adjusted position, and a nozzle mounted upon the handle and having interlocking connection with the clamp member to effect rotation thereof with the nozzle when turning the latter.

2. In a pencil of the character specified, the combination of a handle having an opening to receive lead and provided with prongs, a clamp member mounted upon the handle and prongs, and a nozzle fitted to the handle and adapted to rotate thereon and having a feather-and-spline connection with the clamp member whereby the latter may be both rotated and moved longitudinally upon imparting a turning movement to the clamp member solely.

3. In a pencil of the character specified, the combination of a handle having an opening therein and provided with a reduced portion exteriorly threaded, and with prongs, a clamp member mounted upon said prongs and having screw-thread connection with the reduced portion of the handle and a nozzle fitted to the handle and having

a slip-joint connection therewith and having a feather-and-spline connection with the aforesaid clamp member, whereby the latter is both rotated and moved longitudinally upon the nozzle solely.

848,532. HORSE HAY-RAKE. EATON D. BOND, Mercer, Tenn. Filed Apr. 12, 1906. Serial No. 311,311.

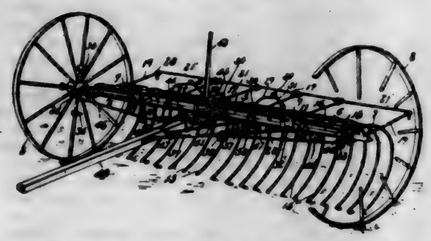

Claim.—1. In a horse-rake, an extensible axle, a sectional rake-head carried by the axle, spaced supports projecting rearwardly from the axle and extending beneath the rake-head, and rods connecting the free ends of the supports.

2. In a horse-rake, an extensible axle, a sectional rake-head carried by the axle and movable vertically to dumping position, supports projecting rearwardly from the axle and extending beneath the rake-head, rods connecting the free ends of the supports, and means for locking the axle in extended position.

3. In a horse-rake, an extensible axle comprising relatively stationary and movable angle-bars, clips carried by the stationary bar, lugs secured to the movable bar and adapted to engage the clips for limiting the extensible movement of the axle, a sectional rake-head carried by the axle, supports projecting rearwardly from the axle and extending beneath the rake-head, and rods pivotally connected to the free ends of the supports.

4. In a horse-rake, an axle, a rake-head carried by the axle, a hook extending from the axle for locking the rake in operative position, and means for releasing the hook to permit the dumping of the rake.

5. In a horse-rake, an axle, a rake-head carried by the axle, a hook pivotally mounted on the axle for locking the rake in operative position, and means for simultaneously releasing the hook and elevating the rake to dumping position.

6. In a horse-rake, an axle, a rake-head carried by the axle, and slide-bars operatively connected with the rake-head and provided with terminal crank-arms adapted to engage the wheels of the axle to effect the dumping of the rake.

7. In a horse-rake, a sectional axle provided with traction-wheels, a rake-head carried by the axle, tappets secured to the wheels of the axle, slide-bars mounted on the axle and provided with terminal crank-arms adapted to engage the tappets, and connections between the slide-bars and rake for dumping the latter.

8. In a horse-rake, an axle, a rake-head carried by the axle, longitudinally-movable members adapted to engage the wheels of the axle for dumping the rake, means for locking the rake in lowered position, and means operated by the movable members for releasing the locking means whereby to effect the dumping of the rake.

9. In a horse-rake, an axle, bearing-clips secured to the axle, a rake-head pivotally mounted in said bearing-clips, and means engaging the clips for locking the terminals of the rake-head in the bearing of said clips.

10. In a horse-rake, an axle, bearing-clips secured to the axle and provided with oppositely-disposed loops, a rake-head having each of its terminals journaled in one of the loops of each clip, and bars slidably mounted in the opposite loop of each clip and adapted to engage the axle-wheels for automatically dumping the rake.

11. In a horse-rake, an axle, a tongue secured thereto, bearing-clips carried by the axle and provided with oppositely-disposed loops, a rake-head having each of its terminals journaled in one of the loops of each clip, bars slidably mounted in the opposite loop of said clip and adapted to engage the axle-wheels for automatically dumping the rake, braces connecting the axle and tongue and rods extended between the clips and braces.

12. In a horse-rake, an axle, a tongue secured to the axle, a rake-head carried by the axle, bell-crank levers pivoted to the axle, slide-bars pivoted to the bell-crank levers and operatively connected with the rake-head, said slide-bars being adapted to engage the axle-wheels to effect automatically the dumping of the rake, a spring interposed between the bell-crank levers, and an operating-lever connected to the bell-crank levers for actuating the slide-bars.

13. In a horse-rake, an axle, a rake-head secured to the axle, bell-crank levers pivoted to the axle, slide-bars operatively connected with the rake-head, and bell-crank levers respectively, and adapted to engage the wheels of the axle for automatically dumping the rake, a spring interposed between the bell-crank levers, and an operating-lever for actuating the link-and-lever connection with said bell-crank levers.

14. In a horse-rake, an axle, a rake-head pivotally mounted on the axle, slide-bars mounted for longitudinal movement on the axle, bell-crank levers operatively connected with the slide-bars, a connection between the bell-crank levers and rake-head, and a lever operatively connected with the bell-crank levers for moving the slide-bars into engagement with the axle-wheels thereby to effect the dumping of the rake.

15. In a horse-rake, an axle, a tongue secured thereto, a rake-head pivotally mounted on the axle, braces extending between the tongue and axle, slide-bars operatively connected with the rake-head and provided with terminal cranks adapted to engage the wheels of the axle for automatically dumping the rake, a hand-operated lever, and a link-and-lever connection between the hand-lever and rake-head for dumping the latter independently of the automatic dumping mechanism.

848,533. PISTON-ROD PACKING. EDWIN G. BOSTWICK, Kalamazoo, Mich. Filed June 16, 1906. Serial No. 322,031.

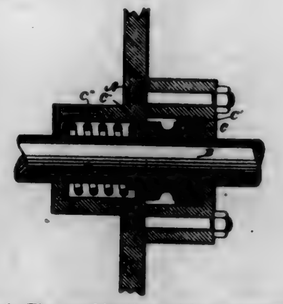

Claim.—1. The combination with a cylinder-head and piston-rod, of a gland, a double-cone metallic packing-ring having an annular groove between its cones with opposite circumferential slots in the said groove, the said cone portions having radial slots therethrough opening into said circumferential slots; a concaved seat-ring for said packing-ring arranged in said gland; a concaved follower or compression-ring for said packing-ring; substantially as described.

2. The combination of a double-cone metallic packing-ring having an annular groove between its cones with circumferential slots in the said groove, the said cone portions having radial slots therethrough opening into said circumferential slots; a concaved seat for said packing-ring; a concaved follower or compression-ring; and a coiled spring arranged to bear thereon, as specified.

3. The combination of a double-cone metallic packing-ring having an annular groove between its cones with circumferential slots in the said groove, the said cone portions having radial slots therethrough opening into said circumferential slots; a concaved seat for said packing-ring; a concaved follower or compression-ring for said packing-ring, as specified.

4. The combination of a double-cone metallic packing-ring having an annular peripheral groove between its cones; a concaved seat for said packing-ring; a concaved follower or compression-ring; and a coiled spring arranged to bear thereon, as specified.

5. The combination of a double-cone metallic packing-ring having an annular peripheral groove between its cones; a concaved seat for said packing-ring; a concaved follower or compression-ring, substantially as described.

848,534. SWING. ALLEN P. BOYER, Goshen, Ind. Filed Aug. 31, 1904. Serial No. 222,830.

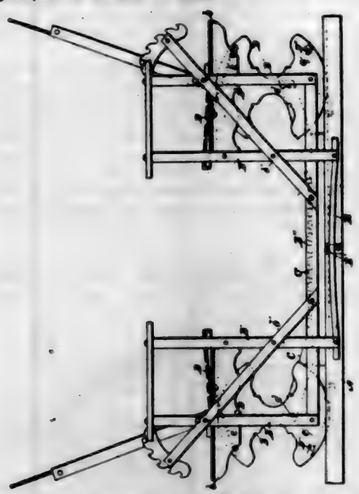

Claim.—1. In a structure of the class described, the combination of a base or platform; ways on said platform having guiding-flanges thereon, said guiding-flanges having inclined guiding-faces; a frame; seats carried by said frame; irregularly-curved double-headed rockers arranged in pairs, adapted to travel on said ways; ways on said frame, having guiding-flanges thereon, said guiding-flanges having inclined guiding-faces, adapted to travel on said rockers; upwardly-curved bars arranged at the sides of said platform, carried by said frame; and hooks on said platform projecting outwardly over said bars, for the purpose specified.

2. In a structure of the class described, the combination of a base or platform; ways on said platform having guiding-flanges thereon, said guiding-flanges having inclined guiding-faces; a frame; seats carried by said frame; double-headed rockers arranged in pairs adapted to travel on said ways; ways on said frame, having guiding-flanges thereon, said guiding-flanges having inclined guiding-faces adapted to travel on said rockers; bars arranged at the sides of said platform, carried by said frame; and hooks on said platform projecting outwardly over said bars, for the purpose specified.

3. In a structure of the class described, the combination of a base or platform; ways on said platform; a frame; seats carried by said frame; irregularly-curved double-headed rockers arranged in pairs, adapted to travel on said ways; ways on said frame adapted to travel on said rockers; upwardly-curved bars arranged at the sides of said platform, carried by said frame; and hooks on said platform projecting outwardly over said bars, for the purpose specified.

4. In a structure of the class described, the combination of a base or platform; ways on said platform; a frame; seats carried by said frame; double-headed rockers arranged in pairs adapted to travel on said ways; ways on said frame adapted to travel on said rockers; bars arranged at the sides of said platform carried by said frame; and hooks on said platform projecting outwardly over said bars, for the purpose specified.

5. In a structure of the class described, the combination of a base or platform; ways on said base; a seat-carrying frame; carrying-rockers therefor adapted to travel on said ways on said base; upwardly-curved bars carried by said seat-carrying frame, arranged at the sides of said platform; and retainers on said base, projecting over said bars, for the purpose specified.

6. In a structure of the class described, the combination of a base or platform; ways on said base; a seat-carrying frame; carrying-rockers therefor adapted to travel on said ways on said base; bars carried by said seat-carrying frame arranged at the sides of said platform; and retainers on said base projecting over said bars, for the purpose specified.

7. In a structure of the class described, the combination of a base or platform; a seat-carrying frame supported to reciprocate thereon; upwardly-curved bars carried by said seat-carrying frame; and retainers on said base or platform, projecting over said bars, for the purpose specified.

8. In a structure of the class described, the combination of a base or platform; a seat-carrying frame supported to reciprocate thereon; bars carried by said seat-carrying frame; and retainers on said base or platform, projecting over said bars, for the purpose specified.

848,535. ANNUNCIATOR. DAVID H. COKER, Piedmont, Ala. Filed Apr. 7, 1906. Serial No. 310,500.

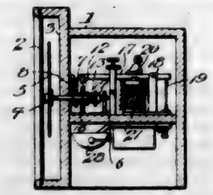

Claim.—1. An annunciator having an indicator, a shaft for operating the indicator, a pinion fixed to the shaft, a ratchet-wheel loosely mounted on the shaft and in frictional engagement with said pinion, a resetting rack-bar meshing with the pinion, means for holding the ratchet-wheel against retrograde rotation, a pawl for imparting an intermittent forward motion to the ratchet-wheel, and electrical means for actuating the pawl.

2. An annunciator having an indicator, a shaft for operating the indicator, a pinion fixed to the shaft, a ratchet-wheel loosely mounted on the shaft and in frictional engagement with said pinion, a spring for holding the ratchet-wheel in engagement with the pinion, a resetting rack-bar meshing with the pinion, means for holding the ratchet-wheel against retrograde rotation, a pawl for imparting an intermittent forward motion to the ratchet-wheel, and electrical means for actuating the pawl.

848,536. BALANCED VALVE FOR ENGINES. JAMES M. COSPER, Brighton, Ala., assignor of one-third to John S. Acton, Brighton, Ala., and one-third to Michael E. Connor, Milwaukee, Wis. Filed Sept. 25, 1905. Serial No. 280,095.

Claim.—1. In a balanced valve for fluid-pressure-operated engines, the combination with the cylinder, having

an exterior chamber or passage, of a valve-chest having ports communicating with said cylinder and chamber or passage, a rotary valve having passages therein adapted to connect said ports as the valve is rotated, packing-strips in the periphery of the valve forming a fluid-tight space or cavity on one side of the valve, there being a passage or passages connecting said space or cavity with the opposite side of the valve, whereby excess pressure from the latter side of the valve will pass into the said space or cavity and equalize the pressure on both sides of the valve, said latter passage or passages being independent of said first passages and having a portion placed to also connect the ports as the valve is rotated, substantially as specified.

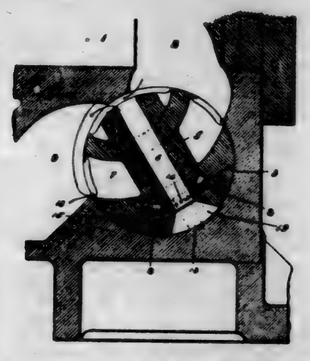

2. In a balanced valve for fluid-pressure-operated engines, the combination with the cylinder and a chamber or passage outside of the cylinder, of a valve-chest having ports communicating with said cylinder and chamber or passage, a rotary valve having passages therein adapted to connect said ports as the valve is rotated, packing-strips in the periphery of the valve on one side of the valve, and a passage or passages connecting said space or cavity with the opposite side of the valve, whereby excess pressure on the latter side of the valve will pass into the said cavity or space and equalize pressure on both sides of the valve, and fluid-pressure-circulating grooves in the cylindrical surface of the valve communicating with the fluid-pressure passages extending through the valve for connecting the cylinder and the outside chamber, substantially as specified.

3. In a balanced valve for fluid-pressure-operated engines, the combination with the cylinder, of a valve-chest having a port for exhaust communicating with the cylinder and a port communicating with the exhaust-passage, a rotary valve having a passage or passages extending therethrough adapted to connect the cylinder-port with the exhaust-passage as the valve is rotated, means for forming a packed space or cavity on the surface of the valve opposite the exhaust-port of the valve-chamber, and passages extending therefrom through the valve to the said latter port, said latter passage having a portion placed to also connect the cylinder-port with the exhaust-passages as the valve is rotated, substantially as specified.

4. In a balanced valve for fluid-pressure-operated engines, the combination with the cylinder, of a valve-chest having a port for exhaust communicating with the cylinder and a port communicating with the exhaust-passage, a rotary valve having a passage or passages extending therethrough adapted to connect the cylinder-port with the exhaust-passages as the valve is rotated, a packed space or cavity on the periphery of the valve opposite the exhaust-port of the valve-chamber, passages independent of the first passage or passages extending through the valve to the said latter port, and fluid-pressure-circulating grooves in the periphery of the valve opposite the cylinder-port communicating with the fluid-pressure passages in the valve, substantially as described.

848,537. REINFORCED TILE OR SLAB. CHARLES C. DAVIS, Philadelphia, Pa. Filed Dec. 27, 1906. Serial No. 349,677.

Claim.—1. A reinforced concrete tile, comprising a corrugated sheet of foraminated material, retaining and strengthening bars extending through openings in the side walls of the several corrugations of said sheet, means for clamping said sheet to the end portions of said bars, and a body of plastic material incasing said sheet and retaining-bars, substantially as described.

2. A reinforced concrete tile, comprising a corrugated sheet of foraminated material, retaining and strengthening bars extending through openings in the walls of the several corrugations of said sheet, supporting-lugs for securing said tile in position, a common means for securing said lugs to the end portions of said bars, and the adjacent portions of said corrugations, and a body of plastic material incasing said sheet and retaining-bars, substantially as described.

3. A reinforced concrete tile, comprising a corrugated sheet of foraminated material, retaining and strengthening bars extending freely through openings in the walls of the several corrugations of said sheet, supporting-lugs engaging the end corrugations of said sheet, a common means for fastening said supporting-lugs to the end portions of said bars and for securing thereto the interposed portions of said corrugated sheet, and a body of plastic material incasing said sheet, and retaining-bars, substantially as described.

848,538. VAULT-COVER MOLD. JAMES H. DENNEY, Portland, Ind. Filed Apr. 17, 1906. Serial No. 312,172.

Claim.—1. A vault-cover mold, comprising spaced strips, wooden forms releasingly connected with the strips, a lower matrix supported by the forms, an upper matrix arranged above the lower matrix and spaced apart therefrom, a second series of wooden forms arranged directly above the first forms for supporting the upper matrix, each of said forms comprising alined sections detachably connected, the outer ends of the sections extending beyond the ends of the lower forms, and having angular portions resting upon the strips and detachably connected thereto.

2. A vault-cover mold, comprising spaced strips, wooden forms releasingly connected with the strips, a lower matrix supported by the forms, an upper matrix arranged above the lower matrix, wooden forms for supporting the upper matrix, each of said forms comprising detachable sections, the outer ends of the sections extending beyond the ends of the lower form, and detachably connected with the strips.

848,539. WINDOW-SHADE ROLLER. EDWARD S. DINKEL, Bridgewater, Va. Filed Nov. 7, 1906. Serial No. 342,896.

Claim.—The combination with a spring-actuated shade-roller provided with a spindle having a flattened outer portion, of a cylindrical cap or casing rigidly fitted on the roller and having an end opening through which the spindle projects, said cap or casing being also provided with a peripheral opening, and a slidable gravity pawl or dog arranged within the cap or casing in substantially a vertical position and having a longitudinal slot receiving the flattened portion of the spindle, said pawl or dog being slidable on the spindle and provided at each end at an intermediate point between its side edges with a single tooth, the end portions of each end edge being arranged to rest upon the inside of the casing at opposite sides of the opening to limit the downward or outward movement of the dog and the tooth at either end being adapted to

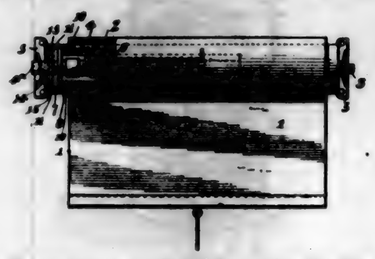

enter the peripheral opening of the casing but not projecting from the latter, and each tooth having a shoulder for engaging one of the walls of the said peripheral opening and provided with an inclined edge adapted to be engaged by the opposite wall of the peripheral opening to lift the pawl or dog out of engagement with the cap or casing.

848,540. FERTILIZER AND LIME DISTRIBUTER. JAMES M. EARLY, Indiana, Pa. Filed Jan. 31, 1906. Serial No. 298,875.

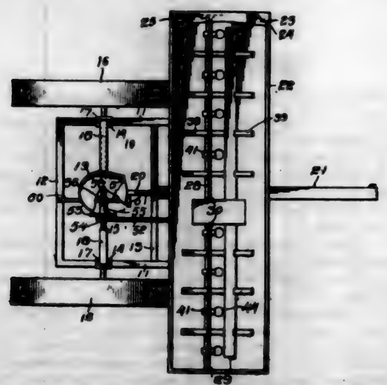

Claim.—1. A distributer comprising a frame arranged for travel, the hopper mounted upon the frame, the rod arranged for reciprocatory movement in the hopper, the plurality of arms extending upwardly from the rod and lying against the forward wall of the hopper, the plurality of arms extending rearwardly from the rod to lie against the floor of the hopper and thence upwardly to lie against the rear wall thereof, and means for reciprocating the rod.

2. A distributer comprising a frame arranged for travel the hopper mounted upon the frame, the rod mounted for reciprocatory movement in the hopper, arms extending upwardly from the rod and in spaced parallel relation to the forward wall of the hopper, arms extending rearwardly from the rod and in spaced parallel relation to the floor of the hopper, said last-named arms being directed upwardly to lie in spaced parallel relation to the rear wall of the hopper, the beater-shaft journaled for rotation in the hopper adjacent the rear wall thereof, the beater-arms carried by the shaft and arranged to move between the upturned portions of the last-named vibrator-arms, and means for reciprocating the rod.

3. A distributer comprising a frame arranged for travel, a hopper mounted upon said frame, a series of vibrators mounted in said hopper and arranged for reciprocatory movement therein, each of said vibrators comprising an arm adapted to move along one of the walls of the hopper and an arm adapted to move along the other of the walls and the floor of the hopper and means for reciprocating said vibrator series.

4. A distributer comprising a frame arranged for travel, a hopper mounted upon said frame, a series of vibrators mounted in said hopper and arranged for reciprocatory movement therein, each of said vibrators comprising an arm adapted to move along one of the walls of the hopper and in spaced relation thereto and an arm adapted to move along the other of the walls and the floor of the hopper and means for reciprocating said vibrator series.

5. A distributer comprising a frame arranged for travel, the hopper mounted upon the frame, the vibrator mounted within the hopper for reciprocatory movement, the power-shaft, the beater-shaft journaled for rotation in the hopper, gear connections between said power-shaft and said beater-shaft, the gear connections between said beater-shaft and said vibrator.

848,541. NUT-LOCK. MERTON ELLIS and EDWARD A. BOWEN, Huntington, W. Va. Filed Apr. 30, 1906. Serial No. 314,493.

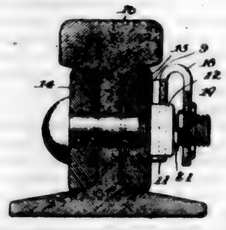

Claim.—1. A device for locking nuts consisting of a plate having the ends bent at right angles thereto and with a perforated arm extending from one edge and a nut-engaging recess in the other edge, said recessed edge and bent ends adapted to bear against the structure engaged by the bolt and holding the plate from turning and said arm adapted to be bent over the nut and engaging the bolt in advance thereof by its aperture.

2. The combination with a body and a clamp-bolt and its nut, of a locking device for said nut consisting of a plate having an intermediate recess and laterally-projecting ends and with an arm projecting therefrom opposite said recess and provided with a transverse aperture, said recess adapted to bear over said nut, with the lateral ends bearing against the body and the perforation of the arm bearing over the bolt in advance of the nut, a resilient washer associated with said nut, and fastening means carried by the bolt and bearing against the perforated arm.

3. The combination with a railway-rail joint including the adjacent rail ends clamp-plates and the clamp-bolts and their nuts, said bolts having transverse apertures through their threaded portions, of a locking-plate having a plurality of recesses corresponding to and adapted to bear over said nuts with one or more extending arms adapted to be folded over one or more of the nuts and provided with apertures for bearing over the adjacent bolts, and locking-keys adapted to engage the apertures in the bolts exteriorly of the arms.

4. The combination with a railway-rail joint including the adjacent rail ends clamp-plates and their nuts, of a locking device consisting of a plate having lateral projections at the ends for bearing against the clamp-plate and with spaced recesses for bearing over the nuts, said plate having one or more arms provided with transverse apertures and adapted to be bent over the bolt and bear over

the same, a resilient washer associated with said nut, and fastening means carried by said bolt and bearing upon said perforated arm.

848,542. PLAYING-CARDS. ALONZO K. FERRIS, New York, N. Y. Filed Mar. 1, 1906. Serial No. 303,657.

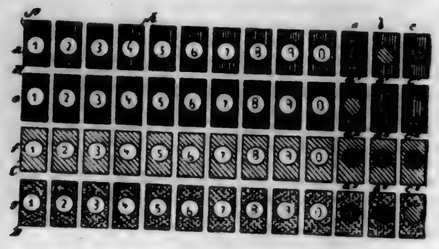

Claim.—1. A deck of playing-cards, comprising a plurality of sets of suit-cards, the suit-cards of one set being correspondingly colored but differently colored with respect to the suit-cards of the other sets, a plurality of interchanger-cards for each set of suit-cards, the number of interchanger-cards of each set being less by one than the number of suits, each of the interchanger-cards for each set of suit-cards having a portion thereof of the same color as its suit, and further differently colored from the color of its suit but corresponding in color to the color of one of the other suits.

2. A deck of playing-cards comprising a plurality of sets of suit-cards, each of the cards of each of the sets of suit-cards being correspondingly indicated and further differently indicated with respect to each other, and interchanger-cards for each set of suit-cards, the number of the interchanger-cards of each suit being less by one than the number of suits, each of the interchanger-cards of one suit provided with an indication to indicate to which suit it belongs, and further provided with an indication corresponding to the indication of one of the other suits.

3. A deck of playing-cards comprising a plurality of sets of suit-cards, the suit-cards of each set being correspondingly colored and each provided with an indication different from one another, a plurality of interchanger-cards for each set of suit-cards, the number of the interchanger-cards of each set being less by one than the number of the suits, each of the interchanger-cards for each set of suit-cards having a portion thereof of the same color as its suit, and further provided with a portion differently colored from the color of the suit but corresponding in color to the color of one of the other suits.

4. A deck of playing-cards comprising four sets of suit-cards, the suit-cards of one set differently colored with respect to the suit-cards of the other sets, three interchanger-cards for each set of suit-cards, the said three interchanger-cards each having a portion thereof colored to correspond to the same color as its suit, one of said interchanger-cards having a portion correspondingly colored to one of the suits other than the suit to which the interchanger-card belongs, another of the interchanger-cards having a portion corresponding in color to another of the suits other than the suit to which the interchanger-card belongs, and the other of the interchanger-cards having a portion thereof correspondingly colored to the other of the suits other than that to which the interchanger-card belongs.

848,543. HOT-AIR FURNACE. HARRY P. FISH, Youngstown, Ohio. Filed Mar. 28, 1906. Serial No. 308,553.

Claim.—An improvement in hot-air furnaces comprising, in combination with the fire-pot and casing of the furnace, with a space between the same, a fuel-box leading into the upper portion of the fire-pot, heating-chambers mounted within said space, pipes forming communication between the chambers, burners extending into the lower one of

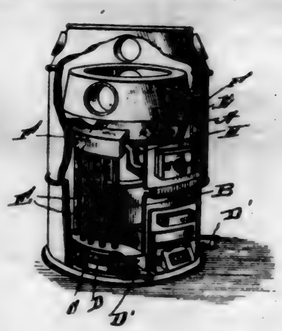

said chambers, the upper of said heating-chambers positioned above the fuel-box, and pipes leading from said upper chambers through the side walls of the fuel-box, as shown and described.

848,544. BOMB FOR COYOTES. JOHN N. GASSETT, Laurin, Mont. Filed Aug. 10, 1906. Serial No. 330,018.

Claim.—1. A bomb comprising explosive and igniting material adapted to be secured in a shell inclosed by a flexible covering having an inner frictional surface.

2. A bomb comprising a block carrying explosive and igniting material adapted to be secured in a shell, and a covering secured over said shell provided with an inner frictional surface.

3. A bomb comprising a grooved block carrying powder, igniting material carried by said block and a flexible covering secured over said block provided with a frictional inner surface, for the purpose described.

4. A bomb comprising a grooved block having powder arranged in said groove, igniting material secured on the corners of the block, a shell secured over said block and a covering provided with a frictional surface secured over said shell, for the purpose set forth.

5. A bomb comprising a block carrying explosive powder and igniting material, a thin plastic shell inclosing said block, and a flexible covering provided with a frictional surface secured over said shell, for the purpose described.

6. A bomb comprising a grooved block having powder arranged in said grooves, igniting material secured on the corners of the block, a clay shell inclosing said block and a canvas covering secured over said shell provided with a layer of sand on its under side, for the purpose described.

848,545. RULING DEVICE. CHARLES C. GLIDDEN, Birmingham, Ala. Filed Dec. 5, 1906. Serial No. 346,413.

Claim.—A hand-ruling device consisting of a handle and a printing-roll revolubly mounted therein, having its surface formed into a plurality of annular printing-surfaces, some of which trace wider lines than the others, said surfaces being arranged so as to rule one or more series of separated lines, each series consisting of a wide line and two narrow lines.

848,545.

848,546. ADDRESSING-MACHINE. ALBERT E. GRAPP, Minneapolis, Minn. Filed May 28, 1906. Serial No. 319,019.

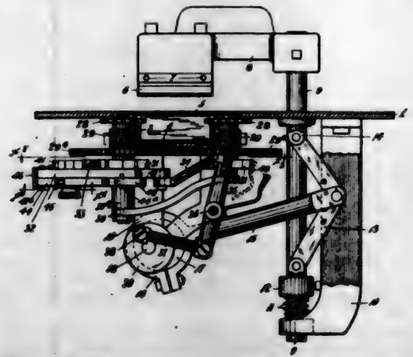

Claim.—1. The combination with a type-galley and a coöperating platen, of means for reciprocating said platen, and means for imparting intermittent feed movement to said galley, said latter means comprising a pair of toothed wheels arranged to operate on type-bars or linotypes held in said galley, gears connecting said toothed wheels for synchronous movements in reverse directions, a ratchet-wheel movable with one of said toothed wheels, and a vibratory pawl-carrier having a driving-pawl operative on said ratchet-wheel, substantially as described.

2. The combination with a galley and type-bars or linotypes held therein, of a platen overlying the type-faces of said type-bars, means for imparting intermittent printing movement to said platen, and means for imparting intermittent feed movement to said galley, said latter means comprising a pair of toothed wheels on opposite sides of the galley, engageable with the ends of said type-bars, gears connecting said toothed wheels for synchronous movements in reverse directions, a ratchet-wheel rotatable with one of said toothed wheels, and a crank-driven vibratory pawl-carrier provided with a driving-pawl coöperating with said ratchet-wheel, substantially as described.

3. The combination with a type-galley and a platen, of means for imparting printing movement to said platen, and means for imparting intermittent feed movement to said galley comprising a ratchet-wheel, a vibratory pawl-carrier, a driving-pawl on said carrier coöperating with said ratchet-wheel, a rotary pawl-tripping device mounted on said pawl-carrier, and provided with a ratchet-wheel, a spring-pressed lever mounted on said pawl-carrier and provided with a pawl acting on the ratchet-wheel of said rotary pawl-tripping device, and a relatively fixed abutment or stop with which said spring-pressed lever engages under vibratory movements of said pawl-carrier, to throw said pawl-tripping device intermittently into and out of action on the said driving-pawl, substantially as described.

4. The combination with a type-galley and a coöperating platen, of means for imparting intermittent printing movement to said platen, and means for imparting intermittent feed movement to said galley, said latter means comprising a ratchet-wheel, a vibratory pawl-carrier, a driving-pawl on said carrier coöperating with said ratchet-wheel, a notched pawl-tripping disk rotatively mounted on said pawl-carrier and provided with a ratchet-wheel, a spring-pressed pawl-equipped lever mounted on said pawl-carrier and provided with a pawl that is operative on the ratchet-wheel of said tripping-disk, and a relatively fixed abutment or stop operative on said pawl-equipped lever, under vibratory movements of said pawl-carrier, to cause said pawl-tripping disk to intermittently throw said driving-pawl into and out of action, and which abutment or stop is movable into and out of operative position, substantially as described.

5. The combination with a type-galley and means for imparting an intermittent feed movement thereto, of a plunger provided with a platen, and means for intermittently moving said platen comprising a toggle-lever, a shaft provided with an eccentric, and a rod connecting said eccentric to said toggle-lever, substantially as described.

6. The combination with a type-galley and a coöperating platen, of means for moving one of said parts with respect to the other to produce the print, and means for imparting an intermittent feed movement to said galley comprising a ratchet-wheel, a coöperating pawl-carrier, a pawl on said carrier engageable with said ratchet-wheel, and an automatically-actuated pawl-and-lever device for automatically rendering said pawl operative and inoperative on said ratchet-wheel at predetermined intervals, substantially as described.

848,547. CLOCK. ARTHUR H. HADLEY and WILLIAM L. GRAY, Philadelphia, Pa. Filed Apr. 14, 1906. Serial No. 311,642.

Claim.—1. In a clock, rotating dials, a telescoping arbor therefor connected with each of said dials, a rigid device engaging one end of said arbor and a resilient device engaging the other end thereof, said devices being adapted to bear against an adjacent member of the dial.

2. In a clock, a plurality of separately-rotating dials, an arbor connected with one dial, an arbor connected with the other dial, said arbors being in engagement with members of a clock-train and means including resilient

devices on said arbors and engaging the bottoms of the dials for connecting said arbors with said dials.

3. In a clock, a plurality of separately-rotating dials, arbors for respectively operating said dials and means for connecting said arbors with said dials consisting each of a resilient device at one end of an arbor and a rigidly-acting device at the other end thereof, said devices engaging a member of the adjacent dial.

4. In a clock, a plurality of separately-rotating dials, an arbor for each dial, one arbor passing freely through the other arbor, said arbors being adapted to be engaged with members of a clock-train, a rigid device and a resilient piece on opposite ends of each arbor, said device and piece being adapted to tighten against opposite portions of the adjacent dial.

5. In a clock, a plurality of separately-rotating hemispherical dials, an arbor for each dial, the arbors being telescopic and adapted to be engaged with members of a clock-train, means including resilient devices on said arbors and engaging the bottoms of the dials for connecting the arbors with said dial, a yoke in which one of said arbors is mounted, a base to which said yoke is secured and an adjusting device on one of said arbors between the yoke and adjacent dial.

6. In a clock, a base, a yoke thereon, a clock-train in said base, separated dials, a tubular arbor and an arbor telescoped therein, both of said arbors being connected respectively with said clock-train, the upper end of the telescoped arbor being engaged with said yoke, and adjustable means on said arbor between the yoke and the adjacent dial.

7. In a clock, a base, a yoke thereon, a clock-train in said base, separated dials, a tubular arbor and an arbor telescoped therein, both of said arbors being connected respectively with said clock-train, the upper end of the telescoped arbor being engaged with said yoke, adjustable means on said arbor between the yoke and the adjacent dial, and a resilient device on each arbor engaging the adjacent portion of its dial.

848,548. GUIDE FOR SAWS. AMOS HARROLD, Mansfield, Ohio, assignor to The Aultman & Taylor Mach. Company, Mansfield, Ohio, a Corporation of Ohio. Filed Aug. 23, 1905. Serial No. 275,505.

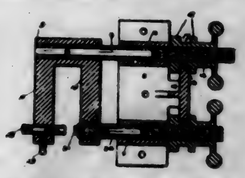

Claim.—1. In a saw-guide, a box having two bearings formed therein parallel with each other, a projecting portion extending from one side of said bearing-box, a rod journaled in one of said bearings with one end screw-threaded, a guide secured to the opposite end of said rod, a similar rod journaled in the other bearing with one end adapted to support the guide in position when in use, two nuts provided with screw-threaded apertures fitted to the screw-threaded ends of said rods, annular flanges formed upon the outer periphery of said nuts extending on each side of the projecting portion whereby the nuts are retained in place when the rods are adjusted.

2. In a saw-guide, a box provided with two parallel bearings, rods of different lengths journaled therein, a guide with two arms extending therefrom secured to one of said rods, two nuts having screw-threaded apertures fitted to the screw-threaded ends of said rods, annular flanges forming grooves made integral with the outer periphery of a portion of said nuts, a projecting T-shaped portion extending from one side of the bearing-box with the head adapted to fit into the annular grooves provided on the nuts whereby the nuts are retained in place when the rods are adjusted.

3. In a saw-guide, a journal-box having two bearings formed therein parallel with each other, a projecting T-shaped portion extending from one side of said box, two rods slidably journaled in said bearings, a guide having two arms forming a yoke secured to one of said rods, nuts having annular grooves formed on the outer periphery thereof to fit the head of the projecting portion.

4. In a saw-guide the combination of a bearing-box having two bearings formed therein parallel with each other, a T-shaped projecting portion extending from one side, rods journaled in said bearings, a guide fitted to one of said rods, two nuts fitted to the screw-threaded ends of said rods, annular flanges formed on the outer periphery of said nuts extending on each side of the projecting portion thereby movably locking the nuts in place when rotated for the adjustment of the guide and rods.

5. In a guide for saws, a bearing-box having two bearings formed therein parallel with each other, an outwardly-projecting T-shaped portion extending from one side of said box, two rods slidably journaled therein, a yoke fitted to one end of one of said rods, a pin adjustably fitted to one arm of said yoke, an aperture provided in the other arm of said yoke into which one end of the other rod extends, nuts fitted to the ends of said rods having annular grooves engaging with the head of the projecting portion.

848,549. GASKET AND HOLDER THEREFOR. CORNELL S. HAWLEY and FRANCIS C. GREEN, New York, and WILLIAM H. FULTON and JAMES F. MCELROY, Albany, N. Y., assignors to Consolidated Car Heating Company, Albany, N. Y., a Corporation of West Virginia. Filed Nov. 3, 1905. Serial No. 285,693.

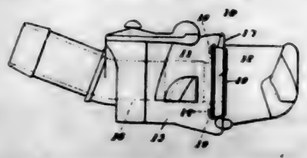

Claim.—1. In combination, a coupling member and a gasket having a tongue-and-groove sliding connection on opposite edges and engaging by a diametric movement of the gasket.

2. In combination, a member formed with a port and with a gasket-channel transverse to said port and open at one end, and a gasket with opposite edges engaged by the walls of said channel and thereby held against axial displacement.

3. In combination, a coupling member having a port and a gasket-guide transverse thereto, a gasket slidingly engaged with said guide, and means for holding said gasket against diametric sliding movement in said guide.

4. In combination, a coupling member having a port and a gasket-channel open at one side of the port to permit diametric insertion and withdrawal of the gasket, and a gasket mounted in said channel and provided with an adjustable locking device engaging the coupling member for retaining the gasket against withdrawal.

5. A gasket having a flexible inelastic metallic lug adapted to be permanently bent into engagement with a complemental part on a ported coupling member for interlocking the gasket with said member.

6. A gasket comprising a compressible annulus, and a metallic reinforcement therefor formed with an inelastic flexible lug for attaching the gasket to a coupling member.

7. A gasket comprising an annulus of soft material combined with a reinforcing sheet-metal ring having an integral inelastic flexible lug for attaching the annulus to a coupling member.

8. In combination, a coupling member having a port, and a gasket connecting therewith by a sliding movement across said port and composed of compressible material having a metallic reinforcement which engages the coupling member.

9. In combination, a ported coupling member having undercut guides open at one end for transverse insertion and removal of the gasket, and a gasket slidingly mounted in said guides and comprising a compressible annulus and an annular metallic reinforcement formed with a flange fitting the guides.

10. In combination, a ported coupling member having undercut gasket-guides transverse to its port and a gasket slidingly mounted in said guides and composed of a soft annulus and an exterior tapered reinforcing-ring conforming to the undercut guides.

11. A gasket comprising inner and outer frusto-conical rings, and a compressible annulus held between said rings.

12. A gasket comprising inner and outer tapering rings and a compressible annulus held between said rings and projecting beyond the same to form a yielding packing-face.

13. A gasket comprising inner and outer tapering rings and a compressible annulus confined between the same and exposed at both ends to form yielding packing-faces.

14. In combination, a coupling member having a channel, and a gasket slidably mounted in said channel and comprising a compressible portion, and a sheet-metal reinforcement therefor having a flange engaging the edges of the channel, and a flexible lug interlocking with the coupling member to prevent sliding movement of the gasket.

15. In combination, a coupling member having a channel with a substantially U-shaped undercut edge, and a gasket having a sheet-metal portion with a U-shaped edge slidingly engaged with the channel edge, a flexible tongue locking the gasket against sliding movement, and a rubber annulus mounted in said sheet-metal portion.

16. In combination, a ported coupling member formed with a portion for engagement by a gasket-lug, and a gasket on said member having a flexible lug bent into engagement with said portion for holding the gasket in place.

17. In combination, a ported coupling member having a gasket-channel transverse to its port, and a gasket slidingly mounted in said channel and having a flexible lug bent into engagement with the coupling member for holding the gasket against diametric movement.

18. In combination, a ported coupling member having a gasket-channel transverse to its port and a lug-engaging portion adjacent to an open space, and a gasket mounted in said channel and having a flexible metallic lug engaging said portion and presenting a free end in said open space for engagement by a tool.

19. In combination, a coupling member having a port and a gasket-channel open at one side of the port, and a gasket mounted in said channel and having a flexible lug bent into engagement with the coupling member on the opposite side of the port.

20. In combination, a coupler part having a port-face, a locking-wing alongside of said port-face and an aperture formed in the body of the coupler part substantially at the root of said wing and extending through to the outer side thereof, and a removable gasket-holder having an adjustable locking member which hooks over into said aperture.

848,550. SEVERING APPARATUS. GEORGE P. HEMSTREET, Hastings-upon-Hudson, N. Y., assignor to The International Pavement Company, Hartford, Conn., a Corporation of Connecticut. Filed Sept. 19, 1904. Serial No. 224,984.

Claim.—1. A severing apparatus comprising a stationary work-support, a plurality of flexible severing devices adapted to be placed around material to be severed, means engaging adjacent extremities of said devices and adapted to be secured to said work-support, and a common means engaging the opposite adjacent extremities and acting longitudinally to draw said devices laterally through the material.

2. In a severing apparatus the combination of a stationary work-support, a plurality of flexible severing devices adapted to be placed around the material to be severed, means engaging adjacent extremities of said devices and adapted to be detachably secured to said work-support, and a common rotary means engaging the opposite adjacent extremities and acting longitudinally to draw said devices laterally through said material.

3. In a severing apparatus the combination of a stationary work-support and a plurality of flexible severing devices having their adjacent extremities anchored to and spaced apart by suitable means, with a drum engaging the opposite extremities of said devices and upon which they may be wound and means to rotate said drum to simultaneously actuate said devices.

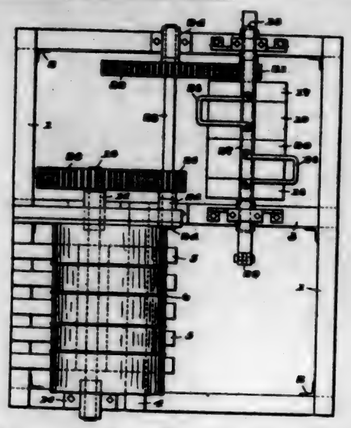

4. In a severing apparatus the combination of a work-support composed of a plurality of parallel supporting members spaced apart, a plurality of flexible severing devices extending through said support, a spacing and anchoring bar engaging adjacent extremities of said devices and adapted to engage beneath said supporting members to hold said devices in fixed position, with a drum rotatably mounted beneath said support and to which the opposite extremities of said devices are secured, and means to rotate said drum to simultaneously actuate said devices.

5. In a severing apparatus the combination with a work-support and a plurality of flexible severing devices having their adjacent extremities anchored to and spaced apart by suitable means, with a drum engaging the opposite extremities of said devices and upon which they may be wound, means to rotate said drum, and means to reverse the rotation of said drum at an accelerated speed to unwind the severing members therefrom.

6. In a severing device, a stationary work-support, a plurality of flexible severing devices, a bar to which an end of each of said severing devices is adapted to be secured, means for detachably anchoring said bar beneath the material to be severed but permitting said severing means to operatively engage said material, and a common actuating means upon which said severing devices may be wound.

7. In a severing device, a stationary work-support, a plurality of flexible severing devices, a bar to which an end of each of said severing devices is adapted to be secured, means for detachably anchoring said bar beneath the material to be severed but permitting said severing means to operatively engage said material, a common actuating means upon which said severing devices may be wound, means to rotate said actuating means to operate the severing devices and means to reverse the direction of rotation of said actuating means.

848,551. LAWN-MOWER. ALFRED HILL, Denver, Colo., assignor to The Kendrick and Hill Manufacturing Company, Denver, Colo. Filed Apr. 3, 1905. Renewed Nov. 27, 1906. Serial No. 345,354.

Claim.—1. In a lawn-mower, the combination with the ground-wheels, cutting device and gears, the gears, adja-

cent the ground-wheels being provided with interiorly and exteriorly located teeth or lugs formed substantially the same on both sides, and a pawl-holder mounted on each ground-wheel and adjustable, and a pawl carried by the pawl-holder, the latter being capable of such adjustment, as to bring the pawl into operative engagement with opposite sides of the teeth or lugs of the gear, whereby the gearing may be operated by moving the machine in either direction.

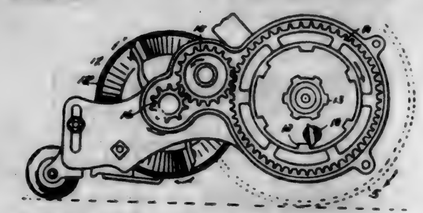

2. In a device of the class described, the combination of a ground-wheel, a gear located in suitable proximity to the ground-wheel and provided with interior and exterior teeth fashioned to engage a pawl on opposite sides for operating the gear in the reverse directions, a pawl-holder rotatably mounted on the ground-wheel, and a pawl slidable in the pawl-holder, whereby when the holder is in one position, the pawl occupies such a position with reference to the teeth or lugs of the gear that the latter may be rotated in one direction, while when the pawl-holder is given a half-turn, the pawl will engage the teeth or lugs of the gear to rotate the latter in the opposite direction.

3. In a lawn-mower, the combination with the ground-wheels, cutter and interposed gearing, of means mounted on the machine for reversing the movement of the operating-gears when the motion of the ground-wheels is reversed, comprising a pawl-holder rotatably adjustable on a ground-wheel, the gear adjacent the ground-wheel being provided with interiorly and exteriorly projecting lugs arranged in concentric series and adapted to be engaged in operative relation by the pawl when the latter is on either side thereof.

4. In a machine of the class described, the combination with a ground-wheel, of a pawl slidably mounted and revolubly adjustable on the ground-wheel.

5. In a machine of the class described, the combination with a ground-wheel, of a pawl-holder revolubly mounted on the ground-wheel, and a pawl slidable in the holder and having beveled ends.

6. In a machine of the class described, the combination with a ground-wheel, of a pawl-holder revolubly mounted on the ground-wheel, and a pawl slidable in the holder and having both ends beveled on one side of the pawl.

7. In a lawn-mower, the combination with the ground-wheels, a cutter and an operating-gear, of a sleeve mounted on a ground-wheel, a pawl-holder having a stem passing through said sleeve, a spring surrounding the stem within the sleeve, the pawl-holder having a head projecting beyond the sleeve and provided with a lug, the sleeve adjacent the head having a recess adapted to receive the lug whereby the pawl-holder is normally locked in the adjusted position, the pawl-holder being revolubly adjustable in the sleeve, and a pawl slidable in the pawl-holder and engaging the gear for the purpose set forth.

8. In a machine of the class described, the combination with a pair of ground-wheels, of a pawl-holder revolubly mounted on each wheel, and a pawl slidable in the holder.

848,552. ATTACHMENT FOR COLD-TIRE-SHRINKING MACHINES. SAMUEL N. HOUSE, St. Louis, Mo. Filed Dec. 12, 1905. Serial No. 291,453.

Claim.—1. The combination with a frame-wall of a tire-shrinking machine, of a shear-blade fixed to said frame-wall, a power-lever journaled to said frame-wall, a shear-blade fixed to said power-lever, and means for shifting said power-lever laterally, substantially as set forth.

2. The combination with the frame side walls of a tire-shrinking machine, of a movable journal-box in one of said side walls, a power-lever having trunnions, one of which is journaled in said journal-box, a shear-blade fixed to one of said side walls, a shear-blade fixed to said lever, and means for moving said journal-box to shift said lever laterally, substantially as set forth.

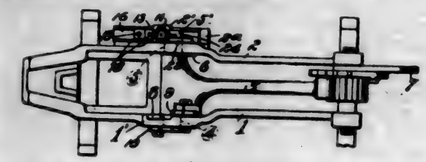

3. The combination with the frame side walls of a tire-shrinking machine, of a movable journal-box in one of said side walls, a power-lever having trunnions, one of which is journaled in said journal-box, a shear-blade fixed to one of said side walls, a shear-blade fixed to said lever, a pressure-bar arranged to bear against said journal-box, and set-screws passing through said pressure-bar and seated in the frame side wall in which said journal-box is located, substantially as set forth.

4. The combination with a frame side wall of a tire-shrinking machine, of a power-lever having a trunnion provided with a crank-arm, a punch connected to said crank-arm, a plurality of independent dies to which said punch is adapted to be moved, and shiftable means on which said dies are loosely seated, substantially as set forth.

5. The combination with a frame side wall of a tire-shrinking machine, of a power-lever having a trunnion provided with a crank-arm, a punch detachably connected to said crank-arm, a shiftable die-holder located beneath said punch, and a plurality of independent dies supported by said die-holder, substantially as set forth.

6. The combination with a frame side wall of a tire-shrinking machine, of a power-lever having a trunnion provided with a crank-arm, a punch suspended from said crank-arm and arranged to operate in said guide member, a channeled die-holder shiftably supported beneath said guide member, and a plurality of dies loosely seated on said die-holder, substantially as set forth.

7. The combination with a frame side wall of a tire-shrinking machine, of a power-lever having a trunnion extending through said side wall and provided with a crank-arm, a pair of links pivoted to said crank-arm, a block interposed between said links, a second pair of links pivoted to said block, a punch pivoted to said second pair of links, a shiftable die-holder located beneath said punch, and a plurality of dies carried by said die-holder, substantially as set forth.

8. The combination with a frame side wall of a tire-shrinking machine, of a power-lever having a trunnion provided with a crank-arm, a punch connected to said crank-arm, a shiftable die-holder located beneath said punch, a plurality of independent dies loosely seated on said die-holder, and means for holding said die-holder in set positions, substantially as set forth.

848,553. FEED-OPERATING MECHANISM. HARRY L. JEFFRIES, Grimes, Iowa. Filed May 1, 1905. Serial No. 258,903.

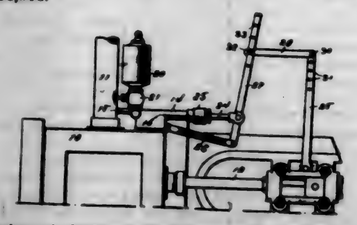

Claim.—A feed-operating mechanism comprising a fulcrum pivoted to the base of a cylinder, a lever pivoted to the fulcrum and its long arm provided with bolt-holes, a plunger pivotally connected with the lever near its fulcrum, a standard fixed to the valve-stem of an engine and provided with a plurality of bolt-holes in its upper end portion and a link pivotally and adjustably connected with the standard and the lever, arranged and combined to operate in the manner set forth.

848,554. BUSTLE ATTACHMENT FOR SKIRTS. WILLIAM P. JORDS, Wilmington, Del. Filed Oct. 24, 1906. Serial No. 340,246.

Claim.—The combination with a skirt, of a facing, composed of a continuous piece of fabric, connected at its edges with the side and rear portions of the interior of the skirt, and material of soft nature filling the space between the skirt and facing forming a pliable pad about the upper portion of the skirt conforming to the contour thereof.

848,555. REACH-COUPLING. ALEXANDER L. KIRKPATRICK and JAMES C. KIRKPATRICK, Hugo, Ind. Ter. Filed Jan. 17, 1906. Serial No. 296,520.

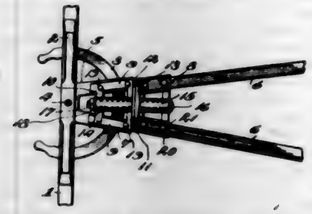

Claim.—A reach-coupling comprising front and rear sections, each formed of a pair of spaced arms, a longitudinal bearing-sleeve, front and rear webs or cross-pieces integral with said arms and bearing-sleeves, the rear cross-piece of the front member and the front cross-piece of the rear member being formed with an abutting head, and the side arms of the rear member being channeled or provided with reach-bar-receiving grooves, and a bolt passing through the sleeves and pivotally connecting said members.

848,556. COPYING-MACHINE. AUGUSTUS D. KLABER, London, England. Filed Nov. 22, 1906. Serial No. 344,576.

Claim.—1. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which the web and the impression-sheets pass, means for rotating one of said rollers, a receiving-roller on which the web is wound after passing between said rollers, a cutting device for cutting the web upon the receiving-roller, and a movable part on the receiving-roller rearward of the point thereon where the web is cut adapted to grip the end of the web, substantially as set forth.

2. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which the web and the impression-sheets pass, means for rotating one of said rollers, a receiving-roller on which the web is wound after passing between said rollers, a gripping member pivotally mounted on said receiving-roller, a second gripping member on said roller, and a spring connected to said pivoted member for causing it to grip the web between it and said second gripping member, substantially as set forth.

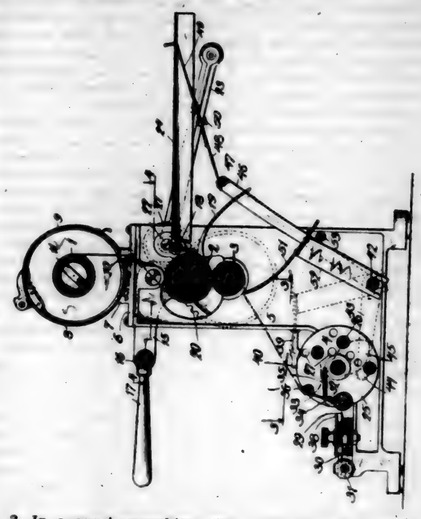

3. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which the web and the impression-sheets pass, means for rotating one of said rollers, a receiving-roller on which the web is wound after passing between said rollers, a movable part on said receiving-roller for gripping said web and a spring acting thereon to hold it in either the open or closed position, substantially as set forth.

4. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which the web and the impression-sheets pass, means for rotating one of said rollers, a receiving-roller on which the web is wound after passing between said rollers, means for rotating the same, a movable part on said receiving-roller and means actuated by the rotation of said receiving-roller for automatically closing said part to grip said web, substantially as set forth.

5. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which the web and the impression-sheets pass, means for rotating one of said rollers, a receiving-roller on which the web is wound after passing between said rollers, a cutting device for severing the web on the receiving-roller, and a part on said receiving-roller movable to throw the end of said severed portion away from the periphery of said roller, substantially as set forth.

6. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which the web and the impression-sheets pass, means for rotating one of said rollers, a receiving-roller on which the web is wound after passing between said rollers, a movable cutting device for severing the web upon the receiving-roller, a bar on the receiving-roller with which said device coacts and a movable part mounted upon said receiving-roller in rear of said bar, substantially as set forth.

7. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which the web of paper passes, means for rotating one of said rollers, a receiving-roller on which the web is wound after passing between said rollers, an automatically-operated feeding device for feeding impression-sheets between said web and one of said copying-

rollers and means for adjusting said device for feeding sheets of varying dimensions, substantially as set forth.

8. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which the web of paper passes, means for rotating one of said rollers, a receiving-roller on which the web is wound, means for operating the same, a feeding device for feeding impression-sheets between said web and one of said copying-rollers, means for operating said device when the receiving-roller is in a definite position, and means for adjusting said device for feeding sheets of varying dimensions, substantially as set forth.

9. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers, means for pressing said rollers together, means for rotating one of said rollers, a feed-board so located with reference to said copying-rollers that the impression-sheets fed from said board are caused to pass around substantially half the circumference of one of said rollers in contact with said web and then between said rollers, a feed device for the impression-sheets movable relatively to said board and means for adjusting said device for feeding sheets of varying dimensions, substantially as set forth.

10. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which said web passes, means for rotating one of said rollers, a receiving-roller on which the web is wound after passing between said copying-rollers, and means for rotating the same, said receiving-roller having a pair of end members and parts extending between and supported at their ends on said end members and said parts being adapted to be mounted at varying distances from the axis of the roller, substantially as set forth.

11. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which said web passes, means for rotating one of said rollers; and a receiving-roller on which the web is wound after passing between said copying-rollers, said receiving-roller consisting of two end plates and a plurality of bars extending between them with their ends entering openings in said plates, the number of openings in each of said plates being greater than the number of said bars, substantially as set forth.

12. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which the web of paper passes, means for rotating one of said rollers, a receiving-roller on which the web is wound after passing between said copying-rollers, means for rotating the same, a cutting-device mounted adjacent to said receiving-roller and movable toward and away from the same for cutting the web wound thereon, and means for indicating the proper position of the receiving-roller for operating said cutting device, substantially as set forth.

13. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which said web passes, a receiving-roller on which the web is wound after passing between said copying-rollers, means for rotating said receiving-roller and one of said copying-rollers, a cutting device mounted opposite said receiving-roller, means for actuating the same to cut the web upon the receiving-roller, and a stationarily-mounted indicator coacting with a mark on the receiving-roller to indicate the proper position of said roller for operating said cutting device, substantially as set forth.

14. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which said web passes, a receiving-roller on which the web is wound after passing between said copying-rollers, means for rotating said receiving-roller and one of said copying-rollers, a rod mounted parallel and adjacent to said copying-rollers, and a stripper loosely mounted on said rod and bearing by gravity against one of said copying-rollers, substantially as set forth.

15. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which said web passes, means for rotating one of said rollers, a feed-board so located with reference to said copying-rollers that the impression-sheets fed therefrom are caused to pass around substantially half the circumference of one of said rollers in contact with said web and then between said rollers, a rod mounted parallel and adjacent to said copying-rollers, and a stripper for the impression-sheets loosely pivoted on said rod and bearing by gravity against one of said rollers, substantially as set forth.

16. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which the web and impression-sheets pass, a receiving-roller on which the web is wound after passing between said copying-rollers, and means for cutting the web upon the receiving-roller, said supply-roller having a yielding portion extending beyond the periphery of the roller, substantially as set forth.

17. In a copying-machine, the combination of a supply-roller on which a continuous web is wound, two copying-rollers between which the web and impression-sheets pass, means for rotating one of said rollers, a receiving-roller on which the web is wound after passing between said copying-rollers, means for cutting the web upon the receiving-roller, and a casing for said supply-roller comprising two end members, a sheet-metal member secured thereto, and a second sheet-metal member pivoted to the first and adapted to fit tightly against the same when in the closed position, the free edges of said sheet-metal members extending in close proximity to the web passing from said supply-roller out of the casing and one of said edges being curled, substantially as set forth.

18. In a copying-machine, the combination of a supply-roller having a continuous web wound thereon, a pair of copying-rollers between which the web and impression-sheets pass, a receiving-roller on which the web is wound after passing between said copying-rollers, means for cutting the web upon the receiving-roller, and a stripper-plate mounted for movement from an operative position between said copying and receiving rollers to an inoperative position permitting free access to the parts of the machine, substantially as set forth.

19. In a copying-machine, the combination of a supply-roller having a continuous web wound thereon, a pair of copying-rollers between which the web and impression-sheets pass, a receiving-roller on which the web is wound after passing between said copying-rollers, means for cutting the web upon the receiving-roller, and a stripper-plate mounted between said copying and receiving rollers, its edge extending in close proximity to said web, substantially as set forth.

20. In a copying-machine, the combination of a supply-roller having a continuous web wound thereon, a pair of copying-rollers between which the web and impression-sheets pass, a receiving-roller on which the web is wound after passing between said copying-rollers, means for cutting the web upon the receiving-roller, and a stripper-plate pivotally mounted and adapted for movement about its pivot from an operative position in which its edge extends in close proximity to said web to an inoperative position permitting free access to the parts of the machine, substantially as set forth.

848,557. PROCESS OF MAKING STENCILS. AUGUSTUS D. KLABER, London, England. Filed Nov. 30, 1906. Serial No. 345,619.

Claim.—1. The process of making stencils which consists in cutting the characters to be reproduced in a stencil-sheet, then applying a strengthening compound to the sheet, and causing a flow of air through the interstices formed in cutting the stencil to prevent the compound from clogging the interstices, substantially as set forth.

2. The process of making stencils consisting in cutting the characters to be reproduced in a stencil-sheet, then coating the sheet with a quick-drying varnish, and causing a flow of air through the interstices formed in cutting the stencil before the varnish has dried to prevent the varnish from clogging the interstices, substantially as set forth.

848,558. POSTMARKING AND CANCELING MACHINE. NILS A. KRAG and GUSTAV A. HANSEN, Christiania, Norway. Filed Oct. 3, 1905. Serial No. 281,177.

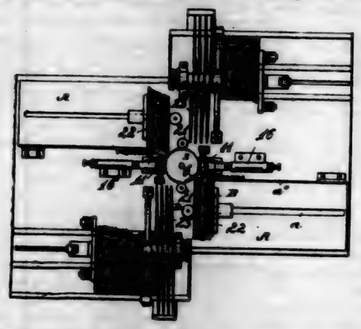

Claim.—1. In a postmarking and stamp-canceling machine, a rotatable feed member having a part of its periphery composed of a non-friction material and a part of its periphery composed of friction material, said parts having the same radius, means to feed a letter-stack in a direction transverse to the plane of the letters to present the forward edge of the forward letter to the periphery of said feed member at a point of the latter in rear of a diameter drawn at right angles to the plane of the letters in the stack, and a resilient finger mounted at said point, capable of a movement to and from the periphery of the feed member without coming into contact with the latter.

2. In a postmarking and stamp-canceling machine, a rotatable feed member, a stamping element mounted on the same shaft as the said feed member but in another axial plane, means to present the forward edge of a letter to said feed member, and a resilient finger mounted so as to be capable of a movement to and from the periphery of the feed member without coming into contact with the latter.

3. In a postmarking and stamp-canceling machine, a rotatable feed member having part of its periphery composed of a non-friction material and part of its periphery composed of friction material, means to feed a letter-stack in a direction transverse to the plane of the letters to present the forward edge of the forward letter directly to the periphery of the said feed member at a point of the latter in rear of a diameter drawn at right angles to the plane of the letters in the stack, and means to taper the end of the stack adjacent to the feed member.

4. In a postmarking and stamp-canceling machine, a rotatable feed member composed of two parallel disks placed on the same shaft, said disks having part of their periphery composed of a non-friction material and part of their periphery composed of friction material, a stamping element mounted on the same shaft as the said feed member between the said disks, and means to present the forward edge of a letter to said feed member.

5. In a postmarking and canceling machine, a feed member composed of two disks mounted on a shaft at a certain distance from each other, a free roller in coöperation with each of said disks and means to press the free roller yieldingly against the periphery of the said disks, a stamping member mounted on the same shaft as the said disks between the latter, two free rollers in coöperation with the stamping member, said free rollers having parallel axes and means to hold said rollers at a certain distance from the face of the stamping element and exert a yielding resistance when pressed outwardly.

6. In a postmarking and canceling machine, the combination with a rotary stamping member and an inking device, of means to press a letter in contact with the stamping-face, said means consisting of two resilient rollers having parallel axes, and means to hold the rollers at a certain distance from the face of the stamping member.

7. A duplex postmarking and stamp-canceling machine having one rotating feed member, one rotating stamping member, two sets of free rollers at two opposite points of the rotating feed member and two assembling-screws.

8. In a postmarking and stamp-canceling machine, a rotatable member composed of a plurality of recessed parallel disks composed of a non-frictional material, a frictional portion adjustably mounted in said recess, and stamping elements carried by the adjustable portion.

9. In a duplex postmarking and stamp-canceling machine, a rotating feed member, and means adapted to present letters at diametrically opposite points of the feed member.

10. In a duplex postmarking and stamp-canceling machine, a rotating member, means adapted to present letters at diametrically opposite points of the rotating member, and a gripping device carried by the rotating member adapted to consecutively engage letters at the different points.

11. In a duplex postmarking and stamp-canceling machine, a rotating member, feed-troughs adapted to present letters at different points of the rotating member, gripping devices on the latter, and a stamping member carried by the rotating member.

12. In a duplex postmarking and stamp-canceling machine, a rotating feed member, feed-troughs adapted to present letters at different points of the latter, a stamping member on the feed member, pressure-rolls adapted to coöperate with the stamping member at different points of the feed member.

13. In a duplex postmarking and stamp-canceling machine, a rotating feed member, feed-troughs adapted to present letters at different points of the feed member, a stamping member on the latter, pressure devices adapted to coöperate with the stamping member at different points of the feed member, and pressure-disks adapted to coöperate with the feed member at different points thereof.

14. In a duplex postmarking and stamp-canceling machine, a rotating feed member, feed-troughs adapted to present letters at different points of the feed member, a stamping member on the latter, means at different points of the feed member to ink the stamping member, pressure-rolls adapted to coöperate with the stamping member at different points of the feed member, and pressure-disks adapted to coöperate with the latter at different points.

15. In a postmarking and stamp-canceling machine, a rotatable shaft, a plurality of recessed parallel disks mounted thereon having non-frictional peripheries, a plate having a frictional periphery mounted in the recessed portion of each disk, means for connecting said plates, means to adjust the latter in the recesses and a stamping member mounted on the plates.

16. In a postmarking and stamp-canceling machine, a rotatable shaft, a roller mounted thereon, a disk having a recess formed in its periphery mounted on each side of the roller, a plate adjustably mounted in said recess, a disk pivoted eccentrically on the shaft having an arcuate slot therein, and a connecting member for the plates projecting through the slots.

17. In a postmarking and stamp-canceling machine, a rotatable shaft, a roller mounted thereon, having seats formed therein, a disk mounted on each side of the roller and having a recess registering with the seats, plates adjustable in the recesses, a disk pivoted eccentrically on the shaft having an arcuate slot therein, a bolt connecting the plates projecting through the slot, and a stamping-die mounted between the plates.

18. In a postmarking and stamp-canceling machine, the combination with a feedway and the guide-wall thereof,

of a roller having its periphery projecting in rear of the guide-wall, a non-frictional member on said roller to arrest the passage of the letters in one direction, a frictional member to grip and carry the letters at right angles to their path of travel in the feedway and a stamping member carried by the roller.

10. In a postmarking and stamp-canceling machine, the combination with a feedway, of a rotatable feed member at the delivery end of the latter having a non-frictional portion to arrest the passage of the letters in one direction and a frictional portion to grip and carry the letters at right angles to their path of travel in the feedway, and a resiliently-mounted finger coöperating with said feed member.

848,559. BATTERY-PLATE. WILLIAM G. C. KRAUSE, Waterbury, Conn., assignor to Charles B. Schoenmehl. Filed June 24, 1905. Serial No. 266,901.

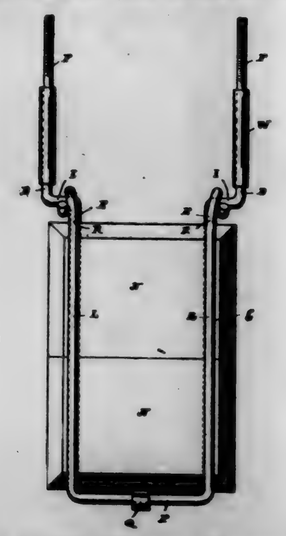

Claim.—1. A battery-plate holder of the class described, comprising a pair of spaced back supports to engage the outer surfaces of the back of a plate, a front member hinged to said plate and means to hold said members in a closed position to clamp a plate.

2. A battery-plate holder of the class described, comprising a fixed vertically-disposed wire support to engage the back face of a plate, and a front wire support hinged to and registering with said back and adapted to yieldably engage the front of the plate directly opposite from said back members.

3. A battery-plate holder of the class described, comprising a pair of spaced back supports to engage the rear side of a plate, a pair of spaced front supports hinged to said back supports to engage the front of a plate and means to hold said supports closed against a plate.

4. In a battery-plate holder, the combination with a cover, of a U-shaped wire frame attached thereto, a U-shaped gate member hinged to said U-shaped frame, a plate intermediate said U-shaped members and means to lock said gate in its closed position against the plate.

5. A battery-plate holder of the class described, comprising a back formed of wire bent to form two supports to engage the one side of a plate, a second pair of wire supports hinged to the before-mentioned supports and adapted to engage the opposite face of the plate, and means to lock a plate intermediate such supports.

6. In a battery-plate holder, the combination of depending wire supports having angular bends therein forming horizontal pintles, a U-shaped wire-clamping member hinged to the pintles of said supports, and means to lock said gate in a closed position against the gate.

7. A holder of the class described formed of wire, and comprising a back supporting member, a front member hinged to said back, a compressed negative element having grooves to be engaged by said front and back members, and means to hold said members in a closed position against the said elements.

8. A holder of the class described, and comprising a back formed of wire threaded for attachment to a cover and bent to form pintles, a second wire member hinged to said pintles bent to clamp a plate when closed, and means to hold said members in a clamped position.

848,560. TYPE-WRITING MACHINE. EDWARD F. KUNATH, Jersey City, N. J., assignor to Underwood Typewriter Company of New York, N. Y., a Corporation of New Jersey. Filed Dec. 4, 1905. Serial No. 290,172.

Claim.—1. In a type-writing machine, the combination with a platen of pressure-rolls mounted to run directly upon the platen and independently press thereagainst, said rolls being connected to cause one to move against the platen while the other moves away from the platen.

2. In a type-writing machine, the combination with a platen of pressure-rolls therefor, and a key having means to release the rolls in alternation.

3. In a type-writing machine, the combination with a platen of pressure-rolls therefor, and a key having means to release either roll and render the other roll effective.

4. In a type-writing machine, the combination with a platen, of pressure devices coöperating therewith to feed different sheets of paper around the platen, and a single finger-piece having means for releasing either feeding device and simultaneously bringing the other feeding device into operation.

5. In a type-writing machine, the combination with a platen, of pressure-rolls mounted side by side along the platen, and a single finger-piece having means for releasing either pressure-roll and simultaneously bringing the other pressure-roll into action.

6. In a type-writing machine, the combination with a platen, of a plurality of pressure devices ranged along the platen, and a single finger-piece having means for releasing either pressure device and simultaneously bringing the other device into action.

7. In a type-writing machine, the combination with a platen, of a set of main pressure-rolls, an auxiliary roll, and a single finger-piece having means for releasing the main rolls and simultaneously bringing into operation the auxiliary roll.

8. In a type-writing machine, the combination with a platen, of a set of main pressure-rolls ranging along the platen, an auxiliary roll; and a single finger-piece having means for releasing said auxiliary roll and simultaneously bringing into operation said main rolls.

9. In a type-writing machine, the combination with a platen, of pressure-rolls ranged along the platen, a rock-shaft extending along the platen, a key for said rock-shaft, and means controlled by said rock-shaft for simultaneously releasing one of said rolls and causing another of said rolls to become effective.

10. In a type-writing machine, the combination with a platen, of rolls ranged along the platen, some of said rolls forming a set of main pressure-rolls and the remaining rolls being auxiliary, a rock-shaft extending along the platen, and means controlled by said rock-shaft for releasing the main rolls and simultaneously bringing the auxiliary rolls into operation.

11. In a type-writing machine, the combination with a platen, of rolls ranging along the platen, spring-pressed arms or levers engaging said rolls, and a rock-shaft having cam portions to release one or more of said arms and concomitantly bring one or more other arms into effective action.

12. In a type-writing machine, the combination with a revoluble platen, of a rock-shaft extending along the platen and controlled by a key, cams provided upon said rock-shaft, levers having arms to engage said cams and extending forwardly and rearwardly from said shaft, and rolls engaged by said levers; said cams constructed to release some of said arms and concomitantly bring other arms into action.

13. In a type-writing machine, the combination with a revoluble platen, of a roll to coöperate therewith to feed wide sheets of paper around the platen, a device for carrying a paper ribbon, a roll to coöperate with the platen for feeding said ribbon, and a release-key having means for effecting the release of either roll while calling the other roll into action.

14. In a type-writing machine, the combination with a platen, of a spool to carry a paper ribbon, a roll to press the ribbon against the platen, a release-key for said pressure-roll, and a main set of rolls for pressing wide sheets of paper against the platen, said main set of rolls connected to said release-key and constructed to be released thereby when the ribbon-pressure roll is brought into action.

15. The combination with a revoluble platen, of a spool for carrying a paper ribbon, a releasable pressure-roll coöperating with the platen to draw said ribbon around the platen, and a spool for taking up the ribbon as it runs off from the platen; and a set of main pressure-rolls releasable independently of the first-mentioned pressure-roll.

16. In a type-writing machine, the combination with a platen and a set of pressure-rolls therefor, of means for releasing the rolls, means for supporting a paper ribbon which is carried around the platen, and means rendered effective by said releasing means for feeding said ribbon in line-space direction.

17. In a type-writing machine, the combination with a platen, of a pressure-roll for feeding wide sheets of paper around the platen, means for releasing the roll, means for supporting a paper ribbon which is carried around the platen, and means rendered effective by said releasing means, for coöperating with the platen to line-space said ribbon.

18. In a type-writing machine, the combination with a cylindrical platen and a releasable main pressure-roll, of two spools for delivering and winding up a coil of paper ribbon carried around the platen, a roll releasable independently of said pressure-roll for pressing said ribbon against the platen, and means for pressing said spools together so as to cause the winding-spool to be rotated by means of the movement of the delivering-spool.

19. In a type-writing machine, the combination with a platen, of a series of pressure-rolls ranging along the platen, means for supporting a coil of paper ribbon which is carried around the platen, means for enabling one of said rolls to coöperate with the platen to line-feed said ribbon while the other rolls are released, and means for enabling an extra wide sheet of paper to be fed by all of said rolls at will.

20. In a type-writing machine, the combination with a platen and pressure-rolls, of a release-key, means for enabling said release-key to release one of said rolls while bringing another thereof into action, and means for also enabling the release-key to release all of said rolls simultaneously, at will.

21. In a type-writing machine, the combination with a platen-frame, of a platen revolubly mounted in said frame, a rod mounted on said frame and extending along the platen, arms upon said rod and adjustable therealong, a plate above the platen and connecting said arms and adjustable along the rod therewith, and gages upon said plate for the leading and side edges of the paper; and said arms also extending rearwardly from said rod so as to guide the paper laterally when introduced around the platen; said plate having at one end a guide for the side edge of the paper, and at the other end extending over its supporting-arm.

22. In a type-writing machine, the combination with a platen, of a main pressure-roll or set of rolls for feeding wide sheets of paper around the platen, means for supporting a coil of paper ribbon which is carried around the platen, a roll for pressing said ribbon against the platen, a releabe-key which releases the main rolls while bringing the ribbon-pressure roll into action, and a tablet mounted above the platen upon which to adjust the main sheets while the main pressure-rolls are released; said tablet being provided with a gage or gages for the edges of the main sheets.

23. In a type-writing machine, the combination with a platen and a plurality of pressure-rolls, certain of which are normally out of action, of a release-key, and shiftable means for enabling said release-key either to release all of said rolls simultaneously or to release one roll while bringing another roll into action.

24. In a type-writing machine, the combination with a platen and a series of pressure-rolls ranging end to end along the platen, of a release-key, and shiftable means for enabling said key either to release said rolls all together, or else to release some of the rolls while bringing others of the rolls into action.

25. In a type-writing machine, the combination with a platen and means for supporting a coil of paper ribbon which is carried around the platen, of a roll to coöperate with the platen for feeding said ribbon, pressure-rolls to feed wide sheets of paper around the platen, means for causing the first roll to be out of action while said pressure-rolls are effective, and vice versa, a release-key, and shiftable means for enabling said key either to release said ribbon-pressure roll while calling the other rolls into action, or to release all of said rolls simultaneously.

26. In a type-writing machine, the combination with a platen, of rolls ranging along the platen, spring-pressed arms for said rolls, and a rock-shaft having two sets of cams to engage said arms; said rock-shaft being movable endwise to bring either set of cams into play; and concomitantly put the other cams out of action, and thereby vary the effect upon said rolls of rocking said shaft.

27. In a type-writing machine, the combination with a platen, of spring-pressed rolls ranging along the platen, a rock-shaft having two sets of cams for releasing said rolls either in alternation or all together, said rock-shaft being movable endwise to bring either set of cams into use, and a key having means to rock said shaft.

28. In a type-writing machine, the combination with a platen, of spring-pressed rolls ranging along the platen, a rock-shaft having cams for releasing said rolls in alternation and cams for releasing all the rolls together, said rock-shaft being movable endwise so as to bring either set of cams into use, and a key for rocking said shaft; said rock-shaft having means for mechanically detaining the rolls in released positions.

29. In a type-writing machine, the combination with a platen, of pressure-rolls therefor, a key which releases the

rolls in alternation, and means for enabling the key to release the rolls all together, at will.

30. In a type-writing machine, the combination with a platen, of pressure devices coöperating therewith to feed different sheets of paper around the platen, means for releasing either feeding device and simultaneously bringing the other feeding device into operation, and means for releasing all of the rolls simultaneously.

31. In a type-writing machine, the combination with a platen, of pressure-rolls ranging side by side along the platen, means for releasing either pressure-roll and simultaneously bringing the other pressure-roll into action, and means for releasing all the rolls simultaneously.

32. In a type-writing machine, the combination with a platen, of a plurality of pressure devices ranged along the platen, means for releasing either pressure device and simultaneously bringing the other pressure device into action, and means for causing both pressure devices to act together and release together.

33. In a type-writing machine, the combination with a platen, of pressure-rolls ranged along the platen, a longitudinally-movable shaft extending along the platen, a key for said rock-shaft, and means upon said rock-shaft and effective at one longitudinal position thereof for simultaneously releasing one of said rolls and causing another of said rolls to become effective, and means upon said rock-shaft effective at another longitudinal position thereof, for sumultaneously releasing all of the rolls.

34. In a type-writing machine, the combination with a platen, of rolls ranging along the platen, spring-pressed arms or levers engaging said rolls, and a rock-shaft having cam portions to operate said arms; certain of said cam portions being constructed to release certain of said arms and bringing certain other arms into effective action, and certain other cam portions being constructed to release all of said arms simultaneously; shiftable means being provided to bring either set of cam portions into use.

35. In a type-writing machine, the combination with a revoluble platen, of a rock-shaft extending along the platen and controlled by a key, two sets of cams provided upon said rock-shaft, levers having arms to engage said cams and extending forwardly and rearwardly from said shaft, and rolls engaged by said levers; one set of said cams being constructed to release certain of said rolls and bring into action others of said rolls, and the other set of cams being constructed to release all the rolls simultaneously; said rock-shaft being shiftable to bring either set of cams into use.

36. In a type-writing machine, the combination with a platen, of a main pressure-roll or set of rolls for feeding wide sheets of paper around the platen, means for supporting a coil of paper ribbon which is carried around the platen, a roll for pressing said ribbon against the platen, a release-key having means for releasing the main rolls while bringing the ribbon-pressure roll into action, a tablet mounted above the platen upon which to adjust the main sheets while the main pressure-rolls are released; said table being provided with a gage or gages for the edges of the main sheets; and means for enabling said release-key to release all of said rolls simultaneously.

37. In a type-writing machine, the combination with a revoluble platen, of pressure-rolls ranging along the platen, a rock-shaft having two sets of cams formed thereon for releasing said rolls either in alternation or all together, said rock-shaft being movable endwise to bring either set of cams into play, and means being provided for detaining said rock-shaft at either end of its endwise movement, a lever-arm splined to said rock-shaft, and a key connected to said lever-arm.

38. In a type-writing machine, the combination with a revoluble platen, of pressure-rolls ranging along the platen, a rock-shaft having two sets of cams formed thereon for releasing said rolls either in alternation or all together, said rock-shaft being movable endwise to bring either set of cams into play, and yielding means being provided for detaining said rock-shaft at either end of its endwise movement, a lever-arm splined to said rock-shaft, and a key connected to said lever-arm, and buttons upon the ends of said rock-shaft for shifting the same endwise.

39. In a type-writing machine, the combination with a platen, of pressure-rolls ranging along the platen, certain of said rolls being normally ineffective, a rock-shaft extending along the platen, a key for said rock-shaft, means controlled by said rock-shaft for simultaneously releasing one of said rolls and simultaneously causing another of said rolls to become effective, and shiftable means for enabling said rock-shaft to release all of said rolls simultaneously.

848,561. CAKE-CUTTER. VERNON T. LITTLEFIELD, Bangor, Me., assignor of one-sixth to Harry A. M. Rush, one-sixth to James A. Rush, and one-sixth to Eugene Rush, Millinocket, Me. Filed July 18, 1906. Serial No. 326,733.

Claim.—The herein-described implement comprising a body with a handle extending upwardly therefrom and having a cutter with an inner beveled cutting edge formed within the lower extremity of the body, a socket and a recess constructed of different diameters, and also formed within the body and above the cutter, an auxiliary cutter having an inner surrounding beveled cutting edge formed therein, said auxiliary cutter having its upper portion mounted in the socket, and a solid shank formed centrally on the upper surface of the auxiliary cutter and serving to be inclosed within the recess, substantially as specified.

848,562. WIRE-CLOTH SUPPORTING AND MEASURING APPARATUS. WILLIAM W. MARCH, Nocona, Tex. Filed July 13, 1906. Serial No. 326,146.

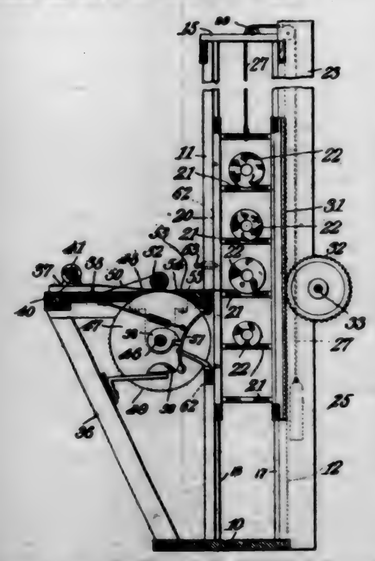

Claim.—In a device of the class described, a supporting-frame, a table extending laterally of said frame, a rewinding-drum upon said table, a rack slidable in said frame and divided into a plurality of compartments for rolls of the material to be measured, and means for operating said roll-supporting rack to bring any required roll into position relative to said body.

848,563. MACHINE FOR MANUFACTURING BOOKS. WILLIAM H. MARVIN, and ROBERT R. VESSEY, New York, N. Y., assignors to Fred White, New York, N. Y. Filed May 5, 1898. Serial No. 679,707.

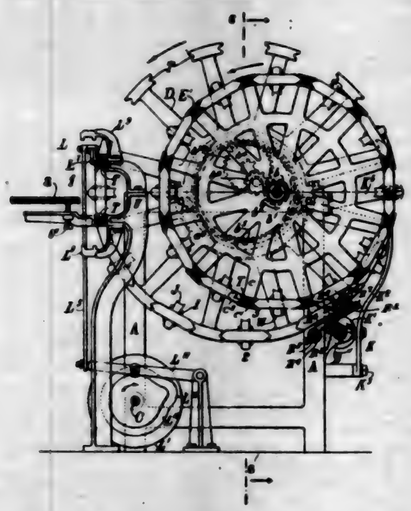

Claim.—1. In book-making machines, a plurality of clamps, and a plurality of series of tracks carrying such clamps, revolving around parallel axes with an intermittent motion for presenting the clamps at successive positions, and means moving the clamps axially of said tracks from one series to the next.

2. In book-making machines, a plurality of clamps, in combination with a plurality of series of tracks for carrying the clamps, said tracks revolving with an intermittent motion around a predetermined axis, and means for shifting the clamps from one to the next series of tracks.

3. In book-making machines, a plurality of clamps, and a plurality of series of tracks carrying the clamps, said tracks revolving with an intermittent motion around predetermined axes, and those of one series being eccentric of those of the other series.

4. In book-making machines, a plurality of separately-movable clamps movable around a predetermined axis and longitudinally thereof each having means for clamping a book or other article, tracks for such clamps, and means moving the clamps around such axis and longitudinally thereof said clamps each independent of the others.

5. In book-making and other machines, a plurality of claimps, and means carrying said clamps in an endless path and with a step-by-step motion a plurality of times around a predetermined axis, to successive positions longitudinal of the axis, and then in reverse direction to the point of starting.

6. In book-making and other machines, a plurality of clamps, and means carrying said clamps with an intermittent motion throughout an approximately helical path to successive positions longitudinally of a predetermined axis.

7. In book-making and other machines, a plurality of clamps, in combination with a plurality of movable tracks therefor, and a stationary track connecting the extremities of said movable tracks, and means for moving the clamps through the movable and stationary tracks in an endless path.

8. In book-making and other machines, a plurality of revolving carriers eccentrically mounted and having longitudinal tracks alining at one point, in combination with a plurality of clamps carried in said tracks and movable longitudinally thereof, and means for transferring the clamps from the tracks of one carrier to those of another.

9. In book-making and other machines, a plurality of revolving carriers of different diameters and eccentrically mounted the one relatively to the other, having tracks coinciding at one point, in combination with a stationary track alining with the tracks of the larger carrier, a plurality of clamps movable longitudinally through said tracks, and means moving the clamps from the stationary track to and through the tracks of the carriers.

10. In book-making and other machines, three revolving carriers, mounted on parallel axes side by side, the center one of less diameter than and eccentrical to the others, said carriers having longitudinal tracks, alining at one point, a stationary track between the outer carriers, clamps movable through the tracks of the carriers and the stationary track, and means moving the clamps in an endless path throughout such tracks.

11. In book-making and other machines, a revolving drum having longitudinal tracks on its periphery, in combination with a plurality of clamps carried in said tracks, of less length than the drum and movable to successive positions longitudinally thereof, means for revolving the drum, and means for moving the clamps.

12. In book-making and other machines, a plurality of clamps, tracks carrying such clamps, means moving said tracks with an intermittent rotary motion, means moving the clamps longitudinally of the tracks, gumming mechanism opposite one position of the clamps, and super-applying mechanism opposite another position of the clamps.

13. In book-making and other machines, a plurality of clamps, tracks carrying the clamps, means intermittently rotating the tracks, means moving the clamps longitudinally thereof, gumming mechanism opposite one position of the clamps, and mechanism for applying lining-paper opposite another position of the clamps.

14. In book-making machines, a plurality of clamps, tracks carrying the clamps, means revolving the tracks, means moving the clamps axially of the tracks to successive positions, and mechanism for performing successive operations incident to book-making at successive positions of the clamps.

15. In book-making and other machines, a plurality of clamps, tracks carrying the clamps, means revolving the tracks intermittently, means moving the clamps to successive positions longitudinally of the tracks, gumming mechanism, opposite one position of the clamps, super-applying mechanism opposite another position thereof, and pressing mechanism opposite another position of the clamps.

16. In book-making and other machines, a plurality of clamps, tracks carrying the clamps, means intermittently revolving the tracks, means moving the clamps longitudinally of the tracks to successive positions, gumming mechanism opposite one position of the clamps, lining-applying mechanism opposite another position thereof, and pressing mechanism opposite another position thereof.

17. In book-making and other machines, a plurality of clamps, tracks carrying the clamps, means intermittently revolving the tracks, means moving the clamps longitudinally of the tracks, gumming mechanism opposite one position of the clamps, super-applying mechanism opposite another position thereof, second gumming mechanism opposite another position of the clamps, and lining-applying mechanism opposite still another position thereof.

18. In book-making and other machines, a plurality of clamps, tracks carrying the clamps, means moving the clamps through an approximately helical path with an intermittent rotary and longitudinal motion, gumming and super-applying mechanism opposite different positions of the clamps, and continuously-driven mechanism operating the gumming and super-applying mechanism during the rests of the clamps.

19. In book-making and other machines, a continuously-driven driving-shaft, in combination with a revolving drum

having longitudinal tracks, means intermittently revolving the drum from said shaft, a plurality of separate clamps carried by said tracks, continuously-driven cams, shifters operated by said cams during the rests of said drum, and then moving said clamps longitudinally of said tracks, and mechanism for performing successive operations incident to book-making opposite successive positions of said clamps and operating during the rests thereof.

20. In book-making and other machines, a revolving drum having longitudinal tracks, a plurality of clamps carried by said tracks, a continuously-driven driving-shaft, mechanism revolving said drum intermittently from said shaft, mechanism shifting said clamps longitudinally of said drum, a cam-shaft continuously driven from said driving-shaft, and mechanism for performing successive operations incident to book-making driven by said cam-shaft and operating during the rests of said drum.

21. In book-making and other machines, an intermittently-revolving drum having a plurality of longitudinal tracks, a plurality of clamps carried by said tracks and movable to successive positions longitudinally thereof, mechanisms for performing successive operations incident to book-making opposite successive positions of such clamps, and means for preventing operation of said mechanisms opposite one of said positions.

22. In book-making and other machines, a plurality of clamps, and means carrying them through a substantially helical path and holding them at successive positions therein, in combination with mechanisms opposite said positions for performing successive operations incident to book-making respectively, and means for preventing operation of any of said mechanisms.

23. In book-making and other machines, the improved clamp consisting of a surrounding frame, clamping-plates carried thereby, means locking said plates in the clamped position, and means automatically unlocking said plates.

24. In book-making machines, the improved book-clamp consisting of a surrounding frame, oppositely-movable clamping-plates carried thereby, means automatically moving such plates toward and from the clamping positions, and means equalizing such movements.

25. In book-making and other machines, the improved clamping mechanism consisting of oppositely-moving clamping-plates, means for locking such plates in any position, yielding pressers for pressing the plates against the object to be clamped, carriers for said pressers having a predetermined movement of greater extent than necessary for the pressers, springs between the carriers and pressers, yielding to permit the greater movement of the former, and means controlled by said carriers for automatically actuating said locking means when said clamping-plates are pressed against the object to be clamped.

26. In book-making and other machines, the improved clamping mechanism consisting of oppositely-moving clamping-plates, means for locking such plates in any position, yielding pressers for pressing the plates against the object to be clamped, carriers for said pressers having a predetermined movement of greater extent than necessary for the pressers, and springs between the carriers and pressers yielding to permit the greater movement of the former, said carriers operating said lock by their continued movements after the arrest of said pressers.

27. In book-making and other machines, the improved clamping mechanism consisting of clamping-plates, a yielding presser, a carrier movably carrying said presser, springs between the carrier and presser, means moving the carrier a predetermined distance greater than the necessary movement of said presser, an adjustable connection between the carrier and such means, and means controlled by said carrier for automatically locking said plates when the article is clamped between them.

28. For book-making and other machines, the improved clamping mechanism consisting of a frame having guideways, clamping-plates carried by said guideways and movable within said frame, cams locking said plates to said frame, and means automatically releasing said cams.

29. For book-making and other machines, a clamping mechanism consisting of a frame having guideways, movable plates within said frame engaging said guideways, cams for locking said plates to the frame, and means for automatically setting said cams.

30. In book-making and other machines, the improved clamping mechanism consisting of a frame, clamping-plates movably carried thereby, means for closing said plates against an object, means for automatically locking said plates when closed, and means for automatically releasing said plates.

31. For book-making and other machines, a clamp consisting of a frame adapted to slide in a track, clamping-plates movably carried thereby, means for closing said plates disposed in the path of movement thereof, means for locking said plates when closed, and an automatic tripper adapted to be operated during the movement of said frame to unlock said plates.

32. In clamping mechanism for book-making and other machines, a frame adapted to move in tracks, movable clamping-plates carried thereby, means for closing said plates, means for locking the plates closed, and a lock-operating device traveling with such frame and adapted to be operated by the movement thereof to insure locking of plates.

33. For book-making and other machines, a gumming mechanism comprising a reciprocating gummer, movable into and out of contact with the object to be gummed, and means tilting said gummer at its extremes of movement, whereby the gummer skips the edge of the object in advancing thereto and applies gum from its middle outwardly to one end with one stroke and from its middle to the opposite end with another stroke.

34. In gummers for book-making and other machines, an oscillating gum-applier M^6, means for moving it a greater distance than the length of the object to be gummed, and means oscillating it beyond the extremities of the object to be gummed.

35. In gummers for book-making and other machines, an oscillating gummer M^5, a carriage M^9 thereof, a track for said carriage, means moving the carriage and gummer outwardly to a gum-box and upwardly to the object to be gummed, and oscillating the gummer.

36. The improved gummer for book-making and other machines, comprising a gum-brush, a movable carriage therefor, a belt M^{10} holding said carriage, rollers M^{20} carrying said belt, and means reciprocating said carriage.

37. In gummers for book-making and other machines, an oscillating gum-applier, a carriage to which it is fulcrumed, an oscillating arm M^7, means moving said arm, and a lost-motion connection between said arm and applier transmitting a part of the motion of the arm to the applier to oscillate and reciprocate the latter.

38. In super-appliers and the like for book-making and other machines, a super-holding box and means for intermittently moving it, in combination with a bottom for carrying the supers in said box, and means for moving it a greater distance than the movement of the box.

39. In super-appliers and the like for book-making and other machines, a super-holding box and means for intermittently moving it, in combination with a bottom for carrying the supers in said box, and yielding means for moving it a greater distance than the movement of the box.

40. In super-appliers and the like for book-making and other machines, a box for holding supers, a movable bottom for carrying the supers therein, means advancing said bottom to successive upward position in said box as the supers diminish, and catches for holding the bottom in such positions, said means reciprocating the bottom upwardly and downwardly relatively to the box from its various positions therein for advancing the top super toward the book.

41. In a super-applying and other mechanism, a holding-box and a movable bottom therein, in combination with means for moving the bottom within the box, and means for reciprocating the bottom and box together.

42. In super-applying and other mechanism a movable box and a movable bottom therein, means for moving the box and bottom together, and means for independently moving the bottom, in combination with means catching the bottom at successive positions within the box and limiting its receding movement thereon.

43. In super-applying and other devices, a bottom for holding a pile of supers, means for lifting said bottom, a yielding connection between the bottom and lifting means, catches for holding the bottom at successive points in its range of movement, said lifting means being automatically adjustable to lift the bottom from its successive positions.

44. In super-applying and other mechanism, a bottom for holding a pile of supers, a lifter for said bottom, springs between the lifter and bottom, a toggle for operating the lifter, and a ratchet-and-pawl connection between the toggle and the lifter for adjusting the throw of the toggle to the position of the lifter.

45. In super-applying and other mechanism, a movable carrier for a pile of supers, posts N for said carrier, slideways N^9 for said posts, a toggle N^{11} connected at its respective extremities to said posts and ways, and means for actuating said toggle for lifting and lowering the holder, combined with means for progressively advancing the supers in the holder.

46. In super-applying and other mechanism, differential cams N', N^3, connecting-rods N^{12}, N^{22} operated respectively by said cams, toggles N^{11}, N^{17} operated respectively by said rods, a holder for the supers operated by the toggles N^{11}, and a bottom carrying the supers operated by said toggles N^{17}.

47. In gum-appliers for book-making and other machines, a gummer and a track therefor having a portion substantially parallel with the object to be gummed and receding inclines at the extremities of such object, in combination with means carrying said gummer along said track, whereby the gummer will not apply over the edges of the track.

48. In gum-appliers for book-making and other machines, a gummer and a yielding track therefor having a portion substantially parallel with the object to be gummed and receding inclines at the extremities of such object, in combination with means carrying said gummer along said track, whereby the gummer will not apply over the edges of the track.

49. In gummers for book-making and other machines, a gum-roller O^4, a track O^2 therefor, a post O^3 yieldingly carrying said track, a swinging arm O^5, and a connection between said arm and roller reciprocating the latter in said track.

50. The improved lining-applier for book-making and other machines, comprising a lining-feeder, a lining-cutter, a presser-plate beyond the latter, said feeder delivering said lining to said presser-plate, means for operating said cutter, means subsequently lifting said plate to apply the lining thereon to an adhesive object, means holding said lining on said plate, and means intermittently actuating said parts to apply the lining to successive objects.

51. The improved lining-applier, comprising trimming-rolls P^6, intermittently-driven feed P^4, a cutter operated during the rests of said feed and comprising a presser P^{10}, a blade P^7, means moving said blade, and a spring yieldingly transmitting the motion of the blade to the presser, in advance of the blade and means supporting the severed lining and applying it to an object, and means holding said lining thereon before application.

52. The improved lining-applier consisting of a yielding presser P^{10} having a perforated top and hollow interior, a reciprocating carrier P^{20} therefor, an air-pump P^{29}, a piston P^{30} therein operated with said carrier, whereby said pump exhausts by the upward movement of said carrier a connection between the exhaust side of said pump and said presser, and an air-inlet P^{32} for said pump at the extreme movement of said piston, whereby the lining is held to the presser before its application and released thereafter.

53. In lining-appliers, a reel P^1, intermittently-driven feed-rolls for feeding a lining therefrom, a cutter beyond said rolls, a presser adjacent to said cutter and adapted to receive the severed lining from said cutter, means holding said lining thereon, a cam P^5 operating said cutter during the rests of said feed, and a cam P' operating said presser after operation of said cutter.

54. For book-making and other machines, mechanism for pressing a lining on a book and for like purposes, comprising an oscillating and reciprocating member for bearing against the lining, a frame carrying such member means for reciprocating such member, and means for oscillating it at the extremities of its movements.

55. For book-making and other machines, a brush Q', a holder Q^2 therefor, a carrier Q^{11} for the holder, tracks in which said carrier reciprocates, and a lost-motion connection between the carrier and holder permitting oscillation of the brush at the extremities of its movements.

56. In book-making and other machines a frame A having bearings a and a', in combination with a revolving drum D having a hollow hub a^6 carried by the bearings a, a drum E revolving eccentrically of the drum D, and a shaft b for the drum E traversing the hub of the drum D and mounted in the bearings a'.

57. In book-making and other machines a drum D having a hollow hub a^6 having internal gear-teeth, in combination with a frame A having a hollow bearing for said drum, a driving-shaft mounted eccentrically to said drum traversing said bearing and hub and carried by said frame, and internal gears between said shaft and drum driving the drum from the shaft.

58. In book-making and other machines, the drums D, E and F, a frame carrying said drums, a driving-shaft B, intermittent driving mechanism G driving the drums from the shaft, tracks T on the drums, clamps I sliding longitudinally of the tracks and revolving with the drums, a support U having fixed tracks coinciding with and extending between the tracks of the drums D and F, means for sliding the clamps in the tracks, and means for feeding and discharging books to the clamps at said fixed tracks.

848,564. STEAM-GENERATOR. WILLIS MITCHELL, Malden, Mass. Filed Jan. 25, 1905. Renewed Aug. 28, 1906. Serial No. 332,389.

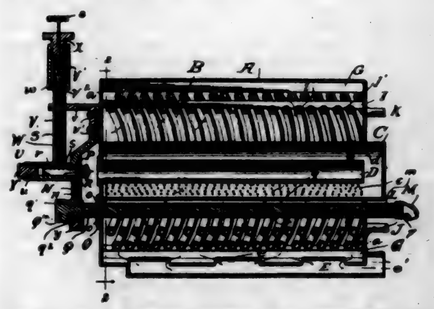

Claim.—1. In a steam-generator, the combination of a water-tube coiled in concentric helices with a laterally-perforated burner extending longitudinally as a core within the same and discharging ignited gas or vapor against the coils thereof and means for maintaining intervals between the helices for the purpose set forth.

2. In a steam-generator, the combination of a water-tube coiled into concentric approximately horizontal helices with a burner surrounded thereby extending longitudinally as a core therein, provided with a series of perforations in its under side and discharging ignited gas or vapor against the lower parts of the coils and means for maintaining intervals between the said helices and between the coils of each helix substantially as set forth.

3. In a steam-generator, the combination of a water-tube coiled into concentric approximately horizontal helices with a burner surrounded thereby and discharging ignited gas or vapor against the lower part of the same in oblique diverging jets on each side of the vertical longitudinal central plane of the said burner substantially as set forth.

4. In a steam-generator, the combination of a water-

tube coiled into concentric approximately horizontal helices with a burner surrounded thereby and discharging ignited gas or vapor against the lower part of the said helices in series of oblique diverging jets on each side of the vertical longitudinal central plane of the said burner and heat-outlets arranged along the central line of the bottom of the generator between the series of jets for the purpose set forth.

5. In a steam-generator, the combination of a water-tube coiled into concentric approximately horizontal helices with a burner surrounded thereby and discharging ignited gas or vapor against the lower part of the said helices and an inclosing casing arranged to leave a space between it and the outer helix, as an accumulator of concentrated heat for the purpose set forth.

6. In a steam-generator, the combination of a water-tube coiled into concentric approximately horizontal helices with a burner surrounded thereby and discharging ignited gas or vapor against the lower part of the said helices, an inclosing casing arranged to leave a space between it and the outer helix as an accumulator of concentrated heat, said casing being provided with outlets at the bottom only for the purpose set forth.

7. In a steam-generator, the combination of a water-tube coiled into concentric approximately horizontal helices with a burner surrounded thereby and discharging ignited gas or vapor against the lower part of the said helices, an inclosing casing arranged to leave a space between it and the outer helix as an accumulator of concentrated heat and devices interposed between the said casing and the outer helix to maintain the said space unchanged and hold the said helices in position substantially as set forth.

8. In a steam-generator, the combination of a water-tube coiled into concentric approximately horizontal helices with a burner surrounded by the same and discharging gas or vapor in two series of diverging jets against the lower part of said helices on each side of the vertical plane of the axis of said burner, an inclosing casing arranged to leave a heat-accumulator space between it and the outer helix and an outlet trough or pipe arranged longitudinally under said casing between the two series of such jets, the said pipe being connected to the interior of said casing by a series of openings substantially as set forth.

9. In a steam-generator, the combination of a water-tube coiled into approximately horizontal concentric helices with a burner surrounded by the same and discharging ignited gas or vapor in two series of diverging jets against the lower part of said helices on each side of the vertical plane of the axis of said burner an inclosing casing arranged to leave a heat-accumulator space between it and the outer helix and an outlet trough or pipe communicating with the interior of said casing and arranged longitudinally under the said casing between the two series of diverging jets and supports for said helices arranged between the outer helix and the said casing and serving to keep the intervening heat-accumulator space unchanged, two of the said supports being arranged above the said pipe or trough, which is fastened to these supports and suspended therefrom substantially as set forth.

10. In an approximately horizontal steam-generator, the combination of a helical water-tube with a burner surrounded thereby and discharging ignited gas or vapor against the lower part of the same, an outer casing closed at the top but having outlet below, and longitudinal helix-supports provided with transverse upward passages for heat and heated matter substantially as set forth.

11. In an approximately horizontal steam-generator, the combination of a helical water-tube with a burner surrounded thereby and discharging ignited gas or vapor against the lower part of the same, an outer casing closed at the top but having outlet below and longitudinal helix-supports provided with transverse upward passages and interposed between the casing and helix to maintain without change a heat-accumulator space between them substantially as set forth.

12. In a steam-generator, the combination of a water-tube wound into approximately horizontal concentric helices, a burner surrounded thereby and discharging ignited gas or vapor against the lower part of the same throughout the length of the same, longitudinal supports which separate the helices from each other and which are provided with grooves or projecting parts which separate the coils of each helix from each other, an outer casing and additional longitudinal helix-supports, some of which are provided with upward and downward passages, and some of which also serve to maintain an accumulator-space between the outer helix and the said casing substantially as set forth.

13. In a steam-generator, the combination of a water-tube wound in concentric approximately horizontal helices with a burner surrounded thereby and provided with a series of holes for discharging ignited gas and vapor against the lower part of said helices throughout their length, an exterior casing arranged to leave an accumulator-space within it around the said helices and having outlet below but not above and means for maintaining intervals between the helices and between the coils of each helix, as well as maintaining the said accumulator-space for the purposes set forth.

848,565. PLOW. JOSEPH MCMULLIN, Casey, Iowa. Filed Sept. 10, 1906. Serial No. 334,001.

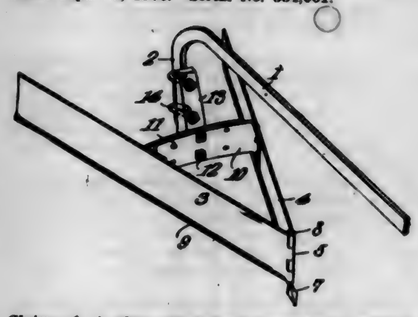

Claim.—1. A plow attachment comprising a shovel, a rod extending therefrom, blades hinged upon the rod and extending at angles to each other, and means for adjustably securing the blades at desired angles.

2. A plow attachment comprising a shovel, a rod extending therefrom, blades hinged upon the rod and extending at angles to each other, said blades having their lower edges outturned and sharpened, curved plates secured to the blades and normally overlapping, a shank, and means extending through the shank and plates for securing the shank to the plates and locking said plates in adjusted position.

848,566. BORING-CHUCK. LARS A. NILSSON, Katrineholm, Sweden. Filed Nov. 10, 1902. Serial No. 130,735.

Claim.—1. In a chuck, the combination of a body having an axial bore for the reception of a tool-shank or the like, and provided with a radial opening, a radially-movable tool-gripping roller seated in said opening, a sleeve embracing said body and rotatable thereon and provided with an internal cam constructed and arranged to bear against said tool-gripping roller and force it inward when rotated.

2. In a chuck, the combination of a body and a surrounding sleeve, said body and sleeve being relatively rotatable, said body having an axial tool-opening and a radial opening, a rolling gripping device radially movable in the radial opening of said body, said surrounding sleeve provided with a cam-surface constructed and arranged to bear upon said gripping device and force it inward when said sleeve and body are rotated relatively.

3. In a chuck, the combination with a hollow body portion having longitudinal slots therein, a sleeve angularly displaceable thereon, a series of radially-displaceable tool-gripping rollers situated in said slots of the body portion and adapted to bear internally against the tool and externally against the sleeve, and angularly-disposed cam-surfaces on said sleeve for the rollers to bear against, the movement of the rollers about their axes when power is transmitted through the chuck to the tool displacing the sleeve in a direction to cause the cam-surfaces to automatically exert on the rollers and the tool an inward pressure which increases with the power.

4. In a chuck, the combination with a hollow body portion having longitudinal slots therein, a sleeve angularly displaceable thereon, a series of radially-displaceable tool-gripping rollers situated in said slots of the body portion and adapted to bear internally against the tool and externally against the sleeve, eccentric friction-surfaces on said sleeve for the rollers to bear against, and means for normally keeping the sleeve in a position in which the crests of the eccentric friction-surfaces bear against the rollers and enable the latter, in tending to roll about their axes when power is transmitted through the chuck to the tool, to angularly displace the sleeve in a direction to cause the eccentric friction-surfaces to automatically exert on the rollers and the tool an inward pressure which increases with the power.

5. In a chuck, the combination with a hollow body portion having longitudinal slots at its inner end, a sleeve detachably connected with said portion and angularly displaceable thereon, a series of radially-displaceable tool-gripping rollers situated in said slots of the body portion and adapted to bear internally against the tool and externally against the sleeve, eccentric friction-surfaces on said sleeve for the rollers to bear against, and a spring for normally keeping the sleeve in a position in which the crests of the eccentric friction-surfaces bear against the rollers and enable the latter, in tending to roll about their axes when power is transmitted through the chuck to the tool, to angularly displace the sleeve in a direction to cause the eccentric friction-surfaces to automatically exert on the rollers and the tool an inward pressure which increases with the power.

848,567. RANGE-FINDER. HARRY C. PERCY, Natchitoches, La. Filed Apr. 13, 1906. Serial No. 311,620.

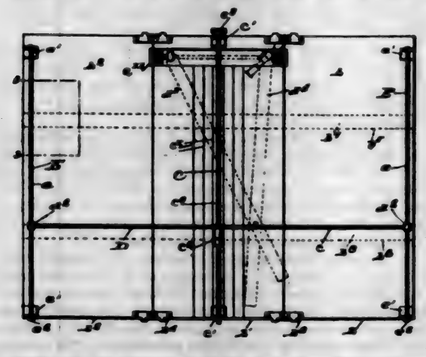

Claim.—1. In apparatus of the class described, a range-finder comprising a table, a triangular frame having a base-line fixed to the table at the center of one of the sides thereof, and side lines pivoted to the ends of the base-line and movable upon each other, a slide engaging each of said sides, and means for ascertaining the east or west departures and latitude of the apex of the triangular frame comprising a screw-threaded rod journaled in bearings upon the table and arranged perpendicular to the center of the base-line, a sleeve having a screw-threaded opening for engaging the rod, a bar having graduations for indicating east and west departures fixed by its center to the sleeve at right angles to the rod, rods on each side of the table and parallel with the first rod, the ends of said bar having sleeves secured thereto and sliding upon said rods and said rods having graduations to indicate the latitude, and means on said slide for contacting with said bar, said table being divided on lines parallel with the central rod and upon each side thereof, into three sections, and the sections being hinged to each other whereby to fold upon the central section.

2. In apparatus of the class described, a range-finder comprising a table, a triangular frame having a base-line fixed to the table at the center of one of the sides thereof, and side lines pivoted to the ends of the base-line and movable upon each other, a slide engaging each of said sides, and means for ascertaining the east or west departures and latitude of the apex of the triangular frame comprising a screw-threaded rod journaled in bearings upon the table and arranged perpendicular to the center of the base-line, a sleeve having a screw-threaded opening for engaging the rod, a bar having graduations for indicating east and west departures fixed by its center to the sleeve at right angles to the rod, rods on each side of the table and parallel with the first rod, the ends of said bar having sleeves secured thereto and sliding upon said rods and said rods having graduations to indicate the latitude, and means on said slide for contacting with said bar.

3. In range-finders, means for computing the sides of a triangle having a known base-line, comprising a triangular frame having a base-line adapted to be brought into coincidence with the known base-line, and movable sides adapted to be brought into relations with the frame base-line corresponding with the relations of the sides of the triangle to the known base-line, and means for computing the east or west departures and the latitude of the apex of the triangular, comprising a screw-threaded rod arranged perpendicular to the center of the frame base-line, a bar arranged at right angles to the rod and having at its center a sleeve having a screw-threaded opening for engaging the rod, said bar having graduations upon each side of its center indicating east and west departures, rods upon each side of the screw-threaded rod and parallel therewith, means on the bar for engaging said rods, said rods being graduated to indicate the latitude, and means for rotating the screw-threaded rod whereby to move the bar into and out of contact with the apex of the triangular frame.

4. In range-finders, means for computing the sides of a triangle having a known base-line, comprising a triangular frame having a base-line adapted to be brought into coincidence with the known base-line, and movable sides adapted to be brought into relations with the base-line corresponding to the relations of the sides of the triangle to be computed to the known base-line, and means for computing the east and west departures and the latitude of the apex of the triangle, comprising a bar arranged parallel to the base-line of the frame, said bar having graduations upon each side of the center thereof, indicating east and west departures, and having its center directly opposite the center of the frame base-line, means for moving said bar toward and from the base-line of the frame, means for retaining the bar in parallelism with the frame base-line during the movement theerof, and means at the apex of the frame for contacting with the bar.

5. In range-finders, means for computing the sides of a triangle having a known base-line, comprising a triangular frame having a base-line adapted to be brought into coincidence with the known base-line, and movable sides adapted to be brought into relations with the frame base-line, corresponding to the relations of the sides of the triangle to the known base-line, and means for computing the east or west departures of the apex of triangle, comprising a screw-threaded rod arranged perpendicular to the center of the frame base-line, a bar having a screw-threaded opening at its center for engaging the rod, and having graduations upon each side of its center indicat-

ing east and west departures, said bar being arranged at right angles to the rod, and means for rotating the rod whereby to move the bar into and out of contact with the apex of the triangular frame.

6. In range-finders, means for computing the sides of a triangle having a known base-line, comprising a triangular frame having a base-line adapted to be brought into coincidence with the known base-line, and movable sides adapted to be moved into positions corresponding to the positions of the sides of the triangle with respect to the known base-line, and means in connection with the frame for computing the east or west departures and the latitude of the apex of the triangle, comprising a bar arranged parallel to the base-line and having its center in the same vertical line with the center thereof, said bar having graduations upon each side of the center thereof indicating the east and west departures, a rod having graduations indicating the latitude, for guiding said bar and arranged perpendicular thereto, and means for moving the bar into contact with the apex of the frame.

7. In a range-finder, means for computing the sides of a triangle having a known base-line, comprising a triangular frame having a base-line adapted to be brought into coincidence with the known base-line, and movable sides adapted to be moved into positions corresponding with the positions of the sides of the triangle with respect to the known base-line, and means in connection with the frame for computing the east or west departures comprising a bar arranged parallel to the base-line and having its center in a line perpendicular to the center of the base-line, said bar having graduations upon each side of the center thereof indicating east and west departures.

848,568. TELEPHONE-DETECTOR. ARNOLD R. PIEHN, Alta Vista, Iowa. Filed Mar. 31, 1906. Serial No. 309,136.

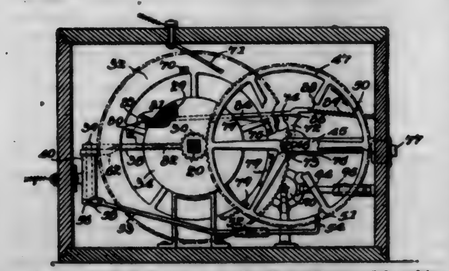

Claim.—1. In telephony, a circuit making and breaking means arranged in a talking-circuit and serving to signal the number of a station breaking in to the receivers of connected subscribers.

2. In a telephone system, a circuit-closer arranged in a normally disconnected talking-circuit, and means operating through said circuit-closer for signaling the number of the station at which the circuit is closed.

3. In a telephone system, means at each substation for making and breaking the circuit in accordance with a predetermined code, and mechanism for starting said means into operation when the talking-circuit is closed.

4. In telephony, a normally broken talking-circuit, a normally locked circuit-closing and signaling device arranged at each station for making and breaking the circuit in accordance with a predetermined code, and means operable by the subscriber for releasing said signaling device.

5. In telephony, a normally broken talking-circuit, a normally locked signaling device arranged at each station for making and breaking the circuit in accordance with a predetermined code, and a manually-operable releasing device which passes beyond the control of the person operating.

6. In telephony, a normally broken talking-circuit, a normally locked circuit-closing and signaling means arranged to make and break the circuit in accordance with a predetermined code, and a releasing device arranged at each station and which the subscriber is compelled to operate before his talking-circuit is closed.

7. In telephony, a normally broken talking-circuit, a circuit make and break mechanism arranged at each station for signaling in accordance with a predetermined code, means for locking said signaling device from movement, and a releasing member which the subscriber is compelled to operate before his talking-circuit can be closed.

8. In party-line telephone systems, in which the talking-circuits are normally disconnected, a normally locked circuit-closer for establishing the talking-circuit, and having means for making and breaking the circuit to send an audible signal, and means for releasing said circuit-closer and temporarily holding the same with the circuit closed while the telephone is in use.

9. In telephony, a revoluble make-and-break device, connected in the talking-circuit, means for moving the same, an escapement member for holding the make-and-break device from movement, and a push-button connected to said escapement device.

10. In telephony, a spring-revolved make-and-break device connected in the talking-circuit, and carrying a contact for closing said talking-circuit, an escapement member arranged to permit first a limited movement of the make-and-break device to complete the talking-circuit, and then a complete movement to send a signal, and a push-button connected to said escapement.

11. In telephony, a revoluble make-and-break device connected in the talking-circuit, a contact carried thereby, a stationary contact with which the make-and-break contact engages to complete the talking-circuit, a lug projecting from said make-and-break device, an anchor having pallets for engaging the lug, and means for operating said anchor.

12. An automatic signaling device, comprising a revoluble wheel having spaced contacts, a fixed contact with which said spaced contacts engage, to alternately make and break a signaling-circuit, a lug or tooth projecting from the wheel, an escapement member for permitting limited movement and then a further movement of the wheel, and means for operating said escapement member.

13. In telephone signaling mechanisms including magneto-generators, a wheel or disk having a projecting contact, a stationary contact with which said projecting contact engages, means for locking and releasing the wheel, a spring for rotating said wheel, a spring-winding means, and mechanism for automatically connecting and disconnecting the same from the operating-shaft of the magneto-generator.

14. In signaling mechanism, a revoluble and endwise-movable shaft, a spring placed under stress during the turning of the shaft, and a signaling means operable by unwinding of the spring, and controllable by the endwise movement of the shaft.

15. In electric signaling, a revoluble and endwise-movable shaft, a spring placed under stress during the turning of the shaft, a signaling device arranged to make and break a circuit in accordance with a predetermined code, said signaling device being operable during the unwinding movement of the spring, and a signal-locking means releasable by the endwise movement of the shaft.

16. In electric signaling, a revoluble and endwise-movable shaft, a signaling means arranged to make and break a circuit during the turning of the shaft and serving during unwinding to transmit movement to the signaling device, and an escapement mechanism controlling the movement of the signaling device, and releasable by the endwise movement of the shaft.

17. In electric signaling, a revoluble and endwise-movable shaft, a clutch-disk thereon, a hollow shaft, a clutch-disk adjustable longitudinally of the hollow shaft, said clutch-disks being engaged on endwise movement of the first shaft, a ratchet-wheel, and a pinion secured to the hollow shaft, a spring having its inner end secured to said hollow shaft, a gear-wheel mounted loosely on the shaft and having a pawl intermeshing with the ratchet-wheel, circuit-closing contacts carried by said gear-wheel, a counter-shaft, a gear carried thereby and intermeshing with the pinion, a pair of projecting pins carried by the gear of the counter-shaft and arranged, respectively, at different radial distances from the center of said counter-shaft, means for shifting the loose clutching-disk, and mechanism controlled by the pinions for operating the clutch-shifting means.

18. In mechanism of the class described, the combination with a gear-train, of a revoluble member, having a pair of pins arranged, respectively, at different distances from the center of rotation of said member, a clutch through which movement is imparted to the gear-train, a clutch-shifting lever, a pivotally-mounted operating-lever having a pair of fingers arranged one on each side of the clutch-shifting lever, a bar connected to the operating-lever and having a projecting finger arranged to be alternately engaged by the pins, and a spring engaging the operating-lever and tending to complete the movement of the same in either direction after the commencement of such movement through the medium of the pins.

19. In mechanism of the class described, the combination with a magneto-generator, having a revoluble and endwise-movable shaft, of a spring placed under stress during the turning of the shaft, a revoluble contact-carrier operable during the unwinding of the spring, a locking device for said contact-carrier, and means operable by endwise movement of the shaft for releasing said locking device.

848,569. STOPPER FOR BOTTLES. JOHN T. SANDMAN, Philadelphia, Pa., assignor of one-half to Frederick Woerner, Philadelphia, Pa. Filed May 23, 1906. Serial No. 318,353.

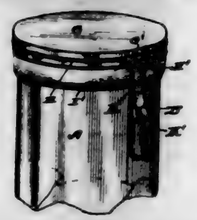

Claim.—The combination with a receptacle having a laterally-projecting nose having a concaved under side, of a band surrounding the upper end of said receptacle and having an upwardly-projecting ear, a cover adapted to fit over said receptacle, a band surrounding said cover pivotally connected to the upwardly-projecting ear and a keeper formed of a wire bail having one end pivotally mounted on said band surrounding the cover, and provided with a cross-bar formed by a portion of one side being looped around the other side, and upon itself said bar being adapted to fit in the concaved under side of the nose for the purpose described.

848,570. ZINC ELECTRODE. CHARLES B. SCHOENMEHL, Waterbury, Conn. Filed Nov. 16, 1905. Serial No. 287,641.

Claim.—1. An electrode, comprising a zinc having a reduced extension, a suspending-rod embedded in but protruding from said extension, and a hardened shoulder on said rod adjoining the end of the extension to engage the under side of the cover.

2. An electrode, comprising a zinc having a reduced extension, a suspending-rod extended from said extension, and a hardened shoulder upon said rod and embedded in the end of said extension.

3. A battery-electrode, comprising a cylindrical zinc having one or more poles formed integral therewith extended beyond the main body of the zinc, suspending-rods partially inclosed in said poles and zinc in a way to be protected by the same, and hardened shoulders upon the rods to engage the under side of the cover.

4. An electrode, comprising a zinc, a suspending-rod embedded in but protruding from said zinc, a shoulder on said rod to engage a cover, and an extension of said zinc to surround the sides of said shoulder and to also engage said cover.

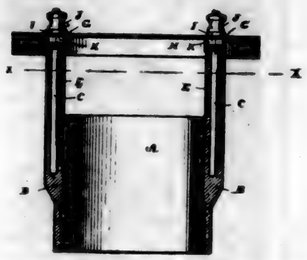

5. A battery-electrode comprising a zinc containing a suspending-rod embedded therein and having a hardened shoulder adjacent to its upper end, a zinc covering for the lower portion of said rod and shoulder formed integral with said main zinc, said covering being provided with a shoulder at its upper end surrounding the shoulder of the rod and adapted to form a liquid-tight joint with the battery-cover to protect the uncovered portion of said rod from the action of the battery solution.

6. An electrode, comprising a zinc, a suspending-rod embedded in but protruding from said zinc, an annular shoulder upon the rod adjoining the face of the zinc to form a hard engaging surface.

7. An electrode, comprising a zinc, a suspending-rod embedded in but protruding from said zinc, and a shoulder on said rod adjoining the face of the zinc to form a hard engaging surface.

8. An electrode, comprising a zinc having a reduced extension, a suspending-rod embedded in but protruding from said extension and an integral annular shoulder upon the rod adjoining the face of the zinc to form a hard engaging surface for the cover.

848,571. SWEEPER. JOSIAH B. SCOVELL, Duluth, Minn. Filed Feb. 8, 1904. Serial No. 192,651.

Claim.—1. In an apparatus of the class described, the combination of a collapsible frame, said frame comprising central and end standards, arms connected to said central standards, arms connected to said end standards and connected to said first-mentioned arms, fastening means for holding said frame in an extended position, and wheels secured to and supporting said frame.

2. In a mechanism of the class described, the combination of a collapsible frame, said frame comprising parallel central and end standards, arms connecting said central and end standards, longitudinally-extending bars supported by said central and end standards and being capable of locking the frame in an adjusted position, and wheels secured to and supporting said frame.

3. In an apparatus of the class described, a collapsible frame comprising central and end standards, and arms connected to said central standards, arms connected to said end standards and connected to said first-mentioned arms, fastening means for holding said frame in an extended position, wheels secured to and to support said frame, a rotary brush carried by the frame, and means connected with the wheels for rotating the rotary member.

4. In a mechanism of the class described, a collapsible frame comprising parallel central and end standards, arms connecting said central and end standards, longitudinally-extending bars supported by said central and end standards and being capable of locking the frame in an extended position, wheels secured to and to support said frame, a rotary brush journaled in the central standards,

and means connecting the wheels with and to operate the rotary member.

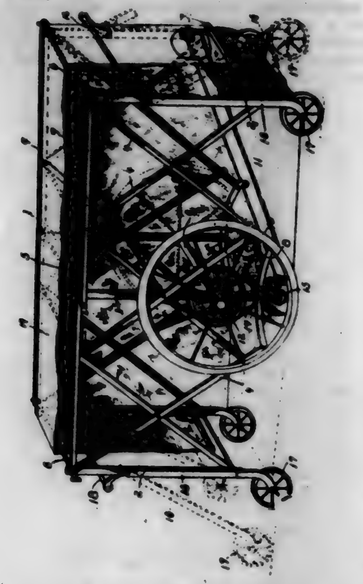

848,572. BALANCING LOCOMOTIVE-ENGINE. HENRY F. SHAW, Boston, Mass. Filed Oct. 23, 1906. Serial No. 340,225.

Claim.—1. In a locomotive-engine, a counter crank-shaft having cranks operated by the main rods of the steam-cylinders, parallel rods centrally connected to cranks upon said counter crank-shaft and connected at their ends to the crank-pins of the driving-wheels, substantially as and for the purpose set forth.

2. In a locomotive-engine, a counter crank-shaft having four cranks arranged in pairs, one pair at each side of the center of the engine, the cranks of each pair being set in opposition to each other one of each pair being connected to the center of a parallel rod and also to the main rod of a high-pressure steam-cylinder, while the other crank of the pair is connected to the main rod of the low-pressure steam-cylinder.

3. In a locomotive-engine a counter crank-shaft and means for connecting said shaft to the frame of the engine, the power-transmitting mechanism and the driving-wheels: sustaining-bars constructed to connect the boxes of the axles of the driving-wheel and the said counter crank-shaft and to sustain them in line substantially as and for the purpose set forth.

848,573. SUSPENSION DEVICE FOR ELECTRIC LAMPS. CAMPBELL SMART, Swansea, England. Filed Jan. 12, 1907. Serial No. 352,012.

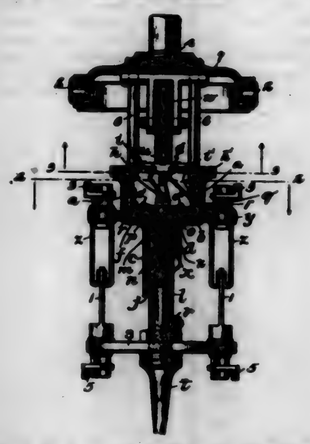

Claim.—1. In a suspension device for electric lamps, the combination of a fixed casting provided with electric contacts, and with a downwardly-extending central tube, said tube being slotted on one side and having its lower end beveled off, with a movable part provided with contacts, said movable part being provided with an upwardly-projecting cylindrical portion provided with an extension adapted to engage the lower end of said tube and to ride in said slot, the upper part of said cylindrical portion being provided with a neck and a flattened head, a movable ring provided with projecting arms, said ring being perforated to permit the passage of said flattened head, the bottom of said casting being provided with inclined teeth, downwardly-projecting inclined arms supported by said casting with which said first-named arms are adapted to engage as the movable part is raised, and a rope attached to said movable part for raising and lowering the same, substantially as described.

2. In a suspension device for electric lamps, the combination of a stationary cylindrical hollow casting terminating at its bottom in an extended tube, said tube being provided with a slot and having its lower end beveled off, electrical contacts carried by said casting, said casting being provided with inclined teeth on its bottom, a movable part provided with a hook and with electrical contacts, said movable part having an upwardly-projecting cylindrical portion provided with an extension, said extension being adapted to contact with the lower end of said inclined tube and to move in the slot therein, the upper end of said movable part being provided with a neck and an enlarged flattened head, a ring movably supported on the bottom of said casting and provided with projecting arms and with a perforation of substantially the same shape as said flattened head, a bracket secured to said casting, downwardly-projecting arms having inclined faces carried by said bracket, and a rope attached to said movable part, substantially as described.

3. In a suspension device for electric lamps, the combination of a fixed portion, a pulley supported thereon, a casting also supported thereon, said casting being hollow and provided with a bottom terminating in a downwardly-extending tube, said tube having its lower end beveled off and being provided with a slot, the bottom of said casting being provided with upwardly-extending teeth, a perforated ring in said casting provided with projecting arms, a movable part, the upper part of said movable part being provided with a neck, and a flattened head adapted to pass through the perforation in said ring, a perforated bracket secured to said casting, arms projecting downwardly from said bracket and having inclined faces, and a rope attached to said movable part and passing through the perforation in said bracket and over said pulley, substantially as described.

4. In a suspension device for electric lamps, the combination of a stationary part, a bracket secured to said stationary part, a pulley mounted in said bracket, a casting secured to said stationary part, said casting being cylindrical in form and hollow and provided with a bottom, a tube extending downward centrally from the bottom of said casting, the upper end of said tube being coned out, and said tube being provided with a slot and having its lower end beveled, electrical contacts carried by said casting, a movable part consisting of a plate provided with electrical contacts, a hook and an upwardly-extending cylindrical part terminating in a neck, and a flattened head, said cylindrical part having an extension adapted to engage the lower end of said tube and move in said slot, the bottom of said casting being provided with inclined teeth, a movable ring having its lower portion coned and provided with projecting arms and a perforation through which said flattened head can pass, a perforated bracket attached to said casting, arms extending downwardly from said bracket and having inclined faces, and a rope attached to said movable part and passing through the perforation in said bracket and over said pulley, substantially as described.

848,574. STAIR-ROD. PATRICK J. A. SMITH, Washington, D. C., assignor of one-half to Bernard R. Weitsman, Brooklyn, N. Y. Filed Aug. 24, 1906. Serial No. 331,919.

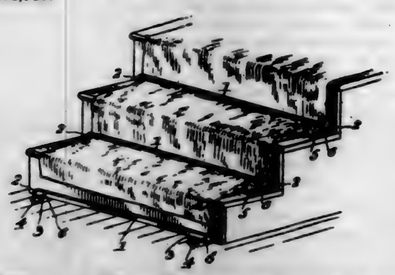

Claim.—1. A stair-rod for carpets, constructed of a rod having its opposite ends returned to form edge pockets for the carpet, and provided with suitable fastening devices.

2. A stair-rod for carpets, constructed of a rod having its opposite ends returned to form edge pockets for the carpet, and terminating in fastening devices for securing the rod in place.

3. A stair-rod for carpets, constructed of a rod having its opposite ends returned to form edge pockets for the carpet, and bent at right angles to the vertical plane of said edge pockets to constitute fastening devices for securing the rod in place.

4. A stair-rod for carpets, constructed of a rod having its opposite ends returned to form edge pockets for the carpet, and bent at right angles to the vertical plane of the edge pockets and formed as eyes to receive screws or other fastening devices.

5. A stair-rod for carpets, constructed of a rod having its ends returned to form edge pockets for the carpet, and bent at right angles to the vertical plane of the edge pockets and formed as eyes upon one side of the rod, and extended across the returned portion of the rod and terminating in driving-points on the opposite side of the rod.

6. A stair-rod for carpets, constructed of a rod having its ends returned to form edge pockets for the carpet, and bent at right angles to the vertical plane of the edge pockets and formed as eyes upon one side of the rod, and extended across and above the returned portion of the rod and terminating in driving-points on the opposite side of the rod.

7. A stair-rod for carpets, constructed of a rod having its opposite ends returned to form edge pockets for the carpet and terminating in fastening devices, the said rod being divided between its ends and slidably connected, whereby the rod may be adjusted to fit carpets of different widths.

848,575. COLLAR. ALBERT B. STAFFORD, Chicago, Ill. Filed Apr. 16, 1906. Serial No. 312,004.

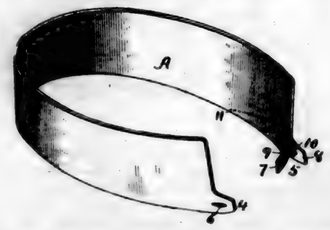

Claim.—1. A collar having two projecting buttoning-flaps integral with the body thereof, one of said flaps being split to receive the other flap between its divided parts and the three thicknesses of the flaps being correspondingly provided with buttonholes substantially as set forth.

2. A collar provided at one end with a double buttoning-flap integral with the body of said collar and adapted to receive the buttoning-flap on the other end of the collar between the two parts of said double flap substantially as set forth.

3. A collar provided at one end with a single projecting buttoning-flap only and on the other with a projecting double flap adapted to receive the former between its parts, these being the only parts of the article used in fastening the same substantially as set forth.

848,576. BOTTLE OPENER AND STOPPER. AUGUSTUS W. STEPHENS, Waltham, Mass. Filed Jan. 15, 1907. Serial No. 352,395.

Claim.—A combined stopper and disk remover, comprising a tapered body shaped to fit the mouth of a milk-bottle and having a rigid wide flat bottom surface and having a hooked prong adapted to engage a disk stopper, the bottom of said body being of slightly less diameter than the mouth of the bottle and said body being of a height to enable it to be operated as the long arm of a lever to remove a disk stopper while one edge of the bottom portion rests upon such disk near the margin thereof.

848,577. PORTABLE FEEDER FOR THRESHING-MACHINES. DAVID STILL, Milton, Oreg. Filed Mar. 20, 1906. Serial No. 307,009.

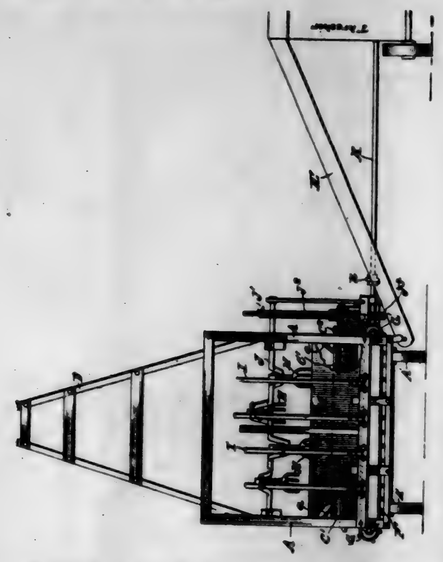

Claim.—1. A portable feeder for threshing-machines, comprising a wagon-like body having a slatted and endless longitudinal apron in its bottom, a transverse apron at the end thereof at a lower level, an external power-transmission shaft, driving-gears for connecting the same to the two aprons and means for interrupting the transmission of power to the longitudinal apron without affecting the movement of the other.

2. A portable feeder for threshing-machines, comprising a wagon-like body having a slatted and endless longitudinal apron in its bottom, a transverse apron at the end thereof at a lower level, a series of pickers arranged at the discharge end of the longitudinal apron, an external power-transmission shaft, and means for interrupting the transmission of power to the longitudinal apron without affecting the movement of the transverse apron and the pickers.

3. A portable feeder for threshing-machines, comprising a wagon-like body having a traveling longitudinal apron in its bottom, a transverse apron at the end thereof at a lower level, an upright inclosure for one end and one side of said transverse apron, an external power-transmission shaft and gears connecting the same to the aprons.

4. A portable feeder for threshing-machines, comprising a wagon-like body having a traveling longitudinal apron in its bottom, a transverse apron at the end thereof at a lower level, a transverse crank-shaft, picker-bars hung thereon at one end, upright tilting bars pivoted at their lower ends and connected at their upper ends to the picker-bars, an external power-transmission shaft and gears for connecting the same to the aprons and picker-shaft.

5. A portable feeder for threshing-machines, comprising a wagon-like body having a traveling longitudinal apron in its bottom, a transverse apron at the end thereof and at a lower level, a transverse crank-shaft with pickers, an external power-transmission shaft, a pair of bevel-gears connecting the same to the shaft of the transverse apron, a pair of gears with sprocket wheels and chains connecting it with the picker-shaft and a separable friction-gear with operating-lever and sprocket wheels and chain for connecting it to the main longitudinal apron.

6. A thresher-feeder comprising a set of supporting-wheels, a longitudinally-arranged endless apron, a transversely-arranged endless apron at the rear end and picking devices.

7. A thresher-feeder comprising a set of supporting-wheels, a longitudinally-arranged endless apron, a transversely-arranged endless apron at the rear end, picking devices, means for driving said parts, and means for stopping the longitudinally-arranged apron while the other parts are operating.

848,578. PROTECTOR FOR PLANER-WAYS. WILLIAM A. THELIN, Bridgeport, Conn. Filed Mar. 29, 1906. Serial No. 308,717.

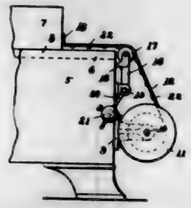

Claim.—1. In a protector for planer-ways, the combination with a bed and table, of a strip connected intermediate the ends of the table and bed in line with the ways, a spring-actuated spool to which said strip is connected and adapted to unreel and allow the strip to play out with a forward movement of the table and to wind up when the table travels in the opposite direction, and a yieldable roll situated upon the end of bed and beneath the strip to engage and protect the strip from the edge of said bed.

2. In a protector for planer-ways, the combination with a bed and table, of a flexible strip connected to the end of the table in line with the ways of the bed, a roll-bracket hinged to the end of bed, a spring-actuated spool mounted on the bed and connected with the opposite end of the strip adapted to automatically wind the strip and to allow it to run out over the roll against the action of the spring.

3. In a protector for planer-ways, the combination with a planer bed and table, of a spool rotatably mounted upon the end of the planer-bed, a flexible strip one end of which is attached to the end of the table and the other to the spool, and a torsional spring to operate the spool to normally retain the strip wound thereon, and a yieldable roll normally located in line with the travel of the table and over which the strip is drawn.

4. In a protector for planer-ways, the combination with a planer bed and table, of a spring-actuated spool attached to the end of the planer-bed, a flexible strip connected intermediate of the said spool and table, an arm pivotally connected to the end of the bed bearing a roll, and means to yieldably hold it in line with the travel of the strip over the edge of the bed.

5. In a protector for planer-ways, the combination with a planer bed and table, of a spring-actuated spool attached to the end of the bed, a strip connected intermediate the table and spool, an arm pivoted to the end of the bed bearing a roll in line with the ways of the table and means connected with the said arm to normally hold the roll in such position and adapted to be shoved back under the way of the table.

6. In a protector for planer-ways, the combination of a spring-actuated spool attached to the end of a planer-bed, a flexible strip connected intermediate of said spool and the end of the planer-table, a weighted and hinged bracket normally bearing a roll in line with said ways and over which said strip is drawn, and transverse cleats attached to the under side of said flexible strip.

7. In a protector for planer-ways, the combination of a spring-actuated spool rotatably attached to the end of a planer-bed, a flexible strip one end of which is connected to the planer-table and the other end to the spool and

adapted to be wound thereon and run over the ways of the bed of the planer, and a roll rotatably and pivotally mounted to the end of the planer-bed in line with the table and over which the flexible strip is designed to travel.

848,579. INHALER. GUSTAV A. THIEDE, Baltimore, Md. Filed Feb. 13, 1906. Serial No. 300,872.

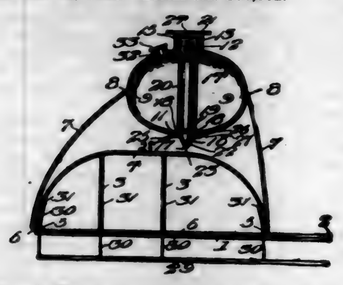

Claim.—1. The combination with an inhaler including a main frame, of a holder comprising a ring, rods depending from said ring and secured to the main frame, of a receptacle formed with an annular groove to receive the ring, a tube arranged within the receptacle and in communication therewith, and a manually-operable valve for controlling the outlet from the tube.

2. An inhaler comprising a main frame designed to support an absorbent material, and an auxiliary frame conforming in contour to the shape of the main frame and movably connected to the main frame, said auxiliary frame being arranged to be moved to adjust the main frame with relation to the face of the patient.

3. The combination with an inhaler for use with anesthetics and designed in normal use to contact with the face of the patient, of means for adjustably spacing said inhaler from the face of the patient to increase or decrease the quantity of air admitted to the anesthetic vapor.

4. An inhaler comprising a main frame designed to support absorbent material, an auxiliary frame to be projected from said main frame to provide a free air-space beneath the main frame, and means for securing the auxiliary frame in projected relation to the main frame.

5. An inhaler comprising a frame designed to support absorbent material, and an auxiliary frame to be projected from said frame to provide a free air-space beneath the main frame, said auxiliary frame being slidably and frictionally connected to the main frame.

848,580. PUZZLE. JOHN F. TOOMEY, Chicago, Ill. Filed June 16, 1906. Serial No. 322,093.

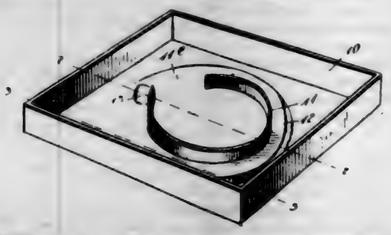

Claim.—1. A puzzle comprising a box, a curved wall therein provided with an opening between its ends, a track raised from the bottom of the box and extending around the wall and across said opening and having a depression adjacent said opening, and a ball adapted to roll around on the track.

2. A puzzle comprising a box, a segmental wall therein, a raised track extending around the wall and being inclined on one side away from the wall, and a ball adapted to roll around on the track.

3. A puzzle comprising a box, a segmental wall therein, a track extending around the wall and inclined toward the same on one side and away from the same on the other, and a ball adapted to roll around on the track.

4. A puzzle comprising a box, a segmental wall therein, a track extending around the wall and inclined away from the same on one side, an inclined runway leading from said side of the box to a point near the beginning of the track, and a ball adapted to roll on the track and runway.

848,581. CONTROLLER FOR ROLLING-MILL REPEATERS. FRANK P. TOWNSEND, Elyria, Ohio, assignor to National Tube Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Nov. 12, 1906. Serial No. 342,929.

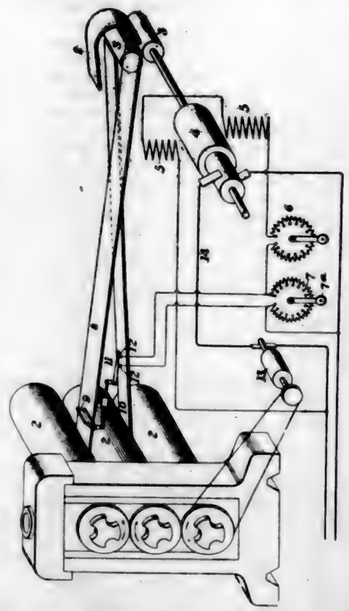

Claim.—1. In a rolling-mill, a repeater having rolls, a motor for driving the repeater-rolls, and a device arranged to be controlled by the piece being rolled, and having connections arranged to vary the speed of the motor; substantially as described.

2. In a rolling-mill, a repeater having rolls, an electric motor for driving the repeater-rolls, a rheostat in the motor-circuit for varying the speed of the motor, and a switch device for the rheostat arranged to be actuated by the piece being rolled; substantially as described.

3. In a rolling-mill, a repeater having rolls, a shunt electric motor for driving the rolls of the repeater, a rheostat in the field-circuit of the motor, means for normally short-circuiting the rheostat, and a switch operated by the piece being rolled for removing the short circuit; substantially as described.

4. In a rolling-mill, a repeater having rolls, an electric motor for driving the repeater-rolls, a speed-controlling rheostat in the circuit of the motor, means for normally short-circuiting the rheostat, a device arranged to be moved by the piece being rolled to temporarily remove the short-circuit, and a second speed-controlling device

also in the motor-circuit for modifying the speed changes effected by the rheostat; substantially as described.

5. In a rolling-mill, a repeater having rolls, an electric motor for driving the rolls of the repeater, adjustable speed-controlling rheostats in the circuit of the motor, and a switch device having an operating member in the path of movement of the piece being rolled, the switch device being arranged to control the operative circuit connections of one of the rheostats, substantially as described.

6. In a rolling-mill, a repeater having rolls, an electric motor for driving the rolls of the repeater, a speed-controlling rheostat in the circuit of the motor, contact devices normally short-circuiting the rheostat, and a trigger device located in the path of the piece being rolled, and having connections to operate the contact devices; substantially as described.

7. In a rolling-mill, the combination of reducing-rolls, a repeater having feed-rolls, an electric motor connected to and arranged to drive the feed-rolls, a generator connected in the circuit of the motor to act as a booster, and connections for driving the generator by the reducing-roll-driving engine; substantially as described.

8. In a rolling-mill, the combination of reducing-rolls, a repeater having feed-rolls, an electric motor connected to and arranged to drive the feed-rolls, a generator connected in the circuit of the motor to act as a booster, and a positive driving connection between the generator and the reducing-rolls; substantially as described.

9. In a rolling-mill, a repeater guide and repeater feed rolls operating in conjunction with said guide, a power-motor constructed and arranged to drive the feed-rolls, a controlling member adjacent to the repeater-guide and normally held in one position, and arranged to be moved and held out of normal position by a piece which passes over the guide, the said controlling member constructed and arranged to operate the controlling means of a speed-controlling device, said controlling device being connected to the motor and arranged to vary the speed of the motor; substantially as described.

848,582. GOODS-SEPARATING DEVICE. AUSTIN C. WALLACE, Medford, Mass. Filed Dec. 21, 1905. Serial No. 292,706.

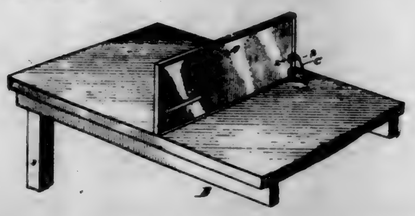

Claim.—1. A device of the character specified comprising a dividing board or plate, braces hinged thereto at one end of said board or plate on opposite sides thereof, said braces being adapted to turn out to extend laterally from said board or plate or turn back to extend on lines parallel therewith, and means for holding said braces in position of extension.

2. A device of the character specified comprising a dividing board or plate, braces hinged thereto at one end of said board or plate on opposite sides thereof and adapted to turn out from said plate for holding the plate in an upright position and which braces also are adapted to fold either backward in extension from said plate in planes parallel therewith or forward parallelly adjacent to said plate, and means for holding said braces in either of their positions of outward or parallel extension.

3. A device of the character specified comprising a dividing board or plate, a wire brace hinged thereto, and a yielding member consisting of a free end of wire forming an integral part of said brace and adapted to bear with tension against a fixture or support for holding said brace in place.

4. A device of the character specified comprising a dividing-plate of thin, sheet metal, means for reinforcing the edges of said plate, one or more folding braces hinged to said plate for holding the same in an upright position, which braces, when folded, are adapted to assume a position in a plane parallel with said plate and which brace or braces also are made each of a single piece of bent wire, and socket-forming means attached to said plate for receiving the end portions of said wire brace and through one of which sockets one end of said wire brace is extended to engage with a surface against which it bears with tension for holding said brace in a proper operative position, substantially as described.

5. A device of the character specified comprising a dividing-plate, one or more folding braces hinged to said plate for maintaining the same in a proper upright position, which brace or braces when folded are adapted to assume a position in a plane substantially parallel with said plate, and which brace or braces also are made each of a single piece of bent wire, socket-forming members attached to said plate for receiving the turned ends of said wire brace and through the socket of one of which members one end of said wire brace is adapted to extend and bear with tension against the other of said socket-forming members and, when the brace is in an operative position, be contained in a recess formed therein, substantially as described.

6. A device of the character specified comprising a dividing board or plate, a brace hinged thereto having a yielding member operable by said brace and adapted to bear with tension against a fixture or support, and said fixture, the same having sockets with rounding surfaces between the same within and against which said yielding member is adapted to have its bearing as the brace is turned.

848,583. FIRE-SHIELD. DAVID S. WATSON, Canastota, N. Y. Filed Feb. 5, 1906. Serial No. 299,640.

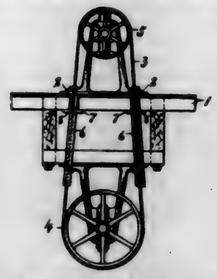

Claim.—A fire-shield for belt or similar openings in floors and partitions of buildings, said fire-shield being divided longitudinally through one side to permit it to be placed around the belt or other device which may pass through said opening, and means for securing said shield to the floor or partition in line with the opening so as to project some distance into the room.

848,584. CLASP. JEREMIAH W. ALBIN and DAVID C. RICKETTS, Babylon, N. Y. Filed Feb. 21, 1906. Serial No. 302,194.

Claim.—1. A clasp presenting a pair of leaves attached together near one extremity and tending to separate at the opposite extremity, one of said leaves having an opening in its free extremity, the other having a spur which may project through said opening, a sliding sleeve on one of said leaves and having an upwardly-turned lip at one edge thereof, facilitating the movement of said sleeve, said sleeve having a transverse tongue formed on the inner side thereof, the adjacent face of one of said leaves having a plurality of transverse grooves adapted to be engaged by said tongue.

2. In a clasp, in combination, a pair of superposed leaves, a member pivotally attached therebetween and adapted to be attached to a garment, said leaves having free extremities tending to separate, one of said extremities having an opening therethrough, the other having a spur adapted to project through said opening, one of said leaves having a plurality of transverse grooves in the outer face thereof, and a sliding sleeve on said leaves having an inwardly-disposed tongue adapted to engage said grooves, and a lip formed on said sleeve for advancing the same.

848,585. WIRE-FENCE STAY. WILLIAM R. ALLYN, Poneto, Ind. Filed Mar. 15, 1906. Serial No. 306,209.

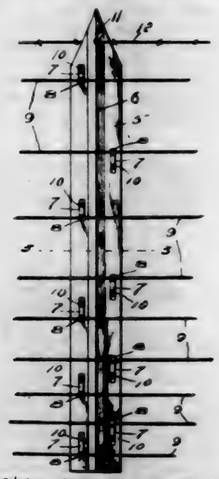

Claim.—1. A device of the class described comprising a strip of material having a rib extending longitudinally thereof, and tongues struck up from said strip upon each side of said rib and extending in opposite directions with respect to each other.

2. A device of the class described comprising a strip of material having a rib formed longitudinally thereof, and tongues struck up from said strip upon opposite sides of said rib and extending in a vertical plane and in opposite directions with respect to each other.

848,586. OIL-BURNER. ATWELL J. BLACKFORD, Cleveland, Ohio, assignor to American Stove Company, St. Louis, Mo., a Corporation. Filed Aug. 23, 1897. Serial No. 649,211.

Claim.—1. In an oil-burner, the combination with an oil-holding trough, the lower part of the trough being adapted to contain a body or column of oil when in normal operation, and the upper part forming a vaporizing-chamber to vaporize the oil from its free surface and means located in the trough for igniting or starting the vaporizing of the oil, of perforated combustion-tubes forming an uninterrupted continuation of the vapor-chamber and adapted to cause the vapors arising from the surface of the oil to burn with a blue flame by admixture with the air.

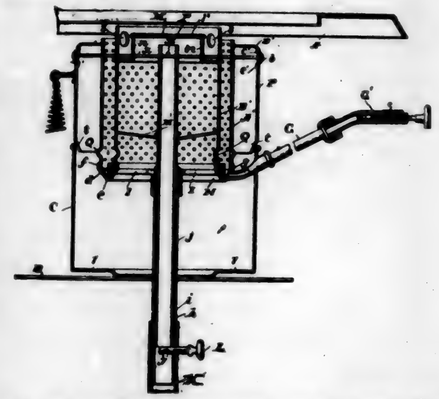

2. In a burner, the combination with a trough and perforated tubes situated thereabove and forming a combustion-chamber, said trough having at its bottom a liquid-containing portion, and an upper vapor-receiving space, and a vertically-disposed lighting member seated in the liquid-containing portion and extending upward between the walls of the vapor-receiving portion to form a vapor-space at the side of the lighting member.

3. In an oil-burner, the combination with an oil-holding trough having a contracted lower part and an enlarged upper part, the lower part of the trough being adapted to contain a body or column of oil when in normal operation and the upper part forming a vaporization-chamber to vaporize the oil from its free surface and means located in the trough for igniting or starting the vaporizing of the oil, of perforated combustion-tubes forming an uninterrupted continuation of the vapor-chamber and adapted to cause the vapors arising from the surface of the oil to burn with a blue flame by admixture with the air.

4. In a burner the combination with a trough and perforated tubes situated thereabove and forming a combustion-chamber, said trough having at its botom a liquid-containing portion, and an enlarged upper vapor-receiving space, and a vertically-disposed lighting member seated in the liquid-containing portion and extending upward between the walls of the enlarged vapor-receiving portion to form a vapor-space at the side of the lighting member.

5. In a burner the combination of a trough and perforated tubes situated thereabove and forming a combustion-chamber, a lighting member vertically disposed between the upwardly-disposed walls of the trough, said trough having a contracted lower portion in which the lighting member is seated, and a vapor-space above the contracted portion at the side of the vertically-disposed lighting member.

6. In a burner, the combination of a trough and perforated tubes situated thereabove and forming a combustion-chamber, said trough being contracted at its lower portion, and a vertically-disposed lighting member seated in said contracted portion and extending upward between the upwardly-disposed walls and constituting a vapor-space in the upper portion of the trough at the side of the said lighting member.

7. In a burner the combination of a trough and perforated tubes situated thereabove and forming a combustion-chamber, said trough being contracted at its lower portion and being provided with a wick seated in the contracted portion of the trough and extending upwardly between and distant from its upwardly-disposed walls.

8. An oil-burner comprising a trough having a contracted oil-groove, and an oil-supply pipe having an enlarged supply end communicating directly with the contracted oil-groove.

9. An oil-burner comprising a vaporising-section, a depending guideway, an independently vertically movable combustion-section having a depending lifting extension engaging said guideway, and a vertically-movable lifting member carried by said guideway and adapted to engage the lifting extension.

10. An oil-burner, comprising a vaporising-section, a depending guideway, an independently vertically movable combustion-section having a depending lifting extension engaging the guideway, a lifting member carried by the guideway and adapted to engage the lifting extension, the lifting member and guideway having laterally-engaging members for sustaining the lifting member and thereby the combustion-section in an elevated position.

11. An oil-burner comprising a vaporising-trough, a vertically-movable combustion-section to permit access to the trough for lighting purposes, a cup-shaped shell inclosing the trough and extending below it and provided with a restricted air-opening, a drum inclosing the combustion-section and movable therewith, the upper end of the cup-shaped shell extending considerably above the said trough for the purpose of protecting the initial flame when lighting.

12. A combustion-section comprising concentric perforated combustion-tubes, a hat-shaped diaphragm situated within the inner tube with its lower end engaging the tube below its upper end, the extension of the diaphragm having a top provided with an air-passage to feed oxygen to the gases and flame above.

13. A combustion-section comprising concentric perforated combustion-tubes, a hat-shaped diaphragm situated within the inner tube with its lower end engaging the inner tube below its upper end, the top of the extension having air-openings and the upper end of the inner tube constructed to permit an inward passage of the vapors over said extension-openings for the purpose described.

14. A combustion-section comprising concentric perforated combustion-tubes, an air-deflector or diaphragm situated within the inner tube and provided with an upward extension, the lower end engaging the inner tube below its upper end, the top of the extension of the deflector having air-passages, and the inner tube having air-passages about opposite the top of the diaphragm to deliver the gases over the said openings in the top of the diaphragm.

15. A combustion-section comprising concentric perforated combustion-tubes, a diaphragm situated within the upper portion of the inner tube below its upper end and having air-passages, the inner tube constructed to deliver some of the gases over said passages, and an inclosing drum for the outer combustion-tube open to the atmosphere at its lower end and having an inwardly-extending flange at its upper end to deflect the gases inward for the purpose described.

16. A combustion-section comprising concentric combustion-tubes, a diaphragm having an upwardly-extending central portion and situated within the inner tube with its lower end engaging the tube below its upper end to form a "well," the central portion of the diaphragm extending upward to near the top of the inner tube and provided with a plurality of small openings, whereby the escaping gases are drawn inward and supplied with oxygen.

17. A combustion-section comprising concentric combustion-tubes, a diaphragm situated within, closing the upper end of and having communication with the inner tube, and provided with an air escape or escapes, and an air-pipe delivering air against the under side of the diaphragm.

18. A combustion-section comprising concentric combustion-tubes, a hat-shaped diaphragm situated within and spanning the upper end of the inner tube and having an air-passage, a pipe having its upper end within the inner tube and adapted to deliver air within the crown of the said diaphragm, and its opposite end receiving fresh air from without the combustion-section.

19. A combustion-section comprising concentric combustion-tubes, a hat-shaped diaphragm situated within the inner tube below its upper end and closing the same, the crown of the diaphragm having an air-passage, a centrally-disposed air-pipe having its upper end extending within the crown of the said diaphragm and its lower end receiving air from the lower portion of the burner.

20. A combustion-section comprising concentric perforated combustion-tubes, a hat-shaped diaphragm situated within the upper end of the inner tube and closing the same, the crown of the diaphragm having an air passage or passages, an air-pipe situated within the inner combustion-tube and delivering air within the crown of the diaphragm, the inner combustion-tube having openings at a point adjacent the top of the crown of the diaphragm, whereby air is delivered to the openings in the crown of the diaphragm and passes over the crown through the openings of the inner tube.

21. The combination of the combustion-tubes and inclosing drum provided with registering horizontal openings, of transverse rods passing through said openings in the tubes and drum and projecting beyond the latter, and sockets inclosing the projecting ends of the rod, said sockets having arms attaching them to the drum.

22. A burner comprising a V-shaped trough having its apex forming a contracted oil-groove, and a supply-pipe having its supply end enlarged horizontally and communicating directly with the apex thereof, substantially as described.

23. In a burner, the combination of a trough and perforated tubes situated thereabove and forming a combustion-chamber, said trough being V-shaped in cross-section, a contracted liquid-containing portion constituting the apex thereof, and a wick seated in the apex of said trough and extending upwardly between and distant from its upwardly-disposed walls.

848,587. ELASTIC-FLUID TURBINE. CHARLES W. DRAKE, Grand Rapids, Mich. Filed Mar. 22, 1906. Serial No. 307,456.

Claim.—1. In an elastic-fluid turbine, the combination of a turbine disk or wheel 1, with a series of composite buckets arranged therein, each bucket consisting of a main bucket 2, with a curved wall 5, and an auxiliary bucket 3 within the same, formed by the curved wall or partition 4, the said wall 4 being cut away at 4' to form a passage for fluid against the wall 5 of the main bucket 2, the passage expanding at 6; and a nozzle arranged to deliver elastic fluid under pressure to impact and react on both of said walls 4 and 5, as specified.

2. In an elastic-fluid turbine, the combination of a turbine disk or wheel with a series of composite buckets arranged therein, each bucket consisting of a main curved wall and an auxiliary substantially parallel curved wall within the same, corresponding in contour to the said main wall, with passages formed through the said auxiliary wall; and a nozzle arranged to deliver fluid into the said composite buckets successively, whereby the fluid will be divided and impact and react upon the series of walls of said composite buckets, as specified.

3. In an elastic-fluid turbine, the combination of a turbine disk or wheel; a bucket with a recurved wall, arranged therein, with an annular auxiliary bucket arranged within the said main bucket and having its inlet within the walls of the main bucket, with passages formed to deliver into both the main and auxiliary buckets from substantially the same point; and a nozzle arranged to deliver elastic fluid under pressure to secure its impact and reaction on the curved walls of said buckets, as specified.

4. In an elastic-fluid turbine, a bucket of the recurved type, with a plurality of similar walls, with inlet-passages thereto connecting within the wall of the main bucket; and a nozzle arranged to deliver elastic fluid to impact and react on the said walls, as specified.

5. In an elastic-fluid turbine, a bucket of the recurved type, with a plurality of similar walls, with inlet-passages thereto connecting within the wall of the main bucket, the same being arranged to receive a jet of elastic fluid, coacting as specified.

6. In an elastic-fluid turbine, the combination of a turbine-disk with main buckets of the recurved type with an annular auxiliary bucket within each of the said main buckets, the said auxiliary buckets having their inlets within the walls of the said main buckets with a passage or passages to deliver the fluid to both the main and the auxiliary buckets from substantially the same point, to secure its impact and reaction on the curved walls thereof, as specified.

848,588. ELASTIC-FLUID TURBINE. CHARLES W. DRAKE, Grand Rapids, Mich. Filed Nov. 29, 1907. Renewed Sept. 8, 1906. Serial No. 333,778.

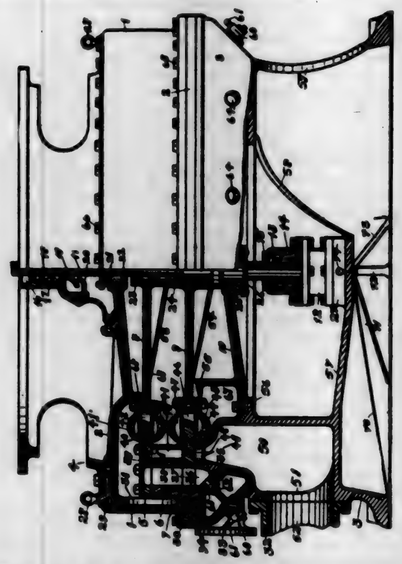

Claim.—1. In an elastic-fluid turbine, the combination of the casing and support, consisting of base-section 3 containing exhaust-chamber and passages, the skeleton frame 2 resting thereon, and the detachable ring-casing 1 embracing the skeleton casing, adapted to be detached and elevated therefrom; and a separate casing or frame 4 resting on the skeleton frame.

2. In a turbine-engine, the combination of the casing consisting of a base part, a skeleton-frame part, and an outer detachable ring portion adapted to be separate therefrom; a central vertical shaft supported on a step-bearing; a pair of turbine-wheels secured to said shaft; supporting dish-shaped plates under the said wheels and engaging a suitable annular shoulder thereon to prevent contortion therein; suitable buckets on the peripheries of said wheels; and nozzles for delivering the elastic fluid thereto, coacting for the purpose specified.

3. In an elastic-fluid turbine, the combination of a base-section; a vertical shaft suitably arranged in the center thereof with a pair of turbine-wheels with buckets on their peripheries; a series of nozzle and guide-passage blocks supported within the buckets of said turbine-wheels; and separator-blocks between the said nozzle and guide-passage blocks for supporting them in proper position and provided with proper passages for suitably connecting the same together, coacting for the purpose specified.

4. In an elastic-fluid turbine, the combination of the casing and support consisting of base-section 3 containing the exhaust chamber and passage, the skeleton frame 2 resting thereon, and the detachable ring-casing 1, embracing the skeleton casing, adapted to be detached and elevated therefrom.

5. In an elastic-fluid turbine-engine, the combination of a suitable base; a vertical shaft arranged centrally therein and supported in a suitable step-bearing, the base 3 supporting said bearing and being provided with an annular inlet-chamber 35, with suitable inlet-passages 63 therefrom to the different nozzle-sections; governing-valves 60 and 61 for controlling the said nozzles in the exhaust-chamber in said base; a lower head 10 for the turbine-wheel casing, supported on a flange 56 thereof and provided with a suitable stuffing-box at the center to embrace the said vertical shaft, and provided with an annular flange 55 extending up into proximity with the lower surface of the lower turbine-wheel adjacent to the bucket-sections; turbine-wheels 8 and 9 secured to the said vertical shaft by suitable hubs and arranged one above the other; oppositely-faced bucket-segments suitably secured to the webs of said turbine-wheels; guide-passage blocks 5 and 7 extending inwardly between the oppositely-faced bucket-segments on each wheel with a spacer-block 6 between the same, containing passages 36, 37, 38, 39 and 40, delivering into the buckets 47 of the lower bucket-segments of the upper wheel 8, and a passage 42 in the guide-block 5 leading from the inner side of said bucket 41 to the inner side of the said bucket 41', and thence through the said guide-block 5 to the guide-passage 42' from the outer side of the buckets 41' to the outer side of the bucket 41; an exit-passage 1' in said guide-block 5 in advance of the inlet-passages 39 connecting to a passage 43 through the spacer-block 6; a nozzle-passage 44 delivering thence through guide-block 7 to the outer side of the buckets 45; a passage 46 through the said guide-block 7 to the inner side of the upper bucket 47; a passage 48 to connect the outer periphery of the said upper buckets 47 to the exhaust-chamber 50; an upper skeleton casing 2 extending to form the upper head of the turbine-chamber, with a stuffing-box at its center to embrace the vertical shaft and an annular flange 68 in proximity to the upper side of the wheel 8 just within the bucket-segments and also provided with openings 31 to permit access to the guide-blocks, separator-block and turbine-buckets; a ring-casing 1 flanged at its upper and lower side to fit onto the casing 2, with means for elevating the same to make the said skeleton casing 2 accessible; a casing 4 resting on top of said casing 2 to form a base for supporting a dynamo or other machinery above; and suitable adjustable bearings at the center of said shaft, all coacting substantially as described and for the purpose specified.

6. In an elastic-fluid turbine-engine, the combination of a suitable base; a vertical shaft arranged centrally therein and supported in a suitable step-bearing, the base 3 supporting said bearing and being provided with an annular inlet-chamber 35, with suitable inlet-passages 63 therefrom to the different nozzle-sections; governing-valves 60 and 61 for controlling the said nozzles, in the exhaust-chamber in said base; a lower head 10 for the turbine-wheel casing, supported on a flange 56 thereof and provided with a suitable stuffing-box at the center to embrace the said vertical shaft, and provided with an annular flange 55 extending up into proximity with the lower surface of the lower turbine-wheel adjacent to the bucket-sections; turbine-wheels 8 and 9 secured to the said vertical shaft, and provided with an annular flange 55 extending up into proximity with the lower surface of the lower turbine-wheel adjacent to the bucket-sections; turbine-wheels 8 and 9 secured to the said vertical shaft by suitable hubs and arranged one above the other; oppositely-faced bucket-segments suitably secured to the webs of said turbine-wheels; guide-passage blocks 5 and 7 with

portions projecting from said oppositely-faced buckets, and a spacer-block 6 between said guide-passage blocks, the passages therethrough to deliver elastic fluid to operate the said turbine-wheels and pass through the same successively, thence to the exhaust; an upper skeleton casing 2 extending to form the upper head of the turbine-chamber, with a stuffing-box at its center to embrace the vertical shaft and an annular flange 68 in proximity to the upper side of the wheel 8 just within the bucket-segments and also provided with openings 31 to permit access to the guide-blocks, separator-block and turbine-buckets; a ring-casing 1 flanged at its upper and lower side to fit onto the casing 2, with means for elevating the same, to make the said skeleton casing 2 accessible; a casing 4 resting on top of said casing 2 to form a base for supporting a dynamo or other machinery above; and adjustable bearings at the center of said shaft, all coacting substantially as described and for the purpose specified.

7. In an elastic-fluid turbine-engine, the combination of a suitable base; a vertical shaft arranged centrally therein and supported in a suitable step-bearing, the base 3 supporting said bearing and being provided with an annular inlet-chamber 35, with suitable inlet-passages 63 therefrom to the different nozzle-sections; governing-valves 60 and 61 for controlling the said nozzles in the exhaust-chamber in said base; a lower head 10 for the turbine-wheel casing, supported on a flange 56 thereof and provided with a suitable stuffing-box at the center to embrace the said vertical shaft, and provided with an annular flange 55 extending up into proximity with the lower surface of the lower turbine-wheel adjacent to the bucket sections; turbine-wheels 8 and 9 secured to the said vertical shaft by suitable hubs and arranged one above the other; oppositely-faced bucket-segments suitably secured to the webs of said turbine-wheels; guide-blocks arranged to deliver steam successively to the said oppositely-faced buckets; an upper skeleton casing 2 extending to form the upper head of the turbine-chamber, with a stuffing-box at its center to embrace the vertical shaft and an annular flange 68 in proximity to the upper side of the wheel 8 just within the bucket-segments and also provided with openings 31 to permit access to the guide-blocks, separator-block and turbine-buckets; a ring-casing 1 flanged at its upper and lower side to fit onto the casing 2, with means for elevating the same to make the said skeleton casing 2 accessible; a casing 4 resting on top of said casing 2 to form a base for supporting a dynamo or other machinery above; and adjustable bearings at the center of said shaft, all coacting substantially as described and for the purpose specified.

8. In an elastic-fluid turbine-engine, the combination of a suitable base; a vertical shaft arranged centrally therein and supported in a suitable step-bearing, the base 3 supporting said bearing and being provided with an inlet-chamber 35, with a suitable inlet-passage 63 therefrom to the nozzle; a governing-valve for controlling the said nozzle in the exhaust-chamber in said base; a lower head 10 for the turbine-wheel casing, supported on a flange 56 thereof and provided with a suitable stuffing-box at the center to embrace the said vertical shaft, and provided with an annular flange 55 extending up into proximity with the lower surface of the lower turbine-wheel adjacent to the bucket-sections; turbine-wheels 8 and 9 secured to the said vertical shaft by suitable hubs and arranged one above the other; oppositely-faced bucket-segments suitably secured to the webs of said turbine-wheels; guide-passage blocks 5 and 7 extending inwardly between the oppositely-faced bucket-segments on each wheel with a spacer-block 6 between the same, containing passages 36, 37, 38, 39 and 40, delivering into the buckets 41 of the lower bucket-segments of the upper wheel 8, and a passage 42 in the guide-block 5 leading from the inner side of the said bucket 41 to the inner side of the said bucket 41′ and thence through the said guide-block 5 to a guide-passage 42′ from the outer side of bucket 41′ to the outer side of bucket 41, and an exit-passage 1″ in said guide-block 5 in advance of the inlet-passages 39 connecting to a passage 43 through the spacer-block 6, and a nozzle-passage 44 delivering thence through guide-block 7 to the outer side of the buckets 45, and a passage 46 through the said guide-block 7 to the inner side of the upper bucket 47, and a passage 48 to connect the outer periphery of the said upper buckets 47 to the exhaust-chamber 50; an upper skeleton casing 2 extending to form the upper head of the turbine-chamber, with a stuffing-box at its center to embrace the vertical shaft and an annular flange 68 in proximity to the upper side of the wheel 8 just within the bucket-segments and also provided with openings 31 to permit access to the guide-blocks, separator-block and turbine-buckets; a ring-casing 1 flanged at its upper and lower side to fit onto the casing 2, with means for elevating the same to make the said skeleton casing 2 accessible; a casing 4 resting on top of said casing 2 to form a base for supporting a dynamo or other machinery above; and adjustable bearings at the center of said shaft, all coacting for the purpose specified.

9. In an elastic-fluid turbine-engine, the combination of a suitable base; a vertical shaft arranged centrally therein and supported in a suitable step-bearing, the base 3 supporting said bearing and being provided with an inlet-chamber 35, with a suitable inlet-passage 63 therefrom to the nozzle; a governing-valve for controlling the said nozzle in the exhaust-chamber in said base; a lower head 10 for the turbine-wheel casing, supported on a flange 56 thereof and provided with a suitable stuffing-box at the center to embrace the said vertical shaft, and provided with an annular flange 56 extending up into proximity with the lower surface of the lower turbine-wheel adjacent to the bucket-sections; turbine-wheels 8 and 9 secured to the said vertical shaft by suitable hubs and arranged one above the other; oppositely-faced bucket-segments suitably secured to the webs of said turbine-wheels; guide-passage blocks 5 and 7 with portions projecting from said oppositely-faced buckets, and a spacer-block 6 between said guide-passage blocks, and passages therethrough to deliver elastic fluid to operate the said turbine-wheels and pass through the same successively, thence to the exhaust; an upper skeleton casing 2 extending to form the upper head of the turbine-chamber, with a stuffing-box at its center to embrace the vertical shaft and an annular flange 68 in proximity to the upper side of the wheel 8 just within the bucket-segments and also provided with openings 31 to permit access to the blocks, separator-blocks, and turbine-buckets; a ring-casing 1 flanged at its upper and lower side to fit onto the casing 2, with means for elevating the same to make said skeleton casing 2 accessible; a casing 4 resting on top of said casing 2 to form a base for supporting a dynamo or other machinery above; and suitable adjustable bearings at the center of said shaft, all coacting substantially as described and for the purpose specified.

10. In an elastic-fluid turbine-engine, the combination of a suitable base; a vertical shaft arranged centrally therein and supported in a suitable step-bearing, the base 3 supporting said bearing and being provided with an inlet-chamber 35, with a suitable inlet-passage 63 therefrom to the nozzle; a governing-valve for controlling the said nozzle in the exhaust-chamber in said casing; a lower head 10 for the turbine-wheel casing, supported on a flange 56 thereof and provided with a suitable stuffing-box at the center to embrace the said vertical shaft, and provided with an annular flange 55 extending up into proximity with the lower surface of the lower turbine-wheel adjacent to the bucket-sections; turbine-wheels 8 and 9 secured to the said vertical shaft by suitable hubs and arranged one above the other; oppositely-faced bucket-segments suitably secured to the webs of said turbine-wheels; guide-blocks arranged to deliver steam successively to the said oppositely-faced buckets; an upper skeleton casing 2 extending to form the upper head of the turbine-chamber, with a stuffing-box at its center to embrace the vertical shaft and an annular flange 68 in proximity to the upper side of the wheel 8 just within the bucket-segments and also provided with openings 31 to permit access to the guide-blocks, separator-blocks and turbine-buckets; a ring-casing 1 flanged at its upper and lower side to fit onto the casing 2, with means for elevating the same to make said skeleton casing 2 accessible; a casing 4 resting on top of said casing 2 to form a base for supporting a dynamo or other machinery above; and suitable adjustable bearings at the center of said shaft, all coacting substantially as described and for the purpose specified.

ing the same to make the said skeleton casing 2 accessible; a casing 4 resting on top of said casing 2 to form a base for supporting a dynamo or other machinery above; and suitable adjustable bearings at the center of said shaft, all coacting substantially as described and for the purpose specified.

11. In an elastic-fluid turbine-engine, the combination of a suitable base; a vertical shaft arranged centrally therein and supported in a suitable step-bearing, the base 3 supporting said bearing and being provided with an annular inlet-chamber 35, with suitable inlet-passages 63 therefrom to the different nozzle-sections; governing-valves 60 and 61 for controlling the said nozzles in the exhaust-chamber in said base; a lower head 10 for the turbine-wheel casing, supported on a flange 56 thereof and provided with a suitable stuffing-box at the center to embrace the said vertical shaft, and provided with an annular flange 55 extending up into proximity with the lower surface of the lower turbine-wheel adjacent to the bucket-section; turbine-wheels 8 and 9 secured to the said vertical shaft by suitable hubs and arranged one above the other; oppositely-faced bucket-segments suitably secured to the webs of said turbine-wheels; guide-passage blocks 5 and 7 extending inwardly between the oppositely-faced bucket-segments on each wheel with a spacer-block 6 between the same, containing passages 36, 37, 38, 39 and 40, delivering into the buckets 41 of the lower bucket-segments of the upper wheel 8 and a passage 42 in the guide-block 5 leading from the inner side of the said bucket 41 to the inner side of the said bucket 41′, and thence through the said guide-block 5 to a guide-passage 42′ from the outer side of the buckets 41′ to the outer side of bucket 41, and an exit-passage 1″ in said guide-block 5 in advance of the inlet-passages 39 connecting to a passage 43 through the spacer-block 6, and a nozzle 44 delivering thence through guide-block 7 to the outer side of the buckets 45, and a passage 46 through the said guide-block 7 to the inner side of the upper bucket 47, and a passage 48 to connect the outer periphery of the said upper buckets 47 to the exhaust-chamber 50, and suitable adjustable bearings at the center of said shaft, all coacting substantially as described and for the purpose specified.

12. In an elastic-fluid turbine-engine, the combination of a suitable base; a vertical shaft arranged centrally therein and supported in a suitable step-bearing, the base 3 supporting said bearing and being provided with an annular inlet-chamber 35, with suitable inlet-passages 63 therefrom to the different nozzle-sections; governing-valves 60 and 61 for controlling the said nozzles in the exhaust-chamber in said base; a lower head 10 for the turbine-wheel casing, supported on a flange 56 thereof and provided with a suitable stuffing-box at the center to embrace the said vertical shaft, and provided with an annular flange 55 extending up into proximity with the lower surface of the lower turbine-wheel adjacent to the bucket-sections; turbine-wheels 8 and 9 secured to the said vertical shaft by suitable hubs and arranged one above the other; oppositely-faced bucket-segments suitably secured to the webs of said turbine-wheels; guide-passage blocks 5 and 7 with portions projecting from said oppositely-faced buckets, and a spacer-block 6 between said guide-passage blocks, the passages therethrough to deliver elastic fluid to operate the said turbine-wheels and pass through the same successively, thence to the exhaust; and suitable adjustable bearings at the center of said shaft, all coacting substantially as described and for the purpose specified.

13. In an elastic-fluid turbine-engine, the combination of a suitable base; a vertical shaft arranged centrally therein and supported in a suitable step-bearing, the base 3 supporting said bearing and being provided with an annular outlet-chamber 35, with suitable inlet-passages 63 therefrom to the different nozzle-sections; governing-valves 60 and 61 for controlling the said nozzles in the exhaust-chamber in said base; a lower head 10 for the turbine-wheel casing, supported on a flange 56 thereof and provided with a suitable stuffing-box at the center to embrace the said vertical shaft, and provided with an annular flange 55 extending up into proximity with the lower surface of the lower turbine-wheel adjacent to the bucket-sections; turbine-wheels 8 and 9 secured to the said vertical shaft by suitable hubs and arranged one above the other; oppositely-faced bucket-segments suitably secured to the webs of said turbine-wheels; guide-blocks arranged to deliver steam successively to the said oppositely-faced buckets; and suitable adjustable bearings at the center of said shaft, all coacting substantially as described and for the purpose specified.

14. In an elastic-fluid turbine-engine, the combination of a suitable base; a vertical shaft arranged centrally therein and supported in a suitable step-bearing, the base 3 supporting said bearing and being provided with an inlet-chamber 35, with a suitable inlet-passage 63 therefrom to the nozzle; a governing-valve for controlling the said nozzle in the exhaust-chamber in said base; a lower head 10 for the turbine-wheel casing, supported on a flange 56 thereof and provided with a suitable stuffing-box at the center to embrace the said vertical shaft, and provided with an annular flange 55 extending up into proximity with the lower surface of the lower turbine-wheel adjacent to the bucket-sections; turbine-wheels 8 and 9 secured to the said vertical shaft by suitable hubs and arranged one above the other; oppositely-faced bucket-segments suitably secured to the webs of said turbine-wheels; guide-passage blocks 5 and 7 extending inwardly between the oppositely-faced bucket-segments on each wheel with a spacer-block 6 between the same, containing passages 36, 37, 38, 39 and 40, delivering into the buckets 41 of the lower bucket-segments of the upper wheel 8 and a passage 42 in the guide-block 5 leading from the inner side of the said bucket 41 to the inner side of the said bucket 41′, and thence through the said guide-block 5 to a guide-passage 42′ from the outer side of buckets 41′ to the outer side of the bucket 41, and an exit-passage 1′ in said guide-block 5 in advance of the inlet-passages 39 connecting to a passage 43 through the spacer-block 6, and a nozzle-passage 44 delivering thence to the guide-block 7 to the outer side of the buckets 45, and a passage 46 through the said guide-block 7 to the inner side of the upper buckets 47 and a passage 48 to connect the outer periphery of the said upper buckets 47 to the exhaust-chamber 50; and suitable adjustable bearings at the center of said shaft, all coacting substantially as described and for the purpose specified.

15. In an elastic-fluid turbine-engine, the combination of a suitable base; a vertical shaft arranged centrally therein and supported in a suitable step-bearing, the base 3 supporting said bearing and being provided with an inlet-chamber 35, with a suitable inlet-passage 63 therefrom to the nozzle; a governing-valve for controlling the said nozzle in the exhaust-chamber in said base; a lower head 10 for the turbine-wheel casing, supported on a flange 56 thereof and provided with a suitable stuffing-box at the center to embrace the said vertical shaft, and provided with an annular flange 55 extending up into proximity with the lower surface of the lower turbine-wheel adjacent to the bucket-sections; turbine-wheels 8 and 9 secured to the said vertical shaft by suitable hubs and arranged one above the other; oppositely-faced bucket-segments suitably secured to the webs of said turbine-wheels; guide-passage blocks 5 and 7 extending inwardly between the oppositely-faced bucket-segments on each wheel with a spacer-block 6 between the same, containing passages 36, 37, 38, 39 and 40, delivering into the buckets 41 of the lower bucket-segments of the upper wheel 8 and a passage 42 in the guide-block 5 leading from the inner side of the said bucket 41 to the inner side of the said bucket 41′, and thence through the said guide-block 5 to a guide-passage 42′ from the outer side of buckets 41′ to the outer side of the bucket 41, and an exit-passage 1′ in said guide-block 5 in advance of the inlet-passages 39 connecting to a passage 43 through the spacer-block 6, and a nozzle-passage 44 delivering thence to the guide-block 7 to the outer side of the buckets 45, and a passage 46 through the said guide-block 7 to the inner side of the upper buckets 47 and a passage 48 to connect the outer periphery of the said upper buckets 47 to the exhaust-chamber 50; and suitable adjustable bearings at the center of said shaft, all coacting substantially as described and for the purpose specified.

16. In an elastic-fluid turbine-engine, the combination of a suitable base; a vertical shaft arranged centrally therein and supported in a suitable step-bearing, the base 3 supporting said bearing and being provided with an inlet-chamber 35, with a suitable inlet-passage 63 therefrom to the nozzle; a governing-valve for controlling the said nozzle in the exhaust-chamber in said base; a lower head 10 for the turbine-wheel casing supported on a flange 56 thereof and provided with a suitable stuffing-box at the center to embrace the said vertical shaft, and provided

with an annular flange 56 extending up into proximity with the lower surface of the lower turbine-wheel adjacent to the bucket-sections; turbine-wheels 8 and 9 secured to the said vertical shaft by suitable hubs and arranged one above the other; oppositely-faced bucket-segments suitably secured to the webs of said turbine-wheels; guide-blocks arranged to deliver steam successively to the said oppositely-faced buckets; and suitable adjustable bearings at the center of said shaft, all coacting substantially as described and for the purpose specified.

17. In an elastic-fluid turbine, the combination of a base with an annular supply-passage around the same, with suitable controlling-valves and an exhaust-passage leading therefrom; a head for the said base, with a flange extending into proximity to the bucket-segments of the bottom turbine-wheel; a step-bearing supported on a suitable shelf at the center with openings through the side of the base to make the same accessible; blocks containing nozzle and guide passages, supported by said base; and a vertical shaft with turbine-wheels carried by the said base, coacting for the purpose specified.

18. In an elastic-fluid turbine, the combination of a base with an annular supply-passage around the same, with suitable controlling-valves and an exhaust-passage leading therefrom; a step-bearing supported on a suitable shelf at the center, with openings through the side of the base to make the same accessible; blocks containing nozzle and guide passages, supported by said base; and a vertical shaft with turbine-wheels carried by said base, coacting for the purpose specified.

19. In an elastic-fluid turbine, the combination of a base with an annular supply-passage around the same, with suitable controlling-valves and an exhaust-passage leading therefrom; a step-bearing supported on a suitable shelf at the center with openings through the side of the base to make the same accessible; blocks containing guide-passages, supported by said base; and a vertical shaft with turbine-wheels carried by the said base, coacting for the purpose specified.

20. In an elastic-fluid turbine-engine, the combination of a suitable base, supporting-blocks with guide-passages therein and inlet-passages; a vertical shaft with a number of horizontal turbine-wheels thereon carrying oppositely-faced bucket-sections secured to the periphery of the webs of said wheels; nozzle and guide passage blocks projecting between the buckets on said wheels; a spacer-block between the same, containing appropriate passages leading first to the upper set of turbine-buckets and thence delivering downwardly; a suitable casing surrounding the said guide-passage blocks and turbine-wheels and closing the upper side of the same, with a suitable stuffing-box surrounding the shaft at the center, coacting for the purpose specified.

21. In an elastic-fluid turbine-engine, the combination with a vertical shaft of horizontally-disposed turbine-wheels with disk-like centers, having annular shoulders on their under sides; disk-shaped supports arranged to fit against said shoulders and embrace the shaft to serve as a truss or brace for the said turbine-wheel, as specified.

22. In a turbine-engine, the combination with a suitable casing, of a vertical shaft; a horizontally-arranged turbine-wheel therein, with nozzle and guide passage blocks extending to the same; and an annular flange extending into proximity with the said turbine-wheel on its under side toward its periphery, for the purpose specified.

23. In an elastic-fluid turbine, the combination of a suitable base having inlet-passages therein; nozzle and guide passage blocks with a separator-block supported on said base with passages therethrough; and turbine-wheels with buckets at their peripheries facing each other from opposite sides thereof and embracing the said nozzle and guide passage blocks, as specified.

24. In an elastic-fluid turbine-engine, the combination of a series of wheels with oppositely-faced buckets secured to the peripheries; blocks with nozzle and guide passages extending into and between the said buckets of each wheel; and intermediate separator-blocks, with passages connecting from one set of buckets to the inlet of the next set of buckets, whereby the engine is compounded and the expansion of the expansive fluid is utilized.

848,589. VENDING-MACHINE. CHARLES FORTH, Boston, Mass., assignor to Walter S. Davis, Malden, Mass. Filed Jan. 30, 1906. Serial No. 298,583.

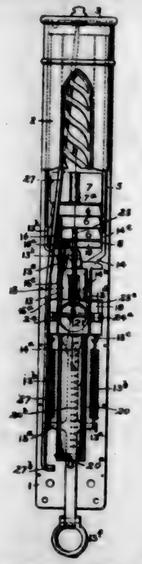

Claim.—1. In a vending-machine, the combination with an ejecting member movable in one direction, of an actuating member operatively connected therewith and movable transversely with reference to the movement of the ejecting member, and a controlling member movable with the actuating member and adapted to coöperate with the inserted coin.

2. In a vending-machine, the combination of means for holding the articles in column, an ejecting member movable transversely with reference to the column of articles and adapted to discharge the lowermost article, an actuating member movable longitudinally with respect to the column of articles, and a controlling member movable with the actuating member and adapted to coöperate with the inserted coin.

3. In a vending-machine, the combination of means for holding the articles in vertical column, an ejecting member movable horizontally beneath the column and adapted to engage and eject the lowermost article, a vertically-movable actuating member operatively connected with the ejecting member, and a controlling member movable vertically with the actuating member and adapted to coöperate with the inserted coin.

4. In a vending-machine, the combination with the ejecting member, of an actuating member operatively connected therewith, a controlling member movable with the actuating member, and a locking mechanism carried by the controlling member and movable relatively to said controlling member and adapted to be unlocked by cooperation with the inserted coin.

5. In a vending-machine, the combination of a frame or casing, an ejecting member, an actuating member operatively connected with the ejecting member, a controlling member movable with the actuating member, and a locking mechanism carried by the controlling member and movable relatively thereto, and adapted to engage the frame or casing and hold the controlling member against movement, said locking mechanism being adapted to be unlocked by coöperation with the inserted coin.

6. In a vending-machine, the combination with an ejecting member, of an actuating member operatively connected therewith, a controlling member movable with the actuating member and normally locking the same against action, means for holding the inserted coin with its side face temporarily in the path of the controlling member, and means controlled by the engagement of said member with the side face of the coin for unlocking the actuating member, said controlling member being adapted when the actuating member is unlocked to engage and push the coin before it.

7. In a vending-machine, the combination with ejecting mechanism, of a controlling member movable therewith, a locking mechanism carried by the controlling member and normally locking the ejecting mechanism against action, and a releasing device carried by the controlling member, and adapted by engagement with the inserted coin to be moved relatively to the controlling member and actuate the locking mechanism.

8. In a vending-machine, the combination of an ejecting mechanism, a controlling-plunger movable therewith, a locking-bolt carried by the plunger and adapted when projected to prevent action of the ejecting mechanism, means for holding the inserted coin temporarily in the path of the plunger, and a releasing-pin carried by the plunger and movable relatively, and adapted when engaged with the inserted coin to retract the locking-bolt.

9. In a vending-machine, the combination with the casing formed with a circular guideway or opening, of means for holding the inserted coin in said opening, a controlling-plunger sliding in said opening, a locking mechanism carried by the plunger, a releasing device disposed centrally in the plunger and adapted by engagement with the inserted coin to actuate the locking mechanism, and an ejecting mechanism operatively connected with the controlling-plunger.

10. In a vending-machine, the combination of a casing provided with a circular guideway or opening, means for holding the coin temporarily in said opening, a controlling-plunger movable in said opening, a transversely-movable locking-bolt mounted in the plunger, and adapted when projected to engage with a fixed portion of the casing when the plunger is moved in the opening, a releasing-pin carried by the plunger and movable relatively to the same, and coöperating with the bolt to retract it, said releasing-pin adapted to engage with the inserted coin and be moved relatively, and an ejecting mechanism operatively connected with the plunger.

11. In a vending-machine, the combination of a casing provided with a coin-slot and with a guiding-opening communicating therewith, a controlling-plunger mounted to move in the guiding-opening, a movable member or tumbler extending in the path of the inserted coin and in the path of the plunger, said member adapted when the proper coin is inserted, to be moved out of the path of the plunger, and an ejecting mechanism operatively connected with the plunger.

12. In a vending-machine, the combination with the casing formed with a coin-slot and with a guiding-opening communicating therewith, of a controlling-plunger movable in said opening and controlling the action of the ejecting mechanism, and two yielding tumblers extending in the path of the incoming coin at opposite sides, and projecting in the guiding-opening in the path of the plunger, said tumblers being adapted by the engagement of an inserted coin of the proper diameter, to be moved out of the path of the plunger.

13. In a vending-machine, the combination of a casing provided with a coin-slot and with a circular guiding-opening communicating therewith, a cylindrical controlling-plunger mounted to move in the guiding-opening, means for holding the inserted coin temporarily in the path of the plunger; whereby the latter will coöperate with said coin, an ejecting mechanism and means independent of the coin operatively connecting said ejecting mechanism with the plunger.

14. In a vending-machine, the combination of a casing provided with a coin-slot and with a guiding-opening communicating therewith, means adapted to act on the edge of the coin and serving to hold the same frictionally in the guiding-opening, a plunger movable in said guiding-opening and adapted to coöperate with the side of the coin, an ejecting mechanism and means independent of the coin operatively connecting the ejecting mechanism with the plunger.

15. In a vending-machine, the combination with a casing formed with a coin-slot and adapted to hold a column of articles to be delivered, of a follower-weight acting on said column and adapted to descend as the articles are delivered from the bottom of the column, a vertically-movable rod with its lower end normally free of the coin-slot and its upper end terminating normally below the upper surface of the lowermost article in the column, said upper end of the rod being in the path of the follower-weight; whereby when the last article is delivered, the weight will act on the upper end of the rod and push the same downward in front of the coin-slot.

16. In a vending-machine, the combination of a casing formed with a coin-slot and adapted to hold a column of articles to be delivered, a follower-weight acting on said column and adapted to descend as the articles are delivered, and a vertically-movable rod with its lower end held yieldingly and normally free of the coin-slot and with is upper end in position to be encountered by the weight when the last article is delivered from the holder; whereby the further descent of the weight will project the rod across the coin-slot.

17. In a vending-machine, the combination of an upright casing provided in its side with an article-delivery opening, in its front with a horizontal coin-slot, and on its interior with a vertically-arranged circular guiding-opening communicating with the coin-slot, an article-holder adapted to hold the articles in column form, a transversely-movable ejecting-finger adapted to engage the lowermost article in the column and discharge the same through the delivery-opening, a vertically-movable actuating-slide operatively connected with the ejecting-finger and adapted, when moved downward to operate the ejecting-finger, a controlling-plunger carried by the slide and movable in the circular guiding-opening in the casing, a locking mechanism on the plunger normally holding the parts against action, and adapted to be released by engagement with an inserted coin of the proper thickness, and two yielding tumblers projecting in the path of the incoming coin and in the path of the plunger, and formed with curved surfaces to act on the coin and hold the same frictionally in the path of the plunger, said tumblers adapted, when a coin of the proper diameter is held by them, to be maintained free of the path of the plunger.

18. In a vending-machine, the combination of a casing provided with a coin-slot and with a guiding-opening communicating therewith, a member movable in said opening, a coin-holding device disposed normally in the path of the movable member and adapted to be moved out of its path when a coin of the proper diameter is inserted and held by said device, and means independent of the coin-holding device for locking said member against movement, said means being adapted, by coöperation with the coin, to unlock said member.

19. In a vending-machine, the combination of a casing provided with a coin-slot and with a guiding-opening communicating therewith, a controlling member mounted to move in the guiding-opening, a movable member or tumbler extending normally in the path of the controlling member, and adapted to frictionally hold an inserted coin in the path of the incoming coin, said tumbler arranged to be moved out of the path of the controlling member when a coin of the proper diameter only is inserted in the coin-slot, means controlled by the movement of the controlling member for dislodging a coin of less diameter held by the tumbler, and an ejecting mechanism operatively connected with the controlling member.

20. In a vending-machine, the combination of a casing provided with a coin-slot and with a guiding-opening communicating therewith, an ejecting mechanism, a controlling-plunger operatively connected with the ejecting mechanism and mounted to move in the guiding-opening, and yielding tumblers extending normally in the path of the plunger, and adapted to frictionally hold an inserted coin in front of the coin-slot, said tumblers arranged to be moved out of the path of the plunger by the insertion of a coin of the proper diameter only, and the said plunger

being provided in its under side with recesses adapted to coöperate with the tumblers and permit of a limited movement of the plunger relative to the tumblers; whereby said limited relative movement of the plunger will act to dislodge a coin of smaller diameter held by the tumblers, and this without affecting the obstruction position of the tumblers in the path of the plunger.

21. In a vending-machine, the combination with a casing provided with a coin-slot and guiding-opening communicating therewith, of a member movable in said opening, means for holding the inserted coin in the path of said member, and a locking mechanism adapted to hold said member against movement and adapted by coöperation with the coin to release the member; whereby said member when released will engage and push the coin before it.

22. In a vending-machine, the combination of a casing having a coin-slot and a guiding-opening communicating therewith, a member movable in said guiding-opening, a locking means for normally locking said member against action, and means for holding the inserted coin in the guiding-opening in the path of movement of said member, said locking means being adapted by coöperation with the inserted coin to release the member; whereby the latter when released will engage and push the coin before it.

23. In a vending-machine, the combination with an ejecting mechanism, of a controlling member constructed to normally lock the ejecting mechanism against action, and arranged by coöperation with the inserted coin to release the ejecting mechanism and dislodge the inserted coin.

848,590. CAR AND RAILWAY SWITCH. FLOYD S. GALLUP, CHARLES SHANAHAN, FREDERICK L. GALLUP, and JOHN N. GALLUP, Hancock, Iowa. Filed Aug. 9, 1906. Serial No. 329,948.

Claim.—1. In combination with a switch, comprising the point-rails, a switch-block, a bed-plate therefor, a casing upon which the bed-plate rests, said switch-block having a depending lug extending into said casing and having a lateral movement therein, said lug having a slot, a rod fulcrumed therein the ends of which rod having means for engaging or disengaging the point-rails.

2. In combination with a switch, comprising the usual point-rails, a switch-block, a bed-plate therefor, a spring-actuated presser-bolt having a recess for throwing the switch-block, a casing upon which the bed-plate rests, said switch-block having a depending lug extending into said casing and having a lateral movement therein, said switch-block also having a longitudinal tapering rib to be received by the recess of the presser-bolt, said lug having a slot therein, a rod fulcrumed therein, the ends of which rod having link-latches for engaging or disengaging the point-rails, having recesses to receive said link-latches.

848,591. HAND-CULTIVATOR. ELIAS HAIMAN and GEORGE N. MURRAY, Cleveland, Ohio, assignors to The Empire Plow Company, Cleveland, Ohio, a Corporation. Filed Jan. 14, 1907. Serial No. 352,074.

Claim.—1. A hand-cultivator having sectional side bars and front and rear wheels on which said bars are supported, and handle-braces connected at their lower ends with the rear wheel and adjustable in respect to said handles at their front ends, and a tooth-supporting standard engaged at the joint between said side bars.

2. The construction of hand-cultivators comprising front and rear wheels set in alinement, side bars connecting said wheels and jointed substantially at their middle between said wheels, handles and braces therefrom to the rear wheel and a two-sided tooth-standard engaged at the joints of said side bars and vertically adjustable in respect to said wheels.

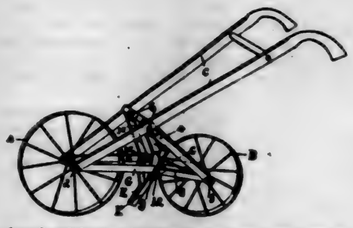

3. A hand-cultivator having front and rear wheels, parallel centrally-pivoted side bars between said wheels, a divided standard engaged with said side bars at the joints therein and adjusting-braces engaged with said standard at their front ends and on the rear-wheel spindle at their rear ends.

848,592. BRAZING COMPOUND. CHARLES E. HAMILTON, Winnepeg, Manitoba, Canada, assignor to Joshua Oldham and Sons, Brooklyn, N. Y., a Corporation. Filed Oct. 3, 1906. Serial No. 337,235.

Claim.—1. A brazing compound of the character described, comprising oil, ferrous carbonate, borax, sodium carbonate, and potassium carbonate, compounded in the proportions and manner described.

2. A brazing compound of the character described, consisting of oil, two ounces; ferrous carbonate, four ounces; borax, twelve ounces; sodium carbonate, one ounce, and potassium carbonate, one ounce, all compounded as set forth.

3. A brazing compound of the character described, consisting of oil, two ounces; ferrous carbonate, four ounces; borax, twelve ounces; sodium carbonate, one ounce; sal-ammoniac, half-ounce, and potassium carbonate, one ounce, all compounded as set forth.

848,593. FRICTION-GEARING. CHARLES B. HATFIELD, Rochester, N. Y., assignor to Hatfield Motor Vehicle Company, Cortland, N. Y., a Corporation of New York. Filed Mar. 26, 1906. Serial No. 308,045.

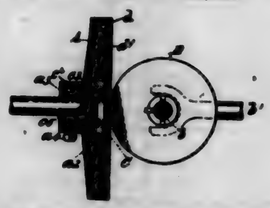

Claim.—1. In power-transmitting mechanism, the combination with a friction driving-disk, of a driven wheel having its periphery arranged in contact with and driven by the driving-disk, a floating rest located at the center of the face of the driving-disk and comprising a plate fixed in a recess in said driving-disk and a cup-shaped plate having its flange engaging the fixed plate to turn with relation thereto and inclosing an antifriction-bearing, substantially as described.

2. In power-transmitting mechanism, the combination with a friction driving-disk, of a driven wheel having its periphery arranged in contact with and driven by the driving-disk, a floating rest located at the center of the face of the driving-disk and comprising a plate mounted in a recess in said driving-disk and free to turn therein, an antifriction-bearing supporting said plate and consisting of a plurality of rolling members arranged in circular form and a ring supporting said rolling members, substantially as described.

848,594. COPYING-MACHINE. AUGUSTUS D. KLABER, London, England. Filed Oct. 28, 1905. Serial No. 284,920.

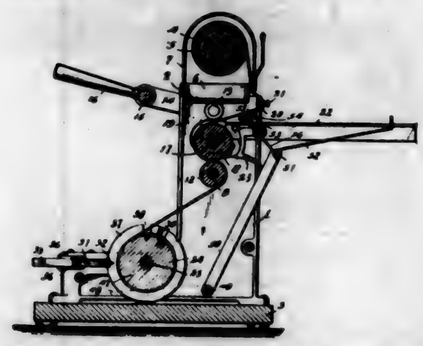

Claim.—1. A copying-machine having a supply-roller on which a continuous web of copying-paper is wound, an inclosure for the roller having a narrow opening therein through which the web of paper passes, a receptacle for a damping medium within the inclosure, two rollers between which said web passes, and means for actuating said rollers, substantially as described.

2. A copying-machine comprising a supply-roller on which a continuous web of copying-paper is wound, two copying-rollers one having a resilient surface and the other being of smaller diameter and having a hard surface, means for pressing said rollers together, means for rotating one of said rollers, and a feed-board so located with reference to said rollers that the impression-sheets fed from said board are caused to pass around substantially half the circumference of one of said rollers in contact with said web and then between said rollers, substantially as described.

3. In a copying-machine, the combination of a supply-roller on which a continuous web of copying-paper is wound, two rollers mounted for rotation in contact with each other and between which the web of paper passes, means for rotating one of said rollers, an automatically-operated feeding device for feeding sheets from which copies are to be made between the web of paper and one of said rollers, a receiving-roller on which the web is wound after passing between said rollers, and means for cutting the web of paper upon the receiving-roller, substantially as described.

4. A copying-machine having a supply-roller upon which a continuous web of copying-paper is wound, two rollers between which the web of paper passes, means for rotating one of said rollers, a member having a plane surface over which sheets from which copies are to be made are moved, devices for preventing the feeding of sheets over said surface, and means for operating said devices intermittently to permit of feeding, substantially as described.

5. A copying-machine having a supply-roller upon which a continuous web of copying-paper is wound, two rollers between which the web of paper passes, means for rotating one of said rollers, means for feeding sheets from which copies are to be made between the web of paper and one of said rollers, devices for preventing the feeding of the sheets, and means for operating said devices intermittently to permit of feeding, substantially as described.

6. In a copying-machine, the combination of a supply-roller upon which a continuous web of copying-paper is wound, two rollers between which the web of paper passes, means for rotating one of said rollers, a receiving-roller on which the web is wound after passing between said rollers, a member having a plane surface over which sheets from which copies are to be made are moved, and means for preventing the feeding of sheets over said surface except when the parts are in a predetermined relation, substantially as described.

7. In a copying-machine, the combination of a supply-roller upon which a continuous web of copying-paper is wound, two rollers between which the web of paper passes, means for rotating one of said rollers, a receiving-roller upon which the web is wound after passing between said rollers, means for cutting the web of paper upon the receiving-roller, a member having a plane surface over which the sheets from which copies are to be made are moved, devices for preventing the feeding of sheets over said surface, and means for operating said devices intermittently to permit of feeding, substantially as described.

8. A copying-machine having a supply-roller upon which a continuous web of copying-paper is wound, two rollers between which the web of paper passes, means for rotating one of said rollers, a member having a plane surface over which sheets from which copies are to be made are moved, feeding devices for moving sheets over said surface, devices for obstructing the movement of sheets over said surface, and means operated automatically for simultaneously moving said obstructing devices and actuating said feeding devices to move a sheet into position for copying, substantially as described.

9. In a copying-machine, the combination of a supply-roller upon which a continuous web of copying-paper is wound, two rollers between which the web of paper passes, means for rotating one of said rollers, an automatically-operated device for feeding sheets between the web and one of said rollers, devices for preventing the feed of the sheets, means for operating said devices to permit feeding, a receiving-roller upon which the web is wound, and means for cutting the web upon the receiving-roller, substantially as described.

10. In a copying-machine, the combination of a supply-roller upon which a continuous web of copying-paper is wound, two rollers between which the web of paper passes, means for rotating one of said rollers, a receiving-roller upon which the web is wound after passing between said rollers, means for cutting the web upon the receiving-roller, and an indicator operated automatically when a definite amount of paper has been wound upon the receiving-roller, substantially as described.

11. In a copying-machine, the combination of a supply-roller upon which a continuous web of copying-paper is wound, two rollers between which the web of paper passes, means for rotating one of said rollers, a receiving-roller upon which the web is wound, an indicator arranged to give an indication when a definite amount of paper has been wound on the receiving-roller, and means for cutting the web of paper upon the receiving-roller, substantially as described.

12. In a copying-machine, the combination of a supply-roller upon which a continuous web of copying-paper is wound, two rollers between which the web of paper passes, means for rotating one of said rollers, a receiving-roller upon which the web of paper is wound, a viscous section upon the surface of said receiving-roller, and means for rotating the receiving-roller, substantially as described.

13. In a copying-machine, the combination of a supply-roller on which a continuous web of copying-paper is wound, two rollers between which the web of paper passes, means for rotating one of said rollers, a receiving-roller on which the web of paper is wound after passing between said rollers, and devices for cutting the web of paper upon the receiving-roller and for simultaneously punching holes in the sheets thus formed adjacent to the line of the cut, substantially as described.

14. In a copying-machine, the combination of a frame, a supply-roller on which a continuous web of copying-paper is wound, two rollers between which the web of paper and the sheets from which the copies are to be made pass, one of said rollers being mounted in said frame, a pivoted frame carrying the other of said rollers and adapted to be swung about its pivots to carry said roller into and out of

engagement with the roller first named, and means for rotating one of said rollers, substantially as described.

15. A copying-machine having a supply-roller on which a continuous web of copying-paper is wound, two rollers between which the web of paper and the sheet from which the copy is to be made pass, pivoted arms in which one of said rollers is supported, stops to limit the movement of said arms when the axis of the roller carried thereby has crossed the plane of the axes of the other roller and the pivots of said arms, and means for rotating one of said rollers, substantially as described.

16. In a copying-machine, the combination of a supply-roller, two rollers between which the web from the supply-roller passes, means for rotating one of said rollers, a roller to receive the web, a cutting device for cutting the web of paper upon said receiving-roller, means for operating said device, and means to prevent operating the cutting device except when the receiving-roller is in a definite position, substantially as described.

17. In a copying-machine, the combination of a supply-roller on which a continuous web of copying-paper is wound, two rollers between which the web of paper passes, means for rotating one of said rollers, a receiving-roller on which the web is wound, means for operating the same, devices for feeding sheets from which copies are to be made between the web and one of said rollers, and means for operating said devices when the receiving-roller is in a definite position, substantially as described.

18. In a copying-machine, the combination of a supply-roller on which a continuous web of paper is wound, two rollers between which the web of paper passes, means for rotating one of said rollers, a receiving-roller on which the web is wound after passing between said rollers, and means to insure the introduction of sheets between the web and one of said rollers when the receiving-roller is in a definite position, substantially as described.

19. In a copying-machine, the combination of a supply-roller on which a continuous web of paper is wound, two rollers between which the web of paper passes, means for rotating one of said rollers, a receiving-roller on which the web is wound after passing between said rollers, and means controlled by the receiving-roller governing the introduction of the sheets from which copies are to be made between the web of paper and one of said rollers, substantially as described.

20. A copying-machine comprising a supply-roller on which a continuous web of copying-paper is wound, two copying-rollers, means for pressing said rollers together, means for rotating one of said rollers, and a feed-board so located with reference to said rollers that the impression-sheets fed from said board are caused to pass around substantially half the circumference of one of said rollers in contact with said web and then between said rollers, substantially as set forth.

848,595. METHOD OF REGULATING THE TEMPERATURE OF AIR. PAUL MANDEVILLE and WILLIAM C. WALKER, Chicago, Ill.; said Mandeville assignor to Charles E. Mandeville, Chicago, Ill. Filed May 19, 1906. Serial No. 317,824.

Claim.—1. The method of regulating the temperature of air in a chamber, which consists in displacing by convection a part of the air in said chamber with air introduced thereinto at a different temperature, and then directing a current of air through said chamber.

2. The method of regulating the temperature of air in a chamber, which consists in directing a current of air at a different temperature through said chamber at intervals, and permitting the air therein to diffuse by convection.

3. The method of regulating the temperature of air in a chamber, which consists in introducing cool air into said chamber, permitting the air so introduced to diffuse therein by convection, and then causing a circulation of air through said chamber.

4. The method of regulating the temperature of air in a chamber, which consists in establishing a circulation of cool air through said chamber, permitting the air so introduced to diffuse therein by convection, and then again establishing a circulation of cool air through said chamber.

5. The method of regulating the temperature of air in a chamber, which consists in introducing into said chamber air at a temperature different from that in said chamber permitting it to diffuse therein by convection and then causing a circulation of air through said chamber.

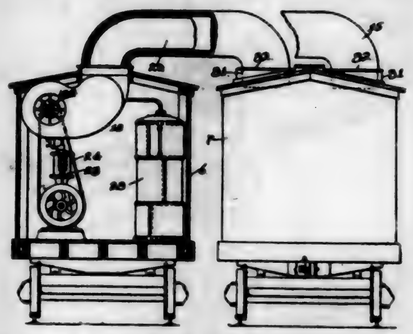

6. The method of regulating the condition of air in a chamber, which consists in displacing by convection a part of the air in said chamber with air of different density introduced thereinto and then directing a current of air through said chamber.

7. The method of regulating the condition of air in a chamber, which consists in alternately introducing air into said chamber and permitting it to diffuse therein by convection the air introduced being of a different density from the air contained in said chamber.

8. The method of regulating the condition of air in a chamber, which consists in displacing by convection a part of the air in said chamber with air of different humidity introduced thereinto and then directing a current of air through said chamber.

9. The method of regulating the condition of air in a chamber, which consists in alternately introducing air into said chamber and permitting it to diffuse therein by convection, the air introduced being of a different humidity from the air contained in said chamber.

848,596. TRACE-FASTENING DEVICE FOR WHIFFLETREES. IVISON B. MARTIN, Paris, Tenn., assignor of one-fourth to Samuel H. Caldwell and one-fourth to Dumas I. Martin, Paris, Tenn. Filed Dec. 22, 1906. Serial No. 349,059.

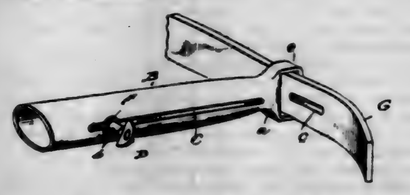

Claim.—1. A trace-fastening device for whiffletrees comprising a whiffletree formed with a longitudinal groove at its ends, a socket having a loop at its end and a slot corresponding to said groove, and an adjustable button arranged in said slot.

2. A trace-fastening device for whiffletrees comprising a whiffletree having a longitudinal groove at its ends, a socket formed with a loop at its end and a longitudinal slot in one side, a button having a threaded shank adapted to slide in said slot, and a nut arranged in said groove to receive said shank.

848,597. BURNER. WILLIS MITCHELL, Malden, Mass. Original application filed Jan. 25, 1905, Serial No. 242,638. Divided and this application filed Aug. 30, 1905. Serial No. 276,435.

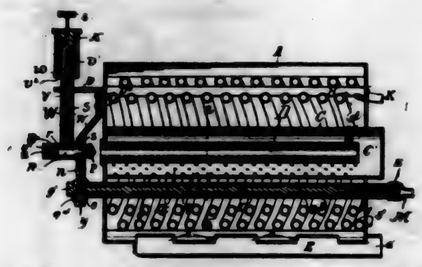

Claim.—A horizontal, elongated burner closed at both ends and having its under side provided with perforations, in combination with a mixing-tube, which is open at both ends, arranged concentrically within said burner and supported at its inner end by the latter, a jet block or nozzle discharging into the open outer end of said mixing-tube, and a vapor or gas generator arranged under the said burner, to be acted on by the flame-jets from said perforations, and supplying vapor to the said jet-block, the said burner and the said mixing-tube being each in a single piece, with an unobstructed space between their sides, a space being also left between their inner ends, to provide for reversing the current of mixed air and vapor, and the said generator being provided with a collared core which divides said generator into a series of connected retorts, and a cleaning-disk with inlet-passages on the inner end of said core, substantially as set forth.

848,598. CONTROLLING MEANS FOR RELEASE-VALVES. SILAS C. MOORE, South Omaha, Nebr. Filed Jan. 5, 1907. Serial No. 350,936.

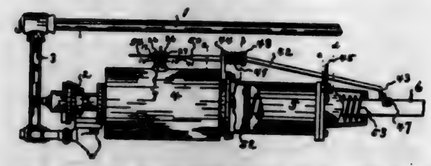

Claim.—1. In controlling means for a release-valve, the combination with a release-valve having a rock-bar; of a pair of locking-bars and a spreading-rod; said pair of locking-bars seated upon the rock-bar of the release-valve; said spreading-rod mounted operatively adjacent to said pair of locking-bars, and means to control the spreading-rod.

2. In controlling means for a release-valve, the combination with a release-valve having a rock-bar; of a pair of locking-bars and a spreading-rod; said pair of locking-bars seated upon the rock-bar of the release-valve; said spreading-rod mounted operatively adjacent to said pair of locking-bars; means to control the locking-bars, and means to control the spreading-rod.

3. In air-brake mechanism, controlling means for a release-valve; in combination with the auxiliary reservoir, piston-rod, and a release-valve having a rock-lever and mounted upon said auxiliary reservoir; of a pair of locking-bars seated upon said rock-lever, a spreading-rod resiliently mounted in operative proximity to said locking-bars and having an engagement with the piston-rod; and means to control said locking-bars.

4. In air-brake mechanism, controlling means for a release-valve; in combination with the auxiliary reservoir, piston-rod, and a release-valve having a rock-lever and mounted upon said auxiliary reservoir; of a pair of locking-bars seated upon said rock-lever, a spreading-rod mounted in operative proximity to said locking-bars and having an engagement with the piston-rod; means to control said locking-bars, and means to control the spreading-rod.

5. In combination with a release-valve having a releasing-lever formed as a rock-bar, of controlling means for said release-valve, comprising outer and upwardly-extending projections formed upon said rock-bar; a pair of resiliently-mounted locking-bars having inner contact-faces seated upon the outer sides of said outer and upwardly-extending projections of the rock-bar, and having transversely-disposed faces formed upon its terminal ends adapted to have a seating upon the terminal end of one of the projections formed upon said rock-bar of said releasing-lever at the time of actuating said rock-bar.

848,599. MUSIC-LEAF TURNER. FRED W. MCNEIL, St. Louis, Mo. Filed June 9, 1906. Serial No. 321,034.

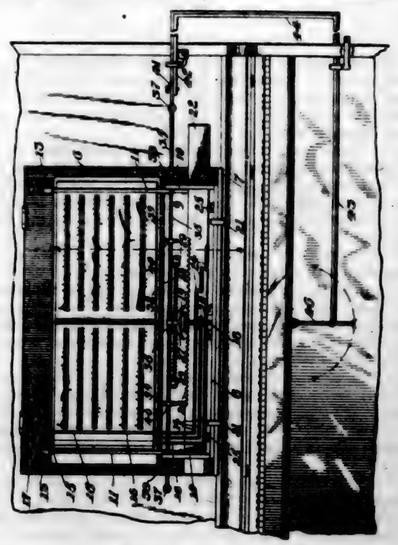

Claim.—In a music-leaf turner, the combination with a supporting-frame, a pivot or shaft arranged centrally thereon, a series of right-angular arms and pinions to which they are attached, said pinions being rotatable on the shaft, a bar which is arranged behind the pinions and slidable in guides, its upper edge being toothed and its front side provided with a series of racks duly spaced from each other and adapted to engage the aforesaid pinions successively, a double-ended pawl pivoted on the frame in position for engagement with the slidable rack-bar, a rod 35 arranged on the frame parallel to the rack-bar and above the pawl with which it is slidably connected, springs applied to said rod on each side of the pawl-shank, and a second rod 28 arranged below the first-named rod, and spiral springs encircling said rod each side of the pawl, whereby the latter is held normally in balanced position or out of engagement with the rack-bar, substantially as described.

848,600. PRODUCTION OF HOMOGENEOUS BODIES FROM TANTALUM OR OTHER METALS. MARCELLO VON PIRANI, Wilmersdorf, Berlin, Germany, assignor to Siemens & Halske A.-G., Berlin, Germany, a Corporation of Germany. Filed Oct. 4, 1906. Serial No. 337,427.

Claim.—1. The method of producing homogeneous bodies of refractory metal, which consists in inclosing the

metal in a suitable vessel, excluding air from said vessel, and directing cathode-rays upon said metal until it is fused and rendered homogeneous.

2. The method of producing homogeneous bodies of refractory metal, which consists in inclosing the metal in a suitable vessel, excluding air from said vessel, and focusing cathode-rays upon said metal until it is fused and rendered homogeneous.

3. A method of producing homogeneous bodies of refractory metal, consisting in inclosing the metal in a vessel containing a cathode-ray emitter, in exhausting air from said vessel, and in focusing cathode-rays on to said metal whereby the same is fused.

4. A method of producing homogeneous bodies of refractory metal, consisting in inclosing the metal in a vessel containing a plurality of cathode-ray emitters, in exhausting air from said vessel, and in focusing a plurality of cathode-ray brushes onto said metal whereby the same is melted.

5. A method of producing homogeneous bodies of refractory metal, consisting in inclosing the metal in a vessel containing a plurality of ray-emitters, in connecting the same with a source of high-tension alternating current, in exhausting air from said vessel, and in focusing the brushes from said emitters onto said metal whereby the same is fused.

6. The method of producing homogeneous bodies of refractory metal, which consists in triturating the metal, inclosing the triturated metal in a suitable vessel, excluding air from said vessel, and directing cathode-rays on said triturated metal until it is fused and rendered homogeneous.

7. The method of producing homogeneous bodies of refractory metal, which consists in triturating the metal, inclosing the triturated metal in a suitable vessel, excluding air from said vessel, and focusing cathode-rays on said triturated metal until it is fused and rendered homogeneous.

8. The method of producing homogeneous bodies of refractory metal, which consists in triturating the metal, inclosing the triturated metal in a suitable vessel, maintaining said vessel exhausted of air and other gases, and directing cathode-rays upon said triturated metal until it is fused and rendered homogeneous.

9. The method of producing homogeneous bodies of refractory metal, which consists in triturating the metal, inclosing the triturated metal in a suitable vessel, maintaining said vessel exhausted of air and other gases, and focusing cathode-rays upon said triturated metal until it is fused and rendered homogeneous.

848,601. ELECTRIC-TROLLEY RETAINER. EDWARD T. PLATT, Chicago, Ill., assignor of one-half to Herman Feldmann, Chicago, Ill. Filed May 21, 1906. Serial No. 318,080.

Claim.—In a device of the class described, the combination of a trolley pole and wheel, retaining-arms pivoted to the pole and having outwardly-flared portions extending above and beyond the wheel, springs for yieldingly holding the arms in one direction, stops arresting the movement of the arms in one direction, and a forked plate secured to the pole and forming guides and stops for the arms and limiting the movement of the arms in the opposite direction.

848,602. CAR-FENDER. SIMON A. POLITSKY, Boston, Mass. Filed Apr. 2, 1906. Serial No. 309,268.

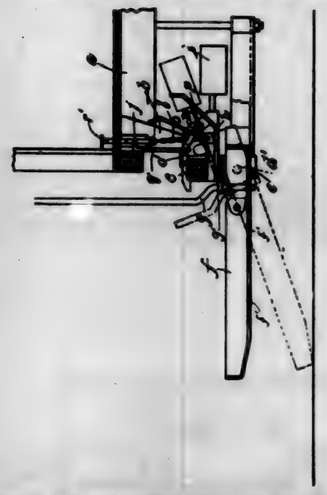

Claim.—1. The combination with a car, of a fender pivoted to one end thereof, manually-operated means in connection with the fender for positively depressing the outer end of the fender, a latch yieldingly mounted on the fender and movable therewith, a fixed member which engages the latch to lock the fender in its depressed position, and separate manually-operated means for releasing said latch.

2. The combination with a car, of a fender pivoted to one end thereof, a counterweight connected to the fender and arranged to hold its outer end elevated, manually-operated means for depressing the outer end of said fender against the force of said counterweight, a latch for holding it in position with its outer end depressed, and means for releasing said latch.

3. The combination with a car, of a fender pivoted to one end thereof, manually-operated means for depressing the outer end of said fender, a latch pivoted to the fender and adapted to engage with a stationary portion of the car-frame for holding the fender with its outer end depressed, and means for releasing said latch.

4. The combination with a car, of a fender pivoted to one end thereof, manually-operated means for depressing the outer end of said fender, a latch carried by the fender and arranged to be moved over and to slip into locking relation with a laterally-extending portion of the car-frame for holding the fender with its outer end depressed, and means for releasing said latch.

5. The combination with a car, of a fender pivoted thereto adjacent one end, a counterweight connected to said fender in such manner as to hold elevated the free outer end of the latter, a member mounted on the car and operable in opposite directions, a connection between said member and the fender whereby movement of the member in one direction causes depression of the free end of the fender against the resistance of said counterweight, a lock for holding the fender depressed, and means for releasing said lock on actuation of said member in the opposite direction.

6. The combination with a car, of a fender pivoted thereto adjacent one end, a counterweight connected to said fender in such manner as to hold elevated the free outer end of the latter, a bar pivoted to the car and operable in opposite directions, a connection between said bar and the fender whereby movement of the bar in one direction causes depression of the free end of the fender against the resistance of said counterweight, a lock for holding the fender depressed, and means for releasing said lock on actuation of said bar in the opposite direction.

7. The combination with a car, of a fender pivoted thereto adjacent one end, a counterweight connected to said fender in such manner as to hold elevated the free outer end of the latter, a member mounted on the car and manually operable in opposite directions, a connection between said member and the fender whereby movement of the member in one direction causes depression of the free end of the fender against the resistance of said counterweight, a lock for holding the fender depressed, and means for releasing said lock on actuation of said member in the opposite direction.

8. The combination with a car, of a fender pivoted thereto adjacent one end, a counterweight connected to said fender in such manner as to hold elevated the free outer end of the latter, a lever pivoted to the car-frame, a connection between one arm thereof and the fender, whereby movement in one direction of the lever may depress the free end of the fender, a latch for holding the fender depressed against the pressure of the counterweight, and means connected to the other arm of the lever for releasing the latch upon actuation of the lever in the opposite direction.

9. The combination with a car, of a fender pivoted thereto adjacent one end, a counterweight connected to said fender in such manner as to hold elevated the free outer end of the latter, a lever pivoted to the car-frame, a connection between one arm thereof and the fender, whereby movement in one direction of the lever may depress the free end of the fender, a latch carried by the fender arranged to drop into locking engagement with a portion of the car-frame when the fender is depressed to hold the same in such position against the pressure of the counterweight, and means connected to the other arm of the lever arranged to engage and release the latch when the lever is moved in the opposite direction.

10. The combination with a car, of a fender pivoted thereto adjacent one end, a counterweight connected to said fender in such manner as to hold elevated the free outer end of the latter, a lever pivoted to the car-frame, a connection between one arm thereof and the fender, whereby movement in one direction of the lever may depress the free end of the fender, a latch for holding the fender depressed against the pressure of the counterweight, means connected to the other arm of the lever for releasing the latch upon actuation of the lever in the opposite direction, and projecting members mounted on the lever on opposite sides of its fulcrum in position to be engaged by the foot of the operator.

848,603. SNAP-HOOK. JOSEPH H. READ, Burlington, N. J. Filed Apr. 21, 1906. Serial No. 313,063.

Claim.—The combination with a hook having a groove in its concave surface; of a curved keeper pivoted, and adapted to lie entirely within the groove, a lever fulcrumed in the end of the hook, and adapted to extend across the mouth of the hook, and a hook upon the lever overlapping the keeper, said lever-hook being adapted, when the lever is in position across the mouth, to depress one

end of the keeper into the groove and project the other end thereof into the mouth of the first-mentioned hook.

848,604. ANTIRECOIL DEVICE FOR EXPLOSIVE-ENGINES. DYCKE H. REIMERS, Chicago, Ill., assignor of one-half to Fred Biffar, Oak Park, Ill. Filed Nov. 25, 1905. Serial No. 289,031.

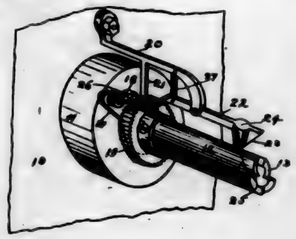

Claim.—1. The combination with the crank-shaft of an engine, of a ratchet-wheel mounted thereon, a pawl to engage said wheel, a lever extending near the shaft and adapted at one of its ends to engage the pawl and having its other end downwardly and inwardly inclined and in position to be engaged and raised by the application of a starting-crank, substantially as described.

2. The combination with the crank-shaft of an engine having a clutch-face on its outer end, of a ratchet-wheel mounted on said shaft, a pawl to engage the ratchet-wheel, a lever extending near the shaft and adapted at one of its ends to engage the pawl and having its other end inwardly and downwardly inclined, and in position to be engaged and raised by the application of a starting-crank having a clutch-face to engage the outer end of the crank-shaft, substantially as described.

848,605. PROCESS FOR UNGUMMING SILK. PETER SCHMID, Basel, Switzerland. Original application filed July 15, 1905, Serial No. 269,877. Divided and this application filed Oct. 17, 1905. Serial No. 283,146.

Claim.—1. The herein-described process of ungumming silk, consisting in first making a bath containing soap, then treating the raw silk with the lather only of the said bath in presence of steam and air, the silk not being submerged in the bath, and finally washing the silk thus treated.

2. The herein-described process for ungumming silk, consisting in first making a bath containing soap, then treating the raw silk with the lather only of the said bath obtained by heating said soapy bath to the boiling-point in the presence of air, the silk not being submerged in the bath, and finally washing the silk thus treated.

3. The herein-described process for ungumming silk, consisting in first making a bath containing soap, then treating the raw silk with the lather only of the said bath obtained by heating said soapy bath to the boiling-point and injecting air in said bath, the silk not being submerged in the bath, and finally washing the silk thus treated.

848,606. VARIABLE-SPEED MECHANISM. CHRISTOPHER M. SPENCER, Windsor, Conn., assignor to The Universal Machine Screw Company, Hartford, Conn., a Corporation of Connecticut. Original application filed May 4, 1904, Serial No. 206,277. Divided and this application filed Mar. 8, 1906. Serial No. 304,830.

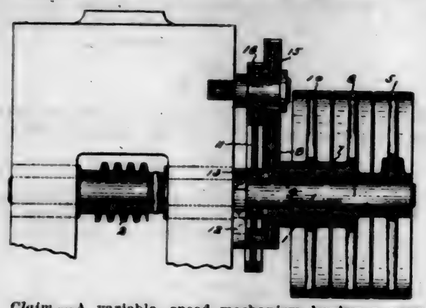

Claim.—A variable-speed mechanism having a worm-shaft, a pulley fixed to the worm-shaft, a pulley adjacent thereto and loose on the worm-shaft, an idle pulley free on the hub of the loose pulley, a gear on the worm-shaft adjacent to and connected with the hub of the loose pulley, a gear loose on the worm-shaft, two gears fastened together on a parallel shaft, one of said gears meshing with the gear that is connected with the hub of the loose pulley and the other of said gears meshing with the gear that is loose on the worm-shaft, a pawl carried by the gear that is loose on the worm-shaft, and a ratchet fixed to the worm-shaft and engaged by the pawl, substantially as specified.

848,607. OIL OR GAS ENGINE. ELIHU THOMSON, Swampscott, Mass. Filed Apr. 15, 1899. Serial No. 713,093.

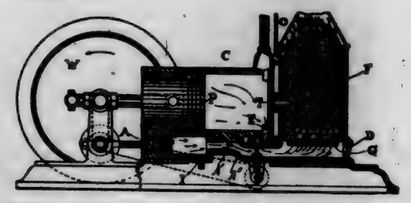

Claim.—1. The combination with an oil-engine and furnace, the heated material in which is traversed by the exhaust-gases in escaping, of a means for supplying air and combustible to said furnace for maintaining its high temperature, an ignition-tube for the engine which is heated by the furnace, and an oil-vaporizer also heated by the heat of the furnace, for the purpose set forth.

2. In a gas or oil engine, the combination of a piston and cylinder, means for supplying a mixture of oil and air to the engine in which the oil is in excess beyond the charge normal to the engine, a deodorizer containing a finely-divided mass, an exhaust-passage between the engine and the deodorizer, and means for forcing the unconsumed products from the cylinder into the deodorizer where they are consumed.

3. In combination a gas or oil engine, a deodorizer which is divided into sections, and means whereby at one time one section may receive air and another section exhaust gases and at another time the one exhaust gases and the other air.

4. In combination a gas or oil engine, a deodorizer which is divided into sections, means for admitting air to one section and exhaust-gases to another section, and means for directing the air to the section which has been receiving exhaust-gases and the exhaust-gases to the section which has been receiving air.

5. In combination a gas or oil engine comprising a piston and cylinder, a deodorizer which is divided into sections, an exhaust-passage communicating with the deodorizer and the cylinder, means for supplying air to the deodorizer, and means for directing the exhaust-gases into any of the sections.

6. In combination a gas or oil engine, a vaporizer, an ignition device, a heater maintained at a high temperature wholly or in part by the exhaust-gases for heating the vaporizer and ignition device and means for supplying air to said heater.

7. In a deodorizer, the combination of a chamber divided into sections and containing fuel, a passage for admitting gases to one of the sections, a passage for admitting air to another of the sections, and valves for controlling the admission of gas and air so arranged that the sections receiving air and gas may be made to alternate.

8. In a deodorizer, the combination of a receptacle which contains fuel, a septum for dividing the receptacle into two or more parts, a jacket surrounding the receptacle and separated therefrom by a space, and a septum for dividing the space between the receptacle and the jacket into two or more parts.

9. In a deodorizer, the combination of a receptacle filled or partially filled with combustible material, a jacket surrounding the receptacle and separated therefrom by a space, means for supplying gas to the space below the receptacle, a second jacket outside of the first, and means for supplying air to the space between the two jackets.

10. In a deodorizer, the combination of a receptacle divided into two sections, each section being partly or wholly filled with combustible material, a double jacket surrounding the receptacle whereby the air-passage to it is compelled to pass up and down, thereby receiving a certain amount of heat from the receptacle, a source of air-supply communicating with the space formed by the jackets, and means for admitting gas to the space below the receptacle wherein it mingles with air and passes through the fuel in the receptacle.

11. In a gas-engine, the combination of a piston and cylinder, an ignition-tube which is situated in the path of the exhaust-gases from the cylinder, a furnace for heating the tube and burning the unconsumed products in the exhaust, and automatically-acting means for supplying fuel to the furnace for increasing the temperature of the tube and assisting to burn the unconsumed products of the exhaust.

12. In combination a piston and cylinder, a furnace situated in close proximity to the cylinder, means for automatically supplying fuel to the furnace, and an ignition-tube for firing the charge of gas in the cylinder which extends into the furnace, the interior of said tube being in open communication with said cylinder.

13. In combination, a piston and cylinder, a furnace situated in close proximity to the cylinder, a pump for automatically supplying fuel to the furnace, a vaporizer for delivering fuel to the cylinder which is heated by the furnace, and an ignition-tube which opens into the cylinder and extends into the furnace.

14. In an internal-combustion engine, a combustion-chamber, a furnace located in proximity thereto, air-pumping means operated by the engine, and means for causing the air pumped thereby and the exhaust-gases from the combustion-chamber to pass into said furnace.

848,608. PROCESS OF SHUCKING OYSTERS. EDWARD L. TORSCH and JOHN H. PARKER, Baltimore, Md. Filed June 3, 1905. Serial No. 263,610.

Claim.—1. The process of shucking an oyster, consisting in removing the hinge by successive grindings which sunder the nexus between the shells while producing a suitably enlarged aperture; pulling the shells apart and severing the muscles attaching the meat to the shells by instruments introduced through the aperture; and separately depositing the meat and shells.

2. The process of shucking an oyster, consisting in removing portions of the shells by successive deeper and deeper grindings for producing an enlarged aperture; pulling the shells apart and severing the muscles attaching the meat to the shells by instruments introduced through the aperture; and separately depositing the meat and shells.

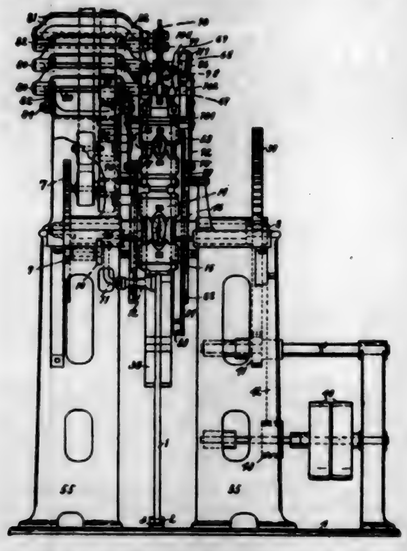

3. The process of shucking oysters, consisting in producing holes in the shells, severing the nexus and retaining-muscles during a continual circular movement of the oysters, while in substantially vertical positions, so that the holes are not yet below the horizontal, causing the oysters to continue their circular movement, and then turning the oysters upside down for discharging the meats from the shells by gravity.

4. The process of shucking an oyster consisting in producing a hole in and thereby weakening the hinge connection between its shells, separating the shells and removing the meat.

5. The process of shucking oysters, consisting in grinding through the hinges thereof and cutting the meat from the shells through the openings thus made.

6. The process of shucking oysters, consisting in grinding through the hinges thereof, pulling the shells apart, cutting the meat from the shells through the opening thus made, and discharging the meat therethrough by the action of gravity.

7. The process of shucking oysters, consisting in grinding through the hinges thereof, cutting the meat from the shells, and dropping the meats and the shells at different places.

8. The process of shucking oysters, consisting in grinding holes in the shells by successive abrasive actions, pulling the shells apart by means applied at the sides of the apertures produced, sufficiently far to allow the introduction of knives for severing the meat from the shells, releasing the meat by the action of gravity, at one location, and dropping the shells at a different location.

9. The process of shucking oysters, consisting in causing them to travel along a path in succession with all their corresponding parts moving in the same line, cutting larger and larger holes at successive locations of said path, partly separating the shells from each other and thus enlarging the openings, severing the meats from the shells by cutting the muscles which connect said meats to said shells, and finally dropping the shells at another location of the travel.

10. The process of shucking oysters, consisting in destroying the hinges and severing the retaining-muscles during the continued circular movement of said oysters while in substantially vertical positions with the hinges upward, causing the oysters to continue their circular travel, and then turning the oysters upside down for discharging the meats from the shells.

11. The process of shucking oysters, consisting in propelling them along a circular path in succession with all their hinges moving in but one circle, grinding off part of the shells at the hinges at one point of travel, then grinding off more of the material of the shell at a farther part of the travel, and so on until no hinges remain and holes are formed at the places of the hinges existing originally, severing the oysters' muscles while still moving in a circle by an action from without and through the openings thus made, and then removing the meats from between the shells.

12. The process of shucking oysters, consisting in destroying the hinges while pointing upright, separating the shells sufficiently to release the meats, and severing the muscles from the shells, then turning the oysters to a downward position for releasing the meats.

13. The process of shucking oysters, consisting in moving oysters toward a center of revolution against a resisting force of a yielding nature acting outward radially, positively blocking the outward movement of the oysters for preventing their outermost edges from passing a single circle, gripping the oysters circularly, causing them to continue their travel in a circle, cutting holes through said outermost edges, pulling the shells apart, cutting the meats from the shells through the openings thus made while the oysters are still traveling in a circle, and then removing the meats from the shells while the latter are still traveling in a circle.

848,609. CORN-HARVESTER. JOHN J. WAGONER, Delong, Ind. Filed May 17, 1904. Serial No. 208,475.

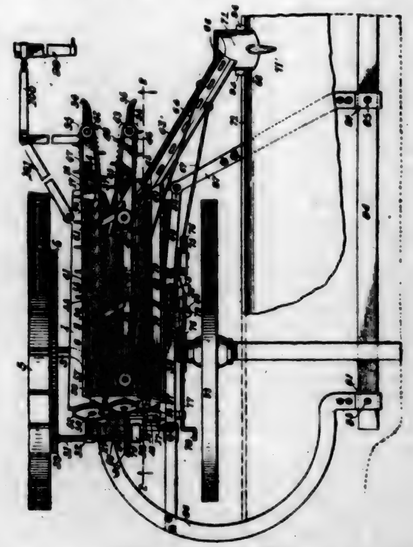

Claim.—1. In a machine of the class described, a harvester-frame, provided with two forwardly-projecting members, a driving and supporting wheel for one side of said frame, and vertically-adjustable means for attaching the other side of said frame to a wagon a bracket extending laterally from the drive-wheel side of the harvester-frame, and means for attaching a draft-animal to said bracket.

2. In a machine of the class described, a frame or casing, provided with two suitable forwardly-projecting members, a ground-engaging wheel supporting one side of said casing, a draft device attached to the outer side of the outer member; a slidable rack-bar, the inner side of the inner member having a suitable guideway for the passage of said rack-bar, and means for operating the latter.

3. In a harvesting-machine, the combination with a wagon running-gear, a harvester-frame, rotary supporting means for the outer side of said frame, and means for connecting the inner side of the harvester-frame with said running-gear, a rack-bar, the inner side of said frame provided with a guideway for the passage for said rack-bar, the lower end of said rack-bar being provided with supporting means, and operating means including a crank-shaft for lowering and raising said rack-bar.

4. In a machine of the class described, a frame or casing, provided with two forwardly-projecting members, a ground-engaging wheel supporting the outer side of said casing, a bracket attached to the outer side of the outer member, and a draft attachment connected with said bracket, a slidable rack-bar, the inner side of the inner member having a suitable eye for the passage of the said rack-bar, and means for operating said rack-bar.

5. In a harvesting-machine, the combination with a running-gear, a harvester-frame, rotary supporting means for the outer side of said frame, braces connected with the rear and front ends of said frame and extending laterally from the inner side of the latter, and means adapted for adjustably connecting their free ends with the reach of said running-gear.

6. A harvester frame or casing, a ground-engaging wheel supporting one side of said casing, braces connected with and extending from the opposite side of said casing, a running-gear, and connecting means including blocks, each having a plurality of recesses to engage the reach of said running-gear, and each provided with an overhanging flange connected with the free end of one of the braces.

7. A harvester-casing, a ground-engaging supporting-wheel for the outer side of said casing, a running-gear, connecting means between said running-gear and the inner side of the harvester-casing, and auxiliary supporting means vertically adjustable with relation to the inner side of said harvester-casing.

8. A harvester-casing, a ground-engaging supporting-wheel for the outer side of said casing, braces connected with said casing and extending laterally from the inner side of the latter, a running-gear adjustably supporting the free ends of said braces, and auxiliary supporting means vertically adjustable with relation to the inner side of the harvester-casing.

9. A harvester-casing, a ground-engaging supporting-wheel for the outer side of said casing, a running-gear, connecting means between the latter and the inner side of the harvester-casing to support the latter, a bracket extending laterally from the outer side of the harvester-casing in front of the supporting-wheel, and a draft attachment connected with said bracket.

10. A harvester-casing, rotary supporting means for the outer side of said casing, a running-gear, and adjustable connecting means between the latter and the inner side of the harvester-casing, said connecting means including a pair of braces connected respectively with the inner side of the harvester-casing and with the reach of the running-gear, a bolt connecting said braces, a lug extending forwardly from the harvester-casing and having an opening for the passage of the connecting-bolt, and a curved brace-bar connecting said bolt with the brace extending to the reach of the running-gear.

11. In a harvesting-machine, the combination with a wagon running-gear, a harvester-frame having two forwardly-projecting members, rotary supporting means for the outer side of said frame, connecting means between said running-gear and the inner side of the harvester-frame to support the latter, a wagon-box supported upon said running-gear, an elevating device connected with and extending obliquely forward and inward from the front end of the inner member and disposed to receive the discharge from said member.

12. In a corn-harvester, a casing having a longitudinal inclination, a ground-engaging supporting-wheel on one side of said casing and braces firmly connected with each end of said casing, a running-gear, connecting means between said running-gear and the ends of the harvester-casing, and auxiliary supporting means vertically adjustable with relation to the ends of the harvester-casing.

13. In a harvesting-machine, the combination with a running-gear, a harvester-frame, rotary supporting means for the outer side of said frame, braces connected with and extending laterally from the inner side of said frame and adapted to be connected at their free ends with said running-gear, an elevating device connected with and extending obliquely forward and inward from the front end of said frame, a wagon-box supported by said running-gear and disposed to receive the discharge from said elevating device.

14. In a corn-harvester, a pair of snapping-rollers, a pair of husking-rollers disposed below and overlapped by the inner snapping-roller, and shafts supporting said rollers, slidable bearings for the outer snapping-roller and for the inner husking-roller, springs disposed to press said bearings in the direction of the shafts of the other rollers, and means for limiting the movement of said slidable bearings, set-screws adapted to regulate the pressure of said springs.

15. In a corn-harvester, a casing, a pair of snapping-rollers mounted in said casing, a pair of husking-rollers disposed below the plane of and overlapped by the inner snapping-roller, said snapping-rollers having spiral grooves or rifles the grooves in each roller arranged opposite the ridges of the other.

16. In a corn-harvester, a pair of snapping-rollers having slightly-tapering bodies, the outer snapping-roller slightly disposed above the plane of the inner snapping-roller, a pair of husking-rollers disposed below the plane of and overlapped by the inner snapping-roller over the outer husking-roller, and shafts supporting said rollers, the axes of which are mounted in suitable bearings.

17. In a corn-harvester, a casing having two forwardly-projecting members, a slightly-tapering snapping-roller supported by the outer member, a similar snapping-roller supported by the inner member, a guard-board disposed closely to the outer snapping-roller, a guard-board suitably spaced above the inner snapping-roller, spring-closures suitably spaced along the snapping-rollers and pivotally attached to the inner guard-board.

18. In a corn-harvester, a casing, a pair of snapping-rollers mounted in said casing, a pair of husking-rollers disposed below the plane of and overlapped by the inner snapping-roller, a deflecting guard-board disposed closely to the outer snapping-roller, an adjustable protecting guard-board projecting downwardly closely to the inner side of the outer snapping-roller, and means for attaching said adjustable board to said deflecting-board, a deflecting guard-board disposed closely to the inner husking-roller, an intermediate guard-board spaced above the inner snapping-roller, spring-closures pivotally attached to said intermediate board, connecting means between the rear ends of said guard-boards.

19. In a corn-harvester, a casing, a pair of snapping-rollers mounted in said casing, the outer snapping-roller being disposed above the plane of the inner snapping-roller, a pair of husking-rollers disposed below the plane of and overlapped by the inner snapping-roller, guard-boards adjacent to the outer snapping-roller and to the inner husking-roller, an intermediate guard-board spaced above the inner snapping-roller, and a spring-actuated closure between said intermediate and outer guard-boards, said closure being located near the points of the snapping-rollers.

20. In a corn-harvester, a pair of snapping-rollers, a guard-board adjacent to the outer snapping-roller, a protecting guard-board projecting downwardly to the inner side of the outer snapping-roller and attached near the lower side of said guard-board, means for vertical adjustment of the protecting guard-board.

21. In a corn-harvester, a pair of slightly-tapering snapping-rollers, a deflecting guard-board disposed closely to the outer snapping-roller, a protecting guard-board attached to said deflecting-board and projecting downwardly to the inner side of the outer snapping-roller, a guard-board spaced above the inner snapping-roller, spring-closures disposed along the snapping-rollers between said guard-boards and pivotally attached to one of said guard-boards.

22. In a corn-harvester, a casing, a pair of snapping-rollers mounted in said casing, an outer deflecting guard-board, a protecting guard-board attached to said deflecting-board and extending downwardly and parallel to the inner side of the outer snapping-roller, a deflecting guard-board spaced above and parallel with the inner snapping-roller, flexible closures between said deflecting-boards, one of said closures being located near the points of said rollers.

23. In a corn-harvester, a pair of snapping-rollers, guard-boards adjacent to said snapping-rollers, connecting means between the rear ends of said guard-boards, and a stalk-guard connected with one of said guard-boards in front of the rear connecting means.

24. In a corn-harvester, a pair of snapping-rollers, a guard-board adjacent to the outer snapping-roller, and a protecting guard-board extending downwardly contiguous to the inner side of the outer snapping-roller and attached near the lower side of said guard-board, means for adjustment of said protecting guard-board, a pair of husking-rollers disposed below the plane of and overlapped by the inner snapping-roller, a guard-board disposed closely to the inner husking-roller, an intermediate guard-board spaced above the inner snapping-roller, spring-closures suitably disposed along the snapping-rollers and pivotally attached to said intermediate guard-board.

25. In a corn-harvester, a pair of snapping-rollers, a pair of husking-rollers disposed below and overlapped by the inner snapping-roller, guard-boards one adjacent to the outer snapping-roller and one adjacent to the inner husking-roller, a protecting guard-board attached to the outer guard-board and extending downwardly and parallel to the inner side of the outer snapping-roller, and means for adjustment of the protecting guard-board, an intermediate guard-board spaced above the inner snapping-roller, spring-closures disposed along the snapping-rollers between the intermediate and the outer guard-board and pivotally attached to said intermediate guard-board.

26. In a corn-harvester, a frame, a pair of snapping-rollers supported by said frame, the outer snapping-roller being disposed above the inner snapping-roller, guard-boards suitably spaced above the snapping-rollers, spring-closures suitably spaced along the snapping-rollers between said guard-boards and hingedly attached to the inner guard-board.

27. In a corn-harvester, a casing inclining rearwardly and upwardly and mounted upon an arch-axle, a ground-engaging supporting-wheel mounted upon the outer end of said axle, a pair of snapping-rollers having slightly-tapering bodies, the outer snapping-roller disposed above the inner snapping-roller, a pair of husking-rollers disposed below and overlapped by the adjacent snapping-roller, and vertically-adjustable supporting means for the ends of said casing.

28. In a corn-harvester, a pair of snapping-rollers, a deflecting guard-board disposed closely to the outer snapping-roller, an adjustable protecting guard-board partly disposed below and overlapping the deflecting guard-board and projecting downwardly adjacent to the inner side of the outer snapping-roller, and means for vertical adjustment of said protecting guard-board.

29. In a corn-harvester, a casing having two forwardly-projecting members, the outer member supporting a snapping-roller, the inner member supporting a similar snapping-roller; and a pair of husking-rollers, said husking-rollers disposed below the plane of and overlapped by the inner snapping-roller, a discharge-spout attached to said inner member at the front ends of said husking-rollers.

30. In a corn-harvester, a casing having two forwardly-projecting members, a slightly-tapering snapping-roller mounted in the outer member, a similar snapping-roller mounted in the inner member, said rollers normally spaced slightly apart except at their extreme rear ends, a pair of husking-rollers disposed below and overlapped by the inner snapping-roller, permanent bearings for the inner snapping-roller and the outer husking-roller, slidable spring-pressed bearings for the outer snapping-roller and for the inner husking-roller, and means for limiting the movement of said slidable spring-pressed bearings.

31. In a corn-harvester, a pair of snapping-rollers, a pair of husking-rollers disposed below the plane of and overlapped by the adjacent snapping-roller, a discharge-spout at the front ends of the husking-rollers, an elevating device disposed to receive the discharge from said spout, and means for operating the snapping and husking rollers and the elevating device.

32. In a machine of the class described, a harvester-frame, rotary supporting means for the outer side of said frame, a wagon running-gear and means for connecting the inner side of said frame with the wagon running-gear, a wagon-box mounted upon said running-gear, an elevating device connected with and extending obliquely forward and inward from the front end of the harvester-frame, said wagon-box disposed to receive the discharge from said elevating device.

33. In a corn-harvester, a pair of snapping-rollers having slightly-tapering bodies, guard-boards suitably spaced above the snapping-rollers, spring-actuated closures suitably disposed along said snapping-rollers and hingedly connected to the inner guard-board.

34. In a device of the class described, a harvester-casing, rotary supporting means for the outer side of said casing, a running-gear, means for connecting the inner side of said harvester-casing with and supporting the same upon said running-gear, a wagon-box supported upon the latter, an elevating device connected with and extending obliquely from the harvester-casing, and a spout connected adjustably with the wagon-box and adapted to receive the discharge from said elevating device.

35. In a corn-harvesting machine, a pair of slightly-tapering snapping-rollers, a guard-board spaced above parallel with the inner snapping-roller, spring-closures suitably spaced along the snapping-rollers and pivotally attached to said guard-board.

36. In a corn-harvesting machine, a pair of slightly-tapering snapping-rollers, a deflecting guard-board adjacent to the outer snapping-roller, a protecting guard-board disposed near the lower side of and overlapping the deflecting guard-board and projecting downwardly closely to the inner side of the outer snapping-roller, and means for attaching the protecting guard-board to said deflecting guard-board.

37. In a corn-harvester, a casing, a pair of snapping-rollers mounted in said casing, a pair of husking-rollers disposed below the plane of and overlapped by the inner snapping-roller, a deflecting guard-board disposed closely to the outer snapping-roller, an adjustable protecting guard-board attached to said deflecting guard-board and projecting downwardly and parallel to the inner side of the outer snapping-roller, a deflecting guard-board disposed closely to the inner husking-roller, an intermediate guard-board spaced above the inner snapping-roller, spring-closures pivotally attached to said intermediate guard-board, connecting means between the rear ends of said guard-boards.

38. In a corn-harvester, an arched axle, a casing provided with two forwardly-projecting members, the outer member being disposed above the inner member, said casing inclining rearwardly and upwardly and mounted upon the arch-axle, a ground-engaging supporting-wheel mounted upon the outer end of said axle, a pair of slightly-tapering snapping-rollers mounted in said casing, a guard-board spaced above the inner snapping-roller, flexible closures pivotally attached to said guard-board, a guard-board disposed closely to the outer snapping-roller, adjustable protecting guard-board projecting downwardly closely to the inner side of the outer snapping-roller and attached to the outer guard-board, means for vertical adjustment of the protecting guard-board.

39. In a harvesting-machine, the combination with a

wagon running-gear, a harvester-frame, a driving and supporting wheel for the outer side of said frame, means for connecting the inner side of said harvester-frame with and supporting the same upon said running-gear, a wagon-box mounted upon the latter, an elevating device connected with and extending forwardly and inwardly from the front end of the harvester-frame, and means adapted for adjustably supporting the free end of said elevating device in relation to said wagon-box.

40. In a machine of the class described, a harvester-frame having two forwardly-projecting members, rotary supporting means for the outer side of said frame, a running-gear, connecting means between the latter and the inner side of the harvester-frame to support the latter, a wagon-box supported by said running-gear, an elevating device connected with and extending obliquely forwardly and inwardly from the front end of the inner member, said wagon-box disposed to receive the discharge from said elevating device.

41. In a harvesting-machine, the combination with a running-gear, a harvester-frame, an axle having a spindle at the outer end of said axle, the harvester-frame supported by said axle, a driving and supporting wheel mounted on said spindle, braces connected with each end of said frame and extending from the inner side of the latter, said running-gear adjustably supporting the free ends of said braces, and auxiliary supporting means vertically adjustable upon the side of the harvester-frame opposite the drive-wheel, an elevating device connected at the front end of said frame, a wagon-box supported by said running-gear, said elevating device arranged to receive the discharge from the harvester-frame and deliver the same into said box.

848,610. OVERHEAD TROLLEY-FROG. BURT WILBUR, Syracuse, N. Y. Filed July 18, 1905. Serial No. 270,205.

Claim.—A switch for overhead trolleys, comprising a substantially Y-shaped member having its intermediate top portion flat and straight, and its opposite ends curved upwardly and provided with slots to receive the current-conductors, flanges depending from said plate, a switch-point pivoted at the juncture of the two converging arms of said Y-shaped member, said switch-point having a rearwardly-projecting heel, said heel lying between the two converging arms of said Y-shaped member, a spring secured to one of said converging arms, said spring bearing against said heel member and adapted to maintain said switch-point in engagement with one of said depending flanges, and clamps carried by the top face of said switch, said clamps adapted to receive the electrical conductors, and forming means for supporting said switch therefrom.

848,611. PROCESS OF DELINTING COTTON-SEED LINTERS. CHARLES H. CASEBOLT, Columbus, Miss., assignor, by direct and mesne assignments, of one-half to Grant Bros. Company, Memphis, Tenn., a Corporation of Georgia, and one-half to American Linting Company, a Corporation of Tennessee. Filed May 17, 1904. Renewed Jan. 24, 1907. Serial No. 353,905.

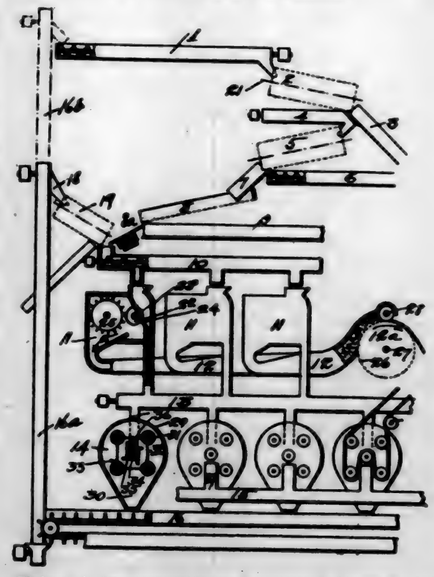

Claim.—1. The process herein described of treating cotton-seed delint which consists in dissociating such delint in the presence of additional cotton-seed to open up the mass and straighten the fibers and combine the longer fibers thereof with the linters of said seed.

2. The process herein described of treating the delint obtained from cotton-seed from which the linters have been removed which process consists in introducing said delint into the presence of additional cotton-seed whereby the longer fibers of the delint are caused to combine with the linters of the said cotton-seed.

3. The process herein described of delinting cotton-seed which consists essentially in removing and recovering the linters separate from the seed and its adhering remaining fibers, then removing the said fibers from said seed, and finally recovering the remaining linters from the delint by opening up the mass of delint in the presence of additional cotton-seed from which linters have not been removed whereby the extreme short fibers and foreign matter in the delint are permitted to escape and the longer fibers of the delint are straightened out and combine with the linters of the said cotton-seed.

848,612. MANUFACTURE OF ALUMINA AND ALKALI SULFUR SALTS. ADOLF CLEMM, Mannheim, Germany. Original application filed Apr. 5, 1906, Serial No. 310,090. Divided and this application filed Jan. 12, 1907. Serial No. 352,025.

Claim.—1. In the process of manufacturing alumina the steps which consist in mixing aluminiferous material with quantities of alkali sulfate and carbon which are multiples of those theoretically required to form an alkali aluminate and calcining the mixture, lixiviating the calcined mass and treating the solution with sulfureted hydrogen substantially as and for the purpose set forth.

2. In the process of manufacturing alumina, the steps which consist in mixing aluminiferous material with quantities of alkali sulfate and carbon, which are multiples of those theoretically required to form an alkali aluminate, calcining the mixture, lixiviating the calcined mass, treating the solution with sulfureted hydrogen, separating the thus-obtained precipitate from the remaining solution and treating the latter with sulfurous acid substantially as and for the purpose set forth.

3. In the process of manufacturing alumina, the steps which consist in mixing aluminiferous material with quantities of alkali sulfate and carbon, which are multiples of those theoretically required to form an alkali aluminate, calcining the mixture, lixiviating the calcined mass, treating the solution with sulfureted hydrogen, separating the thus-obtained precipitate from the remaining solution and treating the latter with sulfurous acid, treating the insoluble residues of the lixiviated calcined mass with oxidizing agents, treating the products of oxidation with water concentrating the solution thus obtained, and allowing the thiosulfate contained therein to be crystallized out substantially as and for the purpose set forth.

848,613. ROTARY WEED-CUTTER AND CULTIVATOR. ANTON A. FEHRENBACHER, Condon, Oreg., assignor of one-half to Clarence H. Smith, Condon, Oreg. Filed May 29, 1906. Serial No. 319,327.

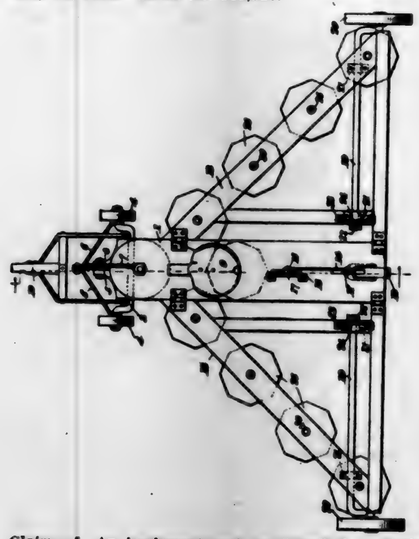

Claim.—1. An implement such as described consisting of a platform, wheels supporting said platform, a means for raising and lowering the platform, wings hinged to said platform, wheels supporting the outer ends of said wings, a means for raising and lowering the outer ends of said wings, vertically-journaled shafts carried by the platform and wings and horizontally-disposed disks attached to the ends of said shafts.

2. An implement such as described consisting of a platform, wheels supporting said platform, a means for raising and lowering said platform, triangular wings hinged to the longitudinal sides of said platform, wheels supporting the outer ends of said wings, a means for raising and lowering the outer ends of said wings, shafts vertically journaled in said wings and platform and having at their lower ends horizontally-disposed disks, the shafts and the wings being arranged in lines which extend parallel to the line representing the hypotenuse of the triagle of the wings.

848,614. MACHINE FOR CUTTING AND WINDING COLLARETS. JOSEPH A. FISCHING, Utica, N. Y., assignor to Johnston Novelty & Mill Specialty Company, Utica, N. Y. Filed Mar. 30, 1905. Serial No. 252,895.

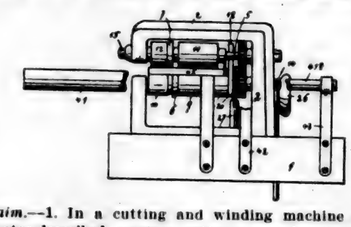

Claim.—1. In a cutting and winding machine of the character described, a rotary cutter mounted and arranged to receive the end of a tubular fabric as described and sever a strip therefrom, a drawing and winding mechanism for the severed strip, and a guide and spreader for the strip arranged between the cutting and the drawing and winding mechanisms, substantially as set forth.

2. In a cutting and winding mechanism of the character described, forwarding-rollers arranged for the reception of the end of a tubular fabric as described, coöperating circular cutters in said rollers, respectively, a drawing and winding mechanism arranged to operate on the severed strip, and a guide and spreader for the severed strip arranged between the said cutting and the drawing and winding mechanisms, substantially as set forth.

3. In a cutting and winding machine of the character described, a frame and forwarding-rollers arranged in the frame for the reception of the end of a tubular fabric as described, coöperating circular cutters in said rollers, respectively, rollers for supporting said tubular fabric, drawing and winding mechanism arranged to operate on the severed strip, and a guide and spreader for the severed strip arranged between said cutting and winding mechanisms, substantially as set forth.

4. In a cutting and winding machine of the character described, the combination of an open-sided frame in which are mounted the forwarding-rollers 9, 10, 11 and 12 arranged to receive the end of a tubular fabric as described, circular cutters 6 and 7 arranged in said sets of rollers, a cloth-guide in advance of said rollers, supporting-rollers for said tubular fabric, one of which is provided with means for driving a drawing and winding mechanism arranged to operate on the severed strip, and a guide and spreader for the severed strip arranged between said cutting and winding mechanisms substantially as set forth.

848,615. MEANS FOR EFFECTING ESCAPE OF OCCUPANTS FROM SUNKEN VESSELS. ISAAC FRIPP, Catford, England, assignor to James Watt, Catford, England. Filed Oct. 13, 1905. Serial No. 282,653.

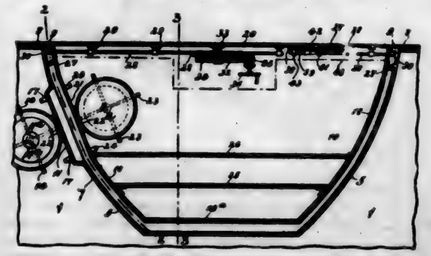

Claim.—1. In means for the purpose set forth the combination with a ship of a containing-chamber built there-

in means for flooding said chamber in any position thereof, a releasable vessel located within said chamber and having convex inwardly-directed side and end walls the former meeting in the central plane of the vessel and closable means for giving access from the ship to the interior of said vessel substantially as described.

2. In means for the purpose set forth the combination with a ship, of a containing-chamber built therein, means for flooding said chamber in any position thereof, a releasable vessel located within said chamber and having convex inwardly-directed side and end walls the former meeting in the central plane of the vessel and means for locking the latter in and releasing same from the chamber aforesaid substantially as described.

3. In means for the purpose set forth the combination with a ship, of a containing-chamber built therein, means for flooding said chamber in any position thereof, a releasable vessel located within said chamber and having convex inwardly-directed side and end walls, the former meeting in the central plane of the vessel, closable means for giving access from the ship to the interior of the vessel, means for locking the latter in and releasing same from the chamber aforesaid and means for permitting egress from the vessel substantially as described.

4. In means for the purpose set forth the combination with a ship, of a containing-chamber built therein, means for flooding said chamber in any position thereof, a releasable vessel located within said chamber and having convex inwardly-directed side and end walls, the former meeting in the central plane of the vessel, an overdeck to said vessel flush with the deck of the ship, closable means for giving access from the ship to the interior of the vessel, means for locking the latter in and releasing same from the chamber aforesaid, a closable hatchway in the overdeck of the vessel, lookouts in the walls thereof, a deck portion within same and hand-rails adjacent said deck portion substantially as described.

848,616. APPARATUS FOR THE RAPID DETERMINATION OF THE MOISTURE CONTENT OF GRAIN. EDGAR BROWN, New York, and JOSEPH W. T. DUVEL, Ohio. Filed Mar. 2, 1907. Serial No. 360,248.

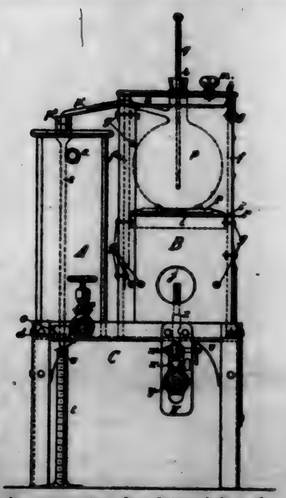

Claim.—An apparatus for determining the percentage of moisture in grain or other similar material, consisting of (a) an evaporating-chamber which is divided into compartments, said compartments being lined with asbestos and being separated from each other by double walls with a convenient air-space in order to prevent any one compartment from being affected by the heat from the adjoining compartment, said compartments being further provided with a flange near the base, projecting into the interior, for supporting the wire-gauze and triangle on which the flask containing the mixture of oil and the substance of which the moisture determination is to be made, rests, the compartments of the evaporating-chamber being further provided with asbestos-lined covers, each having an opening in the center through which the neck of the flask projects, said covers being also provided with a flange fitting down into the compartments; (b) spherical distillation-flasks having an opening at the top through which the oil and substance of which the moisture determination is to be made, is introduced, closed by a rubber stopper carrying a thermometer, said flasks also having a side tube leading off from the neck through which the distillate passes into condenser-tubes; (c) a condensing-tank and condenser-tubes; (d) graduated cylinders for receiving the distillate; all in combination forming the apparatus, substantially as described.

REISSUES.

12,623. DUMPING MECHANISM FOR METALLIC CARS. ANTON BECKER, Columbus, Ohio, assignor, by mesne assignments, to The Ralston Steel Car Company, East Columbus, Ohio, a Corporation of Ohio. Filed May 2, 1906. Serial No. 314,000. Original No. 763,841, dated June 28, 1904.

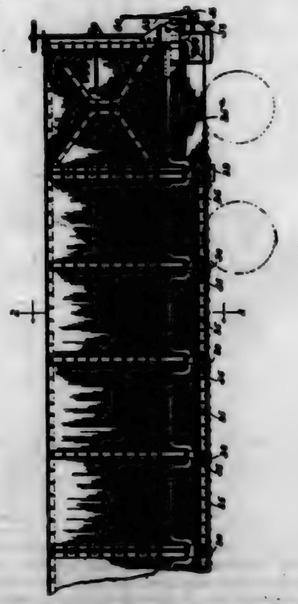

Claim.—1. In a car, in combination with the frame of the car, a pivoted door adapted to retain a part of the load, a shaft adjacent to the door, a crank-arm on said shaft, a wheel on said crank-arm in engagement with said door, means for holding said wheel in contact with the door in all operative positions, and means for turning said shaft, whereby, as said shaft is moved, said door is opened or closed.

2. In a car, in combination with the frame of the car, a pivoted door adapted to retain a portion of the load, a shaft journaled adjacent to said door, a crank on said shaft, a journaled wheel on said crank-arm adapted to bear against the door, and mechanism on the crank-arm sliding in a slot in the door and means for turning the shaft, whereby moving the shaft in opposite directions gives the door corresponding motion.

3. In a car, in combination with the frame of the car, a pivoted door adapted to retain a portion of the load a shaft journaled on opposite sides of said door, double crank-arms between the bearings of said shaft having a common crank-pin, a wheel or wheels on said crank-pin bearing against said door, means for holding said wheel in contact with the door in all operative positions, and means for turning said shaft, whereby, as said shaft is moved, said door is moved.

4. In a car, in combination with the frame of the car, a pivoted door adapted to retain a portion of the load, a shaft pivotally mounted adjacent to the door and on opposite sides of it, double crank-arms between the bearings of said shaft having their crank-pin bearing against and supporting said door and mechanism on said pin in engagement with a slot in said door, whereby as said shaft is revolved in opposite directions, it moves the door positively in opposite directions.

5. In a car, in combination with the frame of the car, a pivoted door adapted to retain a portion of the load, a shaft journaled adjacent to the door and on opposite sides thereof, double crank-arms on said shaft and a pin connecting them adapted to support said door, a wheel upon the crank-arm bearing against the under side of the door and mechanism mounted on the crank-pin moving in a slot in the door and mechanism for moving said shaft, whereby as the shaft is moved in opposite directions, the door is positively moved in opposite directions.

6. In a car, the combination of the frame of the car consisting of a center plate-girder and cross-bearers or bolsters, doors pivoted to the center girders adapted to swing up and form a portion of the floor of the car and adapted to swing down between the cross-supports, a shaft pivotally mounted at a fixed point on the cross-supports and a crank-arm on said shaft bearing against the under side of each of the doors, adapted, as said shaft is moved, to open and close the doors.

7. In a car the combination of a frame of a car, consisting of a center girder and cross-bearers or bolsters, doors pivoted to the center girder adapted to swing up and form a portion of the floor of the car and adapted to swing down between the cross-supports, a shaft pivotally mounted at a fixed point on the cross-supports, a crank-arm on said shaft and a wheel on said crank-arm bearing against the under side of the doors.

8. In a car, the combination of the frame of the car consisting of a center plate-girder and cross-bearers or bolsters, doors pivoted to the center plate-girder adapted to swing up and form a portion of the floor and adapted to swing down between the cross-supports to empty the load from the doors, a shaft pivotally mounted on the cross-supports, a portion of the shaft being bent to form double crank-arms, each crank-arm, bearing against and supporting the door above it and means for turning the said shaft, whereby, as said shaft is turned in opposite directions, said doors are positively moved up and down.

9. In a metallic car, a shaft having one or more crank-arms with connecting-pins in it, an antifriction-wheel having a hole in its center large enough to allow it to slip along said shaft over said crank-arms onto said crank-pin, and a split sleeve adapted to fit over said crank-pin to form a journal-bearing for said antifriction-wheel.

10. In a metallic car, a shaft having one or more double crank-arms and a connecting crank-pin bent in it, an antifriction-wheel having a hole in its center large enough to allow it to slip along said shaft over said crank-arms onto said crank-pin, a split sleeve adapted to fit over said crank-pin to form a journal-bearing for said antifriction-wheel and a finger rotatably mounted upon said sleeve adapted to engage a slot in a door.

11. In a car, a cross-bearer or bolster having a notch in its lower edge, a casting forming the lower portion of the bearing for a shaft adapted to fit into said notch and means for securing said casting to said cross-bearer or bolster.

12. In a car, a cross-bearer or bolster having a notch in its lower edge, a member adapted to act as a lower bearing for a shaft closing the bottom of said notch, and means for securing said member to said cross-bearer or bolster.

13. In a car, a cross-bearer or bolster made in the form of a plate-girder with a lower flange, a notch cut in the lower edge of said bolster adapted to form the top bearing for a shaft, a casting adapted to form the lower bearing for a shaft adapted to fit in said notch and means for securing said casting to the flange of said cross-bearer or bolster.

14. In a metallic car a frame consisting of a central plate-girder and cross-bearers or bolsters intersecting the same at right angles, a door pivoted to said central plate-girder between one set of cross-bearers or bolsters, adapted when level, to form a portion of the floor of the car, and adapted when swung down, to permit the portion of the load upon the door to slide off at the side of the car, means for moving said door from one position to the other and horizontal truss-bracing near the top of said plate-girder but low enough to permit said opening and closing of the door connected to opposite cross-bearers or bolsters, substantially as described.

15. In a car, in combination with the frame of the car, a pivoted door adapted to retain a portion of the load, a shaft pivotally mounted adjacent to the door and on opposite sides of it, double crank-arms between the bearings of said shaft having their crank-pin bearing against and supporting said door in both open and closed positions, and means for operating the shaft to open and close the door.

16. In a car, in combination with the frame of the car, a pivoted door adapted to retain a portion of the load, a shaft journaled adjacent to the door and on opposite sides thereof, double crank-arms on said shaft and a pin connecting them adapted to support said door in both open and closed positions, a wheel upon the crank-arm bearing against the under side of the door and mechanism for moving said shaft to open and close the door.

17. In a dumping-car, a hinged door forming a part of the car-bottom, a supporting-arm pivotally connected to the car-frame beneath the door and movable to and from vertical position in engagement with the under side of the door to hold the door closed when in vertical position and supporting the door when in open position and means for turning the arm to permit the door to open when turned from vertical position.

18. In a dumping-car, a hinged door forming a part of the car-bottom, a supporting-arm pivotally connected to the car-frame beneath the door and movable to and from vertical position in engagement with the under side of the door to hold the door closed when in vertical position and permit the door to open and support it in open position when turned from vertical position.

12,624. MANIFOLDING-PAD AND HOLDER. CARRIE L. BECK, Elmira, N. Y., executrix of Warren F. Beck, deceased. Filed Jan. 25, 1907. Serial No. 353,956. Original No. 647,934, dated Apr. 24, 1900.

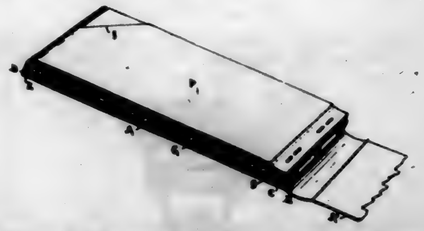

Claim.—1. The combination, with a holder for manifolding-pads, of a bent-up edge portion having a bail hinged at the top thereof, and means for locking the bail in the angle between said parts for the purpose set forth.

2. The combination with a manifolding-pad, the leaves of which are bound together at one end, of a transfer-sheet

having one end held rigidly in position with relation to the pad on a line parallel with and adjacent to the free ends of the leaves of the pad, said sheet being movable only in a direction parallel with the lateral edges of the leaves of the pad and overlying and substantially covering said leaves and having a portion cut away to expose said leaves at or near the free ends, the free ends of the leaves of the pad being adapted to be grasped where exposed by said cut-away portion and drawn directly away from the line of attachment of the transfer-sheet when a leaf is withdrawn from beneath the sheet without disturbing said fixed relation of said transfer-sheet with respect to the pad.

12,625. GRADUATED REINFORCED ARCHED ANGLE-BAR FOR RAILWAY-TRACK JOINTS. GEORGE H. WILLIAMS, Kansas City, Mo., assignor to Railway Supplies, Limited, Toronto, Canada, a Corporation. Filed Feb. 20, 1907. Serial No. 358,762. Original No. 714,422, dated Nov. 25, 1902.

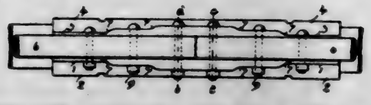

Claim.—The combination with two abutting ends of railway-track rails, of a pair of reinforced graduated angle-bars and bolts passing through the reinforced graduated portions and the web of the rail, the reinforcement on the face of the inside bar having its upper end located above the neck of the cove in the face of the bar and at the same time out of the path of the flange of a car-wheel passing along the track.

DESIGNS.

38,487. BADGE. JOHN J. DAVIS, Pittsburg, Pa. Filed Feb. 27, 1907. Serial No. 359,698. Term of patent 14 years.

Claim.—The ornamental design for a badge, as shown.

38,488. BADGE. JOHN J. DAVIS, Pittsburg, Pa. Filed Feb. 27, 1907. Serial No. 359,699. Term of patent 14 years.

Claim.—The ornamental design for a badge, as shown.

38,489. BADGE. ROBERT C. SHERRARD, Chicago, Ill., assignor to United Order of Foresters, Chicago, Ill., a Corporation. Filed Jan. 31, 1907. Serial No. 355,156. Term of patent 3½ years.

Claim.—The ornamental design for a badge as shown.

38,490. BADGE. ROBERT C. SHERRARD, Chicago, Ill., assignor to United Order of Foresters, Chicago, Ill., a Corporation. Filed Jan. 31, 1907. Serial No. 355,157. Term of patent 3½ years.

Claim.—The ornamental design for a badge as shown.

38,491. LOCKET OR SIMILAR ARTICLE. EUSTACE CREBS and CHARLES S. COURT, Providence, R. I., assignors to Wightman and Hough Company, a Corporation of Rhode Island. Filed Feb. 21, 1907. Serial No. 358,755. Term of patent 3½ years.

Claim.—The ornamental design for a locket or a similar article as shown.

38,492. CUT-GLASS VESSEL. WILLIAM C. ANDERSON. Lansing, Mich. Filed Feb. 23, 1907. Serial No. 359,942. Term of patent 7 years.

Claim.—The ornamental design for a cut-glass vessel, as shown.

38,493. CIGAR BAND OR WRAPPER. LOUIS C. WAGNER, New York, N. Y. Filed Jan. 30, 1907. Serial No. 354,828. Term of patent 7 years.

Claim.—The ornamental design for a cigar band or wrapper, as shown.

38,494. CIGAR BAND OR WRAPPER. LOUIS C. WAGNER, New York, N. Y. Filed Jan. 30, 1907. Serial No. 354,829. Term of patent 7 years.

Claim.—The ornamental design for a cigar band or wrapper as shown.

38,495. CIGAR BAND OR WRAPPER. LOUIS C. WAGNER, New York, N. Y. Filed Feb. 27, 1907. Serial No. 359,694. Term of patent 7 years.

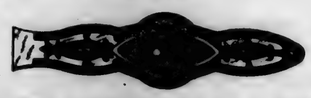

Claim.—The ornamental design for a cigar band or wrapper as shown.

38,496. CIGAR BAND OR WRAPPER. LOUIS C. WAGNER, New York, N. Y. Filed Feb. 27, 1907. Serial No. 359,695. Term of patent 7 years.

Claim.—The ornamental design for a cigar band or wrapper as shown.

38,497. HEATING-STOVE. HENRY H. HIGBEE, Indianapolis, Ind. Filed Feb. 12, 1906. Serial No. 300,810. Term of patent 7 years.

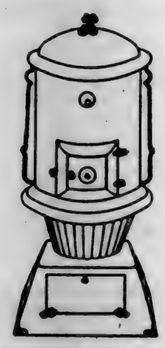

Claim.—The ornamental design for a heating-stove, as shown.

38,498. STOVE. AUGUST T. WEHRLE, Newark, Ohio. Filed Feb. 20, 1907. Serial No. 358,506. Term of patent 7 years.

Claim.—The ornamental design for a stove substantially as shown.

38,499. AUTOMOBILE-HORN. GAETANO MARCHESINI, New York, N. Y. Filed Feb. 14, 1907. Serial No. 357,418. Term of patent 7 years.

Claim.—The ornamental design for an automobile-horn, as shown.

TRADE-MARKS

PUBLISHED MARCH 26, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 1,869. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) KAMPFE BROS., New York, N. Y. Filed Apr. 17, 1905.

Particular description of goods.—Razors and Razor-Blades.

Ser. No. 1,871. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) KAMPFE BROS., New York, N. Y. Filed Apr. 17, 1905.

Particular description of goods.—Razors and Razor-Blades.

Ser. No. 1,875. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) KAMPFE BROS., New York, N. Y. Filed Apr. 17, 1905.

Particular description of goods.—Safety-Razors, Razor-Blades, and Safety Corn-Knives.

Ser. No. 1,876. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) KAMPFE BROS., New York, N. Y. Filed Apr. 17, 1905.

Particular description of goods.—Safety-Razors, Razor-Blades, and Safety Corn-Knives.

Ser. No. 2,029. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) THE RAILWAY MATERIALS COMPANY, Chicago, Ill. Filed Apr. 17, 1905. Used ten years.

THE FERGUSON

Particular description of goods.—Oil-Furnaces.

Ser. No. 7,519. (CLASS 8. DETERGENTS.) COMPAGNIE RAY MIT BESCHRÄNKTER HAFTUNG, Berlin, Germany. Filed June 5, 1905.

Particular description of goods.—Soap.

TRADE-MARKS

PUBLISHED MARCH 26, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 1,869. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) KAMPFE BROS., New York, N. Y. Filed Apr. 17, 1905.

Particular description of goods.—Razors and Razor-Blades.

Ser. No. 1,871. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) KAMPFE BROS., New York, N. Y. Filed Apr. 17, 1905.

Particular description of goods.—Razors and Razor-Blades.

Ser. No. 1,875. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) KAMPFE BROS., New York, N. Y. Filed Apr. 17, 1905.

STAR

Particular description of goods.—Safety-Razors, Razor-Blades, and Safety Corn-Knives.

Ser. No. 1,876. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) KAMPFE BROS., New York, N. Y. Filed Apr. 17, 1905.

Particular description of goods.—Safety-Razors, Razor-Blades, and Safety Corn-Knives.

Ser. No. 2,029. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) THE RAILWAY MATERIALS COMPANY, Chicago, Ill. Filed Apr. 17, 1905. Used ten years.

THE FERGUSON

Particular description of goods.—Oil-Furnaces.

Ser. No. 7,519. (CLASS 8. DETERGENTS.) COMPAGNIE RAY MIT BESCHRÄNKTER HAFTUNG, Berlin, Germany. Filed June 5, 1905.

Particular description of goods.—Soap.

Ser. No. 8,663. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) LORD & TAYLOR, New York, N. Y. Filed June 21, 1905.

CRESCENT
BLACK
GUARANTEED STAINLESS

Particular description of goods.—Hosiery.

Ser. No. 10,279. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) BASIL B. EARNSHAW, Washington, D. C. Filed July 10, 1905. Used ten years.

CREAM BLEND

Particular description of goods.—Wheat-Flour.

Ser. No. 11,551. (CLASS 56. CANES, PARASOLS, AND UMBRELLAS.) PAUL FRIEDRICH WILHELM GEBEF, Viersen, Germany. Filed Aug. 11, 1905.

Bravo!

Particular description of goods.—Umbrellas.

Ser. No. 12,000. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) RALSTON PURINA CO., St. Louis, Mo. Filed Aug. 25, 1905.

The cross is red.
Particular description of goods.—Wheat-Flour.

Ser. No. 12,051. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) ACME WHITE LEAD & COLOR WORKS, Detroit, Mich. Filed Aug. 28, 1905.

Particular description of goods.—Paints of All Kinds, Enamels, Stains, and Varnishes.

Ser. No. 12,324. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany. Filed Sept. 7, 1905.

Agfa

Particular description of goods.—Films, Plates, and Photographic Papers.

Ser. No. 14,123. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) RAYNOR & PERKINS ENVELOPE COMPANY, New York, N. Y. Filed Oct. 31, 1905. Used ten years.

F.H.D&Co.

Particular description of goods.—Paper for Writing and Printing Purposes and Envelops.

Ser. No. 15,315. (CLASS 47. CONFECTIONERY.) G. KAMMERMANN & CIE. SCHWEIZ. TROCKENMILCHGESELLSCHAFT, Glockenthal, Switzerland. Filed Dec. 9, 1905.

ASTRA

Particular description of goods.—A Mixture of Dry Milk and Cocoa.

Ser. No. 16,930. (CLASS 9. EXPLOSIVES.) JÖNKÖPINGS OCH VULCANS TÄNDSTICKSFABRIKSAKTIEBOLAG, Jönköping, Sweden. Filed Feb. 12, 1906. Used ten years.

Particular description of goods.—Safety-Matches.

Ser. No. 17,029. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) TROUT HARDWARE COMPANY, Chicago, Ill. Filed Feb. 14, 1906.

Particular description of goods.—Garden-Rakes, Garden-Shovels, Garden-Hoes, Garden-Trowels, and Garden-Spades.

Ser. No. 17,276. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) CHARLES BREVES, Chicago, Ill. Filed Feb. 23, 1906.

Particular description of goods.—Headache Medicines.

Ser. No. 17,825. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) F. A. HARDY & Co., Chicago, Ill. Filed Mar. 14, 1906.

Particular description of goods.—Test-Types, Eyeglasses, Spectacles, Lens-Mountings for Eyeglasses and Spectacles, Lenses for Eyeglasses and Spectacles, Opera-Glasses, and Eye-Testing Instruments.

Ser. No. 17,991. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany. Filed Mar. 19, 1906.

Solamin

Particular description of goods.—Coal-Tar Dyestuffs.

Ser. No. 17,992. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany. Filed Mar. 19, 1906.

Naphtogen

Particular description of goods.—Coal-Tar Dyestuffs.

Ser. No. 18,340. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) THOS G. CARROLL & SON CO OF BALTIMORE CITY, Baltimore, Md. Filed Mar. 29, 1906.

BALTIMORE CLUB

Particular description of goods.—Rye Whisky.

Ser. No. 18,341. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) THOS G. CARROLL & SON CO OF BALTIMORE CITY, Baltimore, Md. Filed Mar. 29, 1906.

RETURN

Particular description of goods.—Rye Whisky.

Ser. No. 18,486. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) THE DIAMOND RUBBER CO., Akron, Ohio. Filed Apr. 4, 1906.

Diamond

Particular description of goods.—Pneumatic Cushion and Solid Rubber Automobile and Vehicle Tires.

Ser. No. 18,719. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MARY A. LUPTON, MILLARD F. CATTELL, and PHILIP S. HORTZ, executors and trustees of the estate of Lewis M. Green, Woodbury, N. J. Filed Apr. 12, 1906.

AUGUST FLOWER.

Particular description of goods.—A Preparation for the Cure of Dyspepsia.

Ser. No. 19,458. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany. Filed May 11, 1906.

Particular description of goods.—Hair-Dyeing Preparations.

Ser. No. 20,533. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) MORSE TWIST DRILL & MACHINE COMPANY, New Bedford, Mass. Filed June 23, 1906. Used ten years.

MORSE

Particular description of goods.—Calipers and Gages.

Ser. No. 21,428. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) BOOTS PURE DRUG COMPANY LIMITED, Nottingham, England. Filed Aug. 9, 1906.

ZOMELA

Particular description of goods.—Medical Preparations for the Skin for Human Use.

Ser. No. 21,462. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) BYRNE & HAMMER DRY GOODS Co., Omaha, Nebr. Filed Aug. 10, 1906.

OAK

Particular description of goods.—Shirts of All Kinds, Except Dress and Knitted, and Overalls and Duck Coats and Jumpers.

Ser. No. 21,568. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio. Filed Aug. 15, 1906. Used ten years.

SOLID ROCK

Particular description of goods.—Washboards.

Ser. No. 21,594. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) AKTIEBOLAGET BARTHD. DAHLGREEN, Gothenburg, Sweden. Filed Aug. 16, 1906. Used ten years.

Particular description of goods.—Arrack Punch.

Ser. No. 21,782. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) PAUL BRANDT, Charlottenburg, Germany. Filed Aug. 28, 1906.

Antifliegin

Particular description of goods.—Preparations for Repelling Insects.

Ser. No. 21,888. (CLASS 43. THREAD AND YARN.) GEORGE LUND, London, England. Filed Sept. 4, 1906.

Particular description of goods.—Yarn Produced from Cellulose or Viscose.

Ser. No. 22,357. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JAMES T. PADGETT, New Bloomfield, Mo. Filed Sept. 27, 1906.

P. P. P.

Particular description of goods.—Medicines for the Prevention and Cure of Venereal Diseases.

Ser. No. 22,385. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) ARTHUR HOROWITZ, Berlin, Germany. Filed Sept. 29, 1906.

Visvit

Particular description of goods.—Prepared Foods for Infants and Invalids.

Ser. No. 22,636. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) WALLACE G. STARRY, Harrisburg, Pa. Filed Oct. 10, 1906.

"BROTHERHOOD"

Particular description of goods.—Waterproof Collars and Cuffs.

Ser. No. 22,739. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FOUQUET ET CIE., Paris, France. Filed Oct. 17, 1906.

SULFO-RHINOL

Particular description of goods.—Pharmaceutic and Antiseptic Hygienic Salves, Ointments, and Lotions.

Ser. No. 22,766. (CLASS 48. DAIRY PRODUCTS.) ALPHEUS FAY, Louisville, Ky. Filed Oct. 18, 1906.

DEOLEATE

Particular description of goods.—Prepared Milk and Cream.

Ser. No. 22,845. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) ARTHUR NUSSEY, Paterson, N. J. Filed Oct. 22, 1906.

Roachine

Particular description of goods.—Bug-Powder.

Ser. No. 23,006. (CLASS 10. FERTILIZERS.) STANDARD CHEMICAL & OIL COMPANY, Troy, Ala. Filed Oct. 30, 1906. Used ten years.

The mark is red.

Particular description of goods.—Guano and Bone Fertilizer.

Ser. No. 23,025. (CLASS 8. DETERGENTS.) GEORGE AUGUST SCHMIDT, Chicago, Ill. Filed Oct. 31, 1906. Used ten years.

GEO. A. SCHMIDT'S

Particular description of goods.—Soap.

Ser. No. 23,133. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) CHRISTY & COMPY. LIMITED, London, England. Filed Nov. 6, 1906.

Particular description of goods.—Silk Hats, Soft and Stiff Felt Hats, Straw Hats, Caps Made of Tweed, Cloth, Silk, and Leather, and Helmets Made of Felt, Cork, and Straw, and Felt Bodies Covered with Cloth, Tweed, Silk, Cotton, and the Like Materials.

Ser. No. 23,153. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) KEYSTONE VARNISH CO., Brooklyn, N. Y. Filed Nov. 7, 1906.

Particular description of goods.—A Finishing Product Which is a Combination of Paint and Varnish.

Ser. No. 23,178. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MYRON E. PEASE, Toledo, Ohio. Filed Nov. 8, 1906.

The background within the field of the scroll being blue.

Particular description of goods.—A Medicinal Preparation in Liquid, Salve, or Cream Form for the Cure of Catarrh, Asthma, Hay-Fever, and Cold in the Head.

Ser. No. 23,435. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) JESSIE T. WRIGHT, Cornhill, Tex. Filed Nov. 17, 1906.

Particular description of goods.—A Compound for the Destruction of Johnson Grass, Mites, Fleas, Chicken-Lice, and Bedbugs.

Ser. No. 23,531. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE CLOFTLIN CHEMICAL COMPANY, New York, N. Y. Filed Nov. 22, 1906.

CLOFTLIN

Particular description of goods.—Emulsions of Cod-Liver Oil.

Ser. No. 23,503. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) J. G. HUTCHISON & CO., Ottumwa, Iowa. Filed Nov. 26, 1906.

Particular description of goods.—Buckwheat-Flour, Breakfast Cereal Foods, Wheat-Flour, Oatmeal, Cornmeal, Rice, Rolled Oats, Corn-Starch, and Crackers.

Ser. No. 23,594. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) J. G. HUTCHISON & CO., Ottumwa, Iowa. Filed Nov. 26, 1906.

WAPELLO CHIEF

Particular description of goods.—Canned Fruits, Canned Vegetables, Dried Fruits, Flavoring Extracts, Mince-Meat, Pickles, Catsup, Spices, Sauer-Kraut, Tapioca, Vinegar, Celery Salt, Bird-Seed.

Ser. No. 23,648. (CLASS 30. CROCKERY, EARTHENWARE, AND PORCELAIN.) NAAMLOOZE VENNOOTSCHAP PLATEELBAKKERIJ "DELFT," Amsterdam, Netherlands. Filed Nov. 28, 1906.

Particular description of goods.—Delftware.

Ser. No. 23,771. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) OTTO GOETZE, New York, N. Y. Filed Dec. 5, 1906.

Particular description of goods.—Dyed Cotton Fabrics.

Ser. No. 23,901. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) THE ALBERT M. GUGGENHEIM CO., Cincinnati, Ohio. Filed Dec. 10, 1906.

Fleetwood

Particular description of goods.—Whisky.

Ser. No. 23,952. (CLASS 10. FERTILIZERS.) VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala; Durham, N. C., and Memphis, Tenn. Filed Dec. 12, 1906. Used ten years.

PURE BONE & CANNA CEREAL CUT
GENUINE
SLAUGHTER-HOUSE BONE
GUANO

Particular description of goods.—Fertilizers.

Ser. No. 24,105. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) MORGAN CRUCIBLE COMPANY LIMITED, Battersea, London, England. Filed Dec. 18, 1906.

Particular description of goods.—Plumbago or Graphite for Lubricating Purposes.

Ser. No. 24,109. (CLASS 72. MERCHANDISE NOT OTHERWISE CLASSIFIED.) MORGAN CRUCIBLE COMPANY LIMITED, Battersea, London, England. Filed Dec. 18, 1906.

Particular description of goods.—Crucibles Made of Plumbago or Graphite and other Like Fire-Standing Goods (Consisting of Muffles, Furnaces, Scorifiers, and Retorts Used in All Processes of Smelting, Assaying, Minting, and the Like and for Metallurgical and Chemical Work Generally) and Made of Plumbago or Graphite.

Ser. No. 24,160. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE HALEY-LAYBOURN EYE INFIRMARY, St. Louis, Mo. Filed Dec. 20, 1906. Used ten years.

THE HALEY INFIRMARY

Particular description of goods.—Eye Remedies.

Ser. No. 24,284. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) B. D. SPANDAUER & CO., Baltimore, Md. Filed Dec. 26, 1906.

Gondolier

Particular description of goods.—Women's Shirt-Waists and Shirt-Waist Suits.

Ser. No. 24,297. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) JENKINS PAINT AND OIL CO., Norfolk, Va., and New York, N. Y. Filed Dec. 27, 1906.

Particular description of goods.—A Paint Constituting a Protective Coating for Iron and Steel and Metallic Objects and Structures Generally.

Ser. No. 24,465. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) AMERICAN STOVE COMPANY, Jersey City, N. J., and St. Louis, Mo. Filed Jan. 5, 1907. Used ten years.

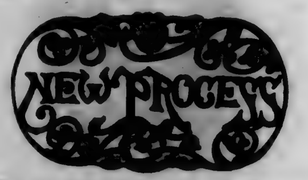

Particular description of goods.—Gas-Ranges or other Gas Stoves and Heaters, Vapor Stoves and Ovens.

Ser. No. 24,525. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOHN G. TRUMAN, Bushnell, Ill. Filed Jan. 8, 1907.

Particular description of goods.—A Colic and Fever Cure for Horses and Cattle.

Ser No. 24,711. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE CONTINENTAL IRON WORKS, Brooklyn, N. Y. Filed Jan. 17, 1907. Used ten years.

CONTINENTAL

Particular description of goods.—Metal Cylinders, Metal Cones, Metal Spheres, Metal Casing for Submarine Mines, Metal Buoys, Metal Compressed-Fluid Receivers, Metal Barrels, Metal Flasks, Metal Digesters, Manhole-Plates other Than for Boilers, Galvanising-Tanks, Metal Annealing-Boxes, Metal Tanks, Stand-Pipes, Metal Air-Chambers, Expansion-Joints, Penstocks.

Ser. No. 24,800½. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) WESTERN GRAIN PRODUCTS COMPANY, Milwaukee, Wis. Filed Jan. 21, 1907.

The background within the circular lines being printed in red.

Particular description of goods.—A Stock-Food Preparation Comprising a Mixture of Ground Grains.

Ser. No. 24,851. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) WRIGHT & DITSON, Jersey City, N. J., and Boston, Mass. Filed Jan. 23, 1907.

Particular description of goods.—Base-Ball Caps, Shirts, Pants, Uniforms, Outing Suits, Hats, and Caps, Tennis Suits and Caps, Foot-Ball Jackets, Pants, and Caps, Bicycle and Golf Uniforms and Caps, Bathing-Suits, Athletic Shirts and Drawers, and Fencing-Jackets.

Ser. No. 24,875. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) GILL BROTHERS COMPANY, Steubenville, Ohio. Filed Jan. 24, 1907.

ACME

Particular description of goods.—Electric Lamps

Ser. No. 24,877. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) STERRINS LAWSON AND SPRAGINS Co., South Boston, Va. Filed Jan. 24, 1907.

LINONETTE

Particular description of goods.—Cotton Piece Goods.

Ser. No. 24,906. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) FORREST L. BRYANT, Binghamton, N. Y. Filed Jan. 25, 1907.

[redacted]

Particular description of goods.—Silk Dress Goods.

Ser. No. 24,927. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) INTERNATIONAL FACTORIES CO., Minneapolis, Minn. Filed Jan. 26, 1907.

Particular description of goods.—Washing-Machines.

Ser. No. 24,948. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) MARVEL BUCKLE COMPANY, Baltimore, Md. Filed Jan. 28, 1907.

Particular description of goods.—Buckles.

Ser. No. 24,965. (CLASS 30. CROCKERY, EARTHENWARE, AND PORCELAIN.) THE ROSEVILLE POTTERY Co., Zanesville, Ohio. Filed Jan. 28, 1907.

Particular description of goods.—Cooking Utensils of Stoneware, Earthenware, and Porcelain.

Ser. No. 25,007. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) WHALEY MILL & ELEVATOR CO., Gainesville, Tex. Filed Jan. 30, 1907.

PRIMROSE

Particular description of goods.—Wheat-Flour.

Ser. No. 25,008. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) WHEALEY MILL & ELEVATOR CO., Gainesville, Tex. Filed Jan. 30, 1907.

WHITE WAVE

Particular description of goods.—Wheat-Flour.

Ser. No. 25,026. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) CHARLES C. MCDONALD, Elyria, Ohio. Filed Jan. 31, 1907.

Particular description of goods.—Canned Fruit, Canned Vegetables, and Canned Baked Beans.

Ser. No. 25,034. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) A. W. STEPHENS MANUFACTURING CO., Waltham, Mass. Filed Jan. 31, 1907.

PICNIC

Particular description of goods.—Metal Bottle-Openers.

Ser. No. 25,038. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) EAGLE ROLLER MILL COMPANY, New Ulm, Minn. Filed Feb. 1, 1907.

Particular description of goods.—Wheat-Flour.

Ser. No. 25,039. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) EAGLE ROLLER MILL COMPANY, New Ulm, Minn. Filed Feb. 1, 1907.

Daniel Webster

Particular description of goods.—Wheat-Flour.

Ser. No. 25,040. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) EAGLE ROLLER MILL COMPANY, New Ulm, Minn. Filed Feb. 1, 1907.

Particular description of goods.—Wheat-Flour.

Ser. No. 25,047. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) JOHN HASKINS LADD, London, England. Filed Feb. 1, 1907.

LADDITE

Particular description of goods.—Incandescent Gas-Mantles.

Ser. No. 25,054. (CLASS 19. BOATS AND ROAD-VEHICLES.) COLUMBUS BUGGY COMPANY, Columbus, Ohio. Filed Feb. 1, 1907. Used ten years.

Columbus

Particular description of goods.—Buggies and Wagons.

Ser. No. 25,055. (CLASS 68. PUBLICATIONS.) THE GLOBE MACHINE AND STAMPING COMPANY, Cleveland, Ohio. Filed Feb. 1, 1907.

The SILENT PARTNER

Particular description of goods.—Magazines and Pamphlets.

Ser. No. 25,063. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) SYLVAN DALSIMER, Philadelphia, Pa. Filed Feb. 2, 1907. Used ten years.

Dalsimer

Particular description of goods.—Shoes Constructed of Leather or Partially of Leather.

Ser. No. 25,082. (CLASS 60. INKS AND INKING MATERIALS.) THE QUEEN CITY PRINTING INK CO., Cincinnati, Ohio. Filed Feb. 2, 1907.

The seal always being printed in red.
Particular description of goods.—Printing-Inks.

Ser. No. 25,108. (CLASS 12. MASONRY MATERIALS.) THE UNION PAPER & TWINE COMPANY, Cleveland, Ohio. Filed Feb. 2, 1907.

LEATHEROID ROOFING

Particular description of goods.—Felt Roofing.

Ser. No. 25,115. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE NEW ERA MILLING COMPANY, Arkansas City, Kans. Filed Feb. 4, 1907.

ECSTASY

Particular description of goods.—Wheat-Flour.

Ser. No. 25,116. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE NEW ERA MILLING COMPANY, Arkansas City, Kans. Filed Feb. 4, 1907.

NOXALL

Particular description of goods.—Wheat-Flour.

Ser. No. 25,133. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) PAUL AND BAKER MANUFACTURING CO., North Attleboro, Mass. Filed Feb. 4, 1907.

P & B

Particular description of goods.—Jewelry, Solid, Plated, and Precious-Metal Tableware, Flat Ware, Hollow Ware, Toilet Articles, Desk Goods, Metal Ornaments and Novelties, and Metal Mountings and Trimmings.

Ser. No. 25,174. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) THE WARREN FEATHERBONE CO., Three Oaks, Mich. Filed Feb. 6, 1907.

Particular description of goods.—Stiffening-Blades, Cords, Tapes, and Fabrics.

Ser. No. 25,196. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOHN J. HOAR, Dubuque, Iowa. Filed Feb. 7, 1907.

PRESTO

Particular description of goods.—Pile Cure.

Ser. No. 25,241. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE JOHN HOBERG CO., Green Bay, Wis. Filed Feb. 11, 1907.

Particular description of goods.—Tissue-Paper, Including Napkins and Toilet-Paper.

Ser. No. 25,263. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) ABRAHAM & STRAUS, Brooklyn, N. Y. Filed Feb. 12, 1907.

PRISCILLA

Particular description of goods.—Coffee and Tea.

Ser. No. 25,265. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) CARLETON & HOVEY, Lowell, Mass. Filed Feb. 12, 1907.

FATHER JOHN'S

Particular description of goods.—A Remedy for Lung and Throat Troubles, a Body-Builder, Health Food, and Nutritive Blood and Nerve Tonic.

Ser. No. 25,286. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE COLLINS COMPANY, Collinsville, Conn. Filed Feb. 13, 1907. Used ten years.

COLLINS.

Particular description of goods.—Axes, Hatchets, Adzes, Bush-Hooks, Saws, Machetes, Tercados, Chisels, Knives, Swords, Sickles, Jincolas, Barras, Mattocks, Lansas, Lancitas, Arpones, Augers, Boring-Bits, Earth and Rock Drills.

Ser. No. 25,306. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) NORTON COMPANY, Worcester, Mass. Filed Feb. 14, 1907.

ALUNDUM

Particular description of goods.—Abrasive Materials, Polishing Compounds, Abrasive Compounds, Polishing Materials, Abrasive Tools, Abrasive Implements, Polishing-Tools, Polishing Implements, Abrasive Grains, Abrasive Powders, Grinding-Wheels, Grindstones, Hones, Whetstones, Tool-Sharpeners, Abrasive Cloth, Abrasive Paper, Articles Made of Abrasive Material, and Articles Containing Abrasive Material.

Ser. No. 25,316. (CLASS 47. CONFECTIONERY.) FRANK A. BEHLER, Pleasant Hill, Mo. Filed Feb. 15, 1907.

CREAM-OLENE

Particular description of goods.—A Powder Used in the Manufacture of Ice-Cream and Ices.

Ser. No. 25,323. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MICROLINE MEDICINE COMPANY, Dallas, Tex. Filed Feb. 15, 1907.

EVE'S

Particular description of goods.—Remedies for Internal and External Use for the Relief of Pain, Remedies for the Cure of Diseases of the Eyes, Remedies for the Cure of Biliousness and Constipation, and Remedies for the Cure of Diseases of Women.

Ser. No. 25,333. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) QUEEN METAL COMPANY, New York, N. Y. Filed Feb. 16, 1907.

QUEEN

Particular description of goods.—An Alloy Resembling Silver.

Ser. No. 25,334. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) QUEEN METAL COMPANY, New York, N. Y. Filed Feb. 16, 1907.

MANUFACTURED BY
Q.M.C.
QUEEN METAL Co.

Particular description of goods.—An Alloy Resembling Silver.

Ser. No. 25,365. (CLASS 64. MEDICAL AND SURGICAL APPARATUS, APPLIANCES, AND INSTRUMENTS.) G. A. CRAYEN & Co., New York, N. Y. Filed Feb. 18, 1907.

Brown's Cross Cross Elastic Band

The cross being printed in green.

Particular description of goods.—Surgical Bandages.

Ser. No. 25,371. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) HARRIS-POLK HAT CO., St. Louis, Mo. Filed Feb. 16, 1907.

WORTH

Particular description of goods.—Felt and Straw Hats.

Ser. No. 25,383. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) RALPH JULIAN SACHERS, New York, N. Y., assignor, by mesne assignments, to The Ikonograph Company of America, a Corporation of New York. Filed Feb. 18, 1907.

IKONOGRAPH

Particular description of goods.—Photographic Cameras, Picture-Exhibiting Apparatus, Photographic Paper, Plates, and Films, and Kinetographic and Kinetoscopic Plates and Films.

Ser. No. 25,388. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) HEINRICH MATTONI AKTIENGESELLSCHAFT, Carlsbad, Austria-Hungary, and New York, N. Y. Filed Feb. 18, 1907. Used ten years.

Giesshübl Sauer
Ungarisch
Giesshübl
Sauerbrunn
Mattoni
Giesshübl
Sauerbrunn
Mattoni
Giesshübl
Sauerbrunn
Mattoni

Ser. No. 25,500. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) FRED. BUTTERFIELD & Co., New York, N. Y. Filed Feb. 21, 1907.

Particular description of goods.—Silk Piece Goods, Silk and Cotton Piece Goods, Cotton Piece Goods, Woolen Piece Goods, Woolen and Alpaca Piece Goods, Cotton and Woolen Piece Goods, Cotton and Mohair Piece Goods, Woolen and Mohair Piece Goods, Cotton and Alpaca Piece Goods.

Ser. No. 25,501. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) CASTLE BROTHERS, INCORPORATED, San Francisco, Cal. Filed Feb. 21, 1907. Used ten years.

Particular description of goods.—Dried Fruit.

Ser. No. 25,502. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) CASTLE BROTHERS, INCORPORATED, San Francisco, Cal. Filed Feb. 21, 1907. Used ten years.

Particular description of goods.—Dried Fruit.

Ser. No. 25,504. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) CENTRAL DAKOTA FLOURING MILL COMPANY, Arlington, S. D. Filed Feb. 21, 1907.

ANEMONE

Particular description of goods.—Wheat-Flour.

Ser. No. 25,514. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) THE MCNEIL BOILER COMPANY, Akron, Ohio. Filed Feb. 21, 1907. Used ten years.

COOKBOILER

Particular description of goods.—Water-Tube Boilers.

Ser. No. 25,519. (CLASS 38. PUBLICATIONS.) HARVEY J. GONDEN, Chicago, Ill. Filed Feb. 21, 1907.

PUBLIC SERVICE

Particular description of goods.—A Monthly Journal.

Ser. No. 25,528. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) JACOB DOLL & SONS, INC., New York, N. Y. Filed Feb. 23, 1907. Used ten years.

Stodart

Particular description of goods.—Pianos and Pianos with Interior Players.

Ser. No. 25,537. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) THE KEYSTONE MFG. CO., Buffalo, N. Y. Filed Feb. 23, 1907. Used ten years.

WESTCOTT

Particular description of goods.—Pipe and Nut Wrenches.

Ser. No. 25,540. (CLASS 8. DETERGENTS.) SOLON PALMER, New York, N. Y. Filed Feb. 23, 1907.

GARLAND OF VIOLETS

Particular description of goods.—Soap.

Ser. No. 25,541. (CLASS 8. DETERGENTS.) SOLON PALMER, New York, N. Y. Filed Feb. 23, 1907.

GARLAND OF ROSES

Particular description of goods.—Soap.

Ser. No. 25,543. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) ISAAC PROUTY & Co. (INCORPORATED), Boston, Mass. Filed Feb. 23, 1907.

Particular description of goods.—Men's, Boys', and Youths' Leather Boots and Shoes.

Ser. No. 25,544. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) ABRAHAM & STRAUS, Brooklyn, N. Y. Filed Feb. 23, 1907.

MONTAUK

Particular description of goods.—Tea and Coffee.

Ser. No. 25,546. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) BERNHEIM DISTILLING CO. INC., Louisville, Ky. Filed Feb. 23, 1907.

Particular description of goods.—Whisky.

Ser. No. 25,548. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa. Filed Feb. 23, 1907.

CHROMOL

Particular description of goods.—Saws and Saw-Blades.

Ser. No. 25,551. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) DRAKE & Co., New York, N. Y. Filed Feb. 23, 1907.

Particular description of goods.—Men's, Women's, and Children's Leather Boots and Shoes.

Ser. No. 25,555. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) KAUFMANN BASS & Co., Cincinnati, Ohio. Filed Feb. 23, 1907.

Particular description of goods.—Gin.

Ser. No. 25,566. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) SMITH-BRISCOE SHOE COMPANY, INCORPORATED, Lynchburg, Va. Filed Feb. 23, 1907.

CRANBERRY

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 25,574. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.

SPALDING

Particular description of goods.—Base-Ball, Foot-Ball, and Bicycle Stockings, Jerseys, Sweaters, Knit Shirts, Knit Tights, and Knit Bathing Suits and Trunks.

Ser. No. 25,575. (CLASS 64. MEDICAL AND SURGICAL APPARATUS, APPLIANCES, AND INSTRUMENTS.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.

SPALDING

Particular description of goods.—Elastic Bandages, Supporters, and Suspensories.

Ser. No. 25,578. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.

Particular description of goods.—Base-Ball, Foot-Ball, and Bicycle Stockings, Jerseys, Sweaters, Knit Shirts, Knit Tights, and Knit Bathing Suits and Trunks.

Ser. No. 25,579. (CLASS 64. MEDICAL AND SURGICAL APPARATUS, APPLIANCES, AND INSTRUMENTS.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.

Particular description of goods.—Elastic Bandages, Supporters, and Suspensories.

Ser. No. 25,582. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.

Particular description of goods.—Base-Ball, Foot-Ball, and Bicycle Stockings, Jerseys, Sweaters, Knit Shirts, Knit Tights, and Knit Bathing Suits and Trunks.

Ser. No. 25,582. (CLASS 64. MEDICAL AND SURGICAL APPARATUS, APPLIANCES, AND INSTRUMENTS.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.

SPALDING

Particular description of goods.—Elastic Bandages, Supporters, and Suspensories.

Ser. No. 25,589. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) CO-OPERATIVE FOUNDRY CO., Rochester, N. Y. Filed Feb. 25, 1907.

RED CROSS STOVES & RANGES

Particular description of goods.—Stoves, Ranges, Furnaces, and Heaters.

Ser. No. 25,595. (CLASS 8. DETERGENTS.) IOWA SOAP COMPANY, Burlington, Iowa. Filed Feb. 25, 1907.

Robin Hood

Particular description of goods.—Soap.

Ser. No. 25,602. (CLASS 68. PUBLICATIONS.) THE VICKERY & HILL PUBLISHING CO., Augusta, Me. Filed Feb. 25, 1907.

THE AMERICAN FARM WORLD

Particular description of goods.—A Monthly Periodical.

Ser. No. 25,613. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) INTERNATIONAL POWER COMPANY, New York, N. Y.; Bridgeport, Conn.; Providence, R. I., and Worcester, Mass. Filed Feb. 23, 1907.

Particular description of goods.—Internal-Combustion Engines.

Ser. No. 25,614. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) BLOOD BALM COMPANY, Atlanta, Ga. Filed Feb. 26, 1907. Used ten years.

BOTANIC BLOOD BALM

Particular description of goods.—A Remedy for the Alleviation and Cure of Blood Diseases.

Ser. No. 25,615. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) BLOOD BALM COMPANY, Atlanta, Ga. Filed Feb. 26, 1907.

B.B.B.

Particular description of goods.—A Remedy for the Alleviation and Cure of Blood Diseases.

Ser. No. 25,619. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) BEDFORD-WILLIS COMPANY, Boston, Mass. Filed Feb. 26, 1907.

PLYMOUTH MILLS

Particular description of goods.—Knit Underwear.

Ser. No. 25,623. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) THE CHARLES E. HIRES COMPANY, Philadelphia, Pa. Filed Feb. 26, 1907. Used ten years.

Particular description of goods.—Root-Beer.

Ser. No. 25,626. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) THE PITTSBURGH WATERPROOF SHOE POLISH COMPANY, Pittsburg, Pa. Filed Feb. 26, 1907.

EVERMORE

Particular description of goods.—Polish for Boots and Shoes and Polish for Leather.

Ser. No. 25,628. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) WEILLER & HERMAN CO., New York, N. Y. Filed Feb. 26, 1907.

Particular description of goods.—Children's Dresses.

Ser. No. 25,661. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) JOHN S. NAYLOR & CO., Wheeling, W. Va. Filed Feb. 28, 1907.

Squaredeal

Particular description of goods.—Hosiery and Knitted Underwear.

Ser. No. 25,663. (CLASS 47. CONFECTIONERY.) EMORY C. SPERRY, Canton, Ohio. Filed Feb. 28, 1907. Used ten years.

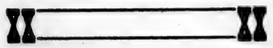

Particular description of goods.—Candy.

TRADE-MARKS

REGISTERED MARCH 26, 1907.

61,464. VARNISH-LIKE PRESERVATIVE FOR LINOLEUM, OIL-CLOTH, AND LIKE MATERIAL. GEO. H. BAKER, New Haven, Conn.
Filed December 22, 1906. Serial No. 24,221. PUBLISHED JANUARY 29, 1907.

61,465. MEDICATED SOAP. ICHTHYOL GESELLSCHAFT CORDES, HERMANNI & Co., Hamburg, Germany.
Filed December 15, 1906. Serial No. 24,039. PUBLISHED JANUARY 29, 1907.

61,466. COAL. JEWETT BIGELOW & BROOKS, Detroit, Mich.
Filed December 29, 1906. Serial No. 24,339. PUBLISHED JANUARY 29, 1907.

61,467. COMPOSITION FOR REMOVING PAINT AND VARNISH. JOHN LUCAS & Co., Philadelphia, Pa.
Filed September 16, 1905. Serial No. 12,708. PUBLISHED JANUARY 29, 1907.

61,468. VARNISHES AND JAPANS. JOHN LUCAS & Co., Philadelphia, Pa.
Filed September 16, 1905. Serial No. 12,709. PUBLISHED JANUARY 29, 1907.

61,469. PAINT USED FOR FINISHING PURPOSES. JOHN LUCAS & Co., Philadelphia, Pa.
Filed January 4, 1907. Serial No. 24,445. PUBLISHED JANUARY 29, 1907.

61,470. FURNITURE-POLISH. LYON & HEALY, Chicago, Ill.
Filed October 18, 1906. Serial No. 22,757. PUBLISHED JANUARY 29, 1907.

61,471. SOAP. THE POMPEIAN MFG. Co., Cleveland, Ohio.
Filed December 11, 1906. Serial No. 23,928. PUBLISHED JANUARY 29, 1907.

61,472. CALCIMINE. ALABASTINE COMPANY, Grand Rapids, Mich.
Filed June 11, 1906. Serial No. 20,216. PUBLISHED JANUARY 29, 1907.

61,473. CARPET, CLOTH, AND GLOVE CLEANERS. THE CITIZENS' WHOLESALE SUPPLY COMPANY, Columbus, Ohio.
Filed December 8, 1906. Serial No. 23,874. PUBLISHED JANUARY 29, 1907.

61,474. SOAP. THE POMPEIAN MFG. Co., Cleveland, Ohio.
Filed December 11, 1906. Serial No. 23,927. PUBLISHED JANUARY 29, 1907.

61,475. COMBINATION OF WHITE LEAD AND ZINC. W. W. LAWRENCE & COMPANY, Pittsburg, Pa.
Filed December 5, 1906. Serial No. 23,787. PUBLISHED JANUARY 29, 1907.

61,476. COTTON PIECE GOODS. AMERICAN PRINTING COMPANY, Fall River, Mass.
Filed December 27, 1906. Serial No. 24,292. PUBLISHED JANUARY 29, 1907.

61,477. MATTING. ATKINSON, MENTZER & GROVER, Chicago, Ill.
Filed July 8, 1905. Serial No. 9,927. PUBLISHED JANUARY 29, 1907.

61,478. BROAD SILK. J. S. CASTELL & Co., New York, N. Y.
Filed November 17, 1906. Serial No. 23,434. PUBLISHED JANUARY 29, 1907.

61,479. COTTON, COTTON AND SILK, AND COTTON AND WOOL PIECE GOODS. CHARLES C. COPELAND & Co., New York, N. Y.
Filed October 29, 1906. Serial No. 23,964. PUBLISHED JANUARY 29, 1907.

61,480. BEER. EL DORADO BREWING Co., Stockton, Cal.
Filed December 22, 1906. Serial No. 24,225. PUBLISHED JANUARY 29, 1907.

61,481. PAPER TOYS. MARY A. GLEN, Elizabeth, N. J.
Filed November 22, 1906. Serial No. 23,586. PUBLISHED JANUARY 29, 1907.

61,482. CORSETS. MADAME IRÈNE New York, N. Y.
Filed December 27, 1906. Serial No. 24,296. PUBLISHED JANUARY 29, 1907.

61,483. LEGGINGS. H. JACOB & SONS, New York, N. Y.
Filed December 15, 1906. Serial No. 24,059. PUBLISHED JANUARY 29, 1907.

61,484. SILK DRESS GOODS. LEHIGH VALLEY SILK MILLS, South Bethlehem, Pa.
Filed April 16, 1906. Serial No. 18,838. PUBLISHED JANUARY 29, 1907.

61,485. SHIRTINGS. MINOT, HOOPER & Co., New York, N. Y.
Filed May 11, 1905. Serial No. 5,068. PUBLISHED JANUARY 29, 1907.

61,486. DRESS-SHIELDS. THE OMO MANUFACTURING COMPANY, Middletown, Conn.
Filed August 10, 1906. Serial No. 21,472. PUBLISHED JANUARY 29, 1907.

61,487. LADIES' AND CHILDREN'S SHIRT-WAISTS AND SHIRT-WAIST SUITS. ISRAEL RAND, Philadelphia, Pa.
Filed December 31, 1906. Serial No. 24,371. PUBLISHED JANUARY 29, 1907.

61,488. LEATHER GLOVES. F. J. RAYMOND, Stockton, Cal.
Filed June 24, 1905. Serial No. 9,951. PUBLISHED JANUARY 29, 1907.

61,489. MEN'S, WOMEN'S, AND CHILDREN'S KNITTED UNDERSHIRTS AND DRAWERS. ROBISCHON & PECKHAM COMPANY, New York, N. Y.
Filed December 24, 1906. Serial No. 24,259. PUBLISHED JANUARY 29, 1907.

61,490. DOLLS AND TOY ANIMALS. ROUECH-BOWDEN COMPANY, Detroit, Mich.
Filed January 2, 1907. Serial No. 24,388. PUBLISHED JANUARY 29, 1907.

61,491. DRESS-SILKS. AUGUSTUS HANS SANDS, New York, N. Y.
Filed October 13, 1906. Serial No. 22,686. PUBLISHED JANUARY 29, 1907.

61,492. CERTAIN NAMED GOODS USED IN ATHLETIC GAMES AND SPORTS. VICTOR SPORTING GOODS Co., Springfield, Mass.
Filed May 27, 1906. Serial No. 6,784. PUBLISHED JANUARY 29, 1907.

61,493. BROAD SILKS, DRESS-SILKS, AND PIECE SILKS. JOHN WANAMAKER, Philadelphia, Pa.
Filed April 7, 1906. Serial No. 18,600. PUBLISHED JANUARY 29, 1907.

61,494. FIRE-EXTINGUISHERS, CHEMICAL-ENGINES, AND HAND-GRENADES, AND ATTACHMENTS THEREFOR. AMERICAN-LA FRANCE FIRE ENGINE Co., Elmira, N. Y.
Filed December 14, 1906. Serial No. 24,008. PUBLISHED JANUARY 29, 1907.

61,495. HORSESHOES. THE CHILLINGTON TOOL COMPANY, LIMITED, Wolverhampton, England.
Filed November 24, 1906. Serial No. 23,573. PUBLISHED JANUARY 29, 1907.

61,496. LEATHER BLACKINGS AND DRESSINGS. THE CITIZENS' WHOLESALE SUPPLY CO., Columbus, Ohio.
Filed December 11, 1906. Serial No. 23,929. PUBLISHED JANUARY 29, 1907.

61,497. SMOKING-TOBACCO, CIGARS, CIGARETTES, AND SNUFF. DE ERVEN DE WED. J. VAN NELLE, Rotterdam, Netherlands, assignor to New Firm De Erven de Wed. J. Van Nelle, Rotterdam, Netherlands.
Filed November 22, 1906. Serial No. 14,896. PUBLISHED JANUARY 29, 1907.

61,498. WATER-MOTORS. THE EDGAR MANUFACTURING COMPANY, Boston, Mass.
Filed December 10, 1906. Serial No. 23,895. PUBLISHED JANUARY 29, 1907.

61,499. FILES AND RASPS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.
Filed December 31, 1906. Serial No. 24,352. PUBLISHED JANUARY 29, 1907.

61,500. STOVE-POLISH. J. A. WRIGHT & Co., Keene, N. H.
Filed June 21, 1906. Serial No. 20,459. PUBLISHED JANUARY 29, 1907.

61,501. WASHING-MACHINES AND WRINGERS. THE NINETEEN HUNDRED WASHER CO., Binghamton, N. Y.
Filed December 26, 1906. Serial No. 24,279. PUBLISHED JANUARY 29, 1907.

61,502. CERTAIN ELECTRICAL MACHINES AND APPARATUS. SOCIÉTÉ ANONYME DES ANCIENS ÉTABLISSEMENTS PANHARD & LEVASSOR, Paris, France.
Filed May 24, 1905. Serial No. 6,476. PUBLISHED JANUARY 29, 1907.

61,503. AUTOMOBILES AND PARTS THEREOF, EXCEPT RUBBER TIRES. SOCIÉTÉ ANONYME DES ANCIENS ÉTABLISSEMENTS PANHARD & LEVASSOR, Paris, France.
Filed May 24, 1905. Serial No. 6,477. PUBLISHED JANUARY 29, 1907.

61,504. FERTILIZERS. ASHEPOO FERTILIZER COMPANY, Charleston, S. C.
Filed November 19, 1906. Serial No. 23,456. PUBLISHED JANUARY 29, 1907.

61,505. TYPE. BARNHART BROTHERS & SPINDLER, Chicago, Ill.
Filed October 26, 1905. Serial No. 14,223. PUBLISHED JANUARY 29, 1907.

61,506. MAGNETOS. THE BRIDGEPORT SPECIALTY COMPANY, Bridgeport, Conn.
Filed November 23, 1906. Serial No. 23,550. PUBLISHED JANUARY 29, 1907.

61,507. HARROWS, PLOWS, CULTIVATORS, HORSE-HOES, SEEDERS, LAWN AND FIELD ROLLERS. THE CUTAWAY HARROW COMPANY, Higganum, Conn.
Filed November 30, 1906. Serial No. 23,681. PUBLISHED JANUARY 29, 1907.

61,508. INCANDESCENT ELECTRIC LAMPS. THE FRANKLIN ELECTRIC MFG. CO., Hartford, Conn.
Filed June 10, 1905. Serial No. 7,849. PUBLISHED JANUARY 29, 1907.

61,509. METAL PLATES AND STEEL. FRIED. KRUPP AKTIENGESELLSCHAFT, Essen-on-the-Ruhr, Germany.
Filed October 11, 1906. Serial No. 22,641. PUBLISHED JANUARY 29, 1907.

61,510. CIGARS. THE FRITZ BROS. CO., Cincinnati, Ohio.
Filed May 21, 1906. Serial No. 19,724. PUBLISHED JANUARY 29, 1907.

61,511. CERTAIN METAL MANUFACTURES. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
Filed December 20, 1906. Serial No. 24,162. PUBLISHED JANUARY 29, 1907.

61,512. CERTAIN AGRICULTURAL MACHINES. INTERNATIONAL HARVESTER COMPANY OF AMERICA, Chicago, Ill.
Filed July 28, 1906. Serial No. 21,264. PUBLISHED OCTOBER 16, 1906.

61,513. SEWING-MACHINES. NATIONAL SEWING MACHINE COMPANY, Belvidere, Ill.
Filed December 15, 1906. Serial No. 24,068. PUBLISHED JANUARY 29, 1907.

61,514. GAS AND VAPOR HEATERS AND FURNACES. THE SNITZER COMPANY, Pittsburg, Pa.
Filed December 15, 1906. Serial No. 24,071. PUBLISHED JANUARY 29, 1907.

61,515. DECORATIVE ELECTRIC-LIGHTING OUTFITS. THE STERLING ELECTRICAL MANUFACTURING COMPANY, Warren, Ohio.
Filed December 14, 1906. Serial No. 24,015. PUBLISHED JANUARY 29, 1907.

61,516. STEEL CAR-WHEELS. TAYLOR IRON & STEEL CO., High Bridge, N. J.
Filed December 24, 1906. Serial No. 24,260. PUBLISHED JANUARY 29, 1907.

61,517. BEARING METALS. THE TRAKA METAL COMPANY, Medford, Mass.
Filed November 22, 1906. Serial No. 23,541. PUBLISHED JANUARY 29, 1907.

61,518. FRICTION-MATCHES. UNION MATCH COMPANY, Duluth, Minn.
Filed December 24, 1906. Serial No. 24,261. PUBLISHED JANUARY 29, 1907.

61,519. SOIL-SCRAPERS. THE WELLS-JONES PLOW CO., Jackson, Tenn.
Filed May 22, 1906. Serial No. 19,781. PUBLISHED JANUARY 29, 1907.

61,520. RAZORS. WM. ELLIOT & Co., New York, N. Y.
Filed December 28, 1906. Serial No. 24,304. PUBLISHED JANUARY 29, 1907.

61,521. RAZORS. WM. ELLIOT & Co., New York, N. Y.
Filed December 28, 1906. Serial No. 24,305. PUBLISHED JANUARY 29, 1907.

61,522. RAZORS. WM. ELLIOT & Co., New York, N. Y.
Filed December 28, 1906. Serial No. 24,306. PUBLISHED JANUARY 29, 1907.

61,523. RAZORS. WM. ELLIOT & Co., New York, N. Y.
Filed December 28, 1906. Serial No. 24,307. PUBLISHED JANUARY 29, 1907.

61,524. RAZORS. WM. ELLIOT & Co., New York, N. Y.
Filed December 28, 1906. Serial No. 24,308. PUBLISHED JANUARY 29, 1907.

61,525. RAZORS. WM. ELLIOT & Co., New York, N. Y.
Filed December 28, 1906. Serial No. 24,310. PUBLISHED JANUARY 29, 1907.

61,526. LACE-LEATHER. AMERICAN LACE LEATHER CO., INC., Richmond, Va.
Filed December 29, 1906. Serial No. 24,330. PUBLISHED JANUARY 29, 1907.

61,527. FRUIT OR [PRESERVING JARS. BALL BROS. GLASS MFG. CO., Muncie, Ind.
Filed December 27, 1906. Serial No. 24,298. PUBLISHED JANUARY 29, 1907.

61,528. CHOCOLATE, COCOA, AND BONBONS. "LUCERNA" ANGLO-SWISS MILK CHOCOLATE CO., Hochdorf-Lucerne, Switzerland.
Filed April 4, 1906. Serial No. 18,504. PUBLISHED JANUARY 29, 1907.

61,529. FRUIT-BISCUIT. NATIONAL BISCUIT COMPANY, Jersey City, N. J., and Chicago, Ill.
Filed July 10, 1905. Serial No. 9,980. PUBLISHED JANUARY 29, 1907.

61,530. HIGH-GRADE PAPER FOR USE IN WRITING, PRINTING, AND ENGRAVING. PARSONS PAPER CO., Holyoke, Mass.
Filed December 22, 1906. Serial No. 24,210. PUBLISHED JANUARY 29, 1907.

61,531. WITHDRAWN.

61,532. CHEWING-GUM. SODA MINT GUM COMPANY, Trenton, N. J., and Allegheny, Pa.
Filed December 31, 1906. Serial No. 24,372. PUBLISHED JANUARY 29, 1907.

61,533. WHEAT-FLOUR. STANDARD MILLING CO., Houston, Tex.
Filed June 2, 1906. Serial No. 19,998. PUBLISHED JANUARY 29, 1907.

61,534. WHISKY. ROBERT S. STRADER, Lexington, Ky.
Filed November 12, 1906. Serial No. 23,274. PUBLISHED JANUARY 29, 1907.

61,535. WHISKY. ROBERT S. STRADER, Lexington, Ky.
Filed November 12, 1906. Serial No. 23,275. PUBLISHED JANUARY 29, 1907.

61,536. METALLIC PACKING. THE STRONG MACHINERY & SUPPLY CO., New York, N. Y.
Filed December 29, 1906. Serial No. 24,343. PUBLISHED JANUARY 29, 1907.

61,537. VAULT-LIGHTS, SIDEWALK-LIGHTS, AND DOOR AND WINDOW LIGHTS. AMERICAN BAR-LOCK CO., Philadelphia, Pa.
Filed December 19, 1906. Serial No. 24,136. PUBLISHED JANUARY 29, 1907.

61,538. MAGNETOS. THE BRIDGEPORT SPECIALTY COMPANY, Bridgeport, Conn.
Filed November 23, 1906. Serial No. 23,551. PUBLISHED JANUARY 29, 1907.

61,539. MEN'S LEATHER SHOES. CLARKE BROS., Scranton, Pa.
Filed December 24, 1906. Serial No. 24,343. PUBLISHED JANUARY 29, 1907.

61,540. MEN'S, BOYS', AND YOUTHS' LEATHER SHOES. CLARKE BROS., Scranton, Pa.
Filed December 24, 1906. Serial No. 24,344. PUBLISHED JANUARY 29, 1907.

61,541. LADIES' LEATHER SHOES. CLARKE BROS., Scranton, Pa.
Filed December 24, 1906. Serial No. 24,345. PUBLISHED JANUARY 29, 1907.

61,542. LADIES' LEATHER SHOES. CLARKE BROS., Scranton, Pa.
Filed December 24, 1906. Serial No. 24,346. PUBLISHED JANUARY 29, 1907.

61,543. FERTILIZERS. CRAVEN CHEMICAL COMPANY, Newbern, N. C.
Filed January 5, 1907. Serial No. 24,463. PUBLISHED JANUARY 29, 1907.

61,544. FERTILIZERS. CRAVEN CHEMICAL COMPANY, Newbern, N. C.
Filed January 5, 1907. Serial No. 24,464. PUBLISHED JANUARY 29, 1907.

61,545. OIL FOR CERTAIN NAMED PURPOSES. G. W. COLE COMPANY, Rahway, N. J., and New York, N. Y.
Filed December 21, 1906. Serial No. 24,202. PUBLISHED JANUARY 29, 1907.

61,546. OIL FOR CERTAIN NAMED PURPOSES. G. W. COLE COMPANY, Rahway, N. J., and New York, N. Y.
Filed December 21, 1906. Serial No. 24,203. PUBLISHED JANUARY 29, 1907.

61,547. INCANDESCENT LAMPS. THE GENERAL INCANDESCENT LAMP COMPANY, Cleveland, Ohio.
Filed November 21, 1906. Serial No. 23,513. PUBLISHED JANUARY 29, 1907.

61,548. DECORATIVE ELECTRIC-LIGHTING OUTFITS. THE STERLING ELECTRICAL MANUFACTURING COMPANY, Warren, Ohio.
Filed December 14, 1906. Serial No. 24,014. PUBLISHED JANUARY 29, 1907.

61,549. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
Filed December 20, 1906. Serial No. 24,168. PUBLISHED JANUARY 22, 1907.

61,550. RAZORS. WM. ELLIOT & Co., New York, N. Y.
Filed December 28, 1906. Serial No. 24,309. PUBLISHED JANUARY 29, 1907.

61,551. BREAD. LOUIS REMI BERGERON, Fall River, Mass.
Filed June 4, 1906. Serial No. 20,049. PUBLISHED JANUARY 29, 1907.

61,552. LADIES', MISSES', AND CHILDREN'S LEATHER SHOES. CLARKE BROS., Scranton, Pa.
Filed December 24, 1906. Serial No. 24,348. PUBLISHED JANUARY 29, 1907.

61,553. CERTAIN BAKERY PRODUCTS, CEREAL FOODS, AND YEAST. THE CITIZENS' WHOLESALE SUPPLY CO., Columbus, Ohio.
Filed December 11, 1906. Serial No. 23,930. PUBLISHED JANUARY 29, 1907.

61,554. WHEAT-FLOUR. COMMERCIAL MILLING COMPANY, Detroit, Mich.
Filed August 20, 1906. Serial No. 21,668. PUBLISHED JANUARY 29, 1907.

61,555. CIGAR-CABINETS. COOPER & MCKEE, New York, N. Y.
Filed October 11, 1906. Serial No. 22,657. PUBLISHED JANUARY 29, 1907.

61,556. WHEAT-FLOUR. MACK H. DAVIS, Shelby, Ohio.
Filed December 24, 1906. Serial No. 24,252. PUBLISHED JANUARY 29, 1907.

61,557. BED AND UPHOLSTERY SPRINGS. THE DIAMOND FABRIC COMPANY OF AMERICA, Hoboken, N. J.
Filed July 25, 1906. Serial No. 21,166. PUBLISHED JANUARY 29, 1907.

61,558. CERTAIN PASTRY. ANDREW T. DIETZ, Toledo, Ohio.
Filed August 20, 1906. Serial No. 21,683. PUBLISHED JANUARY 29, 1907.

61,559. CHEWING-GUM. DOCTOR WEMM'S EUCALYPTUS CURE COMPANY, Denver, Colo.
Filed December 1, 1906. Serial No. 23,710. PUBLISHED JANUARY 29, 1907.

61,560. LACTOBACILLINE FERMENT. THE FERMENT COMPANY, New York, N. Y.
Filed November 30, 1906. Serial No. 23,662. PUBLISHED JANUARY 29, 1907.

61,561. LACTOBACILLINE FERMENT. THE FERMENT COMPANY, New York, N. Y.
Filed November 30, 1906. Serial No. 23,663. PUBLISHED JANUARY 29, 1907.

61,562. GRASS, CLOVER, AND FIELD SEEDS. THE ILLINOIS SEED COMPANY, Chicago, Ill.
Filed December 31, 1906. Serial No. 24,356. PUBLISHED JANUARY 29, 1907.

61,563. WHISKY. KAMP DISTILLING CO., St. Louis, Mo.
Filed June 26, 1905. Serial No. 9,030. PUBLISHED JANUARY 29, 1907.

61,564. DRAWING-PAPER. THE KREUFEL & ESSER COMPANY, Hoboken, N. J.
Filed January 4, 1907. Serial No. 24,452. PUBLISHED JANUARY 29, 1907.

61,565. WHISKY. BENJAMIN W. LE COMPTE, Galveston, Tex.
Filed June 15, 1905. Serial No. 8,221. PUBLISHED JANUARY 29, 1907.

61,566. CONFECTIONERS' PASTE TO BE USED IN MAKING CANDIES. MALLOW CREAM CO., Chicago, Ill.
Filed November 26, 1906. Serial No. 23,618. PUBLISHED JANUARY 29, 1907.

61,567. HORSE-WHIPS. GROVER C. MORGAN, Westfield, Mass.
Filed November 19, 1906. Serial No. 23,469. PUBLISHED JANUARY 29, 1907.

61,568. CANDY. NATIONAL BISCUIT COMPANY, Jersey City, N. J., and New York, N. Y.
Filed December 29, 1906. Serial No. 24,341. PUBLISHED JANUARY 29, 1907.

61,569. WOODEN HANDLES FOR TOOLS AND IMPLEMENTS. NEUSS, HESSLEIN & Co., New York, N. Y.
Filed October 23, 1906. Serial No. 22,848. PUBLISHED JANUARY 29, 1907.

61,570. CERTAIN PORCELAIN ARTICLES. THE OWEN CHINA COMPANY, Minerva, Ohio.
Filed January 5, 1907. Serial No. 24,472. PUBLISHED JANUARY 29, 1907.

61,571. WHEAT-FLOUR. THE P. TRENT CO., Cincinnati, Ohio.
Filed December 18, 1906. Serial No. 24,127. PUBLISHED JANUARY 29, 1907.

61,572. ALL KINDS OF LEATHER. PFISTER & VOGEL LEATHER COMPANY, Milwaukee, Wis.
Filed December 17, 1906. Serial No. 24,098. PUBLISHED JANUARY 29, 1907.

61,573. ALL KINDS OF LEATHER. PFISTER & VOGEL LEATHER COMPANY, Milwaukee, Wis.
Filed December 17, 1906. Serial No. 24,099. PUBLISHED JANUARY 29, 1907.

61,574. ALL KINDS OF LEATHER. PFISTER & VOGEL LEATHER COMPANY, Milwaukee, Wis.
Filed December 17, 1906. Serial No. 24,100. PUBLISHED JANUARY 29, 1907.

61,575. LEATHER BOOTS AND SHOES. HERBERT LINCOLN PURDY, Boston, Mass.
Filed November 12, 1906. Serial No. 23,290. PUBLISHED JANUARY 29, 1907.

61,576. WHEAT-GRITS. THE RUGBY MILLING COMPANY, Rugby, N. D.
Filed August 27, 1906. Serial No. 21,760. PUBLISHED JANUARY 29, 1907.

61,577. LEATHER OF ALL KINDS. CHAS. A. SCHIEREN & CO., New York, N. Y.
Filed August 25, 1906. Serial No. 21,753. PUBLISHED JANUARY 29, 1907.

61,578. LEATHER FOBS, MATCH-CASES, AND POCKET-BOOKS. WEISS M'F'G. CO., New York, N. Y.
Filed December 13, 1906. Serial No. 23,987. PUBLISHED JANUARY 29, 1907.

61,579. WHISKY. DELANEY & MURPHY, Chicago, Ill.
Filed April 10, 1905. Serial No. 1,005. PUBLISHED NOVEMBER 13, 1906.

61,580. WHISKY. FREIBERG, MEYER & CO., Cincinnati, Ohio.
Filed May 25, 1905. Serial No. 6,586. PUBLISHED OCTOBER 9, 1906.

61,581. HONEY COMPOUNDS. GORDON, WOLF AND CO., New York, N. Y.
Filed January 3, 1907. Serial No. 24,410. PUBLISHED JANUARY 29, 1907.

61,582. POULTRY FOOD. THE ILLINOIS SEED COMPANY, Chicago, Ill.
Filed December 31, 1906. Serial No. 24,355. PUBLISHED JANUARY 29, 1907.

61,583. CUSTARD-POWDER. IVIMY, LIMITED, London, England.
Filed December 29, 1906. Serial No. 24,338. PUBLISHED JANUARY 29, 1907.

61,584. WHISKY. W. H. JONES AND CO., Boston, Mass.
Filed April 3, 1905. Serial No. 347. PUBLISHED MARCH 13, 1906.

61,585. DRAWING-PAPER. THE KEUFFEL & ESSER COMPANY, Hoboken, N. J.
Filed January 4, 1907. Serial No. 24,453. PUBLISHED JANUARY 29, 1907.

61,586. GIN. HENRY R. MYERS, Covington, Ky.
Filed June 8, 1905. Serial No. 7,701. PUBLISHED JANUARY 29, 1907.

61,587. HIGH-GRADE PAPER FOR USE IN WRITING, PRINTING, AND ENGRAVING. PARSONS PAPER CO. Holyoke, Mass.
Filed December 22, 1906. Serial No. 24,209. PUBLISHED JANUARY 29, 1907.

61,588. HIGH-GRADE PAPER FOR USE IN WRITING, PRINTING, AND ENGRAVING. PARSONS PAPER CO., Holyoke, Mass.
Filed December 22, 1906. Serial No. 24,211. PUBLISHED JANUARY 29, 1907.

61,589. HIGH-GRADE PAPER FOR USE IN WRITING, PRINTING, AND ENGRAVING. PARSONS PAPER CO., Holyoke, Mass.
Filed December 22, 1906. Serial No. 24,212. PUBLISHED JANUARY 29, 1907.

61,590. SALAD-DRESSING, CATSUP, AND MINCE-MEAT. PRESSING & ORR COMPANY, Norwalk, Ohio.
Filed December 27, 1906. Serial No. 24,296. PUBLISHED JANUARY 29, 1907.

61,591. SADDLE-HOUSINGS AND SADDLE-PADS. THE SMITH-WORTHINGTON COMPANY, New York, N. Y.
Filed April 27, 1905. Serial No. 3,203. PUBLISHED JANUARY 29, 1907.

61,592. WHISKY. THE STAR DISTILLERY CO., Cincinnati, Ohio.
Filed May 24, 1905. Serial No. 6,490. PUBLISHED MARCH 6, 1906.

61,593. LAW-BOOKS. THE AMERICAN LAW BOOK COMPANY, Jersey City, N. J., and New York, N. Y.
Filed November 24, 1906. Serial No. 22,569. PUBLISHED JANUARY 29, 1907.

61,594. TEAS. BURTON & DAVIS CO., New York, N. Y.
Filed July 9, 1906. Serial No. 20,737. PUBLISHED JANUARY 29, 1907.

61,595. FRESH, SMOKED, AND CURED MEATS. CHARLES ROESCH AND SONS COMPANY, Philadelphia, Pa.
Filed June 27, 1906. Serial No. 20,897. PUBLISHED JANUARY 29, 1907.

61,596. CERTAIN SEA FOODS. E. T. SMITH COMPANY, Worcester, Mass.
Filed July 14, 1906. Serial No. 20,931. PUBLISHED NOVEMBER 20, 1906.

61,597. MALT EXTRACT. THE EBLING BREWING CO., New York, N. Y.
Filed November 30, 1906. Serial No. 23,677. PUBLISHED JANUARY 29, 1907.

61,598. CAST-STEEL. GEBR. BÖHLER & CO. AKTIENGESELLSCHAFT, Berlin, Germany.
Filed December 14, 1905. Serial No. 15,398. PUBLISHED JANUARY 29, 1907.

61,599. INDIA-RUBBER PENCIL-ERASERS. L. & C. HARDTMUTH, Vienna and Budweis, Austria-Hungary, and London, England.
Filed June 14, 1905. Serial No. 8,065. PUBLISHED MAY 22, 1906.

61,600. CERTAIN CLOTHING. HEIDELBERG, WOLFF & CO., New York, N. Y.
Filed July 14, 1906. Serial No. 20,936. PUBLISHED JANUARY 29, 1907.

61,601. CREAMERY-BUTTER. KIRSCHBRAUN & SONS, Omaha, Nebr.
Filed November 24, 1906. Serial No. 23,577. PUBLISHED JANUARY 29, 1907.

61,602. CERTAIN RUBBER CLOTHING. LAWTON & HALL, Chicago, Ill.
Filed November 10, 1906. Serial No. 23,246. PUBLISHED JANUARY 29, 1907.

61,603. MANGANESE BRONZE. THE MANGANESE BRONZE & BRASS CO. LD., London, England.
Filed February 12, 1906. Serial No. 16,947. PUBLISHED JANUARY 29, 1907.

61,604. KNIT HOSIERY AND UNDERWEAR. M. & C. MAYER, New York, N. Y.
Filed October 4, 1905. Serial No. 13,265. PUBLISHED JANUARY 29, 1907.

61,605. CIGARS. PARK & TILFORD, New York, N. Y.
Filed November 16, 1906. Serial No. 23,303. PUBLISHED JANUARY 29, 1907.

61,606. CIGARS. PARK & TILFORD, New York, N. Y.
Filed November 16, 1906. Serial No. 23,305. PUBLISHED JANUARY 29, 1907.

61,607. CIGARS. PARK & TILFORD, New York, N. Y.
Filed November 16, 1906. Serial No. 23,306. PUBLISHED JANUARY 29, 1907.

61,608. LEATHER BOOTS AND SHOES. REGAL SHOE COMPANY INC., Boston, Mass.
Filed June 4, 1906. Serial No. 20,027. PUBLISHED JANUARY 29, 1907.

61,609. WHISKY. MAX. SALMON, New York, N. Y.
Filed June 11, 1906. Serial No. 20,205. PUBLISHED JANUARY 29, 1907.

61,610. WHISKY. SAMPLE & CO., New York, N. Y.
Filed May 4, 1906. Serial No. 4,512. PUBLISHED JANUARY 29, 1907.

61,611. ODOMETERS, KILOMETER-COUNTERS, AND TACHYMETERS. ADAM SCHNEIDER, Berlin, Germany.
Filed November 10, 1906. Serial No. 23,261. PUBLISHED JANUARY 29, 1907.

61,612. LINK-BUTTONS, TIE-CLASPS, STUDS, AND COLLAR-SUPPORTERS. STERN BROTHERS & COMPANY, New York, N. Y.
Filed November 29, 1906. Serial No. 15,098. PUBLISHED JANUARY 29, 1907.

61,613. THIMBLES. STERN BROTHERS & COMPANY, New York, N. Y.
Filed November 29, 1906. Serial No. 15,087. PUBLISHED JANUARY 29, 1907.

61,614. WHISKY. STRAUS, GUNST & CO., Richmond, Va.
Filed May 12, 1906. Serial No. 5,296. PUBLISHED JANUARY 29, 1907.

61,615. CANNED FRUITS AND VEGETABLES. W. R. ROACH & CO., Hart, Mich.
Filed June 3, 1905. Serial No. 7,348. PUBLISHED JANUARY 29, 1907.

61,616. COFFEE AND TEA. W. S. QUINBY COMPANY, Boston, Mass.
Filed December 31, 1906. Serial No. 24,359. PUBLISHED JANUARY 29, 1907.

61,617. WEEKLY JOURNAL. AGRICULTURAL PUBLISHING COMPANY, Raleigh, N. C.
Filed December 13, 1906. Serial No. 23,991. PUBLISHED JANUARY 29, 1907.

61,618. PORK-RELISH. DAVID M. BODINE, Trenton, N. J.
Filed November 30, 1906. Serial No. 23,694. PUBLISHED JANUARY 29, 1907.

61,619. CERTAIN OILS. THE CITIZENS' WHOLESALE SUPPLY CO., Columbus, Ohio.
Filed December 8, 1906. Serial No. 23,875. PUBLISHED JANUARY 29, 1907.

61,620. LEAD-PENCILS OF ALL KINDS, INCLUDING COPYING-PENCILS. EAGLE PENCIL COMPANY, New York, N. Y.
Filed December 19, 1906. Serial No. 24,140. PUBLISHED JANUARY 29, 1907.

61,621. GELATIN FOR USE AS FOOD. J. & G. COX LIMITED, Gorgie, Edinburgh, Scotland.
Filed August 3, 1906. Serial No. 21,314. PUBLISHED JANUARY 29, 1907.

61,622. CANNED HASH-MEAT. AUGUSTUS OEHLER, Savannah, Ga.
Filed December 6, 1906. Serial No. 23,843. PUBLISHED JANUARY 29, 1907.

61,623. LEATHER BOOTS, SHOES, AND SLIPPERS. PAUL BROTHERS, Philadelphia, Pa.
Filed December 8, 1906. Serial No. 23,876. PUBLISHED JANUARY 29, 1907.

61,624. APPARATUS FOR GENERATING OXYGEN. THE ROESSLER & HASSLACHER CHEMICAL CO., New York, N. Y.
Filed November 26, 1906. Serial No. 23,611. PUBLISHED JANUARY 29, 1907.

61,625. CANNED SALMON. C. SCHMITZ & CO., New York, N. Y.
Filed December 14, 1906. Serial No. 24,029. PUBLISHED JANUARY 29, 1907.

61,626. MONTHLY NEWSPAPER. SUCCESSFUL FARMING PUBLISHING COMPANY, Des Moines, Iowa.
Filed November 24, 1906. Serial No. 23,585. PUBLISHED JANUARY 29, 1907.

LABELS

REGISTERED MARCH 26, 1907.

13,416.—*Title:* "JUST RIGHT." (For Cigars.) O. L. SCHWENCKE LITHOGRAPHIC CO., New York, N. Y. Filed March 1, 1907.

13,417.—*Title:* "ORELA." (For Cigars.) O. L. SCHWENCKE LITHOGRAPHIC CO., New York, N. Y. Filed March 1, 1907.

13,418.—*Title:* "GOOD LUCK." (For Cigars.) O. L. SCHWENCKE LITHOGRAPHIC CO., New York, N. Y. Filed March 1, 1907.

13,419.—*Title:* "SE-BA-GO." (For a Carbonated Beverage.) RICHARD R. ARMSTRONG, Terre Haute, Ind. Filed January 17, 1907.

13,420.—*Title:* "SEIPP'S EXPORT." (For Beer.) WILLIAMS BROS. CO., Milwaukee, Wis. Filed February 26, 1907.

13,421.—*Title:* "KAFFEE KLATSCH." (For Coffee.) BERLIN LABORATORY, Cincinnati, Ohio. Filed March 2, 1907.

13,422.—*Title:* "BISCO." (For a Baking Compound.) BERLIN LABORATORY, Cincinnati, Ohio. Filed March 2, 1907.

13,423.—*Title:* "BIG JANE." (For Baking-Powder.) BERLIN LABORATORY, Cincinnati, Ohio. Filed March 2, 1907.

13,424.—*Title:* "BAKING POWDER." (For Baking-Powder.) BERLIN LABORATORY, Cincinnati, Ohio. Filed March 2, 1907.

13,425.—*Title:* "CORN CRYSTALS." (For a Cereal Food.) CORN CRYSTAL COMPANY, Worcester, Mass. Filed March 2, 1907.

13,426.—*Title:* "LION WASHING POWDER." (For Washing-Powder.) RUDOLPH H. KEAGY, Canton, Ohio. Filed March 2, 1907.

PRINTS

REGISTERED MARCH 26, 1907.

1,935.—*Title:* "RIMLESS EYEGLASS SNAP." (For Eyeglass-Snap.) CHAPIN & HOLLISTER CO., Providence, R. I. Filed March 1, 1907.

1,936.—*Title:* "JUMPED INTO FAVOR FROM THE START." (For Whisky.) WM. LANAHAN & SON, Baltimore, Md. Filed February 20, 1907.

1,937.—*Title:* "PERRY'S FASHIONS FOR SPRING 1907." (For Men's Clothing.) PERRY & Co., Philadelphia, Pa. Filed February 27, 1907.

1,938.—*Title:* "MEN'S AND BOYS' APPAREL." (For Men's and Boys' Apparel.) H. C. LYTTON, Chicago, Ill. Filed February 26, 1907.

1,939.—*Title:* "WHO'S YOUR TAILOR?" (For Men's and Boys' Coats, Vests, and Trousers.) ED. V. PRICE & COMPANY, Chicago, Ill. Filed February 26, 1907.

1,940.—*Title:* "? FALL 1907 GUESS." (For Men's and Boys' Coats, Vests, and Trousers.) ED. V. PRICE & COMPANY, Chicago, Ill. Filed February 26, 1907.

1,941.—*Title:* "FINE VARNISHES AND JAPANS." (For Varnishes and Japans.) THE BIGELOW VARNISH CO., Newark, N. J. Filed February 27, 1907.

1,942.—*Title:* "SAPOLIN POWDERS FOR ALL KINDS OF GILDING." (For Gilding-Powders.) GERSTENDORFER BROS., New York, N. Y. Filed February 27, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE MIDGLEY.

Decided January 10, 1907.

1. ABANDONMENT OF APPLICATION—WHEN HOLDING IS PROPER. Where twenty-seven claims were rejected on August 9, 1905, and on June 9, 1906, the applicant amended two of the rejected claims and added two new claims, but made no allusion to the remaining twenty-five rejected claims, and the Examiner on August 14, 1906, on taking up the case in the regular course of his work, notified applicant that his case was abandoned, *Held* that the Examiner's action is entirely in accord with sound reason and well-established practice and is the only proper action which could have been given under the circumstances.

2. SAME—UNRESPONSIVE ACTION NOT ENTITLED TO CONSIDERATION. Petitioner's contention that his unresponsive amendment filed within the year is entitled to consideration and action upon its merits is clearly unfounded, since the statutes provide for no piecemeal consideration and the rules prohibit the same.

3. SAME—APPLICANT RESPONSIBLE FOR FAILURE TO COMPLY WITH RULES. The fact that the Examiner in the regular course of business did not reach applicant's case and give him notice of the insufficiency of his action until after the year allowed for action had expired does not relieve applicant of the necessity of taking responsive action within the year required by the rules or shift the responsibility for failure to comply with the rules to the Patent Office.

4. SAME—APPLICATION ABANDONED WHERE DELAY WAS NOT UNAVOIDABLE. Where the delay has not been terminated by the filing of an action fully responsive to the last rejection and where no good reason appears why such an action should not have been filed within the year allowed therefor, *Held* that the delay was not unavoidable and that the application is abandoned.

ON PETITION.

WIRELESS-TELEGRAPH SYSTEM.

Mr. Cornelius D. Ehret for the applicant.

ALLEN, *Commissioner:*

This is a petition that the Examiner's action holding the case abandoned be set aside as improper and that the application be revived and given status as a pending application.

It appears from the statement of the Examiner upon the petition that twenty-seven claims in this application were rejected on August 9, 1905; that on June 9, 1906, the applicant amended two of the rejected claims and added two new claims, but made no allusion to the remaining twenty-five rejected claims, and that upon August 14, 1906, the Examiner, taking up the case in the regular course of his work, held that it was abandoned.

There is no error in the Examiner's action. It is entirely in accord with sound reason and well-established practice and is the only proper action which could have been given under the circumstances. Rule 69 provides that in order to be entitled to reconsideration the applicant must distinctly and specifically point out the supposed errors in the Examiner's action. The applicant has made no attempt to comply with this rule. Rule 171 provides that prosecution of an application to save it from abandonment must include such proper action as the condition of the case may require. These rules for the conduct of proceedings in the Patent Office, made with the approval of the Secretary of the Interior and not inconsistent with law, have all the force and effect of statutes. (Sec. 483, Rev. Stats.) No proper action in accordance therewith having been taken within the year following the official action of August 9, 1905, the application is clearly abandoned under section 4894, Revised Statutes. The petitioner's contention that his amendment of June 9, 1906, is entitled under the statutes to consideration and action upon its merits is clearly unfounded. The statutes provide for no piecemeal consideration, and the rules referred to prohibit the same. Nor is this position a merely technical one, as is contended by the petitioner. The same reasons upon which the requirement for action by the applicant within a year following the Office action is based require that his action shall be fully responsive to the Office action. There appears to have been no reason why the applicant in this case should not have furnished the Examiner, as required by the rules, with his reasons for persisting in the twenty-five rejected claims. There was certainly no reason why the Examiner should have reconsidered his rejection of such claims without a statement of such reasons from the applicant, and, in fact, such reconsideration would have been improper. (*Ex parte Alton*, 113 O. G., 1968.) Action by the Examiner without reconsideration of the rejection of the twenty-five unamended claims leading to a finding that the case was otherwise ready for allowance would have resulted in an extension of the period for prosecution by the applicant of another year for no other purpose than the filing of his reasons for persisting in these claims, which reasons could and should have been filed in the preceding year.

The petitioner contends that the Examiner's failure to act upon the case and give notice of the insufficiency of the applicant's action for something over two months from the date of the applicant's action and until

after the year allowed for action had expired is responsible in some way not made clear for the petitioner's failure to file proper action within the proper time. The Examiner states that the case was acted upon by him in the regular course of business. Does the pressure of work in the Patent Office, resulting in a delay in action of two months or more, relieve applicants of the necessity of taking responsive action within a year, as required by the rules? Or should the Examiners single out those cases in which the action taken is not fully responsive and give notice thereof at once in advance of action upon other cases? The answer to each of these questions obviously is no. The requirement of the practice for responsive actions is clearly set forth in the rules and in many published decisions. (*Ex parte Vaughen*, 97 O. G., 957; *ex parte Kuper*, 97 O. G., 2981; *ex parte Whitney*, 98 O. G., 1969; *ex parte Alton*, 113 O. G., 1968; *ex parte Linde*, 115 O. G., 1329; *ex parte Busenbens*, 117 O. G., 600; *ex parte Schmitt*, 121 O. G., 688.) To comply with this requirement, the exercise of merely ordinary care is in general necessary. It is not alleged that more than that would have been required in this case. Clearly the responsibility for failure to comply rests in general upon the applicant or his representatives and cannot be shifted to the Patent Office. This case appears to be no exception to this rule.

The application is clearly abandoned unless the delay in prosecuting the same has been unavoidable. The delay cannot be held to have been unavoidable, however, first, because it has not as yet been terminated by the filing of an action fully responsive to the rejection of August 9, 1905, and, second, because no good reason appears why such an action should not have been filed within the year originally allowed therefor.

The petition is denied.

ADKINS AND LEWIS v. SEEBERGER.

Decided January 17, 1907.

1. INTERFERENCE—MOTION FOR DISSOLUTION—EXTENSION OF LIMIT OF APPEAL.

The limit of appeal will not be extended to permit an appeal upon motion to transmit a motion for dissolution where the transmission of said motion would merely result in a reconsideration by the Primary Examiner under the head of irregularity in declaring the interference of the facts he has already considered under the right to make the claims.

2. SAME—SAME—SAME.

A long and unexcused delay in filing an appeal constitutes a sufficient reason for denying an extension of the limit of appeal. *Hewitt* v. *Steinmetz*, 122 O. G., 1395.

3. SAME—SAME—EXERCISE OF SUPERVISORY AUTHORITY OF COMMISSIONER.

Where the question presented upon a motion for dissolution can be raised, under Rule 130, at final hearing before the Examiner of Interferences and upon appeals from such decision, there is no occasion for the exercise of the supervisory authority of the Commissioner.

ON PETITION.

ESCALATOR.

Messrs. Duncan & Duncan for Adkins and Lewis.

Messrs. Coburn & McRoberts for Seeberger.

ALLEN, *Commissioner:*

This is a petition either (1) that the limit of appeal from the decision of the Examiner of Interferences refusing to transmit the interference upon the ground of irregularity be extended and the accompanying appeal from said decision be entertained or (2) that the question of irregularity in the declaration of the interference be considered by the Commissioner under his supervisory authority.

The motion to dissolve alleged irregularity in declaring the interference and that Seeberger has no right to make the claims of the issue. The contention that Seeberger is estopped from making the claims by reason of his failure to insert them in his application under Rule 109 during a prior interference is urged in support of both grounds of the motion. The Examiner of Interferences transmitted the second ground and refused to transmit the first ground of this motion, setting a limit of appeal that expired June 7, 1906.

The Primary Examiner held that Seeberger has a right to make the claims, whereupon Adkins and Lewis on October 23, 1906, brought the present petition. No excuse whatever is made for the long delay in filing the appeal, and this alone is sufficient reason for denying the petition. (*Hewitt* v. *Steinmetz*, 122 O. G., 1395.) Moreover, if the appeal should be granted and the motion to dissolve again transmitted it would merely result in a reconsideration by the Primary Examiner under the head of irregularity of the very facts that he has already considered under the right to make the claims. That these facts were properly considered under the ground of the right to make the claims has not been questioned. The conduct of the petitioners in prosecuting that ground of their motion indicates that they are of the opinion that they were properly raised under said ground.

No occasion appears for the exercise of supervisory authority. Under present Rule 130 petitioners can raise the question of their opponent's right to the claims at the final hearing before the Examiner of Interferences and upon appeals from such decision.

The petition is denied.

EX PARTE FOWLER, JR.

Decided January 17, 1907.

1. ABANDONED APPLICATION—WHAT IS RESPONSIVE ACTION.

On October 16, 1905, the EXAMINER finally rejected certain claims. The applicant on June 6, 1906, filed an amendment substituting new claims for those rejected, which amendment was refused entry by the EXAMINER in view of the final rejection. On September 24, 1906, applicant filed a request for reconsideration of the final rejection and refusal of his amendment, accompanied by a statement of reasons why he considered said actions improper. In reply he was notified by the EXAMINER on November 3, 1906, that his application was abandoned, and on November 6, 1906, he took this petition. *Held* that if the final rejection of October 16, 1905, was proper the condition of the case called for either a cancelation of the rejected claims or an appeal to the EXAMINERS-IN-CHIEF, and since such action was not taken within the year the case is abandoned; but in case the final rejection was irregular or premature, then the actions of June 6 and September 24 were such as the condition of the case required, and the application is not abandoned.

2. FINAL REJECTION—WHEN UNWARRANTED.

Where appellant's letter stated that the prior Office action was not understood, requested that the pertinency of the references be pointed out as a guide to applicant in the further prosecution of the case, and expressly stated that it was not intended as a request for reconsideration, *Held* that the action of the Examiner in treating this letter as calling for a reconsideration and in finally rejecting the claims was unwarranted.

3. SAME—WHEN PREMATURE.

Where in the Office action prior to the final rejection a claim was criticised, but its rejection was inadvertently omitted, *Held* that the final rejection was premature.

ON PETITION.

WEIGHING AND VENDING MACHINE.

Mr. Jonathan O. Fowler, Jr., pro se.

ALLEN, *Commissioner:*

This is a petition from the actions of the Primary Examiner finally rejecting the case, refusing to enter and consider an amendment, and holding the application abandoned.

After numerous actions during the prosecution of this application the Primary Examiner on October 16, 1905, finally rejected certain claims. In response to this action the applicant on June 6, 1906, presented a proposed amendment. On June 25, 1906, the Primary Examiner informed applicant that the proposed amendment would not be entered or considered in the case. Under date of September 24, 1906, applicant replied by a further argument and request for reconsideration of the final action and refusal of the amendment. He was notified by the Primary Examiner on November 3, 1906, that as he had not made a responsive action within a year from the final rejection his application was abandoned. From this action the present petition was filed on November 6, 1906.

If the final rejection of October 16, 1905, was proper, the condition of the case called for either a cancelation of the rejected claims or an appeal to the Examiners-in-Chief, and since such action was not taken within the year it would follow that the action of the Examiner holding the case abandoned is correct. Petitioner, however, claims that the final rejection was irregular and premature and desires to further prosecute the application before the Primary Examiner. Following the final rejection of October 16, 1905, Fowler filed on June 6, 1906, an amendment consisting of thirty-two claims and a cancelation of the former claims. This amendment was refused entry by the Primary Examiner on June 26, 1906, in view of the final rejection of October 16, 1905. On September 24, 1906, applicant filed a request for reconsideration of the Office actions of October 16, 1905, and June 25, 1906, accompanied by a statement of reasons why he considered said actions improper. Such request for a second action was necessary under the provisions of Rule 145 to entitle applicant to raise the question of the propriety of the final rejection by petition. In case it is found that the final rejection was irregular or premature, then the request for reconsideration of September 24, 1906, was such an action as the condition of the case required, and since it was taken within the year after the final rejection it must follow that the case is not abandoned. (*Ex parte Thayer*, 122 O. G., 1724.)

Petitioner contends that the Office action of July 8, 1905, which the Examiner states was intended as a rejection of all of the fifty-eight claims of the case, does not contain a rejection of claims 35, 47, 48, 49, and 50, also that his letter of July 14, 1905, in response thereto was not a request for reconsideration, and that the Examiner should not, therefore, have made his next action a final rejection.

In his letter of July 14, 1905, applicant stated that a part of the prior Office action rejecting certain claims is not understood. He then discussed the structures intended to be covered by said claims and concluded with the statement:

> Applicant begs to have it distinctly understood that this communication is in no sense to be regarded as a re-presentation of the claims for action, but simply as a request that the pertinence of the references to the various claims may be clearly explained, under Rule 66, as a means of aiding applicant to judge of the propriety of further prosecuting or altering the said claims.
>
> In order to avoid any mistake, applicant desires to state more specifically that what he wishes is to have each part, or codperating parts, of the Stallwerck structure pointed out and designated by its appropriate reference-symbol which is the equivalent of each of the various elements of the claims and particularly the equivalent of one of the eight elements of the combination of parts contained in claim 1 and recited above.
>
> The same information is also desired in regard to the Ubrig machine, and also in regard to the Page, Wallace, Muller and Milo machines or structures that disclose the said combination of parts.

This letter requested that the pertinency of the references be pointed out as a guide to applicant in the further prosecution of the case and expressly stated that it was not intended as a request for reconsideration. The Examiner, however, treated this letter as calling for a reconsideration, and in his letter of final rejection stated that the "references have been explained and their pertinency pointed out many times." The record shows that on three occasions applicant was notified that upon the correction of slight informalities the case would be passed to issue. In his reply to this petition the Examiner states that the final rejection was intended to cover all the claims in the case. These facts indicate some basis for applicant's claim that the position of the Office with respect to the references was not entirely understood.

In view of all the circumstances the final rejection is believed to have been unwarranted. (*Ex parte Miller*, 104 O. G., 309.)

Concerning the claims which petitioner contends were not rejected in the Office letter of July 8, 1905, said letter states:

> In claim 35 it is not clear what limitation is covered by the negative expression in the last line of said claim.
>
> Claims 47, 48, 49 and 50, cover merely a "plurality" of devices for actuating the goods-delivery mechanism, and are regarded as presenting nothing patentable over the construction shown by the patent to Ubrig of record.

Although the word "reject" is not used, the language clearly indicates that claims 47 to 50 were intended to be rejected and must have been so understood. This is not the case, however, with respect to claim 35, which is merely criticised. The Examiner admits that the rejection of claim 35 was "inadvertently omitted from the Office letter," but claims that it is not materially different from claims 34 and 36 and that applicant should have understood that "it was clearly the intention of the Examiner to reject it along with the rest." In his brief, which has been sworn to, petitioner says:

> That believing claim 35 to be allowable from the fact that the same had not been rejected, the final rejection of the application was a surprise to your petitioner against which he was not able to guard or protect himself.

Since claim 35 had not been previously rejected, the final rejection is held to have been premature.

Having found that the final rejection was irregular and premature, it is directed that it be set aside and that the amendment filed June 6, 1906, be entered and considered. For reasons stated above it follows that if this amendment is a proper response to the Office action of July 8, 1905, the application is not abandoned.

The petition is granted to the extent indicated.

BAY STATE BELTING COMPANY v. KELTON-BRUCE MANUFACTURING COMPANY.

Decided January 18, 1907.

1. INTERFERENCE—TESTIMONY—CONTROL OF WITNESSES.

The Patent Office has no power to compel the attendance of witnesses or to enforce the production of evidence of any kind (*Lindstrom* v. *Lipschutz*, 120 O. G., 904; *Kelly et al.* v. *Park et al.*, C. D., 1897, 182; 81 O. G., 1931.)

2. SAME—SAME—BOOKS USED TO REFRESH MEMORY NEED NOT BE OFFERED IN EVIDENCE.

Books produced at the examination of a witness for the purpose of refreshing his memory need not be offered in evidence. (*Laas and Sponenberg* v. *Scott*, 122 O. G., 352; *McCormick* v. *Cleal*, C. D., 1898, 492; 83 O. G., 1514.)

3. SAME—SAME—SUPPRESSION—REFUSAL TO PLACE BOOKS IN EVIDENCE.

Where certain books were referred to by a witness for the purpose of refreshing his recollection, and opposing counsel, who was given an opportunity to examine them, did not interpose any objection to the books or cross-examine the witness relative to the entries, *Held* that a subsequent refusal to produce the books for inspection or to offer them in evidence does not warrant the suppression of any part of the deposition of the witness who referred to said books.

APPEAL from Examiner of Interferences.

TRADE-MARK FOR BELT AND LACE LEATHER.

Mr. George N. Goddard for Bay State Belting Company.

Messrs. Pennie & Goldsborough for Kelton-Bruce Manufacturing Company.

ALLEN, *Commissioner:*

This is an appeal from the decision of the Examiner of Interferences denying the motion of the applicant, the Kelton-Bruce Manufacturing Company, that the opponent, the Bay State Belting Company, be required to produce for inspection and to offer in evidence certain books of the last-named company referred to by one of their witnesses, George B. Rowbotham, or in lieu thereof that certain questions and answers be stricken from the record.

The decision of the Examiner of Interferences denying the motion that the Bay State Belting Company be required to produce the books referred to and to offer them in evidence was clearly correct. The Patent Office has no power under the law to compel the attendance of witnesses or to enforce the production of evidence of any kind. (*Lindstrom* v. *Lipschutz*, 120 O. G., 904; *Kelly et al.* v. *Park et al.*, C. D., 1897, 182; 81 O. G., 1931.)

The decision of the Examiner of Interferences refusing to strike parts of Rowbotham's deposition from the record was also correct. It appears from the record that the books referred to by the witness for the purpose of refreshing his recollection were produced during his examination and that counsel for the applicant was given an opportunity to inspect the items referred to by the witness. Applicant's counsel did not at the time the books were produced make any attempt to inspect them other than to refer to the items mentioned by the witness, nor did he cross-examine the witness relative to the contents of the books. Several days after the examination of this witness had been concluded the applicant's counsel entered upon the record a request that the books referred to be produced for inspection and offered in evidence. Upon opposing counsel's refusal to comply with this request counsel for the applicant gave notice of his intention to bring the motion now under consideration. It is well settled that books produced at the examination of a witness for the purpose of refreshing his memory need not be offered in evidence. (*Laas and Sponenberg* v. *Scott*, 122 O. G., 352; *McCormick* v. *Cleal*, C. D., 1898, 492; 83 O. G., 1514.) The failure of applicant's counsel to interpose any objection to the books or to cross-examine the witness relative to the entries therein when they were presented to him for inspection warrants the presumption that he was at that time satisfied with the authenticity of the books and their contents. No reason therefore appears for striking out any part of Rowbotham's deposition.

The decision of the Examiner of Interferences is affirmed.

EX PARTE BULLOCK.

Decided February 7, 1907.

1. CLAIMS FOR INDEPENDENT INVENTIONS—PRACTICE.

Where claims presented by amendment are held by the Examiner to be for an independent invention from that presented in the other claims, *Held* that the question of whether the claims are in fact for an independent invention must be settled before applicant can demand an action upon their merits. If for an independent invention, applicant is estopped from prosecuting said claims on their merits in this application, and they should be canceled. This question is the same as that ordinarily presented in a requirement for division, with the exception that in originally presenting and prosecuting claims to one invention only applicant has already made his election and has now no choice as to which set of claims he will cancel. (*Ex parte Selle*, 110 O. G., 1728; *ex parte Tuttle*, 113 O. G., 1967.)

2. CLAIMS—INDEFINITE AND FUNCTIONAL.

Where the claim is not for a combination of which the "means" for the purpose mentioned is an element, but is merely for means as an element and covers all possible means for accomplishing a certain function regardless of structure, *Held* that the claim is indefinite and functional.

ON PETITION.

CLOTHES-DRYING DEVICE.

Mr. F. G. Dieterich and *Messrs. Fred G. Dieterich & Company* for the applicant.

ALLEN, *Commissioner:*

This is a petition from the refusal of the Examiner to forward an appeal to the Examiners-in-Chief.

The claims originally presented were all rejected as covering aggregations. Present claims 9 and 10 presented in applicant's second amendment were held in the following action of the Examiner to be for an independent invention, and the remaining claims were rejected as covering aggregations. Claim 9 was also objected to as indefinite. Upon a repetition of this action applicant filed an appeal to the Examiners-in-Chief upon all of these points. The Examiner refused to forward this appeal, for the reason that the case in not in condition for such an appeal until the formal objection to claim 9 is cured and until the question of whether claims 9 and 10 cover an independent invention is finally determined and an examination made as to their novelty, if it is held on appeal that they may be prosecuted in this case.

The question whether claims 9 and 10 are for an independent invention from that presented in the other claims must be settled before applicant can demand an action upon their merits. If for an independent invention, applicant is estopped from prosecuting said claims on their merits in this application, and they should be canceled. This question is the same as that ordinarily presented in a requirement for division, with the exception that in originally presenting and prosecuting claims to the invention of claims 1 to 8 only applicant has already made his election and has now no choice as to which set of claims he will cancel. (*Ex parte Selle*, 110 O. G., 1728; *ex parte Tuttle*, 113 O. G., 1967.)

Claim 9 reads as follows

9. In a device of the class described, means for transferring clothes-carrying rods from one position and depositing them on a suitable support, substantially as shown and described.

The claim is clearly indefinite and functional. No structure by which the function stated is accomplished is set forth in the claim. The claim is not for a combination of which the "means" for the purpose mentioned is an element, but is merely for means as an element and covers all possible means for accomplishing a certain function regardless of structure. (*Ex parte Kotler*, 95 O. G., 2684.)

The Examiner was right in refusing to forward applicant's appeal in its present form. The case is in condition for appeal merely on the question whether the claims cover more than one invention, and the appeal should be limited to this question.

The petition is denied.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

KREAG v. GEEN.

Decided December 4, 1906.

ORIGINALITY—EMPLOYER AND EMPLOYEE—IMPROVEMENTS BY EMPLOYEE.

When one conceives the principle or plan of an invention and employs another to perfect the details and realize his conception, though the latter may make valuable improvements therein, such improved result belongs to the employer.

Mr. C. S. Davis and *Mr. H. L. Osgood* for Kreag.

Mr. F. F. Crampton and *Mr. Geo. H. Hamlin* for Geen.

SHEPARD, *J.:*

The subject-matter of invention in this case is an improvement in brushes used for polishing shoes. Geen holds a patent for the invention issued October 4, 1904, upon an application filed December 3, 1903. Kreag filed an application making the same claims on November 25, 1904. An interference was declared between the two with issue defined as follows:

1. In a brush, a back, a felt pad, and a pad-cover having free side edges and constituting a brushing-surface, said pad being compressed near its ends by fastening devices and the parts between the fasteners of the pad and the proximate ends of the brush still further compressed by the cover fastened to the said ends.

2. In a brush, a back, a felt pad, and a pad-cover constituting a brushing-surface, said pad having fluted edges whereby said edges are made more compressible.

3. In a brush, a back, a plurality of felt pads, and a pad-cover constituting a brushing-surface, said pads having fluted edges whereby said edges are made more compressible.

4. In a brush, a wooden back having the overhanging end extensions, a plurality of felt pads tacked to the back near its ends, a pad-cover consisting of a strip of animal skin with its natural covering, said pads being narrower than the back and narrower than the strip and having fluted edges, and fastening devices securing the strip to the back under the extensions, said natural covering of the strip of skin extending outside of the back, both at its sides and ends.

The Examiner of Interferences decided in favor of Geen, and was reversed by the Examiners-in-Chief who awarded priority to Kreag. This decision was in turn reversed on appeal to the Commissioner, from whose decision awarding priority to Geen this appeal has been taken by Kreag.

The decision that the issue is a patentable one, having been made in the Office and a patent issued thereon to Geen, although it is confessed by the Examiner of Interferences that "the invention is an exceedingly limited one," is binding upon us on this appeal. Assuming, as we must, for the purposes of this case, that the original conclusion, arrived at, it appears, with considerable difficulty in the Office in passing Geen's application to patent, was a sound one, the single question for our determination is the disputed claim of priority between the patentee and the later applicant.

The question as presented on the evidence is one of originality rather than the ordinary one of priority between independent inventors.

Kreag was an officer of the American Chemical Manufacturing and Mining Company that was engaged in the manufacture of a shoe-polish called "Shinola." Geen was his neighbor, and was the manager of a department in the Fred O. Todd Co., whose business was the manufacture of shoes. Geen was also a mechanic of some skill, and said, in giving testimony, that Kreag thought him capable of producing a brush suitable for paste polish. As early as November, 1901, Kreag had been looking about for a satisfactory brush for use with his "Shinola" polish. He collected a number of brushes in ordinary use for polishing with paste, and finding none to answer his purposes, applied to Geen to assist him. Kreag and Geen differ in their statements as to communications made by Kreag to the latter, and there is no independent testimony. It is clear, however, that Geen began his labors at the instigation of Kreag.

In this conflict of testimony, the burden being heavily upon Kreag in the first instance as claiming against a patentee, we must resort to certain well-established circumstances in the case to ascertain from them, if possible, the exact relations of the parties, and the extent of the communication made by Kreag to Geen at the time of enlisting the latter's services. Geen admits that Kreag sent and brought him several old brushes, and most if not all of them were produced by the parties and made exhibits in the case. Some of these were felt and some bristle brushes; some had daubers attached, but the majority had not. Two had sheepskin faces for polishers attached to wooden backs, and in one of them the woolly-skin pad was secured by nails to an undercut portion of the back. Kreag also furnished another brush which had the wooden back of the ordinary shoe-brush. A thick felt pad, thicker or more resilient midway between the ends, was nailed to the wooden back, and covered with a strip of cloth for a polishing-surface. It was in a new combination of the materials of these old brushes and their arrangement, making a superior polisher, that invention was found to exist when the patent was issued to Geen.

Kreag undoubtedly employed Geen to make a new

brush, and, in addition to the sample brushes, furnished him with the materials used in his experiments. The itemized accounts rendered by Geen and paid by Kreag show this plainly. When the desired brush was produced, Geen made them in large quantities for Kreag who furnished the materials and paid for the work. The relation of employer and employee once established, the law is well settled that when one conceives the principle or plan of an invention, and employs another to perfect the details and realize his conception, though the latter may make valuable improvements therein, such improved result belongs to the employer. (*Milton* v. *Kingsley*, C. D., 1898, 420, 426; 75 O. G., 2193, 2195; 7 App. D. C., 531, 537; *Gedge* v. *Cromwell*, C. D., 1902, 514; 98 O. G., 1486; 19 App. D. C., 192, 198; *Miller* v. *Kelly*, C. D., 1901, 405; 96 O. G., 1038; 18 App. D. C., 163, 170; *Gallagher* v. *Hastings*, C. D., 1903, 531; 103 O. G., 1165; 21 App. D. C., 88, 99; *Flather* v. *Webber*, C. D., 1903, 561; 104 O. G., 312; 21 App. D. C., 179.) Applying this principle to the established circumstances of the case, we are forced to the conclusion that Kreag had in mind the general plan of the new brush with resilient felt pads and sheepskin polishing-surface when he employed Geen to undertake the work of construction. Whether he had in mind the fluted edges of the pads, also, is immaterial. With the three brushes, before described, in his possession, and with his mind bent on improvement upon them, we must believe that he had a general conception of the new construction; and that he must necessarily have communicated that conception to Geen, who by his skill as a mechanic was able to produce the desired construction, as well as to improve it. Notwithstanding the improvement upon the combinations of form and materials shown in the old brushes has been declared the exercise of inventive talent, we think that it was undoubtedly within the conception of Kreag in a crude form, at least, and that he disclosed it to Geen. As before declared, it is not within our province, under the limitation of the jurisdiction conferred upon us in such cases as this, to say that the improvement was the result of mere mechanical skill rather than of invention. Whatever it was, we are of the opinion upon consideration of all the facts and circumstances disclosed by the evidence, that Kreag and not Geen is entitled to the benefit of it. The decision will therefore be reversed, and this decision will be certified to the Commissioner of Patents. Reversed.

Notice.

[PUBLIC—No. 232.]

An Act to amend sections five and six of an Act entitled "An Act to authorize the registration of trade-marks used in commerce with foreign nations or among the several States or with Indian tribes, and to protect the same."

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section five of the Act entitled "An Act to authorize the registration of trade-marks used in commerce with foreign nations or among the several States or with Indian tribes, and to protect the same," approved February twentieth, nineteen hundred and five, be, and is hereby, amended to read as follows:

"SEC. 5. That no mark by which the goods of the owner of the mark may be distinguished from other goods of the same class shall be refused registration as a trade-mark on account of the nature of such mark unless such mark—

"(a) Consists of or comprises immoral or scandalous matter.

"(b) Consists of or comprises the flag or coat of arms or other insignia of the United States, or any simulation thereof, or of any State, or municipality, or of any foreign nation, or of any design or picture that has been or may hereafter be adopted by any fraternal society as its emblem: *Provided*, That trade-marks which are identical with a registered or known trade-mark owned and in use by another, and appropriated to merchandise of the same descriptive properties, or which so nearly resemble a registered or known trade-mark owned and in use by another, and appropriated to merchandise of the same descriptive properties, as to be likely to cause confusion or mistake in the mind of the public, or to deceive purchasers, shall not be registered: *Provided*, That no mark which consists merely in the name of an individual, firm, corporation, or association, not written, printed, impressed, or woven in some particular or distinctive manner or in association with a portrait of the individual or merely in words or devices which are descriptive of the goods with which they are used, or of the character or quality of such goods, or merely a geographical name or term, shall be registered under the terms of this Act: *Provided further*, That no portrait of a living individual may be registered as a trade-mark, except by the consent of such individual, evidenced by an instrument in writing: *And provided further*, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this Act."

SEC. 3. That section six of said Act be, and the same is hereby, amended to read as follows:

"SEC. 6. That on the filing of an application for registration of a trade-mark which complies with the requirements of this Act, and the payment of the fees herein provided for, the Commissioner of Patents shall cause an examination thereof to be made; and if on such examination it shall appear that the applicant is entitled to have his trade-mark registered under the provisions of this Act, the Commissioner shall cause the mark to be published at least once in the OFFICIAL GAZETTE of the Patent Office. Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this Act. An opposition may be filed by a duly-authorized attorney, but said opposition shall be null and void unless verified by the opposer within a reasonable time after such filing. If no notice of opposition is filed within said time, the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for. If on examination an application is refused, the Commissioner shall notify the applicant, giving him his reasons therefor."

Approved, March 2, 1907.

Attorneys.

(ORDER No. 1,704.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 21, 1907.

Pursuant to the provisions of section 487 of the Revised Statutes, and with the approval of the Secretary of the Interior, Reuben G. Orwig, of Des Moines, Iowa, registry number 2627, is hereby disbarred from practice before the United States Patent Office for gross misconduct.

F. I. ALLEN,
Commissioner.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 16, 1907.

James J. Six Dykstra, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Friedrich Adolf Richter, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to James J. Six Dykstra, of Chicago, Ill. The notices of declaration mailed by the Patent Office in the usual manner to the said James J. Six Dykstra at his known address, 94 South Market street, Chicago, Ill., and to his attorney of record have been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said James J. Six Dykstra, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 15, 1907.

Whitman & Welch, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Exposition Cotton Mills, of Atlanta, Ga., for registration of a trade-mark, an application and a registration of the Massachusetts Cotton Mills, of Lowell, Mass., and a trade-mark registered to Whitman & Welch, of New York, N. Y., and Hartford, Conn. It has been impossible to locate said Whitman & Welch, and registered letters addressed to this firm have been returned by the Post-Office Department unclaimed.

Notice is therefore hereby given to said Whitman & Welch, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 127—No. 5. TUESDAY, APRIL 2, 1907. PRICE—$5 per year.

CONTENTS.

	Page.
ISSUE OF APRIL 2, 1907	1583
INTERFERENCE NOTICE	1583
ATTORNEYS	1583
APPLICATIONS UNDER EXAMINATION	1584
INTERFERENCE NOTICE	1590
PATENTS GRANTED	1584
REISSUES	1965
DESIGNS	1963
TRADE-MARKS—REGISTRATION APPLIED FOR	1965
TRADE-MARKS—REGISTERED	1985
LABELS	1990
PRINTS	1990
COMMISSIONER'S DECISIONS—	
Ex parte M. Zimmermann Company	1991
Barber v. Wood	1991
Hols v. Hewitt	1992
Dixon and Marsh v. Graves and Whittemore	1993
DECISIONS OF THE U. S. COURTS—	
Potter v. McIntosh	1995
INTERFERENCE NOTICES	1996

ISSUE OF APRIL 2, 1907.

Patents	737—No.	848,617 to No. 849,353, inclusive.
Designs	11—No.	38,500 to No. 38,510, inclusive.
Trade-Marks	171—No.	61,627 to No. 61,797, inclusive.
Labels	27—No.	13,427 to No. 13,453, inclusive.
Prints	7—No.	1,943 to No. 1,949, inclusive.
Reissues	3—No.	12,626 to No. 12,628, inclusive.
Total issue	956	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	4	1	New Hampshire	2	2
Alaska, District of	....	....	New Jersey	20	3
Arizona Territory	....	....	New Mexico Ter't'y	....	....
Arkansas	1	1	New York	138	47
California	22	2	North Carolina	1	....
Colorado	11	1	North Dakota	2	....
Connecticut	14	3	Ohio	52	11
Delaware	....	....	Oklahoma Territ'y	3	....
District of Columbia	5	2	Oregon	1	....
Florida	3	....	Pennsylvania	66	21
Georgia	9	1	Philippine Islands	....	....
Idaho	1	....	Porto Rico	....	....
Illinois	61	20	Rhode Island	8	1
Indian Territory	....	....	South Carolina	....	1
Indiana	18	9	South Dakota	4	....
Iowa	16	5	Tennessee	3	2
Kansas	11	....	Texas	17	....
Kentucky	10	1	Utah	3	....
Louisiana	2	....	Vermont	4	....
Maine	3	4	Virginia	6	1
Maryland	3	2	Washington	7	....
Massachusetts	38	16	West Virginia	6	....
Michigan	20	1	Wisconsin	14	4
Minnesota	10	8	Wyoming	....	....
Mississippi	3	....	U. S. Army	....	....
Missouri	22	5	U. S. Navy	....	....
Montana	3	....			
Nebraska	9	1	Total to citizens of the United States	677	185
Nevada	1	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks, Labels, and Prints.	Countries.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Argentina	....	....	Natal	....	....
Austria-Hungary	1	....	Netherlands	....	1
Belgium	....	1	Newfoundland	....	....
Brazil	....	....	New South Wales	1	....
British West Indies	....	....	New Zealand	....	....
Canada	18	....	Norway	....	....
Cape Colony	....	....	Persia	....	....
Chile	....	....	Queensland	....	....
China	....	....	Roumania	....	....
Costa Rica	....	....	Russia	1	....
Cuba	....	....	Scotland	....	....
Denmark	....	....	South Australia	....	....
Ecuador	....	....	Spain	1	....
England	12	8	Sweden	1	....
France	7	....	Switzerland	2	1
Germany	22	9	Transvaal, South Africa	1	....
Haiti	....	....	Victoria	3	....
Ireland	....	....	Western Australia	1	....
Italy	....	....			
Japan	....	....			
Java	....	....	Total to citizens of foreign countries	71	20
Mexico	....	....			

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 27, 1907.

Jeptha J. Lamb and James H. Patton, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application for patent filed by Winne Gordon, of Sharon Springs, N. Y., and an application for patent filed by Jeptha J. Lamb and James H. Patton, of Bellevue, Idaho. It appears from the record of the interference that the present whereabouts of said Jeptha J. Lamb and James H. Patton is unknown, and all communications directed to their address above given within the past two years have been returned unclaimed by the Post-Office Department.

Notice is therefore hereby given to the said Jeptha J. Lamb and James H. Patton, their assigns or legal representatives that if they or any of them desire to contest the said interference, they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

Attorneys.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 26, 1907.

This Office has been advised by the Secretary of the Interior of the disbarment of the following attorneys from practice before the Department or any Bureau thereof: Abram C. Reak, Allerton, Iowa, March 16, 1907; John S. Walton, Coatesville, Ind., March 23, 1907; William L. De Lacey, Poughkeepsie, N. Y., March 27, 1907; Edgar A. Nichols, Hot Springs Ark., March 27, 1907; John M. Scoville, Baldwinsville, N. Y., March 26, 1907.

C. M. IRELAN,
Chief Clerk.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business March 30, 1907.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Mar. 21	Mar. 21	90
208	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Mar. 16	Mar. 1	144
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presmaking, Presses, Store-Service, Tobacco, etc.	Mar. 13	Feb. 27	160
109	XVI. Telegraphy and Telephony	Mar. 12	Feb. 27	190
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	Mar. 12	Feb. 27	200
227	XVIII. Steam-Engineering, etc	Mar. 12	Feb. 26	218
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Mar. 12	Feb. 26	174
319	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Mar. 12	Feb. 26	216
127	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Mar. 11	Feb. 26	200
167	V. Bookbinding, Harvesters, Jewelry, and Music.	Mar. 11	Feb. 26	309
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Mar. 11	Feb. 20	260
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Mar. 11	Feb. 19	418
153	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Mar. 9	Mar. 2	220
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Mar. 9	Feb. 26	107
223	IV. Bridges, Conveyors, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Mar. 8	Feb. 14	244
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Mar. 7	Feb. 19	221
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Mar. 6	Feb. 27	260
224	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Mar. 5	Feb. 26	266
222	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Mar. 5	Feb. 26	316
122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Mar. 5	Feb. 26	314
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Mar. 4	Mar. 4	204
143	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sewerage.	Mar. 2	Feb. 21	267
146	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Protecting Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Mar. 1	Mar. 1	409
276	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Mar. 1	Feb. 23	281

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
207	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	Mar. 1	Feb. 6	245
147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Wood-working.	Mar. 1	Feb. 4	249
275	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Feb. 28	Feb. 26	255
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Feb. 27	Feb. 8	214
262	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	Feb. 26	Feb. 25	253
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Feb. 25	Feb. 8	261
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Feb. 26	Feb. 5	363
232	X. Carriages and Wagons	Feb. 20	Feb. 25	462
204	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Feb. 18	Feb. 7	327
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Feb. 16	Jan. 28	342
229	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making, etc.	Feb. 15	Feb. 4	373
243	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Feb. 14	Feb. 13	626
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Feb. 11	Feb. 13	431
279	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	Feb. 11	Jan. 31	337
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Jan. 29	Feb. 13	334

Total number of applications awaiting action 11,467

139	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	Mar. 26	Mar. 20	152
	Designs	Mar. 28	Mar. 13	28
	Labels and Prints			

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 18, 1907.

James J. Six Dykstra, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Friedrich Adolf Richter, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to James J. Six Dykstra, of Chicago, Ill. The notices of declaration mailed by the Patent Office in the usual manner to the said James J. Six Dykstra at his known address, 94 South Market street, Chicago, Ill., and to his attorney of record have been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said James J. Six Dykstra, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

PATENTS

GRANTED APRIL 2, 1907.

848,617. SPRING FOR EYEGLASSES. LEO F. ADT, Albany, N. Y. Filed Oct. 27, 1905. Serial No. 284,632.

Claim.—1. In eyeglasses, the combination with the lenses, and nose-guards therefor, of a bridge-spring having attaching ends and reversely-arranged bends therein disposed between the attached ends and the middle of the spring and in planes transverse to the plane of the lenses and arranged above the attaching ends.

2. In eyeglasses, the combination with the lenses, nose-guards therefor and attaching devices, of a spring connected to the attaching devices at its ends and having vertical bends formed therein and extending transversely of the plane of the lenses, all portions of the spring being arranged above the attaching ends and the apexes of the bends being located adjacent to the attaching devices.

3. In eyeglasses, the combination with the lenses, and nose-guards therefor, of a spring connecting the lenses having depressed bends or loops therein to bring the ends of the central nose-spanning portion and all parts of the spring close to and wholly above the points of attachment of the spring.

4. In eyeglasses, the combination with the lenses and nose-guards therefor, of a spring connecting the lenses having open loops therein with their arms arranged in a substantially vertical plane, disposed transversely of the plane of the lenses, all portions of the spring being arranged above the point of attachment to the lenses.

5. In eyeglasses, the combination with the lenses, nose-guards therefor, and attaching devices movable with the lenses, of a spring connecting the attaching devices having vertical, reversely-arranged bends therein above the plane of the attaching devices and between the central and attached portions of the spring.

6. In eyeglasses, the combination with the lenses and nose-guards therefor, of a spring connecting the lenses embodying a central portion having its ends extending downward and upward to form a vertical bend close to the point of attachment of the spring, the upwardly-extending portions being bent downwardly to form a second bend in rear of the first, said bends being formed between the points of attachment and the central portion of the spring.

7. In eyeglasses, the combination with the lenses, guards therefor, and attaching devices carried by the lenses, of a spring connecting the lenses having a central portion, the ends of the spring extending downwardly to a point adjacent to the corresponding attaching devices, thence upwardly, rearwardly, forwardly and downwardly to the attaching devices.

8. In eyeglasses, the combination with the lenses, guards and attaching devices carried by the lenses, of a spring composed of flat material connecting the lenses having the central arched portion and the ends connected to the attaching devices on the lenses, the material of the spring between said central portion and the ends having two bends edgewise of the material and located above the attaching devices in the lenses.

9. In eyeglasses, the combination with the lenses, guards and attaching devices carried by the lenses, of a spring composed of flat material connecting the lenses having the central portion and its attaching ends connected to the attaching devices on the lenses, the material of the spring between said central portion and the ends having two bends edgewise of the material opening in opposite directions and located above the attaching devices.

10. In eyeglasses, the combination with the lenses, guards and attaching devices carried by the lenses, of a spring connecting the lenses having the central portion and the ends connected to the attaching devices on the lenses, the material of the spring between said central portion and ends having two bends extending transversely of the plane of the lenses opening in opposite directions and located above the attaching devices on the lenses.

848,618. APPARATUS FOR COOLING LIQUIDS. LORENZO A. ANSON, Cleveland, Ohio, assignor of one-half to John C. Meyers, Cleveland, Ohio. Filed Jan. 17, 1905. Serial No. 241,518.

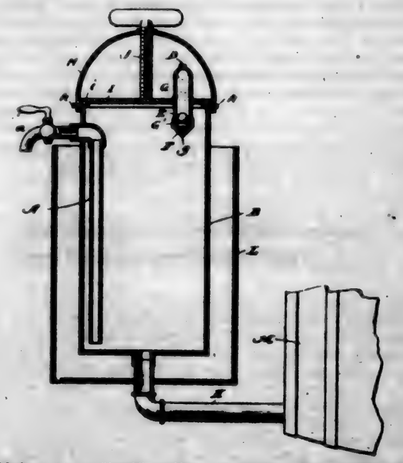

Claim.—In a liquid-cooling apparatus, the combination of a cooling vessel, supply and exhaust pipes passing into the said vessel and an automatic relief and vent valve comprising a tubular casing extending from the interior to the exterior of said vessel and having a vent-aperture at its outer end, a perforated portion removably secured to the interior end of said casing, a float within the casing adapted to close said vent-aperture and a grating secured to said casing at its interior end and accessible upon removal of said perforated portion, substantially as described.

848,619. BOWLING-ALLEY ATTACHMENT. WILLIAM R. A. BALL, St. Thomas, N. D. Filed Dec. 21, 1906. Serial No. 348,956.

Claim.—1. An alley attachment comprising a plate having a rear imperforate section and a front section provided with openings, said sections being pitched at an

angle to each other, said front section having at its lower edge a strip for attachment to the alley.

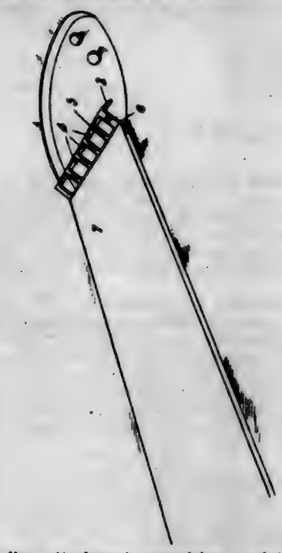

2. An alley attachment comprising a plate having a rear imperforate section and a front section provided with openings, said sections being pitched at an angle to each other, the partitions between said openings having their longitudinal edges rearwardly inclined, said front section having at its lower edge a strip for attachment to the alley.

848,620. FOUNTAIN-PEN. JOHN S. BARNES, Rockford, Ill. Filed Dec. 18, 1905. Serial No. 292,232.

Claim.—1. A fountain-pen comprising a barrel portion, a pen-holding section provided with lengthwise slots and a central opening, and a movable portion located within the central opening of the pen-holding section formed with a lengthwise groove and with side cut-away sections communicating with the groove.

2. A fountain-pen comprising a barrel portion, a pen-holding section provided with lengthwise slots and a central opening, and a movable portion located within the central opening of the pen-holding section provided with a tail portion having grooves extending in the direction of its length and the main section of the movable portion formed with side cut-away sections communicating with the grooves.

848,621. HAY-LOADER. WILLIAM H. BARTLETT, Nora, Nebr. Filed Dec. 4, 1905. Serial No. 290,206.

Claim.—A hay-loader comprising, in combination, a receiving-wagon, a loading-wagon disposed directly in front of said receiving-wagon and connected therewith; loading mechanism operatively mounted upon said loading-wagon and extending adjacent the front end of said receiving-wagon in position to discharge thereinto; a caster-wheel connected to the rear end of said loading-wagon; a lever pivotally mounted upon said loading-wagon above said caster-wheel and extending over the front end of said receiving-wagon in position to be grasped by the occupant thereof; and flexible connections between the lever and caster-wheel for turning the latter in opposite directions to guide the loading-wagon.

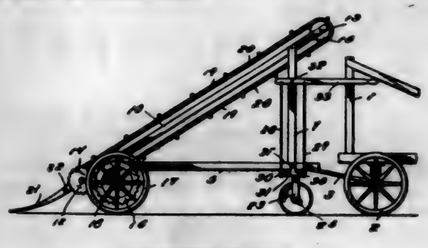

848,622. GAS-GENERATOR. FRITZ BAUER, Berlin, Germany. Filed Apr. 2, 1906. Serial No. 309,444.

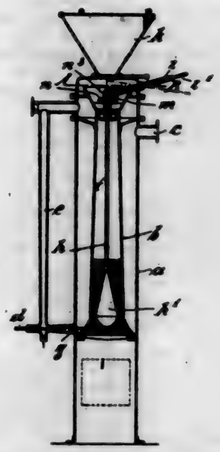

Claim.—1. A sucking gas-producer, comprising in combination: an outer shaft, a feeding-shaft forming an annular space with the latter, and a hollow body at the lower end of said feeding-shaft constructed to produce a hollow space within the fuel of the feeding-shaft immediately above the fire zone of the gas-producer, for the purpose as described.

2. A sucking gas-producer comprising in combination: an outer shaft, a feeding-shaft forming an annular space with the latter, and a hollow cone at the lower end of the feeding-shaft constructed to produce a hollow space within the fuel of the feeding-shaft immediately above the fire zone of the gas-producer, and leaving a small annular passage for the fuel, for the purpose as described.

3. A sucking gas-producer comprising in combination: an outer shaft, a feeding-shaft forming an annular space with the latter, and a hollow cone at the lower end of the feeding-shaft constructed to produce a hollow space within the fuel of the feeding-shaft immediately above the fire zone of the gas-producer, and leaving a small annular passage for the fuel, and means for rotating and reciprocating the hollow cone, and a connecting-rod for connecting the hollow cone with said means, for the purpose as described.

848,623. DISPLAY-FIXTURE. LEMMON M. BEELER and FIELDING A. BEELER, Norfolk, Nebr. Filed Nov. 1, 1906. Serial No. 341,643.

Claim.—1. A device of the class described comprising a body having spaced guide members at its side edges the edges of said members being bent in substantially parallel

with the body, holding members disposed transversely of said body, and means for adjustably connecting said holding members to the guide members.

2. A device of the class described comprising a body member, guide members at the side edges of said body, a plurality of supporting members having longitudinal channels in their opposite edges for supporting card-like structures, and means for adjustably coupling said supporting members to said guide members.

3. A device of the class described comprising a body, guide members at the side edges of said body the edges of said members overhanging said body and at a distance therefrom, a plurality of supporting members, means for detachably coupling said supporting members to said guide members, a shelf-support having one edge turned downwardly for bearing between said supporting members and body.

4. A device of the class described comprising a body, guide members at the side edges of said body, a plurality of supporting members, means for detachably coupling said supporting members to said guide members, a shelf-support having one edge turned downwardly for bearing between said supporting members and body, and with guide-clips at the ends bearing over said shelf, an extension-shelf member bearing beneath said guide-clips and with clips at the ends bearing beneath said shelf member and with the outer edge of the adjustable shelf member turned upwardly to form a guard thereto.

5. A device of the class described comprising a body mounted for rotation, guide members at the side edges of said body the edges of said members overhanging the opposite sides of said body, a plurality of supporting members having longitudinal channels, and means for adjustably coupling said supporting members at the opposite sides of said body.

6. A device of the class described comprising a body, guide members at the side edges of the body, a plurality of supporting members each formed from a strip of metal folded upon itself at the opposite edges and with the outer portions bent outwardly at reverse angles to form longitudinal channels in the opposite edges of said supporting members, and means for adjustably coupling said supporting members to said guide members.

848,624. ADJUSTABLE MIRROR. ENDO L. BELL, Norfolk, Va. Filed July 30, 1906. Serial No. 328,445.

Claim.—1. A frame having longitudinally-adjustable members, a mirror-frame disposed within said adjustable frame, and means for mounting said mirror-frame for swinging between the members of the adjustable frame.

2. A frame having longitudinally-adjustable members, means for supporting said frame for swinging, a mirror-frame, and means for supporting the mirror-frame between the members of the adjustable frame, the pivots of the two frames being disposed along intersecting lines.

3. A supporting structure, a supporting device mounted upon said structure to swing horizontally, a supporting-frame, means for mounting said frame to swing vertically upon said device, a mirror-frame, and means for mounting said mirror-frame for swinging horizontally within said supporting-frame.

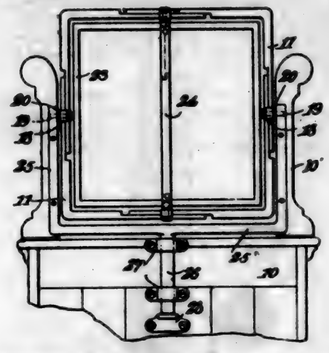

4. A supporting structure, a supporting device mounted upon said structure to swing horizontally, a frame having horizontally-adjustable members, means for mounting said frame to swing upon said device, a mirror-frame, and means for mounting said mirror-frame to swing from said adjustable frame.

5. A supporting structure, a frame having horizontally-adjustable members, means for mounting said frame for swinging upon said structure, a mirror-frame, and means for mounting said mirror-frame to swing within said adjustable frame.

6. A frame having longitudinally-adjustable members, a mirror-frame disposed within said adjustable frame, arms pivoted at their outer ends respectively to said adjustable frame and mirror-frame and with their inner ends overlapping, and clamping means adapted to be applied adjustably to said overlapping portions of said arms.

7. A frame having longitudinally-adjustable members, a mirror-frame disposed within said adjustable frame, arms pivoted at their outer ends respectively to said adjustable frame and mirror-frame and with their inner ends overlapping, a clamping means comprising superimposed blocks having half-bearings for receiving the overlapping portions of said arms, and means for connecting said blocks.

8. A frame formed of a plurality of L-shaped members having overlapping portions, clamping means applied adjustably to said overlapping portions, a mirror-frame disposed within said adjustable frame, and means for mounting said mirror-frame for swinging from said adjustable frame.

9. A frame formed of a plurality of L-shaped members having longitudinally-slotted overlapping portions, clamp-blocks adjustably disposed in the slots in said portions, means for compressing said overlapping portions upon said blocks, a mirror-frame, and means for mounting said mirror-frame to swing within said adjustable frame.

10. An adjustable frame formed of a plurality of L-shaped members having longitudinally-slotted overlapping portions and spaced teeth extending into the slots, clamp-blocks adjustably disposed in the slots in said portions and having teeth corresponding to and adapted to adjustably engage the teeth in the slots, means for compressing said overlapping portions upon said blocks, a mirror-frame, and means for mounting said mirror to swing within said adjustable frame.

11. A frame formed of a plurality of L-shaped members having longitudinally-slotted overlapping portions, clamp-blocks adjustably disposed in the slots in said portions, a supporting device, pivot-pins extending through said blocks at two opposite sides of said frame and into said device, a mirror-frame, and pivot-pins extending through the other opposite blocks and into said mirror-frame.

12. A frame formed of a plurality of L-shaped members having longitudinally-slotted overlapping portions with spaced teeth within the slots, clamp-blocks adjustably disposed in the slots in said portions and having teeth corresponding to and adapted to engage the teeth within the slots, a supporting device, pivot-pins extending through said blocks at two opposite sides of said frame and into said supporting device, a mirror-frame, and pivot-pins extending through the other opposite pair of said blocks and into said mirror-frame.

848,625. WASTE-CONDENSER FOR COMBERS. STEPHEN D. BENNETT and GEORGE SYLVIA, Fitchburg, Mass. Filed Jan. 18, 1906. Serial No. 296,053.

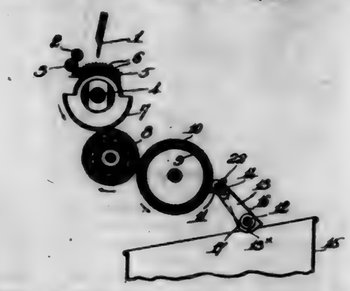

Claim.—1. In apparatus of the class described, a doffer-cylinder, a comb to remove the waste therefrom and discharge it into a can, means to vibrate the comb, a waste-condensing device normally actuated by said means to condense the waste as it accumulates in the can, and means to permit said condensing device to be moved into inoperative position.

2. In apparatus of the class described, a doffer-cylinder, a comb to remove the waste therefrom and discharge it into a can, an oscillating shaft having attached arms on which the comb is mounted, a waste-condenser fulcrumed on the shaft and extended toward the comb, and means to detachably connect the free edge of the condenser and the arms, whereby an intermittent swinging movement is imparted to the condenser, to compress the waste as it accumulates in the can.

3. The combination, in a comber having means, including a vibrating comb, to discharge waste into a can, and an oscillating shaft with which the comb is connected, of a plate-like condenser vibrated in unison with the comb to condense the waste in the can, downturned end flanges on the condenser, apertured to loosely receive the shaft, and means to detachably connect the free edge of the condenser and the comb.

4. In a comber, means, including a revolving doffer-cylinder and a coöperating comb, to discharge waste into a can, means to actuate the comb, combined with a waste-condenser operated automatically by or through said means, and a detachable connection between said means and the condenser, whereby the latter may be swung back into inoperative position away from the comb.

5. In a comber, waste-discharging means, including a revolving doffer-cylinder and a coöperating comb, an oscillating actuating-shaft with which the comb is connected, combined with a sheet-metal waste-condenser loosely fulcrumed on and extended from the shaft to the comb and means to detachably connect the free edge of the condenser and the comb to rock in unison with the latter to condense the waste as it accumulates in the can.

848,626. ROCKING MECHANISM FOR BUILDING BLOCKS AND BRICKS. FRANK A. BOSEE, South Bend, Ind., assignor to Ideal Concrete Machinery Company, South Bend, Ind., a Corporation of Indiana. Filed Feb. 5, 1907. Serial No. 355,322.

Claim.—1. A rocking mechanism for building blocks and bricks comprising two side frames, each formed of arms, cross-bars connecting the frames, and plates adapted to carry the blocks and bricks.

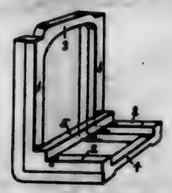

2. A rocking mechanism for building blocks and bricks, comprising portions substantially at right angles to each other adapted to receive plates for carrying the blocks or bricks, and a rectangular bar extending across and within the angle between the two portions to properly position the plates.

3. A rocking mechanism for building blocks and bricks, comprising two side frames, each formed of arms at right angles to each other, cross-bars connecting the outer ends of the arms, a third cross-bar lying within the angle and connecting the inner ends of the arms, and plates adapted to carry the blocks and bricks.

848,627. BARBER'S HEATER. JOSEPH L. BOUCHER, Chico, Cal., assignor of one-half to Joseph Compton, Chico, Cal. Filed Feb. 28, 1906. Serial No. 303,469.

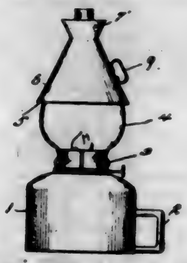

Claim.—A lamp-chimney having the lower part which engages the burner made of glass, and the upper part constructed of an outer and inner shell of sheet metal, the two shells being joined at the lower end of the inner shell with a water-tight joint, and the outer shell extending farther down and fitting over the outside of the top margin of the glass portion, the outer shell at its upper end flaring outwardly and the inner shell being contracted at the top and extending upwardly beyond the upper and outwardly-flared end of the outer shell.

848,628. INDICATOR. JOHN E. BROWN, Sarnia, Ontario, Canada, assignor to Cyrus H. Sinclair, Detroit, Mich. Filed June 9, 1906. Serial No. 320,997.

Claim.—1. In an indicating mechanism, the combination with a revoluble member, of a rack and pinion for actuating the same, a guide for determining the path of the movement of said rack, an arm projecting laterally from said rack, a rockable guide adjacent to said arm, a coupling member slidably engaging said arm, and rockable guide and connections for operating said slide and for rocking said guide.

2. In an indicating mechanism, the combination with a revoluble member, of a rack and pinion for actuating the same, a guide parallel to said rack, antifriction-bearings at opposite ends of said rack engaging said guide, an arm projecting laterally from said rack intermediate its ends, a guide adjacent to said arm, and pivoted for angular adjustment, a slide engaging said arm, an adjacent guide and separate actuating connections for said slide and for rocking said angular adjustable guide.

3. In an indicating mechanism, the combination with a revoluble member, a rack and pinion for actuating the same, a guide for said rack parallel thereto, an arm secured to said rack, and an adjacent guide extending laterally from the rack to one being bifurcated to embrace the other, and both being longitudinally slotted; a slide engaging the slots for said guide, an arm means for moving said slide longitudinally into said slot, and separate means for changing the angularity of said adjacent guide.

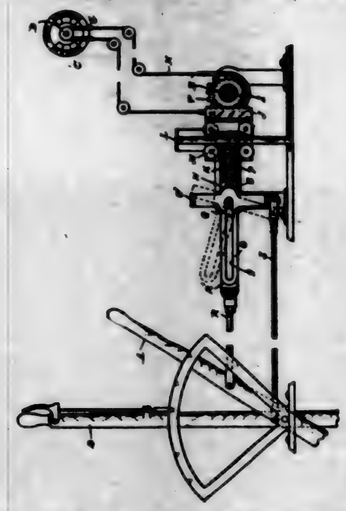

4. In an indicating mechanism the combination with a revoluble member, of a rack and pinion for actuating the same, a guide for said rack parallel thereto, an arm projecting laterally from said rack, being bifurcated, and longitudinally slotted, a longitudinally-slotted guide embraced by the furcations of said arm and pivoted for angular adjustment, a slide engaging the slots of said bifurcated arm and guide, a bifurcated longitudinally-adjustable rod embracing said bifurcated arm and connecting the said slide, and a connection to said slotted guide for rocking the same to change its angular relation to said arm.

848,629. PUMP. JOHN H. BURKHOLDER, Ashland, Ohio. Filed July 12, 1906. Serial No. 325,903.

Claim.—1. In a pump the combination of a pair of cylinders arranged parallel to each other, a tubular U-shaped hollow element having its legs operating in said cylinders and provided with pistons, said tubular legs having means for affording communication between said cylinders.

2. In a pump, cylinders, and a tubular operating element having piston-carrying arms, one of said arms having its inner end opening upon one side of its piston and the other of said arms having its inner end opening upon the opposite side of its piston.

3. In a pump, cylinders, a tubular operating element having hollow arms, pistons upon said arms and a valve in one of said arms, the other of said arms having an an aperture adjacent to its closed end.

4. In a pump, cylinders, a tubular operating element having hollow arms to reciprocate in said cylinders, one of said cylinders having an outlet connection, pistons upon said arms, the arm in the last-mentioned cylinder having its inner end closed and an aperture adjacent to said closed end and above the piston on said arm, and a check-valve in the other of said arms.

5. In a pump, large and small cylinders, said small cylinder having an outlet, a tubular operating element having hollow arms in communication with each other, pistons upon said arms in said cylinders, the arm in said small cylinder having a closed inner end and an aperture above its piston, and a check-valve in the open end of the arm in said large cylinder.

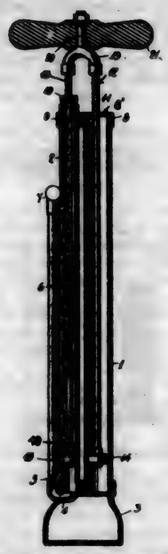

6. In a pump, a base, cylinders projecting therefrom, an outlet connection for said base in one of said cylinders, closures for the outer ends of said cylinders, a tubular operating element comprising hollow arms adapted to reciprocate in said closures and a hollow arch connecting said arms, valves upon said arms within said cylinders, one of said arms having its inner end closed and formed with an aperture above its valve and a check-valve in the open inner end of the other of said arms.

7. In a pump, a base, cylinders projecting therefrom, an outlet connection in said base for one of said cylinders, closures for the outer ends of said cylinders, a tubular operating element comprising hollow arms adapted to reciprocate in said closures and a hollow arch connecting said arms, valves upon said arms within said cylinders, one of said arms having its inner end closed and formed with an aperture above its valve, a check-valve in the open inner end of the other of said arms, a foot-loop upon said base, and a handle upon the connecting-arch of said operating element.

848,630. HOE-ROLLING MACHINE. FRANK W. CAMERON, Frankfort, N. Y. Filed Sept. 23, 1905. Serial No. 279,755.

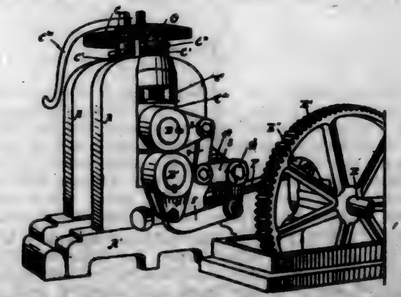

Claim.—1. In a device of the character described, having die-bearing rollers, a crank-arm mounted on each roller

and a bell-crank with link connections between the same and the said crank-arms to reciprocate the latter to and fro.

2. In a device of the character described having rollers and means to reciprocate one of the same, a bell-crank lever, and operative connections between the arms of the said lever and the rollers whereby to transmit power from the reciprocated roller to the other roller to reciprocate the latter instantaneously with the action of the former roller.

848,631. TOWER FOR SULFURIC-ACID PLANTS. RICHARD CELLARIUS, Sergievskoi Posad, Russia. Filed Dec. 14, 1905. Serial No. 291,687.

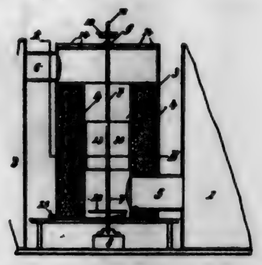

Claim.—In the manufacture of sulfuric acid, an apparatus for eliminating the chamber-gases from the readily-produced sulfuric acid, by setting the gases, during their passage from one chamber to the next following one, together with steam in vivid whirling motion and throwing them against damp coke; comprising in combination a lead turret 3, a layer of coke 4 provided at the inner walls of said turret, a gas-inlet pipe 5 led into the lower part of said turret, a gas-outlet pipe 6 branched off from the upper part of said turret, a steam-supply pipe 7 passed through the center of said turret and provided at its passages through the top and bottom of said turret with water seals 9 to make said passages air-tight, a bearing 8 placed underneath the bottom of said turret and adapted to support the closed end of said steam-pipe 7 so as to let the latter revolve therein, oppositely-directed arms 12 made hollow and disposed somewhat below the orifice of said gas-inlet pipe 5 and adapted to set by the reaction of the steam escaping through them the steam-pipe 7 in rotation, and paddles 13 fixed to said steam-pipe 7 somewhat above the orifice of said gas-inlet pipe 5 and adapted to set the gases together with the steam into vivid whirling motion and to throw them on to the layer of coke which is made damp by acid or water introduced through perforations 14 in the top of said turret, substantially as described and shown.

848,632. BIT. GEORGE T. CHAPIN, Stafford, Kans. Filed Aug. 17, 1906. Serial No. 331,074.

Claim.—A tool of the class described comprising a bit having an enlarged blade portion, the upper end of the said portion being reduced and squared, the said squared portion being of greater length than width, a cutter-bar provided with a slot for the lengthwise reception of the squared portion, and a nut arranged to hold the cutter-bar upon the bit.

848,633. PADLOCK. CHESTER A. CHUBB, Wilmington, N. C. Filed June 9, 1906. Serial No. 320,945.

Claim.—1. A lock of the class described, comprising a case, a shackle the side arms of which are movable through one face of said case, one of said arms being provided with a transverse aperture, a lock-lever pivoted in said case and provided at one end with a locking-arm adapted to be projected through said aperture and at the opposite end with a key-arm having rack-teeth, a spring operating in connection with said lever for holding the locking-arm in operative position, a key-tube secured in the case adjacent to the key-arm and through which a key is adapted to be inserted, and a key provided with teeth adapted to operate in connection with the rack-teeth on the key-arm.

2. A lock of the class described, comprising a case, a shackle the side arms of which are movable through one face of said case, one of said arms being provided with a transverse aperture, a lock-lever pivoted in said case and provided at one end with a locking-arm adapted to be projected through said aperture and at the opposite end with a key-arm having rack-teeth, a spring operating in connection with said lever for holding the locking-arm in operative position, a key-tube secured in the case adjacent to the key-arm and through which a key is adapted to be inserted, a key provided with teeth adapted to operate in connection with the rack-teeth on the key-arm, a dog pivoted in the case and adapted to engage the lock-lever and hold it in operative position and to be thrown out of engagement with said lock-lever by the insertion of the key.

3. A lock of the class described, provided with a lock-lever having rack-teeth at one end, a key provided with teeth adapted to operate in connection with said rack-teeth, and a tube through which said key is inserted, said tube being provided with inwardly-directed pins, and the shank of the key with longitudinal grooves at the inner end of which is an annular groove.

4. A lock of the class described, provided with a lock-lever having at one end a locking-arm and at the other end a key-arm provided with rack-teeth, a key-tube, and a key adapted to be inserted through said tube, said key being provided with teeth adapted to engage said rack-teeth, and said tube being provided with inwardly-directed pins and said key having longitudinal grooves through which said pins pass and at the inner ends of which is an annular groove.

5. A lock of the class described, provided with a lock-lever having at one end a locking-arm and at the other end a key-arm provided with rack-teeth, a key-tube, and a key adapted to be inserted through said tube, said key being provided with teeth adapted to engage said rack-teeth, and said tube being provided with inwardly-directed pins and said key having longitudinal grooves through which said pins pass and at the inner ends of which is an annular groove, and a pivoted dog adapted to hold the lock-lever in operative position, said dog being thrown out of engagement with said lever by the insertion of the key.

848,634. GROUND-ANCHOR. BERNARD W. P. COGHLIN, Montreal, Quebec, Canada. Filed Nov. 19, 1906. Serial No. 344,070.

Claim.—1. A ground-anchor comprising an anchoring member and a bar connected thereto, such bar being adapted to serve the dual function of a stay and means whereby the anchoring member is driven, such anchoring member extending beneath the lower end of the said bar when in anchoring position.

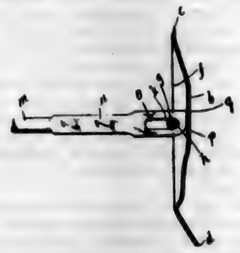

2. A ground-anchor comprising an anchor-plate and a bar connected thereto, such bar being adapted to serve the dual function of a stay and means whereby the anchor-plate is driven, such anchor-plate extending beneath the lower end of the said bar when in anchoring position.

3. A ground-anchor comprising a metallic length and an anchor-plate connected thereto by a sliding pivotal connection and means for preventing movement of the plate in one direction past a predetermined angular position.

4. A ground-anchor comprising an anchor-plate and a bar connected thereto with a sliding pivotal connection such bar being adapted to serve the dual function of a stay and means whereby the anchor-plate is driven.

5. A ground-anchor comprising an anchor-plate having a longitudinal groove below one surface thereof, and a rigid bar pivoted to the plate within the groove.

6. A ground-anchor comprising an anchor-plate with a longitudinal groove in one side, a rigid bar slotted near one end, and a pin pivoting the bar to the plate with its slotted end within the groove.

7. A ground-anchor comprising an anchor-plate with a longitudinal groove in one side and a longitudinal rib upon the other side, a rigid bar slotted near one end, and a pin pivoting the bar to the plate with its slotted end within the groove.

8. A ground-anchor comprising an anchor-plate, a rigid bar having one end partially rounded and formed with a square shoulder, and means pivoting the bar to the plate.

9. A ground-anchor comprising an anchor-plate, a rigid bar having one end partially rounded and formed with a square shoulder, and slotted means pivoting the bar to the plate.

10. A ground-anchor comprising an anchor-plate with a longitudinal groove in one side and a longitudinal rib upon the other side, a rigid bar having one end partially rounded and formed with a square shoulder, and a pin pivoting the bar with the said end within the groove.

11. A ground-anchor comprising a plate with a longitudinal groove in one side and a longitudinal rib upon the other side, a rigid bar having one end slotted and partially rounded and formed with a square shoulder, and a pin pivoting the bar to the plate with its slotted end within the groove.

12. A ground-anchor comprising a plate *b* with points *c* and *d*, groove *e*, rib *f*, perforations *g* and raised portions *h*; a rigid bar *m* having a slot *o*, rounded portion *p* and shoulder *q*; and pin *k*, substantially as described and for the purpose set forth.

13. A sheet-metal anchor-plate for the purpose set forth having a longitudinal groove in one side with transverse perforations the centers whereof lie in axial alinement and in the plane of the side in which the groove is formed.

848,635. TRANSMISSION MECHANISM. GEORGE S. COMSTOCK, Mechanicsburg, Pa. Filed Apr. 13, 1906. Serial No. 311,549.

Claim.—1. The combination with a reciprocating piston and a rotary crank-shaft, of a guide on said piston, and a block mounted to reciprocate on said guide and to oscillate in a transverse plane, said block also journaled to the crank of said shaft.

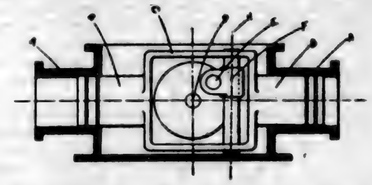

2. The combination with a reciprocating piston and a rotary crank-shaft, of a yoke extending from said piston, a guide mounted in said yoke, and a block journaled to the crank of said shaft and connected to said guide for relative reciprocatory and transverse oscillatory movement.

3. The combination with two opposed reciprocating members having the same axis, of a yoke connecting said members, a guide mounted in said yoke having a cylindrical bearing-surface, a block slidably connected to said guide, and a crank-shaft with which said block engages.

848,636. FIRE AND POLICE SIGNALING SYSTEM. WILLIAM CONDON, Kansas City, Mo., assignor of one-half to Albert Barrett, Kansas City, Mo. Filed July 7, 1902. Serial No. 114,578.

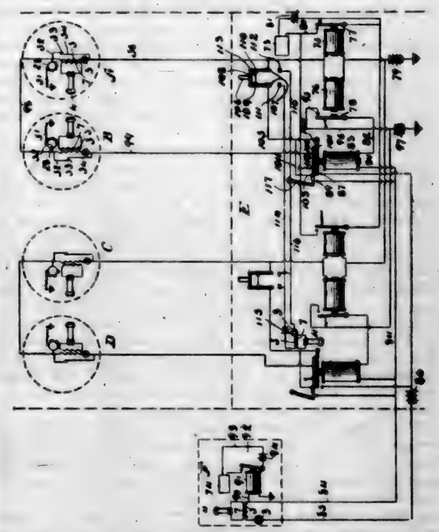

Claim.—1. In a signal system, the combination with an electrical circuit, of means for transmitting over said circuit electrical impulses at two rates of speed, two receiving devices located in the said circuit one of said receiving devices being responsive to the said impulses at both rates of speed, and the other responsive to the impulses at the slower rate of speed, a second electrical circuit normally disconnected from the first circuit, and means for connecting the two said circuits together when the receiving device is actuated which responds to the slower impulses, substantially as described.

2. In a signal system, the combination with an electrical circuit, of a plurality of transmitting devices located in said circuit, means by which each of said signal-

transmitting devices may transmit impulses over the said circuit at two rates of speed, two receiving devices located in said circuit, one of said receiving devices being responsive to the said impulses at both rates of speed, and the other of said receiving devices responding to only the slower impulses, a second electrical circuit normally disconnected from the first circuit, and means by which the two circuits are connected when the receiving device is actuated which responds to the slower impulses, substantially as described.

3. In a signal system, the combination with a plurality of electrical circuits, of a plurality of signal-transmitting devices located one in each of said circuits, means by which each of said transmitting devices may transmit over the circuit in which it is located electrical impulses at two rates of speed, a plurality of receiving devices located two in each of said circuits, one of each of said two receiving devices being responsive to the impulses sent at both rates of speed, and the other of each of said two receiving devices being responsive to only the slower impulses, a supplemental electrical circuit normally disconnected from the other circuits, and means by which the supplemental circuit may be connected with any of the other circuits when the receiving device located therein and responsive only to the slow impulses is actuated, substantially as described.

4. In a signal system, the combination with a plurality of electrical circuits, of a plurality of signal-transmitting devices located in each of said circuits, means by which each of said signal-transmitting devices may transmit over the circuit in which it is located electrical impulses at two rates of speed, a plurality of receiving devices located two in each of said circuits, one of each of said receiving devices being responsive to impulses sent at both rates of speed, and the other of said receiving devices being responsive to only the slower impulses, a supplemental electrical circuit normally disconnected from the other circuits, and means by which the said supplemental circuit may be connected with any of the other circuits when the receiving device located therein and responsive to only the slower impulses is actuated, substantially as described.

5. In a signal system, the combination with an electrical circuit, of means for transmitting electrical impulses over the said circuit at two rates of speed, two receiving devices located in the said circuit, one of said receiving devices being responsive to the said impulses at both rates of speed, and the other receiving device responding to only the slower impulses, a registering device, means by which the said registering device is actuated when either of the said receiving devices responds, a supplemental circuit normally disconnected from the first circuit, means for connecting the supplemental circuit with the first circuit when the receiving device which responds to only the slower impulses is actuated, a second registering device, and means for actuating the second registering device when impulses are sent over the supplemental circuit, substantially as described.

6. In a signal system, the combination with an electrical circuit, of a plurality of signal-transmitting devices located in the said circuit, means by which each of said signal-transmitting devices may transmit over the said circuit electrical impulses at two rates of speed, two receiving devices located in said circuit, one of said receiving devices being responsive to the said impulses at both rates of speed, and the other of said receiving devices being responsive only to the slow impulses, a registering device, means by which said registering device is actuated when either of said receiving devices responds to the electrical impulses, a supplemental circuit normally disconnected from the first circuit, means by which the supplemental circuit is connected with the first circuit when the receiving device is actuated which responds only to the slower impulses, a second registering device, and means for actuating the said second registering device when impulses are sent over the supplemental circuit, substantially as described.

7. In a signal system, the combination with an electrical circuit, of means for transmitting electrical impulses over the said circuit at two rates of speed, two receiving devices located in the said circuit, one of the said receiving devices being responsive to the impulses at both rates of speed, and the other receiving device responding to only the slower impulses, a registering device, means for actuating the registering device when either of the receiving devices responds, a supplemental circuit, means by which electrical impulses corresponding to the said slower impulses are sent over the supplemental circuit when the receiver is actuated which responds only to the slower impulses, a second registering device for registering the impulses sent over the supplemental circuit, means for connecting the two circuits together, and means for causing telephonic currents to traverse both circuits, substantially as described.

8. In a signal system, the combination with an electrical circuit, of a station provided with a signal-transmitting device adapted to be connected with the said circuit, means by which the said transmitting device may transmit electrical impulses over the circuit at two rates of speed, a receiving-station provided with two receiving devices, one of which is responsive to the impulses sent at both rates of speed, and the other responsive to only the slower impulses, a registering device at the receiving-station which is actuated when either of the receiving devices responds, a supplemental receiving-station provided with a registering device, a circuit connecting the first receiving-station with the supplemental station and connected with the register at the latter station, means at the first receiving-station for causing electrical impulses corresponding to the said slower impulses to traverse the circuit connecting the two receiving-stations, means at the first receiving-station for connecting the two circuits together and actuated by the receiving device which responds only to the slower impulses, and means provided at each station for permitting telephonic communication between the different stations over the connecting circuits, substantially as described.

9. In a signal system, the combination with a signal-box provided with a door, of a signal-transmitting device, means by which the opening of the said door causes the said signal-transmitting device to be operated, a lock in the box for holding the door in the closed position, and means connected with the lock by which when the key is inserted therein and turned in one direction the signal-transmitting device will be operated at one rate of speed, and when the key is turned in the lock in the other direction the signal-transmitting device will be operated at a different rate of speed, substantially as described.

10. In a signal system, the combination with a signal-box provided with a door, a key and a lock for securing the door in the closed position, of a rotatable contact-wheel means by which the opening of the door causes the said wheel to rotate, means by which the wheel may be made to rotate at two rates of speed, and means by which the rate of speed of rotation of the wheel is controlled by the direction the key is turned in the said lock, substantially as described.

11. In a signal system, the combination with a signal-box provided with a door, a lock for securing the door and a key for the lock, of a train of gears, a spring for driving the same, a contact-wheel rotated by the said train, means by which the train-spring is wound when the door is opened, means for changing the speed at which the train is driven, and means connected with the lock by which the changing of speed of the train is controlled by the direction in which the key is turned in the lock, substantially as described.

12. In a signal system, the combination with a signal-box provided with a door and a lock for keeping the door in the closed position, the lock being adapted to receive a key for the purposes of unlocking the same and releasing the door, of a movable make-and-break device actuated by the opening of the said door, and means controlled by the movement of the key in the lock for determining the speed of movement of the make-and-break device, substantially as described.

848,687. CENTER-STOP TROLLEY-BRACKET. JOHN H. COOK, New York, N. Y. Filed Nov. 2, 1905. Serial No. 285,525.

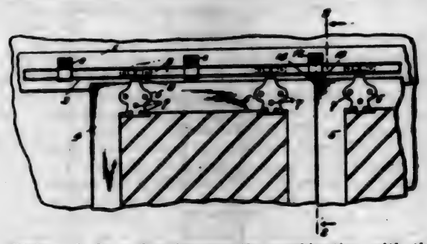

Claim.—1. In a door-hanger, the combination with the doors, trolleys and track, of a center-stop bracket to support the track and constructed to be engaged by the faces of the doors so as to limit their movement, the said bracket having a depending stop-flange out of the path of said trolley and a vertical ear and a rearwardly-extending lug for firmly attaching it to its support, substantially as described.

2. In a door-hanger, the combination with the doors, trolleys and track, of a center-stop bracket constructed to be engaged by the faces of the doors so as to limit their movement, the said bracket having a depending flange and extensions by means of which it is secured to its support.

3. In a door-hanger, the combination with the doors, trolleys and track of a center-stop bracket constructed to be engaged by the faces of the doors so as to limit their movement, the said bracket having a depending flange and means for firmly supporting it.

4. A stop-bracket, having a hollow body portion adapted to support a hollow track, a flange out of the line of said track to engage a door carried by the track, and means to support the bracket.

5. A center-stop bracket, comprising in its construction a hollow body portion, a depending flange, a vertical ear, and a rearwardly-extending lug, substantially as shown and described.

6. A center-stop bracket comprising in its construction a hollow body portion, a depending flange and a vertical ear, substantially as shown and described.

7. A center-stop bracket, having a depending stop-flange to engage with the face of the doors and with an extension for securing it in its operative position upon the support.

8. In a door-hanger, the combination with the trolleys and track of a center-stop bracket comprising in its construction a hollow body portion adapted to support the track, means for fastening it to a support and means carried by the stop-bracket to contact with and limit the movement of the door.

9. A stop-bracket provided with an aperture extending therethrough, the walls whereof are adapted to support a hollow track, the lower wall being substantially in alinement with the wheel-engaging portion of said track, means to support the bracket, and means carried by the bracket to engage and limit the travel of a member supported by the hollow track.

848,688. ICING-MACHINE. ALEXANDER W. COPLAND, Detroit, Mich. Filed Nov. 6, 1905. Serial No. 285,977.

Claim.—1. In a coating-machine, the combination of a periodically-reversing holder for the articles to be coated, and an automatic feeding means for said articles to and from said holder, operating during the interval when the latter is in upper position.

2. In a coating-machine, the combination with a periodically-reversing holder, of means for simultaneously feeding the uncoated and coated articles respectively to and from said holder.

3. In a coating-machine, the combination with a periodically-reversing holder, of a pair of pushers traveling in the plane of the holding-face, the one in advance of the other and the advance pusher traveling completely across the holder, means for depositing the articles to be coated in the path of the rear pusher whereby they are fed onto the holder, and means for returning the forward pusher through a different path, avoiding the deposited articles, whereby in subsequent operation said deposited articles are removed from the holder by said forward pusher.

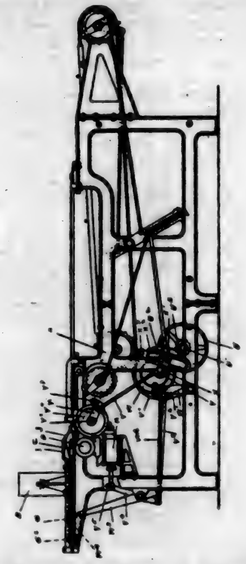

4. In a coating-machine, the combination with a rotary holder periodically operated to be reversed in position, a pair of pushers traveling in the plane of said holder in initial position, the one in advance of the other and an advance pusher traveling across the holder, a receptacle for the uncoated articles from which they are fed into the path of the rear pusher and carried thereby onto said holder, means for returning the forward pusher through a path avoiding the articles deposited on the holder, and timed operating mechanism whereby said pushers are simultaneously operated during the interval of rest of said holder and said holder is reversed in position intermediate successive forward operations of said pushers.

5. In a coating-machine, the combination of a container for the coating fluid, a reversible holder for the article to be coated thereabove and a feed mechanism to and from said holder in the plane thereof while in upper position.

6. In a coating-machine, the combination of a container for the coating fluid, a reversible holder thereabove having diametrically-opposed holding-surfaces and a lateral feed mechanism to and from said holder in the plane of the upper holding-surface.

7. In a coating-machine, the combination of a holder for the article to be coated in inverted position, a container for the coating fluid therebeneath and means for raising the coating fluid from varying levels to an exactly-predetermined level.

8. In a coating-machine, the combination with a reversible holder for the article to be coated, of a container for the coating fluid therebeneath and means operating when the holder is in the coating position for raising the surface of the fluid by displacement to a predetermined level.

9. In a coating-machine, the combination with a holder for the inverted article, of a container for the coating fluid therebeneath, and means for contacting the article with said fluid and then separating it therefrom, a scraper for removing the surplus material from the coated surface and a guide for the scraper, for the purpose described.

10. In a coating-machine, the combination with a movable holder for the article to be coated, of a container for

the coating fluid, and means for automatically raising and lowering the surface of the fluid while the holder is in the coating position, for the purpose described.

11. In a coating-machine, the combination with a holder for the article to be coated, of a container for the coating fluid in operative relation thereto, a cylinder communicating with said container, a piston in said cylinder arranged to force fluid from said cylinder into said container, said container having an overflow outlet at the height of the required fluid-level in the container, for the purpose described.

12. In a coating-machine, the combination with a container for the coating fluid, of a holder for the articles to be coated arranged to be moved from a loading position to a position in operative relation to said container and thence to an unloading position, a suction means operating to hold the articles on said holder, and means for raising the surface of the fluid into contact with the articles when said holder is in the coating position.

13. In a coating-machine, the combination with a container for the coating fluid, of a reversible holder for the articles to be coated, means for causing the surface of the fluid to contact with the articles when said holder is in its reversed position, an adjustable scraper for removing the surplus fluid from the article, and a guide for the scraper, substantially as described.

14. In a coating-machine, the combination with a holder and means for feeding articles onto said holder, of a pusher reciprocating across said holder, and means compelling said pusher to take different paths in its advance and return movements, for the purpose described.

15. In a coating-machine, the combination with a holder for the articles, of a pusher, means for reciprocating said pusher across said holder, and means compelling said pusher to take different paths in its advance and return movements, for the purpose described.

848,639. SUPPORT FOR GAS-GENERATORS. WILLIAM P. CRARY, New York, N. Y. Filed May 26, 1906. Serial No. 318,790.

Claim.—An open ring, outwardly-extending lugs on the ends thereof, and a bolt extending through said lugs, in combination with upwardly-extending arms secured to said ring at opposite points thereon and having their upper ends bent toward each other and again bent to form parallel vertical extensions, a semicircular curve in each of said extensions, each of said curves adapted partially to encircle a bar or like member of a vehicle-frame, a bolt extending through said extensions below said curves and a bolt extending through said extensions above said curve, all constructed and arranged to be clamped to said bar and support a gas-generator held in said ring.

848,640. FIRE-ESCAPE. MATHEW W. DALTON, Willard, Utah. Filed Mar. 15, 1906. Serial No. 306,284.

Claim.—1. The herein-described flexible fire-escape ladder comprising the ropes or cables, the cross-bars or rungs bearing on one side thereof, channel-irons bearing on the opposite side thereof engaging said rungs or bars and having openings through which the ropes or cables pass, and bolts passed through said channel-irons and bars and clamping them to the opposite sides of the ropes or cables, substantially as described.

2. The herein-described flexible fire-escape ladder comprising the ropes or cables, the rungs or cross-bars connecting them together, the steps interposed between certain of the rungs or cross-bars, and parallel bars to which

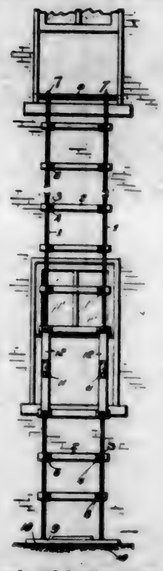

said steps are secured and having their upper and lower ends secured to certain of the cross-bars or rungs, substantially as described.

848,641. HYDRAULIC JACK. HENRY C. DUDGEON, Locust Valley, N. Y. Filed May 2, 1906. Serial No. 314,841.

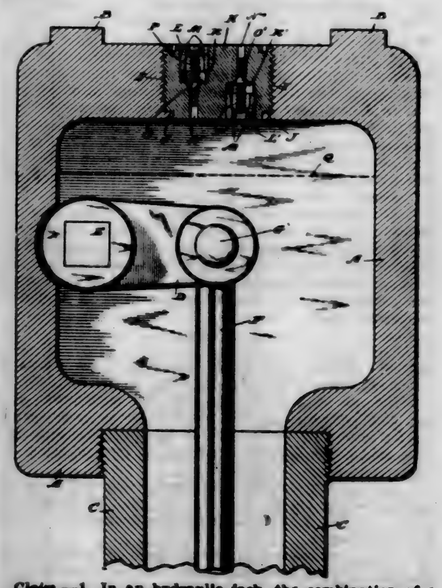

Claim.—1. In an hydraulic jack, the combination of a reservoir in the head of the jack from which the pump receives its supply of liquid, automatically-acting valves set within the wall of the reservoir without projection beyond its outer surface and which operate in reverse directions, connecting the interior of the reservoir with the external air.

2. In an hydraulic jack, the combination of a reservoir in the head of the jack from which the pump receives its supply of liquid, two valves set in the wall of the reservoir without projection beyond its outer surface, each having a reseating-spring, one adapted to be opened by pressure from within the reservoir outwardly, and the other by pressure from without the reservoir inwardly.

3. In an hydraulic jack, the combination of a reservoir in the head of the jack from which the pump receives its supply of liquid, a block threaded into the wall of the reservoir, the exterior surface whereof is flush with the exterior surface of the reservoir, openings through said block, valves seated therein no part of which project beyond the outer surface of the block, one adapted to be opened by pressure from within the reservoir outwardly and the other by pressure from without the reservoir inwardly and springs which normally reseat said valves.

848,642. ROLLER-BEARING. RUBY G. EASTMAN, Marion, Ind., assignor to Benjamin F. Burk and Philip Matter, copartners as firm of National Sweeper Company, Marion, Ind. Filed June 22, 1903. Serial No. 162,479.

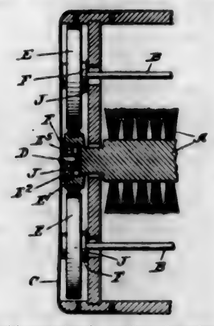

Claim.—A self-contained roller-bearing for carpet-sweepers and the like, comprising a cylindrical thin metal cup, a centrally-perforated cover therefor, a series of rollers therein each of approximately the same length as the cup and adapted to bear against its ends when in position, and provided with an annular groove midway of its length, a retainer to keep the rollers distributed about the inner surface of the cup, said retainer being in the form of a disk and with a central aperture and open notches on one of its edges, and a flexibly-mounted shaft adapted to extend through the central perforation of the cover and in engagement with the rollers.

848,643. WHIP-SOCKET. WILLIAM F. FARVER and HENRY H. LEHMAN, Ashland, Ohio. Filed Apr. 14, 1906. Serial No. 311,718.

Claim.—1. A whip-socket comprising a casing, a chambered member slidably mounted within the casing for vertical movement, means for holding the member yieldably against downward movement, a jaw member located within the chambered member for sliding movement with respect thereto and arranged for the reception of a body between its jaws, said members being constructed and arranged for coöperation to move the jaws of the jaw member inwardly when the latter is moved downwardly with respect to the chambered member, means for holding the jaw member yieldably against downward movement, and means for holding the two members in downwardly-moved position.

2. A whip-socket comprising a chambered member, a jaw member located within the chambered member for movement with respect thereto and including spaced jaws arranged for the reception of a whip therebetween, said members being arranged for coöperation to move the jaws against the whip when the jaw member is moved downwardly with respect to the chambered member, means for holding the jaw member yieldably against downward movement, means for holding the chambered member yieldably against downward movement, a stem carried by the jaw member and extending downwardly through the chambered member, a latch arranged for engagement of the stem to hold it with the two members against the action of other holding means, said latch being arranged for movement by a key out of operative position, and means for holding a latch yieldably in operative position.

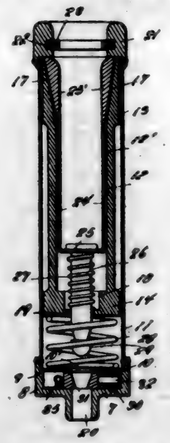

3. A whip and socket comprising a base member, a casing secured to the base member, a member slidably mounted within the casing and having a chamber opening through its upper end, said member having diametrically opposite downwardly-convergent jaw-grooves in its inner surface at its upper end, a jaw member located within the chamber for sliding vertical movement and including spaced arms and a connecting-bight, said arms having jaws at their upper ends extending into the grooves and having outwardly-divergent outer faces for engagement of the slanting faces of the grooves to move the jaws inwardly when the jaw members are moved downwardly, a stem carried by the bight of the jaw member and extending downwardly through the chambered member, a spring arranged to hold the jaw member yieldably against downward movement, a horizontal plate located within the base member, a spring located in spaced relation to the upper surface of the base member and the plate, and arranged to hold the chambered member yieldably against downward movement, a latch pivoted between the base member and the plate for movement into and out of engagement with the stem when the latter is at the downward limit of its movement, to hold the stem with the jaw and chambered members against upward movement, and means for holding the latch yieldably in operative position.

848,644. DOOR-SECURER. HARRISON D. FLEGEL, Racine, Wis., assignor, by direct and mesne assignments, to Edward J. Schowalter, Racine, Wis. Filed Jan. 8, 1906. Serial No. 295,012.

Claim.—1. A door-securer consisting of a flat metal tongue having a right-angle side fold constituting a lug, and a pair of tapes having ends thereof clamped in the lug.

2. A door-securer consisting of a flat metal two-piece tongue one section of which is thinner than the other and provided with a right-angle end flange, the thickest

section being provided with a right-angle end fold, and a pair of tapes having ends thereof clamped with said flange in said fold.

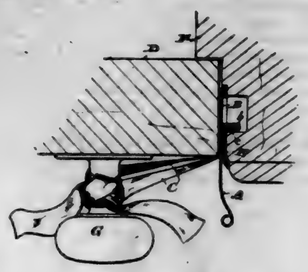

848,645. CHAIR. ORRIN G. FRANKS, Kenosha, Wis. Filed Mar. 29, 1906. Serial No. 308,781.

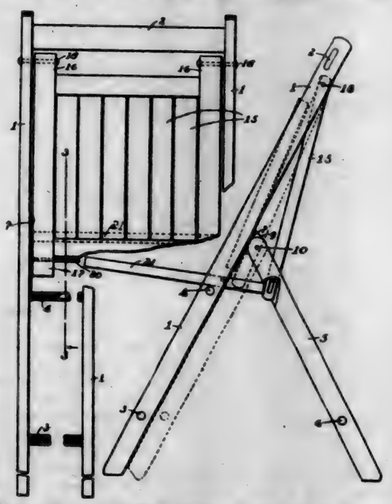

Claim.—1. In a folding chair, a main frame, a secondary frame, located at the rear of and hinged by its upper end to the main frame, a seat hinged by its rear end to the secondary frame, means on said main frame forming a rest for the seat and means on said seat and said main frame for preventing the seat from sliding on said rest and for guiding the seat when it is being folded or unfolded, and a back hinged by its upper end to the main frame and slidably joined by its lower end to the secondary frame, substantially as described.

2. In a folding chair, a main frame, a back hinged by its upper end to said main frame and having slots at its lower end, a secondary frame located at the rear of and hinged by its upper end to the main frame and comprising a transverse rod, 20, extending through said slots, a seat hinged by its rear end to the secondary frame, means on said main frame forming a rest for the seat, means on said seat and said main frame for preventing the seat from sliding on said rest and for guiding the seat when it is being folded or unfolded, substantially as described.

3. In a folding chair, a main frame, a back hinged by its upper end to said main frame and having slots at its lower end, a secondary frame located at the rear of and hinged by its upper end to the main frame and comprising a transverse rod, 20, extending through said slots, a seat hinged by its rear end to said rod by upward-directed plates, 22, means on said main frame forming a rest for the seat, means on said seat and said main frame for preventing the seat from sliding on said rest and for guiding the seat when it is being folded or unfolded, substantially as described.

848,646. LOCKING DEVICE FOR DOORS OF RAILWAY-CARS. BERNHARD GÖSTENMEIER, Marzloh, and WILHELM PAUELS, Holten, near Sterkrade, Germany. Filed Sept. 5, 1906. Serial No. 333,819.

Claim.—Locking device for doors of railway-cars, comprising in combination with the car, a rod *a* movably mounted at each side above the doors of said car, brackets *a'* adapted to hold said rod, an arm *b* fixed to one end of said rod, a lever system *c*, *d* pivotally connected to the free end of said arm and centered (at *e*) on the face of said car, a handle *o* attached to the free end of said lever system, a locking mechanism *p* for said lever system, an eye-shaped projection *f* disposed on said rod above each door of said car and provided with a lower front corner made round, a casing *h* provided on top of each door of said car, a spring *i* placed in said casing, and a movable bolt *g* disposed on said casing and provided with an upper rear corner made round, and adapted to effect the locking of the door of said car by catching into said eye-shaped projection even when said rod *a* is already in locking position, substantially as described and shown.

848,647. DEVICE FOR ROLLING TIPS FOR CIGARETTE-MACHINES. JULIEN GUENIFFEY and JULES NICAULT, Paris, France. Filed Dec. 23, 1905. Serial No. 293,074.

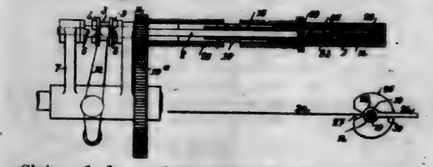

Claim.—1. In a cigarette-machine, an apparatus for winding or rolling comprising a slit spindle having a bulged part, and a socket movable along the said spindle, the end of the said socket which engages the bulged part of the spindle having an outer conical surface adapted to form a conical surface substantially continuous with the end of the spindle when the socket is brought into position to close the slit.

2. In a cigarette-machine, an apparatus for winding or rolling comprising a rotary slit spindle, a socket slidable on the said spindle to close the slit portion, and slidable connections to cause the said socket to turn or revolve with the spindle.

3. In a cigarette-machine, an apparatus for rolling or winding a tapered strip to form a mouthpiece with a spiral loose within it for preventing escape of the tobacco and substantially cylindrical on the outside, including in combination a spindle with means at its end for catching the point of such strip, said spindle having a substantially conical surface on which said strip is wound, and a sleeve having a cylindrical bore surrounding said conical surface.

4. In a cigarette-machine, an apparatus for rolling or winding comprising a slit spindle, means for closing the said slit to catch a sheet of paper inserted in the slit, and an ejecting-ring surrounding said spindle and reciprocable relatively thereto.

5. In a cigarette-machine, an apparatus for rolling or winding a tapered strip, including in combination a slit spindle 1, a socket 14 sliding over said spindle and adapted when slid forward to close said slit to catch in its end the point of said strip inserted in the slit, and a sleeve 26 surrounding said spindle and having a flared slit through which the paper may be introduced to the slit of the spindle.

848,648. TWINE-HOLDER. GRANT HANSCOM, Loveland, Colo. Filed Apr. 20, 1906. Serial No. 312,821.

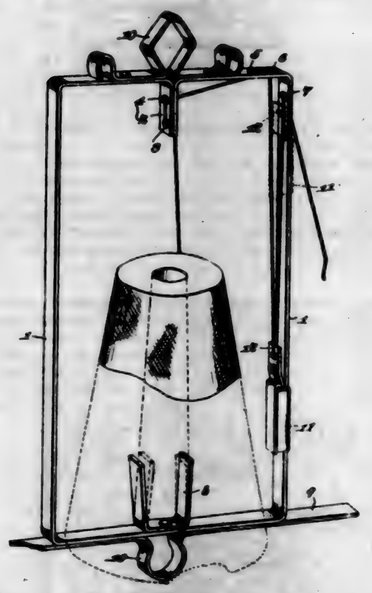

Claim.—A twine-holder comprising a frame having inwardly-turned ends constituting a centrally-disposed depending tongue at the top thereof, said tongue having apertures therein disposed along the longitudinal center of the frame and extending at right angles to the longitudinal axis of the frame, said frame having a pair of apertures within and extending at right angles to the top thereof and being disposed adjacent one corner of the frame, there being another aperture in one side of the frame adjacent said corner, all of said apertures being located in the same plane, a cone-engaging bracket upon the bottom of the frame and in alinement with the tongue, a slide mounted on the apertured side of the frame, and an apertured tongue extending from said slide, the apertures in the frame-tongue, top, slide-tongue, and side being adapted to receive twine from a cone upon the bracket, the walls of the apertures in the frame being adapted to frictionally engage said twine with sufficient force to hold it against movement during the action of the slide, and laterally-extending arms secured to the bottom of the frame and constituting guards for the twine end.

848,649. TYPE-WRITING MACHINE. WILLIAM F. HELMOND, Hartford, Conn., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 28, 1906. Serial No. 349,772. (Model.)

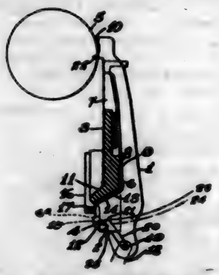

Claim.—1. In a type-writing machine, the combination with a set of type-bars, of an upright segment having radial guiding-slots in which the type-bars are hung on a curved pivot-wire; said segment being formed with a broad rib or thickened portion projecting from its front face along its lower edge, the type-bar-guiding slots being cut through only the under side of said rib, the top of said rib being broad and unslotted, and the type-bars constructed to strike rearwardly against only the upper edge or border of said rib, to permit the types to spring to the platen.

2. In a type-writing machine, the combination with a set of type-bars, of an upright segment having radial guiding-slots in which the type-bars are hung on a curved pivot-wire; said segment being formed with a broad rib or thickened portion projecting from its front face along its lower edge, the type-bar-guiding slots being cut through only the under side of said rib, the top of said rib being broad and unslotted, and the type-bars constructed to strike rearwardly against only the upper edge or border of said rib, to permit the types to spring to the platen, the type-bars being formed with projections to contact with the rib.

3. In a type-writing machine, the combination with a set of type-bars, of an upright segment having radial guiding-slots in which the type-bars are hung on a curved pivot-wire; said segment being formed with a broad rib or thickened portion projecting from its front face along its lower edge, the type-bar-guiding slots being cut through only the under side of said rib, the top of said rib being broad and unslotted, and the type-bars constructed to strike rearwardly against only the upper edge or border of said rib, to permit the types to spring to the platen, the type-bars formed with projections to contact with the rib, and the latter having a slightly-raised surface to be struck by said projections.

4. In a type-writing machine, the combination with a set of rearwardly-striking type-bars, of an upright segment having radial guiding-slots in which the type-bars are hung on a curved pivot-wire; said segment being formed with a broad rib or thickened portion projecting from its front face along its lower edge, the type-bar-guiding slots being cut through only the under side of said rib leaving a broad portion of the rib above the stop, each type-bar when in printing position extending forwardly from its pivot to clear said rib, and thence straight upward with a slight rearward inclination to its type-carrying end, and constructed to strike rearwardly, at a point well above the slot, against only the upper edge or border of said rib.

5. In a type-writing machine, the combination with a set of rearwardly-striking type-bars, of an upright segment having radial guiding-slots in which the type-bars are hung on a curved pivot-wire; said segment being formed with a broad rib or thickened portion projecting from its front face along its lower edge, the type-bar-guiding slots being cut through only the under side of said rib leaving a broad portion of the rib above the stop,

each type-bar when in printing position extending forwardly from its pivot to clear said rib, and thence straight upward with a slight rearward inclination to its type-carrying end, and constructed to strike rearwardly, at a point well above the slot, against only the upper edge or border of said rib; said segment having projecting from its rear lower portion a segmental flange extending back over portions of the type-bar hubs which project rearwardly from the segment, and the segment being thickened on its rear side below said flange, to afford extensive bearings for the type-bars.

6. In a type-writing machine, the combination with a set of rearwardly-striking type-bars, of an upright segment having radial guiding-slots in which the type-bars are hung on a curved pivot-wire; said segment being formed with a broad rib or thickened portion projecting from its front face along its lower edge, the type-bar-guiding slots being cut through the lower portion of said rib, and the type-bars constructed to strike upon the upper edge or border of said rib, each type-bar when in printing position extending forwardly from its pivot to clear said rib, and thence directly upward with a slight rearward inclination to its type-carrying end; said segment having projecting from its rear lower portion a segmental flange extending back over portions of the type-bar hubs which project rearwardly from the segment; a curved universal bar directly in rear of the segment and below the flange and operable by heels on the type-bars, which are constructed to project rearwardly from the rear face of the segment when the type-bars are in printing position; said segment having on its rear face below said flange a single curved recess, and said pivot-wire occupying said recess.

7. In a type-writing machine, the combination with a set of rearwardly-striking type-bars, of an upright segment having radial guiding-slots in which the type-bars are hung on a curved pivot-wire; said segment being formed with a broad rib or thickened portion projecting from its front face along its lower edge, the type-bar-guiding slots being cut through the lower portion of said rib, and the type-bars constructed to strike upon the upper edge or border of said rib, each type-bar when in printing position extending forwardly from its pivot to clear said rib, and thence directly upward with a slight rearward inclination to its type-carrying end; said segment having projecting from its rear lower portion a segmental flange extending back over portions of the type-bar hubs which project rearwardly from the segment; the type-bar-guiding slots extending through the lower portion of said flange, thence upwardly and forwardly through the front of the rib, and the type-bars having at their hub ends a corresponding upward and forward inclination.

8. In a type-writing machine, the combination with a set of rearwardly-striking type-bars, of an upright segment having radial guiding-slots in which the type-bars are hung on a curved pivot-wire; said segment being formed with a broad rib or thickened portion projecting from its front face along its lower edge, the type-bar-guiding slots being cut through the lower portion of said rib, and the type-bars constructed to strike upon the upper edge or border of said rib, each type-bar when in printing position extending forwardly from its pivot to clear said rib, and thence directly upward with a slight rearward inclination to its type-carrying end; said segment having projecting from its rear lower portion a segmental flange extending back over portions of the type-bar hubs which project rearwardly from the segment; the type-bar-guiding slots extending through the lower portion of said flange, thence upwardly and forwardly through the front of the rib, and the type-bars having at their hub ends a corresponding upward and forward inclination, the front face of said rib being approximately vertical from the top of the anvil portion to the top of the slot portion thereof.

9. In a type-writing machine, the combination with a segment having radial slots, of a set of type-carrying bars guided in the slots and mounted on a curved pivot-wire, the type-bars having each a long slot engaged by an operating-pin, and said slot terminating at its inner end in a short wire-engaging slot at an angle to the long slot and cut substantially concentric with the type, for the purpose specified.

10. In a type-writing machine, the combination with a segment having radial slots, of a set of type-carrying bars guided in the slots and mounted on a curved pivot-wire; each type-bar having an open slot whereby it is detachably engaged to said pivot-wire; the wire-engaging portion of the slot being cut substantially concentric with the type, for the purpose specified.

848,650. ROLLER-BEARING. WALTER D. HODSON, Marion, Ind., assignor to Benjamin F. Burk and Philip Matter, copartners as firm of National Sweeper Company, Marion, Ind. Filed June 22, 1903. Serial No. 162,492.

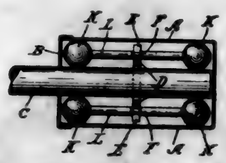

Claim.—In a roller-bearing, the combination of a retaining-case with a plurality of roller-like parts each comprising a pair of spherical bearing devices, one at each end of the case, a flexible connection between such devices, and a spacer comprising an annulus having notches to receive the several flexible connections of the bearing device, said annulus being arranged centrally of the casing to keep the roller-like parts in position.

848,651. CAN-CAPPING MACHINE. SAMUEL HOOKEY, Wyandotte, Mich. Filed Mar. 5, 1906. Serial No. 304,181.

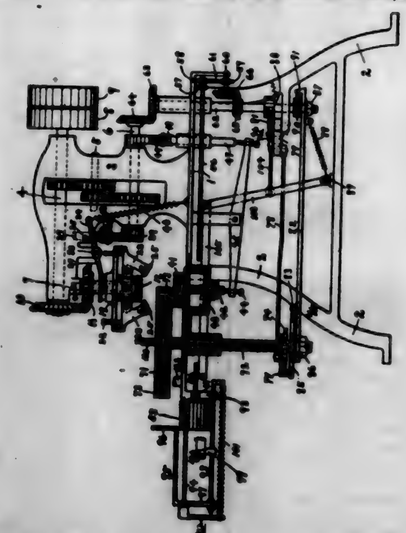

Claim.—1. In a can-capping machine, the combination of a table, a frame to support the same, a shaft vertically mounted in said table, a star-wheel mounted at the upper end of said shaft and provided with pockets to receive cans, a ratchet-wheel and a pawl-carrier mounted on said shaft near its lower end, a pawl mounted on the carrier and adapted to actuate the ratchet-wheel, a lever mounted on said frame, a link connecting the pawl-carrier and lever, a second vertical shaft, a cam thereon adapted to operate the lever, a spring to return the pawl-carrier to normal position, and a reciprocating device connected to said lever and adapted to move cans into the pockets in said star-wheel.

2. In a can-capping machine, the combination of a revoluble can-carrier having pockets, means for intermittently actuating the same, a conveyer for the can-bodies, a chute for can-heads, a spring-operated reciprocating pusher adapted to move a can-body from the conveyer into a pocket, means for positioning the can-head so the can in the carrier-pocket may engage under the flange of the can-head, and means for pressing the head onto the can.

3. In a can-capping machine, the combination of a revoluble can-carrier having pockets, means for intermittently actuating the same, conveyers for the can bodies and heads, a pusher adapted to move a can-body from its conveyer into a pocket, means for assembling the can heads and bodies, and means for indenting the can-heads to hold them in place on the bodies.

4. In a can-capping machine, the combination of a revoluble can-carrier having pockets, means for intermittently actuating the same, conveyers for the can-bodies and the heads, a pusher adapted to move a can-body from its conveyer into a pocket, means for assembling the can heads and bodies, and spring-operated means to actuate the pusher.

5. In a can-capping machine, the combination of a revoluble can-carrier having pockets, means for intermittently actuating the same, conveyers for the can-bodies and heads, a pusher adapted to move a can-body from its conveyer into a pocket, means for assembling the can heads and bodies, spring-operated means to actuate the pusher, and a spring to return the pusher to normal position.

6. In a can-capping machine, the combination of a revoluble can-carrier having pockets, means for intermittently actuating the same, conveyers for the can bodies and heads, a spring-operated pusher adapted to move a can-body from its conveyer into a pocket, and mechanism to actuate the pusher acting alternately with the means to actuate the can-carrier.

848,652. UNIVERSAL JOINT FOR SHAFTS AND RODS. ARTHUR J. HUGHES, Pearl River, N. Y. Filed Feb. 19, 1906. Serial No. 301,837.

Claim.—1. A universal joint for shafts and rods comprising the two furcated sections of the shaft, each provided with ears recessed at their margins and registering apertures, a recessed central block having apertures through opposite sides to receive short pins for hinging one section thereon and a perforated block fitted into the central block for receiving the long pin extending through the central block for hinging the other section thereon and pins adapted for hinging the sections to the central block, substantially as shown and described.

2. In a universal joint for shafts and rods, a central recessed block, hinge-pins extending through two opposite sides thereof, a removable perforated bearing-block located in the cavity of the central block and a hinge-pin extending through the bearing-block and one side of the central block, in combination with the furcated sections having ears recessed at the margins of the shaft, substantially as shown and described.

3. The herein-described universal joint for shafts and rods, comprising a central block perforated and provided with a cavity as set forth, separate hinge-pins located at right angles with respect to each other and entering said cavity, and a removable perforated block located in the cavity and affording a bearing for one of the hinge-pins, the whole being constructed and arranged substantially as shown and described.

848,653. TYPE-WRITER OPERATOR. BENJAMIN F. HUTCHES, Jr., New York, N. Y. Filed May 15, 1905. Serial No. 260,413.

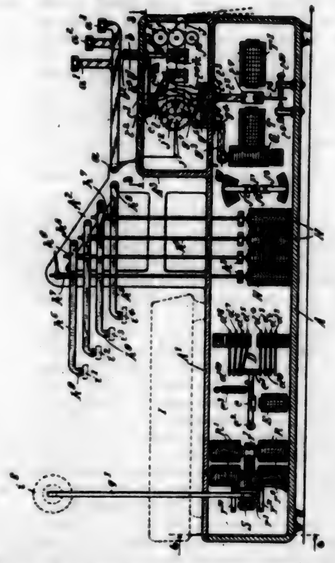

Claim.—1. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, manually-actuated means on the operator-frame for operating the keys of a type-writer, and additional automatically-actuated means for operating said keys, substantially as specified.

2. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, manually-actuated keys on the operator-frame for operating the keys of the type-writer, and means actuated by the operator-keys for simultaneously producing a record, substantially as specified.

3. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, manually-actuated means on the operator-frame adapted to operate type-writer keys, and a record also adapted to operate said keys, substantially as specified.

4. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, means on the operator-frame adapted to actuate type-writer keys, keys for manually operating said actuating means, and means for automatically operating said actuating means, substantially as specified.

5. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, means on the operator-frame adapted to actuate type-writer keys, keys for manually operating said actuating means, and a record for automatically operating said actuating means, substantially as specified.

6. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, electrically-controlled means on the operator-frame adapted to actuate type-writer characters, keys on the operator-frame for manually operating said electrically-controlled means, and means on the operator-frame for

automatically operating said electrically-controlled means, substantially as specified.

7. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, electrically-controlled means on the operator-frame adapted to actuate type-writer characters, keys on the operator-frame for manually operating said electrically-controlled means, and a record adapted to also operate said electrically-controlled means, substantially as specified.

8. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, electrically-controlled means on the operator-frame adapted to actuate type-writer characters, means for manually operating said actuating means, and means for automatically operating said actuating means, substantially as specified.

9. As a new article of manufacture, a type-writer operator provided with electrically-controlled means adapted to actuate type-writer characters, keys for manually operating said actuating means, and a record for automatically operating said actuating means, substantially as specified.

10. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, electrically-controlled means on the operator-frame adapted to actuate type-writer characters, keys for manually operating said actuating means, and means operated by the keys for producing a record, substantially as specified.

11. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, means on the operator-frame adapted to actuate type-writer keys, and punches adapted to simultaneously perforate a record, substantially as specified.

12. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, manually-actuated keys on the operator-frame adapted to operate type-writer keys, and punches simultaneously actuated by said operator-keys and adapted to form a record, substantially as specified.

13. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, electrically-controlled means on the operator-frame adapted to actuate type-writer keys, punches adapted to perforate a record, means for intermittently feeding the record, and keys for actuating the electrically-controlled means and the punches, substantially as specified.

14. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, electrically-controlled means on the operator-frame adapted to actuate type-writer characters, keys for manually operating said actuating means, means actuated by the keys for producing a record, and means adapted to be controlled by the record for operating the actuating means, substantially as specified.

15. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, electrically-controlled means on the operator-frame adapted to actuate type-writer shift-keys, and means for manually operating said actuating means, substantially as specified.

16. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, electrically-controlled means on the operator-frame adapted to actuate type-writer shift-keys, and means for automatically operating said actuating means, substantially as specified.

17. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, electrically-controlled means on the operator-frame adapted to actuate type-writer shift-keys, keys for operating said actuating means, and means actuated by the keys for producing a record, substantially as specified.

18. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, electrically-controlled means on the operator-frame for depressing and maintaining depressed a type-writer shift-key, electrically-controlled means for depressing a type-writer character-key, electrically-controlled means for releasing both keys, and means for manually operating the electrically-controlled means, substantially as specified.

19. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, electrically-controlled means on the operator-frame for depressing and maintaining depressed a type-writer shift-keys, electrically-controlled means for depressing a type-writer character-key, electrically-controlled means for releasing both keys, and means for automatically operating the electrically-controlled means, substantially as specified.

20. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, means on the operator-frame for returning a type-writer carriage, and means for automatically operating the carriage-return means, substantially as specified.

21. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, means on the operator-frame for returning a type-writer carriage, and a record for operating the carriage-return means, substantially as specified.

22. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, means on the operator-frame for returning a type-writer carriage, and means for producing a carriage-return record, substantially as specified.

23. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, means on the operator-frame for returning a type-writer carriage, means for manually operating the carriage-return means, and means for producing a record, substantially as specified.

24. As a new article of manufacture, a type-writer operator provided with electrically-controlled means for actuating type-writer character-keys and type-writer shift-keys, means for returning a type-writer carriage, and manually-operated means for controlling the first and second named means, substantially as specified.

25. As a new article of manufacture, a type-writer operator provided with electrically-controlled means for actuating type-writer character-keys and type-writer shaft-keys, means for returning a type-writer carriage, and manually-controlled means for controlling the first and second named means and for producing a record, substantially as specified.

26. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, electrically-controlled means on the operator-frame for actuating type-writer character-keys and type-writer shift-keys, means for returning a type-writer carriage, and automatically-operated means for controlling the first and second named means, substantially as specified.

27. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, fingers pivoted to the operator-frame and adapted to actuate the type-writer characters, and means for automatically actuating the fingers, substantially as specified.

28. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, a key on the operator-frame, a contact, an electromagnet in circuit, means for actuating a type-writer character and adapted to be operated by the electromagnet, and a punch adapted to be simultaneously operated by the key, substantially as specified.

29. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, a key on the operator-frame, a pair of electromagnets, means for operating a type-writer character and adapted to be actuated by one of said electromagnets, a punch adapted to be actuated by the key, and record-feeding means adapted to be actuated by the second electromagnet, substantially as specified.

30. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, a key on the operator-frame, a vibrator, pawls on the vibrator, and a rack which is engaged by the pawls and is operatively connected to the type-writer carriage, substantially as specified.

31. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, an electromagnet on the operator-frame, a switch operated thereby, a vibrator in circuit with the switch, means for returning the type-writer carriage, and means for operatively connecting the vibrator with the carriage-return means, substantially as specified.

32. As a new article of manufacture, a type-writer operator provided with a rack adapted to engage a type-writer carriage, a double lever adapted to be engaged by the rack, a contact controlled by said lever, an electromagnet in circuit, and means controlled by the electromagnet for operating the rack, substantially as specified.

33. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, an electric vibrator on the operator-frame, spring-influenced pawls pivoted thereto, a rack adapted to engage the type-writer carriage, and an electromagnet for effecting an engagement between the pawls and the rack, substantially as specified.

34. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, a record-feed roller on the operator-frame, a record, contacts at opposite sides thereof, a ratchet-wheel mounted on the feed-roller, pawls engaging the ratchet-wheel, an armature to which the pawls are operatively connected, and a pair of electromagnets on opposite sides of the armature, substantially as specified.

35. As a new article of manufacture, a type-writer operator comprising a frame independent of the type-writer frame, a pair of contacts on the operator-frame, an intermediate record, means for feeding the record, an electromagnet in circuit with the contacts, and means operatively connected to said electromagnet for actuating the type-writer characters, substantially as specified.

36. As a new article of manufacture, a type-writer operator provided with means for feeding a record, means operated by the record for automatically returning a type-writer carriage, and means for automatically arresting the record-feeding means during the carriage-return motion, substantially as specified.

37. As a new article of manufacture, a type-writer operator provided with means for feeding a record, contacts at opposite sides of the record, an electromagnet in circuit, a switch operated by the electromagnet-armature, and means controlled by the switch for returning a type-writer carriage, and operating the record-feeding means, substantially as specified.

38. As a new article of manufacture, a type-writer operator provided with a record having differently-sized perforations, contacts controlled thereby, means controlled by the larger perforations for shifting a type-writer carriage, and means controlled by the smaller perforation for operating the type-writer characters, substantially as specified.

848,654. AUTOMATIC PAPER-FEEDER FOR TYPE-WRITERS8. BENJAMIN F. HUTCHES, Jr., New York, N. Y. Filed Feb. 26, 1906. Serial No. 302,902.

Claim.—1. A paper-feeder for type-writers comprising a reciprocating carriage, a paper-feed roller journaled therein, a slide taken along by the carriage, and means on the slide for rotating the feed-roller, substantially as specified.

2. A paper-feeder for type-writers comprising a reciprocating carriage, a paper-feed roller and an adjoining platen journaled therein, a slide taken along by the carriage, and means on the slide for rotating the platen, substantially as specified.

3. A paper-feeder for type-writers comprising a reciprocating carriage, a paper-feed roller journaled therein, a slide taken along by the carriage, a power-shaft, and means carried by the slide for rotatably connecting said shaft to the feed-roller, substantially as specified.

4. A paper-feeder for type-writers comprising a reciprocating carriage, a paper-feed roller journaled therein, a slide taken along by the carriage, means on the carriage for rotating the feed-roller, a power-shaft, and key-controlled means for rotatively connecting said shaft to the roller-rotating means on the carriage, substantially as specified.

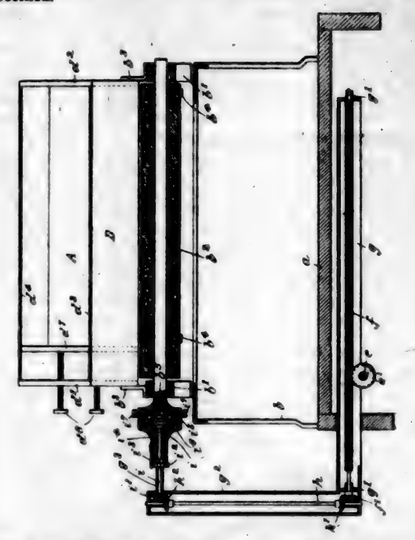

5. A paper-feeder for type-writers comprising a carriage, a paper-feed roller journaled therein, a slide operatively connected to the carriage, means on the carriage for rotating the feed-roller, a power-shaft, a key-controlled clutch, and means controlled by the clutch for operatively connecting said shaft to the roller-rotating means on the carriage, substantially as specified.

6. A paper-feeder for type-writers comprising a reciprocating carriage, a paper-feed roller and an adjoining platen journaled therein, a slide taken along by the carriage, a power-shaft, and means carried by the slide for rotatively connecting said shaft to the platen, substantially as specified.

7. A paper-feeder for type-writers, comprising a platen, a feed-roller, a magazine, a head engaging the platen, a resilient finger on the head, a ratchet-wheel engaged by the finger, and means for rotating the ratchet-wheel, substantially as specified.

8. A paper-feeder for type-writers provided with a carriage, a platen journaled therein, a slide, means for coupling the slide to the platen, a pinion-wire journaled in the slide, means for operatively connecting said wire to the platen, and a worm-wheel engaging the pinion-wire, substantially as specified.

9. A paper-feeder for type-writers provided with a carriage, a platen journaled therein, a slide, means for coupling the slide to the platen, a pinion-wire journaled in the slide, means for operatively connecting said wire to the platen, a worm-wheel engaging the pinion-wire, a power-shaft, and means for coupling the worm-wheel to said shaft, substantially as specified.

10. A paper-feeder for type-writers provided with a carriage, a platen journaled therein, a slide, means for coupling the slide to the platen, a pinion-wire journaled in the slide, means for operatively connecting said wire to the platen, a worm-wheel engaging the pinion-wire, a power-shaft, a clutch for coupling the worm-wheel to said shaft, a key, and means controlled by the key for operating the clutch, substantially as specified.

11. A paper-feeder for type-writers provided with a carriage, a platen journaled therein, a slide, means for coupling the slide to the platen, a pinion-wire journaled in the slide, means for operatively connecting said wire to the platen, a worm-wheel engaging the pinion-wire, a power-shaft, a clutch for coupling the worm-wheel to said shaft,

a record, and means controlled by the record for operating the clutch, substantially as specified.

12. A paper-feeder for type-writers provided with a carriage, a platen journaled therein, a slide, means for coupling the slide to the platen, a pinion-wire journaled in the slide, means for operatively connecting said wire to the platen, a worm-wheel engaging the pinion-wire, a power-shaft, a clutch for coupling the worm-wheel to said shaft, an electromagnet for operating the clutch, a key, and means controlled by the key for closing the circuit of the electromagnet, substantially as specified.

13. A paper-feeder for type-writers provided with a carriage, a platen journaled therein, a slide, means for coupling the slide to the platen, a pinion-wire journaled in the slide, means for operatively connecting said wire to the platen, a worm-wheel engaging the pinion-wire, a power-shaft, a clutch for coupling the worm-wheel to said shaft, an electromagnet for operating the clutch, a record, and means controlled by the record for closing the circuit of the electromagnet, substantially as specified.

848,655. MEAT-HOLDER. CYRILLUS Q. JACKSON, Kemp, Tex. Filed June 7, 1906. Serial No. 320,664.

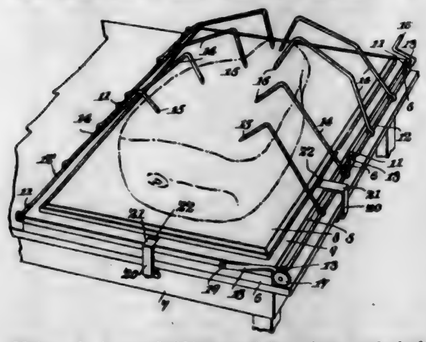

Claim.—1. A meat-holder comprising a base, rock-shafts having crank-arms journaled on the base, a plurality of clamping members pivotally mounted on the rock-shafts and adapted to engage and clamp the meat, and means for locking the clamping members in operative position.

2. A meat-holder comprising a base, rock-shafts having crank-arms journaled on the base, a plurality of clamping members pivotally mounted for sliding movement on the rock-shafts and adapted to engage and clamp the meat and means for locking the clamping members in operative position.

3. A meat-holder comprising a base provided with a marginal flange, rock-shafts having crank-arms journaled on the base, impaling members mounted on the rock-shafts between the crank-arms and movable into and out of engagement with the meat, means for locking the impaling members in operative position, and a cover adapted to engage the flange when the impaling members are moved to inoperative position.

4. A meat-holder comprising a base, a rock-shaft having crank-arms journaled on the base, a ratchet-wheel secured to the shaft, a plurality of impaling members carried by the rock-shaft and movable into and out of engagement with the meat, and a pawl pivotally mounted on the base and adapted to engage the ratchet-wheel for locking the impaling-hooks in operative position.

5. A meat-holder comprising a base, rock-shafts pivotally mounted on the base and provided with crank-arms, impaling members carried by the rock-shafts, a handle secured to one of the rock-shafts for rotating the same thereby to move the impaling members to operative and inoperative position, and means for locking said impaling members in operative position.

6. A meat-holder comprising a base, eyes extending laterally from the opposite longitudinal edges of said base, rock-shafts having crank-arms journaled in said eyes, impaling members pivotally mounted for sliding movement on the rock-shafts and movable into and out of engagement with the meat, a ratchet secured to one of the shafts, a pawl carried by the base and adapted to engage the ratchet for locking the impaling members in operative position, and a cover adapted to engage the base when the impaling members are moved laterally to inoperative position.

848,656. MACHINE FOR MAKING PAPER BOXES. EMIL JAGENBERG, Dusseldorf, Germany. Filed Apr. 14, 1905. Serial No. 255,534.

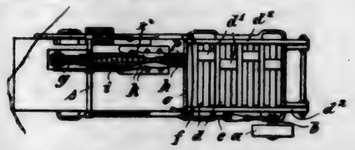

Claim.—1. In a machine for making paper boxes, a pair of folders having curved flanges of different lengths, a feed-apron intermediate the folders and overlapped by the folder-flanges, a pivoted core-plate having an eye and a central row of openings, a rod embraced by the eye, rollers journaled in the openings and adapted to engage the central portion of the blank, and means for pressing the rollers against the blank, substantially as specified.

2. In a machine for making paper boxes, an endless elastic feed-apron, combined with a superposed guide-plate having a series of openings and an eye, rollers journaled in the openings, a rod embraced by the eye, a lever projecting from the rod, and means for depressing the lever, substantially as specified.

848,657. AUTOMATIC SIGN-EXHIBITOR. FRANK A. JOHNSON, FREDERICK WEDDEMANN, and EDWARD BLANKENBERG, Danville, Ill. Filed Mar. 1, 1906. Serial No. 303,718.

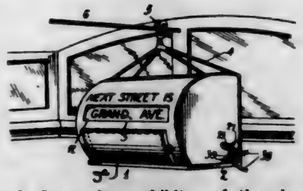

Claim.—1. In a sign-exhibitor of the character described, the combination with a casing having a view-opening, of supporting-plates arranged on the ends of said casing to form upper and lower guide-passages, slidably-supported sign-plates, angularly-beat lugs formed on said plates to engage said guide-passages, a plunger-plate adapted to raise said sign-plates upwardly in said upper guide-passages thereby successively bringing said plates opposite said view-opening at one end of said upper passages and engaging the sign-plate at the opposite end of the upper passages with the upper end of the lower inclined passages, to the lower ends of which the plates drop by gravity, means whereby one sign-plate at a time is released and permitted to drop from said lower passages onto said plunger-plate, and means whereby said plunger-plate is automatically operated to raise the plates that have dropped thereon, substantially as described.

2. In a sign-exhibitor of the character described, the combination with a casing having a view-opening, of supporting-plates secured to the ends of said casing, said plates being arranged to form upper and lower guide-passages, sign-plates slidably supported by said plates, means whereby said plates are slidably engaged with the guide-passages, a plunger-plate adapted to successively raise said sign-plates opposite to said view-opening, means to hold said sign-plates opposite said view-opening until pushed upwardly by the next plate, a crank-shaft journaled in said casing, oppositely-projecting crank-arms arranged on said shaft, a pitman-rod to connect one of said arms with said plunger-plate, a motor arranged in said casing, and a pitman-rod connecting said motor with the crank-arm on the opposite end of said crank-shaft, substantially as described.

3. In a sign-exhibitor of the character described, the combination with a casing having a view-opening, of supporting-plates secured to the ends of said casing, said plates being arranged to form upper and lower guide-passages, sign-plates slidably supported by said plates, means whereby said sign-plates are slidably engaged with the guide-passages, a plunger-plate adapted to successively raise said sign-plates opposite said view-opening, means for holding said sign-plates opposite said view-opening until pushed upwardly by the next plate, a crank-shaft journaled in said casing, crank-arms upon said shaft, a pitman-rod connecting one of said crank-arms to said plunger-plate, an electric motor arranged in said casing, and a rod connecting said motor and another crank-arm on said crank-shaft.

4. In a sign-exhibitor of the character described, the combination with a casing having a view-opening, of supporting-plates secured to the ends of said casing, said plates being arranged to form upper and lower guide-passages, sign-plates slidably supported by said plates, means whereby said sign-plates are slidably engaged with the guide-passages, a plunger-plate adapted to successively raise said sign-plates opposite said view-opening, means for holding said sign-plates opposite said view-opening until pushed upwardly by the next plate, a crank-shaft journaled in said casing, crank-arms upon said shaft, a pitman-rod connecting one of said crank-arms to said plunger-plate, and an intermittently-operated electric motor arranged in said casing and connected to another crank-arm upon said shaft.

5. In a device of the character described, a casing having a sight-opening, downwardly-inclined feed-guideways, return-guideways leading past said opening and to the upper ends of said feed-guideways, sign-plates slidably engaged with said guideways, a plunger for successively raising said sign-plates opposite said opening and moving them through said return-guideways, means for holding said sign-plates opposite said opening, an escapement device for successively feeding the sign-plates in said feed-guideways onto said plunger, means for operating said plunger, and means for reversing the sign-plates on their return movement.

6. In a device of the character described, a casing having a sight-opening, downwardly-inclined feed-guideways, return-guideways leading past said opening and to the upper ends of said feed-guideways, sign-plates slidably engaged with said guideways, a plunger for successively raising said sign-plates opposite said opening and moving them through said return-guideways, means for reversing the sign-plates on their return movement, means for holding said sign-plates opposite said opening, pairs of oppositely-moving escapement-fingers for feeding the sign-plates in said feed-guideways onto said plunger, and means for simultaneously operating said plunger and said escapement-fingers.

7. In a device of the character described, a casing having a sight-opening, downwardly-inclined feed-guideways, return-guideways leading past said opening and to the upper ends of said feed-guideways, sign-plates slidably engaged with said guideways, a plunger for successively raising said sign-plates opposite said opening and moving them through said return-guideways, means for holding said sign-plates opposite said opening, a rock-shaft, cross-bars thereon, escapement-fingers upon said cross-bars for feeding the sign-plates in said feed-guideways onto said plunger, an operating-shaft, connections between the latter and said plunger for operating said plunger, and connections between said operating-shaft and said rock-shaft for actuating said escapement-fingers.

8. In a device of the character described, a casing having a sight-opening, downwardly-inclined feed-guideways, return-guideways leading past said opening and to the upper ends of said feed-guideways, sign-plates slidably engaged with said guideways, a plunger for successively raising said sign-plates opposite said opening and moving them through said return-guideways, means for holding said sign-plates opposite said opening, means whereby one sign-plate at a time is released from said feed-guideway and permitted to drop upon said plunger, a crank-shaft, and a rod connecting the crank upon said shaft to said plunger-plate.

9. In a device of the character described, a casing having a sight-opening, supporting-plates upon and spaced from the opposite walls of said casing to provide downwardly-inclined feed-guideways and return-guideways leading past said sight-opening and to the upper ends of said feed-guideways, sign-plates having angularly-bent lugs to enter and slide in said guideways, a plunger for successively raising said sign-plates opposite said opening and moving them through said return-guideways, means for feeding said sign-plates from said feed-guideways onto said plunger, means for operating said plunger, and means for reversing the sign-plates on their return movement.

848,658. PLAYING MECHANISM FOR STRINGED INSTRUMENTS. LOUIS A. KAMPELMAN, St. Louis, Mo. Filed Mar. 9, 1906. Serial No. 305,094.

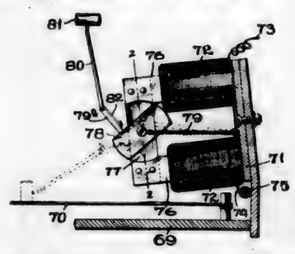

Claim.—1. In a playing mechanism for stringed instruments, a pivotally-mounted member arranged to swing vertically, means whereby said member is caused to swing upon its pivot-point, an arm projecting from the front side of said member, a second arm pivotally connected to the outer end of the first-mentioned arm, a hammer-head carried by the end of the second-mentioned arm and a spring secured to the first arm and bearing upon the top of the rear end of the second arm, substantially as specified.

2. A musical instrument comprising horizontal strings, a series of magnet-coils positioned above the strings, the cores of which magnets are extended, an armature pivotally mounted between the extended cores, an arm projecting from the front side of said armature, a second arm pivotally connected to the first-mentioned arm and a spring normally engaging the rear end of the second arm for maintaining it in an elevated position, substantially as specified.

3. A musical instrument comprising horizontal strings, a series of magnet-coils positioned above the strings, the cores of which magnets are extended, a spring-held armature pivotally mounted between the extended ends of each pair of cores, an arm carried by the lower end of each armature, a second arm pivotally connected to the first arm, a hammer carried by the second arm, and a spring engaging on the rear end of the second arm for normally holding it elevated, substantially as specified.

848,659. HAIR-CUTTING REGISTER. HUGH C. KELLEY, Sonora, Tex. Filed Dec. 21, 1906. Serial No. 348,944.

Claim.—1. The combination of a barber's chair comprising a back, a guide thereon, a head-rest, and a post for the rest engaging in the guide, with a registering device comprising a leaf-spring supported in the guide to be actuated by the post, an indicating means, and a member between the means and spring for actuating the former.

2. The combination of a barber's chair having a head-rest guide, a head-rest provided with a post movable in the guide, and a plate secured to the guide, with a registering device comprising a push-rod movable through one of the walls of the guide, a spring arranged in the guide to engage the push-rod and disposed to be actuated by the post of the head-rest, a hand and dial indicating means supported on the plate, and a step-by-step mechanism actuated by the push-rod.

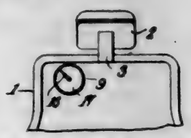

3. A registering device for a barber's chair having a removable head-rest, a guide for the same, comprising a supporting-frame, a ratchet-wheel mounted thereon, an indicating-hand movable with the wheel, a push-rod, a pawl at one end thereof for actuating the wheel, a hold-back pawl, a leaf-spring adapted to be mounted on the chair so as to be actuated by the removal and insertion of the head-rest thereon, and a spring coöperating with the first-mentioned spring to move the push-rod in opposite directions.

848,660. SHAMPOO-REGISTERING DEVICE. HUGH C. KELLEY, Sonora, Tex. Filed Dec. 21, 1906. Serial No. 348,945.

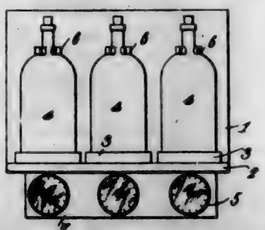

Claim.—1. In a device of the class described, the combination of a support, a movable member thereon for holding a bottle, a registering device actuated by the member, and means arranged on the support for compelling the member to be moved as the bottle is placed in position.

2. In a device of the class described, the combination of a support, a movable member thereon, a registering device on the support arranged to be actuated by the said member, and a fixed bottle-holding device on the support arranged to cause the member to be moved by the bottle as the latter is engaged with the holding device.

3. In a device of the class described, the combination of a support having a plurality of openings, followers movably mounted in the openings, a registering device associated with each follower to be actuated thereby, and a spring-holder on the support arranged above each follower for engaging the neck portion of the bottle and acting through the latter to hold the adjacent follower depressed.

4. In a device of the class described, the combination of a support having a plurality of openings, vertically-movable followers in the openings for receiving the bottles, a registering device located under each follower for actuation thereby, a casing for the registering devices, a plurality of spring-holders arranged in a position to require the followers to be depressed to place the bottles in position and adapted to engage the upper portions of the bottles to hold them in place.

848,661. DOOR. ISRAEL KOSTELANITZ, Brooklyn, N. Y. Filed Mar. 15, 1906. Serial No. 306,314.

Claim.—1. The combination with a core comprising end rails and a panel rabbeted in the end rails, of sheathings for the end rails, having portions extending along the inner surfaces of the rails, and sheathings for opposite sides of the panel, each consisting of a body portion, a marginal portion disposed substantially at right angles to the body portion and designed to lie flat against the last-named portions of the contiguous sheathing for the end rails, and edge portions projecting within the adjacent recess in the end rails, and core-strips secured to the panels and coacting with the panel-sheathings to prevent the withdrawal of said edge portions from said grooves or recesses, substantially as described.

2. The combination with a core comprising end rails, side rails and a panel, of sheathing-strips for the end rails and side rails, said strips for the side rails having flanges 4°, panel-plates having opposite edges secured to opposite side rails and flanges 3° associated with each of said edges of the panel-plates and trough-shaped strips secured to the side rails and receiving the flanges 3° and4°, substantially as described.

3. The combination with a core comprising end rails, transverse rails, side rails and panels, of sheathing-strips for the end rails and transverse rails, sheathing-plates for the panels having their edges contiguous the side rails fastened thereto, and U-shaped strips associated with each side rail each having one of its legs secured to the side rail by the fastening means for the panel-plates and a trough-shaped sheathing for each side rail having locking-flanges engaging with the free legs of the contiguous U-shaped strips, substantially as described.

848,662. MANIFOLD COUNTER-SALES CHECK-BOOK. JOSEPH O. LALONDE, Montreal, Quebec, Canada, assignor of two-thirds to Victor Guertin, Montreal, Canada. Filed Jan. 15, 1906. Serial No. 296,084.

Claim.—1. A counter-sales check-book, comprising a pair of stiff covers and an intermediate limp connection between the stiff covers, an open-ended pocket carried by one of the stiff covers, a guide-plate carried by the same stiff cover, and means carried by the limp connection for holding the sheet of manifolding material.

2. A counter-sales check-book, comprising a pair of covers, a pocket carried by one of the covers, two continuous sheets carried in the pocket, a plate secured to one of the covers and provided with a hooked end adapted to guide the continuous sheets as they are drawn from the pocket, and means for holding a sheet of manifolding material between the sheets as they are removed.

3. In a counter-sales check-book, covers, a pocket carried by one of the covers, two continuous sheets carried in the pocket, a plate secured to one of the covers and provided with a hooked end adapted to guide the continuous sheets as they are drawn from the pocket, and removable means for holding a sheet of manifolding material between the sheets as they are removed.

4. In a counter-sales check-book, covers, a pocket carried by one of the covers, two continuous sheets carried in the pocket, a bar provided with pointed lugs secured intermediate of the covers and provided with flanges at its opposite ends, one of said flanges having an opening and the other a slot, and a rod having a rounded end and a resilient bifurcated end, said pointed end being disposed in said opening and said bifurcated end being disposed in said slot.

5. In a counter-sales check-book, covers, a pocket carried by one of the covers, two continuous sheets carried in the pocket, a bar connected with the covers, a rod detachably mounted on the bar, a plate on said bar, and a sheet of manifolding material secured to the plate.

6. In a counter-sales check-book, covers comprising a pair of boards and an intermediate limp connection, an open-ended pocket carried by one board, a manifolding-sheet-holding member carried by the limp connection, a cutting member and a resilient clip carried by the other board, a manifolding sheet secured to the holding member, and a supply of continuous sheets carried by the pocket, one of said sheets extending above and the other below the manifolding-sheet.

7. In a counter-sales check-book, covers comprising a pair of boards and an intermediate limp connection, a pocket carried by one of the boards, a guide-plate carried by the same board and provided with a hooked end, a removable manifolding element carried by the limp connection, a cutter-plate carried by the other board, and a clip carried by the latter board.

848,663. BRAKE-SHOE MOUNTING. VAN BUREN LAMB, New Haven, Conn., assignor to Keystone Brake Shoe Company, New York, N. Y., a Corporation of New York. Filed May 19, 1906. Serial No. 317,708.

Claim.—1. In construction of the class described, in combination, a brake-shoe divided transversely into two parts, a divided brake-head engaging the shoe and holding the parts thereof in assembled relation, and means adapted to hold together the parts of said head.

2. In construction of the class described, in combination, a brake-shoe divided transversely into two parts and provided upon its rear surface with a laterally-undercut projection, a divided brake-head adapted to fit about said projection and hold the parts of said shoe in assembled condition, and means adapted to hold together the parts of said head.

3. In construction of the class described, in combination, a brake-shoe divided transversely into two parts and provided upon its rear surface with a laterally-undercut projection tapering toward each end of the shoe, a divided brake-head adapted to fit about said projection and hold the parts of said shoe in assembled condition, and means adapted to hold together the parts of said shoe.

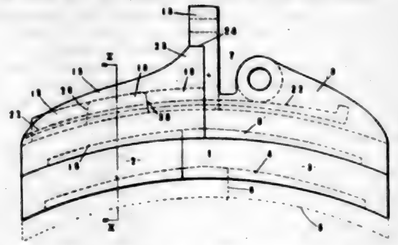

4. In construction of the class described, in combination, a brake-shoe divided transversely into two parts, a divided brake-head engaging the shoe and holding the parts thereof in assembled relation, and means adapted to hold together the parts of said head, the line of division of said brake-head being offset with respect to the line of division of said brake-shoe.

5. In construction of the class described, in combination, a brake-shoe divided transversely into two parts and provided upon its rear surface with a laterally-undercut projection, a divided brake-head adapted to fit about said projection and hold the parts of said shoe in assembled condition, and means adapted to hold together the parts of said head, the line of division of said brake-head being offset with respect to the line of division of said brake-shoe.

6. In construction of the class described, in combination, a brake-shoe divided transversely into two parts, a second brake-shoe adapted to engage and hold together the parts of said first brake-shoe, said second shoe being divided transversely into two parts, a divided head engaging said second shoe and holding the parts thereof in assembled relation, and means adapted to hold together the parts of the head.

7. In construction of the class described, in combination, a brake-shoe divided transversely into two parts, a second brake-shoe adapted to engage and hold together the parts of said first brake-shoe, said second shoe being divided transversely into two parts, a divided head engaging said second shoe and holding the parts thereof in assembled relation, and means adapted to hold together the parts of the head, the lines of division of said two shoes being offset with respect one to another.

8. In construction of the class described, in combination, a brake-shoe divided transversely into two parts, a second brake-shoe engaging and interfitting with the rear of said first shoe and divided transversely into two parts on a line offset with respect to the line of division of said first shoe, and means adapted to hold together the portions of said second shoe.

9. In construction of the class described, in combination, a brake-shoe divided transversely into two parts, a second brake-shoe engaging and interfitting with the rear of said first shoe and divided transversely into two parts on a line offset with respect to the line of division of said first shoe, said second shoe being formed with a projecting tenon having undercut lateral walls, a divided head, the parts of which fit about said tenon, and means adapted to hold together the parts of said head.

10. In construction of the class described, in combination, a brake-shoe divided transversely into two parts, a second brake-shoe engaging and interfitting with the rear of said first shoe and divided transversely into two parts on a line offset with respect to the line of division of said

first shoe, said second shoe being formed with a projecting tenon having undercut lateral walls, a divided head, the parts of which fit about said tenon, and means adapted to hold together the parts of said head, said first and second shoes being interchangeable one with another.

11. In construction of the class described, in combination, a brake-shoe provided with a projecting tenon, the lateral surfaces of which are undercut, a divided head one end of which fits about one portion of said tenon and the other end of which comprises laterally-separable parts, and means adapted to hold said parts together.

12. In construction of the class described, in combination, a brake-shoe provided with a projecting tenon, the lateral surfaces of which are undercut, a divided head one end of which fits about one portion of said tenon and the other end of which comprises laterally-separable parts, said parts of said head being provided with laterally-extending projections intermeshing one with another, and means adapted to hold said parts together.

13. In construction of the class described, in combination, a brake-shoe provided with a projecting tenon the lateral surfaces of which are undercut, a divided head one end of which fits about one portion of said tenon and the other end of which comprises laterally-separable parts, said parts being provided with laterally-extending projections adapted to intermesh one with another and having keyways formed therein registering one with another with the parts in assembled relation, and a key passing through said keyways and holding said parts together.

14. In construction of the class described, in combination, a pair of substantially interchangeable shoe members each of which is provided upon its rear surface with a projection having undercut lateral walls and upon its front surface with a recess adapted to fit a similar projection whereby each shoe member is adapted to be mounted upon the other, each shoe member being transversely divided and the lines of division being offset with respect one to another with the parts in assembled condition.

15. In construction of the class described, in combination, a brake-shoe provided with a projecting tenon having its lateral surfaces undercut, a brake-head provided with laterally-separable parts adapted to fit about said tenon, said parts having projecting portions intermeshing one with another with the parts in assembled condition and provided with keyways, and a key passing through said keyways and locking said parts in assembled relation.

16. In construction of the class described, in combination, a brake-shoe provided with a projecting tenon having its lateral surfaces undercut, a brake-head comprising laterally-separable parts adapted to fit about said tenon, one of said parts being provided with a projection the walls of which converge in a direction away from the shoe and the other of said parts being provided with a pair of projections adapted to fit about said first-mentioned projection, and a key passing through keyways formed in said projections and locking said parts in assembled relation.

17. In construction of the class described, in combination, a brake-shoe provided with a projecting tenon having its lateral surfaces undercut, a divided head one end of which fits about one portion of said tenon and the other end of which comprises laterally-separable parts, intermeshing projections formed upon said parts and provided with converging walls, a shoulder formed upon said head under which one separable part is adapted to rest, and a key passing through said head and holding the parts in assembled relation.

18. In construction of the class described, in combination, a brake-shoe provided with a projecting tenon having its lateral surfaces undercut, a divided head one end of which fits about one portion of said tenon and the other end of which comprises laterally-separable parts, intermeshing projections formed respectively upon said parts and provided with converging walls, a shoulder upon said head upon which the projection from one separable part rests, a shoulder upon said separable part upon which the projection from said head rests, and a key passing through said head and holding the parts in assembled condition.

19. In construction of the class described, in combination, a brake-shoe provided with a projecting tenon having its lateral surfaces undercut and tapering toward the ends of the shoe, a divided head one end of which fits about one portion of said tenon and the other end of which comprises laterally-separable parts, intermeshing projections formed upon said parts and provided with converging walls, a shoulder formed upon said head under which one separable part is adapted to rest, and a key passing through said head and holding the parts in assembled relation.

20. In construction of the class described, in combination, a shoe divided transversely into two parts, a divided brake-head fitting about one end of said shoe and having at its other end a laterally-separable portion adapted to fit about the other end of the shoe, and means adapted to hold the parts of said head together.

21. In construction of the class described, in combination, a shoe divided transversely into two parts and provided upon its rear surface with a tenon having its lateral walls undercut, a brake-head having laterally-separable portions provided with laterally-extending projections adapted to intermesh upon said portions being fitted about said tenon, and means adapted to hold the portions of said head in assembled relation.

22. In construction of the class described, in combination, a shoe divided transversely into two parts and provided upon its rear surface with a tenon having its lateral walls undercut, a head having laterally-separable parts adapted to fit about said tenon, each of said parts being provided with a laterally-extending projection adapted to rest against the other with said parts in assembled condition, and a key adapted to pass through a keyway formed in said portions.

23. In construction of the class described, in combination, a brake-shoe divided transversely into two parts and provided upon its rear surface with a tenon having its lateral walls undercut, a second brake-shoe divided into two parts and fitted about said tenon and provided with a similar tenon upon its rear surface, a divided head fitted about one end of the tenon upon said second shoe and provided with a laterally-separable portion adapted to fit about the other end thereof, and means adapted to hold said portions of said head in assembled condition.

24. In construction of the class described, in combination, a brake-shoe divided transversely into two parts and provided upon its rear surface with a tenon having its lateral walls undercut, a second brake-shoe divided into two parts and fitted about said tenon and provided with a similar tenon upon its rear surface, a divided head fitted about one end of the tenon upon said second shoe and provided with a laterally-separable portion adapted to fit about the other end thereof, a projection formed upon the main portion of said head, a projection formed upon the separable portion of said head and adapted to rest against said first projection, and a key adapted to pass through said projections and lock the same in assembled relation.

25. In construction of the class described, in combination, a brake-shoe divided transversely into two parts and provided upon its rear surface with a tenon having its lateral walls undercut, a second brake-shoe divided into two parts and fitted about said tenon and provided with a similar tenon upon its rear surface, a divided head fitted about one end of the tenon upon said second shoe and provided with a laterally-separable portion adapted to fit about the other end thereof, a projection formed upon the main portion of said head, a projection formed upon said separable portion of said head and adapted to rest against said first projection, and a key adapted to pass through said projections and lock the same in assembled relation, the lines of division of said two shoes being offset with respect one to another.

848,664. TILE-MOLDING MACHINE. DAVID LEONARD, St. Louis, Mich. Filed May 18, 1906. Serial No. 317,437.

Claim.—1. A molding-machine comprising a table, a core mounted to reciprocate therein, a jacket mounted upon the table and adapted to surround the core, said jacket consisting of movably-connected sections, one of said sections being immovably mounted upon the table, and a casing removably mounted within the jacket and comprising a single sheet adapted to surround material within the jacket, the ends of said casing being adapted to overlap, and means upon said ends for holding them together when overlapping.

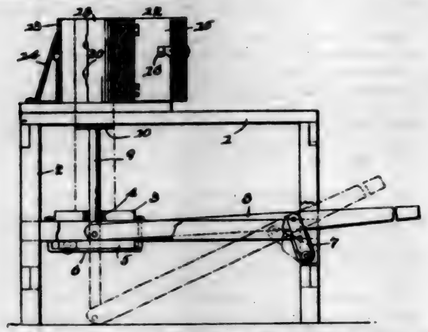

2. A molding-machine comprising a table, a core mounted to slide therein, a sectional jacket with one of its sections immovably secured upon the table, the other section being movably connected to the immovable section, a casing adapted to be seated within the jacket and formed of a single sheet adapted to surround material within the jacket, one end of said sheet having apertures therein, lugs integral with the other end and adapted to be seated within the apertures, a plunger movable with the core, a guide therefor, a link pivoted upon the table, a lever fulcrumed upon and movable with the link, one end of said lever being pivoted to the plunger, and a locking-lever mounted to swing into the path of the first-mentioned lever when the core is raised.

848,665. ROTARY EXPLOSION-ENGINE. LEVI W. LOMBARD, Medford, Mass. Filed May 12, 1904. Renewed Aug. 29, 1906. Serial No. 332,511.

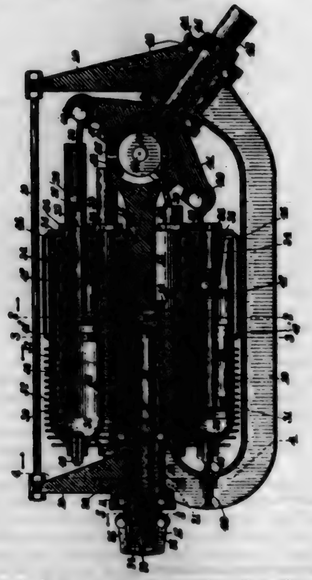

Claim.—1. In an engine, the combination of a plurality of cylinders, reciprocating pistons therefor, means for revolving said cylinders about a common axis, igniting devices for said cylinders, a plurality of disks surrounding said cylinders and forming a support therefor, and members interposed between said disks and forming therewith a plurality of chambers.

2. In an engine, the combination of a plurality of cylinders, reciprocating pistons therefor, means for revolving said cylinders about a common axis, igniting devices for said cylinders, a plurality of disks surrounding said cylinders and forming a support therefor, a common exhaust-chamber for the cylinders and supports between said chamber and the spaces between said disks.

3. In an engine, the combination of a plurality of cylinders, reciprocating pistons therefor, means for revolving said cylinders about a common axis, igniting devices for said cylinders, a plurality of disks surrounding said cylinders and forming a support therefor, a common exhaust-chamber, an exhaust-passage from each cylinder to said chamber, and ports between said chamber and the spaces between said disks.

4. In an engine, the combination of a revoluble member, a plurality of disks mounted upon said member, members interposed between some of said disks and forming therewith a plurality of chambers, a plurality of cylinders mounted in said disks parallel to and revolving with said revoluble member, and reciprocating pistons therefor, and exhaust-ports from each of said cylinders communicating with one of said chambers.

5. In an engine, the combination of a revoluble member, a plurality of disks mounted upon said member, members interposed between some of said disks and forming therewith a plurality of chambers, a plurality of cylinders mounted in said disks parallel to and revoluble with said revoluble member, reciprocating pistons therefor, and inlet-ports from each of said cylinders communicating with one of said chambers.

6. In an engine, the combination of a revoluble member, a plurality of disks mounted upon said member, members interposed between some of said disks and forming therewith two chambers, a plurality of cylinders mounted in said disks parallel to and revoluble with said revoluble member, inlet-ports from each of said cylinders communicating with one of said chambers, and exhaust-ports from each of said cylinders communicating with the other of said chambers.

7. In an engine, the combination of a revoluble member, a plurality of disks mounted upon said member, members interposed between some of said disks and forming therewith two chambers, a plurality of cylinders mounted in said disks parallel to and revolving with said revoluble member, reciprocating pistons therefor, exhaust-ports from each of said cylinders communicating with one of said chambers, a sparking plug in each cylinder, and means for transmitting a current to said plug at a point in the revolution of said cylinders.

8. In an engine, the combination of a revoluble member, a plurality of disks mounted upon said member, members interposed between some of said disks and forming therewith two chambers, a plurality of cylinders mounted in said disks parallel to and revoluble with said revoluble member, reciprocating pistons therefor, inlet-ports from each of said cylinders communicating with one of said chambers, a sparking plug in each cylinder, and means for transmitting a current to said plug at a point in the revolution of said cylinders.

9. In an engine, the combination of a revoluble member, a plurality of disks mounted upon said member, members interposed between some of said disks and forming therewith two chambers, a plurality of cylinders mounted in said disks parallel to and revoluble with said revoluble member, reciprocating pistons therefor, inlet-ports from each of said cylinders communicating with one of said chambers, exhaust-ports from each of said cylinders communicating with the other of said chambers, a sparking plug in each cylinder, and means for transmitting a current to said plug at a point in the revolution of said cylinders.

10. In an engine, the combination of a revoluble member, a plurality of disks mounted upon said member, a

plurality of cylinders passing through and beyond said disks parallel to and revolving with said revoluble member, reciprocating pistons therefor, an exhaust-chamber in said revoluble member, and exhaust-passages communicating with said chamber from each of said cylinders.

11. In an engine, the combination of a revoluble member, a plurality of disks mounted upon said member, a plurality of cylinders mounted in said disks parallel to and revolving with said revoluble member, reciprocating pistons therefor, an exhaust-chamber in said revoluble member, exhaust-passages communicating with said chamber from each of said cylinders, and ports from said chamber to the spaces between said disks.

12. In an engine, the combination of a revoluble member, a plurality of cylinders, a plurality of disks mounted upon said revoluble member and extending throughout the length of the combustion-chamber in said cylinders for which they form a support, a reciprocating barrel-piston for each cylinder provided with a tubular projection, a bearing in the end of said cylinder for said tubular projection, a driven shaft at an angle to said revoluble member, a disk on said driven shaft, and connectors secured to said disk and provided with bearings in the interior of said tubular projections of said pistons.

13. In an engine, the combination of a revoluble member having a bifurcated end each arm of which is provided with a disk-like portion, a member of cruciform shape mounted in said bifurcated end and having trunnions supported thereby, a driven shaft, a disk thereon, trunnion-bearings on said disk provided with disk-like portions contacting with other disk-like portions on said cruciform member, a plurality of cylinders mounted upon and revoluble with said revoluble member, reciprocating pistons therein, and connectors between said disk and pistons.

14. In an engine, the combination of a hollow revoluble shaft, a plurality of cylinders supported on said shaft by a plurality of thin parallel disks and revolving therewith, reciprocating pistons in said cylinders, an inlet-chamber, ports communicating between said inlet-chamber and the hollow passage within said shaft, and ports communicating between said hollow passage and said cylinders.

15. In an engine, the combination of a hollow revoluble shaft, a plurality of cylinders mounted on and revolving with said shaft, reciprocating pistons in said cylinders, an inlet-chamber, ports communicating between said inlet-chamber and the hollow passage within said shaft, other ports communicating between said hollow passage and said cylinders, and a valve for regulating the opening of said inlet-ports.

16. In an engine, the combination of a hollow revoluble shaft, a plurality of cylinders mounted on and revolving with said shaft, reciprocating pistons in said cylinders, an inlet-chamber, ports communicating between said inlet-chamber and the hollow passage within said shaft, and a valve in said hollow passage for regulating the opening of said ports.

17. In an engine, the combination of a revoluble shaft, a plurality of cylinders mounted on and revolving with said shaft, reciprocating pistons in said cylinders, an inlet-chamber surrounding said shaft, a cylindrical chamber within said revoluble shaft, a piston-valve in said chamber provided with a series of openings corresponding with the ports through said revoluble shaft, and means for reciprocating said piston-valve to open and close said ports.

18. In an engine, the combination of a revoluble shaft, a plurality of cylinders mounted on and revolving with said shaft, reciprocating pistons in said cylinders, an inlet-chamber surrounding said shaft, a cylindrical chamber within said revoluble shaft, a piston-valve in said chamber provided with a series of openings corresponding with the ports through said revoluble shaft, means for reciprocating said piston-valve to open and close said ports, a spring for moving said valve in one direction, and governor mechanism for moving said valve in the opposite direction.

19. In an engine, the combination of a revoluble shaft, a plurality of cylinders mounted on and revolving with said shaft, reciprocating pistons in said cylinders, an inlet-chamber surrounding said shaft, a cylindrical chamber within said revoluble member, a piston-valve in said chamber provided with a series of openings corresponding with the ports through said revoluble member, means for reciprocating said piston-valve to open and close said ports, and governor mechanism for controlling the movement of said valve.

20. In an engine, the combination of a revoluble member, an inlet-chamber surrounding said revoluble member, a central chamber within said revoluble member, valve-controlled ports communicating between the inlet-chamber and central chamber, a plurality of cylinders supported by and revolving with said revoluble member, reciprocating pistons in said cylinders, and a chamber communicating with each of said cylinders and said central chamber.

21. In an engine, the combination of a revoluble member, an inlet-chamber surrounding said revoluble member, a central chamber within said revoluble member, valve-controlled ports communicating between the inlet-chamber and central chamber, a plurality of cylinders supported by and revolving with said revoluble member, reciprocating pistons in said cylinders, a chamber communicating with each of said cylinders and said central chamber, an exhaust-chamber within said revoluble member, and a passage communicating with said exhaust-chamber and with each of said cylinders.

22. In an engine, the combination of a revoluble member, an inlet-chamber surrounding said revoluble member, a central chamber within said revoluble member, valve-controlled ports communicating between the inlet-chamber and central chamber, a plurality of cylinders supported by and revolving with said revoluble member, reciprocating pistons in said cylinders, a chamber communicating with each of said cylinders and central chamber, an exhaust-chamber within said revoluble member a passage communicating with said exhaust-chamber and with each of said cylinders, a plurality of disks mounted on said revoluble member and supporting said cylinders, and ports communicating with said exhaust-chamber and the spaces between said disks.

23. In an engine, the combination of a revoluble tubular member, a plurality of cylinders parallel thereto mounted on and revolving with said tubular member, reciprocating-pistons in said cylinders, and an inlet and exhaust passage within said revoluble member one within the other.

24. In an engine, the combination of a revoluble hollow shaft, a tubular member surrounding said shaft and forming therewith an exhaust-chamber, a plurality of thin parallel disks surrounding and extending throughout the length of said tubular member, a plurality of cylinders extending through said disks, reciprocating pistons therefor, members interposed between some of said disks and forming two chambers, ports communicating between the exhaust-chamber and one of said chambers, ports communicating between the other chamber and the interior of said shaft, and ports communicating with both of said chambers and the interior of said cylinders.

25. In an engine, the combination of a revoluble hollow shaft, a tubular member surrounding said shaft and forming therewith an exhaust-chamber, a plurality of thin parallel disks surrounding and extending throughout the length of said tubular member, and ports communicating between said exhaust-chamber and the spaces between said disks.

26. In an engine, the combination of a revoluble hollow shaft, a tubular member surrounding said shaft and forming therewith an exhaust-chamber, a plurality of thin parallel disks surrounding and extending throughout the length of said tubular member, ports communicating between said exhaust-chamber and the spaces between said disks, a plurality of cylinders extending through said disks, reciprocating pistons therefor, members interposed between some of said disks and forming two chambers, ports communicating between the exhaust-chamber and one of said chambers, ports communicating between the other chamber and the interior of said shaft, and ports communicating with both of said chambers and the interior of said cylinders.

27. In an engine, the combination of a revoluble hollow shaft, a tubular member surrounding said shaft and forming therewith an exhaust-chamber, a plurality of thin parallel disks surrounding and extending throughout the length of said tubular member, ports communicating between said exhaust-chamber and the spaces between said disks, a plurality of cylinders extending through said disks, reciprocating pistons therefor, members interposed between some of said disks and forming two chambers, ports communicating between the exhaust-chamber and one of said chambers, ports communicating between the other chamber and the interior of said shaft, ports communicating with both of said chambers and the interior of said cylinders, and means for regulating the admission of combustible to said cylinders through said hollow shaft.

848,666. WRAPPER-CARRIER FOR CIGAR-MACHINES. WILLIAM S. LUCKETT, East Orange, N. J., assignor to International Cigar Machinery Company, New York, N. Y., a Corporation of New Jersey. Filed May 31, 1906. Serial No. 319,411.

Claim.—1. In a cigar-machine, the combination with a wrapping mechanism, of a suction wrapper-carrier which delivers the wrapper to the wrapping mechanism during the wrapping operation, the angular relation of the wrapping mechanism and carrier varying during the delivery of the wrapper, said carrier having a recessed holding-face, the recesses communicating with a suction-chamber through openings smaller in area than the area of the recesses at the face of the carrier and being disposed across the face of the carrier in lines arranged to become parallel to the wrapping mechanism as the angular relation varies.

2. In a cigar-machine, the combination with a wrapping mechanism, of a suction wrapper-carrier which delivers the wrapper to the wrapping mechanism during the wrapping operation, the angular relation of the wrapping mechanism and the carrier varying during the delivery of the wrapper, said carrier having channels in its operating-face, said channels communicating with the suction-chamber through openings smaller in area than the area of the channels and being disposed generally transversely across the face of the carrier so as to become successively parallel with the wrapping mechanism as the angular relation between the carrier and the wrapping mechanism varies.

3. A suction wrapper-carrier for cigar-machines, the operating-face of which is provided with recesses in open communication with the suction-chamber, the area of the openings by which communication is established with the chamber being less than the area of the recesses at the face of the carrier.

848,667. CIGAR-MACHINE. WILLIAM S. LUCKETT, East Orange, N. J., assignor to International Cigar Machinery Company, New York, N. Y., a Corporation of New Jersey. Filed May 31, 1906. Serial No. 319,412.

Claim.—1. The combination with a cigar-completing mechanism, of two sets of means whereby bunches may be presented thereto.

2. The combination with cigar-completing mechanism including a wrapping mechanism, of a bunch-rolling mechanism, means whereby the bunches formed by the rolling mechanism are presented in due course to the wrapping mechanism, and means whereby bunches other than those formed in due course by the rolling mechanism may be presented to the wrapping mechanism.

3. The combination with a cigar-completing mechanism, of means for making and presenting bunches thereto, and supplemental means whereby made bunches may be presented thereto.

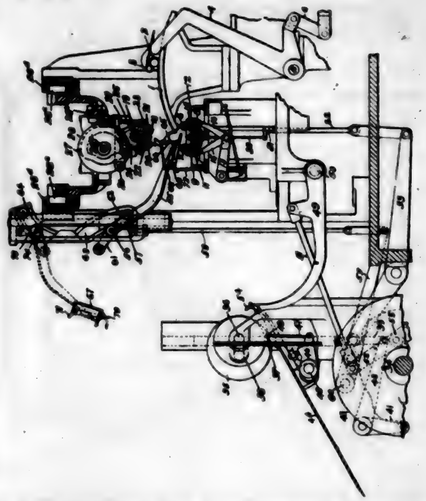

4. The combination with a cigar-completing mechanism including wrapper-applying means, of a bunch-rolling mechanism, means for transferring the bunches formed by the rolling mechanism to the wrapper-applying means, a supplemental carrier for made bunches, and means for operating the carrier to bring the bunches within the range of action of the transferring means.

5. The combination with a cigar-completing mechanism including wrapper-applying means, of a bunch-rolling mechanism, means for transferring the bunches formed in the rolling mechanism to the wrapper-applying means, a swinging bunch-carrier arm, and means for operating the arm to bring the bunches within the range of action of the transferring means.

6. The combination with a cigar-completing mechanism including wrapper-applying means, of a bunch-rolling mechanism, a shaping mechanism to which the bunches formed in due course by the rolling mechanism are delivered, a transferrer for carrying the bunches from the shaping mechanism to the wrapper-applying means, a bunch-carrier for handling bunches other than those formed in due course by the rolling mechanism, and means for operating the bunch-carrier to deliver the bunches to the shaping mechanism.

848,668. VEHICLE-BRAKE. BALTIS P. LUKENS and ISADORE S. DIEHL, Allentown, Pa. Filed May 22, 1906. Serial No. 318,127.

Claim.—1. In a vehicle-brake, the combination of the brake-shoe; of means arranged to press said shoe against the rail upon which the vehicle runs; a removable face-plate for said shoe; and a plurality of replaceable friction-studs held in place by said face-plate, substantially as set forth.

2. In a vehicle-brake, the combination with a brake-shoe supported in proximity to the surface traversed by said vehicle, and located between a wheel and the end of the vehicle; of a shaft journaled above said shoe; an arm on said shaft; a link connecting said shoe and arm; and a rod extending from said shoe to the under side of the vehicle, whereby the shoe is maintained in proper relation to the vehicle; and means arranged to shift said shaft to extend said shoe into engagement with said traversed surface, substantially as set forth.

3. In a vehicle-brake, the combination with a brake-

shoe; of a removable face-plate for said shoe; and a plurality of edged frictional studs held in place by said face-plate, substantially as set forth.

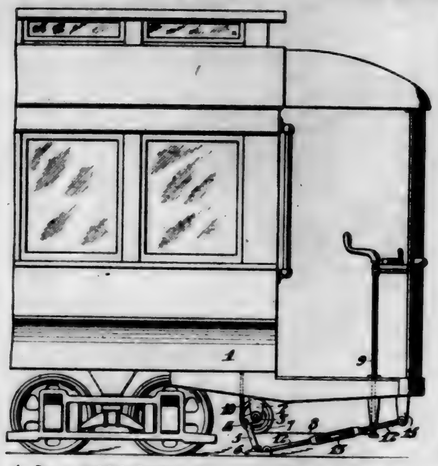

4. In a vehicle-brake, the combination with a brake-shoe; of a removable face-plate for said shoe; and a plurality of edged frictional studs passing through and secured in place by said face-plate, substantially as set forth.

5. In a vehicle-brake, the combination with a brake-shoe; of a plate secured to said shoe; a plurality of shouldered apertures in said plate; and shouldered edged frictional studs seated in said apertures, arranged to frictionally engage a relatively movable surface, when said shoe is shifted, substantially as set forth.

6. In a vehicle-brake, the combination with a brake-shoe; of a plate secured to said shoe; a plurality of pointed studs; heads on said studs opposed to said points and arranged to be engaged by said plate; and means arranged to shift said shoe to engage said points with a relatively movable surface.

848,669. JACKET. JACOB H. MARK, Herkimer, N. Y., assignor to Mark Manufacturing Company, Herkimer, N. Y., a Corporation of New York. Filed Mar. 24, 1906. Serial No. 307,815.

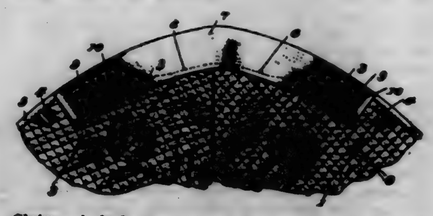

Claim.—A body-garment having a roll-collar of substantially the same width throughout formed of a tubular seamless piece of ribbed material secured to said garment, said collar in its turned-up position overlapping and protecting the throat of the wearer.

848,670. GRAIN-SEPARATOR. JOHN B. MEYER, Shepherd, Mich., assignor of one-tenth to Bert G. Freeman, Shepherd, Mich. Filed Apr. 19, 1906. Serial No. 312,605.

Claim.—1. In a separator of the character described, the combination with the threshing mechanism, of a straw-rack loosely mounted therein, said straw-rack comprising a series of longitudinally-disposed bars connected at their opposite ends by cross-bars, said longitudinal bars being arranged in pairs to form passages between each pair of bars, fish-back notches or offsets formed on the upper edges of said longitudinal bars, fish-back plates secured to said offset surfaces of each pair of bars, said plates having right-angularly formed flanges, whereby the former are supported in an inclined position on said offset surfaces, a series of picker-rods arranged below said rack-bars, picker-rods secured to said bars and projected upwardly therefrom through the passages between said straw-rack bars, means to impart upward and rearward movement to said picker bars and rods, means to shake said straw-rack, and a beater mounted above the forward end of said straw-rack, substantially as described.

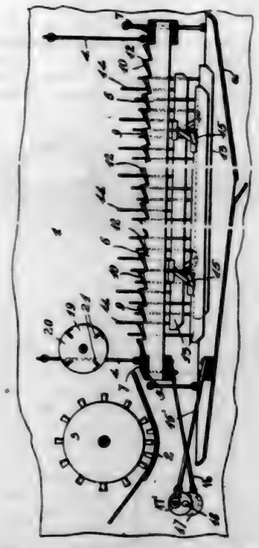

2. In a separator, the combination with the threshing mechanism, of a fish-back straw-rack loosely mounted therein, said rack being provided with a series of longitudinally-disposed passages, triple crank-shafts arranged below said rack, a series of picker-bars mounted on said crank-shaft, upwardly-projecting picker-rods arranged on said bars to project upwardly through the passages in said straw-rack, whereby when said crank-shafts are operated an upward and rearward motion will be imparted to said picker bars and rods, a grain-pan, pitman-rods connected to said straw-rack and grain-pan, respectively, a drive-shaft, oppositely-disposed cranks mounted on said shaft and connected to said pitman-rods, whereby said straw-rack and grain-pan are shaken, a beater revolubly mounted above the forward end of said straw-rack, and plates in said beater to prevent the fanning or blowing of the straw from the threshing mechanism, substantially as described.

848,671. LOOSE-LEAF BINDER. HENRY C. MILLER, Milwaukee, Wis. Filed July 7, 1905. Serial No. 268,681.

Claim.—1. In a loose-leaf binder, a rigid sectional post having means for continuously varying its length at one end, and means for adding sections at the other end thereof.

2. In a loose-leaf binder, a rigid sectional post comprising a plurality of sections joined together, one of said sections being composed of two members which telescope one within the other, and means for adjusting the extension of said telescoping section in combination with a binder-bar removably secured to one end of said post.

3. In a loose-leaf binder, a rigid sectional post comprising an extensible section secured at one end to one cover of the binder and having means for adjusting its extension, and a plurality of interchangeable sections adapted to be secured to the free end of said extensible section and to each other in combination with a binder-bar removably securable to the end of said post opposite said extensible section.

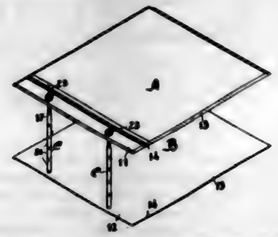

4. In a loose-leaf binder, a post-section comprising a barrel having an internal thread at one end and a screw fitting said internal thread and rotating loosely in said barrel, the thread of said screw projecting when in use from the opposite end so as to engage the internal thread of the next section.

5. In a sectional post for loose-leaf binders, a post-section having a transverse notch at one end thereof, and a transverse projection at the other end adapted to fit in the notch of the adjacent section; said notch and projection being shaped to permit the projection on one section to enter the notch on another section when the two are brought together endwise, in combination with means on said section for securing it to the adjacent section.

6. A sectional post for loose-leaf binders comprising a plurality of sections having a device operated from one end thereof engaging it to the section abutting on the other end, said device being covered by the section abutting on the first end.

7. A loose-leaf binder comprising in combination with a pair of back bars, an extensible section secured at its end to one of said bars, and comprising telescoping members, means for adjusting the extension of said section from the outer side of the bar to which it is attached, a plurality of interchangeable sections one or more of which is secured to the free end of said extensible section and each of which comprises a barrel having an internal thread at one end and a screw loosely rotating in said barrel and projecting when in use from the other end, said screw engaging the internal thread of any of said sections; and a screw set in the opposite back bar and rotating in a hole therein, the thread thereof projecting from the inner side of said back bar and engaging the internal thread of the end section of the post.

8. In a sectional post for loose-leaf binders, a post-section comprising a hollow barrel having an internal flange 32 around one end, a screw 33 having its shank passing through the opening in said flange and its head abutting thereagainst, and an internally-screw-threaded plug 35 secured in the opening of the other end of said barrel.

9. In a sectional post for loose-leaf binders, a post-section comprising a hollow barrel having an internal flange 32 around one end, a screw 33 having its shank passing through the opening in said flange and its head abutting thereagainst, and an internally-screw-threaded plug 35 secured in the opening of the other end of said barrel, said barrel having on one end a projecting part and on the other end a depressed part adapted to receive the projecting part of the adjacent section.

848,672. BENCH-DRILL. WILLIAM MITCHELL and JOHN F. MITCHELL, Milwaukee, Wis. Filed Dec. 18, 1905. Serial No. 292,244.

Claim.—In a portable bench-drill, an elongated frame having a rigid arm projecting laterally toward the front, an elongated laterally-expanded slideway 15 on the front edge of the frame, a marginal flange 18 on and projecting at one edge in front of the laterally-expanded slideway, a slide fitted and movable endwise on the expanded slideway and bearing laterally against the marginal flange, a finger holding the slide to the slideway movably, a rack on that edge of the slide opposite its bearing against the marginal flange and projecting at a right angle away from a plane through the axis of the drill-shaft and through the face of the slideway, a mutilated gear pivoted on the frame and provided with a handle and meshing with the rack on the slide adapted to move the slide up and down and to permit its movement independently of the gear, and a material-holder on the slide in the projection of the axis of the drill-shaft and adapted by the movement of the slide to be brought nearer to and to be carried away from the drill-shaft.

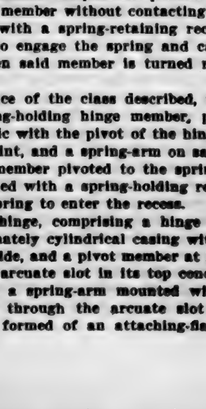

848,673. SPRING-HINGE. ELISHA MOORE, Boston, Mass. Filed July 19, 1904. Serial No. 217,233.

Claim.—1. In a device of the class described, the combination with one hinge member and a spring carried thereby, of a second hinge member adapted for pivotal connection with the first, carrying a spring-retaining recess, and provided with means to operate on the spring to cause the spring to enter the spring-retaining recess and act on the second member.

2. In a device of the class described, the combination with one hinge member, and a spring carried thereby, of a second hinge member adapted for pivotal connection with the first hinge member without contacting with the spring, and provided with a spring-retaining recess and a cam-face adapted to engage the spring and cause it to enter the recess when said member is turned relatively to the other.

3. In a device of the class described, the combination with the spring-holding hinge member, provided with a guide concentric with the pivot of the hinge and having a compression-point, and a spring-arm on said member, of a second hinge member pivoted to the spring-holding member and provided with a spring-holding recess and a cam to cause the spring to enter the recess.

4. A spring-hinge, comprising a hinge member formed of an approximately cylindrical casing with an attaching-flange on one side, and a pivot member at its top, and provided with an arcuate slot in its top concentric with the pivot member; a spring-arm mounted within the casing and extending through the arcuate slot; and a second hinge member formed of an attaching-flange and a pro-

jecting shoulder having a spring-holding recess and pivot member.

5. In a device of the class described, the combination with the spring-holding hinge member and a spring-arm carried thereby, a guide for the spring-arm having a compression-point and a branch on each side of the compression-point, of a second hinge member pivoted to the spring-holding hinge member and provided with a spring-holding recess and a cam for causing the spring-arm to enter said recess when the member is turned.

6. In a device of the class described, the combination of the spring-holding hinge member, provided with an arcuate guide concentric with the pivot of the hinge and providing a compression-point and a branch on each side of the compression-point, and a second hinge member provided with a shoulder having its rear wall nearer to the axis of the hinge than its front wall, and having a spring-holding recess in its front wall, and a cam-face between its rear wall and the spring-holding recess.

7. In a device of the class described, the combination with the spring-holding hinge member and a spring-arm carried thereby having its end slightly bent, a guide for the end of the spring-arm having a compression-point and a branch on each side of the compression-point, of a second hinge member pivoted to the spring-holding hinge member and provided with a spring-receiving recess; the end of the spring-arm being, when in one of the guide branches, in a position to hold the two hinge members together and, when in the other guide branch, in a position to permit the members to be separated.

848,674. ROUND-DOOR SAFE. MOSES MOSLER, New York, N. Y., assignor to Mosler Safe Company, Hamilton, Ohio. Filed Jan. 23, 1907. Serial No. 353,593.

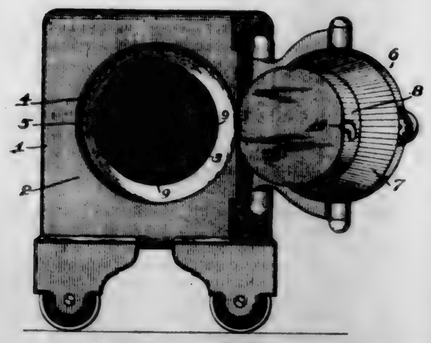

Claim.—1. A round-door safe having a circular door-jamb cylindrical in its rear portion and tapering in its front portion and having practically continuous jamb-surfaces, a door having corresponding cylindrical and tapering portions, and a coöperating recess and projecting stud in the joint between the door and jamb, combined substantially as set forth.

2. A round-door safe having a circular door-jamb cylindrical in its rear portion and tapering in its front portion and having practically continuous jamb-surfaces, a door having corresponding cylindrical and tapering portions, and a coöperating recess and projecting stud in the cylindrical portion of the joint between the door and jamb, combined substantially as set forth.

3. A round-door safe comprising a circular door and door-jamb with practically continuous surfaces, and a co-operating stud and recess in the joint between the door and jamb, the active portion of the stud being convex, and the recess being concave in cross-section and having an entering portion leading into a circumferential portion having a helical trend, combined substantially as set forth.

848,675. WAVE-METER. JOSEPH MURDAS, Wilkes-Barre, Pa. Filed Jan. 29, 1906. Serial No. 298,466.

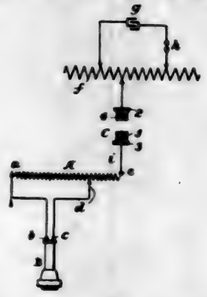

Claim.—1. In a wave-meter, the combination with a closed circuit adapted to have its period varied, of means for indicating the constants of the circuit for each adjustment, means for indicating a resonant condition of the circuit, and electrostatic means external to the said circuit for coupling said circuit with the system, the waves of which are to be measured.

2. In a wave-meter, the combination with a closed circuit adapted to have its period varied, of means for indicating the constants of the circuit for each adjustment, means for indicating a resonant condition of the circuit, and opposed electrodes external to the said circuit for coupling the said circuit with the system, the wave length of which is to be measured, each of said electrodes comprising a plurality of projecting prongs.

3. In a wave-meter, the combination with a closed circuit adapted to have its period varied and comprising an electrostatic telephone-receiver for indicating a resonant condition of the circuit, of means for indicating the constants of the circuit for each adjustment, and electrostatic means for coupling said circuit with the system, the wave length of which is to be measured.

4. In a wave-meter, the combination with a closed circuit adapted to have its period varied and comprising an electrostatic telephone-receiver for indicating a resonant condition of the circuit, of means for indicating the constants of the circuits for each adjustment, and electrostatic means for coupling said circuit with the system, the wave length of which is to be measured, the said electrostatic means comprising opposed electrodes, each having a plurality of projecting prongs.

5. In a wave-meter comprising a closed circuit including an adjustable reactance-coil calibrated to indicate the turns of the coil included in the circuit, and an electrostatic telephone-receiver having adjustable electrodes and calibrated to indicate the distance of separation of its electrodes.

6. In a wave-meter, the combination with a closed circuit adapted to have its period varied and including an inductance and an electrostatic telephone-receiver, of electrostatic means for coupling said circuit with the system, the wave length of which is to be measured, said electrostatic means comprising opposed electrodes adapted to be adjusted with relation to each other.

848,676. ELECTRIC TRANSFORMER. JOSEPH MURDAS, Wilkes-Barre, Pa. Filed Mar. 17, 1906. Serial No. 306,608.

Claim.—1. In an electric transformer, the combination with the secondary coil thereof, of means for including any desired number of turns in the effective circuit, and a primary symmetrically adjustable with relation to the middle of the effective portions of the coil of the secondary.

2. In an electric transformer, the combination with a secondary comprising a coil of bare wire, of means for including in the secondary circuit any desired number of turns of said coil, a primary coil surrounding the secondary coil, and means for symmetrically adjusting the primary with relation to the middle of the effective portions of the coil of the secondary.

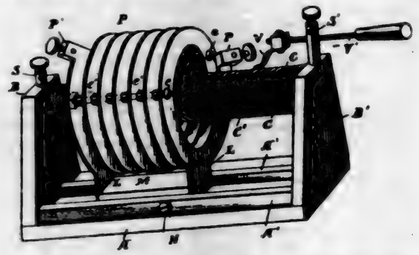

3. In an electric transformer, the combination with a base, of a secondary comprising a support of insulating material having threads in its surface and a coil of bare wire laid in said threads, a binding-post secured to one of the terminals of the coil, an adjustable contact adapted to slide over the turns of the coil, a primary consisting of a continuous coil surrounding the secondary, and a carriage supporting the primary and adapted to be adjusted upon the base.

4. In an electric transformer, a base-board having a grooved way, a carriage sliding in the way, a primary mounted on the carriage, uprights connected to the base, a secondary secured to said uprights, a fixed binding-post for one terminal of the secondary, and an adjustable contact for making sliding connection upon the various turns of the secondary.

5. In a device of the character described, a secondary coil comprising a tube of insulating material having a spiral thread in its outside and a bare conducting-wire laid in the thread.

6. In a device of the character described, a primary comprising a plurality of cut rings, the adjacent ends of each of two rings being united to form a continuous spiral, and the outer rings being provided with legs to form a support for the primary.

7. In a device of the character described, a primary comprising a continuous spiral and having spacing and holding devices for maintaining the spirals in proper relation.

8. In a device of the character described, a primary comprising a continuous spiral and having rods extending through the spirals, and spacing tubes or washers mounted on the rods between the spirals.

848,677. RAILROAD-GATE. GEORGE E. MURRAY, St. Regis Falls, N. Y. Filed July 12, 1906. Serial No. 325,905.

Claim.—1. The combination with railroad-rails, of gates therefor movable into and out of operative position, rock-shafts pivotally connected with the rails, upwardly-extending operating-fingers carried by certain of said shafts, pumps connected with others of said shafts for operation when the shafts are rocked, cross-arms carried by the shafts, connections between the cross-arms of the shafts for simultaneous operation of the shafts, fluid-operated mechanism connected with the gates for movement thereof, a fluid-supply tank, fluid-conducting connections between the tank and the mechanism, fluid-conducting connections between the pump and the tank, valves for the mechanisms, and connections between certain of the rock-shafts and the valves for movement of the latter when the shafts are rocked.

2. The combination with railroad-rails, of rock-shafts pivotally connected therewith in spaced relation, upwardly-extending train-engaging fingers carried by the rock-shafts, other rock-shafts pivotally connected with the rails between the first-named shafts, pumps connected with the second-named rock-shafts for operation thereby when the shafts are rocked, connections between the several rock-shafts for simultaneous movement thereof, cylinders, pistons in the cylinders, gates, operative connections between the pistons and the gates, fluid-conducting connections between the pumps and the cylinders, valves movable into and out of position to cut off the passage of fluid

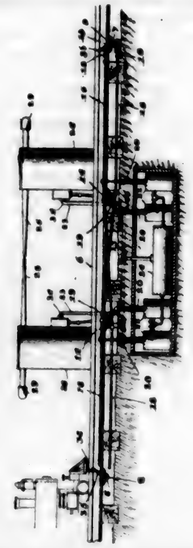

to the cylinders, and connections between the valves and the second-named rock-shafts, for movement of the valves into operative position when the first-named shafts are moved in one direction, and into inoperative position when said first-named shafts are moved in the other direction.

848,678. TYPE-WRITING MACHINE. HARRY S. MCCORMACK, Providence, R. I., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Sept. 13, 1905. Serial No. 278,253.

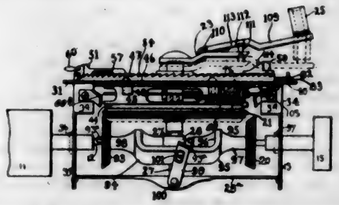

Claim.—1. In a type-writing machine, the combination with a revoluble platen, of a rotatable finger-piece, and reversing-gear connecting said finger-piece to the platen.

2. In a type-writing machine, the combination with a revoluble platen having an axle, of a gear, and a pair of pinions splined to said axle one upon each side of said gear, and engageable with the latter singly.

3. In a type-writing machine, the combination with a revoluble platen having an axle, of a gear, a pair of pinions splined to said axle one upon each side of said gear, and engageable with the latter singly, and a finger-piece connected to said pinions for moving them to and fro upon the platen-axle.

4. In a type-writing machine, the combination with a revoluble platen of a gear, a pair of pinions connected to the platen to rotate therewith, one pinion upon each side

of said gear, and means for mechanically maintaining engagement of said gear with either of said pinions.

5. In a type-writing machine, the combination with a revoluble platen, having an axle, of a gear, a pair of pinions upon opposite sides of said gear, said pinions splined to said axle, a lever controlling said pinions, and means for mechanically maintaining either of said pinions in engagement with said gear.

6. In a type-writing machine, the combination with a revoluble platen having an axle, of a gear, a pair of pinions upon opposite sides of said gear, said pinions splined to said axle, a sliding box connected to said pinions, a shifting-lever connected to said box, and a pair of spring-jaws between which said lever projects, said jaws provided with means for detaining said lever at the extremes of its box-shifting movement.

7. In a type-writing machine, the combination with a revoluble platen and a line-spacing mechanism, of a rotatable actuator normally disconnected from the platen, means for effecting connection between the actuator and the platen so that said actuator may advance the latter, a stop for arresting such advance movement of platen and actuator, whereby successive sheets may be inserted and carried around the platen and each brought to the same point for beginning the first line of writing, means permitting immediate release of the platen and actuator from said stop without retracting the platen, whereby the platen may be advanced line by line immediately after its arrest by said stop and independently thereof, and means for mechanically disconnecting said actuator from said platen upon its return to normal rotative position.

8. In a type-writing machine, the combination with a revoluble platen and a line-spacing mechanism, of a finger-piece normally disconnected from the platen, means between the finger-piece and the platen for enabling the former to rotate the latter through about an entire revolution, and an adjustable stop for limiting the advance rotation of the platen by said finger-piece; means being provided to cause the release of said finger-piece to effect dissociation of said stop with the platen immediately upon the arrest of the latter by said stop, whereby after being advanced by said finger-piece to the proper point to begin the first line of writing, the platen may be immediately advanced line by line past said stop.

9. In a type-writing machine, the combination with a revoluble platen and a line-spacing mechanism, of a revoluble finger-piece normally disconnected from the platen, means for effecting operative connection between the finger-piece and platen and for mechanically maintaining such connection, so that the finger-piece may advance the platen at a single stroke through a large number of ordinary line-spaces, a stop for arresting the advance movement of the platen effected by said finger-piece, and means for mechanically dissociating said stop from said platen upon the arrest of the platen by said stop, so that the platen may be advanced line by line past said stop.

10. In a type-writing machine, the combination with a revoluble platen and a line-spacing mechanism, of a crank normally disconnected from the platen, means for enabling the crank by a single stroke from its normal rotative position to effect about a complete advance revolution of said platen, an adjustable stop for arresting the platen and crank, and means for enabling the platen to be immediately advanced from its position of arrest past said stop.

11. In a type-writing machine, the combination with a revoluble platen and a line-spacing mechanism, of a revoluble finger-piece normally disconnected from the platen, means for effecting operative connection between the finger-piece and platen and for mechanically maintaining such connection, an adjustable stop for arresting the advance movement of the platen effected by said finger-piece, and means for enabling said finger-piece while still mechanically connected to the platen, to pass by said stop.

12. In a type-writing machine, the combination with a revoluble platen and a line-spacing mechanism, of a revoluble finger-piece normally disconnected from the platen, means for effecting operative connection between the finger-piece and platen and for mechanically maintaining such connection, an adjustable stop for arresting the advance movement of the platen effected by said finger-piece, means for enabling said finger-piece while still mechanically connected to the platen, to pass by said stop; and means operating at the completion of the revolution of said finger-piece for effecting its disconnection from the platen.

13. In a type-writing machine, the combination with a revoluble platen and a line-spacing mechanism, of a crank normally disconnected from the platen, means for effecting operative connection between the crank and the platen so that by a single stroke of the crank the platen may be rotated through at least the major portion of an entire revolution, adjustable means for determining the length of stroke of the crank, and means for releasing the platen and the crank from said stroke-determining means while the platen and crank remain operatively connected.

14. In a type-writing machine, the combination with a revoluble platen and a line-spacing mechanism, of a revoluble finger-piece normally disconnected from the platen, means for effecting operative connection between the finger-piece and the platen, a rack curved concentrically with the axis of motion of said finger-piece, a stop adjustable along said rack, for arresting the platen-rotating movement of said finger-piece, and means operating upon the release of said finger-piece for releasing the same from said stop to permit the finger-piece and platen to advance past said stop.

15. In a type-writing machine, the combination with a revoluble platen and a line-spacing mechanism, of a rotatable finger-piece normally disconnected from the platen, means for connecting said finger-piece to the platen and mechanically maintaining such connection, a stop, a normally ineffective abutment connected to said finger-piece and depressible thereby so as to engage said stop when the finger-piece is rotated, and a spring for lifting said abutment clear of the stop.

16. In a type-writing machine, the combination with a revoluble platen and a line-spacing mechanism, of a crank, movement-multiplying gearing between the crank and the platen, said crank and platen being normally disconnected, means for enabling the crank to become connected with the platen so that the movement of the crank from normal position gives the platen an advance rotative movement, a stop for limiting the advance rotation of the platen effected by said crank, and means for enabling the platen to be thereupon immediately advanced by said line-spacing mechanism past said stop.

17. In a type-writing machine, the combination with a revoluble platen and a line-spacing mechanism, of a crank, a pinion connected to the platen, a gear connected to the crank but normally disconnected from said pinion, means for enabling said gear to be moved into mesh with said pinion, means for mechanically maintaining such connection, a stop for arresting the platen-advancing movement of said crank, and means releasing the crank from said stop while said gear and pinion remain in mesh.

18. In a type-writing machine, the combination with a revoluble platen and a line-spacing mechanism, of a crank, a pinion connected to the platen, a gear connected to the crank, but normally disconnected from said pinion, means for enabling said gear to be moved into mesh with said pinion, means for mechanically maintaining such connection, a stop for arresting the platen-advancing movement of said crank, means releasing the crank from said stop while said gears remain connected; and means disconnecting said gears upon the movement of said crank to normal rotative position.

19. In a type-writing machine, the combination with a revoluble platen and a line-spacing mechanism capable of rotating the platen at each stroke through several line-spaces, of a mechanism normally disconnected from the platen and capable by its initial movement from normal position of advancing the platen at a single stroke through a much larger number of line-spaces, and an adjustable stop for limiting the movement of the last-mentioned line-spacing mechanism; means being provided for mechanically dissociating said platen from said stop immediately upon completion of said initial movement, so that the platen may be advanced from its position of arrest past said stop by the first-mentioned line-spacing mechanism.

20. In a type-writing machine, the combination with a revoluble platen and a line-spacing mechanism, of a crank normally disconnected from the platen, means for enabling a movement of said crank to effect connection between the crank and the platen so that the initial movement of the crank advances the platen, a stop for arresting the platen-advancing movement of said crank, and a spring which immediately releases the platen from said stop upon the release of the crank at the completion of such initial movement of the crank.

21. In a type-writing machine, the combination with a revoluble platen, of a rotatable finger-piece normally disconnected from the platen, means for effecting and maintaining such mechanical connection between the finger-piece and the platen that the initial movement of the finger-piece may advance the platen, a stop for arresting the platen-advancing movement of said finger-piece, and means for releasing the finger-piece from said stop while the finger-piece and platen are still connected, and means for subsequently disconnecting the finger-piece from said platen.

22. In a type-writing machine, the combination with a revoluble platen, of a rotatable finger-piece normally disconnected from the platen, means normally locking said finger-piece against rotation, means for effecting and maintaining such mechanical connection between the finger-piece and the platen that the initial rotative movement of the finger-piece may advance the platen, a stop for arresting the platen-advancing movement of said finger-piece, means for releasing the finger-piece from said stop, while the finger-piece and the platen are still connected, and means for subsequently disconnecting the finger-piece from the platen, and restoring the finger-piece to normal locked condition when it reaches its initial rotative position.

23. In a type-writing machine, the combination with a revoluble platen, of a finger-piece normally disconnected from the platen, means for effecting and maintaining connection between the finger-piece and platen, said connecting means including a reversing-gear whereby the initial movement of the finger-piece may be caused either to advance or retract the platen at will, and stops for arresting the forward and backward movements of the platen effected by said finger-piece.

24. In a type-writing machine, the combination with a revoluble platen, of a rotatable finger-piece, reversing-gearing connecting said finger-piece to the platen, and relatively adjustable stops for arresting the forward and backward movements of the platen effected by said finger-piece.

25. In a type-writing machine, the combination with a revoluble platen, of a finger-piece normally disconnected from the platen, means locking said finger-piece in normal position, means for effecting and maintaining connection between said finger-piece and the platen, said connecting means including reversing-gearing, and relatively adjustable stops for limiting the forward and backward movements of the platen effected by said finger-piece.

26. In a type-writing machine, the combination with a revoluble platen, of a finger-piece normally disconnected from the platen, means locking said finger-piece in normal position, means for effecting and maintaining connection between said finger-piece and the platen, said connecting means including reversible gearing, relatively adjustable stops for limiting the forward and backward movements of the platen effected by said finger-piece, means for enabling said finger-piece to pass said stops, and means for disconnecting the finger-piece from the platen.

27. In a type-writing machine, the combination with a revoluble platen, of a finger-piece normally disconnected from the platen, means locking said finger-piece in normal position, means for effecting and maintaining connection between said finger-piece and the platen, said connecting means including reversible gearing, relatively adjustable stops for limiting the forward and backward movements of the platen effected by said finger-piece, means for enabling said finger-piece to pass said stops, and means for disconnecting the finger-piece from the platen and restoring it to its normal locked condition.

28. In a type-writing machine, the combination with a revoluble platen having an axle, of a gear, a pair of pinions splined to said axle one upon each side of said gear, and engageable with the latter singly, said gear normally disconnected from said pinions, a finger-piece for operating said gear, means for effecting and maintaining connection between said gear and either of said pinions, and relatively adjustable stops for variably limiting the forward and backward movements of said finger-piece, gear and platen.

29. In a type-writing machine, the combination with a revoluble platen having an axle, of a gear, a pair of pinions splined to said axle one upon each side of said gear and engageable with the latter singly, said gear normally disconnected from said pinions, a finger-piece for operating said gear, means for effecting and maintaining connection between said gear and either of said pinions, relatively adjustable stops for limiting the forward and backward movements of said finger-piece, gear and platen, and means for enabling the platen to be rotated independently of said stops.

30. In a type-writing machine, the combination with a revoluble platen, of a rotatable actuator normally disconnected from the platen, reversing-gear for connecting the actuator to the platen so that the latter may be either advanced or retracted at the initial movement of the actuator from normal position, adjustable stops for limiting the initial movement of the actuator, means permitting release of the platen and actuator from said stop so that the advance movement of the platen may continue, a stop for limiting the return movement of the actuator to normal rotative position, and means for mechanically disconnecting said actuator from said platen upon the return of the actuator to normal rotative position.

31. In a type-writing machine, the combination with a revoluble platen, of a rotatable finger-piece normally disconnected from the platen, means locking said finger-piece in normal rotative position, reversing-gear for effecting operative connection between the finger-piece and platen so that the latter may be either advanced or retracted at the initial rotation of said finger-piece, means for mechanically maintaining such connection, a stop for limiting the initial rotation of the finger-piece and platen, means for mechanically dissociating said stop from said platen so that the latter may be advanced line by line independently of said stop, a stop for limiting the return movement of the finger-piece, and means for disconnecting the finger-piece from the platen upon the return of the former to normal rotative position.

32. In a type-writing machine, the combination with a revoluble platen, of a revoluble finger-piece normally disconnected from the platen, reversing-gear for effecting connection between the finger-piece and platen so that the latter may be either advanced or retracted by the initial movement of the former, relatively adjustable stops for limiting the back-and-forth movement of said finger-piece, and means for enabling the finger-piece to pass said stops.

33. In a type-writing machine, the combination with a revoluble platen, of a revoluble finger-piece normally disconnected from the platen, means for effecting connection between the finger-piece and platen so that the latter may be either advanced or retracted by the initial movement of the former, relatively adjustable stops for limiting the back-and-forth movement of said finger-piece, means for enabling the finger-piece to pass said stops, means for disconnecting the finger-piece from the platen when the former reaches normal rotative position, and means for locking said finger-piece in normal rotative position.

34. In a type-writing machine, the combination with a revoluble platen, of a crank, a pair of pinions connected to the platen, a gear connected to the crank but normally disconnected from the pinions, means for enabling said gear to move into mesh with either pinion for effecting either advance or retraction of the platen at the initial movement of the gear, means for maintaining such con-

nection, relatively adjustable stops for arresting the forward and backward movement of said crank, means for enabling the crank to pass said stops, and means disconnecting the gear from the pinion upon the return of the gear to normal rotative position.

35. In a type-writing machine, the combination of a platen, a normally disconnected manually-operable device for rotating the platen, means for connecting said manually-operable device to the platen, stops for limiting the forward and backward strokes of said manually-operable device, and adjustable means for causing the backward strokes to be variably shorter than the forward strokes of the platen that are effected by the reciprocation of said manually-operable device between said stops.

36. In a type-writing machine, the combination of a revoluble platen, relatively adjustable stops for arresting both forward and backward revolutions of the platen, and mechanism controlling the strokes of the platen in such a manner as to cause one stroke of the platen to be longer than the other stroke between said stops; said stroke controlling mechanism including a part adjustable for causing variations in the difference between the forward and backward strokes of the platen.

37. In a type-writing machine, the combination with a revoluble platen, of a manually-operated device for rotating the platen, stops for limiting the forward and backward strokes of the platen, and adjustable means for causing varying initial portions of the platen-retracting strokes of said manually-operable device to be ineffective.

38. In a type-writing machine, the combination with a platen, of a normally disconnected manually-operable device for rotating the platen backward and forward, stops limiting the strokes of said manually-operable device, means for connecting said manually-operable device to the platen and disconnecting it therefrom, means for mechanically effecting an idle initial movement of said manually-operable device and an adjustable stop for limiting such initial movement.

39. In a type-writing machine, the combination with a platen, of a normally disconnected manually-operable device for rotating the platen backward and forward, stops limiting the strokes of said manually-operable device, means for connecting said manually-operable device to the platen and disconnecting it therefrom, means for mechanically effecting an idle initial movement of said manually-operable device, an adjustable stop for variably limiting such initial movement, and a finger-piece connected to said adjustable stop for setting the same.

40. In a type-writing machine, the combination with a platen and a manually-operable rotative device normally disconnected from the platen, of means for enabling an axial movement of said rotative device to connect the latter to the platen, a foot upon said rotative device, a latch engaging said foot to lock said device in connection with the platen, a step for maintaining such connection during the rotation of the platen forwardly and backwardly by said rotative device; said stop having a recess normally occupied by said foot, a spring for effecting the return axial movement of said rotative device, a spring for turning said rotative device idly in the platen-retracting direction while disconnected from the platen, and an adjustable stop for variably limiting such idle movement.

41. In a type-writing machine, the combination with a revoluble platen, of a pinion connected to the platen, a gear normally disengaged from said pinion, means for effecting engagement between said gear and said pinion at will, relatively adjustable stops for limiting the movement of said gear and platen forwardly and backwardly, means for mechanically maintaining said gear in mesh for a greater platen-advancing than platen-retracting movement, and adjustable means for varying the difference between the platen-advancing and platen-retracting movements.

848,679. STARTING MEANS FOR EXPLOSION-MOTORS. EMIL A. NELSON, Detroit, Mich., assignor to William J. Newton and Charles J. Woodall, Detroit, Mich. Filed Jan. 24, 1906. Serial No. 297,625.

Claim.—1. The combination with the shaft of a motor, of a worm-wheel, worm, and actuating-handle for starting the shaft, the worm movable tangentially in respect to the wheel to be thrown tangentially out of engagement therewith on the rotation of the wheel faster than or in a different direction from the worm.

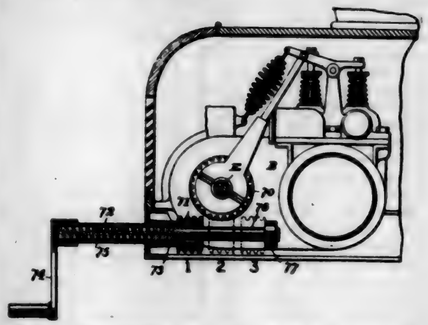

2. The combination with the shaft of a motor, of a worm-wheel thereon, a starting-shaft provided with a handle and carrying a worm, and a spring-support for the worm constructed to yield to permit the worm to be carried on the shaft by the wheel.

3. The combination with a shaft of a motor, of a worm-wheel, a worm, and means for turning the same to rotate the wheel, the worm mounted to slide to different positions out of engagement with the wheel under the action of the latter.

4. The combination with the shaft of a motor, of a worm-wheel, a hand-shaft, a worm engaging said wheel and turning with said hand-shaft, means whereby the worm may be carried tangentially to, beneath, and beyond said wheel, and a spring tending to hold the worm out of engagement with the wheel.

5. The combination with the shaft of a motor, of a worm-wheel, a hand-shaft, a worm engaging said wheel and carried by said hand-shaft, means whereby the worm may be carried tangentially to, beneath, and beyond said wheel, and means whereby the worm is permitted to slide tangentially in respect to the wheel when the wheel turns faster than or in a different direction from the shaft.

6. The combination with the shaft of a motor, of a worm-wheel thereon, a starting-shaft provided with a handle and carrying a worm, and a spring connected to be compressed as the worm is carried to a position engaging the wheel and capable of yielding to permit the worm to be carried by the wheel.

7. The combination with the shaft of a motor carrying a worm-wheel, of a hollow starting-shaft carrying a worm and handle and mounted to slide longitudinally, and a spring arranged to carry the hand-shaft to a position with the worm at one side of the wheel.

848,680. WRITING-PAPER TABLET. LYMAN H. NELSON, Portland, Me. Filed May 11, 1906. Serial No. 316,256.

Claim.—1. The herein-described paper tablet consisting of a plurality of sheets of paper placed together to form a pad or block of removable sheets having a stepped construction constituting one beveled end, a continuous coating of adhesive material on said beveled end which covers the ends and one adjacent face of each sheet and fills the angular recesses between the ends.

2. The herein-described paper tablet consisting of a plurality of sheets of paper placed together to form a pad or block of removable sheets having a stepped construction constituting one beveled end and a binder having a flat adhering surface secured on said beveled end by adhesive material which coats the end of the pad and adheres to the end and adjacent portion of the face of each sheet and fills the angular space between the sheets.

3. The herein-described paper tablet consisting of a plurality of sheets of paper placed together to form a pad or block of removable sheets, the ends of the sheets at one end of the pad being arranged to offset or overlap each other from the bottom to the top to form a generally beveled end and a binder having a flat adhering surface secured to the generally beveled end of the pad by an adhesive substance which coats the end of the pad and adheres to the end and to a portion of one adjacent face of each sheet and fills the angular spaces between the sheets.

4. The herein-described process of forming a pad or tablet of removable sheets which consists of assembling a plurality of sheets of paper to form a pad or block, "fanning" or offsetting the sheets at one end of the pad, coating the end with adhesive material and finally applying a binder having a flat adhering surface to the offset end by means of said adhesive material.

848,681. SWITCH FOR OVERHEAD RAILWAYS. EDWARD C. NEWTON, Reno, Nev., assignor of one-half to William Pickersgill, Reno, Nev. Filed Feb. 6, 1907. Serial No. 356,069.

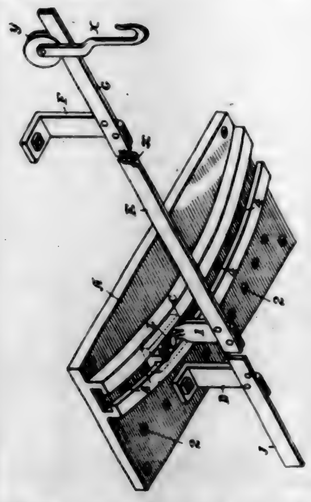

Claim.—1. In a switch device for elevated rails, a switch-plate provided with a series of hangers and with a guide arranged on parallel curves, a second bracket for supporting the main rail, a switch hinged to the main rail, a carrier adapted to slide upon the guide of the switch-plate and to support the outer end of the switch, and a spring-lock carried by the carrier and adapted to engage notches upon the switch-plate, or parts supported thereby, for the purpose set forth.

2. The combination with a switch-plate having a curved guide and a series of hangers, of a carrier movable upon the said guide and adapted to support the end of a switch, and provided with a spring-lock, for the purpose described.

3. The combination of a switch-plate and series of hangers connected thereto in position to support a series of radiating rails, and with a curved guide and series of notches, and a carrier sliding upon said guide and provided with a lock for engaging said notches, and having a bracket adapted to support the end of a pivoted switch.

4. The combination of a switch-plate and series of hangers supported thereby, a curved guide consisting of separated flanged ribs and series of notches in the switch-plate, a carrier sliding upon said guides and provided with a hanger or bracket extending downward between the guides, and a spring-lock carried by the carrier and adapted to notches in the switch-plate.

5. The combination of a switch-plate, pendent hangers and means for connecting the hangers detachably to the plate, a curved guide upon the switch-plate, a slide supported by said guide and provided with a bracket for the attachment of a switch, and a spring-lock provided with a rounded bolt, and carried by the carrier and adapted to engage notches in the switch-plate.

848,682. OIL-CLOTH RACK. PASCAL S. PEASE, North East, Pa. Filed Apr. 26, 1906. Serial No. 313,880.

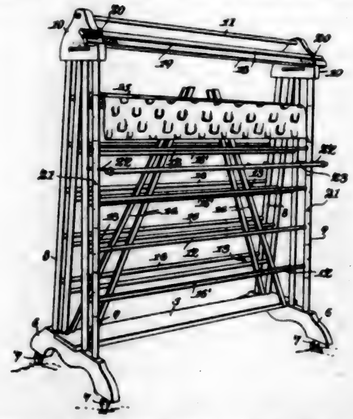

Claim.—1. A rack comprising a frame provided with spaced supports for the reception of the rolls to be displayed, diagonally-disposed bars interposed between the supports and defining an intermediate compartment, an auxiliary support disposed at the top of the rack, bars extending transversely of the frame and forming a recess for the reception of a cutting-tool, and means for clamping the material in engagement with the transverse bars.

2. A rack comprising a frame provided with spaced supports for the reception of the rolls of the material to be displayed, and diagonally-disposed bars interposed between the supports and defining an intermediate compartment.

3. A rack comprising supporting members, a plurality of sets of standards secured to the supporting members spaced transverse rods connecting the standards of each set and forming supports for the rolls of material to be exhibited, and a folding-bar extending laterally from one of the standards of each set.

4. A rack comprising supporting members, a plurality of sets of standards secured to the supporting members spaced transverse rods connecting the standards of each set and disposed one above the other to form supports for the rolls of material to be exhibited, the standards at one side of the rack being provided with a graduated scale, bars extending transversely of the rack at the upper edge thereof and defining an intermediate recess for the reception of a cutting-tool, an auxiliary roll-support arranged at the upper end of the rack, and clips for clamping the free edge of the material into engagement with the spaced bars.

5. A rack comprising supporting members, a plurality of sets of standards secured to the members and connected by laterally-spaced transverse rods forming supports for the rolls of material to be displayed, head-blocks secured to the standards, spaced bars connecting the head-blocks and defining an intermediate recess for the reception of a cutting-tool, diagonally-disposed bars interposed between the standards and forming an intermediate compartment, and means for clamping the material of the adjacent roll in engagement with the spaced bars.

6. A rack comprising spaced supporting members having a bar secured thereto, standards carried by the supporting members and provided with terminal head-blocks, rods connecting the standards and forming supports for the rolls of material to be displayed, a plurality of rods connecting the head-block and forming an auxiliary support, one of said rods being mounted for rotation in the head-block, bars carried by the head-blocks and spaced apart to form a recess for the reception of a cutting-tool, and diagonally-disposed bars secured to the base and converging toward the upper end of the rack, said bars defining an intermediate compartment for the reception of some of the rolls of material.

7. A rack comprising a base, standards secured to the base and connected by transverse members forming supports for the rolls of material to be displayed, head-blocks secured to the standards, bars connecting the head-blocks and spaced apart to form an intermediate recess for the reception of a cutting-tool, said bars being extended laterally beyond the head-blocks to form a support for the cutting-tool when the latter is in inoperative position.

8. A rack comprising a base, uprights secured to the base and connected by transverse members forming supports for the rolls of material to be displayed, horizontally-disposed bars connecting the uprights and spaced apart to form an intermediate recess, finger-pieces slidably mounted on the bars, a cutting-blade interposed between the finger-pieces and having its cutting edge inclined or beveled in opposite directions and disposed within the recess, and a head carried by the cutting-blade and spaced from the adjacent edges of the horizontal bars, said bars being extended laterally beyond the uprights to form supports for the cutting-blade when the latter is in inoperative position.

9. A rack comprising a base, uprights secured to the base and connected by transverse members forming a support for the rolls of material to be displayed, horizontally-disposed bars connecting the uprights and spaced apart to form an intermediate recess, a finger-piece slidably mounted on the horizontal bar, and a vertically-movable cutting-blade mounted for reciprocation in the recess and provided with oppositely-inclined cutting edges.

848,683. DRAINER. GEORGE W. PRINCE, Morrison, Colo. Filed Aug. 8, 1905. Serial No. 273,304.

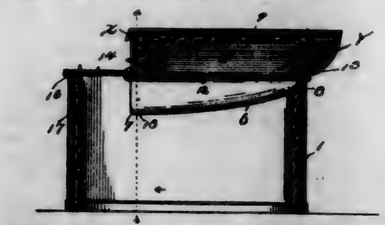

Claim.—1. A drainer of the character described comprising a body portion whose sides converge downwardly and whose rear wall and bottom inclines downwardly with respect to the sides, a drain-opening formed in one end of the body portion, and a lid hingedly connected directly over said opening.

2. A drainer constructed and arranged for engagement with the top of a washboiler, the said drainer having shoulders formed upon its outer surface to prevent displacement of the drainer with respect to the boiler, an opening in one end of the drainer for discharge of water therefrom into the boiler, and a lid hinged to one end of the drainer for engagement over the boiler.

848,684. DOUBLE-SEATED VALVE. JAMES E. PURSER, Windsor, Ontario, Canada, assignor to John Morehead, Detroit, Mich. Filed Mar. 28, 1906. Serial No. 308,570.

Claim.—1. In combination two chambers located the one above the other, the one being a receiving and the other a discharge-chamber, a valve case or cage provided with an interior diaphragm engaged with the walls of said chambers and forming with the wall of the case an inlet and an outlet channel communicable through the valve-case, and a double-seated valve to control said communication, said case passing through the upper wall of the upper chamber.

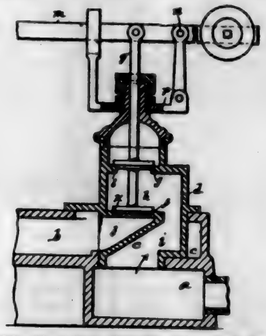

2. In combination two chambers located the one above the other, the one a receiving and the other a discharge chamber and having a diaphragm therebetween, a valve case or cage engaged in said diaphragm and in the upper wall of the upper chamber, and forming an interior chamber within the case, said diaphragm forming within the case an inlet and an outlet passage communicable the one with the other through the interior chamber of the case, and a double-seated valve to control said communication.

3. In combination two chambers the one above the other, the one a receiving-chamber and the other a discharge-chamber, a valve case or cage projecting through the wall of the upper chamber forming an interior chamber communicable with the receiving and the discharge chambers, and provided with double valve-seats and a double-seated valve seated upon said seats to control said communication, said valve provided with a stem projecting through the case, and means to actuate the valve.

848,685. SINGLE-SEATED VALVE. JAMES E. PURSER, Windsor, Ontario, Canada, assignor to John Morehead, Detroit, Mich. Filed Mar. 28, 1906. Serial No. 308,571.

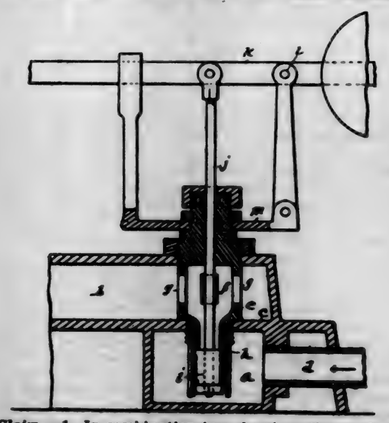

Claim.—1. In combination two chambers the one located above the other and having a diaphragm therebetween, the upper chamber provided with an upper wall, a valve case or cage engaged in said wall and diaphragm and communicable at its lower end into the lower chamber and above said diaphragm into the upper chamber, an inlet-pipe leading into one of said chambers, a discharge-pipe leading from the other chamber, and a single-seated valve seating in said case governing the communication through said valve case or cage between said chambers.

2. In combination two chambers the one located above the other and having a diaphragm therebetween, the upper chamber provided with an upper wall, a valve case or cage engaged in said wall and diaphragm communicable below said diaphragm into the lower chamber and provided with a seat toward the lower end thereof, said valve case or cage forming an interior chamber having ports above said diaphragm opening into the upper chamber, and a valve to seat upon said seat.

3. In combination two chambers the one located above the other and having a diaphragm therebetween, the upper chamber provided with an upper wall, a valve case or cage engaged in said wall and diaphragm communicable below said diaphragm into the lower chamber and provided with a seat toward the lower end thereof, said valve case or cage forming an interior chamber having ports above said diaphragm opening into the upper chamber, a valve to seat upon said seat, said valve opening downward, and means to actuate the valve.

4. In combination two chambers the one located above the other and having a diaphragm therebetween, the upper chamber provided with an upper wall, a valve case or cage engaged in said wall and diaphragm communicable below said diaphragm into the lower chamber and provided with a seat toward the lower end thereof, said valve case or cage forming an interior chamber having ports above said diaphragm opening into the upper chamber, a valve to seat upon said seat, said valve provided with a valve-stem projecting through said case, and means engaged with the valve-stem to actuate the valve.

848,686. MECHANICAL MOVEMENT. FRANCIS H. RICHARDS, Hartford, Conn. Filed Apr. 23, 1900. Renewed June 9, 1903. Serial No. 160,774.

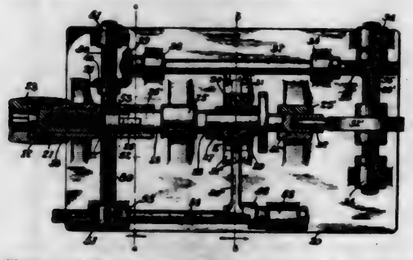

Claim.—1. The combination with a rotatable shaft, of a variable-throw eccentric mounted thereon, and eccentric means for varying the throw of the eccentric according to a predetermined sequence and relation which is independent of any change in the speed of the shaft.

2. The combination with a rotatable shaft and with a variable-throw eccentric mounted thereon, of an eccentric automatic throw-changing mechanism controlling the operation of the eccentric independently of any change in the speed of said shaft.

3. The combination, with a rotatable shaft and with a variable-throw eccentric mounted thereon, of an automatic throw-varying device controlled by said shaft and controlling the operation of the eccentric independently of any change in the speed of said shaft.

4. The combination, with a rotatable shaft and with a variable-throw eccentric mounted thereon, of a cam for periodically varying the throw of the eccentric in a predetermined manner.

5. The combination, with a rotatable shaft and with a variable-throw eccentric mounted thereon, of a cam controlled by said shaft and operative for varying the throw of the eccentric.

6. The combination, with a rotatable shaft and with a variable-throw eccentric mounted thereon, of an eccentric-strap, one of said eccentric members being reciprocable relatively to the other, and means controlled by the shaft for operating said reciprocable member of the eccentric according to a predetermined sequence and relation which is independent of any change in the speed of said shaft.

7. The combination, with a rotatable shaft and with an eccentric mounted thereon and reciprocable through its strap, of an eccentric-strap, and means controlled by the shaft for reciprocating said eccentric according to a predetermined sequence and relation which is independent of any change in the speed of said shaft.

8. The combination, with a rotatable shaft mounted for reciprocation and with an eccentric carried thereon and reciprocable through its strap, of an eccentric-strap, and means controlled by the rotation of the shaft for reciprocating said shaft and the eccentric in a predetermined timing.

9. The combination, with a rotatable shaft mounted for reciprocation, and with an eccentric mounted thereon for longitudinal movement through its strap, of an eccentric-strap; a cam controlled by the rotation of the shaft for reciprocating said shaft and eccentric in one direction; and means for returning said shaft and eccentric to their normal longitudinal positions.

10. The combination, with a driving member and with a reciprocatory shaft rotatable in unison therewith, of an eccentric mounted on said shaft and reciprocable through its strap; an eccentric-strap; and means operable by the driving member for reciprocating said shaft.

11. The combination, with a driving member and a driven member, of a variable-throw eccentric controlled by the driving member and operative for imparting a variable movement to said driven member having a predetermined sequence and relation which is independent of any change in the speed of the driving member.

12. The combination, with a driving member and an oscillatory driven member, of a variable-throw eccentric controlled by the driving member and operative for imparting a variable rocking movement to said driven member having a predetermined sequence and relation which is independent of any change in the speed of the driving member.

13. The combination, with a driving member and a driven member, of a variable-throw eccentric controlled by said driving member and operative for imparting a variable movement to the driven member, and automatically-operative means for periodically changing the throw of the eccentric independent of any change of the speed in the driving member.

14. The combination, with a driving member and a driven member, of a variable-throw eccentric controlled by the driving member and operative for imparting a variable movement to said driven member, and mechanism controlled by said driving member for varying the throw of said eccentric independent of any change of the speed in the driving member.

15. The combination, with a driving member and a driven member, of a variable-throw eccentric mounted on the driving member and operative for imparting a variable movement to said driven member, and means controlled by said driving member for varying the throw of the eccentric independent of any change of the speed in the driving member.

16. The combination, with a driving member and with a rotatable shaft operated thereby and mounted for reciprocation, of a driven member; a variable-throw eccentric mounted on said shaft and reciprocable therewith through its strap and operative for imparting a variable movement to the driven member; an eccentric-strap; means for guiding said strap; and means controlled by the driving member for reciprocating said shaft and periodically changing the throw of the eccentric.

17. The combination, with a shaft, of an eccentric and an eccentric-strap, the former of which is mounted on, and has its working face oblique to the axis of, the shaft, one of said eccentric members being reciprocable relatively to the other; and an independently-movable bearing member interposed between the eccentric and strap and held against longitudinal movement in said strap.

18. The combination, with a shaft, of an eccentric and an eccentric-strap, the former of which is mounted on, and has its working face oblique to the axis of, the shaft, one of said eccentric members being reciprocable, relatively to the other; and an independently-movable bearing member having a bore to fit the working face of the eccentric and having a spherical bearing-face coöperating with the inner bearing-face of the eccentric-strap.

19. The combination, with a shaft and with an eccentric mounted thereon and having its working face oblique to the axis of a shaft, both of said members being mounted for reciprocation through the strap, of an eccentric-strap; a bearing member having a bore to fit the working face of the eccentric and having a spherical bearing-face co-operating with the inner face of the strap; and means for guiding the strap and holding the same against lateral displacement.

20. The combination with a rotating shaft, of means for deriving a to-and-fro movement therefrom, and means operative thereon for varying such movement in a predetermined sequence and relation, which is independent of any change in the speed of the shaft.

21. The combination with a rotating shaft, of means for deriving a variable to-and-fro movement therefrom, and means for varying such movement in a predetermined sequence and relation independent of any change in the speed of the shaft.

22. The combination with a rotatable shaft, of means for deriving a variable to-and-fro movement therefrom, and means operative thereon independent of any change in the speed of the shaft for controlling such movement.

23. The combination with a rotatable shaft, of means for automatically deriving a to-and-fro movement therefrom, and means for variably controlling such movement in a predetermined sequence and relation.

24. The combination with a rotating shaft, of means for automatically deriving a variable to-and-fro movement therefrom, and means for automatically varying said movement in a predetermined sequence and relation.

25. The combination with a rotative shaft, of an element connected with the shaft for imparting a to-and-fro movement from the same, and automatic means for shifting the said element in the direction of the shaft-axis.

26. The combination with a rotating shaft, of an element connected with the shaft for imparting a to-and-fro movement from the same, and means driven from the shaft for shifting the said element in the direction of the shaft-axis.

27. The combination with a rotating shaft, of an element connected with the shaft for imparting a to-and-fro movement from the same, and a cam for shifting the said element in the direction of the shaft-axis.

28. The combination with a shaft, of a variable-throw driver, a shaft for the driver rotating in unison with said former shaft and movable axially thereof, a movement-transmitter for the driver, a ball-and-socket connection between said driver and its movement-transmitter, and means for reciprocating the driver and driver-shaft axially of the latter.

29. The combination with a shaft, of a variable-throw driver, a shaft for the driver rotating in unison with said former shaft and movable axially thereof, a movement-transmitter for the driver, a ball-and-socket connection between said driver and its movement-transmitter, and a cam and spring for reciprocating the driver and driver-shaft axially of the latter.

30. The combination with a shaft, of a variable-throw driver, a shaft for the driver rotating in unison with said former shaft and movable axially thereof, a movement-transmitter for the driver, a ball-and-socket connection between said driver and its movement-transmitter, and a cam driven from the driven shaft and a spring for reciprocating the driver and driver-shaft axially of the latter.

31. The combination with a shaft provided with an axially-extending socket, of a variable-throw driver, a shaft for the driver rotating in unison with said former shaft and movable axially thereof in said socket, a movement-transmitter for the driver, a ball-and-socket connection between the driver and its movement-transmitter, and a cam and a spring in said socket for reciprocating the driver and the driver-shaft axially of the latter.

32. The combination with a shaft provided with an axially-extending socket of a variable-throw driver, a shaft for the driver rotating in unison with said former shaft in said socket, a movement-transmitter for the driver, and movable axially thereof, a ball-and-socket connection between the driver and its movement-transmitter, a cam and a spring in said socket for reciprocating the driver and the driver-shaft axially of the latter, and gearing actuated from the driven shaft for rotating the cam.

33. The combination with a shaft provided with an axially-extending socket, of a variable-throw driver, a shaft for the driver rotating in unison with said former shaft and movable axially thereof in said socket, a movement-transmitter for the driver, a ball-and-socket connection between the driver and its movement-transmitter, a cam and a spring for reciprocating the driver and the driver-shaft axially of the latter, a pin extending from said driver-shaft and contacting with said cam, and gearing actuated from the driven shaft for rotating the cam.

848,687. PHONOGRAPH. CORNEIL RIDDERHOF, Grand Rapids, Mich., assignor to Multi-Phonograph Company, Winona, Minn. Filed Sept. 27, 1905. Serial No. 280,294.

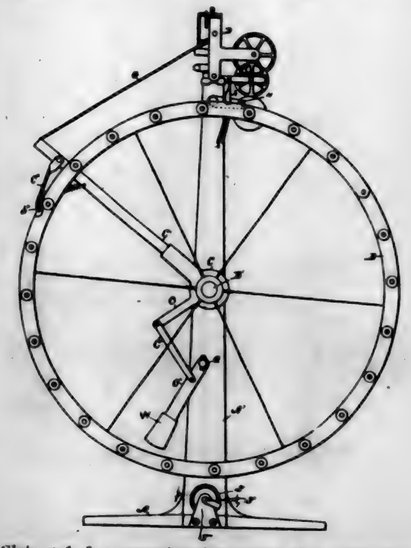

Claim.—1. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a locking-dog for said magazine-wheel; a motor; a screw driving-shaft; a carriage; a rock-shaft on said carriage; connections for said rock-shaft to said motor for stopping it; a driving-arm E on said rock-shaft; a shaft-engaging blade E′ secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F‴ on said driving-shaft, having an adjustable trip-pin for said arm *e*; an arm *e*′ on said rock-shaft for throwing it to its forward position; an arm F′ on said screw-shaft, having a laterally-projecting trip-pin for said arm *e*′ thereon; connections for said rock-shaft to said locking-dog for said magazine-wheel; a pivoted lever having a pawl thereon for actuating said magazine-wheel; connections for said lever to said carriage; a weight; a pivoted arm by which said weight is carried; and a connecting-link for said weight-carrying arm to the short arm of said lever, for the purposes specified.

2. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a locking-dog for said magazine-wheel; a motor; a screw driving-shaft; a carriage; a rock-shaft on said carriage; connections for said rock-shaft to said motor for stopping it; a driving-arm E on said rock-shaft; a shaft-engaging blade E′ secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F‴ on said driving-shaft, having a trip-pin for said arm *e*; an arm *e*′ on said rock-shaft for throwing it to its forward position; an arm F′ on said screw-shaft, having a laterally-projecting trip-pin for said arm *e*′ thereon; connections for said rock-shaft to said locking-dog for said magazine-wheel; a pivoted lever having a pawl thereon for actuating said magazine-wheel; connections for said lever to said carriage; a weight; a pivoted arm by which said weight is carried; and a connecting-link for said weight-carrying arm to the short arm of said lever, for the purpose specified.

3. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a motor; a screw driving-shaft; a carriage; a rock-shaft on said carriage; connections for said rock-shaft to said motor for stopping it; a driving-arm E on said rock-shaft; a shaft-engaging blade E′ secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F‴ on said driving-shaft, having an adjustable trip-pin for said arm *e*; an arm *e*′ on said rock-shaft for throwing it to its forward position; an arm F′ on said screw-shaft, having a laterally-projecting trip-pin for said arm *e*′ thereon; a pivoted lever having a pawl thereon for actuating said magazine-wheel; connections for said lever to said carriage; a weight; a pivoted arm by which said weight is carried; and a connecting-link for said weight-carrying arm to the short arm of said lever, for the purpose specified.

4. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a motor; a screw driving-shaft; a carriage; a rock-shaft on said carriage; connections for said rock-shaft to said motor for stopping it; a driving-arm E on said rock-shaft; a shaft-engaging blade E′ secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F‴ on said driving-shaft, having a trip-pin for said arm *e*; an arm *e*′ on said rock-shaft for throwing it to its forward position; an arm F′ on said screw-shaft, having a laterally-projecting trip-pin for said arm *e*′ thereon; a pivoted lever having a pawl thereon for actuating said magazine-wheel; connections for said lever to said carriage; a weight; a pivoted arm by which said weight is carried; and a connecting-link for said weight-carrying arm to the short arm of said lever, for the purpose specified.

5. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a locking-dog for said magazine-wheel; a screw driving-shaft; a carriage; a rock-shaft on said carriage; a driving-arm E on said rock-shaft; a shaft-engaging blade E′ secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F‴ on said driving-shaft, having an adjustable trip-pin for said arm *e*; an arm *e*′ on said rock-shaft for throwing it to its forward position; an arm F′ on said screw-shaft, having a laterally-projecting trip-pin for said arm *e*′ thereon; connections for said rock-shaft to said locking-dog for said magazine-wheel; a pivoted lever having a pawl thereon for actuating said magazine-wheel; connections for said lever to said carriage; a weight; a pivoted arm by which said weight is carried; and a connecting-link for said weight-carrying arm to the short arm of said lever, for the purpose specified.

6. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a locking-dog for said magazine-wheel; a screw driving-shaft; a carriage; a rock-shaft on said carriage; a driving-arm E on said rock-shaft; a shaft-engaging blade E′ secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F‴ on said driving-shaft, having a trip-pin for said arm *e*; an arm *e*′ on said rock-shaft for throwing it to its forward position; an arm F′ on said screw-shaft, having a laterally-projecting trip-pin for said arm *e*′ thereon; connections for said rock-shaft to said locking-dog for said magazine-wheel; a pivoted lever having a pawl thereon for actuating said magazine-wheel; connections for said lever to said carriage; a weight; a pivoted arm by which said weight is carried; and a connecting-link for said weight-carrying arm to the short arm of said lever, for the purpose specified.

7. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a screw driving-shaft; a carriage; a rock-shaft on said carriage; a driving-arm E on said rock-shaft; a shaft-engaging blade E′ secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F‴ on said driving-shaft, having an adjustable trip-pin for said arm *e*; an arm *e*′ on said rock-shaft for throwing it to its forward position; an arm F′ on said screw-shaft, having a laterally-projecting trip-pin for said arm *e*′ thereon; a pivoted lever having a pawl thereon for actuating said magazine-wheel; connections for said lever to said carriage; a weight; a pivoted arm by which said weight is carried; and a connecting-link for said weight-carrying arm to the short arm of said lever, for the purpose specified.

8. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a screw driving-shaft; a carriage; a rock-shaft on said carriage; a driving-arm E on said rock-shaft; a shaft-engaging blade E′ secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F‴ on said driving-shaft, having a trip-pin for said arm *e*; an arm *e*′ on said rock-shaft for throwing it to its forward position; an arm F′ on said screw-shaft, having a laterally-projecting trip-pin for said arm *e*′ thereon; a pivoted lever having a pawl thereon for actuating said magazine-wheel; connections for said lever to said carriage; a weight; a pivoted arm by which said weight is carried; and a connecting-link for said weight-carrying arm to the short arm of said lever, for the purpose specified.

9. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a locking-dog for said magazine-wheel; a motor; a screw driving-shaft; a carriage; a rock-shaft on said carriage; connections for said rock-shaft to said motor for stopping it; a driving-arm E on said rock-shaft; a shaft-engaging blade E′ secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F‴ on said driving-shaft, having an adjustable trip-pin for said arm *e*, said pin having a retaining-plate for said arm thereon; an arm *e*′ on said rock-shaft for throwing it to its forward position; an arm F′ on said screw-shaft, having a laterally-projecting trip-pin for said arm *e*′ thereon; connections for said rock-shaft to said locking-dog for said magazine-wheel; means for actuating said magazine-wheel; and connections for said wheel-actuating means to said carriage, for the purpose specified.

10. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a locking-dog for said magazine-wheel; a motor; a screw driving-shaft; a carriage; a rock-shaft on said carriage; connections for said rock-shaft to said motor for stopping it; a driving-arm E on said rock-shaft; a shaft-engaging blade E′ secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F‴ on said driving-shaft, having a trip-pin for said arm *e*; an arm *e*′ on said rock-shaft for throwing it to its forward position; an arm F′ on said screw-shaft, having a laterally-projecting trip-pin for said arm *e*′ thereon; connections for said rock-shaft to said locking-dog for said magazine-wheel; means for actuating said magazine-wheel; and connections for said wheel-actuating means to said carriage, for the purpose specified.

11. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a motor; a screw driving-shaft; a carriage; a rock-shaft on said carriage; connections for said rock-shaft to said motor for stopping it; a driving-arm E on said rock-shaft; a shaft-engaging blade E' secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F''' on said driving-shaft, having an adjustable trip-pin for said arm *e*, said pin having a retaining-plate for said arm thereon; an arm *e'* on said rock-shaft for throwing it to its forward position; an arm F' on said screw-shaft, having a laterally-projecting trip-pin for said arm *e'* thereon; means for actuating said magazine-wheel; and connections for said wheel-actuating means to said carriage, for the purpose specified.

12. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a motor; a screw driving-shaft; a carriage; a rock-shaft on said carriage; connections for said rock-shaft to said motor for stopping it; a driving-arm E on said rock-shaft; a shaft-engaging blade E' secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F''' on said driving-shaft, having a trip-pin for said arm *e*; said trip-pin being adapted to engage said arm to retain the carriage until the starting of the motor; an arm *e'* on said rock-shaft for throwing it to its forward position; an arm F' on said screw-shaft, having a laterally-projecting trip-pin for said arm *e'* thereon; means for actuating said magazine-wheel; and connections for said wheel-actuating means to said carriage, for the purpose specified.

13. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a locking-dog for said magazine-wheel; a screw driving-shaft; a carriage; a rock-shaft on said carriage; a driving-arm E on said rock-shaft; a shaft-engaging blade E' secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F''' on said driving-shaft, having an adjustable trip-pin for said arm *e*, said pin having a retaining-plate for said arm thereon; an arm *e'* on said rock-shaft for throwing it to its forward position; an arm F' on said screw-shaft, having a laterally-projecting trip-pin for said arm *e'* thereon; connections for said rock-shaft to said locking-dog for said magazine-wheel; means for actuating said magazine-wheel; and connections for said wheel-actuating means to said carriage, for the purpose specified.

14. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a locking-dog for said magazine-wheel; a screw driving-shaft; a carriage; a rock-shaft on said carriage; a driving-arm E on said rock-shaft; a shaft-engaging blade E' secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F''' on said driving-shaft, having a trip-pin for said arm *e*; said trip-pin being adapted to engage said arm to retain said carriage; an arm *e'* on said rock-shaft for throwing it to its forward position; an arm F' on said screw-shaft, having a laterally-projecting trip-pin for said arm *e'* thereon; means for actuating said magazine-wheel; and connections for said wheel-actuating means to said carriage, for the purpose specified.

15. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a screw driving-shaft; a carriage; a rock-shaft on said carriage; a driving-arm E on said rock-shaft; a shaft-engaging blade E' secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F''' on said driving-shaft, having an adjustable trip-pin for said arm *e*, said pin having a retaining-plate for said arm thereon; an arm *e'* on said rock-shaft for throwing it to its forward position; an arm F' on said screw-shaft, having a laterally-projecting trip-pin for said arm *e'* thereon; means for actuating said magazine-wheel; and connections for said wheel-actuating means to said carriage, for the purpose specified.

16. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a screw driving-shaft; a carriage; a rock-shaft on said carriage; a driving-arm E on said rock-shaft; a shaft-engaging blade E' secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm F''' on said driving-shaft, having a trip-pin for said arm *e*, said trip-pin being adapted to engage said arm to retain the carriage until the starting of the motor; an arm *e'* on said rock-shaft for throwing it to its forward position; an arm F' on said screw-shaft, having a laterally-projecting trip-pin for said arm *e'* thereon; means for actuating said magazine-wheel; and connections for said wheel-actuating means to said carriage, for the purpose specified.

17. In a phonograph, the combination of a frame; a screw driving-shaft; a carriage; a rock-shaft on said carriage; a driving-arm on said rock-shaft; a shaft-engaging blade adjustably secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm on said driving-shaft, having an adjustable trip-pin for said arm *e*, said pin having a retaining-plate for said arm thereon; and means for throwing said rock-shaft forwardly when said carriage is returned to its initial position, for the purpose specified.

18. In a phonograph, the combination of a frame; a screw driving-shaft; a carriage; a rock-shaft on said carriage; a driving-arm on said rock-shaft; a shaft-engaging blade secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm on said driving-shaft, having a trip-pin for said arm *e*, said pin having a retaining-plate for said arm thereon; and means for throwing said rock-shaft forwardly when said carriage is returned to its initial position, for the purpose specified.

19. In a phonograph, the combination of a frame; a screw driving-shaft; a carriage; a rock-shaft on said carriage; a driving-arm on said rock-shaft; a shaft-engaging blade adjustably secured to said driving-arm; an arm *e* on said rock-shaft for throwing it to its rearward position when said carriage reaches the end of its movement; an arm on said driving-shaft, having an adjustable trip-pin for said arm *e*; and means for throwing said rock-shaft forwardly when said carriage is returned to its initial position, for the purpose specified.

20. In a magazine-phonograph, the combination of a frame; a screw driving-shaft; a carriage; a rock-shaft on said carriage; a driving-arm on said rock-shaft; a shaft-engaging blade adjustably secured to said driving-arm; an arm on said rock-shaft for throwing it to its forward position; and an arm on said screw-shaft, having a laterally-projecting trip-pin for said arm thereon, for the purpose specified.

21. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a locking-dog for said magazine-wheel; a motor; a screw driving-shaft; a carriage; a rock-shaft on said carriage; an arm on said rock-shaft arranged to engage said driving-shaft; connections for said rock-shaft to said motor for stopping it; means for actuating said rock-shaft at the ends of the movement of the said carriage; connections for said rock-shaft to said locking-dog for said magazine-wheel; a pivoted lever having a pawl thereon for actuating said magazine; connections from said lever to said carriage; a weight; a pivoted arm by which said weight is carried; and a connecting-link for said weight-carrying arm to the short arm of said lever, for the purpose specified.

22. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a carriage; driving means therefor; a pivoted lever having a pawl thereon for actuating said magazine; connections from said lever to said carriage; a weight; a pivoted arm by which said weight is carried; and a connecting-link for said weight-carrying arm to the short arm of said lever, for the purpose specified.

23. In a magazine-phonograph, the combination of a frame; a magazine-wheel; driving means therefor; a pivoted lever having a pawl thereon for actuating said magazine; a weight; a pivoted arm by which said weight is carried; and a connecting-link for said weight-carrying arm to the short arm of said lever, for the purpose specified.

24. In a magazine-phonograph, the combination of a magazine-wheel; a pivotally-supported shaft; a driving-wheel for said magazine-wheel on said shaft; a pivotally-supported link on said shaft; a bowed spring arranged to bear against said wheel; a sleeve on said shaft; a nut clamped against said sleeve; and friction-washers arranged between said nut and link and said link and spring, for the purpose specified.

25. In a magazine-phonograph, the combination of a magazine-wheel; a pivotally-supported shaft; a driving-wheel for said magazine-wheel on said shaft; a pivotally-supported link on said shaft; a bowed spring arranged to bear against said wheel; and friction-washers arranged between said nut and link and said link and spring, for the purpose specified.

26. In a magazine-phonograph, the combination of a magazine-wheel; a pivotally-supported shaft; a driving-wheel for said magazine-wheel on said shaft; a pivotally-supported link on said shaft; a bowed spring arranged to bear against said wheel; a sleeve on said shaft; and a nut clamped against said sleeve, for the purpose specified.

27. In a magazine-phonograph, the combination of a magazine-wheel; a pivotally-supported shaft; a driving-wheel for said magazine-wheel on said shaft; a pivotally-supported link on said shaft; and a bowed spring arranged to bear against said wheel, for the purpose specified.

28. In a magazine-phonograph, the combination of a magazine-wheel; a pivotally-supported shaft; a driving-wheel for said magazine-wheel on said shaft; a pivotally-supported link on said shaft; a bowed spring arranged between said wheel and link; a sleeve on said shaft; and a nut clamped against said sleeve for securing said wheel and link in position; for the purpose specified.

29. In a magazine-phonograph, the combination of a magazine-wheel; a pivotally-supported shaft; a driving-wheel for said magazine-wheel on said shaft; a pivotally-supported link on said shaft; and a bowed spring arranged between said wheel and link, for the purpose specified.

848,688. DIES. PETER RIESECK, Allegheny, Pa. Filed Oct. 19, 1905. Serial No. 283,497.

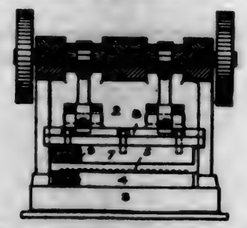

Claim.—The combination of a male die having one or more pyramidal projections thereon with sharp apexes, and a female die having coinciding recesses pyramidal in shape and having rounded apexes.

848,689. STOVEPIPE-DRUM. JOHN J. ROBERTS, Loyal, Wis. Filed June 1, 1905. Renewed Sept. 27, 1906. Serial No. 336,496.

Claim.—A heating-drum comprising a casing, a plurality of cylindrical chambers disposed horizontally within the casing and extending alternately at right angles to each other, pipes connecting the chambers, pipes extending from the uppermost and lowermost chambers through the corresponding ends of the casing, a plate disposed longitudinally and centrally of each of the chambers and cut away between its corners, a smoke-inlet pipe extending through the lower end of the casing to the height of the uppermost chamber, a smoke-outlet pipe extending through the top of the casing to the height of the lower side of the lowermost

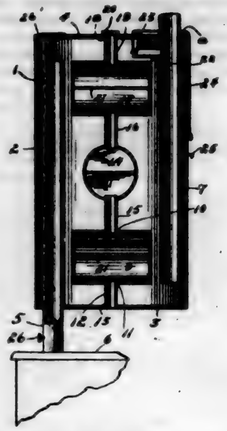

chamber, and a damper in the upper portion of the last-named pipe above the chambers.

848,690. WOOD COVERING OR FACING. HERMANN ROMÜNDER, Milwaukee, Wis. Filed May 27, 1904. Serial No. 210,126.

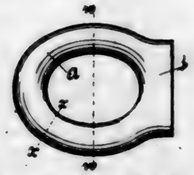

Claim.—1. A rim for basins and the like comprising a plurality of annular plates of veneer united by cement, and caused by heat and pressure to assume a surface convex on the upper side by the downpressing of the edges thereof.

2. A rim for basins and the like comprising a plurality of annular fibrous plates united by a waterproof cement, and caused by heat and pressure to assume a convex upper surface and to become impregnated throughout with said waterproof cement.

3. An improved closet-seat comprising a plurality of annular fibrous plates united by cement, the edges whereof are pressed downwardly under heat and pressure whereby the whole assumes a convex upper surface.

4. An improved closet-seat comprising a plurality of annular fibrous plates united by a waterproof cement which is caused to thoroughly impregnate said plates from the inner faces thereof by heat and pressure whereby it is rendered impregnable to moisture from the outside, and bent to a convex upper surface.

5. A rim for basins and the like comprising three annular plates of wood veneer having their grains crossed, the whole combined, united and thoroughly impregnated with a waterproof cementing compound whereby they are rendered impregnable to moisture from the outer surface, and the whole caused by heat and pressure to assume a convex upper surface.

848,691. COMBINED CAN AND JAR OPENER. MATTI SARVALLA and PETER J. ZEIEN, Dekalb, Ill. Filed Apr. 5, 1906. Serial No. 310,171.

Claim.—A can-opener comprising a handle provided with a threaded stem; a lower plate rigidly secured to said stem and including a flat body portion provided with a

slot extending longitudinally thereof, the upper face of said plate being serrated adjacent said slot; a traveling collar carried by said stem and provided with a shoulder extending through said slot; an upper plate including a flat body portion movable directly along the upper face of said lower plate in contact therewith and connected with the shoulder on said traveling collar, said upper plate be-

ing provided with a slot disposed directly above the slot in said lower plate; a dog pivotally secured to said upper plate within the slot therein, said dog having a serrated under face adapted to engage the serrated face of said lower plate, to hold said upper plate in adjusted position; a centering-beak carried by said upper plate; and a cutting-blade carried by the lower plate.

848,692. HOOP-MAKING MACHINE. LORENZO D. SCOTT, East Machias, Me. Filed Feb. 14, 1906. Serial No. 301,094.

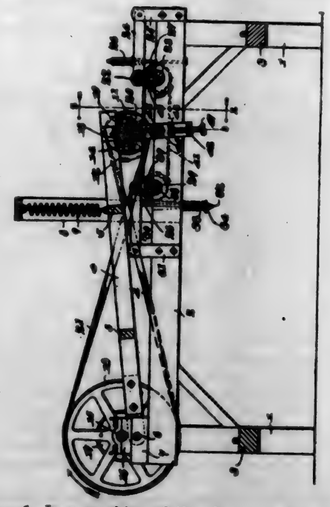

Claim.—1. In a machine of the character described, the combination with a stationary frame, of a planer-frame mounted thereon, a spring for normally limiting the movement of the planer-frame in one direction and capable of acting as a buffer to limit the movement of the frame in the other direction, a rotary planer carried by the planer-frame, and a gaging-support carried by the planer-frame.

2. In a machine of the character described, the combination with a main frame, of front and rear feed-rolls, a rotary planer mounted between the feed-rolls, a spring for normally limiting the movement of the planer in one direction and capable of acting as a buffer to limit the movement of the planer in the other direction, and a gaging-support movable with the planer.

3. In a machine of the character described, the combination with a main frame, of front and rear feed-rolls, an upwardly and forwardly inclined spring-supported swinging planer-frame mounted upon the main frame and overhanging the space between the feed-rolls, a rotary planer carried by the planer-frame located between the feed-rolls, and a gaging-support carried by the planer-frame adjustable with respect to the planer.

4. In a machine of the character described, the combination with a main frame, of a drive-shaft, an inclined vertically-movable spring-supported planer-frame, a rotary planer carried by the frame and driven from the drive-shaft, a gaging-support carried by the planer-frame, and feed-rolls mounted upon the main frame in front and rear of the planer and driven from the drive-shaft.

5. In a machine of the character described, the combination with a main frame, of a vertically-movable swinging planer-frame mounted thereon, a support rising from the main frame above the planer-frame, a spring-hanger carried by the support and connected to the planer-frame, said spring-hanger normally limiting the downward movement of the planer-frame and adapted to act as a buffer to limit the upward movement thereof, a rotary planer carried by the planer-frame, and a gaging-support carried by the planer-frame.

6. In a machine of the character described, the combination with a main frame, of a rotary planer, a slotted hanger, a roller-bracket, a gage-roller having its journal piercing the bracket and slidably engaging the slotted portion of the hanger, and a set-screw carried by the hanger and engaging the bracket to adjust the latter.

7. In a machine of the character described, the combination with a stationary frame made up of spaced side bars having front and rear feed-rolls extending between the side bars at one end of the frame, the space between the side bars in rear of the feed-rolls being open, and an elastically-yieldable rotary planer mounted between the front and rear feed-rolls.

8. In a machine of the character described, the combination with a frame including spaced side bars having front and rear feed-rolls at one end thereof, the space between the bars in rear of the feed-rolls being open, of a drive-shaft mounted across the rear end of the frame, a swinging planer-frame pivotally supported upon the main frame adjacent the drive-shaft and overhanging the space between the front and rear feed-rolls, a rotary planer carried by the planer-frame between the feed-rolls, a support rising from the main frame, a spring suspending the planer-frame from the support, the feed-rolls and the rotary planer being driven from the drive-shaft, a hanger depending from the planer-frame and located between the feed-rolls, a roller-bracket adjustably carried by the hanger, and a gage-roll carried by the bracket.

848,693. TOOTHPICK-HOLDER. CHARLES H. SHARP, Lockport, N. Y. Filed June 14, 1906. Serial No. 321,671.

Claim.—1. A holder for quill toothpicks comprising a casing having an opening at one end, a plug fitted in said casing, and provided with an enlarged outer end, a sliding member surrounding the plug and fitted within the holder, said sliding member having a stud extending through the slot in the holder for clamping the toothpick in position, and a cap or cover fitted to the holder and adapted to be placed upon either end thereof, substantially as described.

2. A holder for quill toothpicks comprising a casing, open at one end and closed at the other, said casing having a longitudinal slot formed therein and an enlargement upon said casing, a plug or core within said casing, said plug having an enlarged outer end, a sliding tube surrounding the plug within the casing and having a stud projecting through the longitudinal slot in the casing, said sliding tube designed to clamp a toothpick between the enlarged head of the plug and the inner wall of the casing, and a cap fitted to the ends of the casing, substantially as described.

848,694. WATER-MOTOR. LEVI M. SHAW, Chicago, Ill. Filed May 8, 1905. Serial No. 259,266.

Claim.—1. In a water-motor, the combination of a power-transmitting shaft, a rocking longitudinal support carried by and extending fore and aft of the shaft, and a motor mounted on the rocking support forward of the power-transmitting shaft, said motor consisting of a plurality of blades, longitudinally-traveling chain-carriers for the blades, a forward supporting-shaft mounted on the forward end of the rocking support, a supporting-shaft intermediate of the power-transmitting shaft and the front supporting-shaft, and sprocket-wheels for the chains on the shafts, substantially as described.

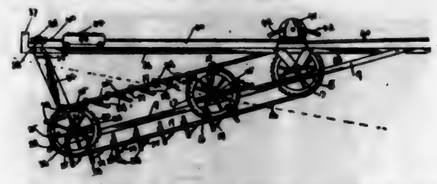

2. In a water-motor, the combination of a floating foundation, a power-transmitting shaft mounted on the floating foundation, a rocking longitudinal support carried by and extending fore and aft of the shaft, and a motor mounted on the rocking support forward of the power-transmitting shaft, said motor consisting of a plurality of blades, longitudinally-traveling chain-carriers for the blades, a forward supporting-shaft mounted on the forward end of the rocking support, a supporting-shaft intermediate of the power-transmitting shaft and the front supporting-shaft, and sprocket-wheels for the chains on the shafts, substantially as described.

3. In a water-motor, the combination of a power-transmitting shaft, a rocking longitudinal support mounted on and extending fore and aft of the power-transmitting shaft, a pair of shafts in advance of the power-transmitting shaft and separated apart and revolubly mounted on the rocking support, a pair of chain sprocket-wheels on each shaft of the pair of shafts, a sprocket-chain for each pair of chain sprocket-wheels and a plurality of paddles carried by the chains, substantially as described.

4. In a water-motor, the combination of a power-transmitting shaft, a rocking longitudinal support mounted on and extending fore and aft of the power-transmitting shaft, a pair of shafts in advance of the power-transmitting shaft and separated apart and revolubly mounted on the rocking support, a pair of chain sprocket-wheels on each shaft of the pair of shafts, a sprocket-chain for each pair of chain sprocket-wheels, each chain having an arm on a plurality of its links, and a plurality of paddles pivotally mounted between the arms of the chain-links, substantially as described.

5. In a water-motor, the combination of a power-transmitting shaft, a rocking longitudinal support mounted on and extending fore and aft of the power-transmitting shaft, a pair of shafts in advance of the power-transmitting shaft and separated apart and revolubly mounted on the rocking support, a pair of chain sprocket-wheels on each shaft of the pair of shafts, a sprocket-chain for each pair of chain sprocket-wheels, each chain having an arm on a plurality of its links, a plurality of paddles pivotally mounted between the arms of the chain-links, and means for adjusting the inclination of each paddle, substantially as described.

6. In a water-motor, the combination of a power-transmitting shaft, a rocking longitudinal support mounted on and extending fore and aft of the power-transmitting shaft, a pair of shafts in advance of the power-transmitting shaft and separated apart and revolubly mounted on the rocking support, a pair of chain sprocket-wheels on each shaft of the pair of shafts, a sprocket-chain for each pair of chain sprocket-wheels, each chain having an arm on a plurality of its links, a plurality of paddles pivotally mounted between the arms of the chain-links, and a shiftable weight traveling on the rocking support for adjusting the dip of the paddles, substantially as described.

7. In a water-motor, a power-transmitting shaft, a rocking support composed of several longitudinal and parallel sections located side by side and each section mounted on and extending fore and aft of the power-transmitting shaft, a pair of shafts in advance of the power-transmitting shaft, both shafts crossing and mounted on the several sections of the support and separated fore and aft one from the other, pairs of chain sprocket-wheels on each shaft, one pair for each section of the support, a sprocket-chain for each pair of chain sprocket-wheels, and a plurality of blades mounted between each pair of sprocket-chains, substantially as described.

8. In a water-motor, a power-transmitting shaft, a rocking support composed of several longitudinal and parallel sections located side by side and each section mounted on and extending fore and aft of the power-transmitting shaft, a pair of shafts in advance of the power-transmitting shaft, both shafts crossing and mounted on the several sections of the support and separated fore and aft one from the other, pairs of chain sprocket-wheels on each shaft, one pair for each section of the support, a sprocket-chain for each pair of chain sprocket-wheels, a plurality of blades mounted between each pair of sprocket-chains, and means for adjusting the inclination of the paddles, substantially as described.

9. In a water-motor, a power-transmitting shaft, a rocking support composed of several longitudinal and parallel sections located side by side and each section mounted on and extending fore and aft of the power-transmitting shaft, a pair of shafts in advance of the power-transmitting shaft, both shafts crossing and mounted on the several sections of the support and separated fore and aft one from the other, pairs of chain sprocket-wheels on each shaft, one pair for each section of the support, a sprocket-chain for each pair of chain sprocket-wheels, a plurality of blades mounted between each pair of sprocket-chains, and a shiftable weight for adjusting the dip of the paddles, substantially as described.

10. In a water-motor, a power-transmitting shaft, a rocking support composed of several longitudinal and parallel sections located side by side and each section mounted on and extending fore and aft of the power-transmitting shaft, a pair of shafts in advance of the power-transmitting shaft, both shafts crossing and mounted on the several sections of the support and separated fore and aft one from the other, pairs of chain sprocket-wheels on each shaft, one pair for each section of the support, a sprocket-chain for each pair of chain sprocket-wheels, a plurality of blades mounted between each pair of sprocket-chains, means for adjusting the inclination of the paddles, and a shiftable weight for adjusting the dip of the paddles, substantially as described.

11. In a water-motor, the combination of a power-transmitting shaft, a rocking longitudinal support carried by and extending fore and aft of the shaft, and a motor mounted on the rocking support forward of the power-transmitting shaft, said motor consisting of a plurality of blades, longitudinally-traveling chain-carriers for the blades, a forward supporting-shaft mounted on the forward end of the rocking support, a supporting-shaft intermediate of the power-transmitting shaft and the front supporting-shaft, sprocket-wheels for the chains on the shafts, and means for adjusting the inclination of the paddles, substantially as described.

12. In a water-motor, the combination of a power-transmitting shaft, a rocking longitudinal support carried by and extending fore and aft of the shaft, and a motor mounted on the rocking support forward of the power-transmitting shaft, said motor consisting of a plurality of blades, longitudinally-traveling chain-carriers for the blades, a forward supporting-shaft mounted on the forward end of the rocking support, a supporting-shaft intermediate of the power-transmitting shaft and the front supporting-shaft, sprocket-wheels for the chains on the shafts, and a shiftable weight for adjusting the dip of the paddles, substantially as described.

13. In a water-motor, the combination of a power-transmitting shaft, a rocking longitudinal support carried by and extending fore and aft of the shaft, and a motor mounted on the rocking support forward of the power-transmitting shaft, said motor consisting of a plurality of blades, longitudinally-traveling chain-carriers for the

blades, a forward supporting-shaft mounted on the forward end of the rocking support, a supporting-shaft intermediate of the power-transmitting shaft and the front supporting-shaft, sprocket-wheels for the chains on the shafts, means for adjusting the inclination of the paddles, and a shiftable weight for adjusting the dip of the paddles, substantially as described.

848,695. SYSTEM OF VENTILATION AND HEATING. ROBERT W. SHAW, London, Ontario, Canada. Filed Aug. 8, 1904. Serial No. 220,026.

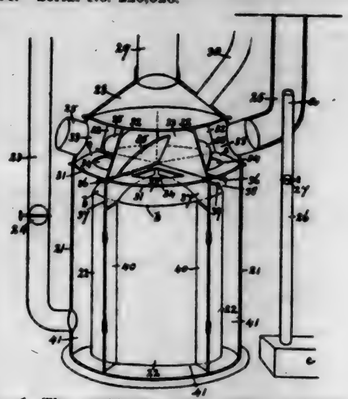

Claim.—1. The combination of a casing, a fire-pot inclosed thereby, a cold-air flue leading into the space between the casing and the fire-pot near the bottom of said space, vertical partitions hinged to the casing and dividing the space between the casing and the fire-pot into a plurality of compartments, a horizontal partition in the casing above the fire-pot and having openings, pivoted dampers for controlling said openings, hinged vertical partitions beneath the horizontal partition, a plurality of vertical partitions above the horizontal partition, a hot-air pipe leading from the chamber in the casing above said horizontal partition, a second hot-air pipe also communicating with the space above the horizontal partition, a fresh-air pipe communicating with said second-named hot-air pipe, and a cold-air flue communicating with the chamber in the casing at the top thereof, substantially as described.

2. The combination of the fire-pot, an inclosing casing therefor, horizontally-disposed spaced partitions in said casing above the fire-pot separating the chamber of the casing into separate compartments, the lower of said partitions having openings, pivoted dampers controlling said openings, vertical partitions hinged to the casing and separating the space between said casing and the fire-pot into compartments, vertical partitions hinged to the lower of said horizontal partitions and extending over the dome of the fire-pot, radially-disposed vertical partitions between the horizontal partitions, hot-air flues communicating with the space between said horizontal partitions, a cold-air flue communicating with the space between the casing and the fire-pot, and a hot-air flue and a cold-air flue communicating with the chamber of the casing above the uppermost horizontal partition thereof, substantially as described.

848,696. SIPHON. WILLIAM S. SHIELDS, Chicago, Ill. Filed June 19, 1906. Serial No. 322,362.

Claim.—1. A time-siphon having a trap, an air-dome in which air is compressed by the rising of liquid within it, said dome having an opening for the escape of air therefrom, and a vent-pipe communicating with the interior of the siphon and with the interior of the dome, said vent-pipe having a trap, the seal of which is forced by the pressure of the air in the siphon upon a reduction of the pressure of the air in the dome, substantially as described.

2. A time-siphon having a trap, an air-dome in which air is compressed by the rising of liquid within it, said dome having an opening for the escape of air and means for regulating the capacity of said opening, and a vent-pipe communicating with the interior of said siphon and with the interior of said dome, said vent-pipe having a trap, the seal of which is forced by the pressure of the air in the siphon upon a reduction of the pressure of the air in the air-dome, substantially as described.

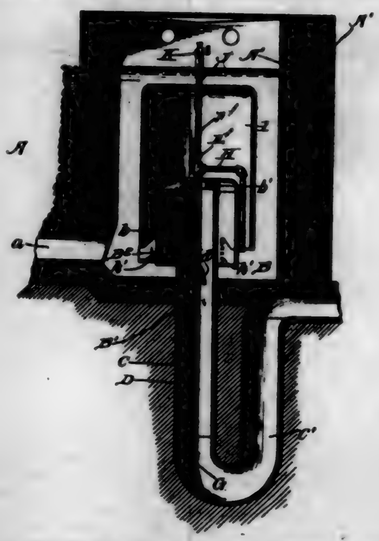

3. A time-siphon having a trap, an air-dome in which air is compressed by the rising of liquid therein, the said dome having an opening for the escape of air therefrom, and a vent-pipe communicating with the interior of said siphon with the interior of said dome, said vent-pipe having a trap and controllable means for adjusting the depth of said trap, substantially as described.

4. The combination, with a receptacle adapted to contain liquid, of a time-siphon, the short leg of which is located in said receptacle, said siphon having a deep seal-trap, an air-dome also located in said receptacle and having an opening for the escape of air, and a vent-pipe having a downtake-leg communicating with the interior of the siphon and an uptake-leg communicating with the interior of the air-dome, said legs being in communication at bottom to form a trap, whereby the pressure of the air in the dome acting upon the liquid in the uptake-leg of the vent-trap will prevent the forcing of said trap by the pressure of the air from the siphon upon the liquid in the downtake-leg of said vent-trap until the pressure of the air within the dome is reduced, substantially as described.

848,697. CONCRETE-BLOCK MACHINE. MANUEL SILVA and ANDREW LUMPP, Springfield, Ill. Filed Aug. 31, 1906. Serial No. 332,847.

Claim.—1. A concrete-building-block machine comprising a base parallel partitions centrally carried by said base, hinged sides carried by the base, end gates hinged to the sides adapted to overlap the ends of the partitions, and vertical transverse partitions arranged between the partitions first mentioned and the sides, a top having cut-out portions, means for locking the end gates in a closed position, and means for locking the top to the sides.

2. A building-block machine, comprising a base, centrally-arranged partitions carried by said base spaced slightly apart, sides hinged to the base, partitions adapted to be fitted between said sides and first-mentioned partitions, end gates hinged to the sides, a rod arranged between the central partitions and threaded adjacent each end, a clamping-plate adapted to fit upon said rod and engage the gate at each end of the mold, and a nut adapted to work upon each end portion of the rod and hold the clamping-plate at said end into engagement with the gates at that end, a top and means for locking the top to the sides.

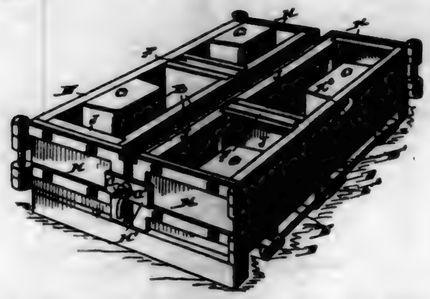

3. A building-block machine, comprising a mold divided into a plurality of compartments, hinged sides swinging outwardly and downwardly forming the outer sides of said compartments, end gates hinged to each end of each of said sides, a clamping-plate adapted to engage simultaneously free marginal portions of two of said gates, and means for locking the said clamping-plates into position.

4. In a device of the kind described comprising a base centrally-arranged vertical partitions thereon, sides hinged to said plates, end gates hinged to the said sides, and bearing against the ends of the said partitions, transverse partitions, removable side plates having a beveled flange extending parallel with their edges, said plates fitting in the mold and a removable top adapted to rest over the sides, end gates and partitions, the said top being cut out as and for the purpose set forth.

5. A mold of the kind described comprising a permanent base, fixed centrally-arranged partitions, said partitions being spaced apart, a rod arranged between and parallel to the said partitions and projecting beyond the ends of the same, the end portions of the rod being threaded, sides hinged to the base, end gates hinged to the sides, each end gate bearing against one of the partitions at its ends, a top, said top being cut out, cores carried by the hinged sides a clamping-plate adapted to slide upon the end portions of the rod, one of said clamping-plates being provided at each end of the mold and each clamping-plate engaging two of the gates, and nuts working upon the rod and holding the clamping-plates against the gates, as and for the purpose set forth.

848,698. GUARD OR EXTENSION FOR BAKING-PANS. MATTIE B. SMITH, London, Ohio. Filed Apr. 26, 1906. Serial No. 313,883.

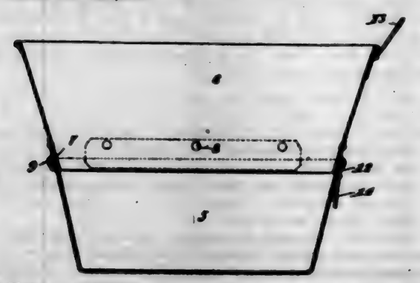

Claim.—A baking-pan comprising a pair of substantially rectangular telescopic receptacles each provided with a terminal reinforcing-bead and operating-handle, the lower receptacle being closed at the bottom and provided with inclined side walls converging toward the bottom of the receptacle and adapted to engage correspondingly-inclined side walls of the upper receptacle when said receptacles are assembled, said upper receptacle being open at the top and bottom and provided at its lower longitudinal and transverse edges with reinforcing-plates extending approximately the entire length and width of the upper receptacle and having their free edges spaced from the adjacent walls of said receptacle to form pockets for the reception of the reinforcing-bead of the lower receptacle, the free edges of the reinforcing-plates terminating short of the lower edge of the receptacle and being bent downwardly and inwardly to form spring locking-lips adapted to bear against the reinforcing-bead of the lower receptacle, thereby to prevent accidental displacement of said receptacles.

848,699. HAT. EDWARD D. SOULÉ, New York, N. Y. Filed Dec. 4, 1906. Serial No. 346,240.

Claim.—1. In a hat of the character described, the combination of a brim portion comprising a band provided with one element of a series of locking devices, a lower fabric ring having flaps provided with members adapted to engage the locking elements on the band, and an upper fabric member having flaps adapted to be held between the parts of said locking devices, substantially as described.

2. In a hat of the character described, the combination of a brim portion comprising a band carrying studs, and superposed layers of fabric secured thereto, the upper layer of fabric being provided with flaps having apertures designed to pass over the studs and the lower layer having flaps provided with female snap members designed to interlock with the studs on the band, substantially as described.

3. A hat of the character described, comprising the combination of a brim portion including an upwardly-projecting band carrying studs, a crown portion composed of an inner stiffening member having a depending band provided with orifices through which certain of the said studs are adapted to project, a fabric covering for said stiffening member, and female locking members in said crown for engaging certain of said studs and interlocking the crown and brim portions, substantially as described.

4. In a hat of the character described, the combination of a brim portion comprising a band having studs and a fabric member provided with flaps designed to be held by said studs, and a crown portion composed of an inner stiffening member having a depending band provided with orifices through which those studs pass which are not engaged by the said flaps, a fabric covering over said stiffening member, and female locking members on the interior of said crown fabric covering for engaging the studs projecting through the orifices in the crown-band, substantially as described.

5. In a hat of the character described, the combination of a brim portion comprising a band having a series of eight studs and a fabric member provided with four pairs of flaps designed to be held by four of said studs, a crown portion composed of an inner stiffening member having a depending band provided with orifices through which the unengaged studs project, a fabric covering over said stiffening member having four female locking members designed to interlock with said unengaged studs, and a resilient flexible wire ring inserted in each of the crown and brim fabrics for distending the same radially, substantially as described.

6. In a hat of the character described, the combination with a band provided with locking members, of a brim portion having flaps designed to interlock with said locking

members, a resilient ring provided in said brim portion for radially distending the fabric thereof, a stiffening member having orifices through which certain of the locking members on the band project, and a covering for said stiffening member having locking members adapted to interlock with the locking members projecting through the orifices in the band.

7. In a hat of the character described, the combination with a band provided with locking members, of a brim portion comprising an upper and lower layer of fabric each of which is provided with flaps, the flaps upon the upper layer lying against the outer circumference of the band and having apertures designed to pass over the locking members thereon and the flaps upon the lower layer being lengthened to pass upwardly against the inner surface of the band and to be turned downwardly and fastened over the flaps upon the upper layer, a resilient ring provided in said brim portion for distending the fabric thereof, and a crown portion having locking members adapted to interlock with certain of the locking members on the band.

8. In a hat of the character described, the combination with a relatively stiff band having a series of locking members thereon, of a brim portion provided with flaps having locking members adapted to engage certain of the locking members on said band, a stiffening member having a part concentric with and adapted to encircle said band and having orifices through which the unengaged locking members on the band project, and a crown portion adapted to envelop the stiffening member and being provided with locking members designed to engage the locking members on the band which project through the orifices in the stiffening member.

848,700. FOUNTAIN-BRUSH. GEORGE R. STANTON, Decatur, Ill. Filed Sept. 7, 1906. Serial No. 333,734.

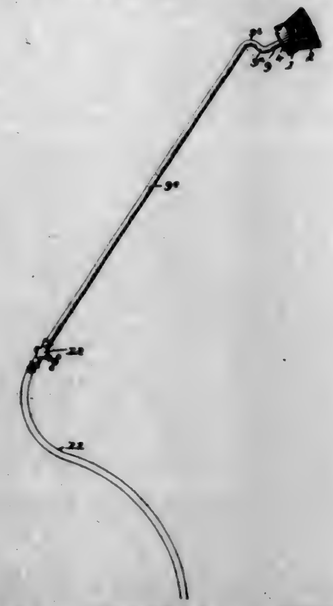

Claim.—1. In a fountain-brush, the combination with the brush-head having a water-passage; of a water-supply, and a tubular handle connecting the supply with the brush-head, and given a compound turn near the latter so that the bristles stand oblique to the line of the handle, as and for the purposes set forth.

2. In a fountain-brush, the combination with the brush-head having a water-passage; of a water-supply, and a tubular handle connecting the supply with the brush-head, and given two turns near the latter for the purpose set forth, the angle of the turn adjacent the brush-head being greater than the angle of the other turn.

3. In a fountain-brush, the combination with the brush-head having an axial water-passage therethrough, and a tube fixed therein and provided with a sprayer; of a hose, a cock, connected therewith, and a tubular handle connecting the cock with said tube in the brush-head, the body of the handle near the brush-head being given first a right-angular turn and then an oblique turn in the reverse direction, for the purpose set forth.

848,701. GAME APPARATUS. THOMAS M. ST. JOHN, New York, N. Y. Filed Dec. 3, 1904. Serial No. 235,298.

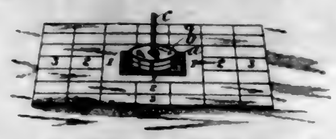

Claim.—A game apparatus comprising a board, the face of which is divided into sections marked with different numbers or values and carries an electrophorous consisting of a suitable non-conductor adapted to be statically charged by friction, and a metal box adapted to rest upon the non-conductor and having a removable cover with a socket in the top, and a spindle-handle of insulating material of such length as to be contained in the box and adapted to be seated in the socket, the apparatus being adapted to be used with light pieces of paper, pith, &c., substantially as and for the purpose described.

848,702. BALLING-HEAD FOR CONDENSER CARDING-ENGINES. WILLIAM STOTT, Rochdale, England. Filed Feb. 6, 1905. Serial No. 244,376.

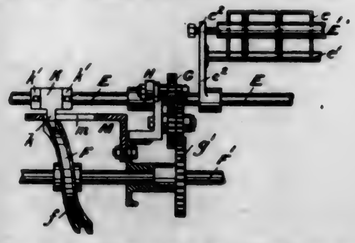

Claim.—In a traverse motion for balling-head for carding-engines the combination with the winding-roller of a traverse-bar and traverse-guides, a cam to operate the traverse-bar, a swinging bracket, a train of gear-wheels mounted thereon, a gear-wheel on the winding-roller gearing with one end of the train, and a gear-wheel on the cam-shaft gearing with the other end of the train to drive the cam direct from the winding-roller substantially as and for the purposes set forth.

848,703. POWER-TRANSMISSION DEVICE. CHARLES A. TAYLOR, Jacksonville, Ill., assignor of twenty-four and three-fourths one-hundredths to Charles F. Tone, and twenty-four and three-fourths one-hundredths to John A. Carpenter, Jacksonville, Ill. Filed Mar. 19, 1906. Serial No. 306,884.

Claim.—1. A power-transmission device comprising a reciprocatory element having oppositely-extending spiral threads thereon, a rotary element, clutches or nuts engaged with the screw-threads upon said reciprocatory element, spring-actuated pawls carried by said clutches or nuts, and annular rows of ratchet-teeth upon said rotary element to co-act with said pawls, substantially as described.

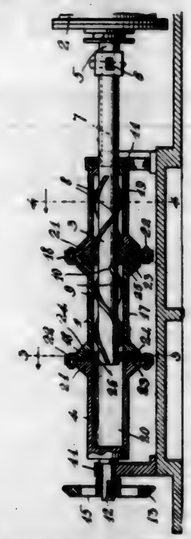

2. A power-transmission device comprising a sliding rod having oppositely-extending spiral screw-threads thereon, a rotary element or cylinder consisting of a central section having recessed ends and end sections secured upon the ends of said central section, clutches or nuts engaged with the screw-threads upon said rod and disposed in the recessed ends of said central section of the cylinder, ratchet-teeth in said recessed ends of the central section of the cylinder, and spring-actuated pawls carried by said clutches or nuts and engaged with said ratchet-teeth, substantially as described.

3. A power-transmission device comprising a suitable support having bearings and guides, a reciprocating rod, a head on said rod to slide in said guides and prevent said rod from turning, oppositely-extending spiral screw-threads on said rod, a rotary element mounted in said bearings, and alternately-acting clutch devices coöperating with respective screw-threads of said rod to actuate said rotary element, substantially as described.

848,704. LIQUID-METER. WILLIAM THOMSON, Largs, Scotland, and RALPH BLAKISTON, WILLIAM HOPE, and GEORGE B. RICHARDS, Liverpool, England, assignors to the Palatine Engineering Company, Limited, Liverpool, England. Filed Apr. 16, 1906. Serial No. 312,015.

Claim.—1. In a liquid-meter, the combination of a horizontal tapered pipe, and an impact member mounted to move in the tapered portion of the pipe and having two coned faces and its center of gravity and its center of buoyancy in the same vertical line.

2. In a liquid-meter, the combination of a tapered pipe, an impact member in the pipe, and means inside the shell of the impact member for counterbalancing the difference between its weight and buoyancy.

3. In a liquid-meter, the combination of a tapered pipe, an impact member having two coned faces in the pipe, and a guide passing through the impact member and on which it moves.

4. In a liquid-meter, the combination of a horizontal tapered pipe, an impact member in the pipe having its center of gravity and its center of buoyancy in the same vertical line, and a guide passing through the impact member and on which it moves.

5. In a liquid-meter, the combination of a tapered pipe, an impact member in the pipe, means inside the shell of the impact member for counterbalancing the difference between its weight and buoyancy, and a guide passing through the impact member.

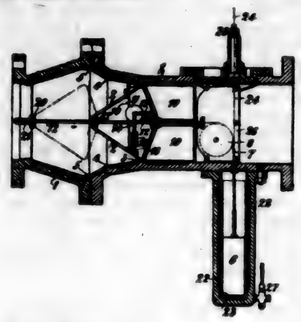

6. In a liquid-meter, the combination of a horizontal tapered pipe, a hollow impact member in the pipe, a guide passing through the impact member, an arm pivoted inside the impact member, a roller carried by the arm and bearing on the guide, and a spring fixed in the impact member tending to force the roller against the guide.

7. In a liquid-meter, the combination of a horizontal tapered pipe, an impact member having two coned faces mounted to move in the tapered portion of the pipe, a counterbalance-weight tending to pull the impact member toward the narrower portion of the pipe, a vessel containing it, a line connecting the impact member to the counterbalance-weight, and a pulley over which the line passes.

8. In a liquid-meter, the combination of a horizontal tapered pipe, an impact member in the pipe having its center of gravity and its center of buoyancy in the same vertical line, a counterbalance-weight, a vessel containing it and in which it fits closely, a line connecting the impact member to the counterbalance-weight, and a pulley over which the line passes.

9. In a liquid-meter, the combination of a tapered pipe, an impact member in the pipe, means inside the shell of the impact member for counterbalancing the difference between its weight and buoyancy, a counterbalance-weight, a vessel containing it, a line connecting the impact member to the counterbalance-weight, and a pulley over which the line passes.

10. In a liquid-meter, the combination of a tapered pipe, an impact member having two coned faces in the pipe, a guide passing through the impact member and on which it moves, a counterbalance-weight, a vessel containing it, a line connecting the impact member to the counterbalance-weight, and a pulley over which the line passes.

11. In a liquid-meter, the combination of a horizontal tapered pipe, an impact member in the pipe having its center of gravity and its center of buoyancy in the same vertical line, a guide passing through the impact member, a counterbalance-weight, a vessel containing it and in which it fits closely, a line connecting the impact member to the counterbalance-weight, and a pulley over which the line passes.

12. In a liquid-meter, the combination of a tapered pipe, an impact member in the pipe, means inside the shell of the impact member for counterbalancing the difference between its weight and buoyancy, a guide passing through the impact member, a counterbalance-weight, a vessel containing it, a line connecting the impact member to the counterbalance-weight, and a pulley over which the line passes.

13. In a liquid-meter, the combination of a horizontal tapered pipe, a hollow impact member in the pipe, a guide passing through the impact member, an arm pivoted inside the impact member, a roller carried by the arm and bearing on the guide, a spring fixed in the impact member tending to force the roller against the guide, a counterbalance-weight, a vessel containing it, a line connecting the im-

pact member to the counterbalance-weight, and a pulley over which the line passes.

14. In a liquid-meter, the combination of a horizontal tapered pipe, an impact member having two coned faces mounted to move in the tapered portion of the pipe, a counterbalance-weight tending to pull the impact member toward the narrower portion of the pipe, a closed vessel containing it, an indicating apparatus, a pair of lines connecting the counterbalance-weight to the impact member and to the indicating apparatus respectively, a pulley over which the first line passes, and a closed casing containing the pulley and the lines.

15. In a liquid-meter, the combination of a horizontal tapered pipe, an impact member in the pipe having its center of gravity and its center of buoyancy in the same vertical line, a counterbalance-weight, a closed vessel containing it, an indicating apparatus, a pair of lines connecting the counterbalance-weight to the impact member and to the indicating apparatus respectively, a pulley in the pipe over which the first line passes, and a closed casing containing the pulley and the lines.

16. In a liquid-meter, the combination of a tapered pipe, an impact member in the pipe, means inside the shell of the impact member for counterbalancing the difference between its weight and buoyancy, a counterbalance-weight, a closed vessel containing it, an indicating apparatus, a pair of lines connecting the counterbalance-weight to the impact member and to the indicating apparatus respectively, a pulley over which the first line passes, and a closed casing containing the pulley and the lines.

17. In a liquid-meter, the combination of a horizontal tapered pipe, an impact member having two coned faces mounted to move in the tapered portion of the pipe, a guide passing through the impact member, a counterbalance-weight tending to pull the impact member toward the narrower portion of the pipe, a closed vessel containing it, an indicating apparatus, a pair of lines connecting the counterbalance-weight to the impact member and to the indicating apparatus respectively, a pulley over which the first line passes, and a closed casing containing the pulley and the lines.

18. In a liquid-meter, the combination of a horizontal tapered pipe, an impact member in the pipe having its center of gravity and its center of buoyancy in the same vertical line, a guide passing through the impact member and on which it moves, a counterbalance-weight, a closed vessel containing it, an indicating apparatus, a pair of lines connecting the counterbalance-weight to the impact member and to the indicating apparatus respectively, a pulley over which the first line passes, and a closed casing containing the pulley and the lines.

19. In a liquid-meter, the combination of a tapered pipe, an impact member in the pipe, means inside the shell of the impact member for counterbalancing the difference between its weight and buoyancy, a guide passing through the impact member, a counterbalance-weight, a closed vessel containing it, an indicating apparatus, a pair of lines connecting the counterbalance-weight to the impact member and to the indicating apparatus respectively, a pulley over which the first line passes, and a closed casing containing the pulley and the lines.

20. In a liquid-meter, the combination of a horizontal tapered pipe, a hollow impact member in the pipe, a guide passing through the impact member, an arm pivoted inside the impact member, a roller carried by the arm and bearing on the guide, a spring fixed in the impact member tending to force the roller against the guide, a counterbalance-weight, a closed vessel containing it, an indicating apparatus, a pair of lines connecting the counterbalance-weight to the impact member and to the indicating apparatus respectively a pulley over which the first line passes, and a closed casing containing the pulley and the lines.

848,705. KNOCKDOWN SECTIONAL BOOKCASE. FRED W. TOMEY, Grand Rapids, Mich. Filed June 27, 1906. Serial No. 323,713.

Claim.—1. In a knockdown sectional bookcase, front and rear shelf members spaced apart, end strips attached to said members and provided with grooves in their upper and lower sides, a middle shelf member adapted to be placed between the front and rear members, a plate attached to said middle member, and end sections having tongues on their respective ends to enter the said grooves in the end strips.

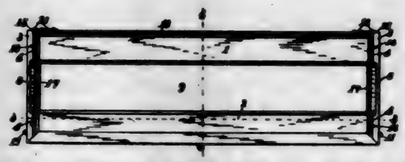

2. In a knockdown sectional bookcase, front and rear shelf members spaced apart, end strips attached to said members and provided with grooves and recesses, a middle shelf member between said front and rear members and engaging the recesses, and end sections having tongues to engage the grooves.

3. In a knockdown sectional bookcase, a shelf member having grooves in the upper and lower sides of its ends and grooves in its rear portion, a back engaging the rear grooves, end sections having tongues on their respective ends to engage the said end grooves, and detachable fastenings connecting the ends and back.

4. In a knockdown sectional bookcase, front and rear shelf members spaced apart, the rear member having grooves in its upper and lower sides, end strips attached to said members and having grooves in their upper and lower sides and recesses in their inner sides, a back inserted in the rear grooves, end sections having tongues to engage the grooves in the end strips and a recess in the lower tongue to receive the middle shelf member, a middle shelf member engaging the recesses, and hooks and eyes detachably connecting the end sections and back.

5. In a sectional bookcase, hooks horizontally slidable in recesses in the ends of the sections, and adapted to engage corresponding hooks on adjacent sections, and detachably connect the sections end to end.

6. In a sectional bookcase, a hook having a plate portion provided with a slot, flanges on three sides of the plate portion, a hook on the fourth side of the same, an end section having a recess in which the hook is slidable, and a screw inserted in the slot and case.

7. In a sectional bookcase, a hook having a plate portion provided with a slot, a hook on the outer edge of the plate portion, an end section to the case and having a recess in which the plate is slidable, and a screw inserted in the slot and end section.

848,706. PACKAGE-SEALING APPARATUS. JOSEPH H. TUTTLE, West Somerville, Mass., assignor to Clarence B. Frost, Cambridge, Mass. Filed Jan. 11, 1907. Serial No. 351,847.

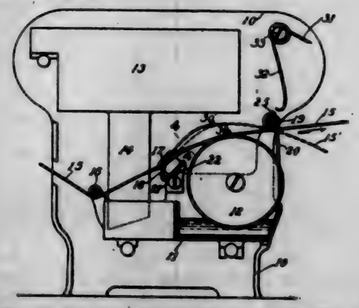

Claim.—1. A device for rendering tape adhesive, in combination with means for arching the tape transversely and directing the same over said device.

2. A device for rendering tape adhesive, in combination with guides pressing the edges and the center of the tape in opposite directions, forming a transverse arch in the tape, and directing the tape over said device.

3. A device for rendering tape adhesive, in combination with means directing the tape upward over said device, forming it into a shape of uneven levels transversely and supporting its under side only at the upper levels thereof.

4. A device for rendering tape adhesive, in combination with plates set substantially parallel to each other, engaging opposite sides of the tape and directing it thereover, and means to adjust the distance between the plates between which the tape passes.

5. A device for rendering tape adhesive, in combination with plates set substantially parallel to each other, engaging opposite sides of the tape and directing it thereover, there being a mutually-opposing spring and screw for adjusting the one plate with respect to the other.

6. A device for rendering tape adhesive, in combination with a carriage on the delivery side thereof, movable fore and aft and engaging the tape edgewise.

7. A device for rendering tape adhesive, in combination with a support adjacent to the delivery side of the device, comprising side shelves supporting the edges of the projecting tape, there being a space free of support for tape between the shelves.

8. A device for rendering tape adhesive, in combination with a support adjacent to the delivery side of the device, comprising side shelves supporting the edges of the projecting tape out of contact with said device, the space between the shelves being free of support for tape, and there being side guides between said device and the inner edges of said shelves.

9. A severing device for tape, comprising a guide for the tape; a lever, having at one end a portion adapted to be engaged by tape proceeding from the guide; a fulcrum, and a severing-blade at its other end, beyond the fulcrum, normally projecting in operative position, the first end being approximately in line between it and said guide and thus giving leverage against the tape to hold the blade against recession when the tape is being severed.

848,707. TYPE-WRITING MACHINE. FRANZ X. WAGNER, New York, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 27, 1905. Serial No. 252,382.

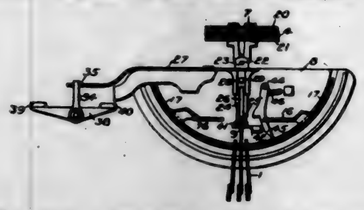

Claim.—1. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, a part which is reciprocated at the operations of the types, and a member shiftable to different positions upon said ribbon-carrier, and having a plurality of steps movable into the path of said reciprocating part so as to effect variable movements of said ribbon-carrier and bring different color-bands on the ribbon into use.

2. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, a member shiftable thereon and having step portions, a lever which may engage with either of said step portions according to the adjustment of said shiftable member, and means for reciprocating said lever at the type-strokes.

3. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, a stepped member movable thereon, means including a finger-piece for adjusting said stepped member transversely of the ribbon-carrier, and a lever movable at each key-stroke and engageable with either step upon said step member.

4. In a type-writing machine, the combination with types and a platen, of a ribbon-vibrator, a stepped member pivoted thereon, a shifter mounted upon the framework and capable of vibrating said pivoted member to bring either step thereon into use, and a lever reciprocated at each type-stroke and engageable with said stepped member.

5. In a type-writing machine, the combination with types and a platen, of a ribbon-vibrator, a stepped member movable transversely thereon, a stationary shifter having a pin-and-slot engagement with said stepped member so as to effect transverse adjustment of the latter but permit ribbon-vibrating movement thereof, and a lever reciprocated at the key-strokes and engageable with either step of said stepped member.

6. In a type-writing machine, the combination with types and a platen, of a ribbon carrier, a transversely-movable stepped member thereon, a lever reciprocated at the type-strokes and engageable with either step of said stepped member, means for detaining said stepped member in different positions to cause said lever to engage either step thereon, and means for enabling said lever to return said carrier to normal position.

7. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, an arm pivoted thereon and having steps, a member reciprocated at the type-strokes and having a part to engage either step, a shifter mounted upon the framework and having a slot extending in the direction of the movement of said ribbon-carrier, and a pin upon said stepped member engaging said slot.

8. In a type-writing machine, the combination with types and a platen, of a part reciprocated at the key-strokes, a ribbon-carrier, a member pivoted upon said ribbon-carrier and having steps, and a finger-piece for effecting movement of said pivoted member to shift either step into the path of said reciprocating part.

9. In a type-writing machine, the combination with types and a platen, of a part reciprocated at the key-strokes, a ribbon-carrier, a member mounted upon said ribbon-carrier and having steps, a finger-piece for effecting movements of said stepped member to shift either step into the path of said reciprocating part, and means for detaining said stepped member in the different positions to which it is shifted.

10. In a type-writing machine, the combination with types and a platen, of a part reciprocated at the key-strokes, a ribbon-carrier, a member mounted upon said ribbon-carrier and having steps, a shifter mounted upon the framework of the machine and connected to said stepped member, for effecting movements of the latter, to bring either step into the path of said reciprocating member, means for detaining said shifter in different positions, and a finger-piece controlling said shifter.

11. In a type-writing machine, the combination with types and a platen, a part reciprocated at each type-stroke, a ribbon-carrier, a stepped member between said ribbon-carrier, and said reciprocating part, and means for adjusting said stepped member to effect different vibrations of the ribbon-carrier to bring either color-band of the ribbon into use.

12. In a type-writing machine, the combination with types and a platen, a part reciprocated at each type-stroke, a ribbon-carrier, a stepped member between said ribbon-carrier and said reciprocating part, means for adjusting said stepped member to effect different vibrations of the ribbon-carrier to bring either color-band of the ribbon into use, a shifter upon the framework controlling the position of said stepped member, and means for detaining said shifter in a plurality of positions.

13. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, means vibrating the ribbon-carrier at the type-strokes, a plurality of differently-colored keys, and means enabling each key to control the vibration of the ribbon-carrier so as to bring into use the ribbon-band having the color corresponding to the operated key.

14. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, an actuator reciprocated at the type-strokes, a plurality of differently-colored

keys, and means between said actuator and said ribbon-carrier and controlled by said colored keys for bringing differently-colored bands of the ribbon into use.

15. In a type-writing machine, the combination with types and a platen, of a ribbon-vibrator, an actuator reciprocated at the type-strokes, a two-arm lever, a key upon each arm of the lever, and means between said actuator and said vibrator and controlled by said lever, for causing such movements of said carrier as to bring different color-bands of the ribbon into use.

16. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, a part which is reciprocated at the operations of the types, a member having steps and pivoted to one of said ribbon-carrier and reciprocating parts, and means for effecting such relative movements of said stepped member, as to cause the reciprocating part either to effect variable movements of said ribbon-carrier to bring different color-bands on the ribbon into use, or to fail to move the carrier, at the will of the operator.

17. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, a part which is reciprocated at the operations of the type-strokes, a member having steps and shiftable on one of said elements, and a finger-piece upon the framework connected to said stepped member and capable of shifting the same, so that the ribbon-carrier is either rendered ineffective at the type-strokes or caused to bring different widthwise portions of the ribbon into use.

18. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, a member having steps and shiftable thereon, a finger-piece upon the framework and connected to said stepped member, a part which is reciprocated at the operations of the types, said stepped member being movable into such positions as to cause said reciprocating part either to move the carrier different distances or not at all, and means detaining said stepped member in its different positions.

19. In a type-writing machine, the combination with types and a platen, of a member having steps, a ribbon-carrier, a part reciprocating at the type-strokes, said stepped member being shiftable upon one of said elements so as to cause said ribbon-carrier to be moved different distances, by the engagement of said reciprocating part with said steps, and means for rendering said reciprocating member ineffective at will.

20. In a type-writing machine, the combination with types and a platen, of a ribbon-vibrator, a member having steps and shiftable thereon, a shifter mounted upon the framework, and a part reciprocated at each type-stroke and engageable with said stepped member, said shifter capable of moving said stepped member either so that different steps thereof may engage said reciprocating part, or so that said carrier is inoperable by said reciprocating part, at will.

21. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, a part which reciprocates at the type-strokes, and a shiftable member having steps either of which is engageable by said reciprocating part, said steps separated by an opening in which said reciprocating part may work idly, and means for detaining said stepped member in such positions that said reciprocating part may engage either of said steps or work idly in said opening, at the will of the operator.

22. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, a part reciprocated at the type-strokes a member shiftable upon one of said carrier and reciprocating elements; said stepped member being formed with an opening between said steps; a shifter mounted upon the framework and connected to said stepped member; and means for detaining said shifter in any one of three positions, so as to cause either of said steps or said opening to stand opposite to said reciprocating part.

23. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, a part reciprocated at the type-strokes, a member provided with steps and an intervening opening and pivoted upon said carrier, a rocking device upon the framework provided with keys, means connecting said rocking device to said stepped member, and means for detaining said stepped member with either one of said steps or said opening opposite to said reciprocating part.

24. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, a part reciprocated at the type-strokes, a member having two steps and an intervening opening and shiftable transversely upon said carrier, a shifter-bar mounted upon the framework and controlling said stepped member, means for detaining said shifter-bar in any of three positions, and a rock-shaft connected to said shifter-bar and having a pair of keys.

25. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, an actuator reciprocated at the type-strokes, a shiftable member between said actuator and said carrier to enable similar movements of said actuator to effect variable movements of the carrier, and a plurality of differently-colored keys operatively connected to said shiftable member.

26. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier; means for vibrating the ribbon-carrier at the type-strokes; said vibrating means including a part shiftable to different positions for causing different color-bands on the ribbon to be brought into use; differently-colored keys mounted upon the framework; and means enabling said keys to shift said shiftable member to different positions.

27. In a type-writing machine, the combination with keys and a platen, of a ribbon-carrier, a part reciprocated at the type-strokes, a stepped member between said ribbon-carrier and said reciprocating part, a shifter controlling said stepped member so as to bring either step thereof into coöperation with said reciprocating part, and keys mounted upon the framework and having means for moving said shifter to different positions.

28. In a type-writing machine, the combination with keys and a platen, of a ribbon-carrier, a part reciprocated at the type-strokes, a stepped member between said ribbon-carrier and said reciprocating part, a shifter controlling said stepped member so as to bring either step thereof into coöperation with said reciprocating part, and keys having means for moving said shifter to different positions, said keys being differently colored.

29. In a type-writing machine, the combination with types and a platen, of a ribbon-vibrator, a part reciprocated at the type-strokes, a stepped member shiftable upon said ribbon-vibrator to bring either step thereon into coöperation with said reciprocating member, a shifter mounted upon the framework and connected to said stepped member, a two-arm lever operatively connected to said shifter, keys mounted upon the arms of said lever, and means for detaining said shifter in different positions.

30. In a type-writing machine, the combination with types and a platen, of a ribbon-vibrator, a part reciprocated at the type-strokes, a stepped member pivoted upon said carrier and pivoted so as to bring either step thereof into coöperation with said reciprocating part, a pin upon said pivoted member, a shifter-bar mounted upon the framework and having a slot to engage said pin, said slot extending in the direction of movement of said ribbon-carrier, a detent for holding said shifter-bar in a plurality of positions, a rock-shaft connected to said shifter-bar, arms projecting from said rock-shaft upon opposite sides thereof, and keys upon said arms.

31. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, means for vibrating the ribbon-carrier at the type-strokes, a plurality of differently-colored keys mounted upon the framework of the machine, and means for enabling said keys either to control the vibration of the ribbon-carrier so as to bring into use different widthwise portions thereof, or to cause said ribbon-carrier to be inoperative during the type-strokes.

32. In a type-writing machine, the combination with types and a platen, of a ribbon-carrier, an actuator reciprocated at the type-strokes, a plurality of differently-colored keys, and means between said actuator and said ribbon-carrier and controlled by said keys for bringing different widthwise portions of the ribbon into use; said means being movable by said keys to an inoperative position.

33. In a type-writing machine, the combination with types and a platen, of a ribbon-vibrator, an actuator reciprocated at the type-strokes, a two-arm lever, a key upon each arm of the lever, and means controlled by said lever for either bringing different widthwise portions of the ribbon into use, or causing said ribbon to be ineffective at the type-strokes, at will.

34. In a type-writing machine, the combination with types and a platen, shiftable to enable different types to print, of a ribbon-vibrating mechanism including a ribbon-carrier which is shiftable with the platen, a device shiftable transversely upon said ribbon-carrier for enabling different widthwise portions of the ribbon to be brought into use, and a shifter mounted upon the framework of the machine and connected to said transversely-shiftable device and provided with a finger-piece.

35. In a type-writing machine, the combination with types and a platen shiftable to enable different types to print, of a rail or frame shifting with the platen, a lever shifting with said rail, a ribbon-carrier having steps for engagement by said lever and also shifting with the platen, and means for causing said lever to engage either step at will.

36. In a type-writing machine, the combination with types and a platen shiftable to enable different types to print, of a frame shifting with the platen, a lever reciprocated at the type-strokes and shifting with said frame, a ribbon-carrier, means upon said frame for shifting said ribbon-carrier with the platen, a member upon said ribbon-carrier shiftable transversely and having steps either of which may be engaged by said lever, and means upon the framework of the machine for shifting said stepped member.

37. In a type-writing machine, the combination with types and a platen shiftable to enable different types to print, of a frame shifting with the platen, a lever reciprocated at the type-strokes, and shifting with said frame, a ribbon-carrier having steps engageable by said lever, means for shifting said ribbon-carrier with the platen, and means upon the framework of the machine for effecting a relative shifting movement between said lever and said steps, an opening provided between said steps in which said lever may work idly, and said shifting means including a pair of keys whereby either of said steps or said opening may be brought opposite to said lever.

38. In a type-writing machine, the combination with types and a platen shiftable to enable different types to print, of a frame shifting with the platen, a lever reciprocated at the type-strokes, and shifting with said frame, a ribbon-carrier, means upon said frame for shifting said ribbon-carrier with the platen, a member upon said ribbon-carrier shiftable transversely, and having steps either of which may be engaged by said lever, means for shifting said stepped member, a stop for limiting the printing stroke of said ribbon-carrier when the platen is in lower-case position, and means upon said platen-shifting frame for moving said stop out of working position when the platen shifts.

848,708. TYPE-WRITING MACHINE. FRANZ X. WAGNER, New York, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed May 29, 1905. Serial No. 262,851.

Claim.—1. The combination with a ribbon-vibrating lever having studs at unequal distances from its fulcrum, of an actuator having slots to engage said studs, said actuator being shiftable to bring either stud into use at will, and also being shiftable to a position in which neither stud is engaged by the actuator; and a pair of shift-keys mounted at the keyboard and connected to said actuator.

2. In a type-writing machine, the combination of a ribbon-vibrating lever having studs at unequal distances from its fulcrum, an actuator having slots to engage said studs, a reciprocating frame whereon said actuator is pivoted in such a manner that the actuator may be shifted from side to side to enable either slot to engage its associated stud or to render the actuator free of the studs, and a detent for holding said actuator in any position to which it is shifted.

3. In a type-writing machine, the combination with a ribbon-vibrating lever having studs at unequal distances from its fulcrum, of an actuator having slots to engage said studs, a link connected to said actuator, an arm connected to said link, a shaft upon which said arm is fixed, divergent arms upon said shaft, and keys upon the ends of said arms.

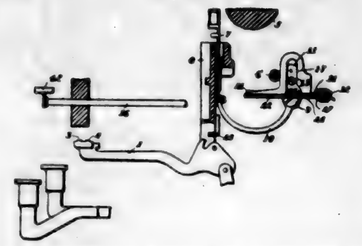

4. In a type-writing machine, the combination with a ribbon-vibrating lever having studs at unequal distances from its fulcrum, of an actuator having slots to engage said studs, a reciprocating frame whereon said actuator is pivoted in such a manner that the actuator may be shifted from side to side to enable either slot to engage its associated stud or to render the actuator free of the studs at will, a detent for holding said actuator in any position to which it is shifted, and shift-keys connected to said actuator.

5. In a type-writing machine, the combination with a ribbon-vibrating lever, of an actuator, a reciprocating frame whereon said actuator is shiftable, a detent for holding said actuator in any position to which it is shifted, a pair of keys, and means for enabling said keys to shift said actuator; means being provided whereby shifting of the actuator effects variation in the leverage of the latter upon said lever, and said keys being mounted upon the framework of the machine near the keyboard.

848,709. TYPE-WRITING MACHINE. HERMAN L. WAGNER, Mount Vernon, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Jan. 5, 1907. Serial No. 350,955.

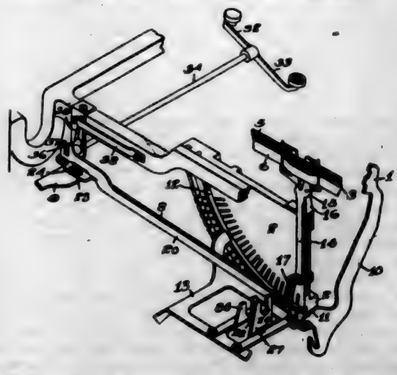

Claim.—1. In a type-writing machine having types and a universal bar reciprocated at the type-strokes, the combination with a ribbon-carrier, of a lever connected to the carrier and provided on opposite sides with wrists at unequal distances from its fulcrum, bearings on opposite sides of said lever and engageable by said wrists and connected to said universal bar to reciprocate therewith, and means for shifting said lever from side to side to engage and disengage the wrists with the bearings.

2. In a type-writing machine having types and a uni-

versal bar reciprocated at the type-strokes, the combination with a ribbon-carrier, of a lever connected to the carrier and provided on opposite sides with wrists at unequal distances from its fulcrum, bearings on opposite sides of said lever and engageable by said wrists, and connected to said universal bar to reciprocate therewith, and means for shifting said lever from side to side to engage and disengage the wrists with the bearings; said carrier extending upwardly from said lever and loosely guided at its upper portion to permit it to rock from side to side to accommodate the lateral shifting movements of the lever and also to permit it to be reciprocated up and down by the lever to cause the ribbon to cover and uncover the printing-point.

3. In a type-writing machine having types and a universal bar reciprocated at the type-strokes, the combination with a ribbon-carrier, of a lever connected to the carrier and provided on opposite sides with wrists at unequal distances from its fulcrum, bearings on opposite sides of said lever and engageable by said wrists and connected to said universal bar to reciprocate therewith, a shifter whereon said lever is mounted, said shifter movable in a direction transverse to the lever to shift the latter from side to side to engage and disengage the wrists with the bearings, a finger-piece for said shifter, and a detent for holding the shifter at either end of its movement.

4. In a type-writing machine having types and a universal bar which is reciprocated at the type-strokes, the combination of a ribbon-carrier, a lever connected to said ribbon-carrier to reciprocate the same, a shifter-bar upon which said lever is fulcrumed, said bar mounted to shift in a direction transverse to said lever, wrists projecting from opposite sides of said lever at different distances from its fulcrum, and arms connected to said universal bar, one upon each side of said lever, said arms having bearings engageable alternately by said wrists.

5. In a type-writing machine having types and a universal bar which is reciprocated at the type-strokes, the combination of a ribbon-carrier, a lever connected to said ribbon-carrier to reciprocate the same, a shifter-bar upon which said lever is fulcrumed, said bar mounted to shift in a direction transverse to said lever, wrists projecting from opposite sides of said lever, at different distances from its fulcrum, and arms connected to said universal bar, one upon each side of said lever, said arms having bearings engageable alternately by said wrists, and a rock-shaft having a crank connected to said bar for moving said lever from side to side to engage either of its wrists with its associated bearing and disengage the other wrist from its associated bearing, said rock-shaft extending from said bar to the front of the machine and provided at its forward end with a finger-piece.

6. In a type-writing machine having types and a universal bar which is reciprocated at the type-strokes, the combination of a ribbon-carrier, a lever connected to said ribbon-carrier to reciprocate the same, a shifter-bar upon which said lever is fulcrumed, said bar mounted to shift in a direction transverse to said lever, wrists projecting from opposite sides of said lever, at different distances from its fulcrum, and arms connected to said universal bar, one upon each side of said lever, said arms having bearings engageable alternately by said wrists, a rock-shaft having a crank connected to said bar for moving said lever from side to side to engage either of its wrists with its associated bearing and disengage the other wrist from its associated bearing, said rock-shaft extending from said bar to the front of the machine and provided at its forward end with a finger-piece, a detent-arm upon said rock-shaft, and a detent-spring upon the framework engaging said arm to hold the bar at either end of its movement.

7. In a type-writing machine provided with a framework and also having types and a universal-bar frame which is reciprocated at the type-strokes, the combination of a ribbon-carrier which is loosely guided near one end both for reciprocatory movement to cause the ribbon to cover and uncover the printing-point and also for a lateral rocking movement, a lever connected to the other end of said ribbon-carrier to reciprocate the same, a bar upon which said lever is fulcrumed, said bar mounted to move in a direction transverse to said lever, wrists projecting from opposite sides of said lever at different distances from its fulcrum on said bar, arms upon said universal frame, one upon each side of said lever, said arms having bearings engageable alternately by said wrists, a rock-shaft having a crank loosely connected to said bar for moving said lever from side to side to engage either of its wrists with its associated bearing and disengage the other wrist from its associated bearing, said rock-shaft extending from said bar to the front of the machine and provided at its forward end with a finger-piece, a detent-arm upon said rock-shaft, and a detent-spring upon the framework engaging said arm to hold the bar at either end of its movement.

8. In a type-writing machine having types, a universal bar reciprocated at the type-strokes, a platen and a frame whereon said platen shifts for writing capital and lower-case letters, the combination with a ribbon-carrier, of a lever connected to the carrier and mounted upon said shifting frame to shift therewith together with the ribbon-carrier, said lever provided on opposite sides with wrists at unequal distances from its fulcrum, slotted arms on opposite sides of said lever and engageable by said wrists at all positions to which said frame is shifted and connected to said universal bar to reciprocate therewith, and means mounted upon said shifting frame for also shifting said lever from side to side to engage and disengage the wrists with the slotted arms.

9. In a type-writing machine having types, a universal bar reciprocated at the type-strokes, a platen and a frame whereon said platen shifts for writing capital and lower-case letters, the combination with a ribbon-carrier, of a lever connected to the carrier and mounted upon said shifting frame to shift therewith together with the ribbon-carrier, said lever provided on opposite sides with wrists at unequal distances from its fulcrum, slotted arms on opposite sides of said lever and engageable by said wrists at all positions to which said frame is shifted and connected to said universal bar to reciprocate therewith, a shifter whereon said lever is mounted, said shifter mounted on said shifting frame and also movable in a direction transverse to the lever to shift the latter from side to side to engage and disengage the wrists with the slotted arms, and a finger-piece upon the framework of the machine and loosely engaged to said shifter to accommodate the movements of said shifting frame.

10. In a type-writing machine having types, a universal bar reciprocated at the type-strokes, a platen and a frame whereon said platen shifts for writing capital and lower-case letters, the combination with a ribbon-carrier, of a lever connected to said ribbon-carrier to reciprocate the same, a shifter-bar upon which said lever is fulcrumed, said bar mounted on said platen-shifting frame to shift also in a direction transverse to said levers, wrists projecting from opposite sides of said lever at different distances from its fulcrum, arms connected to said universal bar one upon each side of said lever, said arms having slots extending in the direction of the shifting movement of said platen and engageable alternately by said wrists, a rock-shaft mounted upon the framework and having a crank loosely connected to said bar to accommodate the platen-shifting movements of said frame, for enabling said shaft to move said bar and said lever from side to side to engage either of its wrists with its associated slot and disengage the other wrist from its associated slot, said rock-shaft extending from said bar to the front of the machine, and a finger-piece upon the forward end of said rock-shaft.

848,710. LATCH FOR BURGLAR-ALARMS. ISAAC WATKINS, Hartford, Conn. Filed July 12, 1905. Serial No. 269,315.

Claim.—1. An alarm, means for sounding the alarm, a lock-case, a sliding frame mounted in the case and including bars rigidly united, said frame being operatively connected with the alarm-sounding mechanism, a latch mounted within the case independently of said frame, and mechanism mounted in the case and connected with the latch and sliding frame to operate both.

2. An alarm, means for sounding the alarm, a lock-case, a sliding frame mounted within the case and including side parts rigidly connected, connections between said frame and alarm-sounding mechanism, a latch mounted to slide in the case independently of said frame, and operating mechanism connected with the latch and sliding frame to initially operate the latter to sound the alarm and subsequently move the latch to release it.

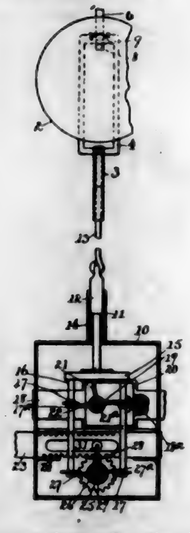

3. An alarm, means for souding the alarm, a lock-case containing a sliding frame including side parts rigidly connected, connections between said slide and alarm-sounding mechanism, a latch mounted in the case independently of said frame, and operating mechanism connected with the frame and latch to operate the former and sound the alarm before the operation of the latch.

4. An alarm, striking mechanism therefor, a lock-case containing a slide including side parts rigidly connected, connections between said slide and alarm-striking mechanism, a sliding latch borne in the case independently of said slide, a rotating spindle mounted in the case, and connections between said spindle and latch and slide for operating the latter to sound the alarm before releasing the latch.

5. An alarm, means for sounding the alarm, a lock-case bearing a sliding frame including side parts rigidly connected, connections between said frame and alarm-sounding mechanism, a sliding latch mounted independently of said frame, a spindle, yielding members borne on the sliding frame, and lugs on the spindle to engage said yielding members, and a lug also on the said spindle to operate the latch, said lugs being arranged to operate the slide and sound the alarm before the operation of the latch.

6. An alarm, means for sounding the alarm, a lock-case, a sliding frame mounted within said case and including side parts rigidly connected, yielding members mounted to slide on the side parts, connections between the sliding frame and alarm-sounding mechanism, a sliding latch, a spindle, and lugs mounted on said spindle to engage the yielding members to operate the sliding frame and to operate the latch.

7. An alarm, mechanism for sounding the alarm, a lock-case bearing a sliding frame operatively connected with the alarm-sounding mechanism, a latch mounted to slide transversely to the direction of movement of the frame, a rotating spindle mounted in the latch, a collar loosely borne on the spindle to engage and operate the latch, and lugs on the spindle to engage and operate both the sliding frame and said collar.

8. In a lock mechanism including a case, a sliding frame adapted for attachment to an alarm mechanism and mounted in the case, the alarm mechanism, a latch mounted in the case, a lock-bolt mounted in the case, a spindle to slide said latch and connected to operate said sliding frame, and a rotating part mounted in the case to operate the bolt and connected with said sliding frame.

9. In a lock mechanism including a case, a sliding frame adapted for connection with an alarm mechanism, the alarm mechanism, a sliding latch, a sliding bolt, rotating mechanism appurtenant to the latch, rotating mechanism mounted in the case to operate the bolt, both of the rotating mechanisms being connected with the sliding frame to operate said frame to sound an alarm before releasing the latch or bolt.

10. In a lock including a case, a sliding frame mounted therein, a latch and a bolt each sliding in a direction transversely to the direction of movement of the sliding frame, rotating mechanism for the latch, rotating mechanism for the bolt, connections between said sliding frame and each of the rotating mechanisms to operate the frame to sound an alarm before releasing the latch or bolt, and the alarm mechanism.

11. In a lock mechanism, a case, a latch mounted therein, a sliding frame located within the case, alarm mechanism located without the case and operatively connected with said sliding frame, a rotating mechanism operatively connected with the sliding frame and the latch and provided with means for the reception of a knob or key to operate both the frame and the latch.

12. In a lock including a case, a sliding frame mounted within the case and including side parts rigidly connected, yielding members slidable along said side parts, a latch, a spindle, alarm mechanism connected with said sliding frame, and lugs on said spindle to coöperate with said yielding members to move the frame and a lug for operating the latch.

13. In a lock including a case, a sliding frame mounted therein and including side parts rigidly connected and having yielding members slidable therealong, alarm mechanism connected with said sliding frame, a latch having an opening, a spindle projecting through the opening in said latch and between the side parts of said frame, and lugs on said spindle for engaging said yielding members to operate the frame and for engaging the latch to operate it.

14. In a lock mechanism including a case, a sliding frame including side parts rigidly connected, yielding members mounted to slide on the side parts, alarm mechanism connected with said sliding frame, a sliding latch, a sliding bolt, a spindle for operating the latch, a spindle for operating the bolt, and lugs on each of said spindles for engagement with said yielding members to operate the sliding frame.

848,711. GAME APPARATUS. DANIEL WEAVER, New York, N. Y. Filed June 28, 1906. Serial No. 323,801.

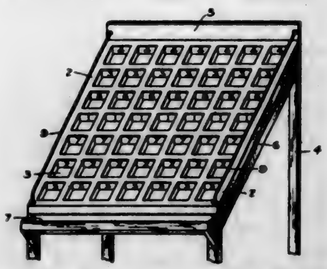

Claim.—A game apparatus comprising a stand having an upwardly-projecting back board or guard arranged at its rear upper edge, a game-board hingedly connected to the back board and comprising a grid having appropriately-numbered openings, all of which are of the same size and shape, an inclined platform arranged below the board

to support the same, guard-rails arranged on the platform at each side of the board, and a trough disposed at the lower end of the platform.

848,712. DOOR-SPRING. ELMER J. WELLS, Nashua, Iowa, assignor of one-half to George F. Schluts, Salt Lake City, Utah. Filed Aug. 30, 1906. Serial No. 332,667.

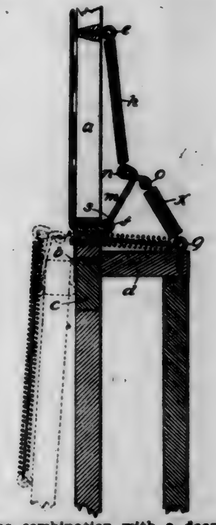

Claim.—1. The combination with a door-casing and a door hinged thereto of tension-springs connected respectively to said casing and door, and a spacing-lever pivoted to said door and connected to the inner ends of said springs.

2. The combination with a door-casing and a door hinged thereto, of coiled springs connected respectively to said casing and said door, and a spacing-lever having one end pivoted to said door and its other end supplied with eyelets, the inner end of each spring connected to a separate eyelet.

848,713. SOLE-LEVELING MACHINE. ERASTUS E. WINKLEY, Lynn, Mass. Filed Apr. 2, 1903. Serial No. 150,704.

Claim.—1. A sole-leveling machine, having, in combination, a leveling-roll, a shoe-supporting jack, a shaft and suitable connections for relatively actuating the jack and roll to level the sole of a shoe supported upon the jack, and mechanism acting automatically to stop the rotation of the shaft when the shaft is rotated in either direction, substantially as described.

2. A sole-leveling machine, having, in combination, a leveling-roll, a shoe-supporting jack, a shaft and suitable connections for relatively actuating the jack and roll to level the sole of a shoe supported upon the jack, and mechanism acting automatically to disconnect the jack from the shaft when the shaft is rotated in either direction, substantially as described.

3. A sole-leveling machine, having, in combination, a leveling-roll, a shoe-supporting jack, a shaft and suitable connections for relatively actuating the jack and roll to level the sole of a shoe supported upon the jack, driving mechanism for the shaft including a clutch, a projection mounted to move with the shaft, an arm arranged to be engaged by said projection when the shaft is rotated in either direction and to be moved in opposite directions thereby, and connections between said arm and said clutch for actuating the clutch to stop the rotation of the shaft when said arm is moved in either direction, substantially as described.

4. A sole-leveling machine, having, in combination, a leveling-roll, a shoe-supporting jack, a shaft and suitable connections for relatively actuating the jack and roll to level the sole of a shoe supported upon the jack, driving mechanism for the shaft including a clutch, a projection mounted to move with the shaft, an arm arranged to be engaged by said projection when the shaft is rotated in either direction, connections between said arm and said clutch for actuating the clutch to stop the rotation of the shaft, and means for disconnecting the jack from the shaft including a cam projection mounted to move with the shaft, and adjustable circumferentially thereof, substantially as described.

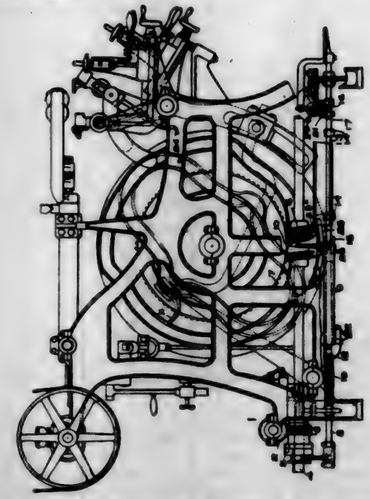

5. A sole-leveling machine, having, in combination, a leveling-roll, a shoe-supporting jack, a shaft and suitable connections for relatively actuating the jack and roll to level the sole of a shoe supported upon the jack, driving mechanism for the shaft including a clutch, a projection mounted to move with the shaft, an arm arranged to be engaged by said projection when the shaft is rotated in either direction, connections between said arm and said clutch for actuating the clutch to stop the rotation of the shaft, and means for disconnecting the jack from the shaft including a cam projection mounted to move with the shaft, said projections being relatively adjustable circumferentially of the shaft, substantially as described.

6. A sole-leveling machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of leveling rolls, a shaft and suitable connections for relatively actuating each jack and its coöperating roll to level the sole of a shoe, driving mechanism for the shaft including a clutch, a projection mounted to move with the shaft, an arm arranged to be engaged by said projection when the shaft is rotated in either direction, connections between said arm and said clutch for actuating the clutch to stop the rotation of the shaft, and means for disconnecting each jack from the shaft including a cam projection mounted to move with the shaft, said projections being relatively adjustable circumferentially of the shaft, substantially as described.

7. A sole-leveling machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of leveling-rolls, a shaft and suitable connections for relatively actuating each jack and its coöperating roll to level the sole of a shoe, and mechanism acting automatically to disconnect each jack from the shaft when the shaft is rotated in either direction, substantially as described.

8. A sole-leveling machine, having, in combination, a leveling-roll, a shoe-supporting jack, a shaft and suitable connections for relatively actuating the jack and roll to level the sole of a shoe supported upon the jack, and mechanism acting automatically to disconnect the jack from the shaft when the shaft is rotated in either direction and to stop the rotation of the shaft, substantially as described.

848,714. BOOK-COVER. CHARLES E. WISE, Brooklyn, N. Y. Filed June 2, 1906. Serial No. 319,891.

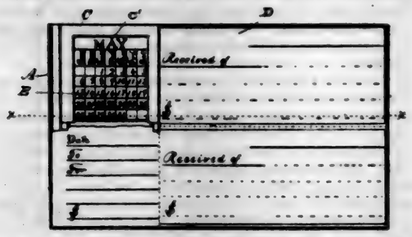

Claim.—Leaves printed with stubs at one side, a cover for said leaves having its under side the full size of said leaves and its upper side the size of the stubs only, a flat pocket in said stub-cover, an opening through the outer face of said stub-cover into said pocket and a removable calendar in said pocket visible through said opening as described.

848,715. EYEGLASS-FASTENER. EDWARD H. ZELLER, Cleveland, Ohio. Filed July 30, 1906. Serial No. 328,418.

Claim.—A lens rabbeted in opposite sides near one edge to provide outwardly-diverging surfaces, in combination with a fastening element having a fork to engage one edge of the lens and fork-arms to engage such surfaces thereof to effect a dovetail connection between said lens and said fastening element, substantially as described.

848,716. MINE-DOOR. WILLIAM W. ZUBER, Osnaburg, Ohio. Filed Jan. 14, 1907. Serial No. 352,071.

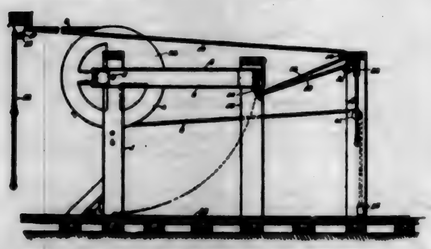

Claim.—1. In a mine trap-door the combination of a door-frame, and a door pivotally mounted at the top or upper portion of the frame, a wheel provided with a counterbalance, cords adapted to actuate the wheel, said cords provided with weighted pulls, a spring-catch adapted to hold the door in an open position, cords extended in opposite directions from the spring-catch and adapted to release the spring-door, substantially as and for the purpose specified.

2. In a mine-door the combination of a fixed door-frame, a door pivotally mounted in the frame, a wheel provided with a counterbalance, said counterbalance adapted to hold the door in a closed position, a spring-catch connected to the door-frame, and adapted to engage the door when in an elevated position, said counterbalance of the wheel adapted to hold the door in engagement with the spring-catch, means for releasing the spring-catch from the door, and means for actuating the wheel, substantially as and for the purpose specified.

848,717. GALLEY-LOCK FOR PRINTERS' GALLEYS. HENRY L. ADZIT, Grand Rapids, Mich. Filed Mar. 5, 1906. Serial No. 304,243.

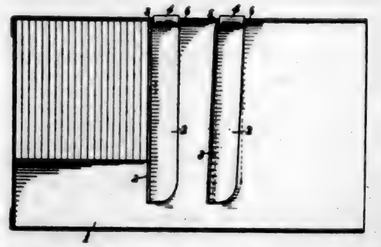

Claim.—1. As an article of manufacture, a lock for a printer's galley, comprising a bar adapted to engage and hold type, and a clamp on the bar to loosely embrace and freely slide on the wall of a printer's galley, said clamp being arranged at an obtuse angle to the side of the bar adapted to engage the type whereby when the bar is at right angles to such wall the clamp will grip the wall and lock the bar in place.

2. As an article of manufacture, a lock for a printer's galley comprising a bar having a vertical side wall adapted to engage and hold type, a clamp on one end of the bar to loosely embrace and freely slide on the wall of a printer's galley and a flexible tongue in the clamp to engage the wall and lock the bar when the latter is at right angles to the said wall whereby when the bar is at right angles to such wall the clamp will grip the wall and lock the bar in place.

3. As an article of manufacture, a lock for a printer's galley comprising a bar having a bottom and a side arranged at right angles, and forming vertical and horizontal members, an extension of the horizontal member bent upward and thence outward and downward to loosely embrace the wall of a galley and freely slide thereon, and also arranged at an obtuse angle to the vertical member whereby said embracing part will grip the wall and lock the bar in place when the latter is at right angles to said wall.

4. A lock for a printer's galley comprising a bar having a bottom and a side arranged to form horizontal and vertical members, the horizontal member being bent upward, outward and downward to form a clamp and the vertical member separately extended and bent within said clamp, to form a spring yieldingly opposed to the outer part of said clamp.

848,718. DISPLAY-STAND. SAMUEL BRACKSTONE, Corinth, Miss., assignor of one-fourth to Frank B. Allen and one-fourth to Edwin W. Mitchell, Corinth, Miss., and one-fourth to Louis H. Harris, St. Louis, Mo. Filed Feb. 11, 1907. Serial No. 356,900.

Claim.—1. In a display-stand, a standard provided with an upright rod, a frame pivotally mounted thereon provided with a bar, a plurality of supporting-pins adjustably mounted upon said bar, said pins each comprising a support having a perforated head and two oppositely-extending members, one member being secured to the head and having its ends provided with depending hooks, and the other member being connected at its middle with the lower portion of the support and having its ends adapted to detachably engage with said hooks.

2. In a display-stand, a standard provided with an upright rod, a frame pivotally mounted thereon provided with

a bar, supporting-pins adjustably mounted on said bar, each pin comprising two members, a support connected with the central portions of said members for engaging with the bar, the ends of one of the members being each bent at an angle and provided with a hook, and the intermediate portion of the other member being bent into coils and having its ends adapted to be detachably engaged with said hooks.

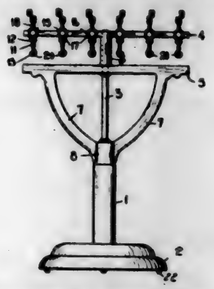

3. In a display-stand, a standard, the upper end of which is recessed, a rod extended upwardly from said standard, a frame rotatably mounted on said rod, comprising two bars spaced apart and brackets from the lower bar to the top of the standard, a sleeve at the inner ends of said brackets, the lower end of which is rounded to engage with the recessed portion of the standard, and supporting-pins upon the upper bar.

4. A display-pin, comprising two parallel members, each end of one of which is bent at an angle and provided with a hook and the ends of the other member are adapted to engage with said hooks, a support connected with the central portions of said members, one end of which is provided with a perforated head, and a thumb-screw projecting into said perforation.

848,719. ALTERNATING-CURRENT MOTOR. EDWARD BRETCH, St. Louis, Mo. Filed Nov. 17, 1905. Serial No. 287,803.

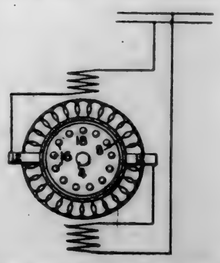

Claim.—1. In a dynamo-electric machine, a magnetic field in combination with an armature having a core of magnetic material, an outer winding carried by said core, means for controlling and directing the flow of the current in said winding, an inner winding located within the zone of the outer winding and separated therefrom to form a pathway for the magnetic flux to pass through the outer winding without penetrating the inner winding; substantially as described.

2. An armature comprising a core of magnetic material, a commutated winding of low resistance located at the periphery of said core, an inner winding or low resistance located within the zone of the commutated winding and separated therefrom to form a pathway for the magnetic flux to pass through the commutated winding without penetrating the inner winding; substantially as described.

3. An armature comprising a core of magnetic material, a commutated winding of low resistance located near the periphery of said core, a squirrel-cage winding embedded in the core within the zone of the commutated winding and separated therefrom to form a pathway for the magnetic flux to pass through the commutated winding without penetrating the squirrel-cage winding; substantially as described.

4. An armature having a slotted laminated core of magnetic material, a commutated winding carried by the slotted portion of said core, an inner winding consisting of transversely-extending bars of conducting material embedded in the core within the zone of the commutated winding and separated therefrom to form a pathway for magnetic flux to pass through the commutated winding without penetrating the inner winding, and conducting means connected to the ends of said bars; substantially as described.

5. In a dynamo-electric machine, a slotted laminated field-core in combination with an armature having a core of magnetic material, a commutated winding of low resistance carried by said core, an inner winding of low resistance carried by said core and located within the zone of the commutated winding and separated therefrom to form a pathway for the magnetic flux to pass through the commutated winding without penetrating the inner winding; substantially as described.

848,720. AUTOMATIC CURRENT-INTERRUPTER. VICTOR H. BROC, New York, N. Y., assignor to Broc-Barbier Auto Ignition Company, New York, N. Y., a Corporation of New York. Filed Sept. 5, 1906. Serial No. 333,289.

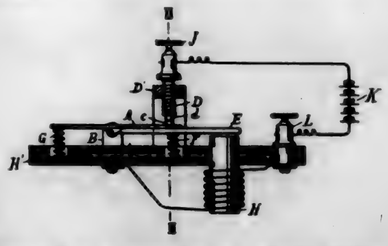

Claim.—1. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts held together by opposing springs, substantially as described.

2. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts held in place by opposing springs, substantially as described.

3. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts, one hung between its ends, and the other at one end, substantially as described.

4. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts, the strip supported at one end being adapted to be attracted away from the other by a magnet, substantially as described.

5. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts held together and in place by two springs, substantially as described.

6. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts held together and in place by opposing springs, substantially as described.

7. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts held together and in place by opposing springs, pivoted, or flexibly hung on the same line of support, substantially as described.

8. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts, flexibly hung on the same line of support, held together by spiral springs, one hung between its ends and the other at one end, substantially as described.

9. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts held together by springs, the strip supported at one end being adapted to be attracted away from the other by a magnet, substantially as described.

10. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts held together by opposing springs, the strip supported at one end being adapted to be attracted away from the other by a magnet, substantially as described.

11. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts held in place by opposing spiral springs, pivoted or flexibly, hung on the same line of support, one between its ends and the other at one end, substantially as described.

12. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts, pivoted or flexibly, hung on the same line of support, one hung between its ends and the other at one end, substantially as described.

13. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts pivoted, or flexibly, hung on the same line of support, the strip supported at one end being adapted to be attracted away from the other by a magnet, substantially as described.

14. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts, one hung between its ends, and the other at one end, the strip supported at one end being adapted to be attracted away from the other by a magnet, substantially as described.

15. In an electrical-current interrupter, a vibrating arm or lever, composed of two parts, one magnetically attractable, and one magnetically inert, held in place by spiral springs, substantially as described.

16. In an electrical-current interrupter, a vibrating arm or lever, composed of two parts, one magnetically attractable, and one magnetically inert, held in place by opposing spiral springs, substantially as described.

17. In an electrical-current interrupter, a vibrating arm or lever, composed of two parts, one magnetically attractable, hung at one end and one magnetically inert, hung between its ends, substantially as described.

18. In an electrical-current interrupter, a vibrating arm or lever, composed of two parts, one magnetically attractable, hung at one end, and one magnetically inert, the strip magnetically attractable being adapted to be attracted away from the other by a magnet, substantially as described.

19. In an electrical-current interrupter, a vibrating arm or lever, composed of two parts, one magnetically attractable, and one magnetically inert, held together and in place by two springs, substantially as described.

20. In an electrical-current interrupter, a vibrating arm or lever, composed of two parts, one magnetically attractable, and one magnetically inert, held in place by springs, pivoted or flexibly, hung on the same line of support, substantially as described.

21. In an electrical-current interrupter, a vibrating arm or lever, composed of two parts, one magnetically attractable, hung at one end, and one magnetically inert, hung between its ends, both held in place by spiral springs, substantially as described.

22. In an electrical-current interrupter, a vibrating arm or lever, composed of two parts, one magnetically attractable, and one magnetically inert, held together by opposing springs, the arm supported at one end being adapted to be attracted away from the other by a magnet, substantially as described.

23. In an electrical-current interrupter, a vibrating arm or lever, composed of two parts, one magnetically attractable, and one magnetically inert, held in place by opposing springs, the arm supported at one end being adapted to be attracted away from the other by a magnet, substantially as described.

24. In an electrical-current interrupter, a vibrating arm or lever, composed of two parts, one magnetically attractable, and one magnetically inert, one hung between its ends, and the other at one end, the arm supported at one end being adapted to be attracted away from the other by a magnet, substantially as described.

25. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts, pivoted or flexibly hung on the same line, the one between its ends, and the other at one end, held together and in place by spiral springs, substantially as described.

26. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts, pivoted or flexibly, hung on the same line, the one between its ends, and the other at one end, held together and in place by spiral springs, the arm supported at one end being adapted to be attracted away from the other by a magnet, substantially as described.

27. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts, pivoted or flexibly, hung on the same line, the one between its ends and the other at one end, held together and in place by springs, the arms supported at one end being adapted to be attracted away from the other by a magnet, being attracted as the current flows and released when the current is broken, substantially as described.

28. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts, pivoted or flexibly, hung on the same line, the one between its ends and the other at one end, held together and in place by springs, the arm supported at one end being adapted to be attracted away from the other by a magnet, being attracted as the current flows and released when the current is broken, and adapted to operate together, or to be drawn apart, substantially as described.

29. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts, pivoted or flexibly, hung on the same line, the one between its ends and the other at one end, held together and in place by springs, the arm supported at one end being adapted to be attracted away from the other by a magnet, in case the first becomes frozen or fixed, being attracted as the current flows and released when the current is broken, and so constructed that the parts approaching to form a contact will meet and remain together without recoil or vibration, substantially as described.

30. In an interrupter for electrical currents, a vibrating arm or lever, composed of two parts, held together and in place by springs and so constructed that the parts approaching to form a contact will meet and remain together without recoil or vibration, substantially as described.

848,721. ATTACHMENT FOR HORSESHOES. JAMES W. BUCK, New York, N. Y. Filed Mar. 5, 1906. Serial No. 304,359.

Claim.—1. An attachment for horseshoes, comprising a plate of the general shape of a horseshoe, having heel and toe calks, a pair of projections on its front surface at the two sides of the toe-calk, a projection at the rear of toe-calk, and two projections near the heel-calks, all of said projections extending upwardly.

2. An attachment for horseshoes, comprising a plate of the general shape of a horseshoe, having heel and toe calks, a pair of projections on its front surface at the two sides of the toe-calk, a projection at the rear of the toe-calk, and two projections near the heel-calks, all of said projections extending upwardly, with a pair of attaching-ears extending upwardly from the outer sides of the plate, all of said projections the ears and the heel and toe calks, being formed integrally with the plate.

3. An attachment for horseshoes, comprising a plate having an outer surface corresponding to the shape of the horseshoe and provided with means for engaging the horseshoe, and preventing lateral motion thereof, said attachment also being provided with a pair of upwardly-extending ears, and a band detachably connected to said ears and adapted to pass around the hoof.

4. An attachment for horseshoes, comprising a plate having a pair of upwardly-extending ears at its sides, and a band for holding the attachment in position, said band

comprising two members, each connected with one of said ears, and each having an offset engaging said ears, and a tongue adjustably connected with each of said members.

5. An attachment for horseshoes, comprising a plate having a pair of upwardly-extending ears and a band for holding the attachment in position, said band comprising two bows connected respectively with said ears, and each having a shank, and a tongue having openings receiving said shanks for connecting the said bows, the openings in said tongue being of two kinds, those at one end being wider than those at the other, and one of said shanks being pivoted with respect to the member to which it is attached.

6. An attachment for horseshoes, comprising a plate having an outer surface corresponding to the shape of the horseshoe, and provided with means for engaging the horseshoe and preventing lateral motion thereof, said attachment also being provided with a pair of upwardly-extending projections on its outside surface, said projections having slots, means attached in said slots for attaching the device to the hoof of a horse, and a cushion mounted between the attachment and horseshoe.

7. An attachment for horseshoes, comprising a plate of the shape of a horseshoe, and provided with upwardly-extending projections on its inner and outer edges at the toe and heel, and a band for holding the plate in position, said band comprising two members each having detachable connection with a projection of the plate, and a tongue adjustably secured to each of said members.

8. An attachment for horseshoes, comprising a plate of the shape of a horseshoe and provided with apertured ears at its sides, and a band for securing the plate to a shoe, said band comprising two members, each having an angular end in interlocking engagement with an ear of the plate, and a tongue adjustably connecting the members.

9. An attachment for horseshoes, comprising a plate of the shape of a horseshoe and provided with apertured ears, and a band for securing the plate to a shoe, said band comprising two members having angular ends engaging the apertured ears of the plate and a keeper for engaging the said angular end, and a tongue adjustably connecting the members of the band.

848,722. AUXILIARY VALVE FOR AUTOMOBILE-ENGINES. FRANK T. CABLE, Quincy, Mass. Filed Oct. 18, 1906. Serial No. 339,471.

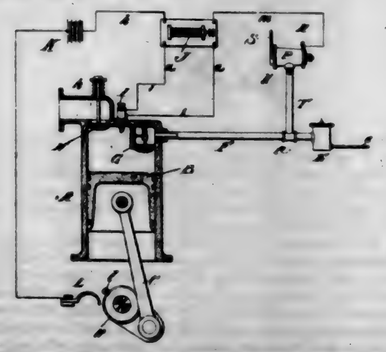

Claim.—1. The combination with the induction-pipe of an explosion-engine, of an auxiliary valve for admitting air to the pipe, an ignition-circuit and contact making and breaking devices operated simultaneously with said auxiliary valve.

2. The combination with an explosion-engine of ignition devices, a carbureter, an induction-pipe leading from the carbureter to the engine-cylinder, an auxiliary valve for admitting atmospheric air to the induction-pipe interposed between the carbureter and the engine-cylinder and circuit making and breaking devices in the ignition-circuit operated simultaneously with said valve.

3. An auxiliary valve for automobile-engines comprising a valve-casing having a port opening to the atmosphere and another port connected with the induction-pipe of the engine, a valve for opening and closing communication between said ports and circuit making and breaking devices carried by said valve whereby the ignition-circuit of the engine may be opened when the valve is open to establish communication between said ports and will be closed when the valve is closed.

848,723. SHUT-OFF FOR OIL-TANKS. JOHN B. CARR, Pemberville, Ohio. Filed July 19, 1906. Serial No. 326,876.

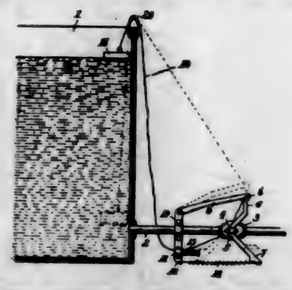

Claim.—The combination with an oil-tank having a discharge-pipe extending therefrom and provided with a valve the stem of which is squared at its outer end, of an angle-lever provided centrally with a square opening by which it is applied to the squared end of the valve-stem so as to provide members at the opposite sides of the latter, a supporting-bracket adapted to be clamped upon the discharge-pipe and comprising two similar plates and connecting-bolts, said plates embracing the discharge-pipe and forming a tapered opening near the lower end of the bracket and a pair of ears at the upper end thereof, a wedge-shaped buffer-bar removably engaging the tapered opening of the bracket, a trip-lever pivoted between the ears at the upper end of the bracket and adapted to detachably engage one member of the angle-lever, and a compression-spring connected to the other end of the angle-lever and to the supporting-bracket; together with a float located in the tank, a guide at the upper edge of the tank, and a flexible connection extending from the float over the guide and connected to the trip-liver, as herein shown and described.

848,724. INK-PAD. ALFRED B. CHANDLER, Chicago, Ill., assignor to Ruger Fountain Ink Pad Company, Chicago, Ill. Filed May 11, 1906. Serial No. 316,251.

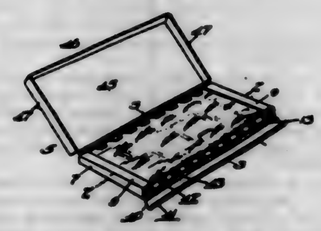

Claim.—1. An ink-pad structure comprising in combination a receptacle provided with a pad-retaining device comprising overhanging flanges at one or more sides thereof, a movable rim at one side, and a reversible pad adapted to be inserted in and confined from accidental detachment, but removable from said receptacle, substantially as described.

2. An ink-pad structure comprising in combination a receptacle provided with a pad-retaining device comprising overhanging flanges at one or more sides thereof and a hinged rim at one side, and a reversible pad adapted to be inserted in and confined from accidental detachment, but removable from said receptacle, substantially as described.

3. An ink-pad structure comprising in combination a suitable receptacle, a pad removably held therein, said pad being provided with a centrally-located impervious plate having tongues alternately bent over the pervious members of the pad and operating to protect the edges from wear and the swelling of the pad from tightening its edges against the side of the receptacle, substantially as described.

848,725. FIRE-ALARM APPARATUS. WELLINGTON S. CLAY and ALBION T. MCKENNEY, Hutchinson, Minn. Filed Feb. 19, 1904. Serial No. 194,409.

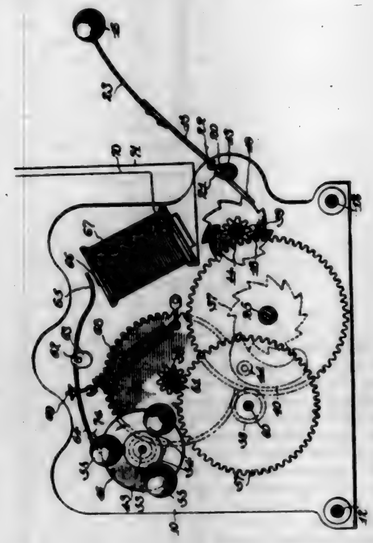

Claim.—1. A device of the class described comprising a hammer mounted for vibration, means for vibrating said hammer, an automatic governing device for said means consisting of a fixed shaft having a shoulder, a disk mounted for rotation on said shaft and restrained from lateral movement by said shoulder, a rotating means attached to said disk, a second disk mounted upon the shaft and being capable of lateral and rotary movement thereon, spring-bars having intermediate weights attached at their ends to said disks, a collar fixed to the shaft and an elastic washer interposed between said collar and the second said disk.

2. A device of the character described comprising a hammer mounted for vibration, means for vibrating said hammer, a device for automatically controlling said vibrating means consisting of a fixed shaft having a shoulder, a disk mounted for rotation on said shaft and being restrained from lateral movement by said shoulder, a rotating means attached to said disk, a second disk mounted upon the shaft and being capable of lateral and rotary movement thereon, a collar located upon the shaft and being capable of lateral adjustment thereon, an elastic washer interposed between said collar and the second said disk, spring-arms attached at their ends to said disks, and weights mounted upon intermediate portions of said arms.

848,726. VALVED WIND MUSICAL INSTRUMENT. CHARLES G. CONN, Elkhart, Ind. Filed Dec. 4, 1905. Serial No. 290,279.

Claim.—1. A valved wind musical instrument comprising three valves, a bell-pipe connected to one of the outside valves, connections between the valves whereby the wind passes successively through the valves to the bell-pipe, a valve-slide on the other outside valve, and a mouth-pipe leading into this latter outside valve from a direction to cause no additional return-bends in either position of the plunger of this latter valve.

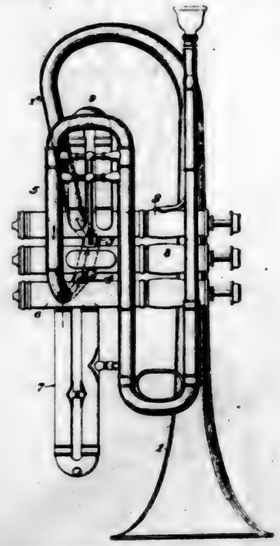

2. A valved wind musical instrument, comprising three valves, a bell-pipe leading from one of the outside valves, connections between opposed walls of the valves whereby an approximately straight wind-passage through the valves to the bell-pipe is secured when the valves are in their open positions, a valve-slide connected to the other outside valve, and a mouth-pipe leading into this latter valve from a direction to produce no additional return-bends in either position of the plunger of this latter valve.

3. The combination with three valves, and the bell, of a valve-slide connected to the side of the valve nearest the bell, an outlet-pipe leading from the opposite side of the said valve and connected to the intermediate valve, a pipe connecting the valve farthest from the bell and the intermediate valve, a bell-pipe connected to the valve farthest from the bell, and a mouth-pipe leading into the valve nearest the bell between the valve-slide thereof and the outlet-pipe, from a direction to produce the same number of return-bends in both positions of the valve.

848,727. HORSE-PROTECTOR. JAMES E. CRAWFORD, Charleston, W. Va. Filed July 10, 1906. Serial No. 325,531.

Claim.—A horse-protecting shield of substantially oblong shape adapted to be placed around and conform to the neck and shoulders of an animal and to extend downwardly from the base of the neck to and terminating at the bottom portion of the horse-collar at opposite sides thereof, said shield being constructed of flexible fabric and provided at its front edge with an arched neck-receiving portion, a reinforcing-piece of stouter material arranged at and extending from the opposite sides of the central portion of the shield to preserve the shape of the same,

and terminal straps secured to the shield at the ends thereof and provided with means for securing them to the horse-collar or hames of a harness.

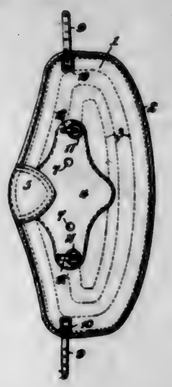

848,728. MECHANICAL STOKER. FREDERICK J. CROLIUS, Pittsburg, Pa. Filed May 21, 1903. Serial No. 158,090.

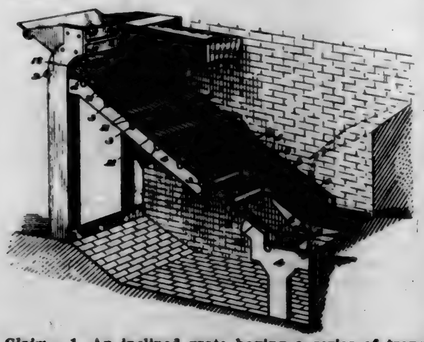

Claim.—1. An inclined grate having a series of transverse, rocking grate-bars, the upper grate-bar being substantially imperforate, the intermediate grate-bars being provided with substantially horizontal air-spaces, and the lower grate-bars being provided with vertical air-spaces; substantially as described.

2. An inclined grate having a series of transverse rocking bars, the upper bars in said series having inclined wings arranged to prevent the dropping of the fuel, and air-spaces between said wings, the intermediate grate-bars of said series being provided with substantially horizontal air-spaces, and the lower grate-bars of the series being provided with substantially vertical air-spaces; substantially as described.

3. An inclined grate having a series of transverse rocking bars, each provided with detachable sections, the uppermost sectional bar being substantially imperforate, the intermediate sectional bars having substantially horizontal air-spaces, and the lower sectional bars having vertical air-spaces; substantially as described.

4. An inclined grate having a series of transverse rocking bars, the uppermost bar being substantially imperforate, the intermediate bars being formed to admit air to and prevent the dropping of the fuel, the lower bars having vertical air-spaces, in combination with a dumping-grate, at the bottom of the inclined grate-surface; substantially as described.

5. A grate comprising an inclined series of transverse rocking bars, having detachable sections held on said bars by gravity only, the uppermost sections forming a substantially imperforate surface, the intermediate sections having inclined wings arranged to prevent the dropping of the fuel and air-spaces between said wings, and the lower sections having vertical air-spaces; substantially as described.

848,729. PROCESS OF PRODUCING GAS. HENRY L. DOHERTY, Madison, Wis. Filed May 12, 1906. Serial No. 316,535.

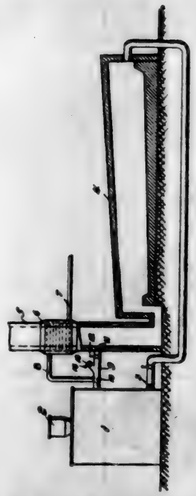

Claim.—1. In the operation of a downdraft gas-producer, the process which consists in maintaining the first-ignited layers of fuel therein at a temperature sufficient to fuse ash ingredients and lower layers at a gasifying temperature below said first-stated temperature by an accelerated draft-current of commingled exothermic and endothermic components traversing said first-ignited layers at a speed greater than the reactive rapidity of the same.

2. In the operation of a downdraft gas-producer, the process which consists in maintaining the first-ignited layers of fuel therein at a temperature sufficient to fuse ash ingredients and lower layers at a gasifying temperature below said first-stated temperature by a hot accelerated draft-current of commingled exothermic and endothermic components traversing said first-ignited layers at a speed greater than the reactive rapidity of the same.

3. In the operation of a downdraft gas-producer, the process which consists in maintaining the first-ignited layers of fuel therein at a temperature sufficient to fuse ash ingredients and lower layers at a gasifying temperature below said first-stated temperature by a hot accelerated draft-current of commingled exothermic and endothermic components in thermally-balancing proportions traversing said first-ignited layers at a speed greater than the reactive rapidity of the same, recovering heat from the outflowing gas and adding it to the inflowing gases.

4. The process of producing gas which consists in establishing and maintaining a deep bed of hot fuel and transmitting through the same an accelerated draft-current of commingled air and products of combustion at a velocity sufficiently great to insure a regulated proportion of said draft-current passing through the fuel unchanged, thereby imparting sensible heat to the remoter layers of fuel and yielding a gas of regulated dilution.

5. The process of producing gas which consists in establishing and maintaining a deep bed of hot fuel and transmitting through the same under accelerated velocity a hot draft-current of commingled air and products of combustion in the same direction as the feed of fuel, the temperature of said draft-current being maintained sufficiently high to permit fusion of ash ingredients in the first-ignited layers of the fuel and its velocity being sufficiently great to insure a regulated portion passing through the fuel unchanged, thereby imparting sensible heat to the underlying layers of fuel and yielding a gas of regulated dilution.

6. The process of producing gas which consists in establishing and maintaining a deep bed of hot fuel, and in transmitting therethrough a hot draft-current of commingled air and products of combustion at sufficient velocity to insure a regulated portion going through the fuel unchanged, thereby yielding a gas of regulated dilution.

7. The process of producing gas which consists in establishing and maintaining a deep bed of ignited fuel and in transmitting downward through the same an accelerated draft-current of commingled air and products of combustion at a sufficient velocity to cause reaction throughout the depth of said bed, said draft-current traveling at a greater speed than the reaction speed of the first-ignited layers.

8. The method of heating remoter layers of fuel in a deep bed of fuel which consists in transmitting through said fuel a draft-current at a velocity greater than the reaction speed of the first-ignited layers.

9. In the operation of a gas-producer, the method of obviating channeling in the fuel-bed which consists in transmitting through the fuel-bed a draft-current rich in carbon dioxid at a speed greater than the reactive speed of the first-ignited layers.

10. The process of producing gas which consists in establishing and maintaining a deep bed of ignited fuel, mingling air with products of combustion to produce a draft-current, and feeding said draft-current downward through the ignited fuel at a speed greater than the reactive speed of the first-ignited layers with the components of the draft-current and at a speed sufficient to cause reaction throughout the entire depth of said bed.

11. The process of producing gas which consists in establishing and maintaining a deep bed of hot fuel and transmitting therethrough a hot incombustible draft-current of commingled air and products of combustion in exothermic and endothermic balance, the sensible heat of the draft-current being sufficient to maintain the temperature of the producer at a given point and obviate heat losses.

12. The process of producing gas which consists in establishing and maintaining a deep bed of hot fuel, transmitting therethrough a hot draft-current of commingled air and products of combustion in exothermic and endothermic balance, recovering heat from the gas produced and adding it to the inflowing draft-current.

848,730. SYSTEM FOR TRANSMITTING ELECTRIC CURRENTS TO CARS. JOHN J. EAGAN, San Francisco, Cal. Filed Dec. 26, 1905. Serial No. 293,394.

Claim.—1. In a system for transmitting electric currents to cars a wire suspended transversely from poles on both sides of a street or road, springs secured to said poles for grasping said wire when raised, a suspended rod above a car, springs permitting the perpendicular movement of said rod power-wires and means leading to said springs for transmitting the current from the power-wires to said transverse wire, substantially as described.

2. In a system for transmitting electric currents to cars a wire suspended transversely from poles on both sides of a street or road, springs secured to said poles for grasping said wire when raised, a rod suspended above a car, movable curved extensions to said rod at each end thereof, vertical rods for conducting the electric current into said car, springs permitting the perpendicular movement of said first-named rod power-wires and means leading to said springs for transmitting the current from the power-wires to said transverse wire, substantially as described.

3. In a system for transmitting electric currents to cars a wire suspended transversely from poles on both sides of a street or road, springs secured to said poles for grasping said wire when raised, a rod suspended above a car, movable curved extensions to said rod at each end thereof, vertical rods, pulleys, and connecting means for causing the movement of said extensions by the trucks of said car, vertical rods for conducting the electric current into said car, springs permitting the perpendicular movement of said first-named rod power-wires and means leading to said springs for transmitting the current from the power-wires to said transverse wire, substantially as described.

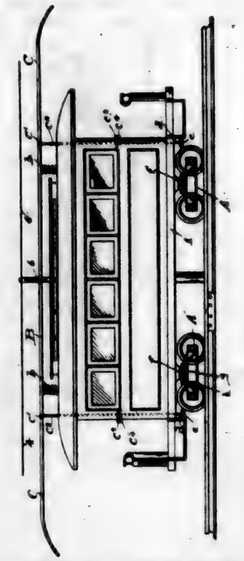

4. In a system for transmitting electric currents to cars a wire suspended transversely from poles on both sides of a street or road, springs secured to said poles for grasping said wire when raised and arranged to release said wires by the weight thereof, a rod suspended above a car, a movable curved extension to said rod at each end thereof, vertical rods, pulleys, and connecting means for causing the movement of said extensions by the trucks of said car, vertical rods for conducting the electric current into said car, springs permitting the perpendicular movement of said first-named rod power-wires and means leading to said springs for transmitting the current from the power-wires to said transverse wire substantially as described.

5. In a system for transmitting electric currents to cars a longitudinal rod having laterally-movable extensions pivotally connected thereto mounted on a car, said car being supported on trucks, pulleys secured to said trucks, turnably-mounted vertical rods connected to said extensions, vertical rods turnably supported beneath said first-named vertical rods and in alinement therewith, pulleys secured at the lower ends of the rods so supported, means for connecting and disconnecting the vertical rods so alined and means whereby the pulleys secured to said trucks turn the pulleys secured to rods as aforesaid.

6. In a system for transmitting electric currents to cars a longitudinal rod, having laterally-movable extensions pivotally connected thereto, mounted on a car, said car being supported on trucks arranged for turning; a plurality of turnable vertical rods at each end of the car arranged for connection and disconnection, and means in proximity to the base of said car for the turning of said vertical rods by said trucks.

848,731. DOOR-OPENING DEVICE. OLIVER M. EDWARDS, Syracuse, N. Y. Filed Apr. 9, 1904. Serial No. 202,324.

Claim.—1. In a door-opening device the combination, substantially as set forth, of a pivotally-mounted locking-

detent arranged with its pivot and engaging portion both near to a line described by the edge of the door in opening and closing, a movable part, a portion of which is adapted to engage with the locking-detent and actuate it in one direction and another portion is adapted to engage with the door to partially open the same, and operating means adapted to actuate such part, whereby the door is released from the locking-detent and partially opened by actuating the operating means.

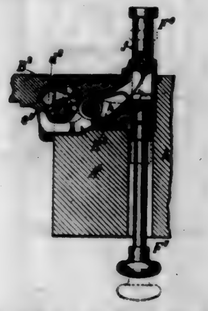

2. In a door-opening device the combination, substantially as set forth, of a pivotally-mounted locking-detent arranged with its pivot and engaging portion in a line, which, with the plane of the trap-door, forms an obtuse angle, a movable part, a portion of which is adapted to engage with the locking-detent and actuate it in one direction and another portion is adapted to engage with the door to partially open the same, and operating means adapted to actuate such part, whereby the door is released from the locking-detent and partially opened by actuating the operating means.

3. In a door-operating device the combination, substantially as set forth, of a pivotally-mounted locking-detent arranged with its pivot adjacent to the line described by the edge of the door in opening and closing, a movable part, a portion of which is adapted to engage with the locking-detent and actuate it in one direction and another portion adapted to engage the door to partially open the same, and operating means adapted to actuate such part, whereby the door is released from the locking-detent and partially opened by actuating the operating means.

4. In a door-opening device the combination, substantially as set forth, of a movable part loosely mounted adjacent to the door and adapted to strike the door a percussive blow, and operating means connected with such part and adapted to move the same quickly in one direction and partially open the door.

5. In a door-opening device the combination, substantially as set forth, of a movable part loosely mounted adjacent to the door, all parts of which are movable to substantially the same extent, and adapted to strike the door a percussive blow, and operating means connected with such part and adapted to move the same quickly in one direction and partially open the door.

6. In a door-opening device the combination, substantially as set forth, of a movable part loosely mounted adjacent to the door and adapted to strike the door a percussive blow, and operating means connected directly to and movable with such part and adapted to move the same quickly in one direction and partially open the door.

7. In a door-opening device the combination, substantially as set forth of a movable locking-detent, a part loosely mounted and bodily movable, adapted by its weight to strike the door a percussive blow, a portion of which is adapted to engage with the locking-detent and actuate it in one direction and another portion adapted to engage with the door and deliver a blow thereon to partially open the same, and operating means adapted to actuate such part, whereby the door is released from the locking-detent and partially opened by actuating the operating means.

8. In a door-opening device the combination, substantially as set forth, of a pivotally-mounted locking-detent, a part loosely mounted and bodily movable, adapted by its weight to strike the door a percussive blow, a portion of which is adapted to engage with the locking-detent and actuate it in one direction and another portion to engage with the door and deliver a blow thereon to partially open the same, and operating means adapted to actuate such part, whereby the door is released from the locking-detent and partially opened by actuating the operating means.

9. In a door-opening device the combination, substantially as set forth, of a pivotally-mounted locking-detent mounted on the platform and adapted to engage with the door, a movable part, a portion of which is adapted to engage with the locking-detent and actuate it in one direction and another portion adapted to engage the door to partially open the same, and operating means adapted to actuate such part, whereby the door is released from the locking-detent and partially opened by actuating the operating means.

10. In a door-opening device the combination, substantially as set forth, of a movable locking-detent, a part movable in substantially right lines, a portion of which is adapted to engage with the locking-detent and actuate it in one direction and another portion adapted to engage with the door and deliver a percussive blow thereon to partially open the same, and operating means adapted to actuate such part, whereby the door is released from the locking-detent and partially opened by actuating the operating means.

11. In a door-opening device the combination, substantially as set forth, of a movable locking-detent, a part movable in substantially right lines, a portion of which is adapted to engage with the locking-detent and actuate it in one direction and another portion adapted to engage with the door to partially open the same, and operating means adapted to actuate such part, whereby the door is released from the locking-detent and partially opened by actuating the operating means.

12. In a door-opening device the combination, substantially as set forth, of a pivotally-mounted locking-detent arranged with its pivot on one side of the line described by the edge of the door in opening and closing and its engaging portion on the other side of such line, a movable part, a portion of which is adapted to engage with the locking-detent and actuate it in one direction and another portion adapted to engage the door to partially open the same, and operating means adapted to actuate such part, whereby the door is released from the locking-detent and partially opened by actuating the operating means.

13. In a door-opening device the combination, substantially as set forth, of a movable locking-detent actuating means therefor mounted upon the door, a movable part mounted on the platform, a portion of which is adapted to engage with the locking-detent and actuate it in one direction and another portion adapted to engage with the door to partially open the same, and operating means adapted to actuate such part, whereby the door is released from the locking-detent by either the actuating or operating means and it is partially opened by actuating the operating means.

14. In a door-opening device the combination, substantially as set forth, of a movable locking-detent, actuating means therefor, a movable part, a portion of which is adapted to engage with the locking-detent and actuate it independently of its actuating means and another portion adapted to engage the door to partially open the same, and operating means adapted to actuate such part, whereby the door is released from the locking-detent by either the actuating or operating means and it is partially opened by actuating the operating means.

15. In a door-opening device the combination, substantially as set forth, of a pivotally-mounted locking-detent arranged with its pivot and engaging portion in a line, which, with the plane of the trap-door, forms an obtuse angle, and operating means engageable with the detent in only one direction of movement and adapted to actuate such detent when moving in that direction.

16. In a door-opening device the combination, substantially as set forth, of a locking-detent pivotally mounted on the door, and operating means adapted to engage with the detent and actuate it in one direction and permit such detent to be actuated by other means in the same direction without disturbing such operating means.

17. In a door-opening device the combination, substantially as set forth, of a locking-detent pivotally mounted on the door, means adapted to actuate such detent also mounted on the door, and operating means mounted on the structure adapted to actuate such detent and release the door.

18. In a door-opening device the combination, substantially as set forth, of a locking-detent pivotally mounted in position to hold the door closed and to release the same, and operating means of different kinds, each adapted to engage with such detent and move it in one direction and one of which means is mounted separately from the door.

19. In a door-opening device the combination, substantially as set forth, of a locking-detent pivotally mounted in position to hold the door closed and to release the same, and differently-acting operating means, one adapted to move such detent in one direction and the other to move it in the other direction, the detent and operating means being mounted separately from the door.

20. In a door-opening device the combination, substantially as set forth, of a locking-detent pivotally mounted in position to hold the door closed and to release the same, and different operating means, each of which is adapted to engage with such detent independently of the other to actuate it and release the door from its holding action.

21. In a door-opening device the combination, substantially as set forth, of a locking-detent pivotally mounted in position to hold the door closed and to release the same, and different operating means, each of which is adapted to engage with such detent independently of the other to actuate it and release the door, and each is also adapted to remain immovable upon the operation of the other.

848,732. COMBINED WAIST-HOLDER AND SKIRT-SUPPORTER. JULIUS EISMAN, Toronto, Ontario, Canada. Filed Apr. 13, 1905. Serial No. 255,437.

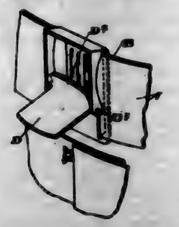

Claim.—In a shirt-waist holder and skirt-supporter, the combination with a fabric band or belt having a back inside strip of resilient waterproof gripping material designed to prevent vertical displacement of the shirt-waist material and a reinforcement for the band, of a clamping device having the back plate thereof designed to extend and be held between the band and the reinforcing-strip, located centrally of the length of the strip, and having arms extending downwardly from the upper edge, and the clamping-lever pivotally held in the arms and having the inner bent end designed to coact with the fabric band in front of the back plate, so as to grip the skirt as and for the purpose specified.

848,733. APPARATUS FOR TESTING FEED-WATER, &c. JAMES L. FITTS, Merchantville, N. J., assignor to Warren Webster & Company, a Corporation of New Jersey. Filed Aug. 2, 1906. Serial No. 328,900.

Claim.—1. In a color-testing apparatus for feed-water, the combination with the feed-water heater, of a water-cooler connected therewith for receiving and cooling a portion of the feed-water to be tested, a receptacle for receiving the cooled water from the cooler, and a vessel for the testing liquid arranged above said receptacle for the test-water and adapted to supply the testing liquid to it.

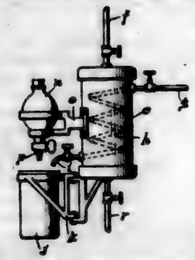

2. In a color-testing apparatus for feed-water, the combination with the feed-water heater, of a water-cooler connected therewith for receiving and cooling a portion of feed-water to be tested and having a discharge-outlet for the cooled water, a hinged bracket carried by said cooler, and a receptacle for the test-water carried by said bracket and arranged under the discharge-outlet of the cooler, a second bracket carried by the cooler and arranged above the receptacle for the test-water, and a receptacle for the testing liquid carried by said second bracket.

848,734. PACKAGE-SEALING DEVICE. CLARENCE B. FROST, Cambridge, Mass. Filed May 15, 1906. Serial No. 316,998.

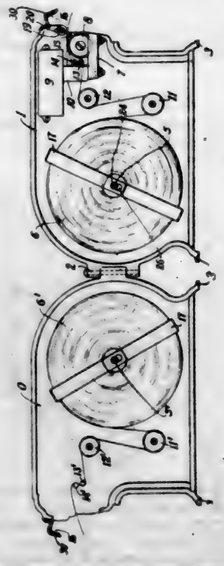

Claim.—1. In apparatus of the class described, a holder for a supply of elastic tape; a device for rendering the tape adhesive; a stationary guide for the tape set between the supply and said device, holding the tape normally out of contact therewith.

2. In apparatus of the class described, a holder for a supply of elastic tape; a device over which the tape normally passes for rendering the tape adhesive; two stationary guide-pins for the tape set between the supply and said device, the one above the other, whereby the tape

normally is directed upward and passes over the said device without contact therewith.

3. In apparatus of the class described, a holder for a supply of elastic tape; a device for rendering the tape adhesive; in combination with a stationary guide set between the supply and said device, holding the tape normally above and out of contact with the device; and a support for the external end outside said device.

4. In apparatus of the class described, a holder for a supply of tape; a device for rendering the same adhesive, over which the tape passes; and a support for the external end of the tape, having ridges approximately parallel to the movement of the tape.

5. In apparatus of the class described, a holder for a supply of tape; a blade rigidly mounted for severing the tape, in combination with a guard for the blade, comprising an adjacent movable plate approximately parallel therewith and projecting beyond its edges.

6. In apparatus of the class described, a holder for a supply of tape; a V-blade for severing the tape, rigidly mounted; in combination with a guard for the blade, comprising an adjacent plate set approximately parallel with the blade and projecting beyond its edges, said plate being arranged to yield toward the base of the V, when engaged by tape about to be severed, thus exposing the blade.

7. In apparatus of the class described, a casing, comprising an inclosing frame having two sections hinged vertically; a supply-holder and guides for tape on each section of the casing-wall; a device mounted on one wall for rendering the tape from both walls adhesive, the guides on the other wall being arranged to guide tape thereto when the sections of the frame are closed.

8. In apparatus of the class described, a holder for a supply of tape, and a moistenig device for one surface of the tape, in combination with a layer of elastic adhesive material dried upon said surface of the tape, whereby the tape is rendered elastic, and a non-yielding guide leading the tape to a position adjacent to but not in contact with the moistening device, whereby the unmoistened portion of the tape automatically retracts from said device after contact therewith.

848,735. PACKAGE-SEALING APPARATUS. CLARENCE B. FROST, Cambridge, Mass. Filed Jan. 28, 1907. Serial No. 354,449.

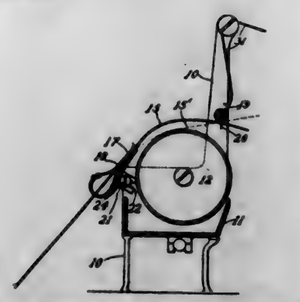

Claim.—1. A device for rendering tape adhesive, in combination with plates set approximately in parallelism, engaging the tape on opposite sides and directing it over and normally out of influence of said device.

2. A device for rendering tape adhesive, in combination with plates arranged to engage opposite sides of the tape and direct the tape, fixed pivotally near said device, whereby by adjustment of the plates about the pivot the tape may be directed at varying angles over said device.

3. A device for rendering tape adhesive, in combination with a stationary guide for tape arranged to direct tape over said device, and means to adjust the position of said guide angularly with respect thereto.

4. A device for rendering tape adhesive, in combination with a support for the tape issuing therefrom, comprising swinging rests therefor, one normally under each edge of the tape and swinging sidewise to permit passage of the tape to and from its normal position.

848,736. CAN-FEEDING MECHANISM FOR CANNING-MACHINES. GEORGE G. GLASS, Hoopeston, Ill. Filed June 22, 1905. Serial No. 266,535.

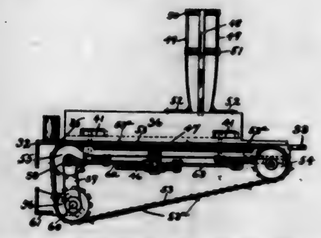

Claim.—1. A mechanism for guiding and feeding cans of varying diameters into a machine, comprising a chute having side walls so mounted as to be movable laterally relatively to each other, means for effecting such relative lateral movement of said side walls, a conveyer in said chute, and means for bodily adjusting the can-engaging portion of said conveyer, substantially as described.

2. A mechanism for guiding and feeding cans of varying diameters into a machine, comprising a chute having side walls so mounted as to be movable laterally relatively to each other, means for effecting such relative lateral movement of said side walls, a conveyer in said chute, and means for bodily adjusting the can-engaging portion of said conveyer longitudinally of said chute, substantially as described.

3. A mechanism for guiding and feeding cans of varying diameters into a machine, comprising a chute having side walls so mounted as to be movable laterally relatively to each other, means for effecting such relative lateral movement of said side walls, an endless chain conveyer operating in and longitudinally of said chute, and means for bodily adjusting the can-engaging sections of said conveyer inwardly and outwardly of said chute, substantially as described.

4. A mechanism for guiding and feeding cans of varying diameters into a machine, comprising a chute having side walls so mounted as to be movable laterally relatively to each other, a transversely-expansible and contractible can-spout secured to and mounted upon said side walls, a conveyer in said chute, and means for effecting relative lateral movement of said side walls, substantially as described.

5. A mechanism for guiding and feeding cans of varying diameters into a machine, comprising a chute having laterally-movable side walls, a conveyer in said chute, a transversely-expansible and contractible can-spout disposed above said side walls, a manually-operable member, actuating connections between the latter and said side walls, and connections between said side walls and can-spout whereby the contraction or expansion of the latter is effected simultaneously with the narrowing or widening of said chute, substantially as described.

6. A mechanism for guiding and feeding cans of varying diameters into a machine, comprising a chute having laterally-movable side walls, a conveyer in said chute, a transversely-expansible and contractible can-spout disposed above said side walls, a manually-operable member, actuating connections between the latter and said side walls, other actuating connections between said manually-operable member and the can-engaging section of said conveyer whereby the latter may be moved bodily inwardly and outwardly of the chute, connections between said side walls and can-spout whereby the contraction or expansion of the latter is effected simultaneously with the narrowing or widening of said chute and with the inward or outward movement of said conveyer, substantially as described.

848,737. NUT-RETAINER. MARTIN V. GOLDEN, Hopewell, Pa. Filed May 10, 1906. Serial No. 316,174.

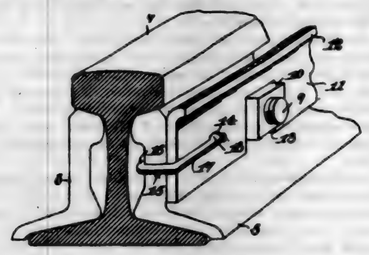

Claim.—In a nut-lock, the combination with the rails and splice-bars, of bolts piercing the rails and splice-bars and provided with terminal nuts, a locking-plate having an aperture formed in one end thereof and provided with a plurality of spaced recesses for the reception of the nuts, and a locking member formed of a single piece of spring metal having an intermediate portion thereof bearing against one end of the adjacent splice-bar and locking-plate, respectively, and its opposite ends bent to form a pair of spaced arms one of which is interposed between the rail and the adjacent splice-bar, the opposite arm being extended longitudinally of the exposed face of the locking-plate and having its free end bent inwardly to form a terminal locking-lug adapted to engage the aperture in said locking-plate.

848,738. CLOTHES-HANGER. OSCAR F. GRANT, Pittsburg, Pa. Filed May 18, 1905. Serial No. 261,019.

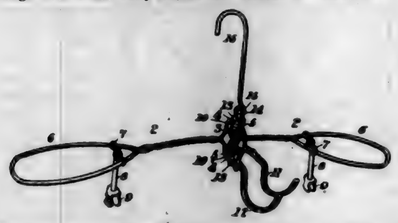

Claim.—1. A folding clothes-hanger having a pintle, opposite wire wings, each consisting of a wire bent back upon itself with its ends spread apart, and hinged to the pintle, and a separate hook hinged to said pintle; substantially as described.

2. In a folding clothes-hanger, a vertical pintle provided with opposite wings, each wing consisting of a wire bent back upon itself and forming an outer loop, the inner portions of the wing being twisted around each other, and then spread apart with their separated ends bent and looped about the pintle so that the wings may be swung together through a plane transverse to the pintle; substantially as described.

3. In a folding clothes-hanger, a wing formed of an open wire loop, a cross-bar in the loop, and a clip or clasp hanger hinged to the cross-bar and arranged to swing into the plane of the loop; substantially as described.

4. A folding clothes-hanger having a vertical pintle, a hanger pivoted to the upper end of the pintle, oppositely-extending wire wings hinged to the pintle, each wing consisting of a wire bent back upon itself with its ends spread apart and hinged to the pintle, and a plurality of wire hooks also hinged to said pintle; substantially as described.

5. In a folding clothes-hanger, a transverse pintle, wings pivoted thereto, each wing consisting of a wire loop with its inner ends spread apart and bent around the transverse pintle, a hook pivoted to the upper end of the pintle, and a swinging hook pivoted to the pintle; substantially as described.

6. A folding clothes-hanger having oppositely-projecting hinged wings, and a central pintle or support, and a plurality of hooks hinged to the pintle or support and arranged to swing sidewise through a path approximately in line with the folded wings; substantially as described.

848,739. COCK OR VALVE. JAKOB GUT, Zurich, Switzerland, assignor of one-half to Oskar Bosshard, Zurich, Switzerland. Filed Dec. 27, 1905. Serial No. 293,474.

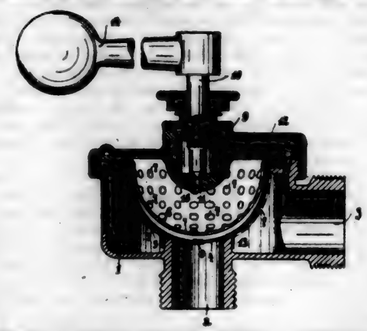

Claim.—A cock or valve comprising a chamber having an inlet forming a seat and an outlet for fluid, a perforated elastic cut-off member of hemispherical form mounted directly over said inlet and adapted to be seated thereon when the cock is closed, perforated walls inclosing said cut-off member while allowing same a limited amount of movement, a chamber inclosed by said perforated walls and cut-off member, a channel communicating with said chamber and the outlet aforesaid and a valve for opening and closing said channel substantially as described.

848,740. SPRING-SCALE. MARIUS H. HANSEN, Chicago, Ill. Filed June 29, 1905. Serial No. 267,587.

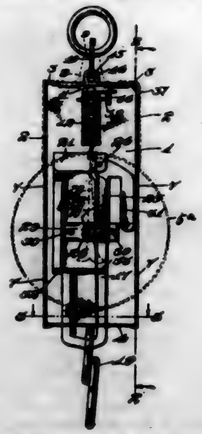

Claim.—1. A spring-scale having in combination a case having an opening in its bottom and a single spring supported by the case, a draw-bar made of a broad piece of sheet metal, the upper end of said draw-bar being bent downward, the two sides of said bent portion being perforated at one side of the longitudinal center of the draw-bar, a hook secured to the lower end of the spring and occupying said opening, a rack pivoted to the draw-bar, a pointer and means for transmitting movement from the rack to the pointer, substantially as set forth.

2. A spring-scale having in combination a case, a spring supported by the case, a draw-bar made of sheet metal, and having at its upper end two downwardly-turned portions, a rack-bar, the upper end of which occupies the space between said downwardly-turned portion, and is pivoted thereto substantially as described.

3. A spring-scale having a case, a spring, the upper end of which is supported by the case, an adjustable fork engaging the upper end of the spring, and a draw-bar, the lower end of the spring being provided with means for engaging the draw-bar, substantially as described.

4. In a spring-scale, the combination of a case, a spring supported by the case and having at its lower end a hook, a draw-bar made of sheet metal and having its upper end bent first horizontally and then downwardly, the top of said bent portion having an elongated opening and the adjacent portion of the draw-bar having an opening, through which openings the hook of the spring passes, and a rack pivoted to the aforesaid downwardly-extending portion, substantially as described.

5. A spring-scale having in combination a case, a spring supported thereby, a draw-bar supported by the spring, means carried by the draw-bar for supporting the load, a rack-bar carried by the draw-bar, a pinion with which the rack-bar engages, and a weight for holding the rack-bar in engagement with the pinion, said weight being adapted to contact with the side of the case for limiting the lateral movement of the upper end of the draw-bar, substantially as described.

6. A draw-bar for scales made of a single piece of sheet metal, having its upper end bent to provide a horizontal portion and a vertical depending portion, a portion of the horizontal portion and of the upper portion of the draw-bar proper being slit and bent downwardly to form a lug parallel with the aforesaid depending portion, the horizontal portion and the draw-bar being provided with openings, a spring having flattened hook passing through said openings and a rack-bar pivoted between the two vertical depending portions, substantially as described.

848,741. FENDER ATTACHMENT FOR CULTIVATORS. WILLIAM H. HARDMAN, Edison, Ohio. Filed Aug. 31, 1906. Serial No. 332,811.

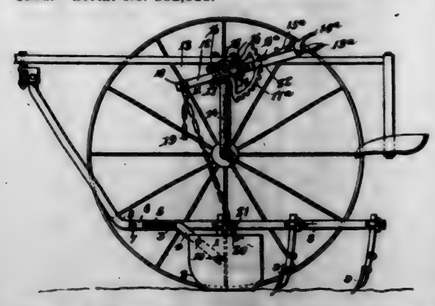

Claim.—1. The combination with a cultivator having an arched axle and provided with spaced cultivator-beams arranged below the axle, of a pair of guards or fenders located in the space between the beams and movable independently thereof, and a single longitudinally-disposed lever mounted on the arched axle above and between the cultivator-beams and provided with arms connected with the fenders for adjusting the same independently of the cultivator-beams.

2. A cultivator attachment comprising a pair of movably-mounted guards or fenders adapted to be raised or lowered, and a substantially T-shaped operating-lever fulcrumed at an intermediate point and having opposite laterally-extending arms connected with the guards or fenders.

3. A cultivator attachment comprising a pair of guards or fenders adapted to be raised or lowered, a substantially T-shaped operating-lever provided at an intermediate point with a clamp for fulcruming the lever on a cultivator, and means for connecting the opposite arms of the lever with the guards or fenders.

4. A cultivator attachment comprising a pair of movably-mounted guards or fenders, an operating-lever connected with the guards or fenders and provided at an intermediate point with a bearing-recess, a clamping plate or member spaced from the lever and provided with a bearing-recess located opposite that of the lever, and adjusting devices connecting the clamping plate or member with the lever.

5. The combination with a cultivator having opposite beams and provided with an arched axle, of guards or fenders having arms pivotally connected with the said beams, an operating-lever fulcrumed at an intermediate point on the axle and provided in advance of the same with opposite arms and having a handle portion in rear of the said axle, and connections between the guards or fenders and the arms of the operating-lever.

848,742. EXCAVATING-MACHINE. JOHN HELM, St. Louis, Mo. Filed Mar. 7, 1906. Serial No. 304,613.

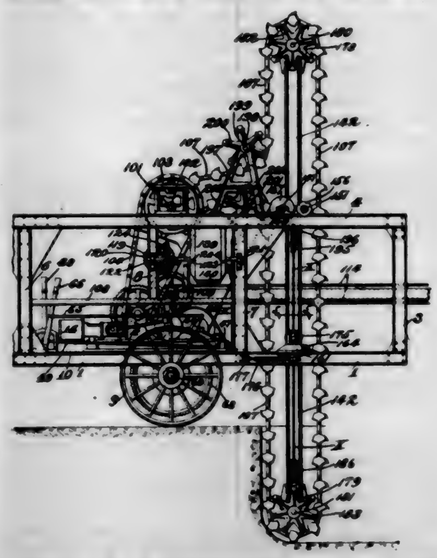

Claim.—1. An excavating-machine comprising a main frame, an excavating member, guides on said main frame, said excavating member being reciprocatingly mounted in said guides, and a cable for raising and lowering said excavating member.

2. An excavating-machine comprising a main frame, excavating means guided by rollers mounted on said main frame, and a winding-drum and a cable for raising and lowering said excavating means.

3. An excavating-machine comprising a main frame, excavating means, a transversely-arranged drag-conveyer and a longitudinally-arranged conveyer, said longitudinal conveyer being adapted to receive the excavated material from said drag-conveyer.

4. An excavating-machine comprising a main frame, having top and bottom longitudinal beams, an excavating-frame, and guide-rollers arranged on shafts mounted on said top and bottom beams in which said excavating-frame is mounted.

5. An excavating-machine comprising a main frame, provided with upper and lower longitudinal beams, an excavating-frame, guide-rollers for said excavating-frame arranged on shafts mounted on said upper and lower longitudinal beams, and resilient means connected with said excavating-frame for yieldingly holding said excavating-frame to its work.

6. In an excavating-machine, an excavating-frame, and means for vertically moving said excavating-frame, said means comprising a cable, a winding-drum, a sheave for said cable, and yielding means for holding said sheave in position.

7. An excavating-machine comprising an excavating-frame, a cable for operating said excavating-frame, a winding-drum for said cable, a shaft on which said winding-drum is mounted, a clutch for operatively connecting said drum and said shaft, means for propelling said machine, a gear on said winding-drum shaft, said gear being operatively connected with said propelling means, and a clutch for connecting said gear with said shaft.

8. An excavating-machine comprising a main frame, an engine-shaft mounted on said main frame, a pinion on said engine-shaft, a gear engaging said pinion, a shaft on which said gear is mounted, means on said shaft for propelling said machine, an excavating-frame, means on said shaft for vertically reciprocating said excavating-frame, and clutches mounted on said shaft which control the connection and disconnection of said propelling means and said reciprocating means with said shaft.

9. An excavating-machine comprising a main frame, an excavating-frame, an excavating-bucket chain, and means for propelling said machine, said propelling means comprising a winding-drum, a cable, and yielding means adapted to regulate the tension of said cable.

10. An excavating-machine comprising a main frame, an excavating-frame, an operating-cable supporting said excavating-frame, a cable-sheave mounted within said excavating-frame, and springs interposed between said sheave and a part fixed on said excavating-frame.

11. In an excavating-machine, a main frame, an excavating-frame reciprocatingly mounted in guides in said main frame, a sheave mounted in a sliding block in said excavating-frame, springs interposed between said sliding block and a fixed abutment on said excavating-frame, and a cable passing under said sheave and attached to a winding-drum on said main frame whereby said excavating-frame can be reciprocated and yieldingly supported.

12. In an excavating-machine, a main frame, a traction-carriage for said main frame, means for propelling said carriage, an excavating-frame reciprocatingly mounted in said main frame, upper and lower guides on said main frame for said excavating-frame, said lower guide being longitudinally movable and yieldingly held on said main frame, whereby said excavating-frame can be yieldingly held to its work.

13. In an excavating-machine, a main frame, a vertically-movable excavating-frame mounted in guides on said main frame, means for reciprocating and supporting said excavating-frame in working position, sprocket-wheels at the top and bottom of said excavating-frame, a driving-shaft mounted on said main frame and laterally disposed relative to said excavating-frame, sprocket-wheels on said driving-shaft, idler sprocket-wheels mounted on said main frame between said driving sprocket-wheels and said excavating-frame, said idlers being tangentially disposed relative to the sprocket-wheels on said excavating-frame in the direction of reciprocation of said frame, and an endless-chain excavating-bucket conveyer passing around the sprocket-wheels on said excavating-frame, and between said idler sprocket-wheels and around said driving sprocket-wheels.

848,743. EXCAVATING BUCKET AND CUTTER. JOHN HELM, St. Louis, Mo. Filed Mar. 7, 1906. Serial No. 304,614.

Claim.—1. A cutting-bucket for excavating-machines comprising a bucket proper, and a cutting member having a serrated cutting edge forming pointed and rigid teeth, the metal below the apex of each tooth being cut away to render the metal of substantially uniform thickness from cutting edge to base.

2. A cutting-bucket for excavating-machines comprising a bucket proper, a separable forward cutting member, and separable side cutting members adjacent to the ends of said forward member, and in coöperative relation thereto.

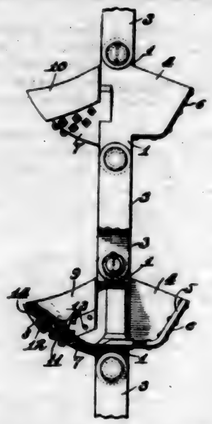

3. A cutting-bucket for excavating-machines comprising a bucket proper, an intermediate cutting member separably secured to the forward portion of said bucket, said separable cutting member having a serrated cutting edge forming pointed and rigid teeth, and side cutting members separably mounted on said bucket at each end of said serrated cutting member and in coöperative relation to said intermediate cutting member.

4. A cutting-bucket for excavating-machines comprising a bucket proper having integral side and forward bottom portions said forward bottom portion having a seat formed therein, a cutting member having a rearward fastening portion adapted to rest in said seat, and also formed with a recess adapted to receive the forward edge of said bottom portion.

848,744. SUSPENDING AND HOISTING MECHANISM. OLAF HETLESAETER, Milwaukee, Wis., assignor to Allis-Chalmers Company, Milwaukee, Wis., a Corporation of New Jersey. Filed July 12, 1906. Serial No. 325,765.

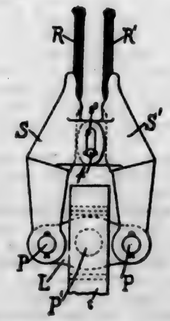

Claim.—1. The combination with a member adapted to be supported, of a plurality of means for supporting said member, said means being connected to prevent separation thereof while permitting a limited movement of one means with respect to another.

2. The combination with a member adapted to be supported, of an equalizing-lever, and a plurality of supporting means attached to said lever, said supporting means being connected to prevent separation thereof.

3. The combination with a member adapted to be sup-

ported, of an equalizing-lever and a plurality of supporting means attached to said lever, said supporting means being connected to prevent separation thereof while permitting a limited movement of one means with respect to another.

4. The combination with a member adapted to be supported, said member being provided with an aperture, of an equalizing-lever projected through said aperture, and a plurality of supporting means attached to said lever, said supporting means being connected to prevent separation thereof.

5. The combination with a member adapted to be supported, said member being provided with an aperture, of an equalizing-lever projected through said aperture, and a plurality of supporting means attached to said lever, said supporting means being connected to prevent separation thereof while permitting a limited movement of one means with respect to another.

6. The combination with the member *t* of the lever L and the splicing members S, S' provided with the elongated slots s^3, said members being connected by the pin p.

7. The combination of a member adapted to be supported, said member being provided with an aperture, an equalizing-lever projected through said aperture and provided with a pivot, said lever and pivot being movably supported within said aperture.

8. The combination with a member adapted to be supported, said member being provided with a cylindrical aperture, revoluble means disposed within said aperture, a lever projected through said aperture and pivoted on said revoluble means, and supporting means attached to said lever.

848,745. TIRE FOR VEHICLES. JOHN E. HOPKINSON, West Drayton, England. Filed Feb. 28, 1906. Serial No. 303,350.

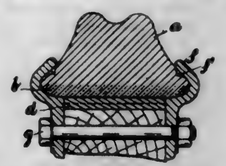

Claim.—1. In a tire for vehicles, a rim, transverse slots in said rim, said slots being of tapered width, an elastic tire seated in said rim, said tire having a rubber base harder than the tread, projections from the base of said tire, said projections being tapered in width and adapted to engage with and be locked in said rim.

2. In a tire for vehicles, a rim, transverse slots in said rim, said slots being of taper width and inclined to the plane of the wheel, an elastic tire seated in said rim, said tire having a rubber base harder than the tread, projections from the base of said tire, said projections being tapered in width, inclined to the plane of the wheel and adapted to engage with and be locked in said rim.

3. In a tire for vehicles, a rim, a periphery to said rim, said periphery being inclined to the plane of the wheel, transverse slots in said rim, said slots being of taper width and inclined to the plane of the wheel, an elastic tire seated in said rim, said tire having a rubber base harder than the tread, said base being inclined to the plane of the wheel, projections from the base of said tire, said projections being inclined to the plane of the wheel, tapered in width and adapted to engage with and be locked in said rim.

4. In a tire for vehicles, a felly-ring, transverse dovetail slots of tapering width in said felly-ring, a rubber tire, an elastic tread portion to said tire, a base to said tire of harder rubber, and transverse projections tapered in width from the base of said tire extending across said base and adapted to enter and fit said felly-slots.

5. In a tire for vehicles, a felly-ring having transverse dovetail slots of tapering width made therein, a rubber tire having an elastic tread portion and having a base of harder rubber, said base having dovetail projections tapering in width and fitting said slots, and flange-plates mounted upon the sides of the rim.

6. In a tire for vehicles, a felly-ring having transverse dovetail slots of tapering width made therein, a rubber tire having an elastic tread portion and having a base of harder rubber, said base having dovetail projections tapering in width and fitting said slots, and flange-plates mounted upon the sides of the rim said plates having inturned edges and a beading with diamond-shaped points projecting into contact with the tire.

7. In a tire for vehicles, a wheel-rim, transverse slots across said wheel-rim, said slots being of dovetail form tapering in width and having floors longitudinally inclined from end to end, an elastic tire having a hardened base, transverse projecting bars from and extending across said base, said bars being of dovetail form and having under surfaces inclined longitudinally from end to end and adapted to fit said tapered slots, and flange-plates upon the wheel-rim adapted to pull the tire into the bed of the rim.

8. In a tire for vehicles, a wheel-rim, transverse slots across said wheel-rim, said slots having their floors inclined longitudinally from end to end, an elastic tire having transverse dovetail projections across its inner periphery, said projections having their under surfaces inclined longitudinally from end to end, flange-plates on the sides of the wheel, said tire being adapted to be slid laterally upon the rim with the inclined projections fitting said inclined slots and to be retained in position by said flange-plates.

9. In a tire for vehicles, a wheel-rim, transverse dovetail slots across said rim, said slots being tapering in width and having floors inclined in the direction of their length, an elastic tire having a hardened backing, and transverse projecting bars across said backing, said bars being of dovetail form tapering in width and having under surfaces inclined in the direction of their length, said bars adapted to fit said slots, said tire being pushed laterally into place upon the rim, and means for holding said tire in position upon the rim.

848,746. ADHESIVE COMPOUND. MONE R. ISAACS, Philadelphia, Pa. Filed Oct. 11, 1906. Serial No. 338,397.

Claim.—1. An adhesive compound consisting of a proteid, lime, a fluorid, and a compound containing calcium and magnesium.

2. An adhesive compound consisting of casein, lime, a fluorid and a compound containing calcium and magnesium.

3. An adhesive compound consisting of casein, lime, a fluorid, and a compound of the silicates and aluminates of calcium and magnesium.

4. An adhesive compound consisting of casein, lime, sodium fluorid and a compound of the silicates and aluminates of calcium and magnesium.

5. An adhesive compound consisting of casein, lime sodium fluorid and hydraulic cement.

6. An adhesive compound consisting of casein, lime, sodium fluorid and Portland cement.

7. An adhesive compound consisting of casein one hundred parts, lime two to ten parts, sodium fluorid two to eight parts, Portland cement nine to fifteen parts.

8. A composition of matter to be used for making an adhesive compound consisting of lime, a fluorid and a compound of the silicates and aluminates of calcium and magnesium.

9. A composition of matter to be used for making an adhesive compound consisting of lime, sodium fluorid and a compound of the silicates and aluminates of calcium and magnesium.

10. A composition of matter to be used for making an adhesive compound consisting of lime, sodium fluorid and hydraulic cement.

11. A composition of matter to be used for making an ingredient of a casein adhesive compound consisting of lime, sodium fluorid and Portland cement.

12. An adhesive compound consisting of casein, lime, sodium fluorid, hydraulic cement and water.

13. An adhesive compound consisting of casein, lime, sodium fluorid, Portland cement and water.

14. A composition of matter to be used for making an adhesive compound, consisting of lime, sodium fluorid, a compound of the silicates and aluminates of calcium and magnesium, and water.

848,747. WHEEL FOR VEHICLES. THOMAS JONES, Hampton-in-Arden, England. Filed Aug. 31, 1905. Serial No. 276,570.

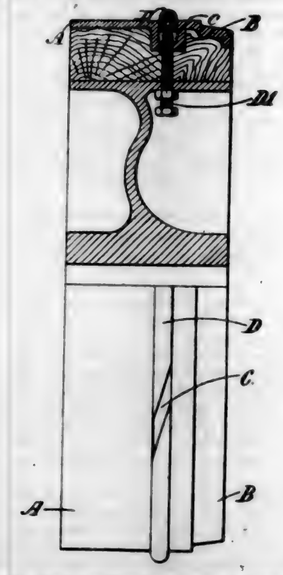

Claim.—1. The combination with a road or similar wheel, of a spring-ring adapted to be expanded to engage a tramway or similar rail, substantially as described.

2. The combination with a road or similar wheel having a tread portion adapted to engage a road-surface, of a second tread portion adapted for railway use a peripheral groove in the road-tread surface, and a spring-ring normally lying within said groove, adapted to be expanded to engage a tramway or similar rail substantially as described.

848,748. WAFER-LIFTING DEVICE. YASUKE KAWASAKI, Vancouver, British Columbia, Canada. Filed Nov. 30, 1906. Serial No. 345,780.

Claim.—1. As a wafer-lifting device a series of independently-resilient thin blades downwardly projecting at an acute incline from a common frame to which they are secured.

2. As a wafer-lifting device a series of independently-resilient inclined blades and means for securing them to a common frame or plate.

3. As a wafer-lifting device an open frame having handles on the sides and a series of independently-resilient thin blades secured to the under side of the frame said blades being first backwardly bent and then forwardly bent to form a flat surface at an acute angle to a common plane through the front lower edges of the blades.

848,749. TRUNK-CIRCUIT FOR TELEPHONE SYSTEMS. JOSEPH B. KELLEY and EDWIN B. HEAFORD, Omaha, Nebr. Filed Dec. 31, 1906. Serial No. 350,302.

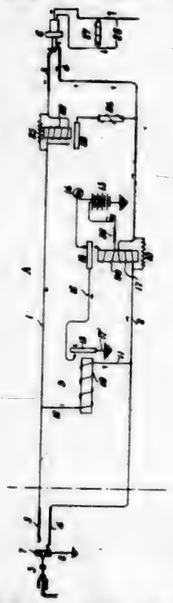

Claim.—1. In a telephone system, the combination of an exchange-station, and a toll-station, with a two-conductor trunk-line, a signal-circuit associated with the trunk-line, a bridged relay for closing the signal-circuit when the exchange-station is connected with the trunk-line, a relay for opening the signal-circuit when the toll-station is connected with the trunk-line, and a means for locking out the signal as long as the bridged relay is energized.

2. In a telephone system, the combination of an exchange-station, and a toll-station, with a two-conductor trunk-line, a signal, a battery connected therewith, a signal-circuit, a relay bridged across the trunk-line and having a grounded armature adapted to close the signal-circuit when the exchange-station is connected with the trunk-line, a relay in the trunk-line energized when the toll-station is connected with the trunk-line and having an armature for opening the signal-circuit, and a lock-out means supplied with current from the said battery for holding the signal-circuit open as long as the bridged relay is energized.

3. In a telephone system, the combination of an exchange-station, and a toll-station, with a two-conductor trunk-line, a signal-circuit including a source of current, a relay of high resistance bridged across the trunk-line to be energized by current from the exchange-station when the latter is connected with the trunk-line and provided with a grounded armature adapted to close the signal-circuit, a relay-coil in series with one side of the trunk-line and having an armature for opening the signal-circuit when the toll-station is connected with the trunk-line, and a lock-out coil connected with the source of current in the signal-circuit and connected with the armature of the series relay when the latter is actuated and grounded through said armature and the armature of the bridged relay for holding the lamp-circuit open as long as the bridged relay is energized.

4. In a telephone system, the combination of an exchange-station, and a toll-station, with a two-conductor trunk-line, a signal-circuit including a battery having one side grounded, a relay bridged across the trunk-line and having a grounded armature for closing the signal-circuit,

a cut-out relay in one side of the trunk-line and provided with an armature included in the signal-circuit for opening the latter, and means dependent upon the bridged relay for holding the armature of the cut-out relay in open circuit.

5. In a telephone system, the combination of an exchange-station, and a toll-station, with a two-conductor trunk-line, a signal-circuit including a battery having one side grounded, a relay bridged across the trunk-line and having a grounded armature for closing the signal-circuit, a cut-out relay in one side of the trunk-line and provided with an armature included in the signal-circuit for opening the latter, a lock-out coil on the latter relay adapted to be connected with the armature of the cut-out relay when the latter is actuated, and a resistance-containing conductor connected with the ungrounded side of the said battery and with the lock-out coil.

6. In a telephone system, the combination of an exchange-station, and a toll-station, with a two-conductor trunk-line, a signal-circuit including a battery having one side grounded, a relay bridged across the trunk-line and having a grounded armature for closing the signal-circuit, a relay connected in series with one side of the trunk-line and provided with an armature included in the signal-circuit for opening the latter, a lock-out coil on the last-mentioned relay adapted to be connected with the armature of the same when the latter is actuated, a resistance-containing conductor connecting the lock-out coil with the ungrounded side of the said battery, a relay-coil connected in series with the other side of the trunk-line, and a conductor containing retardation bridged across the trunk-line by the armature of the last-mentioned relay.

848,750. ELECTRIC TRANSMISSION OF INTELLIGENCE. ISIDOR KITSEE, Philadelphia, Pa. Filed June 28, 1906. Serial No. 323,861.

Claim.—1. In a telegraph system, the combination with the line, of a return-conductor, two branch circuits connected between said line and said return-conductor, one branch conductively connected to the line and including the winding of a receiving instrument and a key, the other branch connected from said line to said return-conductor independently of said first branch and containing a second winding of said receiving instrument and a condenser.

2. In a telegraph system, the combination with the line, of a return-conductor, two branch circuits at each station connected independently of each other between said line and said return-conductor, a receiving instrument having oppositely-disposed windings, one winding conductively included in one branch with a transmitter, the other winding included in the other branch with a condenser, and means for adjusting the effect of said second winding.

3. In a telegraph system, the combination with the line, of a return-conductor, two independent branches at each station from said line to said return-conductor, one branch conductively connected to the line and containing a winding of a receiving instrument and a transmitter of direct current, the second branch including a second winding of said receiving instrument disposed oppositely to said first-mentioned winding, and a condenser.

4. In a telegraph system, the combination with the line, of a return-conductor, two independent branch circuits between said line and return-conductor at each station, a receiving instrument having a winding connected in one branch with a source of direct current and a key, a second winding of said receiving instrument connected in the other branch with a condenser and disposed oppositely to said first-mentioned winding.

5. In a telegraph system, the combination with the line, of a return-circuit, two branch circuits at each station from said line to said return-circuit, one branch conductively connected to the line and containing the winding of a receiving instrument and a transmitter, the second branch including a winding of said receiving device connected in opposition to said first-mentioned winding, and a condenser.

6. In a telegraph system, the combination with the line, of a return-circuit, and two branches from said line to said return-circuit at each station, one branch conductively connected to said line and containing the winding of a receiving device, an inductance and a transmitter, the second branch including a winding of said receiving device oppositely disposed with respect to said first-mentioned winding, and a condenser.

7. In a telegraph system, the combination with the line, of a return-circuit, two branches from said line to said return-circuit at each station, one branch conductively connected to said line-circuit and including the winding of a receiving device, a transmitter, and an inductance, the second branch including a winding of said receiving device disposed oppositely to said first-mentioned winding, and a condenser.

8. In a telegraph system, the combination with the line, of a return-circuit, two branches from said line to return-circuit at each station, one branch conductively connected to said line and including a winding of a receiving instrument, a source of energy and a key, the other branch including the winding of said receiving device disposed oppositely to said first-mentioned winding, and a condenser.

9. In a telegraph system, the combination with the line, of a return-circuit, two branches between said line and return-circuit at each station, one branch including the winding of a receiving device, a source of energy, a key, and an inductance, the other branch including a winding of said receiving device disposed oppositely to said first-mentioned winding, and a condenser.

10. In a telegraph system, the combination with the line, of a return-circuit, two branches between said line and return-circuit at each station, one branch including the winding of a receiving device, a source of energy, and a key, a condenser in shunt to said key, said second branch including a winding of said receiving device disposed oppositely to said first-mentioned winding, and a condenser.

11. In a telegraph system, the combination with a line conductor, of a return-conductor, a receiving instrument and a transmitter at each station, a winding of said receiving instrument conductively connected to the line conductor and to the return-conductor, and means for rendering ineffective impulses induced in said line conductor by another circuit comprising a second winding on said receiving instrument connected in circuit with a condenser between said line and return conductors independently of said transmitter.

848,751. ELECTRIC TRANSMISSION OF INTELLIGENCE. ISIDOR KITSEE, Philadelphia, Pa. Filed Aug. 9, 1906. Serial No. 329,886.

Claim.—1. A line of transmission comprising means to neutralise the inducing effect of other lines, said means embracing for the devices inserted in said line a converter, one coil connected to part of the circuit with the interposition of condensers and the second coil connected in multiple arc to the receiving device to be protected.

2. In combination with a line of transmission and stations therefor, means to protect the receiving devices of said stations from the influence of impulses induced in said line, said means comprising a path opaque to the flow of a voltaic current, said path connected with one terminal to the line and with the second terminal to the ground, one coil of a converter inserted in said path and the second coil of said converter connected with the interposition of condensers to the device to be protected.

3. As a means to protect devices inserted in a line of transmission from the inducing effect on neighboring lines, a converter for each of said devices, one coil connected in a grounded branch circuit and the second coil connected in multiple arc to the device to be protected, both coils provided with means to make the same opaque to the flow of a voltaic or straight current.

848,752. TELEGRAPHY. ISIDOR KITSEE, Philadelphia, Pa. Filed Aug. 27, 1906. Serial No. 332,175.

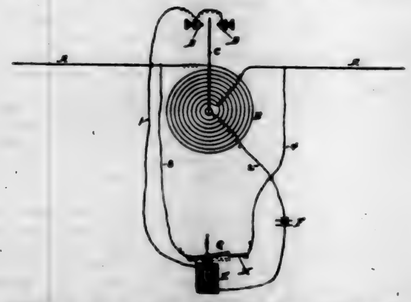

Claim.—1. As a means to return the movable part of a receiving device inserted in a line of transmission to its normal or zero position, a shunt around said receiving device, said shunt embracing the armature of an electromagnet, a stationary contact in the region of said armature, said armature adapted to close said local circuit only during the return movement to its normal position.

2. In telegraphic apparatus, the combination with the relay or receiving device inserted in the line of transmission of a shunt-circuit embracing the armature of an electromagnet and means to close said shunt only during the movement of said armature from one position to a second position.

3. In telegraphic apparatus, the combination with the relay or receiving device inserted in a line of transmission, a shunt-circuit embracing the armature of an electromagnet and means to close said shunt during the upward movement of said armature.

848,753. ELECTRIC RECEIVING DEVICE. ISIDOR KITSEE, Philadelphia, Pa. Filed Sept. 8, 1906. Serial No. 333,846.

Claim.—1. A receiving device for electric transmission of intelligence comprising a permanent magnet, an electromagnet for each pole of said magnet, a vibrating diaphragm for each of said electromagnets and means to connect to each of said diaphragms a localized device adapted to be actuated through the movements of said diaphragms.

2. Means to receive impulses impressed upon a line of transmission and translate the same, said means embracing two vibrating diaphragms, an electromagnet for each of said diaphragms, means to induce magnetic lines of force in the core of each of said electromagnets, a siphon-recorder, and means to induce movements in said siphon-recorder through the movements of both of said diaphragms.

3. In electric transmission of intelligence, a receiving device comprising two electromagnets, a vibrating diaphragm for each of said electromagents, a polarized armature for each of said diaphragms, means to induce magnetic lines of force locally in the cores of said electromagnets, a translating device, and means to operate said translating device through the movements of both of said diaphragms.

4. In combination, a receiving device and a localized translating device, both operatively related to each other, the receiving device inserted in the line of transmission and comprising two telephonic receivers, the vibrating diaphragms of both receivers provided with polarized means and adapted through their movements to actuate said translating device.

5. Means to receive impulses impressed upon a line of transmission and translate the same, said means embracing two telephonic receivers inserted in the line of transmission, a localized translating device and means to operate said translating device through the movements of the diaphragms of one or the other of the telephonic receivers.

848,754. CROSS-HEAD. GEORGE LANE, Poughkeepsie, N. Y., assignor to Lane Motor Vehicle Co., a Corporation of New Jersey. Filed Jan. 2, 1907. Serial No. 350,482.

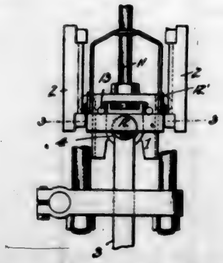

Claim.—1. In combination with a reciprocating member, a guide therefor on each side thereof, antifriction devices between the reciprocating member and the guides and having movement of translation longitudinally of both the reciprocating member and the guides, and means for positively maintaining the oppositely-placed antifriction devices in their relative positions at all points of the stroke of the cross-head, substantially as described.

2. In combination with a reciprocating member, guides between which the reciprocating member moves, antifriction devices between said reciprocating member and the guides and located upon opposite sides of the said reciprocating member, and a retainer for the antifriction devices forming a connection between said oppositely-located antifriction devices and causing them to maintain their relative positions and move in unison, said retaining means having movement with the antifriction devices, longitudinally of the reciprocating member substantially as described.

3. In combination, a reciprocating member, guides between which said member moves, antifriction devices between the said member and the guides, a retainer engaging the antifriction devices and forming a connection between them causing them to move in unison, the said retainer being adjusted at the ends of the stroke by the reciprocating member, substantially as described.

4. In combination, a cross-head, guides therefor, the

rollers between the cross-head and guides, a retainer having openings in which the rollers are held, said retainer being free from the cross-head to have a differential stroke in respect thereto and arranged to be adjusted at the ends of the strokes of said cross-head, substantially as described.

5. In combination, a cross-head, guides therefor, antifriction devices between the cross-head and the guides, and a retainer guided by the piston-rod and engaging the antifriction device, substantially as described.

6. In combination, a cross-head, two guides therefor, an antifriction device located between the cross-head and each guide, a retainer for the antifriction devices having a lateral bearing on the piston-rod and a longitudinal bearing on each antifriction device.

848,755. TELLER'S WINDOW. EMERY LIBERTY, New York, N. Y., assignor of one-half to David Nevius, New York, N. Y. Filed Nov. 7, 1904. Renewed Mar. 21, 1906. Serial No. 307,256.

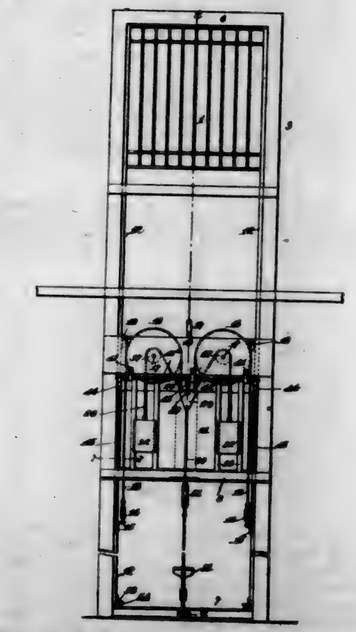

Claim.—1. In a teller's window, the combination with a gate, sliding in guides within the window, of a wheel, a flexible tension member connecting the gate and wheel, means for rotating the wheel and a lock for preventing open movement of the gate, the lock being actuated by the wheel-rotating mechanism.

2. In a teller's window, the combination with a gate sliding in guides within the window, of a wheel, a flexible tension member, connecting the gate and wheel, means for rotating the wheel, and a lock for preventing open movement of the gate, the lock being actuated to unlock the gate by a movement of the wheel-actuating mechanism in one direction, and to lock the gate on the reverse movement of the wheel-actuating mechanism.

3. In a teller's window, the combination with a gate sliding in guides within the window, a rod carried by the gate, means for opening and closing the gate, and a clutch adapted to engage with the rod during the closing of the gate and prevent opening of the gate, the clutch being actuated by the opening mechanism.

4. In a teller's window, the combination with a gate sliding in guides within the window, a rod carried by the gate, means for opening and closing the gate, and a clutch adapted to engage with the rod during the closing of the gate, the opening mechanism including a cam to actuate the clutch-operating mechanism.

5. In a teller's window, the combination with a gate sliding in guides within the window, a rod carried by the gate, means for opening and closing the gate, and a clutch adapted to engage with the rod during the closing of the gate, the clutch being secured upon a shaft, and means carried by the opening mechanism to rotate the shaft, and actuate the clutch.

6. In a teller's window, the combination with a gate sliding in guides within the window, a rod carried by the gate, means for opening and closing the gate, and a clutch adapted to engage with the rod during the closing of the gate, the clutch being secured upon a shaft, and a cam carried by the opening mechanism to rotate the shaft and actuate the clutch.

7. In a teller's window, the combination with a gate sliding in guides within the window, a plurality of rods carried by the gate, means for opening and closing the gate, clutches adapted to engage with the rods during the closing of the gate, the said clutches being carried upon a shaft, with means carried by the opening mechanism to rotate the shaft and actuate the clutches.

8. In a teller's window, the combination with a gate sliding in guides within the window, a plurality of rods carried by the gate, means for opening and closing the gate, clutches adapted to engage with the rod during the closing of the gate, the said clutches being carried upon a shaft, with means carried by the opening mechanism to rotate the shaft and actuate the clutches, and operating connections between the shaft and clutches.

9. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal, and connections between the pedal and wheel for rotating the latter, and opening the gate, the connections including a sprocket and a chain.

10. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal, and connections between the pedal and wheel for rotating the latter, and opening the gate, the connections including a sprocket and a chain, a lock for the gate, and a lost-motion connection between the sprocket and wheel.

11. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal, and connections between the pedal and wheel for rotating the latter, and opening the gate, and a lock for the gate, the said lock being controlled by the opening connections.

12. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the pedal and wheel for rotating the latter and opening the gate, the connections including a sprocket and a chain, and a lock for the gate, the said lock being controlled by the opening connections.

13. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal, and connections between the pedal and wheel for rotating the latter, and opening the gate, the connections including a sprocket and a chain, and a lost-motion connection between the sprocket and wheel, and a lock for the gate, the said lock being controlled by the opening connections.

14. In a teller's window, the combination with a gate, sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal and connections between the pedal and wheel for rotating the latter and opening the gate, a rod carried by the gate, a clutch adapted to engage with the rod, and connections between the gate-operating mechanism and the clutch for actuating the latter.

15. In a teller's window, the combination with a gate, sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal and connections between the pedal and wheel for rotating the latter and opening the gate, a rod carried by the gate, a clutch adapted to engage with the rod, and connections between the gate-operating mechanism and the clutch for actuating the latter, the connections comprising a cam and a finger.

16. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal and connections between the pedal and wheel for rotating the latter and opening the gate, the said connections including a chain and a sprocket-wheel, and a counterweight.

17. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel to the gate, a pedal and connections between the pedal and wheel for rotating the latter and opening the gate, the said connections including a chain and a sprocket-wheel, and a counterweight, and lost-motion connections between the wheel and sprocket and counterweight.

18. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the wheel and gate, and a lock, of means for rotating the wheel and opening the window, and lost-motion connections between the wheel and the rotating means, for permitting the tripping of the lock.

19. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the gate and wheel, and a lock, of a pedal, connections between the pedal and wheel for rotating the wheel and opening the window, and lost-motion connections between the pedal and wheel for permitting the tripping of the lock.

20. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the gate and wheel, and a lock, of means for rotating the wheel in one direction to open the window, lost-motion connections between the wheel and rotating means for permitting the tripping of the lock, and means for restoring the rotating means.

21. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the gate and wheel, of means for rotating the wheel in one direction to open the window, and a lock, lost-motion connections between the wheel and rotating means for permitting the tripping of the lock, means for restoring the rotating means, and means for closing the window.

22. In a teller's window, the combination with a gate sliding in guides within the window, a wheel, and a flexible tension member connecting the gate and wheel, and a lock, of means for rotating the wheel in one direction to open the window, lost-motion connections between the wheel and rotating means for permitting the tripping of the lock, means for restoring the rotating means, and means independent of the opening means for closing the window.

848,756. TELLER'S WINDOW. EMERY LIBERTY, New York, N. Y., assignor of one-half to David Nevius, New York, N. Y. Filed Mar. 21, 1906. Serial No. 307,178.

Claim.—1. In a teller's window, the combination with the wicket, of means for raising the wicket, such means including a rod, and a lock for the wicket, such lock including a friction-clutch engaging with the rod.

2. In a teller's window, the combination with a wicket, of lifting and locking means for the wicket, the said lifting and locking means being carried *in toto* upon a backing-plate, in such a manner as to form an entirety, adjustable independently of the wicket, and connections between the lifting and locking means and the wicket.

3. In a teller's window, the combination with the wicket, of a rod for lifting the wicket, a chain and sprocket for lifting the rod, a pinion and a rack for rotating the pinion, and means for moving the rack, a cam moved by the rack, lost-motion connections between the pinion and sprocket, a friction-clutch adapted to engage with the rod, and a dog adapted to engage with the cam and release the clutch.

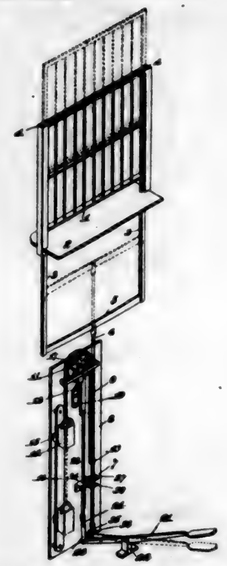

4. In a teller's window, the combination with a wicket, of means for moving the wicket and means for locking the wicket, such means including a rack, means for moving the rack, a rod, means actuated by the rack for moving the rod, and a friction-clutch engaging with the rod, and a dog actuated by the movement of the rack for disengaging the clutch, and connections between the rod and wicket.

5. In a teller's window, the combination of a backing-plate, a bracket thereon, the said bracket having a guide for the wicket-moving rod, and a plate-clutch for the rod secured to the bracket.

6. In a teller's window, the combination of a backing-plate, a bracket thereon, the said bracket having a guide for the wicket-moving rod, and a plate-clutch secured to the bracket, and a dog carried by the bracket and engaging with the clutch.

7. In a teller's window, the combination of the lifting-rod, and a guide therefor, the said guide being in the form of a bracket, a plate connected to the bracket, and having an opening through which the rod passes, and a spring surrounding the rod and engaging with the plate.

8. In a teller's window, the combination of the wicket and opening mechanism, such mechanism including a chain, and sprocket, and pinion, a rack engaging with the pinion, and a roller engaging with the rack, the said roller being adjustably mounted.

9. In a teller's window, the combination therewith of the opening mechanism including a chain and actuating mechanism therefor, and a counterweight, the said counterweight comprising a box and clips thereon, in engagement with a track of T-section.

10. In a teller's window, the combination of a wicket and a rod for elevating the wicket, means for elevating the rod, and a rubber cushion on the lower end of the rod, and a fixed abutment against which the button will contact when the wicket is closed.

848,757. ORIENTATION DEVICE. HENRY C. LOMB and ERNEST G. SAILER, Rochester, N. Y. Filed Oct. 29, 1906. Serial No. 340,958.

Claim.—1. In a device for establishing a luminous point of reference in an optical field, the combination with an

optical instrument, of a cross-hair arranged to appear in the field thereof embodying an electrical conducting filament provided at a point intermediate its ends with a section offering greater resistance to the passage of a current than the adjoining portions and an electrical circuit including said filament.

2. In a device for establishing a luminous point of reference in an optical field, the combination with an optical instrument, of a cross-hair arranged to appear in the field thereof embodying an electrical conducting-filament reduced in the area of its cross-section at a point intermediate its ends and an electrical circuit including said filament.

3. The combination with an optical instrument, of cross-hairs arranged therein composed of electrical conducting material and adapted to be rendered luminous at their point of intersection alone, by the passage of an electric current through them.

4. In a device for establishing a point of reference in an optical field, the combination with an optical instrument, of a cross-hair arranged to appear in the field thereof embodying a flat ribbon of suitable conducting material reduced in the area of its cross-section at a point intermediate its ends and an electrical circuit including said filament.

5. In an optical instrument, the combination with a cross-hair adapted to be rendered incandescent by means of an electric current, of means for imposing a yielding tensile strain on said cross-hair.

6. The combination with an optical instrument, of cross-hairs arranged therein composed of ribbons of conducting material reduced in width at their point of intersection to enable the said intersecting-points alone to be raised to incandescence by the passage of suitable electrical currents.

7. In an appliance for establishing a point of reference in an optical field, the combination with a support and a cross-hair connected thereto at one end, of a plug in the support, a plunger operating therein and connected to the opposite end of the cross-hair, a shoulder on the plunger and a spring arranged on the support and engaging the shoulder on the plunger to hold the cross-hair under tension.

8. In an electrically-illuminated cross-hair for optical instruments, the combination with a tubular support of electrical conducting material inclosing a filament in contact therewith at one end, of an insulated plug arranged in said support having a metallic core connected to the filament at one end and projecting beyond the plug at the other to form a binding-post.

9. A cross-hair for telescopes comprising a flat strip of material arranged transversely of the tube with its greatest transverse dimension extending in the direction of the optical axes of the lenses.

10. The combination with an optical instrument embodying a lens, of two cross-hairs composed of ribbons of suitable material arranged transversely at right angles to the optical axis and to each other with their greatest transverse dimension extending in the direction of said axis, whereby the observing organ may be alined with reference to the latter.

11. The combination with an optical instrument embodying a lens, of two cross-hairs composed of ribbons of suitable material arranged transversely at right angles to the optical axis and to each other with their greatest transverse dimension extending in the direction of said axis, and means for effecting a torsional adjustment of the cross-hairs.

848,758. HOT-AIR REGISTER. CHARLES H. MEISEYER, Saginaw, Mich. Filed Oct. 28, 1905. Renewed Feb. 18, 1907. Serial No. 358,114.

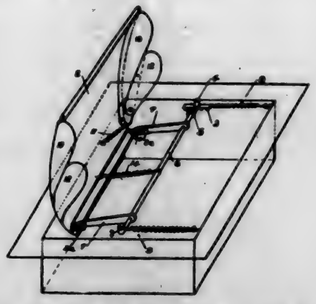

Claim.—1. The combination with the grate of a hot-air register, of a deflecting-hood adapted to project above the grating when opened and to disappear beneath the grating and shut the register when closed; a foot-pin and a rack carried by said pin; a rock-shaft carrying a pinion engaging said rack; radial arms fixed to said rock-shaft and pivotally secured at their ends to said hood.

2. The combination in a hot-air register with an approximately horizontal stationary grating extending across a register-opening, of a heat-deflector comprising a plate capable of being projected above the grating and an automatically folding and unfolding wing secured to at least one edge of the plate and carried thereby for reducing or enlarging the deflecting-surface.

3. The combination with a stationary grating, of a combined deflector-plate and closure therefor, the deflector-surface adapted to be projected beyond the grating or withdrawn behind the same, mechanism for projecting the deflector-surface or for retracting it, means for loosely connecting the mechanism and plate, and tension means extending between the plate and mechanism.

4. In a register, the combination with a stationary grating, of a deflecting-hood adapted to project above the grating when opened and to disappear beneath the grating and close the register when in lowered position, wings pivotally mounted on the hood and adapted to automatically expand when the hood is in raised position and to fold over the hood when the latter is in lowered position.

5. The combination with a register, of a deflector adapted to project in front of the register, when in extended position and to be withdrawn within the register to close the latter when in retracted position, a rod-and-lever connection for effecting the actuation of the deflector and resilient means placed under tension by the operation of the rod-and-lever connection for yieldingly retaining the deflector in any of its positions.

6. A deflector mechanism for discharge-openings comprising a suitable supported rock-shaft, arms projecting from the shaft, a hood to which the free ends of the arms are loosely pivoted, and a tension means connecting the hood and shaft.

7. A deflective mechanism for discharge-openings comprising a suitably-supported rock-shaft, arms projecting from the shaft, a hood to which the free ends of the arms are loosely pivoted, cranked arms on the shaft, tension means connecting the arms and the wall of the opening.

8. A deflector for openings comprising a hood, means for projecting the hood from and withdrawing it into the opening and overlapping wings pivotally secured to the opposite edges of the hood, the wings adapted to expand when the hood is projected and to overlap each other and the hood when the latter is withdrawn into the opening.

9. A deflector for discharge-openings comprising a hood, mechanism for projecting the hood from the opening to open the opening and for retracting it into the opening to close the latter and wings pivotally secured to the opposite edges of the hood, the wings adapted to expand as the hood is projected from the opening, the outer edges of the wings adapted to engage the wall of the opening when the hood is retracted to effect their closing.

848,759. PIPE-TESTING MACHINE. JOHN P. MERN, Brooklyn, N. Y., assignor of one-half to C. H. Bull, Brooklyn, N. Y. Filed Jan. 2, 1906. Serial No. 294,253.

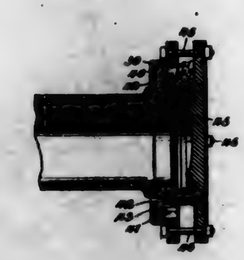

Claim.—1. In mechanism of the class described, the combination with a pipe-surrounding ring of sufficient diameter to pass over the enlarged end of a pipe, said ring having an annular recessed seat in its inner side, of a bearing-ring comprising sections that detachably fit in the seat and have their outer faces substantially flush with the outer face of the ring, a closure comprising a disk having an inwardly-extending boss of less diameter than the rings, said boss being arranged to be located in the end of the pipe, a packing-gasket surrounding and held in place by the boss, and bolts connecting the disk and pipe-surrounding ring to draw the same together.

2. In mechanism of the class described, the combination with a ring, of a pipe-closure, tie-bolts connecting the ring and closure, said ring having an annular seat, guides located in the ring, and a bearing-ring comprising sections that detachably fit in the seat between the guides, and are arranged to engage the pipe.

848,760. STONE-POLISHING WHEEL. SAMUEL H. MILLS, Montpelier, Vt. Filed July 30, 1906. Serial No. 328,496.

Claim.—A polishing-wheel provided on its lower face with a number of curved discontinuous ribs, both ends of some of the ribs being tapered down to let the abrasive material and sand pass under them.

848,760.

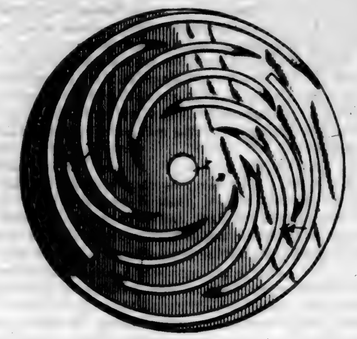

848,761. SELF-CLOSING DOOR OR SHUTTER. HENRY T. MOODY, Newburyport, Mass., assignor to Victor Manufacturing Company, Newburyport, Mass., a Copartnership. Filed Nov. 5, 1906. Serial No. 342,000.

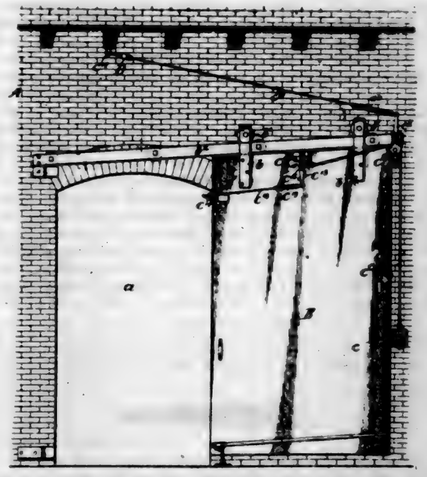

Claim.—1. The combination with a self-closing fire door or shutter of a weight, a rope connecting with the door or shutter and supporting said weight, a pulley over which the rope renders, and means supporting said pulley whereby the position thereof may become changed and said rope released therefrom.

2. The combination with a self-closing fire door or shutter of a weight, a rope connecting with the door or shutter supporting said weight, a pulley over which the rope renders, a supporting-fixture for said pulley, means connecting said pulley with its support whereby it may gravitate from a position of engagement with said rope to a position where said rope is released from said pulley, and releasable means holding said pulley in its position of engagement as aforesaid.

3. The combination with a self-closing fire door or shutter, of a weight, a rope supporting said weight, a pulley over which the rope renders, means whereby said rope prevents the closing of said door and releasable means supporting said pulley whereby the release of the support may free the door from the control of the weight.

4. The combination with a self-closing fire door or shutter of a weight, a rope connecting with the door or shutter supporting said weight, a pulley over which the rope ren-

dera, an arm carrying said pulley, a fixture of support to which said arm is pivoted, a lever connecting with said arm adapted to hold said pulley-carrying arm in a position whereby said pulley may receive said rope, a stop for defining said position, releasable means including the element of a fusible link for holding said lever in an engaging position, and means secured to said pulley-carrying arm for casting off or releasing said rope from said pulley when said arm is released from its holding-lever, substantially as described.

5. The combination with a self-closing fire door or shutter, of a weight, a rope carrying said weight, a pulley over which the rope renders, a member pivotally fixed to the side of the door or shutter and with which member said rope makes detachable connection whereby it may be disconnected therefrom as said member is released to pivotally turn from an engaging position, means releasable when overheated for holding said member in an engaging position, and a stop for defining such position.

6. The combination with a self-closing fire door or shutter of a weight, a rope carrying said weight, a pulley over which the rope renders, an arm pivoted to the side of said door or shutter, a hook carried by said arm, means forming a detachable connection between said hook and the end of said weight-carrying rope and adapted to be released therefrom when said hook turns from an engaging position upon the pivotal turning of said arm, and means for holding said hook in engaging position comprising a connection including the element of a fusible link between said arm and said door or shutter.

7. The combination with a self-closing fire door or shutter, of a weight, a rope carrying said weight, a pulley over which the rope renders, means releasable when overheated by which said weight-carrying rope makes connection with the door or shutter, and independent means releasable when overheated whereby said rope may be released from said pulley.

8. The combination with a self-closing fire door or shutter, of a weight, a rope connecting with the door or shutter and supporting said weight, a pulley over which the rope renders, and means for detachably supporting said pulley in operative position to receive said rope whereby said pulley may become detached from its operative position as aforesaid and said rope become released therefrom.

848,762. PAPER-CLIP. CHARLES R. MUELLER, Detroit, Mich. Filed Aug. 20, 1906. Serial No. 331,243.

Claim.—A clip or paper fastener constructed to form a ring, one end of the material deflected inwardly to cross the ring and form a tongue, said tongue being curved outward from the ring at the point of connection and curving back to a point within the ring and then extending to engage the opposite side of the ring.

848,763. CAR-COUPLING. JOHN F. MCCARTHY, Indianapolis, Ind., assignor of two-thirds to Patrick F. Moriarty and John L. Ramsay, Indianapolis, Ind. Filed Jan. 7, 1907. Serial No. 351,251.

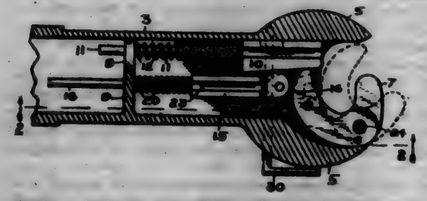

Claim.—1. In a car-coupling, a hollow draw-bar a coupling-piece of elbow form pivoted to said bar means for locking the coupling-piece an antifriction-wheel in contact with the inner arm of the coupling-piece and a spring to press the antifriction-wheel constantly against the coupling-piece and swing the latter into open position when released by said locking means.

2. In a car-coupler a hollow draw-bar a coupling-piece of elbow form pivoted within said draw-bar a sliding wedge to lock the coupling-piece in its closed position a head mounted within the draw-bar and having a sliding movement longitudinally of the draw-bar a spring pressing the head normally toward the coupling-piece and an antifriction-wheel carried by the head and bearing constantly against the inner arm of the coupling-piece.

3. In a car-coupler a hollow draw-bar, a coupling-piece of elbow form located within and pivoted to said draw-bar, a wedge-shaped locking-plate sliding lengthwise longitudinally of the draw-bar to lock the coupling-piece in closed position, a head mounted within the draw-bar longitudinal ribs in the draw-bar forming guides for said head said draw-bar having an inside lug a stem or bolt carried by said head and passing through said lug a spirally-wound spring surrounding said bolt and located between its head and said lug and an antifriction-wheel carried by the head having constant contact with said coupling-piece.

848,764. TYPE-WRITING MACHINE. HARRY S. MCCORMACK, New York, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Jan. 17, 1907. Serial No. 352,711.

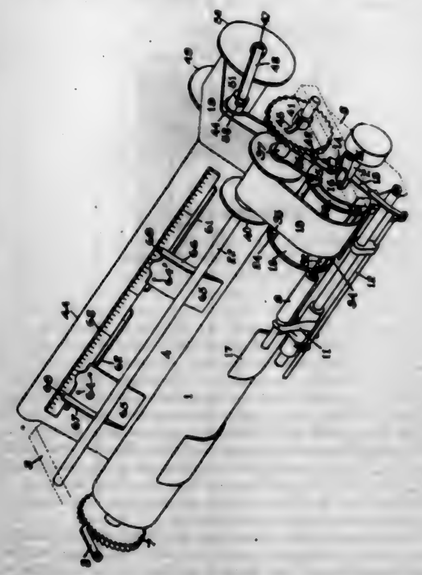

Claim.—1. In a type-writing machine, the combination with a revoluble main platen and a platen-frame, of an auxiliary platen fixed rigidly to the platen-frame at the end of the main platen.

2. In a type-writing machine having a revoluble main platen, a platen-frame and means for feeding paper around the platen, the combination of an auxiliary platen fixed rigidly to the platen-frame at the end of the main platen and flush therewith, and means for drawing a paper ribbon around the auxiliary fixed platen.

3. In a type-writing machine having types, a revoluble main platen and a platen-frame, the combination with an auxiliary platen fixed rigidly to the platen-frame at the

end of the main platen, of means for adjusting the auxiliary platen toward and away from the types.

4. In a type-writing machine having types, a revoluble main platen and a platen-frame, the combination with an auxiliary platen in the form of a segment of a cylinder at the end of the main platen, said segment being provided with an eccentric hinge whereby it is supported upon the platen-frame, of means for securing the segment rigidly to the platen-frame in different positions to which the segment is adjusted about said hinge.

5. In a type-writing machine having a revoluble main platen, a platen-frame and means for feeding paper around the platen, the combination of an auxiliary platen fixed rigidly to the platen-frame at the end of the main platen and flush therewith, means in rear of the auxiliary platen for holding a paper-ribbon spool, a second spool for drawing the ribbon off from the auxiliary platen, and line-spacing mechanism for the second spool.

6. In a type-writing machine having a revoluble main platen, a platen-frame, means for feeding paper around the platen and a line-spacing mechanism, the combination of an auxiliary platen fixed rigidly to the platen-frame at the end of the main platen and substantially coincident therewith, a spool in line with said auxiliary platen to receive a paper ribbon, and line-spacing mechanism to turn said spool to draw the ribbon over the auxiliary platen.

7. In a type-writing machine, the combination with a revoluble main platen and a platen-frame, of an auxiliary platen fixed rigidly to the platen-frame at the end of the main platen, and mechanism independent of the main platen for effecting intermittent line-feeding movements of a paper ribbon over said auxiliary platen.

8. In a type-writing machine, the combination with a revoluble main platen and a platen-frame, of an auxiliary platen fixed rigidly to the platen-frame at the end of the main platen, a delivery-spool and a receiving-spool in line with said auxiliary platen, and line-spacing mechanism connected to the receiving-spool to draw a paper ribbon from said delivery-spool over said auxiliary platen.

9. In a type-writing machine, the combination with a revoluble main platen and a platen-frame, of an auxiliary platen fixed rigidly to the platen-frame at the end of the main platen, a delivery-spool holder, a curved plate forming approximately a continuation of the fixed platen and extending back therefrom toward said spool-holder to form a surface around which the paper ribbon may run to the fixed platen, and means for drawing the paper ribbon from the fixed platen.

10. In a type-writing machine, the combination with a revoluble main platen and a platen-frame, of an auxiliary platen fixed rigidly to the platen-frame at the end of the main platen, a delivery-spool and a receiving-spool in line with said auxiliary platen, line-spacing mechanism connected to the receiving-spool to draw a paper ribbon from said delivery-spool over said auxiliary platen, and guiding devices over which the paper ribbon may run between the delivery-spool and the fixed platen and between the latter and the receiving-spool.

11. In a type-writing machine having a revoluble main platen, a platen-frame and a paper-shelf, the combination of an auxiliary platen at one end of the main platen, a receiving-spool in juxtaposition to the auxiliary platen, the latter being of reduced cross-section as compared to said main platen, to give clearance to said receiving-spool, the platens being flush at the printing-line, and a delivery-spool mounted upon the platen-frame in rear of the paper-shelf.

12. In a type-writing machine having a revoluble main platen and a platen-frame, the combination of an auxiliary platen between the main platen and one end of the platen-frame, and means to feed a paper ribbon around said auxiliary platen, said feeding means including a spool around which the paper ribbon is wound, said spool having flanges overlapping the end of the main platen, and the auxiliary platen being of reduced cross-section as compared to said main platen, to give clearance for said flanges, the platens being flush at the printing-line.

13. In a type-writing machine having a revoluble platen and a pressure-roll to run upon the platen and mechanism for releasing the pressure-roll, the combination of a spool for winding a paper ribbon independently of said platen, a ratchet-wheel for said spool, and a pawl connected to said releasing mechanism for operating said ratchet-wheel.

14. In a type-writing machine provided with types, the combination of means for supporting a main sheet and a paper ribbon side by side in position to be written upon by the types, said means including a revoluble platen and a roll for pressing the main sheet against the revoluble platen, means for releasing said roll, and means controlled by said releasing means for feeding the paper ribbon line by line.

15. In a type-writing machine having a revoluble platen, a pressure-roll to run thereon, and means to release the pressure-roll, the combination with an auxiliary platen at the end of the main platen, of means controlled by said releasing means for feeding a paper ribbon, line by line over said auxiliary platen.

16. In a type-writing machine having a revoluble platen, a pressure-roll to run thereon, and means to release the pressure-roll, the combination with an auxiliary platen at the end of the main platen, of means controlled by said releasing means for feeding a paper ribbon line by line over said auxiliary platen, said feeding means including a pawl connected to said releasing means, and a ratchet-wheel rotated by said pawl and connected to a rotary device for feeding the paper ribbon.

17. In a type-writing machine having a revoluble platen, a pressure-roll to run thereon, and means to release the pressure-roll, the combination with an auxiliary platen at the end of the main platen, of a spool for drawing a paper ribbon from said auxiliary platen, a ratchet-wheel for said spool, and a pawl operated by said releasing means to turn said ratchet-wheel.

18. In a type-writing machine having a revoluble main platen, a platen-frame and a paper-shelf in rear of the platen, the combination of an auxiliary platen at one end of the main platen, a receiving-spool in juxtaposition to the auxiliary platen, the latter being of reduced cross-section as compared to said main platen, to give clearance to said receiving-spool, and a delivery-spool holder mounted on the platen-frame to move from a position of use back of the paper-shelf to a position of disuse forward of the paper-shelf.

19. In a type-writing machine having a revoluble platen, a platen-frame and a paper-shelf in rear of the platen, and also having means to coöperate with the platen to feed wide sheets around the same, the combination of a receiving-spool forward of the paper-shelf, a delivery-spool coöperating therewith to feed a paper ribbon alongside of the wide sheets, and a line-feeding device for the receiving-spool; said delivery-spool mounted to move from a position of use back of the paper-shelf to a position of disuse forward of the paper-shelf.

20. In a type-writing machine having a revoluble platen, a platen-frame and a paper-shelf in rear of the platen, the combination of an arm carrying at one end a spool-holder and hinged at the other end upon the platen-frame, so that the spool-holder may be swung from the rear side to the front side of the platen, and yielding means for mechanically locking said arm in either such position.

21. In a type-writing machine having a revoluble platen and a paper-shelf in rear of the platen, the upper end of the paper-shelf being curved in tubular form, a bushing within the tubular portion of the paper-shelf, a pintle extending through the bushing, an arm fixed upon the pintle and carrying a holder for a paper-spool, said bushing recessed at its outer end to receive said arm and lock the same against rotation, and a spring connected to said pintle to draw said arm into the recess.

22. In a type-writing machine having a revoluble main platen provided with an axle, a platen-frame, a paper-shelf in rear of the platen, and a rod mounted upon the platen-frame and extending along the platen in rear thereof, the combination of an auxiliary platen in the form of a segment at one end of the main platen, plates upon which said auxiliary platen is mounted, said plates mounted upon said platen-axle, and a pair of arms mounted upon said axle and confined between said plates and extending

back to said rod to be held in position thereby, said platen-segment being curved eccentrically to said platen-axle and adjustable about said axle to rotate different portions of the segment into the printing-field to adjust the segment to the types.

23. In a type-writing machine having a revoluble main platen provided with an axle, a platen-frame, a paper-shelf in rear of the platen, and a rod mounted upon the platen-frame and extending along the platen in rear thereof, the combination of an auxiliary platen in the form of a segment at one end of the main platen, plates upon which said auxiliary platen is mounted, said plates mounted upon said platen-axle, and a pair of arms mounted upon said axle and confined between said plates and extending back to said rod to be held in position thereby, said platen-segment being curved eccentrically to said platen-axle and adjustable about said axle to rotate different portions of the segment into the printing-field to adjust the segment to the types, one of said plates having a closed slot to receive a screw which is threaded into one of said arms to secure the segment where adjusted, a hollow shaft mounted upon said rod, a receiving-spool fixed upon said shaft, a ratchet-wheel also fixed upon said shaft, a pawl to actuate said ratchet-wheel, and means to operate said pawl.

24. In a type-writing machine having a revoluble main platen provided with an axle, a platen-frame, a paper-shelf in rear of the platen, a pressure-roll running upon the platen, a mechanism for releasing said pressure-roll, and a rod mounted upon the platen-frame and extending along the platen in rear thereof, the combination of an auxiliary platen in the form of a segment at one end of the main platen, plates upon which said auxiliary platen is mounted, said plates mounted upon said platen-axle, a pair of arms mounted upon said axle and confined between said plates and extending back to said rod to be held in position thereby, said platen-segment being curved eccentrically to said platen-axle and adjustable about said axle to rotate different portions of the segment into the printing-field to adjust the segment to the types, one of said plates having a slot to receive a screw which is threaded into one of said arms to secure the segment where adjusted, a hollow shaft mounted upon said rod, a receiving-spool fixed upon said shaft, a ratchet-wheel also fixed upon said shaft, and a pawl connected to said pressure-roll-releasing mechanism to operate said ratchet-wheel.

25. In a type-writing machine having a revoluble main platen provided with an axle, a platen-frame, a paper-shelf in rear of the platen, a pressure-roll running upon the platen, a mechanism for releasing said pressure-roll, and a rod mounted upon the platen-frame and extending along the platen in rear thereof, the combination of an auxiliary platen in the form of a segment at one end of the main platen, plates upon which said auxiliary platen is mounted, said plates mounted upon said platen-axle, a pair of arms mounted upon said axle and confined between said plates and extending back to said rod to be held in position thereby, said platen-segment being curved eccentrically to said platen-axle and adjustable about said axle to rotate different portions of the segment into the printing-field to adjust the segment to the types, one of said plates having a slot to receive a screw which is threaded into one of said arms to secure the segment where adjusted, a hollow shaft mounted upon said rod, a receiving-spool fixed upon said shaft, a ratchet-wheel also fixed upon said shaft, a pawl connected to said pressure-roll-releasing mechanism to operate said ratchet-wheel, a paper-guiding shield below said segment and forming approximately a continuation thereof and curving from the lower edge of said segment rearwardly and upwardly, and a delivery-spool from which the paper ribbon is led forwardly beneath and around said shield and up in front of said segment and back to said receiving-spool.

26. In a type-writing machine having a revoluble main platen provided with an axle, a platen-frame, a paper-shelf in rear of the platen, a pressure-roll running upon the platen, a mechanism for releasing said pressure-roll, and a rod mounted upon the platen-frame and extending along the platen in rear thereof, the combination of an auxiliary platen in the form of a segment at one end of the main platen, plates upon which said auxiliary platen is mounted, said plates mounted upon said platen-axle, a pair of arms mounted upon said axle and confined between said plates and extending back to said rod to be held in position thereby, said platen-segment being curved eccentrically to said platen-axle and adjustable about said axle to rotate different portions of the segment into the printing-field to adjust the segment to the types, one of said plates having a slot to receive a screw which is threaded into one of said arms to secure the segment where adjusted, a hollow shaft mounted upon said rod, a receiving-spool fixed upon said shaft, a ratchet-wheel also fixed upon said shaft, a pawl connected to said pressure-roll-releasing mechanism to operate said ratchet-wheel, a paper-guiding shield below said segment and forming approximately a continuation thereof and curving from the lower edge of said segment rearwardly and upwardly, a delivery-spool from which the paper ribbon is led forwardly beneath and around said shield and up in front of said segment and back to said receiving-spool, an arm having a stud whereon said delivery-spool is mounted, a pintle whereon said arm is secured, a bearing upon said paper-shelf wherein said pintle may turn and also move axially, said bearing being provided at its end with a diametrical recess in which said arm fits so that the arm is locked against rotation, and a spring upon said pintle for holding said arm in said recess, said arm being reversible in the recess, so as to move the spool from a position of use in rear of the bearing to a position of disuse in front of the bearing.

27. In a type-writing machine having a revoluble main platen provided with an axle, a platen-frame, a paper-shelf in rear of the platen, the combination of an auxiliary platen in the form of a segment at one end of the main platen, a receiving-spool, a delivery-spool from which the paper ribbon is led forwardly beneath and up in front of said segment and back to said receiving-spool, an arm having a stud whereon said delivery-spool is mounted, a pintle whereon said arm is secured, and a bearing whereon said pintle may turn.

28. In a type-writing machine having a platen and a paper-shelf in rear of the platen, the combination of a scale provided upon the front of said paper-shelf, a paper-guide in front of said paper-shelf and having a gage for the side edge of the sheets, said gage provided with an index to coöperate with said scale, and means to clamp the paper-guide.

29. In a type-wrting machine having a platen and a paper-shelf in rear of the platen, the combination of a scale provided upon the front of said paper-shelf, the latter being slotted along said scale, a paper-guide in front of said paper-shelf and having a gage for the side edge of the sheets, said gage provided with an index to coöperate with said scale, a tongue provided upon said paper-guide and projecting rearwardly through the slot in the paper-shelf, and a cam provided with a handle and pivoted upon said tongue to bind against the rear side of the paper-shelf to clamp the paper-guide thereto.

30. In a type-writing machine having a platen and a paper-shelf in rear of the platen, the combination of a scale provided upon the front of said paper-shelf, a pair of paper-guides in front of said paper-shelf and having opposite gages for the side edges of the sheets, said gages provided with indexes to coöperate with said scale, and means to clamp the paper-guides to the paper-shelf.

31. In a type-writing machine having a platen and a paper-shelf in rear of the platen, the combination of a scale provided upon the front of said paper-shelf, the latter being slotted along said scale, a pair of paper-guides in front of said paper-shelf and having opposite gages for the side edges of the sheets, said gages provided with indexes to coöperate with said scale, tongues provided upon said paper-guide and projecting rearwardly through the slots in the paper-shelf, and cams provided with handles and pivoted upon said tongues to bind against the rear side of the paper-shelf to clamp the paper-guides thereto.

32. In a type-writing machine having a revoluble platen and a paper-shelf inclining upwardly and rearwardly from the rear side of the platen, so as to leave a substantial space between the platen and the paper-shelf, the combination with a paper-carrying spool, of means whereon said spool is mounted to move from a position in rear of the paper-shelf to a position within said space between said platen and said paper-shelf; said spool having provision for mechanically determining each of said positions thereof.

848,765. ANIMAL-TRAP. CHARLES PEMBERTON, Camp Chase, and WILLIAM S. MACDONALD, Columbus, Ohio. Filed May 18, 1906. Serial No. 317,627.

Claim.—1. A rat-trap comprising a plurality of body-wires and a plurality of series of framing-wires, each of said series of framing-wires consisting of three wires which lie very close together, said wires being woven in and out between the body-wires, the central wire of each of said series passing over the body-wires which the outside wires of each of said series pass under whereby the trap-body is braced at intervals by said series of framing-wires.

2. A door for a trap comprising a wire mesh and a pair of clamping members which surround said wire mesh and which clamp the outer ends of said wire mesh between them.

3. A door for a trap comprising a wire mesh, a collar, a washer means for clamping said collar to said washer and for clamping the ends of the wire mesh between the said collar and said washer, a hook carried by said door and a hinge also carried by said door.

4. In a trap, the combination with a body portion formed with a plurality of longitudinally-extending wires, the ends of which are bent to form the ends of the trap, of an annular collar, an annular washer, and lugs carried by the collar and adapted to be bent over the annular washer, the free ends of the body-wires entering between said lugs and being clamped between the washer and the collar.

5. A rat-trap having a body portion which is composed of a plurality of longitudinally-extending wires, the ends of said wires being bent at right angles to form a flat-ended trap, a washer, a collar carrying a plurality of members adapted to be bent over the edges of the washer, the free ends of the wires at the end of the trap entering between said members and being clamped between the washer and the collar.

6. A rat-trap composed of a plurality of longitudinally-extending body-wires, and a plurality of series of framing-wires which are woven in and out between said body-wires transversely of the trap, each of the series of the framing-wires comprising a plurality of wires which lie close together whereby said series form stiffening-ribs transversely of the trap and at intervals throughout the length thereof.

848,766. TRANSMISSION-GEAR. ARTHUR E. PHELON, Springfield, Mass. Filed Apr. 30, 1906. Serial No. 314,343.

Claim.—1. A variable-speed mechanism comprising a rotatable sleeve suitably supported, a portion of which constitutes a differential-gear case, a counter-shaft, a sliding gear on the sleeve and a second sliding gear on the counter-shaft; a two-part shaft in the sleeve, and a differential-gear mechanism in the sleeve with which the ends of the driven shaft engage and constituting a connection between the sleeve and shaft; a fixed gear on the counter-shaft with which the sliding gear on the sleeve meshes, and a fixed gear on the sleeve with which the sliding gear on the counter-shaft meshes, and a loose gear constantly rotating on the sleeve, with which the sliding gear on the sleeve may engage to rotate the sleeve by direct drive, and an intermediate gear between the sliding gear on the counter-shaft and the fixed gear on the sleeve whereby the latter may be reversely rotated by the engagement of the sliding gear with said intermediate.

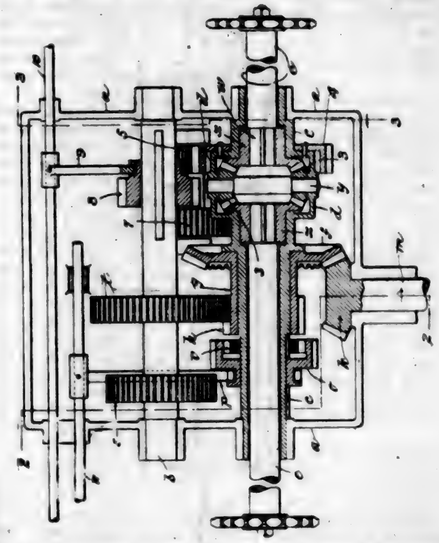

2. A variable-speed mechanism comprising an inclosing casing, a sleeve rotatably mounted therein, a portion of which constitutes a differential-gear case, differential-gear mechanism in the latter, and a two-part driven-shaft in the sleeve operatively connected to the differential; a counter-shaft rotatably mounted in the casing parallel with the said sleeve, a loose gear on the latter, and a fixed gear on the counter-shaft with which the loose gear is in mesh, and suitable means to impart constant rotation to the loose gear, a sliding gear on the sleeve non-rotatable thereon, and a second fixed gear on the counter-shaft, said sliding gear being movable into meshing engagement with the loose gear to rotate the sleeve at one speed or into mesh with said second fixed gear on the counter-shaft to rotate the sleeve at a different rate of speed in the same direction, a sliding gear on the counter-shaft, and a gear secured to the sleeve, and means to move this sliding gear into mesh with the gear fixed to the sleeve to rotate the latter.

848,767. METHOD OF TURNING LASTS. EDWIN J. PRINDLE, Washington, D. C., assignor to The Premier Last Company, Great River, Long Island, N. Y., a Corporation of New York. Filed May 7, 1904. Serial No. 206,946.

Claim.—1. The method of forming lasts or last parts, consisting in forming on a model a regular surface such as a plane, or a surface of revolution supporting the model and the block to be turned by one extremity, so as to leave the body portion and the opposite extremity exposed, forming the foot-shape contour and one extremity, and then forming a regular surface on the last or last part to be formed by a cutter guided in a definite relation to the surface on the model.

2. The method of forming lasts or last parts, which consists in forming a plane surface on the model, supporting the model in the lathe so that the plane surface thereon shall be perpendicular to the axis of revolution and so that an extremity of the model shall be exposed, supporting a block in the lathe, so that an extremity thereof shall be exposed, forming the foot-shape contour of the last, forming the extremity of the last, and then forming a plane surface corresponding to the plane surface in the

model by a cutter guided from the said plane surface on the model.

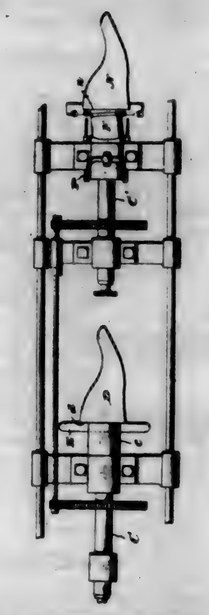

3. The method of forming lasts or last parts, which consists in forming on a model a regular surface such as a plane, or a surface of revolution supporting the model and a block in the lathe, so that an extremity of each shall be exposed, and shaping the extremity of the last to be formed by a cutter guided from the extremity of the model, the cutter and cutter-guide traveling in a general direction toward the tip of the extremity, as distinguished from a direction away from such tip.

4. The method of forming lasts or last parts, which consists in forming on a model a regular surface such as a plane, or a surface of revolution supporting the model and a blank in the lathe, so that an extremity of each shall be exposed, and shaping the extremity of the last to be formed by a cutter guided from the extremity of the model, the cutter and guide traveling in a general direction toward the tip of the extremity and the cutter revolving on an axis parallel to this line of travel.

848,768. VARIABLE-SPEED MECHANISM. ARNOLD W. PUPER, New York, N. Y. Filed Sept. 20, 1906. Serial No. 335,345.

Claim.—1. In mechanism of the class stated, the combination of a motor-shaft, a driving-shaft and a counter-shaft, gears connecting the motor-shaft with the counter-shaft, variable-speed devices carried by the counter-shaft adapted to drive the driving-shaft at all degrees of speed between the maximum and minimum speeds of the mechanism, gears connecting said devices with the driving-shaft, other gears connecting the counter-shaft with the driving-shaft and means to lock the motor-shaft and the driving-shaft together.

2. In mechanism of the class stated, the combination of a motor-shaft, a driving-shaft and a counter-shaft, gears connecting the motor-shaft with the counter-shaft, variable-speed devices carried by the counter-shaft adapted to drive the driving-shaft at all degrees of speed between the maximum and minimum speeds of the mechanism, means to adjust the variable-speed devices, gears connecting said devices with the driving-shaft, other gears connecting the counter-shaft with the driving-shaft and means to lock the motor-shaft and the driving-shaft together.

3. In mechanism of the class stated, the combination of a motor-shaft, a driving-shaft and a counter-shaft, gears connecting the motor-shaft with the counter-shaft, variable-speed devices carried by the counter-shaft adapted to drive the driving-shaft at all degrees of speed between the maximum and minimum speeds of the mechanism, means to adjust the variable-speed devices and gears connecting said devices with the driving-shaft.

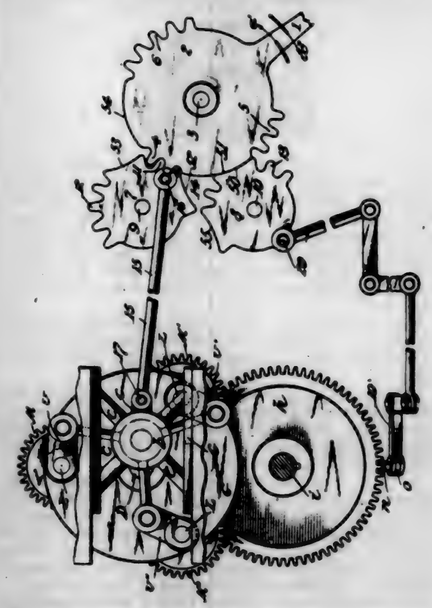

4. In mechanism of the class stated, the combination of a motor-shaft, a driving-shaft and a counter-shaft, gears connecting the motor-shaft with the counter-shaft, variable-speed devices carried by the counter-shaft adapted to drive the driving-shaft at all degrees of speed between the maximum and minimum speeds of the mechanism, means to lock the motor-shaft and the driving-shaft together and means to adjust the variable-speed devices which likewise actuate the said locking devices.

5. In mechanism of the class stated, the combination of a motor-shaft, a driving-shaft and a counter-shaft, gears connecting the motor-shaft and counter-shaft, a sliding gear upon the driving-shaft, means upon the driving-shaft and the motor-shaft coacting with the hub of the sliding gear whereby it is adapted to longitudinal movement over them, but not rotary movement on them, a fixed gear upon the counter-shaft with which the sliding gear meshes, and means to move the sliding gear longitudinally of the driving-shaft and motor-shaft.

6. In mechanism of the class stated, the combination of a motor-shaft, a driving-shaft, a counter-shaft, gearing connecting the motor-shaft to the counter-shaft, transmitting-gearing connecting the counter-shaft to the driving-shaft, means to lock and unlock the motor-shaft and the driving-shaft, speed-varying devices geared to the driving-shaft, a single lever and mechanism coacting therewith, whereby the transmitting-gearing is connected and disconnected and the locking and unlocking devices are brought into action when the coacting parts are made to move synchronously by the speed-varying devices.

7. In mechanism of the class stated, the combination of a counter-shaft and driving means therefor, a plate on the counter-shaft, a plurality of independently-oscillating gears supported by said plate, adjustable devices whereby the last-named gears are caused to oscillate during their rotary movement about the axis of the counter-shaft, and a power-transmitting gear, the axis of which is eccentric to the axis of the counter-shaft and with which the oscillating gears intermittently engage.

8. In mechanism of the class stated, the combination of a counter-shaft and driving means therefor, a plate on the counter-shaft, a plurality of independently-oscillating gears supported by said plate, devices connected with said oscillating gears whereby they are caused to oscillate during their rotary movement about the axis of the counter-shaft and the time and extent of their oscillation determined and a power-transmitting gear, the axis of which is eccentric to the axis of the counter-shaft with which the oscillating gears engage.

9. In mechanism of the class stated, the combination of a counter-shaft and driving means therefor, a plate on the counter-shaft, a plurality of independently-oscillating gears supported by said plate, shafts for the support of the oscillating gears, cranks on the shafts, radius-bars pivoted at one end to the cranks and at their other ends to a pin common to them all, a support for the pin and means to move the support so that its center shall be concentric with or eccentric to the center of the counter-shaft and a power-transmitting gear with which the oscillating gears intermittently engage.

10. In mechanism of the class stated, speed-varying devices comprising a plurality of oscillating gears, a shaft about which said oscillating gears revolve, a power-transmitting gear the axis of which is eccentric to that of the first-named shaft and means whereby the oscillating gears are caused to oscillate to and fro once during each complete revolution.

11. In mechanism of the class stated, speed-varying devices comprising a plurality of oscillating gears, a shaft about which the oscillating gears revolve, a power-transmitting gear the axis of which is eccentric to that of the first-named shaft, means whereby the oscillating gears are caused to oscillate to and fro once during each complete revolution and other means to determine the extent of such oscillation.

12. In mechanism of the class stated, a motor-shaft, a driving-shaft, a counter-shaft, speed-varying devices adapted to drive the driving-shaft at all degrees of speed between the maximum and minimum speeds of the mechanism, means whereby the motor-shaft and the driving-shaft may be locked together for direct drive, transmitting-gears which may connect all three of said shafts and thus the power from the motor-shaft be transmitted to the driving-shaft through the counter-shaft at a predetermined speed, other gears whereby the power may be transmitted to the driving-shaft through said speed-varying devices at variable speeds, and means to throw one of said sets of devices out of action to allow the speed to be varied by the other set.

13. In mechanism of the class stated, the combination of a counter-shaft, a plurality of oscillating gears carried by the counter-shaft about its axis, a gear the axis of which is eccentric to the axis of the counter-shaft with which said oscillating gears intermittently engage, means whereby said oscillating gears are caused to oscillate to and fro once in each complete revolution, means on the shafts of the oscillating gears whereby they are allowed limited rotary movement thereon and springs connecting the oscillating gears with their shafts whereby the gears are elastically held relative to their shafts.

14. In mechanism of the class stated, a motor-shaft, a counter-shaft and a driving-shaft, gearing connecting the motor-shaft and the counter-shaft, gearing connecting the counter-shaft and the driving-shaft adapted to differentiate the speed of the driving-shaft relative to that of the motor-shaft, the gear upon the driving-shaft being longitudinally slidable and adapted to lock the driving-shaft to the motor-shaft, speed-varying devices and gearing connecting them with the driving-shaft, and a lever coacting with the speed-varying devices and the sliding gear upon the driving-shaft, whereby the following power transmissions may be secured, first, from the motor-shaft direct to the driving-shaft at the speed of the motor-shaft; second, from the motor-shaft to the counter-shaft and thence to the driving-shaft at a speed different from that of the motor-shaft, and third, from the motor-shaft to the counter-shaft, thence to the speed-varying devices and from them to the driving-shaft at varying speeds.

15. In mechanism of the class stated, a motor-shaft, a counter-shaft and a driving-shaft, gearing connecting the motor-shaft and the counter-shaft, gearing connecting the counter-shaft and the driving-shaft adapted to differentiate the speed of the driving-shaft relative to that of the motor-shaft, the gear upon the driving-shaft being longitudinally slidable and adapted to lock the driving-shaft to the motor-shaft, speed-varying devices and gearing connecting them with the driving-shaft, and a lever coacting with the speed-varying devices and the sliding gear upon the driving-shaft, whereby the following power transmissions may be secured, first, from the motor-shaft direct to the driving-shaft at the speed of the motor-shaft; second, from the motor-shaft to the counter-shaft and thence to the driving-shaft at a speed different from that of the motor-shaft, and third, from the motor-shaft to the counter-shaft, thence to the speed-varying devices and from them to the driving-shaft at varying speeds, and means to positively hold the mechanism in the positions they occupy during each of said arrangements.

16. In mechanism of the class stated, speed-varying devices and devices for effecting direct and indirect transmission of the power, in combination with a lever, a series of broken gears and suitable connecting devices between the broken gears and the speed-varying and the direct and indirect transmission devices, whereby, depending on the position of the lever, the power may be transmitted direct and at constant full motor speed, or indirect at a different but constant speed, or at gradually-variable speeds.

17. In mechanism of the class stated, the combination of a motor-shaft, a counter-shaft, and a driving-shaft, gearing connecting the motor-shaft and the counter-shaft, transmitting-gearing connecting the motor-shaft and the driving-shaft, means to lock the motor-shaft and the driving-shaft together and to unlock the same, devices geared to the driving-shaft adapted to drive it at all degrees of speed between the maximum and minimum speeds of the mechanism, a single lever connected with said last-named devices and with the means for locking and unlocking the motor-shaft and the driving-shaft and means to positively and safely hold the parts in such positions as they may be moved into by said lever.

848,769. STORM-FRONT FOR VEHICLES. HARRY D. PURSELL, Washington Court-House, Ohio. Filed July 13, 1906. Serial No. 326,028.

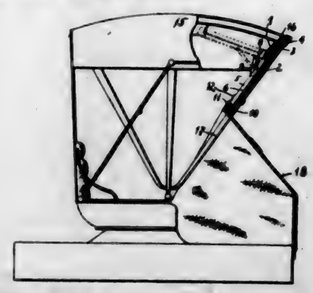

Claim.—1. In a storm-front for vehicles, the combination of a frame 1, a window-frame hinged within said frame 1, prop-bars connected with said frame 1, a window-frame adapted to be supported by said prop-bars in an elevated position, top hooks connected with said frame 1 and adapted to engage the valance-bar of a vehicle-top, apron-

engaging devices carried by said frame 1, and an apron adapted to be detachably connected therewith.

2. In a storm-front for vehicles, the combination of a frame 1 having a facing of suitable flexible material which overlaps the ends of said frame and is adapted to be secured at the sides of said frame to the front bow of a vehicle, valance-bar-engaging devices projecting from the upper side of said frame, a glass-carrying window frame hinged within said first-mentioned frame, means for connecting the latter with the side piece of the vehicle, and means for supporting a flexible rain-curtain from said frame.

3. In a storm-front for vehicles, the combination with a rigid frame, of a window-frame hinged within said rigid frame, means for securing said rigid frame to a vehicle-top, flexible flaps secured to the ends of the frame and adapted to be secured about the front bow of a vehicle, an apron, and connections between the rigid frame and the apron for securing the upper edge of said apron directly to the rigid frame.

848,770. CUSHION-SOLE. HARRY A. ROBERTS, Hornellsville, N. Y., assignor of one-half to Frank J. Nelson, Hornellsville, N. Y. Filed May 3, 1906. Serial No. 314,988.

Claim.—1. The combination of a backing, a cushion of suitable thickness having its edge coinciding with that of the backing, a lining of waterproof material between the cushion and backing and having its edge coinciding with that of the latter, a covering of waterproof material disposed over the cushion and having its marginal portion turned down over the edge of the cushion and lining and backing and secured to the latter, and a facing of flexible material secured on the covering and of such size as to face only the portion disposed on top of the cushion.

2. The combination of an inner sole, a cushion disposed over the same and having its edge coinciding with that of the latter, a lining of waterproof material interposed between the cushion and inner sole, a waterproof covering on top of the cushion and having a marginal portion extending a suitable distance beyond the cushion and adapted to be turned down over the edges of the cushion and inner sole, a facing of soft leather corresponding in size to the cushion, means for securing the facing to the covering before the latter is secured over the cushion, an upper, a welt, and stitches securing the upper and said covering at its edge between the welt and inner sole, the edge of the lining meeting said covering at the turned-down portion thereof.

3. A sole-cushion, comprising a suitable backing, a cushion which is of substantially the same shape as the backing, a waterproof lining between the cushion and backing, a covering of waterproof material for the cushion having its edges free of and extending downwardly over the edges of the cushion and meeting the edges of the lining, means for securing the edges of the covering to the said backing, and a soft-leather facing for the covering which is stitched thereto and arranged with its edges coinciding with the edges of the cushion.

4. The combination of an inner sole, a cushion therefor, a lining of waterproof material inserted between the sole and cushion, a covering of waterproof material for the cushion that meets the edges of the lining and arranged with its edges disposed under the inner sole, a facing of flexible leather secured to the covering, a vamp, a welt, and a row of stitches for securing the welt and vamp together with the cushion-covering to the inner sole.

848,771. LINOTYPE-MACHINE. JOHN R. ROGERS, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Feb. 17, 1906. Serial No. 301,665.

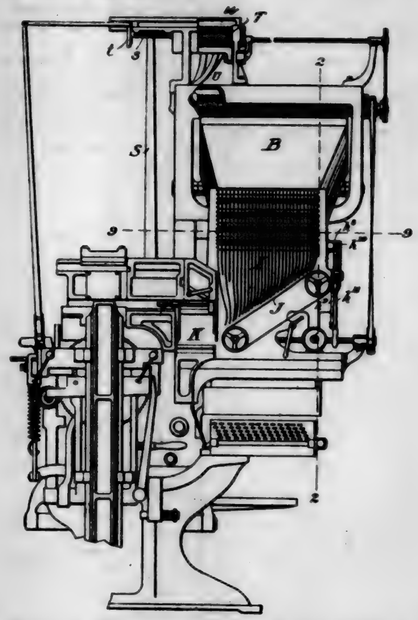

Claim.—1. In a linotype-machine, plural magazines and a series of escapements for each magazine, in combination with a series of actuating devices and a movable support therefor whereby said devices may be moved bodily at will into operative relation to one set of escapements or another, whereby the escapements of either magazine may be actuated to the exclusion of the others.

2. In a linotype-machine, plural magazines and a series of escapements for each magazine, in combination with a series of finger-keys, and intermediate actuating devices having one end adjustable at will to engage the escapements of any one series.

3. In a linotype-machine, three or more fixed magazines and a series of escapements for each magazine, in combination with a fixed keyboard mechanism and intermediate escapement-actuating devices adjustable endwise in relation to the keyboard mechanism for connection with the escapements of any one magazine at will.

4. In a linotype-machine, plural stationary magazines, and a series of escapements for each magazine, in combination with a fixed keyboard, a series of reeds actuated thereby, and a series of slides longitudinally adjustable adapted to connect the reeds with any series of escapements at will.

5. In a linotype-machine, three stationary magazines, one overlying another, each provided with a series of escapement-levers, and escapement-actuating devices adjustable at will to directly engage the escapements of any magazine.

6. In a linotype-machine, a series of superposed magazines, an upright raceway to receive matrices from all the magazines, and an intermediate adjustable bridge or support to carry the matrices from one magazine at a time to the raceway.

7. A series of superposed magazines, each having a series of escapements arranged to deliver matrices at their lower ends, and a raceway I to receive the matrices, in combination with an intermediate vertically-adjustable bridge L.

8. A series of superposed magazines, an upright raceway I to receive the matrices from all the magazines, and an intermediate vertically-adjustable frame carrying a bridge to support the matrices from the magazine to the raceway, and also carrying means for actuating the escapements.

9. A series of magazines each provided with escapements, in combination with the escapement-actuating rods G, their guides H movable to and from the magazines, and the vertically-movable frame F carrying the guides H.

10. A series of magazines and corresponding series of escapements in combination with escapement-actuating devices, means for imparting a reciprocating motion to said devices, and means for adjusting said actuating devices vertically and for effecting their engagement with and disengagement from the escapements and the mechanism which operates them.

11. In combination, the series of magazines and their escapements, the vertical raceway I, the series of bars *i*, and vertically-movable bridge L.

12. In combination with the series of magazines and corresponding series of escapements, escapement-actuating slides G, the bridge L, and means for first disengaging the slides from the escapements and thereafter adjusting the slides and the bridge vertically, and vice versa.

13. In combination with a series of magazines and escapements, escapement-actuating slides G, their adjustable supporting-bars H, a vertically-movable frame carrying said bars, hand-levers A^9 and A^{11} and intermediate connections through which said levers effect the adjustments of the frame F and slide G, substantially as described.

14. In combination with the vertically-movable frame F, the guides H movable therein, and slides G movable in the guides, the levers A^9 and A^{11}, the locking device A^{13} connecting said levers, and connections between the respective levers, the frame F and guides H for effecting the movement of the frame and guides.

15. In a linotype-machine, the combination of the following elements; the series of superposed stationary magazines and corresponding series of escapements, an assembling mechanism, a raceway through which all the magazines deliver to said mechanism, a keyboard, and vertically-adjustable devices whereby the keyboard may be connected with the escapements of any magazine at will to the exclusion of the others.

16. In a linotype-machine, plural magazines each combined with a distributer, a matrix separating and feeding mechanism in advance of each of said distributers, and a font-distributer arranged to deliver the matrices of the respective fonts to the respective separators whereby the matrices belonging to different fonts are delivered from the composed line to the respective separators, and delivered by the latter, one at a time, to the respective magazine-distributers.

17. In a linotype-machine, a series of superposed magazines removable and separable at will, a base-frame supporting the series, and means connected with the base-frame and acting to urge the magazines downward; whereby they are seated firmly upon one another and upon the base-frame, and prevented from twisting out of form or moving out of position.

18. In combination with a series of superposed magazines, the base-frame, and the hinged arms provided with means for clamping the magazines in place.

19. In a linotype-machine, and in combination with a base-frame, an independently-removable magazine overlying the same, and means for binding the magazine down firmly upon the base-frame.

848,772. CRACK-PREVENTING MEANS FOR LOOMS. CHARLES F. ROPER, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Apr. 17, 1906. Serial No. 312,118.

Claim.—1. In a loom, a lay, means to stop the movement thereof, a shipper, an instrumentality rendered operative by final movement thereof to stopping position to cause said means to stop the lay after passing front center, and means to positively render said instrumentality inoperative by movement of the shipper to running position.

2. In a loom, a lay, means to stop the movement thereof, and a shipper controlling by its movement the operation of said means and positively rendering the same inoperative when the shipper is in running position, movement of the shipper to stopping position causing said means to stop the lay after beating in the last-laid filling.

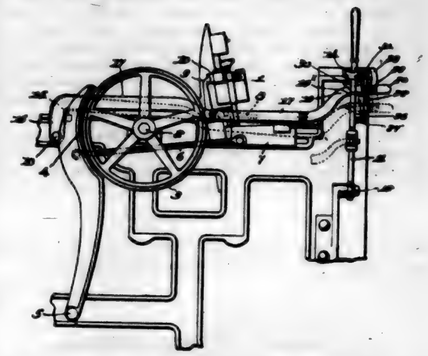

3. In a loom, a lay, braking means to stop its movement, a shipper, and connections between it and said means to positively control and retain the latter inoperative when the shipper is in running position and to permit said means to operate when the shipper is nearly in stopping position, whereby the braking action on the lay is delayed until after the filling has been beaten in.

4. In a loom, a device to govern the operation thereof, a lay, brake mechanism for the loom, and means to actuate said mechanism, combined with an instrumentality controlled at all times by said device to prevent the operation of said actuating means until the governing device has nearly attained its position to cause loom stoppage.

5. In a loom, a shipper, a lay, brake mechanism for the loom, and means to actuate said mechanism, combined with a detent to prevent the operation of said actuating means when the shipper is in running position, the movement of the shipper to stopping position rendering said detent inoperative only when the shipper has nearly reached the limit of such movement.

6. In a loom, a device to govern the operation thereof, a lay, protector mechanism, a brake mechanism actuated by or through the operation of the protector mechanism, and an independent instrumentality to effect the operation of the brake mechanism after complete beat-up of the lay when the movement of the governing device to effect stoppage of the loom is nearly completed.

7. In a loom, a shipper, a lay, means to arrest the forward movement of the lay, and a device governing the operation of said means and controlled at all times by the position of the shipper, movement of the shipper to stopping position acting when such movement is nearly completed to effect the operation of said means through a change in the position of the governing device.

8. In a loom, a shipper, a rotatable brake member, a shoe to coöperate therewith, an actuator to effect coöperation of said brake members, and a device to maintain the actuator inoperative when the shipper is in running position, movement of the shipper to stopping position gradually moving the device to prevent full release of the actuator until after the lay has beaten in the filling last laid.

9. In a loom, a shipper, a rotatable brake member, a shoe to coöperate therewith, an actuator to effect coöperation of said brake members, a detent coöperating with the actuator and maintaining it inoperative when the shipper is in running position, and a connection between said shipper and detent to gradually move the detent into inoperative position as the shipper is moved to stopping position, whereby coöperating movement of the brake members is delayed until such shipper movement is nearly completed.

10. In a loom, a shipper, a rotatable brake member, a shoe to coöperate therewith, an actuator to effect coöperation of said brake members, a pivotally-mounted detent to coöperate with the actuator and having a cam-face, and a projection on the shipper to coöperate with said cam-face, retaining the detent in operative position when the loom is running and gradually moving the detent into inoperative position as the shipper moves into stopping position.

11. In a loom, a shipper, a rotatable brake member, a shoe to coöperate therewith, an actuator to effect coöperation of said brake members, a device controlled by the shipper to maintain the actuator inoperative when the shipper is in running position and to release the actuator when the movement of the shipper to stopping position is nearly completed, and a catch to automatically retain the actuator inoperative if restored to normal position while the loom is stopped, return of the shipper to running position acting to release the catch.

848,773. THRUST-BEARING. FRITZ SCHULZ, Chicago, Ill. Filed Nov. 13, 1905. Serial No. 287,144.

Claim.—1. In a thrust-bearing, the combination with a sleeve having an end wall, and the spindle revoluble in said sleeve, of a plate disposed between the end wall of said sleeve and the end of said spindle and having a central rectangular opening, rollers of greater diameter than the thickness of said plate disposed within said opening and confined between the side walls of the latter by peripheral contact therewith, the axes of said rollers being radially disposed relatively to the axis of said spindle and the outer ends thereof being conical and abutting against the end walls of said opening, said rollers being disposed on opposite sides of the axis of rotation of said spindle and adapted to be revolved by contact with the inner end of the latter to revolve said plate.

2. An antifriction-bearing for a spindle comprising a cup of larger diameter than said spindle, a revoluble plate having an opening disposed between the end wall of said cup and the end of the spindle, rollers of larger diameter than the thickness of said plate loosely disposed in said opening and adapted to receive the thrust pressure on said spindle, there being an annular flange at the inner end of said spindle, a plate disposed adjacent the mouth of said cup and having a central opening for the passage of said spindle, antifriction-rollers disposed around said spindle between said annular flange and said plate, and a split spring-ring disposed in an annular groove in the mouth portion of said cup adapted to hold said last-named plate against removal.

848,774. COMBINED CONVEYER AND STAIRCASE. MARTIN C. SCHWAB, Baltimore, Md., assignor to Gravity Conveyor Company, a Corporation of New York. Original application filed June 1, 1905, Serial No. 263,328. Divided and this application filed Dec. 19, 1906. Serial No. 348,518.

Claim.—1. The combination of a conveyer and means comprising steps within the conveyer for supporting said conveyer.

2. The combination of a conveyer, and stairs secured to the inside of said conveyer.

3. The combination of a conveyer, having an inner inclosing casing and an outer inclosing casing and a stairs within the inner casing of said conveyer.

4. The combination with a conveyer, of a core substantially centrally disposed within the conveyer, and stairs interposed between said core and said conveyer, entirely within the latter and in an alinement different from that of the parts of the conveyer.

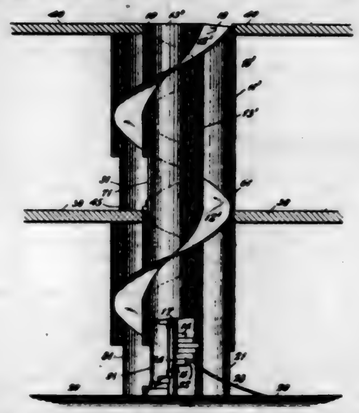

5. The combination of a gravity-conveyer, comprising an outer shell and inner shell with an interposed spiral blade, and stairs on the interior of said inner shell.

6. The combination with a gravity-conveyer, having an outer inclosing casing and an inner inclosing casing of an inner core, and steps interposed between said inner core and said gravity-conveyer wholly within the inner casing.

7. The combination of a gravity-conveyer, and stairs on the interior of said conveyer, wholly within the latter and arranged in an alinement separate from that of the parts of the conveyer.

8. The combination with a conveyer, of an inner core, and stairs arranged spirally in the staircase formed by the conveyer and the inner core, said stairs being wholly within the conveyer and in a vertical alinement separate from the vertical alinement of the parts of the conveyer.

9. The combination with a conveyer comprising an inner casing, a stairs inside of said inner casing, and a landing for said stairs at or near openings in said conveyer.

10. The combination with a conveyer, of stairs secured to the interior thereof, and a landing for the stairs adjacent openings in the conveyer.

11. The combination with a conveyer, of a series of steps arranged spirally within said conveyer to form spiral stairs, a floor-landing, and a landing for the stairs at or near said floor-landing and at or near openings in the conveyer.

12. The combination with a conveyer, of spiral stairs within said conveyer, a floor-landing, and a landing for the stairs between openings in said conveyer.

13. The combination with a gravity-conveyer having an inner shell, of spiral stairs within said inner shell and extending between openings in said inner shell at different elevations, and a landing for said spiral stairs at or near one of said openings and opposite an additional opening in the gravity-conveyer.

14. The combination with a gravity-conveyer having a spiral surface, of spiral stairs arranged on the interior of said conveyer, passage-ways for said stairs and leading into and out of said conveyer, and a platform forming a continuation of said spiral surface through an exit-opening in the conveyer.

15. The combination of a spiral gravity-conveyer, and spiral stairs on the interior of said conveyer and wholly within the latter, the alinement of the parts of the stairs being distinct from the alinement of the parts of the conveyer.

16. The combination with a gravity-conveyer, of landings therefor, of stairs in a spiral staircase on the interior of said conveyer and extending between entrance and exit openings in the conveyer.

17. The combination with a spiral gravity-conveyer, comprising outer and inner shells with a large interposed spiral blade, said outer shell having openings for the insertion and withdrawal of packages or articles, of an inner core within said inner shell, a series of spirally-arranged steps between said inner core and said inner shell and extending between entrance and exit openings in said inner shell, and landings between said entrance and exit openings, and corresponding openings in the outer shell.

848,775. AIR-COMPRESSOR. WILSON SELAKOSKY, White Haven, Pa. Filed Aug. 6, 1906. Serial No. 329,427.

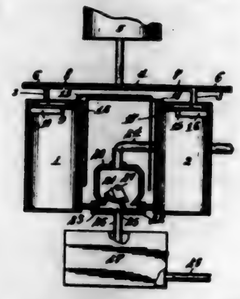

Claim.—1. In an air-compressor, the combination with two tanks, of an air-supply pipe connected thereto, inlet and discharge valves arranged in said supply-pipe, a compressed-air tank connected to said air-supply pipe between said discharge-valves, a valve-casing arranged between said tanks, a water-supply tank connected to said casing, side discharge-ports connecting the lower end of the casing with the lower end of said tanks, a main discharge-port arranged in said casing between said side discharge-ports, a valve mounted in said casing and adapted to alternately cover and uncover the side ports in said casing to connect the latter with first one and then the other of said tanks and to alternately connect said tanks with a main discharge-port arranged in said casing, an operating-lever connected to the stem of said valve, and means actuated by the pressure of air in said tanks to automatically operate said lever and thereby turn said valve first in one direction and then in the other, substantially as described.

2. In an air-compressor, the combination with a pair of tanks, of an air-inlet pipe connected thereto, air inlet and discharge valves arranged in said pipe, an air-discharge pipe connected to said inlet-pipe between said discharge-valves, a valve-casing arranged between said tanks, a water-supply pipe connected to said casing, water-discharge ports arranged in each side thereof and connected to the lower ends of said tanks, a main discharge-port arranged between said side ports, an oscillatory valve-shaft arranged in said casing, a valve mounted on said shaft, said valve being adapted to alternately connect first one and then the other of said tanks with said casing to supply water to the same and to alternately connect said tanks to the main discharge-port to drain the water from the same, an operating-lever connected to the shaft of said valve, a pair of air-cylinders, pistons arranged in said cylinders, a piston-rod common to both of said pistons and loosely connected to said valve-lever, and means whereby said pistons are automatically operated, substantially as described.

3. In an air-compressor, the combination with a pair of tanks, of an air-inlet pipe connected thereto, air inlet and discharge valves arranged in said pipe, an air-discharge pipe connected to said inlet-pipe between said discharge-valves, a valve-casing arranged between said tanks, a water-supply pipe connected to said casing, water-discharge ports arranged in each side thereof and connected to the lower ends of said tanks, a main discharge-port arranged between said side ports, an oscillatory valve, a valve-shaft arranged in said casing, a valve mounted on said shaft, said valve being adapted to alternately connect first one and then the other of said tanks with said casing to supply water to the same and to alternately connect said tanks to the main discharge-port to drain the water from the same, an operating-lever connected to the stem of said valve, a pair of air-cylinders, pistons arranged in said cylinders, a piston-rod common to both of said pistons and loosely connected to said valve-lever, air-conducting pipes connected to the upper ends of said tanks and to said cylinders, whereby a charge of air from said tanks will operate the pistons of said cylinders to automatically shift said valve, floats arranged in the upper ends of said tanks, valves operated by said floats to open and close the ends of said air-supply pipes when the water rises and falls in said tanks, substantially as described.

848,776. BALL-BEARING. ALBERT T. SISSON, Providence, R. I., assignor, by mesne assignments, to W. Penn Mather, Providence, R. I. Filed Feb. 10, 1906. Serial No. 300,416.

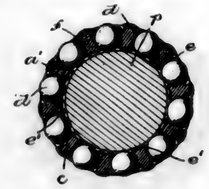

Claim.—1. In a ball-bearing, a ball cage or holder having perforations, balls located in said perforations, and the holder having thin flanges formed of the material thereof and partially detached therefrom, entirely surrounding the perforations and bent over so as to contract the ends thereof and retain the balls therein.

2. In a ball-bearing, a ball cage or holder having perforations, balls located in said perforations, and the holder having flanges separated from the body of the case by encircling annular spaces, extending entirely around the perforations, and inclined inward to reduce the end openings thereof and retain the balls therein.

3. In a ball-bearing, a ball cage or holder having perforations, balls located in said perforations, and the material of the holder around the mouth of each perforation being formed into a partially-detached flange or lip by a surrounding annular groove and bent inward over the ball in the perforation.

4. In a ball-bearing, a ball cage or holder having perforations, balls located in said perforations, and the cage being formed with an integral flange extending from a line or zone within the mouth of each perforation convergently toward the axis thereof and partially over the ball contained therein.

5. A ball-holder for bearings having perforations extending between opposite faces thereof, balls located in the perforations and the material immediately around the rims thereof being separated from the body of the holder and bent inwardly over the balls.

848,777. STENCILING-MACHINE. STEPHEN T. SMITH, Jr., Stamford, Conn., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed June 23, 1906. Serial No. 323,031.

Claim.—1. A delivery-shelf for a stenciling-machine comprising a plate having a sheet-receiving ledge, and a second plate having its edges folded over to receive the first plate; means being provided for hanging the second plate loosely upon the stenciling-machine so that said ledge may rest upon the table.

2. A delivery-shelf for a stenciling-machine comprising

a plate having a sheet-receiving ledge, and a second plate having its edges folded over to receive the first plate; and

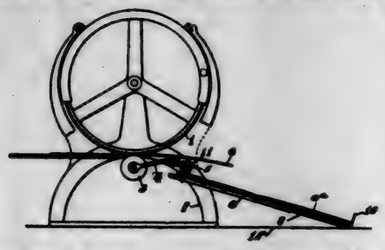

hooks provided upon the second plate for catching over bosses upon the stenciling-machine.

848,778. HOSE. WALTER W. SPADONE, New York, N. Y., assignor to The Gutta Percha & Rubber Manufacturing Company, New York, N. Y., a Corporation of New York. Filed Nov. 2, 1905. Serial No. 285,576.

Claim.—1. A tubular rubber article having an inner layer of rubber, a reinforcing-strip applied longitudinally on the outer surface of said inner layer and permanently connected therewith, a layer of fabric wrapped or coiled around said inner layer and reinforcing-strip, with the inner end of said wrapped layer in engagement with the reinforcing-strip, and an outer layer of rubber in which said fabric layer is embedded, all the parts of said rubber article being permanently connected to form a unitary article.

2. A tubular rubber article having an inner layer of rubber, a reinforcing-strip, of a color contrasting with that of the said layer, applied longitudinally on the outer surface of said inner layer and permanently connected therewith, a layer of fabric wrapped or coiled around said inner layer and reinforcing-strip, with the inner end of said wrapped layer in engagement with the reinforcing-strip, and an outer layer of rubber in which said fabric layer is embedded, all the parts of said rubber article being permanently connected to form a unitary article.

848,779. CULTIVATING-PLOW BLADE. ARTHUR R. SULLIVAN, Rome, Ga. Filed May 28, 1906. Serial No. 319,179.

Claim.—A plow-blade having straight front and rear edges converging toward the lower end and wedge-shaped in cross-section, the lower end of the blade being beveled from the front to the rear and having an upward-curved extension of its rear edge.

848,780. BALING-PRESS. WILLIAM E. TATE, Weatherford, Tex. Filed Dec. 1, 1906. Serial No. 345,873.

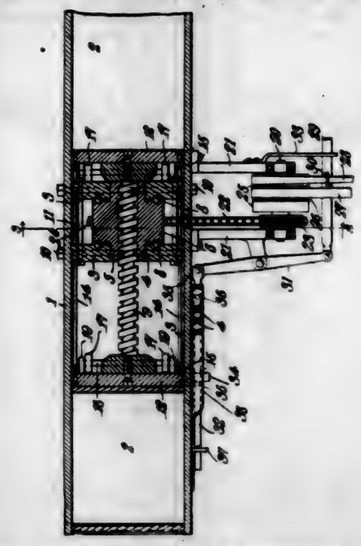

Claim.—1. In a baling-press, the combination with a suitable frame having compressing-chambers at opposite ends, an intermediately-arranged pocket for discharging the material into the compressing-chambers, plunger-heads mounted to operate in the respective chambers, a top plate rigidly secured to the upper ends of the plunger-heads and serving as a cut-off for controlling the discharge of material from the hopper to the compressing-chambers alternately, and operating as a spacing member for the upper portions of the plunger-heads, longitudinal tension-rods having threaded ends extending into the plunger-heads, and nuts on the said threaded ends arranged at the inner and outer sides of the plunger-heads for adjusting and securing the latter in parallel relation, of an operating-screw having its ends adapted to coöperate with the inner sides of the respective plunger-heads at points intermediate the said top plate and tension-rods, and means coöperating with said screw for reciprocating the plunger-heads.

2. In a baling-press, the combination with a suitable frame having compressing-chambers at opposite ends, a hopper at the middle of the frame for discharging material alternately into the respective compressing-chamber, an operating-nut journaled on relatively fixed portions of the frame, a screw coöperating with said nut, plunger-heads arranged at the ends of said screw, and driving means for imparting forward and reverse movement to said nut, of mechanism arranged to be operated to limit the stroke of the plunger-heads and coöperating with said driving means for alternately reversing the direction of rotation of said nut, and a device operating automatically for yieldingly retaining the driving means in condition to operate the plunger-heads in each direction until they reach the ends of their strokes.

3. In a baling-press, the combination of a frame, a reciprocating element therein, a nut and screw for reciprocating the element, arms supported on one side of the frame, a shaft mounted on the arms, a sprocket-and-chain driving device between the shaft and nut, fixed and loose pulleys on the shaft, straight and reverse belts engaging the pulleys, a belt-shipper, a lever mounted on one of the arms and connected with the shipper, a longitudinally-movable member mounted on the frame and connected with the lever, means on the element arranged to actuate the rod adjacent the end of each stroke, and a stop device for holding the rod stationary during the period the said means is idle.

4. In a baling-press, the combination of a frame, a reciprocating element therein, a nut and screw for reciprocating the element, arms supported on one side of the frame, a shaft mounted on the arms, a sprocket-and-chain driving device between the shaft and nut, fixed and loose pulleys on the shaft, straight and reverse belts engaging the pulleys, a belt-shipping rod, a bracket on one of the arms on which the free end of the said rod is slidably mounted, a lever on the other arm with which the rod is connected, a longitudinally-movable member connected with the lever and guided on the frame, a pair of spaced stops on the member, a finger on the said element arranged to engage the stops to impart movement to the member, a leaf-spring secured to the frame at a point adjacent the member, roller-engaging pockets at the outer end of the spring, and a roller mounted on the said member to alternately engage in one or the other of the pockets.

848,781. COMBINED MOP HEAD AND WRINGER. HENRY O. THOMAS, Harrisburg, Nebr. Filed Apr. 11, 1904. Serial No. 202,576.

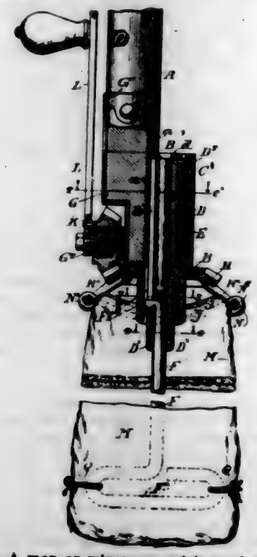

Claim.—1. A mop or wiper comprising a handle; a terminal fitting secured thereto; a gear journaled on said terminal fitting having rigid loops or eyes for securing one end of the mop-cloth; a stretcher held non-rotatably by the handle and extending therefrom beyond the gear, and having at its remote end means for holding the other end of the mop-cloth, and means mounted on the fitting for rotating the gear.

2. A mop or wiper comprising a handle; a terminal fitting thereon; a sleeve in said terminal fitting movable longitudinally therein; a spring for yieldingly resisting such movement outward and for retracting the sleeve; means on said fitting for holding one end of the wiping-cloth; a stretcher having one end extending within the sleeve and pivotally connected thereto at a point back of the end of the fitting when the sleeve is retracted to the limit of the action of the spring, said stretcher having at the remote end means for holding the other end of the wiping-cloth.

3. A mop or wiper comprising a handle; a terminal fitting thereon; rotatable means thereon for holding one end of the wiping-cloth; a stretcher telescoping therein, having at its remote end means for holding the other end of the cloth; and having at its end connected with the fitting a transversely-projecting lug or finger, the fitting being slotted for the engagement of said lug or finger therewith, the handle being secured to the fitting at the side thereof at which said slot is formed in the fitting, and having a slot registering with the slot in the fitting and extending up beyond the fitting for engaging the transverse finger of the stretcher to guide it into engagement with the slot of the fitting from a position to which it may be moved up beyond the same.

4. A mop or wiper comprising a handle; a terminal fitting thereon; a gear journaled on the fitting; a pinion mounted on the fitting and engaging the gear for rotation, the fitting being open from end to end; a stretcher telescoping through the same; the gear having means for holding one end of the wiping-cloth and the stretcher having at its forward end means for holding the other end of the cloth, and coöperating means on the stretcher and fitting for holding the stretcher non-rotatable.

5. A mop or wiper comprising a handle; a terminal fitting thereon; a sleeve telescoping in the fitting, said fitting having a spring-chamber laterally communicating with the cavity of the fitting in which the sleeve telescopes, a spring lodged in such chamber; said sleeve having a lug or finger projecting into the chamber to engage the spring for tensioning the same when the sleeve is moved forward in the fitting; means on the fitting for holding one end of the wiping-cloth; a stretcher telescoping through the sleeve and having means for pivotally engaging the latter at the forward limit of its telescoping movement at a position within the fitting when the sleeve is retracted by the spring.

6. A mop or wiper comprising a handle; a terminal fitting thereon; a gear journaled on said fitting having laterally-projecting lugs for holding one end of the wiping-cloth; a stretcher extending forward from the fitting having means at its forward end for holding the other end of the cloth; a pinion journaled on the side of the fitting for engagement with the gear in a plane transverse to the plane of rotation of the gear; a crank-handle on said pinion for rotating the same, the diameter of the pinion to that of the gear being as one to two, the pinion being meshed with the gear relatively to the handle's position so that the handle extends past the gear at a point intermediate between the lugs at one side whereby it arrives at the same position at the other side and clears the lugs at every rotation.

848,782. ROCK AND ORE CRUSHER. GEORGE H. THURSTON, Johannesburg, Transvaal, assignor to Allis-Chalmers Company, Milwaukee, Wis., a Corporation of New Jersey. Filed June 9, 1906. Serial No. 321,018.

Claim.—In a rock and ore breaker, a crushing-head comprising a core portion of relatively soft metal, said core portion having an inclined outer surface, a mantle of relatively hard metal closely fitting the core portion, and an inwardly-projecting lug having an inclined face, said lug being located at the lower edge of the mantle and said core being provided adjacent its lower edge with

a vertical groove having inclined wedge portions for engaging the lug on the mantle.

848,783. TYPE-WRITER CABINET. FRED W. TOBEY, Grand Rapids, Mich. Filed Sept. 11, 1905. Serial No. 277,898.

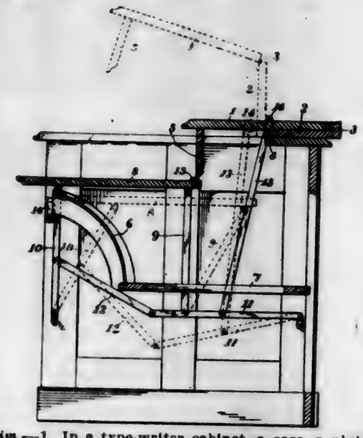

Claim.—1. In a type-writer cabinet, a case, a platform, means for movably supporting the platform, a stop on the rear of the platform, a cover divided transversely into three parts and hinged to fold upon itself in horizontal planes with the middle part inverted, and an apron on the front of the cover adapted to engage the stop to lock the device with the platform elevated and the cover open.

2. In a type-writer cabinet, a case having an inner chamber, a platform movable in the chamber, means for movably supporting the platform, a stop on the platform, a cover to the chamber and having a hinged rear portion adapted to turn to reversed horizontal positions, and a front portion hinged thereto to move rearward without reversing, an apron on the cover to engage the stop, and means for connecting the rear portion of the cover and said platform-supporting means to simultaneously adjust the cover and platform.

3. In a type-writer cabinet, a case having an inner chamber, a platform movable in the chamber, means for supporting and moving the platform, a cover for the chamber divided into front, middle, and rear parts, said parts being hinged to each other, the rear part being fixed, the middle part being adapted to turn to reversed horizontal positions, the front part being moved rearwardly thereby without reversal, a bottom in the chamber having an upwardly-extended front portion, and an apron on the front portion of the cover adapted to engage the front of the bottom when the device is closed, and to engage the rear of the platform when the device is open.

4. In a type-writer cabinet, the combination of a case having an inner chamber, a platform movable in the chamber, parallel arms pivoted to the platform at one end and to the sides of the chamber at the other end, a cover having a hinged portion adapted to turn to reversed horizontal positions, a rigid arm on said portion, a toggle-joint lever pivoted at its respective ends to one of the parallel arms and to the case, and a rod connecting the said lever and the arm on the cover.

848,784. MACHINE FOR SHUCKING OYSTERS. EDWARD L. TORSCH and JOHN H. PARKER, Baltimore, Md. Filed Jan. 28, 1905. Serial No. 242,335.

Claim.—1. In a machine for shucking oysters, the combination of a constantly-rotating wheel, oyster-carriers mounted upon said wheel, means governed by the motion of said wheel for holding said oysters in such positions that all their hinges coincide substantially with one and the same circle drawn about the center of said wheel, spinning grinding-disks located in the path of said hinges, the successive disks being nearer and nearer the center of said wheel, means for separating the shells of the oysters from each other successively, knives governed by the motion of said wheel for cutting the meats from the shells, and jaws forming a part of said carriers and gripping said oysters, and means for opening and releasing said jaws to deliver the shells after the discharge of said meats.

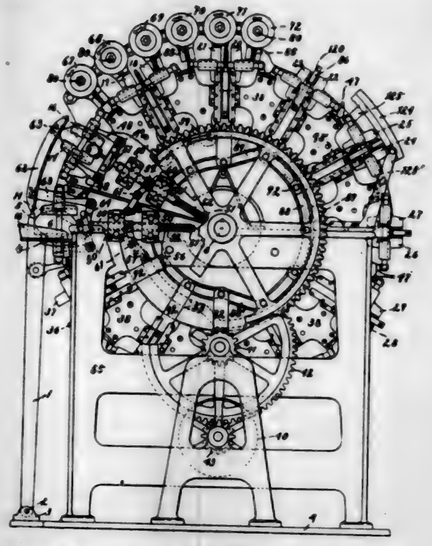

2. In a machine for shucking oysters, the combination of a rotating wheel for carrying oysters, means for producing holes in said oysters, knives carried by said wheel, rollers carried by said knives, and stationary cams in the paths of said rollers for propelling said knives through said holes for severing the meats from the shells of said oysters.

3. In a machine for shucking oysters, the combination of a moving element for carrying oysters, means for producing holes in said oysters, longitudinally-movable knives carried by said element, rollers attached to said knives, cam-and-roller mechanism governed by said element for tilting said knives so that the latter terminate at the holes produced in the oysters, stationary cams for the rollers which are on said knives for feeding the knives longitudinally into the holes in the oysters, sheathing-fingers for the knives, and means governed by said element for moving the fingers from each other for separating the shells before the said knives are fed longitudinally, and a driver for said element.

4. In a machine for shucking oysters, the combination of a moving element for carrying oysters, means for producing holes in the shells of said oysters, hollow fingers for pulling said shells apart to form larger holes in the shells, flexible knives in said fingers, rollers, cams on said element for actuating said rollers, mechanism between said fingers and said rollers for separating said shells, other rollers carried by said knives, and cams in the paths of the last-named rollers for guiding said knives into the holes in the oysters, the fingers acting as guides for the flexible knives, and the portions of the fingers near their ends being curved.

5. In a machine for shucking oysters, the combination of a constantly-rotating wheel, jaws thereon, and a pusher-lever for forcing oysters into said jaws, said jaws being arranged in pairs, which are equally spaced around the whole periphery of said wheel, said lever being reciprocated and timed in a predetermined manner with relation to said pairs of jaws to feed an oyster into the jaws every time a pair arrives at a certain point.

6. In a machine for shucking oysters, the combination of a constantly-rotating wheel, jaws thereon, a pusher-lever for forcing oysters into said jaws and having a notch in one end whose sides are for pressing against said oysters, guides on each side of said notched portion and extending on the sides of said jaws and a spring-pressed element in the jaws opposite said notch by which element an oyster is pressed outward against a side of said notch, for adjusting the oyster for the beginning of its travel with the wheel.

7. In a machine for shucking oysters, the combination of a constantly-rotating wheel, jaws thereon, a pusher-lever for forcing oysters from a position out of said jaws to a position in said jaws, which are arranged in pairs, a spring-pressed element at each pair of jaws, and opposite said lever for pressing upon the oysters radially outward from the center of said wheel and a curved stop-plate 62, against which it is the purpose of the springs to push each oyster to position it accurately.

8. In a machine for shucking oysters, the combination of a constantly-rotating wheel, jaws thereon arranged in pairs, a pusher-lever for forcing oysters into said pairs successively, guides extending from the jaws to said lever for directing said oysters in a straight line, a spring-pressed disk at each pair of jaws acting radially outward from the center of said wheel toward said lever and a curved stop-plate 62, against which it is the purpose of the spring to push each oyster to position it accurately.

9. In a machine for shucking oysters, the combination of a rotary wheel, pairs of jaws on the periphery thereof, a pusher-lever opposite one of the pairs of jaws, which are equally spaced around the whole periphery of said wheel, the relative motions of the traveling jaws and said lever which is reciprocating being timed in a predetermined manner, a driver for rotating said wheel and reciprocating said lever, a disk at each pair of jaws and opposite said lever, a spring compressible from said disk radially inward and a curved stop-plate 62, against which it is the purpose of the springs to push each oyster to position it accurately.

10. In a machine for shucking oysters, the combination of a rotating wheel, pairs of jaws thereon, a pusher-lever opposite one pair of jaws at a time, a driver for operating said wheel and said lever, a resisting-disk opposite said lever and at the rear of said jaws, a spring behind said disk for resisting the inward motion of said disk toward the center of said wheel and a curved stop-plate 62, against which it is the purpose of the spring to push the oyster to position it accurately.

11. In a machine for shucking oysters, the combination of a pair of jaws, a rotary wheel holding the same at the periphery of said wheel, a device governed by the rotary wheel, for automatically feeding an oyster into said jaws and a spring and plate for adjusting oysters of various lengths, so that the end of each oyster will project the same distance from said jaws, the spring being carried by said wheel, and the said plate being stationary.

12. In a machine for shucking oysters, the combination of a pair of jaws, a rotating element carrying said jaws, a yielding disk at the rear of said jaws, a lever opposite one of the jaws, for pushing oysters into the jaws, and having a surface against which it is the purpose of the disk to push the oysters, and a curved stop-plate having a surface beyond said first-named surface, and also for stopping an oyster when pressed outward by said disk.

13. In a machine for shucking oysters, the combination of a pair of jaws, a rotating element carrying said jaws, a yielding disk at the rear of said jaws, a rod attached to said disk, a tube containing said rod, a second rod bearing against the first rod, a collar on the second rod, and a spring bearing against said collar.

14. In a machine for shucking oysters, the combination of a pusher-lever 1, pivoted at its lower end by a pivot 2, a frame for the machine supporting the pivot 2, and the lever having a notch 5 at its upper end for receiving an oyster, gripping-jaws opposite said lever, means for operating the lever 1 consisting of a constantly-rotating gear-wheel 7, a main shaft for the machine to which said gear-wheel is fixed, a pinion 9 engaged with said gear-wheel 7, a crank 10 carried by said pinion, and a connecting-rod 11 for communicating reciprocating motion from said crank to said lever, being pivoted to each, a guiding-bracket 13 reaching beyond the sides of said lever and overlapping one of the jaws 15, which is one of the above-named jaws, said jaws being normally open, an element in the rear of the jaws for pushing the oyster therein against one of the surfaces of said notch, a curved stop-plate practically continuous with said one surface, and opposite the path of said jaws, gearing for moving said jaws in said path, and devices for closing said jaws upon an oyster only after it has left said lever.

15. In a machine for shucking oysters, the combination of a pusher-lever 1, pivoted at its lower end by a pivot 2, a frame for the machine supporting the pivot 2, the lever having a notch at its upper end with two surfaces, one surface being for supporting the weight of an oyster and the other surface being for pushing the oyster, a pair of gripping-jaws opposite said lever, means for operating the lever, consisting of a constantly-rotating gear-wheel 7, a main shaft for the machine fixed to said wheel, a pinion 9 engaging with said gear-wheel 7, a crank 10 governed by said pinion, a connecting-rod joining said crank to said lever, a guiding-bracket 13 at the sides of said lever, a stop 62 having a surface parallel to the path of said jaws, and forming a practically continuous surface with the pushing-surface of said lever, when said lever is near said jaws, a disk in said jaws, and opposite said stop, and a spring for forcing said disk against an oyster in the jaws when open, so as to press said oyster against said stop, during the traveling motion of the jaws.

16. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeding device for supplying oysters to said grippers, mechanism connecting said element and said device for operating the latter, a driver for said element, a pusher for pressing against an oyster with a spring action when an oyster is being driven into said grippers, means beyond said feeding device measured therefrom in the direction of rotation of said element, and located opposite the path of said grippers for causing oysters in successive grippers to have their protruding tip ends lie in one and the same circle, an arrangement governed by said element for closing said grippers before they move beyond said means, said oyster-grippers having interior spring-pressed teeth extending therefrom for pressing upon different parts of an oyster.

17. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, and a feeding device for supplying oysters to said grippers, said grippers consisting of pairs of jaws, spring-teeth therein, and a pusher in said jaws resiliently movable to and fro along the center line between the jaws.

18. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeding device for supplying oysters to said grippers, means governed by said element for maintaining said grippers open for a predetermined interval of time after being fed with oysters, a stop-plate 62, spring-pressed disks 64, and means for performing the positive function of closing the jaws upon the oysters after being properly located by the above-named elements.

19. In a machine for shucking oysters, the combination of a rotating wheel, a pair of jaws thereon, a driver for operating said wheel, a resilient pusher between and at the rear of said jaws, a spring behind said pusher for making it resilient in a radial direction with regard to said wheel, the two jaws being opposite each other, means for moving the jaws to and from each other while maintained parallel to each other, and spring-pressed teeth in two rows in each jaw pointing toward each other, each jaw being V-shaped, and the two rows of springs on each jaw being fastened to the inside of the arms of the V.

20. In a machine for shucking oysters, the combination of a rotating wheel, a pair of jaws thereon, a driver for operating said wheel, a resilient stop between and at the rear of said jaws, a spring behind said stop for making it resilient in a radial direction with regard to said wheel, the two jaws being opposite each other, means for moving the jaws to and from each other while maintained parallel to each other, and spring-pressed teeth in two rows in each jaw pointing toward each other, each jaw being V-shaped, and the two rows of springs on each jaw being fastened to the inside of the arms of the V, slides carrying said jaws, and parallel rods forming guides for said slides.

21. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeding device for supplying oysters to said grippers, mechanism connecting said element and said device for operating the latter, a driver for said element, a pusher for pressing against an oyster with a spring action when an oyster is being driven into said grippers, means beyond said feeding device in the direction of rotation of said element, and located opposite the path of said grippers for causing oysters in successive grippers to have their protruding tip ends lie in one and the same circle, an arrangement governed by said element for closing said grippers before they move beyond said means, each of said grippers consisting of a pair of jaws movable to and from each other, on a common center line, arms of two cranks pivoted to the respective jaws, a tube pivotally connected up with the other arms of said cranks, a rod supporting said pusher and sliding in said tube, and a pusher-spring in said tube for producing said spring action upon said pusher.

22. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeding device for supplying oysters to said grippers, means governed by said element for maintaining said grippers open for a predetermined interval of time after being fed with oysters, a stationary stop opposite the grippers while they are open, and apparatus governed by said element for closing said grippers.

23. In a machine for shucking oysters, the combination of a rotating element, oyster-grippers thereon, a feeding device for supplying oysters to said grippers, mechanism connected between said element and said feeding device for operating the same, a spring-pressed disk 64 to push the oyster outwardly, a stop beyond said feeding device for preventing said oyster from being pushed too far by said means, and means for closing said grippers upon an oyster before passing said stop, said grippers being arranged in pairs which are equally spaced in a row upon said element and projecting therefrom and timed to be opposite the feeding device during the feeding motion of said feeding device.

24. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeding device for supplying oysters to said grippers, mechanism connecting said element and said device for operating the latter, a driver for said element, a tongue for pressing against an oyster with a spring action when an oyster is being driven into said grippers, means beyond said feeding device measured therefrom in the direction of rotation of said element, and located opposite the path of said grippers for causing oysters in successive grippers to have their protruding hinges lie in one and the same circle, an arrangement governed by said element for closing said grippers before they move beyond said means, and apparatus for cutting holes in the shells at said hinges and located beyond said means.

25. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeding device for supplying oysters to said grippers, mechanism connecting said element and said device for operating the latter, a driver for said element, a tongue for pressing against an oyster with a spring action when an oyster is being driven into said grippers, means beyond said feeding device in the direction of rotation of said element, and located opposite the path of said grippers for causing oysters in successive grippers to have their protruding hinges lie in one and the same circle, an arrangement governed by said element for closing said grippers before they move beyond said means, apparatus for cutting holes in the shells at said hinges and located beyond said means, said grippers consisting each of a pair of jaws, and said arrangement consisting of a stationary cam, a roller for moving in the cam, a lever pivoted to said element, and carrying said roller on one arm thereof, a tube movable upon said element, and having a pin engaging with the other arm of said lever, and cranks pivotally connected up between said jaws and said tube, and a rod for said tongue sliding in said tube, resisting-springs being provided both for said tube and said rod.

27. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeding device for supplying oysters to said grippers, mechanism connecting said element and said device for operating the latter, a driver for said element, a tongue for pressing against an oyster with a spring action when an oyster is being driven into said grippers, means beyond said feeding device in the direction of rotation of said element, and located opposite the path of said grippers for causing oysters in successive grippers to have their protruding hinges lie in one and the same circle, an arrangement governed by said element for closing said grippers before they move beyond said means, apparatus for cutting holes in the shells at said hinges and located beyond said means, said element consisting of a wheel, said grippers consisting of pairs of jaws arranged circularly around the center of said wheel, a stationary support carrying a cam with two guiding-surfaces, a roller per each gripper between said surfaces which form an endless groove, levers pivoted to said wheel to form fulcrums for the levers, and pivoted also to said rollers, and mechanisms connected up between said levers and the respective pairs of jaws for closing the jaws, said cam having such a curvature at the point for closing, as to tilt said levers one at a time as the rollers travel along said cam.

28. In a machine for shucking oysters, the combination of a rotating wheel, open pairs of jaws equally spaced around the periphery thereof, a reciprocating lever for furnishing oysters to said pairs of jaws, a crank-and-pinion combination connecting said wheel to said lever for reciprocating the latter, a tongue for pressing against each oyster in said pairs of jaws, a spring for said tongue, a stationary stop beyond said lever along the periphery of said wheel, and located opposite the path of said jaws for causing oysters in successive pairs of jaws to have their hinges protruding equally from said jaws, and cams and rollers governed by said wheel and driven thereby for closing a pair of jaws while it is opposite said stationary stop.

29. In a machine for shucking oysters, the combination of a rotating wheel, pairs of jaws arranged around the periphery thereof, and means for alternately closing and opening said jaws consisting of a stationary cam formed endless around the center of said wheel, arc-shaped around said center at that position where the jaws are to remain closed, curved inwardly toward the center from said arc at that position where the jaws are to be opened and to remain open, rollers traveling around said cam, levers fulcrumed upon said wheel and connecting with the respective rollers, and mechanically connected up with the respective pairs of jaws, and retractile springs cooperating with said cams, rollers and levers tending to open said jaws.

30. In a machine for shucking oysters, the combination of a rotating wheel, pairs of jaws arranged around the periphery thereof, and means for alternately closing and opening said jaws consisting of a stationary cam formed endless around the center of said wheel, arc-shaped around said center at that position where the jaws are to remain closed, curved inwardly toward the center from said arc at that position where the jaws are to be opened and to remain open, rollers traveling around said cam, levers fulcrumed upon said wheel and connecting with the respective pairs of jaws, retractile springs coöperating with said cams, rollers and levers tending to open said jaws, slides for each pair of jaws, guide-rods for said slides, arms of two cranks pivoted to the respective jaws of a pair, a tube pivotally connected up with the other arms of said cranks, bearings for said tube attached to said wheel, and a spring acting outward radially from the center of said wheel upon said tube, said spring being in a compressed condition when said jaws are open.

31. In a machine for shucking oysters, the combination of a rotating wheel, open pairs of jaws equally spaced around the periphery thereof, a reciprocating lever for furnishing oysters to said pairs of jaws, a crank-and-pinion combination connecting said wheel to said lever for reciprocating the latter, a pusher for pressing against each oyster in said pairs of jaws, a spring for said pusher, a stationary stop beyond said lever as measured from said lever along the periphery of said wheel, and located opposite the path of said jaws for causing oysters in successive pairs of jaws to have their hinges protruding equally from said jaws, cams and rollers governed by said wheel and driven thereby for closing a pair of jaws while it is opposite said stationary stop, a spinning grinding-disk nearer the center of said wheel than said stop, and additional grinding-disks successively nearer the center of said wheel than any preceding disk.

32. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeding device for supplying oysters to said grippers, mechanism connecting said element and said device for operating the latter, a driver for said element, a tongue for pressing against an oyster with a spring action when an oyster is being driven into said grippers, means beyond said feeding device in the direction of rotation of said element, and located opposite the path of said grippers for causing oysters in successive grippers to have their protruding hinges lie in one and the same circle, an arrangement governed by said element for closing said grippers before they move beyond said means, and apparatus for cutting holes in the shells at said hinges and located beyond said means, said apparatus consisting of individually manually adjustable grinding-disks.

33. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeding device for supplying oysters to said grippers, means governed by said element for maintaining said grippers open for a predetermined interval of time after being fed with oysters, a stationary stop opposite the grippers while they are open, and apparatus governed by said element for closing said grippers, said apparatus consisting of a stationary double cam forming a groove, as many pivots as there are grippers projecting from said element, levers pivoted to the respective pivots, a roller on each lever running in said groove, and mechanism connected up between said levers and said grippers.

34. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeding device for supplying oysters to said grippers, means governed by said element for maintaining said grippers open for a predetermined interval of time after being fed with oysters, a stationary stop opposite the grippers while they are open, and apparatus governed by said element for closing said grippers, said apparatus consisting of a stationary double cam forming a groove, as many pivots as there are grippers projecting from said element, levers pivoted to the respective pivots, a roller on each lever running in said groove, and mechanism connected up between said levers and said grippers, said mechanism consisting of cranks connecting with said grippers, holders for said cranks, and pin-and-slot joints between said levers and said holders.

35. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeding device for supplying oysters to said grippers, means governed by said element for maintaining said grippers open for a predetermined interval of time after being fed with oysters, a stationary stop opposite the grippers while they are open, and apparatus governed by said element for closing said grippers, said apparatus consisting of a stationary double cam forming a groove, as many pivots as there are grippers projecting from said element, levers pivoted to the respective pivots, a roller on each lever running in said groove, and mechanism connected up between said levers and said grippers, said mechanism consisting of cranks connecting with said grippers, holders for said cranks, and pin-and-slot joints between said levers and said holders, said cam being formed endless around the center of said element, arc-shaped around said center at a certain distance therefrom for acting upon said rollers to maintain said grippers closed, curved inwardly toward the center, and then arc-shaped again at a less distance from said center to act upon said cams for maintaining said grippers open, and then curved outwardly from said center for acting upon said rollers to close said grippers.

36. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeding device for supplying oysters to said grippers, mechanism connecting said element and said device for operating the latter, a driver for said element, a pusher for pressing against an oyster with a spring action when an oyster is being driven into said grippers, means beyond said feeding device in the direction of rotation of said element, and located opposite the path of said grippers for causing oysters in successive grippers to have their protruding hinges lie in one and the same circle, an arrangement governed by said element for closing said grippers before they move beyond said means, and grinding-disks for cutting holes in the shells at said hinges and located beyond said means, and an organization governed by said element for driving the disks in units of several each.

37. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeding device for supplying oysters to said grippers, mechanism connecting said element and said device for operating the latter, a driver for said element, a pusher for pressing against an oyster with a spring action when an oyster is being driven into said grippers, means beyond said feeding device in the direction of rotation of said element, and located opposite the path of said grippers for causing oysters in successive grippers to have their protruding pushers lie in one and the same circle, an arrangement governed by said element for closing said grippers before they move beyond said means, and disks for cutting holes in the shells at said hinges and located beyond said means, and an organization governed by said element for driving the disks in units of several each, said organization consisting of pulleys attached to said disks, other pulleys separate from said disks, and a belt passing alternately over the first and second named pulleys.

38. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeding device for supplying oysters to said grippers, and means governed by said element for maintaining said grippers open for a predetermined interval of time after being fed with oysters, said means consisting of a cam-

and-roller device, the cams thereof being stationary, and the rollers of said device being individually connected with said grippers and devices for adjusting the oyster in the jaws, while the latter are still maintained open by said means.

39. In a machine for shucking oysters, the combination of a rotating element, oyster-grippers thereon, a feeding device for supplying oysters to said grippers, mechanism connected between said element and said feeding device for operating the same, means for resisting the action of said feeding device upon an oyster when being fed into any pair of grippers, a stop beyond said feeding device for preventing said oyster from being pushed too far by said means, and means for closing said grippers upon an oyster before passing said stop, grinding-disks beyond said stop for cutting holes in said oysters, pivoted arms supporting said disks, and screws for adjusting the positions of said arms.

40. In a machine for shucking oysters, the combination of a rotating element, oyster-grippers thereon, a feeding device for supplying oysters to said grippers, mechanism connected between said element and said feeding device for operating the same, means for resisting the action of said feeding device upon an oyster when being fed into any pair of grippers, a stop beyond said feeding device for preventing said oyster from being pushed too far by said means, and means for closing said grippers upon an oyster before passing said stop, grinding-disks beyond said stop for cutting holes in said oysters, pivoted arms supporting said disks, and screws for adjusting the positions of said arms, pulleys attached to said disks, and a driving-belt passing over the same in series.

41. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeder for supplying oysters to said grippers, mechanism connecting said element and said device for operating the latter to open and close the same at predetermined intervals, a regulator for adjusting the oysters in said grippers, for causing the oysters therein to project the same distances therefrom, apparatus for cutting holes in the shells of the oysters, fingers for entering said holes for separating said shells, means being provided for separating said fingers from each other, projectile-blades carried by said fingers, and means for projecting said blades into said oysters for severing the meats from the shells.

42. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeder for supplying oysters to said grippers, mechanism connecting said element and said grippers for operating the latter to open and close the same at predetermined intervals, a regulator for adjusting the oysters in said grippers, for causing the oysters therein to project the same distances therefrom, apparatus for cutting holes in the shells of the oysters, and fingers for entering said holes for separating said shells.

43. In a machine for shucking oysters, the combination of cutters for removing the material at the hinges of oysters for destroying the hinges and forming holes through the shells, a driver for propelling said oysters along a path, a pair of pivoted fingers, with their pivots so disposed that the ends of the fingers can be brought to each other for entering said oysters in pairs, and means controlled by said driver for moving said fingers bodily away from each other while in said holes, for separating said shells.

44. In a machine for shucking oysters, the combination of cutters for removing the material at the hinges of oysters for destroying the hinges and forming holes through the shells, a driver for propelling said oysters along a path, a pair of pivoted fingers, with their pivots so disposed that the ends of the fingers can be brought to each other for entering said oysters in pairs, and means controlled by said driver for moving said fingers bodily away from each other while in said holes, for separating said shells, said means for each finger being in duplicate and either duplicate consisting of a toothed segment rigid with one of said fingers, a toothed rack normally out of engagement with said segment, a single driver for all of the above-named elements, and devices connected with said drivers and said segment for bringing the latter into engagement with said rack.

45. In a machine for shucking oysters, the combination of cutters for removing the material at the hinges of oysters for destroying the hinges and forming holes through the shells, a driver for propelling said oysters along a path, a pair of pivoted fingers, with their pivots so disposed that the ends of the fingers can be brought to each other for entering said oysters in pairs, and means controlled by said driver for moving said fingers bodily away from each other while in said holes, for separating said shells, said means for each finger being in duplicate and either duplicate consisting of a toothed segment rigid with one of said fingers, a toothed rack normally out of engagement with said segment, a single driver for all of the above-named elements, and devices connected up with said driver and said segment for bringing the latter into engagement with said rack, said devices consisting of a holder for said segment, a stationary cam, and a roller carried by said holder, and bearing on said cam.

46. In a machine for shucking oysters, the combination of cutters for removing the material at the hinges of oysters for destroying the hinges and forming holes through the shells, a driver for propelling said oysters along a path, a pair of pivoted fingers, with their pivots so disposed that the ends of the fingers can be brought to each other for entering said oysters in pairs, and means controlled by said driver for moving said fingers bodily away from each other while in said holes, for separating said shells, said means for each finger being in duplicate and either duplicate consisting of a toothed segment rigid with one of said fingers, a toothed rack normally out of engagement with said segment, and a cam-and-roller device connected up with said driver both for bringing said segment into engagement with said rack and for rotating said segment by the joint action of said rack and said cam-and-roller device.

47. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeder for supplying oysters to said grippers, mechanism connecting said element and said device for operating the latter to open and close the same at predetermined intervals, a regulator for adjusting the oysters in said grippers, for causing the oysters therein to project the same distance therefrom, apparatus for cutting holes in the shells of the oysters, and fingers for entering said holes for separating said shells, and devices for successively rotating said fingers to enter said holes and for moving said fingers bodily for forcing the shells of the oysters apart.

48. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeder for supplying oysters to said grippers, mechanism connecting said element and said device for operating the latter to open and close the same at predetermined intervals, a regulator for adjusting the oysters in said grippers, for causing the oysters therein to project the same distances therefrom, apparatus for cutting holes in the shells of the oysters, partly rotary fingers for entering said holes close together in pairs, and a toothed segment and rack for rotating each pair of said fingers.

49. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeder for supplying oysters to said grippers, mechanism connecting said element and said device for operating the latter to open and close the same at predetermined intervals, a regulator for adjusting the oysters in said grippers, for causing the oysters therein to project the same distances therefrom, apparatus for cutting holes in the shells of the oysters, fingers for entering said holes for separating said shells, a pivoted toothed segment carried by each finger, a pivoted rack for engaging with said segment, the pivots for the last two elements being on lines parallel, to each other, a movable support for the pivot of the segment, and an arrangement provided between said support and said rack for tilting said support during a part of its movement.

50. In a machine for shucking oysters, the combination of a rotating element, oyster-grippers thereon, a feeder for supplying oysters to said grippers, mechanism connecting said element and said grippers for opening and closing the latter, an automatic regulator for causing the oysters in said grippers to project equal distances therefrom, cutters for making holes in the shells of the oysters, a pair of rotary fingers for entering any hole in the oysters, said fingers being normally out of the hole, the device for rotating each finger consisting of a pivot for the finger, movable along a straight line, teeth arranged around said pivot and rigid therewith, a rack whose teeth are in a straight row and parallel to said line, and a device governed by said element for causing the first-named teeth to roll over the second-named teeth, which latter are stationary.

51. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeder for supplying oysters to said grippers, mechanism connecting said element and said device for operating the latter to open and close the same at predetermined intervals, a regulator for adjusting the oysters in said grippers, for causing the oysters therein to project the same distances therefrom, apparatus for cutting holes in the shells of the oysters, blades, and projectors for propelling said blades and guiding the same for severing the meats from the shells.

52. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeder for supplying oysters to said grippers, mechanism connecting said element and said device for operating the latter to open and close the same at predetermined intervals, a regulator for adjusting the oysters in said grippers, for causing the oysters therein to project the same distances therefrom, apparatus for cutting holes in the shells of the oysters, blades, projectors for propelling said blades and guiding the same for severing the meats from the shells, and propellers for operating said projectors, consisting of cam-and-roller devices.

53. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeding device for supplying oysters to said grippers, means governed by said element for maintaining said grippers open for a predetermined interval of time after being fed with oysters, a stationary stop opposite the grippers while they are open, and apparatus governed by said element for closing said grippers, said apparatus consisting of a stationary double cam forming a groove, as many pivots as there are grippers projecting from said element, levers pivoted to the respective pivots, a roller on each lever running in said groove, and mechanism connected up between said levers and said grippers, said mechanism consisting of cranks connecting with said grippers, holders for said cranks, pin-and-slot joints between said levers and said holders, said cam being formed endless around the center of said element, arc-shaped around said center at a certain distance therefrom for acting upon said rollers to maintain said grippers closed, curved inwardly toward the center, and then arc-shaped again at a less distance from said center to act upon said cams for maintaining said grippers open, and then curved outwardly from said center for acting upon said rollers to close said grippers, a second cam with a similar contour, second rollers in said second cam, means for cutting holes in said oysters, fingers controlled by said second rollers for entering said holes, there being a pair of fingers for each of said grippers, a device for forcing apart the shells of the oysters by separating each pair of fingers from each other, pairs of blades, propellers for driving said blades into said holes for severing the meats, and consisting of a third stationary cam, and rollers carried by one set of the members of said pairs of blades for being operated by said third cam, there being a similar cam and roller movement for the other set of members of the said pairs of blades.

54. In a machine for shucking oysters, the combination of a rotating wheel, oyster-grippers carried thereby, cutters for making holes in the oysters held by said grippers, a blade projecting into one of the holes, and being movable, in a direction for severing the meats, a roller carried by said blade, and a cam for the roller, a bearing for the blade being provided and movable with said wheel, said cam being stationary.

55. In a machine for shucking oysters, the combination of oyster-grippers, cutters for making a hole in the oyster held in said grippers, a driver for moving said grippers, a blade, means for pointing said blade into said hole, and a propeller for projecting said blade through the hole into the oyster, said propeller consisting of a driver for propelling the blade laterally synchronously with said grippers, a stationary cam, and a roller for said cam mounted upon said blade, and a guide for the blade for causing it to move point first when said roller is propelled by said cam.

56. In a machine for shucking oysters, the combination of a rotating element, open oyster-grippers thereon, a feeder for supplying oysters to said grippers, mechanism connecting said element and said device for operating the latter to open and close the same at predetermined intervals, a regulator for adjusting the oysters in said grippers, for causing the oysters therein to project the same distances therefrom, apparatus for cutting holes in the shells of the oysters, fingers for entering said holes for separating the shells, blades for entering said holes, for severing the meats from the oysters, means for closing said grippers before the action of said cutting apparatus, and for opening said grippers after the discharge of the meats for delivering the shells of the oysters.

57. In a machine for shucking oysters, the combination of a set of fingers for entering a hole formed in the shell of the oyster, and means for separating the fingers from each other to pull the shells apart, and a driver for actuating said fingers, means for holding the oyster, and connections for coördinating the movements of the oyster.

58. In a machine for shucking oysters, the combination of flexible knives, means for cutting holes in the oysters for the entrance of said knives to separate the meats from the shells, means for separating the shells sufficiently to deliver the meats, a driver being provided for actuating the above-named elements, means for holding the oysters, and connections for coördinating the movements of the oysters.

59. In a machine for shucking oysters, the combination of a rotating wheel, grippers thereon for holding oysters, a feeding device for supplying said grippers with oysters, abrasive cutters for freeing the shells of each oyster from each other, a pair of fingers for insertion between the shells of each oyster, flexible knives for separating the meats from the shells, a driver and mechanisms connected up therewith for operating the elements, in the required order.

60. In a machine for shucking oysters, the combination of a rotating wheel, jaws arranged in a row thereon in pairs, and means governed by the motion of said wheel, for alternately opening and gradually closing the pairs of jaws, said means consisting of a stationary cam-plate, having two endless cam-surfaces, a roller for each pair of jaws between said surfaces, a tube for each pair, bell-cranks connecting said tubes to the respective jaws, and a retractile spring for each tube.

61. In a machine for shucking oysters, the combination of a rotating wheel, jaws arranged in a row thereon in pairs, means governed by the motion of said wheel, for first opening the pairs of jaws in succession, then gradually closing the jaws in succession, and then gradually opening them again in succession, said means consisting of a single cam and a series of rollers therein connected up respectively with the pairs of jaws, a feeder successively opposite the pairs of jaws in their open condition, a stop beyond the feeder, opposite said jaws, and spanning about two pairs of jaws at a time, a series of grinding-disks beyond the stop, each one being nearer and nearer the center of the wheel, fingers carried by said wheel, a cam-and-roller device for operating the same at a point beyond said disks and for pulling apart the shells of the oysters, blades, rollers connected up therewith, a cam beyond said disks and in the path of said rollers for guiding them out of said path for propelling said blades into said

oysters, and intermediate mechanisms connected with said wheel for actuating the various parts in the required manner and order.

62. In an oyster-shucking machine, the combination of a wheel; equidistant pairs of gripping-jaws on its periphery; a pusher-lever; and connections moving the lever toward the wheel when a gripping-jaw comes opposite to said lever; whereby one oyster is fed to each gripping-jaw.

63. In a machine for shucking oysters, the combination of a traveling element, a series of jaws mounted thereon for receiving oysters while in motion, a pusher-lever for feeding oysters successively to said jaws, a yielding stop in each of said jaws for maintaining any oyster of whatever size against said lever, means for closing said jaws to grip the oysters, and connections causing the lever to approach each jaw as it comes opposite said lever.

848,785. CLOSING-CAP. EUGENE A. TOWLE, St. Paul, Minn. Filed Aug. 16, 1904. Serial No. 220,976.

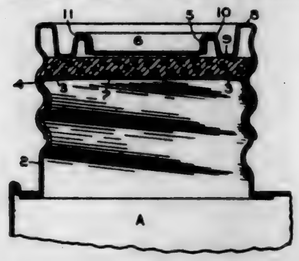

Claim.—1. A closure of the class described comprising in combination a neck, a cap fitted to said neck and provided with an opening in its top, said cap being formed with a contact opposed to the top of the neck, a secondary closure fitted to said opening, and a flat unbent resilient imperforate disk arranged between the cap and neck, said disk being held in position by the pressure of the neck and the opposed contact-wall of the cap against the free edge of said disk.

2. A closure of the class described comprising in combination a neck, a cap fitted thereto provided with an opening in its top, a secondary closure for said opening, and a downwardly-extending rib carried by the top of said cap in position to form a contact opposed to the top of the neck.

3. A closure of the class described, comprising in combination a neck formed with an inwardly-flanged outer end, a cap fitted to said neck and provided with an opening in its top, a friction-cap fitted in said opening, a rim carried by said cap and extending above the top of said friction-top, and a circumferential rib carried by the top of said cap and extending below the bottom of said friction-top.

4. A closure of the class described, consisting of a threaded neck having an inwardly-flanged outer end, a threaded cap fitted to said neck, said cap being formed in its top with a central opening, and the top of said cap being bent to form an outer rim and then bent to form a downwardly-extending rib standing above said neck-flange, and then bent to form an inner rim standing lower than said outer rim, a friction-top fitted to said inner rim, and a resilient disk arranged between said rib and neck-flange.

5. A closure of the class described, comprising a threaded neck having an inwardly-flanged outer end, a threaded top fitted to said neck and provided with a central opening in its top, the top of said cap being bent to form an outer rim, an inner concentric rim around said opening, and a downwardly-extending rib intermediate of said rims, a friction-top fitted in said opening with its upper edge lower than said outer rim, and its lower edge higher than said rib, and a resilient disk arranged within said cap above said flanged neck.

6. A closure of the class described comprising in combination a neck, a cap fitted thereto provided with an opening in its top, a secondary closure for said opening, a rib extending downwardly from the top of the cap toward the top of the neck whereby said rib and the top of the neck form opposed clamping contacts, and an imperforate resilient disk interposed between said rib and neck.

7. A closure of the class described comprising in combination a neck formed with an inwardly-flanged outer end, a cap fitted to said neck and provided with an opening in its top, a secondary closure for said opening, and a resilient disk interposed between said top and the flanged end of said neck.

8. A closure of the class described comprising in combination a neck formed with an inwardly-flanged outer end, a cap fitted to said neck and provided with an opening in its top, a secondary closure for said opening, a circumferential rib carried by the top of said cap and extending toward the flanged end of said neck, and a resilient disk arranged between said cap and neck.

848,786. STEAM-BOILER. EMERY A. VOIGHT, Paducah, Ky. Filed Dec. 6, 1906. Serial No. 346,593.

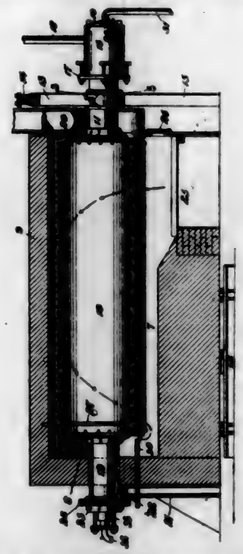

Claim.—1. In a boiler of the character described, the combination with a furnace having doors, of a rotatable boiler-body located over the furnace and having a gudgeon extending above and in front of the doors, a suspended bearing engaging an intermediate portion of the gudgeon, a non-rotatable head located on the outer end of the gudgeon outside the bearing, and water-gage mechanism located on the head and disposed above the space in front of the doors of the furnace.

2. In a boiler of the character described, the combination with a furnace having doors, of a rotatable body located over the furnace and having a tubular gudgeon, and a suspended hanger located over the furnace-doors, said gudgeon being journaled in the hanger.

3. In a boiler of the character described, the combination with a furnace having doors, of a rotatable boiler located over the furnace and having a tubular gudgeon projecting in front of the same, a supporting-frame, and a hanger suspended from the supporting-frame and surrounding the gudgeon, said gudgeon being journaled in the hanger.

4. In a boiler of the character described, the combination with a rotatable body having a series of flues therethrough, of means for projecting a steam-jet longitudinally through the flues, said flues successively alining with the jet upon the rotation of the body.

5. In a boiler of the character described, the combination with a rotatable body having a series of flues therethrough, of a furnace located at the front end of the body and having communication with the rear ends of the flues, a stack communicating with the flues at the front end of the body, and a steam-directing nozzle projecting toward the rear end of the body longitudinally of the flues, said flues being successively movable into alinement with the nozzle upon the rotation of the body.

6. In a boiler of the character described, the combination with an inclosed chamber having side walls, and a top, of a rotatable boiler located in the chamber in spaced relation to the side walls and top, said boiler having longitudinal flues therethrough, a furnace located beneath the front portion of the boiler, a stack communicating with the front ends of the flues, and a baffle-plate extending partially around the rear portion of the boiler and bridging the space between the same and the top and side walls.

7. In a boiler of the character described, the combination with a rotatable boiler having tubular gudgeons, of means engaging the gudgeons for supporting the boiler, a feed-pipe extending through one of the gudgeons and terminating short of the other gudgeon, and a blow-off pipe extending through the other gudgeon and disposed longitudinally in the central portion of the boiler, said pipes being in substantial alinement and having their inner ends spaced apart, and said blow-off pipe being perforated within the boiler.

8. In a boiler of the character described, the combination with an inclosed chamber having side walls and a top, of a boiler-body located within the chamber and having tubular gudgeons projecting through the ends of the chamber, a stationary hood mounted on the front gudgeon and having water-level-indicating means, a suspended hanger engaging the front gudgeon for supporting the same, flues extending longitudinally through the boiler-body, the rear ends of said flues communicating with the chamber, a stack communicating with the front ends of the flues, a furnace located in the front portion of the chamber, a baffle-plate surrounding the upper rear portion of the boiler-body, and a forwardly-extending steam-directing nozzle projecting through the rear end of the chamber and longitudinally of the flues, the rear ends of said flues being successively movable into alinement with the nozzle.

848,787. TYPE-WRITING MACHINE. FRANZ X. WAGNER, New York, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 13, 1905. Serial No. 291,580.

Claim.—1. In a type-writing machine, the combination with types and a platen, of a sliding ribbon-carrier, a part which is reciprocated at the operation of the types, two levers so connected to said reciprocating part as always to be vibrated thereby, and means for rocking said ribbon-carrier sidewise into direct engagement with either of said levers; one of said levers being so mounted and connected as to give a longer stroke than the other lever to the ribbon-vibrator.

2. In a type-writing machine, the combination with types, of a ribbon-carrier, two levers mounted side by side upon coincident axes, and extending to said carrier, a single device for vibrating said levers at the type-strokes through unequal distances, and means for rocking said carrier so as to engage either of said levers to be operated thereby.

3. In a type-writing machine, the combination with types, of a ribbon-carrier, said carrier being movable to cover or uncover the printing-point, means for rocking said carrier from side to side, and means coöperating with said carrier, when the latter is rocked in one direction, to give the carrier a short stroke, and means coöperating with said carrier when it is rocked in the other direction, to give the carrier a long stroke, for covering the printing-point with the ribbon, so as to bring into use different widthwise portions of the ribbon.

4. In a type-writing machine, the combination with types and a ribbon-carrier, of two levers mounted upon a single pivot, a slotted reciprocating member engaging said levers at different distances from their pivots, so that the levers are vibrated simultaneously through different arcs, and means for causing said ribbon-carrier to be operated by either of said levers, at will.

5. The combination with types, of two levers, means for vibrating said levers simultaneously through unequal distances at the type-strokes, and a sliding ribbon-carrier movable into direct engagement with either of said levers at will.

6. The combination with types and a shifting platen, of two levers, mounted to shift with the platen, means for vibrating said levers simultaneously through unequal distances at the type-strokes, a ribbon-carrier, and means mounted upon the framework and connected to said carrier for effecting and maintaining connection thereof with either of said levers at will.

7. In a type-writing machine, the combination with types, of a ribbon-carrier, means for guiding said carrier for a sliding movement to cover and uncover the printing-point, means for effecting a transverse rocking movement of said carrier, and unequally-moving devices with either of which said carrier may connect by means of its rocking movements, to cause said carrier to carry the ribbon unequal distances over the printing-point.

8. In a type-writing machine, the combination with types, of a stationary guide, a riboon-carrier having means loosely engaging said guide to slide thereon to and from the printing-point, a member having a pin-and-slot engagement with said ribbon-carrier, and shiftable so as to rock said carrier sidewise, and unequally-vibrating levers with either of which said carriers may be engaged by means of such rocking movement, and whereby the carrier may be moved different distances over the printing-point.

9. In a type-writing machine, the combination with types, and a shifting platen, of a part reciprocated at the type-strokes, a ribbon-carrier, a finger-piece mounted upon the frame of the machine and having a loose connection to said ribbon-carrier whereby it may effect lateral movements thereof, means detaining said finger-piece in different positions, and two levers shiftable with the platen and connected to said reciprocating part so as to be operated simultaneously thereby; said finger-piece being capable of moving said carrier laterally into connection with either of said levers.

10. In a type-writing machine, the combination with types and a platen, of a part reciprocating at the type-strokes and having a slot, two levers pivoted together and having wrists engaging said slot at different points, a ribbon-carrier, a guide which said ribbon-carrier loosely engages, and a shifter mounted upon the framework and having a loose connection with said carrier for shifting the same laterally so as to engage either of said levers.

11. In a type-writing machine, the combination with types and a platen shiftable to enable different types to print, of a frame or rail shifting with the platen, two levers reciprocated together at the type-strokes and shifting with said frame or rail, a ribbon-carrier, and means for shifting said ribbon-carrier laterally to connect with either of said levers so as to be given either a short of a long stroke, and also so as to be shifted together with said frame or rail.

12. In a type-writing machine, the combination with

types and a platen shiftable to enable different types to print, of a ribbon-vibrating mechanism including a ribbon-carrier which is shiftable laterally, and levers with either of which said carrier may be engaged by said lateral movement and by either of which said carrier may be caused to shift with said platen, means for vibrating said levers together but unequally at the type-strokes, and a shifter mounted upon the framework of the machine and having a loose connection to said vibrator for effecting lateral movements thereof.

848,788. TYPE-WRITING MACHINE. HERMAN L. WAGNER, Mount Vernon, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed May 7, 1906. Serial No. 315,608.

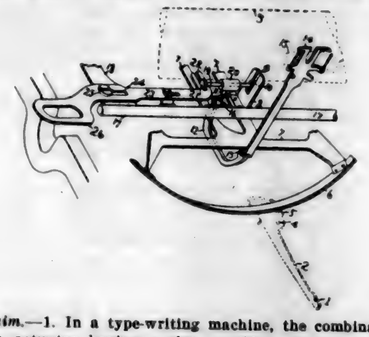

Claim.—1. In a type-writing machine, the combination of an actuator having a slot, a ribbon-carrier, a lever therefor, a wrist engaging said slot and slidable in said lever and having a head, a slide having a cross-slot engaging said head, and a finger-piece upon said slide, the latter movable to disconnect said wrist from said actuator, to silence said vibrator at will; said wrist formed upon a shaft having a long bearing in said lever.

2. In a type-writing machine, the combination of a ribbon-carrier, a lever for operating the same, a platen-shifting frame whereon said lever is pivoted, a shaft movable endwise in a long bearing provided in said lever, a wrist upon one end of said shaft, a head upon the other end of said shaft, a slide having a cross-fork engaging said head and provided with a finger-piece, a frame which reciprocates at the type-strokes, and a vertically-slotted actuator upon said frame, said finger-piece and slide being movable to disengage said wrist from said slotted actuator, to silence said vibrator at will.

848,789. CULTIVATOR. LEWIS E. WATERMAN, Rockford, Ill., assignor to Emerson Manufacturing Company, Rockford, Ill., a Corporation of Illinois. Filed Oct. 22, 1906. Serial No. 339,979.

Claim.—1. In a cultivator, a main frame, two supporting-wheels independently connected to the main frame and capable of a bodily movement in the direction of the line of draft, two shovel-supporting beams independently connected to the main frame and capable of independent vertical movement, means for raising and lowering the beams independently, and connections whereby the said means move a supporting-wheel.

2. In a cultivator, a main frame, two supporting-wheels independently connected to the main frame and capable of a bodily movement in the direction of the line of draft, two shovel-supporting beams independently connected to the main frame and capable of independent vertical movement, and means for moving the supporting wheel and beam of one side of the main frame in unison and independently of the supporting wheel and beam of the other side of the main frame.

3. In a cultivator, a main frame, two stub-axles pivotally connected to the main frame, a supporting-wheel for each axle, two shovel-supporting beams independently connected to the main frame and capable of independent vertical movement, and means for moving the stub-axle and beam of one side of the main frame in unison independently of the stub-axle and beam of the other side of the main frame.

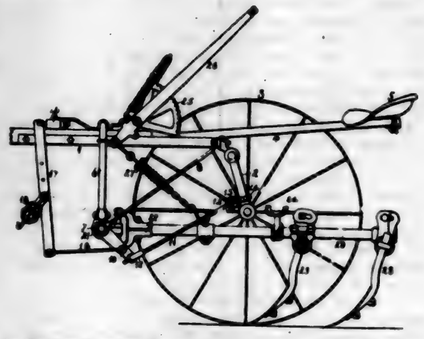

4. In a cultivator, a main frame, two supporting-wheels independently connected to the main frame and capable of a bodily movement in the direction of the line of draft, two shovel-supporting beams independently connected to the main frame and capable of independent vertical movement, means for varying the working depth of the shovels of one beam independently of the working depth of the shovels of the other beam, and connections between a beam and supporting-wheel whereby they move in unison.

5. In a cultivator, a main frame, an arch-bar, a sleeve having a pivotal connection with the arch-bar and provided with a laterally-extending arm, a movable axle, a wheel connected to the axle, a connection between the arm and axle, a shovel-supporting beam movable with the sleeve, and a draft connection with the arm.

6. In a cultivator, a main frame, two supporting-wheels independently connected to the main frame and capable of a movement in the direction of the line of draft, an arch-bar fixedly connected to the main frame, two shovel-supporting beams independently connected to the arch-bar and capable of an independent vertical movement, and means for moving the supporting wheel and beam of one side of the main frame in unison independently of the supporting wheel and beam of the other side of the main frame.

7. In a cultivator, a main frame, two supporting-wheels independently connected to the main frame and capable of a bodily movement in the direction of the line of draft, two shovel-supporting beams independently connected with the main frame and capable of independent vertical movement, two levers and connections whereby a lever will move a supporting wheel and beam of one side of the main frame independently of the supporting wheel and beam of the other side of the main frame.

8. In a cultivator, a main frame, two supporting-wheels independently connected to the main frame and capable of a bodily movement in the direction of the line of draft, two shovel-supporting beams independently connected to the main frame and capable of independent vertical movement, two levers, and connections whereby a lever will move a supporting wheel and beam of one side of the main frame in unison independently of the lever, supporting wheel and beam of the other side of the main frame.

9. In a cultivator, a main frame, two supporting-wheels independently connected to the main frame and capable of a bodily movement in the direction of the line of draft, two shovel-supporting beams independently connected to the main frame and capable of independent vertical movement, two levers, a connection between a lever and beam of one side of the main frame, and a connection between the beam and a supporting-wheel of the same side of the main frame, whereby a movement of the lever will move the beam and supporting-wheel independently of the beam and supporting-wheel of the other side of the main frame.

10. In a cultivator, a main frame, two supporting-wheels independently connected to the main frame and capable of a bodily movement in the direction of the line of draft, two shovel-supporting beams independently connected to the main frame and capable of independent vertical movement, a lever, a connection between the lever and beam and another connection between the beam and supporting-wheel, whereby a movement of the lever will move both the beam and supporting-wheel.

11. In a cultivator, a main frame, two supporting-wheels independently connected to the main frame and capable of a movement in the direction of the line of draft, two shovel-supporting beams independently connected to the main frame and capable of independent vertical movement, two levers, a toothed quadrant for each lever, a flexible connection between a lever and a beam on one side of the main frame, and a connection between the beam and a supporting-wheel on the same side of the main frame, whereby a movement of the beam will move the supporting-wheel independently of the movement of the lever.

12. In a cultivator, a main frame, two supporting-wheels independently connected to the main frame and capable of a bodily movement in the direction of the line of draft, two shovel-supporting beams independently connected to the main frame and capable of independent vertical movement, two levers, a toothed quadrant for each lever, and connections whereby a lever will move a supporting wheel and beam of one side of the main frame in unison independently of the supporting wheel and beam of the other side of the main farme.

13. In a cultivator, a main frame, two supporting-wheels independently connected to the main frame and capable of a bodily movement in the direction of the line of draft, two shovel-supporting beams independently connected to the main frame and capable of independent vertical movement, two levers, a connection between a lever and beam of one side of the main frame, and a connection between the beam and a supporting-wheel of the same side of the main frame, whereby a movement of the lever will move the beam and supporting-wheel independently of the beam and supporting-wheel of the other side of the main frame, the connection between the beam and supporting-wheel being adjustable as to length to vary the distance between the beam and supporting-wheel.

14. In a cultivator, a main frame, two supporting-wheels independently connected to the main frame and capable of a bodily movement in the direction of the length of draft, two shovel-supporting beams independently connected to the main frame and capable of independent movement, means for moving a beam and supporting-wheel in unison, the means for one beam and supporting-wheel being independent of the means for the other beam and supporting-wheel.

848,790. SEEDING-MACHINE. LEWIS E. WATERMAN, Rockford, Ill., assignor to Emerson Manufacturing Company, Rockford, Ill., a Corporation of Illinois. Filed Feb. 19, 1907. Serial No. 358,210.

Claim.—1. In a seeding-machine the combination of a main frame, a plow-standard capable of a vertical movement in connection with the frame, a plow supported by the standard, means for raising and lowering the standard and holding it in its adjusted position, a covering-shovel-supporting frame pivotally connected with the standard, a toothed segment connected with the standard, a hand-lever for the toothed segment, and a connection between the hand-lever and covering-shovel-supporting frame.

2. In a seeding-machine, the combination of a main frame, a covering-shovel-supporting frame capable of a vertical movement, a bar depending from the main frame, a cross-bar connecting the side bars of the shovel-supporting frame, two arms extending from the cross-bar and receiving the bar between them, thereby forming a guide for the shovel-supporting frame in its vertical movements and preventing lateral movement of the shovel-supporting frame.

3. In a seeding-machine, the combination of a main frame, a covering-shovel-supporting frame capable of a vertical movement, a cross-bar connecting the side bars of the shovel-supporting frame, a rod connected to the

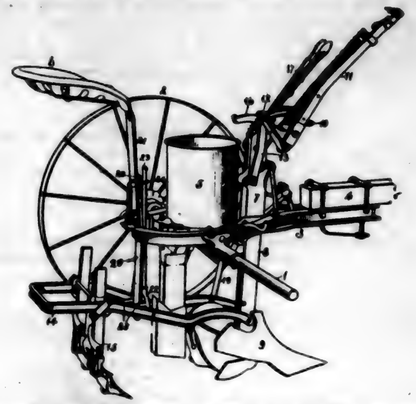

cross-bar, and a guide for the upper end of the rod permitting the rod to move vertically.

848,791. PYRIMIDIN DERIVATIVE. LEO WEBER, Darmstadt, Germany. Filed Sept. 8, 1904. Serial No. 223,746. (Specimens.)

Claim.—1. The process of producing new derivatives of oxypyrimidin consisting in condensing dicyandiamid with negatively substituted acetic-acid esters in a solution of an alcoholate, boiling the liquid whereby the new derivative is formed, and isolating the same in the manner well known for this class of bodies, substantially as described.

2. The process of producing 2-cyanimino-4-amino-5-diethyl-6-oxypyrimidin consisting in condensing dicyandiamid with diethylcyanacetic-acid ester in a solution of sodium ethylate, boiling the liquid and isolating the precipitated crystalline mass by filtration, substantially as described.

3. The new derivatives of oxypyrimidin characterized by the following general formula:

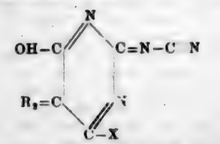

in which R represents hydrogen atoms which may be replaced by alkyl radicals and X a methyl, hydroxyl or amido group, produced by condensation of dicyandiamid and negatively substituted acetic-acid esters, and which new bodies are difficultly soluble in hot water and alcohol, readily soluble in alkaline liquids, forming salts with the alkalies and which are decomposed into 2-oxypyrimidin derivatives, carbonic acid and ammonia on prolonged boiling with dilute acids, substantially as described.

4. The new 2-cyanimino-4-amino-5-diethyl-6-oxypyrimidin produced by condensation of dicyandiamid and cyanacetic acid ester characterized by the formula:

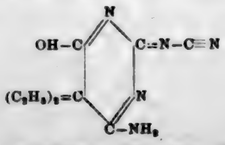

which is nearly insoluble in cold water, relatively easily soluble in a dilute solution of carbonate or of hydrate of soda, in warm alcohol and in boiling water, and crystal-

lizes from the latter in small needles, which melt at 265° centigrade approximately.

5. As a new article of manufacture, a substance obtainable from oxypyrimidin and which on prolonged boiling with dilute hydrochloric acid is decomposed into 2-oxypyrimidin derivative, carbonic acid and ammonia and which is characterized by the following general formula:

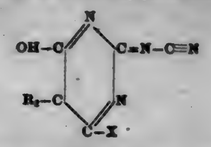

in which R represents hydrogen atom which may be replaced by alkyl radical and X a methyl, hydroxyl or amido group.

848,792. FLUSHING-CLOSET. EDWARD T. WEBSTER, Milwaukee, Wis. Filed Feb. 26, 1906. Serial No. 303,844.

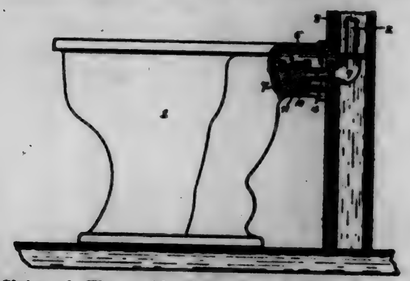

Claim.—1. The combination with a flushing-closet provided with a rearwardly-extending pipe-inclosing sleeve adapted to close the space between said closet and abut against an adjacent wall, of a horizontal metallic pipe connection having a close joint with said closet within and at the inner end of said sleeve, whereby the necessity of forming a close joint between the rear end of said pipe-inclosing sleeve and an adjacent wall is avoided.

2. The combination with a flushing-closet provided with a rearwardly-extending pipe-inclosing sleeve adapted to close the space between said closet and abut against an adjacent wall, said sleeve being provided upon its lower side with an opening through which the couplings of the pipe connections therein may be reached from below, said sleeve being adapted to close the space between the bowl of the closet and the adjacent wall and obscure the horizontal pipe connections from view.

3. The combination with a flushing-closet provided with a rearwardly-extending sleeve adapted to close the space between said closet and an adjacent wall of a metallic pipe connection communicating directly with the closet through said sleeve, whereby the necessity of forming a close joint between the rear end of said sleeve and such wall is avoided.

848,793. RELAY STRUCTURE. HARRY G. WINSTON, Chicago, Ill., assignor to Milo G. Kellogg, Chicago, Ill. Filed Feb. 4, 1907. Serial No. 355,720.

Claim.—1. An electrical relay structure including a relay having two energising-paths, an armature therefor partially actuated on completion of the first energising-path and held temporarily in an intermediate position until the second energising-path is completed, a normally open switch-contact of said relay held closed by said armature in both its intermediate and fully-attracted positions, a second relay responsive to the closing of said contact adapted to subsequently complete the second energising-path to fully attract said armature, and a normally closed switch-contact of said relay held continuously open by said armature in its fully-attracted position only.

2. An electrical relay structure including a relay, an armature therefor, a normally open switch-contact for said relay, a normally closed switch-contact adapted to be opened on attraction of said armature, an electrical circuit including said last-mentioned contact for initially energising said relay to cause said armature to vibrate said last-mentioned contact while said first contact is maintained closed, and means controlled by said normally open contact when closed adapted to subsequently hold said armature continuously attracted.

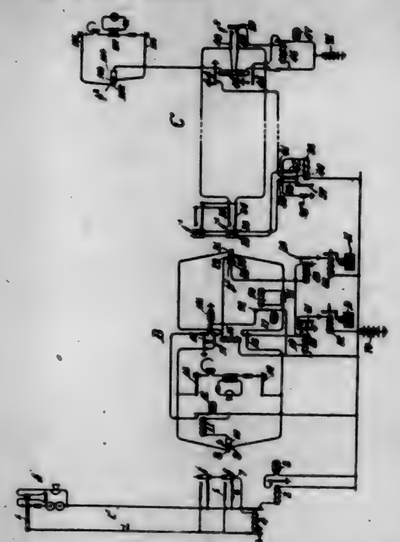

3. An electrical relay structure including a relay, a normally open switch-contact controlled by said relay, a second normally open switch-contact controlled by said relay, a normally closed switch-contact controlled by said relay, means including said last-mentioned contact for initially causing a continuing peculiar operation of said relay holding said first normally open contact closed while preventing a continuous holding of said normally closed contact open, and means operated by the closing of said first contact adapted to eventually establish a locking-current flow for said relay including said second normally open switch-contact, the establishing of said locking-flow effecting a different energising of said relay to cause it to hold said normally closed contact open.

4. An electrical relay structure including a relay having two windings, an armature therefor, means including an external resistance and a source of current for causing a preliminary energisation of one winding of said relay, a switch-contact of said relay adapted to limit said preliminary energisation, and means automatically set in train of action by said preliminary energisation to subsequently establish a path for current fully energising said relay, said path including both windings of said relay and excluding said external resistance.

5. An electrical relay structure including a relay having two windings, an armature therefor, means including an external resistance and a source of current for causing a preliminary energisation of one winding of said relay, a switch-contact of said relay adapted to limit said preliminary energisation, and means automatically set in train of action by said preliminary energisation to subsequently establish a path for current to energise said relay to hold its armature fully attracted.

6. In an electrical relay structure, the combination of a relay, an armature for said relay having an initial and subsequent motion, an electromagnet, means controlled by the initial motion to establish the circuit of said electromagnet, and means controlled by the energisation of said electromagnet to cause the subsequent motion of said armature.

7. In an electrical relay structure, the combination of a relay, an armature for said relay having an initial and subsequent motion, an energising-circuit for said relay to produce said initial motion, an electromagnet, means controlled by said initial motion to energise said electromagnet, means controlled by the said subsequent motion to interrupt said energising-circuit, and means responsive to the energisation of the electromagnet to cause the final motion of said armature.

8. In an electrical relay structure, the combination of a relay, an armature for said relay having an initial and subsequent motion, an energising-circuit for said relay to produce said initial motion, an electromagnet, means controlled by the initial motion to energise said electromagnet, means controlled by the subsequent motion to interrupt said energising-circuit, and means controlled by said electromagnet to complete a locking-circuit and cause the said subsequent motion of said armature.

848,794. STOVE-LINING CLAMP AND SUPPORT. SAMUEL WEINBERG, Scranton, Pa. Filed Dec. 8, 1906. Serial No. 346,889.

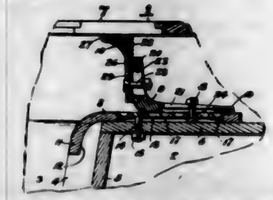

Claim.—1. A device of the character described comprising the clamp member 8 having the short arm 11 and the long arm formed with the longitudinal slot 13, said slot having its longitudinal edges 17 upon the bottom of said arm beveled outwardly and downwardly and its longitudinal edges upon the top of said arm formed with the seats 16, substantially as shown and for the purpose specified.

2. A device of the character described comprising the member 9 having the long and short arms 19, 20 formed with serrated outer faces 24 and with the longitudinal slots 21, 23, the slot 21 in the long arm 19 having its longitudinal edges 22 upon its outer face beveled outwardly, substantially as shown and for the purpose specified.

3. A device of the character described comprising a clamping member formed with the slot 13 having its bottom longitudinal edges 17 beveled outwardly and downwardly and its top longitudinal edges formed with the seats 16 adapted to receive the head of a bolt passed through the slot 13 and to permit the head of said bolt to lie beneath the top of said member, a supporting member having a slot and a bolt passed through the last-mentioned slot and the slot 13 in the clamping member for adjustably securing said members together, said bolt having its head engaged with the beveled edges 17 of the slot 13 and lying within the plane of the bottom of the clamping member.

4. A device of the character described, comprising a clamping member formed with the slot 13 and having its bottom longitudinal edges 17 beveled outwardly and downwardly and its top longitudinal edges formed with the seats 16 adapted to receive the head of a bolt passed through the slot 13 and to permit the head of said bolt to lie beneath the top of same member, the substantially right-angular reversible supporting member 9 having long and short arms formed with serrated outer faces and with longitudinal slots, said supporting member being adapted to have the serrated outer face of either of its arms engaged with the top of the clamping member, and a clamping-bolt passed through the alining slots in the two members and having its head engaged with the beveled bottom edges 17 of the slot in the clamping member so that the head of said bolt lies within the plane of the bottom of the clamping member, substantially as set forth.

5. The combination with the stove-top, the fire-box lining and the oven-plate formed with an aperture, of a clamping member having a short arm to engage the said lining and a long arm to engage the top of the oven-plate, said long arm being formed with the longitudinal slot 13 having its bottom longitudinal edges 17 beveled outwardly and downwardly and its top longitudinal edges formed with the seats 16, the bolt 14 passed through the aperture in the oven-plate and the slot 13 and having its head engaged with one of the seats 16, a stove-top-supporting member having a slot and a roughened surface to engage the top of the clamping member, and the bolt 18 passed through the slots in said members and having its head engaged with the beveled edges 17 of the slot in the clamping member, substantially as shown and described.

6. A device of the character described, comprising a clamping member, a supporting member, a connecting member, each of said members being of substantially right-angular form, and the connecting member being reversible, and means for adjustably connecting the supporting and clamping members to the two arms of the connecting member.

7. A device of the character described, comprising a clamping member, a supporting member, a connecting member, each of said members being of substantially right-angular form, and provided with longitudinal slots, the connecting member being reversible, and bolts passed through said slots for adjustably connecting said members together, substantially as shown and described.

8. A device of the character described, comprising a clamping member of substantially right-angular form having a longitudinal slot formed with seats in its edges, a substantially right-angular connecting member having long and short arms formed with longitudinal slots, the outer faces of said arms being serrated, a substantially right-angular supporting member having a slot in one of its arms and serrations upon the outer face of said slotted arm, and clamping-bolts passed through the slots in said members for adjustably connecting them together, substantially as shown and described.

848,795. EAVES-TROUGH HANGER. EDWARD T. WILDSMITH, Birmingham, Ala. Filed Mar. 17, 1906. Serial No. 306,657.

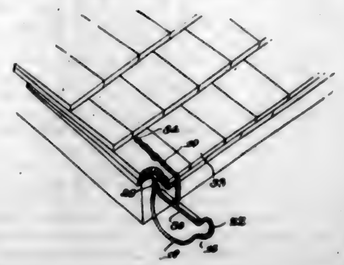

Claim.—1. An eaves-trough hanger consisting of a frame constructed from a single piece of wire folded upon itself and twisted for a part of its length and the untwisted part extended laterally in opposite directions, one of said laterally-extending pairs bent upon itself to form an eye and thence extending parallel to said laterally-extended parts and the other laterally-extending part formed into a loop for bearing over the roll portion of the eaves-trough and curved beneath the body of the same and with its terminal extending through said eye, the terminal of said parallel portion entwisted around the eaves-trough roll-engaging loop.

2. An eaves-trough hanger consisting of a frame con-

structed from a single piece of wire folded upon itself and twisted for a part of its length and the untwisted parts extended laterally in opposite directions, one of said laterally-extending parts bent upon itself to form an eye and thence extending parallel to said laterally-extended parts and formed into a loop and entwisted with the terminal of the other laterally-extended part, to bear over the roll portion of the eaves-trough, and thence curved beneath the body of the trough and with its terminal extending through the eye, and a brace-plate folded over said laterally-extending parts and the spaced parallel portion of the frame.

3. An eaves-trough hanger consisting of a frame having an arm for bending over the roof and with laterally-extending members spaced apart with an eye at one end and a loop at the other end for bearing over the roll portion of the eaves-trough, said frame having an arm extending from said loop and bearing beneath the body of the trough and secured at its terminal in said eye, and a brace formed from a sheet of metal having a recess in one edge and an aperture near the other edge and folded longitudinally with one of said lateral members in the fold of the plate and the arm extending through the aperture and recess, and the brace secured in place by folding the same over the other lateral member.

848,796. ILLUSION-CAR. WILLIAM H. WINTERBORNE, San Antonio, Tex. Filed Sept. 6, 1906. Serial No. 333,566.

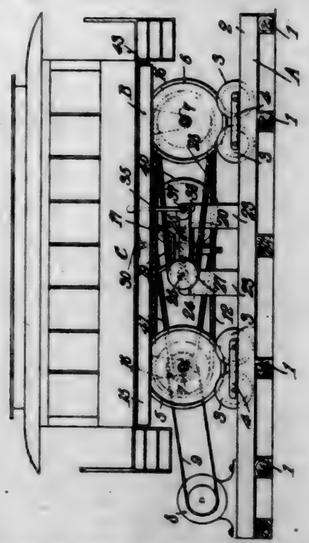

Claim.—1. An amusement device having a car-body, means for causing a side-to-side movement of said car-body, means for producing an up-and-down rocking movement of said car-body, and means for moving the forward end of said car-body in a lateral direction.

2. An amusement device having a supporting-frame, means for moving said supporting-frame from side to side, a car-body pivotally mounted upon said supporting-frame, and means for causing an up-and-down rocking movement of said car-body upon said supporting-frame.

3. An amusement device having a supporting-frame, means for moving said supporting-frame from side to side, a car-body pivotally mounted upon said supporting-frame, means for causing up-and-down rocking movement of said car-body upon said supporting-frame, and means for swinging the forward end of said car-body in a lateral direction upon said supporting-frame.

4. An amusement device having a plurality of car-wheels, a supporting-frame carried by said car-wheels, means for moving said supporting-frame from side to side with respect to said car-wheels, a car-body pivotally mounted upon said supporting-frame, and means for causing up-and-down rocking movement of said car-body upon said supporting-frame.

5. An amusement device having a plurality of car-wheels, axles connected with said car-wheels, a supporting-frame slidably mounted upon said axles, and a car-body pivotally mounted upon said supporting-frame.

6. An amusement device having a plurality of car-wheels, axles connected with said car-wheels, a supporting-frame slidably mounted upon said axles, a car-body pivotally mounted upon said supporting-frame, means for causing up-and-down rocking movement of said car-body upon said supporting-frame, and means for swinging the forward end of said car-body in a lateral direction with respect to said supporting-frame.

7. An amusement device having a base-frame, supporting-wheels journaled upon said base-frame, car-wheels mounted upon said supporting-wheels, axles connected with said car-wheels, a supporting-frame having brackets slidably mounted upon said axles, said supporting-frame having a conical socket, a car-body having a pivot-point fitting into the conical socket of the supporting-frame, link-rods having a universal connection with said car-body, means for reciprocating said link-rods in opposite directions, a slotted bracket connected with said supporting-frame, a worm-disk having an eccentric-pin engaged with said slotted bracket for moving said supporting-frame from side to side, means for rotating said worm-disk, and a draw-rod slidably mounted upon said supporting-frame and pivotally connected with said car-body.

848,797. MACHINE FOR GROOVING WOOD. ROBERT S. ALLAN, Durham, England. Filed Aug. 17, 1904. Serial No. 221,052.

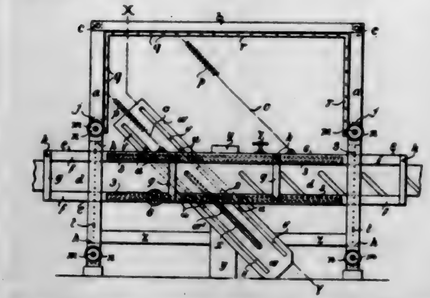

Claim.—1. In a machine for grooving or trenching wood and the like, the combination of a routing-cutter, a work-carrying frame mounted so as to be freely movable in any direction in the plane in which it lies, an adjustable guiding means mounted independently of said frame and adapted to be adjusted at various angles, and means connecting said guide to said frame and adapted to constrain said frame to move only in a direction corresponding to the position of said guide.

2. In a machine for grooving or trenching wood and the like, the combination of a routing-cutter, a work-carrying frame mounted so as to be freely movable in any direction in the plane in which it lies, an adjustable guiding means adapted to constrain said frame to move only in a predetermined direction and to be adjusted to alter the direction of movement of the frame, said guiding means comprising an angularly-adjustable member having elongated grooves and mounted independently of said frame, and guide-blocks adapted to slide in said grooves and pivotally connected to guide-blocks carried by said frame.

3. In a machine for grooving or trenching wood and the like, the combination of a routing-cutter, a stationary frame, a movable work-carrying frame mounted in said stationary frame and freely movable in any direction in the plane in which it lies, a guide member carried by said stationary frame and adapted to be adjusted at various angles thereto, and means connecting said guide member to said movable frame whereby the latter is constrained to move only in a direction corresponding to the position of said guide member.

4. In a machine for grooving or trenching wood and the like, the combination of a routing-cutter, a stationary frame, a movable work-carrying frame mounted in said stationary frame and freely movable in any direction in the plane in which it lies, an angularly-adjustable guide member carried by said stationary frame and adapted to be adjusted at various angles thereto, and means connecting said guide member to said movable frame whereby the latter is constrained to move only in a direction corresponding to the position of said guide member, said means comprising guide-blocks adapted to slide in elongated grooves in said guide member and pivotally connected to guide-blocks carried by said movable frame.

5. In a machine for grooving or trenching wood and the like, the combination of a routing-cutter, a work-carrying frame mounted so as to be freely movable in any direction in the plane in which it lies, an adjustable guide for said frame mounted independently thereof and adapted to be adjusted at various angles, and means connecting said frame to said guide whereby said frame is constrained to move only in a direction corresponding to said guide and said guide can be adjusted to alter the direction of the movement of said frame to vary the cut without alteration of the angle at which said frame or the work lies.

6. In a machine for grooving or trenching wood and the like, the combination of a routing-cutter, a stationary frame, a movable work-carrying frame mounted in said stationary frame, and freely movable in any direction in the plane in which it lies, a guide carried by said stationary frame and adapted to be adjusted at various angles thereto, said guide and said movable frame having elongated grooves on their opposing faces and members sliding in the respective grooves and pivoted to each other whereby said movable frame and guide may be adjusted angularly to each other and said movable frame is constrained to travel only in a direction corresponding to the position of said guide.

7. In a machine for grooving or trenching wood and the like, the combination of a routing-cutter, a work-carrying frame mounted so as to be freely movable in any direction in the plane in which it lies, an adjustable guiding means mounted independently of said frame and connected thereto and adapted to be adjusted to alter the direction of the travel of said frame whereby to vary the angle of the cut and to constrain said frame to move only in a direction corresponding to the position of said guide, and means for restoring said frame to its original position, said means being adjustable in accordance with the variations of movement of said frame.

8. In a machine for grooving or trenching wood and the like, the combination of a work-carrying frame mounted so as to be freely movable in any direction in the plane which it lies, an adjustable guiding means mounted independently of said frame and connected thereto and adapted to be adjusted to alter the direction of the travel of said frame whereby to vary the angle of the cut and to constrain said frame to move only in a direction corresponding to the position of said guide, and means for restoring said frame to its original position, said means being adjustable in accordance with the variations of movement of said frame and comprising a spring having one end attached to said frame and means adapted to support the other at different positions.

9. In a machine for grooving or trenching wood and the like, the combination of a fixed part, a work-carrying frame mounted so as to be freely movable in any direction in the plane in which it lies, said fixed part and said frame having interengaging guiding means adapted to constrain said frame to move in a predetermined path, such guiding means being adjustable to vary the angle of the path in which such frame moves.

10. In a machine for grooving or trenching wood and the like, the combination of a fixed part, a work-carrying frame mounted so as to be freely movable in any direction in the plane in which it lies, said fixed part and said frame having interengaging guiding means adapted to constrain said frame to move in a predetermined path, such guiding means being adjustable to vary the angle of the path in which such frame moves, and comprising an angularly-adjustable member having elongated grooves and mounted independently of said frame, and guide-blocks adapted to slide in said grooves and pivotally connected to guide-blocks carried by said frame.

11. A machine for grooving or trenching wood or the like, the combination of a fixed part, a work-carrying frame, mounted so as to be freely movable in any direction in the plane in which it lies, said fixed part and said frame having interengaging guiding means adapted to constrain said frame to move in a predetermined path, such guiding means being adjustable to vary the angle of the path in which such frame moves, and comprising an angularly-adjustable guide member carried by said fixed part, and adapted to be adjusted at various angles thereto, and means connecting said guide member to said work-carrying frame whereby the latter can move only in a direction corresponding to the position of said guide member, said means comprising guide-blocks adapted to slide in elongated grooves in said guide member and pivotally connected to guide-blocks carried by said frame.

12. In a machine for grooving or trenching wood and the like, the combination of a fixed part, a work-carrying frame mounted so as to be freely movable in any direction in the plane in which it lies, said fixed part and said frame having interengaging guiding means adapted to constrain said frame to move in a predetermined path, such guiding means being adjustable to vary the angle of the path in which such frame moves, and comprising a guide having elongated grooves facing similar grooves formed in said frame and members sliding in the respective grooves and pivoted to each other whereby said frame and guide may be adjusted angularly to each other and said frame can travel only in a direction corresponding to the position of said guide.

13. In a machine for grooving or trenching wood and the like, the combination of a fixed part, a work-carrying frame mounted so as to be freely movable in any direction in the plane in which it lies, said fixed part and said frame having interengaging guiding means adapted to constrain said frame to move in a predetermined path, such guiding means being adjustable to vary the angle of the path in which such frame moves, and means for restoring the guide to its original position after its movements.

14. In a machine for grooving or trenching wood and the like, the combination of a fixed part, a work-carrying frame mounted so as to be freely movable in any direction in the plane in which it lies, said fixed part and said frame having interengaging guiding means adapted to constrain said frame to move in a predetermined path, such guiding means being adjustable to vary the angle of the path in which such frame moves, and means for restoring the guide to its original position after its movements, such means being adjustable in accordance with the angle of movement of the frame.

848,798. FOCUSING-CLOTH. JACKSON H. ANGLE, Freeport, Ill. Filed Dec. 12, 1906. Serial No. 347,547.

Claim.—1. A focusing-cloth provided with means for connecting its edges, and yielding means intermediate its edges and located near one end for taking up slack.

2. A focusing-cloth provided with adjustable means for connecting its edges, and yielding means intermediate its edges and located near one end for taking up slack.

3. A focusing-cloth provided with means for connecting its edges and an elastic band located near one end having

one end secured to the cloth and its other end provided with means for attachment to the cloth.

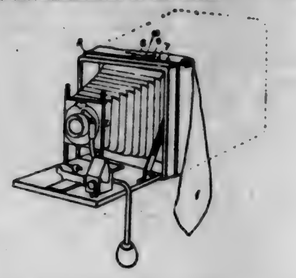

848,799. INTERCHANGEABLE HEEL FOR BOOTS AND SHOES. ROBERT BARNES, Fitzroy, Victoria, Australia. Filed Feb. 14, 1906. Serial No. 301,066.

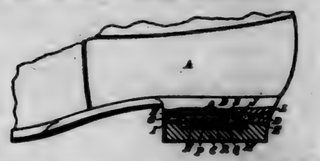

Claim.—In interchangeable heels for boots and shoes, the combination of a metallic ring attached to the removable heel portion, a circular collar carried thereby and having a groove in the periphery thereof and recesses leading from the upper edge of the collar to such groove, means permanently secured to the shoe for engaging the collar to hold the removable heel, attached thereto, in place and means to prevent it from turning.

848,800. GRINDER. WILLIAM F. BARNES, Rockford, Ill. assignor to W. F. & John Barnes Company, Rockford, Ill., a Corporation of Illinois. Filed Apr. 3, 1906. Serial No. 309,794.

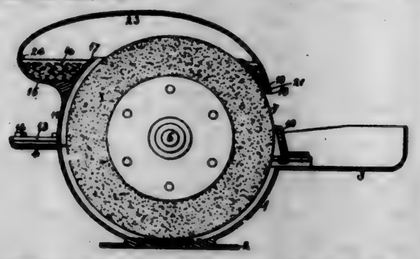

Claim.—1. The combination of a reservoir-base, a grinding-wheel located within the base, a reservoir located above the base, and a cover for the upper reservoir, the upper reservoir having an opening to permit water to be discharged onto the grinding-wheel and made bodily movable to present the opening over the wheel as the wheel wears.

2. The combination of a reservoir-base, a grinding-wheel located within the base, a reservoir surrounding the upper portion of the wheel, an intermediate portion connecting the two reservoirs and a crowned cap for the upper reservoir, the upper reservoir provided with an opening to permit water to be discharged onto the wheel.

3. The combination of a reservoir-base, a reservoir above the base, a crowning-cap for the upper reservoir, a grinding-wheel adapted to transfer water from the lower reservoir into the upper reservoir, the upper reservoir provided with an opening to permit water to be discharged onto the wheel, and a regulator for the discharge-opening.

848,801. FILLING-DETECTING MECHANISM FOR LOOMS. ARTHUR E. BENSON, Providence, R. I., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Feb. 6, 1907. Serial No. 355,983.

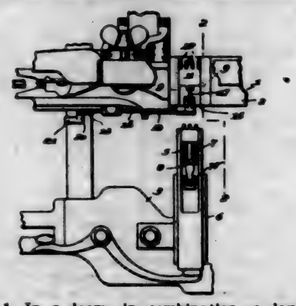

Claim.—1. In a loom, in combination, a lay, a grid thereon, a filling-fork to coöperate on the forward beat of the lay with intact filling laid in front of the grid, and means to move the grid forward on and with relation to the lay on its forward beat, to advance the detecting action of the fork.

2. In a loom, in combination, a lay, a filling-fork to detect on the forward beat of the lay, a grid mounted on the lay opposite the fork and movable transversely of the lay, and means to automatically move the grid toward the front of the lay on its forward beat, to advance the detecting action of the fork on the detecting beat.

3. In a loom, in combination, a lay, a filling-fork to detect on the forward beat of the lay, a transverse guideway on the lay opposite the fork, a slide movable in the guideway and having a grid, means to move the slide to position the grid behind the shuttle-path when the shuttle is picked, and means to move the slide forward on the forward beat of the lay, to thereby position the grid to advance the detecting action of the fork.

4. In a loom, in combination, a lay, a filling-fork to detect on the forward beat of the lay, a grid mounted on the lay opposite the fork and movable transversely of the lay, spring-controlled means to move the grid into position behind the shuttle-path when the shuttle is picked, and means to move the grid toward the front of the lay on its forward beat, to hasten the detecting action of the fork on the detecting beat of the lay.

5. In a loom, a lay, a filling-detector, and means operative on the forward beat of the lay and carried by the lay to move the filling toward the front of the lay opposite the detector, to hasten the detecting action of the latter.

6. In a loom, in combination, a filling-detector, a lay, and means mounted on and movable relatively to the lay to automatically hasten the detecting action of said detector upon intact filling on the forward beat of the lay.

7. In a loom, in combination, a filling-detector, a lay, a grid thereon opposite the detector, and means operating on the beat up of the lay to move the grid forward relatively to the lay, to thereby hasten the coöperation of the detector with the filling if present.

848,802. PULLEY-CASING. RUSSELL H. BOWEN, Palmyra, N. J., assignor to The American Pulley Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Apr. 12, 1906. Serial No. 311,231.

Claim.—1. In a pulley-casing, the combination with a pressed metal shell having bent side walls and inwardly-bent edges; and a projecting tongue formed integrally with said walls; of a clamping-band embracing the side walls and secured to said tongue.

2. In a pulley-casing, the combination with a pressed metal shell having bent side walls and inwardly-bent edges, and a projecting tongue formed integrally with said walls; of a clamping-band embracing the side walls and secured to said tongue; and a second tongue also formed integrally with said walls and provided with a bearing-block adapted to receive a screw or other fastening device.

3. In a pulley-casing, the combination with a pressed metal shell having bent side walls with inwardly-bent edges; and projecting tongues formed integrally with said walls and having raised rims; of a clamping-band embracing said side walls and provided with a tongue seated within the rim of one of said tongues upon the shell; a bearing-block seated within the rim of the other of said tongues upon the shell; and means for securing said members together.

4. In a pulley-casing, the combination with a pressed metal shell having bent side walls with inwardly-bent edges and projecting tongues formed integrally with said walls; of overhanging projections arranged upon one of said tongues; a bearing-block seated upon said tongue and beneath said projections; and means for securing said side walls together and for affording a bearing for a pulley mounted between them.

848,803. MEANS FOR CONTROLLING THE FLOW OF AIR. JOSEPH H. BRADY, Kansas City, Mo. Filed Mar. 22, 1906. Serial No. 307,536.

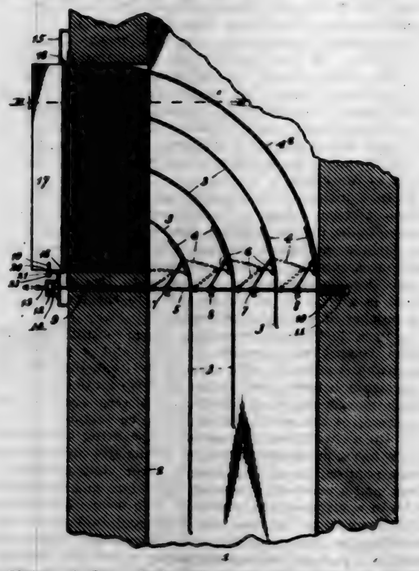

Claim.—1. In a device of the character described, the combination with an air-shaft having an outlet, a diffuser dividing said shaft and consisting of plates for directing the air to the outlet, dampers adjustably secured to said plates, a rod for adjusting said dampers provided with a threaded end, means for preventing said rod from turning, a nut engaging the threaded end of the rod for moving the latter inwardly or outwardly, a bracket for preventing said nut from moving longitudinally with the rod, and a rectangular frame surrounding the outlet and carrying said bracket.

2. In a device of the character described, the combination with an air-shaft having an outlet, a deflector arranged at said outlet and consisting of a plurality of adjustable blades arranged in two or more series, a connecting-bar uniting each series so that they may be independently adjusted, a slotted segment arranged adjacent to each connecting-bar, a stem extending through each connecting-bar and slotted segment, and clamping-nuts engaging the stems.

848,804. TRUCK. EDWIN C. BRUEN, Brooklyn, N. Y. Filed Jan. 25, 1906. Serial No. 297,756.

Claim.—1. The combination in a truck, of a platform rigidly mounted directly upon the upper ends of a series of vertically-adjustable screws, with a series of sprocket-wheels horizontally mounted on the wheel-axles and centrally-cored and threaded to respectively engage said screws, and means such as a sprocket-chain passing around and engaging the outer periphery of each sprocket-wheel, whereby said screws can be adjusted to raise or lower said platform, substantially as described.

2. In a vertically-adjustable truck, a platform rigidly mounted at the respective four corners thereof upon the upper end of vertical screws, each of said screws extending through a tubular bearing and engaging a centrally-cored and threaded sprocket-wheel horizontally mounted on the wheel-axle, and means such as a sprocket-chain passing around and engaging the outer periphery of each sprocket-wheel, whereby said vertical screws can be adjusted to raise or lower said platform, substantially as described.

3. The combination with a truck provided with a platform rigidly mounted upon the upper ends of vertically-adjustable screws, and means for adjusting said screws to raise or lower said platform, of the portable platform H, mounted upon supports, substantially as described for the purposes set forth.

848,805. SLED-RUNNER. FRANK BEYER, Waterloo, Iowa, assignor of one-half to Michael Jackman, Waterloo, Iowa. Filed June 7, 1906. Serial No. 320,492.

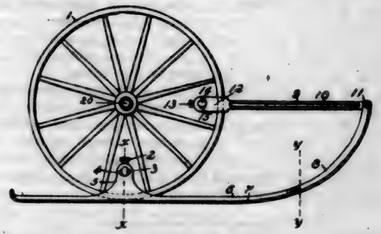

Claim.—In combination, a wheel rotatably mounted on a vehicle-axle, a sled-runner provided with parallel perforated uprights, an interiorly-threaded bearing-plate having its ends removably set in said perforations, a thumb-screw in said bearing-plate arranged to compress said runner against said wheel, a bifurcated connecting-rod pivoted to one end of said runner, perforations in said bifurcations, an interiorly-threaded bearing-plate having its

ends removably set in said perforations, and a thumb-screw in said bearing-plate arranged to rigidly compress said wheel within the bifurcations of said rod.

848,806. RAILWAY-TIE. FRANK BEYER, Waterloo, Iowa, assignor of one-half to Michael Jackman, Waterloo, Iowa. Filed June 7, 1906. Serial No. 320,498.

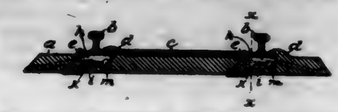

Claim.—1. A railway-tie, comprising a tie-body having fixed clutches, and removable keys therein spaced apart from said clutches, said clutches and said keys adapted to secure rails therebetween, and truss-rods having their ends secured in said tie-body.

2. A railway-tie, comprising a tie-body having fixed clutches opening in the same direction, removable keys therein opposite to and spaced apart from said clutches, said clutches and said keys adapted to secure rails therebetween, and truss-rods having their ends secured in the ends of the said tie-body.

3. A railway-tie, comprising a tie-body having fixed clutches, removable keys therein spaced apart from said clutches, said clutches and said keys adapted to secure rails therebetween, and a weighted lever for securing each of said keys removably in said tie-body.

848,807. PROCESS OF MAKING RUBBER FOOTWEAR. MAURICE C. CLARK, Providence, R. I., assignor to Marvel Rubber Company, Providence, R. I., a Corporation of Rhode Island. Filed June 20, 1906. Serial No. 322,530.

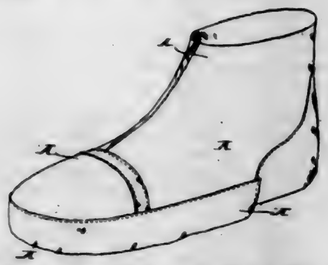

Claim.—1. The process of making rubber footwear which consists in uniting pieces of uncoated textile material to form a stocking or lining for the shoe, applying to the outer surface of this lining pieces of rubber compound and subjecting the article so built up to pressure between opposing surfaces to vulcanize the compound and force part of the same into the pores of the lining.

2. The process of manufacturing rubber footwear which consists in appiying to a complete lining or stocking pieces of unvulcanized rubber compound, and subjecting the article so built up to pressure between opposing surfaces, certain of which are heated, to vulcanize the compound and force the same into the pores of the lining and simultaneously mold the complete article.

848,808. JUSTIFYING MECHANISM. FRANCIS B. CONVERSE, Jr., Louisville, Ky., assignor, by mesne assignments, to The Cleveland Typesetter Company, Cleveland, Ohio, a Corporation of Ohio. Filed Feb. 5, 1900. Serial No. 4,124.

Claim.—1. In a justifying mechanism, a space-determining mechanism including a series of steps and a connection therefrom for governing the size of space for justification, means for varying said space-determining mechanism according to the shortage of the line to be justified and the number of spaces in that line, and mechanism for thereafter giving periodic variations to the steps relative to the connection therefrom, the amount of which periodic variations is proportionate to the reciprocal of the number of spaces to be justified.

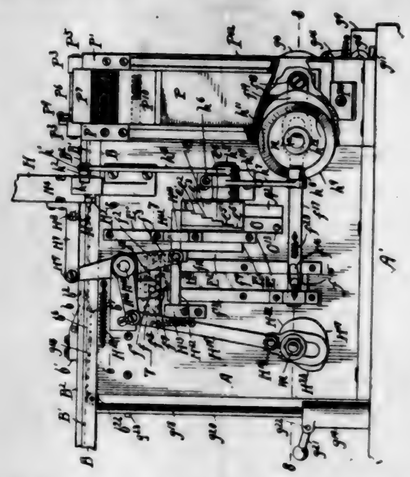

2. In a justifying mechanism, means for placing in the line approximate sizes of spaces to justify it, a space-determining mechanism for governing the size placed and including a series of steps and a connection therefrom, means for giving such space-determining mechanism an initial variation dependent upon the thickness of the individual space theoretically required, means for thereafter giving the space-determining mechanism subsequent periodic variations each proportional to the reciprocal of the number of spaces for justification, whereby the sum of said periodic variations is constant and independent of the number thereof, said periodic variations accumulating to cause the selection of different sizes of spaces at a point dependent upon the said initial variation, substantially as described.

3. In a justifying mechanism, measuring mechanism, a series of steps, a connection between said steps and the spaces to be in the justified line, combined with means for causing movement between said steps and said connection according to the measuring mechanism, and means for causing periodic movements thereof each of which is a fraction of a step equal to the reciprocal of the number of spaces to be justified.

4. In a justifying mechanism, space-controlling mechanism comprising a series of steps and a connection therefrom combined with means for causing periodic movements between such steps and connection, each of which movements is a fraction of a step equal to the reciprocal of the number of spaces to be justified.

5. In a justifying mechanism, measuring mechanism which has a movement according to the size of individual space required to equally space a given line, a series of steps, and a connection between said steps and the spaces to be in a justified line, combined with means for causing initial movement between the steps and said connection according to the measuring mechanism, and means for causing a periodic movement thereof which is a fraction of a step equal to the reciprocal of the number of spaces to be justified, substantially as described.

6. In a justifying mechanism, in combination, a case containing permanent spaces graded in respect to thickness, a justifying-channel adapted to contain a line of type, means for shifting the case relative to the channel to cause different-sized spaces to cooperate therewith, means for forcing a space from the space-case into the justifying-channel, means for varying the mechanism which determines the position of said case periodically during the justification for each space inserted an amount which is such fraction of the maximum amount required to shift the case from one permanent space to the next as is expressed by the reciprocal of the number of spaces in the line to be justified, substantially as described.

7. In a justifying mechanism, in combination, a type-channel adapted to contain a line of type, a case containing a series of permanent spaces graded in respect to thickness coöperating with said channel, and movable relative thereto, means for forcing a space from said case into the channel, a series of steps, a connection from the steps to the case and determining the position of the case according to the step it engages, and mechanism for changing the relative position of the connection and steps during the justification of the line by periodic movements which are individually of an amount dependent on the number of spaces in the line to be justified, substantially as described.

8. In a justifying mechanism, in combination, a series of steps, a series of spaces graded in respect to thickness, a connection between said spaces and steps whereby the size of space selected is dependent upon that step with which such connection engages, means for placing such selected space in a line being justified, and means for periodically changing the relative position of the steps and said connection during the justification which periodic changes are individually a fraction of the step equal to the reciprocal of the number of spaces to be justified, substantially as described.

9. In a justifying mechanism, in combination, means for holding a line of type and temporary spaces, a series of permanent spaces adapted to replace the temporary spaces, means for causing such replacement, and space-determining mechanism, means whereby its position determines the size of permanent space to be inserted, means for varying said space-determining mechanism periodically during the justification, and means for changing the leverage at which such varying mechanism acts inversely according to the number of temporary spaces in the line, substantially as described.

10. In a justifying mechanism, in combination, means for holding a line of type, a series of spaces graded in respect to thickness adapted to be placed therein, a series of steps, a connection between the steps thereof and such spaces, mechanism for placing the selected space in the line to justify it, mechanism for changing the relative position of the steps and its connection periodically during the justification, means for giving a definite movement to such mechanism and mechanism for changing the leverage at which this last-mentioned means acts inversely according to the number of spaces to be justified, whereby said definite movement produces at the steps a movement proportional to the reciprocal of the number of spaces in the line, substantially as described.

11. In a justifying mechanism, in combination, means for holding a line of type, a plate movable relative thereto, means for moving said plate proportionately to the number of spaces in the line to be justified, a measuring-blade varied in incline by said movement, means for moving the blade thus varied to measure the line, a space-determining mechanism varied to measure the line, a space-determining mechanism varied by the movement of said blade, and a subsequent varying mechanism operated periodically during the justification to change such determining mechanism, means for giving a definite movement to said subsequent mechanism, and a connection between this subsequent mechanism and said plate whereby the leverage is changed inversely according to the number of spaces in the line, substantially as described.

12. In a justifying mechanism, in combination, a series of steps, a series of spaces graded in respect to thickness, a connection between the same and said steps, a varying mechanism adapted to change the relative position of said steps and connection, means for actuating said varying mechanism periodically during the justification, and means for changing the leverage at which such mechanism acts inversely with the number of spaces in the line, whereby each periodic movement may vary the relative position of the steps, and connection proportionately to the reciprocal of the number of spaces to be justified, substantially as described.

13. In a justifying mechanism, in combination, a series of steps, a series of spaces graded in respect to thickness, a connection between said spaces and steps, means for placing a selected space in a line being justified, a lever adapted in its movement to shift said steps, mechanism for operating said lever which is actuated a definite amount for each space placed, and means for varying the leverage at which such operating mechanism acts inversely with the number of spaces to be justified, substantially as described.

14. In a justifying mechanism, means for holding a line of type to be justified, a series of steps, a measuring-blade, means for varying the angle of the blade according to the number of spaces to be justified in the line, means for moving the adjusted blade to measure the line, means for communicating movement from the blade to the steps in relation to a suitable connection leading from said steps, means for varying such relation periodically by an amount which is a fraction of a step equal to the reciprocal of the number of spaces to be justified in the line, combined with such connection, substantially as described.

15. In a justifying mechanism, in combination, means for holding a line of type and temporary spaces, an adjustably-inclined blade, means for changing the angle thereof according to the number of spaces, and the position of the operating end thereof according to the aggregate thickness of the temporary spaces, means for moving said adjusted blade according to the line's shortage, a series of steps moved to a position determined by the position which the blade thus assumes, a lever adapted in its movement to shift said series of steps, an operating mechanism for periodically moving said lever, said operating mechanism being moved a definite amount each time, means for shifting the connection between said operating mechanism and lever away from the pivot of the latter by amounts proportional to the number of spaces in the various lines to be justified, substantially as described.

16. In a justifying mechanism, in combination, a series of steps, a pivoted lever adapted in its movement to move said series, a slidable block carried by said lever, an operating member engaging said block and thus operating the lever with a varying leverage according to the position of the block, means for holding a line of type to be justified, means for taking account of the number of spaces therein, and means for shifting said block accordingly whereby a definite movement of said operating member communicates to the series of steps a movement proportional to the reciprocal of the number of spaces in the line, and a suitable connection leading from the steps and the spaces to be in a justified line, substantially as described.

17. In a justifying mechanism, in combination, a justifying-channel adapted to contain a line of type, a case adapted to contain a series of spaces graded in respect to thickness coöperating with said channel, a series of steps, a connection between the space-case and steps whereby the size of space to be inserted is dependent upon the step with which said connection engages, means for giving initial movement to the steps relative to such connection according to the individual size of space required to justify the line and independent of the number of such spaces, and means for thereafter during justification giving a periodic relative movement between said parts which is a fraction of a step equal to the reciprocal of the number of spaces in the line to be justified, substantially as described.

18. In a justifying mechanism, in combination, a selecting member carrying a series of steps and a series of teeth, a lever carrying a series of verniered pawls adapted to engage said teeth, an operating member for actuating said lever, means for varying the connection between said operating member and the lever whereby the leverage is changed inversely with the number of spaces in the line to be justified, means for periodically moving said operating member during justification and a suitable connection from

said steps whereby the relative position of the selecting member thereto determines the size of space to be in the justified line, substantially as described.

19. In a justifying mechanism, in combination, a series of steps, a connection leading from the steps thereof to permanent spaces to be in the justified line, a lever adapted in its movement to vary the relative position of the connection and steps, an operating member for actuating said lever, means for varying the connection between said operating member and the lever whereby the leverage is changed inversely with the number of spaces in the line to be justified, means for periodically moving said operating member during justification, and a suitable connection from said steps whereby the relative position thereof determines the size of space to be in the justified line, substantially as described.

20. In a justifying mechanism, in combination, a selecting mechanism having a series of steps and a series of teeth rigid therewith, a pawl adapted to engage said teeth, means for actuating said pawl, and means for varying the actuation of the pawl inversely with the number of spaces in the line to be justified.

21. In a justifying mechanism, in combination, a selecting mechanism having a series of steps and a series of teeth rigid therewith, a movable member, a series of vernicred pawls carried by said member and adapted to engage said teeth, and means for moving said member.

22. In a justifying mechanism, in combination, a space-determining mechanism including a series of steps, means for initially placing said steps according to the line shortage and the number of spaces to be justified, and means for subsequently varying the position of the steps according to the number of spaces in the line.

848,809. JUSTIFYING MECHANISM. FRANCIS B. CONYNGHAM, Jr., Cleveland, Ohio, assignor, by mesne assignments, to the Cleveland Typesetter Company, Cleveland, Ohio, a Corporation of Ohio. Filed Sept. 4, 1903. Serial No. 172,001.

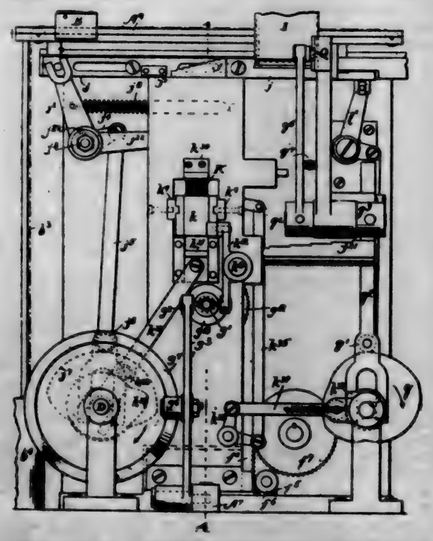

Claim.—1. In a justifying mechanism, mechanism for governing the size of permanent spaces to be in the line, which mechanism includes a series of sets of independently-movable members, each set corresponding to a different number of spaces in the line.

2. In a justifying mechanism, the combination of a member placed according to the line shortage and the number of spaces in the line, mechanism for governing the size of permanent space to be placed in the line, a connection between the same and said member which includes a series of sets of plungers, each set corresponding to a different number of spaces in the line, and means for positioning said plungers relative to the stepped member and the connection to the permanent spaces.

3. In a justifying mechanism, the combination of means for placing permanent spaces graded with respect to thickness, and mechanism coöperating with the same which includes a series of sets of independently-movable members each set comprising a number of members equal to the number of spaces in the line which that particular set is adapted to justify.

4. In a justifying mechanism, mechanism for governing the fractional spacing, consisting of a stepped member and a coöperating series of sets of plungers, each set comprising a number of plungers equal to the number of spaces in the line which that particular set is adapted to justify, the faces of the plungers in any set which engage the stepped member being each a fraction of the aggregate width of the complete set equal to the reciprocal of the number of spaces, said plungers having other operative faces which are of the same width irrespective of their set.

5. In a justifying mechanism, the combination of a member placed according to the line shortage and the number of spaces in the line, means for placing permanent spaces graded with respect to thickness, a connection between the same and said member which includes a series of sets of plungers, each set comprising a number of plungers equal to the number of spaces in the line which that particular set is adapted to justify, the faces of the plungers in any set which engage said member being each a fraction of the aggregate width of the complete set equal to the reciprocal of the number of spaces, the plungers being capable of independent movement.

6. In a justifying mechanism, a series of sets of plungers, each set comprising a number of plungers equal to the number of spaces in the line with which that set operates, the plungers in any set having one engageable face of a width equal to the total width of the set divided by the number of spaces for that set, and the plungers having other engageable faces of a width the same irrespective of their set.

7. In a justifying mechanism, the combination, with line-measuring mechanism and space-accounting mechanism, of a stepped member placed according to the two preceding mechanisms, mechanism for placing permanent spaces graded in respect to their thickness, and a connection between the same and said stepped member, said connection including a series of members adapted to engage such steps, said series contacting with said stepped member throughout a space equal to the length of one of its steps.

8. In a justifying mechanism, the combination, with line-measuring mechanism and space-accounting mechanism, of a stepped member placed according to the two preceding mechanisms, means for placing permanent spaces graded in respect to their thickness, and a connection between the same and said stepped member, said connection including a series of plungers adapted to engage the steps of said member, said plungers at the face which engages said steps being of aggregate width equal to the length of a step, and there being independent movement between the plungers.

9. In a justifying mechanism, the combination, with line-measuring mechanism and space-accounting mechanism, of a member placed according to the two preceding mechanisms, means for placing permanent spaces graded in respect to their thickness, a connection between the same and said member, said connection including a series of independently-movable plungers, and means for causing periodic movement between a portion of the connection to the permanent spaces and faces of said plungers.

10. In a justifying mechanism, in combination with line-measuring mechanism and space-accounting mechanism, a member positioned according to the two preceding mechanisms, a series of sets of plungers each set corresponding to a different number of spaces, means for placing permanent spaces, and a connection between the same and said member which connection includes said plungers.

11. In a justifying mechanism, in combination with line-measuring mechanism, space-accounting mechanism, a member positioned according to the two preceding mechanisms, a series of sets of plungers each set corresponding to a different number of spaces, means for placing permanent spaces, and a connection between the same and said member, which connection includes said plungers as distance-pieces between said stepped member and another portion of the connection.

12. In a justifying mechanism the combination of a stepped member having equal steps, and a coöperating series of sets of plungers each set corresponding in number to a definite number of spaces and the aggregate width of the step-engaging faces of the permanent spaces, a connection between the same and said stepped member which connection includes said plungers as distance-pieces between the steps of said stepped member and another portion of the connection, and means for periodically shifting such other portion of the connection to successively free it from plungers.

13. In a justifying mechanism, in combination, a stepped member governed according to the line's variation from required length and the number of spaces, a series of sets of plungers adapted to engage the steps of said stepped member, a connection between said plungers and space-placing means, each set of plungers corresponding to a definite number of spaces for justification, and means for shifting said series of sets of plungers bodily to bring into engaging position with the stepped member the set corresponding to the number of spaces.

14. In a justifying mechanism, in combination, line-measuring mechanism, space-accounting mechanism, a stepped member placed according to the two preceding mechanisms, a movable space-case adapted to contain spaces graded in respect to thickness, a set of plungers adapted to engage the steps of said member, and a connection between said plungers and movable space-case.

15. In a justifying mechanism, in combination, a stepped member, a movable space-case adapted to contain spaces graded in respect to thickness, a set of plungers adapted to engage the steps of said member, and a connection between said plungers and movable space-case, said connection including another stepped member and mechanism between it and the plungers for causing the space-case to change its position during the justification at a time dependent upon the position of the plungers on a step.

16. In a justifying mechanism, in combination, line-measuring mechanism, space-accounting mechanism, a stepped member placed according to the two preceding mechanisms, a series of sets of plungers adapted to engage the steps of said member, a movable space-case, a connection between same and said plungers, means for moving the plungers to bring the set corresponding to the number of spaces into engaging position, and means for moving the connection between the plungers and the space-case.

17. In a justifying mechanism, in combination, line-measuring mechanism, space-accounting mechanism, a stepped member placed according to the two preceding mechanisms, a series of sets of plungers adapted to engage the steps of said member, a movable space-case, a connection between same and said plungers, means for moving the plungers to bring the set corresponding to the number of spaces into engaging position, and means operated during justification of the line for alternately ejecting permanent spaces from the space-case and moving the connection between the space-case and the selected set of plungers.

18. In a justifying mechanism, the combination of a stepped member governed according to the line shortage and the number of spaces in the line, means for placing permanent spaces graded with respect to thickness, and a connection between the same and said member which includes a series of sets of plungers, each set comprising a number of plungers equal to the number of spaces in the line which that particular set is adapted to justify, the faces of the plungers in any set which engage the stepped member being each a fraction of the aggregate faces of all the plungers (except the last ones) which are engaged by the connection to the permanent spaces equal to the reciprocal of the number of spaces with which that set operates and the other face of all the plungers in every set being of the same width irrespective of their set, the last plunger in each set having that face which is engaged by the connection to the permanent spaces of a width sufficient to make all the plungers the same aggregate width on this face irrespective of the set.

19. In a justifying mechanism, for use in fractional spacing, a series of sets of plungers contained in a movable frame, each set corresponding to a definite number of spaces, means for moving said frame to bring into engaging position a set corresponding to the number of spaces in the line for justification, said plungers consisting of independently-movable bars adapted to act as distance-pieces between said stepped member and the connection to the permanent spaces, the aggregate width of said bars at either end being the same in all the sets, the individual width at one end being a fraction of that end's aggregate equal to the reciprocal of the number of spaces with which that set operates and the other end of all of the plungers in every set being the same definite amount irrespective of the set with the exception of the last plunger which is wide enough on this end to fill out an equal aggregate width of all the sets.

20. In a justifying mechanism, in combination, a stepped member placed according to the line shortage and the number of spaces, a case for permanent spaces graded in respect to thickness, a series of sets of plungers contained in a movable frame, each set corresponding to a definite number of spaces for justification in the line, means for moving said frame to bring into engaging position a set corresponding to the number of spaces in the line, said plungers consisting of independently-movable bars adapted to act as distance-pieces between the stepped member and the space-placing means, the aggregate width of said bars in each set at one end being equal to the length of a step in said stepped member and the individual width at this end being a fraction of the aggregate equal to the reciprocal of the number of spaces with which that set operates and width at the other end of all of the plungers in every set being the same definite amount irrespective of the set, with the exception of the last plunger which is wide enough on this end to fill out an equal aggregate width of all the sets, the plungers thus internally overhanging each other, and there being space where they thus overhang to allow independent movement of them.

21. In a justifying mechanism, the combination of a stepped member placed according to the line shortage and the number of spaces, means for placing permanent spaces, a series of sets of plungers adapted to engage the steps of said member, each set corresponding to a different number of spaces, a movable member engaging said plungers, a connection between said movable member and the permanent spaces, and means operated during the justification of the line for periodically shifting said movable member a definite amount irrespective of the number of spaces.

22. In a justifying mechanism, the combination of a stepped member, a space-case, a series of sets of plungers adapted to engage the steps of said member, a movable member adapted to engage said plungers, a connection between said movable member and said space-case, a shaft rotated for each space to be justified, and operating mechanism including a toothed rack and pawl connecting said movable member with said shaft.

23. In a justifying mechanism, the combination of a stepped member, a space-case, a series of sets of plungers adapted to engage the steps of said member, a movable member engaging said plungers, a connection between said movable member and the space-case, means operated during the justification of the line for periodically shifting said movable member a definite amount irrespective of the number of spaces, a second stepped member in the connection between said movable member to change its position when the movable member passes off of those plungers which have been unsupported by the step of the first stepped member.

24. In a justifying mechanism, in combination, a stepped member, a series of sets of plungers, each set corresponding

to a definite number of spaces in the line to be justified, means for bringing into coöperation with a step of said member a set of said plungers which correspond to the particular line being justified to select one size of permanent spaces, said plungers overhanging such step if the line will not exactly justify with one size of space, means for placing a series of permanent spaces graded in respect to thickness, a connection between such placing means and such selected set of plungers, and means for periodically changing the relation of said connection and the set of plungers to cause the connection to eventually come onto the overhanging plungers only, and means for thereupon moving said plungers and connection to select the next size of permanent space.

25. In a justifying mechanism, in combination, a stepped member, a series of sets of plungers, each set corresponding to a definite number of spaces in the line to be justified, means for bringing into coöperation with a step of said member a set of said plungers which correspond to the particular line being justified, said plungers overhanging such step if the line will not exactly justify with one size of space, a space-case for permanent spaces, a connection between the same and such selected set of plungers, a second stepped member included in such connection, means for periodically changing the relation of said connection and the set of plungers to cause the connection to eventually come onto the overhanging plungers only, and means for thereupon moving said plungers and connection to move said second stepped member to cause the space-case to shift to bring into action a different size of permanent spaces.

26. In a justifying mechanism, in combination, a series of gears of different radii selected according to the number of spaces and moved according to the line shortage, a stepped member moved by said gears, a series of sets of plungers placed with relation to said member according to the number of spaces, means for placing permanent spaces, connection between the same and said stepped member, said connection including a movable member which engages the selected set of plungers and moves so as to be consecutively released therefrom.

27. In a justifying mechanism, in combination, a series of gears of different radii corresponding to the number of spaces, a stepped member adapted to be moved by said gears, a series of sets of plungers each set corresponding to a different number of spaces, mechanism for moving said gears and said plungers to select a gear and a set of plungers according to the number of spaces in the line, mechanism for rotating such selected gear according to the line's variation from required length, and fractional spacing mechanism governed by such selected set of plungers.

28. In a justifying mechanism, the combination of a stepped member placed according to the line shortage and the number of spaces in the line, means for placing a series of permanent spaces graded in respect to thickness, a connection between such placing means and the steps of said member, said connection including a series of sets of plungers, the set being selected according to the number of spaces, and including also a movable member engaging said plungers, means for giving said movable member periodically during justification definite movements whose amount is independent of the number of spaces, the faces of the plungers which said member engaged being all, except the last plungers, of the same width irrespective of the set, said plungers having other faces engaging the steps of said stepped member, which latter faces vary in width in the different sets being each of an individual width equal to the length of a step divided by the number of spaces with which that set is adapted to operate.

29. In a justifying mechanism, the combination of a stepped member having steps of equal length, means for placing permanent spaces, a connection between the same and the steps of said member, said connection including a series of sets of plungers, the set being selected according to the number of spaces, and including also a movable member engaging said plungers, means for giving said movable member periodically during justification definite movements whose amount is independent of the number of spaces, the faces of the plungers which said member engages being all, except the last plungers, of the same width irrespective of the set, said plungers having other faces vary in width in the different sets being each of an individual width equal to the length of a step divided by the number of spaces with which that set is adapted to operate, said plungers thus overhanging intermediately and having spaces between them where they overhang to allow independent movement of them.

30. In a justifying mechanism, the combination of a stepped member having equal steps and placed according to the line shortage and the number of spaces in the line, means for placing permanent spaces, a series of sets of independently-movable plungers, the sets differing in the number of their plungers according to the number of spaces, a movable member engaging said plungers, means for giving said member periodically during justification definite movement whose amount is independent of the number of spaces, the faces of the plungers which said member engages being all, except the last plunger, of the same width irrespective of the set, said plungers having other faces engaging the steps of said stepped member, which latter faces vary in width in the different sets being each of an individual width equal to the length of a step divided by the number of spaces with which that set is adapted to operate, the last plunger in each set having that face which is engaged by the movable member of a width sufficient to make all the sets so engaged of the same aggregate width, a shiftable frame carrying the plungers, and a connection between said movable member and the means for placing permanent spaces.

31. In a justifying mechanism, in combination, a stepped member, a series of sets of plungers contained in a shiftable frame, a movable space-case, connection between the same and said plungers, means for shifting the frame crosswise of said stepped member and said connection to bring between them as distance-pieces that set of plungers corresponding to the number of spaces in the line, and means for periodically moving the connection between the plungers and the space-case to cause it to pass from those plungers which engage a step of said stepped member onto those which overhang such step and thus stand in position to be moved to engage the next step.

32. In a justifying mechanism, in combination, a stepped member, a series of sets of plungers adapted to engage the same, whereby some of the plungers may be caused to rest on one step and others on another, and a moveable platform adapted once for each line to engage said plungers and return them to initial position.

33. In a justifying mechanism, the combination of a stepped member, a frame containing a series of sets of plungers, each set corresponding to a definite number of spaces for justification, means for moving said frame transversely of the stepped member, a connection between the set of plungers thus selected and means for placing permanent spaces, a movable platform adapted to replace plungers which have been moved from zero position and a flat surface against which the plungers are forced in such replacement.

34. In a justifying mechanism, in combination, a step-bar shiftable longitudinally according to the number of spaces and the line shortage, a movable space-case, a movable plate connected with said space-case, a frame intermediate of said plate and bar and carrying a series of sets of plungers, means for moving said frame according to the number of spaces to bring a selected set of plungers between the bar and plate, the lower ends of the plungers being of an aggregate width just equal to the length of a step on said bar and of an individual width which is said length divided by the number of plungers in that set, and the upper ends of said plungers which are engaged by said plate being, with the exception of the last plunger, of the same width irrespective of the set, and means for giving said plate a movement equal to the upper end of a plunger for each space inserted.

35. In a justifying mechanism, in combination, a stepped bar shifting longitudinally according to the number of spaces and the line shortage, a movable space-case, a movable plate connected with said space-case, a frame intermediate of said plate and bar carrying a series of sets of plungers, means for moving said frame according to the number of spaces to bring a selected set of plungers between the bar and plate, the ends of the plungers coöperating with the bar being of an aggregate width just equal to the length of a step on said bar and of an individual width which is said length divided by the number of spaces in the line corresponding to that set, and the ends of said plungers which are engaged by said plate being, with the exception of the last plungers, of the same width irrespective of the set, a toothed rack for operating said plate a pawl for operating said rack, and means for moving said pawl for each space inserted.

36. In a justifying mechanism, in combination, a stepped bar shifting longitudinally according to the number of spaces and the line shortage, means for placing permanent spaces, a movable plate connected with said means, a frame intermediate of said plate and bar carrying a series of sets of plungers, means for moving said frame according to the number of spaces to bring a selected set of plungers between the bar and plate, the ends of the plungers coöperating with the bar being of an aggregate width just equal to the length of a step on said bar and of an individual width which is said length divided by the number of spaces in the corresponding line, and the ends of said plungers which are engaged by said plate being, with the exception of the last plunger, of the same width irrespective of the set, means for giving said plate a movement equal to the individual width of the last-mentioned ends of a plunger for each space inserted, a series of gears of radii varying according to the number of spaces mounted on a common shaft, means for selecting for action one of said gears according to the number of spaces and moving it according to the line shortage, and gearing connecting said series of gears and said stepped member.

37. In a justifying mechanism, in combination, a stepped bar shiftable longitudinally according to the number of spaces and the line shortage, a movable space-case, a movable plate connected with said space-case, a series of sets of plungers intermediate of said plate and bar, means for moving said plungers according to the number of spaces to bring a selected set between the bar and plate, the lower ends of the plungers being of an aggregate width just equal to the length of a step on said bar and of an individual width which is said length divided by the number of spaces in the line corresponding to that set, and the upper ends of said plungers which are engaged by said plate being, with the exception of the last plunger, of the same width irrespective of the set, a toothed rack for operating said plate a pawl for operating said rack, and means for moving said pawl for each space inserted.

38. In a justifying mechanism, in combination, a member having a rigid series of steps, a coöperating series of plungers, and a movable space-case regulated thereby.

39. In a justifying mechanism, in combination, a stepped member, a coöperating series of sets of members and means controlled thereby for selecting permanent spaces.

40. In a justifying mechanism, a series of sets of plungers having two operative faces, one face being dimensioned proportionately to the reciprocal of the number of the spaces in the line with which the set is to be used, and the other face being dimensioned uniformly in all the sets.

41. In a justifying mechanism, plungers having two operative faces, one face being dimensioned proportionally to the reciprocal of the number of spaces in the line with which it is to be used, and a stepped member coöperating with said face.

42. In a justifying mechanism, a series of sets of plungers, each set having a number of plungers equal to the number of spaces in lines of type, at least all of the plungers but one being of equal width at one end, the other ends in each set being equal but differing in the different sets.

43. In a justifying mechanism, a series of sets of plungers having two operative faces, one face of the plungers having a dimension which in the successive sets forms a harmonic series, the corresponding dimension of the other faces being uniform in the different sets.

44. In a justifying mechanism, a series of sets of plungers having one operative face whose aggregate width is an increasing amount with the increase of the number of spaces and having other operative faces which individually decrease in width reciprocally with the increase of the number of spaces.

45. In a justifying mechanism, the combination of mechanism operated in accordance with the number of spaces in a line and the line shortage, mechanism coöperating therewith for governing the selection of spaces to be placed in the line, said mechanism including a series of sets of members which have an operating-face which decreases in a harmonic ratio for the successive sets.

46. In a justifying mechanism, the combination of mechanism operated in accordance with the number of spaces in a line and the line shortage, mechanism coöperating therewith for governing the selection of spaces to be placed in the line, said mechanism including a series of sets of members which have each one operating-face alike irrespective of the set and another operating-face which decreases in a harmonic ratio for the successive sets.

47. In a justifying mechanism, plungers uniformly dimensioned at one end and at the other end dimensioned proportionally to the reciprocal of the number of spaces in the line with which they are to be used.

48. In a justifying mechanism, plungers uniformly dimensioned on one face and having another face dimensioned proportionally to the reciprocal of the number of spaces in the line with which they are to be used, combined with a space-determining mechanism variable according to the line shortage and the number of spaces to be justified.

848,810. JUSTIFYING MECHANISM. FRANCIS B. CONVERSE, Jr., Cleveland, Ohio, assignor, by mesne assignments, to The Cleveland Typesetter Company, Cleveland, Ohio, a Corporation of Ohio. Filed Sept. 5, 1903. Serial No. 172,147.

Claim.—1. In a justifying mechanism, in combination, a member placed according to the line shortage and the number of spaces, mechanism for controlling the size of permanent spaces to be in the justified line, a connection between said mechanism and said member, mechanism located according to two factors one of which is the gap between a certain point on said member and such connection, and the other of which is the number of spaces, and mechanism for periodically moving the last-mentioned mechanism to eventually cause change of size of space selected.

2. In a justifying mechanism, in combination, a stepped member, means for controlling the size of permanent spaces to be in the line, a connection between the same and said member, means for measuring the distance between the said connection and the end of a step in said member, mechanism controlled by said measurement and the number of spaces for governing the fractional spacing.

3. In a justifying mechanism, in combination, means for determining the size of permanent spaces, mechanism for giving said means a primary setting, mechanism for measuring the amount which said primary setting is out of position for all the spaces to be of one size, and mechanism governed by said measurement and by the number of spaces, for shifting at the proper time the space-controlling mechanism.

4. In a justifying mechanism, in combination, means for determining the size of permanent spaces, mechanism for giving said means a primary setting, mechanism for measuring the amount which said primary setting is out of position for all the spaces to be of one size, a member placed according to said measurement and the number of spaces,

and means for thereafter periodically moving said member to cause at the proper time a change in the size of permanent space selected.

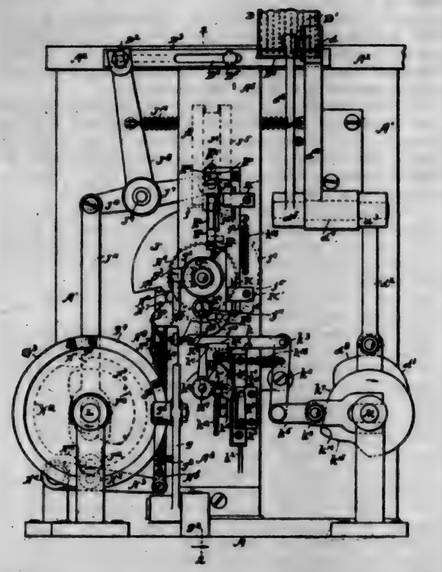

5. In a justifying mechanism, in combination, means for determining the size of permanent spaces, mechanism for primarily setting the same, mechanism for measuring the amount which said primary setting is out of position from that where all the spaces would be of the same size, a member displaced according to said measurement and the number of spaces, means for periodically replacing said member by equal movements for each space inserted, and means, governed thereby for varying the size of space selected.

6. In a justifying mechanism, in combination, means for determining the size of permanent spaces, mechanism for primarily setting the same, mechanism for measuring the amount which said primary setting is out of position from what it would be if all the spaces were to be of one size, a member placed according to said measurement and the number of spaces, means for periodically moving said member, and mechanism whereby when said member reaches a predetermined position a portion of the space-determining means is caused to be shifted.

7. In a justifying mechanism, in combination, a movable space-case, a stepped member, a connection from the steps of said member for controlling the size of permanent spaces to be in the line, mechanism displaced according to two factors, one of which is the gap between such connection and the end of the step engaged thereby, mechanism placed according to said measurement and the number of spaces, means for moving said mechanism in periodic steps, and means whereby when the same reaches a predetermined position the space-case is adapted to be shifted.

8. In a justifying mechanism, in combination, a stepped member, means for placing the same according to the line shortage and the number of spaces, a connection from the steps of said member for controlling the size of permanent spaces to be in the line, mechanism displaced according to two factors, one of which is the gap between such connection and the end of a step and the other the number of spaces, mechanism for returning said displaced member in periodic steps, mechanism adapted to be actuated by said member when returned to vary the size of permanent spaces.

9. In a justifying mechanism, a member placed according to the line shortage and the number of spaces, mechanism adapted to engage the same for determining the size of permanent spaces to be in the line, mechanism for shifting said member to take up the gap between a certain point thereon and said mechanism, a second member, mechanism for displacing it proportionately to the shifted distance of the first-mentioned member multipied by the number of spaces, mechanism for returning said displaced member, and mechanism adapted to be controlled by the displaced member for changing the size of permanent spaces.

10. In a justifying mechanism, the combination, of a stepped member, means for primarily setting the same according to the line shortage and the number of spaces, a plunger adapted to engage a step of said member, means connected with said plunger for controlling the size of permanent spaces to be in the line, mechanism for measuring the gap between said plunger and the end of the step on which the plunger rests, and mechanism varied by said measurement and the number of spaces for causing change in size of the permanent spaces selected.

11. In a justifying mechanism, in combination, a stepped member primarily placed according to the line shortage and the number of spaces, a plunger adapted to engage a step of said member, means connected with said plunger for placing permanent spaces, means for moving said stepped member to take up the gap between the plunger and the end of the step on which the plunger rests, means located according to said movement of the stepped member and the number of spaces, and mechanism for periodically moving said means to govern the fractional spacing.

12. In a justifying mechanism, in combination, a stepped member, means for primarily setting it according to the line shortage and the number of spaces, means for controlling the size of permanent spaces to be in the justified line connected with a step of said member, mechanism for giving said member a secondary movement to take up the gap between such connected means and the end of the step which it engages, a member displaced according to such movement and the number of spaces for justification, means for replacing said displacing member periodically during justification, and mechanism adapted to be operated by said displaced member for changing the size of permanent spaces.

13. In a justifying mechanism, the combination of a series of gears of radii increasing with the number of spaces, means for selecting a gear corresponding to the number of spaces, a rack adapted to engage such selected gear, means for moving it according to the line shortage, space-placing means, a connection between the same and said series of gears, means for thereafter giving said series of gears another movement dependent upon the distance between certain points of said connection, and mechanism now in connection with the selected gear for determining the fractional spacing.

14. In a justifying mechanism, the combination of a series of gears of radii increasing with the number of spaces, means for selecting a gear corresponding to the number of spaces, a rack adapted to engage such selected gear, means for moving it according to the line shortage, space-controlling means, a connection between the same and said series of gears, means for giving said series of gears another movement dependent upon the distance between certain points of said connection, means now in connection with the selected gear (and hence moved according to the factors of the last-mentioned movement and the number of spaces) mechanism controlled by said means for determining the fractional spacing, means for periodically moving said mechanism, and means adapted to be actuated by said mechanism for shifting the space-controlling means.

15. In a justifying mechanism the combination of a series of gears of radii increasing with the number of spaces, means for selecting a gear corresponding to the number of spaces, a rack adapted to engage such selected gear, means for moving it according to the line shortage, space-controlling means, a connection between the same and said series of gears, means for thereafter giving said series of gears another movement dependent upon the distance between certain points of said connection, in connection with the selected gear at the time of the last-mentioned movement, mechanism located by said last-mentioned means, means for shifting said mechanism, and means adapted to be actuated by said mechanism when it reaches a predetermined position for changing the size of space, said shifting being accomplished periodically during the justification by movements individually independent in amount of the number of spaces.

16. In a justifying mechanism, the combination of a series of gears of radii increasing in arithmetic ratio, a stepped disk connected with said gears, means for selecting for action a gear dependent on the number of spaces in the line, means for moving such gear according to the line shortage, a plunger adapted to rest upon a step of the disk so placed, mechanism for controlling permanent spaces connected with said plunger, means for thereafter rotating said disk to take up the gap between said plunger and the end of the step on which the said plunger rests, a rack connected with the selected gear, a member adapted to be connected with said rack and hence displaced according to the movement thereof, means for alternately placing the selected spaces in the line and returning said member to initial position by definite equal movements, and mechanism actuated by said member when it reaches initial position to cause the space-controlling means to shift.

17. In a justifying mechanism, the combination of a series of gears whose radii increase in an arithmetic series, a stepped member connected therewith and adapted to rest on a step of said member, a rack, means for causing same to mesh with the gear corresponding to the number of spaces, means for thereafter moving said rack according to the line shortage, fractional spacing mechanism, means for bringing it into engagement with said rack after the primary location of said stepped member, means for thereafter moving said gears according to the distance between said plunger and the end of the step on which it rests.

18. In a justifying mechanism, the combination of a stepped member, space-placing means, a plunger connected therewith and adapted to rest on a step of said member, a series of gears whose radii increase in an arithmetic series, a rack, means for causing same to mesh with the gear corresponding to the number of spaces, means for thereafter moving said gears according to the distance between said plunger and the end of the step on which it rests, a member of the fractional-spacing mechanism, adapted to be displaced by said rack, means for periodically during the justification replacing said member by definite steps individually independent of the number of spaces, and mechanism thrown into action when said member reaches its initial position for causing a shifting of the space-placing means.

19. In a justifying mechanism, in combination, means for determining the size of permanent spaces, mechanism for setting said means, mechanism for measuring the amount which such setting is out of position from what it would be if all the spaces were to be of one size, a series of gears of varying radii, a rack, means for causing the same to mesh with a gear selected according to the number of spaces, means for rotating said gear according to such measurement, and fractional-spacing mechanism governed by said rack.

20. In a justifying mechanism, in combination, a series of gears of radii increasing arithmetically, a stepped member connected therewith, a plunger adapted to rest on a step of said member, a space-case, a connection between the same and said plunger, a rack, means for causing it to mesh with a gear selected according to the number of spaces, means for thereafter moving the rack according to the line shortage, a fractional-spacing member, means for thereafter establishing a connection between it and said rack, means for thereafter rotating said gears to take up the gap between said plunger and the end of the step on which it rests, means operating once for each space to return the displaced member of the fractional-spacing mechanism to initial position by steps equal in amount, mechanism connected with the space-case and adapted to shift it, and means for actuating said last-mentioned mechanism when said displaced member has been returned to its initial position.

21. In a justifying mechanism, in combination, a member having a series of steps, one for each size of permanent space, means for moving it in one direction according to the number of spaces and the line shortage, and means for thereafter moving it in the other direction to locate the fractional-spacing mechanism.

22. In a justifying mechanism, in combination, a stepped member, means for placing it according to the number of spaces and the line shortage, and means for thereafter moving it to bring it into the position it would occupy if the spaces were all of the same size, and fractional-spacing mechanism varied by said movement.

23. In a justifying mechanism, in combination, a member having a series of steps, means for moving it in one direction according to the number of spaces in the line and the line shortage, and means for thereafter moving it in the opposite direction to govern the fractional spacing.

24. In a justifying mechanism, in combination of a single series of steps for justifying lines of varying number of spaces, there being one step for each size of permanent spaces, means for moving said series of steps lengthwise of a step according to the number of spaces and the line shortage, and means for thereafter moving said series in the direction of the length of a step to govern the fractional spacing.

848,811. HOT-WATER VALVE. JAMES L. COOK, Dayton, Ohio. Filed Jan. 2, 1906. Serial No. 294,047.

Claim.—In a hot-water valve, a valve-casing, the apertured cap E with interior annular valve-seat D, said valve-seat lying adjacent to the orifice in said cap, a valve-stem having a collar F thereon, said collar lying within the apertured cap and having a valve-seat D' thereon matching with the seat D in said cap, said valve-seat D' being recessed and filled with a composition of soter metal to insure a smooth wearing-surface and tight joint, said valve-seat D' lying adjacent to the stem, a nut H supported on the lower end of the apertured cap, a spring G surrounding the valve-stem and inclosed between the collar F and the nut H within the apertured cap, double screw-threads J on the portion of said valve-stem lying within the valve-casing, a basket engaging said screw-threads, said basket having guide-arms projected from opposite sides thereof and receiving guide-ribs on the opposite sides of the valve-casing, a disk O mounted within the basket M, and the valve-seat Q on the lower end of the valve-casing, substantially as described.

848,812. BEVEL-BOARD-CUTTING MACHINE. JOHN P. CROWLEY, Newport, Ky., assignor to the Crawley Book Machinery Company, a Corporation of Kentucky. Filed Apr. 27, 1905. Serial No. 257,640.

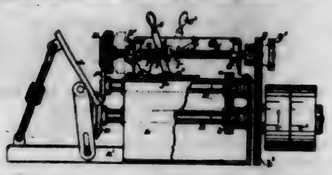

Claim.—1. In combination with a machine having a revolving disk cutter for cutting beveled edges on boards, a rotary grinder whose plane is parallel with the plane of the cutter, means for holding said grinder out of contact with the cutter, means for bringing said grinder into contact with the cutter, and while in such contacting position independent means for rotating said cutter.

2. A grinder for revolving cutters composed substantially of the beveled rotary grinder, H, the spring, K, the sleeve, I, and the gear, *g*, all mounted on the shaft, G, the lever, J, with its stud, *f*, and roll, *j*, adapted to engage the sleeve, I, and suitable mechanism for driving the gear, *g*, substantially as set forth.

848,813. METAL-WORKING MACHINE. ARTHUR CURRIER, Manchester, N. H., assignor to Dodge Needle Company, Manchester, N. H., a Corporation of New Hampshire. Filed June 4, 1906. Serial No. 320,037.

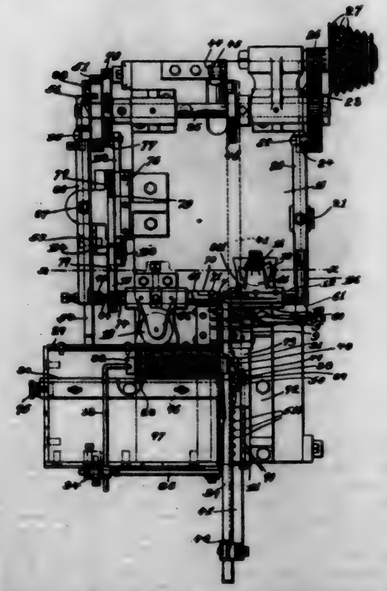

Claim.—1. In a device of the class described, an open-ended rack for supporting articles to be fed, an adjustable stop-plate against which the first article in the rack rests, and a picker to feed said first article free from the other articles in the rack.

2. In a device of the class described, an open-ended rack for supporting articles to be fed singly, an adjustable stop-plate supported independently of the rack and against which the first article in the rack rests, and a picker to feed said article free from the others in the rack.

3. In a device of the class described, a rack, a tool to operate on articles as they are fed from the rack, a pair of clamping-jaws to grip each article and hold it stationary while acted on by the tool and reciprocating means adapted at each forward stroke to feed a single article from the rack to the jaws, said rack being constructed to permit said article to be fed free from the other articles in the rack regardless of the length of the articles.

4. In a device of the class described, a needle-supporting rack, a tool to operate on the needles as they are fed from the rack, a pair of jaws to hold each article stationary as it is acted on by the tool and intermittently-acting means to feed at each forward movement a needle from the rack to the tool and free from the other needles in the rack regardless of the length of the needles.

5. In a device of the class described a needle-supporting rack, a tool to operate on the needles as they are fed from the rack, a pair of clamping-jaws to rigidly hold each needle while it is acted upon by the tool and reciprocating means having a fixed length of stroke to feed needles singly from the rack to the tool, and free from the other needles in the rack regardless of the length of the needles at each forward stroke.

6. In a device of the class described, a needle-supporting rack, an adjustable stop-plate against which the end needle in the rack rests, and a reciprocating picker to feed needles one by one from the rack.

7. In a device of the class described, a needle-supporting rack, a reciprocating picker, and a stop-plate against which the end needle in the rack rests, said stop-plate being adjustable, whereby it may be adjusted to permit any-sized needle to be carried clear of it by the picker.

8. In a device of the class described, a needle-supporting rack, a picker, a picker-reciprocating mechanism, said picker being adjustably carried by said picker-reciprocating mechanism, and an adjustably-mounted stop-plate against which the needle next to be picked from the rack rests.

9. In a device of the class described, an open-ended needle-supporting rack, an adjustable stop-plate having an inclined edge against which the end needle rests, a picker, and picker-reciprocating mechanism.

10. In a device of the class described, an open-ended needle-supporting rack, an adjustable stop-plate having an inclined edge against which the end needle rests, a picker, and picker-reciprocating mechanism.

11. In a device of the class described, a pair of clamping-jaws, a needle-supporting rack, an adjustable stop-plate having an edge against which the end needle in the rack rests, said edge being out of line with the jaws when closed and means to feed the needles separately into the jaws free from the stop-plate.

12. In a device of the class described, a pair of clamping-jaws, a needle-supporting rack, an adjustable stop-plate having an edge against which the end needle in the rack rests, said edge being out of line with the jaws when closed, and a reciprocating picker to feed the end needle from the rack into the jaws.

13. In a device of the class described, a pair of clamping-jaws, a needle-supporting rack, an adjustable stop-plate against which the needles rest, and means to feed said needles into the jaws.

14. In a device of the class described, a pair of clamping-jaws, a needle-supporting rack, an adjustable stop-plate against which the end needle in the rack rests, and reciprocating means to feed said needles into the jaws.

15. In a device of the class described, a pair of clamping-jaws, a needle-supporting rack having a guide for the ends of the needles in a fixed position with relation to the jaws, an adjustably-mounted stop-plate against which the needles rest, said stop-plate holding the first needle just clear of said guide, and means to feed said needle into the jaws.

16. In a device of the class described, a pair of clamping-jaws, a needle-support, means to move the latter into position beneath the jaws to support a needle and out of position to allow said needle to drop, and needle-feeding mechanism.

17. In a machine of the class described, a needle-supporting rack, a pair of clamping-jaws, a reciprocating picker, means to feed needles of any length from the rack into the clamping-jaws, and means to bend the end of the needle into hook shape while held by the clamping-jaws.

18. In a device of the class described, a former, automatic means to feed individual articles singly against the former, a wiper to bend said articles around the former and clamping means to hold each article while it is acted upon by the wiper.

19. In a device of the class described, a former, automatic means to feed separate needles successively into juxtaposition to the former, a rotary wiper to act on the end of the needle and bend it around said former and clamping means to hold each article while it is being acted on by the wiper.

20. In a device of the class described, a former, means to feed an article into juxtaposition thereto and to bring it thereagainst by two separate movements, means to clamp the article in such position, and a wiper to wipe the end of the article around the former.

21. In a device of the class described, a former, means to feed an article into juxtaposition to said former, means including a wiper-roll to move the article angularly with relation to the direction of feed to bring it against the former and to wipe the end of said article around the former.

22. In a device of the class described, a former, means to feed an article into juxtaposition to said former, a wiper, means to move the latter transversely to the direction of feed, thereby to press the end of the article against the former, and means to move the wiper thereafter around the former to bend the article to the desired shape.

23. In a device of the class described, a former, means to feed an article in juxtaposition thereto, a wiper, means to move the wiper transversely of the former to force the article against the former, means to clamp the article rigidly in this position, and means to wipe the wiper around the former, thereby to bend the article.

24. In a device of the class described, a former, a wiper, means to move the wiper toward the former, thereby to force an article against the former, means to move the wiper around the former, thereby to bend the article, and means to move the former to withdraw it from the bent article.

25. In a device of the class described, a shaft mounted for turning movement and having a yieldingly-mounted wiper, a former supported independently of said shaft, and means to turn said shaft to cause the wiper to move about the former to bend an article.

26. In a device of the class described, a former, a shaft mounted for turning movement, a wiper mounted eccentrically on said shaft, and means operating first to move the wiper toward the former and then to turn the shaft thereby to carry the wiper bodily about the former.

27. In a device of the class described, a non-rotary former, a wiper, means operating first to move the wiper toward the former thereby to force an article against the former, and then to move the wiper bodily about the former to bend the article, and means to move the former to withdraw it from the bent article.

28. In a device of the class described, a former, a shaft mounted for turning movement, a head pivoted thereto, a wiper carried by said head, and intermittingly-acting means operating first to swing the head on the shaft to carry the wiper toward the former and subsequently to turn the shaft to carry the wiper around the former.

29. In a device of the class described, a former, a shaft mounted for turning movement, a head pivoted thereto, a wiper carried by said head, intermittingly-acting means to swing the head on the shaft to carry the wiper toward the former, and other means to turn the shaft to carry the wiper bodily about the former.

30. In a device of the class described, a former, a shaft mounted for turning movement, a head pivoted thereto, a wiper carried by said head, and means operating first to swing the head positively on the shaft and subsequently to turn the shaft to carry the wiper around the former.

31. In a device of the class described, a former, a shaft mounted for turning movement, a head pivoted to the shaft, a wiper adjustably carried by said head, and means operating first to swing the head on the shaft to move the wiper toward the former, and subsequently turn the shaft to carry the wiper around the former.

32. In a machine of the class described, a former, a shaft mounted for turning movement, a head movably mounted on the shaft, a wiper mounted on the head, and means operating to first move the head relative to the shaft to move the wiper toward the former, and then to turn the shaft to carry the wiper around the former.

33. In a machine of the class described, a pair of clamping-jaws movable relative to each other, means to partially close said jaws and to subsequently fully close them, means to feed a needle between the jaws while they are partially closed, said jaws gripping the needle when they are fully closed, and means to bend the needle while gripped by said jaws.

34. In a device of the class described, a fixed jaw, a movable jaw constructed so that it will automatically open away from the fixed jaw, and automatic means to move the movable jaw toward the fixed jaw with an intermittent movement.

35. In a device of the class described, a fixed jaw, a movable jaw constructed so that it will automatically open away from the fixed jaw, a lever engaging said movable jaw, and a cam for actuating the lever, said cam having a shape to partially close the jaws and maintain said jaws in this condition for a predetermined length of time and then fully close the jaws.

36. In a device of the class described, a fixed jaw, a movable jaw constructed so that it will automatically open away from the fixed jaw, a lever engaging said movable jaw, a cam for actuating the lever, said cam having a shape to partially close the jaws and maintain said jaws in this condition for a predetermined length of time and then fully close the jaws, and means to feed a needle between the jaws when they are partially closed.

37. In a device of the class described, a pair of clamping-jaws movable relative to each other, a needle-support, and means to move said needle-support to a position beneath said jaws before the jaws are closed together.

38. In a machine of the class described, a former, a wiper normally separated therefrom, means including a yielding construction to move said wiper toward the former, and means to move said wiper bodily about the former.

39. In a device of the class described, a former, a wiper normally separated therefrom, means to move the wiper toward the former, said means including a spring, and means to carry the wiper bodily about the former.

40. In a device of the class described, a former, a shaft, a wiper movably carried by the shaft and normally separated from the former, means including a resilient connection to move the wiper toward the former, and means to turn the shaft to carry the wiper bodily about the former.

41. In a device of the class described, a former, a shaft, a head pivoted thereto, means including a yielding connection to swing the head on the shaft at a definite point in the cycle of operations, thereby to carry the wiper toward the former, and means to turn the shaft to carry the wiper bodily about the former.

42. In a machine of the class described, a non-rotatable former, a wiper, means including a yielding connection to move said wiper toward the former, and means to move the wiper bodily about the former.

43. In a device of the class described, a non-rotatable former, a wiper, means to move the wiper toward the former, said means including a spring, and means to carry the wiper bodily about the former.

44. In a device of the class described, a non-rotatable former, a shaft, a wiper movably carried by the shaft, means including a resilient connection to move the wiper toward the former, and means to turn the shaft to carry the wiper bodily about the former.

45. In a machine of the class described, a former, a wiper, means to move the wiper about the former to bend

an article thereabout, means to yieldingly hold the wiper against the former during such movement thereof, and means to retract the wiper from the former after the bending operation.

46. In a machine of the class described, a former, a wiper, automatic means to move the wiper around the former thereby to bend an article thereabout, and automatic means to move the wiper radially away from the former after the bending operation.

47. In a machine of the class described, a former, a wiper, means to move the wiper toward the former and yieldingly hold it thereagainst, means to move the wiper about the former, and means to retract the wiper from the former.

48. In a machine of the class described, a former, a wiper, means to move the wiper against the former thereby to hold an article thereagainst and to hold the wiper yieldingly against said article, means to move the wiper about the former thereby to bend an article, and means to retract the wiper after the article is bent.

49. In a machine of the class described, a former, a shaft mounted for turning movement, a head pivoted to the shaft, said head having a resilient arm, a wiper mounted on the head, means acting against said arm to swing the head on the shaft to move the wiper toward the former, and means to turn the shaft to carry the wiper about the former.

50. In a machine of the class described, a former having a tapering portion, means to feed an article against said tapering portion, clamping means to hold the article in such position, and a wiper to bend the article about the former.

51. In a machine of the class described, a former having a tapering portion, a wiper, means including a yielding connection to move said wiper toward the former at a definite time, and means to carry said wiper bodily about the former.

52. In a machine of the class described, a former having a tapering portion and adjustable longitudinally, a wiper, means including a yielding connection to move said wiper toward the former at a definite time, and means to carry said wiper bodily about the former.

53. In a machine of the class described, a former having a tapering horn, means to feed an article into juxtaposition to said horn, a pair of clamping-jaws, and a wiper to act on the article and bend it around the horn.

54. In a machine of the class described, a longitudinally-adjustable former having a tapering horn, means to feed a needle into juxtaposition to said horn, and means to bend the needle about the horn.

55. In a machine of the class described, a pair of clamping-jaws, a former having a tapering horn, said former being adjustable laterally of said jaws to bring different portions of the horn into operative position, means to feed a needle between the jaws, and means to bend the needle about the former.

56. In a device of the class described, an open-ended rack, an adjustable stop-plate for engaging the first needle in the rack, clamping-jaws, and a picker to push the needles one at a time free from the stop-plate and between the clamping-jaws.

57. In a device of the class described, an open-ended rack, an adjustable stop-plate against which the end needle in the rack rests, and a picker to push said end needle free from the stop-plate.

58. In a device of the class described, an open-ended rack, an adjustable stop-plate against which the end needle in the rack rests, a pair of clamping-jaws, a picker to push the end needle free from the stop-plate and between the jaws, and a needle-support to support the needle while thus being pushed.

848,614. TELEPHONE TRUNKING SYSTEM. WILLIAM W. DEAN, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed July 26, 1902. Serial No. 117,059.

Claim.—1. The combination with a trunk-line adapted to connect telephone-lines together for conversation, of a signaling apparatus for the incoming end of the trunk, a relay at said end to place said apparatus in condition to operate and adapted to be actuated during connection with the called line and before the called subscriber's response, and a locking-circuit for said relay closed by itself when actuated to maintain the same operated, substantially as described.

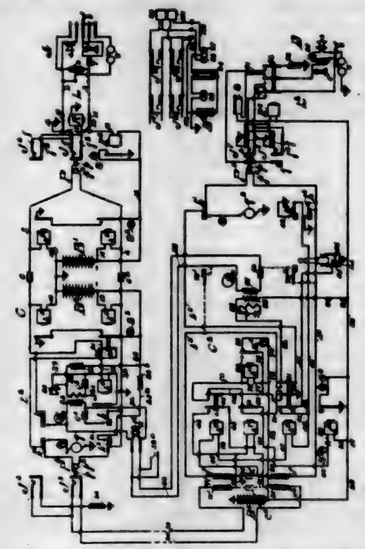

2. The combination with a trunk-line adapted to connect telephone-lines together for conversation, of a signaling apparatus for the incoming end of the trunk, a relay at said end actuated over a local circuit independent of the talking-circuit and trunk-connecting means, said relay serving to place said apparatus in condition to operate, and a locking-circuit for said relay closed by itself when actuated to maintain the same operated, substantially as described.

3. The combination with a trunk-line adapted to connect telephone-lines together for conversation, of a signaling apparatus for the incoming end of the trunk, a relay at said end to place said apparatus in condition to operate, a local circuit therefor, a manually-operated switch independent of the trunk-connecting means to open and close said local circuit, said relay serving when actuated to close a locking-circuit for itself whereby the same remains actuated, substantially as described.

4. The combination with a trunk-line adapted to connect telephone-lines together for conversation, of a signaling apparatus for the incoming end of the trunk, a relay at said end to place said apparatus in condition to operate, a local circuit therefor, a ringing-key for the trunk to connect the calling-generator therewith, said key serving to open and close said local circuit, and means to cause said relay to lock itself in actuated condition after the closing of said local circuit, substantially as described.

5. The combination with a trunk-line adapted to connect telephone-lines together for conversation, of a relay at the incoming end actuated by current over the trunk from the outgoing end, a second relay at the incoming end, a signal also at the latter end whose actuation depends upon said relays, said second relay being initially actuated over a local circuit and a locking-circuit therefor to maintain the relay actuated, substantially as described.

6. The combination with a trunk-line adapted to connect telephone-lines together for conversation, of a relay at the incoming end actuated by current over the trunk from the outgoing end, a second relay at the incoming end, a signal also at the latter end whose actuation depends upon said relays, said second relay being initially actuated over a local circuit independent of the talking-circuit, and thereafter over a locking-circuit closed by itself, substantially as described.

7. The combination with a trunk-line adapted to connect telephone-lines together for conversation, of a relay at the incoming end actuated by current over the trunk from the outgoing end, a second relay at the incoming end, a signal also at the latter end whose actuation depends upon said relays, a local circuit for said second relay over which it is initially actuated, a switch independent of the trunk-plug for controlling said circuit, and a locking-circuit for said relay closed by itself when actuated, substantially as described.

8. The combination with a trunk-line adapted to connect telephone-lines together for conversation, of a relay at the incoming end actuated by current over the trunk from the outgoing end, a second relay at the incoming end, a signal also at the latter end whose actuation depends upon said relays, a local circuit over which said second relay is initially actuated, a ringing-key for the trunk to connect the calling-generator thereto, said key controlling said local circuit, and a locking-circuit closed by itself to thereafter maintain the relay actuated, substantially as described.

9. The combination with a trunk-line adapted to connect telephone-lines together for conversation, of signaling apparatus for the incoming end of the trunk, a relay at said end to place said apparatus in condition to operate, a locking-circuit for said relay closed by itself when once operated, and a plug-seat switch to open said locking-circuit when the connection has been taken down and the trunk-connecting plug has been seated therein, substantially as described.

10. The combination with a trunk-circuit adapted to connect telephone-lines together for conversation, of signaling apparatus at the incoming end of the trunk, a relay to place said apparatus in condition to operate, a local circuit for said relay independent of the talking-circuit, a manually-operated switch to control said circuit, a locking-circuit for said relay closed by itself when actuated to maintain the same operated during the connection, and a plug-seat switch controlling said locking-circuit which is adapted to open the same when the connection has been severed and the trunk-connecting plug placed in the seat, substantially as described.

11. The combination with a trunk-circuit adapted to connect telephone-lines together for conversation, of a signal for the incoming end of the trunk, a relay adapted when actuated to place said signal in condition to operate, a local circuit for said relay independent of the talking-circuit, a ringing-key for the trunk adapted to connect the calling-generator therewith, said ringing-key serving when operated to close said local circuit, a locking-circuit for said relay to maintain the same operated during conversation and after the ringing-key has been returned to normal position and a plug-seat switch to control said locking-circuit whereby when the connection has been severed and the trunk-connecting plug placed in the seat, the locking-circuit is open, substantially as described.

12. The combination with a trunk-line adapted to connect telephone-lines together for conversation, of a relay at the incoming end of the trunk actuated by current over the trunk from the outgoing end, a second relay at said end, means for initially operating said latter relay during connection with a called line and before the subscriber's response, a locking-circuit for said latter relay closed by itself when actuated, means for opening said locking-circuit when the connection is severed with the called line, and a signal at the incoming end whose actuation depends upon said two relays, substantially as described.

13. The combination with a trunk-circuit adapted to connect subscribers' lines together for conversation, of a relay at the incoming end actuated by current from the outgoing end of the trunk, a second relay at the incoming end of the trunk actuated during connection with the called line, a locking-circuit therefor closed by itself when actuated, a plug-seat switch for the incoming trunk-plug controlling said locking-circuit and adapted when the plug is in the seat to open the same, and a signal whose actuation depends upon said two relays, substantially as described.

14. The combination with a trunk-circuit adapted to connect telephone-lines together for conversation, of a relay at the incoming end actuated by current from the outgoing end, a second relay at the incoming end actuated over a local circuit, a manually-operated switch independent of the trunk-connecting plug to close said circuit, a locking-circuit for said latter relay, means to open said circuit when the connection is taken down, and a signal whose actuation depends upon said two relays, substantially as described.

15. The combination with a trunk-circuit adapted to connect subscribers' lines together for conversation, of a relay at the incoming end actuated by current from the outgoing end, a second relay at the incoming end, a local circuit therefor independent of the talking-circuit, a ringing-key to connect the calling-generator with the incoming end of the trunk, said key serving when actuated to close said local circuit, a locking-circuit for the relay closed by itself when actuated, a plug-seat switch having contacts in said locking-circuit and adapted to normally open same, when a trunk-plug is seated therein and a signal whose actuation depends upon said two relays, substantially as described.

16. The combination with a trunk-line adapted to connect telephone-line circuits together, of a ringing-signal for the incoming end of the trunk, a relay actuated over a local circuit distinct from the talking-circuit to direct current through said signal to operate the same when the subscriber has been called but before his response, a ringing-key to connect the calling-generator with the incoming end of the trunk, said key serving to close the circuit of said relay to actuate the same, a second relay adapted to deprive said signal of operating-current when the subscriber responds, and a third relay for locking out said signal and means for maintaining actuating-current through said relay during the remainder of the connection, substantially as described.

17. The combination with a trunk-line adapted to connect subscribers' lines together for conversation, of a ringing-signal for the incoming end of the trunk, a relay adapted to direct current through said signal to operate the same when the subscriber has been called but before his response, the circuit of said relay being initially closed before the subscriber responds and thereafter controlled through a locking-circuit to maintain the same operated during the connection, a second relay adapted to deprive said signal of operating-current when the called subscriber responds, and means for locking out said signal during the remainder of the connection, substantially as described.

18. The combination with a trunk-line adapted to connect subscribers' lines together for conversation, of a ringing-signal for the incoming end of the trunk, a relay adapted to direct current through said signal before the called subscriber responds, a local circuit for said relay initially closed in the operation of the ringing-key of the trunk, said relay being adapted to close a locking-circuit for itself when actuated, a plug-seat switch in said locking-circuit adapted to open the same when the trunk-plug has been returned to normal position, a second relay adapted to deprive said signal of operating-current when the called subscriber responds, and means for locking out said signal during the remainder of the connection, substantially as described.

19. The combination with a trunk-line adapted to connect telephone-lines together for conversation, of a disconnect-signal for the incoming end of the trunk, means operated by current flowing over a local circuit independent of the talking-circuit for placing said signal in condition to operate, said local circuit being closed by a switch independent of the trunk-connecting plug, and further means controlled by the connection at the outgoing end of the trunk for rendering said signal inoperative, substantially as described.

20. The combination with a trunk-line adapted to connect telephone-lines together for conversation, of a disconnect-signal for the incoming end of the trunk, a relay actuated by current over a local circuit for placing said signal in condition to operate, said local circuit being controlled by the trunk ringing-key, and a relay actuated by current

over the outgoing end of the trunk when the connection exists at said outgoing end to prevent said signal from operating, substantially as described.

21. The combination with a trunk-line adapted to connect telephone-line circuits together for conversation, of a disconnect-signal for the incoming end, a relay actuated over a local circuit initially closed by the trunk ringing-key when operated to call the wanted subscriber, said relay serving to place said signal in condition to operate, a locking-circuit for said relay closed when the relay is once actuated, a plug-seat switch in said locking-circuit to open the same when the connection is taken down and the trunk-plug is placed in the seat, and a relay energized by current over the trunk from the outgoing end when connection exists at said end to prevent said signal from operating, substantially as described.

22. The combination of a trunk-line, of a cord-circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to connect, a signal associated with the incoming end, a relay also at said incoming end adapted to be operated by current sent over the trunk-circuit, a second relay at said incoming end adapted to be operated by current flowing over a local circuit, a ringing-key initially controlling said local circuit, said circuit being thereafter controlled through contacts of said relay to maintain the relay operated, a plug-seat switch to open the locking-circuit of said relay when the trunk-plug is returned to normal position, said relays jointly controlling the said signal so as to operate the same to give a guard indication when the cord-circuit is connected with the trunk-circuit and the trunk-circuit is disconnected from the said line, or to place said signal in condition to operate so as to give a disconnect indication when the cord-circuit is disconnected from the trunk and the trunk is connected with the line, substantially as described.

23. The combination with a trunk-line, of a cord-circuit to connect with its outgoing end, and a called subscriber's line with which its incoming end is adapted to connect, a guard-signal for the incoming end of the trunk, means to actuate said signal by current sent over the trunk when the cord-circuit is connected with the trunk, and further means actuated by current sent over a local circuit when the trunk is connected with the called line to render said signal inert, said local circuit being independent of the trunk-connecting plug, substantially as described.

24. The combination with a trunk-line, of a cord-circuit to connect with its outgoing end, and a called subscriber's line with which its incoming end is adapted to connect, a guard-signal for the incoming end of the trunk, means to actuate said signal by current sent over the trunk when the cord-circuit is connected with the trunk, and further means actuated by current sent over a local circuit when the trunk is connected with the called line to render said signal inert, said local circuit being closed through contacts of the trunk ringing-key, substantially as described.

25. The combination with a trunk-line, of a cord-circuit to connect with its outgoing end, and a called subscriber's line with which its incoming end is adapted to connect, a guard-signal for the incoming end of the trunk, means to actuate said signal by current sent over the trunk when the cord-circuit is connected with the trunk, and further means actuated by current sent over a local circuit when the trunk is connected with the called line to render said signal inert, said circuit being initially controlled through contacts of the ringing-key and thereafter completed through contacts of the plug-seat switch, substantially as described.

26. The combination with a trunk-line adapted to connect telephone-lines together for conversation, of a signal at the incoming end of the trunk, a relay actuated during connection with the called line and before the subscriber's response to place said signal in condition to operate, a second relay actuated by current from over the trunk when a connection exists at the outgoing end thereof, of a third relay at said incoming end connected with the sleeve-strand of the cord-circuit and responsive to current in the line when the called subscriber answers, said relays serving to control said signal in such manner that when the first relay is energized and the other relays deënergized, the signal is actuated, substantially as described.

27. The combination with a trunk-circuit adapted to connect subscribers' lines together, a supervisory signal associated with the outgoing end of the trunk, a high-resistance trunk-relay at the incoming end, said relay being normally disposed in the path of current over the trunk to limit the flow therein, and thereby permit the operation of said supervisory signal, a relay at the incoming end of the trunk connected with the sleeve-strand thereof, and responsive to current in the line when the called subscriber answers said relay serving to remove the resistance of the trunk-relay to permit an increased flow of current over the trunk to thereby render said supervisory signal inoperative, substantially as described.

28. In a telephone system, the combination with a telephone-line, of a trunk-circuit adapted to be connected therewith, of a ringing-signal at the incoming end of the trunk placed in condition to operate by current sent through a local circuit independent of the talking-circuit by the actuation of the ringing-key, and again rendered inoperative by current flowing over a portion of the talking-circuit when the called subscriber answers his call, substantially as described.

848,815. STOPPING AND STARTING MECHANISM FOR LOOMS. WILLIAM F. DRAPER and CHARLES F. ROPER, Hopedale, Mass., assignors to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed June 14, 1906. Serial No. 321,597.

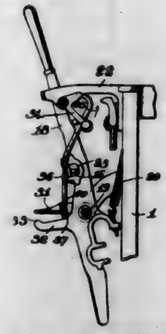

Claim.—1. In a loom, in combination, a shipper, a brake, fast and loose pulleys to coöperate with a driving-belt, and means controlled by movement of the shipper to stopping position to shift the belt wholly from the fast onto the loose pulley before the brake is applied, said means also acting to throw off the brake positively and entirely before the belt is shifted onto the fast pulley by movement of the shipper to running position.

2. In a loom, in combination, a driving-shaft provided with fast and loose pulleys to coöperate with a driving-belt, a brake for said shaft, a shipper, and means controlled by movement thereof to stopping position to shift the belt onto the loose pulley and thereafter effect the application of the brake, and to positively throw off the latter, before the belt is shifted onto the fast pulley, by movement of the shipper to running position.

3. In a loom, in combination, a driving-shaft provided with fast and loose pulleys to coöperate with a driving-belt, a brake for said shaft, an actuator for the brake, a shipper, and means controlled by movement thereof to stopping position to wholly shift the belt to the loose pulley and thereafter permit the actuator to apply the brake, and to positively render the actuator inoperative and release the brake before the belt is shifted from loose to fast pulley, by movement of the shipper to running position.

4. In a power-loom, in combination, a brake, an actuator therefor, a shipper coöperating with said actuator, to automatically and positively release the latter upon stopping movement of the shipper, to apply the brake, and means governed by such shipper movement to throw off the power from the loom before the brake-actuator is released.

5. In a power-loom, in combination, a brake, an actuator therefor, a shipper, means governed by movement of the shipper from running position to a predetermined point to wholly throw off the power from the loom, and means operative on shipper movement beyond such point toward stopping position to cause application of the brake by its actuator independently of the shipper.

6. In a power-loom, in combination, a brake, an actuator to apply it, means to throw the power onto and off of the loom, and a shipper to govern said means and the brake-actuator, movement of the shipper from running position to a predetermined point throwing off the power and thereafter permitting the actuator to apply the brake, while reverse movement from stopping position to such point causes the actuator to positively release the brake, continued movement to running position throwing the power onto the loom.

7. In a loom, in combination, an annular, rotatable brake member, a coöperating segmental member having a two-part movement toward and from the annular member, a shipper, a brake-actuator controlled thereby, and means movable with the shipper, whereby one part of the movement of the segmental brake member is simultaneous with, and the other part of such movement independent of the shipper movement, thereby providing for easy adjustment of the segmental member, and insuring absolute disengagement of both members when the shipper is moved to running position, and absolute engagement when the shipper is moved to stopping position.

8. In a loom, in combination, an annular, rotatable brake member, a coöperating segmental member having an extended or augmented movement toward and from the annular member whereby easy adjustment of the segmental member is provided and absolute engagement or disengagement of said members insured, a shipper, a brake-actuator controlled thereby and separate therefrom, and means to throw power onto and off the loom by movement of the shipper from stopping to running position, and vice versa, respectively, shipper movement from stopping position operating through the actuator to positively and completely disengage the brake members before the power is thrown on, reverse shipper movement permitting the actuator to positively effect engagement of said brake members after the power is thrown off.

9. In a power-loom, in combination, a driving-shaft adapted to effect reciprocation of the lay, brake mechanism, a shipper, and means governed by movement of the shipper from running position to a predetermined point to wholly throw off the power and bring the brake mechanism into condition for instant operation, movement of the shipper past such point causing immediate and full operation of the brake mechanism by said means, independently of the shipper, to stop rotation of the driving-shaft at a substantially fixed point.

10. In a power-loom, in combination, a driving-shaft adapted to effect reciprocation of the lay and having an attached annular brake member, a coöperating segmental member having an augmented movement toward and from the annular member, a shipper, and means separate from the shipper and governed by movement thereof from running position to a predetermined point to wholly throw off the power and positively move the segmental member into position for instant coöperation with the annular brake member, movement of the shipper past such point causing immediate and complete coöperation of said rotatable and segmental brake members, by or through said means, to stop rotation of the driving-shaft at a substantially fixed point.

848,816. COOKING-POT. EMIL DUSER, Backnang, Germany. Filed Jan. 8, 1907. Serial No. 350,000.

Claim.—1. The combination with a pot, of a cover, a spring-motor and bell, constituting the handle of the cover, a float beneath the cover, a stem extending loosely from the float to the cover and means operatable by said stem to release the spring-motor, substantially as set forth.

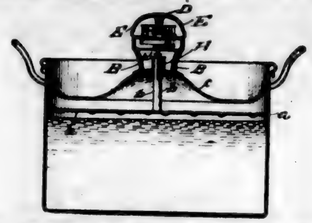

2. The combination with a pot, of a cover having a central neck, a spring-motor and bell on said cover and above the neck and constituting the handle of the cover, a latch for locking the spring-motor in a state of rest, a float and a stem on said float passing through said neck and guided therein, substantially as set forth.

3. The combination with a pot, of a cover having a central neck, a spring-motor on said cover and above the neck and constituting the handle of the cover, a float, a stem extending from said float through said neck and having an external projection at its upper end, and a latch for releasing the spring-motor, which latch is above the upper end of said stem, substantially as set forth.

848,817. DOOR-FASTENER. IRA A. FLEMING, Union City, Wash., assignor to Amelia A. Fleming, Union City, Wash. Filed Oct. 8, 1906. Serial No. 338,090.

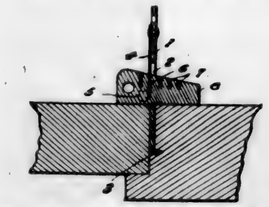

Claim.—1. A door-fastener comprising a plate having a laterally-extended spur at one end and formed with a longitudinal slot, a latch-plate pivoted to the opposite end of the plate and formed with a finger-piece and shoulders at opposite sides of said finger-piece, and a key adapted to pass through the slot of said plate and having a series of cuts extended inward from an edge to receive a shouldered portion of said latch.

2. A door-fastener comprising a plate having a laterally-extended spur at one end and formed with a longitudinal slot, a latch-plate pivoted to the opposite end of the plate and having a finger-piece and a shoulder adjacent to said finger-piece, and a key adapted to pass through the slot of said plate and having a series of cuts along one edge to receive the shouldered end of the latch-plate, the finger-piece serving as a stop to limit the swinging of the latch-plate in one direction by coming in contact with said key.

848,818. MEASURING DEVICE. CHARLES H. FOAT, Stafford, Kans. Filed Aug. 1, 1906. Serial No. 328,800.

Claim.—1. In a device of the character described, the combination with a roll-holding device and a support therefor, of a foldable table pivotally connected to said device, and a scale upon the table.

2. In a device of the character described, the combination with a roll-holding device and a support therefor, of a foldable table pivotally connected to said device, a scale upon the table, and a straight-edge movably connected to and normally disposed upon the holding device.

3. In a device of the character described, the combina-

tion with a trough and a support therefor, of a table pivotally connected to the trough, and a scale upon the table.

4. In a device of the character described, the combination with a trough and a support therefor, of a table pivotally connected to the trough, a scale upon the table, and a straight-edge movably connected to and normally resting upon the trough adjacent the table.

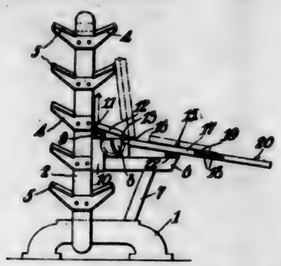

5. In a device of the character described, the combination with a holding-trough and a support therefor, of a sectional table pivotally connected to the trough, a straight-edge normally resting upon the trough adjacent the table, and arms extending from the straight-edge and pivotally connected to the support.

6. In a device of the character described, the combination with a rack, of a holding-trough supported thereby, and a foldable table pivotally connected to the trough.

7. In a device of the character described, the combination with a rack and a trough supported thereby, of a sectional table pivotally connected to the trough, and means for supporting the table in extended position.

8. In a device of the character described, the combination with a rack and a trough supported thereby, of a sectional table pivotally connected to the trough, means for supporting the table in extended position, and a scale upon the table.

9. In a device of the character described, the combination with a rack and a trough supported thereby, of a sectional table pivotally connected to the trough, means for supporting the table in extended position, a scale upon the table, a straight-edge normally resting upon the trough adjacent the table, and arms extending therefrom and pivotally connected to the rack.

10. In a device of the character described, the combination with supporting-standards and inclined shelves carried thereby; of a trough supported by the standards, a foldable table pivotally connected to and adapted to fold over the trough, means connected to the standards for supporting the table in extended position, and a straight-edge movably connected to the standards and normally bearing upon the trough adjacent the table.

848,819. BUSHING-COUPLING. CHARLES A. FREEMAN, East Orange, N. J. Filed Nov. 27, 1906. Serial No. 345,299.

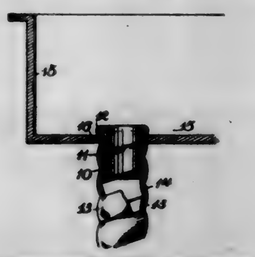

Claim.—1. In combination with an electrical conduit having a lining wound in helical convolutions with a slight space between the windings, of a device comprising a rigid metallic tubular member to enter the conduit and having an external thread to enter the spaces between the windings of the conduit and arranged to partly spread the windings longitudinally and be locked therein, and having a flange for the reception of a tool.

2. In combination with an electrical conduit having a lining wound in helical convolutions, of a tubular metallic member having a thread to enter the juncture of the windings and arranged to part the windings longitudinally by its entrance and be locked therein, the member having a flange adapted to receive a tool.

3. In combination with an electrical conduit having a lining wound in helical convolutions, of a tubular metallic member having a raised helical thread on its periphery to enter between the convolutions of the lining to spread them apart longitudinally and be held thereby, the tubular member being turned over to form a flange for the reception of a tool.

848,820. SHIFTING TOP FOR CARRIAGES. ANTHONY C. GERTH, Cincinnati, Ohio, assignor of thirty one-hundredths to Joseph B. Gerth and thirty one-hundredths to Harry T. Becker, Cincinnati, Ohio. Filed Dec. 6, 1906. Serial No. 346,530.

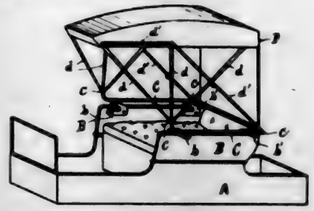

Claim.—1. In an article of the character indicated, a frame having forward and rear brackets from the sides thereof, rearwardly-opening slots in the rear brackets and holes pierced in the forward brackets, a yoke-frame provided with downwardly-projecting pins, said pins having necks to engage the slots and holes of the brackets, and spring-actuated lugs adapted to enter said holes in the forward brackets to lock the pins in place.

2. In an article of the character indicated, a frame having forward and rear brackets projecting outward from the sides thereof, rearwardly-opening slots in the rear brackets and holes having side slots pierced in the forward brackets, a frame carrying the vehicle-top, provided with downwardly-projecting pins, said pins having heads at their projecting ends and reduced necks to enter the slots in the respective brackets, and spring-actuated lugs carried by said frame and located at the sides of the forward pins to enter the holes in the forward brackets alongside the pins when the pins enter the slots in the forward brackets.

848,821. WADING-BOOT. OSCAR F. GLIDDEN, Grand Rapids, Mich. Filed June 7, 1906. Serial No. 320,614.

Claim.—1. An integral garment comprising foot, leg and body members formed of material impervious to water and having seams also rendered impervious to water, said garment having a top opening only, foldable gussets at the respective sides of the body portion, and means for detachably securing the edges of the outer portions of the garment to each other, whereby the gussets are folded within said outer portion, when in use, and with their upper edges at the top of the garment.

2. Wading-boots, comprising foot, leg and body members, formed integral, and having a top opening only, foldable gussets at the respective sides of the body members, detachable means for securing the upper angles of each gusset to each other, and detachable means for securing the middle of the upper edge of the gussets to each other.

3. Wading-boots, comprising boot, leg and body members, formed integral, and having a top opening only, the body member being provided at each side with a foldable gusset

connecting the front and rear portions thereof, and adapted to fold near the middle and extend within the body member to near each other at the middle of their upper edges, means for detachably securing the front and rear portions

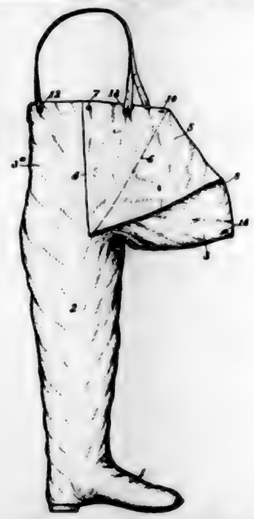

of the body member in close relation, and means for attaching suspenders to the body member and to the rear portions of the gussets.

848,822. TURRET TOOL-POST. GEORGE E. GREENLEAF, Plainfield, N. J., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Filed Sept. 6, 1906. Serial No. 333,529.

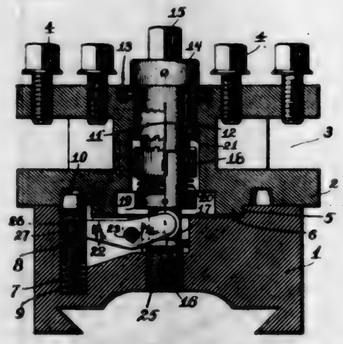

Claim.—1. In a machine-tool, the combination of a base, a rotatable tool-post mounted on the base, a pintle mounted for rotation and longitudinal movement in the tool-post and threaded into the base and having a collar to clamp the tool-post to the base, a series of ratchet-teeth surrounding the pintle and rigid with the tool-post, and a collar mounted on the pintle and having ratchet-teeth to engage the ratchet-teeth carried by the tool-post and adapted to be brought into engagement therewith by the longitudinal movement of the pintle in the tool-post, substantially as described.

2. In a machine-tool, the combination of a base, a rotatable tool-post mounted on the base, a pintle mounted for rotation and longitudinal movement in the tool-post and threaded into the base and having a collar to clamp the tool-post to the base, a series of ratchet-teeth surrounding the pintle and rigid with the tool-post, a collar splined on the pintle and having ratchet-teeth adapted by the longitudinal movement of the pintle to be brought into engagement with the teeth carried by the tool-post, and a spring carried by the pintle and urging said collar in the direction of tooth engagement and against a shoulder formed on the pintle, substantially as described.

3. In a machine-tool, the combination of a base, a rotary tool-post, a rotatable pintle having a screw-thread engaging a threaded socket in the base, an annular guide on the pintle, a plurality of locking sockets in the tool-post, a locking-bolt movable in the base and adapted to engage the sockets, a rock-arm fulcrumed in the base, of which one end engages the bolt and the position of the other is controlled by said guide, a ratchet member carried by the pintle and a ratchet member rigid with the tool-post.

848,823. CAKE-CUTTER. SIMON J. HARDING, Harrisburg, Pa., assignor to Fred D. Harding, West Baldwin, Me. Filed May 26, 1906. Serial No. 318,911.

Claim.—1. A cake-cutter comprising an outer or main cutter, and an inner pivotally-mounted reversible cutter.

2. A cake-cutter comprising an outer or main cutter having opposite cutting edges, an inner movably-mounted reversible cutter arranged within the outer cutter, and exterior operating means connected to the inner cutter to reverse the same and move the said inner cutter into and out of position for cutting and to arrange the same to cooperate with either of the cutting edges of the main cutter.

3. A cake-cutter comprising an outer or main cutter having opposite cutting edges, an inner movably-mounted reversible cutter arranged within the outer cutter, and exterior operating means connected to the inner cutter to reverse the same and move the said inner cutter into and out of position for cutting and to arrange the same to cooperate with either of the cutting edges of the main cutter, said operating means forming a handle for the cake-cutter when the inner cutter is in either position.

4. A cake-cutter comprising an outer or main cutter, a support pivotally mounted within the outer or main cutter, and an inner cutter carried by the support.

5. A cake-cutter comprising an outer or main cutter, an inner pivotally-mounted support normally interlocked with the outer or main cutter and adapted to be reversed, and an inner cutter carried by the support.

6. A cake-cutter comprising an outer resilient main cutter having opposite grooved portions, a pivotally-mounted support interlocked with the grooved portions of the outer cutter, and an inner cutter carried by the support.

7. A cake-cutter comprising an outer or main cutter, a pivoted support mounted within the main cutter, an exterior handle connected with the pivoted support, and an inner cutter carried by the latter.

8. A cake-cutter comprising an outer or main cutter, a pivotally-mounted transverse support interlocked with the main cutter, an exterior handle rigid with the support, and an inner cutter mounted on the support.

9. A cake-cutter comprising an outer or main cutter, a reversible support, a handle connected with the support, and an inner cutter mounted on the support.

10. A cake-cutter comprising an outer or main cutter, a reversible support having an opening, and an inner cutter having its inner end fitted within the said opening and rigidly connected with the support.

11. A cake-cutter comprising a body having a smooth cutting edge and provided with opposite crimped cutting edges, and a reversible inner cutter.

12. A cake-cutter comprising a body having a smooth cutting edge and provided with opposite crimped cutting edges, a reversible inner cutter, and an exterior handle extending from the body between the said cutting edges and connected with the inner cutter for operating the same.

848,824. APPARATUS FOR EMBOSSING NAME-PLATES, &c. THOMAS HAWKINS, London, England. Filed Nov. 13, 1902. Serial No. 131,147.

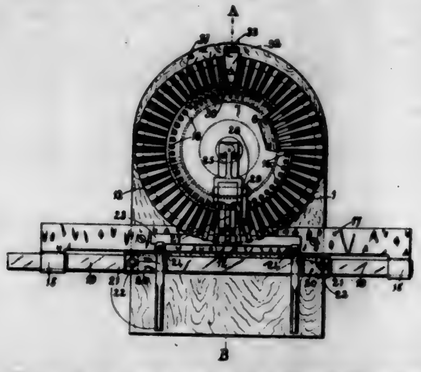

Claim.—1. In apparatus such as hereinbefore referred to the combination of a die-carrier, a row of staple-pieces the upper halves of which are resilient fixed at their inner ends to said die-carrier, and dies upon the outer ends of said staple-pieces

2. In apparatus such as hereinbefore referred to, the combination of a die-carrier with a row of dies 11 and 12, staple-pieces 13 upon which said dies are fixed the upper halves of said staple-pieces being resilient and retaining the dies 11 and 12 normally apart, distance-blocks 14 fixed to said staple-pieces, and means for holding said staple-pieces in position upon the die-carrier.

3. In apparatus such as hereinbefore referred to the combination of a die-carrier, staple-pieces, the upper halves of which are resilient fixed at their inner ends to said die-carrier, dies upon the outer ends of said staple-pieces, a serrated edge upon said die-carrier, and a spring-detent which is adapted to enter the serrations for the purpose of retaining the die-carrier in desired position.

4. In apparatus such as hereinbefore referred to, the combination of a die-carrier, a row of staple-pieces the upper halves of which are resilient fixed at their inner ends to the die-carrier, means for controlling the die-carrier, movable means for holding the plate to be embossed, means in operative connection with and adapted to support said movable means and means for operating the dies.

5. In apparatus such as hereinbefore referred to, the combination of a die-carrier, a row of staple-pieces the upper halves of which are resilient fixed at their inner ends to the die-carrier, dies upon the outer ends of the staple-pieces, means for controlling the die-carrier, a fixed plate opposite the die-carrier, sockets within the plate, a bar adapted to slide within said sockets, sockets adjustably secured to the bar, clips fixed to the last-mentioned sockets for holding the plate to be embossed, means for operating the bar, and means for operating the dies.

848,825. PLOW. WALTER P. HENDON, Dallas, Tex., assignor to Emerson Manufacturing Company, Rockford, Ill., a Corporation of Illinois. Filed July 9, 1906. Serial No. 325,281.

Claim.—1. In a plow, the combination of a main frame, wheels supporting the main frame, a disk-support having a pivotal connection with the main frame on a horizontal pivot thereby permitting the support to have a vertical swinging movement, a toggle-lever connection between the support and main frame, and a spring exerting its force on the toggle-lever thereby holding the disk down to its work in a yielding manner.

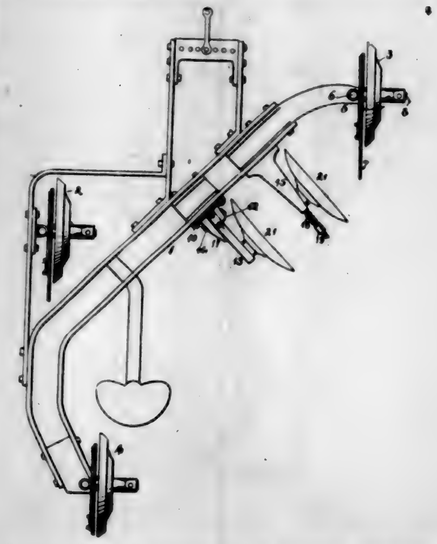

2. In a plow, the combination of a main frame, and dish-shaped wheels supporting the main frame and arranged in a vertical position and having one face standing in a vertical plane, the concave faces of all the wheels facing in the same direction.

848,826. SAFETY NECK-YOKE. HALSTEAD T. HOOKER, Maryville, Mo. Filed Aug. 6, 1906. Serial No. 329,462.

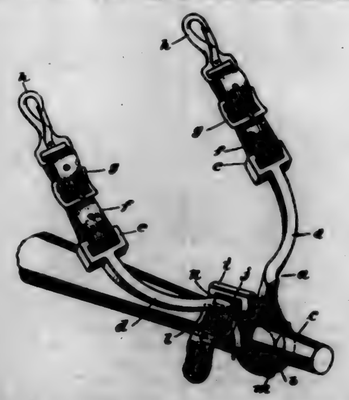

Claim.—1. A safety device for supporting vehicle-poles, consisting of a transverse yoke having a ring for the reception of the end of the pole in front of the pole-stop, means for connecting the respective ends thereof with the harness, a short rearwardly-extended arm connected with said ring above the pole and a strap attached to said arm, said strap being provided with a detachable fastening device and arranged to encircle the pole immediately behind and in contact with the pole-stop, whereby said stop may be caused to engage the ring upon one side and the strap upon the other.

2. A safety device of the class described, comprising a yoke formed in one piece with loops at the respective ends, an intermediate pole-ring, a short integral rearwardly-extended arm, a loop therein for the reception of a strap and a strap therein provided with a buckle, said loop being parallel with the axis of the pole to enable the strap to encircle the latter.

848,827. GAME APPARATUS. FREDERICK W. HOTTENROTH, New York, N. Y. Filed Apr. 2, 1906. Serial No. 309,438.

Claim.—1. A game apparatus comprising a box having a transparent false bottom spaced from its bottom proper and provided with a series of indentations, a slide removably inserted under the false bottom, and a plurality of men or pieces.

2. A game apparatus comprising a box having a transparent false bottom spaced from its bottom proper and provided with a series of indentations, a plurality of interchangeable slides for insertions in the chamber formed between the bottom proper of the box and its transparent false bottom, and a plurality of game-pieces or men.

3. A game apparatus comprising a box having a transparent bottom provided with apertures or perforations, a pictorial representation adapted to be removably placed under the glass bottom and men or game-pieces disposed within said box.

848,828. OIL-BURNER. WILLIAM R. JEAVONS, Cleveland, Ohio. Filed Nov. 27, 1905. Serial No. 289,282.

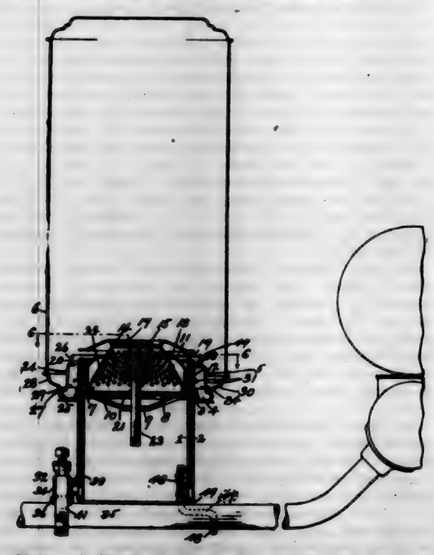

Claim.—1. In an oil-burner, the combination of an inner and an outer wick-tube, a spreader extending across the tops of said wick-tubes and spaced therefrom, a vertically-extending ring of less diameter than the inner wick-tube and located within the top of said tube and forming therewith a protected space, the top of said ring terminating in about the plane of the top of the inner work-tube and below the said spreader, means for supporting the said ring in central relation to the inner wick-tube, and means for supplying air in limited volume to the space between the said ring and inner wick-tube, substantially as specified.

2. In an oil-burner, the combination of an inner and an outer wick-tube, a vertically-extending ring in the upper end of the inner wick-tube and forming therewith a space or passage, a spreader extending across the tops of said ring and tubes and spaced therefrom, and means for supplying air in limited quantity to said space between the top and bottom of said ring, substantially as specified.

3. In an oil-burner, the combination of an inner and an outer wick-tube, a spreader extending across the tops of said tubes and spaced therefrom, a vertically-extending ring of less diameter than the inner wick-tube and located within the top of said tube and forming therewith a protected space, the top of said ring being in about the same plane as the top of the inner wick-tube and being below the spreader to provide therebetween a free passage-way for air, and means for supporting the said ring in central relation to the inner wick-tube, said ring being provided with perforations for supplying air in limited volume to the space between the said ring and the inner wick-tube, substantially as specified.

4. In an oil-burner, the combination of an inner and an outer wick-tube, a vertically-extending ring in the upper end of the inner wick-tube and forming therewith a space or passage, the upper end of said ring terminating in about the same plane as the tops of the wick-tubes, a spreader above said ring and tubes for directing the air from the interior of the inner wick-tube and ring laterally across the upper ends of said tubes and ring, and means for obstructing the flow of air to the space or passage between the ring and the inner wick-tube, substantially as specified.

5. In an oil-burner, the combination of an inner and an outer wick-tube, a vertically-extending ring in the inner wick-tube and forming therewith a space or passage, the upper end of said ring terminating in about the same plane as the upper ends of the wick-tubes, a spreader above said ring and tubes for directing the air from the interior of the inner wick-tube and ring laterally across the upper ends of the same, suitable supporting means for the said ring and spreader, and means for supplying a restricted volume of air to the space or passage between said ring and the inner wick-tube, substantially as specified.

6. In an oil-burner, the combination of an inner and an outer wick-tube, a spreader extending across the tops of said tubes and spaced therefrom, a vertically-extending ring within the upper portion of the inner wick-tube with its top in about the plane of the top of said tube and spaced from the upper end of said tube to form a protected space therewith, said ring being provided with perforations for admitting air in limited volume to said space, substantially as specified.

7. In an oil-burner, the combination of an inner and an outer wick-tube, a spreader extending across the tops of said tubes and spaced therefrom, a vertically-extending ring within the inner wick-tube with its top in about the plane of the top of said tube and forming therewith a protected space, said ring having perforations for supplying air in limited volume to said space, and means for supporting said ring and said spreader in central relation to the inner tube, substantially as specified.

8. In an oil-burner, the combination of an inner and an outer wick-tube, a spreader extending across the tops of said tubes and spaced therefrom, a vertically-extending ring within the upper end of said inner wick-tube and having its upper end deflected inwardly and in about the same plane as the top of the inner wick-tube to form therewith a protected space or chamber, said inwardly-deflected portion being provided with perforations for supplying air in limited volume to said space, substantially as specified.

9. In an oil-burner, the combination of an inner and an outer wick-tube, a vertically-extending ring of less diameter than the inner wick-tube and located within said tube and forming therewith a vertically-extending space for the passage of air, a spreader extending across the tops of said tubes and ring and spaced therefrom, and means for obstructing the flow of air to said space whereby the volume of air supplied thereto is limited, substantially as specified.

10. In an oil-burner, the combination of inner and outer wick-tubes, a spreader extending across the tops of said tubes and spaced therefrom, a vertically-extending ring of less diameter than the inner wick-tube and located within the same and forming therewith a vertically-extending annular passage-way, and a support for the lower end of said ring, said support comprising a ring carried by the inner wick-tube and projecting inwardly from the inner surface thereof, the width of said ring being at least as great as the width of the space between the former ring and the inner wick-tube, and means for supporting the lower end of the former ring above the surface of the latter ring and at a less distance thereabove than the width of the space between said former ring and the inner wick-tube, whereby the supply of air to said space is limited, substantially as specified.

11. In an oil-burner, the combination of an inner and an outer wick-tube, a spreader extending across the tops of said tubes and spaced therefrom, a vertically-extending ring within the inner tube and of less diameter than said tube to form therewith a protected space, means for obstructing the admission of air to said space, said ring having perforations for admitting a further limited volume of air to said space, substantially as specified.

12. In an oil-burner, the combination of an inner and an outer wick-tube, a spreader extending across the tops of said tubes and spaced therefrom, a vertically-extending ring within the inner wick-tube and of less diameter than said tube to form therewith a vertically-extending annular air-space, a horizontally-extending ring or flange at the bottom of said ring and preventing the admission of air in a vertical direction to said space, the said flange or ring forming with the bottom of the vertical ring a horizontal air-passage of less width than the width of the vertical space or passage between the latter and the inner wick-tube, and means for supporting said vertically-extending ring in central relation to the inner wick-tube, substantially as specified.

13. In an oil-burner, the combination of an inner and an outer wick-tube, an air-distributer supported within the inner wick-tube, said distributer comprising a spreader or deflector extending across the tops of said tubes and spaced therefrom, a vertically-extending ring spaced from the upper end of the inner wick-tube to form therewith a protected space or chamber, a perforated conical connection having the lower end thereof connected to the said ring and its upper end secured to the central portion of the spreader, a free airway being provided between the said ring and spreader, substantially as specified.

14. In an oil-burner, the combination of an inner and an outer wick-tube, an air-distributer supported within the inner wick-tube, said distributer comprising a spreader extending across the tops of said tubes and spaced therefrom, a vertically-extending ring within said inner wick-tube and having its upper end spaced from the upper end of the wick-tube to form therewith a protected chamber, a perforated conical supporting member having the lower end thereof connected to the lower portion of said ring and the upper end thereof connected with the central portion of said spreader, a free airway being provided between said ring and spreader, substantially as specified.

15. In an oil-burner, the combination of an inner and an outer wick-tube, a vertically-extending ring of less diameter than the inner wick-tube and having its top deflected inwardly, means for supporting said ring centrally of said inner wick-tube with its upper end in about the plane of the top of said inner wick-tube, means for admitting air to the space between said ring and the inner wick-tube, means for admitting a limited volume of air through the inwardly-deflected portion of said ring, and a spreader extending across the top of said ring and spaced therefrom, substantially as specified.

16. In an oil-burner, the combination of an inner and an outer wick-tube, a spreader extending across said tubes, a vertically-extending ring of less diameter than the inner tube and having its upper end in about the same plane as the top of said tube and provided with perforations for admitting a limited volume of air to the space between said ring and tube, and a ring surrounding the outer wick-tube with its upper end below the plane of the spreader and between the plane of the same and the plane of the top of the outer wick-tube, and a chimney, substantially as specified.

17. In an oil-burner, the combination of an inner and an outer wick-tube, an air-distributer supported within the inner wick-tube, said distributer comprising a spreader or deflector extending across the tops of said tubes and spaced therefrom, a vertically-extending ring of less diameter than the diameter of the inner wick-tube and forming with the inner surface thereof an annular passage-way for air, the upper end of said ring being in about the plane of the upper end of the wick-tubes, and a perforated conical support having the lower end thereof connected to said ring and the upper end thereof connected to the central portion of said spreader, substantially as specified.

18. In an oil-burner, the combination of an inner and an outer wick-tube, a ring within the inner wick-tube and forming therewith a protected space, and a spreader extending across the tops of said ring and tubes and spaced therefrom, the top of the inner tube being below the top of the outer tube, substantially as specified.

19. In an oil-burner, the combination of an inner and an outer wick-tube, a ring within the inner wick-tube and forming therewith a protected space, means for supplying air in limited volume to said space, and a spreader extending across the tops of said tubes and ring and forming therewith a horizontal airway, the top of the inner tube being below the top of the outer tube, substantially as specified.

20. In an oil-burner, the combination of an inner and an outer wick-tube, a ring within the inner wick-tube and having its upper end deflected inwardly, a spreader extending across the tops of said tubes and ring and forming therewith an airway, the top of the inner tube being below the top of the outer tube, substantially as specified.

21. In an oil-burner, the combination of an inner and an outer wick-tube, a ring within the inner tube and forming therewith a protected space, a spreader extending across the tops of said ring and tubes and forming therewith an airway, and a ring surrounding the upper end of the outer tube and spaced therefrom, said last-mentioned ring having perforations therethrough, substantially as specified.

22. In an oil-burner, the combination of an inner and an outer wick-tube, a ring within the inner tube and forming therewith a protected space, a spreader extending across the tops of said ring and tubes and forming therewith an airway, a ring surrounding the outer tube and spaced therefrom, said last-mentioned ring having a chimney-support and being perforated above said support, substantially as specified.

23. In an oil-burner, the combination of an inner and an outer wick-tube, a ring within the inner tube and forming therewith a protected space, a spreader extending across the tops of said ring and tubes and forming therewith an airway, a ring surrounding and spaced from the outer tube, and a chimney supported on the latter ring below the top of the outer wick-tube, perforations being provided in the latter ring below the top of the outer wick-tube and in the lower portion of the chimney, substantially as specified.

24. In an oil-burner, the combination of a wick-tube, a spreader having air-supplying openings through its central portion, a frusto-conical ring having opening in the inclined wall thereof to permit free flow of air therethrough and having a flat top provided with air-supplying openings through its central portion adapted to register with the openings in the spreader, means for securing together the central portions of the top of said ring and the spreader, and means for supporting said parts centrally of the wick-tube, said means comprising a centrally-arranged spindle connected to said spreader, and a socket within said wick-tube for said spindle, substantially as specified.

25. In an oil-burner, the combination of an inner wick-tube, a spreader extending across the top of said wick-tube and spaced therefrom, a perforated frusto-conical ring secured to said spreader, a vertically-extending ring surrounding the lower portion of said frusto-conical ring and connected to the bottom thereof, said ring being of less diameter than said tube to form an annular air-space therebetween and having an inwardly-deflected top, means for supporting the aforesaid parts in central relation to the wick-tube, and means for supplying air in limited volume to the space between the vertical ring and the wick-tube, substantially as specified.

26. In an oil-burner, the combination of an outer wick-tube, an inner wick-tube the top of which is below the level of the outer wick-tube, a spreader extending over said tubes and spaced a short distance therefrom, a frusto-conical perforated ring connected to said spreader, a vertically-extending ring of less diameter than the inner wick-tube, connected at its bottom to the frusto-conical ring and having its upper end deflected with the top thereof in about the plane of the outer wick-tube, means for supporting the aforesaid parts centrally with respect to the inner wick-tube, and means for admitting a limited quantity of air to the lower portion of the space between the vertical ring and the inner wick-tube and to the upper portion of said space through the inwardly-deflected portion of said ring, substantially as specified.

27. In a burner, the combination of a pair of wick-tubes, a spreader extending over said tubes, a ring surrounding said outer tube and having an outwardly-extending seat, a substantially vertical surface thereabove having perforations therethrough, and an inwardly-directed upper portion the top of which is above and spaced from the outer wick-tube, and a chimney having an inwardly-directed bottom portion supported on said seat, said portion being provided with perforations, substantially as specified.

28. In an oil-burner, the combination of a pair of wick-tubes, a spreader extending across said tubes, a ring surrounding and spaced from the outer tube with its upper end in proximity to the top of said tube and between the same and the spreader, a chimney supported on said ring, said chimney having an inwardly-directed bottom portion provided with perforations, there being perforations in said ring above the perforations in the chimney, substantially as specified.

29. In an oil-burner, the combination of an inner wick-tube, a spreader extending across said tube, a vertically-extending ring of less diameter than the inner tube and having its upper end in about the plane of the top of said tube, an outer wick-tube having a bead formed thereon adjacent its top, a ring surrounding said outer tube and spaced therefrom so as to afford an air-space between said ring and outer tube, said last-mentioned ring being provided with inwardly-extending projections to engage the bead on the outer tube whereby the ring is supported, substantially as specified.

30. The combination, with a fuel-supply pipe, of a burner, a hook projecting from one side of said burner and adapted to engage the under side of said supply-pipe, and means for detachably securing the opposite side of said burner to said pipe, substantially as specified.

31. The combination of a fuel-supply pipe, of a burner, said burner having projecting therefrom a hook adapted to engage said pipe, protecting material interposed between said burner and said pipe, and means for detachably securing the portion of said burner opposite said hook to said pipe, substantially as specified.

32. The combination, with a fuel-supply pipe, of a burner, a hook projecting from said burner, said hook having a portion of its shank extending along the pipe and the hoop portion embracing the lower portion of said pipe, and means for securing the burner, at another portion thereof, to said pipe, substantially as specified.

33. The combination of a fuel-supply pipe, of a burner-base, a hook projecting downwardly from said base and adapted to engage the under side of said pipe, and a metal strap detachably connecting the side of said base opposite the hook to said pipe, substantially as specified.

34. The combination of a fuel-supply pipe, said pipe having a nipple projecting therefrom provided with a central bore communicating with the pipe and an annular seat surrounding said bore, a burner having projecting therefrom a fuel connection the end of which is adapted to fit in said seat, and a flexible metal strap for detachably securing said connection to said nipple, substantially as specified.

35. The combination of a fuel-supply pipe having a seat thereon, of a burner having a projection adapted to engage said seat, a hook projecting from said burner and adapted to engage said pipes, a flexible strap extending around said pipe and said projection, and means for adjusting the tension of said strap, substantially as specified.

36. The combination of a fuel-supply pipe, of a burner, and means for securing said burner to said pipe, said means comprising a seat carried by the pipe and having a bore communicating therewith, a fuel connection projecting from the burner and adapted to engage said seat, a flexible metal strap extending around said pipe and said connection, and means for adjusting the tension of said strap, substantially as specified.

37. The combination of a fuel-supply pipe, a burner, means for detachably securing said burner to said pipe, and means comprising a seat carried by said pipe, a projection extending laterally from the burner and adapted to engage said seat, a flexible strap surrounding said projection and the pipe, said strap having inclined portions adapted to engage the pipe below the center thereof, and means for adjusting the tension of said strap, substantially as specified.

38. The combination of a fuel-supply pipe having a seat, a burner having a portion engaging said seat, a strap surrounding said burner portion and the pipe below the seat, said strap having inclined flexible portions adapted to engage said pipe, and means for adjusting the tension of said strap, substantially as specified.

39. The combination of a fuel-supply pipe having a seat, a burner having a projection engaging said seat, a strap having flexible portions surrounding said projection and said pipe, said strap having inclined portions positioned to engage said pipe below the center thereof, a bolt extending through the upper portion of said strap with its lower end in engagement with said projection, and a nut on said bolt within the upper portion of the strap, substantially as specified.

40. The combination of a fuel-supply pipe having a nipple projecting therefrom, said nipple being provided with a central bore communicating with the pipe and an annular seat surrounding said bore, a burner having a supply connection projecting therefrom, said connection being provided with a thimble the open end of which is adapted to fit said seat, and means for securing opposite portions of said burner to said pipe with the thimble in engagement with said seat, substantially as specified.

41. The combination of a fuel-supply pipe having a seat provided with a bore communicating with said pipe, a burner having a supply connection provided with a thimble the open end of which is adapted to engage said seat, a strap surrounding said thimble and pipe, and means for adjusting the tension of said strap, said strap being so shaped as to center the same whereby the tension thereof on said pipe and thimble is equalized when the strap is tightened, substantially as specified.

42. The combination of a fuel-supply pipe having a seat, a burner having a projection adapted to engage said seat, a strap surrounding said thimble and pipe, and means for adjusting the tension of said strap, said strap being so shaped as to be automatically centered when the strap is tightened, substantially as specified.

848,829. OIL-BURNER. WILLIAM R. JEAVONS, Cleveland, Ohio. Filed Mar. 6, 1906. Serial No. 304,468.

Claim.—1. In a burner of the class described, the combination of an inner and an outer wick-tube, and a spreader extending across the tops of said tubes and forming an airway therewith, said inner tube being provided with a flange extending inwardly from the upper end and having a portion toward the interior of the burner on a

higher plane than the portion adjacent to the inner wick-tube to form an air-barrier, substantially as specified.

2. In a burner of the class described, the combination of an inner and an outer wick-tube, a spreader extending across the tops of said tubes and forming an airway therewith, and a flange projecting inwardly directly from the top of the inner wick-tube and having a portion toward the interior of the burner on a higher plane than the top of the inner wick-tube, substantially as specified.

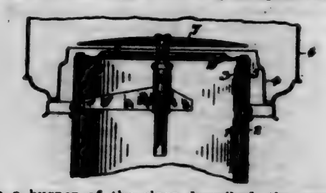

3. In a burner of the class described, the combination of an inner and an outer wick-tube, a collar surrounding said tubes with its top edge above the plane of the same, a spreader extending across the tops of said tubes and having its outer edge on a plane above the top edge of the collar, and a flange extending inwardly directly from the upper end of the inner wick-tube and having a portion in a higher plane than the top of the said wick-tube to form an air-barrier, substantially as specified.

4. In a burner of the class described, the combination of an inner and an outer wick-tube, a collar surrounding and spaced from the outer wick-tube with its upper edge in a higher plane than the top of said wick-tube, a spreader extending across the tops of said wick-tubes with its outer edge in a plane above the top edge of the collar, and a flange extending inwardly directly from the upper end of the inner wick-tube and having a portion above the plane of the top of said tube to form an air-barrier, substantially as specified.

5. In a burner of the class described, the combination of an inner and an outer wick-tube, a spreader extending across the tops of said tubes and forming an airway therewith, and a flange integral with the inner wick-tube and projecting inwardly from the top thereof, said flange having a portion toward the interior of the burner on a higher plane than the portion adjacent to the wick-tube to form an air-barrier for protecting the base of the wick.

6. In a burner of the class described, the combination of an inner and an outer wick-tube, a spreader extending across the tops of said tubes and spaced therefrom to form an airway therewith, and a flange projecting inwardly from the upper portion of the inner wick-tube and having a portion thereof in a higher plane than the top of said tube to form an air-barrier, said flange being provided with perforations for admitting air in limited volume therethrough.

7. In a burner of the class described, the combination of an inner and an outer wick-tube, a spreader extending across the tops of said tubes and forming an airway therewith, and a flange projecting inwardly from the upper end of said wick-tube and having a portion toward the interior of the burner on a higher plane than the top of said wick-tube, said flange being provided with perforations below the said portion for admitting air in limited volume therethrough.

8. In a burner of the class described, the combination of an inner and an outer wick-tube, a collar surrounding the outer wick-tube and spaced therefrom and having its upper edge above the upper edge of said wick-tube, a spreader extending across the tops of said tubes with its outer edge above the plane of the upper edge of the collar, and a flange extending inwardly from the upper portion of the inner wick-tube and having a portion on a higher plane than the top of said tube for the purpose of forming an air-barrier, there being perforations in said flange to permit the passage of a limited volume of air therethrough.

9. In a burner of the class described, the combination of an inner and an outer wick-tube, a collar surrounding the outer wick-tube and spaced therefrom, and having its upper edge above the upper edge of said wick-tube, a spreader of less diameter than the said collar and extending across the tops of the wick-tubes and forming an airway therewith, said spreader having its outer edge above the plane of the upper edge of the collar, and a flange extending inwardly from the top of the inner wick-tube and having a portion toward the interior of the inner tube on a higher plane than the portion adjacent to said tube for forming an air-barrier, said flange being provided with perforations below the highest portion or barrier thereof for admitting air in limited volume therethrough, substantially as specified.

848,830. WICK-TUBE. WILLIAM R. JEAVONS, Cleveland, Ohio. Filed Nov. 3, 1906. Serial No. 341,860.

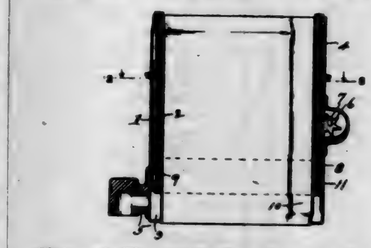

Claim.—1. The combination of a pair of wick-tubes, a wick therein, and a wick-raiser, each of said tubes having only at the section thereof which includes the point of engagement between the wick-raiser and the wick one or more projections which extend into the space between the tubes and narrow the same on both sides of said point of engagement and above and below the same, substantially as specified.

2. A pair of wick-tubes arranged to form an annular wick-space therebetween, a wick-raiser projecting into the space between said tubes, one of said tubes having one or more projections extending into the space between the tubes on both sides of said wick-raiser and extending above and below the same, the narrowed space thus provided constituting a portion only of the complete annular space between said tubes, substantially as specified.

3. The combination of a pair of wick-tubes arranged to form an annular space between them of greater width than the wick and so shaped as to contract said space at their upper ends to substantially the width of the wick, a wick and a wick-carrier in said space, means for raising and lowering the wick, means being provided in proximity to the wick-raising means for contracting the width of one section of the wick-space in a vertical direction both above and below the wick-raiser, substantially as specified.

4. The combination of a pair of cylindrical wick-tubes forming an annular wick-space between them, a wick-raiser carried by the outer tube, said tubes being fashioned to contract or narrow the wick-space, at one section only, in a vertical direction above and below the wick-raiser and said section extending circumferentially on both sides of said wick-raiser, substantially as specified.

5. The combination of a pair of wick-tubes having an annular space therebetween, a wick and wick-carrier in said annular space, a spur-wheel for raising and lowering said wick, and means for narrowing said wick-space to substantially the width of the wick and carrier at the section of said annular space which includes said wheel, such narrowed portion extending substantially from the top to the bottom of the wick-space.

6. The combination of a pair of wick-tubes having an annular space therebetween, a wick-raiser, and a wick-carrier in said space, said space being of greater width than is normally provided for the free movement of said wick and carrier therein and said space at the section including the wick-raiser being contracted to substantially the width of the wick and the carrier and such contracted space extending above and below said carrier, substantially as specified.

7. The combination of a pair of wick-tubes having therebetween an annular space which is contracted at the upper ends of said tubes, a wick and wick-carrier in said space, and a spur-wheel, means being provided for narrowing the width of the space between said tubes in the section which includes the spur-wheel to a width substantially equal to the width of the wick and carrier, the narrowed section thus provided extending both above and below said spur-wheel.

8. The combination of a pair of wick-tubes arranged to form therebetween an annular space which is narrowed at the upper ends of the tubes to substantially the thickness of the wick, a wick in said space, a wick-raiser for said wick, and means providing a contracted section in said annular space, said section extending from near the bottom of the tubes to near the top thereof and including between its circumferential limits the wick-raiser, substantially as specified.

9. The combination of a pair of wick-tubes having therebetween an annular space for the reception of a wick, a wick and wick-carrier within said space, a spur-wheel carried by the outer tube and arranged to engage the wick-carrier and raise and lower the same and the wick, and means providing a narrowed vertically-extending section of the annular space between said tubes, such narrowed section being of substantially the same width as the width of the wick and carrier and extending on both sides of the spur-wheel and substantially from the bottom to the top of the wick-tubes, substantially as specified.

10. The combination of a pair of wick-tubes having an annular space therebetween, a wick and wick-carrier in said space, the upper ends of said tubes converging to narrow the space therebetween at this point, a wick-raiser carried by the outer tube and engaging the wick and carrier, one of said tubes having one or more projections extending into the annular space and so arranged as to narrow the width thereof at one section only, such narrowed section extending vertically from the lower to the upper portion of said tubes and circumferentially on both sides of the wick-raiser.

11. The combination of a pair of wick-tubes having therebetween an annular space which is contracted at the upper end of said tubes, a wick and wick-carrier in said space, and a spur-wheel engaging said carrier and wick, one of said tubes having one or more projections extending into the annular space to form a contracted or narrowed section thereof, said narrowed section extending from the upper to the lower portion of said space and extending laterally on both sides of the spur-wheel.

848,831. INDICATOR ATTACHMENT FOR CALIPERS. JOHN E. KAMPE, Waltham, Mass. Filed June 18, 1906. Serial No. 322,264.

Claim.—1. An indicating attachment for calipers, comprising a pivotally-mounted socket, a post adjustably mounted in said socket, and an indicating-bar pivotally mounted on the end of said post, substantially as described.

2. An indicating device for calipers, comprising a sleeve pivotally mounted on a jaw of said calipers, a post slidably mounted in said sleeve, means to clamp said post in an adjusted position, and a double-ended indicating-bar, pivotally mounted in the outer end of said post, substantially as described.

3. An indicating attachment for calipers comprising a socket pivotally mounted on a jaw of said caliper, said socket having a split or bifurcated outer end, a post slidably mounted in said socket, a clamping band or collar arranged on the bifurcated outer end of the latter, a clamping-screw arranged in said band or collar to clamp the bifurcated outer end of said socket into engagement with said post, and a double-ended indicating-bar pivotally mounted on the outer end of said post, substantially as described.

4. An indicating attachment for calipers comprising a socket pivotally mounted on a jaw of said caliper, said socket having a split or bifurcated outer end, a post slidably mounted in said socket, a clamping band or collar arranged on the bifurcated outer end of the latter, a clamping-screw arranged in said band or collar to clamp the bifurcated outer end of said socket into engagement with said post, an indicating-bar pivotally mounted in the outer end of said post, said bar having obliquely-disposed beveled ends, and curved beveled recesses formed in one edge thereof, substantially as described.

5. An indicating attachment for calipers comprising a socket pivotally mounted upon one member of the caliper-jaws, said socket having a split or bifurcated outer end, a post slidably mounted in said socket, means to clamp the bifurcated outer end of said socket on said post, a bifurcated head formed on the outer end of the latter, a pivot-screw arranged in said head, and an indicating-bar pivotally mounted on said pivot-pin, said bar having beveled indicating points or edges formed on each end thereof, substantially as described.

848,832. HAY-STACKER. AARON F. KEARNS, Moscow, Okla. Filed June 4, 1906. Serial No. 320,152.

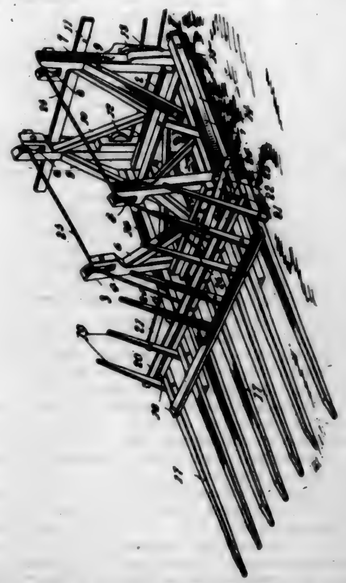

Claim.—1. In a stacker, the combination of a framework comprising runners, pairs of front and rear posts projected upward from the runners, a cross-bar connecting the rear pair of posts near their upper ends and having its end portions projected laterally beyond the said rear posts to form stops, a fork or load-carrier comprising longitudinal bars having pivotal connection with said posts, a cross-bar and braces connecting said longitudinal bars of the

fork and adapted to rest upon the runners and support the fork or load-carrier in approximately horizontal position, and means for raising and lowering the said fork or load-carrier.

2. A hay-stacker comprising the following elements in combination, namely, runners, transverse connecting-pieces at opposite ends of the runners, posts projecting upwardly from the end of the runners and provided at their upper ends with rollers, a pair of braces for each post interposed between the same and the runners and their connecting-pieces, a cross-bar connecting the rear posts near their upper ends and extended to form stops, longitudinal bars pivoted to the rear posts, cross-bars connecting the front portion of the longitudinal bars and forming a rake-head, tines secured to said cross-bars, fingers pivoted to the tines, braces pivoted to certain fingers and having adjustable connection with the longitudinal bars, a rail secured to the fingers with which said braces are connected and forming a support for the remaining fingers, and operating-cords attached to the rake-head and passing over the rollers at the upper ends of the aforesaid posts and adapted to have the operating force applied thereto.

848,833. METHOD FOR PREPARING HALF-TONE PRINTING-PLATES. LAWRENCE KERN, Dayton, Ky. Filed Feb. 8, 1906. Serial No. 300,043.

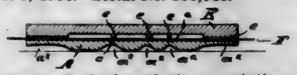

Claim.—The method of producing a printing-plate, of the kind here in view, and which method consists of first decreasing the thickness of the plate from its under side and below such parts only of its printing-face which are intended to produce high lights and blended effects adjacent thereto, and of afterward depressing these parts below the level of the printing-face by applying positive pressure directly against such face, contact of the pressure-exerting means being limited to the deepest portions only of the surface to be depressed, and which portions are caused to produce absolute high lights by being depressed below printing contact, additional surface portions adjacent to these deepest portions being also drawn in, the transition from the normal face being on a gradual curve so that the printing on these curved surfaces takes place with an evenly-graduated contact, whereby the blended effects adjacent to the high lights are produced.

848,834. SYSTEM OF VENTILATING SUBWAYS. WALTER E. LAMB, Ransomville, N. Y. Filed July 16, 1906. Serial No. 326,446.

Claim.—1. In a system of ventilating subways and in combination with a subway, a fresh-air-inlet passage communicating at one end with the subway, an automatically-operating closure for the fresh-air-inlet passage permitting ingress of air to the subway, but preventing egress or outlet of such air through said passage, and doors situated at a suitable point in the length of the passage to regulate the quantity of air to be drawn into the same.

2. In a system of ventilating subways and in combination with a subway, an auxiliary fresh-air passage communicating with the subway, and a partition longitudinally of the subway and arranged opposite the mouth of the air-passage aforesaid.

3. In a system of ventilating subways and in combination with a subway, an auxiliary fresh-air passage communicating with the subway, a partition longitudinally of the subway and arranged opposite the mouth of the air-passage aforesaid, said partition being provided with a plurality of openings, and means for closing and opening said openings of the partition.

4. In a system of ventilating subways and in combination with a subway, a plurality of tracks arranged in said subway, an auxiliary fresh-air-inlet passage communicating with the subway, and a partition arranged in the subway longitudinally thereof, said partition being located opposite the mouth of the auxiliary air-passage and between the tracks aforesaid.

5. In a system of ventilating subways and in combination with a subway, a plurality of tracks arranged in said subway, an auxiliary fresh-air-inlet passage communicating with the subway, a partition arranged in the subway longitudinally thereof, said partition being located opposite the mouth of the auxiliary air-passage and between the tracks aforesaid, the partition having a plurality of openings therein, means for closing and opening said openings of the partition, and means in the length of the auxiliary air-passage permitting air to pass into the subway through said passage but preventing air from escaping from the subway therethrough.

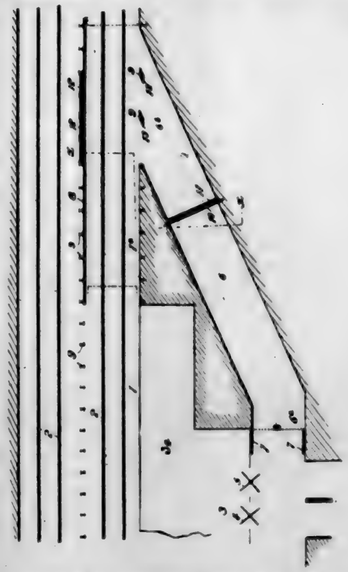

6. In a system of ventilating subways and in combination with a subway, a plurality of tracks arranged in said subway, an auxiliary fresh-air-inlet passage communicating with the subway, a partition arranged in the subway longitudinally thereof, said partition being located opposite the mouth of the auxiliary air-passage and between the tracks aforesaid, the partition having a plurality of openings therein, means for closing and opening said openings of the partition, valve means for the auxiliary air-passage permitting air to pass into the subway through said passage but preventing air from escaping from the subway therethrough, and means for regulating the quantity of air admitted to the subway through the auxiliary passage.

7. In a system of ventilating subways and in combination with a subway, a plurality of tracks arranged in said subway, an auxiliary fresh-air-inlet passage communicating with the subway, a partition arranged in the subway longitudinally thereof, said partition being located opposite the mouth of the auxiliary air-passage and between the tracks aforesaid, the partition having a plurality of openings therein, means for closing and opening said openings of the partition, means in the length of the auxiliary air-passage permitting air to pass into the subway through said passage but preventing air from escaping from the subway therethrough, and doors arranged to regulate the quantity of air admitted to the subway through the auxiliary air-passage.

848,835. CHALK HOLDER AND GUARD. WILLIAM R. LEMOY, Oceanpark, Cal. Filed Apr. 2, 1906. Serial No. 309,302.

Claim.—1. A chalk-holder having a recess to receive and fit the chalk, said recess having an enlargement near its inner end, and an elastic guard device fitting in said recess and bent to engage said enlargement of the recess and provided with elastic arms, and having an inbent portion to engage the chalk.

2. A chalk-holder comprising a body having a recess to receive and fit the chalk and provided with an enlargement near the inner end of said recess, and a bent guard of elastic material formed to fit and slide in the recess and having its arms bent to engage said enlargement and formed with inbent ends to engage the chalk.

848,836. MULTIPLE PUMP. JOHN F. LIEBENTRITT, Bankstown, near Sydney, New South Wales, Australia. Filed July 18, 1905. Serial No. 270,230.

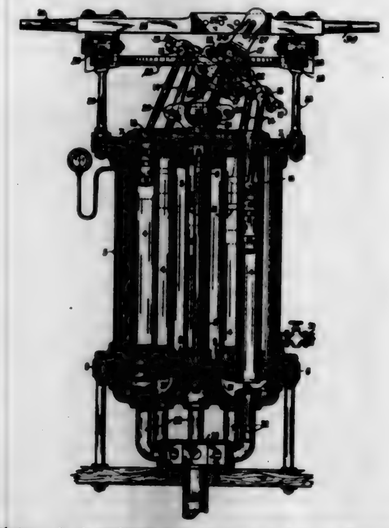

Claim.—1. A multiple pump comprising a circular series of pump-barrels, pistons operating in the barrels, an inclined spindle, an inclined disk mounted on the spindle and connected with the pistons, a rotary operating device eccentrically connected with the spindle, and means for adjusting the spindle to change the inclination thereof.

2. A multiple pump embodying a circular series of pump-barrels, pistons operating in the barrels, an inclined spindle, an actuating disk or plate mounted on the spindle and connected with the pistons, and a rotary operating device, said spindle being adjustably connected with the operating device and movable toward and from the center thereof, whereby the inclination of the spindle is changed.

3. A multiple pump embodying a casing, a plurality of pump-barrels, pistons operating in the barrels, a superimposed annular track, a rotary operating device mounted on the track, an inclined spindle eccentrically connected with the rotary operating device, and an inclined disk or plate mounted on the spindle and connected with the pistons.

4. A multiple pump comprising a plurality of pump-barrels, pistons operating in the barrels, a superimposed annular track, an operating cross-bar arranged diametrically of the track and mounted thereon at opposite sides thereof and provided with a slot, an inclined spindle adjustably secured in the slot of the cross-bar and movable toward and from the center to change its inclination, and a plate or disk mounted on the spindle and connected with the pistons.

848,837. CARPENTER'S FLOOR-VISE. RUDOLPH MARZ and JOHN P. SCHNEIDER, Newport, Ky. Filed June 11, 1906. Serial No. 321,155.

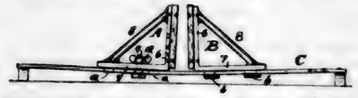

Claim.—1. In a carpenter's floor-vise, the combination of a base provided on its under side with legs, one at each end whereby the same is supported with a clear space below it and between said legs, there being also spaced longitudinal slots in the base between its legs, coacting clamping-jaws removably seated on this base and provided with lugs on their under side which are fitted to the slots in the base whereby these jaws are positioned, the lugs of one jaw being hook-shaped to prevent displacement of this particular jaw, and a set-screw carried by the other jaw and occupying the slot below it whereby this jaw is adjustably held, the base upon which these jaws are mounted consisting of an elongated piece of steel so that the weight of an object may act upon this base in a manner to actuate the jaws automatically for the purpose of gripping or releasing such object.

2. In a carpenter's floor-vise, the combination of a one-piece base consisting of an integral blade of spring-steel which is provided on its upper side with two clamping-jaws mounted so as to be adjustable with reference to each other, and having on its under side two legs, one at each end whereby said steel blade is supported with a clear space below it which permits the same to yield downwardly when affected by the weight of work placed on its upper side and between the jaws thereat.

848,838. ATTACHMENT FOR HATS. WILLIAM L. MAYNARD, Hudson, Mich. Filed July 31, 1906. Serial No. 328,596.

Claim.—1. An attachment for hats embodying suitable securing means for fastening the same thereto, other means normally occupying a position within the hat so as not to obstruct or prevent placing of the article upon the head, and means for holding the last-mentioned means in a position preventing placing of the hat properly upon the head.

2. In combination with a hat, an attachment therefor embodying means for fastening the same to the hat, members normally occupying positions within the hat so as not to interfere with placing the article upon the head, and means for holding said members in such positions that they project downwardly from the crown of the hat and prevent placing of the hat properly upon the head.

3. In combination with a hat, an attachment therefor including a band or strip fastened within the hat, and members pivoted to the said band or strip and normally occupying positions in which they project upwardly toward the crown of the hat, said members being movable to occupy positions extending away or downwardly from the crown of the hat, and means for holding the members in the last-mentioned positions.

4. In combination with a hat, an attachment therefor consisting of coöperating members pivotally connected with

the hat at opposite sides thereof, means normally holding said members in positions in which they extend toward the crown of the hat, and interlocking means between the members for holding the same in positions in which they extend from the crown of the hat to prevent placing of the article upon the head of the wearer.

5. In combination with a hat, an attachment therefor consisting of coöperating members pivotally connected with the hat at opposite sides thereof, means normally holding said members in positions in which they extend toward the crown of the hat, and means for holding the said members in positions in which they extend from the crown of the hat to prevent placing of the article upon the head of the wearer, one of the members constituting a name-plate.

6. In combination with a hat, an attachment therefor consisting of coöperating members pivotally connected with the hat at opposite sides thereof, means normally holding said members in positions in which they extend toward the crown of the hat, and means for holding the said members in positions in which they extend from the crown of the hat to prevent placing of the article upon the head of the wearer, one of the members constituting a name-plate, the other of the members comprising a loop of wire material adapted to interlock with the name-plate.

848,839. GAME APPARATUS. DAN C. MONROE, Huntsville, Ala. Filed Oct. 19, 1906. Serial No. 339,664.

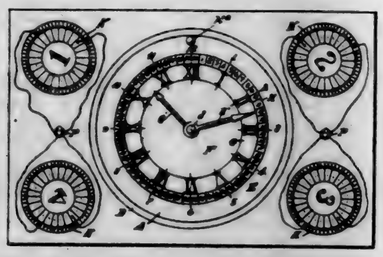

Claim.—1. A game apparatus, comprising a game-board containing the representation of a clock-face, embodying Roman numerals for the hours and a circular series of Arabic numerals designating the minutes, the two sets of numerals being of contrasting colors and freely-pivoted dummy hands mounted within the clock-face, said hands being of contrasting colors corresponding to the colors of the two sets of numerals.

2. A game apparatus embodying a game-board, a disk mounted to turn on said board and provided with the representation of a clock-face, whereby the disk may be turned to bring the clock-face into proper position for a player, and dummy hands pivoted to freely turn around the clock-face.

3. A game apparatus comprising a game-board provided with a depression in its upper face, and a socket at the center of the depression, a disk received in said depression and provided with a central boss or extension fitting in the said socket and constituting a pivot around which the disk may turn, a retaining-ring secured to the game-board and extending over the outer edge of the disk, a pivot-pin in said disk at the center thereof, the said disk containing the representation of a clock-face, and freely-pivoted dummy hands mounted within the clock-face.

4. A game apparatus, comprising a game-board containing the representation of a clock-face, dummy hands pivotally mounted within the clock-face, the clock-face embodying two concentric sets of numerals designating the hours and minutes, respectively, and a counter displayed on said board and embodying two concentric circles of numerals, one circle or set of numerals running from one to twenty-four and the other from one to sixty, there being provided a peg-socket for each of said numerals.

848,840. SKIMMING DEVICE FOR MOLTEN METALS. GEORGE W. MOORE, Burlington, N. J. Filed June 30, 1906. Serial No. 324,170.

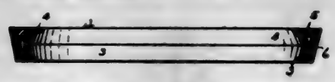

Claim.—1. The combination of a molten-metal-pouring vessel and an annular ring, smaller in diameter than the inside diameter of said vessel, said ring having its outer surface tapered from the bottom outwardly, its inner surface parallel with said outer surface for the lower half thereof and the upper half of its surface tapered inwardly at an angle to said lower portion forming an annular pocket around the center of said inner wall, substantially as and for the purpose described.

2. As an article of manufacture, an annular ring of plumbago having its outer surface tapered from the bottom outwardly, the lower portion of its inner surface parallel with said outer surface and the upper portion thereof tapered inwardly and at an angle to said parallel portion thus forming a central circumferential depression in the inner wall of said ring.

3. As an article of manufacture, an annular ring of plumbago having an annular band of asbestos cast in the body thereof, said ring having its outer surface tapered outwardly from bottom to top surface, the lower portion of the inner surface being parallel with said outer surface and the upper portion tapered inwardly at an angle to the lower portion, substantially as and for the purpose described.

848,841. MACHINE FOR LAYING UNDERGROUND DRAIN-TILES. MARSENA P. MCCULLOCH, Red Oak, Iowa. Filed Aug. 2, 1906. Serial No. 328,938.

Claim.—1. A tile carrier and layer comprising longitudinal side sections, connected together at their front ends and otherwise separated from each other at their upper and lower sides to enable a stop-stake to be driven between them and into the ground below, for the purpose set forth.

2. A hollow tile carrier and layer of the class described having a bottom, sides and top portions, said top portions adapted to be opened at points between the ends of the tile carrier and layer, in combination with a relatively fixed stop device to cause such tiles as are in the carrier and layer in rear of such stop device to be forced out of said carrier and layer by the motion of the latter, said stop device coacting with the top portions of said tile carrier and layer, while the latter is in motion, to open said top portions in advance of such stop device to enable tiles to be placed in such tile carrier and layer in front of such stop device.

3. A hollow tile carrier and layer of the class described having an elastic bottom, elastic sides and elastic top portions, said top portions adapted to be opened at points between the ends of the tile carrier and layer, in combination with a relatively fixed stop device to cause such tiles as are in the carrier and layer in rear of such stop device to be forced out of said carrier and layer by the motion of the latter, said stop device coacting with the top portions of said tile carrier and layer, while the latter is in motion, to open said top portions in advance of such stop device to enable tiles to be placed in such tile carrier and layer in front of such stop device.

848,842. SAW-TOOTH. LAWRENCE G. MCKAM, New Westminster, British Columbia, Canada. Filed June 27, 1906. Serial No. 323,716.

Claim.—1. In a saw; parallel pillar-teeth backwardly raked from the line of the direction of cut, the top of each tooth being angled from the front face thereof to afford the necessary amount of clearance, and the top and cutting-face of each adjacent tooth ground to a moderate bevel to opposite sides of the blade.

2. In a saw; parallel pillar-teeth backwardly raked from the line of direction of cut at an angle of approximately seventy degrees, the top of each tooth being approximately normal to the cutting-face, and the top and cutting-faces of adjacent teeth beveled to an angle of approximately forty-five degrees to offer a cutting edge on alternate sides of the saw-blade.

3. In a saw; parallel pillar-teeth backwardly raked from the line of direction of cut at an angle of approximately seventy degrees, the tops of such teeth being approximately normal to the cutting-faces thereof, the tops and cutting-faces of the teeth being beveled to an angle of about forty-five degrees so as to offer a cutting edge on adjacent teeth to opposite sides of the saw-blade, the backs of the teeth being square to the face of the saw-blade, the gullets about equal to the width of the teeth, and the adjacent teeth "set" to opposite sides of the blade a sufficient amount to afford clearance for the blade.

848,843. COUNTER. DAVID L. NEWCOMB, San Diego, Cal. Filed Mar. 3, 1903. Serial No. 145,931.

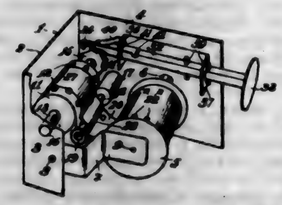

Claim.—1. In a counter, a strip, means for propelling said strip embracing a plurality of ratchets having oppositely-facing teeth, an operating-rod, a push-pawl formed rigidly on said rod and movable over one of said ratchets, and a lug on said rod movable into position for engagement with the other ratchet.

2. In a counter, a frame, a strip provided with definite symbols, means for supporting said strip in a compact form in said frame, a sprocket-drum mounted on the frame, said strip passing over said sprocket-drum, a stripper comprising a plate of spring metal, the stripping edge of said plate being provided with two notches, said stripper being attached to said frame, the stripping edge of said stripper bearing against said sprocket-drum, said notches registering with the teeth of said sprocket-drum and allowing rotation of the same.

3. In a counter, a frame formed of a single piece of sheet metal, a strip provided with a series of definite symbols, means for supporting said strip in a compact form in said frame, a drum rotatably mounted on said frame, means on said drum for engaging said strip and actuating the same, a ratchet axially connected with said drum, a pair of lugs formed out from one side of said frame, each lug having a slot, the lug nearest the ratchet having an elongated slot, an operating-rod passing through both of said slots, means on the end of said operating-rod for engaging said ratchet, a folded flat spring interposed between the upper wall of said elongated slot and the upper face of said operating-rod, a lip formed on the upper member of said spring hooked against the upper wall of the slot, and a lug on the lower member of the spring bearing against the side of said operating-rod and holding said spring in position.

4. In a counter, a frame formed of a single piece of sheet metal, a strip provided with a series of definite symbols, means for supporting said strip in a compact form in said frame, a drum rotatably mounted on said frame, means on said drum for engaging said strip and actuating the same, a ratchet axially connected with said drum, a pair of lugs formed from one side of said frame, each lug having slots, the lug nearest the ratchet having an elongated slot, an operating-rod passing through both of said slots, means on the end of said operating-rod for engaging said ratchet, and a folded flat spring interposed between the upper wall of said elongated slot and the upper face of said operating-rod.

5. In a counter, a frame, a spool rotatably mounted at one end on said frame, a spring-arm pivoted to said frame and supporting the other end of the spool and frictionally bearing against said spool, a strip wound on said spool, said strip having a series of definite symbols, and means for actuating said strip step by step and causing said symbols to sequentially appear at a definite point.

6. In a counter, a frame, a strip provided with a series of definite symbols, means for retaining said strip in a compact form in said frame, a drum rotatably mounted on said frame, means on said drum for engaging said strip and actuating the same, the front plate of said frame having an aperture, a guard covering said aperture, a stripper bearing against said drum, said strip passing over said drum and stripper and through the front plate of said frame and through said guard.

7. In a counter, a frame, a strip provided with a series of definite symbols, a guard on said frame, said guard having a sight-aperture, means on said frame for propelling said strip through said guard and projecting said symbols sequentially in said sight-aperture, and a plate having a thin edge forming the lower wall of said sight-aperture.

8. In a counter, a frame, a strip provided with a series of definite symbols, a guard on said frame, said guard having a sight-aperture, means on said frame for propelling said strip through said guard and proecting said symbols sequentially in said sight-aperture, and a knife carried by said guard.

9. In a counter, a frame, a strip provided with a series of definite symbols, a guard on said frame, said guard having a sight-aperture, and means on said frame for propelling said strip through said guard and projecting said symbols sequentially in said sight-aperture.

10. In a counter, a frame, a strip provided with a series of definite symbols, means for supporting said strip in a

compact form on said frame, a drum rotatably mounted on said frame, means on said drum for engaging said strip, and propelling the same, a double ratchet axially connected with said drum, an operating-rod slidably mounted on said frame, a lug on the end of said operating-rod engaging the teeth of one of said ratchets, a detent formed near the end of said operating-rod and engaging the other ratchet, said detent and lug being spaced apart, and means for yieldingly holding the working end of said operating-rod close to said double ratchet.

11. In a counter, a frame, a strip provided with a series of definite symbols, means for supporting said strip in a compact form on said frame, a drum rotatably mounted on said frame, a double ratchet connected with said drum, the teeth of one of said ratchets facing opposite from the teeth of the other ratchet, an operating-rod slidably mounted on the frame, one end of the operating-rod being formed in a detent which engages one of said ratchets, a lug on said operating-rod engaging the teeth of the other ratchet, and means on the drum for engaging said strip and propelling the same.

12. In a counter, a strip provided with a series of definite symbols, means for supporting said strip in a compact form in said frame, a drum rotatably mounted on the frame, a ratchet connected to said drum, means on the drum for engaging said strip and propelling the same, a ratchet connected with the drum, an operating-rod slidably mounted on the frame, one end of the operating-rod being formed as a detent and engaging said ratchet, and a spring retaining-pawl engaging said ratchet.

13. In a counter, a frame, a strip having a series of definite symbols, means for supporting said strip in a compact form in said frame, a drum rotatably mounted on said frame, means on said drum for engaging said strip, a ratchet connected to said drum, an operating-rod slidably mounted on the frame, one end of the operating-rod being formed as a detent and engaging said ratchet, means for yieldingly holding said detent in engagement with said ratchet, and means for normally locking said drum from movement in both directions.

14. In a counter, a frame, a strip provided with a series of definite symbols, means for supporting said strip in a compact form in said frame, a drum rotatably mounted on said frame, means on said drum for moving said strip, a ratchet connected with said drum, an operating-rod, means for supporting said operating-rod embracing a lug having an elongated slot, a pawl on the edge of said operating-rod, and a spring engaging said operating-rod and forcing said pawl against said ratchet, and means for positively locking the teeth of said operating-rod.

15. In a counter, a frame, a strip provided with a series of definite symbols, means for supporting said strip in a compact form in said frame, a drum rotatably mounted on said frame, means on said drum for moving said strip, a ratchet connected with said drum, an operating-rod, means for supporting said operating-rod embracing a lug having an elongated slot, a pawl on the end of said operating-rod, and a spring engaging said operating-rod and forcing said pawl against said ratchet.

16. In a counter, a frame, a strip provided with a series of definite symbols, means for supporting said strip in a compact form in said frame, means for actuating said strip, a drum in said frame, a ratchet connected with the drum, an operating-rod, means on the frame slidably supporting the operating-rod and allowing it an up-and-down movement, and a push-pawl on the end of said operating-rod for engaging said ratchet.

17. In a counter, a frame, a spool rotatably mounted on the frame, a strip wound on the spool, said strip being provided with a series of perforations and with a series of symbols having a definite relation to the perforations, a sprocket-drum rotatably mounted on the frame, said strip passing over the sprocket-drum, teeth on the drum engaging the perforations in said strip, a stud having a contracted neck, a tension-band having a loop at its lower end, said loop encircling said neck, the upper end of the tension-band being hooked over the strip and pressing the strip against the surface of the sprocket-drum, and means for rotating said sprocket-drum step by step and bringing the symbols on said strip sequentially into a definite position.

18. In a counter, a frame, two rotatable elements thereon, a strip coiled on one element but not on the other, the latter element having teeth, the strip having perforations and symbols and making operative connection with the toothed element, a tension-band curved substantially concentric with the toothed element and holding the strip in contact with the element, and a rod provided with a retaining-pawl and a push-pawl for rotating the said toothed element step by step and sequentially bringing said symbols into a definite position.

19. In a counter, a strip provided with a series of perforations, a series of symbols placed in definite relation to the perforations, means for actuating said strip step by step, and bringing said symbols sequentially into a definite position, and means for locking said strip.

20. In a counter, a frame, a spool having a shaft extending beyond one of the flanges thereof, a stud on the frame, said shaft being mounted on said stud, means for retarding the rotation of said spool, a strip wound on said spool, said strip being provided with a series of perforations along the edge thereof and with a series of symbols arranged thereon in definite relation to the perforations, a sprocket-drum mounted on the frame, teeth on the sprocket-drum, said strip passing over said drum, the teeth of the drum engaging the perforations in the strip, and means for rotating said drum step by step and bringing the symbols on said strip sequentially into a definite position, said strip being severable and having a free unconfined end which is accessible, so that the exposed portion may be severed from the rest of the strip, and means for locking said strip.

21. In a counter, a frame, a spool rotatably mounted on the frame, means for frictionally retarding the rotation of the spool, a strip wound on the spool, said strip being provided with a series of perforations along the edge thereof and having a series of symbols arranged thereon in definite relation to said perforations, a sprocket-drum rotatably mounted on the frame, teeth on the drum, said strip passing over the drum, and the teeth of said drum engaging the perforations in said strip, means for actuating said drum step by step and bringing the symbols sequentially into a definite position, said strip being severable and having a free unconfined end which is accessible, so that the exposed portion may be severed from the rest of the strip, and means for locking said strip.

22. In a counter, a frame, a spool rotatably mounted thereon, a strip wound thereon, said strip being provided with a series of perforations along the edge thereof, a sprocket-drum rotatably mounted on the frame and provided with sprocket-teeth, said strip passing over said drum, the teeth of the drum engaging with the perforations in the strip, means for rotating said drum step by step and bringing said symbols sequentially into a definite position, said strip being severable and having a free unconfined end which is accessible, so that the exposed portion may be severed from the rest of the strip, and means for locking said strip.

23. In a counter, a strip provided with a series of perforations spaced equally apart and arranged along each edge thereof, said strip being provided with definite symbols arranged between the two rows of perforations, each symbol occupying a position linearly midway of adjacent pairs of transversely-opposite perforations, means coacting with said perforations for actuating said strip step by step and bringing said symbols sequentially into a definite position, said strip being severable and having a free unconfined end which is accessible so that the exposed portion may be severed from the rest of the strip, and means for locking said strip.

24. In a counter, a strip provided with rectangular perforations along each edge thereof, each perforation on one edge registering with a corresponding perforation on the opposite edge, said strip having definite symbols arranged between said perforations, each symbol bearing a definite relation to each pair of opposite perforations, means coacting with said perforations for actuating said strip step by step and bringing said symbols sequentially into a definite position, said strip being severable and having a free unconfined end which is accessible so that the exposed portion may be severed from the rest of the strip, and means for locking said strip.

25. In a counter, a strip provided with perforations, said perforations being spaced equally apart, said strip being provided with symbols spaced equally apart and arranged between the perforations, means coacting with the perforations for actuating said strip step by step and bringing said symbols sequentially into a definite position, said strip being severable and having a free unconfined end which is accessible so that the exposed portion may be severed from the rest of the strip, and means for locking said strip.

26. In a counter, a strip provided with perforations along both sides thereof, said strip having definite symbols arranged between said perforations, means coacting with the perforations for actuating said strip step by step and bringing said symbols sequentially into a definite position, said strip being severable and having a free unconfined end which is accessible so that the exposed portion may be severed from the rest of the strip, and means for locking said strip.

27. In a counter, a flexible strip provided with a series of definite symbols and a series of perforations in definite relation to the symbols, means coacting with the perforations for moving said strip step by step and bringing the symbols sequentially into a definite position, said strip being severable and having a free unconfined end which is accessible so that the exposed portion may be severed from the rest of the strip, and means for locking said strip.

28. In a counter, a strip having definite symbols thereon, means for moving said strip step by step and bringing said symbols sequentially into a definite position, said strip being severable and having a free unconfined end which is accessible so that the exposed portion may be severed from the rest of the strip, and means for locking said strip.

29. A counter comprising a free-ended strip having symbols and perforations correspondingly spaced therealong; a sprocket fitting the perforations to advance the strip; a guard through which the free end of the strip extends, and a lock-ratchet for advancing the strip step by step through the guard.

30. A frame, a free-ended strip weakened at regular intervals and having symbols on the intervening portions, and means for positively moving said strip step by step a distance equal to the distance between adjacent weakened points and pushing the free end through said frame and means for locking said strip.

31. A frame, a free-ended strip, means for positively moving said strip step by step out of said frame, and means for positively locking said strip.

32. In a counter, a frame, a drum provided with indicating means, a double ratchet rotatable with said drum, an operating-rod slidably mounted on said frame, a lug on the end of said operating-rod engaging the teeth of one of said ratchets, a detent formed near the end of said operating-rod and engaging the other ratchet, said detent and lug being spaced apart, and means for yieldingly holding the working end of said operating-rod close to said double ratchet.

33. In a counter, a frame, a drum rotatably mounted on said frame and provided with indicating means, a double ratchet connected with said drum, the teeth of one of said ratchets facing opposite from the teeth of the other ratchet, and an operating-rod slidably mounted on the frame, one end of the operating-rod being formed in a detent which engages one of said ratchets, a lug being provided on said operating-rod engaging the teeth of the other ratchet.

34. In a counter, a frame, a drum provided with indicating means and toothed operating means, and a reciprocatory operating-rod provided with a detent for operating said toothed operating means and a lug for preventing accidental displacement thereof.

35. In a counter, a frame, a drum provided with indicating means, a double ratchet rotating with said drum, and a tilting, reciprocatory rod adapted to engage one set of ratchet-teeth to rotate the drum, said rod having a detent normally engaging the other set of ratchet-teeth.

848,844. DOUBLE-ACTION PRESS. FRANK C. B. PAGE, New York, N. Y., assignor to E. W. Bliss Company, a Corporation of West Virginia. Filed Sept. 12, 1903. Serial No. 172,856.

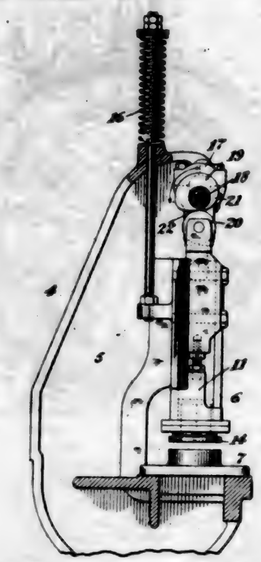

Claim.—1. In a press, the combination with a die, having a main aperture and an auxiliary aperture, communicating with each other, the main aperture being of greater depth than the auxiliary aperture, two members slidably mounted, a main plunger on one of said members, an auxiliary plunger on the other of the said members, and mechanism for moving the main and auxiliary plungers respectively into the main and auxiliary apertures, the parts being so arranged that both plungers act to cut out the blank and to move it into the said apertures after which the motion of the auxiliary plunger ceases while the motion of the main plunger continues thereby drawing up the blank by moving it entirely into the main aperture.

2. In a press, the combination with a die, having a main aperture and an auxiliary aperture, communicating with each other, the main aperture being of a greater depth than the auxiliary aperture, two members slidably mounted, a main plunger on one of said members, and an auxiliary plunger on the other of the said members, and mechanism for moving the main and auxiliary plungers respectively into the main and auxiliary apertures, the parts being so arranged that the main plunger acts to cut out the body of the blank and the auxiliary plunger acts to cut out a projection from the body of the blank, the said blank being thereby moved into the said apertures after which the motion of the auxiliary plunger ceases while the motion of the main plunger continues, thereby drawing up the blank by moving it entirely into the main aperture.

3. In a press, the combination with a lower female die, and an upper movable male die composed of two members, both of which act to cut the blank simultaneously, and one of which acts to draw up the blank.

4. In a press, the combination of a female die, two reciprocating members adapted to coact with the said die to simultaneously cut a blank, one of said members acting further on the blank by moving the portion cut out by the other member from under the same, thereby drawing it up.

848,845. ENGINE. ARTHUR J. PAIGE, Terre Haute, Ind. Filed Jan. 31, 1907. Serial No. 355,096.

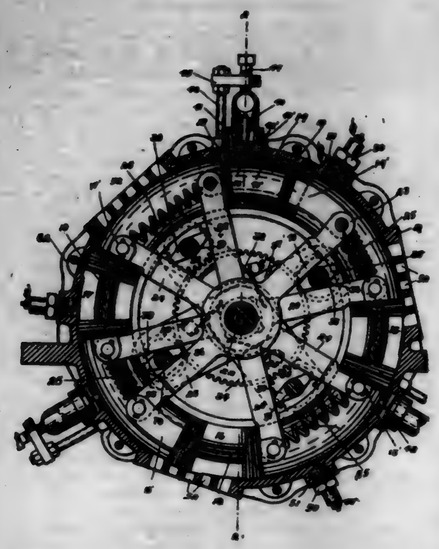

Claim.—1. In an engine, the combination with a main casing, of an expansion-chamber mounted in said main casing and movable therethrough around an axis, a piston arranged in said chamber and also movable around the same axis, a planetary element having its orbit around said axis, an abutment with which the planetary element has a rolling driving engagement, means connecting the expansion-chamber and piston with the planetary element whereby the expansive movement of the combustion-chamber and piston will rotate the planetary element.

2. In an internal-combustion engine, the combination with a main casing, of a combustion-chamber mounted in said main casing and movable therethrough around an axis, a piston arranged in said chamber and also movable around the same axis, a planetary element having its orbit around said axis, an abutment with which the planetary element has a rolling driving engagement, and means connecting the combustion-chamber and piston with the planetary element whereby the expansive movement of the combustion-chamber and piston will rotate the planetary element, means for introducing a combustible charge into the combustion-chamber, and means for firing the same.

3. In an engine, the combination of an expansion-chamber and piston therefor, means supporting said chamber and piston for orbituary movement, a planetary element having a rolling driving engagament with an abutment, the said abutment, and intermediate connections between said planetary element and the expansion-chamber and piston whereby relative expansive movement thereof will cause rotation of the planetary element.

4. In an internal-combustion engine, the combination, of a combustion-chamber and piston therefor, means supporting said chamber and piston for orbituary movement, a planetary element having a rolling driving engagement with an abutment, the said abutment, intermediate connections between said planetary element and the expansion-chamber and piston whereby relative expansive movement thereof will cause rotation of the planetary element, means for introducing a combustible charge into the combustion-chamber, and means for firing the same.

5. In an engine, the combination with a main casing having an orbituary chamber, of a pair of elements arranged therein to form between the same an expansion-chamber, means for supporting said pair of elements for orbituary travel through said orbituary chamber, said means permitting relative movement of said pair of elements, a planetary member having a rolling driving connection with an abutment, the said abutment, and connections between the said pair of elements and the planetary element for rotating the planetary element by relative separation of the said pair of elements.

6. In an internal-combustion engine, the combination with a main casing having an orbituary chamber, a fuel-induction port, an eduction-port, and an intermediate firing means, of a pair of elements arranged in the orbituary chamber to form between the same a combustion-chamber, means for supporting said pair of elements for orbituary travel through said orbituary chamber, said means permitting relative movement of said pair of elements, a planetary member having a rolling driving connection with an abutment, the said abutment, and connections between the said pair of elements and the planetary element for rotating the planetary element by relative separation of the said pair of elements.

7. In an engine, the combination with a shaft, of a pair of arms centered upon said shaft, an expansion-chamber carried by one of said arms, a piston fitted in said expansion-chamber and carried by the other of said arms, an abutment-gear, a planetary gear meshing with said abutment-gear, means for supporting said planetary gear for planetary movement about the abutment-gear, and intermediate connections between said planetary gear and the piston and combustion-chamber whereby relative expansive movement of the piston and combustion-chamber will rotate the planetary gear.

8. In an internal-combustion engine, the combination with a shaft, of a pair of arms centered upon said shaft, a combustion-chamber carried by one of said arms, a piston fitted in said combustion-chamber and carried by the other of said arms, an abutment-gear, a planetary gear meshing with said abutment-gear, means for supporting said planetary gear for planetary movement about the abutment-gear, intermediate connections between said planetary gear and the piston and combustion-chamber whereby relative expansive movement of the piston and combustion-chamber will rotate the planetary gear, a fuel-induction passage, an eduction-passage, and an intermediate firing means, said induction-passage, firing means, and eduction-passage being arranged to intermittently and successively register with the combustion-chamber during its orbituary travel.

9. In an engine, the combination with a shaft, of a pair of arms centered upon said shaft, an expansion-chamber carried by one of said arms, a piston fitted in said expansion-chamber and carried by the other of said arms, an abutment-gear, a planetary gear meshing with said abutment-gear, means for supporting said planetary gear for planetary movement about the abutment-gear, a cam carried by the planetary gear and having a sliding engagement with the supporting-arms whereby relative expansive movement of the piston and combustion-chamber will rotate the planetary gear.

10. In an internal-combustion engine, the combination with a shaft, of a pair of arms centered upon said shaft, a combustion-chamber carried by one of said arms, a piston fitted in said combustion-chamber and carried by the other of said arms, an abutment-gear, a planetary gear meshing with said abutment-gear, means for supporting said planetary gear for planetary movement about the abutment-gear, a cam carried by the planetary gear and having a sliding engagement with the supporting-arms whereby relative expansive movement of the piston and combustion-chamber will rotate the planetary gear, a fuel-induction passage, an eduction-passage, and an intermediate firing means, said induction-passage, firing means, and eduction-passage being arranged to intermittently and successively register with the combustion-chamber during its orbituary travel.

11. In an engine, the combination with a main casing having an annular chamber, of an expansion-chamber fitting said annular chamber and having an orbituary movement therethrough, a piston mounted in said expansion-chamber and movable in general therewith, a planetary element having a driving engagement with an abutment, the said abutment, means carried by said casing for introducing into said expansion-chamber an expansive fluid at a point in its orbituary travel, and connections between said planetary element and the piston and expansion-chamber whereby relative expansive movement of the expansion-chamber and piston will rotate the planetary element.

12. In an internal-combustion engine, the combination with a main casing having an annular chamber, an induction-port leading into said chamber, an eduction-port leading from said chamber and an intermediate firing means communicating with said chamber, of a combustion-chamber fitting said annular chamber and having an orbituary movement therethrough, the combustion-chamber having a port adapted to successively register with the induction-port, firing means and the eduction-port, a piston mounted in said combustion-chamber and movable in general therewith, a planetary element having a driving engagement with an abutment, the said abutment, and connections between said planetary element and the piston and combustion-chamber whereby relative expansive movement of the combustion-chamber and piston will rotate the planetary element.

13. In an engine, the combination with a casing having an annular chamber, of an expansion-chamber mounted therein and adapted to travel therethrough, a piston mounted in said expansion-chamber and adapted to travel in general therewith but having a relative movement therein, an abutment-gear, a planetary gear meshing therewith, and intermediate connections between said planetary gear and the expansion-chamber and piston.

14. In an internal-combustion engine, the combination with a casing having an annular chamber, a fuel-inlet port, an eduction-port, and an intermediate firing means, all communicating with the said annular chamber, of a combustion-chamber mounted in said annular chamber and adapted to travel therethrough, a piston mounted in said combustion-chamber and adapted to travel in general therewith but having a relative movement therein, an abutment-gear, a planetary gear meshing therewith, and intermediate connections between said planetary gear and the combustion-chamber and piston, the said combustion-chamber having a port adapted to successively register with the induction-passage, the firing means, and the eduction-passage of the casing.

15. In an engine, the combination with a casing having an annular chamber, of an expansion-chamber mounted therein and adapted to travel therethrough, a piston mounted in said expansion-chamber and adapted to travel in general therewith but having a relative movement therein, an abutment-gear, a planetary gear meshing therewith, a cam carried by the planetary gear, and means connected with said expansion-chamber and piston for engaging the said cam to rotate the same by expansive movement of the said chamber and piston.

16. In an internal-combustion engine, the combination with a casing having an annular chamber, a fuel-inlet port, an eduction-port, and an intermediate firing means, all communicating with the said annular chamber, of a combustion-chamber mounted in said annular chamber and adapted to travel therethrough, a piston mounted in said combustion-chamber and adapted to travel in general therewith but having a relative movement therein, an abutment-gear, a planetary gear meshing therewith, a cam carried by the planetary gear, means connected with said expansion-chamber and piston for engaging the said cam to rotate the same by expansive movement of the said chamber and piston, the said combustion-chamber having a port adapted to successively register with the induction-passage, the firing means, and the eduction-passage of the casing.

17. In an engine, the combination with a main casing having an annular chamber, of a central shaft, an expansion-chamber mounted in said annular chamber and adapted to travel therethrough, a piston mounted in said expansion-chamber and adapted to travel in general therewith but having a relative movement therein, a pair of arms centered upon said shaft and one attached thereto, one of said arms connected to the piston and the other of said arms connected to the expansion-chamber, a stationary gear, a planetary gear meshing with said stationary gear, and intermediate connections between said planetary gear and said arms whereby relative expansive movement of the expansion-chamber and piston will rotate the planetary gear.

18. In an internal-combustion engine, the combination with a main casing having an annular chamber, an induction-passage, a firing means, and an eduction-passage, all communicating with said annular chamber, of a central shaft, a combustion-chamber mounted in said annular chamber and adapted to travel therethrough, a piston mounted in said combustion-chamber and adapted to travel in general therewith but having a relative movement therein, a pair of arms centered upon said shaft and one attached thereto, one of said arms connected to the piston and the other of said arms connected to the combustion-chamber, a stationary gear, a planetary gear meshing with said stationary gear, and intermediate connections between said planetary gear and said arms whereby relative expansive movement of the combustion-chamber and piston will rotate the planetary gear.

19. In an engine, the combination with a main casing having an annular chamber, of a central shaft, an expansion-chamber mounted in said annular chamber and adapted to travel therethrough, a piston mounted in said expansion-chamber and adapted to travel in general therewith but having a relative movement therein, a pair of arms centered upon said shaft and one attached thereto, one of said arms connected to the piston and the other of said arms connected to the expansion-chamber, a stationary gear, a planetary gear meshing with said stationary gear, a cam carried by the planetary gear and engaging said arms whereby relative expansive movement of the expansion-chamber and piston will rotate the planetary gear.

20. In an internal-combustion engine, the combination with a main casing having an annular chamber, an induction-passage, a firing means, and an eduction-passage, all communicating with said annular chamber, of a central shaft, a combustion-chamber mounted in said annular chamber and adapted to travel therethrough, a piston mounted in said combustion-chamber and adapted to travel in general therewith but having a relative movement therein, a pair of arms centered upon said shaft and one attached thereto, one of said arms connected to the piston and the other of said arms connected to the combustion-chamber, a stationary gear, a planetary gear meshing with said stationary gear, a cam carried by the planetary gear and engaging said arms, whereby relative expansive movement of the combustion-chamber and piston will rotate the planetary gear.

21. In an engine, the combination with a casing having an annular chamber therein, of an expansion-chamber mounted therein and adapted to travel therethrough, packing-rings at the ends of said chamber between said expansion-chamber and the annular chamber, and longitudinal packing-strips at opposite sides of the combustion-chamber and interlocking at their ends with the packing members.

22. In an engine, the combination of an expansion-chamber and piston therefor, one of which is movable relative to the other, means supporting said chamber and piston for orbituary movement, a planetary element for rolling driving engagement with an abutment, the said abutment, and intermediate connections between said planetary element and the aforesaid relatively movable element whereby relative expansive movement thereof will cause rotation of the planetary element.

23. In an engine, the combination, of an expansion-chamber and piston therefor, one of which is movable relative to the other, means supporting said chamber and piston for orbituary movement, a planetary gear for rolling driving engagement with an abutment-gear, the said abutment-gear, and intermediate connections between said planetary gear and the aforesaid relatively movable element whereby relative expansive movement thereof will cause rotation of the planetary element.

848,846. **RECORDER.** DAVID PATTERSON, Denver, Colo. Filed July 9, 1906. Serial No. 325,233.

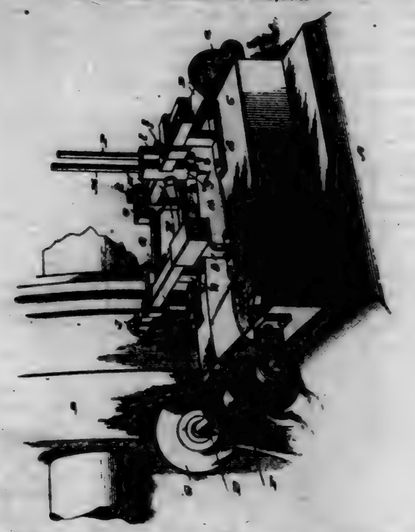

Claim.—1. A recorder for the purpose described, comprising a body, a device carried by the body and arranged to be moved by variations in the tire-tread of a wheel, at an angle to said tread, a marker connected and movable with said movable device, and means, also carried by the body, for moving means designed to receive the marking; the said means for moving the marking-receiving means having a wheel disposed at an angle to the direction of movement of the before-mentioned movable device and arranged to engage the side of the first-mentioned wheel and derive motion therefrom.

2. A recorder for the purpose described, comprising a body, a device carried by the body and arranged to be moved by variations in the tire-tread of a wheel, at an angle to said tread, a marker connected and movable with said movable device, a drum mounted on the body and arranged to rotate at an angle to the direction of movement of the movable device, and a second drum similarly mounted on the body and having a wheel disposed at an angle to the direction of movement of the movable device and arranged to engage a side of the before-mentioned wheel, said drum being designed to carry a ribbon arranged to receive the marking and also arranged to be fed off one of the said drums and on the other.

3. A recorder for the purpose described, comprising a body, a thrust-rod carried by the body and arranged to be moved endwise by variations in the tire-tread of a wheel, at an angle to said tread, a bar carried by the body and movable parallel to the thrust-bar, a lever fulcrumed at an intermediate point of its length and connecting the said bars, a marker carried by the second-mentioned bar, means for holding the thrust-bar under yielding pressure against a tire-tread, a drum mounted on the body and arranged to rotate at an angle to the direction of movement of the thrust-bar, and a second drum similarly mounted on the body and having a wheel disposed at an angle to the direction of movement of the movable device and arranged to engage a side of the before-mentioned wheel, said drums being designed to carry a ribbon arranged to receive the marking and also arranged to be fed off one of the drums and on the other.

4. A recorder for the purpose described, comprising a body, a thrust-rod carried by the body and arranged to be moved endwise by variations in the tire-tread of a wheel, at an angle to said tread, a bar carried by the body and movable parallel to the thrust-bar, a lever fulcrumed at an intermediate point of its length and connecting the said bars, a marker carried by the second-mentioned bar, means for holding the thrust-bar under yielding pressure against a tire-tread, a drum mounted on the body and arranged to rotate at an angle to the direction of movement of the thrust-bar, a second drum similarly mounted on the body and having a wheel disposed at an angle to the direction of movement of the movable device and arranged to engage a side of the before-mentioned wheel, said drums being designed to carry a ribbon arranged to receive markings and also arranged to be fed off one of the drums and on the other, a bar held against movement on the body, and a marker carried by the latter bar.

848,847. **FENCE-POST.** WILLIAM PETERSEN, Benton county, Iowa. Filed Jan. 21, 1907. Serial No. 353,284.

Claim.—1. A concrete fence-post, consisting of the combination of a body having reinforcing-strands embedded longitudinally in it near its edges, and provided with a plurality of apertures parallel with and inside said reinforcing-strands, and removable wire clips engaging the inside of said apertures, the outer surface of said post, and the fence-wire.

2. A fence-post, consisting of the combination with a concrete upright having a plurality of apertures near its longitudinal edges, of means inserted within said apertures for removably attaching planking to said post.

3. A fenbe-post, consisting of the combination with a concrete upright having longitudinal reinforcing-strands embedded therein, and provided with a plurality of apertures near its longitudinal edges between said strands and the center of the post, of means inserted within said apertures for removably engaging another body thereto.

848,848. **PLOW ATTACHMENT.** CLARENCE A. PHILLIPS, Middlebury, Vt. Filed Sept. 26, 1906. Serial No. 336,244.

Claim.—1. In combination with a plow comprising a shovel and a wing, an attachment consisting of a blade arranged at the upper edge of the wing and having its inner end extending over the upper end of the shovel.

2. In combination with a plow comprising a shovel and a wing, an attachment consisting of a blade arranged at the upper edge of the wing and having its inner end extending over the upper end of the shovel, the upper rear corner of the blade being curved forward to throw the dirt back upon the hill.

3. In combination with a plow comprising a shovel and oppositely-disposed wings, an attachment, the same comprising similar blades arranged above the wings, and having their inner ends extending over the upper end of the shovel and meeting on a central line, the upper rear corners of the blades being curved forward to throw the dirt back upon the hill.

848,849. **TELEGRAPHY.** WALTER P. PHILLIPS, New York, N. Y. Filed July 27, 1904. Serial No. 218,434.

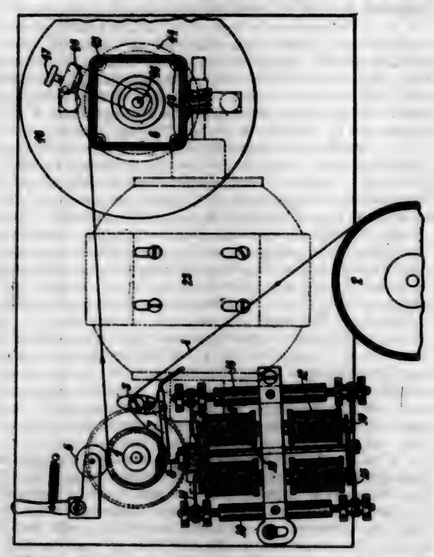

Claim.—1. A telegraphic recording instrument comprising in combination, two oppositely-acting magnets, armatures facing the poles of said magnets and rigidly connected together, a recording device carried by the armatures, flat springs supporting said armatures and adjustable supports for the opposite ends of the same, whereby said springs tend to maintain the armatures in a position of symmetry with respect to the magnets, as set forth.

2. A telegraphic instrument comprising in combination two oppositely-acting magnets, an armature adapted to be reciprocated thereby, a reactance-coil connected with said magnets, a source of current for energising the magnets and for charging the reactance-coil, and circuit-controlling devices for alternately energising the magnets and directing the discharge of the reactance-coil through the same, as and for the purpose set forth.

3. A telegraphic instrument comprising in combination two oppositely-acting magnets, an armature adapted to be reciprocated thereby, a reactance-coil connected with said magnets, a source of current for energising the magnets, a source of current for charging the reactance-coil, and circuit-controlling devices for directing the current from the first-named source through the two magnets alternately, and discharging the reactance-coil through the magnets at the instant of the interruption of the current through either, as and for the purpose set forth.

4. In a telegraphic instrument the combination with two oppositely-acting magnets and an armature system reciprocated thereby, of a reactance-coil in series with the magnets, a source of current for energising the magnets, a source of current for charging the reactance-coil, a circuit-controller and connections through the same from the sources of current to the magnets and reactance-coil, respectively, whereby the reactance-coil will discharge through the magnets at the instant of the interruption through either of the currents from the energising source, as set forth.

5. The combination with the oppositely-acting magnets of a telegraphic instrument, of a source of current, a circuit-controller for directing the current through the magnets alternately, a reactance-coil in series with the two magnets, a source of current for charging the same, one pole being connected to the middle point of the reactance-coil, and the other to the contact-lever of the circuit-controller, but in opposition to the other source, whereby one-half of the reactance-coil will be in circuit with its source while either magnet is energised, but permitted to discharge through the magnets when the energising-current is interrupted, as set forth.

6. In a telegraphic recording instrument the combination with two oppositely-acting magnets, rigidly-connected armatures, and flat springs supporting the same in a position of symmetry with respect to the poles of the magnets, of means for alternately energising said magnets, a reactance-coil in series therewith, means for charging the same, and directing the discharge through the magnets at the instant of the interruption of current through either in a direction to neutralise the residual magnetism of the one and impart the proper polarity to the other for the reciprocation of the armatures, as set forth.

7. A telegraphic recording instrument comprising in combination two oppositely-directed magnet-poles, armatures facing said poles and adapted to be reciprocated by the alternate attractive action thereof, a recording device carried by the armatures, flat springs supporting said armatures and adjustable supports for the opposite ends of the same, whereby said springs tend to maintain the armatures in a position of symmetry, with respect to the poles, as set forth.

848,850. **CHRISTMAS-TREE HOLDER.** CHARLES PISSAHL, Chicago, Ill. Filed Oct. 6, 1906. Serial No. 337,670.

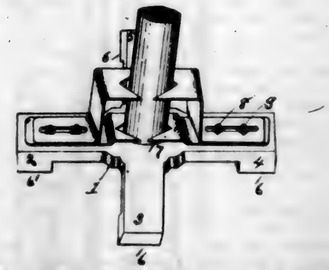

Claim.—1. A stand comprising a base, and a plurality of sets of independently-adjustable gripping devices mounted thereon, the devices of each set being slidable one on the other and arranged with their biting ends at different heights to grip the object to be supported at a plurality of points vertically separated from each other.

2. A stand comprising a base, a set of diametrically-disposed gripping devices mounted thereon, a second set of diametrically-disposed gripping devices mounted for adjustment independently of the first set, the devices of each set being arranged with slides in a direction transverse to the axis of the objects to be supported, and a common means for securing each set of devices to the base.

3. A stand comprising a base having radially-disposed arms, a plurality of pairs of gripping devices on diametrically-disposed arms of the base and provided with longitudinal slots, and means extending through the slots for securing the gripping devices to the arms for independent radial adjustment.

4. In a "Christmas-tree holder" the combination with the base formed of a single casting having arms and a central orifice, of two pairs of adjustable L-shaped members resting upon said base, bolts passing through orifices in the base and slots in the members and adjusting-nuts upon said bolts which bear upon the top members and binding the members and base together.

5. A stand comprising a base provided with a plurality of radial arms, a pair of radially-adjustable gripping members mounted on the arms, and having jaws on their inner ends, a second pair of radially-adjustable gripping mem-

bers on the base, and a common means for securing corresponding members of the pairs to the base.

6. A stand comprising a base provided with a central opening for receiving the bottom end of the object to be supported and with a plurality of radially-extended arms, a set of gripping devices mounted on the base and adjusted inwardly and outwardly with respect to the opening for engaging the object, and another set of gripping devices similarly adjustable and arranged with their inner ends to engage the said objects above the points of engagements of the first set.

7. A stand comprising a base provided with a central opening for receiving one end of the object to be supported and with a plurality of oppositely-extending arms, a pair of oppositely-disposed gripping devices radially adjustable on the base and having their inner ends formed into jaws for engaging the said objects, at one side of the base, and a second set of gripping devices adjustably mounted on the base and having their inner ends formed into jaws arranged to grip the said object at another point thereon axially spaced from the point of engagement of the first jaws.

848,851. MACHINE FOR MAKING PAPER SHELLS. ALFRED A. RAYMOND, Chicago, Ill., assignor to Raymond Concrete Pile Company, Trenton, N. J., a Corporation of New Jersey. Filed Feb. 26, 1904. Serial No. 195,411.

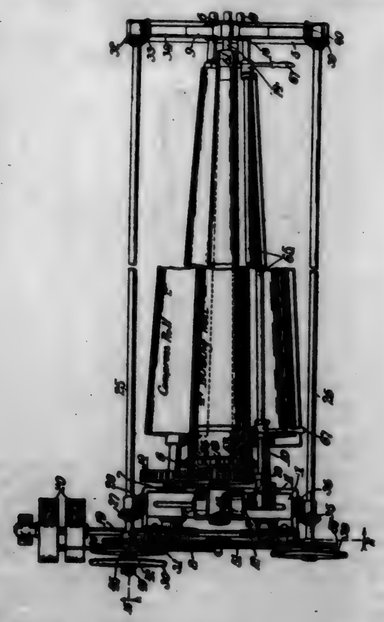

Claim.—1. A shell-forming machine comprising a winding-roll, a compress-roll, a roll for applying adhesive material, said rolls being geared to rotate together, and means for permitting the winding-roll to swing in a plane of its longitudinal axis.

2. A shell-forming machine comprising a winding-roll a compress-roll, and a roll for applying adhesive material, said rolls being geared to rotate together, said winding-roll being pivoted at one end to swing in a plane of its longitudinal axis.

3. A shell-forming machine comprising a winding-roll arranged to swing in a plane of the longitudinal axis, a compress-roll, a roll for applying adhesive material, and power-multiplying means for shifting the compress-roll and adhesive-applying roll toward or away from the winding-roll.

4. A shell-forming machine comprising a winding-roll arranged to swing in a plane of its longitudinal axis, a compress-roll, a roll for applying adhesive material, journal-boxes for the respective rolls, and means for shifting the journal-boxes and the compress-roll and adhesive-applying roll toward or away from the winding-roll.

5. A shell-forming machine comprising a winding-roll, a compress-roll, a roll for applying adhesive material, journal-boxes for the respective rolls, and means for shifting the journal-boxes and the compress-roll and adhesive-applying roll toward or away from the winding-roll in combination with means for permitting the swinging of the winding-roll in a plane of its longitudinal axis.

6. A machine for forming tapering shells comprising a winding-roll, a compress-roll, a roll for applying adhesive material, said rolls being tapered, and being provided with journals at both ends, and means for permitting the swinging of the winding-roll in a vertical position.

7. A machine for forming tapering shells comprising a winding-roll, a compress-roll, a roll for applying adhesive material, said rolls being tapered, the compress and the adhesive-applying rolls being arranged in the same horizontal plane, and the winding-roll being arranged in a plane above the other two rolls.

8. A machine for forming paper shells, comprising a winding-roll, a compress-roll, a roll for applying adhesive material, said rolls being tapered and the compress-roll and the roll for applying adhesive material being arranged in substantially the same horizontal plane, and means for forcing the completed shell from the winding-roll.

9. A machine for forming paper shells comprising a winding-roll, a compress-roll, a roll for applying adhesive material, said rolls being tapered and the compress-roll and the roll for applying adhesive material being arranged in substantially the same horizontal plane, and a movable ring upon the winding-roll for forcing or stripping the completed shell therefrom.

10. A machine for forming tapering shells comprising a winding-roll, a compress-roll, a roll for applying adhesive material, said rolls being tapered, a stripper-ring arranged around the larger end of the winding-roll, and power-multiplying means carried by said winding-roll and adapted to move said stripper-ring longitudinally of the roll to force the completed shell therefrom.

11. A machine for forming tapering shells comprising a winding-roll, a compress-roll, a roll for applying adhesive material, said rolls being tapered, and a wedge-shaped clamp-bar extending longitudinally of the winding-roll.

12. A machine for forming tapering shells comprising a winding-roll, a compress-roll, a roll for applying adhesive material, said rolls being tapered, and a laterally-wedging clamp-bar set into the winding-roll and extending longitudinally thereof.

13. A machine for forming tapering shells comprising a tapering winding-roll having at its smaller end a sleeve removable with the completed shell.

14. A machine for forming tapering shells comprising a tapering winding-roll, and a removable sleeve set into the smaller end of such roll and conforming to the taper thereof.

15. A machine for forming tapering shells comprising a tapering winding-roll pivoted at one end to swing vertically and a removable sleeve arranged on the smaller end thereof.

16. A shell-forming machine comprising a winding-roll, a compress-roll, a roll for applying adhesive material, laterally-adjustable journal-boxes for the last two named rolls, and means for adjusting or shifting such journals either independently or simultaneously at the will of the operator.

17. A shell-forming machine comprising a winding-roll, a compress-roll, a roll for applying adhesive material, laterally-adjustable journal-boxes for the last two named rolls, screw-feed mechanism for said boxes respectively for shipping them, and means for connecting said mechanism at the will of the operator for joint or simultaneous action.

18. A shell-making machine comprising a rotatable and pivoted winding-roll, and a lifting-head arranged on one end of the roll but removable therefrom.

19. A shell-making machine comprising a rotatable and pivoted winding-roll of tapered form, and a lifting-head arranged on the smaller end of such roll and conforming to the taper thereof.

20. A shell-making machine comprising a rotatable and pivoted winding-roll of tapered form, and a lifting-head having flanges conforming to the taper of the roll and inset in its smaller end.

21. A shell-making machine comprising a rotatable and pivoted winding-roll of tapered form, and a removable lifting-head having flanges conforming to the taper of the roll and inset in its smaller end, such head normally bearing against said end of the roll.

22. A shell-making machine comprising a rotatable and pivoted winding-roll of tapered form, a lifting-head having flanges conforming to the taper of the roll and inset in its smaller end, and a lifting-ring arranged to clamp the completed shell against the flanges of the lifting-head.

23. A shell-making machine comprising a rotatable and pivoted winding-roll of tapered form, a removable lifting-head arranged on the smaller end of the roll, and a lifting-ring for clamping the smaller end of the shell between itself and the lifting-head.

24. A machine for forming tapering shells comprising a winding-roll having means for gripping the shell material, a compress-roll, and a roll for applying adhesive material, all of said rolls being positively driven and said compress and adhesive-applying rolls being arranged to bear strongly against said winding-roll.

25. A machine for forming tapering shells comprising a tapering winding-roll, a compress-roll, and a roll for applying adhesive material, said compress and adhesive-applying rolls being positively driven, and being arranged to bear strongly against said winding-roll.

26. A machine for forming tapering shells comprising a winding-roll, a compress-roll and a roll for applying adhesive material, all of said rolls being tapered and unyieldingly supported and said adhesive-applying roll being adapted to apply pressure to material wound upon said winding-roll.

27. A machine for forming tapering shells, comprising a tapering winding-roll, means thereon for gripping the shell material, and means arranged concentrically of said winding-roll for stripping the shell therefrom.

28. A machine for forming tapering shells comprising a tapering winding-roll, means thereon for gripping the shell material, means carried on said winding-roll for stripping the shell therefrom, and a tapering compress-roll coöperating with the winding-roll.

29. A machine for forming tapering shells comprising a tapering winding-roll, means thereon for gripping the shell material, power-multiplying means carried on said winding-roll for stripping the shell therefrom, a tapering compress-roll coöperating with the winding-roll, and a roll for applying adhesive material.

30. A shell-forming machine comprising a winding-roll, a compress-roll, a roll for applying adhesive material, such winding-roll being pivoted at one end, journals for both ends of said compress and adhesive-applying rolls, and means for shifting said journals with their associated rolls toward or away from the winding-roll.

31. A shell-forming machine comprising a winding-roll, a compress-roll, a receptacle for containing a supply of adhesive material, a roll coöperating with said receptacle for applying said material, and means for shifting the compress-roll and adhesive-applying roll toward or away from the winding-roll in unison.

32. A shell-forming machine comprising a winding-roll, a compress-roll, a receptacle for containing a supply of adhesive material, a roll for applying said adhesive material, and means for shifting the compress-roll and adhesive-applying roll toward or away from the winding-roll in unison, or independently, at the will of the operator.

33. A machine for forming tapering shells, comprising a tapering winding-roll having a conical-shaped end section removable with the completed shell.

848,852. AIR-INLET VALVE. PATRICK H. REARDON, San Francisco, Cal. Filed Dec. 27, 1904. Serial No. 238,540.

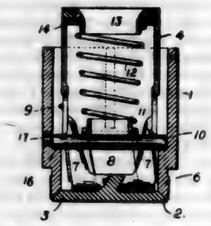

Claim.—1. In an air-inlet valve, a main shell or casing provided with a valve-seat, an annular stemmed valve movable endwise therein engaging with the seat, an inlet-space for air around the annular stem and between it and the shell, side openings in the annular stem and a spring to resist the opening of the valve and a suitable abutment for the spring.

2. In an air-inlet valve, a main shell or casing provided with a valve-seat, an annular stemmed valve movable endwise therein engaging with the seat, the stem being provided with spiral vanes or wings extending upward for a portion of its length, an inlet-space for air around the annular stem and between it and the shell, side openings in the annular stem and a spring to resist the opening of the valve and a suitable abutment for the spring.

3. In an air-inlet valve, a main shell or casing provided with a valve-seat, external threads thereon adjacent to the valve-seat for securing it in place, an annular stemmed valve movable endwise therein engaging with the seat, an inlet-space for air around the annular stem and between it and the shell, side openings in the annular stem and a spring to resist the opening of the valve and a suitable abutment for the spring.

4. In an air-inlet valve, a main shell or casing provided with a valve-seat, external threads thereon adjacent to the valve-seat for securing it in place, an annular stemmed valve movable endwise therein engaging with the seat, the stem being provided with spiral vanes or wings extending upward for a portion of its length, an inlet-space for air around the annular stem and between it and the shell, side openings in the annular stem and a spring to resist the opening of the valve and a suitable abutment for the spring.

5. In an air-inlet valve, a main shell or casing provided with a valve-seat, external threads thereon adjacent to the valve-seat for securing it in place, an annular stemmed valve movable endwise therein and engaging with the seat, an inlet-space for air around the annular stem and between it and the shell, side openings in the annular stem and a spring to resist the opening of the valve, a pin or yoke transversely passing through the annular stem, an annular seat or shoulder in the shell upon which the ends of the pin rest and a suitable socket or other attachment upon the pin adapted to receive one end of the spring as an abutment therefor.

6. In an air-inlet valve, a main shell or casing provided with a valve-seat, external threads thereon adjacent to the valve-seat for securing it in place, an annular stemmed valve movable endwise therein and engaging with the seat, an inlet-space for air around the annular stem and between it and the shell, side openings in the annular stem, a spring to resist the opening of the valve, a pin or yoke transversely passing through the annular stem, an annular seat or shoulder in the shell upon which the ends of the pin rest, a suitable socket or other attachment upon the pin adapted to receive one end of the spring as an abutment therefor and a ring or socket at the upper

end of the annular stem suitably secured thereto and adapted to receive the other end of the spring.

7. In an air-inlet valve, a main shell or casing provided with a valve-seat, external threads thereon adjacent to the valve-seat for securing it in place, an annular stemmed valve movable endwise therein and engaging with the seat, the stem being provided with inward spiral vanes or wings extending upward for a portion of its length, an inlet-space for air around the annular stem and between it and the shell, side openings in the annular stem and a spring to resist the opening of the valve, a pin or yoke transversely passing through the annular stem, an annular seat or shoulder in the shell upon which the ends of the pin rest and a suitable socket or other attachment upon the pin adapted to receive one end of the spring as an abutment therefor.

8. In an air-inlet valve, a main shell or casing provided with a valve-seat, external threads thereon adjacent to the valve-seat for securing it in place, an annular stemmed valve movable endwise therein and engaging with the seat, the stem being provided with spiral vanes or wings extending upward for a portion of its length, an inlet-space for air around the annular stem and between it and the shell, side openings in the annular stem, a spring to resist the opening of the valve, a pin or yoke transversely passing through the annular stem, an annular seat or shoulder in the shell upon which the ends of the pin rest, a suitable socket or other attachment upon the pin adapted to receive one end of the spring as an abutment therefor and a ring or socket at the upper end of the annular stem suitably secured thereto and adapted to receive the other end of the spring.

9. In an air-inlet valve, a main shell or casing provided with a valve-seat, external threads thereon adjacent to the valve-seat for securing it in place, an annular stemmed valve movable endwise therein and engaging with the seat, an inlet-space for air around the annular stem and between it and the shell, side openings in the annular stem, a spring to resist the opening of the valve, a pin or yoke transversely passing through the annular stem, an annular seat or shoulder in the shell upon which the ends of the pin rest, a hole in the side of the shell for the entrance of the pin and a suitable socket or other attachment upon the pin adapted to receive one end of the spring as an abutment therefor.

10. In an air-inlet valve, a main shell or casing provided with a valve-seat, external threads thereon adjacent to the valve-seat for securing it in place, an annular stemmed valve movable endwise therein and engaging with the seat, an inlet-space for air around the annular stem and between it and the shell, side openings in the annular stem, a spring to resist the opening of the valve, a pin or yoke transversely passing through the annular stem, an annular seat or shoulder in the shell upon which the ends of the pin rest, a hole in the side of the shell for the entrance of the pin, a suitable socket or other attachment upon the pin adapted to receive one end of the spring as an abutment therefor and a ring or socket at the upper end of the annular stem suitably secured thereto and adapted to receive the other end of the spring.

11. In an air-inlet valve, a main shell or casing provided with a valve-seat, a valve movable endwise therein and engaging with the seat, a stem to said valve and an inlet for air longitudinally through said stem and a second inlet for air longitudinally external to said stem and a spring to oppose the opening of said valve and a suitable abutment for the spring.

12. In an air-inlet valve, a main shell or casing provided with a valve-seat, external threads thereon adjacent to the valve-seat for securing it in place, a valve movable endwise therein and engaging with the seat, a stem to said valve and an inlet for air longitudinally through said stem, a second inlet for air longitudinally external to said stem and a spring to oppose the opening of said valve and a suitable abutment for the spring.

13. In an air-inlet valve, a main shell or casing provided with a valve-seat, external threads thereon adjacent to the valve-seat for securing it in place, an annular stemmed valve movable endwise therein and engaging with the seat, the stem being provided with inwardly-projecting spiral vanes or wings extending upward for a portion of its length, an inlet longitudinally through said stem, a second inlet longitudinally external to said stem, said inlets forming passages for air, side openings in the valve-stem connecting these passages, a spring to resist the opening of the valve, a pin or yoke transversely passing through the annular stem, an annular seat or shoulder in the shell upon which the ends of the pin rest, a suitable socket or other attachment upon the pin adapted to receive one end of the spring as an abutment therefor and a ring or socket at the upper end of the annular stem provided with lugs engaging with said stem and adapted to receive the other end of the spring.

14. In an air-inlet valve, a main shell or casing provided with a valve-seat, external threads thereon adjacent to the valve-seat for securing it in place, an annular stemmed valve movable endwise therein and engaging with the seat, the stem being provided with inwardly-projecting spiral vanes or wings extending upward for a portion of its length, an inlet longitudinally through said stem, a second inlet longitudinally external to said stem, said inlets forming passages for air, side openings in the valve-stem between the spiral vanes connecting these passages, a spring to resist the opening of the valve, a pin or yoke transversely passing through the annular stem, an annular seat or shoulder in the shell upon which the ends of the pin rest, a hole in the side of the shell for the entrance of the pin, a suitable socket or other attachment upon the pin adapted to receive one end of the spring as an abutment therefor and a ring or socket at the upper end of the annular seat provided with lugs or projections engaging with suitable recesses in the valve-stem adapted to receive the other end of the spring and suitable slots or guides in the annular stem for the pin.

848,853. FIRE-SHUTTER. RALPH R. REED, San Francisco, Cal. Filed June 21, 1906. Serial No. 322,700.

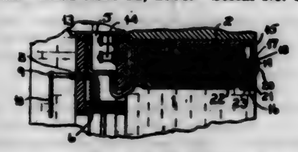

Claim.—1. A fire-curtain comprising a series of hingedly-connected slats or sections, means to connect the upper section or slat at the top of a window-frame, a pivotally-mounted bell-crank lever adapted to engage the inner edge of the lower slat when the latter is in folded position, a hingedly-mounted panel arranged at the opposite edges of said folded slats, a retaining-lug on the lower edge of said panel to engage the outer edge of the lower slat, a counterbalancing-spring connected to said bell-crank lever, and means whereby the latter is manually operated and disengaged from the slats of said curtain to permit the same to drop, substantially as described.

2. A fire-curtain comprising a series of hingedly-connected slats or sections, means to connect the upper section or slat at the top of a window-frame, a pivotally-mounted bell-crank lever adapted to engage the inner edge of the lower slat when the latter is in folded position, a hingedly-mounted panel arranged at the opposite edges of the folded slats, a retaining-lug on the lower edge of said panel to engage the outer edge of the lower slat, a counterbalancing-spring connected to said bell-crank lever, a rock-shaft having arranged on one end thereof a releasing-arm to engage said bell-crank lever, a crank-arm on the opposite end of said rock-shaft, and an operating-rod connected to said crank-arm, substantially as described.

3. A fire-curtain comprising a series of hingedly-connected slats or sections, means to connect the upper section or slat at the top of a window-frame, a pivotally-mounted bell-crank lever adapted to engage the inner edge of the lower slat when the latter is in folded position, a hingedly-mounted panel arranged at the opposite edges of the folded slats, a retaining-lug on the lower edge of said panel to engage the outer edge of the lower slat, a counterbalancing-spring connected to said bell-crank lever, means to electrically and manually operate said bell-crank lever to disengage the same from said slats, and an automatically-released supporting mechanism arranged at the opposite edge of said slats, substantially as described.

4. A fire-curtain comprising a series of hingedly-connected slats or sections, means to connect the upper section or slat at the top of a window-frame, a pivotally-mounted bell-crank lever adapted to engage the inner edge of the lower slat when the latter is in folded position, a hingedly-mounted panel arranged at the opposite edges of the folded slats, a retaining-lug on the lower edge of said panel to engage the outer edge of the lower slat, a counterbalancing-spring connected to said bell-crank lever, means to electrically and manually operate said bell-crank lever to disengage the same from said slats, and an automatically-released supporting mechanism arranged at the opposite edge of said slats, substantially as described.

5. A fire-curtain comprising a series of hingedly-connected slats or sections, means to connect the upper section or slat at the top of a window-frame, a pivotally-mounted bell-crank lever adapted to engage the inner edge of the lower slat when the latter is in folded position, a hingedly-mounted panel arranged at the opposite edges of the folded slats, a retaining-lug on the lower edge of said panel to engage the outer edge of the lower slat, a counterbalancing-spring connected to said bell-crank lever, means to electrically and manually operate said bell-crank lever to disengage the same from said slats, and a thermostatic releasing mechanism arranged in said panel to disengage the lug thereon from said slats, substantially as described.

6. A fire-curtain comprising a series of hingedly-connected slats or sections, means to connect the upper section or slat at the top of a window-frame, a pivotally-mounted bell-crank lever adapted to engage the inner edge of the lower slat when the latter is in folded position, a hingedly-mounted panel arranged at the opposite edges of the folded slats, a retaining-lug on the lower edge of said panel to engage the outer edge of the lower slat, a counterbalancing-spring connected to said bell-crank lever, means to electrically and manually operate said bell-crank lever to disengage the same from said slats, and a thermostatic, releasing mechanism arranged in said panel to disengage the lug thereon from said slats, said thermostatic, releasing mechanism comprising a covered concavity formed in said panel, a diaphragm arranged in said covered concavity, an expansive fluid adapted to bear on one side of said diaphragm and a plunger-rod in engagement with the opposite side of the latter and with the adjacent edges of the curtain-slats, whereby upon expansion of said fluid the retaining-lug on said panel will be disengaged from said slats, substantially as described.

848,854. CIGAR-CASE. PETER RENNER, Cincinnati, Ohio. Filed Apr. 20, 1906. Serial No. 312,854.

Claim.—1. A case of the character described, comprising a plurality of members hingedly connected, a refractory lining at the interior of each of said members with which the lighted portion of the cigar is adapted to contact, a resilient strip having one of its ends connected to the inner side of one of said members and its other end free, a support carried by the free end of said strip and arranged transversely thereof, said support receiving the cigar and serving to elevate the same under the movement of said strip to position the cigar for ready removal when the case is opened, and also coacting with the opposite member to hold the cigar in position in the case when the latter is closed, and a fastener for retaining the members in closed relation.

2. A case of the character described, comprising a plurality of members hingedly connected, a refractory lining at the interior of each of said members with which the lighted portion of the cigar is adapted to contact, a resilient strip arranged at the inner side of one of said members and provided at one of its ends with engaging prongs for fastening said strip to said member, the other end of said strip being free, a support carried by the free end of said strip and arrranged transversely thereof, said support receiving the cigar and serving to elevate the same under the movement of said strip to position the cigar for ready removal when the case is opened, and also coacting with the opposite member to hold the cigar in position in the case when the latter is closed, and a fastener for retaining the members in closed relation.

848,855. CORE FOR ROLLS. EDWIN RILEY, Livermore Falls, Me., assignor of one-half to International Paper Company, New York, N. Y., a Corporation. Filed June 22, 1906. Serial No. 322,958.

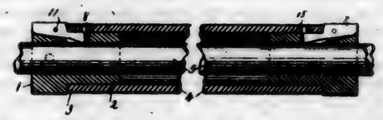

Claim.—1. In a means for winding paper, the combination with a shaft of a hollow paper core, of hollow metallic heads or chucks shouldered to fit against ends and having reduced shanks to fit within the ends of the core, latches pivotally supported in slots in the chucks and having tips adapted to enter holes near the ends of the core and set-screws on the chucks to engage with the shaft, said shaft when in position in the core and chucks being adapted to hold the latches up in engagement with the core-holes to lock the core against rotation.

2. In a means for winding wide strips of paper into a roll, the combination of a hollow core made of paper to receive the roll and adapted to be arranged on a rotating shaft, said core being formed with a hole near each end, of metallic reinforcing-eyelets fitted to, and upset in, said holes, of metal heads or chucks fitting the ends of the cores, a set-screw in each head to engage with the shaft, and a latch in a slot in each head and adapted to be swung into engagement with said hole, to lock the core to the heads and on the shaft.

3. In a roller for rolls of paper and similar material, the combination with a tubular core provided with holes arranged a short distance within its ends, of similar heads fitting the ends of the core, and latches pivotally connected to each head and adapted to enter the holes and lock the heads to the core.

4. In a roller for rolls of paper and similar material, the combination with a tubular core, of metallic heads fitting the ends of the core and latches hung on pivots in the heads and adapted to engage with openings in the core.

5. In a roller for rolls of thin material, the combination with a tubular core having holes adjacent to its ends, of tubular heads fitting the ends of the core, and movable locking-pieces supported on the heads and extending within the core, said locking-pieces being adapted to be moved into engagement with said holes by the insertion of the shaft through the heads and the core.

6. In a roller for rolls of thin material, the combination with a tubular core, of heads fitting the ends of the core, and latches hung on pivots in slots in the heads, said latches being adapted to be swung from the interior into engagement with the core.

7. In a means for winding paper, the combination with

a shaft adapted to be rotated, of a tubular paper core, tubular metallic heads having outer cylindrical portions substantially equal in diameter to the core and having shanks fitting within the core ends, swinging parts pivotally connected to the heads and adapted to engage with the core, and set-screws on the heads to engage with the shaft, said heads and core, when assembled on the shaft, presenting a substantially smooth exterior, unbroken by projections, except by the set-screws.

8. In a paper-roller, the combination with a tubular core, of similar metallic heads having outer cylindrical portions substantially equal in diameter to the core and having inner cylindrical shanks fitting within the core ends, said shanks being of smaller diameter than said outer portions, said outer portions and said shanks forming shoulders to fit against the core ends, and swinging parts on both heads to engage with openings in the core.

9. In a paper-roller, the combination with a tubular core, having holes near its ends, of tubular heads fitting the ends of the core, latches hung in openings in said heads and having their inner ends extending within the core, and tips on said inner ends arranged substantially at a right angle to the body of the latch, said tips being adapted to engage with said holes.

10. In a roller for rolls of paper and similar material, the combination with a tubular core provided with openings adjacent to its ends, of heads fitting the ends of the core, said heads being tubular to receive a shaft, and of swinging parts hung in the heads, said swinging parts being adapted to swing down into the tubular openings in the core when the parts are separated but to be moved into engagement with the openings to lock the heads to the core, when the parts are arranged on the shaft.

848,856. OSTEOPATHIC TABLE. HENRY T. ROOT, Kirksville, Mo. Filed Nov. 17, 1906. Serial No. 343,918.

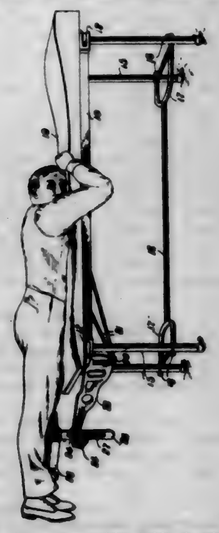

Claim.—1. An osteopathic table having a bracket attached thereto, brace-rods extending from the bottom of the bracket inwardly to the sides of the table, a closed bearing and an open bearing projecting outwardly from the top and bottom respectively of said bracket, and a swinging arm provided with pintles adapted to engage said bearings.

2. An osteopathic table having a bracket attached thereto said bracket having at its top an outwardly-projecting closed bearing and at its bottom an outwardly-projecting open bearing, and a removable swinging arm provided at one end with an adjustable rest or support and at its other end with projecting lugs adapted to extend between the bearings of said bracket and rest against them, said lugs having oppositely-projecting pintles adapted to engage said bearings.

848,857. LIFT-PUMP. FREDERICK A. RUHL, Stockton, Cal. Filed June 7, 1906. Serial No. 320,556.

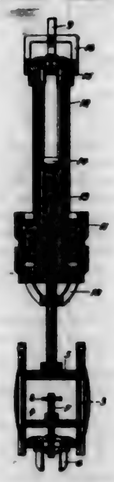

Claim.—1. In a pump, a plunger having an external packing and an internal valve and with a depending guiding device, a foot-valve structure consisting of spaced transverse members and connecting vertical members spaced apart and extending above and below the transverse members, resilient members connected respectively to said spaced vertical members and extending outwardly therefrom, a valve having a stem slidably engaging one of said transverse members, and a rod connected to the other of said transverse members and slidably engaging said guiding device and with a terminal lateral head for bearing upon said guiding device when the plunger is in its elevated position.

2. In a pump, a foot-valve structure consisting of transverse members and spaced apart and connected by a plurality of spaced vertical members extending above and below the transverse members, resilient members connected respectively to said vertical members and extending laterally therefrom, a valve having a stem slidably engaging one of said transverse members, and a rod connected to the other of said transverse members and adapted to slidably engage the plunger of the pump.

848,858. MEANS FOR TRANSFERRING A GUN FROM ITS CARRIAGE TO A GUN-CARRYING VEHICLE. CHARLES P. E. SCHNEIDER, Le Creusot, and EMILE RIMAILHO, Neuilly-sur-Seine, France. Filed Aug. 17, 1906. Serial No. 331,040.

Claim.—1. In combination, a service-carriage and a transport-carriage one of said carriages being provided with spindles projecting from the cheeks of the carriage and parallel to the axle of the carriage, and the other

carriage having hinge locking parts engaging said spindles when the carriages are in gun-transfer position, said locking parts being capable of a play transverse to said spindles, and a lifting and self-adjusting alining device reacting against the service-carriage to lift the transport-carriage from its ground-support into gun-transfer position on the service-carriage.

2. In combination, a gun-carriage having a trail provided with a guide depression therein, and a gun-carrying vehicle, spindles projecting from the cheeks of the said carriage and in a line parallel with the axle of the gun-carriage, locking parts on the gun-carrying vehicle having supporting-noses and retaining-hooks for engaging said spindles, and a lifting-screw secured to said vehicle and having its free end guided in said guide depression for raising said vehicle off its ground-support and for alining the same into gun-transfer position.

3. In combination, a gun-carriage and a gun-carrying vehicle being provided with slideways or tracks, hinge connecting-supports connecting said carriage and vehicle when in gun-transfer position, the movable members of said supports being capable of a play transverse to the hinge-axis, and self-adjusting vehicle-lifting means for lifting said gun-carrying vehicle from its ground-support to said hinge-supports to aline said ways or tracks.

4. In combination, a service-carriage and a gun-transfer carriage, hinge-couplings for connecting the rear of the first-named carriage with the forward part of the second carriage, and a lifting and self-adjusting alining device reacting against the service-carriage to lift the transport-carriage from its ground-support into gun-transfer position on the service-carriage.

848,859. STRIKER-PLATE. JOHN H. SHAW, New Haven, Conn., assignor to Sargent & Company, New Haven, Conn., a Corporation of Connecticut. Filed Sept. 26, 1905. Serial No. 280,210.

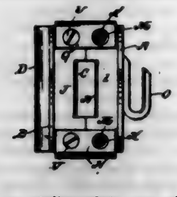

Claim.—1. In a striker-plate, or similar article, the combination with a front plate; of a plurality of separate fastening-plates adjustable on said front plate; and means for securing said fastening-plates to the wall or other article, substantially as described.

2. In a striker-plate, or similar article, the combination with a front plate; of a plurality of separate fastening-plates adjustable in connection with said front plate; and means for securing one of said fastening-plates to said front plate and said fastening-plates to the wall, or other article, substantially as described.

3. In a striker-plate, or similar article, the combination with a front plate; of a plurality of L-shaped fastening-plates having flanges adapted to slide on said front plate; and means for securing said flanges to said front plate and said fastening-plates to the wall or other article, substantially as described.

4. In a striker-plate, or similar article, the combination with a front plate; of a fastening-plate adjustable thereon; a reversible latch-guard pivotally mounted on said fastening-plate; and means for holding said latch-guard in either one of two positions, substantially as described.

5. In a striker-plate, or similar article, the combination with a front plate; of a fastening-plate adapted to be applied to either side of said front plate; and a latch-guard secured to said fastening-plate, substantially as described.

848,860. ROTARY ENGINE. DANIEL F. SMITH, New York, N. Y., assignor of one-fourth to E. Osborne Smith, New York, N. Y. Filed June 29, 1905. Renewed Aug. 30, 1906. Serial No. 332,594.

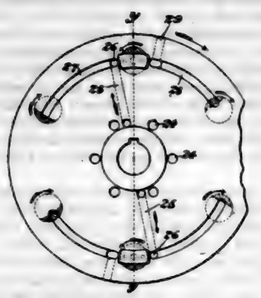

Claim.—1. In a fluid-pressure motor, the combination with a pressure-chamber and a piston traveling therein, of movable sections in frictional contact with the upper and lower faces of said piston and forming part of the walls of said pressure-chamber, substantially as described.

2. In a rotary motor, the combination of an annular chamber, a piston adapted to travel therein, and adjustable sections forming frictional contact-surfaces for the upper and lower faces of said piston and constituting the walls of said chamber, substantially as described.

3. In a rotary motor, the combination of an annular chamber, a piston adapted to travel therein, adjustable annular sections lying one within the other and forming frictional contact-surfaces for said piston and constituting the walls of said chamber, substantially as described.

4. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, and movable sections in frictional contact with the upper and lower faces of said pistons and forming part of the walls of said chambers, substantially as described.

5. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, and movable annular sections lying one within the other and between which the pistons move, the said sections being in frictional contact with said pistons and forming part of the walls of said chambers, substantially as described.

6. In a rotary motor, the combination with an annular pressure-chamber, of a piston-carrier adjacent to said chamber, a plurality of pistons on said carrier and traveling in said chamber, annular sections adjustable in a direction toward and away from the piston-carrier, which lie one within the other and between which the pistons move, the said sections being in frictional contact with said pistons and forming part of the walls of said pressure-chamber, substantially as described.

7. In a rotary motor the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, and movable annular sections adjustable in a direction at right angles to the plane of movement of the pistons, lying one within the other and between which the pistons move, the said sections being in frictional contact with said pistons and forming part of the walls of the pressure-chambers, substantially as described.

8. In a fluid-pressure motor, the combination with a pressure-chamber and a piston traveling therein, of movable sections in frictional contact with the upper and lower faces of said piston and forming part of the walls of said pressure-chamber, and elastic means for adjusting said sections to take up the wear thereof, substantially as described.

9. In a rotary motor, the combination of an annular

chamber, a piston adapted to travel therein, and adjustable sections forming frictional contact-surfaces for the upper and lower faces of said piston and constituting the walls of said chamber, and spring means for maintaining said sections in operative engagement with said piston, substantially as described.

10. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, movable sections in frictional contact with the upper and lower faces of said piston and forming part of the walls of said chambers, and yielding tension devices for forcing said sections toward said piston-carrier, substantially as described.

11. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, movable annular sections lying one within the other and between which the pistons move, the said sections being in frictional contact with said pistons and forming part of the walls of said chambers, and yielding tension devices for forcing said sections toward said piston-carrier, substantially as described.

12. In a fluid-pressure motor, the combination with a pressure-chamber and a piston traveling therein, of movable sections in frictional contact with the upper and lower faces of said piston and forming part of the walls of said pressure-chamber, and elastic-fluid sealing devices on said piston and which contact with the stationary portions of the pressure-chamber wall, substantially as described.

13. In a rotary motor, the combination of an annular chamber, a piston adapted to travel therein, adjustable sections forming frictional contact-surfaces for the upper and lower faces of said piston and constituting the walls of said chamber, and elastic-fluid sealing devices on said piston and which contact with the stationary portions of the pressure-chamber wall, substantially as described.

14. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, movable sections in frictional contact with the upper and lower faces of said pistons and forming part of the walls of said chambers, and elastic-fluid sealing devices on said piston and which contact with the stationary portions of the pressure-chamber walls, substantially as described.

15. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, movable annular sections lying one within the other and between which the pistons move, the said sections being in frictional contact with said pistons and forming part of the walls of said chambers, and yielding packing devices at the ends of said pistons and which press against the stationary portions of the pressure-chamber walls, substantially as described.

16. In a rotary fluid-motor, the combination of an annular chamber, a piston traveling therein, inlet and exhaust ports communicating with said chamber, a plurality of movable partitions adapted to inclose portions of the annular chamber and by which the piston is permitted to pass, means for moving said partitions and delivering the pressure fluid so that a uniform pressure is maintained upon one side of the piston and a constant exhaust upon the other, the pressure-chamber constituting at all times except when the piston is passing a partition, the space in the annular chamber between the piston and the second partition behind it, substantially as described.

17. In a rotary fluid-motor, the combination of an annular chamber, a piston traveling therein, inlet and exhaust ports communicating with said chamber, a plurality of movable partitions adapted to inclose portions of the annular chamber and by which the piston is permitted to pass, means for moving said partitions and delivering the pressure fluid so that the pressure-chamber constitutes, at all times except when the piston is passing a partition, the space in the annular chamber between the piston and the second partition behind it, substantially as described.

18. In a rotary fluid-motor, the combination of an annular chamber, a piston traveling therein, inlet and exhaust ports communicating with said chamber, a plurality of rotating valves adapted to inclose portions of the annular chamber and by which the piston is permitted to pass, means for moving said partitions and delivering the pressure fluid so that a uniform pressure is maintained upon one side of the piston and a constant exhaust upon the other, the pressure-chamber constituting at all times except when the piston is passing a valve, the space in the annular chamber between the piston and the second valve behind it, substantially as described.

19. In a rotary fluid-motor, the combination of an annular chamber, a piston traveling therein, inlet and exhaust ports communicating with said chamber, a plurality of rotating valves adapted to inclose portions of the annular chamber and by which the piston is permitted to pass, means for moving said partitions and delivering the pressure fluid so that the pressure-chamber constitutes at all times except when the piston is passing a valve the space in the annular chamber between the piston and the second valve behind it, substantially as described.

20. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, a plurality of movable partitions, adapted to inclose portions of the annular chambers and by which the pistons are permitted to pass, operating mechanism connected with the main shaft for moving said partitions and delivering the pressure fluid so that a uniform pressure is maintained upon one side of the pistons and a constant exhaust upon the other, substantially as described.

21. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, a plurality of movable partitions adapted to inclose portions of the annular chambers and by which the pistons are permitted to pass, means for moving said partitions and delivering the pressure fluid so that the pressure-chamber constitutes at all times, except when the piston is passing a partition, the space in the annular chamber between a piston and the second partition behind it, substantially as described.

22. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, a fluid-inlet having communication through the piston-carrier with one side of the pistons, and an exhaust leading from the other side of said pistons, through said piston-carrier to an exhaust-chamber, substantially as described.

23. In a rotary motor, the combination of an annular chamber, a piston adapted to travel therein, inlet and exhaust ports communicating with the chamber, movable partitions adapted to inclose portions of the annular chamber, operating mechanism connecting with the main shaft for moving said partitions, said partitions being so arranged as to form in connection with the piston a pressure-chamber on one side of the piston, and an exhaust-chamber on the other side thereof during the entire movement of the piston, substantially as described.

24. In a rotary motor the combination of a pressure-chamber, a piston traveling therein, movable valves or partitions adapted to inclose portions of said chamber and by which the piston is permitted to pass without contact and springs pressing on said valves in the direction of their wear, substantially as described.

25. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, valves or partitions adapted to inclose portions of said chamber and by which the piston is permitted to pass, and automatic means of taking up the wear on said valves, substantially as described.

26. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, movable sections in frictional contact with said pistons and forming part of the walls of said chambers, valves or partitions adapted to inclose portions of said chambers and by which the piston is permitted to pass, and automatic means for taking up the wear on said valves, substantially as described.

27. In a rotary motor the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, movable annular sections adjustable in a direction at right angles to the plane of movement of the pistons, lying one within the other and between which the pistons move, the said sections being in frictional contact with said piston and forming part of the walls of said chambers, valves or partitions adapted to inclose portions of said chamber and by which the piston is permitted to pass, and automatic means of taking up the wear on said valves, substantially as described.

28. In a rotary motor, the combination of an annular chamber, a piston adapted to travel therein, adjustable sections forming frictional contact-surfaces for said piston and constituting the walls of said chamber, elastic-fluid sealing devices on said piston and which contact with the stationary portions of the pressure-chamber wall, valves or partitions adapted to inclose portions of said chamber and by which the piston is permitted to pass, and automatic means for taking up the wear on said valves, substantially as described.

29. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, movable sections in frictional contact with said piston and forming part of the walls of said chambers, elastic-fluid sealing devices on said piston and which contact with the stationary portions of the pressure-chamber wall, valves or partitions adapted to inclose portions of said chamber and by which the pistons are permitted to pass, and automatic means for taking up the wear on said valves, substantially as described.

30. In a fluid-pressure motor, the combination with a pressure-chamber and a piston adapted to travel therein, of movable valves in said chamber, and means for equalizing the pressure on all sides of said valves during the period of their movement, substantially as described.

31. In a rotary motor, the combination of an annular chamber, a piston adapted to travel therein, inlet and exhaust ports communicating with said chamber, movable partitions adjustable longitudinally and adapted to inclose portions of said chamber, being so arranged as to form in connection with the piston a pressure-chamber on one side of the piston, and an exhaust-chamber on the other side thereof during the entire movement of the piston, and means for equalizing the pressure on both sides of said valves during the period of their movement, substantially as described.

32. In a rotary motor, the combination of a pair of annular chambers, a piston-carrier between said chambers a plurality of pistons on said carrier and adapted to travel in said chambers, inlet and exhaust ports communicating with said chambers, movable valves adjustable longitudinally and adapted to inclose portions of said chamber and by which the pistons are permitted to pass, and means for equalizing the pressure on both sides of said valves during the period of their movement, substantially as described.

33. In a fluid-pressure motor, the combination with a pressure-chamber and a piston traveling therein, of movable sections in frictional contact with said piston and forming part of the walls of said pressure-chamber, movable valves in said chamber, and means for equalizing the pressure on both sides of said valves during the period of their movement, substantially as described.

34. In a rotary motor, the combination of an annular cylinder, a piston adapted to travel therein, adjustable sections forming frictional contact-surfaces for said piston and constituting the walls of said chamber, of movable valves in said chamber and means for equalizing the pressure on both sides of said valves during the period of their movement, substantially as described.

35. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chamber, valves or partitions adapted to inclose portions of said chambers and by which the pistons are permitted to pass, and means for equalizing the pressure on both sides of said valves during the period of their movement, substantially as described.

36. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, movable annular sections adjustable in a direction at right angles to the plane of movement of the pistons, lying one within the other and between which the pistons move, the said sections being in frictional contact with said pistons and forming part of the walls of said chambers, valves or partitions adapted to inclose portions of said chambers and by which the pistons are permitted to pass, automatic means of taking up the wear on said valves, and means for equalizing the pressure on both sides of said valves during the period of their movement, substantially as described.

37. In a rotary motor, the combination of an annular chamber, a piston adapted to travel therein, adjustable sections forming frictional contact-surfaces for said piston and constituting the walls of said chamber, elastic-fluid sealing devices on said piston and which contact with the stationary portions of the pressure-chamber wall, valves or partitions adapted to inclose portions of said chamber, and by which the piston is permitted to pass, automatic means of taking up the wear on said valves, and means for equalizing the pressure on both sides of said valves during the period of their movement, substantially as described.

38. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, movable sections in frictional contact with said pistons and forming part of the walls of said chambers, rotary valves adapted to inclose portions of said chambers, and means for equalizing the pressure on both sides of said valves during the period of their movement, substantially as described.

39. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, movable annular sections lying one within the other and between which the pistons move, the said sections being in frictional contact with said pistons and forming part of the walls of said chambers, movable valves adapted to inclose portions of said chambers, and means for equalizing the pressure on both sides of said valves during the period of their movement, substantially as described.

40. In a rotary motor, the combination of an annular chamber, a piston adapted to travel therein, inlet and exhaust ports communicating with the chamber, movable partitions adapted to inclose portions of the annular chamber, and being so arranged as to form, in connection with the piston, a uniform-pressure chamber on one side of the piston and an exhaust-chamber on the other side thereof during the entire rotation of the piston, and a movable by-pass or port communicating with said exhaust-chamber and connecting both sides of the partition at the end of said chamber, substantially as described.

41. In a rotary motor, the combination of an annular chamber, a piston adapted to travel therein, inlet and exhaust ports communicating with the chamber, movable partitions adapted to inclose portions of the annular chamber and by which the piston is permitted to pass, means

for moving said partitions so that when the piston is passing any given partition, the adjacent ones are closed, said adjacent partitions forming in connection with the piston a uniform-pressure chamber on one side thereof, and an exhaust-chamber on the other side, and a movable by-pass or port communicating with said exhaust-chamber and connecting both sides of the partition at the end of said chamber, substantially as described.

42. In a rotary fluid-motor, the combination of an annular chamber, a piston traveling therein, inlet and exhaust ports communicating with said chamber, a plurality of movable partitions adapted to inclose portions of the annular chamber and by which the piston is permitted to pass, means for moving said partitions and delivering the pressure fluid so that a uniform pressure is maintained upon one side of the piston and a constant exhaust upon the other, the pressure-chamber constituting at all times except when the piston is passing a partition, the space in the annular chamber between the piston and the second partition behind it, and a movable by-pass or port communicating with said exhaust-chamber and connecting both sides of the partition at the end of said chamber, substantially as described.

43. In a rotary fluid-motor, the combination of an annular chamber, a piston traveling therein, inlet and exhaust ports communicating with said chamber, a plurality of rotating valves adapted to inclose portions of the annular chamber and by which the piston is permitted to pass, means for moving said partitions and delivering the pressure fluid so that the pressure-chamber constitutes at all times, except when the piston is passing a valve, the space in the annular chamber between the piston and the second valve behind it, and a movable by-pass or port communicating with said exhaust-chamber and connecting both sides of the partition at the end of said chamber, substantially as described.

44. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, a plurality of movable partitions, adapted to inclose portions of the annular chambers and by which the pistons are permitted to pass, means for moving said partitions and delivering the pressure fluid so that a uniform pressure is maintained upon one side of the pistons and a constant exhaust upon the other, and a movable by-pass or port communicating with said exhaust-chamber and connecting both sides of the partition at the end of said chamber, substantially as described.

45. In a rotary motor, the combination with an annular pressure-chamber, of a piston-carrier adjacent to said chamber, a plurality of pistons on said carrier and traveling in said chamber, valves adapted to inclose portions of said annular chamber, a fluid-inlet having communication through the piston-carrier with one side of the pistons and an exhaust leading from the other side of said pistons, and a relief-port in said carrier communicating with the exhaust-chamber and connecting both sides of the valve at the end of said chamber, substantially as described.

46. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, valves adapted to inclose portions of said annular chamber, a fluid-inlet having communication through the piston-carrier with one side of the pistons, an exhaust leading from the other side of said pistons, and a relief-port in said carrier communicating with the exhaust-chamber and connecting both sides of the valve at the end of said chamber, substantially as described.

47. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, valves or partitions adapted to inclose portions of said chambers and by which the pistons are permitted to pass, automatic means of taking up the wear on said valves, and a relief-port in said carrier communicating with the exhaust-chamber and connecting both sides of the valve adjacent to said chamber, substantially as described.

48. In a rotary motor the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, movable annular sections adjustable in a direction at right angles to the plane of movement of the pistons, lying one within the other and between which the pistons move, the said sections being in frictional contact with said pistons and forming part of the walls of said chambers, valves or partitions adapted to inclose portions of said chambers and by which the pistons are permitted to pass, automatic means for taking up the wear on said valves, and a movable by-pass or port communicating with said exhaust-chamber and connecting both sides of the partition at the end of said chamber, substantially as described.

49. In a rotary motor, the combination of an annular chamber, a piston adapted to travel therein, adjustable sections forming frictional contact-surfaces for said piston and constituting the walls of said chamber, elastic-fluid sealing devices on said piston and which contact with the stationary portions of the pressure-chamber wall, valves or partitions adapted to inclose portions of said chamber and by which the piston is permitted to pass, automatic means for taking up the wear on said valves, and a relief-port in said carrier communicating with the exhaust-chamber and connecting both sides of the valve adjacent to said chamber, substantially as described.

50. In a rotary motor, the combination with a pair of annular pressure-chambers in circumferential alinement, of a piston-carrier between said chambers, a plurality of pistons on said carrier and traveling in said chambers, movable sections in frictional contact with said piston and forming part of the walls of said chambers, elastic-fluid sealing devices on said pistons and which contact with the stationary portions of the pressure-chamber wall, valves or partitions adapted to inclose portions of said chamber and by which the pistons are permitted to pass, automatic means for taking up the wear on such valves, and a relief-port in said carrier communicating with the exhaust-chamber and connecting both sides of the valve at the end of said chamber, substantially as described.

51. In a rotary motor, in combination, an annular cylinder, a rotating disk arranged to form one of the side walls of the cylinder, a piston connected to the disk and fitted to slide or travel around the cylinder, and a valve comprising a body portion seated to rotate in a cylindrical recess formed in the other side wall of the annular cylinder and to rock into circular recesses formed in the cylindrical walls thereof, and a spring for holding the end of this segmental part against the side of the disk, and means for rocking the valves, substantially as described.

52. In a rotary motor, in combination, an annular cylinder, a piston adapted to travel therein; inlet and exhaust ports in communication with the cylinder; and a valve seated to rotate in a recess formed in one of the side walls of the cylinder and having an extension adapted to lie athwart the cylinder to act as an abutment and to move into circular recesses formed in the circular walls of the cylinder, and openings through the main portion for access of the active fluid in the cylinder to all parts of valve, and means for rocking the valve, substantially as described.

53. In a rotary motor, in combination an annular cylinder, a piston adapted to travel therein, inlet and exhaust ports in communication with the cylinder, and a valve seated to rotate in a recess formed in one of the side walls of the cylinder and having an extension adapted to lie athwart the cylinder to act as an abutment and to move into circular recesses formed in the circular walls of the cylinder, and provided with a recess or pocket in its outer surface; recess-grooves extending from the circular wall of the cylinder into the circular recess; and means for rocking the valve, substantially as described.

54. In a rotary motor, in combination, an annular cylinder; a piston adapted to travel therein; inlet and exhaust ports in communication with the cylinder; and a valve seated to rotate in a recess formed in one of the side walls of the cylinder and having an extension adapted to lie athwart the cylinder to act as an abutment and to move into circular recesses formed in the circular walls of the cylinder, and openings through the main portion for access of the active fluid in the cylinder to all parts of valve; a recess or pocket formed in the outer surface of the segmental part of the valve, and recess-grooves extending from the circular wall of the cylinder into the circular recess to afford communication between the recess in the segmental part of the valve and the interior of the cylinder; and means for rocking the valve, substantially as described.

55. In a rotary motor, in combination, an annular cylinder, a rotating disk arranged to form one of the side walls of the cylinder; a piston connected to the disk and fitted to slide or travel around the cylinder; and a valve comprising a body portion seated to rotate in a cylindrical recess formed in the other side wall of the annular cylinder, a segmental part fitted to slide longitudinally on the body portion and adapted to extend athwart the annular cylinder and to rock into circular recesses formed in the cylindrical walls thereof, and a spring for holding the end of this segmental part against the side of the disk; openings and recesses extending from the interior of the annular cylinder to the surfaces of the valve opposed to those under the influence of the active fluid in the cylinder, and means for rocking the valve, substantially as described.

56. In a rotary motor, in combination, a body composed of two parts, each provided with an annular groove formed in its inner face; a disk fitted to rotate between the inner faces of the two parts of the body, the sides of which cover the open sides of the grooves, thus forming therewith an annular cylinder on either side of the disk; pistons extending from the sides of the disk, fitted to slide around the annular cylinders and diametrically arranged on the sides of the disk; valves fitted to rock in the annular cylinder and formed to permit the pistons to pass through or by them and also to act as abutments in the cylinders; a shaft having bearings in the body concentric with the annular cylinders and on which the disk is secured; means for rocking the valves; and inlet and outlet passages and ports for the flow or live active fluid to the cylinders and the exhaust therefrom, substantially as described.

57. In a rotary motor, in combination, a body; two flat rings fitted in a circular groove therein with an annular space between them; a disk adapted to rotate concentrically to the annular space and with its face arranged against the outer faces of the rings, constituting with the adjacent faces of the flat rings and the inner wall of the groove of the body an annular cylinder; means as springs, for holding the rings against the side of the disk; pistons fitted to slide in the annular cylinder and carried by the disk; rotary valves fitted to rock in circular recesses formed in the adjacent faces of the rings and formed to permit the piston to pass by them; and means for rocking the valve in unison with the movement of the pistons, substantially as described.

58. In a rotary motor, in combination, a body or casing provided with a circular groove forming an annular cylinder; a shaft fitted to rotate in central bearings in the body; a disk secured to the shaft with its side covering the opening of the circular groove, and having intake-passages extending from its central part to ports in its face opening into the cylinder, and passages extending from its periphery to exhaust-ports in its face. pistons secured to the face of the disk and extending into and fitted to slide in the annular cylinder; a steam chamber or chest at the central part of the body into which the intake-passages open; an exhaust-chamber surrounding the periphery of the disk into which the exhaust-passages open; valves fitted to rock in circular recesses formed in the annular cylinder to constitute abutments therein and constructed to permit of the passage of the pistons through them, and means for rocking the valves to cause them to work in unison with the pistons, substantially as described.

59. In a rotary motor, in combination, a body having two internal circular grooves; a disk fitted to rotate between the grooves with its sides covering the openings of the same, thus forming two annular cylinders; pistons secured to and diametrically arranged on the sides of the disk and formed to slide through the annular cylinders; a central shaft having bearings in the body and to which the disk is secured; valves fitted to rotate in the annular cylinders, adapted to act as abutments and formed to permit the pistons to pass by them, and having operating-stems extending through the body, means, as cams and levers, imparting motion from the central shaft to the stems of the valves; a steam chamber or chest in the body at the central parts of the two sides of the disk, and an exhaust-chamber surrounding the periphery of the disk, and two sets of ports in the sides of the disk, one of each at the opposite ends of the pistons, and opening into the annular cylinders, and passages connecting the one set of ports with the central steam-chest and the other set of ports with the exhaust-chamber, substantially as described.

60. In a rotary motor, in combination, an annular cylinder; a rotating disk arranged to form one of the side walls of the cylinder; a piston connected to the disk and fitted to slide or travel around the cylinder; and a valve comprising a body portion seated to rotate in a cylindrical recess formed in the other side wall of the annular cylinder, a segmental part fitted to slide longitudinally on the body portion and adapted to extend athwart the annular cylinder and to rock into the circular recesses formed in the cylindrical walls thereof; and means for rocking the valve, substantially as described.

61. In a fluid-pressure motor, a pressure-chamber, a piston adapted to travel therein, and movable valves for inclosing portions of said chamber and adapted to be forced into steam-tight contact with the walls of said chamber by the action of the pressure fluid, and to be released from such pressure before any movement of the valves takes place, substantially as described.

62. In a rotary motor, an annular pressure-chamber, a piston adapted to travel therein, and rotating valves for inclosing portions of said chamber and adapted to be forced into steam-tight contact with the walls of said chamber by the action of the pressure fluid and to be released from such pressure before any movement of the valves takes place, substantially as described.

63. In a rotary motor, an annular pressure-chamber, a piston adapted to travel therein, and movable valves for inclosing portions of said chamber and composed of a plurality of members, one within the other, and having reciprocal movements so as to reduce the amount of throw of a single part, substantially as described.

64. In a rotary motor, an annular pressure-chamber, a piston adapted to travel therein, and movable valves for inclosing portions of said chamber and composed of a plurality of members having reciprocal movements so as to reduce the amount of throw of a single part, said valves being adapted to be forced into steam-tight contact with the walls of said chamber by the action of the pressure fluid and to be released from such pressure before any movement of the valves takes place, substantially as described.

65. In a rotary motor, an annular pressure-chamber, a piston adapted to travel therein, and movable valves for inclosing portions of said chamber and composed of a plurality of rotating members, one within the other, and having reciprocal movements around a common center so as to reduce the amount of throw of a single part, substantially as described.

66. In a rotary motor, an annular pressure-chamber, a piston adapted to travel therein, and movable valves for inclosing portions of said chamber and composed of a plurality of rotating members, one within the other, and having reciprocal movements around a common center so as to reduce the amount of throw of a single part, said valves being adapted to be forced into steam-tight contact with the walls of said chamber by the action of the pressure fluid, substantially as described.

67. In a rotary motor, the combination of a pair of annular pressure-chambers, a piston-carrier between said chambers and a plurality of pistons on said carrier adapted to travel in said chambers, annular sections adjustable in a direction toward and away from the piston-carrier and between which the pistons move, said chambers being so proportioned as to maintain equal pressures on each side of said carrier, and the pistons being so arranged on the carrier as to balance one another and prevent excessive wear on the moving parts, substantially as described.

68. In a rotary motor, the combination of a pair of annular pressure-chambers, a piston-carrier between said chambers and a plurality of pistons on said carrier adapted to travel in said chambers, movable annular sections lying one within the other and between which the pistons move, the said sections being in frictional contact with said pistons and forming part of the walls of said chamber, said chambers being so arranged as to maintain equal pressures on each side of said carrier and the pistons being so arranged on the carrier as to balance one another and prevent excessive wear on the moving parts, substantially as described.

69. In a rotary motor, the combination of a pair of annular pressure-chambers, a piston-carrier between said chambers and a plurality of pistons on said carrier adapted to travel in said chambers, said chambers being so proportioned as to maintain equal pressure on each side of said carrier and the pistons being so arranged on the carrier as to balance one another and prevent excessive wear on the moving parts, a plurality of movable partitions adapted to inclose portions of the annular chambers and by which the pistons are permitted to pass, and means for moving said partitions and delivering the pressure fluid so that the pressure-chamber constitutes at all times, except when a piston is passing a partition, the space in the annular chamber between said piston and the second partition behind it, substantially as described.

70. In a rotary fluid-pressure motor, the combination with an annular fluid-chamber, a piston adapted to travel therein, movable valves in said chamber and a by-pass connecting both sides of said valves during the entire period of their movement so as to equalize the pressure thereon, substantially as described.

71. In a rotary fluid-pressure motor, the combination with an annular fluid-chamber, a piston adapted to travel therein, movable valves or partitions for inclosing portions of said chamber and by which said piston is adapted to pass, and a by-pass connecting the opposite sides of said valves during the entire period of their movement so as to equalize the pressure thereon, substantially as described.

72. In a rotary fluid-pressure motor, the combination with an annular fluid-chamber, a piston-carrier adjacent thereto, a piston on said carrier and adapted to travel in said chamber, a movable valve in said chamber, and a by-pass in said piston-carrier communicating with both sides of said valve during the entire period of its movement so as to equalize the pressure thereon, substantially as described.

848,861. COAL-MAGAZINE FOR AUTOMATIC STOKERS. LLOYD DE WITT SMITH, Detroit, Mich. Filed Oct. 14, 1905. Serial No. 282,708.

Claim.—1. In a magazine for automatic stokers, the combination with a side wall, of ends provided with bearings, and a cast bottom plate provided with a longitudinal rib extending from the lower surface of the plate at right angles thereto and at a short distance from one edge thereof to form with said edge a triangular-shaped strengthening edge and having a series of transverse webs connecting the plate and rib and formed with projections on the ends of the plate to engage the bearings and support the plate at each end.

2. In a magazine, for automatic stokers, the combination with a side wall, of a rear end wall formed with a bearing, a front end wall formed with a pocket open at the top and side, a plate adapted to form an inclined bottom for the magazine engaging the pocket at its forward end and provided with means on the rear end of the plate to engage the bearing.

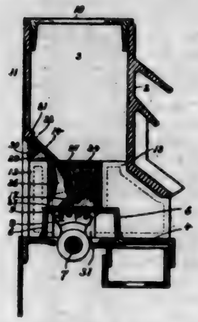

3. In a magazine for automatic stokers, the combination with a side wall, of a rear end wall formed with a recess, a front end wall formed with a pocket open at its top and side, and a plate adapted to engage the pocket at its forward end and provided with a lug on its rear end to engage the recess.

4. In a magazine for automatic stokers, the combination with a side wall, of an inclined bottom plate having a lug on its rear end, a rear end wall provided with a recess to receive said lug, and a front end casting formed with a pocket open at its top and side to receive the forward end of the plate by inserting the same through the open top, said pocket being formed with a front wall which is inclined inward and downward from the top of the pocket to engage the end of the plate.

5. In a magazine for automatic stokers, the combination of a side wall provided with an inwardly-projecting shoulder, a rear end wall formed with a recess, a front end formed with a pocket, and a bottom plate provided with a lug at its rear end to engage and turn in the recess and adapted to engage the pocket at its forward end and be supported with its upper edge beneath the shoulder.

6. In a magazine, for automatic stokers, the combination with a side wall, of a rear end wall formed with a recess, a front end wall formed with a pocket open at the top and one side, and a bottom plate adapted to be supported in an inclined position having a lug on its rear end to engage said recess and a laterally-extending end flange on its forward end to fit within the pocket and engage the side walls thereof when the plate is in its normal position, to prevent lateral movement of the plate.

7. In a magazine for automatic stokers, the combination of a side wall formed with an inwardly-projecting shoulder and an inwardly and downwardly extending longitudinal flange, an end wall formed with a recess, a front end wall formed with a pocket open at its top and side and formed with a front wall extending inward and downward from the top of the pocket, and a bottom plate adapted to engage the flange on the side wall beneath the shoulder and formed with an inwardly and downwardly inclined end to engage the inclined wall of the pocket and with a lug on its rear end to engage and turn within the recess.

8. In a magazine for automatic side-feed stokers, the combination with a furnace-front having a door, of a vertical side wall formed with a longitudinally-extending supporting-flange, a rear end wall formed with a triangular-shaped recess, a front end casting extending upward to the bottom of the door in the furnace-front and formed with a pocket open at its top and inner side and having a front wall extending inward and downward from the upper edge of the casting and provided with a forwardly-extending ledge on its upper end, and an inclined detachable bottom plate having a lug on its rear end to engage the recess in the end wall and a laterally-extending flange on its forward end to fit within the pocket and provided with a forwardly-projecting and downwardly-extending flange on its forward end at its upper edge to engage and rest upon the ledge.

848,862. FERRY-BRIDGE. EUGENE W. STERN, New York, N. Y. Filed July 19, 1906. Serial No. 326,811.

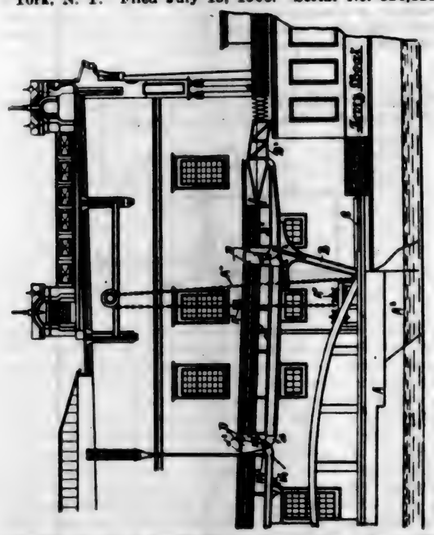

Claim.—1. In a double-decked ferry-bridge, the combination with the main deck of a superstructure and interposed column-supports and a longitudinal sliding base therefor.

2. In a double-decked ferry-bridge, the combination with the main deck of a superstructure comprising a second deck and interposed column-supports, and a longitudinal sliding base therefor provided with terminal stops.

3. In a bridge of the character described, a fundamental swinging structure having substantially a horizontal fixed axis, a jointed superstructure carried by the fundamental structure, the two adapted to swing in unison, supports for the superstructure pivotally connected thereto and slidingly connected with the fundamental structure.

4. In a bridge of the character described, the combination of a fundamental structure and a superstructure, both being adapted to swing on fixed substantially horizontal axes, and of supports, for the superstructure carried by the fundamental structure, provided with a sliding base connection.

5. In a plural-decked bridge of the character described, and wherein the same is adapted to swing on substantially horizontal fixed axes, a column-support having a sliding base rising from the main deck and pivotally connected with the upper deck, a gangway for the upper deck carried by said support and adapted to maintain a substantially horizontal position during the range of swinging movement on the said bridge, substantially as described.

6. In a plural-decked bridge of the character described, having a main deck and an upper deck substantially vertically over the former, adapted to swing on substantially horizontal fixed axes, a column-support having a sliding base rising from the main deck and pivotally connected with the upper deck, a gangway for the upper deck carried by said support, a stationary support for the structure, and means connecting the free swinging terminal of the lower deck and said stationary support for adjusting the horizontal position of said gangway.

7. In a bridge of the character described, the pivoted gang-plank provided with an adjustable counterbalance, and means at the outer terminal of said gang-plank for securing the position of the gangway.

8. In a bridge of the character described, the pivoted gangway provided with an adjustable counterbalance and a latch at the inner extremity, and a swinging sill at the outer extremity thereof together with means at the outer extremity of the gangway for controlling the latch.

9. In a gangway, a pivoted terminal gang-plank, a counterbalance and a latch at one extremity of said gang-plank, and means at the outer extremity of said gang-plank for controlling the latch.

10. In a double-decked bridge of the character described, the combination of upper-deck supports and longitudinal-displacement bases therefor of varying lengths.

11. In a double-decked bridge of the character described, the combination of upper-deck supports and longitudinal-displacement bases therefor of varying lengths, and of a truss structure for receiving the stress imposed upon the deck when the shorter-length bases have been displaced.

12. In a double-decked bridge of the character described, the combination of upper-deck supports and longitudinal-displacement bases therefor of varying lengths, the upper-deck supports being provided with longitudinal-displacement bases and of a truss structure.

13. In a double-decked bridge, the combination of upper-deck supports and longitudinal-displacement bases therefor said upper-deck supports being provided with means for restricting the movement of the supports.

14. In a bridge of the character described and in combination with the superstructure, supporting-columns having longitudinal-displacement bases, the heads of the supporting-columns being provided with stops.

15. In a bridge of the character described and in combination with the superstructure and column-supports therefor, displacement-supporting bearings for the superstructure and longitudinal-displacement bases for the supports.

848,863. REINFORCE AND BACKING FOR ARTIFICIAL TEETH. ISIDORE STERN, New York, N. Y. Filed July 16, 1906. Serial No. 326,335.

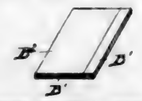

Claim.—1. A metallic tooth backing and reinforce, including two layers of different metals of different widths, both of said layers being intimately united, one layer being of solid gold and providing a solid-gold border at one edge.

2. A metallic tooth backing and reinforce, including two layers of different metals of different widths, both of said layers being intimately united, one layer being of solid gold and providing a solid-gold border at one edge, said backing being of substantially the same thickness throughout.

3. A metallically-reinforced artificial tooth, comprising a tooth of porcelain-like material, a metallic backing comprising a facing of gold bearing directly against the rear face of said tooth and overstanding the biting edge thereof, and a reinforcing layer of different metal intimately united with the gold facing at the back thereof, and a covering of gold solder for said reinforcing layer.

848,864. SPRING-SUPPORT FOR VEHICLE-BODIES. LEMUEL N. STEWART, Agency, Mo. Filed Mar. 9, 1906. Serial No. 305,149.

Claim.—1. In means of the class described, the combination of a support including spaced vertical members, a horizontal bar connecting the said members, complemental supporting members pivoted between their ends to the vertical members and connected at adjacent extremities for simultaneous movement, a bolster mounted upon the upper ends of the levers, a yoke connected with the adjacent ends of the levers, a rod attached to said yoke and passing through the horizontal bar, an adjustable

member on the said rod, and a spring interposed between the horizontal bar and the said adjustable member.

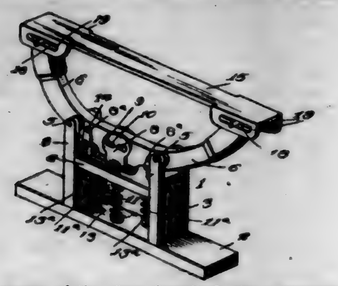

2. In means of the class described, the combination of a support, complemental supporting-levers pivoted at a point between the ends thereof to the support, connecting means between the adjacent ends of the levers for effecting simultaneous movement of said levers, a bolster mounted upon the outer or opposite ends of the levers and loosely connected therewith, a spring connected with the support and attached to the adjacent ends of both levers, and other springs auxiliary to the first-mentioned spring and each connected with one of the levers and adjustable independently of the first-mentioned spring to supplement the action thereof.

3. In means of the class described, the combination of a support including spaced vertical members, a horizontal bar connecting said members, complemental supporting-levers pivoted between their ends to the vertical members and connected at adjacent extremities for simultaneous movement, a bolster mounted upon the upper or remote ends of the levers, a yoke connected with the adjacent ends of the levers, a rod attached to said yoke and passing through the horizontal bar, an adjustable member on the lower end of said rod, a spring interposed between the horizontal bar and the adjustable member aforesaid, each lever having another yoke connected thereto, the last-mentioned yoke of each lever having a rod attached thereto and passing through the horizontal bar, an adjustable member on the last-mentioned rod of each lever, and a spring for said rod interposed between its adjustable member and the horizontal bar for the purpose specified.

848,865. FLY-CATCHER. ELLA K. STOBER, Akron, Ohio. Filed Dec. 21, 1906. Serial No. 348,937.

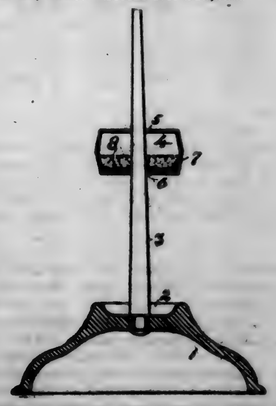

Claim.—The combination in a device of the class designated, of a base provided with a concaved depression in its upper portion, a tapering pin mounted on said base within the confines of said depression, a tank provided with perforated top and bottom portions, the perforations in these portions being larger than the pin at its largest point, a rubber washer in the bottom of said tank provided with a perforation sufficient to permit the pin to pass therethrough and be frictionally engaged thereby, and a quantity of adhesive or mucilaginous liquid in said tank above said rubber washer, all constructed substantially as shown and for the purpose stated.

848,866. ANIMAL-TRAP. ELBERT STURGILL, Bolia, Ky. Filed Dec. 17, 1906. Serial No. 348,226.

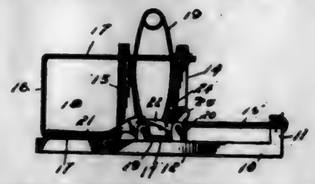

Claim.—An animal-trap comprising a base, a stationary standard thereon, a standard movable at its lower end along the base, a rod supported by the stationary standard and base for supporting and guiding the movable upright, an angular loop of wire outside of the stationary standard and having its arms extended through the same and connected with the movable standard an extensible spring between the two standards, a trip-lever or latch pivoted on the base and having its free end extending in a plane coincident with the base of the loop, a dog adapted to engage the said latch-lever and the movable upright to hold the trap in set position, and when disengaged from the latch-lever to free the movable upright, allowing the trap to be sprung.

848,867. DECORATING WALLS AND OTHER SURFACES. EVA SWITZER, Brooklyn, N. Y. Filed May 3, 1905. Serial No. 258,656.

Claim.—1. As a decoration for walls or other surfaces a plurality of cut-out representations of birds in different positions assumed while flying, and of different sizes, the whole collectively, being adapted when secured upon the wall or other surface to be decorated, to represent a flock of birds in flight, in perspective.

2. As a decoration for walls or other surfaces, a set or series of cut-out figures each figure representing a flying bird, the set comprising figures of birds in different positions and figures of different sizes, the set being adapted when secured to a plain undecorated surface, to represent in perspective, a flock of birds in flight.

848,868. DEVICE FOR FEEDING MELTING-POTS. EUGÈNE TRAMA, Marseille, France. Filed July 14, 1906. Serial No. 269,752.

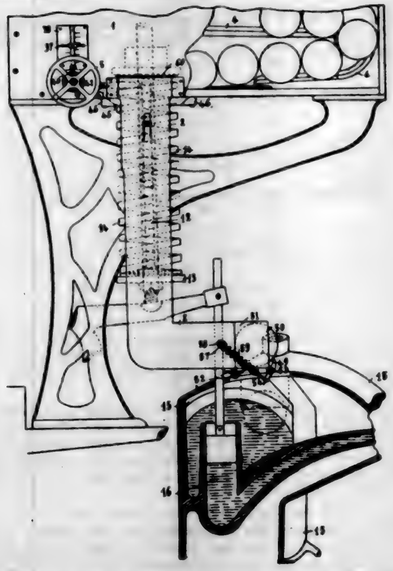

Claim.—1. In an automatic feed device for the metal-pots of linotype-machines, mechanism enabling the discharge of the balls to be regulated in accordance with a certain number of strokes of the plunger and comprising a hand-wheel mounted on a screw-threaded shaft, a perforated disk keyed to the said shaft, a spring for stopping the said disk, a traversing screw-nut mounted on the shaft, a slider mounted on the nut, a lever mounted to oscillate around the slider, a rod connected with one of the ends of the said lever, a ring on the rod which acts as an ordinary support to the plunger-spring, a rod pivotally connected with the other end of the said lever, a bell-crank lever joined to the rod, a pawl mounted on the bell-crank lever and adapted to engage with a ratchet-wheel, a cam, a shaft arranged to support the cam, the ratchet-wheel and the bell-crank lever, a finger actuated by the said cam, and an escapement-lever controlled by the said finger and allowing a passage for the balls, one by one, each time that the said toothed wheel effects a complete revolution, as described.

2. In an automatic feed device for the metal-pots of linotype-machines, the combination with the regulating-shaft of the mechanism for regulating the discharge of the balls of metal, of an indicator comprising a screw-spindle, toothed wheels gearing the screw-spindle to the regulating-shaft, a traversing nut mounted on the screw-spindle, an indicator arranged on the said nut and a graduated scale placed outside the magazine as described above.

3. In an automatic feed device for the metal-pots of linotype-machines, mechanism enabling the discharge of the balls to be regulated in accordance with a certain number of strokes of the plunger and comprising a hand-wheel mounted on a screw-threaded shaft, a perforated disk keyed to the said shaft, a spring for stopping the said disk, a traversing screw-nut mounted on the shaft, a slider mounted on the nut, a lever mounted to oscillate around the slider, a rod connected with one of the ends of the said lever, a ring on the rod which acts as an ordinary support to the plunger-spring, a rod pivotally connected with the other end of the said lever, a bell-crank lever joined to the rod, a pawl mounted on the bell-crank lever and adapted to engage with a ratchet-wheel, a cam, a shaft arranged to support the cam, the ratchet-wheel and the bell-crank lever, a finger actuated by the said cam, an escapement-lever controlled by the said finger and allowing a passage for the balls, one by one, each time that the said toothed wheel effects a complete revolution, and a hand-wheel keyed to the shaft which carries the toothed wheel and the cam and enabling the machine to be worked by hand in case of necessity.

4. In an automatic feed device for the metal-pots of linotype-machines, charged by means of balls of metal, a feed-tube for conveying the balls to the metal-pot, a spring mounted inside the vertical part for deadening the shock of the balls and a spring acting as a brake for moderating the fall of the said balls.

848,869. PERFORATOR. HENRY UPTON, Gananoque, Ontario, Canada. Filed June 28, 1905. Serial No. 267,436.

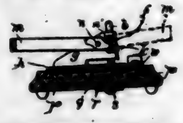

Claim.—1. A perforator comprising a pair of punches, a bar connecting such punches rigidly together, means whereby the punches are guided, means independent of the said bar and rigidly supporting a fulcrum-bar adjacent to the guiding means, and a lever fulcrumed a short distance from one end upon the fulcrum-bar, and adapted to at times have its short end project beneath and bear upwardly upon the first-mentioned bar and at other times have its long end ride the said bar, for the purpose set forth.

2. A perforator consisting of a bed-plate having a pair of holes therein, a pair of punches consisting of round bars equal in cross-section to the diameter of the holes in the bed-plate and each having one end diametrically concaved, a bar connecting such punches rigidly together, means whereby the punches are guided, and means rigidly supporting a fulcrum-bar adjacent to the guiding means, and a U-lever fulcrumed a short distance from its ends upon the fulcrum-bar and adapted to, at times, have its short end project beneath and bear upwardly upon the first-mentioned bar and, at other times, have its long end ride the said bar, substantially as described and for the purpose set forth.

3. A perforator consisting of a base having a pair of openings therethrough, a bed-plate secured to the top of such base and having a pair of perforations in line with the openings in the base, a pair of guiding-brackets mounted rigidly upon the bed-plate, a pair of punches having concave lower ends, and guided in the guiding-brackets, a bar rigidly connecting the punches together, a U-lever fulcrumed a short distance from the ends of its legs to the pair of brackets, and adapted to, at times, have its short end project beneath and bear upwardly upon the first-mentioned bar and at other times have its long end ride the said bar, a plate pivoted to the under side of the base and adapted to extend across and close the lower end of the openings therein, substantially as described and for the purpose set forth.

848,870. VARIABLE-SPEED MECHANISM. FRANKLIN A. WELLER, Troy, N. Y. Filed May 21, 1906. Serial No. 317,011.

Claim.—1. The combination with a motor-shaft; a drive-wheel fixed to rotate with, and slide longitudinally of, such shaft; an idle wheel; a movable support for the idle wheel; and a flexible transmitting member mounted upon

the wheels; of a counter drive-shaft; a plurality of wheels fixed upon such drive-shaft in planes parallel with the plane of the flexible transmitting member and differing from each other in diameter; means for moving the flexible transmitting device from the plane of one of the wheels on the counter drive-shaft to that of another; and means for moving the flexible transmitting member into and out of engagement with that one of the counter-shaft wheels which occupies the same plane with the flexible transmitting member.

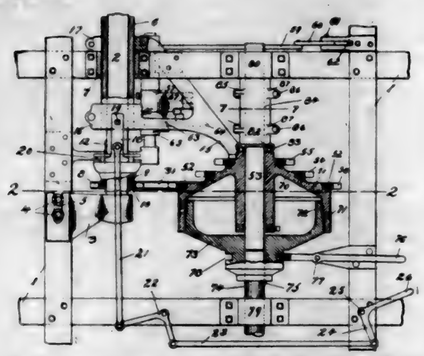

2. The combination with a drive-shaft and a plurality of wheels differing in diameter and fixed upon the shaft; of a motor-wheel movable laterally; a loose wheel; supports for the loose wheel movable in the plane of the motor-wheel, and also at right angles to such plane; a flexible transmitting member mounted upon the motor-wheel and loose wheel; and means for imparting to the flexible transmitting member and its supporting-wheels reciprocating movements at right angles to the planes of the drive-shaft wheels; and means for imparting to the flexible transmitting members to-and-fro movements in the planes of the drive-shaft wheels respectively, whereby the flexible transmitting member to-and-fro movements in the ment with any one of the plurality of drive-wheels fixed on the drive-shaft, substantially as described.

3. The combination with a motor-shaft; a driving-sprocket; sprocket-driven sprocket-chains; and chain-supports movable longitudinally of the shaft, the sprocket-chain being capable of lateral movements in the plane of the driving-sprocket; of a working hub having a plurality of sprockets of differing diameters fixed thereon in parallel planes each parallel to the plane of the driving-sprocket; means for moving the chain with its supports longitudinally of the shaft into the plane of a selected hub-sprocket; and means for communicating the desired lateral movements to the chain, whereby the selected hub-sprocket is engaged by the chain, substantially as described.

4. The combination with a motor-shaft; and sprocket-wheel mounted to rotate with and slide longitudinally thereof; of an oscillatory arm loosely mounted upon such power-shaft and adapted to slide longitudinally thereof; a sprocket-chain supported by the sprocket-wheel, and an idle wheel on the arm; a working hub having a plurality of sprockets of differing diameters fixed thereon in parallel planes, each parallel to the plane of the chain-supporting wheels; means for moving the chain-supporting wheels from the plane of one hub-sprocket to that of another; and means for communicating varying oscillatory movements to the arm, whereby the chain can be forced into and out of engagement with any predetermined hub-sprocket, substantially as described.

5. The combination with a motor-shaft; and sprocket-wheel mounted to rotate with and slide longitudinally thereof; of an oscillatory arm loosely mounted upon such power-shaft and adapted to slide longitudinally thereof; a sprocket-chain supported by the sprocket-wheel, and an idle wheel on the arm; a working hub having a plurality of sprockets of differing diameters fixed thereon in parallel planes, each parallel to the plane of the chain-supporting wheels; means for moving the chain-supporting wheels from the plane of one hub-sprocket to that of another; and a lever provided with a plurality of steps arranged at different distances from the lever-fulcrum corresponding with the differing diameters of the hub-sprockets and severally adapted to engage the oscillatory arm for communicating and controlling its oscillatory movements.

848,871. CHUCK FOR TRANSFER-PRESSES. GEORGE WHITE, Jersey City, N. J. Filed June 17, 1904. Serial No. 213,049.

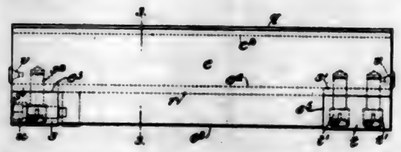

Claim.—1. A chuck for transfer-presses, comprising a body slotted longitudinally to receive the type-blocks and a pressure-receiving plate of relatively hard metal in the bottom of said slot, substantially as described.

2. A chuck for transfer-presses, comprising a body of metal slotted on opposite sides, one of said slots being adapted to receive the type-blocks, and plates of hard metal in said slots for contact with the type-blocks and the working plate of the press respectively substantially as described.

3. A chuck for transfer-presses, comprising a body of metal slotted to receive the type-blocks and formed with seats at the ends of the slot, a plate of hard metal in said slot to receive the pressure of the type-blocks, and thrust-blocks secured in said seats at the ends of said slot, substantially as described.

4. A chuck for transfer-presses, comprising a body of metal slotted to receive the type-blocks and formed with seats at the ends of the slot, a plate of hard metal placed in said slots to receive the pressure of said type-blocks, thrust-blocks secured in said seats at the ends of said slot and a binding or locking screw seated in one of said thrust-blocks, substantially as described.

5. A chuck for transfer-presses, comprising a body of metal slotted to receive the type-blocks and having at the bottom of said slot an undercut or dovetailed slot and a plate of hard metal seated in said dovetailed slot to receive the pressure of the type-blocks, substantially as described.

6. A chuck for transfer-presses, comprising a body of metal slotted to receive the type-blocks and having at the bottom of said slot an undercut or dovetailed slot and formed with seats, a plate of hard metal in said dovetailed slot to receive the pressure of the type-blocks and thrust-blocks secured in said seats and having dovetailed projections to engage said dovetailed slot, substantially as described.

848,872. SUBMARINE OR SUBMERGIBLE BOAT. THEODORUS S. BAILEY and LAWRENCE Y. SPEAR, Quincy, Mass., assignors to Electric Boat Company, Bayonne, N. J., a Corporation of New Jersey. Filed June 26, 1905. Serial No. 267,028.

Claim.—1. A submarine or submergible boat having a submergence-tank, the center of volume of whose contents is substantially in vertical alinement with the center of buoyancy of the immersed portion of the boat, said boat having a buoyant chamber so constructed and located that the centers of all water-planes passing therethrough shall lie substantially in a vertical line passing through the center of volume of the contents of said submergence-tank.

2. A submarine or submergible boat having a submergence-tank within the same, and a buoyant protuberance upon the upper portion of the boat, said tank and protuberance being so situated that the centers of gravity of the contents of the one and the centers of buoyancy of the other shall be substantially in the same vertical line for all degrees of submergence.

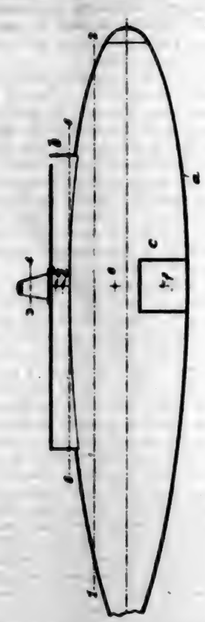

3. A submarine or submergible boat having a submergence-tank within the same, and a buoyant protuberance upon the upper portion of the boat, said tank and protuberance having relative volumes such that the weight of the contents of the auxiliary tank when full is substantially equal to the buoyancy of the buoyant protuberance and being so situated that the centers of gravity of the contents of the one and the centers of buoyancy of the other shall be substantially in the same vertical line for all degrees of submergence.

4. A submarine or submergible boat having a submergence-tank, the center of volume of whose contents is in substantially vertical alinement with the center of volume of the boat submerged, and a buoyant protuberance so located in the upper portion of the hull that its centers of buoyancy lie in substantially vertical alinement with the centers of gravity of the contents of said tank for all degrees of submergence.

5. In a submarine or submergible boat of the type having an auxiliary submergence-tank, the center of volume of whose contents is substantially in vertical alinement with the center of buoyancy of the boat as a whole when submerged, the combination with said tank of a buoyant protuberance upon the upper portion of the hull, said tank and protuberance having relative volumes such that the weight of the contents of the auxiliary tank when full is substantially equal to the buoyancy of the buoyant protuberance, and being so situated and proportioned that the center of gravity of the contents of the one and the center of buoyancy of the other shall be substantially in the same vertical line for all degrees of submergence of the protuberance.

6. In a submarine or submergible boat, main submerging means adapted to completely submerge the boat in fresh water and incapable of completely submerging the boat in salt water, and auxiliary submerging means adapted to complete the submergence in salt water, the boat being so shaped that the immersed portion of the boat when the main submergence means is operated in salt water has its center of buoyancy for all degrees of submergence substantially in vertical alinement with the center of buoyancy of the boat as a whole when submerged.

848,873. PIPE-COUPLING. WILLIAM BARTHOLOMEW, New York, N. Y., assignor to Troy Laundry Machinery Company, Limited, Troy, N. Y., a Corporation of New York. Filed Feb. 21, 1906. Serial No. 302,238.

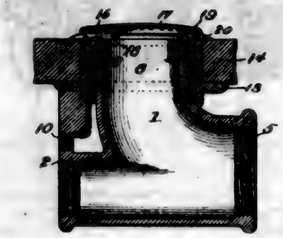

Claim.—1. A coupling provided with an intake and discharge passage, and with a steam-chamber surrounding said passage and having discharge-openings adjacent to the open end thereof.

2. A coupling provided with an intake and discharge passage, and with a steam-chamber surrounding said passage and having discharge-openings adjacent to the open end thereof, and a baffle-plate disposed above said openings.

3. A coupling provided with an intake and discharge passage and with a steam-chamber surrounding said passage and having discharge-openings adjacent to the open end thereof, and an annular baffle-plate surrounding said passage and disposed above said openings.

4. A coupling provided with an intake and discharge passage and with a steam-chamber surrounding said passage and having discharge-openings adjacent to the open end thereof, an annular baffle-plate surrounding said passage and disposed above said openings, spacing-lugs upon the under face of said plate, and securing means extending through said lugs into the face of said steam-chamber.

5. A coupling provided at opposite sides with inlet and discharge openings, and a passage extending at an angle to said openings and provided with a surrounding steam-chamber having a feed-opening.

6. A coupling provided at opposite sides with inlet and discharge openings, a passage extending at an angle to said openings and provided with a surrounding steam-chamber having a feed-opening, and a baffle-plate spaced from the discharge-opening of said steam-chamber.

7. A coupling provided at opposite sides with inlet and discharge openings, a passage extending at an angle to said openings and provided with a surrounding steam-chamber having a feed-opening, an annular baffle-plate disposed above the discharge-openings from the steam-chamber, and spacing means disposed between said plate and a face of the steam-chamber.

8. A coupling provided at opposite sides with inlet and discharge openings, a passage extending at an angle to said openings and provided with a surrounding steam-chamber having a feed-opening, an annular baffle-plate disposed above the discharge-openings from the steam-chamber, spacing means disposed between said plate and a face of the steam-chamber, and a securing-flange carried by the coupling and surrounding said chamber.

9. A coupling comprising a casing provided at one side with an inlet-opening and at the opposite side with a waste-opening of greater diameter than the inlet-opening, and a passage extending through the casing at an angle to said openings and surrounded by an annular steam-chamber having at one side a depending inlet connection.

10. A coupling provided with an inlet and discharge passage, and a steam-chamber surrounding the same and having at one side a depending passage provided with pipe connecting means therewith.

848,874. CYLINDER WASHING-MACHINE. WILLIAM BARTHOLOMEW, New York, N. Y., assignor to Troy Laundry Machinery Company, Limited, Troy, N. Y., a Corporation of New York. Filed July 28, 1906. Serial No. 327,422.

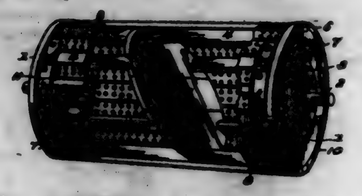

Claim.—A washing-machine cylinder comprising staves and opposite heads, a series of inwardly-projected ribs individually disposed between said staves and provided intermediate of their ends with recesses upon their inner faces, and a partition disposed between the heads and inclined to the longitudinal axis of the cylinder, said partition having recesses upon its periphery to interlock with those of the ribs.

848,875. BEATING-UP MECHANISM FOR LOOMS. CHARLES W. BATES, St. Hyacinthe, Quebec, Canada. Filed Mar. 10, 1905. Serial No. 249,453.

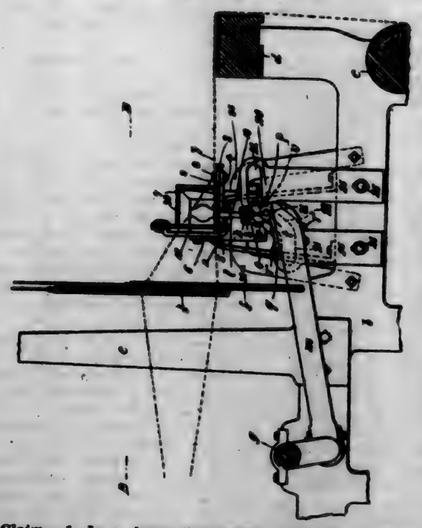

Claim.—1. In a loom the combination with a device adapted to move the weft-thread into contact with the woven cloth, of means for intermittently operating such device, stationary guiding mechanism whereby the said device is disengaged from the warp-threads during each period of intermission.

2. In a loom the combination of a pair of stationary guiding devices one at each side of the loom and presenting connected guiding portions in different planes relatively to the warp-threads, a vibratory device for moving the weft-thread into contact with the woven cloth, and a pair of lateral projections upon such device and engaging such guiding devices for the purpose set forth.

3. In a loom the combination with a vibratory device for moving the weft-thread into contact with the woven cloth, of a pair of stationary guiding devices one at each side of the loom and each formed with a slot presenting connected guiding portions in different planes relatively to the warp-threads, a pair of lateral projections upon such device one at each side of the loom and engaging the said slotted guiding devices, for the purpose set forth.

4. In a loom the combination with the shuttle-raceway, of a comb for beating up the weft-thread; means for imparting a beating-up action to the comb; and means whereby the said comb is enabled to enter between the warp-threads at a point behind the path along which the shuttle travels on the raceway.

5. In a loom the combination with a transversely-slotted stationary raceway, of a device having fingers adapted to be projected through the slot of the raceway, and means imparting to the said device movements alternately from one side to the other of the tread of the raceway and transversely through such tread.

6. In a loom the combination with a stationary raceway in the form of a reed, of a device having fingers adapted to be projected between the wires of the reed and means imparting to the said device movements alternately from one side to the other of the tread of the reed and transversely through such tread.

7. In a loom the combination with a stationary reed adapted to act as a raceway for a shuttle, of a vibratory device for moving the weft-thread into contact with the woven cloth such device having projecting members adapted to intersect the reed and having a pair of lateral projections one at each side of the loom, a pair of stationary guiding devices one at each side of the loom and each arranged to be engaged by one of the said projections, such guiding devices presenting guiding portions out of parallelism with the warp-threads, for the purpose set forth.

8. In a loom the combination with a stationary reed adapted to act as a raceway for a shuttle, of a vibratory comb for moving the weft-thread into contact with the woven cloth and the teeth whereof are adapted to intersect the wires of the reed, such comb having a pair of lateral projections one at each side of the loom, means for vibrating such comb, a pair of stationary guiding devices one at each side of the loom and each arranged to be engaged by one of the said projections, such guiding devices presenting guiding portions out of parallelism with the warp-threads, for the purpose set forth.

9. In a loom the combination with a stationary reed adapted to act as a raceway for a shuttle, of a vibratory comb for moving the weft-thread into contact with the woven cloth and the teeth whereof are adapted to intersect the wires of the reed, such comb having a pair of lateral projections one at each side of the loom, means for vibrating such comb, a pair of slotted stationary guiding devices one at each side of the loom and each arranged to have the slot therein engaged by one of the said projections, such slots presenting guiding portions in different planes parallel to the warp-thread and guiding portions out of parallelism with such warp-threads and connecting together said first-mentioned guiding portions, for the purpose set forth.

848,876. FRUIT-PICKER. GEORGE A. BERGER, Jr., Fremont, Ohio. Filed Dec. 21, 1906. Serial No. 349,003.

Claim.—1. A fruit-picking device comprising a pole, a basket hinged on said pole and spring-pressed into longitudinal alinement therewith, and a cable secured to said basket eccentrically of its hinge and adapted to extend down along the pole whereby the said cable may be pulled upon from the lower end of the pole, and the basket thereby tilted upon the pole.

2. A fruit-picking device, comprising a pole, a basket hinged on said pole and spring-pressed into longitudinal alinement therewith, a cable secured to said basket eccentrically of the hinge thereof, a running connection between said cable and the pole, and means for securing the cable rigidly to the pole.

3. A fruit-picking device comprising a pole, a basket hinged on said pole and spring-pressed into longitudinal alinement therewith, a cable secured to said basket, the pole being provided with a roller over which said cable passes, and a finger-loop connected to said cable and adapted to draw the same along the pole whereby to tilt the basket.

4. A fruit-picking device comprising a pole, a basket mounted to tilt on said pole, a cable secured to said basket, a link to which the cable is attached, the link being mounted to slide longitudinally on the pole and provided at one end with a finger-loop, and keepers adapted to be engaged by said loop, as and for the purpose set forth.

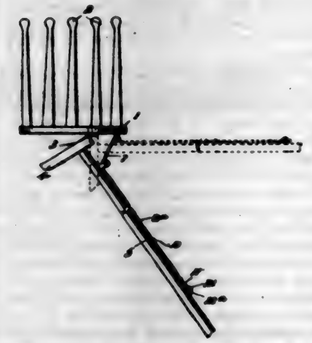

5. A fruit-picking device, comprising a pole, a basket mounted to tilt on said pole, a cable secured to said basket, a link mounted to slide longitudinally on the pole and attached to said cable, said link being provided with a finger-loop and a rod which connects the finger-loop and the link, and a pair of spaced keepers secured to said pole and provided with downwardly-facing shoulders, the loop being adapted to be inserted over said keepers whereby to hold the basket tilted at one angle with respect to the pole, and the rod being adapted to be placed between said keepers with the shoulders of the latter engaging the loop whereby to hold the basket at a greater inclination with respect to the pole.

848,877. PLIERS, PUNCH, AND SIMILAR TOOL. WILLIAM A. BERNARD, New Haven, Conn., assignor to The William Schollhorn Company, New Haven, Conn., a Corporation of Connecticut. Filed May 3, 1905. Serial No. 258,637.

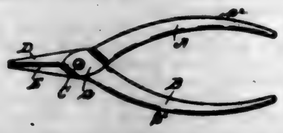

Claim.—1. In pliers, punches, and similar articles, the combination with two members pivotally united, a jaw at the forward end of each member, and the rear portions of said members constituting handles each having its edges bent inward transversely to form smooth inner surfaces, and each being bent longitudinally to constitute substantially convexed surfaces.

2. In pliers, punches and similar articles, the combination with two members pivotally united, a jaw at the forward end of each member, the rear portions of the said members having different cross-sectional areas and having inturned edges to constitute smooth inner surfaces, and the said portions being bent longitudinally, substantially as described.

3. In pliers, punches and similar articles, the combination of two members pivotally united, a jaw at the forward end of each member and the rear portions of the member being formed into handles and having their edge portions bent inwardly in substantially straight lines to form flat smooth inner surfaces, substantially as described.

4. A curved sheet-metal handle for pliers and the like, of substantially semitubular cross-section, said cross-section being closed or continuous throughout the gripping-surface of the handle, and larger in one dimension at the middle of said gripping-surface than at either end thereof.

848,878. COTTON-THINNER. NATHAN C. BOLIN, Decker, Tex. Filed June 13, 1906. Serial No. 321,563.

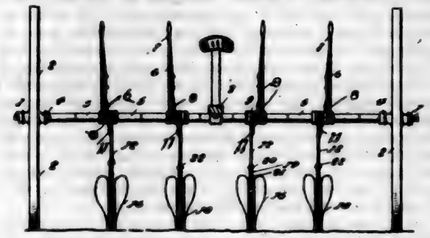

Claim.—1. In an implement of the character described, the combination of an axle, sleeves mounted upon said axle to turn freely thereon, plow-beams having adjustable connection with said sleeves, toothed segments fast to the axle, and levers fast to the respective sleeves and provided with means for coöperating with the toothed segments to hold the plow-beams in an adjusted position, and connecting means between the beams and said levers.

2. In an implement of the character specified, the combination of an axle, sleeves mounted upon the axle to turn freely thereon, an operating-lever fastened to each sleeve, interlocking means between the levers and axle to secure the sleeves at any required angular adjustment, a plow-beam mounted upon each sleeve and having independent pivotal movement, and connecting means between the several plow-beams and the respective operating-levers.

3. In an implement of the character set forth, the combination of an axle, a series of sleeves mounted upon said axle, a lever fastened to each sleeve, a toothed segment connecting with the axle in coöperative relation with each operating-lever, a hand-latch applied to each lever for cooperation with the respective segments to secure the operating-levers and sleeves in the required adjusted position, a cuff adjustable upon the sleeves both angularly and longitudinally, a plow-beam having pivotal connection with each cuff, and a flexible connection between each plow-beam and the respective operating-lever.

848,879. SEAL. LEWIS A. BROWN, St. Louis, Mo., assignor to St. Louis Steel Enameled Brick and Seal Company, a Corporation of Missouri. Filed Dec. 11, 1905. Serial No. 291,278.

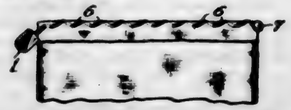

Claim.—1. A seal comprising a tape adapted to be sewn threadwise in cloth and the like, a knob or button inseparably fastened to one end thereof, a metallic finger fastened to the other end of the tape, a seal-body having a passage-way therein to receive the finger, and a spring within the passage-way to engage with the finger.

2. A seal comprising a tape adapted to be sewn threadwise in cloth and the like, a knob or button inseparably fastened to one end thereof, a metallic finger having a hook on the other end of the tape, a seal-body having a passage-way to receive the hook, and means, within the passage-way, to engage the hook to prevent its withdrawal.

3. A seal comprising a tape, a knob or button inseparably fastened to one end thereof, a metallic finger having wings bent over to bind upon the other end of the tape and form a shoulder on one side of the finger, a shoulder on the other side of the finger, a hook on the end of the finger, a seal-body having a passage-way therein to receive

the finger and the shoulders, a case within the passage-way to receive the hook, and a spring partially embedded in the seal-body, projecting into the case to engage the hook, substantially as specified.

4. A seal for bags and other receptacles comprising a flexible article adapted to be sewn threadwise through the bag or receptacle material, a knob or button inseparably fastened to one end of said flexible article, a seal-body, and means for engaging said body inseparably with the other end of said flexible article to prevent extraction thereof after it has been sewn, substantially as specified.

5. A seal for bags and similar receptacles comprising a flexible member which can be sewn threadwise through the bag or receptacle material, a knob or button inseparably fastened on one end of said member, a seal-body inclosing locking mechanism, and means rigid with the flexible member to engage with the locking mechanism and thereby prevent extraction of the flexible member after it has been sewn, substantially as specified.

6. A seal for bags and other receptacles comprising a flexible article adapted to be sewn threadwise through the bag or receptacle material, a knob or button inseparably fastened on one end of said flexible article, a metallic finger attached to the other end of the tape, a shoulder on each side of the finger, a hook or shoulder near the end of the finger, a seal-body having a passage-way therein to receive the finger and the shoulders, a case of narrower width than the passage-way embedded within the seal-body and opening into the passage-way to receive the hook, a spring having its central portion embedded within the seal-body at one side of the passage-way and its two ends projecting into the case from the open end thereof and substantially forming a V whereby to engage the hook, substantially as specified.

848,880. THEATRICAL SCENERY. EDGAR S. CAMERON, Chicago, Ill., assignor of one-half to Mark Salomon, Chicago, Ill. Filed Nov. 6, 1905. Serial No. 285,965.

Claim.—1. In a device of the class described, a scenic member, and an auxiliary transforming member of substantially the same outline, the latter normally concealed by the former and adapted to be moved with relation thereto to change the scenic effect normally produced by said scenic member.

2. In a device of the class described, a stationary member, and an auxiliary movable member of corresponding outline carried thereby for changing the scenic effect normally produced by such scenic member.

3. In a device of the class described, a stationary scenic member, and an auxiliary member of substantially the same contour carried thereby and movable relative thereto, and means for moving the auxiliary member independently of and relatively to the scene produced by the stationary member whereby a transformation of the stationary member may be gradually effected.

4. In a device of the class described, a stationary scenic member, an auxiliary member of corresponding outline located on the rear face of and slidable on the stationary member for changing the effect normally produced by the stationary member, and cable mechanism for raising and lowering the auxiliary member.

5. In a device of the class described, a stationary set piece bearing an out-of-door scenic representation, and a normally concealed auxiliary movable member of corresponding outline carried by the set piece and adapted when exposed above the same to transform the scenic representation to a snow scene.

6. In a device of the class described, a set piece bearing an out-of-door scenic representation, and a normally concealed auxiliary member having substantially the same outline as and slidably mounted on the set piece and adapted when exposed above the set piece to produce a corresponding snow-scene effect, and means for sliding the auxiliary member.

7. In a device of the class described, a stationary scenic member, an auxiliary member located on the rear face of and slidable on the stationary member so as to be disclosed above the upper edge of the stationary member, a drum, and a cable having portions attached to the auxiliary piece to maintain the parallelism of the latter when moved.

8. In a device of the class described, a stationary scenic member having mounted thereon a member to change the effect produced by the stationary member, a drum, idlers carried by the stationary member, and a cable adapted to the drum and idlers and having parallel portions attached to the auxiliary member and moving in the same direction to maintain the parallelism of the latter.

9. In a device of the class described, a plurality of stationary scenic members each of which is provided with a movable transforming member of substantially the same outline as and normally concealed by the stationary member and adapted when exposed to change the effect of the scene produced by the stationary members, and means for moving and exposing the transforming members simultaneously without changing the positions of the scenic members.

10. In a device of the class described, a plurality of stationary scenic members, a movable transforming member carried by and conforming to the contour of each stationary member for changing the effect produced by the stationary members without changing the positions of the scenic members, and means for moving the transforming members simultaneously but different distances.

11. In a device of the class described, a plurality of stationary scenic members, a movable member carried by each stationary member for producing a different effect with respect to the stationary members, simultaneously-operated drums each of which is associated with a stationary member, and cables adapted to the drums and attached to the movable members, the said drums decreasing in diameter, whereby the movable members are moved simultaneously but different distances.

12. In a device of the class described, a set piece and a flap normally horizontal and concealed by the set piece and which when inclined to expose the same changes the effect normally produced by the set piece.

13. In a device of the class described, a set piece, a flap normally horizontal and concealed by the set piece, and means for tilting the flap to expose the same and vary the effect normally produced by the set piece.

14. In a device of the class described, a stationary scenic setting consisting of one or more pieces, a flap normally concealed by the setting, and means for tilting the flap to disclose the same and transform the effect normally produced by the setting to another effect without moving the setting.

15. In a device of the class described, a plurality of set pieces, a flap normally horizontal and concealed by the set pieces and having openings through which the set pieces pass, and means for tilting the flap to disclose it to view and to transform the effect normally produced by the set.

16. In a device of the class described, a scenic member provided with an auxiliary member, a set piece in front of the scenic member, a flap normally concealed by the set piece, and means for moving and exposing the auxiliary member and the flap simultaneously to change the normal effect produced by and without changing the position of the scenic member and set piece.

17. In a device of the class described, a scenic member, an auxiliary member carried by and movable relative to the said member, a plurality of set pieces in front of the said member, a flap normally concealed by the set pieces and having openings through which the latter project, and cable connections for moving the auxiliary member and flap simultaneously to disclose the same and vary the effect of the scenic member and set pieces.

848,881. SLIDING-DOOR LOCK. LEON CATOR, Palmyra, N. Y. Filed Apr. 21, 1906. Serial No. 313,037.

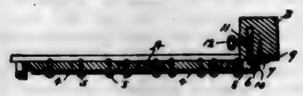

Claim.—1. The combination with a sliding door of a hasp-plate fixed thereto, said hasp-plate having a shouldered end portion terminating in a forward extension in a plane parallel to the plane of said plate, said door being recessed adjacent to said shouldered end, a stationary keeper for said extension and a bolt designed to work in the recess of said door, and to engage said shouldered end whereby to hold said extension within said keeper.

2. The combination with a sliding door of a hasp-plate carried thereby, said hasp-plate having a shouldered end provided with a forward angular extension in a plane parallel to the plane of said plate, said extension having an inclined or beveled surface, said door being recessed rearwardly of said extension, a stationary keeper for said extension, and a sliding bolt designed to work in the recess of said door and to engage said shouldered end whereby to hold said extension within said keeper.

3. The combination with a sliding door, of a hasp-plate carried thereby, and provided with an angular shoulder in spaced parallel relation to the adjacent edge of the door, said shoulder having a forward extension parallel with the said hasp-plate, a stationary keeper for said extension and a sliding bolt mounted for reciprocating movement longitudinally of said shoulder and adapted and arranged for locking engagement with said shoulder, as and for the purpose specified.

848,882. WEATHER-GUARD. EUGENE L. CHARBOIN, Seattle, Wash. Filed Mar. 14, 1906. Serial No. 306,042.

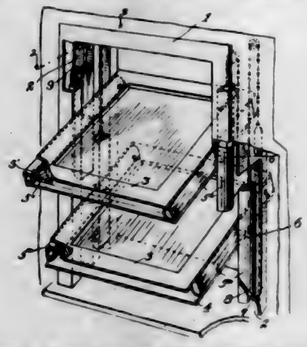

Claim.—1. In combination with a window-frame, a sash therein, said sash being formed in the outer portions of opposite sides with grooves, and said window-frame being formed in contiguous sides with grooves registering therewith, and weather-guards each projecting into a groove of the sash and window-frame respectively and formed of sections pivoted together, and means to effect rotation of said weather-guards.

2. In combination with a window-frame, a sash therein, said sash having its stiles formed with grooves registering with grooves in the contiguous sides of the window-frame, and means formed of sections pivoted together arranged between the stiles of the sash and the adjacent sides of the window-frame and projecting into the grooves thereof, whereby the sash is mounted for vertical sliding and swinging movement.

3. In combination with a window-frame a sash therein, weather-guards secured in the stiles of said sash and slidably engaging in the adjacent sides of the window-frame, said weather-guards being formed in sections pivoted together whereby swinging of said sash is permitted, and means whereby said guards are bodily rotated, thereby breaking the registration of the spaces between the respective sections thereof with the spaces between the stiles of the sash and the adjacent sides of the window-frame.

4. In combination with a window-frame, a sash therein, weather-guards in the stiles of said sash, said guards being formed in sections pivoted together, one section being secured in the stile of the sash and the other slidably engaging in the adjacent side of the window-frame, and means to rotate said guards by movement of the sash.

5. In combination with a window-frame, a sash therein, opposite rotatable weather-guards formed in sections pivoted together and one section of each guard being received in the adjacent stiles of the sash and the other sections slidably engaging in the sides of the window-frame and being formed with cam-slots, and means secured to the window-frame and arranged to engage in said cam-slots, for the purpose specified.

6. In combination with a window-frame, a sash therein, opposite weather-guards formed of hollow metal sections having their adjacent walls corrugated thereby providing interlocking portions, one section of each weather-guard being secured in the adjacent stile of the sash, and the other sections being slidably engaged in the window-frame.

7. A weather-guard formed of a plurality of sections pivoted together so that one section can be swung on the other.

848,883. PACKAGE-ROLL OF METALLIC LEAF. WALTER H. COE, Providence, R. I. Filed May 31, 1906. Serial No. 319,643.

Claim.—A package-roll of metallic leaf having its supporting-strip provided with a smooth surface at one side, and a comparatively rough surface at the other, whereby the metallic leaf may be suitably held for delivery upon unwinding the roll.

848,884. EXCELSIOR-CUTTING MACHINE. WILLIAM D. CRAIG, Kansas City, Mo. Filed Nov. 5, 1906. Serial No. 341,999.

Claim.—1. In a machine of the character described, the combination with the main frame and fixed standards rising therefrom, a main shaft journaled in the frame and having a disk cutter and a pulley, a counter-shaft journaled in said standards at right angles to the main shaft, a pulley on the counter-shaft, and belting connecting said pulleys; of a swinging frame comprising arms pivoted at their upper ends on the counter-shaft, chuck members carried by their lower ends, a belt and pulleys connecting one of said members with the counter-shaft, a brace rigidly connecting said arms, a pulley on the main frame, and a cable leading from said brace over the pulley to a weight.

2. In a machine of the character described, the combination with the main frame and fixed standards rising therefrom, a main shaft journaled in the frame and having a disk cutter and a pulley, a counter-shaft journaled in said standards at right angles to the main shaft, a pulley on the counter-shaft, and belting connecting said pulleys; of a swinging frame comprising arms pivoted at their upper ends on the counter-shaft, chuck members carried by their lower ends, a belt and pulleys connecting one of said members with the counter-shaft, a brace rigidly

connecting said arms, arms projecting rigidly from said standards above the disk cutter, and set-screws in these

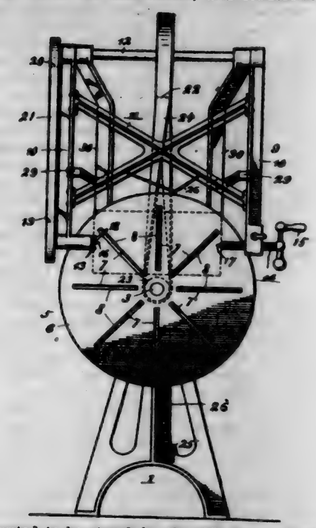

arms adapted to be struck by the side arms of said swinging frame, substantially as described.

848,885. AUTOMOBILE-WHEEL. DAVID R. C. DEVINE, Philadelphia, Pa., assignor to himself and John F. Phillips, Philadelphia, Pa. Filed July 20, 1906. Serial No. 326,968.

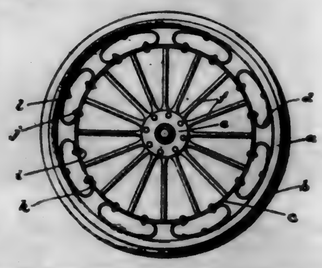

Claim.—1. In a vehicle-wheel, the combination with a rim and a hub, of spring-strips confined between them and adapted to yield during compression of the rim, said springs being provided with a bend or hump adapted during the compression of the spring to rock and slide upon one of the wheel members.

2. In a vehicle-wheel, the combination with a rim and a hub, of spring-strips confined between them and adapted to yield during compression of the rim, said springs being provided with a bend or hump adapted during the compression of the spring to rock and slide upon one of the wheel members, said spring being slotted longitudinally in the part thereof provided with the hump, and a bolt engaging the slot and said wheel member.

3. In a vehicle-wheel, the combination with a rim and a hub, of spring-strips confined between them and adapted to yield during compression of the rim, said springs being provided with a bend or hump adapted during the compression of the spring to rock and slide upon one of the wheel members, said spring being slotted longitudinally in the part thereof provided with the hump, and a bolt engaging the slot and said wheel member, said bolt having a head whose under surface is convex and rests within the concavity of the hump.

4. In a vehicle-wheel, the combination with an outer rim, an inner rim spaced therefrom and normally concentric thereto, a hub, and connections between the hub and the inner rim, of a series of springs interposed between the rims, each spring comprising an elastic metal strip secured between its ends to the outer rim and having its ends bent inwardly toward each other, so as to lie outside the inner rim, each spring-strip, near each of its ends, being bent successively toward and from the inner rim to form a hump, contacting therewith, adapted during the compression of the spring to rock and slide upon the rim, said spring being slotted longitudinally near its end, and a bolt engaging the rim and the slot of the spring.

5. In a vehicle-wheel, the combination with an outer rim, an inner rim spaced therefrom and normally concentric thereto, a hub, and connections between the hub and the inner rim, of a series of springs interposed between the rims, each spring comprising an elastic metal strip secured between its ends to the outer rim and having its ends bent inwardly toward each other, so as to lie outside the inner rim, each spring-strip, near each of its ends being bent successively toward and from the inner rim to form a hump, contacting therewith, adapted during the compression of the spring to rock and slide upon the rim, and means securing the spring to the inner rim.

6. In a vehicle-wheel the combination with an outer rim, an inner rim spaced therefrom and normally concentric thereto, a hub, and connections between the hub and the inner rim, of a series of springs interposed between the rims, each spring comprising an elastic metal strip secured between the ends to the outer rim and having its ends bent inwardly toward each other, so as to lie outside the inner rim, each spring-strip, near each of its ends, being bent successively toward and from the inner rim to form a hump contacting therewith, said spring-strip being slotted longitudinally in that part of the strip so contacting with the inner rim, and a bolt extending through the rim and the slot of the spring-strip and having a head having a convex under surface overlying and contacting with the concavity of the hump.

7. In a vehicle-wheel, the combination with an outer rim, an inner rim spaced therefrom and normally concentric therewith, a hub, and connections between the hub and the inner rim, of a series of springs interposed between the rims and secured to one of the rims, said springs each being bent outwardly and inwardly to form a hump contacting with the other rim and adapted in the compression of the spring to rock and slide upon its contacting rim.

8. In a vehicle-wheel, the combination with an outer rim, an inner rim spaced therefrom and normally concentric therewith, a hub, and connections between the hub and the inner rim, of a series of springs interposed between the rims and secured to one of the rims, said springs each being bent upwardly and inwardly to form a hump contacting with the other rim, said spring being slotted longitudinally in the part thereof provided with the hump, and a bolt engaging the slot and wheel member whose under surface rests within the concavity of the hump.

9. In a vehicle-wheel, the combination with an outer rim, an inner rim spaced therefrom and normally concentric thereto, a hub, and connections between the hub and the inner rim, of a series of springs interposed between the rims, each spring comprising an elastic strip secured between its ends to the outer rim and having its ends each bent successively outwardly and inwardly with respect to its intermediate portion and thence again bent for a relatively short distance outwardly and inwardly to form a hump contacting with the inner rim, said hump being slotted longitudinally, and a bolt engaging the rim and the slot of the spring.

848,886. COOLING DEVICE FOR COMBUSTION-ENGINES. CHARLES E. DURYEA, Reading, Pa. Filed Apr. 9, 1903. Serial No. 151,807.

Claim.—1. In a heat-engine, a crank-case, a cylinder screwed thereinto, and a sheet-metal jacket removably attached at one end between said case and cylinder.

2. In a heat-engine one or more cylinders having lateral flanges and removably attached to a common crank-case by screw-threads in the ends of said cylinders and a sheet-metal jacket clamped at one end between said flanges and case, said cylinders being adapted to be stopped in a predetermined position by the interposition of suitable gaskets in conjunction with said flanges.

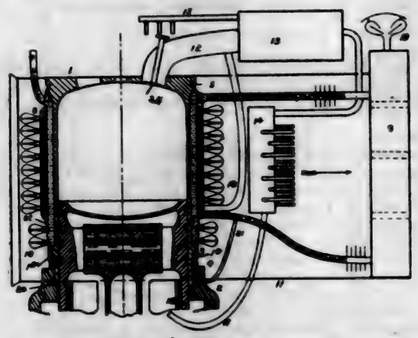

3. In a heat-engine a cylinder having a sheet-metal jacket and adapted to be attached to a crank-case by the use of screw-threads on the end of the cylinder and a flange which serve to both fix the cylinder and to clamp one end of the jacket.

4. In a heat-engine, a crank-case, a cylinder screwed thereinto, a sheet-metal jacket removably attached at one end between said case and cylinder, the cylinder at the other end being provided with an exterior groove receiving the end of the jacket, and a soft-metal ring in said groove binding said jacket in place.

5. In combination with a heat-engine whose piston is open to the air at one end, a casing surrounding the same and having openings to permit air circulation, a muffler, a pipe leading from the muffler, and an injector in the casing having multiple small jets for causing a circulation of air through the same, said injector being connected with the muffler by said pipe, and a pipe leading from an exhaust-passage into the open end of the piston to increase the circulation of air therein.

6. In a heat-engine, a piston open to the air at one end, a casing surrounding the engine and having openings to permit air circulation, a jacket surrounding the cylinder, a tank, means for the circulation of a cooling medium through said tank and jacket, a muffler, an injector connected to the muffler and having multiple small outlet-jets for causing a circulation of air through the casing, and a pipe leading from the injector into the open end of the piston.

7. In a heat-engine, a piston open to the air at one end, a casing surrounding the engine and having openings to permit air circulation, a jacket surrounding the cylinder, a tank, a trap at the top of the tank, means for the circulation of a cooling medium through said tank and jacket, a muffler, an injector connected to the muffler and having multiple small outlet-jets for causing a circulation of air through the casing, and a pipe leading from the injector into the open end of the piston.

8. In a heat-engine, a plurality of liquid-containing jackets, a filling of easily-melted metallic alloy between one of said jackets and the cylinder, and piping for containing liquid, a circulating medium consisting of lubricating-oil and means for oiling the piston from the circulating-supply.

9. In combination with a heat-engine, a tank for containing oil, a casing inclosing the engine, a jacket for the cylinder, with means for causing a circulation of air through the casing, consisting of multiple jets of exhaust-gases, means for forcing into said oil bubbles of gas to lessen the density of said oil, a connection between the tank and the cylinder-jacket and a trap in the top of said tank to separate the bubbles from the oil and to permit the escape thereof to the atmosphere.

10. The combination with a cylinder having a flange, and a groove near one end, and a crank-case, of a jacket having one end seated in said groove and the other end engaged beneath said flange, and gaskets interposed between the flange and the end of the crank-case and engaged by the end of said jacket as and for the purpose specified.

11. In combination with a heat-engine, a suitable jacket for containing oil, a supply-tank connected therewith, a second jacket containing an easily-melted metallic alloy interposed between the cylinder-wall and said oil-jacket, means for forcing gas into the oil, and a separator in said tank constructed to eliminate the gases from the oil in said tank.

848,887. AUTOMATIC IDENTIFICATION-STAMP. JAMES T. EARLE, Latonia, Ky. Filed July 8, 1904. Serial No. 215,837.

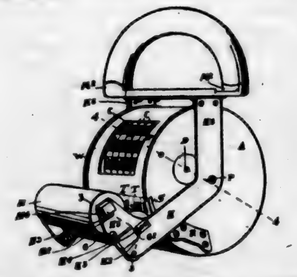

Claim.—1. A cylinder provided with a recess B having two or more disks C, carrying on their peripheries characters, the said disks being pivoted on a pivot D, and the characters of each disk extending through the space F in the periphery of the cylinder, and means for setting these disks at any proper point of their circle of rotation, the cylinder being provided with circumferential grooves, adapted to receive the dating-stamps, and the dating-stamps therein substantially as and for the purposes specified.

2. A cylinder provided with a recess B having two or more disks C, carrying on their peripheries characters, the said disks being pivoted on a pivot D, and the characters of each disk extending through the space F in the periphery of the cylinder, and means for setting these disks at any proper point of their circle of rotation, the cylinder being provided adjoining the space F with circumferential grooves, adapted to receive the dating-stamps, and the dating-stamps therein, substantially as and for the purposes specified.

3. In a machine for stamping, consisting of a cylinder provided with type, a handle, arms K pivotally secured at P to the cylinder extension K^9, intermediate means between the handle and extension K^9 for connecting the same, rollers L pivoted to the arms K at their lower ends, inking-roller in the terminal member of arm K, the arm K and the extension K^9 being at an angle to each other, substantially as and for the purposes specified.

4. In an automatic identification-stamp, a cylinder having a recess, two or more disks set within said recess, a pivot D for carrying the same, means for setting the disks so that the proper character thereon shall be in position for printing, a handle, arms K, K^9, the latter attached to the handle, rollers L connected to the lower end of arms K, inking-roll G, a device for elastically pressing it against cylinder A, a pivot P fixed to the cylinder A, a spring Q connected to said pivot at one end and at the other to arm K^9 and a stop R for limiting the action of the spring in returning the cylinder to its first position, substantially as and for the purposes specified.

5. In an automatic identification-stamp, a cylinder having a recess, two or more disks set within said recess, a pivot D for carrying the same, means for setting the disks so that the proper character thereon shall be in

position for printing, a handle, arms K, K², the latter attached to the handle, rollers L connected to the lower end of arms K, inking-roll G, a device for elastically pressing it against cylinder A, the ink-feeding roll H, device for elastically pressing it against the roll G, a pivot P fixed to the cylinder A, a spring Q connected to the said pivot at one end and at the other to arm K², and a stop R for limiting the action of the spring in returning the cylinder to its first position, substantially as and for the purposes specified.

6. A cylinder provided with a recess having two or more disks bearing characters, the said disks being pivoted on a pivot D and the characters of each disk extending through the space F in the periphery of the cylinder, means for setting these disks at any proper point of their circle of rotation, and the peripheral rubber rim on the periphery of the cylinder, at each edge of it, substantially as and for the purposes specified.

848,888. OUTLET-BOX. FREDERIC W. ERICKSON, New York, N. Y. Filed Jan. 29, 1907. Serial No. 354,607.

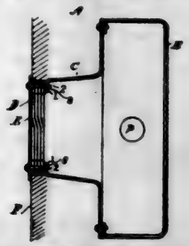

Claim.—1. The combination with an outlet-box and its cover or lid of a spacing device interposed between the box and cover consisting of two or more layers of metal of small cross-section having projections on opposite sides and internal loops, with screws joining the cover to the box whose bodies extend through said loops.

2. The combination with an outlet-box and its cover or lid, of a spacing device interposed between the box and cover consisting of two or more layers in one piece of thin metal ribbon having projections on opposite sides and internal loops, with screws joining the cover to the box whose bodies extend through said loops.

3. The combination with an outlet-box and its cover or lid, of a spacing device interposed between the box and the cover consisting of two or more layers in one piece occupying different planes of thin resilient metal ribbon rectangular in plan having projections on opposite sides and internal loops, with screws joining the cover to the box whose bodies extend through said loops.

4. As an article of manufacture, a spacing device composed of thin ribbon metal in one piece occupying different planes having projections on opposite sides with loops in the rear of said projections.

5. As an article of manufacture, a spacing device composed of a strip or ribbon of thin resilient metal built up in two or more planes rectangular in plan having projections on opposite sides and loops in the rear of said projections, each plane being slightly separated from the other.

6. As an article of manufacture for outlet-boxes a collar or spacing device composed of metal of small cross-section in one piece occupying different planes conformed in plan to the opening of an outlet-box.

7. As an article of manufacture for outlet-boxes a collar or spacing device composed of metal of small cross-section in one piece occupying different planes conformed in plan to the opening of an outlet-box the coils made homogeneous by being dipped in molten soft metal.

8. As an article of manufacture for outlet-boxes a collar or spacing device composed of metal of small cross-section in one piece occupying different planes conformed in plan to the opening of an outlet-box the configuration of the same adapted to assist in steadying the same laterally when upon said box.

9. The combination with an outlet-box an extension or spacing device consisting of laminations of suitable material substantially of the shape of the box-opening, with means for adapting the thickness of the laminations to coincide with the face of the wall, as set forth.

848,889. PACKING-CASE. WILLIAM P. FITZGERALD, Brooklyn, N. Y., assignor to Crouch & Fitzgerald, a Corporation of New York. Filed Sept. 18, 1906. Serial No. 335,114.

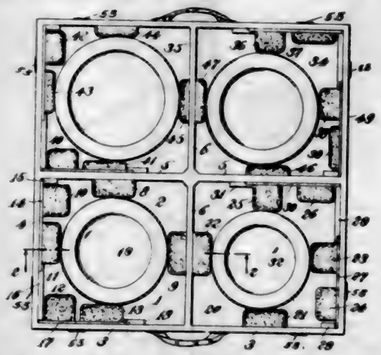

Claim.—1. A traveling-case, comprising a packing-compartment provided with substantial walls; means for varying the packing-space within said compartment comprising one or more spacing members of selected dimensions each removably securable to one or more of the walls of said compartment.

2. A traveling-case, comprising a packing-compartment provided with substantial walls; means for varying the packing-space within said compartment comprising one or more spacing members of selected dimensions each fixed to an interchangeable slide which is removably securable to one or more of the walls of said compartment.

3. A traveling-case, comprising a packing-compartment provided with substantial walls; means for varying the packing-space within said compartment comprising a set of spacing members of various selected dimensions integrally mounted on a single reversible slide; means for removably securing said slide to a wall of said compartment so that the location of the spacing members relative to the compartment will be altered when said slide is reversed, end for end.

4. In a traveling-case, one or more trays each comprising one or more packing-compartments provided with substantial walls; means for varying the packing-space within one or more of said compartments comprising a set of spacing members of selected dimensions, said members being mounted side by side on a single reversible slide; means for removably securing said slide to a wall of a compartment so that the location of the spacing members relative to the compartment will be altered when said slide is reversed, end for end.

5. In a packing-compartment provided with substantial walls; self-contained means comprising spacing members of selected dimensions reversibly secured to one or more walls of said compartment and capable of varying the packing-space within said compartment.

6. In a packing-compartment for fragile articles and provided with substantial walls; a plurality of walls provided with fixed pads; one or more additional walls provided with means for removably securing pads of selected dimensions so that the packing-space within said compartment may be varied to conform to the articles contained therein.

7. In a packing-compartment provided with four substantial walls substantially at right angles one with another; similar means in combination with each of two adjacent walls for varying the packing-space within the compartment, said means comprising a plurality of spacing members fixed side by side to a removable and reversible slide.

8. A traveling-case comprising one or more trays divided by walls into compartments; one or more of said compartments being provided with means for varying the packing-space within the compartments, said means comprising a plurality of spacing members of different dimensions respectively and mounted on a reversible slide removably secured one to each of one or more walls of the compartment.

9. In a traveling-case, a tray divided by partitions into compartments of uniform dimensions and provided with substantial walls; means for changing the packing-space in one compartment from one to the other of two selected sizes; means for changing the packing-space in a second compartment from one to the other of two independent selected sizes; said means comprising one or more sets of spacing members for each compartment, each set being mounted on a reversible slide removably securable to a wall of the compartment.

10. In a traveling-case, one or more trays divided by walls each into a plurality of compartments; means for changing the packing-space in each of a plurality of said compartments from one to the other of two selected sizes for each compartment, said two selected sizes for one compartment being independent of the selected sizes for the other compartments; said means comprising one or more sets of spacing members for each compartment, each set being mounted on a reversible slide removably securable to a wall of the compartment.

11. In a packing-case for fragile articles of various standard sizes, a tray comprising separate compartments accessible from above; a compartment provided with a pad at the bottom and a plurality of wall-pads of selected dimensions; one or more of said wall-pads being removable and replaceable so as to vary the packing-space within said compartment from one standard size to another.

12. In a packing-case for fragile articles of various standard sizes, a tray comprising separate compartments accessible from above; a compartment provided with a pad at the bottom and a plurality of wall-pads of selected dimensions; one or more of said wall-pads being removable and replaceable so as to vary the packing-space within said compartment from one standard size to another; and guiding and securing means in combination with one or more walls of said compartment for said removable and replaceable pads.

13. In a packing-case for plates, a compartment provided with flat vertical walls and a horizontal bottom wall; a centrally-located vertical pad for each vertical wall, one or more of said pads being of selected dimensions and removable and replaceable so as to vary the packing-space within said compartment.

14. In a packing-case for plates, a box-like compartment regular in horizontal outline and open at the top; a centrally-located vertical pad for each of a plurality of the vertical walls of said compartment; a pair of pads for each of the remaining vertical walls of said compartment, said pair of pads being respectively of two separate selected sizes; said pair of pads being mounted on a removable and reversible slide securable to a wall of said compartment so that one of said pads will be centrally located relative to said wall and the reversal of said slide will cause said pads to vary the packing-space within said compartment.

15. In a packing-case for plates, an exterior receptacle provided with a lid and containing one or more trays, each comprising a box-like compartment regular in horizontal outline and open at the top; a centrally-located vertical pad for each of a plurality of the vertical walls of said compartment; a pair of pads for each of the remaining vertical walls of said compartment, said pair of pads being respectively of two separate selected sizes; said pair of pads being mounted on a removable and reversible slide securable to a wall of said compartment so that one of said pads will be centrally located relative to said wall and the reversal of said slide will cause said pads to vary the packing-space within said compartment.

16. In a packing-case, a box-like compartment open at the top and provided with vertical walls; vertical guides secured to one or more walls of said compartment; a reversible slide removably secured to a wall by said guides; a pair of vertically-extending spacing members secured to said slide; said pair of spacing members being respectively of different selected dimensions so that the reversal of said slide will alter the packing-space within said compartment.

17. In a packing-case, a box-like compartment open at the top and provided with vertical walls and regular in horizontal outline; vertical guides secured to one or more walls of said compartment; a reversible slide removably secured to a wall by said guides; a pair of vertically-extending spacing members secured to said slide so that one of said spacing members is centrally located relatively to said wall, said pair of spacing members being respectively of different selected dimensions so that the reversal of said slide will alter the packing-space within said compartment.

18. In a packing-case, a tray comprising a packing-compartment having substantial walls; a wall of said compartment being provided with a pad for engaging the articles to be packed therein; and means associated with a wall of said compartment for varying the packing-space within said compartment, said means comprising an adjustable spacing member.

848,890. BOILER-BRACKET. JAMES J. FLETCHER, Toronto, Ontario, Canada. Filed Oct. 23, 1906. Serial No. 340,175.

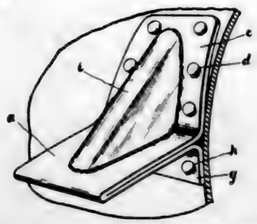

Claim.—A boiler-bracket, comprising a plate of metal angularly formed having a length integral therewith doubled under the horizontal section and terminating in a downwardly-depending flap the latter forming substantially a continuation of the upper vertical section, and the said flap and the said vertical section having suitable rivet-holes therethrough, and the said horizontal and upper vertical sections having a hollow strut formation integral therewith and extending centrally in a direct line to a point intermediate of the length of said vertical section to a point intermediate of the length of said horizontal section and merging into the flat surface of said plate and into the angle at each side intermediate of the width of said sections, substantially as described.

848,891. SPEED CONTROLLER AND REGULATOR FOR EXPLOSIVE-ENGINES. HENRY FORD, Detroit, Mich., assignor to Henry Ford Company, Detroit, Mich., a Corporation of Michigan. Filed Aug. 23, 1902. Serial No. 120,854.

Claim.—1. In an explosive-engine, the combination with an air-intake pipe into the cylinder open to the atmosphere and having an automatically-operating suction-valve at the junction of the intake-pipe with the cylinder, of a variable oil-feeding device in the intake-pipe comprising a multiported slide-valve operated by the engine and adapted to feed the oil in measured quantity into the intake-pipe, means under control of the operator for varying the quantity of oil discharged at each suction-

stroke of the piston, and connection between said controlling means and the suction-valve whereby the extent of opening of the suction-valve and correspondingly the amount of air permitted to pass through the suction-valve into the cylinder is proportionately varied.

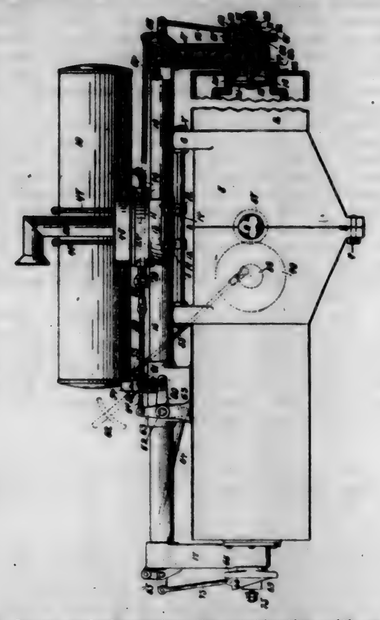

2. In an explosive-engine, the combination with an air-intake pipe into the cylinder open to the atmosphere and an automatically-operating suction-valve at the junction of the intake-pipe with the cylinder, a variable abutment for said valve controlling the extent of opening of said valve, a vertical branch in the intake-pipe, a gasolene-holder through which said branch pipe passes, a multiported slide-valve in said gasolene-holder traversing the branch pipe and adapted to vary the oil-feed by varying the stroke of the valve, a lever under the control of the operator for lengthening or shortening the stroke of the valve, and connection between said lever and the variable abutment of the intake-pipe for correspondingly increasing or decreasing the extent of opening of the suction-valve whereby the quality of the explosive fluid remains fixed but the quantity is variable.

3. In an explosive-engine the combination, of a generator comprising an air-intake pipe open at one end and connected at the other end to the cylinder, an automatic suction-valve at the junction of the intake-pipe with the cylinder, an adjustable stop at the end of the valve-stem limiting the motion of the valve, a variable abutment consisting of two wedge-shaped members one of which is under the control of the operator, a gasolene-holder, a supply-tank communicating with said gasolene-holder, a vertical branch in the air-intake pipe passing through said gasolene-holder, a slide-valve submerged in the gasolene-holder and variably traversing the branch pipe and variable valve-gear for said valve under control of the operator.

4. In an explosive-engine, the combination with an air-intake pipe open to the atmosphere having an automatically-operating suction-valve at the junction of said intake-pipe with the working cylinder, a vertical branch in said intake-pipe through which a portion of the air passes, a gasolene-holder through which said branch pipe passes, a multiported slide-valve submerged in said gasolene-holder and traversing said branch pipe, a rock-arm operated by the motion of the engine and carrying a sliding sleeve, actuating valve-gear connected to said sliding sleeve, a lever under the control of the operator, connections between said sliding sleeve and the lever for lengthening and shortening the stroke of the valve, a variable abutment controlling the extent of opening of the automatic valve and means connecting said abutment with the sliding sleeve, whereby the lengthening or shortening of the stroke of the valve correspondingly increases or restricts the extent of opening of the suction-valve.

5. In an explosive-engine the combination with the cylinder, of a generator forming the intake-pipe, a casing in said pipe provided with a horizontal diaphragm forming a mixing-chamber in the lower portion of the casing and a gasolene-holder in the upper portion of the casing, the intake-passage leading through said holder and the multiported slide-valve in said holder traversing said passage at substantially right angles thereto and intermittently communicating with said holder on opposite sides and the apertured seats on opposite sides of said valve in line with said passage.

6. In an explosive-engine the combination with the cylinder, of a generator comprising an air-intake pipe open at one end and connected at the other end to the cylinder, a casing in said pipe provided with the two side passages and the central passage through it, the horizontal diaphragm forming a mixing-chamber in the lower portion of the casing and the gasolene-holder above it, through which the central passage passes, the variably-actuated slide-valve in said holder intermittently communicating with said holder and said passage and the seats on opposite sides of the slide-valve.

7. In an explosive-engine the combination with the cylinder, of a generator comprising an air-intake pipe open at one end and connected at the other end to the cylinder, a casing forming a portion of said pipe, provided with a gasolene-holder and the passages around said holder uniting above and below said holder and the central passage through it, a diaphragm forming a mixing-chamber in the lower portion of the casing and a multiported slide-valve in said holder having a variable movement in open communication with the central passage.

8. In an explosive-engine the combination with the cylinder, of a generator comprising an air-intake pipe open at one end and connected to the cylinder at the other end, a casing in said pipe, a gasolene-holder in said casing, air-passages around said holder and a central passage through it uniting above and below said holder, a diaphragm forming a mixing-chamber in the casing below said holder, a slide-valve in said holder traversing said central passage, an automatically-operating suction-valve at the junction of said intake-pipe with the cylinder and means under control of the operator for proportionately varying the stroke of the slide-valve and the opening movement of the suction-valve in direct proportion to each other.

848,892. PACKAGE-SEALING APPARATUS. CLARENCE B. FROST, Cambridge, Mass. Filed Aug. 8, 1906. Serial No. 329,668.

Claim.—1. A rotatable roll for rendering tape adhesive, in combination with a drag-bearing thereon, comprising a spring-rod having one end fixed in position eccentrically to the roll on the side toward which motion normally proceeds, and the other end bearing against the periphery.

2. A rotatable roll for rendering tape adhesive, in combination with a spring drag-bearing thereon, the spring being arranged to act approximately in a tangential direction.

3. A device for rendering tape adhesive, in combination with a carriage located in the subsequent path of the tape, movable backward and forward in the direction of travel of the tape, for retractably supporting the tab end of tape.

4. A device for rendering tape adhesive, in combination with a blade for severing the tape; and means for guiding the package attached to the tape past the blade during the severing operation at a predetermined distance therefrom.

5. A device for rendering tape adhesive, in combination with a blade for severing the tape; and stationary guards set adjacent to the ends of the blade's edge, projecting before the same and obstructing the approach thereto.

6. Means for guiding a strip of tape, in combination with a lever, having at one end a severing-blade for tape and having its other end in position to be engaged by the tape when the latter approaches the blade, thereby holding the blade against retraction.

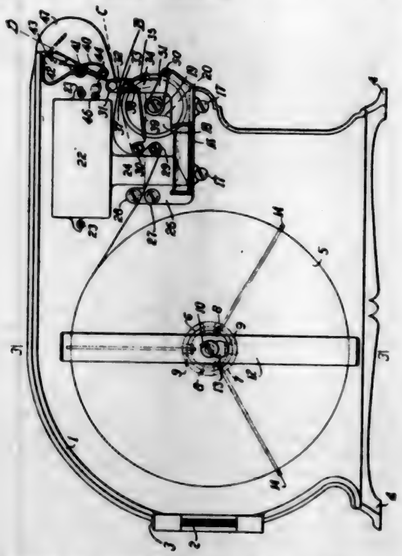

7. Means for guiding a strip of tape, in combination with a lever, having at one end a severing-blade normally retracted within the apparatus and having its other end normally in position to be engaged and retracted by the tape on its approach to the blade, thereby projecting the blade.

8. Means for guiding a strip of tape; a roll contacting with the guided tape to render the tape adhesive, in combination with a small auxiliary roll revoluble about the axis of the first roll and contacting with its surface beyond the point of guided contact of tape therewith, whereby the projecting tab end may be rendered adhesive.

9. A severing-blade, movably mounted; in combination with a reversely-moving arm controlling the blade's movement, said arm being engaged and operated by approach of the tape toward the blade for severing.

10. An apparatus for furnishing adhesive tape, having a pivotal support for a supply-roll, in combination with rotatable disks thereon embracing opposite sides of the roll, having radially-expansive spring-prongs projecting approximately parallel to the pivot for engaging interiorly the tubular core of a roll of tape.

848,893. SWITCHING DEVICE. EDWARD F. GEHRKENS, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 22, 1904. Serial No. 229,537.

Claim.—1. The combination of a distributing-circuit, a transformer having a plurality of taps, said transformer connected to one side of said circuit, a contact-blade connecting the other side of said circuit to one of said taps, means for moving said contact-blade from tap to tap, and a circuit-breaker for interrupting the current through said blade during said movement from tap to tap.

2. The combination of a distributing-circuit, a transformer having a plurality of taps, said transformer connected to one side of said circuit, a plurality of contact-blades connecting the other side of said circuit to one of said taps, means for successively moving said blades from tap to tap, and means for interrupting the current through one of said blades during its movement from tap to tap.

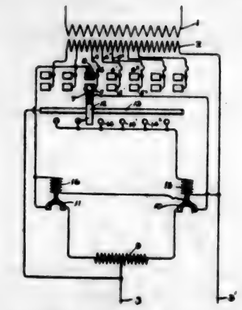

3. In an electrical system, the combination of distributing-mains, a source of current connected to one of said mains, a plurality of taps for said source of current, a plurality of contact-blades connecting one of said mains to said source of current, means for successively moving said contact-blades from tap to tap, and automatic means for interrupting the current through one of said blades during its movement from tap to tap.

4. The combination with a source of current having a plurality of taps, of a main contact-blade in circuit with one of said taps, means for moving said blade from tap to tap, an auxiliary contact-blade connected through an impedance to said main contact-blade, and means for imparting to said auxiliary blade an intermittent motion with respect to said main contact-blade.

5. In an electrical system, the combination of a transformer having a plurality of taps, a distributing-main, a contact-blade connecting said distributing-main to one of said taps, an auxiliary blade, a reactance device connected between said blades, means for moving said first-named blade from tap to tap, and an automatic circuit-breaker for interrupting the current through said first-named blade during its movement from tap to tap.

6. The combination with a transformer having a plurality of taps, of a main contact-blade in circuit with one of said taps, means for moving said blade to a second tap, means for opening the circuit through said blade before it leaves said first-named tap, means for closing said circuit when said blade is in contact with said second-named tap, an auxiliary contact-blade, and means for imparting to said auxiliary blade an intermittent motion with respect to said main contact-blade.

7. The combination with a source of current having a plurality of taps, of a main contact-blade in circuit with one of said taps, means for moving said blade from tap to tap, an auxiliary contact-blade, means for imparting to said auxiliary blade an intermittent motion with respect to said main contact-blade, a reactance device connected between said blades and a distributing-circuit connected to said reactance device and to said source of current.

8. The combination with a transformer having a plurality of taps, of a main contact-blade in circuit with one of said taps, means for moving said blade from tap to tap, an auxiliary contact-blade, means for imparting to said auxiliary blade an intermittent motion with respect to said main contact-blade, a reactance device connected between said contact-blades, and automatic means for alternately disconnecting said contact-blades from said reactance device during said movement from tap to tap.

9. The combination with distributing-mains of a transformer having a plurality of taps, a main contact-blade in circuit with one of said mains, an auxiliary contact-blade in circuit with said main, means for moving said blades

from tap to tap, and automatic means for alternately disconnecting said contact-blades from said main during said movement from tap to tap.

10. The combination with a transformer having a plurality of taps, of a main contact-blade and an auxiliary contact-blade in circuit with one of said taps, a reactance device connected between said blades, means for moving said blades from tap to tap, and automatic means for alternately disconnecting said contact-blades from said reactance device during said movement from tap to tap.

848,894. WATER-WHEEL. GEORGE D. GILBERT, Jennings, Mont. Filed Nov. 29, 1904. Serial No. 234,767.

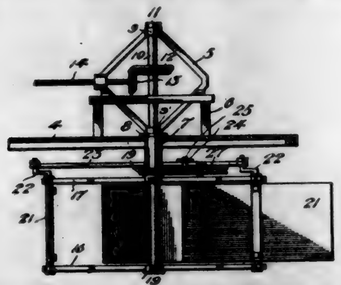

Claim.—In a current-motor, the combination of a float, a transverse gang-plank carried thereby and provided with an extension, braces on said extension, a vertically-arranged diamond-shaped supporting-frame held by said braces, a sleeve fixed to the lower corner portion of the supporting-frame and extending through the gang-plank extension and provided with a sprocket-pinion, a water-wheel shaft extending through said sleeve and journaled in bearings at the upper and lower corner portions of the supporting-frame, said sleeve being provided with a collar resting on the plank extension to sustain the parts firmly in position, a water-wheel fixed to said shaft below the plank extension and provided with pivoted blades having cranks, a rectangular operating-frame connected at its corner portions with said cranks, said operating-frame being provided with a cross-piece between two of the arms thereof, a sprocket-wheel journaled upon one of the arms of the water-wheel and having a crank-pin connected with said cross-piece, a chain passing around said sprocket-wheel and the sprocket-pinion on the stationary sleeve, a power-shaft journaled in one of the side corner portions of the supporting-frame, and intermeshing gears connecting said shaft with the water-wheel shaft.

848,895. ATTACHING DEVICE. MICHAEL W. GILMARTIN, Brooklyn, N. Y. Filed May 1, 1906. Serial No. 314,712.

Claim.—1. A device of the class described, comprising a slotted body, a latch pivotally mounted therein, the outer end of said latch being heavier than the inner end, the front face of the latter normally engaging the end of the slot in the body, corresponding recesses in the front face of the said inner end and in the end of the slot in the body, and a headed bolt adapted to be held in said recesses, with its head beneath the inner end of the latch.

2. A device of the class described, comprising a slotted body, a latch pivotally mounted therein and normally held with its inner end in engagement with the end of the slot in the body, recesses in the front face of said inner end and in the end of said slot, and a headed bolt adapted to be passed into said body by swinging the inner end of said latch downwardly and then to be secured therein by the return of said latch to its normal position.

3. In a device of the class described, the combination with a hoisting-rope carrying a headed bolt at its lower end, of a hook adapted to engage said bolt and comprising a slotted body, a latch pivoted near one of the upper corners of the same, the inner end of said latch abutting against the end of the slot in the body when in its normal position, the outer end of said latch being heavier than said inner end so as to keep the latter normally raised, the front face of said inner end being recessed or slotted to receive the shank of said bolt and maintain the same securely locked in the hook with its head below the inner end of the latch.

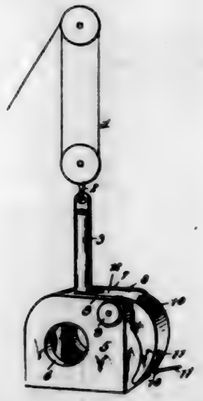

4. A detachable boat-hook, comprising a slotted and apertured body adapted to be secured to the boat and a latch hung therein so as to open to admit the head of a bolt and to close around the shank of said bolt.

5. A detachable boat-hook, comprising a body adapted to be secured to a boat and having a vertical slot therein, a latch pivotally supported to swing in said slot and to normally engage with its front beveled face a corresponding beveled surface at the inner end of the slot in the body, corresponding recesses in said beveled face and surface, whereby a headed bolt can be inserted into the hook by pressing it down on the inner end of said latch and will be securely held in place by the swinging back into place of said latch, and means to open said latch.

6. A detachable boat-hook, comprising a transversely-apertured and vertically-slotted body adapted to be secured to the bolt, a latch pivoted to swing vertically in said body, one arm of said latch projecting downwardly outside of said body and the other arm normally abutting against a beveled surface at the inner end of said slot, the end face of said inner arm being slotted or recessed to receive the shank of a headed bolt attached to the fall, and means to raise said first-mentioned arm to release said bolt.

7. A hook comprising a body open at the top and provided with means whereby it can be attached to an object, a latch pivoted at one side of said opening and adapted to normally close the same, the inner arm of said latch being apertured to receive the end of a headed bolt carried by the hoisting or transporting means, and the outer arm of said latch being of greater weight than the inner arm, so as to normally keep the latch in its closed position.

848,896. CLAMPING TYPE IN TYPE-GALLEYS. RUDOLPH W. GOSS, St. Louis, Mo., assignor to The Lewis Publishing Company, University City, Mo., a Corporation of South Dakota. Filed Jan. 4, 1907. Serial No. 350,783.

Claim.—1. A device of the character described, comprising a base, a yielding clamping member carried by said base, the ends of said clamping member being adapted to engage the inside faces of the sides of the galley, and finger-pieces on said clamping member adapted to be pressed together for moving the ends of said clamping member out of engagement with the sides of the galley; substantially as described.

2. A device of the character described, adapted to be placed in a type-galley to clamp the type therein, and comprising a clamping member formed of yielding material and having the end portions thereof doubled and bent rearwardly to provide finger-pieces; substantially as described.

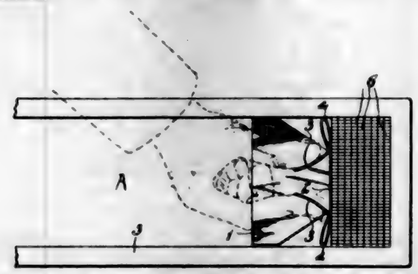

3. A device of the character described, adapted to be placed in a type-galley to clamp the type therein, and comprising a base-piece and a clamping member formed from a single piece of sheet metal, the intermediate portion of said clamping member being connected to the base-piece and the ends of said clamping member being free and adapted to engage the inside faces of the sides of the galley to hold the device in position; substantially as described.

4. A device of the character described, constructed from a single piece of sheet metal, and comprising a base, a clamping member consisting of a piece disposed at approximately right angles to the base and having the end portions thereof doubled and bent rearwardly to form finger-pieces 3; substantially as described.

848,897. MUSIC-LEAF TURNER. JULIUS B. GOLDEN, Wolcott, Vt. Filed Sept. 20, 1906. Serial No. 335,415.

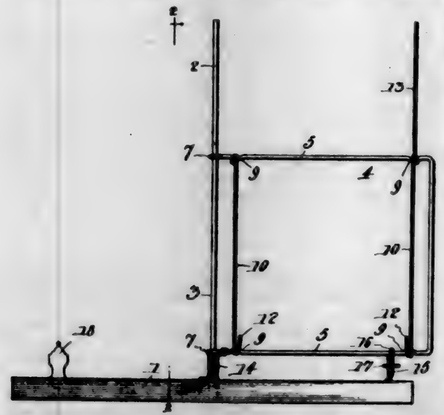

Claim.—1. A music-leaf turner comprising a base-bar, transversely-spaced uprights mounted thereon, a loose-leaf carrier comprising an approximately U-shaped member having eyes at its free ends loosely engaging the front upright and adapted to swing thereon, stay-rods connecting the legs of said U-shaped leaf-carrier, one of said stay-rods being extended at its upper end to form a support for the front edge of the loose sheet, a spring connected with said leaf-carrier and a spring-actuated detent for operating said leaf-carrier.

2. A music-leaf turner comprising a base-bar, transversely-spaced uprights mounted thereon, a loose-leaf carrier comprising an approximately U-shaped member having eyes at its free ends loosely engaging the front upright and adapted to swing thereon, stay-rods connecting the legs of said U-shaped leaf-carrier, the lower ends of said stay-rods being extended and bent to form leaf-retaining clips and a spring-actuated detent mounted on the base-bar in position to engage the free end of said leaf-carrier.

848,898. TUBULAR-TANK INSPECTOR AND GAGE. WILLIAM GREGSON, Beaumont, Tex. Filed Mar. 12, 1906. Serial No. 305,680.

Claim.—1. In a device of the character described, the combination with a pole, of an open-ended tube carried by said pole, a valve located at each end of said tube, means for closing both of said valves when pressure is applied to the pole, and means for actuating said valves from the upper end of the pole.

2. In a device of the character described, the combination with a pole, of an open-ended tube carried by said pole, a valve located at each end of said tube, means for simultaneously closing said valves by pressure upon the pole, means for closing said valves from the upper end of the pole, and a spring-detent for holding said valves at their limit of movement.

848,899. SEPARABLE FASTENER. SOLOMON HAINSFURTHER, Winchester, Ill. Filed Apr. 11, 1906. Serial No. 311,163.

Claim.—1. A fastener comprising a plate having connected guide-flanges, a resilient keeper secured between the flanges and having a tooth thereon normally adjacent the plate, a combined sleeve and finger-piece at the free end of the keeper and normally projecting beyond the plate and a toothed tongue adapted to be inserted through the sleeve and between the keeper and plate for engagement by the tooth on the keeper.

2. A separable fastener comprising a plate having guide-flanges, a spring secured at one end between the flanges

and having a tooth normally adjacent the plate, said spring terminating in a combined sleeve and finger-piece normally projecting beyond the face of the plate, and a toothed tongue insertible through the sleeve and between the toothed spring and the plate.

3. In a fastener of the character described, a receiving member comprising a plate having parallel connected flanges, a spring secured at one end between the flanges, the free end of the spring having an integral sleeve constituting a finger-piece projecting normally beyond the face of the plate, there being an integral retaining-tooth upon the spring normally disposed adjacent the plate.

4. A separable fastener comprising a plate having guide-flanges, a spring secured at one end between the flanges, said spring terminating in a combined sleeve and finger-piece normally projecting beyond the face of the plate, and a tongue insertible through the sleeve and between the spring and plate, said tongue and spring having means for automatically engaging to lock them normally against separation.

5. A separable fastener comprising a plate having notched guide-flanges, a spring secured at one end between the flanges, said spring terminating in a combined sleeve and finger-piece normally projecting beyond the face of the plate, and a tongue insertible through the sleeve and between the spring and plate, said tongue and spring having means for automatically engaging to lock them normally against separation.

848,900. VENTILATION OF SUBWAYS. OSCAR HAMMERSTEIN, New York, N. Y. Filed July 25, 1905. Serial No. 271,129.

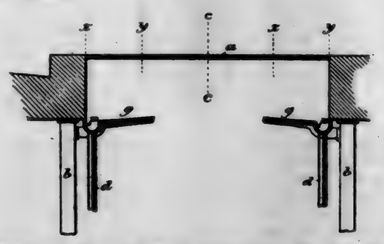

Claim.—1. In a subway construction, the combination of a subway-tunnel, a roof-support, a roof perforated to establish free air-outlets to the outer atmosphere, a transversely-inclined guard beneath the perforated part of said roof and drainage means connected to said guard.

2. In a subway construction, the combination of a subway-tunnel, a roof-support, a roof open directly to the atmosphere on two sides thereof and a plurality of inclined guards beneath the said openings adapted to carry off water, and provided with drainage means.

3. In a subway construction, the combination of a subway-tunnel, a roof perforated to establish free air-outlets to the outer atmosphere, a transversely-inclined guard disposed beneath the perforated part of the roof and provided with a longitudinal gutter, and drainage means connected to said gutter.

4. In a subway construction, the combination of a subway-tunnel, a roof perforated to establish free air-outlets to the outer atmosphere, and a transparent guard disposed beneath said roof.

848,901. RAIL-JOINT. WILLIAM A. HARVEY, Big Rapids, Mich., assignor of one-half to William Lambert, Reed City, Mich. Filed Dec. 13, 1906. Serial No. 347,731.

Claim.—In combination with rails having upon their webs laterally-extending shoulders, the upper and lower edges of which diverge from each other toward the outer faces of the shoulders, plates having recesses which receive said shoulders and fit snugly about the same and bolts passing transversely through the plates and rails.

848,901.

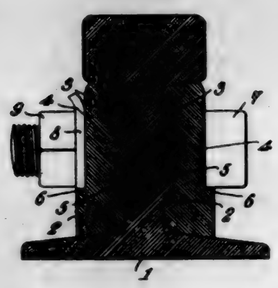

848,902. ATTACHING-PLUG AND WALL-RECEPTACLE. JAMES J. HARTLEY and FRANK C. DE RAMER, Schenectady, N. Y., assignors to General Electric Company, a Corporation of New York. Filed Apr. 22, 1905. Serial No. 256,884.

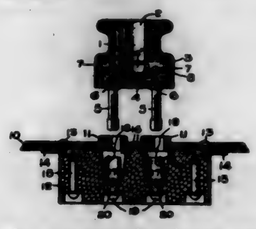

Claim.—1. In a coupling for electric conductors, the combination with an insulating-base provided with pockets, of metallic sockets secured in said pockets by screws passing through the base, and spring-tongues secured to said sockets and projecting into the same.

2. In a coupling for electric conductors, the combination with a base of insulation having two pockets, of a metallic socket in each pocket having a slot in one side, and a spring-tongue projecting through said slot and having a flange clamped beneath said socket.

3. In a coupling for electric conductors the combination of an insulating-base having in the front side two pockets and two recesses, metallic sockets located in said pockets and terminal connections located in said recesses, bridging-strips on the back side of the base, and screws extending through the base and connecting the ends of each strip respectively with a socket and a terminal connection.

848,903. ART OF DISTILLING. HEINRICH HIRZEL, Leipsig-Plagwitz, Germany. Filed Feb. 1, 1900. Serial No. 3,610.

Claim.—1. The process of continuous distillation, which consists in separating the material to be distilled into a plurality of portions located one above the other, heating the portions to a temperature approaching but below the boiling-point of the product which is to be obtained, and permitting a heated gas to flow upward into contact with the different portions *seriatim*.

2. The process of continuous distillation, which consists in separating the material to be distilled into portions located one above the other, heating said portions to a temperature approaching but below the boiling-point of the product which is to be obtained, leading a heated gas through the various portions *seriatim*, whereby the fraction is carried off with the gas, and then cooling said gas and fraction, whereby the two are separated.

3. The process of continuously distilling petroleum and the like which consists in passing such petroleum through a heated column apparatus and concurrently passing a heated gas through the apparatus in the opposite direction to remove and to recover benzin; and passing the treated petroleum through a second and uniformly-heated column apparatus of a temperature in the neighborhood of 150° to 160° centigrade against an opposed current of heated gas to remove and recover kerosene.

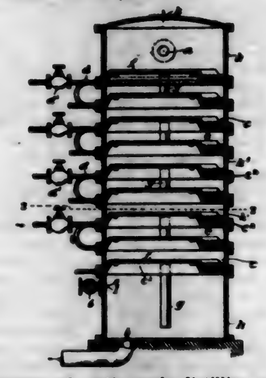

4. The process of continuously distilling petroleum and the like which consists in passing such petroleum through a heated column apparatus and concurrently passing a heated gas in the opposed direction to remove benzin; passing the treated petroleum through a second and uniformly-heated column apparatus of a temperature in the neighborhood of 150° to 160° centigrade against an opposed current of heated gas to remove and recover kerosene, and finally passing the treated petroleum through a third and uniformly-heated column apparatus of a temperature in the neighborhood of 175° to 180° centigrade against an opposed current of heated gas to remove and recover lubricating-oils.

5. The process of continuously distilling oily bodies which consists in passing such oily bodies consecutively through a series of column apparatus, each uniformly heated and certain members of the series being respectively of a temperature in the neighborhood of 108° to 115° centigrade, in the neighborhood of 150° to 160° and in the neighborhood of 175° to 180° centigrade and at the same time bringing into contact with the oily body in each apparatus an opposed current of heated gas to remove and recover the bodies volatile at the temperature prevailing therein.

6. The process of continuously distilling oily bodies which consists in preliminarily heating such oily body, and passing the same consecutively through a series of column apparatus, each uniformly heated, and certain members of the series being respectively of a temperature in the neighborhood of 108° to 115° centigrade, in the neighborhood of 150° to 160° centigrade and in the neighborhood of 175° to 180° centigrade and at the same time bring into contact with the oily body in each such apparatus an opposed current of heated gas to remove and recover the bodies volatile at the temperature prevailing therein.

7. The process of recovering fractions from a composite oily body which consists in heating it in films to a temperature approaching, but below its boiling-point, stripping it of constituents of high vapor tension at such temperature by means of a gas-current, and repeating the treatment at a series of successively-higher temperatures.

8. The process of recovering fractions from petroleum which consists in heating films of petroleum to a temperature near but below the boiling-point of such petroleum, and stripping it of constituents having a high vapor tension at such temperature by means of a gas-current.

9. The process of recovering fractions from petroleum which consists in heating petroleum in films to a temperature near but below the boiling-point of gasolene; stripping it of gasolene by means of a gas-current; again heating it in films to a temperature near but below the boiling-point of kerosene, stripping it of kerosene by means of a gas-current; and again heating it in films to a temperature near but below the boiling-point of lubricating-oils, and stripping it of such lubricating-oils by means of a gas-current.

848,904. BELT-SHIFTER. CARL M. HOWO, Effington, S. D. Filed July 12, 1906. Serial No. 325,864.

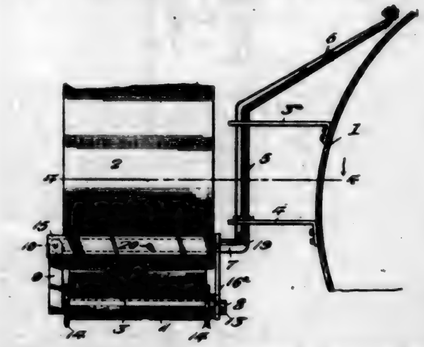

Claim.—1. A belt-shifter comprising a journaled post, said post being provided with a horizontally-disposed arm, a shaft provided with an angular portion hingedly connected to said arm, said shaft being adapted to be moved into a horizontal or vertical position, means for supporting said shaft in either of said positions, and a roller journaled upon said shaft.

2. A belt-shifter comprising a journaled post, said post being provided with a horizontally-disposed arm, a shaft provided with an angular portion hingedly connected to said arm, said shaft being adapted to be moved into a horizontal or vertical position, a boxing mounted upon said arm and adapted to retain the shaft in a vertical position, a bracket secured to said boxing and engaging the shaft to support the same in a horizontal position, and a roller journaled upon said shaft.

3. A belt-shifter comprising a journaled post provided with an angularly-disposed arm, a shaft connected with the arm and adapted to be supported at an angle or in parallel alinement with relation to the arm, and a roller journaled upon the shaft.

4. A belt-shifter comprising a vertically-journaled post provided with a horizontally-disposed arm, a shaft connected with the arm and adapted to be supported at an angle or in parallel alinement with relation thereto, and a roller journaled upon the shaft.

5. A belt-shifter comprising an arm, a shaft provided with an angular portion hingedly connected to the arm, said shaft being adapted to be supported at an angle or in parallel alinement with relation to the arm, a boxing mounted upon the arm and adapted to engage the angular portion of the shaft to support the latter at an angle with relation to the arm, a bracket secured to the boxing and adapted to support the shaft in parallel relation with the arm, and a roller journaled upon the shaft.

848,905. SELF-LOCKING BLOCK AND PULLEY. GEORGE M. JENSON, Hayward, Minn. Filed Apr. 4, 1906. Serial No. 309,818.

Claim.—1. In a device of the kind described, the combination with casings provided with pulleys having ratchets formed on their sides, of a rope connected to one of said casings, passing over the pulley in said casings, and a brake-shoe carried by one of said casings, provided with a pivoted pawl, for the purpose described.

2. In a device of the kind described, the combination with casings provided with pulleys, of a rope connected to one of said casings passing over the said pulleys, one of the pulleys in each casing being provided with a ratchet

edge, and a pawl arranged in each casing adapted to engage said pulleys, one of said pawls being carried by a brake-shoe adapted to engage said rope, for the purpose described.

3. In a device of the kind described, the combination with casings provided with pulleys, of a rope connected to one of the casings passing over the pulleys, one of the pulleys in each casing being provided with a ratchet edge, a pawl pivoted to one of the casings adapted to engage said pulleys, in said casings, and a brake-shoe arranged in the other casing adapted to engage said rope carrying a spring-actuated pawl adapted to engage the ratchet-pulley for the purpose described.

4. In a device of the kind described the combination with a casing provided with pulleys, of an arm projecting upwardly from one of said casings, a rope connected to said arm passing over the pulleys, one of the pulleys in each casing being provided with a ratchet edge, a pawl pivoted to one of the casings adapted to engage said ratchet-pulley in said casing, a brake-shoe pivoted in the other casing adapted to engage said rope and a spring-actuated pawl pivotally mounted on the end of the said shoe adapted to engage the ratchet-pulley of said casing for the purpose described.

848,906. DOMESTIC STEAMER. SPENCER M. JOHNS, San Francisco, Cal. Filed Apr. 4, 1904. Renewed Sept. 12, 1906. Serial No. 334,351.

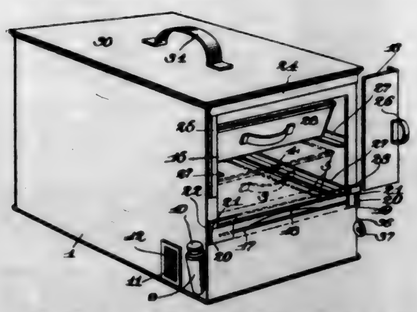

Claim.—1. In a device of the class described, a casing having a water-space at the bottom thereof, and a transverse slot in its front end; inclined flanges secured interiorly to the sides of the casing and having upwardly-extending cleats, the lower front ends of said flanges terminating in alinement with the transverse slot, a diaphragm supported upon the flange between the cleats of the latter and capable of withdrawal through the transverse slot, said diaphragm constituting the top of the water-space, and a vertically-movable slide forming a closure for the transverse slot.

2. In a device of the class described, a casing having a water-space at its lower end, a door-opening in its front wall and a transverse slot below said opening, a diaphragm supported slidably upon flanges secured interiorly to the sides of the casing, and constituting the top of the water-space, and accessible through the transverse slot in the casing, a vertically-slidable closure for said transverse slot, said closure having an offset shoulder and an upwardly-extending flange and a laterally-movable slide forming a closure for the opening in the front part of the casing, the lower edge of said slide being supported by the flange and shoulder of the vertically-movable closure.

3. In a device of the class described, a casing having a water-space, inclined flanges having drain-openings at their lower ends and provided with upwardly-extending cleats said drain-openings being disposed between said cleats and the sides of the casing, a diaphragm supported upon said flanges between said cleats and having a dome perforated for the passage of steam, and pan-supporting flanges disposed interiorly in the casing above the diaphragm and spaced from the walls of said casing.

4. In a device of the class described, a casing having a water-space and provided in its front wall with a door-opening and a transverse slot below said opening, flanges within said casing having upwardly-extending cleats and provided with drain-openings disposed between said cleats and the walls of the casing, a diaphragm supported upon said flanges between said cleats, a slidable closure for the opening in the front part of the casing, a slidable member affording a closure for the slot in the front part of the casing through which the diaphragm is removable, said member constituting also a support and guide for the laterally-slidable closure of the main opening, supporting-flanges disposed longitudinally within the casing and spaced from the side walls thereof, pans supported upon said flanges and accessible through the front opening, and a removable lid whereby access may be had to the uppermost pan.

848,907. TURNING STAGE FOR THEATERS. MAX KAHANE, Vienna, Austria-Hungary. Filed July 20, 1906. Serial No. 327,100.

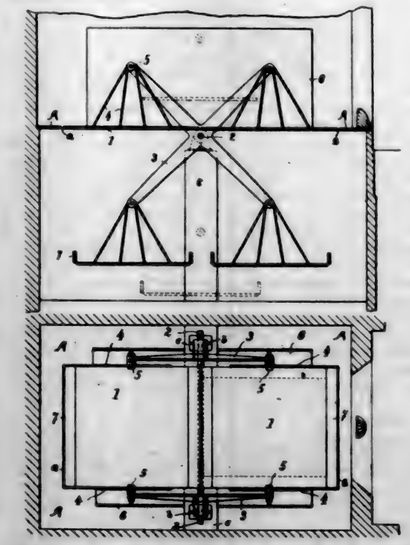

Claim.—1. A stage comprising a plurality of revolving supports and platforms pivoted thereon, two adjacent platforms being adapted, when brought into the same horizontal plane, to form a substantially continuous stage equal in size to twice the area of one platform.

2. The combination with a fixed stage having an opening therein of a plurality of pivotally-mounted platforms movable through the openings, two of the platforms when swung into the plane of the stage adapted to close said opening.

3. The combination with a fixed stage having an opening therein, of a plurality of platforms, and a plurality of revoluble arms carrying said platforms, said arms arranged to carry two platforms simultaneously into the horizontal plane of the stage to close said opening.

4. The combination with a fixed stage having an opening therein, of a rotatable shaft mounted centrally of the opening below the plane of the stage, a plurality of arms keyed to the shaft, platforms pivoted to the arms arranged to swing in pairs into the plane of the stage and completely close the opening therein.

5. The combination with a fixed stage having an opening therein, of a rotatable shaft mounted centrally of the opening below the plane of the stage, a plurality of platforms, arms radiating from the shaft pivotally connected with the platforms and arranged to carry the latter in pairs into the plane of the stage, and hinged projections on the platforms for the purpose specified.

848,908. METHOD OF STIFFENING PILE FABRICS. FREDERIC E. KIP, Montclair, N. J. Filed Jan. 30, 1901. Renewed Mar. 7, 1906. Serial No. 304,660.

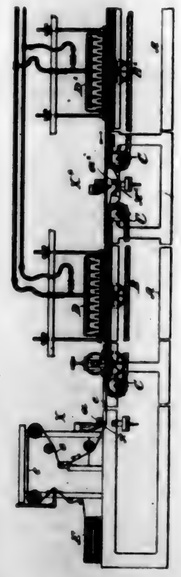

Claim.—1. The herein-described method of stiffening pile fabrics, which consists in first applying to the back of the continuously-moving fabric a coating of stiffening material, then drying said coating, then applying a second coating of stiffening material on the first coating, then drying this second coating, and then smoothing and polishing, said operations being performed in a continuous manner.

2. The herein-described method of stiffening pile fabrics, which consists in first applying to the back of same a coating of thick stiffening material, then drying said coating, then applying a second coating of stiffening material in a thinner condition, on the first coating, then drying this second coating, and then smoothing and polishing, said operations being performed in a continuous manner.

3. The herein-described method of stiffening pile fabrics, which consists in first applying to the back of said fabric while the latter is moving a coating of stiffening material, then applying heat directly to said coating on the back for drying the same, the back of the moving fabric being uppermost, then applying a second coating of thinner material to the dried surface, and then drying this second coating.

848,909. APPARATUS FOR DRESSING OR STIFFENING PILE FABRICS. FREDERIC E. KIP, Montclair, N. J. Filed Jan. 30, 1901. Renewed Mar. 7, 1906. Serial No. 304,661.

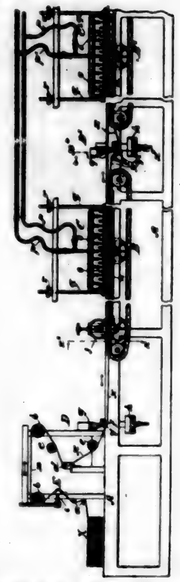

Claim.—1. An apparatus for the purpose specified, having means for carrying the strip of fabric, means for applying a primary coating of thick dressing or stiffening material to the back of the moving fabric, means for drying this primary coating, means for applying a second coating of thinner stiffening material to the fabric over said dried coating, and means for drying said second coating, said applying and drying means being arranged in the order named, whereby two successive coatings may be applied to the back of the fabric at one operation thereon.

2. An apparatus for the purpose specified, having means for carrying a strip of pile fabric, means for applying to the back of the same a dressing or stiffening material, and means for drying the latter, and having also a preliminary drier applied to the back of the moving pile fabric, said drier comprising a hollow, V-shaped bar and means for heating the same.

3. The combination with the endless carrier for the fabric, of a heater, comprising a casing having a ribbed plate *n*, suspended over the carrier, means for adjustably suspending said casing, the gas-burners in said casing, and means for supplying air and gas to said burners.

4. An apparatus for the purpose specified, having in combination a preliminary drier for the moving fabric, comprising a V-shaped bar, a series of gas-jets which direct their flames into the hollow at the back of said bar, and bearers for the fabric at the respective sides of said V-shaped bar and adapted to cause the moving fabric to draw over the angular face of said bar, and means for applying to the dried fabric a stiffening material and for drying the latter.

5. An apparatus for the purpose specified, having means for applying the stiffening material to the upper face of the moving fabric, comprising a fixed depressing-scraper *f'* under which the fabric passes, a glass bar *e'* in front of and above the scraper, over which the moving fabric passes, and a reservoir above the pocket formed in the fabric in front of the said scraper, said reservoir supplying the stiffening material.

6. In an apparatus for treating pile fabrics the combination of means for carrying the fabric with the back

thereof uppermost, means for applying a stiffening material to the back of the fabric, and a heater so located that the moving fabric will pass below with its back toward and in proximity thereto for the purpose of drying said material.

848,910. SLED. GUSTAV KOCH, St. Cloud, Minn. Filed Feb. 17, 1906. Serial No. 301,673.

Claim.—1. A journal-box formed of two portions having mating semicylindrical bearing-surfaces, one of said portions having a semicircular depression therein, in combination with a shaft journaled in said box and having a flange thereon to fit in and slightly shorter than said depression, substantially as shown and described.

2. A journal-box formed of two portions having mating semicylindrical bearing-surfaces, one of said portions having a semicircular depression at the end of the bearing-surface, in combination with a shaft journaled in said box and having a flange on its end to fit in and slightly shorter than said depression, substantially as shown and described.

3. In combination with a sled-knee, a journal-box secured thereto consisting of two portions having mating semicylindrical bearing-surfaces, the upper of said portions having a semicircular depression at the outer end of its bearing-surface, a plate for holding the bolster having a hook at one end, a stud-shaft secured to the other end of said plate adapted to seat in the semicylindrical bearings and having a flange on its outer end to seat in the depression aforesaid and formed shorter than said depression, and brace-rods secured to said knee and the hook on the plate, substantially as shown and described.

848,911. ROD-CATCHER. MAXWELL KREPP, Franklin, Pa. Filed Oct. 27, 1905. Serial No. 284,689.

Claim.—1. In a device of the character specified, a spanner, having a substantially semicircular gap, a vertically-movable jaw located at one side of said gap, and means of actuating said jaw.

2. In a device of the character described, a spanner having an opening of substantially semicircular form, in combination with a downwardly and inwardly moving jaw, located at one side of said opening, and means of actuating said jaw.

3. In a device of the character described, a spanner having a gap, and a vertically-movable, wedge-shaped jaw located at one side of said gap.

4. In a device of the character described, a spanner, having a gap as shown, an inclined seat at one side of said gap, and a movable jaw in said seat.

5. In a device of the character described, a spanner having a gap, an inclined seat at one side of said gap, a wedge-shaped jaw, movably seated in said seat.

848,912. DISK PLOW. CLYDE C. LEUTY, Justin, Tex. Filed Oct. 3, 1906. Serial No. 337,201.

Claim.—In a disk plow, the combination of a main beam, a disk-carrying beam hinged thereto, a hand-lever pivotally mounted on the main beam and having an opening and depending ears at one end, a block pivoted between said ears, under the lever, and having a vertical opening, a rod connected at its lower end to the disk-carrying beam and extending at the upper end through the openings in the aforesaid block and lever, a cross-key extending through the top of the rod and arranged to rest upon the lever, and a spring coiled around the rod between the block and the disk-carrying beam.

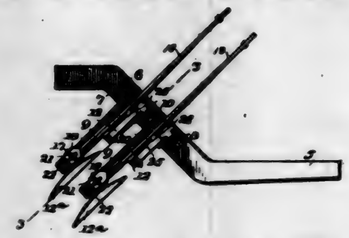

848,913. PLOW-STOCK. ALONZO R. MALLORY, Atlanta, Ga.; Howard P. Mallory, administrator of said Alonzo R. Mallory, deceased. Filed June 5, 1906. Serial No. 320,353.

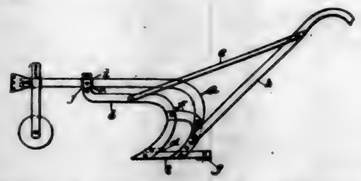

Claim.—1. In a plow, a beam and a foot pivotally secured by its front end to same and extending backwardly along said beam and curved downwardly and forwardly at its back end, a supplementary foot secured to said foot a short distance from its back end and curved backwardly and downwardly therefrom, a landside secured to the free ends of said foot and supplementary foot and means for adjustably securing said beam to said supplementary foot.

2. In a plow, a beam curved downwardly at its back end, a foot secured adjustably by its front end to said beam and thence extending backwardly and being curved downwardly and forwardly at its free end, a curved supplementary foot secured to said foot a short distance from the free end thereof, its curved portion lying substantially parallel to the curved end of said foot and being attached to said landslide, and means for adjustably connecting the back end of said beam to said supplementary foot.

3. In a plow, a beam, and a curved foot lying along the under side of said beam and being secured adjustably at its back end to said beam, and its forward ends being upturned and adapted to lie upon opposite sides of said beam, an intervening shackle provided with side plates adapted by flanges to engage said upturned ends and a bolt passing through said upturned ends and through said shackle above said beam.

848,914. SCREW. ROBERT S. MATHESON, Perth, Western Australia, Australia, assignor of one-fourth to Thomas Wall Hardwick, one-fourth to Arthur Goodchild Canham, and one-fourth to William Henry Clarke James, Perth, Western Australia, Australia. Filed Mar. 18, 1905. Serial No. 250,882.

Claim.—1. A screw having a cylindrical pointed shank and an elliptical helical thread extending from the point along the shank, substantially as described.

2. A screw having a cylindrical pointed shank and an elliptical helical thread tangential to the shank at the minor axis of the ellipse.

848,914.

848,915. TRIP-COIL FOR CIRCUIT-BREAKERS. EZRA B. MERRIAM, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Feb. 15, 1905. Serial No. 245,648.

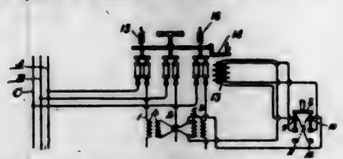

Claim.—1. The combination with an automatic circuit-breaker, of mechanism for tripping the same comprising a trip-lever, an electromagnet having differential windings for actuating the same, and a circuit-changer for varying at will the relative directions of a current through said windings.

2. The combination with an automatic circuit-breaker, of mechanism for tripping the same comprising a trip-lever, an electromagnet having differential windings for actuating the same, and means whereby the fluxes due to a current through the windings may be joined or opposed at will.

848,916. LOADING OR FILLING SUBSTANCE FOR USE IN THE MANUFACTURE OF PAPER. ALFRED MONIN, Lent, France. Filed Jan. 18, 1907. Serial No. 352,909.

Claim.—In the manufacture of paper the employment as a filling or loading substance of a mixture of natural raw sulfate of lime and natural burnt sulfate of lime substantially in the manner and for the purposes specified.

848,917. BUILDING-BLOCK. EDWARD J. MCELLIGOTT, and EDUARDO A. CIMMERY, Manistee, Mich. Filed Oct. 16, 1905. Serial No. 283,071.

Claim.—A ventilator of the character and for the purpose specified, comprising two telescopic thimbles, both of which are provided at their outer edges with outstanding flanges, the circular plate having its edge recurved to embrace the flange at the outer end of one of said thimbles and thereby secured thereto, said plate having openings therein and a notch in the side wall of one of said openings, a damper-plate arranged on the inner side of the first-named plate and having openings to register with the openings thereof, and the two plates pivoted together at the centers the outer edge of the damper-plate working within the recurved edge of the first-named plate, a handle attached to the damper-plate and extending outwardly through one of the openings in the first-named plate and arranged to enter the notch therein when the damper-plate is fully closed, and wire fabric or like protecting means secured to the inner side of the damper-plate.

848,918. CONNECTION FOR TABLE-LEGS. JAMES L. NEVIN and DICK Q. NEVIN, New Vienna, Ohio. Filed Aug. 12, 1904. Serial No. 220,525.

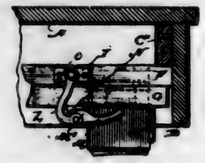

Claim.—The combination with a table having timbers secured to its under side, of strips hinged to said timbers, plates secured to the side of the timbers, having pivot-lugs projecting outwardly therefrom provided with a reduced end, hooks mounted on said reduced portion of said lugs, provided with bifurcated lower ends, stop-lugs formed on said plate adapted to be engaged by said hooks, bearing-plates having concaved faces secured to the lower faces of said strips and projecting out beyond the outer edge thereof, and levers provided with eccentric heads pivoted between the bifurcated lower end of said hooks adapted to engage the bearing-plates and securely clamp the strip and timbers together, for the purpose described.

848,919. ROLL-FORMING MACHINE. PHILIP P. NUNGESSER and WILLIS E. HARMON, Cleveland, Ohio, assignors to The Nungesser Electric Battery Co., Cleveland, Ohio, a Corporation of Ohio. Filed July 12, 1906. Serial No. 325,776.

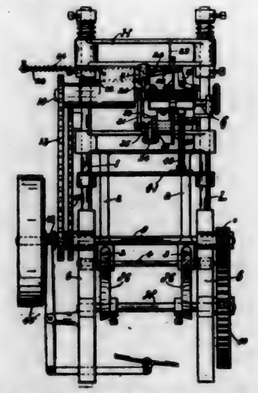

Claim.—1. In a machine for forming rolls out of sheet metal, a rotatable mandrel and a vertically-yielding support therefor, a pivoted lower jaw and devices thereon arranged beneath said mandrel and adapted to coöperate therewith in shaping the roll.

2. In a roll-forming machine, an upper jaw and a lower jaw pivoted thereon, a vertically-yieldable rotatable mandrel on the upper jaw and forming mechanism on the lower jaw beneath said mandrel comprising rolls and a fillet between said rolls, and means engaging said lower jaw between its pivot and said rolls to raise and lower the same.

3. In a roll-forming machine, a vertically-slidable upper jaw and springs bearing down thereon, a mandrel carried by said jaw, a pivoted lower jaw and forming mechanism for the roll on the free end of said lower jaw, means to

feed the stock to said mandrel and forming mechanism, and operating means for the lower jaw between its pivot and the roll-forming mechanism thereon.

4. In a roll-forming machine, a vertically-slidable upper jaw and a pivoted lower jaw, one above the other, a mandrel on the upper jaw and guiding and shaping mechanism on the lower jaw adapted to coöperate with the mandrel in wrapping a roll thereon, means to rotate said mandrel, means to hold the lower jaw up in working relation therewith while the roll is being formed comprising cam-actuated parts midway between the front and rear of said lower jaw, and means to strip the finished roll from the mandrel.

5. In a roll-forming machine, a pivoted jaw and cam-controlled mechanism for raising and lowering the same, in combination with a rotatable vertically-yielding mandrel and a support therefor, forming-rolls on the said pivoted jaw beneath said mandrel, and means to thrust the finished roll from the mandrel.

6. In a roll-forming machine, a fixed upper jaw and a rotatable mandrel and fixed support therefor, in combination with a forming-roll and an idler adapted to coöperate with said mandrel, a pivoted support for said rolls and means to raise and lower said support and said rolls comprising rotatable cams and a cross-head supported from said cams and engaging the bottom of said pivoted support.

7. In a roll-forming machine, roll-forming devices comprising a rotatable mandrel and forming-rolls separately supported, said mandrel having a free outer end, in combination with means to strip the mandrel of the finished roll comprising a device adapted to engage over the mandrel behind said roll and means to thrust said device forward to strip the roll from the mandrel.

8. In a roll-forming machine, a roll-forming mechanism comprising suitable jaws, in combination with means to feed the sheet to form the rolls to the machine comprising a toothed disk and actuating mechanism therefor operatively connected with the lower of said jaws.

9. In a roll-forming machine, a mandrel to receive a roll and means to form the roll on said mandrel, in combination with means to feed the roll-forming sheets to the machine comprising a suitable table, a toothed feeding-wheel to engage the plate on said table and pawl-and-ratchet mechanism to rotate said disk at predetermined intervals.

848,920. DUSTER. SANFORD L. PENDERGRASS, Monroe, Ga. Filed July 3, 1905. Serial No. 268,169.

Claim.—A duster comprising a handle having an enlarged head provided with a marginal recess therein, a strip of fabric having its body portion slitted transversely to form a continuous longitudinal fringe portion, said strip being also provided with an intact marginal band which is wound around said head within said recess, means for securing said band to said recess, the strands of said fringe portion being grouped together and tied in bunches, substantially as specified.

848,921. FENCE-POST. DANIEL C. PETERS, Biloxi, Miss. Filed Aug. 4, 1905. Serial No. 272,670.

Claim.—A fence-post comprising a body portion having a longitudinal groove therein opening through its front face and having transverse vertically-spaced seats in its rear face, said seats opening through the side faces of the post, strengthening devices embodied in the post and a fibrous strip engaged in the groove, said seats being arranged for the reception of fence portions therein, said posts having passages formed therethrough communicating with the seats.

848,921.

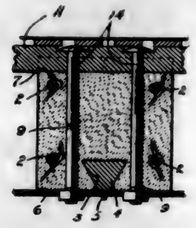

848,922. FORK. HEINRICH H. POPAHL, Vivian, Minn. Filed July 31, 1906. Serial No. 328,581.

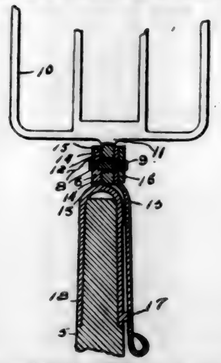

Claim.—The combination with the socketed ferrule provided with the side-toothed jaw, of the tool having a shank provided with a coöperating side-toothed jaw, a bolt having a squared portion, and a quick-screw-threaded end to engage the first-mentioned jaw, a wrench-lever provided with a square hole to fit on the squared portion of the bolt, the latter being provided with a finer screw-thread on the end opposite that bearing the quick-thread, a milled nut turned on the fine screw-thread of the bolt, and a toothed bar fixed on the ferrule to engage the handle of the wrench-lever.

848,923. ALTERNATING-CURRENT METER. WILLIAM H. PRATT, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed July 25, 1906. Serial No. 327,598.

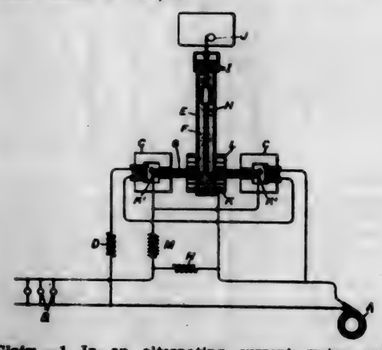

Claim.—1. In an alternating-current meter, an inductive potential-circuit, a series circuit, and phase-controlling means in said series circuit adapted to bring the current in the series circuit of the meter into phase with the current in the potential-circuit on non-inductive load.

2. In an alternating-current meter, in combination with a load-circuit, the energy in which is to be measured, an inductive potential-circuit, a series circuit, and phase-retarding means adapted to lag the current in said series circuit behind the current in the load-circuit by an amount equal to the lag of the current in the potential-circuit behind the potential of the load-circuit.

3. In an alternating-current meter, an inductive potential-circuit, a series circuit, an inductive resistance in the series circuit in series with the meter, and a resistance of smaller self-induction in shunt to the first-mentioned resistance and meter.

4. In an alternating-current meter, an inductive potential-circuit, a series circuit, a reactance in the series circuit in series with the meter, and a non-inductive resistance shunting the reactance and meter.

5. In an alternating-current meter, in combination with a load-circuit, the energy in which is to be measured, a field-circuit in shunt to the load-circuit, an armature-circuit in series with the load-circuit, and phase-retarding means in the armature-circuit adapted to lag the armature-current behind the load-current by an amount equal to the lag of the current in the field-circuit behind the potential in the load-circuit.

6. In an alternating-current meter, in combination with a load-circuit, the energy in which is to be measured, a field-circuit in shunt to the load-circuit, an armature-circuit in series with the load-circuit, a reactance in series with the armature-circuit, and a non-inductive resistance in shunt to the reactance and armature-circuit.

848,924. SAFETY WATCH-POCKET. GEORGE W. ROBERTSON, Trego, Wis. Filed Nov. 20, 1906. Serial No. 344,302.

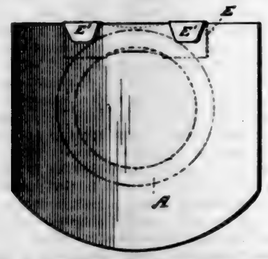

Claim.—1. A security watch purse consisting of two resilient rings fastened together about portions of their peripheries, sheets of fabric secured to said rings and forming a pocket, the free portions of said rings having indentures formed therein, a plate having lugs bent upon themselves to form hooks adapted to engage over the edge of a pocket, said plate secured to one of said rings, and means carried by the plate for holding the latter to the edge of a pocket, as set forth.

2. A security watch-purse consisting of two resilient rings fastened together about portions of their peripheries, sheets of fabric secured to said rings and forming a pocket, the free portions of said rings having indentures formed therein, a plate having lugs bent upon themselves to form hooks adapted to engage over the edge of a pocket, said plate secured to one of said rings, a resilient strip fixed to one of said rings and to said plate and having spurs adapted to coöperate with said lugs to hold the plate to the edge of a pocket, as set forth.

3. A security watch-purse consisting of two resilient rings fastened together about portions of their peripheries, sheets of fabric secured to said rings and forming a pocket, the free portions of said rings having indentures formed therein, a plate having lugs bent upon themselves to form hooks adapted to engage over the edge of a pocket, said plate secured to one of said rings, a resilient strip fixed to one of said rings and to said plate and provided with lugs at its ends extending through slits in said plate, and provided with spurs at the ends of said lugs adapted to coöperate with said lugs upon the plate to retain the device over the edge of a pocket, as set forth.

4. A security watch-purse comprising two resilient rings fastened together about portions of their peripheries, sheets of fabric fastened to said rings and forming a pocket, the free portion of each ring having an outwardly-formed groove adapted to normally embrace the stem of a watch contained within the pocket, a plate having an indenture therein adapted to receive the outwardly-bent portion of one of said rings to which it is fastened, lugs upon said plate which are bent upon themselves to form hooks, a resilient strip with an indenture seated in the indenture of said plate to which it is fastened and provided with lugs having spurs at their ends which extend through slits in said plate and coöperate with said lugs which are bent upon themselves to hold the same to the edge of an object which is to support the device, as set forth.

848,925. ELECTRIC GOVERNOR. ERNEST SCHATTNER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 6, 1904. Serial No. 227,358.

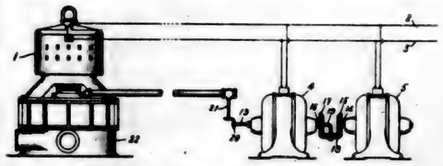

Claim.—1. The combination with an alternating-current circuit, of a motive device in operative relation thereto having a normally rotating member, automatic means for increasing the speed of said rotating member upon a decrease of frequency in said alternating circuit, and means for utilizing said change of speed to produce mechanical movement.

2. The combination with an alternating-current circuit, of a plurality of motive devices in operative relation thereto, a rotor for each of said motive devices, automatic means for changing the relative speed of said rotors upon a change of frequency in said alternating-current circuit, and means for utilizing said change of speed to produce mechanical movement.

3. The combination with a source of alternating current, of a plurality of motive devices connected thereto, a rotor for each of said motive devices, a field-winding for each of said motive devices, means for modifying the phase relation in said field-windings to cause rotation of said rotors, said means adapted to change the relative speed of said rotors upon a change in frequency of said current source, and means for utilizing said change in relative speed to produce mechanical movement.

4. The combination with a source of alternating current, of a prime mover mechanically connected thereto, means for supplying fluid to said prime mover, a plurality of motive devices electrically connected to said source of current, a rotor for each of said motive devices, means for causing said rotors to revolve at the same speed for a certain frequency of the current and to change relatively in speed upon a change of frequency, and means for utilizing said change of relative speed to vary the quantity of fluid supplied to said prime mover.

5. The combination with an alternating-current circuit, of a motive device connected thereto, automatic means for varying the speed of said motive device when the frequency of said circuit changes, a second motive device, and regulating means for utilizing a relative change of speed of said motive devices.

6. The combination with an alternating-current generator, of a prime mover connected thereto, a motive device electrically connected to said generator, automatic means for changing the speed of said motive device when

the frequency of said circuit changes, a second motive device, means for rotating the same, a differential gear between said motive devices, and means operated by said differential gear for varying the speed of said prime mover.

7. The combination with an alternating-current circuit, of a motive device in operative relation thereto having a normally rotating member, a reactance for determining the normal speed of rotation of said member, automatic means for changing the speed of said rotating member upon a change of frequency in said alternating circuit, and means for utilizing said change of speed to produce mechanical movement.

848,926. SYSTEM OF MOTOR CONTROL. CARL SCHIEBLER, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed Sept. 5, 1905. Serial No. 276,928.

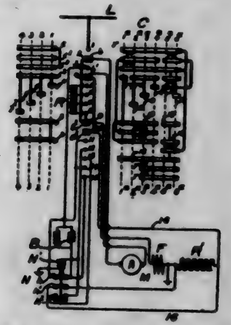

Claim.—1. In a system of control, a motor, a motor-controller having "off," braking and power positions, and means associated with said controller for effecting different braking conditions in the same position of the controller according as the controller is moved to the braking position from the "off" position or from the power position.

2. In a system of control, a motor, a motor-controller arranged to connect the motor to a source of power to drive it when in a power position and to connect said motor as a braking-generator when in a braking position, and means for producing an ultimate change in the condition of the braking-circuit in the same position of the controller upon operating the controller from the braking position to the power position and back to the braking position.

3. In a system of control, a motor, a motor-controller having power, braking and "off" positions and contacts arranged to respectively connect the motor to a source of current-supply to drive the same, to connect the motor as a braking-generator, and to disconnect the motor from the source of current-supply, in said several positions, and means for effecting different conditions in the circuit of the braking-generator in the same position of the controller according as the controller is moved to the braking position from the power position or from the "off" position.

4. In a system of control, a motor, a source of current-supply, a controller arranged to connect said motor as a braking-generator in its braking position and for operation as a motor in its power position, a motor-protecting device normally inoperative when said motor operates as a braking-generator, and means for rendering said protecting device operative upon moving the controller from said power position to the said braking position.

5. In a system of control, a motor, a source of current-supply, a controller arranged to connect said motor as a braking-generator in its braking position and for operation as a motor in its power position, a normally inoperative resistance, and means for introducing said resistance into the braking-circuit upon moving the controller from said power position to said braking position and for preventing the introduction of said resistance into the braking-circuit upon moving the controller from "off" position to said braking position.

6. In a system of control, a motor, a source of current-supply, a motor-protecting device, a controller having "off", braking and power positions and contacts arranged to connect said motor to said source of current-supply for operation as a motor in said power position and to connect said motor as a braking-generator independently of said protecting device when the controller is moved to the braking position from the "off" position, and means for bringing said protecting device into play upon moving the controller from the power position to the braking position.

7. In a system of control, a motor, a source of current-supply, a motor-controller having braking and power positions, contacts in said controller arranged to connect said motor as a braking-generator in the braking position, an auxiliary braking resistance in the generator-circuit, means for normally short-circuiting said resistance, and means associated with said controller for opening said short circuit upon moving the controller to the braking position through the power position.

8. In a system of control, a motor, a source of current-supply, a motor-controller having "off," braking and power positions, contacts on said controller arranged to connect said motor for operation as a braking-generator in said braking position and for operation as a motor in said power position, an auxiliary braking resistance, a relay for normally short-circuiting said resistance, contacts in the power positions of said controller for completing an actuating-circuit for said relay, and means for maintaining said relay in its actuated position until the controller is returned to its "off" position.

9. In a hoisting system, a motor, a reversing-controller for said motor, said controller having an "off" position between its "up" and "down" sides and braking and power positions on its "down" side, and means associated with said controller for effecting different braking conditions according as the controller is moved to the braking position or positions from the "off" position or from the "down" power position or positions.

10. In a hoisting system, a motor, a source of current-supply, a reversing-controller for said motor, said controller having on its "down" side braking and power positions, and contacts arranged to connect said motor as a braking-generator in said braking position or positions and for operation as a motor in said power position or positions, a motor-protective device normally inoperative when said motor operates as a braking-generator, and means for rendering said protective device operative upon moving the controller from said power position or positions to the said braking position or positions.

11. In a hoisting system, a motor, a source of current-supply, a reversing-controller having between its "up" and "down" sides an "off" position and braking and power positions on its "down" side, contacts on said controller arranged to connect said motor for operation as a braking-generator in said braking position or positions and for operation as a motor in said power position or positions, an auxiliary braking resistance, and a relay for normally short-circuiting said resistance, contacts in the said power position or positions of the controller for completing an actuating-circuit for said relay, and means for maintaining said relay in its actuated position until the controller is returned to its "off" position.

848,927. METHOD OF MAKING WHEELS. CHARLES T. SCHOEN, Moylan, Pa. Filed June 25, 1906. Serial No. 323,401.

Claim.—1. The method of making wheels having a hub, a web, and a rim, which consists in shearing from rolled metal stock an angular flat blank of the approximate weight of the finished wheel and subjecting the blank to pressure on its flat sides only in circular dies, within which dies the blank is circumferentially confined during the pressing operation.

2. The method of making wheels having a hub, a web, and a flanged rim, which consists in shearing from rolled steel stock an angular flat blank of the approximate weight of the finished wheel and subjecting the blank to pressure on its flat sides only in circular dies within which the blank is circumferentially confined during the pressing operation and dishing or coning the wheel while so confined.

848,928. ELECTRIC FEEDING MECHANISM. ARTHUR W. SHERWOOD, McDonough, Ga. Filed Dec. 26, 1906. Serial No. 349,445.

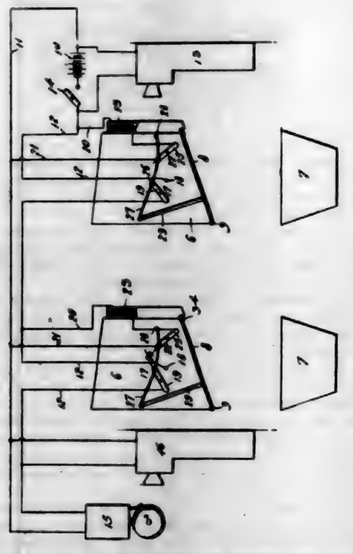

Claim.—1. In a feeding device, in combination, a series of feed-boxes having openable bottoms, an electric circuit having a controlling-switch and a source of current, and means to successively open the bottoms of the boxes, comprising a switch in the circuit at each box and operatively connected to the bottom thereof, the switch being open when the bottom is closed and vice versa, a catch at each box, engaging the bottom to hold the same closed, and an electromagnet bridged in the circuit at each box and having an armature operatively connected to the catch, to release the same.

2. In a feeding device, in combination, a series of dumping feed-boxes, a sounding-signal at the end of the series, an electric circuit having a controlling-switch distant from the boxes, a transmitter and receiver in the circuit, the former being adjacent the signal and the latter adjacent the switch, and means in the circuit to dump the boxes and sound the signal.

3. In a feeding device, in combination, a series of feeding-boxes having swinging bottoms, an electric circuit having a source of current and a controlling-switch, a switch at each box, in series in the circuit, a bridge-circuit at each box, in advance of such switch, and having therein a switch and an electromagnet, a catch for each bottom, connected to the armature of the magnet and adapted to be released when the magnet is energized, and a connection between the bottom and the switches at each box, arranged to open the switch in the main circuit and close the switch in the bridge-circuit when the bottom is closed, and vice versa.

848,929. APPARATUS FOR DISCHARGING LIQUIDS. FRED P. SMITH, Chicago, Ill., assignor of one-half to Edward C. Lewis, Chicago, Ill., and John H. Kitchen, Kansas City, Mo., copartners. Filed July 17, 1906. Serial No. 326,578.

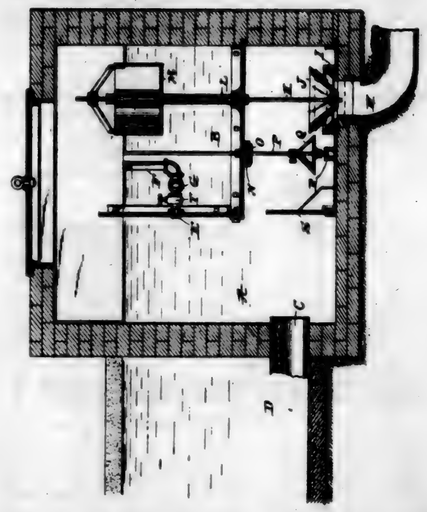

Claim.—1. In combination with a chamber or receptacle provided with an outlet; a tank likewise provided with an outlet which opens into the chamber or receptacle; an inlet for the tank communicating with the chamber; a float located in the tank; a valve controlled by said float for opening and closing the outlet of the chamber; a valve for closing the opening leading from the tank to the chamber; and a float mounted in the chamber and connected to said valve.

2. In combination with a chamber; a tank communicating therewith; means for controlling the water-line within said tank; a valve for controlling the outlet of the chamber; and a float mounted in the tank and connected to the valve, whereby when the water or other liquid within the tank reaches a predetermined height the valve will be opened and the chamber discharged.

3. In combination with a chamber provided with an outlet; a tank in communication therewith; means contained within the tank for regulating the water-line therein; a float mounted in the tank; a valve connected to the float and serving, when the float is lowered, to close the outlet of the chamber; and means for discharging the tank when the chamber is emptied.

4. In combination with a chamber provided with an outlet; a tank; a pipe affording communication between said chamber and tank, the outer end of the pipe being adjustable to a higher or lower plane; a float mounted in the tank; a valve connected to the float and serving, when lowered, to close the outlet of the chamber; and means for discharging the tank when the chamber has been emptied.

5. In combination with a chamber provided with an outlet; a tank communicating with said chamber through a restricted opening; a discharge-pipe located within the tank and communicating with said restricted opening, the mouth of said pipe being adjustable to a higher or lower level, whereby the flow of liquid from the chamber into the tank and the water-level within the tank may be regulated as desired; a float mounted in the tank; a valve-stem connected to said float; a valve adjustably secured

at the lower end of the stem and arranged to close the outlet of the chamber when the float is lowered; a second valve arranged to open and close a passage leading from the tank directly to the chamber; a valve-stem for said valve; and a float secured to said stem and located within the chamber.

6. In combination with a measuring-chamber provided with an outlet; a valve normally closing said outlet against the passage of liquid from the chamber; a tank in communication with said measuring-chamber; and means contained within the tank for operating the valve according to the height of water or other liquid in the tank, substantially as described.

848,930. CUT-OFF FOR OIL-TANKS. ASA L. STUMP, Stumptown, W. Va. Filed Jan. 13, 1906. Serial No. 295,975.

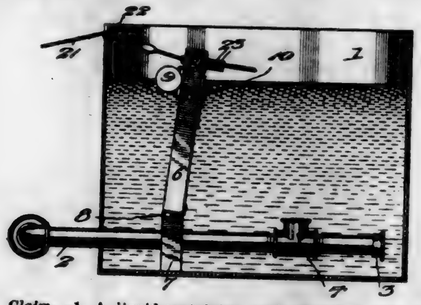

Claim.—1. A liquid-containing tank provided with an outlet, a valve for automatically closing the outlet when the liquid falls to a prescribed level, means for automatically locking the valve in closed position, and means uninfluenced by the liquid in the tank and adapted to be manually operated for releasing said locking means.

2. A liquid-containing tank provided with a discharge-pipe having an outlet, a valve operating to automatically close said outlet when the liquid therein falls to a prescribed level, means carried by the valve for engaging the pipe and locking said valve in closed position, and manually-operable means uninfluenced by the liquid in the tank for releasing said locking means.

3. A liquid-containing tank provided with an outlet, a swinging float-valve therein operating to automatically close said outlet when the liquid falls to a prescribed level, means for automatically locking said valve in closed position, said means being thrown into action by the closing movement of the valve, and manually-operable means uninfluenced by the level of the liquid for releasing said locking means.

4. A liquid-containing tank provided with a discharge-pipe having an outlet, a swinging float-valve therein operating to automatically close said outlet when the liquid falls to a prescribed level, locking-jaws carried by said valve to engage the pipe and lock the valve in closed position, and manually-operable means uninfluenced by the liquid in the tank for retracting said locking-jaws.

5. A liquid-containing tank provided with a discharge-pipe having an outlet, a swinging float-valve adapted to close said outlet when the liquid falls to a prescribed level, pivoted gripping-jaws carried by the valve to automatically engage the pipe and lock the valve in closed position, actuating-arms connected with the jaws, and means connected with said actuating-arms whereby the jaws may be manually retracted to release them from engagement with the pipe.

6. An oil-tank provided with an outlet, a valve for automatically closing the outlet when the oil falls to a prescribed level, pivoted jaws for locking the valve in closed position, gravity-controlled arms for swinging said jaws closed, and means for actuating the arms to release the jaws.

7. A liquid-containing tank provided with an outlet, a float-valve for closing the outlet when the liquid falls to a prescribed level, automatically-operating locking means for securing the valve in closed position, said means being uninfluenced by the liquid in the tank, and operating means extending to the exterior of the tank, whereby said locking means may be released to permit the valve to open.

8. An oil-tank provided with a discharge-pipe having an inlet, a gravity float-valve for closing said inlet when the oil in the tank falls to a prescribed level, automatic jaws carried by the valve to grip the pipe when the valve is closed, weighted arms controlling said jaws, and means for actuating said arms to release the jaws.

848,931. REVERSING DEVICE FOR SHAFTS. AUGUST SUNDBERG and GUSTAF ERICSSON, Stockholm, Sweden. Filed Oct. 10, 1906. Serial No. 338,282.

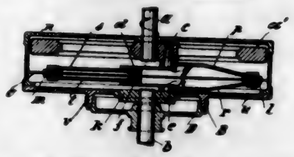

Claim.—1. The combination with a motor-shaft and a propeller-shaft in line therewith, of reciprocating members, a crank on each shaft and means connecting both cranks with the reciprocating members.

2. The combination with a motor-shaft and a propeller-shaft in line therewith, of conjointly-reciprocating members, cranks on each shaft, and means connecting the cranks with both reciprocating members.

3. The combination with a motor-shaft and a propeller-shaft in line therewith, of a guide, slides mounted on the latter, cranks on each shaft and means connecting the cranks with the guide.

4. The combination with a motor-shaft and a propeller-shaft in line therewith, of a supporting member, a guide carried by the latter, slides on the guide, a crank on each shaft, and means connecting each crank with the slides.

5. The combination with a motor-shaft and a propeller-shaft, of a rotatable supporting member, a guide carried by the latter, a crank on each shaft, and means connecting the cranks with the guide.

6. The combination with a motor-shaft and a propeller-shaft, of a rotatable supporting member, a guide carried by the latter, a crank on each shaft, rods connected with each crank, means connecting the rods, and means to lock the supporting member to the propeller-shaft.

7. The combination with a motor-shaft and a propeller-shaft, of a supporting member, a guide fixed in the latter, slides on the guide, a crank on each shaft, rods connecting the cranks with the slides, and means to connect the supporting member with the propeller-shaft.

8. The combination with a motor-shaft and a propeller-shaft, of a supporting member loosely mounted on the shafts, a guide mounted in the supporting member between the ends of the shafts, slides mounted on the guide, a crank carried by each shaft, rods connecting the cranks and one of the slides, a second crank carried by each shaft connected with the other slide, a clutch-ring carried by the supporting member, and a clutch-wheel on the propeller shaft adapted to be moved into and out of engagement with the clutch-ring.

9. The combination with a motor-shaft, of a slide adapted to be reciprocated thereby, a propeller-shaft, and mechanism operated by the slide to rotate the propeller-shaft in a direction opposite to the direction of rotation of the motor-shaft.

10. The combination with a motor-shaft having a crank mounted thereon, of a slide, a rod connected to the crank and slide, a propeller-shaft, a crank mounted thereon, and a rod connected to the slide and to the last-named crank at a point angularly displaced with relation to the point of connection of the first-named crank and rod, whereby

the propeller-shaft is rotated in a direction opposite to the direction of rotation of the motor-shaft.

848,932. REEL-CARRIER. JESSE J. TELLINGTON, Berlin, N. H. Filed Apr. 13, 1906. Serial No. 311,568.

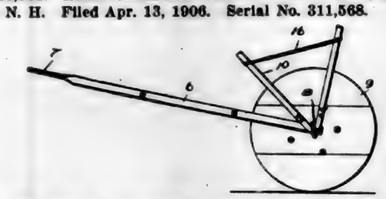

Claim.—1. A reel-carrier comprising a pair of sills, a bolt at the front ends thereof adapted to carry a reel; V-shaped supports pivoted to said bolt for supporting the reel when in one position; and means for retaining said V-shaped supports upon the sills when the reel is in its second position.

2. A reel-carrier comprising a pair of sills, a bolt at the front end thereof adapted to carry a reel; V-shaped supports pivoted at their upper ends to each end of said bolt for supporting the reel when in one position; and a bracket attached to the inner face of each support; said brackets having alining perforations through which said bolt passes.

3. A device of the kind described comprising in combination, a reel composed of a pair of heads and connecting cross-pieces; a carrier for said reel comprising a pair of sills; a bolt passing through the front end of said sills and said heads; V-shaped supports pivoted at their upper ends to each end of said bolt exterior of said sills for supporting the device in operative position; and a bracket attached to the inner side of each support; said brackets being adapted to retain said supports in place upon the sills when the device is in an inoperative position.

848,933. CARBURETER. WALTER THEIM, Halle-on-the-Saale, Germany, assignor to Adolph Louis, Paris, France. Filed Aug. 8, 1904. Serial No. 219,982.

Claim.—1. In an apparatus of the character described, the combination of a casing closed to all sides, a carbureter-coil within said casing, an air-inlet pipe communicating with said coil, a suction-drum entirely within the casing, an outlet-pipe leading from said drum, and a distributer mounted on said casing for feeding liquid hydrocarbon to said coil.

2. In an apparatus of the character described, the combination of a casing closed to all sides, a caburetor-coil within said casing, an air-inlet pipe communicating with said coil, a suction-drum entirely within the casing, an outlet-pipe leading from said drum, a distributer mounted on said casing for feeding liquid hydrocarbon to said coil, and means connecting the drum and the distributer to cause said parts to operate in unison.

3. In an apparatus of the character described, the combination of a casing closed to all sides, a carbureter-coil within said casing, an air-inlet pipe communicating with said coil, a suction-drum entirely within the casing, an outlet-pipe leading from said drum, a distributer mounted on said casing for feeding liquid hydrocarbon to said coil, and means connecting the drum and the distributer to cause said parts to operate in unison; said casing containing a space for a cooling medium and above said space a second space in which the carbureted mixture entering from the coil is collected.

848,934. BREAST-STRAP. JOHN TOLEN, Maud, Okla. Filed Sept. 19, 1905. Serial No. 279,149.

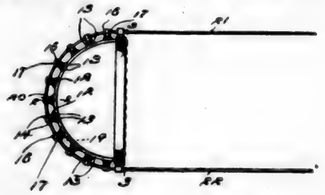

Claim.—The combination, with a breast-strap, of a plurality of pairs of oppositely-disposed legs secured thereto; strips connecting the outer ends of each pair of legs; a U-shaped frame secured to the breast-strap between each pair of legs, the side members of each frame having bifurcated outer ends, the fingers formed thereby being adapted to embrace the opposite ends of the connecting-strips; a rod passed through each pair of legs and the side members of the corresponding frame; and a roller loosely mounted upon each rod.

848,935. SYSTEM OF ELECTRICAL DISTRIBUTION. MATTHEW O. TROY, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed July 19, 1902. Serial No. 116,208.

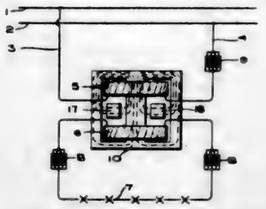

Claim.—1. The combination of a series circuit containing translating devices possessing inductance, a device possessing capacity also in said circuit, and a transformer for supplying current to said circuit, said transformer possessing sufficient inductive reactance to filter out or suppress harmonics.

2. The combination of a transformer having a magnetic circuit of adjustable reluctance, a series circuit containing translating devices possessing inductance, and means in said circuit for maintaining a constant current therein.

3. The combination of a transformer of variable reactance, a series circuit containing translating devices fed thereby, and a device possessing the effect of capacity in series in said circuit.

4. The combination of a series circuit containing translating devices possessing inductance, a device possessing capacity in series in said circuit, and a source of current for supplying said circuit, said source possessing sufficient inductance to damp out harmonics in the wave of current in said circuit.

5. The combination of a transformer, means for varying the reluctance of the leakage-path between the primary and secondary of said transformer, means for supplying said transformer with current from a source of nominally-constant potential, a series circuit containing translating devices connected to the secondary of said transformer, a

device possessing capacity in series in said circuit for securing a substantially constant current regulation in said circuit, and additional means for compensating for the effect of the inductance of the transformer upon the system.

6. A regulable stationary induction apparatus consisting of a closed core, coils spaced apart on said core, a flux-shunt of magnetic material movable into and out of the space between said coils, and means for holding said flux-shunt in any chosen position within its range of movement.

7. A regulable stationary induction apparatus consisting of a closed core, coils mounted on said core so as to provide a leakage-space for magnetic flux, a flux-shunt of magnetic material, a device for raising and lowering said flux-shunt in said leakage-space, and means for holding said flux-shunt in any chosen position within its range of movement.

8. Means for improving the power factor of an alternating-current circuit consisting of a condenser, and a device possessing inductance in circuit with said condenser and operating to screen out harmonics.

9. A regulable stationary induction apparatus consisting of a closed magnetic core, coils mounted on said core so as to provide between them a leakage-space for magnetic flux, a flux-shunt of magnetic material, movable into and out of said leakage-space, and a hand-wheel for raising and lowering said flux-shunt.

848,936. MEANS FOR IMPROVING THE POWER FACTOR OF ALTERNATING-CURRENT CIRCUITS. MATTHEW O. TROY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 21, 1904. Serial No. 225,308.

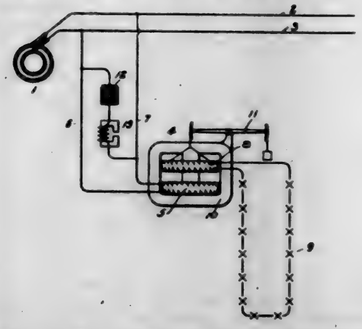

Claim.—1. The combination of an alternating-current supply-circuit, a consumption-circuit including a device or devices taking lagging current from the supply-circuit, and means for improving the power factor of said supply-circuit consisting of a condenser and an inductance in series with each other in a circuit independent of said consumption-circuit.

2. The combination of a source of alternating current, a circuit taking lagging current therefrom, and an independent circuit taking leading current from said source, the last-mentioned circuit including a condenser provided with means for eliminating the effect of minor harmonics.

3. The combination of a source of alternating current, a constant-current circuit supplied with energy from said source, a circuit fed from said source independently of said constant-current circuit and including a condenser with means for eliminating the effect of harmonics on said condenser.

848,937. BRIDLE-BIT. JOHN W. TURNER, Terre Haute, Ind. Filed Dec. 27, 1905. Renewed Nov. 15, 1906. Serial No. 343,631.

Claim.—1. The combination, with the mouth-bar of a bit formed of two parts provided with pivoted overlapping end portions, of a clip slidable on the said end portions and normally holding the parts of the said mouth-bar in alinement.

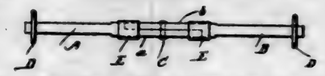

2. The combination, with the mouth-bar of a bit formed of two parts provided with offset and overlapping end portions, of a pivot connecting the said end portions, and a clip slidable on the said end portions and normally holding the parts of the said mouth-bar in alinement.

3. The combination, with the mouth-bar of a bit formed of two parts provided with pivoted overlapping end portions, of a tubular spring-clip slidable on the said end portions and normally holding the parts of the said mouth-bar in alinement.

4. The combination, with the mouth-bar of a bit formed of two parts provided with overlapping end portions, of two clips arranged one on each side of the pivot of the said parts of the mouth-bar and slidable in opposite directions upon their said end portions and normally holding the parts of the said mouth-bar in alinement.

848,938. TOY LANTERN. JESSIE C. TYNDALL, St. Louis, Mo. Filed Nov. 7, 1906. Serial No. 342,374.

Claim.—1. A toy lantern consisting of an approximately spherical-shaped molded shell open at its upper end and provided with openings for representing a nose, mouth and eyes, said shell being formed to represent a pumpkin, a removable lid to cover the open end of the shell, devices on the lid which extend underneath an inwardly-projecting flange on the shell, an eye connected to said lid, and a handle detachably connected to said eye; substantially as described.

2. A toy lantern consisting of a molded shell formed to represent a pumpkin and having openings therein to represent eyes, nose and mouth, pieces of transparent material fastened to the inside of the shell to cover said openings, an inwardly-extending flange at the upper end of said shell having notches formed in the edge thereof, a sheet-metal lid provided with L-shaped catches which extend underneath the flange on the shell to retain the lid in position, an eye secured to said lid, and a handle provided at one end with a hook which engages the eye on the lid; substantially as described.

848,939. ELECTRIC HEATING UNIT. TYCHO VAN ALLER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Dec. 29, 1905. Serial No. 293,746.

Claim.—1. An electric heating unit comprising an insulating-base, a series of resistance-coils having their ends supported in said base, similarly-supported insulating spacing-strips between said coils, and a shield for said coils adapted to be supported by said strips.

2. An electric heating unit comprising an insulating-plug, a resistance-conductor wound into a series of coils and having only their ends supported in said plug, a shield for said coils, and a retaining-cap for said shield secured to said plug and having a central opening, said cap being raised away from said shield and beveled around the opening so as to form a bearing edge in contact with said shield.

3. An electric heating unit comprising an insulating-plug, a resistance-conductor wound into a series of coils arranged in a plane and having their ends supported in said plug, similarly-supported insulating spacing-strips between such coils, a mica shield for said coils adapted to be supported by said strips, and a retaining-cap for said shield secured to said plug and having a central opening, said cap being raised away from said shield but having the edge of the opening bearing thereon.

4. An electric heating unit comprising an insulating-base, a resistance-conductor wound into a series of parallel coils arranged in a plane and having their ends supported in said base, the turns of the outer coils of the series being closer together than those of the inner coils.

5. An electric heating unit comprising an insulating-plug, a resistance-conductor wound into a series of parallel coils arranged in a plane and having their ends supported in said base, the turns of the outer coils being closer together than those of the inner coils, a mica shield for said coils, and means for securing said shield to said plug.

6. An electric heating unit comprising an insulating-plug, a resistance-conductor wound into a series of parallel coils arranged in a plane and having their ends supported in said base, the turns of the outer coils of the series being closer together than those of the inner coils, a mica shield for said coils, and insulating spacing-strips between the coils and adapted to support said shield.

7. An electric heating unit comprising a porcelain plug, a resistance-conductor wound into a series of parallel coils arranged in a plane and having their ends supported in said plug, the turns of the outer coils of the series being closer together than those of the inner coils, similarly-supported insulating spacing-strips between said coils, a mica shield for said coils adapted to be supported by said strips, and a retaining-cap for said shield secured to said plug and having a central opening, said cap being raised away from said shield but having the edge of the opening bearing thereon.

8. An electric cigar-lighter comprising a plug for an incandescent-lamp socket having a threaded stem to enter a socket, a refractory insulating-support, a continuous coil of reflexed resistance-wire supported at intervals therein, refractory insulating spacing-strips between the several reflexes, and a cap containing an opening to admit a cigar or the like.

9. An electric heating unit comprising an insulating-base, a series of resistance-coils having their ends supported therein, insulating-strips between said coils, and a shield for said coils adapted to be supported by the strips.

10. An electric heating unit comprising an insulating-plug, a resistance-conductor wound into a series of coils arranged in the base, and having their ends supported in said plug, insulating spacing-strips between said coils, a mica shield for said coils, adapted to be supported by the strips, and a retaining-cap for the shield secured to the plug and having a central opening.

848,940. ELECTRIC-SWITCH-OPERATING APPARATUS. IRA L. VAN BUSKIRK, Louisville, Ky. Filed Sept. 13, 1906. Serial No. 334,483.

Claim.—1. The combination, with an electric switch, of a vibratory dog adapted to engage the switch when the latter is closed; an electromagnet, including an armature; a link connecting said armature with said dog; a series of push-buttons circuited with said electromagnet, and adapted, upon depression, to vibrate said dog to release the same from engagement with said switch through the link connection between said dog and armature; and a spring connected with said switch, and adapted to throw the same into open position when said dog has been actuated.

2. The combination, with an electric switch, of a movable dog adapted to engage the switch when the latter is closed; an electromagnet including an armature; a hammer secured to said armature; a bell located adjacent said hammer, in position to be struck thereby; a link connecting said hammer with said dog; a series of push-buttons circuited with said electromagnet, and adapted upon depression to release said dog from engagement with said switch; and a spring connected with said switch, and adapted to throw the same into open position when said dog has been actuated.

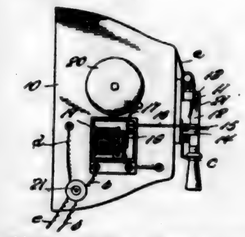

3. The combination, with an electric switch, of a vibratory dog mounted upon the switch-block and adapted to engage the switch when the latter is in closed position; an electromagnet including an armature; a hammer secured to said armature; a strap secured to said hammer at right angles thereto, said strap having an eye formed in its free end; a bell located adjacent said hammer in position to be struck thereby; a link having a hook at one end for engagement with said eye, and connected at its opposite end with said dog; a series of push-buttons, circuited with said electromagnet, and adapted, upon depression, to vibrate said dog to release the same from engagement with said switch through the link connection between said dog and armature; and a spring connected with said switch, and adapted to throw the same into open position when said dog has been actuated.

4. The combination, with an electric switch, comprising spaced blades, a connecting cross-bar, and a lip secured to the latter, of an electromagnet including an armature; a dog pivotally mounted upon the switch-block and adapted to engage said lip when the switch is in closed position; a link connecting said armature and dog; a series of push-buttons circuited with said electromagnet, and adapted, upon depression, to release said dog from engagement with said lip through the link connection between said dog and armature; a spring bearing against one of said blades and adapted to swing said switch into open position; and means adapted to contact with the opposite blade, to limit such swinging movement.

5. The combination, with an electric switch, comprising spaced blades, a connecting cross-bar, and a lip secured to the latter intermediate the ends thereof; of an electromagnet including an armature; a dog pivotally mounted upon the switch-block between said blades, and adapted to engage said lip, when the switch is in closed position; a hammer secured to said armature; means connecting said hammer and dog; a series of push-buttons circuited with said electromagnet, and adapted, upon depression, to release the dog from engagement with said lip through the connecting means between said hammer and said dog; a spring adapted to engage one of said blades to swing said switch into open position; and a spring adapted to contact with the opposite blade, to limit such swinging movement.

848,941. ELECTRICAL CONNECTING-PLUG. FREDERICK M. VOGEL, Lynn, and CHARLES E. WHITE, Malden, Mass., assignors to General Electric Company, a Corporation of New York. Filed Feb. 25, 1906. Serial No. 247,326.

Claim.—1. A coupling for electrical conductors consisting of an insulating-body having a straight bore therethrough, and a metallic connector within the same com-

prising a terminal secured against rotation by engagement with the walls of the said perforation, and a socket screwed to the terminal and engaging the said perforation-walls.

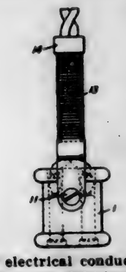

2. A coupling for electrical conductors consisting of an insulating-body having a straight bore therethrough which is non-circular at one end and a metallic connector within the same comprising a terminal having a head engaging said non-circular portion and correspondingly shaped, and a split tube in screw-threaded engagement with said terminal, said tube and terminal being wholly below the surface of the insulating-body.

3. A coupling for electrical conductors consisting of an insulating-block having straight bores therethrough which are non-circular at one end, metallic connectors within said perforations each comprising a terminal having a head engaging said non-circular portion and correspondingly shaped, and a split tube flanged at one extremity and in screw-threaded relation with said terminal at the other, said terminals and tubes being wholly below the surface of said block.

4. The combination with a coupling provided with terminals and an electrical conducting-cord therefor, of means for preventing sharp flexure of the cord comprising a supporting-clip, a bushing extending therefrom for supporting said cord, a flexible tube engaging said clip and mounted upon said bushing, and means for securing said clip to said coupling.

5. The combination with a coupling provided with terminals and an electrical conducting-cord therefor, of means for preventing sharp flexure of the cord comprising an inclosing helical spring, bushings fitting into opposite ends thereof to support said cord, a clip engaging one of said bushings and supporting said spring, and means for attaching said clip to said coupling.

848,942. PROPELLER. JOHN A. WADE, Traverse City, Mich. Filed Feb. 19, 1906. Serial No. 301,946.

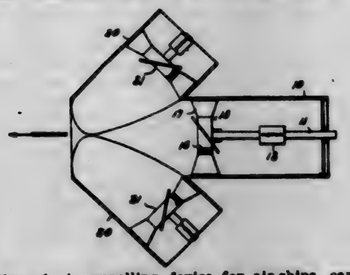

Claim.—1. A propelling device for air-ships, carriages and the like, comprising a cylindrical casing open at both ends and of substantially uniform diameter from end to end, a centrally-arranged disk within said casing, and means for exhausting the air in advance of the disk to permit the exercise of atmospheric pressure on the rear face of the disk, and the forward movement of the disk, the casing and the apparatus to which the latter is attached.

2. In a propelling device for air-ships, carriages and other vehicles, a casing open at both ends and of uniform diameter from end to end, a disk arranged centrally of the casing and adapted to be acted upon by atmospheric pressure to effect the forward movement, fan-blades arranged between the periphery of the disk and the wall of the casing, and means for operating the fan-blades to create a partial vacuum in front of the disk.

3. In apparatus of the class described, a cylindrical casing open at both ends, and of substantially uniform diameter throughout its length, a revoluble fan arranged therein and having a solid central disk, the fan being arranged to create a partial vacuum in advance of the disk, auxiliary casings connected at their front ends to the main casing at a point in advance of the fan, and auxiliary fans mounted in auxiliary casings and acting to further exhaust the air in advance of the main casing.

848,943. WIRE-FENCE TOOL. ROBERT L. WARREN, Wardell, Mo. Filed Apr. 30, 1906. Serial No. 314,532.

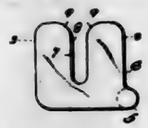

Claim.—A tool of the class described comprising a handle, a bifurcated jaw member carried by the handle and extending in a plane at right angles to the plane occupied by the handle, the extreme outer portion of the edges of said bifurcation being diverged the remaining portion of the edges of the bifurcation being located in parallel planes.

848,944. REVERSE-CURRENT DEVICE. EDMUND B. WEDMORE, Rugby, England, assignor to General Electric Company, a Corporation of New York. Filed Nov. 11, 1905. Serial No. 286,843.

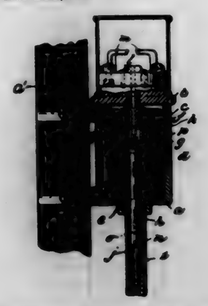

Claim.—1. An electric protective device comprising current and potential coils, and an open magnetic circuit threading said coils and having an adjustable air-gap more remote from the current-coil than from the potential-coil.

2. An electric protective device comprising current and potential coils, an open magnetic circuit threading said coils and including a movable member, and means for promoting magnetic leakage of the flux of one of said coils away from said movable member.

3. An electric protective device comprising current and potential coils, an open magnetic circuit threading said coils including a movable member, and means for promoting magnetic leakage of the flux of the current-coil away from said movable member.

4. An electric protective device comprising current and potential coils, a magnetic circuit threading said coils, and a body of magnetic material between said coils for shunting the magnetic flux.

5. An electric protective device comprising current and potential coils, an open magnetic circuit threading said coils and having its air-gap disposed nearer to one coil than the other, and means for promoting magnetic leakage of the flux of the more remote coil away from said air-gap.

6. An electric protective device comprising current and potential coils, an open magnetic circuit threading said coils and having its air-gap disposed more remote from the current-coil than from the potential-coil, and means for promoting magnetic leakage of the current-coil away from said gap.

7. An electric protective device comprising a casing of magnetic material, current and potential coils contained therein, a fixed core attached to the top of the casing around which the current-coil is arranged, and a plunger movable within the potential-coil and normally situated with its upper extremity remote from the current-coil.

8. An electric protective device comprising a casing of magnetic material, current and potential coils therein, a fixed core attached to the top of the casing and extending downward within the current-coil, a plunger movable within the potential-coil and normally situated with its upper extremity remote from the current-coil, and a short-circuited winding on the fixed core for shunting the flux of the current-coil.

9. An electric protective device comprising current and potential coils, a fixed core of high reluctance extending into one of said coils, and a coöperating plunger.

10. An electric protective device comprising current and potential coils, an open magnetic circuit threading said coils having the core embraced by the current-coil of high reluctance.

848,945. COMPOUND VISE. JAS. H. WESTCOTT, Oneida, N. Y., assignor of one-half to Westcott Chuck Company, Oneida, N. Y., a Corporation of New York. Filed Jan. 25, 1906. Serial No. 297,725.

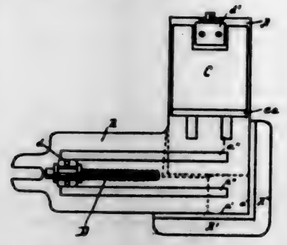

Claim.—1. A combined vise having fixed abutments and sliding abutments, one opposite to each fixed abutment adapted to be passed into the field in front of the other sliding abutment, one of the said sliding abutments having its gripping portions made up of parts interlocking and removable to reduce the face of said portions, substantially as described.

2. In a combined vise, sliding abutments and opposite fixed abutments, one of said sliding abutments being composite to present a gripping portion of reduced extent by the removal of certain of the component parts of said abutment, the said parts being dovetailed into the main portion of the abutment and having a portion thereof in operative contact with the block-actuating means.

848,946. POWDER-GUN. JACOB L. WEBSTER, McRaeville, Ga. Filed Dec. 4, 1905. Serial No. 290,229.

Claim.—In a powder-gun, the combination with a pump-cylinder, of a reciprocatory piston located in the pump-cylinder, a handle connected with the piston for operation thereof, an air-reservoir, pipe connections between the pump-cylinder and air-reservoir for the passage of air from the pump to the reservoir, a discharge-pipe connected with the air-reservoir, a valve in the discharge-pipe, a supporting-handle carried by the air-reservoir, a handle for the valve extending over the air-reservoir, a container mounted upon the discharge-pipe and communicating therewith, a transverse rock-shaft journaled in the container, depending agitating-fingers carried by the rock-shaft within the container, an upwardly-extending arm

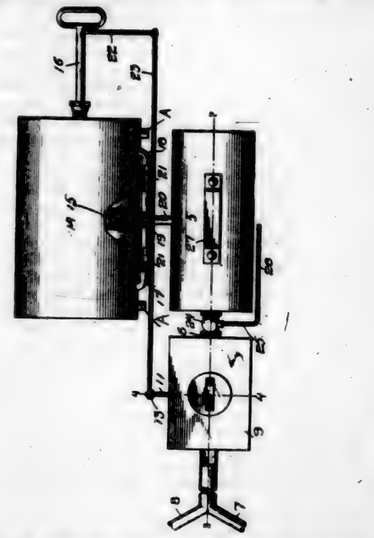

carried by the rock-shaft outwardly of the container, and a link pivoted to the upper end of the arm and to the handle of the pump for oscillation of the rock-shaft when the handle is reciprocated.

848,947. SIGHT. CHARLES WHITE and MARGARET A. S. WHITE, Montreal, Quebec, Canada. Filed Apr. 8, 1905. Serial No. 254,508.

Claim.—1. The combination with a fore sight mounted upon the barrel of the arm in close proximity to the muzzle and comprising a plurality of sighting devices arranged in different vertical planes, and a laterally-adjustable rear sight of plate form having a plurality of completely-inclosed peep-holes arranged in different vertical planes to represent different degrees of drift.

2. A sight comprising two series of sighting devices arranged in different vertical planes, and the devices of one series being separated from and disposed in staggered relation to the devices of the other series.

3. In a sight the combination of a base, a member carried by the base, means for raising and lowering the member relatively to the base, such member having two series of peep-holes arranged in different vertical planes, the peep-holes of one series being separated from and arranged in staggered relation to the peep-holes of the other series.

4. In a sight the combination of a base, a leaf carried

by and hinged at one end to the base, means retaining the leaf yieldingly in different angular positions relatively to the base, a plate carried by the leaf and having a plurality of completely-inclosed peep-holes therein such peep-holes being separated from one another, means for adjusting the plate upon the leaf longitudinally, and means for adjusting such plate upon the leaf laterally.

5. In a sight the combination of a base, a leaf carried by and hinged at one end to the base, means retaining the leaf yieldingly in different angular positions relatively to the base, an oblong plate carried by the leaf and longitudinally thereto and having a plurality of completely-inclosed peep-holes therein separated from one another and arranged in two parallel rows longitudinally to the plate, means for adjusting the plate longitudinally, and means for adjusting such plate laterally.

6. In a sight the combination of a base, a leaf carried by and hinged at one end to the base, means retaining the leaf yieldingly in different angular positions relatively to the base, an oblong plate carried by the leaf longitudinally thereto and having a plurality of completely-inclosed peep-holes therein arranged in two parallel rows longitudinally to the plate such peep-holes being separated from one another, the peep-holes of each series being disposed progressively-increasing distances apart from the hinged end of the leaf, means for adjusting the plate longitudinally, and means for adjusting such plate laterally.

7. In a sight the combination of a base, a leaf carried by and hinged at one end to the base, means retaining the leaf yieldingly in different angular positions relatively to the base, a slide mounted upon the leaf, a plate carried by the slide and having a plurality of completely-inclosed peep-holes therein such peep-holes being separated from one another, means for adjusting the slide upon the leaf longitudinally, and means for adjusting such plate upon the slide laterally.

8. In a sight the combination of a base, a leaf carried by and hinged at one end to the base, means retaining the leaf yieldingly in different angular positions relatively to the base, a slide mounted upon the leaf, an oblong plate carried by the slide longitudinally thereto and having a plurality of completely-inclosed peep-holes therein arranged in two parallel rows longitudinally to the plate such peep-holes being separated from one another, means for adjusting the plate longitudinally and means for adjusting such plate laterally.

9. In a sight the combination with a support, a movable member carried by the support and having a plurality of sighting devices arranged in two rows the devices of each row being disposed a distance apart less than the distance separating the rows, means for adjusting the member longitudinally to the rows, and means for adjusting such member transversely to the rows.

10. In a sight the combination of a base, a leaf carried by and hinged at one end to the base, means retaining the leaf yieldingly in different angular positions relatively to the base, a slide mounted upon the leaf, an oblong plate carried by the slide longitudinally thereto and having a plurality of completely-inclosed peep-holes therein arranged in two parallel rows longitudinally to the plate, the peep-holes of each series being disposed progressively-increasing distances apart from the hinged end of the leaf, and the peep-holes of one series being in staggered relation to the peep-holes of the other series, means for adjusting the slide longitudinally, a scale indicating the extent of longitudinal movement of the slide, the last-mentioned means consisting of a bearing upon the leaf, a screw carried rotatably in such bearing and retained therein against longitudinal displacement and having one end screwed into a tapped boring in the slide, such screw being graduated and the graduations thereof being aliquot parts of the scale, and means for adjusting such plate laterally.

11. In a sight the combination of a base, a leaf carried by and hinged at one end to the base, means retaining the leaf yieldingly in different angular positions relatively to the base, a slide mounted upon the leaf, an oblong plate carried by the slide longitudinally thereto and having a plurality of completely-inclosed peep-holes therein arranged in two parallel rows longitudinally to the plate, the peep-holes of each series being disposed progressively-increasing distances apart from the hinged end of the leaf, and the peep-holes of one series being in staggered relation to the peep-holes of the other series, means for adjusting the slide longitudinally, a scale indicating the extent of longitudinal movement of the slide, the last-mentioned means consisting of a bearing upon the leaf, a screw carried rotatably in such bearing and retained therein against longitudinal displacement and having one end screwed into a tapped boring in the slide, such screw being graduated and the graduations thereof being aliquot parts of the scale, and means for adjusting such plate laterally, consisting of a threaded shank carried by and projecting laterally from the plate, a bearing upon the slide, and a tapped device carried rotatably by the slide and having the threaded shank screwed thereinto.

12. In a sight the combination with a support, a movable member carried by the support and having a plurality of sighting devices arranged in two rows the devices of each row being disposed a distance apart less than the distance separating the rows, means for adjusting such member transversely to the rows, a pair of scales indicating the extent of the longitudinal and transverse movements respectively of the member, the first-mentioned adjusting means being graduated in aliquot parts of the divisions of the longitudinal scale, and the second-mentioned adjusting means being graduated in aliquot parts of the divisions of the transverse scale.

13. In a sight the combination with a support, a movable sighting member carried by the support and having a plurality of sighting devices arranged in two rows, the devices of each row being disposed a distance apart less than the distance separating the rows, rotary means for vertically adjusting the movable sighting member and rotary means for horizontally adjusting the sighting member, of a pair of scales indicating the extent of the vertical and horizontal movements respectively of the sighting member, the first-mentioned rotary adjusting means being graduated in aliquot parts of the divisions of the first-mentioned scale and the second-mentioned rotary adjusting means being graduated in aliquot parts of the divisions of the second-mentioned scale.

14. In a sight the combination of a base, a leaf, a sight member carried by a slide mounted upon the leaf, means for adjusting the slide longitudinally, a scale indicating the extent of longitudinal movement of the slide, and the last-mentioned means being graduated in aliquot parts of the scale, and means for adjusting the sight member laterally, consisting of a threaded shank carried by and projecting laterally from the plate, a bearing upon the slide, and a tapped device carried rotatably by the slide and having the threaded shank screwed thereinto.

15. In a sight the combination with a base, a sight member mounted upon the base, and graduated means whereby such member is simultaneously moved along the base and raised therefrom the extent of its movement in both directions being equal.

16. In a sight the combination with a base, a leaf hinged at one end to the base, a sight member mounted slidably upon the leaf, means consisting of a pair of incline planes of 45° each one upon the leaf and the other upon the base, and a graduated rotary device whereby such member is simultaneously moved along the base and raised therefrom, the extent of its movement in both directions being equal, and a scale indicating the extent of the elevation the graduations of such scale being spaced apart progressively-increasing distances from the end nearest the hinged end of the leaf toward the other end and the graduations of the rotary device being aliquot parts of the scale.

848,948. FLARING-MACHINE FOR METAL RINGS, &c. GEORGE H. WHITE, Oil City, Pa., assignor to S. R. Dresser Manufacturing Company, Bradford, Pa. Filed Feb. 20, 1906. Serial No. 302,054.

Claim.—1. In a flaring-machine for metal rings, &c., the combination with the main frame provided with a stationary roller, of a vertically-movable roller and a guide extending transversely of the said rollers, and on opposite sides of the same, for engaging the lateral edges of the ring under treatment, said guide being pivotally supported at one end to the main frame and having a central portion in engagement with the movable flaring-roller, with which it moves vertically, and a support connected with the main frame, and provided with a recess to receive the free end of said guide when in operative position, substantially as described.

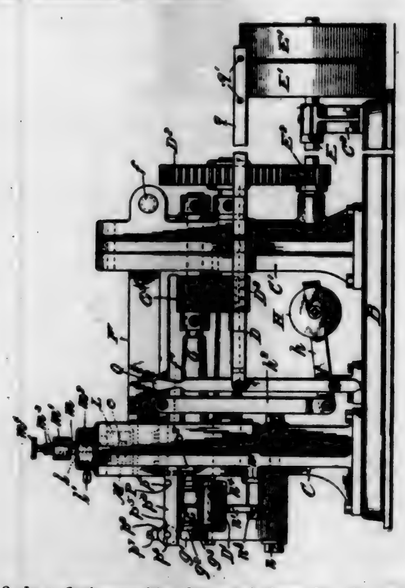

2. In a flaring-machine for metal rings, &c., the combination with the main frame provided with a stationary roller, of a vertically-movable roller and a guide, extending transversely of the said rollers, and on opposite sides of the same, for engaging the lateral edges of the ring under treatment, said guide being pivotally connected at one end to the main frame and having a central portion in engagement with the movable flaring-roller, with which it moves vertically, and a support connected with the main frame, and provided with a recess to receive the free end of said guide when in operative position, substantially as described.

3. In a flaring-machine for metal rings, &c., the combination with the main frame provided with a stationary roller, of a vertically-movable roller, a guide extending transversely of said rollers, and on opposite sides of the same, and rollers having their axes perpendicular to the axes of said rollers carried by said guide, for engaging the lateral edges of the ring under treatment, substantially as described.

4. In a flaring-machine for metal rings, &c., the combination with the main frame provided with a stationary roller, of a vertically-movable roller, a guide extending transversely of said rollers, and on opposite sides of the same, and rollers having their axes perpendicular to the axes of said rollers, carried by said guide, for engaging the lateral edges of the ring under treatment, said guide being pivotally supported at one end, and a rigid support having a recess for receiving the free end of said guide, when in operative position, substantially as described.

5. In a flaring-machine for metal rings, &c., the combination with the main frame provided with a stationary roller, and a vertically-movable roller, of a pair of guides disposed transversely to the axes of said rollers, and above the stationary roller, for engaging the opposite lateral edges of the ring under treatment, said guides being each pivotally supported at one end and supporting devices for holding the free ends of said guide firmly when in operative position, substantially as described.

6. In a flaring-machine for metal rings, &c., the combination with the main frame provided with a stationary roller, and a vertically-movable roller, of a pair of guides disposed transversely to the axes of said rollers, and above the stationary roller, for engaging the opposite lateral edges of the ring under treatment, said guides being each pivotally supported at one end, means for adjusting said guides toward and from each other, and supporting devices for holding the free ends of said guides firmly, when in operative position, substantially as described.

7. In a flaring-machine for metal rings, &c., the combination with a stationary roll and a vertically-movable roll, one of said rolls having annular enlarged portions and the other being provided with annular reduced portions, means for forcing the movable roll toward the stationary roll to clamp a portion of a ring between them, a pair of hinged brackets having guiding-rollers on opposite sides of the stationary roll, a supporting-pivot for said brackets, each of said brackets being provided with a curved slot concentric with the axis of said pivot, and adjusting devices engaging said slots, substantially as described.

8. In a flaring-machine for metal rings, &c., the combination with a stationary roll, and a vertically-movable roll, means for forcing said movable roll toward the stationary roll, said rolls being provided, the one with annular enlarged portions and the other with corresponding annular reduced portions, a pair of adjustable supporting and guiding rollers, arranged on opposite sides of said stationary and movable roll, and guiding devices disposed transversely to and above said rolls for engaging the ends or edge portions of the ring, one of said guiding devices being provided with separate idle rollers having their axes disposed transversely to the axes of the flaring-rollers for engaging the edge portions of the ring on opposite sides of its center, substantially as described.

9. In a flaring-machine for metal rings, &c., the combination with the main frame, of a stationary shaft mounted therein and provided with a flaring-roll, of a vertically-swinging frame pivotally mounted in the main frame, a roll-shaft carried in said swinging frame and provided with a flaring-roll, devices engaging said swinging frame for forcing the roll carried thereby toward the stationary roll, a counterbalance for said swinging frame for separating said rolls to permit the insertion and removal of the rings, means for rotating said roll-shafts, said rolls being provided the one with annular enlarged portions and the other with annular reduced portions, a pivot-pin arranged below said stationary roll, adjustable brackets pivotally mounted on said pivot-pin, guiding-rollers carried by said brackets, and pivotally-mounted guiding devices, extending transversely of and above said rolls, and provided with means for engaging the edges of a ring to steady the same, substantially as described.

848,949. COMBINED CURTAIN-POLE AND SHADE SUPPORT. THOMAS G. WILSON, Center Hall, Pa. Filed Apr. 24, 1906. Serial No. 313,431.

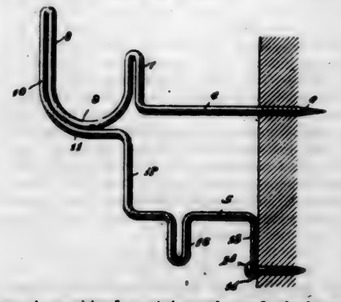

Claim.—A combined curtain-pole and shade support formed from a single wire and comprising an upper outstanding shank having spaced upstanding doubled fingers on its outer portion projecting above the plane of the

same and having a curved portion between them, forming a pole-receiving socket, the outer finger being longer than the inner finger and having an outer arm curved against and extending below the curved portion, said arm having a depending terminal directly below the inner finger, and a lower shank disposed in parallel relation with the upper shank and having its outer end joined to the lower end of the depending terminal of said arm, said lower shank having a depending roller-holding loop disposed substantially midway between the ends of the lower shank and also having an offset eye at its inner end, the upper shank having a threaded inner terminal located above and projecting beyond the vertical plane of the eye.

848,950. PIPE-BRACKET. HEINRICH WYLER, Lambrecht, Germany. Filed Aug. 24, 1906. Serial No. 331,913.

Claim.—The combination of a longitudinally-extensible bar, a bar having a longitudinal slot, a bolt near the outer end of the extensible bar engaging said slot and means for pivotally supporting the two bars, respectively at points spaced from one another.

848,951. COCK. JOHANN J. AEPPLI-STOCKER, Zurich, Switzerland, assignor to The Firm of "Sanitas" Aktiengesellschaft für Sanitäre & Heizungs-Anlagen, Zurich, Switzerland. Filed Sept. 2, 1905. Serial No. 276,807.

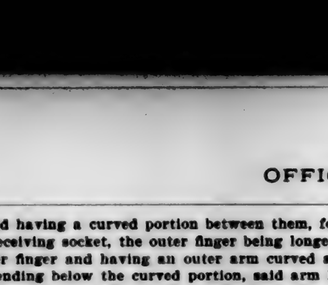

Claim.—In a cock, the combination with a casing having an inlet and main valve and piston-chambers therein; of a valve-seat having a passage therethrough between the two chambers, a main valve and piston in the respective chambers rigidly connected, a by-pass between the inlet and piston chambers to admit fluid behind the piston, an auxiliary valve operating at an angle to the main valve and controlling said by-pass, the lower end of which is beveled, an outlet from the piston-chamber in front of the piston therein, a passage connecting the piston-chamber in rear of the piston with the outlet, and a cylindrical sliding member having a bevel-faced groove cut therein engaged and non-rotatably held by the lower end of the stem of the auxiliary valve, whereby when the sliding member is operated said auxiliary valve is lifted to open the by-pass to admit fluid behind the piston to open the main valve connected to the piston, substantially as and for the purposes set forth.

848,952. APPARATUS FOR PACKING PACKET GOODS BY HAND. JOSEPH ARONOWITZ, Cambridge, England. Filed Sept. 22, 1905. Serial No. 279,593.

Claim.—An improved apparatus for packing packet goods comprising a well, a cone-shaped projection extending upwardly from the base thereof, a hollow receiver having a hinged side and adapted to enter said well and to loosely

surround said projection, and a packet-closing tool having a flat blade, rammer and stop.

848,953. SASH LOCK AND SUPPORT. DORA E. BARNES, Hays, Kans. Filed May 21, 1906. Serial No. 318,020.

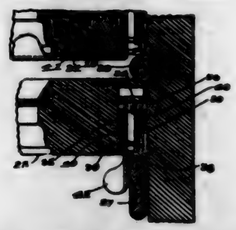

Claim.—1. In a sash lock and holder, a casing adapted to be embedded in the sash rearwardly of the window-stop, two cams operating in said casing transversely of the sash bearing against said stop, said cams reversely arranged and movable toward each other to effect their release, and means for independently actuating said cams.

2. The combination with a window-frame and its stop and the sash movable relative thereto, of a combined locking and holding mechanism connected to the sash rearwardly of said stop and operative transversely of the sash and against the stop, and means for releasing said locking and holding means.

3. The combination with a window-frame and its stop and the sash movable relative thereto, of two cams movably disposed in said sash, and reversely arranged and movable toward each other to effect their release and operating against said stop and rearwardly of the same, and means for independently operating said cams.

4. In a sash lock and holder, two locking members each with spaced sides and connected by a transverse web, one of the sides of each member terminating in a cam-face for bearing against a stationary portion of the window-frame and the other of said sides terminating respectively in operating-arms.

848,954. PROCESS OF MAKING RESISTANCE DEVICES. LAWRENCE E. BARRINGER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Feb. 5, 1906. Serial No. 299,447.

Claim.—1. The process of making a resistance device which consists in forming a base from a material which will harden under steam treatment, mounting a resistance-coil in said base, applying a quantity of said material in a more fluid form to said coil and base and finally hardening the whole with steam.

2. The process of making a resistance device which consists in forming a base from a material which will be converted into a silicate by steam, mounting a resistance-coil in said base, applying a similarly-convertible material in a more fluid form to the coil to secure it in place and treating the whole with steam.

3. The process of making a resistance device which consists in pressing a grooved base from a compound which will be converted into a silicate by steam, inserting a resistance-coil in said groove, filling the groove with a similarly-convertible material and subjecting the whole to steam treatment.

4. The process of making a resistance device which consists in pressing a grooved base from a compound of silica and a hydrate, placing a resistance-coil in the groove, filling said groove with a similar compound in a more fluid condition and subjecting the whole to steam treatment.

5. The process of making a resistance device which consists in pressing a grooved base from a compound of a fibrous material with silica and a hydrate, placing a resistance-coil in the groove, filling said groove with a fluid compound of silica and a hydrate and subjecting the whole to steam treatment.

6. The process of making a resistance device which consists in placing a resistance-coil in a suitable base, filling the interstices of said coil with a compound of silica and a hydrate and subjecting the whole to steam treatment.

7. The process of making a resistance device which consists in forming a grooved base from a compound of a fibrous material with hydrous silicate of calcium, mounting a resistance-conductor in said groove, filling the groove with a compound of silica and a hydrate and subjecting the whole to steam treatment.

848,955. MOLD. GEORGE L. BARTLETT, Mattapan, Mass. Filed May 28, 1906. Serial No. 319,021.

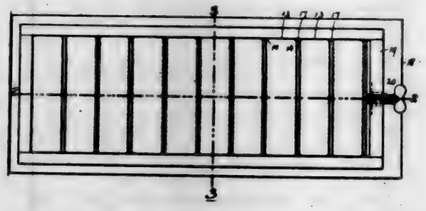

Claim.—1. An angular mold member comprising a central portion and end portions projecting therefrom and flexibly connected therewith, said portions having edge flanges constituting narrow extensions of the molding-surfaces.

2. An angular mold member composed of a resilient strip having a flanged central portion and flanged end portions projecting therefrom, and flexibly connected therewith, the flanges of said portions having beveled ends which meet when the end portions are in their operative positions.

3. A mold comprising a series of angular mold members, each having a flanged central portion and flanged end portions flexibly connected therewith, a series of flat mold members adapted to be interposed between adjacent angular members, and a holder adapted to receive the two series of members, and provided with means for clamping the members together.

4. A mold comprising alternating angular and flat mold members separable from each other, and means for detachably securing said members in their operative positions.

5. A mold comprising alternating angular and flat mold members separable from each other, and a frame formed to receive said members, and having means for pressing the members together.

848,956. LOCKABLE BADGE FOR PERSONAL WEAR. FRANK C. BERENS, Washington, D. C. Filed Sept. 25, 1906. Serial No. 336,133.

Claim.—1. As an article of manufacture, a badge for personal wear comprising an exposed portion having indicating characteristics, and rigid means for locking the same to the apparel of the user, said means being offset rearwardly from the plane of the back of the badge to accommodate the part to which the badge is attached and formed whereby to be released only by means of a predetermined device.

2. As an article of manufacture, a badge for personal wear comprising an exposed portion having indicating characteristics, and means for locking the same to the apparel of the user including a shackle having a portion intermediate its ends offset from said ends to accommodate the part to which the badge is attached and permit the badge to lie flat when in use, a casing, and means mounted in said casing for locking the shackle when the badge is applied.

2. As an article of manufacture, a badge for personal wear comprising an exposed portion having indicating characteristics, and means for locking the same to the apparel of the user including a rigid shackle having a portion offset rearwardly from the plane of the back of the badge to accommodate the part to which the badge is attached, a casing, and means mounted in said casing for locking the shackle when the badge is applied.

4. As an article of manufacture, a badge for personal wear comprising an exposed portion having indicating characteristics, and means for locking the same to the apparel of the user including an engaging part offset rearwardly from the plane of the back of the badge to accommodate the material to which the badge is attached, and means for locking the said engaging part when the badge is applied, said means being formed whereby to be released only by a predetermined key.

5. As an article of manufacture, a badge for personal wear comprising an exposed portion having indicating characteristics, a pivoted shackle for securing the same in place formed to pass through the buttonhole and receive the material of the lapel of a coat, a casing, and locking means mounted within said casing and shielded thereby from the hands of the user.

6. As an article of manufacture, a badge for personal wear comprising an exposed portion having indicating characteristics, and means for securing the same to the apparel of the user including an engaging part formed to receive and clasp a part of the apparel, and locking means therefor formed to be released only by means of a predetermined device.

848,957. PIANOFORTE. GEORGE BLESS, Brooklyn, N. Y. Filed Apr. 14, 1906. Serial No. 311,721.

Claim.—1. In a pianoforte, the combination of side pieces provided with cross-pieces, and a string frame or plate having hooks at its vertical edges to engage with said cross-pieces to hold the parts when assembled.

2. In a pianoforte, the combination of vertical side pieces provided with recesses and cross-pieces upon their inner faces, and a string frame or plate having flanges at its vertical edges and hooks extended outward from the flanged edges to engage with the said cross-pieces of the vertical sides.

3. In a pianoforte, the combination of the case, a sounding-board, and connecting means between the case and sounding-board which admit of movement of the latter incident to contraction and expansion without straining or affecting the case.

4. In a pianoforte, the combination of the case, a support for the sounding-board connected to said case, a

sounding-board, and means for securing the sounding-board to its support so as to admit of movement of the sounding-board incident to contraction and expansion without straining or affecting the case or the sounding-board support.

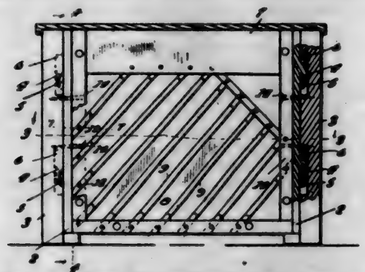

5. In a pianoforte, the combination of a case, a string-frame having flanges at its edges, positive interlocking means between the string-frame and case, inner and outer linings, positive connecting means between the outer lining and the flanges of the string-frame, a sounding-board having its edge portions arranged between the two linings, and connecting means between the linings and string-frame and clamping the sounding-board between the linings without interfering with its movements incident to contraction and expansion.

848,958. SELECTIVE SIGNAL SYSTEM. ELMER F. BLISS, Schnectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 12, 1906. Serial No. 325,840.

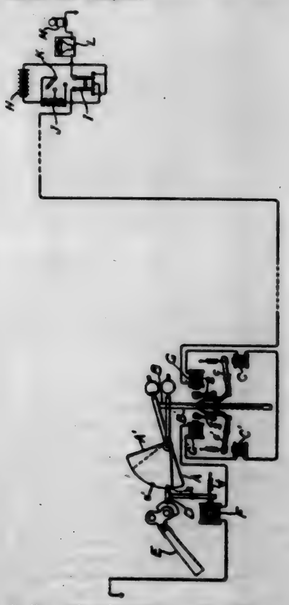

Claim.—1. In a signal system, a plurality of stations, a plurality of selective devices at each station, means controllable from a distance for moving the several devices at each station step by step independently of each other, and a signal device at each station controlled by the joint action of the selective devices at that station.

2. In a signal system, a plurality of stations, a plurality of selective devices at each station, a conductor extending through said stations, a plurality of magnet-windings at each station in circuit with said conductor and arranged to respond to currents of different character, means controlled by each magnet for moving one of said devices step by step, and a signal device at each station controlled by the joint action of the selective devices at that station.

3. In a signal system, a plurality of stations, a plurality of selective devices at each station, a plurality of electromagnets at each station, means controlled by each magnet for moving one of said devices step by step, a signal device at each station controlled by the joint action of the selective devices at that station, and means at a distant point for controlling the magnets at all the stations.

4. In a signal system, a plurality of selective devices, a plurality of electromagnets responsive to currents of different character, means controlled by each magnet for moving one of said devices step by step, a signal device controlled by the joint action of said selective devices, a conductor connected to said magnets, and means at a distant point for supplying currents of different character to said conductor to operate said magnets selectively.

5. In a signal system, two selective devices, a conductor, two polarized magnets connected to said conductor and arranged to respond to currents of opposite polarity therein, means at a distant point for supplying current of either polarity to said conductor, means controlled by each magnet for moving one of said devices step by step, and a signal device controlled by the joint action of the selective devices.

6. In a signal system, a plurality of selective devices, means controllable from a distance for moving said devices independently step by step, a movable member normally locked in one position and arranged to be unlocked by the joint action of said devices, and a signal controlled by said member.

7. In a signal system, a plurality of selective devices, a plurality of magnets responsive to currents of different character, means controlled by each magnet for moving one of said devices step by step, a movable member normally locked in one position and arranged to be unlocked by the joint action of said selective devices, a signal controlled by said member, a conductor connected to said magnets and extending to a distant point, and means at the distant point for supplying currents of different character to said conductor to operate said magnets selectively.

8. In a signal system, a plurality of selective devices, means controllable from a distance for moving said devices independently step by step, a movable member normally locked in one position and arranged to be unlocked by the joint action of said devices, an electromagnet for moving said member when unlocked, and a signal controlled by said member.

9. In a signal system, a plurality of selective devices, a plurality of magnets responsive to currents of different character, means controlled by each magnet for moving one of said devices step by step, a movable member normally locked in one position and arranged to be unlocked by the joint action of said selective devices, a magnet for moving said member when unlocked arranged to respond to current of a different character from the currents to which the first-mentioned magnets respond, a signal controlled by said member, a conductor connected to all of said megnts and extending to a distant point, and means at the distant point for supplying currents of different character for selectively operating said magnets.

10. In a signal system, two selective devices, a conductor, two polarised magnets connected to said conductor and arranged to respond to currents of opposite polarity therein, means controlled by said magnets for moving said devices respectively step by step, a movable member normally locked in one position and arranged to be unlocked by the joint action of said devices, a magnet for moving said member when unlocked connected to said conductor and arranged to respond only to a current stronger than that to which the polarised magnets respond, a signal controlled by said member, and means at a distant point for supplying currents of opposite polarity and of different strengths to said conductor.

11. In a signal system, a plurality of stations, a plurality of selective devices at each station, means controllable from a distance for moving the several devices at each station step by step independently of each other, a signal device at each station controlled by the joint action of the selective devices at that station, and means controllable from a distance for resetting said selective devices.

12. In a signal system, a plurality of selective devices, a plurality of electromagnets responsive to currents of different character, means controlled by each magnet for moving one of said devices step by step, a signal device controlled by the joint action of said selective devices, a conductor connected to said magnets, means at a distant point for supplying currents of different character to said conductor to operate said magnets selectively, and electromagnetic means for resetting the selective devices connected to said conductor and arranged to respond to a current of different character from that to which the first-mentioned magnets respond.

13. In a signal system, two selective devices, a conductor, two polarized magnets connected to said conductor and arranged to respond to currents of opposite polarity therein, means at a distant point for supplying current of either polarity to said conductor, means controlled by each magnet for moving one of said devices step by step, a signal device controlled by the joint action of the selective devices, and electromagnetic means for resetting the selective devices connected to said conductor and arranged to respond only to a current of greater strength than that to which the polarized magnets respond.

14. In a signal system, a signal, a plurality of selective devices jointly controlling said signal, a plurality of magnets controlling said devices and signal, a single conductor connected to all of said magnets, and means at a distant point for supplying currents of opposite polarity to said conductor.

15. In a signal system, a signal, a plurality of selective devices jointly controlling said signal, a plurality of magnets controlling said devices and signal, a single conductor connected to all of said magnets, and means at a distant point for supplying currents of different strengths to said conductor.

16. In a signal system, a signal, a plurality of selective devices jointly controlling said signal, a plurality of magnets controlling said devices and signal, a single conductor connected to all of said magnets, and means at a distant point for supplying currents of opposite polarity and of different strengths to said conductor.

848,959. BLOCK-SIGNAL SYSTEM. ELMER F. BLISS, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 19, 1906. Serial No. 335,209.

Claim.—1. In combination with an electric railway having both rails conductively continuous for all currents, sources of alternating current connected across the track-rails at intervals, adjacent sources being of different phase, and signal-controlling means connected across the rails at points between the sources and responsive to control a signal only to current of the phase of the resultant current from both adjacent sources.

2. In combination with an electric railway having both rails conductively continuous for all currents, sources of alternating current connected across the track-rails at intervals, adjacent sources being of different phase, and signal-controlling relays arranged in pairs at points between the sources, each relay having two coacting windings, one connected across the track-rails and traversed by the resultant current from both adjacent sources, and the other supplied independently of the rails with current of the proper phase for producing an effective torque in both relays simultaneously only in conjunction with said resultant current.

3. In combination with an electric railway having both rails conductively continuous for all currents, sources of alternating current connected across the track-rails at intervals, adjacent sources being of different phase, and signal-controlling relays connected across the track-rails in pairs at points between the sources, the relays being responsive simultaneously only to current of the phase of the resultant current from both adjacent sources.

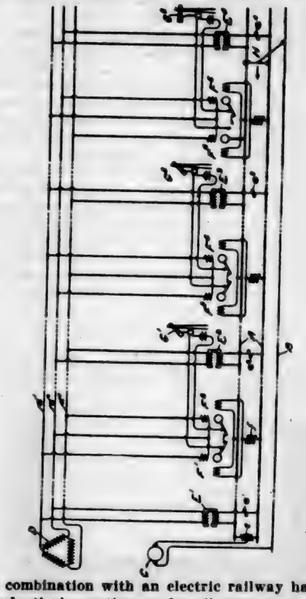

4. In combination with an electric railway having both rails conductively continuous for all currents, two sources of high-frequency currents of different phase connected across the rails a distance apart, a block-signal for the portion of track between said sources, and signal-controlling means connected across the rails at a point between said sources and arranged to put said signal at danger upon a failure of current from either of said sources.

5. In combination with an electric railway having both rails conductively continuous for all currents, two sources of alternating currents of the same frequency but different phase connected across the rails a distance apart, two relays connected across the rails at a point between said sources responsive simultaneously only to the resultant current from both sources, and a signal controlled by the joint action of said relays.

6. In combination with an electric railway having both rails conductively continuous for all currents, two sources of alternating currents of different phase connected across the rails a distance apart, and a signal-controlling relay of the inductive type having two coacting windings, one connected across the rails at a point between said sources and the other supplied independently of the rails with current of the same phase as that supplied by one of said sources to the rails.

7. In combination with an electric railway having both rails conductively continuous for all currents, two sources of alternating currents of different phase connected across the rails a distance apart, two relays of the inductive type each having two coacting windings, one winding of both relays being connected across the rails at a point between said sources, and the other windings of the relays being supplied independently of the rails with currents corresponding in phase to the currents supplied to the rails by said two sources respectively, and a signal controlled by the joint action of the two relays.

8. In an electric railway employing the rails as return-conductor for the power-current, a pair of relays having a common winding connected across the track-rails and each having a second winding supplied with current independently of the rail-circuit and of each other.

9. In an electric railway employing the rails as return-conductor for the power-current, a pair of relays having a common winding connected across the track-rails and each having a second winding supplied with current independently of the rail-circuit and of each other, and a signal controlled by said relays jointly.

10. In an electric railway employing the rails as return-conductor for the power-current, a source of alternating current connected to the track-rails, a pair of relays each comprising a short-circuited conducting member, a winding connected across the track-rails in inductive relation to both members, and an independent winding for each relay coacting with the track-winding and supplied with alternating current independently of the rail-circuit.

11. In an electric railway employing the rails as return-conductor for the power-current, a source of alternating current connected to the track-rails, a pair of relays each comprising a short-circuited conducting member, a winding connected across the track-rails in inductive relation to both members, an independent winding for each relay coacting with the track-winding and supplied with alternating current independently of the rail-circuit, and a signal controlled by said relays jointly.

848,960. DESICCATING MATERIAL. WILHELM BRAUN, Feuerbach, near Stuttgart, Germany. Filed Dec. 15, 1905. Serial No. 291,859.

Claim.—1. The herein-described desiccating material, composed of a hygroscopic matter, powdered plaster-of-paris, and ground turf, substantially as described, and for the purpose set forth.

2. The herein-described desiccating material, comprising four parts of a hygroscopic matter, two parts of plaster-of-paris, and one part of ground turf, substantially as described, and for the purpose set forth.

848,961. WEATHER-STRIP. SAMUEL P. BRICKER, Allegheny, Pa. Filed Sept. 22, 1905. Serial No. 279,615.

Claim.—1. As an improved article of manufacture, a weather-strip formed of a plate of sheet metal bent to provide a base, inwardly-disposed redoubled base-flanges, and extending doubled ribs having inner unattached terminal edges, substantially as set forth.

2. As an improved article of manufacture, a weather-strip formed of a sheet-metal base having its edge portions bent inwardly toward each other upon the base, then outwardly at right angles thereto, and then bent backwardly toward the base to provide rounded edges, substantially as set forth.

3. As an improved article of manufacture, a weather-strip comprising a base of thin sheet metal doubled to form an attaching-flange and independent outwardly-extending ribs at right angles thereto formed by doubling each edge portion of the metal upon itself, substantially as set forth.

4. A weather-strip comprising a sheet-metal blank doubled upon itself to provide an attaching-base and having its terminal sides bent outwardly at right angles to the base and rounded at the edges, substantially as set forth.

5. A weather-strip comprising a sheet-metal blank doubled upon itself to provide an attaching-base and having its terminal edge portions bent outwardly at right angles to the base and doubled upon themselves, substantially as set forth.

6. A weather-strip comprising a sheet-metal blank doubled upon itself to provide an attaching-base and having its terminal edge portions bent outwardly at right angles to the base and doubled upon themselves, with an intervening space between the sides forming each rib, substantially as set forth.

7. A weather-strip comprising a sheet-metal blank doubled upon itself to provide an attaching-base and having its terminal edge portions bent outwardly at right angles to the base and bent upon themselves to form doubled ribs, with an intervening space between the ribs, substantially as set forth.

8. As an improved article of manufacture, a weather-strip formed of a strip of sheet metal, having its opposite edges bent to provide closely adjacent doubled ribs, with its intervening portion formed into an attaching-base at right angles to said ribs, substantially as set forth.

9. A weather-strip comprising a sheet-metal base, flanges connected therewith and extending inwardly toward each other having their terminal edges bent outwardly at right angles to said base and turned inwardly toward each other to form outer rounded edges, substantially as set forth.

10. In a weather-strip, the combination of a frame member comprising a base reflexed upon itself and having its edge portions formed into doubled ribs, and an interfitting sash member, substantially as set forth.

11. In a weather-strip, the combination with a sash having a receiving-groove, of a frame member comprising a base reflexed upon itself and having its edge portions formed into doubled ribs extending at right angles to the base and into the groove of the sash, substantially as set forth.

12. In combination, a window-jamb, spaced strips applied to said jamb forming a runway, a sash mounted in said runway, and a weather-strip comprising a base secured in the runway of the sash and coöperating with the spaced strips aforesaid, an edge portion of the base being folded thereon and bent outwardly to form a side of the body of the strip, said side being refolded to form a spaced side.

13. A weather-strip comprising a base having an edge portion thereof folded upon itself, the folded portion of the base being projected outwardly therefrom to form a side, said side being bent upon itself to form a second side in spaced relation thereto.

848,962. CUSPIDOR. ERNEST E. BROWN, Carico, Oreg. Filed Aug. 17, 1905. Serial No. 274,557.

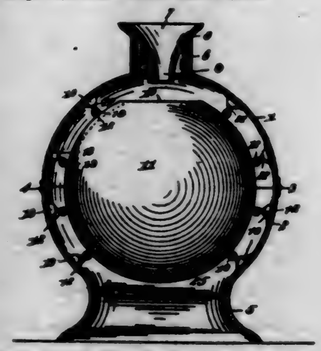

Claim.—In a cuspidor, the combination with a hollow cylindrical casing including separable upper and lower portions, of washer-plates secured against the inner surface of the casing, wheels connected with the washer-plates for rotation upon their axes and for bodily rotation with respect to the washer-plates to extend in different planes, and a hollow cylindrical receptacle disposed within the casing and against the wheels, said receptacle having an opening in its upper portion and having its lower portion weighted to maintain the receptacle with its opening at all times uppermost, said casing having an opening therein at its top.

848,963. GAS-MANUFACTURING APPARATUS. JACOB J. BUERNBENZ, Chicago, Ill., assignor to Industrial Gas Construction Co., Chicago, Ill., a Corporation of Illinois. Filed May 26, 1906. Serial No. 318,825.

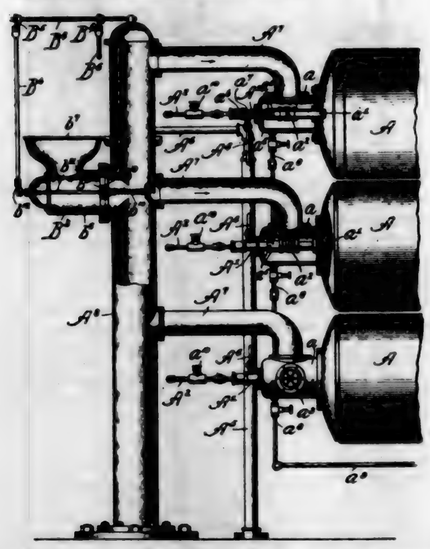

Claim.—1. Apparatus for manufacturing gas from volatile liquid without the use of heat, comprising, in combination, a mixer-chamber, a movable gas-holder in communication with the mixer-chamber, an atomizing-injector connected with the mixer-chamber, liquid and air conduits connected with the injector, liquid and air supply sources connected with said conduits, pressure-regulating means controlling the pressure of air and liquid passing through the injector, valves for said conduits, and means controlled by the gas-holder controlling said valves.

2. The combination of a mixer-chamber, an injector connected therewith having liquid and air passages, means for introducing volatile liquid and air under common pressures and in atomizing relationship through the injector, a gas-holder in communication with said mixer-chamber, an air-conduit through which air may be drawn from the external air through said injector, a valve for said conduit, and means controlled by the gas-holder serving to close said valve when the gas-supply is sufficient and to open said valve when the gas-supply approaches exhaustion.

3. The combination of a mixer-chamber, an injecting device having a liquid-passage and an air-passage through which liquid and air may be introduced in atomizing relationship, an air-supply source communicating with said air-passage, a liquid-tank having connection with said liquid-passage and serving as a supply source for volatile liquid, a water-tank connected with said volatile-liquid tank, and an air-conduit connecting said air-supply source with said water-tank.

4. The combination of a mixer-chamber, an injecting device having a liquid-passage and an air-passage through which liquid and air may be introduced in atomizing relationship, an air-supply source communicating with said air-passage, a liquid-tank having connection with said liquid-passage and serving as a supply source for volatile liquid, a water-tank connected with said volatile-liquid tank, an air-conduit connecting said air-supply source with said water-tank, a gas-holder in communication with said mixer-chamber, a valve for said air-conduit, an air-intake for the passage of external air to the injecting device, a valve for said air-intake, and means controlled by the gas-holder and controlling said valves.

5. In apparatus for producing gas from carbonaceous liquid, the combination of a gas-holder having a movable member, a mixer-chamber in communication therewith, means for forcing into the mixer-chamber liquid and air under uniform common pressure and in atomizing relationship, the liquid and air orifices and the liquid and air pressures bearing a predetermined relation, whereby the proper atomizing and mixing effect is obtained, and means controlled by the movable member of the gas-holder serving to control the admission of the liquid and air to the mixer-chamber.

6. Apparatus for the purpose set forth, comprising a plurality of mixer-chambers, a plurality of injectors connected therewith, liquid and air conduits connected with said injectors, means for forcing liquid and air under pressure into the injectors, a series of air-conduits communicating with the injectors and with a common air-conduit, and a valved air-intake through which atmospheric air is supplied to said last-named conduit.

7. Apparatus for the purpose set forth, comprising a plurality of mixer-chambers, a plurality of injectors having liquid and air passages, means for supplying liquid and air under pressure to the injectors, a series of air-conduits connected with the injectors and with a common air-conduit, a valved inlet for said last-named conduit through which an induced flow of atmospheric air is admitted, and means for closing the liquid-passages and the individual injectors at will.

8. Apparatus for the purpose set forth, comprising a plurality of superposed mixer-chambers, a plurality of superposed injectors connected therewith, a stand-pipe for compressed air having branch passages connected with the injectors, an oil-supply pipe connected with the injectors, air-conduits connected with the injectors, a stand-pipe connected with said last-named conduits, and a valved inlet for said last-named stand-pipe.

9. Apparatus of the character set forth, comprising a mixer-chamber, an injector connected therewith having a liquid-passage and an air-passage, means for supplying liquid and air under pressure to the injector, valves controlling the passage of liquid and air to the injector, an air-conduit connected with the injector and having an inlet from the external atmosphere, a valve controlling said inlet, a gasometer in communication with the mixer-chamber, and a rock-shaft projecting from and controlled by the gasometer and controlling said valves.

10. Apparatus of the character set forth, comprising a mixer-chamber, an injector connected therewith comprising a tube communicating with the mixer-chamber and having an air-inlet near its outer end, a nozzle having liquid and air passages, a chamber inclosing said tube and into which said nozzle projects, a valve controlling the passage through said tube and having operating means projecting through a lateral wall of said chamber, and a valved air-conduit connected with said chamber.

11. Apparatus of the character set forth, comprising a plurality of superposed mixer-chambers, a plurality of injectors having air and liquid passages, a stand-pipe for compressed air connected with the air-passages of the injectors, a pipe communicating with said stand-pipe and having a valve, a series of air-conduits connected with the injectors, a stand-pipe connected with said air-conduits, an air-intake for said last-named stand-pipe equipped with a valve, a pipe communicating with the liquid-passages of the injectors and equipped with a valve, a gasometer communicating with said mixer-chamber, and controlling means for said valves controlled by said gasometer.

12. Apparatus for the purpose set forth, comprising a mixer-chamber, an injector connected therewith having a liquid-passage and an air-passage, a volatile-liquid tank connected with said liquid-passage, a water-tank connected with said volatile-liquid tank, a source of compressed-air supply, means of communication between said source of compressed-air supply and said water-tank and the air-passage of said injector, and pressure-reducing means controlling said means of communication.

13. In apparatus of the character set forth, the combination of a mixer-chamber, an injector connected therewith having a liquid-passage and an air-passage, a volatile-liquid tank connected with said liquid-passage, a water-tank connected with said volatile-liquid tank, a compressed-air tank, a pipe leading therefrom to said injector, a pair of valves connected with said pipe, a pipe leading from said first-named pipe between said valves to said water-tank, a gasometer connected with said mixer-chamber, and means controlled by said gasometer controlling said valves.

848,964. GASOMETER. JACOB J. BUSENBENZ, Chicago, Ill., assignor to Industrial Gas Construction Company, Chicago, Ill., a Corporation of Illinois. Filed May 26, 1906. Serial No. 318,827.

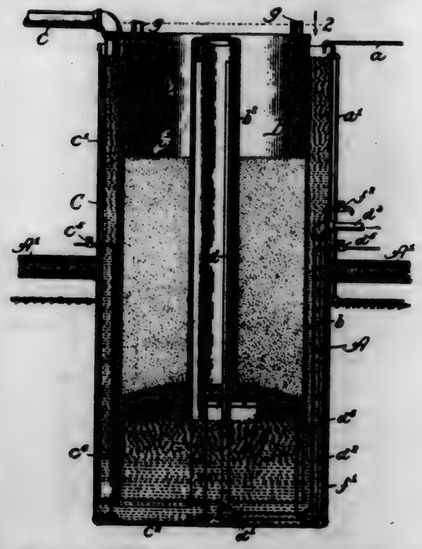

Claim.—1. The combination of a tank, a movable cylindrical member within said tank and forming therewith an annular chamber, a bell fitted within said cylindrical member near the bottom thereof and equipped with an upward tubular extension having a closed upper end, an inlet-pipe extending downwardly through said annular chamber from the upper end of said tank, thence to the central portion of said tank at the bottom thereon, thence rising within the extension of said bell, and an outlet-pipe located within said bell and extending downwardly to the bottom of said tank, thence outwardly to a wall of the tank, and thence upwardly within said annular chamber, and finally outwardly through a wall of said tank.

2. The combination of a tank, a movable bell within said tank, a U-shape inlet-pipe for the entrance of gas having a horizontal portion resting on the bottom of said tank, a U-shape outlet-pipe having a horizontal portion resting on the bottom of said tank, and drain-pipes communicating with the lowermost portions of said first-named pipes and extending upwardly and thence outwardly through the lateral walls of said tank.

3. The combination of a tank, a bell in said tank and forming with the tank an annular chamber, and a drain-pipe for the bell having a standing portion rising within the bell to the water-line, said drain-pipe extending laterally at its lower portion, thence upwardly within said annular chamber, and thence laterally through a wall of said tank.

848,965. GATE-LATCH. SCOTT W. CARLISLE, Bradshaw, Nebr. Filed July 12, 1906. Serial No. 325,972.

Claim.—The combination of the gate and gate-posts and a horizontal latch-bar secured to the gate and extending beyond its swinging edge, a bottomless pocket secured to the gate-post, a ring in said pocket, a screw-stud extended through the bottomless pocket and ring to support the latter loosely in the pocket, a latch-lever pivoted to the post with its inner arm extended under the ring, and a pin adapted to be inserted through the pocket above the axis of the ring and in close proximity to the latter.

848,966. FRUIT AND VEGETABLE CLIPPER. NELS A. CARLSON, Hallandale, Fla. Filed July 27, 1906. Serial No. 328,108.

Claim.—1. A fruit and vegetable clipper comprising a pair of members crossing each other intermediate their ends and being pivotally connected, one of said members having its handle end bent outwardly and provided with a split finger-loop the adjacent ends of which are spaced apart to form clamping-arms adapted to engage the forefinger, said loop being provided with an adjusting-screw extending through the arms of the loop, and the other member having its handle end bent inwardly and tapered, and a spring comprising a pair of converging arms resiliently connected together, one of said arms being attached to the outer edge of one of said members and the other of said arms being secured to the inner edge of the other of said members.

2. A fruit and vegetable clipper comprising pivotally-united cutting members each having one end thereof extended beyond its pivot-point to form an integral operating-handle, a finger-loop carried by one of said arms and adapted to engage the forefinger, the adjacent handle being extended beyond and over the finger-loop for engagement with the thumb, and a spring comprising a pair of converging arms one of which is secured to the outer edge of one operating-handle and the opposite arm to the inner edge of the adjacent handle.

848,967. COTTON-PICKER. BENJAMIN A. CHEW, Augusta, Ga. Filed May 23, 1906. Serial No. 318,341.

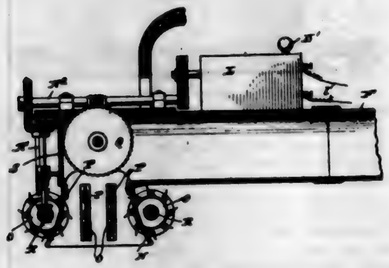

Claim.—1. In a cotton-picker the combination with the conveyer duct or tentacle and the laterally-projecting bell-mouth forming the cotton-entrance opening, of the mechanically-operated pickers projecting in through the wall of said bell-mouth, means for mechanically operating said pickers and means for creating an air suction through the conveyer-duct.

2. In a cotton-picker, the combination with the conveyer duct or tentacle having the nozzle end provided with a laterally-projecting bell-mouth forming the cotton-entrance opening, of the rotary pickers projecting in through the wall of the bell-mouth, gearing for rotating said pickers and means for creating an air suction through the conveyer-duct; substantially as described.

3. In a cotton-picker, the combination with the conveyer duct or tentacle having a nozzle end and bell-mouth cotton-entrance, of a series of rotary pickers projecting through the wall of said bell-mouth in angular relation to each other, means for rotating said pickers and means for creating an air-current through the duct transversely of the inner end of the bell-mouth.

4. In a cotton-picker, the combination with the nozzle having a laterally-projecting bell-mouth forming the cotton-entrance, of a series of rotary pickers grouped around the bell-mouth at one side of the nozzle and projecting through the wall of said bell-mouth in angular relation to each other and means for simultaneously rotating the pickers; substantially as described.

5. In a cotton-picker the combination with the nozzle having a lateral cotton-entrance opening with a converging wall, of rotary pickers projecting through the converging wall of the entrance-opening on opposite sides thereof in position to entangle cotton in the larger part of the entrance-opening and force the same through the smaller part into the nozzle; substantially as described.

6. In a cotton-picker, the combination with the nozzle having the cotton-entrance opening therein, of a mechanical picker for detaching the cotton from the boll, embodying a rotary carrier, picker-teeth pivotally mounted thereon and springs for holding said teeth projected; substantially as described.

7. In a cotton-picker, the combination with the nozzle having the cotton-entrance opening therein of a mechanical picker for detaching the cotton from the boll, embodying a rotary carrier, rearwardly-inclined picker-teeth pivotally mounted thereon and springs for holding said teeth projected.

8. In a cotton-picker the combination with the nozzle having the bell-mouth cotton-entrance opening, of a mechanical picker for detaching the cotton from the boll embodying a rotary carrier, rearwardly-inclined picker-teeth pivotally mounted thereon and projecting through an opening in the wall of the bell-mouth and springs for holding said teeth projected; substantially as described.

9. In a cotton-picker, the combination with the nozzle having the bell-mouth cotton-entrance opening, of a mechanical picker for detaching the cotton from the boll, embodying a rotary carrier and spring-pressed picker-teeth pivotally mounted on the carrier and a clearing-brush against which the teeth are deflected for detaching adherent fiber; substantially as described.

10. In a cotton-picker, the combination with the nozzle having the cotton-entrance opening, of the mechanical picker for detaching the cotton from the bolls embodying a rotary carrier, double-pronged picker-teeth pivotally mounted on the carrier and springs for holding said teeth projected; substantially as described.

11. In a cotton-picker, the combination with the nozzle having the laterally-projecting bell-mouth cotton-entrance opening, of the mechanical pickers grouped in pairs on opposite sides of said bell-mouth; substantially as described.

12. In a cotton-picker, the combination with the nozzle having the laterally-projecting bell-mouth cotton-entrance opening of the mechanical pickers embodying rotary toothed carriers arranged in pairs on opposite sides of said bell-mouth and projecting into the same and means for simultaneously rotating said pickers; substantially as described.

13. In a cotton-picker, the combination with the suction-nozzle having the air-entrance opening and the lateral cotton-entrance opening and mechanical pickers for advancing the cotton through said cotton-entrance opening, of the kicker-wheel at the inner side of and intersecting said cotton-entrance opening for advancing the cotton in the nozzle; substantially as described.

14. In a pneumatic cotton-picker, the combination with the tubular tentacle through which the cotton is carried by pneumatic pressure and a nozzle on the outer end of said tentacle having a lateral cotton-entrance opening, of a kicker-wheel in said nozzle extending in a plane parallel with the axes of the nozzle and lateral cotton-openings for inaugurating the movement of the cotton away from the entrance-opening; substantially as described.

15. In a pneumatic cotton-picker the combination with the tubular tentacle through which the cotton is carried by pneumatic pressure and a nozzle on the outer end of said tentacle, having a lateral cotton-entrance opening and an air-entrance opening, of a valve controlling the air-entrance opening and means for adjusting said valve; substantially as described.

16. In a pneumatic cotton-picker the combination with the tubular tentacle through which the cotton is carried by pneumatic pressure and a nozzle at the outer end of said tentacle, having a cotton-entrance opening and a separate air-entrance opening, of mechanical pickers for advancing the cotton through the cotton-entrance opening and an adjustable valve for regulating the entrance of air through the air-entrance opening; substantially as described.

17. In a pneumatic cotton-picker the combination with the vehicle, the power-generator and suction-fan carried thereby, of the flexible tubular tentacle connected with the fan and a pivoted supporting-arm mounted on and projecting laterally from the vehicle and connected with the tentacle at a point remote from the vehicle; substantially as described.

18. In a pneumatic cotton-picker, the combination with the vehicle, the power-generator and suction-fan carried thereby, of the flexible tubular tentacle connected with the fan and an adjustable supporting-arm pivotally supported by the vehicle and connected with the tentacle at a point remote from the vehicle; substantially as described.

848,968. COTTON-PICKER. BENJAMIN A. CHEW, Augusta, Ga. Filed Nov. 5, 1906. Serial No. 342,056.

Claim.—1. In a pneumatic cotton-picker the combination with the nozzle having a substantially straight passage therethrough and a bell-mouth cotton-entrance at one side

of and opening transversely into said substantially straight passage, of toothed rotary pickers journaled at an angle to each other around the bell-mouth and having their peripheries projecting into both the bell-mouth and the substantially straight passage through the nozzle for mechanically carrying the cotton entirely through the bell-mouth and delivering the same into the passage.

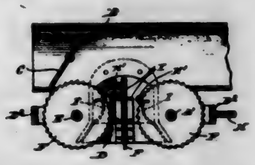

2. In a pneumatic cotton-picker the combination with the nozzle having an air-passage therethrough and a bell-mouth cotton-entrance at one side of and opening transversely into said air-passage, of toothed rotary pickers journaled at an angle to each other around the bell-mouth, said pickers being of greater diameter than the length of the bell-mouth, and having their peripheries projecting into the bell-mouth and beyond each end of the same, whereby the cotton will be engaged before it enters the bell-mouth and will be carried by the pickers entirely through the bell-mouth and into the air-passage.

3. In a cotton-picker, the combination with the nozzle end of the duct having a valved air-inlet and a transverse cotton-inlet, of a bell-mouth frame secured to one side of the nozzle around the cotton-inlet and having shaft-bearing projections on four sides thereof, picker-shafts and pickers journaled in said bearings and connected by gearing for simultaneous rotation and a power-shaft mounted in alinement with one of said picker-shafts.

4. In a cotton-picker, the combination with the nozzle end of the duct having an air-inlet in the end and a transverse cotton-inlet, and a bell-mouth frame secured around the cotton-inlet and having shaft-bearing projections, of picker-shafts arranged in a quadrangle in said frame and connected by gearing, a drive-shaft in line with and connected to one of said picker-shafts.

5. In a cotton-picker, the combination with the nozzle end of the duct having an end air-opening a lateral cotton-inlet opening and a bell-mouth frame surrounding the cotton-inlet opening, there being radial-picker-saw slits extending longitudinally through the frame and through the wall of the nozzle, of radial picker-saws journaled in the frame and having their peripheries projecting into the nozzle and bell-mouth and beyond the outer edge of the bell-mouth; substantially as described.

6. In a pneumatic cotton-picker, the combination with the nozzle end of a suction conveyer, of a bell-mouth forming a cotton-entrance opening, picker-saws projecting into said opening and yielding clearers between which the picker-saws pass to free the cotton therefrom.

7. In a cotton-picker, the combination with the nozzle end of a suction conveyer-duct, of a bell-mouth forming the cotton-entrance opening, mechanically-operated picker-saws projecting into said bell-mouth and backwardly-inclined yielding clearers between which the picker-saws pass after entering the bell-mouth; substantially as described.

8. In a cotton-picker, the combination with the nozzle end of the suction duct having the bell-mouth cotton-entrance opening and an air-port in proximity to the inner end of said bell-mouth, of the toothed rotary picker having its periphery projecting into the bell-mouth and extending inwardly past the air-port whereby air entering through said port will assist in clearing the cotton from the picker.

9. In a cotton-picker, the combination with the nozzle end of the suction duct having the bell-mouth cotton-entrance opening and a plurality of air-ports around the base of the bell-mouth, of a plurality of rotary toothed pickers journaled in angular relation around the bell-mouth and having their peripheries projecting into said bell-mouth and extending inwardly past the air-ports, whereby air entering said ports will clear cotton from the pickers.

848,969. CLAMPING-RING. JAMES CLARK, Bradford, Pa., assignor to S. R. Dresser Manufacturing Company, Bradford, Pa. Filed Dec. 21, 1906. Serial No. 348,913.

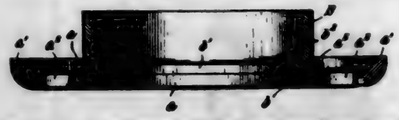

Claim.—1. A clamping-ring for pipe-couplings comprising a plate member, disposed perpendicularly to the axis of the ring, and provided with a central pipe-aperture, a plurality of bolt-holes located around said aperture and separated reinforcing-lugs each located between one of said bolt-holes, and said central aperture, and a flange member having annular portions disposed substantially perpendicularly to said plate member, and having at its inner end integral portions disposed parallel to and engaging a face of the plate member, around said pipe-aperture and also engaging said reinforcing-lugs, substantially as described.

2. A clamping-ring for pipe-couplings formed of wrought metal and comprising a plate member, disposed perpendicularly to the axis of the ring, and provided with a central pipe-aperture, a plurality of bolt-holes located around said aperture, and separated reinforcing-lugs formed integrally with said plate each located between one of said bolt-holes and the pipe-aperture and connected to the plate member at the edge of the bolt-hole, and a flange member having annular portions of greater diameter than the pipe-aperture disposed substantially perpendicularly to said plate member and having at its inner end inwardly-extending integral portions, forming an annular reinforcing-flange, having portions engaging a face of the plate member adjacent to said pipe-aperture and portions engaging said reinforcing-lugs, substantially as described.

3. A clamping-ring for pipe-couplings formed of wrought metal and comprising a plate member disposed perpendicularly to the axis of the ring and provided with a central pipe-aperture, bolt-holes located at intervals around the said aperture, and reinforcing-lugs, integral with the said plate member, lying upon one face of said plate member, between the bolt-holes and the pipe-aperture and connected with the plate member adjacent to the edges of said bolt-hole and a flange member having an annular portion disposed substantially perpendicularly to the plate member, and an inwardly-extending annular flange at its inner end engaging said plate member, and also engaging said lugs, the portions of said lugs engaging said flange member conforming to the shape thereof, substantially as described.

4. A clamping-ring for pipe-couplings formed of wrought metal, comprising a plate member having a central pipe-aperture, a plurality of bolt-holes, located around the said aperture and a reinforcing-lug located between each bolt-hole and the pipe-aperture, connected integrally with the plate at the edge of the bolt-hole, and a separate flange member having an annular portion substantially perpendicular to said plate member, and having its inner end provided with an inwardly-extending flange portion engaging said plate member adjacent to said pipe-aperture and embedded in said reinforcing-lugs, substantially as described.

848,970. SYNCHRONISM-INDICATOR. PAUL I. CLARK, Chicago, Ill., assignor to General Electric Company, a Corporation of New York. Filed Oct. 19, 1903. Serial No. 177,587.

Claim.—1. A synchronism-indicator comprising a constant-current transformer responsive to exchange-currents between the machines to be synchronized, and a signal operatively related to said transformer.

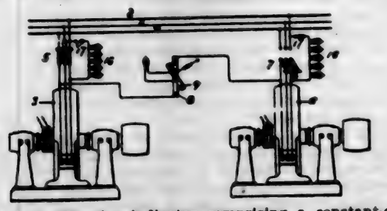

2. A synchronism-indicator comprising a constant-current transformer having its primary coil responsive to exchange-currents between the machines to be synchronized, and its secondary coil in circuit with a signal-lamp.

3. A synchronism-indicator comprising two relatively movable coils, one responsive to exchange-currents between the machines to be synchronized, and the other connected with an indicating device.

4. A synchronism-indicator comprising two relatively movable coils, one responsive to exchange-currents between the machines to be synchronized and the other connected with a signal-lamp, and means for yieldingly opposing the relative movement of said coils.

5. A synchronism-indicator comprising a transformer having a stationary coil responsive to exchange-currents between the machines to be synchronized, and a pivoted coil connected with the signal-lamp.

6. A synchronism-indicator comprising a transformer having a stationary coil responsive to exchange-currents between the machines to be synchronized, a pivoted coil connected with a signal-lamp, and a spring opposing the movement of said pivoted coil.

7. A synchronism-indicator comprising a transformer having a stationary coil responsive to exchange-currents between the machines to be synchronized and a pivoted coil connected with the signal-lamp, a spring opposing the movement of said pivoted coil, and an eccentric moving with the pivoted coil and to which said spring is connected.

8. In a synchronism-indicator, the combination with two or more alternating-current machines, of a signal-lamp, and means for supplying it with constant current during the greater portion of phase displacement of said machines and reducing said current when the machines come nearly in step.

9. In a synchronism-indicator, the combination with two alternating-current machines, of two relatively movable coils which repel each other when the phase displacement of said machines is great, and a signal-lamp which fluctuates in brilliancy when the phase displacement is small and the coils are not moving.

848,971. ELASTIC WHEEL. MARCEL COSSET, Paris, France. Filed Feb. 17, 1906. Serial No. 301,681.

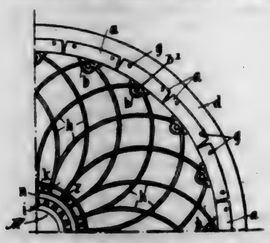

Claim.—1. A wheel comprising in combination a hub, a segmental felly, means connecting said hub and felly, and means for alining the segments of said felly, said means comprising a metallic ribbon and a cable.

2. A wheel comprising in combination a hub, a segmental felly, means uniting the felly and hub, and means for alining the segments of said felly comprising superimposed metallic ribbons and cables.

3. A wheel comprising in combination a hub, a segmental felly, means uniting the hub and felly, the segments of said felly being of U-shaped cross-section adapted to receive the tire, and means for alining the segments of said felly and seated in said segments and comprising alternately-disposed metallic ribbons and cables.

4. A wheel comprising in combination a hub, a segmental felly, spring-spokes connecting said hub and felly, said hub being provided with annular flanges engaging the spokes laterally, and wedging devices engaging the ends of said spokes.

5. A wheel comprising in combination a hub, a segmental felly, and spring-spokes engaging said felly and hub, said hub being provided with annular retaining-flanges engaging the spokes laterally, wedging devies engaging the ends of said spokes, and radial devices for separating the spokes.

6. A wheel comprising in combination a hub, a segmental felly, and springs connecting said felly and hub, said hub being provided with annular flanges engaging the springs laterally, wedging-blocks engaging the ends of said springs, and spacing devices for separating the springs.

7. A wheel comprising in combination a hub, a segmental felly, springs connecting said hub and felly, and means connected with said hub and yieldingly connected with said felly serving to inclose said springs.

848,972. CHAIN-CLASP. JOHN COSTELLO, Providence, R. I. Filed Sept. 8, 1906. Serial No. 333,822.

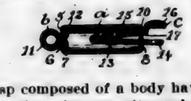

Claim.—A clasp composed of a body having a closed end and an eye secured to its opposite end, said closed end being formed with a central aperture forming an annular inwardly-extending lip, a spring-snap composed of an integral elongated section of sheet metal of equal thickness throughout, said metal being folded centrally to provide two spring-arms of equal length normally having a V-shaped space between their inner faces, one of said arms being formed at its outer end with an enlarged portion of circular shape having a central annular eye, the other arm at its outer end being formed with a right-angular offset and with an outwardly-projecting circular button of concavo-convex form, said button being of substantially the same size as said enlarged portion of the first-named arm and directly overlying said portion, said second-named arm being formed with a notch at a point directly adjacent said offset to receive said lip, said button and said enlarged portion presenting two spaced parallel finger-grasps which are of equal length and extend in approximately parallel planes.

848,973. BRUSH. ORLANDO CRITTENDEN, Akron, Ohio. Filed Aug. 9, 1906. Serial No. 329,926.

Claim.—A brush provided with a plurality of rows of elastic teeth, each tooth being formed with flat opposite faces and side edges that taper or converge in an outward direction, the teeth in each row setting close to each other at their bases, edge to edge with their opposite flat faces flush with each other and all the teeth of one row being in line with the other teeth of the same row, all the rows of teeth extending parallel, and continuously in a straight line.

848,974. ROTARY CARPET-CLEANER. ARNER CROSSMAN, Chicago, Ill. Filed Apr. 15, 1904. Serial No. 203,380.

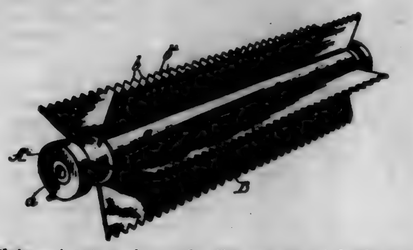

Claim.—A rotary cleaner for the purpose set forth comprising a core and a plurality of longitudinally-disposed wings extending radially from said core, said wings being made of flexible material and separated by substantial angular distance at their bases, and the free or active margins of said wings being notched to constitute a plurality of narrow contact-points separated by spaces.

848,975. BOOK. ERNEST L. CUDEBEC, Dalton, N. Y. Filed Apr. 9, 1906. Serial No. 310,858.

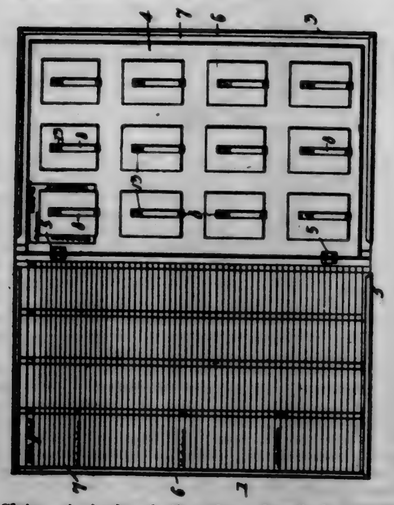

Claim.—A book of the class described comprising hingedly-connected cover and leaf sections, spring-clips upon the opposite faces of said leaf-sections, and angularly-projecting spacing-flanges upon the edges of said leaf-sections, substantially as described.

848,976. WATCH. NEIL CURRIE, Dallas, Tex., assignor of one-fourth to C. L. Warren, Dallas, Tex., and one-fourth to Dan Davies, St. Louis, Mo. Filed Feb. 27, 1905. Serial No. 247,558.

Claim.—1. A watch having top and bottom plates, a mainspring-barrel having a ratchet-wheel formed integral therewith, said barrel being mounted in and projecting through a recess turned out in said top plate and said wheel being located above said top plate, and a combined arbor and screw coöperating with said top plate for holding said barrel in position.

2. In a watch provided with top and main plates, a mainspring-barrel mounted in and projecting through a recess turned out in said top plate and having a winding or ratchet wheel formed integral therewith and located above said top plate, and a combined arbor and screw for holding said barrel in position, said barrel having a sleeve engaging said arbor.

3. In a watch provided with top and main plates, a mainspring-barrel mounted in and extending through a recess turned out in said top plate and having a ratchet-wheel formed integral therewith and located above said top plate, a combined arbor and screw for said barrel secured in said main plate, a main drive-wheel mounted on said arbor and having a sleeve projecting upward about said arbor, and a bearing integral with said barrel and resting on said sleeve.

4. In a watch provided with a top plate and a main or bottom plate and a main drive-wheel; a combined arbor and screw secured in said bottom plate, said main drive-wheel being mounted on said arbor and having an upwardly-extending sleeve, and a mainspring-barrel having a ratchet-wheel formed integral therewith and having a bearing projecting downward and resting on said sleeve, said barrel being supported in a recess formed in said top plate and said ratchet-wheel being located above said top plate.

848,977. CLOD-CRUSHER. CHARLES J. DAVIS, Lansing, Mich. Filed Apr. 18, 1906. Serial No. 312,337.

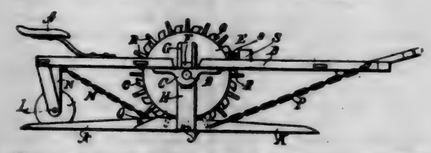

Claim.—1. In a clod-crusher, the combination with a frame, of a series of fingers pivotally connected with the frame and arranged below the frame, a roller, and devices connected with the roller by which it is guided in an up-and-down movement and held against lateral displacement, the said roller resting normally upon the fingers, whereby clods taken up by the fingers are crushed by the roller upon the fingers.

2. In a clod-crusher, the combination with a frame, of a roller having a shaft, bearings engaging the said shaft and secured to the frame, a series of fingers pivotally and separably connected with the frame and arranged below the frame, the said roller resting normally upon the fingers, devices constructed and arranged to guide the roller in an up-and-down movement and to hold it against lateral displacement, the said fingers adapted to take up the clods whereby they may be crushed by the roller upon the fingers.

3. In a clod-crusher, the combination with a frame, of a series of fingers pivotally connected with the frame and arranged below the frame, a roller, devices connected with the roller by which it is guided in an up-and-down movement and held against lateral displacement, and means adapted to revolve the roller, the said roller resting normally upon the fingers, whereby clods taken up by the fingers are crushed by the roller upon the fingers.

4. In a clod-crusher, the combination with a frame, of a series of fingers pivotally connected with the frame and arranged below the frame, a roller, devices connected with the roller by which it is guided in an up-and-down movement and held against lateral displacement, and means actuated by drawing the frame along and adapted to revolve the roller, the said roller resting normally upon the fingers whereby clods taken up by the fingers are crushed by the roller upon the fingers.

5. In a clod-crusher, the combination with a frame, of a series of fingers pivotally connected with the frame and arranged below the frame, means adapted to limit the inclination of said series of fingers with respect to the frame, a roller, and devices connected with the roller by which it is guided in an up-and-down movement and held against lateral displacement, the said roller resting normally upon the fingers, whereby clods taken up by the fingers are crushed by the roller upon the fingers.

6. In a clod-crusher, the combination with a frame, of a series of fingers pivotally connected with the frame and arranged below the frame, devices including a relatively small roller arranged to move in contact with the ground for supporting the frame in a level position, means adapted to limit the inclination of said series of fingers with respect to the frame, a relatively large roller, and devices connected with the roller by which it is guided in an up-and-down movement and held against lateral displacement, the said roller resting normally upon the fingers, whereby clods taken up by the fingers are crushed by the roller upon the fingers.

848,978. METHOD OF SOLDERING SHEET-METAL PLATES. JAMES DONOGHUE, Cleveland, Ohio. Filed Aug. 17, 1906. Serial No. 331,011.

Claim.—1. The method of soldering the seams of sheet metal, consisting in folding the edges of the sheets to hook together, placing a ribbon of solder in the seam, said ribbon being folded in Z shape to fit between the folds and around both of the said edges and then applying heat and pressure.

2. The method of joining sheets of metal, consisting in bending the edges of the sheets to form hooks adapted to interlock to form a seam, inserting a strip of solder between the hooks, said strip being folded to extend around the edges of both of the sheets and beyond the bends thereof between the hook portion of each sheet and the body portion of the other, and then compressing and heating the joint to melt the solder and flatten the seam.

848,979. KITCHEN-CABINET. CLAUDE A. ELLIS, Carlisle, Ind. Filed Aug. 27, 1906. Serial No. 332,229.

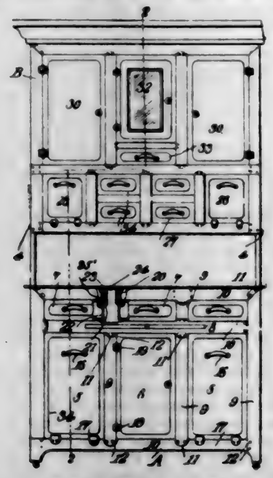

Claim.—1. A kitchen-cabinet comprising a sheet-metal body including vertical and horizontal rails on its front, said rails each being composed of a strip of metal bent back on itself at both edges and having spaced rearwardly-extending portions, partitions extending between the said spaced portions of the rails for dividing the said body into compartments, and receptacles arranged in the compartments.

2. A kitchen-cabinet comprising a sheet-metal body including a table-top, vertical and horizontal members riveted together and to the body to form the front of the latter, partitions riveted to the said rails for dividing the body into compartments, inverted-U-shaped members having longitudinal flanges forming ledges and provided with lugs at their ends, fastening devices for securing the said U-shaped members to the under side of the table-top for reinforcing the latter, fastening devices for securing the lugs of the U-shaped members to the body, and receptacles in the compartments some of which are supported on the ledges of the U-shaped members.

3. A kitchen-cabinet including an enameled sheet-metal table-top, a plurality of supporting and reinforcing members, each formed of sheet metal and of U shape in cross-section, said members being permanently secured to the under side of the table-top to reinforce the same, and the lowermost edges of their vertical sides being turned outward to form ledges, and slidable drawers arranged between adjacent members, said drawers having outwardly-extending flanges movable on and supported by said ledges.

4. A kitchen-cabinet front comprising a plurality of connected horizontal and upright rails riveted together to form a skeleton structure, each rail comprising a sheet-metal body bent back on itself from both edges and having spaced rearwardly-extending portions, and horizontal and vertical partitions connected with said rearwardly-extending portions of the rails.

5. A kitchen-cabinet comprising a frame divided into compartments, a cover for one of the compartments, a receptacle mounted in the said compartment, parallel links on which the receptacle is mounted, and connections between the cover and receptacle for moving the latter by the cover.

6. A kitchen-cabinet comprising a supporting-frame made of sheet metal, a compartment therein, a cover for the compartment, a receptacle mounted in the compartment to move in and out of the open end thereof, and flexible elements connecting the cover with the receptacle for moving one by the other.

848,980. BLIND-FASTENER. GEORGE H. FISHER, Plainfield, N. J. Filed Nov. 30, 1906. Serial No. 345,796.

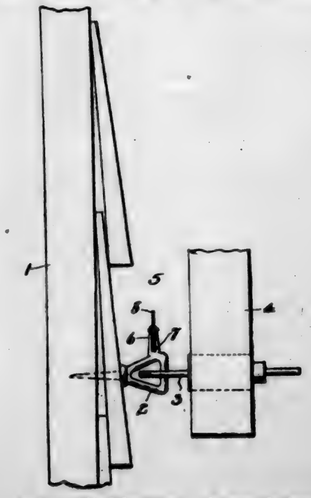

Claim.—1. In a blind-fastener, a keeper designed to be placed between a blind and the wall of a house and pro-

vided with a rotatable member for preventing birds from roosting on the keeper so mounted on said keeper as to be spaced from said wall and said blind, substantially as described.

2. In a blind-fastener a keeper provided with a slot and a rotatable member mounted in said slot, substantially as described.

3. In a blind-fastener a keeper provided with a spur and a rotatable member mounted thereon, substantially as described.

4. In a blind-fastener a keeper provided with a spur having a slot and a rotatable member mounted in said slot, substantially as described.

5. In a blind-fastener, a keeper provided with a slot and a rotatable member mounted in said slot and having a series of points, substantially as described.

6. In a blind-fastener, a keeper designed to be placed between a blind and the wall of a house and provided with a rotatable member having a series of points, said rotatable member being so mounted on said keeper as to be spaced from said wall, substantially as described.

848,981. FABRIC-REELING MACHINE. MICHEL J. FISHER, Utica, N. Y. Filed May 2, 1901. Serial No. 58,427.

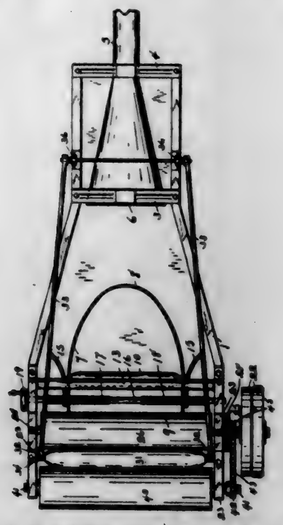

Claim.—1. In a fabric-reeling machine for tubular fabrics, the combination with a suitable frame, of a pair of draft-rollers supported thereon, means to rotate the rollers, a reel to receive the fabric, a main presser-roller coöperating with the reel, a connection between the main presser-roller and the draft-roller-operating mechanism, a pair of antifriction-rollers arranged on the frame, a spreader arranged to be supported by said antifriction-rollers, said spreader having a spacer, a rounded front end and a squared rear end, and adjustable guides adjacent to the spreader on each side.

2. In a reeling-machine for tubular, knit fabrics, the combination of a suitable supporting-frame, a spreader having a curved forward end and a squared rear end, means for supporting the spreader on the frame, an adjusting-screw journaled in the frame and formed with reverse threads on its opposite ends, a crank to rotate the screw and adjust the two guides simultaneously with relation to the spreader, a pair of draft-rollers rotating in opposite directions to draw the fabric over the spreader, a main presser-roller, means to operate said rollers, and a reel to receive the fabric from the draft-rollers.

3. In a reeling-machine for tubular, knit fabrics, the combination of a suitable supporting-frame, a tube to sustain the fabric to be wound, antifriction-rollers journaled on the frame; a spreader having a spreading-roller, a squared inner end attached to the spreading-roller and fitting between the antifriction-rollers and an elongated, curved, expanding end also secured to the spreader-roller; an adjusting-screw journaled in the frame and formed with reverse screw-threads on its opposite ends, guides of greater width than the spreader fitted respectively to the reversely-threaded portions of the adjusting-screw, a crank on the screw to adjust the guides simultaneously with relation to the spreader, draft-rollers to draw the fabric over the spreader, and a reel to receive the fabric.

4. In combination in a reeling mechanism for tubular, knit fabrics, a suitable supporting-frame, a reversing-tube having an expanded rear end for supporting and reversing the fabric to be wound, a pair of antifriction-rollers journaled in the frame; a spreader composed of a spreading-roller, a squared rear end attached to said spreading-roller and extending rearwardly between the antifriction-rollers and an elongated, curved, outer end attached to the spreader-roller and adapted to expand the fabric, said inner and outer ends being suitably formed of wire; an adjusting-screw journaled in the frame and provided with reverse screw-threads on each side, said guides extending above and below the spreader, a crank on said adjusting-screw for adjusting the guides simultaneously in and out with relation to the spreader; draft-rollers suitably journaled on the frame behind the spreader to draft the fabric, intermeshing gears on the journals of said rollers, a power-pulley on one of said journals; a pair of corresponding standards supported near the front of the frame, a pair of supporting-arms pivotally connected to said standards at their front ends and having forked rear ends, a reel to receive the fabric freely journaled in said forked ends, said reel being arranged behind and above the draft-rollers, suitable pins for retaining the reel in said forked end; a presser-roller journaled in the frame behind the reel, said presser-roller being of larger diameter than a draft-roller, a gear on said presser-roller journal, a corresponding gear on one of said draft-roller journals, and a link chain connecting said corresponding gears.

848,982. PROTECTION OF PARALLEL TRANSMISSION-LINES. ANDERS FJARE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 17, 1904. Serial No. 228,674.

Claim.—1. The combination with three or more parallel transmission-lines, two series transformers for each line, a differential tripping device for each line, means for producing in each tripping device two opposing forces proportional respectively to the secondary current of one series transformer for that line and to the algebraic sum of the secondary currents in the other transformer and the corresponding transformers of the other lines, and a switch in the circuit of each line controlled by the tripping device for that line.

2. In combination with three or more parallel transmission-lines, two series transformers for each line, a differential tripping device for each line having one winding connected to the secondary of one of said transformers for that line and a second winding energized with a current proportional to the algebraic sum of the secondary currents of the series transformers of the corresponding phase of all said lines, and a switch in the circuit of each line controlled by the tripping device for the line.

3. In combination with three or more parallel transmission-lines, two series transformers for each line, a transformer energized in common from series transformers in all the lines, a differential tripping device for each line having one winding connected to the secondary of one of the series transformers in that line and the other connected to a secondary of the common transformer, and a switch in the circuit of each line controlled by the tripping device for that line.

4. In combination with three or more parallel transmission-lines, two series transformers in each line, a differential tripping device for each line, a transformer having a plurality of primary coils severally connected to the secondaries of one of the series transformers in each line, a differential tripping device for each line having one winding connected to the secondary of the other of the series transformers in that line and the other winding connected to a secondary winding on the common transformer, and a switch in the circuit of each line controlled by the tripping device for that line.

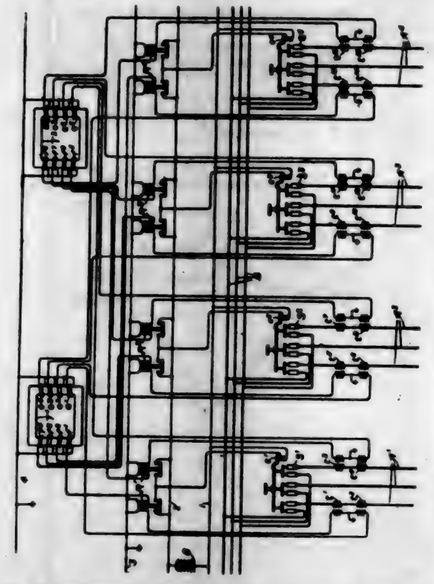

5. In combination with three or more parallel transmission-lines, two series transformers for each line having cores adapted to be saturated by a fraction of the full-load current of the line, a differential tripping device for each line, means for producing in each tripping device two opposing forces proportioned respectively to the secondary current of one series transformer for that line and to the algebraic sum of the secondary currents in the other transformer and the corresponding transformers of the other lines, and a switch in the circuit of each line controlled by the tripping device for that line.

6. In combination with three or more parallel transmission-lines, two series transformers in each line having cores adapted to be saturated by a fraction of the full-load current of the line, a transformer having a plurality of primary coils severally connected to the secondaries of one of the series transformers in each line, a differential tripping device for each line having one winding connected to the secondary of the other of the series transformers in that line and the other winding connected to a secondary winding of the common transformer, and a switch in the circuit of each line controlled by the tripping device for that line.

848,983. RAIL-BOND. WALTER E. FOSTER, Chicago, Ill. Filed Dec. 6, 1905. Serial No. 290,551.

Claim.—1. A rail-bond comprising, in combination, a metal bonding element and a metal key, said bond, both before and in its application to use, conforming in cross-sectional dimension and in shape to the aperture in a rail to be bonded, whereby the bond is adapted to fit accurately and snugly within said aperture without expanding it therein.

2. A rail-bond comprising, in combination, a metal bonding element having the outer surface of each end portion of rounded shape in cross-section, and a metal key for each said end having its outer surface of rounded shape in cross-section, said bond, both before and in its application to use, conforming in cross-sectional dimension and shape to the aperture in a rail to be bonded, whereby the bond is adapted to fit accurately and snugly within said aperture without expanding therein.

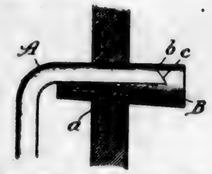

3. A rail-bond comprising, in combination, a metal bonding element having semicylindrical end portions, and a semicylindrical metal key for each said end, said bond, both before and in its application to use, conforming in cross-sectional dimension and in shape to the aperture in a rail to be bonded, whereby the bond is adapted to fit accurately and snugly within said aperture without expanding therein.

4. A rail-bond comprising, in combination, a bonding element and a metal key, said bond, both before and in its application to use, conforming in cross-sectional dimension and in shape to the aperture in a rail to be bonded, whereby the bond is adapted to fit accurately and snugly within said aperture without expanding it therein, and an offset on said key fitting over an end of the bonding element.

848,984. ELECTROPNEUMATIC TRACK-CHANNELER. ARTHUR H. GIBSON, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N. Y., a Corporation of New Jersey. Filed Sept. 27, 1906. Serial No. 336,413.

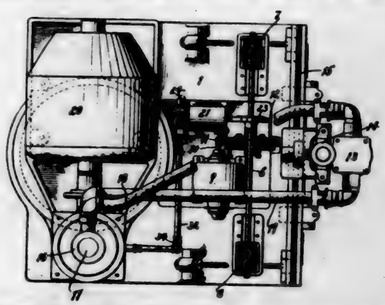

Claim.—1. In combination, a percussive tool, an air-pressor for operating it by reciprocating columns of air and means independent of the pressor for raising the pressure therein.

2. In combination, a percussive tool, an air-pressor for operating it by reciprocating columns of air and an air-pump independent of the pressor for raising the pressure therein.

3. In combination, a percussive tool, an air-pressor for operating it by reciprocating columns of air, a motor for driving the pressor and means independent of the pressor for raising the pressure therein.

4. In combination, a percussive tool, an air-pressor for operating it by reciprocating columns of air, a motor for driving the pressor and an air-pump independent of the pressor for raising the pressure therein.

5. In combination, a percussive tool, an air-pressor for operating it by reciprocating columns of air, an air-pump independent of the pressor for raising the pressure therein and a motor for driving the pump.

6. In combination, a percussive tool, an air-pressor for operating it by reciprocating columns of air, a motor for driving the pressor, an air-pump independent of the

pressor for raising the pressure therein and a separate motor for driving the pump.

7. In combination, a percussive tool, an air-pressor for operating it by reciprocating columns of air, an air-pump independent of the pressor having a pipe leading to the pressor for raising the pressure therein and a check-valve located in said pipe at the desired distance from the pressor.

8. In combination, a percussive tool, an air-pressor for operating it by reciprocating columns of air, an air-pump independent of the pressor having a pipe leading to the pressor for raising the pressure therein, a check-valve located in said pipe at the desired distance from the pressor and a motor for driving the pump.

9. In combination, a percussive tool, an air-pressor for operating it by reciprocating columns of air, a motor for driving the pressor, an air-pump independent of the pressor having a pipe leading to the pressor for raising the pressure therein and a check-valve located in the pipe at the desired distance from the pressor.

10. In combination, a percussive tool, an air-pressor for operating it by reciprocating columns of air, a motor for driving the pressor, an air-pump independent of the pressor having a pipe leading to the pressor for raising the pressure therein, a check-valve located in said pipe at the desired distance from the pressor and a separate motor for driving the pump.

11. In combination, a truck forming a support for a percussive tool, an air-pressor for operating it by reciprocating columns of air, an air-pump for raising the pressure in the pressor and motors arranged to drive the pressor, pump and truck.

12. In combination, a truck forming a support for a percussive tool, an air-pressor for operating it by reciprocating columns of air, an air-pump for raising the air-pressure in the pressor and means arranged to drive the pressor, pump and truck comprising a motor for driving the pressor and a separate motor for driving the pump and truck.

13. In combination, a truck forming a support for a percussive tool, an air-pressor for operating it by reciprocating columns of air, an air-pump for raising the pressure of air in the pressor, a drive-shaft for the truck, a motor for rotating the drive-shaft to drive the truck in either direction and a connection between the drive-shaft and pump whereby the rotary movement of the shaft operates the pump.

14. In combination, a truck forming a support for a percussive tool, an air-pressor for operating it by reciprocating columns of air, an air-pump for raising the pressure of air in the pressor, a drive-shaft for the truck and a motor having a friction-clutch connection with the drive-shaft for driving the truck in either direction.

848,985. ENGINE. EGBERT H. GOLD, Chicago, Ill. Filed Feb. 10, 1905. Serial No. 245,092.

Claim.—1. The combination with a casing, of a hollow shaft mounted therein, a plurality of hollow motor-arms connected with said shaft and communicating with the interior thereof, said motor-arms being arranged to discharge into said casing at different angles but so as simultaneously to rotate said shaft.

2. The combination with a casing, of a hollow shaft mounted therein, a plurality of hollow motor-arms connected with said shaft and communicating with the interior thereof, said motor-arms discharging into the interior of said casing, at different angles but so as to simultaneously rotate said shaft, and two series of pockets arranged within said casing, one series of pockets being adapted and arranged adjacent to the discharge end of a motor-arm discharging at one angle and the other series of pockets being adapted and arranged adjacent to the discharge end of a motor-arm at a different angle.

3. The combination with a casing provided with a main chamber and a motor-fluid-inlet chamber, of a hollow shaft extending into both of said chambers and having longitudinal play in its bearings, said shaft being provided with a passage leading from the interior of said shaft to the interior of the motor-fluid chamber and with an annular shoulder, a suitable seat for said shoulder, and a motor-arm arranged within said main chamber and connected with the interior of said shaft, said motor-arm being arranged to discharge into said chamber so as to rotate said shaft and so also as to draw said annular shoulder against the seat provided therefor.

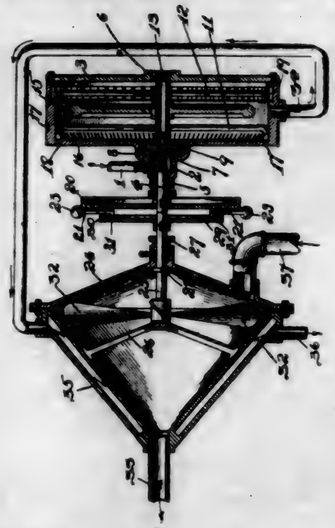

4. The combination with a hollow rotatable shaft, of a casing provided with a motor-fluid-inlet chamber, said shaft extending through said chamber and said shaft having longitudinal play in its bearings and being provided with a passage leading from the interior of said shaft into said motor-fluid chamber and with an annular shoulder, a suitable seat for receiving said shoulder, a motor-arm communicating with the interior of said shaft and discharging in such a manner as to rotate said shaft, and means for supplying the motor fluid to said motor-fluid-inlet chamber in such a manner as to rotate said shaft and to also operatively hold said shoulder to the seat provided therefor.

5. The combination with a casing provided with a motor-fluid-inlet chamber having an open space to receive steam, of a hollow rotatable shaft extending into said chamber and provided with a passage leading from the interior of said shaft into said chamber, said shaft being also provided with a non-packing shoulder, a suitable seat for said shoulder, a packing-washer mounted upon said shaft between said shoulder and said seat, all so arranged that the pressure of the motor fluid in said inlet-chamber will cause said shoulder to clamp said washer against said seat, and means communicating with the interior of said shaft for rotating said shaft when motor fluid under pressure is supplied to said inlet-chamber.

6. The combination with a longitudinally-movable shaft provided with a freely-rotating collar, of a casing provided with a fluid-inlet chamber having an open space to receive steam and with a seat for said collar, means for supplying liquid under pressure to said casing, and a fluid-outlet leading from said casing, all so arranged that the fluid-pressure within said casing will force said collar toward said seat.

7. The combination with a casing provided with a fluid-inlet chamber having an open space to receive steam, of a longitudinally-movable shaft extending into said chamber and provided with a shoulder out of contact with the wall of said chamber, of a seat, a packing-ring mounted upon said shaft between said shoulder and said seat, a fluid-outlet passage leading through said chamber, and means for supplying fluid under pressure to said chamber, all so arranged that the fluid-pressure within said chamber will clamp said washer between said shoulder and said seat.

8. In combination, a rotary engine, means for supplying a motor fluid to said engine so as to actuate said engine, means for utilizing the exhaust from said engine in varying quantities, thereby varying the flow of the motor fluid to said engine, a load-shaft, and means for automatically connecting the shaft of the engine with the load-shaft whenever the engine attains a certain speed and for automatically disconnecting said shafts from each other whenever the engine drops below said speed.

848,986. RAILWAY-SWITCH. ERNEST F. GREENE, Silver Creek, N. Y. Filed Feb. 14, 1906. Serial No. 300,970.

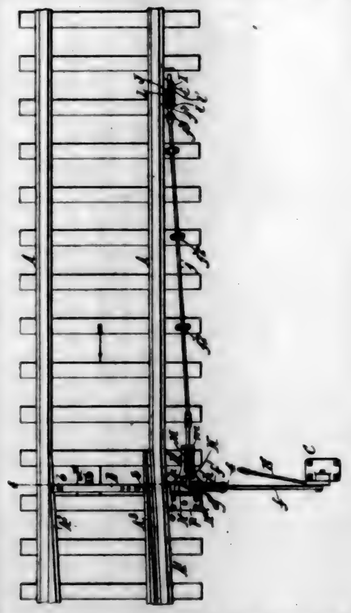

Claim.—1. The combination of the main track, the switch-rails, means for automatically closing the switch-rails, a manual shifting device for the last-named rails, a coupling connecting the switch-rails with said shifting device, a trip device connected with said coupling, and automatic setting or projecting means for the trip device constructed and arranged to act upon said coupling when the switch is moved from its closed to its open position, whereby the trip device is projected through the medium of the coupling, substantially as set forth.

2. The combination of the main track, the switch-rails, means for automatically closing the switch-rails, a manual shifting device for the last-named rails, a coupling-bolt detachably connecting the switch-rails with said shifting device and taking part in the movements of the switch-rails, a trip device connected with said bolt and arranged to be operated by a train on the main track, a spring applied to said bolt and acting to retract the trip device, and automatic setting or projecting means for the trip device constructed and arranged to act upon said coupling-bolt when the switch is moved from its closed to its open position, substantially as set forth.

3. The combination of the main track, the switch-rails, means for automatically closing the switch-rails, a shifting device for the last-named rails, a coupling connecting the switch-rails with said shifting device, a trip device connected with said coupling and adapted to be operated by a train on the main track, and a fixed cam arranged to be engaged by the coupling when the switch is opened for automatically setting the trip device, substantially as set forth.

4. The combination of the main track, the switch-rails, a spring for closing said rails, a manual switch-shifting device, a connection between said shifting device and the switch-rails consisting of a sleeve or socket connected with one of said parts and a rod connected with the other part and entering the socket, a sliding bolt for coupling said rod and socket movable with the switch-rails, a trip device for withdrawing said bolt arranged to be operated by a train on the main track, and a stationary cam arranged to be engaged by said bolt when the switch is opened, for shifting the bolt lengthwise and setting the trip device, substantially as set forth.

5. The combination of the main track, the switch-rails, a spring for closing said rails, a manual switch-shifting device, a connection between said shifting device and the switch-rails consisting of a sleeve or socket connected with one of said parts and a rod connected with the other part and entering the socket, a sliding bolt for coupling said rod and socket movable with the switch-rails, a trip device connected with said bolt and arranged to be operated by a train on the main track, and a fixed cam extending into said sleeve and arranged to shift the coupling-bolt rearwardly when the switch is moved to its open position, substantially as set forth.

6. The combination of the main track, the switch-rails, a spring for closing said rails, a manual switch-shifting device, a connection between said shifting device and the switch-rails consisting of a sleeve or socket connected with one of said parts and a rod connected with the other part and entering the socket, a sliding bolt for coupling said rod and socket movable with said sleeve, a spring tending to move said bolt forwardly, a trip device for withdrawing the bolt arranged to be operated by a train on the main track, and a fixed cam extending through the side of said sleeve and having an oblique face over which the front end of the coupling-bolt rides when shifted laterally in opening the switch, substantially as set forth.

7. The combination of the main track, the switch-rails, a spring for closing said rails, a manual switch-shifting device, a connection between said shifting device and the switch-rails consisting of a sleeve or socket connected with one of said parts and a rod connected with the other part and entering the socket, said rod having a plurality of bolt-holes either of which is adapted to register with a hole of the sleeve, a spring-pressed coupling-bolt for the sleeve and the rod adapted to engage one of the holes of said rod in one position of the switch-rails and the other hole thereof in another position of said rails, and an actuating device connected with said bolt and arranged to be tripped by a train on the main track, substantially as set forth.

8. The combination of the main track, the switch-rails, means for automatically closing the switch-rails, a manual shifting device for the last-named rails, a coupling connecting the switch-rails with said shifting device, a trip-lever arranged to be actuated by a train on the main track, a link connected at one end with said coupling and having its opposite end attached to said lever by a pin-and-slot connection, and a spring applied to said link and tending to swing said lever to its operative position, substantially as set forth.

848,987. WINDOW-SHADE AND CURTAIN-POLE HOLDER. JAMES H. GREEN, Freeport, Pa. Filed May 24, 1906. Serial No. 318,576.

Claim.—A combined window-shade and curtain-pole hanger or fixture, comprising similiar complemental sections placed one upon the other, each having a longitudinal slot extending nearly the entire length thereof and provided at its inner end with oppositely-extending lugs in the plane thereof and folded upon themselves to engage

loosely with the longitudinal edges of the adjacent section to hold said sections together and give proper direction thereto in longitudinal adjustment thereof, each section having its outer end portion longitudinally cut and having the portion bordering upon the cut bent outward at a right angle to provide window-shade-supporting ex-

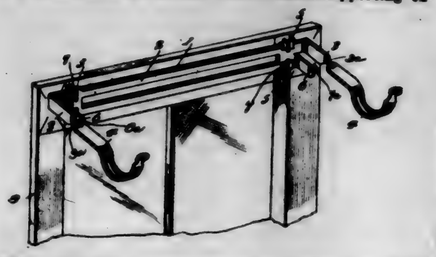

tensions and curtain-pole-supporting members, said parts being bent at different points in the length of the section, the curtain-pole-supporting members having a twist in their length to throw the outer portions in an approximately horizontal position and having said outer portions slotted longitudinally.

848,988. SYSTEM OF GUN CONTROL. JOHN L. HALL, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Nov. 28, 1904. Serial No. 234,469.

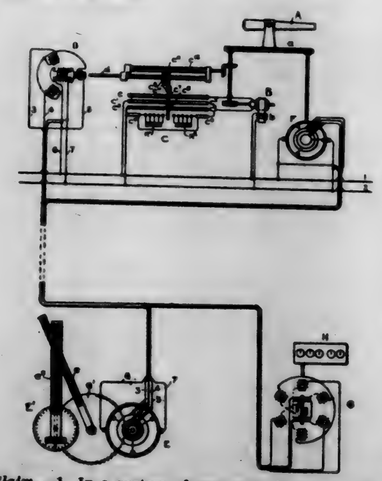

Claim.—1. In a system of gun control, a gun and operating means therefor, and controlling mechanism for said operating means including an arm in the control-station and apparatus for causing the gun to be moved into parallelism with said arm together with means for adjusting said arm parallel to the line connecting the gun and target.

2. Means for training a gun or other apparatus upon any desired point, which comprises operating means including an arm and mechanism for causing the gun to be moved into parallelism with said arm, together with means for adjusting said arm parallel to the line connecting the gun and said point, when the distance between the point and the gun and the direction of the point from the arm are known.

3. In a system of gun control, a gun and operating means therefor, controlling mechanism for said operating means including an arm in a remote control-station and apparatus for causing the gun to be moved into parallelism with the arm, and means for adjusting the arm in the remote station into parallelism with a line connecting the gun and any desired point when the distance of the point from the gun and the direction of the point with relation to the remote station are known.

4. In a system of gun control, a gun, an operating-motor, a master-controller including an operating-arm and means for bringing said arm into parallelism with the line along which the gun is to be trained, means controlled by said master-controller for bringing said gun into parallelism with said arm, and means controlled by said gun for stopping the gun when it reaches the position in which it is parallel with said arm.

848,989. CHURN. GEORGE W. HAMILTON, Columbus, Ohio. Filed May 18, 1906. Serial No. 317,445.

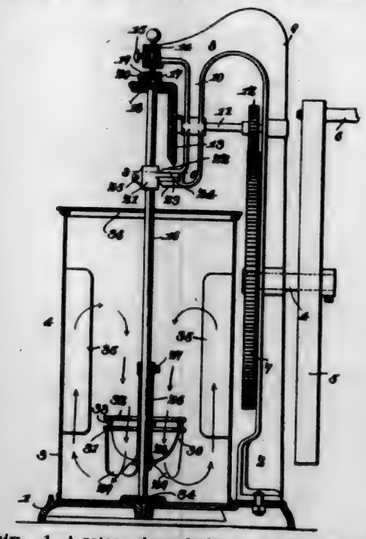

Claim.—1. A rotary churn-dasher consisting of a sleeve, blades attached thereto, each blade having a narrow approximately horizontal inner terminal, a narrow inclined outer terminal and a wide intermediate portion with a straight inclined outer edge, a ring connected to the blades at the narrow inclined outer terminal thereof and having all of its sides, edges and surfaces located above the blades, said ring having greater breadth horizontally than thickness vertically, all parts of the said blades being encompassed in a space, the transverse dimension of which is less than the transverse diameter of the ring.

2. A rotary churn-dasher consisting of a sleeve, blades attached thereto, each blade having a narrow approximately horizontal inner terminal, a narrow inclined outer terminal and a wide intermediate portion with a straight inclined outer edge, a plurality of rings spaced apart and connected to the blade at the narrow inclined outer terminal thereof and having all of their sides, edges and surfaces located above said rings and having greater breadth horizontally than thickness vertically, all parts of the blades being encompassed within a space of less transverse dimension than the transverse diameter of the blades.

848,990. TRANSIT THRESHING-MACHINE. D MAURICE HARTSOUGH, Minneapolis, Minn., assignor of one-half to Patrick J. Lyons, Steel, N. D. Filed Dec. 27, 1906. Serial No. 349,695.

Claim.—A transit thresher comprising a prime mover and a thresher, a triangular coupling-frame attached at its short side to the thresher and having its long side substantially in alinement with the initial power-wheel of the operating parts of the thresher, said coupling-frame being coupled at the angle formed by its long side and the hypotenuse to the frame of the prime mover, a shaft journaled upon the prime mover and having a knuckle-joint

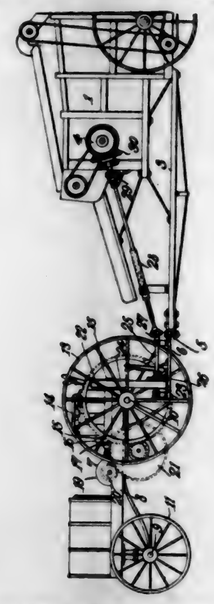

located above the point of connection between the frames, said shaft being operatively connected with the initial power-wheel of the operating parts of the thresher and also being operatively connected with the engines of the prime mover.

848,991. HAND-REST. FRANK R. HARVEY, Houghton, Mich. Filed July 16, 1906. Serial No. 326,456.

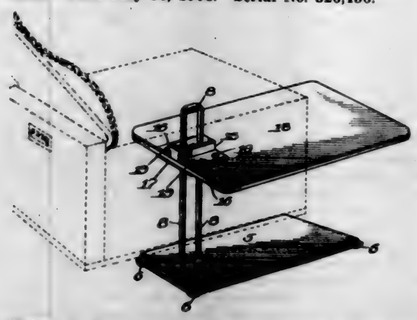

Claim.—1. In a hand-rest, the combination with a base, and a standard mounted on said base and adapted to prevent the rotation thereon of the parts supported thereby, of a plate slidingly mounted on said standard, a spring bearing against said standard and the outer end of said plate, and a platen secured to said plate, substantially as described.

2. In a hand-rest, the combination with a base, and a standard mounted on said base and adapted to prevent the rotation thereon of the parts supported thereby, of a plate having a recessed portion to form a longitudinal recess and having openings in said recessed portion whereby said plate is slidingly mounted on said standard, a spring in said recess bearing against said plate and said standard, a second plate slidingly mounted on said standard, and a platen secured between said plates, substantially as described.

3. In a hand-rest, the combination with a base, and a support having two parallel upright rods secured to said base, of a plate provided with openings conforming to said upright portions of said standard and slidingly mounted thereon, a second plate having openings conforming to the uprights of said standard and slidingly mounted thereon, and a platen secured between said plates, substantially as described.

4. In a hand-rest, the combination with a base, and a support having two parallel upright rods secured to said base, of an upper plate having a raised portion forming a longitudinal recess and having openings therein conforming to said uprights whereby said plate is slidingly mounted thereon, a lower plate having openings to conform to said uprights of said standard and registering with the openings in the upper plate whereby said lower plate is slidingly mounted on said standard, and a platen secured between said plates, substantially as described.

5. In a hand-rest, the combination with a base, and a support having two parallel upright rods secured to said base, of an upper plate having a raised portion forming a longitudinal recess and having openings therein conforming to said uprights whereby said plate is slidingly mounted thereon, a spring mounted in said recess and bearing against the outer end thereof and the adjacent upright, a lower plate having openings to conform to said uprights of said standard and registering with the openings in the upper plate whereby said lower plate is slidingly mounted on said standard, and a platen secured between said plates, substantially as described.

6. In a hand-rest, the combination with a base, and a standard composed of two upright parallel rods connected at the top and secured at the lower ends to said base, of an upper plate having a raised portion forming a longitudinal recess and having openings therein conforming to said uprights whereby said plate is slidingly mounted thereon, a spring mounted in said recess and bearing against the outer end thereof and the adjacent upright, a lower plate having openings to conform to said uprights of said standard and registering with the openings in the upper plate whereby said lower plate is slidingly mounted on said standard, and a platen secured between said plates, substantially as described.

848,992. PENNY-COLLECTOR. HARMON G. HEWITT, Georgetown, Ill. Filed Aug. 16, 1906. Serial No. 330,897.

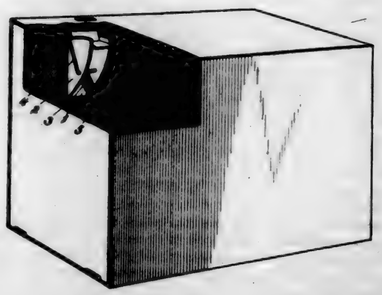

Claim.—A device of the class described, comprising a mail-box having an opening therein, a rounded surface arranged beneath said opening, and a spring-actuated lever adapted to sweep said surface, substantially as and for the purpose described.

848,993. SLACK-ADJUSTER FOR BRAKES. JAMES M. HINES, Albany, N. Y. Filed Aug. 2, 1906. Serial No. 328,845.

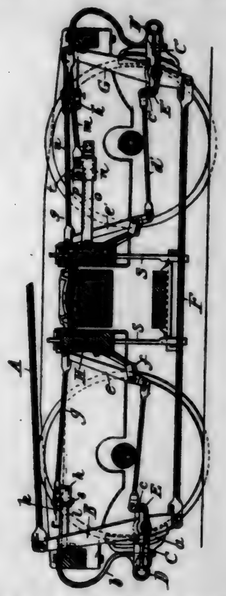

Claim.—1. In a brake mechanism for vehicles, brake-beams, brake-shoes carried thereby, brake-applying mechanism for moving said beams and shoes toward the wheels to apply the brakes, a separate mechanism associated with each brake-beam and independent of the brake-applying mechanism for retaining that portion of the brake-applying movement which is due to the slack in the brake mechanism, and means for automatically adjusting the brake-applying mechanism to take up the slack on the releasing movement of the brakes.

2. In a brake mechanism for vehicles, brake-beams, brake-shoes carried thereby, means for moving said beams toward the wheels to apply the brakes, a retainer attached to each brake-beam actuated by the brake-applying movement thereof to limit the movement of the brake-beam away from the wheels, and means for automatically adjusting the brake-applying mechanism to take up the slack therein on the releasing movement of the brakes.

3. In a brake mechanism for vehicles, a system of levers, brake-beams adapted to be actuated by said levers, brake-shoes carried by said beams, a retainer connected to each brake-beam by a lost-motion device and adapted to be set by the brake-applying movement to limit the withdrawal of the brake-shoes, and means for taking up the slack in the system of levers on the brake-releasing movement.

4. In a brake mechanism, a plurality of brake-beams, brake-shoes carried thereby, a live lever mounted on a single free pivot fixed with relation to one of said brake-beams, a dead lever mounted on a pivot fixed with relation to another of said brake-beams, means for creating a fulcrum for said dead lever fixed with relation to the vehicle or truck-body, means independent of said levers for limiting the movement of the brake-beams away from the wheels, and means for automatically adjusting the position of the fulcrum for the dead lever on the releasing movement of the brakes.

5. In a brake mechanism for vehicles, two brake-beams, brake-shoes carried thereby, a live lever mounted on a pivot fixed with relation to one brake-beam, a dead lever mounted on a pivot fixed with relation to the other brake-beam, means for applying the braking power to one end of the live lever, a connection between the live lever and the dead lever, adjustable mechanism connected to each of the brake-beams and adapted to limit the movement thereof away from the wheels, means for creating a fulcrum for the dead lever fixed with relation to the truck-frame, and means for adjusting the position of said fulcrum on the releasing movement of the brake mechanism.

6. In brake mechanism for vehicles, two brake-beams, brake-shoes supported thereby, a live lever mounted on a pivot fixed with relation to one brake-beam and a dead lever mounted on a pivot fixed with relation to the other brake-beam, means for applying the braking power to the live lever, connections between the live lever and the dead lever, a retaining-lever mounted adjacent to each brake-beam and connected thereto by a lost-motion device, a rack adjacent to each of said retaining-levers, pawls adapted to engage with the said racks, connections between the retaining-levers and said pawls, a rack mounted adjacent to the dead lever and a pawl connected to the dead lever adapted to engage with the said rack; substantially as and for the purpose described.

7. In a braking mechanism for vehicles, a plurality of brake-beams, brake-shoes supported thereby, brake-applying levers mounted on pivots fixed with relation to said beams, means for applying the braking power to one of said levers, connections between said levers, a pivoted retaining-lever mounted adjacent to each brake-beam and connected thereto by a lost-motion device, a rack adjacent to each of said retaining-levers, pawl-boxes mounted on said racks, connections between the pawl-boxes and the retaining-levers, a rack adjacent to one of the brake-applying levers, a pawl-box sliding on said rack, and connections between the said pawl-box and adjacent lever, substantially as described.

848,994. ELECTRIC JUNCTION AND OUTLET BOX. OTTO C. HOFFMANN, New York, N. Y., and ALBERT I. APPLETON, Chicago, Ill., assignors to Chicago Fuse Wire & Mfg. Co., Chicago, Ill. Filed Nov. 8, 1906. Serial No. 342,587.

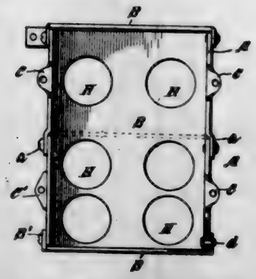

Claim.—1. In an outlet-box, a perforated casing, supporting-ears for such casing, the casing consisting of a "unit" comprising a variable number of "spacers," removably united, an end plate on the "unit" and an end plate removably attached to the last "spacer" constituting continuous inclosure.

2. In an outlet-box, a perforated casing, supporting-ears for such casing, the casing consisting of a "unit," comprising a variable number of duplicate "spacers" removably united, an end plate on the "unit" and an end plate removably attached to the last "spacer" constituting continuous inclosure.

3. In an outlet-box, a perforated casing, supporting-ears for such casing, the casing consisting of a "unit" comprising a variable number of "spacers" and separate end plates constituting a continuous inclosure, the "unit" and each "spacer" provided with projections for attaching the electrical appliance covering the box, said projections being equidistantly arranged along said length of the complete box.

4. In an outlet-box, a perforated casing, supporting-ears for such casing, the casing consisting of a "unit" comprising a variable number of U-shaped "spacers" removably united, an end plate on the "unit" and an end plate attached to the last "spacer," constituting continuous inclosure, the means of uniting the "spacers" consisting of a device permanently secured to one edge of each of the arms of the U.

5. In an outlet-box for electric distribution, a perforation in the wall of the box, a filling-piece for the perforation held in place by cement applied as described, acting in conjunction with an extended lip upon one end of the filling-piece.

6. In an outlet-box for electric distribution, a perforation in the wall of the box, a filling-piece for the perforation held in place by cement applied upon insertion of the piece acting in conjunction with an extended lip upon one end of the filling-piece, and cement under the lip.

7. In an outlet-box for electrical distribution, a perforated casing, the perforations being closed by filling-pieces smaller than the perforations and cemented into position, the said pieces having cylindrical faces, the cement being located upon such faces.

8. In an outlet-box for electric distribution, a perforation in the wall of the box having an axially-extended periphery, a filling-piece for the perforation held in place by cement between such periphery and piece and applied upon insertion of the piece.

9. In an outlet-box for electrical distribution, a perforation in the wall of the box, a filling-piece for the perforation held in place by cement, both the perforation and the piece being provided with cylindrical faces, the cement being located upon such faces and applied upon insertion of the piece.

848,995. SPRAY-NOZZLE. ARTHUR B. HULL, Gasport, N. Y., assignor to Friend Mfg. Co., Gasport, N. Y. Filed Apr. 10, 1906. Serial No. 310,901.

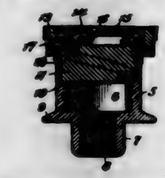

Claim.—In a spray-nozzle, the combination with a casing, of a plug fitted in the casing and having its outer end substantially flush with one end of said casing, said plug having a helical conducting-channel in one side, a cap detachably mounted on the end of the casing having the plug, and a packing-ring interposed between the front wall of the cap and the adjacent ends of the casing and plug, said ring engaging both the casing and plug and spacing the front wall of the cap therefrom to provide an interior chamber inclosed by the ring, said ring furthermore terminating short of the inner side of the channel of the plug so that said channel communicates with the interior chamber and the cap having an outlet communication with said interior chamber.

848,996. RECEPTACLE FOR STORAGE-BATTERY PLATES. CHARLES S. KAUFMANN, Chicago, Ill., assignor to American Battery Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 26, 1904. Serial No. 226,097.

Claim.—1. In a receptacle for storage-battery plates consisting of a tank, an outwardly-flaring protective strip secured to the top of the tank below the edge thereof and upwardly extending above the edge, said strip having a straight upper edge and an inwardly-diverging lower edge and forming a groove or channel in conjunction with the tank, a removable cover provided with a wedge-shaped flange adapted to fit over the top of the tank and have the wedge-shaped flange fit into the groove or channel, and a protective sheath extending around the body of the tank, substantially as described.

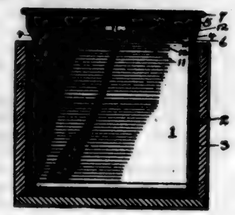

2. In a receptacle for storage-battery plates consisting of a tank, an outwardly-flaring protective strip secured to the top of the tank below the edge thereof and upwardly extending above the edge, said strip having a straight upper edge and an inwardly-diverging lower edge and forming a groove or channel in conjunction with the tank, a cover provided with a wedge-shaped flange adapted to fit over the top of the tank and have the wedge-shaped flange fit into the groove or channel, and a protective sheath extending around the body of the tank and separated therefrom by a filling of insulating material, substantially as described.

848,997. HARROW-SULKY. NELSON KENER, Marseilles, Ill., assignor to Isaac G. Osgood and Beman F. Osgood, Marseilles, Ill. Filed Apr. 17, 1906. Serial No. 312,131.

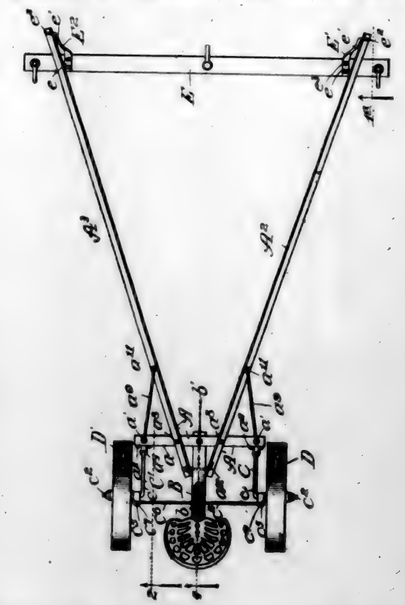

Claim.—1. In a sulky of the character described, the combination of a frame having tongue members adapted to be secured at different points on the machine to which it is to be attached, a seat connected with said frame, a pair of wheels, a pair of caster-stems having swivel connection with said frame and provided with spindles upon which said wheels are journaled, and means tying said caster-stems together at the base portions of the spindles, for the purpose set forth.

2. In a sulky of the character described, the combination of a frame having a tongue, a seat connected to said

frame, a pair of wheels, a pair of caster-stems having swivel connection with said frame and equipped with spindles upon which said wheels are journaled, a pair of arms on the base portions of said spindles, and a rod joining said arms, for the purpose set forth.

3. In a sulky of the character described, the combination of a frame having a pair of vertical bearings for caster-stems, a pair of caster-stems having downturned ends swiveled in said bearings and having their rear portions equipped with outwardly-projecting spindles, a pair of arms joined to said caster-stems at the base portions of said spindles, and a rod connecting said arms.

4. In a sulky of the character described, the combination of a frame having an arch with a cross member, a pair of diverging shaft members supported on said cross member and extending in the rear thereof, and a seat adjustably connected with the rear portions of said shaft members and with said cross member.

5. In a sulky of the character described, the combination of a frame having an arch comprising a pair of castings provided on their rear sides with perforate swivel-lugs, a cross member joining the upper ends of said castings, a pair of forwardly-diverging shaft members extending across said cross member, brace members joining said cross member and castings to said shaft members, a seat connected with the rear end portions of said shaft members and with said cross member, and caster-stems having vertical swivel portions received by the perforate lugs of said castings.

848,998. BOAT LOWERING AND DETACHING APPARATUS. OLE P. E. KNUDSEN, Seattle, Wash. Filed Feb. 9, 1906. Serial No. 300,315.

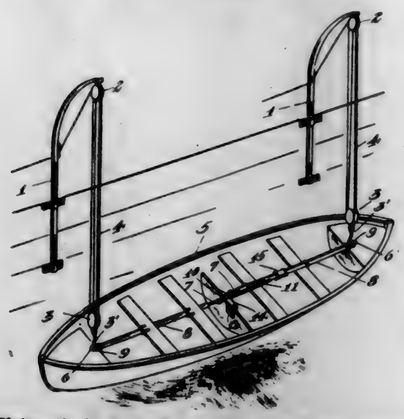

Claim.—1. An apparatus for launching boats comprising means for lowering and holding a boat in a lowered position including opposite blocks provided with hooks, tubular casings extending longitudinally of the boat and being arranged adjacent the seats so as to serve as handholds, rods slidable in said casings and projecting from the outer ends thereof, the hooks of said blocks being engaged with the projecting end portions of said rods, and means for sliding said rods simultaneously.

2. An apparatus for launching boats comprising means for lowering and holding a boat in a lowered position, tubular casings extending longitudinally of the boat, rods slidable in said casings and projecting from the outer ends thereof, the outer end portions of said rods being engaged with said means, a shaft disposed intermediate said casings, opposite arms secured to said shaft and pivotally connected each with its respective rod, a lever secured to said shaft, and a thimble forming a keeper slidable on one of said casings and being formed with a channel adapted to receive the free end portion of said lever.

848,999. WHISTLE-VALVE. LORENZ KRATZENSTEIN, Buffalo, N. Y. Filed Feb. 8, 1906. Serial No. 300,077.

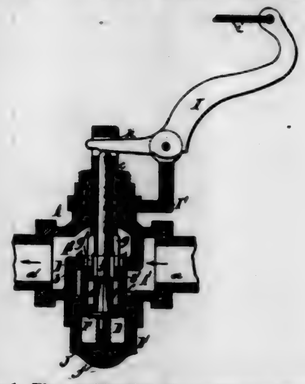

Claim.—1. The combination of a valve-case having inlet and outlet chambers, a passage connecting the same and an auxiliary chamber arranged within said inlet-chamber, a main valve controlling said passage and fitted in said auxiliary chamber, said valve having a relief-passage connecting the auxiliary chamber with the outlet-chamber of the case and a hollow stem extending through the wall of the case, a relief-valve of smaller diameter than the main valve arranged in the auxiliary chamber controlling, said relief-passage and having a stem arranged in the stem of the main valve, and a common operating device for said stems arranged to act upon the relief-valve stem in advance of the main-valve stem, substantially as set forth.

2. The combination of a valve-case having inlet and outlet chambers, a passage connecting the same and an auxiliary chamber arranged within said inlet-chamber, a main valve controlling said passage and fitted in said auxiliary chamber, said valve having a relief-passage connecting the auxiliary chamber with the outlet-chamber, a relief-valve of smaller diameter than the main valve controlling said relief-passage, and a spring arranged in the auxiliary chamber for closing the relief-valve, and means for opening said valves, substantially as set forth.

849,000. TRACTION-ENGINE BRAKE. ARTHUR B. LATHAN, Albia, Iowa. Filed June 8, 1906. Serial No. 320,893.

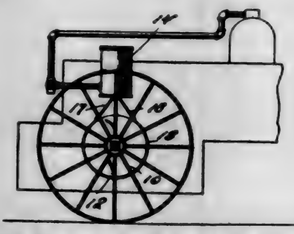

Claim.—In a traction-engine of the class described, the combination of the ground-wheel and its axle, with the band-wheel secured on the axle of the ground-wheel, the band or strap on the rim of the band-wheel having divided ends, a steam-cylinder located directly above the band-wheel, a piston in the cylinder, a piston-rod connected at its upper end with the bottom of the piston, the lower end of the piston-rod being pivoted to the convergent ends of two links, the other ends of which are connected to the divided ends of said strap, a steam-inlet to the cylinder below the piston, a steam-conduit communicating between said inlet and the boiler, and means, conveniently located,

for controlling the admission of steam to, or shutting it off, from the cylinder.

849,001. VOTING-MACHINE. WILLIAM J. LAUSTERER, Jamestown, N. Y., assignor to The U. S. Standard Voting Machine Company, Rochester, N. Y., a Corporation of New York. Filed Oct. 6, 1905. Serial No. 281,610.

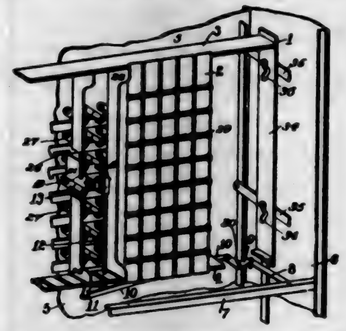

Claim.—1. In a voting-machine, the combination with a plate, the register-frame and means operating upon the ends of the plate and frame for causing their movement relatively toward and from each other, of connections between the plate and frame at their ends and connections intermediate their ends connected for simultaneous operation to maintain the parts parallel during their movements.

2. In a voting-machine, the combination with a plate, the register-frame and means for causing their movement relatively toward and from each other, of means auxiliary to said operating means and connecting the plate and frame at a different point for maintaining the parallelism of the parts of the frame and plate.

3. In a voting-machine, the combination of a plate bearing indicators, a relatively movable register-frame, registers thereon and pallet-bars for operating the registers, and with which the indicators coöperate and the positive connection between the frame and the plate preventing a springing of either member during the movement of the parts.

4. In a voting-machine, a stationary plate and a relatively movable register-frame, means for causing relative movement between them and connections at the middle of said register-frame and plate to hold that portion of the plate and the frame in the same relative positions as the ends.

5. In a voting-machine, a plate, a movable register-frame, connections between the ends of the plate and frame for moving them relatively toward and away from each other, connections between said plate and said frame at a point intermediate of the ends coördinating with the connection at the ends for the purpose of moving said parts uniformly at all points of connection.

6. In a voting-machine, the combination with the casing, the plate, the relatively movable register-frame, a bell-crank pivoted on the frame and having one arm connected to the casing, and a rack connected to the other arm, of a rack connected to the plate and gearing and a gear arranged between said racks for causing equal parallel movement of the plate and frame.

7. In a voting-machine, the combination of the casing, the plate, the relatively movable register-frame, two bell-cranks pivoted on the frame and operating at right angles, a link extending between said bell-cranks and connections between one of said bell-cranks and the frame and between the other and the plate for causing relatively equal and parallel movements of the parts.

8. In a voting-machine, the combination of the casing, the plate, the relatively movable register-frame, racks connected to and moving with each of the parts, a pinion between the racks and connections between the register-frame and the casing for moving one of the racks as the frame is moved.

9. In a voting-machine, the combination with the relatively movable plate and register-frame, of a horizontally-extending rack connected to the plate, a vertically-movable rack connected to the frame, the pinion between them and means for actuating the vertical rack relatively to the frame when the latter is moved relatively to the plate.

10. In a voting-machine, the combination with the relatively movable plate and register-frame, of the horizontal rack extending rearwardly from the plate, the vertically-movable rack on the frame, the pinion between them, the bell-crank on the frame movable in a vertical plane and connected to the rack, the bell-crank movable in a horizontal plane connected to the first-mentioned bell-crank and mediately to the plate.

11. In a voting-machine, the combination with the relatively movable plate and register-frame, the register-castings on the latter, and the support independent of the channels, of the horizontal rack on the plate, the pinion journaled on the support, and meshing with the rack, the vertical rack on the frame also meshing with the pinion and connections intermediate said rack and the plate for causing the reciprocation of the former when the plate and frame are moved relatively.

849,002. CLOSURE FOR GAS-TANKS. ERNEST F. LLOYD, Detroit, Mich. Filed May 15, 1905. Serial No. 260,532.

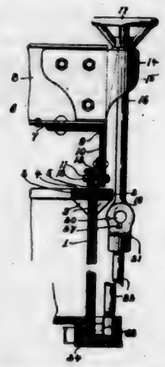

Claim.—1. The combination with a receptacle for gas and a cover for said receptacle, of a downwardly-extending flange on the bottom of the receptacle to which the side wall of the receptacle is secured, a bracket provided with a screw-threaded socket, bolts extending through the flange and wall of the receptacle and through the bracket to secure said bracket to the receptacle, a rod screw-threaded at its lower end to engage said socket and extending upward to near the top of the receptacle, a vertically-adjustable bolt carried by the cover, and means for detachably securing the lower end of the bolt to the upper end of the rod.

2. The combination with a receptacle for gas and a cover for said receptacle, of a bracket secured to the cover and provided with an opening, an eyebolt adapted to swing in said opening and screw-threaded at its upper end, a wheel-nut on said end of the bolt in contact with the upper side of the bracket, a clevis attached to the receptacle to receive the eye of the eyebolt, and a pin detachably engaging said eye and openings in the clevis.

3. The combination with a receptacle for gas, and a cover for said receptacle, of an eyebolt adjustably secured to the cover and having an elongated opening or eye at its lower end, a clevis secured to the receptacle and provided with openings having laterally-extending slots at their lower sides a pin adapted to engage the eye and the openings in the clevis, a lip extending laterally from one end

of the pin in one direction, and a weight-handle extending laterally from the other end of the pin in another direction.

4. The combination with a receptacle for gas and a cover for said receptacle, of a bracket secured to the cover and formed with a downwardly-enlarging opening, an eye-bolt having a screw-threaded upper end and an elongated eye at its lower end supported in said opening, a wheel-nut on the threaded end of the bolt in engagement with the upper side of the bracket, a bracket secured to the receptacle at the lower edge thereof, a rod secured at its lower end to said bracket, a clevis on the upper end of said rod provided with openings having slots at their lower sides, a pin to engage said openings and the eye of the eyebolt, a lip extending laterally in one direction from one end of said pin, and a weighted handle extending laterally from the other end of the pin in an opposite direction.

849,003. EVAPORATING-PAN. WILLIAM R. MACKLIND, Mineral Point, Mo. Filed June 11, 1906. Serial No. 321,179.

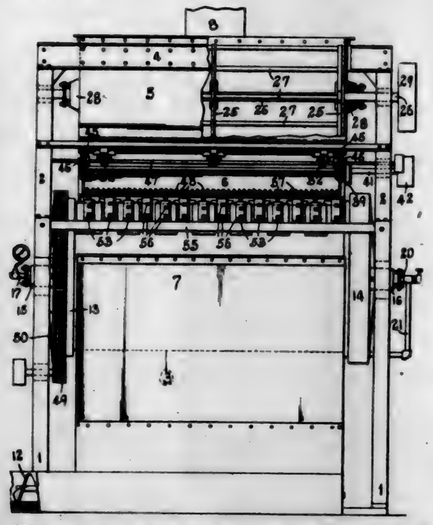

Claim.—1. In a drier, a hollow rotating drum, means for supplying steam to the interior of said drum, one end of said drum being enlarged to form a water-trap to receive the water formed by the condensed steam, a segmental-shaped receptacle located within the enlarged portion of said drum above the horizontal axis thereof, buckets fastened to the inside of the enlarged portion of the drum for taking the water from said trap and emptying it into said receptacle, and a discharge-pipe extending through the axle on which the drum rotates and connected at its inner end to the lower end of said segmental-shaped receptacle; substantially as described.

2. A drier comprising a transversely-arranged rotating drum, a hopper for holding the material to be dried and provided in its bottom with discharge-openings, an inclined feed-table arranged between said hopper and drum and provided at its upper end with a receptacle to receive the material as it leaves the hopper, a rotary mixer mounted in said receptacle, means for supplying steam to the interior of said drum to dry the material thereon, a casing surrounding the drum for collecting the steam or vapor arising from said material and conveying it away from the drum, a coil located in said casing below the drum, and means for conveying the water, formed by the condensed steam in said drum, to said coil for heating the same; substantially as described.

3. In a drier, a hopper for holding the material to be dried and provided with discharge-openings, a horizontally-disposed heated drum for drying said material arranged below the hopper, a vibrating table located between the drum and hopper for receiving the material from the hopper and feeding it to said heated drum, and a rotary mixer mounted in said hopper; substantially as described.

4. In a drier, a hopper for holding the material to be dried, a heated drum for drying said material, an inclined feed-table located between said hopper and heated drum, a hopper at the upper edge of said table to receive the material from the supply-hopper, a rotary mixer in the table-hopper, and a dam in said hopper for causing the material to flow evenly over the surface of the table; substantially as described.

5. In a drier, a heated device for drying material, a vibrating feed-table for supplying the material to said heated device, said table being provided at its edge with corrugations which cause the material to flow therefrom in a number of uniform streams; substantially as described.

6. In a drier, a horizontally-arranged heated drum for drying material, a hopper for holding the material to be dried, an inclined feed-table located between said hopper and drum and provided with a corrugated edge, means for vibrating said table, means for removing the dry material from said drum comprising a plurality of rows of blades extending the full length of the drum, the blades of one row being staggered with respect to the blades of the other row, a plurality of brackets adjustable horizontally toward and away from the drum, means for clamping the blades to the brackets, and means for adjusting each blade vertically relatively to the bracket on which it is mounted; substantially as described.

849,004. SUSPENDER-BUCKLE. JULIUS MALTBY, Waterbury, Conn., assignor to Waterbury Buckle Co., Waterbury, Conn., a Corporation. Filed Oct. 26, 1906. Serial No. 340,665.

Claim.—1. In a suspender-buckle, the combination with the frame thereof, of a buckle-lever mounted upon the upper portion of the said frame, and a web-gripping slide mounted upon the ends of the frame so as to slide thereupon, and proportioned in width to the width of the frame so that it will grip the webbing between its lower edge and the lower bar of the frame, while its upper edge is coacting with the lever for holding the running portion of the webbing.

2. In a suspender-buckle, the combination with the frame thereof, of a buckle-lever mounted upon the upper portion of the frame, and a web-gripping slide mounted upon the ends of the frame and provided near its ends with rearwardly-offset web-holding fingers under which the edges of the webbing are caught to hold the webbing flat against the back of the slide.

849,005. KITCHEN IMPLEMENT. RUDOLPH H. MEYER, Knoxville, Pa. Filed Apr. 21, 1906. Serial No. 313,025.

Claim.—1. A combination implement comprising a handle having one end turned at a sharp angle ending in a flat point and having a flat inclined lower face, and a shoulder on the lower edge of the handle coöperating with said inclined lower face, said shoulder on its lower edge sloping from its end toward the handle.

2. A combination implement comprising a handle having one end turned at a sharp angle and provided with an outer rounded face, a flat sharp point and a flat inclined

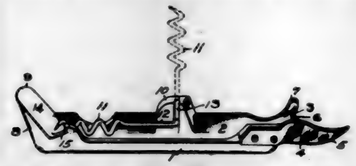

lower face, and a shoulder on the lower edge of the handle coöperating with said inclined lower face.

849,006. PROPELLING AND FLOATING DEVICE FOR BOATS AND THE LIKE. HANS MIKOREY, Schöneberg, Germany. Filed Dec. 7, 1905. Serial No. 290,695.

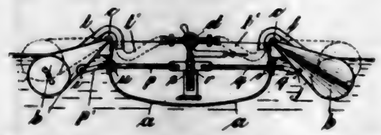

Claim.—A propelling and floating device for boats and the like, comprising, in combination, two floats *b* attached each to one side of the boat by means of a pivotal connection *c* and shaped each in such a manner that its upper and lower sides while diverging from their pivotal connection *c* are joined to a cylindrical body and join each other at the bow of the boat in cutter-like fashion, horizontal rods *p*, *q* led through stuffing-boxes *u*, *v* in the boat from the interior to the outside of the boat and pivotally connected with their outer ends to the lower flat sides of said floats *b* and provided at their inner ends, one with left-hand screw-threads and the other with right-hand screw-threads, a bracket *s* fixed to the bottom of the boat, a socket *r* revolubly mounted in said bracket *s* and provided at its outside with a hand-wheel and at its inside with right and left hand screw-threads adapted to receive the correspondingly-screw-threaded ends of said rods *p*, *q* and, when being turned to raise or lower said floats *b*, propellers *n* and propelling-motors *m* one placed at the rear end of each float *b*, a generator or equivalent power source placed in the boat itself, steam-pipes *l'*, *l* between said propelling-motor and said generator, a three-way cock or equivalent device inserted in the connection between the steam-pipes for each motor and adapted to effect the propulsion either by both motors or for steering purposes by any one of them only, substantially as described and shown and for the purpose set forth.

849,007. HAT-VENTILATOR. WILLIAM E. MILLER, Bingham Canyon, Utah. Filed Dec. 15, 1906. Serial No. 348,040.

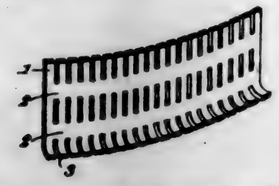

Claim.—A hat-ventilator comprising a strip having parallel openings passing through its longer transverse dimension, said strip being cut away between said openings whereby substantially tubular portions are formed which are integrally joined together by webs, the lower ends of said tubular portions being curved laterally.

849,008. HAM-COMPRESSING MACHINE. GIOVANNI MONGARDI, Boston, Mass., assignor of one-half to Henry Fiorentini, Boston, Mass. Filed May 2, 1906. Serial No. 314,842.

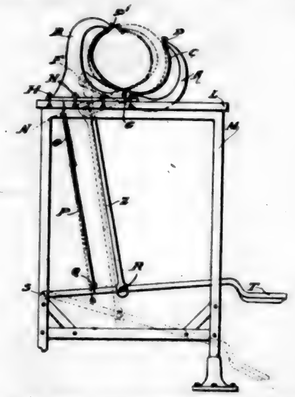

Claim.—1. A meat-compressing machine comprising a fixed standard terminating in a fixed jaw, a compressing-lever pivoted below said jaw, and having a jaw movable toward and from the fixed jaw, said standard and lever being separated by a space which is overhung by the said jaws when they are brought together, a flexible jacket adapted to occupy said space, and having ears adapted to engage said jaws, and mechanism for moving said lever to contract the jacket and compress its contents.

2. A meat-compressing machine comprising a fixed standard terminating in a fixed jaw, a compressing-lever pivoted below said jaw, and having a jaw movable toward and from the fixed jaw, said standard and lever being separated by a space which is overhung by the said jaws when they are brought together, a flexible jacket adapted to occupy said space, and having ears adapted to engage said jaws, mechanism for moving said lever toward the standard to contract the jacket, and means for automatically retracting the lever to release the jacket.

3. A meat-compressing machine comprising a fixed standard terminating in a fixed jaw, a compressing-lever pivoted below said jaw, and having a jaw movable toward and from the fixed jaw, said standard and lever being separated by a space which is overhung by the said jaws when they are brought together, a flexible compressor attached at its ends to said jaws, and occupying said space, a flexible jacket adapted to be detachably inserted in the compressor, and provided with means for adjustably connecting its edges, and mechanism for moving the lever to contract the compressor and jacket.

4. A meat-compressing machine comprising a fixed standard terminating in a fixed jaw, a compressing-lever pivoted below said jaw, and having a jaw movable toward and from the fixed jaw, said standard and lever being separated by a space which is overhung by the said jaws when they are brought together, a treadle-lever connected with the compressing-lever, and a retracting-spring connected with the treadle-lever.

849,009. METHOD OF ELECTRIC LIGHTING. DANIEL M. MOORE, Newark, N. J., assignor to Moore Electrical Co., New York, N. Y., a Corporation of New York. Filed Apr. 18, 1903. Renewed Sept. 27, 1906. Serial No. 336,497.

Claim.—1. The herein-described method of converting electric energy into light and distributing the same, which consists in passing the electric energy through a conducting column of gas adapted to be rendered luminous thereby, and prolonging or extending said column around over or through the space to be lighted.

2. The herein-described method of converting electric energy and producing light thereby, consisting in passing the energy through an elongated column or columns of gas in which the energy is converted into light and distributing or conducting the luminous columns around or through the space to be illuminated.

3. The herein-described method of converting electric energy into light and distributing the same, consisting in converting said energy into a luminous column or columns of gas or vapor and distributing or conducting the column over or around the space to be illuminated.

849,010. OVEN. JOHN J. MURPHY, Boston, Mass. Filed Oct. 3, 1906. Serial No. 337,306.

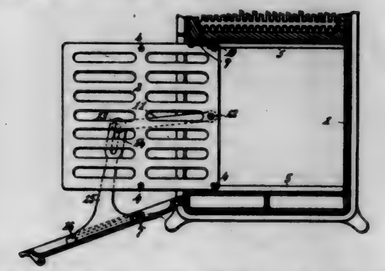

Claim.—In an oven, sliding shelves having a link pivotally attached at the rear about midway of the sides of the oven, in combination with a bracket-arm secured to the inner side of the oven-door and extending inward therefrom at an angle of about forty-five degrees therewith to a point near the central line of the shelves when the door is open at right angles, said bracket-arm having a slot in its free extremity in which traverses a stud on the free end of said link, substantially as and for the purpose specified.

849,011. PICKING-BLOCK. MICHAEL J. MURRAY, Dubuque, Iowa. Filed Apr. 5, 1906. Serial No. 310,097.

Claim.—A friable or easily-disintegrated picking-block for poultry consisting of water-slaked lime, salt, Venetian red, gravel, sand and grains substantially in the proportions specified.

849,012. CANDLE STICK OR HOLDER. HERMAN F. NEMS, Brooklyn, N. Y., assignor to Bensiger Bros., New York, N. Y., a Firm. Filed Oct. 15, 1902. Serial No. 127,840.

Claim.—1. A candle stick or holder consisting of an upper support and a lower support comprising inwardly and downwardly inclined surfaces for automatically centering and holding the lower end of the candle.

2. A candle stick or holder consisting of an upper support and a lower support comprising means for automatically centering and holding the lower end of the candle, and a connection between said support and said base extending a considerable distance laterally of the said parts.

3. A candle stick or holder consisting of an upper rigid circular support and a base provided with a plurality of inclined wedge-shaped devices for automatically centering and holding the lower end of the candle, and a connection between said support and said base, said support, base and connection being formed integrally.

849,013. WHEELED SCRAPER. JOHN S. NORRIS, Red Lodge, Mont. Filed Dec. 4, 1906. Serial No. 346,284.

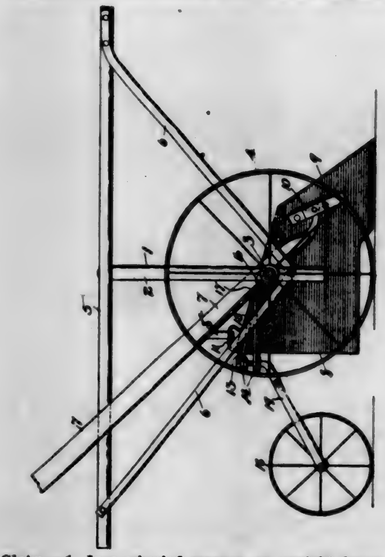

Claim.—1. In a wheeled scraper, an upright frame having wheels journaled at its ends, a cross-bar secured to said frame, a trailer-wheel swivelly secured to said cross-bar, levers fulcrumed on said upright frame, and a scoop pivotally secured to said levers and supported by the cross-bar, substantially as shown and described.

2. In a wheeled scraper, a wheeled frame, levers fulcrumed on said frame, a scoop having its front end pivotally secured to said levers and its rear end supported by said frame, ears on the sides of said scoop, and hooks on said levers to engage said ears to manipulate the front end of the scoop, substantially as shown and described.

3. In a wheeled scraper, a wheeled frame, levers fulcrumed on said frame, a scoop having its front end pivotally secured to the front ends of said levers, lugs on the rear end of said scoop to engage the frame, ears on the sides of the scoop, and hooks on said levers to engage said ears, substantially as shown and described.

4. In a wheeled scraper, an inverted-U-shaped frame, rectangular frames at each side thereof, wheels journaled on said rectangular frames, other rectangular frames swivelly secured in the first-mentioned rectangular frames, levers fulcrumed in said swiveled frames, a scoop having its front end pivotally secured to the front ends of said levers, ears on the sides of said scoop, and hooks on said levers to engage said ears, substantially as shown and described.

5. In a wheeled scraper, an inverted-U-shaped frame, a rectangular frame at each side of said inverted-U-shaped frame, wheels journaled on said rectangular frames, a cross-bar secured to said inverted-U-shaped frame, a trailer-wheel swivelly secured to said cross-bar, other rectangular frames swivelly mounted in the first-named rectangular frames, levers fulcrumed in said swiveled frames, a scoop having its front end pivotally secured to the front ends of said levers, lugs on the rear end of the scoop to engage the cross-bar aforesaid, ears on the sides of the scoop, and hooks on the levers to engage said ears, substantially as shown and described.

849,014. HAY-LADDER FASTENER. JAMES OGLE, Wingate, Ind. Filed July 12, 1906. Serial No. 325,962.

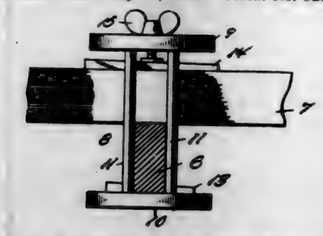

Claim.—1. A hay-frame including sills and cross-beams, and clamps for connecting the same together, each clamp including a pair of plates and pairs of spaced bars connecting said plates, and spaces between said bars forming openings through which the sills and cross-beams extend, and a member carried by one of said plates and movable into and out of contact with the corresponding cross-beam.

2. A hay-frame including sills and cross-beams, and clamps for connecting said parts together, each clamp including a pair of plates, pairs of spaced bars connecting said plates, the spaces between said bars forming openings through which the sills and cross-beams extend, a presser-plate secured to the upper clamp-plate, and means for moving said presser-plate into and out of contact with the upper face of the cross-beams.

3. A hay-frame including sills and cross-beams, said sills being formed on their under faces with a series of transverse openings corresponding in number with the number of clamps; clamps for connecting said sills and cross-beams and comprising upper and lower plates and spaced connecting-bars, the spaces between said bars forming openings through which the sills and cross-beams project; a presser-plate secured to the upper plate of each clamp and adapted to be moved into and out of contact with the upper face of the corresponding cross-beam; and a wedge seated in each of said transverse openings for preventing endwise movement of the sills with respect to the clamps.

4. A hay-frame including upper and lower plates, bars connecting said plates, and spaced apart at equal distances from each other; a set-screw working through the upper plate and located midway between the several bars, said set-screw projecting on opposite sides of said upper plate; and a presser-plate secured to the lower end of said set-screw.

849,015. PROJECTILE. EDWARD OHL, Strassburg, Germany. Filed June 7, 1906. Serial No. 320,619.

Claim.—1. A projectile having a shell, rings surrounding the same, rotary balls held by said rings, and a casing surrounding the balls and the shell and rotating on the latter on ball-bearings, substantially as and for the purpose set forth.

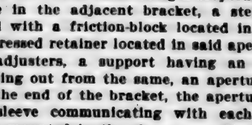

2. A projectile, rings surrounding the same, and rotary balls held by the said rings, those balls of each alternate annular row projecting beyond those of the intermediate rows, substantially as and for the purpose set forth.

849,016. SASH-ADJUSTER. JAMES W. PATERSON, New Castle, Pa. Filed Sept. 7, 1905. Serial No. 277,304.

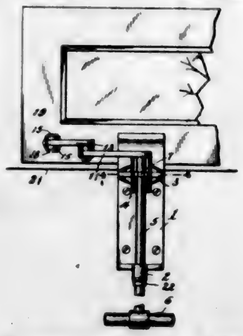

Claim.—1. In sash-adjusters, a plate, a bracket projecting from said plate and provided with a bearing-sleeve having an enlarged hole at its upper end, a stem engaging said sleeve and provided with a depending handle, a friction-block on said stem, a spring-pressed retainer engaging said friction-block and located in an aperture in said bracket and connecting devices to be secured to a sash comprising a crank secured at the upper end of said stem adjacent said sleeve.

2. In sash-adjusters, a plate formed with outwardly-projecting brackets provided with bearing-sleeves, one of said bearing-sleeves being formed with an enlarged hole at one end, there being a coöperating transverse aperture in the bracket extending to the rear wall of said plate, an operating-stem in said sleeve and provided with connecting means, a friction-block on said stem and located within said hole and a retainer and operating-spring coöperating with said friction-block and located in said transverse aperture.

3. In sash-adjusters, a plate formed with outwardly-projecting brackets, bearing-sleeves on said brackets, one of said bearing-sleeves being provided with an enlarged hole at one end of the same and there being a coöperating transverse aperture in the adjacent bracket, a stem in said sleeves formed with a friction-block located in said hole and a spring-pressed retainer located in said aperture.

4. In sash-adjusters, a support having an apertured bracket extending out from the same, an apertured sleeve supported on the end of the bracket, the apertures of the bracket and sleeve communicating with each other, a stem rotatably mounted in the sleeve, an adjustable friction device yieldingly mounted in the aperture of the bracket and contacting with the outer face of the stem and connections from the stem to the sash to move the same.

5. In a deck-sash opener, in combination, a hollow bracket, a spindle journaled within the head of the bracket, a friction-block on the spindle and housed within the bracket-head and having a flattened face, the bracket being apertured to form at one end of the block a bearing for the spindle and at the other end an opening to admit the block, a spring-advanced plunger, within the shank of the

bracket engaging the friction-block, a crank, and link connection for uniting the spindle with the deck-sash.

849,017. FILTER. JOHN T. H. PAUL, Chicago, Ill., assignor to E. Goldman & Co., Chicago, Ill., a Corporation of Illinois. Filed Oct. 25, 1906. Serial No. 340,480.

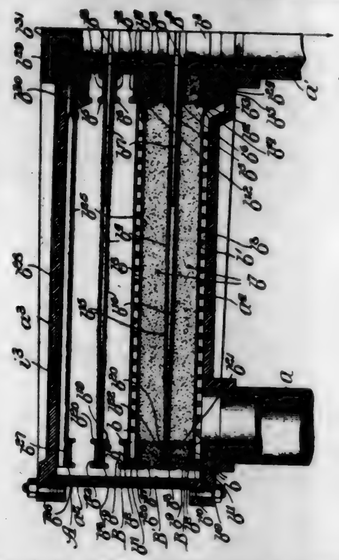

Claim.—1. In a filter, the combination of a casing provided with an inlet and having a central outlet, and filter-cells within the casing and forming therewith an annular chamber, the filter-cells being constructed with telescoping central conduit-sections and distributer and collector elements equipped at their external peripheries with packing-rings, and filter masses extending between and compacted between said packing-rings, for the purpose set forth.

2. In a filter, the combination of a casing provided with a central outlet, distributer elements equipped at their outer peripheries with packing-rings and having passages through which liquor may gain access to the distributer elements, collector elements equipped at their outer peripheries with packing-rings opposed to said first-named packing-rings and filter material confined between the distributer and collector elements and compacted between said packing-rings.

3. In a filter, the combination of a casing having a central outlet-passage, and cells within said casing and forming therewith an annular chamber, and comprising distributer elements equipped centrally with conduit-sections and at their external peripheries with packing-rings, collector elements equipped centrally with conduit-sections telescoping with said first-named conduit-sections and equipped at their external peripheries with packing-rings, and filter masses confined between said distributer elements and collector elements and compacted between said packing-rings, for the purpose set forth.

4. In a filter, the combination of a casing provided at its bottom with a central outlet-passage, a radially-corrugated perforate distributer element resting upon said bottom of said casing, and provided with a central conduit-section and equipped at its external periphery with a packing-ring, collector elements having a conduit-section telescoping with said first-named conduit-section and equipped at its external periphery with a packing-ring opposed to said first-named packing-ring, and filter material confined between said distributer and collector elements and compacted between said packing-rings, for the purpose set forth.

5. In a filter, a distributer element comprising a radially-corrugated perforate plate having a central opening, a conduit-section connected with said perforate plate at said central opening, and a packing-ring connected with the outer periphery of said perforate plate and having passages for admission of liquor to the channels formed by the corrugations of said plate.

6. In a filter, a distributer element comprising a radially-corrugated perforate plate having a central opening, a conduit-section fitted in said opening and equipped externally between its ends with a flange bearing against one surface of said plate, a packing-ring fitted on said conduit-section and bearing against the other surface of said plate, and a packing-ring connected with the outer periphery of said perforate plate and having a dependent flange provided with channels, for the purpose set forth.

7. In a filter, a collector element comprising a screen equipped centrally with conduit-sections formed to afford packing-rings, with passages extending between the packing-rings to admit liquor to the central conduit of the filter, and a packing-ring connected with the outer periphery of said collector element.

8. In a filter, a collector element comprising a pair of annular screens, spacing members between the screens at the inner peripheries thereof, conduit-sections applied to the inner margins of said screens and affording packing-rings, and a binding applied to the outer peripheries of said screens and affording packing-rings, for the purpose set forth.

9. In a filter, the combination of a casing having a central outlet-passage, distributer elements equipped at their outer peripheries with packing-rings having depending channeled flanges, collector elements equipped at their external peripheries with packing-rings, filter material confined between the distributer elements and collector elements, and screens adjacent to the intermediate distributer elements and equipped at their external peripheries with packing-rings opposed to the packing-rings of the collector elements.

849,018. PROCESS OF MAKING CAMPHOR FROM ISOBORNEOL. CURT PHILIPP, Dresden, Germany, assignor to Chemische Fabrik von Heyden Aktiengesellschaft, Dresden, Germany. Filed May 4, 1906. Serial No. 315,202.

Claim.—An improvement in the process of making camphor from isoborneol, which consists in adding isoborneol to nitric acid below the boiling-point of the latter, taking care that the reaction is brought about by the presence of small quantities of lower oxy compounds of nitrogen, substantially as and for the purpose specified.

849,019. CHANNELING-MACHINE. WILLIAM PRELLWITZ, Phillipsburg, N. J., assignor to Ingersoll-Rand Company, New York, N. Y., a Corporation of New Jersey. Filed Oct. 23, 1905 Serial No. 283,987.

Claim.—1. A channeler comprising a wheeled truck, a drill pivoted thereon, means for moving the truck to cause the drill to cut a channel to a predetermined point and a motor connected to the drill for swinging it in the arc of a circle to cause the drill to complete the channel from said predetermined point.

2. A channeler comprising a wheeled truck, a drill pivoted thereon, a motor for driving the truck to cause the drill to cut a channel to a predetermined point and another motor connected to the drill for swinging it in the arc of a circle to cause the drill to complete the channel from said predetermined point.

3. A channeler comprising a wheeled truck, a drill pivoted thereon, a motor for driving the truck to cause the drill to cut a channel to a predetermined point and another motor mounted on the truck and connected to the drill for swinging it in the arc of a circle to cause the drill to complete the channel from said predetermined point.

4. A channeler comprising a wheeled truck, a drill pivoted thereon, means for locking the drill to and releasing it from the truck, a motor for driving the truck to cause the drill to cut a channel to a predetermined point while

the drill is locked to the truck and another motor connected to the drill for swinging it in the arc of a circle to cause the drill to complete the channel from said predetermined point when the drill is released from the truck.

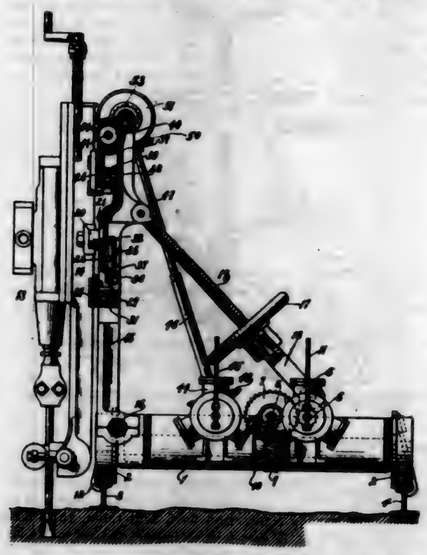

5. A channeler comprising a wheeled truck, a drill pivoted thereon, means for locking the drill to and releasing it from the truck, a motor for driving the truck to cause the drill to cut a channel to a predetermined point when locked to the truck and another motor mounted on the truck and connected to the drill for swinging it in the arc of a circle to cause the drill to complete the channel from said predetermined point when the drill is released from the truck.

6. A channeler comprising a wheeled truck, a drill pivoted thereon, means for locking the drill to and releasing it from the truck, means for moving the truck to cause the drill to cut a channel to a predetermined point while locked to the truck and a motor connected to the drill for swinging it in the arc of a circle to cause the drill to complete the channel from said predetermined point when the drill is released from the truck.

7. A channeler comprising a wheeled truck, a drill pivoted thereon, means for locking the drill to and releasing it from the truck, means for moving the truck to cause the drill to cut a channel to a predetermined point when locked to the truck and a motor mounted on the truck and connected to the drill for swinging it in the arc of a circle to cause the drill to complete the channel from said predetermined point when the drill is released from the truck.

8. A channeler comprising a wheeled truck, a frame hinged thereto, a drill, its shell pivoted on the frame, means for adjusting the frame into different angular positions with respect to the truck, a motor for driving the truck to cause the drill to cut a channel to a predetermined point, another motor mounted on the truck and connected to the drill for swinging it in the arc of a circle to cause the drill to complete the channel from said predetermined point.

9. A channeler comprising a wheeled truck, a truck-frame, a drill, its shell pivoted on the frame, curved guides on the frame for the shell concentric with and upon opposite sides of the pivotal connection of the shell with the frame, a motor mounted on the truck and connections between the motor and shell for permitting the motor to swing the shell.

10. A channeler comprising a wheeled truck, a frame hinged thereto, a drill, its shell pivoted on the frame, means for adjusting the frame into different angular positions with respect to the truck, a worm carried by the frame, a segment carried by the shell meshing therewith, a motor mounted on the truck and an extensible and contractible shaft geared to the motor and worm.

11. A channeler comprising a truck-frame, a drill, its shell pivoted to the frame, guides on the frame concentric with and upon opposite sides of the pivotal connection, upper and lower segments carried by the shell, engaged with the guides and means for swinging the drill-shell.

12. A channeler comprising a truck-frame, a worm mounted thereon, a motor for operating the worm, a drill, its shell pivoted to the frame, a guide on the frame concentric with the pivotal connection and a segment carried by the shell engaged with the guide, the said segment having a toothed rack meshing with the worm.

849,020. SIDEWALK-LIGHT. EMANUEL A. REICH, Wheeling, W. Va. Filed Nov. 19, 1906. Serial No. 343,963.

Claim.—1. In a knockdown frame for sidewalk-lights, T-shaped supporting-bars, spaced lugs struck up from the table portions of said bars, and inverted-T-shaped bars mounted transversely of the first-mentioned bars with their base-flanges underlying the points of said lugs.

2. In a knockdown frame for sidewalk-lights, T-shaped supporting-bars, lugs struck up from the table portions of said bars, and inverted-T-shaped bars mounted transversely of the first-mentioned bars on the table portions thereof, the said lugs serving as spacers for the mounting of said inverted bars and adapted for holding said bars in upright positions.

3. In a knockdown frame for sidewalk-lights, T-shaped supporting-bars, lugs struck up from the table portions of said bars, and inverted-T-shaped bars mounted transversely of the first-mentioned bars on the table portions thereof, the last-mentioned bars having stems relatively shorter in length than the thickness of the light to be carried thereby, and the lugs of the first-mentioned bars in clamping engagement with the bases of the last-mentioned bars.

4. In a knockdown frame for sidewalk-lights, T-shaped supporting-bars, T-shaped bars mounted in inverted position transversely of the first-mentioned bars on the table portions of the latter, and lugs struck up at spaced intervals in said table portions, said lugs being spaced according to the length of the glass lights to be supported and being in clamping engagement with the inverted bars whereby when said lights are mounted upon the last-mentioned bars the latter are locked against lateral movement.

5. In a knockdown frame for sidewalk-lights, T-shaped supporting-bars, T-shaped bars mounted in inverted position transversely of the first-mentioned bars on the table portions of the latter, and lugs struck up at spaced intervals in said table portions, said lugs being spaced according to the length of the glass lights to be supported by said last-mentioned bars and being in clamping engagement with said last-mentioned bars whereby when said lights are mounted in the frame said last-mentioned bars are locked against lateral movement, the lugs of each table portion being all extended in the same direction with the exception of the lug at the end toward which the plurality of lugs are directed, which lug is reversely directed.

6. In a frame for sidewalk-lights, supporting bars or tables, T-shaped bars mounted in inverted position transversely of said tables, lugs struck up at spaced intervals in the faces of said tables, said lugs being in clamping engagement with the base-flanges of said bars, said base-flanges serving as supports for the opposite ends of glass lights, said lugs and said glass lights coacting to hold said bars against lateral movement, said bars having stems

of less length than the thickness of the lights carried by the bars.

849,021. GLASS-FURNACE. SOLON O. RICHARDSON, Jr., Toledo, Ohio. Filed July 2, 1904. Serial No. 215,053.

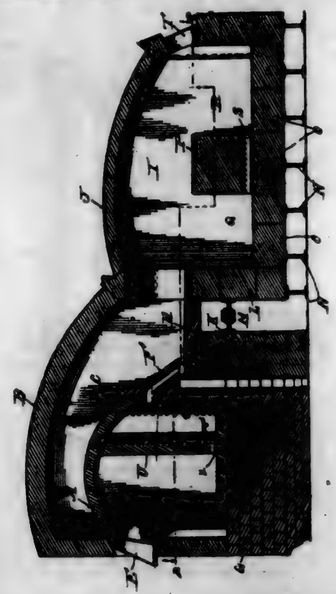

Claim.—1. A glass-furnace which comprises a heating-chamber and a plaining-chamber, in free communication with each other above the metal-line of the plaining-chamber, a melting-pot mounted in the heating-chamber, a metal-conduit leading from the outlet of the melting-pot into the plaining-chamber, said furnace being provided with an air-port interposed between the heating-chamber and the plaining-chamber below said conduit.

2. A glass-furnace, comprising a heating-chamber, a substantially-closed melting-pot mounted in said heating-chamber, said pot being provided with a feed-port opening outside of said heating-chamber, and with an outlet-port discharging into the furnace, said furnace being also provided with a plaining-chamber, a conduit arranged to receive metal from said pot and to take it into said plaining-chamber, said furnace being also provided with an air-port interposed between the plaining-chamber and the heating-chamber, and below the level at which said conduit crosses said air-port.

3. In a glass-furnace, the combination with a heating-chamber, a melting-pot mounted in said chamber and having a feed-in opening at one end and arranged to discharge into said heating-chamber, a plaining-chamber, means for conducting the product of said pot from the heating-chamber to the plaining-chamber, and means for passing the flame and gases through said heating-chamber and around said pot, so as to reduce the contents of said pot and maintain the fluidity of the contents of said plaining-chamber.

849,022. TRUCK. ALONZO P. SANDS, Maryville, Ill., assignor of one-half to Albert Hrubetz, Maryville, Ill. Filed Nov. 12, 1906. Serial No. 343,032.

Claim.—1. The combination of a truck, a tiltable centrally-fulcrumed table having a transverse supporting and retaining ledge at its inner end and carried by said truck, and means for tilting said table with its load into an approximately upright position, substantially as set forth.

2. The combination of a truck, a pair of tiltable centrally-fulcrumed tables each having a transverse supporting and retaining ledge at its inner end and carried by said truck, and means for tilting said tables into an approximate upright position, substantially as set forth.

3. The combination of a truck, a pair of tiltable centrally-fulcrumed tables each having a transverse supporting and retaining ledge at its inner end and carried by said truck, and operating means for simultaneously tilting said tables into an approximately upright position, substantially as set forth.

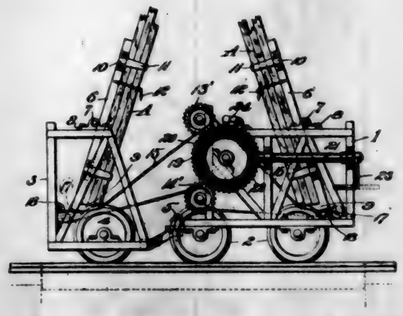

4. The combination with a truck, a tiltable centrally-fulcrumed table having a transverse supporting and retaining ledge at its inner end and carried by said truck, an operating-rope having connection with said table, and means by which said rope is operated to impart tilting movement to said table, substantially as set forth.

5. The combination of a truck, a tiltable centrally-fulcrumed table having a transverse supporting and retaining ledge at its inner end and carried by said truck, a pair of drums, means for rotating said drums, and flexible means of connection between said drums and said table, whereby said table is tilted when said drums are rotated, substantially as set forth.

6. The combination of a truck, a tiltable centrally-fulcrumed table having a transverse supporting and retaining ledge at its inner end and carried by said truck, a pair of drums, means for rotating said drums, and an operating-rope connected to said table and having connection with said drums whereby said table is tilted when said drums are rotated, substantially as set forth.

7. The combination of a truck, a pair of tiltable centrally-fulcrumed tables each having a transverse supporting and retaining ledge at its inner end and carried by said truck, a pair of drums, means for rotating said drums, and flexible connections between said tables and drums through the medium of which said tables are tilted simultaneously when said drums are rotated, substantially as set forth.

8. The combination of a truck, a pair of tiltable centrally-fulcrumed tables each having a transverse supporting and retaining ledge at its inner end and carried by said truck, operating-ropes connected to said tables, idlers on which said ropes operate, a pair of drums to which said ropes are connected, and means for operating said drums, substantially as set forth.

9. The combination of a truck, a tiltable centrally-fulcrumed table having a transverse supporting and retaining ledge at its inner end and carried by said truck, and means for tilting said table into an approximately upright position, said table-tilting means including an extensible shaft carried by said truck, substantially as set forth.

10. The combination of a truck, a tilting table centrally fulcrumed in horizontal position on the truck, means for tilting the table to an approximately upright position, and means for supporting and retaining the load when the table is in either a horizontal or an approximately upright position.

849,023. DEVICE FOR FASTENING SEWING-MACHINES IN WAGONS. FRANCIS M. SARGENT, Washington, Pa. Filed Oct. 5, 1906. Serial No. 337,538.

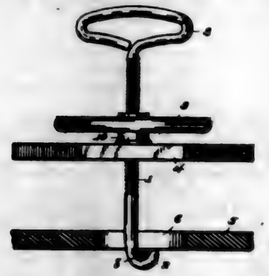

Claim.—1. In a device for fastening sewing-machines in wagons, a longitudinal threaded stem, a hook on the lower end of the stem, a horizontal cross-bar centrally and slidably mounted on said stem, a follower mounted on said stem above the cross-bar, and hook-engaging means carried by the wagon-body.

2. In a device of the character described, the combination with the bottom of a wagon-body having hook-engaging means, of a threaded stem, a hook carried by the lower end of said stem, a horizontally-extending longitudinal cross-bar slidable upon said stem, and a heavy threaded hand-wheel follower on said stem above said cross-bar whereby a ready adjustment may be secured.

3. In a device of the character described, the combination with the bottom of a wagon-bed having hook-engaging means mounted therein, of a threaded stem adapted for projecting vertically through a sewing-machine treadle, a hook on the lower end of said stem for interlocking engagement with said hook-engaging means, a hand-grasp provided on the upper end of said stem, a clamping member slidable upon said stem and adapted for resting upon said treadle, and a hand-wheel follower in threaded engagement with said stem above said clamping member.

4. In a device of the character described, the combination with a wagon-bed having a slot in its bottom, of a rod secured to said bottom and extending transversely across said slot, a threaded stem having a hook upon its lower end for engagement with said rod, said stem being adapted for insertion through the treadle of a sewing-machine, a slidable cross-bar centrally mounted on said stem, and means carried by said stem whereby said bar may be clamped upon said treadle.

5. In means for fastening sewing-machines in wagons, a wagon-bottom having a slot therein, a rod extended transversely across said slot and attached to the wagon-bottom, a longitudinal threaded stem, a hook on the lower end of said stem, a bar slidably mounted on said stem, and a threaded hand-wheel follower on said stem above said bar.

6. In a fastening device for sewing-machines, the combination with a wagon-body having a slot in its bottom, of a rod secured to said bottom and extending transversely across said slot, a threaded stem having a hook upon its lower end for engagement with said rod, said stem being adapted for insertion through an aperture in the treadle of a sewing-machine, a clamping member slidable upon said stem and adapted for resting upon said treadle, and a follower in threaded engagement with said stem above said clamping member whereby the latter is caused to firmly bind upon said treadle, said follower comprising a heavy wheel having an interiorly-threaded hub.

7. In a device of the character described, the combination with a wagon-body, of a longitudinal threaded stem, a hook carried by the lower end of said stem, a handle on the upper end of said stem, a bar slidable upon said stem, a hand-wheel having an interiorly-threaded hub in threaded engagement with said stem above said bar, and a rod, adapted to be engaged by said hook, secured on the under side of the bottom of said wagon-body and extending transversely across a slot provided in said bottom.

849,024. PREPAYMENT TIME-SWITCH APPARATUS. ERNEST SCHATTNER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 23, 1905. Serial No. 266,549.

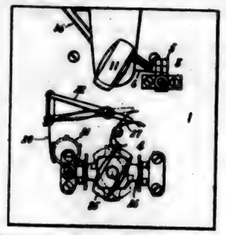

Claim.—1. In a prepayment time-switch apparatus, two switches electrically connected in series and operable entirely independently, a clockwork for opening one of said switches, means for closing this switch and winding the clockwork, and means for automatically stopping said clockwork when either of said switches is opened.

2. In a prepayment time-switch apparatus, two switches electrically connected in series and operable entirely independently, a clockwork for opening one of said switches, manually-operable means for closing this switch and winding the clockwork, and means for automatically stopping said clockwork when either of said switches is opened.

3. In a prepayment time-switch apparatus, two switches electrically connected in series and operable entirely independently, a clockwork for opening one of said switches, a winding-shaft having a limited movement for closing this switch and winding the clockwork, and means for automatically stopping said clockwork when either of said switches is opened.

4. In a prepayment time-switch apparatus, a switch, a clockwork for opening said switch, a winding-shaft having a limited movement, means associated with said shaft for causing said switch to close when said shaft is moved to one limit of its movement and to cause the switch to open when the shaft is brought to its other limit of movement, and means for operating said shaft to close the switch.

5. In a prepayment time-switch apparatus, a switch, a clockwork for opening said switch, a winding-shaft having a limited movement, means associated with said shaft for closing and opening said switch at the opposite limits of movement of the shaft, and means for operating the shaft to close the switch.

6. In a prepayment time-switch apparatus, a switch, a clockwork for opening said switch, a winding-shaft having a limited movement, and means associated with said shaft whereby the movable member of the switch is placed under tension during the movement of the shaft from the switch-closed to the switch-open position.

7. In a prepayment time-switch apparatus, a switch, a clockwork for opening said switch, a winding-shaft having a limited movement, means associated with said shaft for causing said switch to close when said shaft is moved to one limit of its movement and to cause the switch to open when the shaft is brought to its other limit of movement, means for rotating the shaft to close the switch, and means for stopping the clockwork when the switch is in the open position.

8. In a prepayment time-switch apparatus, a switch, a clockwork for opening said switch, a winding-shaft having a limited movement, means associated with said shaft for causing said switch to close when said shaft is moved to one limit of its movement and to cause the switch to open when the shaft is brought to the other limit of its movement, means for operating the shaft to close the switch, a second switch, and means associated with said second switch for stopping said clockwork when the second switch is opened.

9. In a prepayment time-switch apparatus, a switch, a clockwork for opening said switch, a winding-shaft having a limited movement, a switch member mounted upon said shaft, a complementary switch member mounted to rotate with said shaft and arranged to engage with the movable

switch member when the shaft is rotated in one direction, and a spring connecting said movable switch member and said complementary switch member whereby when the shaft is rotated by the clockwork the spring is placed under tension and an instantaneous break at the switch is produced.

849,025. TROLLEY-WHEEL. EDWARD P. SHARP, Buffalo, N. Y. Filed June 29, 1904. Serial No. 214,664.

Claim.—1. A sectional wheel, comprising a hub, side plates having webs or central portions, and collars cast upon the hub and the adjacent portions of said webs, said collars and the hub being provided with interlocking portions which anchor the collars upon the hub, substantially as set forth.

2. A sectional wheel comprising a hub provided at its ends with flanges and between its ends with shoulders, side plates having webs or central portions surrounding the hub, and collars cast around the hub and the adjacent portions of said webs and confined between said shoulders and flanges, substantially as set forth.

3. A sectional wheel comprising a hub provided with end flanges and a central annular enlargement, side plates having dished webs surrounding the end portions of the hub and bearing against the outer lateral edges of said enlargement, leaving spaces between the outer sides of the enlargement and the inner sides of the webs, and collars cast around the hub and the adjacent portions of the webs and between the webs and said enlargement, substantially as set forth.

4. A sectional wheel comprising a hub, opposing flange-plates secured to the hub and having lugs at their inner edges, and a tread-ring arranged between the flanges of said plates and having stops which engage said lugs, substantially as set forth.

5. A sectional wheel comprising a hub, and opposing flange-plates secured to the hub, each of said plates being provided at its inner edge with lugs which extend across the joint between the plates, substantially as set forth.

6. A sectional wheel comprising a hub, opposing flange-plates secured to the hub, and a tread-ring arranged between the flanges of said plates, said plates being provided at their inner edges with lugs which extend across the joint between the plates, substantially as set forth.

7. A sectional wheel comprising a hub, and opposing flange-plates secured to the hub and each provided at its inner edge with a pair of lugs which extend across the joint between the plates, one lug of each pair being arranged to bear against one side of the companion lug of the opposing plate and the other lug of the pair being arranged to bear against the opposite side of the companion lug of the opposing plate, substantially as set forth.

849,026. GRAIN-WEIGHING MACHINE. BENJAMIN M. STEELE, Peoria, Ill., assignor to Ben Steele Weigher Manufacturing Company, Peoria, Ill., a Corporation of Illinois. Filed Nov. 23, 1904. Serial No. 233,932.

Claim.—1. In a weigher, the combination of a spout having a gate, a hopper having a valve, a trip-shaft controlling the opening and closing of the said gate and valve, a continuously-driven sprocket carried on said shaft, a friction-clutch adapted to be actuated by the sprocket-wheel for rotating the trip-shaft, a scale-lever, and means carried on the lever when projected in the path of the clutch adapted to disengage the same.

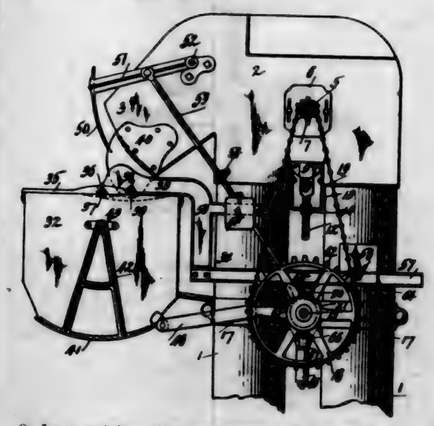

2. In a weigher, the combination of a spout having a gate, a hopper having a valve, a trip-shaft controlling the opening and closing of the said gate and valve, clutch parts carried by the said shaft adapted to have an intermittent frictional engagement, a scale-lever and means connected with the lever adapted when the lever is lowered to disengage the clutch parts.

3. In a weigher, the combination of a spout having a gate, a hopper having a valve, a trip-shaft controlling the opening and closing of the said gate and valve, a member loosely carried and continuously rotating on said shaft, a second member fixed on the shaft, mechanism interposed on the shaft between the aforesaid members adapted to clutch the matching faces of the members at intervals, a scale-lever, and means attached to said lever adapted to engage with and control the interposed mechanism aforesaid.

4. In a weigher, the combination of a spout having a gate, a hopper having a valve, a trip-shaft controlling the opening or closing of the said gate and valve, a sprocket-wheel loosely carried and rotating continuously on said shaft, a member fixed on said shaft, a disk loosely carried on the shaft intermediate the member and sprocket, means carried by the disk adapted at intervals to lock the sprocket with the member, a weight-controlling member, and means projecting therefrom adapted to engage the disk for disengaging the sprocket and said first-mentioned member.

5. In a weigher, the combination of a spout having a gate, a hopper having a valve, a trip-shaft controlling the opening or closing of the said gate and valve, a sprocket-wheel loosely carried on the shaft, a member fixed on said shaft, a disk loosely carried on the shaft and adapted at intervals to have a locking relation with the member and sprocket to impart rotation to the shaft through the member aforesaid, a weight-controlled member having a predetermined movement, and means projecting therefrom adapted at intervals to engage and release the disk from the first-mentioned member and thereby stop the rotation of the shaft.

6. In a weigher, the combination of a spout having a gate, a hopper having a valve, a trip-shaft, a pitman connected at one end to the trip-shaft and its opposite end connected to the hopper-valve, a cam member on said shaft, a rod connected at one end to the spout-gate and its opposite end controlled by said cam, intermittingly-engaging clutch parts carried by the said shaft for rotating the latter, and means operating at predetermined intervals for disengaging the clutch parts and thereby stop the rotation of the trip-shaft, substantially as specified.

7. In a weigher, the combination of a spout having a gate, a hopper having a valve, an intermittingly-rotated trip-shaft, connections between the trip-shaft and hopper-valve, a sprocket-wheel rotating loosely on the said shaft, a cam fixedly carried on the said shaft, means for intermittingly locking the sprocket with the cam aforesaid, a rod connected at one end to the spout-gate and its opposite end raised or lowered through the action of the aforesaid cam, and means connected with the hopper adapted to disconnect the cam from the sprocket, substantially as specified.

8. In a weigher, the combination of a spout having a gate, a hopper having a valve, an intermittingly-rotated trip-shaft, connections from one end of the said shaft with the valve of the hopper, a sprocket-wheel loosely carried on said shaft, a member fixedly carried on the said shaft, means for intermittingly locking the sprocket to the member and thereby rotate the said shaft, a rod connected at one end to the spout-gate and its lower end normally resting on the said member when the latter is at rest, and dislodged from the said member when the same is rotated to close the spout-gate, and means connected with the hopper adapted to disconnect the member and sprocket and thereby stop the rotation of said shaft and member, substantially as specified.

9. In a weigher, the combination of a spout having a gate, a hopper having a valve, a trip-shaft, connections between said shaft and said gate and valve, a member loosely carried on the said shaft, means for clutching the said member to the shaft for intermittingly actuating the same, a scale-lever supporting at one end a hopper and at its opposite end having a laterally-extended finger adapted to engage and retain the aforesaid member in a position of rest when the hopper is raised, substantially as specified.

10. In a weigher, the combination of a spout having a gate, a hopper having a valve, a trip-shaft, connections between the said shaft, gate and valve, clutch parts one loose and the other fixed on said shaft, an interposed member controlling the engagement of such clutch parts, and a scale-lever movable above the fixed clutch part and having a laterally-extended finger adapted to engage the member aforesaid for disengaging the clutch parts, substantially as specified.

11. Means for controlling the movements of the trip-shaft of a weigher, comprising a trip-shaft, a sprocket loosely carried thereon having a friction engaging face, a member fixedly carried on said shaft provided with cam-like faces, a plate interposed between the faces of the member and sprocket and having means for intermittingly impinging the faces of said sprocket and member, and a movable beam having a laterally-extended finger adapted at predetermined intervals to engage the said plate for releasing the same from the sprocket and member, substantially as specified.

12. In a weigher, the combination of a spout having a gate, a hopper having a valve, a trip-shaft, connections between said shaft, gate and valve, clutch parts one loose and the other secured on said shaft, means operating at predetermined intervals for controlling the engagement and disengagement of said clutch parts, and a brake-controlling device constantly engaging one of said clutch parts, substantially as specified.

13. In a weigher, the combination of a spout having a gate, a weight-controlled beam, a hopper suspended on one end of said beam, a valve for the hopper connected with side arms pivotally attached to the hopper, an extension integral with one of said arms and extending up above the hopper, a weight on said extension, a trip-shaft, connections between said shaft, the spout-gate and one of the arms of said hopper-valve, and means for intermittingly actuating the said shaft.

14. In a weigher, the combination of a spout having a gate, a hopper having a valve, a trip-shaft, means for intermittingly actuating the said shaft, connections between one end of the shaft and the hopper-valve, a member revolubly connected with the trip-shaft, a rod connected at one end to the spout-gate and its opposite end adapted to be intermittingly engaged by the member aforesaid in the rotation of the said shaft for raising and permitting the same to drop the said rod and thereby open or close the gate of the spout, substantially as specified.

15. In an automatic weigher, mechanism for controlling the gate of the spout and valve of the hopper, comprising an intermittingly-actuated shaft, connections between said shaft the spout-gate and valve of the hopper, a continuously-driven sprocket-wheel on said shaft, a member carried by the shaft and adapted to have a slight oscillatory movement in the direction of rotation of said sprocket-wheel and by such movement clutch the sprocket-wheel to the shaft, a weight-controlled member, and a lateral extension therefrom adapted to control the said first-mentioned member.

16. In an automatic weigher, mechanism for controlling the gate of the spout and valve of the hopper, comprising an intermittingly-actuated shaft, connections between the said shaft the spout-gate and valve of the hopper, a sprocket-wheel loosely carried on the shaft, a member carried on the shaft adjacent to the hub of the sprocket, a beam connected with the hopper, an extension from said beam adapted when the hopper is raised to engage and hold the said member in inoperative position, the said member when released from the extension of the beam adapted to have an initial partial rotation through frictional contact with the hub of the sprocket and ultimately clutch the sprocket to the shaft, substantially as specified.

17. In an automatic weigher, the combination with the delivery-spout, of a spout-gate adapted to intermittingly close over the opening of said spout, a trip-shaft, a rod connected one end to the spout-gate, means carried by the trip-shaft for controlling the movement of the said rod, adapted during a partial rotation of the shaft to permit the rod to drop of its own weight and close the spout instantly, and during the latter half of the rotation of said shaft again engage the said rod and raise the same to open the said spout, substantially as specified.

18. In an automatic weigher, means for controlling the spout-gate and valve of the hopper, a trip-shaft, connections between said shaft, the spout-gate and valve of the hopper, a continuously-actuated sprocket-wheel carried on said shaft its hub having a ball-race, a plate carried on the shaft having a radial extension, a series of balls retained in said plate and projecting from opposite sides thereof, a member fixedly carried on the shaft provided with a series of depressions adapted at intervals to be engaged by the balls of the plate, a beam supporting the hopper, a laterally-extended finger on the beam adapted to engage the extension of the plate to hold the same in an inoperative relation with sprocket and member, the said plate when released by the extension of the beam adapted through its balls to engage the depressions in the member through a frictional contact with the ball-race of the sprocket-wheel to facilitate in locking the sprocket to the shaft, substantially as specified.

19. In an automatic weigher, the combination of a spout having a gate and a hopper having a valve, a trip-shaft, a sprocket-wheel loosely carried on said shaft, a member fixedly attached to said shaft, an intermediate plate adapted at intervals to engage portions of the sprocket-wheel and member to lock the said sprocket to the shaft, a pitman connected with one end of the shaft and hopper-valve, a cam extension of the aforesaid member, a rod connected at one end to the spout-gate and its opposite end adapted to be controlled by the movements of the said cam extension, and a scale-beam provided with means adapted at intervals to engage the plate aforesaid and hold the shaft in a position of rest, substantially as specified.

20. In an automatic weigher, the combination of a spout having a gate, and a hopper having a valve, a trip-shaft, a crank attached to one end of the shaft, a pitman secured to the crank and attached at its opposite end to the hopper-valve, a rod attached at one end to the spout-gate, a guide for the said rod, a rest for the lower end of said last-mentioned rod when the spout-gate is raised, said rest revolubly attached to the said shaft, clutch devices on the said shaft adapted to be intermittently engaged for imparting motion to the said shaft for the purposes specified, a beam connected with the hopper, and a lateral extension of the beam adapted when the latter is lowered at its free end to engage and retain the clutch parts in inoperative positions, substantially as specified.

21. In an automatic weigher, the combination of a spout

having a gate and a hopper having a valve, a trip-shaft, connections between the said shaft spout-gate and valve of the hopper, a sprocket-wheel loosely carried on the shaft having a hub with an engaging face, a member fixedly attached to the shaft having an engaging face, an intermediate member loosely carried on the shaft having engaging devices adapted at intervals to clutch the engaging face of the sprocket and first-mentioned member, a scale-beam supporting the hopper at one end and its opposite end when the hopper is raised disposed in a lowered position and resting on a suitable support, a finger extending outwardly from the face of the beam adapted when the said beam is lowered to engage the intermediate member and retain the same free from engagement with the sprocket and member aforesaid, substantially as specified.

22. In an automatic weigher, the combination of a spout having a gate and a hopper having a valve, a trip-shaft, connections between the said shaft the spout-gate and valve of the hopper, clutch members, one loose and the other fixed on the said shaft, an intermediate member having an extension and adapted at intervals to clutch the first-mentioned member to each other, a scale-beam supporting the hopper at its outer end, a suitable support for the free end of the beam when the hopper is raised and the beam lowered, a laterally-extended finger from the beam adapted when the beam is lowered to engage the extension of the intermediate member to hold the same in an inoperative position, substantially as specified.

23. In an automatic weigher, the combination with the spout-gate and valve of the hopper, a trip-shaft, connections between the said shaft the spout-gate and valve of the hopper, clutch mechanism carried by said shaft adapted to be engaged at predetermined intervals for imparting movement to the shaft, a scale-beam having connection with the hopper, and a transverse extension from the beam adapted to have engagement with certain of the clutch parts for placing the same in an inoperative position, substantially as specified.

24. In an automatic weigher, the combination of a spout, a gate adapted to intermittingly close the said spout, a trip-shaft adapted to be intermittingly rotated, a rod attached at its upper end to the said spout-gate, a rest on the said shaft for the lower end of the rod adapted to normally hold the rod in a raised position, means for rotating said shaft, and means for stopping and retaining said shaft in a position of rest at predetermined intervals, substantially as specified.

25. In a device of the class described, the combination of a trip-shaft, a sprocket-wheel loosely carried on the said shaft having its hub provided with a concentric groove, a member fixed on the shaft and spaced a short distance from the hub of the sprocket-wheel, its front face provided with a series of cam-like depressions, an interposed disk having a concavo-convex body the convex face having a frictional contact with the member, balls suitably retained in the body of the disk adapted to have a frictional contact with the groove of the sprocket-wheel, means for holding the disk in an inoperative position, the said disk when released adapted to have an initial partial rotation imparted to it through the frictional contact of the balls with the sprocket resulting in locking the said balls against the cam-face of the member and thereby lock the sprocket to the shaft, substantially as specified.

26. The herein-described brake for the trip-shaft of a weigher, comprising a member carried on said shaft, a brake yieldingly held in engagement with said member, and means supporting said brake, substantially as specified.

27. The herein-described controlling-brake for the trip-shaft of a weigher, comprising a member carried on said shaft and provided with a depression in its periphery, a brake-shoe yieldingly held in engagement with said member adapted when entering the depression of the member to retain it in a position of rest, and means supporting said brake-shoe, substantially as specified.

28. In a device of the class described, the combination with elevator-tubes, a shaft supported between the tubes and adapted to be intermittingly actuated, a member carried on said shaft, a brake-shoe yieldingly engaging the said member, said shoe carried in a bracket and the bracket suitably attached to the tubes, substantially as specified.

29. In a device of the class described, the combination with elevator-tubes, a shaft supported between the tubes and adapted to be intermittingly actuated, a member carried on said shaft, a brake yieldingly held in engagement with the said member, said brake consisting of a roller supported by a stem, a bracket attached to the tubes and supporting the said stem, and a spring carried around said stem within the bracket, engaging an offset on the stem and an offset at the lower end of the bracket, substantially as specified.

30. In a weigher, the combination of a spout having a gate and a hopper having a valve, a trip-shaft, connections between said shaft the spout-gate and valve of the hopper, clutch members one loose and the other fixed on said shaft, a member interposed between said clutch members adapted at intervals to clutch the members and thereby impart rotation to the shaft, a scale-beam connected with the hopper, a finger extending outwardly from the beam adapted at intervals to engage the interposed member for holding the same in an inoperative position, a rest for the beam adapted to engage with the surface of the fixed clutch member, and a pin on said member adapted to temporarily lock the rest in position on the member, substantially as specified.

31. In a grain-weigher, the combination of an elevator having a discharge-spout, a valve controlling the outlet-opening of the spout, a rod connected with said valve, and an intermittently-revoluble member engaged by the said rod adapted in its rotation to raise the said rod and permitting the same to drop to facilitate in opening or closing the said valve.

32. In a grain-weigher, the combination of an elevator having a discharge-spout, a valve controlling the outlet-opening of the spout, an intermittently-revoluble shaft, a rod connected with said valve and having its lower end in proximity to the said shaft, and means carried on the said shaft adapted during a partial rotation thereof to raise the rod and open the valve, and in the further rotation of said shaft moving away from the rod and permitting the same to drop of its own weight and thereby close the said valve.

33. In a grain-weigher, the combination of an elevator having a discharge-spout, a valve controlling the outlet-opening of the said spout, a shaft, a member having an irregular periphery attached to said shaft, a rod connected with the valve the lower end of which normally rests on said member, means for imparting movement to said shaft, the said member adapted in the rotation of the shaft to raise the said rod and permit the same to drop, thereby opening and closing the said valve.

34. In a grain-weigher, the combination of an elevator having a discharge-spout, a valve controlling the outlet-opening of said spout, a shaft, a cam carried on said shaft, a rod attached to the valve, a member attached to the lower end of the rod and having a semicircular portion conforming to a portion of the said cam and to be engaged thereby, means for rotating the shaft and thereby causing the cam to lift the rod and subsequently to move from beneath the same, and means for guiding the cam into the semicircular member at the lower end of the said rod.

35. In a grain-weigher, the combination of an elevator having a discharge-spout, a valve controlling the outlet-opening of the spout, a counterbalanced weighing-hopper, a valve controlling the outlet of said hopper, an intermittently-revoluble shaft, a pitman-rod connected with the valve of the hopper and attached to the shaft upon one side of said elevator, a rod connected with the valve of the spout aforesaid and operating upon the opposite side of said elevator, and means carried on said shaft adapted in the rotation thereof to raise the rod connected with the spout-valve and thereby open the same and permitting the said rod to drop of its own weight for the purpose of closing said valve.

36. In a grain-weigher, an elevator comprising parallel tubes and having a discharge-outlet, a valve controlling said outlet, a counterpoised weighing-receptacle beneath the outlet aforesaid, a valve controlling the outlet through the receptacle, a shaft disposed transversely between the tubes, a crank on one end of said shaft, a rod connected with said crank and with the valve of the receptacle; a pitman connected with said first-mentioned valve, and a cam on the end of the shaft opposite to that which carries the crank for controlling the movement of said rod.

37. In a grain-weigher, the combination of an elevator having a discharge-outlet, a valve controlling said outlet and carried by arms pivotally connected to the side of said elevator, a transverse shaft, a rod connected with one of said valve-arms and having its lower end in proximity to said shaft, a guide on the side of the elevator for said rod, and means carried on said shaft adapted to engage the lower end of the rod for raising the same during a partial rotation of the shaft and in the further rotation of the shaft permitting the rod to drop of its own weight.

38. In a grain-weigher, the combination of a trip-shaft, a clutch part fixed on said shaft and provided with tapered depressions in its outer face, a continuously-movable clutch part loosely mounted on said shaft and provided with an annular groove on its inner face, a ball-retainer loosely carried on said shaft and interposed between the said clutch parts, said ball-retainer having a cup-shaped central body portion whereby a frictional contact is made with the central body portion of said clutch part, balls carried in said retainer and coinciding with the groove of the loose clutch part and also adapted to have an intermittent frictional engagement with the depressions in the outer face of the fixed clutch parts, and a weight-controlled member adapted at predetermined intervals to have engagement with said ball-retainer, for the purposes specified.

39. In a grain-weigher, the combination of an elevator having a discharge-outlet, a valve controlling said outlet, a transverse trip-shaft, a fixed clutch part on said shaft, a loose clutch part on said shaft adapted to be continuously rotated, a member carried by said shaft and interposed between the clutch parts, adapted at predetermined intervals to connect the said clutch parts for imparting movement to said shaft, weight-controlled means adapted at predetermined intervals to have engagement with said interposed members, a rod connected with the valve of the elevator and having its lower end carried in proximity to said shaft, and means integral with said clutch part and carried by said shaft which controls the operation of said rod and normally serves as a rest therefor.

40. In a device of the character described, an oscillating valve, an intermittently-revoluble shaft, a member revoluble with said shaft, a rod connected at one end with said valve and disconnected at its opposite end, but adapted to be engaged by the aforesaid member in the operation of said shaft for raising the said valve.

41. In a device of the character described, an oscillating valve, an intermittently-revoluble shaft, a member carried by said shaft and having a cam-engaging face, a rod connected at one end with said valve and disconnected at its opposite end, but adapted to be engaged by the cam-face of the said member in the operation of said shaft for raising the said valve.

42. In a device of the character described, an oscillating valve, an intermittently-revoluble shaft, a member carried by said shaft and having a cam-face, a rod connected at one end with said valve and having its lower end normally resting on said member, means for actuating the said shaft, the actuation of the shaft causing the member in its rotation to raise the rod and permitting the same to drop and thereby open and close the said valve.

43. In a device of the character described, a pivoted valve-arm, a valve-plate attached to said arm, an intermittently-revoluble shaft, a member carried on said shaft, a reciprocating rod attached at one end to the valve-arm aforesaid and disconnected at its opposite ends, but adapted in the rotation of said shaft to be engaged by the said member for reciprocating the said rod.

849,027. INTEGRATING PHOTOMETER. CHARLES P. STEINMETZ, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 13, 1902. Serial No. 127,039.

Claim.—1. The combination with a light, of a photometric screen, and a series of mirrors arranged about said light and inclined to reflect the image of said light upon said screen, said mirrors being placed one each in the center of each of a series of zones of equal area, of an imaginary sphere surrounding said light as a center.

2. The combination with a light, of a photometric screen, and a series of mirrors arranged about said light, said mirrors being inclined to reflect the image of said light upon said screen, and so placed with reference to a series of zones of equal areas on an imaginary sphere surrounding said light that each of said mirrors reflects light of the average intensity existing over a corresponding zone of said series.

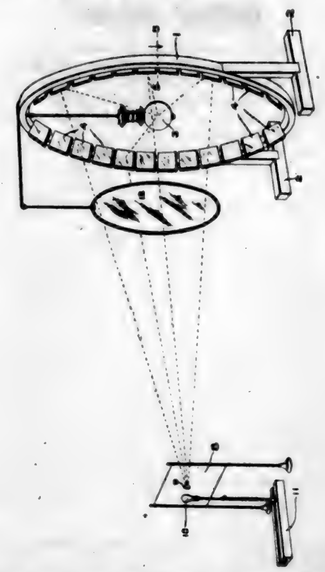

3. The combination with a light, of a photometric screen, and a plurality of series of mirrors arranged about said light, said mirrors being inclined to reflect the image of said light upon said screen and so placed with reference to a similar plurality of series of zones on an imaginary sphere surrounding said light that each of said mirrors reflects light of the average intensity existing over a corresponding zone, the zones of each series being equal in area.

4. The combination of a light to be measured, the distribution of which is substantially symmetrical about an axis, and a frame supporting a plurality of mirrors in a circle about said light, said mirrors being separated by equal distances as measured along one of the diameters of said circle.

5. The combination with an object to be illuminated, of a source of light and a series of mirrors arranged to reflect light upon said object from said source, the mirrors being so placed that the light reflected from each mirror represents the average intensity of light on one of a series of equal areas on the surface of an imaginary sphere surrounding said source.

6. The combination with a source of radiation, of an object and a series of reflecting devices for reflecting radiations from the source upon said object, said reflecting devices being so placed that each reflects radiation from the source of the average intensity which would exist on one of a series of equal areas on the surface of an imaginary sphere surrounding said source.

7. The combination with a source of radiation, of a series of reflecting devices so placed that each reflects radiations from the source of the average intensity which would exist on one of a series of equal areas on the surface of an imaginary sphere surrounding said source, and means for observing said reflected radiations.

having a gate and a hopper having a valve, a trip-shaft, connections between the said shaft spout-gate and valve of the hopper, a sprocket-wheel loosely carried on the shaft having a hub with an engaging face, a member fixedly attached to the shaft having an engaging face, an intermediate member loosely carried on the shaft having engaging devices adapted at intervals to clutch the engaging face of the sprocket and first-mentioned member, a scale-beam supporting the hopper at one end and its opposite end when the hopper is raised disposed in a lowered position and resting on a suitable support, a finger extending outwardly from the face of the beam adapted when the said beam is lowered to engage the intermediate member and retain the same free from engagement with the sprocket and member aforesaid, substantially as specified.

22. In an automatic weigher, the combination of a spout having a gate and a hopper having a valve, a trip-shaft, connections between the said shaft the spout-gate and valve of the hopper, clutch members, one loose and the other fixed on the said shaft, an intermediate member having an extension and adapted at intervals to clutch the first-mentioned member to each other, a scale-beam supporting the hopper at its outer end, a suitable support for the free end of the beam when the hopper is raised and the beam lowered, a laterally-extended finger from the beam adapted when the beam is lowered to engage the extension of the intermediate member to hold the same in an inoperative position, substantially as specified.

23. In an automatic weigher, the combination with the spout-gate and valve of the hopper, a trip-shaft, connections between the said shaft the spout-gate and valve of the hopper, clutch mechanism carried by said shaft adapted to be engaged at predetermined intervals for imparting movement to the shaft, a scale-beam having connection with the hopper, and a transverse extension from the beam adapted to have engagement with certain of the clutch parts for placing the same in an inoperative position, substantially as specified.

24. In an automatic weigher, the combination of a spout, a gate adapted to intermittingly close the said spout, a trip-shaft adapted to be intermittingly rotated, a rod attached at its upper end to the said spout-gate, a rest on the said shaft for the lower end of the rod adapted to normally hold the rod in a raised position, means for rotating said shaft, and means for stopping and retaining said shaft in a position of rest at predetermined intervals, substantially as specified.

25. In a device of the class described, the combination of a trip-shaft, a sprocket-wheel loosely carried on the said shaft having its hub provided with a concentric groove, a member fixed on the shaft and spaced a short distance from the hub of the sprocket-wheel, its front face provided with a series of cam-like depressions, an interposed disk having a concavo-convex body the convex face having a frictional contact with the member, balls suitably retained in the body of the disk adapted to have a frictional contact with the groove of the sprocket-wheel, means for holding the disk in an inoperative position, the said disk when released adapted to have an initial partial rotation imparted to it through the frictional contact of the balls with the sprocket resulting in locking the said balls against the cam-face of the member and thereby lock the sprocket to the shaft, substantially as specified.

26. The herein-described brake for the trip-shaft of a weigher, comprising a member carried on said shaft, a brake yieldingly held in engagement with said member, and means supporting said brake, substantially as specified.

27. The herein-described controlling-brake for the trip-shaft of a weigher, comprising a member carried on said shaft and provided with a depression in its periphery, a brake-shoe yieldingly held in engagement with said member adapted when entering the depression of the member to retain it in a position of rest, and means supporting said brake-shoe, substantially as specified.

28. In a device of the class described, the combination with elevator-tubes, a shaft supported between the tubes and adapted to be intermittingly actuated, a member carried on said shaft, a brake-shoe yieldingly engaging the said member, said shoe carried in a bracket and the bracket suitably attached to the tubes, substantially as specified.

29. In a device of the class described, the combination with elevator-tubes, a shaft supported between the tubes and adapted to be intermittingly actuated, a member carried on said shaft, a brake yieldingly held in engagement with the said member, said brake consisting of a roller supported by a stem, a bracket attached to the tubes and supporting the said stem, and a spring carried around said stem within the bracket, engaging an offset on the stem and an offset at the lower end of the bracket, substantially as specified.

30. In a weigher, the combination of a spout having a gate and a hopper having a valve, a trip-shaft, connections between said shaft the spout-gate and valve of the hopper, clutch members one loose and the other fixed on said shaft, a member interposed between said clutch members adapted at intervals to clutch the members and thereby impart rotation to the shaft, a scale-beam connected with the hopper, a finger extending outwardly from the beam adapted at intervals to engage the interposed member for holding the same in an inoperative position, a rest for the beam adapted to engage with the surface of the fixed clutch member, and a pin on said member adapted to temporarily lock the rest in position on the member, substantially as specified.

31. In a grain-weigher, the combination of an elevator having a discharge-spout, a valve controlling the outlet-opening of the spout, a rod connected with said valve, and an intermittently-revoluble member engaged by the said rod adapted in its rotation to raise the said rod and permitting the same to drop to facilitate in opening or closing the said valve.

32. In a grain-weigher, the combination of an elevator having a discharge-spout, a valve controlling the outlet-opening of the spout, an intermittently-revoluble shaft, a rod connected with said valve and having its lower end in proximity to the said shaft, and means carried on the said shaft adapted during a partial rotation thereof to raise the rod and open the valve, and in the further rotation of said shaft moving away from the rod and permitting the same to drop of its own weight and thereby close the said valve.

33. In a grain-weigher, the combination of an elevator having a discharge-spout, a valve controlling the outlet-opening of the said spout, a shaft, a member having an irregular periphery attached to said shaft, a rod connected with the valve the lower end of which normally rests on said member, means for imparting movement to said shaft, the said member adapted in the rotation of the shaft to raise the said rod and permit the same to drop, thereby opening and closing the said valve.

34. In a grain-weigher, the combination of an elevator having a discharge-spout, a valve controlling the outlet-opening of said spout, a shaft, a cam carried on said shaft, a rod attached to the valve, a member attached to the lower end of the rod and having a semicircular portion conforming to a portion of the said cam and to be engaged thereby, means for rotating the shaft and thereby causing the cam to lift the rod and subsequently to move from beneath the same, and means for guiding the cam into the semicircular member at the lower end of the said rod.

35. In a grain-weigher, the combination of an elevator having a discharge-spout, a valve controlling the outlet-opening of the spout, a counterbalanced weighing-hopper, a valve controlling the outlet of said hopper, an intermittently-revoluble shaft, a pitman-rod connected with the valve of the hopper and attached to the shaft upon one side of said elevator, a rod connected with the valve of the spout aforesaid and operating upon the opposite side of said elevator, and means carried on said shaft adapted in the rotation thereof to raise the rod connected with the spout-valve and thereby open the same and permitting the said rod to drop of its own weight for the purpose of closing said valve.

36. In a grain-weigher, an elevator comprising parallel tubes and having a discharge-outlet, a valve controlling said outlet, a counterpoised weighing-receptacle beneath the outlet aforesaid, a valve controlling the outlet through the receptacle, a shaft disposed transversely between the tubes, a crank on one end of said shaft, a rod connected with said crank and with the valve of the receptacle, a pitman connected with said first-mentioned valve, and a cam on the end of the shaft opposite to that which carries the crank for controlling the movement of said rod.

37. In a grain-weigher, the combination of an elevator having a discharge-outlet, a valve controlling said outlet and carried by arms pivotally connected to the side of said elevator, a transverse shaft, a rod connected with one of said valve-arms and having its lower end in proximity to said shaft, a guide on the side of the elevator for said rod, and means carried on said shaft adapted to engage the lower end of the rod for raising the same during a partial rotation of the shaft and in the further rotation of the shaft permitting the rod to drop of its own weight.

38. In a grain-weigher, the combination of a trip-shaft, a clutch part fixed on said shaft and provided with tapered depressions in its outer face, a continuously-movable clutch part loosely mounted on said shaft and provided with an annular groove on its inner face, a ball-retainer loosely carried on said shaft and interposed between the said clutch parts, said ball-retainer having a cup-shaped central body portion whereby a frictional contact is made with the central body portion of said clutch part, balls carried in said retainer and coinciding with the groove of the loose clutch part and also adapted to have an intermittent frictional engagement with the depressions in the outer face of the fixed clutch parts, and a weight-controlled member adapted at predetermined intervals to have engagement with said ball-retainer, for the purposes specified.

39. In a grain-weigher, the combination of an elevator having a discharge-outlet, a valve controlling said outlet, a transverse trip-shaft, a fixed clutch part on said shaft, a loose clutch part on said shaft adapted to be continuously rotated, a member carried by said shaft and interposed between the clutch parts, adapted at predetermined intervals to connect the said clutch parts for imparting movement to said shaft, weight-controlled means adapted at predetermined intervals to have engagement with said interposed members, a rod connected with the valve of the elevator and having its lower end carried in proximity to said shaft, and means integral with said clutch part and carried by said shaft which controls the operation of said rod and normally serves as a rest therefor.

40. In a device of the character described, an oscillating valve, an intermittently-revoluble shaft, a member revoluble with said shaft, a rod connected at one end with said valve and disconnected at its opposite end, but adapted to be engaged by the aforesaid member in the operation of said shaft for raising the said valve.

41. In a device of the character described, an oscillating valve, an intermittently-revoluble shaft, a member carried by said shaft and having a cam-engaging face, a rod connected at one end with said valve and disconnected at its opposite end, but adapted to be engaged by the cam-face of the said member in the operation of said shaft for raising the said valve.

42. In a device of the character described, an oscillating valve, an intermittently-revoluble shaft, a member carried by said shaft and having a cam-face, a rod connected at one end with said valve and having its lower end normally resting on said member, means for actuating the said shaft, the actuation of the shaft causing the member in its rotation to raise the rod and permitting the same to drop and thereby open and close the said valve.

43. In a device of the character described, a pivoted valve-arm, a valve-plate attached to said arm, an intermittently-revoluble shaft, a member carried on said shaft, a reciprocating rod attached at one end to the valve-arm aforesaid and disconnected at its opposite ends, but adapted in the rotation of said shaft to be engaged by the said member for reciprocating the said rod.

849,027. INTEGRATING PHOTOMETER. CHARLES P. STEINMETZ, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 13, 1902. Serial No. 127,039.

Claim.—1. The combination with a light, of a photometric screen, and a series of mirrors arranged about said light and inclined to reflect the image of said light upon said screen, said mirrors being placed one each in the center of each of a series of zones of equal area, of an imaginary sphere surrounding said light as a center.

2. The combination with a light, of a photometric screen, and a series of mirrors arranged about said light, said mirrors being inclined to reflect the image of said light upon said screen, and so placed with reference to a series of zones of equal areas on an imaginary sphere surrounding said light that each of said mirrors reflects light of the average intensity existing over a corresponding zone of said series.

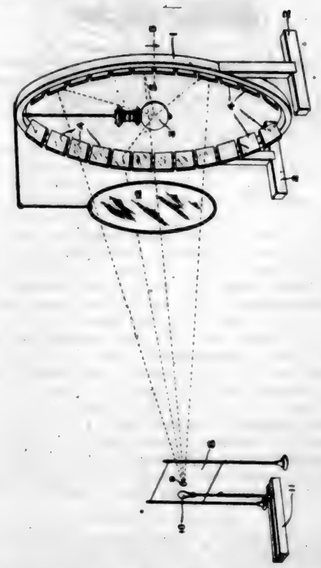

3. The combination with a light, of a photometric screen, and a plurality of series of mirrors arranged about said light, said mirrors being inclined to reflect the image of said light upon said screen and so placed with reference to a similar plurality of series of zones on an imaginary sphere surrounding said light that each of said mirrors reflects light of the average intensity existing over a corresponding zone, the zones of each series being equal in area.

4. The combination of a light to be measured, the distribution of which is substantially symmetrical about an axis, and a frame supporting a plurality of mirrors in a circle about said light, said mirrors being separated by equal distances as measured along one of the diameters of said circle.

5. The combination with an object to be illuminated, of a source of light and a series of mirrors arranged to reflect light upon said object from said source, the mirrors being so placed that the light reflected from each mirror represents the average intensity of light on one of a series of equal areas on the surface of an imaginary sphere surrounding said source.

6. The combination with a source of radiation, of an object and a series of reflecting devices for reflecting radiations from the source upon said object, said reflecting devices being so placed that each reflects radiation from the source of the average intensity which would exist on one of a series of equal areas on the surface of an imaginary sphere surrounding said source.

7. The combination with a source of radiation, of a series of reflecting devices so placed that each reflects radiations from the source of the average intensity which would exist on one of a series of equal areas on the surface of an imaginary sphere surrounding said source, and means for observing said reflected radiations.

8. The combination with a source of light, of a photometric device, and a series of mirrors unequally spaced in a circle about said source to reflect light upon said device proportional to the mean spherical candle-power of the source.

849,028. CONNECTOR FOR ELECTRIC CONDUCTORS. GEORGE E. STEVENS, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Feb. 11, 1904. Serial No. 193,031.

Claim.—1. A connector for an electric conductor, comprising a stem around which the conductor extends, a flange on the stem integral therewith, and a perforated plate fitting on the stem and held in place between the flange and the conductor.

2. A connector for an electric conductor, comprising a stem having a flange thereon, a perforated plate fitting on said stem and held in place between the flange and the conductor, and an extension on said plate adapted to grip the conductor.

3. A connector for an electric conductor, comprising a stem having a flange thereon, a perforated plate fitting on said stem and held in place between the flange and the conductor, and a second flange on the stem holding the conductor in firm engagement between it and said plate.

4. A connector for an electric conductor comprising a stem having a flange thereon, a perforated plate fitting on the stem and provided with an extension adapted to grip the conductor, and a second flange on the stem holding the conductor firmly between it and said perforated plate.

5. A connector for an electric conductor comprising a stem having a flange at one end thereof, a perforated plate fitting on the stem and provided with an extension having wings which hold the conductor between them, and a flange on the other end of said stem between which and said perforated plate the end of the conductor is held.

849,029. AIR-SHIP. JACK E. TAYLOR, Wheeling, W. Va. Filed Nov. 26, 1906. Serial No. 345,057.

Claim.—1. In a flying-machine, an oblong metallic shell, a tube extending longitudinally and centrally through said shell, a second shell enveloping the first-mentioned shell and spaced therefrom forming a gas-chamber between said shells, a propeller in said tube, driving means for said propeller, a plurality of tubes extended vertically through said shells, propellers in said tubes, and driving means for said propellers.

2. In a flying-machine, an oblong metallic shell, cylindrical in cross-section, a tube extending longitudinally and centrally through said shell, a propeller in said tube, an outer shell enveloping the first-mentioned shell and braced therefrom to form a gas-chamber between the shells, a plurality of vertical tubes extended through said shells and open to the atmosphere at each end, propellers in said tubes, means for driving each of said propellers, braces holding the inner shell and the longitudinally-extending tube in fixed relation to each other, and a rudder operatively connected to said last-mentioned tube.

3. In a flying-machine, an oblong metallic shell, tubular in cross-section and open at each end, a tube open from end to end projected longitudinally and centrally through said shell, braces holding said shell and tube in fixed relation to each other, an outer shell enveloping the first-mentioned shell, a gas-chamber formed between said shells, braces holding said shells in fixed relation to each other, a plurality of tubes extended vertically through said shells, propellers in each of said tubes, motors, gearing between said motors and said propellers, clutch mechanism whereby said propellers may be thrown into and out of gear, and guiding mechanism carried by the central horizontal tube at one end thereof.

4. In a flying-machine, an oblong metallic shell, a tube extending longitudinally and centrally through said shell, a propeller in said tube, a second shell enveloping the first-mentioned shell and braced therefrom forming a gas-chamber between said shells, a plurality of vertically-disposed tubes associated with said shells and having their ends open to the atmosphere, propellers in said tubes, and means for driving said propellers.

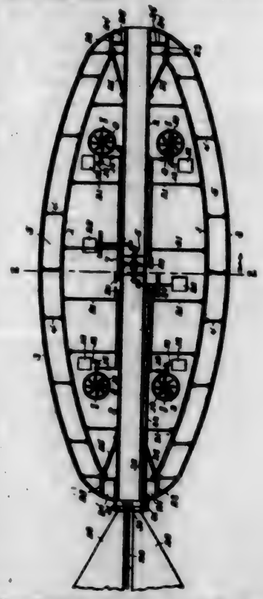

5. In a flying-machine, an oblong metallic inner shell, an outer shell enveloping the inner shell and braced therefrom to form a gas-chamber between said shells, a tube extended longitudinally and centrally through the inner shell and having its opposite ends open and projected beyond the ends of said shells, a propeller mounted in said tube, braces between said tube and the inner shell, tubes open at each end projected vertically through said shells and firmly held thereby, and propellers in the vertical tubes.

6. In a flying-machine, inner and outer oblong metallic shells spaced apart to constitute a gas-chamber therebetween, a tube extended longitudinally and centrally through the inner shell, said shells both terminating at each end at equidistant points from said tube, tubular extensions of the inner shell connected to the ends of the outer shell and forming tubular openings about the ends of said tube, a plurality of tubes extended vertically through said shells, and propellers in each of said tubes.

7. In a flying-machine, inner and outer oblong metallic shells spaced and braced apart, a tube extended longitudinally through the inner shell, said shells terminating at their ends at points remote from said tube, the adjacent ends of said shells being connected forming a closed gas-chamber between the shells and forming window-openings adjacent to the tube at each end, vertical tubes extended through said shells, propellers in each of said tubes, and driving means for said propellers.

8. In a flying-machine, inner and outer oblong metallic shells spaced and braced apart, a tube extended longitudinally through the inner shell, said shells terminating at their ends at points remote from said tube, the adjacent ends of said shells being connected forming a closed gas-chamber between the shells and forming window-openings adjacent to the tube at each end, vertical tubes extended through said shells, propellers in each of said tubes, driving means for said propellers, braces holding the inner shell and the longitudinally-extending tube in fixed relation to each other, and a rudder operatively connected to the last-mentioned tube.

849,030. PUMP. CLEMENT VALLIQUETTE, Limestone, Ohio. Filed Aug. 8, 1906. Serial No. 329,084.

Claim.—1. In a pump, a vertically-disposed framework, a casing mounted therein having an inlet and an outlet, a rotary shaft journaled within said casing consisting of a plurality of sections, one end of each section being reduced and provided with threads and the opposite end of each section having a threaded recess to receive the said reduced portion, propellers carried at the joint of the sections, a U-shaped member secured to the lower portion of the casing and being provided with a ball-bearing for the end of the said rotary shaft, deflectors secured to the casing and means for adjusting the same with relation to the propellers.

2. In a pump, a vertically-disposed framework, a casing mounted therein having an inlet and an outlet, a rotary shaft journaled within said casing consisting of a plurality of sections, one end of each section being reduced and provided with threads and the opposite end of each section having a threaded recess to receive the said reduced portion, propellers carried at the joint of the sections, a U-shaped member secured to the lower portion of the said casing and being provided with a ball-bearing for the end of the said rotary shaft, deflectors having threaded bolts projecting therefrom, elongated apertures formed in the casing to receive said bolts, bushings or gaskets carried upon said bolts and nuts threaded upon the ends of said bolts for adjusting the deflectors with relation to the propellers.

849,031. ATTACHMENT FOR VEHICLE-WHEELS. DELL WARD, Grand Rapids, Mich., assignor of one-fifth to John Kelsey and one-fifth to Henry J. Herbert, Detroit, Mich., one-fifth to Joseph R. Taylor, Grand Rapids, Mich., and one-fifth to Wallace W. Johnson, Chicago, Ill. Filed Jan. 21, 1907. Serial No. 353,261.

Claim.—1. A wheel attachment comprising a plate or disk having a central opening to receive the outer end of the hub of a vehicle-wheel, a ring to surround the rim of said wheel, clips to embrace said rim and slidably engage the same, means for attaching the clips and ring, and springs adapted to connect the disk and clips.

2. A wheel attachment comprising a ring to surround the rim of a vehicle-wheel and spaced apart therefrom, U-shaped clips to slidably embrace the rim of said wheel, means for attaching the clips to the ring, a central member adapted to engage the hub of the wheel, and contractile springs adapted to connect said clips to said central member.

3. In combination with a vehicle-wheel, a central member attached to the hub of the wheel, clips slidably embracing the rim of the wheel, a ring surrounding the rim of the wheel and spaced apart therefrom, means for attaching the clips to the ring, and springs connecting the central member and the clips.

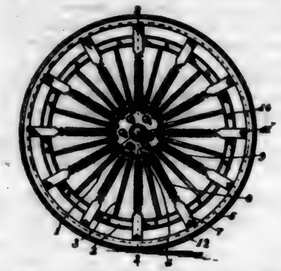

4. In combination with a vehicle-wheel, a disk having a central opening to receive the outer end of the hub and attached to the hub outside the plane of the rim of the wheel, clips embracing and slidably engaging the rim of the wheel, a ring surrounding the rim of the wheel and spaced apart therefrom, means for attaching the clips to the ring, and contractile radial springs arranged inclined to the plane of the rim and ring, said springs being attached at one end to the clips and at the other end attached to the disk.

5. In combination with a vehicle-wheel, a disk having a central opening to receive the outer end of the hub of the wheel and marginal openings to receive the ends of the springs, a ring to surround the wheel-rim and spaced apart therefrom, lugs on the inner side of the ring and having bolt-openings, U-shaped clips slidably embracing the wheel-rim and bolted to the lugs, and springs having hooks at their respective ends to engage the openings in the disk and the inner ends of the clips.

849,032. TELEPHONE SYSTEM. CHARLES A. WARDNER, Brushton, N. Y. Filed Dec. 7, 1905. Serial No. 290,722.

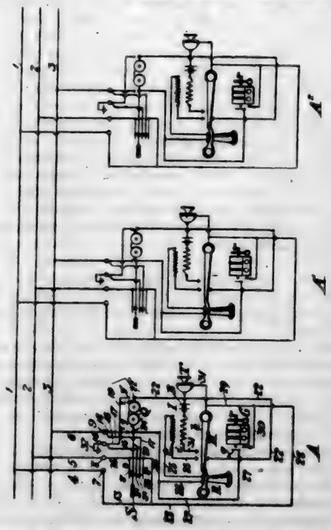

Claim.—1. A party-line telephone system, comprising a main circuit having two metallic conductors, a supplemental conductor, a common ground return for one or more of said conductors, and means whereby one of said

conductors and the common ground return may be utilized for talking purposes while the main circuit is being used.

2. A party-line telephone system, comprising a main circuit having two metallic conductors, a supplemental conductor, a common ground return for one or more of said conductors, means for sending ringing-current over the main circuit, and means whereby ringing-current may be sent over the supplemental conductor and said ground return.

3. A party-line telephone system, comprising a main circuit having two metallic conductors, a supplemental conductor, a common ground return for one or more of said conductors, means for sending ringing-current over said main circuit, and means whereby ringing-current may be sent over one of said conductors and the common ground return.

4. In a party-line telephone system, the combination with a main circuit comprising two metallic conductors, of a supplemental conductor, a common ground return for one or more of said conductors, and means whereby the normal talking-circuit can be changed from metallic to grounded.

5. In a party-line telephone system, the combination with a main circuit having two metallic conductors, of a supplemental conductor, a common ground return for one or more of said conductors, means for changing the normal talking-circuit from metallic to grounded, and means for holding said last-named means in operative position during conversation.

6. In a party-line telephone system, the combination with a main circuit comprising two metallic conductors, of a supplemental conductor, a common ground return for one or more of said conductors, means for changing the talking-circuit from a metallic to a grounded one comprising a switch, and automatic means for holding said switch in operative position during conversation.

7. In a party-line telephone system, the combination with a main circuit comprising two metallic conductors, of a supplemental conductor, a common ground return for one or more of said conductors, a switch for changing the normal talking-circuit from a metallic to a grounded one, means for holding said switch in operative position, and means for automatically releasing said switch.

8. In a party-line telephone system, the combination with a main circuit comprising two metallic conductors, of a supplemental conductor, a common ground return for one or more of said conductors, a switch for changing the normal talking-circuit from a metallic to a grounded one, a weighted hook-lever adapted to engage said switch to hold it in operative position, and a receiver-lever adapted to release said weighted lever so that the switch may be returned to its normal position.

9. A party-line telephone system, comprising a main circuit having two metallic conductors, a supplemental conductor, substations connected to said conductors, ringers at the substations, and means for changing the ringers from the metallic circuit to one of the conductors and a common ground return.

849,033. HAY-LOADING APPARATUS. ROBERT W. WELLER, Packwood, Iowa. Filed Oct. 3, 1906. Serial No. 337,192.

Claim.—1. An apparatus for the purpose specified including a base, a frame supported on said base, a platform carried on said frame, means for turning said frame on a vertical axis, means for rocking the platform-supports on a horizontal axis, and means for tilting said platform in opposite directions from its initial position.

2. An apparatus for the purpose specified including a base, sills supported on said base and carrying a frame, a platform borne by said frame, means for turning the sills and frame on a vertical axis, means for rocking the frame on a horizontal axis, and means for tilting said platform.

3. An apparatus for the purpose specified including a fixed base, sills mounted on said base, a movable frame supported on the sills, a receiving-platform carried on the frame, means for turning said sills and frame on a vertical axis, means for rocking said frame on a horizontal axis, means for locking the frame in its initial position and means for tilting said platform.

4. An apparatus for the purpose specified including a base, a circular track laid on said base, a movable frame supported on said track, a platform carried on said frame, means for turning said frame upon the circular track, means for rocking the frame, means for locking the frame in its initial position, means reversible for tilting the platform, and means for locking the platform in its initial position.

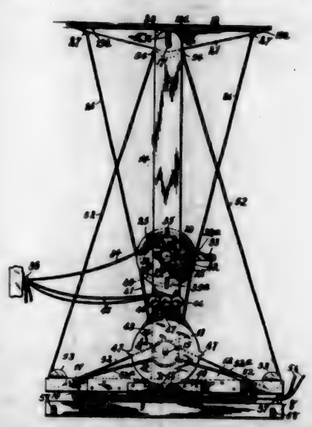

5. An apparatus for the purpose specified including a base furnished with a circular track, a frame adapted to turn on said circular track, a platform carried on said frame, means for turning the frame upon said track, means for rocking the frame upon a horizontal axis, means for locking said frame in its initial position, means for tilting the platform upon a horizontal axis, means for automatically returning said platform to its initial position, and means for retaining said platform in such initial position.

6. An apparatus for the purpose specified including a fixed base, a revoluble frame mounted upon said base, a platform carried on the frame, means for revolving said frame upon the base, means for rocking the frame upon a horizontal axis, means for locking the frame in its initial position, means for releasing the frame from its locked position, means for automatically tilting the platform synchronously with the rocking movement of the frame and means for automatically locking the platform when tilted to its initial position.

7. An apparatus for the purpose specified including a base having a circular track, a frame adapted to turn on said track, a platform carried on the frame, means for turning the frame upon said track, means for preventing displacement of the frame from the track, means for rocking the frame upon a horizontal axis, means for automatically locking the frame in a secondary position, means for releasing the frame from a locked position, means for automatically tilting said platform simultaneously with the rocking movement of the frame means for automatically restoring the frame and platform to their initial position and means for automatically locking said frame and platform in their initial positions.

8. An apparatus for the purpose specified including a base provided with a circular track, a frame adapted to turn on the track, a platform carried on said frame, means for turning the frame upon the said track, means for preventing displacement of the frame from the track, means for rocking the frame upon a horizontal axis, means for automatically locking the frame in a plurality of positions, means for releasing the frame from any of its locked positions, means for automatically tilting the said platform simultaneously with the rocking movement of the frame, means for automatically restoring the frame and platform to their initial positions, means for automatically locking said frame and platform in their initial or secondary positions, means for tilting said platform independently of the movements of the frame, means for automatically restoring said platform to its initial position when independently tilted, means for automatically locking said platform in its initial position, said locking means being independent of the means for locking the frame in its initial position, and means for anchoring said base.

849,034. PHOTOGRAPH-PLATE. PIERRE V. W. WELSH, New York, N. Y. Filed Oct. 26, 1906. Serial No. 340,681.

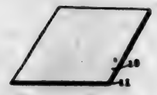

Claim.—1. As an improved article of manufacture, a composite photograph-plate having a sensitized metal surface, and a backing of lighter and more bulky material.

2. A photograph-plate having a metal surface coated with sensitized material and a backing of lighter and thicker material, the two parts being rigidly secured together and of the same size.

3. A photograph-plate comprising two sections, one of sheet metal having a sensitized coating and the other of cardboard, the sections being of the same size and rigidly secured together.

4. A photograph-plate comprising two sections of the same size, one of sheet metal having a coating of sensitized material and the other of thicker and lighter material, adapted to soften when immersed in a bath.

849,035. MEANS FOR SUPPORTING GYMNASTIC HORIZONTAL BARS. WILHELM WESTENHOFF, Wildeshausen, Germany, assignor of one-half to Gustave J. Westenhoff, St. Louis, Mo. Filed Oct. 17, 1906. Serial No. 339,380.

Claim.—1. In a horizontal-bar-supporting means, the combination with a horizontal bar, of a pair of clamping-blocks having inclined faces against which the ends of said bars are adapted to bear, and means for drawing said bar along said inclined faces, substantially as set forth.

2. In a horizontal-bar-supporting means, the combination with a horizontal bar, of a pair of clamping-blocks having inclined faces against which the ends of said bar are adapted to bear, and draw-screws having engagement with said horizontal bar for moving its ends in engagement with said inclined faces, substantially as set forth.

3. In a horizontal-bar-supporting means, the combination with a horizontal bar, of a pair of clamping-blocks having inclined faces against which the ends of said bar are adapted to bear, draw-screws engaging said horizontal bar and extending through portions of said blocks, and draw-nuts fitted to said draw-screws, substantially as set forth.

4. In a horizontal-bar-supporting means, the combination with a horizontal bar, of a pair of clamping-blocks having inclined faces adapted to receive the ends of said bar, draw-screws having loops encircling said bar and extending through portions of said blocks, and draw-nuts fitted to said draw-screws, substantially as set forth.

5. In a horizontal-bar-supporting means, the combination with a horizontal bar, of a pair of clamping-blocks having inclined faces adapted to receive the ends of said bar, draw-screws having loops encircling said bar and extending through portions of said blocks, and draw-nuts fitted to said draw-screws; said horizontal bar being provided with eyes in which the loops of said draw-screws are fitted, substantially as set forth.

6. In a horizontal-bar-supporting means, the combination with a horizontal bar, of a pair of clamping-blocks having inclined faces adapted to receive the ends of said bar and having guides located adjacent to said inclined faces, draw-screws having loops encircling said bar and fitting in said guides, and draw-nuts fitted to said draw-screws, substantially as set forth.

849,036. FISHING-TACKLE. MARTIN ZIMMERMAN, Rochester, N. Y. Filed Oct. 18, 1906. Serial No. 339,427.

Claim.—1. In a fishing-tackle, a suitable support and a hook secured thereto by a flexible and elastic connection whereby such hook, when inserted within a bait and extended outwardly through an opening therein, may be yieldably held against the body of such bait.

2. In a fishing-tackle, a suitable support and two hooks each independently secured thereto by a flexible and elastic connection whereby such hooks when inserted within the mouth and outwardly through and behind the gills of a fish impaled thereon may be yieldably held in such position.

3. In a fishing-tackle, a supporting-wire adapted to be inserted through the bait and carrying a permanently-closed loop and a hook removably secured in such loop, the whole device adapted to be drawn forward within the bait to expose such hook adjacent thereto and such bait, when thus in position thereon, operating to prevent the removal of such hook from such loop.

4. In a fishing-tackle, a supporting-wire adapted to be inserted through the bait and carrying a permanently-closed loop and a twin hook removably secured in such loop, the whole device adapted to be drawn forward within the bait to expose each member of such twin hook on the sides thereof and such bait, when thus in position thereon, operating to prevent the removal of the twin hook from such loop.

5. In a fishing-tackle, a supporting-wire, a hook connected thereto and adapted to be inserted within and extend outwardly through a bait impaled thereon, such wire

carrying an extension below such hook and adapted to be inserted through the bait and carrying a loop and a hook removably secured in such loop, the whole device adapted to be drawn forward within the bait when in position to prevent the removal of such last hook and to expose the same adjacent to such bait.

6. In a fishing-tackle, a supporting-wire, a hook secured thereto by a flexible and elastic connection and adapted to be inserted within and extend outwardly through a bait impaled thereon, such wire carrying an extension below such hook and adapted to be inserted through the bait and carrying a loop and a hook removably secured in such loop, the whole device adapted to be drawn forward within the bait when in position to prevent the removal of such last hook therefrom and to expose the same adjacent to such bait.

7. In a fishing-tackle, a supporting-wire, two hooks each secured thereto by a flexible and elastic connection whereby such hooks may be inserted within the mouth and extend outwardly through and behind the gills of a fish impaled thereon, such wire carrying an extension below such hooks and adapted to be inserted through the fish and carrying a loop and a twin hook removably secured in such loop, the whole device adapted to be drawn forward within the fish when in position to prevent the removal of the twin hook therefrom and adapted to expose each member of such twin hook on the sides of the fish.

8. In a fishing-tackle, a supporting-wire, two hooks connected thereto and adapted to be inserted within the mouth and extend outwardly through and behind the gills of a fish impaled thereon, such wire carrying an extension below such hooks and adapted to be inserted through the fish and carrying a loop and a twin hook removably secured in such loop, the whole device adapted to be drawn forward within the fish when in position to prevent the removal of the twin hook therefrom and adapted to expose each member of such twin hook on the sides of the fish.

9. In a fishing-tackle, a wire, a twirler or spoon comprising a blank struck out from a sheet of metal having lugs or ears bent in parallel planes and at practically right angles to the plane of the blank but on opposite sides thereof, such lugs or ears having holes therethrough constituting bearings spaced apart for revolubly supporting such twirler upon such wire, an opening through such twirler to receive such wire and such twirler having wings formed into curved blades extending obliquely outward from a line connecting such holes.

10. In a fishing-tackle, a wire, a twirler or spoon comprising a blank struck out from a sheet of metal having lugs or ears bent in parallel planes and at practically right angles to the plane of the blank but on opposite sides thereof, such lugs or ears having holes therethrough constituting bearings spaced apart for revolubly supporting such twirler upon such wire, and an opening through the body of such twirler between such lugs or ears to receive such wire whereby such twirler may be revolubly supported and balanced on such wire and such twirler having wings formed into curved blades extending obliquely outward from a line connecting such holes.

849,037. ORE CRUSHING AND SCREENING MILL. JOSEPH ALGERT, Denver, Colo. Filed Sept. 17, 1906. Serial No. 334,925.

Claim.—1. In an ore crushing and screening mill, a rotatable head having a flange on one side and a hub on the other side, a removable flanged-shaped ring attached to its opposite side having an introverted hooked-shaped inner peripheral edge, a divided circumferential ring having a recess-face fitting around said curved hooked end of said flange-ring, a shaft extending through the hub of said flanged portion and means for supporting said divided flanges and said divided circumferential ringing in a rotatably substantially water-tight joint on said hooked inner peripheral edge of said flange-ring.

2. In an ore crushing and screening mill, the combination of a supporting-frame, a rotatable head having a flange on one side and a hub on the other side, a shaft supported in said frame and secured to said hub, and means for rotating said shaft, with the ring secured to said head and provided with a curved hooked-shaped inner peripheral edge, a saddle extending across said frame, a flange secured to said saddle and fitting the inner peripheral edge of said flange-ring, and a ring secured to said flange and provided with a curved recess arranged to fit over said hooked end of said curved hook-ring with a close but rotatable joint.

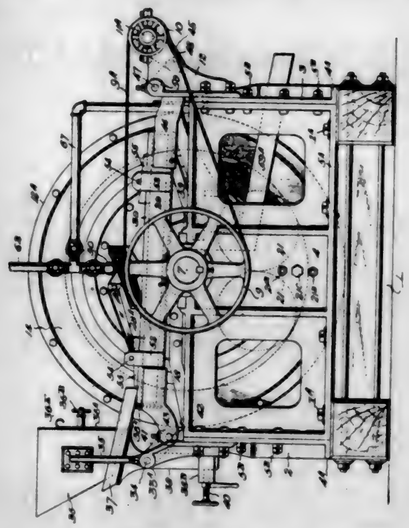

3. In an ore crushing and screening mill, a rotating ore-crushing head having a flange at one side, a shaft upon which said head and flange are secured, means for rotating said shaft and head, a detachable narrow flange-ring secured to the opposite edge of said ore-crushing ring, a fixed flange fitting in the inner periphery of said flange-ring, and a water-tight joint formed between the inner peripheral edge of said flange-ring and the periphery of said center side flange, said water-tight joint being arranged to permit said flange-ring's inner periphery to rotate on said center flange.

4. In an ore crushing and screening mill, the combination with the supporting-frame, provided with a rotatable shaft, of a rotating head mounted on said shaft, a ring-shaped flange secured to said rotating head provided with an introverted curved inner end, a divided stationary flange fitting around said shaft and arranged to close the opening within said ring-shaped flange, and a divided ring secured to said stationary flange and arranged and adapted to form a water-tight joint between said stationary flange and the ring-shaped flange of said rotating head.

5. In an ore crushing and screening mill, the combination with the supporting-frame, the driving-shaft, the mill-head secured to said shaft, the flange-ring, the splash-plates, and means including a ring connected with the inner periphery of said flange-ring, and the outer peripheral edge of said splash-plates, for making a water-tight rotative journal-joint between said flange-ring and said splash-plates.

6. In an ore crushing and screening mill, the combination of the supporting-frame, the mill-head rotatably mounted thereon, provided with a flanged ring having an introverted curved inner peripheral edge, the splash-plates arranged with said flange-ring to form the opposite side of said mill-head, means including an adjustable support for adjusting said splash-plates, concentric to said flange-ring's inner peripheral edge, a divided ring secured to said splash-plate, a curved recess on said divided ring adapted to fit over said curved hook on said flange-ring, and to permit said flange-ring to rotate in said recess and arranged and adapted to form a water-tight joint and rotatable bearing between said flange-ring and said splash-plates, an ore-crushing die-ring secured in said mill-head, a pair of rolling disk ore-crushing mullers rollingly and operatively seated on said die-ring within said mill-head.

7. In an ore-crushing mill, the combination of the supporting frame, the driving-shaft journaled therein, means for rotating said shaft, the mill-head ring secured to said driving-shaft, the flange-ring secured thereto, the stationary splash-plates, means connected to said frame and including a vertical and horizontal adjustable support for concentrically adjusting said splash-plates, means including a ring connected with said splash-plates for forming a water-tight joint between said flange-ring and said splash-plates, the disk-ring in said mill-head, the disk roller-mullers on said die-ring, a water-inlet aperture in the top portion of said splash-plates, a water-supply pipe extending into said water-aperture, a water-jet-discharging nozzle connected to said water-supply pipe and arranged to discharge a jet of water against the roller disk tread portion of said die-ring.

8. In an ore crushing and screening mill, rotatable vertical mill-head, having sides, a portion of one of which sides is non-rotatable, an ore-crushing die-ring in said mill-head, ore-crushing rollers loosely mounted on the inner periphery of said die-ring, means including a pipe for feeding water under pressure to the inner periphery of said die-ring, means including an inlet-aperture in the non-rotatable one of said ring sides, for feeding ore and water into said mill-ring to said die-ring and rollers, an ore-pulp-discharge aperture in said non-rotatable side of said mill-head, an ore-pulp spout within said mill-head connected to said aperture and arranged to discharge crushed ore-pulp from said mill and die-rings and rollers and a reciprocating screen arranged to receive the discharged crushed ore-pulp from said mill-head.

9. In an ore crushing and screening mill, the combination of the mill-head, provided with an operatively-arranged die-ring and roller disk mullers, the removable non-rotatable central side portion of said mill-head, the flange-ring secured to said mill-head and provided with the inwardly-curved hook, the splash-ring secured to said non-rotatable central side portion of said mill-head and fitting around said hooked end of said flange-ring, the fluid-pipe and discharging-nozzle arranged to discharge water against said die-ring, an ore-pulp-inlet feeding and a discharge-outlet in said non-rotatable side of said mill-head, a discharge-spout within said mill-head connected to said discharge-outlet, means for feeding ore through said ore-inlet, a reciprocating screen arranged adjacent to said mill-head, a hopper arranged to feed ore to said screen, a discharge-spout extending from said discharge-outlet of said mill-head onto said screen and adapted to feed the crushed product of said mill-head onto said screen, a spout arranged to catch the oversize product of said screen and convey it to said mill-head's feed-inlet, and means including spouts for conveying the screened ore product away from said screen and mill.

10. In an ore crushing and screening mill, the combination of the supporting-frame, the ore-crushing mill, and the reciprocating screen, with the ore-feed hopper secured to said frame above said screen, the feed-pan below said hopper, resting at its discharge end on one end of said screen, a shaft secured to said frame, a rock-arm pivotally mounted on said shaft and arranged to support at its upper end the opposite end of said feed-pan, and having its opposite end connected to said frame, with an adjustable reciprocative resilient connection, and means for imparting a reciprocating movement to said screen, whereby the said reciprocative movement of said screen is imparted to the discharging end of said ore-feeding pan.

11. In an ore crushing and screening mill, the combination with the supporting-frame and the ore-crushing mill, having an ore-feed inlet and feed-spout, and a discharge-outlet and a crushed-ore collecting and discharging spout, of the screen-pan, and screen, swinging shafts at the opposite ends of said screen-pan, the arms and shafts pivotally arranged to support said swinging shafts and said screen-pan, the eccentric and surrounding arm connected to one of said swinging shafts, and arranged to reciprocate said screen-pan, the ore-feeding hopper secured to said frame, the feed-pan arranged to receive ore from said hopper and discharge it on said screen, a gate connected to said hopper and extending into said feed-pan, means for adjusting said gate, means connected with said screen-pan and with said frame for imparting a vibratory motion to said feed-pan, means for conveying the screened-ore product from said screen, means for discharging the oversize screen ore into said ore-crushing-mills's feed-inlet spout, and for discharging the crushed ore of said mill from said mill's collecting and discharging spout onto said screen.

12. In an ore crushing and screening mill, the combination with a suitable supporting-frame, of an ore-crushing mill rotatably journaled therein, a reciprocating screen mounted on said frame adjacent to said mill, means for feeding ore to said screen, means for feeding the oversize of said screen to said ore-crushing mill, means for feeding the crushed-ore product of said ore-crushing mill to said screen, means for conveying the screened product of said screen away from said screen and mill, and means for feeding any suitable fluid into said ore-crushing mill.

13. In an ore crushing and screening mill, the combination of the supporting-frame, the mill-head, a vertical ore-crushing die-ring carried by said mill-head, and crushing-roller rotatably mounted in said frame, having an ore-feeding inlet and a crushed-ore discharge-outlet, said outlet comprising a spout having oppositely-flaring wing or side portions extending on each side of its central portion at an upward and outward angle, and arranged and adapted to be secured to said discharge-outlet, within the inner periphery of said die-ring, water-supply pipe connected to a supply of water under pressure extending into said mill above said discharge-spout, having a water-discharging nozzle arranged to deliver a supply of water under pressure against the inner periphery of said die-ring, above said discharge-spout, and at a point that will permit said water and any crushed ore that may adhere to said die-ring to drop into said discharge-spout, and thereby be conveyed out of said mill, a water-supply pipe arranged to discharge a supply of water into said feeding-inlet, and a suitable screen in operative relation to said die-ring mill and arranged to receive and screen the crushed-ore product and to return the oversize to the feeding-inlet, and suitable means for conveying said screenings product away from said mill.

849,038. PRINTING AND EMBOSSING APPARATUS. EDWIN E. ANGELL, Somerville, Mass., assignor to Angell Manufacturing Company, Boston, Mass., a Corporation of Massachusetts. Filed Jan. 25, 1906. Serial No. 297,809.

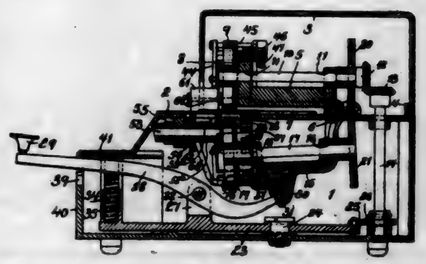

Claim.—1. An apparatus of the character described comprising means for printing the outlines of characters leaving the interior portions thereof blank, and means for displacing and stretching the portions of the material printed on within the said outlines.

2. An apparatus of the character described, comprising means for offsetting integral portions of a sheet, in the form of conventional characters, slightly away from the surface of the sheet, and means for impressing the sheet

and depositing color on the surface thereof in lines surrounding and inclosing the offset portions of the same, thereby sharply defining the edges of the characters.

3. An apparatus of the character described comprising means for printing characters on one side of a sheet, and means for printing on the other side of the sheet outlines of the same characters placed over and surrounding the characters first printed.

4. A printing apparatus comprising coöperating projecting and centrally-recessed types adapted to print on opposite sides of a sheet and to displace the sheet between the portions thereof which are printed on.

5. A printing apparatus comprising coöperating types, one of which is recessed in its interior, and has projecting edges or lips adapted to impress the outlines of a character, while the other is protuberant and shaped to fit within the recess of the first.

6. A printing apparatus comprising coöperating types, one of which is recessed in its interior, leaving only the outlines of the character projecting, while the other is protuberant and shaped to fit within the recess of the first, and separate means for inking the types.

7. A printing apparatus comprising coöperating types, one of which is recessed in its interior, leaving only the outlines of the character projecting, while the other is protuberant and shaped to fit within the recess of the first, and means for coating each opposing type with a color different from that of the other.

8. A printing apparatus comprising a type-carrier having characters of which the edges are raised and the central portions recessed, a second type-carrier having raised characters corresponding to those of the first carrier and adapted to enter the recesses thereof, means for moving the carriers in unison to bring corresponding raised and recessed types adjacent, and means for bringing said types together to print.

9. A printing apparatus comprising holders carrying cooperating marking dies or types, said holders being simultaneously movable to shift the complemental dies and one relatively movable toward the other to print; and a single operating-arm mounted to swing in two planes and connected to said holders in such manner as to impart to them their die-shifting movement when swung in one plane, and to force them together for printing when oscillated in the other plane.

10. A printing apparatus comprising a pair of holders carrying coöperating marking dies or types, both movable to alter the operative dies and one relatively movable toward and from the other to print, a swinging arm in connection with both holders for adjusting them in unison, and an operating member connected to said arm for moving it, and engaged with the relatively movable holder for moving the same toward the other holder.

11. A printing apparatus comprising relatively stationary and movable supports, holders rotarily mounted in said supports carrying coöperating marking dies or types, gearing connecting said holders for causing them to rotate in unison to shift their several dies correspondingly, and an operating member connected both to rotate said holders and to move the holder carried by the relatively movable support toward the other holder.

12. A printing apparatus comprising relatively stationary and movable supports, holders rotarily mounted in said supports carrying coöperating marking dies or types, gearing connecting said holders for causing them to rotate in unison to shift their several dies correspondingly, and an operating member geared to the holders to rotate them and engaged with the relatively movable support to bring the dies together.

13. A printing apparatus comprising relatively stationary and movable supports, holders rotarily mounted in said supports carrying coöperating marking dies or types, gearing connecting said holders for causing them to rotate in unison to shift their several dies correspondingly, an arm in geared connection with said holders and movable to rotate them, and an operating-arm carried by said first arm and engaged with the relatively movable support for moving the same to bring the dies together.

14. A printing apparatus comprising relatively stationary and movable supports, holders rotarily mounted in said supports carrying coöperating marking dies or types, gearing connecting said holders for causing them to rotate in unison to shift their several dies correspondingly, an arm in geared connection with said holders and movable in one plane to rotate them, and an operating-arm carried by said first arm movable in a different plane and engaged with the relatively movable support for moving the same to bring the dies together.

15. A printing apparatus comprising rotary die-holders carrying coöperating printing-dies, one holder being mounted for movement toward and from the other, an arm pivoted to move in one plane and in geared connection with said holders for rotating them to shift the dies, and an operating-arm pivoted to the first arm so as to move relatively thereto in a plane transverse to the first plane, said operating-arm being engaged with the relatively movable die-holder to move the same toward the other holder to print.

16. A printing apparatus comprising rotary die-holders carrying coöperating printing-dies, one holder being mounted for movement toward and from the other, an arm pivoted to move in one plane and in geared connection with said holders for rotating them to shift the dies, and an operating-arm pivoted to the first arm so as to move relatively thereto in a plane transverse to the first plane, said operating-arm having a portion in line with the pivotal axis of the first arm engaged with the relatively movable die-holder for moving the same toward the other holder.

17. A printing apparatus comprising rotary die-holders carrying coöperating printing-dies, one holder being mounted for movement toward and from the other, an arm pivoted to move in one plane and in geared connection with said holders for rotating them to shift the dies, an operating-arm pivoted to the first arm so as to move relatively thereto in a plane transverse to the first plane, said operating-arm being engaged with the relatively movable die-holder to move the same toward the other holder to print, and a spring between the two arms tending to hold the operating-arm so as to separate the die-holders.

18. A printing apparatus comprising rotary die-holders carrying coöperating printing-dies, one holder being mounted for movement toward and from the other, an arm pivoted to move in one plane and in geared connection with said holders for rotating them to shift the dies, an operating-arm pivoted to the first arm so as to move relatively thereto in a plane transverse to the first plane, said operating-arm being engaged with the relatively movable die-holder to move the same toward the other holder to print, and recesses arranged to receive the operating-arm when the latter is actuated for printing, to position the die-holders and dies.

19. A printing apparatus comprising rotary die-holders carrying coöperating printing-dies representing different characters, one holder being mounted for movement toward and from the other, an arm pivoted to move in one plane and in geared connection with said holders for rotating them to shift the dies, an operating-arm pivoted to the first arm so as to move relatively thereto in a plane transverse to the first plane and movable with the first arm to set the same and thereby the dies by which an impression is to be made, said operating-arm being engaged with the relatively movable die-holder to move the same toward the other holder to print, and a scale adjacent the operating-arm bearing characters corresponding to those on the dies.

20. A printing apparatus comprising rotary die-holders connected for adjustment in unison, a series of cooperating marking-dies on each holder, one of the holders being relatively movable toward and from the other for bringing dies together to impress opposite sides of a sheet, an operating-arm engaged with said last-named holder, movable in one direction to bring the holders together and in a transverse direction to adjust the holders, and a plate adjacent the arm having tapered notches into which the arm moves when bringing the holders together, and by which it is guided to adjust the dies into exact registry.

849,039. TOILET SCREW-NUT. EDGAR W. BASSICK and CHARLES S. BARNARD, Bridgeport, Conn., assignors to The Burns, Silver and Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Oct. 3, 1906. Serial No. 337,223.

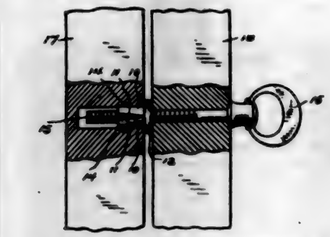

Claim.—1. As an article of manufacture, a combined nut and washer comprising a plurality of internally-threaded members each having a flange at one end, and a ring-shaped disk embracing the flanges of said members and hingedly connecting them, the edges of said members being beveled or tapered whereby the insertion of the end of a bolt will swing said members apart.

2. As an article of manufacture, a combined nut and washer comprising a plurality of internally-threaded members each having a flange at one end and each having a spur, and a ring-shaped disk embracing the flanges of said members and hingedly connecting them, the edges of said members being beveled or tapered whereby the insertion of the end of a bolt will swing said members apart, the diameter of the nut at a point taken through said spurs being substantially not greater than the diameter of the nut adjacent to said fingers.

849,040. LOCK FOR MAIL-SACKS. FRANK S. BENSER and MILES M. FAUCETT, Hoskins, Nebr. Filed July 21, 1906. Serial No. 327,195.

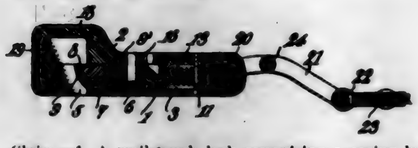

Claim.—1. A mail-pouch lock comprising a casing half having a longitudinally-extending channel with a reduced end and shoulders formed in its side walls, a spring-actuated bolt located in said channel and having a reduced end and laterally-disposed shoulders, a second half closing the first said half and having a keyhole and a vertically-protruding portion in the vicinity thereof, and a strap attached to the lock.

2. A mail-pouch lock comprising casing halves attached together and carrying a slidable bolt, one of the said halves having a transversely-extending groove, a link having a cross-bar located in said groove, the opposite casing half closing the said groove, a strap attached to said link, and a stud mounted upon said strap.

849,041. FASTENING DEVICE. WILLIAM BILLINGSLEY, Quincy, Wash. Filed July 10, 1906. Serial No. 325,554.

Claim.—1. A fastening device comprising a slotted supporting member, a spring-pressed saddle movable longitudinally of the supporting member, a bolt, trunnions extending therefrom and slidably and pivotally mounted within the slots, said saddle normally exerting a longitudinal pressure upon the bolt, and resilient means overlapping the bolt for retarding the pivotal movement of said bolt in one direction.

2. A fastening device comprising a supporting member, guides outstanding therefrom, a longitudinally-movable bolt detachably mounted between and pivotally engaging the guides, said bolt having a rounded inner end, resilient means for retarding the pivotal movement of the latch in one direction, a curved saddle-piece bearing upon the rounded end of the bolt, and resilient means for exerting a constant pressure upon the saddle-piece and in the direction of the length of the bolt.

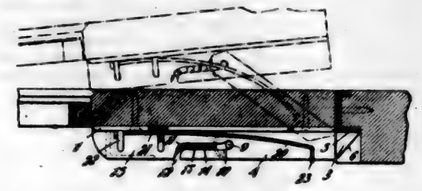

3. A fastening device comprising a supporting member, parallel guides thereon, braces integral with the supporting member and the guides, a spring-pressed saddle-piece interposed between and movable longitudinally of the guides, a slidable bolt pivotally mounted between the guides and normally contacted by the saddle-piece, and a spring bearing upon the bolt and seated within the braces, said spring normally holding the bolt against pivotal movement.

4. A fastening device comprising a supporting member, parallel guides thereon, braces integral with the supporting member and the guides, a spring-pressed saddle-piece interposed between and movable longitudinally of the guides, a slidable bolt pivotally mounted between the guides and normally contacted by the saddle-piece, a spring bearing upon the bolt and seated within the braces, said spring normally holding the bolt against pivotal movement, and a noise-deadening device upon the bolt for contacting with the supporting member.

5. A fastening device comprising a supporting member, channel-plates connected with said supporting member, at least one of said channel-plates having a longitudinal slot formed with a curved rear wall and a lateral entrance portion intersecting the edge of said channel-plate, a bolt having a trunnion slidably fitted into said slot and being capable of pivotal movement upon said trunnion, and a spring for normally preventing the pivotal movement of said bolt upon said trunnion.

6. A fastening device comprising a supporting member, bolt-guiding means, a slidable bolt, a spring-casing, a bolt-spring loosely fitted into said casing, a saddle-piece loosely fitting the rear end of said bolt and having a stem loosely fitted into the forward end of said bolt-spring, and a second spring for normally holding said bolt within said guiding means.

7. A fastening device comprising a supporting member, a pair of channel-plates connected with said supporting member, at least one of said channel-plates having a longitudinal slot formed with a lateral entrance portion, a slidable bolt having a trunnion extending through said slot, said bolt being formed with a rounded rear end, a straight engaging face and a beveled engaging face, a spring-casing at the rear ends of said channel-plates, a spring loosely fitted into said spring-casing, a saddle-piece loosely engaging the rounded rear end of said bolt and having a stem loosely engaging the forward end of said spring, perforated braces connected with said supporting member, and a spring having parallel rear ends loosely extended through said perforated braces and having a yoke extending around said channel-plates and directly engaging said bolt.

849,042. AUTOMATIC CAR-COUPLING. THOMAS G. BLACKMAN, Jr., Graceville, Fla. Filed Nov. 3, 1905. Serial No. 285,750.

Claim.—1. An automatic coupling comprising a recessed draw-head, a knuckle pivoted thereto and provided with a shank adapted to swing into the recess in said head, shoulders on said head and shank, and a locking device disposed

in said head and adapted to be engaged by said shank as it moves inwardly to couple and forced thereby positively and independently of gravity between said shoulders to complete locked position, substantially as described.

2. An automatic coupling comprising a recessed draw-head, a knuckle pivoted thereto and provided with a shank adapted to swing into the recess in said head, a rocking angular locking device disposed in said head and adapted to be engaged by said shank as it moves inwardly and swung thereby in a vertical plane longitudinally of the head until it is forced by said shank positively and independently of a gravity movement between portions of the head and shank to complete locked position.

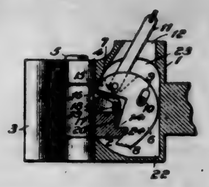

3. An automatic coupling comprising a recessed draw-head, a knuckle pivoted thereto and provided with a shank adapted to swing into the recess in said head, an angular locking device loosely pivoted in the head and having one end disposed in the path of said shank when in its open position and the other adapted to move toward the face of the head, and portions of the head and shank between which said latter end is positively forced by the incoming shank independently of a gravity movement to complete locked position.

4. An automatic coupling comprising a recessed draw-head, a knuckle pivoted thereto and provided with a shank adapted to swing into the recess in said head, the rear side of said shank abutting throughout against the rear wall of said recess while the front side of the shank stands flush with the concave face of the draw-head, shoulders on said head and shank, and a locking device disposed in said head and adapted to be engaged by said shank and forced thereby positively to complete locked position between said shoulders, substantially as and for the purposes described.

5. An automatic coupling comprising a recessed draw-head, a knuckle pivoted thereto and provided with a shank adapted to swing into the recess in said head, said shank having a reduced portion leaving a shoulder, a shouldered portion of the head forming part of the top of said recess and under which said reduced portion of the shank passes, said shank in its coupled position substantially filling the recess in the head, its rear edge throughout abutting against the rear wall of the recess and the major portion of its front edge standing flush with the face of the draw-head and a locking device disposed in the head and adapted to be moved positively by said shank into the narrow opening between the said shouldered portions of the shank and head to lock the knuckle.

6. In an automatic coupling comprising a recessed draw-head, a knuckle pivoted thereto and provided with a shank adapted to swing into the recess in said head, said shank having a recess therein with an outwardly and downwardly slanting floor, a locking device adapted to be moved in an arcuate direction by the shank and forced into position to lock the latter, and means to lift said device so that it engages in said recess in the shank and is held thereby out of operative position for locking the shank.

7. In an automatic coupler, a draw-head having a shallow horizontal recess in its front face and a narrow vertical recess disposed longitudinally of the head and opening into said first recess, a knuckle pivoted to the head, a tail-wing on the knuckle which swings into said horizontal recess and has its rear edge to conform with and engage the rear wall of the horizontal recess, an angled locking device loosely pivoted in said vertical recess and so disposed that when in its open position its lower arm projects into the horizontal recess, and shoulders on said head and shank which stand opposed when the knuckle is closed, the upper end of said locking device being adapted to be forced to complete locked position between said shoulders and held there by the engagement of the shank with its lower arm.

8. In an automatic coupler, a recessed draw-head, a knuckle pivoted therein, a shank on said knuckle having a shoulder 18, a slanting face 15 and a longitudinal recess 20, a shoulder 21 on the head opposed to shoulder 18, a locking device consisting of an angled piece having a locking-head, tailpiece and an intermediate shoulder, and means to lift said device so as to set its shoulder into said recess 20 thereby setting the device for uncoupling, said device being so disposed and shaped that when the knuckle is open, its locking-head will rest on face 15 and as the knuckle closes, its shank will engage the tailpiece of the device immediately after the locking-head clears the face 15 and will force and positively hold said locking-head between the shoulders 18 and 21 until the device is lifted by said means.

9. In an automatic coupler, the combination with a draw-head and swinging knuckle, of a rocking locking device comprising a head, a tailpiece and a shoulder disposed toward the face of the draw-head, means to move said device, a tail-wing on the knuckle having a shoulder 18 and a slanting face 15, a shoulder on the draw-head opposed to the shoulder 18, said tail-wing being adapted to engage the tailpiece of said device and force its head positively between said opposed shoulders, and said shoulder on the locking device being adapted to be moved into engagement with said shank and thereby hold said head in a position to clear said shoulder 18 and rest upon said face 15 as the knuckle opens.

849,043. METHOD OF AND APPARATUS FOR SINKING WELLS. EUGENE F. BRADT, Detroit, Mich. Filed July 21, 1906. Serial No. 327,169.

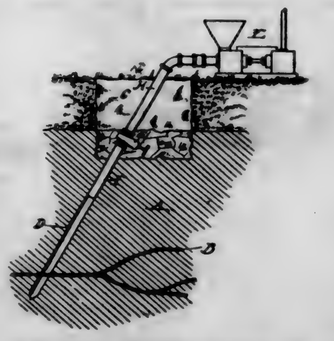

Claim.—1. The herein-described method of sinking shafts, consisting first in drilling a test-bore, in then forcing cementitious material within the bore and communicating channels, and maintaining the material therein under pressure in excess of the opposing pressure until set, and finally sinking the shaft.

2. The method of sinking shafts, consisting in driving in a section of ground through which the shaft is to be sunk a test-bore into communication with the channel to be closed, and in then forcing cementitious material under pressure into the bore and channel, and maintaining the pressure therein by closing the bore.

3. In apparatus for sinking shafts, the combination with a conduit adapted to be inserted and held within the ground, a valve-controlled closure for the conduit, a pump, and a pipe connection between said pump and closure.

4. The herein-described method of sinking shafts, consisting first in forming a closable conduit in the ground, and in then driving a test-bore through said conduit.

849,044. ROTARY DRIER. HERMANN BRINKER, Hamilton, Ohio. Filed Nov. 30, 1906. Serial No. 345,769.

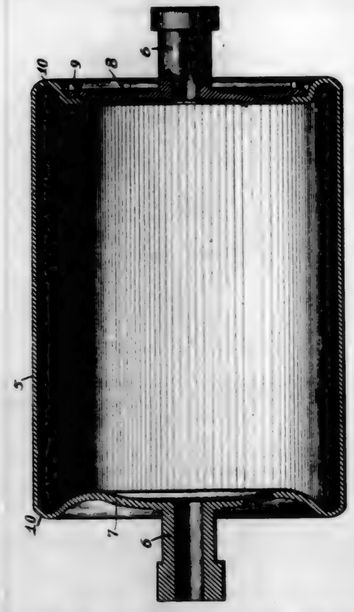

Claim.—A drier comprising a cylindrical metallic shell having at each end an extension of substantially the same thickness as the shell and curving longitudinally outward and radially inward and having journal-heads joined to such extensions, substantially as set forth.

849,045. ADVERTISING-MACHINE. EDGAR W. BROWN, Dayton, Ohio. Filed Apr. 12, 1906. Serial No. 311,375.

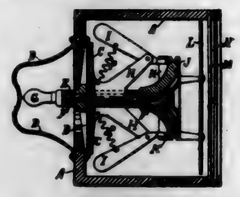

Claim.—1. In a machine of the class described, a light-interrupter consisting of two members, one a revolving member and the other a stationary member, each member having an equal number of similar openings.

2. In a machine of the class described, a light-interrupter consisting of a stationary member and a revolving member, each member having radial openings.

3. In combination in a machine of the class described, means for producing an interrupted light and figures moving in the path of said interrupted light, different portions of said figures being spaced so as to cause said different portions to appear to move at different speeds.

4. In combination in a machine of the class described, means for producing an interrupted light, one or more series of figures adapted to move in the path of said interrupted light and automatic means for causing the relative speed between the rate of light interruption and the speed of the moving figures to vary.

849,046. RAILWAY-CROSSING SIGNAL. DELANO J. BRUSH, Columbus, Ohio. Filed Oct. 29, 1906. Serial No. 340,953.

Claim.—1. In a device of the character described, the combination with an oscillatory arm, of a signal adapted to be actuated by said arm, a rod connected to said arm and adapted to impart movement thereto, a spring for imparting movement to said arm in one direction, a crank to which one end of the rod is connected, a shaft to which said crank is connected, a fixed arm carried by said shaft, and an arm loosely mounted upon said shaft and adapted to be actuated by the wheels of a train.

2. In a device of the character described, the combination with an oscillatory arm, of a signal adapted to be actuated by said arm, a rod connected to said arm and adapted to impart movement thereto, a spring for imparting movement to said arm in one direction, a crank to which one end of the rod is connected, a shaft to which said crank is connected, a fixed arm carried by said shaft, an arm loosely mounted upon said shaft and adapted to be actuated by the wheels of a train, and a spring normally tending to throw the last-named arm into such position that it will be engaged by the wheels of a train.

849,047. FARE-REGISTER. WALTER W. BUBLESON, Denaud, Fla. Filed Jan. 10, 1906. Serial No. 295,413.

Claim.—1. In a fare-recorder, the combination with a pair of recording devices, each of which comprises a marker for a movable record-belt, and a ratchet-wheel for operating the belt, of a spring-supported block, a depressible platform, an arm extending from the platform, the outer end of the arm extending above the block and adapted to bear thereon when the platform is depressed beyond a predetermined extent, rack-bars for actuating the aforesaid ratchet-wheels, and operatively connected to the markers, one of said rack-bars being connected to the arm, and the other to the aforesaid block, and a yielding stop for the platform, said stop yielding when the platform is weighted beyond a predetermined extent.

2. In a fare-recorder, the combination with a pair of recording devices, each of which comprises a marker for a movable record-belt, and a ratchet-wheel for operating the

belt, of a spring-supported block, a depressible platform, an arm extending from the platform, the outer end of the arm extending above the block and adapted to bear thereon when the platform is depressed beyond a predetermined extent, rack-bars for actuating the aforesaid ratchet-wheels, and operatively connected to the markers, one of said rack-bars being connected to the arm, and the other to the aforesaid block, a sliding weight, and a lever connected at one end to the platform, and its other end extending under the weight.

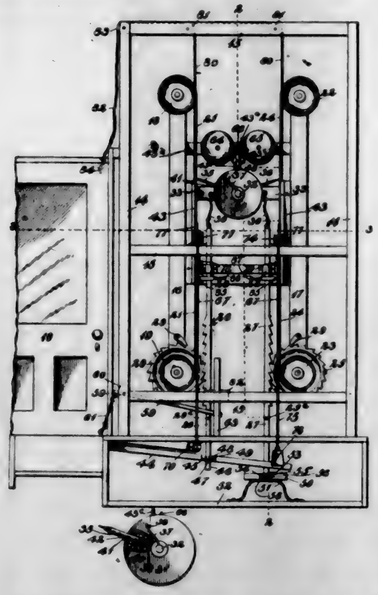

3. In a fare-recorder, the combination with a pair of recording devices, each of which comprises a ratchet-wheel for operating a movable record-belt, and a marker for each belt, of rack-bars engaging the ratchet-wheels and operatively connected to the markers, and means for operating one or both of the rack-bars according to the weight of the person to be recorded.

4. In a fare-recorder, the combination with a pair of recording devices, each of which comprises a ratchet-wheel for operating a movable record-belt, and a marker for each belt, of rack-bars engaging the ratchet-wheels and operatively connected to the markers, a depressible platform operatively connected to one of the rack-bars and adapted to actuate the other rack-bar when the platform is depressed beyond a predetermined extent, and a yielding stop for the platform, said stop yielding when the platform is weighted beyond a predetermined extent.

5. In a fare-register, the combination of a ratchet-wheel for moving a record-belt, a rotatable disk carrying a marking device for the belt, a rack-bar for actuating the ratchet-wheel and operatively connected to the aforesaid disk, and a depressible platform for actuating the rack-bar.

849,048. FUEL-FEED FOR HYDROCARBON-ENGINES. FRANK T. CABLE, Quincy, Mass., assignor to Electric Boat Company, Bayonne, N. J., a Corporation of New Jersey. Filed Oct. 8, 1906. Serial No. 337,945.

Claim.—1. In a fuel-feeding system for hydrocarbon-engines, the combination of carbureter, a supply-pipe leading thereto, an overflow-pipe leading therefrom, a supply-tank, a float-chamber connected with the overflow-pipe and with the supply-pipe, a valve operated by the float to control the communication of the supply-pipe with the tank and the float-chamber respectively, and means in the supply-pipe between the float-chamber and the carbureter for forcing the liquid into the carbureter.

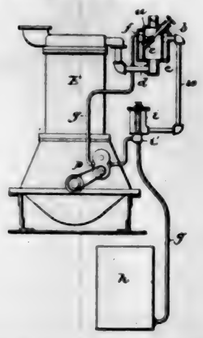

2. In a fuel-feeding system for hydrocarbon-engines, the combination of a constant-level carbureter, a supply-pipe leading thereto, an overflow leading therefrom, a supply-tank, a chamber connected with the overflow-pipe and with the supply-pipe, a float in said chamber, a valve operated by said float to control the communication of the supply-pipe with the tank and the float-chamber respectively, and a pump in the supply-pipe between the float-chamber and the carbureter.

3. In a fuel-feeding system for hydrocarbon-engines, the combination of a constant-level carbureter, a supply-pipe and an overflow-pipe connected thereto, a supply-tank, a pump in the supply-pipe, and means regulated by the overflow from the carbureter for connecting the pump-inlet to the supply-tank or to the overflow-pipe.

4. In a fuel-feeding system for hydrocarbon-engines, a carbureter having a liquid-chamber and a mixing-chamber and a regulable valve between the said chambers, and means for maintaining a given level in the liquid-chamber, comprising a supply-tank, a pipe connecting said tank with the liquid-chamber of the carbureter, an overflow-pipe connected to said liquid-chamber, a float-chamber connected to said overflow-pipe and to said supply-pipe, a float in said float-chamber, a valve operated by said float to control the communication of the supply-pipe with the tank and the float-chamber respectively, and a pump in the supply-pipe between the float-chamber and the carbureter.

849,049. PNEUMATIC TIRE. LORWIN N. CATES, St. Louis, Mo. Filed Mar. 28, 1906. Serial No. 308,590.

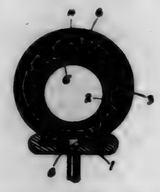

Claim.—A pneumatic tire comprising an inner inflatable tube or section, an outer layer or section therefor, an intermediate band composed of a series of overlapping strips, a series of headed rivets yieldingly and mechanically connecting the strips along their overlapping portions or edges, the several strips terminating at one end in elongated slots, and having studs at the opposite end for loosely engaging said slots, the band encompassing the outer portion of the periphery of the inner tube, substantially as set forth.

849,050. AIR-GOVERNOR FOR MUSICAL INSTRUMENTS. JOSEPH H. CHASE, Buffalo, N. Y., assignor to The Chase & Baker Company, Buffalo, N. Y., a Corporation of New York. Filed May 3, 1906. Serial No. 314,941.

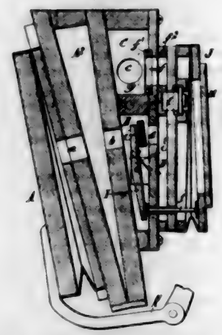

Claim.—1. An air-governor, comprising a case having inlet and outlet chambers, a valve controlling the passage of the air from one of said chambers to the other, a governing-pneumatic controlling said valve, and means for establishing or cutting off communication between said pneumatic and said outlet-chamber at will, substantially as set forth.

2. An air-governor, comprising a case having inlet and outlet chambers, a valve controlling the passage of the air from one of said chambers to the other, a governing-pneumatic controlling said valve and communicating with said outlet-chamber by an exhaust-port and with the atmosphere by a flushing-port, and a switch-valve operating to close one of said ports when the other is opened, substantially as set forth.

3. An air-governor, comprising a case having inlet and outlet chambers, a manual throttle-valve for controlling the passage of the air from the inlet to the outlet chamber, a regulating-valve also controlling the passage of the air from the inlet to the outlet chamber, a governing-pneumatic controlling said regulating-valve and communicating normally with said outlet-chamber, and a valve for establishing or cutting off communication between said pneumatic and said outlet-chamber at will, substantially as set forth.

4. An air-governor comprising a case having inlet and outlet chambers, a chamber or passage connecting said chambers, a regulating-valve controlling the passage of the air from said connecting-chamber to said outlet-chamber, a governing-pneumatic controlling said valve, and means for establishing or cutting off communication between said pneumatic and said connecting-chamber at will, substantially as set forth.

5. An air-governor comprising a case having inlet and outlet chambers, a chamber or passage connecting said chambers, a regulating-valve controlling the passage of the air from said connecting-chamber to said outlet-chamber, a governing-pneumatic controlling said valve and communicating with said connecting-chamber by an exhaust-port and with the atmosphere by a flushing-port, and a switch-valve operating to close said flushing-port when said exhaust-port is opened, and vice versa, substantially as set forth.

6. An air-governor comprising a case having inlet and outlet chambers, a chamber or passage connecting said chambers, a regulating-valve controlling the passage of the air from said connecting-chamber to said outlet-chamber, a governing-pneumatic normally communicating with said connecting-chamber and controlling said regulating-valve, and a throttle-valve controlling the passage of the air from said inlet-chamber to said connecting-chamber, substantially as set forth.

7. An air-governor, comprising a case having inlet and outlet chambers, a chamber or passage connecting said chambers, a throttle-valve controlling communication between said inlet-chamber and said connecting-chamber, a regulating-valve controlling communication between said connecting-chamber and said outlet-chamber, a governing-pneumatic controlling said regulating-valve, and a switch-valve for establishing or cutting off communication between said pneumatic and said connecting-chamber, substantially as set forth.

8. An air-governor, comprising a case having inlet and outlet chambers and a port or passage connecting the same, a regulating-valve applied to said port and opening in the direction of the air-current through the same, and a governing-pneumatic normally communicating with said chambers and controlling said valve, substantially as set forth.

9. An air-governor comprising a case having inlet and outlet chambers, a chamber or passage connecting the same, a lever arranged in said outlet-chamber, a valve carried by said lever and controlling the port between the outlet-chamber and the connecting-chamber, a governing-pneumatic normally communicating with said connecting-chamber, and a sliding rod transmitting motion from the movable board of said pneumatic to said lever and passing through said connecting-chamber, substantially as set forth.

849,051. POWER-TRANSMISSION DEVICE. ALEXANDER CHURCHWARD, Pelham, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 6, 1902. Serial No. 122,382.

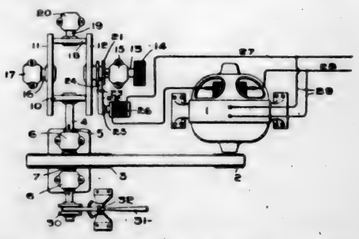

Claim.—1. In combination, a motor, a friction-disk driven thereby, another friction-disk in rolling engagement with the first, and electromagnetic means for automatically regulating the pressure between the disks in accordance with the load transmitted by the disks.

2. In combination, a pair of disks having their axes at right angles, one of the disks frictionally driving the other, and electromagnetic means for automatically varying the pressure between the disks in accordance with the power transmitted.

3. In combination, a frictional driving-gear, a driven gear turning at a different rate of speed from the driving-gear, and electromagnetic means for automatically varying the pressure between the disks in accordance with the power transmitted.

4. In combination, a motor, a shaft, a pair of friction-gears connecting the motor and the shaft, and automatic electromagnetic means for varying the pressure between the gears as the load on the motor varies.

5. In combination, a pair of friction-gears, and electromagnetic means for automatically forcing them together with a pressure varying with the load transmitted.

6. In combination, an electric motor, a pair of members having non-coincident axes, one of said members being driven by the motor and frictionally driving the other, and means operated by the current of the motor for forcing the members together.

7. The combination of an electric motor, a pair of friction-gears driven thereby, and an electromagnet for varying the pressure between said gears, said electromagnets being energized by the current of the motor.

8. In combination, an electric motor, a friction-disk driven thereby, said friction-disk being made out of yielding material and clamping means operated by the motor-

current for axially compressing said disk and hence increasing its diameter.

9. In combination, a pair of friction-gears, and electromagnetic means for automatically forcing them together with a pressure varying with the load transmitted by the gears.

10. The combination of a friction-disk, a friction-roller placed to engage the same, with electromagnetic means for automatically forcing one of said parts toward the other with a pressure proportional to the power transmitted by said parts, substantially as described.

11. The combination of a friction-disk, a friction-roller placed to engage the same, with electromagnetic means for automatically forcing the roller toward the disk with a pressure proportional to the power transmitted through the said parts, substantially as described.

12. The combination of a friction-disk, a friction-roller, driving means connected to one of said parts and driven mechanism connected to the other, with electromagnetic means for automatically forcing the roller and the disk together when the driving means is operated, substantially as described.

13. The combination of a friction-disk, a friction-roller normally out of active engagement with the same, driving and driven mechanism respectively connected to said two parts, said driving mechanism including electromagnetic means for automatically forcing the roller against the disk under operating conditions, substantially as described.

14. In combination, a driving member, a driven member in engagement therewith, and electromagnetic means for forcing the members together with a pressure proportional to the product of the speed with which the driving member moves into the retarding force exerted on it by the driven member.

15. In combination, a friction-disk, a friction-roller normally out of operative engagement with the same, driving and driven mechanism respectively connected to said disk and roller, and means controlled by the energization of the driving mechanism for automatically forcing the roller into operative engagement with the disk.

849,052. SUPERHEATER. FRANCIS J. COLE, New York, N. Y., assignor to American Locomotive Company, New York, N. Y., a Corporation of New York. Filed Sept. 14, 1906. Serial No. 334,663.

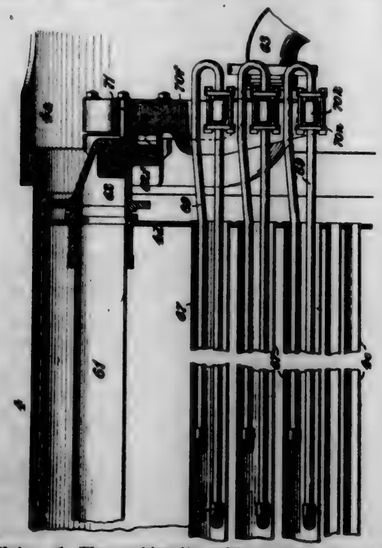

Claim.—1. The combination, with a tubular steam-boiler, of a T-head divided into supply and delivery compartments, a vertical saturated-steam header and a vertical superheated-steam header communicating, respectively, with the supply and the delivery compartments, and a pair of superheater-pipes communicating at their forward ends with the saturated and the superheated steam headers, respectively, and connected laterally to said headers.

2. The combination, with a tubular steam-boiler, of a T-head divided into supply and delivery compartments, a vertical saturated-steam header and a vertical superheated-steam header, each extending downwardly from the T-head, and communicating, respectively, with the supply and the delivery compartments thereof, and a pair of superheater-pipes communicating at their forward ends with the saturated and the superheated steam headers, respectively.

3. The combination, with a tubular steam-boiler, of a T-head divided into supply and delivery compartments, a vertical saturated-steam header and a vertical superheated-steam header independently and detachably connected to said T-head and communicating, respectively, with the supply and the delivery compartments thereof, and a pair of superheater-pipes communicating at their forward ends with the saturated and the superheated steam headers, respectively.

4. The combination, with a tubular steam-boiler, of a T-head divided into supply and delivery compartments, a vertical saturated-steam header and a vertical superheated-steam header communicating with the supply and the delivery compartments, respectively, a superheating-tube located below the T-head, and a pair of superheater-pipes extending in the superheating-tube, and communicating, through lateral connections, with the saturated-steam header and the superheated-steam header, respectively.

5. The combination, with a tubular steam-boiler, of a T-head divided into supply and delivery compartments, a vertical saturated-steam header and a vertical superheated-steam header communicating with the supply and the delivery compartments respectively, superheating-tubes located below the T-head, pairs of superheater-pipes extending in the superheating-tubes, and lateral connections through which one pipe of each pair communicates with the saturated-steam header and the other pipe of said pair communicates with the superheated-steam header.

6. The combination, with a tubular steam-boiler, of a T-head divided into supply and delivery compartments, superheating-tubes, vertical saturated-steam headers communicating with the supply-compartment and having lateral tubular ears, vertical superheated-steam headers communicating with the delivery-compartment and having lateral tubular ears, and pairs of superheater-pipes located in the superheating-tubes and connected at their front ends to ears on a saturated and a superheated-steam header, respectively.

7. The combination, with a tubular steam-boiler, of a T-head divided into supply and delivery compartments, superheating-tubes, vertical saturated-steam headers communicating with and connected detachably to the supply-compartment and having lateral tubular ears, vertical superheated-steam headers communicating with and connected detachably to the delivery compartment having lateral tubular ears, and pairs of superheater-pipes located in the superheating-tubes and connected at their front ends to ears on a saturated and a superheated steam header, respectively.

8. The combination, with a tubular steam-boiler, of a T-head divided into supply and delivery compartments, a vertical saturated-steam header and a vertical superheated-steam header communicating, respectively, with the supply and the delivery compartments, a pair of superheater-pipes communicating at their forward ends with the saturated and the superheated steam headers, respectively, and connected to the rear ends of lateral tubular ears on said headers, and a pair of superheater-pipes communicating at their forward ends with the saturated and the superheated steam headers, respectively, and being bent downwardly and rearwardly and connected to the front ends of lateral tubular ears on said headers.

9. The combination, with a tubular steam-boiler, of vertical rows of superheating-tubes, pairs of superheater-pipes extending longitudinally therein, fittings connecting the ends of the pipes of each pair nearer the fire-box, a main steam-supply pipe, a steam-delivery pipe, a plurality of vertical saturated-steam headers and vertical superheated-steam headers, disposed, in alternated position, in advance of the superheating-tubes, and communicating with the steam-supply pipe and with the steam-delivery pipe, respectively, and connections coupling the forward ends of each pair of superheater-pipes to a saturated-steam header and to a superheated-steam header, respectively, upon the sides of said headers.

10. The combination, with a tubular steam-boiler, of a plurality of saturated-steam headers, each communicating with a steam-supply pipe, a plurality of alternately-disposed superheated-steam headers, each communicating with a steam-delivery pipe, all of said headers being formed with lateral tubular ears or connection-chambers, a plurality of pairs of superheater-pipes, and connections coupling the forward ends of each pair of superheater-pipes to ears on a saturated-steam header and a superheated-steam header, respectively.

11. The combination, with a tubular steam-boiler, of a plurality of saturated-steam headers, each communicating with a steam-supply pipe, a plurality of alternately-disposed superheated-steam headers, each communicating with a steam-delivery pipe, all of said headers being formed with open-ended lateral tubular ears or connection-chambers, a plurality of pairs of superheater-pipes having their forward ends coupled to the rear ends of ears on a saturated and a superheated steam header, respectively, and a plurality of pairs of superheater-pipes having their forward ends coupled to the forward ends of ears on a saturated and a superheated steam header, respectively.

12. In a steam-boiler superheater, the combination of a vertical casing or header having an upper port or opening for communication with a T-head compartment and lateral tubular ears or connection-chambers, and superheater-pipes connected to said lateral connection-chambers.

13. In a steam-boiler superheater, the combination of a vertical casing or header having an upper port or opening for communication with a T-head compartment and lateral open-ended tubular ears or connection-chambers, superheater-pipes having straight ends connected to the rear ends of said lateral connection-chambers, and superheater-pipes having downwardly and rearwardly bent ends connected to the forward ends of said lateral connection-chambers.

14. In a steam-boiler superheater, the combination of a vertical casing or header having an upper port or opening for communication with a T-head compartment and lateral open-ended tubular ears or connection-chambers, superheater-pipes registering with the open ends of the lateral connection-chambers, packing interposed between said chambers and the pipe ends, glands or followers bearing on collars on the pipes, and bolts connecting said glands or followers.

15. In a steam-boiler superheater, the combination of a vertical casing or header having an upper port or opening for communication with a T-head compartment and lateral open-ended tubular ears or connection-chambers provided with end recesses, packing inserted in said recesses, superheater-pipes registering with the open ends of the lateral connection-chambers and bearing on the packing, glands or followers bearing on collars on the pipes, and bolts connecting said glands or followers.

16. In a steam-boiler superheater, the combination of a vertical casing or header having an upper port or opening for communication with a T-head compartment and lateral open-ended tubular ears or connection-chambers, superheater-pipes registering with the open ends of the lateral connection-chambers, packing interposed between said chambers and the pipe ends, rocking or curved-faced glands or followers bearing on collars on the pipes, and bolts connecting said glands or followers.

17. In a steam-boiler superheater, the combination of a vertical casing or header having an upper port or opening for communication with a T-head compartment and lateral open-ended tubular ears or connection-chambers, superheater-pipes having straight ends registering with the open rear ends of the lateral connection-chambers, superheater-pipes having downwardly, rearwardly and outwardly bent ends registering with the open forward ends of the lateral connection-chambers, glands or followers bearing on collars on the pipes, and bolts connecting said glands, the bolts adjoining the bent pipes being cleared for access by the outward bends of said pipes.

18. A vertical casing or header for steam-boiler superheaters having an upper port or opening for communication with a T-head compartment, and lateral tubular ears or connection-chambers which are open at both their forward and rear ends for connection with the forward ends of superheater-pipes.

19. A vertical casing or header for steam-boiler superheaters having an upper port or opening for communication with a T-head compartment, and lateral tubular ears or connection-chambers which are open at both their forward and rear ends for connection with the forward ends of superheater-pipes and are recessed at their ends for the reception of packing.

20. A pair of superheater-pipes for steam-boiler superheaters which are connected at their rear ends in U form, and having one of their forward ends straight and the other bent in U form, both ends being provided with collars for connection to headers.

21. A pair of superheater-pipes for steam-boiler superheaters which are connected at their rear ends in U form, and provided with collars on their forward ends for connection to headers, and are bent in U form downwardly, rearwardly, and outwardly adjacent to their forward ends.

22. In a steam-boiler superheater, the combination of a T-head divided into supply and delivery compartments, a plurality of saturated-steam headers and superheated-steam headers, disposed alternately on the T-head and connected thereto with the capacity of independent attachment and removal, said saturated and superheated steam headers communicating, respectively, with the supply and the delivery compartments, and a plurality of pairs of superheater-pipes, the forward ends of each of which are connected to the sides of a saturated and a superheated steam header, respectively.

23. In a steam-boiler superheater, the combination of a vertical casing or header, and a plurality of superheater-pipes communicating directly therewith through both the front and back ends of lateral connections.

24. In a steam-boiler superheater, the combination of a plurality of vertical saturated-steam headers and vertical superheated-steam headers, a T-head extending transversely in the smoke-box and having two compartments to which the saturated and the superheated steam headers are, respectively, connected, and a plurality of pairs of superheater-pipes extending in U form rearwardly from the headers, the forward end of one pipe of each pair being connected to a saturated-steam header and the other end to a superheated-steam header.

849,053. DEVICE FOR AUTOMATICALLY REGULATING THE QUALITY OF GAS. GEORGE F. CONNER, Port Huron, Mich. Filed Sept. 22, 1902. Serial No. 124,339.

Claim.—1. In a gas regulating and supply system, an air-valve for admitting air to the pipes beyond the carbureter, a by-pass opening into the system both near the air-valve and at a point remote from the air-valve, having a cross-sectional area relatively larger than the area of the pipe into which it opens, and said pipe extending to a comparatively high altitude above the by-pass, a movable diaphragm dividing the by-pass into two compartments and means operatively connecting the air-valve and said diaphragm.

2. A regulator for a gas generating and distributing

system, comprising a mixing-chamber, a fluid-controlled movable diaphragm, dividing said chamber into two compartments, and a supply-pipe, eduction-pipe and air-valve opening into one of said compartments, the other compartment being connected with said eduction-pipe, said diaphragm being adapted to operate said valve, said mixing-chamber having a cross-sectional area of relatively large area compared with the said supply and eduction pipes and said eduction-pipes extending to a comparatively high altitude above the mixing-chamber.

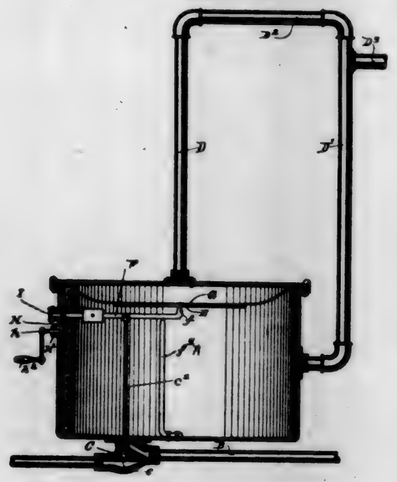

3. A regulator for a gas generating and distributing system, comprising a mixing-chamber, a movable diaphragm dividing said chamber into an upper and a lower compartment, a supply-pipe, eduction-pipe and an air-valve opening into the lower compartment, the upper compartment being also connected with said eduction pipe, and said diaphragm being adapted to operate said valve, said mixing chamber having a cross sectional area of relatively large area compared with the said supply and eduction pipes and said eduction-pipes extending to a comparatively high altitude above the mixing-chamber.

4. A regulator for a gas generating and distributing system, comprising a mixing chamber, divided by a movable diaphragm into an upper and a lower compartment, a supply-pipe, and an eduction-pipe opening into the lower of said compartments, said eduction-pipe being also connected by a branch pipe to the upper compartment, and an air-valve opening into the lower compartments operated by the diaphragm the latter being controlled by the fluid in the system, said mixing-chamber having a cross sectional area of relatively large area compared with the said supply and eduction pipes and said eduction-pipes extending to a comparatively high altitude above the mixing-chamber.

5. A regulator for a gas generating and distributing system, comprising a mixing-chamber, a movable diaphragm dividing said chamber into two compartments, a supply-pipe and an eduction-pipe opening into the lower compartment, the upper of said compartments being connected by a conductor to the discharge-pipe and means operated by the diaphragm adapted to admit air into the said supply-pipe, said mixing-chamber having a cross-sectional area of relatively large area compared with the said supply and eduction pipes and said eduction-pipes extending to a comparatively high altitude above the mixing-chamber.

6. A regulator for a gas generating and distributing system, comprising a mixing-chamber divided into two compartments by a movable diaphragm, a gas-supply pipe and an eduction-pipe opening into one of the compartments, a pipe from the other compartment opening into said eduction-pipe between its ends, and means operatively connected to said diaphragm adapted to admit air into said supply-pipe, said mixing-chamber having a cross-sectional area of relatively large area compared with the said supply and eduction pipes and said eduction-pipes extending to a comparatively high altitude above the mixing-chamber.

7. A regulator for a gas generating and distributing system, comprising a mixing-chamber, a movable diaphragm dividing said chamber into an upper and a lower compartment, a gas-supply pipe and an eduction-pipe opening into the lower compartment, a pipe discharging from the upper compartment into said eduction-pipe between its ends, and an air-valve opening into said chamber connected to said diaphragm, said mixing-chamber having a cross-sectional area of relatively large area compared with the said supply and eduction pipes and said eduction-pipes extending to a comparatively high altitude above the mixing-chamber.

8. A regulator for a gas generating and distributing system comprising a mixing-chamber, a movable diaphragm in said chamber, a gas-supply pipe discharging into said chamber below said diaphragm, an eduction-pipe leading from said chamber below said diaphragm, a pipe opening into the chamber above the diaphragm, and into the eduction-pipe between its ends, an air-valve opening into said chamber below the diaphragm operating said diaphragm, and means to adjustably limit the movements of the diaphragm, said mixing-chamber having a cross-sectional area of relatively large area compared with the said supply and eduction pipes and said eduction-pipes extending to a comparatively high altitude above the mixing-chamber.

9. A regulator for a gas generating and distributing system, comprising a mixing-chamber, a gas-supply pipe discharging into said chamber, an eduction-pipe leading from said chamber, a movable diaphragm above said inlet and eduction pipe, adapted to divide said chamber into two compartments, an air-valve opening into said chamber, a pipe opening into said chamber on the side of the diaphragm remote from the eduction-pipe and into said eduction-pipe between its ends, means for counterpoising said diaphragm and adjustably limiting its motion, and means operatively connecting said valve to said diaphragm, said mixing-chamber having a cross-sectional area of relatively large area compared with the said supply and eduction pipes and said eduction-pipes extending to a comparatively high altitude above the mixing-chamber.

10. A regulator for a gas generating and distributing system, comprising a mixing-chamber, a movable diaphragm dividing said chamber into two compartments, a gas-inlet pipe an eduction-pipe and an air-valve opening into one of said compartments, a pipe connecting the other compartment with said eduction-pipe between the ends thereof, means for adjustably counterpoising and limiting the movement of said diaphragm, and means operatively connecting said valve to said diaphragm adapted to operate said valve when said diaphragm is moved, said mixing-chamber having a cross-sectional area of relatively large area compared with the said supply and eduction pipes and said eduction-pipes extending to a comparatively high altitude above the mixing-chamber.

849,054. DEVICE FOR HOLDING CLOTHES-LINE POLES. EDWIN D. COVENTRY and JAMES W. ARCHER, Buffalo, N. Y. Filed Jan. 24, 1907. Serial No. 353,858.

Claim.—A device for holding clothes-line poles, consisting of a tapered hollow casing adapted for the reception of a clothes-line pole, and a hinged cover connected to said casing and adapted to close the upper end thereof, said casing being provided with a pivoted handle and a groove within which said handle is adapted to lie.

849,054.

849,055. TYPE-WRITER CARRIAGE. EDWIN B. CRAM, Brooklyn, N. Y., assignor to New York Adding Typewriter Company, Orange, N. J., a Corporation of Missouri. Filed Apr. 27, 1904. Serial No. 205,205.

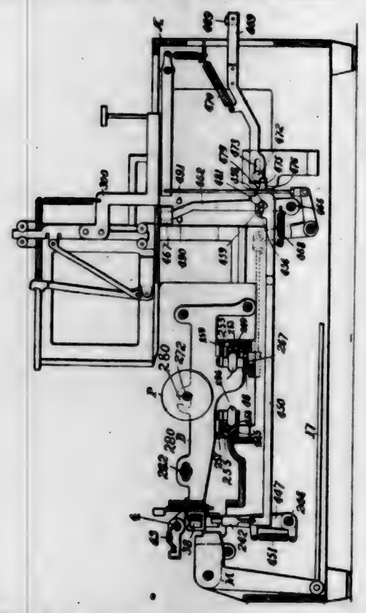

Claim.—1. In a type-writer, the combination with a carriage and operating-keys, of a lever adapted to be rocked by the carriage at any desired point in its travel, means for preventing operation of the keys including a pin-and-slot connection with said lever, a notch or recess being formed in a side wall of the slot and normally receiving the pin, a spring tending to hold the key-locking devices in inoperative position and adapted to be put under tension by the engagement, through such pin and notch, of said lever and key-locking devices, and means for withdrawing the pin of such connection from said notch.

2. In a type-writer, the combination with a carriage and operating-keys, of a pivotally-mounted bail movable to and from a position to prevent operation of the keys, a spring acting to hold said bail in inoperative position, a lever adapted to be rocked by the carriage and having a slot formed therein, and provided with a notch in one of its side walls, a pin connected with the key-locking bail and extending into said slot, and normally fitting in said notch to connect said pin and lever to cause the latter to move the key-locking bail to operative position, and means for releasing said pin from said notch and thereby allowing it to move freely in the slot in the lever at will.

3. In a type-writer, the combination with a carriage and operating-keys, of a pivotally-mounted bail movable to and from a position to prevent operation of the keys, a spring acting to hold said bail in inoperative position, a lever adapted to be rocked by the carriage and having a slot formed therein, a pin connected with the key-locking bail and extending into said slot, means for connecting said pin and lever to cause the latter to move the key-locking bail to operative position, and a release-key movable longitudinally of said lever and adapted to rock the same to release the pin connected with the key-locking bail therefrom.

4. In a type-writer, the combination with a carriage, of a stop device for the carriage, keys, locking means for preventing operation of the keys, means controlled by the carriage for operating said locking means, and means adapted to release said locking means by a limited movement and on a further movement to release the carriage from said locking means, substantially as described.

5. In a type-writer, the combination with key-stems, of a bail movable into and out of the path of said stems, a pin connected to said bail, an operating-lever having a slot in which said pin works, said slot having a notch at one end adapted to receive said pin, a cam, a plunger coöperating with said cam to release said pin from said notch, and means tending to move said bail out of the path of said stems, substantially as described.

6. In a type-writer, the combination with a carriage, of a stop thereon, a rock-shaft, an arm thereon adapted to engage with said stop, a lever, secured to said rock-shaft, having a shoulder and a cam, key-stems, a bail movable into and out of the path of said stems, a pin-and-slot connection between said bail and said lever, the slot having a notch at one end to receive the pin and a plunger which, when depressed, engages said cam to remove said pin from said notch and then comes against said shoulder, thereby releasing said carriage from said stop device, substantially as described.

7. In a type-writer, the combination with a carriage and operating-keys, of means for preventing operation of the keys, a rock-shaft having an arm adapted to be engaged by a projection on the carriage to limit the travel of the latter, connections between said shaft and the key-locking means, whereby when the shaft is rocked by a suitable projection on the carriage the key-locking means will be moved to operative position, and a release-key adapted to disconnect the rock-shaft and key-locking means by a limited movement and, by a further movement, to actuate the rock-shaft to withdraw the arm thereon from the path of its coöperating projection on the carriage.

8. In a type-writer, the combination with a carriage and operating-keys, of means for preventing operation of the keys, a rock-shaft having an arm adapted to be engaged by a projection on the carriage to limit the travel of the latter, connections between said shaft and the key-locking means, whereby when the shaft is rocked by a suitable projection on the carriage the key-locking means will be moved to operative position, and a release-key adapted to disconnect the rock-shaft and key-locking means without actuating said shaft.

9. In a type-writer, the combination with a carriage and operating-keys, of means for preventing operation of the keys, a rock-shaft having a projection adapted to be en-

gaged by means connected with the carriage to limit the travel of the latter, a lever fulcrumed on said shaft and connected with the key-locking devices, whereby when said shaft is rocked by a suitable projection moving with the carriage said lever will move the key-locking devices to operative position, and a release-key adapted to rock said lever about its fulcrum to disconnect the key-locking devices therefrom by a limited movement and, by a continued movement, to actuate the rock-shaft to withdraw the carriage-locking projection thereon from operative position.

10. In a type-writer, the combination with means for preventing operation of the keys, means for sounding an alarm to indicate the approach to the end of a line, and a common rock-shaft for operating both said line-lock and alarm mechanisms, of means for rocking said shaft in one direction to actuate the line-lock mechanism and in the opposite direction to actuate the alarm mechanism.

11. In a type-writer, the combination with means for preventing operation of the keys, and means for sounding an alarm to indicate the approach to the end of a line, of a rock-shaft, two oppositely-inclined cams connected with the carriage and adapted to successively rock said shaft in opposite directions, and connections between said shaft and both the line-lock mechanism and the alarm mechanism, the parts being so arranged that when the shaft is rocked by one of said cams the alarm mechanism is operated and when said shaft is rocked by the other cam the line-lock mechanism is actuated.

12. In a type-writer, the combination with key-stems, of locking means for preventing the operation of said stems, an alarm for indicating the approach of the end of a line, a carriage, a rock-shaft connected to said locking means and said alarm, an arm on said rock-shaft and means carried by said carriage for moving said arm back and forth, said alarm and locking means being so related to said arm that when it is rocked in one direction the alarm will be operated and when rocked in the other direction said locking means will be moved into operative position, substantially as described.

13. In a type-writer, the combination with key-stems, of locking means for preventing the operation of the keys, an alarm for indicating the approach of the end of a line, a rock-shaft so connected to said alarm and said locking means that when it is rocked in one direction said alarm will be operated and when rocked in the other direction said locking means will be thrown into operative position and means operated by the carriage for rocking said shaft, substantially as described.

14. In a type-writer, the combination with means for preventing operation of the keys, and means for sounding an alarm to indicate the approach to the end of a line, of a rock-shaft, means for successively rocking said shaft in opposite directions as the carriage approaches the end of its travel, and connections between said shaft and both the alarm mechanism and the line-lock mechanism, so arranged that when the shaft is rocked in one direction the alarm mechanism will be operated and when the shaft is rocked in the other direction the line-lock mechanism will be actuated.

15. In a type-writer, the combination with means for preventing operation of the keys, and means for sounding an alarm to indicate the approach to the end of a line, of a rock-shaft, an arm extending radially from said shaft, means on the carriage for successively engaging said arm and rocking the shaft in opposite directions, and connections between said shaft and both the alarm mechanism and the line-lock mechanism whereby when the shaft is rocked in one direction the alarm mechanism will be operated and when the shaft is rocked in the opposite direction the line-lock mechanism will be actuated.

16. In a type-writer, the combination with a main carriage having horizontal slots formed in its ends, of a platen, a shaft therefor supported by said main carriage and a subcarriage supported by said shaft and having projections extending into said slots, substantially as described.

17. In a type-writer, the combination with a main carriage comprising end plates, a feed-rack and bars constituting bearings for said carriage, said rack and bars being secured to said end plates, of a subcarriage carried by said main carriage, movable with relation thereto and mounted between the end plates of said main carriage, substantially as described.

18. In a type-writer, the combination with a main carriage comprising end plates, a feed-rack and bars constituting bearings for said carriage, said rack and bars being secured to said end plates, of a subcarriage carried by said main carriage, movable with relation thereto and mounted between the end plates of said main carriage, said subcarriage comprising end plates and a base-piece connected thereto, substantially as described.

19. In a type-writer, the combination with a main carriage comprising end plates, a feed-rack and bars constituting bearings for said carriage, said rack and bars being fixed to said end plates, of a platen, a shaft therefor, arms pivoted to said carriage and supporting said shaft and a subcarriage supported by said platen-shaft within the ends of said main carriage, substantially as described.

849,056. DUMPING-WAGON. ROBERT CRITSER and ROBERT C. WRIGHT, Lapel, Ind. Filed Feb. 6, 1907. Serial No. 356,052.

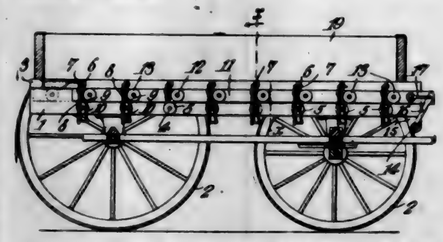

Claim.—1. The combination with a plurality of pivotally-mounted bottom sections; of a sidable series of lifting and supporting rollers movable below the pivots of said sections.

2. The combination with a plurality of pivotally-mounted bottom-sections; of a slidable series of lifting and supporting rollers, and means carried by each bottom-section and in the path of one of the rollers for facilitating the shifting of the sections into closed position.

3. The combination with a plurality of pivotally-mounted bottom-sections; of a slidable series of actuating devices, and deflecting means upon the bottom-sections and in the paths of said devices.

4. The combination with a plurality of pivotally-mounted bottom-sections; of an inclined deflecting device upon each section, a seat integral with said device, and movable means for successively contracting with the inclined portion and the seat to shift and support the bottom-section.

5. The combination with a plurality of pivotally-mounted bottom-sections, and a bowed seat carried by each of said sections; of a plurality of simultaneously-movable actuating devices disposed to contact with and be held against movement by said seats and to support the sections in closed position.

6. The combination with a plurality of pivotally-mounted bottom-sections; of simultaneously-movable lifting and supporting devices, and means upon the sections for holding said devices against accidental displacement.

7. The combination with a plurality of pivotally-mounted bottom-sections; of a series of rotatable lifting and supporting devices, means upon each of the bottom-sections for holding said devices against accidental displacement, and deflecting portions upon the sections for directing said devices against the holding means.

8. The combination with a plurality of pivotally-mounted bottom-sections, a bowed seat upon each of said sections, and an inclined portion extending from said seat; of a plurality of simultaneously-movable lifting and supporting devices for successively contacting with the inclined portions and the seats of the respective sections.

9. The combination with a plurality of pivotally-mounted bottom-sections, a concave seat upon each section, and an inclined portion extending from each seat; of a plurality of simultaneously-movable rollers disposed to successively contact with the inclined portions and seats, and means for actuating the rollers.

10. The combination with a plurality of pivotally-mounted bottom-sections; of connected side bars, rollers carried thereby and movable against the respective bottom-sections, guides for the side bars, and manually-operated means for actuating the side bars.

11. The combination with side beams, friction-rollers thereon, and guide-flanges adjacent the rollers; of a plurality of pivotally-mounted bottom-sections interposed between the flanges, side bars movably mounted between the flanges and friction-rollers, rollers carried by the side bars and movable simultaneously against the respective bottom-sections, and manually-operated means for actuating the side bars.

12. The combination with a receptacle; of a closure pivotally mounted therein, a bowed seat upon said closure, an inclined portion extending from said seat, and a shiftable lifting and supporting device disposed to successively contact with the inclined portion and the seat.

13. The combination with a receptacle; of a closure pivotally mounted therein, a combined lifting and supporting device movable against the closure, and means upon said closure for holding the device against accidental displacement while supporting the closure.

14. The combination with a receptacle; of a closure pivotally mounted therein, a combined lifting and supporting roller, means for shifting the roller against the closure to raise and support it, and non-yielding means carried by the closure for holding the roller against accidental displacement while supporting the closure.

849,057. FENCE-MAKING MACHINE. ELLIOTT DIAL, Vivian, La. Filed Jan. 14, 1907. Serial No. 352,249.

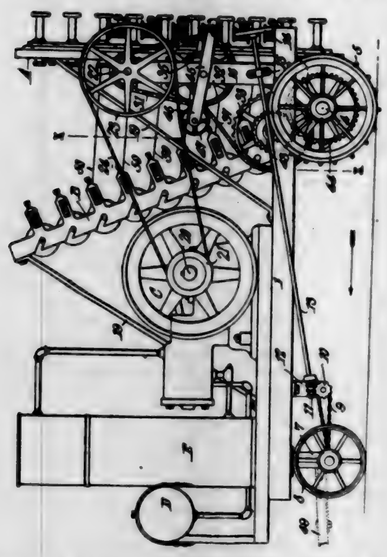

Claim.—1. A portable fence-making unit comprising a truck having traction-wheels, a prime mover mounted on the truck, a fence-weaving machine upon the truck, connections between the prime mover and the fence-machine, connections between the prime mover and the traction-wheels of the truck timed to propel the truck in synchronism with the rate of weaving of the fence, and controlling means for regulating the speed of the truck and of the fence-machine irrespective of the speed of the prime mover.

2. A portable fence-making unit comprising a truck mounted at one end upon traction-wheels and at the other end provided with steering-wheels, a prime mover upon the truck, a fence-weaving machine also mounted upon the truck, connections between the prime mover and the fence-machine and between the prime mover and the traction-wheels timed to drive the truck in synchronism with the rate of weaving of the fence, steering connections from the fence-making end of the machine to the steering-wheels, and controlling means for regulating the speed of weaving of the fence and the progress of the truck also located at the fence-making end of the machine.

3. A portable fence-making unit consisting of a truck having traction-wheels at one end, a fence-weaving machine mounted upon the traction end of the truck, a prime mover also mounted on the truck, loose connections between the prime mover and the fence-machine, means for tightening said loose connections to drive the fence-machine, and positive connections between the fence-machine drive and the traction-wheels of the truck timed to propel the truck in synchronism with the rate of weaving of the fence.

4. A fence-making unit comprising a portable truck mounted upon traction-wheels at one end and steering-wheels at the other end, a fence-weaving machine mounted upon the traction end of the truck, a prime mover mounted upon the steering end of the truck, a drive-shaft positively connected to the fence-weaving machine, positive connections between said drive-shaft and the traction-wheels, a loose connection between the prime mover and the aforesaid drive-shaft, means for tightening said loose connection located at the traction end of the truck, and means for controlling the steering-wheels also located at the traction end of the truck.

5. A fence-making unit comprising a truck mounted at one end upon traction-wheels and at the other end upon steering-wheels, a fence-weaving machine mounted upon the traction end of the truck, an explosive-engine mounted upon the other end of the truck, a drive-shaft positively connected to the fence-weaving machine and also positively connected to the traction-wheels through gearing timed to drive the truck synchronously with the rate of weaving of the fence, a loose belt connection between the engine and the drive-shaft, tightening means for the belt located at the traction end of the truck, and means also located at the traction end of the truck and connected to the steering-wheels for steering the truck.

849,058. MANUFACTURE OF BRIQUETS. ALPHONSE ENBRAYAT, Levallois, France. Filed Oct. 26, 1905. Renewed Mar. 7, 1907. Serial No. 361,147.

Claim.—1. Method for the manufacture of an adhesive to be used for the manufacture of briquets, according to which the adhesive is made by boiling seaweed with water to transform it into a gelatinous pulp, by adding sodium oxid to the pulp, and by admixing lime, lime salts or cement and a composition of formic aldehyde and alkaline silicates after the pulp has been prepared, substantially as described and for the purpose set forth.

2. Method for the manufacture of an adhesive to be used for the manufacture of briquets, according to which the adhesive is made by boiling lichens with water to transform it into a gelatinous pulp, by adding sodium oxid to the pulp, and by admixing lime, lime salts or cement and a composition of formic aldehyde and alkaline silicates after the pulp has been prepared, substantially as described and for the purpose set forth.

849,059. FLOOR-JACK. HENRY C. FLEMING and WILLIAM F. ROYSTER, Denison, Tex. Filed Aug. 9, 1905. Serial No. 273,409.

Claim.—A device of the class described, comprising levers pivoted intermediate their ends, each lever having a jaw portion, a dog loosely mounted in each jaw portion, a spring arranged between the levers to force said dogs

normally toward each other, and a brace-bar pivotally connected to one of the levers.

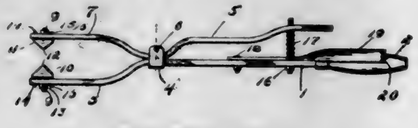

849,060. INVISIBLE BELT FOR TROUSERS. MORRIS FRIEDBAUM, Philadelphia, Pa. Filed May 23, 1906. Serial No. 318,348.

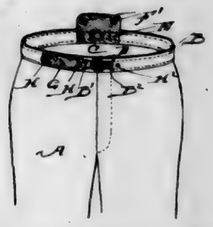

Claim.—A pair of trousers provided with a waistband having a continuous space formed therein, said waistband having spaced openings communicating with said continuous space, a pair of belts arranged in said continuous space, the end of one belt and the buckle of the other belt extending out through said spaced openings and connected together, a flap secured to the inside of the waistband at the rear, adapted to be folded over the buckle of the belt at the rear, and a flap provided with sockets in its inner end faces secured to the outside of the waistband at one side of the buckle of the belt at the front of said trousers, and a plurality of resilient heads secured to said waistband at either side of said front buckle, the said sockets in either end of said flap fitting over said resilient heads at either side of said front buckle when it is desired to conceal said buckle, and said sockets in said flap fitting over said resilient heads at one side of said buckle when it is desired to have said buckle exposed, substantially as described.

849,061. VENTILATING APPARATUS. JAMES G. GARNER, Chicago, Ill. Filed Dec. 9, 1904. Serial No. 236,249.

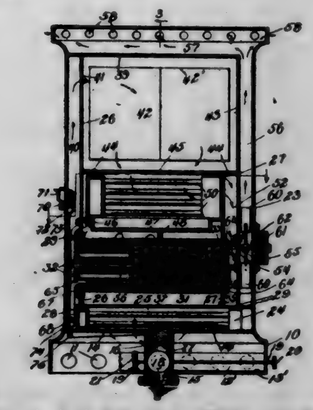

Claim.—1. A device for ventilating relatively small areas, comprising a containing-casing provided with an inlet and an outlet, a damper for said inlet, and between the inlet and outlet means for attemperating air, and an air-circulating fan, and means whereby the damper is respectively opened and closed substantially simultaneously with the starting and stopping of the fan.

2. A device for ventilating relatively small areas, comprising a unitary containing-casing provided with an inlet and an outlet, a damper for said inlet, and between the inlet and outlet means for attemperating, cleansing and positively circulating air, said air-circulating means comprising a centrifugal fan; controlling means for starting and stopping the fan and connections between the said controlling means and the damper for opening the damper when the fan is started and closing it when the fan is stopped.

3. In a ventilating apparatus, a fan, an air-purifier, regulable means for supplying water to the purifier, regulable means for supplying air to be purified, and means for varying the speed of the fan arranged to simultaneously regulate the water and air supply.

4. In a ventilating apparatus, a rotary air-purifier, means for rotating said air-purifier, means for supplying water to the purifier, means for regulating the water-supply, and means for controlling the speed of rotation of the purifier arranged to simultaneously control the water-regulating means.

5. In a self-contained ventilating apparatus, a casing of cabinet form adapted for inclusion directly in the area to be ventilated, and the following-named instrumentalities disposed within and on the casing to wit: a motor, a centrifugal fan driven thereby, a purifier, attemperating means, regulable means for supplying air to the casing, passages for directing air through the air purifying and attemperating means, and means for controlling the operation of the fan arranged to control also the regulable air-supply means.

6. In a self-contained ventilating apparatus, a casing of cabinet form adapted for inclusion directly in the area to be ventilated, and the following-named instrumentalities disposed on and within the casing, viz: a motor, a centrifugal fan driven thereby, an air-purifier, air-attemperating means, regulable means for supplying air to the casing, means for controlling the operation of the motor, arranged to control also the regulable air-supply means.

7. In a self-contained ventilating apparatus, a casing of cabinet form having an air-inlet, and the following-named instrumentalities associated with said casing, to wit: a purifying and attemperating means, a centrifugal fan for circulating air through the casing, a fan-motor, a motor-controlling device, a damper in the air-inlet, and a connection between said damper and the motor-controlling means arranged to open the damper when the motor is started and to close it when the motor is stopped.

8. In a self-contained ventilating apparatus, a casing of cabinet form adapted for installation in the room to be ventilated, and the following-named instrumentalities assembled and disposed on and within the casing, viz: a motor, a fan driven thereby, a rotary air-purifier also driven thereby, means for cleansing the purifier, a tempering-coil, a main heating-coil, regulable means for supplying air to the casing, passages for directing the air successively through the tempering-coil, the air-purifier and the heating-coil, and means for regulating the speed of the fan and coincidently adjusting the regulable air-supply means.

9. In a device of the character described, a casing adapted for inclusion directly in the area to be ventilated, said casing containing therein means for attemperating the air, a screen for purifying the air, and regulable means for supplying water to said screen to cleanse the same, there being associated with said casing a motor, a fan thereby being associated with said casing a motor, a fan driven thereby and arranged to impel air through the casing and the apparatus contained therein, and means for controlling the motor speed arranged to automatically control the water-supply means.

10. In a machine of the character described, a casing of cabinet form adapted for inclusion directly in the area to be ventilated, an inlet to said casing, attemperating areas therein, a distributing area in communication with said attemperating areas and having outlets therein for distributing air to the area to be ventilated, a fan for positively circulating the air through the casing, means for controlling the speed of the fan, means for regulating the capacity of the inlet to the casing, said inlet-regulating means being arranged for automatic control consistently with the speed of the fan.

11. In a machine of the character described, a casing of cabinet form adapted for inclusion directly in the area to be ventilated, and comprising a base having inlet-openings 11 therein, an inlet-pipe 15 adapted to be led to the outer air, a damper 18 in said pipe, a damper 12' for the inlet-apertures 11, suitable connections between said dampers whereby as one damper is opened the other is closed, an auxiliary damper 17 to control the inlet 15, attemperating means within the casing, a fan for impelling air through the casing, means for regulating the speed of the fan, and connections between said fan-regulating means and the damper 17 whereby the said damper is adjusted when the speed of the fan is changed.

12. In a self-contained ventilating apparatus adapted for installation directly in the area to be ventilated, a casing providing an outlet in its upper part, an inlet communicating with the area to be ventilated, and an inlet communicating with an area outside of the area to be ventilated both communicating with the casing below the outlet; means for closing each of said inlets; and within the casing a heating means between the inlet and outlet, and a fan, there being a passage for constant free circulation of air through the casing, whereby air may be positively impelled through the casing by the fan, or allowed to circulate naturally when the fan is stopped.

13. In a self-contained ventilating apparatus, adapted for installation directly in the area to be ventilated, a casing providing an oulet, an inlet communicating with the area to be ventilated, an inlet communicating with the outside air, a damper for closing each inlet, a fan, means for driving the fan, means for starting and stopping the fan, an attemperating area within the casing, there being a free path of air circulation from the inlets through said area to the outlet, and means operable simultaneously with the fan starting and stopping means for opening the outside-air damper when the fan is started and closing it when the fan is stopped.

14. In a self-contained ventilating apparatus, adapted for installation directly in the area to be ventilated, a casing providing an outlet, an inlet communicating with the area to be ventilated, and an inlet for communication with the outside air, there being within the casing a constantly-free passage for air circulation from the inlet to the outlet, air-attemperating means in said path, a fan for positively propelling air through said path, dampers for the inlets and connections between the dampers, whereby as one is opened the other is closed.

849,062.

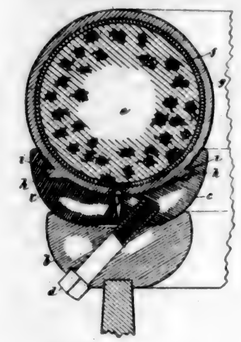

849,063. BELT. INDIA J. GILBERT and DANIEL R. GILBERT, Williamstown, W. Va. Filed Dec. 12, 1905. Serial No. 291,445.

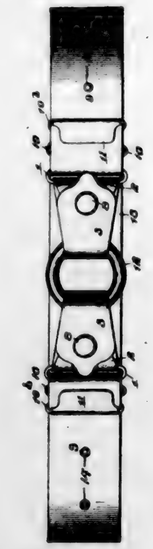

Claim.—1. The combination with a belt having eyelets therein, and means for detachably fastening the belt; of a loop secured to each end of the belt, one side of said loop terminating in laterally-extending arms, upwardly and inwardly extending terminals on said arms, a back plate secured to said arms, an extension at one end of said back plate, said extension being disposed out of line with the back plate to form an offset, a plate pivotally mounted upon said terminals, a tongue integral with and at right angles to said pivoted plate adapted to extend through one of the eyelets and engage the extension on the back plate.

2. The combination with a belt having eyelets therein, and means for detachably fastening the belt; of means to adjust the size of the belt comprising a loop, a back plate secured to said loop, an extension on said back plate and out of alinement therewith, terminals on said loop and over said extension, a plate pivotally mounted on said terminals adapted to dispose the belt into engagement with said extension, and abruptly out of its natural alinement, and a tongue integral with and at right angles to said

849,062. VEHICLE-WHEEL. CHESTER A. GAULD, Hamilton, Ontario, Canada. Filed Mar. 27, 1906. Serial No. 308,248.

Claim.—In a vehicle-wheel a wood felly of a wheel formed convex on the rear or spoke side and concave on the front or opposite side, a correspondingly-shaped metallic rim, formed in two longitudinal halves, their inner sides beveled slightly outward, and made to fit in and be secured to the said concavo-convex felly, two annular grooves formed on the inside of said metallic rim, a solid outer tire of a light and fungous material, as cork, formed annularly, and inclosed in a light but strong material, as duck canvas, open along the center of the inside, and laced tight by strings, and covered on the outside with a cover of elastic material, as rubber, also open along the center of the inside and laced to tighten it around the tire portion, the said rubber covering constructed with annular projections on the sides which fit into the annular grooves in the metallic rim, and hold the tire to the said rim, all constructed for the purpose specified.

pivoted plate adapted to extend through one of the eyelets and engage the extension on the back plate.

849,064. CAN-COVER. BENJAMIN F. GOLDMAN, San Francisco, Cal. Filed June 26, 1906. Serial No. 323,528.

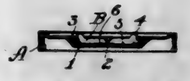

Claim.—1. In a can-top having a depression and holes in the said depression, a cap having corresponding holes and having an upwardly-extending flange, ears cut in the top at the edge of the depression, and bent down over the flange to hold the cap in place, and lugs on the edge of said cap extending upwardly between the ears.

2. In a can-top having a depression and holes in said depression, a central boss, a cap having corresponding holes and rotatably mounted in said depression, ears cut in the top of the edge of the depression, and bent to hold the cap in place, a hole in the center and lugs on the edge of said cap, the parts being centered as set forth.

3. A can-top having a depression with ears cut in the top at the edge of the depression and extending downwardly, and a rotary cap having an upwardly-extending flange provided with lugs on its edge and fitting beneath the ears, said cap fitting in the can-top and said cap and top having openings adapted to register, substantially as described.

849,065. ROPE-CLAMP. CHARLES W. GUTTZEIT, High Bridge, N. J. Filed Mar. 20, 1906. Serial No. 306,971.

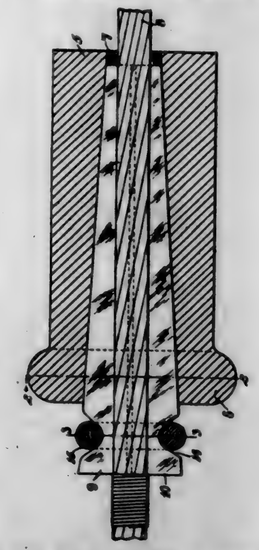

Claim.—A rope-clamp comprising a sleeve, a series of wedge members in the sleeve coöperating with the bore thereof to clamp the rope against longitudinal movement, the wedge members projecting beyond the sleeve at their larger ends and provided with a peripheral groove, a U-shaped bolt in the groove of the wedge members and engaging a plurality of such members, an apertured block fitted on the bolt and extending into the grooved portions of the other wedge members, and nuts on the bolt ends engaging the block and securely clamping the wedge members.

849,066. DISPLAY-RACK. WILLIAM C. HAHN, Fort Scott, Kans. Filed Oct. 27, 1906. Serial No. 340,877.

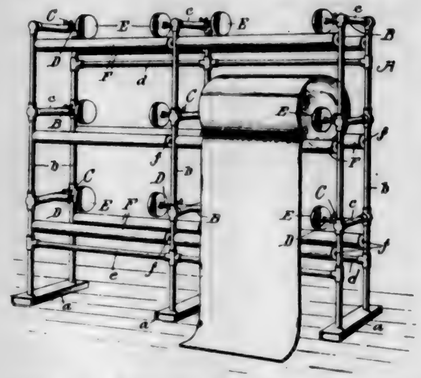

Claim.—1. A display-rack for rolled goods, comprising a frame having supports for wheels or disks, extending in the direction of its length, rollers journaled in the frame below the said supports and arranged to form a cradle for supporting a roll of goods, and wheels or disks mounted to turn on the said supports and arranged at right angles to the rollers, whereby they are adapted to present their faces to the ends of a roll of goods.

2. A display-rack for rolled goods, comprising a frame, rollers journaled in the frame and arranged to form a cradle for supporting a roll of goods, wheels or disks arranged to present their faces to the ends of the roll of goods, and connections intermediate said wheels or disks and the frame; the said connections being adjustable as to length, whereby the wheels or disks may be positioned at various distances apart.

3. A display-rack for rolled goods, comprising a frame having upright bars arranged in pairs and cross-bars connecting the upright bars of each pair and also having longitudinal bars connecting the pairs of upright bars, rollers journaled in the upright bars of the frame and arranged to form cradles for supporting rolls of goods, supports extending laterally from the cross-bars of the frame, and wheels or disks mounted to turn on said supports and arranged to present their faces to the ends of rolls of goods.

4. A display-rack for rolled goods, comprising a frame having upright bars arranged in pairs and cross-bars connecting the upright bars of each pair and also having longitudinal bars connecting the pairs of upright bars, rollers journaled in the upright bars of the frame and arranged to form cradles for supporting rolls of goods, supports extending laterally from the cross-bars of the frame and respectively made up of sections adjustably connected together, whereby they may be increased or diminished in length, and wheels or disks mounted on said supports and arranged to present their faces to the ends of rolls of goods.

849,067. DUMPING-WAGON. JOHN HEBERLING, Rochester, N. Y. Filed Mar. 10, 1906. Serial No. 305,198.

Claim.—1. In a dumping-wagon, the combination with a box and movable bottom-sections thereon, of winding devices comprising a separate drum connected to each bottom-section, an operating device common to all of the winding devices and detachable connections between it and each drum.

2. In a dumping-wagon, the combination with a box and movable bottom-sections thereon, of winding devices comprising a separate drum connected to each bottom-section, a common support for the drums, an operating means and devices for detachably connecting it to each drum.

3. In a dumping-wagon, the combination with a box and movable bottom-sections thereon, of separate operating devices connected to the bottom-sections for closing them, an actuating member and means for detachably connecting it to each of the operating devices.

4. In a dumping-wagon, the combination with a box and movable bottom-sections thereon, of a separate revoluble operating device connected to each bottom-section for closing it, a single actuating member and means for detachably connecting it to each of the operating devices.

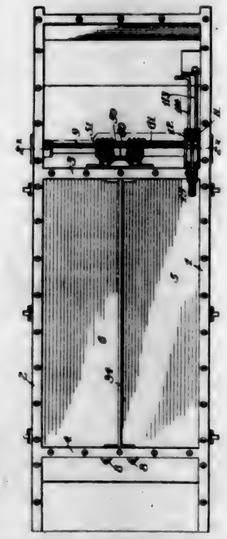

5. In a dumping-wagon, the combination with a box and movable bottom-sections thereon, of a separate operating device connected to each bottom-section, an actuating member, detachable connections between it and each operating device and a locking device coöperating with each of the latter to prevent its movement when disconnected from the actuating member.

6. In a dumping-wagon, the combination with a box and movable bottom-sections thereon, of a separate operating device connected to each bottom-section, an actuating member and detachable connections between it and each operating device, locking devices coöperating with the several operating devices and an independently-movable releasing member coöperating with each locking device.

7. In a dumping-wagon, the combination with a box and movable bottom-sections thereon, of a separate operating device connected to each bottom-section, an actuating member and detachable connections between it and each operating device, locking devices coöperating with the several operating devices and independently-movable releasing members arranged in juxtaposition and adapted to simultaneously disengage their respective locking devices.

8. In a dumping-wagon, the combination with a box, movable bottom-sections thereon, a support on the box and separate operating devices mounted on the support and connected to each section, of means for operating them to close the sections, separate devices for locking each of the latter in the closed position and separate releasing devices located in juxtaposition and adapted to be operated to release the bottom-sections independently or simultaneously.

9. In a dumping-wagon, the combination with a box, movable bottom-sections thereon, a support on the box and separate operating devices mounted on the support and connected to each section, of means for operating them in one direction to close the sections, separate devices for locking each operating device against movement in the other direction and a releasing-arm for each locking device, said arms having their ends arranged in juxtaposition and of different lengths.

10. In a dumping-wagon, the combination with a box and two movable bottom-sections thereon, of two winding-drums, means connecting each of them to one of the bottom-sections, an operating device and means detachably connecting it to both drums.

11. In a dumping-wagon, the combination with a box and movable bottom-sections thereon, of drums, means connecting each of them to one of the bottom-sections, ratchet-wheels on the drums arranged in proximity to each other, an actuating-arm and pawls thereon coöperating with said ratchet-wheels.

12. In a dumping-wagon, the combination with a box and movable bottom-sections thereon, of a shaft, winding-drums thereon, ratchet-wheels arranged adjacent to each other and connected to the separate drums and connections between the latter and the bottom-sections, an operating-arm and pawls detachably connecting it to the ratchet-wheels.

13. In a dumping-wagon, the combination with a box, movable bottom-sections thereon and a shaft, of connections between the latter and one of the bottom-sections, a drum revolubly mounted on the shaft and connected to the other bottom-section and ratchet-wheels connected respectively to the drum and shaft, means for rotating the ratchet-wheels, detents coöperating with the latter and a separate releasing device coöperating with each detent.

14. In a dumping-wagon, the combination with a box and movable bottom-sections thereon, of a support on the box, a plurality of winding devices on the support connected one to each bottom-section and means for operating the winding devices.

15. In a dumping-wagon, the combination with a box, movable bottom-sections thereon and a shaft connected to one of the bottom-sections, of a drum journaled on the shaft and connected to the other bottom-section, ratchet-wheels connected to the shaft-drum, an operating-arm having a bifurcated end straddling said wheels and oscillating around the shaft and separate pawls pivoted on the arm and coöperating with the ratchet-wheels.

16. In a dumping-wagon, the combination with a box, movable bottom-sections thereon and a shaft connected to one of the bottom-sections, of a drum journaled on the shaft and connected to the other bottom-section, a ratchet-wheel attached to the shaft and having a hub at its outer side journaled in the side of the box, a second ratchet-wheel on the end of the drum adjacent the first-mentioned wheel, an operating-arm having a bifurcated end embracing the ratchet-wheels and pawls on the arm coöperating with each of the latter.

17. In a dumping-wagon, the combination with a box, a division-wall therein and a movable bottom-section closing each division of the box, of means for operating said bottom-sections independently to deposit material from either division of the box.

18. In a dumping-wagon, the combination with a box having a movable bottom-section, a winding-drum and a connection between it and the bottom, of a ratchet-wheel connected to the drum, means for operating it and a detent coöperating therewith, a brake-shoe and a releasing device coöperating with the detent and shoe to move the latter into engagement with the ratchet-wheel when the former is disengaged.

19. In a dumping-wagon, the combination with a box having movable bottom-sections, a shaft extending transversely of the box and journaled thereon at one end, and a connection between the shaft and one of the bottom-sections, of a drum journaled on the shaft and connected to the other bottom-section, a ratchet-wheel secured to the shaft having a hub extending outwardly and forming a journal for the other end of the shaft and a second ratchet-wheel attached to the drum and located in proximity to the first-mentioned wheel, a housing attached to the side of the box, detents therein coöperating with the separate ratchet-wheels and means for operating the latter.

848,068. ARTIFICIAL FUEL AND PROCESS OF MAKING THE SAME. JOSEPHINE A. HERBEIN, Seattle, Wash. Filed Dec. 8, 1905. Serial No. 291,003.

Claim.—1. The process of making artificial fuel, which consists, first, in heating petroleum, second dissolving resin therein, third, adding an alkali in a watery solution, fourth, boiling the aforesaid mixture until partial saponification is produced, fifth, adding dried peat, sixth, adding saccharoses and lime to produce an impure saccharate of lime, seventh, pressing the mass into briquets, and eighth, subjecting the briquets to the action of heat.

2. The process of making artificial fuel, which consists, first, in heating petroleum, second, dissolving resin in the heated petroleum, third, adding an alkali in a watery solution, fourth, boiling this mixture until partial saponification occurs, fifth, charging dried peat with the partially-saponified petroleum, sixth, adding a lignaceous material, seventh, adding lime and water, eighth, adding dextrin and sugar to form with the previously-supplied lime impure saccharate of lime, ninth, pressing the mass into briquets, and, tenth, subjecting the briquets to the action of heat.

3. The process of making artificial fuel, which consists, first in heating oil, second, dissolving resin in the hot oil, third, adding an alkali, fourth, adding dried peat, fifth, adding lime, sixth, adding water, seventh, adding saccharine material to form with the previously-supplied lime an impure saccharate of lime when the mass is subjected to heat and pressure.

4. An artificial fuel consisting of petroleum, and resin, the addition of this mixture of an alkali and water which under the action of heat effects a partial saponification, dried peat, then by the addition of lime with water and carbohydrates when subjected to pressure accompanied by heat in forming the mass into briquets transforms the last-named ingredients into an impure saccharate of lime to serve as a binder.

5. An artificial fuel consisting of petroleum, and resin, the addition to the mixture of an alkali and water, dried peat, lime and a dextrin, which being subjected to pressure and heat in manufacturing the mass into briquets, transforms the last-named ingredients, with the impurity of saccharine material present in said dextrin, into an impure saccharate of lime for a binder.

849,069. DISPLAY-RACK. RAY S. HICKS, Chicago, Ill. Filed Apr. 11, 1906. Serial No. 311,121.

Claim.—1. A display-rack of the class described comprising angular side rails, rails at each end of said angular side rails, means to secure said end rails to the side rails, angular legs at each corner of said rails, one section of each leg engaging one face of the side rails while the opposite section engages the face of the end rails, means to secure said rails and legs together brace members disposed between the end rails and each leg, auxiliary angular posts disposed along the length of said side rails, one section of each auxiliary post being longer than the opposite section, the elongated section being parallel with the outer face of the side rails and the shorter section being at right angles thereto and extending below the side rails and means to secure said auxiliary post to the side rails.

2. A display-rack of the class described comprising angular side rails, rails at each end of said angular side rails, means to secure said end rails to the side rails, angular legs at each corner of said rails, one section of each leg engaging one face of the side rails while the opposite section engages the face of the end rails, means to secure said rails and legs together, brace members disposed between the end rails and each leg, auxiliary angular posts disposed along the length of said side rails, one section of each auxiliary post being longer than the opposite section, the elongated section being parallel with the outer face of the side rails and the shorter section being at right angles thereto and extending below the side rails and removable supporting members adapted to be loosely disposed upon the side rails to support articles to be displayed.

849,069.

849,070. TRAP. HENRY J. HOUTSINGER and HERBERT A. STILSON, Rock Falls, Ill., assignors, by mesne assignments, to Sterling Specialty Company, Sterling, Ill., a Corporation of Illinois. Filed Feb. 27, 1906. Serial No. 303,163.

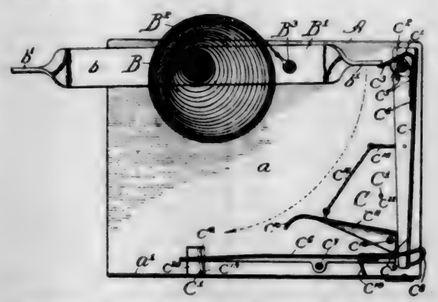

Claim.—1. A trap comprising a striker, stored-power mechanism for actuating the striker, trip mechanism equipped with a spring, and automatic means for relieving the tension of the spring upon the trip to enable it to be easily sprung.

2. A trap comprising a striker, stored-power mechanism for actuating the striker, trip mechanism equipped with a spring, a tension-relieving device equipped with an automatically-actuated stop, and a stop with which said first-named stop makes automatic engagement and disengagement.

3. A trap comprising a potentially-movable rotary striker, spring-equipped trip mechanism automatically arresting the striker in its rotation, and automatic means for relieving the tension of the trip mechanism.

4. A trap comprising a potentially-movable rotary striker, trip mechanism equipped with a spring, and a tension-relieving device for relieving the pressure of said spring upon the trip mechanism comprising a rotary member actuated with the striker and moving under its own inertia after the arrest of movement of the striker to relieve the pressure of the spring upon the trip mechanism, for the purpose set forth.

5. A trap comprising a potentially-movable rotary striker, trip mechanism equipped with a spring, a member rotating with the striker, a tension-relieving member, and coöperating means on said two members for moving the second-named member through the medium of the first-named member and permitting a continuation of said movement after the first-named member has come to a rest, whereby the tension of said spring upon the trip mechanism is relieved after the arrest of the striker, for the purpose set forth.

6. A trap comprising a potentially-movable rotary striker, a member secured to and rotating with the shaft of said striker, trip mechanism serving to arrest said striker at each half-revolution, and a tension-relieving member actuated by the member secured to said shaft and making a complete revolution at each half-revolution of the striker.

7. A trap comprising a potentially-movable rotary striker, a member secured to and rotating with the shaft of said striker, trip mechanism serving to arrest said striker at each half-revolution, and a tension-relieving member equipped with a spring engaged by the member secured to said shaft, said spring serving as a means for actuating the tension-relieving member and the tension-relieving member being movable after the arrest of movement of the member secured to said shaft, for the purpose set forth.

8. A trap comprising a shaft a potentially-movable rotary striker mounted on the shaft, trip mechanism equipped with a spring, a tension-relieving member journaled on said shaft, and means actuated by the shaft for giving an impetus to the tension-relieving member during the movement of said striker, for the purpose set forth.

9. A trap comprising a potentially-movable rotary striker, trip mechanism operating to arrest said striker at each half-revolution, a shaft for said striker, a spring for the trip mechanism, a spring-engaging member journaled on said shaft, means actuated by the shaft for giving an impetus to said spring-engaging member, and a yieldingly-held automatically-projected stop carried by the spring-engaging member, for the purpose set forth.

10. A trap comprising a shaft a potentially-movable rotary striker mounted on the shaft, trip mechanism for the striker including a pedal, a spring adapted to exert pressure upon the pedal, a spring-engaging member journaled on said shaft, means carried by the shaft for giving an impetus to said spring-engaging member, a stationary stop, and a stop movably connected with the spring-engaging member, for the purpose set forth.

11. A trap comprising a casing, a shaft a potentially-movable rotary striker mounted on the shaft journaled in said casing, trip mechanism including a substantially vertical lever at one end of the casing and a substantially horizontal pedal engaging said lever, a spring adjustably connected with the said casing and having a forwardly-projecting arm equipped with a projection adapted to engage said pedal, a tension-relieving member journaled on said shaft adapted to engage said spring, and means connected with said shaft for giving an impetus to the tension-relieving member, for the purpose set forth.

12. A trap comprising a casing having an open end, a potentially-movable striker pivoted in the upper portion of said casing, and trip mechanism comprising a lever pivotally connected with the upper portion of the opposite end of said casing, a bell-crank lever engaging said first-named lever and having an arm supporting the striker, said bell-crank lever being movable idly in one direction, and a pedal controlling said first-named lever.

13. A trap comprising a casing having an open vertical end, a coil-spring connected with said casing, a horizontal shaft connected with said coil-spring and equipped with arms swinging in a vertical plane and constituting a striker, and trip mechanism comprising a lever forming a closure for the opposite end of the casing, and a pedal controlling said lever.

14. A trap comprising a casing, a potentially-movable rotary striker mounted in the upper portion thereof, and trip mechanism comprising a lever with means for engaging the striker, a pedal controlling said lever, and a lever adapted to move said first-named lever to the closed position and projecting into the path of the striker.

15. A trap comprising a potentially-movable rotary striker, trip mechanism comprising a lever with means for arresting the striker, a lever connected with said first-named lever and projecting into the path of the striker, a pedal controlling said first-named lever, a spring for exerting pressure upon the pedal, a tension-relieving device, and means moving with the striker for giving an impetus to said tension-relieving device, for the purpose set forth.

16. A trap comprising a casing, a potentially-movable rotary striker mounted on a horizontal pivot in the upper portion thereof, said casing having an open vertical end, and trip mechanism comprising a lever constituting a closure for the other end of the casing, and a pedal within the lower portion of said casing controlling said lever.

17. A trap comprising a casing having an open end, a potentially-movable striker mounted in the upper portion of said casing, a bait-chamber opening within the casing, and trip mechanism comprising a substantially vertical lever supporting the striker, and a substantially horizontal pedal having its free end adjacent to the bait-chamber, for the purpose set forth.

18. A trap comprising a casing having an open end and an opening at one side, a potentially-movable rotary striker mounted in the upper portion of the casing, a removable bait-chamber connected with the side of the casing at the opening therein, and trip mechanism comprising a member affording a closure for the opposite end of the casing, and a pedal controlling said member.

19. A trap comprising a casing having an open end, a potentially-movable rotary striker mounted in the upper portion of the casing and having a rearwardly-extending arm, a lever pivoted at the upper portion of the rear end of the casing constituting a closure for the rear end of the casing, a bell-crank lever pivoted at the same point and engaging the striker-arm and having a bearing on said first-named lever, and a pedal within the casing near the bottom thereof, and having engagement at its rear end with the lower end of said first-named lever, for the purpose set forth.

849,071. GAS COOLING AND MIXING TOWER. JOHN T. HUTSON, Atlanta, Ga. Filed Aug. 23, 1906. Serial No. 331,769.

Claim.—1. A gas-flue comprising a plurality of superposed gas-mixing chambers, a series of gas-pipes one within the other interposing and connecting the chambers, and spiral vanes between said pipes.

2. A gas-flue comprising a plurality of annular superposed gas-mixing chambers, a series of gas-pipes one within the other leading to the chambers, a series of gas-pipes one within the other leading from the chambers out of the vertical plane of said leading-in pipes, and a pair of spiral vanes between the pair of pipes of each series.

3. A gas cooling and mixing tower comprising a funneled air-shaft, a plurality of superposed gas-mixing chambers encircling the shaft, and a nest of gas-pipes between and connecting said chambers.

4. A gas cooling and mixing tower comprising a funneled air-shaft, a plurality of superposed gas-mixing chambers encircling the shaft, a series of gas-pipes one within the other intervensing and connecting the chambers, and a pair of spiral vanes within and spanning the space between the said pipes.

5. A gas cooling and mixing tower comprising induction and exhaust gas-chambers, a plurality of superposed gas-mixing chambers interposed between the induction and exhaust chambers, a series of nests of gas-pipes connecting the mixing-chambers and having spiral vanes therein, and an air-shaft extending through the nests of pipes and the mixing-chambers.

6. A gas cooling and mixing tower comprising induction and exhaust gas-chambers, a plurality of superposed gas-mixing chambers interposed between the induction and exhaust chambers, a series of nests of gas-pipes connect-

ing the mixing-chambers and having spiral vanes therein, and an air-shaft composed of a series of superposed in-

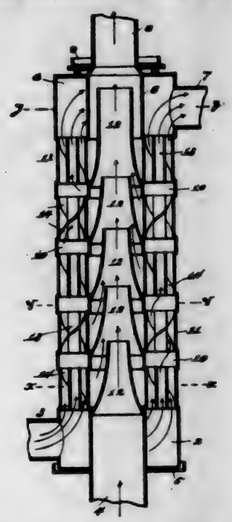

verted funnels overlapping each other and extending through the nests of pipes and the mixing-chambers.

849,072. VENTILATING WINDOW-SASH LOCK. FRANK E. JEFFERS, Chicago, Ill. Filed Apr. 4, 1906. Serial No. 309,751.

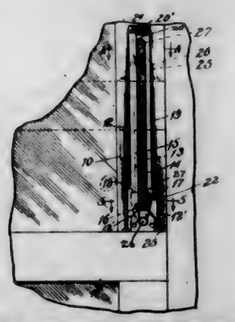

Claim.—1. In combination with the upper and lower sash of a window, of a guide-plate upon one sash, having a slot therein laterally enlarged at its lower end to form a shoulder, and a bolt member upon the other sash comprising a bolt mounted for reciprocation and rotation, and having an eccentrically-disposed head adapted to interfit in the slot or engage the shoulder in the enlargement thereof, and means constantly tending to force said bolt longitudinally in a direction to engage said slot, and rotarily in a direction to engage the shoulder.

2. In a device of the character described, a plate adapted for connection with one sash of a window, said plate having therein a recess, and a slot of less width than the recess communicating with said recess, said recess and slot having on one side coincident enlargements, and a bolt member adapted to be secured to the other sash member, comprising a casing, a bolt mounted to slide and rotate in said casing, a latch without the casing carried by and movable with said bolt, shaped for introduction though the coincident enlargements of the slot and recess, and adapted to slide in said recess, and a spring normally tending to press the latch into the recess and laterally toward the side thereof away from the enlargement, whereby said spring tends to normally prevent the withdrawal of the bolt.

3. In a device of the character described, the combination of a guide-plate having a guiding-slot, a recess wider than the slot below said slot, an enlargement in the slot, to permit the withdrawal of a bolt-head, the sliding bolt having a head for engaging the recess, and means tending constantly to move said bolt longitudinally and rotatively in directions to cause or maintain the locking engagement of its head with the guide-plate recess.

4. In a device of the character described, the combination of a guide-plate having a guiding-slot, a recess wider than the slot below said slot, an enlargement in the slot to permit the withdrawal of the bolt-head, a sliding bolt having a head for engaging the recess, means tending constantly to move said bolt longitudinally and rotatively in directions to cause or maintain the locking engagement of its head with the guide-plate recess, and means for guiding said bolt and timing its sliding and rotative movements in proper relation to each other.

5. In a device of the character described, the plate 12, having recess 13, slot 14, enlargements 16 and 17, and the cut-away portions 19 and 20, in combination with a bolt member comprising a casing 25 having therein the slot 29, a bolt 26 with a head 27, the spring 31 and the handle 30, all arranged substantially as described.

849,073. SHUTTLE-SPINDLE. WILLIAM KOEHLER, Fulton, N. Y., assignor to American Textile Specialty Machinery Company, New York, N. Y., a Corporation of New York. Filed Aug. 25, 1905. Serial No. 275,718.

Claim.—1. A shuttle-spindle having a smooth tapered surface over the principal part of its length and provided over a portion of its length with a screw-thread having a sharp edge adapted to readily cut into a cop-tube.

2. A shuttle-spindle provided over a portion of its length with a screw-thread having a sharp edge adapted to readily cut into a cop-tube and of such slight pitch as to lock the tube in engagement with said thread against longitudinal movement, said spindle having a smooth tapered surface projected outward at least as far as the outer edge of said threaded portion.

3. A shuttle-spindle provided with transverse threads having a sharp edge adapted to readily cut into a tube, and a longitudinal groove interrupting said screw-thread and forming sharp points for said threads.

4. A shuttle-spindle provided over a portion of its length with a screw-thread having a sharp edge adapted to readily cut into a cop-tube and of such slight pitch as to be at approximately a right angle to the axis of the spindle and to lock the tube in engagement with said thread against longitudinal movement, a longitudinal groove being extended across said thread.

5. A shuttle-spindle composed of hollow segmental portions, and having a screw-thread formed thereon with a sharp edge adapted to readily cut into a cop-tube and of such slight pitch as to lock the tube in engagement with said thread against longitudinal movement.

6. A shuttle-spindle composed of hollow segmental portions, and having a screw-thread formed thereon with a sharp edge adapted to readily cut into a cop-tube and of such slight pitch as to lock the tube in engagement with said thread against longitudinal movement, and a groove interrupting said screw-thread and forming sharp points to readily enter the material of the tube.

849,074. LARD DIPPER AND MEASURE. JOSEPH S. LABRY, Viva, La. Filed Oct. 12, 1906. Serial No. 338,643.

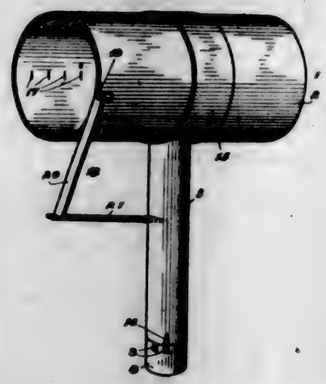

Claim.—1. In a device of the character described, the combination of a barrel portion, of a movable disk or bottom therein, extensions under said disk or bottom, one of which is provided with a rack, a handle for said barrel portion, a rod within said handle, a pinion carried on said rod and arranged for engagement with said rack on said extension, the whole being arranged whereby rotation of the said rod will raise or lower the said bottom or disk within the barrel portion to increase or diminish the capacity, substantially as described.

2. In a device of the character described, the combination of a barrel portion, a handle associated therewith, a movable disk or bottom within said barrel portion, a rack under said disk or bottom and connected thereto, a rotatable element arranged within said handle, means on said rotatable element for engagement with said rack, the whole being arranged whereby the rotation of said rotatable element will raise or lower the said movable bottom or disk within the barrel portion to increase or diminish the capacity of the barrel portion above the said movable disk or bottom, substantially as described.

3. In a device of the character described, the combination of a barrel portion, a movable disk or bottom arranged within the same, a handle for said barrel portion, a rotatable rod within said handle, means connected to said movable disk or bottom for engagement with said rotatable rod, the whole arranged whereby the rotation of said rod will raise or lower the said movable disk or bottom to increase or diminish the capacity of the barrel portion above the said movable disk or bottom, substantially as described.

849,075. BAND-CUTTER AND FEEDER FOR CORN-HUSKERS. FRANK J. MAIN and RUDOLPH C. WILHAGEN, Madison, Wis. Filed May 8, 1905. Renewed Aug. 14, 1906. Serial No. 330,586.

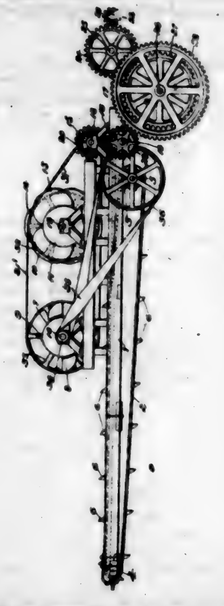

Claim.—1. In an automatic feeder for corn-huskers, the combination of a table, feeding means including an endless conveyer, a band-cutter, spreading means beyond the band-cutter, a pair of feed-rolls beyond the spreading means, and connections for driving the feed-rolls at a speed to propel the stalks by momentum across the throat of the husker.

2. In an automatic feeder for corn-huskers, the combination of a table, feeding means including an endless conveyer, a band-cutter, a spreading-roll beyond the band-cutter having right and left spiral spreading-blades, a pair of feed-rolls beyond the spreading-roll, and connections for driving the feed-rolls at a speed in excess of the speed of the other moving parts to propel the stalks by momentum across the throat of the husker.

3. In an automatic feeder for corn-huskers, the combination of a table, feeding means including an endless conveyer, a band-cutter, a spreading-roll beyond the band-cutter, a pair of feed-rolls beyond the spreading-roll, connections for driving the spreading-roll at a speed in excess of the speed of the conveyer, and connections for driving the feed-rolls at a speed in excess of the speed of the spreading-roll to propel the stalks by momentum across the throat of the husker.

4. In an automatic feeder for corn-huskers, the combination of a table, feeding means including an endless conveyer, a band-cutting and feed roll, a spreading-roll beyond the first-named roll, a pair of feed-rolls beyond the spreading-roll, connections for driving the band-cutting and feed roll and the spreading-roll at a speed in excess of the speed of the conveyer, and connections for driving the pair of feed-rolls at a speed in excess of the speed of the band-cutting and feed roll and the spreading-roll to propel the stalks by momentum across the throat of the husker.

5. In an automatic feeder for corn-huskers, the combination of a table, feeding means including an endless conveyer, a rotatable band-cutter, a spreading-roll beyond the first-named roll, a pair of feed-rolls beyond the spreading-

roll, connections for driving the band-cutting and feed roll and the spreading-roll at a speed in excess of the speed of the conveyer, and connections for driving the pair of feed-rolls at a speed in excess of the speed of the band-cutting and feed roll and the spreading-roll to propel the stalks by momentum across the throat of the husker.

849,076. SPOOL FOR PHOTOGRAPHIC-FILM CARTRIDGES. FRANK J. MATHEIN, New Haven, Conn., assignor to The Anthony & Scovill Company, Binghamton, N. Y. Filed Sept. 1, 1906. Serial No. 333,019.

Claim.—1. A spool for film-cartridges embodying two sheet-metal flanges and a hollow sheet-metal center piece to which both of the flanges are attached, one of the flanges having a centrally-located opening for the reception of the winding device of the winding-key.

2. A spool for film-cartridges embodying two metallic flanges and a hollow sheet-metal center piece provided with longitudinally-extending parts which interlock with and attach it to both of the flanges, one of the flanges having a centrally-located opening for the reception of the winding device of the winding-key, the adjoining edges of the center piece being separated to produce a longitudinally-extending slit, which connects its outside with its hollow inside through which slit the end of the opaque material of the cartridge may be passed and stored within the hollow interior.

3. A spool for film-cartridges embodying two metallic flanges each having openings in their centers adapted to receive the bearings for the support and rotation of the spool, a hollow sheet-metal center piece provided with longitudinally-projecting parts which engage in the openings in the flanges and attach both of them to it, the adjoining edges of the center piece being separated to produce a longitudinally-extending slit through which the end of the opaque material of the cartridge may be passed and stored within the hollow interior.

4. A spool for film-cartridges embodying two sheet-metal flanges each provided with centrally-located and radially-extending openings, a hollow metallic center piece provided with longitudinally-extending parts which engage in the extremes of the radially-extending openings in the flanges leaving their central parts open for the reception of the bearings and winding device for the spool, the hollow center piece having a longitudinally-extending slit through which the end of the opaque material of the cartridge may be passed and received within its hollow interior.

849,077. ADJUSTABLE FIREPLACE GRATE-BASKET. HENRY E. MOOMAW, Chattanooga, Tenn. Filed Jan. 19, 1907. Serial No. 353,108.

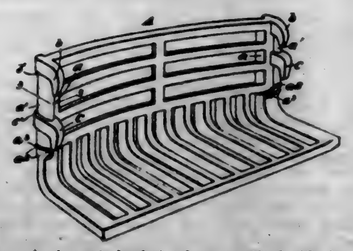

Claim.—1. A grate-basket whose vertical side bars are each provided with guideways or flanges projecting forwardly and backwardly and whose upper end is provided with a hook, and a gravitating hook loosely mounted on each pair of guideways, the head of this hook being grooved along its inner side so as to embrace the guideways and the outer face of the side bar, for the purpose set forth.

2. A grate-basket whose vertical side bars are each provided with guideways or flanges projecting forwardly and backwardly and whose upper end is provided with a hook, and a gravitating hook loosely mounted in each pair of guideways, the head of this hook being grooved along its inner side so as to embrace the guideways and the outer face of the side bar, said guideways being shorter than the distance of travel of the movable hook between the upper hook and the bottom of the grate, for the purposes set forth.

3. A grate-basket whose vertical side bars are each provided with an upper hook and a pair of vertical guideways one projecting inwardly and the other projecting outwardly and both extending along the corners of the grate-bars and being shorter in length than the distance between the upper hook of the grate and the bottom of the grate, and a gravitating hook slidingly mounted on each pair of guideways, this hook having its head grooved so as to embrace the side face of the side bar and the oppositely-projecting guideways, substantially as set forth.

4. A grate-basket whose vertical side bars are each provided with a pair of guideways projecting respectively inwardly and frontwardly and whose upper end is provided with a downwardly-turned hook, and a gravitating hook loosely mounted on each pair of guideways and having the inner face of its head portion grooved vertically, this groove being undercut so as to embrace the outer face of the side bar and fit around the guideways, said guideways being shorter than the distance of travel of the hook between the upper hook and the bottom of the grate, whereby the adjustable hook may be removed by a lateral or sidewise movement, substantially as set forth.

5. A grate-basket whose vertical side bars are each provided with a pair of guideways projecting respectively inwardly and frontwardly and whose upper end is provided with a downwardly-turned hook, and a gravitating hook loosely mounted on each pair of guideways and having the inner face of its head portion grooved vertically, this groove being undercut so as to embrace the outer face of the side bar and fit around the guideways, said guideways being shorter than the distance of travel of the hook between the upper hook and the bottom of the grate, whereby the adjustable hook may be removed by a lateral or sidewise movement, and a removable stop device engaging the ways at a point between the adjustable hook and the point of detachment from the ways, substantially as set forth.

849,078. HOISTING APPARATUS. LINCOLN MOSS, New York, N. Y. Filed Apr. 15, 1904. Serial No. 203,263.

Claim.—1. The combination with a boom arranged for pivotal movement in vertical plane, of means for opposing resistance to the moment of the boom which increases throughout the descent of the boom at a rate considerably more rapid than the rate of increase of said moment, whereby the movement of the boom and its load is gradually arrested as the boom approaches its lowermost position.

2. The combination with a boom of a track, a counterweight arranged for travel on said track, and connections between said boom and said counterweight, the track and connections between the boom and the counterweight being so arranged that the counterweight opposes to the moment of the boom a resistance which varies disproportionately to the variation of the moment of the boom.

3. The combination with a boom of a track, a counterweight arranged to travel upon said track, and an adjustable connection between said counterweight and boom, said track and said connection being so arranged that the counterweight is caused to oppose a resistance to the moment of the boom which varies disproportionately to the variation of the moment of the boom.

4. The combination with a pivoted boom of counterbalancing devices including a counterweight operatively connected with said boom and a track along which said counterweight travels, said track being nearly horizontal at its lower end and curving upward in a curve of gradually-increasing curvature which is substantially vertical at its upper end.

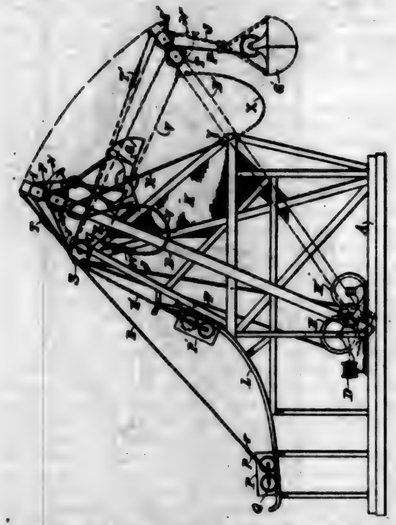

5. The combination with a pivoted boom and a load-holder suspended therefrom, of means for opposing to the moment of the boom a resistance which is always less than said moment, but which nearly equals said moment when at its maximum and is considerably less than said moment when at its minimum.

6. The combination with a pivoted boom of means for positively limiting the movement of said boom, a hoisting-cable guided over said boom, a load-holder suspended at the end of said hoisting-cable and susceptible of movement independent of said boom after the boom has reached the lower limit of its movement, and means for opposing a variable resistance to the moment of the boom.

7. The combination with a pivoted boom having a guide-sheave near its free end, of a hoisting-cable passing over said guide-sheave, a load-holder suspended by said cable below said boom, and means for opposing to the moment of said boom a resistance which varies disproportionately to the variation of said moment.

8. The combination with a pivoted boom having a guide-sheave near its free end, of means for limiting the movement of said boom, a hoisting-cable passing over said guide-sheave, a load-holder suspended at the end of said hoisting-cable, a buffer carried by said boom and adapted to be engaged by said load-holder when hoisted, and means for opposing to the moment of the boom a resistance which varies disproportionately to the variation of said moment.

9. The combination with a boom, of counterbalancing devices including a track formed upon a curve in a vertical plane, a counterweight having two pairs of rollers resting on said track and a connection between said boom and said counterweight, said connection being secured to the counterweight substantially midway between its ends.

849,079. ROAD-GRADER. JOSEPH MCMAHILL, Walnut Grove, Ill. Filed May 22, 1906. Serial No. 318,195.

Claim.—1. A scraper of the class described comprising a pair of rails, a reach longitudinally disposed between said rails, a head at the forward end of said rails, an axle adjustably secured to the forward end of said reach, a bolster rigidly secured to the rear ends of said reach and rails, standards carried by said bolster and forming sockets, bars longitudinally movable in said sockets, carrying-wheels secured to said bars, pinions disposed between said standards and in mesh with racks upon said bars, means to rotate said pinions whereby said bolster may be raised or lowered and a scraper operatively mounted on said rails and reach.

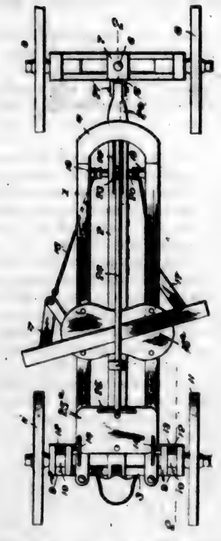

2. A scraper of the class described comprising a pair of parallel rails, a head at one end of said rails, and a bolster at the opposite end thereof, a reach disposed through said head and having its opposite end secured to said bolster, a scraper pivotally mounted upon said reach, a shaft secured to the forward end of said rails, drums on said shaft, cables disposed on said drums and into engagement with said scraper, a pinion secured to said shaft and projecting through a slot in the reach, an operating-shaft mounted upon said reach, a worm on said operating-shaft and in engagement with the pinion, whereby when said operating-shaft is rotated, the scraper will be disposed at varied angles.

3. A scraper of the class described comprising rails, a reach longitudinally disposed between said rails, a scraper pivotally secured to said reach, a shaft at the forward end of said reach, drums rigidly secured to said shaft, arms projecting from said scraper, cables disposed between said drums and arms, means to rotate said drums, an axle adjustably secured to the front end of said reach, carrying-wheels for said axle, a bolster rigidly secured to the rear end of said rails and reach, standards carried by said bolster, said standards having sockets therein, bars longitudinally movable in said sockets, racks at the upper ends of said bars, carrying-wheels rotatably mounted upon said bars, pinions carried by said standards and in mesh with said racks upon the bars, and means to rotate said pinions independently of each other whereby each end of the bolster may be raised or lowered as desired.

849,080. HORSESHOE. JOHN D. OLCOTT, Norwalk, Ohio. Filed Feb. 27, 1906. Serial No. 303,210.

Claim.—1. In a horseshoe, comprising a flat plate of horseshoe form, on which the foot is designed to rest, the said plate having a vertical flange extending downwardly from its outer edge, and calks located underneath said plate and adjacent to the inner side of said flange, the front calk having a shoulder adapted to engage the lower edge of said flange, substantially as described.

2. A horseshoe, comprising a flat plate of horseshoe form, said plate being provided with an integral vertical flange on each edge, said flanges forming a casing between them, and calks rigidly and detachably secured within said casing the front calk having a shoulder adapted to engage the lower edge of said flange, and the rear calks having pins adapted to enter openings in said flange.

3. A horseshoe comprising a curved flat plate having an integral vertical flange on its outer edge and perforated for attachment to the foot, calks arranged underneath the plate, a curved plate connecting the calks together and removable therewith, and a cushion of flexible material between said upper and lower plates.

4. The combination with a curved and perforated shoe-plate and vertical flanged casing therefor, substantially as described, of calks arranged within the casing, a curved plate within the casing to which said calks are attached, a cushion between the calk-plate and shoe-plate and a retaining device for the calk-plate, substantially as described.

5. The combination with a curved and perforated shoe-plate, and vertical casing therefor, substantially as described, of a bottom plate secured to said casing below the shoe-plate and a heel-plate hinged to the bottom plate, substantially as described.

6. The combination with a curved and perforated shoe-plate, and vertical casing therefor, substantially as described, of a bottom plate within the casing extending from one side of the shoe to the other, a heel-plate hinged to the bottom plate, and a transverse spring-bar engaging opposite sides of the casing and extending across the open end of the shoe, substantially as described.

7. The combination with a curved and perforated shoe-plate, and vertical casing therefor, of calks within the casing, a bottom plate between the inner sides of the casing, a hinged heel-plate, a spring-bar extending across the opening in the shoe at the heel and engaging said shoe-plate at each end, and means for supporting said hinged heel-plate in the raised position, substantially as described.

849,081. CONTRIVANCE TO SPRINKLE MANURE. CHRISTIAN ORTMANN, Schependorf, near Baumgarten, Germany. Filed Mar. 30, 1906. Serial No. 309,000.

Claim.—In a contrivance for sprinkling manure, the combination of tank *a* bearing pipe *c*, a pipe *b* connected to the same at right angles, tubes *e* provided on openings in said pipe *b*, flap-valves *d* hinged on said pipe *b* and controlling the outlets of said tubes *e*, springs *o* attached to the levers of said valves, arms *f* fastened to the said tank *a*, axle *g* supported by said arms *f*, toothed wheels and chain *h* operatively connected with said axle *g*, pins *i* affixed to said axle *g* and arranged to operate said valves *d*, a perforated trough-shaped receiver *k* supported by arms *p* and forks *q* adapted to receive the discharge from tubes *c*, substantially as described.

849,082. EXCAVATING-MACHINE. CHARLES G. PAGE, Oak Park, Ill., assignor to Frederick C. Austin, Chicago, Ill. Filed Mar. 12, 1906. Serial No. 305,623.

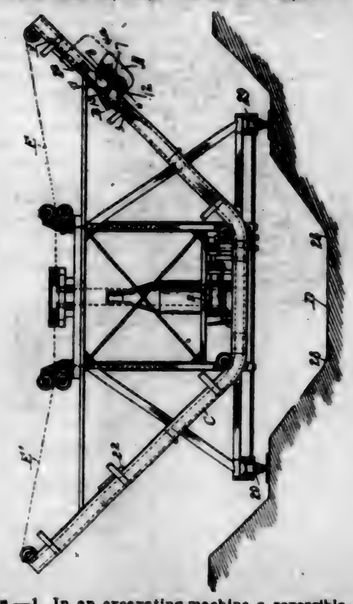

Claim.—1. In an excavating-machine a reversible scoop for facing to cut in opposite directions in alternation, and means for directing and moving the scoop alternately in opposite directions along a path conforming to the transverse contour of the excavation.

2. In an excavating-machine for digging trenches, the combination of a reversible scoop for facing to cut in opposite directions in alternation; means for moving and directing the scoop alternately in opposite directions along a path conforming to the transverse contour of the proposed trench; and means for automatically reversing the cutting position of the scoop relatively to its direction of travel.

3. In an excavating-machine for digging trenches, the combination of a reversible scoop for facing to cut in opposite directions in alternation; means for moving and directing the scoop alternately in opposite directions along a path conforming to the transverse contour of the proposed trench; and means for automatically reversing and dumping the scoop at each terminal portion of its line of travel.

4. In an excavating-machine for digging trenches, a transverse guide conforming to the transverse contour of the proposed trench; a truck supported to traverse the guide; means for moving the truck along the guide alternately in opposite directions; a scoop pivotally mounted upon the truck; means for reversing the scoop to cause it to face in opposite directions in alternation, and means for automatically and temporarily locking the scoop in each of such two positions, the scoop being adapted for cutting in each position.

5. In an excavating-machine, a truck; a guide for the truck conformable to the transverse contour of the proposed excavation; a scoop for facing to cut in opposite directions in alternation pivotally mounted on the truck and reversible thereon; means for drawing the truck along the guide alternately in opposite directions; and means for turning the scoop about its pivotal axis at or substantially at each terminal portion of its line of travel in direction and to an extent to dump its contents and bring it from a position for cutting one way into position for cutting in an opposite direction.

6. In an excavating-machine, the combination of a pivoted reversible scoop for facing to cut in opposite directions in alternation; means for moving and directing the scoop alternately in opposite directions along a path conforming to the transverse contour of the proposed excavation; and means for automatically reversing the cutting position of the scoop relatively to its direction of travel and consisting of a reversing device for reversing and dumping the scoop, and means for actuating the reversing device at the terminal portion of the movement of the truck.

7. In an excavating-machine, the combination of a track-guide conforming to the transverse contour of the proposed trench; a truck for travel along the track-guide; means for moving the truck along the track-guide in opposite directions in alternation; a scoop pivotally supported upon the truck; a slide-rack on the truck; power-transmitting connection between the slide-rack and the scoop for turning the latter about its pivotal axis; means for locking and unlocking the rack; and means for holding the rack and permitting the truck to advance while the rack is thus held, thereby permitting relative movement between the rack and truck to turn the scoop about its pivotal axis to an extent to reverse the cutting position of the scoop.

8. In an excavating-machine for digging trenches, the combination of a guide-track conformable to the transverse contour of the trench; a truck supported to traverse the guide-track; means for moving the truck along the guide-track in opposite directions in alternation; a reversible scoop pivotally mounted upon the truck and adapted for facing in opposite directions according to its position, and means for automatically causing the scoop to perform three-quarters or substantially three-quarters of a revolution at each terminal portion of the travel of the truck and in direction to dump the scoop and to bring it into position for excavating during the return travel of the truck.

9. In an excavating-machine for digging trenches, a track-guide conformable to the transverse contour of the excavation and having its upper end portions provided with stops; a truck arranged to traverse the guide-track; cables and operating means therefor for drawing the truck along the track-guide in opposite directions in alternation; a reversible scoop pivotally mounted upon the truck; a shifter for turning the scoop about its pivotal axis, said shifter being supported upon a truck, the stops on the track-guide being arranged for opposing movement on the part of the shifter with the truck when the latter is performing the terminal portions of its travel, and a locking device for automatically unlocking the shifter from the truck prior to reversement of the scoop, and for automatically locking the shifter upon the truck when such reversement on the part of the scoop has been effected.

10. In an excavating-machine for digging trenches, a track-guide conforming to the transverse contour of the trench; a scoop-reversing device on the truck adapted for projection from opposite ends of the truck in alternation; cables for drawing the truck along the track-guide in opposite directions in alternation; a reversible scoop pivotally supported upon the truck; gear connection between the reversing device and the scoop for turning the latter about its pivotal axis when the reversing device is held stationary and the truck is advanced; and means for automatically locking and unlocking the slide on the truck.

11. In an excavating-machine, a reversible scoop for facing to cut in opposite directions in alternation; means for directing and moving the scoop alternately in opposite directions along a path conforming to the transverse contour of the excavation, and means for reversing the scoop from its position for facing and cutting in one direction to a position for facing and cutting in an opposite direction along said path.

12. In an excavating-machine, a guide conformable to the transverse contour of the proposed excavation; a reversible scoop for facing to cut in opposite directions in alternation and supported for bodily movement along the guide, and means for moving the scoop along the guide in opposite directions in alternation, the scoop being reversible from a position for cutting in one direction to a position for cutting in an opposite direction and being adapted for cutting and loading in each of said two positions, the bottom and back of the scoop in one of said positions being respectively its back and bottom in the other one of said two positions, and means for automatically reversing the scoop from one to the other position in direction to invert and thereby dump the scoop during such reversing movement.

13. In an excavating-machine for digging trenches, a track-guide conformable to the transverse contour of the trench; a truck arranged to traverse the track-guide; means for moving the truck along the track-guides in opposite direction in alternation; a scoop pivotally supported upon the truck and arranged for reversal from a position for cutting in one direction to a position for cutting in an opposite direction; a device for thus reversing the position of the scoop supported upon the truck, the connection between the truck and the reversing device permitting relative independent movement whereby independent movement of one member shall cause the reversal of the scoop; means for temporarily locking together the scoop and the reversing device; and means on the track-guide for operating the locking means to break locked connection between the reversing device and the truck.

14. In an excavating-machine a track; a truck for traversing the track; a reversible scoop supported by side pivots on the truck and adapted and arranged to turn about an axis passing through said pivots from a position for facing to cut in one direction to a position to cut in an opposite direction; and means for reversing the scoop comprising gears on the scoop and a reversing device engaging with the gears; the truck and reversing device being relatively and independently movable to a limited extent.

849,083. FLUID-AGITATOR. JOSIAH P. PERKINS, Indianapolis, Ind. Filed Mar. 15, 1906. Serial No. 306,169.

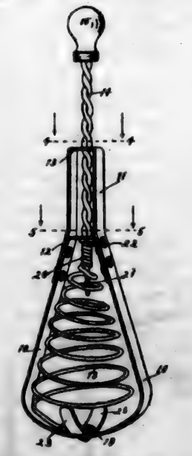

Claim.—1. A fluid-agitator including a beating element, means for vertically reciprocating the same, and means actuated by said vertically-reciprocating means for causing the simultaneous horizontal revolution of said beating element.

2. A fluid-agitator including two beaters, one within the other, said outer beater being revoluble and the inner beater being vertically movable, and a single means for actuating both beaters.

3. A fluid-agitator including a helical spring, revoluble means on which said spring is mounted and to which said spring is secured at its lower end, and a vertically-movable actuator that revolves said revolving means and compresses said spring.

4. A fluid-agitator including a revoluble beater, an actuator operating through the upper part of said revoluble beater for revolving it, and a helical spring within the lower part of said revoluble beater that is secured at its lower end to said revoluble beater and presses upward against said actuator.

5. A fluid-agitator including a revoluble beater with a head provided with top and bottom cross-plates, the bottom plate having a guiding-hole in it and the top plate having an elongated slot in it, a twisted stem vertically movable through both of said plates, a stop at its lower end, a stop at its upper end, and a spring for upwardly actuating said stem.

6. A fluid-agitator including a revoluble beater with a head provided with top and bottom cross-plates, the bottom plate having a guiding-hole in it and the top plate having an elongated slot in it, a twisted stem vertically movable through both of said plates, a stop at its lower end, a stop at its upper end, an upwardly-acting spring secured to the lower part of said revolving beater and pressing upwardly against the lower part of said stem, and a pin extending downward from the lower end of the stem on which the upper end of said spring has bearing.

7. A fluid-agitator including a revoluble beater with a head provided with top and bottom cross-plates, the bottom plate having a guiding-hole in it and the top plate having an elongated slot in it, a twisted stem vertically movable through both of said plates, a stop at its lower end, a stop at its upper end, a spring for upwardly actuating said stem, and an auxiliary beater secured to the lower end of the revolving beater transversely thereof with its ends extending upward.

8. A fluid-agitator including a revoluble beater with a head provided with top and bottom cross-plates, the bottom plate having a guiding-hole in it and the top plate having an elongated slot in it, a twisted stem vertically movable through both of said plates, a pin at the lower end of said stem, a stop at its lower end, a stop at its upper end, a helical spring within the lower part of said revolving beater, the lower part of said spring being secured to said revolving beater and the upper part being coiled loosely about said pin, and an auxiliary beater secured to the lower end of the revolving beater transversely thereof with its ends extending upwardly beside the lower portion of said spring.

849,084. AUTOMATIC VALVE. AUGUSTUS F. PRIEST, Milwaukee, Wis., assignor to The A. F. Priest Mfg. Co. Filed Apr. 28, 1906. Serial No. 314,145.

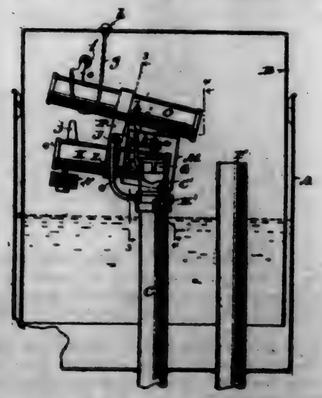

Claim.—1. A valve mechanism comprising a balanced valve-lever, a weight arranged to travel across the lever-fulcrum, a supplementary balanced lever in connection with the first-named lever, said supplementary lever being provided with a weight arranged to travel across its fulcrum and having greater power than the said first-named lever, whereby the first-named lever is actuated.

2. In a gas-mixing apparatus, a tank provided with a telescopic cover, air, gas, and supply pipes for the tank, valves for air and gas pipes, a balanced lever in connection with the valves, a weight arranged to travel across the lever-fulcrum, a supplementary balanced lever in connection with the first-named lever, said supplementary lever being provided with a weight arranged to travel across its fulcrum, and having greater power than said first-named lever, and means in connection with the last-named lever and telescopic cover whereby an initial movement is imparted to said lever to control the movements of the first-named lever.

3. In a gas-mixing apparatus, a tank provided with a telescopic cover, air, gas and supply pipes for the tank, valves for the air and gas pipes, a balanced lever in connection with the valves, a movable weight carried by the lever, a supplementary balanced lever in connection with the first-named lever, a movable weight carried thereby, said lever and weight having greater power than the first-named lever, and means in connection with the last-named lever and telescopic cover, whereby an initial movement is imparted to said lever to change the position of its weight and thereby actuate the first-named lever.

4. In a gas-mixing apparatus, a tank having a telescopic cover, air, gas and supply pipes for the tank, valves for the air and gas pipes, a balanced pivoted tubular lever in connection with the valves, a ball-weight loosely fitted in the tubular lever, a supplementary balanced pivoted tubular lever of greater length than the first-named lever and in connection therewith, a ball-weight loosely fitted therein, and means in connection with the last-named tubular lever and telescopic cover, whereby an initial movement is imparted to said lever to change the position of its weight, and thereby actuate the first-named lever.

849,085. DYNAMO-ELECTRIC MACHINE. EMANUEL ROSENBERG, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed Aug. 1, 1904. Serial No. 219,022.

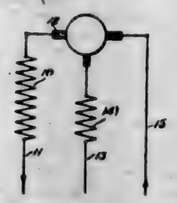

Claim.—1. The combination of a three-wire dynamo-electric machine having a main winding connected to one of the outside mains of the system, and an auxiliary winding traversed by current flowing in the neutral conductor of the system.

2. In a dynamo-electric machine connected to a three-wire system, a regulating-winding connected to one of the outside conductors of said system, and an auxiliary winding of half the number of turns connected to the neutral conductor of the system.

3. A dynamo-electric machine, a multiple conductor system connected thereto, a winding on said machine connected to one of the outside conductors of said system, and an auxiliary winding on said machine connected to an intermediate conductor of said system.

849,086. PHONOGRAPH. WILLIAM W. ROSENFIELD, New York, N. Y. Filed May 16, 1906. Serial No. 317,065.

Claim.—1. In a phonograph, the combination with the record-carrier, the reproducer-carrier, and a feed-screw and a feed-nut for coacting to give the reproducer-carrier its reproducing movement, of a reproducing-diaphragm, a reproducing-point connected therewith and capable of movement independently thereof laterally of the record, and means for shifting the reproducing-point slightly backward relatively to the diaphragm when off the record, substantially as described.

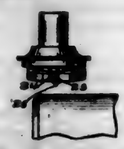

2. In a phonograph, the combination with the reproducing-diaphragm, of a reproducing-point connected therewith and capable of movement independently thereof laterally of the record, and means for shifting the reproducing-point slightly backward relatively to the diaphragm when moved off the record and for holding it in such position until again moved into engagement with the record, substantially as described.

3. In a phonograph-reproducer, the combination with the diaphragm, of a reproducing-point connected therewith and capable of movement independently thereof laterally of the record, and means for shifting the reproducing-point slightly backward relatively to the diaphragm when off the record, substantially as described.

4. In a phonograph-reproducer, the combination with the diaphragm, of a reproducing-point connected therewith and capable of movement independently thereof laterally of the record, and means for supporting the reproducing-point when off the record in a position slightly backward of its normal reproducing position, substantially as described.

5. In a phonograph, the combination with a record-mandrel for carrying a cylindrical record, a reproducer-carrier, and a feed-screw for engaging a feed-nut on the carrier for giving the carrier its reproducing movement, of a reproducer having a reproducing-point connected with the diaphragm so as to be capable of movement independently thereof laterally of the record, and means for shifting the reproducing-point slightly backward relatively to the diaphragm when off the record, substantially as described.

6. In a phonograph, the combination with a reproducing-diaphragm, of a member capable of movement toward and from the diaphragm and tending to move from the diaphragm toward the record and also capable of movement independently of the diaphragm laterally of the record, a reproducing-point supported by said member and connected with the diaphragm, and means for shifting said member slightly backward relatively to the diaphragm when moved to carry the reproducing-point off the record, substantially as described.

7. In a phonograph-reproducer, the combination with the diaphragm, of a member capable of movement toward and from the diaphragm and tending to move from the diaphragm toward the record and also capable of movement independently of the diaphragm laterally of the record, a reproducing-point supported by said member and connected with the diaphragm, and means for shifting said member slightly backward relatively to the diaphragm when the reproducer is moved out of operative position, substantially as described.

8. In a phonograph-reproducer, the combination with the diaphragm, of a member capable of movement toward and from the diaphragm and tending to move from the diaphragm toward the record and also capable of movement independently of the diaphragm laterally of the record, a reproducing-point supported by said member and connected with the diaphragm, and an inclined support for said member for shifting said member slightly backward relatively to the diaphragm when moved to carry the reproducing-point off the record, substantially as described.

9. In a phonograph-reproducer, the combination with the diaphragm, of a member pivoted to swing toward and from the diaphragm and also laterally of the record and tending to move from the diaphragm toward the record, a lever pivotally mounted on said member and connected with the diaphragm, a reproducing-point carried by said lever, and a supporting-loop for said member having an inclined supporting portion for shifting said member slightly backward relatively to the diaphragm when the reproducer is moved out of operative position, substantially as described.

849,087. CLUTCH MECHANISM. MAURICE I. ROSENTHAL, Fort Wayne, Ind. Filed June 7, 1905. Serial No. 264,046.

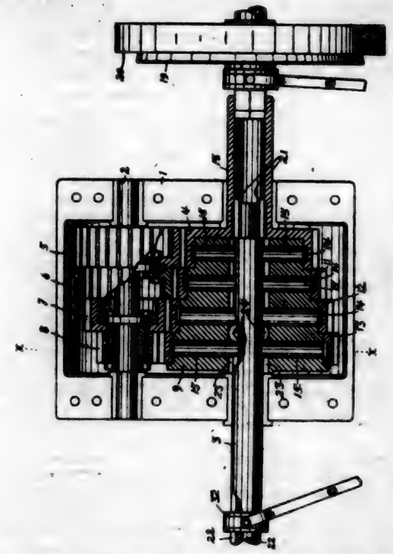

Claim.—1. In a clutch, a driving-gear and driven member suitably mounted with their axial centers in alinement; a clutch member in fixed connection with the driven member and ranging within the flange of the driving-gear; oppositely-disposed dogs mounted in radial position in the clutch member and being adapted to be shifted inwardly and outwardly, the said driving-gear having notches within its flange to receive the outer ends of the dogs; a guide-pin arranged longitudinally within each of said dogs and having a head upon its end nearest the inner end of the dog; a compression-spring acting against said head to hold it in normal position, each of said dogs having a slot and transverse pin at its inner end; and actuating-bars in longitudinal movable relation with the driven member, having oppositely-disposed crooks, and engaged with the respective dogs, the crooks of said bars acting against said heads to move said dogs outwardly.

2. In a clutch, a clutch member having mounted thereon in movable relation therewith an internally-notched ring; a dog in connection with the clutch member adapted to be moved outwardly into engagement with said ring, and having a guide-pin with a head; a spring in connection with the dog and acting against the head of the guide-pin; a transverse pin at the inner end of the dog; and an actuating-bar having an outwardly-extending crook, and engaged with said dog between said head and transverse pin.

3. In a clutch, a clutch member having a ring mounted thereon in movable relation therewith, and having also one or more dogs adapted to engage the ring, each of said dogs having a transverse pin at its inner end; a guide-pin in movable relation with each of said dogs; a compression-spring in connection with each of said guide-pins acting respectively against the dogs to hold them in outermost position; and one or more actuating-bars in connection with the corresponding dogs and each having an outwardly-disposed crook adapted to move the respective dogs outward

by coming into engagement with the corresponding guide-pins, and inward engagement with said transverse pins.

4. In a clutch, a clutch member and a driving member, in combination with a dog movably mounted in the clutch member and having a guide-pin movably connected therewith, and having also a transverse pin at its inner end; a spring acting between the dog and guide-pin to hold the former toward its outermost position; and an actuating-bar in movable relation with the clutch member and extending through the inner portion of the dog between said transverse pin and inner end of the guide-pin, the said actuating-bar having a curved portion adapted to move said dog outwardly into engagement with the driving member by acting against the end of the guide-pin, and inwardly by engagement with said transverse pin.

849,088. SPRING-CUSHION WORK. WATSON R. SMITH, Jackson, Mich., assignor to Jackson Cushion Spring Company, Jackson, Mich. Filed Sept. 11, 1906. Serial No. 334,192.

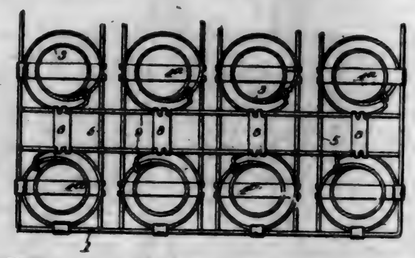

Claim.—1. A cushion comprising a frame, supporting-wires, springs disposed upon the wires, and two-end fasteners connecting opposite sides of each spring and the corresponding supporting-wires, each fastener having pairs of fingers at each end, the fingers of each end being arranged one pair in advance of the other.

2. A cushion comprising a frame, supporting-wires, springs disposed upon the supporting-wires, two-end fasteners connecting the springs and the corresponding supporting-wires, and two-end fasteners connecting the upper convolutions of each spring at opposite sides of the latter.

3. A fastener for spring-cushion work, comprising a member provided with pairs of fingers at each end, the fingers at each end being arranged one pair in advance of the other pair.

4. A fastener for spring-cushion work, comprising a member provided with pairs of fingers at each end, the fingers at each end being arranged one pair in advance of the other pair and the pairs at each end lying in different planes with respect to each other.

849,089. SOCKET-KEY FOR ELECTRIC-LAMP SOCKETS. PHILIP L. SYLVESTER, Scranton, Pa., assignor to The Scranton Button Company, Scranton, Pa., a Corporation of Pennsylvania. Filed July 5, 1906. Serial No. 324,785.

Claim.—1. A key for incandescent-lamp sockets comprising a finger-piece of molded insulating material having a flattened head and a shank or thickened portion at one end of said head, and a metal stem or spindle embedded in said shank and having one or more ribs or projections embedded in the shank and extending at an angle to the central plane of said head.

2. A key for incandescent-lamp sockets comprising a finger-piece of molded insulating material having a flattened head and a shank or thickened portion at one end of said head, and a metal stem or spindle having a flattened end embedded in said flattened head and having one or more ribs or projections extending at an angle to the plane of said end and embedded in said shank or thickened portion.

3. A key for incandescent-lamp sockets comprising a finger-piece of molded insulating material having a flattened head and a shank or thickened portion at one end of said head, and a metal stem or spindle having a flattened end embedded in said flattened head and having ribs projecting from opposite sides of the shank at right angles to the plane of said end and embedded in said shank or thickened portion of the finger-piece.

849,090. WASHING-MACHINE. HENRY E. THOMPSON, Denton, Tex. Filed Feb. 23, 1905. Serial No. 246,995.

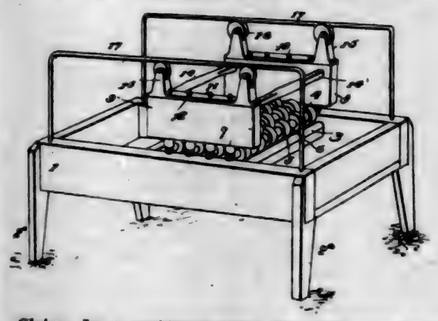

Claim.—In a washing-machine, the combination of a suds-box, a stationary rubber in said suds-box, a reciprocating rubber coöperating with the stationary rubber and comprising spaced connected sides, tracks carried by the sides of the suds-box, plates mounted on the upper edge portions of the sides of the reciprocating rubber and provided with vertical standards projecting therefrom, rollers journaled in the standards and engaging the tracks aforesaid to direct the reciprocating rubber in its movement, a plurality of rubbing-rollers carried by the reciprocating rubber, the sides of the reciprocating rubber being formed with a plurality of vertical openings extending entirely therethrough and closed at the upper ends by the plates above mentioned, a plurality of vertical bearings mounted in the vertical openings of the reciprocating rubber and having the upper ends thereof reduced and passing through openings in the plates applied to the sides of said rubber, stops at the upper extremities of the bearings to limit the downward movement thereof, springs interposed between the enlarged lower end portions of the bearings and the plates of the reciprocating rubber and mounted in the openings in the sides of the latter so as to normally tend to force the bearings downwardly, the bearings having the rollers of the reciprocating rubber journaled therein and being movable toward the sides of the suds-box and to be limited in their downward movement thereby.

849,091. DETACHABLE MUSIC-ROLL SUPPORT. EDWIN S. VOTEY, Summit, N. J., assignor to Aeolian Company, New York, N. Y., a Corporation of Connecticut. Filed May 1, 1905. Serial No. 258,211.

Claim.—1. A music-roll coupling having at one end a projecting centering portion for entering the hollow end of the music-roll, an outwardly-extending portion formed with an annular recess, and a coupling member in said recess, and at its other end a recess for detachably engaging a shaft.

2. A music-roll coupling for a mechanical musical instrument having at one end a projecting centering portion for entering the hollow end of a music-roll and an outwardly-extending portion for bearing against the end of such roll, and at its other end a recess for engaging the end of a shaft and means independent of any stationary portion of said instrument for detachably securing the coupling on such shaft.

3. A music-roll coupling for a mechanical musical instrument having at one end a projecting centering portion for entering the hollow end of a music-roll, an outwardly-extending portion for bearing against the end of such roll and a coupling member for engaging with a coupling member on such roll, and at its other end a recess for engaging the end of a shaft and means for detachably engaging such shaft indepednent of any stationary portion of said instrument.

4. A music-roll coupling having at one end a projecting centering portion for entering the hollow end of a music-roll, an outwardly-extending portion formed with an annular recess for engaging a bead at the end of such roll and a tooth in said recess for engaging a corresponding notch in such bead, and at its other end a recess for detachably engaging a shaft.

5. A music-roll coupling comprising a shaft-engaging portion recessed to engage the end of the shaft, means for securing said portion on the shaft, and a centering portion for entering the hollow end of a music-roll, said centering portion being provided with an outwardly-extending portion for bearing against the end of the roll and being rotatably mounted on said shaft-engaging portion.

6. A pair of music-roll couplings, each having means for detachably engaging the end of a shaft, an inwardly-projecting centering portion for entering the hollow end of a music-roll, and a flange for bearing against the end of the roll, one of said couplings having means for driving engagement with the roll, and the other coupling having a rotary bearing between its shaft-engaging means and its centering portion.

7. A music-roll coupling having at one end means for supporting a music-roll in alinement with a roll-supporting shaft of a mechanical musical instrument, and formed with an annularly-recessed portion and a coupling member in such recess, and at its other end a recess for detachably engaging a shaft.

8. A music-roll coupling having at one end means for supporting a music-roll in alinement with the roll-supporting shaft of a mechanical musical instrument, and formed with an annularly-recessed portion and at its other end a recess for engaging the end of a shaft, and means for detachably securing the coupling on such shaft.

9. A music-roll coupling for a mechanical musical instrument provided with a roll-supporting shaft, said coupling having at one end a projecting centering portion for entering the hollow end of a music-roll and an outwardly-extending portion for bearing against the end of such roll and at its other end a recess for engaging the end of the shaft, and means for detachably securing the coupling on said shaft, said shaft having an axial recess for receiving the pin of a solid-end music-roll.

10. A music-roll coupling for a mechanical musical instrument provided with a roll-supporting shaft, said coupling having at one end a projecting centering portion for entering the hollow end of a music-roll, an outwardly-extending portion for bearing against the end of such roll and a coupling member for engaging with the coupling member on such roll and at its other end a recess for detachably engaging the end of said shaft, said shaft having a non-circular axial recess for receiving the pin of a solid-end music-roll.

11. A mechanical musical instrument having roll-carrying journals forming parts thereof, in combination with a tubular music-roll, and means normally and detachably secured to said journals for centering and driving said roll.

12. A mechanical musical instrument having roll-carrying journals, one of said journals being the usual driving-journal and the other the usual spring-pressed coöperating journal, in combination with a flanged plug detachably secured to said driving-journal, and another flanged plug detachably secured to said coöperating journal.

13. A mechanical musical instrument having roll-carrying journals, one of said journals being the usual driving-journal and the other the usual spring-pressed coöperating journal, in combination with a driving-plug detachably secured to said driving-journal, and a coöperating plug swiveled to said coöperating journal.

14. A mechanical musical instrument having roll-carrying journals, roll-engaging plugs detachably mounted on the respective journals, and set-screws for fastening the respective plugs to said journals.

15. A mechanical musical instrument having roll-carrying journals, in combination with a hollow music-roll, plugs for engaging the openings in said roll, and means for detachably securing said plugs to the respective journals.

849,092. GARMENT-SUPPORTER CLASP. CHARLES M. WEBB, Waterbury, Conn., assignor to Waterbury Buckle Company, Waterbury, Conn., a Corporation. Filed Mar. 12, 1906. Serial No. 305,432.

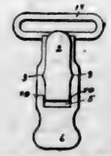

Claim.—In a garment-supporter clasp, the combination with an inner jaw formed about midway of its length with integral forwardly-projecting perforated ears, of an outer jaw formed about midway of its length with a lever-opening, an operating-spring located between the two jaws for automatically separating them and consisting of the bend produced by folding the single piece of metal from which the said inner and outer jaws and spring are made, means applied to the said spring for the reception of the webbing from which the said garment-supporter is suspended; and a cam-lever provided at its inner end with pintles entering the said perforated ears for pivotally connecting the lever with the inner jaw from which it extends outward through the said lever-opening in the outer jaw, the said lever being formed at opposite points upon its edges and about midway of its length with outwardly-projecting tooth-like stops which coact with the outer face of the outer jaw at points on the opposite sides of the said lever-

opening therein for preventing the jaws from being spread too far apart by the said spring for the proper action of the said cam-lever.

849,093. COMPOSITE RAILWAY-TIE. LOUIS H. WOLFF, Indianapolis, Ind., assignor of two-fifths to Henry B. Heywood, Indianapolis, Ind. Filed May 17, 1906. Serial No. 317,322.

Claim.—1. The process of making a composite railway cross-tie which process consists in forming the internal and the external portions thereof under pressure and at different times.

2. The process of making a composite railway cross-tie which process consists first in pressing the external portion into shape, and in subsequently forming and pressing the central portion into place in the external portion for uniting the two portions and giving to the whole tie substantially the same density and character.

3. The process of making a composite railway cross-tie which consists in separately forming and pressing the external and central portions into shape, the external portion having its central portion and one side unformed, then placing such central portion within the external portion, and finally filling the cavity in the external portion under pressure for holding the internal portion in place and for uniting all portions into a homogeneous article.

849,094. SELF-RIGHTING ROLLER-BEARING. OSWALD F. ZAHN, Los Angeles, Cal. Filed Sept. 5, 1906. Serial No. 335,017.

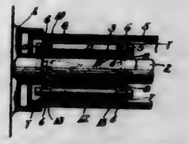

Claim.—1. A roller-bearing comprising inner and outer bearing members, the inner bearing member provided with a plurality of annular flanges, and bearing-rollers, having a groove near each end, of less diameter than the bearing-surface of said rollers, the inwardly-facing walls of said grooves engaging with the outer faces of said flanges, and the inner faces of said flanges being free from engagement with the rollers.

2. A roller-bearing comprising inner and outer bearing members, the inner bearing member provided with a plurality of annular flanges, and bearing-rollers, having a groove near each end, of less diameter than the rolling diameter, the inwardly-facing walls of said grooves engaging with the outer faces of said flanges, the inner faces of said flanges being free from engagement with the rollers, and spacing means for the rollers.

3. A roller-bearing comprising inner and outer bearing members, the inner bearing member provided with a plurality of annular abutment members, and bearing-rollers, having a groove near each end, of less diameter than the rolling diameter, the inwardly-facing walls of said grooves engaging with the outer faces of said annular abutment members, and the inner faces of said annular abutment members being free from engagement with the rollers, whereby any skewing of the rollers in the bearing causes contact between the rollers and a bearing member tending to rectify the rollers and the rollers being free to move longitudinally in the bearing member to allow such rectifying contacts.

4. A roller-bearing comprising inner and outer bearing members, the inner bearing member provided with a plurality of annular flanges, and bearing-rollers, grooved to engage said flanges on the faces of the grooves farthest from the middle of the rollers, the other faces of the grooves being free from engagement with the flanges, and the grooves being of less diameter than the rolling diameter of the rollers.

5. A roller-bearing comprising inner and outer bearing members, the inner bearing member having a plurality of annular flanges, and bearing-rollers, grooved to engage said flanges on the faces of the grooves farthest from the middle of the rollers, the other faces of the grooves being free from engagement with the flanges, the grooves being of less diameter than the rolling diameter of the rollers, and spacing means for the rollers.

6. A roller-bearing comprising inner and outer bearing members, each having a plurality of annular flanges, and bearing-rollers, grooved to engage said flanges on the faces of the grooves farthest from the middle of the rollers, the other faces of the grooves being free from engagement with the flanges, and the grooves being of less diameter than the rolling diameter of the rollers.

7. A roller-bearing comprising inner and outer bearing members, each bearing member being provided with a plurality of annular abutment members, and bearing-rollers, having a groove near each end, of less diameter than the rolling diameter, the inwardly-facing walls of said grooves engaging with the outer faces of said annular abutment members, and the inner faces of said annular abutment members being free from engagement with the rollers, whereby any skewing of the rollers in the bearing causes contact between the rollers and a bearing member tending to rectify the rollers and the rollers being free to move longitudinally in the bearing member to allow such rectifying contacts.

849,095. VEHICLE-WHEEL. ARTHUR A. AMBLER, Springfield, Ohio. Filed Mar. 12, 1906. Serial No. 305,696.

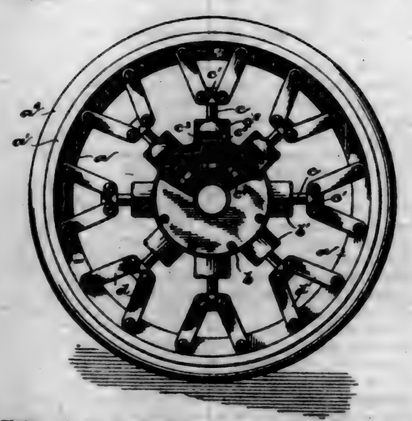

Claim.—1. In a vehicle-wheel, an outer rim, an inner hub, a series of spokes radiating from said hub, interposed cushions between the spokes and hub, and a separate flexible connecting part between each of said spokes and said rim, substantially as specified.

2. In a vehicle-wheel, an outer rim, a series of inner spokes, a series of flexible connecting parts between said spokes and rim, and an inner hub suspended by said inner spokes, and an interposed cushion between each of said spokes and said hub, substantially as specified.

3. In a vehicle-wheel, an outer rim, an inner hub suspended therefrom, the connections between said rim and hub being such as to form a cushion-support for said hub and to permit said rim to swerve laterally in either direction independent of said hub, substantially as and for the purpose specified.

4. In a vehicle-wheel, an outer rim, flexible straps connected thereto, inner radial spokes suspended from said straps, cushions on said inner spokes, and an inner hub supported on said cushions, substantially as specified.

5. In a vehicle-wheel, an outer rim, an inner hollow hub having radial spokes projecting therefrom, each of said spokes having an interposed cushion between its inner end and the interior of said hub, and two or more flexible connecting parts between the outer end of each of said spokes and the wheel-rim, said flexible connecting parts diverging from said spoke to their points of connection to said rim, substantially as specified.

6. In a vehicle-wheel, an outer rim, an inner hub, radial spokes in said hub, flexible connections from said spokes to said rim, cushions on said spokes, and a universal bearing between each of said cushions and said hub to permit lateral movement of said rim independent of said hub, substantially as specified.

7. In a vehicle-wheel, an outer rim, an inner hub, spokes radiating from said hub, flexible connections from the outer ends of said spokes to said rim, a cushion on each of said spokes within said hub, and a collar on each spoke between its springs and the hub having a rounded bearing-face, the said hub at the point of contact with said collars being correspondingly formed, substantially as specified.

8. In a vehicle-wheel, an outer rim, an inner hub, spokes radiating from said hub, the outer ends of said spokes being connected to said rim by flexible connections, an adjusting-nut on the inner end of each spoke, a collar provided with a rounded bearing-face also on each spoke within said hub and providing a universal bearing for said hub which is formed at the point of contact of a shape to correspond to the rounded face of said collar, and a cushion between said nut and collar, substantially as specified.

9. In a vehicle-wheel, an outer rim, an inner hub, radial spokes projecting from said hub, interposed cushions between said spokes and hub, a T-shaped head on the outer end of each of said spokes, flexible connecting parts connected to said head on opposite sides of the radial center of said spoke, said flexible connecting parts being diverged and connected to said rim, substantially as specified.

849,096. FLAT-TOP DESK. WILHELMINE ANDERSON, Brooklyn, N. Y. Filed Dec. 23, 1904. Renewed Jan. 21, 1907. Serial No. 353,354.

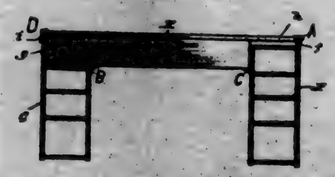

Claim.—1. In a flat-top desk, in combination, the top E having the projecting part h; the pedestal F hinged to the projecting part h and arranged to be turned over on top of the latter; and the pedestal G having the projecting side g hinged to the bottom of the top and arranged to turn under the latter, substantially as and for the purpose set forth.

2. In a flat-top desk, in combination the top E, having the projecting part h; the pedestal F, hinged to the projecting part h, and arranged to be turned over on top of the latter; the pedestal G having the projecting side g, hinged to the bottom of the top and arranged to turn under the latter; and means whereby the several parts are locked in position when erected, substantially as and for the purpose set forth.

849,097. APPARATUS FOR EXTRACTING METALS FROM THEIR ORES. CRAIG B. ARNOLD, Philadelphia, Pa. Filed June 4, 1904. Serial No. 211,104.

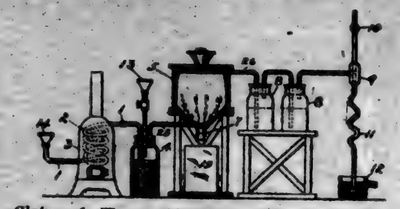

Claim.—1. The combination substantially as described in an apparatus for recovering gold and silver by the cyanid process, of a pulp-containing vat or tank, an inlet at the bottom of the tank-opening in position to cause gas when introduced in sufficient quantity and under sufficient head to thoroughly agitate any pulp contained therein, connections leading from the outside atmosphere to said inlet, a Woulfe bottle interposed in such connections and adapted to supply the entering air with a gas of the halogen group, an outlet from said pulp-containing tank connected to the upper part thereof, a hydraulic exhaust-pump connected to said outlet and an absorption tank or vat interposed in the connection between the tank and the exhaust-pump said pump being adapted to produce by exhaustion a flow of air through the Woulfe bottle and into the tank in sufficient amount to thoroughly agitate the pulp, as and for the purpose described.

2. In an apparatus for recovering gold and silver from ores, the combination substantially as described, of a closed tank adapted to hold a metal-bearing pulp and having an inlet at the bottom thereof, pipes or connections leading from the outside atmosphere to said inlet, a Woulfe bottle and a heater interposed in said connections, an outlet from the top of said tank and a hydraulic exhaust-pump and an absorption-tank connected to said outlet, the absorption-tank being interposed between the outlet and the pump, as and for the purpose described.

849,098. COMBINED FORK, SPOON, KNIFE, AND CAN-OPENER. CHARLES G. AUFRICHTIG, St. Louis, Mo. Filed Mar. 8, 1906. Serial No. 304,874.

Claim.—An article of the character described, comprising a shank, a concave member at one end of said shank, a blade extending from one side of said concave member, and a prong at the forward end of said blade and having a cutting edge; all of said parts being integral with each other and the edge of the concave member opposing the cutting edge of the prong so as to serve as a backing therefor.

849,099. ROTARY MOTOR. CHARLES B. BATDORF, Brooklyn, N. Y. Filed Feb. 9, 1905. Serial No. 244,931.

Claim.—1. The combination with working members, two describing independent orbits and one being movable about a fixed fulcrum relative to the axes of the two working members and operated thereby by contacting therewith, and the contacting portions of the fulcrumed member operating in parallel paths.

2. The combination with a casing having chambers, of an element operable in each chamber, one of said elements being balanced upon a bearing, and effectual for controlling the flow of medium to the other elements.

3. The combination with a casing comprising a chamber which is divided into compartments, of an element operable in each compartment, one of said elements being balanced and having an angular motion, and which is effectual for controlling the flow of a medium to the other elements.

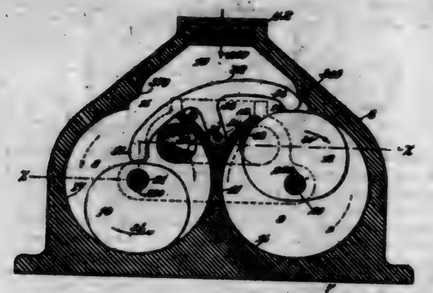

4. The combination with a casing comprising a chamber which is divided into compartments, of an element operable in each compartment, one of said elements being balanced upon a bearing and effectual for controlling the flow of medium to the other elements.

5. The combination with a casing comprising a chamber, having compartments, a rotatably-mounted member in two of said compartments, and an integral pivoted member in contact with both and actuated by said rotatably-mounted elements.

6. The combination with a casing having three chambers, a rotatably-mounted member in two of said chambers and a member movable about a fixed fulcrum in another chamber and actuated by said rotatably-mounted elements, said member having its end portions in contact with each of said rotatably-mounted members at the same time.

7. The combination with a casing having chambers, a rotatably-mounted member in two of said chambers, means for effecting the simultaneous rotation in opposite directions of said members and a member movable about a fixed fulcrum and actuated by said rotatably-mounted members, said member having its opposite extremities in contact with rotatably-mounted members.

8. The combination with a casing comprising a chamber having compartments, a rotatably-mounted member in two of said compartments, and an integral pivoted member actuated by said rotatably-mounted elements, said pivoted member having each end thereof in contact with said rotatably-mounted members.

9. The combination with a casing having a chamber which is divided into compartments, one serving as a pressure-compartment, a rotatably-mounted member in two of said compartments, and a pivoted member actuated by said rotatably-mounted elements, said pivoted member having two portions in contact with said rotatably-mounted members, and adapted to admit the pressure from the pressure-compartment to the compartments containing the rotatably-mounted members.

10. The combination with a casing having a chamber, which is divided into intercommunicating compartments, of an element operable in each compartment, two side by side, and one above the two, one of said elements being balanced and in contact with others effectual for controlling the flow of a medium to the compartments containing the other elements.

11. The combination with a casing having three chambers, of an element operable in each chamber, one of said elements being supported on a fixed fulcrum and having an angular movement relatively to the movements of the other elements, and which is effectual for controlling the flow of a medium against the other elements.

12. The combination with rotatably-mounted pistons and an integral member rocked thereby, said member being movable about a fulcrum fixed between the pistons and relatively to a casing in which the parts are located, and which is given an angular movement by the pistons.

13. The combination with a power-chamber, of a working member operable therein and which is so constructed and arranged as to operate in true balance in the medium, portions of such member contacting with the walls of said chamber, working members operating in chambers communicating with the power-chamber, and by which the first-mentioned member is actuated to intermittently control the medium from one to another of said chambers.

14. The combination with pivoted and angularly-movable means and rotatably-mounted means operating about dissident axes for actuating the angularly-movable means.

15. The combination with a casing having a power-chamber, of a fixed fulcrumed working member operable therein, and which is so constructed and arranged as to operate in true balance in the medium, portions of such member being in constant contact with working members operating in chambers communicating with the power-chamber, and by which the first-mentioned member is actuated to intermittently control the medium from one to another of said chambers.

16. The combination with a casing having a power-compartment of a fixed fulcrumed working member operable therein and which is so constructed and arranged as to operate in true balance in the medium, portions of such member contacting with the walls of said compartment, working members operating in other compartments communicating with the power-compartment, through openings in the wall which form the compartments, and by which the first-mentioned member is actuated to intermittently control the medium from one to another of said chambers.

17. The combination with an integral fulcrumed angularly-movable and balanced member having opposed extremities, and a bearing, of members suitably actuated for alternately raising and lowering said extremities.

18. The combination with a chamber divided by walls into compartments and having openings leading therethrough from one to the other, of an angularly-movable member operating in one compartment, and adapted to intermittently open and close said openings, and members operating in the other compartments and for actuating said first-mentioned member.

19. The combination with a chamber, having compartments with ports leading from one to the other, a member operating in one compartment and the ends of which intermittently open and close each port, members operable in the other chambers for actuating the first-mentioned member, and with which the extremities of the first member are in contact in unison, and means to effect a simultaneous motion of the last-mentioned members.

20. In a motor, the combination with two revolving members which revolve about dissident axes, and whose path of movement is in opposite directions, and a member mounted in a bearing which is intermediate the revolving members, said member being actuated by the revolving members by having its extended portions in contact with the revolving members.

21. In a motor, the combination with two revolving members which revolve about dissident axes, and whose path of movement is through independent and opposite circuits, a member mounted in a bearing which is intermediate the revolving members, said member being actuated by the revolving members by having its opposite portions in contact with the revolving members, and means for maintaining the portions in contact with the members.

22. In a motor, the combination with two revolving members which revolve about dissident axes, and whose path of movement is through independent and opposite circuits, a member mounted in a bearing which is intermediate the revolving members, said member being actuated by the revolving members, by having its oppositely-disposed portions in contact with the revolving members, and means for maintaining the elements relatively in contact.

23. In a motor, the combination with two revolving members which revolve about dissident axes, and whose path of movement is through independent and opposite circuits, a member mounted in a bearing and which is actuated by the revolving members, means for operating the revolving members independent of the other member, and means for maintaining contact between the members.

24. The combination with a chamber having compartments with ports leading from one to the other, of a member operating in one compartment and which is in true balance during operation, and which has an angular movement, and is adapted to intermittently open and close said ports, and members operating in the other compartments and which are adapted to actuate said first-mentioned member.

25. The combination with a casing having a chamber divided into a series of compartments, one of which is a power-compartment, a working member located therein and adapted for controlling the power to the other compartments, movably-mounted members in said compartments and adapted to operate the working member, said movably-mounted member operating in opposite directions, and said working member being in constant contact with both movably-mounted members at the same time.

26. The combination with a casing having a power-chamber, of a working member operable therein and which is so constructed and arranged as not to be affected by the resistance of the medium, working members operating the chambers communicating with the power-chamber, and by which the first-named member is actuated to give it an angular motion and to allow it to intermittently control the medium, said first-named member being in contact with both working members and said last-mentioned chambers being provided with exhaust-ports which are opened and closed by the working members.

27. The combination with a power-chamber, of a working member operable therein and which is so constructed and arranged as to operate in true balance in the medium, portions of such member contacting with the walls of said chamber, working members operating in chambers communicating with the power-chamber, and by which the first-mentioned member is actuated to intermittently control the medium from one to another of said chambers, said members being in constant contact, and means for maintaining contact between the members.

28. In a motor, the combination with three working members, two of which revolve, and one of which is integral and pivoted and has an angular motion in coincidence with the revolutions of the members.

29. In a motor, the combination with two revolving members which revolve about dissident axes, and whose path of movement is in opposite directions, and a member having an angular movement, and operated by the revolving members.

30. In a motor, the combination with two revolving members which revolve about dissident axes, and whose path of movement is through independent and opposite circuits, and a member having its extremities in contact with both revolving members, and by which it is balanced.

31. In a motor, the combination with a casing which is divided into compartments, of two revolving members which revolve in two compartments and about dissident axes, and whose path of movement is in opposite directions, and a member mounted in another compartment, and which is intermediate of the revolving members, said member being actuated by the revolving members by having its extended portions in contact with the revolving members.

32. In a motor, the combination with a casing having a chamber which is divided into compartments into two of which two revolving members, which revolve about dissident axes are mounted, and whose path of movement is through independent and opposite circuits, a member mounted in a bearing in another compartment which is above the compartments for the revolving members, said member being actuated by the revolving members by having its opposite portions in contact with the revolving members, and means for maintaining the portions in contact with the members.

33. In a motor, the combination with a casing, divided into compartments, and in two of which are revolving members, which revolve about dissident axes, and whose path of movement is through independent and opposite circuits, a member mounted in another compartment and in a bearing which is intermediate of the revolving members, said member being actuated by the revolving members, by having its oppositely-disposed portions in contact with the revolving members, and means for maintaining the elements relatively in contact.

34. In a motor, the combination with a casing which is divided into compartments, two revolving members operating in two of the compartments and about dissident axes, and whose path of movement is through independent and opposite circuits, a member mounted in another compartment and which is actuated by the revolving members, means for operating the revolving members in unison, and means for maintaining contact between the members.

35. In a motor the combination with two revolving members, means for revolving the same in opposite directions, and an intermediate angularly-movable working member driven intermittently through independent paths, and a bearing for the intermediate member.

36. In a motor, the combination with working members, means for operating the same in opposite directions, and an intermediate angularly-movable member driven intermittently through independent paths, and a bearing for said intermediate member.

37. In a motor, the combination with a casing having a chamber which is divided into three compartments, with ports leading from one to another, of a member operating in one chamber to open and close said ports, and members operating in contact with said member, for causing an intermittent movement of the member.

38. In a motor, the combination with a casing having chambers and ports leading from one to another of said chambers, of a fixed fulcrumed member operating in one chamber to open and close said ports intermittently, and means to shift the member to its open and closed positions.

39. In a motor, the combination with a casing having chambers and ports leading from one to another, of a pivoted member having an angular motion and working in one of said chambers and adapted to intermittently open and close said ports, means actuating in said other chambers and which operate the working member, and means for adjusting said member relatively to the actuating means.

40. The combination with three members in intimate and continual contact, one of which is supported on a fixed fulcrum and has an angular motion and transmits power to the others, and independent means for transmitting motion from one to the other.

41. In a motor, the combination with two revolving members and a fixed fulcrum member which is given an angular motion by the revolutions of the revolving members.

42. In a motor, the combination with two revolving members revolving in opposite directions, but in similar paths, and a fixed fulcrum member in intimate contact therewith, and which is given an angular movement thereby.

43. In a motor, the combination with a casing having a chamber which is divided into compartments, two rotating and one oscillating member in said compartments said members being in close contact with each other and with the walls of the compartments.

44. In a motor, the combination with a casing having chambers, two revolving and one oscillating pivoted member, said members being in constant contact with each other and the walls of the chambers, and means for operating some of the members in unison.

45. In a motor, the combination with two revolving disks rotating irregularly with respect to their centers of a pivoted member actuated thereby and having its ends bearing on said disks, said disks and member being constantly in contact, and said member being given an angular movement by the disks.

46. In a motor, the combination with two revolving irregular-conformed members, operating irregularly with respect to their centers, of a member rocked thereby, and which is pivoted above and between the two, by having its

ends in contact with the irregular members, means for maintaining the contact, and means for operating the revolving members in opposite and similar paths.

47. In a combination of the class specified, a casing having a medium-containing compartment having ports for supplying a plurality of compartments, of movable parts in said compartments, one of said movable parts, being supported on a fixed fulcrum and operated by the others for intermittently controlling the medium from the one to the other chambers.

48. In a device of the character specified, the combination with an angularly-movable member mounted upon a bearing and having a to-and-fro movement in two directions, said bearing assuming the pressure of the medium directed against the member, of members rotatably mounted and which lightly contact with the movable ends of said member for operating the same intermittently.

49. The combination with a fixed fulcrum angularly-movable member, and members operating in dissident paths for effecting such movement.

50. The combination with a member mounted upon a bearing and having an angular movement, a bearing therefor and which assumes the pressure of a medium directed against the member, of members operable for lightly contacting with and operating said member.

51. The combination with a fixed fulcrum angularly-movable member, adapted to open and close the ports of an engine, of members traveling through dissident paths and in unison for effecting an intermittent movement of the member.

52. The combination with a pressure-chamber, of a pressure-controller mounted for angular movement therein, and a plurality of members operating in chambers communicating with the pressure-chamber, and adapted to operate the pressure-controller, said pressure-controller being adapted to divide the pressure from that portion of the members which offer the greatest leverage.

53. The combination of three elements, each interdependent upon the other for movement, and one being integral and supported about a fixed fulcrum and traveling about an axis eccentric to the axes to the others.

54. In a motor, the combination with a pivoted member, and two rotating bodies mounted eccentrically of common centers dissidently disposed.

55. The combination with a casing having chambers, of three elements operable therein, one of said elements having a fixed fulcrum and an angular movement which is given by the movement of the other elements and which element is effectual to control the flow of a medium to the chambers containing said elements.

56. The combination with two rotating pistons to an oscillating piston operated thereby, said oscillated piston being movable about a fulcrum fixed relatively to a casing in which the parts are located and which is given an angular movement by the rotating pistons.

57. The combination with two irregularly-formed rotatably-mounted pistons of an angular, movable piston operated thereby by being in close contact therewith, said movable piston being movable about a fulcrum fixed relatively to a casing in which all the members are located.

58. The combination with irregularly-formed movable members, and an angularly-movable member operated thereby and upon their faces, by being in positive contact therewith, said member being rocked upon a fulcrum fixed relatively to a casing in which all of the members operate and between the pistons.

59. The combination with a revolving member, each so located that the throw of one will be equalized by the throw of the other, and an intermediate integral and pivoted angularly-movable member actuated by the revolving members.

60. In a device of the character specified, the combination with rotating bodies, of a fulcrumed balanced valve operated thereby for controlling a medium to the bodies, said valve operating to throw the medium to the outer side of the bodies.

61. The combination with revolving bodies, movable about dissident axes, and which are eccentrically mounted thereupon, and a balanced and fixedly-fulcrumed member to which angular throw is imparted by the diversified movements of the revolving bodies.

62. The combination with two shafts located side by side of rotating bodies mounted on said shafts and operating in opposite directions, means for operating the bodies and a pivoted member angularly operated by said bodies.

63. The combination with chambers, of two shafts located therein, and side by side, and operated in opposite directions, means for operating the bodies and a balanced and fulcrumed member angularly operated by said bodies, and which is in intimate contact therewith.

64. The combination with a casing having chambers, of oppositely-rotating members in two of said chambers, and a pivoted member actuated by contact with the peripheries of said rotatably-mounted members.

65. In a motor, the combination with a pivoted member, two rotating bodies mounted eccentrically of common centers dissidently disposed, and a casing.

66. In a motor, the combination with a casing having intercommunicating compartments provided with ports leading from one to the other, one of said compartments receiving the constant pressure of a medium, a member balanced therein and having an angular motion for controlling the pressure from one to the other, and means to operate the member.

67. In a motor, the combination with chambers for receiving working members, one of which chambers serves as a pressure-chest for a medium, and which communicates with the others through openings formed in the walls on opposite sides of a wall between the chambers and a balanced fulcrumed valve operating in the openings for regulating the flow of the medium.

68. The combination with a casing having chambers, of an element operable in each chamber, one of said elements being balanced in and having an angular motion in one of the chambers, and effectual for controlling the flow of medium from one to the other of said chambers.

69. The combination with a casing having a chamber, which is divided into compartments of oppositely-rotating members in two of said compartments, and a pivoted member actuated by contact with the peripheries of said rotatably-mounted members.

70. The combination with a power-chamber, of a fixed fulcrumed working member operable therein and which is so constructed and arranged as to operate in true balance in and under the pressure of the medium, portions of such member contacting with abutments on the walls of said chamber, working members operating in chambers communicating with the power-chamber, and by which the first-mentioned member is actuated to intermittently control the medium from one to another of said chambers.

71. The combination with a power-chamber, of a fixed fulcrumed working member operable therein and which is so constructed and arranged as to operate in true balance in the medium, portions of such members contacting with abutments on the walls of said chamber, working members operating in chambers communicating with the power-chamber, and by which the first-mentioned member is actuated to intermittently control the medium from one to another of said chambers, and means for creating contact between the members.

72. The combination with a power-chamber, of a fixed fulcrumed working member operable therein and which is so constructed and arranged as to operate in true balance in the medium, portions of such member contacting with the walls of said chamber, working members operating in chambers communicating with the power-chamber, and by the first-mentioned member is actuated to intermittently control the medium from one to another of said chambers, means for adjusting one of the members relatively to the others, and means for causing a relative operation of some of the members.

73. The combination with a casing having a series of chambers therein, one of which is a power-chamber, an angularly-working member located therein and adapted for controlling the power in the other chambers, said member working under the pressure of the medium, movably-mounted members in said chambers and adapted to operate the working member, said movably-mounted members operating in opposite directions.

74. The combination with a power-chamber, of a working member operable therein and which is so constructed and arranged as to operate in true balance in and under the pressure of the medium, portions of such member contacting with abutments on the walls of said chamber, working members operating in chambers communicating with the power-chamber, and by which the first-mentioned member is actuated to control the medium from one to another of said chambers.

75. The combination with a power-chamber, of a working member operable therein and which is so constructed and arranged as to operate in true balance in the medium portions of such members contacting with abutments on the walls of said chamber, working members operating in chambers communicating with the power-chamber, and by which the first-mentioned member is actuated to control the medium from one to another of said chambers, and means for creating contact between the members.

76. The combination with a power-chamber, of a working member operable therein and which is so constructed and arranged as to operate in true balance in the medium, portions of such member contacting with the walls of said chamber, working members operating in chambers communicating with the power-chamber, and by the first-mentioned member is actuated to control the medium from one to another of said chambers, means for adjusting one of the members relatively to the others, and means for causing a relative operation of some of the members.

77. The combination with a casing having chambers of an element operable in each chamber, one of said elements being fixedly fulcrumed and effectual for controlling the flow of a medium to the chambers containing the other elements, the mounting of the said elements being such as to avoid pressure of the medium except on one side thereof.

78. The combination with a casing having chambers, of an element operable in each chamber, one of said elements being fixedly fulcrumed and having an angular movement, and which is effectual for controlling the flow of a medium against a plurality of elements, said member being under the constant pressure of the medium.

79. The combination with two members rotating in independent orbits of means operated thereby, said means being pivoted at a fixed point relatively between the axes of the rotating members.

80. In a motor, the combination with three working members two of which revolve, and one of which is integral and fulcrumed and has an angular movement in coincidence with the revolutions of the members, and means operatively connecting the two members.

81. In a motor the combination with two revolving members which revolve about dissident axis, and whose path of movement is in opposite directions, a member fixedly fulcrumed gives an angular movement thereby, and gears connecting the members.

82. In a motor, the combination with two revolving members which revolve about dissident axis, and whose path of movement is through independent and opposite circuits, a fixedly-fulcrumed member given an angular movement thereby by having its extremities in contact with the revolving members, and a train of mechanism connected to the revolving members.

83. In a motor the combination with a casing having three chambers and ports leading from one to the others, of an angularly-movable member operating in one chamber to open and close said ports intermittently and means to intermittently shift the member to open and close positions.

84. The combination with three members in intimate and continual contact, one of which is fixedly fulcrumed and has an angular movement and transmits power to the other, and gears for transmitting motion from one to the other.

85. In a motor, the combination with two revolving members and a pivoted and balanced valve having an angular movement in unison with the revolutions.

86. In a motor, the combination with a casing having chambers two revolving and one fixedly fulcrumed and angularly-movable member, said members being in constant contact with each other and projections on the walls of the chambers, and gears for operating the revolving members in unison, and in opposite directions.

87. In a motor, the combination with a pressure-chamber, of a fixedly-fulcrumed member operating in said chamber and without resistance against the pressure, of chambers communicating by ports in the walls of the chambers with said chamber, members rotating in said chambers, and a member being operable to intermittently open and close said ports by the rotation of said members.

88. In a motor, the combination with two revolving irregularly-formed members, operating irregularly with respect to their centers, of a fixedly-fulcrumed member given an angular movement thereby, by having its ends in contact with the irregular members, means for maintaining the contact and means for operating the revolving members in opposite directions in similar paths.

89. In a combination of the class specified, a medium-containing chamber, having ports in the walls thereof, for supplying a plurality of contiguously-arranged chambers, of movable parts in said chambers, one of said movable parts being fixedly fulcrumed having an angular movement to intermittently control the medium from the one to the other chambers.

90. A motor-casing, comprising a chamber having three compartments one above two, and communicating through openings and means operating in the openings for cutting off the communication.

91. The combination with a casing comprehending a chamber divided into three compartments in the walls between which are inlet-ports, and two of which chambers have exhaust-ports, a member angularly movable for intermittently opening and closing the inlet-ports, and members operative for automatically operating said member and simultaneously opening and closing the exhaust-ports.

92. The combination with three compartments comprehended within a chamber, and between one and two of which there is an inlet-port, the said two being also provided with exhaust-ports, members operating to automatically open and close the exhausts, and an angular movable member operated by said members for opening and closing the inlet-ports.

93. In a motor, the combination with two revolving disks of irregular form, of a fixedly-fulcrumed member having its ends bearing on said disks, and so actuated thereby as to have its ends carried up and down intermittently, said disks and member being constantly in contact, and means for actuating the disks.

94. In a motor, the combination with a casing having chambers, two rotating and one fixedly fulcrumed and having its ends movable perpendicular and intermittently, said members being in close contact with each other and with projecting walls of the chambers.

95. In a motor, the combination with the casing having chambers one above two, which are located side by side, and ports leading from one to another, of a member having an angular movement in one chamber to open and close said ports, and members having irregular form and operating in constant contact with two points on said member, for causing an intermittent movement of the member.

96. In a motor, the combination with working members, means for operating the same in opposite directions, and an intermediate member driven angularly through independent paths, by having two portions thereof in contact with both working members, and a bearing for said intermediate member.

97. In a motor, the combination with two revolving members, gears for revolving the same in opposite directions and an intermediate working member driven angularly through independent paths, by having two portions thereof in contact with both working members, and a bearing for the intermediate member.

98. The combination with working members, each revolving about dissident axes, and a fixedly-fulcrumed member operated thereby through an angular path.

99. The combination with a casing having three cham-

bers, of an element operable in each chamber, one of said elements being shiftable angularly and effectual to control the flow of a medium from one chamber to the others containing the other elements.

100. The combination with chambers having inlet and exhaust ports, members operating in two of said chambers, and one member operating in another chamber, and under the pressure of a medium directed against one surface thereof, and which automatically opens and closes said ports, said members shielding the other side of the member from medium pressure.

101. The combination with two working members operating about dissident axes, and an integral fixedly-fulcrumed member, which is given an angular movement by the operation of the working members.

102. In a motor the combination with two members moving about independent axes of an angularly-movable member operated thereby about a fixed fulcrum relatively between the rotating members.

103. The combination with three movable members two of which are rotatably mounted about independent axes, one of which operates about an axis fixed intermediate the axis of the rotatably-mounted members and which is operated by said rotatably-mounted members.

104. The combination with fixedly-fulcrumed angularly-movable means, members moving on opposite sides of the fulcrum and adapted to operate the means and a casing for the elements, which is divided into casing-sections one of which is a pressure-chamber, communication from which is governed by the angularly-movable means.

105. In a motor, the combination with three working members two of which revolve, and one of which is integral and fulcrumed at a fixed point between the two members and has an angular movement in coincidence with the revolutions of the members, and means operatively connecting the two members.

106. In a motor, the combination with an angular-movable member, rotating about a fulcrum fixed relatively to the motor-casing, and a plurality of means to operate the member, said fulcrum being between the axes of the means.

107. The combination with a casing having chambers, of an element rotatable in each chamber, one of said elements having a fixed fulcrum between the axes of the rotatable elements and an angular movement and being effectual for controlling the flow of a medium to the chambers containing a plurality of elements.

108. The combination with fixedly-pivoted angularly-movable members, rotatably-mounted members adapted to operate said members, said pivot between the axes of rotation of the members, and a casing for the elements, which is divided into casing-sections one of which is a pressure-chamber, communication from which is governed by the angularly-movable means.

849,100. GUY-WIRE FASTENER. AARON BEARSE, Syracuse, N. Y., assignor of one-half to N. G. Pangburn, Albany, N. Y. Filed Aug. 24, 1906. Serial No. 331,886.

Claim.—1. A fastening device for guy-wires comprising an anchor-rod having an eye, a clamping-plate having a portion thereof inserted in the eye, and provided with a sheave-opening, a sheave in said opening for receiving the guy-wire, and a second clamping-plate with means for drawing said plates against opposite sides of the wire.

2. A fastening device for guy-wires comprising an anchor-rod having an eye, a clamping-plate having a head fastened in the eye of the rod, a roller on the head around which the adjacent end of the guy-wire is looped, and means for clamping opposite portions of the loop to said plate.

3. A fastening device for guy-wires comprising an anchor-rod and a clamping-plate rigidly secured thereto, a sheave embraced in the connection between the plate and anchor-rod and around which the guy-wire is looped and means for securing opposite sides of the loop to said clamping-plate.

4. In a fastening device for guy-wires, an anchor-rod having an eye, a clamping-plate having a head fitted within the eye and formed with a groove receiving the inner sides of said eye, said head being provided with a transverse opening centrally within the eye, a sheave in said opening around which the guy-wire is looped, said plate having lengthwise grooves in which opposite sides of the

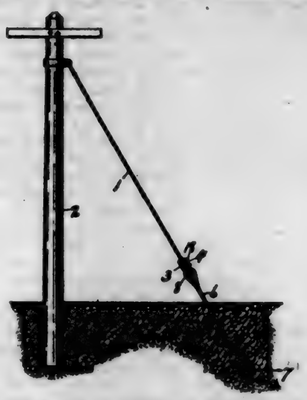

loop are seated, and an additional plate engaging the opposite faces of the loop and clamped to the first-named plate.

849,101. GOLD-SAVING APPARATUS. ERASTUS S. BENNETT, New York, N. Y. Filed Oct. 20, 1903. Serial No. 177,798.

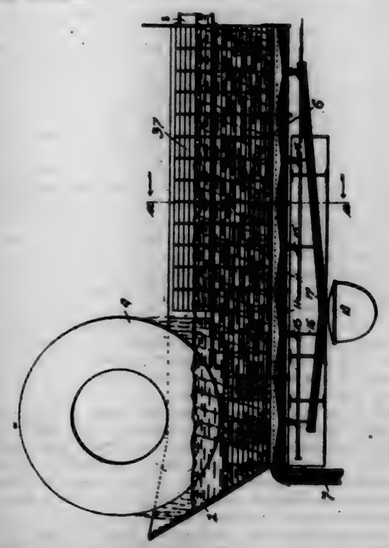

Claim.—1. An amalgamating-tank comprising upwardly-flaring sides, mercury-containing pockets on the flaring sides, a bottom, a water-distributing conduit extending along said bottom and having upwardly-directed jet-nozzles, a plurality of depressions arranged at different points longitudinally of the tank-bottom and each containing a body of mercury, whereby under the agitation to which the tank is subjected the mercury in said depressions individually will have a panning effect on the gold-bearing sand, and means for drawing off mercury from the said depressions, substantially as described.

2. An amalgamating-tank comprising upwardly-flaring

sides, mercury-containing pockets on the flaring sides, a bottom, a water-distributing conduit extending along said bottom and having upwardly-directed jet-nozzles, a plurality of depressions arranged at different points longitudinally of the tank-bottom and each containing a body of mercury, whereby under the agitation to which the tank is subjected the mercury in said depressions individually will have a panning effect on the gold-bearing sand, and means for drawing off mercury from the said depressions, said nozzles extending above the level of the mercury in the depressions and said tank having an elevated discharge-opening to which the nozzles lift the tailings directly, substantially as described.

3. In combination with a tank having riffles or pockets on the inner sides thereof, in tiers, and a bottom having a plurality of depressions arranged at different points longitudinally of the said bottom, and a circulating system for the mercury connected to the several depressions to withdraw the mercury therefrom and a discharge-pipe along the upper part of the tank to supply mercury thereto at different points, pointed screw-valves in the pipes over the several tiers, to regulate the flow of mercury independently to each tier and to clear the delivery-opening of sand, which mercury flows downwardly and collects in the said depressions disposed at different points along the bottom to be drawn off therefrom, substantially as described.

4. An amalgamating-tank comprising a plurality of removable pockets of non-amalgamable material, each having a substantially vertical inner wall over which the mercury passes, and amalgamable aprons between the pockets of non-oxidizing material extending substantially vertically to the pocket next below and to the outer edge thereof, leaving the surface of said pocket free from its inner to its outer side, said tank being subjected to vibration, substantially as described.

5. An amalgamating-tank comprising upwardly-flaring sides, mercury-containing pockets on the flaring sides, a bottom, a water-distributing conduit extending along said bottom and having upwardly-directed jet-nozzles, a plurality of depressions arranged at different points longitudinally of the tank-bottom and each containing a body of mercury, whereby under the agitation to which the tank is subjected the mercury in said depressions individually will have a panning effect on the gold-bearing sand, means for drawing off mercury from the said depressions, and means for continuously purifying and returning the mercury to the top of the tank to feed the pockets, substantially as described.

6. An amalgamating-tank comprising a series of pockets, one above the other, each having a substantially vertical inner wall and an apron between it and the next pocket below, said pockets being removable and formed of non-amalgamable material while the aprons are of amalgamable material, and means for creating a movement of the material down the sides of the tank, substantially as described.

7. An amalgamating-tank having upwardly-flaring sides with ledges extending therefrom at intervals, and at substantially right angles thereto, pockets supported by gravity on the said ledges, and each being individually removable and a substantially vertically depending apron carried by each pocket and removable therewith, each pocket being of non-amalgamable material and each apron of amalgamable material, substantially as described.

8. In an amalgamating-tank, the inclined wall, the ledge extending at substantially right angles thereto on its inner side, a series of pockets each removable and having an inclined outer side fitting the inclined wall of the tank, an inclined bottom fitting on the ledge, a substantially vertical inner wall, each pocket discharging over its vertical wall to the pocket next below, and means for continuously supplying mercury to flow from pocket to pocket, substantially as described.

9. An amalgamating-tank having upwardly-flaring sides, a conduit extending along the bottom thereof, removable nozzles inclining toward the tailings end of the tank and alternately inclining in opposite directions laterally, and means for attaching the nozzles to the conduit, including guides for insuring the proper direction of the nozzle, substantially as described.

10. An amalgamating-tank in which jets operate freely while the tank is working and which is kept from clogging when the jets are shut off comprising a submerged conduit and submerged upwardly-directed nozzles, each nozzle having within it a valve closing toward the conduit, substantially as described.

11. In combination with an ore-separating tank, a water-distributing pipe at the bottom thereof, said tank having an opening axially in line with the pipe through which said pipe may be cleaned and means for closing said opening, said means consisting of a cap-plate and keys for holding the same in place, substantially as described.

12. In combination with a tank having inclined sides with shelves or ledges projecting inwardly therefrom and at a right angle and mercury-pockets held in place on the said ledges by gravity to overflow one into another and freely removable therefrom individually, substantially as described.

13. In combination with the tank, a series of tiers of mercury-pockets of non-amalgamable material each having a vertical inner wall with an apron depending therefrom, of amalgamable material down to the top of the next pocket, a series of depressions in the bottom of the tank, each providing a separating-pan and a rotary separator on the tank serving to subject the same to vibrations, substantially as described.

14. In combination with the tank having an upper discharge-opening, jet-nozzles along the bottom of the tank inclining toward the discharge end and a set of jet-nozzles near the discharge end placed close together, the jets from which are directed to and converge toward the said elevated discharge-opening, substantially as described.

15. In combination with an ore-separating tank, jet-nozzles, longitudinal shelves or brackets on the sides of the tank and a filler of wood or other material under the said shelves to prevent the ore or sand from filling this space, substantially as described.

16. In combination, the tank having flaring sides, ledges projecting inwardly therefrom, pockets supported removably on the ledges, aprons depending from the pockets and means for filling the space beneath the ledges and between the aprons and the wall of the tank, substantially as described.

17. An amalgamating-tank comprising upwardly-flaring sides, mercury-containing pockets on the flaring sides, a bottom, a water-distributing conduit extending along said bottom and having upwardly-directed jet-nozzles, a plurality of depressions arranged at different points longitudinally of the tank-bottom and each containing a body of mercury, whereby under the agitation to which the tank is subjected the mercury in said depressions individually will have a panning effect on the gold-bearing sand, and means for drawing off mercury from the said depressions, said pockets being removable whereby their contents may be dumped into the bottom of the tank to be drawn off from the depressions therein.

849,102. EAR-MUFF ATTACHMENT FOR HATS. HENRY BORNEMAN, Paterson, N. J. Filed Mar. 13, 1905. Serial No. 249,747.

Claim.—In an ear-muff attachment for hats, the combination of fabric pieces forming the ear-muffs proper, a

transverse bar secured in each fabric piece at the top thereof, a cord having a running engagement with said bars, means for attaching the ends of said cord to a bat and means for detachably securing the lower ends of said fabric pieces to said cord, substantially as described.

840,103. STEAM-BOILER FURNACE. ISAAC H. BOYER, Muncie, Ind. Filed Jan. 8, 1906. Serial No. 295,029.

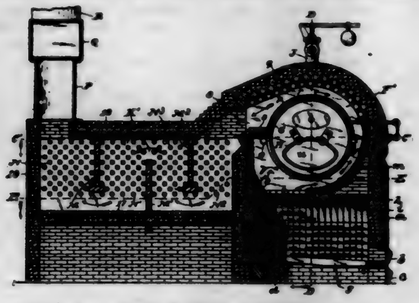

Claim.—1. A steam-producer including a furnace comprising a front wall, a rear wall, a pair of opposing side walls, an arch extending from the front wall nearly but not entirely to the rear wall, an upwardly-inclined wall extending from the inner end of the arch toward the front wall, and an evaporator extending longitudinally near the rear wall and the curved wall and spaced therefrom to form a combustion-chamber and also a passage-way for the products of combustion.

2. A steam-producer including a furnace comprising a front wall, a rear wall having an inclined part, an arch extending from the front wall toward but not to the inclined part of the rear wall, opposing side walls, an inclined curved wall extending from the inner end of the arch upwardly toward the front wall, and an evaporator arranged adjacent to the curved wall partially above the inclined part of the rear wall and spaced therefrom to form a passage-way for the products of combustion.

3. A steam-producer including a furnace comprising a front wall, opposing side walls, a rear wall having an inclined part provided with a lining composed of bricks having each a body portion projecting beyond side portions thereof, an arch extending from the front wall toward the inclined part of the rear wall, an inclined curved wall extending from the inner end of the arch upwardly toward the front wall, and an evaporator arranged opposite to the curved wall and spaced therefrom to form a passage-way for the products of combustion.

4. A steam-producer including a furnace comprising a front wall, a rear wall, side walls a plurality of arches extending from the front wall toward but not to the rear wall, supports for the arches, an inclined wall having a concave upper surface and extending from the inner ends of the arches upwardly toward the front wall, an evaporator arranged opposite to and spaced from the concave surface of the inclined wall to form a passage-way for the products of combustion, a furnace-top extending from the rear wall to the evaporator and therewith forming a combustion-chamber, and a roof-wall extending from the inclined wall above and over the evaporator and spaced from the evaporator to form a passage-way for the products of combustion.

5. A steam-producer including a furnace comprising a front wall, a rear wall, side walls, a plurality of arches extending from the front wall toward but not to the rear wall, a support inclosed by the walls collectively supporting an end of each one of the arches, an inclined wall extending from the inner end portions of the arches upwardly toward the front wall, and an evaporator arranged opposite to the inclined wall and spaced therefrom to form a passage-way for the products of combustion.

6. A steam-producer including a furnace comprising a front wall, a rear wall, side walls having linings composed of bricks having each a projecting body portion extending beyond side portions thereof, an arch extending from the front wall nearly but not entirely to the rear wall, an evaporator extending longitudinally opposite to the rear wall and the end of the arch and spaced therefrom to form a combustion-chamber, a wall extending from the end portion of the arch and curved concavely on its top toward the front wall and spaced from the evaporator to form a passage-way from the combustion-chamber for the products of combustion, and a roof-wall extending from the rear wall to the evaporator forming with the evaporator the top of the combustion-chamber.

7. A steam-producer including a furnace comprising a front wall, side walls, a plurality of arches extending from the front wall toward but not to the rear wall and having projections on the under side thereof, certain of said arches being partially supported by the side walls, a partition-wall partially supporting said arches, an inclined wall extending from the inner end portions of said arches upwardly toward the front wall, and an evaporator arranged opposite to and spaced from the inclined wall to form a passage-way for the products of combustion.

8. A steam-producer including a furnace comprising a front wall, side walls, a rear wall having a lining composed of bricks having each a projecting body portion extending beyond side portions thereof, an arch extending from the front wall toward but not to the lining of the rear wall, an evaporator extending longitudinally opposite to the rear wall and the end of the arch and spaced therefrom to form a combustion-chamber, and an inclined wall extending from the end portion of the arch opposite to the evaporator toward the front wall and spaced from the evaporator to form a passage-way for the products of combustion.

9. A steam-producer including a furnace comprising a front wall, a rear wall, side walls, an arch extending from the front wall toward but not to the rear wall and composed of bricks having projecting body portions extending beyond side portions thereof, an evaporator extending longitudinally opposite to the rear wall and spaced therefrom to form a combustion-chamber, and an inclined wall extending from the inner end portion of the arch upwardly toward the front wall and spaced from the evaporator to form a passage-way for the products of combustion.

10. A steam-producer including a furnace comprising a front wall, a rear wall, side walls, a plurality of arches extending from the front wall toward but not to the rear wall, certain of the arches being partially supported by the side walls, a partition-wall partially supporting said arches and having projections on the faces thereof, an inclined wall extending from the inner end portions of said arches upwardly toward the front wall, and an evaporator arranged opposite to and spaced from the inclined wall to form a passage-way for the products of combustion.

849,104. BURIAL-CASKET-LOWERING APPARATUS. WILLIAM J. BREED and JOSEPH G. WARTHER, Cincinnati, Ohio, assignors to The Crane & Breed Manufacturing Company, Cincinnati, Ohio, a Corporation of Ohio. Filed July 18, 1904. Serial No. 217,130.

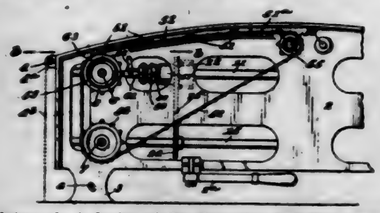

Claim.—1. A device of the character described comprising a casing having a space for communication with a grave when the casing is over the grave, casket-lowering means comprising a rotative part provided with a projection and a device controlled from the operation of the casket-lowering means and movable in the path of the projection on said rotative part.

2. A device of the character described comprising a casing having a space for communication with a grave, casket-lowering means comprising a rotative part, means to check the rotation of said part and comprising members having threaded connection, one member being adapted, when the members are relatively moved, to exert frictional pressure on said rotative part and mechanism controlled from the movement of the casket-lowering means and controlling the movement of one member relatively to the other.

3. A device of the character described comprising a casing, casket-lowering means comprising a rotative member, a screw-threaded part arranged to turn in unison with the movement of the casket-lowering means, a device having threaded engagement with said screw-threaded part and arranged to turn in unison therewith, but adapted, when moved relatively thereto, to traverse the screw-threaded part and to exert frictional pressure on the rotative part to check the operation of the casket-lowering means and mechanism controlled from the movement of the casket-lowering means and controlling the movement of said frictional engaging device relatively to the screw-threaded part.

4. A device of the character described comprising a casing, casket-lowering means comprising a rotative member, a screw-threaded part arranged to turn in unison with the movement of the casket-lowering means, a device having threaded engagement with said screw-threaded part and arranged to turn in unison therewith, but adapted, when moved relatively thereto, to traverse the screw-threaded part and to exert frictional pressure on the rotative part to check the operation of the casket-lowering means, a projection on said device and mechanism controlled from the movement of the casket-lowering means and movable in engagement with said projection.

5. A device of the character described comprising a casing, casket-lowering means comprising a rotative member, a screw-threaded part arranged to turn in unison with the movement of the casket-lowering means, a device having threaded engagement with said part and arranged to turn in unison therewith, but adapted, when moved relatively thereto, to traverse the screw-threaded part and to exert pressure on the rotative member to check the operation of the casket-lowering means, a slide-plate movable in and out of engagement with the projection, means to hold said plate out of engagement with the projection and a device arranged to turn in unison with the movement of the casket-lowering means and adapted, upon increase of speed, to engage and move the slide-plate into engagement with said projection.

6. A device of the character described comprising a casing, casket-lowering means, grave-concealing devices, a driving connection between the casket-lowering means and said grave-concealing devices and mechanism actuated from the operation of the grave-concealing devices for throwing said driving connection out of operation.

7. A device of the character described comprising a casing, casket-lowering means, grave-concealing devices, a driving connection comprising a disengageable clutch device between the casket-lowering means and the grave-concealing devices and mechanism actuated from the operation of the grave-concealing devices for throwing said clutch device of the driving connection out of operation.

8. A device of the character described comprising a casing, casket-lowering means comprising shafts extended along the sides of the casing and geared to a transverse shaft at their ends, a sprocket-wheel on the transverse shaft, and provided with a clutch-surface, a clutch member held to turn with the transverse shaft but movable endwise thereof in and out of engagement with the clutch-surface of the sprocket-wheel, grave-concealing devices comprising shafts along the sides of the casing and geared to a transverse shaft at their ends, a sprocket-wheel on said last-named transverse shaft, a chain passed over the sprocket-wheels on said transverse shafts, and means, actuated from the operation of the grave-concealing devices for moving the clutch member endwise on the first-named transverse shaft.

9. A device of the character described comprising a casing, casket-lowering means, grave-concealing devices comprising a part mounted to move and provided with a projection, a driving connection comprising a disengagable clutch device between the casket-lowering means and the grave-concealing devices, and mechanism for throwing said clutch device of the driving connection out of operation and comprising a lever connected with a movable clutch member and a trip-bar actuated from the projection of the grave-concealing devices and connected with the lever.

10. A device of the character described comprising a casing formed of end portions, rods extended along the sides of the casing with extremities secured to the end portions thereof, casket-lowering means comprising shafts extended along opposite sides of the casing and adapted for connection with tapes for supporting a casket or coffin and provided with actuating means and grave-concealing devices and means detachably connected with said rods for covering the sides of the casing.

11. A device of the character described comprising a casing, grave-concealing devices comprising a shaft held to turn, a spring coiled on the shaft with an end held to the casing, and a part connected with the other end of the spring and adjustably held to the shaft.

12. A device of the character described comprising a casing having end portions but open along its sides, devices extended longitudinally along the sides of the casing and means, detachably held upon said devices for closing the open sides of the casing.

13. A device of the character described comprising a casing, casket-lowering means, grave-concealing devices, and resilient means for moving the grave-concealing devices into closed position.

14. A device of the character described comprising a casing, casket-lowering means, grave-concealing devices and resilient means controlled from the operation of the casket-lowering means and arranged to move the grave-concealing devices into closed position.

15. A device of the character described comprising a casing, casket-lowering means, grave-concealing devices, resilient means for moving the grave-concealing devices into closed position and mechanism actuated from the operation of the casket-lowering means and controlling the operation of the grave-concealing devices.

16. A device of the character described comprising a casing, casket-lowering means, grave-concealing devices, resilient means for moving the grave-concealing devices into closed position, a driving connection between the casket-lowering means and the grave-concealing devices for controlling the movement of said devices from the operation of the casket-lowering means and mechanism for throwing said driving connection out of operation.

17. A device of the character described comprising a casing, casket-lowering means, grave-concealing devices, resilient means for moving the grave-concealing devices into closed position, a driving connection between the casket-lowering means and the grave-concealing devices for controlling the movement of said devices from the operation of the casket-lowering means and mechanism actuated from the movement of the grave-concealing devices for throwing said driving connection out of operation.

18. A device of the character described comprising a casing, casket-lowering means, grave-concealing devices, means for moving the grave-concealing devices into closed position and mechanism for controlling the movement of the grave-concealing devices and actuated from the operation of the casket-lowering means.

19. A device of the character described comprising a casing, casket-lowering means, grave-concealing devices, means for moving the grave-concealing devices into closed position, a driving connection between the casket-lowering means and the grave-concealing devices for controlling the movement of said devices from the operation of the casket-lowering means and mechanism for throwing said driving connection out of operation.

20. A device of the character described comprising a

casing, casket-lowering means, grave-concealing devices, means for moving the grave-concealing devices into closed position, a driving connection extended between the casket-lowering means and the grave-concealing devices for controlling the movement of said devices from the operation of the casket-lowering means and comprising a clutch device and mechanism controlled from the movement of the grave-concealing devices and connected with said clutch device for throwing the driving connection out of operation.

21. In a device of the character described, the combination of a frame having a space for communication with a grave when the frame is over the grave, casket-lowering means, a brake device the parts of which are adapted for engagement to check the operation of the casket-lowering means and mechanism actuated in unison with the casket-lowering means and controlling the engagement of said parts of the brake device.

22. In a device of the character described, the combination of a frame, casket-lowering means, a rotative part having operative connection with said casket-lowering means and devices engageable with said part and adapted, respectively, for manual control and for control from the movement of the casket-lowering means and adapted for engagement with said rotative part to check the operation of the casket-lowering means.

849,105. FLUSHOMETER. ROBERT A. BROOKS, Chicago, Ill. Filed Dec. 4, 1903. Serial No. 183,790.

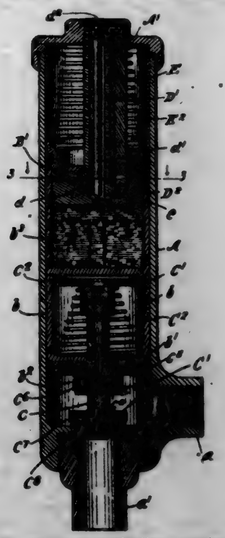

Claim.—1. In an automatically opening and closing flushometer the combination with a closed casing having an inlet-passage and an outlet-passage, of a flushing-valve seated on the outlet-passage, a piston positioned above the inlet-passage, a movable cup above said piston and comprising an upper and a lower chamber, a valve between the chambers, a fluid normally filling the lower chamber, means operated by the upward movement of the piston acting to force said fluid from one to the other of said chambers, means acting normally to force the cup downwardly, a yielding connection between the flushing-valve and the piston whereby upward movement of the piston acts to lift the flushing-valve and support the same above its seat until said piston has returned to near its normal position, and means retarding the return flow of the fluid in said cup acting to retard closure of the flushing-valve.

2. In an automatically-operating flushometer the combination with a closed casing, of a longitudinally-movable cup secured therein and containing a fluid, a fixed division-wall separating the same into an upper and a lower chamber and provided with a restricted passage through which said chambers communicate, a piston seated in said casing below said cup, means movable thereby acting to force the fluid from one chamber through said restricted passage into the other, means acting normally to hold said piston at the lower limit of its movement, a flushing-valve connected with the piston and adapted to close with the pressure and means acting to hold said flushing-valve above its seat during a part of the movement of the piston.

3. In an automatically-operating flushometer the combination with a closed casing, of an inlet and an outlet pipe connected therein, a flushing valve seated to close the outlet-pipe with the pressure, a piston positioned above the inlet-pipe, a downwardly-extending tubular stem opening through the piston and passing through the flushing-valve, a fluid-containing cup above the piston and means operated by pressure of said fluid acting to control the movement of said valve, a spring on said stem bearing upwardly on said flushing-valve whereby upward movement of the piston acts to compress said spring until the flushing-valve is raised whereupon said spring holds said valve above its seat until the piston is returned to approximately its normal position.

4. In an automatic flushometer the combination with a closed casing, of an inlet-pipe opening thereinto, a discharge-pipe opening therefrom below the inlet-pipe, a flushing-valve seated on the discharge-pipe and adapted to close the same with the pressure, a piston of greater diameter positioned above the same and closing the casing above the inlet, a downwardly-extending tubular stem on said piston which opens therethrough and passes through the flushing-valve, a spring carried thereon and bearing upwardly on the flushing-valve and resisting upward movement of the piston and fluid-operated means acting to regulate the flushing and retard the closing after flushing.

5. In an automatic flushometer the combination with a closed casing, of an inlet and an outlet pipe connected therein, a flushing-valve seated to close the outlet-pipe with the pressure, a piston seated to close the casing above the inlet-valve, a stem connecting the valve and piston and slidably engaged in one of the same, a spring carried on said stem and acting to elevate the flushing-valve when unseated, a spring acting normally to resist upward movement of the piston, and fluid-operated means actuated by said piston and acting to regulate the flushing and closing the flushing-valve.

6. In an automatic flushometer the combination with a cylindric casing, of an apertured partition secured therein out of contact with the side walls thereof, a piston in said casing, a closed cup thereon slidably engaged intermediate said casing and said partition, a fluid in said cup, a flushing-valve adapted to seat with the pressure and to remain seated during part of the travel of the piston and means acting to force said fluid from one side of the partition to the other.

7. In an automatically opening and closing flushometer the combination with a casing of an inlet and an outlet pipe connected therein, a piston positioned above the inlet-pipe, a flushing-valve yieldingly connected therein and normally closing the outlet-passage and of less area than the piston, a cap above the piston, a valved partition dividing the same into chambers, a spring bearing against the bottom of the cup and against a part carried on the flushing-valve and a fluid partly filling the chambers, whereby upward movement of the controlling-valve acts to force the fluid in the cup from one to the other chamber, thereby controlling the operation of the valve.

8. In an automatic flushometer the combination with a flushing-valve, at the bottom of the water-chamber adapted to close with the pressure, of a cup positioned above the water-chamber, means adapted to move said cup independently of the flushing-valve, a valved partition suspended from the top of the casing and dividing the cup into upper and lower chambers, a fluid in one or more of said chambers, means operated by the movement of the cup acting to raise the flushing-valve and simultaneously force the fluid in the cup from one side of the partition to the other and means retarding the flow of said fluid acting to regulate the reseating of the flushing-valve.

9. In a self opening and closing flushometer, the combination with a closed casing, of an inlet and an outlet pipe connecting therein, a piston above the inlet-pipe, a flushing-valve of smaller diameter yieldingly connected therewith and positioned to close the discharge-orifice and affording a water-chamber between said valves, a reciprocating cup secured in the casing above the piston, a valved partition therein, adapting the cup to move thereon and dividing the same into a plurality of chambers, a fluid partly filling the cup, and means operated by the upward movement of the piston acting to cause displacement of the fluid in one of the chambers of said cup, and a spring acting to seat the flushing-valve and reverse the flow of the fluid in the cup and means retarding said flow.

10. In an automatically-operated flushometer, the combination with a closed casing having an inlet and an outlet opening, of a piston above the inlet-opening, a flushing-valve closing the outlet-opening with the pressure and adapted to remain seated while the piston travels therefrom, means regulating the operation of said valve and piston embracing a closed cup carried on said piston, a valved partition therein rigidly engaged on the casing, a fluid partly filling the cup and operative connection between said valve and the cup acting to trip the valve and time the operation thereof by the flow of fluid through the chambers of the cup and means regulating said flow therethrough.

11. In a self opening and closing flushometer the combination with the casing, and an inlet and outlet pipe connected therein, a flushing-valve seated to close the outlet-pipe with the pressure, a piston in said casing above the inlet-pipe and of greater diameter than the flushing-valve, a longitudinally-movable cup above the piston, a valved partition therein adapting the cup to move thereon and dividing the same into chambers, a fluid filling one or more of said chambers, means operatively connected with the piston acting to force said fluid from chamber to chamber in said cup during the upward movement of the piston and a spring acting to close the flushing-valve after flushing.

12. In an automatically opening and closing flushometer, the combination with a cylindric casing having an outlet and an inlet aperture, a flushing-valve adapted to control said outlet, an upwardly-directed tubular stem thereon provided with a flanged head, a reciprocating piston intermediate said valve and said head, means engaged between the piston and head adapted to unseat said valve when the piston reaches the upward limit of its travel, a closed cup carried on said piston, an apertured partition therein non-movable with respect to said cup and a fluid in said cup adapted to pass through said partition during the operation of the flushing-valve.

13. In a flushometer, the combination with a cylindric casing of an apertured partition secured therein out of contact with the side walls thereof, a piston in said casing, a tubular stem extending therethrough, a closed cup in said casing and slidably engaged intermediate the same and said partition, a fluid in said cup and a valve in said partition affording a more rapid flow of said fluid therethrough in one direction than in the other.

14. In a flushometer the combination with a casing having inlet and outlet apertures therein, of an apertured partition suspended in said casing out of contact with the side walls thereof, a piston movable in said casing, a flushing-valve thereon adapted to control the outlet, a cup carried above the piston and movable thereby and projecting between the partition and casing, a fluid in said cup adapted to pass back and forth through the partition and means in said partition affording a more rapid flow of said fluid in one direction than in the other.

15. In a flushometer the combination with a casing having inlet and outlet apertures therein of a flushing-valve seated to control said outlet, a partition in said casing, a cup operatively connected with said valve and adapted to slidably engage between said partition and casing, a fluid in said cup and means in said partition adapted to permit said fluid to flow through the partition faster in one direction than in the other.

16. In a flushometer the combination with a casing having outlet and inlet ports therein, of a valve controlling the outlet-port, an apertured partition in said casing, a controlling fluid in said casing disconnected from the flushing fluid, means for forcing said controlling fluid back and forth through the partition and means affording a faster flow of said fluid in one direction through the partition than in the other.

17. In a flushometer the combination with a casing having an inlet and an outlet opening therein, a valve seated to close the outlet-opening, a piston in said casing above the inlet-opening, a valve-stem on said valve extending upwardly through the piston, a closed cup in the casing adapted to be moved vertically by said piston, an operating fluid therein, a stationary apertured partition in said cup and means in said partition adapted to permit a more rapid flow of said fluid therethrough in one direction than in the other.

849,106. CANE-LOADER. JOSEPH B. CASTAGNOS, Iberville, La., assignor of one-half to John G. Guyton, Bayou Goula, La. Filed Mar. 29, 1906. Serial No. 308,811.

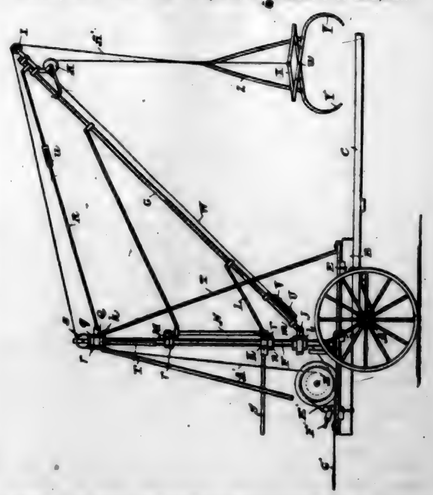

Claim.—1. The combination in a cane-loader, of a frame, an axle comprising a main section connected to the frame and provided at one end with a wheel and having its opposite end extended beyond the frame, and an auxiliary section detachably connected to the main section, a wheel capable of use interchangeably on the auxiliary section and the extended portion of the main section, and removable means for detachably securing said wheel on either the auxiliary section or the extended portion of the main section.

2. The combination in a cane-loader, of a platform, a mast rising therefrom, couplings loosely mounted on the mast; one of said couplings having a rearwardly-extending hand-lever, an upright connecting the two upper couplings, a boom connected to the lower coupling, a brace interposed between and connecting the next upper coupling and the boom, and a brace interposed between and connecting the upright and the boom.

3. The combination in a cane-loader, of a platform, a mast rising therefrom, couplings loosely mounted and supported on the mast, a boom connected to the lower coupling, an upright connecting the intermediate couplings together, a brace interposed between and connecting the lower of the intermediate couplings and the boom, a brace interposed between and connecting the upright and the

boom, and a brace interposed between and connecting the uppermost coupling and the upper end of the boom and having means whereby it may be increased or diminished in length.

849,107. RAILWAY-ALARM. CHRISTOPHER J. COURTRIGHT, Marlboro, N. J. Filed July 23, 1906. Serial No. 327,298.

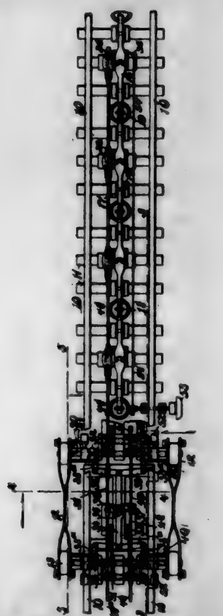

Claim.—1. A safety attachment for railroads comprising crossing-gates, operating members on either side of the crossing-gates, gate-actuating means connectible with the operating members, a clutch to effect this connection, and a connection between the clutch-operating means and an operating member on the railroad.

2. A safety attachment for railroads comprising crossing-gates, mechanism for opening the gates, mechanism for closing the gates, a clutch mechanism adapted to alternately engage the gate opening and closing means, operating members on either side of the crossing-gates connectible with the gate-operating means, and an operating member on each side of the gates for operating the clutch mechanism.

3. A safety attachment for railroads comprising crossing-gates, depressible operating members on either side of the crossing-gates, gate-actuating means connectible with the operating members, a clutch to effect this connection, operating members on the railroad with connections for operating the clutch, an audible signal, and connections for operating the signal from the clutch-operating members.

4. A safety attachment for railroads comprising a gate on each side of the railroad, a connection between the gates, mechanism on one gate for opening them, means on the other gate for closing them, a clutch to alternately engage the opening and closing means, operating members on the railroad to operate the opening and closing means, and operating members on the railroad to operate the clutch.

5. A safety attachment for railroads comprising a pair of gates on either side of the railroad, mechanism for opening the gates, mechanism for closing the gates, a clutch to alternately engage the opening and closing means, a connection for moving the gates in unison, operating members comprising pivoted levers, weights on the free ends of the levers, rods operating the gate-operating means from the levers, and rods connecting the outermost members with the clutch.

6. A safety attachment for railroads comprising a pair of gates on each side of a railroad, means for opening the gates, means for closing the gates, a clutch to alternately engage the opening and closing means, operating members on the railroad connected with the clutch, an audible signal connected with the operating members, and a series of gate-operating members to operate the gate-operating mechanism, and means for disengaging one gate-operating means when the clutch engages the other.

7. A safety attachment for railroads comprising a pair of gates on each side of the railroad, a gate-casing supporting each gate, a ratchet mechanism in each gate-casing to operate its gates, the mechanism in one pair of gates acting to close them and in the other pair to open them, a connection between the gates to move them in unison, a shaft operating the ratchet mechanisms, members on the railroad connected with the shaft to reciprocate it, a clutch to engage the gate opening and closing means alternately, and members connected with the clutch to operate it.

8. A device of the kind described comprising a pair of gates on each side of a railroad, means on one pair of gates for opening them and means on the other pair for closing them, a connection to cause the gates to move in unison, a shaft connecting the opposed gates of each pair, a clutch member fixed to each shaft adjacent to each gate-casing, a sliding clutch member on each shaft adjacent to each fixed member, levers operating the sliding clutch members, a bar connecting the levers, rods connecting the levers with the operating members on the railroad, additional operating members on the railroad connected with the gate-operating means, and means operated by the clutch to release one gate-operating means when the other becomes operative.

9. In a device of the kind described, crossing-gates, means for opening the gates, means for closing the gates, a clutch to alternately engage the opening and closing means, operating members on the railroad for the clutch, other operating members on the railroad for the opening and closing means, connecting-rods between the operating members and the elements to be operated, each member comprising a pair of pivoted levers hinged together and weighted on their free ends, a link on one of the levers, a second lever, a shaft supporting the second lever, and a finger on the shaft to engage one of the connecting-rods.

10. In a device of the kind described, a pivoted gate, a gate-casing supporting the gate, a shaft arranged in the casing supporting the gate, a crank on the shaft, a ratchet-plate in the casing, a bar connecting the crank with the ratchet-plate, a shaft passing through and supporting the ratchet-plate loosely thereon, a crank secured on the shaft, a pawl pivoted to the crank and adapted to engage the teeth of the ratchet-plate, and a lever to throw the pawl out of engagement with the ratchet on the ratchet-plate.

849,108. ICE-SCRAPER. JOHN DREES, Covington, Ky. Filed Oct. 15, 1906. Serial No. 339,008.

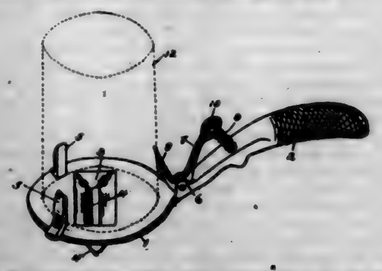

Claim.—An ice-scraping tool, comprising a circular base-plate, provided with a handle, a central elongated opening through the plate, with scraping-knife secured along the edge of the opening, with retaining-lugs projecting upward from the plate, a pivoted lever with clasping-face, and a spring bearing thereon, to hold a glass or other receptacle on the base-plate.

849,109. VEHICLE-SPRING. MARTIN EMMERICH, New Haven, Conn., assignor of one-half to George Rotman, New Haven, Conn. Filed Jan. 31, 1907. Serial No. 355,056.

Claim.—1. The combination with the upper and lower leaves of an elliptical spring, of a yoke to which one end of the lower leaf is attached, said yoke mounted at the upper end of a central rod the end of the upper leaf connected with the upper ends of two side rods arranged one on either side of the central rod, a top plate through which said rods extend, a bottom plate with which the side rods are engaged and through which the central rod passes, and springs around said rods between said plates, substantially as described.

2. The combination with the upper and lower leaves of an elliptical spring, of a yoke to which one end of the lower leaf is attached, said yoke mounted at the upper end of a central rod the end of the upper leaf connected with the upper ends of two side rods arranged one on either side of the central rod, a top plate through which said rods extend, a bottom plate with which the side rods are engaged and through which the central rod passes, the central rod provided at its lower end with nuts, and a buffer-spring between said nuts and under the face of the lower plate, and springs around said rods between said plates, substantially as described.

3. The herein-described auxiliary spring for vehicles comprising a top plate and a lower plate, a central rod passing freely through the said plates, a nut at the lower end of said rod, side rods extending freely through the top plate and fixed to the lower plate, collars around said side rods above the top plate, coil-springs surrounding said rods between said plates, a yoke mounted at the upper end of said central rod, and the upper end of the side rods bowed inward over said yoke, substantially as described.

849,110. FOUNTAIN-PEN. FREDERICK W. ERICKSON, New York, N. Y. Filed Jan. 7, 1907. Serial No. 351,072.

Claim.—1. As an article of manufacture constituting a reservoir for a fountain-pen, a tube of soft pliable material containing a liquid, provided with a collar upon its periphery and having a depression on one end, as set forth.

2. As an article of manufacture constituting a reservoir for a fountain-pen, a tube of gelatin containing writing fluid, provided with a collar upon its periphery, and having a depression on one end, as set forth.

3. As an article of manufacture constituting a reservoir for a fountain-pen, a tube of soft pliable material containing a liquid provided with a collar upon its periphery and sealed at its ends.

4. A fountain-pen consisting of a barrel part and a pen-holding part screwed to each other, the latter part having a passage from its outer end into the barrel terminating in a cutting edge or point, with an ink-holding receptacle held in position in the barrel and in connection with the said passage.

5. A fountain-pen consisting of a tubular handle and a pen-holding portion screwed to each other, the latter having a passage from its outer end into the handle terminating in a cutting edge or point, with an ink-holding receptacle provided with means whereby it is held in position in the barrel and in connection with the said passage.

6. A fountain-pen consisting of a tubular handle and a pen-holding portion screwed to each other, the latter having a passage from its outer end into the handle and there provided with a cutting edge or point, with an ink-holding receptacle having a collar on its periphery held between the meeting ends of the handle and said portion, substantially as set forth.

7. A fountain-pen consisting of a tubular handle and a pen-holding portion screwed to each other, the latter having a passage from its outer end into the handle and there provided with a cutting edge or point, with an ink-holding receptacle of pliable yielding material having a collar on its periphery held between the meeting ends of the handle and said portion, substantially as set forth.

8. A fountain-pen consisting of a tubular handle and a pen-holding portion screwed to each other, the latter having a passage from its outer end into the handle terminating in a tube having a cutting end or point, with a removable ink-holding receptacle of pliable material having a collar on its periphery held between the meeting ends of the handle and said portion, as set forth.

9. A fountain-pen consisting of a tubular handle and a pen-holding portion screwed to each other, the latter having an inclined passage from its outer end into the opposite end of which is inserted a metal tube with a sharp point or edge, with a removable ink-holder of gelatin having a collar on its periphery held between the meeting ends of the handle and said portion, the said tube continuing the passage into the said holder, as set forth.

849,111. POST-CARD FRAME OR MOUNT. ELMER E. FAIRCHILD, Rochester, N. Y., assignor of one-third to Edward C. Gutland and one-third to Henry O. Alderman, Rochester, N. Y. Filed Nov. 20, 1906. Serial No. 344,308.

Claim.—1. A frame or mount comprising a frame-section consisting of a body portion provided with an opening and a pair of end and side flaps, each having their inner and outer faces scored to form folds, with the outer folds secured to the outer face of the body portion and flush with said opening, and a back-section having the marginal por-

tions of one face thereof secured to the rear face of the body portion, said back-section provided with a transversely-extending slot near one end thereof.

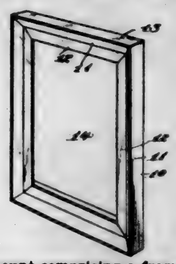

2. A frame or mount comprising a frame-section consisting of a body portion provided with an opening and a pair of end and side flaps, each having their inner and outer faces scored to form folds, with the outer folds secured to the outer face of the body portion, the inner folds projecting at right angles to the body portion and the intermediate folds extending downwardly at an inclination from the inner to the outer folds, and a back section having marginal portions in one face thereof secured to the rear face of the body portions, said back-section of greater width and length than said opening and having an elongated slot to permit of the insertion of the post-card.

849,112. PANE-ATTACHING MEANS. ROBERT C. FINGAL and THOMAS FABRIN, Aurora, Ill. Filed July 11, 1906. Serial No. 325,598.

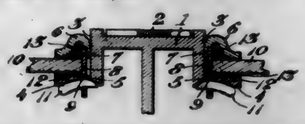

Claim.—1. A window-casing comprising metallic strips, each of said strips being formed with a laterally-projecting pane-supporting flange, and a securing-section to coöperate with said flange, said section being formed with means to engage the flange at determinate points throughout the length of the latter.

2. A window-casing comprising metallic strips, each of said strips being formed with a pane-supporting flange, a securing-section for each flange, strips projecting from the section at determinate points throughout its length and adapted to be passed through openings formed in the flange, and means for engaging the strips beyond the flange.

3. A window-casing comprising metallic strips, each of said strips being formed with a pane-supporting flange, a securing-section for each flange, strips projecting from the section at determinate points throughout its length and adapted to be passed through openings formed in the flange, and keys arranged for removable engagement with the strips beyond the flange.

4. A window-casing comprising metallic strips, each of said strips being formed with a pane-supporting flange, a securing-section for each flange, strips projecting from the section at determinate points throughout its length and adapted to be passed through openings formed in the flange, and keys arranged for removable engagement with the strips beyond the flange, the coöperating surface of the flange being cut away to provide for the reception of the keys.

849,113. COAL-TIPPLE. JOHN J. FLEMING, Carrick, Pa., assignor to Phillips Mine and Mill Supply Co., Pittsburg, Pa., a Corporation of Pennsylvania. Filed Sept. 10, 1906. Serial No. 334,006.

Claim.—1. In a coal-loading apparatus, the combination of a pivoted and counterweighted basket, a chute attached at one end to the basket a flexible connection attached to the other end of the chute and a counterbalance-weight attached to said flexible connection.

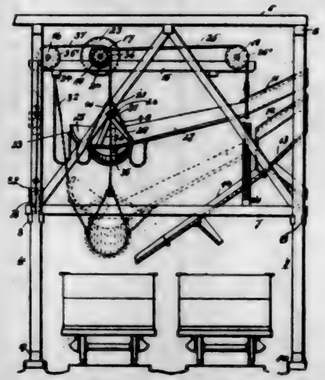

2. In a coal-loading apparatus, the combination of a movable basket composed of sections pivotally connected together, means for movably suspending the basket, means whereby the basket will be automatically opened when it is moved downwardly, a chute suspended below the basket-sections at their juncture and connected at one end to the basket-suspending means, a flexible connection attached at one end to the free end of the chute-pulleys over which said flexible connection is passed and a weight connected to said flexible connection to counterbalance said chute.

3. In a coal-tipple, the combination with a pivoted and counterweighted two-part weighing-basket, of a pivoted and counterbalanced chute arranged below the weighing-basket and connected to and adapted to move with the basket and to receive the coal therefrom when the basket is opened and the coal discharged therefrom, and subsequently discharge the coal into a car.

849,114. FURNACE. JOHN B. FORTUNE, Detroit, Mich., assignor to Murphy Iron Works, Detroit, Mich., a Corporation of Michigan. Filed Oct. 29, 1906. Serial No. 341,100.

Claim.—1. In a furnace, the combination with a grate, of a rotary clinker-bar for feeding the ashes from said grate, said bar being adapted to operate differentially at different portions of its length.

2. In a furnace, the combination with an inclined grate, of a rotary clinker-bar extending along the lower end of said grate and means whereby said clinker-bar will remove a greater quantity of the ashes at one point than at another.

3. In a furnace, the combination with a grate, of a grate-bearer having spaced sides, and a clinker-bar arranged within the space between said sides and adapted to leave a greater open space at one point than at another.

4. In a furnace, the combination with a grate-bearer having separated sides and a tapering rotary clinker-bar arranged in the space between said sides.

5. In a furnace, the combination with a grate-bearer having separated sides, and a rotary clinker-bar arranged in the space between said sides, said bar and bearer being relatively proportioned to leave a tapering space between the same for the differential removal of ashes and clinker.

849,115. ROD-PACKING. ADAM W. FRANCE, Philadelphia, Pa., assignor to France Packing Company, a Corporation of Pennsylvania. Filed Oct. 13, 1900. Serial No. 32,927.

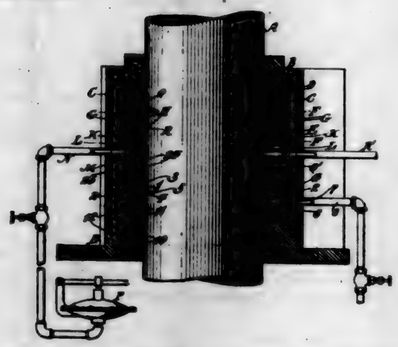

Claim.—1. In a metallic rod-packing, the combination of a rod, metallic packing-rings, means for holding said rings upon said rod, and means for carrying off the pressure from the cylinder whereby the same is prevented from effecting the outer peripheries of said rings.

2. In a metallic rod-packing, the combination of a rod, sectional metallic packing-rings, steam-joints being formed between the sections of each ring and between adjacent rings, means for holding said rings upon said rod, and means for carrying off the pressure from the cylinder whereby the same is prevented from effecting the outer peripheries of said rings.

3. In a metallic rod-packing, the combination of a rod, metallic packing-rings, and a case for said rings, adapted to carry off the pressure from the cylinder whereby the same is prevented effecting the outer peripheries of said rings.

4. In a metallic rod-packing, the combination of a rod, sectional metallic packing-rings, steam-joints being formed between the sections of each ring and between adjacent rings, and a case for said rings, the ends of said case forming steam-joints with said packing-rings and adapted to carry off the pressure from the cylinder whereby the same is prevented from effecting the outer peripheries of said rings.

5. In a metallic rod-packing, the combination of a rod, metallic packing-rings, means for holding said rings upon said rod, means for carrying off the pressure from the cylinder whereby the same is prevented from effecting the outer peripheries of said rings, and means for permitting lateral movement of said rod with respect to the cylinder.

6. In a metallic rod-packing, the combination of a rod, metallic packing-rings, means for holding said rings upon said rod, means for carrying off the pressure from the cylinder whereby the same is prevented from effecting the outer peripheries of said rings, and means for permitting the lateral movement of said rod, rings and the means controlling the latter with respect to the cylinder.

7. In a metallic rod-packing, the combination of a rod, a case surrounding the same, metallic packing-rings inclosed within said case, and means for carrying off steam-pressure from the cylinder whereby the same is prevented from entering said case and effecting the outer peripheries of said packing-rings.

8. In a metallic rod-packing, the combination of a rod, a case surrounding the same and having an interior groove or compartment, metallic packing-rings situated within said groove or compartment, and means for carrying off the pressure of the steam from the cylinder whereby the same is prevented from entering said groove or compartment and effecting the outer peripheries of said rings.

9. In a rod-packing, a pressure-regulating case, and packing-rings therein, a space being formed between said case and rings, and the contact between said case, rings and rod being adapted to prevent the ingress of steam into said space, and an outlet from said case.

10. In a rod-packing, packing-rings around the rod, and a closed case around said packing-rings, steam-joints being formed between said packing-rings and between said packing-rings and said case, for the purpose of preventing steam-pressure from the cylinder on the outer side of the packing-rings and an outlet from said case.

11. In a rod-packing, a pressure-regulating case, packing-rings therein, a space being formed between said rings and case, and the contact between said case, rings and rod being adapted to prevent the ingress of steam into said space, and means for regulating the pressure within said case.

12. In a rod-packing, a pressure-regulating case, packing-rings therein, an outlet from said case, and a pressure-regulating valve controlling said outlet.

13. In a rod-packing, a pressure-regulating case, and packing-rings therein forming steam-joints between each other and between said packing-rings and the ends of the case, a space being formed between said case and rings, and the contact between said case, rings and rod being adapted to prevent the ingress of steam into said space.

14. In a rod-packing, a pressure-regulating case, closed on the outside and having openings in its ends for the rod, and packing-rings in said case forming steam-joints between each other and between said packing-rings and the ends of the case, a space being formed between said case and rings, and the contact between said case, rings and rod being adapted to prevent the ingress of steam into said space.

15. In a rod-packing, a packing-case having an interior groove or cavity, and a pressure-regulating case containing packing-rings situated therein, a space being formed between said case and rings, and the contact between said case, rings and rod being adapted to prevent the ingress of steam into said space.

16. In a rod-packing, a packing-case having an interior groove or cavity, a pressure-regulating case containing packing-rings situated therein, a space being formed between said case and rings, and the contact between said case, rings and rod being adapted to prevent the ingress of steam into said space, and an outlet from said pressure-regulating case to the exterior of said packing-case.

17. In a rod-packing, a packing-case, a pressure-regulating case therein, containing packing-rings, a space being formed between said case and rings, and the contact between said case, rings and rod being adapted to prevent the ingress of steam into said space, an opening in said pressure-regulating case communicating with an opening leading exterior to said packing-case.

18. In a rod-packing, a packing-case, a pressure-regulating case therein containing packing-rings, a space being formed between said case and rings, and the contact between said case, rings and rod being adapted to prevent the ingress of steam into said space, a channel between said packing-case and pressure-regulating case communicating with the exterior of the former and the interior of the latter.

19. In a rod-packing, a packing-case, a pressure-regulating case therein containing packing-rings, a space being formed between said case and rings, and the contact between said case, rings and rod being adapted to prevent the

ingress of steam into said space, a channel in the exterior of said pressure-regulating case communicating with the interior thereof and with the exterior of the packing-case.

20. In a rod-packing, a pressure-regulating case containing packing-rings and consisting of rings having lateral flanges provided with interfitting ends forming a steam-joint, a space being formed between said case and rings, and the contact between said case, rings and rod being adapted to prevent the ingress of steam into said space.

21. In a rod-packing, a packing-case having an interior groove or cavity, a pressure-regulating case therein consisting of relatively movable members having lateral flanges provided with interfitting adjacent ends forming a steam-joint, packing-rings within said pressure-regulating case forming steam-joints between each other and the ends of the pressure-regulating case, devices for holding the said members and packing-rings together under tension, a space being formed between said case and rings, and the contact between said case, rings and rod being adapted to prevent the ingress of steam into said space, and an outlet from said pressure-regulating case to the exterior of the packing-case.

22. In a rod-packing a packing-case having interior grooves or cavities containing packing-rings, a passage through the wall or flange separating said grooves or cavities and terminating at its inner end in a port adjacent the rod, the opposite end of the passage communicating with a source for supplying lubricant.

23. In a rod-packing, a packing-case, a pressure-regulating case therein and comprising relatively movable members with a steam-joint therebetween, a passage from the interior of the pressure-regulating case to the exterior of the packing-case through abutting ends of the said members, and packing-rings in said pressure-regulating case bearing yieldingly against the rod.

24. In a rod-packing, a packing-case, a pressure-regulating case therein and comprising relatively movable members with a steam-joint therebetween, a passage from the interior of the pressure-regulating case to the exterior of the packing-case through abutting ends of said members, packing-rings in the pressure-regulating case, and means holding said members and packing-rings together and preventing the pressure from the cylinder from effecting the outer peripheries of the rings.

25. In a rod-packing, a packing-case, a pressure-regulating case therein and comprising relatively movable members with a steam-joint therebetween, a passage from the interior of the pressure-regulating case to the exterior of the packing-case through abutting ends of said members, packing-rings in the pressure-regulating case, means holding said members and packing-rings together and preventing the pressure from the cylinder from effecting the outer peripheries of the rings, and means acting on the outer peripheries of the rings to press them yieldingly against the rod.

26. In a rod-packing, a packing-case having interior groove, a pressure-regulating case therein and comprising relatively movable members, packing-rings within the pressure-regulating case, the end of one of said members forming a steam-joint with one end of said groove, means holding said packing-rings and members together, and an outlet from the pressure-regulating case.

27. In a metallic rod-packing, a rod, metallic packing-rings, means for holding said rings upon said rod in combination with means for preventing the pressure from the cylinder from effecting the outer periphery of said rings.

849,116. GAS-LIGHTING APPARATUS. ERNEST A. FRARY and EDWARD N. FRARY, Deerfield, Mass. Filed Mar. 9, 1906. Serial No. 305,178.

Claim.—1. An electric-lighting gas-burner having a cock controlling the gas-delivery thereto and comprising a gas-ignition device, and a gas-pipe for supplying gas through said burners, electromagnetic devices for opening and closing the gas-cock and operating the ignition device, and comprising two contacts and a circuit-closing movable member therebetween, a casing connected with the pipe and burner and having a diaphragm in unison with which said circuit-closing member moves, a spring for imposing a resistance against the movement of said diaphragm in one direction, and means for varying the tension of said spring, a gas-tank connected with said diaphragm-casing and with the gas-passage through said burner, and means for varying the gas-pressure in said tank.

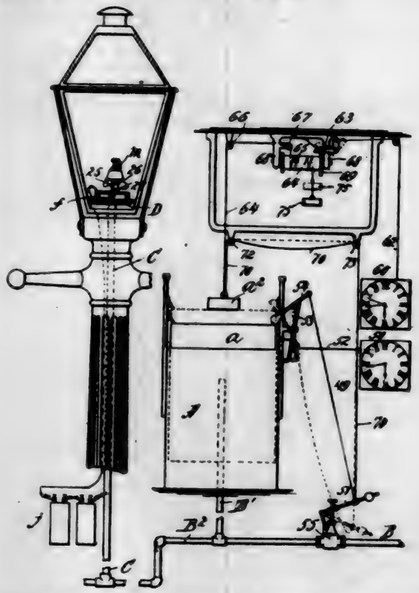

2. An electric-lighting gas-burner having a cock controlling the gas-delivery therethrough and comprising a gas-ignition device, electromagnetic devices for opening and closing the gas-cock and energising the ignition device, and comprising two contacts and a circuit-closing movable member therebetween, a casing having a diaphragm, in unison with which said circuit-closing member moves, a gas-tank having a movable portion, a gas-supply pipe connected therewith and with which tank a supply-pipe has connection and with which said diaphragm also has communication, automatic means for lowering, below its normal, the pressure in said gas-tank and against the diaphragm, and automatic means for thereafter increasing the gas-pressure in said tank.

3. A gas-burner having a gas-cock and an ignition member, electromagnetic means for closing and opening the gas-cock and comprising a movable circuit-closing member, a casing provided with a diaphragm coacting with said circuit-closing member, and a gas-tank having communication with said diaphragm-casing, clockworks-actuated means for automatically lowering the gas-pressure in said tank, and clockworks-actuated means for again increasing the gas-pressure in said tank, for the purposes set forth.

4. In an automatic gas-lighting apparatus, the combination with a burner, a gas-conduit connected therewith, and a cock controlling the passage of gas through the burner, of electromagnetic mechanism comprising a magnet, and armature operable on the gas-cock to open, and a magnet and armature operable on the gas-cock to close it, and an electric gas-lighter coacting with one of said electromagnets, normally open circuit-conductors having connected therewith a battery and in connection with said electromagnets and also connected with separated contacts, a diaphragm subject to the pressure of the gas passing through said conduit to the burner, and a circuit-closing contact-piece controlled by the diaphragm and movable against either of said contacts according as the gas-pressure is raised or lowered, and for establishing circuits through said electromagnets for operating said gas-cock in either direction.

5. In an automatic gas-lighting apparatus the combination, with a gas-lighting burner having a cock adapted to control the gas-passage therethrough, electromagnetic devices operative to open and close said cock and a diaphragm operative to control said electromagnetic cock-operating devices, of a gas-tank having a movable portion and in communication with a gas-supplying pipe and with a conduit or branch pipe connected with the gas-burner, a catch for restraining in a lowered position the movable portion of the gas-tank, a detent for said catch, and a clockworks coacting with said detent and operable at a predetermined time to free the detent from the catch whereby the movable portion of the tank may have a rising movement to cause a lowering of the gas-pressure therein, and for effect on said diaphragm.

6. In an automatic gas-lighting apparatus the combination, with a gas-lighting burner having a cock adapted to control the gas-passage therethrough, electromagnetic devices operative to open and close said cock and a diaphragm operative to control said electromagnetic cock-operating devices, of a gas-tank having a movable portion and in communication with a gas-supplying pipe and with a conduit or branch pipe connected with the gas-burner, a self-closing valve in the gas-supply pipe, means for restraining said valve in its open position, and a clockworks coacting with said valve-restraining means and adapted for operation at a predetermined time to release said valve for a closing movement.

7. In an automatic gas-lighting apparatus the combination with a gas-lighting burner having a cock adapted to trol the gas-passage therethrough, electromagnetic devices operative to open and close said cock and a diaphragm operative to control said electromagnetic cock-operating devices, of a gas-tank having a movable portion and in communication with a gas-supply pipe and with a conduit or branch pipe connected with the gas-burner, a valve in the gas-supply pipe having a weighted operating-lever therefor, a catch for restraining in a lowered position the movable portion of the gas-tank, a detent for said catch, a connection between said catch and said valve-operating lever, and a clockworks coacting with said detent and operable at a predetermined time to free such detent from the catch whereby the gas-supply-pipe valve may have a closing movement and whereby the movable tank portion may have a rising movement under the gas-pressure therein.

8. In an automatic gas-lighting apparatus the combination with a gas-lighting burner having a cock adapted to control the gas-passage therethrough, electromagnetic devices operative to open and close said cock and a diaphragm operative to control said electromagnetic cock-operating devices, of a gas-tank having a movable portion and in communication with a gas-supply pipe and with a conduit or branch pipe connected with the gas-burner, a valve in the gas-supply pipe having a weighted operating-lever therefor, a catch for restraining in a lowered position the movable portion of the gas-tank, a detent for said catch, a connection between said catch and said valve-operating lever, a clockworks coacting with said detent and operable at a predetermined time to free such detent from the catch whereby the gas-supply-pipe valve may have a closing movement and whereby the movable tank portion may have a rising movement under the gas-pressure therein, a weight above the gas-tank having a flexible suspension means therefor, means for holding said weight above and normally free from the movable portion of the tank comprising a detent therefor, another clockworks coacting with said last-named detent and operable at another predetermined time for liberating the suspended weight whereby it may exert its gravitative force against the movable portion of the gas-tank thereby increasing the already-lowered gas-pressure therein, and a connection between said weight and gas-supply-pipe-valve-operating lever whereby on the descent of the weight such lever will be drawn upwardly and the valve again opened.

9. In an automatic gas-lighting apparatus the combination with a gas-lighting burner having a cock adapted to control the gas-passage therethrough, electromagnetic devices operative to open and close said cock and a diaphragm operative to control said electromagnetic cock-operating devices, of a gas-tank having a movable portion

and in communication with a gas-supply pipe and with a conduit or branch pipe connected with the gas-burner, a valve in the gas-supply pipe having a weighted operating-lever therefor, a catch for restraining in a lowered position the movable portion of the gas-tank, a detent for said catch, a connection between said catch and said valve-operating lever, a clockworks coacting with said detent and operable at a predetermined time to free such detent from the catch whereby the gas-supply-pipe valve may have a closing movement and whereby the movable tank portion may have a rising movement under the gas-pressure therein, a weight above the gas-tank having a flexible suspension means therefor, means for holding said weight above and normally free from the movable portion of the tank comprising a detent therefor, another clockworks coacting with said last-named detent and operable at another predetermined time for liberating the suspended weight whereby it may exert its gravitative force against the movable portion of the gas-tank thereby increasing the already-lowered gas-pressure therein, and a connection between said weight and gas-supply-pipe-valve-operating lever whereby on the descent of the weight such lever will be drawn upwardly and the valve again opened.

849,117. SHIRT-WAIST. MAMIE FREEKSON, Mount Pleasant, Iowa. Filed Oct. 16, 1905. Serial No. 282,951.

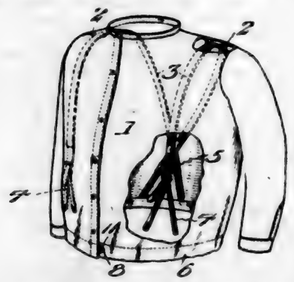

Claim.—A shirt or shirt-waist provided with a waist-band-pocket open at one end and permanently closed at the opposite end, a belt disposed in said pocket, one end of the belt being turned back to form a loop projecting partially through the open end of the pocket, and the other end of the belt being permanently fastened at the permanently-closed end of the pocket, a fastening member secured to the latter-named end of the pocketed portion, a complemental fastening-loop upon the projecting end of the belt-loop, and a clasp slidably engaging the belt and connected with the free end of the loop, whereby the belt may be adjusted as to length, said clasp being normally inclosed within the pocket and provided with a clamp to fasten it in adjusted position, whereby the inner wall of the pocket will act as a shield to prevent pressure of the clasp upon the person of the wearer.

849,118. BED-SPRING. DAVID GARBER, Levering, Mich. Filed Sept. 27, 1906. Serial No. 336,474.

Claim.—1. A bed-spring comprising a frame, end pieces formed in sections, one of which is adapted to slidably engage the other, a rebent guide-flange and rebent guide-tongues formed on the opposite edges of one of said end sections to frictionally engage the adjacent edges of the opposite section, whereby said sections are held in adjusted engagement, springs formed in overlapping sections, and means to clamp the ends of said sections into engagement with the sections of said end pieces of the frame, substantially as described.

2. A bed-spring comprising a frame having angle-iron end pieces formed in sections, side rails secured and braced to the opposite ends of said end pieces, a rebent guide-flange formed on one edge of one of said angle-iron end

sections, rebent guide-tongues formed on the opposite edge of the same to receive the end of the opposite end section, whereby said sections are held in frictional engagement with each other, overlapping springs arranged on each of said end sections, and clamping-bars secured to said end sections to clamp the ends of the spring-sections thereto, substantially as described.

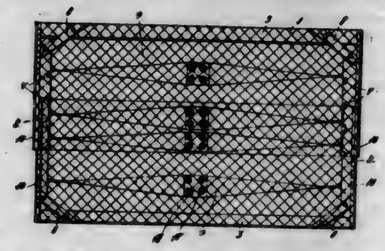

3. A bed-spring comprising a frame having angle-iron end pieces formed in sections, side rails secured and braced to the opposite ends of said end pieces, a rebent guide-flange formed on one edge of one of said angle-iron end sections, rebent guide-tongues formed on the opposite edge of the same to receive the end of the opposite end section, whereby said sections are held in frictional engagement with each other, overlapping springs arranged on each of said end sections, clamping-bars secured to said end sections to clamp the ends of the spring-sections therewith, notched flanges formed on one edge of said clamping-bars to engage the ends of the spring-sections, a series of coil-springs arranged below said spring-sections, and supporting-frames adapted to hold said coil-springs in position, substantially as described.

849,119. WHEELBARROW-AXLE. MARTIN V. GARVER, Bryan, Ohio. Filed Oct. 18, 1905. Serial No. 283,202.

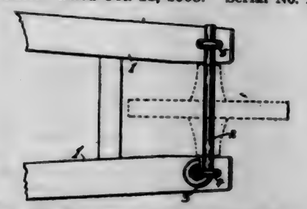

Claim.—A wheelbarrow-axle comprising a metal rod having at one end an eye, a hook having a threaded shank and engaged with said eye, another hook having a threaded shank and engaged with the opposite end of the axle, and nuts on the threaded extremities of said two hook-shanks.

849,120. BRUSH-HOLDER. FRANK W. GARRETT, Norwood, Ohio, assignor to The Bullock Electric Manufacturing Company, a Corporation of Ohio. Filed June 23, 1906. Serial No. 266,687.

Claim.—1. In combination, a brush-holder comprising a body and a pressure-finger, a brush in said holder, and a yieldable member carried by said brush and upon which said pressure-finger bears.

2. In combination, a brush-holder, comprising a body and a pressure-finger, a brush in said holder, and a yieldable spring-piece carried by said brush and upon which said pressure-finger rests.

3. In combination, a brush-holder, comprising a body and a pressure-finger, a brush in said holder, a clip mounted on the upper end of said brush, a spring-piece carried by said clip and upon which said pressure-finger rests, and a flexible conductor or shunt fastened to said clip and removable from said brush and holder with said clip.

4. In combination, a brush-holder comprising a body and a pressure-finger, a brush in said holder, a U-shaped spring-clip mounted on the upper end of said brush, and a spring-piece carried by said clip and located between the pressure-finger and said brush so as to permit the brush to respond readily to irregularities in the commutator of the machine.

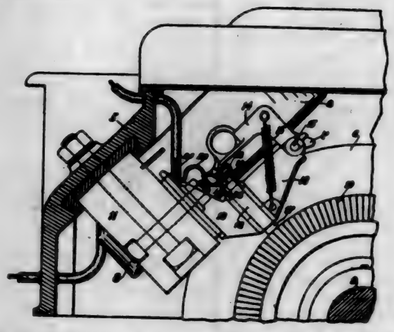

5. As an article of manufacture, a brush-clip carrying a spring upon which is adapted to rest the pressure-finger of the brush-holder.

6. As an article of manufacture, a brush-clip carrying a spring upon which is adapted to rest the pressure-finger of the brush-holder, and a flexible conductor or shunt fastened to said clip and spring.

7. As an article of manufacture, a brush-clip carrying a spring upon which is adapted to rest the pressure-finger of the brush-holder, and a flexible conductor or shunt having one end fastened to said clip and located between the clip and spring.

8. As an article of manufacture, a U-shaped brush-clip having fastened thereto a U-shaped spring-piece upon which the pressure-finger of the brush-holder is adapted to rest when the brush and clip are in position in the brush-holder.

849,121. SAFETY GAS-COCK. CHARLES L. GE FROHER, Philadelphia, Pa. Filed Feb. 20, 1906. Serial No. 301,987.

Claim.—1. A gas-cock having a plug, an operative yoke therefor, one end of said plug having a transversely-extending recess therein, one terminal of said yoke being connected with the other end of said plug, and the other terminal of said yoke being seated in said recess and embraced by the side walls thereof, and a securing-screw, the latter passing through said terminal into said plug, and abutting said walls, said yoke freely embracing the body of the cock, and being adapted to abut in either direction against said body.

2. A gas-cock having a plug, a yoke, the latter having its terminals extending from the opposite ends of said plug, and screws for connecting said terminals with said ends, said plug having one of its ends formed with a transversely-extending recess, and the adjacent terminal of the yoke being seated in said recess, and being embraced by the side walls of the latter, said yoke freely embracing the body of the cock.

3. In a gas-cock, a body, a plug and a yoke, the latter having its terminals extending from the ends of said plug, means for connecting said terminals with said ends, and a handle on said yoke, one of said heads having therein a transversely-extending recess, and the adjacent terminal being seated in said recess and being embraced by the side walls thereof.

4. A gas-cock consisting of a body, a plug and a yoke, the latter having its terminals connected with the opposite ends of said plug, a handle for said piece, and a screw connecting said handle with said yoke, the head of said screw being on the interior of said yoke, and forming a single stop to abut against the body of the cock in the opposite motions of the yoke.

849,122. CONVEYER FOR METAL BARS. JEROME R. GEORGE, Worcester, Mass., assignor to Morgan Construction Company, Worcester, Mass., a Corporation of Massachusetts. Filed Sept. 19, 1905. Serial No. 279,136.

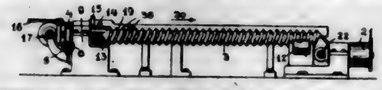

Claim.—1. A conveyer for metal bars, consisting of a series of screw-threaded rotating shafts, and a series of independently-rotating conveyer-rolls arranged to support a metal bar opposite the ends of said screw-threaded shafts.

2. A conveyer for metal bars, consisting of a series of screw-threaded rotating shafts, and a series of independently-driven conveyer-rolls arranged to support a metal bar opposite the ends of said screw-threaded shafts and in a plane above the upper or supporting surfaces of said shafts.

3. A conveyer for metal bars, consisting of a series of screw-threaded shafts, a series of independently-driven conveyer-rolls arranged to support a metal bar opposite the ends of said screw-threaded shafts, and means for transferring a metal bar from said conveyer-rolls to said screw-threaded shafts.

4. In a conveyer for metal bars, the combination with a series of rotating screw-threaded shafts, of rotating rolls interposed between said shafts.

5. In a conveyer for metal bars, the combination of a series of screw-threaded rotating bars, and means for feeding a metal bar upon said shafts by a sidewise movement of the bar over the ends of the shafts.

6. In a conveyer for metal bars, the combination of a series of rotating shafts having screw-threaded sections, conical rotating rolls, and means for delivering a metal bar from said rolls to the screw-threaded sections of said shafts.

7. In a conveyer for metal bars, the combination of a series of rotating screw-threaded shafts lying in the same plane, with the delivery ends of said shafts the highest, and with the shape of said screw-threads adapted to hold a metal bar against gravity acting in a direction at an oblique angle to the axes of said shafts, and means for feeding a metal bar transversely to said shafts and into contact with the screw-threads.

8. In a conveyer for metal bars, the combination of a series of parallel shafts lying in the same plane, a portion of said shafts having a right-hand and a portion left-hand screw-threads.

9. In a conveyer for metal bars, the combination of a series of screw-threaded shafts having parallel axes lying in the same plane and adapted to hold a metal bar lying transversely thereon, means for feeding a bar upon the receiving ends of said shafts, and shorter screw-threaded shafts interposed between the receiving ends of the longer shafts.

10. In a conveyer for metal bars, the combination of a screw-threaded shaft journaled at one end in a bearing, and a pair of rolls arranged to support the opposite end of said shaft.

11. In a conveyer for metal bars, the combination of a series of screw-threaded shafts, means for simultaneously rotating said shafts, a series of conical conveyer-rolls having their supporting-surfaces inclined to allow a metal bar to pass by gravity upon said screw-threaded shafts, of means for varying the position of a metal bar on said conical rolls, whereby the longitudinal movement of the metal bar is varied in speed.

12. In a conveyer for metal bars, the combination of a series of rotating conical conveyer-rolls for imparting a longitudinal movement to a metal bar, having their supporting-surfaces inclined, a stop-plate for limiting the longitudinal movement of the bar, a movable plate for retaining the bar on said rolls against gravity, and means for changing the position of said retaining-plate.

849,123. VOTING-MACHINE. ALFRED J. GILLESPIE, Atlantic, Iowa, assignor to U. S. Standard Voting Machine Company, Rochester, N. Y., a Corporation of New York. Filed Aug. 30, 1904. Serial No. 222,697.

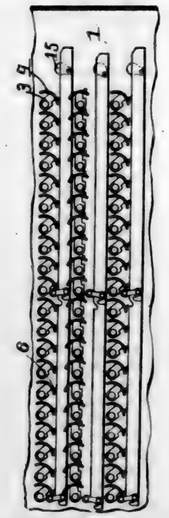

Claim.—1. In a voting-machine, the combination with a casing, and a plurality of movable ballot-indicators therein, of a laterally-movable straight-ticket bar adapted to cooperate with the indicators and composed of independently-supported sections, means for coupling the sections for simultaneous operation and an actuating member attached permanently to one of the sections.

2. In a voting-machine, the combination with a casing, and a plurality of movable ballot-indicators therein, of a laterally-movable straight-ticket bar adapted to coöperate with the indicators to move them to voted position composed of independently-supported sections, means for coupling said sections for simultaneous operation and an operating means connected to one of said sections and independent of the coupling means for operating such of the sections as may be coupled.

3. In a voting-machine, the combination with a casing, and a plurality of movable ballot-indicators therein, of a laterally-movable bar for operating said indicators composed of independently-supported sections, each section adapted to coöperate with a definite number of indicators, said sections being provided with interlocking parts for coupling them directly and an actuating device for one of the sections.

4. The combination with a plurality of ballot-indicators, of an operating member therefor composed of a plurality of sections each independently supported at one end only and detachably connected to the adjacent section at the other.

5. The combination with a plurality of ballot-indicators, of an operating member therefor composed of a plurality of sections, having detachable hooks at the ends for en-

gaging adjacent sections and supporting-links for one end of each section.

6. The combination with a plurality of ballot-indicators of a longitudinally and laterally movable member for operating them composed of detachable sections each section coöperating with different indicators.

7. The combination with a plurality of ballot-indicators of a movable operating member therefor composed of sections capable of separation when moved to an abnormal position and means for limiting the normal movement of said member.

8. The combination with a plurality of ballot-indicators, of a movable operating member therefor composed of a plurality of sections capable of separation when moved to an abnormal position means for limiting the normal movement of said member and means for retaining disconnected sections out of coöperative relation with the others.

9. The combination with a plurality of ballot-indicators, of a movable operating member therefor composed of separate sections, an operating device connected to one section, detachable connections between said sections and means for holding the detached sections out of engagement with the section having the operating device connected thereto.

10. The combination with a plurality of ballot-indicators, of an operating member therefor composed of a plurality of sections, one section thereof being supported at both ends and the other sections supported at one end only and detachable connections between the adjacent ends of the sections.

11. The combination with a plurality of ballot-indicators, of an operating member therefor composed of a plurality of sections one section thereof being supported at both ends, the other sections supported at one end only, detachable connections between the adjacent ends of the sections and means for holding the sections out of coöperative relation with the first-mentioned section.

12. The combination with a plurality of ballot-indicators, of an operating member therefor composed of a plurality of detachable sections having engaging hooks at their adjacent ends, links supporting sections, and means for limiting the movement of the operating member in one direction.

13. The combination with a plurality of ballot-indicators, of an operating member therefor composed of a plurality of detachable sections having engaging hooks at their adjacent ends movable means for limiting the movement of the member in one direction and means for holding the detachable sections out of coöperative relation with the others.

14. The combination with a plurality of series of ballot-indicators of a plurality of the straight-ticket bars, one for each series, and each composed of detachable sections, means for operating said bars and means for holding the detached sections of the bars of coöperative relation with the others.

15. In a voting-machine an operating member consisting of a plurality of sections detachably connected at their adjacent ends in combination with means for operating one of the sections and means for holding the other sections out of coöperative relation with the former.

16. The combination with the operating member composed of a plurality of sections, one section having two supporting-links connected thereto, and the other sections each having one supporting-link and coöperating projections and recesses, means for limiting the movement of the first section and retaining devices for holding the other sections out of engagement therewith.

17. The combination with a plurality of series of indicators, a plurality of members each composed of a plurality of sections capable of disconnection when moved to an abnormal position and means for preventing the movement of all the members to said abnormal position.

18. In a voting-machine the combination with ballot-indicators, of a laterally and longitudinally movable operating member therefor and a vertically-movable bar with which said operating member coöperates.

19. In a voting-machine the combination with a plurality of series of ballot-indicators, of a plurality of longitudinally and laterally movable operating members one for each series and a vertically-movable bar having projections thereon with which said members coöperate.

20. In a voting-machine the combination with a plurality of series of ballot-indicators, a plurality of laterally and longitudinally movable operating members one for each series having the beveled ends and the vertically-movable bar having projections with which said beveled ends engage when the members are moved to one position.

21. The combination with a plurality of series of ballot-indicators, of a plurality of operating members one for each series and each composed of sections detachable when moved to an abnormal position and a removable locking-bar adapted to engage the members and prevent the movement to detaching position.

849,124. CARRIER. BENJAMIN F. GOLDNAMER and ROBERT C. HALL, Cynthiana, Ky. Filed Aug. 3, 1906. Serial No. 329,043.

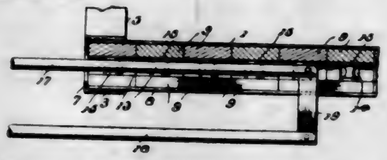

Claim.—1. A carrier comprising a supporting-tube, removable roller-bearing-carrying sections within the tube and a supporting member within the tube and working between the rollers.

2. A carrier comprising a supporting-tube having a slot in its lower face, removable roller-bearing-carrying sections within the tube and with slots corresponding to the slot in the tube, and a supporting-rod working within the sections and having a downwardly-extending supporting means passing through the slot in the sections and the tube and adapted to travel therein with the rod.

3. A carrier comprising a supporting-tube, removable sections therein and said sections having central longitudinal openings therethrough, rollers carried by the sections on opposite sides of the openings, and a supporting-rod within the openings in the sections and supported by the rollers therein.

4. A carrier comprising a supporting-tube having a slot in its lower face, removable roller-bearing-carrying sections within the tube having slots corresponding with the slot in the tube, and a supporting-rod movable within the section and having one end projecting through the end of the supporting-tube and the opposite end having a downwardly-extending lug passing through the slots in the sections and tube.

5. A carrier comprising a supporting-tube, removable roller-bearing-carrying sections within the tube, and means for holding said sections within the tube.

6. A carrier comprising a supporting-tube, removable roller-bearing-carrying sections within the tube, and a rod passing through the sections and holding them in their relative positions in respect to each other within the tube.

7. A carrier comprising a supporting member, removable roller-bearing-carrying sections carried by the supporting member, and a hanging member movably supported within the sections.

8. A carrier comprising a supporting member, removable roller-bearing-carrying sections carried by the supporting member, means for holding said sections within the supporting member, and a hanging member movably supported within the sections.

9. A carrier comprising a supporting-tube, cylindrical roller-bearing-carrying sections within the tube and a hanging member movably supported within the sections.

10. A carrier comprising a supporting-tube, cylindrical sections within the tube and having openings therethrough, rollers carried by the sections on two opposite sides of the openings, and a hanging member movably supported within the openings in the sections.

11. A carrier comprising a supporting-tube, cylindrical sections within the tube and openings extending longitudinally therethrough, rollers carried by the sections on two opposite sides of the openings, and a rod passing through openings in the sections and supported by the rollers.

12. A carrier comprising a supporting-tube, removable sections within the tube, a pair of roller-bearings within each section, and a rod supported by the roller-bearings within the sections.

13. A carrier comprising a supporting-tube, removable sections within the tube and having a longitudinal opening therethrough, each section having a transverse opening intersecting the longitudinal opening, rollers journaled in the transverse openings on each side of the longitudinal opening, and a hanging rod movable within the longitudinal opening and supported by the rollers.

14. A carrier comprising a supporting-tube, removable sections within the tube, a pair of concaved rollers within each section, and a rod supported by the roller-bearing within the sections.

15. A carrier comprising a tube having a slot in its lower face and extending the entire length thereof, supporting means carried by the upper face of the tube, cylindrical sections within the tube and having their ends abutting said sections and having central openings and a slot extending downwardly and communicating with the openings and registering with the slot in the tube, means for securing said sections within the tube, said sections having transverse openings intersecting the longitudinal openings, the said openings of each section having a roller vertically journaled therein, and said roller having concaved faces extending slightly within the longitudinal opening, a rod located within the longitudinal openings of the sections and supported by the concaved faces of the roller, the inner end of said rod being bent downwardly and around beneath the tube, and a thin strip connecting the inner end of the rod and traveling in the slots in the sections and tube.

849,125. TARGET ATTACHMENT. HORATIO B. HOLLIFIELD, Washington, D. C. Filed Nov. 23, 1906. Serial No. 344,679.

Claim.—1. For covering individually bullet-holes in targets, a hole-covering plate provided upon one face with a spring adapted to enter a bullet-hole and by its resilience yieldingly resist withdrawal.

2. In devices for covering individual bullet-holes in targets, a hole-covering plate provided upon one face with a spring adapted to enter a bullet-hole and by resilience to resist withdrawal, and having upon its opposite face a projection adapted to be grasped by the fingers, for withdrawing it.

3. In devices for covering individual bullet-holes in targets, a hole-covering plate provided upon one face with a spring device adapted to pass through the target in such hole and to yieldingly engage the target's rear face.

4. In devices for covering a bullet-hole in a target, a plate provided upon one side with nearly contiguous spring-arms diverging gradually and then gradually converging; whereby the arms readily enter a bullet-hole, spring toward each other when pressed on in the same, recoil as the wider part emerges, and thereby engage the rear face of the target and hold the plate firmly against the same.

5. The combination with spring-arms lying side by side and connected at one end and further first diverging near the point of connection, then converging, then again diverging and converging in like manner, of a centrally-perforated plate adapted to be pushed over said arms from their free ends, substantially as and for the purpose set forth.

6. The combination with a spring-coil having its constituent wire extended outward as two initially adjacent resilient arms first gradually diverging, then gradually converging, then again in like manner diverging and converging, of a centrally-perforated plate adapted to be passed over said arms until adjacent to said coil.

849,126. MOLD FOR FORMING WALLS. WILLIAM D. HAM, Knoxville, Tenn. Filed May 24, 1906. Serial No. 318,586.

Claim.—1. A mold comprising opposite sides, a resilient core between said sides, and a strip supported by the upper edges of said sides, crossing the space between the latter, and removably connected with the upper end of the core, the latter being pendent from said strip.

2. A mold comprising opposite sides, a strip extending across and supported by the upper edges of said sides, and a divided tubular core between the sides, said core having openings near its upper end through which said strip removably passes for supporting the core, the latter being pendent from the strip.

3. A mold having sides composed of sections, and strips extending across the space between said sides, for holding the sections in operative relation with each other, and for also supporting said sections, said strips being separably related within the sections to permit the sections to be separated from the strips for leaving the latter permanently in the mass molded between said sides.

4. A mold comprising parallel sides, a strip extending across and supported by said sides, and a divided tubular core between the sides, said core having openings through which said strip passes to thereby support the core and the dividing-line of the core being disposed substantially centrally between said openings.

849,127. TYPE-WRITING MACHINE. JOHN J. HANNAHS, New York, and ANTHONY A. HIEBER, Brooklyn, N. Y., assignors, by direct and mesne assignments, to Universal Typewriter Company, a Corporation of New York. Filed Feb. 4, 1901. Serial No. 45,810.

Claim.—1. In a type-writing machine, a pivoted frame, type-bars journaled therein and arranged to strike downwardly toward a printing-point, a plurality of types on each bar having their faces inclined an appreciable amount with respect to one another so as to be incapable of printing simultaneously on a flat surface, and means for tilting said frame independently of the key-levers whereby the different faces are made operative to strike the printing-point.

2. In a type-writing machine, a pivoted frame, type-bars journaled therein and having a plurality of type-faces inclined at an appreciable angle to one another so as to be incapable of printing simultaneously on a flat surface, and means for tilting said frame independently of the key-levers to shift different type-faces into printable relation.

3. In a type-writer, a pivoted frame, type-bars journaled therein and each having three type-faces inclined at an appreciable angle with respect to one another so as to be inca-

pable of printing simultaneously on a flat surface, and means whereby said frame is tilted independently of the key-levers to move different type-faces into striking relation to the printing-point.

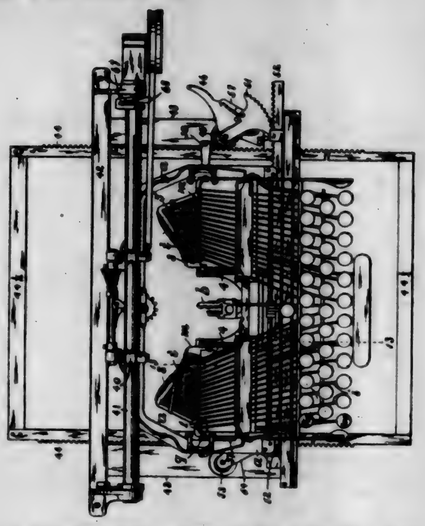

4. In a type-writer, a flat platen and key-levers, a frame, type-bars journaled therein each having a plurality of type-faces inclined to one another, and means for tilting said frame independently of the key-levers whereby any desired type-face may be brought into striking relation with a flat platen.

5. In a type-writing machine, the combination of a frame, key-operating levers mounted upon said frame, type-bars each having type-heads substantially at right angles to the plane of movement thereof and having a plurality of types fixed thereon with the type-faces inclined an appreciable amount with respect to each other, and a rocking frame also mounted upon said frame and carrying said type-bars, and movable independently of said key-levers.

6. In a type-writer, type-bars having at one end heads extended transversely to the bars and making substantially equal angles therewith, each having upon one side a plurality of type-faces, the faces being inclined an appreciable amount with respect to one another so as to be incapable of printing simultaneously upon a flat surface, and having at the other end a bearing transverse to the type-bar, and means for rocking the bar and its bearing to bring any desired type-face parallel with the printing plane.

7. In a type-writer, a type-bar having at one end a pivot-shaft and at the other end a head extending transversely substantially at right angles to the bar and approximately in the plane of the shaft and having a plurality of type-faces inclined to one another so as to be incapable of printing simultaneously on a flat platen.

8. In a type-writer, the combination, with a series of type-bars each having an independent pivot-shaft and means for rocking the same and having a head with a plurality of type-faces inclined to one another, of a journal-plate having bearings for the pivot-shafts and means for shifting the journal-plate to bring the several type-faces to the same printing-point.

9. In a type-writing machine, the combination of a system of type-bars, each having a plurality of types fixed thereon with the type-faces inclined an appreciable amount with respect to each other so as to be incapable of printing simultaneously on a flat surface, a system of key-levers for operating the type-bars, links extending from the levers to the type-bars, and means for rocking the type-bar system to enable different types to print, whereby the links vibrate about their points of connection to the key-levers during the rocking of the type-bar system.

10. In a type-writing machine, the combination of a system of type-bars, each having a plurality of types fixed thereon with the type-faces inclined an appreciable amount with respect to each other so as to be incapable of printing simultaneously on a flat surface, a system of keys, a system of levers between the keys and the type-bars, and means for rocking said system of type-bars to enable the different types to print, while said key-levers remain stationary.

11. In a type-writing machine, the combination of a system of type-bars, the axes of which lie in two rows which radiate from opposite sides of the printing-point, each type-bar being provided with a plurality of types, the types on each bar lying in appreciably different planes so as to be incapable of printing simultaneously on a flat surface, a system of key-operated levers for operating said type-bars, and means for shifting the type-bar system independently of the key-levers, to enable different types to print.

12. In a type-writing machine, the combination with a system of type-bars, each having three types thereon with their faces inclined to one another a flat platen, and a system of keys for operating said type-bars, of means for rocking said system of type-bars in opposite directions from normal central position, independently of said keys, for enabling the different types to print.

13. In a type-writing machine, the combination with a system of type-bars, each having three types thereon with their faces inclined to one another so as to be incapable of printing simultaneously on a flat surface, said type-bars being pivoted in two rows which radiate from opposite sides of the printing-center, and a system of key-operated levers connected to said type-bars, of means for rocking said system of type-bars in opposite directions from normal central position while said levers are stationary, for enabling the different types to print.

14. In a type-writing machine, the combination of a flat platen, a system of type-bars, each having a plurality of types fixed thereon with the type-faces inclined to each other so as to be incapable of printing simultaneously on a flat surface, and the type-faces on all the bars having uniform spacing and inclination, of means for rocking the type system to enable the different types to print.

15. In a type-writing machine, the combination of a flat platen, a system of type-bars, each having three types fixed thereon with the type-faces inclined to each other so as to be incapable of printing simultaneously on a flat surface, the types on all the bars having uniform spacing and inclination, and means for rocking the type system in either direction from normal central position, to enable the extreme types to print.

16. In a type-writing machine, the combination of type-bars having the faces of their type arranged upon different planes, and a frame carrying the type-bars, pivotally carried upon a sliding support and adapted to be oscillated upon its pivot, with mechanism adapted to impart an oscillating motion to the frame and a sliding movement to its support.

17. In a type-writer, the combination, with a series of type-bars each having a pivot-shaft and means for oscillating the same, and having a head with adjacent type-faces inclined to one another, of a journal-plate having bearings for the pivot-shafts, a fixed pivot at one end of the journal-plate, a movable pivot at the opposite end, and means for adjusting the movable pivot to bring the several type-faces to the same printing-point.

18. In a type-writer, the combination with a series of type-bars each having a pivot-shaft and means for oscillating the same, and having a head with adjacent type-faces inclined to one another, of a journal-plate having bearings for the pivot-shafts, a fixed pivot at one end of the journal-plate, a movable pivot at the opposite end, means for locking the movable pivot in a central position, and means for unlocking the pivot and shifting it to lateral positions and locking it therein.

19. In a type-writer, the combination, with a series of type-bars each having a pivot-shaft and means for oscillating the same, and having a head with adjacent type-faces inclined to one another, of a journal-plate having bearings for the pivot-shafts, a fixed pivot at one end of the journal-plate, a movable pivot at the opposite end, means for locking the movable pivot in the central position, finger-keys for rocking the journal-plate into opposite positions, and connections from such keys for first unlocking the movable pivot, shifting the same, and relocking it when the journal-plate is shifted.

20. In a type-writer, the combination, with a series of type-bars each having a pivot-shaft and means for oscillating the same, and having a head with adjacent type-faces inclined to one another, of a journal-plate having bearings for the pivot-shafts, a fixed pivot at one end of the journal-plate, a movable pivot at the opposite end, means for locking the movable pivot in a central position, a locking-arm with rocker-arm attached, a shifting-lever to rock the journal-plate, a finger-key with lever having a slot engaged with such rocker-arm to first move the locking-arm and a slot engaged with the shifting-lever to rock the journal-plate, substantially as herein set forth.

21. In a type-writer, the combination, with an alinement-guide arranged over the printing-point and having a toothed cheek as set forth, of a pivot-shaft mounted at one side of such guide, a type-bar attached to such shaft and having a head extended transversely from the end of such bar approximately into the plane of said shaft, with adjacent type-faces inclined to one another upon the side of such head, and the head having notches in one edge to engage the teeth of the alinement-guide, a movable bearing for the pivot-shaft, and means for shifting the bearing at an inclination to a vertical plane to direct the several type-faces to the printing-point.

22. In a type-writer, the combination, with an alinement-guide arranged over the printing-point, and having a toothed cheek as set forth, of opposed type-bars having pivot-shafts journaled in bearings at opposite sides of such alinement-guide, and provided with transverse heads having each a plurality of type-faces and notched upon one edge, the teeth in the alinement-guide arranged to engage the said notches in different adjustments of the head, and means for simultaneously shifting the bearings of the pivot-shafts at opposite sides of the alinement-guide to bring the corresponding type-faces upon such opposite type-bars, when operated, to the same printing-point.

23. In a type-writer, the combination, with a type-bar having a head with adjacent type-faces disposed in planes inclined to one another, and notches intermediate to the type-faces, of an alinement-guide arranged over the printing-point, and having a tooth to engage such notches in different adjustments of the said head, substantially as herein set forth.

24. In a type-writer, the combination, with a type-bar having a head with parallel edges and three type-faces disposed in planes inclined to one another, and notches upon the parallel edges intermediate to the type-faces, of an alinement-guide arranged over the printing-point and having cheeks to fit the edges of said head, and teeth above and below the printing-point to engage said notches in different adjustments of the head.

25. In a type-writer, the combination, with the triangular journal-plate *m* having opposed bearings in its converging sides, of a series of type-bars of gradually-increasing lengths having pivot-shafts fitted in the said opposite bearings, cranks at the rear ends of the type-bars and finger-keys with connections to the said cranks.

26. In a type-writer, the combination, with the triangular journal-plate *m* having opposed bearings in its converging sides, of a series of type-bars of gradually-increasing lengths having pivot-shafts fitted in the said opposite bearings, cranks at the rear ends of the type-bars, finger-keys with connections to the said cranks, and the type-bars having each a head with a plurality of type-faces inclined to one another and means for rocking the journal-plate to adjust the plane of each type-face to the printing-plane when in operation.

27. In a type-writer, the combination, with the triangular journal-plate *m* having opposed bearings in its converging sides, of a series of type-bars of gradually-increasing lengths having pivot-shafts fitted in the said opposite bearings, cranks at the rear ends of the type-bars, finger-keys with connections to the said cranks, and the type-bars having each a head with a plurality of type-faces inclined to one another, means for rocking the journal-plate to adjust the plane of each type-face to the printing-plane, and means for shifting the journal-plate to bring the several type-faces to the same printing-point.

28. In a type-writer, the combination, with the triangular journal-plate *m* having opposed bearings in its converging sides, of a type-rest extended upwardly therefrom, a series of type-bars of gradually-increasing lengths having pivot-shafts fitted in the said opposite bearings, cranks upon the pivot-shafts, and finger-keys with connections to the said cranks to actuate the type-bars, substantially as herein set forth.

29. A type-writer having the two triangular journal-plates with their apices toward one another and an alinement-guide disposed between the same opposed bearings in the converging sides of the journal-plates, a series of type-bars with pivot-shafts fitted to the said opposite bearings, cranks upon the rear ends of the pivot-shafts and finger-keys with connections to said cranks, substantially as herein set forth.

30. A type-writer having the two triangular journal-plates with their apices toward one another and an alinement-guide disposed between the same, opposed bearings in the converging sides of the journal-plates, a series of type-bars having each a head with adjacent type-faces inclined toward one another, and a pivot-shaft fitted to opposed bearings in the journal-plate, cranks upon the pivot-shafts and finger-keys with connections to actuate the cranks, and means for rocking the journal-plate to bring the several type-faces parallel with the printing-plane when in operation.

31. In a type-writer, the combination, with a bed having an alinement-guide arranged at the printing-point, of a journal-plate having a series of bearings with their ends projected progressively upon one edge of the plate with the faces of the bearings all tangential to a common tangent curve at one side of the printing-point, a series of graduated type-bars extending from the projecting ends of such bearings tangentially to the said curve, and provided each with a transverse head adapted to extend across the printing-point, the several bearings upon the journal-plate being at right angles to the tangential faces of the bearings, and a head-rest being projected upward from the journal-plate, and the whole arranged and operated to support the heads upon the graduated bars normally one above the other when at rest, and to permit the heads to pass one over the other in moving to the printing-point.

32. In a type-writer, the combination, with a flat platen, a base-frame with a carriage having a bed and type mechanism movable thereon, and an alinement-guide at the printing-point within the bed, of two series of type-bars having pivot-shafts journaled at opposite sides of the printing-point and each type-bar having a head with a plurality of type-faces disposed in planes inclined to one another, means for directing any one of such type-faces to the printing-point and for rocking the head to set such type-faces at pleasure parallel with the platen.

33. In a type-writer, the combinattion, with the type-bar pivot-shaft and the crank *o* having an open eye at the end, of a key-lever and a link comprising a threaded socket pivoted upon the key-lever, a joint-piece screwed into the said socket with a lateral crank-pin at the end to engage the said eye, and a leaf-spring attached to the joint-piece and pressing normally upon the end of the crank-pin to retain it in the eye, whereby the link forms an adjustable and detachable connection with the crank.

34. In a type-writer, the combination, with a bed having an alinement-guide fixed over a printing-point, with a series of type-bars having pivot-shafts arranged at opposite sides of the same, with cranks at the end of the pivot-shafts, key-levers *i* having their inner ends over the said cranks and their outer ends provided with finger-keys, and the fulcrum-plate *f* intermediate to the ends of the key-levers, substantially as shown and described.

35. In a type-writer, the combination, with a journal-plate having converging sides, with a series of bearings extended across such sides, and a series of type-bars having pivot-shafts journaled in said bearings, with cranks e in a straight line upon the ends of the pivot-shafts along one side of the journal-plate, of the pivots 6 and 8 upon the ends of the journal-plate in line with the cranks, means to rock the journal-plate, and finger-keys with connections to the said cranks to oscillate the pivot-shafts, whereby the relation of the connections to the cranks is maintained when the journal-plate is rocked on the said pivots.

36. In a type-writer, the combination, with a journal-plate having a series of bearings disposed transversely across the same with a series of type-bars of gradually-increasing lengths having pivot-shafts fitted in the said bearings and each having a transverse head bearing a plurality of characters, cranks and connections for actuating the pivot-shafts, an alinement-guide suitably arranged at a printing-point to receive the heads of all of the type-bars, a swivel-box at one end of the journal-plate with means for shifting the journal-plate upon such swivel-box, and the alinement-guide and the heads of the type-bars being curved concentric with the said swivel-box, whereby the heads are alined in the various shifted positions of the journal-plate, substantially as herein set forth.

37. In the type-writer, the combination, with the type-bars herein described having at one end a head extended transversely to the bar, such head curved in the direction of its extension from the bar and having upon one side a plurality of type-faces inclined to one another and disposed in the same relation to the said curve, of means for twisting the bar to bring the several type-faces successively into the same plane, and means for swinging the type-bars to bring the several type-faces at pleasure to the same printing-point.

38. The type-bar herein described, having at one end a head extended transversely to the bar, such head curved in the direction of its extension from the bar and having upon one side a plurality of type-faces inclined to one another and disposed in the same relation to the said curve, in order that either of the said type-faces may be brought successively parallel with the same printing-plane when the bar is twisted, and means for supporting the bar, to permit it to be twisted or laterally rocked and swung as herein described, to bring the several type-faces at pleasure to the same printing-point.

39. In a type-writing machine, a nest of type-bars of graduated lengths and pivoted at correspondingly-graduated distances from the printing-center and so that they may swing past one another, said type-bars mounted in a row which radiates from the printing-center, and their pivots lying in converging relation such that all of the type-bars when in printing positions extend radially from the printing-center to their pivots.

40. In a type-writing machine, a nest of type-bars each carrying a plurality of types, said type-bars being of graduated lengths and pivoted at correspondingly-graduated distances from the printing-center and so that they may swing past one another, the types extending angularly from the free ends of the bars but close thereto, said type-bars mounted in a row which radiates from the printing-center, each type-bar overlapping the next, and their pivots lying in converging relation so as to enable all the types to strike at the printing-center.

41. In a type-writing machine, a nest of single-arm type-bars each carrying a plurality of types, said type-bars being of graduated lengths and mounted at correspondingly-graduated distances from the printing-center, the types extending angularly from the free ends of the bars, both types and bars being arranged in echelon, the bars being in a row which radiates from the printing-center, and so pivoted that all of the types may strike at the printing-center.

42. In a type-writing machine, a system of type-bars consisting of two rows radiating from opposite sides of the printing-point, the type-bars in each row being of graduated lengths and mounted at correspondingly-graduated distances from the printing-center, each bar provided with a multiple type which extends angularly from the end of the bar, both types and bars being arranged in echelon and the bars being mounted with their pivots in converging relation, so that all of the types may strike at the printing-center.

43. A book type-writer comprising a flat platen, a system of single-arm type-bars mounted to strike down upon said platen and consisting of two rows of bars which radiate from opposite sides of the printing-center, said type-bars being of gradually-increasing lengths and mounted at corresponding distances from the printing-center, and being arranged in echelon, with their pivots converging so that all the types may strike at the printing-center, key-bearing levers extending forwardly from said type-bars, above said platen, and links connecting said type-bars to said levers.

44. A book type-writer comprising a flat platen, a system of single-arm type-bars mounted to strike down upon said platen and consisting of two rows of bars which radiate rearwardly and outwardly from opposite sides of the printing-center, said type-bars being of gradually-increasing lengths and mounted at corresponding distances from the printing-center, and being arranged in echelon and mounted upon rearwardly-converging rock-shafts of gradually-increasing lengths from the center to the sides of the system, crank-arms upon the forward ends of the rock-shafts, links extending upwardly from the crank-arms, a system of keys, and two sets of levers, said sets diverging rearwardly from said keys and fulcrumed between their ends and connected at their rear ends to said links.

45. In a type-writing machine, the combination of a system of type-bars consisting of two rows radiating from opposite sides of the printing-point, the type-bars in each row being of graduated lengths and mounted at correspondingly-graduated distances from the printing-center, each bar being provided with a multiple type which extends angularly from the end of the bar, both types and bars being arranged in echelon, and the bars being mounted with their pivots in converging relation, so that all of the types may strike at the printing-center, key-bearing levers connected to said type-bars, and means for shifting the type-bar system independently of the key-levers, to enable the different types to print.

46. In a top-strike writing-machine, the combination with a system of type-bars consisting of two rows radiating from opposite sides of the printing-center, the type-bars in each row being of graduated lengths and mounted at correspondingly-graduated distances from the printing-center, of a system of levers mounted above the type-bar pivots and connected at their rear ends to the type-bars and extending forwardly therefrom, keys carried by said levers, and means for shifting the type-bars independently of the key-levers, to enable different types to print.

47. In a top-strike writing-machine, the combination of a system of type-bars consisting of two rows radiating from opposite sides of the printing-center, the type-bars in each row being of graduated lengths and mounted at correspondingly-graduated distances from the printing-center, a system of key-bearing levers extending forwardly from the type-bars, links depending from the rear ends of the levers and connected to the type-bars, and means for shifting the type-bar system to enable different types to print, independently of the key-lever system.

48. In a top-strike writing-machine, the combination with a main frame, of a system of type-bars consisting of two rows radiating from opposite sides of the printing-center, the type-bars in each row being of graduated lengths and mounted at correspondingly-graduated distances from the printing-center, means for shifting the system of type-bars upon said frame, to enable different types to print, a system of key-bearing levers of the first order extending forwardly from the type-bars and fulcrumed directly upon said main frame, and links depending from the rear ends of the key-levers and connected to the type-bars and vibrating idly about their points of attachment to the key-levers during the shifting movements of the type-bar system.

49. In a top-strike writing-machine, the combination with a system of type-bars consisting of two rows radiating from opposite sides of the printing-center, the type-bars in each row being of graduated lengths and mounted at correspondingly-graduated distances from the printing-center, of a system of keys, two sets of levers bearing said keys, said sets diverging rearwardly from the keyboard to said type-bars, and at their rear ends operatively associated with the latter, a shift-key, and means operable by said shift-key for shifting both of said rows of type-bars while said key-levers remain stationary.

50. In a top-strike writing-machine, the combination with a system of type-bars consisting of two rows radiating rearwardly from opposite sides of the printing-center, the type-bars in each row being of graduated lengths and mounted at correspondingly-graduated distances from the printing-center, said type-bars being mounted upon forwardly-extending rock-shafts of gradually-increasing lengths, crank-arms upon said rock-shafts, links extending upwardly from said crank-arms, key-levers mounted upon the frame of the machine and connected to said links, and supporting means wherein said rock-shafts are mounted; said supporting means being shiftable while said key-levers remain stationary, and the links vibrating idly during the shifting movements.

51. In a type-writing machine, the combination with a platen, of a system of type-bars pivoted to strike upon the top of the platen, the type-bars being mounted in two rows which radiate from opposite sides of the printing-point, each type-bar having fixed thereon a plurality of types extending angularly from the type-bar and having their faces inclined to each other, a system of key-bearing levers operatively associated with the type-bars, and means for rocking the type-bars while said levers remain stationary.

52. In a top-strike writing-machine, the combination with a system of type-bars consisting of two rows radiating from opposite sides of the printing-center, the type-bars in each row being of graduated lengths and mounted at correspondingly-graduated distances from the printing-center, each type-bar having fixed thereon a plurality of types with their faces inclined to each other, of a system of levers mounted above the type-bar pivots and connected at their rear ends to the type-bars and extending forwardly therefrom, keys carried by said levers, and means for rocking the type-bar system forwardly independently of said levers, for enabling different types to print.

53. In a top-strike writing-machine, the combination of a system of type-bars consisting of two rows radiating from opposite sides of the printing-center, the type-bars in each row being of graduated lengths and mounted at correspondingly-graduated distances from the printing-point, each type-bar having fixed thereon a plurality of types with their faces inclined to each other, a system of key-bearing levers extending forwardly from the type-bars, links connecting the rear ends of the levers to the type-bars, and means for rocking the type-bar system while the key-levers remain stationary.

54. In a top-strike writing-machine, the combination with a main frame, of a system of type-bars consisting of two rows radiating from opposite sides of the printing-center, the type-bars in each row being of graduated lengths and mounted at correspondingly-graduated distances from the printing-center, supporting means whereon said type-bars are pivoted, said supporting means being mounted upon said main frame for a rocking movement to enable different types to print, a system of key-bearing levers fulcrumed directly upon said main frame and extending forwardly from the type-bars, and connections extending directly from the rear ends of the key-levers to said type-bars and mounted to vibrate idly about their points of attachment to the key-levers during the shifting movements of the type-bar system.

55. In a top-strike writing-machine, the combination with a system of type-bars consisting of two rows radiating from opposite sides of the printing-center, the type-bars in each row being of graduated lengths and mounted at correspondingly-graduated distances from the printing-center, each type-bar having a plurality of types fixed angularly thereon with the type-faces inclined to each other, a system of keys, two sets of levers bearing said keys, said sets diverging rearwardly from the keyboard to said type-bars, and at their rear ends operatively associated with the latter, and means upon which said system of type-bars may rock independently of said levers, for enabling different types to print.

56. A book type-writer comprising a flat platen, a system of type-bars mounted to strike down upon said platen and consisting of two rows radiating from opposite sides of the printing-center, the type-bars in each row being of graduated lengths and mounted at correspondingly-graduated distances from the printing-center, each type-bar having a plurality of types whose faces are inclined to each other, key-bearing levers mounted above said platen and operatively associated with the type-bars, and means for rocking the type-bar system while the key-levers remain stationary, for enabling different types to print.

57. A book type-writer comprising a flat platen, a system of type-bars mounted to strike down upon said platen and consisting of two rows radiating from opposite sides of the printing-center, the type-bars in each row being of graduated lengths and mounted at correspondingly-graduated distances from the printing-center, each type-bar having a plurality of types whose faces are inclined to each other, a system of keys, two sets of levers bearing said keys, said sets diverging rearwardly therefrom, and mounted above said platen, connections from said key-levers to said type-bars, and means for rocking the system of type-bars independently of the key-levers.

58. A book type-writer comprising a flat platen, a system of type-bars mounted to strike down upon said platen and consisting of two rows radiating from opposite sides of the printing-center, the type-bars in each row being of graduated lengths and mounted at correspondingly-graduated distances from the printing-center, each type-bar having a plurality of types whose faces are inclined to each other, a system of key-levers fulcrumed between their ends above said platen and bearing keys at their forward ends, links depending from the rear ends of said levers and connected to said type-bars, and means for rocking the type-bar system independently of said levers; the construction being such that during the rocking of the type-bars said links vibrate idly about their points of connection to said key-levers.

59. In a type-writing machine, the combination of a nest of type-bars of graduated lengths and pivoted at correspondingly-graduated distances from the printing-center and so that they may swing past one another, said type-bars mounted in a row which radiates from the printing-center and each having fixed thereon at an angle thereto a plurality of types whose faces are inclined to each other, the type-bar pivots lying in converging relation such that all of the type-bars when in printing positions extend radially from the printing-center to their pivots, and means for rocking said nest of type-bars to enable different types to print.

60. In a type-writing machine, the combination of a nest of type-bars, of graduated lengths and pivoted at correspondingly-graduated distances from the printing-center and so that they may swing past one another, each type-bar being provided with a plurality of types fixed thereon angularly thereto with the type-faces inclined to each other, said type-bars mounted in a row which radiates from the printing-center, each type-bar overlapping the next, and their pivots lying in converging relation so as to enable all the types to strike at the printing-center, levers connected to said type-bars, keys for said levers, and means for rocking the type-bars independently of the levers, to enable the different types to print.

61. In a book type-writer, the combination with a flat platen, of a nest of single-arm type-bars mounted to strike down upon the platen, said type-bars being of graduated lengths and mounted at correspondingly-graduated distances from the printing-center, and each provided with a plurality of types extending angularly from the bar, the type-faces being inclined to each other, both types and bars being arranged in echelon, the bars being in a row which radiates from the printing-center, and so pivoted that all of the types may strike at the printing-center, a set of key-levers also mounted above said platen and connected to the type-bars, and means for rocking said type-bars while the key-levers are stationary.

62. In a book type-writer, the combination of a flat platen, a system of type-bars consisting of two rows radiating from opposite sides of the printing-center, the type-bars in each row being of graduated lengths and mounted above said platen at correspondingly-graduated distances from the printing-center, each bar being provided with a plurality of types extending angularly therefrom and with their faces inclined to each other, both types and bars being arranged in echelon, and the bars being mounted with their pivots in converging relation, so that all of the types may strike at the printing-center, a system of key-bearing levers mounted above said platen, links connecting said levers to said type-bars, and means for rocking the type-bar system while the levers remain stationary.

63. In a book type-writer, the combination with a system of type-bars consisting of two rows radiating rearwardly from opposite sides of the printing-center, the type-bars in each row being of graduated lengths and mounted above said platen at correspondingly-graduated distances from the printing-center, each type-bar having fixed thereon a plurality of types angularly thereto with their faces inclined to each other, and said type-bars being mounted upon forwardly-extending rock-shafts of gradually-increasing lengths, crank-arms upon said rock-shafts, links extending upwardly from said crank-arms, a system of keys, two sets of levers bearing said keys and diverging rearwardly therefrom above said platen and connected at their rear ends to said links, and means for rocking said system of type-bars independently of said levers.

64. In a type-writing machine, the combination of two rows of type-bars radiating from opposite sides of the printing-center, each type-bar having a plurality of types thereon with their faces inclined to each other, a rocking frame for each row of type-bars, the latter being pivoted upon said frames, and a key-controlled rock-shaft connecting said frames to cause them to rock together.

65. In a type-writing machine, the combination of two rows of type-bars radiating from opposite sides of the printing-center, each type-bar having a plurality of types thereon with their faces inclined to each other, a pair of supporting-frames one for each row of type-bars, each frame being supported at its outer end for universal pivotal motion and at its inner end for a tilting movement and also a movement transverse to the line of writing, a key-controlled rock-shaft controlling both of said frames for rocking them at their outer ends while both tilting and moving them transversely at their inner ends.

66. In a type-writing machine, the combination of two rows of type-bars radiating from opposite sides of the printing-center, each type-bar having a plurality of types thereon with their faces inclined to each other, supporting means whereon said type-bars are pivoted, and key-controlled means for imparting to said supporting means both a tilting movement and a movement transverse to the line of writing for enabling the different types to print.

67. In a type-writing machine, the combination of a system of type-bars, each having a plurality of types thereon with their faces inclined to each other, supporting means whereon said type-bars are pivoted, and key-controlled means for simultaneously tilting and moving said supporting means transversely to the line of writing for enabling the different types to print.

68. In a type-writing machine, the combination of a system of type-bars, each having a plurality of types thereon with their faces inclined to each other, supporting means whereon said type-bars are pivoted, key-controlled means for both tilting and moving said supporting means transversely to the line of writing for enabling the different types to print, stops for limiting such sliding movements, and stops for limiting such rocking movements.

69. The combination with a series of type-bars each having thereon a multiple type provided upon one side with a notch, of means for shifting the series of type-bars, a central type-guide having jaws to receive said types, one of said jaws having a projection to fit into said notch.

70. The combination with a series of type-bars each having thereon a multiple type provided upon one side with a notch, of a central type-guide having jaws to receive said types, and means for effecting a relative case-shifting movement between said type-bars and said type-guide; one of said jaws having two projections, one fitting the type-bar notches at one shift, and the other fitting them at the other shift.

71. The combination with a series of type-bars each having thereon a multiple type provided upon one side with a plurality of notches, of a central type-guide having jaws to receive said types, one of said jaws having a projection which may fit either of said notches, and case-shifting mechanism.

72. The combination with a series of type-bars each having thereon a multiple type provided upon one side with a plurality of notches, of means for shifting the series of type-bars, a central type-guide having jaws to receive said types, one of said jaws having a plurality of projections for fitting in said notches, and case-shifting mechanism.

73. In a type-writer, a system of type-bars having pivot-shafts and having type-faces inclined to one another, a frame for supporting said pivot-shafts in substantially parallel relation to one another, said type-bars being disposed in echelon, and means for moving said frame through an angle, said movement being independent of the key-levers.

74. A type-bar action arranged to be operable upon a flat platen, comprising a frame having a plurality of pivot-shafts journaled therein and disposed in substantially parallel relation, type-bars on said pivot-shafts arranged in echelon, and means for moving said frame through an angle, said movement being independent of the key-levers.

75. A type-bar action arranged to be operable upon a flat platen, comprising a frame having pivot-shafts therein in substantially horizontal relation, type-bars on said pivot-shafts arranged to strike downward toward the platen, and means for moving said frame through an angle, the movement being independent of the key-levers.

849,128. TYPE-WRITING MACHINE. JOHN J. HANNAHS, New York, and ANTHONY A. HIEBER, Brooklyn, N. Y., assignors to Universal Typewriter Company, a Corporation of New York. Original application filed Feb. 4, 1901, Serial No. 45,810. Divided and this application filed Oct. 12, 1906. Serial No. 282,493.

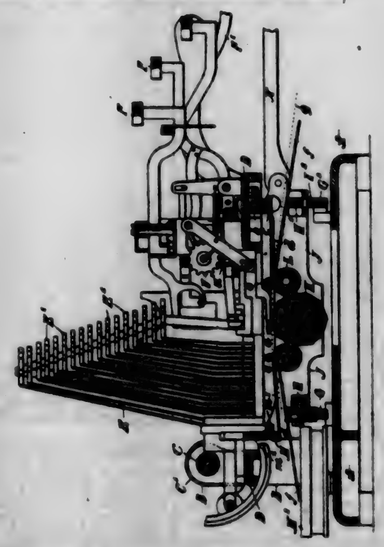

Claim.—1. In a type-writing machine, a bed having a hinge-bar, a type mechanism supported by said hinge-bar, and arranged to strike downward toward the printing-point, a carriage movable on said bed, a platen journaled in said carriage, a pair of feeding-rolls adjacent to said platen and having their top surfaces in horizontal alinement with the upper surface of said platen, and gear connections between said platen and feeding-rolls.

2. In a type-writing machine, a bed having a hinge-bar, a type mechanism supported by said bar, a carriage movable on said bed, a platen journaled in the carriage and having a plurality of plane faces in the path of said type mechanism, feeding-rolls adjacent to said platen and having their top surfaces in horizontal alinement therewith, and spring-impelled presser-rolls bearing upon said feed-rolls.

3. In a type-writing machine, a bed having a hinge-bar, a type mechanism supported by said hinge-bar, a carriage movable on said bed, a platen journaled in the carriage and in the path of said type mechanism, said platen having a ratchet-wheel thereon, a segment-gear carrying a pawl adapted to move said ratchet-wheel, and a cam actuated when the type mechanism is tilted about said hinge-bar for releasing said pawl.

4. In a type-writing machine, a pair of horizontally-disposed feed-rolls, pressure-rolls bearing against their upper surfaces, a ratchet-wheel positively geared to said feed-rolls, a pawl-carrying lever having a gear-section, and a spring-pressed lever having a gear-section meshing with said first-named gear-section.

849,129. GOVERNOR. WILLIAM HARDWICK, Erie, Pa., assignor to Erie Engine Works, Erie, Pa., a Corporation of Pennsylvania. Filed Feb. 4, 1907. Serial No. 355,760.

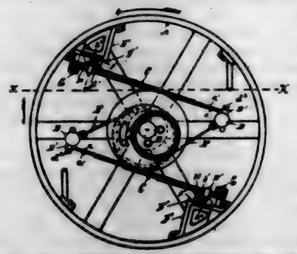

Claim.—1. In a steam-engine governor the combination of a leaf-spring, a bracket having a groove thereon, serrations at the sides of the groove in the bracket, a stud-bolt in said bracket passing through the heel of the spring, a fulcrum-block between the spring and the bracket, a tongue on the fulcrum-block engaging the groove in the bracket, serrations on the fulcrum-block at the sides of the tongue thereon to engage the serrations in the bracket, and a loop embracing the spring and secured to the fulcrum-block, substantially as set forth.

2. In a steam-engine governor the combination of a fulcrum-bracket, a leaf-spring secured thereto, a downturned end on the longer leaf of said spring, a weight, an extension thereon having a longitudinal slot therein to receive the longer leaves of the spring, and a transverse slot to receive the downturned end of one of said leaves, substantially as set forth.

3. In a steam-engine governor the combination of a leaf-spring, a downturned end on one of the longer leaves thereof, a weight, an extension on one side of the weight, a longitudinal slot to receive the longer leaves of the spring and a transverse slot in the weight to receive the downturned end on the spring, and a set-screw in said extension, substantially as set forth.

849,130. CATTLE-GUARD. ALEXANDER HERON, Calder, Ontario, Canada. Filed Aug. 26, 1905. Serial No. 275,977.

Claim.—In a cattle-guard, the combination with the rails and ties of a railway-track, bearing-bars mounted on the ties, a shaft carried by said bearing-bars, said shaft extending entirely across the track, a gate, springs on the free end of the gate at each side thereof, the other end of the gate pivotally mounted on said shaft, plates rigidly carried by the pivoted end of said gate, a second shaft running parallel to said first-named shaft, said shaft being carried by the plates of the gate, a platform mounted on

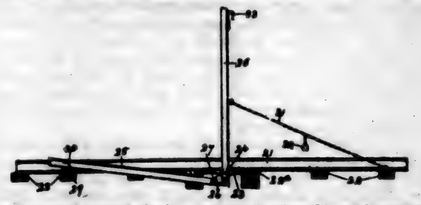

said second-named shaft, a supporting-bar 29, said supporting-bar adapted to support the free end of said platform, and means comprising a chain and weight for limiting the movement of, and returning the gate, substantially as described.

849,131. AUTOMATIC WEIGHING-MACHINE. GEORGE HOEPNER, Chicago, Ill., assignor to Union Scale & Mfg. Co., San Francisco, Cal., a Corporation of California. Filed June 17, 1905. Serial No. 265,762.

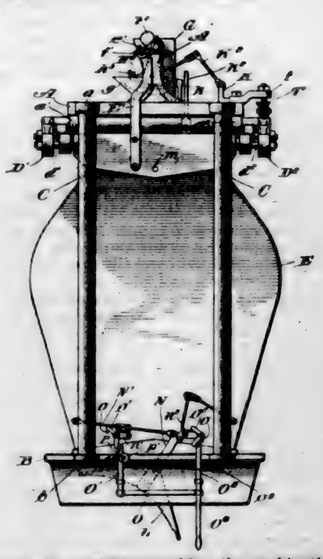

Claim.—1. In a weighing-machine, the combination with a scale-beam of a receptacle supported by said beam to receive the material to be weighed, a discharge-gate at the bottom of said receptacle, means for permitting the opening and closing of said discharge-gate, means for gradually restricting the flow of material to said receptacle directly controlled by the sinking of the receptacle, and means for cutting off the restricted supply of material directly controlled by the scale-beam prior to opening the discharge-gate.

2. In a weighing-machine, the combination with a scale-beam of a receptacle supported by said beam to receive the material to be weighed, a gate for gradually restricting the flow of material to said receptacle, a discharge-gate at the bottom of said receptacle, means for permitting the opening and closing of said discharge-gate, means directly controlled by the sinking of said receptacle to permit said gate to close, a second gate for cutting off the restricted

supply of material, and means directly actuated by the rising of the scale-beam to effect the closing of said second gate prior to opening the discharge-gate.

3. In a weighing-machine, the combination with a scale-beam, of a receptacle supported by said beam to receive the material to be weighed, a gate for restricting the flow of material to said receptacle, means directly actuated by the rising of said receptacle to open said gate, and by the sinking of said receptacle to permit said gate to close, a second gate for cutting off the restricted supply of material, means directly actuated by the rising of the scale-beam to effect the closing of said second gate, and means interposed between said gates for opening said second gate by the rising of the receptacle.

4. In a weighing-machine, the combination with a scale-beam of a receptacle supported by said beam to receive the material to be weighed, a gate for gradually restricting the flow of material to said receptacle, a riser carried by said receptacle, means interposed between said riser and gate to control the closing and opening of the gate as the receptacle sinks and rises, a second gate for cutting off the restricted supply of material, and means directly actuated by the rising of the scale-beam to effect the closing of said second gate.

5. In a weighing-machine, the combination with a scale-beam of a receptacle supported by said beam to receive the material to be weighed, a gate for restricting the flow of material to said receptacle, means directly controlled by the sinking of said receptacle to permit said gate to close, a second gate for cutting off the restricted supply of material, a pair of horizontal toggle-links for retaining said second gate open, and a projection extending upwardly from and carried by the scale-beam for breaking said links and allowing said second gate to close.

6. In a weighing-machine, the combination with a scale-beam of a receptacle supported by said beam to receive the material to be weighed, a gate for restricting the flow of material to said receptacle, a riser carried by said receptacle, means interposed between said riser and gate to control the closing and opening of the gate as the receptacle sinks and rises, a second gate for cutting off the restricted supply of material, a pair of toggle-links for retaining said second gate open, and a projection carried by the scale-beam for breaking said links and allowing said second gate to close.

7. In a weighing-machine, the combination with a scale-beam of a receptacle supported by said beam to receive the material to be weighed, means for gradually restricting the flow of material to said receptacle directly controlled by the sinking of the receptacle, means for cutting off the restricted supply of material directly controlled by the rising of the scale-beam, and means for preventing the scale-beam from rising sufficiently to actuate said cutting-off means at the time the restricting means are actuated.

8. In a weighing-machine, the combination with a scale-beam of a receptacle supported by said beam to receive the material to be weighed, a gate for gradually restricting the flow of material to said receptacle, means directly controlled by the sinking of said receptacle to permit said gate to close, a second gate for cutting off the restricted supply of material, means directly controlled by the rising of the scale-beam to effect the closing of said second gate, and means for preventing the scale-beam rising sufficiently to close the second gate at the time the first gate is closed.

9. In a weighing-machine, the combination with a scale-beam of a receptacle supported by said beam to receive the material to be weighed, a gate for restricting the flow of material to said receptacle, a riser carried by said receptacle, means interposed between said riser and gate to control the closing and opening of the gate as the receptacle sinks and rises, a second gate for cutting off the restricted supply of material, a pair of toggle-links for retaining said second gate open, a projection carried by the scale-beam for breaking said links and allowing said second gate to close, and means for preventing the scale-beam rising sufficiently at the time the first gate is closed to close the second gate.

10. In a weighing-machine, the combination with a scale-beam of a receptacle supported by said beam to receive the material to be weighed, means for gradually restricting the flow of material to said receptacle directly controlled by the sinking of the receptacle, means for cutting off the restricted supply of material directly controlled by the rising of the scale-beam, and means for regulating the proportion of material supplied to the receptacle through the restricted flow.

11. In a weighing-machine, the combination with a scale-beam of a receptacle supported by said beam to receive the material to be weighed, an oscillatory gate for restricting the flow of material to said receptacle, a rotary shaft to which said gate is fixed, a crank-arm on said shaft, a riser carried by the receptacle coöperating with said crank for controlling the closing and opening of said gate as the receptacle sinks and rises, and a second gate for cutting off the restricted supply of material upon the completion of the predetermined amount.

12. In a weighing-machine, the combination with a scale-beam of a receptacle supported by said beam to receive the material to be weighed, an oscillatory gate for restricting the flow of material to said receptacle, a rotary shaft to which said gate is fixed, a crank-arm on said shaft, a riser carried by the receptacle coöperating with said crank for controlling the closing and opening of said gate as the receptacle sinks and rises, a weight projecting radially from said shaft, means for permitting the adjustment of the position of said weight to regulate the quantity of material supplied prior to closing said gate, and a second gate for cutting off the restricted supply of material upon the completion of the predetermined amount.

13. In a weighing-machine, the combination with a scale-beam of a receptacle supported by said beam to receive the material to be weighed, a discharge-gate at the bottom of said receptacle, toggle-links pivotally connected at one end to the receptacle and at the other end to said gate to retain the latter closed, a bell-crank lever pivoted to said receptacle adjacent said links, and an obstruction in the path of said lever to oscillate the same and effect the opening of the gate by breaking the toggle-links upon the final sinking of the receptacle.

14. In a weighing-machine, the combination with a scale-beam of a receptacle supported by said beam to receive the material to be weighed, a discharge-gate at the bottom of said receptacle, toggle-links pivotally connected at one end to the receptacle and at the other end to said gate to retain the latter closed, a bell-crank lever pivoted to said receptacle adjacent said links, and a lever located in position to oscillate said bell-crank lever to break said toggle-links and thereby effect the opening of said gate.

15. In a weighing-machine, the combination with a scale-beam of a receptacle supported by said beam to receive the material to be weighed, a central partition within said receptacle dividing the same into two compartments, an oscillatory discharge-gate at the bottom of said receptacle adapted to alternately open and close the compartments of the receptacle, a pair of toggle-links for holding the gate in each position, and an obstruction located in the path of movement of said links to alternately break the same and permit the gate to swing into position to open one compartment and close the other.

16. In a weighing-machine, the combination with a scale-beam, of means supported by said beam upon which the material to be weighed is delivered, a gate for restricting the flow of material to said receiving means, mechanism for imposing the weight of said gate directly upon said receiving means whereby the rising and sinking of said means directly controls the opening and gradually closing of said gate, and means for cutting off the restricted supply of material, directly controlled by the scale-beam.

17. In a weighing-machine, the combination with a scale-beam, of a receiving means supported by said beam upon which the material to be weighed is delivered, a gate for restricting the flow of material to said receiving means, mechanism interposed between said gate and said means for imposing the weight of the gate upon said receiving means whereby the opening and gradually closing of said gate is directly controlled by the rising and sinking of said receiving means, and means for cutting off the restricted supply of material directly controlled by the scale-beam.

849,132. ADJUSTABLE PIPE-HANGER. CHARLES H. HOOK, Pittsburg, Pa. Filed July 3, 1906. Serial No. 324,655.

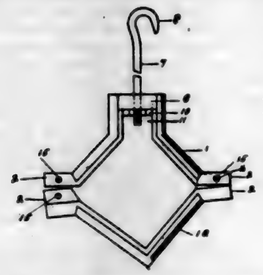

Claim.—1. In an adjustable pipe-hanger, the combination of two complementary substantially L-shaped yokes having lugs at their extremities, bolts passing through and connecting opposed lugs, and a threaded hanger-rod passing through the apex of one of said L-shaped yokes and having an adjusting-nut, substantially as described.

2. In an adjustable pipe-hanger, the combination of a right-angular yoke having lugs at its extremities, a complementary yoke with similar lugs, means for detachably connecting the two yokes, a recessed offset in the apex of one of said yokes, and a threaded hanger-rod passing through said recessed offset and having a nut seated in said recess, substantially as and for the purpose set forth.

3. In an adjustable pipe-hanger, the combination of two complementary right-angular-shaped yokes, an offset at the apex of one of said yokes and having a recessed nut-seat in the inner side thereof, a hanger-rod passing through said offset and having an adjusting-nut located in said seat, and means for connecting said yokes, substantially as and for the purpose set forth.

849,133. SHADE-HOLDING DEVICE. CHARLES L. HOPKINS, Albany, N. Y., assignor to The Curtain Supply Company, Newark, N. J., a Corporation of New Jersey. Filed Apr. 28, 1903. Serial No. 154,688.

Claim.—1. In a shade-holding device, the combination of a stick, an elongated head at the end of the stick, wheels mounted singly in said head toward the ends thereof, and a bodily-movable brake in contact with one of the wheels having holding power to resist rotation of said wheel in one direction only.

2. In a shade-holding device, the combination of a shade-stick, a spring-pressed elongated head at the end of the shade-stick, a plurality of wheels carried by the head, a bodily-movable brake carried by the head, the said brake being adapted to resist rotation of one of the wheels in one direction, but and being without braking power to resist rotation of said wheel in the opposite direction.

3. In a shade-holding device, the combination with a stick, of a head at the end of the stick, a spring within the stick for thrusting said head outwardly, a wheel journaled in said head, a bodily-movable part in contact with said wheel, the said movable part normally acting as a brake upon said wheel, but being without holding power to resist rotation of said wheel when the shade is being drawn downwardly.

4. In a shade-holding device, in combination with a stick, of a head at the end of the stick, an antifriction-roller journaled in said head having a bodily-movable spring-actuated brake in contact therewith at all times and adapted to prevent rotation of the antifriction member in one direction only, and a spring carried by the stick thrusting said head and wheel outwardly.

5. In a shade-holding device, in combination with a stick, a head at the end of the stick, a wheel journaled in said head, and a wedge-shaped part adapted to be thrust between the head and the wheel to prevent rotation of said wheel, substantially as described.

6. In a shade-holding device, in combination with an elongated spring-pressed stick, a head at the end of the stick having antifriction devices journaled therein, a spring-actuated member pivoted in said head adjacent to one of said antifriction devices, and a bodily-movable brake arranged to engage the other antifriction device.

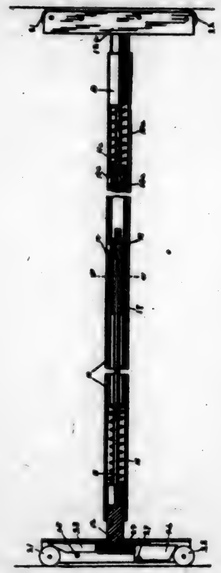

7. In a shade-holding device, the combination of a stick, an elongated, spring-pressed head at the end of the stick, a wheel journaled in said head, a sliding member carried by the head adjacent to the wheel, contacting with said wheel and acting as a brake, said sliding member having braking power to resist rotation of the wheel in one direction but permitting rotation of the wheel in the opposite direction, and means for moving said wheel out of contact with the window-casing for the purpose of moving the shade to a desired position.

8. In a shade-holding device, the combination of a stick, a head at the end of the stick, an antifriction device journaled in said head, a bodily-movable brake in contact with said antifriction device and having holding power to resist movement of the same in one direction only, a spring carried by the stick for forcing the head outwardly, and a spring mounted on said head for pressing the brake against the antifriction device.

9. In a shade-holding device, the combination of a stick, a spring-actuated rod within the stick, a pendant on the rod for retracting the same, an elongated head at the outer end of the rod, and a wheel journaled in said head, having a bodily-movable brake in contact therewith at all times.

10. In a shade-holding device, the combination with a stick, of a head at the end of the stick having a wheel at each end thereof, movable parts adapted to be thrust into contact with the wheels to act as brakes upon said wheels, and a spring located between said movable parts to force them in opposite directions and against their respective wheels.

11. In a shade-holding device, the combination with a stick, of a slidable rod within the stick, a spring for thrusting said rod outwardly, a pendant on the rod having rotary movement independently of the rod, and means for imparting a longitudinal movement to the pendant when the said pendant is rotated and a second pendant immovably secured to the stick.

12. In a shade-holding device, the combination with a stick, of a spring-actuated rod slidably mounted therein,

an opening in the stick between its ends, said opening being rhomboidal in shape, and a pendant on the rod projecting outwardly through the opening, for the purpose described.

13. In a curtain-fixture, a spring-actuated curtain, guideways adjacent said curtain, shoes mounted on said curtain to coöperate with said guideways, a movable guiding member mounted on said shoes to engage said guideways, and bodily-movable means coöperating with said guiding member to automatically vary the freedom of movement of said guiding member along said guideways as it moves in different directions.

14. In a curtain-fixture, a shoe to coöperate with a guideway and comprising a guide-roll to engage said guideway and mounted in said shoe and a sliding grip in said shoe relatively movable with respect to said guide-roll and shoe to be engaged by said guide-roll to allow said guide-roll to have greater freedom of movement along said guideway in one direction than in the other direction.

15. In a holding device for spring-actuated shades, the combination with a stick, of a spring-actuated rod within the stick, a holding device at the end of the stick operatively connected with said rod, and means for retracting the rod comprising a projecting handle passing through an opening in the stick, and an inclined wall with which the handle coöperates, substantially as described.

16. In curtain-fixtures, a shoe having guiding members to engage a guideway, said guiding members comprising a guide-roll mounted in said shoe and a sliding spring-pressed grip in said shoe relatively movable toward said guide-roll to exert an automatic wedging action on said guide-roll to allow said guide-roll to move more freely along said guideway in one direction than in the other direction.

17. In curtain-fixtures, a shoe having guiding members to engage a guideway, said guiding members comprising a rotary guiding member mounted in said shoe and a bodily-movable grip mounted in said shoe movable toward said guiding member, said grip having an automatic wedging action on said guiding member to allow said guiding member to move more freely along said guideway in one direction than in the other direction.

18. In curtain-fixtures, a shoe, a rotating guiding member mounted in said shoe to engage a guideway, a bodily-movable grip mounted in said shoe out of contact with said guideway to engage said guiding member, said grip having an automatic action on said guiding member to restrain its rotation in one direction more than in the other direction.

19. In a curtain-fixture, the combination of a stick, a head at the end of the stick, a wheel mounted in the head, and means adapted to become wedged between the wheel and the inside of the head when the wheel is turned in one direction to retard rotation of the wheel, but to be moved out of retarding engagement with the head when the wheel is turned in the other direction.

20. In a shade-holding device, the combination of a stick, an elongated spring-pressed head at the end of the stick, a wheel journaled in said head, a sliding member carried by the head adjacent the wheel and contacting with said wheel and acting as a brake to resist rotation of the wheel in one direction but permitting rotation in the opposite direction.

21. In a shade-holding device, the combination with a stick, of a head at the end of the stick having separated antifriction devices therein, movable parts adapted to be thrust into contact with said antifriction devices to act as brakes therefor, and a spring located between said movable parts to force them in opposite directions and against the respective antifriction devices.

22. In a curtain-fixture, a shade-stick guideways adjacent the ends of the stick, shoes at the ends of said stick to coöperate with said guideways, a movable guiding member mounted in said shoes to engage said guideways, and a sliding brake coöperating with said guide member to automatically vary the freedom of movement of the same along the guideways as it moves in different directions.

23. In a curtain-fixture, a shade-stick a guideway adjacent the ends of the stick, a shoe at the end of the stick to coöperate with said guideway, a spring-actuated sliding brake arranged to coöperate with said guiding member to automatically vary the freedom of movement of the same along the guideway as it moves in different directions, and retaining means on the shoe for said brake.

24. In a curtain-fixture, a pair of shoes comprising guiding members arranged to engage a guideway and to be rotated thereby, and means coacting with said guiding members to automatically vary the freedom of movement of said guiding members, to allow said guiding members to move more freely along said guideway in one direction than in the other direction, said means including a bodily-movable brake engaging one of said guiding members, and an elongated block having an inclined end normally in engagement with other guiding member, the block being pivoted adjacent its opposite end, and spring means for said block.

25. In a curtain-fixture, a pair of guiding members arranged to engage a guideway and to be rotated thereby, and means coacting with said guiding members to automatically vary the freedom of movement thereof, to allow said guiding members to move more freely along said guideway in one direction than in the other direction, said means comprising a bodily-movable brake engaging one of said connecting members and an elongated block one end of which having an inclined surface arranged to engage the other guiding member, a pivotal support for the opposite end of the block adjacent one of its edges, and a spring engaging said opposite end of the block adjacent its opposite edge.

849,134. GRATER. JULES HUSSER, Pittsburg, Pa. Filed Dec. 27, 1906. Serial No. 349,711.

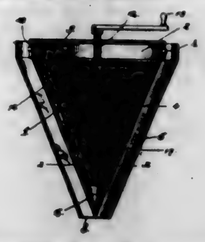

Claim.—1. A utensil of the class described embodying a perforated inverted-cone-shaped receptacle having a vertical upper rim, ribs carried by said receptacle, a casing carried by said ribs and forming a plurality of compartments around said receptacle, a spider-frame detachably connected to the rim of said receptacle, a vertically-disposed shaft journaled in said frame, a head carried by the lower end of said shaft, revoluble rollers supported by said shaft and engaging the inner sides of said receptacle, substantially as described.

2. In a crusher, an inverted-cone-shaped receptacle, a spider-frame detachably secured to the open upper end of said receptacle, a shaft journaled in said spider-frame, a head on the lower end of said shaft, a spider carried by said shaft, and rollers carried by said spider and head.

3. In a crusher, an inverted-cone-shaped perforated receptacle, a spider-frame secured to the open upper end of said receptacle, a shaft journaled in said spider-frame and having a head on its lower end seating in the apex of said cone-shaped receptacle, a spider carried by said shaft, and rollers carried by the spider and said head on the shaft, and operating against the inner face of said perforated cone-shaped receptacle.

849,135. HEAD-REST. AUSBIN D. KANDLE, Pencoyd, Pa., assignor to Kandle Sanitary Head Rest Manufacturing Company, a Corporation of New Jersey. Filed Mar. 16, 1905. Serial No. 250,463.

Claim.—1. The combination with a head-rest of a guiding device for paper comprising a base-plate having its front edge returned forming a bead or strip along its upper side and its rear edge notched or cut away to permit the free edge of a sheet of paper to be grasped and having lugs for connection with a head-rest and upwardly-projecting bearing-lugs, a rocker comprising a handle by which it may be rocked, a shaft journaled in the bearing-lugs of the base-plate, a binding-plate and a cutter-plate at an angle to each other and fitting over the shaft, and a spring coiled on the shaft and bearing at one end against the base-plate and at its other end against the rocker to actuate the latter.

2. The combination in a paper-holding device of a base-plate having a forwardly-extending bed, a rocker pivoted in connection with the base-plate and comprising a cutter-plate and a binding-plate arranged at an angle to the cutter-plate and adapted to bear at its free edge normally against the base-plate adjacent to the bed thereon and a spring actuating said rocker.

3. In a paper guiding and holding device, a base-plate, lugs on said base-plate, an angular rocker pivotally supported on said lugs with both edges at all times within the confines of the width of said base-plate with one edge adapted to contact with said base-plate to bind the paper thereagainst and its other edge constituting a cutter adapted to press the paper against said plate, and a spring confined between the angular sides of said rocker, upon the pivot thereof.

849,136. CORSET. DANIEL KOPS, New York, N. Y. Filed Oct. 16, 1906. Serial No. 339,151.

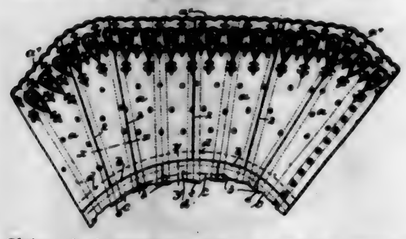

Claim.—1. A corset comprising in both the upper and lower parts series of fabric sections cut from a length of fabric material, having an embroidered straight edge and the sections so proportioned that said embroidered edge constitutes one edge of each section, the embroidered edges constituting the finished edge of the corset and said sections united throughout the waist-line by a sewed union.

2. A corset comprising upper and lower series of fabric sections united throughout the waist-line by sewed lines of union and at least one of said series of fabric sections cut from a length of fabric material, having an embroidered straight edge and the sections so proportioned that the said embroidered edge constitutes the edge of the corset.

3. A corset formed from a length of fabric material, having an embroidered straight edge with shaped parts joined together by sewed lines of union, said embroidered edge constituting one edge of each part and the said embroidered edges constituting one finished edge of the corset and the respective parts united throughout the waist-line by a sewed union.

4. A corset formed from a length of fabric material, the opposite straight finished edges of which constitute the respective top and bottom edges of the corset and said strip severed lengthwise between said edges and the respective divisions of the corset united by sewed lines of union and formed from said parts which are shaped and united along the waist-line by sewed lines of union.

849,137. BONE-POCKET. SAMUEL KOPS, New York, N. Y. Filed Oct. 16, 1906. Serial No. 339,150.

Claim.—1. A bone-pocket comprising a foldable strip of fabric, a lining-strip of the same length as the foldable strip and in width appreciably greater than the width of the bone, a bone laid flatwise on the lining-strip and of a length appreciably less than the length of the foldable and lining strips, with the edges of the foldable strip turned over and overlapping and secured together and the respective ends of the foldable and lining strips at the ends of the bones overturned against the overlapped edges of the foldable strip and means for securing said overturned ends in place.

2. A bone-pocket comprising a foldable strip of fabric, a lining-strip, bones spaced apart and resting upon the lining-strip in the same plane, the edges of the foldable strip overlapped upon the bones and a line of sewing connecting said parts and passing through the overlapped edges of the foldable strip through the lining-strip and substantially through the foldable strip.

3. A bone-pocket comprising a foldable strip of fabric, a lining-strip of the same length and in width appreciably greater than the over-all width of two spaced-apart bones and both of said fabric strips of greater length than the length of the bones, two bones spaced apart and lying upon the lining-strip, the edges of the foldable strip folded over the same and overlapping at the center and a line of sewing passing centrally between the bones, through the overlapped edges, the lining fabric and substantially through the center of the foldable strip.

4. A bone-pocket comprising a foldable strip of fabric, a lining-strip of the same length and in width appreciably greater than the over-all width of two spaced-apart bones and both of said fabric strips of greater length than the length of the bones, two bones spaced apart and lying upon the lining-strip, the edges of the foldable strip folded over the same and overlapping at the center, a line of sewing passing centrally between the bones, through the overlapped edges, the lining fabric and substantially through the center of the foldable strip and the respective ends of the foldable and lining strips overturned against the overlapped edges of the foldable strip.

840,138. HORN-SUPPORT FOR TALKING-MACHINES. OTTO KRAUS, New York, N. Y. Filed Mar. 1, 1906. Serial No. 303,600.

Claim.—1. A horn-support comprising a rod, a clamping element pivotally attached to one end thereof and means

for controlling the movement of said clamping element, a second clamping element provided with a bracket and adapted to slidingly engage said rod and means for holding the sliding element in adjustable relation thereto, a vertical rod supported by said bracket and means for supporting a horn therefrom.

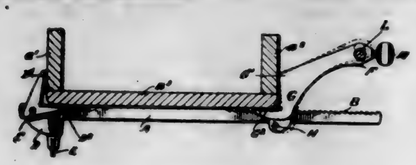

2. A horn-support comprising a rod adapted to extend along the side of the machine-casing, means for holding said rod in detachable relation with the said casing, said means comprising two pivoted elements one of which is provided with a bracket which is adapted to extend from the front of said casing, a vertical rod supported by said bracket, a tubular extension device connected with said vertical rod and means for supporting a horn therefrom.

3. A horn-support having clamping means adapted to engage the front and rear portions of the machine-casing and to be located on the side thereof, a bar connecting and coöperating to hold said clamping means in position on the casing, and pivotal means connected with one of said clamping means for increasing the tension on said bar and thereby increase the pressure on said casing between said clamping means, a bracket extending from the front of the casing and means supported thereby adapted to support the horn.

4. A horn-support having a rod, V-shaped jaws carried thereby in pivotal relation thereto, means connected with one of said jaws to adjust the said pivotal movement for the purpose of more firmly uniting said horn-support to the machine-casing; means for adjusting the distance between said jaws, a bracket and means supported thereby for supporting the horn.

5. A horn-support having a rod provided with a rack, a clamping element adapted to contact with two sides of the casing of the instrument and to swing upon a pivot, a second clamping element adapted to slide on said rod and provided with a projecting portion adapted to coact with said rack, a bracket, and means for supporting a horn therefrom.

6. A horn-support for talking-machines having clamping means adapted to engage front and rear portions of a machine-case, means for locking said clamping means in various positions, a bar and pivotal means, and means for forcibly swinging one clamping part upon the pivotal means.

7. A horn-support, having clamping means adapted to engage front and rear portions of a talking-machine case, comprising a rod having a pivoted element at one end and means for controlling the movement thereof, and a second element adapted to slide on said rod and provided with a bracket and means for locking said element in adjustable relation with said first-named element, a vertical rod supported by said bracket and means for supporting a horn therefrom.

8. A horn-support comprising a rod having a pivoted element at one end thereof and means for controlling its movement, a second element adapted to slidingly engage said rod and provided with a bracket and means for holding said element to said rod, a rod supported by said bracket the lower end of which is adapted to extend below said bracket and serve as a support, and means for supporting a horn from the upper end of said last-named rod.

9. A horn-support comprising a rod having a pivoted element at one end thereof and means for controlling its movement, a second element adapted to slidingly engage said rod and provided with a bracket and means for holding said element to said rod, a vertical rod supported by said bracket and adapted to extend therethrough, an extension device supported by said vertical rod and means for locking said extension device in position and at various angles to said vertical rod for the purpose set forth.

10. A horn-support comprising clamping elements adapted to engage front and rear portions of a talking-machine case, a horizontal rod, a pivotal connection between one of the clamping elements and said rod, and means for controlling the movement of said clamping element.

11. A horn-support comprising clamping elements, a horizontal rod, a pivotal connection between one of the clamping elements and said rod, and means for forcibly swinging said pivotally-connected element in a direction to increase the clamping pressure.

12. A horn-support having clamping elements adapted to engage front and rear portions of a talking-machine case, a rod adapted to extend along the side of the case and in sliding relation to one of said elements and means for locking said element and rod together, a bracket extending from one of said clamping elements and a tubular extension device held by said bracket.

13. A horn-support comprising a rod having a rack, a clamping element adapted to engage adjacent side portions of the talking-machine case, and a clamping element provided with a projection adapted to coact with said rack.

14. A horn-support comprising clamping elements adapted to engage opposite portions of a talking-machine case, means for forcibly swinging one of the clamping elements upon a pivot, a vertical rod supported by one of the clamping elements, and an extension device connected to the vertical rod for the purpose of supporting a horn.

849,139. BILL-FILE. EDWARD W. KRUSE, Higginsville, Mo. Filed Feb. 24, 1906. Serial No. 302,778.

Claim.—1. The combination of a double bill-file consisting of a piece of spring-wire bent to form an arch and then bent near its ends to form a pair of upwardly-disposed hooks, and a frame provided with a hook detachably engaging the upper portion of the arch of the bill-file and with hooks to engage the side portions of said arch.

2. The combination of a frame having a pair of hooks, and a spring-metal bill-file of inverted-U shape with its arms engaging said hooks with a yielding pressure; said arms having their lower ends bent upwardly to form hooks occupying planes substantially at right angles to the plane of the U-shaped portion.

849,140. THREAD CONTROLLING AND UNWINDING DEVICE FOR SEWING-MACHINES. JAMES H. LA BATE, Brockton, Mass. Filed Dec. 21, 1906. Serial No. 348,890.

Claim.—1. An unwinding device for sewing-machines, comprising a substantially horizontal spool-spindle having

stops to prevent endwise displacement of the spool, said stops being adjustable to conform to spools of different lengths, a thread-guide located above the spindle, and means for holding the thread-guide in a plane between the vertical planes of the ends of the spool, said supporting means having provisions for laterally adjusting the thread-guide to correspond with adjustments of said stops to centralize it for spools of different lengths.

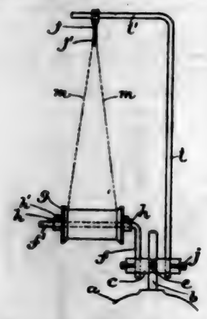

2. An unwinding device for sewing-machines, comprising two bent standards, each having a vertical supporting portion, and a horizontal portion extending laterally therefrom, one of said horizontal portions constituting a spool-spindle, and being provided with spool-stops, while the other horizontal portion constitutes a thread-guide holder, a base to which said standards are attached, said base having means for engagement with the frame of the machine, and a thread-guide affixed to the said holder, and located in a plane between the vertical planes of the ends of the spool.

849,141. COTTON-GIN. STORY B. LADD, Washington, D. C. Filed June 10, 1903. Serial No. 160,847.

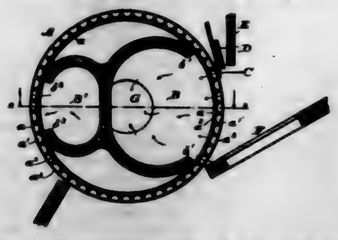

Claim.—1. A cotton-gin roller having peripheral perforations, and means upon which the roller is revolved for conducting air into and out of the roller through its perforations.

2. In a cotton-gin, the combination, with a perforated roller, and a stripper adapted to coöperate with the periphery of the roller in a ginning operation, of means for drawing an equal pressure of air into the roller above and below the coacting point of the stripper and the roller.

3. In a cotton-gin a roller having a perforated surface in combination with a pneumatic cylinder upon which the perforated roller revolves, said pneumatic cylinder having separate chambers for suction and blast respectively.

4. The combination, with a hollow cotton-gin roller having circumferential apertures, and a perforated roller-covering, of a pneumatic cylinder divided lengthwise into separate air-chambers and upon which the roller is revolved.

5. The combination, with a cotton-gin roller, having circumferential apertures, and a sheet of perforated material covering the roller, of a pneumatic cylinder upon which the roller is revolubly mounted, the cylinder being divided lengthwise into separate air-chambers having an opening at one end, one of said chambers having an air-suction mouth in communication with the apertures, and the other of said chambers having an air-blast mouth in communication with the apertures.

6. The combination, with a cotton-gin roller having apertures, and a perforated sheet covering the roller, of a chambered air-cylinder upon which the roller is revolubly mounted, a partition separating the chambers with an axial opening and a mouth in each chamber communicating with said apertures.

7. The combination, with the pneumatic cylinder having separate air-chambers, the pneumatic roller having apertures in communication with the chambers, and the perforated roller-covering, of the knife-bar located adjacent to the roller to separate the cotton-seed from the fiber and permit the latter to be drawn to and held on the roller.

8. The combination, with the roller having apertures and journal-bearing ends, and a perforated surface, of a pneumatic cylinder upon which the roller is mounted and having air-stems forming journals for said roller ends, a partition reaching from one stem to the other and dividing the cylinder into separate chambers which communicate with said apertures through openings in the chambers, and a knife-bar located adjacent to the roller for separating the cotton-seed from the fiber and permitting the latter to be sucked into the said perforations.

9. In a cotton-gin, the combination, with a roller, and a stripper adapted to coöperate with the periphery of the roller in a ginning operation, of means upon which the roller is revolved for permitting an equal air-pressure above and below the coacting place of the stripper with the roller.

849,142. APPARATUS FOR EXACTLY PRINTING OR IMPRESSING TYPE. FRIEDRICH A. LANGEN, Cologne-Riehl, Germany. Filed Aug. 30, 1905. Serial No. 276,468.

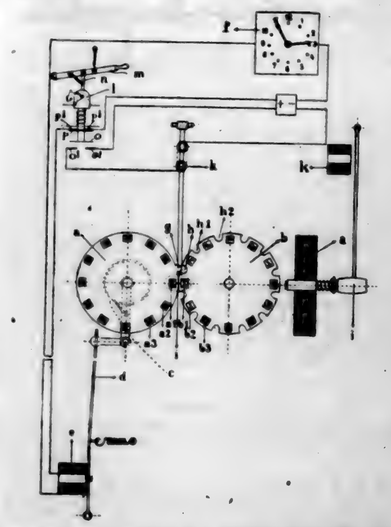

Claim.—In apparatus for exactly printing a plurality of characters, the combination with a plurality of type-wheels, each provided with types movable at right angles to the plane of the wheel, the types of one wheel being arranged in close proximity to the types of the other wheel, a single hammer adapted to simultaneously strike a plurality of adjacent types, of means for actuating said hammer, means for preventing movement of the type-wheels while the hammer is in motion, and means for preventing the motion of the hammer, while the type-wheels are moving.

849,143. DEVICE FOR MOISTENING COLOR-RIBBONS. FRIEDRICH A. LANGEN, Cologne-Riehl, Germany. Filed Feb. 12, 1906. Serial No. 300,562.

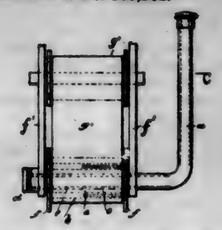

Claim.—A device of the character described comprising a frame, a ribbon-roller mounted in one extremity of said frame, an impervious roller mounted at the other extremity of said frame, a substantially L-shaped tube having its one end perforated and mounted in said frame and forming a bearing for said impervious roller, the stem of said L-shaped tube forming an ink-receptacle, said impervious roller adapted to receive the ink through the perforations of the foot of said L-shaped tube, substantially as described.

849,144. REINFORCED PARTITION. MARTIN W. LAUER, Wilmette, Ill. Filed Sept. 15, 1904. Serial No. 224,613.

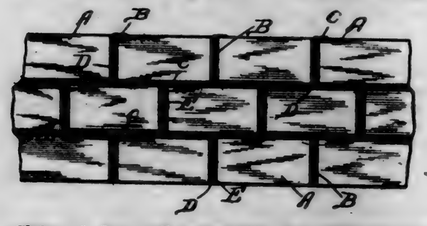

Claim.—1. In a wall construction, the combination of a series of hollow units, a plastic element and metallic elements arranged vertically and securing said units together, each of said metallic elements comprising strips of metal with a bent-over end adapted to rest upon a tile, said strips of such a width and so located as not to obstruct the spaces within the units.

2. In a wall construction, the combination of a series of hollow units, a plastic element and metallic elements arranged vertically and securing said units together, said metallic elements comprising strips of metal of a length greater than the distance between courses and of such a width and so located as not to obstruct the spaces within the units, and having each an end bent so as to form a shoulder adapted to extend horizontally between the courses.

3. In a wall construction, the combination of a series of tiles having passages extending longitudinally therethrough, and placed end to end so as to form a continuous passage through said series, a metallic strip interposed between the meeting ends of two of said tiles, said strip being limited in width so as not to obstruct the passage, said strip being somewhat longer than the vertical distance between courses and having an end bent over upon one of the tiles.

4. In a wall construction, the combination of a series of tiles having passages extending longitudinally therethrough and placed end to end so as to form a continuous passage through said series, a plastic bond between the meeting ends of two of said tiles, a metallic strip arranged between the ends of the tiles and embedded in the plastic bond, said metallic strip extending vertically the height of a single series of tiles and being of such a width and so placed as not to obstruct the passage through the series of tiles.

5. In a wall construction, the combination of a series of tiles having passages extending longitudinally therethrough and placed end to end so as to form a continuous passage through said series, a metallic strip arranged vertically between the meeting ends of two of the tiles and extending vertically the height of a single series of tiles, and a plastic bond adapted to secure the tiles and strips together, said strip and plastic bond being so arranged as not to obstruct the passage through the tiles.

849,145. AUTOMOBILE. JOSEPH LEDWINKA, Philadelphia, Pa., assignor to The Imperial Electric Motor Company, Philadelphia, Pa., a Corporation of Maine. Filed July 10, 1906. Serial No. 325,457.

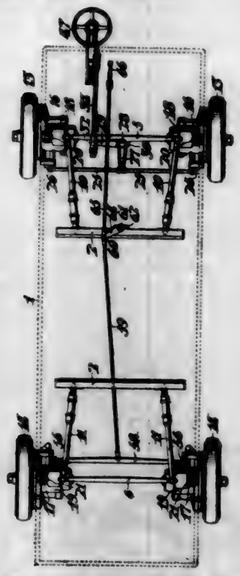

Claim.—1. The combination with a vehicle-wheel; of a stationary axle for said wheel; a motor-casing supporting said axle in rigid relation therewith; a motor carried by said casing comprising an armature-shaft in alinement with said axle; means supporting said armature-shaft independently of said axle; a pinion on said armature-shaft; a counter-shaft provided with a bearing on said motor-casing exterior thereto; a gear-wheel carried by said counter-shaft in engagement with said armature-shaft pinion; a pinion on the end of said counter-shaft adjoining said gear-wheel; and, a gear-wheel carried by said vehicle-wheel in engagement with said counter-shaft pinion, substantially as set forth.

2. The combination with a vehicle-wheel; of a motor-casing carrying a stationary axle for said wheel; a motor carried by said casing, comprising an armature-shaft; means supporting said armature-shaft in said casing independently of said axle; a bearing on said motor-casing exterior thereto; a counter-shaft mounted in said exterior bearing; a pinion on said armature-shaft; a gear-wheel on said counter-shaft engaging said armature-shaft pinion; a pinion on said counter-shaft; and, a gear-wheel on said vehicle-wheel, engaging said counter-shaft pinion, substantially as set forth.

3. The combination with a vehicle-wheel provided with a brake-drum; of a motor-casing carrying a stationary axle for said wheel; a band-brake encircling said drum; a brake-shaft mounted to oscillate on said motor-casing; a head at one end and a lever at the other end of said brake-shaft; eccentric-pins in said head respectively connected with the opposite ends of said brake-band; and, a power-transmitting connection between said motor and said vehicle-wheel, substantially as set forth.

4. The combination with a vehicle-wheel provided with a brake-drum; of a motor-casing carrying a stationary axle for said wheel; a band-brake encircling said drum; a brake-shaft mounted to oscillate on said motor-casing; a head at one end and a lever at the other end of said brake-shaft; eccentric-pins in said head respectively connected with the opposite ends of said brake-band; and, power-transmitting connection between said motor and said vehicle-wheel, comprising an internal gear-wheel in rigid relation with said brake-drum, substantially as set forth.

5. The combination with a vehicle-wheel provided with a brake-drum; of a motor-casing carrying a stationary axle for said wheel; a band-brake encircling said drum; a brake-shaft mounted to oscillate on said motor-casing; a head at one end and a lever at the other end of said brake-shaft; eccentric-pins in said head respectively connected with the opposite ends of said brake-band; a power-transmitting connection between said motor and said vehicle-wheel, comprising an internal gear-wheel in rigid relation with said brake-drum; a counter-shaft provided with a pinion engaging said internal gear-wheel; a gear-wheel in rigid relation with said counter-shaft pinion; and, a pinion on the armature-shaft of said motor, engaging said counter-shaft gear-wheel, substantially as set forth.

6. The combination with a vehicle-wheel; of a motor-casing carrying a stationary axle for said wheel; a motor-armature provided with a commutator mounted to rotate within said casing; openings in opposite sides of said casing local to said commutator; doors for said openings pivoted on said casing, and, a swing-bolt arranged to connect said doors in closed position, substantially as set forth.

7. The combination with a vehicle-wheel; of a motor-casing carrying a stationary axle for said wheel; a motor carried by said casing, comprising an armature-shaft; bearings in unitary relation with said casing, respectively upon opposite sides thereof; a brake-shaft mounted in one of said bearings; a counter-shaft mounted in the other of said bearings; and, a power-transmitting connection between said armature-shaft and vehicle-wheel, substantially as set forth.

8. The combination with a vehicle-wheel; of a motor-casing carrying a stationary axle for said wheel; a motor carried by said casing comprising an armature-shaft in alinement with said axle; means supporting said armature-shaft independently of said axle, comprising bearing-plates respectively at opposite ends thereof; means securing said plates in removable relation with said motor-casing; brush-holder bosses carried by the outer one of said bearing-plates; brush-holders secured to said bosses; and, a power-transmitting connection between said armature-shaft and vehicle-wheel, substantially as set forth.

9. The combination with a vehicle-wheel; of a motor-casing carrying a stationary axle for said wheel; a motor carried by said casing, comprising a bearing-plate at the end of said casing; means securing said plate in removable relation with said casing; brush-holder bosses carried by said bearing-plate; brush-holders secured to said bosses; and, a power-transmiting connection between said armature-shaft and vehicle-wheel, substantially as set forth.

849,146. AUTOMOBILE. JOSEPH LEDWINKA, Philadelphia, Pa., assignor to The Imperial Electric Motor Company, Philadelphia, Pa., a Corporation of Maine. Filed July 10, 1906. Serial No. 325,458.

Claim.—1. In a vehicle, the combination with axle-frames provided with supporting-wheels; of a body-frame; springs independently connecting said axle-frame with said body-frame; spring buffer-rods connecting said axle-frame with said body-frame, each comprising relatively movable members; and, springs tending to maintain said rods of a predetermined length, substantially as set forth.

2. In a vehicle, the combination with a body-frame; of axle-frames provided with supporting-wheels; means resiliently connecting said body-frame and axle-frames, comprising spring buffer-rods, each comprising relatively reciprocatory members; and, means tending to maintain said members in predetermined relation, substantially as set forth.

3. In a vehicle, the combination with a horizontal body-frame, carrying vertical hanger-frames; of vertical axle-frames provided with supporting-wheels; and, a pair of spring buffer-rods local to each wheel, connecting its axle-frame with one of said hanger-frames, respectively above and below the wheel-axis, substantially as set forth.

4. In a vehicle, a spring buffer-rod provided with ball ends respectively in rigid relation with members of the rod which are mounted to reciprocate one within the other; a collar on the inner rod member; and, springs compressed in opposition on opposite sides of said collar, in engagement with abutments in the outer rod, substantially as set forth.

5. In a vehicle, the combination with a body-frame provided with ball-sockets; of an axle-frame provided with ball-sockets; rods provided with ball ends respectively engaged with said body-frame and said axle-frame; each of said rods comprising axially-alined relatively reciprocatory members; and, springs tending to maintain said rod members in predetermined relation, substantially as set forth.

849,147. METAL-CUTTING MACHINE. SAMUEL H. LEWIS, Portsmouth, Va. Filed Feb. 20, 1906. Serial No. 302,034.

Claim.—1. In a device of the character described, the combination with a supporting-frame, of a rotative head a plurality of cylinders formed in said head and a plurality of pistons mounted in said cylinders, cutting-wheels actuated by said pistons and means for supplying fluid under pressure to said cylinders.

2. In a device of the character described, the combination with a rotative head, of means for advancing stock to said head, means for clamping said stock, a plurality of pistons mounted for radial movement in said head, a plurality of cutting-wheels actuated by said piston, means for imparting rotative movement to said head and means for supplying fluid under pressure to the pistons.

3. In a device of the character described, the combination with a rotative head, of cutting members carried by

said head said head having an outwardly-flaring channel formed therethrough the walls of which are corrugated.

4. In a device of the character described, a rotative head having a plurality of cylinders formed therein a plurality of pistons mounted for radial movement in said cylinders, cutting-wheels carried by said pistons and having lateral movement and means for supplying fluid under pressure to said pistons.

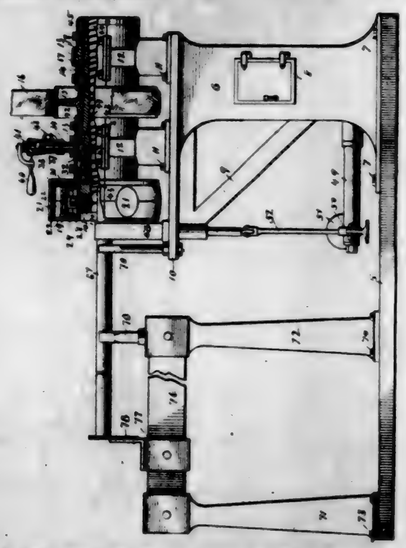

5. In a device of the character described, the combination with a rotative head having a plurality of cylinders formed therein of a plurality of radially-mounted pistons in said cylinders, cutting-wheels carried by said pistons, means for supplying fluid under pressure to said pistons and means for supplying oil to said cutting-wheels.

6. In a device of the character described, a rotative head formed with a longitudinal channel therethrough, said channel having corrugated walls.

7. In a device of the character described, a rotative head formed with a longitudinal channel therethrough, said channel being formed with spirally-corrugated walls.

8. In a device of the character described, a rotative head formed with a longitudinal outwardly-flaring channel therethrough, said channel being formed with spirally-corrugated walls.

9. In a device of the character described, a rotative head formed with a longitudinal channel therethrough and means embodied as an integral part of said head within said channel, for feeding material outwardly therefrom.

10. In a device of the character described, the combination with a rotative head, of a plurality of cutting-blades mounted for radial movement in said head and fluid-pressure-operated means for positively advancing said cutting-blades toward the material to be acted upon.

11. In a device of the character described, a rotative head formed with a longitudinal channel therethrough, a plurality of cutting-wheels mounted within said head and adapted for radial movement toward and within said channel and fluid-pressure-operated means for positively advancing said cutting-wheels toward said channel and the material to be acted upon, therewithin.

12. In a device of the character described, the combination with a rotative head, of a plurality of cutting-knives mounted for radial movement therein, cut-out-controlled means for positively advancing said cutting-knives to the material to be acted upon, said cutting-knives being designed to move away from said material by the centrifugal force of the rotation of said head upon the stoppage of the operation of said last-named means.

849,148. PROTECTIVE DEVICE FOR ELECTRIC CIRCUITS. FREDERIC W. LORD and FREDERIC W. ERICKSON, New York, N. Y. Filed Jan. 28, 1907. Serial No. 354,489.

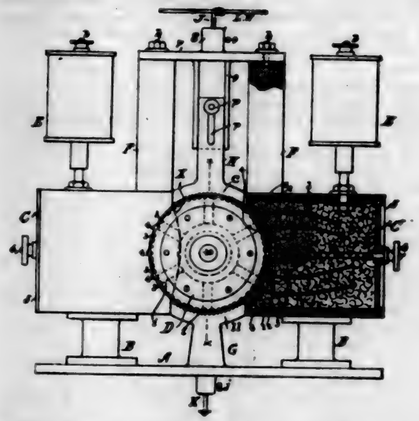

Claim.—1. The combination in a protective device of an air-gap electrode connected to a line-wire, a second air-gap electrode connected to ground, and a rotatable member composed of a plurality of electrodes each adapted to form a bridge between the line-wire and ground-electrodes, with means for partly inclosing the rotating electrodes and providing a film of oil thereover.

2. The combination in a protective device of an air-gap electrode connected to a line-wire, a second air-gap electrode connected to ground, and a rotatable member composed of a plurality of electrodes adapted to form a continuous series of bridges between the line-wire and ground-electrodes, with means for partly inclosing the rotating electrodes and providing a film of oil thereover.

3. The combination in a protective device of an air-gap electrode connected to a line-wire, a second air-gap electrode connected to ground, and a rotatable member composed of a plurality of electrodes adapted to form a continuous series of bridges between the line-wire and ground-electrodes insulated from each other, with insulating-surfaces partly inclosing the rotating electrodes through which oil is conveyed to form a film between said electrodes.

4. The combination in a protective device of an air-gap electrode connected to a line-wire, a second air-gap electrode connected to ground, and a rotatable member upon a shaft with a motor, composed of a plurality of electrodes separated by insulation, each electrode consisting of a ring from which extend two or more poles or arms to the periphery of the member, with curved insulating-surfaces partly inclosing the member through which oil is made to exude and form a film between the poles.

5. The combination in a protective device of an adjustable air-gap electrode connected to a line-wire, a second air-gap electrode connected to ground, and a rotatable member upon a shaft with a motor composed of a plurality of electrodes embedded in insulation each electrode consisting of a ring from which radiate two or more poles or arms to the periphery of the member, with curved insulating-walls partly inclosing the member and forming a side of a chamber from which oil is caused to exude by capillary attraction and form a film between the said poles.

6. The combination in a protective device of an adjustable air-gap electrode connected to a line-wire, a second air-gap electrode connected to ground, and a rotatable member upon a shaft with a motor composed of a plurality of electrodes each of which is adapted to form a bridge between the line and ground electrode serially, each electrode separated from the other by insulating-disks, all of which are held closely together by bolts, with curved insulating perforated walls partly inclosing the rotatable member and forming a side of a chamber from which oil is caused to flow by capillary attraction and form a film between the said poles.

7. The combination in a protective device of a ground-electrode, a rotatable electrode and a line-electrode arranged over each other upon a suitable support with an insulating-chamber on each side of the second electrode whose inner surfaces conform to the contour thereof and are perforated to permit wicks to be drawn therethrough, and an oil-reservoir communication with each chamber, the second or rotatable electrode composed of a plurality of poles extending from central rings and embedded in insulating-disks, all secured by bolts and upon a shaft with a motor, as set forth.

849,149. GLASS-CUTTING DEVICE. NILS A. LYBECK, Kearney, Nebr. Filed June 9, 1906. Serial No. 321,011.

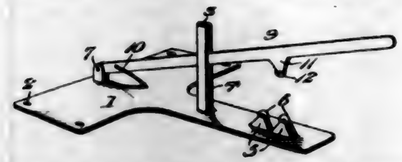

Claim.—In a device of the class described, a base-plate and a vertically-movable lever pivotally connected therewith, a pair of spaced bearings fixed on one of the parts, glass-cutting members journaled in said bearings, a glass-cutting member carried by the other of said parts and adapted for coöperation with the first-named members, and means for guiding the lever in its movements.

849,150. SHOCK-ABSORBER. WILLIAM MAZZOCCO, Plainfield, N. J. Filed Sept. 28, 1906. Serial No. 336,589.

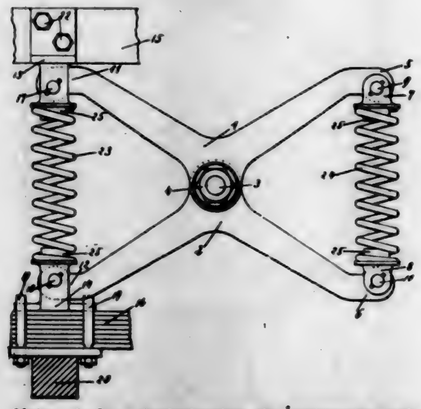

Claim.—1. In a shock-absorber, the combination with a pair of levers fulcrumed together at an intermediate point and opening at one side when closed at the opposite side; of means between said levers yieldingly opposing relative motion in either direction between said levers.

2. In a shock-absorber, the combination with a pair of levers fulcrumed together at an intermediate point and opening at one side when closed at the opposite side, of yielding means between said levers at each side tending to oppose relative motion between the levers in either direction beyond the normal intermediate position.

3. In a shock-absorber, the combination with a pair of levers fulcrumed together at an intermediate point and opening at one side when closed at the opposite side, of springs between said levers opposing relative motion in either direction between said levers.

4. In a shock-absorber, the combination with a pair of levers fulcrumed together at an intermediate point and opening at one side when closed at the opposite side, of springs between the levers at each side tending to oppose relative motion between the levers in either direction beyond the normal intermediate position.

5. In a shock-absorber for vehicles, the combination with a pair of levers fulcrumed together at an intermediate point and opening at one side when closed at the opposite side and means between said levers yieldingly opposing relative motion between the levers in either direction, of suitable means for securing said levers at one side to the vehicle-body and the vehicle-spring respectively.

6. In a shock-absorber, the combination with a pair of levers fulcrumed together at an intermediate point and opening at one side when closed at the opposite side and springs between said levers opposing relative motion between the levers in either direction, of suitable means for securing said levers at one side to the vehicle-body and the vehicle-spring respectively.

7. In a shock-absorber for vehicles, the combination with a pair of levers fulcrumed together at an intermediate point and opening at one side when closed at the opposite side and means between said levers yieldingly opposing relative motion between the levers in either direction, of means for pivotally connecting said levers at one side to the vehicle-body and the vehicle-spring respectively.

8. In a shock-absorber, the combination with a pair of levers fulcrumed together at an intermediate point and opening at one side when closed at the opposite side and springs between said levers opposing relative motion between the levers in either direction, of means for pivotally connecting said levers at one side to the vehicle-body and the vehicle-spring respectively.

9. In a shock-absorber, the combination with a pair of levers fulcrumed together at an intermediate point, and head-pieces pivotally connected with said levers; of springs between said levers fitting into said head-pieces, yieldingly opposing the relative motion in either direction between said levers.

10. In a shock-absorber, the combination with a pair of levers fulcrumed together at an intermediate point, and head-pieces pivotally connected with said levers, of springs between said levers fitting into said head-pieces yieldingly opposing the relative motion in either direction between said levers beyond a normal intermediate point.

11. In a shock-absorber for vehicles, the combination with a pair of levers fulcrumed together at an intermediate point, springs opposing relative motion between the levers in either direction, and head-pieces pivotally connected with said levers and adapted to receive the ends of said springs, of brackets suitably connected with one end of each lever for securing said levers to the vehicle-body and the vehicle-spring respectively.

12. In a shock-absorber for vehicles, the combination with a pair of levers fulcrumed together at an intermediate point, springs opposing relative motion between the levers in either direction beyond a normal intermediate position and head-pieces pivotally connected with said levers and adapted to receive the ends of said springs, of brackets suitably connected with one end of each lever for securing said levers to the vehicle-body and the vehicle-spring respectively.

849,151. HAT. MAX MAYER, New York, N. Y. Filed Jan. 25, 1907. Serial No. 354,073.

Claim.—1. A hat composed of a frame having a crown and rim, a covering for the crown designed to rest on the rim, a retaining-band of elastic material having coöperat-

ing engaging means at its opposite ends, and a ribbon sash of greater length than said band, and also having coöperating engaging means at its ends.

2. A hat composed of a frame having a crown and rim, a covering for the crown designed to rest on the rim, a retaining-band of elastic material having coöperating engaging means at its opposite ends, and a ribbon sash of greater length than said band to which the latter is attached at its ends.

849,152. FLUSHING APPARATUS FOR WATER-CLOSETS, LAVATORIES, &c. MANUEL MENDOZA, Madrid, Spain. Filed July 22, 1904. Serial No. 217,711.

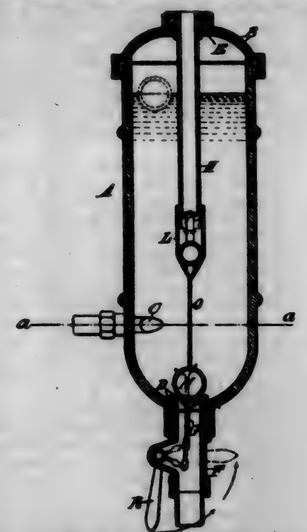

Claim.—A flushing apparatus for water-closets, &c., comprising a casing having an inlet-tube depending within the same, an outlet, and a lateral inlet and a vertical rib opposite said lateral inlet, a valve closing said outlet, an independent valve closing the lower end of the air-inlet tube, and means for unseating the outlet-closing valve and allowing it to automatically reseat itself when the casing is emptied.

849,153. CLASSIFIER. CHARLES W. MERRILL, Lead, S. D. Filed Nov. 25, 1904. Serial No. 234,306.

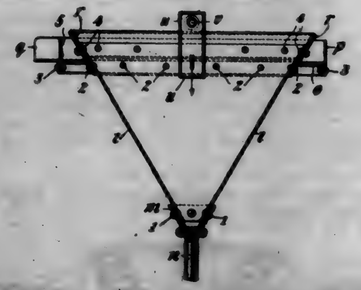

Claim.—1. A classifier provided with an overflow-line of soft substance substantially of the character specified extending around its entire periphery substantially as described.

2. A static classifier consisting of a receiver having a feed wholly within the periphery and said periphery being provided with an overflow-line of soft substance substantially of the character specified substantially as described.

3. A static classifier consisting of a receiver having a main body of metal and a feed wholly within the periphery and said periphery provided with an overflow-line composed of a thin strip of wood with the grain approximately horizontal.

4. A static classifier, consisting of a sheet-iron body, a feed wholly within the periphery, and an overflow-rim composed of a thin strip of wood with the grain approximately horizontal.

5. A static classifier, consisting of a receiver having a sheet-iron body, a bottom discharge, and an overflow-line composed of a thin strip of wood with the grain approximately horizontal.

849,154. SCREEN. FRANK MIKESELL, Jr., Fort Scott, Kans. Filed May 29, 1906. Serial No. 319,356.

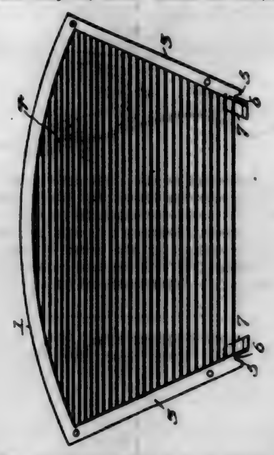

Claim.—The herein-described dry pan-screen comprising two separable sections, the side bars of which are provided with interlocking shouldered tenons and mortises, and a coupling device secured to one of said sections and consisting of a socket member provided with a beveled socket and a tongue member on the other section of the screen provided with a projecting tongue to fit within said socket whereby said screen-sections are rendered separable, as described.

849,155. GAGE. ANDREW MORRISON, Coleman, Tex. Filed Aug. 1, 1906. Serial No. 328,798.

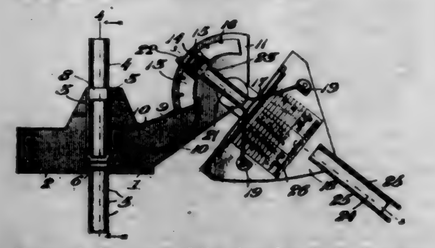

Claim.—1. In a gage of the class described a base having a downturned flange and provided with transverse flanges on its upper side, a slide mounted between the latter flanges and having a spring-clamp at one end, and means for securing the slide at various adjustments.

2. In a gage of the class described a base having a downturned flange, a slide movable transversely upon the upper side of the base and having a spring-clamp at one end, a guide for said slide and means for securing the slide at various adjustments.

3. In a gage of the class described a base having a downturned flange at one edge and provided with upstanding transverse flanges, a notched slide movable between the latter and having a spring-clamp at one end, and a pawl pivoted between upstanding flanges and engaging the notched slide.

4. In a gage of the class described a base having an obliquely-extending neck carrying a segment-plate, a segmental flanged rib upon said plate, a sliding head engaging the flanged rib, a lug pivotally connected with the segment-plate, a gage-plate hingedly connected with the lug and means for adjustably connecting the gage-plate with the sliding head.

5. In a gage of the class described a base having an obliquely-extending neck carrying a segment-plate, a segmental flanged rib upon said plate, a sliding head engaging the flanged rib, means for securing the head at various adjustments upon the flanged rib, a lug pivotally connected with the segment-plate, a gage-plate hingedly connected with the lug and carrying a saw-guide, and means adjustably connecting the gage-plate with the sliding head.

6. In a gage of the class described a base having a downturned flange, adjustable clamping means coöperating with said flange to secure the base in position for operation, a segment-plate connected with the base by an obliquely-disposed neck, a gage-plate connected with the segment-plate for movement in various planes at right angles to one another, means for securing the gage-plate in position at various adjustments, and a saw-guide connected with the gage-plate.

849,156. RESILIENT VEHICLE-TIRE. FRANK MORRIS, Alliance, Ohio. Filed Oct. 9, 1905. Serial No. 281,985.

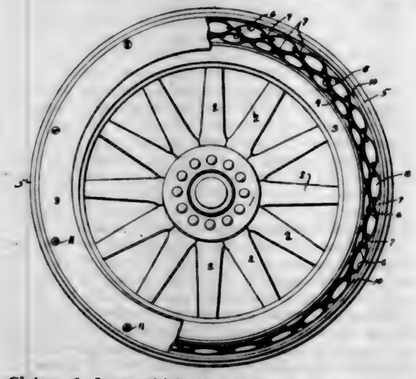

Claim.—1. In a vehicle-tire of the class described, the combination of a felly, a tire fixed thereto, a tread-tire formed of a diameter greater than the felly-tire, said tread-tire provided with an annular shoulder, and an integral right-angled flange, adapted to fit one edge of the fixed tire and felly, a ring-plate adapted to fit the annular shoulder of the tread-tire, the felly-tire and felly, respectively, and secured to said right-angled flange, and a series of elliptic springs linked together and located between the felly-tire and tread-tire, substantially as and for the purpose set forth.

2. In a tire of the class described, the combination of a tire secured to the felly of a wheel, an outer or tread tire formed of a diameter greater than the diameter of the wheel-tire, two series of elliptic springs linked together and the springs and links alternated, substantially as and for the purpose specified.

849,157. ENGINEER'S ALARM. EDWARD MCCLINTOCK, Merriam Park, Minn. Filed Nov. 6, 1905. Serial No. 285,986.

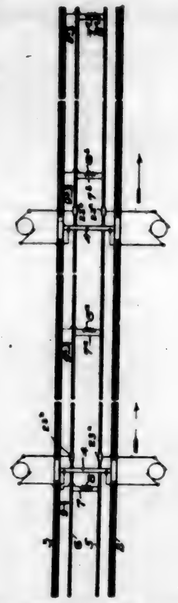

Claim.—1. The combination with a track-circuit having a pole-changer, of good-order and alarm circuits having signals, said good-order circuit being normally closed and said alarm-circuit normally open, sources of electrical energy for said circuits, a throttle-valve, and means connected with said alarm-circuit and arranged to be actuated when the circuit is closed to close said throttle-valve, said means acting to stop both trains if approaching each other and only one train if following each other, substantially as described.

2. The combination with a track-circuit having a pole-changer, of good-order and alarm circuits having signals, said good-order circuit being normally closed and said alarm-circuit normally open, sources of electrical energy for said circuits, throttle and air-brake valves, and means connected with said alarm-circuit and arranged to operate said throttle and air-brake valves to stop the train when said alarm-circuit is closed, said means acting to stop two trains if approaching each other and only one if following each other, substantially as described.

3. The combination with locomotive throttle-valves, of an alarm-circuit normally open and having a source of electrical energy, and means connected with said alarm-circuit for closing a throttle-valve automatically when said alarm-circuit is closed, said means acting to stop both trains if approaching each other and only one if following each other.

4. The combination with locomotive throttle-valves and air-brake valves, of an alarm-circuit normally open, and means connected with said alarm-circuit for automatically closing a throttle-valve and operating said brake-valve to set the brakes when said alarm-circuit is closed, said means acting to stop both trains if approaching each other and only one if following each other.

5. The combination with the main track-rails, of auxiliary rails divided into insulated sections or blocks, the auxiliary rail of each block on one side being in circuit with the auxiliary rail on the other side of the adjoining block, resistance-coils connecting the track-rails on one side with the auxiliary rails on both sides, a track-circuit, good-order and alarm circuits, the former being normally

closed and the latter normally open, and sources of electrical energy for said circuits.

6. The combination with the main track-rails, of auxiliary rails divided into insulated sections or blocks, a track-circuit, good-order and alarm circuits, the former being normally closed and the latter normally open, sources of electrical energy for said circuits, and the auxiliary rails on one side being in circuit with the auxiliary rails of the adjoining blocks on the other side and with the track-rails on that side whereby when two trains enter the same block moving in the same direction the left-hand alarm-circuit of the forward train will be closed and the right-hand alarm circuit of the rear train will be closed to indicate to the engineer of each train the position of the other train.

7. The combination with the main track-rails, of auxiliary rails divided into insulated sections, a track-circuit, good-order and alarm circuits, the former normally closed and the latter normally open, sources of electrical energy for said circuits, and the auxiliary rails on one side being in circuit with the auxiliary rails of the adjoining blocks on the other side and with the track-rails on that side whereby when two trains enter the same block moving in opposite directions the right-hand alarm-circuit of each train will be closed and indicate to the engineer of each train the position and direction of movement of the other train, and an automatic stop device operatively connected with the engine throttle-valve and having an operating means connected with the right-hand alarm-circuit, whereby both trains will be stopped when moving in opposite directions and the rear train will be stopped when they are moving in the same direction.

8. The combination with the main track-rails, of auxiliary rails divided into insulated sections or blocks, a track-circuit, good-order and alarm circuits having signals, the former being normally closed and the latter normally open, sources of electrical energy for said circuits, the auxiliary rails on one side being in circuit with the auxiliary rails of the adjoining block on the other side and with the track-rails on that side whereby, when two trains enter a block moving in the same direction, the left-hand alarm-circuit of the forward train and the right-hand alarm-circuit of the rear train will be closed and indicate to each engineer the position of the other train, and means controlling the throttle and air-brake valves and connected with the right-hand alarm-circuit of each train whereby when said circuit is closed the rear train will be automatically stopped until the forward one has passed on out of the block, substantially as described.

849,158. MACHINE FOR TREATING HIDES, SKINS, AND LEATHER. GEORGE B. NORGRAVE, Peabody, Mass., assignor to Peabody Leather Machinery Company, Peabody, Mass., a Corporation of Maine. Filed Oct. 6, 1906. Serial No. 337,673.

Claim.—1. In a machine for treating hides, skins and leather, a table or work-support, an endless carrier to which said table or support is pivotally connected, said carrier being movable in a substantially triangular path having a substantially vertical portion at the front of the machine, an upwardly-inclined portion extended from the front toward the rear of the machine, and a downwardly-inclined portion extended from the rear toward the front of the machine, operating-tools at the front of the machine located on opposite sides of the vertical path of the table, operating-tools located at the upper portion of the machine on opposite sides of the upwardly-inclined path of the table, and means to move said carrier and its attached table, substantially as described.

2. In a machine for treating hides, skins and leather, a table or work-support, an endless carrier to which said table or support is pivotally connected, said carrier being movable in a substantially triangular path having a substantially vertical portion at the front of the machine, an upwardly-inclined portion extended from the front toward the rear of the machine, and a downwardly-inclined portion extended from the rear toward the front of the machine, operating-tools at the front of the machine located on opposite sides of the vertical path of the table, operating-tools located at the upper portion of the machine on opposite sides of the upwardly-inclined path of the table, means to render fixed or stationary the operating-tools located on the inner side of the path of movement of the table, and means to move said carrier and its attached table.

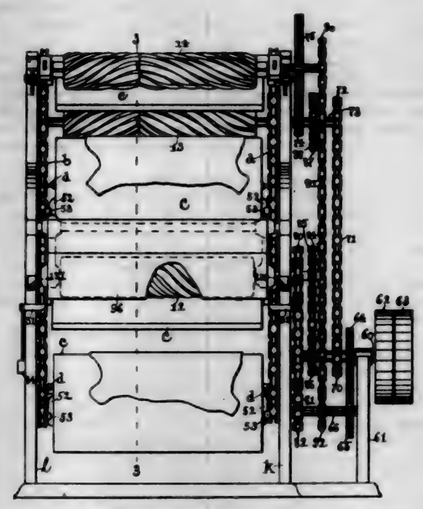

3. In a machine for treating hides, skins and leather, a table or work-support, an endless carrier to which said table or support is pivotally connected, said carrier being movable in a substantially triangular path having a substantially vertical portion at the front of the machine, an upwardly-inclined portion extended from the front toward the rear of the machine, and a downwardly-inclined portion extended from the rear toward the front of the machine, operating-tools at the front of the machine located on opposite sides of the vertical path of the table, operating-tools located at the upper portion of the machine on opposite sides of the upwardly-inclined path of the table, means located beyond the second set of operating-tools to engage the hide or skin on the table and resist movement of said hide or skin on the table under the influence of said second set of tools, and means to move said carrier and its attached table, substantially as described.

4. In a machine for treating hides, skins and leather, a table or work-support, an endless carrier to which said table or work-support is pivotally connected, said carrier being movable in a substantially vertical path at the front of the machine and in an upwardly-inclined path from the front to the rear of the machine, whereby an operator at the front of the machine may shift the hide or skin on its table after it has been acted upon by one set of operating-tools and before being acted upon by a second set of tools, operating-tools at the front of the machine located on opposite sides of the vertical path of the table, operating-tools located at the upper portion of the machine on opposite sides of the upwardly-inclined path of the table, and means to move said carrier and its attached table, substantially as described.

5. In a machine for treating hides, skins and leather, a table or work-support, an endless carrier to which said table or support is pivotally connected intermediate of the ends of said table, said carrier being movable upwardly in a substantially vertical path at the front of the machine and downwardly in an inclined path toward said vertical path, and means on said endless carrier coöperating with means on said table to govern the table in its movement from said inclined path into said vertical path, whereby the front of the table projects beyond the path of movement of the endless carrier and is turned upward in the arc of a circle so that the back of the table is presented to the operator to permit the portion of the hide or skin placed on the back of the table to be smoothed out by the operator while said table is assuming a substantially vertical position, means to act on the hide or skin while on said table, and means to move said carrier and table, substantially as described.

6. In a machine for treating hides, skins and leather, a table or work-support, an endless carrier to which said table or work-support is pivotally connected, said carrier being movable in a substantially vertical path at the front of the machine and in an upwardly-inclined path from the front to the rear of the machine, whereby an operator at the front of the machine may shift the hide or skin on its table after it has been acted upon by one set of operating-tools and before being acted upon by a second set of tools, operating-tools at the front of the machine located on opposite sides of the vertical path of the table, operating-tools located at the upper portion of the machine on opposite sides of the upwardly-inclined path of the table, a holding device to engage the hide or skin and prevent its being drawn off of said table by one tool of said second set, and means to move said carrier and its table, substantially as described.

7. In a machine for treating hides, skins and leather, a table or work-support, an endless carrier to which said table or work-support is pivotally connected, said carrier being movable in a substantially vertical path at the front of the machine and in an upwardly-inclined path from the front to the rear of the machine, whereby an operator at the front of the machine may shift the hide or skin on its table after it has been acted upon by one set of operating-tools and before being acted upon by a second set of tools, operating-tools at the front of the machine located on opposite sides of the vertical path of the table, operating-tools located at the upper portion of the machine on opposite sides of the upwardly-inclined path of the table, yielding devices located on opposite sides of the rearwardly-inclined path of the table to engage the hide or skin while the latter is being acted upon by the second set of operating-tools, and means to move said carrier and its attached table.

849,159. FUSE-CLIP. FREDERICK R. PARKER, Chicago, Ill., assignor to Frank B. Cook, Chicago, Ill. Filed Mar. 14, 1906. Serial No. 306,037.

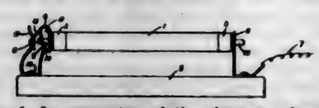

Claim.—1. In apparatus of the character described, a spring member having a tongue portion near one end thereof and a hole near the other end thereof, clamping means near one end of the spring member and formed out of same, and a fuse having a terminal connected with the said clamping means whereby it is securely clamped in place, the said tongue portion being formed to be inserted through the said hole and coöperating therewith to grip a circuit-conductor to connect same in circuit with the fuse.

2. In apparatus of the character described, a spring member having two holes and a tongue portion near one end and a hole near the other end, a fuse having a terminal inserted through the said two holes and depressed whereby the fuse-terminal is placed under a leverage, and the tongue portion being formed to be inserted through the third-mentioned hole and coöperating therewith to grip a circuit-conductor to connect same in circuit with the fuse.

849,160. WET-STONE CAR. ALBERT A. PAULY, Youngstown, Ohio. Original applications filed Jan. 22, 1906, Serial Nos. 297,167 and 297,168. Divided and this application filed Feb. 20, 1906. Serial No. 302,112.

Claim.—A car of the type described comprising a body, shelving arranged within said body, a steam connection carried by said body for conveying steam to the interior thereof, a rectangular framing of perforated pipes supported on the bottom of the car, said framing being in

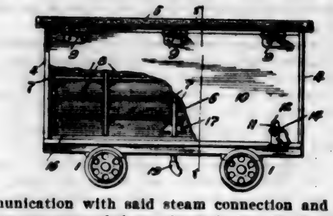

communication with said steam connection and arranged that one or more of the perforated pipes lie directly underneath the shelf in the car, substantially as described.

849,161. HOOK AND EYE. MARY J. RATTIGAN, Pittsburg, Pa. Filed Dec. 27, 1905. Serial No. 293,508.

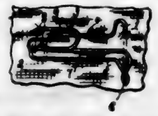

Claim.—A combined hook and safety-pin comprising a single piece of wire bent to provide a transversely-extending link constituting a pin for the attachment of the device to a fabric, a shank portion formed of two strands of wire, said two strands of wire being bent so as to form means for engaging the pin and locking the same, one of said strands being bent to form a resilient member extending across the line of travel of the eye and adapted to hold said eye within the hook and a support for said resilient member, said support extending transversely of the device and being adapted to clasp a piece of fabric inserted between it and one of the strands of the hook, said support being a continuation of the pin member and adapted to clasp the fabric throughout its entire length.

849,162. GAS-GENERATOR. ROBERT REID, South Yarra, Victoria, Australia. Filed Sept. 19, 1905. Serial No. 279,180.

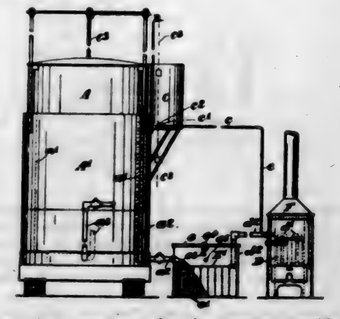

Claim.—1. A generator for the purpose specified composed of a nest or series of telescopic tubes, a supporting-body therefor having ports or passages for connecting the annular passages between the tubes of each adjoining pair together and with the upper ends of each adjoining pair of inner tubes excepting the inlet and outlet ones connected by double or U-shaped bends and with the lower open end of each inner tube terminating just within the solid end of the outer tube substantially as described and shown.

2. A generator for the purpose specified constructed of depending telescopic tubes arranged and supported in the

heated chamber of a furnace or the like in such a manner that the oil in its passage therethrough takes a sharp turn at each end of the tubes and exterior elbows connecting certain tubes substantially as and for the purpose specified.

3. A generator for the purpose specified consisting in combination of a nest or series of telescopic tubes D' D^2, a supporting plate or body D^3 provided with ports or passages d and holes to receive the end of tubes D' D^2, and the vent-holes d^2 the double or U-shaped bends d', the oil-inlet pipe c and the gas-outlet pipe d^3 substantially as described and shown.

4. In a gas-generator, the combination of a heating-chamber, a transverse supporting member therein having draft-openings therethrough, series of tubes having closed outer ends and having their inner ends secured in said member, said member having gas-passages from tube to tube, open-end tubes arranged within said first-mentioned tubes and extending through said member and connected together in pairs at the exterior of said member.

849,163. LOOM. JAMES BIGBY, Paterson, N. J., assignor of one-half to William Holt, Paterson, N. J. Filed May 19, 1906. Serial No. 317,664.

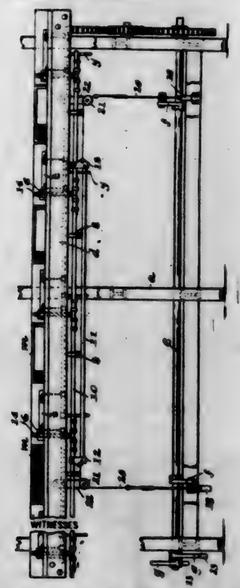

Claim.—1. In a loom, the combination of the batten, and a shuttle-actuating means comprising a series of spring picking-fingers, pickers arranged on said picking-fingers, and a support for said picking-fingers movable parallel with the batten, substantially as described.

2. In a loom, the combination of the batten, and a shuttle-actuating means comprising a sliding bar extending parallel with the batten and movable longitudinally, spring picking-fingers detachably secured to said bar, and pickers arranged on said fingers, substantially as described.

3. In a loom, the combination of the batten and a shuttle-actuating means comprising a sliding bar extending parallel with the batten and movable longitudinally, wire picking-fingers having loop-shaped portions extending upwardly from said bar, and pickers arranged on the loop-shaped portions of said fingers, substantially as described.

4. In a loom, the combination of the batten having a vertical slot extending approximately from one end thereof to the other, pickers, devices for actuating said pickers engaged therewith and projecting through said slot, and a plate having alined slots receiving said devices, said plate being removably secured on the top of the batten whereby to be interchangeable with another or other plates having slots of different lengths, substantially as described.

849,164. PEARL NECKLACE. BERNHARD ROEDE, West Hoboken, N. J. Filed Aug. 17, 1906. Serial No. 331,020.

Claim.—1. A pearl or other necklace consisting of a connecting-cord provided with knots, and pearls, or other component parts, provided with a center bore having an enlarged drill hole or cavity at one end of the bore.

2. A pearl or other necklace consisting of a connecting-cord provided with knots on the same, and a plurality of pearls, each provided with a longitudinal center bore and an enlarged drill hole or cavity at each end of the bores in which the knots of the connecting-cord are located.

849,165. DRIP-PAN. ANNIE C. SCHNEIDER, Bridgeville, Pa. Filed Dec. 11, 1906. Serial No. 347,315.

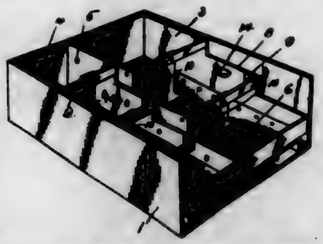

Claim.—1. In a drip-pan, an outer receptacle or pan, two inner drip-pans fitted within the outer receptacle or pan and being of different sizes or capacities, the said inner pans having stepped side walls, straps secured to said stepped side walls, depending feet carried by said straps resting on the bottoms of said inner pans, said straps and feet forming partitions to separate the inner pans into compartments, and means for suspending the inner pans above the bottom of the outer pan.

2. In a drip-pan, an outer pan or receptacle, an inner pan fitted therein and having a perforated bottom supported above the bottom of the outer pan, the said inner pan having stepped side walls, and straps connected to the stepped side walls separating the said inner pan into a plurality of communicating compartments.

849,166. PUMPING-JACK. ED SHAUAN, Lima, Ohio. Filed Nov. 10, 1906. Serial No. 342,844.

Claim.—1. In a pumping-jack, a traveling carriage, a beam for operating the polish-rod, connected with said carriage for rocking motion relatively thereto, and a swinging fulcrum member for the beam.

2. In a pumping-jack, a traveling carriage, a beam connected with the carriage for rocking motion relatively thereto, a polish-rod operable by and separately associated with the beam, and a swinging fulcrum member for said beam.

3. In a pumping-jack, a polish-rod having a cross-head, a beam provided with hooks between which the polish-rod is located, and said hooks supporting said cross-head, a traveling carriage to which said beam is connected for rocking movement, and a swinging fulcrum member for the beam.

4. In a pumping-jack, a traveling carriage, a beam connected at one end with the carriage for rocking motion relatively thereto, a swinging fulcrum member acting against the beam between the ends thereof, and means on the beam opposite the end thereof connected with said carriage for elevating a polish-rod.

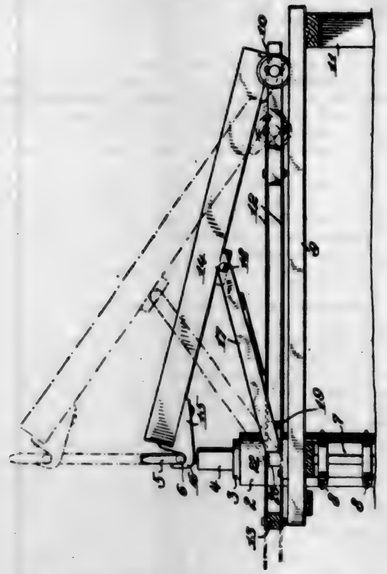

5. In a pumping-jack, a beam having means for operating a polish-rod, a movable support for the beam, and a movable fulcrum for said beam.

6. In a pumping-jack, a beam having means at one end for operating a polish-rod, and a floating fulcrum between the ends thereof, and a movable support to which the opposite end of said beam is connected.

7. In a pumping-jack, a traveling carriage, a beam connected at one end with said carriage for rocking movement relatively thereto, means upon the opposite end of said beam for elevating a polish-rod, and a swinging member supported by stationary bearings and pivotally associated with the beam between the ends thereof.

8. In a pumping-jack, a traveling carriage, a beam connected at one end with the carriage for rocking movement relatively thereto and having means at the opposite end for elevating a polish-rod, studs extending oppositely from the beam between the ends thereof, stationary pivots, and a ladder-like member, the ends of the sides of which are notched to fit said pivots and studs respectively.

9. In a pumping-jack, a horisontally-traveling carriage, a beam for operating the polish-rod in a perpendicular direction, connected with said carriage for rocking motion relatively thereto, and a swinging fulcrum member for the beam situated below the same.

10. In a pumping-jack, the combination of a polish-rod, a beam separably connected with said polish-rod for elevating the same, a traveling carriage to which the beam is flexibly connected, and a swinging fulcrum member supported for movement about a stationary axis and pivotally connected with said beam.

11. In a pumping-jack, a traveling carriage, a beam connected at one end with said carriage for rocking motion relatively thereto, and provided at the opposite end with means for separately engaging a polish-rod to move the same, and a swinging fulcrum member below the beam and engaging the latter between its ends.

849,167. WINDOW-SHADE FIXTURE. SOREN R. SKOV, Cleveland, Ohio, assignor of one-half to Terrance Scullin, Cleveland, Ohio. Filed Dec. 31, 1906. Serial No. 350,126.

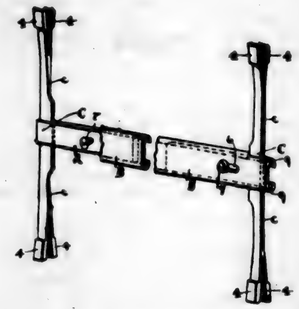

Claim.—1. As a new article of manufacture, a window-shade fixture having a rigid cross-bar and arms fixed rigidly in the ends of said bar and provided with divided spring-bearings at their ends.

2. A window-shade fixture of substantially H-shape having flat spring-arms provided with split outer extremities adapted to bear laterally against the walls of the window-casing.

3. A window-shade fixture of substantially H shape comprising a rigid cross-bar and flat spring-arms rigidly fixed in the ends of said bar and each of said arms having flat outer springs in the same vertical plane as said bar adapted to press laterally against the walls of the window-casing.

4. A window-shade fixture comprising a cross-bar and oppositely-projecting flat spring-arms at each end thereof fixed rigidly in the ends of said bar and having divided spring-bearings at their outer ends.

5. A window-shade fixture comprising a rigid cross-bar and substantially T-shaped end pieces having their stems fixed in said bar and provided with spring-arms in the same vertical plane as the ends of said bar, thereby providing three points of bearing at each side of the fixture with the immediate ends of the cross-bar as the central bearings.

6. A window-shade fixture consisting of a rigid tubular cross-bar and two substantially T-shaped members within the ends of said bar and means to adjustably fix said members in working position, and said members having split spring ends adapted to engage frictionally in the window-casing.

7. A window-shade fixture having a substantially tubular cross-bar, substantially T-shaped end members adapted to be rigidly fixed in said bar and having their outer edges substantially in line with the end edges of the bar; and the arms of said end members provided with split spring-bearings at their outer extremities.

849,168. BOOMERANG-THROWER. GEORGE E. SMITH and DANIEL E. BRINSMADE, Derby, Conn. Filed Dec. 4, 1905. Serial No. 290,824.

Claim.—A boomerang-gun consisting of a piece of suitable material having a flat top to support the boomerang, and a band of elastic material secured at one end to the flat top forward of the position for the boomerang and adapted to have its bight caught over the rear edge of the gun and to be slipped off at, and to fly forward along, the adjacent side edge of the gun.

849,168.

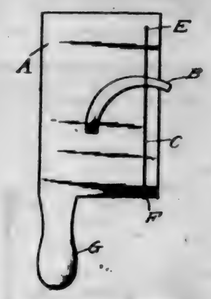

849,169. STOCK-FEEDER. GEORGE J. STEIN, Mount Carmel, Pa. Filed June 27, 1906. Serial No. 323,611.

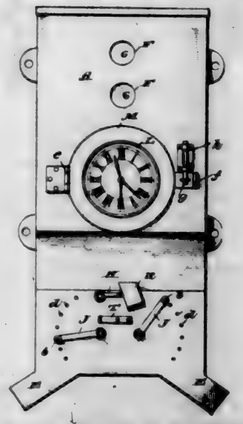

Claim.—1. In a stock-feeder, the combination of a casing having a hopper, a valve arranged to control the discharge of the hopper, spouts arranged to receive from the discharge of the hopper when the valve thereof is opened, separate valves controlling communication between the discharge of the hopper and the spouts, coöperating means on the valves and the casing, whereby each valve may be adjustably fixed independent of the other, and time-controlled mechanism for releasing the valve controlling the discharge of the hopper at a predetermined time.

2. In a stock-feeder, the combination of a casing containing a hopper and a chamber; the said chamber being isolated from the hopper, a subcasing communicating with and extending down from the bottom of the chamber and having an opening in its side adjacent to its lower end, a lever extending lengthwise of and fulcrumed at an intermediate point of its length in the subcasing and having a toe on its lower arm and also having its upper arm extended up into the casing, a valve controlling the discharge of the hopper and having an arm arranged to be engaged by the said toe of the lever, a hinged door for closing the front of the chamber, and a clock carried by the door and having a rotary device arranged when the door is closed to assume a position in readiness to engage the upper arm of the lever and also arranged to rock the lever and release the valve at a predetermined time.

849,170. ELECTRIC SIGNALING. JACOB B. STRUBLE, Wilkinsburg, Pa., assignor to The Union Switch & Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Dec. 3, 1902. Serial No. 133,711.

Claim.—1. The combination with a track-circuit for signaling purposes, of an alternating-current supply therefor, a translating device responsive to alternating current in said circuit and unresponsive to a modification of the alternating current and means for modifying the alternating current.

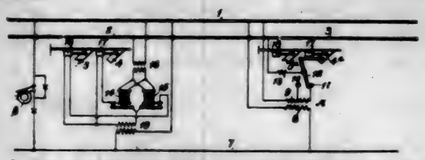

2. The combination with a track-circuit for signaling purposes, of a source of alternating-current supply, a translating device responsive to an alternating current in said circuit and unresponsive to a modification of the alternating current, and means for modifying the alternating current.

3. The combination with a track-circuit for signaling purposes, of an alternating-current supply, a translating device responsive to the alternating current in said circuit and unresponsive to a modification of the alternating current, means for modifying the alternating current, and means for preventing direct current effectively operating the translating device.

4. A signaling system having in combination a series of track-sections each comprising a track-circuit, an alternating-current supply for each track-circuit, a translating device for each track-circuit, signals for the track-sections having operating mechanisms, and means for modifying a characteristic of the alternating current in a track-circuit.

5. In combination, two track-sections, each comprising a track-circuit including a source of alternating current and a translating device which is responsive to the usual alternating current of the track-circuit to control one operation of both a home and distant signal and responsive only to control the home signal when the usual alternating current of the track-circuit is changed, a home and distant signal for each track-section, and means operated by a home signal when moving to its danger position for changing the alternating current in the track-circuit controlling its distant signal, whereby the translating of that track-circuit will be unresponsive to control the distant signal.

6. In a signaling system, the combination of a series of track-sections each comprising a track-circuit, a source of alternating current for each track-circuit, a home signal and operating mechanism for one track-section, a distant signal and operating mechanism at a preceding track-section, a translating device in each track-circuit for controlling the operation of each signal-operating mechanism, and means for changing a characteristic of the alternating current in the track-circuit for the distant signal to render the translating device of that track-circuit responsive and unresponsive thereto.

7. In a signaling system, the combination of a series of track-sections each comprising a track-circuit, a source of alternating current for each track-circuit, a home signal and operating mechanism for one track-section, a distant signal and operating mechanism at a preceding track-section, a translating device in each track-circuit for controlling the operation of each signal-operating mechanism, and means operated from the home signal for changing the alternating current in the track-circuit of the distant signal to render the translating device of that track-circuit responsive and unresponsive thereto to control the home and distant signals.

8. In a signaling system, the combination of a series of track-sections each comprising a track-circuit, a source of alternating current for each track-circuit, a home signal and operating mechanism for one track-section, a distant signal and operating mechanism for the home signal at a preceding track-section, a translating device in each track-circuit for controlling the operation of each signal-operating mechanism, and means in each track-circuit for preventing the effective operation of a translating device by any direct current in the track-circuit.

9. In a railway-signaling system, the combination of a series of track-sections each comprising a track-circuit, a source of alternating current for each track-circuit, a home and distant signal located at the entrance of each track-section and each signal provided with an operating mechanism, a translating device in each track-circuit for controlling circuits for the operating mechanisms of the signals, said translating device being responsive in its action to the alternating current in the track-circuit to control the circuits of both operating mechanisms and responsive to a change in the alternating current in the track-circuit to control the circuits of one of the operating mechanisms, and means for changing the alternating current in the track-circuit.

10. In a railway signaling system, the combination of a series of track-sections each comprising a track-circuit, a source of alternating current for each track-circuit, a home and distant signal located at the entrance of each track-section, and each signal provided with an operating mechanism, a translating device in each track-circuit for controlling circuits for the operating mechanisms of the signals, said translating device being responsive in its action to the alternating current in the track-circuit to control the circuits of both operating mechanisms and responsive to a change in the alternating current in the track-circuit to control the circuits of but one of the operating mechanisms, and means operated by a home signal of one track-section for changing the alternating current in a preceding track-circuit.

11. In a signaling system, the combination with a home signal, a track-circuit including a source of alternating current and a relay responsive to the alternating current for controlling the home signal, a distant signal for the home signal, a track-circuit including a source of current, a relay responsive to the current from said source for controlling the distant signal, and means under the control of the track-circuit for the home signal for changing the alternating current in the track-circuit for the distant signal to which change in current the relay is not responsive.

12. In a signaling system, the combination with a home signal, a track-circuit including a source of alternating current and a relay responsive to the alternating current for controlling the home signal, a distant signal for the home signal, a track-circuit including a source of current and a relay responsive to the current from said source for controlling the distant signal, and means under the control of the track-circuit for the home signal for effecting the source of current in the circuit for the distant signal whereby its relay will or will not respond to control the distant signal.

13. The combination with a plurality of railway-signals located alongside a railway-track, apparatus for controlling the said signals which is selectively responsive to a current characteristic consisting in a periodic variation to control one signal and also controllable by electric current to perform another operation, and means for producing the current of periodic characteristic and the current for effecting the second operation, such apparatus being controllable by the current-producing means through suitable current-transmitting means including a conductor common to the current of periodic characteristic and the current for effecting the second operation.

14. In a block-signal system, the combination with track-circuit sections and signals for said sections; of a source of energy connected at one end of each of said sections; a relay connected to the other end of each of said sections, comprising a stationary field and a rotating armature capable of three functional positions; means for controlling the functional positions of said armature; and means for making said signals give indications corresponding to the said three positions of said armature.

15. In a block-signal system the combination with track-circuit sections and signals for said sections; of a source of energy connected at one end of each of said sections; a relay connected at the other end of each of said sections, comprising a stationary field and a rotating armature capable of three functional positions; means for controlling the functional positions of said armature; means for controlling one of said signals by one of said functional positions of said armature; and means for controlling two of said signals by another functional position of said armature.

16. In a block-signal system, the combination with track-circuit sections and signals for said sections, of a source of energy connected to one end of each of said sections, a relay connected at the other end of each of said sections comprising a stationary field and a rotating armature capable of three functional positions, means for controlling said functional positions of said armature, means for operating one of said signals to the "proceed" position by one of said functional positions of said armature, means for operating two of said signals to the "proceed" position by another functional position of said armature and means for operating both of said signals to the "stop" position by the third functional position of said armature.

17. In a signaling system for railways, the combination with block-sections, a home and distant signal for each block-section, a source of alternating current and a relay for each block-section, said relay comprising a field and an armature having three functional positions, each of which positions effects a control of one or both of the railway-signals.

18. In a signaling system for railways, the combination with block-sections, a home and distant signal for each block-section, a source of alternating current and a relay for each block-section, the relay comprising a field and an armature capable of three positions in each of which positions a control of one or both of the signals is effected, and means controlled by a home signal for producing changes in the alternating current to cause the armature to assume two of its three positions.

19. The combination with a relay for controlling a plurality of signals comprising a field and an armature, the latter having a plurality of functional positions in each of which one or more signals are controlled, and said armature movable to two of its positions by an alternating current and a change of characteristic thereof, and means for supplying the alternating current to the relay and changing a characteristic thereof.

849,171. ELECTRIC SIGNALING. JACOB B. STRUBLE, Wilkinsburg, Pa., assignor to The Union Switch & Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Dec. 3, 1902. Renewed Jan. 17, 1906. Serial No. 296,445.

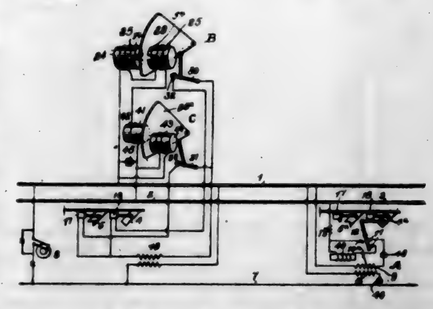

Claim.—1. In a signaling apparatus for railways, the combination of a source of alternating currents, a track-circuit for said currents, two signaling mechanisms operative by said track-circuit currents, and means for changing the normal phase relation of the voltage with the current for effecting an operation of one of said mechanisms and not the other, substantially as set forth.

2. In a signaling apparatus for railways, the combination of a source of alternating currents, a track-circuit for said currents, a signaling mechanism operative by such track-circuit currents regardless of the phase relation of the voltage with the track-circuit current, a signal mechanism operative by such currents on a displacement of the phase relation of the voltage with the current and means

for effecting such phase displacement, substantially as set forth.

3. In a signaling system, the combination of a home signal, a distant signal for the home signal, a track-circuit including a relay and source of alternating current for controlling each signal, and means for changing the phase of alternating current in one track-circuit by the other track-circuit.

4. In a signaling system, the combination of a home and distant signal located at the same point, a single track-circuit and two relays for controlling the home and distant signals, a source of alternating current for said track-circuit to which one of said relays is responsive to operate one of said relays and not the other, and a second source of current for said track-circuit of different phase relation and to which the other of said relays is responsive.

5. In a signaling system, the combination of a plurality of signals, a track-circuit and a relay device for controlling both of said signals, and means for supplying alternating currents of different phase relation to said track-circuit to control the signals at different times.

849,172. ELECTRIC SIGNALING. JACOB B. STRUBLE, Wilkinsburg, Pa., assignor to The Union Switch & Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Dec. 3, 1902. Renewed Jan. 17, 1906. Serial No. 296,446.

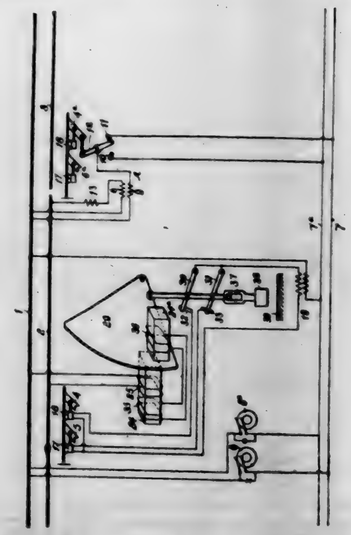

Claim.—1. In a signaling system for railways, the combination of sources of alternating currents of different frequencies, a signal-controlling mechanism operative by such currents, and means for effecting a change from one alternating current to the other in the operation of said signal-controlling mechanism.

2. In a signaling system for railways, the combination with a track-circuit, of sources of alternating currents, a translating device operative by such currents for controlling signal-circuits, a means for effecting a change in the frequency of alternations of said currents in said track-circuits.

3. In a signaling system, the combination of a series of track-sections, each comprising a track-circuit, a source of alternating current for each of said track-circuits of different frequencies, a translating device in circuit with each track-circuit for controlling signaling-circuits, said translating device being responsive to an alternating current of one frequency to control one signal-circuit and responsive to an alternating current of a different frequency to control a second signal-circuit, and means for effecting a change in the alternating current from one frequency to a different frequency.

4. In a signaling system, the combination of a series of track-sections, each comprising a track-circuit, a source of alternating current for each of said track-circuits of different frequencies, a translating device in circuit with each track-circuit for controlling signaling-circuits, said translating device being responsive to the alternating current of one frequency to control one signal-circuit, and responsive to an alternating current of a different frequency to control a second signal-circuit, and means for effecting a change in the source of alternating current from one frequency to a different frequency.

5. In a signaling system, the combination of a series of track-sections, each comprising a track-circuit, two signals provided for each track-section having their operated mechanisms included in separate signal-circuits, sources of alternating current for each of said track-circuits of different frequencies, a translating device in circuit with each track-circuit for controlling the signaling-circuits, said translating device being responsive to an alternating current of one frequency to control one signal-circuit and responsive to an alternating current of a different frequency to control a second signal-circuit, and means operated by one of the signals for effecting a change in the alternating-current frequency in the track-circuit of the preceding track-section.

6. In a signaling system, the combination of two block-sections, a source of alternating currents connected to the track-circuits of said sections, signals controlling one of said sections and governed by the currents in the track-circuit, and means controlled by a signal of one section for changing the frequency of alternations of the current in the track-circuit of the other section.

7. In a signaling system for railways, the combination of a series of track-sections, a track-circuit for each track-section, signal mechanisms controlled from the track-circuits, two sources of alternating current for supplying alternating current to the track-circuits, and means operated by a signal for effecting a change in the frequency of alternations of said currents in the track-circuit whereby the operation of another signal is controlled.

8. A controlling mechanism for a plurality of signals responsive to an alternating current of one frequency to control one signal and responsive to an alternating current of a different frequency to control a second signal and means for supplying the alternating currents of different frequencies of said mechanism.

849,173. SIGNALING SYSTEM FOR ELECTRIC RAILWAYS. JACOB B. STRUBLE, Wilkinsburg, Pa., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Jan. 3, 1907. Serial No. 350,594.

Claim.—1. The combination with an electric railway the trackway of which is used for the return of an alternating propulsion-current and is divided to form block-sections, of a signaling system therefor, said signaling system comprising a railway-signal for each block-section, and a track-circuit for each block-section for controlling the railway-signal, and each track-circuit comprising a source of alternating current of a higher frequency than the propulsion-current, and a relay having two coils which when energized by a preponderance of the signaling-current will close a local circuit for the railway-signal and when energized by a preponderance of the propulsion-current will open the local circuit.

2. The combination with an electric railway the trackway of which is used for the return of an alternating propulsion-current and is divided to form block-sections, of a signaling system therefor, said signaling system comprising a railway-signal for each block-section, and a track-circuit for each block-section for controlling the railway-signal, and each track-circuit comprising a source of alternating current of higher frequency than the propulsion-current, and a relay having two coils, a movable element for each core, and a mechanical connection between the two coils, whereby when both coils are energized by the alternating signaling-current and one by a preponderance thereof the relay will operate to close a local circuit for a railway-signal and when both coils are energized by the alternating propulsion-current and one by a preponderance thereof will operate the relay to open the local circuit.

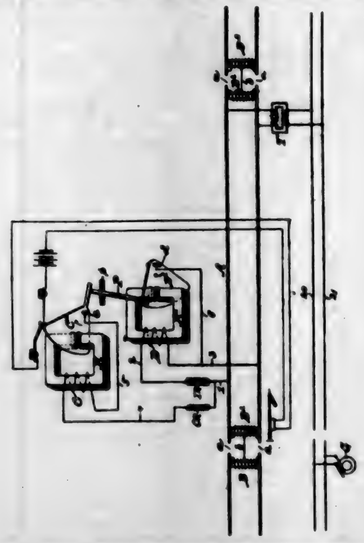

3. The combination with an electric railway the trackway of which is used for the return of an alternating propulsion-current and is divided to form block-sections, of a signaling system therefor, said signaling system comprising a railway-signal for each block-section, a track-circuit for each block-section for controlling the railway-signal and each track-circuit comprising a source of alternating current of higher frequency than the propulsion-current, and a relay having two coils arranged in multiple circuit with the track-rails and one of said circuits having more reactance than the other, whereby when one of the coils is energized by a preponderance of the alternating signaling-current the relay will operate to close a circuit on the railway-signal and when the other coil is energized by a preponderance of the alternating propulsion-current the relay will operate to open the circuit of the railway-signal.

4. In combination with a signaling system for railways, relays for controlling the signals thereof, each relay comprising two coils, a vane movable by each coil, one of said vanes controlling contacts by its movements in response to the absence or presence in its coil of a high-frequency alternating current, and the second of said vanes mechanically connected with the first vane and controlling the circuit of the coil for the first vane.

5. The combination with conductors having impressed thereon an alternating current of high frequency and an alternating current of low frequency, of a relay having two coils both of which are connected with said conductors in multiple circuit, means in the circuit of one coil for selecting between the two currents, a vane for each coil, one of which in one of its movements closes the circuit through the coil of the first vane and causes a movement of the first vane when the coil of the second vane is energized by a preponderance of the low-frequency current.

6. The combination with an electric railway the trackway of which is used to conduct alternating propulsion-current and is divided to form block-sections, of a signaling system therefor, said signaling system comprising a railway-signal for each block-section and a track-circuit for each block-section, and each track-circuit comprising a source of alternating current of higher frequency than the propulsion-current and a relay which responds to the high-frequency current to close a local circuit for the railway-signal, and said relay comprising means which when energized by the propulsion-current will not close the local circuit.

7. In combination with a signaling system for railways, relays for controlling the signals thereof, each relay comprising two coils, means movable in response to the action of both coils for closing a circuit under the influence of current of one frequency, and means responsive to changes in frequency for causing one of said coils to preponderate to open the circuit under the influence of current of a lower frequency.

8. In combination with a signaling system for railways, relays for controlling the signals thereof, each relay comprising two coils, means actuated by both coils to control a circuit, and means responsive to changes in frequency permitting said coils to coöperate and close the said circuit when energized by current of one frequency but causing one coil to operate to open the circuit when energized by a preponderance of current of a lower frequency.

849,174. BED-RAIL JOINT. BERT C. SUITS, Indianapolis, Ind., assignor of one-half to Edwin F. Neff and Charles F. McLain, Indianapolis, Ind. Filed July 3, 1906. Serial No. 324,613.

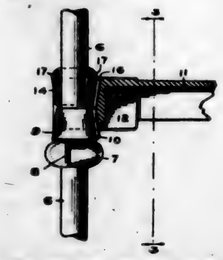

Claim.—1. The combination with a bed-post having a concentric truncated conical section, of a bed-rail having a head with a vertical opening to receive the conical section of the post said head having a slot for the passage of the post into said opening, and an externally-tapering sleeve slidingly mounted on the post to enter the opening in the head and act as a wedge to lock the head against vertical movement.

2. The combination with a bed-post having a concentric truncated conical section, said section having a vertically-disposed rib, of a bed-rail having a head with a vertical opening to receive the conical section of the post said head having a slot for the lateral assembling of the head on the post, and said vertical opening having a groove to receive the rib on the conical post-section, and an externally-tapering sleeve slidingly mounted on the post to enter the opening in the head and act as a wedge to lock the head against vertical movement.

3. In a bed-rail joint, a post having a concentric truncated conical section in combination with a bed-rail having a head at each end, said head having a vertical opening with an end slot leading therto of a width to admit the post, said opening being expanded in diameter both ways from the middle of the opening, and a tapering sleeve sliding on the post and adapted to enter the opening in the head and lock the head on the post.

4. In a bed-rail joint, a post having a concentric truncated conical section in combination with a bed-rail having a head at each end, said head having a vertical opening with an end slot leading thereto of a width to admit the post, said opening being expanded in diameter both ways from the middle of the opening, and a tapering sleeve sliding on the post and adapted to enter the opening in the head and lock the head on the post, said sleeve having inside bearings of soft material.

849,175. DUMP-CAR. VICTOR M. SUMMA, St. Louis, Mo. Filed Mar. 20, 1906. Serial No. 307,055.

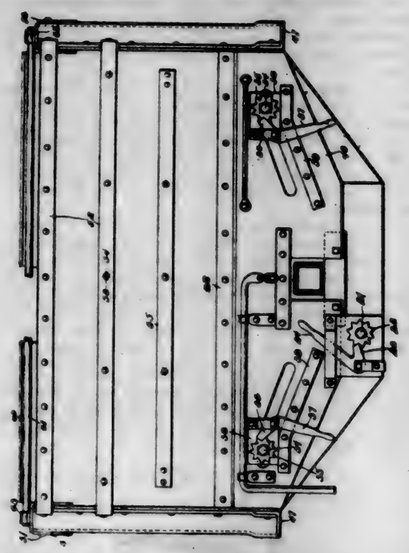

Claim.—1. In a dump-car, the combination with a hinged door or floor-section provided with depending flanges of a laterally-movable supporting rod or shaft upon which the flanges of said door or section rest at all times, chains each having one end fastened to said shaft and the opposite end connected to a stationary part of the car at a point distant therefrom, and means for winding said chains so as to cause said rod or shaft to move laterally and operate upon the door or floor-section.

2. In a dump-car, the combination with a hinged door or floor-section provided with depending flanges of a rolling and traveling shaft upon which the flanges of said door is supported at all times, chains fastened at one end to and adapted to be wound upon said shaft and having their opposite ends connected to a stationary part of the car at a point distant from said shaft, and means for rotating said shaft and causing it to travel laterally while engaging the door or floor-section supported thereon.

3. In a dump-car, the combination with a hinged door or floor-section provided with depending flanges of cross-sills provided with inclined guide-slots, a rolling and traveling shaft movable along said guide-slots and forming a support for the flanges of said door or floor-section at all times, chains fastened at one end to said rolling shaft and at the other end to a stationary part of the car, and means for imparting rotary motion to said shaft.

4. In a dump-car, the combination with a hinged door or floor-section provided with depending flanges and cross-sills provided with inclined slots, of a rolling and traveling shaft movable along said guide-slots and upon which the flanges of the floor-section rest at all times, one or more chains fastened at one end to said shaft and at the other end to a stationary part of the car, means for imparting rotary motion to said shaft, and rack-and-pinion gearing associated with said shaft and cross-sills.

5. In a dump-car, the combination with a hinged door or floor-section provided with depending flanges and cross-sills provided with inclined guide-slots having horizontal end extensions, of a rolling and traveling shaft upon which the flanges of said floor-section rest at all times, said shaft being movable lengthwise of said slots and provided with toothed pinions, one or more chains fastened at one end to said shaft and fastened at their opposite end to a stationary part of the car, stationary racks with which said pinions mesh, and means for rotating said shaft.

6. In a dump-car, a hinged door or floor-section provided with depending flanges in combination with cross-sills provided with inclined guide-slots, a rolling and traveling shaft movable lengthwise of said slots and forming a support upon which the flanges of said floor-section rest at all times, means for rotating said shaft and causing it to traverse the slots, a ratchet-wheel on said shaft, a dog engaging said ratchet-wheel, a dog-carrier embracing said shaft and movable therewith, and a guide or track along which the dog-carrier moves extending parallel with the guide-slot.

7. In a dump-car, the combination with hinged doors or floor-sections, of a laterally-movable rod or shaft for swinging one of said doors, a shaft parallel thereto and mounted in fixed bearings, means for rotating said shaft, one or more chains having their opposite ends connected fixedly to said shafts, and a cam on the rotatable shaft coöperating with the remaining center door, substantially as and for the purpose set forth.

8. In a dump-car, hinged doors or floor-sections, one of which is provided at its free end with a projection and the other with a stop-cleat, in combination with a laterally-movable rod or shaft operating behind one of said doors, a rotary shaft operating in rear of the other door and provided with a cam coöperating directly with the last-named door, means for rotating said shaft, and one or more chains connected at opposite ends to said shafts whereby one rod or shaft is advanced laterally to raise its door, while the cam of the other shaft acts to advance its door and effect an engagement between the projection of one door and the stop-cleat of the other door, substantially as described.

9. In a dump-car, the combination with a hinged floor-section adapted to swing from a horizontal to a vertical position, of an end plate hinged and slidable at its upper edge and provided at its lower free edge with an angle-iron, said end plate being adapted to swing from a vertical to an inclined position and to rest upon the floor-section when the latter is disposed vertically.

10. In a metallic car, a car side or side girder embodying top and bottom angle-irons or sills, a connecting plate or web united thereto, stakes or vertical braces extending between said angle-irons or sills, and a longitudinal stiffener or brace extending along the outside of said stakes and firmly secured to the outer flanges of the stakes at a distance from the connecting plate or web, substantially as described.

11. In a dump-car, the combination with the side plates of the car-body, and an inwardly-displaceable end plate, of connecting tie-braces extending across the ends of the car and consisting of reversely-disposed angle-irons, the ends of which are fastened to the side plates, fasteners passing through said angle-irons, and spacing sleeves or thimbles disposed around the fasteners within the channel-irons and between the flanges thereof, substantially as described.

12. In a metallic car-body, the combination with a center sill having a rolled upper edge, of a hinged floor-section having knuckle-straps which encircle said rolled upper edge of the center sill and have their ends secured to the floor-section, an angle-iron cross-piece secured to the free edge of one section, and flanges on the upper side of the other section forming supporting rests or shoulders on which said cross-piece rests when in a horizontal position.

13. In a dump-car, the combination with hinged floor-sections, of a laterally-movable rod or shaft adapted to swing one of the doors, a shaft parallel thereto and mounted in fixed bearings, means for rotating said shaft, one or more flexible connections having their opposite ends connected fixedly to said shafts, and means on the rotatable shaft coöperating with the remaining door, substantially as and for the purpose set forth.

14. In a dump-car, the combination with a hinged floor-section adapted to swing from a horisontal to a vertical position, of an end plate hinged and slidable at its upper edge and adapted to swing from a vertical to an inclined position and to rest upon the floor-section when the latter is disposed vertically.

849,176. PROPELLING MECHANISM FOR BOATS. HANS THORMEYER, Friedenau, Germany. Filed Nov. 5, 1906. Serial No. 342,135.

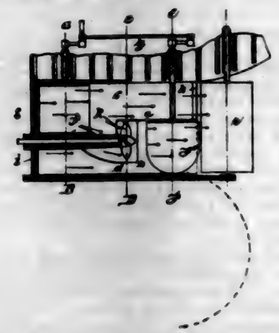

Claim.—1. A device for reversing the direction of the water in driving ships by propellers rotating in one direction, comprising in combination a casing, a partition dividing said casing into two chambers and having an opening connecting said chambers with each other, a propeller rotating in said opening, and closing devices adapted to open and close said chambers at the front and rear, substantially as, and for the purpose, set forth.

2. A device for reversing the direction of the water in driving ships by propellers rotating in one direction, comprising in combination a casing, a partition dividing said casing into two chambers and having an opening connecting said chambers with each other and containing said propeller, closing devices in said chambers, and means connecting said closing devices together, substantially as, and for the purpose, set forth.

849,177. HOT-AIR FURNACE. WILLIAM S. TURNEY, Greensburg, Pa. Filed Dec. 21, 1906. Serial No. 348,928.

Claim.—1. A hot-air furnace comprising a casing open at the top and bottom and having openings in its side walls, a conical hood supported thereon, a gas-burner within the lower portion of the casing, a V-shaped spreader above said burner, and deflector-plates on opposite sides of said casing forming air-chambers which communicate with the openings formed in the side walls of the casing.

2. A hot-air furnace comprising a casing open at top and bottom and having openings in its side walls, a conical hood supported thereon, a gas-burner within the lower portion of the casing, a V-shaped spreader above said burner, and deflector-plates secured to opposite sides of the casing to provide air-chambers, communicating with the openings formed in the side walls of the casing, and having laterally-extending flanges and hooks to secure them to the casing.

3. The combination with a register, of a hot-air furnace suspended below the register and comprising a casing provided at its upper end with projecting lugs and having openings in its side walls, a conical hood resting on said lugs, a gas-burner within the lower portion of the casing, a V-shaped spreader above the burner, deflector-plates secured to opposite sides of the casing to provide air-chambers communicating with the casing through the openings in the side walls thereof.

849,178. PROCESS OF TREATING BACON, &c. THOMAS WALSH, Chicago, Ill., assignor to Swift and Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 30, 1906. Serial No. 308,901.

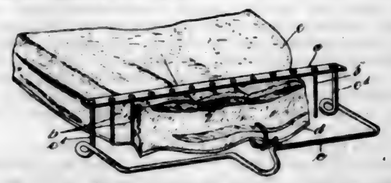

Claim.—In the manufacture of bacon, the method of treating meat, which consists in laterally contracting the meat at one end portion of the piece to substantially the width of the balance of the piece after curing, and applying to the contracted portion a device arranged to maintain the meat in its contracted condition during the curing process, leaving the rind free to contract naturally.

849,179. BOTTLE. WILLIAM WILSON, Oakland, Cal. Filed Oct. 13, 1906. Serial No. 338,702.

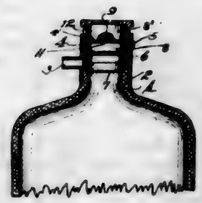

Claim.—1. In a bottle, a sleeve fixed thereto having an outlet-passage in one side, said sleeve having a spiral groove or guide, and a closely-fitting stopper having a pin engaging the spiral guide whereby the turning of the stopper serves to close or open the discharge-passage, said stopper having a bottom closed except for an air-passage therein, and a diaphragm extending across the central portion of the stopper and provided with an air-passage, said stopper having an opening through it above said diaphragm, said openings permitting air to enter the bottle to allow the liquid contents to be discharged.

2. In a bottle, a sleeve fixed to the neck thereof having a discharge-passage in one side, a hollow stopper fitting and turnable within the outer end of the sleeve, said sleeve provided with a spiral guide and said stopper having a pin to engage said guide whereby the turning of the stopper closes or opens the discharge-passage, a diaphragm extending transversely across an intermediate portion of the interior of the stopper, said diaphragm, the bottom of the stopper and the vertical wall of said stopper above the diaphragm, being provided with air-openings, and a valve controlling the opening through the diaphragm.

849,180. SHEARS-SHARPENER. WILLIAM G. WILSON, Wheatland, Cal. Filed Nov. 1, 1906. Serial No. 341,583.

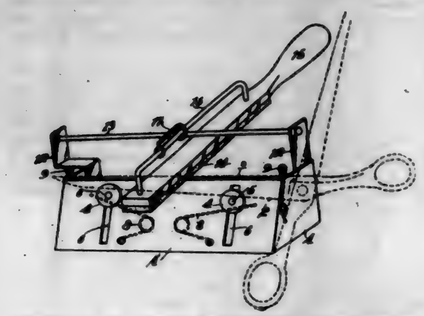

Claim.—1. In a device for sharpening tools having beveled edges, an inclined support for the tool, means by which the beveled edge is held with relation to the support, a guide-bar standing parallel with the tool edge, a sharpening-tool having a longitudinally-fixed rod upon the back, links loosely connecting said rod with the first-named guide-bar whereby the sharpening device may be reciprocated transversely of the blade, and is also slidable from end to end of the guide-bar.

2. In a device for sharpening beveled-edge tools, an inclined surface upon which the tool may rest, said surface having transverse slots made in it, spring-pressed bolts extending through the slots having heads adjustable upon the outer ends and forming supports for the blade, stops against which the edge of the blade contacts, a reciprocating guided sharpening device, and mechanism whereby said device may be moved transversely across the edge of the tool, and longitudinally from end to end thereof.

3. In a sharpening device for beveled-edge tools a base having an inclined slotted face, spring-pressed adjustable clamps carried upon said inclined face and adapted to support the back of the tool, stops against which the cutting edge of the tool abuts and by which its position is adjusted, a bar supported parallel with the beveled edge of the tool, a sharpening device having a guide upon its back, links connecting the guide and the bar, said links being so disposed as to maintain the sharpening device in the plane of the edge to be sharpened and diagonal thereto, said sharpening device being also movable from end to end of the supporting-bar and the tool edge.

849,181. MACHINE FOR SURFACE-FINISHING PAPER. LEON M. YOUNG, South Hadley Falls, Mass. Filed Feb. 14, 1907. Serial No. 357,333.

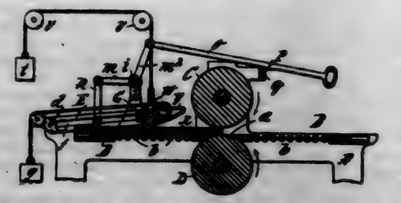

Claim.—1. In a machine of the character described, the combination with a table and a pair of pressure-rolls having adjacent peripheral portions thereof substantially at the table-level, of a bar at one side of the rolls, movable along the table, a means of yielding resistance for forcing the bar toward the rolls, and means for bodily moving the bar to a position above, and separated from, the table.

2. In a machine of the character described, the combination with a table and a pair of pressure-rolls operative for a squeezing action at the table-level, of oppositely-located side members at one side of said rolls, a bar movably guided in said side members, along, and at the level of, the table, means of yielding resistance for forcing the bar toward the rolls, and means for moving the side members, and the bar, having a guiding engagement therein, for the elevation of the bar above the table.

3. In a machine of the character described, the combination with a table and a pair of pressure-rolls operative for a squeezing action at the table-level, of oppositely-located guide members pivotally mounted at one side of said rolls, a bar movably guided in said side members, along, and at the level of, the table, means of yielding resistance for forcing the bar toward the rolls, and a lever having a connection with and operative to elevate the paired members and bar engaged therewith above the table.

4. In a machine of the character described, the combination with the table and the intermediately-located pressure-rolls, of opposite, vertically-movable, guide members having normally horizontal positions and having horizontal longitudinal guideways therein, a follower-bar extending between and having by end portions thereof guiding engagements in said ways and means for elevating said guide members and bar.

5. In a machine of the character described, the combination with the table and the intermediately-located pressure-rolls, of a horizontally-movable follower-bar and vertically-movable opposed side members, with which said bar has engagements, means for elevating said side members and the bar engaged therwith, and one or more flat springs extended from the follower-bar toward the pressure-rolls and having their extremities depending and return-bent.

6. In a machine of the character described, the combination with the table and pressure-rolls, of opposite normally horizontal guide members, pivotally mounted on the table and having horizontal longitudinal guideways therein, a follower-bar endwise engaged with, and to be guided in, said ways, a lever, a link connecting said lever with one of said side members and a rod operatively connected with said lever.

7. In a machine of the character described, the combination with the machine-frame comprising a table and pressure-rolls, of oppositely-arranged normally horizontal guide members pivotally mounted and having horizontally-longitudinal guideways therein, and a follower-bar having guiding engagements in said ways, a rock-shaft having lever-arms linked to said guide members, and said rock-shaft having a further lever affixed thereto, an operating-rod pivoted to the last-named lever and extending longitudinally forwardly and having an abutment-shoulder adapted for engagement with a fixed part of the machine-frame.

8. In a machine of the character described, the combination with a table and an intermediately-located pair of pressure-rolls, of oppositely-located guide members at one side of said rolls, a bar having a guiding engagement with said side members, and yielding pressure means for forcing the bar toward the rolls, means for elevating said guide members and bar above the level of the table, a counterweight and flexible sheave-guided connections between the same and the combined guide members and bar.

849,182. COTTON-PICKER. WILLIS ADKINS, Willis, Tex., assignor of one-half to A. M. Carson, Willis, Tex. Filed Apr. 17, 1906. Serial No. 312,149.

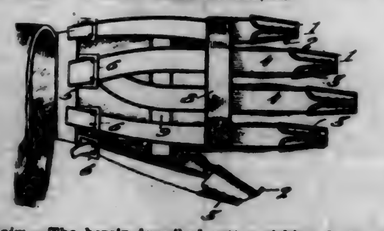

Claim.—The herein-described cotton-picking device consisting of a skeleton glove provided with a thimble for each finger and the thumb, said thimbles each having a laterally-projecting gripping-lip, a wrist-strap, a strap connected with each thimble and extending to the wrist-strap, buckles on the wrist-strap for adjusting the thimble-straps independently, and a tie-strap extending across the thimble-straps and connected thereto, essentially as described.

849,183. ADJUSTABLE LOCKING DEVICE. WILLIAM S. ATWOOD, Montreal, Quebec, Canada, assignor, by direct and mesne assignments, to Simplex Railway Appliance Company, Hammond, Ind. Filed Mar. 10, 1905. Serial No. 249,479.

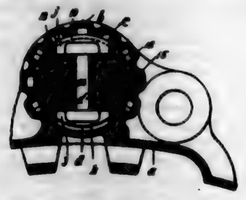

Claim.—1. The combination with a brake beam and a brake head carried by the brake beam, and constructed with a hollow cylindrical part the interior whereof has a regularly disposed series of devices, of a cylindrical block carried by the brake beam and fitting rotatably within the cylindrical part of the head such block having an annular flange formed rigidly upon one end a flanged collar secured upon the opposite end thereof, such flanges being formed with corresponding series of equi-distant devices the devices of such series being disposed a distance apart different to the distance separating the devices of the head whereby the brake head can be secured in different angular positions upon the brake beam.

2. The combination with a brake beam and a brake head carried by the brake beam, and constructed with a hollow cylindrical part the interior whereof has a regularly disposed series of axially extending grooves, of a cylindrical block carried by the brake beam and fitting rotatably within the cylindrical part of the head such block having an annular flange formed rigidly upon one end, a flanged collar secured upon the opposite end thereof, such flanges being formed with corresponding series of equi-distant holes the holes of such series being disposed a distance apart different to the distance separating the grooves of the head, and a pin adapted to be inserted into a coinciding pair of such holes and one of the grooves in the head whereby the brake head can be secured in different angular positions upon the brake beam.

3. The combination of a brake beam and a brake head mounted concentrically on the beam, one of said parts having an odd number and the other an even number of locking members, and a key for forming a locking connection between a pair of said members.

4. The combination of a brake beam, a brake head concentrically and rotatably mounted thereon, and an adjustable connection between said beam and head comprising on one part an odd number and on the other part an even number of relatively disposed locking parts, and a key for forming a locking connection between a pair of said locking parts.

5. The combination of a brake beam and a brake head each embodying a sleeve constructed to fit concentrically one within the other, one of said sleeves having an odd number and the other an even number of locking members, and a key for forming a locking connection between a pair of said members.

6. The combination of a brake beam and a brake head each embodying a sleeve constructed to fit one within the other, one of said sleeves being provided exteriorly and the other interiorly with a plurality of locking faces, an odd number on one end an even number on the other, and a key for forming a locking connection between a pair of said faces.

7. The combination of a brake beam and a brake head each embodying a sleeve constructed to fit one within the other, the sleeve on the head being provided with openings in its periphery and interiorly located locking faces between said openings, the sleeve on the beam being provided with exteriorly located locking faces, one of said sleeves having an odd and the other an even number of said locking faces, and a key for forming a locking connection between a pair of said faces.

8. The combination of a brake beam, a brake head concentrically rotatably mounted thereon, and an adjustable connection between said beam and head comprising on one part a plurality of locking members spaced apart and on the other part a plurality of locking members spaced apart a greater distance than the members on the first part, and a key for forming a locking connection between a pair of said locking parts.

9. The combination of a brake beam and a brake head mounted upon said brake beam, one of said parts having a number of locking members differently spaced from the locking members carried by the other, and a key for forming a locking connection between said members.

10. The combination of a brake beam and a brake head, locking devices on said beam and head, the locking devices on the beam being disposed at distances apart differently spaced from those separating the locking devices on the head, and a member for forming a locking connection between said devices.

849,184. PHOTOGRAPHIC-PRINTING APPARATUS. FREDERICK H. AULD, Columbus, Ohio, assignor to Fred H. Cozzens, New York, N. Y. Filed July 7, 1903. Serial No. 164,510.

Claim.—1. In printing apparatus, the combination with means for supporting a sensitized strip and a shutter, of a variable exposure-determining device and operable connections between the same and said shutter, substantially as set forth.

2. In printing apparatus, the combination with means for feeding a sensitized strip, of a holding device for said strip, a shutter, a variable exposure-determining device, and operable connections between said determining device,

said stop or holding device and said shutter, substantially as set forth.

3. In printing apparatus, the combination with means for supporting a sensitised strip, a shutter, and a platen movable into and out of operative relation to said strip, of mechanism for feeding said strip, a variable exposure-determining device, and coöperative connections between said shutter, said platen, said feeding mechanism and said determining device, substantially as set forth.

4. In printing apparatus, the combination with means for supporting a sensitised strip, a shutter, and a platen movable into and out of operative relation to said strip, of mechanism for feeding said strip, an exposure-determining device, a recording mechanism, and coöperative connections between said shutter, said platen, said feeding mechanism, said determining device and said recording mechanism, substantially as set forth.

5. In printing apparatus, the combination with mechanism for feeding a sensitized strip, of a hinged hood in juxtaposition to which said strip is adapted to travel, a shutter within said hood, and means for operating said shutter in either position of said hood, substantially as set forth.

6. In printing apparatus, the combination with means for feeding a sensitized strip, of a hood in juxtaposition to which said strip is adapted to travel, a two-part shutter within said hood operable by gears upon the outside thereof, racks coacting with said gears, and means connected with said racks for operating said shutter, substantially as set forth.

7. In printing apparatus, the combination with means for feeding a sensitized strip, of a hinged hood in juxtaposition to which said strip is adapted to travel, a two-part shutter within said hood operable by gears upon the outside thereof, connected racks coacting with said gears, one of said racks being pivotally mounted, and means for transmitting motion to said racks to operate said shutter, substantially as set forth.

8. In printing apparatus, the combination with means for feeding a sensitized strip, of a hinged hood in juxtaposition to which said strip is adapted to travel, a two-part shutter within said hood operable by gears upon the outside thereof, connected racks coacting with said gears, a reciprocating shaft upon which one of said racks is pivoted, and means for imparting reciprocatory movement to said shaft, substantially as set forth.

9. In printing apparatus, the combination with means for feeding a sensitised strip, of a hinged hood, a shutter within the same, mechanism for opening and closing the same, and a detachable negative frame or support intermediate of said shutter and said strip, substantially as set forth.

10. In printing apparatus, the combination with mechanism for feeding a sensitised strip, of a hinged hood, a shutter within the same and a platen, means for operating said shutter and for moving said platen into and out of operative relation to said strip simultaneously, a strip-feeding device, and connections between said means and said device for assuring interdependent operation thereof, substantially as set forth.

11. In printing apparatus, the combination of an intermittent strip-feeding device and adjustable mechanism coacting therewith for determining the extent of the intermittent movements of the strip, substantially as set forth.

12. In printing apparatus, the combination of rolls carrying a sensitised strip, a guiding device for said strip, and a strip-feeding device comprising an intermittently-operated shaft, gears carried thereby for imparting movement to said strip, and means for varying the extent of movement of said strip under the influence of said feeding device, said means including mutilated gears mounted side by side but adjustable relatively to each other, substantially as set forth.

13. In printing apparatus, an exposure-determining device comprising the combination of a rotary shaft, a dial and an index movable one relatively to the other, mechanism operated by said shaft for moving said dial and index relatively, and means dependent upon the extent of relative movement of said dial and index for effecting an exposure, substantially as set forth.

14. In printing apparatus, an exposure-determining device, comprising in combination a rotary shaft, a dial and an index, mechanism intermediate of said shaft and dial for operating the latter, and a retracting device for said dial, substantially as set forth.

15. In printing apparatus, an exposure-determining device comprising the combination of a rotary shaft, a dial and an index, actuating mechanism for said dial, operable connections between said shaft and said actuating mechanism, and means dependent upon the extent of movement of said dial for effecting an exposure, substantially as set forth.

16. In printing apparatus, an exposure-determining device, comprising in combination a rotary shaft, a dial and an index, a retracting device for said dial, a worm for actuating said dial, and operable connections between said shaft and said worm, substantially as set forth.

17. In printing apparatus, an exposure-determining device, comprising in combination a rotary shaft, a spring-retracted dial, an index, mechanism for actuating said dial, means for throwing said mechanism into and out of operative relation to said dial, and operable connections between said mechanism and said means, substantially as set forth.

18. In printing apparatus, an exposure-determining device, comprising in combination a rotary shaft, a dial and an index, an actuating device for said dial receiving motion from said shaft, and connections between said index and said shaft, whereby the setting of the former will determine the duration of useful operation of the latter, substantially as set forth.

19. In printing apparatus, an exposure-determining device, comprising in combination a rotary shaft, a dial and an index, actuating mechanism for said dial operated by said shaft, a clutch upon said shaft, and a cam controlled by said index and coacting with said clutch to throw the same into operative position, substantially as set forth.

20. In printing apparatus, an exposure-determining device, comprising in combination a rotary shaft, a collar, a dial pivoted on said collar, an index secured to said collar and coacting with said dial, means for actuating said dial, a cam carried by said collar, and a clutch on said shaft adapted to be thrown into operative position by said cam, substantially as set forth.

21. In printing apparatus, an exposure-determining device, comprising in combination a rotary shaft, a sleeve carried thereby, a clutch between said shaft and sleeve, a dial and an index, means for operating said dial, and mechanism controlled by said index for moving said sleeve and thereby throwing said clutch into operative position, substantially as set forth.

22. In printing apparatus, an exposure-determining device, comprising in combination a rotary shaft, a clutch having a clutch member connected to said shaft a dial and an index, mechanism for throwing said clutch into operative position, and means controlled by the position of said index relatively to said dial for predetermining the duration of such operative position, substantially as set forth.

23. In printing apparatus, an exposure-determining device, comprising in combination a rotary shaft, a clutch having a clutch member connected to said shaft, a spring-retracted dial, a stop therefor and an index coacting therewith, means for actuating said dial as said shaft is actuated, and mechanism brought into operative relation by said actuating means and governed by the position of said index relatively to said dial for throwing said clutch into operative position, substantially as set forth.

24. In printing apparatus, an exposure-determining device, comprising in combination a rotary shaft, a sleeve thereon, a clutch between said shaft and said sleeve, a dial and an index, an actuating device for said dial, and means controlled by said sleeve for throwing said actuating device into and out of operative relation, substantially as set forth.

25. In printing apparatus, an exposure-determining device, comprising in combination a rotary shaft, a sleeve mounted thereon, a clutch between said sleeve and shaft, a dial and an index, an actuating device for said dial operated by said shaft, means for throwing said actuating device into and out of operative relation to said dial, a cam controlled by said index and operated by said actuating device with said dial, and connections between said cam and said clutch for throwing the latter into operative position, substantially as set forth.

26. In printing apparatus, an exposure-determining device, comprising in combination a rotary shaft, a sleeve mounted thereon and carrying a power-transmitting device, a clutch between said shaft and sleeve, a dial and an index, an actuating device for said dial, a cam positioned by said dial and operated by said actuating device to throw said clutch into operative position, and a cam carried by said sleeve and coacting with said actuating device to throw the same into and out of operative position relatively to said dial, substantially as set forth.

27. In printing apparatus, an exposure-determining device, comprising in combination a shaft, a sleeve mounted thereon, a clutch between said sleeve and shaft, a dial and an index, an actuating device for said dial, a cam positioned by said index and operated by said actuating device to throw said clutch into operative position, a cam upon said sleeve controlling the operation of said actuating device, and a second cam upon said sleeve holding said clutch in operative position after such position has been assumed through the operation of the cam first named, substantially as set forth.

28. In printing apparatus, an exposure-determining device, comprising in combination a rotary shaft, a dial and an index, a continuously-operating actuating device for said dial, means for throwing said device into and out of operative relation to said dial, a clutch carried by said shaft, and mechanism for throwing the same intermittently into operative position, substantially as set forth.

29. In printing apparatus, an exposure-determining device, comprising in combination a rotary shaft, a dial and an index, a continuously-operating actuating device for said dial, means for throwing said device into and out of operative relation to said dial, a clutch carried by said shaft, mechanism for throwing the same intermittently into operative position, and a power-transmitting device operated by said shaft only when said clutch is in said operative position, substantially as set forth.

30. In printing apparatus, the combination with means for supporting a sensitised strip and intermittent feeding mechanism therefor, of a platen coacting with said strip, an exposure-determining device, a dial and an index therefor, and connections between said device, said feeding mechanism and said platen, controlled by said index, substantially as set forth.

31. In printing apparatus, the combination with means for supporting a sensitised strip, intermittent feeding mechanism therefor, a shutter and a platen, of an exposure-determining device, connections between said device, said feeding mechanism, said shutter and said platen, and a dial and an index controlling the movement of said shutter, said platen and said feeding device, substantially as set forth.

32. In printing apparatus, the combination with means for supporting a sensitised strip, of feeding mechanism for the strip, connections to said mechanism for intermittently operating the same, and a lock for said mechanism adapted to preclude movement thereof in either direction, substantially as set forth.

33. In printing apparatus, the combination with a sensitised-strip-supporting device, of feeding mechanism, connections to said mechanism for operating the same intermittently, means for varying the extent of such movement, and locking mechanism thrown to operative position after each strip-feeding operation of said mechanism and coacting with said mechanism to preclude movement thereof in either direction, substantially as set forth.

34. In printing apparatus, the combination with sensitised-strip-feeding mechanism, of a shaft, a sleeve carried by said shaft, a connection between said sleeve and said feeding mechanism, a clutch between said sleeve and said shaft, a dial and an index, an actuating device for said dial, and means for throwing the same into and out of operative relation thereto, and mechanism controlled by said index for throwing said clutch into operative position and thereby transmitting movement to said feeding mechanism, substantially as set forth.

35. In printing apparatus, the combination with a sensitised-strip-supporting device, a shutter, a feeding device for said strip and mechanism for intermittently operating said feeding device and shutter, of a shaft, a sleeve carried thereby, a power-transmitting device connected with said mechanism, a clutch between said sleeve and said shaft, a dial and an index, an actuating device therefor and means for throwing the same into and out of operative position, and a cam positioned by said index and operated by said actuating device to throw said clutch into operative position and thereby transmit movement to said mechanism for intermittently operating said feeding device and shutter, substantially as set forth.

36. In printing apparatus, the combination with a sensitised-strip-supporting device, a holding device for said strip, a shutter, a feeding device for said strip and means for intermittently operating said feeding device, said stop and said shutter, of a rotary shaft, a sleeve thereon, a clutch between said sleeve and shaft, connections between said sleeve and said mechanism, a dial and an index, an actuating device for said dial operated by said shaft, means for moving said device into and out of operative relation to said dial, and a cam positioned by said index and operated by said actuating device to throw said clutch into operative position, substantially as set forth.

849,185. STROKE-VARYING MECHANISM. CLOISE H. BALDWIN, Erie, Kans., assignor of one-third to W. R. Cline and one-third to Thomas R. Reece, Erie, Kans. Filed Nov. 12, 1906. Serial No. 343,056.

Claim.—A stroke-varying mechanism comprising the combination of a shaft; a sprocket-wheel fast upon said shaft; a stub-shaft; a support therefor formed with a slot in which said stub-shaft is adjustably mounted; a sprocket-wheel loose upon said stub-shaft; a chain connecting said sprocket-wheels, the links of said chain being readily removable to shorten said chain, when said stub-shaft is moved toward the first-named shaft; a cross-head; a support therefor; and a connecting-rod, one end of which is attached to said cross-head and the other end of which is secured to one of the links of said chain; said cross-head, said slotted support and said shafts being in substantial alinement with one another.

849,186. MATERIAL FOR RUGS, CARPETS, &c. FREDERICK BARTELT, Philadelphia, Pa. Filed Sept. 12, 1905. Serial No. 278,074.

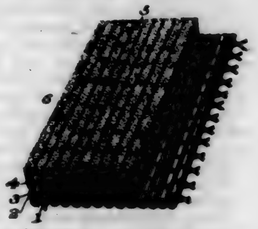

Claim.—1. A chenille composed of warp and weft threads woven continuously in fabric form to complete a tube, a stuffer in said tube, and portions of the weft-threads extending from said tube as a pile.

2. A chenille composed of warp and weft threads woven continuously in fabric form to complete a tube, and portions of the weft-threads extending from said tube as a pile.

849,187. SCRAPER FOR DISK DRILLS. EDWIN R. BEEMAN, Minneapolis, Minn., assignor to Monitor Drill Co., St. Louis Park, Minn., a Corporation of Minnesota. Filed July 26, 1906. Serial No. 327,946.

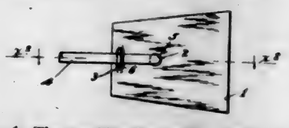

Claim.—1. The combination with a blade having an intermediate perforation or rod-seat and a transversely-extended slot near its rear end, of a loop or yoke like coupling element insertible through the slot of said blade from either side of said blade, and a rod or supporting-arm insertible through the projecting loop of said coupling element, and provided with a crooked end engageable with the perforation or seat of said blade, substantially as described.

2. The combination with a scraper-blade 1 having an intermediate perforation 2 and a transversely-extended slot 3 near its rear end, of a coupling-staple 6 insertible through said perforation 3 from either side of said blade, and having outturned ends 7 limiting its movement through said blade, and a supporting-rod 4 insertible through the projecting portion of said staple and having a laterally-bent end 5 insertible through the perforation 2 of said blade, substantially as described.

849,188. SAFETY-ELEVATOR. ALBERT BENNETT, Arnold, and RUDOLPH BINDER, Natrona, Pa. Filed Sept. 9, 1905. Serial No. 277,799.

Claim.—1. In a device of the character described, spaced stationary guideways, a frame slidable on said guideways, a cage suspended from said frame and provided with bearings engaging said stationary guideways, a vertical rod carried by said frame and slidable therein, toggle members carried by said vertical rod, shoes having bifurcated ends for engaging said stationary guideways and connected to said toggle members and movably engaging said frame, and a spring associated with said vertical rod and adapted to operate said toggle members to cause said shoes to bind on said stationary guideways.

2. In a device of the class described, spaced stationary guideways, a frame slidable upon said stationary guideways, a cage suspended from said frame and provided with bearings movably engaging said stationary guideways, a vertical rod carried by said frame and having its upper extremity connected to the elevator-cable, bearings formed in said frame and with said rod adapted to slide in said bearings, toggle-levers carried by the lower extremity of said rod, guideways carried by said slidable frame, shoes carried by said toggle-levers and movable laterally on the slidable frame and adapted to engage the guide-

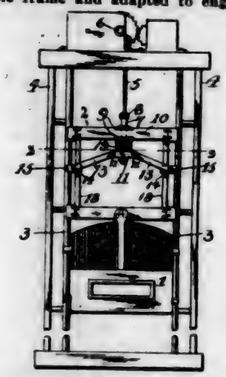

ways of the same, and a coil-spring surrounding said vertical rod, said coil-spring adapted to operate said toggle-levers thereby causing said shoes to bind on said stationary guideways.

849,189. BUFFER. JAMES F. BENNETT, Dronfield, near Sheffield, and JOHN MARTIN, Sheffield, England. Filed Sept. 26, 1905. Serial No. 280,237.

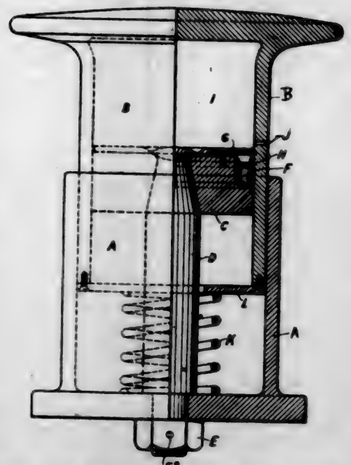

Claim.—A buffer for railway and other vehicles, consisting of an outer cylinder A, a loosely-fitting plunger B to slide therein, and a piston C fixed to the cylinder and fitting interior of plunger, and capable of compressing the air contained therein, said plunger having an inlet therein and a metallic ring H in the cylinder bearing against the plunger B.

849,190. ANGLE-COCK FOR AIR-BRAKE SYSTEMS. JOSEPH A. BENNETT, Youngwood, Pa. Filed Nov. 7, 1906. Serial No. 342,398.

Claim.—1. In an angle-cock, a by-pass tube extending across the key and communicating with one of the openings in said cock, and with the atmosphere when said key is turned to cut off communication between said angle-cock and the train-line.

2. An angle-cock comprising the casting, a bushing fitted into the bore of said casting and provided with openings which are disposed in alinement with the openings in said casting, a key fitted to rotate in said bushing and provided with openings in the opposite walls thereof adapted to be turned in alinement with the openings in the bushing, and a by-pass tube extending through the walls of said key intermediate the openings therein, said by-pass tube adapted to communicate with one of the openings in the bushing and with an air-pocket in the wall of said bushing disposed in communication with an outlet-opening in the casting.

3. In an angle-cock, a key fitted to the cock and provided with a by-pass tube opening in a pocket comunicating with the outer air.

4. An angle-cock comprising a casting, a tapering bore therein, a bushing fitted to said bore and provided with openings in alinement with the openings in the casting, a key fitted to turn in said bushing and provided with openings adapted to be turned into alinement with the openings in the bushing, and a by-pass tube extending through the walls of the key intermediate the openings therein, the ends of the tube being flush with the outer surface of said key, and an air-pocket formed in the bushing and communicating with an outlet formed in the casting.

849,191. WINDMILL. ERICK P. BERGMAN, Concordia, Kans. Filed Apr. 17, 1906. Serial No. 312,099.

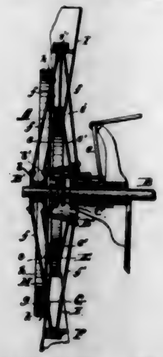

Claim.—1. In a wind-wheel, a shaft having rigidly attached thereto a hub, a rearward-extending casing that is integral with the hub, a slide attached to the shaft within the casing and provided with a forwardly-extending flange, means for moving the slide on the shaft, converging brace-rods carried by the hub, concentric rings attached to the brace-rods, blades pivotally attached to the concentric rings and provided with hooks that project outward from the front edges of each of the blades, a ring carried by the hooks and crank-bars connected to the movable ring carried by the blades and to the flange of the slide, for the purpose set forth.

2. In a wind-wheel, a shaft to which is rigidly secured a hub, a rearward-extending casing formed integral with the front portion of the hub, a slide movable on the shaft within the casing, two series of brace-rods attached to the hub and to the casing, concentric rings having bearings for the blades of the wheel carried by the outer ends of the brace-rods, a ring attached to the outer brace-rods, crank-bars carried by said ring and the hub, a ring movable by the crank-bars such ring being connected to the blades of the wheel, substantially as shown.

849,192. WINDMILL. ERICK P. BERGMAN, Concordia, Kans. Filed Apr. 17, 1906. Serial No. 312,100.

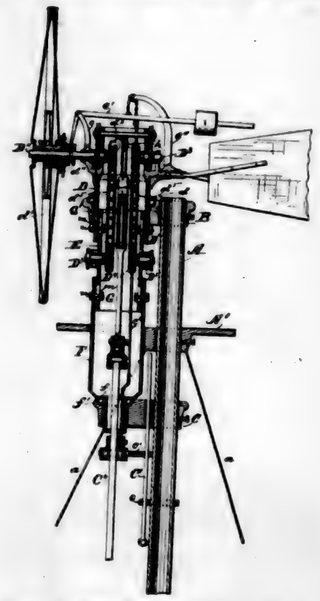

Claim.—1. In a windmill, the combination of a wind-wheel, its shaft and a stub-shaft, a head having bearings in line with each other for the shaft of the wind-wheel and for the stub-shaft, similar gears and sprockets on the shafts, means for transmitting motion from the shaft of the wind-wheel to the stub-shaft, a pair of chains that engage the sprockets and are driven therefrom, a cross-bar attached to and connecting the chains, a pitman connected between the chains to the cross-bar, the pitman having a cross-head which is pivoted thereto and is adapted to engage with vertical guides attached to the head, substantially as shown.

2. In a windmill, the combination of a rotary head or support for a wind-wheel, means for driving a pair of chains, a section maintained in vertically-movable engagement with the head, guide-sprockets for the chains the guide-sprockets being carried by the vertically-movable section, a pitman connected to the chains, a cross-head pivoted to the pitman, guides for the cross-head attached to the rotary head or support for the wind-wheel, and a lower section connected to the intermediate section and resting upon a support, substantially as shown.

3. In a windmill, a head having bearings for the shaft of a wind-wheel and a stub-shaft in line with the shaft of the wind-wheel, bearings for the shafts, means for driving the shafts in unison, sprockets on the adjacent ends of the shafts, a section connected to the head so as to turn therewith and to be capable of a vertical movement independent of the head, guide-bars attached to the head and to the section that is connected to such head, shafts carried by the vertically-movable section, sprockets on said shafts, chains that engage the sprockets, a pitman connected to the chains, a cross-head pivoted to the pitman and provided with a member that engages the guide-bars and a pump-rod connected to the pitman, substantially as shown.

4. In combination with a wind-wheel and its support, of motion-transmitting mechanism comprising a pair of

driven chains, a pitman connected to both of the chains and to a reciprocating bar, an oscillatory cross-head pivoted to the pitman, guide-bars that are engaged by the head, and a coupling that connects the lower end of the pitman to the reciprocating bar, substantially as shown.

5. In a wind-wheel, a tubular support, a platform attached to the support and provided to one side thereof with an opening, fixtures attached to the support and provided with openings, tubular wheel-supporting sections comprising an upper section or head that is seated on the upper fixture and extends through the opening therein, a lower section that bears upon the lower fixture and extends upward through the platform, and an intermediate connection-section that is coupled to the upper and lower section, substantially as shown.

6. In a wind-wheel, a supporting-column provided with laterally-projecting fixtures and a platform, the fixtures and platform having openings for the passage of turning sections that comprise the head of the wind-wheel, recesses in the upper and lower fixtures adjacent to the openings therethrough, antifriction-bearings in the recesses, horizontal portions attached to the upper and lower sections of the heads for engagement with the bearings and an intermediate section having vertical slots through each end and bolts for connecting such section to the lower end of the upper section and to the upper end of the lower section, substantially as shown.

849,193. SWING-MOTION TRUCK. WILLIAM P. BETTENDORF, Davenport, Iowa. Filed Mar. 25, 1904. Serial No. 200,000.

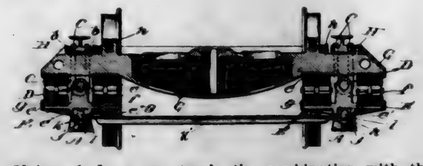

Claim.—1. In a car-truck, the combination with the side frames having bolster-openings therein, of a spring-motion bolster the ends of which extend through said openings, and devices for sustaining said bolster having three pivot-centers two of which are in connection with said side frames and one with said bolster.

2. In a car-truck, the combination with the side frames having bolster-openings therein, and having bearings on each side of the upper arch of said side frame above said opening, of a swing-motion bolster the ends of which extend through said opening, and links journaled in said bearings and having their pendent portions suspend said bolster at a point in the transverse vertical plane mediate said bearings.

3. In a car-truck, the combination with the side frames having bolster-openings therein, and having bearings on each side of the upper arch of said side frame above said opening, of a swing-motion bolster the ends of which extend through said opening, and an oblong link consisting of an endless bar of metal bent at its center of length back upon itself and having its adjacent ends journaled in said bearings, and its central return-bends sustaining said bolster.

4. In a car-truck, the combination with the side frames having bolster-openings therein, of a swing-motion bolster the ends of which extend through said openings, spring-seats, springs thereon for supporting said bolster, and devices for sustaining said bolster having three pivot-centers two of which are in connection with said side frames and one with said spring-seats.

5. In a car-truck, the combination with the side frames having bolster-openings therein, and having bearings on each side of the upper arch of said side frame above said opening, of a swing-motion bolster the ends of which extend through said opening, spring-seats, springs thereon for supporting said bolster, and an oblong link consisting of an endless bar of metal bent at its center of length back upon itself and having its adjacent ends journaled in said bearings, and its central return-bends sustaining said spring-seats.

6. In a car-truck, the combination with the side frames having bolster-openings therein, and having bearings on each side of the upper arch of said side frame above said opening, of a spring-motion bolster the ends of which extend through said opening, spring-seats extending laterally to each side of said side frames and having an upwardly-projecting bail midway between said lateral extensions, and springs seated on each of said extensions for supporting said bolster, and an oblong link consisting of an endless bar of metal bent at its center of length back upon itself and having its adjacent ends journaled in said bearings, and its central return-bends connected to said bail.

7. In a car-truck, the combination with the side frames having bolster-openings therein, and having bearings on each side of the upper arch of said side frame above said opening, of a swing-motion bolster the ends of which extend through said opening, spring-seats extending laterally to each side of said side frames and having an upwardly-projecting bail midway between said lateral extensions, and springs seated on each of said extensions for supporting said bolster, and links journaled in said bearings and having their pendent portions pivotally connected to said bail at a point in the transverse vertical plane mediate said bearings.

8. In a car-truck, the combination with the side frames having bolster-openings therein, and transoms connecting the same at points mediate said opening and their ends which have lateral projections at their ends, extending toward the journal-boxes and removably secured to said frames, of a bolster the ends of which pass through said opening, and means depending from said side frames for suspending said bolster.

9. In a car-truck, the combination with the side frames having bolster-openings therein, and transoms connecting said side frames at points mediate the center of length thereof and the journal-boxes of the same, said transoms having end trunnions that are provided with lateral lugs and are extended through suitable bearings in said side frame, said transoms being also provided with lateral projections extending toward the journal-boxes, and secured to the upper arch of said side frames to prevent the withdrawal of said trunnions, of a bolster the ends of which pass through said bolster-opening, and means depending from said side frames for suspending said bolster.

10. In a car-truck, the combination with side frames having bolster-openings therein, of a spring-platform having a bail arising therefrom which is suspended within said bolster-opening, springs supported by said platform on either side of said side frames, a bolster supported by said springs and means suspending said bail from said side frame.

11. In a car-truck, the combination with side frames having bolster-openings therein, of a spring-platform having a bail arising therefrom which is suspended within said bolster-opening, springs supported by said platform, a bolster supported by said springs and means suspending said bail from said side frame.

12. In a car-truck, the combination with side frames having bolster-openings therein, of a suspended spring-platform, devices for sustaining said platform having three pivot-centers the axes of which are all located above said platform, two of which are in connection with said side frames and one with said platform, and a bolster supported by said platform.

13. In a car-truck, the combination with side frames having bolster-openings therein, of a suspended spring-platform, devices for sustaining said platform having three pivot-centers the axes of which are all located above said platform, two of which are in connection with said side frames and one with said platform, springs supported by said platform, and a bolster supported by said springs.

14. In a car-truck, the combination with side frames having bolster-openings therein, of a suspended spring-platform, devices for sustaining said platform having three pivot-centers the axes of which are all located above said platform, two of which are in connection with said side frames and one with said platform, springs supported by said platform on either side of said side frames, and a bolster supported by said springs.

849,194. CAR-TRUCK. WILLIAM P. BETTENDORF, Davenport, Iowa. Filed June 22, 1904. Serial No. 213,662.

Claim.—1. A car-truck comprising side frames, journal-boxes on the ends thereof, a spring-plank, a bolster, and bolster-springs, assembled and held together in proper relation without bolts or rivets.

2. A car-truck comprising side frames, journal-boxes on the ends thereof, a spring-plank, a bolster, and bolster-springs, assembled and removably held together in proper relation without bolts or rivets.

3. A car-truck comprising cast-metal side frames, journal-boxes cast integral therewith, a spring-plank, a bolster, and bolster-springs assembled and held together in proper relation without bolts or rivets.

4. A car-truck comprising cast-metal side frames, journal-boxes cast integral therewith, a spring-plank, a bolster, and bolster-springs assembled and removably held together in proper relation without bolts or rivets.

5. A car-truck comprising side frames, journal-boxes on the ends thereof, a spring-plank, a bolster, and bolster-springs, assembled and held together in proper relation by gravity without bolts or rivets.

6. A car-truck comprising side frames, journal-boxes on the ends thereof, a spring-plank, a bolster, and bolster-springs, assembled and removably held together in proper relation by gravity without bolts or rivets.

7. A car-truck comprising cast-metal side frames, journal-boxes cast integral therewith, a spring-plank, a bolster, and bolster-springs assembled and held together in proper relation by gravity without bolts or rivets.

8. A car-truck comprising cast-metal side frames, journal-boxes cast integral therewith, a spring-plank, a bolster, and bolster-springs assembled and removably held together in proper relation by gravity without bolts or rivets.

9. A car-truck comprising a bolster, side frames having bolster-openings therein in which the bolster can be raised above its normal plane, bolster-springs supporting said bolster, a spring-plank the ends of which rest upon and interlock with the sills of said bolster-openings and upon which said springs are centered and sustained.

10. A car-truck comprising a bolster, side frames having bolster-openings therein in which the bolster can be raised above its normal plane, a spring-plank the ends of which rest upon and removably interlock with the sills of said bolster-openings, normally compressed springs seated upon and removably interlocked with said spring-plank, and supporting said bolster.

11. A car-truck comprising a bolster, side frames having bolster-openings therein in which the bolster can be raised above its normal plane, a spring-plank the ends of which rest upon and removably interlock with the sills of said bolster, bolster-springs, spring-seats between which said bolsters are retained in a normally compressed condition, the lowermost ones of which rests upon and interlocks with said spring-plank.

12. A car-truck comprising a bolster, side frames having bolster-openings therein in which the bolster can be raised above its normal position, and each of which have depressions in their sills, a spring-plank the ends of which are provided with a downwardly-projecting protuberance engaging said depressions and are provided with upwardly-projecting bosses contiguous thereto, bolster-springs, spring-seats between which said bolsters are retained in a normally compressed condition, the lowermost one of which has concavities in its under surface which when said spring-seat rests upon the ends of said plank fit over and are engaged by said bosses.

13. A car-truck comprising a bolster, side frames having bolster-openings therein in which the bolster can be raised above its normal plane and below the normal plane of which said openings are made wider, bolster-springs supporting said bolster, a spring-plank the ends of which rest upon and interlock with the sills of said bolster-openings and upon which said springs are centered and sustained.

14. A car-truck comprising a bolster, side frames having bolster-openings therein in which the bolster can be raised above its normal plane and below the normal plane of which said openings are made wider, a spring-plank the ends of which rest upon and removably interlock with the sills of said bolster-openings, normally compressed springs seated upon and removably interlocked with said spring-plank, and supporting said bolster.

15. A car-truck comprising a bolster, side frames having bolster-openings therein in which the bolster can be raised above its normal plane and below the normal plane of which said openings are made wider, a spring-plank the ends of which rest upon and removably interlock with the sills of said bolster, bolster-springs, spring-seats between which said bolsters are retained in a normally compressed condition, the lowermost one of which rest upon and interlocks with said spring-plank.

16. A car-truck comprising a bolster, side frames having bolster-openings therein in which the bolster can be raised above its normal position and below the normal plane of which said openings are made wider, and each of which have depressions in their sills, a spring-plank the ends of which are provided with a downwardly-projecting protuberance engaging said depressions and are provided with upwardly-projecting bosses contiguous thereto, bolster-springs, spring-seats between which said bolsters are retained in a normally compressed condition, the lowermost one of which has concavities in its under surface which when said spring-seats rest upon the ends of said plank fit over and are engaged by said bosses.

17. A car-truck comprising side frames having no bolted or riveted connection one with the other, and each having a bolster-opening mediate its ends and journal-boxes secured to the ends thereof, a bolster the ends of which are removably supported on the sills of said bolster-openings, and car-wheels the journals of the axles of which enter said journal-boxes and lock said side frames together without the aid of bolted or riveted parts.

18. A car-truck comprising side frames having no bolted or riveted connection one with the other, and each having a bolster-opening mediate its ends and journal-boxes immovably secured to the ends thereof, a bolster the ends of which are removably supported on the sills of said bolster-openings, and car-wheels the journals of the axles of which enter said journal-boxes and lock said side frames together without the aid of bolted or riveted parts.

19. A car-truck comprising side frames having no bolted

or riveted connection one with the other, and each having a bolster-opening mediate its ends and journal-boxes cast in one piece therewith secured to the ends thereof, a bolster the ends of which are removably supported on the sills of said bolster-openings, and car-wheels the journals of the axles of which enter said journal-boxes and lock said side frames together without the aid of bolted or riveted parts.

20. A car-truck comprising side frames having no bolted or riveted connection one with the other, and each having a bolster-opening mediate its ends and journal-boxes secured to the ends thereof, a bolster and removable springs therefor, the ends of said bolster being removably supported on the sills of said bolster-openings, and car-wheels the journals of the axles of which enter said journal-boxes and lock said side frames together without the aid of bolted or riveted parts.

21. A car-truck comprising side frames having no bolted or riveted connection one with the other, and each having a bolster-opening mediate its ends and journal-boxes immovably secured to the ends thereof, a bolster and removable springs therefor, the ends of said bolster being removably supported on the sills of said bolster-openings, and car-wheels the journals of the axles of which enter said journal-boxes and lock said side frames together without the aid of bolted or riveted parts.

22. A car-truck comprising side frames having no bolted or riveted connection one with the other, and each having a bolster-opening mediate its ends and journal-boxes cast in one piece therewith secured to the ends thereof, a bolster and removable springs therefor, the ends of said bolster being removably supported on the sills of said bolster-openings, and car-wheels the journals of the axles of which enter said journal-boxes and lock said side frames together without the aid of bolted or riveted parts.

23. A car-truck comprising wheels, side frames, a spring-plank the ends of which have gravity-retained interlocking connection with said side frames, and a bolster, said side frames being connected and retained in proper position by the axles of said wheels, and having journal-boxes secured thereto, and with its boxes removable bodily in its entirety sidewise from the ends of said axles.

24. A car-truck comprising wheels, side frames, a spring-plank the ends of which have gravity-retained interlocking connection with said side frames, and a bolster, said side frames being connected and retained in proper position by the axles of said wheels, and having journal-boxes cast in one piece therewith secured thereto, and with its boxes removable bodily in its entirety sidewise from the ends of said axles.

25. A car-truck comprising wheels, side frames, a spring-plank the ends of which have gravity-retained interlocking connection with said side frames, a bolster and removable springs therefor, said side frames being connected and retained in proper position by the axles of said wheels, and having journal-boxes secured thereto, and with its boxes removable bodily in its entirety sidewise from the ends of said axles.

26. A car-truck comprising wheels, side frames, a spring-plank the ends of which have gravity-retained interlocking connection with said side frames, a bolster, and removable springs therefor, said side frames being connected and retained in proper position by the axles of said wheels, and having journal-boxes secured thereto, and with its boxes removable bodily in its entirety sidewise from the ends of said axles.

27. A car-truck comprising wheels, side frames, a spring-plank the ends of which have gravity-retained interlocking connection with said side frames, a bolster, and removable springs therefor, said side frames being connected and retained in proper position by the axles of said wheels, and having journal-boxes immovably secured thereto, and with its boxes removable bodily in its entirety sidewise from the ends of said axles.

28. A car-truck comprising wheels, side frames, a spring-plank the ends of which have gravity-retained interlocking connection with said side frames, a bolster, and removable springs therefor, said side frames being connected and retained in proper position by the axles of said wheels, and having journal-boxes cast in one piece therewith secured thereto, and with its boxes removable bodily in its entirety sidewise from the ends of said axles.

849,195. SPRING-BED. GEORGE E. BIGELOW, Worcester, Mass., assignor to Morgan Spring Co., Worcester, Mass., a Corporation of Massachusetts. Filed Oct. 15, 1903. Serial No. 177,167.

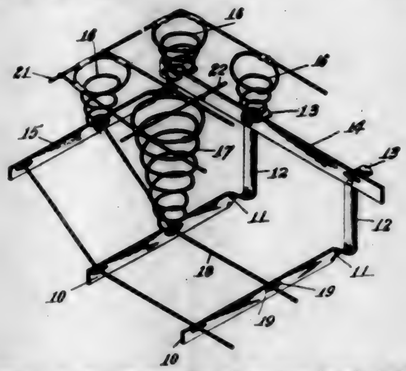

Claim.—1. In a construction of the class described, the combination of a sheet-metal supporting-strip having a slot or recess near its upper edge, a spring having a coil thereof inserted in the socket, and a stay-wire also threaded through said socket, said parts fastened together by bending down the material above the slot or recess.

2. In a construction of the class described, the combination of a sheet-metal strip having a slot or recess near its upper edge with tapering pinching-sections at its end, and a stay-wire socket between them, a spring having one coil inserted through the slot or recess with a stay-wire threaded through the recess below the coil, said parts fastened together by bending down the material above the slot or recess to fasten the coil in the pinching-sections at the ends of the slot and the wire in the socket between said pinching-sections.

3. In a bed-spring, the combination of a framework comprising sheet-metal cross-strips set up edgewise in vertical planes, each cross-strip having a quarter-turn and bent-up section at each end, side strips connected to the bent-up sections of the cross-strips, short coiled springs, each having a coil inserted through a socket in a side strip and fastened by bending down the material above the slot or recess, longer coiled springs, and stay-wires fastened to the cross-strips by the insertion of the stay-wires and the coils of said longer coiled springs, through sockets in the cross-strips, and held in place by bending down the material above the slot or recess.

4. In a bed-spring, the combination of a framework comprising sheet-metal cross-strips set up edgewise in vertical planes each cross-strip having a quarter-turn and bent-up section at each end, side strips connected to the bent-up sections of the cross-strips and standing in vertical planes, short coiled springs each having a coil inserted through a socket in the side strips and fastened down by bending the material above the slot or recess down onto the same, longer coiled springs and stay-wires fastened to the cross-strips by the insertion of the stay-wires and the coils of said longer coiled springs in sockets in the cross-strips and held in place by bending down the material above the slot or recess, and marginal wires and binding-wires connecting the upper ends of the springs together.

849,196. CHECK-TILL. CARL BLANKENAGEL, Bielefeld, Germany. Filed June 29, 1906. Serial No. 324,093.

Claim.—1. A check-till of the type described, comprising in combination in a box, a ring provided with teeth on its outer periphery and divided into fan-shaped compartments for the reception of money revolubly mounted in said box, a plate having an opening immediately under said ring, a plurality of rollers mounted in said box, and adapted to hold a strip of paper, a drawer at the bottom of and normally in said box, mechanism adapted to rotate said rollers, mechanism adapted to engage said drawer, mechanism consisting of a connecting-rod engaging a bell-crank lever revolubly mounted at the center of rotation of the ring and carrying a pawl adapted to engage the teeth on the ring in the backward movement of the connecting-rod, means adapted to engage with said mechanism, a handle outside said box engaging with said means whereby on rotating the handle after money has been put into said ring the paper is moved forward, the drawer is released and the ring is rotated so that the money falls into the drawer from that compartment of the ring over the opening in said plate, substantially as described.

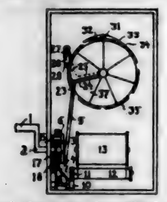

2. A check-till of the type described comprising in combination in a box, a ring provided with teeth on its outer periphery and divided into fan-shaped compartments for the reception of money revolubly mounted in said box, a plate having an opening immediately under said ring, a two-arm lever revolubly mounted on said plate one arm of same being formed as a detent and adapted to engage said teeth on said ring, a plurality of rollers mounted in said box and adapted to receive a strip of paper, a drawer at the bottom of and normally in said box, mechanism adapted to rotate said rollers, mechanism adapted to engage said drawer, mechanism consisting of a connecting-rod engaging a bell-crank lever revolubly mounted at the center of rotation of the ring and carrying a pawl carrying a stud, said pawl being adapted to engage the teeth on the ring in the backward movement of the connecting-rod and said stud being adapted to engage the free arm of said two-armed lever normally engaging the teeth of the ring whereby same is released in the forward movement of said connecting-rod, means adapted to engage with said mechanism, a handle outside the said box engaging with said means whereby on rotating the handle after money has been put into said ring the paper is moved forward, the drawer is released and the ring is rotated so that the money falls into the drawer from that compartment of the ring over the opening in said plate, substantially as described.

849,197. BLOCK-MOLDING MACHINE. WILLIAM A. BOSCK, South Omaha, Nebr. Filed May 24, 1906. Serial No. 318,574.

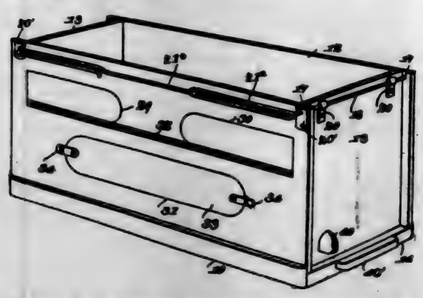

Claim.—1. A mold-box including a bottom member, front and rear plates and end plates, the front plate having an elongated opening for the insertion of a secondary bottom board, and rear and end plates provided with detachable strips for the support of said bottom board.

2. In a mold-box, a bottom member, front and rear plates and end plates, the front and rear plates having notches near their opposite ends, locking-bars extending through the notches and provided at one end with looped handles, clips engaging recessed portions of the locking-bars and secured to the end plates, pivotally-mounted clips carried by the front plate and arranged to enter notches of the locking-bar, and a hook for locking the handles to each other.

849,198. FIREARM. WILLIAM H. BOUST, Audubon, Iowa. Filed Jan. 24, 1906. Serial No. 297,678.

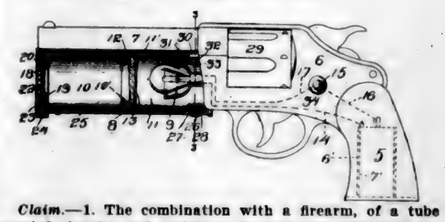

Claim.—1. The combination with a firearm, of a tube carried thereby and including forward and rearward detachably-connected sections, flanges carried by the sections at their mutually-adjacent ends, a lens engaged between the flanges and lying within the tube, a lamp within the rearward section, and a shutter at the forward end of the tube.

2. In a revolver, the combination with a frame, of a revoluble cylinder mounted therein, a pivot-shaft slidably engaged in the cylinder and the frame for rotation of the cylinder in the frame, said pivot-shaft having rack-teeth thereupon, a pinion meshed with the rack-teeth, and a shaft carried by the pinion, said second-named shaft being arranged for rotation of the pinion to move the pivot-shaft into and out of the cylinder.

3. The combination with a firearm, of a tube carried thereby and having an open end, a shutter for the open end, an operating-shaft for the shutter, a pinion carried by the operating-shaft, a transversely-extending rack-bar meshed with the pinion and movable to move the shaft, and a lamp within the tube.

849,199. WHEEL. RUSSELL H. BOWEN, Palmyra, N. J., assignor to The American Pulley Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed July 17, 1905. Serial No. 269,915.

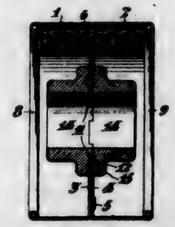

Claim.—1. In a wheel, the combination with a web; of a hub comprising axially-alined sections having projections extending through an opening in said web and respectively engaged with the opposite faces thereof, substantially as set forth.

2. In a wheel, the combination with a web, comprising opposed annular flanges carrying a rim; of a hub comprising axially-alined complementary sections having projections extending through said web and embracing the respectively opposite sides thereof, substantially as set forth.

3. In a wheel the combination with a web, of a hub com-

prising complementary sections respectively provided with axial bearings and having complementary interlocking projections and recesses whereby said sections are inseparably connected, substantially as set forth.

4. In a wheel, the combination with a web, of a hub comprising complementary sections respectively provided with axial bearings and having complementary interlocking projections and recesses circumferentially disposed in alternation in the respective hub-sections, whereby said sections are inseparably connected, substantially as set forth.

849,200. BUSHING. CHARLES A. BRINLEY, Philadelphia, Pa., assignor to The American Pulley Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Sept. 10, 1904. Serial No. 223,963.

Claim.—1. In a bushing, the combination with a semicylindric metal shell having diametrically opposite flanges, provided with recesses; of a semicircular rib, fitted to the periphery of said shell and having its ends secured in said recesses, substantially as set forth.

2. In a bushing, the combination with a semicylindric metal shell having diametrically opposite flanges provided with undercut recesses; of a semicircular rib, fitted to the periphery of said shell and having its ends upset in said recesses, substantially as set forth.

3. In a bushing, the combination with a semicylindric metal shell having diametrically opposite flanges provided with recesses; of a semicircular rib, of rectangular cross-section, fitted to the periphery of said shell and having its ends secured in said recesses, substantially as set forth.

4. In a bushing, the combination with a semicylindric iron shell having diametrically opposite flanges provided with recesses; of a semicircular wrought-iron rib, fitted to the periphery of said shell and having its ends secured in said recesses, substantially as set forth.

5. In a bushing, the combination with a cylindriform metal shell having an exterior flange provided with a recess; of a rib fitted to the periphery of said shell and having its end secured in said recess, substantially as set forth.

849,201. MECHANISM FOR OPERATING AWNINGS. WILLIAM O. CALMAR, San Francisco, Cal. Filed Jan. 9, 1907. Serial No. 351,451.

Claim.—1. The combination with an awning-roller, of a casing designed to be secured to the framing of a window or door, a boxing arranged in the casing, a spring-pressed locking-block movable in said boxing, a bevel-gear arranged in the casing and having an opening with angular walls for receiving said block, a hub on said gear-wheel having a longitudinal opening, the walls of which are angular for receiving the correspondingly-shaped portion of a crank, another gear-wheel in the casing meshing with the first-mentioned gear-wheel, and a driving connection between said other gear-wheel and the awning-roller.

2. The combination with an awning-roller, of a casing adapted to be secured to the framing of a window or door, a rod having a bevel-gear connection with the roller and extended downward, a casing into which the lower end of the rod projects, a bevel-gear attached to the rod within the casing, another gear meshing with the gear on the lower end of said rod, the said other gear having a tubular hub the walls of which are angular, the inner end of the tubular portion being enlarged and also made angular, a boxing secured in the casing, a rectangular locking-block movable in said boxing and adapted to engage in said enlarged portion, and a spring in the boxing for forcing said block into said enlarged opening.

3. The combination of a casing, a gear-wheel having a hub mounted in an opening in the casing, said gear-wheel being provided with a polygonal opening extending through the same and the hub thereof, the opening of the hub being adapted to receive a member of a crank, a sliding and spring-pressed block in the casing and normally engaging the opening of the gear-wheel, a driving-rod projecting into the casing, and a gear-wheel secured to the inner end of the said rod and meshing with the first-named gear-wheel.

849,202. AGRICULTURAL IMPLEMENT. DEXTER S. CARRON, Woodstock, Vt. Filed Nov. 17, 1906. Serial No. 343,920.

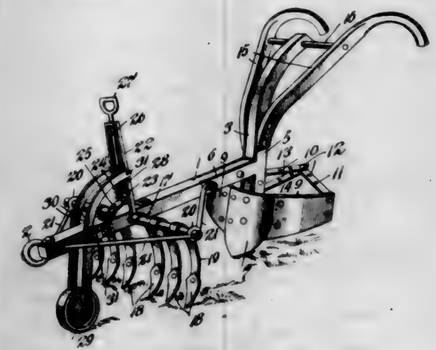

Claim.—1. An agricultural implement comprising a frame, a transverse row of cultivator-teeth carried thereby, a ground-wheel arranged in advance of the cultivator-teeth, and means for simultaneously adjusting said teeth and wheel to position the same for different operations.

2. An agricultural implement comprising a frame, a transverse rock-shaft journaled thereon, a transverse row of cultivator-teeth carried by the shaft, a ground-wheel arranged in advance of the shaft, and means for simultaneously rocking said shaft and adjusting the wheel to position the teeth and wheel for different operations.

3. An agricultural implement comprising a frame, a transverse shaft journaled thereon, a transverse row of cultivator-teeth carried by the shaft, a lever for rocking the shaft, a ground-wheel arranged in advance of the shaft, a connection between said wheel and lever, whereby the shaft and wheel may be simultaneously adjusted to position the wheel and teeth for different operations, and locking means for holding the lever in adjusted position.

4. An agricultural implement comprising a frame, a transverse rock-shaft journaled thereon, a transverse row of cultivator-teeth carried by said shaft, a ground-wheel arranged in advance of the cultivator-teeth, a frame carrying said wheel and vertically adjustable on the main frame, and an adjusting-lever connected with the rock-shaft and pivoted to said carrying-frame, whereby the cultivator-teeth and wheel may be adjusted for a variety of operations.

5. An agricultural implement comprising a frame, bearing members on opposite sides of the frame, a transverse shaft journaled centrally in the frame and terminally in said bearing members, transverse rows of cultivator-teeth arranged on opposite sides of the frame and carried by said shaft, a lever for rocking the shaft, a ground-wheel arranged in advance of the teeth, a frame carrying said wheel and slidably mounted on the frame, said frame being pivotally connected with the lever, and means for locking the lever in adjusted position.

849,203. WATER-REGULATOR. WILLIAM A. CARSON, Weiser, Idaho. Filed Oct. 17, 1906. Serial No. 339,410.

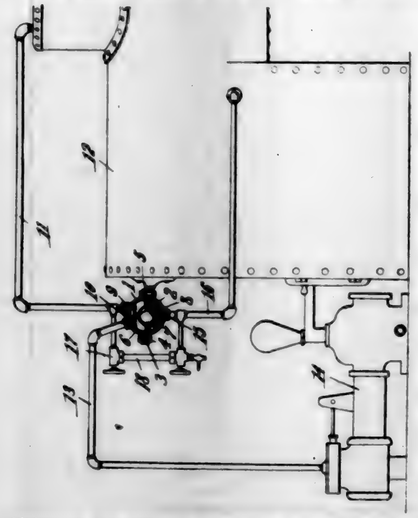

Claim.—1. A feed-water regulator for steam-boilers comprising a casing, a spherical float therein constituting a valve, said casing having a seat conforming in contour with the base of the float, said seat having a steam-inlet and a steam-outlet therein adapted to be simultaneously opened or closed by the float, and means for directing water into the casing.

2. A feed-water regulator for steam-boilers comprising oppositely-disposed substantially cup-like members secured together to form a casing, the upper member having a rounded seat, means for conducting steam to and from the casing, said means intersecting the seat, means for directing water into the casing, and a float loosely mounted within the casing and adapted to be raised into or to move downward from the seat to simultaneously close or open the steam inlet and outlet.

849,204. WINDOW-CLEANING DEVICE. ROBERT J. CLARKE, Pittsburg, Pa. Filed Dec. 13, 1906. Serial No. 347,630.

Claim.—In a window-cleaning device, the combination with a window-frame of channel-shaped guides secured to the frame, slide-blocks in said guides, a rod carried by said slide-blocks, a wiper carried by said rod, a casing at the upper end of said window-frame, band-springs in said casing having one end of each spring extended through an opening provided therefor in the frame and connected to said rod, and means connected to said slide-blocks for actuating the same, substantially as described.

849,205. ANCHOR-PROJECTILE. EDWIN S. CLOUGH, Seattle, Wash., assignor of one-half to William Williamson, Seattle, Wash. Filed July 27, 1906. Serial No. 328,130.

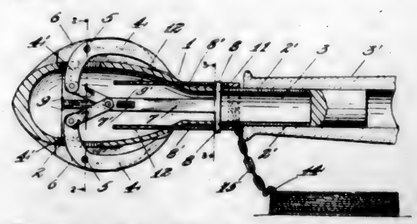

Claim.—1. A device of the type set forth comprising a projectile, an engaging member movably mounted thereon, means for attaching a life-line movable on said projectile, to move said member, and a slip connection between said means and the member.

2. A device of the type set forth, comprising a projectile, an engaging member swingably mounted thereon, means for attaching a life-line movable on said projectile, a slip connection associated with said means, and a link connection between said member and said slip connection.

3. A device of the type set forth comprising a projectile, an engaging member movably mounted thereon, means for attaching a rope movable upon said projectile, and means operatively connecting said member with said attaching means permitting of an independent movement of the latter.

4. A device of the type set forth comprising a projectile, an engaging member movably mounted thereon, a draw-bar connected with said member, means for attaching a rope movable upon said projectile, and a slip connection between said means and the bar.

5. A device of the type set forth comprising a projectile, an engaging member movably mounted thereon, a draw-bar connected with said member, an annular member for attaching a rope movable on said projectile, and a slip connection between said attaching member and the bar.

6. A device of the type set forth comprising a projectile, an engaging member swingably mounted thereon, a draw-bar connected with said member having an angular extension, and means for attaching a rope slidable on said projectile and having an arm provided with a slot receiving said extension.

7. A device of the type set forth comprising a projectile

formed with a chambered head portion and a hollow stem, an engaging member swingably mounted on said head portion, a draw-bar within said projectile connected with said member and having an angular extension, and an annular member for attaching a rope slidable on said stem and having an arm provided with a slot receiving said extension.

8. A device of the type set forth comprising a projectile, an engaging member movably mounted thereon, a movable means in said projectile connected to said member, and a line operatively connected to said movable means for effecting movement thereof.

9. A device of the type set forth comprising a projectile, having a head portion and a stem, an engaging member movably mounted on said head portion, and means in said head portion connected with said member to operate the same, and means having a life-line attached thereto secured to said first means.

10. A device of the type set forth comprising a projectile, an engaging member mounted thereon for movement to relatively projected and retracted positions and having an extension arranged in said projectile, and means connected to the extension of said member for operating said member.

849,206. WELL-CAP. THOMAS A. COOPERRIDER, Thornville, Ohio. Filed Jan. 20, 1906. Serial No. 297,018.

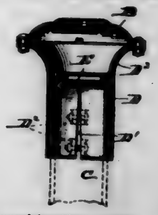

Claim.—1. The combination with a pump-pipe, of a concaved top, a barrel terminating short of said top, a casing having a bell-mouth adapted to fit against the top, the said casing inclosing the upper portion of the barrel, and a shoulder within the casing, curving downwardly and adapted to bear upon and overlap the upper edge of the barrel.

2. The combination with a pump-barrel, of a casing split lengthwise from its lower end, a bell-mouth being formed at the upper end, an annular inwardly and downwardly curving shoulder formed in the casing between the bell-mouth and the inner end of the slot, and adapted to bear upon and overlap the upper edge of the barrel, and a top adapted to fit over the said casing.

3. A device of the kind described comprising a casing split longitudinally from its lower end, an interior downwardly-curving shoulder formed immediately above the inner end of the said slot, a bell-mouth formed on the casing above the said shoulder, a top having a central threaded perforation said top resting upon the bell-mouth, lugs carried by the casing adjacent the slot, and means for drawing the edges of said slot toward each other.

849,207. LATCH-FASTENER. JAMES L. COX, Scottsville, N. Y. Filed Feb. 10, 1906. Serial No. 300,517.

Claim.—1. A latch comprising a latch-rod, a casing for supporting the rod, said rod being mounted for revoluble movement and independent swinging movement relative to the casing, and a spring for returning the latch-rod to normal position after operation.

2. A latch comprising a casing, a latch-rod mounted within the casing for revolution and for independent swinging movement, one end of the rod projecting beyond the casing and being provided with a locking-lug, and a spring fixed within the casing and adapted to be put under tension during either movement of the rod.

3. The combination of duplicate cupboard-doors, of a keeper carried by the inner side of one door, and a latch adapted on closing the door to automatically engage said keeper on the inner side of the doors, and means operative

from without the doors for disengaging said latch and keeper, said means operating by a revolution or tilting of the latch-body.

849,208. DENTAL HANDPIECE. LYTER H. CRAWFORD, New York, N. Y. Filed Apr. 13, 1906. Serial No. 311,548.

Claim.—1. A dental handpiece comprising a barrel or casing, a nozzle having a recess or chamber, a chuck located in said recess or chamber, a block for engaging said chuck, and means for actuating said block to clamp the tool in the chuck, said means comprising a sleeve arranged to be rotated on said barrel or casing and a longitudinally-movable member connecting said block and sleeve.

2. A dental handpiece comprising a barrel or casing, a nozzle, a chuck, a tubular member, a shaft, a block for engaging said chuck, and means arranged to be rotated on said barrel or casing for actuating said member to operate the block.

3. A dental handpiece comprising a barrel or case, a nozzle, a shaft having one end formed into a chuck, a block for locking said chuck, a sleeve, and means intermediate said block and sleeve for imparting a longitudinal sliding movement to said block upon rotation of the sleeve.

4. A dental handpiece comprising a barrel or case, a nozzle, a shaft having one end formed into a chuck, a block for locking said chuck, a cup for supporting said

block, a collar in operative connection with said cup, and a threaded sleeve engaging said collar, whereby the rotation of said sleeve will cause the locking of the chuck.

5. A dental handpiece comprising a barrel or case, a nozzle removably attached to said barrel or case, a shaft carrying a chuck, a block for locking said chuck, a cup for supporting said block, a tube secured to said cup, a collar for imparting a longitudinal movement to said tube, and a sleeve engaging said collar to impart a longitudinal movement thereto.

6. A dental handpiece comprising a barrel or case, a nozzle, a tube, a shaft carrying a chuck extending through said tube, a block for locking said chuck, a spring surrounding said shaft, a collar engaging said tube, and a sleeve for imparting a longitudinal movement to said collar.

7. A dental handpiece comprising a barrel or case, a nozzle, a shaft carrying a chuck, a block for locking said chuck, a cup for supporting said block, a tube connected to said cup, a collar engaging said tube, a threaded sleeve mounted on said barrel or case and engaging said collar, a bearing into which said tube is screwed, a bearing having a recess, and a collar fixed on the shaft and adapted to enter said recess to limit the longitudinal or inward thrust of the shaft.

849,209. COMBINED MOUTH MIRROR AND LAMP. LYTER H. CRAWFORD, New York, N. Y. Filed Apr. 25, 1906. Serial No. 313,585.

Claim.—1. A combined mouth mirror and lamp for dental use comprising a casing provided with illuminating and reflecting mediums mounted universally adjustable on a handle.

2. A combined mouth mirror and lamp for dental use comprising a handle, a mirror, and an electric lamp said mirror and lamp being adjustably mounted on said handle, and means for making and breaking the lamp-circuit carried by said handle.

3. A combined mouth mirror and lamp comprising a handle, a casing adjustably mounted on said handle, a mirror mounted on said casing, a lens mounted opposite said mirror, and a flat electric lamp arranged between said mirror and lens.

4. A combined mouth mirror and lamp for dental use comprising a handle, a casing adjustably connected to said handle, a mirror mounted on said casing, a lens mounted opposite said mirror, a flat electric lamp arranged between said mirror and lens, and means carried by said handle for making and breaking the lamp-circuit.

5. A combined mouth mirror and lamp for dental use comprising a handle, a casing connected by a universal joint to said handle, a mirror mounted on said casing, a lens mounted opposite said mirror, an electric lamp supported within said casing, conductor-wires leading through said handle to said lamp, and a make-and-break collar carried by said handle.

849,210. COMBINED WATER HEATER AND STILL. DENNIS W. DALEY, CHARLES A. GUNN, and FRANK R. DALEY, Pittsburg, Pa., assignors of one-fifth to Mollie Daley and one-fifth to Elvie Daley, Pittsburg, Pa. Filed May 18, 1906. Serial No. 317,460.

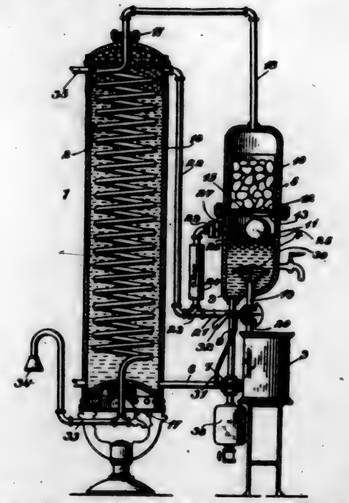

Claim.—1. In a device of the character described, the combination of the hot-water tank, a water-back or heater associated therewith, steam-tank associated with said water-back or heater and means for leading the steam from said steam-tank through the said hot-water tank for condensing the steam, substantially as described.

2. In a device of the character described, the combination of the hot-water tank, a water-back or heater connected thereto in such manner as to provide free circulation of water through said hot-water tank and heater, a steam-tank associated with said water-back or heater, means for providing a free circulation of water through said steam-tank and the water-back or heater, and means for leading the steam from said steam-tank through said hot-water tank to condense the steam and to heat the water in said hot-water tank, substantially as described.

3. In a device of the character described, the combination of the hot-water tank, a water-back or heater connected thereto, a steam-tank associated with said water-back or heater, means for simultaneously shutting off connection between the said hot-water tank and water-back or heater and for bringing into connection the said steam-tank and water-back or heater, substantially as described.

4. In a device of the character described, the combination of the hot-water tank, a water-back or heater connected thereto, a steam-tank connected with said water-back or heater, a deflecting-plate in said steam-tank, a charcoal-receptacle associated with said steam-tank and a condensing-coil within said hot-water tank and connected to said steam-tank, substantially as described.

5. In a device of the character described, the combination of a hot-water tank, a water-back or heater con-

nected thereto, a steam-tank connected to said water-back or heater, a receptacle for holding a purifying material associated with said steam-tank and a condensing-coil within said hot-water tank, said condensing-coil receiving the steam passing from said steam-tank, substantially as described.

6. In a device of the character described the combination with a heater and a hot-water tank, of a steam-tank arranged to be supplied from said hot-water tank, and a coil within said steam-tank for leading the water from said heater through said steam-tank to heat the water therein, and means for leading the water from said coil to said hot-water tank, substantially as described.

7. In a device of the character described the combination with a heater and a hot-water tank, of a steam-tank arranged to be supplied from said hot-water tank, means for leading water from said heater through said steam-tank for heating the water therein, and means for leading the water passing through said steam-tank to said hot-water tank, substantially as described.

849,211. BOTTLE AND JAR. CORNELIUS J. DALY, Philadelphia, Pa., assignor of one-fourth to John O. Eberhard, Jr., Philadelphia, Pa. Filed Dec. 22, 1904. Serial No. 237,920.

Claim.—1. A bottle or jar having a narrow transparent pocket extending inward adjacent to one of its walls and in close proximity thereto for receiving a label and holding it in position therein to be read through the wall of the bottle.

2. A bottle or jar having a narrow pocket extending vertically inward from the shoulder thereof and in close proximity with one of its side walls for receiving a label and holding it in position to be read through the wall of the bottle.

849,212. SELF-THREADING LOOM-SHUTTLE. JEAN B. DAUDELIN, Fall River, Mass., assignor to John Shambow and Christopher J. Shambow, Woonsocket, R. I. Filed Apr. 21, 1904. Serial No. 204,212.

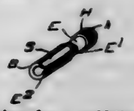

Claim.—1. A bushing for a self-threading shuttle having a threaded portion, a threading-slot throughout a part of its length, and a cleared portion adjacent to said slot and on one side thereof.

2. In a self-threading shuttle, the shuttle-body having a threading-passage and delivery-eye, a bushing having a threaded portion, a threading-slot and a cleared portion on one side of and adjacent to said slot and connecting with the threading-passage of the shuttle.

3. A bushing for a self-threading shuttle having a threading-slot and a cleared portion at the edge of said slot.

4. In a self-threading shuttle, the shuttle-body having a delivery-eye and threading-passage, a bushing for the delivery-eye, said bushing having a threading-slot therein and a cleared portion on the edge of the slot and connecting with the threading-passages of the shuttle.

5. A bushing for a self-threading shuttle, having an unthreaded portion of reduced diameter between its end portions, one of the latter being externally threaded, and a slot extending from one end of the bushing and terminating in said portion of reduced diameter.

6. A bushing for a self-threading shuttle, having a solid, externally-threaded head slotted at its end, a tubular body portion having a longitudinal threading-slot throughout a part of its length, and a cleared portion adjacent and on one side of the threading-slot.

849,213. SELF-THREADING LOOM-SHUTTLE. PIERRE P. DAUDELIN, Fall River, Mass., assignor to John Shambow, Woonsocket, R. I. Filed Mar. 6, 1905. Serial No. 248,414.

Claim.—1. The combination, in a shuttle having a delivery-eye in its side, and a portion of the shuttle-body crossing the lower portion of the eye, to form a thread-support, of a tubular, externally-threaded conductor screwed into the shuttle-body coaxially with the eye and having a longitudinal slot terminating at its outer end below the thread-support, to constitute an inlet for the delivery-eye, said conductor being cut away transversely at the inner end of the slot to permit the thread to be drawn thereinto, and means on the shuttle-body to guide the thread to the cut-away portion of the conductor.

2. The combination in a shuttle having a delivery-eye, of a tubular, externally-threaded conductor screwed into the shuttle coaxially with the eye and having a longitudinal slot communicating at its outer end with the eye, to form a thread-inlet therefor, the inner end of the inlet being enlarged to receive the thread, means to guide the thread to such enlarged portion of the inlet, and a thread-support on the shuttle-body above and crossing the outer end of the inlet.

3. The combination, in a shuttle having a delivery-eye, of a tubular, externally-threaded conductor screwed into the shuttle coaxially with the eye and having a longitudinal slot enlarged at its inner end and at its outer end communicating with and forming a thread-inlet for the delivery-eye, a thread-support on the shuttle-body above and crossing the outer end of the inlet, and intersecting passages in the shuttle-body to direct the thread down to and into the conductor and delivery-eye through the longitudinal slot.

4. The combination in a shuttle having a side delivery-eye and a passage intersecting it, of a tubular conductor inserted in the shuttle coaxially with the eye and having in its bottom a longitudinal slot enlarged at its inner end and at its outer end communicating with the eye, to form a thread-inlet therefor, the conductor being externally recessed above the slot to register with the passage in the shuttle and permit the thread to enter the slot, an intersecting passage in the shuttle to direct the thread to the slot, and a shoulder on the shuttle above and crossing the outer end of the slot, to prevent escape of the thread from the delivery-eye and the conductor.

849,214. BRICK-PRESS BOX. LAWRENCE W. DAUGHENBAUGH and CLARENCE A. MARKLE, Clearfield, Pa. Filed May 22, 1906. Serial No. 318,222.

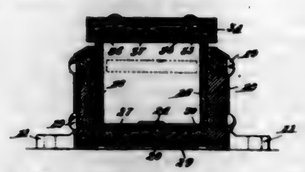

Claim.—1. In a brick-press, a press-box, detachable liners therefor, and means for securing the liners in place, the press-box and liners having closely-interfitting connections to prevent shearing strain on the securing means.

2. In a brick-press, a press-box, detachable liners therefor, the box and liners having closely-interfitting ribbed and grooved connections, and screws extending through the walls of the press-box into the ribbed portions of the liners, shearing strain on the screws being prevented by the ribbed and grooved connections.

3. In a brick-press, a press-box, detachable liners therefor, a box being provided with horizontal grooves, liners having ribs closely fitting within said grooves, and screws extending through the walls of the press-box into the ribs of the liners, shearing strain on said screws being prevented by the ribbed and grooved connections.

4. In a brick-press, a press-box having horizontally-disposed grooves at its inner walls, liners having horizontal ribs fitting within said grooves, securing-screws extending through the vertical walls of the press-box and tapped into the ribbed portions of the liners.

5. In a brick-press, a pad comprising a plate having a recessed upper face and provided with a continuous marginal recess, a detachable name-plate carried by the pad, facing-strips arranged in the recessed upper face of the pad, and liner-strips secured within the marginal recesses of said pad.

849,215. GRAIN-WEIGHING MACHINE. MONROE DAVIS, Billings, Okla., assignor of one-half to O. W. Hutchinson, Billings, Okla. Filed July 13, 1906. Serial No. 326,024.

Claim.—1. In a grain-weighing machine, a rocking beam, a pair of bearings to jointly support the beam and alternately form bearings therefor, and a pair of boxes pivotally suspended from the beam outward of said bearings.

2. In a grain-weighing machine, a rocking beam, a pair of bearings to jointly support the beam and alternately form bearings therefor, a pair of boxes pivotally suspended from the beam outward of said bearings, a hopper, a tiltable pan below the same, and means to automatically tilt said pan and cause the grain from the hopper to alternately fill said boxes.

3. In a grain-weighing machine, a rocking beam, a pair of bearings to jointly support the beam and alternately form bearings therefor, a pair of boxes pivotally suspended from the beam outward of said bearings, a hopper, a tiltable pan below the same, and a traveling weight to automatically change its position after one box has been weighed and incidentally reverse the position of the tilting pan and cause the grain from the hopper to pass into the other or empty box.

4. In a grain-weighing machine, a rocking beam, a pair of bearings to jointly support the beam and alternately form bearings therefor, a pair of boxes pivotally suspended from the beam outward of said bearings, a hopper, a tiltable pan below the same, a pair of abutments outward of the bearings, a weight to move up and down with and longitudinally of the beam and adapted to be prevented from moving longitudinally by the abutment contiguous to the empty box until the opposite box has been weighed and raised the opposite end of the beam sufficiently high to lift the weight completely above the abutment.

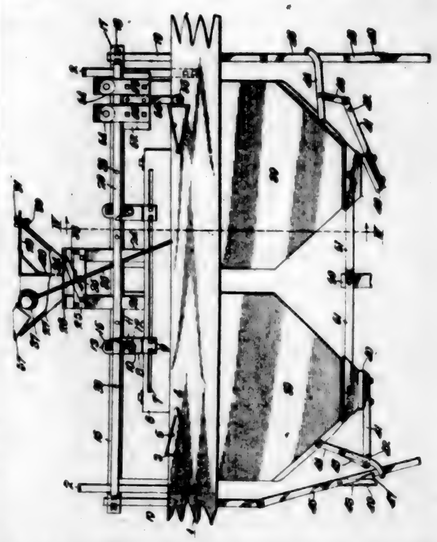

5. In a weighing-machine, a suitable support, standards and abutments carried thereby, a rocking beam above the support and adapted to be limited in its rocking movements by said standards, a pair of bearing-brackets at opposite sides of and equal distances from the center of the beam and rigid with said supports, bearings rigid with and at opposite sides of and equal distances from the center of the beam, engaging said bearing-brackets simultaneously or alternately, boxes pivotally suspended from the beam outward of said bearings, a hopper above the boxes, a tilting pan below the hopper, a shift-lever to operate said pan and hold the same yieldingly tilted to discharge into one box or the other, and a weight movable upward with the beam and longitudinally thereof and adapted to be prevented by the adjacent abutment from the last-named movement until it is lifted above said abutment and in its longitudinal movement to operate the shift-lever and reverse the position of the tilting pan.

6. In a machine of the character described, a rocking beam, bearings at opposite sides of its center to alternately form the fulcrums of said beam, boxes pivotally suspended from the beam outward of said bearings, abutments outward of the suspension-points of the boxes, a longitudinal track-rail rigid with the beam, a traveling weight on said rail outward of the pivotal point of the box to be raised and having a part outward of the corresponding abutment, a tilting pan to discharge grain into the other box until the same overbalances the empty box and the weight and raises the latter until it clears said abutment, and a shift-lever connected to said tilting pan and adapted to be operated by the weight as it travels down the inclined track-rail after being raised above the abutment, the abutment-engaging part of the weight in such movement passing under and outward of the other abutment.

7. In a grain-weighing machine, a rocking beam, a pair of bearings to jointly support the beam and alternately form bearings therefor, a pair of boxes pivotally suspended from the beam outward of said bearings, and means to prevent undue swinging movement of the boxes as they rise and fall in the weighing operation.

8. In a grain-weighing machine, a rocking beam, a pair of bearings to jointly support the beam and alternately

form bearings therefor, a pair of boxes pivotally suspended from the beam outward of said bearings, a rigid part, and links pivotally connecting said part with the boxes to prevent undue swinging movement of the latter in the weighing operations.

9. In a machine of the character described, a box having its lower end open, a hinged valve, a frame pivoted to the box, a link pivoted at its opposite ends to the valve and to said pivoted frame intermediate of its ends, a rocking beam from which the box is suspended, and a bar supported from the rocking beam at a greater distance from its fulcrum than the box and adapted as the beam rocks and raises the box to be also raised and engage the outer end of the pivoted frame and break the toggle composed of said frame and link, to permit the valve to open.

10. In a machine of the character described, a box having its lower end open, a hinged valve, a toggle between the box and valve to hold the latter closed over said opening, a bar having a shoulder engaging a part of the toggle, means to raise the box, and means to simultaneously but more rapidly raise said bar and cause it to break the toggle to permit the valve to be opened.

11. In a machine of the character described, a box having an opening in its lower end, a hinged valve having an arm projecting outward of the hinge-point, a preponderating weight on the valve comprising a hinged frame pivotally suspended from the box and provided with a cross-pin, a link pivotally connecting said arm with the valve-arm and forming in conjunction with said frame a toggle held normally locked by the preponderating weight, and means to swing said frame outward to break the toggle and permit the valve to be opened.

12. In a machine of the character described, a box having an opening in its lower end, a hinged valve having an arm projecting outward of the hinge-point, a preponderating weight on the valve comprising a hinged frame pivotally suspended from the box and provided with a cross-pin, a link pivotally connecting said arm with the valve-arm and forming in conjunction with said frame a toggle held normally locked by the preponderating weight, a pivoted bar having its outer edge engaged by said cross-pin and provided with a notch above the latter, and a guard to close such notch at times.

13. In a machine of the character described, a box having an opening in its lower end, a hinged valve having an arm projecting outward of the hinge-point, a preponderating weight on the valve comprising a hinged frame pivotally suspended from the box and provided with a cross-pin, a link pivotally connecting said arm with the valve-arm and forming in conjunction with said frame a toggle held normally locked by the preponderating weight, and a pivoted bar engaged by said cross-pin and caused by the latter to pitch downwardly and inwardly and provided above said pin with a notch in its outer edge and with a guard adapted to close said notch at times.

14. In a machine of the character described, a rocking beam, a box pivotally suspended therefrom, open at its lower end, a bar depending from the beam at a greater distance from its fulcrum than the box, a bar pivotally suspended from the depending bar to swing toward or from the box and provided with a notch and a pivoted guard to normally close the notch, a valve hinged at its outer edge to the box, and a preponderating weight on the valve outward of its hinge-point, comprising a swing-frame carried by the box and provided with a cross-pin outward of the pivoted bar, and a link pivotally connecting the swing-frame and the valve.

15. In a machine of the character described, the combination of a scale-beam, a pair of boxes pivotally carried by the beam having valve-controlled discharge ends, means whereby the leverage on the beam of the charged box over the uncharged box is decreased, means for charging the empty box until with its advantage of leverage it starts to descend and at the same time elevates the charged box, and means to open the valve of the charged box as it rises.

16. In a machine of the character described, the combination of a rocking beam, bearings for the same at opposite sides of its center and adapted to alternately form the fulcrum thereof and in the interim a joint-support therefor, boxes pivotally suspended from the beam outward of said bearings, and a weight to resist downward movement of the loaded box and after the same is weighed to rapidly move to a point where it will resist the downward movement of the companion box.

17. In a machine of the character described, the combination of a rocking beam, bearings for the same at opposite sides of its center and adapted to alternately form the fulcrum thereof and in the interim a joint-support therefor, boxes pivotally suspended from the beam outward of said bearings, a weight to resist downward movement of the loaded box and after the same is weighed to rapidly move to a point where it will resist the downward movement of the companion box, and means actuated by said weight while changing its position to cut off the supply of grain to the loaded box and direct it into the companion box.

18. In a machine of the character described, a rocking beam, bearings at opposite sides of the center of the same and adapted to alternately form the fulcrum thereof, a pair of boxes pivotally suspended from the beam at the outer sides of said bearings, and a weight adapted to travel from the higher to the lower end of the beam in the interim between the weighing of the boxes.

19. In a machine of the character described, a rocking beam, bearings at opposite sides of the center of the same and adapted to form alternately, fulcrums therefor, a pair of boxes pivotally suspended from the beam at the outer sides of said bearings, a weight adapted to travel from the higher to the lower end of the beam in the interim between the weighing of the boxes, and means actuated by the weight in changing its position, to cut off the supply to the weighted box and direct it into the companion box.

849,216. POLICEMAN'S CLUB. CHARLES J. DIEHL and HENRY W. C. EICKHOFF, Tippecanoe City, Ohio. Filed Aug. 23, 1906. Serial No. 331,709.

Claim.—1. In a policeman's club, the combination, with a hollow handle portion, a battery within the same, and an electric light carried by said handle portion, of a switch controlling the flow of current to said lamp, and means for operating said switch from a plurality of points in the circumference of said club, substantially as described.

2. In a policeman's club, the combination, with a hollow handle portion, a battery within the same, and an electric light carried thereby, of a switch controlling the flow of current to said light comprising contact-plates on the opposite sides of said club, and a split ring having its closed sides in permanent contact with one of said plates and its open side above the other of said contact-plates and normally out of engagement therewith, substantially as described.

849,217. SAFETY-PIN. RICHARD DOUGLAS, New York, N. Y. Filed Jan. 10, 1906. Renewed Feb. 13, 1907. Serial No. 357,190.

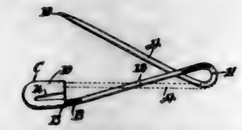

Claim.—1. A safety-pin having a body portion provided at one end with a flattened guard projecting to one side thereof, the body portion being at an angle to the longitudinal axis of the guard, and a straight pin member connected with the body member by a single loop and crossing the said body member between the said loop and the guard, and the body member being arched to space it from the pin member when said member is engaged with the guard, the single loop facilitating the shifting of the pin to bring either the pin member or the body member through the fabric in position to bear the strain of the piercing action and the loop being projected to the opposite side of the body member from the guard whereby the pin will be caused to lie flat when in either position, substantially as set forth.

2. A safety-pin comprising a body portion provided at one end with a guard projecting laterally therefrom, and a pin portion united with the opposite end of the body by a single bend whereby to facilitate the shifting of the pin to bring the fabric into engagement with one or the other portions of the said pin, the said pin portion crossing the body portion and extending on approximately a straight line and arranged at its point to engage the guard, the bend uniting the portions of the pin being projected to the opposite side of the body portion from the guard and the body portion being offset adjacent to the guard, to space the said body portion from the pin portion when the latter is engaged with the guard.

849,218. NECTIE-FASTENER. ESTHER E. R. DRESCHER, Princeton, Minn. Filed Dec. 1, 1906. Serial No. 345,957.

Claim.—The combination with a tie including separate portions, of a confining-band engaged therearound, a socket including portions engaged through the band adjacent to one of its ends and including also a part within which the other end of the band is engaged, said first-named portions of the socket being bent to prevent disengagement thereof from the first-named end of the band and to prevent disengagement of the second-named end of the band from the part in which it is engaged.

849,219. DOUBLE-ACTING WINDOW-SHADE. MAURICE ECKER, Boston, Mass., assignor to Louis M. Stern, Brooklyn, N. Y. Filed Oct. 9, 1906. Serial No. 338,115.

Claim.—1. In combination, a roller adapted to be attached near a window, a second roller adapted to be attached opposite the same, pulleys mounted on said rollers, an endless cord passing over said pulleys, means whereby each of said pulleys may rotate each corresponding roller in one direction only, a curtain normally disposed before said window, and ribbons attached to said curtain and wrapping bodily on said rollers, whereby said curtain may be made to wrap upon itself on either of said rollers.

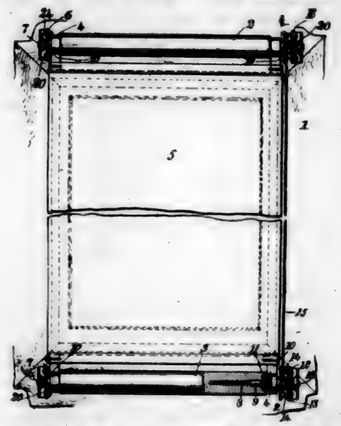

2. In combination, a roller adapted to be attached near a window, a second roller adapted to be attached opposite the same, pulleys mounted on said rollers, an endless cord passing over said pulleys, means whereby each of said pulleys may rotate its corresponding roller in one direction only, a curtain normally disposed before said window, ribbons attached to said curtain and wrapped bodily on said rollers whereby said curtain may be wrapped upon itself on either of said rollers, and brackets supporting said rollers and offering a resistance to the rotation thereof.

3. A curtain-roller having a bore in the end thereof whereby said roller may be cut to a shorter length, which shorter length will present said bore, and an attachment adapted to fit on the end of said roller and having a shank adapted to be received in said bore.

4. In combination, a roller adapted to be mounted at one side of a window, a second roller adapted to be mounted at the opposite side of the window, pulleys rotatably mounted on said rollers, an endless cord passing around said pulleys and affording means for rotating the same, ratchet-wheels rigid with said rollers and having teeth projecting in opposite directions, pawls carried by said pulleys and engaging said ratchet-wheels for rotating the same, ribbons connecting said rollers and adapted to wrap bodily upon said rollers and a curtain mounted between said rollers and adapted to roll upon either of the same.

5. A pulley for operating a curtain, consisting of two collars having sleeves with means for engaging each other when slid laterally.

6. A curtain-pulley consisting of a pair of collars having sleeves projecting toward each other, one of said sleeves having a notch therein and the other of said sleeves having a tongue received in said notch, whereby said collars may be interlocked by a lateral movement.

7. In combination, a curtain-roller having a head on the end thereof, and a pulley having a bore receiving a portion of said head, said pulley consisting of oppositely-disposed collars having sleeves projecting toward each other and adapted to interlock by a lateral movement of one of said collars with respect to the other.

849,220. BLOW-TORCH. FRED G. EMMELMANN and HARRY R. EMMELMANN, Indianapolis, Ind. Filed Jan. 8, 1906. Serial No. 295,026.

Claim.—1. As a new article of manufacture, a blow-torch consisting of a tubular body threaded externally at

both ends, a top and bottom each consisting of a single casting and threaded upon the body, said threaded joints being tinned and sweated, two clips screwed to said castings by band-wires passing around the latter a grip connecting the clips and a filling-cap having a wrench-rod loosely passing through a lug formed upon said cap.

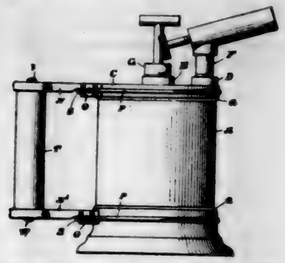

2. In a blow-torch the combination of a body formed of a single piece of tubing, threads formed upon both ends of said body, a top consisting of a single casting having internal threads for engagement with the threads of the upper end of the body, a bottom consisting of a single casting provided with internal threads for engagement with the threads upon the lower end of the body, two band-wires, one fitted in a groove formed around each of the top and bottom castings, clips to which the ends of said wires are attached for securement to the castings, means for tightening and loosening said wires, a grip consisting of a single piece of tubing formed upon sockets formed in the clips, a rod passing through the upper clip and threaded into the lower clip, the end of which rod is riveted so as to hold the grip in place, a cap threaded upon a boss formed on the bottom casting and a wrench-rod passing loosely through a lug upon the cap, as and for the purpose set forth.

3. In combination with a blow-torch of the character described, a handle consisting of two clips connected by a grip consisting of a single piece of tubing and secured together by a rod passed through the two clips and two band-wires one of which passes around and lies in a groove formed in the top of the torch the other passing around and lying in a groove formed in the bottom of the torch, one end of which wires being held in one of the clips by a rivet-head, the other end of which wire being provided with a nut whereby the wires may be tightened upon the torch to hold the clips in place or loosen for adjusting the handle relative to the burner, as specified.

849,221. AUTOMATIC FIRE-ESCAPE MACHINE. FREDERICK G. ENGEL, New York, N. Y. Filed Dec. 2, 1905. Serial No. 290,046.

Claim.—1. A fire-escape device comprising a casing, a drum therein, a cable wound on said drum, a carrier at the free end of the cable, a ring on the casing, a plate, levers carried by said plate and having frictional contact with the ring on the rotation of said plate, a worm-gear connected to said plate, a cog-wheel connected to the drum, a shaft, a worm at one end thereof, engaging with the worm-gear connected to the plate, a second gear-wheel loosely mounted on said shaft and engaging with the cog-wheel connected to the drum and a pawl for imparting the movement of said loosely-mounted worm-wheel to the shaft when said wheel rotates in one direction, substantially as described.

2. A fire-escape device comprising a casing, a shaft held therein, a worm-gear R rotatably mounted on said shaft, a plate connected to said worm-gear E, levers carried by said plate, a ring K with which the levers have frictional contact on the rotation of said plate, a drum, rotating about the said shaft, a cable wound on said drum, a cog-wheel on said drum, a shaft, a gear-wheel *d* loosely mounted on said shaft, said wheel engaging with the cog-wheel on the drum, a pawl for imparting the rotation of the wheel *d* to the shaft when said wheel rotates in one direction, a worm G at the other end of the shaft engaging with the worm-gear R, a gear P having its hub surrounding the shaft, gears connecting said gear with the drum, and

a spring located within the drum and having one end connected to the hub of the gear and its other end to a stationary part of the casing, substantially as described.

849,222. EXTENSION LADDER AND LIFT. ROBERT FLEMING, Toronto, Ontario, Canada. Filed Nov. 28, 1906. Serial No. 345,570.

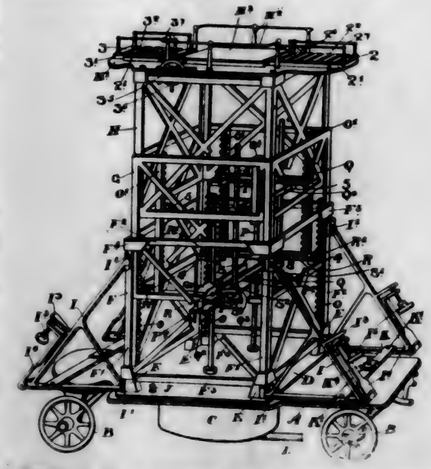

Claim.—1. In an extension ladder or lift, the combination with the telescopic standard-sections, of a turn-table forming the base for the same, a platform on which such turn-table is rotatably supported, vertical toothed racks secured at the bottom to the sides of the sections, guiding stiffening brackets secured to the bottom of each succeeding section above and through which the racks extend, shafts having bearings in the brackets and pinions on the shafts meshing with the racks and means for rotating the shafts, carrying the pinions, simultaneously as and for the purpose specified.

2. In an extension ladder or lift, the combination with the telescopic sections, of the toothed racks secured at the bottom to the sides of the sections, guiding stiffening-brackets secured to the bottom of each succeeding section above and through which the racks extend, shafts having bearings in the brackets and pinions on the shafts meshing with the racks, and means for rotating the shafts, carrying the pinions, simultaneously as and for the purpose specified.

3. In an extension ladder or lift, the combination with the telescopic sections, of the toothed racks secured at the bottom to the sides of the sections, guiding stiffening-brackets secured to the bottom of each succeeding section above and through which the racks extend, shafts having bearings in the brackets and pinions on the shafts meshing with the racks, a vertical shaft, bearings for the same at the bottom of the lower section and bearings for the same at the bottom of the next succeeding section above, a gear-wheel rotating with the shaft and having a sliding movement thereon, and a gear-drive between such shaft and the horizontal shaft carrying the pinions as and for the purpose specified.

4. In an extension ladder or lift, the combination with the telescopic sections, of the toothed racks secured at the bottom to the sides of the sections, guiding stiffening-brackets secured to the bottom of each succeeding section above and through which the racks extend, shafts having bearings in the brackets and pinions on the shafts meshing with the racks, a vertical shaft, bearings for the same at the bottom of the lower section and bearings for the same at the bottom of the next succeeding section above, a gear-wheel rotating with the shaft and having a sliding movement thereon, a gear-drive between such shaft and the horizontal shaft carrying the pinion and a suitable housing for the aforesaid gearing as and for the purpose specified.

5. In an extension ladder or lift, the combination with the telescopic sections, of the toothed racks secured at the bottom to the sides of the sections, guiding stiffening-brackets secured to the bottom of each succeeding section above and through which the racks extend, shafts having bearings in the brackets and pinions on the shafts meshing with the racks, a vertical shaft, bearings for the same at the bottom of the lower section and bearings for the same at the bottom of the next succeeding section above, a gear-wheel rotating with the shaft and having a sliding movement thereon, a gear-drive between such shaft and the horizontal shaft carrying the pinion, a vertical companion shaft having bearings on the aforesaid housing, a gear at the bottom of the same meshing with the sliding gear on the aforesaid vertical shaft, a housing supported on the next succeeding section above the intermediate section, slidable vertically on the companion shaft and a gear-drive between the companion shaft and the shaft carrying the pinions on the said sections as and for the purpose specified.

6. The combination with the platform and housing and turn-table having bearings on the housing, the main driving-shaft, the vertical stub-shaft and bevel-gear on the main shaft and stub-shaft, the bevel-gear on the top of the stub-shaft, a cross-shaft provided with a bevel-gear meshing with the bevel-gear on the top of the stub-shaft, a bevel-gear located at each end of the cross-shaft, the telescopic sections provided with vertical toothed racks fastened to the bottom of each section, the guiding-brackets fastened to the bottom of each succeeding section above and through which the toothed racks extend, the horizontal shafts provided with pinions meshing with the aforesaid racks, the vertical pair of shafts having bevel-wheels at the bottom meshing with the bevel-wheels on the cross-shaft journaled in the turn-table, gear-wheels rotatable with the vertical shaft and slidable thereon, housing suitably supported and through which the vertical shafts extend, gear-drives between the vertical shafts and the lowermost cross-shafts carrying the pinions, a pair of companion shafts having gear-wheels at the lower end meshing with the gear-wheels on the main vertical shafts, housings on the next succeeding section above through which the companion shafts extend and gear-drives located in the housings between the companion shafts and the cross-shafts carrying pinions on the said section as and for the purpose specified.

7. In an extension ladder or lift, the combination with the top section having a suitable platform, of a supplemental platform, longitudinal bars securing it to the main platform and forming guideways, bridges having their longitudinals or bars extending into the guideway adjacent to each other and means for imparting to the bridges longitudinal movement inwardly and outwardly as and for the purpose specified.

8. In an extension ladder or lift, the combination with the top section having a suitable platform, of a supplemental platform, longitudinal bars securing it to the main platform and forming a guideway, bridges having their longitudinals or bars extending into the guideway adjacent to each other, toothed racks secured to the bottom of the bridges, shafts journaled beneath the platform and pinions carried thereby and meshing with the toothed racks and means for turning the pinions operated from the platform as and for the purpose specified.

9. The combination with the top section and platform carried thereby and a supplemental platform and guideways located underneath the supplemental platform of a bridge, a toothed rack located underneath the bridge, a shaft, a pinion located on the same meshing with the toothed rack and means for turning the shaft as and for the purpose specified.

849,223. SPRING-WHEEL. JOSEF FLIEGEL, Mallmitz, Germany. Filed Dec. 26, 1906. Serial No. 349,461.

Claim.—1. In a spring-wheel the combination of a rigid rim, an inner hub capable of eccentric movement relative to the said rim, a set of buffer-bars pivotally connected with the outer rim and having straight-faced abutments which contact tangentially with the periphery of the inner hub, a set of springs supporting yieldingly the said buffer-bars and means such as lateral hub-disks for holding the buffer-bars and springs in the plane of the wheel-rim, substantially as described and shown in the drawings.

2. In a spring-wheel the combination of a rigid rim, an inner hub capable of eccentric movement relative to the said rim, a set of buffer-bars pivotally connected with the outer rim and having straight-faced abutments which contact tangentially with the periphery of the inner hub, a set of springs supporting yieldingly the said buffer-bars, adjustable stops for limiting the movement of the buffer-bars in an inward direction and means such as lateral hub-disks for holding the buffer-bars and springs in the plane of the wheel-rim, substantially as described and shown in the drawings.

849,224. STEP-LADDER. HORACE B. FORBES, Ogden, Utah. Filed Aug. 14, 1906. Serial No. 330,548.

Claim.—1. A step-ladder comprising two sets of legs pivotally connected together, means for adjustably bracing the legs, consisting of a sheet-metal member bent to form a slot with the ends thereof divergently bent and pivotally connected to one pair of the legs, a second sheet-metal member passing through the slot in the first and

longitudinally split forming members divergently bent and pivotally connected to the second set of legs, and locking means carried by the adjacent ends of each member.

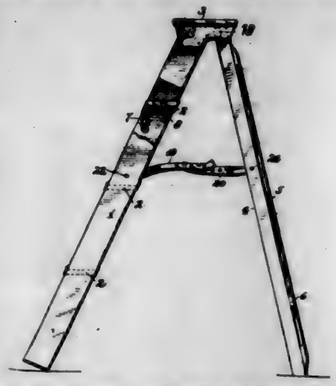

2. In a step-ladder, legs, steps, sheet-metal brackets secured to the legs and connecting them with the steps, each bracket comprising a portion to lie flat against the inner face of a leg, and a second portion bent at substantially right angles to the first to lie flat against the under face of a step, said second portion having an extended end bent downwardly, forming a brace, the latter lying in a plane substantially at right angles to both of said first and second portions, part of said extended end being bent to lie in a plane with said first portion.

3. In a step-ladder, legs, steps, sheet-metal brackets secured to the legs and connecting them with the steps, each bracket comprising a portion to lie flat against the inner face of a leg with ears bent to embrace the edges thereof, and a second portion bent at substantially right angles to the first to lie flat against the under face of a step, said second portion having an extended end bent downwardly, forming a brace, the latter lying in a plane substantially at right angles to both of said first and second portions, part of said extended end being bent to lie in a plane with said first portion, for the purpose described.

4. In a step-ladder, legs, steps secured to the legs rigidly connecting them together, sheet-metal brackets bent in inverted-U shape to embrace the upper ends of the legs at both sides, upwardly-extending ears formed integral with the top of said brackets at each end thereof, a top board secured between said ears, and rear legs having their upper ends pivoted to and inclosed by said brackets.

849,225. APPARATUS FOR SEPARATING CHAFF FROM COFFEE. LOUIS GANS, Los Angeles, Cal. Filed Apr. 6, 1906. Serial No. 310,243.

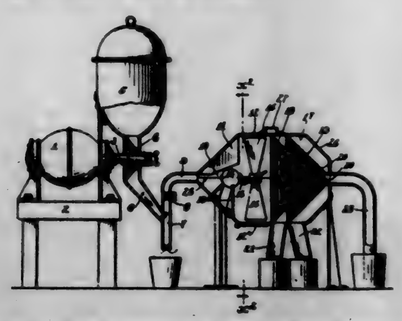

Claim.—1. In combination, a mill, a conical separating-chamber provided with an internal radial blade, a vertical passage-way connected with the separating-chamber, a downwardly-directed passage-way leading from the mill to an intermediate point of the vertical passage, means for regulating the admission of air to the vertical passage-way at a point above the junction of the second-named passage-way, a fan-chamber adjoining the separating-chamber, a fan mounted in the fan-chamber, a motor in the separating-chamber for driving the fan, a screen-chamber adjoining the fan-chamber, a conical screen in the screen-chamber and having a central opening, a pipe communicating with the center of the screen-chamber for delivering the chaff therefrom, and a spout discharging the coffee through the wall of the screen-chamber.

2. In combination, a mill, a conical screen with a central opening, means for conveying material from the mill to the screen, a fan in front of the screen for maintaining an onward draft through the central opening of the screen with a vortical action in front of the screen whereby the heavier particles are whirled away from the core of the draft and driven through the screen away from the central opening while the chaff passes through the central opening in the screen.

3. In combination, a mill, a separating-chamber, a plurality of conical screens each with a central opening back of the operating-chamber, a passage-way from the mill to the separating-chamber, means for maintaining an onward draft through said passage-way, separating-chamber and through the openings in the screens, and means for imparting a vortical action to the draft in front of the screens to throw the heavy particles from the center against the screen and allow the chaff to pass through the central opening in the screen.

849,226. ELECTRIC SIGN. WILLIAM B. GARRETT, Ashton, Ill., assignor of one-half to Francis E. Dresser and Andrew B. Elmer, Rochelle, Ill. Filed May 28, 1906. Serial No. 319,210.

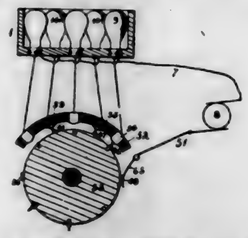

Claim.—1. An electric sign, comprising a plurality of incandescent lamps closely arranged in parallel rows, a plurality of contact members, individual circuit connections between said lamps and members, a movable support provided with a plurality of seats having the same relative arrangement as said lamps, and contact-points removably mounted in said seats and adapted to be brought into engagement with the contact members.

2. An electric sign, comprising a plurality of incandescent lamps closely arranged in parallel rows, a plurality of contact members, individual circuit connections between said lamps and members, a movable support provided with a plurality of seats having the same relative arrangement as said lamps, contact-points removably mounted in said seats and adapted to be brought into engagement with the contact members, and a return-circuit common to all said contact-points.

3. An electric sign, comprising a plurality of incandescent lamps closely arranged in parallel rows, a plurality of contact members, individual circuit connections between said lamps and members, a movable support provided with a plurality of seats having the same relative arrangements as said lamps, contact-points removably mounted in said seats and adapted to be brought into engagement with the contact members, and means for completing the circuits through a group or groups of the lamps when the points and members are brought together.

4. In an electric display apparatus, a plurality of closely-arranged incandescent lamps, a plurality of contact members having the same relative arrangement as said lamps, individual circuit connections between said lamps and members, a movable support, and a plurality of seatable contact-points carried by said support and having the same relative arrangement as said lamps and contact members, substantially as described.

5. In an electric display apparatus, a plurality of closely-arranged incandescent lamps, a plurality of contact members having the same relative arrangement as said lamps, individual circuit connections between said lamps and members, a movable support, a plurality of seatable contact-points carried by said support and having the same relative arrangement as said lamps and contact members, a source of electric supply, and a return-circuit common to all said contact-points.

6. An electric sign, comprising a plurality of incandescent lamps closely arranged in parallel rows, a curved support, a plurality of exposed contact members mounted on said support, individual circuit connections between said lamps and members, a rotatable drum disposed opposite and closely adjacent the concave face of said curved support, said drum being provided with a plurality of seats having the same relative arrangement as the lamps and contact members, contact-points removably mounted in said seats, a source of electric supply, and a return-circuit common to all said contact-points.

849,227. BICYCLE-PUMP. ANGELO GENELLY and BERNARDO GILBERTI, Los Banos, Cal. Filed Mar. 28, 1906. Serial No. 308,467.

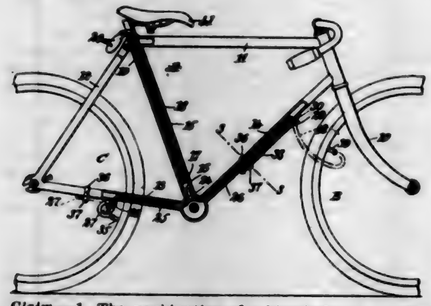

Claim.—1. The combination of a bicycle-frame provided with a center brace adapted to serve as a pump-cylinder, a valvular piston mounted within said center brace, means controllable at will for operating said piston, a plug closing the lower end of said center brace, a tubular member communicating with said center brace, said tubular member being formed with a forwardly-extending branch and a rearwardly-extending branch, a pair of flexible tubes connected respectively to said forwardly and rearwardly extending branches, said flexible tubes serving to connect said center brace respectively with a pair of tires to be inflated, means for holding said flexible tubes in dormant position against said bicycle-frame, and means for automatically closing communication between said center brace and said flexible tubes when the latter are in said dormant position.

2. The combination of a bicycle-frame provided with a center brace adapted to serve as a pump-cylinder, a valvular piston mounted within said center brace, means controllable at will for operating said piston, a plug closing the lower end of said center brace, a tubular member communicating at one end with said center brace, a cap secured to the other end of said tubular member, a coupling-head mounted to rotate on said cap, a flexible tube secured to said coupling-head, said flexible tube being adapted to be coupled to a tire to be inflated, said cap being formed with an opening adapted to provide communication between said flexible tube and said tubular member, and means for securing said flexible tube in dormant position against said bicycle-frame, said opening in said cap being placed in such position as to close communication between said tubular member and said flexible tube when the latter is in said dormant position.

3. The combination of a bicycle-frame provided with a center brace adapted to serve as a pump-cylinder, a valvular piston mounted within said center brace, means controllable at will for operating said piston, a plug closing the lower end of said center brace, a tubular member communicating at one end with said center brace, a cap secured to the other end of said tubular member, a coupling-head mounted to rotate on said cap, a flexible tube secured to said coupling-head, said flexible tube being adapted to be coupled to a tire to be inflated, said cap being formed with an opening adapted to provide communication between said flexible tube and said tubular member, and a spring-clip adapted for securing said flexible tube in dormant position against said bicycle-frame, said opening in said cap being placed in such position as to close communication between said tubular member and said flexible tube when the latter is in said dormant position.

4. The combination of a bicycle-frame provided with a center brace adapted to serve as a pump-cylinder, a valvular piston mounted within said center brace, means controllable at will for operating said piston, said center brace being closed at its lower end, a tubular member communicating at one end with said center brace, a cap secured to the other end of said tubular member, said cap being formed with a flanged head, a washer mounted on said cap, a coupling-head mounted to rotate on said cap between said flanged head and said washer, gaskets fitted respectively between said flanged head and said coupling-head and between said washer and said coupling-head, a flexible tube secured to said coupling-head, said flexible tube being adapted to be coupled to a tire to be inflated, said cap being formed with an opening adapted to provide communication between said flexible tube and said tubular member, and a spring-clip adapted for securing said flexible tube in dormant position against said bicycle-frame, said opening in said cap being placed in such position as to close communication between said tubular member and said flexible tube, when the latter is in said dormant position, said flanged head being formed with a slot serving to indicate the position of said opening.

5. The combination of a bicycle-frame provided with a tubular member adapted to serve as a pump-cylinder, a valvular piston mounted within said tubular member, a rod connected to said piston, a saddle-post fitted into said tubular member and formed with an opening adapted to receive said rod, a handle adjustably secured to said rod, said tubular member being closed at its lower end, a pipe communicating at one end with said tubular member, a cap secured to the other end of said pipe, said cap being formed with a flanged head, a washer mounted on said cap, a coupling-head mounted to rotate on said cap between said flanged head and said washer, gaskets fitted respectively between said flanged head and said coupling-head and between said washer and said coupling-head, a flexible tube secured to said coupling-head, said flexible tube being adapted to be coupled to a tire to be inflated, said cap being formed with an opening adapted to provide communication between said flexible tube and said pipe, and a spring-clip adapted for securing said flexible tube in dormant position against said bicycle-frame, said opening in said cap being placed in such position as to close communication between said tubular member and said flexible tube when the latter is in said dormant position, said flanged head being provided with a slot serving to indicate the position of said opening.

849,228. GUARD FOR COOKING UTENSILS. MARGRET K. GIESSEL, Wapakoneta, Ohio. Filed Mar. 19, 1906. Serial No. 306,927.

Claim.—1. A guard for cooking utensils comprising a truncated cone of sheet metal, the lower end of which is circular and of slightly less diameter than the cooking

utensil on which it is adapted to be mounted, the mouth of said guard being elliptical and disposed on an incline, the wall of said guard being of varying width and the wider portions thereof substantially vertically disposed and the narrowest portion being disposed at a slight incline to horisontal and supported upon the edge of the cooking utensil, and projections secured to the wider portion of said guard and adapted to engage the edge of the cooking utensil to support said wider portion of said guard thereon, said projections being composed of ductile sheet metal and provided with ears adapted to enter slots in the wall of said guard and be bent over to secure said projections.

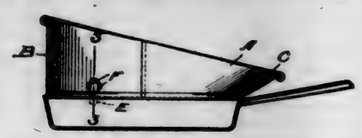

2. A guard for cooking utensils comprising a truncated cone of sheet metal, the lower end of which is circular and of slightly less diameter than the cooking utensil on which it is adapted to be mounted, the mouth of said guard being elliptical and disposed on an incline, the wall of said guard being of varying width and the wider portions thereof substantially vertically disposed and the narrowest portion being disposed at a slight incline to horisontal and supported upon the edge of the cooking utensil, and projections secured to the wider portion of said guard and adapted to engage the edge of the cooking utensil to support said wider portion of said guard thereon, said projections being composed of ductile sheet metal and provided with ears adapted to enter slots in the wall of said guard and be bent over to secure said projections, said guard being reinforced in its edges by means of wires disposed therein.

849,229. ROCK-DRILL. FREDERICK E. GLAZE, Victor, Colo., assignor to The Eureka Drill Steel Company, Cripple Creek, Colo., a Corporation of Colorado. Filed Jan. 31, 1906. Serial No. 298,878.

Claim.—A drill constructed with grooves and ribs, and a series of transversely-disposed obstructions in the grooves, the obstructions being formed integrally connecting two adjacent ribs, substantially as shown and described.

849,230. MONKEY-WRENCH. DAVID GOBEL, Zanesville, Ohio. Filed Jan. 15, 1907. Serial No. 352,883.

Claim.—1. In a monkey-wrench, the combination with the body carrying reciprocating pawls, of a circular disk provided with a ratchet-wheel and with a double, undercut groove having in the bottom thereof ratchet-tracks, and with sliding jaws having double, beveled shanks, and having stationary pawls adapted to engage said ratchet-tracks; said reciprocating pawls being adapted to engage said ratchet-wheel, substantially as described.

2. In a monkey-wrench, the combination with the body carrying reciprocating pawls, of a circular disk provided with a ratchet-wheel and with a double, undercut groove having in the bottom thereof ratchet-tracks, and with sliding jaws having double, beveled shanks, and having stationary spring-pawls adapted to engage said ratchet-tracks; said reciprocating pawls being adapted to engage said ratchet-wheel; substantially as described.

3. In a monkey-wrench, the combination with the body carrying reciprocating pawls, of a socket-bolt and of a circular disk provided with a ratchet-wheel and with a double, undercut groove having in the bottom thereof ratchet-tracks, and with sliding jaws having double, beveled shanks, and having stationary pawls adapted to engage said ratchet-tracks; said reciprocating pawls being adapted to engage said ratchet-wheel, substantially as described.

4. In a monkey-wrench, the combination with the body carrying reciprocating pawls and provided with pawl-locking shoulders, of a circular disk provided with a ratchet-wheel and with a double, undercut groove having in the bottom thereof ratchet-tracks, and with sliding jaws having double, beveled shanks, and having stationary pawls adapted to engage said ratchet-tracks; said reciprocating pawls being adapted to engage said ratchet-wheel and said pawl-locking shoulders, substantially as described.

849,231. REEL-SEAT. FRANK C. GORHAM, New York, N. Y. Filed Dec. 23, 1905. Serial No. 293,101.

Claim.—1. The herein-described reel-seat, comprising the pole-receiving sleeve provided with a longitudinal series of inclined teeth, the abutting reel-base-receiving band at one end of said sleeve, and the slidable locking band or ring adapted to slip over the end of the reel-base and provided at its front edge with a spring-tongue having a tooth inclined opposite to and adapted to engage the teeth of said sleeve.

2. The herein-described reel-seat, comprising the pole-receiving sleeve provided with a longitudinal series of teeth, an abutment at one end of the sleeve, and the slidable locking band or ring adapted to slip over the end of the reel-base and provided with a spring-tongue having a tooth adapted to engage and interlock with the teeth of said sleeve.

3. The herein-described reel-seat, comprising the pole-receiving sleeve, a reel-base-engaging means at one end, an engaging means arranged in longitudinal alinement upon the sleeve, a rotatable locking band or ring, and means carried thereby for removably engaging said engaging means of the sleeve.

4. The herein-described reel-seat, comprising the pole-receiving sleeve provided along its side with a series of teeth, a reel-base-receiving abutting ring at one end thereof, a reel-base-engaging flexible band or ring rotatably and slidably mounted on the other end, and means carried by the band or ring for removably engaging the series of teeth.

849,232. WHIFFLETREE-HOOK. OTTAR B. HAGA, Dogden, N. D., assignor of one-half to Ralph A. Pence, Dogden, N. D. Filed Nov. 8, 1906. Serial No. 342,577.

Claim.—1. In a whiffletree-hook, a plate having a slot of angular formation and a slot rearward of the first-named slot, a hook, and lugs extended from the shank of the hook into said slots.

2. A whiffletree-hook, comprising a plate member having a substantially L-shaped slot and a curved slot rearward of the L-shaped slot, a segmental flange extended laterally from the forward end of the plate, a hook member, and lugs on the shank of said hook member passing into said slots.

3. A whiffletree-hook, comprising a plate having a segmental-shaped forward end and provided with an eye at its rear end, and with slots intermediate of its ends, one slot being angular and the other curved, and a hook having lugs engaging the slots of the plate.

4. A whiffletree-hook, comprising a plate, and a hook, one of the said parts being provided with two slots, one of which is angular and the other curved, and the other part with lugs engaging the slots.

849,233. MACHINE FOR CORING AND SLICING FRUIT. PETER HANSEN, Jersey City, N. J., and GEORGE W. FOOTE, New York, N. Y. Filed Oct. 30, 1905. Serial No. 285,055.

Claim.—1. In a machine for slicing and coring fruit, the combination with a frame, a post extending up from said frame, and a carrier mounted to slide on the said post, of a table mounted to revolve in the frame adjacent to the post, the said table consisting of a hub, arms radiating from the said hub, platforms at the ends of the said arms, said platforms being provided with projections on their upper faces, a cutter and corer located in the said carrier, means for intermittently moving said carrier toward and from the platform, and means connected with said moving means for partially rotating the table during the intermissions of the movement of the carrier, and a connection between the line-shaft and the drive-shaft for periodically moving the line-shaft.

2. In a machine for slicing and coring fruit, the combination with a frame, a drive-shaft mounted in the frame, a line-shaft above the drive-shaft, a post extending up from the said frame, and a carrier mounted to slide on the said post, of a spider-like table mounted to revolve in the frame adjacent to the post, the said table consisting of a hub, arms radiating from the said hub, platforms at the ends of the said arms, which platforms are provided with projections, a cutter and corer located in the said carrier and adapted to slide to and from a platform of the table, an oval cam provided with a corresponding race, mounted on the said drive-shaft, an elliptical cam likewise mounted on the drive-shaft and provided with a friction-roller at its point, a link pivotally connected with the carrier and with the frame, an arm pivoted to the link, extending in direction of the drive-shaft and provided with a head having a friction-roller which enters the race of the oval cam, a connecting-rod attached to the head of the latter arm and to the said link, a gear connection between the line-shaft and the said table, whereby to revolve the same, and a star-wheel secured upon the said line-shaft, the teeth whereof correspond in number to the number of the arms of the said table, the roller of the elliptical cam being adapted to periodically enter the spaces between the teeth of the star-wheel, the two cams having timed movement relative to each other.

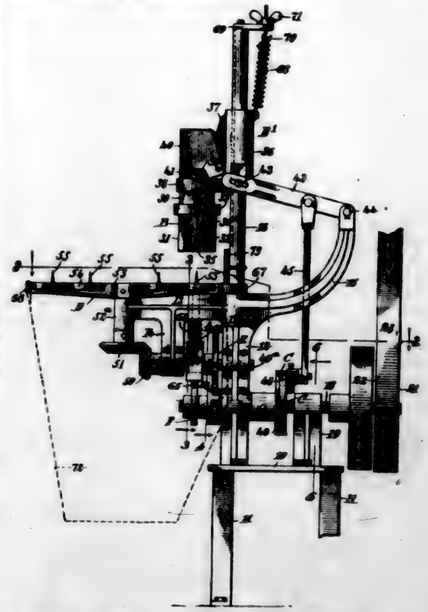

3. In a machine for slicing and coring fruit, the combination with a frame, a drive-shaft mounted therein, a line-shaft located above the drive-shaft, a post extending from the upper portion of the frame, a spider-like table mounted to revolve in the upper portion of the frame adjacent to the post, the arms of the spider-like table terminating in a platform, a driving connection between the line-shaft and the said table, and a combined cutter and corer having a support mounted for sliding and guided movement on the said post to and from a platform of the said table, of an oval cam mounted on the said drive-shaft, having a correspondingly-shaped recess in one of its faces, a link pivoted to the frame and having pivotal connection with the support for the cutter, a connecting-rod pivoted to the link, a pivoted guide for the lower end of the said connecting-rod, a roller on the said guide, which travels in the race of the said cam, an elliptical cam likewise mounted on the said drive-shaft, provided with a roller at its point, a star-wheel secured on the line-shaft, the teeth whereof correspond in number to the arms of the table, the roller of said elliptical cam being

adapted to periodically enter the spaces between the teeth of the star-wheel, a spring-controlled locking-block having sliding movement on the line-shaft and provided with a stem having guided movement in the frame and adapted for locking engagement with the platform of the said table, and a cam secured on the said drive-shaft, having periodical lifting action on the said locking-block to carry its stem in locking engagement with a platform of the table, all of the said cams having timed movement with relation to each other.

849,234. WIRE-STRETCHER. HASTON S. HARRIS and MARMA D. HARRIS, Pattonsville, Va. Filed July 21, 1906. Serial No. 327,160.

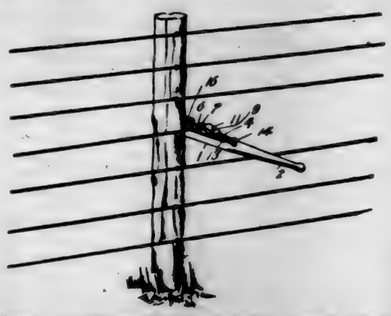

Claim.—A wire-stretcher comprising a stock having a head, a wear-plate secured upon the stock in rear of the head, and formed with a projecting lug, a clamping-lever pivotally supported upon the wear-plate and arranged to coöperate with the lug, the approximate faces of the lug and lever being relatively convex, the head extending upward from the stock beyond the upper surface of the lever and being formed on opposite sides with a concavity extending throughout the length of the head, and spurs projecting in opposite directions from the head within the plane of the respective concavities and in alinement with the clamping-lever.

849,235. COMBINATION INCUBATOR AND BROODER. VERONICA HARTNETT, Sutton, Nebr. Filed May 16, 1906. Serial No. 317,086.

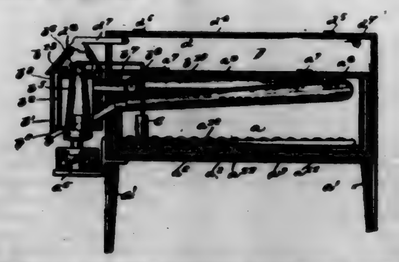

Claim.—1. A combined brooder and incubator, comprising a casing provided with egg-trays for containing the eggs, a boiler, pipes connected with the boiler and arranged above the trays, a heater for the boiler, a brooder resting on the incubator and having a runway extending therebeyond, a hood above the heater, and pipes leading from the hood to the brooder whereby to heat the same.

2. A combined brooder and incubator, comprising a casing having trays for containing the eggs, a boiler, pipes connected with the boiler and arranged above the trays, a heater for the boiler, a brooder resting on the incubator and having a runway extending therebeyond, and a pipe connected with the heater and extending through the brooder near the upper face therof.

3. An incubator comprising a casing for receiving the eggs, a brooder resting on the incubator, a boiler comprising a casing having inner and outer walls spaced apart from each other, and a tube extending through the center of the boiler, a lamp having its flue extending into the tube, said tube having perforations communicating with the space between the inner and outer walls of the boiler, water-pipes leading from the boiler into the incubator, a hood above the tube, and a pipe leading from the hood to the brooder.

849,236. PUZZLE. CARL C. HAYHURST, Barberton, Ohio. Filed Sept. 6, 1906. Serial No. 333,439.

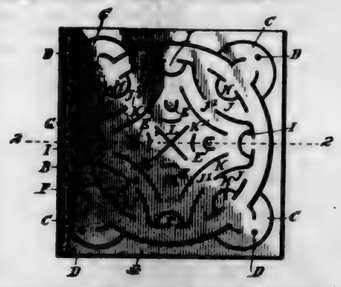

Claim.—1. A puzzle, comprising a board, and raised partitions thereon, the said partitions forming runs for a plurality of balls, and comprising an annular outer partition having exterior corners each for the reception of a ball, an inner partition concentric to the outer partition and spaced therefrom to form a circular pathway, the inner partition having pockets opposite the said corners, a set of pockets on the said inner partition intermediate the said corner-pockets and stalls located radially inward from the said intermediate pockets.

2. A puzzle, comprising a board and raised partitions thereon, the said partitions forming runs for a plurality of balls, and comprising an annular outer partition having exterior corners each for the reception of a ball, an inner partition concentric to the outer partition and spaced therefrom to form a circular pathway, the inner partition having pockets opposite the said corners, a set of pockets on the said inner partition intermediate the said corner-pockets, stalls located radially inward from the said intermediate pockets, and a set of segmental passages opening at both ends into the said circular pathway adjacent to the said intermediate pockets and extending around the inner wall of the corner-pockets.

3. A puzzle, comprising a board and raised partitions thereon, the said partitions forming runs for a plurality of balls, and comprising an annular outer partition having exterior corners each for the reception of a ball, an inner partition concentric to the outer partition and spaced therefrom to form a circular pathway, the inner partition having pockets opposite the said corners, a set of pockets on the said inner partition intermediate the said corner-pockets, stalls located radially inward from the said intermediate pockets, a set of segmental passages opening at both ends into the said circular pathway adjacent to the said intermediate pockets and extending around the inner wall of the corner-pockets, the said segmental passages having each an outlet at the middle of its rear wall, and a second set of segmental passages concentric to the said first-named set of segmental passages and terminating at their ends adjacent to the rear of the said intermediate pockets.

4. A puzzle, comprising a board and raised partitions thereon, the said partitions forming runs for a plurality of balls, and comprising an annular outer partition having exterior corners each for the reception of a ball, an inner partition concentric to the outer partition and spaced therefrom to form a circular pathway, the inner partition having pockets opposite the said corners, a set of pockets on the said inner partition intermediate the said corner-

pockets, stalls located radially inward from the said intermediate pockets, a set of segmental passages opening at both ends into the said circular pathway adjacent to the said intermediate pockets and extending around the inner wall of the corner-pockets, the said segmental passages having each an outlet at the middle of its rear wall, a second set of segmental passages concentric to the said first-named set of segmental passages and terminating at their ends adjacent to the rear of the said intermediate pockets, and central deflection-passages to deflect the balls from the said stalls.

849,237. PRISM MONOCULAR AND BINOCULAR GLASS. GEORGE W. HEATH, Crayford, England. Filed Nov. 21, 1905. Serial No. 288,444.

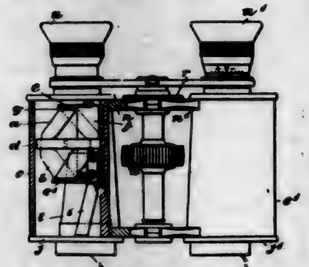

Claim.—1. In prism monocular and binocular glasses in combination, the tubes of the instrument, separate removable rigid carriages, prisms securely mounted in said carriages, said carriages having dovetail slide connections with the body of the instrument and handle-bars for manipulating the carriages and in combination with the cover-plates for preventing endwise movement thereof in the instrument, substantially as described.

2. In prism binocular glasses in combination, the tubes of the instrument, the prisms, separate rigid carriages carrying the prisms said carriages having dovetailed grooves therein and feathers formed on the internal sides of the tubes which are nearest to the center of the instrument engaging with said grooves.

3. In prism binocular glasses, in combination with the tubes of the instrument, and the lugs connecting the same together, the clamping and locking devices consisting of a serrated sector, a corresponding serrated lever and a rotatable disk carrying a projection adapted to engage when required with the serrated lever, substantially as described and for the purpose set forth.

849,238. PROPELLER. ANDER HECTOR, East Newark, N. J. Filed Dec. 27, 1905. Serial No. 293,436.

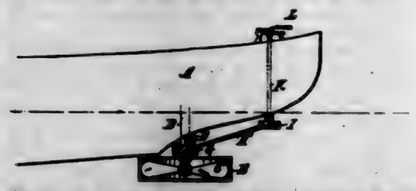

Claim.—1. A propeller and steering apparatus for marine vessels, comprising a vertical shaft projecting from the hull of the vessel, a propeller-wheel having a plurality of vertical blades secured to the lower end of said shaft, a box or shield rotatably secured to said shaft, and inclosing a portion of said wheel, a second vertical shaft projecting beneath the hull and means connecting said shaft with said shield for rotating said shield in unison with said shaft and a handle secured to the upper end of said shaft, said handle being provided with an elongated index-pointer for indicating the position of said shield and the consequent direction of motion of the vessel.

2. In a combined propelling and steering apparatus for vessels, the combination of a propeller-wheel having the plane of its blades lying parallel to the axis of said wheel, a semicircular box or shield inclosing one-half of said wheel-shifting mechanism for rotating said box or shield about the axis of said wheel, a vertical shaft projecting beneath the hull of the vessel and connected to said box or shield by means of a pair of crossed connecting-rods, a handle at the upper end of said shaft for rotating the same and an index-pointer secured to said handle for indicating the direction of motion of said vessel.

849,239. DUST-PAN. JOHN P. HILL, Phelps, N. Y. Filed Oct. 10, 1906. Serial No. 338,288.

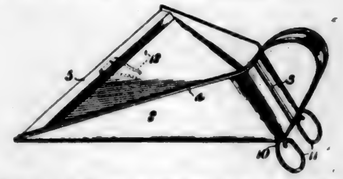

Claim.—1. A dust-pan comprising a body, a handle secured to one end thereof, and a spring-wire engaged between its ends and secured upon the pan by one end portion of the handle, the ends of said wire being downwardly and inwardly curved to constitute a clip, said ends being free.

2. A dust-pan having a back portion inclined to the base of the pan, and a handle secured at its ends to the top of the back and to the lower face of the base of the pan, said handle being secured at an intermediate point to the lower edge of the base, and a spring-rod embraced, and secured upon the pan, by that portion of the handle below the back portion, said spring-rod forming a pan-support and having inturned ends constituting a clip.

849,240. WELL-BUCKET. J FRANK HOLMAN, Neosho, Mo., assignor of one-half to Andrew V. Turner, Neosho, Mo. Filed June 23, 1905. Serial No. 266,571.

Claim.—A bucket for drilled wells, consisting of a cylindrical hollow body having corrugated conical ends, a bail secured to the upper conical end of the body, a conical

and flangeless wooden plug secured water-tight in the lower conical end of the body with its lower face flush with the said end, said plug having a single opening centrally located, a spider removably secured to the lower face of the plug over the opening thereof, and a valve adapted to seat on the inner face of the plug over the opening thereof and having a stem of less diameter than the opening of the plug and extending through the said opening and the spider and provided at its lower end with a stop, substantially as herein shown and described.

849,241. ORGAN. ROBERT HOPE-JONES, New York, N. Y. Filed Apr. 22, 1904. Serial No. 204,374.

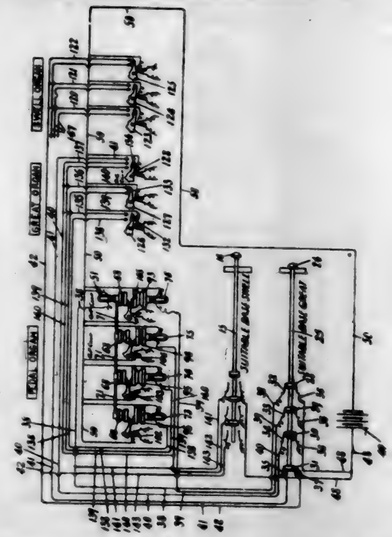

Claim.—1. In an organ, a series of stops, a series of tablets, and connections therefrom for controlling the stops, a series of motors connected with the tablets for moving them to their off positions, and a controlling-motor for the said series of motors.

2. In an organ, a series of stops, a series of tablets and connections therefrom for controlling the stops, a series of motors connected with the tablets for moving them to their off positions, a controlling-motor for the series of motors, and a manually-operated device for inaugurating the operation of the controlling-motor.

3. In an organ, a series of stops and couplers, a series of tablets and connections therefrom for controlling the stops and couplers of one department of the organ, a series of motors for throwing all the stops and couplers and their corresponding tablets to their off position, and a single device for simultaneously energizing all the motors of the series and for causing the operation of one or more of the couplers.

4. In an organ, the combination of a series of stops and couplers, a series of tablets for controlling the stops and couplers, a series of off motors, a more powerful series of on motors for operating the tablets, and means for coincidentally energizing the series of off motors and one or more of the on motors, whereby the latter overcome the force of their respective off motors and operate their respective tablets.

5. In an organ, the combination with the stop and coupler devices of a series of off motors and an opposing series of more powerful on motors, selecting devices for independently energizing each on motor, and means for simultaneously energizing the off motors and for putting the stop and coupler devices into operative relation with the selecting devices.

6. An organ having a plurality of departments, stop-controllers for one department, stop-controllers for a second department, devices for automatically operating the stop-controllers of one department from the stop-controllers of another department, and devices for visibly indicating the on and off positions of each stop-controller thus operated.

7. An organ having a plurality of departments stop and coupler controllers for one department, stop and coupler controllers for another department, and devices for automatically operating the stop and coupler controllers of one department from the stop and coupler controllers of another department, and devices for visibly indicating the on and off positions of each stop and coupler controller operated.

8. In an organ, the combination with two manuals and their stops and couplers, of bass stops, connections for bringing on suitable bass stops for whatever stops may be drawn on either of the manuals, and means for rendering the said connections active for one of the manuals and inactive for the other manual.

9. In an organ, a series of stops and coupler controllers, means for simultaneously throwing a group of stop and coupler controllers to their off positions, and means for throwing individual stop or coupler controllers of the group independently to their on position by overcoming the action of the off means.

10. In an organ, a series of stop and coupler controllers, a series of simultaneously-operating motors for throwing said series of stop and coupler controllers to their off positions, a series of independently-operating larger motors for overcoming the action of the off motors and throwing the said stop and coupler controllers to their on positions, and means operable by the performer for simultaneously energizing all the off motors and rendering the on motors operable.

11. An organ having a plurality of departments, a series of stop and coupler controllers for each department, a series of simultaneously-operating motors for throwing the stop and coupler controllers of one department of the organ to their off positions, a series of independently-operating larger motors for overcoming the action of the off motors and throwing the said stop and coupler controllers to their on positions, and means operated by a single device, as a push-button, for simultaneously energizing all the off motors and for rendering each on motor operable by a controller in another department of the organ.

12. An organ having a plurality of departments, a series of stop and coupler controllers for each department, a series of pneumatic motors for throwing the stop and coupler controllers of one department of the organ to their off positions, a second series of independently-operable larger pneumatic motors for overcoming the action of the off motors and throwing the stop or coupler controllers to their on positions and means operable by a single device, as a push-button, for simultaneously energizing all of the off motors and rendering each on motor independently operable.

13. An organ having a plurality of departments each with a plurality of stops, a series of stop-controllers for one department of the organ, a series of stop-controllers for a second department of the organ, and a series of connections connecting the two sets of stop-controllers whereby a controller of one department is connected with the controller of a suitable stop of the second department.

14. An organ having a plurality of departments, a series of stop-controllers for one department of the organ, a series of stop-controllers for a second department of the organ, connections including a series of electric circuits connecting the two sets of controllers whereby a controller of the first department is connected with the controller of a suitable stop of the second department, and a single device for simultaneously rendering all of the said circuits operable.

15. An organ having a plurality of departments, a series of stop-controllers for one department of the organ, a series of stop-controllers for a second department of the organ, connections including a series of electric circuits connecting the two sets of controllers, whereby a controller of the first department is connected with the controller of a suitable stop or stops of the second department, a device for coupling the first department to the second, and a single device for simultaneously rendering all of the circuits operable and causing the coupler to act.

16. An organ having a plurality of departments, a series of stop-controllers for one department of the organ, a series of stop and coupler controllers for a second department of the organ, connections including a series of electric circuits connecting the two sets of controllers whereby a stop-controller of the first department is connected with the controller of a suitable stop or stops of the second department, a series of tablets for manually operating the controllers of the second department, and a single device for simultaneously rendering all of the said electric circuits operable, for causing the coupler for coupling the first department to the second to act, and for rendering the said series of tablets inoperable.

17. An organ having a plurality of departments, a series of stop-controllers for one department of the organ, a series of stop-controllers for a second department of the organ, a series of motors for causing the stop-controllers of the second department to bring on their respective stops, means connecting the series of motors to the controllers of the first department, a controller of said first department being connected through said means and motors with a suitable controller or controllers in the second department.

18. An organ having a plurality of departments, a series of stop-controllers for one department of the organ, a series of stop-controllers for a second department of the organ, a series of motors for causing the controllers of the second department to bring on their respective stops, means connecting the series of motors to the controllers of the first department, a controller of said first department being connected through said means and motors with a suitable controller or controllers in the second department, and a single device for rendering the said means operable.

19. An organ having a plurality of departments, a series of stop-controllers for one department of the organ, a series of stop-controllers for a second department of the organ, a series of motors for causing the controllers of the second department to bring on their respective stops, means connecting the series of motors to the controllers of the first department, each of said first-department controllers being connected through said means and motors with a suitable controller or controllers in the second department, a coupler-controller for causing the coupling of the second department to the first, and a single device for rendering the said means operable, and for rendering the coupler-controller to act.

20. An organ having a plurality of departments, a series of stop-controllers for one department of the organ, a series of stop-controllers for a second department of the organ, a series of motors for causing the controllers of the second department to bring on their respective stops, means connecting the series of motors to the controllers of the first department, each of said first-department controllers being connected through said means and motors with the controller of a suitable stop in the second department.

21. An organ having a plurality of departments, a series of stop-controllers for one department of the organ, a series of stop-controllers for a second department of the organ, a series of motors for causing the controllers of the second department to bring on their respective stops, means connecting the series of motors to the controllers of the first department, each of said first-department controllers being connected through said means and motors with the controller of a suitable stop in the second department, and a single device for rendering the said motors operable.

22. An organ having a plurality of departments, a series of stop-controllers for one department of the organ, a series of stop-controllers for a second department of the organ, a series of motors for causing the controllers of the second department to bring on their respective stops, means connecting the series of motors to the controllers of the first department, each of said first-department controllers being connected through said means and motors with the controller of a suitable stop in the second department, a coupler-controller for causing the coupling of the first department to the second, and a single device for rendering the said motors operable, and for causing the coupler-controller to act.

23. An organ having a plurality of departments, a series of stop-controllers for one department of the organ, a series of stop-controllers for a second department of the organ, means for manually operating said stop-controllers, a series of motors for causing the controllers of the second department to bring on their respective stops, means connecting the series of motors to the controllers of the first department, each of said first-department controllers being connected through said means and motors with the controller of a suitable stop in the second department, a coupler-controller for causing the coupling of the first department to the second, and a single device for rendering the said motors operable for causing the coupler-controller to act, and for rendering inoperative the manually-operating means for the stop-controllers of the second department.

24. An organ having a plurality of departments, a series of stop-controllers for one department of the organ, a series of stop-controllers for a second department of the organ, a series of bellows for causing the controllers of the second department to bring on their respective stops, a series of electropnuematic motors controlling the series of bellows, a series of electric circuits connecting the electropneumatic motors with the controllers of the first department, a controller of said first department being connected through the electropnuematic motors with a suitable controller or controllers in the second department.

25. An organ having a plurality of departments, a series of stop-controllers for one department of the organ, a series of stop-controllers for a second department of the organ, a series of bellows for causing the controllers of the second department to bring on their respective stops, a series of electropneumatic motors controlling the series of bellows, a series of electric circuits for connecting the electropneumatic motors with the controllers of the first department, a controller of said first department being connected through the electropneumatic motors with a suitable controller or controllers in the second department, and a single device for simultaneously closing all of the circuits so as to render each one of them operable whenever its connected first-department controller is operated.

26. An organ having a plurality of departments, a series of stop-controllers for one department of the organ, a series of stop-controllers for a second department of the organ, a series of bellows for causing the controllers of the second department to bring on their respective stops, a series of electropneumatic motors controlling the series of bellows, a series of electric circuits connecting the electropneumatic motors and the controllers of the first department, a controller of said first department being connected through the electropneumatic motors with a suitable controller or controllers in the second department, means for controlling the coupling of the first department to the second, a bellows for operating the coupler-controller, an electropneumatic motor for causing the bellows to operate a circuit therefor, and a single device for simultaneously closing all of the said electric circuits, so as to render each one of them operable whenever its connected first-department controller is operated, said single device serving also to close the circuit of the electropneumatic motor of the coupler-bellows.

27. An organ having a plurality of departments, a series of stop-controllers for one department of the organ, a series of stop-controllers and coupler-controllers for a second department of the organ, a series of bellows for moving the controller to bring on their respective stops and couplers, a series of electropneumatic motors controlling the said series of bellows, a series of electric circuits connecting some of the electropneumatic motors with the controllers of the first department, a series of electric circuits to operate the coupler electropneumatic motors, a

series of smaller bellows connected with the said second series of controllers for throwing them to their off positions, an electropneumatic motor controlling the series of smaller bellows and provided with an electric circuit, and a single device for simultaneously closing all of the said electric circuits, so as to immediately energize the smaller bellows and coupler-circuits, and to close the circuits connecting the first and second departments.

28. An organ having two departments each with a plurality of stops, a controlling device for bringing on a series of stops in one department of the organ, a controlling device for bringing on a series of stops forming a suitable accompaniment thereto in the second department of the organ, and means whereby a predetermined amount of movement of the first controlling device will also operate the second controlling device.

29. An organ having two departments each with a plurality of stops, a controlling device for bringing on a series of stops in one department of the organ, a controlling device for bringing on a series of stops forming a suitable accompaniment thereto in the second department of the organ, and means connecting the two controlling devices whereby the first controlling device after a predetermined amount of movement, will operate the second controlling device.

30. An organ having two departments each with a plurality of stops, a controlling device for bringing on a series of stops in one department of the organ, an independently-operable controlling device for bringing on a series of stops forming a suitable accompaniment thereto in the second department of the organ, and means whereby the first controlling device after a predetermined amount of movement will also operate the second controlling device.

31. An organ having two departments each with a plurality of stops, a device for bringing on a series of stops in one department of the organ, a device for bringing on a series of stops forming a suitable accompaniment thereto in another department of the organ, and means whereby both devices may be operated by one movement, the devices being provided with springs of different tension to indicate to the touch whether one, the other, or both devices are being operated.

32. An organ having two departments each with a plurality of stops, a series of actions controlling the stops of one department of the organ, a series of actions controlling the stops of a second department of the organ and a series of electric circuits and devices controlled thereby connecting the two series of actions whereby the operation of the stops of the first department is made dependent upon the position of the actions of the second department.

33. An organ having a plurality of departments each with a plurality of stops, a controller for a stop in one department, and devices under the control of the performer for connecting and disconnecting a stop in a second department with said controller whereby the controller controls either a stop in the first department only or controls the stop in that department and a stop in the second department at the will of the operator.

34. An organ having a plurality of departments each with a plurality of stops, a controller for each stop in one department, and devices under the control of the performer for connecting and disconnecting a stop in a second department with each stop-controller of the first department whereby each controller controls either a stop in the first department or a stop in that department and a stop in the second department at the will of the operator.

35. An organ having a plurality of departments each with a plurality of stops, a controller for a stop in one department, devices under the control of the performer for connecting a stop in a second department with said controller and devices for simultaneously coupling the first department to the second.

36. An organ having a plurality of departments each with a plurality of stops, a controller for each stop in one department, devices for connecting a stop in a second department with each controller of the first department, devices for coupling the first department to the second, and means under the control of the performer for rendering the connecting devices active and causing the coupling device to act.

37. An organ having a plurality of departments each with a plurality of stops, manually-operated controllers for the stops in each department, devices under the control of the performer for connecting and disconnecting the controllers of one department with the corresponding controllers in a second department whereby the controllers control either stops in the first department only or control said stops in the first department and stops in the second department at the will of the operator.

38. An organ having a plurality of departments each with a plurality of stops, manually-operated controllers for the stops in each department, devices for coupling one department to another, and devices under the control of the performer for connecting the controllers in one department with controllers in another department and simultaneously causing the coupling devices to act.

39. An organ having a plurality of departments each with a plurality of stops, a controller for a stop in one department, devices under the control of the performer for connecting a stop in a second department with said controller, a controller for a stop in a third department, devices for coupling the third department to the first, and devices controlled by said coupling devices for connecting a stop of the second department with the controller of the third department.

40. An organ having a plurality of departments each with a plurality of stops, a controller for each stop in one department, devices under the control of the performer for connecting a stop in a second department with each controller of the first department, a controller for each stop in a third department, devices for coupling the third department to the first, and devices controlled by said coupling devices for connecting a stop in the second department with each controller of the third department.

41. An organ having a plurality of departments each with a series of stops, a series of stop-controllers for one department, a second series of stop-controllers for a second department, and means under the control of the operator for operating one series of stop-controllers from the other.

42. An organ having a plurality of departments each with a series of stops, a series of stop-controllers for one department, a second series of stop-controllers for a second department, connecting devices between the two series of stop-controllers under the control of the operator for operating the stops of one department through the operation of the stop-controllers of the other department.

43. An organ having a plurality of departments each with a plurality of stops, a series of actions for controlling the stops of one department, a series of actions for controlling the stops of a second department, and connecting devices between the two series of actions under the control of the operator whereby the operation of the stops of one department may be made dependent upon the position of the actions of the other department.

44. An organ having a plurality of departments each with a plurality of stops, devices under the control of the performer for connecting and disconnecting a stop in one department with a stop in another department so that the stops may be operated in unison or one independently of the other.

45. An organ having a plurality of departments each with a plurality of stops, devices under the control of the performer for connecting and disconnecting at will each stop of one department with a stop in a second department.

849,242. WIND-SHIELD FOR VEHICLES. GEORGES HUILLIER, Paris, France. Filed May 22, 1906. Serial No. 318,247.

Claim.—A wind-shield for vehicles, comprising two uprights having their tops curved inwardly, means for detachably holding the uprights to the splash-board, a glazed frame hinged at its upper end to said uprights, so as to freely oscillate, and a curtain having its upper end detachably secured to the lower end of the glazed frame, so as to oscillate with the latter and its lower end detachably secured to the splash-board.

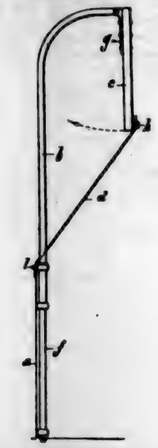

849,243. CLOSURE FOR BOTTLES, &c. JOHN W. HULL, San Antonio, Tex., assignor of one-half to MAX I. MANOWITZ, San Antonio, Tex. Filed June 21, 1904. Serial No. 213,443.

Claim.—1. A stopper for bottles composed of flexible expansible metal of an inverted-cup shape, having outwardly-flared side walls, and provided with an annular bead at its lower end.

2. In a closure for bottles the combination with a bottle-neck provided with an internal shoulder near its upper end and an annular internally-projecting ledge of greater diameter than the bore of the bottle-neck, said ledge lying above said shoulder, of a stopper composed of flexible expansible metal of an inverted-cup shape having outwardly-flared side walls and provided with an annular bead at its lower end.

849,244. RAKE. URIA S. JESSUP, Provo, S. D. Filed Oct. 30, 1906. Serial No. 341,223.

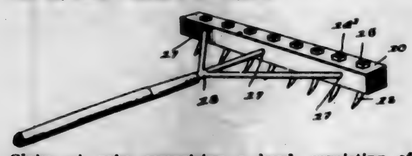

Claim.—A rake comprising a head, consisting of a wood bar, substantially square in cross-section and provided with vertical apertures through it, square in cross-section in the lower half of their distance, and round and reduced in size in the upper half, and rake-teeth having shanks for insertion in said aperture which shanks are square in cross-section at their lower portions and round and screw-threaded at their upper portions, an offset or shoulder being formed at the upper end of the squared part, and a nut turned on the upper screw-threaded portions to tighten the tooth in the body of the head.

849,245. INSOLE FOR USE IN THE MANUFACTURE OF BOOTS AND SHOES. ALBERT E. JOHNSON, Brockton, Mass., assignor to United Shoe Machinery Company, Paterson, N. J., a Corporation of New Jersey. Filed July 14, 1903. Serial No. 165,477.

Claim.—1. An insole for use in manufacturing sewed shoes, consisting of a body portion having two lips cut therefrom, turned up and permanently united throughout their length to form a single stitch-receiving lip.

2. An insole for use in manufacturing sewed shoes, consisting of a body portion having two lips cut therefrom, and turned up and united together by cement and pressure to form a single compressed stitch-receiving lip around the shank and fore part of the body portion of the insole.

3. An insole for use in manufacturing sewed shoes, consisting of a body portion having two lips cut therefrom and turned up and united to form a single stitch-receiving lip around the shank and fore part of the body portion of the insole, and a sheet of reinforcing material cemented to the surface of the body portion and to the inner surface of the lip.

849,246. NON-REFILLABLE BOTTLE. WILLIAM H. W. JONES, Waverly, N. Y. Filed Jan. 20, 1906. Serial No. 297,007.

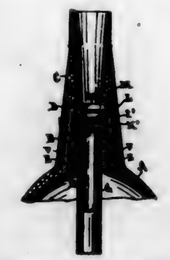

Claim.—1. The combination, with a bottle, or like vessel, having a tubular neck, of a valve seated at the outer end of the neck, a stem on the valve projecting through and fitted to slide in the bore of the neck, said stem being provided with channels for the discharge of liquid where it passes through the neck and having a weight formed upon its inward end, a valve-inclosing member adapted to be permanently fastened to the vessel, said member being provided with a valve-chamber having a contracted orifice, and means for preventing the closing of said orifice by the valve when in open position.

2. The combination, with a bottle, or like vessel, having a neck provided with outside screw-threads, of a discharge-neck adapted to be screwed upon the first neck and forming a valve-chamber at the outer end of said first neck when in place, a valve in said chamber, a shoulder formed on the vessel around the base of the screw-threaded neck, and one or more spring-pawls projecting upwardly from said shoulder, the under side of the discharge-neck being provided with one or more recesses into which said pawl or pawls are adapted to enter to lock said parts together.

3. The combination, with a bottle, or like vessel, having a discharge-outlet provided with a valve-chamber at a point intermediate its ends, of an outwardly-opening valve in said chamber, and a disk having a plurality of small perforations positioned between the valve and the outer end of the valve-chamber, said disk being separate from the valve and spaced therefrom for the purpose set forth.

4. The combination, with a bottle, or like vessel, having a discharge-outlet provided with a valve-chamber at a point intermediate its ends, of an outwardly-opening valve in said chamber, a perforated disk positioned between the valve and the outer end of the chamber, said disk being separate from the valve and spaced therefrom by lugs projecting from one of said members, and springs in the chamber acting to set the disk against the valve to close it.

5. The combination, with a bottle, or like vessel, having a discharge-outlet provided with a valve-chamber at a point intermediate its ends, of an outwardly-opening valve in said chamber, and an independent spring-actuated guard-disk above the valve to effect the closing thereof when flow of liquid from the vessel ceases.

849,247. GAS-GENERATOR. MICHEL J. LACKNER, Dortmund, Germany. Filed Nov. 28, 1905. Serial No. 289,475.

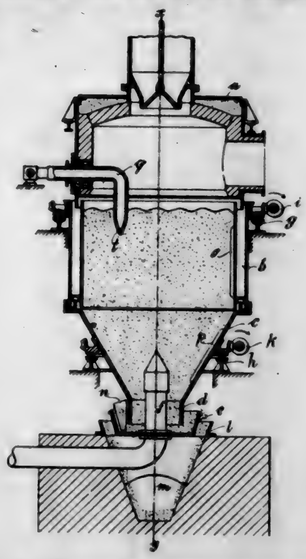

Claim.—1. An improved gas-generator, whose shaft comprises a stationary upper part *a*, one rotating middle part *b* and a revolving lower part *c*, which latter tapers downward, so that the ashes and clinkers are forced automatically toward the axis *x y* of the generator, substantially as described and shown in the drawings.

2. A gas-producer having a revoluble body and a revoluble base, the walls of said parts being provided with inside ribs or projections.

849,248. WRENCH. THOMAS H. LAVIER, Dallas, Tex. Filed Apr. 30, 1906. Serial No. 314,533.

Claim.—1. In a pipe-wrench, the combination with the handle-bar and its jaw, the movable bar and its jaw, the front saddle engaging both bars, teeth on the handle-bar, the main saddle on the movable bar provided with a partition extending from side to side below the latter bar and having teeth engaging the teeth on the handle-bar, the movable bar being further provided with a projection to engage said partition.

2. In a pipe-wrench, the combination with the handle-bar and its jaw, vertical parallel ribs on the sides of the handle-bar in rear of its jaw, teeth on the under side of said bar, of the front saddle extending over the movable bar and downward along the sides of the handle-bar between said vertical ribs, a spring interposed between the lower part of the forward saddle and the handle-bar for drawing the said saddle down on the movable bar, the main saddle on the movable bar provided with teeth engaging the teeth on the handle-bar, means for maintaining the main saddle in position on the movable bar, and a spring disposed between the two bars and operating with a tendency to separate them and to keep the said teeth in engagement with each other, and adapted to be compressed to disengage the said teeth.

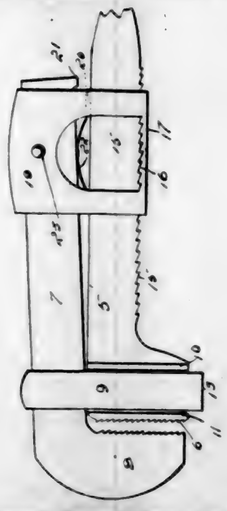

3. In a pipe-wrench, the combination of the handle and its jaw, the said bar having teeth on its under side and provided on its sides with vertical guides, of the movable bar and its jaw, the front saddle engaging both bars and arranged between the said vertical guides on the fixed jaw, a spring interposed between the front saddle and the movable jaw and operating with a tendency to separate the same, the main saddle on the movable bar provided with a partition extending from side to side below the latter bar and having teeth engaging the teeth on the handle-bar, the movable bar being further provided with a projection to engage the said partition.

4. In pipe-wrench, the combination with the handle-bar and its jaw, the movable bar and its jaw, the front saddle engaging both bars, teeth on the handle-bar, the main saddle on the movable bar provided with a partition extending from side to side below the latter bar and having teeth engaging the teeth on the handle-bar, the movable bar being further provided with a projection to engage said partition, a spring interposed between the rearward part of the movable bar and the upper surface of the fixed bar, and a screw-bolt tapped through the main saddle and having its shank passed through the movable bar.

849,249. CLASP. PHILIP C. LAWLESS, Hampstead, London, England. Filed Oct. 21, 1904. Serial No. 229,461.

Claim.—1. A clasp composed of two portions *a* and *b* pivoted one on the other about a displaceable fulcrum, said portions having slits therein, a hollow spring *d* having fangs on its operating edges which engage in the slits, the portions *a* and *b* having bent ends inclosed within the hollow of the spring, the fulcrum consisting of an edge of

a, and a portion of the surface of *b*, a portion of the part *b* acting to thrust the fulcrum edge of part *a* toward the line of pressure of the closing force of the spring, and diminish its leverage of pressure when the portions *a* and *b* are caused to angularly diverge from one another.

2. A clasp composed of two pieces *a* and *b*, which pivot one on the other about a displaceable fulcrum, said pieces having slits therein, a spring *d* on the operating edges of which fangs are formed which engage in said slits, said pieces *a* and *b* having bent ends which are inclosed within the hollow of the spring *d*, the displaceable fulcrum consisting of an edge of the piece *a* and a portion of the surface of the piece *b*, a portion of piece *b* acting to thrust the fulcrum edge of piece *a* toward the line of pressure of the closing force of the spring when the pieces *a* and *b* are caused to angularly diverge from one another and a stop for preventing the continued divergence of pieces *a* and *b* when the displaceable fulcrum reaches the line of pressure.

3. A clasp composed of two pieces *a* and *b*, which pivot one on the other about a displaceable fulcrum, said pieces having slits therein, a spring *d* on the operating edges of which fangs are formed which engage said slits, said pieces *a* and *b* having bent ends which are inclosed within the hollow of the spring *d*, the displaceable fulcrum consisting of an edge of piece *a* and a portion of the surface of piece *b*, a portion of piece *b* acting to thrust the fulcrum edge of piece *a* toward the line of pressure of the closing force of the spring when the pieces *a* and *b* are caused to angularly diverge from one another, the continued divergence of pieces *a* and *b* being prevented by the fang of the spring *d* which is inserted in the slit in piece *b* operating as a stop to limit the displacement of the fulcrum edge of piece *a*.

4. A clasp composed of two pieces *a* and *b* which pivot one on the other about a displaceable fulcrum, said pieces having slits therein, a spring *d* on the operating edges of which fangs are formed which are inserted in said slits, said pieces *a* and *b* having bent ends which are inclosed within the hollow of the spring *d*, the displaceable fulcrum consisting of an edge of *a* and a portion of the surface of *b*, the piece *a* having a notch formed in its fulcrum edge, a portion of piece *b* acting to thrust the fulcrum edge of piece *a* toward the line of pressure of the closing force of the spring to a distance limited by the contact of the inner edge of the notch formed in the fulcrum edge of *a* with one of the fangs formed on the spring *g*.

849,250. COMBINED TELEPHONE DESK-STAND AND CALL-BELL. CHARLES A. L'HOMMEDIEU, Buffalo, N. Y., assignor of one-third to William A. L'Hommedieu, New York, N. Y., and one-third to Harry L'Hommedieu, Buffalo, N. Y. Filed Jan. 5, 1905. Serial No. 239,819.

Claim.—1. A desk-telephone comprising a hollow base, provided with an opening, a standard having detachable engagement with the base and provided with an annular projection near its lower end, a bell contacting with said shoulder to limit upward movement of the bell, and a bell-ringing mechanism located within the base and provided with a clapper-arm extending through the aforesaid opening of the base to ring the bell.

2. A desk-telephone comprising a base having an opening therein, a standard having screw-threaded engagement with the base, a bell embracing the standard and having screw-threaded engagement therewith, a bell-ringing mechanism located in the base and having a clapper-arm extended through the opening of the base to ring the bell.

849,251. CALENDAR-CHART. JOSEPH B. LINDSEY, Lockwood, Mo. Filed Mar. 15, 1906. Serial No. 306,156.

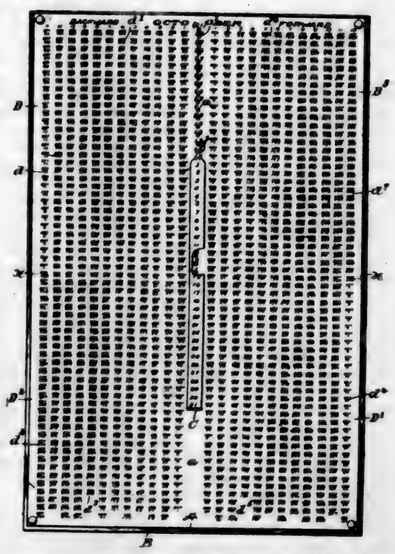

Claim.—1. A calendar-chart having a series of panels arranged one above the other, two to the right and two to the left and a space dividing the right-hand from the left-hand panels the said space having a longitudinal row of figures representing days of a month produced thereon, each panel consisting of longitudinal and parallel columns of names of the months, the outer columns expressing the name of the current month, and chronologically-arranged figures appearing beneath the names of the months, each panel having an independent arrangement of figures, and a computing-strip adapted for attachment to the chart at any point in the row of figures in the said separating-space, the said strip having thereon a row of figures representing the days of a month but arranged in reverse order to the row of corresponding figures in the said separating-space, the figures in said separating-space and on said strip being read in connection with the names of the months and the figures on the columns of said panels.

2. A calendar-chart having a series of panels arranged one above the other, two to the right and two to the left, the panels to the right and to the left being divided by a separating-space, in which space at its upper portion a row of figures is produced representing the days of the month and reading downward from the greatest to the smallest number, each of the said panels comprising parallel columns and each column consisting of a series of the name of a month in the year, the outermost column of each panel bearing the name of the current month, and figures which appear below each name in each column, said figures being chronologically arranged, the figures in the right-hand panel reading in one direction and the figures in the left-hand panel reading in an opposite direction, each column being headed by a numeral representing

the calendar-number of the month represented by the column, and a computing-strip having a row of figures thereon representing the days of a month, the said figures reading from top to bottom of the strip or in reverse order to the reading of the figures in the said separating-space, and means for adjustably securing the said separating-strip at a point below any one of the figures produced on the said separating-space.

3. A calendar-chart having a series of panels produced thereon, four in number and arranged one above the other, two to the right and two to the left, the right and left hand panels being provided with a longitudinal separating-space in which space at its upper portion a row of figures is produced representing the days of the month and reading downward from the greater number to the lesser number, each of said panels comprising a series of parallel columns, each column bearing the repetition of the name of a given month, the outermost column of each panel bearing the repetition of the name of the current month, figures at the top of said columns designating the calendar-number of the several months in the columns, numbers chronologically arranged and representing days of the year, produced one number beneath each repeated name in each column of the panels, the arrangement of the names of the months in the left-hand panels being the same, and the arrangement of the names of the months in the right-hand panels being in corresponding order, the numbers below the names of the columns being chronologically arranged in each panel from 1 to 365, the reading of the numbers in the upper left-hand panel commencing with 1 at the bottom of the outer column, the arrangement of the numbers in the lower right-hand panel commencing with 1 at the top of the outer column, the arrangement of the numbers on the lower left-hand panel commencing with 1 at the bottom of the inner column and the arrangement of the numbers in the upper right-hand panel commencing with 1 at the top of the inner column, a computing-strip having a row of figures thereon representing the days of the month and reading in reverse order to the order of the column of figures in the separating-space, and means for removably securing said computing-strip at points on the said chart below any one of the figures in the said separating-space, as described.

849,252. SHEEP-SHEARS. MARY A. LIPSCOMB, Eureka, Cal. Filed Sept. 5, 1906. Serial No. 333,298.

Claim.—1. In shears, the combination with handles provided at their front ends with longitudinal shanks and having lateral extensions projecting inwardly from the inner ends of the shanks and provided with slots, blades pivoted at their inner portions to the front or outer ends of the shanks and having longitudinal extensions projecting from the inner ends of the blades and located beneath the slots of the lateral extensions, and adjusting devices mounted on the longitudinal extensions of the blades and operating in the slots of the lateral extensions of the handles for securing the said blades in their adjustment.

2. In shears, the combination with handles provided at their front ends with longitudinal shanks and having lateral extensions projecting inwardly and curved longitudinally of the shears, blades pivoted at their inner portions to the outer edges of the shanks and provided at their inner ends with longitudinal extensions curved to fit the lateral extensions, and means for adjustably connecting the extensions.

849,253. STOCKING-SUPPORTING MEANS. GEORGE F. MANSFIELD, Scranton, Miss. Filed Dec. 29, 1906. Serial No. 350,034.

Claim.—The combination with a drawers-leg having a tab provided with a buttonhole, of a strap having a loop formed at its upper end, one wall of such loop having an opening therethrough, a button having a base located within and inclosed by the loop, and a shank extending through said opening in the wall and projecting from said loop, said shank detachably engaging in the buttonhole of the tab, means adjustably connecting the lower terminal of the strap to an intermediate portion of the same, forming a lower adjustable loop, and a stocking-engaging device having a portion engaged in the latter loop and adjustable therewith.

849,254. COMBINED SINK, BATH, AND WASH TUB. WALTER J. MINNS, New York, N. Y. Filed Aug. 6, 1906. Serial No. 329,882.

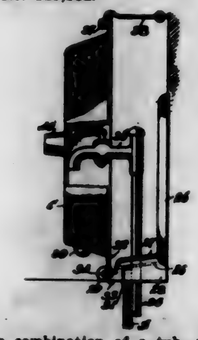

Claim.—1. The combination of a tub, a splash-board above the tub and provided with a forwardly-extending portion projecting over the side of the tub and provided at its front edge with a depending lip, a hinged sink provided at its rear edge with an upwardly-projecting rib or lip back of the depending front flange of the forwardly-projecting portion of the splash-board and guard devices extending between the tub and the splash-board in rear of said overlapping flanges, substantially as set forth.

2. In combination-tubs, a tub, a sink serving as a full or partial covering therefor, a splash-board secured at the rear of the sink, and provided at its lower end with a forwardly-projecting portion extending over said tub and provided with a downwardly-extending lip at its forward longitudinal edge, said sink being provided with a marginal flange the rear section of which has an upwardly-extending longitudinal lip adapted for engagement back of the lip on the bottom of the splash-board when the sink is in horizontal position, and a hinge connection between the bottom of the splash-board and the rear section of the sink-flange, said hinge connection being in advance of the engaging lips.

3. In combination-tubs, a tub, a sink serving as a full or a partial covering therefor, a splash-board secured at the rear of the sink, the bottom of which splash-board has a forward and downward inclination and extends over said tub and is provided with a downwardly-extending lip at its forward longitudinal edge, said sink being provided with a marginal flange the rear section of which has an upwardly-extending longitudinal lip adapted for engagement back of the lip on the bottom of the splash-board when the sink is in horizontal position, a hinge connection between the bottom of the splash-board and the rear section of the sink-flange, said hinge being in advance of the engaging lips and the said sink being provided with a longitudinal pocket in the inner face of the rear portion of its body, and an apron in rear of said engaging lips and depending from the under face of the bottom of the splash-board along the inner face of the rear portion of the tub.

4. The combination with a tub, a splash-board fixed at the rear upper portion of the tub, having a bottom which inclines downwardly and forwardly and extends over said tub, said splash-board bottom being provided with forwardly-extending horizontal hooks, faucets the supply-pipes whereof pass through the bottom of the splash-board, an apron secured to the bottom of the splash-board, extending down to an engagement with the inner upper face of the tub, a flanged sink adapted to constitute a partial or a complete cover for the tub, and trunnions carried by the rear flanged section of said sink, which trunnions enter the said hooks, constituting a hinged connection between the sink and the bottom of the splash-board, the entrance openings to the hooks being so far to the rear that said sink can not be disconnected from the bottom of the splash-board while the faucets remain over the same.

5. The combination with a splash-board provided with forwardly-extending hooks, and faucets in front of said splash-board, of a sink having trunnions entering the said hooks and constituting a hinge connection between the sink and splash-board, the entrance-openings to the hooks being so far to the rear that said sink can not be disconnected from the bottom of the splash-board while the faucets remain over the same, substantially as set forth.

849,255. BURNER. PAUL MISCHKE, East Rutherford, N. J. Filed Sept. 18, 1906. Serial No. 335,071.

Claim.—1. A burner, comprising a nipple provided with a shoulder, a mixing-tube secured to the nipple in alinement therewith, said tube being externally threaded and provided with air-inlets at its inner end, a nut on the said tube, a cup-shaped section having an inwardly-extending and apertured flange seated on the shoulder of the nipple, a forward section secured to the cup-shaped section and seated on the nut of the mixing-tube, said outer section being apertured, and a conical section secured within the cup-shaped section and outer section with its base seated on the flange of the said cup-shaped sections and forming with the said sections and the mixing-tube inner and outer chambers, one surrounding the other, the apex end of the conical section being apertured.

2. A burner, comprising a mixing-tube adapted to be secured to the nipple in alinement therewith and provided with air-inlets at its inner end, a cup-shaped section having an inwardly-extending and apertured flange, an outer apertured section secured to the cup-shaped section and to the mixing-tube, and a conical section secured within the cup-shaped and outer sections with its base engaging the flange of the said cup-shaped section and forming therewith and with the mixing-tube inner and outer chambers, said conical section being provided with openings near its apex end.

3. In a burner, a mixing-tube having its inner end internally threaded and its outer end externally threaded, said tube being provided with air-inlets at its inner end, a cup-shaped section having a flange provided with a central opening and smaller openings around the central opening an apertured outer section secured to the cup-shaped section and having a central opening to receive the mixing-tube, a nut on the mixing-tube in engagement with the said outer section, and a conical section secured within the cup-shaped and outer sections with its base engaging the flange of the said cup-shaped section and forming with said sections inner and outer air-chambers, the conical section being provided with openings at its apex end.

849,256. COMBINED WIRE STRETCHER AND FASTENER. EUGENE P. MOORE, Streator, Ill. Filed Dec. 19, 1906. Serial No. 348,635.

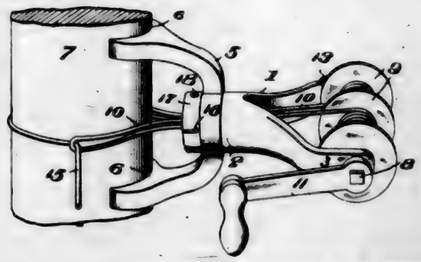

Claim.—1. The herein-described means for securing fence-wires to a post, comprising a frame having a head at one end and arms at the opposite end, a spool rotatably mounted between said arms, means to rotate said spool, said spool being adapted to receive wires which extend through said head and engage the fence-wire, and means to hold said wires while the same are being twisted together.

2. The herein-described means for securing fence-wires to a post, comprising a frame having a head at one end thereof and arms at the opposite end thereof, a shaft rotatably mounted in said arms, a spool fixedly secured on said shaft and between said arms, means to rotate said shaft, whereby wires secured thereto will be wound thereon, said wires extending through a bore in said head and engaging the fence-wire, and a collar on said head having openings therein to receive the free ends of said wires whereby when the head is rotated the wires will be twisted together.

3. The herein-described means for securing fence-wires, comprising a frame, a head on said frame having a bore therein, arms extended from said head, a spool rotatably mounted between said arms, means to prevent rotation of the spool in one direction, said spool adapted to receive wires which extend through said bore and into engagement with the fence-wires, a yoke on said head, a

collar fixedly secured to said head and having openings therein to receive the free ends of said wires whereby said wires will be directed together when said head is rotated.

849,257. HOISTING APPARATUS. LINCOLN MOSS, New York, N. Y., assignor to Robins Conveying Belt Company, New York, N. Y., a Corporation of New Jersey. Filed June 29, 1904. Serial No. 214,622.

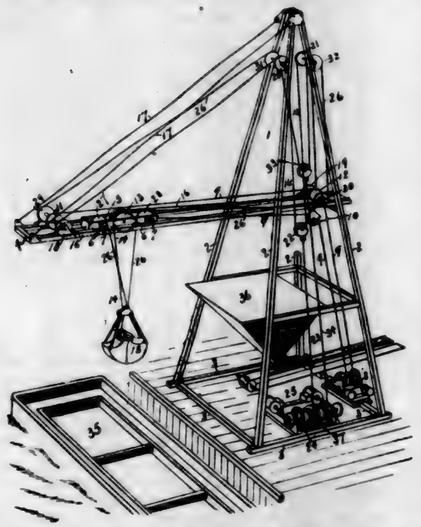

Claim.—1. In hoisting apparatus, the combination with a barrel-sheave or drum of a load-supporting rope attached to the barrel-sheave or drum, and an operating rope or cable having both ends attached to said barrel-sheave or drum and both leads wound thereon in the same direction but extending from the barrel-sheave or drum in opposite directions.

2. In hoisting apparatus, a barrel-sheave or drum, a flexible load-supporting member attached to the barrel-sheave or drum, a flexible operating member having both ends attached to the barrel-sheave or drum and wound thereon in the same direction but extending therefrom in opposite directions, and means engaging the bight of said flexible operating member to exert a pull thereon.

3. In hoisting apparatus, a barrel-sheave or drum, a flexible load-supporting member attached to said drum, a flexible operating member attached at both ends to said drum and having both leads wound thereon in the same direction but extending therefrom in substantially opposite directions, spaced guides for the leads of said operating member, and means in the bight of said operating member for simultaneously placing both leads under tension.

4. In hoisting apparatus, a barrel-sheave or drum, a load-supporting rope or cable attached to said barrel-sheave or drum, an operating rope or cable having both ends attached to said barrel-sheave or drum and wound thereon in the same direction but extending therefrom in substantially opposite directions, spaced pulleys for the leads of said operating rope or cable and means engaging the bight of said operating rope or cable for placing both leads thereof under equal tension.

5. In hoisting apparatus, a barrel-sheave or drum, a flexible load-supporting member attached to the drum, an operating rope or cable having both ends attached to the drum and having both leads wound on the drum in the same direction but extending therefrom in opposite directions, guide-pulleys over which said leads pass and a traveling sheave disposed in the bight of said operating rope or cable to exert a pull thereon.

6. In hoisting apparatus, a barrel-sheave or drum movable bodily, a load-supporting rope or cable attached to said drum, and an operating rope or cable having both ends attached to the drum and wound thereon in the same direction but extending therefrom in substantially opposite directions.

7. In hoisting apparatus, a barrel-sheave or drum, a load-supporting rope or cable attached to said drum, means for imparting bodily movement to said barrel-sheave or drum, and an operating rope or cable having both ends attached to the drum and wound thereon in the same direction but extending therefrom in substantially opposite directions.

8. In hoisting apparatus, a barrel-sheave or drum, a load-supporting rope or cable pendent therefrom, a self-filling bucket carried by said cable, a truck upon which said barrel-sheave or drum is supported, an operating rope or cable having both ends wound on said drum in the same direction but extending therefrom in substantially opposite directions, and a bucket-dumping rope or cable attached to said bucket and extending upward to the truck.

9. In hoisting apparatus, two barrel-sheaves or drums, a self-filling bucket, a rope or cable attached to one of said barrel-sheaves or drums and also attached to the closing-roller of said bucket, a rope or cable attached to the other barrel-sheave or drum and also attached to the frame of said bucket and an operating rope or cable for each of said barrel-sheaves or drums, said operating-ropes each having both ends attached to one of said barrel-sheaves or drums but extending therefrom in substantially opposite directions.

849,258. MACHINE FOR RE-PRESSING BRICK. EUGENE MURRAY, Washington, D. C., and ASHER O. TRAVIS, Del Ray, Va., assignors to Edwin L. Cockrell, Washington, D. C. Filed Feb. 17, 1906. Serial No. 301,715.

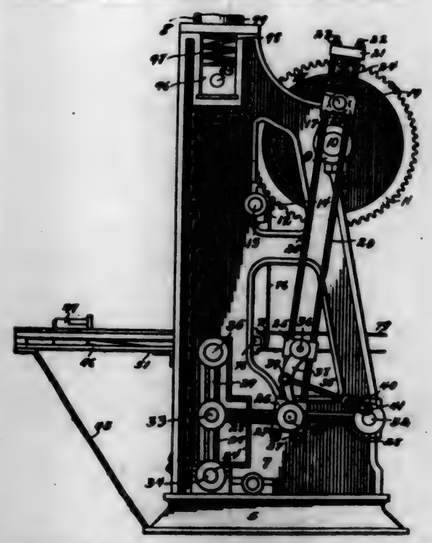

Claim.—1. A re-press-brick machine comprising a frame, upper and lower cross-heads reciprocatively mounted in said frame, upper toggle-arms connected to the upper cross-head and to a spring-pressed bearing, a main shaft, means for actuating said upper toggle-arms from said main shaft, lower toggle-arms connected to the lower cross-head and to a fixed portion of the frame, secondary lower toggle-arms connected to the first-named lower toggle-arms and a fixed portion of the frame, and means for actuating said secondary toggle-arms from the main drive-shaft.

2. In a re-press-brick machine the combination with a frame of a main drive-shaft mounted in said frame, a pinion fast upon said drive-shaft, a secondary drive-shaft, a gear-wheel upon said secondary drive-shaft with which said pinion meshes, an upper cross-head, plungers carried by said upper cross-head, toggle-arms connected to said plunger and to a spring-pressed bearing, a crank carried by the secondary drive-shaft, a connecting-rod between said crank and said toggle-arms, a lower cross-head, a mold-box carried by said lower cross-head, ejecting-plungers carried by said lower cross-head and located in the mold-box, a feeding-table, a feeding-pusher, means for imparting a steady reciprocatory movement to said feeding-pusher from the secondary drive-shaft, and means for imparting an intermittent reciprocatory movement to the lower cross-head from said secondary drive-shaft.

3. In a re-press-brick machine, the combination with a frame of upper and lower reciprocatory cross-heads, plungers carried by said upper cross-head, a mold-box carried by said lower cross-head, vertical toggle-arms connected to said lower cross-head and to a portion of the frame, horizontal toggle-arms connected to said vertical toggle-arms and a portion of the frame, a main drive-shaft, a secondary drive-shaft, cranks carried upon said drive-shaft, means for causing the downward movement of said cranks to impart a downward movement to the horizontal toggle-arms during a portion of the downward movement of said cranks and for permitting said horizontal toggle-arms to remain stationary during the remainder of the movement of said cranks.

4. In a re-press-brick machine the combination with a cross-head of vertical toggle-arms connected to said cross-head and to a fixed portion of the frame, horizontal toggle-arms connected to said vertical toggle-arms and a fixed portion of the frame, a rotative shaft, cranks carried by said shaft, bearing-blocks through which the wrist-pins of said cranks pass, connecting-rods passing through said bearing-blocks, fingers carried by said bearing-blocks, and a link which holds said fingers in alinement with a portion of the horizontal toggle-arms during a portion of the stroke of the eccentric-rods.

5. In a re-press-brick machine the combination with a reciprocatory cross-head, of a mold-box carried by said cross-head, vertical toggle-arms connected to said cross-head and a portion of the frame, horizontal toggle-arms connected to said vertical arms and a portion of the frame, bearing-blocks carried by said horizontal toggle-arms, connecting-rods which pass through said bearing-blocks, fingers carried by said connecting-rods, a link for holding said fingers in alinement with said bearing-blocks during a portion of the stroke of said connecting-rods, a rotative shaft, cranks carried by said shaft, bearing-blocks carried by the connecting-rods through which the wrist-pins of said cranks pass, said blocks being carried by the upper ends of the connecting-rods, and springs bearing between said blocks and the bearing-blocks through which the wrist-pins of the cranks pass.

6. A re-press-brick machine comprising a frame, a main shaft journaled therein, an upper cross-head mounted for reciprocatory movement in said frame, operative connections between said upper cross-head and said main shaft, a lower cross-head mounted for reciprocatory movement in said frame, actuating elements carried by said lower cross-head, connections between said shaft and said actuating elements, means for engaging said connections with said elements during a selected part of a revolution of said shaft and means for disengaging said connections from said shaft during the remainder of the revolution.

7. A re-press-brick machine comprising a frame, a main shaft journaled therein, an upper cross-head mounted for reciprocatory movement in said frame, operative connections between said upper cross-head and said shaft whereby the former is driven from the latter, a lower cross-head mounted for reciprocatory movement in said frame, movable actuating elements carried by said lower cross-head, connections between said shaft and said actuating elements, means interposed between said connections and said elements and controlled by the movement of the latter for engaging and disengaging said connections and said elements to effect a downward movement of said cross-head and means carried by said connections for engaging said elements on the upward movement of said connections.

849,259. OIL-BURNER. LAWRENCE F. MUSTER, Cleveland, Ohio. Filed July 9, 1906. Serial No. 325,339.

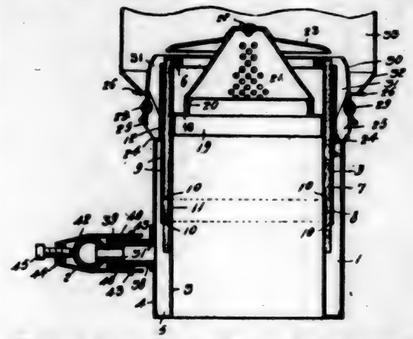

Claim.—1. In an oil-burner, inner and outer wick-tubes, the outer tube being shouldered near its upper end, a perforated collar around and at a distance from the upper ends of said tubes, the upper end of said collar being inturned and extending above the said tubes, substantially U-shaped brackets rigidly secured to said collar, each bracket having its upper end bent laterally and projected through one of the openings in the collar and the lower ends of the brackets resting on said shoulder, and a drum around the collar, the lower end of which is corrugated and bent inward and rests on the projecting ends of said brackets.

2. In an oil-burner, inner and outer wick-tubes, a collar around and at a distance from and extending above the upper ends of said tubes, a perforated ring in the inner tube provided with an upward-extending flange at its inner edge and with a depending flange at the outer edge which is secured to said inner tube, a perforated conical air-spreader resting on said ring around said upwardly-extending flange, and a depending spreader-plate secured to the top of said cone with its edge adjacent to the upper ends of said tubes and collar.

849,260. VAULT-LIGHT. JOHN MCGUIGAN and ARTHUR PRIDDLE, San Francisco, Cal. Original application filed Sept. 21, 1905, Serial No. 279,523. Divided and this application filed July 2, 1906. Serial No. 324,443.

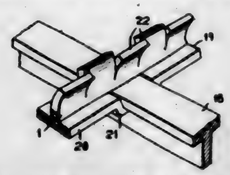

Claim.—1. A vault-light construction comprising reversely-arranged T-bars, one on the other at an angle thereto, and with their heads in the same horizontal plane, the head of one of said bars being offset and partly separated from its web to form an opening for the reception of the head of the other bar, substantially as described.

2. A vault-light construction comprising reversely-arranged T-bars, one on the other at an angle thereto, and with their heads in the same horizontal plane, the head of one of said bars being offset and partly separated from its

web to form an opening for the reception of the head of the other bar, and its web being provided with oppositely-extending lips, for the purpose set forth.

849,261. BUNK-BLOCK. FERNANDO NIMMO, West Point, Ark. Filed May 18, 1906. Renewed Feb. 15, 1907. Serial No. 357,572.

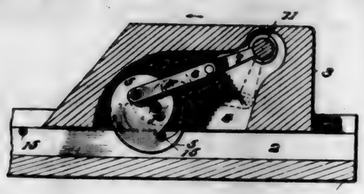

Claim.—1. A bunk-block for logging-wagons, cars or other vehicles consisting of a grooved bolster with one or more locking bolts or bars passing transversely through the groove; a slidable block having its lower edge fitting within the bolster and having a longitudinal recess; a cam-shaped hook located within the recess of the block and mounted upon a transverse shaft; an operating-shaft mounted within the block; toggle-arms pivoted to the cam-shaped hook and operating-shaft, and means for rotating the operating-shaft, substantially as and for the purpose set forth.

2. In a bunk-block such as described and consisting of a grooved bolster and slidable block mounted therein and provided with a cam-shaped hook, toggle-arms and operating-shaft, a hand-lever connected with one end of the operating-shaft and provided with a spring-pawl, and a segmental rack secured to the side of the block and adapted to coöperate with the spring-pawl, substantially as and for the purpose set forth.

3. In a bunk-block such as described the cam-shaped hook adapted to interlock with bolts or bars transversely located in the bolster, toggle-arms pivotally connected at one end to the cam-shaped hook and rigidly connected at the opposite end to an operating-shaft and arranged to constitute a brace or lock to prevent accidental release-ment of the hook from the transverse bolts or bars, substantially as hereinbefore set forth.

849,262. TROLLEY-WHEEL. GEORGE B. NUSSBAUM, New Philadelphia, Ohio, assignor of one-half to John Thurman Milar, New Philadelphia, Ohio. Filed Dec. 6, 1906. Serial No. 346,645.

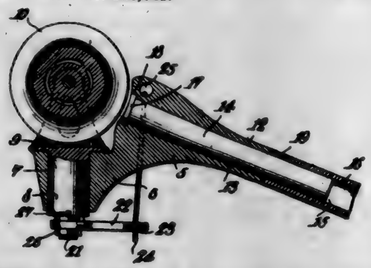

Claim.—1. In a trolley, a pole provided with a recess, a harp-support pivotally mounted for rocking movement on the pole and having a socket formed in one end thereof, a harp journaled in the socket and provided with a trolley-wheel, an arm extending from one end of the harp-support and provided with a terminal eye, an operating-rope secured to the harp-support and extending through the eye in the arm, and a lug carried by the harp-support and adapted to engage the walls of the recess in the trolley-pole for limiting the rocking movement of the harp-support.

2. In a trolley, a pole, a harp-support pivotally mounted for rocking movement on the pole and having a longitudinal bore formed therein for the reception of said pole, there being an opening formed in the support above the longitudinal bore, a harp mounted for rotation on the support and provided with a trolley-wheel, a threaded extension depending from the harp, a laterally-extending arm engaging the extension and provided with a terminal eye, clamping-nuts engaging the threads on the extension and bearing against the arm, and an operating-rope passing through the opening in the harp-support and threaded through the eye in the laterally-extended arm.

3. In a trolley, a pole provided with a segmental recess, a harp-support pivotally mounted for rocking movement on the pole and provided with a laterally-extending lug adapted to engage the walls of the segmental slot for limiting the rocking movement of the support, a harp journaled on the support and provided with a trolley-wheel, an arm extending laterally from the harp and having an eye formed in one end thereof, and an operating-rope secured to the harp-support and extending through the eye in the laterally-extending arm.

4. In a trolley, a harp-support provided with a longitudinal bore and having a socket disposed at one end of the bore, a trolley-pole seated in said bore and provided with a laterally-extending head engaging the walls of the socket, there being a segmental recess formed in the trolley-pole, a lug extending laterally from the harp-support and engaging the walls of the recess for limiting the rocking movement of the harp-support, a harp journaled in the support and provided with a trolley-wheel, said head and support being cut away to accommodate the trolley-wheel, an arm extending laterally from the harp and provided with a terminal eye, and a rope secured to the harp-support and passing through the eye in the arm.

5. In a trolley, a pole having a segmental recess formed therein, a pin rigidly secured to the pole and having its free end formed with an enlarged head, a harp-support pivotally mounted for rocking movement on the pin and having a socket for the reception of the head of the pin, there being an opening journaled in the harp-support at a point adjacent the head of the pin, a lug extending laterally from one end of the harp-support and adapted to engage the walls of the recess for limiting the lateral movement of said harp-support, a trolley-harp mounted for rotation on the support and provided with a trolley-wheel, an extension formed on the harp, a laterally-extending arm carried by the extension and provided with a terminal eye, and an operating-arm passing through the opening in the harp-support and engaging the walls of the eye, said harp-support being cut away to permit rotation of the trolley-wheel.

6. In a trolley, a trolley-pole having a socket formed in one end thereof and provided with a segmental recess, a pin rigidly secured to the pole and seated in said socket, said pin being provided with an enlarged head, a harp-support pivotally mounted for rocking movement on said pin and having a socket for the reception of the head of the pin, there being an opening formed in the harp-support at a point adjacent the socket, a lug extending laterally from the harp-support and adapted to engage the walls of the recess for limiting the rocking movement of the harp-support, a harp journaled in the support and provided with a trolley-wheel, an arm carried by the harp and provided with a terminal eye, and an operating-rope passing through the opening in the harp-support and engaging the walls of the eye.

849,263. WAGON END-GATE. EVERETT W. OLSON, Garfield, Kans. Filed Sept. 10, 1906. Serial No. 333,964.

Claim.—1. The combination with a wagon-body having seats upon the inner faces of its two sides, of an end-gate adapted to have one of its ends engage one of said seats, a locking member pivoted upon the opposite end of said gate and adapted to enter the other of said seats, and means for swinging said locking member into and out of its seat.

2. The combination with a wagon-body having seats upon the inner faces of its two sides, of an end-gate adapted to have one of its ends engage one of said seats, a locking member pivoted upon the opposite end of said gate and adapted to enter the other of said seats, and a toggle connection between said locking member and said gate for moving said toggle into and out of its seat, a bell-crank pivoted upon said gate, and a link connecting one arm of said bell-crank to said locking member, substantially as described.

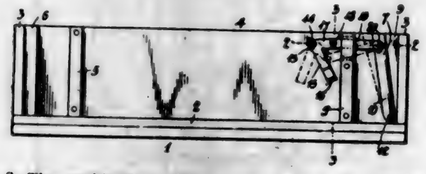

3. The combination with a wagon-body having spaced cleats upon the inner faces of its two sides, the outer cleat on one side being tapered, of an end-gate having one end beveled and its other end adapted to enter between the cleats on one side of the wagon, a locking member pivoted upon said gate, and a toggle connection between said member and said gate for swinging said member into and out of engagement with said tapered cleat.

4. The combination with a wagon-body having spaced cleats upon the inner faces of its two sides, the outer cleat on one side being tapered, of an end-gate having one end beveled and its other end adapted to enter between the cleats on one side of the wagon, a locking-plate of substantially U form in cross-section telescoping the beveled end of the gate and adapted to coact with said tapered cleat, said locking-plate being pivoted at one of its ends, and means for swinging the opposite end of said gate, substantially as described.

5. The combination with a wagon-body having spaced cleats upon the inner faces of its two sides, the outer cleat on one side being tapered, of an end-gate having one end beveled and its other end adapted to enter between the cleats on one side of the wagon, a locking-plate of substantially U form in cross-section telescoping the beveled end of the gate and adapted to coact with said tapered cleat, said locking-plate being pivoted at one of its ends, a lever pivoted upon said end-gate, and a link connecting said lever, substantially as described and for the purpose set forth.

849,264. STANCHION. FRANK S. OVERACKER, Stella, Wash. Filed July 31, 1906. Serial No. 328,607.

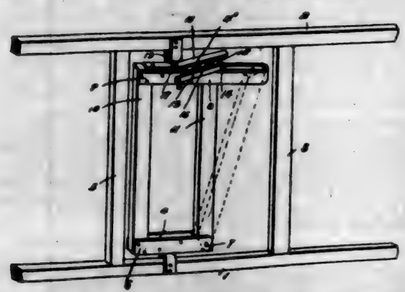

Claim.—1. A stanchion comprising a stationary member, a swinging member, a member embracing both members to guide the swinging member and to limit the outward movement of the latter, the outer end of the guiding and limiting member being contracted to create a binding action upon the swinging member when the latter is swung outwardly, and a latch to hold the stationary and swinging members in operative relation to each other.

2. A stanchion comprising a stationary member, a swinging member, a member embracing both of the aforesaid members to guide and limit the outward swing of said swinging member, the outer end of the guiding and limiting member being contracted to create a binding action therebetween and the swinging member when the latter is thrown outwardly, a latch member to hold the stationary and swinging members in operative relation, and a roller carried by the latch member to reduce friction between the latter and swinging member.

849,265. DRAFT-COMPENSATING DEVICE. MILTON I. PARKHURST, Fancy Prairie, Ill. Filed Nov. 11, 1905. Serial No. 286,902.

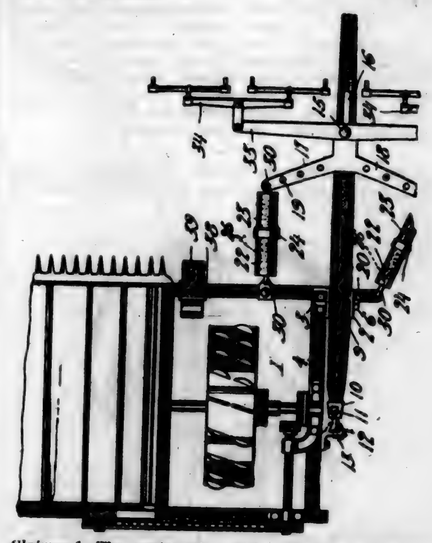

Claim.—1. The combination with a binder or the like, of a tongue movably secured thereto, a draw-head movably mounted on the tongue and supporting the draft-eveners, and compensating devices on opposite sides of said tongue and connected to the draw-head and to the binder, said compensating devices being respectively of normally unequal strengths.

2. The combination with a binder, of a coupling secured thereto, a tongue adjustably supported in the coupling, a draw-head slidably engaging the tongue and supporting the draft-eveners, and compensating devices connected to the binder and to the draw-head, said compensating devices being respectively of normally unequal strengths.

3. The combination with a binder, of a coupling secured thereto, a tongue adjustably supported in the coupling, a draw-head slidably engaging the tongue and supporting the draft-eveners, and compensating devices connected to the binder and to the draw-head, each of said devices comprising a casing, and independent springs mounted within the casing.

4. The combination with a binder, of a coupling secured thereto and inclined with relation to the binder, a tongue having an inclined portion slidably supported in said coupling, means for adjustably securing the tongue with relation to the coupling, a draw-head slidably engaging the tongue, means for limiting the movement of the draw-head with relation to the tongue, arms projecting laterally and in opposite directions from the draw-head, and compensating devices adjustably connected with said arms at their forward ends, the rear end of one of said devices being connected with the binder, and an arm projecting laterally from the coupling to receive the rear end of the other compensating device.

5. The combination with a binder, of a coupling secured thereto, a tongue adjustably supported in the coupling, a draw-head slidably engaging the tongue and supporting the

draft-eveners, and compensating devices connected to the binder and to the draw-head, and a truck connected to the binder and adapted to support the same in the absence of draft on the tongue.

6. The combination with a binder, of a coupling secured thereto, a tongue supported in the coupling, draft-evener-supporting means carried by the tongue, a compensating device connected to said means and to the binder, and a second compensating device connected to said means and to the coupling, the latter compensating device being of relatively less normal strength than the first-mentioned compensating device.

7. The combination with a binder, of a coupling secured thereto, a tongue adjustably supported in the coupling and projecting rearwardly therebeyond, draft-evener-supporting means carried by the tongue, a guide carried by the binder and formed with a curved guideway of approximately triangular shape in transverse section, and an arm carried by the rear end of the tongue and formed with a projection for movable reception within said guideway.

849,266. HUNTING OR SHOOTING GARMENT. FRED PETMECKY, Austin, Tex. Filed Nov. 6, 1906. Serial No. 342,233.

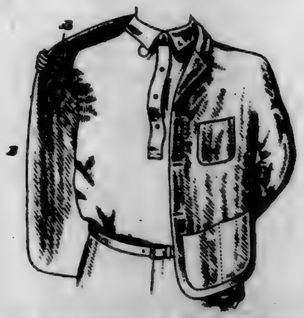

Claim.—The combination with the shooting-coat, of a resilient pad detachably secured to the inner surface thereof, said pad being arranged in front of the shoulder for absorbing the recoil of a firearm, and over the shoulder for preventing abrasion of the shoulder by the carriage of said firearm.

849,267. APPARATUS FOR FORMING PERFORATED STRIPS OR SHEETS. DAVID A. RITCHIE, Cambridge, Mass. Filed Nov. 14, 1906. Serial No. 343,384.

Claim.—1. In a machine of the character described, in combination, a movable carrier, a plurality of punches secured thereto to move therewith, a die member having a plurality of holes or openings coöperating with said punches to form a series of holes in a metal strip or sheet, a rotatable hub or disk provided with a plurality of spokes or radial projections capable of entering the holes formed in said metal strip or sheet, a shaft on which said hub is mounted, a device fast on said shaft, a lever coöperating with said device to lock said shaft and hub from rotation, and means movable with said carrier for disengaging said lever from said device to thereby release the said shaft and its hub, substantially as described.

2. In a machine of the character described, in combination, a movable carrier, a plurality of punches secured thereto to move therewith, a die member having a plurality of holes or openings coöperating with said punches to form a series of holes in a metal strip or sheet, feed-rolls for feeding said strip or sheet, means for rotating said feed-rolls continuously, and means governed by the said carrier and coöperating with the holes or openings formed in the metal strip or sheet for controlling the movement of said metal strip or sheet by said feed-rolls, whereby an intermittent feed is imparted to said strip or sheet by said continuously-rotating feed-rolls, for the purpose specified.

3. In a machine of the character described, in combination, mechanism for punching a plurality of holes or openings in a metal strip or sheet, and a rotatable device actuated by the perforated strip or sheet and controlling the feed or movement of the same, substantially as described.

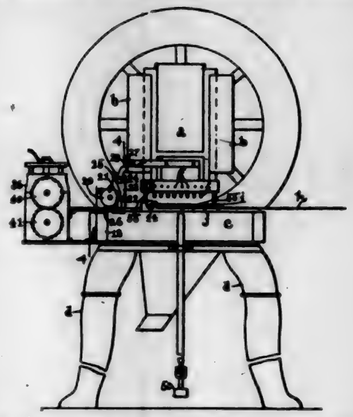

4. In a machine of the character described, in combination, mechanism for punching a plurality of holes or openings in a metal strip or sheet, said mechanism including a movable carrier, a rotatable device actuated by the perforated strip or sheet and controlling the feed or movement of the same, means for locking said device against rotation, and means actuated by said movable carrier for releasing said locking means, substantially as described.

5. In a machine of the character described, in combination, mechanism for punching a plurality of holes or openings in a metal strip or sheet, means for initially positioning the front end of the said strip or sheet with relation to said punching mechanism, and a rotatable device located in the path of movement of said metal strip or sheet and provided with means which are extended across the path of movement of the metal strip or sheet in the rotation of said device, said means being capable of entering into the holes or openings in said strip or sheet to thereby permit the feed of the latter, substantially as described.

6. In a machine of the character described, in combination, mechanism for simultaneously punching a plurality of holes or openings in a metal strip or sheet, and a device for controlling the feed or movement of said strip or sheet, said device having means for entering the holes formed in the strip or sheet and movable with said strip or sheet to permit movement of the same, substantially as described.

7. In a machine of the character described, in combination, mechanism for punching a plurality of holes or openings in a metal strip or sheet, a positively-driven and continuously-rotated feed mechanism capable of engaging the perforated sheet to effect the feed thereof, and rotatable mechanism coöperating with the holes formed in the metal strip for controlling the movement of the metal strip or sheet by said feed mechanism to obtain an intermittent feed of said strip or sheet by said continuously-rotated feed mechanism, substantially as described.

849,268. OVERALLS. LEWIS RUTENBECK, Lost Nation, Iowa. Filed Aug. 30, 1906. Serial No. 332,644.

Claim.—An overalls, comprising a normally flat body including a bib, waist and separated leg-flaps, a neck-strap terminally secured to said bib and means for securing it about the neck of the wearer, a waist-strap fixedly secured at one side of the body at one end and removably attachable to the opposite side edge of the waist, fastening devices along the outer surface of the outer edge portions of said leg-flaps, straps arranged in pairs and permanently attached at one end of each to the inner edge portions of said leg-flaps and their other ends adapted to be removably secured to said fastening devices, a horizontal series of pockets secured on the waist, straps secured to the corners

of said waist and to the outer corners of said horizontal series of pockets, and pockets on the said leg-flaps.

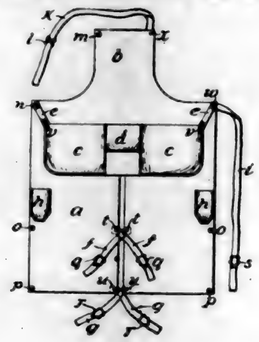

849,269. SEAL BOX-FASTENER. CLARENCE A. SCHAAD, Williams, Cal. Filed Aug. 8, 1906. Serial No. 329,743.

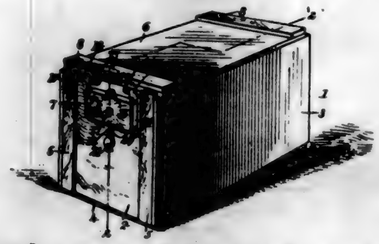

Claim.—1. The combination with a box having a block at an end thereof and a lid hinged at the other end of said box, of a bail having a hinged connection with said lid and adapted to engage with said block, said bail having an aperture, and a pin slidably mounted within said block and adapted to engage with said aperture of said bail.

2. The combination with a box having a block at an end thereof and a lid hinged at the other end of said box, of a bail having a hinged connection with said lid and adapted to engage with said block, said bail having an aperture, a pin slidably mounted within said block and having a slot, a rigid pin in said block transverse of said first pin and passing through said slot, said first pin being adapted to engage with said aperture of said bail and projecting therethrough, and means for attaching a seal at the end of said pin.

3. The combination with a box having a block and cleats at an end thereof and a lid hinged at the other end of said box, of a bail having a hinged connection with said lid and adapted to engage with said block between said cleats, said bail having an aperture, and a pin slidably mounted within said block and adapted to engage with said aperture of said bail.

4. The combination with a box having a block at an end thereof, laterally-disposed projections at an opposite end thereof, and a lid having openings adapted to engage with said projections, of a bail having a hinged connection with said lid and adapted to engage with said block, said bail having an opening, said box having cleats at the ends thereof adjacent to said block and said projections, said block having a pin slidably mounted therewithin adapted to be projected into said opening of said bail to secure the same in position in said opening of said block.

5. In a box-closure, a block secured to an end of a box, a bail hinged to a lid and adapted to engage with said block in a depressed position and constitute a handle to raise said lid when said bail is in a raised position, the bail having an aperture, said block having a pin slidably mounted therewithin and adapted to project from the block through said aperture, and means for attaching a seal to the projecting end of the pin.

6. In a box-closure, a plate having a laterally-disposed end mounted at an end of the box, a second plate having an opening mounted at the end of a lid, said laterally-disposed end being adapted to engage within said opening, a block mounted upon said box, a bail mounted upon said lid and having a hinged connection therewith, said bail being adapted to engage with said block in a depressed position and having an aperture, a pin slidably mounted within said block and adapted to engage within said aperture, and a rigid pin in said block adapted to limit the projection of said first pin from said block.

849,270. TRUCK. ANDREW SCHAFER and GEORGE WANER, Red Bluff, Cal. Filed May 15, 1906. Serial No. 316,930.

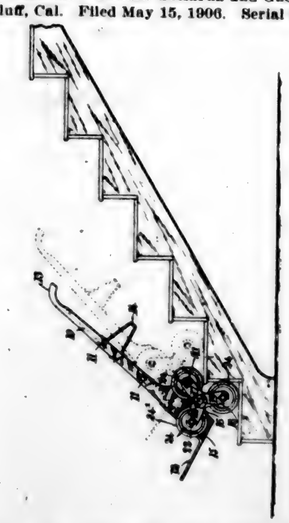

Claim.—A truck comprising a main frame, a shaft journaled transversely of the frame, truck-frames on the ends of the shaft outside of the main frame, each of said truck-frames comprising a plurality of plates spaced apart from each other, and each provided with radial arms, the arms on one plate registering with the arms on the other plate, sleeves between the plates, bolts traversing the plates and the sleeves whereby to secure said plates together, and wheels journaled between each pair of arms.

849,271. WELL-DRILLING MACHINE. JOHN W. SCHERER, Petersburg, Va., assignor of one-half to William A. Scherer, Petersburg, Va. Filed Apr. 17, 1906. Serial No. 312,191.

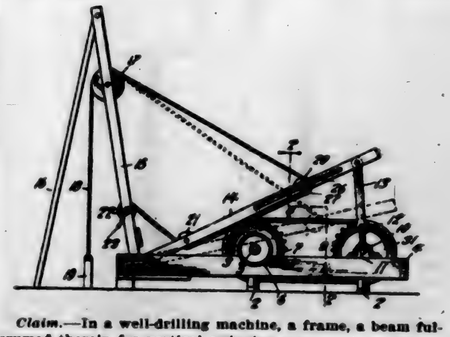

Claim.—In a well-drilling machine, a frame, a beam fulcrumed therein for vertical swinging movement, a drill-op-

erating element connected with the beam and for movement by the latter to operate the drill, a crank-shaft journaled in the frame and having a crank portion, a pitman journaled on said crank portion and connected with the beam, a belt-wheel mounted idly on the shaft and having a laterally-projecting portion, a drive-shaft carrying a belt-pulley, a belt connecting said pulley with the first-named pulley, and an arm fixed on the crank-shaft and adapted for engagement by the projecting portion of the adjacent pulley to positively rotate the shaft and swing the beam downward, said beam being adapted to swing upward under the weight of the drill upon movement of the arm past the dead-center of the pulley.

849,272. WRENCH. SAMUEL P. SCHNEIDER, Lorenton, Pa. Filed Apr. 19, 1906. Serial No. 312,683.

Claim.—As an article of manufacture, an axle-nut wrench consisting of a stationary flat bar provided with a downwardly-turned angular jaw on its forward end, an upturned rear end having a screw-threaded hole formed therethrough and having its sides turned upwardly and inwardly, a sliding flat bar superposed on the stationary bar having its sides engaged by the upwardly and inwardly turned sides of the stationary bar, provided on its forward end with a downwardly-turned angular jaw to coöperate with the first-mentioned jaw, and having an apertured upturned rear end, and a rod provided on its outer end with a handle and having its forward part screw-threaded and tapped through the screw-threaded upturned end of the stationary bar, the rod being passed through the said aperture and its tip formed into a head.

849,273. BEATER OR MIXER. ERNST J. SCHUIRMANN and TIDO R. SCHUIRMANN, Chenoa, Ill. Filed July 10, 1906. Serial No. 325,503.

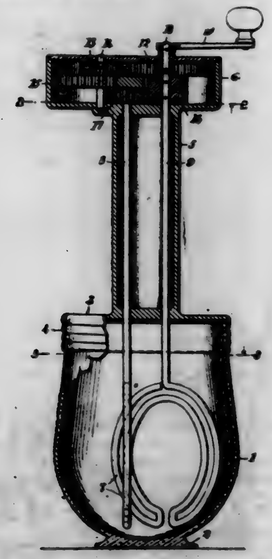

Claim.—1. In combination, a vessel having a cover, a tubular handle on said cover, agitating means in said vessel, and means at the outer end of the handle and passing therethrough for operating said agitating means.

2. In combination, a vessel having a cover, a tubular handle extending upward from said cover, a closed casing at the outer end of said handle, agitators in the vessel, gearing in the casing, means connecting the gearing and the agitators, and means outside of the casing and connected to the gearing for operating the agitators.

3. A beater or mixer comprising a vessel having a substantially hemispherical bottom, agitators in said vessel and supported free from contact with the walls thereof, a cover for the vessel, a tubular handle extending upward from the cover, a closed casing at the outer end of the handle, and operating-gears in the casing connected through the handle to the agitators.

849,274. JOURNAL-BOX. WILLIAM H. SHEASBY, Los Angeles, Cal., assignor to Antifriction Journal Box Company, Los Angeles, Cal., a Corporation of California. Filed Dec. 17, 1906. Serial No. 348,359.

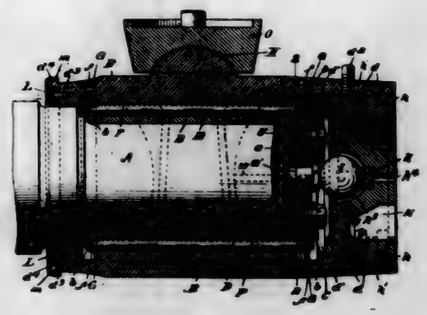

Claim.—1. In combination with an axle structure and a journal-box inclosing the same and having a projecting cylindrical end portion, there being an annular interior stop-flange d' in this projecting portion of the box, and a series of inwardly-projecting separated segmental flanges on the interior of this projecting portion between said stop-flange and the outer end of the box, and a closure-plug cylindrical in shape and provided with a series of separated segmental outwardly-extending flanges on its outer surface and an annular radial flange h on its outer end adapted to fit within the outer end of the box, and a locking device for this closure-plug.

2. In combination with an axle structure and a cylindrical box inclosing the same, a closure-plug in the outer end of this box provided with a central recess h^3, a ball confined in this recess, a wear-plate K at the bottom of this recess to receive the end thrust of the ball, said closure-plug being provided with a passage h^4 leading from the outer face of the plug to said water-plate K.

3. In combination with a journal-box having formed in its outer end a series of inwardly-projecting separated segmental flanges, a closure-plug cylindrical in shape adapted to fit within the end of the box and provided with two series of outwardly-projecting separated radial flanges adapted to fit between and interlock with the flanges on the box, and a locking device for this plug.

4. In combination with a journal-box having formed in its outer end opposite inwardly-projecting segmental flanges and an inwardly-projecting flange inside of said flanges, a closure-plug carrying an end-thrust element in its inner end or face and provided peripherally with outwardly-projecting segmental flanges, said plug being adapted to fit within the outer end of the journal-box, a locking device for the plug, and an axle having its spindle portion journaled in the box and its outer end engaging said end-thrust element.

849,275. TERMINAL FOR ELECTRICAL MOLDINGS. REUBEN SIMON, New York, N. Y. Filed May 9, 1906. Serial No. 315,948.

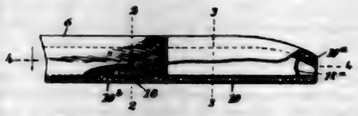

Claim.—1. The combination of a molding provided with channels, a body portion of insulating material having channels adapted to register with said channels of said molding, said body portion being further provided with a constricted edge, the latter being rounded for preventing abrasion of wires, and means for connecting said body portion with said molding.

2. The combination of a molding provided with a plurality of channels separated by a partition, said molding being partly cut away, and a body member of insulating material provided with channels registering with those of said molding, and further provided with a tongue fitting against said molding where the latter is cut away.

3. The combination of a molding provided with channels and with a partition, and a body portion of insulating material provided with a tongue integral therewith and fitting said molding and said partition, said body portion being further provided with channels registering with those of said molding, and also provided with a partition registering with said partition of said molding.

4. As an article of manufacture, a terminal for electrical moldings, comprising a body portion of insulating material provided with channels separated by a partition, said partition being comparatively short, so as to retreat from one edge of said body portion, said edge of said body portion being constricted and also being rounded to prevent the abrasion of wires.

5. The combination of a molding which is cut away for a little distance, and a body portion of insulating material fitting against said molding and provided with a tongue fitting into the mutilation thus formed by cutting away said molding, said body portion of insulating material and said molding being provided with channels in registry with each other.

6. The combination of a molding provided with channels and with a mutilation, a body portion provided with channels registering with said channels of said molding and further provided with a tongue entering said mutilation, and means for securing said body portion and said molding rigidly together.

849,276. AUTOMATIC STREET-INDICATOR FOR ELECTRIC RAILWAYS. ERIC M. SMITH, ALBERT M. KEMP, and JOSEPH E. FITZWATER, Denver, Colo. Filed Nov. 23, 1905. Serial No. 288,733.

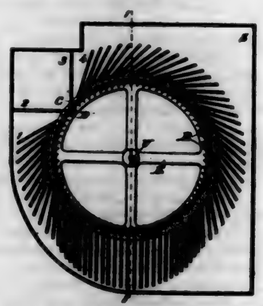

Claim.—1. In a street-indicator, a rotatable cylinder, a plurality of signs pivotally mounted thereon, means for giving said cylinder a step-by-step movement to display said signs successively and automatic means for reversing the direction of the cylinder movement.

2. In a street-indicator, a rotatable cylinder, a plurality of signs pivoted to said cylinder, means for advancing said signs successively to display position and means for reversing the direction of rotation of said cylinder to move said signs to display position in reverse order.

3. In a street-indicator, a rotatable member, a plurality of signs pivotally mounted thereon, a ratchet-wheel secured coaxially with said member, a fork mounted on the pivot of each sign, a stationary member adapted to engage said forks and display signs successively in either direction of movement of said member, an integral, double-ended pawl for driving said ratchet-wheel in either direction, and means for automatically reversing the driving position of said pawl.

4. In a street-indicator, a reversible rotatable cylinder, a series of signs pivoted near the periphery of said cylinder, forks pivoted coaxially with each of said signs, a pin arranged to engage said forks successively to move said signs to display position in either direction of rotation of said cylinder, and a single, reversible driving means for driving said cylinder in either direction.

5. In a street-indicator, a rotatable cylinder, a plurality of signs pivotally mounted thereon, a ratchet-wheel mounted coaxially with said cylinder, an integral, double-ended pawl for driving said wheel and cylinder in either direction and means for automatically reversing the driving position of said pawl at a predetermined point.

6. In a street-indicator, a rotatable cylinder, a plurality of signs pivoted thereto, reversible ratchet-and-pawl mechanism for intermittently rotating said cylinder, electrically-operated means for oscillating said pawl mechanism, means for closing the circuit of said electrically-operated means at predetermined points, and means for automatically reversing said pawl mechanism.

7. In a street-indicator, a movable sign-carrying member and actuating means therefor, said means comprising an oscillating lever, a pawl carried thereby a spring adapted to drive said lever and sign-carrying member in one direction, a solenoid adapted to drive said lever and sign-carrying member in the opposite direction, means for passing a current through the solenoid-winding at predetermined intervals, and automatic means for reversing the pawl carried by said lever.

8. In a street-indicator, a rotatable sign-carrying member and actuating means therefor, said means comprising a pawl-lever, an integral, double-ended pawl thereon, a solenoid-core mounted on an extension of said lever, a circuit comprising the winding of said solenoid and extending from a feed-main to a return, contacts removably mounted on the feed-main and arranged to close the circuit through said solenoid, a spring connected to the lever and adapted to drive said lever and rotate the sign-carrying member when the solenoid-circuit is broken and automatic means for reversing the driving position of said pawl.

9. In a street-indicator, a movable sign-carrying member and actuating means therefor, said means comprising a reversible ratchet-wheel, a lever carrying an integral, double-ended pawl arranged to engage said wheel, a spring-dog for holding said wheel during the non-driving movement of said pawl, means for oscillating said lever, and automatic means for reversing the driving position of said pawl.

10. In a street-indicator, a movable sign-carrying member and actuating means therefor, said means comprising a reversible ratchet-wheel, a lever carrying an integral double-ended pawl arranged to engage said wheel, a spring-dog for holding said wheel during the non-driving movement of said pawl, and automatic means for reversing the driving position of said pawl at predetermined intervals.

11. A street-indicator comprising a rotatable cylinder, plurality of pivoted skeleton leaves mounted adjacent to the periphery of said cylinder, a fork pivoted coaxially with each of said leaves, an adjustably-mounted stationary pin positioned to engage said forks successively, a ratchet-wheel mounted coaxially with said cylinder, an oscillating lever having an integral, double-ended pawl mounted in operative relation with said wheel, a three-armed lever having two of its arms positioned to reverse the driving position of said pawl and a plurality of pins removably mounted in said cylinder and arranged to engage the third arm of

the three-armed lever to actuate said pawl at predetermined positions of said cylinder.

849,277. PHOTOGRAPHIC-PRINT-TESTING DEVICE. FREDERICK SOHON, Washington, D. C. Filed Nov. 17, 1906. Serial No. 343,896.

Claim.—1. A photographic testing device of the character described, comprising a support having indicating means, and a shutter movably mounted on the support and movable over said indicating means.

2. A photographic testing device of the character described, comprising a support having indicating means, a shutter movably mounted on the support and movable over said indicating means, and means for limiting the speed of the shutter over said indicating means.

3. A photographic testing device of the character described, comprising a light-shield having an open portion that permits the passage of light, a shutter movable across the open portion, and means for limiting the speed of the shutter.

4. A photographic testing device of the character described, comprising a light-shield having an open portion that permits the passage of light, said shield having indicators associated with the open portion, and a shutter movable across the open portion.

5. A photographic testing device of the character described, comprising a light-shield having an open portion that permits the passage of light, said shield having indicating projections extending into the open portion, and a shutter movable across said open portion.

6. A photographic testing device of the character described, comprising a light-shield having a series of indicating characters comprising a stencil, and a shutter movable successively over said characters.

7. A photographic testing device of the character described, comprising a shield having an open portion, a series of projections extending into the open portion, a series of indicating characters cut through the shield adjacent to the open portion and associated with the projections, and a shutter movable across the open portion.

8. A photographic testing device of the character described, comprising a shield-plate having an open portion with projections extending into said open portion, indicating characters cut through the plate adjacent to the projections, a shutter rotatably mounted on the plate and movable over the open portion and the characters, and means for limiting the movement of the shutter.

9. A photographic testing device of the character described, comprising a light-shield having a plurality of sets of indicating characters cut through the same, a cover movable to a position over either set of characters, leaving the other set exposed, and a shutter movable over said characters.

10. A photographic testing device of the character described, comprising a shield having an open portion, and a plurality of sets of indicating characters cut through the shield directly adjacent to the open portion, a cover movable to a position over either set of characters, leaving the other set exposed, and a shutter movably mounted on said shield and movable over the open portion thereof.

11. A photographic testing device of the character described, comprising a shield having an open portion in one margin with projections extending into said open portion, and a plurality of sets of characters cut through the shield-plate and associated with the projections, a pintle carried by the shield-plate, a cover movably mounted on said pintle and movable to a position to cover either set of characters, leaving the other exposed, a shutter rotatably mounted on the pintle and movable over the open portion of the shield-plate, and means for limiting the speed of the shutter.

12. In a photographic testing device of the character described, the combination with a shield having an open portion to permit the passage of light, of a shutter pivoted on the shield and movable across the open portion.

13. In a photographic testing device of the character described, the combination with a shield having an open portion to permit the passage of light, of a shutter movable across the open portion, and means for determining the rapidity of such movement, said means comprising a conduit having a restricted portion, and a body of material located in the conduit and movable through the restricted portion.

14. In a photographic testing device, of the character described, the combination with a shield having an open portion, of a swinging shutter movable across the open portion, and means for determining the rapidity of such movement, said means comprising a curved conduit having a restricted portion, and a body of material located in the conduit and arranged to flow through the restricted portion.

15. In a photographic testing device of the character described, the combination with a shield, of a rotatable shutter mounted thereon, a substantially circular closed conduit movable with the shutter and having a restricted portion, and a body of material loosely located within the conduit and arranged to flow through the restricted portion thereof.

16. In a photographic testing device of the character described, the combination with a shield-plate having an open portion, and a series of characters cut through the plate and adjacent to the open portion, of a rotatable shutter movable across the open portion, a circular conduit rotatable with the shutter and having a restricted portion, and a body of freely-flowing material that is located in the conduit and arranged to pass through the restricted portion thereof.

17. In a photographic testing device of the character described, the combination with a shield having an open portion, of a shutter movable across the open portion, and a carrier on which the shutter is mounted, said shutter being adjustable to different positions on the carrier to vary the time of passage of said shutter across the open portion.

18. In a photographic testing device of the character described, the combination with a shield having an open portion, of a shutter movable across the open portion, a carrier on which the shutter is mounted, and means for effecting a predetermined movement of the carrier, said shutter being adjustable to different positions on the carrier to vary its time of passage across the open portion.

19. In a photographic testing device of the character described, the combination with a shield, of a carrier rotatably mounted thereon, and a shutter movable with the carrier and movable to different positions thereon.

20. In a photographic testing device of the character described, the combination with a shield having a plurality of sets of indicating characters, of a carrier movably mounted on the shield, a shutter movable with the carrier and movable to different positions thereon, and a cover movable to positions over either set of characters.

21. In a photographic testing device of the character described, the combination with a shield-plate having an open portion and a plurality of sets of indicating characters cut through the shield-plate and associated with the open portion, of a pintle carried by the shield-plate, a cover mounted on the pintle and having portions movable to positions over either set of characters, a carrier rotatably mounted on the pintle, a substantially circular conduit mounted on the carrier and having a restricted portion, a freely-flowing body of material located within the conduit, and a shutter carried by the carrier and movable across the open portion of the shield-plate, said shutter being adjustable to different positions on the carrier.

22. In a photographic testing device, of the character described, the combination with negative and paper holding means having an open portion to permit the passage of light through the negative to the paper held thereby, of a shutter movable across said portion.

23. In a photographic testing device of the character described, the combination with negative and paper holding means, including a shield having an open portion, and a clamp associated with the shield, of a shutter movable across the open portion.

24. In a photographic testing device of the character described, the combination with a negative and paper holding device including a shield-plate having an open portion, and a clamp-plate movable toward and from the shield-plate, said shield-plate having indicating characters, of a rotatable carrier journaled on the shield-plate and having a circular conduit provided with a contracted portion, freely-flowing material located in the conduit, and a shutter mounted on the carrier and movable across the open portion of the shield-plate.

25. In a photographic testing device of the character described, the combination with means for admitting light through a photographic negative, of a shutter movable across the same, and means for indicating the time occupied by the shutter in reaching different points in its path of movement.

26. In a photographic testing device of the character described, the combination with a light-shield having a portion that admits light to a photographic negative placed behind the shield, of a shutter movable across said portion, and means for indicating on the print, the time occupied by the shutter in reaching different points in its path of movement across said portion.

27. In a photographic testing device of the character described, the combination with means for admitting light through a photographic negative, of a shutter movable across the same, and means for limiting the speed of the shutter in its said movement.

28. In a photographic testing device of the character described, the combination with a light-shield having a portion that admits light to a photographic negative placed behind the shield, of a shutter movable across said portion, and means for limiting the shutter to a predetermined speed in its passage across said portion.

29. In a photographic testing device of the character described, the combination with a light-shield having an open portion that permits the passage of light to a negative placed behind said shield, and also having a series of indicating characters associated with the open portion comprising a stencil that permits the passage of light, and a shutter movable across the open portion.

849,278. PIANO-ACTION. LEWIS N. SOPER, Guelph, Ontario, Canada. Filed Jan. 11, 1907. Serial No. 351,840.

Claim.—1. An upright-piano action comprising a countercheck with shank, a hammer-butt, a jack, a spring having one end connected to the jack and its free end extending above the plane of the countercheck-shank, a flexible connection located above the countercheck-shank and having one end attached to the free end of the spring and its opposite end connected with the hammer-butt and a spring-directing element controlled by a movable part of the action.

2. An upright-piano action comprising a hammer-butt, a jack, a spring interposed between the butt and jack, and means connected with said spring operating to direct the movement of the spring.

3. An upright-piano action comprising a hammer-butt, a jack, a spring interposed between the butt and jack, and a connection between said spring and a movable element of the action operating to direct the movement of the spring.

4. An upright-piano action comprising a hammer-butt, a jack, a spring interposed between the butt and jack, and a link having one end connected with the spring and operating to direct the movement of said spring.

5. An upright-piano action comprising a hammer-butt, a jack, a spring interposed between the butt and jack, a wippen, and a link actuated by the wippen and connected with the spring and operating to direct the movement of the spring.

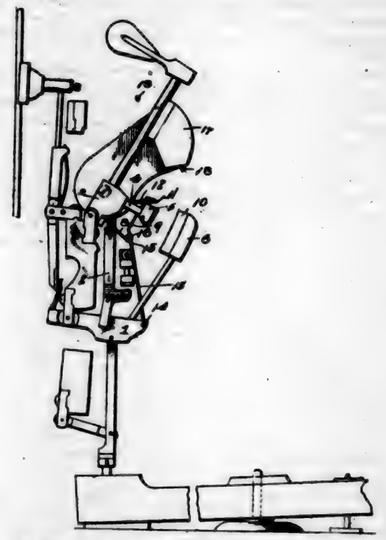

6. An upright-piano action comprising a hammer-butt, a jack, a spring interposed between the butt and jack, and a connection actuated by a movable element of the action and pivotally attached to the spring at a point intermediate of the ends thereof.

7. An upright-piano action comprising a hammer-butt, a jack, a spring interposed between the butt and jack, a countercheck with shank, a flexible connection having one end connected with the countercheck-shank and the other end in engagement with the free end of said spring and a spring-directing element actuated by a movable part of the action.

849,279. MOTOR. RALPH R. SPEARS, Wheeling, W. Va. Filed June 14, 1906. Serial No. 321,674.

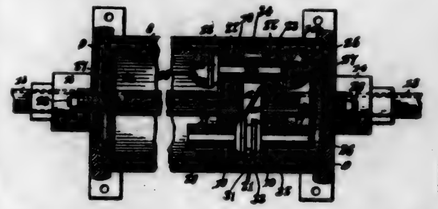

Claim.—1. In a motor of the character described, the combination with a cylinder, of a reciprocatory piston and piston-rod mounted in the cylinder, inlet and exhaust valve members movably mounted on the piston on different sides of the piston-rod, and a single yielding abutment element located within the cylinder and having an opening that receives the piston-rod, said element extending around the piston-rod and having portions disposed in the path of movement of both valve members.

2. In a motor of the character described, the combination with a cylinder having a head, of a reciprocatory piston and piston-rod mounted in the cylinder, inlet and exhaust valve members movably mounted on the piston on different sides of the piston-rod, a single yielding abutment element located within the cylinder and having an opening that receives the piston-rod, said element extending around the piston-rod and having portions spaced from the cylinder-

head and disposed in the path of movement of both valve members, and means passing through an intermediate portion of the element at one side of the piston and between the portions that are disposed in the path of movement of the valve members for securing said element to the cylinder-head.

3. In a motor of the character described, the combination with a cylinder having a head, of a reciprocatory piston mounted in the cylinder, a piston-rod secured to the piston and passing through the head, inlet and exhaust valve members mounted on the piston, a spring-plate having an intermediate portion secured to the cylinder-head, said plate having an open portion through which the piston-rod passes, the portions on opposite sides of the opening being offset from the intermediate portion, and said offset portions being disposed in spaced relation to the head and being located in the path of movement of the valve members.

4. In a motor of the character described, the combination with a cylinder having heads, of a reciprocatory piston operating in the head, a piston-rod carried by the piston and extending through both heads, inlet and exhaust valve members carried by the piston on opposite sides of the rod and projecting beyond the opposite faces of said piston, and spring-disks secured to the inner sides of the heads and having slots in which the piston-rods operate, said slots defining spring-wings arranged on opposite sides of the piston-rod and disposed in the paths of movement of the projecting portions of the valve members.

849,280. TOY. WILLIAM STEVENS, Keown, Pa. Filed May 14, 1906. Serial No. 316,897.

Claim.—1. A mechanical toy comprising a wheel provided with a hub and converging spokes; an axle loosely passing through said hub and extending beyond said hub on both sides thereof, a rider for said wheel having one foot attached to each axle extension, a balance-weight attached to said axle and located between the spokes directly opposite the rider; and means for positively turning said wheel, said means being connected at one end to the rim of said wheel and at the other end to said axle.

2. A mechanical toy comprising a wheel provided with a hub and converging spokes; an axle loosely passing through said hub, and extending beyond said hub on both sides thereof; a rider for said wheel having one foot secured to each axle extension, a balance-weight secured to said axle and located between the spokes directly opposite the rider; and a spring for positively rotating said wheel having one end fastened to the rim thereof, and the other end fastened to said axle, said spring being wound by rotating said wheel relatively to said axle and rider.

849,281. HOG-TROUGH. GEORGE STAHLE, Davenport, Iowa. Filed Apr. 2, 1906. Serial No. 309,490.

Claim.—1. A trough comprising a horizontally-disposed channel member and end plates secured thereto and a cover having a hinged connection with the end plates at one side of the channel member and provided with a recess adapted to aline with an opening in one of the end plates when the cover is in a closed position, and a locking-pin to be inserted through the opening in the end plate and to engage the recess in the cover to lock the cover in a closed position.

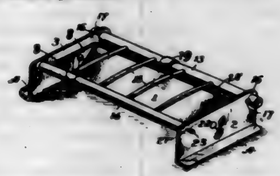

2. A trough comprising a channel member and end plates secured to said channel member and a cover comprising a pair of longitudinally-arranged bars and transverse bars arranged at regular intervals and connecting the longitudinally-arranged bars, and one of the last-mentioned bars having a hinged connection with the end plates at one side of the channel member, and the other of said bars being provided with a recess adapted to aline an opening in one of the end plates when the cover is in a closed position and a locking-pin to be inserted through said opening and to engage the recess to lock the cover in closed position.

3. A trough comprising a horizontally-disposed channel member having formed integral therewith at each end thereof a pair of connecting-flanges closing the channel member at its ends, and end plates secured to said flanges.

4. A trough comprising a horizontally-disposed channel member of approximately V-shape form in cross-section provided at each end with a pair of triangular-shaped connecting-flanges closing the channel member at its ends, and end plates secured to said flanges.

5. A trough comprising a horizontally-disposed channel member constructed from a single sheet of material having at each end a pair of triangular extensions, said sheet being folded to approximately V-shape form in cross-section, and the triangular extensions being bent at an angle to the main portion with their adjacent edges abutting, said triangular extensions closing the ends of the channel member and constituting connecting-flanges, and end plates secured to the connecting-flanges.

6. A trough comprising a horizontally-disposed channel member having at each end connecting-flanges completely closing the ends of the channel member and constituting end walls therefor, and end plates secured to said flanges.

7. A trough comprising a horizontally-disposed channel member having at each end extensions completely closing the ends of the channel member and constituting end walls therefor, and means for supporting the channel member.

849,282. HOSE-SUPPORTER. LOUIS C. STUKENBORG, Browns, Ala. Filed Nov. 3, 1906. Serial No. 341,851.

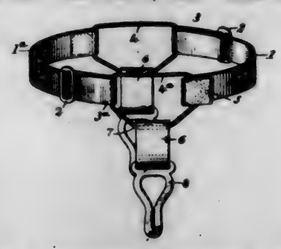

Claim.—1. A hose-supporter comprising a tape having one end doubled over and secured to form a hook, and means for supporting the hose attached to the other end of said tape and adapted to be engaged with said hook.

2. A hose-supporter comprising a tape having one end doubled over and stitched to a point forming a hook, and means for supporting the hose attached to the other end of said tape and adapted to be engaged with said hook.

3. A hose-supporter comprising two tapes, and cords connecting said tapes together at diametrically opposite points, one of said tapes being doubled over and secured to form a flexible hook whereby one of said cords may be detachably connected therewith.

4. A hose-supporter comprising a plurality of tapes, and hose-supporting devices attached to said tapes, one of said tapes being formed with a soft, flexible hook, whereby the adjacent supporting device may be detachably connected therewith.

849,283. COMPOUND BRAKE. AUGUST SUNDH, Yonkers, N. Y., assignor to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed June 19, 1905. Serial No. 265,995.

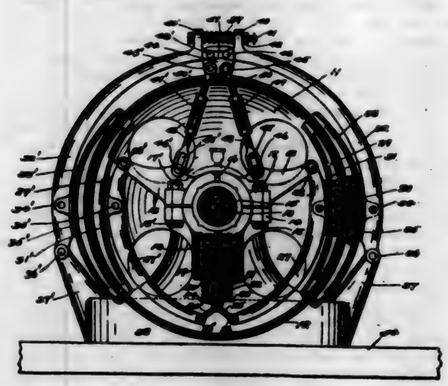

Claim.—1. The combination with a moving member, of a brake associated therewith, an additional brake for said moving member, and means for effecting the application of said additional brake after the setting of said first-named brake.

2. The combination with a moving member, of a brake therefor, an additional brake opposite said first-named brake, and means coacting with said first-named brake for effecting the application of said additional brake after the first-named brake is applied.

3. The combination with a moving member, of a brake therefor on one side of said member, an additional brake opposite said first-named brake and on the opposite side of said member, and means coacting with said first-named brake after the setting thereof for applying said additional brake.

4. The combination with a rotating member, of a primary brake therefor, a secondary brake for said rotating member, and means for applying said secondary brake from said primary brake after the application of the latter.

5. The combination with a rotating member, of an inner primary brake therefor, an outer secondary brake opposite said primary brake, and connections for effecting the application of the secondary brake after the setting of the primary brake.

6. The combination with a moving member, of a double brake therefor, of an additional double brake adjacent said first-named brake, and connections for effecting the application of said additional double brake upon the application of said first-named double brake.

7. The combination with a moving member, of a primary double brake, a secondary double brake adjacent said primary double brake, and means coacting with the primary double brake for applying the secondary double brake.

8. The combination with a rotating member, of an inner primary double brake, an outer secondary double brake, and connections between said brakes.

9. The combination with a moving member, of a brake associated therewith and movable in the direction of motion of said member, an additional brake in close proximity to said first-named brake, and means for effecting the application of said additional brake to said member when said first-named brake is applied.

10. The combination with a moving member, of a brake associated therewith and movable in the direction of motion of said member, an additional brake in close proximity to said first-named brake, and means for effecting the application of said additional brake to said member upon the setting of said first-named brake.

11. The combination with a moving member, of a brake associated therewith and movable in the direction of motion thereof, an additional brake opposite said first-named brake, and means effecting the application of said additional brake when said first-named brake is applied.

12. The combination of a moving member and two devices arranged opposite each other and on opposite sides of said moving member for retarding the motion of said member, one of said devices being brought into operation by the other device through frictional engagement of the latter with said member.

13. The combination with a rotating member, of a device for retarding the motion thereof, an additional device for retarding the motion of said member, and means coacting with the first-named device for bringing the said additional device into operation through the frictional engagement of said first-named device with said rotating member.

14. The combination with a moving member, of a brake associated therewith and movable in the direction of motion of said member, and a second brake adjacent said first-named brake and actuated by the impressed motion thereof due to its frictional contact with said moving member.

15. The combination with a moving member, of a brake associated with a portion of said moving member and movable in the direction of motion of said member, and a second brake associated with an opposite portion of said moving member and actuated by the impressed motion of said first-named brake due to its frictional engagement with said moving member.

16. The combination with a rotating member, of an inner primary brake movable in the direction of motion of said member, an outer secondary brake opposite said primary brake, and means for effecting the application of said additional brake when said first-named brake is applied.

17. The combination with a rotary member, of a brake for acting thereon, a support for said brake constructed to move around the axis of said member, and a second brake for said member and actuated by the impressed movement of said support due to frictional engagement of said first-named brake with said member.

18. The combination with a rotary shaft, of a friction-pulley on said shaft, a brake associated with said friction-pulley and movable in the direction of rotation thereof, an additional brake for said pulley, and means actuated by the impressed movement of said first-named brake due to frictional engagement of the first-named brake with the said friction-pulley for applying said additional brake to said pulley.

19. The combination with a rotary friction-pulley, of means for retarding the motion of said pulley and movable around the axis thereof, and additional means for retarding the motion of said pulley, said additional means being operated by the impressed rotary movement of said first-named means.

20. The combination with a rotary shaft, of a friction-pulley thereon, arms connected at one end by a joint, brakes on said arms bearing on the pulley, means for normally forcing the arms apart to move said brakes into contact with said pulley, a support for said arms, and electromagnetic means carried by said support for forcing together said arms and relieving the brake-pressure.

21. The combination with a rotary shaft, of a friction-pulley on said shaft, a frame loose on said shaft, a brake supported by said frame and bearing on said pulley, an additional brake, and connections between said frame and said additional brake for effecting the application of the

latter when the frame is tilted by the frictional engagement of said first-named brake with said pulley.

22. The combination with a rotary shaft, of a friction-pulley on said shaft, arms connected by a joint at one end, brakes supported on said arms and bearing on said pulley, means for moving said arms to release or apply said brakes, a support for said arms constructed to permit the same to tilt in the direction of rotation of said pulley, an additional brake associated with said pulley, and means actuated by the tilting of said support and arms due to frictional engagement of said first-named brakes for effecting the application of the additional brake.

23. The combination with a rotary shaft, of a friction-pulley thereon, arms connected by a joint at one end, brakes supported by said arms and associated with said pulley, one or more springs for moving said arms to brake-applying position, an electromagnetic device for releasing said brakes, a support for said arms constructed to permit the same to tilt in the direction of rotation of said pulley, an additional brake for said pulley, and brake-applying means for said additional brake actuated by the tilting of said arms due to frictional engagement of said brakes.

24. The combination with a rotary shaft, of a friction-pulley secured thereto, a brake for application to the inner periphery of the pulley-rim, a support for said brake loose on said shaft, an additional brake for application to the outer periphery of the pulley-rim, and connections between said outer brake and said support for the inner brake, the outer brake being controlled by the displacement of said support in arc due to the frictional contact between the inner brake and the pulley-rim.

25. The combination with a rotary shaft, of a friction-pulley thereon, a brake associated with the inner periphery of the pulley-rim, a support for said brake loose on said shaft, an additional brake associated with the outer periphery of the pulley-rim, and means for operating said additional brake controlled by the displacement of said support in arc due to the frictional contact of the first-named brake with the inner periphery of the pulley-rim.

26. The combination with a rotary shaft, of a double rocker-arm loose thereon, a solenoid connected to said rocker-arm, a brake-pulley on said shaft, levers pivoted on said rocker-arm and controlled by said solenoid, brakes acting on said pulley and controlled by said levers, additional brakes acting on said pulley, and means controlled by the displacement of said rocker-arm in arc for moving said brakes into operating position.

27. The combination with a rotary member, of a brake constructed to retard the motion thereof and movable around the axis of said rotary member, a second brake for acting on said rotary member, means for applying said second brake by the actuation of said first-named brake, electromagnetic means for releasing said first-named brake, and means for restoring both of the brakes to normal.

28. The combination with a movable member, of a brake associated therewith, an additional brake for said movable member, means for effecting the application of said additional brake upon the setting of said first-named brake, electromagnetic means for releasing the primary brake, and means for restoring both of said brakes to normal position upon the operation of said electromagnetic means.

29. The combination with a movable member, of a brake therefor, an additional brake for said member, means coacting with said first-named brake for applying said additional brake, means for releasing said first-named brake, and means coacting with said brake-applying means of said additional brake for restoring both brakes to normal.

30. The combination with a movable member, of a device for retarding the motion thereof, an additional device for retarding the motion of said member, means coacting with the first-named device for bringing said additional device into operation through the frictional engagement of said first-named device with said movable member, and means for restoring said brakes to normal position.

31. The combination with a rotating member, of a primary brake therefor, means for applying said brake, a secondary brake, means coacting with the primary-brake-applying means for applying said secondary brake, and a spring for restoring said brakes to their normal positions.

32. The combination with a rotating shaft, of a friction-pulley thereon, a primary brake to act on said pulley, a rocker-arm loose on said shaft, a brake-lever supported by said rocker-arm and supporting said brake, means for moving said lever to apply said primary brake, a secondary brake, an additional brake-lever therefor, connections between said rocker-arm and additional brake-lever, electromagnetic means for releasing said primary brake, and a single restoring means for both of said brakes.

33. The combination with a rotating shaft, of a friction-pulley thereon, a double rocker-arm loose on said shaft, primary brake-levers supported by said rocker-arm, primary brake-shoes supported by said levers and associated with the inner periphery of the pulley-rim, means for moving said primary brake-levers to apply said primary brake-shoes, secondary brake-levers, secondary brake-shoes supported thereby and associated with the outer periphery of the pulley-rim opposite said primary brake-shoes, adjustable connections between said rocker-arm and said secondary brake-levers, electromagnetic means for releasing the primary brake levers and shoes, and a spring associated with the free ends of said secondary brake-levers for restoring the same to normal and for coacting with said adjustable connections to rotate said rocker-arm to normal position.

34. The combination with a moving member, of a brake therefor, electromagnetic means for releasing said brake, and a plurality of concentrically-arranged springs for applying said brakes.

35. The combination with a moving member, of means for retarding the motion thereof, a plurality of concentrically-arranged springs for operating said retarding means, and means for releasing said retarding means.

36. The combination with a moving member, of a brake therefor, a solenoid, a plunger for said solenoid, a plurality of independent springs surrounding one end of said plunger, and means for connecting said brake and plunger.

37. The combination with a brake-pulley, of a primary brake and a secondary brake for said pulley, a solenoid, a plunger for said solenoid, a plurality of independent springs for moving said plunger, and connections between said plungers and said brakes.

849,284. SHADE-ROLLER. ARTHUR L. SUTTON, Paint Rock, Ala. Filed Oct. 15, 1906. Serial No. 339,066.

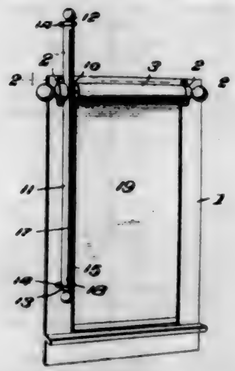

Claim.—1. The combination with a roller having a shank at each end thereof; of supporting-brackets for said shanks one of said shanks being elongated, a pinion on said elongated shank and between the end of the roller and supporting-bracket, a rod having a rack at its upper end adapted to engage said pinion, a tubular casing for said rod, said casing having a slot extending from its lower end to a point adjacent its upper end, into which extends said pinion, a fixed cap at the upper end of said tubular casing, a removable cap at the lower end thereof, ears on said caps by which means the caps are secured to a frame and a handle extending through said slot and into engagement with said rod whereby said rod may be operated to rotate said roller.

2. The combination with a roller having a shank at each end thereof one of said shanks being elongated, of supporting-brackets for the outer ends of said shanks, a tubular casing disposed between one end of the roller and adjacent supporting-bracket, a pinion on said elongated shank one portion of which is adapted to enter an elongated slot in the casing, a rod longitudinally movable in said casing, a rack at the upper end of said rod adapted to extend into said slot and engage said pinion said casing extending a distance above and below the roller, a cap fixed to the upper end of said casing and a removable cap at the lower end thereof, laterally-extending ears on said caps adapted to receive securing means and a handle secured to the lower end of said rod, and extending through said slot whereby said rod may be moved upwardly or downwardly to raise and lower the casing.

849,285. MUD KNIFE AND SHIELD FOR HARVESTER-WHEELS. WILLIAM D. TAYLOR, Hartford, Kans. Filed Sept. 19, 1906. Serial No. 335,219.

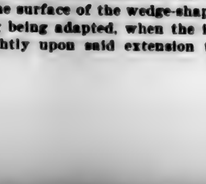

Claim.—1. A mud knife and shield for harvesters, consisting of a substantially vertical blade disposed adjacent to the edge of the bull-wheel tread, a horizontal shield-plate projecting laterally from said blade, and means for securing said blade to the harvester-frame.

2. A mud knife and shield for harvesters, consisting of a substantially vertical blade disposed adjacent to the edge of the bull-wheel tread, a horizontal shield-plate projecting laterally from said blade, and brace-rods adjustably secured at one end to said blade and at their opposite ends to the harvester-frame.

3. A mud knife and shield for harvesters consisting of a blade having a shank, said shank attached to the frame of the harvester and the blade disposed adjacent to the edge of the bull-wheel tread, a horizontally-disposed shield-plate projecting laterally from the upper edge of the blade, brace-rods adjustably secured at one end on opposite sides of the blade and secured at their opposite ends to the frame of the harvester.

4. A mud-knife for harvesters, consisting of a blade disposed adjacent to the edge of the tread of the bull-wheel of a harvester, a shield projecting laterally from said blade, and means for securing said blade to the harvester-frame, said means also serving to permit adjustment of the blade to and from the edge of the tread of the bull-wheel.

849,286. WHEEL-HUB. CHARLES THERRIEN, Sr., Lake Linden, Mich. Filed July 27, 1905. Serial No. 271,540.

Claim.—A vehicle-wheel hub comprising flanged outer and inner members, the outer member having a screw-threaded extension upon which the inner member is turned, combined with spokes arranged and clamped between the flanges of said members; a wedge-shaped annular band disposed upon said inward extension with its inclined face bearing against the inner ends of the spokes; and an expansion-ring located upon said inward extension behind said wedge-shaped band and bearing against the rear face of the latter, the said inner ends of the spokes being beveled to fit on the surface of the wedge-shaped band, and the expansion-ring being adapted, when the inner member is screwed up tightly upon said extension to force said band outwardly upon said extension and said spokes outwardly, to expand the spokes against the wheel-felly.

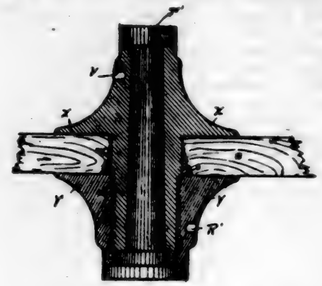

849,287. ELECTRIC SIGNAL SYSTEM. WILLIAM M. THOMAS, Chicago, Ill., assignor of one-half to Otto Eisenschiml, Chicago, Ill. Filed Aug. 3, 1906. Serial No. 329,019.

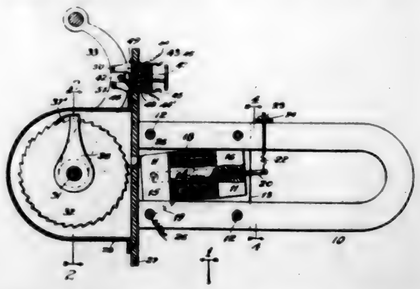

Claim.—1. In a system of the character described, a dynamo-electric machine, a plurality of devices, one for each circuit, each adapted and arranged for imparting motion to an inductive element of said machine, a plurality of circuits included in said system, and a means for causing the energization of a given circuit upon the movement of the motion-imparting device associated with said circuit.

2. In a system of the character described, a dynamo-electric machine, a plurality of devices, one for each circuit, each adapted and arranged for imparting motion to an inductive element of said machine, a plurality of normally open circuits included in said system, a circuit-closing switch, automatically operating to close a given circuit upon the movement of the motion-imparting device associated with said circuit.

3. In a system of the character described, a dynamo-electric machine of the alternating type, having a field and an inductor, adapted and arranged to be relatively vibrated, a plurality of devices, one for each circuit, arranged for relatively vibrating said indicator and field, a plurality of circuits included in said system, a means for causing energization of a given circuit upon the movement of the motion-imparting device associated with said circuit.

4. In a system of the character described, a dynamo-electric machine of the alternating type, having a field and inductor adapted and arranged to be relatively vibrated, a movable device or handle, adapted when moved, to impart movement in one direction to relatively vibrate said inductor and field, a spring to move said inductive device in the opposite direction, a means to return said handle to normal position, a circuit closed as a result of the movement of said handle and a bell in said circuit responsive to impulses of electricity from said machine, reoccurring in successive alternating directions.

5. In a system of the character described, a dynamo-electric machine of the alternating type, having a field and an inductor adapted and arranged to be relatively vibrated, a plurality of movable devices, one for each circuit arranged for relatively vibrating said inductor and field, a plurality of normally open circuits common to said system, and a spring-impelled switch for each circuit, adapted and arranged to automatically close a given circuit at the time when said motion-imparting device is initially moved.

6. In a system of the character described, a dynamo-electric machine, a plurality of motion-imparting handles, a plurality of electric circuits containing alarm-bells, one circuit for each handle, controlled by its respective handle, connections from said handles whereby motion is independently imparted to an inducing member of said dynamo, and means for including the coacting circuit with the dynamo at the time when the respective handle is first moved to impart motion to the proper element of the dynamo.

7. In a system of the character described, a dynamo having two inducing elements, one stationary and the other adapted and arranged to be relatively moved, a wheel having an uneven surface at or near its periphery, a projection from said relatively movable element, adapted and arranged to engage said surfaces or teeth, a handle or the like, for imparting rotary motion to the wheel to move the inducing element in one direction, and a spring to move said element in the opposite direction.

8. In a system of the character described, a dynamo having two inducing elements, one stationary and the other adapted and arranged to be relatively moved, a wheel having an uneven surface at or near its periphery, a projection from said relatively movable element adapted and arranged to engage said teeth, a handle or the like, for imparting rotary motion to the wheel to move the inducing element in one direction, a spring to move said element in the opposite direction, a circuit controlled by said handle, and a means such as a spring for returning said handle to normal position.

9. In a system of the character described, a means for directly imparting motion to an inducing element of a dynamo-electric machine, to vibrate the same, comprising a handle, such as 33, a toothed wheel, such as 32 for imparting motion to the inductor, an engaging part, such as pin 26, a pawl, such as 37, for connecting said handle to said wheel, and a spring, such as 39, to return the handle to its normal position.

849,288. AUTOMATIC CLUTCH-COUPLING FOR SHAFTS. JESSE F. THOMAS, New London, Wis. Filed Apr. 13, 1906. Serial No. 311,495.

Claim.—1. In a shaft-coupling, in combination, a clutch member adapted to be attached to a driven shaft, a shaft in alinement therewith, a second clutch member slidably mounted on said first clutch member and having slots therein, counterweights having heads received in said slots and having toes abutting the side of said shaft, and a projecting member carried by said shaft and engaged by said toes whereby the outward movement of said weights will advance said second clutch member.

2. In a shaft-coupling, in combination, a clutch member adapted to be attached to a driven shaft, a shaft alining therewith, a second clutch member slidably mounted on said shaft and having diametrically-disposed slots, a transverse gib mounted in said shaft and having its extremities projecting into said slots, weights having heads lying in said slots and having toes engaging the edge of said gib and the side of said shaft.

3. In a shaft-coupling, in combination, a clutch member adapted to be attached to a driven shaft, a shaft in alinement therewith, a second clutch member slidably mounted on said first clutch member and having slots therein, counterweights having heads received in said slots and having toes abutting the side of said shaft, a projecting member carried by said shaft and engaged by said toes whereby the outward movement of said weights will advance said second clutch member, and means for normally holding said second clutch member out of engagement with said first clutch member.

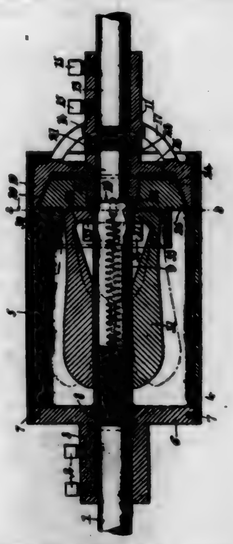

4. In combination, a driven shaft, a clutch member rigidly attached thereto, a driving-shaft, a casing rigidly attached to said driving-shaft and having a shell surrounding said clutch member, a second clutch member mounted within said casing and adapted to slide toward said first clutch member, said second clutch member having slots therein, said shaft having a transversely-disposed gib projecting into said slots, weights mounted in said case on each side of said shaft and having heads disposed in said slots, said heads having toes engaging the side of said shaft and the edges of said gib, said heads abutting the face of said second clutch member and affording means for advancing the same when said weights fly outwardly.

849,289. HYDROCARBON-BURNER. LEO UHRIG and RICHARD A. STABEN, Whittier, Cal. Filed Dec. 15, 1905. Serial No. 291,923.

Claim.—1. In a hydrocarbon-burner, a generator pan or tray, a U-shaped pipe supported above and on said pan with its legs disposed in the same horizontal plane, a valved pipe connected with one end of the U-shaped pipe and communicating with a source of water-supply, a valve-casing connected with the other end of the U-shaped pipe and having a valved outlet-pipe, a burner-tip connected with the latter and located between the legs of the U-shaped pipe, and an oil-pipe connected with the burner-tip and communicating with a source of oil-supply.

2. In a hydrocarbon-burner, a generating-pan having uprights, a steam-pipe supported by said uprights and bent on itself in a horizontal plane to approximate the periphery of the pan, a burner-tip connected with one end of the steam-pipe and arranged to direct its flame against the bend of the latter, a valved pipe connected with the other end of the steam-pipe and communicating with a source of water-supply, an oil-pipe connected with the burner-tip, and a valved pipe connected with the oil-pipe and communicating with a source of oil-supply.

3. In a hydrocarbon-burner, a tip comprising two rectangular blocks arranged one over the other and each having a passage bored therein, notches on the adjacent faces of the blocks which communicate with and flare outwardly from the passages in a plane at right angles to the common axis of the passages, a partition-plate arranged between the blocks for separating the notches and coöperating with the latter to form similar outlet or discharging openings expanding uniformly in an outward direction, means for holding the blocks and partition-plate together, a pipe connected with one of the passages for feeding liquid fuel thereto, and a pipe connected with the other passage for supplying steam to the same.

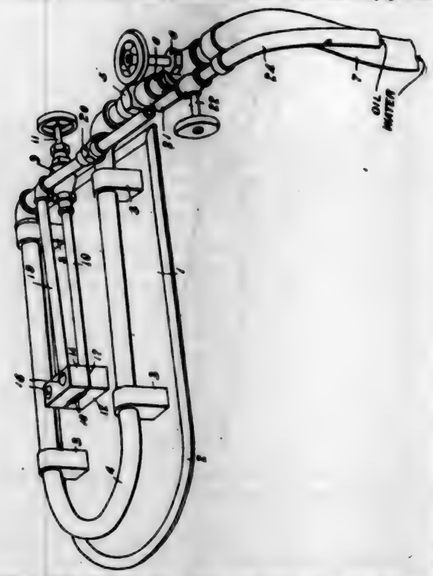

849,290. DEVICE FOR SUPPORTING FOWLS. HERBERT M. VANDERBILT, Suffern, N. Y. Filed July 17, 1906. Serial No. 326,602.

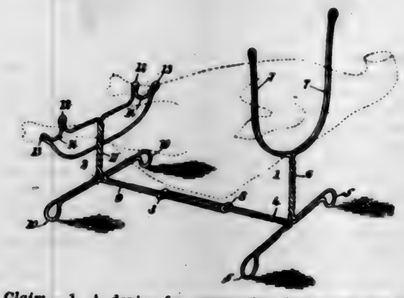

Claim.—1. A device for supporting fowls and the like, comprising two members, each having supporting-feet joined together, a standard rising from the center of the joining portion of said feet on each member, a large U-shaped seat centrally supported at the upper end of one of the standards, and a small seat arranged at each side of and supported by the other standard.

2. A device for supporting fowls and the like, comprising two members adjustably connected together, each member having supporting-feet joined together, a standard rising from the center of the joining portion of said feet on each member, a seat centrally supported at the upper end of one of the standards, and a seat arranged at the side of and supported by the other standard.

3. A device for supporting fowls or the like, comprising two members adjustably connected together, each member including a standard, a U-shaped seat centrally supported at the upper end of one of the standards, and a small seat arranged at each side and supported by the other standard.

4. A device for supporting fowls or the like, comprising two members each having an element slidably embracing each other, a standard vertically rising from each element, a seat centrally supported at the upper end of one of the standards, and a seat arranged at each side of and supported by the other standard.

5. A device for supporting fowls and the like, comprising two wire members slidably connected together, each of said members including feet joined together, a standard rising from the center of the joining portion of said feet on each member, a large seat centrally supported at the upper end of one of the standards, and a small seat arranged at each side of and supported by the other standard.

6. A device for supporting fowls and the like, comprising two members slidably connected together, each member having feet joined together, a large seat centrally supported on the joining portion of the feet of one member, and a small seat supported on the joining portion of the feet of the opposite member at each side thereof.

849,291. DOOR FOR FREIGHT-CARS. JAMES VAN SLYKE, Shellrock, Iowa. Filed Jan. 12, 1906. Serial No. 295,815.

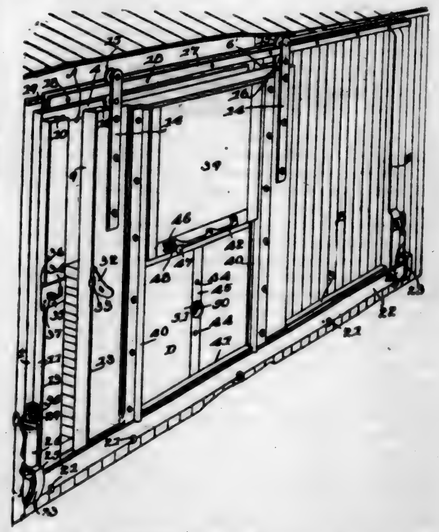

Claim.—1. A slidably-supported car-door capable of swinging outwardly at its lower end, a hingedly-supported guard member adapted to engage the lower end of the door and having apertured brackets, suitably-supported housings, and bolts slidable and oscillatory in said housings and having eccentric terminal-engaging members.

2. The combination with a slidably-supported car-door capable of swinging and means for preventing vertical movement of the door; of a bottom guard-rail hingedly mounted below and normally out of contact with the door and adapted to overlap the bottom portion of the door, said rail constituting a guide for the door when sliding, and means at each end of the rail for locking it in guiding position.

3. The combination with a hinged supporting-rail and a longitudinally-movable car-door suspended from and held against vertical movement by the rail and disposed to swing therewith; of a hinged bottom guard-strip normally out of contact with the door and adapted to overlap the lower edge of the car-door and to constitute a guide therefor throughout the longitudinal movement of

the door, said guard-strip adapted to prevent swinging of the door.

4. The combination with a hinged supporting-rail and a car-door suspended from and adapted to move longitudinally of the rail and to swing therewith, said rail holding the door against vertical movement; of a hinged bottom guard-strip normally out of contact with the door and adapted to overlap the lower edge of the car-door and to constitute a guide therefor throughout the longitudinal movement of the door, said guard-strip adapted to prevent swinging of the door, and means adjacent the ends of the strip for locking it in overlapping position.

5. The combination with a hinged supporting-rail and a car-door suspended from and adapted to move longitudinally of the rail and to swing therewith, said rail holding the door against vertical movement; of a hinged bottom guard-strip normally out of contact with the door and adapted to overlap the lower edge of the car-door and to constitute a guide therefor throughout the longitudinal movement of the door, said guard-strip adapted to prevent swinging of the door, and stop-cleats fixedly secured between the ends of the guard-strip and supporting-rail and in the path of the longitudinally-movable door.

849,292. ANTIMAGNETIC DEVICE FOR WATCHES. ASHBEL T. WALL, East Greenwich, R. I., and ORLANDO M. THOWLESS, Newark, N. J. Filed Jan. 4, 1905. Serial No. 239,549.

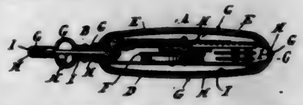

Claim.—1. An antimagnetic device for watches, consisting of a watchcase, composed in necessary parts of magnetic metal, and having an enameled dial-plate formed of magnetic metal with copper welded to one or both sides thereof, and the enamel on the face of the copper.

2. An antimagnetic device for watches, consisting of a watchcase, composed in necessary parts of magnetic metal and having attached to the movement an enameled dial-plate formed of magnetic metal with copper welded to one or both sides thereof, and the enamel on the face of the copper.

3. As a new article of manufacture, a dial-plate for watches, formed of a layer of magnetic metal with one or more layers of copper welded thereto.

4. As a new article of manufacture, a dial for watches, composed of magnetic metal welded to layers of copper, and having enamel on the face of the copper, properly figured.

5. In an antimagnetic device for watches, the combination of the watchcase, A, composed of magnetic metal, H, united to the covering metals, G, and I, with the enameled dial-plate, J, formed of magnetic metal welded to layers of copper having the enamel on the face of the copper, and the movement, F, as described.

6. In an antimagnetic device for watches, the combination of the watchcase, A, the dial-plate, J, formed of magnetic metal welded to layers of copper and the enamel on the face of the copper, the magnetic band, K, and the movement, F, as described.

849,293. CAKE-TURNER. MARIA C. WALSTON, Tullahoma, Tenn. Filed Nov. 14, 1906. Serial No. 343,467.

Claim.—A cake-turner comprising a flat lifting blade or plate having a horseshoe-shaped outer frame, a star-shaped center piece having some of its points attached to the inner edge of the outer frame, and a crescent-shaped brace connecting the terminals of the frame and rear point of the center piece, bearings upon the center piece and brace, a third bearing upon one of the ends of the horseshoe-shaped frame, a spring-handle having arms provided with obliquely-bent portions, one of the arms having a shaft extending forwardly from its obliquely-bent portion upon which the bearings of the center piece and brace of the lifting-blade are journaled, and the obliquely-bent portion of the other arm being formed with a crank engaging

the bearing upon the rear end of the horseshoe-shaped frame, substantially as described.

849,294. GRANARY. ELMER G. WARE, Emporia, Kans. Filed June 7, 1906. Serial No. 320,559.

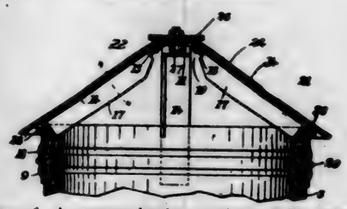

Claim.—1. A granary having a substantially cylindrical body presenting circumferentially-disposed corrugations near the upper edge thereof, a roof-frame having downwardly-bent arms with corrugations matching said first corrugations, a roof supported on said roof-frame, and means for securing said arms to said body.

2. In a granary, in combination, a body of cylindrical form having corrugations formed near the upper edge thereof, a roof-frame presenting radially-disposed trusses attached together at their inner extremities and having downwardly-projecting arms with corrugations matching said first corrugations, a band encircling said body at said corrugations and securing said arms thereto, and a roof supported on said roof-frame and composed of a plurality of detachable sections.

3. In a granary, in combination, a body presenting circumferentially-disposed corrugations near the upper edge thereof, a roof-frame composed of angle-irons having downwardly-projecting flanges, and webs bent downwardly to form arms with corrugations matching the said corrugations, a band encircling said body at said corrugations and holding said arms thereto, said trusses being secured together at their inner extremities, and a roof supported on said frame.

4. A granary having a substantially cylindrical body, a roof-frame supported on the upper edge of said body and presenting a central plate with trusses radiating therefrom and secured to said body, a roof composed of sections detachably connected together having flanges on the under edges thereof adapted to engage the side wall of said body, and means for supporting said roof at said central plate.

849,295. TENSION DEVICE. SIMON W. WARDWELL, Providence, R. I. Filed May 15, 1905. Serial No. 260,502.

Claim.—1. In a tension device, the combination with a bracket having an inclined face, a pin projecting perpendicular to said face, resilient washers surrounding the pin and one of them bearing on the face, two disks mounted on the pin between the washers, and a weight slidable on the pin to engage the other washer to apply pressure to the disks.

2. In a tension device, the combination with a bearing-pin, of two adjacent disks mounted on the pin, resilient washers engaging the outer faces of the disks, and means to exert pressure on the washers to force the disks together, including a weight slidable on the pin through gravity, to engage one of the washers.

3. The combination in a tension device with a stud or pin, of wheels or disks mounted rotatively on the pin and a weight sliding on the pin through gravity, to press the disks together.

4. The combination in a tension device with a stud or pin, of resilient washers on the pin, disks rotatable upon the pin between the washers, and a weight slidable on the pin through gravity, to apply pressure on the washers.

5. The combination in a tension device having rotatable disks with coinciding flat faces, of means for directing a thread to travel between the disks in a curve in contact with the faces thereof to rotate the same, and a weight directly engaging one of the disks to press the same toward the other by gravity.

6. The combination in a tension device adapted to apply tension to a running thread, of an inclined pin over which the thread runs, disks mounted on the pin and rotated by the action of the thread, resilient washers engaging the outer faces of the disks, and a weight mounted on the pin to slide through gravity to apply pressure through the washers to the disks.

7. The combination in a tension device adapted to act on a running thread, of a pin supported at an angle to the horizontal, a rotative bushing on the pin over which the thread runs, two disks rotatable in respect to the pin, resilient washers engaging the outer faces of the disks, and a weight sliding on the pin, through gravity, to engage one of the washers.

8. The combination in a tension device adapted to act on a running thread, of an inclined stud or pin, a disk, formed with a hub or flange over which the thread runs, mounted rotatively on the pin, a second disk mounted rotatively on the hub, resilient washers engaging the outer faces of the disks, and a weight slidable on the pin to engage one of the washers through gravity.

9. The combination in a tension device with a bracket, having an inclined recessed face, a stud or pin projecting from said face, a slidable weight on the stud, with its faces recessed to correspond with the bracket, resilient washers arranged in the recesses, and two disks mounted rotatively on the pin between the washers, and having their edges flanged outward to project within the recesses of the bracket and weight, substantially as shown and described.

10. The combination in a tension device having rotatable disks with coinciding flat faces, of means for directing a thread to travel between the disks in a curve in contact with the faces thereof to rotate the same, a weight directly engaging one of the disks to press the same toward the other by gravity, and an elastic backing of a character to permit the separation of the disks under the action of the thread without changing the position of the pressure means.

849,296. DETECTOR DEVICE. SIMON W. WARDWELL, Providence, R. I. Filed Jan. 24, 1906. Serial No. 297,692.

Claim.—1. In a detecting device for insulated wire the combination with a grooved wheel over which the wire runs, of a helical spring surrounding the wheel within its groove, for the purpose specified.

2. In a detecting device for insulated wire or cable, the combination of a wheel or pulley over which the wire is led, and an endless helical spring surrounding the periphery of the wheel and adapted to bear on the wire.

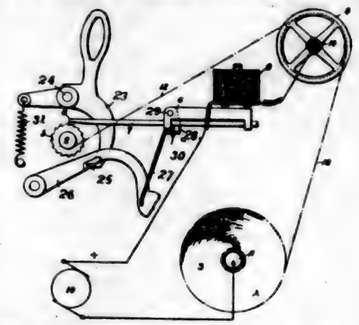

3. The combination with the stopping devices of a machine for winding insulated wire, and a supply from which the wire is wound and a guide-wheel over which the wire travels, of electrical means to actuate the stopping devices of the machine, an electrical circuit including, with a source of electrical energy, the said electrical means, the wire being wound and the guide-wheel, and means to electrically connect said wire with said guide-wheel, in the manner and for the purpose indicated.

4. The combination with an electromagnetic stop device, of an electric circuit, a traveling wire forming one terminal of the circuit, a guide-wheel for the wire forming the other terminal, and means to electrically connect the wire with the wheel.

5. The combination in a normally open electrical circuit with an electromagnetic stop device, of a traveling insulated wire forming one terminal of the circuit, a guide-wheel for the wire forming the other terminal of the circuit, and means to electrically connect the wire with the wheel.

6. The combination in a normally open electrical circuit with an electromagnetic stop device, of a traveling insulated wire forming one terminal of the circuit, a guide-wheel for the wire forming the other terminal of the circuit, and a ring of coiled spring-wire surrounding the periphery of the guide-wheel and contacting with the insulated wire to electrically connect the wire with the wheel.

7. The combination in a normally open electrical circuit with an electromagnetic stop device, of a traveling insulated wire forming one terminal of the circuit, a grooved guide-wheel forming the other terminal of the circuit, and a ring of coiled spring-wire within the groove of the wheel, for the purpose specified.

8. The combination with a winding-machine having as components a winding-spindle 2, devices for holding the supply 3 and a guide-wheel 4, electrically insulated from the machine, of an insulated wire wound from said supply upon the spindle 2, and passing over the wheel 4, an electrical circuit having one terminal in the machine and another in said wire, stop devices included in the electrical circuit, and means carried on the guide-wheel 4 to connect the terminals, when a defect occurs in the insulation of said wire.

9. The combination with means for feeding an insulated strip, of a stop device therefor, an electrical motor and generator for operating said device, and a contact member arranged in circuit including said motor, generator and part of the strip said contact member comprising a wheel or pulley over which the strip is traveled and a spring feeler-band surrounding the periphery of said wheel and bearing on the strip.

10. The combination with a traveling covered strip and means for feeding the same, of an electric generator connected electrically with the strip and idler-pulley or

guide-wheel over which said strip travels, a member carried by said guide-wheel and arranged to contact with said strip and with any part thereof where the core is exposed, a stop device for the feeding means, and an electric motor to operate the same in circuit with the generator, the contact member and strip.

11. The combination with means for delivering a metallic coated strip from its supply and with a stop device and electric motor therefor, of a feeler member having flexible contact-fingers arranged to contact with said strip, and a circuit including a generator, said member, the motor and the strip.

12. In a machine for winding a covered metallic strip, the combination of the winding devices, a supply from which the strip is drawn, a stop device, means for electrically operating the same on completing a circuit through the strip, and a member arranged in the circuit to complete the circuit when the metallic part of the strip is in contact with said member, said member formed with flexible teeth or projections for kneading and feeling the covering of the strip.

13. In a detecting device for machines for winding insulated metallic strips, the combination with a normally open electrical circuit including the strip, of a feeling device also included in the circuit comprising a plurality of yielding fingers adapted to be pressed into contact with the strip to close the circuit when defective insulation occurs.

849,297. DENTAL SWAGING DEVICE. GEORGE J. WEBER, Liberty Center, Ohio. Filed Nov. 15, 1905. Serial No. 287,532.

Claim.—A dental-plate-swaging device comprising a cup, a counter-die of plastic material therein terminating below the upper edge of the cup, said die being provided with a forming-cavity and a plane marginal seat-face between the same and wall of the cup, a plunger adapted to fit at its lower end in the upper portion of the cup and provided with a recess of greater width and length than said forming-cavity, a die-backing seated in said recess and composed of non-metallic substance capable of being rendered plastic at a low degree of heat, a low-fusing, base-metal die partially embedded in the backing, said die being fusible at a higher degree of temperature than the backing and adapted to approximately fit the forming-cavity, whereby a portion of the backing surrounds the die, said portion being trimmed flush with the lower edge of the plunger to form a plane marginal seat-face around the die, and a sheet of resilient material free from connection with the dies and adapted to be interposed between the plate and wall of the counter-die, said sheet being of proper dimensions to cover the plate and the said seat-faces of the die and counter-die, whereby a uniform, maximum cushioning action is secured in the operation of swaging a plate, substantially as described.

849,298. FILE-BOX. ANDREW L. WEIS, Monroe, Mich. Filed May 24, 1906. Serial No. 318,449.

Claim.—1. In a receptacle of the described character, a flexible metal strip secured at its extremities to the floor of the receptacle, a follower, and means for slidably engaging the bottom of the follower with said strip.

2. In a receptacle of the described character, a flexible metal strip secured at opposite ends to the floor of the receptacle, a follow-block adapted to move lengthwise of the strip, and a clasp which slidably engages the strip and which is secured to the follow-block.

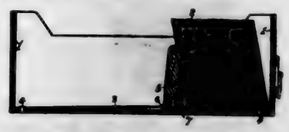

3. In a receptacle of the described character, a flexible metal strip secured at its extremities to the floor of the receptacle, a follow-block, another metal strip wrapped around the strip first mentioned and in slidable engagement therewith, and means for securing said second-mentioned strip in place upon the bottom of the follow-block.

4. In a receptacle of the described character, a follow-block arranged transversely of and movable longitudinally in the receptacle, a flexible metal strip secured at its opposite ends to the floor of the receptacle, a second metal strip which slidably clasps the strip first mentioned one end of said second metal strip being secured to the bottom of the block, and a third metal strip which overlaps the second strip and having both its ends secured to the bottom of the block.

5. In a receptacle of the described character, a follow-block having in its bottom a recess, a flexible metal strip secured at its extremities to the floor of the receptacle, and means for slidably engaging the block with the strip, said means being disposed within said recess.

849,299. FENCE-POST AND SOCKET THEREFOR. WILLIAM L. WELCH, Jamaica, N. Y. Filed Mar. 31, 1906. Serial No. 309,174.

Claim.—The improved fence-post comprising the post proper having a circular beveled collar located a suitable distance from its lower end, and the metal socket having a cylindrical body and an enlarged head provided interiorly with a beveled socket corresponding to and forming a seat for the collar of the post proper as shown and described.

849,300. WASHING-MACHINE. PETER WERTS, St. Marys, Ohio. Filed Feb. 15, 1906. Serial No. 301,261.

Claim.—1. In a washing-machine, the combination with a receptacle; of oppositely-disposed spring-pressed rubbing-boards within the receptacle and spaced apart at their lower ends, one of said boards being dished, a guide-plate for directing material from one of the boards into the dished portion of the other board, and a plunger interposed between the boards and above the guide-plate.

2. In a washing-machine, the combination with a receptacle having a hopper opening thereinto; of oppositely-disposed spring-pressed rubbing-boards mounted within the receptacle, a curved extension upon one of the boards projecting into the hopper, one of the boards being dished at its lower end, a guide-plate extending under one of the boards and into the dished portion of the other board, and a plunger interposed between and adapted to move longitudinally of the rubbing-boards.

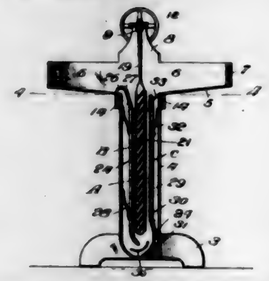

3. In a washing-machine, the combination with a receptacle; of oppositely-disposed spring-pressed rubbing-boards mounted within the receptacle, a plunger interposed between the boards, means for reciprocating the plunger, and a guard movably connected to the upper end of one of the boards and contacting with a wall of the receptacle.

4. In a washing-machine, the combination with a receptacle having a hopper opening into one end thereof; of oppositely-disposed spring-pressed rubbing-boards mounted within the receptacle, strips at each edge of the rubbing-boards, the strips upon one rubbing-board being curved backward and resting upon the floor of said hopper and parallel strips connecting said curved portions, pivoted guides interposed between the rubbing-boards, and a plunger slidably mounted within the guides.

5. In a washing-machine, the combination with a receptacle; of oppositely-disposed spring-pressed rubbing-boards mounted within the receptacle, one of said boards having a dished lower end, a guide-plate extending into said dished end and under the end of the other board, a pivoted guard connected to the upper end of the dished board and contacting with a wall of the receptacle, and a reciprocating plunger interposed between the rubbing-boards.

6. In a washing-machine, the combination with a receptacle having resiliently-mounted rubbing-boards therein; of pivoted guides interposed between the boards, side strips slidably mounted within the guides, and parallel inclined overlapping slats connecting the side strips and constituting a plunger.

849,301. FEED-WATER REGULATOR. LOUIS WESTCOTT, Middleport, N. Y. Filed July 21, 1906. Serial No. 327,154.

Claim.—1. In a feed-regulator for steam-boilers, the combination with a boiler, and a water-supply pipe having a controlling-valve therein, of an expansion-pipe communicating at one end with the boiler below the normal water-lever, a steam-conducting pipe communicating at one end with the boiler above the normal water-level, a flexible communicating connection between the opposite ends of said pipes, an operating-lever fulcrumed to the steam-conducting pipe and pivotally connected with the expansion-pipe, and means controlled by said lever for closing and opening the valve in the supply-pipe when the expansion-pipe expands and contracts.

2. In a feed-regulator for steam-boilers, the combination with a boiler, and a water-supply pipe having a controlling-valve therein, of an expansion-pipe communicating at one end with the boiler below the normal water-level, a steam-conducting pipe communicating at one end with the boiler above the normal water-level, a union-pipe hingedly connected with the outer ends of said expansion and steam-conducting pipes and establishing communication therebetween, an operating-lever fulcrumed to the steam-conducting pipes and pivotally connected with the expansion-pipe, and means controlled by said lever for closing and opening the valve in the supply-pipe when the expansion-pipe expands and contracts.

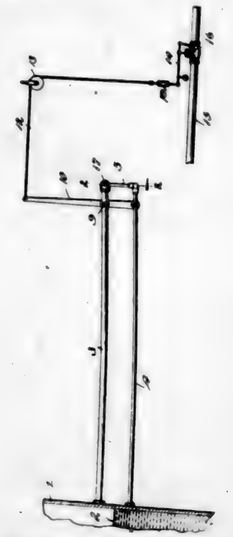

3. In a feed-regulator for steam-boilers, the combination with a boiler, and a water-supply pipe having a controlling-valve therein, of an expansion-pipe communicating at one end with the boiler below the normal water-level, a steam-conducting pipe communicating at one end with the boiler above the normal water-level, said pipes being inclined outwardly and upwardly from the boiler, a flexible communicating connection between the opposite ends of said pipes, an operating-lever fulcrumed to the steam-conducting pipe and pivotally connected with the expansion-pipe, and means controlled by said lever for closing and opening the valve in the supply-pipe when the expansion-pipe expands and contracts.

849,302. BRAKE. ESTON V. WHELCHEL, Rossville, Ga. Filed May 23, 1906. Serial No. 318,396.

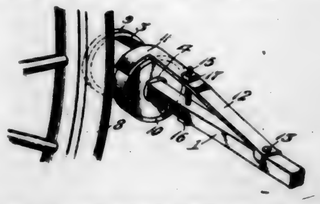

Claim.—1. A wheel-brake comprising a roller-shoe adapted to work in contact with a wheel rim or tire, said shoe having bands secured to its ends and an adjustable friction device adapted to bear upon one of said bands for resisting the rotation of said roller-shoe.

2. A wheel-brake comprising a roller-shoe mounted to rotate upon a bearing or support, an adjustable friction device for resisting the rotation of said roller-shoe, said friction device comprising a spring-arm carrying a friction-shoe and a threaded bolt passed through said spring-arm to hold said friction device in adjusted position, substantially as described.

849,303. VARIABLE GEARING FOR FARE REGISTERS AND RECORDERS. DAVID B. WHISTLER, Dayton, Ohio, assignor to The Recording and Computing Machines Company, Dayton, Ohio, a Corporation of Ohio. Filed Sept. 19, 1906. Serial No. 335,244.

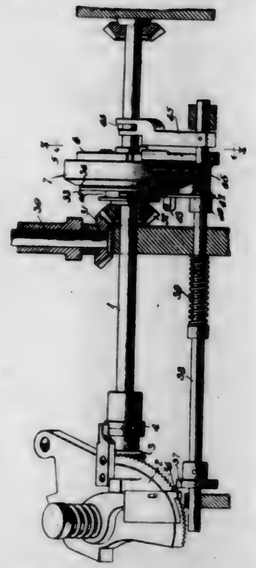

Claim.—1. The combination, with an operating-shaft, of a variable gear comprising two members, one fixed on said shaft and the other normally free to rotate relatively thereto, gear-teeth mounted to slide in one of said members transversely of the periphery thereof, the other member having a cam engaging said gear-teeth to project and retract the same into and out of operative position, and means for rotating said cam member, substantially as described.

2. The combination, with an operating-shaft, of a variable gear comprising two members, one fixed on said shaft and the other normally free to rotate relatively thereto, one of said members having a body portion transversely grooved at its periphery and having a lateral adjoining portion of less diameter across which the grooves extend, gear-teeth mounted to slide in said grooves and having dimensions such as to fit entirely within those portions of said grooves which lie within the body portion of said member, said teeth being provided with radially-projecting pins, the other member being provided with a flange which fits around the body portion of the tooth-bearing member, said flange being provided with an internal cam-groove to receive the pins of the teeth, said cam-groove comprising two circular portions lying in parallel planes and connected by an inclined intermediate portion, substantially as described.

4. In a variable gear of the character described, a tooth-bearing member having a rim and hub, and a cam-bearing member rotatable relatively thereto and provided with an aperture having marginal teeth, in combination with a housing located in said aperture and having a base secured to the inner face of the tooth-bearing member between its hub and rim, and a spring-pawl mounted in said housing and engaging the marginal teeth of the aperture of the cam-bearing member, substantially as described.

5. The combination, with an operating-shaft, of a variable gear comprising a tooth-bearing member fixed on said shaft and a cam-bearing member normally free to rotate thereon, a gear loosely mounted on said shaft, a clutch member splined on the hub of said gear and adapted to engage the cam-bearing member, and means for operating said clutch member, substantially as described.

6. The combination, with an operating-shaft, of a variable gear comprising two members, one fixed on said shaft and the other normally free to rotate relatively thereto, gear-teeth mounted to slide in one of said members, the other member having a cam engaging said gear-teeth to project and retract the same into and out of operative position, and means for rotating said cam member, substantially as described.

849,304. RAKE. ROBERT H. WHITTED, Crawfordsville, Ind. Filed Aug. 8, 1906. Serial No. 329,755.

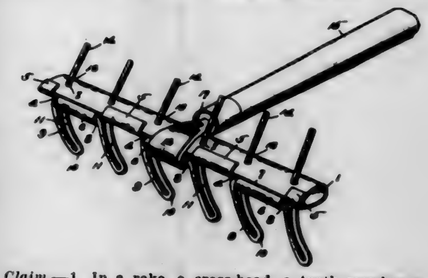

Claim.—1. In a rake, a cross-head, a tooth member secured to and parallel with the head and extended to form a tooth upon each of two sides of the head.

2. In a rake, a cross-head, a tooth member secured to and parallel with the head and extended to form a single tooth upon one side and a folded tooth upon the other.

3. In a rake, a cross-head composed of folded sheet material, and a tooth member secured to and parallel with the head and extended to form a tooth upon each of two sides of the head.

4. In a rake, a cross-head composed of folded sheet material, and a tooth member secured to and parallel with the head and extended to form a single tooth upon one side and a folded tooth upon the other.

5. In a rake, a cross-head, a tooth member secured to and parallel with the head and folded to form a tooth upon one side and passed through the head to form a single tooth upon the other side.

6. In a rake, a cross-head composed of folded sheet material, and a tooth member secured to and parallel with the head and folded to form a tooth upon one side and passed through the head to form a single tooth upon the other side.

7. In a rake, a cross-head composed of folded sheet material, and a tooth member secured to and parallel with the head by a fold of the material and folded to form a tooth upon one side and passed through the head to form a single tooth upon the other side.

8. In a rake, a cross-head composed of sheet material folded and held in such folded position by lips of the material, and a tooth secured to the head by a fold of the material between the lips.

9. In a rake, a cross-head composed of sheet material folded and held in such folded position by lips of the material, and a tooth member secured to and parallel with the head by a fold of the material embracing the tooth member.

10. In a rake, a hollow cross-head, a tooth member bent to form a folded tooth, and a single tooth, and a lip embracing and securing the tooth member to the head and with the folded tooth upon one side and the single tooth upon the other.

11. In a rake, a sheet of material folded to form a hollow cross-head, lips of the material arranged to hold the cross-head properly folded, a tooth passing through the head and folded to form a folded tooth upon one side, and a fold of the sheet material embracing and securing a portion of the tooth member parallel with the head.

12. In a rake, a tooth member composed of a wire, having a straight central portion, then bent upon each side into arms extending substantially at right angles to the central portion, the arms being then folded upon themselves, and the ends extended beyond the central portion with the folds in planes transverse to the central portion.

13. In a rake, a cross-head, a tooth member composed of a wire having a straight central portion, then bent upon each side into arms extending substantially at right angles to the central portion, the arms being then folded upon themselves and the free ends extended beyond the central portion with the folds in planes transverse, to the central portion, and means for securing the tooth member to the head.

14. In a rake, a sheet of material folded to form a cross-head, a tooth member composed of a wire having a straight central portion then bent upon each side into arms extending substantially at right angles to the central portion, the arms being then folded upon themselves and the free ends extended beyond the central portion with the folds in planes transverse to the central portion and with the free ends passed through the cross-head to form single teeth and with the folds opposite to form folded teeth, folds of the sheet material embracing the central straight portion of the tooth member, and a handle secured to the head.

849,305. MATCH HOLDER AND LIGHTER. VICTOR WINQUIST, Rockford, Ill., assignor of one-fourth to Alfred Turnstrom, Rockford, Ill., and one-fourth to Leonard Stockhus, Freeport, Ill. Filed July 9, 1906. Serial No. 325,305.

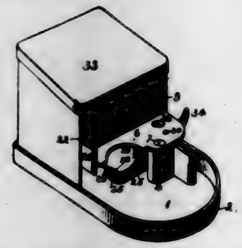

Claim.—1. In a match holder and lighter, the combination of a match-receptacle having a hopper-shape bottom which is provided with a discharge-opening, one wall made yielding, a movable cut-off extending within the discharge-opening, a spring for holding the yielding wall against the cut-off and the cut-off against the stationary wall of the receptacle, a roughened surface, and a match-carrier adapted to operate the cut-off and yielding wall and carry a match-head in contact with the roughened surface.

2. In a match holder and lighter, the combination of a match-receptacle having a hopper-shaped bottom which is provided with a discharge-opening, one wall made yielding, a movable cut-off extending within the discharge-opening and provided with a match-rest, a spring for holding the yielding wall against the cut-off and the cut-off against the stationary wall of the receptacle, a roughened surface and a match-carrier adapted to operate the cut-off and yielding wall and carry a match-head in contact with the roughened surface.

3. In a match holder and lighter, the combination of a match-receptacle having a hopper-shaped bottom which is provided with a discharge-opening, one wall made yielding, a movable cut-off extending within the discharge-opening, a spring for holding the yielding wall against the cut-off and the cut-off against the stationary wall of the receptacle, a roughened surface, a match-carrier adapted to operate the cut-off and yielding wall and carry a match-head in contact with the roughened surface and a stationary spring under which the carrier remains at rest after delivering a match, said stationary spring holding the lighted match in connection with the carrier.

4. In a match holder and lighter, the combination of a match-receptacle having a hopper-shaped bottom which is provided with a discharge-opening, one wall made yielding, a movable cut-off extending within the discharge-opening, a spring for holding the yielding wall against the cut-off and the cut-off against the stationary wall of the receptacle, a yielding roughened surface, and a match-carrier adapted to operate the cut-off and yielding wall and carry a match-head in contact with the roughened surface.

849,306. COIN-OPERATED MECHANISM. JAMES J. WOOD, Fort Wayne, Ind. Original application filed May 24, 1905, Serial No. 262,194. Divided and this application filed Sept. 12, 1905. Serial No. 278,085.

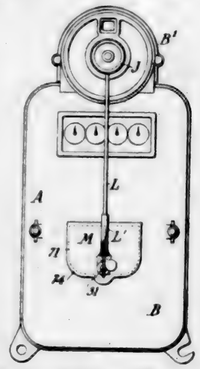

Claim.—1. The combination with a casing having a front opening and formed with a compartment 70, of a coin-box M adapted to enter said compartment through said front opening, a coin-conduit L fixed thereto, and a lock carried by the box for fastening said box in said compartment.

2. The combination with a casing having a front opening, of a coin-box M adapted to enter said opening, a coin-conduit L fixed to said box, and means for lifting said box as it moves backwardly into said opening.

3. The combination with a casing having a front opening, of a coin-box M adapted to enter said opening, a coin-conduit L fixed to said box, and means for lifting said box as it moves backwardly into said opening, comprising an inclined guide 72 engaging the bottom of said box.

4. The combination with a casing having a front opening, of a coin-box M adapted to enter said opening, a coin-conduit L fixed to said box, said box having a lug 73 adapted to enter said opening upon the lifting of the box, and a lock for holding the box in place when so entered.

5. The combination with a casing having a front opening, of a coin-box M adapted to enter said opening, a coin-conduit L and curved branch L' adapted to deliver coins into said box, and said box formed with an internal upright projection 75 adapted to divide the entering coins.

6. The combination with a casing having a front opening 71, of a coin-box M entering said opening, having a lock N, the casing having an inward projection 72, and the lock having a projection engaging the same to lock the parts in place.

7. A coin-box for a coin-operated mechanism, having a

partition partially dividing its interior, and a lock formed in said partition.

8. A coin-box for a coin-operated mechanism, adapted to receive the discharged coins from a conduit, and having its interior partially divided by a partition in line with said conduit, so that the entering coins are received on said partition and caused thereby to fall into the compartments on either side thereof.

849,307. WAGON-BRAKE. GEORGE F. YOUNG, South Kortright, N. Y. Filed Aug. 7, 1906. Serial No. 329,534.

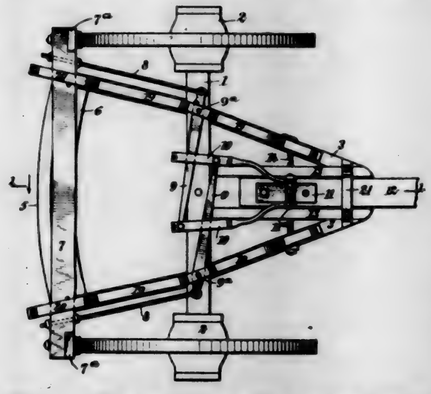

Claim.—1. The combination with a forward running-gear, of a longitudinally-movable pole, a brake-beam connected therewith, brake-shoes mounted on said beam, a weighted pivoted lever provided with an eccentric-pin, and a bolt movable transversely of said pole, so as to prevent longitudinal movement thereof, substantially as shown and described.

2. The combination with a forward running-gear having hounds connected on their forward ends by a transverse bar, and parallel guide-bars, of a pole provided with a longitudinal slot adapted to engage said bar, hounds mounted on said pole, levers connected at their inner ends to said hounds, connecting-rods pivoted to the outer ends of said levers, a brake-beam secured to the ends of said connecting-rods, brake-shoes mounted on said beam, an eccentric lever, and a bolt operated by said lever and movable transversely in said pole, substantially as shown and described.

3. The combination with a forward running-gear having hounds mounted upon an axle and connected at their forward ends by means of a transverse bar, of parallel guide-bars connected with the forward ends of the hounds and with the axle, auxiliary hounds secured at their central portion to the lower edge of the axle, and at their outer ends to the main hounds, a brake-beam, brake-shoes mounted on said beam, connecting-rods secured at their rear ends to said brake-beams, and pivoted at their forward ends to transverse levers mounted on the lower edge of the axle in a plane below that of the brake-beam, hounds connected with said levers, a longitudinally-movable pole connected with said hounds, a bolt movable transversely in said pole, and a lever adapted to operate said bolt, substantially as shown and described.

4. The combination with a forward running-gear, of a longitudinally-movable pole, a brake-beam connected therewith, brake-shoes mounted on said beam, a bolt movable transversely of said pole adapted to prevent longitudinal movement thereof, and a reversible weighted lever connected with said bolt, substantially as shown and described.

5. The combination with a forward running-gear having hounds connected at its forward end by a transverse bar and parallel guide-bars, of a pole provided with a longitudinal slot adapted to engage said bars and with a vertical aperture communicating with said slot, a brake beam mounted on said hounds and connected with said pole, brake-shoes mounted on said beam, a bolt movable in the vertical aperture of said pole, and a reversible weighted lever connected with said bolt, substantially as shown and described.

849,308. PULLEY-FRAME. LAWRENCE ZAMBONI, Philadelphia, Pa., assignor to The American Pulley Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Jan. 28, 1905. Serial No. 243,006.

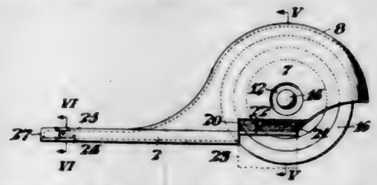

Claim.—1. A pulley-frame comprising a hollow sheet-metal face-plate; pulley-housings in unitary relation with said face-plate; and flanges extending from said housings above said face-plate, arranged to bear upon the pulley-stile of a window-frame, substantially as set forth.

2. In a pulley-frame, the combination with housing members extending upon opposite sides of the pulley; of a shaft extending through the pulley in riveted engagement with said housing members; a hollow face-plate having its outer, inner and side walls in unitary relation with said housing members; and, supporting-flanges for said frame having their free edges extending outwardly in unitary relation with said housing members in a plane parallel with said face-plate, but nearer to the axis of rotation of said pulley, substantially as set forth.

3. A pulley-frame comprising a face-plate; sheet-metal pulley-housings secured to said face-plate; and, flanges distinct from said face-plate, extending from said housings, arranged to engage a window-frame, substantially as set forth.

4. A pulley-frame formed of a single piece of sheet metal, comprising housings extending upon opposite sides of the pulley, and a hollow face-plate in unitary relation with said housings; the end of said face-plate being closed by flanges extending transversely with respect to the plane thereof, in unitary relation with said face-plate, substantially as set forth.

5. A pulley-frame comprising a hollow sheet-metal face-plate having its outer, inner and side walls in unitary relation, the end of said face-plate being closed by flanges extending transversely with respect to the plane thereof in unitary relation with said face-plate, substantially as set forth.

849,309. WHEEL. JOHN E. ZIMMERMANN, Willow Grove, Pa., assignor to The American Pulley Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed May 26, 1905. Serial No. 262,351.

Claim.—1. In a wheel, the combination with a sheet-metal rim comprising sectoral members; of plane gusset-plates extending in a plane at right angles to the axis of the wheel and bridging the joints between said members, substantially as set forth.

2. In a wheel, the combination with a sheet-metal rim comprising axially-alined semicylindrical members; of plane gusset-plates extending in a plane at right angles to the axis of the wheel and bridging the joints between said members, substantially as set forth.

3. In a wheel, the combination with a sheet-metal rim, comprising axially-alined sectoral members having their joints in staggered relation; of plane gusset-plates extending in a plane at right angles to the axis of the wheel and bridging the joints between said members, substantially as set forth.

4. In a wheel, the combination with a sheet-metal rim comprising sectoral members having inwardly-turned flanges extending in a plane at right angles to the axis of the wheel; of plane gusset-plates extending parallel with said flanges and bridging the joints between said members; and, means securing said gusset-plates in rigid relation to said flanges, substantially as set forth.

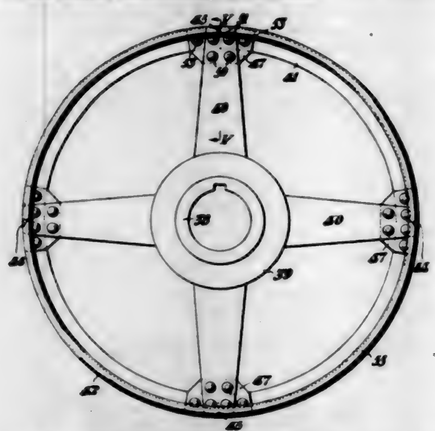

5. In a wheel, the combination with a sheet-metal rim comprising axially-alined sectoral members, having their joints in staggered relation; of plane gusset-plates extending in a plane at right angles to the axis of the wheel, and bridging the joints between said members; and, means securing said rim members and gusset-plates in rigid relation, substantially as set forth.

6. In a wheel, the combination with a sheet-metal rim comprising axially-alined sectoral members having their joints in staggered relation; of plane gusset-plates extending in a plane at right angles to the axis of the wheel, and bridging the joints between said members, and, means securing said rim members and gusset-plates in rigid relation, comprising spoke members and rivets extending through the same, substantially as set forth.

7. In a wheel, the combination with a rim comprising sectoral sections; of a hub; spoke members connecting said rim and hub having plane ends overlapping the joints between the rim-sections; plane gusset-plates overlapping the joints between said rim-sections and extending in a plane at right angles to the axis of the wheel; and, means extending through said spoke members, gusset-plates and rim-sections securing them in rigid relation, substantially as set forth.

8. In a wheel, the combination with a rim comprising axially-alined sections having inwardly-extending central circumferential flanges; of spoke members having ends engaged with said flanges; plane gusset-plates local to said spoke members, of greater radial extent than said flanges; filling-plates distinct from said flanges and from said spoke members, interposed between the latter; and, means extending through said spoke members, gusset-plates and filling-plates securing them in rigid relation, substantially as set forth.

849,310. FISH-HOOK HOLDER. CLARENCE E. ALLSHOUSE, Chicago, Ill. Filed Dec. 24, 1906. Serial No. 349,228.

Claim.—1. A fish-hook holder comprising a plate, hook-receiving members for receiving the bends of the hooks onto said plate, and upon said plate clips coacting with said hook-receiving members, each said clip comprising a pair of separated upright rigid members, and resilient facings upon said rigid members, arranged to receive therebetween and retain by their resilient pressure, portions of the hook.

2. In a device of the character described, a plate, a loop upon said plate, a coacting clip upon said plate suitably removed from the loop, and comprising a pair of upright, substantially rigid tongues, and bodies of rubber covering the adjacent sides of said tongues.

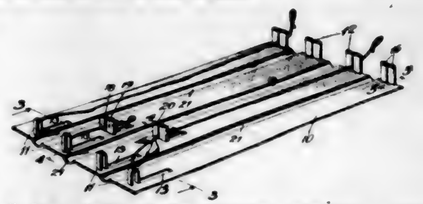

3. In a device of the character described, a plate, tongues struck from said plate and bent upon themselves to form vertical closed loops, coacting clips each comprising a pair of vertical, substantially rigid tongues, slightly separated, and bodies of rubber between the tongues receiving support from said tongues.

4. In a device of the character described, a plate, a closed loop adjacent one end of the plate, a clip adjacent the other end of the plate, comprising coacting bodies of resilient material arranged to grip therebetween the snell of a fish-line, and a similar pair of coacting bodies between the first said clip and the loop.

5. In a device of the character described, a plate, hook-receiving means adjacent one end of the plate, snell receiving and retaining means adjacent the opposite end of the plate, and corrugations in said plate arranged to receive the barbed ends of hooks positioned by the hook-receiving means and clip.

6. In a device of the character described, a supporting structure, means thereon for receiving the bends of a plurality of hooks, and remote from such means a plurality of snell-receiving clips each comprising a pair of resilient bodies arranged to receive the snell therebetween, and each independent of the remaining clips.

7. In a device of the character described, means for receiving a hook proper, and means for receiving a snell attached to such hook proper comprising separated rigid bodies and resilient facings upon the adjacent sides of said rigid bodies.

849,311. CURRENT-MOTOR. JOSEPH C. AULD, Miles City, Mont. Filed Sept. 6, 1906. Serial No. 333,530.

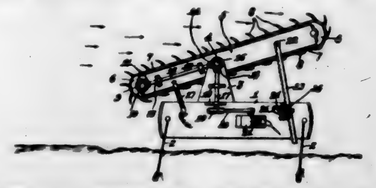

Claim.—1. A current-motor, embodying a base or support, a float pivotally connected thereto intermediate its ends, power-producing means on said float actuated by the stream-current, and means for adjusting said float angularly with respect to said base or support, whereby the movement of the power-producing means may be varied or stopped according to the adjustment of said float with respect to said base or support.

2. A current-motor, embodying a relatively fixed base or support, an extension projecting from the same, a float pivoted intermediate its length to said extension, power-producing means on said float actuated by the stream-current, and means intermediate said base or support and said extension for adjusting said float on its pivot angularly with respect to said base or support, whereby the movement of the power-producing means may be varied or stopped acording to the adjustment of said float with respect to said base or support.

3. A current-motor, embodying a relatively fixed base or support, an extension projecting from the same, a float pivoted intermediate its length to said extension, power-producing means on said float actuated by the stream-current, a rack-bar connecting said base or support and float and pivoted to one of the same, and a ratchet-wheel for actuating said rack-bar for varying the angle of adjustment of said float with respect to said base or support, whereby the movement of the power-producing means may be varied or stopped according to the adjustment of said float with respect to said base or support.

4. A current-motor, embodying a relatively fixed base or support, a float pivotally connected thereto and adjustable to vary its angle with respect thereto, sprocket-wheels mounted in the ends of said float, a sprocket-chain connecting said sprocket-wheels, feathering-blades mounted on said sprocket-chain, and means for imparting the motion received from the stream-current through said blades, sprocket-chain and sprocket-wheels to a power-fixture on said base or support.

5. A current-motor, embodying a relatively fixed base or support, a float pivotally connected thereto and adjustable to vary its angle with respect thereto, sprocket-wheels mounted in the ends of said float, a sprocket-chain connecting said sprocket-wheels, feathering-blades mounted on said sprocket-chain, and means for imparting the motion received from the stream-current through said blades, sprocket-chain and sprocket-wheels to a power-fixture on said base or support, embodying gearing centering on the pivot-point of said float.

6. A current-motor, embodying a relatively fixed base or support adapted to be located in the body of the stream, extensions projecting from each side of the same, a float pivoted intermediate its length on each of said extensions, power-producing means on each of said floats actuated by the stream-current, connections whereby the motion imparted to said power-producing means will be conveyed to power-fixtures on said base or support, and means for independently adjusting said floats on their pivots with respect to said base or support, whereby the movements of the power-producing means may be independently varied or stopped according to the adjustment of said floats with respect to said base or support.

849,312. MEANS FOR PERFORATING TO SAFEGUARD CHECKS AND FOR OTHER PURPOSES. ERNEST A. BARNES, Stawell, Victoria, Australia. Filed Nov. 12, 1906. Serial No. 343,108.

Claim.—1. A portable perforator, comprising a pair of pivotally-supported jaws, one of said jaws being provided with pins of varying length, and the other of said jaws being provided with perforations adapted to register with said pins, said jaws being so arranged in relation to each other as to leave a space to receive the excess of paper or other material operated upon, substantially as described.

2. A portable perforator, comprising a pair of pivoted handles, one of said handles being provided with pins of varying length, and the other of said handles being provided with perforations adapted to register with said pins, and one of said handles being provided with a cut-away portion to receive the excess of paper or other material operated upon, substantially as described.

3. A hand-perforator, comprising two handles pivoted together, one of said handles being provided with pins of varying lengths, and the other of said handles being provided with perforations adapted to register with said pins, and one of said handles being provided with a cut-away portion to receive the excess of material operated upon, and a spring for normally holding said handles apart, substantially as described.

4. A portable perforator, comprising two handles pivoted together, one of said handles being provided with two sets of teeth of varying lengths, and the other with perforations with which said pins are adapted to register, and one of said handles being provided with a cut-away portion to receive the excess of paper or other material operated upon, a spring normally holding said handles apart, and a movable slide whereby one or both of said sets of pins may be operated at the wish of the operator as desired, substantially as described.

5. A hand-perforator, comprising two handles pivoted together, one of said handles being provided with two sets of pins of different lengths and with a recessed portion, and the other of said handles being provided with perforations adapted to register with said pins, an adjustable slide mounted on one of said handles, a projection adapted to strike said slide after the latter has been moved into a certain position, and a spring for normally holding said handles apart, substantially as described.

849,313. CAR-REPLACER. EDWARD H. BEST, St. Thomas, Ontario, Canada, assignor of one-fourth to R. M. C. Toothe and one-half to E. Best, London, Canada. Filed June 28, 1906. Serial No. 323,852.

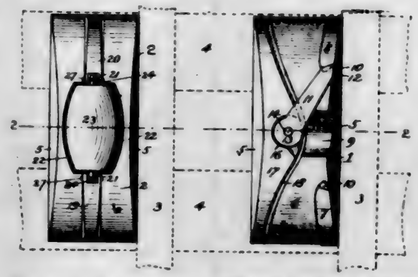

Claim.—1. A car-replacer comprising a pair of members, each provided with a body having outwardly and downwardly inclined sides and a top inclined downwardly from its center to its ends, ribs upon the tops of said members to receive the treads of car-wheels, and means upon said members for directing the car-wheels from said ribs and onto the track-rails.

2. A car-replacer comprising a pair of members, each provided with a body having outwardly and downwardly inclined sides and a top inclined downwardly from its center to its ends, ribs upon the tops of said members to receive the treads of car-wheels, and movable devices upon the tops of said members for deflecting the car-wheels from said ribs and onto the track-rails.

3. A car-replacer comprising a pair of members, each provided with a body having outwardly and downwardly inclined sides and a top inclined downwardly from its center to its ends, ribs upon the tops of said members to receive the treads of car-wheels, one of said members having a deflecting or guiding roller at its upper and inner end and the other of said members having a guide-rib, and a movable element to form a continuation of said guide-rib.

4. A car-replacer comprising a pair of members, each provided with a body having outwardly and downwardly inclined sides and a top inclined downwardly from its center to its ends, ribs upon the tops of said members to receive the treads of car-wheels, one of said members having a deflecting or guiding roller at the upper and inner end of its rib and the other of said members having a guide-rib, and a deflecting-point pivoted upon said guide-rib and adapted to be swung into engagement with either of the tread-engaging ribs on said member, substantially as shown and described.

5. A car-replacer comprising a body having outwardly and downwardly inclined sides and a top inclined downwardly from its center to its ends and formed with a central opening, longitudinally-tapered ribs extending longitudinally and disposed centrally upon the top of said body at its opposite ends, said ribs terminating at the ends of said opening in the top of the body and formed with vertical grooves, and a roller disposed in the opening in the top of said body and having trunnions to enter said grooves, substantially as described.

6. A car-replacer comprising a body having outwardly and downwardly inclined sides, a top inclined downwardly from its center to its ends and having a depression or cavity at its center and upon one side, longitudinally-extending ribs upon the top of said body adapted to receive the treads of car-wheels and formed with seats at their inner ends, a guide-rib upon the opposite side of the top of said body, and a deflecting-point pivoted in a recess in said guide-rib and adapted to be swung into engagement with either of the seats of said tread-engaging ribs, substantially as described.

7. In a car-replacer, a body having its top inclined downwardly from its center to its ends, ribs upon said body to engage the treads of car-wheels, a guide-rib upon said body, and a swinging deflector-point mounted to engage either of said tread-engaging ribs and to form a continuation of said guide-rib.

849,314. HEATING APPARATUS. VIRGIL W. BLANCHARD, New York, N. Y. Filed Jan. 22, 1906. Serial No. 297,247.

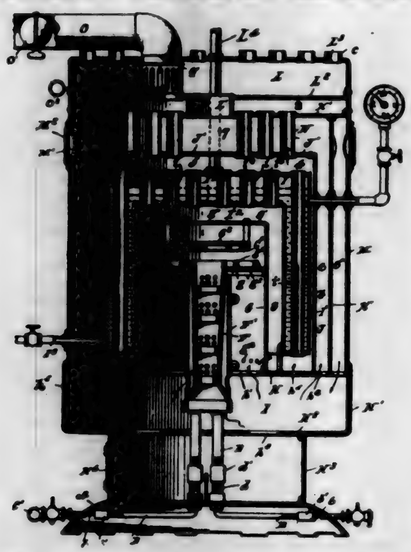

Claim.—1. The combination of a burner, an inverted-cup-shaped boiler above and surrounding the burner, annular flues for the products of combustion exterior to the boiler, an air-heating chamber above the boiler, gas-flues passing through said chamber, an outlet for the gases above said chamber, and an air-distributing chamber.

2. The combination of a burner, means for supplying gas and air thereto, an inverted-cup-shaped boiler above and surrounding the burner, annular flues for the products of combustion exterior to the boiler, an annular air-heating flue inclosing the gas-flues, an air-heating chamber above the boiler, gas-flues passing through said chamber, an outlet for the gases above said chamber, and an air-distributing chamber above the air-heating chamber.

3. The combination of a burner, an inverted-cup-shaped boiler above and surrounding the burner, annular flues for the products of combustion exterior to the boiler, an air-heating chamber above the boiler, gas-flues passing through said chamber, an outlet for the gases above said chamber, and an air-distributing chamber; with a casing surrounding the flues, an air-chamber in the casing below the burner and flues, and air-passages connecting said air-chamber with said flues.

4. The combination of a burner, means for supplying gas and air thereto, an inverted-cup-shaped boiler above and surrounding the burner, annular flues for the products of combustion exterior to the boiler, an annular air-heating flue inclosing the gas-flues, an air-heating chamber above the boiler, gas-flues passing through said chamber, an outlet for the gases above said chamber, and an air-distributing chamber above the air-heating chamber; with a casing surrounding the air-heating flues, an air-chamber in said casing below the burner and flues, and air-passages connecting said air-chamber with said flues.

5. In a gas-heating apparatus, the combination of a gas-burner, a combustion-chamber above the burner, descending flues surrounding the burner, an air-heating chamber above the combustion-chamber, an outlet-chamber for the gases above the air-heating chamber, pipes passing through the air-heating chamber and connecting the combustion-chamber with the outlet-chamber, a hot-air-distributing chamber above the outlet-chamber, and a connection between the air-heating and air-distributing chamber.

6. In a gas-heating apparatus, the combination of a gas-burner, a combustion-chamber above the burner, descending flues surrounding the burner, an air-heating chamber above the combustion-chamber, an outlet-chamber for the gases above the air-heating chamber, a hot-air-distributing chamber above the outlet-chamber, pipes connecting the combustion-chamber with the outlet-chamber, and a pipe connecting the air-heating and air-distributing chamber; with an inverted-cup-shaped boiler in the combustion-chamber and surrounding the burner, adapted to cause the products of combustion to first descend and then ascend in their passage to the outlet-chamber.

7. In combination, a burner, a combustion-chamber surrounding the same into which the heated products of combustion are discharged, an air-heating chamber inclosing the combustion-chamber, an air-distributing chamber, pipe connections between such chambers, an outlet-chamber between the air-heating and air-distributing chambers, and heating-pipes connecting the combustion and outlet chambers and passing through the upper portion of the air-heating chamber.

8. In combination, a burner, a combustion-chamber surrounding the same, into which the heated products of combustion are discharged, an air-heating chamber inclosing the combustion-chamber, an outlet-chamber above the air-heating chamber, heating-pipes connecting the combustion and outlet chambers and passing through the upper portion of the air-heating chamber, an air-distributing chamber above the outlet-chamber, connections between the air-heating and air-distributing chambers; with an inverted-cup-shaped boiler in the combustion-chamber forming interior descending and exterior ascending gas flues or passages therein, and fire-tubes extending through said boiler for the passage of the products of combustion.

9. In a gas-heating apparatus, the combination of a gas-burner, a combustion-chamber above the burner, descending flues surrounding the burner, an air-heating chamber above the combustion-chamber, an outlet for the gases above the air-heating chamber, and pipes passing through the air-heating chamber, and connecting the combustion-chamber with the outlet-chamber, an air-supply chamber below the burner and flues and communicating therewith, and a hot-air-distributing chamber above the gas-outlet chamber and communicating with the air-heating chamber.

10. In combination a gas-burner, a combustion-chamber surrounding the same into which the heated products of combustion are discharged, an air-heating chamber inclosing the combustion-chamber, a gas-outlet chamber above the air-heating chamber, and heating-pipes connecting the combustion and outlet chambers and passing through the upper portion of the air-heating chamber; with a cold-air-supply chamber below the burner and flues and communicating therewith, and a hot-air-distributing chamber above the gas-outlet chamber communicating with the air-heating chamber.

11. The combination of a burner, an inverted-cup-shaped boiler surrounding said burner, and gas-flues or the products of combustion exterior to said boiler and surrounding the same; with a cold-air-supply chamber below the burner and flues and communicating therewith, and a hot-air-distributing chamber above the boiler communicating with the air-heating flues.

12. In combination, a burner, an inverted-cup-shaped boiler surrounding said burner, gas-flues for the products of combustion exterior to said boiler, and air-heating flues surrounding the boiler and gas-flues; with a cold-air-supply chamber below the burner and flues and communicating therewith, and a hot-air-distributing chamber above the boiler and communicating with the air-heating flues.

13. The herein-described heating apparatus having an air-distributing chamber at its lower end a cylinder above said chamber, a gas-burner in said cylinder, a combustion-chamber surrounding the said cylinder, ascending air-heating flues around said combustion-chamber, an air-heating chamber above said combustion-chamber, a gas-outlet chamber above the air-heating chamber, heating-pipes connecting the combustion-chamber and outlet-chamber, a distributing-chamber above the outlet-chamber communicating with said air-heating chamber, a casing inclosing the air-heating chamber and flues, the space between said casing and flues communicating with the air-distributing chamber.

14. The herein-described heating apparatus having an air-distributing chamber at its lower end, a cylinder above said chamber, a gas-burner in said cylinder, a combustion-chamber surrounding the said cylinder, ascending air-heating flues around said combustion-chamber, an air-heating chamber above said combustion-chamber, a gas-outlet chamber above the air-heating chamber, and heating-pipes connecting the combustion-chamber and outlet-chamber, and passing through the air-heating chamber; with means for supplying air to said air-distributing chamber, means for supplying mixtures of air and gas to said burner, and a valve on the outlet-pipe for the products of combustion for establishing communication between said outlet-pipe and the air-distributing chamber.

15. The herein-described heating apparatus having an air-distributing chamber at its lower end, a cylinder above said chamber, a gas-burner in said cylinder, a combustion-chamber surrounding the said cylinder, ascending air-heating flues around said combustion-chamber, an air-heating chamber above said combustion-chamber, a gas-outlet chamber above the air-heating chamber, heating-pipes connecting the combustion-chamber and outlet-chamber, a distributing-chamber above the outlet-chamber communicating with the air-heating chamber, a casing inclosing the air-heating chamber and flues, the space between said casing and flues communicating with the air-distributing chamber; with an inverted-cup-shaped boiler located in the combustion-chamber and surrounding the burner and forming descending and ascending flues for the products of combustion and provided with vertically-disposed hot-air pipes for the products of combustion.

16. The herein-described heating apparatus having an air-distributing chamber at its lower end, a cylinder above said chamber, a gas-burner in said cylinder, a combustion-chamber surrounding the said cylinder, ascending air-heating flues around said combustion-chamber, an air-heating chamber above said combustion-chamber, a gas-outlet chamber above the air-heating chamber, heating-pipes connecting the combustion-chamber and outlet-chamber, and passing through air-heating chamber, and a distributing-chamber above the outlet-chamber communicating with the air-heating chamber, a casing inclosing the air-heating chamber and flues; with an inverted-cup-shaped boiler located in the combustion-chamber and surrounding the burner and forming descending and ascending flues for the products of combustion and provided with vertically-disposed hot-air pipes for the products of combustion, means for supplying gas to the burner, and a valve in the gas-outlet whereby terminal gases may be discharged into the air-distributing chamber.

849,315. GAS COOKING-STOVE. VIRGIL W. BLANCHARD, New York, N. Y. Filed Jan. 22, 1906. Serial No. 297,250.

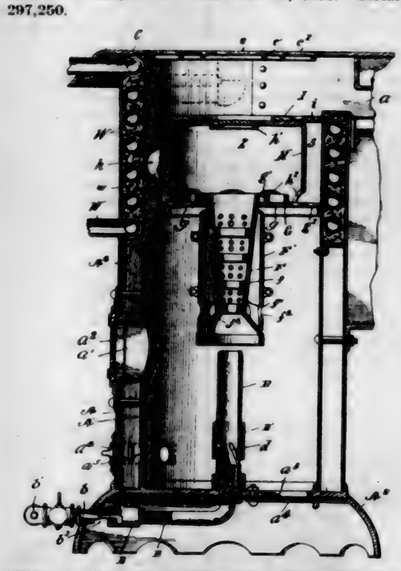

Claim.—1. In a gas cooking-stove, the combination of the base, the casing thereon, a transverse partition in said casing perforated for the passage of air, a burner below and suspended from the partition, and laterally perforated for the admission of air, means for admitting mixtures of air and gas into the lower end of said burner, and an inverted-cup-shaped casting resting upon said partition over the mouth of the burner.

2. In a gas cooking-stove, the combination of the casing, a transverse partition therein perforated for the passage of air, a burner suspended from said partition and laterally perforated for the passage of air, means for admitting mixtures of air and gas into the lower end of said burner, and an inverted-cup-shaped casting resting upon said partition above the mouth of the burner and having gas-outlets around its lower edges, and a flue for the burnt gases around and above said casting.

3. In a gas cooking-stove, the combination of the casing, a burner, means for admitting mixtures of air and gas into said burner, an inverted-cup-shaped casting in said casing above the mouth of the burner, and a valve on said casting partly closing the flue-space between the walls of said casting and the casing.

4. In a gas cooking-stove, the combination of the base, the casing thereon, a transverse partition in said casing perforated for the passage of air, a burner suspended from said casing, means for admitting mixtures of air and gas to the lower end of said burner, an inverted-cup-shaped casting supported on said partition above the mouth of the burner, an outlet above said casting, and a valve on said casting partly closing the flue-space between the walls of said casting and the casing.

5. In a gas heating-stove, the combination of a cylindrical casing, a base supporting the same, a top plate closing the case, an outlet below the top plate, a transversely-arranged partition within the casing below the outlet perforated for the passage of air, a burner below the partition provided with perforations in its side for the admission of air, and a mixing-tube within the casing discharging into the burner.

6. In a gas heating-stove, the combination of a cylindrical casing, a base supporting the same, a top plate closing the case, an outlet in the side of the casing below the top plate, a transversely-arranged partition within the casing below the outlet perforated for the passage of air, a burner suspended from said partition and provided with perforations in its side for the admission of air, and a mixing-tube within the casing discharging into the burner.

7. In a gas heating-stove, the combination of a cylindrical casing, a base supporting the same, a top plate closing the case, an outlet below the top plate, a transversely-arranged partition within the casing perforated for the passage of air, a burner below the partition and discharging above the same and provided with perforations in its side for the admission of air, and a mixing-tube within the casing discharging into the burner; with an inverted-cup-shaped casting mounted on said perforated plate above the burner, and of smaller diameter than the internal diameter of the stove, and a valve for regulating the admission of air into said stove below the burner.

8. In a gas heating-stove, the combination of a cylindrical casing, a base supporting the same, a top plate closing the case, an outlet below the top plate, a transversely-arranged partition within the casing perforated for the passage of air, a burner suspended from said partition and provided with perforations in its side for the admission of air, and a mixing-tube within the casing discharging into the burner; with an inverted-cup-shaped casting mounted on said perforated plate above the burner, and a valve for regulating the admission of air into said stove below the burner.

9. In a gas heating-stove, the combination of a base, a casing thereon comprising inner and outer cylindrical walls, valved openings for the admission of air into the lower portion of said casing, a perforated partition in said casing below the outlet, an inverted-cup-shaped casting supported on said partition, a tubular burner suspended from said partition, an air-heating jacket surrounding said burner and provided with air-inlets, and a gas and air mixing tube discharging into the lower end of said burner.

10. In a gas heating-stove, the combination of the casing, having inner and outer cylindrical walls, valved openings for the admission of air into the lower portion of said casing, a perforated partition in said casing below the outlet, an inverted-cup-shaped casting supported on said partition, a tubular burner provided with constrictions and perforations and suspended from said partition, and a gas and air mixing tube discharging into the lower end of said burner.

11. In a cooking-stove, the combination of a base, inner and outer cylinders thereon constituting a casing, a top plate closing the upper end of said casing, an outlet below the top plate, a transversely-arranged perforated metal plate supported in the casing below the outlet, an inverted-cup-shaped casting supported on said plate and forming an annular flue exterior thereto in said casing, a tubular burner provided with perforations for the admission of air in its sides, a gas and air mixing tube in the lower part of the stove discharging into said burner, and means for supplying a mixture of gas and air to said tube, and a valved air-inlet opening in the lower part of the stove.

12. In a cooking-stove, the combination of a base, the inner and outer cylinders thereon constituting a casing, a top plate closing the upper end of said casing, an outlet below the top plate, valved air-inlet openings in the lower part of the stove and valves regulating said opening, and a transversely-arranged perforated metal plate supported in the casing below the outlet; with an inverted-cup-shaped casting supported on said plate, a tubular burner suspended from said perforated plate and provided with perforations for the admission of air in its sides, a gas and air mixing tube in the lower part of the stove discharging into said burner, and means for supplying a mixture of gas and air to said tube.

849,316. GAS COOKING STOVE OR RANGE. VIRGIL W. BLANCHARD, New York, N. Y. Filed Jan. 22, 1906. Serial No. 297,251.

Claim.—1. In a gas heating-range, the combination of the heating-section and a burner therein producing a volume of intensely-heated gas; with a range portion having a series of sections each provided with removable top plates, a receiving-chamber in each section underlying the top plates, a perforated cover for each receiving-chamber adapted to cause the products of combustion or hot gases to jet upwardly against the overlying plates, and a descending passage communicating with the receiving-chamber of the next section.

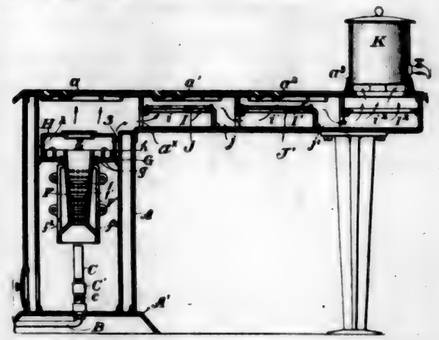

2. In a range, the combination of a gas-burning section; with a series of cooking-sections each provided with a lower receiving-chamber *i* at one side and extending horizontally into the section and adapted to receive hot gases from the preceding section and to direct the gases upwardly against the overlying top plates on the section, removable griddles in the top plates, and an outlet from one section into the receiving-chamber of the next succeeding section.

3. In a cooking-range, the combination of a burner-section, a series of range-sections connected with the outlet of the burner-section and each provided with a receiving-chamber *i* in its lower portion and extending horizontally into the section and adapted to discharge gases upwardly against the top of the sections and a descending passage *j* for the escape of the burnt gases at the end of the receiving-chamber, the descending passage of one section communicating with the receiving-chamber of the next section.

4. In a range, the combination of a burner, means for introducing mixtures of air and gas thereinto, a casing inclosing the burner, an outlet for the gases in the side of said casing, and a range-section having a receiving-chamber *i* in its lower portion at one side a griddle in its top, and a descending flue *j* at its discharge end, whereby the gases are caused to ascend and descend in such section and are jetted upwardly against the overlying griddle.

5. In a gas heating-range, the combination of the heating-section, and a burner therein for producing a volume of intensely-heated gas; with a range portion having a series of sections each provided with a receiving-chamber, a perforated cover for said receiving-chamber adapted to cause the products of combustion to jet upwardly therein, and a descending gas-escape passage at the side of the receiving-chamber, said escape-passage communicating with the receiving-chamber of the next section.

849,317. WATER-HEATING APPARATUS. VIRGIL W. BLANCHARD, New York, N. Y. Filed Jan. 22, 1906. Serial No. 297,252.

Claim.—1. The combination of a gas heating device, comprising a casing closed at its upper end and having an outlet at one side near its upper end, a partition in said casing below the outlet, and a burner suspended from said partition discharging burning gases above the same; with a water-heating coil, said coil being continuous below the outlet of the furnace and having a return-bend opposite the outlet.

2. The combination of a gas heating device, comprising

a double-wall casing closed at its upper end and having an outlet at one side near its upper end, a partition in said casing below the outlet, and a burner suspended from said partition discharging burning gases above the same; with a water-heating coil inclosed in the walls of the casing, said coil being continuous below the outlet of the furnace and having a return-bend opposite the outlet.

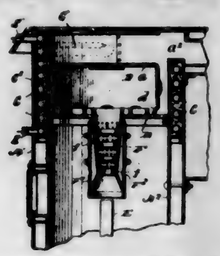

3. The combination with a gas-burning stove or furnace having double walls, an annular partition in the upper part thereof, a top plate closing the upper end of said furnace, a burner suspended from said partition, means for discharging gaseous mixtures into said burner, an inverted-cup-shaped casting above the burner adapted to cause the products of combustion to pass up close to the walls of the stove above the partition, and a water-heating coil inclosed in the walls of the furnace adjacent to and surrounding the said casting.

849,318. COOKING APPARATUS. VIRGIL W. BLANCHARD, New York, N. Y. Filed Jan. 22, 1906. Serial No. 297,253.

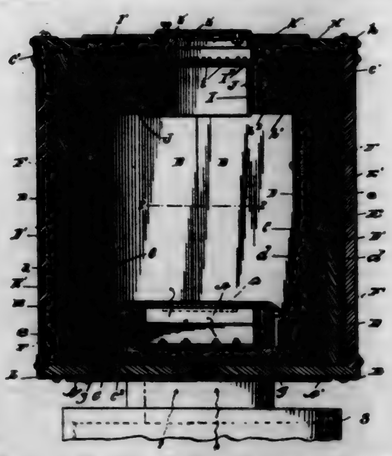

Claim.—1. The herein-described heat-accumulating chamber having its walls constructed with an internal layer of metal, a layer of asbestos, a second metal lining, a second layer of asbestos, a layer of wood, and a layer of felt, and an outer layer of wood.

2. The combination of a gas-supply flue, U-shaped supports attached to the under side of said flue, and a heat-accumulating chamber surrounding said flue and mounted on said supports, said chamber having its walls constructed to prevent loss of heat by exterior conduction or radiation.

3. The combination with a heat-accumulating chamber having an outlet in its top, of a closure for said outlet, comprising a wood plate having a lining of metal and an opening, an annular metallic collar fitted in said opening, an asbestos packing surrounding said collar, a griddle supported on said collar, a plate for closing the opening in said collar, having an aperture and a valve for said aperture.

849,319. GUARD FOR GAS HEATING-STOVES. VIRGIL W. BLANCHARD, New York, N. Y. Filed Jan. 22, 1906. Serial No. 297,262.

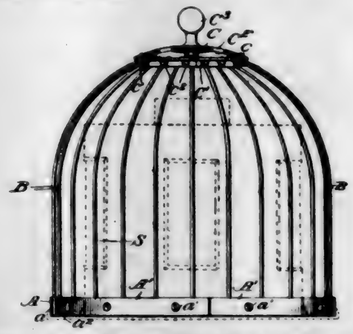

Claim.—1. The herein-described hood comprising an annular base-band having notches on its inner face, segments attached to said band, a top plate having a series of radially-disposed notches on its under surface, a series of segments detachably attached to the under side of the top plate, and a series of parallel rods or wires having their lower ends confined in the notches of the band by its clamping-plates, and having their upper ends confined in the notches of the top plate by its clamping-segments all constructed and arranged substantially as shown and described.

2. The herein-described hood comprising an annular base-band having vertical notches in its inner face, segments attached to said band having notches on their outer faces registering with those in the base-band, a top plate having a series of radially-disposed notches on its under surface, a series of segments detachably attached to the under side of the clamp-plate, and an annular series of parallel rods or wires having their lower ends confined in the notches of the band and its clamping-plates, and having their upper ends bent inwardly and confined in the notches of the top plate and its clamping-segments all constructed and arranged substantially as shown and described.

849,320. ATTACHMENT FOR GAS HEATING-STOVES. VIRGIL W. BLANCHARD, New York, N. Y. Filed Jan. 22, 1906. Serial No. 297,264.

Claim.—1. The combination with a gas heating-stove, of a grid adapted to be placed above the outlet thereof provided with a depending skirt-flange and with large openings, upstanding studs surrounding such openings, a cover-plate provided with large openings registering with those in the grid, and removable covers for said openings.

2. In combination with a gas heating-stove, a removable grid adapted to be placed above the outlet thereof provided with a depending heat-detaining skirt-flange, and with openings for culinary vessels upstanding studs surrounding such openings, and removable covers for said openings.

849,321. GAS COOKING-STOVE. VIRGIL W. BLANCHARD, New York, N. Y. Filed Jan. 22, 1906. Serial No. 297,265.

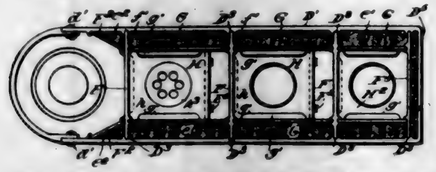

Claim.—1. In a range, the combination of bottom and side plates, and a top plate having griddle-openings therein, a false bottom plate and a non-heat-conducting layer between the false bottom and bottom plate; with transversely-arranged partitions, and longitudinally-arranged plates between the partitions parallel with the side walls; with griddles in the top plate and L-shaped castings under the griddles whereby products of combustion are directed upwardly against the latter.

2. In combination, a heating-range having transverse partition-plates between its side walls provided with flue-openings, and longitudinally-disposed plates arranged between the said partition-plates and adjacent the side walls thereof to form dead-air spaces at the sides of the range.

3. In a range, the combination of bottom and side plates, and a top plate having griddle-openings therein, with a false bottom plate, transversely-arranged partitions provided with flue-openings and longitudinally-disposed plates between the partitions arranged parallel with the side walls to form a dead-air spaces at the side of the range.

4. In combination, a heating-range having removable transverse partition-plates as F between its side walls, and longitudinally-disposed removable plates as G between the partition-plates and adjacent to and parallel with the side walls, substantially as described.

5. In a range, the combination of bottom, side and top plates, transverse plates F provided with openings for the passage of gases on their under side, longitudinally-disposed plates G between the partition-plates and parallel with but spaced from the side walls, and non-heat-conducting material filling the spaces between the longitudinal plates and walls.

6. The combination with a gas-burning stove, of a range extension connected with the outlet of said stove, transversely-arranged partitions F in said extension and longitudinally-arranged plates G adjacent to but spaced apart from the side walls, and L-shaped castings H arranged between the partitions.

7. The combination with a gas-burning stove, of a range extension connected with the outlet of said stove, transversely-arranged partitions F, longitudinally-arranged plates G interposed between said partitions, L-shaped castings H, a false bottom underlying the partitions, a non-heat-conducting packing interposed between the false bottom, and bottom plate of the range, and non-heat-conducting material in the spaces between the longitudinal plates and the side walls of the range.

849,322. DOOR-FASTENING. VIRGIL W. BLANCHARD, New York, N. Y. Filed Jan. 22, 1906. Serial No. 297,268.

Claim.—In combination, a door-frame, a door hinged to one side of the frame, a lever pivoted to the lower side and opposite end of the frame and adapted to engage the door when the latter is partly closed and the lever is swung upward, a spring engaging the pivoted end of the lever to hold the lever in engagement with the catch, and a catch

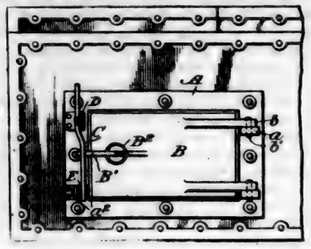

on the upper part of the door-frame adapted to engage the upper end of the lever.

849,323. GAS-BURNING STOVE. VIRGIL W. BLANCHARD, New York, N. Y. Filed Jan. 22, 1906. Serial No. 297,272.

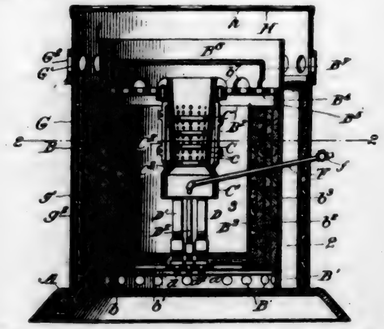

Claim.—1. The combination in a gas-burning stove, of a base, a cylinder supported thereon, a partition in the cylinder above the base provided with openings for the passage of air, a plate above said partition, a cylinder between the partition and the plate, and a non-heat-conducting packing filling the space between the inner and outer cylinders.

2. The combination in a gas-burning stove, of a base, a cylinder supported thereon, a partition in the cylinder above the base provided with openings for the passage of air, said cylinder having openings in its wall below the partition, a plate above the partition, and a cylinder between the partition and the plate; with a burner suspended within the second cylinder, a dome-shaped plate above the burner, and means for discharging mixtures of gas and air into the lower end of said burner.

3. The combination in a gas-burning stove, of a base, a cylinder supported thereon, a partition in the cylinder above the base provided with openings for the passage of air, a plate above said partition, a cylinder between the partition and the plate, and a non-heat-conducting packing filling the space between the inner and outer cylinders; with a burner suspended within the second cylinder, a dome-shaped plate above the burner and means for supplying mixtures of gas and air into the lower end of said burner.

4. In a gas-burning apparatus, the combination of a base, a cylinder supported thereon having an internal burner-chamber and non-heat-conducting walls surrounding said chamber, a casing inclosing the said cylinder but leaving an air-space between the cylinder and casing, said casing having air-inlet openings in its upper end, and a valve for regulating the admission of air through said openings.

5. In a gas-burning apparatus, the combination of an

internal burner-chamber, non-heat-conducting walls surrounding said chamber, a casing inclosing the said walls, but leaving an air-flue between the walls and casing, the latter being provided with air-inlet openings in its upper end, and a valve for regulating the admission of air; with a perforated partition above the burner-chamber, a burner suspended from said partition, and means for discharging mixtures of gas and air into said burner.

6. In a gas-burning apparatus, the combination of a base, a cylinder supported thereon having an internal burner-chamber and non-heat-conducting walls surrounding said chamber, a casing inclosing the said cylinder, but leaving an air-space between the cylinder and casing, the latter being provided with air-inlet openings in its upper end, and a valve for regulating the admission of air through said openings; with a perforated partition above the burner-chamber, a burner suspended from said partition within the burner-chamber, and a mixing-tube for discharging gas and air into the burner.

7. In a gas-burning stove, the combination of a base, a cylinder supported on said base, a partition in the said cylinder, an angular plate above the partition, a small cylinder interposed between the annular plate and the partition, a non-heat-conducting packing between the inner and outer cylinders, a perforated plate above the annular plate, a burner suspended from said perforated plate, and a deflecting-plate above the burner.

8. In a gas-burning stove, the combination of a base, a cylinder supported on said base having openings in its lower end, a partition in the said cylinder above said opening, also provided with air-inlet openings, an annular plate above the partition, a small cylinder imposed between the annular plate and the partition, a non-heat-conducting packing between the inner and outer cylinders, a perforated plate above the annular plate, a burner suspended from said perforated plate and means for supplying mixtures of gas and air to said burner.

9. In a gas-burning stove, the combination of a base, a cylinder supported on said base having openings in its lower end, a partition in the said cylinder above said openings and provided with air-inlet openings, an annular plate above the partition, a smaller cylinder interposed between the annular plate and the partition, a plate above the annular plate, a burner suspended in the smaller cylinder, a deflecting-plate above the burner; with an exterior casing surrounding said cylinder, leaving a space between the casing and cylinders forming a descending air-flue; the casing having apertures for admitting air to said flue, and a top plate for the casing provided with outlets for the heated gases.

10. In a gas-burning stove, the combination of a base, a cylinder supported on said base having openings in its lower end, a partition in the said cylinder above said openings provided with air-inlet openings, an annular plate above the partition, a small cylinder interposed between the annular plate and the partition, a non-heat-conducting packing between the inner and outer cylinders, a perforated plate above the annular plate, a burner suspended from said perforated plate and a deflecting-plate above the burner, and means for supplying mixtures of gas and air to said burner; with a casing surrounding said cylinder, but leaving air-flue between the casing and cylinders, the former having apertures in its upper end for admitting air to said flue, and a top plate above the distributing-plate provided with outlets for the heated gases.

849,324. STARTING DEVICE FOR INTERNAL-COMBUSTION ENGINES. FRANCIS W. BRADY, Englewood, N. J. Filed Aug. 11, 1904. Serial No. 220,381.

Claim.—1. An internal-combustion engine having an air inlet and conduit, a valve controlling the admission of air to the engine through said conduit, a chamber about the valve-stem, an inlet to said chamber for supplying fluid hydrocarbon thereto, and a duct in the valve-stem to connect the fluid-chamber with the air-conduit when the valve is open.

2. An internal-combustion engine having an air inlet and conduit, a valve controlling the admission of air to the engine through said conduit, a stem on the valve, a bearing for said stem, a chamber between the stem and its bearing, an inlet to said chamber for supplying fluid hydrocarbon thereto, and ducts in the valve-stem to connect the fluid-chamber with the air-conduit when the valve is open.

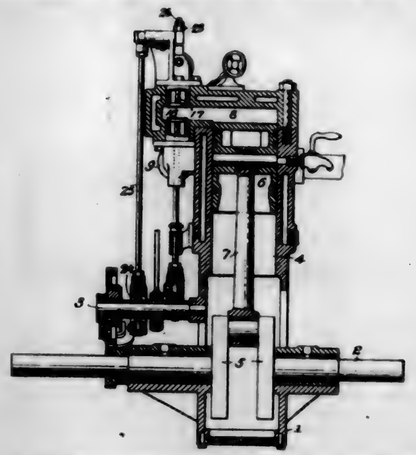

3. An internal-combustion engine, having an air inlet and conduit, a valve controlling the admission of air to the engine through said conduit, a stem on the valve, a duct in said stem, a bearing which embraces the valve-stem and closes the duct when the air-valve is closed, and means for supplying a fluid hydrocarbon to said duct.

4. An internal-combustion engine, having an inlet and conduit for air, a valve controlling said conduit, the longitudinally-grooved stem of said valve, and means for supplying a volatile liquid to the incoming air at starting to form an explosive charge, said means comprising a holder for the volatile liquid, a conduit leading therefrom to the valve-stem, a cock controlling said conduit and a bearing about said stem which cuts off the flow of liquid to the air-conduit when the air-valve is closed.

5. An internal-combustion engine, having an inlet and conduit for air to the engine, a valve controlling the influx of air, the stem of said valve having formed in it an annular chamber 20 within the bearing of the stem, and longitudinal grooves 22, forming ports, a holder 13 for a volatile liquid, a pipe 14 connecting said holder with the chamber 20, and a cock 21, in and controlling the flow through said pipe, said ports being so disposed that they are closed when the air-valve is closed and open when said valve is open.

849,325. LUBRICATING-OIL FEED FOR RECIPROCATING ENGINES. FRANCIS W. BRADY, Englewood, N. J. Filed Apr. 14, 1906. Serial No. 311,767.

Claim.—1. In a lubricating-oil feed for reciprocating engines, an oil-pump secured to the engine-pitman, and partaking of the sidewise movement thereof and a projection in the path of the movement of the pump and engaging therewith to actuate it during its sidewise movement.

2. In a lubricating-oil feed for reciprocating engines, an oil-pump rigidly secured to the engine-pitman in such manner as to partake of the sidewise movement thereof, and means whereby the pitman in its sidewise movement will operate the pump to feed oil to the engine-bearings.

3. In a lubricating-oil feed for reciprocating engines, an oil-pump carried by the engine-pitman, an actuating-lever for said pump, and a projection on the engine-piston engaging said lever, whereby the sidewise movement of the pitman actuates the oil-pump.

4. In a reciprocating engine, a piston having a wrist-pin, a pitman provided with bearings for the said wrist-pin and for a crank-pin, an oil-cup communicating with the wrist-pin bearings and provided with an overflow-passage, an oil-pump mounted on the pitman and actuated by the sidewise movement thereof to feed oil to the cup, and an oil-pipe leading from the overflow-passage in the oil-cup to the bearings for the crank-pin, substantially as described.

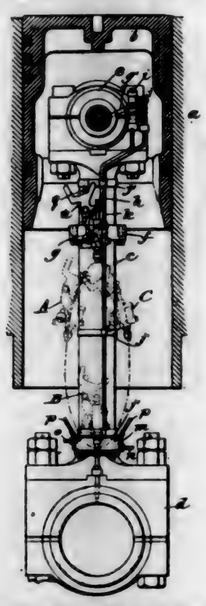

5. In a reciprocating engine, a piston having a wrist-pin, a pitman provided with bearings for the said wrist-pin and for a crank-pin, an oil-cup plunger actuated by the sidewise movement of the pitman, a chamber for said plunger having an oil-inlet and a second inlet so constructed and arranged as to be opened after the suction-stroke of the plunger has begun, the said chamber also having a discharge-port, an oil-cup communicating with the wrist-pin bearings and having an overflow-port, a pipe connecting the discharge-port of the pump with the oil-cup, and a second pipe leading from the overflow-passage in said cup to the bearings for the crank-pin, substantially as described.

6. In a lubricating-oil feed for reciprocating engines, an oil-pump actuated by the movement of the engine-piston, and having an oil-inlet to the pump-chamber, and a second inlet to said chamber so constructed and arranged as to be opened after the suction period of the pump has begun.

7. In a lubricating-oil feed for reciprocating engines, an oil-pump plunger actuated by the movement of the engine-piston, a chamber for the plunger having an oil-inlet at its bottom, a second inlet above the oil-inlet, and a discharge-port, and an oil-pipe leading from the discharge-port to bearings on the engine.

8. In a lubricating-oil feed for reciprocating engines, an oil-pump mounted thereon, an oil-reservoir also mounted on said engine, means for causing the pump to dip into the reservoir at intervals and means for creating the suction period of the pump while it is dipping into the reservoir.

9. In a lubricating-oil feed for reciprocating engines, an oil-pump mounted thereon, an oil-reservoir also mounted on said engine, means for causing the pump to dip into the reservoir at intervals, means for creating the suction period of the pump while it is dipping into the reservoir, and means for maintaining constant the oil-level in the reservoir.

10. In an oil-feed for reciprocating engines, an oil-pump rigidly secured to the engine-pitman and partaking of the sidewise movement thereof, an oil-reservoir so mounted in the path of the movement of the pump that the pump dips into it at the end of the outward stroke of the pitman, and means actuated by the sidewise movement of the pump to create its suction period while it is dipping into the reservoir.

11. In a lubricating-oil feed for reciprocating engines, an oil-pump mounted thereon, an oil-reservoir also mounted on said engine, means for causing the pump to dip into the reservoir at intervals, an oil-inlet to the pump-chamber, a second inlet to the said chamber, and means for withdrawing the pump-plunger while the pump is dipping into the reservoir, the second inlet being so constructed and arranged as to be opened after the pump-plunger is partially withdrawn.

12. In a reciprocating engine, a piston having a wrist-pin a pitman provided with bearings for the said wrist-pin and for a crank-pin, an oil-pump mounted on the pitman, an actuating-lever for the pump, a projection on the piston engaging with the lever, an oil-reservoir mounted on the engine in the path of the movement of the pump, a plunger in the pump actuated by the said lever, a chamber for the plunger, provided with an oil-inlet at its bottom, a second inlet above the oil-inlet, and a discharge-port, an oil-cup communicating with the wrist-pin bearings and having an overflow-passage, a pipe connecting the discharge-port of the pump with the oil-cup, and a pipe leading from the overflow-passage in the cup to the bearings for the crank-pin.

13. In a lubricating-oil feed for reciprocating engines a suction-pump provided with an induction-port communicating with an oil-supply, and an eduction-port communicating with the bearing to be lubricated, and means for relieving the suction through the induction-port during the suction period of the pump.

14. In a lubricating-oil feed for reciprocating engines, a suction-pump provided with an induction-port communicating with an oil-supply, an eduction-port communicating with the bearings to be lubricated, and a second induction-port, and a chamber containing oil communicating with the second induction-port the second induction-port being so constructed and arranged as to be open during a part of the suction period of the pump and a corresponding part of the expulsion period of the pump.

15. In a lubricating-oil feed for reciprocating engines, an oil-pump rigidly secured to a reciprocating part, an oil-reservoir mounted at one extremity of the path of the movement of said pump, and drip-aprons for said reservoir, substantially as described.

849,326. ROTARY ENGINE. JAMES BURN, Chester, Pa., assignor of one-third to John H. Burn and one-third to Myra Burn Thompson, Chester, Pa. Filed May 4, 1905. Serial No. 258,788.

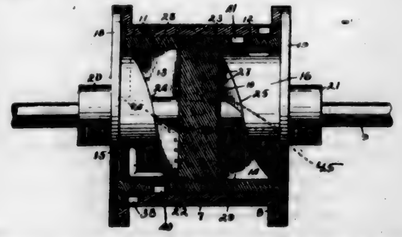

Claim.—1. The combination with the shafts, of cylinders turning with the shaft and provided with inlet and exhaust port, pistons carried by the cylinders and non-rotatable cylinder-heads provided with inlet and exhaust ports adapted to register with the ports in the cylinders to admit steam to and exhaust steam from the cylinders.

2. In a rotary engine, the combination with cylinders fixed concentrically to said shaft, the bottom of the cylin-

ders being slotted, of pistons mounted on and slidable axially of the shaft and through the slots in the bottom of the cylinder, fixed non-rotatable heads for the cylinders, cams on the inner faces of the cylinders constructed to operate said pistons and exhaust and inlet ports formed in the heads and cylinder-walls, controlled by the movement of the pistons, the position of which is controlled by the cams.

849,327. BEET AND COTTON BLOCKER. CHARLES CARSTENS, Denver, Colo. Filed June 4, 1906. Serial No. 320,211.

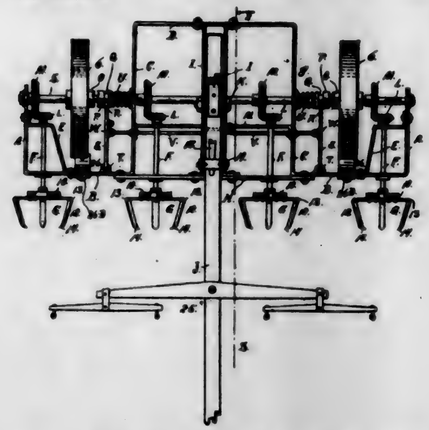

Claim.—1. In a beet and cotton blocker, the combination with ground-wheels and an axle upon which the ground-wheels are loosely mounted, of a framework pivotally mounted on the axle, blocker-head shafts journaled in the framework and extending at right angles to the axle, a gearing connection between the axle and the shafts, clutch members splined on the axle and adapted to engage coöperating clutch members carried by the ground-wheels, means for shifting the framework on the axle to raise and lower the blocker-heads, and means for automatically connecting and disconnecting the said clutch members by the action of the framework as the latter is so shifted.

2. An apparatus of the class described, the combination of an axle, ground-wheels normally loose thereon and provided with clutch members, other clutch members splined on the axle, springs whose normal tendency is to throw the splined clutch members into engagement with the clutch members of the ground-wheels, a framework pivotally mounted on the axle, blocker-head shafts journaled in the frame and geared to the axle, means for shifting the framework on the axle to raise the blocker-heads, means for automatically disconnecting the splined clutch members from the wheel-clutch members by the action of the framework as the latter is so shifted.

3. In apparatus of the class described, the combination with ground-wheels and an axle loose on the ground-wheels, the said wheels being provided with clutch members, other clutch members splined on the axle, springs for normally throwing the splined clutch members into engagement with the wheel clutch members, a framework pivotally mounted on the axle, blocker-head shafts journaled on the frame and geared to the axle, and means for shifting the splined clutch members to disconnect them from the wheel clutch members as the framework is moved on the axle to raise the blocker-heads to the operative position, said means comprising clutch-shifting levers, links connected with these levers and extending inwardly toward the center of the machine, and a centrally-located lever with which the inner extremities of the links are connected, said levers being so arranged that as the portion of the framework forward of the axle is raised, the said lever strikes the tongue and is automatically shifted to pull the links inwardly for the purpose set forth.

849,328. FEED-WATER PURIFIER. JOHN S. CLARK, Cleveland, Ohio. Filed Apr. 21, 1906. Serial No. 313,055.

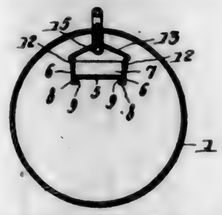

Claim.—A feed-water-purifying trough for steam-boilers, comprising a bottom, side walls and end walls detachably secured together, for the purpose set forth.

849,329. MANUFACTURE OF CUTTING-DISKS. WILLIAM U. COLTHAR, Springfield, Ohio. Original application filed Aug. 10, 1904, Serial No. 220,185. Divided and this application filed Nov. 13, 1905. Serial No. 287,157.

Claim.—The hereinbefore-described process of manufacturing cutting-disks, consisting in providing flat circular sheet-metal blanks having central apertures, bending the marginal portion of said blanks laterally to a uniform inclination to the planes of the sides of the central portion thereof, whereby a marginal bevel is formed on one side of the blank and a central recess on the other side, then revolving said disks in pairs with their concave faces toward each other and introducing between them a cutting-tool to remove all but a small portion of the metal lying beyond the said bevel on the recess side of each disk, substantially as described.

849,330. LAVATORY APPARATUS. HOWARD M. COX, Chicago, Ill., administrator of Charles S. Hill, deceased. Filed Aug. 29, 1904. Serial No. 222,627.

Claim.—1. A lavatory apparatus having, in combination, a valve-casing having a discharge-aperture therein, a rotary valve C in said casing provided with induction-ports above its closed bottom adapted to supply through the pipe J water at the different temperatures desired, and having below its closed bottom a camway D, *d*, which, upon the rotation of the valve C raises or lowers the discharge-valve and thus controls the discharge substantially as described.

2. A lavatory apparatus having, in combination, an upwardly-tapering valve-chamber communicating at its sides with the hot and cold water supply pipes, and connected at its lower end to the casing H; a rotary valve fitting within said chamber so as to close the lower end thereof, and having above such closure side passages always open at their upper ends to communicate with the discharge-spout and adapted to be put into lateral communication with both, or either, or neither, of the supply-pipes by turning the valve to the proper positions, and also having a dependent flange below such closure provided with a cam-track; a tubular member E having at its top a projection which rests upon the cam-track, and at its bottom an annular discharge-valve; and a handle at the top of

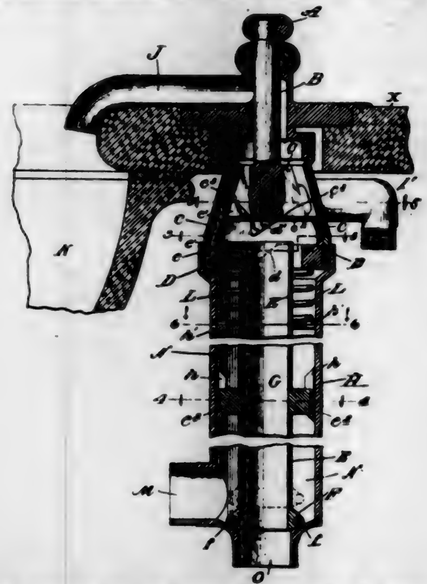

the structure for the purpose of rotating the supply-valve; substantially as described.

849,331. SAD-IRON. FERDINAND A. HOYA, Milwaukee, Wis., assignor of one-half to William Woods Plankinton, Milwaukee, Wis. Filed Apr. 3, 1905. Serial No. 253,526.

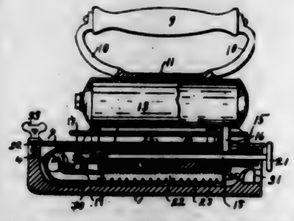

Claim.—1. In a sad-iron of the described class, the combination with a body, of a cap-plate hinged thereto at one end; a set of forked standards on the cap-plate; a tank mounted between said standards above the cap-plate; a handle having supporting-arms connected with the standards; a burner located below and supported from the cap-plate; and deflecting-plates above and below, and connected with, the cap-plate, and interposed between the tank and burner, with intervening air-spaces.

2. In a sad-iron of the described class, the combination with a cap-plate having a duct for fluid fuel; a burner underneath the cap-plate; and a heat-conveying flange projecting from the walls of said duct in the direction of the burner substantially in a plane common to the duct and burner.

3. In a sad-iron of the described class, the combination of a chambered base; a cap-plate therefor hinged thereto at one end; a burner connected with the cap-plate; a bracket on the cap-plate supporting the burner; and flanges in the base, adapted to coöperate with the bracket in subdividing the chambered base into compartments; and means for mixing air and combustible fluid in one compartment and conveying it to said burner in the other compartment.

4. In a sad-iron of the described class, the combination of a chambered base, partially subdivided by interior partitions; a cap-plate hinged to the base; a burner connected with the cap-plate; a support for said burner supplementing said partitions; means for mixing air and fluid hydrocarbon at one side of said partitions and conveying the same through said support to the burner.

5. In a sad-iron of the described class, the combination of a chambered base partially subdivided by interior partitions; a cap-plate hinged to the base; a burner connected with the cap-plate; a support for said burner supplementing said partitions; means for mixing air and fluid hydrocarbon at one side of said partitions and conveying the same through said support to the burner; said cap-plate being extended and formed to abut the base below the hinges when the plate is raised, whereby the plate is supported in a raised position.

849,332. AUTOMATIC TORPEDO-PLACING DEVICE FOR RAILROADS. WILLIAM H. KELLEY, Denver, Colo. Filed Feb. 15, 1907. Serial No. 357,482.

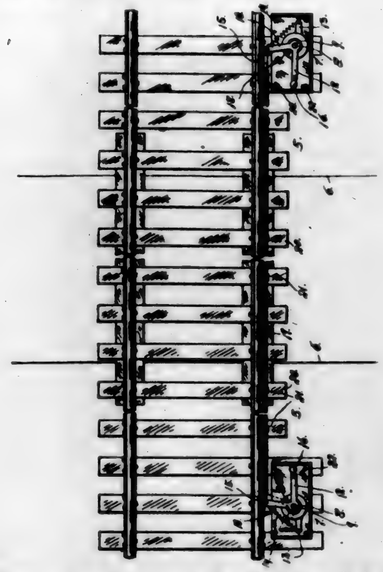

Claim.—1. In an automatic torpedo-placing device for railroads, the combination with a suitable casing, of a bell-crank-lever device, one arm of which is provided with a torpedo, a spring connected with the other arm, and normally having a tendency to throw the torpedo-arm toward the rack-rail and into position to place the torpedo upon the rail, and a readily-destructible device connected with the spring-arm and normally holding the device in such position as to prevent the torpedo-arm from approaching the rail.

2. A device of the character described, comprising a bell-crank lever suitably fulcrumed, one arm of the lever carrying a torpedo, and a spring connected with the other arm and normally having a tendency to throw the torpedo-arm toward the track, and means connected with the spring-arm for holding the torpedo-arm away from the track, the said means being readily destructible, substantially as described.

3. In apparatus of the class described, the combination of two spring-actuated torpedo-placing devices located at a suitable distance from the extremities of a bridge, cul-

vert, or other danger-point, and a readily-destructible connection between the two devices whereby they are held inactive as long as the said connection remains intact, substantially as described.

4. The combination with a railroad-track, of a spring-actuated torpedo-placing device located in the vicinity of the track, and a destructible connection with the said device whereby the same is held in the inactive position until the said connection is destroyed or broken.

5. The combination with a railroad-track, of two spring-actuated lever-like torpedo-placing devices located in the vicinity of the track and at a suitable distance from the opposite ends of the bridge, culvert or other danger-point, and a destructible connection between the two lever-like devices whereby they are held inactive as long as the destructible device remains intact, substantially as described.

849,333. AIR-COMPRESSOR AND INTERCOOLER. JOHN G. LEYNER, Denver, Colo. Original application filed Oct. 1, 1902, Serial No. 125,539. Divided and this application filed Sept. 2, 1903. Serial No. 171,625.

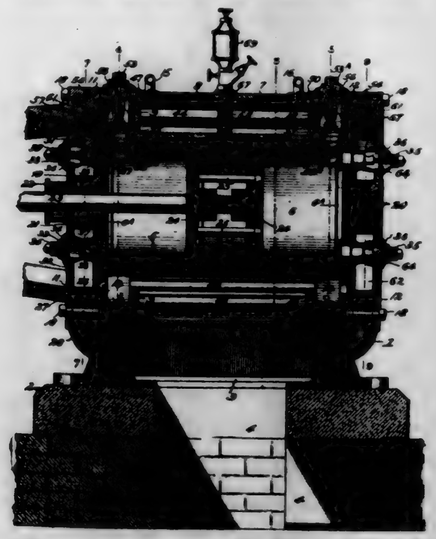

Claim.—1. An air compressor and cooler, comprising a cylinder and piston, a valved outlet and air-compartment at each end of said cylinder, and continuous cooling-passages connecting said compartments and so arranged that the same passages carry compressed air delivered by each stroke of said piston.

2. An air compressor and cooler, comprising a cylinder and piston, a valved outlet and air-compartment at each end of said cylinder, continuous cooling-passages connecting said compartments and arranged to carry the compressed air delivered by each stroke of said piston, and partitions subdividing said compartments into sections which communicate with different groups of cooling-passages.

3. In a combined air compressor and intercooler, the combination of an air-compressing cylinder having a surrounding water-jacket, an air-compartment at each end of said water-jacket, a plurality of continuous air-pipes extending through said water-jacket from one air-compartment to the other, and valved ports arranged to deliver air from each end of the cylinder into an air-compartment and thence through said pipes.

4. In a combined air-compressor and air-intercooler, the combination with the cylinder and the piston, of a cylindrical shell surrounding said cylinder, a water-space between said shell and said cylinder, means for admitting and discharging cold water to and from said water-space, an air-compartment at each end of said water-space, a plurality of continuous air-pipes extending through said water-space from one air-compartment to the other, and valved ports arranged to deliver air from each end of the cylinder into an air-compartment and thence through said pipes.

5. In a combined air-compressor and air-intercooler, the combination with the cylinder and the piston, of a water-jacket surrounding said cylinder, having its ends intermediate of the ends of the cylinder, an air-space between the ends of said water-jacket and the ends of said cylinder, air-pipes extending through said water-jacket from one air-compartment to the other, valved ports arranged to deliver air from each end of the cylinder into an air-compartment and thence through said pipes, and air-compartment cylinder-heads at each end of said cylinder.

6. In a combined air-compressor and air-intercooler, the combination with the cylinder and the piston, of a water-jacket surrounding said cylinder intermediate of its ends, a plurality of continuous air-pipes arranged axially of said cylinder through said water-jacket, cylinder-heads at each end of said cylinder provided with an annular air-compartment between said cylinder-heads and said water-jacket, a plurality of air-inlet valves in said cylinder-heads, arranged to admit air to said cylinder, and valved ports arranged to deliver air from each end of the cylinder into an air-compartment and thence through said pipes.

7. In a combined air-compressor and air-intercooler, the combination with the cylinder and the piston, of a water-jacket surrounding said cylinder intermediate of its ends, a plurality of air-pipes arranged axially of said cylinder through said water-jacket, cylinder-heads at each end of said cylinder provided with an annular air-compartment between said cylinder-heads and said water-jacket, a plurality of air-inlet valves in said cylinder-heads arranged to admit air to said cylinder, valved ports arranged to deliver air from each end of the cylinder into an air-compartment and thence through said pipes, and partitions arranged in said air-compartments, to reverse the direction of the flow of air through said air-pipes.

8. In a combined air compressor and intercooler, the combination with the cylinder and the piston, of a water-jacket surrounding said cylinder intermediate of its ends, a plurality of air-pipes arranged axially of said cylinder through said water-jacket, cylinder-heads at each end of said cylinder provided with annular air-compartments between said cylinder-heads and said water-jacket, a plurality of air-inlet valves in said cylinder-heads arranged to admit air to said cylinder, valved ports arranged to deliver air from each end of the cylinder into an air-compartment and thence through said pipes, partitions in said air-compartments, which reverse the direction of the flow of air through the air-pipes, and means, as independent groups of said air-pipes, which cause the air taken at each end of the cylinder to mingle in the air-compartments.

9. In a combined air compressor and intercooler, the combination with the cylinder and piston of a water-jacket surrounding said cylinder intermediate of its ends; an air-space formed between each end of said water-jacket and the end of the cylinder, each of said air-spaces being divided by partitions into an upper and lower compartment, openings at each end of the cylinder which communicate with the said upper air-compartments and valves which normally close said openings; a group of large air-pipes which extend through the water-jacket, and connect the upper air-compartments at each end of the cylinder; a group of smaller pipes which connect the upper air-compartment at the rear end of the cylinder, with the lower air-compartment at the forward end of the cylinder, and a group of similar pipes, which connect the lower, forward air-compartment with the lower rear air-compartment, cylinder-heads at each end of the cylinder having air-spaces which connect with the atmosphere; inlet-valves in said heads which admit air into the interior of the cylinder; and air-passages formed by partitions in the air-space of the rear cylinder-head, which separate the compressed air as it passes to a place of storage, from the air which is drawn into the cylinder-head; the air being caused to travel backward and forward through the several groups of pipes and to be thoroughly cooled thereby, substantially as shown.

849,334. WARDROBE-TRUNK. WILLIAM C. LIKLY and JOHN J. CANNAN, Rochester, N. Y., assignors to Henry Likly & Company, Rochester, N. Y., a Corporation of New York. Original application filed May 14, 1906. Serial No. 316,626. Divided and this application filed Nov. 26, 1906. Serial No. 345,262.

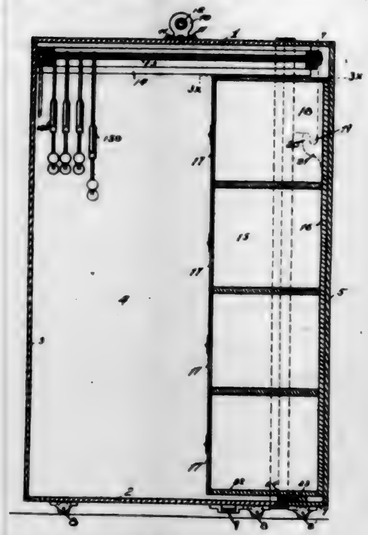

Claim.—1. In a trunk, the combination with a body portion open at one side, of a cover for closing it, a cabinet-section removably supported on the cover and adapted to project into the body of the trunk when the cover is in the closed position.

2. In a trunk, the combination with a body open at one side and a cover for closing it comprising shallow side and end walls and a back, of a cabinet-section arranged therein and adapted to project into the body of the trunk comprising side walls and of less width than the cover and body, members spacing the cabinet-section centrally of the cover and interlocking devices on the cabinet and cover removably securing the former within the latter.

3. In a trunk, the combination with a body open at one side guides projecting outwardly beyond the edges of the body at one end thereof and a frame supported in the guides and having an edge also projecting beyond the edges of the body, of a cover fitted to the outer side of the latter and comprising a back and side and end walls of a depth to receive the projecting ends of the guides and the edge of the frame and a cabinet-section mounted on the cover and projecting into the body of the trunk when said cover is closed.

4. In a trunk, the combination with a body open at one side and a cover fitted thereto, both the body and cover comprising side and end walls and a back, of a cabinet-section arranged within the trunk body and cover having side walls, spacing members on the cabinet supporting it centrally between the side walls of the trunk and co-operating interlocking members on the cabinet and cover arranged in rear of the spacing members and detachably supporting the cabinet on the cover.

5. In a trunk, the combination with a body open at one side and a cover fitted thereto, of a cabinet-section fitting the interior of the trunk, detachable connections between the cabinet and cover and garment supporting devices arranged within the trunk and adapted to prevent the disengagement of the connections when the cover is closed.

6. In a trunk, the combination with a body open at one side and a cover therefor, a cabinet-section fitting the trunk and detachable connections between it and the cover, of garment-supporting devices arranged within the trunk-body and coöperating with the top of the cabinet to prevent its longitudinal movement when the cover is closed.

7. In a trunk, the combination with a body open at one side, a cover hinged to the body and a cabinet-section supported on the cover and projecting into the body and having its top spaced a fixed distance from the top of the trunk, of detachable connections between the cabinet and cover, garment-supporting devices arranged in the top of the trunk comprising a movable frame and relatively stationary guides adapted to project over the top of the cabinet when the parts are in the normal position.

849,335. ELECTRIC DENTAL FURNACE. LOUIS MARKWITZ, San Francisco, Cal. Filed Jan. 22, 1906. Serial No. 297 367.

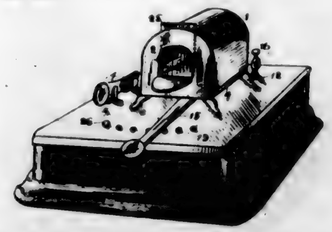

Claim.—1. In an electric furnace, the combination comprising a muffle provided with corrugations or grooves on its exterior surface arranged to receive a winding of wire; a jacket of earthy non-heat-conducting material, encompassing said muffle, and made in two separable parts, and an outer metal casing also made of two separable parts, and provided with means for fastening the same together; the front wall of said outer casing being made with an opening leading into the muffle, and provided with a suitable sliding door to close said opening.

2. In an electric furnace, the combination comprising a muffle provided with corrugations or grooves, on its exterior surface, arranged to receive a winding of wire, a jacket of earthy non-heat-conducting material, encompassing said muffle and consisting of two horizontally-separable parts as 19, 19ª and an outer metal casing also made of two separable parts, and provided with means for fastening the same together; the front wall of said outer casing being made with an opening leading into the muffle, and provided with a suitable sliding door to close said opening.

3. In an electric furnace, the combination comprising a muffle provided with corrugations or grooves on its exterior surface arranged to receive a winding of wire, a jacket of earthy non-heat-conducting material, encompassing said muffle, and made in two separable parts, an outer metal casing made of two integral parts, one consisting of the bottom and the front end wall, and the other consisting of an arched roof, the side walls and the rear end wall; the front wall being made with an opening leading into the muffle, and provided with a suitable sliding door to close said opening; and means for fastening the two parts of the outer casing after assembling the parts.

4. In an electric furnace, the combination comprising a muffle provided with corrugations or grooves on its exterior surface arranged to receive a winding of wire, a jacket of earthy non-heat-conducting material, encompassing said muffle, and made in two separable parts, an outer metal casing made of two parts, one consisting of the bottom and

the front end wall and the other consisting of an arched roof, the side walls and the rear end wall, the front wall being made with an opening leading into the muffle, and provided with a sliding door to close said opening; a flange-plate on the rear end of the bottom part of such outer casing, and means for locking the rear end wall of the outer casing thereto, to hold the parts together.

5. An electric furnace comprising a muffle provided with corrugations or grooves on its exterior surface arranged to receive a winding of wire, a jacket of earthy non-heat-conducting material, encompassing said muffle and consisting of two horizontally-separable parts as 19, 19^a, an outer metal casing made of two parts, one consisting of the bottom and the front end wall, and the other consisting of an arched roof, the side walls and the rear end wall; the front wall being made with an opening leading into the muffle, and provided with a sliding door to close said opening; a flange-plate on the rear end of the bottom part of such outer casing, and means for locking the rear end wall of the outer casing thereto, to hold the parts together.

6. An electric furnace, comprising a base consisting of a rheostat or resistance box, the coils of which are arranged in groups rearward and forward of the center, so as to leave a space between said groups for the purpose specified; means for adjusting the rheostat, an outer metal casing, mounted on said base, said casing consisting of two parts 2, 3 one comprising the bottom and the front end wall, the latter being made with a door-opening, and the other part of said casing comprising an arched roof, the side walls, and the rear end wall, the roof portion being made with a slot 24; a door of transparent material inserted in said slot to close the opening of the front wall, means for fastening the two parts of the outer casing together; a muffle provided with corrugations or grooves on its exterior surface, and having a winding of wire lying in said grooves electrically connected with the rheostat; and an intermediate jacket, of earthy non-heat-conducting material, encompassing said muffle and consisting of two separable parts, as 19, 19^a.

849,336. SIGNALING SYSTEM FOR TELEPHONE-EXCHANGES. FRANK R. MCBERTY, Evanston, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Original application filed July 11, 1902. Serial No. 115,131. Divided and this application filed Jan. 20, 1905. Serial No. 241,962.

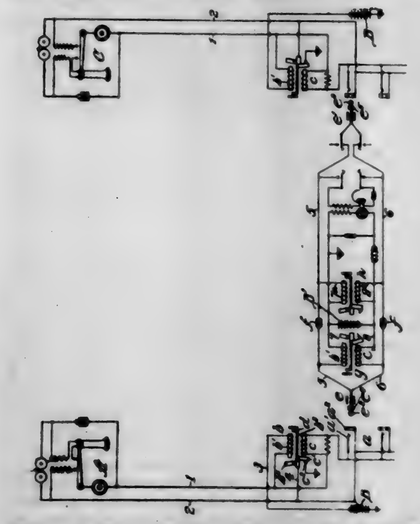

Claim.—1. The combination with a metallic-circuit line, and means for closing the line at the substation, of a line-signal indicator and a controlling-magnet therefor in a permanent ground branch from one of the line conductors, a ground branch from the other line conductor, a magnet adapted to efface the indicator when displayed, and switch-contacts actuated by said last-mentioned magnet for breaking said ground branch, and means for exciting the said last-mentioned magnet in making connection with the line, as described.

2. The combination with a metallic-circuit line and means for closing the line at the substation, of spring-jacks in a multiple switchboard for the line, the test-rings of the spring-jacks being connected with one of the line conductors, a ground branch from said line conductor, a signal-controlling magnet in a permanent ground branch containing a battery from the other line conductor, a magnet adapted to restore the signal, and means for exciting the said last-mentioned magnet in making connection with the line, and switch-contacts operated by said last-mentioned magnet for breaking the ground branch from the test-rings, as described.

3. The combination with a telephone-line and a spring-jack thereof, and a plug and plug-circuit therefor, of a line-signal-controlling magnet in a ground branch from the line including a battery, a magnet adapted to efface the indicator of said signal when displayed, said last-mentioned magnet being serially included in the line between the branch and the spring-jack, and a ground branch from the conductor of the plug-circuit which is connected with said serial magnet, as described.

4. The combination with a metallic-circuit line and a switch at the station for closing the circuit, a spring-jack for the line and a plug and plug-circuit for making connection therewith, of the line-signal in a ground branch from one of the line conductors together with a battery, a ground branch from the other line conductor, an indicator-restoring magnet for resetting said line-signal serially included in the line between the spring-jack and the ground branch, said indicator-restoring magnet being adapted to break the ground branch connected with the other conductor of the line, and a bridge of the cord-circuit containing a battery, as described.

5. In a supervisory system for telephone-lines having telephone-switches for closing the lines, a supervisory signal associated with the plug comprising a pivoted weighted indicator, an overbalancing-armature and a magnet therefor, and a restoring-armature and a magnet therefor adapted to conceal said indicator, of a circuit independent of the telephone-switch containing the magnet of said overbalancing armature, and a switch for closing said circuit and a circuit including said restoring-magnet, said last-mentioned circuit being controlled by the telephone-switch, as described.

6. In combination with a telephone-line and a telephone-switch at the station thereof, a spring-jack for the line, and a plug and plug-circuit, a supervisory signal having an indicator, and means for displaying it, an armature engaging said indicator to counteract said means, and a magnet for said armature, a circuit for said magnet closed in registering contacts of the spring-jack and plug, and independent of the telephone-switch, a restoring-armature adapted to counteract said means to conceal the indicator, and a magnet therefor, said last-mentioned magnet being in a circuit of the line controlled by the telephone-switch, as desired.

7. The combination with a telephone-line extending from a substation to a central office, of a source of current at the central office, of a telephone-switch at the substation controlling said circuit, a visual-signal device for the line at the central office, a magnet, an armature therefor normally overbalancing the indicator of the signal device to conceal the same, said armature when attracted being adapted to display the indicator said magnet being controlled by the substation telephone-switch, link conductors at the central office, a connection-switch for uniting said link conductors with the line, a magnet adapted to withdraw the indicator of said signal device, and a circuit for said magnet completed upon the closure of said connection-switch.

8. The combination with a telephone-line extending from a substation to a central office, of a source of current at the central office, of a telephone-switch at the substation controlling said circuit, a visual-signal device for the line at the central office, a magnet adapted to display the indicator of said signal device, a circuit controlled by the substation telephone-switch, link conductors at the central office, a connection-switch for uniting said link conductors with the line, a magnet adapted to withdraw the indicator of said signal device, a circuit for said magnet completed upon the closure of said connection-switch, a supervisory visual signal associated with the plug-circuit, an indicator-displaying magnet therefor included in said last-mentioned circuit, and a restoring-magnet for said supervisory signal in a circuit controlled after the closure of said connection-switch by the substation-switch; whereby the indication of the line-signal is effaced and the indicator of the supervisory signal is made responsive to the telephone-switch upon the closure of said connection-switch.

9. In a supervisory system, the combination with a telephone-line and a telephone-switch at the station thereof, a spring-jack for the line and a plug and plug-circuit, of a signal-controlling magnet in a ground branch from the line with a source of current, a signal-restoring magnet serially in the line between said branch and the spring-jack, a ground branch from the other line conductor, said last-mentioned branch being controlled by the restoring-magnet, a supervisory visual signal associated with the plug-circuit, an indicator-displaying magnet thereof in a ground branch from said side of the line containing the signal-restoring magnet, a restoring-magnet of the supervisory signal in a ground branch from the other side of the plug-circuit, said last-mentioned branch containing the source of current; whereby the indication of the line-signal is effaced and the indicator of the supervisory signal is made responsive to the telephone-switch to be displayed when the switch opens the line-circuit, as described.

10. The combination with a telephone-line extending from a substation to a central source of current and a telephone-switch at the substation controlling said circuit, of a visual-signal device for the line at the central office comprising a pivoted weighted indicator, an overbalancing-armature therefor, a magnet controlling said armature responsive to said substation-switch, a restoring magnet and armature for said indicator, link conductors at the central office, a connection-switch for uniting said link conductors with the line, and a circuit for said restoring-magnet completed upon the closure of said connection-switch.

849,337. EXCAVATING-MACHINE. CHARLES G. PAGE, Oak Park, Ill., assignor to Frederick C. Austin, Chicago, Ill. Filed Aug. 3, 1906. Serial No. 329,058.

Claim.—1. In an excavating-machine, a truck or carrier provided with a scoop pivotally supported thereon for reversement from a position for cutting in one direction to a position for cutting in an opposite direction; an inclined track portion traversed by the truck or carrier; and reversing means operated by movement of the truck or carrier downwardly along the incline and timed for reversing the scoop from one to the other of its cutting positions.

2. In an excavating-machine, a truck or carrier provided with a scoop pivotally supported thereon for reversement from a position for cutting in one direction to a position for cutting in an opposite direction; an inclined track portion traversed by the truck or carrier; and reversing means operated by movement of the truck or carrier downwardly along the incline and adapted for reversing the scoop in direction to dump the same and bring it from a position for cutting in one direction to a position for cutting in an opposite direction.

3. In an excavating-machine, a truck or carrier provided with a scoop supported thereon to turn about a transverse axis in direction for dumping; an inclined track portion traversed by the truck or carrier, and means for dumping the scoop operated by the action of the truck or carrier moving downwardly along the inclined track portion.

4. In an excavating-machine, a scoop and means for bodily moving the scoop transversely to and in conformity with the contour of a proposed ditch, said scoop being adapted for rotative action about a transverse axis and adapted for facing in opposite directions in alternation and for cutting in each of these two positions, either of said positions being attained by partial rotation of the scoop; means for moving the support for the scoop transversely to the ditch-line; means for temporarily locking the scoop against rotation; means for releasing the scoop-locking means, and means for turning the scoop from a loading to a dumping position and actuated for such purpose by gravity when the scoop-support has been elevated and temporarily released to permit it to move downwardly.

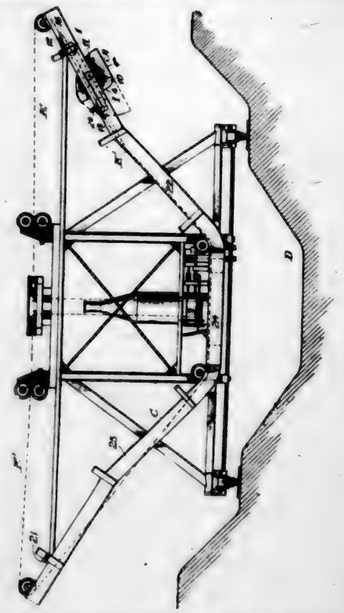

5. In an excavating-machine, a track conformable to the transverse outline of a proposed ditch and having end portions adapted to extend up and over the banks at opposite sides of the ditch; a truck for traversing the track; a reversible scoop pivotally supported upon the truck and adapted to turn from a position for facing to cut in one direction to a position for facing to cut in an opposite direction; a reversing device supported upon the truck for reversing the scoop; locking means for temporarily locking together the reversing device and the truck; means on the track for actuating the locking device so as to release the truck from the reversing device when the truck is on an inclined portion of the track, whereby when the truck is released it will move downwardly along the track and thereby cause the reversal of the scoop.

6. In an excavating-machine, a truck; a track for the truck having an inclined portion; a reversible scoop such as set forth pivotally supported on the truck; a reversing device supported on the truck and connected with the scoop by power-transmitting connection; rock-shafts on opposite ends of the truck; latches on said rock-shafts; arms on said rock-shafts; stops for engaging said arms in alternation; and operating-cables attached to opposite ends of the reversing device, said reversing device being provided with catch means for engaging with the latches, and with inclines for raising the latches and directing them to the catch means.

7. In an excavating-machine, a truck or carrier, and a track-guide therefor; a scoop supported to turn about a transverse axis on the truck or carrier; a bolt or latch device for engaging and holding the scoop against rotation

when the scoop is in position for excavating, said bolt or catch device being supported upon the truck or carrier; means for withdrawing the catch or bolt from its engagement with the scoop so as to permit the latter to turn in direction for dumping its contents, and means for subsequenly projecting said latch or catch into position for again engaging the scoop.

8. In an excavating-machine, a track conformable to the transverse contour of a proposed ditch; a truck supported to traverse the track; a scoop pivotally supported upon the truck and having upon each side a stop device; a slide-bolt supported by the truck and arranged for engaging and releasing the stop device on the scoop in alternation; means for operating the bolt, and means for turning the scoop in direction for dumping when the bolt is disengaged from the stop device on the scoop.

9. In an excavating-machine, a track; a truck; a scoop pivotally supported on the truck; means for reversing the cutting position of the scoop; catch or stop devices on the scoop; slide-bolts or latches for alternately engaging one or the other of the stop devices according to the position of the scoop; and means for automatically operating the bolts or latches.

10. In an excavating-machine, a track; a truck; a scoop supported for rotary movement upon the truck; a latch device supported upon the truck and arranged and adapted for engaging and releasing the scoop; a device for operating the latch; and an arm or stop on the track structure for engaging and actuating said latch-operating device at a time for releasing and dumping the scoop.

11. In an excavating-machine, a truck; a scoop pivotally supported upon the truck and having a side stop or catch device; a slide-bolt arranged for engaging and releasing said stop or catch device; a rack and pinion for operating the bolt; an arm for operating the rack and pinion, and a stop or arm supported independent of the truck for engaging said arm at a time for releasing the scoop.

12. In an excavating-machine, a track; a truck; a reversible scoop pivotally supported on the truck; a scoop-reversing device carried by the truck; a locking device on the truck for engaging the scoop-reversing device and locking together the said reversing device and the truck; a locking device for engaging and holding the scoop against rotation; and transmitting connection between the locking device for engaging the scoop and the locking device for engaging the scoop-reversing device, and for adapting the movement of the latter in releasing the scoop-reversing device to cause such power-transmitting connection to actuate the scoop-locking device in direction for releasing the scoop.

13. In an excavating-machine, a truck; a scoop pivotally supported on the truck, a device for locking and releasing the scoop comprising a slide-bolt for engaging and releasing the scoop; a rack and pinion for operating the bolt, the pinion being supported for oscillatory movement, whereby the bolt can be moved in opposite directions in alternation; an arm or tappet for operating the pinion; a track which is traversed by the truck; a stop supported independently of the truck and arranged to be engaged by the arm or tappet during the movement of the truck and to thereby cause the arm or tappet to move and actuate the pinion in the direction to withdraw the bolt from engagement with the scoop and thereby permit the latter to dump.

14. In an excavating-machine, a track conformable to the transverse contour of a proposed ditch; a truck for traversing the track; cables for drawing the truck alternately in opposite directions; a reversible scoop such as set forth pivotally mounted on the truck; means for temporarily connecting the scoop and truck with one and the other of said cables in alternation; means for disconnecting the scoop and truck from either one of the cables which is drawing the scoop up an inclined portion of the track, thereby permitting the truck to move downwardly along the track; and means for reversing the scoop during said down movement of the truck, said reversing means being actuated by such movement of the truck relatively to and independent of the said cable.

15. In an excavating-machine, a truck or carrier; a scoop supported on the truck or carrier to turn about a transverse axis in direction for dumping its contents; a track; means for moving the truck or carrier along the track in opposite directions in alternation; bolts or latches supported upon the truck or carrier and arranged for reciprocative movement respectively at opposite sides of the scoop; catch devices for the bolts or latches on opposite sides of the scoop; means for operating the bolts or latches and stop means on the track for causing such bolt or latch actuating means to operate in direction for unlocking the scoop.

849,338. BUFFING-MACHINE. ANDREW W. ROGERS, Beverly, Mass., assignor to Sidney W. Winslow, trustee, Beverly, Mass. Filed Sept. 14, 1906. Serial No. 334,687.

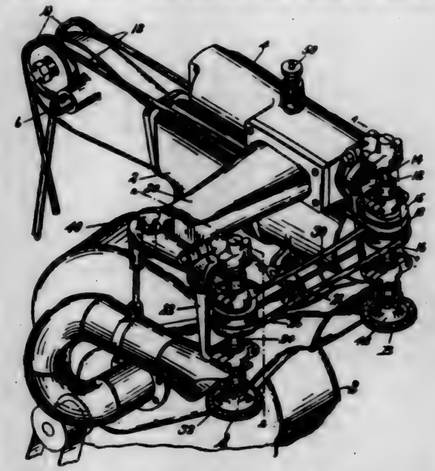

Claim.—1. In a machine of the class described, a plurality of rotary devices for operating on the bottoms of shoes, each device comprising a holder, a pneumatic support and an abrasive covering; combined with means for supplying air under pressure, including an air-compressor, and conduits leading from the compressor through each of the holders to the pneumatic supports; and means for regulating the relative supply of air to the different pneumatic supports.

2. In a machine for operating on the bottoms of shoes, a rotary device comprising a pneumatic support and an abrasive covering; combined with a second rotary device comprising a support and an abrasive covering; mechanism for actuating said devices; means adapted to supply air under pressure to said devices; and means for rendering the air-supplying means operative or inoperative for supplying air to the second device.

849,339. RIBBON MECHANISM FOR TYPE-WRITERS. AUGUST SCHNEBLOCH, New York, N. Y., assignor of one-half to E. C. Stearns & Co., Syracuse, N. Y., a Corporation of New York, and one-half to John E. Thomas, New York, N. Y. Original application filed Apr. 7, 1900, Serial No. 11,993. Divided and this application filed May 9, 1901. Serial No. 59,361.

Claim.—1. In a type-writer, the combination with the frame, platen, keys, key-levers, types, type-bars, ribbon and operative connections between the respective key-levers and type-bars, of a ribbon-guide adapted to move rectilinearly and vertically, guiding mechanism positively to guide the ribbon-guide in said rectilinear vertical movement and connections operated by all the key-levers to raise the ribbon-guide in a straight line to a point immediately in front of the platen during the first portion of the downward movement of the key and to lock the ribbon-guide in said position during the continued downward movement of the key, until the type has struck.

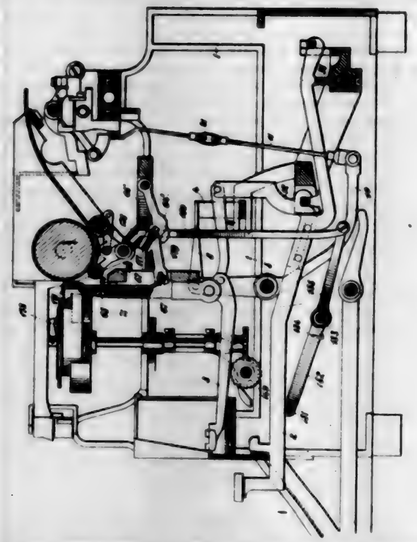

2. In a type-writing machine, the combination with the frame, the platen, the key-levers, the type-bars and connections between the key-levers and the type-bars, of the support formed with bent forks or bent slots of which the upper portions are arranged at an angle to the lower portions, an oscillating lever formed with an inclined slot and journaled on said support, the ribbon-guide suitably supported on the frame and connected to the oscillating lever, a link having a portion engaging with said bent slots and with said inclined slot, and connections between the key-levers and the link whereby the link is raised on the depression of each key-lever.

3. In a type-writing machine, the combination with the frame, the platen, the key-levers, and type-bars suitably supported on the frame, of connections between the key-levers and the type-bars, a support having forwardly-extending branches, both of said branches being formed with corresponding opposite bent forks or bent slots of which slots the lower portions are vertical and the upper portions inclined, an oscillating lever journaled on said support and having an inclined slot substantially corresponding to the upper portion of said bent slots, the ribbon-supporting mechanism suitably supported on the frame, operative connections between the ribbon-supporting mechanism and the oscillating lever, a link, a pin on said link engaging with said inclined slot and said bent slots and connections between the type-bars and the lower end of said link whereby the link is raised at the depression of each type-bar.

4. In a type-writing machine, the combination with the frame, the platen, the key-levers and the type-bars suitably supported on the frame, of a ribbon-guide, a ribbon-guide mechanism supported on the frame and fitted to the guide, a slotted support on the frame, a slotted oscillating lever journaled on the support and connected to the ribbon-guide mechanism, a link engaging with the slots in the support and in the oscillating lever, and connections between the key-levers and the link whereby the link and the oscillating lever are both raised during the first portion of the downward stroke of each key-lever, but during the last portion of the downward stroke the link only is raised, while the oscillating lever, and ribbon-guide mechanism are locked firmly in printing position.

5. In a type-writer, the combination with the frame, platen, keys, key-levers, types, type-bars, ribbon and operative connections between the respective key-levers and type-bars, of a fixed lever-support arranged adjacent to and below the platen, a ribbon-guide, guiding means in which the ribbon-guide moves in a straight line up and down, an oscillating lever journaled on said lever-support and connected to the ribbon-guide, an element fitted to move simultaneously in suitable slots in said lever-support and oscillating lever, and connections to said element operated by the depression of all the key-levers, operating to raise said element in said support-slot and thereby swing up the oscillating lever and raise the ribbon-guide to a point immediately in front of the platen during the first portion of the downward movement of the key and to lock the ribbon-guide in said position during the continued downward movement of the key, until the type has struck.

849,340. COMBINED CONVEYER AND STAIRCASE. MARTIN C. SCHWAB, Baltimore, Md., assignor to Gravity Conveyor Company, a Corporation of New York. Filed June 1, 1905. Serial No. 263,328.

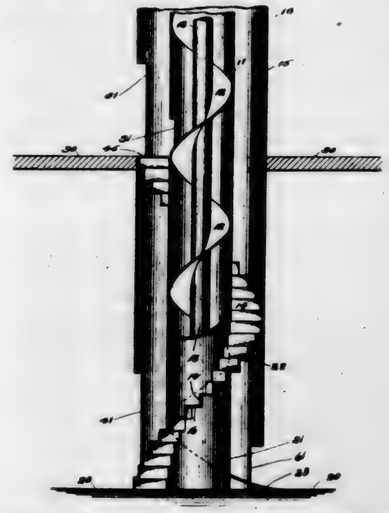

Claim.—1. The combination of a conveyer, and means comprising steps for supporting said conveyer.

2. The combination with a conveyer, of stairs secured to the outside of said conveyer.

3. The combination with a conveyer, of a casing outside the conveyer, and stairs interposed between said conveyer and casing.

4. The combination with a gravity-conveyer, of stairs on the exterior of said conveyer, and an outer shell.

5. The combination with a gravity-conveyer, of a casing exterior to the conveyer, and stairs interposed between said conveyer and casing.

6. The combination with a conveyer, of an outer casing inclosing the same, and stairs arranged spirally in the staircase formed by the conveyer and said outer casing.

7. The combination with a conveyer, of an outer casing, stairs inside of said casing and exterior to the conveyer, and a landing for said stairs at or near an opening in said conveyer.

8. The combination with a conveyer, of stairs secured to the exterior thereof, and a landing for the stairs and opposite an opening in the conveyer.

9. The combination with a conveyer, of a series of steps arranged spirally around said conveyer to form spiral stairs, a floor-landing; and a landing for the stairs,

at or near said floor-landing and at or near an opening in the conveyer.

10. The combination with a conveyer, of a casing surrounding the same, spiral stairs in said casing, a floor-landing, and a landing for the stairs at or near said floor-landing and opposite an opening in the conveyer.

11. The combination with a gravity-conveyer having an outer shell, of a casing surrounding said shell, spiral stairs interposed between said shell and casing and extending between openings in said outer casing at different elevations, and a landing for said spiral stairs at or near one of said openings and opposite an opening in the gravity-conveyer.

12. The combination with a gravity-conveyer having a spiral surface, of spiral stairs arranged on the exterior thereof, a casing inclosing said stairs and conveyer and having entrance and exit openings for the staircase, and a platform forming a continuation of said spiral surface through an exit-opening in the conveyer and an opening in the casing registering with said exit-opening.

13. The combination with an outer casing, of an inner core, and a spiral blade interposed between said casing and core and tilted toward said outer casing.

849,341. SKIRT-MARKER. WILLIAM H. SIMMONS, New York, N. Y. Filed Mar. 22, 1906. Serial No. 307,429.

Claim.—A marking apparatus comprising a base having an upwardly-extending hub, a carrier-ring rotatable about said hub, said ring having a socket portion, a stand supported upon said base out of frictional contact with said ring; a non-adjustable horizontal member removably fitting in said socket, a vertical rod adjustably carried by said horizontal member, a chalk-holder revoluble about said rod, and a supporting-collar adjustable upon said rod, for said chalk-holder.

849,342. BICYCLE. THOMAS SWINBANK, Senath, Mo. Filed May 7, 1906. Serial No. 315,564.

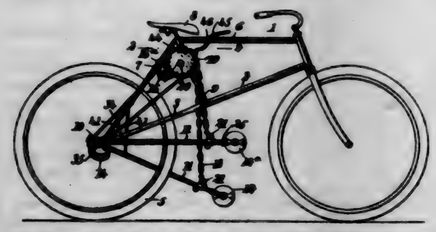

Claim.—1. In a bicycle, in combination, a frame, a rear axle, levers having forks at the rear extremities thereof engaging said axle, springs connecting said levers with said axle and affording means for maintaining said levers in engagement with said axle, pedals carried by said levers, and mechanism connecting said levers with one of the wheels for driving the bicycle.

2. In a bicycle, in combination, a frame, a rear axle, levers having forks at the rear extremities thereof engaging said axle, springs attached to said axle and attached to said levers near said forks and affording means for holding said forks in engagement with said axle, flexible members attached to said levers, mechanism operated by said flexible members for driving a wheel of said bicycle, and bow-springs connecting said frame with said levers and exerting an upward pull thereupon.

3. In a bicycle, in combination, a frame, a pair of levers pivoted thereto and carrying pedals, sleeves slidably mounted on said levers, dogs pivotally mounted on said sleeves and engaging said levers, flexible members attached to said dogs respectively at points removed from the pivots thereof; and affording means for actuating said dogs to grip said levers, and mechanism actuated by said flexible members for driving said bicycle.

849,343. CASING FOR ELECTRIC SIGNALING INSTRUMENTS. EUGENE W. VOGEL, Chicago, Ill., assignor to The Railroad Supply Company, a Corporation of Illinois. Filed Feb. 24, 1902. Serial No. 95,395.

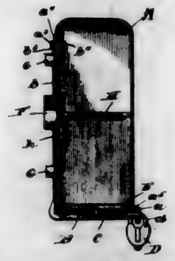

Claim.—1. In a casing for electric instruments, the combination with a fixed base upon which the instrument is mounted and having a passage-way therethrough for the conductors connected to the instrument, of a removable cover inclosing the instrument and resting upon the base, a depending flange on the cover surrounding the base and having a slot therethrough below the plane of the base, a swinging latch pivoted to the base and adapted to engage the slot in said flange, and means for retaining the latch within the slot.

2. In a casing for electric instruments, the combination with a fixed base comprising a vertical portion having a passage-way therethrough and a horizontal portion upon which the instrument is mounted, of a removable cover inclosing the instrument and resting upon the horizontal portion of the base, a depending flange on the cover surrounding the edge of the horizontal portion of the base and having a slot therein below the plane of the base, a swinging latch pivoted beneath the horizontal portion of the base and adapted to engage the soit in said flange, and means for retaining the latch within the slot.

3. In a casing for electric instruments, the combination with a fixed base comprising a vertical portion having a passage-way therethrough and a horizontal portion upon which the instrument is mounted, of a horizontal shelf supported by said vertical portion in a plane opposite said passage-way whereby conductors may extend through said passage-way to instruments both upon said horizontal portion of the base and upon said shelf, a removable cover inclosing the instruments and resting upon the horizontal portion of the base, a depending flange on the cover surrounding the edge of the horizontal portion of the base and having a slot therein below the plane of the base, a swinging latch pivoted beneath the horizontal portion of the base and adapted to engage the slot in said flange, and means for retaining the latch within the slot.

4. In a casing for electric instruments, the combination with a fixed base comprising a vertical portion having a passage-way therethrough and a horizontal portion upon which the instrument is mounted, of a horizontal shelf supported by said vertical portion in a plane opposite said passage-way whereby conductors may extend through said passage-way to instruments both upon said horizontal portion of the base and upon said shelf, a removable cover having grooves engaging the side edges of said vertical portion of the base and resting upon the horizontal portion of the base, a depending flange on the cover surrounding the base and having a slot therethrough below the plane of the base, a swinging latch pivoted to the base and adapted to engage the slot in said flange, and means for retaining the latch within the slot.

5. In a casing for electric instruments, the combination with a fixed base comprising a vertical portion having a passage-way therethrough and a horizontal portion upon which the instrument is mounted, of a horizontal shelf supported by said vertical portion in a plane opposite said passage-way whereby conductors may extend through said passage-way to instruments both upon said horizontal portion of the base and upon said shelf, a removable cover having grooves engaging the side edges of said vertical portion of the base and resting upon the horizontal portion of the base, overlapping wedge-shaped flanges on the top of said vertical portion of the base and on said cover extending between the upper ends of said grooves, a depending flange on the cover surrounding the base and having a slot therethrough below the plane of the base, a swinging latch pivoted to the base and adapted to engage the slot in said flange, and means for retaining the latch within the slot.

849,344. ILLUMINABLE SPECULUM. REINHOLD H. WAPPLER, New York, N. Y. Filed Apr. 6, 1906. Serial No. 310,237.

Claim.—1. The combination of a tubular member into which the observer looks, a planospherical lens disposed partially within the line of sight through said tubular member, the geometrical center of said lens being displaced relatively to the longitudinal axis of said tubular member, and a reflecting-surface disposed adjacent to said plane surface of said lens.

2. The combination of a three-quarter spherical lens provided with a plane surface, a reflecting-surface disposed adjacent to said plane surface, and a tubular member so disposed that its longitudinal axis passes through a part of said planospherical lens, the relative position of said lens and said tubular member being such that the geometrical center of said lens is displaced relatively to the longitudinal axis of said tubular member.

849,345. CONVEYER. JOHN T. WILMORE, Denver, Colo. Filed Sept. 19, 1905. Serial No. 279,144.

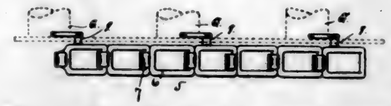

Claim.—1. The combination of a conveyer composed of links whose body parts all lie in the same plane and in the plane of their axes, flights rigidly attached to the edges of certain of the links, and a slotted track coöperating with the conveyer and engaged thereby, the flights of the conveyer being above the track.

2. The combination of a conveyer composed of links whose body parts all lie in the same plane and in the plane of their axes, flights, and projections connecting the flights with the links; and a slotted track coöperating with the conveyer, the links of the latter being on one side of the track, the flights being on the other side of the track and the projections occupying a position in the slot of the track.

3. The combination of an endless horizontally-arranged conveyer composed of links whose body parts all lie in the same plane and in the plane of their axes, flights located at suitable intervals, and projections connecting the flights with the links; and a slotted track coöperating with the conveyer, the links of the conveyer being below the track, the flights above the track and the projections occupying the slot of the track.

849,346. HEATING AND VENTILATING SYSTEM. LEWIS W. ABBOTT, Worthington, Minn., assignor of one-half to Adolph Amondson, Worthington, Minn. Filed Apr. 23, 1906. Serial No. 313,289.

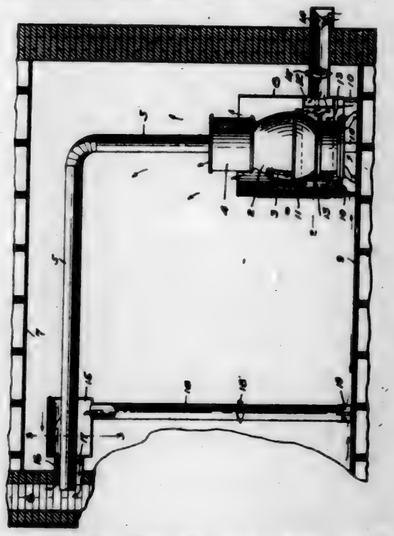

Claim.—1. The combination, with a heater, of a surrounding drum open at top and bottom, a conductor arranged within said drum and extending around said heater and provided with a series of openings upon its inner surface and a pipe leading from the outside atmosphere and connected with said conductor, substantially as described.

2. The combination, with a heater, of the drum 8 surrounding said heater and open at top and bottom, the conductor 12 arranged upon the inner wall of said drum and extending horizontally around said heater, provided with a series of openings 13 upon its inner surface and the pipe 14 connected with said drum and adapted to conduct air from the outside atmosphere into said conductor 12, substantially as described.

849,347. SEAM-TRIMMER AND EDGE-BINDER FOR SEWING-MACHINES. WILLIAM R. ABERCROMBIE, Bridgeport, Conn., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Nov. 7, 1906. Serial No. 342,360.

Claim.—1. In a sewing-machine for seam-trimming and edge-binding, a binder-head and a slide-plate upon which said binder-head is mounted, said slide-plate and binder-head being capable of adjustment in a direction substantially transverse to the direction of the feed of the material to a position convenient for the severing of the binding, and for the convenient manipulation of the severed ends of said binding to complete the stitching and binding operation, in combination with a seam-trimming mechanism provided with means for adjusting the trimmer-blade carrier into and out of operative relationship with the actuating mechanism of the sewing-machine during the stitching operation.

2. In a sewing-machine for seam-trimming and edge-binding, a binder-head, a throat-plate provided with a seat for said binder-head, a locking-lever, a slide-plate upon which said binder-head and locking-lever are mounted, and a bracket provided with guides for guiding the movements of said slide-plate and with locking means coacting with said locking-lever to lock said slide-plate in operative relationship with the stitch-forming mechanism, said slide-plate and binder-head being capable of adjustment in a direction substantially transverse to the direction of the feed of the material to a position convenient for the severing of the binding, and for the convenient manipulation of the severed end of said binding to complete the stitching and binding operation, in combination with a seam-trimming mechanism provided with means for adjusting the trimmer-blade carrier into and out of operative relationship with the actuating mechanism of the sewing-machine during the stitching operation.

3. In a sewing-machine for seam-trimming and edge-binding, a throat-plate, a binder-head, a locking-lever, a slide-plate upon which said binder-head and locking-lever are mounted, and a bracket or plate to which said lever locks said slide-plate when the latter is adjusted to its operative position relatively to the stitch-forming mechanism, said binder-head being capable of adjustment in a direction substantially transverse to the direction of the feed of the material to a position for the convenient severing of the binding, and for the convenient manipulation of the severed end of said binding to complete the stitching and binding operation, in combination with a seam-trimming mechanism provided with means for adjusting the trimmer-blade carrier into and out of operative relationship with the actuating mechanism of the sewing-machine during the stitching operation.

4. In a sewing-machine for seam-trimming and edge-binding, a slide-plate, a binder-head, a scroll-guard and a locking-lever, said binder-head, scroll-guard and locking-lever mounted upon said slide-plate and capable of adjustment in a direction substantially transverse to the direction of the feed of the material to a position convenient for the severing of the binding, and for the convenient manipulation of the severed end of said binding to complete the stitching and binding operation, in combination with a seam-trimming mechanism provided with means for adjusting the trimmer-blade carrier into and out of operative relationship with the actuating mechanism of the sewing-machine during the stitching operation.

5. In a sewing-machine for seam-trimming and edge-binding, a binder-head, a locking-lever, a spring for actuating said lever, and a slide-plate, said binder-head, locking-lever and spring being mounted on said slide-plate and capable of adjustment in a direction substantially transverse to the direction of the feed of the material to a position convenient for the severing of the binding and for the convenient manipulation of the severed end of said binding to complete the stitching and binding operation, in combination with a seam-trimming mechanism provided with means for adjusting the trimmer-blade carrier into and out of operative relationship with the actuating mechanism of the sewing-machine during the stitching operation.

6. In a sewing-machine for seam-trimming and edge-binding, a throat-plate, a binder-head, a scroll-guard, a slide-plate and a bracket to which said slide-plate is slidably secured, said binder-head and scroll-guard being mounted upon said slide-plate and capable of adjustment in a direction substantially transverse to the direction of the feed of the material to a position convenient for the severing of the binding, and for the convenient manipulation of the severed end of said binding to complete the stitching and binding operation, a locking-lever carried by said slide-plate and coacting with said bracket to lock said slide-plate in operative relationship with the stitch-forming mechanism, said locking-lever being provided with a thumb end which coacts with said slide-plate to unlock said lever, in combination with a seam-trimming mechanism provided with means for adjusting the trimmer-blade carrier into and out of operative relationship with the actuating mechanism of the sewing-machine during the stitching operation.

849,348. WETTER-UP FOR LEATHER-WORKING MACHINES. WILLIAM C. GEGLER, Philadelphia, Pa. Filed Aug. 16, 1906. Serial No. 330,918.

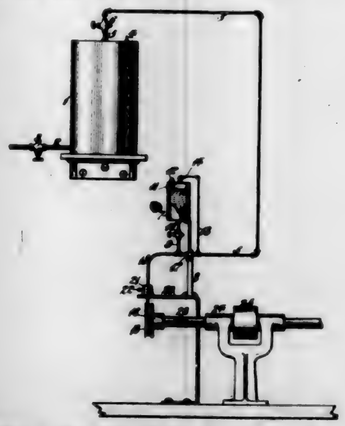

Claim.—1. In a device of the character described, an operating-tool, a nozzle in proximity thereto, a liquid-container, and means for forcing the liquid through the nozzle for producing a spray.

2. In a device of the character described, an operating-tool, a nozzle in proximity thereto, a source of fluid-supply and means for mixing air under pressure with said fluid-supply.

3. In a device of the character described, an operating-tool, a nozzle in proximity thereto and in the rear thereof and means for forcing fluid through said nozzle to form a spray thereof.

849,349. METHOD OF WETTING UP. WILLIAM C. GEGLER, Philadelphia, Pa. Filed Sept. 25, 1906. Serial No. 336,153.

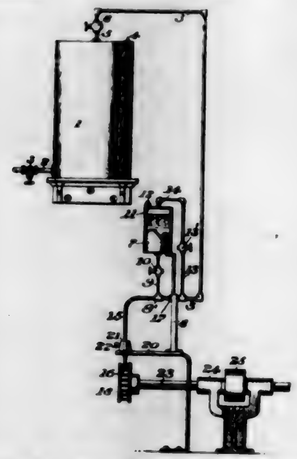

Claim.—1. The process of wetting up material for leather-working machinery, which consists in applying vapor forcibly against the grain of the leather as it emerges from a preceding operation, in order to prepare it for the next succeeding operation.

2. The process of wetting up leather for leather-working machinery, which consists in forcibly applying moisture in the form of a spray in proximity to a tool operating upon said leather at a point at which the leather leaves the tool.

3. The process of wetting up, which consists in spraying water by means of an air-pressure upon leather as it emerges form a cutting operation.

4. The process of wetting up leather for tool operations thereon which consists in forcing a spray of fluid upon the material operated upon during the operation of the tool and in close proximity thereto.

5. The process of working leather which consists in cutting the same, in forcing a spray of fluid upon the surface cut in close proximity to the operating-tool and in repeating the cutting operation while the surface is still moist.

6. The process of wetting up leather which consists in subjecting the surface of the leather to a mixture of air and water in a finely-divided form under pressure and subsequently mechanically operating thereon.

849,350. SWITCH FOR OVERHEAD-TROLLEY TRACKS. FREDERICK KRAMER, Los Angeles, Cal., assignor of one-third to Daniel McConaghy, Los Angeles, Cal. Filed Oct. 1, 1906. Serial No. 336,942.

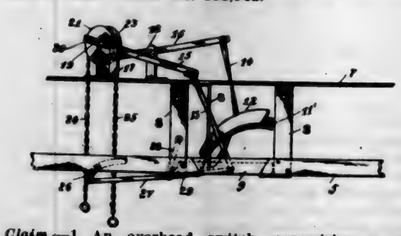

Claim.—1. An overhead switch, comprising a main track and a switch-track, said tracks being attached to the ceiling by means of hangers, said switch-track joining said first-named track at an angle thereto; removable sections pivotally secured in said tracks adjacent their point of junction; a grooved pulley revolubly mounted in bearings secured to the ceiling; engaging pins secured to the opposite sides of said pulley near its periphery and at points diametrically opposite each other; a pair of operating-arms pivotally mounted in bearings secured to the ceiling, having slots in their ends adapted to engage the pins secured to the pulley; connecting-links secured to the outer end of said last-named arms, their other ends being pivotally secured to the removable sections; and operating means secured to the pulley whereby the removable sections are pulled one into and the other out of engagement with the tracks simultaneously.

2. An overhead switch, comprising a main track and a switch-track, said tracks being attached to the ceiling by means of hangers, said switch-track joining the first-named track at an angle thereto; removable sections pivotally secured to said track adjacent their point of junction; a grooved pulley revolubly mounted in bearings secured to the ceiling; engaging pins secured to the side of said pulley near its periphery and at points diametrically opposite each other; a pair of operating-arms pivotally mounted in bearings secured to the ceiling having slots in their ends adapted to engage the pins secured to the pulley; connecting-links secured to the outer end of said last-named arm; their other ends being pivotally secured to the removable sections; operating-pulls secured to said pulley; removable-section-operating tongues pivotally secured to said main track and switch-track, said tongues projecting upwardly in the path of the carrier when either of said removable sections are in their open position, the lower ends of said tongues projecting downwardly below the main switch-track; movable arms pivotally secured to the hangers adjacent the pivotal point of the removable sections; connecting-links pivotally secured to the lower arms of the operating-tongue, their other ends pivotally engaging the downwardly-projecting arms secured to the hanger; and connecting-links pivotally secured to the outer end of the downwardly-projecting arms secured to the hangers, their other ends pivotally engaging the removable sections at points where the first-named connecting-links engage the sections.

849,351. GATE. CHARLES PATTEN, Fairfax, S. D. Filed Sept. 29, 1906. Serial No. 336,719.

Claim.—1. A swinging gate comprising a frame, a pivoted supporting-bar carried thereby, a latch-bar pivoted to the supporting-bar and in guided connection with the frame, a spring supporting the supporting-bar from the frame and operative to retract the latch-bar, and means for securing the latch-bar in latching position against the action of said spring.

2. A swinging gate comprising a frame, a latch-bar at the free end thereof in guided connection at its upper end with said frame, a supporting-bar pivoted at one end to the frame and at its opposite end to the lower end of the latch-bar, a retracting-spring connecting said supporting-bar to the frame, and latch mechanism carried by the upper end of the latch-bar to engage the latch-post and hold said latch-bar against retraction.

3. A swinging gate comprising a frame, a supporting-bar pivoted at one end to the frame, a vertically-movable latch-bar pivoted at its lower end to said supporting-bar and in guided connection at its upper end with the frame, a retracting-spring connecting the supporting-bar with the frame, a lever pivoted to the latch-bar, and a latch member pivoted to said lever to engage the latch-post and adapted to be held in connection with the post by the action of the lever to secure the bar in latching position against the action of said spring.

4. In a swinging gate, the combination of hinging and latch posts, a keeper at the lower end of the latch-post, a gate hinged at one end to the hinging-post, a supporting-bar pivoted at one end thereto, a latch-bar at the free end of the gate pivoted adjacent its lower end to said supporting-bar and in guided connection adjacent its upper end

with the free end of the gate, locking means at the upper end of the gate to engage the latch-post and hold said latch-bar seated in the keeper, and a retracting-spring connecting the supporting-bar with the frame of the gate and operative to elevate said supporting and latch bars when said locking means is released.

5. A swinging gate comprising a frame provided at its upper free end with a guide, a latch-bar movable in said guide, a supporting-bar pivotally connecting the lower end of the latch-bar with the frame, a contractile spring connecting the free end of the supporting-bar with the frame and adapted to exert its energy to elevate the latch-bar, and means for connecting the upper end of the latch-bar with the gate-post to hold said bar from upward movement.

849,352. SHIPPING-CASE. NAHUM J. BUSBY, Boston, Mass., assignor to E. A. G. Busby, Chelsea, Mass. Filed Sept. 29, 1905. Serial No. 280,660.

Claim.—1. A shipping-case embodying a body portion exteriorly and interiorly recessed and screw-threaded at its open end, a closing-disk resting on the shoulder formed by the interior recess, an absorbent pad resting on said disk, a screw-plug engaging the screw-threads of the interior recess and forcing said pad and disk downward, an absorbent pad resting on said screw-plug, a disk on said pad, and a screw-cap engaging the screw-threads of the exterior recess and exerting pressure on said upper disk and pad.

2. A shipping-case embodying a body portion exteriorly and interiorly screw-threaded at its open end, a screw-plug engaging the interior screw-threads and having its upper surface dished or cupped and grooved from its outer edge to said dish or cup, an absorbent pad imposed on said plug, and a screw-cap engaging the exterior screw-threads of the body portion and forcing said absorbent pad against the screw-plug.

3. A shipping-case embodying a body portion exteriorly and interiorly screw-threaded at its open end, a screw-plug engaging the interior screw-threads and having its upper and under surfaces dished or cupped and grooved from its outer edge to said dishes or cups, absorbent pads lying against each side of said plug, a disk interposed between the lower absorbent pad and the interior of the body portion, and a screw-cap engaging the exterior screw-threads of the body portion and forming an outer closure.

849,353. ELECTRIC EAR-PHONE. LEWIS F. CLARKE, Boston, Mass., assignor to Globe Ear Phone Company, Boston, Mass., a Corporation of Massachusetts. Filed Feb. 13, 1907. Serial No. 357,154.

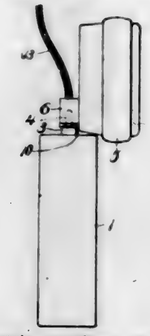

Claim.—An electric ear-phone, comprising a pocket-battery having separated contact-plugs projecting from its upper end, combined with a transmitter having a socket-piece provided with separated sockets adapted to aline with and receive said plugs, and circuit-terminals held by said socket-piece and engaged with said sockets.

REISSUES.

12,626. SUPPORTING-STAND AND MOLD FOR MAKING BUILDING-BLOCKS. LEVI P. NORMANDIN, Jackson, Mich., assignor to William F. Cowham, Jackson, Mich. Filed May 31, 1905. Serial No. 263,192. Original No. 729,887, dated June 2, 1903.

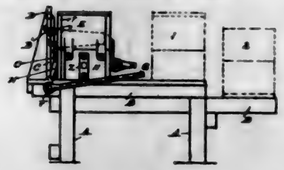

Claim.—1. A mold consisting of two members each forming a side and an end wall of the mold and having a limited movement relative to the other, an annular abutment secured to one of said members, and a movable bottom supported by said abutment.

2. A mold consisting of two members movable relatively to each other and forming the walls of the mold, an annular abutment secured to one of said members near the lower side of the wall and provided with transverse bars

having openings, a movable bottom, and guide-pins on said bottom to engage the openings in said bars.

3. A mold consisting of two members each forming a side and an end wall of the mold, said side walls being each formed with an aperture, ears on the end walls to project through said apertures, and cams pivotally secured to said ears to engage the side walls.

4. A mold formed of two members each consisting of a side and an end wall secured together to form a corner of the mold and each formed with an aperture, an ear on each side wall adjacent to said apertures, an ear on each end wall to project through said apertures, adjustable stops on the ears on the side walls, and cams pivotally secured to said ears on the end walls and having cam-faces to engage the stops and the side walls.

5. A mold consisting of two members each forming a side and an end wall of the mold and one of said members formed with notches at its lower edge, means for uniting said members, an annular abutment secured at one side to one of said members and at its opposite side is provided with lugs to engage the notches in the other member, and a movable bottom supported by said abutment.

6. A mold consisting of two members each forming a side and an end wall of the mold and one of said members being provided with notches in the lower edge of its walls, inwardly-extending lugs on the member having the notched edge, an annular abutment secured at one side to one of the members provided with notches at its opposite side to receive the lugs on the other member, lugs on the abutment to loosely engage the notches in the adjacent member, arched cross-bars connecting the sides of the annular abutment and having openings, a movable bottom supported by said abutment, guide-pins on said bottom extending through said openings in the cross-bars, stops on the outer ends of said pins, and means for loosely connecting the said members and for clamping the same together.

7. A mold having side and end walls secured together at two opposite corners of the mold and forming two members, means for uniting said members at the other corners of the mold, side extensions curved at their upper sides and detachably secured to the side walls of the mold, end extensions detachably secured to the end walls of the mold, a curved movable bottom, and a wedge-block to form the end of the molded article.

8. In a machine for molding building-blocks, the combination with a supporting-stand; of uprights near one end of said stand, a mold having openings in its side wall adjacent to said uprights, a series of core-blocks adjustably secured to the uprights and adapted to project into the mold through said openings, a rock-shaft journaled in bearings on the stand, arms on said rock-shaft to engage the mold to move the same to withdraw the cores from the mold, and a lever on the rock-shaft to operate the same.

9. In a machine for molding building-blocks, the combination with a supporting-stand; of uprights on said stand provided with slots, a cross-bar provided with slots, bolts passing through the slots in the uprights to adjustably secure the cross-bar thereto, tapering core-blocks adjustably secured to said cross-bar by bolts passing through the slots in said bar, a mold supported by the stand adjacent to the uprights and beneath the core-blocks, side and end extensions detachably secured to the walls of said mold, one of said side extensions being formed with openings through which the core-blocks project, and means for moving the mold to withdraw the core-blocks.

10. In a machine for molding blocks, a mold comprising a side for molding the face of the block, an apertured side at an angle to the face-molding side, and a third side, which is removable, a stand upon which said mold is initially supported with its face-molding side down, a core mounted on said stand to project laterally in registration with the aperture of said apertured side and relatively movable to said mold for insertion and withdrawal through said aperture, and means for turning said mold to bring the removable side down whereby the molded block may be removed thereon.

11. In a machine for molding blocks, a mold comprising a face-molding side, an apertured side at an angle thereto, and a third side, which is removable, a stand on which said mold is initially supported with said face-molding side down, a core mounted on said stand projecting laterally in registration with the aperture of said apertured side and relatively movable in relation to the mold for insertion and withdrawal through said aperture, means for turning the mold to bring the removable side down, and a portion of said stand upon which said mold is supported after turning.

12,627. YIELDABLE GEAR. HARRY B. STILZ, Philadelphia, Pa. Filed Sept. 18, 1906. Serial No. 335,160. Original No. 807,692, dated Dec. 19, 1905.

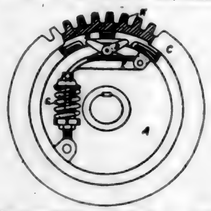

Claim.—1. The combination with a shaft, a wheel secured to the shaft, a gear mounted upon and rotatable relative to the wheel, said wheel and gear having annular slots, of a split band fitted in the slot around the circumference of the wheel expansible into the slot in the body of the gear, a connection between said band and said wheel, and a mechanism by which the band is actuated against the gear.

2. A yieldable gear comprising a central member, a gear member surrounding said central member, a yieldable band arranged between said members, a stop on one of said members for holding said band against movement circumferentially of said member, and means mounted wholly on said latter member for permanently forcing said band radially against the other member.

3. A yieldable gear comprising a wheel member, a gear member concentric therewith, a yieldable band arranged between said members, a stop on one of said members against which one end of said band bears, and means mounted wholly on said latter member for permanently forcing said band radially into frictional engagement with the other member.

4. A yieldable gear comprising a wheel member, a gear member surrounding said wheel member, a yieldable band arranged between said members and concentrically with respect thereto, a stop on the wheel member against which one end of the band bears, and means mounted wholly on the wheel member and acting on the opposite end of said band for permanently forcing it radially against the interior of the gear member.

5. A yieldable gear comprising a central member, a gear member surrounding said member central, a split band arranged between said members, a connection between said band and said central member, and means mounted wholly on said central member for permanently forcing said band against the interior of said gear member.

6. A yieldable gear comprising a body member, a gear member concentric with and supported by said body member, a split band carried by said body member and arranged concentric with and between said members, and a spring mounted on said body member for permanently holding said band in frictional engagement with the interior of the said gear member.

7. A yieldable gear comprising a wheel member, a gear member surrounding said wheel member, a yieldable band arranged between said members and concentrically with respect thereto, a stop on the wheel member against which

one end of the band bears, and a spring device mounted on said wheel member and coöperating with the band to force the end thereof against said stop and expand the band into frictional engagement with the gear member.

8. A yieldable gear comprising a wheel member, a gear member coaxial therewith, a yieldable band located between said members, a stop on said wheel member for holding said band against movement circumferentially thereof, and a spring device mounted on said wheel member and coöperating with the band to force the ends thereof apart and press the band radially into frictional engagement with the gear member.

9. The combination of a shaft, a wheel secured to the shaft, a gear concentric with and rotatable relative to the shaft and having a friction-surface, a yieldable band loosely fitted around the circumference of the wheel, a stop on the wheel in a position to take the thrust of the band, and means mounted upon the wheel independently of the shaft for acting upon the slack end of the band to hold it permanently in engagement with said friction-surface.

10. The combination of a shaft, a wheel member secured to said shaft, a gear member coaxial with the wheel members, a yieldable band located between said members, a stop on said wheel member for holding said band against movement circumferentially thereof, and means mounted on said wheel member independently of the shaft for operating permanently on the ends of the band to force the band radially into frictional engagement with the gear member.

12,628. WINDOW. SIDNEY U. BARR, New York, N. Y. Filed Feb. 11, 1907. Serial No. 356,941. Original No. 797,835, dated Aug. 22, 1905.

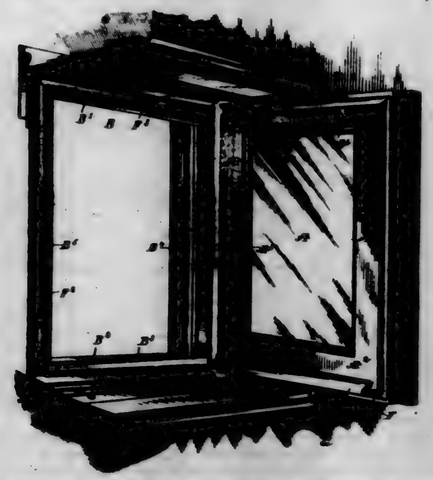

Claim.—1. A window comprising a window-frame, a sash mounted to swing on the said window-frame, and tubular packings in the joints of the frame and sash and pressed on closing the sash, the joints embodying registering grooves in the frame and sash and having recesses for receiving the portions of the packings deflected on pressing the packings, and the latter completely filling said grooves in the closed position of the sash.

2. A window comprising a window-frame, a sash mounted to swing on the said frame, packings in the joints of the frame and sash at the sides, top and bottom, the bottom packings being attached to the sash and the side and top packings being secured to the window-frame, and a water-table on the sash and extending over and beyond the said bottom packing to carry the water clear of the packing, the said water-table forming a portion of the seat of the bottom packing, said joints embodying registering grooves in the frame and sash, and the said packings completely filling the grooves in the closed position of the sash.

3. A window comprising a window-frame, a sash mounted to swing on the said frame, and packings in the joints of the frame and sash, each packing consisting of a compressible tube and a rigid core extending through the tube, and said joints embodying registering grooves in the frame and sash which are completely closed by the packings in the closed position of the sash.

4. A window comprising a window-frame, a sash mounted to swing on the said frame, and packings in the joints of the frame and sash, each packing consisting of a compressible tube and a rigid core extending through the tube, and screws passing transversely through the core and a portion of the tube to screw into the corresponding joint part to secure the packing in position; the heads of the screws being free of the tubes and located opposite the portions to be pressed on closing the sash.

5. A window comprising a window-frame, a window-sash, the frame and sash having pairs of registering rabbets, and compressible packings one for each of the said pairs of registering rabbets, each packing being somewhat larger in cross-section than its corresponding pair of registering rabbets to press the packing on closing the sash and deflecting a portion thereof, one of the rabbets having an enlargement for the reception of the deflected portion of the packing.

6. A window comprising a window-frame, a window-sash, the frame and sash having pairs of registering rabbets, and compressible packings one for each of the said pairs of registering rabbets, each packing being secured in one of the rabbets of the pair of rabbets, and the other rabbet of the pair being somewhat narrowed at the entrance to cause a pressing of the packing on closing the sash.

7. A window comprising a window-frame, a window-sash, the frame and sash having pairs of registering rabbets, and compressible packings one for each of the said pairs of registering rabbets, each packing being secured in one of the rabbets of the pair of rabbets, and the other rabbet of the pair being somewhat narrowed at the entrance to cause a pressing of the packing on closing the sash, the narrowed rabbet having its back portion enlarged for the reception of the deflected portion of the packing due to the pressing.

8. A window comprising a window-frame, a sash, and pivots on which the sash is hung in the window-frame, the said pivots being slidably mounted to disconnect the sash from the window-frame.

9. A window comprising a window-frame, a sash, vertically-alined pivots on which the sash is hung on the window-frame, and manually-controlled means connected with the upper pivot, to disengage the same from the sash, the said pivots being slidably mounted.

10. A window comprising a window-frame, a sash, vertically-alined pivots on which the sash is hung on the window-frame, a lever pivotally connected with the upper pivot and fulcrumed on the top cross-bar of the window-frame, and a screw screwing in the top cross-bar of the window-frame and having a ball-and-socket connection with the said lever.

11. A window comprising a window-frame, a sash, vertically-alined pivots for hanging the sash in the window-frame, and removable means on the sash, for gaining access to the lower pivot, to raise or lower the latter.

12. A window comprising a window-frame, a sash, vertically-alined pivots for hanging the sash in the window-frame, removable means on the sash, for gaining access to the lower pivot, to raise or lower the latter, and a pin on the said lower pivot, normally concealed by the said removable means.

13. In a window, a pivot, a lever pivoted intermediate of its ends and having one end pivotally connected with the pivot, and means connected with the other end of the lever for swinging the lever on its pivot.

14. In a window, a pivot, a pivoted lever having one end loosely pivoted to the pivot, and a screw screwing into a fixed support and engaging the other end of said lever.

15. In a window, a sash having a bearing in its lower end and a recess leading into the bearing, a pivot in the recess and provided with means whereby it may be raised, and a block for closing the said recess.

16. In a window, a sash having a bearing in its lower end and a recess leading to the bearing, a pivot in the bearing and provided with a recess, and a stop-pin projecting into the recess of the sash, and a filling-block in the recess of the sash and secured to the pivot.

DESIGNS.

38,500. BADGE. ALEXANDER H. KOPETSCHNY, Jersey City, N. J. Filed Mar. 4, 1907. Serial No. 360,622. Term of patent 14 years.

Claim.—The ornamental design for a badge, as shown.

38,501. WATCH-FOB. JOHN H. HALL, Jr., Portsmouth, Va. Filed Sept. 1, 1906. Serial No. 333,020. Term of patent 7 years.

Claim.—The ornamental design for a watch-fob, as shown.

38,502. PUZZLE-BOX. ELIZABETH W. WRIGHT, Philadelphia, Pa. Filed Feb. 20, 1907. Serial No. 358,507. Term of patent 7 years.

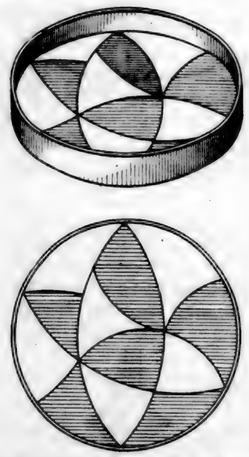

Claim.—The ornamental design for a puzzle, as shown.

38,503. BOTTLE. NORRIS L. O'NEILL, Oakland, Cal., and RICHARD R. BURKE, Denver, Colo. Filed Feb. 21, 1907. Serial No. 358,756. Term of patent 14 years.

Claim.—The ornamental design for a bottle, as shown.

38,504. VESSEL FOR TABLE USE. ADOLPHE PAROUTAUD, New York, N. Y. Filed Feb. 19, 1907. Serial No. 358,327. Term of patent 7 years.

Claim.—The ornamental design for a vessel for table use as shown.

38,505. VESSEL FOR TABLE USE. ADOLPHE PAROUTAUD, New York, N. Y. Filed Feb. 19, 1907. Serial No. 358,328. Term of patent 7 years.

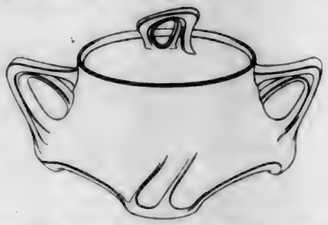

Claim. The ornamental design for a vessel for table use as shown.

38,506. LAMP-STAND. RICHARD MUHR, Chicago, Ill. Filed Jan. 14, 1907. Serial No. 352,309. Term of patent 7 years.

Claim.—The ornamental design for a lamp-stand, as shown.

38,507. RIBBON. GEORGE A. MORGAN, New York, N. Y. Filed Jan. 25, 1907. Serial No. 354,147. Term of patent 3½ years.

Claim.—The ornamental design for a ribbon as shown.

38,508. PILE FABRIC. FREDERIC E. KIP, Montclair, N. J. Filed Jan. 21, 1907. Serial No. 353,401. Term of patent 7 years.

Claim.—The ornamental design for a pile fabric, as shown.

38,509. PILE FABRIC. FREDERIC E. KIP, Montclair, N. J. Filed Jan. 21, 1907. Serial No. 353,402. Term of patent 7 years.

Claim.—The ornamental design for a pile fabric, as shown.

38,510. PICTURE-FRAME. STEPHEN BILEK, Chicago, Ill. Filed Feb. 20, 1907. Serial No. 358,509. Term of patent 3½ years.

Claim.—The ornamental design for the picture-frame as shown.

TRADE-MARKS

PUBLISHED APRIL 2, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 1,873. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) KAMPFE BRO'S., New York, N. Y. Filed Apr. 17, 1905.

STAR

Particular description of goods.—Razor-strops.

Ser. No. 3,081. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) THE ORGAN POWER CORPORATION, Hartford, Conn. Filed Apr. 26, 1905. Used ten years.

SPENCER

Particular description of goods.—Hydraulic Motors, Air-Pumps, Water-Motor Pumps, Water-Lifts, and Blowers.

Ser. No. 3,082. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) THE ORGAN POWER CORPORATION, Hartford, Conn. Filed Apr. 26, 1905.

ORGOBLO

Particular description of goods.—Hydraulic Motors, Air-Pumps, Water-Motor Pumps, Water Lifts, and Blowers.

Ser. No. 3,893. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) LABROT & GRAHAM, Frankfort, Ky. Filed May 1, 1905. Used ten years.

OLD OSCAR PEPPER

Particular description of goods.—Whisky.

Ser. No. 6,954. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) CHARTER OAK STOVE AND RANGE COMPANY, St. Louis, Mo. Filed May 29, 1905.

WALDORF

Particular description of goods.—Stoves, Furnaces, and Parts of Stoves and Furnaces, and Stove-Repairs.

Ser. No. 7,620. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) ROSE BINNER SCOGNAMILLO, New York, N. Y. Filed June 8, 1905. Used ten years.

Binner

Particular description of goods.—Corsets.

Ser. No. 8,656. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) LORD & TAYLOR, New York, N. Y. Filed June 21, 1905.

706z

Particular description of goods.—Hosiery.

Ser. No. 8,658. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) LORD & TAYLOR, New York, N. Y. Filed June 21, 1905.

109K

Particular description of goods.—Hosiery.

Ser. No. 8,660. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) LORD & TAYLOR, New York, N. Y. Filed June 21, 1905.

65K

Particular description of goods.—Hosiery.

Ser. No. 9,361. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ROBERT H. HUNSTOCK, St. Louis, Mo. Filed June 28, 1905. Used ten years.

HEADINE

Particular description of goods.—A Remedy for Headache and Neuralgia.

Ser. No. 10,533. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) HARRY L. SCHLESINGER, Atlanta, Ga. Filed July 18, 1905.

ALLEE SAMEE

Particular description of goods.—Crackers or Biscuits.

Ser. No. 10,745. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) ALFRED PEATS CO., New York, N. Y. Filed July 24, 1905.

Particular description of goods.—Wall-Paper.

Ser. No. 11,282. (CLASS 51. MALT LIQUORS.) GABRIEL SEDLMAYR, BRAUEREI ZUM SPATEN, Munich, Germany. Filed Aug. 5, 1905.

Particular description of goods.—Beer.

Ser. No. 11,283. (CLASS 51. MALT LIQUORS.) GABRIEL SEDLMAYR, BRAUEREI ZUM SPATEN, Munich, Germany. Filed Aug. 5, 1905.

SPATEN

Particular description of goods.—Beer.

Ser. No. 11,401. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HOUCHENS MEDICINE CO., Baltimore, Md. Filed Aug. 7, 1905. Used ten years.

THE FAMILY PHYSICIAN

Particular description of goods.—A Remedy for Coughs, Colds, Bronchitis, Diphtheria, Measles, Scarlet Fever, and Typhoid Fever, and Used Also as a Blood-Purifier.

Ser. No. 11,668. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) A. W. SHAW & CO., Freeport, Me. Filed Aug. 15, 1905.

Particular description of goods.—Leather Boots and Shoes and Boot and Shoe Leather.

Ser. No. 14,542. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) LYNCHBURG SHOE CO., Lynchburg, Va. Filed Nov. 13, 1905.

Particular description of goods.—Men's Boys', and Youths' Leather Boots and Shoes.

Ser. No. 15,795. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) THE MORGAN CRUCIBLE CO. LIMITED, Battersea, London, England. Filed Jan. 2, 1906.

Particular description of goods.—Motor Brushes and Brushes for Dynamos.

Ser. No. 15,805. (CLASS 18. AGRICULTURAL AND DAIRY MACHINERY AND PARTS OF SUCH MACHINERY.) SMITH & SONS MFG. CO., Kansas City, Mo. Filed Jan. 2, 1906.

ROYAL

Particular description of goods.—Drag-Scrapers, Plows, and Road-Graders.

Ser. No. 15,806. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) SMITH & SONS MFG. CO., Kansas City, Mo. Filed Jan. 2, 1906.

ROYAL

Particular description of goods.—Baling-Presses.

Ser. No. 17,030. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) TROUT HARDWARE COMPANY, Chicago, Ill. Filed Feb. 14, 1906.

The clover-leaf is green.

Particular description of goods.—Culinary and Cooking Utensils Made of Tinware, Enameled Granite-Ware, and Enameled Steelware.

Ser. No. 17,043. (CLASS 72. MERCHANDISE NOT OTHERWISE CLASSIFIED.) XAVIER GUSTAVE EDOUARD DE FAUCOMPRÉ, Paris, France. Filed Feb. 15, 1906.

Particular description of goods.—Straw Pipes or Tubes Through Which Liquids May be Drawn.

Ser. No. 17,497. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) EVERSHED & VIGNOLES LTD., London, England. Filed Mar. 3, 1906.

MEGGER

Particular description of goods.—Electric Testing Apparatus.

Ser. No. 17,567. (CLASS 10. FERTILIZERS.) VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906.

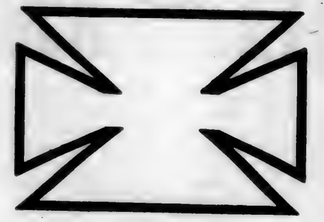

Particular description of goods.—Fertilizers.

Ser. No. 17,607. (CLASS 12. MASONRY MATERIALS.) EDW. L. HOLMES, San Francisco, Cal., assignor to Ferrolite Company, San Francisco, Cal., a Corporation of Nevada. Filed Mar. 6, 1906.

FERROLITE

Particular description of goods.—Pipes, Spans, Struts, Receptacles, Conduits, Monuments, Artificial Stones, and Building Members Manufactured of Concrete.

Ser. No. 18,016. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) LYSANDER D. CHILDS, Chester, S. C. Filed Mar. 19, 1906.

Silmaq

Particular description of goods.—Carbonated Water.

Ser. No. 18,261. (CLASS 68. PUBLICATIONS.) RAND, MCNALLY & COMPANY, Chicago, Ill. Filed Mar. 20, 1906. Used ten years.

BLUE BOOK

Particular description of goods.—Bankers' Directory and List of Attorneys.

Ser. No. 18,262. (CLASS 68. PUBLICATIONS.) RAND, MCNALLY & COMPANY, Chicago, Ill. Filed Mar. 26, 1906. Used ten years.

RAND, McNALLY & CO'S BANKERS DIRECTORY AND LIST OF BANK-ATTORNEYS

Particular description of goods.—Bankers' Directory and List of Attorneys.

Ser. No. 19,692. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) RICE, STIX DRY GOODS COMPANY, St. Louis, Mo. Filed May 19, 1906. Used ten years.

Premium

Particular description of goods.—Overalls and Pantaloons.

Ser. No. 19,693. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) RICE, STIX DRY GOODS COMPANY, St. Louis, Mo. Filed May 19, 1906. Used ten years.

Premium

Particular description of goods.—Knitted and Netted Underwear.

Ser. No. 20,092. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FARBENFABRIKEN VORM. FRIEDR. BAYER & Co., Elberfeld, Germany. Filed June 6, 1906.

SOPHOL

Particular description of goods.—Specific Bactericide, an Antigonorrheic, and Antisyphilitic.

Ser. No. 20,317. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) PURRELL L. LENT, Binghamton, N. Y. Filed June 15, 1906.

Particular description of goods.—A Starch Polish.

Ser. No. 20,596. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) HARRY E. RUGER, La Fayette, Ind. Filed June 27, 1906. Used ten years.

AMERICAN METAL POLISH

Particular description of goods.—Metal-Polish.

Ser. No. 20,606. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia, Pa. Filed June 27, 1906. Used ten years.

"Tudor Accumulator"

Particular description of goods.—Storage Batteries or Accumulators.

Ser. No. 20,763. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) GUSTAV B. GEHLERT, Benton Harbor, Mich. Filed July 6, 1906.

Particular description of goods.—Pickles and Vinegar.

Ser. No. 20,885. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) ALBION MANUFACTURING COMPANY, New York, N. Y. Filed July 12, 1906.

ALBO

Particular description of goods.—A Cleansing Preparation for White Canvas, Buckskin, Military Helmets, Army and Navy Leggings, &c.

Ser. No. 20,949. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) VALIER & SPIES MILLING COMPANY, Marine and St. Jacob, Ill., and St. Louis, Mo. Filed July 16, 1906.

CABLE

IXL

Particular description of goods.—Wheat-Flour.

Ser. No. 21,101. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ST. JACOBS OIL, LIMITED, London, E. C., England, and Baltimore, Md. Filed July 24, 1906.

Dr. Aug. Koenig's Hustenbonbons Grub Thee.

Particular description of goods.—The Following Products of Such Manufacturing Establishment—Namely, a Remedy for Various Affections of the Throat, Lungs, and Bronchial Tubes, Such as Coughs, Colds, Asthma, Bronchitis, Influenza, Sore Throat, Croup, Hoarseness, Incipient Consumption, and for the Relief of Consumptive Patients in Advanced Stages of the Disease.

Ser. No. 21,232. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) CROSS PHOTO PAPER CO., Rochester, N. Y. Filed July 25, 1906.

CO-LO-MAT

Particular description of goods.—Photographic Papers for Printing by Sunlight and by Artificial Light.

Ser. No. 21,566. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio. Filed Aug. 15, 1906. Used ten years.

SILVER MOON

Particular description of goods.—Washboards.

Ser. No. 21,567. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio. Filed Aug. 15, 1906.

BRASS CROWN

Particular description of goods.—Washboards.

Ser. No. 21,570. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio. Filed Aug. 15, 1906. Used ten years.

SEAL STAR

Particular description of goods.—Washboards.

Ser. No. 21,571. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio. Filed Aug. 15, 1906.

BUCK -EYE

Particular description of goods.—Washboards.

Ser. No. 21,573. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio. Filed Aug. 15, 1906. Used ten years.

TIDALWAVE

Particular description of goods.—Washboards.

Ser. No. 21,574. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio. Filed Aug. 15, 1906. Used ten years.

NORTH STAR

Particular description of goods.—Washboards.

Ser. No. 22,331. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) BENEDICTUS, WEILL & COMPANY, New York, N. Y. Filed Sept. 26, 1906.

CREPONETTE

Particular description of goods.—Crape.

Ser. No. 22,408. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) PITTMAN MEDICINE CO., Fitzgerald, Ga. Filed Oct. 1, 1906.

RANEY'S KING OF BLOOD.

Particular description of goods.—A Remedy for the Blood.

Ser. No. 22,409. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) PITTMAN MEDICINE CO., Fitzgerald, Ga. Filed Oct. 1, 1906.

Particular description of goods.—A Cure for Dyspepsia.

Ser. No. 22,528. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) GALLATIN VALLEY MILLING COMPANY, Belgrade, Mont. Filed Oct. 5, 1906.

GOLDEN RULE

Particular description of goods.—Wheat-Flour.

Ser. No. 22,606. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WILLIAM H. WAKEFIELD, Charlotte, N. C. Filed Oct. 8, 1906.

MER-CU-RALIN

Particular description of goods.—An Eye-Ointment.

Ser. No. 22,863. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) OMNIA CHEMICAL CO., New York, N. Y. Filed Oct. 23, 1906.

GERM-ICIDE ELECTRIC

Particular description of goods.—A Liquid Insecticide.

Ser. No. 22,898. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) JOPLIN OVERALL COMPANY, Joplin, Mo. Filed Oct. 25, 1906.

ECONOMY

J. O. CO.

Particular description of goods.—Overalls, Pants, and Coats.

Ser. No. 22,899. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) JOPLIN OVERALL COMPANY, Joplin, Mo. Filed Oct. 25, 1906.

Particular description of goods.—Overalls, Pants, and Coats.

Ser. No. 23,066. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) SHERER-GILLETT COMPANY, Chicago, Ill. Filed Nov. 3, 1906. Used ten years.

GILLETT'S

Particular description of goods.—Ammonia, Dry Blue, Liquid Bluing, Washing-Crystal, Gloss Starch, Saffron, Baking-Powder, and Glycerin.

Ser. No. 23,068. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) SHERER-GILLETT COMPANY, Chicago, Ill. Filed Nov. 3, 1906.

Particular description of goods.—Washing-Crystal, Compounds for Softening Water for Washing Purposes, Gloss Starch, and Saffron.

Ser. No. 23,070. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) SHERER-GILLETT COMPANY, Chicago, Ill. Filed Nov. 3, 1906.

MAGIC

Particular description of goods.—Laundry Starch.

Ser. No. 23,104. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) SAMUEL H. FRENCH & CO., Philadelphia, Pa. Filed Nov. 5, 1906. Used ten years.

BUCK

Particular description of goods.—White Lead and Zinc-White.

Ser. No. 23,105. (CLASS 12. MASONRY MATERIALS.) SAMUEL H. FRENCH & CO., Philadelphia, Pa. Filed Nov. 5, 1906. Used ten years.

FRENCH'S

Particular description of goods.—Calcined Plasters and Casting-Plasters.

Ser. No. 23,106. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) SAMUEL H. FRENCH & CO., Philadelphia, Pa. Filed Nov. 5, 1906. Used ten years.

Particular description of goods.—White Lead and Zinc-White.

Ser. No. 23,141. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) THE ORGAN POWER CORPORATION, Hartford, Conn. Filed Nov. 6, 1906.

CENTURY

Particular description of goods.—Water-Motors, Water-Motor Pumps, Water-Lifts.

Ser. No. 23,143. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) REGINA FLOUR MILL CO., St. Louis, Mo. Filed Nov. 6, 1906.

Particular description of goods.—Wheat-Flour.

Ser. No. 23,144. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) REGINA FLOUR MILL CO., St. Louis, Mo. Filed Nov. 6, 1906.

WHITE SILK

Particular description of goods.—Wheat-Flour.

Ser. No. 23,324. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) VANE-CALVERT PAINT CO., St. Louis, Mo. Filed Nov. 13, 1906.

Particular description of goods.—Colored Pigments Used for Paint.

Ser. No. 23,394. (CLASS 71. TOBACCO PRODUCTS.) PARK & TILFORD, New York, N. Y. Filed Nov. 16, 1906.

SYBILLA

Particular description of goods.—Cigars.

Ser. No. 23,450. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) GRACE BENNETT FEAHNEY, New Orleans, La. Filed Nov. 19, 1906.

POYDRAS MARKET

Particular description of goods.—Coffee.

Ser. No. 23,468. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) THOMAS MANLY, Kentish Town, England. Filed Nov. 19, 1906.

OZOBROME

Particular description of goods.—Photographic Papers, Photographic Carbon-Tissue, and Transfer-Paper.

Ser. No. 23,532. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE CLOFTLIN CHEMICAL COMPANY, New York N. Y. Filed Nov. 22, 1906.

Particular description of goods.—Emulsions of Cod-Liver Oil.

Ser. No. 23,778. (CLASS 68. PUBLICATIONS.) THE JEWELERS CIRCULAR PUBLISHING CO., New York, N. Y. Filed Dec. 5, 1906. Used ten years.

THE HOROLOGICAL REVIEW

Particular description of goods.—Periodicals.

Ser. No. 23,814. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) BUFFALO FORGE COMPANY, Buffalo, N. Y. Filed Dec. 6, 1906. Used ten years.

BUFFALO

Particular description of goods.—Drilling, Punching, and Shearing Machines for Use in Metal Work.

Ser. No. 24,084. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) BERRY MEDICAL COMPANY, Stevens Point, Wis. Filed Dec. 17, 1906.

Particular description of goods.—A Medicine for the Cure of Rupture.

Ser. No. 24,110. (CLASS 72. MERCHANDISE NOT OTHERWISE CLASSIFIED.) MORGAN CRUCIBLE COMPANY LIMITED, Battersea, London, England. Filed Dec. 18, 1906.

Particular description of goods.—Crucibles, Cupels, Scorifiers, and Roasting-Dishes, (Both These Two Descriptions of Goods Being Articles in the Nature of Crucibles,) Crucible Covers, Stands, and Stirrers, Wedges, Chlorin-Tubes, and Couple-Tubes, All the Above-Mentioned Goods Being of Fire-Clay or Similar Refractory Material; Clay Liners for Crucibles, Fire-Bricks, Plates, Slabs, Domes, and Tubes, All the Said Goods Being of Clay or Similar Refractory Material; Patching Material for Furnace-Work, of Clay or Similar Refractory Material; Rehausses, Being Muffle-Rings or Removable Taps, (Accessories for Use with Crucibles,) of Clay or Similar Refractory Material.

Ser. No. 24,128. (CLASS 52. PACKING-HOUSE PRODUCTS.) SCHWARZSCHILD AND SULZBERGER COMPANY, Kansas City, Kans.; Chicago, Ill., and New York, N. Y. Filed Dec. 18, 1906.

Particular description of goods.—Unctuous Food Products—Namely, Lard and Beef Oil or Fat Prepared for Use in the Manufacture of Oleomargarin or Artificial Butter.

Ser. No. 24,142. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GEORGE HANSON, Independence, Wis. Filed Dec. 19, 1906.

Baby Manna

Particular description of goods.—A Medical Preparation for the Treatment of Diseases of Infants and Children.

Ser. No. 24,370. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GEORGE C. KRUSEN, Philadelphia, Pa. Filed Dec. 31, 1906.

DR. LOBB

Dr. T. Lobb M.D.

Particular description of goods.—Remedies for Coughs, Colds, Rheumatism, Anemia, Piles, Catarrh, Dyspepsia, Constipation, Headaches, Female Complaints, Diseases of the Kidneys, Diseases of the Bladder, Diseases of the Liver, Diseases of the Blood, and Diseases of the Nerves, a Skin-Lotion, and a Vigorizer.

Ser. No. 24,583. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) PHOS-FERRONE MANUFACTURING CO., St. Louis, Mo. Filed Jan. 11, 1907.

PHOS-FERRONE

Particular description of goods.—Tonic Beverages and a Syrup for Soda-Fountain Flavoring.

Ser. No. 24,586. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) HARRY J. GOULD, Chicago, Ill. Filed Jan. 11, 1907.

Particular description of goods.—A Game Played with Cards.

Ser. No. 24,612. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) RADIGAN, RICH & Co., New York, N. Y. Filed Jan. 14, 1907.

ARCHER BRAND

Particular description of goods.—Razors, Kitchen-Knives, Cleavers, Vegetable-Knives, Boning-Knives, Skinning-Knives, Cooks' Knives, and Butchers' Knives.

Ser. No. 24,681. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) NEBRASKA MERCANTILE COMPANY, Grand Island and St. Paul, Nebr. Filed Jan. 16, 1907.

The cross is red.

Particular description of goods.—Wheat-Flakes, Buckwheat-Flour, Oatmeal, Cereal Breakfast Foods, Pancake-Flour.

Ser. No. 24,715. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) GEO. BORGFELDT & Co., New York, N. Y. Filed Jan. 17, 1907.

Particular description of goods.—Enameled Steelware for Culinary and Household Purposes.

Ser. No. 24,727. (CLASS 47. CONFECTIONERY.) ASA M. FITCH, Indianapolis, Ind. Filed Jan. 17, 1907. Used ten years.

The body of the box is red, and the border of the cover and the label on one side of the box are yellow.

Particular description of goods.—Chewing-Gum.

Ser. No. 24,728. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) WILLIAM HEYMANN, New York, N. Y. Filed Jan. 17, 1907.

Convencion

Particular description of goods.—Collars Made from Celluloid and other Similar Compositions.

Ser. No. 24,809. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) GEORGE URBAN MILLING COMPANY, Buffalo, N. Y. Filed Jan. 21, 1907.

Particular description of goods.—Wheat-Flour.

Ser. No. 24,811. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) VACUUM OIL COMPANY, Rochester, N. Y. Filed Jan. 21, 1907.

GARGOYLE

Particular description of goods.—Lubricating, Illuminating, and Heating Oils, Greases, and Waxes, Pipe-Joint Grease, Paraffin-Wax, Cheese-Coating Wax, and Oils, Greases, and Waxes for Stuffing and Finishing Leather.

Ser. No. 24,814. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE PERFECT SAFETY PAPER CO., Franklin, Ohio, and Chicago, Ill. Filed Jan. 21, 1907.

PADLOCK SAFETY PAPER

Particular description of goods.—Printing and Writing Paper Commonly Employed for Checks, Drafts, Tickets, Certificates, &c.

Ser. No. 24,855. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) H. T. LORD COMPANY, Manchester, N. H. Filed Jan. 23, 1907. Used ten years.

Particular description of goods.—A Stimulant for External and Internal Use.

Ser. No. 24,886. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FARBENFABRIKEN VORM. FRIEDR. BAYER & CO., Elberfeld, Germany. Filed Jan. 25, 1907.

SPIROSAL

Particular description of goods.—Antirheumatic and Analgesic, Mainly for Local Use.

Ser. No. 24,902. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) AGUSTUS MORGAN, Seattle, Wash. Filed Jan. 25, 1907.

M M M

Particular description of goods.—Remedies for Skin Diseases.

Ser. No. 24,910. (CLASS 71. TOBACCO PRODUCTS.) HOWARD HAZLETT, Wheeling, W. Va., administrator of the estate of Augustus Pollack, deceased. Filed Jan. 26, 1907. Used ten years.

Particular description of goods.—Stogies.

Ser. No. 24,911. (CLASS 71. TOBACCO PRODUCTS.) HOWARD HAZLETT, Wheeling, W. Va., administrator of the estate of Augustus Pollack, deceased. Filed Jan. 26, 1907.

The central field being gold and the crown and surrounding annular band being lilac.
Particular description of goods.—Stogies.

Ser. No. 24,912. (CLASS 71. TOBACCO PRODUCTS.) HOWARD HAZLETT, Wheeling, W. Va., administrator of the estate of Augustus Pollack, deceased. Filed Jan. 26, 1907.

The central field being blue, the crown and surrounding annular band red.
Particular description of goods.—Stogies.

Ser. No. 24,913. (CLASS 71. TOBACCO PRODUCTS.) HOWARD HAZLETT, Wheeling, W. Va., administrator of the estate of Augustus Pollack, deceased. Filed Jan. 26, 1907.

The central field being red and the crown and annular band being blue.
Particular description of goods.—Stogies.

Ser. No. 24,914. (CLASS 71. TOBACCO PRODUCTS.) HOWARD HAZLETT, Wheeling, W. Va., administrator of the estate of Augustus Pollack, deceased. Filed Jan. 26, 1907.

The central field being red.
Particular description of goods.—Stogies.

Ser. No. 24,919. (CLASS 71. TOBACCO PRODUCTS.) PARK & TILFORD, New York, N. Y. Filed Jan. 26, 1907.

Particular description of goods.—Cigars.

Ser. No. 24,920. (CLASS 71. TOBACCO PRODUCTS.) PARK & TILFORD, New York, N. Y. Filed Jan. 26, 1907.

Particular description of goods.—Cigars.

Ser. No. 24,925. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) OBAH SMITH, Oil City, Pa. Filed Jan. 26, 1907. Used ten years.

FOWLER

Particular description of goods.—Gas and Gasolene Engines.

Ser. No. 24,935. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) EDWARD MACBEAN & CO. LIMITED, Glasgow, Scotland. Filed Jan. 26, 1907.

MAXHED

Particular description of goods.—Brattice Cloth.

Ser. No. 24,954. (CLASS 48. DAIRY PRODUCTS.) AMERICAN MILK PRODUCT CO., Chicago, Ill. Filed Jan. 28, 1907.

XXXX

Particular description of goods.—Evaporated Milk.

Ser. No. 24,963. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) KEHLOR FLOUR MILLS COMPANY, St. Louis, Mo.; Kansas City, Kans., and East St. Louis, Ill. Filed Jan. 28, 1907.

Particular description of goods.—Wheat-Flour.

Ser. No. 25,023. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE CONCORDIA MILLING COMPANY, Concordia, Kans. Filed. Jan. 31, 1907.

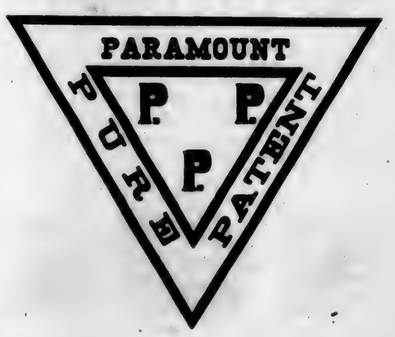

Particular description of goods.—Wheat-Flour.

Ser. No. 25,024. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE CONCORDIA MILLING COMPANY, Concordia, Kans. Filed Jan. 31, 1907.

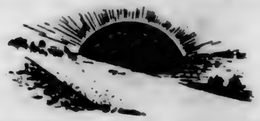

Particular description of goods.—Pancake-Flour.

Ser. No. 25,066. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) T. A. SLOCUM CO., New York, N. Y. Filed Feb. 2, 1907. Used ten years.

Coltsfoote Expectorant

Particular description of goods.—An Expectorant for Coughs, Colds, Croup, Hoarseness, Whooping-Cough, and Influenza.

Ser. No. 25,080. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) OZOJELL CO., New York, N. Y. Filed Feb. 2, 1907.

OZOJELL

Particular description of goods.—A Pharmaceutical Preparation for Catarrh, Cold in the Head, Rose Cold, and Deafness.

Ser. No. 25,094. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) RICE, STIX DRY GOODS COMPANY, St. Louis, Mo. Filed Feb. 2, 1907.

ECLIPSE

Particular description of goods.—Bleached Muslin.

Ser. No. 25,098. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) RICE, STIX DRY GOODS COMPANY, St. Louis, Mo. Filed Feb. 2, 1907.

OUR NAVY

Particular description of goods.—Cotton Piece Goods.

Ser. No. 25,131. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) CHARLES C. MCDONALD, Elyria, Ohio. Filed Feb. 4, 1907.

Particular description of goods.—Canned Oven-Baked Beans and Canned Pork and Beans.

Ser. No. 25,163. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WILLIAM M. JUDD, Mexico, Mo. Filed Feb. 6, 1907.

Particular description of goods.—An Eye-Ointment.

Ser. No. 25,211. (CLASS 60. INKS AND INKING MATERIALS.) H. M. STORMS CO., New York, N. Y. Filed Feb. 8, 1907.

CAMEO

Particular description of goods.—Type-Writer Ribbons and Carbon-Papers.

Ser. No. 25,217. (CLASS 71. TOBACCO PRODUCTS.) JOHN B. BAIN, New Concord, Ohio. Filed Feb. 9, 1907. The seal being green.

HAND MADE BAIN'S LONG FILLER Green Seal STOGIES THE JOHN B. BAIN CIGAR CO. NEW CONCORD, OHIO.

Particular description of goods.—Stogies.

Ser. No. 25,222. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) THE FERRO MACHINE AND FOUNDRY CO., Cleveland, Ohio. Filed Feb. 9, 1907.

FERRO

Particular description of goods.—Internal-Combustion Engines and Parts Thereof.

Ser. No. 25,233. (CLASS 2. MINERAL.) BLACK BAND COAL & COKE CO., Springhill, W. Va., and Cincinnati, Ohio. Filed Feb. 11, 1907.

"IMPERIAL"

Particular description of goods.—Anthracite, Bituminous, Semibituminous, and Smokeless Coal.

Ser. No. 25,236. (CLASS 18. AGRICULTURAL AND DAIRY MACHINERY AND PARTS OF SUCH MACHINERY.) J. A. ENGEL & Co., East Peoria, Ill. Filed Feb. 11, 1907.

SUCCESS

Particular description of goods.—Combined Wagon-Jack and Grain-Elevator.

Ser. No. 25,287. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) JAMES DONOVAN & Co., Everett, Mass. Filed Feb. 13, 1907.

Particular description of goods.—Boots, Shoes, and Slippers Made Wholly or in Part of Leather, Silk, Felt, and Cloth.

Ser. No. 25,305. (CLASS 17. WOOD MANUFACTURES NOT OTHERWISE CLASSIFIED.) LAY AND BALCOM MANUFACTURING CO., Port Allegany, Pa. Filed Feb. 14, 1907. Used ten years.

Particular description of goods.—Butter-Dishes.

Ser. No. 25,312. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) WILLIAM TREVOR, New York, N. Y. Filed Feb. 15, 1907.

"Ethel B"

Particular description of goods.—Ladies' Embroidered Linen Collars.

Ser. No. 25,314. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) DANIEL VINCENT ARQUIMBAU, New York, N. Y. Filed Feb. 15, 1907.

G.C.

Particular description of goods.—Licorice Paste.

Ser. No. 25,328. (CLASS 68. PUBLICATIONS.) HELF & HAGER CO., New York, N. Y. Filed Feb. 15, 1907.

HITLAND HELF & HAGER CO

Particular description of goods.—Sheet-Music.

Ser. No. 25,341. (CLASS 40. DISTILLED ALCOHOLIC LIQUORS.) EMINENCE DISTILLERY CO., St. Paul, Minn. Filed Feb. 16, 1907.

BOHEMIAN CLUB

Particular description of goods.—Whisky.

Ser. No. 25,342. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) HAND MADE BOOT & SHOE CO., Chippewa Falls, Wis. Filed Feb. 16, 1907.

Hunkidori

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 25,363. (CLASS 68. PUBLICATIONS.) THE BUSINESS MAN'S PUBLISHING COMPANY, LIMITED, Detroit, Mich. Filed Feb. 18, 1907.

The Book-Keeper and Home Study

Particular description of goods.—Magazines.

Ser. No. 25,368. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) FAILING OPTICAL CO., Buffalo, N. Y. Filed Feb. 18, 1907.

OPTOID

Particular description of goods.—Spectacle and Eyeglass Lenses.

Ser. No. 25,478. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) IMPERIAL BIT & SNAP CO., Racine, Wis. Filed Feb. 20, 1907. Used ten years.

REICHERT'S

Particular description of goods.—Snap-Hooks, Combined Snaps and Slides, and Breast-Strap Slides and Snap-Hooks.

Ser. No. 25,480. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOSEPH G. KUEHNL, Toledo, Ohio. Filed Feb. 20, 1907. Used ten years.

Particular description of goods.—Proprietary Medicine Used as a Laxative, as a Tonic, and for Nervous Diseases.

Ser. No. 25,488. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE SOUTHWESTERN MILLING COMPANY, Jersey City, N. J., and Kansas City, Mo. Filed Feb. 20, 1907.

Particular description of goods.—Wheat-Flour.

Ser. No. 25,493. (CLASS 71. TOBACCO PRODUCTS.) BUTLER-BUTLER INCORPORATED, New York, N. Y. Filed Feb. 21, 1907.

ST. LEGER

Particular description of goods.—Cigars.

Ser. No. 25,494. (CLASS 71. TOBACCO PRODUCTS.) BUTLER-BUTLER INCORPORATED, New York, N. Y. Filed Feb. 21, 1907. Used ten years.

SOVEREIGN

Particular description of goods.—Cigars.

Ser. No. 25,497. (CLASS 71. TOBACCO PRODUCTS.) HOWARD HAZLETT, Wheeling, W. Va., administrator of the estate of Augustus Pollack, deceased. Filed Feb. 21, 1907. Used ten years.

Particular description of goods.—Stogies.

Ser. No. 25,505. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) J. B. PEARSON COMPANY, Boston, Mass. Filed Feb. 21, 1907.

Particular description of goods.—Youths', Boys', and Young Children's Play-Suits Made of Linen, Woolen, and Cotton Cloth.

Ser. No. 25,506. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) J. B. PEARSON COMPANY, Boston, Mass. Filed Feb. 21, 1907.

Particular description of goods.—Misses', Girls,' and Young Children's Play-Suits Made of Linen, Woolen, and Cotton Cloth.

Ser. No. 25,507. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) HAMILTON C. APPLEGATE, Louisville, Ky. Filed Feb. 21, 1907.

ROSE BUD

Particular description of goods.—Whisky.

Ser. No. 25,510. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) DOMESTIC MANUFACTURING CO., Racine, Wis. Filed Feb. 21, 1907. Used ten years.

DOMESTIC

Particular description of goods.—Mangles, Ironers, Washers, Extractors, Clothes-Driers, Clothes-Racks, Ironing-Boards, and Sleeve-Boards.

Ser. No. 25,520. (CLASS 68. PUBLICATIONS.) EMANUEL J. CEVASCO, San Francisco, Cal. Filed Feb. 21, 1907. Used ten years.

La Voce del Popolo.

Particular description of goods.—A Newspaper.

Ser. No. 25,521. (CLASS 12. MASONRY MATERIALS.) INTERLOCKING STONE CO., Oakland, Cal. Filed Feb. 21, 1907.

Particular description of goods.—Building Blocks and Tiles.

Ser. No. 25,534. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) KENTON BAKING POWDER COMPANY, Cincinnati, Ohio. Filed Feb. 23, 1907.

Particular description of goods.—Baking-Powder.

Ser. No. 25,538. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) MANHATTAN ELECTRICAL SUPPLY COMPANY, Jersey City, N. J., and New York, N. Y. Filed Feb. 23, 1907.

The representation of the seal being printed in red.
Particular description of goods.—Dry Batteries.

Ser. No. 25,539. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) MANHATTAN ELECTRICAL SUPPLY COMPANY, Jersey City, N. J., and New York, N. Y. Filed Feb. 23, 1907.

RED
SEAL

Particular description of goods.—Dry Batteries.

Ser. No. 25,545. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) THE BAY VIEW WINE CO., Sandusky, Ohio. Filed Feb. 23, 1907.

PLEASURE CLUB

Particular description of goods.—Whisky.

Ser. No. 25,557. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) NEWARK TORTOISE SHELL NOVELTY CO., Newark, N. J. Filed Feb. 23, 1907.

The rose being printed in red and the leaves in green.
Particular description of goods.—Combs and Hair-Pins.

Ser. No. 25,565. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE SLATER SHOE COMPANY, Montreal, Quebec, Canada. Filed Feb. 23, 1907.

Particular description of goods.—Leather Boots, Shoes, and Slippers.

Ser. No. 25,584. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) HILLS BROS., San Francisco, Cal. Filed Feb. 25, 1907.

Particular description of goods.—Spices and Flavoring Extracts.

Ser. No. 25,586. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) HILLS BROS., San Francisco, Cal. Filed Feb. 25, 1907.

Particular description of goods.—Tea.

Ser. No. 25,606. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) CHICAGO BAILEY COMPANY., Chicago, Ill. Filed Feb. 25, 1907.

The Chief's Own.

Particular description of goods.—Metallic Packing.

Ser. No. 25,636. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE IRWIN AUGER BIT CO., Wilmington, Ohio. Filed Feb. 27, 1907.

Particular description of goods.—Bits and Augers.

Ser. No. 25,643. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) WENDT BROTHERS, New York, N. Y. Filed Feb. 27, 1907.

The band is red.
Particular description of goods.—Silk Linings.

Ser. No. 25,648. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE SOUTHWESTERN MILLING COMPANY, Jersey City, N. J., and Kansas City, Mo. Filed Feb. 27, 1907.

THE SOUTHWESTERN MILLING CO.
ARISTOS
—THE BEST—
KANSAS CITY U.S.A.

The circle being printed in orange, the word "Aristos" being printed in yellow.
Particular description of goods.—Wheat-Flour.

Ser. No. 25,649. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE SOUTHWESTERN MILLING COMPANY, Jersey City, N. J., and Kansas City, Mo. Filed Feb. 27, 1907.

ARISTOS
THE SCHOOL BAG FLOUR

Particular description of goods.—Wheat-Flour.

Ser. No. 25,651. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) H. F. BRAMMER MANUFACTURING COMPANY, Davenport, Iowa. Filed Feb. 28, 1907.

FLYER

Particular description of goods.—Washing-Machines for Laundry Purposes.

Ser. No. 25,656. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) HEINTZ BROS., Buffalo, N. Y. Filed Feb. 28, 1907. Used ten years.

HB

Particular description of goods.—Finger-Rings.

Ser. No. 25,659. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) NELSON H. MARVIN, Boston, Mass. Filed Feb. 28, 1907.

Tear-about

Particular description of goods.—Leather Shoes.

Ser. No. 25,664. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HARRY BURNS VOORHEES, Easton, Pa. Filed Feb. 28, 1907.

YENOM

Particular description of goods.—A Remedy for Constipation, Stomach and Bowel Complaints, and a General Tonic.

Ser. No. 25,671. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE CITIZENS' WHOLESALE SUPPLY CO., Columbus, Ohio. Filed Mar. 1, 1907.

Particular description of goods.—Meat and Salad Sauces and Dressings.

Ser. No. 25,672. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE CITIZENS' WHOLESALE SUPPLY COMPANY, Columbus, Ohio. Filed Mar. 1, 1907.

Particular description of goods.—Cream of Tartar.

Ser. No. 25,686. (CLASS 48. DAIRY PRODUCTS.) THE GREAT ATLANTIC & PACIFIC TEA COMPANY, New York, N. Y. Filed Mar. 2, 1907. Used ten years.

A&P

Particular description of goods.—Condensed Milk, Evaporated Milk, and Butter.

Ser. No. 25,687. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE GREAT ATLANTIC & PACIFIC TEA COMPANY, New York, N. Y. Filed Mar. 2, 1907. Used ten years.

SULTANA

Particular description of goods.—Canned Vegetables and Spices.

Ser. No. 25,689. (CLASS 8. DETERGENTS.) THE GREAT ATLANTIC & PACIFIC TEA COMPANY, New York, N. Y. Filed Mar. 2, 1907. Used ten years.

A&P

Particular description of goods.—Soaps in Powdered and Cake Forms.

Ser. No. 25,699. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) JOHN H. KEATLEY, Minneapolis, Minn. Filed Mar. 2, 1907.

OLD GOLD

Particular description of goods.—Cornmeal.

Ser. No. 25,700. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) JOHN H. KEATLEY, Minneapolis, Minn. Filed Mar. 2, 1907. Used ten years.

AMERICA'S FINEST

Particular description of goods.—Wheat, Graham, and Rye Flour.

Ser. No. 25,701. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JUSTIN H. BURDICK, Milton, Wis. Filed Mar. 2, 1907.

TOLO

Particular description of goods.—A Lotion.

Ser. No. 25,703. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) AMEDEE FORTIER, Waterville, Me. Filed Mar. 2, 1907.

VITEJOU COMPOUND.

Particular description of goods.—Remedies for the Stomach, Kidneys, and Liver.

Ser. No. 25,709. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) NATIONAL STARCH COMPANY, Jersey City, N. J., and Oswego, N. Y. Filed Mar. 2, 1907. Used ten years.

GLEN COVE

Particular description of goods.—Laundry Starch.

Ser. No. 25,711. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) WESTERN RESERVE WOOLEN CO., Cleveland, Ohio. Filed Mar. 2, 1907.

MEADOW BROOKE

Particular description of goods.—Woolen Piece Goods.

Ser. No. 25,714. (CLASS 12. MASONRY MATERIALS.) BARRETT MANUFACTURING COMPANY, New York, N. Y. Filed Mar. 2, 1907.

"NOX-'EM-ALL"

Particular description of goods.—Sheathing-Paper for Use in the Construction of Buildings.

Ser. No. 25,721. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J. Filed Mar. 4, 1907. Used ten years.

SILICA GRAPHITE

Particular description of goods.—Paint.

Ser. No. 25,723. (CLASS 2. MINERAL.) JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J. Filed Mar. 4, 1907. Used ten years.

DIXON'S

Particular description of goods.—Graphite.

Ser. No. 25,728. (CLASS 18. AGRICULTURAL AND DAIRY MACHINERY AND PARTS OF SUCH MACHINERY.) DUANE H. NASH INC., Millington, N. J. Filed Mar. 4, 1907. Used ten years.

ACME

Particular description of goods.—Pulverizing-Harrows, Clod-Crushers, and Levelers.

Ser. No. 25,729. (CLASS 18. AGRICULTURAL AND DAIRY MACHINERY AND PARTS OF SUCH MACHINERY.) DUANE H. NASH INC., Millington, N. J. Filed Mar. 4, 1907. Used ten years.

ACME

Particular description of goods.—Pulverizing-Harrows, Clod-Crushers, and Levelers.

Ser. No. 25,732. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) THE AMERICAN GOETZE-GASKET & PACKING CO., New York, N. Y. Filed Mar. 4, 1907.

Goetzerit

Particular description of goods.—Machinery Packing.

Ser. No. 25,734. (CLASS 47. CONFECTIONERY.) BON-BON COMPANY, New York, N. Y. Filed Mar. 4, 1907.

Particular description of goods.—Chewing-Gum.

Ser. No. 25,744. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MOFFITT-WEST DRUG CO., St. Louis, Mo. Filed Mar. 4, 1907.

Melachol

Particular description of goods.—A Remedy for Diseases of the Liver.

Ser. No. 25,745. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed Mar. 4, 1907. Used ten years.

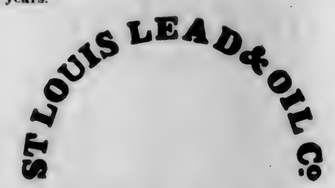

Particular description of goods.—Oxids of Lead.

Ser. No. 25,758. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) WOOLSON SPICE COMPANY, Toledo, Ohio. Filed Mar. 4, 1907. Used ten years.

Vienna

Particular description of goods.—Coffee.

Ser. No. 25,760. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) WOOLSON SPICE COMPANY, Toledo, Ohio. Filed Mar. 4, 1907.

HAWKEYE

Particular description of goods.—Coffee.

Ser. No. 25,761. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) WOOLSON SPICE COMPANY, Toledo, Ohio. Filed Mar. 4, 1907.

CHALLENGE

Particular description of goods.—Coffee.

Ser. No. 25,788. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed Mar. 6, 1907.

Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 25,789. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed Mar. 6, 1907.

Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 25,790. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed Mar. 6, 1907.

Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 25,793. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ALVIN P. SAWYER, Chicago, Ill. Filed Mar. 6, 1907.

KO-RO-NO

Particular description of goods.—A Liver Remedy.

Ser. No. 25,801. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE JOHN C. LINDSAY CO., New York, N. Y. Filed Mar. 6, 1907.

TRONAZONE

Particular description of goods.—Liquid Preparation for Use in Treatment of Diseases of the Nose and Throat.

Ser. No. 25,805. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) FIGGE-DOYLE CO., Milwaukee, Wis. Filed Mar. 6, 1907.

Luster

Particular description of goods.—Whisky, Gin, and Brandy.

Ser. No. 25,830. (CLASS 2. MINERAL.) JAMES C. MCGREW, Lexington, Mo. Filed Mar. 7, 1907.

Particular description of goods.—Coal.

Ser. No. 25,847. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) HOLZAPFEL'S COMPOSITIONS COMPANY, LIMITED, Newcastle-on-Tyne, England. Filed Mar. 8, 1907.

SILVERETTE

Particular description of goods.—Aluminium Paint.

TRADE-MARKS

REGISTERED APRIL 2, 1907.

61,627. ROOFING AND SHEATHING FELT. Barrett Manufacturing Company, New York, N. Y.
Filed November 21, 1906. Serial No. 23,526. PUBLISHED FEBRUARY 5 1907.

61,628. DETERGENT CLEANING PREPARATION. Chemische Fabrik Griesheim-Elektron, Frankfort-on-the-Main, Germany.
Filed December 29, 1906. Serial No. 24,334. PUBLISHED FEBRUARY 5, 1907.

61,629. WOOD AND FURNITURE POLISHES. The Citizens' Wholesale Supply Company, Columbus, Ohio.
Filed January 7, 1907. Serial No. 24,480. PUBLISHED FEBRUARY 5, 1907.

61,630. ANTISEPTIC TOILET SOAP. Hall & Ruckel, New York, N. Y.
Filed November 16, 1906. Serial No. 23,389. PUBLISHED FEBRUARY 5, 1907.

61,631. ANTICORROSIVE AND ANTIFOULING PAINT, MIXED PAINT, AND ENAMELS. Holzapfel's Compositions Company, Limited, Newcastle-upon-Tyne, England.
Filed January 26, 1906. Serial No. 16,534. PUBLISHED FEBRUARY 5, 1907.

61,632. GREASE-ERADICATOR. Albert J. Kayser, Joplin, Mo.
Filed December 4, 1906. Serial No. 23,757. PUBLISHED FEBRUARY 5, 1907.

61,633. SOAP. Lever Brothers Company, Cambridge, Mass.
Filed February 5, 1906. Serial No. 16,767. PUBLISHED FEBRUARY 5, 1907.

61,634. THINNERS OR SOLVENTS. Lilly Varnish Company, Indianapolis, Ind.
Filed February 19, 1906. Serial No. 17,173. PUBLISHED AUGUST 21, 1906.

61,635. SOAP. Mexican Amole Soap Co., Peoria, Ill.
Filed July 24, 1905. Serial No. 10,768. PUBLISHED FEBRUARY 5, 1907.

61,636. WHITE LEAD. W. W. Lawrence & Company, Pittsburg, Pa.
Filed December 5, 1906. Serial No. 23,786. PUBLISHED FEBRUARY 5, 1907.

61,637. SOAP. Elmo D. Ward, Paragould, Ark.
Filed January 3, 1907. Serial No. 24,426. PUBLISHED FEBRUARY 5, 1907.

61,638. VARNISHES AND STAINS. X-Ray Varnish Company, Chicago, Ill.
Filed June 22, 1906. Serial No. 20,484. PUBLISHED FEBRUARY 5, 1907.

61,639. EAVES-TROUGH HANGERS. J. R. Baker & Sons Co., Kendallville, Ind.
Filed December 14, 1906. Serial No. 24,018. PUBLISHED FEBRUARY 5, 1907.

61,640. STOVE-CLAY. The Bridgeport Crucible Co., Bridgeport, Conn.
Filed January 8, 1907. Serial No. 24,517. PUBLISHED FEBRUARY 5, 1907.

61,641. SOLUTION FOR SOLDERING AND CLEANSING METALS. Brumer Bros., Clinton, Iowa.
Filed May 20, 1905. Serial No. 6,134. PUBLISHED NOVEMBER 13, 1906.

61,642. METAL, STOVE, SILVER, AND GLASS POLISHES. The Citizens' Wholesale Supply Company, Columbus, Ohio.
Filed January 7, 1907. Serial No. 24,479. PUBLISHED FEBRUARY 5, 1907.

61,643. FUSES. Coast Manufacturing & Supply Co., Berkeley, Cal.
Filed January 5, 1907. Serial No. 24,459. PUBLISHED FEBRUARY 5 1907.

61,644. FUSES. Coast Manufacturing & Supply Co., Berkeley, Cal.
Filed January 7, 1907. Serial No. 24,482. PUBLISHED FEBRUARY 5, 1907.

61,645. CANNED VEGETABLES, FRUITS, AND BERRIES. Downing-Taylor Co., Springfield, Mass.
Filed January 3, 1907. Serial No. 24,403. PUBLISHED FEBRUARY 5, 1907.

61,646. METAL-POLISH. George J. C. Fiedler, Chicago, Ill.
Filed October 20, 1906. Serial No. 22,815. PUBLISHED FEBRUARY 5, 1907.

61,647. DENTAL ALLOYS AND DENTAL INSTRUMENTS MADE THEREFROM. Charles A. Fones, New York, N. Y.
Filed December 6, 1906. Serial No. 23,822. PUBLISHED FEBRUARY 5, 1907.

61,648. BREAD. Frank Fuller, New York, N. Y.
Filed December 10, 1906. Serial No. 23,916. PUBLISHED FEBRUARY 5, 1907.

61,649. DECORATIVE ELECTRIC-LIGHTING OUTFITS. Jaeger Miniature Lamp Manufacturing Company, New York, N. Y.
Filed December 14, 1906. Serial No. 24,023. PUBLISHED FEBRUARY 5, 1907.

61,650. ACCUMULATORS. Albert Müller, New York, N. Y.
Filed January 8, 1907. Serial No. 24,522. PUBLISHED FEBRUARY 5, 1907.

61,651. COFFEE. T Lloyd Owens, Savannah, Ga.
Filed September 1, 1906. Serial No. 21,851. PUBLISHED FEBRUARY 5, 1907.

61,652. COTTON CARPET-WARP AND COTTON TWINE. The Putnam-Hooker Company, Cincinnati, Ohio.
Filed November 10, 1906. Serial No. 23,258. PUBLISHED FEBRUARY 5, 1907.

61,653. PRESERVED FISH. Rosenstein Brothers Inc., New York, N. Y.
Filed October 26, 1906. Serial No. 22,931. PUBLISHED FEBRUARY 5, 1907.

61,654. SOLUTION FOR REPAIRING PNEUMATIC TIRES. Jean Baptiste Sans, Brussels, Belgium.
Filed July 28, 1905. Serial No. 11,558. PUBLISHED FEBRUARY 5, 1907.

61,655. RAT AND ROACH EXTERMINATOR. Stearns Electric Paste Co., Buffalo, N. Y.
Filed January 10, 1907. Serial No. 24,566. PUBLISHED FEBRUARY 5, 1907.

61,656. PREPARATION TO ABSORB DUST WHEN SWEEPING. St. Louis Dust Settling Co., St. Louis, Mo.
Filed October 23, 1906. Serial No. 22,867. PUBLISHED JANUARY 29, 1906.

61,657. SPICES. Black Hawk Coffee & Spice Company, Waterloo, Iowa.
Filed July 2, 1906. Serial No. 20,690. PUBLISHED FEBRUARY 5, 1907.

61,658. BREAD. Frank Fuller, New York, N. Y.
Filed September 12, 1906. Serial No. 22,041. PUBLISHED FEBRUARY 5, 1907.

61,659. OLIVE-OIL. MERIDIONAL CHEESE AND OIL CO., New York, N. Y.
Filed October 9, 1905. Serial No. 13,457. PUBLISHED FEBRUARY 5, 1907.

61,660. CANDY. WALLACE & CO., New York, N. Y.
Filed December 1, 1905. Serial No. 15,109. PUBLISHED FEBRUARY 5, 1907.

61,661. CONDENSED MILK. WISCONSIN CONDENSED MILK CO., Burlington, Wis., and New York, N. Y.
Filed August 26, 1905. Serial No 12,035. PUBLISHED FEBRUARY 5, 1907.

61,662. COCOA, CHOCOLATE, AND CHOCOLATE CANDY. AMBROSIA CHOCOLATE COMPANY, Milwaukee, Wis.
Filed December 26, 1905. Serial No. 15,660. PUBLISHED FEBRUARY 5, 1907.

61,663. PREPARED ANIMAL FATS FOR BAKING AND COOKING. BRAUN & FITTS, INC., Chicago, Ill.
Filed February 9, 1906. Serial No. 16,862. PUBLISHED FEBRUARY 5, 1907.

61,664. CERTAIN CLOTHING. CELLULAR CLOTHING COMPANY, LIMITED, London, England.
Filed June 24, 1905. Serial No. 8,986. PUBLISHED FEBRUARY 5, 1907.

61,665. BOOKS AND PAMPHLETS OF TRAVEL. THE COLLYER TOURS COMPANY, Boston, Mass.
Filed September 28, 1906 Serial No 22,361. PUBLISHED FEBRUARY 5, 1907.

61,666. OINTMENT FOR PILES, CUTS, BURNS, AND ALL ERUPTIONS OF THE SKIN. THE JAMES W. FOSTER CO., Bath, N. H.
Filed October 22, 1906. Serial No. 22,832. PUBLISHED FEBRUARY 5, 1907.

61,667. CERTAIN MEDICINAL COMPOUNDS. DR. D. JAYNE & SON, Philadelphia, Pa.
Filed July 17, 1905. Serial No. 10,447. PUBLISHED JANUARY 29, 1907.

61,668. SALVE FOR THE CURE OF ECZEMA AND KINDRED DISEASES. ESTHER LAWSON, Moline, Ill.
Filed December 26, 1906. Serial No. 24,278. PUBLISHED FEBRUARY 5, 1907.

61,669. CEMENT COMPOUNDS FOR MAKING PIPE-JOINTS. THE LEADITE COMPANY OF AMERICA, Philadelphia, Pa.
Filed December 17, 1906. Serial No. 24,091. PUBLISHED FEBRUARY 5, 1907.

61,670. EVAPORATED MILK, CONDENSED MILK, EVAPORATED CREAM, AND CONDENSED CREAM. MOHAWK CONDENSED MILK CO., Rochester, N. Y.
Filed December 20, 1906. Serial No. 24,165. PUBLISHED FEBRUARY 5, 1907.

61,671. MEDICINAL COMPOUND. MOUNTAIN IRON MINERAL CO., Spartanburg, S. C.
Filed August 21, 1906. Serial No. 21,692. PUBLISHED JANUARY 29, 1907.

61,672. PREPARATIONS FOR PURIFYING AND SOFTENING WATER. THE PORCELA CO., Pittsburg, Pa.
Filed August 17, 1906. Serial No. 21,642. PUBLISHED FEBRUARY 5, 1907.

61,673. FINE AND CROSS-BRED GRADES OF WOOL. DANL. S. PRATT, Boston, Mass.
Filed January 11, 1907. Serial No. 24,576. PUBLISHED FEBRUARY 5, 1907.

61,674. TYPE-WRITING MACHINES. ROYAL TYPEWRITER CO., Hoboken, N. J.
Filed April 28, 1906. Serial No. 19,155. PUBLISHED FEBRUARY 5, 1907.

61,675. BLUE-PRINT PAPER. TECHNICAL SUPPLY COMPANY, Scranton, Pa.
Filed January 10, 1907. Serial No. 24,564. PUBLISHED FEBRUARY 5, 1907.

61,676. DISINFECTANTS, AIR-PURIFIERS, AND DEODORIZERS. W. AND F. WALKER LIMITED, Liverpool, England.
Filed March 13, 1906. Serial No. 17,790. PUBLISHED FEBRUARY 5, 1907.

61,677. FILMS, PLATES, AND PHOTOGRAPHIC PAPERS. ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany.
Filed April 11, 1906. Serial No. 18,689. PUBLISHED FEBRUARY 5, 1907.

61,678. TOOTH-PASTE AND TOOTH-POWDER. P. BEIERSDORF & CO., Hamburg, Germany.
Filed July 3, 1905. Serial No. 10,579. PUBLISHED FEBRUARY 5, 1907.

61,679. VIOLIN, MANDOLIN, GUITAR, AND BANJO STRINGS. BUEGELEISEN & JACOBSON, New York, N. Y.
Filed December 26, 1906. Serial No. 24,272. PUBLISHED FEBRUARY 5, 1907.

61,680. JAVELLE WATER. AMÉDÉE CASTAING, New York N. Y.
Filed October 1, 1906. Serial No. 22,397. PUBLISHED FEBRUARY 5, 1907.

61,681. REMEDY FOR LIVER COMPLAINTS. DR. D. JAYNE & SON Philadelphia, Pa.
Filed April 10, 1905. Serial No. 1,035. PUBLISHED JANUARY 29, 1907.

61,682. BITTERS. EMIL JULIUS ROBERT EXNER, Berlin, Germany.
Filed September 25, 1906. Serial No. 22,321. PUBLISHED JANUARY 29, 1907.

61,683. WILTON CARPETS AND RUGS. IVINS, DIETZ & METZGER CO., Philadelphia, Pa.
Filed April 29, 1905. Serial No. 3,668. PUBLISHED FEBRUARY 5, 1907.

61,684. EAU-DE-COLOGNE. JOHANN MARIA FARINA GEGENÜBER DEM JÜLICHS-PLATZ, Cologne, Germany.
Filed November 2, 1905. Serial No. 14,217. PUBLISHED SEPTEMBER 11, 1906.

61,685. BEER. THE INDIANAPOLIS BREWING COMPANY, Indianapolis, Ind.
Filed August 16, 1906. Serial No. 21,620. PUBLISHED FEBRUARY 5, 1907.

61,686. REMEDY FOR DISEASES OF THE STOMACH AND BOWELS. PEPSIN SYRUP CO., Monticello, Ill.
Filed December 24, 1906. Serial No. 24,258. PUBLISHED FEBRUARY 5, 1907.

61,687. COAL-CUTTING MACHINES. THE PNEUMELECTRIC MACHINE COMPANY, Syracuse, N. Y.
Filed September 15, 1906. Serial No. 22,120. PUBLISHED FEBRUARY 5, 1907.

61,688. WHISKY. FREDERICK C. RENZIEHAUSEN, Pittsburg, Pa.
Filed July 23, 1906. Serial No. 21,093. PUBLISHED FEBRUARY 5, 1907.

61,689. CIGARS. EDWARD F. SCHWEIKERT, Springfield, Ohio.
Filed June 13, 1905. Serial No. 8,045. PUBLISHED FEBRUARY 5, 1907.

61,690. INTERNAL REMEDY FOR PURIFYING THE BLOOD AND PREVENTING CHOLERA. HILAIRE VINCENT, Manchester, N. H.
Filed October 2, 1905. Serial No. 13,214. PUBLISHED JANUARY 29, 1907.

61,691. DYES. WILLIAM EDGE & SONS LIMITED, Bolton, England.
Filed September 17, 1906. Serial No. 22,163. PUBLISHED JANUARY 29, 1907.

61,692. GRASS-SEEDS, GRAIN-SEEDS, TIMOTHY-SEED, AND CLOVER-SEED. THE ALBERT DICKINSON COMPANY, Chicago, Ill.
Filed June 20, 1905. Serial No. 8,590. PUBLISHED FEBRUARY 5, 1907.

61,693. CLEANSING AND DISINFECTING PREPARATION. AMERICAN ANTIFORMIN CO., New York, N. Y.
Filed October 3, 1906. Serial No. 22,452. PUBLISHED JANUARY 29, 1907.

61,694. CORN AND BUNION PLASTERS. BAUER & BLACK, Chicago, Ill.
Filed January 5, 1907. Serial No. 24,456. PUBLISHED FEBRUARY 5, 1907.

61,695. CANNED LOBSTER. H. C. BAXTER & BRO., Brunswick, Me.
Filed June 16, 1905. Serial No. 8,338. PUBLISHED FEBRUARY 5, 1907.

61,696. IMITATION LEATHER. THE BRITISH PLUVIUSIN COMPANY, LIMITED, Manchester, England.
Filed April 17, 1906. Serial No. 18,877. PUBLISHED FEBRUARY 5, 1907.

61,697. HAIR-TONIC, TALCUM POWDER, TOOTH-POWDER, AND SKIN FOOD. SUSIE PORTER BURBANK, Boston, Mass.
Filed October 12, 1905. Serial No. 13,511. PUBLISHED JANUARY 29, 1907.

61,698. MEDICINES FOR THE TREATMENT AND REGULATION OF THE STOMACH, BOWELS, LIVER, AND KIDNEYS. WILLIAM C. BURK, Philadelphia, Pa.
Filed December 22, 1906. Serial No. 24,222. PUBLISHED JANUARY 29, 1907.

61,699. WHISKY. CASEY BROS., Scranton, Pa.
Filed June 24, 1905. Serial No. 8,919. PUBLISHED FEBRUARY 5, 1907.

61,700. CERTAIN COTTON PIECE GOODS. CHARLES C. COPELAND & CO., New York, N. Y.
Filed June 13, 1906. Serial No. 20,253. PUBLISHED FEBRUARY 5, 1907.

61,701. COTTON, WOOLEN, WORSTED, SILK, AND HAIR PIECE GOODS. THE CRAVENETTE COMPANY, LTD., Bradford, England.
Filed September 9, 1905. Serial No. 12,437. PUBLISHED FEBRUARY 5, 1907.

61,702. MAIDS', WAITRESSES', AND NURSES' CAPS. OTTO F. DREYER, New York, N. Y.
Filed May 22, 1906. Serial No. 19,783. PUBLISHED FEBRUARY 5, 1907.

61,703. FILES AND RASPS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.
Filed December 31, 1906. Serial No. 24,351. PUBLISHED FEBRUARY 5, 1907.

61,704. INSECTICIDE. THOMAS HETHERINGTON, Philadelphia, Pa.
Filed December 27, 1906. Serial No. 24,295. PUBLISHED FEBRUARY 5, 1907.

61,705. ANTISEPTICS. ARTHUR HOROWITZ, Berlin, Germany.
Filed September 29, 1906. Serial No. 22,386. PUBLISHED FEBRUARY 5, 1907.

61,706. EYE-SALVES. BAPTIST KAHABKA, Buffalo. N. Y.
Filed December 22, 1906. Serial No. 24,226. PUBLISHED JANUARY 29, 1907.

61,707. CERTAIN MEDICAL COMPOUND. THE KALINE COMPANY, Nashville, Tenn.
Filed December 19, 1906. Serial No. 24,144. PUBLISHED FEBRUARY 5, 1907.

61,708. REMEDIES FOR THE CURE OF BLOOD, LIVER, AND KIDNEY DISEASES. GEORGE HERRMANN LAWSON, Hartford, Conn.
Filed January 22, 1906. Serial No. 16,381. PUBLISHED JANUARY 29, 1907.

61,709. WHISKY. ALBERT LIPMAN, Cincinnati, Ohio.
Filed June 8, 1905. Serial No. 7,666. PUBLISHED FEBRUARY 5, 1907.

61,710. CERTAIN EXTRACTS. MARDEN, ORTH & HASTINGS, Boston, Mass.
Filed December 21, 1906. Serial No. 24,204. PUBLISHED FEBRUARY 5, 1907.

61,711. PIPE-ORGANS. LEONARD DANIEL MORRIS, Chicago, Ill.
Filed August 13, 1906. Serial No. 21,522. PUBLISHED FEBRUARY 5, 1907.

61,712. INJECTORS FOR STATIONARY AND LOCOMOTIVE STEAM-BOILERS. THE OHIO INJECTOR COMPANY, Wadsworth, Ohio.
Filed December 17, 1906. Serial No. 24,095. PUBLISHED FEBRUARY 5, 1907.

61,713. LINIMENTS. OINO LINIMENT CO., Boston, Mass.
Filed December 21, 1906. Serial No. 24,197. PUBLISHED JANUARY 29, 1907.

61,714. SWEATERS, CARDIGAN JACKETS, KNITTED BATHING-SUITS, STOCKINGS. PLATT & CLARK CO., New York, N. Y.
Filed June 14, 1906. Serial No. 20,267. PUBLISHED FEBRUARY 5, 1907.

61,715. FIRE-EXTINGUISHING COMPOUNDS. PLUVIUS-FEUERLÖSCHER-GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG, Hamburg, Germany.
Filed December 22, 1906. Serial No. 24,233. PUBLISHED FEBRUARY 5, 1907.

61,716. TOY FIGURES. CHARLES SACKMAN, Jamaica, N. Y.
Filed December 22, 1906. Serial No. 24,234. PUBLISHED FEBRUARY 5, 1907.

61,717. HAMMOCKS. D. W. SHOYER & CO., New York, N. Y.
Filed December 26, 1906. Serial No. 24,283. PUBLISHED FEBRUARY 5, 1907.

61,718. ILLUSTRATED WEEKLY JOURNAL. THE STUYVESANT COMPANY, New York, N. Y.
Filed July 23, 1906. Serial No. 21,082. PUBLISHED FEBRUARY 5, 1907.

61,719. WHISKY. SUNSET DISTILLING CO., Chicago, Ill.
Filed May 24, 1905. Serial No. 6,453. PUBLISHED FEBRUARY 5, 1907.

61,720. SEWING-MACHINES, COVERS, TABLES, STANDS, AND ATTACHMENTS. WHITE SEWING MACHINE CO., Cleveland, Ohio.
Filed December 29, 1906. Serial No. 24,344. PUBLISHED FEBRUARY 5, 1907.

61,721. TINTING-COLOR FOR BLEACHERS' USE. WILLIAM EDGE & SONS, LIMITED, Bolton, England.
Filed June 13, 1905. Serial No. 8,023 PUBLISHED JANUARY 29, 1907.

61,722. REMEDIES FOR CERTAIN DISEASES. AMERICAN DRUGGISTS SYNDICATE, New York, N. Y.
Filed November 24, 1906. Serial No. 23,568. PUBLISHED JANUARY 29, 1907.

61,723. CANNED LOBSTER. H. C. BAXTER & BRO., Brunswick, Me.
Filed June 16, 1905. Serial No. 8,339. PUBLISHED FEBRUARY 5, 1907.

61,724. BAKING-POWDER. BLACK HAWK COFFEE & SPICE COMPANY, Waterloo, Iowa.
Filed July 2, 1906. Serial No. 20,688. PUBLISHED FEBRUARY 5, 1907.

61,725. FLAVORING-SYRUPS. ALLEN M. BRADLEY, Marion, Ind.
Filed May 28, 1906. Serial No. 19,925. PUBLISHED FEBRUARY 5, 1907.

61,726. APPARATUS FOR MAKING STEREOTYPE PRINTING-PLATES. THE CAMPBELL PRINTING PRESS & MANUFACTURING CO., New York, N. Y.
Filed December 20, 1906. Serial No. 24,303. PUBLISHED FEBRUARY 5, 1907.

61,727. CARBON-PAPER AND TYPE-WRITER RIBBONS. CORONA SUPPLY CO., Rochester, N. Y.
Filed December 3, 1906. Serial No. 23,740. PUBLISHED FEBRUARY 5, 1907.

61,728. REMEDIES FOR CERTAIN DISEASES. THE DR. MILES MEDICAL COMPANY, Elkhart, Ind.
Filed December 28, 1906. Serial No. 24,320. PUBLISHED JANUARY 29, 1907.

61,729. COMPOUND FOR USE UPON THE COMMUTATORS, COLLECTOR-RINGS, &c., OF ELECTRICAL MACHINERY. MORTIMER DU PEROW, Washington, D. C.
Filed January 2, 1907. Serial No. 24,381. PUBLISHED FEBRUARY 5, 1907.

61,730. SUBSTITUTES FOR IODIDS. FARBENFABRIKEN VORM. FRIEDR. BAYER & CO., Elberfeld, Germany.
Filed December 8, 1906. Serial No. 23,889. PUBLISHED FEBRUARY 5, 1907.

61,731. WHISKY. PHILIP FREILER, Elgin, Ill.
Filed April 20, 1905. Serial No. 2,334. PUBLISHED APRIL 3, 1906.

61,732. REMEDIES FOR CERTAIN DISEASES. GOODNESS BROS., Webster and Worcester, Mass.
Filed December 12, 1906. Serial No. 23,962. PUBLISHED JANUARY 29, 1907.

61,733. WHISKY. JAEGER BROS. CO., Dubuque, Iowa.
Filed May 29, 1905. Serial No. 7,009. PUBLISHED MAY 25, 1906.

61,734. MEDICINAL PASTES AND OINTMENTS. JOHN WYETH AND BROTHER, INCORPORATED, Philadelphia, Pa.
Filed August 15, 1906. Serial No. 21,547. PUBLISHED JANUARY 29, 1907.

61,735. RESTORATIVE AND NUTRITIVE TONIC. JOSEPH M. LIEBERMANN, New York, N. Y.
Filed August 22, 1906. Serial No. 21,712. PUBLISHED FEBRUARY 5, 1907.

61,736. ALLOY OF METALS USED FOR BEARINGS AND OTHER PURPOSES. THE MANGANESE BRONZE & BRASS CO. LD., London, England.
Filed February 12, 1906. Serial No. 16,948. PUBLISHED FEBRUARY 5, 1907.

61,737. APPARATUS FOR PURIFYING WATER. PITTSBURGH FILTER MFG. CO., Pittsburg, Pa.
Filed October 1, 1906. Serial No. 22,410. PUBLISHED FEBRUARY 5, 1907.

61,738. INCANDESCENT GAS-BURNERS. THE PLUME & ATWOOD MFG. CO., Waterbury, Conn., and New York, N. Y.
Filed March 12, 1906. Serial No. 17,756. PUBLISHED FEBRUARY 5, 1907.

61,739. REMEDY FOR CERTAIN DISEASES. RADWAY & COMPANY, New York, N. Y.
Filed November 13, 1906. Serial No. 23,206. PUBLISHED FEBRUARY 5, 1907.

61,740. WASHING-MACHINES. RICHMOND CEDAR WORKS, Richmond, Va.
Filed December 19, 1906. Serial No. 24,148. PUBLISHED FEBRUARY 5, 1907.

61,741. PRINTING AND LITHOGRAPHING INKS. ELISHA F. RYCHEN, Buffalo, N. Y.
Filed January 7, 1907. Serial No. 24,503. PUBLISHED FEBRUARY 5, 1907.

61,742. RAT, VERMIN, AND INSECT DESTROYER OR EXTERMINATOR. HENRY C. SPETZLER, Baltimore, Md.
Filed March 22, 1906. Serial No. 18,153. PUBLISHED JUNE 26, 1906.

61,743. MAGAZINES. STERLING ELECTRIC CO., La Fayette, Ind.
Filed January 11, 1907. Serial No. 24,578. PUBLISHED FEBRUARY 5, 1907.

61,744. ANTISEPTIC POWDER COMPOUND. WATCHMAN & REYNOLDS, Baltimore, Md.
Filed December 20, 1906. Serial No. 24,176. PUBLISHED FEBRUARY 5, 1907.

61,745. EVAPORATED CREAM. WISCONSIN CONDENSED MILK CO., Burlington, Wis., and New York, N. Y.
Filed May 9, 1906. Serial No. 19,401. PUBLISHED FEBRUARY 5, 1907.

61,746. TOY-HOLDING BELTS, HOOPS, OR GIRDLES. MARY DARLINGTON COATES, 2nd, Chester, Pa.
Filed October 3, 1906. Serial No. 22,469. PUBLISHED FEBRUARY 5, 1907.

61,747. BOOTS, SHOES, SLIPPERS, AND SANDALS. F. P. KIRKENDALL & CO., Omaha, Nebr.
Filed October 4, 1906. Serial No. 22,486. PUBLISHED JANUARY 8, 1907.

61,748. LEATHER BOOTS AND SHOES. CHAS. K. FOX, Haverhill, Mass.
Filed December 26, 1906. Serial No. 24,266. PUBLISHED FEBRUARY 5, 1907.

61,749. LEATHER BOOTS AND SHOES. CHAS. K. FOX, Haverhill, Mass.
Filed December 26, 1906. Serial No. 24,267. PUBLISHED FEBRUARY 5, 1907.

61,750. CHAINS AND BRACELETS. FERED & PEIKES, New York, N. Y.
Filed December 24, 1906. Serial No. 24,254. PUBLISHED FEBRUARY 5, 1907.

61,751. HAIR-NETS. THEO. H. GABY & CO., New York, N. Y.
Filed December 13, 1906. Serial No. 24,113. PUBLISHED FEBRUARY 5, 1907.

61,752. WHISKY. GEO. BENZ & SONS, St. Paul, Minn.
Filed November 16, 1906. Serial No. 23,407. PUBLISHED FEBRUARY 5, 1907.

61,753. KNITTED HOSIERY, KNITTED UNDERSHIRTS, AND DRAWERS. GUY, CURRAN & CO., Washington, D. C.
Filed October 20, 1906. Serial No. 22,960. PUBLISHED FEBRUARY 5, 1907.

61,754. SILK RIBBONS, SILK PIECE GOODS, AND SILK LININGS. SIDNEY C. GUYON, New York, N. Y.
Filed December 15, 1906. Serial No. 24,072. PUBLISHED FEBRUARY 5, 1907.

61,755. LEGGINGS. H. JACOB & SONS, New York, N. Y.
Filed December 15, 1906. Serial No. 24,060. PUBLISHED FEBRUARY 5, 1907.

61,756. MEDICINAL PREPARATION FOR COUGHS, COLDS, AND CROUP. THEODORE W. LARWILL, Henderson, Tenn.
Filed November 30, 1906. Serial No. 23,687. PUBLISHED FEBRUARY 5, 1907.

61,757. DAMASK TABLE-CLOTHS, NAPKINS, AND TOWELS. NEUSS, HESSLEIN & CO., New York, N. Y.
Filed December 24, 1906. Serial No. 24,262. PUBLISHED FEBRUARY 5, 1907.

61,758. OINTMENTS. PITMAN-MYERS COMPANY, Indianapolis, Ind.
Filed October 23, 1906. Serial No. 22,860. PUBLISHED JANUARY 29, 1907.

61,759. PILLS. RADWAY & COMPANY, New York N. Y.
Filed November 13, 1906. Serial No. 23,307. PUBLISHED FEBRUARY 5 1907.

61,760. REMEDY FOR WHOOPING-COUGH. USED EXTERNALLY. THE SPINOL COMPANY, Pottsville, Pa.
Filed December 17, 1906. Serial No. 24,096. PUBLISHED FEBRUARY 5, 1907.

61,761. RYE WHISKY. THE THOS. MOORE DISTILLING CO., McKeesport, Pa.
Filed December 20, 1906. Serial No. 24,179. PUBLISHED FEBRUARY 5, 1907.

61,762. CERTAIN MEDICINES. THE WALTER MEDICINE COMPANY, Peru, Ind.
Filed October 8, 1906. Serial No. 22,599. PUBLISHED JANUARY 29, 1907.

61,763. WHEAT-FLOUR. WASHBURN-CROSBY COMPANY, Minneapolis, Minn.
Filed November 13, 1906. Serial No. 23,320. PUBLISHED DECEMBER 11, 1906.

61,764. WATERPROOFED COTTON PIECE GOODS. WILLIAM L. BARRELL CO., New York, N. Y.
Filed November 3, 1906. Serial No. 23,077. PUBLISHED FEBRUARY 5, 1907.

61,765. WATERPROOFED COTTON PIECE GOODS. WILLIAM L. BARRELL CO., New York. N. Y.
Filed November 5, 1906. Serial No. 23,112. PUBLISHED FEBRUARY 5, 1907.

61,766. CERTAIN MEDICINES. PHILIP BOURNE, New York, N. Y.
Filed December 28, 1906. Serial No. 24,316. PUBLISHED FEBRUARY 5, 1907.

61,767. CERTAIN MEDICINE. MAX J. BREITENBACH, New York, N. Y.
Filed October 22, 1906. Serial No. 22,852. PUBLISHED JANUARY 29, 1907.

61,768. MEDICINAL PREPARATION FOR INTERNAL AND EXTERNAL USE. MATTHEW J. DOW, Muskegon, Mich.
Filed October 27, 1905. Serial No. 13,979. PUBLISHED MAY 22, 1906.

61,769. MEN'S COTTON AND WOOLEN OUTERSHIRTS. ELMIRA SHIRT MANUFACTURING COMPANY, Elmira, N. Y.
Filed January 7, 1907. Serial No. 24,492. PUBLISHED FEBRUARY 5, 1907.

61,770. BITTERS. JOHANNES von FERREN, Kiel, Germany.
Filed October 2, 1905. Serial No. 13,207. PUBLISHED JANUARY 29, 1907.

61,771. WITHDRAWN.

61,772. HOSE-SUPPORTERS. GEORGE FROST COMPANY, Boston, Mass.
Filed January 3, 1907. Serial No. 24,409. PUBLISHED FEBRUARY 5, 1907.

61,773. REMEDY FOR COLDS AND THROAT AND LUNG TROUBLE. EDWARD HEFFERNAN, Lynn, Mass.
Filed August 9, 1906. Serial No. 21,424. PUBLISHED JANUARY 29, 1907.

61,774. SOAP. RICHARD M. HOLLINGSHEAD, Camden, N. J.
Filed September 20, 1906. Serial No. 22,201. PUBLISHED JANUARY 29, 1907.

61,775. HAIR-TONICS AND DANDRUFF CURES. CLARENCE HUGHEL, Indianapolis, Ind.
Filed December 28, 1906. Serial No. 24,318. PUBLISHED FEBRUARY 5, 1907.

61,776. GLUE. S. ISAACS & CO., New York, N. Y.
Filed January 3, 1907. Serial No. 24,426. PUBLISHED FEBRUARY 5, 1907.

61,777. DISINFECTANTS. JOHNSON & JOHNSON, New Brunswick, N. J.
Filed October 17, 1905. Serial No. 13,665. PUBLISHED MAY 29, 1906.

61,778. WHISKY. THE KOHN DISTILLING CO., Montgomery, Ala.
Filed January 8, 1907. Serial No. 24,530. PUBLISHED FEBRUARY 5, 1907.

61,779. SILK FABRICS. LANEA SILK COMPANY, Hazleton, Pa.
Filed January 10, 1907. Serial No. 24,550. PUBLISHED FEBRUARY 5, 1907.

61,780. TAFFY OR TOFFEE. THE M. HYMAN CONFECTIONERY & CATERING CO., Denver, Colo.
Filed January 7, 1907. Serial No. 24,495. PUBLISHED FEBRUARY 5, 1907.

61,781. SOLDERING-FLUX. M. W. DUNTON AND COMPANY, Providence, R. I.
Filed January 10, 1907. Serial No. 24,556. PUBLISHED FEBRUARY 5, 1907.

61,782. LAMP GLASSES AND GLOBES. MACBETH-EVANS GLASS COMPANY, Pittsburg, Pa.
Filed June 23, 1906. Serial No. 20,513. PUBLISHED FEBRUARY 5, 1907.

61,783. CERTAIN JEWELRY. MCRAE AND KEELER, Attleboro, Mass.
Filed December 14, 1906. Serial No. 24,012. PUBLISHED FEBRUARY 5, 1907.

61,784. CURE FOR RHEUMATISM, PLEURISY, SPRAINS AND BRUISES. THE MIST RHEUMATIC COMPANY, (not incorporated), Chicago, Ill.
Filed January 10, 1907. Serial No. 24,560. PUBLISHED FEBRUARY 5, 1907.

61,785. WHISKY. ISA MONHEIMER, Chicago, Ill.
Filed April 21, 1905. Serial No. 2,541. PUBLISHED JANUARY 8, 1907.

61,786. VELVETEENS. N. ERLANGER, BLUMGART & CO., New York, N. Y.
Filed January 9, 1907. Serial No. 24,531. PUBLISHED FEBRUARY 5, 1907.

61,787. CANNED SARDINES. NO. LUBEC MFG. & CANNING CO., North Lubec, Me.
Filed January 8, 1906. Serial No. 16,026. PUBLISHED FEBRUARY 5, 1907.

61,788. WHEAT-FLOUR. THE NORTHWESTERN CONSOLIDATED MILLING COMPANY, Minneapolis, Minn.
Filed November 27, 1905. Serial No. 15,023. PUBLISHED OCTOBER 23, 1906.

61,789. TONIC. RHEINSTROM, BETTMAN, JOHNSON & CO., Cincinnati, Ohio.
Filed June 19, 1905. Serial No. 8,485. PUBLISHED JANUARY 29, 1907.

61,790. BROADCLOTHS. MORRIS ROSENBAUM'S SONS, New York, N. Y.
Filed May 29, 1906. Serial No. 19,931. PUBLISHED FEBRUARY 5, 1907.

61,791. CERTAIN MEDICINE. SOCIETY OF CHEMICAL INDUSTRY IN BASLE, Basel, Switzerland.
Filed October 13, 1906. Serial No. 22,688. PUBLISHED FEBRUARY 5, 1907.

61,792. OIL FOR MEDICINAL PURPOSES AND APPLICATIONS. C. DE KONING TILLY, Haarlem, Netherlands.
Filed June 30, 1906. Serial No. 20,682. PUBLISHED JANUARY 29, 1907.

61,793. CERTAIN MEDICAL PREPARATIONS. WALTHER MANUFACTURING CO., New York, N. Y.
Filed December 1, 1906. Serial No. 23,709. PUBLISHED JANUARY 29, 1907.

61,794. WHISKY. WILLIAM H. LEE & CO., St. Louis, Mo.
Filed June 30, 1905. Serial No. 9,429. PUBLISHED OCTOBER 9, 1906.

61,795. BITTERS. BASILIUS WINTER, Rock Island, Ill.
Filed May 13, 1905. Serial No. 5,543. PUBLISHED FEBRUARY 5, 1907.

61,796. CONDENSED MILK. WISCONSIN CONDENSED MILK CO., Burlington, Wis., and New York, N. Y.
Filed August 26, 1905. Serial No. 12,036. PUBLISHED FEBRUARY 5, 1907.

61,797. WASHING-MACHINES. WALTER J. ZUILL, Syracuse, N. Y.
Filed December 5, 1906. Serial No. 23,776. PUBLISHED FEBRUARY 5, 1907.

LABELS

REGISTERED APRIL 2, 1907.

13,427.—*Title:* "SI PERKINS." (For Cigars.) KOELLE-MUELLER LABEL CO., St. Louis, Mo. Filed January 2, 1907.

13,428.—*Title:* "ASPARAGUS SMYRNA FIG COFFEE." (For Coffee.) ALVIN E. CROCKER, New York, N. Y. Filed March 2, 1907.

13,429.—*Title:* "PLYMOUTH ROCK COFFEE JELLY COMPOUND." (For Coffee-Jelly Compounds.) PLYMOUTH ROCK GELATINE CO., Boston and Brighton, Mass. Filed March 4, 1907.

13,430.—*Title:* "UNION MAID." (For Flour.) THE PATTON MILLING CO., Catlettsburg, Ky. Filed February 23, 1907.

13,431.—*Title:* "EXTYRPO." (For a Depilatory.) BERTHA SMITH, New York, N. Y. Filed March 12, 1907.

13,432.—*Title:* "LYDIA E. PINKHAM'S VEGETABLE COMPOUND." (For Medicine.) LYDIA E. PINKHAM MEDICINE CO., Lynn, Mass. Filed February 21, 1907.

13,433.—*Title:* "LYDIA E. PINKHAM'S VEGETABLE COMPOUND." (For Medicine.) LYDIA E. PINKHAM MEDICINE CO., Lynn, Mass. Filed March 11, 1907.

13,434.—*Title:* "ROSILGO." (For Cleaning Compound.) M. J. ROBERTS, Columbus, Ohio. Filed March 4, 1907.

13,435.—*Title:* "FRICKEL NOCKSEM-ALL." (For Cleaning Compound.) HARRY FRICKEL, Philadelphia, Pa. Filed March 11, 1907.

13,436.—*Title:* "TRANSPAROSA COMPLEXION GLYCERINE SOAP." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907.

13,437.—*Title:* "SAVON MUCHA LILAC." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907.

13,438.—*Title:* "ARBOR SERIES HELIOTROPE." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907.

13,439.—*Title:* "SAVON MUCHA SANDALWOOD." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907.

13,440.—*Title:* "SYLVAN ROSE." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907.

13,441.—*Title:* "SYLVAN LILAC." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907.

13,442.—*Title:* "ARCADIA LILAC." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907.

13,443.—*Title:* "SYLVAN CARNATION." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907.

13,444.—*Title:* "ARBOR SERIES ROSE." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907.

13,445.—*Title:* "ARCADIA HELIOTROPE." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907.

13,446.—*Title:* "SAVON MUCHA VIOLET." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907

13,447.—*Title:* "ARCADIA VIOLET." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907.

13,448.—*Title:* "SYLVAN SANDALWOOD." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907.

13,449.—*Title:* "ARBOR SERIES VIOLET." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907.

13,450.—*Title:* "SAVON MUCHA HELIOTROPE." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907.

13,451.—*Title:* "ARBOR SERIES LILAC." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 9, 1907.

13,452.—*Title:* "NIGHT GOWNS, S. J. U. CO." (For Night-Gowns.) SOUTH JERSEY UNDERWEAR COMPANY, Philadelphia, Pa. Filed December 14, 1906.

13,453.—*Title:* "BUTNORIP." (For Trousers.) LINCOLN GRANT TITUS, Columbus, Ohio. Filed January 14, 1907.

PRINTS

REGISTERED APRIL 2, 1907.

1,943.—*Title:* "THE ALARM CLOCK." (For a Cereal Breakfast Food.) CREAM OF WHEAT COMPANY, Minneapolis, Minn. Filed February 15, 1907.

1,944.—*Title:* "HELLO! HELLO!" (For Flour.) WASHBURN CROSBY COMPANY, Minneapolis, Minn. Filed March 4, 1907.

1,945.—*Title:* "SOME PEOPLE FUSS AND FUME AND FRET OVER BREAD MAKING." (For Flour.) WASHBURN CROSBY COMPANY, Minneapolis, Minn. Filed March 4, 1907.

1,946.—*Title:* "IF YOU WERE A MILLER." (For Flour.) WASHBURN CROSBY COMPANY, Minneapolis, Minn. Filed March 4, 1907.

1,947.—*Title:* "HANDLING THE FLOUR QUESTION—*RIGHT*." (For Flour.) WASHBURN CROSBY COMPANY, Minneapolis, Minn. Filed March 4, 1907.

1,948.—*Title:* "THE HOUSEHOLD SURGEON." (For Antiseptic Healing-Oil.) PARIS MEDICINE COMPANY, St. Louis, Mo. Filed March 9, 1907.

1,949.—*Title:* "LILIES OF THE VALLEY AND SUNDOWN BACKS, CONGRESS PLAYING CARDS." (For Playing-Cards.) THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed March 7, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE M. ZIMMERMANN COMPANY.

Decided January 18, 1907.

TRADE-MARKS—PRACTICE REGARDING EXPRESSION OF COLOR.

Where in an application for registration of a trade-mark colors are indicated in the drawing by conventional lining in accordance with the chart for draftsmen on page 87 of the Rules of Practice in the United States Patent Office, *Held* that if color forms a material feature of the mark the colors should be described in order to comply fully with section 1 of the act of May 4, 1906, while if color is not an essential feature a new drawing omitting the conventional lining used to express color should be filed.

ON PETITION.

TRADE-MARK FOR CURED MEATS.

Mr. Titian W. Johnson for the applicant.

ALLEN, *Commissioner:*

This is a petition from the following requirement of the Examiner of Trade-Marks:

The mark is shown in the drawing as in particular colors. Therefore the colors of the mark should be described.

The labels filed with the application show the letter "Z" in red on a field of dark blue surrounded by an annular band of lighter blue. These colors are indicated in the drawing of the application by lining it in accordance with the chart for draftsmen on page 87 of the Rules of Practice in the United States Patent Office.

So far as the drawing is concerned, it would appear that applicant intends to make color an essential feature of its mark. This appears to be admitted by the applicant, for it states in its petition:

Because the mark has been shown or shaded in the drawing to indicate certain colors as shown by the "draftsman's chart," in a case of this sort can only show that the draftsman has followed his subject closely, and to those familiar with the "chart" it would probably appear, if they thought of it at all, that the "Z" was printed in red, but it does not necessarily follow, or follow at all, that the color is a part or essential to applicant's mark, unless he so expresses it in his statement, and relies upon the color to form a part thereof.

While to one familiar with the draftsman's chart the lining of the mark would indicate the color scheme, to one not thus familiar it would not express color. Therefore if color forms a material feature of the mark the colors should be described in order to comply fully with section 1 of the act of May 4, 1906, which requires—

a description of the trade-mark itself, only when needed to express colors not shown in the drawing.

In its petition, however, applicant disclaims color as an essential feature of the mark. It states:

In this case colors are shown or indicated, but as above suggested they are not important to applicant or depended upon by applicant to form an essential feature of his trade-mark. In this case colors are not needed or depended upon, and no expression of colors should, in opinion of counsel, appear in the statement.

If such is the case, it is obvious that in order to avoid confusion and ambiguity color should not be indicated in the drawing.

If petitioner regards color as a feature of its mark, it should be described; if not, a new drawing should be filed omitting the conventional lining used to express color.

The petition is denied.

BARBER *v.* WOOD.

Decided January 26, 1907.

1. INTERFERENCE—MOTION TO TAKE TESTIMONY TO SHOW INOPERATIVENESS—NOT APPEALABLE.

Where a motion for permission to take testimony for the purpose of showing that the opponent's device is inoperative, pending the determination of a motion to dissolve the interference, was denied by the Examiner of Interferences on the ground that the rules do not provide for the taking of testimony in interference cases prior to the determination of a motion to dissolve, *Held* that no appeal lies from the decision of the Examiner of Interferences on the question of taking testimony to show inoperativeness and that no occasion is presented for the exercise of the supervisory authority of the Commissioner.

2. SAME—INOPERATIVENESS OF OPPONENT'S DEVICE—PRACTICE.

Under Rule 130 where the operativeness of an opponent's device or his right to make the claim is material to the right o a party to a patent said party may urge the matter at final hearing before the Examiner of Interferences as a basis for his award of priority; but as a condition precedent to such right, the party must first present the matter upon a motion for dissolution, or show good reason why such motion was not made and prosecuted.

ON PETITION.

SHEET-DELIVERY MECHANISM.

Messrs. Brown & Seward and *Mr. Walter F. Rogers* for Barber.

Messrs. Southgate & Southgate for Wood.

ALLEN, *Commissioner:*

This is a petition by Barber that under the exercise of my supervisory authority the Examiner of Interferences be directed to retain the custody of this case and that petitioner may be permitted to take testimony upon the question of inoperativeness and of public use.

On June 30, 1906, in response to an order to show cause why judgment on the record should not be entered against him, Barber brought a motion to dissolve this interference on several grounds, including inoperativeness and public use of Wood's device, all of

which were transmitted to the Primary Examiner by the Examiner of Interferences except that of public use. An appeal was taken from the refusal to transmit this ground.

On July 25, 1906, Barber made a motion before the Examiner of Interferences for an order permitting him to take testimony in support of the ground of his preceding motion that the Wood invention is in certain respects inoperative and also to establish public use and abandonment by Wood.

The portion of the motion relating to the taking of testimony on the question of public use was dismissed by the Examiner of Interferences on the ground that only the Commissioner has authority to institute public-use proceedings. Petitioner has not made such a showing as would warrant the institution of public-use proceedings. (*Siebert* v. *Bloomberg*, 124 O. G., 628.)

Concerning the taking of testimony on the question of inoperativeness, the motion was denied without prejudice, on the ground that the rules do not provide for the taking of testimony in interference cases prior to the determination of a motion to dissolve. In *Lowry and Cowley* v. *Spoon* (124 O. G., 1846) it was held that no appeal would lie from the decision of the Examiner of Interferences on the question of taking testimony to show inoperativeness. Barber, however, asks that I exercise my supervisory authority and reverse the decision of the Examiner of Interferences.

It is noted that the Examiner of Interferences has not finally determined whether Barber should be permitted to take the desired testimony for use at final hearing, but has merely held that he should not do so until the motion to dissolve now before the Primary Examiner is decided.

I find no occasion for the exercise of supervisory authority in this case.

Under Rule 130 where the operativeness of an opponent's device or his right to make the claim is material to the right of a party to a patent said party may urge the matter at final hearing before the Examiner of Interferences as a basis for his award of priority; but as a condition precedent to such right the party must first present the matter upon a motion for dissolution or show good reason why such motion was not made and prosecuted. Petitioner apparently wishes to have waived this preliminary presentation of the matter by motion to dissolve. I do not find that the circumstances of the case warrant a waiver of this preliminary requirement or that petitioner will suffer any injustice by following the usual course of procedure. As stated in *Clement* v. *Browne* v. *Stroud*, (125 O.G., 992:)

> It is for the guidance and assistance of the other tribunals of the Office that Rule 130 provides that a motion to dissolve shall be a condition precedent to urging before the Examiner of Interferences that an opponent's claim is unpatentable.

The consideration of the grounds of the motion to dissolve upon the papers of record may dispose of the interference without the delay and expense incident to the taking of testimony. From the denial of the motion to dissolve upon the grounds urged there is no appeal from the decision of the Primary Examiner, (Rule 124,) while if the motion prevails upon the matter of record the time that would be consumed by taking testimony is saved. After the present motion to dissolve is disposed of petitioner may pursue his motion for an order permitting him to take testimony under the practice announced in *Browne* v. *Stroud* (122 O. G., 2688) and *Lowry and Cowley* v. *Spoon*, (122 O. G., 2687.)

The petition is denied.

HOLZ v. HEWITT.

Decided March 1, 1907.

1. INTERFERENCE—REFERENCE UNDER RULE 126—REJECTION OF CLAIMS.

Where the Examiners-in-Chief in their decision in an interference upon priority of invention call the attention of the Commissioner under Rule 126 to the fact that in their opinion the issue is not patentable and the decision becomes final by the expiration of the limit of appeal without appeal, the Examiner will be directed to reject in the application of the successful party the claim corresponding to the issue found by the Examiners-in-Chief to be unpatentable. (*Snider* v. *Bunnell*, 103 O. G., 890, distinguished.)

2. SAME—SAME—SAME.

It is not to be presumed that the Examiners-in-Chief would form an opinion adverse to a party's interest and call attention to the same upon the record without careful consideration in those cases where the grounds of their opinion had already been considered by the Primary Examiner and held insufficient to warrant such adverse opinion. When they express an opinion under these circumstances, the same is clearly of sufficient force to bind the Primary Examiner and sustain his *pro forma* rejection of claims until the opinion is withdrawn by the Examiners-in-Chief themselves or overruled by the Commissioner or court of appeals in the regular course of appeal.

3. SAME—SAME—HEARING—RULES 126 AND 130 DISTINGUISHED.

Rule 126 does not provide for a hearing by the Commissioner and no reason appears why a hearing should be given to an applicant whose claims are found to be unpatentable by the Board of Examiners-in-Chief in their consideration of the claim in connection with the question of priority of invention.

4. SAME—SAME—APPEAL AFTER REJECTION OF CLAIM.

Where upon reference by the Examiners-in-Chief, under Rule 126, stating that in their opinion the issue of an interference is unpatentable, the Examiner is directed to reject the claims in the application of the successful party, the *pro forma* rejection of the Examiner puts the case at once in condition for a course of appeal which may be carried to the court of appeals if the application is otherwise in condition therefor.

ON PETITION.

REGULATION OF ELECTRICAL-DISTRIBUTION SYSTEMS.

Mr. Albert G. Davis for Holz. (*Mr. Alexander D. Lunt* of counsel.)

Mr. Charles A. Terry for Hewitt.

ALLEN, *Commissioner:*

This is a petition seeking modification of my order of February 5, 1907, directing the Primary Examiner to reject in the application of the successful party the claim corresponding to the issue of the above-entitled interference.

The Examiners-in-Chief in their decision in the interference upon priority of invention called attention to the fact that in their opinion the issue was not patentable. After their decision had become final through the expiration of the limit of appeal without appeal by the unsuccessful party the order of February 5, 1907, to which this petition refers, was issued. The petitioner contends that the parties should be given an opportunity to be heard by the Commissioner upon the matters to which attention has been called by the Examiners-in-Chief before the case is remanded to the Primary Examiner, citing Rule 139. He also contends that the case if remanded should not be accompanied by instructions to reject the claim, but by an order merely for its consideration, citing *Snider* v. *Bunnell*, (103 O. G., 890.)

It is presumed that the petitioner in referring to Rule 139 in support of his contention that the parties should be heard by the Commissioner before the case is remanded to the Primary Examiner has in mind paragraph (*d*) of that rule, providing as follows:

> If the Commissioner, in reviewing the decision of the Examiners-in-Chief, discovers any apparent grounds for granting or refusing Letters Patent not involved in the appeal, he will, before or after final judgment, and whenever in his opinion substantial justice shall require it, give reasonable notice thereof to the parties; and if any amendment or action based thereon be proposed, he will remand the case to the Primary Examiner for consideration.

The present case does not, however, fall within the spirit or the letter of this rule. The Commissioner has not reviewed the decision of the Examiners-in-Chief, nor has he discovered any apparent grounds for granting or refusing a patent. The case does fall under Rule 126, providing that the Examiners-in-Chief, in connection with their consideration of an interference, may direct the attention of the Commissioner to any matter which in their opinion amounts to a statutory bar to the grant of a patent to either of the parties. The latter rule does not provide for a hearing by the Commissioner, and there is no apparent reason why one should be had under the circumstances.

As to the second contention of the petitioner that the case when remanded to the Primary Examiner should not be accompanied by instructions to reject the claim, but should be remanded for consideration in accordance with the practice announced in *Snider* v. *Bunnell*, *supra*, it may be stated that the practice set forth in that decision seems to be uselessly complex and burdensome in its application to such cases as the present one. The order issued in the present case was an intentional departure from that practice.

Under *Snider* v. *Bunnell*, *supra*, this case would have been sent to the Examiner after the recommendation by the Examiners-in-Chief to consider the matters to which attention had been called and to render a decision thereon. In the event of conflict between his conclusions and those of the Examiners-in-Chief the case would then be forwarded to the Commissioner for another decision. Two decisions would thus be rendered by the Office upon the merits of the petitioner's application for patent, in addition to the opinion expressed by the Examiners-in-Chief, without appeal or other action upon the part of the petitioner. If the decision of the Commissioner should be adverse to the applicant, the case would still be in no condition for appeal to the court of appeals, but would have to be returned to the Primary Examiner for the institution of a new course of appeals and *pro forma* decisions by the Primary Examiner and the Examiners-in-Chief before that end could be attained. It is designed by the practice instituted in the present case to avoid these complications, in those cases where the recommendation of the Examiners-in-Chief covers matters considered and passed upon by the Primary Examiner in an *inter partes* decision, by substituting at the outset the entry of a rejection *pro forma* by the Primary Examiner, putting the case at once in condition for a course of appeal which may be carried to the court of appeals if the application is otherwise in condition therefor.

It is not to be presumed that the Examiners-in-Chief would form an opinion adverse to a party's interest and call attention to the same upon the record without careful consideration in those cases where the grounds of their opinion had already been considered by the Primary Examiner and held insufficient to warrant such adverse opinion. When they express such an opinion under these circumstances, the same is clearly of sufficient force to bind the Primary Examiner and sustain his *pro forma* rejection of claims until the opinion is withdrawn by the Examiners-in-Chief themselves or overruled by the Commissioner or court of appeals in the regular course of appeal.

The decision upon priority in the present case having become final through the failure of Holz to appeal, there is no reason for further *inter partes* consideration of the applications. The entry by the Primary Examiner of a rejection in the application of Hewitt based upon the opinion expressed by the Examiners-in-Chief seems to open to Hewitt a way of securing final determination of the question of patentability attended with less complication, labor, and delay than is in general incident to the practice heretofore followed in *Snider* v. *Bunnell*, *supra*. However this may be, the fact that the opinion of the Primary Examiner upon the question raised is of record in the case renders further consideration thereof by him unnecessary, and the fact that of the conflicting opinions of the different tribunals the later opinion comes from the higher tribunal after consideration of the position taken by the lower renders further consideration by any tribunal of the Office of the question superfluous until presented by a statutory appeal.

The petition is denied.

DIXON AND MARSH v. GRAVES AND WHITTEMORE.

Decided March 5, 1907.

1. INTERFERENCE—TESTIMONY TO SHOW ISSUE UNPATENTABLE TO EITHER PARTY IRRELEVANT TO QUESTION OF PRIORITY.

Where during the time assigned him for the purpose of taking testimony upon the question of priority of invention one party took merely the testimony of an expert for the purpose of showing that the issue is not patentable to either party over the prior art, *Held* that the decision of the Examiner of Interferences was proper in granting a motion to strike said testimony from the record on the ground that it is irrelevant to the question of priority.

2. SAME—UNPATENTABILITY OF ISSUE TO ALL PARTIES—PROPERLY RAISED BY MOTION TO DISSOLVE UNDER RULE 122.

Where it is contended that the non-patentability of the issue to either party to the interference may be urged at final hearing, *Held* that during the preliminary stages of the interference and before the parties have been put to the trouble and expense of taking testimony on the question of priority either party may raise the question of the patentability of the issue by motion to dissolve the interference under Rule 122. Contestants are thus given an opportunity to have determined the question of whether the Office was right in declaring the interference and whether the proceeding should continue before testimony as to priority is taken. It is essential to the orderly proceeding of the interference that the question of patentability be finally settled at this time, and for this purpose the rules provide for an appeal from the rejection of claims based on the decision on the motion to the full extent permitted by law.

3. SAME—SAME—CANNOT BE RAISED UNDER RULE 130.

Where it is contended by one party to an interference that he has a right to urge the unpatentability of the issues to either party at the final hearing under Rule 130 and to take testimony in support thereof, *Held* that the contention is erroneous and

that this rule permits a party to urge the non-patentability of a claim to his opponent as a basis for the decision upon priority of invention only when it is material to his own right to a patent.

4. SAME—LIMITED TO QUESTION OF PRIORITY OF INVENTION.

The United States Supreme Court in the case of *ex rel. George A. Lowry* v. *Frederick I. Allen, Commissioner of Patents*, (125 O. G., 2365,) held that section 4904 of the Revised Statutes limits the declaration of interferences to the question of priority of invention. Should a party be permitted to urge that the claims of the issue are patentable to neither party in the interference, a decision that the issue is not patentable would not result in a decision of priority of invention in favor of either party or in the issue of a patent to one of the parties. In the cases contemplated by Rule 130, however, a decision that the issue is not patentable to one party would necessarily result in a decision of priority in favor of the other party.

APPEAL on motion.

METHOD OF SHAPING GLASS.

Messrs. Bakewell & Byrnes and *Mr. H. S. Shepard* for Dixon and Marsh.

Mr. James Whittemore and *Messrs. Bacon & Milans* for Graves and Whittemore.

MOORE, *Acting Commissioner:*

This is an appeal by Dixon and Marsh from the decision of the Examiner of Interferences granting a motion brought by Graves and Whittemore to strike from the record the deposition of Daniel C. Ripley taken on behalf of Dixon and Marsh.

The Examiner of Interferences granted the motion on the ground that the testimony of Ripley is in the nature of an expert deposition intended to show that the claims corresponding to the counts of the issue are not patentable to either party and that it is irrelevant to the question of proiority of invention. I am of the opinion that the Examiner of Interferences is correct in his conclusion.

It is admitted by Dixon and Marsh that the deposition of Ripley is in the nature of an expert opinion directed entirely to the question of the patentability of the issue over the prior art, and they contend that they have a right to urge the unpatentability of the issues to either party at the final hearing and to present evidence of this character in support thereof for consideration at said final hearing in the interference proceeding under Rule 130.

Appellants are in error in this contention. An interference is a proceeding instituted for the purpose of determining the question of priority of invention. Before the interference is declared the issue must be found patentable. During the preliminary stages of the interference and before the parties have been put to the trouble and expense of taking testimony on the question of priority either party may raise the question of the patentability of the issue by motion to dissolve the interference under Rule 122. Contestants are thus given an opportunity to have determined the question of whether the Office was right in declaring the interference and whether the proceeding should continue before testimony as to priority is taken. It is essential to the orderly proceeding of the interference that the question of patentability be finally settled at this time, and for this purpose the rules provide for an appeal from the rejection of claims based on the decision on the motion to the full extent permitted by law. Neither the rules nor the practice as announced in the cases of *Sobey* v. *Holeclaw* (119 O. G., 1922) and *Potter* v. *McIntosh*, (120 O. G., 1823,) recently affirmed by the Court of Appeals of the District of Columbia in *Sobey* v. *Holeclaw* (126 O. G., 3041) and *Potter* v. *McIntosh*, (decided December 14, 1906, but not yet published,) provide for raising the question of the patentability of the issue to all parties as a matter of right at the final hearing or on appeal from the decision on priority.

The contention of appellants that this case comes under the provisions of Rule 130 is erroneous. Rule 130 reads:

Where the patentability of a claim to an opponent is material to the right of a party to a patent, said party may urge the non-patentability of the claim to his opponent at final hearing before the Examiner of Interferences as a basis for the decision upon priority of invention, and upon appeals from such decision. A party shall not be entitled to take such step, however, unless he has duly presented and prosecuted a motion under Rule 122 for dissolution upon the ground in question, or shows good reason why such a motion was not presented and prosecuted.

This rule permits a party to urge the non-patentability of a claim to his opponent as a basis for the decision upon priority of invention only when it is material to his own right to a patent. The principle upon which this rule is based is announced in the decision of the Court of Appeals of the District of Columbia in the case of *Podlesak and Podlesak* v. *McInnerney*, (120 O. G., 2127,) as follows:

The question of the right of a party to make a claim goes to the very foundation of an interference for if the party has not such right the interference fails. If it be incorrectly held that such party has a right to make the claim priority may be awarded to him and his adversary be deprived of a substantial right in that he is not given a claim where he necessarily is the prior inventor, his adversary never having made the invention. Manifestly that question should not be finally determined by the Primary Examiner who originally declared the interference. We therefore take jurisdiction to determine that question in this case as an ancillary question to be considered in awarding priority of invention.

In the case under consideration Dixon and Marsh brought a motion to dissolve the interference on the ground of non-patentability of the issue to either party. The Primary Examiner held that the issue is patentable and denied the motion. To now permit appellants to take testimony concerning patentability of the issue and to contest it at final hearing would, in effect, nullify the provision of Rule 124, which reads:

No appeal will be permitted from a decision rendered upon motion for dissolution affirming the patentability of a claim or the applicant's right to make the same or the identity of meaning of counts in the cases of different parties.

The authority of this Office, with the approval of the Secretary of the Interior, to promulgate Rule 124 has been recently upheld in the decision of the United States Supreme Court in the case of *The United States, ex rel. George A. Lowry*, v. *Frederick I. Allen, Commissioner of Patents* (125 O. G., 2365.) Moreover, this decision states, concerning the purpose of an interference:

It certainly could not have been the intention to destroy all distinctions in procedure. But we are not left to inference. The statute is explicit. It limits the declaration of interferences to the question of priority of invention. Section 4904 provides that in case of conflict of an application for a patent with a pending application or with an unexpired patent (as in the case at bar), the Commissioner shall give notice thereof—

"and shall direct the Primary Examiner to proceed to determine the question of *priority of invention*." (Italics ours.)

And it is provided that the Commissioner shall issue a patent to the party adjudged the prior inventor, unless the adverse party appeals from the decision of the Primary Examiner or Examiners-in-Chief, as the case may be.

Should a party be permitted to urge that the claims of the issue are patentable to neither party in the interference, a decision that the issue is not patentable would not result in a decision of priority of invention in favor of either party or in the issue of a patent to one

of the parties. In the cases contemplated by Rule 130, however, a decision that the issue is not patentable to one party would necessarily result in a decision of priority in favor of the other party. (*Greenawalt* v. *Mark*, 126 O. G., 1063.)

Since the rules and decisions do not permit the non-patentability of the issue to all the parties to be urged at final hearing on the question of priority, it is unnecessary to consider the further contention of appellants that they have a right to take testimony in the interference proceeding in support of their claim that the issues are not patentable. It may be stated, however, that the practice of not permitting the introduction of such testimony is well established and should be adhered to, for reasons stated in the following decisions: *Huber* v. *Aiken*, (88 O. G., 1525,) *Stroud* v. *Miller*, (101 O. G., 2075,) and *Parkes* v. *Lewis*, (120 O. G., 323.)

The decision of the Examiner of Interferences is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

POTTER v. MCINTOSH.

Decided December 14, 1906.

INTERFERENCE—APPEAL ON PRIORITY—CONSIDERATION OF PATENTABILITY.

Where the junior party to an interference concedes that his preliminary statement fails to overcome the filing date of the senior party and the patentability of the issue has been favorably passed upon by the tribunals of the Patent Office, before whom the question was brought in accordance with the practice of that Office, on appeal to the court of appeals from a judgment on priority the question of patentability will not be considered where it is raised merely for the purpose of preventing the grant of a patent to the senior party, except in an extraordinary case.

Mr. A. A. Buck, Mr. G. P. Whittlesey, and *Mr. Albert G. Davis* for the appellant.

Mr. Charles H. Roberts for the appellee.

MCCOMAS, *J.:*

John T. McIntosh, who filed his application June 14, 1902, for a patent for an automatic safety stop device for electric vehicles was later placed in interference with other parties with whose devices three interferences were declared. There were twenty-six counts in the three interferences, and such proceedings were had that to all of these except one, the Primary Examiner dissolved the interference. This single count is in issue here, for the Commissioner of Patents sustained the Examiner; and this count is as follows:

An automatic safety stop device, comprising a mechanism in the controller-arm of an electric motor, synchronously operated with an air-brake valve through a lever connection, substantially as described and shown.

The interference is between McIntosh and the junior party, William B. Potter, who filed his application August 28, 1902. We refrain from reciting the preliminary decision of the Examiner of Interferences and the several appeals for rehearing before him and before the Examiners-in-Chief and the elimination of several interferences because in our opinion it suffices to consider the record and arguments of counsel in connection with the final rulings of the tribunals of the Patent Office upon the single issue whereon the Commissioner made the final decision brought before this court upon this appeal.

After the count just quoted became the remaining count of the issue, the Examiner of Interferences decided that Potter, the junior party, had failed, and gave judgment of priority of invention as to this count in favor of John T. McIntosh, the senior party. Upon appeal, the Examiners-in-Chief, (two of them passing upon the question raised) held that because McIntosh filed June 14, 1902, and because Potter, who filed August 28 in that year, does not allege conception of the invention before July preceding, McIntosh was the prior inventor and was entitled to an award of priority.

Counsel for Potter urged that it is essential to an interference proceeding that the issue be patentable and this issue is not patentable, therefore the Examiner of Interferences should be reversed because there being no patentable invention involved, the Examiner was without jurisdiction to render a decision of priority in favor of either party. The Examiners-in-Chief held that their course was to decide the question of priority on the record as made out by the parties and then under Rule 126—

direct the attention of the Commissioner to any matter not relating to priority which may have come to their notice, and which in their opinion amounts to a statutory bar to the grant of a patent to either of the parties for the claim or claims in interference.

And they affirmed the decision of the Examiner of Interferences. One of the two Examiners-in-Chief under this rule called the Commissioner's attention to the opinion of the Examiner-in-Chief that this issue is not patentable in view of several patents cited by him. The other Examiner-in-Chief was of opinion that the application of McIntosh carrying this claim should be allowed. The Commissioner of Patents held that since the Primary Examiner considered the cited patent on motion to dissolve, and reached the conclusion that the issue was patentable over them and the two members of the Board of Examiners-in-Chief differed in opinion upon the question of patentability, this division of opinion in the appellate tribunal amounts to an affirmance of the decision below and therefore no good reason was seen for referring this case to the Primary Examiner for reconsideration of the question of patentability. Thereupon counsel for Potter appealed from the decision of the Examiners-in-Chief awarding priority of invention to McIntosh. The Commissioner held that—

in this case the appellant failed to allege in his preliminary statement dates of invention early enough to overcome the record date of his opponent and brings this appeal for the sole purpose of attacking the patentability of the issue and of preventing the grant of a patent to his opponent for the invention defined therein. An appeal of this kind was brought and disposed of in the case of *Sobey* v. *Holeclaw*, (28 App. D. C., ——.) It was pointed out there that upon such appeal as the present the case is before me simply upon the question of the priority of the parties with regard to the subject-matter of the issue, and that the junior party having conceded in his preliminary statement that he was subsequent to his opponent in the possession of this subject-matter, there is nothing for me to do but to affirm the decision of the Examiners-in-Chief in favor of the senior party. I am convinced that Potter should not be heard upon this appeal in opposition to the grant of a patent to McIntosh on the ground that the issue is not patentable. The reasons for this conclusion were set forth fully in *Sobey* v. *Holeclaw supra*, and need not be repeated here.

The circumstances of the present case do not appear to be distinguished from those of that case, except in regard to the matter of recommendation by the Examiners-in-Chief under Rule 126. In the former case, the Examiners-in-Chief, after considering the arguments upon patentability, refused to include in their decision upon priority, a statement that in their opinion the issue was not patentable; in the present case one Ex-

aminer-in-Chief found the issue to be patentable, another found it was not patentable, and they so stated; the third was absent. This distinction between the cases is not one of consequence. The Commissioner added that the Primary Examiner had twice found the issue to be patentable and—

whatever objections there may be to the policy and rule preventing appeal from decisions affirming patentability or right to make claims, in those cases where affirmance may result in preventing the issue of a patent to a party who, in the event of a contrary decision, might have been entitled thereto, this policy and rule are believed to be in accordance with sound reason and unimpeachable in their application to cases like the present, where the would-be appellant upon patentability has in any event no standing before the Office as a claimant for a patent upon the matter in question.

Upon a petition by Potter for rehearing his counsel urge that the decision of this court in *Podlesak* v. *McInnerney* (26 App. D. C., 399) sufficiently supported his contention, and the Commissioner adhered to his ruling correctly stating—

that the consideration of the questions of right to make the claim in issue and of identity of invention was undertaken by the court because the appellant in that case came before them seeking to have determined his right to a patent to which he was apparently justly entitled if there was error in the decisions below holding that his opponent was entitled to make the claim in issue and that there was interference in fact. In the present case the appellant is admittedly not entitled to a patent on the matter in issue and as was pointed out in my decision in this case, and in the case of *Sobey* v. *Holsclaw*, no good reason appears for hearing at this time the arguments of the appellant upon the patentability of his opponent's claims, or for reviewing the affirmative decision of the Primary Examiner on that question.

We concur in this very satisfactory exposition of the view which this court so recently expressed in *Sobey* v. *Holsclaw*, *supra*.

All three tribunals of the Patent Office have held that McIntosh was already in the Patent Office with a complete invention before Potter conceived it. Inasmuch as Potter concedes that his preliminary statement has failed to overcome the filing date of the application of McIntosh, the only office of his appeal here is to argue against the patentability of the invention of McIntosh. The appellant here, who admits that he is not the first inventor, has no exclusive personal right in the determination of the patentability, he has no greater interest than other citizens and yet he is here asking us in a case of interference, where the patentability of the invention is a necessary prerequisite to a declaration of interference, and in a class of cases wherein, except under extraordinary circumstances the patentability of an invention is not an open question before us, to review that question and no other. In *Hisey* v. *Peters* (6 App. D. C., 68) this court said an appellant who claims an alleged patentable invention is not to be heard to urge non-patentability of his claim after it has been placed in interference with other claims. His affirmation that his claim is patentable estops him. In *Sobey* v. *Holsclaw*, *supra*, Mr. Justice Duell so fully and exhaustively reviewed the decisions conclusive of the present case, in a case substantially like the one now before us that it is unnecessary to repeat the grounds upon which we affirm the Commissioner of Patents in this case. We adopt the views so well stated by the Commissioner and now affirm his final decision. The arguments of Potter's counsel have failed to satisfy us that the case before us is one of those extraordinary cases in which this court may be called upon to inquire whether there is a patentable invention involved.

This decision will be certified to the Commissioner of Patents in accordance with the statute.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 16, 1907.

James H. Brookmire & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between the application of The Morgan Oyster Company, of San Francisco, Cal., for registration of a trade-mark and a trade-mark registered to James H. Brookmire & Company, of St. Louis, Mo., and a statement has been filed in the case to the effect that the said James H. Brookmire & Company are no longer in business.

Notice is therefore hereby given to James H. Brookmire & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 16, 1907.

James H. Brookmire & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Nininger & Frants, of Daleville, Va., for registration of a trade-mark and a trade-mark registered to James H. Brookmire & Company, of St. Louis, Mo., and a statement has been filed in the case to the effect that the said James H. Brookmire & Company are no longer in business.

Notice is therefore hereby given to James H. Brookmire & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 23, 1907.

Wilson-Cass Company, its assigns or representatives, take notice:

An interference has been declared by this Office between an application of Frank Fuller, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to the Wilson-Cass Company, of Philadelphia, Pa. The notice of declaration mailed by the Patent Office in the usual manner to the said Wilson-Cass Company has been returned by the Post-Office Department undelivered, and the attorney of record for said company is dead.

Notice is therefore hereby given to the said Wilson-Cass Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 15, 1907.

Whitman & Welch, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Exposition Cotton Mills, of Atlanta, Ga., for registration of a trade-mark, an application and a registration of the Massachusetts Cotton Mills, of Lowell, Mass., and a trade-mark registered to Whitman & Welch, of New York, N. Y., and Hartford, Conn. It has been impossible to locate said Whitman & Welch, and registered letters addressed to this firm have been returned by the Post-Office Department unclaimed.

Notice is therefore hereby given to said Whitman & Welch, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 127—No. 6. TUESDAY, APRIL 9, 1907. PRICE—$5 per year.

CONTENTS.

	Page.
ISSUE OF APRIL 9, 1907	1997
CHANGES IN CLASSIFICATION	1997
APPLICATIONS UNDER EXAMINATION	1998
INTERFERENCE NOTICE	1998
PATENTS GRANTED	1999
REISSUES	2356
DESIGNS	2360
TRADE-MARKS—REGISTRATION APPLIED FOR	2365
TRADE-MARKS—REGISTERED	2387
LABELS	2392
PRINTS	2392
COMMISSIONER'S DECISIONS—	
Dixon v. McElroy	2393
Karpenstein v. Hertzberg	2393
Ex parte Pietro	2394
DECISIONS OF THE U. S. COURTS—	
Larkin v. Richardson	2394
PATENT, TRADE-MARK, AND COPYRIGHT LAWS OF THE UNITED STATES OF AMERICA EXTENDED TO AND MADE EFFECTIVE WITHIN THE CANAL ZONE TO THE EXTENT INDICATED	2397
NOTICE	2398
ATTORNEYS	2398
INTERFERENCE NOTICES	2398

ISSUE OF APRIL 9, 1907.

Patents	769	No. 849,354 to No. 850,122, inclusive.
Designs	13	No. 38,511 to No. 38,523, inclusive.
Trade-Marks	172	No. 61,798 to No. 61,969, inclusive.
Labels	15	No. 13,454 to No. 13,468, inclusive.
Prints	8	No. 1,950 to No. 1,957, inclusive.
Reissues	4	No. 12,629 to No. 12,632, inclusive.
Total issue	981	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	3		New Hampshire	1	
Alaska, District of	1		New Jersey	33	5
Arizona Territory	2		New Mexico Ter't'y	1	
Arkansas	5		New York	111	38
California	25	4	North Carolina	2	1
Colorado	6	7	North Dakota	5	1
Connecticut	19	8	Ohio	47	14
Delaware	1		Oklahoma Territ'y	3	
District of Columbia	4		Oregon	4	
Florida	2		Pennsylvania	73	14
Georgia	7	1	Philippine Islands		
Hawaii Territory			Porto Rico		
Illinois	66	12	Rhode Island	6	
Indian Territory	1		South Carolina	1	
Indiana	20	4	South Dakota	3	
Iowa	18	1	Tennessee	9	2
Kansas	16	1	Texas	13	1
Kentucky	10	2	Utah	2	
Louisiana	5		Vermont	2	
Maine	6		Virginia	7	2
Maryland	6	1	Washington	8	1
Massachusetts	37	18	West Virginia	6	
Michigan	20	7	Wisconsin	20	2
Minnesota	15	20	Wyoming	1	
Mississippi	2		U. S. Army		
Missouri	37	11	U. S. Navy		
Montana	3				
Nebraska	6	1	Total to citizens of the United States	706	179
Nevada					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina			Natal		
Austria-Hungary	2	2	Netherlands		
Belgium			Newfoundland		
Brazil			New South Wales		
British West Indies			New Zealand		
Canada	10	1	Norway		
Cape Colony			Persia		
Chile			Queensland		
China			Roumania		
Costa Rica			Russia		
Cuba	1		Scotland		
Denmark	1		South Australia		
Ecuador			Spain		
England	18	7	Sweden		
France	5	5	Switzerland	1	
Germany	35	1	Transvaal, South Africa	1	
Haiti			Victoria		
Ireland			Western Australia		
Italy	2				
Japan			Total to citizens of foreign countries	78	16
Java					
Mexico	2				

Changes in Classification.

(ORDER NO. 1,708.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 3, 1907.

The following corrections are hereby directed to be made in Classification Book published January 1, 1905:

In Division V, class 56, Harvesters, abolish the numeral 110 before subtitle—

Corn-harvesters—
110. Strippers,

and insert the following subclass, accidentally omitted:

Corn-harvesters—
Stalk-cutters—
110. Strippers.

The whole group will then read as follows:

Corn-harvesters—
130. Cutting apparatus,
119. Self-binders,
103. Stalk-cutters—
Droppers—
104. Crane,
105. Direct-tilting,
106. Ejector,
107. Endless-apron,
108. Horizontally moving and tilting,

Corn-harvesters—
Stalk-cutters—
Droppers—
109. Sliding-bottom,
110. Strippers,
Strippers—
111. Comb,
112. Knife,
113. Roller,
131. Toppers.

In same Division, class 84, Music, change the group of Pedals from—

Organs—
24. Pedals—
97. Auxiliary,
98. Guards,
99. Locks,

to read—

24. Pedals—
97. Auxiliary,
98. Guards,
99. Locks.

F. I. ALLEN,
Commissioner.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business April 2, 1907.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Mar. 28	Mar. 28	99
303	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Mar. 20	Mar. 8	128
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	Mar. 20	Mar. 5	178
109	XVI. Telegraphy and Telephony	Mar. 19	Mar. 5	174
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Mar. 19	Mar. 4	168
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Mar. 19	Mar. 2	214
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Mar. 19	Feb. 28	203
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Mar. 18	Mar. 7	104
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	Mar. 18	Mar. 4	233
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Mar. 18	Feb. 28	287
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Mar. 18	Feb. 25	480
327	XVIII. Steam-Engineering, etc	Mar. 15	Mar. 4	217
323	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Mar. 15	Mar. 1	299
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Mar. 15	Feb. 25	236
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Mar. 14	Mar. 13	212
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Mar. 14	Feb. 25	282
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Mar. 12	Mar. 8	283
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Mar. 11	Mar. 11	209
167	V. Bookbinding, Harvesters, Jewelry, and Music.	Mar. 11	Mar. 5	312
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Mar. 11	Mar. 4	280
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Mar. 9	Feb. 23	389
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Mar. 9	Feb. 7	348
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Mar. 8	Mar. 4	379
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Mar. 7	Mar. 7	555

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Mar. 7	Feb. 8	218
142	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sewerage.	Mar. 6	Feb. 26	386
122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Mar. 5	Mar. 4	316
307	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	Mar. 5	Feb. 7	223
362	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	Mar. 2	Mar. 5	395
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Mar. 2	Feb. 14	278
332	X. Carriages and Wagons	Mar. 1	Feb. 25	456
178	III. Annealing and Tempering, Coating with Metal, Electro-chemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Mar. 1	Feb. 18	343
147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Wood-working.	Mar. 1	Feb. 4	288
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Feb. 27	Feb. 20	414
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	Feb. 27	Feb. 5	313
343	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Feb. 19	Feb. 20	640
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Feb. 15	Feb. 2	373
329	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making, etc.	Feb. 15	Feb. 20	420
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Jan. 29	Feb. 13	334

Total number of applications awaiting action 11,635

196	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	Apr. 1	Mar. 25	143
	Designs	Mar. 29	Mar. 25	18
	Labels and Prints			

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 23, 1907.

Wilson-Case Company, its assigns or representatives, take notice:

An interference has been declared by this Office between an application of Frank Fuller, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to the Wilson-Case Company, of Philadelphia, Pa. The notice of declaration mailed by the Patent Office in the usual manner to the said Wilson-Case Company has been returned by the Post-Office Department undelivered, and the attorney of record for said company is dead.

Notice is therefore hereby given to the said Wilson-Case Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

PATENTS

GRANTED APRIL 9, 1907.

849,354. CLAMP. JAMES C. ADAMS, Petroleum, Ind. Filed July 25, 1905. Serial No. 271,202.

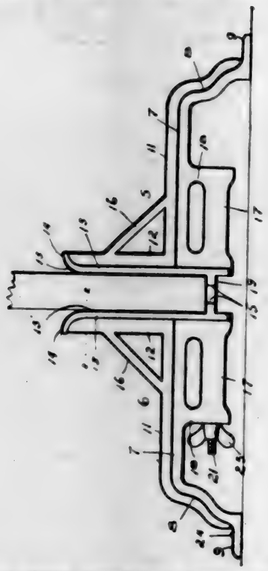

Claim.—A clamp, comprising in combination two castings each including a horizontal portion having a downwardly-directed outer end provided with a foot at its extremity, the foot of one casting having a screw-receiving opening therein, said horizontal portions having longitudinally-extending upwardly-directed strengthening-ribs, said horizontal portions having vertical plates at their mutually-adjacent ends lying in spaced relation, said plates having vertical ribs upon their outer faces, said castings each having a diagonal brace-rib connecting the ribs of their horizontal portions and those of the vertical plates, inwardly-extending lips carried by the plates at the lower ends thereof, cylindrical members joining the lower ends of the plates and extending horizontally beneath the horizontal members and connected therewith at their outer ends, one of said cylindrical members having a passage and the other having a slot therein, a spring fastened in the slot and extending beneath the lips and into the passage, said passage extending longitudinally through the cylindrical member, a threaded rod secured to the spring within the passage and extending outwardly through the outer end thereof, and a wing-nut engaged at the outer end of the threaded rod and bearing against the adjacent cylindrical member, said vertical plates having their inner surfaces curved outwardly at their upper ends.

849,355. MILLING ATTACHMENT FOR LATHES. GILBERT AMONSEN, Minneapolis, Minn., assignor of one-half to Ole H. Jules, Minneapolis, Minn. Filed Apr. 6, 1906. Serial No. 310,286.

Claim.—1. The combination with a lathe, of a work-carriage mounted for vertical adjustments independently of the tool-rest of the lathe and for traveling movements in a horizontal direction transversely of the lathe, and a connection causing said work-carriage to move with the tool-rest of said lathe, but permitting said work-carriage to move independently of said tool-rest in a vertical direction, substantially as described.

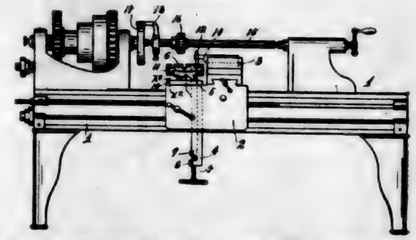

2. The combination with a lathe having a traveling carriage, a transversely-movable tool-rest mounted thereon, of a work-carriage supported by the lathe-carriage and mounted independently of the tool-rest of the lathe to move vertically and in a horizontal direction transversely with respect thereto, and a connection between said tool-rest and said work-carriage causing the two to move together, transversely of the lathe, but permitting said work-carriage to move independently of said tool-rest in a vertical direction, substantially as described.

3. The combination with a lathe having a traveling carriage, of a tool-rest mounted to move transversely of the lathe in a horizontal direction, a vertical guide secured to said lathe-carriage, a supporting-bracket mounted to move vertically on said guide, a work-carriage mounted on the upper end of said supporting-bracket, for movements transversely of the lathe, in a horizontal direction, a vertically-slotted lug on said work-carriage, and a tool secured to said tool-rest and projecting in a slot of said slotted lug, substantially as described.

849,356. NUT-WRENCH. ROBERT M. ATMORE, Cimarron, N. Mex. Filed July 26, 1905. Serial No. 271,343.

Claim.—A wrench comprising a handle having spaced ears formed at one end; a double-acting wrench-head in-

cluding a ratchet mounted between said ears; a pair of oppositely-disposed pawls pivotally mounted between said ears, each pawl having a notch formed in its outer edge; a spring arranged between the pawls for holding the outer ends of the latter normally in engagement with the ratchet of the wrench-head; a pair of independently-movable dogs pivotally mounted between said ears, each dog having an inbent outer end adapted for engagement in the notch of the corresponding pawl for moving the latter against the action of the aforesaid spring out of engagement with the ratchet of the wrench-head to permit rotation of the latter in one direction.

849,357. PASSENGER-ELEVATOR. EDWARD L. BALLARD, New York, N. Y. Filed Sept. 23, 1905. Serial No. 279,761.

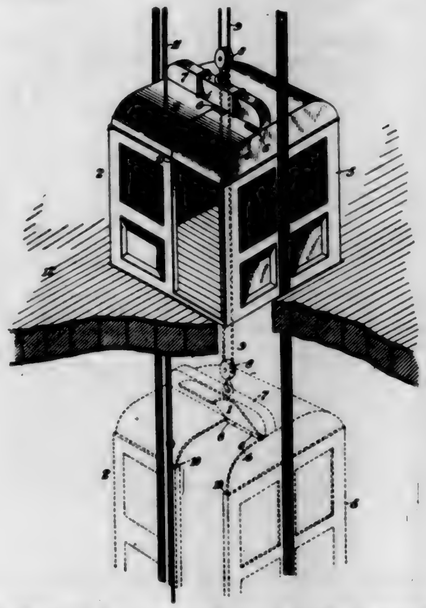

Claim.—1. A passenger elevator-car having an entrance and exit opening through one side thereof and an open portion in one end of the car extending inwardly from said side opening and a displaceable closure normally closing said open portion.

2. A passenger elevator-car having an entrance and exit opening through one side of the same and a roof provided with an open portion extending inwardly from said entrance and exit opening and a light displaceable roof-section normally closing said open portion.

3. An elevator car or cage having an entrance and exit door opening in its side and a roof or top which is provided with an open portion extending inwardly from the door entrance and exit opening, for the purpose set forth.

4. An elevator car or cage having an entrance and exit door opening in its side and a roof or top which is provided with an open portion extending inwardly from the door entrance and exit opening, and a yieldable hinged closure for said opening in the roof or top, for the purpose set forth.

5. An elevator car or cage having an entrance and exit door opening in its side, and provided with a roof or top which is complete except opposite the door entrance and exit opening and is thereat provided with an open portion which extends inwardly from the door entrance and exit opening.

849,358. BOX-HANDLE. NATHANIEL L. BARMORE, Chicago, Ill., assignor to The F. H. Hill Company, Chicago, Ill., a Corporation of Illinois. Filed June 11, 1906. Serial No. 321,290.

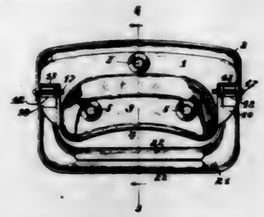

Claim.—1. As an article of manufacture, a box-handle or the like comprising a base provided near each end with a part extending backward at right angles to the face of the base, and spaced from the outer wall thereof, forming with the latter supporting-ears, with a portion extending thence outward parallel to the base forming a limiting-stop for the end of the handle, in combination with a handle having its ends positioned in said spaces and pivotally secured to said ears, with rearward extensions arranged to contact with said limiting-stops when the handle is in operative position limiting further movement thereof in that direction.

2. As an article of manufacture, a box-handle or the like, comprising a base provided near each end with a stop 13, and with a part extending backward at right angles to the face of the base, and spaced from the outer wall thereof to form supporting-ears for a handle, a portion of said part thereof extending thence outward parallel to the base forming a limiting-stop for the handle, in combination with a handle having its ends positioned in said spaces and pivotally secured between said ears, with rearward extensions arranged to contact with said stops when the handle is in operative position and at the moment the upper surface of the handle contacts with the stop 13 on the base, whereby when in operative position the handle engages the base on each side of the pivotal support relieving the pivot from the strain.

3. As an article of manufacture, a box-handle or the like comprising a sheet-metal base provided near each end with a part extending backward at right angles to the face of the base spaced from the outer wall thereof forming with the latter ears for the support of the handle, with a part extending thence outward parallel to the base forming a limiting-stop for the ends of the handle, in combination with a sheet-metal handle having its ends squared to loosely fit between the ears of the base and pivotally secured therein, with rearward extensions arranged to contact with said limiting-stops when the handle is in operative position, limiting the further movement thereof in that direction.

4. In a device of the kind described, a base having its upper portion swelled outward with a rearward margin to seat upon the supporting structure, with its lower part depressed and lying in the same plane with the margin of the upper part, the base being provided with a part extending backward at right angles to the face of the base and spaced from the end margin thereof to form supporting-ears for the handle, with a part extending thence outward parallel with the base forming a limiting-stop for the end of the handle, in combination with a handle having its ends positioned in said spaces between the ears and pivotally secured thereto with rearward extensions arranged to contact with said limiting-stops when the handle is in operative position, limiting further movement thereof in that direction.

5. In a device of the kind described, a base having its upper portion swelled out with the margin extending rearward to seat upon the supporting structure and with the lower portion depressed with its margin in the plane of the margin of the upper part, a stop 13 formed on the base a part extending backward at right angles to the face of the base spaced from the outer margin thereof to form supporting-ears therewith for a handle, and a part extending thence outward parallel to the base forming a limiting-stop for the handle, in combination with a handle having its ends positioned between the ears of said spaces and pivotally supported therein, with rearward extensions arranged to contact with said stop when the handle is in operative position, and at the moment the upper face of the handle contacts with the stop 13.

849,359. BURNER. BERRY A. BAXTER, Mansfield, Ohio. Filed Mar. 10, 1905. Serial No. 249,367.

Claim.—1. A burner composed of an upper portion pressed from metal forming an annular chamber with a series of radial chambers communicating therewith, conical projections pressed from said chambers from which the gas is emitted, a lower portion formed concavo-convex contracting the chambers and the neck of the inlet-pipe, a separable mixer secured to the end of the neck of the burner, said upper and lower portions being provided with an orifice in the center of the chamber, a bushing fitted to said aperture to connect the upper and lower portions in conjunction with beading.

2. In a gas-burner composed of an upper portion having an annular concavo-convex portion with a series of radial chambers extending above the plane of the top surface, tubular conical projections pressed from the surface of the upper portion, a lower portion formed concavo-convex secured to the upper portion, a separable mixer fitted to the inlet-aperture of the neck of the burner as described and set forth.

3. A burner composed of an upper portion having a series of radial chambers extending above the plane of the surface, an annular chamber communicating with said radial chambers, a series of conical projections extending upward from the plane of the radial chambers, a lower portion raised from the plane of the bottom contracting the chamber, said upper and lower portion secured together by beading and an annular collar as described and set forth.

4. A burner composed of an upper portion having a series of radial chambers extending above the plane of the top surface, an annular chamber communicating with said radial chambers, a lower portion raised concavo-convex contracting the chambers, said upper and lower portions connected together by beading and a ring, a series of conical projections pressed outward from the plane of the radial chambers forming gas-ajutages with the base of the conical projections communicating with the chambers forming an enlarged opening at the base and a contracted opening at the point of ignition.

5. A burner composed of an upper portion having an aperture in the center pressed from metal forming an annular chamber and a series of radial chambers communicating therewith, a series of hollow and conical projections extending above the plane of said chambers, a lower portion formed concavo-convex with an aperture in the center contracting said chambers.

6. In a gas-burner the combination of a two-part burner and neck pressed from sheet metal comprising an upper portion with a series of radial chambers pressed outwardly therefrom, tubular conical projections pressed outwardly from said radial chambers, a lower portion formed concavo-convex, both of said lower and upper portions having an opening in the center of the burner.

7. In a gas-burner the combination of a two-part burner and neck pressed from sheet metal comprising an upper portion with a series of radial chambers pressed outwardly therefrom, tubular conical projections pressed outwardly from said radial chambers, a lower portion formed concavo-convex, both of said lower and upper portions having an opening in the center of the burner, a ring to fit said opening and partially connect said upper and lower parts.

849,360. OVEN. BERRY A. BAXTER, Mansfield, Ohio. Filed Aug. 21, 1905. Serial No. 274,993.

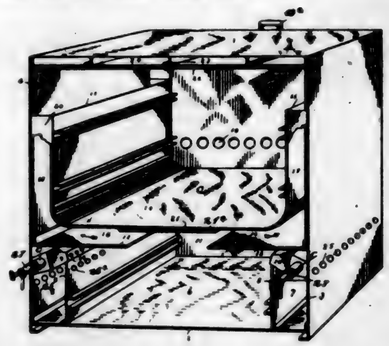

Claim.—1. An oven for gas-stoves composed of a casing substantially rectangular in form, plates secured to the bottom and spaced apart from the side walls, burners secured to the side walls of the frame extending the full width of the side walls with the free ends resting on the ends of the plates, deflector-plates extending horizontally toward the center leaving a space between their ends.

2. An oven having burners fitted to the lower portion of the side walls of the frame running parallel therewith, plates secured to the bottom of said frame forming a support for the extending ends of the burners, deflector-plates attached to the side wall of the frame and extending toward the center of the oven, a plate having upwardly projecting ends secured to the upper portion of the oven-frame leaving a space between the bottom surface thereof and the top of the deflector-plates forming a part of a flue, substantially as described.

3. In an oven for gas-stoves, burners fitted to the lower portion and extending parallel with the side walls, deflector-plates secured to said side wall above and adjacent to said burners extending on a plane toward the center leaving a space between their ends, a plate having upwardly-extending projections attached to the frame above said deflector-plate, said plate and deflector-plates forming flues so arranged as to draw the flame of the ignited gas along the lower surface of the deflector-plates around the flues and over the top into the upper compartment.

4. In an oven composed of two compartments, burners fitted to the side walls parallel therewith, deflectors secured to said walls, a plate suspended above said deflector-plates in such a manner as to form a passage for the gases and heat to the upper compartment, and an auxiliary plate secured to the center of said suspended plate.

5. In an oven, a casing, plates spaced apart from the side walls forming a chamber, burners secured to the side walls and extending parallel therewith the full width, with their ends resting on the top of the plates, deflector-plates secured to the side wall and extending over the burners toward each other leaving a space between their ends, a plate attached to the wall of the oven and suspended over the deflector-plates and in conjunction therewith forming flues for the passage of heat into the upper compartment.

6. In a gas-stove the combination, with a casing; of an oven, burners secured to the side walls of the casing extending the full width, plates secured to the bottom of the oven with their ends adapted to support the free ends of the burners, deflector-plates located above the burners, a plate suspended over the deflector-plates having its ends bent upward and terminating near the top of the oven, an upper compartment of the oven provided with orifices for the escape of the products of combustion.

7. In an oven for gas-stoves, a casing, plates secured to the bottom, burners secured to the side walls with the free ends extending toward the center and resting on the ends of the plates secured to the side walls, a substantially U-shape plate suspended over the deflector-plates forming

fines whereby the heat is conducted under and around the ends of the deflector-plates into the upper compartment of the oven.

849,361. FILE-CUTTING MACHINE. JEAN BÖCHE, Hückeswagen, Germany. Filed Sept. 23, 1904. Serial No. 225,648.

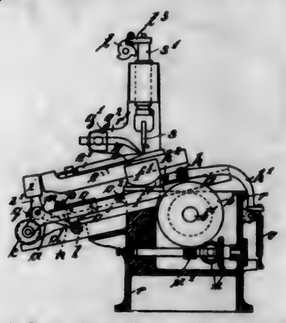

Claim.—1. In a file-cutting machine, the combination with a vertically-arranged reciprocatory cutting device, of a stationary concave anvil-base below the cutter, an anvil constructed to fit in the base and to freely swing therein, and having a concave upper surface curved at right angles to the curve of the anvil-base, a file-carrier having a convex under surface fitting in the concavity of the anvil and longitudinally movable thereon, a friction-roller, a friction-rail, in engagement with said roller to be moved thereby and adapted to be tilted on said roller in a plane at right angles to the roller-axis, a universal swivel connection between the rail and carrier, and means for rotating the friction-roller.

2. In a file-cutting machine, the combination with a vertically-arranged reciprocatory cutting device, of a stationary concave anvil-base below the cutter, an anvil constructed to fit in the base and to freely swing therein, and having a concave upper surface, a file-carrier having a convex under surface fitting in the concavity of the anvil and longitudinally movable thereon, a friction-roller, a friction-rail in engagement with the roller to be moved thereby, a universal swivel connection between the rail and carrier, an angular lever pivoted to the friction-rail and forming at its one end a socket member of the swivel connection and having at its other end a roller for guiding the carrier, a guide member for engaging the roller on the angular lever, an arm *d* carrying the rear end of the friction-rail, and means for rotating the friction-roller.

3. In a file-cutting machine the combination with a vertically-arranged reciprocatory cutting device, of a stationary concave anvil-base below the cutter, an anvil constructed to fit in the base and to freely swing therein and having a concave upper surface, a file-carrier having a convex under surface fitting in the concavity of the anvil and longitudinally movable thereon, a friction-roller, a friction-rail in engagement with that roller to be moved thereby, a universal swivel connection between the rail and carrier, an angular lever pivoted to the friction-rail forming at its one end a socket member of the swivel connection and having at its other end a roller, a movable arm pivoted to the machine-standard, a guiding-piece having a curved edge and adjustably carried by that movable arm and adapted to coöperate with the roller of the angular lever, an arm for carrying the rear end of the friction-rail, and having a curved part guiding the rail in its movement to adapt the machine for acting upon curved files, and a roller fixedly mounted on the friction-rail adapted to coöperate with that movable arm and means for rotating the friction-roller.

849,362. BUOY. WILLIAM C. BUSH, Alpena, Mich. Filed Feb. 8, 1907. Serial No. 356,432.

Claim.—1. A buoy comprising a post of wood tapered or gradually reduced in diameter toward its upper end, a hollow, metallic body having an outer portion and also having a vertical central tube connected in a water-tight manner to the outer portion; the said tapered post being tightly fitted in the tube of the body after the manner of a wedge, and means connecting the body to the post.

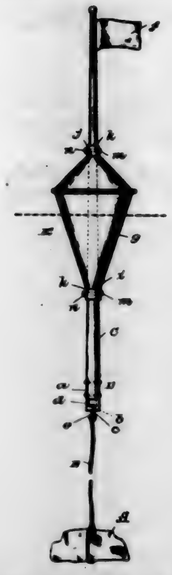

2. In a buoy, the combination with a hollow metallic body having an outer portion and also having a vertical central tube connected in a water-tight manner to the outer portion and extended beyond the ends of the same and provided in its extended portions with apertures, a post of wood tapered or gradually reduced in diameter toward its upper end; said tapered post being tightly fitted in the tube of the body from below upward after the manner of a wedge and having diametrical apertures registered with the apertures in the extended portions of the tube of the body, and means extending through the said registered apertures and connecting the body and the post.

3. The combination of an anchor, a cable connected thereto, a buoy comprising a post of wood tapered or gradually reduced in diameter toward its upper end, a hollow, metallic body having an outer portion and also having a vertical central tube connected in a water-tight manner to the outer portion; the said tapered post being tightly fitted or wedged in the body, and means connecting the body to the post, and a swivel connection intermediate the cable and the post of the buoy comprising a member fixed on the post, and a headed rotatable member journaled in the first-mentioned member and connected to the cable.

849,363. TREE. MARY D. BERRY, New Milford, Conn. Filed June 26, 1906. Serial No. 323,510.

Claim.—1. An artificial tree comprising a base, of a plurality of tapering tube-sections arranged on said base covered with fireproof artificial bark, eyes secured to said sections, limbs having branches provided with needles secured in said eyes and a top arranged in the upper sections for the purpose set forth.

2. An artificial evergreen tree, comprising a base, a series of tapering tubes arranged on said base, covered with fireproof artificial bark, eyes extending out from said section, wire limbs provided with hooks adapted to fit said eyes covered with artificial fireproof bark, and branches carried by said limbs provided with fireproof artificial needles for the purpose set forth.

849,363.

849,364. DRAFT-EQUALIZER. OSCAR J. BOE, Balfour, N. D. Filed Feb. 23, 1906. Serial No. 302,558.

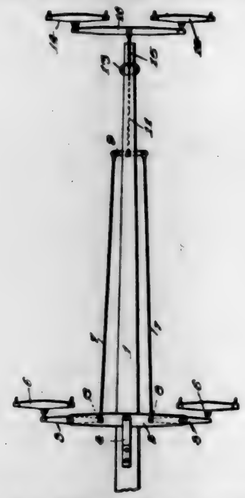

Claim.—1. In a draft-equaliser, the combination of a tongue, a doubletree secured to the rear end of the tongue, a lever pivotally connected at an intermediate point to each end of the doubletree, means for connecting a draft-animal to the outer end of each of the levers, an equalising-bar secured to the forward end of the tongue and having both a pivotal and sliding connection therewith, connecting means between the inner ends of the before-mentioned levers and the outer ends of the equalising-bar, a tension member connected to the equalising-bar at a point between its ends and extending forwardly along the tongue, and means for connecting the lead-animals to the tension member.

2. In a draft-equaliser, the combination of a tongue, a doubletree secured to the rear end of the tongue, a lever pivotally connected at an intermediate point to each end of the doubletree, means for connecting a draft-animal to the outer end of each of the levers, a guideway secured to the tongue toward the forward end thereof and comprising a bar spaced from the tongue and having its ends bent inwardly and secured thereto, a pin slidably mounted within the guideway, an equalising-bar pivotally mounted upon the pin so as to have both a swinging and a sliding movement, connecting means between the inner ends of the before-mentioned levers connected to the doubletree, and the outer ends of the equalising-bar, a tension member connected to the equalising-bar at a point between its ends, and means for connecting the lead-animals to the tension member.

3. In a draft-equalizer, the combination of a tongue, a doubletree pivotally connected to the rear end of the tongue, and having the opposite ends thereof bifurcated, a lever pivotally mounted at an intermediate point in each of the bifurcated ends of the doubletree, means for connecting a draft-animal to the outer end of each of the levers, a guideway secured to the tongue toward the forward end thereof and comprising a bar having its ends bent inwardly and secured to the tongue, the said bar having a slot therein and the tongue being formed with a groove corresponding to the slot, a pin slidably mounted within the slot and groove, an equalizing-bar mounted upon the pin so as to have both a swinging and sliding movement, connecting means between the inner ends of the before-mentioned levers and the outer ends of the equalizing-bar, a tension member secured to the equalizing-bar and extending forwardly along the tongue, and means for connecting the lead-animals to the tension member.

849,365. METAL WEATHER-STRIP. SAMUEL P. BRICKER, Allegheny, Pa. Filed Sept. 3, 1904. Renewed Feb. 16, 1907. Serial No. 357,755.

Claim.—1. A metallic weather-strip composed of a primary flat base of suitable metal bent inwardly upon itself at each side to form secondary bases, the terminal edge portions of said secondary bases being bent outwardly at right angles and adapted to engage a groove in the edge of a window-sash, substantially as set forth.

2. In a weather-strip, the combination of a primary base of sheet metal and similar secondary bases attached thereto having their terminal edge portions bent outwardly at right angles and adapted to engage a groove in the edge of a window-sash, substantially as set forth.

3. The combination with a window-frame provided with a runway, of a metal weather-strip composed of a primary base secured in the runway and a reflexed secondary base having a flange extending angularly therefrom, said secondary base and its flange being capable of movement relatively to the primary base and a window-sash provided with a groove in its edge with which said flange slidably engages; substantially as described.

4. The combination with a sash provided with a receiving-groove, of a stationary frame member composed of a primary base of suitable metal bent inwardly upon itself at each side to form secondary bases, the terminal edge portions of said secondary bases being bent outwardly at right angles and extending into the groove of the window-sash, substantially as set forth.

5. The combination with a weather-strip formed of sheet metal bent or folded inwardly at each edge and extending outwardly to form terminal projecting ribs; of a movable member secured to the sash and in interfitting engagement with said ribs, substantially as set forth.

6. The combination with a weather-strip formed of sheet metal bent or folded inwardly at each edge to provide secondary bases terminating in outwardly-extended ribs, of an independent resilient tongue member formed of a U-shaped strip secured to the sash and embraced by said ribs, substantially as set forth.

849,366. WEATHER-STRIP. SAMUEL P. BRICKER, Allegheny, Pa. Filed Mar. 6, 1905. Serial No. 246,882.

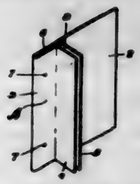

Claim.—1. In a weather-strip, the combination of a primary base of suitable metal bent upon itself to form a secondary base with its terminal edge portion bent outwardly at right angles to form a projecting rib, and a similar rib having its base incorporated with said primary base and secondary base and arranged parallel to said first-named rib, substantially as set forth.

2. A weather-strip consisting of sheet metal reflexed upon one side only to provide an attaching-base and having its terminal edge portions bent out at right angles thereto and arranged in parallel relation to each other with an intervening space, substantially as set forth.

3. In combination, a window-jamb, spaced strips applied to said jamb and forming a runway, a sash mounted in said runway and having a slot in a side thereof, and a weather-strip comprising a base disposed in the runway and having its opposite edge portions engaged by the spaced strips aforesaid, one edge portion of the base being folded thereon and then projected outwardly to form a body portion, the outwardly-projected body portion being received in the slot of the sash aforesaid.

849,367. ARTIFICIAL BAIT. BENJAMIN F. BURKE, Chicago, Ill., assignor of one-half to Matthew Corbett, Chicago, Ill. Filed June 16, 1906. Serial No. 322,035.

Claim.—1. An artificial bait comprising a hollow body having means to admit various quantities of water therein, whereby its buoyancy is adjusted.

2. An artificial bait having means whereby its buoyancy may be adjustably varied.

3. An artificial bait comprising a hollow body having a valve therein, adapted to admit water into the same.

4. An artificial bait comprising a hollow body, a nipple opening within the same, and a hollow screw-plug in the nipple having notches in the sides, through which water may be admitted without removing the plug.

5. An artificial bait comprising a body having a flange provided with holes, and a bait-strip secured in the holes.

6. A bait comprising a floatable body having an interior chamber adapted to contain water.

7. A bait comprising a floatable body composed of rubber and having an interior chamber and an inlet and outlet opening.

849,368. ELECTRICALLY-HEATED HOT-WATER BOTTLE. HERBERT W. CHRISTIAN, Toledo, Ohio. Filed Jan. 8, 1907. Serial No. 351,825.

Claim.—In an electrically-heated hot-water bottle, a receptacle for water having a filling-opening and a second enlarged opening through its walls, an open metal sheath inserted through the enlarged opening and having the margin of the opening sealed around the same, a plug, carrying the terminals of an electric circuit, detachably engaging the sheath, and an incandescent lamp adapted to be inserted into the sheath and connected with the terminals of the plug, substantially as described.

849,368.

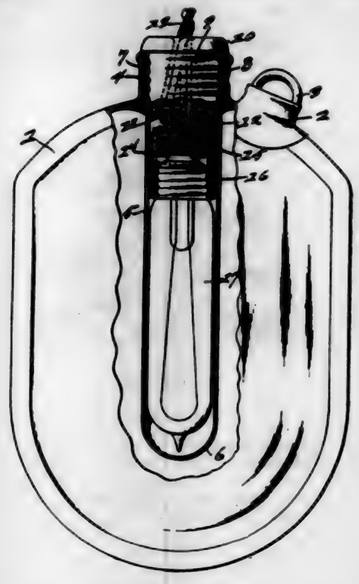

849,369. GAS-COOLER. CHARLES B. CLARK, Bangor, Me. Filed Mar. 3, 1906. Serial No. 304,049.

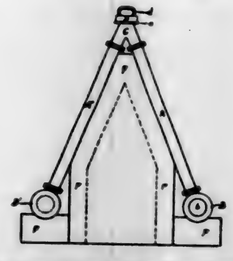

Claim.—In an apparatus of the class described, a tubular header members spaced apart and each provided with a plurality of spaced branch pipes converging inwardly and upwardly and each opposite pair thereof united by a tubular member open at the upper end, and a detachable closure for each of said openings, whereby the product to be treated is received into one of said header members and caused to transverse upwardly through one series of said inclined branch pipes and downwardly through the other of said series of inclined branch pipes and discharged from the other of said headers.

849,370. CLAMPING-RING. JAMES CLARK, Bradford, Pa., assignor to S. R. Dresser Manufacturing Company, Bradford, Pa. Filed Dec. 21, 1906. Serial No. 348,912.

Claim.—1. A clamping-ring for pipe-couplings comprising a plate member, provided with a central pipe-aperture, and bolt-holes located at intervals around said aperture, a flange member having an annular portion disposed substantially perpendicularly to said plate member, and having an inturned annular flange at its inner end engaging the portions of said plate member surrounding said pipe-aperture, and reinforcing-lugs located at intervals around said flange member and extending from said plate member to said flange member, substantially as described.

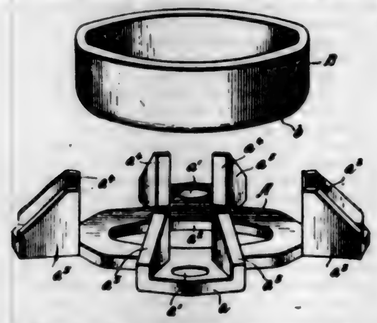

2. A clamping-ring for pipe-couplings comprising a plate member provided with a central pipe-aperture, bolt-holes located at intervals around said aperture and integral reinforcing-lugs, disposed substantially perpendicularly to the other portions of said plate member, and a flange member having an annular portion disposed substantially perpendicularly to the plate member and engaging the inner faces of said reinforcing-lugs and having at one end an inturned reinforcing-flange engaging said portions of said plate member, surrounding said pipe-aperture, substantially as described.

3. A clamping-ring for pipe-couplings formed of wrought metal and comprising a plate member, provided with a central pipe-aperture, bolt-holes arranged at intervals around said pipe-aperture, and reinforcing-lugs formed integrally with said plate member and bent substantially perpendicularly thereto, said lugs being arranged in pairs, the lugs of each pair being located on opposite sides of a bolt-hole, and a flange member having an annular portion disposed substantially perpendicularly to the plate member, and engaging the inner edges of said lugs, and having at its inner end an inwardly-bent annular flange engaging said plate member around said central pipe-aperture, substantially as described.

4. A clamping-ring for pipe-couplings formed of wrought metal and comprising a plate member provided with a central pipe-aperture, bolt-holes arranged at intervals around said pipe-aperture, and integral reinforcing-lugs extending perpendicularly on one side of said plate member, arranged at intervals around said pipe-aperture and substantially radially with respect to the center of said pipe-aperture, and a separately-formed flange member having an annular portion disposed substantially perpendicularly to said plate member, and engaging the inner edges of said reinforcing-lugs, and having at its inner end an inwardly-extending annular flange directly engaging portions of said plate member surrounding said pipe-aperture, substantially as described.

5. A clamping-ring for pipe-couplings formed of wrought metal and comprising a plate member having a central aperture, bolt-holes located at intervals around said aperture, an annular reinforcing-flange around its outer edge, and a plurality of struck-up reinforcing-lugs formed integrally with said plate and extending perpendicularly thereto on one side of the same, said lugs having substantially perpendicular inner edges, and being disposed substantially radially with respect to the center of said pipe-aperture and arranged in pairs, the lugs of each pair being located on opposite sides of a bolt-hole, and a separate flange member having an annular portion disposed substantially perpendicularly to said plate member and having its exterior engaging the inner edges of said lugs and having at its inner end an inwardly-extending flange engaging said plate member, substantially as described.

6. A clamping-ring for pipe-couplings formed of wrought metal and comprising a plate member provided with a central pipe-aperture, bolt-holes located around said aperture, and a series of integral reinforcing-lugs, extending perpendicularly to said plate member, on one side thereof, and a separate flange member engaging said plate member adjacent to said pipe-aperture and having its exterior engaging the inner edges of said reinforcing-lugs, substantially as described.

849,371. CLAMPING-RING. JAMES CLARK, Bradford, Pa., assignor to S. R. Dresser Manufacturing Company, Bradford, Pa. Filed Dec. 26, 1906. Serial No. 349,428.

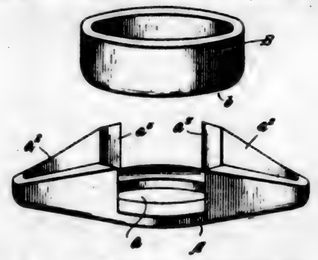

Claim.—1. A clamping-ring for pipe-couplings comprising a plate member having a central pipe-aperture, bolt-holes exterior thereto, and exterior flange portions provided with reinforcing-shoulders, disposed substantially perpendicularly to the face of said plate member, and a flange member having annular portions disposed perpendicularly to the face of said plate member and engaging said shoulders, substantially as described.

2. A clamping-ring for pipe-couplings comprising a plate member having a central pipe-aperture, bolt-holes exterior to said aperture, and exterior flange portions cut away to provide reinforcing-shoulders disposed substantially perpendicularly to the face of said plate member, and a flange member having an annular portion disposed substantially perpendicularly to the face of said plate member and engaging said shoulders, and having at its inner end an inwardly-extending annular flange, engaging portions of said plate member surrounding said pipe-aperture, substantially as described.

3. A clamping-ring for pipe-couplings comprising a plate member provided with a central pipe-aperture, bolt-holes, and exterior flange portions adjacent to said bolt-holes, having reinforcing-shoulders, disposed substantially perpendicularly to the face of said plate member, and a separate flange member having an annular portion fitting within said shoulders and having portions engaging the face of said plate member, substantially as described.

4. A clamping-ring for pipe-couplings formed of wrought metal and comprising a plate member having a central pipe-aperture, bolt-holes, and exterior flange portions adjacent thereto and provided with reinforcing-shoulders disposed substantially perpendicularly to the face of said plate member, and a separate flange member having an annular portion disposed substantially perpendicularly to the face of said plate member, fitting within said shoulders and having an internal diameter greater than said pipe-aperture, said flange member having an inwardly-extending annular flange engaging portions of said plate member surrounding said pipe-aperture, substantially as described.

5. A clamping-ring for pipe-couplings formed of wrought metal and comprising a plate member having a central pipe-aperture, bolt-holes, and exterior flange portions adjacent to said bolt-holes, said flange portions being partially severed from the plate member proper, bent inwardly over the face of the same and provided with reinforcing-shoulders substantially perpendicular to the face of the plate member, and a flange member fitting within said shoulders and having portions at one end engaging the face of the plate member, substantially as described.

6. A clamping-ring for pipe-couplings formed of wrought metal, and comprising a plate member having a central pipe-aperture, bolt-holes located around said aperture, and having its outer marginal portions adjacent to said bolt-holes bent up to form exterior flanges, said flanges being

partially severed at the plane of the face of said plate member, the severed portions of said flanges being bent inwardly over the face of said plate member and having their ends substantially perpendicular to the face thereof to form reinforcing-shoulders, and a flange member, having an annular portion, substantially perpendicular to the face of said plate member, fitting within said shoulders, and of an internal diameter greater than said pipe-aperture in the plate member, the flange member having at its inner end an inwardly-extending flange, parallel with and engaging the face of the plate member, the inner edge of said flange forming an aperture registering with the pipe-aperture in the plate member, substantially as described.

849,372. REVERSING-GEAR. PAUL DAIMLER, Untertürkheim, Germany. Filed May 14, 1906. Serial No. 316,775.

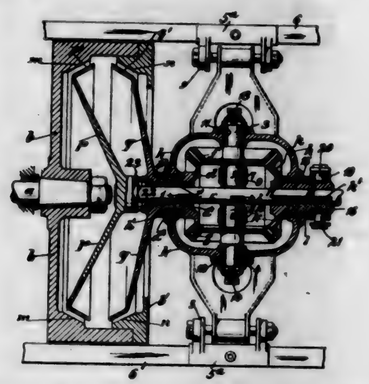

Claim.—1. A reversing-gear comprising in combination, a driving-shaft, a member therefor provided with oppositely-facing inclined or conical friction-surfaces, coupling members adapted to be alternately engaged with said surfaces, a driven shaft on which one of said coupling members is rigidly mounted, the remaining member being loosely mounted on said driven shaft, a gear rigidly connected with said loosely-mounted coupling member, said gear being loose on said driven shaft, a gear rigidly mounted on said driven shaft, and intermediate gears meshing with said rigid and loose gears to effect rotation thereof in opposite directions, a displaceable casing supporting said coupling members, driven shaft and gears and means for displacing said casing to effect alternate engagement of said coupling members with said friction-surfaces.

2. A reversing-gear comprising in combination, a driving member provided with inclined or conical friction-surfaces, coupling members adapted to be alternately thrust into engagement with said surfaces, a driven shaft to which one of said coupling members is rigidly connected, the other of said members being loosely mounted on said driven shaft, a gear loosely mounted on said driven shaft and rigidly connected with loosely-mounted coupling member, a gear rigidly mounted on said driven shaft, intermediate gears meshing with said rigid and loosely-mounted gears to effect rotation thereof in opposite directions and means for shifting said parts to effect alternate engagement of said coupling members with said friction-surfaces whereby the direction of rotation of said driven shaft may be reversed.

3. A reversing-gear comprising a driving member provided with oppositely-disposed friction-surfaces, and a driven member, friction elements for said driven member adapted to be alternately thrust into engagement with said friction-surfaces, said driven member being adapted to operate a load imparting thrusts to said driven member in accordance with the direction of operation of the load, whereby said friction elements are held in operative relation with said friction-surfaces.

4. A reversing-gear comprising a driving member provided with oppositely-disposed friction-surfaces and adapted to be rotated in a single direction, a driven member, friction elements for said driven member adapted to be alternately thrust into engagement with said friction-surfaces, said driven member being longitudinally movable and adapted to operate a load imparting thrusts to said driven member in accordance with the direction of operation of the load, whereby said friction elements are held in operative relation with said friction-surfaces, and means operatively connecting one of said friction elements with said driven member whereby the latter is driven in a reverse direction when one of said elements is in operative relation with said driving member.

5. A reversing-gear comprising a driving member provided with oppositely-disposed friction-surfaces and adapted to be rotated in a single direction, a driven member, friction elements for said driven member adapted to be alternately thrust into engagement with said friction-surfaces, said driven member being longitudinally movable and adapted to operate a load imparting thrusts to said driven member in accordance with the direction of operation of the load, whereby said friction elements are held in operative relation with said friction-surfaces, means operatively connecting one of said friction elements with said driven member whereby the latter is driven in a reverse direction when one of said elements is in operative relation with said driving member, and mechanism for shifting said means and elements to effect alternate engagement of the latter with said driving member.

6. A reversing-gear comprising a driving member provided with oppositely-disposed friction-surfaces, a driven member, friction elements for said driven member adapted to be alternately engaged with said surfaces, one of said elements being rigidly secured to said driven member, means operatively connecting the other of said elements with said driven member, and a support for said means preventing rotation thereof, said driven member being longitudinally movable and adapted to carry a load imparting thrusts to said driven member in accordance with the direction of operation of said load, said friction-surfaces and elements being arranged so that said thrust serves to maintain the same in operative engagement.

849,373. VEHICLE-WHEEL. ALVIN A. DAUGHERTY, New York, N. Y. Filed July 18, 1906. Serial No. 326,706.

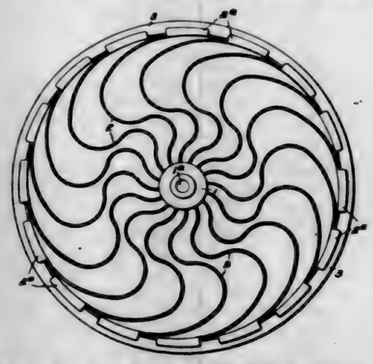

Claim.—1. A vehicle-wheel comprising in combination, a hub, a series of resilient spokes each having one end secured to said hub, and said spokes having their other ends bent to overlap each other, and a rim or tire removably held over the overlapping ends of the spoke.

2. A vehicle-wheel comprising a hub, a series of resilient spokes having one end of each secured to said hub and having overlapping ends bent to overlap and engage each other, a tire, means forming a part of said spokes for holding the tire over the overlapped spoke ends.

3. A vehicle-wheel comprising a hub, a series of resilient spokes having one end of each secured to said hub and having overlapping ends bent to overlap and engage each other, a tire, means forming a part of said spokes for holding the tire over the overlapped spoke ends, said means comprising flanges on the overlapping ends of the spokes to form a tire-receiving channel.

4. A wheel comprising in combination, a hub, resilient spokes secured thereto, said spokes tapering from the hub end outward and bent into an approximately zigzag form in side elevation, and having the outer ends bent to overlap each other, and a flexible tire held over the overlapping spoke ends.

5. A wheel comprising in combination, a hub, resilient spokes secured thereto, said spokes tapering from the hub end outward and bent into an approximately zigzag form in side elevation, and having the outer ends bent to overlap each other, a flexible tire held over the overlapping spoke ends, said overlapping spoke ends having flanges to retain said tire.

6. A vehicle comprising a hub, resilient spokes secured thereto, of curved form in side elevation, said spokes having their outer or rim-engaging ends bent to overlap each other, and a tire held over said overlapping ends and unsecured to said spokes, substantially as shown and described.

7. A vehicle comprising in combination, a hub, a series of resilient spokes each having one end secured to said hub, and said spokes having their other ends bent to overlap each other and means carried by the overlapping spoke ends for forming a peripheral channel, substantially as shown and described.

8. A vehicle comprising in combination, a hub, a series of resilient spokes each having one end secured to said hub, said spokes having their other ends bent to overlap each other, and a metallic tire removably held over said overlapped spoke ends, substantially as shown and described.

9. A vehicle comprising in combination, a hub, a series of resilient spokes each having one end secured to said hub, said spokes having their other ends bent to overlap each other, and a flexible metallic tire removably held over said overlapped spoke ends, substantially as shown and described.

10. A vehicle comprising in combination, a hub, a series of resilient spokes each having one end secured to said hub, said spokes having their other ends bent to overlap each other, a metallic tire removably held over said overlapped spoke ends, and a flexible resilient tire held over the metallic tire, substantially as shown and described.

11. A resilient wheel having the spokes thereof extended to form a yieldable tread-surface and provided with lugs at each side of the tread-surface to form a peripheral recess or channel, substantially as shown and described.

12. A resilient wheel having the spokes thereof extended to form a yieldable tread-surface and provided with lugs at each side of the tread-surface to form a peripheral recess or channel and a tire held in said channel substantially as shown and described.

849,374. VEHICLE-WHEEL. ALVIN A. DAUGHERTY, New York, N. Y. Filed Jan. 5, 1907. Serial No. 351,022.

Claim.—1. A vehicle-wheel comprising in combination a hub, a series of resilient spokes each secured at one end to the hub and having their other ends bent to overlap each other, said overlapped ends being flat and having inwardly-projecting flanges substantially as shown and described.

2. A vehicle-wheel comprising in combination, a hub, a series of resilient spokes each secured at one end to the hub and having their other ends bent to overlap each other, said overlapped ends having inwardly-projecting flanges, and also having outwardly-projecting flanges, and a tire held over the overlapping ends, substantially as shown and described.

3. A vehicle-wheel comprising in combination a hub, a series of resilient spokes each secured at one end to the hub and having their other ends bent to overlap each other, said overlapped ends having inwardly-projecting flanges, and a tire held over the overlapping ends of the spokes, substantially as shown and described.

4. A vehicle-wheel comprising in combination with a hub, a series of spokes having one end of each secured to said hub, and having overlapping ends bent to overlap and engage each other, said spokes having outwardly-projecting flanges, and a tire held over said overlapping ends by said flanges, said flanges having slots, substantially as shown and described.

5. A vehicle-wheel comprising in combination with a hub, a series of spokes having one end of each secured to said hub, and having overlapping ends bent to overlap and engage each other, said spokes having outwardly-projecting flanges, a tire held over said overlapping ends by said flange, said flanges having slots, said spoke-flanges being arranged to abut one another, substantially as shown and described.

6. A vehicle-wheel comprising in combination with a hub, a series of spokes having one end of each secured to said hub, and having overlapping ends bent to overlap and engage each other, said spokes having outwardly-projecting flanges, a tire held over said overlapping ends by said flanges, said flanges having slots, said spoke-flanges being arranged to abut one another, and having their abutting ends curved substantially as shown and described.

7. A resilient wheel having the spokes thereof extended to form a yieldable tread-surface and provided with flanges at each side of the tread-surfaces to form an outer peripheral channel, said flanges abutting one another, substantially as shown and described.

8. A resilient wheel having the spokes thereof extended to form a yieldable tread-surface, and provided with flanges at each side of the tread-surface to form a peripheral channel, said flanges abutting one another, and provided with slots, substantially as shown and described.

9. A resilient wheel having the spokes thereof extended to form a yieldable tread-surface, and provided with flanges at each side of the tread-surfaces to form a peripheral channel, said flanges abutting one another, and provided with slots, the abutting faces of said flanges being curved, substantially as shown and described.

10. A resilient wheel having the spokes thereof extended to form a flat yieldable tread-surface, and provided with flanges at each side of the tread-surfaces to form a peripheral channel, said flanges abutting one another, and a tire held in said channel, substantially as shown and described.

11. A resilient wheel having the spokes thereof extended to form a yieldable tread-surface, and provided with flanges at each side of the tread-surface to form a peripheral channel, said flanges abutting one another, and provided with slots, and a tire held in said channel, substantially as shown and described.

12. A resilient wheel having the spokes thereof extended to form a yieldable tread-surface, and provided with flanges at each side of the tread-surface to form a peripheral channel, said flanges abutting one another, and provided with slots, the abutting faces of said flanges being curved, and a tire held in said channel, substantially as shown and described.

13. A resilient wheel having the spokes thereof extended to form a yieldable tread-surface and provided with flexible

flanges at each side of the tread-surfaces to form a peripheral channel.

14. A resilient wheel having the spokes thereof extended to form a yieldable tread-surface and provided with outwardly-extending flexible flanges at the sides of the tread-surface to form a peripheral recess or channel, a tire held in said channel, supplemental inwardly-projecting flanges on said spokes to embrace adjacent spokes substantially as shown and described.

15. A resilient wheel having the spokes thereof extended to form a yieldable tread-surface and provided with flanges at each side of the tread-surface to form an outer peripheral recess or channel, said spokes each terminating in projecting ends held in said channel substantially as shown and described.

16. A resilient wheel having the spokes thereof extended to form a flat yieldable tread-surface and provided with flanges at each side of the tread-surface to form a peripheral recess or channel, said spokes each terminating in projecting ends held in said channel, and a tire held in said channel, substantially as shown and described.

17. A resilient wheel having the spokes thereof extended to form a flat yieldable tread-surface, means forming a part of said spokes for forming a peripheral channel, a tire held in said channel, said tire being of a diameter less than the maximum expanded diameter of the peripheral channel formed by the spoke ends substantially as shown and described.

18. A resilient wheel having the spokes thereof extended to form a flat yieldable tread-surface and provided with flanges to form a peripheral channel, and means held in said channel for holding said spokes normally compressed substantially as shown and described.

19. A resilient wheel having the spokes thereof extended to form a flat yieldable tread-surface and provided with flanges to form a peripheral channel, means held in said channel for holding said spokes normally compressed, and a tire held in said channel over said means, substantially as shown and described.

849,375. TELEPHONE SYSTEM. WILLIAM W. DEAN, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed May 11, 1901. Serial No. 59,876.

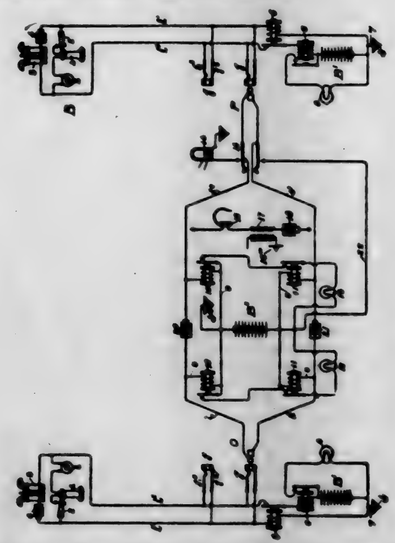

Claim.—1. In a telephone system, the combination with a subscriber's line-circuit, of a cut-off relay and a battery in said circuit, a signaling device, and means for operating said cut-off relay to render said signaling device inoperative.

2. In a telephone system, the combination with a subscriber's line-circuit, of a cut-off relay and a battery in said circuit, a signaling device, and means for operating said cut-off relay to open the circuit of said signaling device.

3. In a telephone system, the combination with a telephone line-circuit, of a cut-off relay and a battery in said circuit, a line-relay, and means to operate said cut-off relay to render said line-relay inoperative.

4. In a telephone system, the combination with a telephone line-circuit, of a cut-off relay and a battery in said circuit, a line-relay, and means for operating said cut-off relay to open the circuit of said line-relay.

5. In a telephone system, the combination with a line-circuit, of a cut-off relay, a line-relay, and a source of current all in said circuit, and means for operating the cut-off relay to cut out the line-relay.

6. In a telephone system, the combination with a line-circuit, of a normally inoperative cut-off relay in said circuit, a line-relay and a source of current also in said circuit, and means for rendering the cut-off relay operative to cut out the line-relay.

7. In a telephone system, the combination with a subscriber's line-circuit, of a cut-off relay, a line-relay, and a source of current all in said line-circuit, and means actuated by the subscriber in calling for operating said line-relay, and further means actuated in making a connection with the line to operate said cut-off relay to cut out the line-relay.

8. In a telephone system, the combination with a line-circuit, of a cut-off relay in the line, a source of current in series with the said cut-off relay, a line-relay in series with said cut-off relay, and means when a connection is made with the line for operating the cut-off relay to render said line-relay inoperative.

9. In a telephone system, the combination with a line-circuit, of a cut-off relay, a line-relay and a source of current all in said line, an operator's connective circuit, and means for operating said cut-off relay when the operator's circuit is connected with the line.

10. The combination with a telephone-line, of a central battery with which the limbs of said line are connected, a line-relay in one limb of the line, and a cut-off relay in the other limb adapted to open the first limb to render the line-relay inoperative, substantially as described.

11. In a telephone system, the combination with a subscriber's line having conductors normally extending to opposite poles of a source of current, a signal-controlling electromagnet in one of said conductors, a switch in said conductor, a cut-off relay having a winding connected in the other conductor and controlling said switch, substantially as described.

12. In a telephone system, the combination with a subscriber's line having conductors normally extending to opposite poles of a source of current, a signal-controlling electromagnet in one of said conductors, a switch in said conductor between said magnet and the subscriber's station, a cut-off relay having a winding connected in the other conductor of said line, but unresponsive to current therein when the subscriber is calling the central station, said relay serving to control said switch, substantially as described.

13. In a telephone system, the combination with a subscriber's line-circuit, of a low-resistance cut-off relay, a high-resistance line-relay, and a source of current all in said line-circuit, whereby when the subscriber calls, the cut-off relay is not operated.

14. In a telephone system, the combination with a subscriber's line-circuit, of a low-resistance cut-off relay, a high-resistance line-relay and a source of current all in said line-circuit, whereby when the subscriber calls the cut-off relay will not be operated, and means for operating said cut-off relay to cut out the line-relay when connection is made with the line.

15. In a telephone system, the combination with a subscriber's line-circuit, of a low-resistance cut-off relay, a high-resistance line-relay, and a source of current all in said line-circuit, whereby when the subscriber calls the cut-off relay will not be operated, and means to cause a greater flow of current through said cut-off relay in making a connection with the line to operate it.

16. In a telephone system, the combination with a subscriber's line-circuit, of a nonsensitive cut-off relay in the line-circuit, a sensitive line-relay and a source of current whereby when the subscriber calls the cut-off relay is not operated.

17. In a telephone system, the combination with a subscriber's line, of a signal-controlling electromagnet and a source of current in the line, a cut-off relay for the line placed in the path of current from said source when the subscriber is calling the central office, but which is unresponsive to such calling-current, and means to operate said cut-off relay when a connection is established with the line to render said signal-controlling electromagnet inoperative, substantially as described.

18. In a telephone system, the combination with a line-circuit, of a low-resistance cut-off relay, a high-resistance line-relay and a source of current all in said line, a cord-circuit, a source of current to furnish current for talking associated with said cord-circuit, and means for throwing additional current onto the cut-off relay from said talking source when the cord-circuit is connected with the line.

19. In a telephone system, the combination with a subscriber's line, of a signal-controlling electromagnet and a source of current in the line, a cut-off relay having a winding connected directly in the path of current flowing in the line when the subscriber is calling the central office, means to render said relay unresponsive to such calling-current, and further means to operate said relay when a connection is established with the line to render said signal-controlling electromagnet inoperative, substantially as described.

20. In a telephone system, the combination with a subscriber's line, of a signal-controlling electromagnet and a source of current in the line, a cut-off relay connected directly in the path of current flowing in said line when a subscriber is calling the central office, the said relay being unresponsive to such calling-current, and means for directing a current through said relay to which the relay is responsive when a connection is established with the line, said relay serving to render said signal-controlling electromagnet inoperative, substantially as described.

21. In a telephone system, the combination with a subscriber's line, of a source of current connected between the limbs thereof, a signal-controlling electromagnet in one of said limbs, a cut-off relay having an actuating-winding connected in the other of said limbs, normally closed switch-contacts of said relay included in the other limb of the line, said relay being unresponsive to current in the line from said source when the subscriber is calling the central office, and means for sending an actuating-current from said source through said relay-winding as long as the line is switched for use to operate said relay and open said limb through the relay-contacts to cut out said magnet, substantially as described.

22. In a telephone-exchange system, the combination with a telephone line-circuit running from a central exchange to a substation and adapted to be closed at the substation, of cord connecting apparatus at the central exchange for connecting said line-circuit with another for conversation, a line-relay normally included in said line-circuit and adapted to be actuated upon the closure of said line-circuit, a signal controlled by said line-relay, a cut-off relay whose winding is permanently included in said line-circuit and adapted to remain inoperative upon a closure of said line-circuit, and means whereby the connection of said cord connecting apparatus with said line-circuit causes an actuation of said cut-off relay to destroy the control of said signal by said line-relay, substantially as described.

23. In a telephone-exchange system, the combination with a telephone line-circuit running from a central exchange to a substation and adapted to be closed at the substation, of cord connecting apparatus at the central exchange for connecting said line-circuit with another for conversation, a line-relay normally included in said line-circuit and adapted to be actuated upon the closure of said line-circuit, a signal controlled by said line-relay, a marginally-adjusted cut-off relay whose winding is permanently included in said line-circuit and adapted to remain inoperative upon a closure of said line-circuit, and means whereby the connection of said cord connecting apparatus with said line-circuit causes an actuation of said cut-off relay to destroy the control of said signal by said line-relay, substantially as described.

24. In a telephone-exchange system, the combination with a telephone line-circuit running from a central exchange to a substation and adapted to be closed at the substation, of cord connecting apparatus at the central exchange for connecting said line-circuit with another for conversation, a line-relay normally included in said line-circuit and adapted to be actuated upon the closure of said line-circuit, a signal controlled by said line-relay, a marginally-adjusted cut-off relay controlling the circuit through said line-relay permanently included in said line-circuit and adapted to remain inoperative upon a closure of said line-circuit, and means whereby the connection of said cord connecting apparatus with said line-circuit causes an actuation of said cut-off relay to destroy the control of said signal by said line-relay, substantially as described.

25. In a telephone system, the combination with a subscriber's line-circuit, of a cut-off relay in the line, a line-relay, a source of current in the line, and means for connecting said cut-off relay in a local circuit to energize the same to render the line-relay inoperative.

26. In a telephone system, the combination with a subscriber's line-circuit, of a cut-off relay in the line, a line-relay and a source of current in the line, a cord-circuit, and a local circuit adapted to be completed when the cord-circuit is connected with the line to energize the cut-off relay.

27. In a telephone system, the combination with a line-circuit, of a cut-off relay in the line, a line-relay, and a source of current all in said line-circuit, a cord-circuit, and means to include the cut-off relay and said source in a local circuit when the cord-circuit is connected with the line, said source serving also to furnish current to the substation for talking purposes.

28. The combination with a telephone-line, of a cut-off relay and a line-relay in the line, a battery, and means to close said cut-off relay and battery in a local circuit when a connection is established with the line, substantially as described.

29. The combination with a telephone-line, of a central battery, a cut-off relay and a line-relay in the line, and a third conductor adapted to be connected around the cut-off relay and battery whereby the cut-off relay is actuated when a connection is established with the line to render the line-relay inoperative, substantially as described.

30. The combination with a telephone-line, of a central battery with which the limbs of said line are connected, a cut-off relay and a line-relay for the line, one side of said cut-off relay being connected with one pole of the battery, a spring-jack connected with the line, a cord-circuit, an additional conductor extending from the other pole of the battery to one strand of the cord-circuit, and means to connect said strand with the limb of the telephone-line connected with the other side of said cut-off relay when a connection is made with the line, whereby the cut-off relay is operated to render the line-relay inoperative, substantially as described.

31. The combination with a subscriber's line normally extending to opposite poles of a source of current, a signal-controlling electromagnet in one of said conductors, a cut-off relay in the second conductor and controlling the continuity of the first-named conductor, a cord-circuit adapted to be connected with the line in response to a call of the subscriber, and connections from said cord-circuit to said battery so as to include the same together with the winding of the cut-off relay in a local circuit, whereby said cut-off relay is operated upon the connection of the cord-circuit to the line and the signal-controlling electromagnet

is rendered inoperative, said battery serving to furnish current for talking purposes, substantially as described.

32. The combination with a telephone-line, of a cut-off relay, a line-relay and a battery in the line, and means to shunt the resistance in the line to permit an increased flow of current through the cut-off relay to operate the same when connection is established with the line, substantially as described.

33. The combination with a telephone-line, of a high resistance line-relay, a low-resistance cut-off relay and a battery in the line, and means to shunt the line-relay when a connection is established with the line to cause an increased flow of current through the cut-off relay to operate the same, substantially as described.

34. In a telephone-exchange system, the combination with a telephone line-circuit running from a central exchange to a substation and adapted to be closed at the substation, of cord connecting apparatus at the central exchange for connecting said line-circuit with another for conversation, a line-relay of high resistance normally included in said line-circuit and adapted to be actuated upon the closure of said line-circuit, a signal controlled by said line-relay, a cut-off relay of low resistance permanently included in said line-circuit and adapted to remain inoperative upon a closure of said line-circuit, and means whereby the connection of said cord connecting apparatus with said line-circuit provides an electrical path of decreased resistance through said cut-off relay, whereby the same is actuated to destroy the control of said signal by said line-relay, substantially as described.

35. In a telephone-exchange system, the combination with a telephone line-circuit running from a central exchange to a substation and adapted to be closed at the substation, of cord-connecting apparatus at the central exchange for connecting said line-circuit with another for conversation, a line-relay normally included in said line-circuit and adapted to be actuated upon the closure of said line-circuit, a signal controlled by said line-relay, a cut-off relay permanently included in said line-circuit and adapted to remain inoperative upon a closure of said line-circuit, and means whereby the connection of said cord connecting apparatus with said line-circuit provides an electrical path of decreased resistance through said cut-off relay, whereby the same is actuated to destroy the control of said signal by said line-relay, substantially as described.

36. In a telephone-exchange system, the combination with a telephone line-circuit, of cord connecting apparatus for connecting said line-circuit with another for conversation, a marginally-adjusted cut-off relay serially included in said circuit, and a line-relay normally serially included in said circuit, the connection of said cord connecting apparatus with said line-circuit serving to provide a circuit in shunt of said line-relay, substantially as described.

37. In a telephone-exchange system, the combination with a telephone line-circuit, of cord connecting apparatus for connecting said line-circuit with another for conversation, a marginally-adjusted cut-off relay serially included in said circuit, and a line-relay normally serially included in said circuit, the connection of said cord connecting apparatus with said line-circuit serving to provide a circuit of low resistance in shunt of said line-relay, substantially as described.

38. In a telephone-exchange system, the combination with a telephone line-circuit, of cord connecting apparatus for connecting said line-circuit with another for conversation, a marginally-adjusted cut-off relay serially included in said circuit, and a line-relay normally serially included in said circuit, the connection of said cord connecting apparatus with said line-circuit serving to provide a circuit in shunt of said line-relay, said shunt-circuit serving to control the supply of current to the supervisory signaling apparatus, substantially as described.

39. In a telephone-exchange system, the combination with a telephone line-circuit, of cord connecting apparatus at the central exchange for connecting said line-circuit with another for conversation, a marginally-adjusted cut-off relay of low resistance serially included in said circuit, and a line-relay of high resistance normally serially included in said circuit, the connection of said cord connecting apparatus with said line-circuit serving to provide a circuit of low resistance in shunt of said line-relay, said shunt-circuit serving to control the supply of current to the supervisory signaling apparatus, substantially as described.

40. In a telephone-exchange system, the combination with a telephone line-circuit, of cord connecting apparatus at the central exchange for connecting said line-circuit with another for conversation, a line-relay normally serially included in said circuit, a signal controlled by said relay, a marginally-adjusted cut-off relay serially included in said circuit, and a switch controlled by said cut-off relay normally making contact to close the line-circuit through said line-relay, said cut-off relay being adjusted so as not to actuate said switch upon the closure of the line-circuit through said cut-off relay and said line-relay, the connection of said cord connecting apparatus with said line-circuit serving to provide a circuit of decreased resistance in shunt of said line-relay, whereby said cut-off relay is actuated to break connection between said switch and its associated contact, thereby breaking the circuit through said line-relay, substantially as described.

41. In a telephone-exchange system, the combination with a telephone line-circuit running from a central exchange to a substation and adapted to be closed at the substation, of cord connecting apparatus at the central exchange for connecting said line-circuit with another for conversation, a line-relay normally included in said line-circuit and adapted to be actuated upon the closure of said line-circuit, a signal controlled by said line-relay, a marginally-adjusted cut-off relay permanently included in said line-circuit and adapted to remain inoperative upon closure of said line-circuit and means whereby the connection of said cord connecting apparatus with said line-circuit provides an electrical path of decreased resistance through said cut-off relay, whereby the same is actuated to destroy the control of said signal by said line-relay, substantially as described.

42. In a telephone system, the combination with a telephone line-circuit, a cut-off relay in the line-circuit, a line-relay, and a source of current also in said line-circuit, a cord-circuit, a battery connected with the cord-circuit and adapted to furnish current for talking purposes, and means for connecting said battery and cut-off relay in a local circuit when a connection is established with the line, said local circuit including part of the talking-circuit.

43. The combination with a telephone-line, a line-relay, a battery and a cut-off relay in the line, means to close a circuit through the cut-off relay when a connection is established with the line, said circuit including a portion of one side of the talking-circuit, substantially as described.

44. The combination with a telephone-line, a line-relay, a battery, a cut-off relay permanently connected in the line, and means to close a circuit through the cut-off relay and battery when a connection is established with the line, said circuit including a portion of one side of the talking-circuit, substantially as described.

45. The combination with a telephone-line, of a line-relay, a battery and cut-off relay in the line, and means to close the circuit through the cut-off relay when a connection is established with the line, said circuit including a portion of the talking-circuit of the telephone-line and cord-circuit, substantially as described.

46. The combination with a telephone-line, of a line-relay, a battery and cut-off relay in the line, and means to close a circuit through the cut-off relay when a connection is established with the line, said circuit including a portion of one side of the talking-circuit of the telephone-line and cord-circuit, substantially as described.

47. In a telephone system, the combination with a subscriber's line normally extending to opposite poles of a source of current, a signal-controlling electromagnet in one of said conductors, a cut-off relay having a winding connected in the opposite conductor and controlling the continuity of the first-named conductor, said winding being energised over a portion of the talking-circuit when a connection is established with the line to render the signal-controlling electromagnet inoperative, substantially as described.

48. The combination with a multiple-switchboard telephone-line, of a plurality of connection-terminals therefor permanently connected therewith, a line-signaling device for the line to indicate a call from the substation to the central office, a cut-off relay for the line to render said signaling device inoperative when a connection is established with the line for conversational purposes, a cord-circuit to establish such conversational circuits, and a central source of current associated with the cord-circuit and included in the metallic circuit of the line during a connection to furnish current for talking and for the operation of said cut-off relay, said relay-circuit including a portion of one side of the talking-circuit, substantially as described.

49. The combination with a telephone-line, a line-relay, a cut-off relay and source of current normally in circuit with the line, the line-relay only being responsive to current from said source when the subscriber is calling, a cord-circuit adapted to be connected with the line, a supervisory signal associated therewith, and means for establishing a path for current over one side of said cord-circuit to operate the said cut-off relay and supervisory signal, and a relay adapted to render the said signal inoperative and having its winding disposed in the path of current over the other side of the said cord-circuit and telephone-line, said relay being controlled by the subscriber, substantially as described.

50. The combination with a telephone-line, a line-relay, a cut-off relay and source of current normally in circuit with the line, the line-relay only being responsive to current from said source when the subscriber is calling a cord-circuit adapted to be connected with the line, a supervisory signal associated therewith, and means for establishing a path for current over one side of said cord-circuit to operate the said cut-off relay and supervisory signal, and an electromagnetic device adapted to render said signal inoperative and having its winding disposed in the path of current over the other side of the said cord-circuit and telephone-line, said electromagnetic device being controlled by the subscriber, substantially as described.

51. The combination with a telephone-line, a line-signal, a cut-off relay and source of current normally in circuit with said line, the cut-off relay being unresponsive to current from said source when the subscriber is calling, a cord-circuit adapted to be connected with the line, a supervisory signal associated therewith, means for operating said signal over a local circuit when a connection exists, said local circuit being free from the control of the subscriber, and means controlled by the subscriber for rendering said signal inoperative by current passed over the line-circuit, substantially as described.

52. The combination with a multiple-switchboard telephone-line, of a battery connected between one line conductor and a third conductor, the other line conductor being also connected with said third conductor, two or more busy-testing terminals connected with the latter line conductor, and a cut-off relay for the line located between the testing-terminals and the third conductor and possessing an appreciable resistance, whereby when a subscriber calls and connects two line conductors together the testing-terminals are raised to a potential above that of the third conductor and the line is in a condition to test busy.

53. In a telephone system, the combination with a telephone-line, of a plurality of connection-terminals permanently connected with the line, testing-contacts for said terminals permanently connected with the sleeve-limb of the line, a line-signaling device for the line, a cut-off relay permanently connected with said sleeve-limb of the line, a cord-circuit having a connecting-plug to be inserted in said connection-terminals to establish conversational circuits with the line, and a central source of current included in the metallic line during a connection and serving to furnish current for talking, to alter the electrical condition of said testing-contacts of the connection-terminals, and for the operation of said cut-off relay; said relay-circuit including a portion of the sleeve-strand of the cord-circuit, the sleeve-contacts of the connected plug and connection-terminal, and a portion of the sleeve-limb of the telephone line, substantially as described.

54. In a telephone system, the combination with a telephone-line, of a plurality of connection-terminals therefor, testing-contacts for said terminals permanently connected with the talking-circuit including the telephone-line, a line-signaling device for the line to indicate a call at the central office from the substation, a cut-off relay for the line permanently connected with a limb of the talking-circuit and arranged when operated to render said signaling device inoperative, a cord-circuit to coöperate with said connection-terminals to establish conversational circuits with the line, a central source of current associated with the cord-circuit and included in the metallic circuit of the line during an established connection to furnish current for talking, and said relay-circuit including a portion of one side of the talking-circuit, substantially as described.

55. The combination with a telephone-line, of connection-terminals for the line having contact-surfaces connected each with one of the line conductors, a line-signal for the line, a cut-off relay therefor connected with one of the line conductors, a cord-circuit and a connecting-plug having contact-surfaces adapted to register with the like surfaces of the connection-terminals of the line when the plug is inserted therein, a battery to furnish current for talking connected with the strand of the cord-circuit corresponding to the line conductor with which the cut-off relay is connected and adapted when a conversational circuit is established to be included in circuit with said cut-off relay to operate the same and thereby render the line-signaling device inoperative, a supervisory relay in the path of current from said battery over the said strand of the cord-circuit, a ringing-generator adapted to be connected with the cord-circuit to call the wanted subscriber and having its path for current completed through said battery, and means for maintaining the supervisory and cut-off relays operated during ringing and for preventing the chattering of the said supervisory relay by the ringing-current, substantially as described.

56. The combination with a telephone-line, of connection-terminals for the line having contact-surfaces connected each with one of the line conductors, a line-signal for the line, a cut-off relay therefor connected with one of the line conductors, a cord-circuit and a connecting-plug having contact-surfaces adapted to register with the like surfaces of the connection-terminals of the line when the plug is inserted therein, a battery connected with the strand of the cord-circuit corresponding to the line conductor with which the cut-off relay is connected and adapted when a conversational circuit is established to furnish current for talking and to be included in a local circuit with said cut-off relay to operate the same and thereby render the line-signaling device inoperative, a supervisory relay in the path of current from said battery over the said strand of the cord-circuit, a ringing-generator adapted to be connected with the cord-circuit to call the wanted subscriber and having its path for current completed through said battery, and means made operative in the use of the ringing-key to prevent chattering of the supervisory relay, substantially as described.

57. The combination with a telephone-line, of a line-signaling device and a battery connected between its line conductors, a cut-off relay connected between one of said conductors and ground and adapted when actuated to render the line-signaling device operative, a cord-circuit, a battery connected between ground and the strand of said circuit that is adapted to be connected with the line conductor with which said cut-off relay is connected whereby said battery and cut-off relay are included in a local circuit during a connection, a supervisory relay included in the path of current over said strand and operated by the current, a ringing-key connected between the battery and the terminals of the cord-circuit, a ringing-generator connected between ground and the other strand of the cord-circuit during ringing, the return-path for the current being over said first-named strand and through the battery to ground to avoid opening said local circuit and thereby deënergizing said relays, and a parallel branch closed by the ringing-key around said supervisory relay during ring-

ing to prevent the same from chattering, substantially as described.

849,376. NUT-LOCK. WILLIAM W. DIVINEY, Allport, Pa. Filed Feb. 5, 1906. Serial No. 299,577.

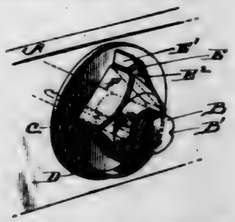

Claim.—1. In a nut-lock, the combination with a bolt provided with longitudinal grooves, of a washer provided with inwardly-projecting lugs adapted to fit on the said bolt and in said grooves and a slot adjacent its edge, and a bowed spring having a lug adapted to fit in said slot arranged on the face of the washer, provided with a locking-block adapted to engage the nut when screwed on the bolt, for the purpose described.

2. In a nut-lock, the combination with a bolt provided with longitudinal grooves, of a washer provided with lugs adapted to fit in said grooves, a slot formed in said washer, a bowed spring provided with a downwardly-projecting lug adjacent one end secured in said slot one edge of the spring resting on the face of the washer, and a locking-block secured to the free end of the spring adapted to engage the nut when screwed on the bolt, for the purpose described.

3. In a nut-lock, the combination with a bolt and nut, the bolt being provided with longitudinal grooves, of a washer provided with inwardly-projecting pointed lugs adapted to fit in said grooves, a slot formed in said washer, a bowed spring provided with a lug adapted to be secured in said slot one edge of the spring resting on the face of the washer, and a wedge-shaped block provided with a beveled end and upper edge secured to the free end of the spring adapted to engage the nut, for the purpose described.

4. In a nut-lock, the combination with a longitudinally-grooved bolt, of a washer provided with pointed lugs adapted to fit in said grooves, having a slot formed therein adjacent its outer edge, and a bowed spring provided with a downwardly-projecting lug, adjacent one end secured in said slot on the face of said washer and provided with a locking-block at its free end adapted to engage the nut when screwed on the bolt, for the purpose described.

849,377. WINDOW-SHADE BRACKET. CONRAD DOEHLER, Sr., St. Bernard, Ohio; Margaret Doehler administratrix of said Conrad Doehler, Sr., deceased. Filed Feb. 12, 1906. Serial No. 300,551.

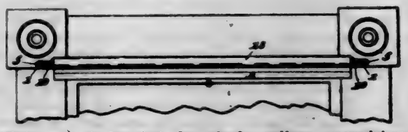

Claim.—1. A bracket for shade-rollers comprising a body portion for attachment to a window-casing and provided with a guide-flange extended longitudinally upon it and having a longitudinal series of serrations, a slide member adapted to receive the end pintle of a shade-roller and adjustable lengthwise along the guide-flange and means for holding said member in adjusted position and comprising a part movable in and out of engagement with the serrations upon the guide-flange said serrations being at inclination to the direction of movement of said part.

2. A bracket for shade-rollers comprising a body portion for attachment to a window-casing and having a longitudinally-extended serrated part, a slide member adapted to receive the end pintle of a shade-roller and adjustable lengthwise along said longitudinally-extended part, a device carried by the slide member and movable in and out of clamping engagement with the serrations of said longitudinally-extended part, the serrations on said longitudinally-extended part being at inclination to the direction of movement of said device, and means for operating said device to engage it with the serrations of said longitudinally-extended part to retain the slide member in adjusted position.

3. A bracket for shade-rollers comprising a body portion for attachment to a window-casing and having a longitudinally-extended guide-flange the opposite surfaces of which are provided with serrations in longitudinally-extended series, a slide member adapted to receive the end pintle of a shade-roller and adjustable lengthwise along the guide-flange, devices carried by the slide member at opposite sides of the guide-flange for movement in and out of engagement with the serrations in opposite surfaces of said flange and means for moving said devices in an inclined direction into engagement with the serrations of the guide-flange to retain the slide member in adjusted position.

4. A bracket for shade-rollers comprising a body portion for attachment to a window-casing and having longitudinally-extended guide-flanges having external inclined serrations and spaced apart to produce between them a guideway the opposite sides of which are undercut, a slide member adapted to receive the end pintle of a shade-roller and adjustable along the guideway with oppositely-projecting inclined parts adapted, when the member is moved toward the body portion, to engage the inclined serrations in the outer surfaces of the guide-flanges, a screw having an enlargement of the undercut guideway with opposite faces engaged with opposite undercut sides thereof, a perforated brace carried by the slide member and through which the screw is passed and a nut carried by the screw outside said brace.

849,378. FLOATING DRY-DOCK. WILLIAM T. DONNELLY, Brooklyn, N. Y. Filed Sept. 24, 1906. Serial No. 335,883.

Claim.—1. In a floating dry-dock water-inlet means, unrestricted water-outlet means, means for supplying air under pressure to the various compartments and means for controlling the expansion of the air in said compartments while the dock is rising, substantially as described.

2. In a floating dry-dock water-inlet means, unrestricted water-outlet means, means for supplying air under pressure to the various compartments and means for controlling the delivery of water at the outlets, whereby the expansion of air is kept under control while the dock is rising, substantially as described.

3. In a floating dry-dock water-inlet means, unrestricted water-outlet means, means for supplying air under pressure to the various compartments and means for controlling the expansion of the air in said compartments while the dock is rising and thereby controlling the rising of the dock, substantially as described.

4. In a floating dry-dock water-inlet means, extensible and retractible water-outlet means and means for exhausting the water therefrom, substantially as described.

5. In a floating dry-dock, pontoons, water-inlet means, extensible and retractible water-outlet means therefor, and means for exhausting water therefrom, substantially as described.

6. In a floating dry-dock, pontoons, water-inlet means, extensible and retractible water-outlet means, air-inlet means and means for controlling the introduction of air, substantially as described.

7. In a floating dry-dock, water-inlet means, extensible and retractible water-outlet means, and means for simultaneously extending and retracting said outlet means, substantially as described.

8. In a floating dry-dock, water-inlet means, extensible and retractible water-outlet means and means for independently extending and retracting said outlet means, substantially as described.

9. In a floating dry-dock, water-inlet means, extensible and retractible water-outlet means, embodying telescopic sections and means for exhausting water therefrom, substantially as described.

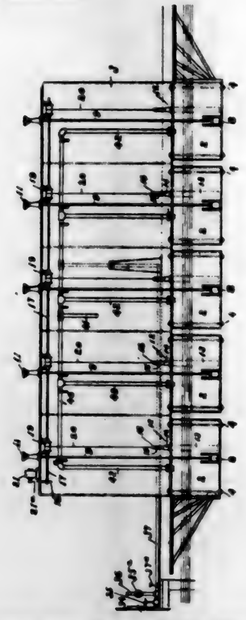

10. In a floating dry-dock, water-inlet means, extensible and retractible water-outlet means, embodying telescopic sections, means for extending and retracting said outlet means and means for exhausting water therefrom, substantially as described.

11. In a floating dry-dock, water-inlet means, extensible and retractible water-outlet means, embodying telescopic sections, means for simultaneously extending and retracting said outlet means, substantially as described.

12. In a floating dry-dock, water-inlet means, pontoons, extensible and retractible water-outlet means therefor, embodying telescopic sections and means for extending and retracting said outlet means, substantially as described.

13. In a floating dry-dock, water-inlet means, pontoons, extensible and retractible water-outlet means therefor, embodying telescopic sections, and means for independently extending and retracting said outlet means, substantially as described.

14. In a floating dry-dock, water-inlet means, pontoons, extensible and retractible water-outlet means, embodying telescopic sections, means for simultaneously extending and retracting said outlet means, air-inlet means, and means for controlling the introduction of air, substantially as described.

15. In a floating dry-dock, water-inlet means, pontoons, extensible and retractible water-outlet means therefor, embodying telescopic sections, air-inlet means, and means for controlling the introduction of air, substantially as described.

16. In a floating dry-dock, pontoons, extensible and contractible water-outlet means therefor, embodying telescopic sections, means for independently extending and contracting said outlet means, air-inlet means, and means for controlling the introduction of air, substantially as described.

17. In a floating dry-dock, water-inlet means, and extensible and retractible water-outlet means always extending above the surface of the water floating the dock, substantially as described.

18. In a floating dry-dock, water-inlet means, water-outlet means always extending above the surface of the water floating the dock, means for supplying air under pressure to the various compartments and means for controlling the expansion of the air in said compartments while the dock is rising and thereby controlling the rising of the dock, substantially as described.

19. In a floating dry-dock, pontoons, water-inlet means, and extensible and retractible water-outlet means always extending above the surface of the water floating the dock, substantially as described.

20. In a floating dry-dock, pontoons, water-inlet means, water-outlet means always extending above the surface of the water floating the dock, means for supplying air under pressure to the various compartments and means for controlling the expansion of air in said compartments while the dock is rising and thereby controlling the rising of said dock, substantially as described.

21. In a floating dry-dock, pontoons, water-inlet means, extensible and retractible water-outlet means always extending above the surface of the water floating the dock and means for exhausting the water therefrom, substantially as described.

22. In a floating dry-dock, water-inlet means, extensible and retractible water-outlet means, air-inlet means and means for controlling the introduction of air, substantially as described.

23. In a floating dry-dock, water-inlet means, extensible and retractible water-outlet means, air-inlet means and means for controlling the exhaust of air, substantially as described.

24. In a floating dry-dock the sides of which consist of water-tight chambers, water-inlet means, unrestricted water-outlet means, means for supplying air under pressure to the various compartments and means for controlling the expansion of the air in said compartments while the dock is rising, substantially as described.

25. In a floating dry-dock the sides of which consist of water-tight chambers, pontoons, water-inlet means, unrestricted water-outlet means, means for supplying air under pressure to the various compartments and means for controlling the expansion of the air in said compartments while the dock is rising, substantially as described.

849,379. ORE-CLASSIFIER. JOHN VAN N. DORR, Lead, S. D. Filed May 18, 1906. Serial No. 317,583.

Claim.—1. An apparatus for classifying crushed ores, comprising a stationary settling-trough to which the pulp is delivered and in which the sand settles by gravity, means for conveying the settled sands to one end of the trough, means for forcing a clear liquid up through the settled sands at the sand-delivery end of the trough to separate the slimes therefrom, and means for conveying slimes away from the bath.

2. An apparatus for classifying crushed ores, comprising an inclined stationary settling-trough to which the pulp is delivered, and in which the sand settles by gravity while the slimes remain in suspension, means for conveying the settled sands upwardly along the inclined bottom of the trough, and means for forcing a clear liquid up through the settled sands to separate slimes therefrom at the sand-delivery end of the trough and to cause said slimes to pass back to the settling-bath.

3. An apparatus for classifying crushed ores, comprising an inclined stationary settling-trough in which the sands settle and the slimes remain in suspension, a reciprocating rake for moving the settled sands upwardly and outwardly in the trough, and means at the sand-delivery end of the trough for forcing clear liquid up through the sands after their emergence from the settling-bath, and while being conveyed away from the bath.

4. An apparatus for classifying crushed ores, comprising an inclined stationary settling-trough in which the sands settle to the bottom while the slimes remain in suspension, a reciprocating rake engaging the settled sand on its outstroke and moving it toward the upper end of the trough,

means for lifting the rake out of engagement with the sand on the instroke, and means for washing the sand to remove the slime therefrom arranged at the sand-delivery end of the trough and acting upwardly through the settled sand.

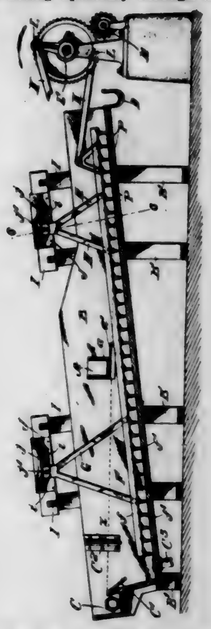

5. An apparatus for classifying ore-pulp comprising a settling-trough, two rakes arranged side by side in the trough, a partition in the lower part of the trough, the upper edge of which is below the liquid-level, for dividing the sands under one rake from the sands under the other rake, mechanism for reciprocating the rakes alternately in opposite directions whereby the weight of the moving parts is counterbalanced and the overflow from the trough is equalized, a launder for receiving slime at the lower end of the trough, a launder for receiving sand at the opposite end thereof and a feed-launder for the pulp arranged intermediate the ends thereof.

6. An apparatus for separating and classifying materials of different settling rates, comprising a stationary settling-trough, a launder for receiving materials remaining in suspension in the trough, a launder for receiving the settled material, means for conveying the settled material toward its receiving-launder, and means for forcing a clear liquid up through the settled material as it emerges from the settling-bath and before its delivery to its receiving-trough.

7. An apparatus for separating and classifying materials of different settling rates, comprising a stationary trough containing a settling-bath, a launder at one end of the trough for receiving material remaining in suspension in the liquid, a launder at the opposite end of the trough for receiving the settled material, a reciprocating rake moving outward while engaging the settled material, means for elevating the rake above the settled material on the instroke without withdrawing it entirely from the bath mechanism for operating the rake and means for forcing a clear liquid up through the settled material as it emerges from the settling-bath and before its delivery to its receiving-launder.

8. An apparatus for classifying crushed ore comprising a stationary settling-trough to which the pulp is delivered and in which the sand settles by gravity while the slimes remain in suspension, means for conveying the sands from the trough without disturbing the settling action in the upper portion of the bath, and means for forcing clear liquid up through the settled sands after their emergence from the bath.

9. An apparatus for separating and classifying material of different settling rates, comprising a stationary settling-trough, a launder for receiving material remaining in suspension in the trough, a launder for receiving the settled material, means below the liquid-level of the bath for conveying the settled material toward its receiving-launder, means above the liquid-level for supporting the conveyer, and means for operating the conveyer.

849,380. COMBINED THRESHOLD AND WEATHER-STRIP. DAVID DUFF, Mulberry, Kans. Filed June 14, 1906. Serial No. 321,912.

Claim.—The herein-described combined threshold and weather-strip comprising an integral cast-metal frame 1 of substantially rectangular form having its inner and outer sides, 2, 3, inclined downwardly in opposite directions, the ends of said frame being extended at its inner side to provide the longitudinally-projecting lugs 13 having beveled ends and forming stops to engage the door-frame, the top of said body being formed with a centrally-disposed, longitudinally-extending channel 4 terminating in the substantially rectangular-shaped recesses 7 having downwardly and outwardly inclined bottoms, said recesses 7 also having at their inner sides the downwardly and inwardly inclined outlets 8, said channel 4 having its bottom formed with countersunk apertures 6 to receive fastening-screws, the upper surface of the downwardly and inwardly inclined sides 3 being formed with the diagonally-arranged outlet-grooves 9 leading from the said channel 4 to points adjacent to the extreme outer edge of the frame, said grooves 9 being V-shaped in cross-section and of gradually-decreasing width from their upper and inner ends to their lower and outer ends, said grooves 9 being also arranged in zigzag relation and in pairs, substantially as shown and for the purposes set forth.

849,381. LIFTING-JACK. JOHN R. EDWARDS, Columbus, Ohio. Filed July 16, 1906. Serial No. 326,313.

Claim.—1. In a lifting-jack, a load-supporting block, a lever for operating the same having a fulcrum-pin, a link connecting said block and lever, combined with a standard of wood provided with a shoulder on its side, and a metallic toothed bar secured to the side of the standard to be supported by said shoulder and to afford fulcrums for the fulcrum-pin of the lever.

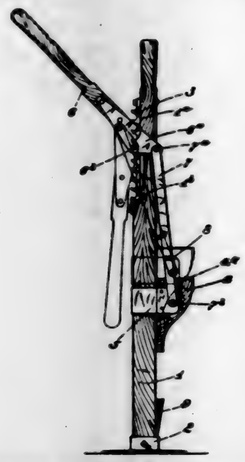

2. As an improved article of manufacture, a lifting-jack comprising, in combination, a standard of wood having at its foot a metallic base-piece and a toothed metallic fulcrum-piece on its side, a metal-armored, load-supporting block having a metallic clip to embrace the standard, said block being slidable with reference to the standard, a lever comprising a long arm of wood and a metallic short arm secured thereto, said short arm provided with a fulcrum-pin to engage said toothed fulcrum-piece, and a metallic link hinged both to the short arm of the lever and to the load-supporting block.

3. As an improved article of manufacture, a lifting-jack comprising, in combination, a standard of wood, a load-supporting block of wood having a metallic clip slidably connecting the block with the standard, a toothed metallic fulcrum-piece secured to the side of the standard, a lever comprising a long arm of wood and a metallic short arm secured thereto, said short arm provided with a fulcrum-bearing to engage said toothed fulcrum-piece, and a metallic link depending hingedly from the short arm of the lever and hingedly connected to the aforesaid metallic clip.

849,382. BOX-CAR-ROOF FRAME. WILLIAM H. EMERICK and HENRY A. BUNDY, Osawatomie, Kans. Filed Feb. 9, 1907. Serial No. 356,549.

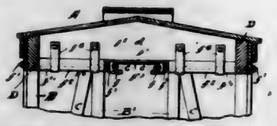

Claim.—1. In a box-car, the combination with diagonally-braced upright end posts and the side plates, end plates and carlines, of a truss-rod loop having oppositely-turned hooks supported under the middle carline, a tie and strut member connecting said loop with the side plates of the car-roof frame and truss-rods fitting at their middle portions in the oppositely-turned hooks of said truss-rod loop and extending to the end plates at the corners of the car-roof frame, substantially as specified.

2. In a box-car, the combination with side-plates, end plates and carlines of the car-roof frame, of a central truss-rod loop having oppositely-turned hooks, strut members connecting the same with the side plates at the middle portion thereof, and longitudinally-extending truss-rods engaging at their middle the oppositely-turned hooks of said truss-rod loop and connected at their ends with the end plates of the car-roof frame at the four corners of the car, substantially as specified.

3. In a box-car, the combination with side plates, end plates and carlines of the car-roof frame, of a central truss-rod loop having oppositely-turned hooks, strut members connecting the same with the side plates at the middle portion thereof, and longitudinally-extending truss-rods engaging at their middle the oppositely-turned hooks of said truss-rod loop and connected at their ends with the end plates of the car-roof frame at the four corners of the car, hangers for the truss-rods and a hanger for the truss-rod loop, substantially as specified.

4. In a box-car, the combination with the side plates, end plates and carlines of a central truss-rod loop, a strut member connecting the same with the side plates of the car-roof frame and diagonally-extending truss-rods fitting at their middle portions in the oppositely-turned hooks of the truss-rod loop and extending to the four corners of the car-roof frame, substantially as specified.

5. In a box-car, the combination with the side plates, end plates and carlines of a central truss-rod loop, a strut member connecting the same with the side plates of the car-roof frame and diagonally-extending truss-rods fitting at their middle portions in the oppositely-turned hooks of the truss-rod loop and extending to the four corners of the car-roof frame, said truss-rod loop being of a double construction, substantially as specified.

6. In a box-car, the combination with the side plates, end plates and carlines, of a central truss-rod loop, tie-rods and blocks connecting the same with the side plates of the car-roof frame, and diagonally-extending truss-rods fitting at their middle portions in the hooks of said truss-rod loop and extending to the four corners of the car-roof frame, said truss-rods being provided with turnbuckles, substantially as specified.

7. In a box-car, the combination with diagonally-braced upright end posts and the side plates, end plates and carlines, of a truss-rod loop having oppositely-turned hooks supported under the middle carline, a tie and strut member connecting said loop with the side plates of the car-roof frame, and truss-rods fitting at their middle portions in the oppositely-turned hooks of said truss-rod loop and extending to the end plates at the corners of the car-roof frame, said truss-rods being provided with turnbuckles, substantially as specified.

8. In a box-car, the combination with side plates, end plates and carlines of the car-roof frame, of a central truss-rod loop having oppositely-turned hooks, strut members connecting the same with the side plates at the middle portion thereof, and longitudinally-extending truss-rods engaging at their middle the oppositely-turned hooks of said truss-rod loop and, at their ends, with the end plates of the car-roof frame at the four corners of the car, said truss-rods being provided with turnbuckles, substantially as specified.

849,383. SANITARY T. JOHN L. FRUIN, New York, N. Y. Filed Oct. 17, 1904. Serial No. 228,739.

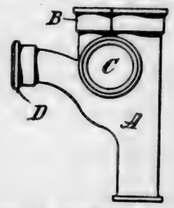

Claim.—A sanitary T composed of a straight portion, adapted to form a length of a main waste-pipe, a lateral enlargement provided with a suitable vent-passage, a main waste branch opening into said enlargement and adapted to project within the interior of the room and discharging immediately under said vent-passage and out of line with the main waste, and an auxiliary waste-passage

adapted to lie wholly within the wall and entering said enlargement between the main waste and the vent-passage whereby the discharge from said auxiliary waste is caused to pass under said vent-passage in entering the main waste.

849,384. UNIVERSAL JOINT FOR SHAFTS OR SECTIONS OF SHAFTS. JAMES H. GAULT, Philadelphia, Pa. Filed May 2, 1906. Serial No. 314,744.

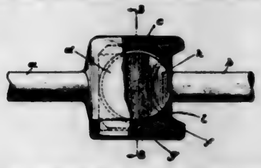

Claim.—1. An universal joint for shafts, comprising a box connected to one shaft or section of a shaft, two semicylinders mounted in said box, to rotate horizontally therein, and a projection from the other shaft between said semicylinders, and having a bearing between said cylinders, and movable horizontally with, and vertically between, said cylinders.

2. An universal joint for shafts, comprising a box connected to one shaft or section of a shaft, two semicylinders mounted in said box, to rotate horizontally therein, and a lenticular projection from the other shaft between said semicylinders, and having a bearing between said cylinders, and movable horizontally with, and vertically between, said cylinders.

3. An universal joint for shafts, comprising a box connected to one shaft or section of a shaft, two semicylinders mounted in said box, to rotate therein, and a projection from the other shaft or section, having a bearing between said semicylinders said semicylinders and box being cut away to allow the projection from, and said shaft to move with said semicylinders and its bearing.

4. An universal joint for shafts, comprising a box connected to one shaft or section of a shaft, two semicylinders mounted in said box, to rotate therein, a projection from the other shaft or section having a bearing between said semicylinders, and a cap for said box, removably secured to said box for the insertion of and securing the parts in said box.

5. An universal joint for shafts, comprising a box connected to one shaft or section of a shaft, two semicylinders mounted in said box, to rotate therein, a projection from the other shaft or section, having a bearing between said semicylinders, and a cap secured by intermeshing threads, with said box for the insertion of and securing the parts in said box.

6. An universal joint for shafts comprising a box connected to one shaft or section of a shaft, two semicylinders mounted in said box, to rotate therein, a projection from the other shaft or section having a bearing between said semicylinders, and caps removably secured forming opposite ends of said box.

7. An universal joint for shafts comprising a box connected to one shaft or section of a shaft, two semicylinders mounted in said box, to rotate therein, the ends of said cylinders being conical, a projection from the other shaft or section, having a bearing between said semicylinders, and caps removably secured forming opposite ends of said box, the inner surface of said caps being conical.

849,385. ORE-SEPARATOR. JOHN W. GIBSON, Milwaukee, Wis. Filed Apr. 2, 1906. Serial No. 309,306.

Claim.—1. In an ore-separator, a movable table of diamagnetic material and provided with gangue-discharging openings, a plurality of electromagnets disposed under said table and means for passing magnetic ore over the table.

2. In an ore-separator, a movable table of diamagnetic material and provided with gangue-discharging openings, means for shaking said table and a plurality of electromagnets disposed under said table.

3. In an ore-separator, a table of diamagnetic material provided with staggered openings, electromagnets arranged in staggered relation under the table and means for passing magnetic ore over the table.

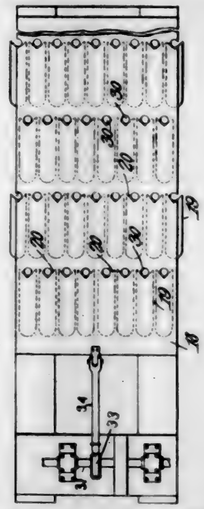

4. In an ore-separator, a table of diamagnetic material provided with staggered openings, means for shaking said table and electromagnets arranged in staggered relation under the table.

5. In an ore-separator, a movable table, a plurality of series of horseshoe-magnets arranged under the table, the magnets of each series being staggered with relation to those of an adjacent series, the table being provided with openings in alinement with the pole-pieces of the electromagnets, and means for passing magnetic ore over the table.

6. In an ore-separator, a movable table, means for shaking said table, a plurality of series of horseshoe-magnets arranged under the table, the magnets of each series being staggered with relation to those of an adjacent series, the table being provided with openings in alinement with the pole-pieces of the electromagnets.

7. In an ore-separator, the combination with a shaking-table, of a plurality of horseshoe-magnets arranged in staggered order under the table and having extension pole-pieces, the table being provided with openings in alinement with such pole-pieces, and means for passing magnetic ore over the table.

8. In an ore-separator, the combination with a shaking-table, of means for operating the same, a plurality of horseshoe-magnets arranged in staggered order under the table and having extension pole-pieces, the table being provided with openings in alinement with such pole-pieces.

9. In an ore-separator, a longitudinally-movable table, horseshoe-magnets arranged in series under the table, the magnets of each series being disposed in staggered relation with respect to those of the adjacent series, said magnets having extension pole-pieces, and the table being provided with gangue-discharging openings in alinement with the pole-pieces and means for passing magnetic ore over the table.

10. In an ore-separator, a longitudinally-movable table, means for shaking said table, horseshoe-magnets arranged in series under the table, the magnets of each series being disposed in staggered relation with respect to those of the adjacent series, said magnets having extension pole-pieces, and the table being provided with gangue-discharging openings in alinement with the pole-pieces.

11. In an ore-separator, the combination with a reciprocatory table of diamagnetic material, a plurality of horseshoe-magnets arranged under the table and having their pole-pieces of different polarity alternating in the width of the table, extension pole-pieces for said electromagnets, the table having gangue-discharging openings in alinement with such pole-pieces, and means for passing magnetic ore over the table.

12. In an ore-separator, the combination with a reciprocatory table of diamagnetic material, of means for operating the same, a plurality of horseshoe-magnets arranged under the table, and having their pole-pieces of different polarity alternating in the width of the table, and extension pole-pieces for said electromagnets, the table having gangue-discharging openings in alinement with such pole-pieces.

13. In a magnetic-ore separator, a reciprocatory table having staggered discharge-openings, electromagnetic means for moving the magnetic ore in a zigzag path across the table and directing the same between the openings, and means for passing magnetic ore over the table.

14. In a magnetic-ore separator, a reciprocatory table having staggered discharge-openings, means for operating the same and electromagnetic means for moving the magnetic ore in a zigzag path across the table and directing the same between the openings.

15. In a magnetic-ore separator, a shaking-table, means for reciprocating the table, a plurality of horseshoe-magnets extending transversely across the table, the pole-pieces of the electromagnets of one series alternating with the pole-pieces of an adjacent series, the table having gangue-discharging openings in alinement with the pole-pieces.

849,386. HARROW-DISK. JAMES R. GRIGG, Arapaho, Okla. Filed Aug. 10, 1906. Serial No. 330,078.

Claim.—As an improved article of manufacture, the herein-described disk for agricultural implements, the same comprising a central earth-working body of concavo-convex form, and teeth radiating from the central body with their side edges converging to points at their outer ends, each of said teeth being concavo-convex in transverse section throughout its extent.

840,387. SAFETY DEVICE FOR FIREARMS. CARL H. HANSEN, Hellerup, Denmark. Filed Apr. 17, 1905. Serial No. 255,062.

Claim.—1. In a firearm, the combination with the firing-pin, of a safety device normally locking the firing-pin and having an exposed part located on the fore-end of the stock of the firearm, said exposed part being movable at an angle to the longitudinal axis of the barrel to release the firing-pin.

2. In a firearm, the combination with the firing-pin, of a safety device normally locking the firing-pin and provided with a press-plate normally flush with the outer surface of the firearm and arranged at the point usually grasped by the foremost hand of the operator when the firearm is discharged.

3. In a firearm, the combination with the firing-pin, of a safety device normally locking the firing-pin and provided with a press-plate normally flush with the outer surface of the firearm and arranged at the point usually grasped by the foremost hand of the operator when the firearm is discharged; said plate being movable inwardly to release the firing-pin.

4. In a firearm, the combination with the firing-pin, of a safety device normally locking the firing-pin and provided with a press-plate normally flush with the outer surface of the firearm and arranged at the point usually grasped by the foremost hand of the operator when the firearm is discharged; said plate being movable inwardly to disengage the safety device from the firing-pin, and means for returning the safety device to its normal position.

849,388. TRACK FOR TELPHERS. HENRY M. HARDING, New York, N. Y. Filed Mar. 4, 1903. Renewed May 23, 1905. Serial No. 261,853.

Claim.—1. The combination with a substantially circular track of a support pivoted in the center of the space inclosed by the track, a section of track carried by said support, branches from the space inclosed by the circular track, and means for connecting the section on the support with the circular and branch tracks, substantially as described.

2. The combination with a substantially circular track of a support pivoted in the center of the space inclosed by the track, a section of track carried by said support and having switches to connect to the circular track, substantially as described.

849,389. MORTISING-MACHINE ATTACHMENT. WILLIAM J. HAYDEN, Athol Center, Mass. Filed Oct. 26, 1906. Serial No. 340,744.

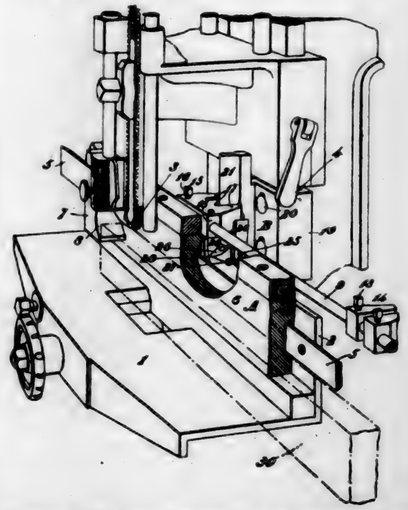

Claim.—1. In a mortising-machine the combination with a vertically-movable table and a stop movable vertically with and longitudinally of the table; of a guide-flange, and a gravity-operated latch adjacent said flange and adapted to limit the longitudinal movement of the stop, said latch being so disposed as to permit the stop to pass

the latch during the downward vertical movement of the table.

2. In a mortising-machine the combination with a vertically-movable table and a stop movable therewith and longitudinally of the table; of a flange adjacent the table and constituting a guide for the stop during its vertical movement, and a latch for limiting the longitudinal movement of the stop prior to its upward movement, said latch being so disposed as to permit the stop to pass it upon the return or downward movement of the stop.

3. In a mortising-machine the combination with a vertically-movable table and a stop movable therewith and longitudinally thereof; of a latch pivotally mounted to swing in a vertical plane and adapted to limit the longitudinal movement of the stop prior to its upward movement, and means for shifting the latch into position to permit the stop to pass the same upon its return or downward movement.

4. In a mortising-machine the combination with a vertically-movable table and a stop movable longitudinally thereof and carried thereby; of a flange adjacent the table and constituting a guide for the stop during the vertical movement thereof, a latch adjacent the guide and adapted to limit the longitudinal movement of the stop prior to the vertical movement thereof, and means for actuating said latch to permit the stop to pass it during the completion of the vertical movement of the stop.

5. In a mortising-machine the combination with a vertically and longitudinally movable slide and a stop adjustably connected thereto; of a flange constituting a guide for the stop, a latch movably mounted adjacent one end of the flange, means for holding the latch normally spaced from the flange, said latch being disposed within the path of the stop during the vertical movement thereof in one direction and in rear of the stop during the movement thereof in the opposite direction.

6. In a mortising-machine the combination with a vertically-movable table, a slide movable longitudinally thereon, and a stop carried by the slide; of a flange disposed adjacent the table and constituting a guide for the stop during the vertical movement of the stop and table, and a gravity-operated latch disposed below the guide-flange and normally spaced therefrom, said latch being arranged to be contacted by and limit the longitudinal movement of the stop, and to release said stop during the completion of a vertical movement thereof.

7. In a mortising-machine the combination with a vertically-movable table, a slide thereon, and a stop adjustably connected to the slide; of a flange constituting a vertical guide for the stop, a latch, means for holding one end of the latch normally spaced a predetermined distance from the end of the flange, and gravity-operated means for returning the latch to said normal position after it has been shifted a greater distance from the flange, the stop being disposed to bear against and be limited in its longitudinal movement by the latch and to pass said latch during the completion of the vertical movement of the stop.

8. In a mortising-machine the combination with a vertically-movable table, a longitudinally-movable slide thereon, and a stop adjustably connected to the slide; of a flange constituting a vertical guide for the stop, said flange having a recessed end, a strip pivotally mounted below the flange and having a weighted end, said strip having one end normally spaced from, but adapted to be forced into, the recessed end of the flange, and gravity-operated means for holding the weighted strip in normal or spaced position, the stop being limited in its longitudinal movement by the strip and disposed to force the same into the recess, said strip adapted to release the stop during the completion of its vertical movement.

9. An attachment for mortising-machines comprising a guide-strip adapted to be secured to a vertically-movable table, a slide thereon, a stop-block secured upon the slide, a stop adjustably connected to the slide, a guide-flange, means for securing said flange to a fixed portion of a mortising-machine, and a gravity-operated latch pivotally secured adjacent, and normally spaced from one end of the flange, said latch being disposed to limit the longitudinal movement of the stop and to permit said stop to pass during the completion of its vertical movement.

10. An attachment for mortising-machines comprising a guide-strip adapted to be secured to the vertically-movable table of a mortising-machine, a slide thereon movable at an angle to the direction of movement of the table, a rod extending longitudinally of and movable with the slide, a stop adjustably mounted on the rod, a flange, means for securing the same to a fixed portion of a machine and in the path of the stop, said flange having a recess in the end of that side thereof first contacted by the stop, a strip pivotally mounted adjacent said end of the flange, and gravity-operated means for holding said strip normally spaced from the recessed end of the flange, said strip adapted when under pressure to be seated within the recessed end.

11. In a mortising-machine the combination with a vertically-movable bed; of a longitudinally-movable slide mounted thereon, a stop extending from the slide, and means fixed upon the machine for stopping the longitudinal movement of the stop and slide prior to each vertical movement of the table and for releasing said stop and slide during the completion of each vertical movement.

12. In a mortising-machine the combination with a vertically-movable table, a slide thereon, a rod disposed longitudinally upon and movable with the slide, and a stop adjustably secured upon the rod; of means fixedly secured to the machine for automatically stopping the longitudinal movement of the slide and stop prior to the vertical movement of the table and for releasing the stop and slide during the completion of said vertical movement.

13. The combination with a guide-flange and a gravity-controlled latch disposed therebelow and normally spaced therefrom; of a vertically-movable guide-strip, a horizontally-movable slide thereon, a rod secured to and movable with the slide, a sleeve adjustably mounted on the rod, and a plurality of fingers extending rearwardly from the sleeve and constituting stops, said stops adapted to successively contact with and be released by the latch prior to and during the completion of the vertical movement of the fingers respectively.

14. An attachment for mortising-machines comprising a base, a guide-flange extending therefrom and having a recessed end, a strip pivoted upon the base and having one end adapted to be seated within the recessed end of the flange, said strip having integral gravity-operated means for holding the same normally spaced a predetermined distance from the recessed end of the flange, a weight secured to and movable with the strip, said weight permitting the strip to be tilted a greater distance from the recessed end and adapted to return it to its position of normal spacing, and work-gaging means controlled by the guide-flange and latch.

15. In a mortising-machine the combination with a guide-flange and a latch movably mounted thereon and normally spaced therefrom; of a stop movable horizontally to shift the latch into alinement with the guide-flange and movable vertically to release the latch, and means upon the latch for shifting the same to direct the stop thereover upon the completion of its vertical movement.

849,390. WIRE-FENCE BUILDER. WILLIAM S. HAZELTON, Prosser, Wash. Filed May 31, 1906. Serial No. 319,590.

Claim.—1. A wire-stretcher comprising a lever composed of two members detachably interlocked and provided with separate wire-engaging devices, and a flexible connection provided with means for engaging the lever.

2. A wire-stretcher comprising a lever composed of two members having overlapped portions and provided with means for detachably interlocking the same, and separate wire-engaging means carried by the members of the lever.

3. A wire-stretcher comprising a lever composed of separable members provided with wire-engaging means, and a flexible connection adapted to engage the lever and having intermediate and terminal engaging devices.

4. A wire-stretcher comprising a lever composed of separable members having overlapped portions, each provided with a projecting stud and a perforation, the stud of each member being detachably fitted into the perforation of the other member, and wire-engaging means carried by the members.

5. A wire-stretcher comprising a lever composed of two separable members having overlapped portions, the overlapped portion of one of the members being bent outwardly or offset and the said members being provided with interlocking means located at the ends of the outwardly-bent or offset portion, an intermediate wire-clamp mounted on the other member and having its attaching means located within the said outwardly-beat portion or offset, and outer wire-clamps mounted on the members and spaced from the intermediate clamp.

6. A wire-stretcher comprising a lever consisting of two separable members, an intermediate wire-clamp mounted on the lever, and outer wire-clamps carried by the members and spaced from the intermediate clamp.

7. A wire-stretcher comprising a lever consisting of two separable members having spaced wire-engaging means.

8. A wire-stretcher comprising a lever consisting of two separable members carrying spaced wire-engaging means, one of the members being also provided with a laterally-bent portion and the other member having a notch, and a rotary wire-cutting device mounted on the member having the notch and provided with a corresponding notch, said wire-cutting device and laterally-bent portion having interlocking means.

9. A wire-stretcher comprising a lever consisting of two separable members having overlapped portions detachably interlocked, one of the interlocked portions being laterally bent and provided with perforations, and a rotary wire-cutting device mounted on the other member and having projections for engaging the perforations of the laterally-bent portion of the first-mentioned member.

10. A wire-stretcher comprising a lever provided with a pair of spaced wire-engaging lugs extending from one side of the lever and adapted to straddle a wire for twisting the same.

11. A wire-stretcher comprising a lever composed of two separable members having overlapped portions, one of the members being provided with a stud having a projection forming a partial head, and the other member being provided with an opening adapted to permit the stud to be inserted in and removed from it when the members are arranged at an angle to each other, means for locking the members in alinement, and wire-engaging means carried by the lever.

12. A wire-stretcher comprising a lever composed of separable members having overlapped portions, each provided with a projecting stud and a perforation, the stud of one of the levers having a partial head and the corresponding perforation of the other member being arranged to permit the head to be passed through it when the members are arranged at an angle to each other, and a catch arranged to engage the other stud for locking the levers in alinement.

13. A wire-stretcher comprising a lever composed of separable members having overlapped portions, each provided with a projecting stud and a perforation, and a catch mounted on one of the members and engaging the stud of the other member, whereby the two members are retained in their interlocked relation.

849,391. GRINDING-MACHINE. HORACE L. HENRY and WALTER ALTHOFF, Geneva, N. Y. Filed Feb. 23, 1906. Serial No. 302,374.

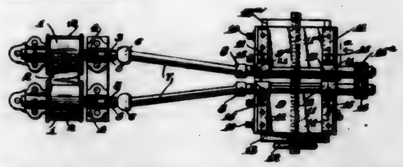

Claim.—1. The combination of a plurality of driving-pulleys actuated by a single belt passing about both in the same direction; pulley-shafts having a sleeve, and internal springs; driving-arbors movably secured to said sleeves and abutting against said springs; grinding-arbors running in cone-bearings; connecting-rods provided with ball-and-socket joints connecting the driving-arbors and grinding-arbors; movable carriages carrying bearing-lugs; bearing-blocks pivotally secured to the lugs so as to admit of a rocking motion away from the opposite ones; springs adjustably bearing against said bearing-blocks; and a right-and-left-handed screw controlling the carriages and adapted to regulate their relation.

2. The combination of a plurality of driving pulleys and shafts equally driven and revolving in the same direction; grinding-arbors; and ball-and-socket connections joining the driving-shafts and grinding-arbors; bearings holding the grinding-arbors, pivotally mounted upon oppositely-adjustable carriages; adjustable springs bearing against said bearings, and a screw adapted to adjust the position of the carriages.

3. The combination of driving-pulleys and shafts; grinding-arbors; flexible connections between the shafts and arbors; movable bearings holding the arbors, mounted upon oppositely-movable carriages, and adjustable means mounted on said carriages for automatically resisting the separation of the bearings; and means for adjusting the carriages.

4. The combination of arbors; oppositely-movable carriages carrying oppositely-movable bearings holding the arbors; resilient means mounted on said carriages for automatically resisting the separation of the bearings; means for communicating motion to the arbors, and means for adjusting the carriages.

5. In an abrading-machine, oppositely-movable bearings holding arbors mounted on oppositely-movable carriages; resilient means interposed between the carriage and the bearing adapted to resist the separation of the bearings, and means for adjusting the relative position of the carriages.

6. In an abrading-machine, bearings carrying grinding-arbors pivotally mounted upon carriages; resilient means mounted on said carriages adapted to automatically resist the separation of the bearings, and means for adjusting the relation of the carriages.

7. The combination of oppositely-movable carriages; bearings pivotally mounted thereon carrying arbors, and springs interposed between the bearings and the carriages adapted to normally and automatically resist the separation of the bearings.

8. The combination of transversely-movable carriages; bearings carrying grinding-arbors pivoted thereon; means

for adjusting the carriages, and adjustable resilient means interposed between the bearings and the carriages adapted to automatically resist the separation of the bearings.

9. In a grinding-machine, transversely-movable spring-regulated pivoted bearings carrying grinding-arbors mounted on transversely-movable carriages, and means for adjusting the same.

10. In a grinding-machine, the combination of fixed driving-shafts, transversely-movable oppositely-disposed and spring-adjusted grinding-arbors, and flexible connections between the shafts and arbors.

11. The combination of a plurality of shafts equally driven and revolving in the same direction; arbors; flexible connections between the shafts and arbors; oppositely-adjustable carriages supporting pivotally-mounted bearings holding the arbors, and adjustable springs bearing against said bearings, and means for adjusting the position of the carriages.

849,392. CEMENT-BLOCK MACHINE. JAMES W. HERRING, Mount Carmel, Pa. Filed Oct. 20, 1906. Serial No. 339,836.

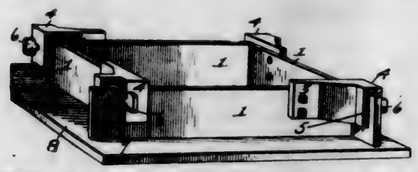

Claim.—A cement-block machine comprising an expansible and contractible mold-body consisting of a plurality of flat upright right-angularly-related side wall-plates each of which, at one end, crosses and projects beyond the end of another plate, each of said side wall-plates being also provided at one end above the plane of its bottom edge with an offstanding bracket provided with a slide-opening receiving the unobstructed end portion of the adjoining side wall-plate, and a clamping-screw carried by each bracket.

849,393. CAR-REPLACER. CHARLES H. HESS, Steamboat Rock, Iowa. Filed Dec. 21, 1906. Serial No. 348,098.

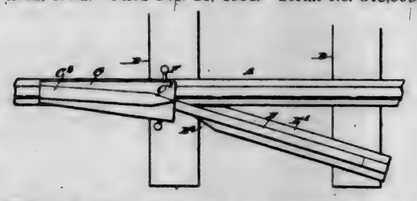

Claim.—1. In a car-replacer, the combination with an inclined rail, of a shoe adapted to rest on the track-rail and carrying the car-wheel across it diagonally, said shoe having a short section of rail at the top, and central thereto, and side flanges to straddle the rail-ball at one end, and at the other end spreading to allow for use in replacing cars from either side of the track-rail.

2. In a car-replacer, the combination of an inclined rail provided with a bottom flange tapered at one end, and a shoe adapted to rest on the track-rail, said shoe having depending flanges, flared at one end, and a raised portion at the top, tapered at one end, to abut against one end of the inclined rail, and carry the car-wheel flange diagonally across the track-rail.

849,394. MERCURY-PUMP. PETER C. HEWITT, New York, N. Y., assignor to Cooper Hewitt Electric Company, New York, N. Y., a Corporation of New York. Filed May 27, 1904. Serial No. 210,076.

Claim.—1. A fall-tube for mercury-pumps having a bulb interposed therein, the portion of the tube leading into the said bulb being formed into a spiral.

2. A fall-tube for mercury-pumps having a bulb interposed therein, and having a portion of the tube leading into the bulb formed into a downwardly-inclined spiral whereby the mercury entering the bulb strikes tangentially upon the mercury in that part of the tube which is below the bulb.

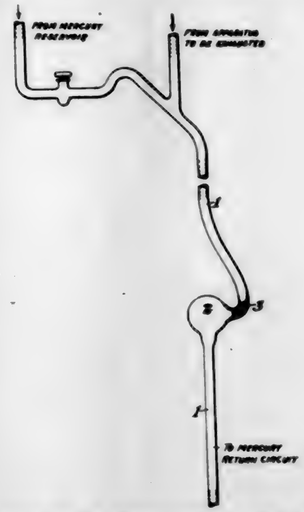

3. In a fall-tube for mercury-pumps, a bulb interposed between the upper and lower parts thereof, the lower part of the tube at the point where it is connected with the bulb being of larger diameter than the upper part of the fall-tube.

849,395. CONDUIT-BOX. CHARLES A. HINSDILL, Troy, N. Y. Filed Apr. 20, 1906. Serial No. 312,784.

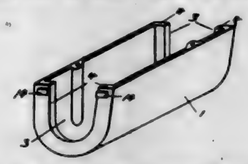

Claim.—1. An outlet-box for conduits provided with an open side and an open slot in its end extending inwardly from said open side, and having on opposite sides of said slot inwardly-extending flanges; and a cover for the open side of the box having a flange adapted to occupy the open end of said slot, and of a less thickness than the end wall flanges on opposite sides of said slot.

2. An outlet-box for conduits provided with an open side and an open slot in its end extending from said open side, and having on the outer side of its end wall near the open end of said slot an outwardly-extending lug.

849,396. CULTIVATOR. WILLIAM C. HINTON, Danburg, Ga., assignor of one-half to John H. Sayer, Pistol, Ga., and one-half to Calloway Croft, Danburg, Ga. Filed Aug. 3, 1906. Serial No. 329,127.

Claim.—1. A cultivator comprising a beam, an arch member attached to the beam and having at its ends elongated openings, a segment member attached to the beam and having at its ends elongated openings, side bars having earth-engaging members, and bolts attached to the bars and passing through the elongated openings of the arch and segment members.

2. A cultivator comprising a beam, an arch member attached to the beam and having at its ends elongated openings, a plow attached to said arch member, a segment member attached to said beam and having at its ends elongated openings, side bars carrying earth-engaging members, bolts attached to said side bars and passing through the elongated openings of the arch and segment members.

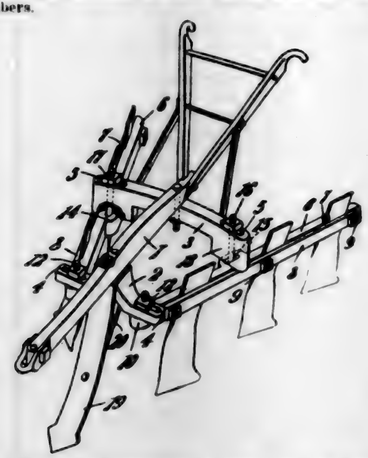

3. A cultivator comprising a beam, an arch member attached to the beam and having at its ends elongated openings, a segment member attached to the beam and having at its ends elongated openings, the under edge of the intermediate portion of said segment member being in a higher plane than the edge at its ends, side bars carrying earth-engaging members, bolts attached to said side bars and entering the elongated openings of the arch and segment members.

4. A cultivator comrpising a beam, an arch member attached to the beam and having elongated openings, a segment member attached to the beam and having elongated openings, side bars carrying earth-engaging members, rails clamped to said bars and forming the retaining means for earth-engaging members, bolts attached to said bars and passing through the elongated openings of the earth and segment members.

849,397. COMBINATION CHAIR AND TABLE. CARL O. HOFFMANN, Chicago, Ill. Filed July 20, 1906. Serial No. 327,065.

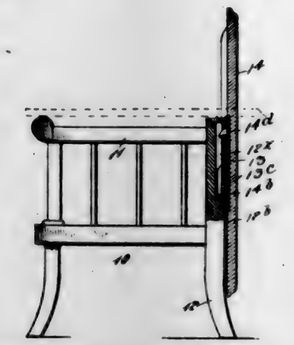

Claim.—The combination with a chair-frame having rear members with recesses in the rear faces thereof and plates over said recesses having upper and lower slots, the latter having cross-slots 13ᵉ, of a removable back convertible to form a table, having plates on the under side thereof with upper and lower projections engageable in the slots, the lower projection having lateral studs 14ᵇ, the slots being different distances apart than the projections.

849,398. BRACKET. HENRY T. HOLLAND, New York, N. Y. Filed July 13, 1906. Serial No. 326,099.

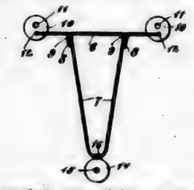

Claim.—1. A bracket comprising a supporting-arm, a brace, and a fastening device at the end of the arm rotatable around the same.

2. A bracket comprising a supporting-arm, a brace, and a fastening for the arm consisting of a disk connected to the arm and which may be turned around the same as an axis.

3. A wall-fastening for a bracket, comprising a sheet-metal disk having a hole near its edge through which the arm of the bracket extends, so that the disk may be turned around the arm.

4. A bracket comprising a supporting-arm, a brace, and a fastener consisting of a sheet-metal disk having a hole near its edge through which the arm extends loosely, the end of the arm being upset behind the disk.

5. A bracket comprising a pair of spaced arms flexibly connected at their front ends and having fastening devices at their rear ends, and a brace hinged to the arms at its upper end and having a fastening device at its lower end.

6. A bracket comprising a piece of wire bent to form a pair of supporting-arms located beside each other and having fastening devices at their ends, and another piece of wire bent to form a brace for both arms and hinged at its upper end to the arms and provided with a fastening device at its lower end.

7. A bracket comprising a piece of wire bent to form a pair of supporting-arms extending at an angle to each other and adjustable by bending to vary the angle, and a brace comprising a piece of wire bent to form two branches each of which is hinged at the end to one of the arms.

8. A folding bracket comprising a piece of wire bent to form a pair of spaced supporting-arms and a loop in each arm, and a piece of wire bent to form a brace for both arms, the ends of said piece being hooked into the loops.

9. A bracket comprising a piece of wire bent to form a pair of supporting-arms and having swiveling-disks at their ends, and a piece of wire bent to form a brace for both arms and hinged at its upper ends to said arms and having a hinged disk at its lower end.

849,399. TAILOR'S CHALK-SHARPENER. ABRAHAM IDOV, Baltimore, Md. Filed Jan. 9, 1907. Serial No. 351,570.

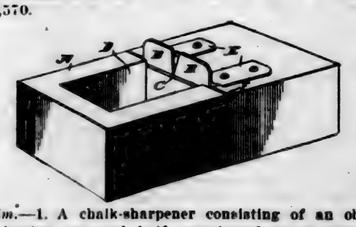

Claim.—1. A chalk-sharpener consisting of an oblong block having one end half constituted as an open-top chamber and the other end half solid, and an upstanding V-slotted knife disposed transversely of said block and substantially centrally thereof.

2. A chalk-sharpener consisting of a block having an open-top chamber or receptacle formed in one portion thereof, and an upright V-slotted knife extending above the surface of said block and forming a continuation of one of the walls of said chamber.

3. A chalk-sharpener consisting of an oblong block having one of its end halves formed as an open-top receptacle, and an upright V-slotted knife extending above the surface of said block at the inner side of the interior of said receptacle.

4. A chalk-sharpener consisting of an oblong block having one of its end halves formed as an open-top receptacle, and an upright V-slotted knife extending above said block at the inner side of the interior of said receptacle, and having arms extending rearward oppositely from said receptacle and secured to the surface of the block.

5. A chalk-sharpener consisting of an oblong block having its top surface divided transversely by a groove, the portion of the block at one side of said groove being constituted as an open-top receptacle, an upright V-slotted knife standing in said groove and projecting therein at either end beyond the interior of said receptacle, and having rearward-extending arms securing it to the surface of the portion on the block at the other side of the groove from said receptacle.

6. A chalk-sharpener consisting of an oblong block having its top surface divided transversely by a groove, the portion of the block at one side of said groove being constituted as an open-top receptacle, an upright V-slotted knife standing in said groove and projecting therein at either end beyond the interior of said receptacle, a metal bar lying in the bottom of said groove, and means for securing the knife rigidly to the block.

849,400. BARREL-HOOP FORMER. THORWALD JOHNSON, Chicago, Ill. Filed May 28, 1906. Serial No. 319,043.

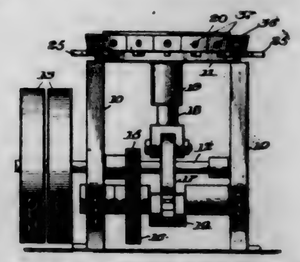

Claim.—1. A former comprising a plurality of radially-movable sections having upwardly-flared faces, a rod reciprocating at the center of the sections, and a series of rods connecting the sections to the reciprocating rod to positively expand and retract the sections.

2. A former comprising a plurality of radially-movable sections having their faces curved and upwardly flared to correspond with a barrel end, a rod reciprocating at the center of the sections, a head on the rod, and a series of rods positively connecting the head and sections.

3. A former comprising a plurality of radially-movable sections having their faces curved and flared to correspond with a barrel end, a rod reciprocating at the center of the sections, a head on the rod comprising a pair of opposed plates, and a series of rods each pivoted at one end to a section and clamped at the other end between the plates.

4. A former comprising a plurality of radially-movable sections having their faces curved and flared to correspond with a barrel end, a rod reciprocating at the center of the sections, a head on the rod comprising a clamping-plate and a dish-shaped plate having its edge serrated, and a series of rods each pivoted at one end to a section and having its other end provided with wings adapted to seat between the serrated edge of the plate and the clamping-plate.

5. A former comprising a table having radial ways, a plurality of movable sections having guides adapted to said ways, said guides extending beyond the associated sections, and a reciprocating rod positively moving said guides in both directions in the ways.

6. A former comprising a table having radial ways, a plurality of movable sections having guides adapted to said ways, said guides extending beyond the associated sections, a reciprocating rod positively moving said guides in both directions in the ways, and a series of supplemental heads adapted to said sections.

7. A former comprising a plurality of radially-movable sections having their faces curved and flared to correspond with a barrel end, a rod reciprocating at the center of the sections, a head on the rod comprising a pair of opposed plates, a series of rods each pivoted at one end to a section and clamped at the other end between the plates, and a series of supplemental heads adapted to said sections and having their faces curved and flared.

849,401. STEAM-TRAP. EDWARD J. KELLEY, Washington, D. C., assignor of one-half to George L. Hess, Pulteney, N. Y. Filed Jan. 29, 1906. Serial No. 298,486.

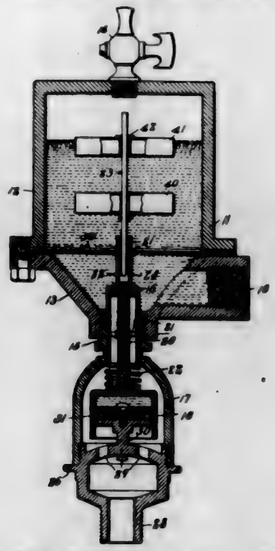

Claim.—1. In a steam-trap, an upper water-receiving chamber, a lower discharge-chamber, a valve-controlling communication between the two, a hollow stem carrying said valve, a piston secured to a fixed point within the lower chamber, a cylinder carrying the hollow stem, a spring surrounding the stem and tending to close the valve, a float-valve arranged in the upper chamber and controlling the passage of water through the hollow stem, and a guiding-tube carried by said stem and surrounding the lower portion of the float-valve.

2. In a steam-trap, the combination with an upper water-receiving chamber, of a lower discharge-chamber, a connecting-nipple between the two, the upper end of the nipple being spaced to form a valve-seat, a valve, a hollow stem carrying the valve, a piston arranged within the lower chamber, a cylinder inclosing the piston and carrying the hollow stem, a spring tending to maintain the valve in closed position, and a float-controlled valve controlling the flow of water through the hollow stem into said cylinder.

3. In a steam-trap, a water-receiving chamber having a discharge-outlet, a spring-closed valve for said outlet, an operating-cylinder connected to the valve, a stationary piston fitting within the cylinder, a hollow valve-stem through which water under pressure may pass from the chamber to the cylinder, and a float-controlled valve for closing the passage through the stem.

849,402. BASKET-HANDLE. JOHN B. KENNY, Geneva, N. Y. Filed Nov. 24, 1906. Serial No. 344,978.

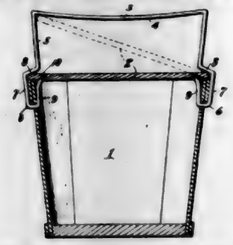

Claim.—1. The combination with a container and a cover therefor, of a handle for said container provided with a shoulder to engage the top of the cover and with a spur located within the container and engaged with the bottom face of said cover for securing it upon the container.

2. The combination with a container and a cover therefor, of a handle provided at its ends with loops to engage the opposite sides of said container, said loops having shoulders to engage the edges of the cover, and spurs located within the container and engaged with the bottom face of said cover for securing it upon said container.

3. The combination with a basket and a cover therefor, of a resilient metal handle formed at its ends with loops to engage and enter the opposite sides of the basket, said loops having at their upper ends angularly-disposed shoulders to engage the edges of the cover, and at their lower ends upwardly and inwardly projecting spurs located within the basket and projecting above its upper edge for engagement with the bottom face of the cover, substantially as shown and for the purpose set forth.

4. The combination with a basket and a cover therefor, of a combined handle and cover-fastener formed from a single piece of resilient wire and bent to provide the hand-grip 4, the upright portions 5 and the loops 6, each of the latter having a straight portion 7 to engage the outer face of the side of the basket, the inclined portion or shoulder 8 to engage the top of the cover and the spur 9 located within the basket and bearing against the inner face of the basket, said spur having its upper end projecting above the upper edge of the basket for engagement with the bottom face of the cover, said spur being formed at its extremity with the outwardly-beveled upper point 10, substantially as shown and for the purposes set forth.

849,403. CRANE. ALVIE V. KISER, Marion, Ohio. Filed Mar. 12, 1906. Serial No. 305,528.

Claim.—1. In a structure as described, the combination of a crane-arm capable of both vertical and revoluble movement, means for elevating said crane-arm perpendicularly, a guideway with which said crane-arm engages, a portion of said guideway being vertically disposed, and a portion of said guideway being inclined and connecting the opposite ends of said vertical portion, whereby said crane-arm will be returned to its original position through gravity, substantially as specified.

2. The combination with a swinging crane-arm, capable of vertical and revoluble movement, of means for elevating said crane-arm perpendicularly and means for moving said crane-arm radially about its axis, while it descends through gravity to its original position.

3. The combination with a swinging crane-arm, of means for elevating said crane-arm while maintaining same in a given radial position and means for automatically causing said crane-arm to swing from said certain radial position and to automatically return to the same radial position while descending.

4. The combination with a swinging crane-arm and a supporting-post, of a trackway on one of said parts, and means on the other part for causing the crane-arm to maintain a given radial position while ascending to automatically swing from said radial position and to automatically return to said position while descending, substantially as specified.

5. The combination with a swinging crane-arm and a supporting-post; of a trackway on one of said parts having a vertical section, a section leading downwardly and outwardly from the upper end of the vertical section, and a section leading upwardly and outwardly from the lower end of the vertical section and connected to the outer end of the other section; means on the other of said parts for travel on the trackway and means for elevating said crane-arm while in engagement with said vertical section, substantially as specified.

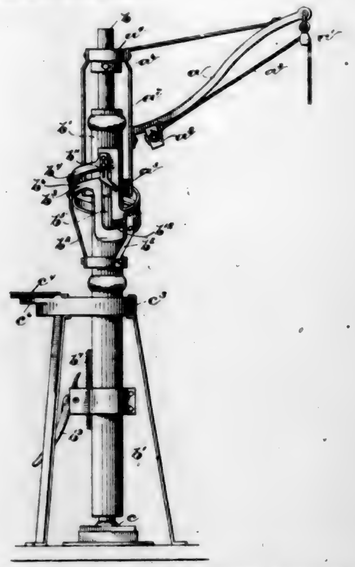

6. The combination with a swinging crane-arm and a supporting-post, of a trackway on one of said parts having a vertical section, a section leading downwardly and outwardly from the upper end of the vertical section, and a section leading upwardly and outwardly from the lower end of the vertical section and connected to the outer end of the other section; means on the other of said parts for travel on the trackway; and means for elevating the crane-arm while in engagement with the vertical section of said trackway, substantially as specified.

7. The combination of a hollow post, a post movable vertically in said hollow post, a crane-arm movable vertically with the post, a trackway carried by one of said parts, and having a vertical section, a section leading downwardly and outwardly from the upper end of the vertical section, and a section leading upwardly and outwardly from the lower end of the vertical section and connected to the outer end of the other section, and a projection carried by another of said parts and movable on the vertical section of the trackway.

8. The combination of a hollow post, a post movable vertically in said hollow post, a crane-arm movable vertically with the post, a trackway carried by one of said parts, and having a vertical section, a section leading downwardly and outwardly from the upper end of the vertical section, and a section leading upwardly and outwardly from the lower end of the vertical section and con-

nected to the outer end of the other section, a projection carried by another of said parts and movable on the vertical section of the trackway, and means for elevating the inner post to elevate the crane-arm.

9. The combination with the hollow post, of a post movable vertically within the hollow post, a crane-arm moved upwardly by the inner post, means for elevating the inner post to elevate the crane-arm, and means causing the crane-arm to automatically swing to one side from the elevated radial position and to automatically return to the same radial position in a lower plane.

10. The combination with a swinging crane-arm, means for elevating said crane-arm while maintaining same in a given radial position, means for automatically causing said crane-arm to swing from said certain radial position and to automatically return to the same radial position while descending, and means to arrest the said crane-arm at a given point in its descending movement, substantially as specified.

11. In a structure as described, a crane-post having universal connections with its supporting-base, a rotary disk located intermediate said supporting-base and the free end of said post, and having an eccentric opening through which said post extends, and means for adjusting said disk and maintaining it in its adjusted position, substantially as specified.

12. In a structure as described, a supporting-post, a crane-arm, means for causing said arm to swing laterally and return to normal position, a cable carried by said crane-arm, a spring-actuated reel for said cable, a detent for holding said reel when the actuating-spring is under tension, substantially as specified.

13. In a structure as described, a supporting-post, a crane-arm, means for causing said arm to swing laterally and return to normal position, a cable carried by said crane-arm, a spring-actuated reel for said cable, the actuating-spring of which is placed under tension by the unwinding of the cable, substantially as specified.

14. In a structure as described, a supporting-post, a universal connection for said post with a stationary supporting-base, a crane-arm free to swing about said post as a center, means for varying the inclination of said post from the vertical whereby said arm will be given a tendency to move through force of gravity, substantially as specified.

15. In a structure as described, a supporting-post, capable of being inclined in any direction, a crane-arm pivoted on said post, a member having an opening eccentrically located therein, through which said post extends, means to oscillate said member whereby the inclination of the post will be varied, substantially as specified.

849,404. MANDREL FOR TALKING-MACHINES. HENRY KOCH, Rahway, N. J., assignor to The Regina Company, Rahway, N. J., a Corporation of New Jersey. Filed Apr. 23, 1906. Serial No. 313,107.

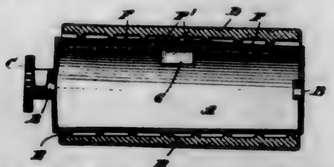

Claim.—1. A talking-machine mandrel provided with two yielding members extending toward each other with their ends adjacent for maintaining the record in position.

2. A talking-machine mandrel provided with a plurality of yielding members extending lengthwise of the mandrel with their free ends adjacent to each other for maintaining the record in position.

3. A talking-machine mandrel provided with a yielding member projected from the curved surface of the mandrel for maintaining the record in position and means adjacent to the free end of the member for limiting the inward movement thereof.

849,405. EGG-TESTER. CHRISTIAN LINGEMANN, St. Louis, Mo. Filed Nov. 14, 1906. Serial No. 343,415.

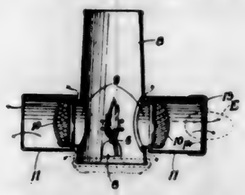

Claim.—1. An egg-tester comprising a flue, a source of light located within the flue, a lens mounted in position opposite the light, and a testing-tube enveloping the lens, an open space being left between the tube, and the lens and between the tube and flue.

2. An egg-tester comprising a flue, a source of light located within the flue, a ring or lens-holder secured to the flue opposite the source of light, a testing-tube enveloping the ring and lens carried thereby, an open space being left between the ring and tube, and between the flue and tube, and a ring of yielding material or fabric secured to the outer end of the tube for receiving an egg.

3. An egg-tester comprising a flue, a source of light located within the flue, a ring or lens-holder secured to the flue opposite the source of light, a testing-tube enveloping the ring and lens carried thereby, an open space being left between the ring and tube, and between the flue and one end of the tube, means for securing the tube to the flue, a ring of yielding material at the outer end of the tube for receiving the egg to be tested, and a collar for securing said material in position.

849,406. PRESSURE-REGULATOR FOR GAS-COCKS. MARTIN W. LONGFELLOW, Hamilton, Ohio. Filed Aug. 1, 1906. Serial No. 328,750.

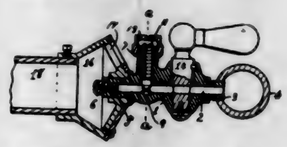

Claim.—A new article of manufacture for gas-regulators, a longitudinally-bored, substantially cylindrical body, each end of which is exteriorly screw-threaded and one end is interiorly threaded, and the intermediate portion is transversely perforated adjacent to one end and provided with an interiorly and exteriorly threaded hollow nipple adjacent to the other end, said hollow being extended across said bore and terminating in a recess.

849,407. UMBRELLA. HARVEY C. LOWRIE, New York, N. Y. Filed Feb. 6, 1906. Serial No. 299,734.

Claim.—1. An umbrella having a hollow handle slidably connected to the umbrella-stick, said handle in its normally extended position having its open inner end adjacent to the tips of the umbrella-ribs when the latter are in closed position, and being adapted to slide over the ribs and cover of the umbrella for shortening its length and housing and protecting the cover.

2. An umbrella having a hollow handle slidably connected to the umbrella-stick, said handle having a flared inner end which in the normally extended position of the handle is adjacent to the tips of the umbrella-ribs when the latter are in closed position, said handle being adapted to slide over the ribs and cover of the umbrella for shortening its length and housing and protecting the cover.

3. The combination with an umbrella-stick of a hollow handle slidably connected thereto, said handle being adapted to slide over the ribs and cover of the umbrella to shorten its length, and a spring controlling the limit of the normal outward movement of the handle.

4. The combination with an umbrella-stick of a hollow handle slidably connected thereto, said handle being adapted to slide over and house the ribs and cover of the umbrella, means for locking the handle against inward movement while permitting it to have a limited movement outwardly from its normal extended position.

5. The combination with a tubular umbrella-stick of a hollow handle having a rod centrally mounted therein, said rod being slidably mounted within said stick and a collar on the end of the stick affording a bearing for said handle.

6. The combination with a tubular umbrella-stick, of a hollow handle having a rod centrally mounted therein said rod being slidably mounted in said tubular stick and having a head or projection thereon, a stop within said stick, and a spring interposed between said head or projection and said stop.

7. The combination with a tubular umbrella-stick of a hollow handle having a rod centrally mounted therein, said rod being slidably mounted in said tubular stick and being provided with a head or projection, a stop in said stick, a spring interposed between said stop and said head or projection, and a screw projecting from said stick into a slot or recess formed in said rod, substantially as described.

849,408. RAIL-JOINT. JAMES H. MARTIN, Falun, Kans. Filed Jan. 9, 1907. Serial No. 351,549.

Claim.—1. The combination with the meeting ends of rails that are formed with a diagonal edge or scarf-joint extending in one plane through the head, web and base of the rail, of a chair of one integral construction provided with a base portion extending underneath the base of the rails at the joint thereof and with two members 6 and 7, the inner member 6 lying at the inner side of the rails, extending over the base-flange of the rails and snugly engaging the web thereof and the under side of the adjacent portion of the head of the rails, such inner member being of a thickness that its exposed wall lies flush with the side edge of the head and extends downwardly in a vertical plane therefrom, and the outer member of said chair extending over the opposite base-flange of the rails and snugly engaging the adjacent wall of the web and the underneath portion of the head, said last-named member of the chair being comparatively thick with respect to the other member and having its exposed wall extending in a diagonal plane from the outer side edge of the head of the rail down to the base of the chair, and bolts extending through the two members of the chair and through the webs of the rails.

2. The combination with the meeting ends of rails the webs of which are provided with slots, of a chair adapted to extend underneath the base of the rails at the joint thereof and formed with two members adapted to extend up alongside of the rails, one member of said chair being provided with angular recesses 4^a and with openings in said recesses, both members of the chair being formed with bolt-holes and bolts extending through said bolt-holes and through the slots of the webs and provided with nuts fitting within the angular recesses of the chair, and locking-pins inserted in the said openings and adapted to lie against the nuts, as and for the purpose set forth.

849,409. TELESCOPE, FIELD-GLASS, AND THE LIKE. KARL MARTIN, Rathenow, Germany, assignor to The Firm of Rathenower Optische Industrie-Anstalt vormals Emil Busch, A. G., Rathenow, Germany. Filed Jan. 31, 1906. Serial No. 298,855.

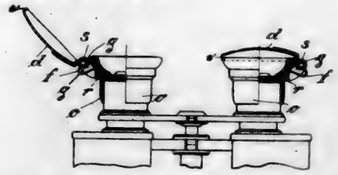

Claim.—In telescopes, field-glasses and the like, the combination with eyepieces, of protecting-covers, attached to the eyepieces by flattened hinge members and having their edges rectangularly turned off, for encircling the outer edge of the eyepieces, and of a spring pressing with one end against the flattened hinge member of the cover insuring thereby the retention of the covers in their opened or closed position, for the purpose of preventing the eyepieces from being soiled, and protecting the eye of the observer against lateral rays.

849,410. FISH-STRINGER. ANSON C. MILLS, Jackson, Mich. Filed May 28, 1906. Serial No. 319,122.

Claim.—1. A fish-stringer, comprising a clamp having a socket, a needle detachably inserted in the socket, a pivoted head on the needle, and a cord attached to the head.

2 A fish-stringer, comprising a needle, a divided head pivoted to the needle and provided with a socket, and a cord having a knot within the socket.

3. A fish-stringer, comprising a needle having an eye at one end, a globular head having a transverse slot to receive the eye of the needle and pivoted thereto and also provided with a socket, and a cord inserted in the socket and having a knot in the end within the socket.

849,411. RAILWAY-CAR. DAVID L. MINIER, Ithaca, N. Y., assignor of one-half to Sarah M. Kirkendall, Ithaca, N. Y. Filed Nov. 7, 1906. Serial No. 342,414.

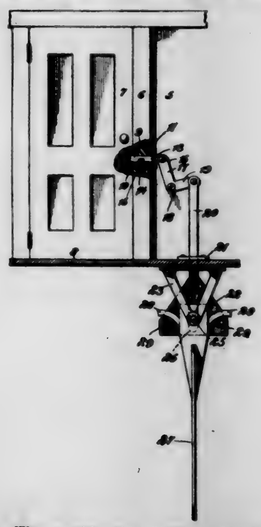

Claim.—1. The combination with a vehicle, of a door mounted on the vehicle, a reciprocatory bolt for locking the door, a bell-crank lever having one arm connected to the bolt, a swinging vane, and a reciprocatory link operated by the swinging vane and having a pivotal connection with the other arm of the bell-crank lever.

2. The combination with a vehicle, of a door mounted on the vehicle, a reciprocatory bolt for locking the door, a swinging vane, and connections between the bolt and vane for effecting the reciprocation of the bolt on the swinging of the vane.

3. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, a pivot-support, a link having connections with the lock and having a slot that receives the pivot, and a swinging vane mounted on the pivot and having an engagement with the link.

4. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, a bracket having a pivot, a link having connections with the lock and having slots that receive the pivot, a swinging vane mounted on the pivot, and a crank-arm carried by the vane and having a movable engagement with the link.

5. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, an oppositely-movable vane, a single link having connections with the lock, and means operated by the vane to move the link in the same direction upon the movement of the vane in either direction.

6. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, an oppositely-movable vane, a single reciprocatory link having connections with the lock, and means operated by the vane to move the link in the same direction upon the movement of the vane in either direction.

7. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, an oppositely-movable vane, a single link connected to the lock, and devices rigidly carried by the vane and engaging the link.

8. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, an oppositely-swinging vane, a single link connected to the lock, and arms mounted on the vane and engaging the link on opposite sides of its pivot for effecting the movement of the said link in the same direction on the opposite swinging movements of the vane.

9. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, a pivot-support, a reciprocatory link having a connection with the lock and having a slidable engagement with the pivot-support, an oppositely-swinging vane mounted on the pivot-support, and oppositely-extending arms carried by the vane and engaging the link on opposite sides of the pivot-axis to effect the movement of the link in the same direction on the opposite swinging movement of the vane.

10. The combination with a vehicle, of a door movably mounted on the vehicle, a lock for the door, a swinging vane mounted on the vehicle and operated by the resistance of air during the movement of said vehicle, a pivot-mounting for the vane, and a reciprocatory link having a sliding connection with the pivot, said link being associated with the lock and vane to transmit motion from the latter to the former.

11. The combination with a vehicle, of a door movably mounted thereon, a sliding bolt for holding the door closed, a bell-crank lever having one arm connected to the bolt, a reciprocatory link connected to the other arm of the bell-crank lever, a bracket-mounting, a pivot carried thereby, said link having a head and a slot in the head that receives the pivot, and a swinging vane mounted on the pivot and having engagement with the head to reciprocate the same.

12. The combination with a vehicle, of a door located on the vehicle, a lock for the door, a link connected to the lock, and an oppositely-swinging pivoted vane having devices on opposite sides of its pivot that coöperate with the link to move the same on the movement of the vane in either direction.

13. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, a link connected to the lock and having spaced projections, and an oppositely-swinging vane pivoted between the projections and having oppositely-extending fingers that engage the projections to move the link upon the swinging movement of the vane.

14. The combination with a vehicle, of a door, mounted thereon, a sliding bolt movable into and out of engagement with the door, a bell-crank lever connected to the bolt, a bracket secured to the under side of the vehicle-floor and having a pivot, a reciprocatory link connected to the bell-crank lever, and having a head provided with a slot that receives the pivot, rollers mounted on the head on opposite sides of the slot, and a vane mounted on the pivot and having oppositely-extending fingers that coöperate with the roller.

15. The combination with a vehicle, of a closure mounted thereon, a lock for the closure, automatic means operated by the movement and stoppage of the vehicle to effect the movement of the lock between an operative and an inoperative position, and means for moving the lock independently of said automatic means.

16. The combination with a vehicle, of a door-frame, and a door mounted on the vehicle, a lock mounted on the frame and movable into and out of engagement with the door for holding the same, a spring engaging the lock to urge it into engagement with the door, and a movable vane mounted on the vehicle and operated by the air resistance during the movement of said vehicle, said vane having connections with the lock to move it against the action of the spring upon the movement of the vehicle.

849,412. CAR-COUPLING. JOHN R. MITCHELL, Hill Top, W. Va. Filed Oct. 4, 1906. Serial No. 337,450.

Claim.—1. A car-coupler including a link having a knuckle pivotally mounted for swinging movement on one end thereof, and a spring-pressed pivotal locking element arranged in advance of the knuckle and having a portion for engagement with the knuckle to lock the same in its operative position.

2. A car-coupler including a link having a knuckle pivotally mounted for swinging movement on one end thereof, and a vertically-swinging locking element arranged in advance of the knuckle and having an opening to receive the free end of the same.

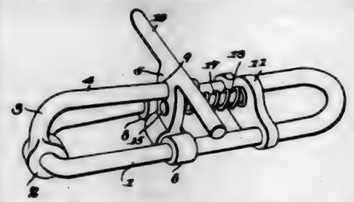

3. A car-coupler including a link having a knuckle pivotally mounted for swinging movement on one end thereof, a swinging locking member for engagement with the free end of the knuckle, and a spring bearing against the locking member to yieldably hold the latter in engagement with the knuckle.

4. A car-coupler having a vertically-swinging knuckle, a swinging locking member for engagement with the knuckle, an abutment in rear of the locking member, a limiting-bar extending between the locking member and the abutment, and a helical spring embracing the bar and bearing against the abutment and the locking member.

5. A car-coupler comprising an elongated link, an elbowed knuckle pivotally embracing the front end of the link, a cross-bar carried by the link, a swinging locking member mounted upon the cross-bar and provided with an opening to receive the free end of the knuckle, a handle-bar carried by the locking member and projecting at opposite sides thereof, an abutment in rear of the locking member, a headed limiting-bar loosely piercing the abutment and the locking member, and a helical spring embracing the bar and bearing in opposite directions against the abutment and the locking member.

849,413. MANUFACTURE OF SIZING OR FINISHING MEDIA. GIULIO MORPURGO, Trieste, Austria-Hungary, assignor to Erste Triester-Reisschäl-Fabriks-Aktien-Gesellschaft, Trieste, Austria-Hungary. Filed Oct. 20, 1905. Serial No. 283,703.

Claim.—1. The herein-described process for manufacturing sizing or finishing media which consists in steaming a substance containing starch and gluten to loosen the tissue, then mixing the substance with a substance having an alkaline reaction so as to disintegrate the proteins, then mixing the product with a solution of an organic acid, and finally drying the mass at a temperature under 100° centigrade.

2. The herein-described process for manufacturing sizing or finishing media which consists in steaming a substance containing starch and gluten to loosen the tissue, then mixing the substance with a solution of ammonium carbonate, then mixing the product with a solution of lactic acid and thoroughly stirring the mass, then drying the mass at a temperature under 100° centigrade, grinding the dried mass and passing it through a sieve.

849,414. BORING-LATHE. EMIL MUELLER, Chicago, Ill. Filed Nov. 27, 1906. Serial No. 345,401.

Claim.—1. An attachment for lathes, comprising a clamp-block having a center hole therein and adapted to be mounted upon the slide-rest of the lathe, a tubular boring-bar holder split horizontally on one side and adjustable angularly on the block and having a collar on the bottom fitting in said hole, and a bolt extending through the parts of the holder at one side of the tube thereof and also through the block and arranged to clamp the same together and to the slide-rest.

2. An attachment for lathes, comprising a lower clamp-block adapted to fit in the groove in the lathe slide-rest, an upper block having a rib on the bottom fitting in said groove and crossed grooves on the top, and also having a hole therethrough at the crossing of said grooves, a split tubular boring-bar holder having a rib on the bottom offset from the axis of the tube, said holder being adjustable

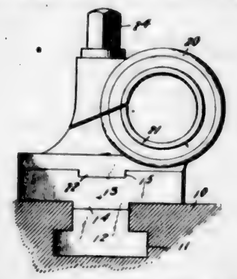

angularly to enter said rib into either of the crossed grooves, and also having a centering-collar fitting in said hole, and a screw extending through the holder at one side of the tube therein and also through the upper block and into the lower block, and adapted to clamp all said parts together.

849,415. PLUG FOR SEALING UNDERGROUND CONDUITS. WILLIAM L. MCGOWAN, Philadelphia, Pa. Filed Apr. 28, 1905. Serial No. 257,848.

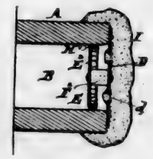

Claim.—1. The combination of a conduit having a duct, with a sealing-plug consisting of a front plate having a series of perforations and a retaining part frictionally held within the duct for holding the front plate in position against the front of the conduit, and a covering of cement mortar over the end of the conduit and front plate and extending into the perforations thereof so as to bind the cement mortar to the plate.

2. The combination of a conduit having a duct, with a sealing-plug consisting of a front plate having a series of perforations formed with outwardly-extending edges forming conical depressions upon the inner face of the plate adjacent to the apertures, and a retaining part frictionally held within the duct for holding the front plate in position against the front of the conduit, and a covering of cement mortar over the end of the conduit and front plate and extending into the perforations thereof so as to bind the cement mortar to the plate.

3. A sealing-plug consisting of a front plate having a series of perforations formed with outwardly-extending edges forming conical depressions upon the inner face of the plate adjacent to the apertures, combined with a retaining part of smaller area having a flexible rim adapted to be frictionally held within the duct, and rigid connections between the front plate and retaining part whereby they are held apart.

4. A sealing-plug for a conduit consisting of a front plate to fit against the end of the conduit, combined with a retaining part of less size so as to enter the duct and having its circumferential edge adapted to create a friction with the interior walls of the duct, and means for holding the front plate and retaining part in a firm attached condition but so that the circumferential edge of the retaining part is some distance to the rear of the

front plate said means consisting of a series of rigid studs F distributed between the said front plate and retaining part and each having shoulders near their ends against which the front plate and retaining part respectively rest and riveted beyond the shoulders at one end to the front plate and at the other end to the retaining part.

5. A sealing-plug for a conduit-duct consisting of a front plate of larger area than the area of the duct and having a series of perforations to receive and hold a sealing cement mortar, combined with a spring-acting retaining part secured to the rear of the front plate and having its rim adapted to create a friction with the interior walls of the duct at some distance from the front plate so as to act upon the interior walls of the duct at a distance from the end of the conduit.

849,416. SHAFT-SUPPORTER FOR VEHICLES. EMIL NESTLER, Provo City, Utah, assignor, by direct and mesne assignments, to Ideal Shaft Supporter Company, Salt Lake City, Utah. Filed June 6, 1905. Serial No. 263,934.

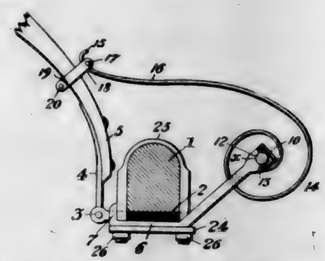

Claim.—1. A shaft-support, comprising a bracket secured to the axle, a pin rotatably mounted in the bracket, a helical spring rigidly secured at one end to the pin and having its other end extended forward over the top of the axle to form an arm or lever, a clip upon the shaft with which the front end of the arm or lever has sliding connection, and means for rotatably adjusting the pin to vary the tension of the spring.

2. A shaft-support, comprising a bracket secured to the axle and having a pair of rearwardly-extending arms, a pin rotatably mounted in the arms, a helical spring rigidly secured at one end to the pin and having its other end extended forward over the top of the axle to form an arm or lever, a clip upon the shaft with which the front end of the arm or lever has sliding connection, and means for rotatably adjusting the pin to vary the tension of the spring.

3. A shaft-support, comprising a bracket secured to the axle and having a pair of rearwardly-extending arms, a pin rotatably mounted in the arms, a helical spring rigidly secured at one end to the pin and having its other end extended forward over the top of the axle to form an arm or lever, an adjustable clip upon the shaft through which the front part of the arm slides, means for rotatably adjusting the pin to vary the tension of the spring, and a stop on the outer end of the arm to prevent the disengagement of the arm from the clip.

4. A shaft-support, comprising a bracket secured to the axle and having a pair of rearwardly-extending arms spring-pressed toward each other, and one of said arms provided with a laterally-projecting lip, a pin rotatably mounted in the arms, a helical spring rigidly secured at one end to the pin and having its other end extended forward over the top of the axle to form an arm or lever, a clip upon the shaft through which the front part of the arm slides, and a cotter secured in a transverse eye in the pin so as to engage the lip on the bracket-arm and hold the pin in different positions of adjustment to vary the tension of the spring.

849,417. COUPLING FOR ELECTRICAL CONDUITS. JOSEPH A. NETH, Dayton, Ohio. Filed Dec. 16, 1905. Serial No. 291,063.

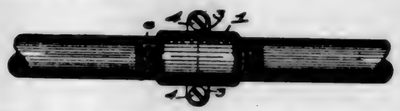

Claim.—In a coupling for connecting electrical conduits, an elongated coupling-clamp consisting of two parts with interior screw-threads and adapted, when in position on the ends of the conduits or pipes, to engage a portion of the threads on each pipe or conduit end and to permit the ends of the pipes or conduits to be brought in contact with each other either before or after the two-part coupling-clamp is placed in position, the said two-part coupling-clamp having means on opposite sides thereof for rigidly maintaining said coupling upon the ends of the pipes or conduits.

849,418. FLEXIBLE SUSPENSION. WILLIAM E. NICKERSON, Cambridge, Mass., assignor to Automatic Weighing Machine Company, New York, N. Y., a Corporation of New York. Filed Aug. 14, 1906. Serial No. 330,567.

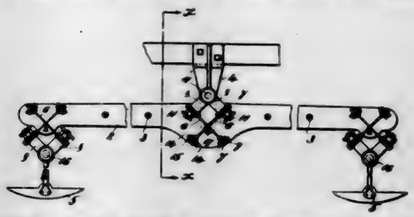

Claim.—1. In a flexible suspension, the combination with supporting and supported members, of flexible strips connected at their ends with said members respectively and crossed in edgewise relation between their ends and means for confining the bending of said strips to a predetermined axis.

2. In a flexible suspension, the combination with supporting and supported members of flexible strips connected at their ends with said members respectively and crossed in edgewise relation between their ends, and means for locating the fulcrum-axis of the suspension at the point of crossing of said strips.

3. In a flexible suspension, the combination with supporting and supported members of flexible strips connected at their ends with said members respectively and crossed in edgewise relation between their ends, and forming substantially a right angle with each other at the point of crossing.

4. In a flexible suspension, the combination with supporting and supported members of flexible strips connected at their ends with said members respectively and crossed in edgewise relation between their ends, and a bar having a sharp edge in contact with said strips at their point of crossing.

5. In a flexible suspension, the combination with supporting and supported members of flexible strips connected at their ends with said members respectively and crossed in edgewise relation between their ends, and a bar having a sharp edge in contact with said strips in their point of crossing, said strips being bowed slightly away from said bar.

6. In a flexible suspension, the combination with supporting and supported members of flexible strips connected at their ends with said members respectively and crossed in edgewise relation between their ends, and means for limiting lateral play of said members with respect to each other.

7. In a flexible suspension, the combination with supporting and supported members of flexible strips connected

at their ends with said members respectively and crossed in edgewise relation between their ends, a bar having a sharp edge in contact with said strips at their point of crossing, and arms carried by the supporting member and having bearing-points located on opposite edges of and adjacent to the supported member and in line with the sharp edge of said bar.

8. The combination with a scale-beam of a collar comprising divergent arms having flat outer ends forming an angle with each other, flexible strips each secured at one end to one of said flat ends, said strips being crossed in edgewise relation between their ends, and connections between the other ends of said strips and said beam.

9. The combination with a scale-beam of a collar comprising divergent arms having flat outer ends forming an angle with each other, flexible strips each secured at one end to one of said flat ends, said strips being crossed in edgewise relation between their ends, connections between the other ends of said strips and said beam, and a bar carried by said beam and having a sharp edge in contact with said strips at their point of crossing.

10. The combination with a scale-beam comprising two side bars spaced apart, of a coöperating member in suspensional relation with said scale-beam, and a suspension connecting said beam and member and comprising flexible strips each secured at one end to said coöperating member and its other end to said beam, said strips being located between said side bars and crossed in edgewise relation between their ends.

11. The combination with a scale-beam provided with horizontal cross-rods arranged in pairs, of a coöperating member in suspensional relation with said scale-beam, and a suspension connecting said beam and member comprising flexible strips having reinforced ends and each secured at one end to said coöperating member and provided at its other end with a transverse pin engaging a pair of said cross-rods, said strips being crossed in edgewise relation between their ends, and a bar located in one of the angles formed by the crossing of said strips and having a sharp edge in contact with the latter at their point of crossing.

12. The combination with a scale-beam comprising two side bars spaced apart and provided with horizontal cross-rods arranged in pairs, of a coöperating member in suspensional relation with said scale-beam, and a suspension connecting said beam and member and comprising flexible strips each secured at one end to said coöperating member and provided at its other end with a transverse pin engaging a pair of said cross-rods, said strips being located between said side bars and crossed in edgewise relation between their ends, and a bar located between said side bars and in one of the angles formed by the crossing of said strips, said bar having a sharp edge in contact with said strips at their point of crossing.

849,419. INKSTAND. CHARLES H. NUMAN, New York, N. Y., assignor to A. A. Weeks-Hoskins Company, New York, N. Y., a Corporation of New York. Filed Jan. 18, 1907. Serial No. 352,860.

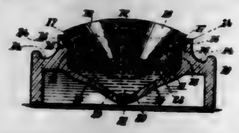

Claim.—1. An inkstand comprising a body portion within which is formed a well and below the upper edge of the mouth of which is an inwardly-extending shoulder, and a cover adapted to enter within the upper edge of said mouth and rest upon said shoulder, said cover having a downwardly-projected extension through which a dipping-opening passes, said opening starting at one side of the center of the cover and thence extending downwardly and inwardly through said extension to the lower part of said well; substantially as set forth.

2. An inkstand comprising a body portion 10 having a well 11 containing at its lower end a distinct concavity 21, said body portion also having at its mouth vertical walls 15 and at the lower edge of said walls an inwardly-extending shoulder 16, and a cover 12 having a convex upper surface and a downwardly-projected extension 23 within which is formed a downwardly and inwardly inclined dipping-opening 13 leading to said concavity 21, the outer edges of said cover being adapted to fit within said walls 15 and rest upon said shoulder 16; substantially as set forth.

3. An inkstand comprising a body 10 having a centrally-disposed well 11 formed with vertical side walls, a mouth coextensive with the horizontal space defined by said walls and a concavity 21 at its lower central portion, and a cover 12 adapted to the mouth of the well and having a convex top and a downwardly-extending portion 23 leading to said concavity, said cover being formed through its top at one side of its center and through said downwardly-extending portion with a dipping-opening having downwardly-converging surfaces; substantially as set forth.

4. An inkstand comprising a body 10 having a well terminating in a concavity 21 at its lower central portion, and a cover 12 adapted to the mouth of the well and having a convex top and a downwardly-extending portion 23 leading to said concavity, said cover being formed through its top at both sides of its center and through said downwardly-extending portion with downwardly and inwardly inclined dipping-openings having downwardly-inclined converging surfaces; substantially as set forth.

5. An inkstand comprising a body portion having a centrally-disposed well 11 formed with vertical side walls, a mouth coextensive with the horizontal space defined by said walls and a concavity 21 at its lower central portion, and a circular removable cover 12 adapted to the mouth of said well and loosely fitting the same so that it may be freely axially turned while covering said well, said cover having an integral downwardly-extending portion 23 leading to said concavity and also a downwardly and inwardly inclined dipping-opening formed through it at one side of its center and through said portion 23; substantially as set forth.

849,420. ELASTIC-FLUID TURBINE. WILLIAM A. NOSSBAUMER, Milwaukee, Wis. Filed Dec. 24, 1900. Serial No. 349,285.

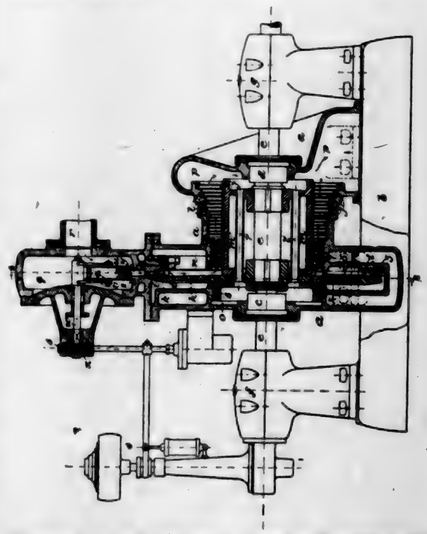

Claim.—1. In an elastic-fluid turbine the combination of coaxial rotary impulse and reaction members each pro-

vided with vanes arranged in concentric circular series, a casing inclosing said members and provided with fixed guide-vanes arranged in concentric series to coöperate with the movable vanes of the rotary members, nozzles arranged to deliver motive fluid to the vanes of the impulse member within a part only of their circuit, a chamber arranged to receive the motive fluid from the impulse member and to deliver it to the vanes of the reaction member throughout their entire circuit, and a balance-piston at one end of the rotating part of the turbine connected with the motive-fluid space to which the opposite end of said rotating part is exposed, substantially as described.

2. In an elastic-fluid turbine the combination of high and low pressure rotary members each provided with vanes arranged in circular series, a casing inclosing said members and provided with fixed vanes arranged in concentric series to coöperate with the movable vanes of the rotary members, a series of nozzles arranged in the arc of a circle to deliver motive fluid to the vanes of the high-pressure member within a part only of their circuit, a chamber arranged to receive motive fluid from the high-pressure member and to deliver it to the vanes of the low-pressure member throughout their entire circuit, and a shield or partition separating the inactive vanes of the high-pressure member from the motive fluid contained in said receiver-chamber, substantially as described.

3. In an elastic-fluid turbine the combination of a casing having stuffing-boxes in the ends, and a piston-chamber at one end connected with the motive-fluid space at the other end, a rotary shaft passing through said stuffing-boxes, high and low pressure members mounted on said shaft within the casing and each provided with vanes arranged in circular series, nozzles arranged to deliver motive fluid simultaneously to a part only of the vanes of the high-pressure member, a chamber arranged to receive the motive fluid from the high-pressure member and to deliver it simultaneously to the entire initial series of vanes of the low-pressure member, and a balance-piston connected with the rotary part of the turbine and fitted in said piston-chamber, substantially as described.

4. In an elastic-fluid turbine the combination of a casing having stuffing-boxes in the ends, an exhaust-chamber in one end and a piston-chamber in the other end connected with said exhaust-chamber, a rotary shaft passing axially through said casing and stuffing-boxes, high and low pressure members mounted on said shaft and each provided with vanes arranged in circular series, nozzles arranged to deliver motive fluid to a part only of the vanes of the high-pressure member, a chamber within said casing arranged to receive the motive fluid from the high-pressure member and to deliver it simultaneously to all the vanes of the first series of said low-pressure member, and a balance-piston fitted in said piston-chamber and attached to one of said rotary members, substantially as described.

5. In an elastic-fluid turbine the combination of a rotary impulse-wheel provided with vanes arranged in circular series, a coaxial reaction-wheel provided on one side with vanes arranged in a number of concentric circular series, a casing inclosing said wheels and provided with guide-vanes arranged to coöperate with the vanes of said impulse and reaction wheels, the guide-vanes for the reaction-wheel being arranged in a number of circular series one within another and concentric with the series of movable vanes on said reaction-wheel, whereby the motive fluid is caused to flow in an approximately radial direction from each inner series to the next outer series, means for supplying motive fluid to a part only of the vanes of the impulse-wheel, and a chamber arranged to receive the motive fluid from the impulse-wheel and to deliver it simultaneously to the entire inner series of vanes of the reaction-wheel, substantially as described.

6. In an elastic-fluid turbine the combination of a rotary part comprising high and low pressure members each provided with vanes arranged in circular series, a casing inclosing said rotary part with a piston-chamber and a chamber arranged to receive motive fluid from the high-pressure member and deliver it all around to the low-pressure member, said casing being provided with fixed vanes arranged in series concentric with and adjacent to the series of movable vanes, a series of nozzles extending part way around the high-pressure member and adapted to deliver motive fluid to its vanes, and a balance-piston attached to the rotary part and fitted in said piston-chamber which communicates with a part of the turbine in which the motive-fluid pressure is such as acting upon said piston will equalize the otherwise unbalanced end pressure on said rotary part, substantially as described.

7. In an elastic-fluid turbine the combination of coaxial rotary impulse and reaction members, means for supplying motive fluid to the vanes of the impulse member, and a chamber arranged to receive the motive fluid from the impulse member and deliver it to the vanes of the reaction member, the impulse member having an unbalanced pressure area exposed to the motive fluid in said chamber and tending to balance the end thrust on the reaction member, substantially as described.

8. In an elastic-fluid turbine the combination of coaxial rotary impulse and reaction members each provided with vanes arranged in circular series, a casing inclosing said members and provided with guide-vanes arranged to cooperate with the vanes of the rotary members, means for supplying motive fluid to the vanes of the impulse member, a chamber arranged to receive the motive fluid from the impulse member and to deliver it to the vanes of the reaction member, and a balancing-piston attached to one end of the rotating part of the turbine and working in a chamber which is connected with the motive-fluid space to which the opposite end of said rotating part is exposed, substantially as described.

849,421. WOOD LATHING-SHEET. JOHN D. O'BRIEN, St. Louis, Mo., assignor of fifty-one one-hundredths to Frank B. McKenna, St. Louis, Mo. Filed June 26, 1906. Serial No. 323,464.

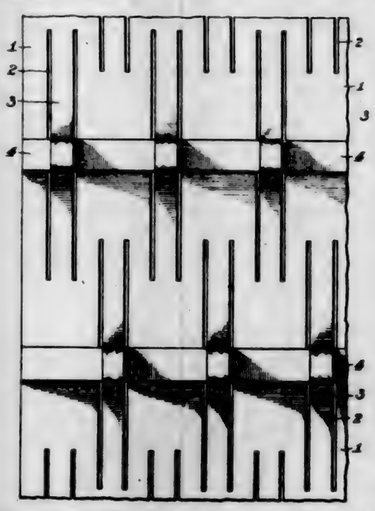

Claim.—1. A lathing for plastering, comprising a sheet of wood formed with a series of slits to in turn form integral strips, and transverse separator-bars arranged in sheds formed between said strips and the sheet.

2. A lathing for plastering, comprising a sheet of wood formed with a series of slits to in turn form integral strips, and transverse separator-bars of wood arranged in sheds formed between said strips and the sheet.

3. A lathing for plastering, comprising a sheet of wood formed with a series of slits arranged in pairs having a staggered relation and forming a series of strips having a like staggered relation, and transverse separator-bars arranged in sheds formed between said strips and the sheet.

4. A lathing for plastering, comprising a sheet of wood formed with a series of slits arranged in pairs having a staggered relation and forming a series of strips having a like staggered relation, and transverse separator-bars of wood arranged in sheds formed between said strips and the sheet.

5. A lathing for plastering, comprising a sheet of wood formed with a series of slits arranged in pairs having a staggered and overlapping relation and forming a series of strips having a like staggered and overlapping relation, and transverse separator-bars arranged in sheds formed between said strips and the sheet.

6. A lathing for plastering, comprising a sheet of wood formed with a series of slits arranged in pairs having a staggered and overlapping relation and forming a series of strips having a like staggered and overlapping relation, and transverse separator-bars of wood arranged in sheds formed between said strips and the sheet.

849,422. SHEET-LATHING MACHINE. JOHN D. O'BRIEN, St. Louis, Mo., assignor of fifty-one one-hundredths to Frank B. McKenna, St. Louis, Mo. Filed June 26, 1906. Serial No. 323,465.

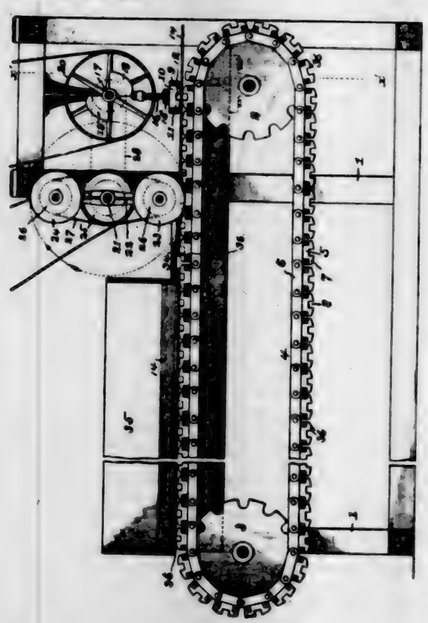

Claim.—1. A sheet-lathing machine provided with an endless carrier and coöperating plungers having on their opposed faces shed-forming devices.

2. A sheet-lathing machine provided with an endless carrier and coöperating plungers having on their opposed faces coacting rows of shed-forming devices, said rows being staggered with relation to each other on the endless carrier.

3. A sheet-lathing machine provided with an endless carrier and coöperating plungers having on their opposed faces coacting rows of shed-forming devices, said rows being staggered with relation to each other on the endless carrier and presenting guideways transversely of the machine for the passage of the weft-strips.

4. A sheet-lathing machine provided with an endless carrier and coöperating plungers having on their opposed faces coacting rows of shed-forming devices, said rows being staggered with relation to each other on the endless carrier, and means for imparting an intermittent travel to said carrier and a reciprocation to said plungers.

5. A sheet-lathing machine provided with an endless carrier and coöperating plungers having on their opposed faces coacting rows of shed-forming devices, said rows being staggered with relation to each other, and means for feeding the weft-bars between the shed-forming devices.

6. A sheet-lathing machine provided with an endless carrier and coöperating plungers having on their opposed faces coacting rows of shed-forming devices, said rows being staggered with relation to each other on the endless carrier, and means for forming a series of longitudinal slits in the sheet of material operated upon.

7. A sheet-lathing machine provided with an endless carrier and coöperating plungers having on their opposed faces coacting rows of shed-forming devices, said rows being staggered with relation to each other on the endless carrier and presenting guideways transversely of the machine for the passage of the weft-strips, and means for forming a series of longitudinal slits in the sheet of material operated upon.

8. A sheet-lathing machine provided with an endless carrier and coöperating plungers having on their opposed faces coacting rows of shed-forming devices, said rows being staggered with relation to each other on the endless carrier, means for forming a series of longitudinal slits in the sheet of material operated upon, and means for feeding the weft-bars between the shed-forming devices.

9. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

10. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections, each formed with a central recess, the projections of each row having a staggered relation to the like projections of the next adjacent rows, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

11. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows, means for feeding a series of weft-bars between the shed-forming projections, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

12. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections, each formed with a central recess, the projections of each row having a staggered relation to the like projections of the next adjacent rows, means for feeding a series of weft-bars between the shed-forming projections, and means for imparting intermittent travel to the carrier, and reciprocation to the plungers.

13. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows, means for forming a series of longitudinal slits in the sheet of material operated on, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

14. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections on the next adjacent rows, means for forming a series of longitudinal slits in the sheet of material operated on, means for feeding a series of weft-bars between the shed-forming projections, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

15. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections on the next adjacent rows, both in a parallel and transverse direction, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

16. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections, each formed with a central recess, the projections of each row having a staggered relation to the like projections of the next adjacent rows, both in a parallel and transverse direction, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

17. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows, both in a parallel and transverse direction, means for feeding a series of weft-bars between the shed-forming projections, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

18. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections, each formed with a central recess the projections of each row having a staggered relation to the like projections of the next adjacent rows in both a parallel and transverse direction, means for feeding a series of weft-bars between the shed-forming projections, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

19. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows in both parallel and transverse direction, means for forming a series of longitudinal slits in the sheet of material operated on, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

20. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows in both a parallel and transverse direction, means for forming a series of longitudinal slits in the sheet of material operated on, means for feeding a series of weft-bars between the shed-forming projections, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

21. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections on the next adjacent rows, means for feeding a sheet of material to the shed-forming projections, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

22. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections, each formed with a central recess, the projections of each row having a staggered relation to the like projections of the next adjacent rows, means for feeding a sheet of material to the shed-forming projections, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

23. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows, means for feeding a sheet of material to the shed-forming projections, means for feeding a series of weft-bars between the shed-forming projections, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

24. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carriers, the projections on the carrier being arranged in rows and each row comprising a number of separated projections, each formed with a central recess, the projections of each row having a staggered relation to the like projections of the next adjacent rows, means for feeding a sheet of material to the shed-forming projections, means for feeding a series of weft-bars between the shed-forming projections, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

25. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows, means for feeding a sheet of material to the shed-forming projections, the same comprising a series of dogs on the carrier, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

26. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections on the next adjacent rows, means for forming a series of longitudinal slits in the sheet of material operated on, means for feeding the sheet of material to the shed-forming projections, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

27. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows, means for feeding a sheet of material to the shed-forming projections, the same comprising a series of dogs on the carrier, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

28. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections, each formed with a central recess, the projections of each row having a staggered relation to the like projections of the next adjacent rows, means for feeding a sheet of material to shed-forming projections, the same comprising a series of dogs on the carrier, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

29. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows, means for feeding a sheet of material to the shed-forming projections the same comprising a series of dogs on the carrier, means for feeding a series of weft-bars between the shed-forming projections, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

30. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections, each formed with a central recess, the projections of each row having a staggered relation to the like projections of the next adjacent rows, means for feeding a sheet of material to the shed-forming projections the same comprising a series of dogs on the carrier, means for feeding a series of weft-bars between the shed-forming projections, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

31. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows, means for forming a series of longitudinal slits in the sheet of material operated on, means for feeding the sheet of material to the shed-forming projections the same comprising a series of dogs on the carrier, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

32. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows, means for forming a series of longitudinal slits in the sheet of material operated on, means for feeding the sheet of material to the shed-forming projections, the same comprising a series of dogs on the carrier, means for feeding a series of weft-bars between the shed-forming projections, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

33. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows, means for feeding a series of weft-bars between the shed-forming projections, the same comprising a containing-hopper, a slide moving in the bottom of said hopper and adapted to feed the lowermost bar, and means for imparting reciprocation to said slide, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

34. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections, each formed with a central recess, the projections of each row having a staggered relation to the like projections of the next adjacent rows, means for feeding a series of weft-bars between the shed-forming projections, the same comprising a containing-hopper, a slide moving in the bottom of said hopper and adapted to feed the lowermost bar and means for imparting reciprocation to said slide, and means for imparting intermittent travel to the carrier and reciprocation to the plungers.

35. A sheet-lathing machine, comprising two series of alternating plungers, a moving carrier, coacting shed-forming projections on the adjacent faces of the plungers and carrier, the projections on the carrier being arranged in rows and each row comprising a number of separated projections arranged in staggered relation to the like projections on the next adjacent rows, means for forming a series of longitudinal slits in the sheet of material operated on, means for feeding a series of weft-bars between the shed-forming projections, the same comprising a containing-hopper, a slide moving in the bottom of said hopper and adapted to feed the lowermost bar, and means for imparting reciprocation to said slide, and means for imparting travel to the carrier and reciprocation to the plungers.

849,423. REVERSIBLE SEAT. FRANK ORT, Chicago, Ill. Filed Nov. 13, 1906. Serial No. 343,206.

Claim.—1. The combination with a closet-bowl, of a cross-bar supported at the rear of the bowl, arms pivoted to the ends of the cross-bar, a reversible seat pivoted between the arms, a cover hinged to the cross-bar, and cushion devices connected to the bar and located under the seat in either position thereof.

2. The combination with a closet-bowl, of a cross-bar upon the rear thereof, a seat pivotally connected to the cross-bar, and swinging rods pivoted at their rear ends to the cross-bar on each side of the bowl and having cushions at their front ends adapted to rest under the seat and upon the top edge of the bowl.

849,424. MUSIC-LEAF TURNER. GEORGE PARIS, Harrisburg, Pa. Filed Apr. 10, 1906. Serial No. 310,065.

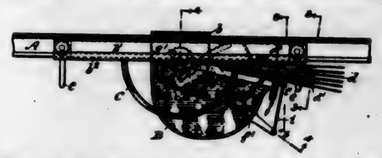

Claim.—1. A music-leaf turner comprising a shelf, a housing hinged to said shelf, a semicircular wire guide secured to said shelf a support at each end of said shelf, a plurality of leaf-holders normally supported by said wire guide and said supports, an oscillating lever for transferring the leaf-holders from right to left about the wire guide, means attached to said lever for engaging the said holders and means for lowering and raising the said lever, substantially as and for the purposes set forth.

2. A music-leaf turner comprising a shelf, a housing hinged to said shelf, a catch to secure said housing to said shelf, a semicircular guide secured to said shelf, a support on each end of said shelf, a plurality of leaf-holders normally supported by said guide and said supports, an oscillating lever adapted to engage the said

holders at one side of the guide and transfer them onto the other side thereof and means for actuating said lever, substantially as and for the purpose set forth.

3. A music-leaf turner comprising a shelf, a housing removably attached to said shelf, a semicircular guide secured to said shelf, a support on each end of said shelf, a plurality of leaf-holders normally supported by said guide and said supports, an oscillating lever, dog and pawl on said lever to engage successively each of the said holders and means for oscillating the said lever substantially as and for the purposes set forth.

4. A music-leaf turner comprising a shelf, a semicircular guide secured to said shelf, a support on each end of said shelf, a plurality of leaf-holders normally supported by said guide and said supports, an oscillating lever, a dog and pawl on said lever to engage successively each of the said holders, means for disengaging said dog and pawl from said holders, and means for oscillating said lever substantially as and for the purposes set forth.

5. A music-leaf turner comprising a shelf, a housing hinged to said shelf, a semicircular guide secured to said shelf, a support on each end of said shelf, a plurality of leaf-holders normally supported by said guide and said supports, a lever, a gear-sector on said lever, a shaft for said lever and sector, a gear-sector pivoted on said housing and meshing with said lever-sector, a dog and pawl on said lever, means for raising and lowering said lever and means for operating said last-named gear-sector, substantially as and for the purposes set forth.

849,425. NEEDLE FOR GRAPHOPHONES AND THE LIKE. FRED PETMECKY, Austin, Tex., assignor to H. F. Thompson, New York, N. Y. Filed Jan. 10, 1906. Serial No. 295,380.

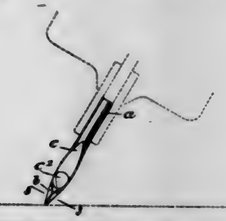

Claim.—1. A needle of the character described having a thin portion extending along the body thereof above the point, and a flat flexible portion at the base of said thin portion and at the head of said point, the point having a general pyramidal shape.

2. A needle or stylus for graphophones and the like, having a thin flat flexible portion located immediately at the rear of the point of the needle, the point having a general pyramidal shape with concave sides.

3. A needle or stylus for graphophones and the like having a pyramidal-shaped point with concave faces.

849,426. MAILING-CARD OR POST-CARD. LUDWIG REIMAN, New York, N. Y. Filed June 1, 1906. Serial No. 319,081.

Claim.—A mailing-card comprising a rectangular-shaped casing having one of its ends open, and provided with oppositely-disposed slots, a slide provided with a slot of substantially the same width as said casing, and slidably mounted therein, a plurality of extensible leaves, a flexible guide mounted centrally of said casing and passing through said slot in said slide, and each of said extensible leaves, a flexible strip fastened to the bottom of said casing on each side thereof, and to the outer of said extensible leaves for limiting the movement thereof, said slide and said leaves adapted to slide on said central guide, and said slide adapted to operate said extensible leaves.

849,426.

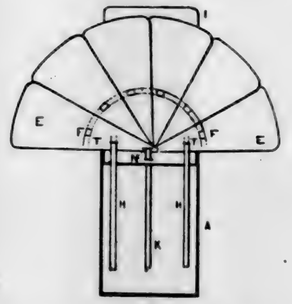

849,427. METAL LATH. JAMES M. RUDE, Covington, Ky. Filed Dec. 4, 1906. Serial No. 346,328.

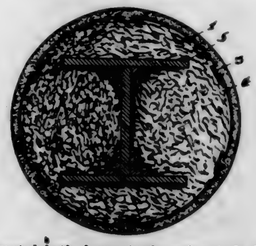

Claim.—A metal lath formed of perforated sheet metal, having a series of dovetailed ribs formed at suitable intervals presenting concrete-retaining and plaster-holding surfaces on opposite sides of the lath, the successive dovetails being alternately differentiated in size whereby a larger rib could be interlocked with a smaller, substantially as described.

849,428. CLOTHES-LINE SUPPORT. JOHN H. REHMLING, New York, N. Y. Filed Apr. 14, 1906. Serial No. 311,751.

Claim.—1. In a clothes-line support, the combination of spaced supporting-brackets, a line-attaching member the ends of which bear loosely against the said spaced brackets, means for connecting a line to the line-attaching member, and keepers carried by the line-attaching member and embracing the brackets whereby the former is held in position against the brackets.

2. In a clothes-line support, the combination of spaced supporting-brackets, a line-attaching member applied to said brackets, means for connecting a clothes-line to the line-attaching member, the brackets aforesaid being formed with seats in the length thereof to receive and position the line-attaching member at a predetermined adjustment relative thereto, and means loosely connecting the line-attaching member to the brackets to admit of free angular movement thereof in the manner specified.

3. In a clothes-line support, the combination of spaced horizontal supporting-brackets provided longitudinally of the inner edges thereof with serrated or notched portions, a vertical line-attaching bar arranged at the inner edges of and received in the seats in the notches or serrated portions of the brackets and positioned at a desired adjustment thereby, loops projecting from the line-attaching bar and loosely connecting the same with the brackets, and upper and lower clamps applied to the line-attaching bar.

4. In a clothes-line support, the combination of spaced and approximately parallel supporting-brackets formed with serrations, a line-attaching member the ends of which bear against the brackets and are held in an adjusted position by means of the serrations, means for connecting a line to the line-attaching member, and means for loosely connecting the line-attaching member to the brackets.

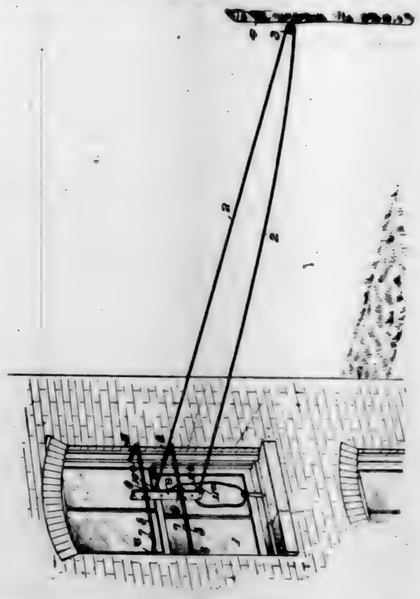

849,429. APPARATUS FOR SEPARATING AND DISCHARGING COKE. WALTER SCHUMACHER, Dusseldorf, Germany. Filed Aug. 31, 1906. Serial No. 332,752.

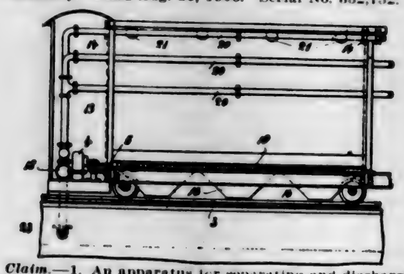

Claim.—1. An apparatus for separating and discharging coke, comprising a car adapted to travel along the front of a coke-oven, a grate mounted on the car and having movable bars, and means for shaking some of said bars, substantially as specified.

2. An apparatus for separating and discharging coke, comprising a car adapted to travel along the front of a coke-oven, a grate having movable bars and mounted on the car, means for shaking some of said bars, a funnel below the grate, and means for closing said funnel, substantially as specified.

3. An apparatus for separating and discharging coke, comprising a car adapted to travel along the front of a coke-oven, a grate mounted on the car and having alternating stationary and movable grate-bars, means for shaking the movable grate-bars, and means for tilting the grate, substantially as specified.

849,430. LOOSE-LEAF BINDER. WYATT SHALLCROSS, St. Louis, Mo. Filed Oct. 8, 1906. Serial No. 337,982.

Claim.—1. A loose-leaf device comprising a base-piece having a plate rigidly connected thereto, leaf-holding prongs connected to said base-piece, a plate pivotally connected to the base-piece and being provided with coöperating leaf-holding prongs, actuating members provided with journals which are mounted in bearings formed in the plate which is rigidly connected to the base-piece and having portions which extend underneath the pivotally-mounted plate, and lugs on said members which project into openings in the base-piece; substantially as described.

2. A loose-leaf device comprising a base-piece having a plate rigidly connected thereto, leaf-holding prongs connected to said base-piece, a plate pivotally connected to the base-piece and being provided with coöperating leaf-holding prongs, actuating members provided with journals which are mounted in bearings formed in the plate which is rigidly connected to the base-piece and having portions which extend underneath the pivotally-mounted plate, and lugs on said members which project into openings in the base-piece, said actuating members being provided with guiding portions that are arranged between the plates on the base-piece; substantially as described.

3. A loose-leaf binder consisting of a back and two pieces to which cover-boards are connected, coöperating leaf-holding prongs carried by one of said pieces, and a device carried by the other piece and coöperating with the leaf-holding prongs for retaining the back in an upright position; substantially as described.

4. A loose-leaf binder consisting of a back and two pieces to which cover-boards are connected, coöperating leaf-holding prongs carried by one of said pieces, and a device connected to the other piece and provided with eyes into which said leaf-holding prongs project; substantially as described.

5. A loose-leaf device comprising a base-piece provided with leaf-holding prongs, a pivoted member mounted on said base-piece and carrying coöperating prongs, an actuating member having a portion which extends underneath said pivoted member and provided with a journal which rests in a bearing on the base-piece, and a portion on said actuating member arranged between the pivoted member and a shoulder on the base-piece for retaining said actuating member in position; substantially as described.

849,431. PENCIL-SHARPENER. OZRO G. SHERMAN, Chicago, Ill. Filed Oct. 15, 1906. Serial No. 338,980.

Claim.—1. In a pencil-sharpener, a bearing-block, guiding-flanges on each side of the block at one end thereof, the said block having a straight portion beyond the guiding-flanges and being cut away in its underneath face under the said flanges and having lugs projecting into said cut-away portion, a knife in said cut-away portion supported at its cutting edge by said lugs, and means carried by the bearing-block for supporting the knife at its other edge.

2. In a pencil-sharpener, a foundation, and a bearing-block supported at an incline on said foundation, guiding-flanges at each side of the bearing-block adjacent one end, the said bearing-block being cut away beneath said guiding-flanges and having lugs projecting into the cut-away portion, a knife supported at its cutting edge by said lugs, and means carried by the bearing-block for supporting the opposite edge of said knife.

3. In a pencil-sharpener, a receptacle constituting a foundation, and a bearing-block supported at an incline on said receptacle and being cut away adjacent its lower end, lugs carried by the bearing-block and projecting into said cut-away portion, a knife mounted in said cut-away portion on said lugs with its cutting edge lying above the face of the bearing-block, and means carried by the bearing-block for maintaining the knife in engagement with said lugs.

849,432. ELECTRIC LOCOMOTIVE. ELMER A. SPERRY, Cleveland, Ohio, assignor to Goodman Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 26, 1902. Serial No. 132,847.

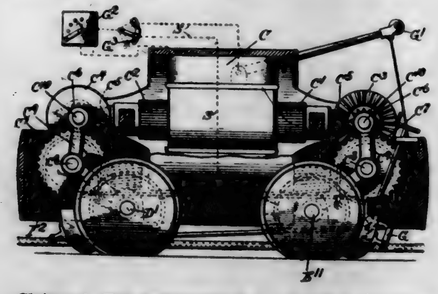

Claim.—1. The combination in a rack-rail locomotive of a motor elastically mounted upon the axles, a propelling-gear adapted to engage the rack, a movable intermediate power connection between the motor and the propelling-gear whereby the motor and its frame are free to move without causing a similar movement of the propelling-gear.

2. The combination in a rack-rail locomotive of a motor, two propelling-gears adapted to engage the rack, a driving connection from the motor to these two gears and an independent connection between the two gears whereby they are kept in a predetermined relation.

3. In an electric rack-rail locomotive, a truck-frame, a motor and a propelling-gear adapted to engage the rack both mounted on the truck-frame, car-wheels resting on a track, the gear mounted for constant vertical relation with the wheels, and a resilient medium between the wheels and said motor.

4. In an electric rack-rail locomotive, a truck-frame, a propelling gear or gears engaging the rack, car-wheels resting upon a track, a motor or motors upon the locomotive, driving connections to the propelling-gears, and a brake attached to the driving connections.

5. In an electric rack-rail locomotive, a truck-frame, a propelling gear or gears engaging the rack, car-wheels resting upon a track, a motor or motors upon the locomotive, two sets of driving connections to the propelling-gears, and a brake attached to each set of the driving connections.

6. An electric rack-rail locomotive, a truck-frame, a propelling gear or gears engaging the rack, car-wheels resting upon a track, a motor or motors upon the locomotive, two sets of driving connections to the propelling-gears, a brake attached to each set of the driving connections, a brake-aplying device for each brake and an equalizer between the brakes.

7. In an electric rack-rail locomotive, a truck-frame, a propelling gear or gears engaging the rack, car-wheels resting upon a track, brakes for the wheels and an independent set of brakes for the propelling-gears.

8. In an electric rack-rail locomotive, a truck-frame, a propelling gear or gears engaging the rack, car-wheels resting upon a track, an axle for the wheels, a propelling-gear mounted thereon, and a detachable driving connection between them.

9. In an electric rack-rail locomotive, a truck-frame, a propelling gear or gears engaging the rack, car-wheels resting upon a track, an axle for the wheels, a propelling-gear mounted thereon by a hub so as to revolve freely upon the axle, a driving connection or gear upon the hub, and a detachable driving connection between them.

10. In an electric rack-rail locomotive, a truck-frame, a propelling gear or gears engaging the rack, car-wheels resting upon a track, an axle for the wheels, a propelling-gear mounted thereon, and a resilient medium between the motor and the propelling-gear.

11. In an electric rack-rail locomotive, a truck-frame, a propelling gear or gears engaging the rack, car-wheels resting upon a track, an axle for the wheels, a propelling-gear mounted thereon but insulated therefrom, an electrical connection extending from the truck-frame to the insulated propelling-gear, and an electric switch in circuit with the connection.

12. In an electric rack-rail locomotive, a truck-frame, a propelling gear or gears engaging the rack, car-wheels resting upon a track, an axle for the wheels, a propelling-gear mounted thereon but insulated therefrom, and a detachable driving connection between them.

13. In an electric rack-rail locomotive, a truck-frame, a propelling gear or gears engaging the rack, car-wheels resting upon a track, an axle for the wheels, a propelling-gear mounted thereon but insulated therefrom in whole or part by a resilient insulating medium.

14. In an electric rack-rail locomotive, a truck-frame, a propelling gear or gears engaging the rack, car-wheels resting upon a track, a power-driven revolving part, the propelling-gear mounted upon but electrically insulated therefrom, and a resilient insulating medium between the part and gear.

15. An insulated propelling-gear for a rack-rail electric locomotive consisting of a ring near to and supporting the teeth, clutch-like projections connected to the ring, cooperating projections for driving the gear, insulating material between the projections, and flanking faces also of insulating material.

16. An insulated propelling-gear for a rack-rail electric locomotive consisting of a ring near to and supporting the teeth, clutch-like projections connected to the ring, cooperating projections for driving the gear, insulating material between the projections, flanking faces also of insulating material, and bolts parallel to the axis for holding the mass together.

17. An insulated propelling-gear for a rack-rail electric locomotive consisting of a ring near to and supporting the teeth, clutch-like projections connected to the ring, cooperating projections for driving the gear, flanking faces of insulating material, for holding the gear laterally and resilient insulating material between the projections.

18. A spring-mounted rack-rail locomotive comprising a truck-frame, truck wheels and axles supporting such frame, a propelling-gear mounted upon the car-axle, and a flexible power connection to the propelling-gear.

19. In an electric rack-rail locomotive, a truck-frame, a propelling gear or gears engaging the rack, car-wheels resting upon a track, a resilient medium between the wheels or connected part and the truck, a motor on the truck and a yielding power connection to the propelling-gear.

20. A spring-mounted rack-rail locomotive comprising a truck-frame, truck wheels and axles supporting such frame, a propelling-gear being mounted upon the car-axles, a flexible power connection to the propelling-gear, comprising an intermediate gear and a swinging journal for the intermediate gear.

21. In an electric rack-rail locomotive resting upon a track, insulated propelling-gear engaging an insulated rack, an electric motor on the locomotive, an overhead-trolley system and electrical connections for the motor extending to both the rack connections and the trolley.

22. In an electric rack-rail locomotive resting upon a track, insulated propelling-gear engaging an insulated rack, an electric motor on the locomotive, an overhead-trolley system and electrical connections for the motor extending to both the rack connections and the trolley, and electrical switches for disconnecting either one or both said sources of supply.

23. In an electric rack-rail locomotive resting upon a track, insulated propelling-gear engaging an insulated rack, an electric motor on the locomotive, in combination with a duplicate electrical traveling-contact system of electrical circuits for the motor.

24. In an electric rack-rail locomotive resting upon a track, insulated propelling-gear engaging an insulated rack, an electric motor on the locomotive, in combination with a duplicate electrical traveling-contact system of electrical circuits for the motor, electrical circuits for the motor, and a branch leading to each of said systems.

25. In an electric rack-rail locomotive resting upon a track, insulated propelling-gear engaging an insulated rack, an electric motor on the locomotive, in combination with a duplicate electrical traveling-contact system of electrical circuits for the motor, and current-control devices in the circuits.

26. In an electric rack-rail locomotive, a truck-frame, two propelling-gears engaging the rack, car-wheels and track for supporting the truck-frame, an electric motor on the locomotive and duplicate power connections from the motor, one extending to each propelling-gear, the connections each consisting of gear-trains and a power connection extending directly between the two propelling-gears or their attached parts.

27. In an electric rack-rail locomotive, a truck-frame, two propelling-gears engaging the rack, car-wheels and track for supporting the truck-frame, an electric motor common to the propelling-gears and serving as a medium of power connection between them.

28. In an electric rack-rail locomotive, a truck-frame, two propelling-gears engaging the rack, car-wheels and track for supporting the truck-frame, an electric motor common to the propelling-gears, the rotating part of which serves as a medium of power connection between the two.

29. In an electric rack-rail locomotive or car, car-wheels for supporting the structure, an electric motor upon the car, electrically-insulated propelling mechanism engaging the rack, duplicate electric traveling-contact systems for the car and a detachable driving connection between the motor and the car-wheels.

30. In an electric rack-rail locomotive, a propelling gear or gears engaging the rack, car-wheels resting upon the track, an axle for the wheels, a motor upon the locomotive, a propelling-gear mounted upon the axle, a detachable driving connection between the propelling-gear and axle, duplicate traveling-contact systems of electric supply and a contact device upon the locomotive for connecting each system with the motor.

849,433. HATCHER. PEARLEY J. SPRAGUE, Gashland, Mo. Filed Apr. 14, 1906. Serial No. 311,637.

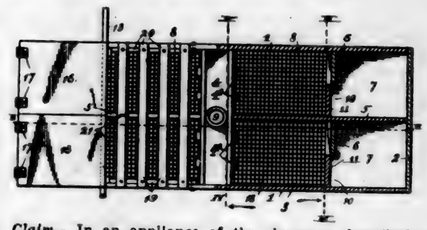

Claim.—In an appliance of the character described, a compartment, a longitudinal partition dividing the same into two smaller compartments, transverse partitions having doorways and dividing said smaller compartments into feed-yards and nests, removable doors arranged to move laterally to cover or uncover the doorways, and a connecting-bar secured to said doors and provided with integral handles, substantially as described.

849,434. RAIL-JOINT. CHARLES H. STEPHENS, Bartlett, Tex. Filed Jan. 22, 1907. Serial No. 353,494.

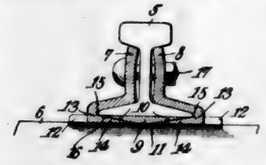

Claim.—1. In a rail-joint, the combination with adjoining rail ends, of a base-plate having its lower surface inclined or beveled from the opposite longitudinal edges thereof toward the center of the plate, fish-plates having laterally-projecting arms extending beneath the base-plate and having their terminals inclined or beveled to correspond to the inclination of the lower surface of the base-plate, and lugs extending laterally from said base-plate in the same plane with the lower surface thereof and bearing against the opposite ends of the fish-plates for locking the latter against longitudinal movement.

2. In a rail-joint, the combination with adjoining rail ends, of a base-plate having its lower surface inclined or beveled in opposite directions, fish-plates provided with inwardly-projecting arms, the terminals of which are inclined to correspond to the inclination of the lower surface of the base-plate, lugs extending laterally from the opposite ends of the base-plate and adapted to engage the fish-plates for locking the latter against longitudinal movement, and a packing bearing against the rails and engaging the base-plate and fish-plates, respectively.

3. In a rail-joint, the combination with adjoining rail ends, of a base-plate having its lower surface inclined or beveled in opposite directions and provided with a flat bearing-surface at the juncture of said inclined faces, lugs extending laterally from the base-plate and disposed in the same plane with the flat bearing-surface of the base-plate, and fish-plates provided with inwardly-projecting arms the ends of which are beveled for engagement with the correspondingly-beveled faces of the base-plate, said fish-plates being locked against longitudinal movement by engagement with the lugs.

4. In a rail-joint, the combination with adjoining rail ends, of a base-plate having its lower surface inclined or beveled from the opposite longitudinal edges thereof toward the center of the plate, there being a flat bearing-surface disposed at the juncture of the inclined faces of said plate, lugs projecting laterally from the opposite ends of the base-plate and extending in the same plane with said plate, fish-plates engaging the rails and having their

lower ends embracing the base of said rails and extending inwardly for engagement with the inclined faces of the base-plate, the terminals of said fish-plates being disposed in horizontal alinement with the flat bearing-surface of the base-plate and extended to said bearing-surface.

5. In a rail-joint, the combination with adjoining rail ends, of a base-plate having a smooth unobstructed upper surface and having its lower surface inclined or beveled in opposite directions, there being a flat bearing-surface disposed at the juncture of the inclined faces of said base-plate, fish-plates engaging the rails and provided with inwardly-projecting arms the ends of which are inclined to correspond to the inclination of the inclined faces of the base-plate, the terminals of said arms being disposed in horizontal alinement with the flat bearing-surface of the base-plate and extended to said bearing-surface, and lugs extending laterally from the opposite ends of said base-plate and bearing against the adjacent ends of the fish-plate for locking the latter against longitudinal movement.

849,435. BURIAL-VAULT. THEODORE A. STEVENSON, Lansing, Kans. Filed Aug. 13, 1906. Serial No. 330,323.

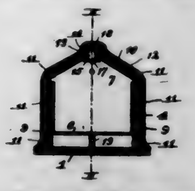

Claim.—1. In a structure of the character described, in combination, a case open at the bottom and provided with longitudinal reinforcements, and a bed-plate upon which said case is adapted to rest, said bed-plate being longer and wider than the case so that it will project beyond the sides and ends thereof, and a coat of plastic material covering the case and the projecting portion of the bed-plate, for the purpose set forth and described.

2. In a structure of the character described, a bed-plate, a case open at the bottom and adapted to be placed upon said bed-plate, and standards for supporting the casket, said standards extending from the bed-plate to a point above the casket to form guides for the case when lowering the same upon the bed-plate, substantially as described.

849,436. FLUSHING-TANK FOR WATER-CLOSETS. JOHN L. SULLIVAN, St. Louis, Mo., assignor to Cahill, Swift Manufacturing Company, St. Louis, Mo. Filed Apr. 2, 1906. Serial No. 309,537.

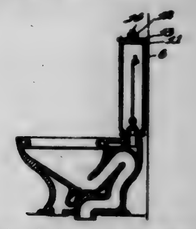

Claim.—A tank of the class described, comprising an outer casing formed by interlocking their edges, a bottom secured to the outer casing, the edges interlocked with the edge of the casing, the outer surface of the casing and bottom covered with enamel, a lining of non-corrodible material located within the outer casing, a bar located at the top of the casing and provided with a threaded stud, and a cover located upon the casing and held in position thereon by a nut secured to the threaded trunnion, substantially as specified.

849,437. PACKING-MACHINE. HERBERT TALLEY, Carthage, Mo. Filed Dec. 8, 1906. Serial No. 346,867.

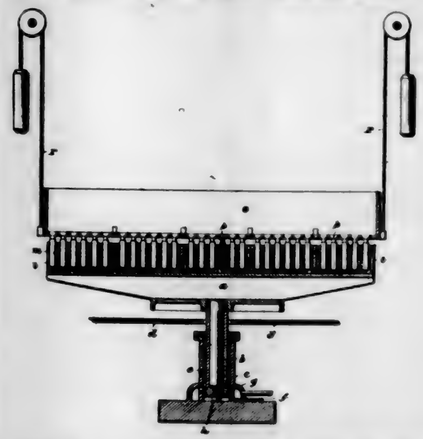

Claim.—1. In a machine for packing explosives and in combination a table, means for giving the same a vertical reciprocating and a jarring movement, a shiftable hopper supported above the table independently thereof and provided with a plurality of discharge-openings, a shell-carrier having a plurality of shell-pockets therein, said carrier being designed to rest upon the top of the table with its pockets in register with the openings in the hopper and means for rigidly connecting the hopper, carrier and tables to one another.

2. The combination, in a machine for packing explosives, with a hopper, a shell-carrier, a supporting-table, of means for imparting a vertical reciprocatory and jarring movement to the table, comprising a cylinder having an inlet in its lower end and an exhaust-port in the side wall a distance above the inlet, and a piston carrying the said table and controlling the exhaust-port.

3. The combination, in a machine for packing explosives, with a hopper, a shell-carrier, a supporting-table, of means for imparting a vertical reciprocatory and jarring movement to the table, comprising a cylinder having inlet and exhaust ports, a piston carrying the table and controlling the exhaust-port, and an abutment adjustable in the head of the piston for controlling the length of the stroke of the piston.

4. In a machine for packing explosives and in combination a table, a shell-carrier or shuttle having a plurality of pockets therein designed to be placed on top of the table, a hopper superimposed above the top of the table, and supported by counterbalanced cables, a plurality of discharge-openings in the bottom of the hopper having the same relative arrangement as the pockets in the carrier and designed to register therewith, funnels arranged in said openings having dependent parts designed to enter the upper ends of the shells within the shell-pockets of the carrier, means for rigidly connecting the table, carrier and hopper and means for imparting a vertical reciprocatory and a jarring movement to the table, substantially as described.

849,438. PNEUMATIC-TIRE PROTECTOR. EDWARD I. TENNANT, Springfield, Ohio. Filed May 8, 1906. Serial No. 315,719.

Claim.—1. In a tire-protector, a tire, an elastic tread-band inclosing the tread portion of said tire, a band of fabric material crossing said elastic tread-band and forming loops on each side of the tire, a series of strips of fabric covering the elastic band at points between the cross-band and filling the spaces between the cross-band, rings passing through the loops formed by the cross-band, and means for contracting said rings to tighten the cross-band.

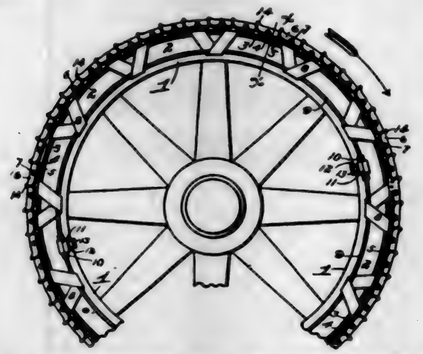

2. In a tire-protector, a tire, an elastic tread-band inclosing the tread portion of said tire, a band of fabric material crossing said elastic tread-band and forming loops on each side of the tire, a series of strips of fabric covering said elastic band at the points between the cross-band and filling the spaces between said cross-band, and a series of metallic plates inclosing the cross-band and the strips filling the spaces between the cross-band.

3. In a tire-protector, a tire, an elastic tread-band inclosing the tread portion of said tire, a band crossing said elastic tread-band and forming loops on each side of the tire, a series of strips of fabric covering said elastic tread-band at the points between the cross-band and filling the spaces between said cross-band, and an elastic band inclosing the cross-band and the strips filling the spaces between the cross-band.

4. In a tire-protector, a tire, an elastic tread-band inclosing the tread portion of said tire, a band crossing said elastic tread-band and forming loops on each side of the tire, a series of strips of elastic fabric inclosing said elastic tread-band and filling the spaces between the cross-band, and an outer elastic band inclosing the cross-band and the strips filling the spaces between the cross-band.

5. In a tire-protector, a tire, an elastic tread-band inclosing the tread portion of said tire, a band of fabric material crossing said elastic tread-band and forming loops on each side of the tire, strips of fabric material covering the elastic tread-band at points between the cross-band, a tread-band inclosing the cross-band and the pieces filling the spaces between said cross-band, and a series of metallic plates secured to said outer tread-band.

849,439. WRENCH. MYRVLE W. THOMPSON, Fruitland, Wash. Filed Apr. 5, 1906. Serial No. 310,162.

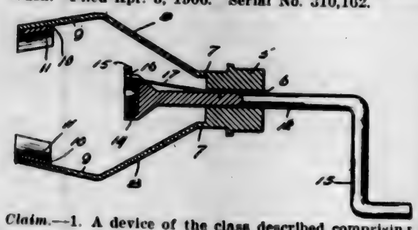

Claim.—1. A device of the class described comprising a frame, a shaft revolubly mounted in the frame, a nut-socket carried by the shaft and means connected with the shaft and extending within said socket for holding a nut therein.

2. A device of the class described comprising a frame, a shaft revolubly mounted in the frame, a nut-socket carried by the shaft, and a resilient finger, connected with the shaft and arranged to hold a nut in the socket, said finger being operable from without the socket to release the nut.

849,440. TANNING COMPOUND. JAMES B. TOMPKINS, Vanderwoort, Ark. Filed July 23, 1906. Serial No. 327,368.

Claim.—1. The herein-described compound the same consisting of tannic acid, azedarach, gum-gambier, alum and oil of cedar.

2. The herein-described compound the same consisting of tannic acid one pound, azedarach one pound, gum-gambier one pound, alum one-half pound and oil of cedar two ounces.

849,441. ANCHOR-POST AND STRETCHER. FRANK UNDERWOOD, Chicago, Ill. Filed June 9, 1906. Serial No. 320,948.

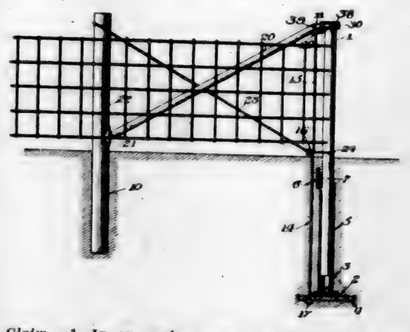

Claim.—1. In an anchor-post and stretcher; a rotatable post, means for securing fencing thereto, means for rotating the post, a brace to engage the post rigidly secured to the ground at a distance therefrom, and means for locking the post to the brace against reverse rotation.

2. In an anchor-post and stretcher, a post rotatable in the ground, means for attaching fencing thereto, a ratchet wheel or collar on the post independent of the fencing-attaching means, a brace to engage the collar secured against rotation by engagement external to the post, and means for mutual engagement between the brace and the collar.

3. In an anchor-post and stretcher, a circular column attached to and rotatable in the ground, a ratchet-collar secured to the column, a brace to engage the ratchet-collar secured against rotation by means independent thereof, and a dog on the brace to engage the ratchet-collar.

4. In an anchor-post and stretcher, the combination of a rotatable column, a brace and head to support the column, a dog on the brace-head, said dog and brace-head being adapted to mutual pivotal engagement on either side of the head, and an invertible collar on the column, said collar having conformably but oppositely placed ratchet-teeth on the upper and lower faces respectively adapted to be engaged by said dog.

5. In an anchor-post and stretcher, the combination of a rotatable column, a brace therefor, a brace-head to engage the column, pivots on either side of the brace-head, a dog mountable on said pivots, and an invertible collar on the column, said collar having conformably but oppositely placed ratchet-teeth on the upper and lower faces respectively and adapted to be engaged by said dog.

6. In an anchor-post and stretcher, a circular column attached to and rotatable in the ground, a ratchet-collar secured to the column, a brace for the post, a dog on the brace to engage the ratchet-collar, and a turning wrench having a central body portion with upper and lower faces, said faces having oppositely-placed but conformed teeth adapted to engage the teeth on the collar.

7. In an anchor-post and stretcher, the combination of an anchor-block, a column rotatable thereon, a brace for

the column to engage the head thereof, and a tie-rod to connect the anchor-block and the brace.

8. In an anchor-post and stretcher, the combination of a column, a foundation-block therefor, a ratchet-wheel on the upper part of the post, a brace-head engaging the ratchet-wheel, a brace to engage the brace-head, and a tie-rod to secure the brace-head to the foundation-block.

9. In an anchor-post and stretcher, a foundation-block secured in the ground, a column pivotally mounted thereon, and a bearing-block in the ground adapted to engage the post midway of its length.

10. In an anchor-post and stretcher, a foundation-block secured in the ground, a sleeve on the bearing-block, a post adapted to rotate in said sleeve, and means for securing the post against reverse rotation.

849,442. PLATFORM-FLAG FOR HARVESTERS. WILLIAM WEBBER, Chicago, Ill., assignor to International Harvester Company, a Corporation of New Jersey. Filed Jan. 21, 1907. Serial No. 353,281.

Claim.—1. A platform-flag for harvesters comprising, in combination a harvester-frame and grain-platform, two bars parallel with each other and arranged in substantially the same horizontal plane, said bars having their inner ends pivotally connected with a fixed part of the harvester-frame and their outer ends overhanging the grain-platform, a platform-flag pivotally connected to said outer ends, and releasable locking means carried by one of said bars and adapted to engage with the other in a manner to prevent relative movement of said bars.

2. A platform-flag for harvesters comprising, in combination a harvester-frame and grain-platform, two bars parallel with each other and arranged in substantially the same horizontal plane, said bars having their inner ends pivotally connected with a fixed part of the harvester-frame and their outer ends overhanging the grain-platform, a platform-flag pivotally connected to said outer ends, a pivoted latch carried by one of said bars, and teeth upon the other bar adapted to receive said latch in a manner to prevent relative movement of said bars.

3. A platform-flag for harvesters comprising, in combination a harvester-frame and grain-platform, two bars parallel with each other and arranged substantially in the same horizontal plane, said bars having their inner ends pivotally connected with a fixed part of the harvester-frame and their outer ends overhanging the grain-platform, a platform-flag pivotally connected to said outer ends, a pivoted latch carried by one of said bars, teeth upon the other bar, and a spring operative to yieldingly hold said latch in engagement with the teeth.

4. A platform-flag for harvesters comprising, in combination a harvester-frame and grain-platform, a flag, an arm overhanging the grain-platform and having said flag pivotally suspended from its outer end and its inner end pivotally connected with a fixed part of the harvester, a bar parallel with said arm and arranged in substantially the same horizontal plane, said bar having its outer end pivotally connected with said flag and its inner end pivotally connected with a fixed part of the harvester, a releasable locking mechanism secured to said arm and adapted to engage with said bar in a manner to prevent said bar moving relative to said arm.

5. A platform-flag for harvesters comprising, in combination a harvester-frame and grain-platform, a flag, an arm overhanging the grain-platform and having said flag pivotally suspended from its outer end and its inner end pivotally connected with a fixed part of the harvester, a bar parallel with said arm and arranged in substantially the same horizontal plane, said bar having its outer end pivotally connected with said flag and its inner end pivotally connected with a fixed part of the harvester, a series of teeth on the bar, and a latch pivotally mounted on said arm and adapted to engage with the toothed portion of the bar.

6. A platform-flag for harvesters comprising, in combination a harvester-frame and grain-platform, a flag, an arm overhanging the grain-platform and having said flag pivotally suspended from its outer end and its inner end pivotally connected with a fixed part of the harvester, a bar parallel with said arm and arranged in substantially the same horizontal plane, said bar having its outer and inner ends pivotally connected with said flag and the harvester-frame, respectively, a latch pivotally mounted on said arm, a series of teeth on said bar, said latch adapted to engage with said teeth in a manner to prevent movement of said arm relative to said bar.

7. A platform-flag for harvesters comprising, in combination a harvester-frame and grain-platform, a flag, an arm overhanging the grain-platform and having said flag pivotally suspended from its outer end and its inner end pivotally connected with a fixed part of the harvester, a bar parallel with said arm and arranged in substantially the same horizontal plane, said bar having its outer and inner ends pivotally connected with said flag and a fixed part of the harvester-frame, respectively, a series of teeth on said bar, a latch pivotally mounted on said arm, and a spring operative to yieldingly hold said latch in engagement with said teeth.

8. A platform-flag for harvesters comprising, in combination a harvester-frame and grain-platform, a flag, an arm overhanging the grain-platform and having said flag pivotally suspended from its outer end and its inner end pivotally connected with a fixed part of the harvester, a bar parallel with said arm and arranged in substantially the same horizontal plane, said bar having its outer and inner ends pivotally connected with said flag and a fixed part of the harvester-frame, respectively, a series of teeth on said bar, a bracket secured to said arm and having a slotted opening therein to receive said bar, a latch pivotally mounted on said bracket and having one end adapted to engage with said teeth, and a tailpiece at its opposite end for manipulating said latch.

9. A platform-flag for harvesters comprising, in combination a harvester-frame and grain-platform, a flag, an arm overhanging the grain-platform and having said flag pivotally suspended from its outer end and its inner end pivotally connected with a fixed part of the harvester, a bar parallel with said arm and arranged in substantially the same horizontal plane, said bar having its outer and inner ends pivotally connected with said flag and a fixed part of the harvester-frame, respectively, a series of teeth on said bar, a bracket secured to said arm and having a slotted opening therein adapted to receive said bar, a latch pivotally mounted on said bracket and having one end adapted to engage with said teeth and the opposite end overhanging said arm, and having a coiled spring operative between it and said arm to yieldingly hold the latch in engagement with said teeth.

849,443. CIRCUIT-CHANGING MECHANISM. HARRY G. WEBSTER, Chicago, Ill., assignor to Milo G. Kellogg, Chicago, Ill. Filed Jan. 3, 1905. Serial No. 239,486.

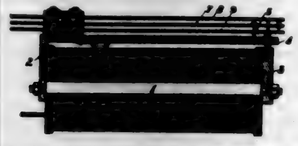

Claim.—1. An electromagnetic circuit-changing device comprising an electromagnet, an extension from each end of the magnet-core, a substantially straight armature axially mounted on one of said extensions and overlapping the other extension, a substantially flat spring fixed to said former extension and extending in a direction substantially parallel to said armature, said spring being mechanically connected to said armature and flexed so as to draw said armature away from said overlapped projection and magnet-core, and a stop for said spring to maintain a definite normal air-gap between said armature and overlapped projection.

2. An electromagnetic circuit-changing device comprising an electromagnet, an extension from each end of the magnet-core, an armature and a flat spring secured to one of said extensions and extending in parallel directions toward the other projection, a mechanical connection between said spring and armature near their outer ends, said armature lying between said magnet and spring and overlapping said other projection, and said spring being flexed so as to draw said armature away from said overlapped projection and magnet-core, and a stop for said spring to maintain a definite normal air-gap between said armature and overlapped projection.

3. An electromagnetic circuit-changing device comprising an electromagnet, an extension from each end of said magnet-core, a substantially straight armature axially mounted on one of said extensions and movable toward said core into engagement with said other extension, a substantially flat spring fixed to said former extension and extending in a direction substantially parallel to said armature, said spring being mechanically connected to said armature and flexed so as to draw said armature away from the said overlapped projection, and a stop for said spring to maintain a definite normal air-gap between said armature and overlapped projection.

4. An electromagnetic circuit-changing device comprising an electromagnet, lateral extensions from the ends of said core, a substantially straight armature axially mounted on one of said extensions and overlapping the other extension, a substantially flat spring fixed to said former extension and extending in a direction substantially parallel to said armature, said spring being mechanically connected to said armature and flexed so as to draw said armature away from said overlapped projection and magnet-core, and a stop for said spring to maintain a definite normal air-gap between said armature and overlapped projection.

5. An electromagnetic circuit-changing device comprising an electromagnet, an extension from each end of said core, a substantially straight armature axially mounted on one extension and extending along and in close proximity to the magnet-winding, with no magnetic material intervening, to the other extension toward which it is drawn in response to the energization of the magnet, a parallel spring lying adjacent to the outer side of said armature, fixed to the same extension as said armature, mechanically connected thereto near its free end, and flexed so as to draw said armature away from said other extension and the mgnet-core, and a stop for said spring to maintain a definite normal air-gap between said armature and said other extension.

6. An electromagnetic circuit-changing device comprising an electromagnet, an extension from each end of the magnet-core, a substantially straight armature axially mounted on one of said extensions and overlapping the other extension, a substantially flat spring fixed to said former extension and extending in a direction substantially parallel to said armature, said spring being mechanically connected to said armature and flexed so as to draw said armature away from said overlapped projection, and a second flat spring lying substantially parallel to said first-mentioned spring and normally engaging the same to limit the outward movement thereof.

7. An electromagnetic circuit-changing device comprising an electromagnet, an extension from each end of the magnet-core, a substantially straight armature axially mounted on one of said extensions and overlapping the other extension, a substantially flat spring fixed to said former extension and extending in a direction substantially parallel to said armature, said spring being mechanically connected to said armature and flexed so as to draw said armature away from said overlapped projection and the magnet-core, a second flat spring lying substantially parallel to said first-mentioned spring and pressing inward toward the latter to engage the same to limit its outward movement, and a stop to normally engage said second flat spring to maintain it in a definite position.

8. An electromagnetic circuit-changing device comprising an electromagnet, an extension from each end of the magnet-core, a substantially straight armature axially mounted on one of said extensions and overlapping the other extension, a substantially flat spring fixed to said former extension and extending in a direction substantially parallel to said armature, said spring being mechanically connected to said armature and flexed so as to draw said armature away from said overlapped projection, a second flat spring lying substantially parallel to said first-mentioned spring and pressing inward toward the latter to engage the same to limit its outward movement, and a stop mounted on said overlapped projection and operative to normally engage said second flat spring to maintain it in a definite position.

9. An electromagnetic circuit-changing device comprising an electromagnet-core, an extension from each end of said core, a substantially straight armature axially secured at one end to one of said extensions and overlapping the other extension at its other end, three substantially flat springs fixed to said former extension and extending in a direction substantially parallel to said armature, a mechanical connection between said armature and the center spring, and means for maintaining the other springs apart, said center spring normally pressing against the outer spring to maintain a definite air-gap between said armature and the overlapped projection but movable into engagement with the inner spring in response to the magnetic pull of the magnet-core.

849,444. PUMP-SUPPORT. JOHN S. WEISER, Spring Valley, Wis. Filed Oct. 31, 1906. Serial No. 341,435.

Claim.—1. A pump-stand and protecting-sleeve for well-casings comprising a hollow cylindrical body adapted to be buried in the earth at the upper end of the well-casing and having ribs thereon adapted to project into the surrounding earth, and means for clamping a pump directly thereto.

2. A combined pump-support and protecting-sleeve for well-casings comprising a hollow cylindrical body adapted to be buried in the earth at the upper end of the well-casing, a peripheral flange at the upper end of the body, reinforcing-ribs between the flange and body forming earth-engaging portions for preventing displacement of the support, and clamping devices on the said flange for securing a pump to the latter.

3. A combined pump-support and protecting-sleeve for well-casings comprising a hollow cylindrical body adapted to be buried in the earth at the upper end of the well-casing, peripheral flanges at the ends of the body having tapped openings, radially-adjustable clamps on the upper flange for securing pumps of different sizes directly to the said body, and bolts for adjustably securing the clamps to the top flange.

4. A combined pump-support and protecting-sleeve for well-casings comprising a hollow cylindrical body adapted

to be buried in the earth at the upper end of the well-casing, a peripheral flange at one end of the body, a cylindrical flange rising from the top face of the pheripheral flange and adapted to extend into the base of the pump for centering the latter relatively to the support, and radially-adjustable clamping devices on the peripheral flange for securing the pump thereto.

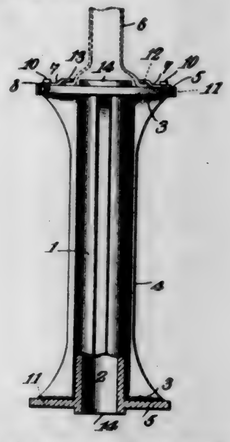

5. A combined pump-support and protecting-sleeve for well-casings comprising a hollow cylindrical body adapted to be buried in the earth at the upper end of the well-casing, peripheral flanges at the ends of the body for preventing vertical movement of the latter, longitudinally-extending ribs arranged to reinforce the flanges and coöperate with the surrounding earth to prevent rotary movement of the body in the earth, cylindrical flanges at the end of the body and projecting outwardly from the peripheral flanges for centering a pump thereon, and radially-adjustable clamping devices adapted to be used interchangeably on either of the peripheral flanges, each clamping device comprising a member having a longitudinally-slotted base and an offset inner end adapted to grip the bottom of a pump, and a bolt extending through the slot of the base and screwing into the adjacent peripheral flange.

840,445. ATTACHMENT FOR SUPPLYING WATER TO ROCK-DRILLS. EUSTACE M. WESTON, Johannesburg, Transvaal. Filed Aug. 1, 1905. Serial No. 272,205.

Claim.—1. In an apparatus of the character described, in combination a drill bit or tool, the shank of which has a tapered portion and provided with a longitudinal hole and a transverse hole, a cylinder having a tapered bore corresponding to the tapered portion of the bit shank, the said tapered portion fitting in the said tapered bore, and a portion of said bore being enlarged to form a water-space surrounding the tapered portion of the bit-shank, and said cylinder being provided with an exterior circumferential recess and apertures leading from said recess to the said water-space, a water-ring seated within the said exterior recess of the cylinder and in which ring said cylinder is free to revolve and means for supplying water to the water-ring.

2. In apparatus of the character described, in combination, a drill-bit constructed with a longitudinal hole and with a transverse hole in communication therewith, a cylindrical piece non-rotatably carried by said bit, said cylindrical piece being formed with an annular internal recess in communication with the transverse hole and with holes in communication with said annular recess, a water-ring rotatably carried by said cylinder, which is in communication with the annular recess in the cylinder and the transverse and longitudinal holes in the bit, and means for supplying water to the water-ring.

3. In apparatus of the character described, in combination, a drill-bit, having a longitudinal hole and a transverse hole in communication therewith and made taper for a portion of its length, a hollow cylindrical piece of corresponding taper non-rotatably carried on the tapered portion of the bit, said cylindrical piece being formed with an internal recess forming a water-space in communication with the transverse hole in the bit and with a hole communicating with said annular recess, a water-ring rotatably mounted on the cylinder in communication through the hole in the cylinder with the internal recess and through the latter with the transverse and longitudinal holes in the bit, and means for conducting water to the water-ring.

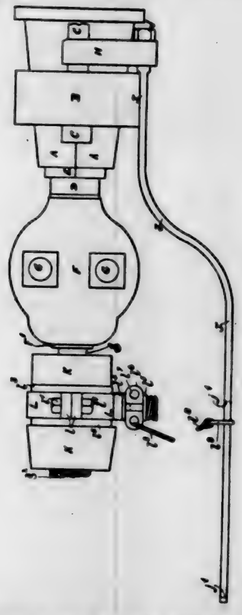

4. In apparatus of the character described, in combination, a drill-bit made taper for a portion of its length and provided with a longitudinal hole and with a transverse hole in said tapered portion in communication with the longitudinal hole, a cylindrical piece constructed with a bore of corresponding taper to the bit upon which it is non-rotatably carried, said cylindrical piece being constructed with an internal annular recess forming a water-space round the tapered portion of the bit and in communication through the transverse hole with the longitudinal hole, said cylindrical piece being also constructed with an external recess and with a port placing said external recess in communication with the internal recess or water-space, a water-ring rotatably carried in said external recess, said water-ring being constructed with an internal recess in communication through the hole in the cylindrical piece with the internal recess or water-space and through the latter with the transverse and longitudinal holes in the bit, and means for conducting water to the water-ring.

5. In apparatus of the character described, in combination, a drill-bit made taper for a portion of its length and provided with a longitudinal hole and with a transverse hole through said tapered portion communicating with said longitudinal hole, a cylindrical piece formed with a tapered bore to fit the tapered portion of the bit on which it is non-rotatably carried, said cylindrical piece being constructed with an internal annular recess forming a water-space round the bit and in communication with the transverse hole, and with an external annular recess and a hole placing said external annular recess in communication with the water-space, a water-ring rotatably positioned in said external annular recess, said water-ring being constructed with an internal recess in communication with the water-space and transverse and longitudinal holes in the bit, means for conducting water to the water-ring, and means for preventing the rotation of the water-ring round the cylinder while permitting the cylinder to rotate in the water-ring.

6. In apparatus of the character described, in combination, a drill bit made taper for a portion of its length and provided with a longitudinal hole and with transverse holes through said taper portion communicating with said longitudinal hole, a cylindrical piece formed with a tapered bore to fit the tapered portion of the bit on which it is non-rotatably carried, said cylindrical piece being constructed with an internal annular recess forming a water-space round the bit and in communication with the transverse holes and with an external annular recess and holes placing said external annular recess in communication with the water-space, a water-ring rotatably positioned in said external annular recess, said water-ring being constructed with an internal recess in communication with the water-space and transverse and longitudinal holes in the bit, means for conducting water to the water-ring, packings located in the recess in the cylinder at the sides of the water-ring, and means for preventing the rotation of the water-ring round the cylinder while permitting the cylinder to rotate in the water-ring, substantially as described.

7. In apparatus of the character described, in combination, a drill-bit made taper for a portion of its length and provided with a longitudinal hole and with transverse holes through said tapered portion communicating with said longitudinal hole, a cylindrical piece formed with a tapered bore to fit the tapered portion of the bit on which it is non-rotatably carried, said cylindrical piece being constructed with an internal annular recess forming a water-space round the bit and in communication with the transverse holes and with an external annular recess and holes placing said external annular recess in communication with the water-space, a water-ring rotatably positioned in said external annular recess, said water-ring being constructed with an internal recess in communication with the water-space and transverse and longitudinal holes in the bit, means for conducting water to the water-ring, packings located in the recess in the cylinder at the sides of the water-ring, and means for preventing the rotation of the water-ring round the cylinder while permitting the cylinder to rotate in the water-ring, said means comprising a spring-bar fixed to a non-rotating portion of the machine at one end and constructed with a longitudinal slot at the other end and a ring adapted to traverse said slot and a flexible connection between said ring and the water-ring, substantially as described.

840,446. RAILWAY-CROSSING. WILLARD B. WESTON, Chicago, Ill. Filed Jan. 10, 1907. Serial No. 351,724.

Claim.—1. In a railway-crossing, the combination with approach and crossing rails spaced apart at the corners of the crossing, of a pair of stub-rails at each corner connected together and pivoted to swing within such space, the stub-rails being arranged at an angle to each other and arranged to connect the respective rails of either line, and means to shift the said stub-rails.

2. In a railway-crossing, the combination with approach and crossing rails spaced apart at the corners of the crossing, of a pair of stub-rails at each corner connected together at an angle, and pivoted to swing in said space, the apex of the angle being toward the corner and the angle being less than the angle of the corner.

3. In a railway-crossing, the combination with line-rails which cross and have spaces at the corners of the crossing, the ends of the rails being beveled at the spaces, of stub-rails connected together in pairs at the corners and beveled at the ends to join with the ends of the line-rails, the pairs being pivoted to swing in the spaces and connect the respective rails of either line.

4. In a railway-crossing, the combination with line-rails which cross and have spaces at the corners of the crossing, of pivoted plates in said spaces, stub-rails arranged at an angle to each other upon said plates, the ends of the line-rails at the spaces, and the ends of the stub-rails, being respectively scarfed and beveled at opposite ends, the plane of the bevels forming arcs concentric with the pivots of the plates.

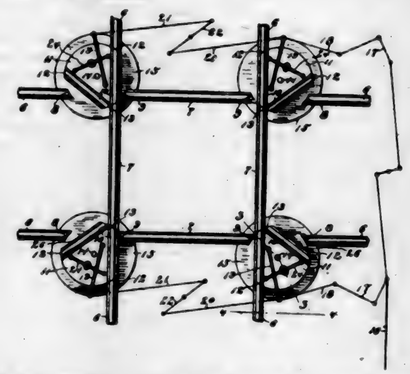

5. In a railway-crossing, the combination with crossing line-rails having spaces at the corners of the crossing, of a pair of stub-rails at each corner connected together and pivoted to swing in said space, means to swing the stub-rails, and a lock for the said rails, connected to and operated by said means.

6. In a railway crossing, the combination with crossing line-rails having spaces at the corners of the crossing, upper and lower plates under said crossing, the upper plate being pivoted and having holes therethrough and the lower plate having recesses which may register with said holes, stub-rails mounted upon the upper plate and arranged to match with either of the line-rails, a rocker pivoted on the upper plate and having locking-pins at the ends which work through the holes and into the recesses, and means to simultaneously operate the plate and rocker.

840,447. COIN-OPERATED MECHANISM. JAMES J. WOOD, Fort Wayne, Ind. Filed Sept. 21, 1905. Serial No. 279,466.

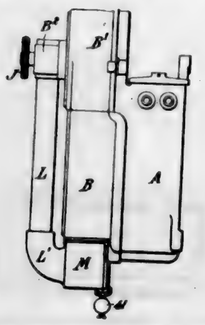

Claim.—1. The combination with a casing, of a coin-box applied removably to the exterior of the casing, a lock carried by the coin-box, and a locking-piece engaged thereby, fastened adjustably to the casing.

2. The combination with a casing, and a coin-box, of a lock and locking-piece for fastening the coin-box to the casing, the lock carried by one of said parts, and the

locking-piece fastened adjustably to the other, whereby to compensate for any variations in their dimensions.

3. The combination with a casing, of a coin-box fitting the exterior of the casing, an adjustable locking-piece comprising a screw-threaded rod engaging the casing, and a lock carried by the coin-box and engaging said rod.

4. The combination with a casing, of a coin-box fastened to said casing, and a lock carried by said box, comprising an oscillatable barrel, a wall of the box formed with a socket in which said barrel turns, whereby it is concealed from view and the box forms also the lock-case.

5. The combination with a casing, of a coin-box fastened to said casing, and a pin-tumbler lock carried by said box, the latter formed with a socket in which its oscillatable barrel may turn, and with sockets for its pin-tumblers.

6. The combination with a casing of a coin-box and a lock for fastening the box to the casing, its moving parts socketed in the box, and having a hole intersecting a part of the lock through which to pass a seal-wire.

840,448. COIN-OPERATED MECHANISM. JAMES J. WOOD, Fort Wayne, Ind. Filed Dec. 14, 1906. Serial No. 347,792.

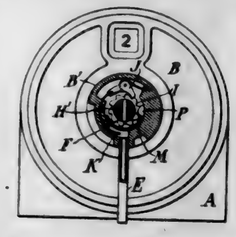

Claim.—1. In a coin-actuated mechanism, the combination of a coin-driving part, a coin-driven part having a prescribed movement, a pawl for locking it at the end of such movement, and an intercepter operatively connected to such pawl to be moved thereby from the path of discharge of the coin upon the moving of the pawl to its locking position.

2. In a coin-actuated mechanism, the combination of an oscillatory coin-driving part, an intermittently-rotative coin-driven part, a ratchet in connection with the latter, a pawl engaging said ratchet, and an intercepting-plate connected to said pawl arranged in the path of escape of the coin when the pawl engages a ratchet-tooth, and movable out of such path by the locking movement of the pawl behind such tooth.

840,449. BARREL AND BOX CARRIER. JOHN A. WRIGHT, Maquoketa, Iowa. Filed June 23, 1905. Serial No. 266,661.

Claim.—1. In a barrel and box carrier, a main quadrilateral frame, consisting of cylindrical members, rollers adapted to operate upon the same, flanges upon the frame upon which the rollers rest, and a reduced portion for the hands of the operater.

2. In a device of the character described, a main frame, elbows connecting the portions of the same, flanges upon the elbows, and rollers operating upon the flanges.

840,450. TYPE-WRITING MACHINE. FRANK A. YOUNG, Syracuse, N. Y., assignor to The Monarch Typewriter Company, Syracuse, N. Y., a Corporation of New York. Filed May 23, 1905. Serial No. 261,864.

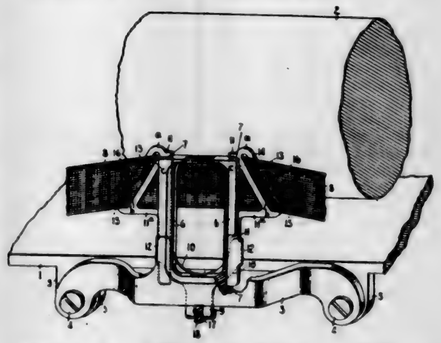

Claim.—1. In a type-writing machine, a ribbon-guide provided with guiding-slots, the outer wall of each slot comprising a downwardly-extending guard-finger offset at its lower end, and an upwardly-extending guard-finger directed toward the first-named finger and terminating at the offset portion thereof.

2. In a type-writing machine, a ribbon-guide provided with guiding-slots, the outer wall of each slot comprising an upwardly-extending guard-finger, and a downwardly-extending guard-finger, the latter finger being offset rearwardly from the first-named finger.

3. In a type-writing machine, a ribbon-guide provided with guiding-slots, the outer wall of each slot comprising an upwardly-extending guard-finger, and a downwardly-extending guard-finger, the latter finger being offset both outwardly and rearwardly from the first-named finger.

4. In a type-writing machine, a ribbon-guide provided with guiding-slots, the outer wall of each slot comprising a downwardly-extending guard-finger, the lower end portion of which finger flares outwardly from the body portion of the finger, and an upwardly-extending guard-finger, the body portions of the two guard-fingers being substantially in line with each other.

5. In a type-writing machine, a ribbon-guide provided with ribbon-guiding slots, the inner edges of said slots being in front of the ribbon and the outer edges in rear of the ribbon, said outer edges comprising downwardly and upwardly extending guard-fingers so arranged that the ribbon is inserted in the vibrator from behind the upwardly-extending guard-fingers and in front of the downwardly-extending guard-fingers, and the walls of the slots being in the same transverse plane.

6. In a type-writing machine, a ribbon-guide having ribbon-retaining slots, the outer walls whereof comprise comparatively long downwardly-extending guard-fingers, and short upwardly-extending guard-fingers arranged so that the ribbon can only be entered in the slots at acute angles to the lengths of the slots.

7. In a type-writing machine, a ribbon-guide having ribbon-retaining slots, the outer walls whereof comprise comparatively long downwardly-extending guard-fingers, and short upwardly-extending guard-fingers, the short fingers being substantially parallel throughout their lengths with the inner walls of said slots, and the long fingers having outwardly and rearwardly flaring ends.

8. In a type-writing machine, a ribbon-guide formed of sheet metal and comprising a stem, a cross-head carried thereby, and slides formed at opposite ends of the cross-head, said slides being provided with retaining-slots, the outer wall of each slot comprising an upwardly-extending guard-finger, and a downwardly-extending guard-finger, the last-named finger being offset rearwardly from the first-named.

9. In a type-writing machine, a ribbon-guide formed of sheet metal and comprising a stem, a cross-head carried thereby, and slides formed at opposite ends of the cross-head, said slides being provided with retaining-slots, the outer wall of each slot comprising an upwardly-extending guard-finger, and a downwardly-extending guard-finger, the last-named guard-finger being offset laterally from the first-named.

10. In a type-writing machine, a ribbon-guide formed of sheet metal and comprising a stem, a cross-head carried thereby, and slides formed at opposite ends of the cross-head, said slides being provided with retaining-slots, the outer wall of each slot comprising an upwardly-extending guard-finger, and a downwardly-extending guard-finger, the last-named guard-finger being offset both laterally and rearwardly from the end of the first-named.

11. In a type-writing machine, a ribbon-guide formed of sheet metal and comprising a stem, a cross-head carried thereby, and slides formed at opposite ends of the cross-head, said slides being formed with diverging ribbon-retaining slots, the outer wall of each of said slots comprising a downwardly-extending guard-finger having an outward flare near the lower end and an upwardly-extending guard-finger.

12. In a type-writing machine, a ribbon-vibrator formed of sheet metal and comprising a stem, a cross-head carried thereby, and slides at opposite ends of the cross-head, said slides being formed with diverging ribbon-retaining slots, the outer wall of each of said slots comprising a downwardly-extending guard-finger having a lateral flare near the lower end, and an upwardly-extending guard-finger, the end of the upper guard-finger terminating behind the end of the lower guard-finger.

13. In a type-writing machine, a ribbon-vibrator formed of sheet metal and comprising a stem, a cross-head carried thereby, and slides at opposite ends of the cross-head, said slides having downwardly-diverging slots, the inner edges of said slots being in front of the ribbon and the outer edges in rear of the ribbon, said outer edges each being formed by a downwardly-extending and an upwardly-extending guard-finger, said guard-fingers being so arranged that the ribbon is inserted in the vibrator from behind the upwardly-extending guard-finger and in front of the downwardly-extending guard-finger.

14. In a type-writing machine, a ribbon-guide formed of sheet metal and comprising a stem, a cross-head carried thereby and slides formed at opposite ends of the cross-head, said slides being provided with retaining-slots, the outer wall of each of said slots comprising a comparatively long downwardly-extending and a short upwardly-extending guard-finger, the short guard-finger being parallel throughout its length with the inner wall of the retaining-slots, and the longer finger being parallel therewith through a portion of its length and having an outwardly and rearwardly flaring bend.

15. In a type-writing machine, a ribbon-guide provided with ribbon-guiding slots, the outer walls of said slots each comprising a downwardly-extending guard-finger, and an upwardly-extending guard-finger, the lower end of the upper guard-finger terminating behind the plane in which the lower finger lies and the lower finger being arranged in the general plane of the vibrator.

16. In a type-writing machine, a ribbon-guide provided with guiding-slots, the outer wall of each slot comprising an upwardly-extending guard-finger and a downwardly-extending guard-finger, the upwardly-extending fingers being directed inwardly so as to give a tapering effect to the ribbon when the latter is drawn taut against said fingers.

17. In a type-writing machine, a ribbon-guide provided with guiding-slots, the outer wall of each slot comprising an upwardly-extending guard-finger and a downwardly-extending guard-finger, the upwardly-extending fingers being directed inwardly so as to give a tapering effect to the ribbon when the latter is drawn taut against said fingers, and the ends of the downwardly-extending fingers flaring laterally so that when the taut ribbon is moved upwardly its upper edge will contact with and be deflected inwardly by said flaring ends.

18. In a type-writing machine, a ribbon-guide provided with guiding-slots, the outer wall of each slot comprising an upwardly-extending guard-finger and a downwardly-extending guard-finger, the ends of the two fingers being so arranged in respect of each other as to form a lateral passage-way at an angle to the guiding-slot and between the ends of the latter, such that the ribbon is necessarily directed into the slot at an acute angle to the length thereof.

19. In a type-writing machine, a ribbon-guide having a slot, said guide comprising a downwardly-disposed guard or finger terminating in an outwardly-disposed portion at an angle to the body of said finger.

20. In a type-writing machine, a ribbon-guide having a slot, said guide comprising a downwardly and outwardly disposed guard or finger terminating in an angle to the body of said finger, the angular termination of said finger being outside of and serving as an entrance to the slot proper.

21. In a type-writing machine, a ribbon-guide having a slot comprising a downwardly-disposed guard-finger terminating in an outwardly-disposed portion at an angle to the body of said finger, the lower end of the slot being constructed to provide a support for the ribbon.

22. In a type-writing machine, a ribbon-guide having a slot comprising a downwardly-disposed guard-finger terminating in a hook-like member arranged at an angle to the general direction of said guard-finger.

23. In a type-writing machine, a ribbon-guide provided with slots and comprising a downwardly-extending guard or finger the main portion of which forms part of the wall of a slot, said finger having a flaring end formed with an inclined edge, said edge being outside the slot but serving to guide the ribbon into one of the slots.

24. In a type-writing machine, a ribbon-guide provided with slots the walls whereof are in a single plane transverse of the machine, the outer wall of each slot comprising two guard-fingers the combined lengths of which exceed the length of the slot.

25. In a type-writing machine, a ribbon-guide cut out at the sides to form ribbon-guiding slots, the entrances to said slots being at the sides farthest from the center of the guide and the upper edge of the mouth of each entrance extending farther from the center of the guide than the lower edge of the mouth, each entrance having a wide or flaring mouth and being disposed obliquely to the guide-slot proper.

840,451. SEAT. JAMES L. ZANE, Pulaski, Iowa. Filed Sept. 25, 1906. Serial No. 336,121.

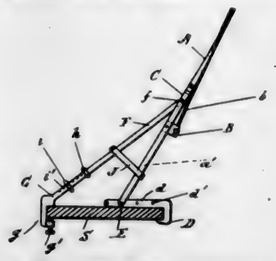

Claim.—1. In a seat-back, the combination, with a main frame, of hooks for engaging the rear part of the seat pivoted to the lower portions of the said main frame, stay-bars pivoted to the upper portions of the said main frame and provided with means for engaging the front part of the seat, and locking devices for holding the said parts in position.

2. In a seat-back, the combination, with a main frame, of hooks for engaging the rear part of the seat pivoted to the lower portions of the said main frame, stay-bars pivoted to the upper portions of the said main frame, extension-bars adjustably connected to the said stay-bars and provided with means for engaging the front part of the seat, and locking devices for holding the said parts in position.

3. In a seat-back, the combination, with a main frame provided with side bars, of hooks for engaging the rear part of the seat pivoted to the lower portions of the said side bars, stay-bars pivoted to the upper portions of the said side bars and provided with means for engaging the front part of the seat, and locking-links slidable over the said stay-bars and side bars.

4. In a seat-back, the combination, with a main frame, of hooks provided with shanks having series of holes and adapted to rest on and engage with the rear parts of the seat, pins pivoting the lower end portions of the said frame to the said shanks, stay-bars pivoted to the upper portions of the said main frame and provided with means for engaging the front part of the seat, and locking devices for holding the said parts in position.

5. In a seat-back, the combination, with a main frame, of hooks for engaging the rear part of the seat pivoted to the lower portions of the said main frame, stay-bars pivoted to the upper portions of the said main frame and provided with eyes at their lower ends, extension-bars provided with means for engaging the front part of the seat, said extension-bars being also provided with notches for engaging with the said eyes and having eyes at their upper ends which are slidable over the said side bars, and locking devices for holding the said parts in position.

849,452. PACKING-AUGER. ELMER E. ZIEGENFUSS, Moline, Ill. Filed June 6, 1906. Serial No. 320,488.

Claim.—1. A packing-auger having a retainer arranged in the space formed between proximal terminals of the flight or flights, said retainer being inclined in the plane of motion of the auger to correspond to the pitch of the flight or flights and extending outward a distance corresponding to the width of the flight.

2. A packing-auger having the retainer arranged in the space formed between proximal terminals of the flight or flights, one portion of the retainer underlapping the topmost terminal and the remaining portion overlapping the lower terminal.

3. As a new article of manufacture, a packing-auger comprising a central support, an integral flight or flights, and an integral retainer arranged in the space formed between the proximal terminals of the flight or flights and inclined from front to rear corresponding to the pitch of the flight.

849,453. TONE PRODUCING AND RECORDING INSTRUMENT. HENRY P. BALL, Schenectady, N. Y., assignor of one-half to Samuel Insull, Chicago, Ill. Filed Dec. 11, 1903. Serial No. 184,815.

Claim.—1. A tone producing and recording instrument, comprising a tone-producing mechanism, a recording mechanism, and a controlling device for the recording mechanism adapted to be actuated by the final driven part of the tone-producing mechanism.

2. A tone producing and recording instrument, comprising a tone-producing mechanism, a recording mechanism, and a controlling device for the recording mechanism structurally separate from the tone-producing mechanism, but adapted to be actuated by the final driven part thereof.

3. A tone producing and recording instrument, comprising a tone-producing mechanism, a recording mechanism, and a controlling device for the recording mechanism situated in the path of movement of the final driven part of the tone-producing mechanism, and adapted to be actuated thereby.

4. A tone producing and recording instrument, comprising a tone-producing mechanism, a recording mechanism provided with means for introducing a time interval between possible successive actions of such recording mechanism, and a controlling device for the recording mechanism structurally separated from but adapted to be actuated by the final driven part of the tone-producing mechanism.

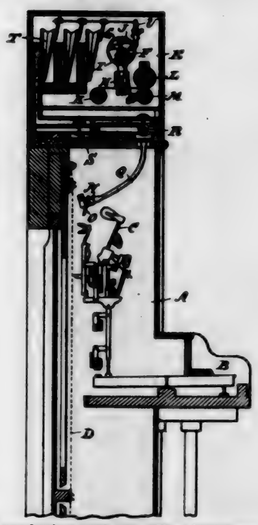

5. A tone producing and recording instrument, comprising a tone-producing mechanism, having a keyboard and moving parts actuated thereby, a recording mechanism, and controlling mechanism for the recording mechanism, situated between the tone producing and the recording mechanisms, not connected to the tone-producing mechanism, but in the path of movement of the final driven part thereof.

6. A tone producing and recording instrument, comprising a tone-producing mechanism having a series of moving hammers, a recording mechanism, and mechanism not connected to the tone-producing mechanism, but in the path of movement of the moving hammers for controlling the action of the recording mechanism.

7. A tone producing and recording instrument comprising a tone-producing mechanism, a recording mechanism provided with means whereby a time interval will elapse between the striking of a note by the performer and the action of the recording mechanism, and a controlling device for the recording mechanism structurally separated from but adapted to be actuated by the final driven part of the tone-producing mechanism.

8. A tone producing and recording instrument comprising a piano-action, a perforating mechanism, and means actuated by the movement of the hammers of the piano-action for controlling the movement of the perforating mechanism.

9. A tone producing and recording instrument comprising a piano-action, a perforating mechanism, and means actuated by the movement of the hammers of the piano-action for controlling after a definite time the movement of the perforating mechanism.

10. A tone producing and recording instrument comprising a series of keys, a series of hammers, a series of controlling devices situated in the path of movement of the hammers, and a series of punches responsive to the action of said controlling devices.

11. A tone producing and recording instrument comprising a series of keys, a series of hammers, a series of pneumatic controlling devices situated in the path of movement of the hammers, and a series of punches responsive to the action of said controlling devices.

12. A tone producing and recording instrument comprising a piano-action, a perforating mechanism, and a series of controlling-valves actuated by the hammers of the piano-action.

13. A tone producing and recording instrument comprising a piano-action, a perforating mechanism, and a series of controlling-valves actuated by parts of the piano-action which are separate from but actuated by the keys of such action.

14. A tone producing and recording instrument comprising a piano-action, a series of perforating mechanisms, a series of controlling mechanisms interposed between the piano-action and the perforating mechanisms, and actuated by the hammers of the piano-action, whereby the movements of the perforating mechanisms are controlled.

15. A tone producing and recording instrument comprising a piano-action, a perforating mechanism, and means actuated by the movement of but not connected to the hammers of the piano-action for controlling the movement of the perforating mechanism.

16. A tone producing and recording instrument comprising a piano-action, a perforating mechanism, and pneumatic mechanism for controlling said perforating mechanism, not connected to but actuated by the hammers of the piano-action.

17. A tone producing and recording instrument comprising a piano-action having as parts thereof a keyboard, and a series of hammers, a recording mechanism, and controllers therefor, actuated by the movement of the hammers of the piano-action.

18. A tone producing and recording instrument comprising a keyboard, a piano-action, a recording mechanism, a controller therefor which is mechanically separated from the hammer portion of the piano-action, but adapted to be moved by the hammer when the latter is actuated by a performer in striking a note on the keyboard.

19. A tone producing and recording instrument, comprising a piano-action, a perforating mechanism, a controlling means for the perforating mechanism actuated by but separated from the piano-action and located to introduce a time interval between the actuation of the piano-action and the actuation of the perforating mechanism.

20. A tone producing and recording instrument comprising a piano-action, a recording device, and controlling means for the recording device actuated by the hammers of the piano-action.

849,454. PRINTING-MACHINE. AXEL V. BEEKEN, Newark, N. J., assignor to Ira Brown Company, a Corporation of New York. Filed June 15, 1906. Serial No. 321,801.

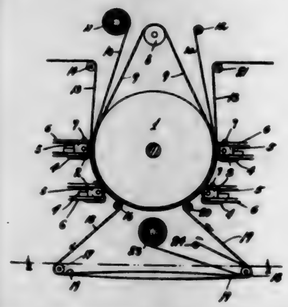

Claim.—In a web-printing machine, the combination of an impression member, a plurality of coacting form members grouped around the said impression member but located in the same transverse plane, two web-reversers standing substantially parallel to the axis of the impression member between which the web is reversed by a single twist and brought back with its other side out in the same transverse plane, and guide-rolls for leading the web around the impression member.

849,455. STEAM-TURBINE. JOHN BRISHLAG, National Soldiers Home, Tenn. Filed Nov. 22, 1906. Serial No. 344,562.

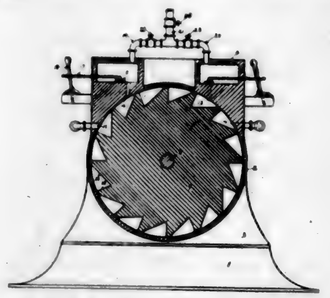

Claim.—In an elastic-fluid turbine, the combination of a casing having the internal facings of its end walls finished smooth, a wheel mounted therein and mounted so as to have a working fit within the end walls, a plurality of sets of peripheral buckets arranged with their fluid-impinging faces in opposite directions, a peripheral partition between adjacent sets of buckets, the buckets of adjacent sets being disposed in staggered relation, a steam-chest for each set of buckets having their fluid-impinging surfaces extending in the same direction, a nozzle for each set of buckets communicating with each chest, a slide-valve in each chest for controlling the flow of motive fluid through the nozzle thereof, lever and latch mechanisms for actuating the valves independently, a branched supply-pipe connected with the steam-chests, and throttle-valves in the pipes for controlling the supply of fluid to the chest independently.

849,456. INDICATOR. GEORGE BROWN, Sarnia, Ontario, Canada. Filed Apr. 2, 1906. Serial No. 309,569.

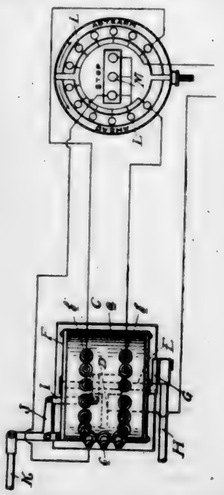

Claim.—1. The combination with the throttle and reversing mechanism of an engine, of an electric indicating mechanism comprising a contact member movable in directions transverse one to the other, connections between the throttle and reversing mechanism for effecting adjustment of said contact member respectively in transverse directions, a plurality of series of contacts selected by one of the movements of said traveling contact member and suc-

cessively contacted by said member in its transverse movement.

2. The combination with the throttle and reversing mechanism of an engine, of an electric indicator comprising a plurality of series of contacts and a coöperating traveling contact member, means connected with said throttle and reversing mechanism whereby the operation of one will adjust said traveling contact member in operative relation to one of the series of contacts, and the operation of the other will cause the progressive contacting of said traveling member with the contacts of the series in connection with which it is adjusted.

3. The combination with the throttle and reversing mechanism of an engine, of an electric indicator comprising a plurality of series of contacts and a common traveling contact member, means controlled by said throttle and reversing mechanism for respectively selecting the series of contacts and actuating said traveling contact-arm in relation thereto, and an indicator having corresponding series of indications connected with said contacts, whereby they will be alternatively selected and displayed.

4. The combination with the throttle and reversing mechanism of an engine, of an electric indicator comprising a cylindrical casing having a plurality of series of insulated contacts secured thereto, a traveling contact member adjustable longitudinally and rotatably in relation to said cylinder to select and trace said series of contacts and connections between the throttle and reversing mechanism for respectively effecting the adjustment of said contact member.

849,457. TROLLEY-CONTROLLER. WILLIS C. BURDON, Louisville, Ky., assignor of forty-nine one-hundredths to C. H. Jenkins and Thos. W. Moran, jointly, Louisville, Ky. Filed Jan. 27, 1906. Serial No. 298,155.

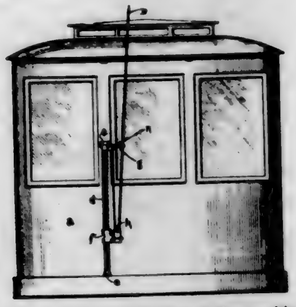

Claim.—1. In a trolley-controller, the combination of a vertical catch-bar attached to the wall of the car, a slide working upon said bar and consisting of a main portion and a secondary portion pivoted to said main portion, a pulley carried by said secondary portion and adapted to engage a loop of the trolley-rope, a tension-spring connecting said main and secondary portions, and means for engaging said vertical catch-bar to stop the movement of the trolley-pole and slide upon sudden upward movement of the same.

2. In a trolley-controller, the combination of a vertical bar attached to the wall of the car, a slide working upon said bar and consisting of a main portion and a secondary portion pivoted to said main portion, a pulley carried by said secondary portion and adapted to engage a loop of the trolley-rope, a tension-spring connecting said main and secondary portions, a cam-lever device pivoted to said main portion, and means in connection therewith for causing said lever device to engage the vertical bar to stop the movement of trolley-pole and slide upon sudden upward movement of the same.

3. In a trolley-controller, a vertical bar attached to the wall of the car, a slide working upon said bar and consisting of a main portion and a pivoted portion carrying a pulley engaging a loop of the trolley-rope, a tension-spring connecting said main and pivoted portions, a lever pivoted to said main portion and having a tail resting upon a lug of the pivoted portion, said lever having a cam-head adapted to frictionally engage the vertical bar to stop the movement of the trolley-pole and slide upon upward movement of the same, substantially as specified.

4. In a trolley-controller, a vertical bar attached to the wall of the car, a slide working upon said bar and consisting of a main portion and a pivoted portion carrying a pulley engaging a loop of the trolley-rope, a lever pivoted to said main portion and having an arm resting upon the pivoted portion, said lever having a cam-head adapted to frictionally engage the vertical bar to stop the movement of the trolley-pole and slide upon upward movement of the same, substantially as specified.

849,458. DITCHING-MACHINE. MASON P. CARPENTER, Mexico, Mo., assignor of one-half to William Diessel, Mexico, Mo. Filed May 18, 1906. Serial No. 317,491.

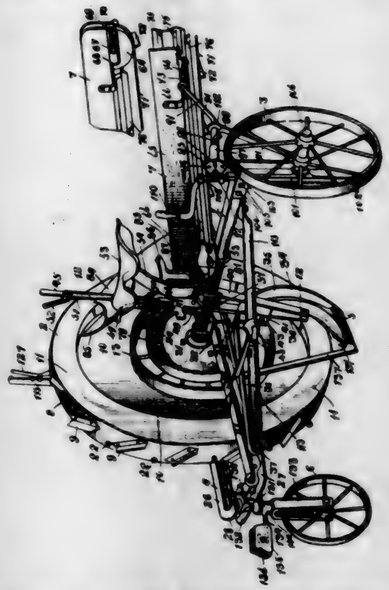

Claim.—1. In a ditching-machine, the combination of a frame, a plow-beam pivoted at its forward end to the frame, a plow on the rear end of the beam, means for adjusting the vertical elevation of the plow-beam and plow, a rolling bucket-wheel in suitable proximity to the plow, a chute adapted to receive the material from the bucket-wheel and discharge the same, and a resilient deflecting-plate within the bucket-wheel and in suitable proximity to the chute and adapted to be retracted to permit the passage of lumps of dirt, substantially as described.

2. In a ditching-machine, the combination of a longitudinally-extending frame, a transversely-extending shaft fixedly secured to the frame, a rolling bucket-wheel rotatably mounted at one end of the shaft, a plow in suitable proximity to the bucket-wheel, a depending guideway at the other end of the fixed shaft, an outwardly-extending journal slidably mounted within the guideway, a feed-screw adapted to give a vertical adjustment to the journal, and an outer wheel revolubly mounted on the journal, substantially as described.

3. In a ditching-machine, the combination of a longitudinally-extending frame, a transversely-extending shaft fixedly secured to the frame and outwardly projecting therefrom at one side, a rolling bucket-wheel rotatably mounted on the shaft and revoluble within the frame, a brace diagonally extending between the frame and the outer end of the shaft, an outer wheel at the outer end of the shaft, a plow secured to the frame in suitable proximity to the bucket-wheel, and a chute for receiving the material from the bucket-wheel, substantially as described.

4. In a ditching-machine, the combination of a rectangular open frame, a transversely-extending shaft rigidly secured to the frame and outwardly projecting therefrom at one side, a rolling bucket-wheel rotatably mounted on the shaft and revoluble within the frame, a brace diagonally extending between the frame and the outer end of the shaft, an outer wheel at the outer end of the shaft, a plow secured to the frame in suitable proximity to the bucket-wheel, and a chute for receiving the material from the bucket-wheel, substantially as described.

5. In a ditching-machine, the combination of a rectangular open frame, a transversely-extending shaft rigidly secured to the frame and outwardly projecting therefrom at one side, a rolling bucket-wheel rotatably mounted on the shaft and revoluble within the frame, a brace diagonally extending between the frame and the outer end of the shaft, an outer wheel at the outer end of the shaft, a plow-beam pivoted at its forward end to the frame and having its rear end downwardly and forwardly bent or turned, a plow secured to the plow-beam, means for adjusting the vertical elevation of the plow-beam, and a chute for receiving the material from the bucket-wheel, substantially as described.

6. In a ditching-machine, the combination of a rectangular open frame, a transversely-extending shaft rigidly secured to the frame and outwardly projecting therefrom at one side, a rolling bucket-wheel rotatably mounted on the shaft and revoluble within the frame, a brace diagonally extending between the frame and the outer end of the shaft, an outer wheel at the outer end of the shaft, a plow-beam pivoted at its forward end to the frame and downwardly and forwardly bent or turned at its free end, a guide-bar depending from the fixed shaft adjacent to the plow-beam, a guide-plate on the plow-beam embracing the guide-bar, a plow secured to the plow-beam, and a lever for raising and lowering the plow-beam, substantially as described.

7. In a ditching-machine, the combination of a rectangular open frame, a transversely-extending shaft rigidly secured to the frame and outwardly projecting therefrom at one side, a rolling bucket-wheel rotatably mounted on the shaft and revoluble within the frame, a brace diagonally extending between the frame and the outer end of the shaft, an outer wheel at the outer end of the shaft, a plow-beam pivoted at its forward end to the frame and downwardly and forwardly bent or turned at its free end, a guide-bar depending from the fixed shaft adjacent to the plow-beam, a guide-plate on the plow-beam embracing the guide-bar, a plow secured to the plow-beam, an L-shaped lever pivoted to the top of the fixed shaft, a link connecting the short arm of the lever with the plow-beam, a segmental rack adjacent to the lever, and a spring-latch on the lever adapted to engage the rack for holding the lever in adjusted position, substantially as described.

8. In a ditching-machine, the combination of an elongated rectangular frame formed of a substantially continuous bar of channel-iron, a shaft transversely extending across and fixedly secured to the frame, a rolling bucket-wheel rotatably mounted on the shaft within the frame, a plow in suitable proximity to the bucket-wheel, a pivoted guide-wheel at the forward end of the frame, an outer wheel at the outer end of the shaft, and a chute for receiving the material from the bucket-wheel, substantially as described.

9. In a ditching-machine, the combination of a rectangular framework, a transversely-extending shaft fixed thereto and round at one end, a bucket-wheel rotatably and slidably mounted on the rounded end of the shaft within the framework and provided with inwardly-opening buckets, a gear-wheel rigidly secured to and rotatable with the bucket-wheel, a plow adapted to turn up the soil and deposit it in the bucket-wheel, a bevel-pinion normally meshing with the gear-wheel, a lever for moving the bucket-wheel along the rounded end of the shaft to throw the gear-wheel and pinion into and out of engagement, a drum actuated by the pinion, an endless belt carried by the drum, and a feed-chute adapted to receive the material from the buckets and discharge it onto the endless belt or apron, substantially as described.

10. In a ditching-machine, the combination of a rectangular framework, a transversely-extending shaft fixed thereto and round at one end, a bucket-wheel rotatably and slidably mounted on the rounded end of the shaft within the framework and provided with inwardly-opening buckets, a gear-wheel rigidly secured to and rotatable with the bucket-wheel, a plow adapted to turn up the soil and deposit it in the bucket-wheel, a bevel-pinion normally meshing with the gear-wheel, a lever for moving the bucket-wheel along the rounded end of the shaft to throw the gear-wheel and pinion into and out of engagement, a drum actuated by the drum, a feed-chute adapted to turn up the soil and deposit it in the bucket-wheel, a bevel-pinion normally meshing with the gear-wheel, a lever for moving the bucket-wheel along the rounded end of the shaft to throw the gear-wheel and pinion into and out of engagement, a drum actuated by the pinion, an endless belt carried by the drum, a feed-chute adapted to receive the material from the buckets and discharge it onto the endless belt or apron, and a guide-wheel pivotally mounted at the forward end of the frame, substantially as described.

11. In a ditching-machine, the combination of a rectangular framework, a transversely-extending shaft fixed thereto and round at one end, a bucket-wheel rotatably and slidably mounted on the rounded end of the shaft within the framework and provided with inwardly-opening buckets, a gear-wheel rigidly secured to and rotatable with the bucket-wheel, a plow adapted to turn up the soil and deposit it in the bucket-wheel, a bevel-pinion normally meshing with the gear-wheel, a lever for moving the bucket-wheel along the rounded end of the shaft to throw the gear-wheel and pinion into and out of engagement, a drum actuated by the pinion, an endless belt carried by the drum, a feed-chute adapted to receive the material from the buckets and discharge it onto the endless belt or apron, a guide-wheel pivotally mounted at the forward end of the frame, and an outer wheel pivotally secured to the end of the shaft, substantially as described.

12. In a ditching-machine, the combination of a rectangular framework, a transversely-extending shaft fixed thereto and round at one end, a bucket-wheel rotatably and slidably mounted on the rounded end of the shaft within the framework and provided with inwardly-opening buckets, a gear-wheel rigidly secured to and rotatable with the bucket-wheel, a plow adapted to turn up the soil and deposit it in the bucket-wheel, a bevel-pinion normally meshing with the gear-wheel, a lever for moving the bucket-wheel along the rounded end of the shaft to throw the gear-wheel and pinion into and out of engagement, a drum actuated by the pinion, an endless belt carried by the drum, a feed-chute adapted to receive the material from the buckets and discharge it onto the endless belt or apron, a guide-wheel pivotally mounted at the forward end of the frame, and a guide-wheel pivotally and vertically adjustably secured to the end of the shaft, substantially as described.

13. In a ditching-machine, the combination of a rectangular framework, a transversely-extending shaft fixed thereto and round at one end, a bucket-wheel rotatably and slidably mounted on the rounded end of the shaft within the framework and provided with inwardly-opening buckets, a gear-wheel rigidly secured to and rotatable with the bucket-wheel, a plow adapted to turn up the soil and deposit it in the bucket-wheel, a bevel-pinion normally meshing with the gear-wheel, a lever for moving the bucket-wheel along the rounded end of the shaft to throw the gear-wheel and pinion into and out of engagement, a drum actuated by the pinion, an endless belt carried by the drum, a feed-chute adapted to receive the material from the buckets and discharge it onto the endless belt or apron, a guide-wheel pivotally mounted at the forward end of the frame, a vertically-adjustable bar slidably mounted on the end of the shaft, an outer wheel outwardly extending from the bar, an outer wheel mounted on the journal, and an adjusting-screw for raising and lowering

the slidably-mounted bar to change the vertical elevation of the wheel, substantially as described.

14. In a ditching-machine, the combination of a rectangular open framework, a transversely-extending shaft rigidly secured to the framework, a bucket-wheel rotatably mounted on the shaft within the framework and comprising an outer tire or rim, an outer wall, an inner wall or ring open at the center, and a plurality of transversely-extending plates forming buckets open at the center, said wheel being mounted upon a hub comprising inner and outer collars connected together, the rim of the wheel being connected with the inner and outer collars by means of tie-rods extending alternately to the inner and outer collars, a vertically-adjustable plow in suitable proximity to the inwardly-opening buckets, a plow-beam to which the plow is secured, means for adjusting the plow-beam, and a chute entered within the open side of the bucket-wheel in position to receive the material dropped from the inwardly-opening buckets, substantially as described.

15. In a ditching-machine, the combination of a rectangular open framework, a transversely-extending shaft rigidly secured to the framework, a bucket-wheel rotatably mounted on the shaft within the framework and comprising an outer tire or rim, an outer wall, an inner wall or ring open at the center, and a plurality of transversely-extending plates forming buckets open at the center, the wheel being mounted upon a hub comprising inner and outer collars connected together, the rim of the wheel being connected with the inner and outer collars by means of tie-rods extending alternately to the inner and outer collars, a plow in suitable proximity to the bucket-wheel, a hooked bent plow-beam pivoted at its forward end to the framework, a guide-bar for the plow-beam, an L-lever, a link connecting the L-lever with the plow-beam, and a chute located within the open side of the bucket-wheel and adapted to receive the material falling from the buckets, substantially as described.

16. In a ditching-machine, the combination of a rectangular open framework, a transversely-extending shaft rigidly secured to the framework, a bucket-wheel rotatably mounted on the shaft within the framework and comprising an outer tire or rim, an outer wall, an inner wall or ring open at the center, and a plurality of transversely-extending plates forming buckets open at the center, the wheel being mounted upon a hub comprising inner and outer collars connected together, the rim of the wheel being connected with the inner and outer collars by means of tie-rods extending alternately to the inner and outer collar, a plow in suitable proximity to the bucket-wheel, a hooked bent plow-beam pivoted at its forward end to the framework, a guide-bar for the plow-beam, an L-lever, a link connecting the L-lever with the plow-beam, a chute located within the open side of the bucket-wheel and adapted to receive the material falling from the buckets, a gear-wheel rigidly secured to the hub of the bucket-wheel, a bevel-pinion normally meshing therewith, a drum actuated by the bevel-pinion, and an endless carrier-belt actuated by the drum and adapted to receive the material from the chute and discharge the same, substantially as described.

17. In a ditching-machine, in combination with a main shaft, a bucket-wheel rotatably mounted thereon, a plow adapted to discharge material into the bucket-wheel, a chute adapted to receive the material carried up by the plate or bar on the end of the shaft, an outer wheel jour-bucket-wheel, a slidably-mounted vertically-extending naled thereto, and an adjusting-screw for changing the vertical elevation of the outer wheel, substantially as described.

849,459. METHOD AND MEANS FOR THE MANUFACTURE OF WIRE-GLASS. WALTER T. CARTER and DANIEL S. BEBER, Beaver, Pa. Filed Nov. 23, 1906. Serial No. 344,711.

Claim.—1. The method herein described of making glass plates, consisting in rolling the first sheet from a batch of molten glass, pouring a second batch of molten glass and scraping it into sheet form upon the first sheet.

2. The method herein described of making glass plates consisting in rolling an initial portion of the first sheet from a batch of molten glass, pouring a second batch of molten glass, continuing the rolling of the first sheet and scraping the second batch of molten glass into sheet form upon the first sheet.

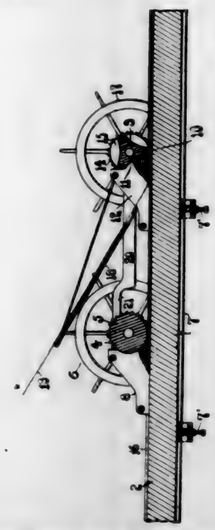

3. The method herein described of making glass plates consisting in rolling the first sheet from a batch of molten glass, placing a portion of a metallic trellis thereon, pouring a second batch of molten glass and scraping it into sheet form upon the trellis and the first-formed sheet.

4. The method herein described of making glass plates consisting in rolling an initial portion of the first sheet from a batch of molten glass, placing a portion of a metallic trellis thereon, pouring a second batch of molten glass, continuing the rolling of the first sheet and scraping the second batch of molten glass into sheet form upon the trellis, and rolled sheet.

5. The method herein described of making glass plates consisting in pouring a batch of molten glass upon a table in front of a roll, placing a wire trellis behind the roll and in front of a scraper, pouring a second batch of glass on the end of the trellis and by advancing the roll and scraper, rolling the first batch into a sheet and scraping the second batch into a sheet upon the first sheet with the trellis embedded between the sheets.

6. The method herein described of making glass plates, which consists in rolling a molten batch of glass into a sheet and during the rolling thereof scraping a second batch of molten glass into a sheet on the rolled sheet and simultaneously embedding the wire trellis between said sheets.

7. In combination, a table, means for forming a layer of glass thereon and a scraper adapted to scrape a second layer on the first layer, said scraper being inclined downwardly so as to recede from said roll for the purpose described.

8. In combination, a table, a roll adapted to form a layer of glass thereon and a scraper, said scraper inclining toward the top of said roll and adapted to scrape a second layer of glass on the first layer and embed a wire trellis between said layers.

9. In combination, a forming-roll, a scraper inclined toward the top of said roll and a lost-motion connection between the roll and scraper; substantially as described.

10. In combination, a forming-roll, a scraper inclined toward the top of said roll, means for feeding wire and glass intermediate the roll and scraper and bars engaging the shafts or spindles of both the roll and the scraper, whereby the roll has a limited movement independently of the scraper; substantially as described.

11. In the manufacture of glass plates, a scraping device having a plurality of scraping portions and means whereby said device may move to bring any one of said portions into position for use; substantially as described.

12. In the manufacture of glass plates, the combination with a table having side racks and side bearing-strips, a forming-roll having pinions engaging the racks, a scraper having loose pinions also engaging the racks and wheels traveling on said side strips and connections between the roll and scraper; substantially as described.

849,460. SAFETY SIGNALING DEVICE FOR RAILWAY-SWITCHES. PROSPER CLOUTIER, Three Rivers, Quebec, Canada. Filed Nov. 28, 1906. Serial No. 345,565.

Claim.—1. In a device of the class described the combination with the switch and the operating mechanism therefor, the signal for the switch and the operating-lever therefor located at some distance therefrom, of a rotatable detent adapted to lock the switch in its open or closed position, and means operated by the signal-operating lever for automatically operating said detent to interlock the switch and signal as and for the purpose specified.

2. An improved safety-switch having a stop secured to a reciprocating member of the switch-operating mechanism, a shaft, a detent secured thereto, and upwardly extending therefrom, the end thereof being adapted to engage the stop and prevent the reciprocative movement of the member, the side of the detent being adapted in another position to be engaged by a stop whereby rotation of the detent and shaft will be prevented, a signal and means operated by the rotation of the shaft supporting the detent for locking said signal in a danger position as and for the purpose specified.

3. An improved safety-switch having a stop secured to a reciprocating member of the switch-operating mechanism, a shaft, a detent secured thereto and upwardly extending therefrom, the end thereof being adapted to engage the stop and prevent the reciprocative movement of the member, the side of the detent being adapted in another position to be engaged by the stop whereby rotation of the detent and shaft will be prevented, a disk having a grooved periphery secured to the shaft, a signal, an operating mechanism therefor and a rope or chain connected to the disk and to the operating mechanism of the signal whereby when the disk is rotated into a predetermined position the operation of the signal will be prevented as and for the purpose specified.

4. An improved safety-switch having a stop secured to a reciprocating member of the switch-operating mechanism, a shaft, a detent secured thereto and upwardly extending therefrom, the end thereof being adapted to engage the stop and prevent the reciprocating movement of the member, the side of the detent being adapted in another position to be engaged by the stop whereby rotation of the detent and shaft will be prevented, a disk having a grooved periphery secured to the shaft, a signal, an operating mechanism therefor and a rope or chain connected to the disk and to the operating mechanism of the signal whereby when the disk is rotated into a predetermined position the operation of the signal will be prevented, a lug secured to the disk, and upwardly extending therefrom and a spring normally depressing the lug tending to move the disk into the position which will prevent the operation of the signal as and for the purpose specified.

5. An improved safety-switch comprising a switch, operating mechanism therefor having a reciprocating member, a stop secured to the said reciprocating member, a shaft, a detent secured thereto, and outwardly extending therefrom, the end thereof being adapted to engage the stop and prevent the reciprocative movement of the member, the side of the detent being adapted to another position to be engaged by the stop whereby rotation of the detent and shaft will be prevented, a disk provided with a grooved periphery secured to the shaft, a signal, gravity-operated means for normally holding it with the danger-signal displayed, an operating mechanism for the signal, a rope or chain connected to the disk and to the operating mechanism of the signal whereby when the said mechanism is operated the disk and shaft will be rotated, a lug integral with the disk, and outwardly extending therefrom, a spring normally depressing the lug to rotate the shaft into a position such that the rope or chain connected thereto will prevent operation of the switch-operating mechanism substantially as described.

849,461. GLASS-PRESS. THOMAS J. CONWAY, Muncie, Ind. Filed Mar. 23, 1906. Serial No. 307,645.

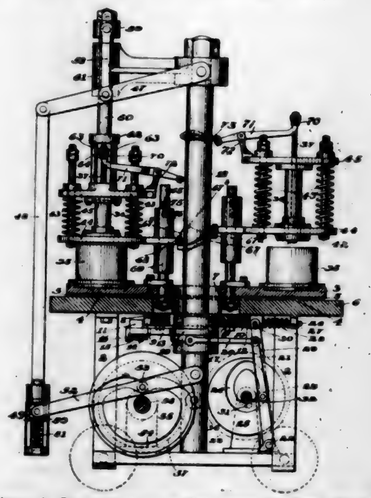

Claim.—1. In an apparatus for pressing glass, the combination of a rotatory table, a mold mounted thereon, devices for imparting an intermittent rotary movement to the table, a two-part plunger, automatic devices for positively depressing the plunger and for raising the upper part thereof, and automatic devices for rotating the lower part of the plunger to release the same from the glass, the said two parts of the plunger in all of said movements being connected together, substantially as described.

2. In apparatus for pressing glass, the combination of a table, devices for imparting an intermittent rotatory movement to the table, a mold mounted on the table, a two-part plunger, devices for imparting a positive downward movement to the plunger, devices for raising one part of the plunger, and devices for subsequently and automatically releasing the other part of the plunger from the glass by a rotary movement of the plunger the said two parts of the plunger in all of said movements being connected together; substantially as described.

3. In apparatus for pressing glass, the combination of a mold, a two-part plunger one of the parts of which is threaded, devices for depressing the plunger, devices for releasing one part of the plunger by an upward movement,

and devices for releasing the other part of the plunger by a gradually-accelerating rotation; substantially as described.

4. In apparatus for pressing glass, the combination of a table, mechanism for imparting an intermittent rotatory movement to the table, a series of molds mounted on the table, a two-part plunger, mechanism for imparting a positive downward movement to the plunger, a single motor for operating said table and plunger, devices for raising one part of the plunger, and devices for subsequently and automatically releasing the other part of the plunger from the glass by a rotary movement the said two parts of the plunger in all of said movements being connected together; substantially as described.

5. In apparatus for pressing glass, the combination of a rotatory table, a series of molds mounted thereon, devices for imparting an intermittent rotatory movement to the table, a plunger normally above and in line with said molds when brought thereover, and automatic devices for swinging said plunger to one side of said molds when the same are brought to the charging position; substantially as described.

849,462. MEANS FOR PREVENTING WASTE IN DISPENSING LIQUIDS. HARRY S. CORNISH, New York, N. Y., assignor to New York Liquid Dispensing Machine Company, a Corporation of New York. Filed Nov. 1, 1905. Serial No. 285,394.

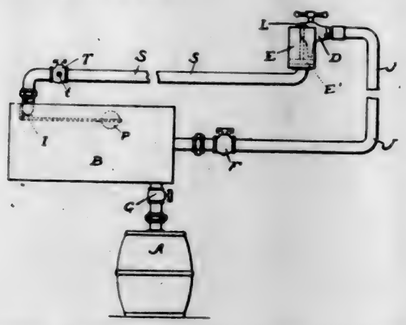

Claim.—1. The combination of a receptacle containing a liquid under gas-pressure, a faucet for dispensing the liquid, a lock for preventing use of the faucet and means for operating the lock by the gas-pressure when the level of the liquid falls, as and for the purpose described.

2. The combination of a receptacle containing a liquid under gas-pressure, a faucet for dispensing the liquid, means actuated by the gas-pressure for preventing use of the faucet and a stop-cock in the faucet-supply pipe, as and for the purpose described.

3. The combination of a receptacle containing a liquid under gas-pressure, a faucet, means actuated by the gas-pressure for preventing use of the faucet, and a gas stop and vent in the pipe through which the gas-pressure acts.

4. In an apparatus for dispensing liquids under pressure from original packages, the combination of a faucet through which the liquid is discharged, a liquid-containing chamber with which the packages may be coupled, a float-valve in said chamber and means actuated by the gas-pressure freed by said valve for preventing use of the faucet.

5. In an apparatus for dispensing liquids from original packages, a liquid-containing chamber with which said packages may be coupled at will, a faucet connected to said chamber, a float-valve in said chamber and means controlled by said valve for preventing use of the faucet.

6. In an apparatus for dispensing liquids, a receptacle and faucet, a liquid-containing chamber located between the receptacle and liquid-faucet, a float-valve in said chamber, a cylinder and piston actuated by gas-pressure released by said float-valve and a lock actuated by said piston, as and for the purpose described.

7. The combination of a package containing a liquid under gas-pressure, a faucet through which the liquid is dispensed and means actuated by the gas-pressure released through emptying of the package for preventing use of the faucet.

8. The combination of a liquid-containing receptacle, a faucet for dispensing the liquid, and means responsive to a fall in the liquid-level for preventing the use of the faucet.

9. The combination of a receptacle containing a liquid under pressure, a faucet for dispensing the liquid, a lock for preventing the use of the faucet and means responsive to change in the level of the liquid for operating the lock.

849,463. MACHINE FOR PEELING AND CORING TOMATOES. HAROLD A. CROSBY, Hamilton, Ontario, Canada, assignor to William Godfrey Lumsden, Hamilton, Canada. Filed Nov. 8, 1905. Serial No. 286,320.

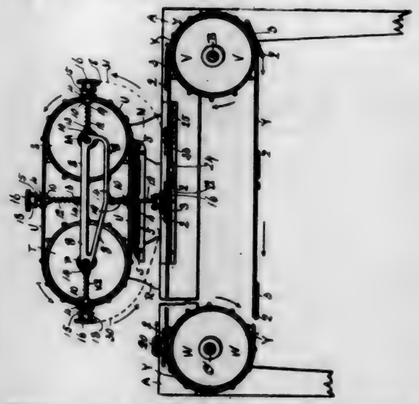

Claim.—1. In a machine for peeling and coring tomatoes, a frame, wheels mounted on the frame, belts on the wheels, a transverse plate carried by the belts, a hub on the plate, a plunger adapted to operate through the hub and plate, a stationary cam, a roller on one end of the plunger to engage the cam; a flexible bearing-surface on the opposite end of the plunger, a tension-spring on the plunger between the roller and the hub, and springs interposed between said plunger and flexible bearing.

2. In a machine for peeling and coring tomatoes, a frame, wheels suitably mounted on the frame, and adapted to revolve in the same direction, belts connecting the wheels, a transverse plate carried by the belts, a hub on the plate, a spring-plunger adapted to operate through the plate and hub, a stationary cam, a roller on the plunger to engage the cam, in combination with endless and horizontally-traveling belts, a transverse tomato-carrying plate carried by the last-named belts having an opening for the placement of a tomato, and adapted to travel horizontally with and below the plunger to hold the tomato between said plunger and said plate, and means for serving the tomato.

3. In a machine of the class set forth, the combination with an open movable support for the tomatoes, of a plunger movable in unison with the tomato-support and having means to engage the tomatoes, and means to cause the plunger to coact with the tomatoes and press them against their support.

4. In a machine of the class set forth, the combination with a movable tomato-support, of a spring-actuated plunger movable in unison with the tomato-support, and a cam for gradually and continuously applying the plunger to the tomato.

5. In a machine of the class set forth, the combination with a movable tomato-support, of a pressure device movable in unison with the tomato-support for acting on the tomatoes comprising a plunger, a plunger-stem, and a connection between the plunger and stem permitting movement of the plunger in relation to the stem.

6. In a machine of the class set forth, the combination with a movable tomato-support, of a pressure device movable in unison with the tomato-support for acting on the tomatoes comprising a plunger-stem, a convexed head or member secured thereto, a plunger having rods which pass loosely through the head, and coil-springs encircling the said rods.

7. In a machine of the class set forth, the combination with a tomato-support, of a knife having a forwardly-projecting part substantially V-shaped in cross-section and flanked by laterally-extending supplemental cutting-knives disposed in the rear of the point of the V-shaped part, and means for effecting the relative movement of the tomato-support and knife.

849,464. TELEPHONE TRUNKING SYSTEM. WILLIAM W. DEAN, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed July 24, 1902. Serial No. 116,783.

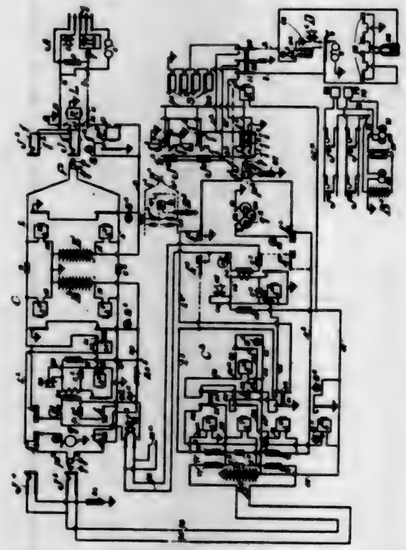

Claim.—1. The combination with a connecting-plug adapted to be connected with a telephone-line to establish a conversational circuit therewith, of a pair of main line-contacts on said plug adapted to be included in the opposite sides of the metallic talking-circuit when connection is established, a third contact on said plug, and a suitable conductor connected therewith adapted to be brought into metallic connection with one of said main contacts when the connection is established, and a retardation-coil individual to the plug connected between said third contact and said suitable conductor, and telephone apparatus affected by current over said latter path, substantially as described.

2. The combination with a connecting-plug adapted to be connected with a telephone-line to establish a conversational circuit therewith, of a pair of main line-contacts on said plug insulated from each other and adapted to be included in the opposite sides of the metallic talking-circuit, a third contact on said plug insulated from the other contacts and adapted to be brought into engagement with one of said contacts when the talking-circuit is established, and a retardation-coil associated individually with said plug and legged to ground from said third contact and telephonic apparatus affected by current through said coil, substantially as described.

3. The combination with a telephone-line, of a cord and plug adapted to be connected therewith, a source of current connected with a talking-strand of said cord, a retardation-coil connected with said plug and normally insulated from the talking-strand, means for connecting said retardation-coil and source in a complete circuit including said talking-strand when the plug is connected with the line, and apparatus associated with the cord and plug actuated by current in said complete circuit, substantially as described.

4. The combination with a telephone-line, of a cord and plug adapted to be connected therewith, a source of current connected with a talking-strand of said cord, a retardation-coil connected with said plug and normally insulated from the talking-strand, means for connecting said retardation-coil and source in a complete circuit including said talking-strand when the plug is connected with the line, and supervisory apparatus associated with said cord and plug and actuated over said complete circuit, substantially as described.

5. The combination with a telephone-line, of a cord and plug to establish connections therewith, a signal for the cord-circuit, a relay associated with the cord and plug and adapted to be actuated over one strand of the cord-circuit to affect said signal when a connection is established, an auxiliary contact on the plug, a suitable conductor to which said contact is connected, a retardation-coil connected between said contact and said suitable conductor, and a jack of the line having contacts to register with the talking-contacts of the plug and the auxiliary contact, the latter contact being connected with a talking-contact when the connection exists, whereby a path for current over said strand through said retardation-coil is provided upon the insertion of the plug, substantially as described.

6. The combination with a telephone-line of a cord and plug to establish connections therewith, a supervisory relay associated with the cord and plug and adapted to be actuated over one strand of the cord-circuit when a connection is established, an auxiliary contact on the plug, a suitable conductor to which said contact is connected, a retardation-coil connected between said contact and said suitable conductor, and a jack of the line having contacts to register with the talking-contacts of the plug and the auxiliary contact, the latter contact being connected with a talking-contact when the connection exists, whereby a path for current over said strand through said retardation-coil is provided upon the insertion of the plug, substantially as described.

7. In a telephone system, the combination with telephone-lines having connection-terminals, of an operator's connective circuit provided with a plug adapted to be connected with said terminals to establish conversational circuits with the lines, a source of current associated with the cord-circuit and connected to one side thereof, telephonic apparatus associated with the cord-circuit and adapted to be operated by current from said source over said side of the cord-circuit, a normally insulated contact on said plug and a connection therefrom to the other pole of said source, and means whereby when the plug is connected with one of said terminals the path for current is completed from said contact to the said side of the cord-circuit and through said apparatus, substantially as described.

8. In a telephone system, the combination with a telephone-line, of a cord-circuit for establishing connections therewith, a supervisory signal for said cord-circuit, and a relay to control said signal, said cord-circuit having a connecting-plug, a connection from ground through a retardation-coil to one contact of said plug, whereby a path for current is provided which allows steady currents to pass to actuate said relay during connection, but which obstructs the voice-currents, substantially as described.

849,465. ORE ROASTING AND TREATING APPARATUS. MYRON DINGS and ALVIN DINGS, Milwaukee, Wis. Filed June 17, 1905. Serial No. 265,640.

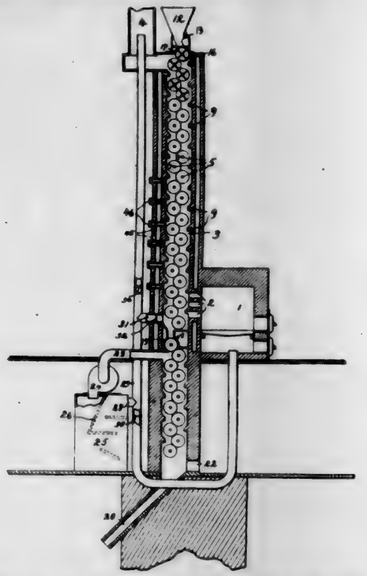

Claim.—1. In apparatus of the described class, the combination with a furnace, of an ore-heating chamber connected therewith, and a series of shafts arranged one above another in said chamber; each of said shafts being provided with imperforate wing-flanges arranged to form a set of buckets closed at the sides and adapted to successively receive and discharge material from the buckets of the next higher shaft.

2. In apparatus of the described class, the combination with a furnace, of an ore-heating chamber connected therewith, supporting rotary shafts arranged at different levels in said chamber, and each provided with tilting buckets closed at the sides and ends and adapted to successively receive and retain substantially all the material from the buckets of the next higher shaft for a definite interval; and means for rotating said shafts.

3. In apparatus of the described class, the combination with a furnace, of an ore-heating chamber connected therewith; supporting rotary shafts arranged at different levels in said chamber, and each provided with tilting buckets having imperforate side and end walls and adapted to successively receive material from the buckets of the next higher shaft; and means for rotating said shafts; each alternate shaft being rotated in a direction opposite that of the intermediate shafts, and said buckets being arranged and adapted to receive and discharge material intermittingly.

4. In apparatus of the described class, the combination of an ore-heating chamber; a furnace having flues leading thereto; a series of rotary shafts arranged in zigzag order from the upper to the lower portion of said chamber; means for rotating the shafts; buckets on the shafts, each comprising end disks mounted on the shafts and provided with wing-flanges between them, extending radially from the shaft and adapted to receive and dump the material from one shaft to another at different intervals; and inwardly-projecting baffles on the side walls of said chamber adapted to direct material into the buckets; said shaft rotating mechanism being adapted to actuate the alternate shafts in a direction opposite that of the intermediate ones.

5. In apparatus of the described class, the combination with a furnace, of an ore-heating chamber connected therewith; supporting rotary shafts arranged at different levels in said chamber, and each provided with tilting buckets adapted to successively receive material from the buckets of the next higher shaft; and means for rotating said shafts; together with an ore-cooling chamber provided with similar shafts and buckets; and means for drawing air through said chamber.

6. In apparatus of the described class, the combination with a furnace, of an ore-heating chamber connected therewith; supporting rotary shafts arranged at different levels in said chamber, and each provided with tilting buckets adapted to successively receive material from the buckets of the next higher shaft; and means for rotating said shafts; together with an ore-cooling chamber provided with similar shafts and buckets; and means for drawing air through said chamber in a direction opposite that of the movement of the material.

7. In apparatus of the described class, the combination with a furnace, of an ore-heating chamber connected therewith; supporting rotary shafts arranged at different levels in said chamber, and each provided with tilting buckets adapted to successively receive material from the buckets of the next higher shaft; and means for rotating said shaft; together with an ore-cooling chamber provided with similar shafts and buckets; means for drawing air through said chamber; and a turnstile-gate for passing material from one chamber to the other.

8. In apparatus of the described class, the combination with a furnace, of an ore-heating chamber connected therewith; supporting rotary shafts arranged at different levels in said chamber, and each provided with tilting buckets adapted to successively receive material from the buckets of the next higher shafts; means for rotating said shafts and buckets; a cooling-chamber means for drawing air through said chamber; a settling-chamber for receiving the air from the cooling-chamber; and a vent therefor adapted to permit the delivery of air to the heating-chamber.

9. In apparatus of the described class, the combination with a furnace, of an ore-heating chamber connected therewith; supporting rotary shafts arranged at different levels in said chamber, and each provided with tilting buckets adapted to successively receive material from the buckets of the next higher shafts; means for rotating said shafts and buckets; a cooling-chamber means for drawing air through said chamber; and means for delivering said air either to the furnace, the heating-chamber, or to a vent-stack connected therewith.

10. In apparatus of the described class, an ore-heating chamber provided with tilting buckets arranged to form a conveyer for material to be roasted, and each adapted to retain substantially all the material from the preceding bucket for a definite interval and a series of sight-tubes communicating with said chamber and provided with suitable caps.

11. In apparatus of the described class, an ore-heating chamber provided with a series of cross-shafts and buckets mounted thereon; and a separate outer wall for said chamber, formed in removable sections provided with antifriction-bearings for the cross-shafts.

12. In apparatus of the described class, the combination with an ore-heating chamber, of a series or rotary shafts therein, provided with bucket-flanges and end disks forming buckets closed at the sides and ends; each shaft and its flanges being arranged to rotate with sufficient lead over that of the next shaft and bucket-flanges to facilitate the delivery of material from one bucket to the other.

13. In apparatus of the described class, a shaft having radial bucket-flanges; and end disks, provided with fillets projecting into the buckets and increasing in thickness in the direction of shaft rotation.

14. In apparatus of the described class, the combination of an ore-heating chamber; a furnace having flues leading thereto; a series of rotary shafts arranged in zigzag order from the upper to the lower portion of said chamber; means for rotating the shafts; end disks on each shaft; and flanges projecting outwardly from each shaft between the end disks thereon and forming with the disks a set of buckets, each adapted to receive material from a bucket on the preceding shaft.

15. In an ore roasting and treating apparatus, the combination with a furnace, a heating-chamber, and a cooling-chamber; of a dust-collector; means for passing air from the cooling-chamber through the dust-collector; and valved discharge connections leading from the dust-collector to the heating-chamber.

16. In an ore roasting and treating apparatus, the combination with a furnace, a heating-chamber, and a cooling-chamber; of a dust-collector; means for passing air from the cooling-chamber through the dust-collector; and valved discharge connections leading from the dust-collector to the heating-chamber; together with means for also utilizing such heated air to increase the draft of the furnace.

17. In an ore roasting and treating apparatus, the combination with a furnace and a heating-chamber, of a cooling-chamber; means for passing air through the cooling-chamber; and valved connections for utilizing the heated air from the cooling-chamber either to increase the supply in said heating-chamber or to increase the draft of the furnace.

849,466. SWIVEL CHECK-VALVE. WILLIAM W. DONALDSON, Jr., Kewanee, Ill. Filed May 29, 1905. Serial No. 262,878.

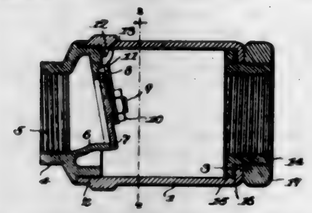

Claim.—The combination with a pipe-section having one end thereof threaded and its opposite end provided with an inwardly-extending flange, of a hub member adapted to engage the threaded end of the pipe-section and having one end thereof threaded and its opposite end provided with an integral extension spaced from one wall of the hub member and having its free end inclined to form an obliquely-disposed valve-seat, a hook extending laterally from the hub at said valve-seat and having its bill inclined upwardly and adapted to engage the interior walls of the pipe-section when the hub is in position thereon, a hanger having an elongated rectangular recess in one end thereof for the reception of the hook and its opposite end provided with a transverse aperture, a valve adapted to engage the seat and provided with an integral threaded extension passing through the aperture in the hanger, a nut engaging the threaded end of the valve extension for securing the latter in position on the hanger, and a threaded sleeve swiveled in the flanged end of the pipe-section.

849,467. REIN-GUARD. WILLIAM P. FELL, Huron, S. D. Filed Feb. 14, 1906. Serial No. 301,000.

Claim.—1. The combination with a vehicle-pole and a neck-yoke held to slide and rock thereon, of a resilient bow-piece having its ends mounted upon the neck-yoke near the respective ends of said neck-yoke, and a resilient connection between the bow-piece and the end of the pole.

2. The combination with a vehicle-pole, a neck-yoke, and means for holding the neck-yoke rockably and slidably mounted upon the pole near its outer end, of a resilient cap-piece mounted upon said end of the pole, and a resilient bow-piece or rein-guard loosely mounted near its center upon the cap-piece, the ends of the bow-piece having engagement with respective end portions of the neck-yoke.

3. The combination with a vehicle-pole, a neck-yoke, an elongated looped bracket on the pole near its outer end, a ring loosely mounted on the pole within the bracket, and means for loosely securing the ring on the neck-yoke at its center, of a resilient cap-piece formed of coiled spring-wire and mounted upon said outer end of the pole, said cap-piece having an eye formed on its outer end, and a resilient bow-piece of metal rod forming a rein-guard, said bow-piece loosely engaging the eye near the center of said bow-piece, and rings on the ends of the bow-piece and mounted on the respective ends of the neck-yoke.

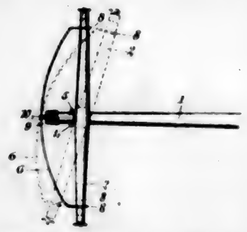

4. A rein-guard, comprising a bow-shaped rod having loops or eyes at its ends to receive the ends of a neck-yoke, and a cap adapted to fit on the end of a wagon-pole and provided with an eye or loop through which the rod passes.

5. A rein-guard, comprising a resilient bow-shaped rod having loops or eyes at its end to receive the ends of a neck-yoke, and a cap adapted to fit upon the end of a wagon-pole and provided with an eye through which the rod passes, the said cap being formed of resilient wire.

849,468. STEAM-SUPERHEATER. CHARLES M. FERGUSON, Lavender Hill, England, assignor to Arthur Horace Spearing, London, England. Filed Nov. 19, 1906. Serial No. 344,108.

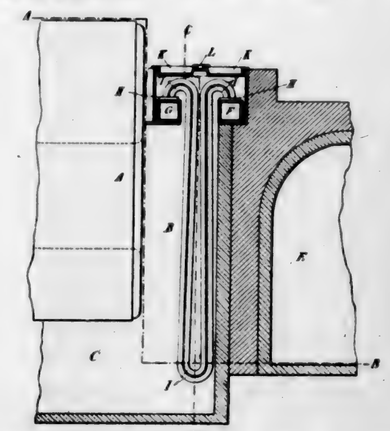

Claim.—1. In a steam-superheater for steam-boilers the combination of a steam-boiler, a vertical flue-space at the back of the boiler, a readily-removable cover closing over the top of this space, an inlet and an outlet steam chamber or header mounted side by side in the upper part of the flue-space, openings in the upper sides of these headers, removable cover-plates closing over these openings and tubes secured at one end to a cover-plate closing an opening in the upper side of one header and then bent and passed downward through the vertical flue-space and then again upward and secured to a cover-

plate closing an opening in the other header and means for conveying steam from the steam-boiler to one of the headers and for leading it away in a superheated state from the other header.

2. The combination of an inlet and an outlet steam chamber or header, tubes led for a distance downward from the upper surface of one header and then upward to the upper surface of the other header and drain-pipes fitted with draw-off cocks extending from the bottom of the header.

849,469. SAVINGS-BANK. ELZEAR E. FORREST, Stoneham, Mass. Filed Aug. 6, 1906. Serial No. 329,339.

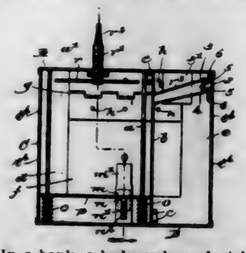

Claim.—1. In a bank, a body embraced at its ends by a top and bottom plate, rods confining said top and bottom plates to said body, springs sustained by the bottom plate, a false bottom sustained by said spring, a door in the body, a bolt for locking said door, and means at the top of said box that may be moved to act on the coin to depress the false bottom and move said bolt to release said door, that the same may be opened.

2. In a bank, a door having a loop, a false bottom having a notch and locked inside the body of said bank, a spring interposed between said false bottom and the bottom of the bank and acting normally to retain the false bottom pressed away from the bottom of the bank, a lever interposed between the bottom of the bank and said false bottom, a bolt attached to said lever, and a spring acting normally to move said lever to project said bolt through the notch in said false bottom to enter said loop and retain said door locked.

3. In a bank, a body closed at its ends by bottom and top plates, a false bottom, springs interposed between said bottom plate and said false bottom, a door, a bolt and lever constituting means for locking said door, a presser located inside said bank below said top plate, and means to depress said depresser, it acting through coin on said false bottom, to move the lever and bolt to unlock said door.

4. A bank comprising a body and top and bottom plates, said body having a wall to divide the bank into bill and cash apartments, said body having means to permit the introduction of money into each of said apartments, a door overlapping but a portion of the side of each apartment between the upper and the lower ends thereof, a false bottom, springs to sustain said false bottom, means acting normally to retain said door locked, and a device to depress said false bottom through coin sustained thereon to unlock said door that it may be opened and thus expose both apartments.

5. A bank comprising a body, top and bottom plates, and a dividing-wall to divide the bank into bill and cash apartments, a chute leading from one side of the body through the bill-apartment into the cash-apartment, said bill-apartment having means to permit the introduction of bills thereinto, a door, means acting normally to lock the door, the unlocking and opening of the door affording access to the bill and cash apartments.

849,470. BAND-WAGON. JAMES H. FOUTS, Moline, Kans. Filed Aug. 23, 1906. Serial No. 331,804.

Claim.—1. A music-stand or support for musicians embodying a plurality of moving platforms to effect thorough blending of the music.

2. A stand or support for musicians consisting of a plurality of platforms rotatable in opposite directions for effecting a thorough blending of the music.

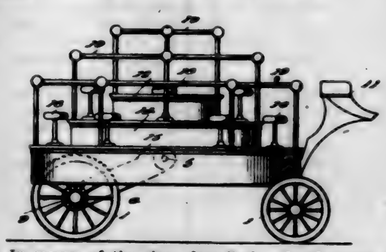

3. In means of the class described, a band-wagon consisting of a moving support mounted on wheels, a plurality of movable platforms carried by the support, and means connected with the platforms for operating the same as the wagon is in motion.

4. In means of the class described, a band-wagon comprising supporting-trucks mounted on wheels, a plurality of movable platforms carried by said trucks adapted to support musicians, and means connecting the platforms with the axles of one of the trucks whereby motion may be imparted to the platforms as the wagon is in motion.

5. A band-wagon comprising supporting-trucks mounted on wheels, rotating and circular platforms carried by said truck, and means connecting the platforms with the axle of one of the trucks whereby opposite rotation may be communicated to the platforms when the wagon is in motion.

6. A stand or support for musicians comprising concentric movable platforms, and means for rotating said platforms in opposite directions.

849,471. ABDOMINAL GUARD AND SUPPORTER. JOHN GAMBLE, Philadelphia, Pa., assignor to George A. Reach, Philadelphia, Pa. Filed Nov. 15, 1906. Serial No. 343,624.

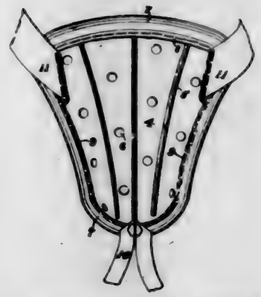

Claim.—An abdominal guard and supporter comprising a corrugated sheet-metal body having a non-corrosive surface and its edge provided with a moisture-proof padding, substantially as described.

849,472. BED-PAN. HEIMAN GOLD, New York, N. Y. Filed Oct. 14, 1905. Serial No. 282,746.

Claim.—1. A bed-pan, the upper portion of which is arched upwardly and inwardly to the walls of the central top opening b^2 in rear of which the top is concaved transversely; the lower portion of which pan has a centrally-disposed flat bottom from the edges of which the walls curve upwardly and outwardly to a horizontal division-line d, and from the rear of which flat bottom, the wall inclines upwardly and rearwardly to the rear end of the pan the rear edge of which is formed by a thin projection or edge d having rounded corners and from which the walls of the pan curve upwardly into the transversely-concaved part and downwardly to the lower inclined part.

2. A bed-pan comprising independently-formed upper and lower sheet-metal sections united by a joint which projects at the rear of the pan as a thin projecting edge, such rear end being of relatively small width having rounding corners and curving upwardly and downwardly from the horizontal line of the seam uniting the two sections.

3. A bed-pan, made of independently-formed upper and lower sheet-metal sections having outwardly-projecting horizontal flange edges meeting to form a horizontal joint d, the top section having an opening b^2 extending rearwardly from the point of maximum height of this section and being concaved transversely in rear of said opening; the lower section having a centrally-disposed flat base of limited width and from the rear of which the lower section inclines upwardly to the seam d at the rear end of the pan, this inclined part being in length substantially equal to the width of the flat base c', and the rear end of the pan having a width substantially one-half the maximum diameter of the pan measured across the center of the flat bottom, the extreme rear edge formed by the projecting seam d being curved horizontally and from which the pan curves upwardly and rearwardly and downwardly respectively on either side of the seam d.

849,473. CASH-CHECKING MACHINE. EDGAR GUESS, Clapham, England. Filed June 20, 1904. Serial No. 213,334.

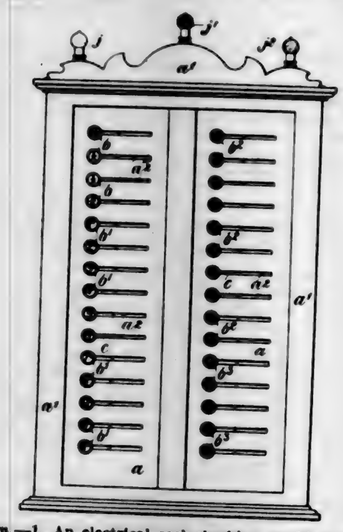

Claim.—1. An electrical cash-checking machine consisting of a switchboard having a series of sliding knobs, each one of which represents a different value equivalent to one or more cash units, a plurality of contacts equivalent in number with the number of units represented on the knob having the highest value, a sliding contact adapted to pass over said contacts and make and break circuit on the return movement, means whereby the sliding knobs are caused to operate the sliding contact so asto cause the number of contacts engaged to correspond with the number of units represented on the knob operated and a dial in electrical connection with the said contacts so arranged as to register each operation of the switchboard, as set forth.

2. An electrical cash-checking machine consisting of a switchboard having a series of sliding knobs, each one of which reperesents a different value equivalent to one or more cash units, a plurality of contacts equivalent in number with the number of units represented on the knob having the highest number, a sliding contact adapted to pass over said contacts and make and break circuit on the return movement, a movable rod carrying said sliding contact, a series of cam-shaped pieces carried by said knobs and adapted to move said rod on sliding the knobs, the amount of movement of said rod varying with each cam-shaped piece so as to cause the number of contacts engaged by the sliding contact to correspond with the number of units represented on the knob operated, and a dial in electrical connection with the said contacts so arranged as to register each operation of the switchboard, as set forth.

3. An electrical cash-checking machine consisting of a switchboard having a series of sliding knobs, each one of which represents a different value equivalent to one or more cash units, a series of contacts one for each denomination of cash units represented by the different series of knobs, each contact comprising a plurality of contacts equivalent in number with the number of units represented on the knob having the highest number of units in its respective denomination, a sliding contact for each denominational contact adapted to pass over the contacts of its series and make and break circuit on its return movement, a movable rod carrying said sliding contact, a series of cam-shaped pieces carried by the sliding knobs and adapted to move said rod on sliding the respective knobs, the amount of movement of said rod varying with each cam-shaped piece so as to cause the number of contacts engaged by the sliding contact to correspond with the number of units represented on the knob operated, and a series of dials in electrical connection with the said contacts so arranged as to register each operation of the switchboard, as set forth.

4. An electrical cash-checking machine consisting of a switchboard having a series of sliding knobs, each one of which represents a different value equivalent to one or more cash units, a series of contacts one for each denomination of cash units represented by the different series of knobs, each contact comprising a plurality of contacts equivalent in number with the number of units represented on the knob having the highest number of units in its respective denomination, a sliding contact for each denominational contact adapted to pass over the contacts of its series and make and break circuit on its return movement, a movable rod carrying said sliding contact, a series of cam-shaped pieces carried by the sliding knobs and adapted to move said rod on sliding the respective knobs, the amount of movement of said rod varying with each cam-shaped piece so as to cause the number of contacts engaged by the sliding contact to correspond with the number of units represented on the knob operated, and a series of dials in electrical connection with the said contacts so arranged as to register each operation of the switchboard, and of mechanism connecting the series of dials together so as to register the total operation of the switchboard, as set forth.

5. An electrical cash-checking machine consisting of a switchboard having a series of sliding knobs, each one of which represents a different value equivalent to one or more cash units, a series of contacts one for each denomination of cash units represented by the different series of knobs, each contact comprising a plurality of contacts equivalent in number with the number of units represented on the knob having the highest number of units in its respective denomination, a sliding contact for each denominational contact adapted to pass over the contacts of its series and make and break circuit on its return movement, a movable rod carrying said sliding contact, a series of cam-shaped pieces carried by the sliding knobs and adapted to move said rod on sliding the respective knobs, the amount of movement of said rod varying with each cam-shaped piece so as to cause the number of con-

tacts engaged by the sliding contact to correspond with the number of units represented on the knob operated, means whereby the interruption in the electrical circuit or circuits—corresponding to the unit or units represented by the knob operated—cause an electrical step-by-step movement or movements included in said circuit or circuits to register such unit or units on one or more of a series of dials, of contacts so arranged in connection with the mechanism of said dials as to come into operation and carry forward the totals of each dial to the next one registering units of a higher value, as set forth.

6. An electrical cash-checking machine consisting of a switchboard having a series of sliding knobs, each one of which represents a different value equivalent to one or more cash units, a series of contacts one for each denomination of cash units represented by the different series of knobs, each contact comprising a plurality of contacts equivalent in number with the number of units represented on the knob having the highest number of units in its respective denomination, a sliding contact for each denominational contact adapted to pass over the contacts of its series and make and break circuit on its return movement, a movable rod carrying said sliding contact, a series of cam-shaped pieces carried by the sliding knobs and adapted to move said rod on sliding the respective knobs, the amount of movement of said rod varying with each cam-shaped piece so as to cause the number of contacts engaged by the sliding contact to correspond with the number of units represented on the knob operated, means whereby the interruption in the electrical circuit or circuits—corresponding to the unit or units represented on the knob operated—cause an electrical step-by-step movement or movements included in said circuit or circuits to register such unit or units on one or more of a series of dials, of contacts so arranged in connection with the mechanism of said dials as to come into operation and carry forward the totals of each dial to the next one registering units of a higher value, of a bell or other audible signal adapted to be sounded on operating any one of the knobs on the switchboard, and of one or more incandescent electric lamps located on or near said switchboard and which are caused to glow on operating any one of the said knobs and to continue glowing until the unit or units represented by said operated knob has or have been registered on the respective dial, as set forth.

7. An electrical cash-checking machine consisting of a switchboard having a series of sliding knobs, each one of which represents a different value equivalent to one or more cash units, a plurality of contacts equivalent in number with the number of units represented on the knob having the highest value, a sliding contact adapted to pass over said contacts and make and break circuit on the return movement, means whereby the sliding knobs are caused to operate the sliding contact so as to cause the number of contacts engaged to correspond with the number of units represented on the knob operated and a dial in electrical connection with the said contacts so arranged as to register each operation of the switchboard in combination with a till consisting of a casing having its sides of transparent material, of a revoluble wheel having four divisions mounted within said casing, of an axle carrying said wheel, of mechanism actuating said axle through one quarter-revolution, of a trigger connected with and operating said actuating mechanism, of a bell carried by said casing, and of mechanism for sounding said bell on operating the said trigger, as set forth.

849,474. DIFFERENTIAL CLUTCH MECHANISM FOR AUTOMOBILES. FREDERICK W. HEDGELAND, Chicago, Ill. Filed Sept. 17, 1906. Serial No. 334,845.

Claim.—1. In differential clutch mechanism, the combination of driven members threaded on longitudinally-movable screw-sections mounted on the axles and adapted to drive in both directions, driving members having inclined friction-surfaces opposed to those of the driven members, and means whereby the screw-sections receive their longitudinal movement.

2. In differential clutch mechanism, the combination with the axles, of driven clutch members threaded on longitudinally-movable screw-sections mounted on the axles and adapted to drive in both directions and also adapted to shift, driving members adapted to act in both directions, and means for causing the shifting of the driven members.

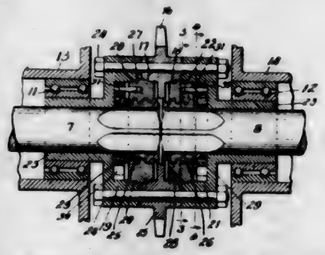

3. In a differential clutch mechanism, the combination with an axle or shaft, of a driven clutch member, a longitudinally-movable screw-section mounted on the axle and engaging the thread of said driven member, a driving member receiving the driving power and acting in both directions, and means for causing the shifting of the driven member.

4. In a differential clutch mechanism, the combination with an axle or shaft, of a driven clutch member surrounding the axle, a screw on the axle serving both to shift and to support said driven member, a driving member actuating the driven member, and means for causing the shifting of the driven member.

5. The combination in a differential friction-clutch mechanism, of driving members and driven members, the former surrounding the latter and adapted to drive them in either direction, said driven members disengaging when they overrun in either direction, and means by which the driven members lock with the driving members when the speed of both exceeds that of the driving members in either direction.

6. In differential clutch mechanism, the combination of the shafts, the driving members, the driven members, the latter mounted on the shafts so as to move longitudinally thereof, and adapted to be actuated in either direction, and means whereby the disengagement and reëgagement of the clutch members is caused whenever the direction of movement is changed or a difference between the speeds of the driving and driven members occurs.

7. In a differential friction-clutch mechanism, the combination of driving and driven members with the shafts, the driven members mounted on the shafts and movable longitudinally thereof, and adapted to be actuated in both directions, and means whereby the shafts control the engagement and disengagement of the clutches.

8. The combination with the driving-shaft, of a differential clutch surrounding the same and having its shifting members actuated longitudinally of the shaft by a sleeve mounted upon and rotating with the shaft, and also having a threaded engagement with the shifting member.

9. An automatic differential clutch, embodying driving members and two threaded shifting driven members, adapted to clutch with the driving members in both directions, each of said driven members releasing automatically when it overruns, and means whereby the driven members may be caused to shift.

10. An automatic differential friction-clutch, embodying driving members and driven members, the driven members receiving power in both directions and each of them adapted to release itself automatically whenever it overruns, and means whereby the driven members may be caused to relock with the driving members both when one overruns and when both overrun simultaneously.

11. The combination in a differential friction-clutch, of a driving member and a driven member, one of said members shifting and engaging the other automatically in either direction, and releasing itself automatically when overrunning, and also acting with the non-shifting member as a brake when the engine is throttled.

12. The combination of the driving members and the driven members engaging automatically and driving in either direction, also releasing automatically when either driven member overruns and automatically reëngaging when both driven members overrun so that the motor may then be utilized as a brake.

13. An automatic clutch embodying driving members and driven members, both having opposing friction-surfaces brought into contact by the shifting of the driven members so as to drive in either direction, each of said driven members releasing automatically whenever it overruns, and both reëngaging when they overrun at the same time, and means for shifting the driven members.

14. An automatic clutch embodying driving members and driven members, both the driving members and the driven members having opposing friction-surfaces brought into contact by the shifting of the driven members so as to drive in either direction, each of said driven members releasing automatically whenever it overruns, and both reëngaging when they overrun at the same time, and tension means acting on the shifting members and causing them to shift.

15. An automatic clutch embodying driving members and driven members, the latter being threaded interiorly and engaging with shifting screw-sections mounted upon the shafts, the members having friction-surfaces adapting them to communicate power in both directions and to release either driven member which may overrun, and means whereby the driven members after being released, may be caused to turn upon said threads and shift into engagement with the driving members.

16. The combination with shafts to be driven, of differential clutch mechanism mounted on the shafts and having shifting driven members controlled in shifting by the shafts, said mechanism acting positively in both directions and permitting either or both shafts to overrun in either direction.

17. The combination with the driven shafts, of a differential friction-clutch mechanism mounted thereon and controlled by longitudinal movements received from the shafts, and acting to positively drive the shafts in either direction and to permit the shafts to overrun in either direction and to reëngage when both overrun at the same time.

18. The combination with the driven shafts, of a differential friction-clutch mechanism mounted thereon, and opened and closed by longitudinal movements caused by the shafts, said clutch mechanism acting to positively drive the shafts in both directions, to permit either shaft to overrun, and to permit them to reëngage when both overrun at the same time.

849,475. SUN-DIAL. EDWARD G. HEWITT, New York, N. Y. Filed July 8, 1905. Serial No. 268,836.

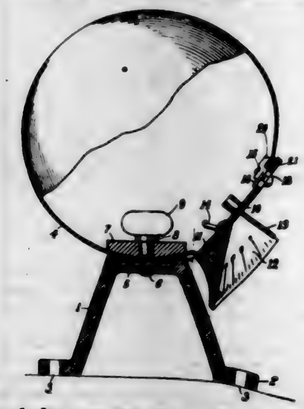

Claim.—1. In a sun-dial, the combination with a base, of a hollow sphere having an opening in its wall, the said opening being located immediately over the base, a bolt extending through the said opening in the sphere-wall into the base, and means enabling the bolt to lock the sphere in adjusted position on the base, as set forth.

2. In a sun-dial, the combination with a base, of a hollow sphere having an opening in its wall above the base, screw devices engaging the base and adapted to lock the sphere in adjusted position on the base, means for manipulating the screw devices, located within the sphere, an opening in the sphere-wall, a dial member removably mounted over the opening, and means for securing the dial member in position, as set forth.

849,476. ADDING-MACHINE. GEORGE N. HINCHMAN, Webster Groves, Mo., assignor to The Standard Adding Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed Mar. 24, 1906. Serial No. 307,848.

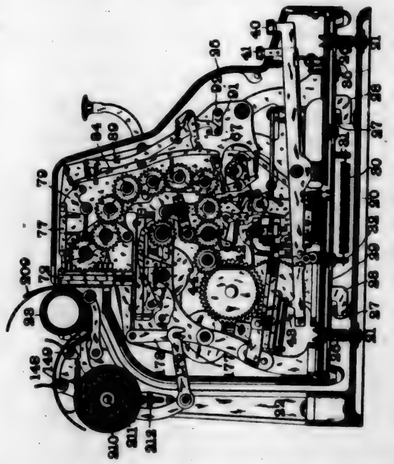

Claim.—1. In a tabulator, the combination with a paper-roll, of adding and printing mechanism moving longitudinally of said paper-roll and coöperating therewith to print numbers, means for operating said paper-roll, and an error-key for said adding and printing mechanism, said error-key also preventing the operation of said paper-roll.

2. In a tabulator, the combination with a paper-roll, of adding and printing mechanism movable longitudinally of said paper-roll and coöperating therewith to print numbers, means for operating said paper-roll from said adding and printing mechanism, and an error-key for said adding and printing mechanism, said error-key also preventing the operation of said paper-roll.

3. In a tabulator, the combination with a paper-roll, of adding and printing mechanism provided with an operating-handle and movable longitudinally of said roll, means for operating said roll from said handle, and an error-key for said adding and printing mechanism, said error-key also preventing the operation of said roll.

4. In an adding-machine, the combination with mechanism in which a number may be set up, separate mechanism for registering the number, and longitudinally-movable gears for connecting and disconnecting said mechanisms.

5. In an adding-machine, the combination with mechanism in which a number may be set up, of mechanism for registering the number, a handle for operating said second mechanism, and longitudinally-movable gears for connecting and disconnecting said mechanisms.

6. In an adding-machine, the combination with mechanism in which a number may be set up, of separate mechanism for registering the number, said second mechanism including printing devices, and longitudinally-mov-

able gears for connecting and disconnecting said mechanisms.

7. In an adding-machine, the combination with mechanism in which a number may be set up, of separate mechanism for registering the number, said second mechanism including printing devices, a handle for operating said second mechanism, and longitudinally-movable gears for connecting and disconnecting said mechanism.

8. In an adding-machine, the combination with mechanism in which a number may be set up, of printing mechanism, connections between said printing mechanism and said first-named mechanism and adapted to be moved into and out of engagement with the latter, and means for centering said connections while out of engagement with said first-named mechanism.

9. In an adding-machine, the combination with mechanism in which a number may be set up, of printing mechanism, connections between said printing mechanism and first-named mechanism and adapted to be moved into and out of engagement with the latter, means for centering said connections while out of engagement with said first-named mechanism, and separate means for centering said printing mechanism after said connections have been moved into engagement with said first-named mechanism.

10. In an adding-machine, the combination with mechanism in which a number may be set up, of printing mechanism, a train of gears for connecting said printing mechanism and said first-named mechanism and adapted to be moved into and out of engagement with the latter, and means for centering the connecting end of said train of gears while the same is out of engagement with said first-named mechanism.

11. In an adding-machine, the combination with mechanism in which a number may be set up, of printing mechanism, a train of gears connecting said printing mechanism and said first-named mechanism and adapted to be moved into and out of engagement with the latter, means for centering the connecting end of said train of gears while the same is out of engagement with said first-named mechanism, and separate means for centering the opposite end of said train of gears to aline the printing mechanism after said train of gears has been moved into an engagement with said first-named mechanism.

12. In an adding-machine, the combination with mechanism for setting up a number, of printing mechanism normally out of engagement with said first-named mechanism, connections between said printing mechanism and said first-named mechanism and normally out of engagement with the latter, and means for centering said connections while out of engagement with said first-named mechanism.

13. In an adding-machine, the combination with mechanism for setting up a number, of printing mechanism normally out of engagement with said first-named mechanism, connections between said printing mechanism and first-named mechanism and normally out of engagement with the latter, means for centering said connections while out of engagement with said first-named mechanism, and separate means for centering said printing mechanism after said connections have been moved into engagement with said first-named mechanism.

14. In an adding-machine, the combination with mechanism for setting up a number, of printing mechanism, a train of gears for connecting said printing mechanism and first-named mechanism and normally out of engagement with the latter, and means for centering the connecting end of said train of gears while the same is out of engagement with said first-named mechanism.

15. In an adding-machine, the combination with mechanism for setting up a number, of printing mechanism, a train of gears for conecting said printing mechanism and first-named mechanism and normally out of engagement with the latter, means for centering the connecting ment with said first-named mechanism, and separate means for centering the opposite end of said train of gears to aline the printing mechanism after said train of gears has been moved into engagement with said first-named mechanism.

16. In an adding-machine, the combination with mechanism for setting up a number, of printing mechanism, connections between said printing mechanism and said first-named mechanism consisting of a plurality of sets of gears forming a train, and means for centering the connecting set of said gears, said means also shifting said gears longitudinally to move the same into engagement with said first-named mechanism.

17. In an adding-machine, the combination with a mechanism for setting up a number, printing mechanism, hammers for said printing mechanism, a plurality of members controlled by the movement of the handle, levers pivoted to said members and controlled by said first-named mechanism and adapted to engage said hammers, and means for releasing said levers.

18. In an adding-machine, the combination with printing devices, of a platen coöperating therewith, a feed-pawl for said platen, a member for operating said feed-pawl and provided with a curved slot, and an arm operated by the pull of the handle and provided with a pin adapted to work in said slot.

19. In an adding-machine, the combination with printing devices, of a platen coöperating therewith, a feed-pawl for said platen, a member for actuating said feed-pawl and provided with a curved slot, an arm operated by the pull of the handle and having a pin adapted to work in said slot, a guide for preventing the pin from working in said slot, and an error-key for moving said guide.

20. In an adding-machine, the combination with printing devices, of a platen therefor, a feed-pawl for said platen, a member for operating said feed-pawl and provided with a curved slot, an arm actuated by the pull of the handle and provided with a pin adapted to work in said slot, a guide for preventing said pin from working in said slot, an error-key for moving said guide, a detent for said guide, and means for releasing said detent.

21. In an adding-machine, the combination with printing devices, of a platen coöperating therewith, a feed-pawl for said platen pivoted to a movable member, a stop carried by said member and having a plurality of faces adapted to cooperate with said feed-pawl, and means for operating said member by the pull of the handle.

849,477. LOAD-TRIMMER. THOMAS IRWIN, Cleveland, Ohio. Filed May 3, 1906. Serial No. 314,914.

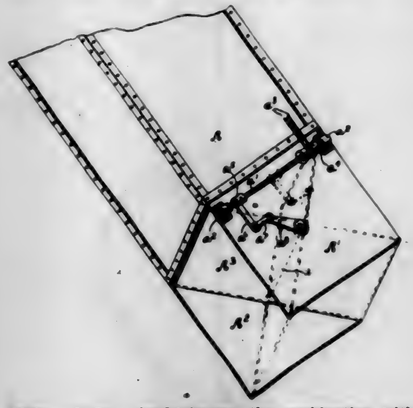

Claim.—1. In a load-trimmer, the combination with a chute having two opposite wall portions extended beyond its discharge end, of a gate pivotally mounted between such extended portions.

2. In a load-trimmer, the combination with a chute having two opposite wall portions extended beyond its discharge end, of a gate pivotally mounted between such extended portions on an axis at substantially right angles to the same.

3. In a load-trimmer, the combination with a chute having two opposite wall portions extended beyond its discharge end, of a gate pivotally mounted between such extended portions on an axis located intermediately of their sides.

4. In a load-trimmer, the combination with a chute having two opposite wall portions extended beyond its discharge end, of a gate pivotally mounted between such extended portions on an axis at substantially right angles thereto and located intermediately of their sides.

5. In a load-trimmer, the combination with a chute having its top and bottom portions extended beyond its discharge end, of a gate pivotally mounted between such extended portions.

6. In a load-trimmer, the combination with a chute having its top and bottom portions extended beyond its discharge end, of a gate pivotally mounted between such extended portions on an axis at substantially right angles to the same.

7. In a load-trimmer, the combination with a chute of substantially rectangular cross-section having two opposite wall portions extended beyond its discharge end, of a gate pivotally mounted between such extended portions on an axis at substantially right angles to the same.

8. In a load-trimmer, the combination with a chute of substantially rectangular cross-section having two opposite wall portions extended beyond its discharge end, of a gate pivotally mounted between such extended portions on an axis at substantially right angles to the same, said gate being equal in length to the diagonal of such portions.

9. In a load-trimmer, the combination with a chute of substantially retangular cross-section having its top and bottom portions extended beyond its discharge end, of a deflecting-plate mounted between such extended portions on a pivotal axis midway between the sides of such portions at substantially right angles to the same.

10. In a load-trimmer, the combination with a chute of substantially retangular cross-section having its top and bottom portions extended beyond its discharge end, of a deflecting-plate centrally mounted between such extended portions on a pivotal axis at substantially right angles to the same, said plate being substantially equal in length to the diagonal of such portions.

11. In a load-trimmer, the combination with a chute oscillatory in a vertical plane and having its walls on the sides transversely disposed to such plane extended beyond its discharge end, of a gate pivotally mounted between such extended wall portions.

12. In a load-trimmer, the combination with a chute oscillatory in a vertical plane and having its walls on the sides transversely disposed to such plane extended beyond its discharge end, on an axis at substantially right angles to the same.

13. In a load-trimmer, the combination with a chute oscillatory in a vertical plane and having its walls on the sides transversely disposed to such plane extended beyond its discharge end, of a deflecting-plate mounted between such extended wall portions on a pivotal axis located intermediately of the sides of such portions and at substantially right angles thereto.

14. In a load-trimmer, the combination with a chute oscillatory in a vertical plane and having its walls on the sides transversely disposed to such plane extended beyond its discharge end, of a deflecting-plate mounted between such extended wall portions on a pivotal axis located midway between the sides of such portions and at substantially right angles thereto.

15. In a load-trimmer, the combination with a chute having two opposite wall portions extended beyond its discharge end, of a gate centrally mounted between such extended portions on a pivotal axis at substantially right angles to the same, and means adapted to angularly position said gate upon such axis.

16. In load-trimmer, the combination with a chute, having its top and bottom portions extended beyond its discharge end, of a gate centrally mounted between such extended portions on a pivotal axis at substantially right angles to the same, said gate being equal in length to the diagonal of such portions, and means adapted to angularly position said gate upon such axis.

17. In a load-trimmer, the combination with a chute of substantially rectangular cross-section having two opposite wall portions extended beyond its discharge end, of a deflecting-plate centrally mounted between said extended portions on a pivotal axis at substantially right angles to the same, and means adapted to angularly position said plate upon its axis, such means comprising a screw rotatably mounted upon said chute, a nut threaded on said screw, an arm rigidly connected with said plate and a link connecting said arm with said nut.

18. In a load-trimmer, the combination with a chute of substantially rectangular cross-section having its top and bottom portions extended beyond its discharge end, of a deflecting-plate centrally mounted between said extended portions on a pivotal axis at substantially right angles to the same, said plate being equal in length to the diagonal of such portions, and means adapted to angularly position such plate upon its axis, such means comprising a screw rotatably mounted upon said chute, means for rotating said screw, a nut threaded upon the same, an arm rigidly connected with said plate, and a link connecting said arm with said nut.

849,478. LOAD-TRIMMER. THOMAS IRWIN, Cleveland, Ohio. Filed July 21, 1906. Serial No. 327,123.

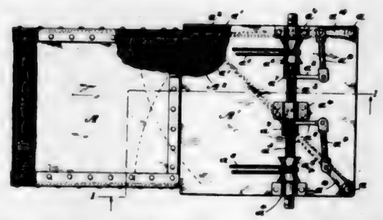

Claim.—1. In a load-trimmer, the combination with a chute having two opposite wall portions extended beyond its discharge end, of a gate adapted in one position to laterally inclose the space between such extended wall portions and in another position to lie diagonally in front of such discharge end.

2. In a load-trimmer, the combination with a chute having two opposite wall portions extended beyond its discharge end, of two gates respectively adapted in one position to close the corresponding side of the space between such extended wall portions and in another position to lie diagonally in front of such discharge end.

3. In a load-trimmer, the combination with a chute having its top and bottom walls extended beyond its discharge end, of a gate pivotally mounted between the extended portions of said walls and adapted in one position to laterally inclose the space between such extended wall portions and in another position to lie diagonally in front of such discharge end.

4. In a load-trimmer, the combination with a chute having its top and bottom walls extended beyond its discharge end, of two gates pivotally mounted between such extended wall portions and respectively adapted in one position to close the corresponding side of the space between such extended wall portions and in another position to lie diagonally in front of such discharge end.

5. In a load-trimmer, the combination with a chute oscillatory in a vertical plane and having its walls on the sides transversely disposed with respect to such plane extended beyond its discharge end, of a gate adapted in one position to laterally inclose the space between such extended wall portions and in another position to lie diagonally in front of such discharge end.

6. In a load-trimmer, the combination with a chute oscillatory in a vertical plane and having its walls on the sides transversely disposed with respect to such plane extended beyond its discharge end, of two gates pivotally mounted between such extended wall portions and respectively adapted in one position to close the corresponding

side of the space between such extended wall portions and in another position to lie diagonally in front of such discharge end.

7. In a load-trimmer, the combination with a chute of substantially rectangular cross-section having two opposite wall portions extended beyond its discharge end, of two gates pivotally mounted between such extended wall portions, the axes of said gates being located in the respective lower corners of the extended portion of said chute.

8. In a load-trimmer, the combination with a chute of substantially rectangular cross-section having its top and bottom walls extended beyond its discharge end, of two gates pivotally mounted between such extended wall portions, the axes of said gates being located in the respective lower corners of the extended portion of such chute.

9. In a load-trimmer, the combination with a chute of substantially rectangular cross-section, such chute being oscillatory in a vertical plane and having its walls on the sides transversely disposed with respect to such plane extended beyond its discharge end, of two gates pivotally mounted between such extended wall portions, the axes of said gates being located in the respective lower corners of the extended portion of such chute.

10. In a load-trimmer, the combination of a chute having two opposite wall portions extended beyond its discharge end, of two gates pivotally mounted between such extended wall portions, the axes of said gates being located in the respective lower corners of the extended portion of said chute, and means for independently angularly positioning said gates upon such axes.

11. In a load-trimmer, the combination of a chute having its top and bottom walls extended beyond its discharge end, two gates pivotally mounted between such extended wall portions, the axes of said gates being located in the respective lower corners of the extended portion of said chute, and means for independently angularly positioning said gates upon said axes.

12. In a load-trimmer, the combination of a chute of substantially rectangular cross-section having its top and bottom walls extended beyond its discharge end, two gates pivotally mounted between such extended wall portions, the axes of said gates being located in the respective lower corners of the extended portion of said chute, and means for independently angularly positioning each of said gates, such means comprising a screw rotatably mounted upon said chute, means for rotating said screw, a nut threaded upon the same, an arm rigidly connected with the corresponding gate, and a link connecting said arm with said nut.

849,479. BOX-LOOM. WILLIAM KAHRE, Wharton, N. J. Filed Apr. 14, 1905. Serial No. 255,476.

Claim.—1. In a box-loom, the combination with the shuttle-race, a lay rock-shaft and a pattern-chain, of a shuttle-box in the form of a sector, the circular front of said shuttle-box being movable near to the end of the shuttle-race, and rods for moving the said box about the center of the circle of which it forms a part, the movements being determined by the pattern-chain and the said rods being mounted upon the lay rock-shaft, substantially as and for the purposes set forth.

2. The combination with the shuttle-box in the form of a sector and a pattern-chain, of pivoted levers for compelling the movement of said box, cams for moving said levers, a cam gear-wheel, and means for connecting the latter with the pattern-chain, substantially as shown and described.

3. In a box-loom, the combination of a shuttle-box in the form of a sector, pivoted levers, rods connecting the box with the levers, cams for moving said levers, a cam gear-wheel, racks for turning said wheel, a pulley connected with the said racks, a pattern-chain, levers movable by contact with the pattern-chain, and flexible connections leading from said levers to the pulley connected with the racks, substantially as and for the purposes set forth.

4. The combination with the shuttle-box in the form of a sector, a pattern-chain, pivoted levers, cams for moving said levers, means for connecting the cams and the pattern-chain, and means for connecting the levers and the box, the latter means being movable with respect to the lay rock-shaft, as set forth.

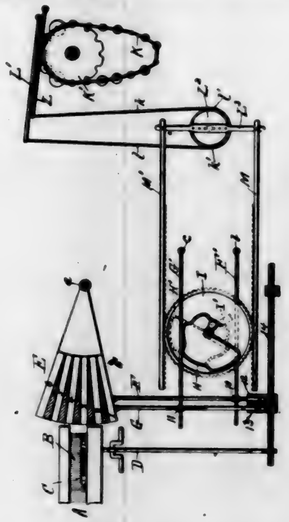

849,480. COMPOSITION FOR REMOVING STAINS AND RESTORING PAINT OR VARNISH TO ITS ORIGINAL GLOSS. ROBERT H. LEE, Santa Monica, Cal., assignor of one-fourth to Thomas H. Moody and one-fourth to John C. Porter, Santa Monica, Cal. Filed Nov. 26, 1906. Serial No. 345,164.

Claim.—1. The herein-described composition of matter, consisting of vinegar; lard-oil; turpentine; kerosene; and lampblack, substantially as described and for the purpose set forth.

2. The herein-described composition of matter, consisting of vinegar; lard-oil; turpentine; oil of citronella; kerosene; and lampblack, substantially as described and for the purpose specified.

3. The herein-described composition of matter, consisting of vinegar one quart; lard-oil one quart; turpentine one pint; kerosene-oil one quart; and lampblack one-half ounce, substantially as described and for the purpose set forth.

4. The herein-described composition of matter, consisting of vinegar one quart; lard-oil one quart; turpentine one pint; oil of citronella one pint; kerosene-oil one quart; and lampblack one-half ounce, substantially as described and for the purpose set forth.

849,481. COMBINED FISHING-ROD AND CANE. JEAN M. LOBIT, New York, N. Y. Filed July 3, 1906. Serial No. 324,681.

Claim.—1. In a combined fishing-rod and cane, the combination of a tubular stock, an extension adapted to be secured at one end of the stock or to be stored within the stock as desired, a removable closure for the other end of the stock, a tool carried by the closure, and a reel-carrier removably secured to the stock, as set forth.

2. In a combined fishing-rod and cane, the combination of a taperng tubular stock having an enlarged handle portion at one end, a tapering extension adapted to be secured at the other end of the stock or to be stored within the stock as desired, a removable screw-closure for the handle end of the stock, carrying a tool within the stock, a reel-carrier fitting the handle portion of the stock, and a screw

device for removably securing the reel-carrier in position, as set forth.

849,482. AIR OR GAS PUMP, &c. GEORGE MACHLET, Jr., Elizabeth, N. J. Filed Nov. 23, 1904. Serial No. 234,026.

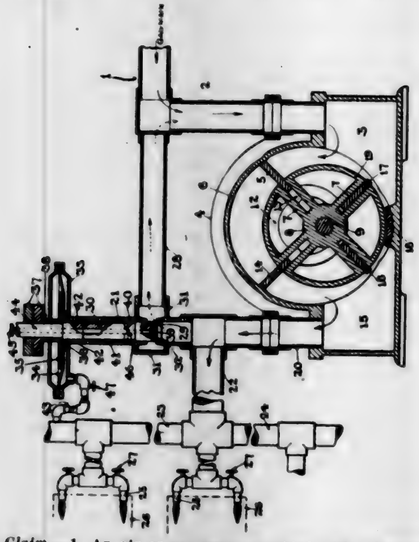

Claim.—1. An air or gas pump provided with a by-pass between its admission and delivery sides, and having means unintermittently dependent upon the pressure of gas during the delivery thereof by the pump, for maintaining substantially uniform the pressure of the gas at the point or points of consumption during substantial fluctuations in the rate of consumption; said means including a valve in said by-pass, and a valve-controller always operable by the minimum useful pressure of the delivered gas, to cause said valve to be constantly open during the consumption of the gas, to permit unintermitting return through said by-pass of gas in varying proportions during the flow thereof out of the pump.

2. An air or gas pump provided with a by-pass between its admission and delivery sides, a valve to control the flow of gas through said by-pass, and a valve-actuator of far greater area than said valve and constantly subjected to the pressure of gas while it is flowing out of the pump, and movable by the minimum useful pressure of the delivered gas, to permit varying proportions of the gas flowing out of the pump to return in an unintermitting flow through said by-pass, to maintain approximately uniform the pressure of the delivered gas-stream that does not return through said by-pass.

3. An air or gas pump provided upon its delivery side with a valve-seat, a rod having at one end a valve to fit said seat, a casing in which said rod fits, a head upon said casing, a diaphragm in said head and connected to said rod and of far greater area than said valve, and a by-pass between the delivery and admission sides of the pump and controlled by said valve; said diaphragm being constantly exposed to the pressure of gas delivered from the pump, and of such area that the minimum useful pressure of the gas thereon keeps said valve constantly open.

4. An air or gas pump provided with a by-pass between its admission and delivery sides, and having means unintermittingly dependent upon the pressure of gas during the delivery thereof by the pump, for maintaining substantially uniform the pressure of the gas at the point or points of consumption during substantial fluctuations in the rate of consumption; said means including a valve in said by-pass, a valve-controller always operable by the minimum useful pressure of the delivered gas, to cause said valve to be constantly open during the consumption of the gas, to permit unintermitting return through said by-pass of gas in varying proportions during the flow thereof out of the pump, and means for regulating the resistance of said pressure-maintaining means to the pressure of the outflowing gas, thereby to regulate the minimum pressure of the gas to suit varying requirements.

5. An air or gas pump provided with a by-pass between its admission and delivery sides, a valve to control the flow of gas through said by-pass, a valve-actuator of far greater area than said valve and constantly subjected to the pressure of gas while it is flowing out of the pump, and movable by the minimum useful pressure of the delivered gas, to permit varying proportions of the gas flowing out of the pump to return in an unintermitting flow through said by-pass, to maintain approximately uniform the pressure of the delivered gas-stream that does not return through said by-pass, and means for changing at will the resistance of said actuator to said gas-pressure thereby to regulate the minimum pressure of the gas to suit varying requirements.

6. An air or gas pump provided upon its delivery side with a valve-seat, a rod having at one end a valve to fit said seat, a casing in which said rod fits, a head upon said casing, a diaphragm in said head and connected to said rod and of far greater area than said valve, a by-pass between the delivery and admission sides of the pump and controlled by said valve; said diaphragm being constantly exposed to the pressure of gas delivered from the pump, and of such area that the minimum useful pressure of the gas thereon keeps said valve constantly open, a weight-holder connected to said diaphragm, and a set of movable weights for resting upon said holder to vary the resistance of said diaphragm to the gas-pressure, thereby to regulate the minimum pressure of the gas to suit varying requirements.

7. The combination with an air or gas pump having a by-pass from its delivery side to its admission side, of a valve associated with said by-pass, a head, a diaphragm in said head and having far more extensive area than said valve, a rod passing through said head and connected to the diaphragm; a set of weights to act upon said rod to vary at will the resistance of said diaphragm to the gas-pressure; said valve being connected to said rod, and said diaphragm being constantly subject to the pressure of gas as it flows out of the delivery side of the pump, and of

sufficient area to enable the minimum useful gas-pressure to hold said valve open.

8. The combination with an air or gas pump having a by-pass from its delivery side to its admission side, of a valve for said by-pass, a head, a diaphragm in said head and connected to said valve, a delivery or service pipe leading from the delivery side of the pump to a device which consumes the gas, and a connection leading from the consumption end of said delivery-pipe back to said head; said diaphragm being of such area that it is caused by the minimum useful gas-pressure to hold said valve constantly open during the flow of gas through said delivery-pipe.

9. An air or gas pump provided upon its delivery side with a valve-seat, a rod having at one end a valve to fit said seat, a casing in which said rod fits, a head upon said casing, and a diaphragm of relatively great area mounted in said head and connected to said rod, the rod being provided with a passage for the fluid to said head, and the pump being also provided with means for conducting the escaping fluid from said valve to the admission side of the pump.

10. The combination with an air or gas pump having a passage from its delivery side to its admission side, of a valve in said passage, a service-pipe leading from said delivery side and having a remote discharge portion, and means for enabling said valve to be controlled by the pressure of the fluid either immediately at the delivery side of the pump or at said remote discharge portion of the service-pipe at will.

11. The combination with an air or gas pump having a passage from its delivery side to its admission side, of a valve in said passage, a head, a diaphragm in said head and connected to said valve, a service-pipe leading from said delivery side and having a remote discharging portion, a valved connection leading from the discharging portion of said service-pipe to said head, and a valved passage directly from the delivery side of the pump to said head.

849,483. MOTOR-VEHICLE. MORTON H. MAGIE and CHARLES N. WINTERS, Bakersfield, Cal. Filed Mar. 22, 1905. Serial No. 251,399.

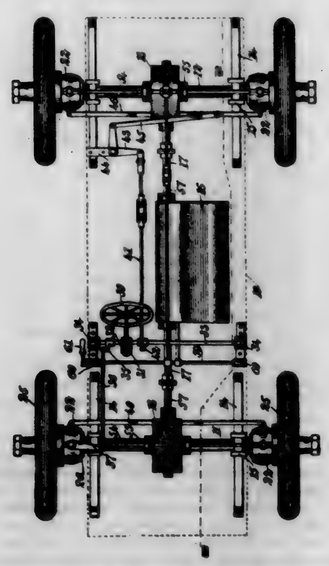

Claim.—1. A motor-vehicle having a plurality of road-wheels, means for revolubly mounting the wheels and also for permitting the wheels to be slued to steer the vehicle, means for driving said wheels independently of the sluing movement thereof, a braking member acting directly on the wheels, and means for operating the braking member independently of the sluing movements of the wheels, said means for driving the wheels and said means for applying the braking members thereto, comprising universal joints coinciding to the centers of the sluing movement of the wheels.

2. The combination of a supporting member or axle, a driving-shaft revolubly carried therein, a tubular journal, means mounting said journal to swing on said supporting member or axle, a wheel revolubly mounted on the tubular journal, means connecting the driving-shaft with the wheel, said means including a universal joint coincident to the center of swinging movement of the journal, and means for applying a braking member directly to the wheel, said means including movement-transmitting parts having a universal joint coincident to the center of swinging movement of the said journal.

3. The combination of a supporting member or axle, a driving-shaft revolubly mounted thereon, a tubular journal, means for mounting the journal to swing on the supporting member, a wheel revolubly carried on the journal, means connecting the wheel with the driving-shaft and including a universal joint coincident to the center of swinging movement of the journal, means furnishing a braking-surface secured directly to the wheel, a brake-shoe coacting with said surface, and means for operating the brake-shoe, said means including movement-transmitting parts having a universal joint coincident to the center of swinging movement of the journal.

4. The combination of a supporting member or axle, a driving-shaft revolubly mounted therein, a box attached to the supporting member, a second box mounted to swing on the first-named box, a tubular journal carried by the second box, a wheel revolubly mounted on the tubular journal, a spindle extending through the tubular journal and having connection with the wheel, a universal joint connecting the spindle and driving-shaft, said joint being coincident to the center of swinging movement of the second-named box, means forming a braking-surface attached directly to the wheel, a brake-shoe coacting with said means, and devices for operating the brake-shoe, said devices including movement-transmitting parts carried respectively in the boxes, and a universal joint establishing connection between said parts and lying coincident to the center of swinging movement of the second-named box.

5. A motor-vehicle having two hollow axles, each with an intermediately-situated differential-gear case, divided driving-shafts carried on each axle, means connecting the sections of said shafts with the source of motive power, four road-wheels, means for mounting said wheels respectively at the ends of the axles, said means permitting the road-wheels to slue or turn to steer the vehicle, means connecting the driving-shaft sections respectively with the road-wheels to drive the same independently of said turning or sluing movement means for imparting said turning or sluing movement to the wheels, and means for applying a braking element directly to each wheel.

6. A motor-vehicle having two hollow axles, each with an intermediately-situated differential-gear case, divided driving-shafts carried on each axle, means connecting the sections of said shafts with the source of motive power, four road-wheels, means for mounting said wheels respectively at the ends of the axles, said means permitting the road-wheels to slue or turn to steer the vehicle, means connecting the driving-shaft sections respectively with the road-wheels to drive the same independently of said turning or sluing movement, means for imparting said turning or sluing movement to the wheels, means attached to each wheel and forming a braking-surface, a brake-shoe coacting with the braking-surface, and means for operating the shoes.

7. A motor-vehicle having two hollow axles, each with an intermediately-situated differential-gear case, divided driving-shafts carried on each axle, means connecting the sections of said shafts with the source of motive power, four road-wheels, means for mounting said wheels respectively at the ends of the axles, said means permitting the road-wheels to turn or slue to steer the vehicle, means connecting the driving-shaft sections respectively with the road-wheels to drive the same independently of said turning or sluing movement, means for imparting said turning or sluing movement to the wheels, means attached to each wheel and forming a braking-surface, a brake-shoe coacting with the braking-surface and means for operating the shoes, said means comprising movement-transmitting parts with universal joints coincident to the axes of said turning or sluing movements of the road-wheels.

8. The combination of a supporting member, a driving-shaft revolubly carried thereby, a tubular journal, means for mounting the journal to swing on the supporting member, a wheel mounted on the journal, means connecting the wheel with the driving-shaft, said means including a universal joint coincident to the center of the swinging movement of the journal, means forming a braking-surface directly on the wheel, a brake member operating on said surface, and devices for actuating the brake member, said devices including a universal joint coincident to the center of the swinging movement of the journal.

849,484. PRINTING-TELEGRAPH. CHARLES J. MENASCO, Birmingham, Ala., assignor of twenty-five one-hundredths to Rufus N. Rhodes and thirty one-hundredths to Richard C. Bankston, Birmingham, Ala. Filed Mar. 5, 1906. Serial No. 304,332.

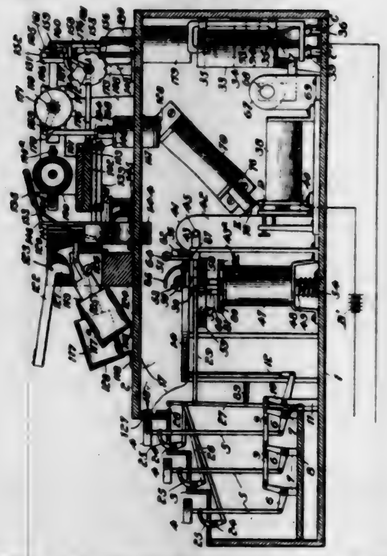

Claim.—1. In electrically-connected printing-machines, a local-circuit-selecting mechanism for each machine comprising a sunflower and a movable switch coöperating therewith, a local controller-circuit for each selecting mechanism, electrically-controlled means included in each controller-circuit and adapted to operate said selecting mechanisms with synchronous step-by-step movements, electromagnetic devices to make and break said controller-circuits and which are connected together, and a key-controlled circuit in the transmitting-machine which includes devices to energize and deënergize the make-and-break devices for the local controller-circuits of both transmitting and receiving machines in unison.

2. In electrically-connected printing-machines, a relay-magnet for each machine included in a main-line circuit, a local controller-circuit for each machine which includes a local battery and a make-and-break switch adapted to be operated by one of said relay-magnets, local-circuit-selecting mechanisms comprising a sunflower and a movable switch-arm coöperating therewith electrically controlled by the action of said relay-magnets on the local controller-circuits and adapted to close corresponding local operating-circuits in the several machines, in combination with a make-and-break device which is cut into the main-line circuit to make and break it at the transmitting-machine only, and key-controlled mechanism which cuts said device into and out of service, its periods of operation varying for each key.

3. In a system of communication by electrically-connected printing-machines, the combination of a plurality of type-machines having printing mechanism controlled by local circuits, contact-plates for the local operating-circuits of each machine, a contact member which engages said plates, electrically-controlled means for moving the contact members of the transmitting and receiving machines in absolute synchronism, which means, responding to main-line current impulses of constant polarity, advance said arms to a different controlling position with each make and each break of said main-line circuit, keys at the transmitting-machine, and key-controlled means to make and break the main-line circuit a different number of times for each key.

4. The combination in a system of electrically-connected printing-machines, of a set of contact-plates for each machine, local operating-circuits connected to said plates, a contact-arm movable over said plates, electromechanical mechanisms included in local controller-circuits for controlling the forward travel of said arms of both transmitting and receiving machines in unison with a step-by-step movement over said contact-plates, said mechanisms being in turn controlled by relay-magnets in a main-line circuit, a make-and-break device operating on the main-line circuit and key-controlled means at the transmitting-machine to start said make-and-break device from a unison-point and stop it after a determined number of makes and breaks, said electromechanical mechanisms being adapted to advance said arms into engagement with a different plate with each make or break of the main-line circuit, and means which act automatically when the contact-arms are stopped, to swing them freely back to unison position.

5. In a printing-telegraph, a circuit-selecting mechanism comprising contacts connected to local operating-circuits and a movable contact-arm, a local controller-circuit and mechanism controlled thereby to move said arm into engagement with said contacts, mechanism brought into operation by the depression of a key which rapidly makes and breaks said controller-circuit, causing said arm to advance step by step over said contacts, key-operated mechanism to arrest the travel of said contact-arm to close a local operating-circuit, means to hold said local operating-circuit open during the travel of said arm, and means included in each of said operating-circuits to effect the return of said arm to initial position.

6. In a printing-telegraph system, a machine comprising in combination a series of contacts, operating-circuits connected to said contacts, a contact-arm coöperating therewith, key-controlled means to stop said arm opposite each contact to close a local operating-circuit, means brought into action by the depression of a key which automatically breaks the circuit to said contacts and effects a step-by-step advance of said arm until it engages a stop, means to return said arm to its initial position, and an electromagnetic device, in a circuit closed upon the engagement of said arm with a stop, which closes the circuit to said contacts and brings said arm under the control of said returning means to restore it to initial position.

7. In a printing-telegraph system, a type-writer comprising keys, a set of contacts, a contact-arm coöperating therewith, stops controlled by said keys and adapted to arrest the travel of said arm in engagement with one of said contacts, electromagnetically-controlled means to advance said arm from its initial position, a spring to return said arm to initial position, and a circuit which is closed when the travel of said arm is arrested by one of said stops and which includes electromagnetic means to free

said arm and permit said spring to return it to initial position.

8. A system of communication by means of electrically-connected printing-machines, said machines comprising in combination, a set of local-circuit contacts, a contact-arm for each set of contacts, a source of electricity, electromagnetically-controlled means to advance said arms step by step and in unison over said contacts, local operating-circuits leading from said contacts, means to simultaneously arrest the advance of all said arms by stopping the arm of the transmitting-machine, means to break the local operating-circuits during the arms' travel over the contacts and to automatically close corresponding operating-circuits through the arms when they come to a stop, and means to restore said arms to initial position immediately after closing an operating-circuit.

9. In a system of communication by electrically-connected type-writers, type-writers each comprising type-bars, a carriage, electromagnets for operating said parts, contacts, local operating-circuits connecting said electromagnets with said contacts, a contact-arm and a source of electricity, in combination with electrically-controlled mechanism to move the contact-arms of said machines with a synchronous step-by-step movement over said contacts, means to break the local operating-circuits to said contacts during the travel of said arms and close corresponding operating-circuits only when the arms stop, means to return the arms to initial position instantly after closing an operating-circuit, and means under the control of the electromagnet included in the operating-circuit last closed, which holds it energized, until it has completed its function.

10. In a system of communication by means of electrically-connected printing-machines, a machine comprising in combination, a local-circuit-controlling contact-arm, a toothed wheel to move said arm, electromagnetic means to control the travel of said toothed wheel, a mechanism to automatically disengage said arm from said wheel and restore it to initial position immediately after closing a local operating-circuit, an electromagnet for operating a printing device included in said local circuit, and auxiliary means to energize said magnet after said arm has broken the local circuit, substantially as described.

11. In a system of communication by electrically-connected type-writers, the combination of a set of contacts for said type-writers, a local operating-circuit connected to each contact, contact-arms which engage said sets of contacts and are moved in unison to temporarily close corresponding local operating-circuits in the several machines, means to hold the local circuits normally open, means to restore said arms to initial position immediately after closing a local operating-circuit, electromagnetic devices included in said local circuits, secondary circuits and means controlled by said magnetic devices to shunt the secondary-circuit current through them and to break said circuit when the devices have completely functioned.

12. In a printing-telegraph system, electrically-connected printing-machines each comprising a local-operating-circuit-selecting mechanism which includes contacts and a movable contact-arm adapted to engage said contacts, operating mechanism for said arm which moves it out of engagement with a contact immediately after closing its respective local operating-circuit, an electromagnet for operating printing devices included in said local operating-circuits, and a switch closed by the instantaneous energization of each magnet and automatically opened when said magnet has completed its printing function, and secondary circuits including a local battery which are shunted through said magnets by the closing of said switches, as and for the purposes described.

13. In a system of communication by electrically-connected type-writers, the combination of a plurality of sets of contacts, a plurality of local circuits connected to each set of contacts, contact-arms which engage said contacts and are moved in unison to temporarily close corresponding local operating-circuits in the several machines, means to automatically break said local operating-circuits during the travel of said arms, means to close a local operating-circuit in each machine when the arm is stopped, a printing-magnet included in said local circuit, means to instantaneously break said local operating-circuit in each machine and restore the arms to initial position while said printing-magnets are performing their function, and means to shunt current through said magnets during the return travel of said arms.

14. In a printing-telegraph, a local-circuit-selecting mechanism comprising a shaft, a contact-arm carried by said shaft, a series of contact-plates with which said arm engages, a spring means to advance said arm with a step-by-step movement over said plates, means to disengage said arm from said spring means, and means to effect a free and instantaneous return of said arm to its initial position after disengagement from said spring means.

15. In a printing-telegraph, a local-circuit-selecting mechanism comprising a shaft, a contact-arm carried by said shaft, a series of contact-plates with which said arm engages, a toothed wheel normally in engagement with said arm, a spring which tends to move said wheel in one direction, an electromagnetic device in a circuit controlled by said arm which disengages said arm from said toothed wheel, a coiled spring, connected to said shaft and wound up by its movement with said wheel, which restores said arm to its initial position when it is disengaged from said wheel.

16. In a printing-telegraph, a local-circuit-selecting mechanism comprising a contact-arm, a series of contacts, a solenoid in a local circuit controlled by said arm, and a core for said solenoid with which said contact-arm is connected and by which it is moved out of engagement with said contacts, substantially as and for the purposes described.

17. In a printing-telegraph, a local-circuit-selecting mechanism comprising contact-plates, a contact-arm in engagement therewith, a solenoid having a core which supports said arm, a spring connected to said core and adapted to counteract movements thereof which tend to advance said arm over said contact-plates or disengage it therefrom, means to advance said arm over said plates, and means to arrest said arm and close a determined local circuit and a circuit including said solenoid, said core being moved by the solenoid when energised to free said arm and permit said spring to return it to initial position.

18. In a printing-telegraph, a local-circuit-selecting mechanism comprising contacts, a contact-arm, a toothed wheel with which said arm normally engages, a spring to turn said wheel and advance said arm over said contacts, means to wind said spring as the toothed wheel is advanced thereby, a solenoid included in a circuit controlled by said arm and adapted to disengage it from said wheel, and means to restore said arm to initial position before permitting it to again engage said wheel.

19. In a printing-telegraph, a local-circuit-selecting mechanism comprising contact-plates, a contact-arm adapted to engage said plates, a rotatable element with which said arm is normally in engagement and by means of which it is moved over said contact-plates, an electromagnetic device, in a circuit controlled by said arm, which disengages said arm from said element, means to return said arm to initial position before it reëngages said element, and local-circuit connections controlled by said device and arm and adapted to hold said arm free of said element until it has reached its initial position.

20. In an electromechanical type-writer, a set of keys, a local-circuit-selecting mechanism, a make-and-break device included in a controlling-circuit for said mechanism, electromagnetic means to start and stop said device, a circuit including said device, a source of electrical energy and a switch closed by the depression of each key, and mechanism to hold said switch closed after the release of said key and until said selecting mechanism resumes its initial position.

21. In a printing-telegraph system, an electromechanical type-writer comprising in combination, manually-operated keys, a local controller-circuit closed by said keys, an automatic make-and-break device included in said circuit, an electromagnetic device included in a circuit controlled by said make-and-break device, a plurality of contacts and local operating-circuits connected therewith, and a selector-arm which is advanced to position for closing any determined local operating-circuit by said electromagnetic device, said device advancing said arm from one to another circuit-controlling position with each make or break of the controller-circuit.

22. In an electromechanical type-writer, the combination of a type-writer base which carries the electromechanical controlling mechanism, a detachable top which carries the printing and operating mechanism, and a plurality of local-circuit connections between the controlling and operating mechanisms comprising contact members on said top and base which detachably engage and close said local circuits when said top is in place.

23. In an electromechanical type-writer, a circuit-selecting mechanism comprising a movable selector-arm, local-circuit contact-plates, a plurality of stops adapted to arrest said arm in its travel over said contact-plates, key-controlled means to operate said stops, a stop lock-plate adapted to engage a stop and hold it, when operated, in the path of said arm, while the other stops are locked against operation, and means which act upon the closing by said arm of a local circuit to free said stops from said lock-plate.

24. In an electromechanical type-writer, the combination with a plurality of key-operated stops, of a contact-arm which engages said stops, operating means for said arm, a spring-pressed lock-plate for said stops, a catch operated by a key, when depressed, which permits said lock-plate to move and lock the stop, operated by the key last depressed in position to engage said contact-arm and prevent other stops being operated until the operating means for said arm restores it to initial position.

25. In a telegraph type-writer, an electrical make-and-break device including a solenoid, a core therefor, and a contact-piece adapted to be oscillated by said core through a lost-motion connection, a circuit closed by the depression of a key and alternately made and broken by said device, and local-circuit-selecting mechanisms which operate responsive to the operation of said device, as and for the purpose described.

26. In a telegraph type-writer, type-bars, a platen-carriage, spacing mechanism therefor, an electromagnet for actuating said mechanism, a circuit for said magnet including a source of electrical energy and a switch, said switch comprising two contact members, one of which is engaged by said type-bars just before they strike said platen and is moved thereby to cause said spacing mechanism to advance the carriage a space, in combination with a key-controlled circuit including an electromagnet adapted to disengage said spacing mechanism from the carriage at any point in its travel, substantially as described.

27. In a telegraph type-writer, type-bars, a platen-carriage, spacing mechanism therefor, a solenoid having a spring-pressed core which operates said mechanism, a circuit for said solenoid including a source of electrical energy and a switch in said circuit comprising contact members, one of which is engaged and moved by said type-bars just before they strike the platen to cause said solenoid to automatically space the carriage, in combination with a spacing-key, and an electromagnet controlled thereby in a local operating-circuit and adapted to move one of said contact members to cause said spacing mechanism to advance the carriage a space, in combination with a key-controlled circuit including an electromagnet adapted to disengage said spacing mechanism from the carriage at any point in its travel, substantially as described.

28. In a system of electrically connecting printing-machines, a selecting mechanism comprising a contact-arm, a set of contacts, local operating-circuits leading from said contacts, a switch to break said circuits, a solenoid having a core adapted to normally close said switch, a switch in the circuit including said solenoid, and key-controlled mechanism to advance said arm over said contacts and act on said latter switch to hold said solenoid energised and open the switch controlled thereby during said advance of said arm, said switch in the solenoid-circuit automatically breaking the circuit to the solenoid when said arm's advance is stopped, to close a local operating-circuit.

29. In a printing-telegraph instrument, a local-circuit-selecting mechanism comprising a set of contacts, a contact-strip adjacent to said contacts, an arm carrying a contact-wheel adapted to engage said strip and contacts, electromagnets, for operating printing devices, connected to said contacts, and controller mechanism for moving said wheel into engagement with any desired contact and closing a circuit from a local battery through said strip and contact to a printing-electromagnet.

30. In a printing-telegraph instrument, a local-circuit-selecting mechanism comprising a contact-strip, separate contacts, a selector-arm carrying a contact member insulated therefrom and adapted to engage said strip and plates to close local operating-circuits, electrically-controlled mechanism for advancing said arm step by step over said contacts, stops to arrest the movement of said arm, and a local circuit, closed through said arm and stop, which includes electrical means to cut said arm-advancing mechanism out of service.

31. In a printing-telegraph instrument, a local-circuit-selecting mechanism comprising a set of contacts, a movable contact-arm, stops for said arm, a spring-pressed lock-plate for said stops, devices, engaged by a key when depressed, which raise a stop and release said lock-plate to spring into engagement with said stop, and means to automatically restore said lock-plate and arm to initial positions after a local operating-circuit has been closed.

32. In a printing-telegraph, local-circuit contacts, a selector-arm movable thereover, keys, stops for said arm which are operated by said keys, a spring-pressed lock-plate for said stops, a key-operated catch which releases said plate when a key is depressed, a step-by-step actuator for said selector-arm, means to disengage said arm from said actuator after engagement with a stop, and means operated by said disengaging movement of the arm to restore said plate to initial position where it is held by said catch.

33. In a printing-telegraph, a local-circuit-selecting mechanism comprising contacts and a movable selector-arm, an actuator to advance said arm with a step-by-step movement, key-controlled stops to arrest the travel of said arm, a local circuit closed by the engagement of said arm with a stop, and electromagnetic means in said circuit which arrests said actuator when said arm engages a stop.

34. In a circuit-selecting mechanism, an escapement, an escapement-wheel, a coiled spring connected thereto, a barrel for said spring, and a solenoid having two spring-retracted cores, one connected to said escapement and one to a device for winding said spring as the escapement-wheel unwinds it, a contact-arm movable with said escapement-wheel, and mechanism to control the circuits to said solenoid.

35. In a printing-telegraph instrument, a platen-carriage, mechanism to feed said carriage forward, a spring to return the carriage, an electromagnet in a key-controlled circuit, and a device moved by said magnet which disengages said carriage from said feed mechanism, said carriage engaging said device at the end of its return travel and moving it to permit said feed mechanism to again act on said carriage.

36. In a printing-telegraph instrument, a platen-carriage, a double rack-bar fixed thereto, feed mechanism comprising spring-pressed pawls engaging said bar and means to move one of said pawls and advance the carriage, a return-spring for the carriage, a cam-bar adapted to engage said pawls and move them out of engagement with said bar and permit said spring to return said carriage, said cam-bar being adapted to be engaged by said carriage at both ends of its travel for the purposes described, and a solenoid included in a local key-controlled circuit and provided with a free core connected to said cam-bar and adapted to disengage said pawls from said rack-bar at intermediate points in the travel of the carriage.

37. In a system of electrically-connected printing-machines, a printing-machine comprising, in combination, electrically-controlled printing mechanism, a platen-carriage, an endless ribbon, feed-rolls for said ribbon to move it during the forward movement of said carriage, guide devices for the ribbon comprising a set of guide-rollers

around which the main portion of the ribbon is wound, means to receive the ribbon from said rollers and deliver it in position for printing on said platen, and stationary guide devices to twist the ribbon and deliver it to the feed-rolls from whence it continues back to the first-mentioned set of rollers.

38. In a system of electrically-connected printing-machines, a machine comprising electrically-controlled printing mechanism, a platen-carriage, mechanism for shifting said carriage to adapt said printing mechanism to print small letters or capitals, said carriage-shifting mechanism comprising an eccentric bar, connections therefrom to said carriage, an electromagnet in a key-controlled circuit, a core for said magnet, an element fixed on said eccentric bar and adapted to be engaged and rocked by said core as it moves in one direction, said rocking movement acting to shift said platen from one printing position to another printing position, and means to return said core to its position for engaging said element after each operation thereof.

39. In a printing-telegraph instrument, a platen-carriage, a rocker-shaft, arms eccentrically connected to said shaft and pivotally connected to said carriage, a toothed disk fixed on said rocker-shaft, a solenoid, a core therefor carrying a dog which engages a tooth on said disk as it moves in one direction and passes to the next tooth in its return movement, means to return said core, means to energize said solenoid comprising a local operating-circuit, and key-controlled means to close said circuit, and printing devices which coöperate with said platen.

40. In a system of electrically-connected printing-machines, a platen, electrically-controlled means to rule said platen, supports at the side of the machine for a roll of paper, an angularly-disposed guide around which said paper is passed and which turns it in position to pass under said platen, and a weight on said paper between the roll and guide, substantially as described.

41. In a printing-telegraph instrument, a set of contacts, a movable contact-arm, local operating-circuits connected to said contacts, a device to break said circuits which is controlled by a circuit including a switch, said switch comprising a contact and a spring-contact arm coöperating therewith and provided with a cam-shoulder, a solenoid which controls the movements of said contact-arm, a core for said solenoid adapted to engage said cam and hold said switch closed during its movements, and key-controlled means to cause said core to be rapidly reciprocated and hold said switch closed until its movements are arrested.

42. In a printing-telegraph, an electrically-controlled step-by-step actuator, a sunflower, a selector-arm coöperating with said sunflower and adapted to be advanced thereover by said actuator, electromagnetic means, in a circuit controlled by said arm, which automatically disengages it from said actuator to permit its restoration to initial position cotemporaneously with the closing by it of a local circuit.

43. In an electrical printing-machine, the combination with a local circuit-selecting mechanism, of a step-by-step actuator therefor, local circuits adapted to be closed by said mechanism, a magnetic device for disengaging said selecting mechanism and actuator to effect the restoration of said mechanism to initial position, a circuit which includes the selecting mechanism and said magnetic device, a circuit-breaker in said latter circuit which holds it open during the operation of said selecting mechanism and simultaneously energizes said magnetic device and closes a local circuit as the travel of said selecting mechanism is arrested.

44. In a printing-telegraph system, type-writing machines comprising each a local circuit-selecting mechanism which includes a sunflower and selector-arm, electrically-controlled devices to advance said arm, a coiled spring which acts both to hold said arm in engagement with said advancing means and to freely restore it to initial position when released from said latter means, and electrically-controlled means to release said arm from said advancing means after it has advanced a determined distance.

45. In a printing-telegraph, a local circuit-selecting mechanism comprising a row of contacts connected to local operating-circuits, a contact-strip adjacent to said contacts, a movable arm carrying an insulated contact-wheel adapted to close circuit between said strip and contacts, a plurality of stops, a stop-plate, a local circuit which includes said plate and arm and is closed when said parts both engage a stop, an electrically-controlled actuator to advance said arm, an interrupter in the circuit controlling said actuator, and electrically-operated means in the circuit closed through said arm and a stop which stops said interrupter substantially simultaneously with said arm.

46. In a type-writing machine, type devices adapted each to print two or more indicia, in combination with a platen, and electrically-controlled rotatable means for adjusting said platen and devices relatively to print from different indicia.

47. In a type-writing machine, type devices adapted each to print two or more indicia, in combination with a platen, eccentric means connected thereto and adapted to adjust said platen for printing from different indicia, electrically-controlled means to turn said eccentric means in one direction only, and means to arrest said eccentric in given positions to hold said platen in proper printing positions with relation to the several sets of printing indicia.

48. In a set of electrically-connected type-writers comprising printing devices provided with two or more separate sets of indicia, a platen adapted to print from one or the other of said sets of indicia in each machine, electrically-controlled mechanisms which adjust said platens and devices to different printing positions in rotation, and a shift-key at the transmitting-machine which controls, by the number of times it is depressed, the synchronous adjustment of said platens and devices to any desired printing position.

49. In a printing-telegraph, a printing-carriage, spring means to return it to initial position, electrically-controlled means to advance and release said carriage, a rod on which said carriage slides, a support for said rod which carries a cylinder concentric with said rod and opening inwardly, a piston on said carriage which enters said cylinder at the end of the carriage's spring-controlled return travel.

50. In a system of electrically-connected printing-machines, a type-writing machine comprising a laterally-movable paper-carriage, supports at one side of the machine, a paper-roll journaled in said supports and disposed so as to feed the paper in the direction of the travel of said carriage, a platen on said carriage, a guide, movable with said carriage, over which said paper passes and by which it is twisted to present it properly to said platen which is disposed transversely of the machine.

51. In a system of electrically-connected type-writers, a secondary machine comprising a transversely-movable platen, a paper-roll journally supported at the side of the machine and disposed so as to feed the paper transversely of the machine, and movable guide means to draw the paper off said roll, twist said paper, and feed it to said platen.

52. In an electrical type-writer, a movable paper-carriage carrying a rotatable platen, a ruling mechanism comprising a rotatable shaft, a gear loosely splined to said shaft, means to engage said gear and move it with said carriage along said shaft, means to rotate said shaft, and means to transmit motion from said gear to said platen, for the purposes described.

53. In an electrical type-writer, a movable paper-carriage carrying a rotatable paper-roll, a shaft on which said carriage slides, a gear-wheel loosely splined to said shaft so as to be freely adjustable lengthwise thereof, a housing on said carriage which engages said gear and moves it along said shaft with the carriage, transmission means to impart rotary motion from said gear to said paper-roll, and electrically-controlled means to rotate said shaft.

54. In an electrical type-writer, a platen, a ribbon, a swinging guide for the ribbon, a flexible contact-piece normally in engagement with said guide, a spacing-circuit closed by the engagement of said contact-piece and guide, means included in said circuit which advance the platen when the circuit is broken, type-bars adapted to engage said guide as they move to print and break said circuit, and a spacing-magnet, in a key-controlled circuit, which is connected to one of said parts normally engaging and is adapted to separate them to break said spacing-circuit.

55. In a system of electrically-connected type-writers, machines each comprising a selecting mechanism which moves responsive to current impulses in a local controller-circuit, an interrupter for said circuit controlled by a circuit common to the several machines, an electromagnetic clutch for each interrupter which stops them synchronously under the control of said selecting mechanisms.

849,485. HOISTING DEVICE. MAX METZGER, Chicago, Ill. Filed Apr. 11, 1906. Serial No. 311,025.

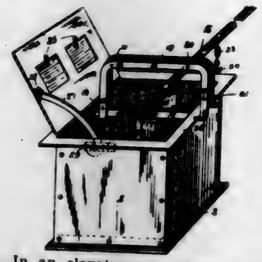

Claim.—1. In an elevator-cage, placed below the surface of the ground or sidewalk, the combination, with a platform therein, an elevating-strap connected movably to said platform and extending upwardly within said cage, a slotted cross-strap 12 within which said elevating-strap is guided, a raising-lever, a horizontal brace within which the said raising-lever swings around an axle fastened thereto, means to connect said raising-lever to the said elevating-strap whereby a flexible connection between the two is formed and means to support the said raising-lever above the said cage, so that the elevator-platform may be raised to the surface by operating said raising-lever, substantially as described.

2. In an elevator-cage placed below the surface of the ground or sidewalk, the combination, with a platform therein, a raising-lever placed above the cage and swingingly supported within a portable brace, an elevating-strap fastened swingingly to the said platform, a flexible connection establishing connection between the said raising-lever and the said elevating-strap at will, a portable brace upon which said raising-lever swings and means by which said portable brace may be supported above the cage, for the purpose and substantially as described.

849,486. CROSS-LINE BUCKLE. FREDRICK W. T. MITCHELL, Iron River, Wis. Filed Mar. 30, 1906. Serial No. 308,924.

Claim.—In a cross-line buckle, the combination of a frame embodying an intermediate cross-bar, a tongue consisting of a length of tubular material flattened at one end and having the flattened portion formed into a loop receiving the intermediate cross-bar of the frame, the opposite end of the tubular material being sharpened to form a hollow punch, the tongue being provided with a slot intermediate of its ends to form a clearance-opening for the same, and a link provided with spaced bearings receiving the intermediate cross-bar of the frame at opposite sides of the tongue and holding said tongue in a predetermined position.

849,487. CLUTCH. ARTHUR J. MORSE, Torrington, Conn., assignor of one-half to Adelbert P. Hine, Torrington, Conn. Filed Dec. 6, 1905. Serial No. 290,621.

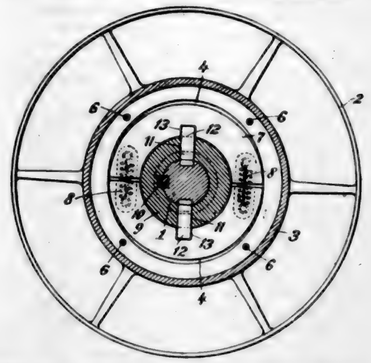

Claim.—1. A clutch comprising a rotatable member provided with a chamber or recess having opposite symmetrical portions eccentrically arranged relatively to its axis, a ring normally rotatable in the recess, and means for expanding the ring to substantially fit and fill said recess.

2. A clutch comprising a rotatable member provided with a chamber or recess having opposite symmetrical portions eccentrically arranged relatively to its axis, a sectional ring normally rotatable in the recess, and means for moving the ring-sections radially of said axis to substantially fit and fill said recess.

3. A clutch comprising a rotatable member recessed to form an annular chamber the opposing walls of which are eccentrically disposed relatively to each other, a two-part ring normally rotatable within the recess, and means for separating the parts of the ring during rotation thereof to substantially fit and fill said recess.

4. A clutch comprising a rotatable member having an elliptical chamber having opposite semicircular portions symmetrically disposed with relation to the axis of the clutch, an expansible member normally rotating free within said chamber and when expanded substantially fitting and filling said chamber, and means for expanding said member during rotation thereof.

5. A clutch comprising a rotatable member having an elliptical chamber portions of which are eccentric to its axis, a sectional ring normally contracted and rotating free within said chamber, said sections conforming in number, size and configuration to the eccentric portions of said chamber, and means for forcing said sections into said eccentric portions to substantially fit and fill said chamber.

6. A clutch comprising a driving member, a driven member, said members combining to form an annular chamber the opposing walls of which are eccentrically disposed relatively to each other, a sectional ring normally rotatable within the chamber and each section corresponding in size and configuration to the eccentrically-disposed walls, and means for expanding said ring to substantially fit and fill said chamber.

7. A clutch comprising a driving member, a driven member, said members combining to form an intervening annular chamber open at one side and having the opposing walls thereof eccentrically disposed relatively to each other, a removable cap closing the open side of the chamber, a sectional clutch-ring normally rotatable within the chamber, and means for expanding said clutch-ring to substantially fit and fill said chamber.

8. A clutch comprising a rotatable member provided with a diametrically-elongated recess, a two-part ring

normally rotatable within the recess, a sleeve secured to the driving-shaft and provided with radially-disposed members coacting to separate the ring-sections, said ring-sections when separated substantially fitting and filling said recess, and means for operating said radially-disposed members during rotation thereof.

9. A clutch comprising a rotatable member provided with a non-circular recess, a sectional ring normally rotatable within the recess and expansible to substantially fit and fill said recess, means for yieldingly uniting the ring-sections, radially-disposed members coacting with the ring-sections, and means for imparting rotary and radial movement to said sections through the radially-disposed members.

10. A clutch comprising a rotatable member recessed to form an oval chamber having semicircular ends, a normally circular two-part ring in said chamber and each part substantially corresponding in size and configuration to the semicircular ends of said chamber, and means for separating the parts of said ring during rotation thereof to substantially fit and fill said chamber.

11. A clutch comprising a rotatable member recessed to form an oval chamber having semicircular ends, a normally circular two-part ring in said chamber, each part substantially corresponding in size and configuration to the semicircular ends of said chamber, and means for increasing the diameter of said ring in the direction of the long diameter of said chamber and in an amount greater than the short diameter of said chamber.

849,488. ROLLER-BEARING. ARTHUR J. MORSE, Torrington, Conn., assignor of one-half to Adelbert P. Hine, Torrington, Conn. Filed Jan. 24, 1906. Serial No. 297,572.

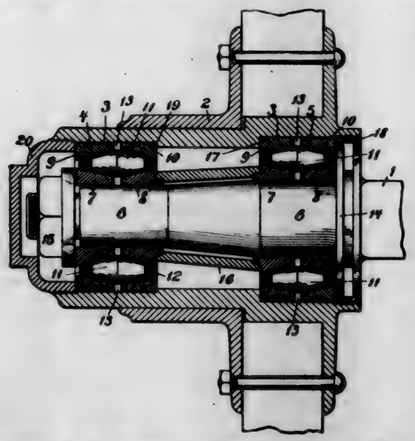

Claim.—1. A roller-bearing comprising a series of double-cone rollers, a rack having sockets tapering in opposite directions in which the rollers are separately contained, and sectional bushings, the members of which combine to form a race for the rollers and are separated to clear the middle portions thereof.

2. A roller-bearing comprising a series of free, double-cone rollers, a rack having symmetrical double-conical sockets of greater diameter than the rack-section and in which the rollers are spaced, and bushings providing bearings for the rollers at opposite ends thereof.

3. A roller-bearing comprising a series of free, double-cone rollers, a rack conforming in cross-section to the shape of the rollers in which the rollers are separately contained in recesses having inner and outer openings narrower than the diameter of said rollers, and a sectional bushing providing bearings for the rollers at the ends thereof only.

4. A roller-bearing comprising a series of double-cone rollers, a sectional rack for the rollers, the members of which combine to form separate double-conical containing-pockets having inner and outer openings of less width than the diameter of the rollers, and a sectional bushing adapted to serve as a race therefor.

5. A roller-bearing comprising a series of double-cone rollers, a rack formed of twin sections having each a series of conical recesses which combine to provide separate double-conical containing-pockets for the rollers, and a sectional bushing adapted to serve as a race therefor.

6. A roller-bearing comprising a series of double-cone rollers, a two-part rack comprising counterpart sections, each part having tapering recesses which combine to provide separate containing-pockets in which the rollers are partly inclosed, and a sectional bushing adapted to serve as a race therefor.

849,489. FABRIC-PRINTING MACHINE. ARCHIE MCNICOL, Jewett City, Conn., assignor to The Jewett City Textile Novelty Company, Jewett City, Conn., a Corporation of Connecticut. Filed Jan. 10, 1906. Serial No. 295,508.

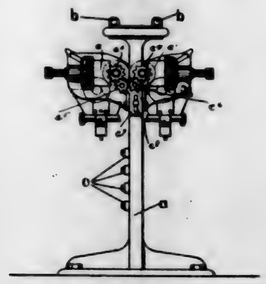

Claim.—1. In combination with a printing-roller consisting of a plurality of separated shells, a color-roll and a color-box having adjustable portions and a support for said box suspended from the journals of the printing-rollers substantially as herein set forth.

2. In combination with a printing-roller consisting of a plurality of separated shells, and a revolubly-mounted color-roll, a color-box having adjustable portions and a support for said box suspended from the journals of the printing-roller, and a doctor-roll revolubly mounted on said box and adapted to coact with the said color-roll.

3. The combination with the printing-rolls composed of a plurality of separated shells, of a color-roll, a color-box, adjustable partitions in said box having ears, a bar beneath said box, rods connecting said ears with said bar, and a thumb-screw carried by said bar and engaging the under side of said box.

4. The combination with the printing-rolls composed of a plurality of separated shells, of a color-roll, a color-box, adjustable partitions in said box having ears, a bar beneath said box, rods connecting said ears with said bar, a thumb-screw carried by said bar and engaging the under side of the box, and hangers suspended from the journals of the printing-roller and on which said box is supported beneath the printing-rollers.

849,490. AUTOMATIC SASH-OPERATOR. LOUIS NEES and WILLIAM VENSKE, Minneapolis, Minn. Filed Mar. 12, 1906. Serial No. 305,445.

Claim.—The combination with a window frame and sash, of bearing-brackets mounted on the upper portion of said frame, and projecting upward therefrom, a non-rotary bearing-sleeve 6 secured to one of said bearing-brackets, a shaft 9 journaled in said bearing-sleeve 6 and projecting from the ends thereof, a pair of sheaves 7 10 secured onto each end of said shaft 9, said sheave 7 being journaled in

one of said bearing-brackets, flexible connections between said pair of sheaves 7 10 and one of said sash, a second pair of sheaves 11 12, the latter of which is journaled on said non-rotary sleeve 6 and the former of which is journaled on the hub of said sheave 7, a tubular casing connecting said pair of sheaves 11 12 for common rotation,

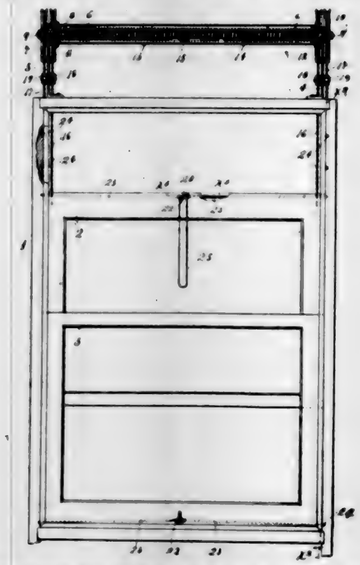

flexible connections between said pair of sheaves 11 12 and the other sash, and a coil-spring anchored to said non-rotary sleeve 6 and attached at one end to one of the inner pair of sheaves, and attached at its other end to one of the outer pair of sheaves, substantially as described.

849,491. SWITCH-POINT LOCK. JAY NOBLE, St. Louis, Mo. Filed July 19, 1906. Serial No. 326,926.

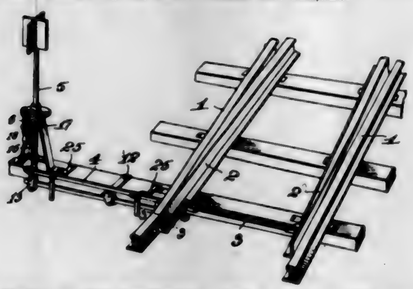

Claim.—1. The combination with a railway-switch and switch-stand, of a bar extending from the switch to the switch-stand and fulcrumed at a point intermediate its ends so as to swing vertically, a flexible connection between one end of the bar and the switch-stand-operating lever, and means on the opposite end of the bar for engaging one of the main-track rails and one of the switch-rails; substantially as specified.

2. The combination with a railway-switch and switch-stand, of a bar extending from the switch-stand to the switch and fulcrumed to swing vertically, means carried by the bar for engaging one of the track-rails and one of the switch-rails, and means whereby the bar is swung upon its fulcrum when the switch-stand is actuated to throw the switch; substantially as specified.

3. A switch-point lock, constructed with a bar extending between the switch and switch-stand, and fulcrumed to swing vertically, means whereby said bar is actuated, means located on one end of said bar for engaging one of the track-rails and one of the switch-rails when said switch-rail is against the track-rail, and a part of which means engages between the track-rail and the switch-rail when the same are separated; substantially as specified.

4. The combination with a railway-switch and switch-stand, of a bar extending between said switch and stand and fulcrumed at a point intermediate its ends, means located on one end of said bar for engaging one of the track-rails and one of the switch-rails to lock said switch-rail in open and closed positions, a connection between the opposite end of the rod and the switch-stand-operating mechanism, and a swivel located in said connection; substantially as specified.

5. The combination with a railway-switch and switch-stand, of a fulcrumed bar extending from the switch to the switch-stand, connections between one end of the bar and the switch-stand-operating mechanism for shifting the bar upon its fulcrum when the switch-stand mechanism is actuated, and means located upon the opposite end of the bar for locking one of the switch-rails in both open and closed positions; substantially as specified.

6. The combination with a railway-switch and switch-stand, of a fulcrumed bar arranged between the switch and switch-stand, connections between one end of the bar and the switch-stand-operating mechanism for shifting the bar upon its fulcrum when the switch-stand mechanism, is actuated, means located upon the opposite end of the bar for locking one of the switch-rails in both open and closed positions, and vertical guides for the bar; substantially as specified.

849,492. STEAM OR WATER HEATER. WILLIAM C. OBERLY, Canton, Ohio. Filed Mar. 23, 1906. Serial No. 307,719.

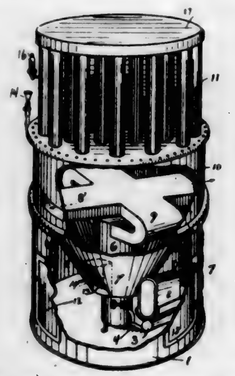

Claim.—The combination of a base-section, a water-chamber casing supported thereon, a burner located within said base-section, a vertical flue located over the burner and within the water-chamber and provided with a closed upper end, a draft-pipe of loop form communicating at its ends with the vertical flue and extending above the same, laterally-extending offtake-pipes communicating with said draft-pipe at opposite sides thereof and at the portion of the loop opposite to the vertical flue, substantially as and for the purpose specified.

849,493. ADVERTISING DEVICE. CHARLES M. O'BRIEN, Chicago, Ill. Filed Apr. 16, 1906. Serial No. 311,861.

Claim.—1. In an advertising device, the combination with a suitably-operated endless conveyer, of a plurality

of signs guided to move in a circuit around the endless conveyer, and connecting devices between the conveyer and signs each of which is constructed and arranged to become detached from the sign to which it is connected, and to pick up the sign in advance thereof at the turning-points of the conveyer.

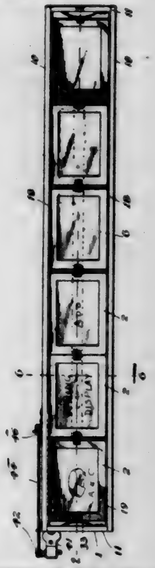

2. In an advertising device, the combination with a plurality of slidably-supported signs, of an endless conveyer constructed and arranged to propel said signs through a circuit, part of which is behind the other and parts of which extend beyond the conveyer, said conveyer having means for engagement with the signs, which means are automatically disengaged from the signs when the latter reach that part of the circuit which extends beyond the conveyer.

3. In an advertising device, the combination with a plurality of signs, of an endless conveyer arranged to propel said signs through a circuit, part of which extends behind the other and parts of which extend beyond the conveyer, sign-engagement devices upon the conveyer each of which is adapted to be withdrawn from the sign with which it is in engagement and to be brought into engagement with the sign in advance thereof to shift the latter sign from one part of the circuit to the other.

4. In an advertising device, the combination with a plurality of slidably-supported signs, of rollers, an endless conveyer carried by said rollers, a guideway on either side of the conveyer each of which guideways merge into a single guideway beyond the conveyer and devices upon the conveyer arranged to propel said signs through the circuit formed by the guideways without reversing the signs, each connecting device being arranged to let go of its sign and pick up the one in advance thereof while passing around the rollers.

5. In an advertising device, the combination with a plurality of signs and a guiding-circuit therefor, one part of which is in back of the other part, of a suitably-operated endless conveyer adopted to propel the signs through the circuit, means of connection between the conveyer and signs, each of which is arranged to become detached from its sign at the point where the sign is shifted from one guideway to the other and to engage with the sign in advance thereof.

6. In an advertising device, the combination with a plurality of signs, a guiding-circuit therefor containing two straight portions one of which is behind the other, of a suitably-operated endless conveyer, sign-engaging devices upon the conveyer, which are adapted to engage with the signs to propel them through the straight portions of the guiding-circuit and each of which is adapted to be detached from the sign which it propels through the straight portions of the guiding-circuit, and to be brought into engagement with the sign in advance thereof at the points where the signs are shifted.

7. In an advertising device, the combination with a suitably-operated endless conveyer, of a guiding-circuit surrounding said conveyer, a plurality of signs slidably mounted in said circuit, pins upon the conveyer detachably connected with the signs, and arranged to become detached from one sign and connected to the preceding sign at the ends of the circuit.

8. In an advertising device, the combination with a suitably-operated endless conveyer, of a guideway surrounding the conveyer, a plurality of signs, detachable connections between the conveyer and signs constructed and arranged to release each sign from the conveyer at the extremities of the guideway and to engage the preceding sign, and a tension device for the conveyer.

9. In an advertising device, the combination with a suitably-operated endless conveyer, of a guiding-circuit extending around said conveyer, the extremities of which extend beyond the conveyer, signs sliding in the guiding-circuit, detachable connections between the conveyer and signs constructed and arranged to release each sign from the conveyer at the extremities of the guideway and to engage the preceding sign, and springs in the extremities of the guideways adapted to yieldingly hold the signs in engagement with the conveyer while the signs are being shifted.

10. In an advertising device, the combination with a suitably-operated endless conveyer having laterally-projecting pins, of front and rear guideways which merge into single guideways beyond the conveyer, signs having means of engagement with the pins, said pins being adapted to draw the signs through the front and rear guideways and each pin being arranged to be withdrawn from its sign and brought into engagement with the sign in advance thereof in shifting the sign from front to back, or vice versa, and springs in the guideways adapted to yieldingly hold the signs in engagement with the conveyer while said signs are being shifted.

11. In an advertising device, the combination with a plurality of signs, of a guiding-circuit therefor constructed and arranged to guide said signs against reversal, one part of said circuit being in back of the other part, a suitably-operated conveyer constructed and arranged to propel said signs through said circuit and constructed and arranged to release each sign and engage the one in advance thereof in shifting the signs from front to back or vice versa.

12. In an advertising device, the combination with a plurality of suitably-guided and supported signs, arranged in a closed circuit, of a suitably-operated endless conveyer arranged to move in a circuit within the circuit of the signs and between the upper and lower edges thereof, and detachable connections between the signs and conveyer whereby the conveyer may impart a reciprocatory movement to the signs in the guiding-circuit without reversal of the signs.

849,494. SOAP-HOLDER. CHARLES OWENS, Chattanooga, Tenn. Filed May 9, 1906. Serial No. 315,884.

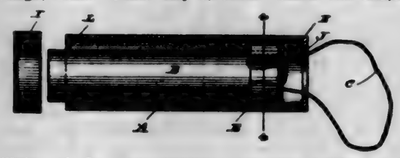

Claim.—1. In a soap-holder, a container having an orifice through which the soap cake may project, and another orifice through which means may be applied to push said cake into a desired position, said last orifice being provided with a projection to prevent the passage of said cake therethrough, a soap-carrier adapted to securely retain said cake, and a spring intermediate the container and the carrier for holding in a desired position the carrier slidably in either direction.

2. In a soap-holder, a container and a spirally-formed soap-cake carrier having an inward spring-pressure on said cake for tightly clasping the same and an outward spring-pressure on the container for holding in a desired position the carrier and said cake slidably along the container in either direction.

3. In a soap-holder, a container having an orifice through which the soap cake may project, a soap-carrier adapted to securely retain the soap cake free from the walls of the container, so that an air-passage is maintained between the soap and the container-walls, and a spring intermediate the container and the carrier for holding in a desired position the carrier slidably in either direction.

4. In a soap-holder, a container having an orifice through which the soap cake may project, a soap-carrier adapted to securely retain the soap cake free from the walls of the container, so that an air-passage is maintained between the soap and the container-walls, a spring intermediate the container and the carrier for holding in a desired position the carrier slidably in either direction, and a cord connected with the soap cake for drawing the same into the container.

849,495. LUBRICATOR FOR EXPLOSIVE-ENGINES. JAMES POWELL, Cincinnati, Ohio, assignor to The Wm. Powell Co., Cincinnati, Ohio, a Corporation of Ohio. Filed Dec. 21, 1905. Serial No. 292,742.

Claim.—1. An attaching-nipple for an oiling device, containing two ports and being recessed from one end, which recess is in open communication with the ports mentioned, a screw-plug fitted to close this recess and containing a valve-chamber and ports whereby this chamber communicates with one of the ports mentioned, which latter port is also open to the oil-supply, while the other port is open to the outside for discharge, and a valve fitted into this chamber in a manner to normally close communication between this chamber and the supply-port and to also positively prevent at all time passage through the valve-chamber from the discharge-port toward the supply-port.

2. In combination with an oil-cup, a housing adapted for attachment thereto and containing a sight-feed chamber and a valve-chamber, both chambers alined within the axial center of the housing, one below the other but separated by the bottom of the sight-feed chamber, there being also two ports which communicate at their inner ends with the valve-chamber mentioned, while with their outer ends one communicates with the sight-feed chamber and the other is open to the outside for discharge and a valve in the valve-chamber controlling communication in one direction between the inner ends of the ports mentioned.

3. In combination with an oil-cup, an attaching-nipple which contains a valve-chamber provided with a valve-seat, all centrally located within the axial center of the nipple, and two ports parallel to each other and to the axis of the nipple, one on each side of the valve-chamber, they entering from opposite sides of the nipple and terminating with their inner ends each short of the other side where they communicate with the valve-chamber, one below and the other above the seat therein, and a valve yieldingly fitted to this seat.

849,496. LOCOMOTIVE-DIAPHRAGM. GEORGE L. PRENTISS, Montclair, N. J., assignor to Parson Manufacturing Company, a Corporation of New York. Filed Apr. 28, 1906. Serial No. 314,216.

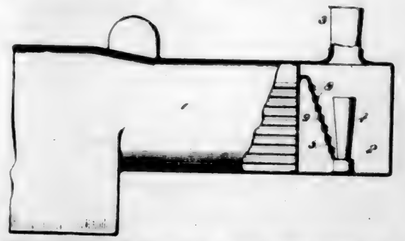

Claim.—1. In a locomotive, a diaphragm interposed between the boiler and the exhaust-flue, said diaphragm being provided with openings which are located through substantially the entire area of the diaphragm and means which are independent of each other for permanently opening or closing one or more of said openings, whereby the draft can be caused to pass through the diaphragm at any portion of its area.

2. In a locomotive, a diaphragm interposed between the boiler and the exhaust-flue, said diaphragm being provided with openings which are located through substantially the entire area of the diaphragm, a damper for permanently opening or closing each of the openings, said dampers being independent of each other whereby the draft can be caused to pass through the diaphragm at any portion of its area by the manipulation of the dampers.

3. In a locomotive, a diaphragm interposed between the boiler and the exhaust-flue, said diaphragm being provided with openings which are located through substantially the entire area of the diaphragm and a series of independent dampers one for each opening pivoted to the diaphragm, each damper being adapted to permanently open or close one of the openings whereby the draft can be caused to pass through the diaphragm at any portion of its area.

4. A locomotive-diaphragm provided with openings located through substantially the entire area of the diaphragm and a series of means one for each opening, said means being independent of each other and each of said means adapted to be manually adjustable to permanently open or close an opening.

849,497. LOCOMOTIVE VALVE-GEAR. HARRY RAINEY, Newark, Ohio. Filed Aug. 20, 1906. Serial No. 331,222.

Claim.—1. The combination with a locomotive of means for detachably connecting the valve-stem of one engine of said locomotive to the valve-stem of the other engine of said locomotive, the valve-stems of said engines being independently actuated.

2. The combination with a locomotive of a support carried by the frame of said locomotive, a rocker-arm pivoted upon said support, and means for detachably connecting the end of said rocker-arm to the valve mechanism of the two engines of the locomotive, each of said valve mechanisms being independently actuated.

3. The combination with a locomotive of a rocker-arm pivoted at its center to a support, the outer ends of said rocker-arm overhanging the valve-stems of the locomotive, and means for detachably connecting the ends of said rocker-arm to said valve-stems, said valve-stems being independently actuated.

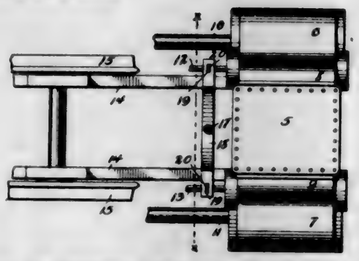

4. In an emergency attachment for locomotives, the combination with a rocker-arm pivoted between the valve-stems of a locomotive, of detachable clamps adapted to be secured upon said valve-stems and to engage the ends of the rocker-arms, the said valve-stems being independently actuated.

5. In an emergency attachment for locomotives, the combination with a rocker-arm, of a support carried by the frame of the locomotive to which said rocker-arm is pivoted, the free ends of the rocker-arm overhanging the valve-stems of the locomotive, and detachable clamps adapted to be secured to said valve-stems and to engage with the ends of the rocker-arm whereby movement may be imparted to one of said valve-stems from the other of said valve-stems when the valve-actuating mechanism of one of the engines is disabled, said valve-stems being independently actuated.

849,498. SIGHT FOR FIREARMS. ROBERT E. REARDON, Ottawa, Ontario, Canada. Filed May 4, 1906. Serial No. 315,212.

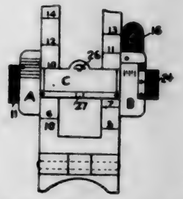

Claim.—1. In a sight for firearms, means for definitely varying the range of fire, comprising a screw having a head integral therewith, said head presenting a number of distinct faces disposed at an angle to each other and capable of being counted by the sense of feeling on the fingers.

2. In a sight for firearms, means for compensating for the wind deflection of the projectile, comprising an adjusting-screw having a head integral therewith, said head presenting a number of distinct faces disposed at an angle to each other and capable of being counted by the sense of feeling on the fingers.

3. In a sight for firearms, a sight-leaf, a sighting-bar freely mounted thereon, means for fixing said bar on said leaf, an eyepiece movably mounted on said sighting-bar, vertical eyepiece-adjusting means carried by said sighting-bar positioned to clear said sight-leaf and adjacent thereto.

4. In a sight for firearms, a sighting-bar-adjusting screw, having a head integral therewith, presenting a plurality of distinct surfaces disposed at an angle to each other and capable of being counted by the fingers when said head is rotated.

5. In a sight for firearms, a sight-leaf, a sighting-bar slidably mounted thereon, a screw having a head with a plurality of surfaces capable of being counted by the fingers when rotated mounted on said sighting-bar, a thread on said screw corresponding to a multiple of said surfaces, and an eyepiece mounted on said sighting-bar and adjustable by said screw.

6. In a sight for firearms, a sight-leaf, a sighting-bar slidably mounted thereon, means for fixing said sighting-bar on the leaf, a screw having a head made with a plurality of surfaces capable of being counted by the fingers when rotated mounted on said sighting-bar, a thread on said screw corresponding to a multiple of said surfaces, a scale on said sighting-bar, and an eyepiece-carrier mounted on said sighting-bar, said eyepiece-carrier being adjusted by said screw, and an eyepiece mounted on said eyepiece-carrier.

7. In a sight for firearms, a sight-leaf, a sighting-bar slidably mounted thereon, means for fixing said sighting-bar on said leaf, a trajectory adjusting-screw having a head made with a plurality of surfaces capable of being counted by the fingers when rotated mounted on said sighting-bar, a thread thereon corresponding to a scale, a multiple of said surfaces on the nut-head carried by the sighting-bar, an eyepiece-carrier movably mounted on said sighting-bar, a wind-gage screw mounted on said eyepiece-carrier, and an eyepiece mounted on said eyepiece-carrier and adjustable horizontally by said wind-gage screw.

8. In a sight for firearms, a sight-leaf, a sighting-bar slidably mounted thereon, means for fixing said sighting-bar on said leaf, a trajectory adjusting-screw on said sighting-bar having a head with a plurality of surfaces capable of being counted by the fingers when rotated, a thread corresponding to a multiple of said surfaces cut on said screw, a scale on said sighting-bar, an eyepiece-carrier movably mounted on said sighting-bar, a wind-gage screw on said eyepiece-carrier having a head with a plurality of surfaces capable of being counted by the fingers when rotated, a thread corresponding to a multiple of said surfaces cut on said wind-gage screw, a scale on said eyepiece-carrier and an eyepiece mounted to slide horizontally on said eyepiece-carrier and adjustable by said wind-gage screw.

9. In a sight for firearms, a sight-leaf, a sighting-bar freely mounted thereon, means for fixing said bar on said leaf, an eyepiece movably mounted on said bar, means for adjusting said eyepiece laterally, a vertical eyepiece-adjusting screw carried by said sighting-bar positioned to clear said sight-leaf and adjacent thereto.

10. In a rifle-sight, a sighting-bar mounted to engage the sight-leaf, a slot 34 cut on said sighting-bar, a slot 15 also cut on said sighting-bar, a screw 16 rotatively mounted in said slot, a sight-piece B having tongues 21 and 20 made to respectively engage slots 34 and 15 of said sighting bar, a perforation longitudinally of tongue 20 and a thread in said perforation made to engage the said screw 16 as and for the purpose set forth.

11. In a rifle-sight, a sighting-bar mounted to engage the sight-leaf, a slot 34 cut on said sighting-bar, a slot 15 also cut on said sighting-bar, a screw 16 rotatively mounted in said slot, a sight-piece B having tongues 21 and 20 made to respectively engage slots 34 and 15 of said sighting-bar, a perforation longitudinally of tongue 20 and a thread in said perforation made to engage the said screw 16, a groove 22 cut transversely of said sight-piece, a screw 34 rotatively mounted in said groove and an eyepiece C having a nut 35 engaging screw 24 of the sight as and for the purpose set forth.

12. In a sight for firearms, a sight-leaf, a scale on said leaf, a depression on the edge of said leaf opposite each scale graduation, a sighting-bar slidably mounted thereon, means carried by said sighting-bar to indicate by the sense of feeling the range-scale on said leaf, and means for fixing said sighting-bar on said leaf.

13. In a sight for firearms, a sight-leaf, a scale on said leaf, a depression on the edge of said leaf opposite each scale graduation, a sighting-bar slidably mounted on said sight-leaf, means carried by said sighting-bar to indicate by the sense of feeling the range-scale on said leaf and means for fixing said sighting-bar on said leaf, a screw having a head with a plurality of surfaces capable of being counted by the fingers when rotated mounted on said sighting-bar, a thread corresponding to a multiple of said surfaces on said screw, a scale on said sighting-bar, an eyepiece-carrier mounted on said sighting-bar, said eyepiece-carrier being adjusted by said screw, and an eyepiece mounted on said eyepiece-carrier.

14. In a rifle-sight, a wind-gage, means for setting the same, and supplementary means to accurately center the eye-aperture by the sense of feeling.

15. In a rifle-sight, a wind-gage, a screw to set the same, a disengaging nut mounted on said screw, means for disengaging said nut, and means integral with said nut to indicate the central position of the eye-aperture.

16. In a sight for firearms, a wind-gage, a screw to set the same, a stem having an oblong aperture inclosing said screw, a thread on the bottom of said oblong aperture, a press-button on said stem, a spring to maintain said thread in engagement with the screw, whereby when the spring is depressed the nut disengages the screw.

17. In a wind-gage for the sights of firearms, an eyepiece-carrier, an adjusting-screw mounted thereon, an eyepiece slidably mounted on said eyepiece-carrier, a stem having an oblong aperture inclosing said screw, a thread on the bottom of said oblong aperture, a press-button on said stem, a lug on the bottom of said stem, a center-indicating perforation in said eye-piece-carrier underneath said screw wherein said lug will drop, when the eye-aperture reaches the center position.

849,499. MOVING-PICTURE MACHINE. ENOCH J. RECTOR, New York, N. Y., assignor to New York Vitak Company, a Corporation of New York. Filed July 20, 1906. Serial No. 326,974.

Claim.—1. A film-mover consisting of a rotary carrier, a spring-finger pivotally connected to said carrier, a stop on said carrier for said finger, and means for momentarily arresting said finger after it has moved the film, whereby the finger is disengaged from said film.

2. A film-mover consisting of a rotary carrier, a spring-finger pivotally connected with said carrier, a stop on said carrier for said finger, and a fixed arrester for momentarily arresting said finger after it has moved the film.

3. The combination of a rotary carrier, a wire or rod journaled on said carrier and having a U-shaped bend therein and also a projecting end or arm, a stop on said carrier, a spring for holding said bent wire or rod normally against said stop, and means coacting with said end or arm for momentarily arresting said bent part after it has moved the film, whereby said bend is withdrawn from the film.

4. The combination of a rotary carrier, a wire or rod journaled on said carrier and provided with a bend therein and also a projecting arm, a stop on said carrier, a spring for holding said bent wire normally against said stop, and a fixed arrester for momentarily arresting said bent wire to withdraw it from the film.

5. The combination with a film-moving finger having an orbital motion, of means for causing the perforated film to incline toward the path of said finger, and means for causing said finger to move on its own axis to disengage itself from said film.

6. The combination with a rotary carrier, and a film-moving finger mounted thereon to be movable relatively thereto, of means for causing the perforated film to incline toward the path of said finger, and means for causing said finger to move relatively to said carrier and in a direction substantially at right angles to the path of the film at the point of engagement to disengage the finger from said film while the film is at rest.

7. A film-mover consisting of a rotary carrier a finger mounted on and carried wholly by said carrier and adapted to have motion relatively thereto and adapted to engage with the perforated film to move it, and means for causing the said finger to move inwardly of said carrier to disengage it from said film.

8. A film-mover consisting of a rotary carrier, a finger mounted on said carrier to have motion relatively thereto and adapted to engage with the perforated film to move it, and an arrester for momentarily stopping the orbital motion of said finger and causing it to move inwardly of said carrier to disengage it from said film.

9. The combination of a pair of parallel arms, a shaft to which they are fast, a wire or rod journaled on said arms and, between said arms, bent outward, and, outside said arms, having an end projecting outward, a stop between said arms, and a spring for holding said bent wire against said stop, with means coacting with said projecting end to arrest it momentarily.

10. The combination of a pair of disks or parallel arms, a rotary shaft to which they are fast, a wire or rod journaled in said arms and, between said arms, bent outward, and, outside of said arms, having an end projecting outward, a stop between said arms, and a spring for holding said bent wire against said stop, with a fixed arrester coacting with said bent end to arrest the same momentarily.

11. The combination of a pair of rotary disks, a wire or rod journaled in said disks and, between said disks, bent outward, and, outside said disks, bent into U shape transverse to the axis of rotation of said wire and having an end projecting outward, a stop on said disks for said bent wire, and a spring for holding said wire against said stop normally, with means for momentarily arresting said projecting end to cause the bent film-moving part to withdraw from the film.

12. The combination of a pair of rotary disks, wire or rod journaled in said disks and, between said disks, bent outward, and, outside said disks, bent into U shape transverse to the axis of motion of said wire and having that end projecting outward, a stop on said disks for said bent wire, and a spring for normally holding said wire against said stop, with a fixed arrester coacting with said projecting end to arrest momentarily the bent wire.

13. A vertical plate provided with two openings, one above the other, and with a film-deflector between said openings, combined with a film-moving finger having an orbital motion and arranged to have rotary motion, and means whereby said finger is rotated to cause it to release the film.

14. A vertical plate provided with two openings, one above the other, and with a film-deflector between said openings, two spring-arms on said plate, a film-guide plate having spring-arms engaging with the spring-arms first named, lugs on the vertical plate for retaining said guide-plate in place above said deflector, combined with means for moving the film.

15. A vertical plate provided with two openings one above the other and having its ends bent away from one side and provided with a film-deflector between said openings.

849,500. WATER SOFTENER AND PURIFIER. HERMANN ROMÜNDER, Milwaukee, Wis. Filed Mar. 20, 1906. Serial No. 306,961.

Claim.—1. In a water-softening device, a tank having a vertical shaft and means for rotating the same, agitating

means carried by said shaft at the lower part thereof, a conical deflector mounted on said shaft above said agitating means, a tube surrounding the upper part of said shaft and terminating just above said deflector, and means for introducing a water-softening solution into said tube.

2. In a water-softening device, a lime-tank having a vertical shaft and means for rotating the same, agitating means carried by said shaft at the lower part thereof, a conical deflector mounted on said shaft above said agitating means, a tube surrounding the upper part of said shaft and terminating just above said deflector, and a quicklime-chamber connected with said tube and supplied with water therefrom.

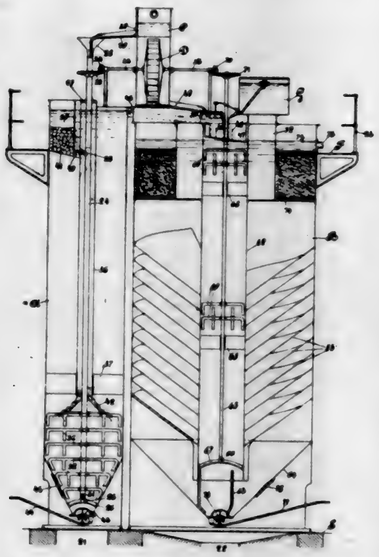

3. In a water-softener, means for mixing chemicals with the raw water in a fixed proportion, the same comprising a mixing-receptacle, a reservoir for a chemical solution having an outlet adapted to deliver said solution into said mixing-receptacle, a valve closing said outlet, and a device connected with said valve and actuated by water flowing into said mixing-receptacle to open said valve, said device permitting said valve to close when no water is flowing into said receptacle.

4. In a water-softener, means for mixing chemicals with the raw water in a fixed proportion comprising a mixing-receptacle, a reservoir for a chemical solution having an outlet adapted to deliver said solution into said mixing-receptacle, a valve closing said outlet, a conduit delivering water to be softened into said mixing-receptacle, means between said conduit and said receptacle for storing the water before flowing into said receptacle and raising the water-level while flowing, said means permitting the sinking of the water-level immediately on water ceasing to flow through said conduit, and a device operated by said rise of level to open said valve and by the fall of level to close said valve.

5. In a water-softener, a mixing device comprising a tank, a float mounted therein, a reservoir for a chemical solution, a valve forming the outlet of said reservoir and adapted to admit said solution to the water to be softened, a connection between said valve and float whereby said valve is opened when said float is raised, and means for delivering a supply of water to said tank; said tank being arranged to overflow on the water reaching a fixed upper level and to empty itself as soon as the flow thereinto ceases whereby said valve is caused to close.

849,501. METAL-SHAPING MACHINE. JAMES M. RUDE, Covington, Ky., assignor to National Cellular Steel Company, New York, N. Y., a Corporation. Filed Apr. 21, 1906. Serial No. 313,017.

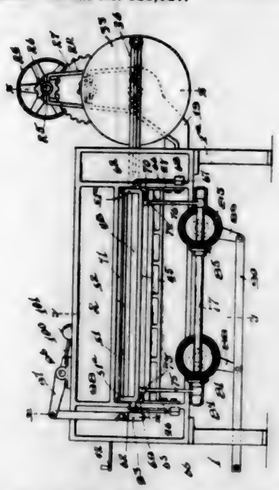

Claim.—1. In a machine for shaping metal from a corrugated blank, compressing members between which the blank is compressed, means for actuating the same, a series of mandrels supported opposite to the end openings of the corrugations, means for inserting and removing the mandrels endwise into and out of the corrugations, and means permitting the mandrels to be moved together laterally under the influence of the compressing mechanism, substantially as described.

2. In a machine for shaping metal from a corrugated blank, compression members between which the blank is compressed, means for actuating the same, a series of mandrels supported opposite to the end openings of the corrugations, means for inserting and removing the mandrels endwise into and out of the corrugations, means permitting the mandrels to be moved together laterally under the influence of the compressing mechanism, and means for automatically returning the mandrels to their initial relative spaced positions when released from the said influence, substantially as described.

3. In a machine for shaping metal from the corrugated blank, compressing members between which the blank is compressed, means for actuating the same, a series of sectional mandrels supported on opposite sides of the compressing mechanism adjacent to the opposite open ends of the corrugations, means for inserting the sectional mandrels, into the corrugations, means permitting the mandrels to be moved together laterally under the influence of the compressing mechanism, and means for withdrawing the sectional mandrels from the corrugations, substantially as described.

4. In a machine for shaping metal from the corrugated blank, compressing members between which the blank is compressed, means for actuating the same, a series of sectional mandrels supported on opposite sides of the compressing mechanism adjacent to the opposite ends of the corrugations, means for inserting the sectional mandrels, into the corrugations, means permitting the mandrels to be moved together laterally under the influence of the compressing mechanism, means for withdrawing the sectional mandrels from the corrugations, and means for automatically returning the mandrel-sections to their initial relative spaced positions when withdrawn, substantially as described.

5. In a machine for shaping metal from a corrugated blank, compressing members between which the blank is compressed, means for actuating the same, a series of triangular-shaped mandrels supported at their outer ends with their apexes uppermost, the inner ends extending adjacent to the open ends of the corrugations when the blank is placed in initial position between the compressing members, an alternating intermediate set of mandrels supported in like manner, but with their bases uppermost, means permitting the mandrel-supports to be moved together when the mandrels are under the influence of the compressing members, whereby the uppermost apex of one mandrel is brought against the uppermost base of its adjacent mandrel conforming the corrugations to the triangular shapes of the mandrels, means for inserting the mandrels endwise into the corrugations, and means for removing them from the completed cells after the compressing operation, substantially as described.

6. In a machine for shaping metal from a corrugated blank, compressing members between which the blank is compressed, means for actuating the same, a carriage mounted on one side of the compressing members adjacent to the open ends of the corrugations of the blank when it is in position between the compression members, a bracket having a guideway for the carriage extending in the direction of the corrugations, means for reciprocating the carriage on the said way, a series of supports having longitudinal guides on the carriage, the said supports having connecting-links permitting them to be spaced at intervals and to be crowded together, and a series of mandrels, the outer ends of which are attached to said supports, the inner ends extending adjacent to the open ends of the corrugations, substantially as described.

7. In a machine for shaping metal from a corrugated blank, compressing members between which the blank is compressed, means for actuating the same, a bracket at one side of the compressing mechanism having a guideway extending in the direction of the corrugations, a carriage slidably mounted on said way, means for reciprocating the said carriage, said carriage being formed with a lower and upper deck each having longitudinal guides, a series of mandrels having supports at their outer ends mounted upon the guides of the said carriage-decks, and links connecting the said supports permitting them to move laterally a predetermined distance, substantially as described.

8. In a machine for shaping metal from a corrugated blank, compressing members between which the blank is compressed, means for actuating the same, a bracket at one side of the compressing mechanism having a guideway extended in the direction of the corrugations, a carriage slidably mounted on said way, means for reciprocating the said carriage, said carriage being formed with a lower and upper deck each having longitudinal guides, a series of mandrels having supports at their outer ends mounted upon the guides of the carriage-decks, and links connecting the said supports permitting them to move laterally a predetermined distance, the mandrels being substantially triangular-shaped in cross-section and alternately placed with their apexes and bases uppermost, the supports for the two series being mounted respectively on the upper and lower deck of the carriage, substantially as described.

9. In a machine for shaping metal from a corrugated blank, compressing members between which the blank is compressed, means for actuating the same, a bracket at one side of the compressing mechanism having a guideway extending in the direction of the corrugations, a carriage slidably mounted on said way, means for reciprocating the said carriage, said carriage being formed with a lower and upper deck each having longitudinal guides, a series of mandrels having supports at their outer ends mounted upon the guides of the said carriage-decks, and links connecting the said supports permitting them to move laterally a predetermined distance, the mandrels being substantially triangular-shaped in cross-section and alternately placed with their apexes and bases uppermost, the supports for the two series being mounted respectively on the upper and lower deck of the carriage, means for automatically returning the mandrels to their relative spaced positions when they are released from the influence of the compressing mechanism, substantially as described.

10. In a machine of the class described for shaping a corrugated blank, a frame, top and bottom compressing members between which the blank is placed, mounted upon guides on the frame slightly converging in the direction of the compressing movement, a ram for the rear of the blank, and an opposing ram for the front of the blank, and means for actuating said compressing mechanism, substantially as described.

11. In a machine for shaping metal employing a corrugated blank and mandrels placed in the corrugations, a top and bottom compressing member between which the blank and mandrels are placed, rams for the front and rear of the blank between the top and bottom members, and means for actuating the compressing members to crowd said mandrels together, and shape the corrugations to the mandrels, substantially as described.

12. In a machine for shaping metal employing a corrugated blank, with mandrels placed in the corrugations, a top and bottom compressing member mounted on guides on the frame, a ram in the rear of the blank between the top and bottom members, means for moving the said members forward, and an opposing ram for the front of the blank, substantially as described.

13. In a machine for shaping metal employing a corrugated blank with mandrels placed in the corrugations, a top and bottom and end compressing member mounted on guides on the frame, means for reciprocating said members on the guides, a ram for the front of the blank normally supported out of line with its coöperating compressing members, and means actuated by the forward movement of the compressing members to insert the front ram in position between the top and bottom members to form a resisting abutment for the compression of the blank, substantially as described.

14. In a machine for shaping metal from a corrugated blank, compressing members between which the blank is placed, a series of mandrels and means for inserting them endwise into the corrugations, means for bringing said compressing members together, means permitting the mandrels to move laterally, means for removing the mandrels endwise, means for returning the mandrels to initial position, and means for returning the compressing mechanism to initial position, substantially as described.

15. In a machine for shaping metal employing a corrugated blank, mandrels in the corrugations, compressing members surrounding the blank, the top and bottom compressing members being mounted on converging guides, and means for actuating the compressing mechanism, substantially as described.

16. In a machine of the class described, compressing mechanism, a carriage movable to and from the said mechanism, supports laterally slidable on the carriage, and mandrels attached at their outer ends to said supports, substantially as described.

849,502. CELLULAR STEEL STRUCTURE. JAMES M. RUDE, Covington, Ky., assignor to National Cellular Steel Company, New York, N. Y., a Corporation. Filed Apr. 21, 1906. Serial No. 313,019.

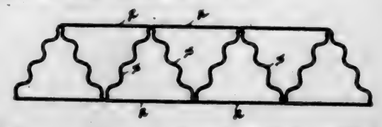

Claim.—1. A cellular building structure formed of a continuous sheet of metal bent to form two parallel walls with plain surfaces, the space between which is divided by corrugated sections into individual cells substantially equilateral triangular-shaped in cross-section, substantially as described.

2. A cellular building structure formed of a continuous sheet of metal bent to form two parallel walls with plain

surfaces, the space between them being divided by corrugated sections of the sheet to form individual cells, the corrugations extending lengthwise of the cells, substantially as described.

3. A fireproof structure formed of cells equilateral triangular-shaped in cross-section, the bases of said triangles being plain surfaces, the bases of the first, third and fifth cells abutting on one side, the bases of the second, fourth and sixth cells abutting on the other side, the equilateral sides of the triangles being corrugated and extending between the walls formed by the bases, substantially as described.

849,503. TROLLEY-POLE. QUINTO SAUDELLI, Fall River, Mass. Filed Jan. 23, 1906. Serial No. 297,450.

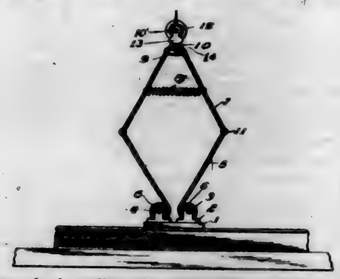

Claim.—1. A trolley-pole comprising a base, a pair of oppositely-coiled spiral springs having their inner ends fixed upon said base, a pair of lower toggle-arms carried by the outer ends of said springs, a pair of upper toggle-arms pivotally connected to the lower toggle-arms, a frame pivotally connecting the upper ends of the toggle-arms, a trolley-wheel revolubly mounted in said frame, and a coil-spring having its opposite ends connected to the upper toggle-arms, substantially as shown and for the purposes set forth.

2. A trolley-pole comprising a base, bifurcated uprights upon said base, transverse pins fixed in said uprights, oppositely-coiled spiral springs arranged in said bifurcated uprights and having their inner ends fixed to said pins, a pair of lower toggle-arms carried by the outer ends of said springs, a pair of upper toggle-arms pivotally connected to the lower toggle-arms, a frame pivotally connecting the upper ends of the upper toggle-arms, and a trolley-wheel revolubly mounted in said frame.

3. A trolley-pole comprising a base, bifurcated uprights thereon, transverse pins fixed in said uprights, a pair of lower toggle-arms formed of resilient metal and having their lower ends flattened and bent to provide oppositely-coiled spiral springs, said springs being arranged in said uprights and having their inner ends fixed to said pins, a pair of upper toggle-arms pivotally connected to the lower toggle-arms, a frame pivotally connecting the upper ends of the upper toggle-arms, a second frame pivoted in the first-mentioned frame, a trolley-wheel revolubly mounted in said second frame, guards arranged upon said second frame upon opposite sides of said trolley-wheel, and a coil-spring having its opposite ends connected to the upper toggle-arms, substantially as shown and described.

849,504. SIGHT FOR GUNS. FRIEDRICH A. SCHANZ, Dresden, Germany. Filed Dec. 22, 1905. Serial No. 293,016.

Claim.—1. In a gun or other sighting device the combination with the front mirror having a sight-opening in its upper edge through which the target may be seen, a rear shield having a sighting-mark thereon, and a telescope, said mirror, mark, and opening being so positioned, that when the reflection of the mark, the opening and the target, as seen through the telescope are brought into a single line of vision, the gun or firearm will be properly sighted; substantially as described.

2. In a gun or other sighting device the combination of a front notched mirror, a rear sighting-telescope, a rear shield bearing a sighting-mark and means for adjusting the relative positions of the telescope and shield substantially as described.

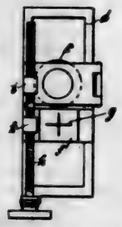

3. In a gun or other sighting device the combination of a front notched mirror, a rear sighting-telescope, a rear shield bearing a sighting-mark and means for simultaneously moving the telescope and shield toward and away from each other, substantially as described.

4. In a gun or other sighting device the combination of a front notched mirror, a rear sighting-telescope, a rear shield bearing a sighting-mark, a frame for the telescope and shield, lugs on the frame, a right and left hand screw-threaded spindle mounted on the lugs, and projections on the telescope and shield adapted to be engaged by the right and left hand threaded portions of the spindle respectively, substantially as described.

849,505. AUTOMATIC IRRIGATOR. RICHARD C. SCHROEDTER, Chicago, Ill. Filed Dec. 31, 1906. Serial No. 350,216.

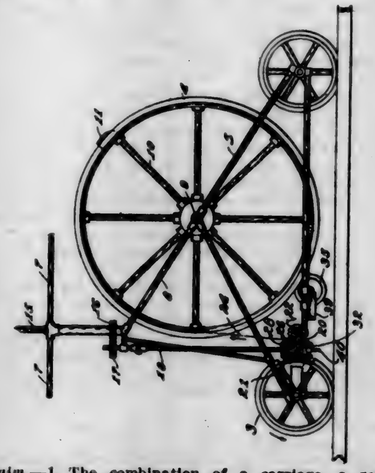

Claim.—1. The combination of a carriage, a rotary sprinkler mounted thereon and adapted to rotate through the force of water passing through it, a hose connecting said sprinkler with an outside source of water, a reel on said carriage arranged to hold said hose without disturbing its connection with said sprinkler, mechanism operated by said sprinkler for rotating said reel so as to wind up the hose and pull the carriage along, and mechanism operated by said sprinkler for driving said carriage in the opposite direction.

2. The combination of a carriage, a rotary sprinkler mounted thereon and adapted to rotate through the force of water passing through it, a hose connecting said sprinkler with an outside source of water, a reel on said carriage arranged to hold said hose without disturbing its connection with said sprinkler, mechanism operated by said sprinkler for rotating said reel so as to wind up the hose and pull the carriage along, mechanism operated by said sprinkler for driving said carriage in the opposite direction, and automatically-operated means for alternately connecting said mechanisms with said sprinkler to cause the carriage to travel back and forth along its course.

3. An irrigator comprising a carriage, a rotary sprinkler mounted thereon and adapted to rotate through the force of water passing through it, a hose connecting said sprinkler with an outside source of water, a reel on said carriage arranged to wind up or unwind said hose without disturbing its connections with the sprinkler and source of water, a worm arranged to be driven by said sprinkler, a pair of worm-wheels located at respectively opposite sides of said worm and spaced apart so as to permit said worm to mesh with but one of said wheels at a time, one of said wheels having driving connection with the wheels of the carriage for propelling the same and the other worm-wheel having driving connection with said reel for causing the same to rotate so as to wind up said hose, and a controlling device adapted to shift said worm from one of said worm-wheels to the other, said controlling device being adapted to automatically shift said worm to its opposite position when said carriage has moved a certain predetermined distance.

4. An irrigator comprising a carriage, a rotary sprinkler mounted thereon and adapted to rotate through the force of water passing through it, a hose connecting said sprinkler with an outside source of water, a reel on said carriage arranged to wind up or unwind said hose without disturbing its connections with the sprinkler and source of water, a worm arranged to be driven by said sprinkler, a pair of worm-wheels located at respectively opposite sides of said worm and spaced apart so as to permit said worm to mesh with but one of said wheels at a time, one of said wheels having driving connection with the wheels of the carriage for propelling the same and the other worm-wheel having driving connection with said reel for causing the same to rotate so as to wind up said hose, and a controlling device adapted to shift said worm from one of said worm-wheels to the other, said controlling device being adapted to automatically shift said worm to its opposite position when said carriage has moved a certain predetermined distance, said reversing means comprising a counterpoised mercury-tube adapted to normally urge said worm toward either limit of its movement, when inclined toward the corresponding side of a horizontal position, substantially as described.

5. In an irrigating apparatus, the combination of a carriage, a rotatable sprinkler mounted thereon, a hose connecting said sprinkler with an outside source of water, a worm on said carriage driven by said sprinkler and having a limited lateral movement on the carriage, a pair of worm-wheels located at respectively opposite sides of said worm and being adapted to respectively drive said carriage in opposite directions, a guide for directing the movement of said worm from one of said worm-wheels to the other, and mechanism comprising a counterpoised weight and a friction shifting member controlled by said weight and adapted through the rotation of the sprinkler to shift said worm into engagement with one of said worm-wheels when said weight is moved to one side of a balanced position and to shift said worm into mesh with the other worm-wheel when said weight is moved to the opposite side of a balanced position.

849,506. ROCK-DRILL. CHARLES E. SHADALL, Milwaukee, Wis., assignor of one-half to Frederick L. Horneffer, Milwaukee, Wis. Filed Mar. 31, 1905. Serial No. 253,018.

Claim.—1. In a rock-drill the combination of a frame provided with journal-bearings and with guides arranged transversely to said bearings, a crank-shaft mounted in said bearings and provided with oppositely-directed cranks, reciprocating cross-heads connected with opposite cranks and tending to counterbalance each other as they are moved simultaneously in opposite directions, and a drill-operating shaft connected with one of said cross-heads, substantially as described.

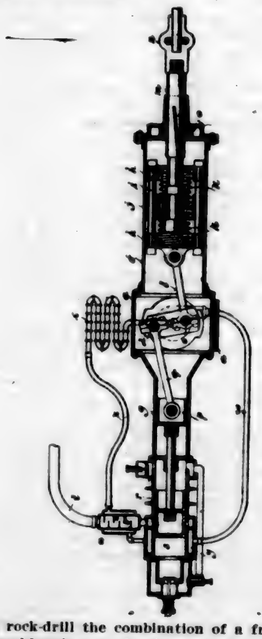

2. In a rock-drill the combination of a frame provided with journal-bearings and with guides arranged transversely to said bearings, a crank-shaft mounted in said bearings and having oppositely-directed cranks, counterbalancing heads carried by said guides and connected with said cranks, and a drill-holder movably mounted in said frame in line with one of said heads which is adapted to impart endwise impulses thereto, substantially as described.

3. In a rock-drill the combination of a crank-case provided at the ends with journal-bearings and on opposite sides with guides arranged in line with each other, a crank-shaft mounted in said bearings and having oppositely-directed cranks, reciprocating cross-heads carried by said guides and connected with said cranks, a drill-operating shaft revolubly connected with one of said heads, and means for turning said shaft in said head when it is reciprocated therewith, substantially as described.

4. In a rock-drill the combination of a crank-case provided with journal-bearings and with guides projecting from opposite sides thereof; a crank-shaft mounted in said bearings and having opposite cranks; a cross-head carried by one of said guides and connected with one of said cranks, said cross-head comprising end pieces connected by guide-rods, a thrust-bearing mounted on said guide-rods, and springs interposed between said end pieces and thrust-bearing; a drill-operating shaft connected with said thrust-bearing; and a counterbalancing cross-head carried by the other guide and connected with the other crank, substantially as described.

5. In a rock-drill the combination of a crank-case provided with journal-bearings and with guides projecting in opposite directions therefrom; a crank-shaft mounted in said bearings and provided with opposite cranks; a cross-head carried by one of said guides and connected with one of said cranks, said cross-head comprising end pieces connected by guide-rods, a thrust-bearing movable on said rods, and springs interposed between said end pieces and thrust-bearing; a drill-operating shaft revolubly connected at one end with said thrust-bearing and provided

at the other end with a drill-holder; a nut confined in the associated guide for turning said drill-shaft; and a counterbalancing cross-head carried by the other guide and connected with the other crank, substantially as described.

6. In a rock-drill the combination of a crank-case provided in the ends with journal-bearings and on opposite sides with cylindrical guides; a crank-shaft mounted in said bearings and having three cranks, the middle crank being opposite the other two; cross-heads fitted in said guides and connected one with the middle crank and the other with the two outer cranks; and a drill-operating shaft connected with one of said cross-heads which the other tends to counterbalance, substantially as described.

7. In a rock-drill the combination of a crank-case provided with journal-bearings and on opposite sides with guides; a crank-shaft mounted in said bearings and having opposite cranks; cross-heads carried by said guides and connected with said cranks; a drill-operating shaft revolubly connected with one of said cross-heads which the other tends to counterbalance; and a motor mounted with said crank-case and guides for turning said shaft, substantially as described.

8. In a rock-drill the combination of a crank-case provided with journal-bearings and on opposite sides with guides at right angles to said bearings; a crank-shaft mounted in said bearings and provided with opposite cranks; cross-heads carried by said guides and connected with said cranks; a reciprocating motor comprising a cylinder attached at one end to the outer end of one of said guides and a piston connected with the associated cross-head; and a drill-operating shaft connected with the other cross-head, substantially as described.

9. In a rock-drill the combination of a frame provided with journal-bearings and with guides arranged transversely to said bearings, a crank-shaft mounted in said bearings and provided with oppositely-directed cranks, counterbalancing-heads mounted on said guides and connected with said cranks, a drill-holder movably mounted in said frame in line with one of said heads which is adapted to impart endwise impulses thereto, and a motor mounted on said frame and connected with said crank-shaft, substantially as described.

10. In a rock-drill the combination of a frame provided with journal-bearings and with guides arranged transversely to said bearings and provided with oppositely-directed cranks, counterbalancing-heads mounted on said guides and connected with said cranks, a drill-holder revoluble and movable endwise in said frame in line with one of said heads which is adapted to impart endwise impulses thereto, means for intermittently turning said drill-holder, and a motor mounted on said frame and connected with said crank-shaft, substantially as described.

11. In a rock-drill the combination of a frame provided with crank-bearings and with guides arranged transversely to said bearings, oppositely-directed cranks journaled in said bearings, counterbalancing-heads mounted on said guides and connected with said cranks, and a reciprocating drill-holder mounted in said frame in line with one of said heads which is adapted to impart endwise impulses thereto, substantially as described.

849,507. POULTRY-PERCH. FRANK SHAY, Newark, N. J., assignor of one-half to Charles A. Andrews, Rutherford, N. J. Filed Mar. 21, 1906. Serial No. 307,216.

Claim.—1. A poultry-perch comprising a standard adapted at its lower end to be secured in position and having near its upper end a disk which is plane or flat for its entire upper surface, the shank portion of said standard extending above said disk, a perch-bar resting diametrically across the said disk and being recessed at its under surface to receive the said shank extension, an annular cup upon the standard-shank below said disk, and means extending through an aperture of the disk for supplying liquid from said cup to the perch-bar.

2. A poultry-perch comprising a standard having at its top a pin to receive the perch-bar and below the same an annular cup surrounding the shank of the standard, a perch-bar mounted upon said pin and being recessed at its under surface, and a tube and wick for supplying liquid from said cup to the perch-bar and held at their upper ends in the said recess thereof.

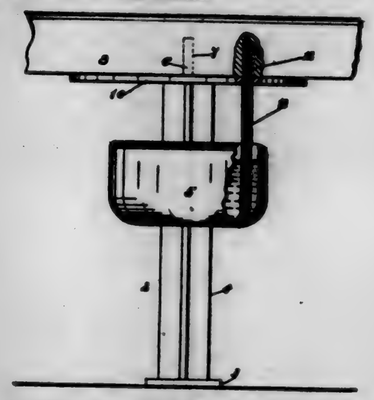

3. A poultry-perch comprising a standard having at its top a pin to receive a perch-bar and below the same an annular cup surrounding the shank of the standard, a perch-bar seated upon said pin and being recessed at its under side, a tube and wick for supplying liquid from said cup to said perch-bar and being held at their upper ends in the said recess thereof, and a shield perforated to receive said pin and slotted to receive said tube and wick and being arranged thereon between the perch-bar and annular cup of the standard.

4. The combination with a support having a pin at its top and a lower annular liquid-cup, of a perch-bar seated on said pin, and a shield-plate at the under side of the bar rotatable on said pin and having an aperture adapted to be covered by said bar.

5. In a poultry-perch, the combination with a support, of a liquid-reservoir carried by said support, a substantially horizontal absorbent perch-bar supported by said support above the said liquid-reservoir, said bar having a vertical recess extending transversely of its grain, a wick extending from said reservoir to the upper part of said recess, and means for holding said wick in place.

6. In a poultry-perch, the combination with a support, of a liquid-reservoir carried by said support, an absorbent perch-bar also carried by said support and having a boring or recess transversely of its grain, a tube extending from said reservoir to said recess and held thereby, and a wick in said tube.

7. In a poultry-perch, a support comprising a standard provided intermediate of its ends with an annular cup, an absorbent perch-bar mounted on said support above said annular cup and having in that portion of its under surface which lies directly over the cup a boring or recess transversely of its grain, a wick depending from said boring into the reservoir, and means for holding said wick in place.

8. In a poultry-perch, a supporting-standard having intermediate of its ends an annular cup or reservoir, an absorbent perch-bar mounted upon said standard above the reservoir and having in its under surface directly over the said reservoir, a boring or recess transversely of its grain, a tube extending upwardly from said reservoir with its upper end held in the said boring, and a wick in said tube.

9. In a poultry-perch, the combination of a support provided intermediate of its ends with a liquid-reservoir, an absorbent perch-bar mounted upon said support and being recessed transversely of its grain, and a wick extending from said reservoir into contact with the inner surface of said recess.

10. The combination with an absorbent perch-bar having two borings at its under side, of a support having a pin at its top adapted to enter one of said borings and having a lower annular liquid-cup surrounding its shank, a tube depending from the other boring into the liquid-cup, a wick in said tube, and a shield-plate at the under side of the perch-rod perforated to receive the support-pin and slotted to receive the wick-tube.

11. The combination with an absorbent perch-bar having two borings at its under side, of a support having a pin at its top adapted to enter one of said borings and having a lower annular liquid-cup surrounding its shank, a wick depending from the other boring of the perch-bar into said cup, and a shield-plate at the under side of said perch-rod apertured to receive the support-pin and to receive the wick.

849,508. EXTRACTOR FOR BOTTLE-STOPPERS OR CORKS. JOSEPH B. SHORT, Newark, N. J. Filed Oct. 26, 1906. Serial No. 340,634.

Claim.—1. A cork or stopper extractor of the character set forth, consisting of a flexible metallic band comprising a central portion and a pair of normally upwardly extending and slightly outwardly inclining arms, arranged for the ready insertion of the same in the mouth of a bottle, a curved portion at the end of each arm for suspension over oppositely-located points of the annular marginal edge of the mouth of the bottle, and an end piece extending downwardly from each curved portion adapted to clamp the outer side of the neck of the bottle, and all arranged so that the insertion of a cork or stopper will spread said outwardly-inclining arms, so that the extractor will be tightly retained in the neck of the bottle when the cork or stopper is driven home, substantially as and for the purposes set forth.

2. A cork or stopper extractor of the character set forth, consisting of a flexible metallic band comprising a central portion and a pair of normally upwardly extending and slightly outwardly inclining arms, arranged for the ready insertion of the same in the mouth of a bottle, a curved portion at the end of each arm for suspension over oppositely-located points of the annular marginal edge of the mouth of the bottle, and an end piece extending downwardly from each curved portion adapted to clamp the outer side of the neck of the bottle, and all arranged so that the insertion of a cork or stopper will spread said outwardly-inclining arms, so that the extractor will be tightly retained in the neck of the bottle when the cork or stopper is driven home, and locking devices at the free ends of said end pieces, adapted to be brought in interlocking engagement when said end pieces are bent upwardly to provide a pull-loop, substantially as and for the purposes set forth.

3. A cork or stopper extractor of the character set forth, consisting of a flexible metallic band comprising a central portion and a pair of normally upwardly extending and slightly outwardly inclining arms, arranged for the ready insertion of the same in the mouth of a bottle, a curved portion at the end of each arm for suspension over oppositely-located points of the annular marginal edge of the mouth of the bottle, and an end piece extending downwardly from each curved portion adapted to clamp the outer side of the neck of the bottle, and all arranged so that the insertion of a cork or stopper will spread said outwardly-inclining arms, so that the extractor will be tightly retained in the neck of the bottle when the cork or stopper is driven home, one of said end pieces being formed with an opening, and the other end piece having oppositely-extending slots and a holding-head, all arranged to be brought in interlocking engagement when said end pieces are bent upwardly to provide a pull-loop, substantially as and for the purposes set forth.

4. A cork or stopper extractor of the character set forth, consisting of a flexible metallic band comprising a central portion and a pair of normally upwardly extending and slightly outwardly inclining arms, arranged for the ready insertion of the same in the mouth of a bottle, a curved portion at the end of each arm for suspension over oppositely-located points of the annular marginal edge of the mouth of the bottle, and an end piece extending downwardly from each curved portion adapted to clamp the outer side of the neck of the bottle, and all arranged so that the insertion of a cork or stopper will spread said outwardly-inclining arms, so that the extractor will be tightly retained in the neck of the bottle when the cork or stopper is driven home, and a coating element over said extractor to prevent corrosion or contamination from the contents of the bottle, substantially as and for the purposes set forth.

5. A cork or stopper extractor of the character set forth, consisting of a flexible metallic band comprising a central portion and a pair of normally upwardly extending and slightly outwardly inclining arms, arranged for the ready insertion of the same in the mouth of a bottle, a curved portion at the end of each arm for suspension over oppositely-located points of the annular marginal edge of the mouth of the bottle, and an end piece extending downwardly from each curved portion adapted to clamp the outer side of the neck of the bottle, and all arranged so that the insertion of a cork or stopper will spread said outwardly-inclining arms, so that the extractor will be tightly retained in the neck of the bottle when the cork or stopper is driven home, and locking devices at the free ends of said end pieces, adapted to be brought in interlocking engagement when said end pieces are bent upwardly to provide a pull-loop, and a coating element over said extractor to prevent corrosion or contamination from the contents of the bottle, substantially as and for the purposes set forth.

6. A cork or stopper extractor of the character set forth, consisting of a flexible metallic band comprising a central portion and a pair of normally upwardly extending and slightly outwardly inclining arms, arranged for the ready insertion of the same in the mouth of a bottle, a curved portion at the end of each arm for suspension over oppositely-located points of the annular marginal edge of the mouth of the bottle, and an end piece extending downwardly from each curved portion adapted to clamp the outer side of the neck of the bottle, and all arranged so that the insertion of a cork or stopper will spread said outwardly-inclining arms, so that the extractor will be tightly retained in the neck of the bottle when the cork or stopper is driven home, one of said end pieces being formed with an opening, and the other end piece having oppositely-extending slots and a holding-head, all arranged to be brought in interlocking engagement when said end pieces are bent upwardly to provide a pull-loop, and a coating element over said extractor to prevent corrosion or contamination from the contents of the bottle, substantially as and for the purposes set forth.

7. A cork or stopper extractor of the character set forth, consisting of a flexible metallic band comprising an enlarged central portion and a pair of narrow and normally upwardly extending arms, adapted to be inserted in the mouth of a bottle, a curved portion at the end of each arm for suspension over oppositely-located points of the annular marginal edge of the mouth of the bottle, and an end piece extending downwardly from each curved portion adapted to clamp the outer side of the neck of the bottle, each end piece being of greater width than the width of each arm, and all arranged so that the insertion of a cork or stopper will tightly retain the stopper in position relative to the neck of the bottle when the cork or stopper is driven home, substantially as and for the purposes set forth.

8. A cork or stopper extractor of the character set forth, consisting of a flexible metallic band comprising an enlarged central portion and a pair of narrow and normally upwardly extending arms, adapted to be inserted in

the mouth of a bottle, a curved portion at the end of each arm for suspension over oppositely-located points of the annular marginal edge of the mouth of the bottle, and an end piece extending downwardly from each curved portion adapted to clamp the outer side of the neck of the bottle, each end piece being of greater width than the width of each arm, and all arranged so that the insertion of a cork or stopper will tightly retain the stopper in position relative to the neck of the bottle when the cork or stopper is driven home, and locking devices at the free ends of said end pieces, adapted to be brought in interlocking engagement when said end pieces are bent upwardly to provide a pull-loop, substantially as and for the purposes set forth.

9. A cork or stopper extractor of the character set forth, consisting of a flexible metallic band comprising an enlarged central portion and a pair of narrow and normally upwardly extending arms, adapted to be inserted in the mouth of a bottle, a curved portion at the end of each arm for suspension over oppositely-located points of the annular marginal edge of the mouth of the bottle, and an end piece extending downwardly from each curved portion adapted to clamp the outer side of the neck of the bottle, each end piece being of greater width than the width of each arm, and all arranged so that the insertion of a cork or stopper will tightly retain the stopper in position relative to the neck of the bottle when the cork or stopper is driven home, one of said end pieces being formed with an opening, and the other end piece having oppositely-extending slots and a holding-head, all arranged to be brought in interlocking engagement when said end pieces are bent upwardly to provide a pull-loop, substantially as and for the purposes set forth.

10. A cork or stopper extractor of the character set forth, comprising a metallic extractor element provided with a normally bent U-shaped portion, and provided with means for suspending said portion from the annular marginal edge of the mouth of a bottle, all arranged to provide an unobstructed entrance for a cork to be driven into the neck of the bottle by means of a corking-machine, substantially as and for the purposes set forth.

11. A cork or stopper extractor of the character set forth, comprising a metallic extractor element provided with a normally bent U-shaped portion, a pair of curved portions connected with said U-shaped portion for suspending said portion from the annular marginal edge of the mouth of a bottle, and an end piece extending downwardly from each curved portion adapted to clamp the outer side of the neck of the bottle, all arranged to provide an unobstructed entrance for a cork to be driven into the neck of the bottle by means of a corking-machine, and locking devices at the free ends of said end pieces, adapted to be brought in interlocking engagement when said end pieces are bent upwardly to provide a pull-loop, substantially as and for the purposes set forth.

849,509. BOTTLE-CLOSURE. JOSEPH B. SHORT, Newark, N. J. Filed Dec. 1, 1906. Serial No. 345,895.

Claim.—1. A combined bottle stopper or cork and extractor, comprising a stopper-body and an extractor-strap, said extractor-strap being arranged against the lower surface and the opposite sides of the stopper-body, and a separable pull-piece adapted to operatively engage with the free ends of said extractor-strap, substantially as and for the purposes set forth.

2. A combined bottle stopper or cork and extractor, comprising a stopper-body and an extractor-strap, said extractor-strap being arranged against the lower surface and the opposite sides of the stopper-body, the free ends of said extractor-strap being provided with end pieces provided with openings therein, and a separable pull-piece adapted to operatively engage with the said end pieces of the extractor-strap, substantially as and for the purposes set forth.

3. A combined bottle stopper or cork and extractor, comprising a stopper-body and an extractor-strap, said extractor-strap being arranged against the lower surface and the opposite sides of the stopper-body, the free ends of said extractor-strap being provided with end pieces provided with openings therein, and a separable pull-piece, said pull-piece being provided at each end with a holding member adapted to engage with the openings in the end pieces of said extractor-strap, substantially as and for the purposes set forth.

4. A combined bottle stopper or cork and extractor, comprising a stopper-body and an extractor, said extractor comprising a flexible strap-like member arranged against the lower surface and the opposite sides of the stopper-body, said strap-like member having flexible end pieces, and a separable pull-piece adapted to operatively engage with the free ends of said strap-like member, substantially as and for the purposes set forth.

5. A combined bottle stopper or cork and extractor, comprising a stopper-body and an extractor, said extrator comprising a flexible strap-like member arranged against the lower surface and the opposite sides of the stopper-body, said strap-like member having flexible end pieces, said end pieces being provided with openings therein, and a separable pull-piece provided at each end with means for engagement with the openings of said end pieces of the strap-like member, for the purpose of providing a pull-loop above the stopper-body.

6. A combined bottle stopper or cork and extractor, comprising a stopper-body and an extractor, said extractor comprising a flexible strap-like member arranged against the lower surface and the opposite sides of the stopper-body, said strap-like member having flexible end pieces, said end pieces being provided with openings therein, and a separable pull-piece provided at each end with means for engagement with the openings of said end pieces of the strap-like member, consisting, essentially, of a holding member adapted to be inserted within the openings of the end pieces of the strap-like member, and to lock therein for the purpose of providing a pull-loop above the stopper-body.

7. A combined bottle stopper or cork and extractor, comprising a stopper-body and an extractor, said extractor comprising a strap-like member arranged against the lower surface and the opposite sides of the stopper-body, said strap-like member being provided with end pieces having receiving-openings therein, and a separable pull-piece provided at each end with a head forming a holding portion adapted to be brought in engagement with the receiving-openings in the end pieces of the strap-like member, substantially as and for the purposes set forth.

8. An extractor for the corks of bottles, comprising an element adapted to be arranged about the outer faces of the cork, and a separable pull-piece adapted to be brought in holding engagement with the ends of the extractor above the upper surface of the cork, substantially as and for the purposes set forth.

9. An extractor for the corks of bottles, comprising an element adapted to be arranged about the outer faces of the cork, and a separable pull-piece adapted to be brought in holding engagement with the ends of the extractor above the upper surface of the cork, and a coating element over said extractor to prevent corrosion or contamination from the contents of the bottle, substantially as and for the purposes set forth.

10. An extractor for the corks of bottles, comprising a strap-like body or member adapted to be arranged about the outer faces of the cork, end pieces at the free end portions of said body, said end pieces being provided with receiving-openings and a separable pull-piece provided at each end with a head or holding member adapted to be brought in holding engagement with the receiving-openings of the end pieces of the strap-like body to form a loop member above the upper surface of the cork, and a coating element over said extractor to prevent corrosion or contamination from the contents of the bottle, substantially as and for the purposes set forth.

11. An extractor for the corks of bottles, comprising a strap-like body adapted to be arranged about the outer faces of the cork, said body having free end portions projecting above the upper face of the cork and each end portion being provided with a loop, and a pulling device detachably connected with said loops.

849,510. GAGE FOR DETERMINING CURVATURE OF SAW-BLADE EDGES. SENECA E. SMITH, Victoria, British Columbia, Canada. Filed May 12, 1906. Serial No. 316,486.

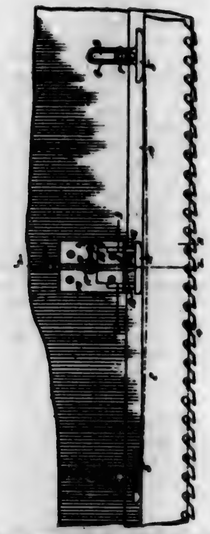

Claim.—1. In a device of the class described, the combination with a bench or support, of adjustable stops spaced a convenient distance apart offering an elongated bearing-surface to the edge of a saw, a gage member comprising a casing, a stem slidable endwise in the support, and having means for engaging the edge of the blade, a pointer pivotally connected to the stem and fulcrumed to said casing at a point adjacent the stem, said pointer and said stem having provisions in virtue of which the movement of the slidable member will be multiplied to the end of the pointer, and a spring to press the slidable member in contact with the edge of a blade on the support.

2. A device of the class described, comprising the combination with a bench or support for a saw-blade, stop members adjustably secured to said bench a convenient distance apart, against which the edge of the blade is adapted to rest, of a gage member secured to the support between the adjustable stops and comprising a casing, a blade-engaging member having a stem endwise slidable within said casing, a pointer pivotally connected to said casing, and to said stem, and means for normally pressing said saw-engaging member of the gage against the edge of the saw-blade, substantially as shown and described.

849,511. BRUSH FOR DYNAMO-ELECTRIC MACHINERY. CHARLES W. SPEIRS, London, England, assignor to The Morgan Crucible Company, Limited, London, England. Filed Nov. 26, 1906. Serial No. 345,210.

Claim.—1. A commutator-brush composed of compressed particles and provided with a metal strip having one entire face thereof in intimate contact with said compressed particles and having portions embedded therein to permanently attach the same to said brush, substantially as described.

2. The combination with a commutator-brush composed of compressed particles, of an eyelet partly embedded therecured to said brush and a conductor having a portion thereof embedded in said brush and connected with said metal strip, substantially as described.

3. The combination with a commutator-brush composed of compressed particles, of an eyelet partly embedded therein and a conductor having a portion embedded in said brush and a portion projecting from said brush through said eyelet, substantially as described.

4. The combination with a commutator-brush composed of compressed particles, of a metal strip secured to said brush, said strip being provided with a depressed portion having slots therein and a conductor having its end passing through said slots in said depressed portion of said strip and firmly retained in contact with said strip, substantially as described.

5. The combination with a commutator-brush composed of compressed particles, of a metal strip secured to said brush, said strip being provided with a depressed portion having slots therein, and a conductor having its end passing through said slots in said depressed portion of said strip, and firmly retained in contact with said strip, said depressed portion of said strip and a portion of said conductor adjacent thereto being embedded in said brush, substantially as described.

849,512. DOUBLE-ACTING SPRAG FOR VEHICLES. HAROLD B. STILLMAN, Philadelphia, Pa. Filed Nov. 30, 1906. Serial No. 345,758.

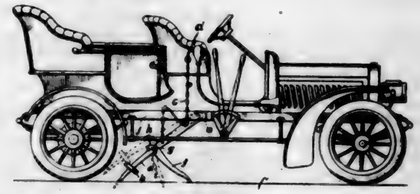

Claim.—1. A double-acting sprag for arresting the motion of vehicles in either direction consisting of two levers pivoted together and having their free ends pointing in opposite directions, one of said levers being adapted to be pivotally connected with the frame of the vehicle.

2. A double-acting sprag for arresting the motion of vehicles in either direction consisting of two levers pivoted together and having their free ends pointing in opposite directions, one of said levers being adapted to be pivotally connected with the frame of the vehicle and the other lever being provided with a heel or extension beyond the pivot-point and above the other lever.

3. A double-acting sprag for arresting the motion of vehicles in either direction consisting of two levers pivoted together and having their free ends pointing in opposite directions, one of said levers being adapted to be pivotally connected with the frame of the vehicle and the other lever being provided with a heel or extension beyond the pivot-point and above the other lever, and with a stop to limit its angular position with reference to said other lever.

4. A double-acting sprag for arresting the motion of vehicles in either direction consisting of two levers pivoted together and having their ends pointing in opposite directions, one of said levers being adapted to be pivotally con-

nected with the frame of the vehicle, and a limit-stop between said levers to limit their angular position with reference to one another when lowered.

5. The combination of a sprag-lever adapted to be pivoted at one end to the frame of a vehicle, and a second sprag-lever pivotally connected with first sprag-lever and pointing in the opposite direction.

6. The combination of a sprag-lever adapted to be pivoted at one end to the frame of a vehicle and a second sprag-lever pivotally connected with said first sprag-lever and pointing in the opposite direction, the length of said second sprag-lever from the pivot-point being greater than the length of the first sprag-lever from said pivot-point to its extremity.

7. The combination of a sprag-lever adapted to be pivoted at one end to the frame of a vehicle and a second sprag-lever pivotally connected with said first sprag-lever and pointing in the opposite direction, the length of said second sprag-lever from the pivot-point being greater than the length of the first sprag-lever from said pivot-point to its extremity, and means to limit the angular position of said levers with reference to one another.

8. The combination of a sprag-lever adapted to be pivoted at one end to the frame of a vehicle and a second sprag-lever pivotally connected with said first sprag-lever and pointing in the opposite direction, said second sprag-lever having a heel extending from its pivot-point above the first sprag-lever and adapted to strike the frame of the vehicle and raise the second sprag-lever when the first sprag-lever is lifted.

9. The combination of the sprag-lever *a*, having means for attachment to the frame of the vehicle, and the sprag-lever *f* pivoted to the sprag-lever *a* and having the heel *h* extending beyond the pivot and above the sprag-lever *a* adapted to strike the frame of the vehicle and raise the sprag-lever *f* when the sprag-lever *a* is lifted, and also having a stop *i* adapted to strike the sprag-lever *a* and limit the angular position of the sprag-lever *f* with reference to said sprag-lever *a*.

10. The double-acting sprag for vehicles, consisting of two levers pivoted together and having their free ends pointing in opposite directions, one of said levers being adapted to be pivotally connected with the frame of the vehicle, and the other lever having a downward curvature toward its extremity.

849,513. FOUNTAIN-PEN HANDLE. FELIX L. STURM, Viropa, W. Va. Filed Dec. 7, 1906. Serial No. 346,699.

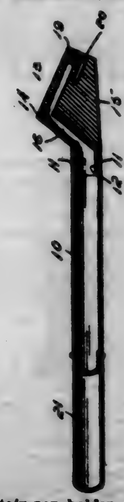

Claim.—A fountain-pen holder comprising a head of elbow form on its upper side having a passage-way therethrough conformable thereto; a hollow reservoir-stock having a screw-threaded connection with the head and communicating with the said passage-way; the head being provided at its forward end with an interiorly-screw-threaded nose, and having its under side extending in the plane of the pen-stock, the head being furthermore provided with a groove below the nose; and a cap adapted to be fitted on the rear end of the reservoir-stock or on the nose.

849,514. EQUALIZING-SUPPORT FOR MOLDERS' FLASKS. HARRIS TABOR, Elizabeth, N. J., and WILFRED LEWIS, Philadelphia, Pa., assignors to The Tabor Manufacturing Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Oct. 25, 1906. Serial No. 340,433.

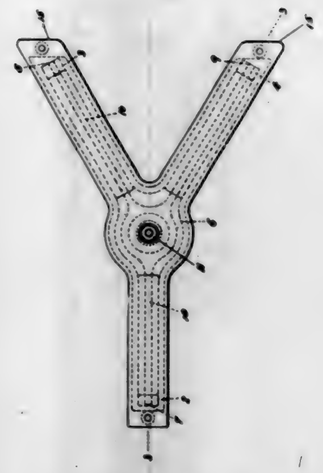

Claim.—1. An equalizing-support for molders' flasks comprising a pair of superposed spiders having three-point bearings between them of which bearings one set are struck from a common center, a pivot centrally connecting said spiders and affording them motion toward and away from each other, and a spring interposed between the spiders, substantially as described.

2. An equalizing-support for molders' flasks comprising a pair of spiders having slot-and-web connection with each other and having bearing-surfaces, a pivot for connecting said spiders and affording them a motion toward and away from each other, and a spring interposed between the spiders, substantially as described.

3. An equalizing-support for molders' flasks comprising a pair of superposed spiders having three-point bearings, means for connecting said spiders to afford them a limited range of universal motion, and a spring for normally holding the spiders in position with their bearings out of contact, substantially as described.

4. An equalizing-support for molders' flasks comprising a pair of superposed members each having part of a ball-joint, means for connecting said members to afford them a limited range of universal motion, and means for normally holding the members in position with the parts of the ball-joint out of contact, substantially as described.

5. An equalizing-support for molders' flasks comprising a pair of superposed members each having part of a ball-joint, and means for normally holding the members in position with the parts of the ball-joint out of contact, substantially as described.

849,515. ROLLER SIDE BEARING FOR RAILWAY-CARS. FREDERICK B. TOWNSEND, Chicago, Ill., assignor to W. H. Miner Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 29, 1906. Serial No. 349,983.

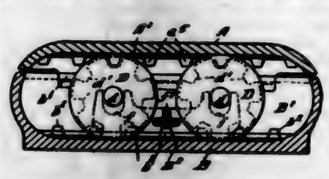

Claim.—1. In a roller side bearing for railway-cars, the combination of the cap or top plate and the bottom or base plate having interengaging guides or flanges to permit the cap or top plate to reciprocate in respect to the bottom or base plate, rollers interposed between said plates furnished with short shafts at each end, a movable roller frame or spider having slotted seats or bearings to receive the shafts of the rollers and provided with a projecting spring-engaging member, said bottom or base plate being provided with a spring-receiving chamber or recess, and a spring therein acting upon said spring-engaging member of said roller spider or frame, said rollers and said top and bottom plates being provided with interengaging teeth-like devices, substantially as specified.

2. In a roller side bearing for railway-cars, the combination with top and bottom plates, furnished with interengaging guides, and the bottom plate being provided with a spring-receiving chamber or recess, rollers interposed between said top and bottom plates furnished with teeth-like devices and said top and bottom plates having teeth-like devices meshing with the teeth-like devices on the rollers, said rollers being provided with short projecting shafts at each end, a roller frame or spider having seats or bearings engaging the shafts of the rollers and provided with a projecting member to engage the springs and a pair of springs in the spring-receiving chamber or recess of the bottom plate, substantially as specified.

849,516. BUCKLE ATTACHMENT FOR STRAPS. JOSEPH VAN CLEVE, Newark, N. J. Filed Apr. 16, 1906. Serial No. 311,919.

Claim.—1. In a device of the kind described, a strap having a tab at one end, said tab being provided with a transverse slot, said strap also being provided with a longitudinal slot adjacent to the tab, and a buckle embracing the strap and having its tongue projecting through the longitudinal slot.

2. A combination of the main strap having a slot therein, a second strap to enter the slot in the first strap and provided with a transverse slot at one end to receive the free end of the second strap, a longitudinal slot near the transverse slot, and a buckle embracing the second strap and having its tongue projecting through the longitudinal slot.

3. The combination with the main strap having a slot therein, of a second strap provided with a transverse slot in one end, the second strap also having a longitudinal slot near the transverse slot, a buckle arranged on the strap and having its tongue projecting through the longitudinal slot, the free end of the second strap being passed through the slot in the main strap and then through the transverse slot in itself, and having perforations to receive the tongue of the buckle.

849,517. CLAMP FOR DRUM ATTACHMENTS. CHARLES B. WANAMAKER and ULYSSES G. LEEDY, Indianapolis, Ind., assignors to Leedy Manufacturing Company, Indianapolis, Ind., a Corporation of Indiana. Filed July 18, 1906. Serial No. 326,790.

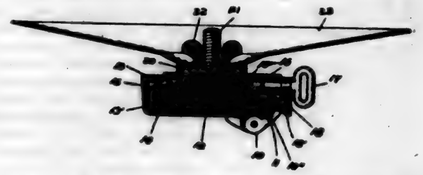

Claim.—1. A clamp comprising a pair of members between which an object may be clamped, one movable relative to the other, a second pair of clamping members, for the same object to be clamped, one movably mounted relative to the other, and means for simultaneously actuating said movable members to simultaneously exert two clamping forces in different directions upon the aforesaid object to be clamped.

2. In a clamp, the combination with the main body, of a movable clamp mounted therein, a cam-block, a second clamping member carried by the main body and engaged by said cam-block, and a single means for simultaneously actuating the first-mentioned clamp and the cam whereby the article to be clamped is simultaneously clamped by two forces at an angle to each other.

3. In a clamp, the combination with the main body, of a movable clamp mounted therein, a cam-block, a second clamping member carried by the main body and engaged by said cam-block, and means for simultaneously actuating the first-mentioned clamp and the cam whereby the article to be clamped is simultaneously clamped by two forces at an angle to each other.

4. In a clamp, the combination with the main body, of a clamping member slidably mounted therein, a clamp-lever pivotally mounted on said main body and having an end coöperating with the main body in a direction at an angle to the direction of coöperation of the first-mentioned clamping member with the main body, means for moving said first-mentioned clamp member in the main body, and means for swinging the clamp-lever on the main body.

5. In a clamp, the combination with the main body, of a clamping member slidably mounted therein, a clamp-lever pivotally mounted on said main body and having an end coöperating with the main body in a direction at an angle to the direction of coöperation of the first-mentioned clamping member with the main body, a cam-block slidably mounted in the main body and adapted to engage the clamping-lever, and a screw engaging the first-mentioned clamping member and cam-block to simultaneously actuate the same.

849,518. CAR-ROOF. WILLIAM J. WHEELER, Fort Wayne, Ind. Filed Nov. 5, 1906. Serial No. 341,969.

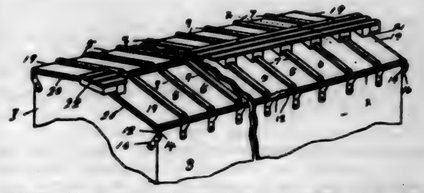

Claim.—1. A car-roof formed of a plurality of metallic roofing-sections having their inner ends provided with locking-flanges, and having longitudinal locking-flanges on their opposite edges, consisting of loosely-interlocking coils adapted to be separated longitudinally without shifting their planes of location, the said interlocking sections being provided upon their outer ends with an inwardly-

coiled flange; and means for securing the lower end of the said sections in position, comprising a pair of horizontal rods arranged in the said named flanges, and a plurality of brackets supporting the said rods as described.

2. In a car-roof a series of metallic roofing-sections having locking upturned flanges upon their upper ends, and down and inturned flanges upon their lower ends, and having longitudinal coiled interlocking flanges upon their opposite edges, whereby the said sections are adapted for a free expansion and contraction without injury thereof; means for securing the upper end in their locked relation; and means for securing the lower end of the said sections to the car-body, consisting of a plurality of upright brackets fixed on the adjacent side of the car-body, and a pair of meeting rods loosely mounted in the said inturned flanges and supported by the said brackets.

849,519. LOOM-PICKER. JOHN WHITEHEAD, Lawrence, Mass., assignor to J. W. Barlow Company, Lawrence, Mass., a Corporation of Massachusetts. Filed Sept. 28, 1906. Serial No. 336,564.

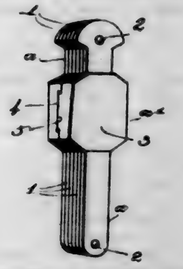

Claim.—1. A loom-picker consisting of a plurality of superposed plies of fibrous material secured together and shaped to present an enlarged impact portion, and a binder formed as a strip molded around such impact portion and having its ends interlocked.

2. A loom-picker consisting of a plurality of superposed plies of suitable material arranged transversely relative to the path of the shuttle and cemented together, and a binder or casing of wear-resisting material formed as a strip and molded about the picker and having its ends overlapped and interlocked.

3. A loom-picker consisting of a plurality of superposed plies of fibrous material cemented together and shaped to present a laterally-enlarged impact portion, and a binder of wear-resisting material formed as a strip and compressed around the impact portion and having its ends overlapped and interlocked.

4. A loom-picker consisting of an elongated body having a broadened impact portion and composed of superposed plies of suitable material cemented together, and a binder of wear-resisting material formed as a strip, molded and compressed about the impact portion and having its ends overlapped and locked one to the other.

5. A loom-picker consisting of a plurality of superposed plies of suitable material cemented together, and a wear-resisting binder formed as a strip and compressed about the picker and having an opening in one end and a laterally-slitted tongue at the other end, the tongue being passed through the opening to interlock the ends of the binder when the latter is in a flexible state.

849,520. WAGON-SHAFT SUPPORT. JOHN B. WENER, Los Angeles, Cal. Filed Oct. 12, 1906. Serial No. 338,668.

Claim.—The combination, with a vehicle-shaft, of a plate provided with lateral arms and a centrally-located hole, a bolt passed through said hole and through the shaft and secured thereto, and the lateral arms being bent around the opposite sides of the shaft and under the same, and the plate being also provided on its upper edge with a knuckle, a link formed from a length of wire and having its ends bent inward in a right line and secured in said knuckle, the axle to which the shaft is secured, and a

bar extending up in the rear of the axle and terminating in a hook with which the link may be engaged.

849,521. COW-MILKING MACHINE. FRED M. WORCESTER, Monroe Center, Ill. Filed Jan. 28, 1907. Serial No. 354,444.

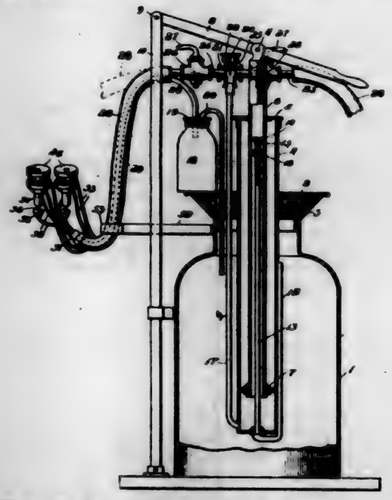

Claim.—1. In a milking-machine, the combination with a receptacle, a cap or top carried by said receptacle, means hermetically sealing said cap upon said receptacle, of a pump-casing carried by said cap and extending into said receptacle, a hollow plunger positioned within said pump-casing, a hollow tubing carried by said pump-casing and extending into said hollow plunger and through said pump-casing and opening at one end into said receptacle, a bottle or receptacle positioned contiguous to said first-mentioned receptacle, a teat-casing provided with a diaphragm, means connecting said teat-casing to said bottle and pump-casing, and means for reciprocating said hollow piston within said pump-casing.

2. In a milking-machine, the combination with a receptacle, of a pump-casing carried by said receptacle and extending into the same, a piston operating in said pump-casing, a teat-casing provided with a diaphragm, a tubing connected to said teat-casing and pump-casing, a relief-valve carried by said tubing, and means for operating said piston.

3. In a milking-machine, the combination of a receptacle, a pump-casing carried by and extending into said receptacle, a hollow tubing carried by said pump-casing, one end of said tubing extending into said pump-casing and provided with a valve-casing and its opposite end extending through the said pump-casing and opening into said receptacle, a hollow piston positioned within said pump-casing and surrounding said hollow tubing, a teat-casing, and means connecting said teat-casing to said pump-casing.

4. In a milking-machine, the combination with a primary receptacle or can, an auxiliary receptacle or bottle contiguous to said can, of a pump-casing carried by and extending into said can, means hermetically sealing said can, a piston operating in said pump-casing, means for causing a vacuum in said bottle and can when said piston is operated, a teat-casing, and means connecting said teat-casing to said pump-casing.

5. In a milking-machine, the combination with a pump, of a valved tubing connected to said pump, and a teat-casing in communication with said tubing, said teat-casing provided with a flexible diaphragm.

6. In a milking-machine, the combination of a receptacle or can provided with a hermetically-sealed cap, a pump-casing extending into said can, a hollow, reciprocating piston mounted in said pump-casing, a valved tubing extending into said pump-casing and positioned between the inner walls of said piston, one end of said tubing opening into said can, a teat-casing, means connecting said teat-casing to said pump-casing, whereby the atmosphere from said can can be forced into said teat-casing through said tubing and pump-casing.

7. In a milking-machine, the combination with a can or receptacle, of an auxiliary receptacle positioned contiguous to said first-mentioned receptacle, a pump-casing extending into said first-mentioned receptacle, a hollow piston operating in said pump-casing, a teat-casing, and means connecting said teat-casing to said pump-casing, and said auxiliary receptacle to said first-mentioned receptacle, whereby atmosphere from said auxiliary receptacle may be passed through the pump-casing and into said teat-casing.

8. In a milking-machine, the combination of a can, a pump carried by said can, a horizontal bracket extending from said can and provided at its outer end with a loop, a teat-casing, and means supporting said teat-casing within the loop of the bracket and connecting said casing in an operable position with said pump-casing.

9. In a milking-machine, the combination with a receptacle, of a pump operating with said receptacle, said pump provided with a coupling having an opening, a relief-valve carried by said coupling, a tubing positioned in the opening of said coupling, a valve formed upon said tubing, and a teat-casing in communication with said tubing.

10. In a milking-machine, the combination with a pump, of a flexible tubing connected at one end to said pump, a teat-casing provided with a flexible diaphragm, a teat-cup in said teat-casing, said flexible tubing provided with a plurality of compartments, means connecting one of said compartments to said teat-casing, and means connecting the other compartment to said teat-cup, whereby when said pump is actuated, movement of the diaphragm will be controlled.

11. In a milking-machine, the combination of a pump provided with a flexible air-tubing, a milk-tubing carried by said air-tubing, a teat-casing, said teat-casing provided with a flexible diaphragm, a teat-cup carried by said teat-casing, a tubing connecting said teat-cup to said milk-tubing, and a tubing connecting said teat-casing to said air-tubing.

12. In a milking-machine, the combination with a pump, of a teat-casing provided with a flexible diaphragm, positioned contiguous to said pump, means connecting said teat-casing to said pump, said diaphragm comprising a flexible, primary member provided with teeth, and flexible, auxiliary members positioned upon opposite sides of said primary member.

13. In a milking-machine, the combination with a pump, of a teat-casing, a slidable teat-cup positioned within said teat-casing, and means connecting said teat-casing to said pump.

14. In a milking-machine, the combination with a pump, of a teat-casing, a teat-cup provided with a valve-casing, carried by said teat-casing, and means connecting said teat-casing to said pump.

15. In a milking-machine, the combination with a pump, of a teat-casing, a cup carried by said teat-casing, a valve-casing connected to said cup, a valve within said valve-casing, and means connecting said teat-casing to said pump.

16. In a milking-machine, the combination with a pump, of a teat-casing, a teat-cup carried by said casing, a valve-casing connected in a communicating position with said teat-cup, a float-valve in said valve-casing, a receptacle, a tubing connecting said valve-casing and receptacle, and means connecting said teat-casing to said pump.

17. In a milking-machine, the combination with a pump, of a teat-casing, a slidable teat-cup positioned within the bottom of said teat-casing, a valve-casing provided with a float-valve, secured to said teat-cup, a receptacle, means connecting said valve-casing to said receptacle, and means connecting said teat-casing to said pump.

18. In a milking-machine, the combination with a pump, of a teat-casing, a conical valve-casing adjustably mounted upon said teat-casing, means connected to said valve-casing and adapted to receive the lower end of a teat, a receptacle, means connecting said valve-casing to said receptacle, and means connecting said teat-casing to said pump.

19. In a milking-machine, the combination with a pump, of a teat-casing, an adjustable valve-casing carried by said teat-casing, a valve in said valve-casing, a receptacle, a tubing connecting said receptacle to said valve-casing, and a tubing connecting said teat-casing to said pump.

20. In a milking-machine, the combination with a pump, of a teat-casing, an adjustable stem extending into said teat-casing, a valve secured to one end of said stem and a teat-cup to the opposite end of said stem, valve means positioned within said valve-casing, a receptacle means connecting said valve-casing to said receptacle, and means connecting the teat-casing to said pump.

21. In a milking-machine, the combination with a pump, of a plurality of teat-casings, a tubing connected to said pump, a compartment formed upon the outer end of said tubing, and a plurality of tubes connected at one end to said teat-casings and at their opposite end to said first-mentioned tubing and opening into said compartment.

22. In a milking-machine, the combination with a pump, of an air-tubing connected at one end to said pump, a milk-tubing in said air-tubing, said air-tubing provided with a compartment at its outer end, said compartment opening only into said milk-tubing, a teat-casing contiguous to said outer end, said teat-casing provided with a teat-cup, means connecting said teat-cup to said compartment and milk-tubing, and means connecting the teat-casing to said air-tubing.

23. In a milking-machine, the combination with a pump, of an air-tubing coöperating with said pump, a milk-tubing carried by said air-tubing, a plurality of teat-casings, each casing provided with a teat-cup, tubes connected to said teat-cups and to the outer end of said milk-tubing, and tubes connected to the teat-casings and to the air-tubing near its outer end.

24. A teat-cup for a milking-machine, comprising a casing provided at one end with a flexible diaphragm, said diaphragm comprising a primary and auxiliary members, said primary member comprising a disk provided with annular grooves formed upon opposite sides, producing teeth formed upon said primary member, the annular grooves constituting a hinged portion for said teeth.

25. A teat-casing for a milking-machine, provided with a flexible diaphragm, said diaphragm provided with a primary flexible member, said member provided with a comparatively rigid tooth hinged upon the main portion of said member, and flexible members positioned upon opposite sides of said primary member.

26. A teat-casing for a milking-machine, provided with a flexible diaphragm, said diaphragm provided with a primary, central member and with flexible disks upon opposite sides thereof, each disk provided with a central opening, said primary member provided with a central opening and with a plurality of comparatively rigid teeth, said primary member provided with a groove upon one side forming a hinged portion for said teeth.

27. A teat-casing for a milking-machine, comprising a body provided at its upper end with a removable concavo-convexed cap, a flexible diaphragm positioned against said cap and within said body, and means for holding said diaphragm against said cap.

28. A teat-casing for a milking-machine, comprising a body, a dished cap carried by the upper end of said body, a diaphragm positioned beneath said cap and in engagement therewith, and means for holding said diaphragm in an operative position against said cap.

849,522. ARTIFICIAL FISH-BAIT. EDWARD C. ADAMS, Morristown, N. J. Filed June 7, 1906. Serial No. 320,590.

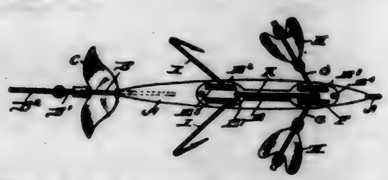

Claim.—1. The combination with a body portion provided with cut-away portions, of a slotted plate arranged over said portions, hooks provided with eyes arranged in said slots and a spring-rod secured to said body adapted to pass through the eyes of the hooks for locking said hooks therein.

2. An artificial bait comprising the body portion having spaced cut-away portions, a plate provided with spaced slots adjacent each end secured to said body over said cut-away portions, rods pivotally mounted in one pair of slots carrying spinners, hooks provided with eyes arranged in the other pair of slots, and a spring-rod secured to said plate, passing through said eyes of the hooks, for the purpose described.

3. An artificial bait comprising a body portion, oppositely-disposed spinning-blades arranged adjacent the forward end of the body, said blades being free to swing back and forth, hooks mounted in the body portion intermediate the ends and projecting in opposite directions and a spring-rod for securing said hooks in place as set forth.

4. An artificial bait comprising a body portion provided with a cut-out portion and having a spinning-blade at the rear end and a hook arranged at the end of said spinning-blade, oppositely-disposed spinning-blades arranged adjacent the forward end of the body portion, said spinning-blades being free to move back and forth, and hooks provided with eyes mounted in the cut-out portion of the body portion intermediate the ends and a spring-rod mounted on said body adapted to pass through the eyes of said hooks, substantially as described.

5. An artificial bait comprising a body portion cut away at definite points upon the under side, a plate secured to the under side of the body portion and longitudinally slotted adjacent its opposite ends, rods or axles passing through the forward slots and pivotally connected to the body portion, spinning-blades arranged upon said rods or axles, hooks provided with eyes having their shanks, passed through the rear slots of the blade and a spring-rod connected to the body portion and adapted to pass upwardly through the plate and through the eyes of the hooks, and a spinning-blade arranged at the rear end of said body portion substantially as described.

849,523. REVERSING VALVE MECHANISM. JAMES E. ARNOLD, Grand View, Ind. Filed Dec. 4, 1905. Serial No. 290,323.

Claim.—In a reversing valve mechanism, the combination with an engine-cylinder, steam-chests arranged at each side of said cylinder, pipes interposed between the ends of said steam-chests and said cylinder, and slide-valves in said steam-chests having heads controlling the adjacent orifices of said respective pipes, of steam-inlet pipes, a common valve-chamber having communication with said inlet-pipes, said inlet-pipes communicating with said steam-chests, steam-exhaust pipes leading from said steam-chests, a common valve-chamber communicating with said steam-exhaust pipe, valves in said respective chambers adapted to control the passage of steam through

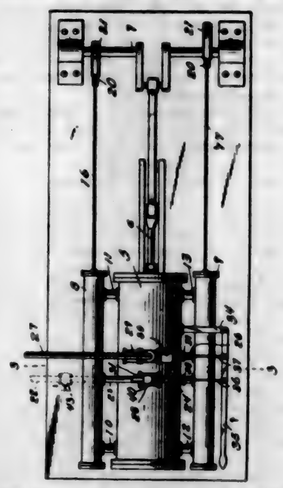

the respective inlet and exhaust pipes communicating with said chambers, a pivoted lever, and operative connections between said lever and said valves for permitting of the simultaneous movement of the latter upon actuation of said lever.

849,524. PROCESS OF EXTRACTING AND RECOVERING THE VOLATILIZABLE CONTENTS OF SEDIMENTARY MINERAL STRATA. DELOS R. BAKER, Delaware, Ohio. Filed June 23, 1902. Serial No. 112,742.

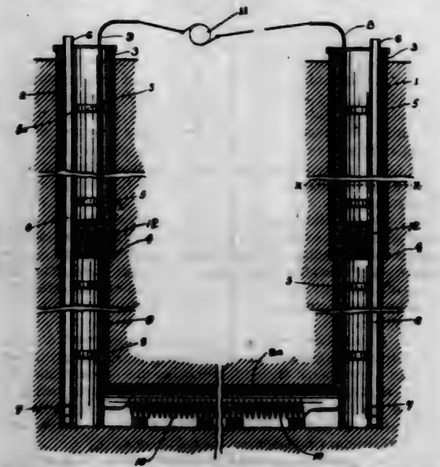

Claim.—1. The herein-described process for extracting and recovering the volatilizable contents of sedimentary strata in place in the earth, consisting of the provision of two earth-wells from the earth's surface to said subterranean strata in place, the transmission by means of conductors in said wells and by means of ground conduction between said wells through said strata of a current of electricity, the withdrawal in gaseous form from one of said wells of the products of the operation of said current upon the contents of said strata and the recovery of the withdrawals.

2. The herein-described process for extracting and recovering the volatilizable contents of sedimentary strata in place in the earth, consisting of the provision of two sealed earth-wells from the earth's surface to said subterranean strata in place, the transmission by means of conductors introduced into said wells and by means of ground conduction between the sealed portions of said wells through said strata of a current of electricity, the withdrawal in gaseous form from one of said wells through a channel communicating between the sealed portion of said well and the earth's surface of the products of the operation of the said current upon the contents of said strata in place and the recovery of the withdrawals.

849,525. VEHICLE-WHEEL. EARL O. BARNES, Brooklyn, N. Y. Filed Aug. 25, 1906. Serial No. 332,006.

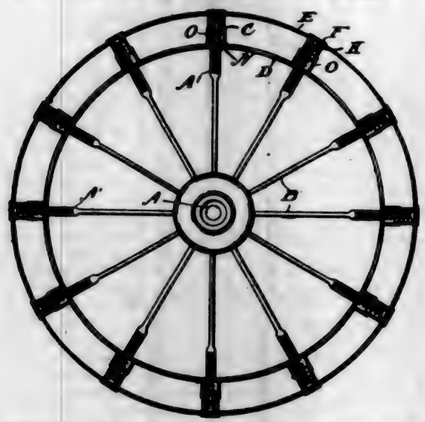

Claim.—A wheel having a hub with radiating spokes, the outer end of each spoke being widened and recessed, an inner rim fastened to the outer end of each spoke and provided with a shell, an outer rim having a series of apertures therein, a rod passing through the two rims and adapted to telescope within the recess in the end of a spoke, a knob fixed to said rod and bearing against the inner surface of the outer rim, a spring interposed between said knob and the inner rim, and a second shell surrounding said knob and rod and telescoping within said first-mentioned shell, as set forth.

849,526. DRAFT-EQUALIZER. HARRY W. BOURRET, Dinsmore, N. D. Filed Nov. 28, 1905. Serial No. 289,411.

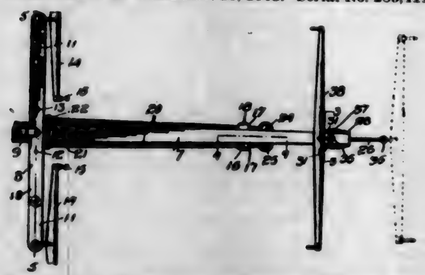

Claim.—A draft-equaliser comprising a pole, a double-tree mounted upon said pole, equaliser-bars associated with said doubletree, means associated with said double-tree and with said equalizer-bars for controlling the movement of the latter, brackets carried by said pole, rollers mounted in said brackets, rods engaged through one of said brackets and between the rollers thereof and connected to the said equalizer-bars, connections between said rods, a draft-rod associated with said connections and engaged through the rollers of the other of said brackets, and means associated with said draft-rods for the connection of a doubletree therewith.

849,527. TRUCK. BOSE B. BOWERS, Macon, Ga. Filed June 21, 1906. Serial No. 322,777.

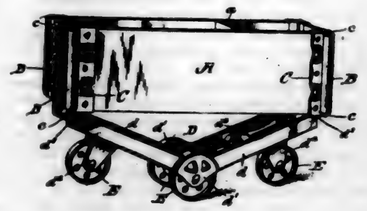

Claim.—1. In a truck, the combination of a truck box or body provided with freely-revoluble abutments offset outwardly from and arranged to extend substantially the full height of said body for warding off blows from objects with which said body may come in contact.

2. In a truck, a truck box or body having its corners equipped with vertically-disposed rollers offset outwardly beyond the sides and ends of said box, thereby providing round revoluble corners, substantially as and for the purpose described.

3. In a truck, a truck box or body having metal angle-brackets attached at its corners, said brackets being substantially commensurate in height with the box and having outwardly-projecting lugs at their upper and lower ends, and vertically-disposed revoluble rollers carried by the respective brackets and mounted between the said lugs thereof, said rollers being offset outwardly from the sides and ends of the box, substantially as and for the purpose described.

4. A wheel-supported truck box or body having protective rollers mounted at its corners and extending substantially the full height thereof, said rollers being arranged to provide offset rounded corners for said box, for the purpose described.

5. A truck comprising a wheeled or roller-supported carrier and a truck box or body mounted thereon and overhanging or projecting beyond said carrier, and protective rollers carried at the corners of said box, the surfaces of said rollers being offset outwardly from the outer faces of the sides and ends of said box.

6. A truck comprising a wheel-supported truck-frame having its sides convergingly inclined from its center toward its opposite ends, a box or body mounted thereon and overlying the sides of said truck-frame, and protective rollers carried at the corners of said box.

7. A truck comprising a wheel-supported truck-frame consisting of side bars mounted on central supporting-wheels and having their arms upwardly and convergingly inclined at opposite sides of said central wheels, end supporting-wheels attached at opposite ends of said truck-frame, and a truck box or body mounted on said truck-frame.

8. In a truck, the combination of a truck-frame consisting of side bars mounted on central supporting-wheels and having their arms upwardly and convergingly inclined at opposite sides of said wheels, connecting-brackets between said arms at each end of said truck-frame, said brackets being mounted upon supporting-wheels, and a truck box or body mounted upon said truck-frame.

849,528. HAY-PRESS. JOSEPH W. CARTER, Roseburg, Oreg., assignor of one-third to F. M. Beard and one-third to James Tooley, Roseburg, Oreg. Filed Apr. 6, 1906. Serial No. 310,364.

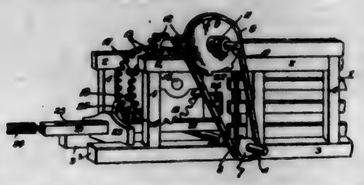

Claim.—1. In a baling-press, a main frame, a longitudinally-extending reciprocatory plunger-rod slidably mounted in the lower central portion thereof, a head upon the inner end of said rod, the metal strap 25 arranged upon the top of said rod and bent upon itself to provide the shoulders 19 and 20, one end of said strap being secured to the rod and its other end to said head and forming a brace therefor, a spring for retracting said plunger-rod, a transverse shaft mounted in said frame above said plunger-rod, a pair of gears fixed upon said shaft and arranged upon opposite sides of said plunger-rod, wrist-pins rigidly connecting said gears and arranged at equal distances from the center of said shaft, antifriction-rollers upon said wrist-pins and adapted to successively engage said shoulders 19, 20, a second transverse shaft mounted in the upper portion of the frame, pinions fixed upon said second shaft and in mesh with said gears, a main drive-shaft mounted in the lower portion of said frame, sprocket-chain gearing between said main drive-shaft and said second or upper transverse shaft, and a clutch connection between the latter and said sprocket-chain gearing substantially as shown and described.

2. In a baling-press, a casing having a feed-opening in its top, transverse shafts arranged at the ends of said feed-openings, rows of spaced fingers projecting radially from said shafts, the fingers on one shaft being adapted to swing between those on the other, crank-arms upon the ends of said shafts, a lever pivoted intermediate its ends, links connecting one end of said lever to said crank-arms, a plunger mounted to reciprocate beneath the feed-opening of said casing, a main shaft, driving connections between the latter and said plunger, an arm upon said main shaft, a pin projecting from said arm and adapted to engage the free end of said lever to elevate the same and swing said fingers downwardly to their closed position, and a coil-spring between said frame and the free end of said lever for pulling the latter downwardly and elevating said fingers to their open position, substantially as shown and described.

849,529. MASSAGE DEVICE. FORREST S. CARTWRIGHT, Chicago, Ill. Filed Oct. 2, 1905. Serial No. 280,980.

Claim.—1. A massage device comprising a frame having upper and lower members connected together in spaced relation, one of said members having spaced racks at each end thereof; hand-frames mounted for movement transversely of the frame and projecting at each end between said spaced members; rods rotatably mounted in said projecting ends of the hand members; gear-wheels mounted upon each rod for engagement with the said racks; and a finger member carried at the outer end of each of said rods, whereby upon movement of the hand members toward or from each other, the rods carried thereby may be rotated.

2. A massage device comprising a frame having upper and lower members connected together in spaced relation, one of said members having spaced racks at each end thereof; hand-frames mounted for movement transversely of the frame and projecting at each end between said spaced members; rods rotatably mounted in said projecting ends of the hand members; gear-wheels mounted upon each rod for engagement with the said racks; and a finger member carried at the outer end of each of said rods, each finger member being corrugated longitudinally, whereby upon movement of the hand members toward or from each other, the rods carried thereby may be rotated.

3. A massage device comprising a frame having upper and lower members connected together in spaced relation, one of said members having spaced racks at each end thereof; hand-frames mounted for movement transversely of the frame and projecting at each end between said spaced members; rods rotatably mounted in said projecting ends of the hand members; gear-wheels mounted upon each rod for engagement with the said racks; and a finger member carried at the outer end of said rods, each finger being of flexible material and pointed at its outer end and provided with corrugations formed longitudinally throughout its length, whereby upon movement of the hand members toward or from each other, the rods carried thereby may be rotated.

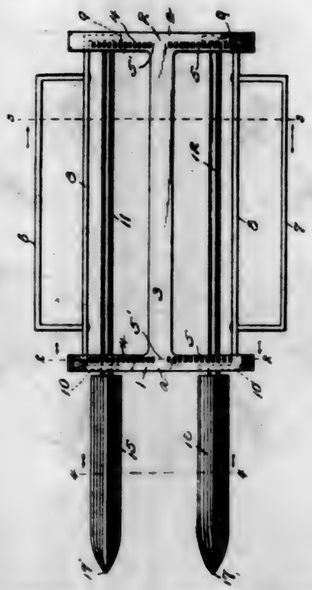

4. A massaging device comprising a frame having spaced members, hand members mounted for movement transversely of the frame, spaced rods carried by said hand members and movable therewith transversely of said frame, connections between the rods and frame whereby the rods may be rotated toward each other, and finger members mounted upon the outer ends of said rods.

5. A massaging device comprising a frame having spaced members, hand members mounted for movement transversely of the frame, spaced rods carried by said hand members and movable therewith transversely of said frame, connections between the rods and frame whereby the rods may be rotated toward each other, and finger members mounted upon the outer ends of said rods, said fingers being corrugated to form ridges.

6. A massaging device comprising a frame having spaced members, hand members mounted for movement transversely of the frame, spaced rods carried by said hand members and movable therewith transversely of the said frame, connections between the rods and frame whereby the rods may be rotated toward each other, and finger members mounted upon the outer ends of said rods, said fingers being of flexible material pointed at their outer ends and corrugated throughout their lengths.

7. A massage implement comprising a frame having spaced members, hand members mounted for movement transversely of the frame, spaced rods mounted for movement transversely of the frame upon movement of the hand members, means whereby the rods may be rotated toward each other, and a flexible finger member carried at the outer end of each of said rods.

849,530. PUMP. HARRY C. CLAY, Columbus, Ind., assignor to Reeves & Company, Columbus, Ind., a Corporation of Indiana. Filed Oct. 23, 1905. Serial No. 284,108.

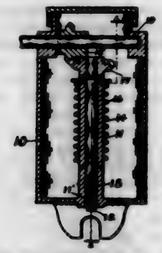

Claim.—1. The combination, with a suitable reservoir, of a cylinder formed integral therewith within the reservoir and having eduction and induction ports communicating with the bore thereof, a piston rotatably and axially reciprocable within the cylinder and having a passage formed therein communicating with the cylinder at the end of the piston and adapted to be brought into registry with the induction and eduction ports successively, a spring for normally urging the piston in one direction, a shaft, a cam carried by said shaft and adapted to drive the piston axially in opposition to the spring, and a pair of meshing gears carried by the shaft and piston. .

2. The combination, with a suitable reservoir, of a cylinder formed integral therewith within the reservoir and having eduction and induction ports communicating with the bore thereof, a piston rotatably and axially reciprocable within the cylinder and having a passage formed therein communicating with the cylinder at the end of the piston and adapted to be brought into registry with the induction and eduction ports successively, a spring for normally urging the piston in one direction, a shaft, a cam carried by said shaft and adapted to drive the piston axially in opposition to the spring, a pair of meshing gears carried by the shaft and piston, a disk carried by the shaft outside the casing, a pair of arms pivoted upon the shaft between said disk and the casing, one of said arms carrying means for engaging and propelling the disk in one direction, and interengaging portions between the two arms permitting limited movement of one of the arms independent of the other.

3. The combination, with a suitable reservoir, of a cylinder formed integral therewith within the reservoir and having induction and eduction ports communicating with the bore thereof, a piston rotatably and axially reciprocable within the cylinder and having a passage formed therein communicating with the cylinder at the end of the piston and adapted to be brought into registry with the induction and eduction ports successively, a spring for normally urging the piston in one direction, a shaft, a cam carried by said shaft and adapted to drive the piston axially in opposition to the spring, a pair of meshing gears carried by the shaft and piston, a disk carried by the shaft outside the casing, a pair of arms pivoted upon the shaft between said disk and the casing, one of said arms carrying means for engaging and propelling the disk in one direction, interengaging portions between the two arms permitting limited movement of one of the arms independent of the other, and means for varying the possible amplitude of said independent movement.

4. The combination, with a suitable reservoir, of a cylinder formed integral therewith within the reservoir and having induction and eduction ports communicating with the bore thereof, a piston rotatably and axially reciprocable within the cylinder and having a passage formed therein communicating with the cylinder at the end of the piston and adapted to be brought into registry with the induction and eduction ports successively, a spring for normally urging the piston in one direction, a shaft, a cam carried by said shaft and adapted to drive the piston axially in opposition to the spring, a pair of meshing gears carried by the shaft and piston, a disk carried by the shaft outside the casing, one of said arms carrying means for engaging and propelling the disk in one direction, interengaging portions between the two arms permitting limited movement of one of the arms independent of the other, and means for varying the possible amplitude of said independent movement.

5. In a pump, the combination, with a cylinder having induction and eduction ports communicating with the bore thereof, of a piston rotatable and axially reciprocable within said cylinder and having a passage formed therein communicating with the cylinder at the end of the piston and adapted to be brought into registry with the induction and eduction ports successively, means for rotating and axially reciprocating the piston, a disk carried by the shaft outside the casing, a pair of arms pivoted upon the shaft between said disk and the casing, one of said arms carrying means for engaging and propelling the disk in one direction, and interengaging portions between the two arms permitting limited movement of one of the arms independent of the other.

6. In a pump, the combination, with a cylinder having induction and eduction ports communicating with the bore thereof, of a piston rotatable and axially reciprocable within said cylinder and having a passage formed therein communicating with the cylinder at the end of the piston and adapted to be brought into registry with the induction and eduction ports successively, means for rotating and axially reciprocating the piston, a disk carried by the shaft outside the casing, a pair of arms pivoted upon the shaft between said disk and the casing, one of said arms carrying means for engaging and propelling the disk in one direction, interengaging portions between the two arms permitting limited movement of one of the arms independent of the other, and means for varying the possible amplitude of said independent movement.

849,531. DRAWING SHEET-GLASS. IRVING W. COLBURN, Franklin, Pa., and JOHN PLAYER, River Forest, Ill., assignors, by direct and mesne assignments, to Colburn Machine Glass Company, Franklin, Pa., a Corporation of New Jersey. Filed May 18, 1906. Serial No. 317,584.

Claim.—1. The method of drawing sheet-glass which consists in preparing a mass of molten glass, causing the surface portion of said mass to overflow its container at two opposite points, and drawing a sheet of glass from said molten mass between said points.

2. The method of drawing sheet-glass which consists in preparing a mass of molten glass, causing the surface portion of said mass to overflow its container at two opposite points, drawing a sheet of glass from said molten mass between said points, and maintaining the level of the molten mass approximately constant during the drawing operation.

3. The method of drawing sheet-glass which consists in preparing a mass of molten glass, causing the surface portion of the molten mass to flow by gravity in opposite directions, and drawing a sheet of glass from said molten mass with its plane in the line of flow of the glass.

4. The method of drawing sheet-glass which consists in preparing a mass of molten glass, causing the surface portion of the molten mass to flow by gravity in opposite directions, drawing a sheet of glass from said molten mass with its plane in the line of flow of the glass, and maintaining the level of the molten mass approximately constant during the drawing operation.

5. The method of drawing sheet-glass which consists in preparing a mass of molten glass, causing the surface portion of said mass to overflow its container at two opposite

points, drawing a sheet of glass from said mass with its plane in a line between said points, and directing a film of heated gases over the surface of the molten mass on opposite sides of the sheet during the drawing operation, whereby a sheet is obtained of uniform width and without wave-lines in its surface.

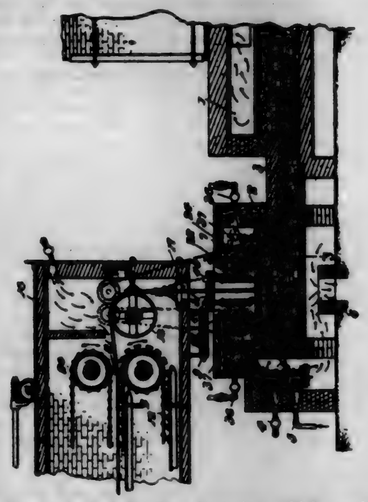

6. The method of drawing sheet-glass which consists in preparing a mass of molten glass, drawing a sheet of glass of uniform width therefrom, and directing a film of heated gases over the surface of the molten mass on opposite sides of the sheet during the drawing operation, the temperature of said gases being above that at which wave-lines or striæ are formed on the surface of the molten mass.

7. In apparatus for drawing sheet-glass, the combination of a receptacle containing molten glass and having oppositely-disposed outlets for the surface portion of said molten glass, means maintaining the level of the molten glass high enough to flow from said outlets, and means drawing a sheet of glass from said molten mass with its plane in a line between said outlets.

8. In apparatus for drawing sheet-glass, the combination of a receptacle containing molten glass and having oppositely-disposed outlets for the surface portion of said glass, means maintaining the level of the molten glass high enough to flow from said outlets, and means drawing a sheet of glass from the molten glass in said receptacle with the plane of said sheet in a line between said outlets.

9. In apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means for drawing a sheet of glass of uniform width therefrom, means directing highly-heated gases into said receptacle on each side of said sheet and above the molten mass, and rotatable guards or deflectors mounted in said receptacle one on each side of said sheet with their lower lines slightly above the surface of said molten mass, whereby a thin film of said heated gases is permitted to pass along the surface of the molten mass and under said guards or deflectors.

10. In apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means for drawing a sheet of glass of uniform width therefrom, means directing highly-heated gases into said receptacle on each side of said sheet and above the molten mass, and continuously-rotating guards or deflectors mounted in said receptacle one on each side of said sheet with their lower lines slightly above the surface of said molten mass, whereby a thin film of said heated gases is permitted to pass along the surface of the molten mass and under said guards or deflectors.

11. In apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means drawing a sheet of glass of uniform width therefrom, means directing highly-heated gases into said receptacle on each side of said sheet and above said molten mass, a guard or deflector on each side of said sheet and positioned to permit but a thin film of said gases to pass between the same and the surface of said molten mass, and two shields one between each guard and said sheet of glass.

12. In apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means drawing a sheet of glass of uniform width therefrom, means directing highly-heated gases into said receptacle on each side of said sheet and above said molten mass, a guard or deflector on each side of said sheet and positioned to permit but a thin film of said gases to pass between the same and the surface of said molten mass, and two shields one between each guard and said sheet of glass, each of said shields being mounted with its lower edge slightly above the surface of said molten mass.

13. In apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means drawing a sheet of glass of uniform width therefrom, means directing highly-heated gases into said receptacle on each side of said sheet and above said molten mass, a guard or deflector on each side of said sheet and positioned to permit but a thin film of said gases to pass between the same and the surface of said molten mass, and two horizontally-adjustable shields one between each guard and said sheet of glass.

14. In apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means drawing a sheet of glass of uniform width therefrom, means directing highly-heated gases into said receptacle on each side of said sheet and above said molten mass, a guard or deflector on each side of said sheet and positioned to permit but a thin film of said gases to pass between the same and the surface of said molten mass, and two vertically-adjustable shields one between each guard and said sheet of glass.

15. In apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means drawing a sheet of glass of uniform width therefrom, means directing highly-heated gases into said receptacle above said molten mass, two guards or deflectors mounted in said receptacle one on each side of said sheet and above the surface of said molten mass, and means for horizontally adjusting said guards or deflectors.

16. In apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means drawing a sheet of glass of uniform width therefrom, means directing highly-heated gases into said receptacle above said molten mass, two guards or deflectors mounted in said receptacle one on each side of said sheet and above the surface of said molten mass, and means for vertically adjusting said guards or deflectors.

17. In apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means drawing a sheet of glass of uniform width therefrom, means directing highly-heated gases into said receptacle above said mass, two guards or deflectors one on either side of said sheet, two shields mounted in said receptacle one between each guard or deflector and the sheet of glass, and means directing a cooling medium through said shields.

18. In apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means drawing a sheet of glass of uniform width therefrom, means directing highly-heated gases into said receptacle above said mass, two guards or deflectors one on either side of said sheet, two shields mounted in said receptacle one between each guard or deflector and the sheet of glass, means whereby said guards and said shields may be horizontally and vertically adjusted, and means directing a cooling medium through said shields.

19. In apparatus for drawing sheet-glass, the combination of a receptacle for molten glass with two oppositely-disposed discharge places formed in its walls, means maintaining molten glass in said receptacle high enough to flow from said discharge places, whereby the surface portion of the molten glass is caused to flow in opposite directions, means drawing a sheet of glass from the molten glass in said receptacle with its plane in the line of flow of the glass toward said discharge places, and means supplying heat to the glass flowing from said discharge places, whereby the clogging of the discharged glass is avoided.

20. In apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass and having oppositely-disposed overflow-lips in its walls at a level below the top of said walls, spouts extending outward from said lips, means directing highly-heated gases against said spouts, means maintaining the molten glass in said receptacle above the level of said lips, and means for drawing a sheet of glass from said molten mass, the plane of said sheet lying in a line extending between said lips.

849,532. POP SAFETY-VALVE. GEORGE E. COUTANT, Springfield, Ill., assignor of one-half to Samuel A. King, Peru, Ind. Filed Jan. 5, 1907. Serial No. 350,978.

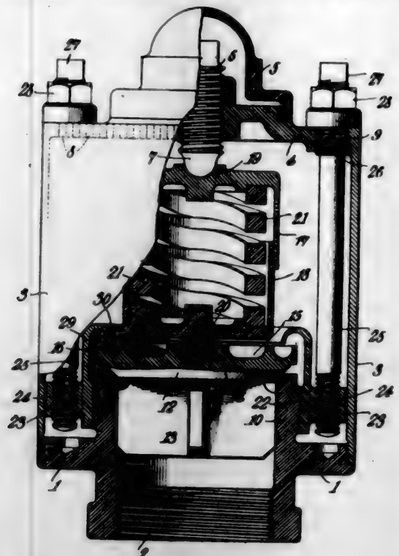

Claim.—1. The combination with a casing having a valve-seat therein; of a spring-pressed valve normally disposed upon the seat, said valve having an annular compartment therein, and means adjustably mounted within the casing for directing escaping fluid into said compartment.

2. The combination with a casing having a valve-seat therein; of a spring-pressed valve normally disposed upon the seat and having an annular compartment in its outer face, means slidably mounted within the casing for directing escaping fluid into the annular compartment, and means for adjusting said slidable means.

3. The combination with a casing having a tubular extension therein constituting a valve-seat; of a spring-pressed valve normally disposed upon the seat and having an annular compartment in its outer face, and a baffle-plate slidably mounted on the extension for directing escaping fluid upon the valve and into the annular compartment.

4. The combination with a casing having a tubular extension therein constituting a valve-seat; of a spring-pressed valve normally disposed upon the seat and having an annular compartment in its outer face, a baffle-plate slidably mounted on the extension and overlapping the valve and its compartment, and means for adjusting said plate toward or from the valve.

5. The combination with a casing having a tubular extension therein constituting a valve-seat; of a spring-pressed valve normally disposed upon the seat and having an annular compartment in its outer face, a baffle-plate slidably mounted on the extension for directing escaping fluid into the annular compartment, and means carried by the casing for adjusting the baffle-plate upon the extension.

6. The combination with a casing having a tubular extension therein constituting a valve-seat; of a spring-pressed valve normally disposed upon the seat and having an annular compartment in the outer face thereof, means for regulating the pressure of the valve upon its seat, and adjustable means for directing escaping fluid upon the valve and into the annular compartment to equalize the pressure beneath the valve.

7. The combination with a casing having a tubular extension therein constituting a valve-seat; of a valve normally disposed upon said seat, said valve having an annular compartment in its outer face, a baffle-plate adjustably mounted on the extension for directing escaping fluid into the annular compartment, and means for adjusting the baffle-plate toward or from the valve.

8. The combination with a casing and a tubular extension therein constituting a valve-seat; of a valve normally disposed upon said seat and having an annular compartment in its outer face, a baffle-plate slidably mounted on the extension and having an inturned deflecting portion overlapping the valve and compartment, and means for adjusting the baffle-plate toward or from the valve.

9. The combination with a casing and a tubular extension therein constituting a valve-seat; of a valve normally disposed upon said seat and having an annular compartment in its outer face, a baffle-plate slidably mounted on the extension and having an inturned deflecting portion overlapping the valve and compartment, and rotatable adjusting devices carried by the extension and engaging and adapted to actuate the baffle-plate.

10. The combination with a casing having a valve-seat therein; of a valve normally disposed upon the seat and having an annular compartment therein, and means within the casing for directing escaping fluid into said compartment.

849,533. PROPELLER. ANDREW DZIEDZIC, Pasadena, Cal. Filed Apr. 23, 1906. Serial No. 313,115.

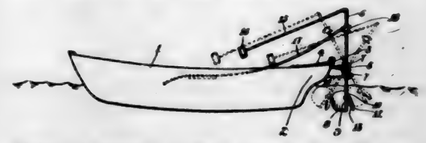

Claim.—A bracket-support attached to the boat, a swivel-bracket pivoted to the support, a sweep journaled in the swivel-bracket, collars on the sweep bearing against both sides of the swivel-bracket, a propeller hinged to the lower end of the sweep, a rudder at the lower end of the sweep projecting forward, a pair of bowed arms at the lower end of the sweep forming a rest for the propeller, a spring for preventing violent impact of the propeller against the bowed arms, an operating-rod pivoted to the upper end of the sweep, a rope attached to the sweep above its fulcrum, and means for automatically retracting the sweep.

849,534. CUT-OFF AND DRAINAGE APPARATUS. WINFIELD H. ELLIS, Argenta, Ark. Filed Feb. 1, 1907. Serial No. 355,337.

Claim.—In an apparatus for the purpose set forth, the combination of a valve or cock inserted in the supply-pipe, said cock being provided with a drain-port and with

a lateral arm and means for restricting the movement of the arm, the casing of said cock being provided with a rigid lateral arm, another valve or cock arranged opposite the aforesaid cock and inserted in the drainage-pipe from the heating system, the plug of this pipe being provided

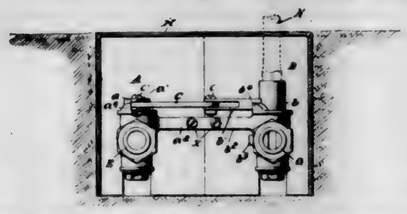

with a radial arm, the casing of this cock being provided with a rigid lateral arm, means for detachably connecting the two rigid lateral arms, and a pivotal link connecting the ends of the arms carried by the plugs, for the purpose set forth.

849,535. LOCK-NUT. JAMES J. FIFIELD, Boston, Mass., assignor of one-half to Willard Howland, Chelsea, Mass. Filed Mar. 22, 1906. Serial No. 307,350.

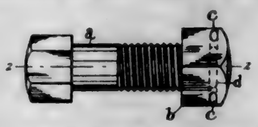

Claim.—1. The combination with a bolt, and a nut threaded thereon having a hole or opening circular in cross-section and extended transversely of said nut to remove a portion of a thread thereof, and a cylindrical pin of substantially the diameter of the hole or opening and having its opposite ends rounded and of less length than the opening or hole in the nut into which it is inserted to permit of a limited movement of the pin while wholly within the said hole or opening.

2. The combination with a bolt, and a nut threaded thereon having a hole or opening circular in cross-section and extended transversely of said nut to remove a portion of a thread thereof, and a cylindrical pin of substantially the diameter of the hole or opening in the nut and having its opposite ends rounded to distort or press a thread of the bolt out of shape without destroying the same and to enable said pin to be entered into and driven out of said hole from either end thereof, substantially as described.

849,536. FIREARM. RICHARD E. FLYBERG, Halstad, Minn. Filed Apr. 6, 1906. Serial No. 310,281.

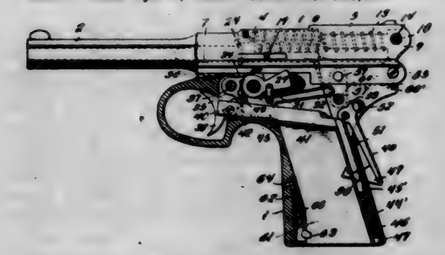

Claim.—1. In a firearm the combination with a stock, a firing mechanism located within the stock, said firing mechanism including a trigger, of a bolt slidably mounted in the stock, a bar connected with the trigger and arranged to engage the bolt when the same is at one limit of its movement, and means for moving the bolt to a position for such engagement, said means being arranged for actuation when the stock is grasped.

2. In a firearm, the combination with a stock, a barrel slidably mounted thereon, a firing mechanism including a trigger, of a bar slidably mounted within the stock and connected with the trigger, a bolt arranged to prevent movement of the trigger through engagement by the bar, and means for releasing the bolt from such engagement.

3. In a firearm, the combination with a stock, a barrel, slidably mounted thereon, a firing mechanism including a trigger, of a bar slidably mounted within the stock and connected with the trigger, a bolt arranged to prevent movement of the trigger through engagement by the bar, and a lever for releasing the bolt from such engagement.

4. In a firearm, the combination with a stock, a barrel slidably mounted thereon, a firing mechanism including a trigger, of a bar connected with the trigger, a bolt arranged for engagement by the bar to prevent movement of the trigger, a lever for moving the bolt out of such engagement, and means for locking the lever against operation.

5. In a firearm, the combination with a stock, a barrel slidably mounted thereon, a firing mechanism including a trigger, of a bar connected with the trigger, a bolt arranged for engagement by the bar to prevent movement of the trigger, a lever for moving the bolt out of such engagement, and a turn-button for locking the lever against operation.

849,537. RAIL-JOINT FOR IRON BEDS. WILLIAM L. FREDERICKS, Minneapolis, Minn. Filed Oct. 26, 1906. Serial No. 340,761.

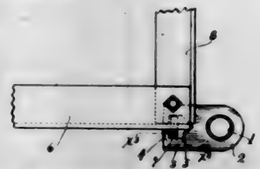

Claim.—1. The combination with a bed-post, of a coupling-head secured thereto, and provided with laterally-spaced jaws 3 having coöperating upwardly-diverging lock-flanges and outwardly-diverging clamping-surfaces, and a rail having on the opposite sides of its vertical flange lock projections that engage with said lock-flanges, and press the end of the rail against the said coöperating clamping-surfaces of said coupling-head, substantially as described.

2. The combination with a post and a coupling-head 2 secured thereto, said coupling-head having jaws 3 formed with laterally-spaced lock-flanges 4 and outwardly-diverging clamping-surfaces 5, the inner surfaces of which lock-flanges diverge upward with respect to said clamping-surfaces 5, of a rail 6 provided near its end with a lock-pin 7 passed through its vertical flange and upset, the ends of the said lock-pin 7 being engageable with the inner surfaces of said lock-flanges 4 to press the inner end of the vertical flange of said rail against the diverging clamping-surfaces 5, substantially as described.

849,538. CARBURETER. PAUL GARTH, Cleveland, Ohio. Filed Dec. 29, 1906. Serial No. 349,976.

Claim.—1. In a carbureter, in combination, a casing, a hollow throttle-valve therein having an inlet-opening for air and an outlet-opening for the mixture, a fuel-supply pipe extending axially through the valve and having lateral outlet-ports, and a controlling-valve screwed into said tube, the casing having an air-inlet passage terminating in a pipe extending into the valve around said fuel-pipe, and also having additional air-inlet openings controlled by the valve.

2. In a carbureter, in combination, a casing, a throttle-valve therein comprising a hollow cylinder having an outlet-opening in the side and air-inlet openings in the bottom,

and a fuel-supply pipe extending through the bottom of the casing and into the valve, the casing having an air-passage terminating in a tube surrounding the fuel-pipe in the valve, said passage also communicating with the interior of the casing through openings in the bottom thereof.

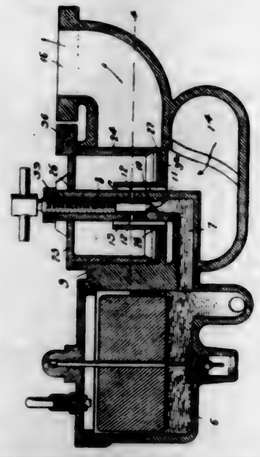

3. In a carbureter, in combination, a casing having an air-inlet tube in the bottom thereof, and segmental air-inlet openings in the bottom around said tube, a fuel-supply pipe opening into said tube, and a cylindrical throttle-valve having a central opening in the bottom through which said tube and pipe project and also having segmental openings in the bottom adapted to register with said air-inlet openings.

4. In a carbureter, in combination, a casing having an air-inlet tube projecting upwardly from the bottom thereof and air-inlet openings in the bottom outside said tube, a cylindrical throttle-valve in the casing, surrounding said tube and having openings in the bottom adapted to register with said openings, a fuel-inlet pipe which extends upwardly through said tube and the top of the valve and has ports opening into the tube, and a fuel-regulating valve screwed into the pipe and controlling said ports and connected at the top to the throttle-valve, to operate therewith.

849,539. TWYER CONSTRUCTION. ULYSSES A. GARRED, Anaconda, Mont., assignor to Charles H. Repath, Anaconda, Mont. Filed June 18, 1906. Serial No. 322,216.

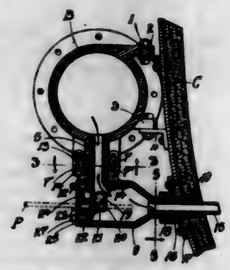

Claim.—In combination with a wind-box having a series of terminally-recessed flanges distributed along its outer walls, hollow necks connecting the flanges to the walls of the wind-box, ribs disposed in pairs on opposite sides of the recesses and extending from the flanges to the wall of the wind-box, twyers having correspondingly-recessed flanges adapted to engage the flanges of the wind-box, and hinge-bolts suspended between each pair of ribs and passed through the recesses of the respective flanges, substantially as set forth.

849,540. SAMPLE-MIXER. ULYSSES A. GARRED, Anaconda, Mont. Filed June 22, 1906. Serial No. 322,906.

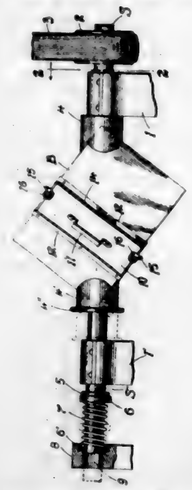

Claim.—1. A sample-mixer comprising a box having six rectangular faces and mounted to rotate about a diagonal axis, one of the faces having an opening located adjacent to a contiguous face, and a sliding door for closing said opening movable in a plane at an angle to the direction of rotation of the box and across the meeting edge of said contiguous faces, substantially as set forth.

2. A sample-mixer comprising a cubical box mounted to rotate about a diagonal axis, one of the faces of the box having an opening located adjacent to a contiguous face, and a sliding door for said opening movable across the meeting edge of said contiguous faces and in a plane making an angle with the general direction of rotation of the box, substantially as set forth.

3. A sample-mixer comprising, a cubical box having an opening in one face thereof adjacent to a contiguous face, a frame encompassing said opening and having flanges overlapping the edges of three contiguous faces of the box, a lid for the frame and means for mounting and rotating the box about a diagonally-disposed axis, substantially as set forth.

849,541. SPRING-BED. ISAAC H. HAAS, Atlanta, Ga. Filed July 30, 1906. Serial No. 328,382.

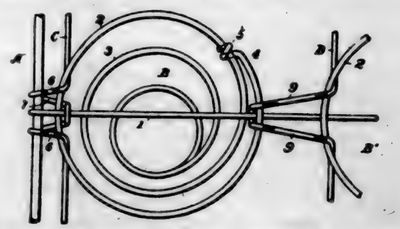

Claim.—1. A spring bed-bottom consisting of parallel upper and lower frames A, E provided with parallel

straight connecting-rods 1 and intermediate springs B, B' the upper coils of the springs bearing against the inner sides of the rods, the end of each outer coil extending over the rod and provided with a hook connecting it to the adjacent coil, and tie-rods C each parallel to one of the side bars of the frame and having two loops 6, 7 extending in opposite directions and both engaging the side bar and the adjacent coil of each spring and one loop engaging also the rod 1 against which said spring bears.

2. A spring bed-bottom consisting of parallel upper and lower frames A, E provided with parallel straight connecting-rods 1 and intermediate springs B, B' the upper coils of the springs bearing against the inner sides of the rods, the end of each coil extending over the rod and provided with a hook connecting it to the adjacent coil, and tie-rods C each parallel to one of the side bars of the frame and having two loops 6, 7 both engaging the side bar and the adjacent coil of each spring and one loop engaging also the rod 1 against which said spring bears, the side portion of each loop having shoulders *x*, *y*, as set forth.

849,542. METALLIC RAILWAY-TIE. BENJAMIN F. HAMILTON, Marlinton, W. Va. Filed Dec. 22, 1906. Serial No. 349,151.

Claim.—A metallic railway-tie having a rail-receiving inverted-T-shaped base portion composed of a central rib, flanges formed integral with the rib, said rib having recesses and V-shaped notches formed integral with the recesses; in combination with a tapering key having a V-shaped groove therein to engage with one of the notches of the recesses in the vertical central rib, all constructed as herein shown and described.

849,543. HEATING ARRANGEMENT FOR TURBINES. RUDOLF HOFFMANN, Mülhausen, Germany. Filed July 9, 1906. Serial No. 325,408.

Claim.—1. In a turbine, a nozzle, and passages supplied therefrom in combination with a steam-jacket to heat said nozzle and passages, said steam-jacket surrounding the nozzle.

2. In a steam-turbine, an expansion-nozzle, a steam-jacket surrounding the nozzle and heat-conducting ribs between the jacket and nozzle arranged to form a continuous steam-passage therethrough, whereby the nozzle and passages supplied with steam therefrom are heated by conduction to heat the working steam.

3. In a steam-turbine, the combination with turbine-wheel of a nozzle extending in a spiral partly around the periphery thereof, a steam-jacket for said nozzle, radiator-ribs between the jacket and nozzle forming a continuous tortuous passage through the jacket, and a steam inlet and outlet for the jacket.

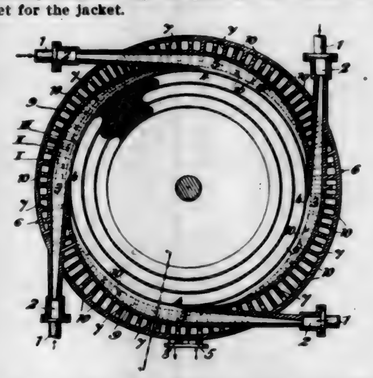

4. In a turbine, an expansion-nozzle terminating in spiral form and a steam-jacket surrounding the nozzle.

5. In a steam-turbine, an expansion-nozzle terminating in a spiral non-expanding end having a discharge-opening therein, a steam-jacket surrounding the nozzle, ribs between the nozzle and jacket-walls and steam-passages through the ribs, said passages out of alinement.

6. In a single-stage turbine, the combination with a plurality of expanding-nozzles, of a steam-jacket common to all the nozzles, radiator-ribs on the nozzles projecting into the jacket and an independent inlet and outlet to said jacket for heating medium.

849,544. ICE-PLOW. GEORGE M. HOKE, Harrisonville, Mo. Filed Apr. 2, 1906. Serial No. 309,431.

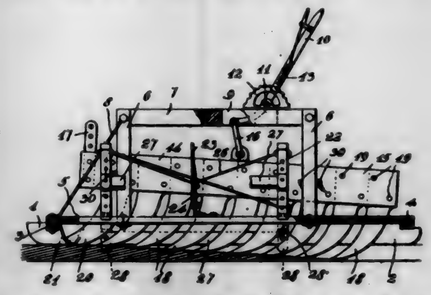

Claim.—In an ice-plow, the combination of a sled having a shoe at its front end to bear on the ice and provided with an opening, a beam having cutters and a standard, the latter operating in the opening of the shoe, guides for the said beam, and means to raise and lower the beam, together with its cutters and standard, with reference to the sled, for the purpose set forth.

849,545. GRINDING AND PULVERIZING APPARATUS. BERTRAM HUNT, San Francisco, Cal. Filed Feb. 27, 1906. Serial No. 303,189.

Claim.—1. In a grinding and pulverizing machine, in combination, a cylindrical vessel, a revoluble driver having radial vanes, centrally mounted within said vessel, leaving an annular space between said driver and the vertical wall of the vessel and a circular space between the driver and the bottom of the vessel, and granular abrasive material in said annular space and said circular space, and between said vanes, for effecting the grinding function as said abrasive material moves at differential speeds by the operation of the driver, substantially as specified.

2. In a grinding and pulverizing machine, in combination, a cylindrical vessel, a revoluble driver having radial vanes, centrally mounted within said vessel, leaving an annular space between said driver and the vertical wall of the vessel and a circular space between the driver and the bottom of the vessel, baffling-ribs on the inner face of the vertical wall of the vessel, radial baffling-bars on the bottom of said vessel, and granular abrasive material in said annular space and said circular space, substantially as specified.

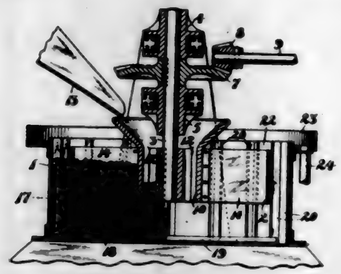

3. In a grinding and pulverizing machine, in combination, a cylindrical vessel, a revoluble driver having radial vanes, centrally mounted therein, leaving an annular space between the two at the sides and a circular space at the bottom, a driving-shaft at the center of the driver, a hopper-shaped hub surrounding said shaft, baffling-bars arranged within the vertical wall of the vessel and on the floor thereof, and granular abrasive material in said annular and circular spaces, substantially as specified.

4. In a grinding and pulverizing machine, in combination, a cylindrical vessel, a revoluble driver having radial vanes centrally mounted therein, leaving an annular space between the two at the sides and a circular space at the bottom, a driving-shaft at the center of the driver, a hopper-shaped hub surrounding said shaft, a feeding-chute adjacent to said hopper-shaped hub, baffling-bars arranged on the inner wall and floor of said vessel, an annular trough surrounding said vessel at the top, with spout, and granular abrasive material in said annular space and said circular space, substantially as specified.

849,546. HEATING-STOVE. JEPTHA L. JOHNSON and THOMAS REYNOLDS, Nicholasville, Ky. Filed Aug. 27, 1906. Serial No. 332,230.

Claim.—1. The combination with a stove-body, of a central flue therein having communication with the smoke-pipe, and terminating at its lower end above the fire-pot, the upper end of said flue terminating near the stove-top a deflector on top of the flue, and a fuel-entrance in the stove-top above the deflector.

2. The combination with a stove-body having a fire-pot in its lower end and a fuel-entrance opening in its upper end, of a central flue in the body open at its lower end and extending from a point above the fire-pot and terminating at its upper end near the top of the body, a deflector on the top of the flue to distribute fuel all around the flue, and a smoke-pipe communicating with said flue.

3. The combination with a stove-body having a fire-pot in its lower end and a fuel-inlet in its top, of a central flue in the body extending from near the fire-pot to near the top of the body and open at its lower end to receive the smoke and gases, a deflector on top of the flue to distribute the fuel all around the same, a branch flue communicating with the main flue and terminating at a

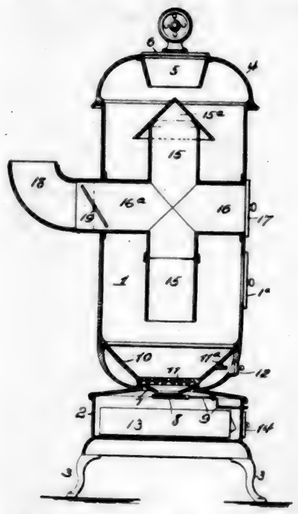

check-draft in the body, another branch flue communicating with the main flue to convey the smoke and gases to the swoke-pipe and a damper in said last-mentioned branch flue.

849,547. COUNTER-DIE AND METHOD OF MAKING SAME. PAUL LEHNERT and MAX LEHNERT, Dresden, Germany, assignors to Arthur Friedheim, Berlin, Germany. Filed June 26, 1906. Serial No. 323,529.

Claim.—1. A counter-die formed from a sheet of compressible material of greater thickness than any portion of the finished die, such sheet being simultaneously compressed in all of its parts and flat on one side and embossed on the other, the embossed portions being compressed less than the plain portions, the material being such that the differently-compressed plain and embossed portions retain their relative forms without further treatment after compression.

2. The herein-described process of manufacturing counter-dies, consisting in preparing a suitable embossing-pulp, forming thereof a plate of a thickness greater than any portion of the finished die, and subjecting all parts of this plate to pressure by a form leaving one side plain and the other side partially plain and embossed, the embossed portions being compressed less than the plain portions, the material being capable of retaining its compressed and embossed condition without drying, hardening, or other treatment.

849,548. FOREHEAD AND EAR PROTECTOR. MAUD E. LINEWEAVER, South English, Iowa. Filed July 19, 1906. Serial No. 326,913.

Claim.—A forehead and ear protector comprising a substantially straight band of soft and thick material adapted to shut in warmth, a button on one end and an elastic loop on the other to fasten it on the head and render it self-adjustable therearound, ear-tabs integrally connected with the lower edge of the forehead-band, elastic fastenings attached to the lower edges of the ear-tabs and adapted to be tied together under the chin of the wearer.

849,548.

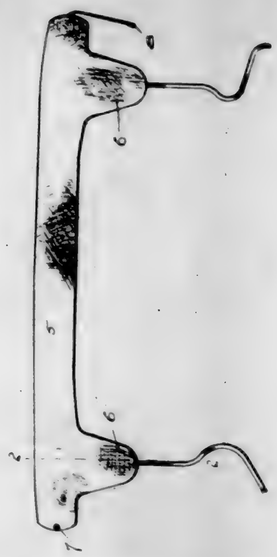

849,549. MOTOR-VEHICLE. LYNN C. LULL, Kalamazoo, Mich. Filed Oct. 24, 1904. Serial No. 229,767.

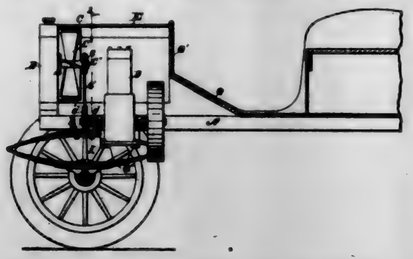

Claim.—1. In a motor-vehicle, the combination of a vehicle-body; an inclined footboard and a dashboard therefor, with a casing or hood projecting forwardly from said foot and dash boards; a heat-radiating device at the forward end of said casing or hood; a fan supported to the rear of said heat-radiating device; a conical open-ended casing for said fan projecting rearwardly from said heat-radiating device coacting with said hood, footboard, and dashboard, to direct the air-current delivered from said fan rearwardly and downwardly under the vehicle-body; a motor arranged in said hood at the rear of said fan, adapted to receive the air-current therefrom; and driving connections from said fan, for the purpose specified.

2. In a motor-vehicle, the combination of a vehicle-body; an inclined footboard and a dashboard therefor, with a casing or hood projecting forwardly from said foot and dash boards; a heat-radiating device at the forward end of said casing or hood; a fan supported to the rear of said heat-radiating device; a conical open-ended casing for said fan projecting rearwardly from said heat-radiating device, coacting with the said hood, footboard, and dashboard, to direct the air-current delivered from said fan rearwardly and downwardly under the vehicle-body; a motor arranged in said hood at the rear of said fan, adapted to receive the air therefrom; and driving connections from said fan, for the purpose specified.

3. In a motor-vehicle, the combination of a vehicle-body; an inclined footboard and a dashboard therefor, with a casing or hood projecting forwardly from said foot and dash boards; a heat-radiating device at the forward end of said casing or hood; a fan supported to the rear of said heat-radiating device; an open-ended casing for said fan, projecting rearwardly from said heat-radiating device, coacting with the said hood, footboard, and dashboard, to direct the air-current delivered from said fan rearwardly and downwardly under the vehicle-body; a motor arranged in said hood at the rear of said fan, adapted to receive the air-current therefrom; and driving connections from said fan, for the purpose specified.

4. In a motor-vehicle, the combination of a vehicle-body; an inclined footboard and a dashboard therefor, with a casing or hood projecting forwardly from said foot and dash boards; a heat-radiating device at the forward end of said casing or hood; a fan supported to the rear of said heat-radiating device; an open-ended casing for said fan, projecting rearwardly from said heat-radiating device coacting with the said hood, footboard, and dashboard, to direct the air-current delivered from said fan rearwardly and downwardly under the vehicle-body; and driving connection from said fan, for the purpose specified.

5. In a motor-vehicle, the combination of a vehicle-body; a casing or hood at the forward end thereof; a heat-radiating device at the forward end of said casing or hood; a fan supported to the rear of said heat-radiating device; a conical open-ended casing for said fan projecting rearwardly from said heat-radiating device coacting with said hood, to direct the air-current delivered from said fan rearwardly and downwardly under the vehicle-body; a motor arranged in said hood at the rear of said fan, adapted to receive the air therefrom; and driving connections from said fan, for the purpose specified.

6. In a motor-vehicle, the combination of a vehicle-body; a casing or hood at the forward end thereof; a heat-radiating device at the forward end of said casing or hood; a fan supported to the rear of said heat-radiating device; a conical, open-ended casing for said fan projecting rearwardly from said heat-radiating device coacting with said hood to direct the air-current delivered from said fan rearwardly and downwardly under the vehicle-body; and driving connections from said fan, for the purpose specified.

7. In a motor-vehicle, the combination of a vehicle-body; a casing or hood at the forward end thereof; a heat-radiating device at the forward end of said casing or hood; an open-ended casing for said fan projecting rearwardly from said heat-radiating device, coacting with said hood, to direct the air-current delivered from said fan rearwardly and downwardly under the vehicle-body; a motor arranged in said hood at the rear of said fan, adapted to receive the air therefrom; and driving connections from said fan, for the purpose specified.

8. In a motor-vehicle, the combination of a vehicle-body; a casing or hood at the forward end thereof; a heat-radiating device at the forward end of said casing or hood; a fan supported to the rear of said heat-radiating device; an open-ended casing for said fan, projecting rearwardly from said heat-radiating device, coacting with said hood, to direct the air-current delivered from said fan rearwardly and downwardly under the vehicle-body; and driving connections from said fan, for the purpose specified.

849,550. AIR-BRAKE MECHANISM. CHARLES G. LUNDHOLM, Otis, Cal., assignor of one-half to Frank E. Davisson, Los Angeles, Cal. Filed July 16, 1906. Serial No. 326,515.

Claim.—1. The combination with a car and brake-cylinder for controlling the brake-levers, of a lifting mechanism independent of and disconnected from the brake mechanism, and valve mechanism for controlling said lifting mechanism.

2. The combination with a brake-cylinder, auxiliary reservoir and supplemental piston-chamber, of a regulating-valve chamber and check-valve chamber in communication with each other and the latter in communication with the supplemental piston-chamber, and a valve for automatically regulating the communication between said chambers.

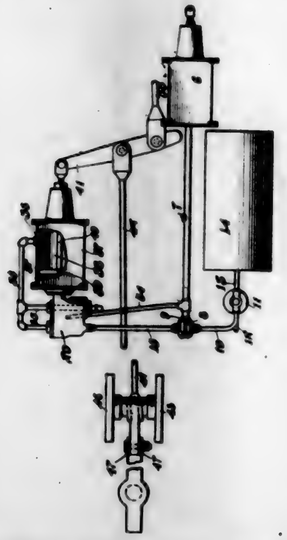

3. The combination with a brake-cylinder, auxiliary reservoir and supplemental piston-chamber, of a regulating-valve chamber and check-valve chamber in communication with each other and the latter in communication with the supplemental piston-chamber, and a valve for automatically regulating the communication between said chambers, a pipe extending from the air-passage between the regulating-valve chamber and check-valve chamber to the brake-cylinder, a triple valve and pipes leading from the auxiliary reservoir to the triple valve and from the latter to the regulating-valve chamber.

4. The combination with a brake-cylinder, auxiliary reservoir and supplemental piston-chamber, of a regulating-valve chamber and check-valve chamber in communication with each other and the latter in communication with the supplemental piston-chamber, a valve for automatically regulating the communication between said chambers, a pipe extending from the air-passage between the regulating-valve chamber and check-valve chamber to the brake-cylinder, a triple valve, pipes leading from the auxiliary reservoir to the triple valve and from the latter to the regulating-valve chamber, a check-valve chamber in the pipe leading to the brake-cylinder and a check-valve in said chamber.

5. The combination of a fluid-pressure brake apparatus of an independent valve-casing on the communication between the auxiliary reservoir and brake-cylinder, said casing being smaller at the bottom than at the top, two pistons in said casing connected by a stem, said casing having an exhaust-port at the lower portion of the enlarged upper part thereof, and a connection intermediate said pistons to an auxiliary piston-chamber and to the brake-cylinder.

6. In a fluid-pressure brake apparatus, an independent valve device for controlling the flow of fluid to the brake-cylinder; a pressure-operated lifting mechanism for controlling the position of said independent valve; a check-valve on the passage leading to said pressure-operated lifting mechanism; and mechanism for holding said check-valve open until the pressure-operated lifting mechanism is released.

7. The combination with an auxiliary reservoir and brake-cylinder adapted to operate brake mechanism, of lifting-levers, a floating lever, means connecting the latter with the lifting-levers, of a supplemental piston-chamber, a piston therein which guides the floating lever, a regulating-valve chamber, a check-valve chamber in communication with the supplemental piston-chamber, a passage between the regulating-valve chamber and the check-valve chamber, valves in said chambers, and a pipe leading from the passage between the chambers to the brake-cylinder.

8. The combination with an auxiliary reservoir and brake-cylinder adapted to operate brake mechanism, of lifting-levers, a floating lever, means connecting the latter with the lifting-levers, of a supplemental piston-chamber, a piston therein which guides the floating lever, a regulating-valve chamber, a check-valve chamber in communication with the supplemental piston-chamber, a passage between the regulating-valve chamber, and the check-valve chamber, valves in said chambers, a pipe leading from the passage between the chambers to the brake-cylinder, a pipe leading from the auxiliary reservoir to the regulating-valve chamber and a pipe leading from the supplemental piston-chamber to the regulating-valve chamber and the check-valve chamber.

9. The combination with an auxiliary reservoir, a brake-cylinder and a triple valve, a pipe leading from the reservoir to the triple valve and a train-line pipe leading to the triple valve, of a supplemental piston-chamber and piston therein, a lifting mechanism operated by the piston-valve mechanism, a pipe leading from the triple valve to said mechanism, a valve leading from the valve mechanism to the brake-cylinder and a pipe leading from the supplemental piston-chamber to the valve mechanism whereby power applied to the brakes of each car is automatically cut off, whenever the desired efficiency has been reached, whether the car be loaded, partially loaded, or empty, without locking the wheels of the car.

10. The combination with a brake-cylinder, an auxiliary reservoir, a supplemental piston-chamber, a piston therein, and lifting mechanism operated and controlled by said piston, of valve-chambers in connection with the brake-cylinder, reservoir and supplemental piston-chamber, and valves therein which are automatically cut off whenever the desired or maximum efficiency has been reached, so that the brake-power applied to the wheels of the car shall be perfectly proportioned to the weight of the car and its load.

849,551. MAIL-CARRYING DEVICE. ADILT A. LUTTERMAN, Ackley, Iowa. Filed Dec. 29, 1906. Serial No. 350,036.

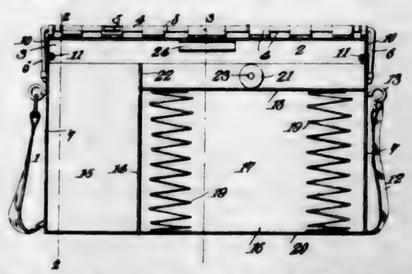

Claim.—1. In a device of the class described, the combination of a receptacle, a transverse partition adjacent one end thereof, a longitudinal partition extending from the transverse partition to the other end of the receptacle, spring-pressed followers in the compartments on opposite sides of the longitudinal partition, a transverse shaft in the receptacle extending across the said compartments, freely-rotatable rollers on the shaft coöperating with the followers to hold mail-matter between them, and hingedly-connected cover-sections arranged over the compartments.

2. In a device of the class described, the combination of a receptacle, a transverse partition having spaced notches at its top portion, a longitudinal partition disposed in a plane between the notches and extending from the transverse partition to one end of the receptacle, a follower in each compartment on opposite sides of the longitudinal partition, springs for yieldingly supporting the followers, a single shaft mounted in two opposite walls of the receptacle and in the longitudinal partition, a roller on the shaft at each side of the longitudinal partition, an arched cover for the receptacle composed of hingedly-connected sections, devices for holding the cover-sections closed, and means on the said sections for holding mail-matter.

3. In a device of the class described, the combination of a receptacle divided into compartments, an arched cover divided longitudinally into sections having depending end portions, eyes at the meeting edges of the sections, a pintle-rod extending through the eyes and having its ends bent downwardly over the end portions of the sections and secured to the receptacle, elastic members at the ends of the cover each connected with the depending portions of the sections thereof for holding the sections closed, and a carrying means attached to the receptacle.

4. In a device of the class described, the combination of a receptacle divided into compartments, an arched cover divided longitudinally into sections having depending end portions, eyes at the meeting edges of the sections, a pintle-rod extending through the eyes and having its ends bent downwardly over the end portions of the sections and secured to the receptacle, elastic members at the ends of the cover each connected with the depending portions of the sections thereof for holding the sections closed, a bail attached to the pintle-rod, and means on the inside of the cover-sections for holding mail-matter.

849,552. COVER OR LID SUPPORT FOR BARRELS. WILLIAM J. MADOLE and HENRY BOERNER, Paris, Tenn. Filed June 11, 1906. Serial No. 321,261.

Claim.—A cover or lid supporting attachment for barrels comprising a bracket composed of a back piece and a top piece projecting laterally from the upper portion of the back piece, a cover pivoted to the top piece of the bracket, a vertical arm projecting upwardly from the back piece of the bracket for coöperation with the cover or lid, hooks projecting from the under side of the top piece of the bracket to engage over the top of a barrel, and a screw or fastening applied to the lower portion of the back piece and adapted to secure the same to the body of a barrel.

849,553. MACHINE FOR SEPARATING GOLD AND PLATINUM FROM OTHER MATERIAL. CHARLES O. MICHAELSEN, Salt Lake City, Utah. Filed Feb. 14, 1905. Serial No. 245,616.

Claim.—1. In combination with a metal-saving machine, a power-driven shaft and an eccentric attached to one end of the connecting-rod, the other end of which is pivoted to the lateral arm of a bell-crank lever, a laterally-actuated box supported on the frame provided with grate-openings in its floor, above and near which, are one or more transversely-disposed chains, each maintained elastically taut and stationary by means of connections at the end of each of said chains, with resilient supports secured to the frame of the machine; the vertical arm of the bell-crank lever pivoted to one end of a short connecting-rod, the other end of said rod secured to the said box, substantially as shown and set forth.

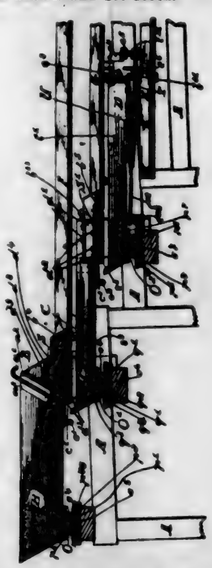

2. In a machine for separating metal from its gangue, a frame provided with bearings carrying a power-driven shaft with an operating-eccentric, and a connecting-rod pivoted to the lateral arm of a bell-crank lever, the vertical arm of which is pivoted to one end of a short rod inclosing a spherical stud secured to a rocker-box capable of being reciprocally actuated and having a perforated floor over which, and in juxtaposition therewith, one or more resiliently-stationary chains are transversely disposed, the said chains being connected at each end with blocks loosely filling corresponding holes in each side of the said rocker-box, the exterior ends of each of the said blocks connected to rods whose outer ends are threaded and provided, each, with a nut by which connections and tension is maintained with springs secured to a stationary part of the frame of the machine in combination with other chains arranged adjacently over the said resiliently-stationary chains but secured to and moving with the inside of the said rocker-box to which the end of the said adjacent chains are attached, substantially as and for the purpose hereinbefore described.

3. In a machine for saving gold and platinum from gangue, the combination of a rocker-box pivoted at its higher end in such a manner as to admit of tilting in any direction, and actuated by a power-driven shaft with an operating-eccentric, and a connecting-rod pivoted to the lateral arm of a bell-crank lever, the vertical arm of which is pivoted to one end of a short rod, the other end of said rod inclosing a spherical stud secured to the said rocker-box, and provided, one on each side, with opposing laterally-projecting curved supporting-arms that rest and ride on bearing-rolls whose axial lines are coincident with radial lines from the center of the pivoted bearing supporting the higher end of the said rocker-box, with a series of chains stretched between springs secured to opposite stationary parts of the frame of the machine, the said series of chains superposed over gratings in the floor of the said rocker-box, other chains being secured to the inner sides of the said rocker-box and disposed approximately parallel and adjacent to the said resiliently-stationary chains, as and for the purpose substantially as described.

4. In a machine for saving gold and platinum from gangue, a box consisting of a bottom, one upwardly-projecting end and two sides, the floor of the said bottom composed in part of flexible material, the sag of which rests on radially-disposed rolls converging toward a centrally-placed bearing supporting the higher end of the said box, the said bearing secured to the under side of the said box and to the frame of the machine in such a manner as to permit of rotative movement of the said box in the plane of its bottom and of that of the top lines of the said radially-disposed rolls whose said converging ends are journaled in bearings secured to a part of the said frame of the machine, the lower end of the said box caused to laterally vibrate by a power-driven shaft, with an operating-eccentric, and a connecting-rod pivoted to the lateral arm of a bell-crank lever, the vertical arm of which is pivoted to one end of a short rod, the other end of said rod inclosing a spherical stud secured to the said rocker-box, substantially as and for the purpose shown.

5. In a machine for recovering gold or platinum from its associated gangue, the combination of a box consisting of three upwardly-extending sides secured to a bottom consisting in part of flexible material, the sag of which rests on and is supported by, a number of radially-disposed conical rolls whose peripheral longitudinal lines and axes converge toward the pivotal bearing supporting the higher end of the said box, the said rolls journaled at their converging ends to a bearing secured to the frame of the machine, and at their diverging ends journaled to bearings secured to a cross-bar secured to the said frame of the machine, the said box provided on its two opposite, inner sides, each, with a detachable plate which serves as a clamp for detachably securing the opposite edges of supplementary superlying removable flexible bottoms, the free end of the said box being laterally vibrated by a power-driven shaft with an operating-eccentric, and a connecting-rod pivoted to the lateral arm of a bell-crank lever, the vertical arm of which is pivoted to one end of a short rod, the other end of said rod inclosing a spherical stud secured to the said rocker-box, substantially as described.

6. In a machine for winning gold and platinum from gangue, a box supported at its higher part by a pivotal bearing connecting the said box with the frame of the machine in such a manner as to permit the free end of the said box to swing laterally, the extreme free end of the said box carrying a curved bar on the arc of a circle, whose radius is the center of the said pivotal bearing, the said curved bar provided on its peripheral edge with a clamp-strip of the same contour, and detachably secured by screws to the said peripheral edge in such a manner as to securely clamp and hold one edge of a flexible sheet whose other edges are secured to inside parts of the said box, a part of whose floor is cut away and substituted by the said flexible sheet, the sag of which is supported and divided by a number of conical rolls whose axes meet at the center of the said pivotal bearing, the converging ends of the axles of the said conical rolls journaled in a bracket secured to the frame of the machine, the diverging ends of the axles of the said rolls journaled in bearings secured to a bar constituting a part of the frame of the machine, the rearward part of each conical-roll axle, immediately forward of its bearing, carrying secured thereto a fender-disk that protects the bearing behind, a power-driven shaft with an eccentric, and a connecting-rod pivoted to the lateral arm of a bell-crank lever, the vertical arm of which is pivoted to the end of the short rod, the other end of said rod inclosing a spherical stud secured to the said rocker-box, substantially as shown and set forth.

7. In a machine for winning gold and platinum from gangue, in combination with a power-driven shaft with an operating-eccentric, and a connecting-rod pivoted to the lateral arm of a bell-crank lever, the vertical arm of which is pivoted to one end of a short rod, the other end of said rod inclosing a spherical stud secured to an inclined, three-sided box pivoted at its higher under side to a median central bearing secured to, and supported by, the frame of the machine, the free end of the said box provided with suitable mechanism for causing it to be laterally vibrated, the said free end of the said box resting and riding on a number of rolls that are radial with the center of the said rolls journaled in a bracket secured to the frame of the machine, the diverging ends of the said rolls journaled in bearings secured to a cross-bar of the frame of the machine, the rearward part of the bottom of the said box consisting of flexible material suitably secured by its edges to the said box, the sag of the said flexible material riding on and divided by the said radially-disposed rolls, the said box, central bearing, rolls and flexible bottom operating below the top level of a tank that may be filled with water with or without chemicals, substantially as and for the purpose shown and described.

8. In a machine for winning metal from gangue, a separating-table whose floor is bounded on three sides by upwardly-extending walls, the said floor supported by two dumb-bell supports located longitudinally median, near the nether end of the said separating-table, the base-plates of the said dumb-bell supports secured to a cross-beam of the frame of the machine, a perforated screen secured and located over a box-chute that is arranged to discharge into another metal-saving device below, the said separating-table terminating, at its lower end, in a bifurcated waste-chute for carrying to waste all material too coarse to pass through the holes in the said perforated screen, the sides of the said separating-table made to vibrate vertically by means of a transverse bar secured to the under side of the said separating-table and projecting beyond one of the sides of the said separating-table and connecting with the top end of a vertical rod whose lower end terminates by a pivoted connection with one of a connected pair of parallel bars between which is a three-way cam secured to the longitudinally-journaled and frame-supported shaft which derives rotary motion from a bevel gear-wheel secured to one end thereof, the said bevel gear-wheel having teeth that intermesh with a bevel-pinion secured to one end of a transversely-journaled, frame-supported driving-shaft carrying secured thereon a balance-wheel and driving-pulley, the rotation of the said three-way cam giving three equal, up-and-down movements to the said parallel bars and connected separating-table for each revolution of the said longitudinal shaft, substantially as described.

9. In a machine for winning metal from gangue, an amalgamating-pan pivoted near its lower, discharge, end to a ball-bearing, the two track-plates of which are each oppositely trunnioned and mounted at right angles to each other, one journaled to a ball-bearing frame secured to the under side of the said amalgamating-pan, the other said track-plate having its oppositely-projecting trunnions disposed at right angles to those of the adjacent track-plate above and separated by a series of balls working in an annular groove in each said track-plate, the opposite trunnions of the lower said track-plate journaled in half-box bearings projecting upward from the ball-bearing base-plate frame which is secured to a cross-beam of the frame of the machine, the higher, swinging end of the said amalgamating-pan supported by a chain whose ends are secured, each, near opposite corners of the said amalgamating-pan, the middle of the said chain forming an apex to which connection is made to a sleeve inclosing and working on a stud projecting from the frame of the machine, the said stud also carrying pivoted thereto the upper extremity of a pendulum-rod whose lower part carries a ball adjustable vertically thereon and secured by a set-screw, the said pendulum-rod being embraced by two pins projecting from a resiliently-secured block inclosed within a box-base secured to the rear end of the said amalgamating-pan the floor of which is cylindrically concave in the direction of the length of the machine, the free end of the said amalgamating-pan caused to swing with the said pendulum-rod by its already-described resilient block with its two projecting pins embracing the said pendulum-rod to which a vibrating movement is given by means of a coiled spring secured at its middle to the said pendulum-rod the ends of the coiled spring secured to a sliding bar

working transversely in ways secured to the frame of the machine, the said sliding bar pivoted to one end of a connecting-rod, the other end of the said connecting-rod being connected to the strap of an eccentric secured to and mounted on a counter-shaft journaled at each end in bearings secured to the frame of the machine, the said counter-shaft also carrying secured thereto a step-cone pulley operated by a belt driven by a reversely-placed step-cone pulley secured to and revolving with the suitably-driven longitudinal shaft journaled in bearings secured to the said frame of the machine, substantially as herein shown and set forth.

840,554. TOY GUN. ALFRED D. MIDDLETON, Savannah, Ga. Filed Dec. 28, 1906. Serial No. 349,913.

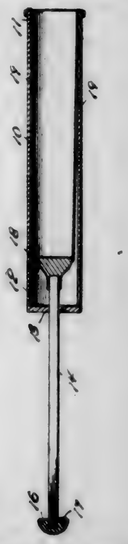

Claim.—A toy gun comprising a barrel provided with an angular opening through the breech, a plunger-rod of form in cross-section corresponding to the form of the opening through the breech and provided on its forward end with a head and on its rearward end with a handle, a support on the breech for a cap, means on the handle for striking the cap, and rubber springs connected at one end with the margin of the muzzle and at the other with the plunger.

849,555. METHOD OF MANUFACTURING METALLIC OXIDS. JOHN H. MONTGOMERY, St. Louis, Mo., assignor of one-third to Francis H. Ludington and Frank Orff, St. Louis, Mo. Filed Oct. 14, 1904. Serial No. 228,444.

Claim.—1. The herein-described method of manufacturing red lead which consists in atomizing molten metal, agitating the atomized particles in the presence of water, then oxidizing said particles by the action of water and circulating air, and thereafter introducing them into a closed receptacle and agitating them while they are subjected to heated air under pressure; substantially as described.

2. The herein-described method of manufacturing red lead which consists in first atomizing the metal, subjecting the atomized particles to constant agitation in a chamber containing circulating air, for a predetermined length of time, then conveying said particles into a heated closed receptacle and agitating them for a certain length of time and subjecting them to heated air under pressure during the time they remain in said chamber; substantially as described.

849,555.

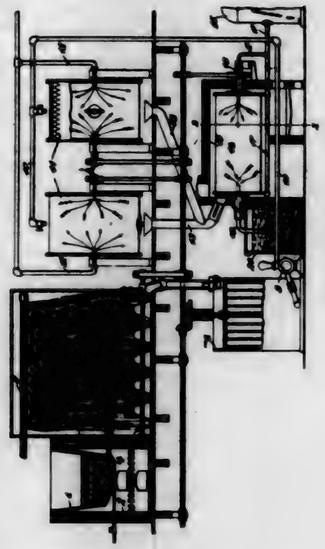

849,556. DRAFT-RIGGING. CHARLES J. NASH, Chicago, Ill., assignor to W. H. Miner Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 17, 1906. Serial No. 348,105.

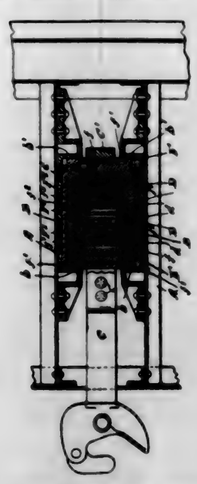

Claim.—1. In a draft-rigging, the combination with the draw-bar, draw-bar yoke and side plates or stop-castings having front and rear stops, of a plurality of alternating sets of straight flat springs and curve-faced bearing-blocks, the bearing-blocks having alternately convex and concave faces engaging the springs, the front and rear blocks acting as followers and engaging the stops and draw-bar, and a box or case inclosing said bearing-blocks and springs, substantially as specified.

2. In a draft-rigging, the combination with the draw-bar, draw-yoke and side plates or stop-castings having front and rear stops, of a plurality of alternating sets of straight flat springs and curve-faced bearing-blocks, the bearing-blocks having alternately convex and concave faces engaging the springs, the front and rear blocks acting as followers and engaging the stops and draw-bar, a box or case inclosing said bearing-blocks and springs, and the front and rear bearing-blocks being movably connected with said inclosing box or case, substantially as specified.

3. In a draft-rigging, the combination with the draw-bar, draw-bar yoke and side plates or stop-castings having front and rear stops, of a plurality of alternating sets of straight flat springs and curve-faced bearing-blocks, the bearing-blocks having alternately convex and concave faces engaging the springs, the front and rear blocks acting as followers and engaging the stops and draw-bar, a box or case inclosing said bearing-blocks and springs, the front and rear bearing-blocks being movably connected with said inclosing box or case, and intermediate bearing-blocks having a series of ribs, substantially as specified.

4. In a draft-rigging, the combination with the stops and draw-bar, of a series of sets of straight flat springs, and convex-faced and concave-faced bearing-blocks interposed between the sets of springs, the convex-faced bearing-blocks alternating with the concave-faced bearing-blocks, a movable case inclosing said bearing-blocks and springs, and a bottom guide supporting said movable case, substantially as specified.

5. In a draft-rigging, the combination with the stops and draw-bar, of a series of sets of straight flat springs, and convex-faced and concaved-face bearing-blocks interposed between the sets of springs, the convex-faced bearing-blocks alternating with the concave-faced bearing-blocks, and the front and rear bearing-blocks having flat outer faces for engagement with the stops and draw-bar, a movable case inclosing said bearing-blocks and springs, and a removable bottom guide supporting said movable case, substantially as specified.

6. In a draft-rigging, the combination with the stops and draw-bar, of a series of sets of straight flat springs, and convex-faced and concave-faced bearing-blocks interposed between the sets of springs, the concave-faced bearing-blocks alternating with the concave-faced bearing-blocks, a case inclosing said springs, and the front and rear bearing-blocks being movably connected with said inclosing case, substantially as specified.

7. In a draft-rigging, the combination with the stops and draw-bar, of a series of sets of straight flat springs, and convex-faced and concave-faced bearing-blocks interposed between the sets of springs, the convex-faced bearing-blocks alternating with the concave-faced bearing-blocks, a case inclosing said springs, the front and rear bearing-blocks being movably connected with said inclosing case, and provided with shoulders to abut against the case, substantially as specified.

849,557. CAMERA-STAND. KNUD NELSON, Chicago, Ill.; Emma Nelson administratrix of said Knud Nelson, deceased. Filed Feb. 16, 1906. Serial No. 301,492.

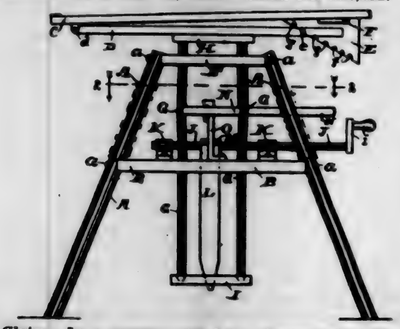

Claim.—In a camera-stand two horisontal platforms, legs connected thereto to support the same and space them the one above the other, parallel rods mounted in said platforms to move vertically through the same, and a top mounted on the upper ends of said rods, a lever lying between said platforms and said rods, and adapted when moved to approximately horizontal position between said rods to force the same from their parallel position, thus causing the rods to bind in the platforms and hold the top at any positon of vertical adjustment.

849,558. SAFETY-PIN. STEPHEN A. NEWMAN, Cassville, Mo., assignor of one-half to Alonzo Lee Brown, Cassville, Mo. Filed May 11, 1906. Serial No. 316,415.

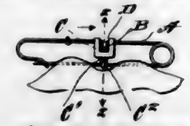

Claim.—1. A safety-pin made up of a single piece of wire which has its shank portion bent to form a loop at right angles thereto, a metallic plate having a contracted portion adapted to be bent over said shank portion and said loop and extending upon both sides of the latter, said contracted portion of the plate being bent to form a hook opposite said loop and adapted to receive the middle portion of the fabric-engaging part of the pin, as set forth.

2. A safety-pin made of a single piece of wire having its shank portion bent to form a loop at right angles thereto, a plate having a longitudinal slot and provided with a contracted portion which is bent to form a hook, said plate adapted to be bent about said shank portion of the pin with the loop positioned in said slot, the shank portion of said hook being adapted to seat in a recess formed at the end of said plate, the fabric-engaging portion of the pin designed to engage said hook, as set forth.

849,559. PIANO. LEVI W. NORCROSS, Fort Worth, Tex. Filed Dec. 8, 1906. Serial No. 346,903.

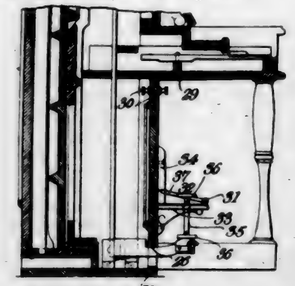

Claim.—1. In a piano, a reversible panel, and auxiliary pedal members secured to one face thereof and adjustable to a concealed idle position within the piano-casing.

2. In a piano, a lower panel, and auxiliary pedal members carried thereby, the panel being reversible to conceal the auxiliary pedal member within the casing.

3. In a piano, a panel, an auxiliary foot-rest carried thereby, and means for supporting the foot-rest, said panel being reversible to conceal the foot-rest within the piano-casing.

849,560. FRICTION SPRING DRAFT-RIGGING FOR RAILWAY-CARS. JOHN F. O'CONNOR, Chicago, Ill., assignor to W. H. Miner Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 14, 1906. Serial No. 347,760.

Claim.—1. In a friction spring draft-rigging, the combination with the draw-bar, draw-bar strap, direct-acting spring in line with the draw-bar, stops and followers, of a

longitudinally-movable friction shell or case, coöperating sliding friction-blocks having inclined or wedging faces, and an antifriction-roller interposed between the inclined or wedging faces of said blocks and having a rolling action on both said faces, substantially as specified.

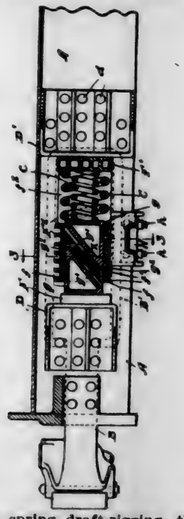

2. In a friction spring draft-rigging, the combination with the draw-bar, draw-bar strap, direct-acting spring in line with the draw-bar, stops and followers, of a longitudinally-movable friction shell or case, coöperating sliding friction-blocks having inclined or wedging faces, and an antifriction device interposed between the inclined or wedging faces of said blocks and having a rolling action on both said faces, said blocks being provided with coöperating saddles to keep the antifriction device in place while permitting the same to roll on the wedging-faces of both blocks, substantially as specified.

3. In a friction draft-rigging, the combination with the draw-bar and direct-acting spring in line with the draw-bar sliding friction devices and having inclined faces for forcing the friction-faces of the friction devices together, of an antifriction device interposed between the inclined faces and having a rolling action on both said faces, substantially as specified.

4. In a friction draft-rigging, the combination with the draw-bar draft-rigging stops and springs, of friction-blocks having inclined faces, and a roller interposed between the inclined faces of adjacent blocks and having a rolling action on both said faces, substantially as specified.

5. In a friction draft-rigging, the combination with the draw-bar, draft-rigging stops and springs, of friction-blocks having inclined faces, and a roller interposed between the inclined faces of adjacent blocks and having a rolling action on both said faces, the adjacent blocks having saddles to support the roller in position, substantially as specified.

6. In a friction draft-rigging, the combination with a draw-bar and direct-acting spring in line with the draw-bar movable friction-shell, of coöperating friction-blocks having inclined or wedging faces, and a roller interposed between the inclined or wedging faces of said blocks and having a rolling action on both said faces, substantially as specified.

849,561. FRICTION DRAFT-RIGGING FOR RAILWAY-CARS. JOHN F. O'CONNOR, Chicago, Ill., assignor to W. H. Miner Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 19, 1906. Serial No. 348,549.

Claim.—1. In a friction draft-rigging, the combination with the draw-bar and its yoke, of a direct-acting spring, followers, stops for the followers, a longitudinally-movable friction-shell, a pair of terminal sliding friction-blocks having inclined or wedging spreader-faces and an intermediate sliding friction-block having two inclined or wedging spreader-faces and antifriction-roller interposed between the terminal friction-blocks and intermediate friction-block, said terminal friction-blocks having inclined or wedging faces engaging the inclined or wedging spreader-faces of the intermediate block, each roller having a rolling action upon both blocks with which it is in contact substantially as specified.

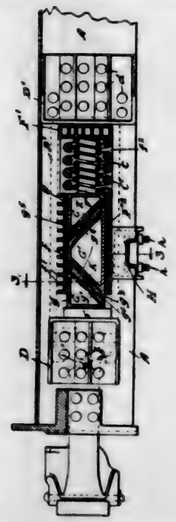

2. In a friction draft-rigging, the combination with the draw-bar and its yoke, of a direct-acting spring, followers, stops for the followers, a longitudinally-movable friction-shell, a pair of terminal sliding friction-blocks having inclined or wedging spreader-faces and an intermediate sliding friction-block having two inclined or wedging spreader-faces and antifriction-roller interposed between the terminal friction-blocks and intermediate friction-block, said terminal friction-blocks and said intermediate friction-block having coöperating saddles or shoulders to keep the antifriction devices in place, each roller having a rolling action upon both blocks with which it is in contact substantially as specified.

3. In a friction draft-rigging, the combination with the draw-bar and a direct-acting spring in line with the draw-bar and a friction-shell, of a pair of terminal friction-blocks and an intermediate friction-block and antifriction-rollers interposed between said intermediate block and said terminal friction-blocks, each roller having a rolling action upon both blocks with which it is in contact substantially as specified.

4. In a friction draft-rigging, the combination with the draw-bar and a direct-acting spring in line with the draw-bar and a friction-shell, of a pair of terminal friction-blocks and an intermediate friction-block and antifriction-rollers interposed between said intermediate block and said terminal friction-blocks, said intermediate and terminal friction-blocks having coöperating shoulders to engage the rollers, each roller having a rolling action upon both blocks with which it is in contact substantially as specified.

849,562. FRICTION DRAFT-RIGGING FOR RAILWAY-CARS. JOHN F. O'CONNOR, Chicago, Ill., assignor to W. H. Miner Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 20, 1906. Serial No. 348,675.

Claim.—1. In a friction draft-rigging, the combination with the draw-bar and its yoke, of side plates furnished with stops, followers, a longitudinally-movable friction-shell, a direct-acting longitudinally-arranged spring within said shell, sliding friction-blocks within said shell having inclined or wedging spreader-faces furnished with steps or offsets, a plurality of antifriction-rollers interposed between the inclined or spreader faces of the friction-blocks, and held in position by the shoulders connecting said steps or offsets, a saddle or support for said friction-shell, and a removable bottom guide or plate upon which said saddle reciprocates, substantially as specified.

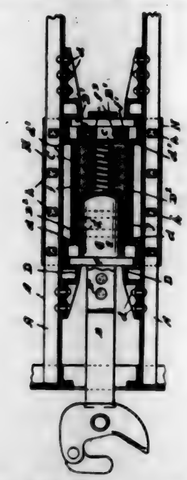

2. In a friction draft-rigging, the combination with the draw-bar and its yoke, of side plates furnished with stops, followers, a longitudinally-movable cylindric friction-shell, a direct-acting longitudinally-arranged spring within said shell, sliding friction-blocks within said shell having inclined or wedging spreader-faces furnished with steps or offsets, a plurality of antifriction-rollers interposed between the inclined or spreader faces of the friction-blocks, and held in position by the shoulders connecting said steps or offsets, a saddle or support for said friction-shell, a removable bottom guide or plate upon which said saddle reciprocates, said friction-shell and one of said friction-blocks having interengaging guide devices to prevent the friction-block from turning in the shell, substantially as specified.

3. In a friction draft-rigging, the combination with a longitudinally-arranged spring, stops and followers and the draw-bar and its yoke, of a longitudinally-movable cylindric friction-shell between the followers and having an internal friction-face, sliding friction-blocks within said shell having external friction-faces engaging the internal friction-face of said friction-shell, and provided with wedging or inclined meeting faces, and an antifriction-roller between said friction-blocks, having a rolling action of both on said blocks, substantially as specified.

4. In a friction draft-rigging, the combination with a longitudinally-arranged spring, stops and followers and the draw-bar and its yoke, of a longitudinally-movable cylindric friction-shell between the followers and having an internal friction-face, sliding friction-blocks within said shell having external friction-faces engaging the internal friction-face of said friction-shell, and provided with wedging or inclined meeting faces, and an antifriction-roller between said friction-blocks, a saddle supporting said friction-shell, and a bottom plate or guide upon which said saddle reciprocates, substantially as specified.

5. In a friction draft-rigging, the combination with a longitudinally-arranged spring, stops and followers and the draw-bar and its yoke, of a longitudinally-movable cylindric friction-shell between the followers and having an internal friction-face, sliding friction-blocks within said shell having external friction-faces engaging the internal friction-face of said friction-shell, and provided with wedging or inclined meeting faces, an antifriction-roller between said friction-blocks, and interengaging guide devices on said friction-shell and on one of said friction-blocks to prevent the friction-blocks from turning, substantially as specified.

6. In a friction draft-rigging, the combination with a longitudinally-arranged spring, stops and followers and the draw-bar and its yoke, of a longitudinally-movable cylindric friction-shell between the followers and having an internal friction-face, sliding friction-blocks within said shell having external friction-faces engaging the internal friction-face of said friction-shell, and provided with wedging or inclined meeting faces, an antifriction-roller between said friction-blocks, a saddle supporting said friction-shell, a bottom plate or guide upon which said saddle reciprocates, and means for preventing the friction-blocks from turning in the friction-shell, substantially as specified.

7. In a friction draft-rigging, the combination with a longitudinally-arranged spring, stops and followers and the draw-bar and its yoke, of a longitudinally-movable cylindric friction-shell between the followers and having an internal friction-face, sliding friction-blocks within said shell having external friction-faces engaging the internal friction-face of said friction-shell, provided with wedging or inclined meeting faces, an antifriction-roller between said friction-blocks, a saddle supporting said friction-shell and a bottom or guide upon which said saddle reciprocates, said saddle for the friction-shell having lateral guides or flanges engaging said bottom plate or guide, substantially as specified.

8. In a friction draft-rigging, the combination with the draw-bar and its yoke, a direct-acting longitudinally-arranged spring, stops and followers, of a longitudinally-movable friction-shell, coöperating sliding friction-blocks within the shell and having inclined or wedging spreader-faces furnished with steps or offsets and shoulders connecting the steps or offsets, and a plurality of antifriction-rollers interposed between the inclined or spreader faces of the friction-blocks and held in position by said shoulders connecting said steps or offsets, substantially as specified.

9. In a friction draft-rigging, the combination with the draw-bar and its yoke, a direct-acting longitudinally-arranged spring, stops and followers, of a longitudinally-movable friction-shell, coöperating sliding friction-blocks within the shell and having inclined or wedging spreader-faces furnished with steps or offsets and shoulders connecting the steps or offsets, and a pair of antifriction-rollers interposed between the inclined or spreader faces of the friction-blocks and held in position by said shoulders connecting said steps or offsets, one of said shoulders being above and the other below the central longitudinal line of the draw-bar or line of thrust, substantially as specified.

10. In a friction draft-rigging, the combination with the draw-bar, stops and followers, of a longitudinally-movable friction-shell having an inside curved friction-face, coöperating friction-blocks having exterior curved friction-faces in sliding frictional engagement with the inside friction-face of said shell, and inclined or wedging meeting faces furnished with steps or offsets and antifriction-rollers between said friction-blocks, said friction-blocks having shoulders for holding the rollers in position, substantially as specified.

849,563. ATTACHMENT FOR DRAFT-TONGUES. OTTO OTTOSON, Jerico, Iowa. Filed Sept. 24, 1906. Serial No. 335,940.

Claim.—1. A draft device of the character described comprising a draft-bar, means to pivotally connect the same to the forward end of a draft-tongue, an apertured casting secured to the rear end of the tongue, and a lug on the inner end of said draft-bar to loosely engage the aperture in said casting, substantially as described.

2. A device of the character described comprising a

draft-bar having near its outer end a tapered bearing-aperture, a tapered stud secured to the forward end of a draft-tongue to receive the apertured end of said bar, a slotted casting secured to the tongue near its rear end, a lug arranged on the inner end of the draft-bar to engage said slotted casting, and draft devices secured to the inner end of said draft-bar, substantially as described.

3. A device of the character described comprising a draft-bar having near its outer end a tapered aperture, a tapered apertured stud arranged on the outer end of the tongue, a fastening-bolt to hold said stud in place, a washer on said bolt to hold the draft-bar on said stud, a slotted casting secured to the tongue near the inner end of the same, a lug on the inner end of said draft-bar to engage the slot in said casting, and a doubletree pivotally connected to the inner end of the draft-bar, substantially as described.

849,564. COFFEE-POT. CHARLES M. OVERCASH, Concord, N. C. Filed June 8, 1906. Serial No. 320,829.

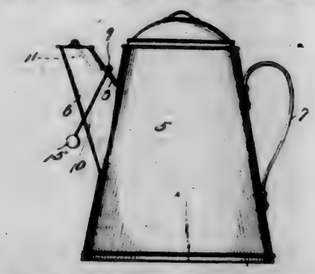

Claim.—1. The combination in a coffee-pot or the like, of a hinge secured to the spout thereof; a rod pivotally mounted in said hinge and bent to form an upper and a lower arm and a connecting-section, said arms being disposed on opposite sides of said spout; a cap attached to said upper arm for closing said spout; and a weight carried by said lower arm.

2. The combination in a coffee-pot or the like, of a plate secured to the spout thereof and formed with a bead disposed transversely of said spout; a rod comprising an upper and a lower arm and a connecting-section, said connecting-section being pivotally mounted in said bead, and said arms being disposed on opposite sides of said spout; a cap attached to said upper arm for closing said spout; and a weight carried by said lower arm.

849,565. LIFTING-JACK. JAMES G. OWEN, Portland, Oreg. Filed Jan. 17, 1907. Serial No. 352,763.

Claim.—1. In a lifting-jack, the combination of a standard, a rack-bar movable thereon, a pinion engaging said rack-bar, a spur-gear revoluble with said pinion, fixed bearings for the shaft of said gear and pinion, an operating-shaft, a movable element having bearings therefor, and an operating-pinion on said operating-shaft, movable into and out of engagement with the said spur-gear, substantially as described.

2. In a lifting-jack, the combination of a standard, a rack-bar movable thereon, a shaft journaled in fixed bearings and having a pinion engaging the rack-bar and also provided with a spur-wheel and with a ratchet-wheel, a dog to engage the ratchet-wheel, a pivoted element having bearings, an operating-shaft journaled in said bearings and having a crank and a pinion, the latter movable into and out of engagement with the spur-gear, and means to lock and release said pivoted element, substantially as described.

849,566. FURNACE FOR BURNING SOFT FUELS. JOHN E. PARKISON, Denver, Colo., assignor to The Western Furnace Company, Denver, Colo., a Corporation of Colorado. Filed Jan. 19, 1907. Serial No. 353,088.

Claim.—1. A furnace provided with side walls having openings and with two separated arches, an air-inlet to the space between the arches, and a series of U-shaped flues in each side wall, the upper ends of said flues communicating with the space between the arches, and the lower ends with the interior of the furnace through openings below the lower arch.

2. The combination in a furnace, of side walls having openings and provided with a series of U-shaped flues, and separated arches between said walls, each flue communicating at one end with the space between the arches, and at the other with the interior of the furnace through an opening below the lower arch, the upper arch extending beyond the lower arch, in position to leave a narrow air-discharge channel between the two, for the purpose set forth.

3. The combination in a furnace, of side walls having openings and provided with U-shaped flues, separated arches between the walls, each flue communicating with the space between the arches at one end and at the other with the interior of the furnace through an opening below the lower arch, additional U-shaped flues in the side walls

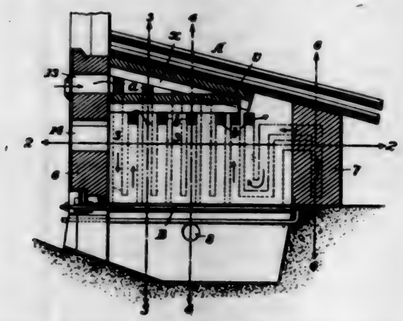

beyond the arches, and a bridge-wall provided with chambers and air-inlets thereto and communicating with said additional flues.

849,567. APPARATUS FOR THE TREATMENT OF SEED-CORN. PAUL PAULSEN, Imfelde, near Meldorf, Germany. Filed Dec. 8, 1906. Serial No. 346,905.

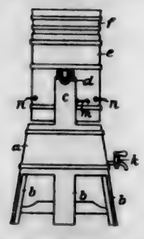

Claim.—Apparatus for the treatment of seed-corn of the character described, comprising a tub *a* provided with a draw-off cock *k* near its closed bottom, two uprights *c* rising from the top edge of the tub *a* at points diametrically opposite, a receiver *e* for the seed-corn to be treated having a sieve-bottom *h*, trunnions *d* in connection with said receiver adapted to be journaled in bearings of the aforesaid uprights *c* and enabling the receiver to be tilted, and a strainer *f* for the liquid poured in detachably connected with the top end of the receiver *e*, substantially as described and shown and for the purpose set forth.

849,568. AIR FILTER AND COOLER. LUCY F. PAWLEY, Los Angeles, Cal. Filed Dec. 19, 1905. Serial No. 292,516.

Claim.—A portable air-filtering device comprising a frame; two removable wire screens in said frame; filtering material between said screens; a reservoir resting upon the upper ends of the guideways for the screens having ports in the bottom thereof in the top of said frame; a slide-valve in the bottom of said reservoir controlling said ports; a waste-pan below said frame and communicating therewith; and lugs secured to the side of said frame, one of said lugs being secured thereto by a hinged connection.

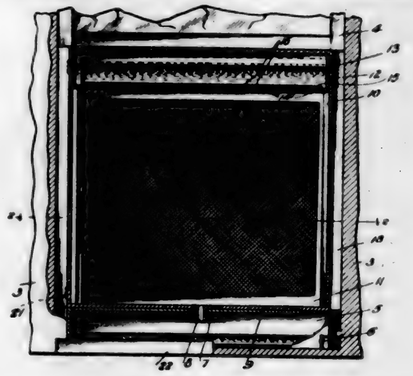

849,569. LOCK AND LATCH MECHANISM. BYRON PHELPS, Seattle, Wash. Filed Oct. 28, 1905. Serial No. 284,784.

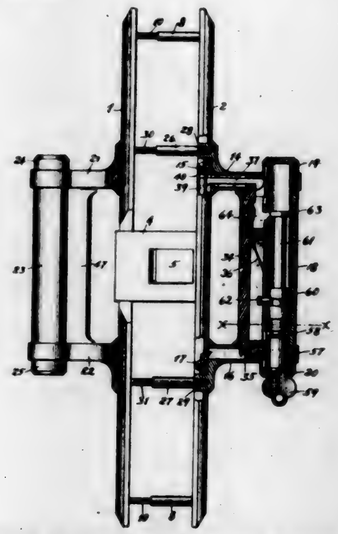

Claim.—1. In a latch mechanism, a pair of plates adapted to the opposite sides of a door, a pair of brackets removably secured to each side plate, a handle supported between each pair of brackets, and screws directly connecting the opposite brackets.

2. In a latch mechanism, a recessed side plate, two brackets carried thereby, a handle carried between said brackets, a pivoted latch-bolt, a link connected thereto and having an opening with an enlarged end, a rock-shaft pivotally mounted in the recess in the back of said side plate, an arm projecting from said shaft having an enlarged head adapted to be removably connected in the slot of said link, an operating member carried by said handle, and means of connection between said operating member and said rock-shaft.

3. In a latch mechanism, a side plate, a pair of brackets removably carried thereby and having openings in the outer end thereof, a tubular handle having its ends within said bracket-openings but removable therefrom and hav-

ing shoulders coacting with said brackets to prevent longitudinal movement, cap members for the opposite ends of said handle, a bolt, a yielding grip member extending along the inner surface of said handle, and means of connection between said grip member and said bolt.

4. In a latch mechanism, a pair of oppositely-arranged dependent side plates adapted to be adjusted to and fro to doors of different thicknesses, adjustable means for connecting said side plates, a latch-bolt, a pair of brackets carried by each side plate, a handle removably carried by each pair of brackets, a grip member for each handle, and independent means of connection between said grip members and said latch-bolt.

5. In a latch mechanism, a latch-bolt, a handle, a laterally-movable spring-pressed grip member, operative means of connection between said grip member and said latch-bolt and means for dogging said grip member.

6. In a lock and latch mechanism, a side plate, a bolt, a pair of brackets carried by said side plate, a tubular handle carried by said brackets, a grip member at the inner side of said handle having a recess in the side toward the handle, means of connection between said grip member and said bolt, a cylinder-lock mounted in said handle, a cam connected to the plug of the cylinder-lock, and a longitudinally-movable dogging device in said handle having a projection extending through said cam and into said recess.

7. In a lock and latch mechanism, a pair of side plates, a latch-bolt supported by one side plate, a handle carried by each side plate, operating means for said latch-bolt, and lock-controlled means accessible from the bottom of one handle for dogging the operation of the latch-bolt.

8. In a lock and latch mechanism, a side plate, a latch-bolt carried thereby, a tubular handle carried by and parallel to said side plate, an operating member carried by said handle, means of connection with said latch-bolt, and a key-controlled dogging mechanism accessible through one end of said handle.

9. In a lock and latch mechanism, a bolt, a handle, an operating member movable into said handle, means of connection with said bolt, and key-controlled means movable longitudinally in said handle for dogging the operation of said bolt by said operating member.

10. In a lock and latch mechanism, a bolt, a tubular handle, a spring-pressed operating member movable toward said handle, and a dogging device in said handle.

11. In a lock and latch mechanism, a side plate, a bolt, a pair of brackets carried by said side plate, a tubular handle carried by said brackets, a grip member lying along one surface of said handle, means of connection between said grip member and said bolt, a dogging device for said grip member, a cam for operating said dogging device, and a spring coacting between said grip member and said cam.

849,570. HYDROSCOPE. GIUSEPPE PINO, Genoa, Italy. Filed Sept. 23, 1903. Serial No. 174,338.

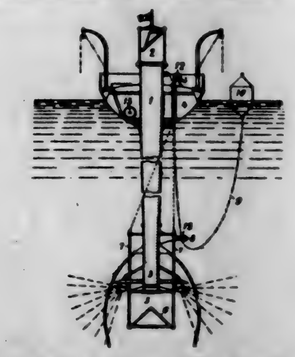

Claim.—1. In an apparatus of the character described, the combination with a body portion composed of tubular sections secured together, of an eyepiece at one end of the body portion, an objective at the opposite end of the body portion, a floatable body from which the tubular body portion is suspended, a capstan carried by said floatable body, a reflector arranged below the objective, a second floatable body and a chain connecting the latter and the capstan.

2. In an apparatus of the character described, the combination with a body portion composed of tubular sections secured together, of an eyepiece at one end of the body portion, an objective at the opposite end of the body portion, a floatable body from which the tubular body portion is suspended, a reflector arranged below the objective, a second floatable body, a capstan on the first floatable body, a chain connected with said capstan and the said second floatable body, an arm 13 on the tubular body portion, and a pulley on said arm, around which pulley the chain passes.

849,571. PIPE-BENDING MACHINE. GEORGE H. REYNOLDS, Mansfield Depot, Conn., assignor to The Pipe Bending Machine Company, a Corporation of North Carolina. Filed Dec. 22, 1905. Serial No. 292,901.

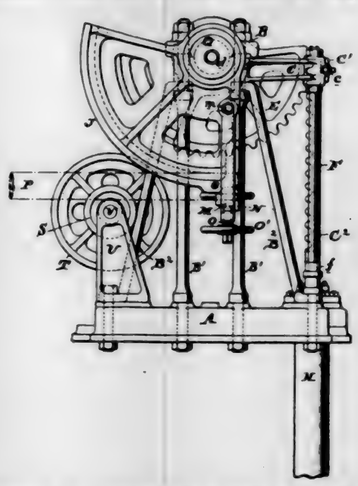

Claim.—1. In a pipe-bending machine, a rocking sector having a curved and grooved perimeter and shoulders *e* near its forward end, combined with a yoke hinged to its forward end and resting against the shoulders *e*, a clamping-jaw carried within the yoke and movable to or from the groove in the sector, and an adjusting-screw carried by the yoke for adjusting the clamping-jaw.

2. In a pipe-bending machine, the combination of a frame having two bearings, a rock-shaft journaled in the bearings, power devices operating on the rock-shaft between the bearings for rocking it, bending-sectors secured to each end of the rock-shaft outside of the bearings, and guides for the pipes respectively arranged in line with the sectors.

3. In a pipe-bending machine, the combination of a frame having two bearings, a rock-shaft journaled in the bearings, power devices operating on the rock-shaft between the bearings for rocking it, bending-sectors secured to each end of the rock-shaft outside of the bearings one of the sectors being of greater radius than the other, and guides for the pipes respectively arranged in line with the sectors consisting of grooved wheels loosely supported and in which the wheel of greatest radius is in line with the sector of smallest radius and vice versa.

4. In a pipe-bending machine, the combination of a frame having two bearings, a rock-shaft journaled in the bearings, power devices operating on the rock-shaft between the bearings for rocking it, bending-sectors secured to each end of the rock-shaft outside of the bearings, clamping devices upon each of the sectors at the forward end for clamping the pipe, and guides for the pipes respectively arranged in line with the sectors.

5. In a pipe-bending machine, the bed-plate, two bearings B B having lateral arms C and connecting cross-frame C', independent upright posts B' B² and C² for connecting the bearings to the bed-plate, a rock-shaft journaled in the bearings, means secured to the rock-shaft for bending the pipe, and power means for rocking the rock-shaft.

6. In a pipe-bending machine, the bed-plate, two bearings B B, upright posts B' for connecting the bearings to the bed-plate, a rock-shaft journaled in the bearings, means secured to the rock-shaft for bending the pipe, a gear secured to the rock-shaft, a reciprocating rack meshing with the gear, a cross-frame C' holding the rack to the gear, lateral arms for holding the cross-guide C' to the rock-shaft, connecting means between the guide C' and the bed-plate to prevent it traveling about the rock-shaft, a hydraulic cylinder below the rack secured to the bed-plate, a piston and piston-rod for the cylinder having a cross-head guided on the upright rods and secured to the rack.

7. In a pipe-bending machine, the combination of a frame having two bearings, a rock-shaft journaled in the bearings, power devices operating on the rock-shaft between the bearings for rocking it, bending-sectors having grooved peripheries secured to the rock-shaft between the bearings and power devices, and guides for the pipes arranged respectively in line with the sectors.

8. In a pipe-bending machine, the combination of a frame having two bearings, a rock-shaft journaled in the bearings, power devices operating on the rock-shaft between the bearings for rocking it, bending-sectors having grooved peripheries secured to the rock-shaft between the bearings and power devices and one sector being of greater radius than the other, and guides for the pipes arranged respectively in line with the sectors consisting of grooved wheels loosely supported and in which the wheel of greatest radius is in line with the sector of smallest radius and vice versa.

9. In a pipe-bending machine, the combination of a frame having two bearings, a rock-shaft journaled in the bearings, power devices operating on the rock-shaft between the bearings for rocking it, bending-sectors secured to the rock-shaft between the bearings and power devices, clamping devices upon each of the sectors at the forward end for clamping the pipe, and guides for the pipe arranged respectively in line with the sectors.

10. In a pipe-bending machine, the combination of a frame having two bearings, a rock-shaft journaled in the bearings, power devices operating on the rock-shaft between the bearings for rocking it consisting of a gear on the rock-shaft and a reciprocating rack meshing with the gear, bending-sectors secured to the rock-shaft between the bearings and power devices, a transverse bolt securing the sectors and gear together, and guides for the pipes arranged respectively in line with the sectors.

11. In a pipe-bending machine, a rock-shaft, four bending-sectors secured to the rock-shaft, bearings for the rock-shaft between the two sectors at each end of the rock-shaft, and power devices for rocking the rock-shaft arranged intermediate of the two middle bending-sectors.

12. In a pipe-bending machine, a rock-shaft, four bending-sectors secured to the rock-shaft, bearings for the rock-shaft between the two sectors at each end of the rock-shaft, and power devices for rocking the rock-shaft arranged upon the rock-shaft intermediate of the two middle bending-sectors and secured directly to them.

849,572. PROCESS OF MAKING PLAYING-BALLS. FRANCIS H. RICHARDS, Hartford, Conn. Filed June 2, 1902. Serial No. 109,906.

Claim.—1. A process of making a playing-ball consisting of placing a hollow body in a mold, distending such body by the injection of a mass and simultaneously imparting thereto an external configuration corresponding to the form of the mold.

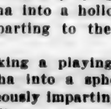

2. A process of making a playing-ball consisting of placing a hollow body in a mold, distending the same by an injection of a mass thereinto while hot and simultaneously imparting thereto an external configuration corresponding to the form of the mold, and hardening the structure by cooling.

3. A process of making a playing-ball consisting in forcing into a hollow elastic body a substance rendered fluent by heat, and simultaneously imparting to the structure the desired form externally.

4. A process of making a playing-ball consisting in forcing into a hollow elastic body while hot a substance rendered fluent by heat, and simultaneously imparting the desired form to the structure externally.

5. A process of making a playing-ball consisting in forcing into a hollow elastic body while hot a substance rendered fluent by heat, and simultaneously imparting the desired form to the structure externally, and then hardening the structure by cooling.

6. A process of making a playing-ball consisting in forcing into a hollow elastic body while hot a substance rendered fluent by heat, and simultaneously imparting to the structure an externally-spherical form with a brambled surface, and hardening the structure by cooling.

7. A process of making a playing-ball consisting in forcing into a hollow body an elastic substance rendered fluent by heat and adapted to harden on cooling, and simultaneously imparting to the structure the desired form externally.

8. A process of making a playing-ball consisting in forcing into a hollow body while hot a substance rendered fluent by heat and adapted to harden on cooling, and simultaneously imparting to the structure the desired external form.

9. A process of making a playing-ball consisting in forcing into a hollow elastic body while hot a substance rendered fluent by heat, and simultaneously imparting to the structure the desired external form.

10. A process of making a playing-ball consisting in forcing into a hollow elastic body while hot a substance rendered fluent by heat, and simultaneously imparting the desired external form to the structure and cooling the structure.

11. A process of making a playing-ball consisting in forcing fluid gutta-percha into a hollow elastic body, and simultaneously imparting to the body the desired form externally.

12. A process of making a playing-ball consisting in forcing fluid gutta-percha into a hollow body while hot, and simultaneously imparting to the body the desired external form.

13. A process of making a playing-ball consisting in forcing fluid gutta-percha into a spherical elastic body while hot, and simultaneously imparting the desired shape to the structure externally.

14. A process of making a playing-ball consisting in applying an outer shell to a hollow sphere and forcing into the sphere a substance rendered fluent by heat and adapted to harden on cooling, and simultaneously imparting to the structure the desired external form.

15. A process of making a playing-ball consisting in applying a loosely-fitting outer shell to a hollow sphere and forcing into the sphere a substance rendered fluent by heat and adapted to harden on cooling, and simultaneously imparting to the structure the desired external form.

16. A process of making a playing-ball consisting in applying successive envelops to a hollow sphere and forcing into the sphere a substance rendered fluent by heat and adapted to harden on cooling, and simultaneously imparting to the structure the desired external form.

17. A process of making a playing-ball consisting in applying an outer shell to an elastic hollow sphere and forcing into the sphere a substance rendered fluent by heat and adapted to harden on cooling, and simultaneously imparting to the structure the desired external form.

18. A process of making a playing-ball consisting in applying an outer shell to a hollow sphere and forcing into the sphere under pressure, a substance rendered fluent by heat and adapted to harden on cooling, and simultaneously imparting to the structure the desired external form.

19. A process of making a playing-ball consisting in applying an outer shell to a hollow sphere and forcing into the sphere under pressure an elastic substance rendered fluent by heat and adapted to harden on cooling, and simultaneously imparting to the structure the desired external form.

20. A process of making a playing-ball consisting in simultaneously driving the air from the interior of a hollow body and forcing into the body a substance renderer fluent by heat and adapted to harden on cooling, and imparting to the structure the desired form externally.

21. A process of making a playing-ball consisting in compounding a sphere of fibrous material and celluloid and placing the structure under distention by injecting thereinto a mass rendered fluent or mobile by heat, and adapted to harden on cooling.

22. A process of making a playing-ball consisting in compounding a sphere of fibrous material and celluloid, and placing the structure under distention by injecting thereinto an elastic substance rendered fluent or mobile by heat, and adapted to harden on cooling.

23. A process of making a playing-ball consisting in compounding a sphere of fibrous material and celluloid and placing the structure under distention by injecting thereinto a mass of gutta-percha and allowing the mass to harden.

24. A process of making a playing-ball consisting in applying to an elastic hollow sphere a shell compounded of fibrous material and celluloid, and placing the structure under distention by forcing into the sphere an elastic substance rendered fluent by heat, and simultaneously imparting to the structure the desired external form.

25. A process of making a playing-ball consisting in applying to a hollow elastic sphere, a plurality of loosely-fitting envelops compounded of fibrous material and celluloid, and forcing into the sphere an elastic substance rendered fluent by heat, and simultaneously imparting to the structure the desired external form.

849,573. HITCHING-STRAP CLAMP. ARTHUR G. RITE, Oklahoma, Okla. Filed Apr. 17, 1906. Serial No. 312,167.

Claim.—As an article of manufacture, a hitching-strap clamp embodying in combination the following elements; a body having two vertical side wall members with their lower edges joined together by cross-bars; a pressing-plate *d* having its rear end upward curved and pivoted in the said side walls and having a lateral rib *d'* midway its ends forming a part of its under surface; a rectangular sheet-metal spring *c* secured upon the rear portion of the said pressing-plate by loose rivets *e e;* a rectangular tongue-plate E resting upon said spring and having one of its ends secured to the said pressing-plate by the rivets *e e;* the locking or clamping lever D pivoted in the ear projections *f* of the side walls *r* and *l;* the cam D' forming the right-angled termination of the said locking or clamping lever, as shown and for the purposes set forth.

849,574. ILLUMINATED SIGN. HUGO RUGER, New York, N. Y. Filed July 28, 1906. Serial No. 328,220.

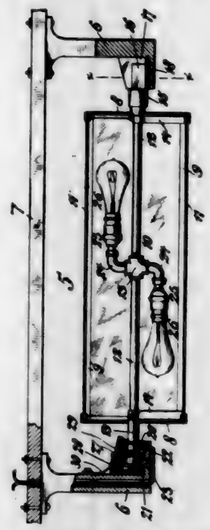

Claim.—In an illuminated sign, the combination with a rotatable member comprising a framework, translucent panels, a support for electric-lighting means within the said panels, and extending trunnions, one of which is provided with circular contact-pieces in electrical connection with said electric-lighting means, of supporting-brackets for said rotary member, one of said brackets having brushes for engaging the said contact-pieces, and a spring-pressed bearing member pressing the said contact-pieces against said brushes, the other of said brackets having a support for the trunnion at that end and an open portion permitting said trunnion to be removed freely therethrough in a direction transverse the direction of its rotation.

849,575. PLOW. JONATHAN H. SAMUELS, Moline, Ill., assignor to D. M. Sechler Carriage Company, Moline, Ill., a Corporation of Illinois. Filed Oct. 17, 1906. Serial No. 339,372.

Claim.—1. The combination with a plow-beam, a standard journaled at the rear end of said plow-beam and movable vertically therein, a caster-wheel carried by said standard, and a lever adapted to raise and lower the rear end of said beam on said standard, of a centering-plate carried by said standard, a spring-seated latch adapted to engage said centering-plate, and mechanism operated by the draft to disengage said latch from said plate when the team is turned to either side, said plate being adapted to remain in engagement with said latch regardless of the varying relative position of said standard and said plow-beam.

2. The combination with a plow-beam, a standard journaled at the rear end of said plow-beam and movable vertically therein, a caster-wheel carried by said standand, a lever pivoted on said plow-beam, and connections between said lever and said standard whereby said standard may be moved longitudinally of itself in said plow-beam, of a centering-plate carried by said standard and of a length equal to the distance of the movement of said standard in said plow-beam, a centering-slot in said plate, a spring-seated latch normally in engagement with said slot, and mechanism operated by the draft to disengage said latch from said slot when the team is turned to either side.

3. The combination with a plow-beam, a standard journaled at the rear end of said plow-beam and movable vertically therein, a caster-wheel carried by said standard, a lever pivotally connected with the rear end of said plow-beam, and a link pivotally connected at one end with said lever and at the other end with the upper end of said standard, of a centering-plate carried by said standard and

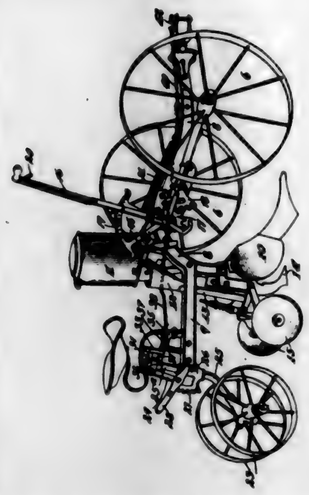

of a length equal to the distance of the movement of said standard in said plow-beam, a centering-slot in said plate, a spring-seated latch normally in engagement with said slot, and mechanism operated by the draft to disengage said latch from said slot when the team is turned to either side.

849,576. PACKING FOR ROTATING MACHINE PARTS. RICHARD SCHULZ, Berlin, Germany. Filed Apr. 16, 1906. Serial No. 312,009.

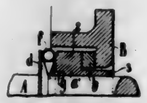

Claim.—1. In a packing for rotating elements, the combination with the rotating element and the stationary member in which said element is mounted; of a main ring locked to the rotating element and axially slidable thereon and an auxiliary free friction-ring between said main ring and stationary member, substantially as described.

2. In a packing, the combination with the rotating element and the stationary member in which said element rotates; of a main ring locked to and longitudinally slidable on the rotating element and free auxiliary friction-rings between said main ring and stationary member, substantially as described.

3. In a packing, the combination with the rotating element and the stationary member in which the said element rotates; of a main ring locked to and longitudinally slidable on the element, free auxiliary rings between the main ring and member and means to urge the rings against the stationary member, substantially as described.

4. In a packing, the combination with the rotating element, a flange thereon, and the stationary member in which the element rotates; of a main ring locked to and longitudinally slidable on the rotating element, auxiliary free rings between the main ring and member and resilient means between the flange and main ring to urge the rings toward the stationary member, substantially as described.

5. In a packing, the combination with the rotating element and the stationary member in which the element rotates; of a main ring having a flange, means to lock the main ring to the rotating element and permit its longitudinal movement, and auxiliary rings mounted free on the flange of the main ring and between it and the stationary member, substantially as described.

6. In a packing, the combination with the rotating element and the stationary member in which the element rotates; of a main ring having a flange, means to lock the main ring to the rotating element and permit longitudinal movement, a plurality of free auxiliary nested rings between the main ring and stationary member, substantially as described.

7. In a packing, the combination with the rotating element having a flange thereon and the stationary member in which it rotates; of a main ring having a flange, means to lock said ring to the element and permit longitudinal movement, springs between the flange on the element and main ring and free auxiliary nested flanged rings between the main ring and member, substantially as described.

8. The combination with the rotating element and the stationary member in which the element rotates; of a plurality of sets of packing-rings each set composed of a main ring longitudinally slidable on and non-rotatively locked to the rotating element, and free auxiliary friction-rings between the main rings and member, substantially as described.

9. The combination with the rotating element having a flange thereon and the stationary member in which said element is mounted; of an internal flange on the stationary member, a main ring longitudinally slidable and non-rotatively locked to the rotating element, free auxiliary rings between the main ring and flange on said member, and resilient means between the flange on the element and main ring to urge the rings against the internal flange.

10. The combination with the rotating element having a flange and the stationary member in which said element rotates; of removable internal flanges secured to the stationary member, a plurality of sets of packing-rings, each set coöperating with an internal flange, the first set of said rings comprising a main flanged ring longitudinally slidable and non-rotatively locked to the rotating element, a plurality of free auxiliary rings mounted on the flange of the main ring and between the body thereof and the first internal ring, means between the flange on the element and main ring to urge the rings against the first internal flange and a following set of packing-rings comprising a main ring and auxiliary rings and means between the two main rings to urge the following set of rings against the second internal flange, substantially as and for the purpose set forth.

849,577. COMBINED PLOW, SHOVEL, AND SEPARATOR. GEORGE T. SEBRELL, Alsea, Oreg. Filed Sept. 4, 1906. Serial No. 333,225.

Claim.—1. An implement of the character described consisting of a wheel-mounted elevator, a shovel located at the lower end thereof and having a cutting edge and bars spaced apart and inclined upwardly and rearwardly from said cutting edge, the lower end of the elevator entering the shovel in the rear of said bars.

2. An implement of the character as described consisting of a wheel-mounted elevator, a shovel attached to the lower end thereof, a roller traveling in front of said shovel, bars pivoted at their rear ends to the elevator and being attached at their forward ends to said roller, and slotted uprights adjustably secured at their upper ends to said elevator and being attached at their lower ends to said roller.

849,577.

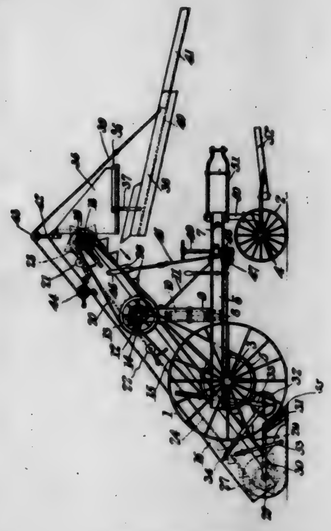

849,578. MOTOR FOR ROCK-DRILLS AND SIMILAR TOOLS. CHARLES E. SHADALL, Milwaukee, Wis., assignor of one-half to Frederick L. Horneffer, Milwaukee, Wis. Filed Aug. 8, 1904. Serial No. 219,876.

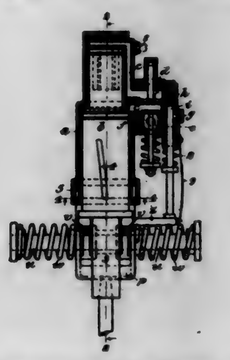

Claim.—1. The combination of a cylinder, a piston fitted in said cylinder, an exhaust-valve, a latch normally holding said valve closed, a rocker operated by the movement of the piston in one direction, a spring tending to move said rocker in the opposite direction, a weighted cam loosely mounted on the rocker and adapted to be carried by its momentum beyond the limit of the active stroke of the piston sufficiently to strip said latch and release said valve, and a spring tending to hold said cam against a stop on the rocker, substantially as described.

2. The combination of a cylinder, a piston fitted therein, an exhaust-valve adapted to be closed by the return stroke of the piston, a latch for holding said valve closed, a rocker arranged to be moved in one direction by the active stroke of the piston, a spring tending to move said rocker in the reverse direction and to return the piston to its initial position, a weighted cam pivotally mounted on the rocker, and a spring normally holding said cam against a stop on the rocker, the cam being adapted to be carried by its momentum against the tension of the spring acting thereon beyond the limit of the active stroke of the piston and in its further movement to trip said latch and permit the valve to open, substantially as described.

3. The combination of a differential cylinder having passages leading from an air-inlet opening into corresponding ends of the larger and smaller parts of the cylinder and connecting the same, a differential piston fitted in said cylinder, inwardly-opening check-valves in said passages, a spring-actuated rocker arranged to return the piston to its initial position after each active stroke thereof, a gas or oil supply connection provided with an inwardly-opening check-valve, and means operated by said rocker for forcing gas or oil into the smaller end of the cylinder during each return stroke of the piston, substantially as described.

4. The combination of a differential cylinder having an air-supply passage opening into the larger part of the cylinder next to the smaller part and provided with an inwardly-opening check-valve and a passage connecting the smaller end of the cylinder with the adjacent end of the larger part and provided with a check-valve which opens toward the smaller end of the cylinder, a differential piston fitted in said cylinder, a spring-actuated rocker for returning said piston to its initial position, a gas or oil supply connection, means operated by said rocker for forcing gas or oil through said connection into the smaller end of the cylinder during each return stroke of the piston, an exhaust-passage opening out of the smaller end of the cylinder, a valve normally closing said exhaust-passage, and means operated by said rocker for releasing and closing said valve at the proper times, substantially as described.

5. The combination of a differential cylinder having a passage connecting the smaller end of the cylinder with the adjacent end of the larger part thereof and provided with a check-valve which opens toward said smaller end, and having an air-supply connection opening into the larger part of the cylinder and provided with an inwardly-opening check-valve, a differential piston fitted in said cylinder, a spring-actuated rocker adapted to return said piston to its initial position, means actuated by said piston for injecting gas or oil vapor into the passage connecting the larger part with the smaller end of the cylinder, an exhaust port or passage opening out of the smaller end of the cylinder, a valve normally closing said port or passage, means operated by said rocker for releasing and closing said valve at the proper times, and a cock for throttling the exhaust and regulating the movement of the piston, substantially as described.

6. The combination of a differential cylinder having a valve-controlled passage connecting its smaller end with the adjacent end of the larger part thereof and having a valve-controlled air-supply connection opening into the larger part of the cylinder, a differential piston fitted in said cylinder, an exhaust-port opening out of the smaller end of the cylinder, a valve normally closing said port, a latch for holding said valve closed, a rocker arranged to be moved in one direction by the active stroke of the piston, a weighted cam pivotally mounted on said rocker and adapted to be carried by its momentum beyond the limit of the active stroke of the piston and to trip said latch, a spring normally holding said cam against a stop on the rocker, a spring adapted to return the rocker and piston to their initial positions and means actuated by the return movement of said rocker for injecting gas or oil vapor into the smaller end of the cylinder, substantially as described.

849,579. ART OF DISTILLING, CONCENTRATING, AND EVAPORATING LIQUIDS. JOHN E. SIEBEL, Chicago, Ill. Filed Apr. 25, 1904. Serial No. 204,871.

Claim.—1. In the process for distilling, concentrating, evaporating and heating liquid, the withdrawal of the vapors formed, increasing their temperature and pressure, saturating them and passing them through the distilling liquid, substantially as set forth.

2. The process of distilling, concentrating and evaporating liquids consisting in heating the liquid to a boiling-point, withdrawing the vapor from said liquid and compressing the same, saturating the compressed vapor and transferring the saturated compressed vapor through a conduit located within the evaporating liquid to a withdrawal-chamber, substantially as set forth.

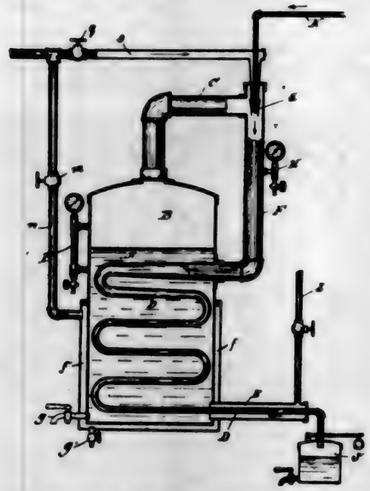

3. The process of distilling, concentrating and evaporating a liquid, consisting in applying heat thereto to bring it to a boiling-point, then withdrawing the vapor by mechanical means and compressing the same and introducing liquid in the compressed vapor thereby saturating the same, raising its temperature and pressure above that of the boiling liquid, then by conduction transferring substantially the entire latent heat of evaporation to the liquid to be distilled, substantially as set forth.

4. The process of distilling, evaporating and concentrating liquids, consisting in heating the liquid to a boiling-point, withdrawing the vapor by mechanical means and compressing the vapor and saturating the same by introducing liquid in the form of a spray and by conduction transferring the entire latent heat of the compressed vapor to the liquid to be evaporated and withdrawing the condensed vapors, substantially as set forth.

849,580. HAY-HARVESTING MACHINE. BENJAMIN SMITH, Dereham township, Oxford county, Ontario, Canada. Filed Oct. 11, 1905. Serial No. 282,343.

Claim.—1. In a hay-harvesting machine, a main frame, a jointed frame pivotally secured to said main frame, supporting-teeth secured to said jointed frame, and means for supporting the jointed frame between its joint and its outer end, in combination with a swinging frame pivotally supported on said main frame above said supporting-teeth of said hinged frame, and means for operating said swinging frame to spread the hay on said supporting-teeth, substantially as shown and described and for the purpose specified.

2. In a hay-harvesting machine, a main frame, and a jointed frame pivotally secured thereto, in combination with a swinging frame pivotally secured to said main frame, and means for connecting said jointed frame with said swinging frame to cause the latter to gradually swing less as the hay accumulates on said jointed frame and thus gradually form the pile of hay tapered or smaller at the upper end lengthwise of the machine, substantially as shown and described and for the purpose specified.

3. In a hay-harvesting machine, a main frame, a jointed frame pivotally secured thereto, and a swinging frame pivotally secured to said main frame, in combination with a segmental bar, pivotally secured to said main frame, and in which an elongated segmental slot is formed, a connecting-bar having a sliding connection at one end with said segmental bar, and pivotally secured at the other end to said swinging frame, a pivot-pin secured to one end of said connecting-bar and extending through and adapted to slide in said segmental slot in said segmental bar, a pulley supported in a bracket secured to said main frame, and a chain passing over said pulley and secured at one end to said jointed frame and at the other end to said connecting-bar, and means for swinging said segmental bar, substantially as shown and described and for the purpose specified.

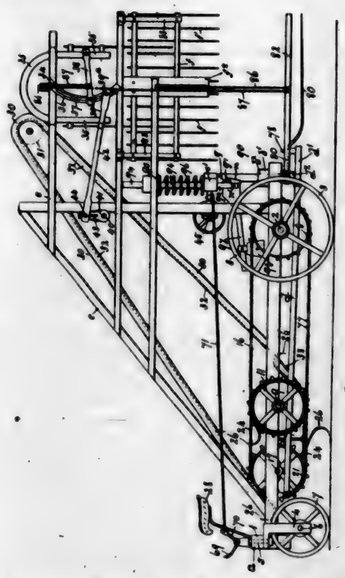

4. In a hay-harvesting machine, a main frame and a jointed frame pivotally secured thereto, in combination with gates hinged to said main frame, and means for connecting said gates with said jointed frame to cause their inner ends to move gradually toward one another, as the hay accumulates on said jointed frame, and thus gradually form the pile of hay tapered or smaller at the upper end from the sides toward the center of the machine, substantially as shown and described and for the purpose specified.

5. In a hay-harvesting machine, a main frame and a jointed frame pivotally secured thereto, in combination with gates hinged to said main frame and inclined toward the center of the machine, levers pivotally secured to said main frame, the end of one of each of which is adapted to engage with one of said gates, and chains, one of which is connected at one end to the outer end of each lever, and at the other end to said jointed frame, substantially as shown and described and for the purpose specified.

6. In a hay-harvesting machine, a main frame, and a jointed frame pivotally secured thereto, in combination with a swinging frame pivotally secured to said main frame, and gates hinged to said main frame and inclined toward the center of the machine, and means for connecting said swinging frame and said gates with said jointed frame to cause the swinging frame to gradually swing less, and gradually to bring the adjacent ends of the gates together, as the hay accumulates on said jointed frame, and thus gradually form the pile or stack of hay on said jointed frame conically tapered toward and

smaller at the upper end, substantially as shown and described and for the purpose specified.

7. In a hay-harvesting machine, a main frame, a jointed frame pivotally secured thereto, supporting-teeth secured to said jointed frame, a shouldered bar resting on said jointed frame, and means for supporting the outer end of said jointed frame and for guiding the shouldered bar as it is raised and lowered, in combination with a vertical bar held in place in a socket in a cross-bar secured to the main frame, a block secured to said vertical bar, a coil-spring encircling said vertical bar and interposed between said block and said cross-bar, and means for connecting said shouldered bar with said vertical bar that will trip and permit them to separate when the hay on the supporting-teeth is of the weight or quantity required, substantially as shown and described and for the purpose specified.

8. In a hay-harvesting machine, a main frame, a jointed frame pivotally secured thereto, supporting-teeth secured to said jointed frame, a shouldered bar resting on said jointed frame, chains connecting said jointed frame with said shouldered bar, and means for supporting the outer end of said jointed frame and for guiding said shouldered bar as it is raised and lowered, in combination with a vertical bar held in place in a socket in a cross-bar secured to said main frame, a block secured to said vertical bar, a coil-spring encircling said vertical bar and interposed between said block and said cross-bar, a lever pivoted on the lower end of said vertical bar, and provided with a shoulder adapted to engage with a shoulder on said shouldered bar, and a weight suspended from said lever, substantially as shown and described and for the purpose specified.

9. In a hay-harvesting machine, a main frame, a jointed frame pivotally secured thereto, supporting-teeth secured to said jointed frame, and gates hinged to said main frame and connected with said jointed frame, in combination with a shouldered bar resting on said jointed frame, chains connecting said jointed frame with said shouldered bar, means for supporting the outer end of said jointed frame and for guiding said shouldered bar as it is raised and lowered, a vertical bar held in place in a socket in a cross-bar secured to said main frame, a block secured to said vertical bar, a coil-spring encircling said vertical bar and interposed between said block and said cross-bar, a lever pivoted on the lower end of said vertical bar, and provided with a shoulder adapted to engage with a shoulder on said shouldered bar, and a weight suspended from said lever, substantially as shown and described and for the purpose specified.

10. In a hay-harvesting machine, a main frame, a jointed frame pivotally secured thereto, supporting-teeth secured to said jointed frame, and a swinging frame pivotally secured to said main frame and connected with said jointed frame, in combination with a shouldered bar resting on said jointed frame, chains connecting said hinged frame with said shouldered bar, means for supporting the outer end of said jointed frame and for guiding said shouldered bar as it is raised and lowered, a vertical bar held in place in a socket in a cross-bar secured to said main frame, a block secured to said vertical bar, a coil-spring encircling said vertical bar, and interposed between said block and said cross-bar, a lever pivoted on the lower end of said vertical bar, and provided with a shoulder adapted to engage with a shoulder on said shouldered bar, and a weight suspended from said lever, substantially as shown and described and for the purpose specified.

11. In a hay-harvesting machine, a main frame, a jointed frame pivotally secured thereto, supporting-teeth secured to said jointed frame, a swinging frame pivotally secured to said main frame, and gates hinged to said main frame, and both connected with said jointed frame, in combination with a shouldered bar resting on said jointed frame, chains connecting said hinged frame with said shouldered bar, means for supporting the outer end of said jointed frame and for guiding said shouldered bar as it is raised and lowered, a vertical bar held in place in a socket in a cross-bar secured to said main frame, a block secured to said vertical bar, a coil-spring encircling said vertical bar and interposed between said block and said cross-bar, a lever pivoted on the lower end of said vertical bar and provided with a shoulder adapted to engage with a shoulder on said shouldered bar, and a weight suspended from said lever, substantially as shown and described and for the purpose specified.

849,581. DRYING-MACHINE. JOSEPH M. SPENCER, Cincinnati, Ohio, assignor to Clement L. Hils, Cincinnati, Ohio. Filed Dec. 4, 1905. Serial No. 290,079.

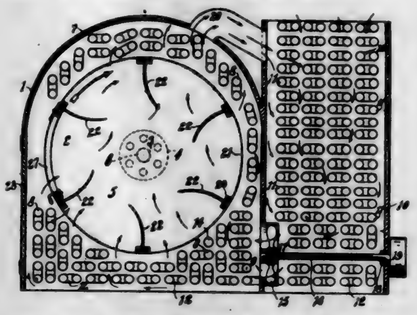

Claim.—In a drying-machine, an inclosing casing, an open cylindrical receptacle, means for rotating said receptacle, inwardly-extending teeth in said receptacle, steam-heating coils arranged within said casing around said receptacle, a heating-tower provided with steam-heating coils communicating with the heating-coils in the inclosing casing, a fan between said tower and inclosing casing adapted to force heated air from the heating-tower into the inclosing casing and a return-duct near the top of said inclosing casing and heating-tower whereby the air is forced to return from the inclosing casing to the heating-tower to be superheated for the purpose of being used repeatedly.

849,582. REGULATION OF ELECTRIC MOTORS. ROWLAND STEBBINS, New York, N. Y. Filed Nov. 9, 1906. Serial No. 342,651.

Claim.—1. The combination, with a continuous-current electric motor having a shunt field-magnet winding, and the speed of which is to be maintained substantially constant, of a resistance in series with the field-magnet winding and of such amount that the change in the field produced by its withdrawal or insertion is greater than is required to correct variations of motor speed; and means for inserting or withdrawing the entire resistance at once, such means responsive to changes in the motor speed.

2. The combination, with an electric motor to be operated at constant speed, of a field-magnet winding, a resistance in circuit therewith of amount such that the change in the field caused by its insertion or withdrawal is greater than is required to correct variations of the motor speed; an electrically-operated switch for cutting in or cutting out the resistance, and means, responsive to changes in the motor speed, for cutting in the entire resistance at once as the speed falls and for so cutting it out as the speed rises.

3. The combination, with an electric motor provided with a field-magnet winding and a resistance in circuit with said winding, of a switch having contacts and connections for shunting the resistance; and a generator rotated by the motor, the current from which operates the switch.

4. The combination, with a motor provided with a shunt field-magnet winding, of a resistance in series with such field-magnet winding, a switch having contacts and connections for shunting the resistance, an electromagnet controlling the switch, and a generator operated by the motor, the current from which controls the electromagnet.

5. The combination, with a motor having a shunt field-magnet winding, of a resistance in series with said winding, a switch having contacts and connections for shunting the resistance at desired times, the resistance being of an amount in excess of that required to compensate for variations in the desired speed of the motor, and electrical means, responsive to such changes in speed, for operating the switch at desired times.

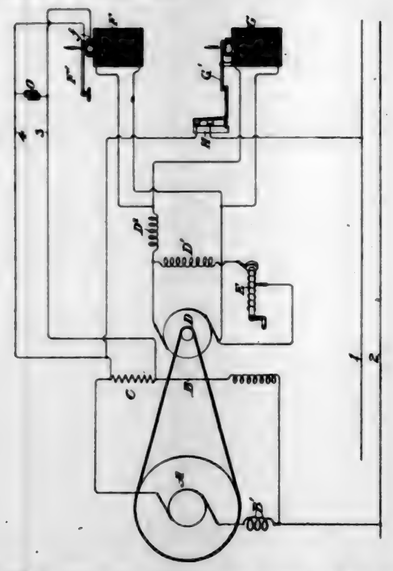

6. The combination, with a motor having a shunt field-magnet winding, of a resistance in series with said winding of such amount as to cause by its insertion or withdrawal a change in the field in excess of that required to control the speed of the motor; means for shunting the resistance, an electromagnet for operating such means, and a generator driven by the motor, the changes in the output of which due to change in speed cause the electromagnet to open and close the shunt.

7. The combination, with a motor having a shunt-winding, of a generator driven by the motor, a resistance in circuit with a shunt field-magnet winding, a switch for inserting or cutting out the resistance, and an electromagnet in circuit with the generator and controlling the switch.

8. In combination with a motor, having a shunt-winding, a generator driven by the motor, means for determining the output of the generator at given speed, a resistance in the shunt field-magnet circuit of the motor; and means, responsive to changes in the generator output due to change in speed, for cutting out or inserting the resistance.

9. The combination with a motor having a shunt field-magnet winding and the speed of which is to be maintained substantially constant, of a generator driven thereby and so geared that its speed changes with and over wider limits than that of the motor; and means for changing the motor speed, inversely responsive to the changes of speed of the generator.

10. The combination, with a shunt-wound motor, of a compound-wound generator driven by the motor and so geared as to rotate faster than the motor revolves; a resistance in the motor field-magnet circuit, an electromagnet in circuit with the generator-armature, and a switch controlling the resistance and operated by the electromagnet.

11. The combination, with a motor having a shunt field-magnet winding, of a generator driven by the motor and having a field-magnet winding with a resistance of the potentiometer type in circuit therewith, by which the strength of the field may be incrementally regulated; with means controlled by changes in the output of the generator for varying the field of the main motor inversely as the output of the generator changes; whereby the increase of speed of the generator retards the main motor, and the diminution of the speed of the generator accelerates the main motor.

12. The combination, with a motor and a regulator therefor arranged to preserve the motor speed constant; a generator driven by the motor, the changes in the output of which operate the regulator, of a circuit-breaker in the motor-lead and means for causing the changes of the generator-current to operate the circuit-breaker when the regulator fails to operate.

849,583. CORSET ATTACHMENT. NETTIE STOSKOPF, Prosper, Minn. Filed Feb. 28, 1906. Renewed Mar. 8, 1907. Serial No. 361,343.

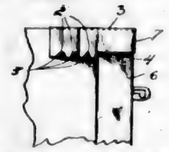

Claim.—An attachment for a corset consisting of a piece of sheet metal having points on its opposite edges with a blank space for a stay-pocket and no points from the blank space to the edge on one side, the said piece folded over the edge of the fabric on a median line and the points passed through the fabric and folded against the opposite side, the place where the points are omitted on one side being folded laterally and the points inserted in the fabric and folded down to form the pocket for the stay at the edge of the corset.

849,584. FOLDING CHAIR. CHARLES J. VAN VALKENBURG, Manchester, Mich. Filed Mar. 26, 1906. Serial No. 308,174.

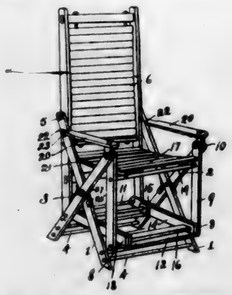

Claim.—1. In a chair, the combination of a foldable crossed-leg support, a back pivoted thereto and extending a distance below such pivot, a pendent frame pivoted to the support in advance of the back, a horizontally-disposed frame pivoted at its rear end to the lower end of the back, a seat pivoted to the back intermediate its ends, said horizontal frame and seat both being loosely supported at their forward ends by the pendent frame, an extensible foot-rest slidingly carried by the horizontal frame, arms pivoted to the support, the whole being adapted to be folded into compact form with the seat, horizontal frame, and foot-rest folded upwardly against the back, the seat being interposed between the back and said frame, the arms raised on their pivots, the crossed legs folded, and the pendent frame still pendent in compact relation to the back and coöperating with the horizontal frame and seat to prevent a lowering thereof relative to the back, substantially as described.

2. The combination with the crossed pivotally-connected legs, of a stop member secured to one leg and having a lateral projection for coacting with the alining face of the other leg at a predetermined point in its opening movement, and a plate fixed to said other leg in position to receive the thrust of the stop member and having a spur or lug formed thereon for engaging the outer face of the projection on the stop member, substantially as described.

849,585. HORIZONTALLY-PIVOTED WINDOW. FREDERICK C. WAGNER and FREDRICK G. KOCH, Cleveland, Ohio, assignors, by mesne assignments, to The Mitchell Reversable Window Company, Fremont, Ohio, a Corporation. Filed Apr. 19, 1906. Serial No. 312,719.

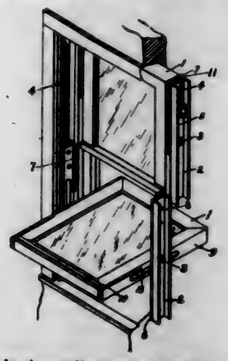

Claim:—1. A horizontally-pivoted window, consisting of a sash, a sash-sustaining member pivotally secured thereto, a plate secured to said sash, openings and slots formed in said plate, sash, and sash-sustaining member, and a pivotally-mounted beveled locking-bar mounted in the opening and slot of said plate and sash and provided with guide-pins surrounded with coiled springs, and stops to limit the outward movement of the same by said coiled springs.

2. A horizontally-pivoted window, consisting of channel-bar sash-sustaining members, plates secured thereto and provided with openings and slots, a sash pivotally secured to said members, plates secured to said sash, openings and slots formed in said plates and sash and registering with said openings and slots of said plates secured to said sash-sustaining members when the sash is in its vertical position, and spring-resisted beveled locking-bars mounted in said openings and slots of said plates and sash and provided at their ends with stops taking into engagement with the plate of said sash-sustaining members to limit the outward movements of the same when the sash is returned to its vertical position.

3. A horizontally-pivoted window, consisting of a channel-bar sash-sustaining member, a plate secured to the web of said member and provided with an opening and slot, a sash pivotally secured to said sash-sustaining member, a plate secured to said sash, registering openings and slots formed in said plates and sash, and a spring-resisted beveled locking-bar mounted in said registering openings and slots of said plates and sash and provided with stops at its ends to engage with said plate secured to said sash.

4. In a horizontally-pivoted window, the combination with a channel-bar sash-sustaining member, and a plate secured to the web thereof and provided with an opening and slot; of a sash pivotally secured to said sash-sustaining member, a plate secured to said sash and provided with an opening and slot adapted to register with said opening and slot of said plate of the sash-sustaining member, and a spring-resisted beveled locking-bar mounted in the opening and slot of said plate and provided at its ends with stops engaging with said sash-plate when the sash is brought in alinement with said sash-sustaining member.

5. In a horizontally-pivoted window, a channel-bar sash-sustaining member, a plate secured to the web thereof and provided with an opening and slot intermediate the ends thereof, diagonally-disposed hooked flanges formed with the sides of said plate near the upper and lower ends thereof, and a sash pivotally secured to said sash-sustaining member and provided with a locking-bar and plate, said locking-bar adapted to move into said opening and slot and said plate to have its edges engaged by said hooked flanges when the sash is in its closed position.

6. In a horizontally-pivoted window, the combination with a channel-bar sash-sustaining member, and a plate secured to the web thereof and provided with an opening and slot; of a sash provided with a slot having its ends extending beyond the ends of said slot in said plate and having openings near its ends extending into the sash, a plate secured to the side of said sash and provided with a slot registering with said first-mentioned slot, a spring-resisted locking-bar mounted in said slot of said sash and provided with guide-pins taking into said openings near the ends thereof and carrying on its ends stops normally engaging said last-mentioned plate, and a pivot hanger-bolt taking through an opening formed intermediate the ends of said locking-bar and securing said sash to said sash-sustaining member.

7. In a horizontally-pivoted window, the combination with a sash provided with a slot opening or recess and having pin-openings near its ends extending into the side of the sash, a plate secured to the side of said sash and provided with a slot-opening of less length than said slot-opening of the sash, and a pivot hanger-bolt mounted intermediate the ends of said slot-openings; of a locking-bar mounted on said pivot hanger-bolt and provided with guide pins or pinties taking into said pin-openings of said sash and end stops normally engaging with said first-mentioned plate, and coiled springs surrounding said guide pins or pinties.

8. In a horizontally-pivoted window, the combination with a channel-bar sash-sustaining member, and a plate secured to the web thereof and provided with an opening and slot and diagonally-disposed flanges; of a sash horizontally pivoted to said sash-sustaining member and provided with an opening and slot, a plate secured to the side of said sash and provided with an opening and slot adapted to register with the opening and slot of said plate secured to the web of said sash-sustaining member, and a beveled spring-resisted locking-bar mounted in the openings and slots of said plate and sash and adapted to take into the opening and slot of said plate secured to said sash-sustaining member when the sash is in its closed or initial position.

849,586. ELECTRIC SIGN. BENJAMIN WALL, Allendale, N. J., assignor to Metropolitan Engineering Company, organized in New York. Filed Dec. 28, 1906. Serial No. 349,888.

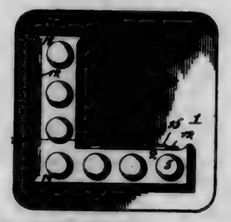

Claim.—1. In an electric sign, a supporting-plate, an open-box-shaped character, glow-lamp sockets secured in the face-wall of said character and received in the space surrounded by the side walls thereof, and means for detachably securing said character upon said plate and with the edges of its open side bearing against the surface of said plate.

2. In an electric sign, a supporting-plate, a plurality of pairs of parallel strips thereon, an open-box-shaped character having its side walls constructed to be received between said strips, means for detachably securing said side walls to said strips, and means for securing glow-lamps to the face-wall of said character.

3. In an electric sign, a supporting-plate, a plurality of pairs of parallel strips thereon, an open-box-shaped character having its side walls constructed to be received between said strips, eyes on said strips, eyes on said side walls, keys constructed to enter said eyes to detachably secure said side walls to said strips and means for securing glow-lamps to the face-wall of said character.

849,587. LOCK. HAROLD C. WARWICK, San Francisco, Cal. Filed Mar. 3, 1904. Serial No. 196,295.

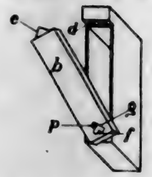

Claim.—In a lock, the combination with a case or body having a socket, of a combined cover and locking bolt having at one end an extension-stud for engaging in said socket and at the other end a pivot-opening and a communicating elongated tumbler-opening, a pin passing through the pivot-opening into said case or body, a loose elongated tumbler in said tumbler-opening and a movable pivoted member working against the surface of said combined cover-bolt and having an elongated recess in its inner face adapted to register with said tumbler-opening and receive the tumbler, whereby the tumbler may be deposited in said recess and the combined cover-bolt then shifted to bring the pivot-pin into the tumbler-opening thereof and then retracted to disengage its stud from the socket and open the device, substantially as described.

849,588. DOLL. SYLVESTER A. WEST, Rock Port, Mo. Filed July 13, 1906. Serial No. 326,133.

Claim.—1. A doll having a hand-chamber in the body portion thereof, movable arms having finger-sockets communicating with said hand-chamber, and means for detachably securing amusement devices to said arms.

2. A doll having a hand-chamber in the body portion thereof, movable arms having finger-sockets communicating with said hand-chamber, and spring-operated thumbs for detachably securing amusement devices upon said arms.

3. A doll having a hand-chamber in the body portion thereof, movable arms having finger-sockets communicating with said hand-chamber, movable legs connected with said body portion, and means located in said hand-chamber for operating said legs.

4. A doll having a hand-chamber in the body portion thereof, movable arms having finger-sockets communicating with said hand-chamber, a handle located in said hand-chamber, and a flexible connection between the handle and the head of said doll.

5. A doll having a hand-chamber, movable arms, a handle located in said hand-chamber, movable legs connected with said doll, and leg-operating devices pivotally mounted upon said handle.

6. A doll having a hand-opening in its back and a hand-chamber in the body portion thereof, movable arms having finger-sockets communicating with said hand-chamber, said arms having spring-operated thumbs for detachably holding amusement devices, a handle mounted in said hand-chamber, a coil-spring connecting the upper end of said handle with the head of said doll, articulated legs connected with said body portion, and leg-operating devices pivotally mounted upon said handle and comprising finger-pieces and angularly-disposed arms projecting downward into said legs, the finger-piece of one of said leg-operating devices being longer than the finger-piece of the other.

7. A doll provided with movable arms having finger-sockets and spring-operated catches for detachably securing amusement devices upon said arms.

849,589. DISPLAY-RACK. THOMAS E. ARNOLD, Port Clinton, Ohio. Filed Apr. 2, 1906. Serial No. 309,395.

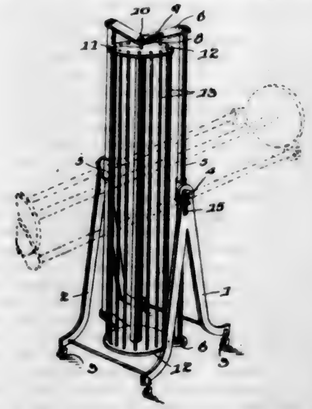

Claim.—1. The combination with supports; of a frame therebetween, laterally-extending trunnions at the center of the frame and bearing on the supports, means upon one of the supports for engaging a trunnion to lock the frame at a desired angle, a spindle detachably and rotatably mounted within and extending longitudinally of the frame, disks secured to and rotatable with the spindle, and a plurality of roll-engaging devices connecting and rotatable with the disks.

2. The combination with portable connected supports; of a frame disposed between the supports, trunnions ex-

tending from the sides thereof, means upon one of the supports for engaging a trunnion to lock the frame at a desired angle, a spindle detachably and rotatably mounted within the frame, disks secured to and rotatable with the spindle, and a plurality of roll-engaging devices connecting and rotatable with the disks.

849,590. SALES-CASE FOR TOBACCO, &c. LAWSON J. BAILEY, Whittier, Cal. Filed Nov. 17, 1905. Serial No. 287,767.

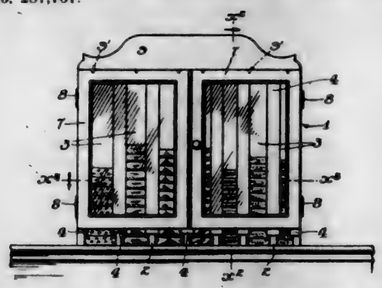

Claim.—1. A sales-case for articles provided with a plurality of vertical partitions forming vertical compartments, flanges at the front of each compartment extending from the side walls of the compartment to contract the opening at the front of the compartment, said flanges terminating above, but adjacent to the bottom of the compartment, leaving a space below the flanges of the full width of the compartment, doors hinged to the case and extending from the top thereof adjacent to nearly the bottom of the compartments to cover the main body of the case but leave the lower portion thereof exposed for withdrawal of articles from the compartments at the bottom thereof.

2. A sales-case for articles provided with a plurality of vertical partitions forming vertical compartments, flanges at the front of each compartment extending from the side walls of the compartment to contract the opening at the front of the compartment, said flanges terminating above, but adjacent to the bottom of the compartment, leaving a space below the flanges of the full width of the compartment, doors hinged to the case and extending from the top thereof adjacent to nearly the bottom of the compartments to cover the main body of the case, but leave the lower portion thereof exposed for withdrawal of articles from the compartments at the bottom thereof, and a cover hinged to the top of the case to cover the compartments.

3. A sales-case for articles provided with a plurality of vertical partitions forming vertical compartments, flanges at the front of each compartment extending from the side walls of the compartment to contract the opening at the front of the compartment, said flanges terminating above, but adjacent to the bottom of the compartment, leaving a space below the flanges of the full width of the compartment, doors hinged to the case and extending from the top thereof adjacent to nearly the bottom of the compartments to cover the main body of the case, but leave the lower portion thereof exposed for withdrawal of articles from the compartment at the bottom thereof, and a cover hinged to the top of the case to cover the compartments, said case having a stepped rear wall to provide compartments of different dimensions.

849,591. SEPARABLE HAT. RUDOLPH F. BARTEL, Bayonne, N. J. Filed June 12, 1906. Serial No. 321,419.

Claim.—1. The combination in a separable hat of a cylindrical frame having shoulders in its side, a separable brim, a tubular extension of the brim carried by the frame and secured under the shoulders thereof, and a separate crown over the extension and secured under the shoulders of the frame.

2. The combination in a separable hat of a frame open at top and bottom and having shoulders in its sides, a brim, a tubular extension attached at one edge to the brim, the said extension inclosing the skeleton frame, a draw-string connected with the free edge of the tubular extension and engaging with the shoulders of the skeleton frame, and a crown over the tubular extension and connected with the shoulders in said frame.

3. The combination in a separable hat of a skeleton frame consists of vertical members and other members connecting them and having shoulders in the vertical members thereof, a separable annular brim of somewhat stiff material under the frame, a pliable extension extending from the central opening in the brim, passing through and wrapped about the frame and secured in the shoulders thereof, and a crown of pliable material over the said extension and engaging with the shoulders of the frame.

4. The combination in a separable hat of a skeleton frame, an upper ring in the frame, a second ring smaller in diameter below the upper ring, vertical members with a shoulder in each joining the rings, a separate brim below the smaller ring, a tubular extension connected with the brim extending up through the rings and drawn over the outside cylindrical surface of the said frame, a hem at the edge of the said extension bearing up against the shoulders in the vertical members and means to hold the hem in place under said shoulders.

5. The combination in a separable hat of a skeleton frame, an upper ring in the frame, a second ring smaller in diameter below the upper ring, vertical members with a shoulder in each joining the rings, a separate brim below the smaller ring, a tubular extension connected with the brim, extending up through the rings and drawn over the outside cylindrical surface of the said frame, a hem at the edge of the said extension bearing up against the shoulders in the vertical members, means to hold the hem in place under said shoulders, a ruffle on the brim and having a central opening, a hem at the said central opening located under the shoulders of the vertical members of the frame, and a draw-string in the hem of the ruffle to hold the latter in place.

6. The combination in a separable hat of a frame having shoulders in its side, a separate brim, a tubular extension for the brim, the said extension inclosing the frame, means to engage the free edge of the said extension with the shoulders of the frame, a crown on the frame over the tubular extension, the lower edge of the crown in engagement with the shoulders of the frame, an upper brim on the brim with the extension, means to secure the upper brim with the shoulders of the frame.

849,592. ELASTIC TIRE. SAMUEL BASCH and ROSE BASCH, London, England. Filed May 10, 1905. Serial No. 259,847.

Claim.—1. The combination in elastic tires or rims for road-vehicles, of an inner rigid rim *b* carried by the spokes *a* of the wheel, an outer flexible elastic rim *c* of larger diameter, laminated springs *h* attached at their center to the outer side of the inner rim *b*, double-ended brackets *h* fixed upon the inner side of the outer flexible rim *c*, and links *j*, *j*, jointed at one end to the ends of the double-ended brackets *h*, and at the other end to the ends of the laminated springs *h*, substantially as set forth and illustrated in Figs. 1 and 2.

2. In combination with an inner rigid rim *b*, springs, double-ended brackets *h*, and links *j*, *j*, an outer flexible elastic rim consisting of two rings formed of strips c', c^2 of flat flexible elastic steel, with a thickness of india-rubber *d*

between the adjoining rings, substantially as set forth and illustrated.

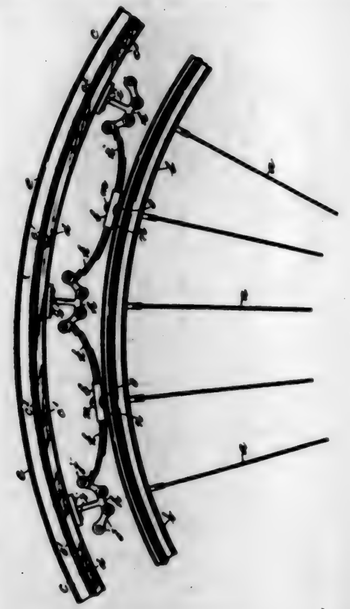

849,593. ELECTRIC IGNITER. WILLIAM H. BLOOD, Jr., Wellesley, Mass. Filed Feb. 2, 1906. Serial No. 299,104.

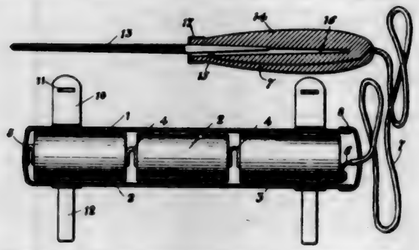

Claim.—1. In an electrical igniter, in combination, a suitable inclosure, fastening means in connection with said inclosure and terminating in ends adapted to be affixed to a part of a gas-stove, one or more batteries within said inclosure and in electrical contact with said means, an induction-coil within said inclosure and connected with said batteries, a flexible insulated conductor leading from said induction-coil, a suitable handle within which said conductor terminates, said handle comprising two relatively movable members, said conductor terminating a contact on the inner face of one of said members, and a metallic rod rigidly mounted in said handle and in electrical connection with a contact on said other member, whereby upon pressure said members may be brought together to establish an electrical connection between said rod and conductor.

2. In an electrical igniter, in combination, a suitable inclosure, means whereby said inclosure may be affixed to a part of a gas-stove, a source of electricity, a flexible insulated conductor leading from one terminal of said source, a suitable handle within which said conductor terminates, said handle comprising two relatively movable members, said conductor terminating on a face of one of said members, and a metallic rod mounted on said handle in electrical connection with a contact exposed on the opposite face of the other member, whereby upon pressure said members may be brought together to establish an electrical connection between said rod and conductor.

3. In a device of the class described, a handle comprising two relatively movable members normally spaced apart, a conductor terminating in a contact movable with one of said members, a spark-rod having a terminal movable with the other of said members adjacent and in the path of the aforesaid contact, whereby upon closing said members an electrical contact will be made and said spark-rod will be put in closed circuit with said conductor, and means for enabling said spark-rod to make sparks at a point distant from its circuit-closing contact.

849,594. CROSS-CONVEYER. CHESTER BRADFORD, Indianapolis, Ind. Filed Oct. 7, 1905. Serial No. 281,848.

Claim.—1. The combination, in a flow-changer, of a shiftable valve, a handle-rod, latching devices carried by said rod and an adjacent stationary part and adapted to engage with each other, a connection between said handle-rod and the valve, and a spring whereby the catching devices are normally held into engagement but which will yield under a rocking force applied to the handle-rod and thus allow said catching devices to become disengaged.

2. The combination of a shifting valve, a handle-rod for operating the same, catch devices mounted on said handle-rod and on an adjacent stationary part and adapted to engage with each other, and a connecting-rod connecting said handle-rod and said valve formed of flat spring metal and secured against suitable shoulders whereby as the handle-rod is rocked in its bearings it tends to twist said connecting-rod against its spring force, which spring force when the force on the handle-rod is relieved tends to restore the parts to normal position.

3. The combination, in a cross-conveyer having two discharging-points and means for conveying material between the two points, of a shifting valve whereby the material is directed toward one of the said discharging-points when in one position and toward the other of said discharging-points when in the other position, a handle-rod secured in bearings alongside the conveyer and connected to said valve, and latching devices consisting of a catch part secured to the side of the conveyer and containing a notch, with inclines leading toward said notch and two latching-fingers secured to said handle-rod that distance apart which said handle-rod moves in shifting the valve from one position to the other, the fingers whereon are respectively adapted to traverse said inclines and engage with said notch at the respective ends of the movement.

4. The combination, in a cross-conveyer, of a valve for shifting the flow of material therein, a handle-rod connected to said valve for operating it, and catch devices for holding said handle-rod to the different positions, said handle-rod being formed in two parts, combined couplings and latch-fingers connecting said two parts, and a catch part wherewith said catch-fingers are adapted to be engaged secured to an adjacent stationary part.

5. A handle-rod composed of two parts, two coupling and latch members connecting said parts, and a catch with which each of said latch members is adapted to engage at the end of the movement of said handle-rod.

6. The combination, in a cross-conveyer having two discharging-points and means for conveying material between the two points, of a shifting valve whereby the material is directed toward one of the said discharging-points when in one position and toward the other of said discharging-points when in the other position consisting of a swinging

plate carried by arms and gudgeons above said plate and a partition rising from the structure below to meet the plate in the same plane as the gudgeons, and a suitable handle-rod connected to one of said gudgeons by means of which said plate may be swung from one position to the other.

849,595. HEAD-REST FOR BARBERS' CHAIRS. BENJAMIN F. BUCHANAN, Camden, N. J. Filed Nov. 14, 1906. Serial No. 343,403.

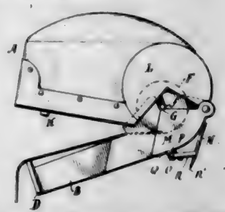

Claim.—1. In a head-rest, the combination with a top provided with a cushion, of a curved wall constituting a portion of a hollow cylinder and secured transversely at the rear of the said top, the said top having a forwardly-extending part adapted to support the cushion, a bottom, a curved wall constituting a portion of a hollow cylinder and secured transversely at the rear of the said bottom, the said curved walls being pivotally connected with each other and constructed to form a hollow cylinder when closed together, the said top and bottom being face to face when said curved walls are closed, and means adapted to retain the parts together when closed, substantially as described.

2. In a head-rest, the combination with a top having a cushion, of a curved wall arranged at the rear of the said top, the said top having a flat portion extending forwardly from the said curved wall and adapted to support the cushion, a flat bottom extending beneath the said top and face to face with the flat portion of the top, a curved wall arranged at the rear of the said bottom, the said curved walls of the top and bottom being constructed to form a tubular roll-holding chamber when together, hinges pivotally connecting the said curved walls, means for latching the flat portions of the top and bottom together, and a paper-cutter arranged transversely in rear of the roll-holding chamber and attached externally to one of the said curved walls, substantially as described.

3. In a head-rest, the combination with a top having a cushion, of a curved wall arranged at the rear of the said top, the said top having a flat portion extending forwardly from the said curved wall and adapted to support the cushion, a flat bottom extending beneath the said top and face to face with the flat portion of the top, a curved wall arranged at the rear of the said bottom, the said curved walls of the top and bottom being constructed to form a tubular roll-holding chamber when together, hinges pivotally connecting the said curved walls, means for latching the flat portions of the top and bottom together, and a paper-cutter arranged transversely with respect to the bottom curved wall and having arms pivotally connected with the bottom, the arms of said paper-cutter being provided with springs normally holding it against the curved wall and permitting the cutter to be drawn downwardly below the bottom curved wall, substantially as described.

849,596. SEAT END. EDWARD G. BUDD, Philadelphia, Pa., assignor to Hale-Kilburn Metal Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed July 18, 1906. Serial No. 326,720.

Claim.—1. A seat end formed of sheet metal and having an integral raised pad provided with an opening and a sleeve supported in said opening, the end of said sleeve extending through the opening being turned over against the side of said pad, substantially as described.

2. A seat end formed of sheet metal and having integral raised pads, a part secured to one side of each of said pads and forming a nut-pocket, a nut in each of said pockets and means coacting with said nuts to secure the ends of connecting rails to said pads, substantially as described.

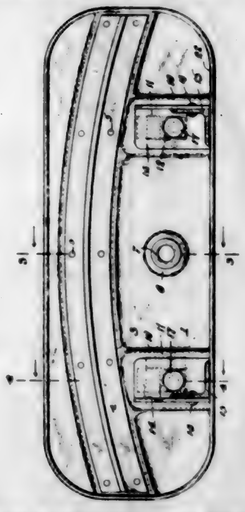

3. A seat end having a part secured thereto and forming a nut-pocket and an opening for a nut in said seat end communicating with said pocket, substantially as described.

4. A seat end formed of sheet metal and having integral raised pads with openings therethrough, parts secured to said seat end one adjacent to each of said openings and forming a nut-pocket, a nut in each of said pockets, and means extending through said openings and coacting with said nuts for securing parts of the seat structure to said seat end, substantially as described.

5. A seat end formed of sheet metal and having openings therethrough, parts formed of sheet metal and secured to said seat end one adjacent to each of said openings, said parts forming nut-pockets, a nut in each of said pockets, and means extending through said openings and coacting with said nuts to secure parts of the seat structure to said seat end, substantially as described.

6. A seat end formed of sheet metal and having integral raised pads to which the parts of the seat structure are secured, the surface of said seat end being inclined to the planes of the tops of said pads, substantially as described.

849,597. COMPRESSOR-VALVE. NIELS A. CHRISTENSEN, Milwaukee, Wis. Filed Mar. 21, 1904. Serial No. 199,228.

Claim.—1. In a compressor, the combination of a suction-valve chamber formed with an inlet below a valve-seat, and with a port above the valve-seat for constant communication with a compressor-cylinder, a plug projecting into and in cross-section filling the valve-chamber within a short distance of the valve-seat, and a suction-valve provided with a stem which is fitted and guided in said plug, substantially as described.

2. In a compressor, the combination of a discharge-valve chamber formed with a port below a valve-seat to open into a compressor-cylinder and a discharge-passage leading from the chamber above the valve-seat, a plug projecting into and in cross-section filling said chamber within a short distance of the valve-seat, and a discharge-valve provided with a stem fitted and guided in said plug, substantially as described.

3. In a compressor the combination of suction and discharge valve chambers provided with valve-seats, interchangeable plugs each adapted to project into and in

cross-section fill the suction-valve chamber within a short distance of its seat and formed with a socket, and inter-

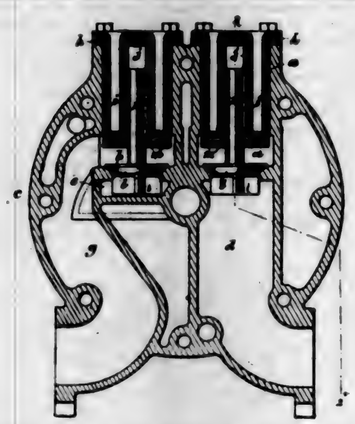

changeable suction and discharge valves having stems fitted and guided in the sockets of said plugs, substantially as described.

849,598. TOP-HOLDER FOR AUTOMOBILES. CHARLES W. COOPS, Taunton, Mass. Filed Apr. 20, 1906. Serial No. 312,757.

Claim.—1. A bow-holder comprising a support for the lower bow, and a spring-controlled presser coacting with the upper bow.

2. A bow-holder comprising a support for the lower bow, and a presser having a spring acting normally to cause the presser to engage the top bow.

3. The combination with a bow-holder and a support for the lower bow of a projection adapted to engage a recess and prevent lateral movement of said bow in said support.

4. A bow-holder comprising a support to sustain and partially surround the lower bow of a set of bows, a rod having a foot, a spring acting normally to maintain said foot against a bow, and means to adjust the foot on said rod.

5. A bow-holder, a support for the lower bow, a presser having a coacting spring, and means to change the stress of said spring.

6. A bow-holder comprising a support and a yieldingly-sustained presser adapted to grasp between them a set of bows of a carriage-top, said presser being capable of being turned into its inoperative position when the carriage-top is up and in use.

7. A series of bows, a support for the lowermost bow of the series, a device acting to retain said bows from jumping with relation to said support when the top is thrown back, and means coacting with and intermediate said bows to prevent lateral movement thereof.

849,599. AUTOMATIC EMERGENCY-BRAKE. WILLIAM COOPER, Georgetown, Colo. Filed Dec. 18, 1906. Serial No. 348,406.

Claim.—1. In power mechanism, a fixed member, a rotatable member, a third member adapted to be wedged between said members, operative means for drawing said third member into said engagement and means whereby the weight of the operator counterbalances said operative means, substantially as and for the purpose set forth.

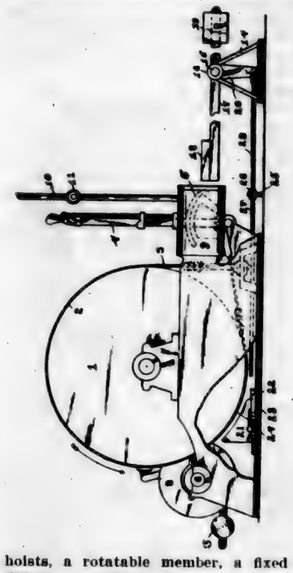

2. In hoists, a rotatable member, a fixed support, a member slidable on said fixed support and adapted to be brought into wedging engagement between said rotatable member and said fixed support, means for drawing said wedging member into operative position and means whereby the weight of the operator counterbalances said first-mentioned means, substantially as and for the purpose set forth.

3. In hoists, a rotatable member, a fixed member, a third member adapted to be brought into wedging engagement between said rotatable member and said fixed member, a weighted lever adapted to operate said wedge member and means whereby the weight of the operator counterbalances said weighted lever, substantially as and for the purpose set forth.

4. In hoists, a rotatable member, a fixed incline member, a third member adapted to be drawn up said incline member into wedging engagement with said rotatable member, a weighted device adapted to operate said wedge member and means whereby the weight of the operator counterbalances said weighted device, substantially as and for the purpose set forth.

849,600. GOLF-BALL MARKER. JOHN C. CORY, New York, N. Y. Filed Mar. 31, 1906. Serial No. 309,048.

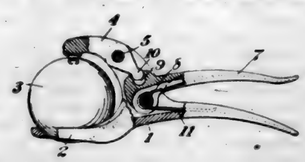

Claim.—1. A golf-ball marker comprising a frame having a concave ball-seat, a movable die-holder, an inelastic die secured to said holder with raised characters, the faces of which correspond to the shape of the ball, and a power member adapted to operate said die-holder and die, substantially as described.

2. A golf-ball marker comprising a frame having a concave ball-seat, a die-holder pivoted to said frame and provided with an inelastic die having a curved contour, and

a power member likewise pivoted to the frame and engaging said die-holder for operating the same, substantially as described.

3. A golf-ball marker comprising a cup-shaped seat, a movable die-holder pivotally mounted adjacent thereto, an inelastic die mounted on said holder having raised characters thereon with curved faces, and a pivoted power member engaging with said die-holder and adapted to operate the same, substantially as described.

4. A golf-ball marker comprising a frame having a cup-shaped seat, a movable die-holder pivotally mounted on said frame adjacent thereto, and having an inelastic die with raised characters mounted thereon, the faces of which correspond to the curvature of the ball, and a power member also pivoted to said frame and a ball-and-socket connection between the die-holder, and power member, and a spring for maintaining the die in its normal position, substantially as described.

5. A golf-ball marker comprising a frame having a ring-shaped inelastic ball-seat with concaved seating-surface, a movable die-holder pivotally mounted on said frame, an inelastic die in said holder provided with a curved face and raised characters, a power member pivotally mounted in said frame, an operating connection between said power member and said die-holder, and a spring for maintaining the die in normal position, substantially as described.

849,601. SAWMILL-CARRIAGE. DANIEL CRANE, Saginaw, Mich., assignor to Wickes Bros., Saginaw, Mich., a Corporation of Michigan. Filed Mar. 28, 1906. Serial No. 308,494.

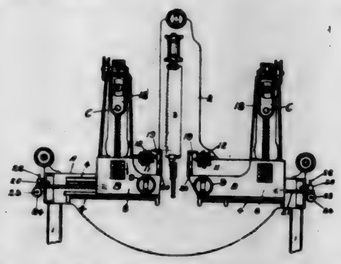

Claim.— 1. The combination in a gang-saw mill, with a frame and a gang, of a carriage on the frame movable toward and from the gang and a feed-roll on the carriage, means at one point in the travel of the carriage for engaging and rotating the feed-roll, the carriage adapted to support the work which engages the feed-roll and remain stationary while the work is being fed to the gang.

2. The combination in a gang-saw mill, with a cutting mechanism, of a carriage movable toward and from the mechanism, a feed-roll and a press-roll, both mounted on the carriage and movable therewith.

3. The combination in a gang-saw mill, of a carriage movable toward and from the gang, and a feed-roll and a jaw mounted on the carriage.

4. The combination in a gang-saw mill, of a carriage movable toward and from the gang, means for moving the carriage toward and from the gang, a feed-roll mounted on the carriage, and a shaft for actuating the feed-roll, the shaft mounted in the frame and detachably connected with the feed-roll on the carriage.

5. The combination in a gang-saw mill, of a carriage movable toward and from the gang, a feed-roll and a support for the work, carried by the forward end of the carriage next the gang.

6. A gang-saw mill comprising a frame, ways carried thereby, a carriage moving on and supported by said ways, the carriage comprising a pair of slide members, a tie-bar connecting the forward ends of the members, near the gang, a feed-roll, and a work-support extending between and secured to the members at the extreme forward end thereof next the gang, to support the work just prior to its engagement by the gang.

7. In a gang-saw mill, the combination with a frame and a gang, of a carriage movable toward and from the gang, a work-support mounted on the carriage at its forward end next the gang to sustain the work just prior to its engagement by the gang means for moving the carriage toward and from the gang and a feed-roll for feeding the work to the gang.

8. The combination in a gang-saw mill, with a frame and a gang, of a carriage movable on the frame toward and from the gang, a feed-roll journaled in the carriage, means supported by the frame for engaging and rotating the feed-roll, the carriage adapted to support the work which is engaged by the feed-roll and to remain stationary as the work is fed to the gang, and a work-support carried by the inner end of the carriage in advance of the feed-roll and adjacent the gang.

9. In a gang-saw mill, the combination with a frame, of a carriage movably mounted thereon, a rack secured to the carriage, a rotatable gear mounted on the frame and engaged by the rack, and means for releasably locking the carriage in its adjusted position and a feed-roll for feeding the work to the gang.

10. The combination in a gang-saw mill, with a frame and a gang, of a carriage movable on the frame toward and from the gang, a rotatable feed-roll journaled in the carriage, means for actuating the roll, the carriage adapted to support the work which engages the feed-roll and remain stationary while the work is being fed to the gang.

11. In a gang-saw mill, the combination with a frame, of a carriage movably mounted thereon, an apertured rack secured to the carriage, a gear engaged by the rack, means for rotating the gear in opposite directions, and a pin carried by the frame and receivable in any one of the apertures in the rack to releasably lock the carriage in its adjusted position and a feed-roll for feeding the work to the gang.

12. A carriage for gang-saw mills, the forward end of which is reduced to form a flange and a shoulder, bearings formed in the flange, a feed-roll journaled in the bearings, a shaft journaled apart from the carriage, and means for detachably engaging the shaft and feed-roll.

13. The combination in a gang-saw mill frame, with a gang, of a carriage movable toward and from the gang, a feed-roll journaled in the carriage, one end of the feed-roll being grooved, a shaft journaled in the frame, and a key carried by the shaft and removably received in the groove of the feed-roll, the key lying in the path of movement of the carriage.

849,602. LIQUID-METER. HOSEA N. DENNY, New York, N. Y. Filed Nov. 5, 1906. Serial No. 342,024.

Claim.—1. In a liquid-meter, a valve to control the flow of liquid, a weight, means independent of the liquid to be measured for retarding the descent of the weight, and connections between the weight and the valve whereby the valve is opened by the weight after the weight is raised to a predetermined height and whereby the valve is closed after the weight has descended to a predetermined level.

2. In a liquid-meter, a valve for controlling the flow of liquid which is normally closed, a weight, pneumatic devices for retarding the descent of the weight, and connections between the weight and the valve whereby the valve is opened after the weight is raised to a predetermined height and closed after the weight has descended to a predetermined level.

3. In a liquid-meter, a valve to control the flow of liquid which is normally closed, a cylinder, a weight arranged for vertical movement in said cylinder and adapted to expel air from the cylinder during its descent, means for controlling the escape of air from the lower portion of the cylinder during the descent of the weight, connections between the weight and the valve whereby the valve is opened after the weight is raised to a predetermined height and closed after the weight has descended to a predetermined level.

4. In a liquid-meter, a valve for controlling the flow of liquid, a cylinder, a weight arranged for vertical sliding movement in said cylinder and adapted to expel air from the cylinder during its descent, a valve in said weight to permit the passage of air through the weight when the weight is raised, means for controlling the rate of escape of air from the lower portion of the cylinder during the descent of the weight, and connections between the weight and the valve for controlling the flow of liquid whereby said valve is opened after the weight is raised to a predetermined height and closed after the weight has descended to a predetermined level.

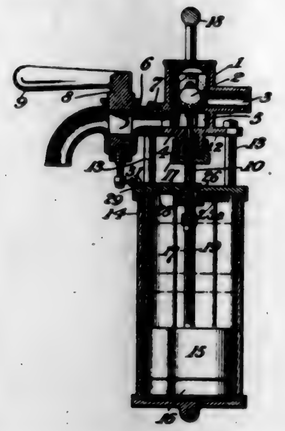

5. In a liquid-meter, a valve for controlling the flow of liquid, a cylinder, a weight arranged for sliding movement in the cylinder and adapted to expel air from the cylinder during its descent, a valve-stem extending from said valve into the upper portion of the cylinder and adapted to be engaged by the weight after the weight is raised to a predetermined height, and connections between the valve-stem and the weight whereby the valve is closed by the descent of the weight after the weight has descended to a predetermined level.

6. In a liquid-meter, a valve to control the flow of liquid, a weight, connections between the valve and the weight whereby the valve is opened after the weight is raised to a predetermined height and whereby the valve is closed after the weight has descended to a predetermined level, a supplemental valve through which the liquid must pass after passing through the controlling-valve, latch mechanism adapted to hold said weight in raised position when the supplemental valve is closed, and connections between said supplemental valve and said latch mechanism whereby the valve is disengaged and the weight is allowed to descend when the supplemental valve is opened.

7. In a liquid-meter, a cylinder, a weight arranged to slide vertically in said cylinder, a valve to control the flow of liquid, a valve-stem connected with said valve and extending within said cylinder, a weight-lifting rod attached to said weight and extending upward through the top of said cylinder, said rod having a slot extending longitudinally throughout a portion of its length and an arm attached to said valve-stem and extending into said slot, whereby the descent of the weight below a predetermined point effects the closure of the valve.

849,603. HOTEL-REGISTER DESK. FRANK F. DOLESHY, Seattle, Wash. Filed Mar. 17, 1906. Serial No. 306,592.

Claim.—1. The combination, in a desk, of a supporting-frame, the table, said table being provided with a centrally-disposed recess for a registry-book, an elevated apertured shelf at one end of the table and an open-top cavity at the other end which communicates with the recess, and a block adapted to be entered within the cavity from said recess and provided with hinged straps, whereby a call-sheet is secured thereto.

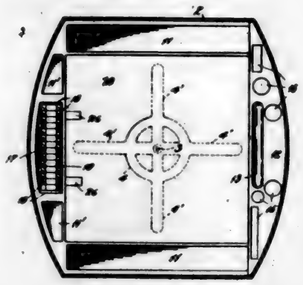

2. The combination in a desk, of a rotatable supporting-frame, the table, said table being provided with a centrally-disposed recess for a registry-book, an elevated apertured shelf at one end of the table and an open-top cavity at the other end which communicates with the recess, and a block adapted to be entered within the cavity from said recess and provided with means whereby a call-sheet may be secured thereto.

3. The combination in a desk, of a supporting-frame, antifriction-bearings between the frame and a rotatable table, the table, said table being provided with a centrally-disposed recess for a registry-book, an elevated apertured shelf at one end of the table and an open-top cavity at the other end which communicates with the recess, a block adapted to be entered within the cavity from said recess and provided with tabs and hinged straps, to receive a call-sheet which is marked into columns, time-indicating numerals and also with room-designating characters.

4. The combination in a desk, of a supporting-frame provided with radially-disposed arms severally provided with downwardly-protruding knobs, antifriction-bearings between the frame and a rotatable table, the table, said table being provided with a centrally-disposed recess for a registry-book, an elevated apertured shelf at one end of the table and an open-top cavity at the other end which communicates with the recess, a block adapted to be entered within the cavity from said recess and provided with tabs to receive hinged straps, and a call-sheet which is marked into columns, time-indicating numerals and also with room-designating characters.

5. In a registry-desk, the combination with the desk-table provided with a centrally-disposed recess and a cavity opening therefrom, of a block, tabs on the block, and straps having hooked ends and hinged to the block.

849,604. SUPPORT FOR SEAT-BACKS. BENJAMIN F. FORTINER, Camden, N. J., assignor to The Hale and Kilburn Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Sept. 6, 1906. Serial No. 333,448.

Claim.—1. In car-seating, the combination of a support, a seat-back, a plate having oppositely-disposed faces one inclined relatively to the other secured to the back with one of said faces lying against the back, the other face of said plate having an opening therein and a cut-away portion at one side of said opening, a locking member rotatable in an opening in said support its end being adapted to extend through the opening in said plate, and a stud on said member adapted to be carried by the rotation thereof toward and away from said cut-away portion, substantially as described.

2. In car-seating, the combination of a support, a seat-

back, a plate having oppositely-disposed faces one inclined relatively to the other secured to the back with one of said faces lying against the back, the other face of said plate having an opening therein and a cut-away portion at one side of said opening, a holder having an opening therethrough mounted on said support, a locking member rotatable in the opening in said holder, its end being adapted to extend through the opening in said plate, and a stud on said member adapted to be carried by the rotation thereof toward and away from said cut-away portion, substantially as described.

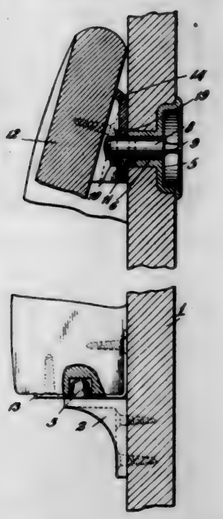

3. In car-seating, the combination of a support, a seat-back, a bracket secured to said support and on which the seat-back rests, a plate having oppositely-disposed faces one inclined relatively to the other secured to the back with one of said faces lying against the back, the other face having an opening therein and a cut-away portion at one side of said opening, a locking member rotatable in an opening in said support its end being adapted to extend through the opening in said plate and a stud on said member adapted to pass through said cut-away portion and to be carried by the rotation of said member toward and away from the same, substantially as described.

4. In car-seating, the combination of a support, a seat-back, a locking member mounted for rotation in said support, an operating-handle on one end of said member, two studs on the side of said member at the other end thereof, one nearer said end than the other and a plate secured to said seat-back with which one of said studs coacts, substantially as described.

849,605. METHOD OF COVERING EYELETS WITH A FLEXIBLE MATERIAL. PERLEY R. GLASS, Boston, Mass., assignor to Peerless Machinery Company, a Corporation of Massachusetts. Filed June 14, 1905. Serial No. 265,181.

Claim.—A method of covering eyelets, consisting in forming the covering material of the proper shape and thickness to cover an eyelet; of placing the eyelet and material in a holding and centering device; of pressing the eyelet upon the material into a lower forming-die to partially form the material around the head of an eyelet; and thereafter pressing an upper forming-die upon the partially-formed material and rotating said die upon the material to complete the shaping of the material to cover the head of an eyelet.

849,605.

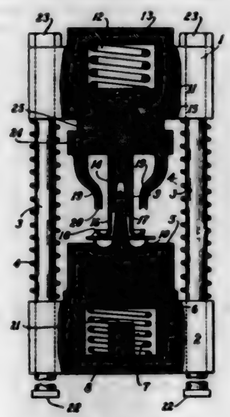

849,606. INSULATOR. ALBION GOLDSTEIN, St. Louis, Mo. Filed Feb. 5, 1906. Serial No. 299,500.

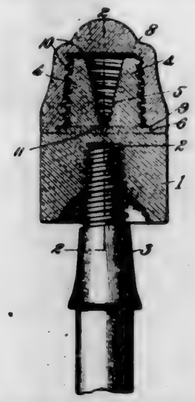

Claim.—1. An insulator comprising a supporting member, a threaded projection integral with one end of said supporting member and provided with a V-shaped notch, a shoulder or rib extending around the projection on the end of the supporting member, there being two alined grooves in the end of the supporting member outside the said shoulder or rib, and a clamping member adapted to screw onto said threaded projection and provided with an annular recess on its abutting end wherein to receive the said shoulder or rib and to enable said clamping member to compress the wire into said alined grooves, substantially as specified.

2. An insulator comprising a supporting member, a threaded projection integral with one end of said supporting member and provided with a V-shaped notch, a shoulder or rib extending around the projection on the end of the supporting member, there being two alined grooves in the end of the supporting member outside the said shoulder or rib, a rubber cap inclosing said threaded projection, and a clamping member adapted to screw onto said threaded projection and provided with an annular recess on its abutting end wherein to receive the said shoulder or rib and to enable said clamping member to compress the wire into said alined grooves, substantially as specified.

849,607. RAIL-JOINT. WILLIAM L. GRANT, Columbia, Tenn. Filed July 18, 1906. Serial No. 326,726.

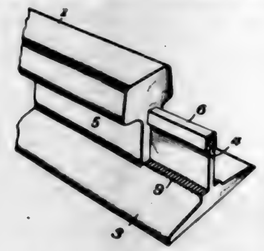

Claim.—1. In a rail-joint, the combination with a rail, having an elongated base, a web on said base, and a head at the upper end of said web, of a rail having a projecting head and web, a slot in the web, a socket at the upper end of said slot, said slot and socket adapted to receive the web and head of the opposite rail, and means at each side of the web on said elongated base and the bottom of said projecting web adapted to interlock with each other whereby the meeting ends of said rails will be secured together.

2. A rail-joint comprising the meeting ends of two rails, one of said rails having an elongated base, a web extending upwardly from said base, a head at the upper end of said web, a plurality of corrugations on said base at each side of said web, the opposite rail having a slot in the projecting web thereof and a socket at the upper end of said slot and a plurality of corrugations on the lower edge of said web, the web and head of the first-mentioned rail adapted to enter the slot and socket of the second-mentioned rail, whereby said rails will be secured together and the respective corrugations interlocked with one another.

849,608. MANUFACTURE OF BUTTONS, BROOCHES, BELT-CLASPS, AND BUCKLE-FRONTS FROM HORN AND HOOF. FRANCIS H. GROVE, Halesowen, England. Filed Aug. 4, 1906. Serial No. 329,267.

Claim.—1. The improved method of manufacturing colored buttons brooches belt-clasps and buckle-fronts from horn and hoof consisting in dyeing the rough blanks, then warming and compressing the dyed blanks in dies and afterward turning off the front dyed surface and rim so as to show the dyed back through the semitransparent horn or hoof substance at the front, and finally polishing the same, or leaving them dull, substantially as set forth.

2. The improved method of manufacturing colored buttons brooches belt-clasps and buckle-fronts from horn and hoof consisting in dyeing the rough blanks, then warming and compressing the dyed blanks in dies and afterward turning off the front dyed surface and rim so as to show the dyed back through the semitransparent horn or hoof substance at the front and then warming and compressing a pattern or device on the front, and finally polishing the same, or leaving them dull, substantially as set forth.

849,609. COIN-CONTROLLED VENDING-MACHINE. ALBERT D. GROVER, Malden, Mass. Filed Dec. 18, 1905. Serial No. 292,367.

Claim.—1. In a coin-controlled vending-machine, a casing having a coin-opening and an opening for the delivery of merchandise; a coin-slide mounted in said casing and arranged to cover both said openings; means for locking the coin-slide; coin-operated means for unlocking the coin-slide; means mounted on the coin-slide to operate a goods-ejector; and said goods-ejector.

2. In a coin-controlled vending-machine, a casing; a merchandise-holding receptacle mounted in said casing; a merchandise-ejector mounted in the casing; a coin-slide mounted in said casing adapted to cover the opening through which the merchandise is delivered; coin-controlled means for releasing the coin-slide; cam-surfaces on said coin-slide adapted to operate the ejector to deliver packages of merchandise.

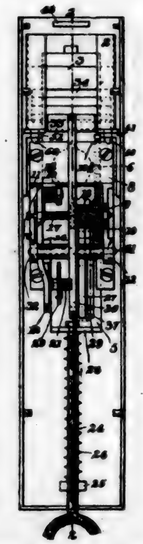

3. A coin-controlled vending-machine, comprising a casing; a coin-opening in said casing, and an opening through which merchandise is ejected; a coin-slide arranged in said casing to cover both said openings; coin-controlled means coöperating with said coin-slide; a merchandise-ejector mounted in said casing and operated from the cam on the coin-slide; said cam; and means for returning the coin-slide to its normal position.

4. In a vending-machine, a casing having a coin-opening and an opening through which merchandise is ejected; a coin-slide slidably mounted in said casing and arranged to cover both said openings; means for locking the coin-slide when it covers both said openings; coin-operated means for unlocking said coin-slide; a merchandise-ejector capable of being oscillated; and means on the coin-slide adapted to oscillate said goods-ejector.

5. In a vending-machine, a casing provided with a coin-opening and an opening for the delivery of merchandise; means for covering both said openings; coin-controlled means arranged to coöperate with the covering means for releasing said covering means to uncover the opening for the delivery of merchandise, and to operate the merchandise-ejector to deliver a package of merchandise; and said merchandise-ejector.

6. In a vending-machine, a casing provided with a coin-opening and an opening for the delivery of merchandise; means for covering both said openings; coin-controlled means arranged to coöperate with the covering means for releasing said covering means to uncover the opening for the delivery of merchandise and to operate a merchandise-ejector to deliver a package of merchandise, and to convey the coin to the coin-receptacle.

7. In a vending-machine, a casing; means in said casing for holding merchandise; an opening in said casing through which the merchandise is to be delivered; a coin-slide for covering said opening; a merchandise-ejector; means coöperating with the coin-slide for operating said merchandise-ejector; a coin-controlled locking device, all said means being so formed and arranged as to be operated when a coin of the proper denomination is

inserted in the coin-slide, and said coin-slide moved downwardly.

849,610. SAFETY ATTACHMENT FOR ELEVATORS. AUGUST J. HALLSTEIN, New York, N. Y. Filed Aug. 17, 1906. Serial No. 330,999.

Claim.—1. The combination with an elevator-car, of a flexible device running normally at the speed of the car and connected therewith, and a restricted guide for the said flexible device, constructed to cause the said device to choke the guide and stop the car if the speed of the latter is materially increased.

2. The combination with an elevator-car, of a chain connected to the car and running freely at the side thereof, and a restricted guide for the chain, constructed to choke if the speed of the car and chain is materially increased.

3. The combination with an elevator-car and guides at the side thereof, of an endless chain connected to the car and running in the guides, the guides being restricted so that if the speed of the car is materially increased, the chain will choke in the guides and stop the car.

4. The combination of the elevator-car, the guide near it, the chain running in the guide and connected to the car, and a cushioned piston below the chain.

5. The combination of the car, the guide, the chain connected with the car, the piston below, and a connecting-rod extending from the piston.

849,611. VENTILATING-CANOPY. WILLIAM L. HOFER, Manhattan, Kans. Filed Dec. 15, 1906. Serial No. 348,071.

Claim.—A canopy for beds comprising a cross-bar extending transversely across the bed at the head thereof, a U-frame permanently secured to the head of the bed and having arms connected to the cross-bar, a second U-frame the arms of which are longer than those of the first-mentioned U-frame and have their extremities loosely connected to the cross-bar, the second-mentioned U-frame being designed to fold against the first-mentioned frame, and a fabric covering comprising a top connecting the cross-bars of the two U-frames and designed to be held in an approximately horizontal position when the second frame is swung outwardly, end walls pendent from the cross-bars of the said frames, and a side wall pendent from one of the edges of the top.

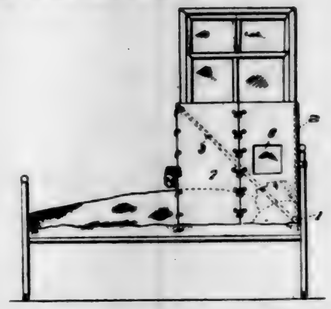

849,612. WIRE-COUPLING. WILHELM HOFMANN, Kötzschenbroda, Germany. Filed June 1, 1903. Serial No. 159,623.

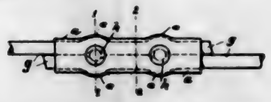

Claim.—A wire coupling or bond consisting of a tubular structure with oppositely-disposed longitudinal stamped-out projections forming pockets of soft metal and intermediate parts of hardened compressed metal and perforations between each two pockets forming a pair, substantially as set forth.

849,613. BEVERAGE-MAKING DEVICE. DWIGHT S. HOLLEY, Forestville, Conn., assignor to The American Silver Company, Bristol, Conn., a Corporation of Connecticut. Filed July 14, 1906. Serial No. 326,264.

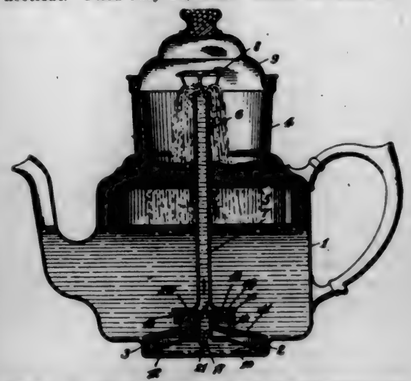

Claim.—1. The combination with two chambers, one of which is a heating-chamber and the other a feeding-chamber, alining ports in communication with said chambers, the feeding-chamber having openings adapted to communicate with the source of liquid-supply, and baffles within the feeding-chamber to trap the feed liquid and prevent the escape of the liquid from the heating-chamber except through the alining ports.

2. The combination with a heating-chamber and a feeding-chamber, of means for permitting one of said chambers to communicate with the other, the feeding-chamber being adapted to communicate with a source of liquid-supply, a baffle within the feeding-chamber to trap the feed liquid and prevent the escape of the liquid from the heating-chamber back through the feeding-chamber, and a discharge-port in communication with the heating-chamber.

3. The combination with a heating-chamber having a discharge-port and a source of liquid-supply for the heating-chamber, of means for permitting liquid from the source of supply to enter said heating-chamber and for preventing the heated liquid from passing back into the source of liquid-supply, said means providing a liquid seal during the passage of the liquid from the heating-chamber through the discharge-port.

4. The combination with a heating-chamber and a source of liquid-supply therefor, of a discharge-port in communication with said heating-chamber and a feeding-chamber in communication with said heating-chamber having oppositely-disposed baffles to trap the feed liquid and prevent the escape of the liquid from the heating-chamber except through its discharge-port.

849,614. GOLD WASHING AND SAVING APPARATUS. GEORGE L. HOLMES, Oakland, Cal. Filed June 26, 1905. Serial No. 266,966.

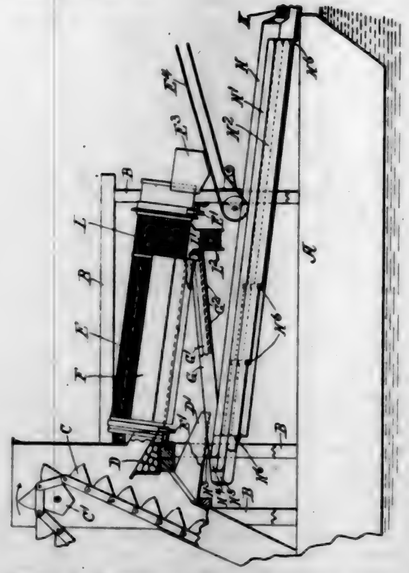

Claim.—1. In apparatus for saving precious metals, the combination of a vessel, with an inclined primary sluice, means for conveying the material mixed with water to said sluice so that it will flow therethrough as a unit, a plurality of reversely-inclined secondary sluices of greater aggregate width arranged side by side and one below the other and substantially parallel to the primary sluices, a plurality of reverse troughs one leading from the lower end of the primary sluice to the upper end of each of the several secondary sluices, and concentrating devices in said sluices.

2. In apparatus for saving precious metals, the combination of a vessel, with an inclined primary sluice, means for conveying the material mixed with water to said sluice so that it will flow therethrough as a unit, a plurality of longitudinal partitions in the bottom of said sluice to prevent the washing from side to side of the material deposited when the vessel is listed, a plurality of reversely-inclined secondary sluices of greater aggregate width than the primary sluice and arranged side by side and one below the other, a plurality of reverse troughs leading from the lower end of the primary sluice to the upper ends of the several secondary sluices, and concentrating devices in said sluices.

3. In apparatus for saving precious metals, the combination of a vessel, with an inclined primary sluice, means for conveying the material mixed with water to said sluice so that it will flow therethrough as a unit, a plurality of longitudinal partitions in the bottom of said sluice to prevent the washing from side to side of the material deposited when the vessel is listed, two sets of reversely-inclined secondary sluices arranged one set on each side of the primary sluice, the sluices of each set being arranged opposite each other and one below the other, a plurality of reverse troughs leading from the lower end of the primary sluice to the upper ends of the several secondary sluices, and concentrating devices in said sluices.

4. In apparatus for saving precious metals, the combination of a vessel, with an inclined screening device, the screen of said device being of greater mesh at the lower than at the upper end, a gathering-sluice, and under the upper end of said screening device a primary sluice reversely inclined with respect to the gathering-sluice into which said gathering-sluice discharges, a plurality of reversely-inclined secondary sluices of greater aggregate width than the primary sluice, and inclined in the opposite direction means for separating and distributing the stream of material to the secondary sluices, and a pair of inclined separating-tables under the lower end of the screening device transverse to the direction of the aforementioned sluices, and concentrating devices in said sluices.

5. In apparatus for saving precious metals, the combination of a vessel, with an inclined fore-and-aft screen, means for conveying the material to the screen and mixing it with water, a gathering-sluice under said screen, an inclined primary concentrating-sluice into which the gathering-screen discharges and over which the material flows as a unit, longitudinal partitions in the bottom of said sluice, a series of reversely-inclined secondary sluices of greater aggregate width than the primary sluice and arranged side by side and one below the other, all of said sluices running fore and aft, a plurality of reverse troughs leading from the lower end of the primary sluice to the upper ends of the secondary sluices, said troughs having different inclinations to compensate for their different lengths, and concentrating devices in said troughs.

849,615. TELEPHONE SWITCH-BOX. STEPHEN C. HOUGHTON, Rome, N. Y. Filed Jan. 21, 1907. Serial No. 353,238.

Claim.—1. In a telephone switch-box, an insulated support, a plurality of strips, some extended downward and some upward and some both downward and upward from said support, the downwardly-extended strips and portions thereof forming electrical connections and the upwardly-extended strips and portions thereof forming switches, a switch-plug adapted to be connected with said downwardly-extended strips and portion thereof, and a telephone-supporting hook adapted to be engaged by the upwardly-extended portions of the strips, substantially as described.

2. In a telephone switch-box, an insulated support, two pairs of strips supported thereby which are disposed in parallelism and constructed and arranged to form a pair of switches, one member of each pair extending downward

to provide an electrical connection and the other member of each pair extending upward and being electrically connected with a binding-post, substantially as described.

3. In a telephone switch-box, an insulated support, two pairs of strips supported thereby which are disposed in parallelism and constructed and arranged to form a pair of switches and one member of each pair extending downward and constructed and arranged to form a pair of engaging portions and a switch-plug adapted to be engaged and held by said downwardly-extended portion, substantially as described.

4. In a telephone switch-box, a pivoted supporting-hook, an insulated support, two spring-acting strips supported thereby which are disposed in parallelism and constructed and arranged to engage said hook, said strips extending downward and constructed and arranged to form a pair of engaging portions, a switch member adapted to be engaged by one of said strips and a switch-plug adapted to be engaged by said downwardly-extended portions, substantially as described.

5. In a telephone switch-box, a pivoted telephone-supporting hook having a cylindrical extension, an insulated support, one or more pairs of strips supported thereby, constructed and arranged to serve as switches, one member of each pair having an inturned end, the under surfaces of such inturned ends engaging said cylindrical extension, whereby said members are operated by the hook and also serve as means for positively restoring the hook, substantially as described.

6. In a telephone switch-box, a pivoted telephone-supporting hook having a cylindrical extension, an insulated support, two spring-acting strips supported thereby having inturned ends which extend above and engage said cylindrical extension and operate to raise the hook, and a switch member engaged by one of said spring-acting strips, substantially as described.

849,616. VISE. AUGUST S. HOVANDER, Clay City, Ind. Filed June 5, 1906. Serial No. 320,272.

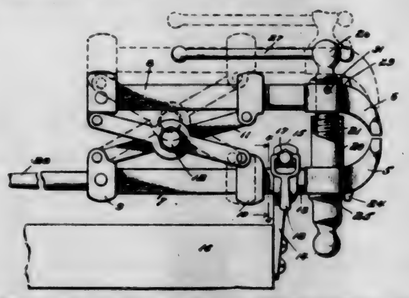

Claim.—1. A vise comprising relatively stationary and movable jaws each provided with laterally-extending reinforcing lugs, parallel shanks carried by the jaws one of which is extended beyond the adjacent end of the other to form an operating-handle, stationary and movable collars mounted on the shanks, links connecting the stationary collar of one shank with the movable collar of the adjacent shank, a pivotal connection between said links, a threaded sleeve engaging the stationary jaw and provided with an extension bearing against the adjacent reinforcing-lug, an operating-screw engaging the threads of the sleeve and provided with an enlarged head bearing against the opposite reinforcing-lug, a supporting-bracket engaging the shank of the stationary jaw and having one end thereof bifurcated, and a clamping-screw engaging the bifurcated end of the bracket for clamping the bracket in engagement with the shank.

2. A vise comprising relatively stationary and movable gripping-jaws provided with parallel shanks, one of said shanks being provided with a curved bearing-surface and extended beyond the end of the adjacent shank to form an operating-handle, a pivotal connection between said shanks, a supporting-bracket having one end thereof formed with a bearing-surface for engagement with the curved portion of the relatively stationary shank and having its free end bifurcated, a clamping-screw engaging the bifurcated end of the bracket for clamping the bracket in engagement with shank, and means for operating the jaws.

849,617. POWER-TRANSMISSION DEVICE. WILLIAM F. HOWE, Chicago, Ill. Filed Apr. 8, 1905. Serial No. 254,452.

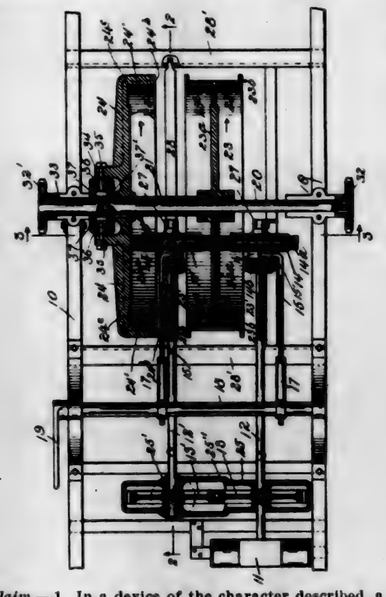

Claim.—1. In a device of the character described, a primary driving-shaft, a driving counter-shaft arranged for rotation in the opposite direction, opposing wheels on the driving and counter shafts, a driven disk between said driving-wheels, and the lever 27 and cam 29 for causing the operative engagement of both driving-wheels and the driven disk.

2. In a device of the class described, a primary driving-shaft, a counter-shaft, gearing connecting said shafts for coincident rotation in opposite directions, opposing wheels on said primary and counter shafts, a driven disk between said driving-wheels, and the lever 27 and cam 29 for moving one of said wheels into contact with the disk and the disk into contact with the other wheel.

3. In a device of the class described in combination, a primary driving-shaft, a counter-shaft, gearing connecting said shafts for coincident rotation in opposite directions, opposing wheels on said driving and counter shafts, each provided with a plurality of contact-surfaces at different radial distances from its center, a disk to be driven interposed between the driving-wheels, and having surfaces for coaction with the different surfaces of the driving-wheels, means for simultaneously shifting the driving-wheels longitudinally of the shaft to bring the different driving-surfaces to confront the corresponding surfaces of the disk to be driven, and the lever 27 and the cam 29 for causing engagement of both driving-wheels with the disk to be driven on opposite sides thereof.

4. In a device of the class described, a driving-shaft, a driving-wheel longitudinally movable on said shaft, and provided with two peripheral contact-surfaces at different radial distances from its axis, a disk to be driven arranged at right angles to the driving-wheel, provided with contact-surfaces in different planes, and an annular recess below the contact-surface of the disk in the plane most remote from the driving-shaft, in suitable relation to the contact-surface of the disk closest to the driving-shaft to receive the driving-surface of larger diameter of the wheel without driving contact, when the driving-surface of smaller diameter of the wheel is in operation, and means for bringing the respective coacting surfaces of said gear members into frictional contact.

5. In combination, in a machine of the class described, a plurality of disks to be driven, a plurality of driving-wheels between two of which one of the driven disks extend, the lever 27 and cam 29 for causing the engagement of the disk and the wheels on both sides thereof, and for causing the engagement of one of said wheels and another of the plurality of disks.

6. In a machine of the class described, in combination, two driving-wheels and two disks to be driven, arranged at right angles thereto, with one of the disks to be driven between said two driving-wheels and one of the driving-wheels between said two disks, and means for varying the relative positions of said members the lever 27 and cam 29 arranged to cause the engagement of the two wheels with the disk therebetween, and the engagement of the wheel between the disks with the disk on the side thereof opposite the other wheel.

849,618. DECK-PLATE. ALBERT R. HURLBURT, Middletown, Conn. Filed June 14, 1906. Serial No. 321,665.

Claim.—1. In a deck-plate, the combination with a body member; of a cover member; and a latch member pivotally connected with said cover member so as to provide means for separably securing said body and cover members together when in one position and providing lifting means for said cover when in its other position, the lifting means being above the surface of said cover member when the said latch member is disengaged from said body member.

2. In a deck-plate, the combination with a body member; of a cover member having a recess in its upper surface and an aperture therethrough adjacent to said recess; and a swinging member pivotally connected with said cover member one end thereof lying within said recess with its upper surface flush with the top of said cover.

3. In a deck-plate, the combination with a body member; of a cover member having a hook thereon; and a latch member pivotally secured thereto with the upper end of said latch member forming a thumb-piece to lift said cover when said latch member is disengaged from said body member.

4. In a deck-plate, the combination with a body member; of a cover member; a latch member, terminating at one end in a hook upon one side of said cover member and at the other end in a lifting means upon the opposite side of said cover member, pivotally connected with said cover member so that the hook end of said latch member will be held in engagement with the cover member by the weight of the lifting end of said latch member.

5. In a deck-plate, the combination with a body member; of a cover member; and a latch member exposed upon both sides of said cover member and pivotally connected therewith, said latch member having a hook end upon one side of said cover member that is held in engagement with said body member by the weight of the end of said latch member that is upon the opposite side of said cover member.

6. In a deck-plate, the combination with the body member; of a cover member; and a pivoted, gravity-actuated latch member for separably securing said cover member to said body member, said latch member having a heavier portion at one side of the pivot than at the other, that heavier portion of said latch member being exposed above the top of said cover member.

849,619. TOY. WILLIAM H. JACKSON, Columbia, Pa. Filed Dec. 31, 1906. Serial No. 350,138.

Claim.—A device of the class described, comprising a disk or wheel provided with a central aperture and at one side of which is a yoke-shaped projecting member which extends laterally therefrom, a rod passed loosely through said aperture and movable therein and the end of which within said yoke-shaped member is provided with a cord-attaching device and the other end with a handle, and a cord connected with the end of said rod within said yoke-shaped member and also connected with the cross-head portion of said yoke-shaped member.

849,620. TUCKING ATTACHMENT FOR SEWING-MACHINES. FORREST W. KEITER, Philadelphia, Pa. Filed Feb. 24, 1906. Serial No. 302,695.

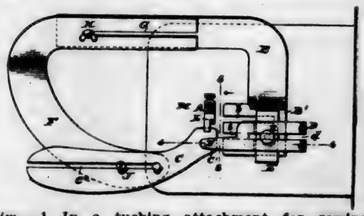

Claim.—1. In a tucking attachment for sewing-machines, a looped frame having one end adapted for attachment to the sewing-machine and the other end provided with a guide, over which the cloth is folded, in combination with a spacing-plate having a spring-finger overlapping the cloth-guide and an inturned slotted base, and a screw for clamping the spacing-plate and end of the looped frame to the sewing-machine.

2. In a tucking attachment for sewing-machines, a looped frame having one end adapted for attachment to the sewing-machine and the other end provided with a guide edge over which the cloth is folded and having its looped portion extensible relatively to both of the end portions to vary the area of the opening for the passage

of the cloth without disturbing the relative adjustment of the end portions, in combination with a spacing-plate having a finger extending above and overlapping the cloth-guide end, and means for clamping the spacing-plate and end of the looped frame to the sewing-machine.

3. In a tucking attachment for sewing-machines, a looped frame comprising an elevated and laterally-extending part B having a foot portion at one end for attachment to the sewing-machine, a looped part F adjustably pivoted to the lateral extension of the part B so as to have adjustment thereon to or from the foot portion of said part B and also in an arc relatively to said foot portion, and a guide portion C having edge C′ for the cloth adjustably connected to the free end of the looped part F so as to be adjusted to or from the foot portion to compensate for the inverse adjustment of the looped part F and maintain the guide edge C′ in proper relation to the needle while permitting the space through the looped frame to be varied and also to permit the guide edge C′ for the cloth to be adjusted to different angles, in combination with a spacing-finger D′ overlapping the guide edge C′ to guide the cloth, and devices for adjustably clamping the spacing-finger and foot of the looped frame to the sewing-machine.

4. In a tucking attachment for sewing-machines, a looped frame having one end adapted to be secured to the sewing-machine and having the other end provided with a short guide edge C′ over which the cloth is folded, combined with an adjustable spacing-plate having a laterally-extending finger greatly rounded on its end to substantially a semicircular shape and overlapping the guide edge, and means for clamping the end of the looped frame and spacing-plate to the sewing-machine.

5. In a tucking attachment for sewing-machines, a looped frame having one end adapted to be secured to the sewing-machine and having the other end provided with a guide edge over which the cloth is folded adjustably connected so as to be adjustable relatively to the part of the frame to be attached to the sewing-machine, combined with an adjustable spacing-plate having a laterally-extending finger rounded on its end to substantially a semicircular shape and overlapping the guide edge and adjustable radially and laterally at its end, and means for clamping the end of the looped frame and spacing-plate to the sewing-machine.

6. In a tucking attachment for a sewing-machine, a looped frame consisting of a part B adapted for attachment to the sewing-machine, a U-shaped part F adjustably connected to the part B by a joint permitting longitudinal and rotary adjustment, and a part C having at one end a guide edge C′ for the cloth and connected with the part F by a joint permitting rectilinear adjustment, in combination with a spacing-plate having a spring-finger overlapping the guide edge, and means for clamping the spacing-plate and part B to the sewing-machine.

7. In a tucking attachment for sewing-machines, a looped frame having one end adapted to be secured to the sewing-machine and having the other end provided with a short guide edge over which the cloth is folded, combined with an adjustable spacing-plate having a laterally-extending finger rounded on its end to substantially a semicircular shape and overlapping the guide edge, and means for clamping the end of the looped frame and spacing-plate to the sewing-machine consisting of a plate E extending over the spacing-plate and end of the looped frame, and a clamping-screw R extending through the plate E spacing-plate and end of the looped frame and adapted to be screwed into the sewing-machine.

849,621. STUFFING-BOX ARRANGEMENT FOR AGITATOR-SHAFTS IN VACUUM STIRRING APPARATUS. FRITZ KEMPTER, Stuttgart, Germany. Filed Feb. 15, 1906. Serial No. 301,315.

Claim.—In a vacuum stirring apparatus, a vacuum-tank, combined with an air-tight casing communicating therewith, a journal-box in the exterior wall of said casing, a shaft projecting from the tank through the casing into the journal-box, and a stuffing-box within the casing, substantially as specified.

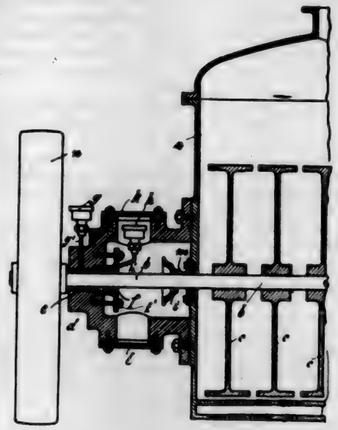

849,622. SORTING DEVICE FOR CARDS. DANIEL KENT, Worcester, Mass. Filed Mar. 6, 1906. Serial No. 304,531.

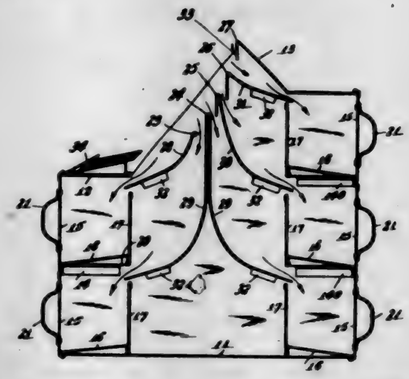

Claim.—1. A device for sorting cards, comprising a cabinet having an inclined opening near the top thereof, a series of sheet-metal guides located with their upper ends parallel and out of vertical alinement, certain of said guides having at their upper ends a lip extending substantially vertically downwardly into the space between them and the guides below for receiving a reference character, the upper and outer portions of the lower guides also being provided with reference characters.

2. A device for sorting cards comprising a cabinet having an inclined opening in the upper portion thereof, the greater part of the opening being located at one side of the center of the cabinet, a set of wires extending horizontally across said opening, said wires being located at different heights and out of vertical alinement with each other, and a series of sheet-metal guides extending from said wires and supported at their upper ends by said wires.

3. A device for sorting cards comprising a cabinet having an inclined opening in the upper portion thereof, the greater part of the opening being located at one side of the center of the cabinet, a set of wires extending horizontally across said opening, said wires being located at different heights and out of vertical alinement with each other, and a series of sheet-metal guides extending from said wires and supported at their upper ends thereby, each of said guides being curved, the curvature of those in the lower part of the cabinet being greater than that of those in the higher part of the cabinet.

4. A device for sorting cards comprising a cabinet having an inclined opening at the top thereof, a series of horizontal wires extending across said opening, said wires being arranged substantially in an inclined plane, a series of sheet-metal guides passing over said wires at their upper ends whereby said guides are supported by the wires, the guide supported by the upper wire being provided with a lip extending downwardly into the space between the upper guide and the guide below for receiving a reference character, the upper and outer portions of the lower guides also being provided with reference characters.

5. A device for sorting cards comprising a cabinet having a number of compartments provided with a series of guides in the compartments, said guides being located at several different heights therein, each of the guides being curved at a point adjacent to the discharge end thereof, the curvature of the guides in the lower part of the cabinet being progressively greater than that of those near the top thereof, and a plurality of series of holders into which said guides are adapted to discharge cards, each holder having a bottom crimped to the front and rear walls thereof, the rear crimp being wider than the front one.

6. A device for sorting cards, comprising a cabinet, a number of partitions dividing said cabinet into a series of compartments, wires passing through said partitions, sheet-metal guides arranged on said wires and forming in connection with the partitions a series of chutes, and a series of removable holders fitting into said cabinet and registering with said chutes.

7. A holder for use in sorting-cabinets made out of a piece of sheet metal having a front wall, a bottom wall, and a rear wall, the bottom wall being crimped to the front and rear walls, the rear crimp being larger than the front crimp, whereby the bottom wall will stand at an incline.

8. A holder for use in sorting-cabinets made out of a piece of sheet metal having a front wall, a bottom wall, and a rear wall, the bottom wall being crimped to the front and rear walls, the rear crimp being larger than the front crimp, whereby the bottom wall will stand at an incline, and ties connecting the crimps and forming guiding-supports for the holders.

9. A holder for use in sorting-cabinets, made of a piece of sheet metal having a front wall, a bottom wall, and a rear wall, the bottom wall being crimped to the front and rear walls, the rear crimp being larger than the front crimp, and the two ends of the holder being open, whereby cards may be discharged from the holder by simply tilting it on one side.

10. A portable holder for cards comprising a sheet-metal piece having two faces arranged at a sharp angle to each other, and a rear supporting-face, the sides being open to permit cards to be discharged sidewise.

11. A holder for cards, comprising a sheet-metal piece having two faces arranged at a sharp angle to each other, and a rear supporting-face, the rear supporting-face and the bottom piece extending back toward the sharp angle.

12. A holder for cards comprising a sheet-metal piece having two faces arranged at a sharp angle to each other, and means for supporting the lower of said faces on an incline with said angle at the lower edge of said faces.

849,623. PIPE AND ROD GRIP. CHARLES A. KILLIAN, Morse Bluff, Nebr. Filed June 4, 1906. Serial No. 320,172.

Claim.—A device of the class described comprising a U-shaped body for bearing around the article to be elevated and provided with a socket on one of its terminals, a bar swinging from the other terminal of said body and adapted to engage said socket, and means for applying a lifting element to said body.

849,623.

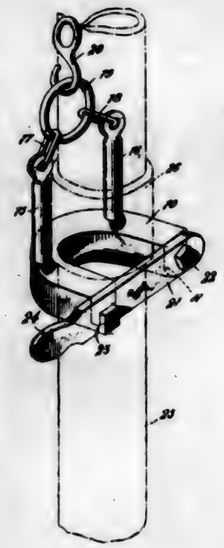

849,624. LAP-ROBE. ARTHUR H. KINDER, Boston, Mass., assignor to L. C. Chase & Co., Boston, Mass. Filed Feb. 23, 1904. Serial No. 194,713.

Claim.—1. A lap-robe composed of two layers of material stitched together about their edges, one of said layers having slits in the direction of the length of the robe, the material at the edges of said slits being inturned, muff material interposed between said layers, the opposite edges of the end of the muff material next the layer thereof that is slitted being infolded while the opposite edges of the muff material contacting with the unslitted layer of the muff material being extended under two of the infolded edges of the slitted layer of material, the edges of the material formed by said slits being stitched to the opposite edges of said muff material.

2. A lap-robe comprising layers of material one of which is slitted to constitute hand-holes, a plurality of layers of muff material interposed between said layers constituting the lap-robe, said muff material being folded on itself, the edges of the muff material being stitched to the opposite edges of both hand-holes.

849,625. HOISTING MECHANISM. GEORGE W. KING, Marion, Ohio, assignor to the Marion Steam Shovel Company, Marion, Ohio, a Corporation of Ohio. Filed May 29, 1905. Serial No. 262,735.

Claim.—1. In a mechanism of the character described, the combination, with a shaft acting against a resistance or load tending to turn said shaft in one direction, of a friction member mounted on said shaft and having a rotary and longitudinal movement, a load-supporting wheel loosely mounted on said shaft adjacent thereto, a drive-wheel mounted on said shaft, means operated by said drive-wheel for bringing said friction member into engagement with said load-supporting wheel, an abutment engaging said load-supporting wheel on the side opposite said friction member to support the same against the thrust of said friction member, and means for locking

said load-supporting wheel against movement in the direction in which the load tends to turn the shaft, substantially as described.

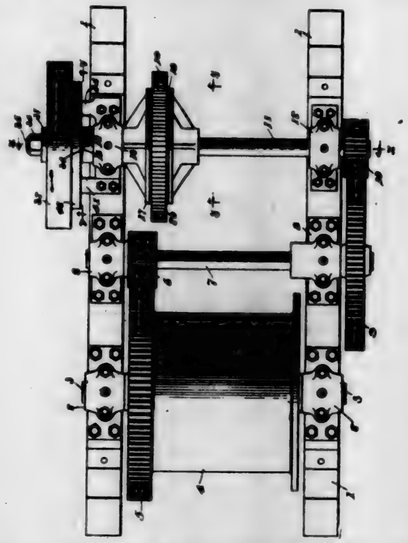

2. In a mechanism of the character described, the combination, with a shaft acting against a resistance or load tending to turn said shaft in one direction, said shaft being longitudinally movable, of a friction member rotating and moving longitudinally with said shaft, a load-supporting wheel loosely mounted on said shaft adjacent thereto, a drive-wheel mounted on said shaft, means operated by said drive-wheel for moving said shaft to bring said friction member into engagement with said load-supporting wheel, an abutment engaging with said load-supporting wheel on the side opposite said friction member to support the same against the thrust of said friction member, and means for locking said load-supporting wheel against movement in the direction in which the load tends to turn said shaft, substantially as described.

3. In a mechanism of the character described, the combination, with a shaft acting against a resistance or load tending to turn said shaft in one direction, said shaft being longitudinally movable, of a sleeve rotating with said shaft and held against longitudinal movement, said sleeve being provided with a friction member, a driving-wheel loosely mounted on said shaft, means operated by said driving-wheel for moving said shaft longitudinally, a friction member secured on said shaft, a wheel loosely mounted on said shaft between the friction members carried by the shaft and sleeve respectively, and means for locking said wheel against movement in the direction in which the load tends to turn the shaft, substantially as described.

4. In a mechanism of the character described, the combination, with a shaft acting against a resistance or load tending to turn said shaft in one direction, said shaft being provided with a part rotating in unison therewith and having a helical or spiral cam-surface, of a driving-wheel loosely mounted on said shaft and having a complementary cam-surface coöperating with the first-mentioned cam-surface, a load-supporting wheel loosely mounted on said shaft, means for preventing rotation of said wheel in the direction in which the load tends to turn the shaft, and a friction member having a rotatory motion derived from the driving-wheel and movable in the direction of its axis of rotation toward and from the load-holding wheel, said axial movement being caused by the movement of the cam-surfaces on each other, substantially as described.

5. In a mechanism of the character described, the combination, with a shaft acting against a resistance or load tending to turn said shaft in one direction, said shaft being longitudinally movable, of a sleeve rotating with said shaft and held against longitudinal movement, said sleeve being provided with a helical or spiral cam-surface, a driving-wheel loosely mounted on said shaft and having a complementary cam-surface coöperating with that of the sleeve, said driving-wheel engaging said shaft to move it longitudinally, a wheel free to rotate relatively to said shaft, means for locking said wheel against movement in the direction in which the load tends to turn the shaft, and means for connecting said wheel and shaft to cause said parts to rotate in unison, said connecting means being operated to connect said parts by the longitudinal movement of the shaft in one direction, and being operated to disconnect said parts by the longitudinal movement of the shaft in the other direction, substantially as described.

6. In a mechanism of the character described, the combination, with a shaft acting against a resistance or load tending to turn said shaft in one direction, said shaft being longitudinally movable, of a sleeve rotating with said shaft and held against longitudinal movement, said sleeve being provided with a helical or spiral cam-surface, a driving-wheel loosely mounted on said shaft and having a complementary cam-surface coöperating with that of the sleeve, said driving-wheel engaging said shaft to move it longitudinally, a friction member rotating and moving longitudinally with said shaft, a load-supporting wheel loosely mounted on said shaft adjacent thereto, an abutment to support said load-supporting wheel against the thrust of the first friction member, and means for locking said load-supporting wheel against movement in the direction in which the load tends to turn the shaft, substantially as described.

7. In a mechanism of the character described, the combination, with a shaft acting against a resistance or load tending to turn said shaft in one direction, said shaft being longitudinally movable, of a sleeve rotating with said shaft and held against longitudinal movement, said sleeve being provided at one end with a helical or spiral cam-surface, and at the other end with a friction member, a driving-wheel loosely mounted on said shaft and having a complementary cam-surface coöperating with that of the sleeve, said driving-wheel engaging said shaft to move it longitudinally, a friction member secured on said shaft, a wheel loosely mounted on said shaft between the friction members carried by the shaft and sleeve respectively, and means for locking said wheel against movement in the direction in which the load tends to turn the shaft, substantially as described.

8. In a mechanism of the character described, the combination, with a shaft acting against a resistance or load tending to turn said shaft in one direction, said shaft being provided with a part rotating in unison therewith and having a helical or spiral cam-surface, of a driving-wheel loosely mounted on said shaft and having a complementary cam-surface coöperating with the first-mentioned cam-surface, a load-supporting ratchet-wheel loosely mounted on said shaft, a pawl for preventing rotation of said wheel in the direction in which the load tends to turn the shaft, and a friction member having a rotatory motion derived from the driving-wheel and movable in the direction of its axis of rotation toward and from the ratchet-wheel to engage and disengage the same, said axial movement being caused by the movement of the cam-surfaces on each other, substantially as described.

9. In a mechanism of the character described, the combination, with a shaft acting against a resistance or load tending to turn said shaft in one direction, said shaft being longitudinally movable, of a sleeve rotating with said shaft and held against longitudinal movement, said sleeve being provided with a helical or spiral cam-surface, a driving-wheel loosely mounted on said shaft and having a complementary cam-surface coöperating with that of the sleeve, said driving-wheel engaging said shaft to move it longitudinally, a friction member rotating and movable longitudinally with said shaft, a ratchet-wheel loosely mounted on said shaft adjacent to said friction member and having a friction-surface to coöperate therewith, an abutment to support said ratchet-wheel against the thrust of the friction member, and a pawl for locking said ratchet-wheel against movement in the direction in which the load tends to turn the shaft, substantially as described.

10. In a mechanism of the character described, the combination, with a shaft acting against a resistance or load tending to turn said shaft in one direction, said shaft being longitudinally movable, of a sleeve rotating with said shaft and held against longitudinal movement, said sleeve being provided at one end with a helical or spiral cam-surface, and at the other end with a friction member, a driving-wheel loosely mounted on said shaft and having a complementary cam-surface coöperating with that of the sleeve, said driving-wheel engaging said shaft to move it longitudinally, a friction member secured on said shaft, a ratchet-wheel loosely mounted on said shaft between the friction members carried by the shaft and sleeve respectively, said ratchet-wheel being provided with friction-surfaces to coöperate with said friction members, and a pawl for locking said ratchet-wheel against movement in the direction in which the load tends to turn the shaft, substantially as described.

11. In a mechanism of the character described, the combination, with a drum, a shaft operatively connected therewith, and a driving-wheel, connected to said shaft, adapted to be connected with a motor and having a friction-ring with an inwardly-facing friction-surface, of a friction-shoe bearing on said friction-surface, an arm pivotally supported at one end eccentrically to the driving-wheel axis and connected to the friction-shoe at its other or free end, and a stop for limiting the engaging movement of the shoe, substantially as described.

12. In a mechanism of the character described, the combination, with a drum, a shaft operatively connected therewith, and a driving-wheel, connected to said shaft, adapted to be connected with a motor and having a friction-ring with an inwardly-facing friction-surface, of a friction-shoe bearing on said friction-surface, an arm pivotally supported at one end eccentrically to the driving-wheel axis and connected to the friction-shoe at its other or free end, and an adjustable stop for controlling the engaging movement of the shoe, substantially as described.

13. In a mechanism of the character described, the combination, with a shaft acting against a resistance or load tending to turn said shaft in one direction, said shaft being provided with a part rotating in unison therewith and having a helical or spiral cam-surface, of a driving-wheel loosely mounted on said shaft and having a complementary cam-surface coöperating with the first-mentioned cam-surface, a load-supporting wheel loosely mounted on said shaft, means for preventing rotation of said wheel in the direction in which the load tends to turn the shaft, a friction member having a rotary motion derived from the driving-wheel and movable in the direction of its axis of rotation toward and from the load-holding wheel by the movement of the cam-surfaces on each other, a reversible motor operatively connected with said driving-wheel, and an automatic brake acting on said driving-wheel with a pressure regulated to overcome the momentum of the wheel and motor when power is shut off after the motor has been running in the direction in which the load tends to move the parts, substantially as described.

849,626. GRINDING-MACHINE. JOHN F. KINSTLE and JOHN M. PECK, Warren, Ind. Filed Sept. 19, 1906. Serial No. 335,256.

Claim.—1. In a machine of the character described the combination with a bar and supporting means therefor, said bar being pivotally mounted and adjustable longitudinally; of a yoke adjustably connected to the bar, a rotatable tool-engaging device carried by the yoke, actuating mechanism upon the bar, and means for transmitting motion from said mechanism to the tool-engaging device.

2. In a machine of the character described the combination with a base having a tubular standard; of a rod adjustably mounted within the standard, a bar pivotally connected thereto, a shaft slidably and rotatably mounted within the bar, means upon the bar for rotating the shaft, a yoke adjustably connected to the bar and constituting a bearing for the shaft, a shaft rotatably and slidably

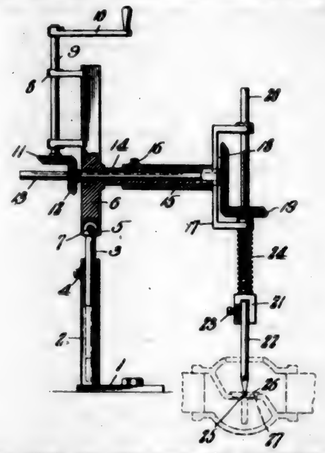

mounted within the yoke, means for transmitting rotary motion from one shaft to the other, and a spring-pressed tool-engaging device upon the last-mentioned shaft.

849,627. DISH-WASHING MACHINE. JOHN KREHBIEL, Cleveland, Ohio. Filed Nov. 1, 1905. Serial No. 285,888.

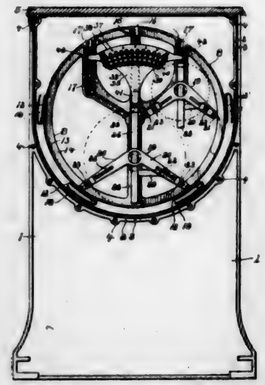

Claim.—1. In a dish-washing machine, the combination with a tank, of a rack for holding dishes provided with means for holding the dishes separated, a skeleton drum rotatively mounted in said tank and provided with a way, and means on the rack for engaging the way and hold the rack in place in the drum.

2. In a dish-washing machine, the combination with a tank, of a rotatable skeleton drum within said tank, an open detachable rack for holding dishes adapted to be placed in the drum, buckets upon the periphery of the drum, and means for turning the drum.

3. In a dish-washing machine, the combination with a tank, of a rotatable skeleton drum within said tank consisting of end rings, an intermediate ring and a series of longitudinal strips secured to the peripheries of said ring, like ways on the rings, a plurality of racks for dishes, and means on the racks for engaging the ways to hold the racks in place within the drum.

4. In a dish-washing machine, the combination of a tank having bearings in its ends, a rotatable supporting-drum in said tank having a hub portion at each end formed with a screw-threaded socket, a stud-bolt in the bearing at one end of the tank engaging the screw-threaded socket in the adjacent end of the drum, a crank-handle having a screw-threaded end extending through the bearing in the end of the tank and engaging the socket in the adjacent end of the drum, and racks for holding dishes detachably held within the drum.

5. In a dish-washing machine, the combination with a tank, of a drum having ends each provided with a plurality of ways on their inner sides, racks for holding dishes, studs on the ends of said rack to engage the ways, and means for locking the racks from moving in the ways.

6. In a dish-washing machine, the combination with a tank, of a skeleton drum in said tank having ends each formed by a hub portion from which arms extend forming a spider and a ring portion integral with the ends of the arms forming the spider, inwardly-extending parallel ribs on said arms of the spider forming ways between them, strips secured to the ring portions of the ends, and racks having outwardly-extending studs on their ends to engage the ways.

7. In a dish-washing machine, the combination with a tank, of a rack for holding plates comprising end portions, bars between said ends adapted to engage the edges of the plates and support the same, and a locking-frame carried by the end portions and adapted to be turned into engagement with the edges of the plates at their side opposite that engaged by the bars, and means for supporting and turning the rack in the drum.

8. In a dish-washing machine, the combination with a tank, of a rack for holding plates having ends, bars between said ends adapted to be engaged by the edges of the plates and support the same, lugs extending laterally from said bars inward between the plates to hold the same separated, a locking-frame consisting of end bars attached to the ends of the rack to turn laterally and a bar secured to the end bars to engage the edge of the plates and provided with lugs to extend inward between the plates, and means for securing the locking-frame with its bar engaging the edges of the plates and in a position to lock the plates between the bars engaging their edges, and means for supporting and turning the rack within the tank.

9. In a dish-washing machine, the combination with a tank, of a rack for holding dishes consisting of ends formed by laterally-extending arms, cross-rods connecting the outer ends of said arms, notch-bars to engage the edges of the dishes adjustably attached to said arms, a locking-frame pivotally attached to the ends and provided with a notch-bar to engage the edges of the dishes, and means for locking said frame with its bar in engagement with the dishes, and means for supporting and turning the rack in the tank.

10. In a dish-washing machine, the combination with a tank, of a rack for holding dishes having arms extending laterally in opposite directions at an angle to each other and forming the ends of the rack, cross-rods connecting the ends of said arms, longitudinal ribs on the inner faces of the arms, notch-bars for engaging the edges of dishes having notches in their ends to receive the ribs, a locking-frame consisting of end bars adjustably attached to the ends of the rack and a notch-bar secured to the ends of said end bars, means for locking said frame in a position midway between the ends of the arms and with the notch-bar in engagement with the dishes, and means in the tank for supporting and turning the rack.

11. In a dish-washing machine, the combination with a tank, of a rack for holding dishes having ends formed by laterally and downwardly extending arms, notch-bars between the outer ends of said arms to engage the edges of the dishes, a loop on each end extending outward therefrom, a locking-frame consisting of end bars extending through and adjustable in said loops and a notch-bar connecting said end bars, means for locking said end bars in their loops, and means for supporting and turning the rack in the tank.

12. In a dish-washing machine, the combination with a tank, of a rack for holding dishes having ends formed by laterally-extending arms meeting at an angle, rods connecting the outer ends of said arms, notch-bars between the ends of said arms, a loop on each end extending longitudinally of one of the arms, a locking-frame formed of a longitudinal notch-bar secured at its ends to side bars having a series of notches in one edge and of such a width that when turned to engage the notch-bar with the dishes and lock the same in the rack, one edge of said bars will engage one side of each loop and the notches in their opposite edges will be engaged with the opposite side of the loops to prevent longitudinal movement of the bars in the loops, and a spring to engage one of the bars and hold the frame in its locked position; and means in the tank for supporting and turning the rack.

13. In a dish-washing machine, the combination with a tank, of a skeleton drum in said tank having a way extending across its ends, a rack for holding plates having studs to engage said way and support the rack in the drum, a rack for holding other dishes or utensils having studs to engage the way, and means for locking the last-named rack in the way to hold both in place in the drum.

14. In a dish-washing machine, the combination with a tank, of a skeleton drum having ends formed with a series of parallel ways extending inward from one side of said ends, a plurality of racks for holding plates or similar dishes provided with studs to engage said ways and be supported thereby within the drum, a rack for holding other table utensils adapted to engage all of the other racks and prevent their movement in the ways, and means for locking the last-named rack in place in the drum.

15. In a dish-washing machine, the combination with a tank, of a rack for holding cups consisting of end plates, supports for a series of nested cups between said end plates, bars extending between the end plates to engage the edges of the cups and hold the same out of contact with each other and partially nested, means for securing the cups upon their supports; and means for supporting and turning the rack in the tank.

16. In a dish-washing machine, the combination with a tank, of a rack for holding knives and forks consisting of end plates, rods connecting the end plates, bars formed with notches to receive the ends of the knives secured to the end plates, and a holder for forks pivoted at one side to turn down upon the knives when in place and hold the same in their notches, and means in the tank for supporting and turning the said rack.

17. In a dish-washing machine, the combination with a tank, of a rack for holding knives and forks consisting of end plates, rods connecting said end plates, bars secured to the end plates having notches in one edge to receive the ends of the knives, transverse wires forming a holder for the forks and pivoted at one side to be turned down over the knives, transverse wire to hold the forks in place, and means for locking the fork-holder over the knives, and means in the tank for supporting and turning said rack.

849,628. TYPE-WRITING MACHINE. EDWARD F. KUNATH, Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 10, 1905. Serial No. 250,442.

Claim.—1. In a type-writing machine, the combination with an actuator which reciprocates uniformly at the key-strokes and is provided with a slot of a ribbon-vibrating lever having a slot, a wrist loose in the slot of said actuator and also loose in the slot of said lever, and means for adjusting said idle wrist so as to vary the length of the stroke of said lever.

2. In a type-writing machine, the combination with an actuator which reciprocates at the key-strokes and is provided with a slot, of a ribbon-vibrating lever having a slot, a wrist loose in the slot of said actuator and also loose in the slot of said lever, and means for adjusting said idle wrist so as to vary the length of the stroke of said lever, and for adjusting said wrist to a point where it is incapable of moving said lever.

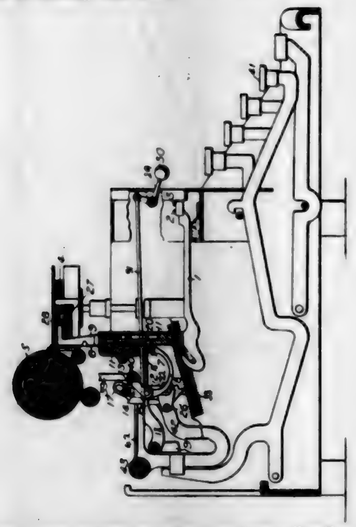

3. In a type-writing machine, a ribbon-vibrating mechanism comprising a slotted reciprocating actuator, a slotted lever, a ribbon-carrier connected to said lever, a wrist extending through the said slots and loose therein, means for supporting said idle wrist, and means for adjusting said supporting means to a plurality of positions.

4. In a type-writing machine, a ribbon-vibrating mechanism comprising a slotted reciprocating actuator, a slotted lever, a ribbon-carrier connected to said lever, a wrist extending through the said slots and loose therein, means for supporting said idle wrist, and means for adjusting said supporting means to three positions, one for causing the upper edge of the ribbon to be used, one for causing the lower edge of the ribbon to be used, and one for effecting disconnection between said slotted actuator and said lever.

5. In a type-writing machine, a ribbon-vibrating mechanism comprising a lever, a reciprocating actuator, a wrist having a loose connection to said lever and a loose connection to said actuator, and means for adjusting said wrist to cause equal movements of said actuator to effect variable movements of said lever.

6. In a type-writing machine, a ribbon-vibrating mechanism comprising a lever, a reciprocating actuator, a wrist having a loose connection to said lever and a loose connection to said actuator, means for adjusting said wrist to cause equal movements of said actuator to effect variable movements of said lever, and means for moving said wrist to a point at which it cannot affect said lever.

7. In a front-strike writing-machine, the combination of a reciprocating frame, a slotted actuator thereon, a wrist movable up and down in the slot, a link device supporting said wrist, means for adjusting said link device to different positions, and a lever having a loose connection to said wrist.

8. In a front-strike writing-machine, the combination of a reciprocating frame, a slotted actuator thereon, a wrist movable up and down in said slot, a link device supporting said wrist, means for adjusting said link device to different positions, and a lever having a loose connection to said wrist; said wrist being movable upon said link to a point to render said lever inoperable by said actuator.

9. In a type-writing machine, a ribbon-vibrating mechanism comprising a reciprocating actuator having a slot, an idle wrist extending loosely through said slot, a ribbon-vibrating lever by the side of said actuator, and having a slot through which said wrist also extends, links supporting said idle wrist, a rock-shaft having arms to which said links are pivoted, and a finger-piece for adjusting said rock-shaft.

10. In a type-writing machine, a ribbon-vibrating mechanism comprising a reciprocating actuator having a slot, an idle wrist extending loosely through said slot, a ribbon-vibrating lever by the side of said actuator, and having a slot through which said wrist also extends, links supporting said idle wrist, a rock-shaft having arms to which said links are pivoted, and a finger-piece for adjusting said rock-shaft; one of said actuator and lever elements being so formed that a movement of said idle wrist effected by said rock-shaft may render said lever inoperable by said actuator.

11. In a type-writing machine, a ribbon-vibrating mechanism comprising a reciprocating actuator having a slot, an idle wrist extending loosely through said slot, a ribbon-vibrating lever by the side of said actuator, and having a slot through which said wrist also extends, links supporting said idle wrist, a rock-shaft having arms to which said links are pivoted, a finger-piece for adjusting said rock-shaft; one of said actuator and lever elements being so formed that a movement of said idle wrist effected by said rock-shaft may render said lever inoperable by said actuator; and a detent for holding said rock-shaft in a plurality of positions.

12. In a front-strike writing-machine, the combination with a reciprocating actuator having a slot, a lever provided with an open slot, a ribbon-carrier connected to said lever, an idle wrist extending through said slots, a pair of links upon which said idle links are carried, a rock-shaft having arms to which said idle links are pivoted, a detent for holding said rock-shaft in any of three positions, so that said idle wrist may work in said lever-slot either near the lever-pivot, or remote from the lever-pivot, or may move to a position outside of said lever-slot, a finger-lever and a link connecting said finger-lever to a third arm upon said rock-shaft.

849,629. RAIL-JOINT. GEORGE LACZAY, Hammond, La. Filed Jan. 7, 1907. Serial No. 351,283.

Claim.—1. A rail-joint comprising rails having dovetail notches in the meeting ends of their webs, a fish-plate arranged at one side of the webs of the rails and extending between the bases and heads thereof and having a recess of double dovetail form in its inner side and also having a transverse aperture extending outward from the center of the recess, a fish-plate arranged at the opposite side of the webs of the rails and extending between the bases and heads thereof and having an integral lug of double dovetail form, arranged at its inner side and extending laterally through the notches of the rail-webs and snugly occupying the recess in the first-mentioned fish-plate, and also having a threaded-shank extending through the aperture in said fish-plate, and a nut mounted on the threaded shank at the outer side of the latter fish-plate.

849,630. THREAD-ROLLING MACHINE. GEORGE B. LAMB, DAVID C. GRIGGS, and ROY H. SMITH, Waterbury, Conn., assignors to the Waterbury Farrel Foundry and Machine Company, Waterbury, Conn., a Corporation of Connecticut. Filed Feb. 20, 1906. Serial No. 301,979.

Claim.—1. In a thread-rolling machine, the combination with a reciprocating slide; of a threading-die connected therewith; a fixed die; a finger connected with said slide and having an independent endwise movement thereon; and a second finger movable toward and away from said first-mentioned finger, said first-mentioned finger being operated by said second finger during a portion of its stroke

by the blank for a portion of its stroke and by the said slide for another portion of its stroke.

2. In a thread-rolling machine, the combination with a slide; of a threading-die connected therewith; a fixed die; a pair of fingers operative between said dies; means for moving one of said fingers at varying speeds during the same stroke; and means for reciprocating the other of said fingers toward and away from the first-mentioned finger during the same stroke.

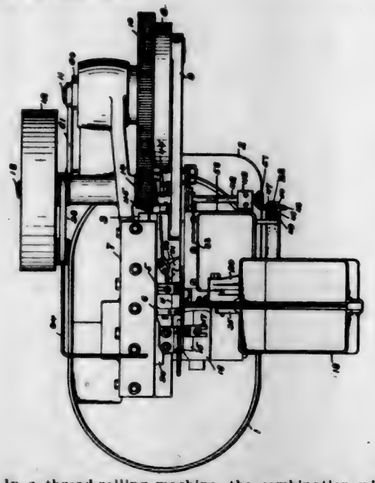

3. In a thread-rolling machine, the combination with a reciprocating slide; of a threading-die connected therewith; a finger connected with said slide and having an independent movement therewith; a fixed die; a second finger; said fingers being arranged so as to grasp a blank between the opposing ends thereof when the movable die is in its retracted position; means for imparting movement to said second finger so as to present the blank between said dies, and move said first finger by the time the end of the movable die is opposite the end of said fixed die; means for withdrawing said second finger after said dies have engaged said blank; and means connected with said slide for engaging said first finger and moving the same therewith after the blank has in part pushed said finger in advance of itself between said dies.

4. In a thread-rolling machine, the combination with a slide; of a movable die; a fixed die; a knock-off mechanism, comprising a knock-off arm pivotally connected with said slide; and cam mechanism fixed in the path of said knock-off arm for moving the same on its pivot-mounting and thereby sweeping over the ends of said dies after the thread-rolling operation.

5. In a thread-rolling machine, the combination with a slide; of a die connected therewith; a knock-off arm pivotally mounted on said slide adjacent to the rear end of said die and carrying a projecting part; and a cam fixed in the path of said projecting part to actuate said knock-off arm.

6. In a thread-rolling machine, the combination with a fixed die; a slide; a die fixed to said slide; a feed-chute; and an adjustable buffer fixed to said slide adjacent to the end of said movable die, and arranged to be opposite said feed-chute at the completion of each stroke of said slide.

7. The combination with a hopper-blade 30 having a recess 31 in the upper edge thereof; of the filling-plates 32 secured to the inner walls of said recess, said plates being opposite to each other with their top edges substantially flush with the upper edge of said blade.

849,631. HORSE-ARRESTER. JAMES T. LAMBERT, Chandler, Tex. Filed Jan. 3, 1906. Serial No. 294,397.

Claim.—A device of the class described comprising a tongue, a whiffletree mounted for sliding movement upon said tongue, a spring-plate arranged to hold said whiffletree against forward movement, a rod mounted upon said tongue beneath said spring-plate, said rod having a bowed portion arranged to contact with said spring-plate when

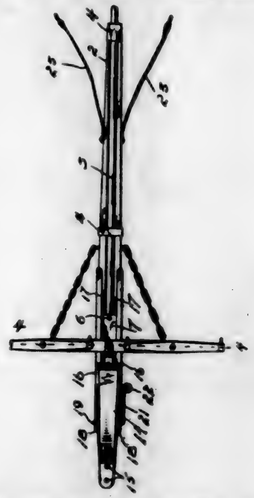

said rod is rocked, said rod including an upstanding cranked end provided with an eye, and straps carried by said tongue and arranged for connection with hits.

849,632. LOOM-PICKER. DAVID LEMOINE, Grafton, Mass., assignor to self, and John Ward, Whitinsville, Mass. Filed Sept. 14, 1905. Serial No. 278,403.

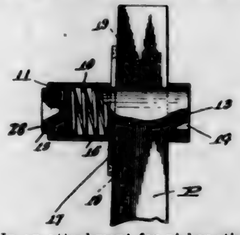

Claim.—1. In an attachment for picker-sticks for looms, the combination of a casing having slots for receiving a picker-stick, and a back screw threaded into the end of the casing for fastening the same in place, said back screw having a bearing-surface for engaging the back of the picker-stick and of substantially the size of said casing.

2. In an attachment for picker-sticks for looms, the combination of a casing having closed-ended slots for receiving the end of a picker-stick, and a back screw threaded into the end of the casing for fastening the same in place, said back screw being seated completely within the end of the casing so as not to project therefrom.

3. In an attachment for picker-sticks, the combination of a casing having slots for receiving a picker-stick, and a bearing-plate inclosed within the casing for protecting the front face of the picker-stick, said bearing-plate having extending arms for fastening the casing from up-and-down movement on the picker-stick.

4. In an attachment for picker-sticks, the combination of a casing having closed-ended slots for receiving the end of a picker-stick, a back screw threaded into the end of the casing for fastening the same in place, and a bearing-plate inclosed within the casing for protecting the front face of the picker-stick, said bearing-plate having extending arms for fastening the casing from up-and-down motion on the picker-stick.

5. In an attachment for picker-sticks, the combination of a casing having closed-ended slots for receiving the end of a picker-stick, a back screw threaded into the end of the casing for fastening the same in place, said casing having an inwardly-extending flange at its other end, a plunger consisting of a thimble inclosing a soft-material striking-face, a spring for the plunger, and a bearing-plate for protecting the front face of the stick from the spring, said bearing-plate having extending arms notched to receive small screws to prevent the attachment from moving up and down on the picker-stick.

6. In an attachment for picker-sticks, the combination of a casing adapted to receive the picker-stick, a plunger consisting of a thimble inclosing a soft striking-face, a spring for the plunger, and a bearing-plate for protecting the front face of the stick from the spring.

7. In an attachment for picker-sticks, the combination of a casing having slots for receiving the picker-stick, a plunger in the casing having a soft striking-face, a spring for the plunger, a bearing-plate for protecting the front face of the picker-stick from the spring, having arms, and means for securing said arms to the picker-stick.

8. In an attachment for picker-sticks, the combination of a casing having slots for receiving the picker-stick, a plunger in the casing having a soft striking-face, a spring for the plunger, and a bearing-plate in the plunger for protecting the front face of the picker-stick from the spring.

849,633. SNOW-PLOW. THOMAS W. LIDDELL, Auson, Wis. Filed June 1, 1906. Serial No. 319,790.

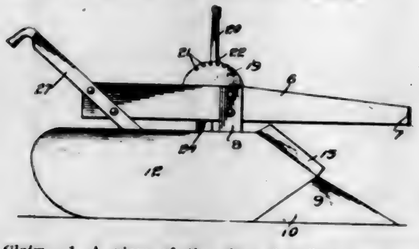

Claim.—1. A plow of the class described comprising spaced longitudinal beams, connections between the beams, stocks carried by the beams, shares carried by the stocks, deflectors connected with the shares, braces for the deflectors, handles connected with the shares and beams, shoes pivoted to the shares and lying therebetween for movement into and out of position to extend below the shares, and means for moving the shoes.

2. The combination with a plow including spaced beams, and shares connected with the beams, of means for elevating the shares, consisting of rods connecting the beams, a bracket-plate mounted upon the rods, a lever pivoted to the bracket-plate, a rod engaging the lever for vertical movement when the lever is moved, plates connected with the rod and shoes connected with the plates.

3. The combination with a plow including spaced beams and shares carried by the beams, of ground-engaging shoes pivoted to the shares for movement into and out of position to hold the shares elevated, upwardly-extending plates pivoted to the shoes for movement thereof, guides for the plates secured to the beams, a rod connected with the plates, cross-rods connected to the beams, a bracket-plate mounted upon the cross-rods, a lever pivotally mounted upon the bracket-plate and connected with the first-named rod for movement of the first-named plates vertically when the lever is moved, and means for holding the lever at different points of its movement.

849,634. HEATING GAS-BURNER. FREDERIC G. NICOLAUS, Cleveland, Ohio. Filed May 20, 1905. Serial No. 261,427.

Claim.—1. A heating-burner comprising a bowl-shaped section having its upper end flaring upwardly; a cap provided with a depending annular flange which projects in under the upper flaring end of and surrounds the bowl-shaped section, said cap having radially-arranged raised portions spaced around the central portion of the cap, with each raised portion of the cap provided with orifices which are in communication with the chamber formed interiorly of the bowl-shaped section and spaced longitudinally of the said raised portion; a gas-conducting tube discharging into the aforesaid chamber, and a spider mounted on and attached to the cap and having arms arranged radially of the cap and alternating with the raised portions of the cap, which arms are connected together at their inner ends and have downwardly-projecting members which raise the spider in the main above the cap.

2. In a heating-burner, the combination, with a chamber having a top wall which has perforated raised portions spaced around the central portion of the wall, and a gas-conducting tube discharging into the said chamber, of a spider arranged above and externally of the said chamber and having laterally-extending arms spaced around the central portion of the aforesaid wall, said arms having downwardly-projecting members and connected together at their inner ends by a web which is arranged above the central portion of the wall, and means attaching the spider at the web to the said wall.

3. The combination of a bowl-shaped section instrumental in forming a chamber and provided at the bottom and centrally with an aperture; a cap forming the top wall of the said chamber and attached to the bowl-shaped section, said cap having a central depressed portion and provided with raised portions which are spaced around the depressed portion of the cap and have orifices in communication with the aforesaid chamber; a gas-conducting tube extending through the aforesaid aperture and around the aforesaid depressed portion of the cap and having lateral holes which are formed in its upper portion and communicate with the said chamber, and a spider mounted on and attached to the cap and having radially-arranged arms spaced around the depressed portion of the cap, which arms are connected together at their inner ends and have downwardly-projecting members arranged to raise the spider in the main above the cap.

4. In a heating-burner, the combination, with a gas-receiving chamber, said chamber having a top wall which has a central depressed portion and is perforated around the depressed portion, of a spider arranged above and externally of the said chamber and having laterally-extending arms spaced around the depressed portion of the aforesaid wall, said arms having downwardly-projecting members and connected together at their inner ends by a web; a screw extending through the web and through the depressed portion of the said wall and arranged with its head at the outer side of the said wall, and a nut mounted on the shank of the screw at the inner side of the said wall, and the aforesaid web being arranged low enough to accommodate the location of the head of the screw below the inner ends of the spider-arms.

5. In a heating-burner, the combination, with a chamber having a top wall which has perforated raised portions spaced around the central portion of the wall, and a gas-conducting tube discharging into the said chamber, of a spider arranged above and externally of the said chamber and having laterally-extending arms spaced around the

central portion of the aforesaid wall, said arms having downwardly-projecting members and connected together at their inner ends by a web which is arranged above the central portion of the wall and flanged downwardly between the arms, and means removably attaching the spider at the web to the said wall.

6. In a heating-burner, the combination, with a chamber having a top wall which is perforated around the central portion of the wall, and a gas-conducting tube discharging into the said chamber, of a spider arranged above and externally of the said chamber and having laterally-extending arms spaced around the central portion of the aforesaid wall, said spider being formed of a single piece of sheet metal and removably held in place, with the arms of the spider provided with downwardly-projecting members and connected together at their inner ends by a web which is arranged above the central portion of the aforesaid wall.

7. In a heating-burner, the combination, with a chamber having a bottom provided centrally with an aperture, said chamber also having a top wall which has a central depressed portion and perforated raised portions spaced around the depressed portion, and a gas-conducting tube extending through the aforesaid aperture and around the depressed portion of and into contact with the aforesaid wall and having an outlet communicating with the aforesaid chamber, of a spider arranged above and externally of the said chamber and having radially-arranged arms spaced around the depressed portion of the aforesaid wall, said arms having downwardly-projecting members and connected together at their inner ends by a web arranged above the depressed portion of the wall; a screw extending through the web and through the depressed portion of the said wall into the aforesaid tube and arranged with its head at the outer side of the said wall, and a nut mounted on the shank of the screw within the tube, and the aforesaid web being depressed far enough to accommodate the location of the head of the screw below the inner ends of the spider-arm.

8. In a heating-burner, the combination, with a chamber having a top wall which has perforated raised portions spaced around the central portion of the wall, and a gas-conducting tube discharging into the said chamber, of a spider arranged above and externally of the said chamber and having radially-arranged arms spaced around the central portion of the aforesaid wall, said arms having downwardly-projecting members and connected together at their inner ends by a web which is arranged above the central portion of the wall and flanged downwardly between the arms; a screw extending through the web and through the depressed portion of the said wall and arranged with its head at the outer side of the said wall, and a nut mounted on the shank of the screw at the inner side of the said wall.

9. In a heating-burner, the combination, with a chamber having a top wall which has perforated raised portions spaced around the central portion of the wall, and a gas-conducting tube discharging into the said chamber, of a spider arranged above and externally of the said chamber and having radially-arranged arms spaced around the central portion of the aforesaid wall, said arms having downwardly-projecting members and connected together at their inner ends by a web which is arranged above the central portion of the wall and flanged downwardly between the arms; a screw extending through the web and through the depressed portion of the said wall and arranged with its head at the outer side of the said wall, and a nut mounted on the shank of the screw at the inner side of the said wall, and the aforesaid web being depressed far enough to accommodate the location of the head of the screw below the inner ends of the spider-arms.

10. In a heating-burner, the combination, with a chamber having a perforated top wall, and means for conducting an inflammable fluid to the said chamber, of a spider composed of a single piece of sheet-steel and arranged above and externally of the said chamber and attached to the aforesaid wall, said spider having radially-arranged arms which are spaced around the central portion of the said wall and have downwardly-projecting members arranged to rest upon the said wall.

11. In a heating-burner, the combination, with a chamber having a perforated top wall, and a gas-conducting tube discharging into the chamber, of a spider arranged above and externally of the chamber and having radially-arranged arms spaced around the central portion of the aforesaid wall, and each spider-arm being provided with two downwardly-diverging members projecting downwardly at opposite longitudinal edges respectively of the arm and over the aforesaid chamber.

849,635. APPARATUS FOR TREATING TEXTILE FIBERS WITH LIQUIDS AND GASES. JULIUS O. OBERMAIER, Lambrecht, Germany. Filed Sept. 5, 1906. Serial No. 333,352.

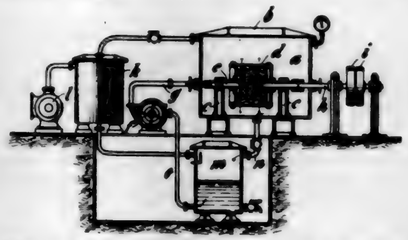

Claim.—A dyeing-machine consisting of a material-receptacle *d* mounted on a hollow horizontal shaft and made as a centrifuge situated in a vessel *a* and connected with a pump *f g*, which vessel *a* is connected with a dye-reservoir *m* situated lower than the vessel, as also with a vacuum apparatus *k* by the insertion of connections between the latter, for the purpose of effecting all of the usual operations during the dyeing process with the least possible consumption of liquid in any order of succession and repetition, under pressure as well as under vacuum, without changing the position of the material.

849,636. HEM-FINDER. GEORGE F. OLDHAM, Toledo, Ohio, assignor of one-half to himself and one-half to Thomas H. Young, Toledo, Ohio. Filed Oct. 15, 1906. Serial No. 339,054.

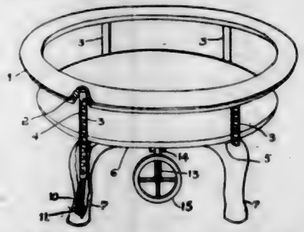

Claim.—1. A hem-finder comprising an endless element having guides, a central element, a rotatable shaft carried by the central element, a plurality of uniformly-operable flexible means separately connecting the shaft and the guides to move the endless element and guides for the flexible means.

2. An endless rigid element, extensions therefrom, a second element having guides for the extensions, a rotatable shaft and guide-pulleys mounted on the second element, and a plurality of flexible connections guided by the pulleys for uniformly actuating the extensions to move the endless element.

849,637. AUTOMATIC CUT-OFF. JOHN D. PATTON, Rosedale, Kans. Filed Dec. 8, 1905. Serial No. 290,994.

Claim.—1. In the device of the character described, an electrical conductor arranged in the form of a frame, a cylinder journaled therein and divided into two compartments having communication through an orifice so that a substance may flow from one compartment to the other, a contact-terminal supported by but insulated from the frame, a switch adapted to establish communication between said terminal and the frame, and contact-terminals carried by the cylinder adapted to alternately and temporarily rest against the first-mentioned terminal.

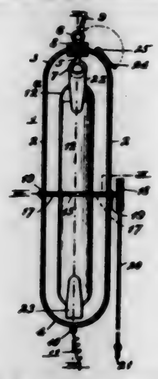

2. In a device of the character described, a loop, a cylinder journaled therein, a partition dividing said cylinder in two compartments and provided with an orifice, a substance in said cylinder adapted to flow from one compartment to another through the orifice, contact-terminals at the ends of the cylinder, a contact-terminal at one end of the loop against which either of the first-mentioned terminals is adapted to bear when it is desired to support the cylinder in a tilted position, a switch mounted upon the loop and adapted to be thrown into contact with the terminal on said loop, and means for setting the cylinder.

849,638. FOLDING RULE. ROY G. PLATT, Topeka, Kans. Filed Dec. 28, 1906. Serial No. 349,863.

Claim.—1. In a rule comprising sections connected by the usual rule-joint, springs applied to opposite edges of a section and extended beyond the joint and provided with catch-stops to snap over the adjacent section and hold the same when extended.

2. A rule comprising a plurality of sections jointed at opposite ends in alternation, springs applied to the edges of the sections and extended beyond the joints and having catch-stops to engage over the adjacent sections and hold the same extended when the rule is unfolded.

3. A rule comprising a plurality of sections jointed at opposite ends in alternation and springs applied to opposite ends of alternate sections and having catch-stops at one side of the springs, the catch-stops of the springs applied to the same section facing in opposite directions.

849,639. APPARATUS FOR PRINTING ON STONE. RICHARD REISS, Berlin, Germany, assignor to Tessarotypie Aktiengesellschaft, Berlin, Germany. Filed July 16, 1906. Serial No. 326,496.

Claim.—In combination a main frame, a top frame having its ends journaled therein, a chartographic-printing device slidably mounted on said top frame, screw-spindles passing through the top frame, hand-wheels secured to the top of said spindles and a bottom frame for the stone supported on the ends of the spindles so that said bottom frame may be adjusted by rotating the spindles.

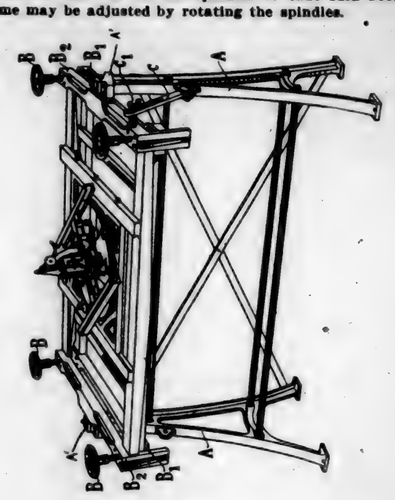

849,640. FLUE-STOP. CHAUNCEY W. REYNOLDS, Jr., Colorado City, Colo., assignor of one-half to Obel H. Mock, Colorado City, Colo. Filed June 9, 1906. Serial No. 321,084.

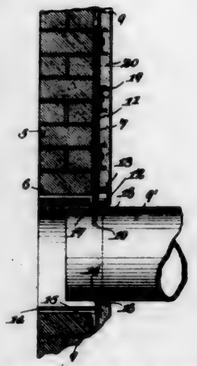

Claim.—1. A device of the class described comprising a plate having an opening formed therein for the reception of a stovepipe, a slide adapted to close the opening when the pipe is withdrawn, and anchoring-flanges secured to the plate and extending transversely of the same.

2. A device of the class described comprising a plate having an opening formed therein for the reception of a stovepipe and provided with longitudinal guides, a closure slidably mounted for vertical movement between the guides and adapted to close the opening when the pipe is withdrawn and spaced angle-irons secured to the plate and provided with lateral anchoring-flanges extending transversely across the face of the plate.

3. A device of the class described comprising a plate having an opening formed therein for the reception of a stovepipe, a thimble extending laterally from one side of the plate and provided with a segmental slot, a closure movable through the slot in the thimble and adapted to engage the stovepipe for locking the latter within the opening, and spaced angle-bars secured to the face of the plate and forming anchoring-flanges, said closure serving to close the opening when the pipe is withdrawn.

4. A device of the class described comprising a plate having an opening formed therein and provided with spaced transversely-disposed angle-bars secured to the face of the plate and forming anchoring-flanges, and a vertically-movable slide mounted on the plate and adapted to form a closure for the opening when the pipe is withdrawn.

5. A device of the class described comprising a substantially rectangular plate provided with an opening for the reception of a stovepipe and having its opposite longitudinal edges bent rearwardly to form parallel guides, a slide mounted for vertical movement between the guides and adapted to engage the stovepipe for locking the latter within the opening, said slide being movable by gravity to close the opening when the stovepipe is withdrawn and spaced angle-bars secured to the face of the plate above the plate-receiving opening and forming laterally-extending anchoring-flanges.

6. A device of the class described comprising a plate having an opening formed therein the walls of which are expanded laterally to form a support for the stovepipe, a slide mounted for vertical movement on the plate and adapted to engage the stovepipe for locking the latter within the opening, said slide being movable by gravity to close the opening when the pipe is withdrawn, and anchoring-flanges extending transversely across the face of the plate.

7. A device of the class described comprising a plate having an opening formed therein and provided with spaced parallel guides, a thimble provided with spaced lugs the terminals of which pass through openings in the plate and are bent laterally into engagement with the adjacent face of said plate, there being a segmental slot formed in the thimble, a slide mounted for vertical movement on the plate and movable through the slot in the thimble for engagement with the stovepipe for locking the latter within the opening, said slide being movable by gravity to close the opening when the stovepipe is withdrawn and anchoring-flanges secured to and extending transversely across the face of said plate.

849,641. CLEANING APPARATUS. ARTHUR E. SADLER, Cuthbert, Tex. Filed June 1, 1906. Serial No. 319,708.

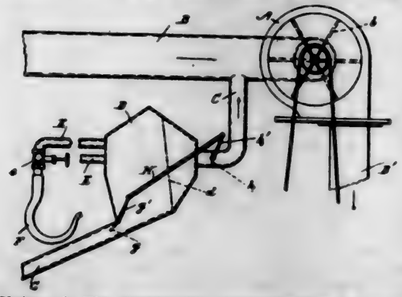

Claim.—1. The combination, with a pneumatic elevator provided with a suction-pipe, of an auxiliary suction-pipe connected to the said suction-pipe, a separating-chamber connected to the said auxiliary suction-pipe and provided with a screen, a flexible pipe connected to the said separating-chamber, a stop-valve for controlling the current of air through the said flexible pipe and auxiliary suction-pipe without affecting the air-current in the said elevator suction-pipe, and means for removing the dust from the said chamber.

2. The combination, with a pneumatic elevator provided with a suction-pipe, of an auxiliary suction-pipe connected to the said suction-pipe, a separating-chamber connected to the said auxiliary suction-pipe and provided with a screen, pipes connected to the said separating-chamber and provided with stop-valves, flexible pipes connected to the said pipes, and means for removing the dust from the said chamber.

3. The combination, with a pneumatic elevator provided with a suction-pipe, of an auxiliary suction-pipe connected to the said suction-pipe, a separating-chamber connected to the said auxiliary suction-pipe and provided with a screen, a flexible pipe connected to the said separating-chamber, a dust-discharge valve at the lower part of the said chamber, a valve in the said auxiliary suction-pipe, and means for connecting the said valves so that when one of them is closed the other one is opened.

849,642. CONNECTING-ROD HEAD. WILLIAM W. SLEEMAN, Oil City, Pa. Filed May 3, 1906. Serial No. 314,984.

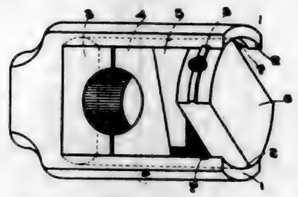

Claim.—In a connecting-rod head, jaws having longitudinally and transversely grooved opposing faces, brasses adapted to occupy said longitudinal grooves, the forward face of the front brass being beveled for the purpose set forth, a head-block having rounded ends and a tongue thereon adapted to occupy said transverse grooves, said head-block being insertible between said jaws by a lateral or rotary movement, means of securing said block in position, a wedge positioned between said brasses and said block, and means for adjusting said wedge.

849,643. COMPOSITION OR COMPOUND FOR BRUSHES OF DYNAMO-ELECTRIC MACHINES. CHARLES W. SPEIRS, Battersea, London, England, assignor to The Morgan Crucible Company, Limited, London, England. Filed June 29, 1905. Serial No. 267,662.

Claim.—A commutator-brush consisting of compressed or crystalline plumbago having incorporated with it metallic copper in finely-divided condition, the flakes of plumbago being arranged in stratified planes parallel to the plane of pressure, and the metallic particles being so arranged as to form at one face of the brush an uninterrupted metallic surface, and being distributed through the mass in graduated proportions, the proportion of copper decreasing toward the opposite face of the brush, substantially as described.

849,644. SELF-REGULATING SYSTEM OF ELECTRICAL DISTRIBUTION. WILLIAM A. TURBAYNE, Lancaster, N. Y., assignor to Gould Coupler Company, New York, N. Y. Filed Apr. 28, 1905. Serial No. 257,840.

Claim.—1. The combination of a main generator, a work-circuit, storage batteries, an exciter apparatus for the main generator whose electromotive force varies in an inverse sense to changes in speed of the main generator, and automatic means constructed to periodically connect said batteries alternately with the work-circuit to supply the latter and with the main generator to be charged, substantially as set forth.

2. The combination of a main generator, a work-circuit, storage batteries, an exciter apparatus for the main generator whose electromotive force varies in an inverse sense to changes in speed of the main generator, and in a direct sense to changes in load on the work-circuit, and means for connecting said batteries alternately with the work-circuit to supply the latter and with the main generator to be charged, substantially as set forth.

3. The combination of a main generator, a work-circuit, storage batteries, an exciter apparatus for the main generator having a winding influenced by current changes in the work-circuit for varying the electromotive force of the exciter apparatus in a direct sense to changes in load on the work-circuit, and means for connecting said batteries alternately with said exciter-winding and the work-circuit and then with the main generator, substantially as set forth.

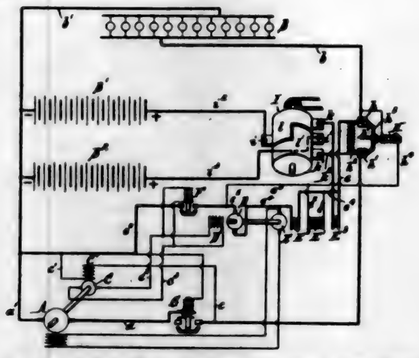

4. The combination of a main generator, a work-circuit, storage batteries, an exciter apparatus for the main generator whose electromotive force varies in an inverse sense to changes in speed of the main generator, and which has a winding connected with the work-circuit for varying the electromotive force of the exciter apparatus in a direct sense to changes in load on the work-circuit, and means for connecting said batteries alternately with the work-circuit and said exciter-winding and then with the main generator, substantially as set forth.

5. The combination of a main generator, a work-circuit, storage batteries, an exciter apparatus for the main generator having a winding in series with the work-circuit for varying the electromotive force of the exciter apparatus in a direct sense to changes in load on the work-circuit, and means for connecting said batteries alternately with said exciter-winding and the work-circuit and then with the main generator, substantially as set forth.

6. The combination of a main generator, a work-circuit, a storage battery connected with the work-circuit, a second storage battery connected with the main generator, means for changing the battery connections so that the battery in connection with the main generator is placed in connection with the work-circuit and vice versa, and an exciter apparatus for the main generator having a winding for regulating the voltage of the exciter apparatus, said winding being supplied by the battery which is in connection with the work-circuit, substantially as set forth.

7. The combination of a main generator, a work-circuit, a storage battery connected with the work-circuit, a second storage battery connected with the main generator, automatic means for periodically changing the battery connections so that the battery in connection with the main generator is placed in connection with the work-circuit and vice versa, and an exciter apparatus for the main generator having a winding for varying the voltage of the exciter apparatus in correspondence with changes in load on the work-circuit, said winding being supplied by the battery which is in connection with the work-circuit, substantially as set forth.

8. The combination of a main generator, a work-circuit, a storage battery connected with the work-circuit, a second storage battery connected with the main generator, a resistance between the connections of the batteries with the work-circuit and the main generator, means for changing the battery connections so that the battery in connection with the main generator is placed in connection with the work-circuit and vice versa, an exciter apparatus for the main generator having a winding for regulating the voltage of the exciter apparatus, said winding being supplied by the battery which is in connection with the work-circuit, and means for short-circuiting said resistance when the main generator is out of action or is not furnishing a desired output, substantially as set forth.

849,645. APPARATUS FOR RECOVERING BENZIN, &c. AMÉDÉE E. VINCENT, Paris, France. Filed July 2, 1906. Serial No. 324,417.

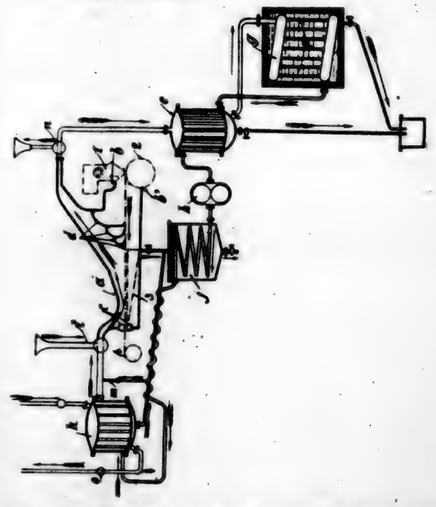

Claim.—1. In an installation for recovering benzin and other volatile products which are freed during certain industrial operations, the combination of a hollow heating-table 3 upon which passes the substance to be treated, a gathering-bell *a* hermetically closed and surrounding the heating-table, a temperature-exchanger *e*, means for leading the gaseous mixture issuing from the gathering-bell into said exchanger, a condenser *g* connected to the temperature-exchanger, a fan or pump *h* adapted to suck the purified air from the temperature-exchanger, and a heater *j* connected with the pump and into which passes the air sucked from the temperature-exchanger, and connected to the gathering-bell, substantially as described and for the purpose set forth.

2. In an installation for recovering benzin and other volatile products which are freed during certain industrial operations, the combination of a hollow heating-table 3 heated by steam and upon which passes the substance to be treated, a gathering-bell *a* hermetically closed and surrounding the heating-table, a temperature-exchanger *e* connected with the bell *a* and into which leads the gaseous mixture issuing from the gathering-bell, a condenser *g* connected to the temperature-exchanger, a fan or pump *h* adapted to suck the purified air from the temperature-exchanger, a first heater *j* connected with the pump and into which passes the air sucked from the temperature-exchanger, a second heater *k* connected to the first heater and to the gathering-bell, a pipe system and valves therein for putting the heater *k* into or out of the closed circuit.

3. In an installation for recovering benzin and other volatile products which are freed during the drying of the gummed canvas prepared in the india-rubber manufacture, the combination of a gum-distributer 1, a canvas-distributing drum 2, a heating-table 3 upon which passes the gummed canvas, a gathering-bell *a* hermetically closed against the gum-distributer and the canvas-distributing drum, curved sheet-plates *d* arranged within the bell and adapted to break the speed of the air-current, a roller-tight joint *c c* for the outlet of the gummed canvas from

the gathering-bell, a temperature-exchanger *e* connected with the bell and into which leads the gaseous mixture issuing from the gathering-bell, a condenser *g* connected to the temperature-exchanger, a fan or pump *h* adapted to suck the purified air from the temperature-exchanger, a first heater *j* connected with the pump and into which passes the air sucked from the temperature-exchanger, a second heater *k* connected to the first heater and to the gathering-bell, a pipe system with suitable valves allowing to put into or out of the closed circuit the second heater *k*, and pipes provided with two-way cocks leading respectively to the inlet and outlet pipes of the gathering-bell, substantially as described and for the purpose set forth.

849,646. AGRICULTURAL IMPLEMENT. HENRY C. WEAVER, Royal, Ark. Filed Oct. 23, 1906. Serial No. 340,165.

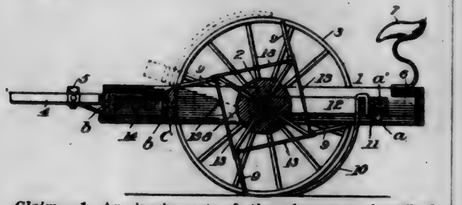

Claim.—1. An implement of the character described, comprising a wheeled frame, a drum mounted for rotation with the wheels, separate sets of tines carried by the drum, a platform arranged between each two sets of tines, and a scoop-rake having its head pivotally mounted upon the axis of the wheels.

2. An implement of the character described, comprising a wheeled frame, a drum mounted for rotation with the wheels, separate sets of tines carried by the drum, a platform arranged between each two sets of tines, a scoop-rake having its head pivotally mounted upon the axis of the wheels, and a collecting-receptacle arranged to coöperate with the scoop-rake and the separate sets of tines.

3. An implement of the character described, comprising a wheeled frame, a rotatable member arranged between the wheels and including separate sets of tines, and a scoop-rake including a head provided with means to pivotally mount it upon the axis of the wheels.

4. An implement of the character described, comprising a wheeled frame, a rotatable member arranged between the wheels and including separate sets of tines, a scoop-rake including a head provided with means to pivotally mount it upon the axis of the wheels, and means whereby said head may be supported in different positions within the frame.

5. An implement of the character described, comprising a wheeled frame, a rotatable member arranged within the frame and provided with separate sets of tines, a platform arranged between each two sets of tines, a scoop-rake pivotally mounted upon the axis of the wheels, means removably engaging the frame to adjust the position of the scoop-rake, and a collecting-receptacle arranged in advance of the wheels for coöperation with said rotatable member and the scoop-rake.

849,647. CROSS-WEAVING LOOM. ANDREW WEIMER, Philadelphia, Pa., assignor of one-half to William D. Weimar, Philadelphia, Pa. Filed Aug. 8, 1905. Serial No. 273,228.

Claim.—1. The combination in a cross-weaving loom of the fixed frame, heddle-frames carrying eyed needles for controlling the cross-weaving warp-threads, cam-controlled shedding-levers, and a cam-controlled heddle-frame-shifting lever at one end of the loom, transmitting-levers at the other end of the loom and levers at the top of the loom whereby motion is transmitted from the shedding-levers to the heddle-frames and from the heddle-frame-shifting lever at one end of the loom to the transmitting-levers at the opposite end of the loom, substantially as specified.

2. The combination, in a cross-weaving loom, of the main frame, heddle-frames carrying eyed needles for controlling the cross-weaving warp-threads, a cam-controlled heddle-frame-shifting lever at one end of the loom, a three-armed lever at the opposite end of the loom engaging one heddle-frame on one side of its fulcrum and the other heddle-frame on the other side of its fulcrum, and means for transmitting movement from said heddle-frame-shifting lever to said three-armed lever, substantially as specified.

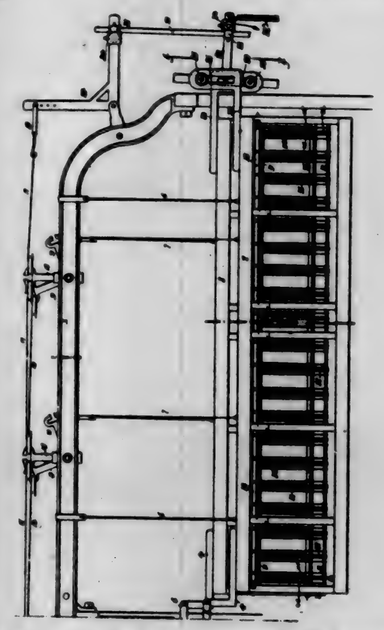

3. The combination in a cross-weaving loom of heddle-frames carrying eyed needles for controlling the cross-weaving warp-threads, bars upon which said heddle-frames are mounted, and means for adjusting said bars laterally in respect to the heddle-frame so as to vary the relation of the needles to each other, substantially as specified.

4. The combination, in a cross-weaving loom, of heddle-frames having eyed needles for controlling the cross-weaving warp-threads, and bars flanking said needles on each side, substantially as specified.

5. The combination, in a cross-weaving loom, of heddle-frames having longitudinal bars carrying eyed needles for controlling the cross-weaving warp-threads, and other longitudinal bars upon which are mounted bars flanking the needles on each side, substantially as specified.

6. The combination of a heddle-frame having longitudinal bars thereon with transverse bolts therein, and eyed needles for controlling the cross-weaving warp-threads, each of said needles having a hooked end engaging a bolt of a longitudinal bar, and also having a bent end entering an opening in said bar, substantially as specified.

7. The combination, in a cross-weaving loom, of heddle-frames carrying eyed needles for controlling the cross-weaving warp-threads, means for simultaneously raising one of said heddles and lowering the other, and means for effecting lateral movement of the heddle-frames when the heddle-eyes are adjacent to each other at the center of the shed, substantially as specified.

8. The combination, in a cross-weaving loom, of heddle-frames having longitudinal bars, eyed needles for controlling the cross-weaving warp-threads, and means for laterally adjusting the needles of each heddle-frame from and toward each other on their supporting-bars, substantially as specified.

9. The combination, in a cross-weaving loom, of heddle-frames controlling the cross-weaving warp-threads, and pattern mechanism for operating said heddle-frames, said pattern mechanism having members for imparting to each heddle-frame a half-shed-and-return movement with intervening side movement for each full beat of the lay, substantially as specified.

10. The combination, in a cross-weaving loom, of heddle-frames for controlling the cross-weaving warp-threads, and pattern mechanism having, in alternation, members for imparting to each heddle-frame during each full beat of the lay, a half-shed-and-return movement with intervening cross movement, or a full-shed movement without return or cross movement, substantially as specified.

810,648. COMBINED CLEAVER AND MEAT-TENDERER. FRANK WHITE, Newark, N. J. Filed June 17, 1905. Serial No. 265,771.

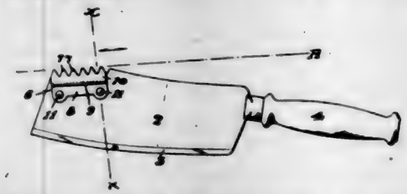

Claim.—An article of the kind described, comprising a single blade having one edge sharpened, a series of teeth formed at an obtuse angle on one corner of the opposed edge of the blade, Z-shaped plates secured at an angle on each side of the series of teeth and each plate having teeth on one edge, the teeth being parallel with the teeth on the blade, and a handle arranged parallel with, and near the back edge of the blade on the end opposed to the teeth, whereby the handle is removed from the table when either the blade or teeth are being used, to prevent injury to the hand.

849,649. DRAFT-RIGGING FOR RAILWAY-CARS. SAMSON D. WRIGHT, Cleveland, Ohio. Filed Jan. 7, 1904. Serial No. 188,098.

Claim.—1. In a draft-rigging for railway-cars the combination with the draw-bar and truck-bolster of a spring-cushioned cage being pivotally supported intermediate said bolster and end sill of such cars, and having arms extending approximately horizontally therefrom and diverging rods connecting said arms with said bolster in the manner as and for the purpose set forth.

2. In a draft-rigging for railway-cars the combination with the draw-bar and a spring-cushioned pivoted cage supported between the king-bolt and end sill of such cars, said cage having arms extending approximately horizontally therefrom, of the truck-bolster and rods extending from near the ends of bolster to said arms and having loose connection with both as shown and for the purpose described.

3. The combination with the draw-bar of a railway-car, of a cage containing the spring for said bar, and having externally-projecting pivots and arms arranged within a suitable casing, the latter being mounted distant from the car-bolster, the truck-bolster, and guide-rods extending angularly from said truck-bolster to said arms for the purpose of fixing the position of the pivotal draw-bar according to the position of the truck-bolster as shown and for the purpose set forth.

4. A draft-rigging for railway-cars comprising a draw-bar having a cage attached to its rear end, a spring placed upon said end between sliding washers and all contained within said cage, vertical pivots and horizontal arms projecting from said cage, a suitable support for said pivots arranged intermediate the bolster and end sill of the car and guide-rods connecting said arms with the truck-bolster substantially in the manner as and for the purpose set forth.

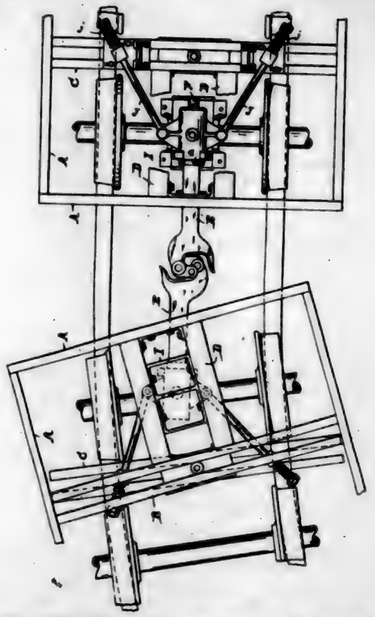

5. In combination with a draft-rigging, a two-part casing secured to the car-frame intermediate the bolster and end sill of said frame, the said casing being adapted for reception of the draw-bar-spring cage and containing sockets for the pivots of said cage as shown and set forth.

6. In a draft-rigging comprising the combination with the truck-bolster and a pivoted laterally-swinging draw-bar, of guide-rods having connection with arms in vertical plane alinement with the pivots of said bar and a swiveled, laterally-adjustable connection with said bolster as shown.

7. In a draft-rigging the combination with the draw-bar of a cage and a suitably-fixed casing for said cage, the said cage containing the spring for said bar, having oscillating movement within said casing and lateral connection with the truck-bolster as shown and described.

849,650. APPARATUS FOR PROCESSING FRUIT. WILLIAM C. ANDERSON, San Jose, Cal. Filed Feb. 26, 1906. Serial No. 303,041.

Claim.—1. In an apparatus for processing fruit, the combination of a receptacle for liquid, a rotatable drum provided with pockets dipping thereinto to carry material into and out of the liquid, and a rake to discharge said pockets of their burden, said rake engaging portions of the drum and actuated thereby.

2. In an apparatus of the class described, the combination of two tanks for liquid, a rotatable drum for each tank having pockets to carry material into and out of the liquid therein, and a rake to discharge the material from the pockets of one of the drums to the pockets of the other drum.

3. In an apparatus of the class described, the combination of two tanks for liquid, a rotatable drum for each tank having pockets to carry material into and out of the liquid therein, means for feeding material to the pockets of one of the drums including a movable gate, and a rake to discharge the material from the pockets of said drum to the pockets of the other drum, said gate and rake both being actuated by the drum primarily receiving the material.

4. In an apparatus of the class described, the combination of two tanks for liquid, a rotatable drum for each tank having pockets to carry material into and out of the liquid therein, and a rake actuated by one of the drums to discharge the material from the pockets thereof to the pockets of the other drum.

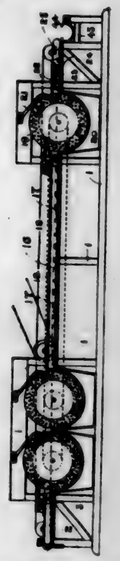

5. In an apparatus for processing fruit, the combination of a tank or receptacle for liquid, a device dipping thereinto to carry fruit into and out of the liquid, a feeder to said device consisting of a shaking-screen provided with an intermittently-removable obstruction in the path of fruit on the screen, means for intermittently removing the obstruction by engaging with the dipping device, and a frame in which the parts are mounted.

6. In an apparatus for processing fruit, the combination of a tank or receptacle for liquid, a device dipping thereinto to carry fruit into and out of the liquid, a feeder to the dipping device consisting of a shaking-screen provided with a hinged apron forming an obstruction at the forward end of the screen and between it and the dipping device, means actuated by the dipping device for intermittently removing the obstruction, a second tank and dipping device, and means intermediate of the dipping devices for transferring fruit from the first to the second dipper, and a frame in which the parts are mounted.

7. In an apparatus for processing fruit, the combination of a tank or receptacle for liquid, a second substantially similar tank adjacent thereto, a rotatable drum having wings or pockets in each of the tanks to carry fruit into and out of the liquid, a rake or the like engaging with and actuated by the wings of the first drum to discharge them of their burden, and act as a feeder to the second drum, a carrier or conveyer adjacent to the first drum and acting as a feeder thereto, a movable obstruction in the path of the fruit upon the conveyer and connections between the obstruction and drum whereby the obstruction is intermittently removed from the path of the fruit, and a frame in which the parts are mounted.

8. In an apparatus for processing fruit, the combination of a tank or receptacle for liquid, a rotatable drum having wings or pockets dipping thereinto to carry fruit into and out of the liquid, a washing device to receive the fruit discharged from the tank, the washing device consisting of a shaking-table having steps or drop-offs to turn the fruit and nozzles or liquid-jets directed to the fruit while on the table, and a frame in which the parts are mounted.

9. In an apparatus for processing fruit, the combination of a tank or receptacle for liquid, a rotatable drum having wings or pockets dipping thereinto to carry fruit into and out of the liquid, a shaking-screen to feed the drum having a hinged forward end, connections with the drum to raise the hinged portion intermittently as an obstruction to fruit on the feeder, a movable conveyer adjacent to the tank to receive the fruit discharged therefrom, said conveyer including means whereby when the conveyer is moved, the fruit thereon will be turned, means for washing the fruit while being turned, a steam-box adjacent to the conveyer, means for passing the fruit through the steam-box, and a frame in which the parts are mounted.

10. In an apparatus for processing fruit, the combination of a tank or receptacle for liquid, a rotatable drum having wings or pockets dipping thereinto to carry fruit into and out of the liquid, a second substantially similar drum adjacent thereto, a rake-off device between the drums engaging with the wings with the first drum to discharge them of their burden, into the second tank, a shaking-screen to feed the first drum, having a hinged forward end, connections with the drum to raise the hinged portion intermittently as an obstruction to the fruit on the feeder, a conveyer to receive the fruit discharged from the second drum, a washing device for the fruit, a steam-box with means for passing the fruit thereto, a trough or sluiceway with jets or nozzles directed thereinto to receive and wash the fruit discharged from the steam-box, and a frame in which the parts are mounted.

11. In an apparatus for processing fruit, the combination of a tank or receptacle for liquid, a rotatable drum provided with wings or pockets dipping thereinto to carry fruit into and out of the liquid, a false bottom to the tank adjacent and conforming to the lower part of the periphery of the drum, a feeder to the drum, a shaking-table having a series of shallow troughs to receive the fruit discharged from the drum, a steam-box with means for passing the fruit therethrough, and a frame in which the parts are mounted.

12. In an apparatus for processing fruit, the combination of a tank or receptacle for liquid, a rotatable drum provided with wings or pockets dipping thereinto to carry fruit into and out of the liquid, an imperforate false bottom to the tank adjacent and conforming to the lower part of the periphery of the drum, an intermittent feeder to the drum, a conveyer adjacent to the drum to receive the fruit discharged therefrom, the conveyer consisting of a perforated shaking-table provided with a series of shallow transverse troughs each having an abrupt and a sloping side constituting a succession of steps or drop-offs, means for applying streams of liquid directed to the fruit while on the conveyer, and a frame in which the parts are mounted.

13. In an apparatus for processing fruit, the combination of a tank or receptacle for liquid, means for heating the liquid, means for carrying fruit into and out of the tank, a feeder to the tank comprising a shaking-screen having a hinged forward part with meaans for raising this part as an obstruction intermittently, a conveyer to receive the fruit discharged from the tank, means adjacent thereto to direct streams of liquid to the fruit while on the conveyer, a steam-box with means to pass the fruit therethrough, means for cooling the fruit adjacent to the steam-box, consisting of a device for applying cooling liquid to the fruit as it emerges from the steam-box, and a frame in which the parts are mounted.

14. In an apparatus for processing fruit, the combination of a tank or receptacle for liquid, a rotatable drum having wings or pockets dipping thereinto to carry fruit into and out of the liquid, a rake-off device consisting of a plate or bar axially parallel to the drum and engaging with the wings to discharge them of their burden, arms or levers to which the plate is attached pivoted above the drum, and a frame in which the parts are mounted.

15. In an apparatus for processing fruit, the combination of a tank or receptacle for liquid, a rotatable drum having wings or pockets dipping thereinto to carry fruit into and out of the liquid, a rake-off device consisting of a plate or bar axially parallel to the drum and engaging with the wings to discharge them of their burden, arms or levers to which the plate is attached pivoted above the drum, a shaking-screen feeder to the drum, having a hinged forward part, a lever in the path of the drum-wings connected to the hinged part to raise it as an obstruction by engagement with the wings, and a frame in which the parts are mounted.

16. In an apparatus for processing fruit, the combination of a tank or receptacle for liquid, a rotatable drum having wings or pockets dipping thereinto to carry fruit into and out of the liquid, a rake-off device consisting of a plate or bar axially parallel to the drum and engaging with the wings to discharge them of their burden, arms or levers to which the plate is attached pivoted above the drum, a second substantially similar arrangement of tank and rake-off device adjacent thereto to receive the fruit discharged from the first, a shaking-screen feeder to the first drum having a hinged forward part, a lever in the path of the drum-wings connected to the hinged part to raise it as an obstruction by engagement with the wings, and a frame in which the parts are mounted.

17. In an apparatus of the class described, the combination with a tank for liquid, a device to carry fruit into and out of the liquid, a feeder for said device provided with a gate, and a rake to discharge the fruit from said device, said gate and rake both being actuated by said device.

18. In an apparatus of the class described, the combination of a tank for liquid, a rotatable drum provided with wings to carry fruit into and out of the liquid, a feeder to the drum provided with a gate actuated by the wings of the drum, and a rake actuated by the wings of the drum to discharge them of their burden.

19. In an apparatus of the class described the combination of two tanks for liquid, a dipping device for each tank to carry fruit into and out of the liquid therein, a feeder to one of said dipping devices provided with a gate and a rake to discharge the material from said dipping device to the other dipping device, said gate and rake both being actuated by the dipping device primarily receiving the material.

20. In an apparatus of the class described, the combination of a tank for liquid, a second similar tank, a rotatable drum for each tank to carry fruit into and out of the liquid therein, said rotatable drums being provided with wings, a feeder to the rotatable drum of the first tank provided with a gate, and a rake to discharge the fruit from said rotatable drum to the rotatable drum of the second tank, said gate and rake both being actuated by the wings of the rotatable drum of the first tank.

21. In an apparatus of the class described, the combination with a tank for liquid, a second tank, a rotatable drum for each tank to carry fruit into and out of the liquid therein, said rotatable drums being provided with wings, a feeder to the rotatable drum of the first tank provided with a gate and a rake to discharge the fruit from said rotatable drum to the rotatable drum of the second tank, said gate and rake both being actuated by the wings of the rotatable drum of the first tank, mechanism for operating the rotatable drums coördinately and at a uniform speed, and a variable-speed gearing for actuating said mechanism.

849,651. ALARM FOR FIRE-ESCAPES. SNOWDEN ASHFORD, Washington, D. C. Filed May 9, 1906. Serial No. 316,021.

Claim.—1. An alarm for fire-escapes comprising a yielding balcony floor or platform supported in equilibrium and projecting on the outside of a wall, an alarm, and means connected with said floor or platform for actuating the alarm, when weight is added to or taken off the floor or platform.

2. An alarm for fire-escapes comprising a yielding balcony floor or platform supported in equilibrium and projecting on the outside of a wall, an alarm, and means connected with said floor or platform for actuating the alarm whether said floor moves away from or near to the wall of the building when weight is added to or taken off the floor or platform.

3. An alarm for fire-escapes comprising a balcony floor or platform, means for yieldingly supporting said floor or platform in equilibrium on the outside of a wall whereby the floor or platform is movable to or from the wall, an alarm, and means for actuating the alarm by any movement of the floor or platform when weight is added to or taken from the platform.

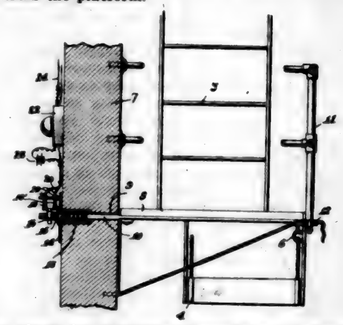

4. An alarm for fire-escapes comprising a balcony floor or platform on the outside of a wall, a rod passing loosely through the wall and connected at its outer end to the floor or platform, a coil-spring engaging the other or inner end of the rod and yieldingly supporting the floor or platform, an alarm and means operated by the movement of the rod for actuating the alarm to indicate whether weight is added to or taken off the floor or platform.

5. An alarm for fire-escapes comprising a balcony floor or platform on the outside of a wall, a rod passing loosely through the wall and connected at its outer end to the floor or platform, a coil-spring engaging the other or inner end of the rod and yieldingly supporting the floor or platform, an electric alarm, and means operated by the movement of the rod for closing the circuit of the electric alarm to indicate whether weight is added to or taken off the floor or platform.

6. An alarm for fire-escapes comprising a balcony floor or platform on the outside of a wall, a rod passing loosely through the wall and connected at its outer end to the floor or platform, a coil-spring engaging the other or inner end of the rod and yieldingly supporting the floor or platform, an electric alarm having two independently-adjustable terminals or circuits and means operated by the movement of the rod for closing either one of the circuits to indicate whether weight is added to or taken off the floor or platform.

849,652. FRONT-AXLE CONSTRUCTION. GEORGE E. BABCOCK, Fort Plain, N. Y., assignor of one-third to Charles L. Wick and one-third to Robert E. Wick, Fort Plain, N. Y. Filed Feb. 10, 1906. Serial No. 300,372.

Claim.—1. The combination of an axle-shaft; an axle-brace through which said axle-shaft passes; a tongue-support provided with openings through which said axle-brace passes; a fifth-wheel engaging said tongue-support and provided on one face with projections engaging the sides of said brace; and on the other with a collar which passes through the opening in the fixed plate; a fixed plate carrying braces adapted to be secured to the bottom of a wagon, one face of which contacts with said fifth-wheel; a bolt passing through said plate, brace and tongue-support secured to the axle-shaft; a means for securing said bolt in position, all substantially as described.

2. The combination of a fixed plate; braces connected therewith adapted to be secured to the bottom of a play-

wagon; a fifth-wheel adapted to rotate in connection with the face of said fixed plate; an axle-brace provided with projections near each end; a tongue-support; an axle-shaft; a king-bolt; said king-bolt encompassing said axle-shaft and passing through said axle-brace, each of said plates secured positively in connection therewith, all substantially as described.

3. The combination of a tongue-support; means for securing the tongue of a play-wagon thereto, on one edge of said tongue-support a bearing for the axle-shaft, the opposite edge of said tongue-support having an opening for the axle-brace; a fifth-wheel; projections thereon, between which projections said axle-brace may be placed; a collar on said fifth-wheel; a fixed plate in contact with which said fifth-wheel is placed, and through an opening in which said collar projects; a series of braces attached to said fixed plate, adapted to be secured to the bottom of a play-wagon, substantially as described.

4. A device adapted to be secured to a child's play-wagon, consisting of a fixed plate; means for securing the same to the bottom of a wagon; a fifth-wheel brought in contact with said fixed plate; an axle-brace in engagement with said fifth-wheel; a tongue-support engaging said fifth-wheel and said axle-brace; an axle supported by said tongue-support and by said axle-brace; a means for connecting together said axle, tongue-support, axle-brace, fifth-wheel and fixed plate, substantially as described.

849,653. ELECTROMAGNETIC APPARATUS. EMILE BACHELET, Tacoma, Wash. Filed Aug. 10, 1904. Serial No. 220,262.

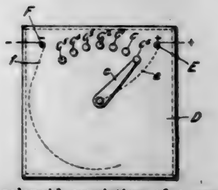

Claim.—1. A solenoid consisting of a concentric series of coils formed from a continuous wire, the wire being connected at intervals to different contact-points; in combination with a non-conducting casing entirely inclosing the solenoid, contact-points on the casing connected to the coils, and means to engage said points and cut more or less of the solenoid into or out of circuit.

2. A solenoid for electromagnetic apparatus of large external diameter and small internal diameter and short length, formed of a continuous wire, said wire having one terminal at the core and being looped at intervals to divide the solenoid into sections, and means for connecting one end of the wire to one terminal conductor; with a non-conducting casing entirely inclosing the solenoid, a series of contact-points on the casing respectively connected to the loops, and a lever connected with the core-terminal of the wire and adapted to engage any contact-point whereby more or less of the solenoid can be thrown into circuit.

3. The combination of the insulated casing, the binding-posts thereon, contact-points intermediate the binding-posts, and connected to one terminal through the magnet-coil, and a switch-lever adapted to contact with said contact-points, and an electrical connection between said switch-lever and the other of said binding-posts; with an electromagnet entirely inclosed within said casing and having looped wires at intervals respectively connected to the several contact-points, and one terminal of said magnet being connected to the other binding-post, substantially as and for the purpose described.

849,654. CORN-THINNER. JAMES P. BENNETT, Broadway, Va. Filed Nov. 9, 1906. Serial No. 342,675.

Claim.—1. In an implement of the character specified, the combination of a frame provided with a foot and with cam portions and grippers having pivotal connection with the frame and normally standing separated and adapted to be pressed together by riding upon the aforesaid cam portions when imparting an oscillatory movement to the said grippers in the operation of the implement.

2. In an implement of the character set forth, the combination of a frame provided with a foot and with an arm and having cam portions, and transversely-spaced grippers having pivotal connection with said frame to oscillate in the plane thereof and normally standing apart and adapted to be pressed together by riding upon the aforesaid cam portions when imparting an oscillatory movement to the said grippers in the operation of the implement.

3. In an implement of the character specified, the combination of a frame provided with a foot and with cam portions, a handle-bar pivoted to the frame, and grippers connected with said handle-bar to oscillate therewith and having a movement at a right angle to the plane of movement of said handle-bar to permit opening and closing of the grippers, the latter normally standing separated and adapted to be pressed together by riding upon the aforesaid cam portions when imparting an oscillatory movement to the handle-bar and grippers.

4. In an implement of the character described, the combination of a frame, comprising a foot, an arm, and side bars, the latter having cam portions and spaced from said arm, a handle-bar pivoted to the arm and adapted to oscillate, and grippers pivoted to the handle-bar to oscillate therewith and having a lateral movement and normally standing apart and adapted to be pressed together by riding upon the aforesaid cam portions when imparting an oscillatory movement to the handle-bar.

5. In an implement of the character specified, the combination of a frame comprising a foot, an arm, and side bars, the latter having portions overhanging the said arm and provided with cam portions, a handle-bar pivoted to the arm and extended between the spaced portions of the side bars overhanging said arm, and grippers pivoted to the handle-bar to oscillate therewith and adapted to be pressed together by riding upon the aforesaid cam portions when imparting an oscillatory movement to the handle-bar.

6. In an implement of the character described, the combination of a frame having cam portions and handle-bar pivotally connected to the frame, grippers connected to the handle-bar and arranged upon opposite sides thereof and normally spaced apart and adapted to be pressed together upon oscillating the handle-bar by riding upon the aforementioned cam portions and coöperating means between the lower portions of the handle-bar and members of the grippers to retain the parts in proper position.

7. In an implement of the character set forth, the combination of a frame comprising a foot, side bars, and an arm, said side bars having their upper ends overhanging the arm and transversely spaced and provided upon their inner sides with cam portions, a handle-bar pivoted to said arm, grippers pivoted to the handle-bar and adapted to oscillate therewith and normally standing apart, said handle-bar and grippers extended through the space formed between the upper overhanging ends of the aforesaid side bars, and means connecting the upper spaced ends of said side bars and limiting the oscillatory movements of the handle-bar and grippers.

8. In an implement of the character set forth, in combination a frame comprising spaced portions provided upon their inner sides with cam-surfaces, grippers separated by means of the frame and adapted to receive an oscillatory movement to cause them to ride upon the aforementioned cam-surfaces to press the jaws of the grippers together, and tie-rods connecting the spaced portions of the frame and limiting the oscillatory movement of the grippers, one of said tie-rods being adjustable to vary the amplitude of oscillation of the grippers, whereby the degrees of closing of the jaws thereof may be varied.

9. In an implement of the character specified, the combination of a frame, comprising a foot, transversely-spaced side bars and an approximately horizontal arm, the upper ends of the side bars overhanging the said arm and provided upon their inner sides with cam portions, a handle-bar pivoted to said arm, grippers extended along opposite sides of the handle-bar and pivoted at their upper ends thereto and having other lower portions forwardly or outwardly deflected, the handle-bar and grippers extending through the space formed between the upper overhanging portions of the aforesaid side bars, and means connecting the upper portions of said side bars and limiting the oscillatory movements of the handle-bar and grippers.

10. In an implement of the character set forth, in combination of a frame, plant-gripping mechanism carried by said frame and means for securing said frame to the foot of the operator, comprising spring-actuated clamp members.

11. In an implement of the character set forth, in combination of a frame, plant-gripping mechanism carried by said frame and means for securing said frame to the foot of the operator, comprising spring-actuated clamp members, the latter consisting of upwardly-converged elements provided at their lower ends with inwardly-extended guides to maintain said elements in proper position.

12. In an implement of the character specified, the combination of a frame provided with a foot-piece embodying a rest having portions formed into the eyes, plant-gripping mechanism attached to said frame, and spring-actuated clamp members having their lower ends inwardly bent to form guides which are passed through and operate in the aforementioned eyes.

13. An implement of the character specified, comprising complemental grooved side bars spaced apart and having the inner sides of their forward portions inclined to form cams and each connected to the lower rear portions of said side bars and projected forwardly, a handle-bar pivoted to the front end of said arm, grippers arranged upon opposite sides of the handle-bar and connected thereto and having their lower portions forwardly deflected, tie-rods connecting the side bars and limiting the oscillation of the handle-bar and grippers, a foot-piece projected from the side bars and having eyes at its lower end and spring-actuated clamp members for guides arranged to operate in the aforementioned eyes.

849,655. AUTOMATIC CARD-FEEDING DEVICE. WILLIAM A. BILLMAN, Colorado Springs, Colo. Filed Jan. 27, 1906. Serial No. 298,239.

Claim.—1. In an apparatus of the class described, a card-reservoir having a slotted bottom and provided with a card-discharge slot at one end, a feed-bar arranged in the bottom slot and of a width less than that of the card-reservoir, a card-engaging member carried by the bar, means beyond the card-discharge slot for preventing the return of a card through said slot, and a card-engaging finger pivoted to the end portion of the bar and arranged at a lower level than said bar, said finger being arranged to support the card during the reverse movement of the bar and to engage with and impart a second feeding movement to said card at the next reciprocation.

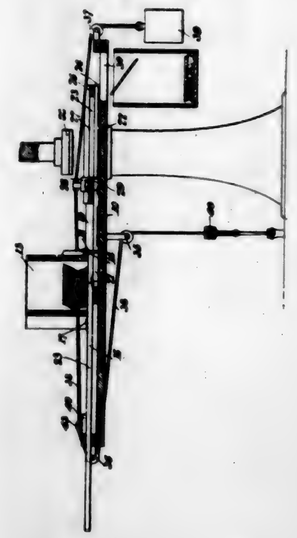

2. The combination with a card-reservoir having a slotted bottom, of a pair of pivotally-connected reciprocatory feeding devices arranged at different levels, the upper feeding device serving to impart the first feeding movement and deliver a card from the reservoir, and the lowermost feeding device serving to engage with and impart a second feeding movement to the card.

849,656. DISPLAY-CABINET. MARTIN T. BRENNAN, Montreal, Quebec, Canada. Filed May 14, 1906. Serial No. 316,595.

Claim.—1. A display-cabinet comprising the combination of a glass cylinder, casings arranged at the top and bottom of the cylinder, a rod disposed through the casings, bracket-arms provided with collars adapted to engage the casings, screw-threaded caps adapted to lock the collars on the casings, brackets adapted to support the arms, and means for displaying collars on the rod in the cylinder.

2. A display-cabinet comprising the combination of a transparent cylinder, a lower casing having an interiorly and exteriorly screw-threaded projection, an upper casing having a projection with a screw-threaded bore and having external screw-threads, bracket-arms having collars disposed around the projections, screw-threaded caps on the projections adapted to lock the collars against the casings a screw-threaded rod disposed with one end in the screw-threaded recess and the other end in the bore of the other casing, an interiorly and exteriorly screw-threaded nut on the rod and in engagement with the bore of the casing, reflectors in the casings, and display-racks on the rod.

849,656.

849,657. RAIL CONNECTION FOR CAR-SEATS AND THE LIKE. EDWARD G. BUDD, Philadelphia, Pa., assignor to Hale-Kilburn Metal Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Apr. 26, 1905. Serial No. 257,539.

Claim.—The combination with a sill or rail, angular in cross-section, of a bearing-piece comprising a perpendicular portion and means for securing the same to an adjacent plate, lateral extensions and means for securing the same to the webs of said sill or rail, and a lateral strengthening extension formed integral with said perpendicular portion, substantially as set forth.

849,658. BALING-PRESS. JAMES A. CARNEY, Vernon, Tex. Filed Mar. 29, 1906. Serial No. 308,805.

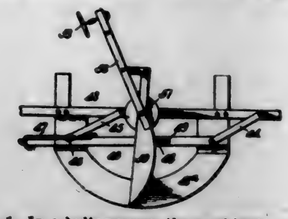

Claim.—1. In a baling-press, the combination with a rotatable baling-box having a plurality of baling-chambers, of a pair of feeding-hoppers for the baling-chambers, and a plunger working through one of said hoppers.

2. In a baling-press, the combination of a pair of feeding-hoppers, a pair of baling-chambers each movable to either one of the hoppers and a plunger forcing the material from one of the hoppers in one chamber while the other chamber is receiving material from the other hopper.

3. In a baling-press, a base-frame, a baling-plunger, a baling-box having a plurality of baling-chambers and rotatable about a vertical axis on the base-frame, and a raised track on the base-frame engaging the baling-box when one of the chambers of said box is located in alinement with the plunger.

4. In a baling-press, a base-frame, a baling-plunger, a baling-box having a plurality of baling-chambers and rotatable about a vertical axis on the base-frame, and a raised track on the base-frame engaging the baling-box when one of the chambers of said box is located in alinement with the plunger, said track having downwardly-turned ends.

5. A baling-press, a baling-box rotatable about a vertical axis and having a plurality of baling-chambers, the side walls of each of which are adapted to swing downwardly, and the top wall of each of which is adapted to swing upwardly.

6. The combination of a baling-chamber with side walls constructed to open, a top wall constructed to open after the side walls, dogs carried by the top and the bottom walls, and the follower-block held by the dogs until the top wall is opened.

7. A baling-press provided with a baling-chamber having hinged side walls, and an oscillatory rod secured to the top of the press and having lateral portions to engage the side walls, and extensions from the lateral portions parallel with the rod to operate the rod.

8. In a baling-box, the combination with the plunger, and the plunger-frame, of a lever pivoted at one end to the plunger, a pair of links pivoted to the plunger-frame, and to the lever intermediate its ends, a cable for operating the lever in one direction, a coil-spring secured to the lever adjacent the plunger and to the plunger-frame and a pair of spring-arms on the plunger-frame to be compressed by the links when the plunger is near its inner position.

9. In a baling-box, the combination with the plunger and the plunger-frame, of a lever pivoted at one end to the plunger, a pair of links pivoted to the plunger-frame and to the lever intermediate its ends, a cable for operating the lever in one direction, a coil-spring secured to the lever adjacent the plunger and to the plunger-frame, a pair of spring-arms on the plunger-frame to be compressed by the links when the plunger is near its inner position, and a cushion in the path of the plunger to cushion the rebound.

10. In a baling-box, the combination with the plunger and the plunger-frame, of a lever pivoted at one end to the plunger, a pair of links pivoted to the plunger-frame and to the lever intermediate its ends, a cable for operating the lever in one direction, a coil-spring secured to the lever adjacent the plunger and to the plunger-frame, a pair of spring-arms on the plunger-frame to be compressed by the links when the plunger is near its inner position, tracks on the plunger-frame, and rollers carried by the plunger and traveling on the tracks.

11. The combination with the frame, of a bar, a pair of links connecting the frame and the bar at different points, and a rotary cam mounted on the frame, and adapted to move the bar in one direction.

12. The combination with the frame, of a bar, a pair of links connecting the frame and the bar at different points, and a rotary cam mounted on the frame and a roller adjustably mounted on the bar and adapted to be engaged by the cam.

13. The combination with the frame, of a bar, a pair of links connecting the frame and the bar, one of said links having a sliding connection with the bar, and a cam adapted to move the bar in one direction.

14. The combination with the plunger and the frame, of a bar, connection between the frame and the bar for causing the bar to move longitudinally and also away from the frame, means for moving said bar and a cable connecting the bar and the plunger.

15. The combination with the plunger and the frame, of a rotary cam mounted on the frame, a bar having connection with the frame for causing the cam to move the bar longitudinally and also away from the axis of the cam and a cable connecting the bar and the plunger.

16. The combination with the frame, of a bar, a pair of links connecting the bar and the frame at different points, and means for moving the bar.

17. The combination with the frame, of a bar, a pair of links connecting the bar and the frame, one of said links having a sliding connection with the bar, and means for moving the bar.

18. The combination with the frame, of a bar, a pair of links connecting the frame and the bar, one of said links having a sliding connection with the bar, a cam adapted to move the bar in one direction, and a roller adjustably mounted on the bar to be engaged by the cam.

19. The combination with the frame, of a bar, a pair of links connecting the frame and the bar at different points, means for moving the bar, and a track on which the bar travels.

20. The combination with the frame, of a bar, a pair of links connecting the frame and the bar, one of the links having a pin-and-slot connection with the bar, and means for moving the bar.

21. In a baling-press, the combination with the plunger, and the plunger-operating mechanism, of a bar, a frame, links connecting the bar and the frame, a cable connecting the bar and the plunger-operating mechanism, and a roller over which said cable travels to maintain the cable in alinement with the plunger-operating mechanism.

849,659. STALK-CUTTER. JOSEPH P. COOPER, Farmersville, Tex. Filed Dec. 7, 1906. Serial No. 346,751.

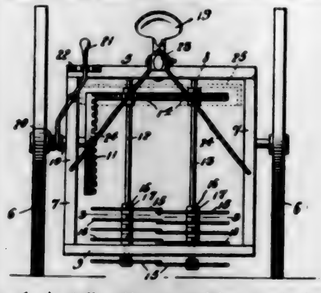

Claim.—1. A stalk-cutter comprising a wheeled frame, a pair of wheel-driven vertical shafts journaled in the frame, a series of cutters mounted on each shaft, and radially-extending gatherer-arms on the shafts between the cutters.

2. A stalk-cutter comprising a wheeled frame, a pair of wheel-driven vertical shafts journaled in the frame, a series of cutters mounted on each shaft and adjustable up and down thereon, and radially-extending gatherer-arms on the shafts between the cutters.

3. A stalk-cutter comprising a wheeled frame, a drive-gear on the axle of one of the wheels, a pair of vertical shafts journaled in the frame, meshing gears on the shafts one of said gears meshing with the drive-gear, a series of cutters on each shaft, and radially-extending gatherer-arms on the shafts between the cutters.

849,660. MAIL-CARRIER'S CART. WILLIAM O. COVEY, Appleton City, Mo. Filed Jan. 23, 1906. Serial No. 297,490.

Claim.—1. A wheel-supported axle, thill-stubs connected therewith, backstays extending rearwardly from said stubs, and extension-bars supported at their front ends upon said stubs and at their rear ends upon the backstays.

2. A wheel-supported axle, thill-stubs connected therewith, backstays connected with and extending rearwardly from the stubs, extension-bars supported upon the stubs and backstays, a vehicle-body, and suspension means connecting said body with the thill-stubs and the extension-bars.

3. A wheel-supported axle, thill-stubs connected therewith, bars extending rearwardly from the thill-stubs, a vehicle-body, and suspension means connecting said body with the thill-stubs and the extension-bars, said means comprising parallel leaf-springs and devices connecting the ends thereof with the stubs and bars.

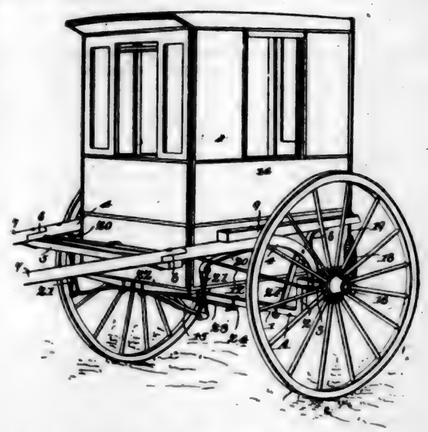

4. A drop-arch axle, thill-stubs connected therewith, leaf-springs connected with the stubs, bars extending rearwardly from the latter, helical springs suspended from the extension-bars, and a vehicle-body connected at its rear end with the helical springs and at its front end with the springs upon the thill-stubs.

5. A drop-arch axle, thill members connected therewith, bars extending rearwardly from the thill members, leaf-springs secured upon the under sides of the latter, helical springs suspended from the extension-bars, a vehicle-body provided with arched springs at its front and rear ends, links connecting the ends of the rear spring with the helical springs, and twisted links connecting the ends of the front spring with the springs upon the under sides of the thill members.

6. In a vehicle of the class described, a drop-arch axle, thill members connected therewith, backstays extending rearwardly from the thill members, extension-bars supported upon the thill members and backstays, springs connected with the thill members and the extension-bars, a vehicle-body having supporting-springs, and suspending means connecting the latter springs with the springs upon the thill members and the extension-bars.

7. A drop-arch axle, thill members connected therewith and having rearward extension-bars, a vehicle-body, springs and suspension means connecting said vehicle-body with the thill members and the extension-bars, and a hook-brace connecting the vehicle-body with the axle.

8. A drop-arch axle having laterally-extending spindle members, thill-stubs connected with said spindle members, and reinforcing-braces connecting the thill-stubs with the arched portion of the axle.

9. A drop-arch axle, a vehicle-body suspended above the axle, and brace means connecting the suspending means with the axle, said means including a device for changing the position of the body with relation to the axle.

10. A drop-arch axle, a vehicle-body suspended above the axle, and means connecting the suspending means adjustably with the axle to regulate the position of the body with relation to the axle.

11. A drop-arch axle, a vehicle-body suspended above the axle, a rock-shaft supported upon the axle and having cranks, links connecting the cranks with the suspending means, and means for adjusting the rock-shaft and for retaining it at various adjustments.

12. A drop-arch axle, thills connected therewith and having rearward extension-bars, a vehicle-body, suspend-

ing means connecting the body with the thills and the extension-bars, a rock-shaft journaled upon the axle and having cranks, links connecting the cranks with the suspending means, an adjusting-lever, a link connecting said lever with one of the cranks upon the rock-shaft, and means for securing the lever at various adjustments.

849,661. AUTOMATIC WHISTLE. WALTER M. COX and ARTHUR M. COX, Cynthiana, Ky. Filed Jan. 22, 1907. Serial No. 353,533.

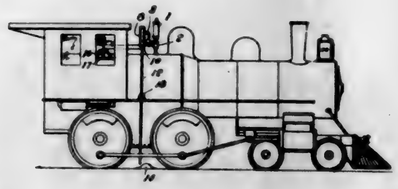

Claim.—1. In an apparatus of the character set forth, the combination with a whistle and its valve, of a bracket supported contiguous to said whistle and provided with two arms, one above the other, an inverted-U-shaped lever having one of its arms bifurcated intermediate of its ends, upon the upper arm of the bracket, a finger fulcrumed intermediate of its ends on the lower arm of the bracket, and having a jointed connection with the lower extremity of the fulcrumed arm of the lever, the lower end of said finger being adapted to actuate the said valve, and a trip-rod adapted to be tripped by a device along the track and having its upper end extending into the space between the said lever and the lower end of the said finger.

2. The combination with a whistle and its valve, of a bracket secured to the base of the whistle and provided with two arms, a lever having spaced arms, one of which is fulcrumed intermediate of its ends on one of the arms of the bracket, a finger fulcrumed intermediate of its ends on the other arm of the bracket and having a loose connection with the fulcrumed arm of the lever, one end of said finger being adapted to actuate the valve, a trip-rod adapted to be actuated by a tripping device along the track and extending into the space between the lever and its finger, means for manually rocking said lever to actuate the whistle independent of the trip-rod, and a manually-released locking device connected with said trip-rod and adapted to hold the same in the position in which it is swung by the tripping device.

3. In combination with a whistle and its valve, of a lever fulcrumed in proximity to the valve and provided with a finger with which it has a jointed connection, said finger being arranged to actuate the valve, the said lever and its finger having different fulcrum-points and the finger being adapted to be moved into operative engagement with the valve when the lever is rocked rearwardly, and a trip-rod adapted to be rocked by a device along the track, the upper end of said trip-rod passing into the space between the lever and its finger and arranged to engage the lever to rock it rearwardly when moved in one direction and to engage the finger of the lever when moved in the opposite direction.

4. The combination with a whistle and its valve, of a finger pivoted intermediate of its ends with one end in proximity to the valve and adapted to actuate the same when such lower end is rocked in one direction, a lever having a loose connection with the other end of said finger and adapted to rock the same, said lever being pivoted with an arm spaced from the first-named end of said finger and a trip-rod adapted to be swung by a device along the track, one end of the trip-rod passing between the lever and said finger and adapted to rock the lever when moved in one direction and to engage the finger when moved in the opposite direction.

849,662. DRIVING AND STEERING MECHANISM FOR MOTOR-VEHICLES. HORATIO G. COYKENDALL, San Jose, Cal. Filed Apr. 6, 1905. Renewed Feb. 18, 1907. Serial No. 358,116.

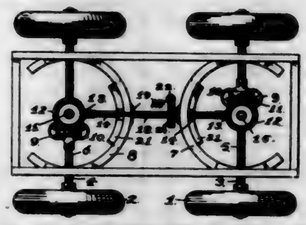

Claim.—1. The combination with the gear mechanism at each end of the vehicle for imparting rotation to the wheels thereof, of horizontally-disposed drive-gears for operating said mechanism, and a longitudinally-disposed rigid drive-shaft for simultaneously actuating each horizontally-disposed drive-gear.

2. The combination with gear mechanism at each end of the vehicle for imparting rotation to the wheels thereof, of horizontally-disposed drive-gears for operating said mechanisms, a continuous rigid longitudinally-extended drive-shaft for simultaneously actuating each horizontally-disposed gear, and means for simultaneously swinging the forward and rear pairs of supporting-wheels for the vehicle.

3. The combination with the front and rear axle of the vehicle, of means for simultaneously swinging the said axles horizontally, driving means situated at each end of the vehicle, and a continuous rigid longitudinally-arranged drive-shaft for actuating said means simultaneously for the propelling of the vehicle.

4. The combination with front and rear axles of a vehicle, separated gear mechanism for imparting movement to the front and rear wheels mounted on said axles, and a continuous rigid longitudinally-extended drive-shaft operatively associated with both gear mechanisms, the said shaft being fixedly supported adjacent opposite ends to the respective axles, in combination with steering mechanism adapted to impart simultaneous movement to the respective axles without interrupting the operation of said gear mechanism.

5. The combination with front and rear axles of a vehicle, of hounds secured to the respective axles, yoke-brackets secured to the respective axles, and a continuous rigid steering-rod fixedly supported upon said brackets and operatively associated with said hounds to simultaneously swing the same.

6. The combination with front and rear axles, of hounds secured to the respective axles, yoke-brackets secured to said axles, a continuous rigid steering-rod fixedly connected to the respective brackets and operatively associated with said hounds to simultaneously swing the same, separated gearing for each axle, and a longitudinally-extended continuous rigid drive-shaft operatively associated with said gearing and fixedly mounted in said brackets.

849,663. PUMP-ROD BOLT. LEO W. CURTIS, Breckenridge, Mich., assignor of one-half to Wm. Mattick, Breckenridge, Mich. Filed Dec. 7, 1906. Serial No. 346,788.

Claim.—1. A device of the character described, comprising a shank provided at one end with an opening extending therethrough, a key pivotally connected to the other end of the bolt and provided at its free end with a tongue adapted to extend through the opening of the shank, and a spring connected to the said key and adapted to bear against the pivoted end of the shank and designed to press the key in a direction to snap the tongue through the opening in the shank.

2. A device of the character described, comprising a shank provided at one end with an opening extending therethrough and at its other end formed with angularly-disposed faces, a key provided with spaced-apart ears between which the angular end of the shank is pivotally mounted, said key being provided with an angularly-disposed tongue adapted to extend through the opening in the shank, and a spring secured to the key and bearing against the angular end of the shank, as and for the purpose set forth.

3. A device of the character described, comprising a shank provided at one end with an opening extending therethrough and formed with angularly-disposed faces at its other end, a key provided with an intermediate portion and two ends extending laterally from the intermediate portion, one of said ends constituting a tongue adapted to be inserted through an opening in the shank, and the other end embodying spaced-apart members formed at one end with ears between which the angularly-formed end of the shank is pivotally mounted, and a spring 8 secured to the last-named end of the key with its free end bearing upon the end of the shank, as and for the purpose set forth.

849,664. RETAINING AND SUPPORTING FRAME FOR WALL-MOLDS. REED DEEDS, Cuyahoga Falls, Ohio. Filed June 25, 1906. Serial No. 323,247.

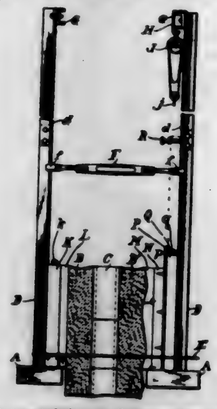

Claim.—1. In a retaining and supporting frame for wall-molds, the combination with uprights comprising separable members having a T-shaped cross-section and adapted to be united longitudinally thereby arranging the flanges of said members correspondingly and practically continuously, of turnbuckles having double hook ends constructed to engage the flanges of said uprights, an angle-iron arranged horizontally and secured to the upper ends of the topmost members of said uprights, a wall-mold, and a hoisting device adapted to raise the mold, substantially as described.

2. In a retaining and supporting frame for wall-molds, the combination with uprights comprising separable members having a T-shaped cross-section and adapted to be united longitudinally thereby arranging the flanges of said members correspondingly and practically continuously, of turnbuckles having double hook ends constructed to engage the flanges of said uprights, an angle-iron arranged horizontally and secured to the upper ends of the topmost members of said uprights, a hoisting device, and a wall-mold comprising separable portions and each portion having devices adapted to engage the hoist whereby each portion may be individually raised, substantially as described.

3. In a retaining and supporting frame for wall-molds, the combination with uprights comprising separable members having a T-shaped cross-section and adapted to be united longitudinally thereby arranging the flanges of said members correspondingly and practically continuously, of turnbuckles having double hook ends constructed to engage the flanges of said uprights, an angle-iron arranged horizontally and secured to the upper ends of the topmost members of said uprights, a hoisting device supported by said angle-iron and horizontally movable thereon, and a wall-mold adapted to be raised by the said hoist, substantially as described.

4. In a retaining and supporting frame for wall-molds, the combination with uprights comprising separable members having a T-shaped cross-section and adapted to be united longitudinally thereby arranging the flanges of said members correspondingly and practically continuously, of turnbuckles having double hook ends constructed to engage the flanges of said uprights, an angle-iron arranged horizontally and secured to the upper ends of the topmost members of said uprights, a hoisting device, and a wall-mold comprising separable portions, one of said portions being a wedge-plate arranged against the uprights upon one side of the mold and adapted to be raised by the hoist, substantially as described.

849,665. COURSE OR TRACK FOR SKATING. ARTHUR F. DEVEREUX, New York, N. Y. Filed Dec. 22, 1906. Serial No. 349,202.

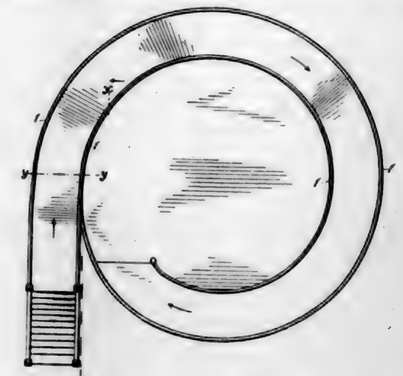

Claim.—1. A track or course for skating having points of maximum and minimum elevation connected by a series of undulations of intermediate elevation.

2. A track or course for skating having a high starting-point and a gradual descending grade broken up into a plurality of undulations.

3. A track or course for skating consisting of an undulating surface with a gradually-descending grade as a whole.

4. In a track or course for skating an elevated starting-point and a downgrade therefrom broken up into undulations.

5. In a track or course for skating an elevated starting-point, an undulating descent therefrom, and a railing for preventing accidental falls therefrom, substantially as set forth.

6. In a skating track or course, the combination of a high starting-point, a descent more or less broken by undulations and means for preventing skaters from accidentally falling from said course.

7. In a track for skating a high starting-point and a descent consisting of a series of variously-curved surfaces whereby the velocity of descent of a skater may be varied.

8. In a skating track or course, the combination of a high starting-point and a descent therefrom, means on such descent to modify the velocity of a skater descending thereon, and guard-rails for preventing accidents.

9. In a track or course for skating a relatively high point for starting, a descent therefrom broken up by undulations and guard-rails at the sides, substantially as set forth.

10. In a track or course for skating an elevated starting-point and means for varying through the effect of gravity the velocity of a skater on said track or course.

849,666. TROLLEY FOR ELECTRIC RAILWAYS. WALTER EDWARDS, Cedargrove, W. Va., assignor of one-third to George W. Keeney and one-third to William H. McQuillan. Filed Oct. 17, 1905. Serial No. 283,158.

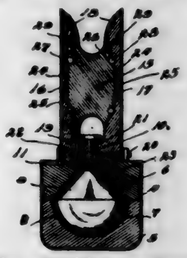

Claim.—A trolley comprising superposed horizontal sections having recesses forming a socket, a head turning in said socket and having an upwardly-projecting shank or stem, a harp composed of two sections having bearing-concavities, one of said sections being provided with an inward extension through which said stem extends, an axieless trolley-wheel having convex sides journaled in said concaved bearing-recesses, a bolt passing through the sections of the harp and through the stem to rigidly connect the latter therewith, and means for pivotally connecting the bracket with a trolley-pole.

849,667. SADDLE-PACK COVER. JOHN A. EVANS, Yellowstone Park, Wyo. Filed Nov. 8, 1906. Serial No. 342,550.

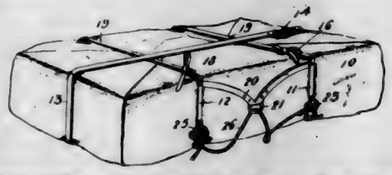

Claim.—The combination with an aparejo having hooks near the top thereof, of a pack-cover comprising a sheet of flexible material, a pair of straps extending across the same and secured thereto, rings on the straps and engageable with the aforesaid hooks, a cross-strap adjacent one of the ends of the aforesaid straps, a ring on the cross-strap, and a rope extending from one of the first-mentioned straps under the lower corners of the aparejo and through the ring on the cross-strap, and made fast to the other strap.

849,668. TRACE. WILLIAM H. FAILOR, Carlisle, Pa. Filed Mar. 24, 1906. Serial No. 307,838.

Claim.—1. The combination with a trace consisting of two sections, one carried by a harness and the other by a vehicle, of a coupling connecting said sections and consisting of detachable members, means for connecting one of said members to a shaft, and means for connecting a holdback to the other of said members.

2. The combination with a trace consisting of two sections, one carried by a harness and the other by a vehicle, of a coupling connecting said sections and consisting of detachable members, a loop upon one of said members, a band upon said loop to loosely engage a shaft, and a loop upon the other of said members to receive a holdback-strap, substantially as described.

3. The combination with a trace consisting of two sections, one carried by a harness and the other by a vehicle, of a coupling connecting said sections and comprising two hollow members having the ends of the trace-sections secured therein, one of said members being formed with recesses or openings, spring-actuated jaws or arms pivotally mounted in the other of said members and adapted to engage said recesses or openings, means upon one of said members to receive a holdback, and means upon the other of said members for attachment to a shaft, substantially as described.

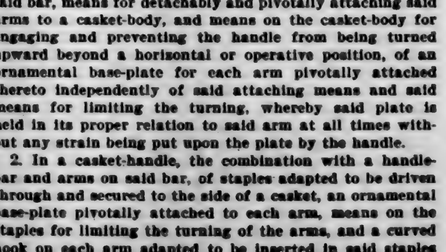

4. The combination with a trace consisting of two sections, one carried by a harness and the other by a vehicle, of a coupling connecting said sections and comprising two hollow members having the ends of the trace-sections secured therein, one of said members being formed with recesses or openings, arms pivoted in the other of said members, a spring between said arms for forcing them apart, lugs upon the beveled outer ends of said arms to enter said recesses or openings, a loop upon one of said members, a band upon said loop for engagement with a shaft, and a loop upon the other of said members to receive a holdback-strap, substantially as shown and described.

849,669. CASKET-HANDLE. WILLIAM T. FISK, Detroit, Mich. Filed Nov. 23, 1905. Serial No. 288,645.

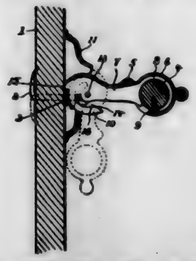

Claim.—1. The combination with a handle-bar, arms on said bar, means for detachably and pivotally attaching said arms to a casket-body, and means on the casket-body for engaging and preventing the handle from being turned upward beyond a horizontal or operative position, of an ornamental base-plate for each arm pivotally attached thereto independently of said attaching means and said means for limiting the turning, whereby said plate is held in its proper relation to said arm at all times without any strain being put upon the plate by the handle.

2. In a casket-handle, the combination with a handle-bar and arms on said bar, of staples adapted to be driven through and secured to the side of a casket, an ornamental base-plate pivotally attached to each arm, means on the staples for limiting the turning of the arms, and a curved hook on each arm adapted to be inserted in said staples when the handles are in a vertical position to pivotally attach the handles to the casket independently of the base-plates and each hook formed concentric with the pivot of its base-plate, whereby said handles may be turned without putting a strain on the base-plates and said plates are held in their proper relation to the arms.

3. In a casket-handle, the combination with a handle-bar and arms on said bar, of staples adapted to be secured to a casket-body, a base-plate for each arm, ears on said base-plates, pivot-pins extending through said ears and arms, a curved hook on each arm formed concentric with the axis of said pivots, and having an extended end provided with a curved edge to engage the eye of the staple in entering the hook therein, and means on the staples for limiting the turning of the arms thereon.

4. In a casket-handle, the combination with a handle-bar, of staples adapted to be secured in the side of a casket, washer-plates on said staples to contact the outer surface of the casket side, handle-arms each formed of cast metal with socket portion at one end and a strengthening-plate extending in its longitudinal center, a ring portion on one end of said plate to embrace the handle-bar, an ornamental base-plate pivotally attached to each arm, a hook formed on each strengthening-plate concentric with said pivot to be engaged with the eyes of the staples and formed with an extended end having a rounded edge to engage the staple in entering the hook and force the arm toward the casket, and a projection on each strengthening-plate to engage the upper edges of the washer-plates and limit the turning of the arms.

849,670. DYNAMO-ELECTRIC MACHINE. SAMUEL S. FORSTER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Nov. 29, 1904. Serial No. 234,759.

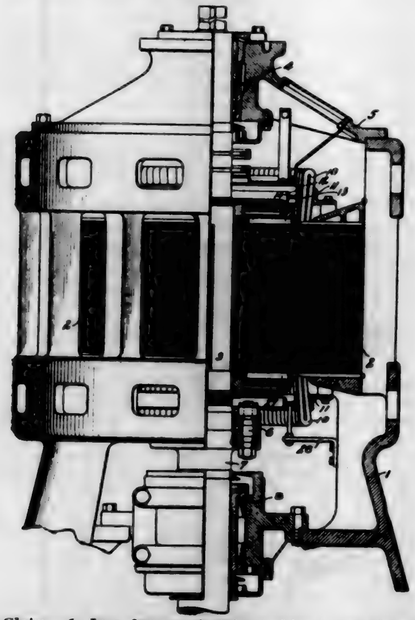

Claim.—1. In a dynamo-electric machine, a core formed of laminæ, end members between which the laminæ are clamped, windings thereon, and means for supporting the end turns or connections comprising an outside cylindrical cover, and internal clamping means, said clamping means comprising a sectional annular member and a second annular member within the first annular member and arranged to expand it, both of said annular members being separable from the core and end members.

2. In a dynamo-electric machine, the combination of a core, windings therein, and means for supporting the end turns or connections comprising an outside cylindrical cover, and internal clamping members, one of said clamping members being formed of segments which engage the end turns or connections, and the other of said clamping members being located within and arranged to support said segments, both of said clamping members being separable from the core.

3. In a dynamo-electric machine, a plurality of conductor portions arranged to form an annular shell, an expansible ring formed of segments the outer surfaces of which engage the conductor portions, an annular member engaging the inner surfaces of said segments, and means independent of said annular member for locking said segments into fixed relation with each other.

4. In a dynamo-electric machine, a plurality of conductor portions arranged to form an annular shell, an annular internal support therefor comprising two annular parts, one of said parts being readily separable from the other.

5. In a dynamo-electric machine, a series of conductor portions arranged to form an annular shell, an annular internal support therefor comprising a portion of slight radial thickness and another portion of considerably greater radial depth normally supporting the first-mentioned portion but readily separable therefrom.

6. In a dynamo-electric machine, an annular core, conductor portions extending therefrom, and an annular internal support for said conductor portions comprising two parts normally engaging but separable from each other, one of said parts being of greater internal diameter than the other.

7. In a dynamo-electric machine, an annular core, conductor portions extending therefrom, an element normally located within said core but removable therefrom, an internal annular support for said conductor portions formed of two parts, said parts being of different internal diameters, the part having the smaller internal diameter being separable from the other part to allow of the removal of said element.

8. In a dynamo-electric machine, an internal field-magnet, an external armature-core, conductor portions extending from one end of said core, and an internal support for said conductor portions comprising an auxiliary part of greater internal diameter than the field and a main part of less internal diameter than said field-magnet normally engaging said auxiliary portion but separable therefrom to allow of the removal of the field-magnet.

9. In a dynamo-electric machine, an internal field-magnet, an external armature-core, conductor portions extending from one end of said core, and an internal support for said projecting conductor portions formed of two parts normally connected together, one of said parts being of less internal diameter than the other from which it is separable to allow of the removal of the field-magnet from its normal position within said armature-core.

10. In a dynamo-electric machine, the combination of a core, windings thereon, and means for supporting the end turns or connections comprising an outside cylindrical cover, an internal expansible ring, and means for expanding said ring comprising an annular member engaging said ring, said annular member being separable from said core.

849,671. DEVICE FOR TESTING THE GERMINATING POWER OF SEED-CORN. ALFRED R. FRANCIS, Kent, Iowa. Filed Oct. 2, 1905. Serial No. 281,026.

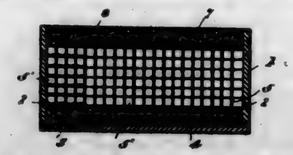

Claim.—1. In a seed-testing device, the combination with a receptacle, of a plurality of crates, each of said crates having a plurality of compartments, located in said

receptacle, a layer of sawdust or like material beneath said crates, pervious cloths between each of the crates, said receptacle having a moisture-discharging opening located slightly above the said layer of sawdust and a layer of sawdust or other absorbent material above the crates.

2. In a seed-testing device, a receptacle having therein a moisture-absorbent material, a series of crates having compartments therein, cloths located between said crates, and a cover of absorbent material.

3. In a device as described, a receptacle having therein a layer of water-absorbent material, means for disposing of surplus water, sectional crates located above said absorbent material, pervious cloths between the crates, and a cover of absorbent material.

4. In a seed-testing device, a receptacle having therein a layer of sawdust, a series of crates located above the sawdust, pervious cloths located between said crates, and a cover of sawdust above the uppermost cloth, all combined.

849,672. FEED MECHANISM FOR WIRE-FENCE MACHINES. PETER FRANTZ, Dixon, Ill. Filed Mar. 28, 1906. Serial No. 308,516.

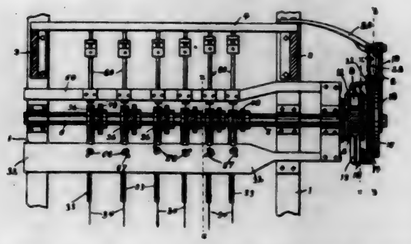

Claim.—1. In a device of the class named, the combination of the transverse rotary shaft 5, suitably mounted in the machine; a series of feed-rolls 36, fixed on the shaft 5; a series of independent feed-rolls 37, supported beneath the rolls 36; the gear-pinion 6, loosely mounted on the shaft 5; the rack-arm 8, actuating the pinion 6; the toothed wheel 15, fixed on the shaft 5; means for operating the rack-arm 8 to give a partial rotation to the pinion 6, and means for imparting the movement of the pinion 6, caused by the upward movement of the rack-arm 8, to the wheel 15, substantially as shown and set forth.

2. In feed mechanism for wire-fence machines, the combination of the rotary shaft 5, suitably mounted in the machine; a series of feed-rolls 36, fixed on the shaft 5; a series of independent feed-rolls 37, supported beneath the rolls 36; the toothed wheel 15, fixed on the shaft 5; the arm 13, loosely supported on the shaft 5; the dog 14, pivotally attached to the end of the arm 13, and engaging the wheel 15; means for holding the dog 14 normally in engagement with the wheel 15; means for giving the arm 13 a partial rotation on the shaft 5; means for holding the dog 14 out of engagement with the wheel 15 during the return movement of the arm 13; and means for holding the wheel 15 from movement while the dog 14 is out of engagement therewith; substantially as shown and for the purpose described.

3. In a device of the class named, the combination of the rotary shaft 5, suitably mounted in the machine; the pinion 6, loosely supported on the shaft 5; the rack-arm 8 actuating the pinion 6; the arm 13, integral with the pinion 6; the dog 14, pivotally supported at the outer end of the arm 13; the toothed wheel 15, fixed on the shaft 5 and engaged by the dog 14; the disk 18, loosely supported on the shaft 5 and provided in its inner face with tracks 25 and 26; the arm 27, secured to the dog 14 and provided with a follower 28 adapted to be engaged by the tracks 25 and 26; means for suitably operating the rack-arm 8; means for holding the disk 18 from turning on the shaft 5; and means for holding the wheel 15 from turning while the dog 14 is disengaged therefrom, substantially as shown and described.

4. In a device of the class named, the combination of the rotary shaft 5, suitably mounted in the machine; the series of feed-rolls 36, fixed on the shaft 5; the angle-plate 32, mounted in the machine, transversely thereof; a series of brackets 40, supported on the angle-plate 32, so as to be vertically adjustable thereon; a series of frames 39, pivotally supported by the brackets 40, and provided with arms 51; a series of feed-rolls 37, rotatably mounted in the free ends of the frames 39; means for forcing the ends of the arms 51 downwardly to increase the pressure of the rolls 37 against the rolls 36; and means for intermittently rotating the shaft 5, substantially as shown and set forth.

5. The combination of the angle-plate 32, suitably mounted in the machine; a bracket 40, fixed to the face of the plate 32; a frame 39, pivotally supported by the bracket 40; a feed-roll 37, rotatably mounted in the free end of the frame 39; the arm 51, integral with the frame 39, and provided with a perforation 52; a pin 53, supported in the perforation 52, and provided with a frame 54; the spring 55, interposed between the frame 54 and arm 51; and means for forcing the pin 53 downwardly, to increase the tension of the spring 55, substantially as and for the purpose named.

6. The combination of the angle-plate 32, suitably mounted in the machine; a bracket 40, fixed to the face of the plate 32; a frame 39, pivotally supported by the bracket 40; a feed-roll 37, rotatably mounted in the free end of the frame 39; the arm 51, integral with the frame 39, and provided with a perforation 52; the pin 53 having its lower end inserted in the perforation 52, and provided with a central frame 54; the spring 55, interposed between the frame 54 and arm 51, on the pin 53; the cylinder 56, mounted in the plate 32, so as to be vertically adjustable therein; the eccentric 58, pivoted in the upper end of the cylinder 56, and adapted to engage the upper end of the pin 53; and means for actuating such eccentric, substantially as shown and for the purpose named.

849,673. MAIL-BAG CATCHING AND DELIVERING APPARATUS. SIMON A. FRASER and FREDRICK S. KLINE, Lorain, Ohio. Filed Jan. 28, 1907. Serial No. 354,433.

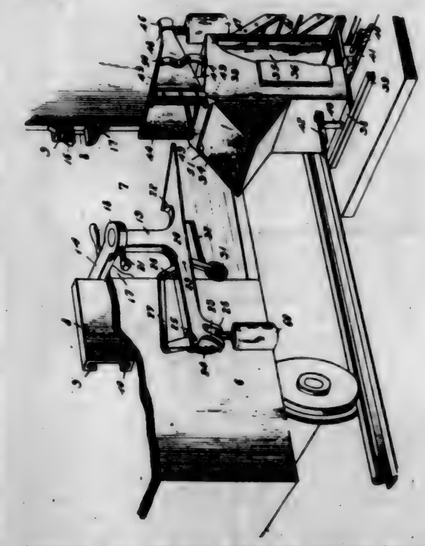

Claim.—1. In a mail-bag catcher and deliverer for cars, in combination, a pair of horizontally-swinging arms hinged to the opposite jambs of the car-door, a device for transferring bags, pivotally connected to the outer ends of the arms, and means for holding the arms swung either in or out.

2. In a mail-bag catcher and deliverer, in combination, a supporting-arm, and a pointed bar carried at the outer end thereof substantially parallel to the side of the car and having a bag-holding latch at its rear end, and a trip-lever carried by the bar and connected to the latch, and arranged to strike an obstacle beside the track, to release the bag.

3. In a mail-bag deliverer, in combination, a horisontal bar carried by the car substantially parallel to the side of the car and having a fork at the rear end, a latch pivoted between the branches of the fork and arranged to hold a bag, and a tripping device connected to the latch and projecting from the bar, and arranged to strike an obstacle beside the track and release the bag.

4. In a mail-bag catcher and deliverer, in combination, a horizontally-swinging arm pivotally supported on the bar beside the doorway thereof, and a bar having catching devices at its front end and delivering devices at its rear end, said bar being detachably suspended from the end of the arm and reversible with respect thereto.

5. In a mail-bag catcher, in combination, a catcher-bar carried by the car, and a split tapered guide supported at the station and having yielding sides and means to hold a bag at the small end thereof, the guide being arranged so that the bar will enter at the large end thereof and pass through the same.

6. In a mail-bag catcher, in combination, a catcher-bar carried by the car, and a tapered guide at the station, formed of opposite spring-supported sides, having means at the small end thereof to support a bag, and arranged so that the bar will pass between said sides.

7. In a mail-bag catcher, in combination, a catcher-bar carried by the car, and a guide at the station, formed of opposite spring-supported side plates tapered to form a neck at the small end, adapted to receive a loop on a mail-bag, and pivotally mounted at their large ends.

8. A mail-bag catching and delivering apparatus for a station, comprising a box having a mouth adapted to receive a bag dropped by the car, a support on top of the box for the outgoing bag, and a guide on the box leading to said support, the box being pivotally mounted to turn its mouth and said guide in opposite directions.

9. A mail-bag catching and delivering apparatus for a station, comprising a receiving-box for the incoming bag, and a delivery device mounted on the box, for the outgoing bag, the box being shiftable laterally to bring the apparatus into or out of position to coöperate with devices carried by the car.

10. In a mail-bag catching and delivering apparatus in combination, a catcher-bar carried by the car and having a latch and trip at its rear end, a receiving-box at the station having a projection in the path of the trip and arranged to release the latch and drop a bag held thereby into the box, and a support upon the box for an outgoing bag, located in the path of the catcher-bar.

11. In a mail-bag catching and delivery apparatus, in combination, an arm projecting from the car, a longitudinally-extending catcher-bar carried by the arm beside the car, and having a pointed front end adapted to enter a loop on a mail-bag, and a trip-actuated bag-holder at the rear end, a box at the station having a mouth at the side, and a ledge at the top adapted to strike the trip and release the holder as the bar passes over the box, and a tapered yielding guide mounted upon the top of the box in line with the bar and having means at its small end to hold a loop on a bag in position to be engaged by the front end of the catcher-bar as it passes through the guide.

12. In a mail-bag catcher and deliverer for cars, in combination, a pair of horisontally-swinging arms hinged to the jambs of the car-door, a bar having bag-transferring devices, pivotally connected to the outer ends of the arms, a guide-rod secured to the outside of the car beside the doorway, a sleeve slidable on the rod, and a link connecting the sleeve and bar.

849,674. FILTER FOR EAVES-TROUGHS. LAWRENCE M. GALLIHER, Plaquemine, La. Filed Aug. 7, 1906. Serial No. 329,608.

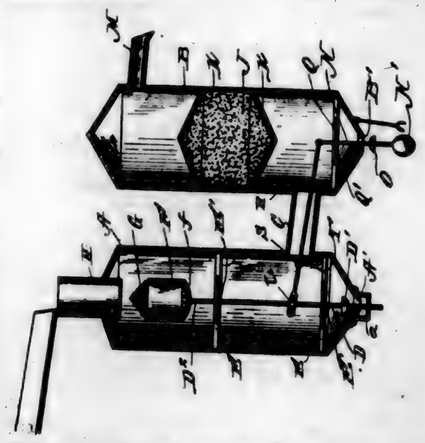

Claim.—1. A filtering apparatus for eaves-troughs, &c., comprising two communicating tanks, a bucket-actuated valve adapted to regulate an exit-opening in one of said tanks, a valve regulating an exit in the other tank, lever and rod connections between said valves in the two tanks, as set forth.

2. A filtering apparatus for eaves-troughs, &c., comprising two communicating tanks, valves controlling exit-openings in the lower ends of the tanks, a bucket mounted in one of said tanks and connected to the valve in the lower end thereof, a tilting lever having connections with said valves and extending through the communicating passage-way between the two tanks, as set forth.

3. A filtering apparatus for eaves-troughs, &c., comprising two communicating tanks, valves controlling exit-openings in the lower ends of the tanks, a bucket mounted in one of said tanks and connected to the valve in the lower end thereof, a tilting lever pivotally mounted in one of the tanks and extending through the communicating passage-way between the two, a rod connected to the end of said lever, a valve provided to said rod and adapted to close an exit-aperture in the bottom of one of the tanks and a weight secured to said rod, connections between said lever and the valve in the tank containing said bucket, as set forth.

4. A filtering apparatus for eaves-troughs, &c., comprising two tanks having a pipe communicating between the same, a bucket mounted in one of said tanks, a valve controlling an opening in the bottom of the tank containing said bucket, rod connections between said valve and bucket, a bracket-arm mounted within one of the tanks, a lever fulcrumed over said bracket-arm and extending through the pipe communicating with the tank, one end of said lever connected to said rods and the bucket containing the tank, a weighted rod secured to one end of said lever, a valve fixed to said weighted rod outside the other tank, said weighted member designed to overbalance the bucket and connections thereto, when said bucket is empty, as set forth.

849,675. WAGON-TOP. WILSON S. GILLELAND and WILLIAM D. STANLEY, Newkirk, Okla. Filed Apr. 3, 1906. Serial No. 309,647.

Claim.—1. The combination with a vehicle-body of horizontal rods secured to the sides thereof, T-couplings slidably mounted on said rods and arranged in opposite pairs, transverse bows having their ends secured in said couplings, upper and lower sets of rule-joint braces connected to the bows at the sides thereof, and a cover for said bows.

2. The combination with a vehicle-body of horizontal rods secured to the sides thereof, transverse bows slidably carried by said rods, a front bow pivotally carried by said rods, means for limiting the movement of the front bow to a pivotal movement and a cover for all said bows.

3. The combination with a vehicle-body of horizontal rods secured to the sides thereof, T-couplings slidably mounted on said rods, transverse bows having their ends secured to said T-couplings, rule-joint braces connecting every two bows, a front bow, T-couplings mounted on said rods near the front thereof and provided with set-screws to hold them stationary, said last-named couplings having a pivotal connection to the front bow, and a cover for said bows.

4. The combination with a vehicle-body of horizontal rods secured to the sides thereof, T-couplings slidably mounted on said rods, transverse bows having their ends secured to said T-couplings, rule-joint braces connecting every two bows, a front bow, T-couplings mounted on said rods near the front thereof and provided with set-screws to hold them stationary, said last-named couplings having a pivotal connection to the front bow, a cover for said bows, and a strap secured to the front bow and designed to extend around the other bows in folded position.

849,676. DISPLAY-STAND. JOHN B. GORDON, Atlanta, Mo. Filed Apr. 2, 1906. Serial No. 309,394.

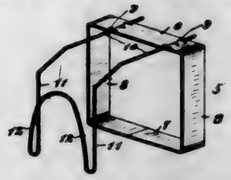

Claim.—1. A display-stand for boxes, comprising a box-support, and a lid-holder, the latter comprising a wire extending outwardly from the support, and then bent downwardly to form a supporting-leg, and upwardly to form a loop to receive the lid.

2. A display-stand for boxes, comprising a flexible box-supporting frame capable of being bent to different heights, and a lid-holder, the latter comprising a wire extending outwardly from the support, and then bent downwardly to form a supporting-leg, and upwardly to form a loop to hold the lid.

849,677. COMBINED TROUSERS-CLASP AND BELT-HOLDER. BENJAMIN A. GROTZ, St. Louis, Mo. Filed Aug. 15, 1906. Serial No. 330,683.

Claim.—1. As a new article of manufacture, a trousers-clasp body, having a backwardly-extending hook, and a depending curved prong projecting outwardly and downwardly from said clasp-body in front of the hook and adapted to engage the tongue of a belt-buckle, substantially as and for the purpose set forth.

2. A trousers-clasp body, having a backwardly-extending hook, and a depending curved prong formed integral therewith and projecting outwardly and downwardly from said clasp-body in front of the hook and adapted to engage the tongue of a belt-buckle, substantially as and for the purpose set forth.

849,678. FORCE DRAFT. NATHAN S. V. HAMEL, Portland, Me. Filed Nov. 20, 1905. Serial No. 288,106.

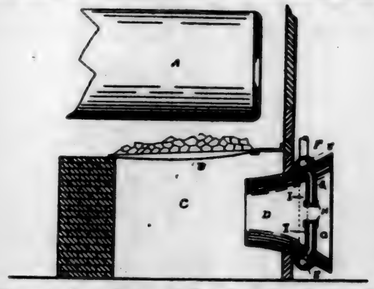

Claim.—1. In a device of the class described, a draft-pipe, a conduit formed integral therewith and extending circumferentially around it, a supply-pipe opening into said conduit and service-pipes within the draft-pipe and leading out of said conduit, said service-pipes being each provided with a series of perforations on the inside thereof, whereby the steam-jets are projected at varying distances from the center of the draft-pipe.

2. In a device of the class described, a tapering draft-pipe, a conduit formed integral therewith and extending circumferentially around it, a supply-pipe opening into said conduit and service-pipes within the draft-pipe and leading out of said conduit, said service-pipes being provided with a series of perforations on the inside thereof and bent to lie in a vertical plane, whereby the steam-jets are projected parallel with the center of the draft-pipe.

849,679. LAMP-BURNER. ALEXANDER H. HANDLAN, Jr., St. Louis, Mo. Filed Feb. 25, 1907. Serial No. 359,059.

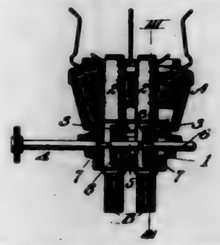

Claim.—1. In a lamp-burner, the combination with a burner-body and a plurality of wick-tubes of wick raising and lowering means, comprising wick-adjusting members independent of each other entering into said wick-tubes and a shaft rotatably and longitudinally shiftably mounted in said body passing through said members and having portions adapted to engage said members or operate freely therein, substantially as set forth.

2. In a lamp-burner, the combination with a burner-body and a plurality of wick-tubes of wick raising and lowering means, comprising wick-adjusting members independent of each other entering into said tubes and containing non-circular apertures and a shaft rotatably and longitudinally shiftably mounted in said body passing through said members and having portions adapted to engage said members or operate freely therein, substantially as set forth.

3. In a lamp-burner, the combination with a burner-body and a plurality of wick-tubes of wick raising and lowering means, comprising a plurality of spur-wheels independent of each other entering into said tubes and containing non-circular apertures and a shaft rotatably and longitudinally shiftably mounted in said body passing through said spur-wheels and having portions adapted to engage said spur-wheels or operate freely therein, substantially as set forth.

4. In a lamp-burner, the combination with a burner-body and a plurality of wick-tubes of wick raising and lowering means comprising a plurality of spur-wheels independent of each other entering into said tubes and containing non-circular apertures and a shaft rotatably and longitudinally shiftably mounted in said body and having circular and non-circular portions adapted to enter said spur-wheels, substantially as set forth.

5. In a lamp-burner, the combination with a burner-body and a plurality of wick-tubes of wick raising and lowering means, comprising wick-adjusting members independing of each other entering into said wick-tubes and a shaft rotatably and longitudinally shiftably mounted in said body passing through said members and having portions adapted to engage said members or operate freely therein and guards for restraining said adjusting members from movement longitudinal of said shaft, substantially as set forth.

6. In a lamp-burner, the combination with a burner-body and a plurality of wick-tubes of wick raising and lowering means comprising a plurality of spur-wheels independent of each other entering into said tubes and containing non-circular apertures and a shaft rotatably and longitudinally shiftably mounted in said body and having circular and non-circular portions adapted to enter said spur-wheels and guards for restraining said spur-wheels from movement longitudinal of said shaft, substantially as set forth.

849,680. GATE-LATCH. THOMAS E. HARNER, St. Louis, Mo. Filed Oct. 31, 1905. Serial No. 285,355.

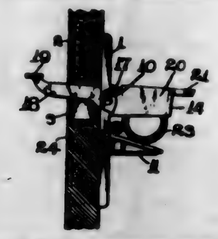

Claim.—A gate-latch, constructed with a plate, a second plate arranged for vertical adjustment in the first-mentioned plate, an arm having an inclined top surface integral with and projecting outwardly from the adjustable plate, a housing carried by the adjustable plate, a locking-ring arranged in said housing and normally resting on the inclined surface of the arm, a lug integral with the housing and projecting through the ring, a lever fulcrumed on the adjustable plate opposite the housing, and a lug integral with said lever and extending through the ring; substantially as specified.

849,681. PUTTY-REMOVER. WALTER H. HAUVER, Newport, Vt., assignor of one-half to William C. Lindsay, Newport, Vt. Filed Apr. 23, 1906. Serial No. 313,353.

Claim.—1. In an implement of the class described, a stock having a curved bearing-surface and with a transverse guideway near said bearing-surface, an operating-handle extending from said stock at one end, a head member adjustably disposed through said guideway and provided with transverse sockets, cutters adjustably disposed in said sockets with their operating ends extending in advance of the bearing-face of said stock, means for adjustably securing said head in said guideway, and means for adjustably securing said cutters in said sockets.

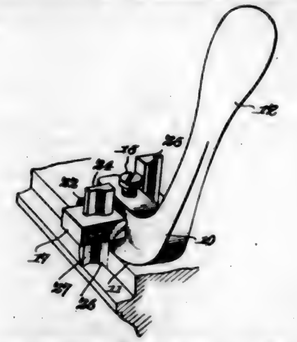

2. In an implement of the class described, a stock having a curved bearing-surface and with a transverse guideway near said bearing-surface, an operating-handle extending from said stock at one end, a head member adjustably disposed through said guideway and provided with transverse sockets, spaced apart and enlarged at their adjacent ends, cutters having their stocks corresponding to and movably engaging said sockets and with their operating ends extending one at a time below the bearing-surface of said stock, means for adjustably securing said head in said stock-guideway, and means for adjustably securing said cutters in said sockets.

849,682. VEHICLE-BRAKE. WILLIAM E. HEAVLIN and CLIFFORD S. HEAVLIN, Bowerston, Ohio. Filed Aug. 14, 1906. Serial No. 330,575.

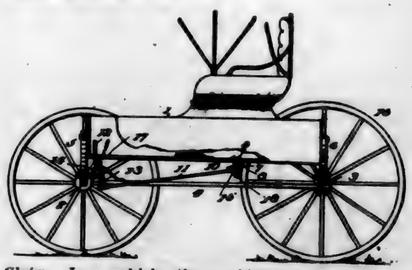

Claim.—In a vehicle, the combination of running-gear comprising front and rear axles, a reach connecting the said axles, and front and rear springs mounted upon the respective axles, a body mounted upon the said springs and having a limited longitudinal play with reference to the running-gear and both axles thereof, a brake-beam mounted in bearings upon the vehicle-body and having terminal crank-arms provided with brake-shoes arranged to bear against the wheels and provided with an intermediate arm of less length than said crank-arms, a brake-setting lever mounted upon the running-gear, means for locking said lever to the running-gear in an adjusted position, and a rigid operating-rod attached at one end to the brake-setting lever and having connection at the opposite end with the said intermediate arm of the brake-beam, the parts being arranged to operate substantially in the manner specified.

849,683. SUN-DIAL. EDWARD G. HEWITT, New York, N. Y. Filed Oct. 18, 1905. Serial No. 283,238.

Claim.—1. The combination with a sun-dial, of a vertical column, a casing surrounding the column, means for

relative adjustment between said column and casing, a cap on the column, a hollow spherical body on the column and connected thereto by a bolt passing through the cap and body, a hemispherical support for the sun-dial adjustably mounted on said body and inclosing the same, and means for securing said body and support together in adjusted position.

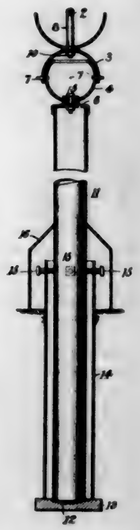

2. The combination with a sun-dial, of a support a spherical body rigidly connected thereto, a hollow, hemispherical support for the dial adjustably mounted on the said body and inclosing the same, and means for securing said body and support together in adjustable position.

849,684. ELECTRIC SWITCH. EDWARD M. HEWLETT, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed May 1, 1901. Serial No. 58,242.

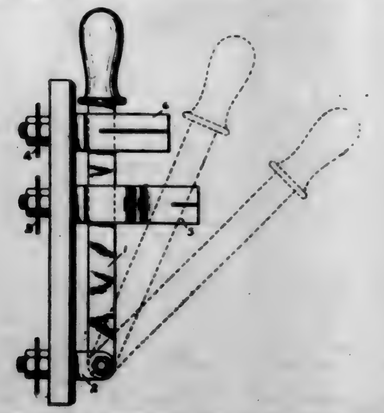

Claim.—1. In combination with an electric motor, two automatic cut-outs of different current-carrying capacity and means for cutting said cut-outs into circuit with the motor consecutively and compelling the cut-out of lesser current-carrying capacity to be cut in later than the other.

2. The combination of an electric motor, with a switch having a single open position, two thermal cut-outs of different current-carrying capacity, and means for compelling the transfer of the current from that of greater current-carrying capacity to that of lesser each time the circuit through said motor is closed.

849,685. INK-SAVING ADJUSTMENT. FRANK C. JOHNSON, Portland, Me. Filed Oct. 6, 1905. Serial No. 281,617.

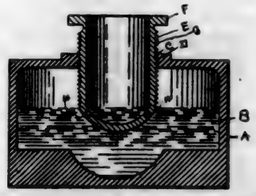

Claim.—The combination with an ink-well having a threaded bushing therein of an ink-well stopper comprising an externally-threaded cylindrical cap having a projecting flange at the top, openings in the bottom and an air-duct in its vertical wall, whereby when the cap is screwed home the air-duct is closed by said projecting flange.

849,686. FURNACE. NELS JOHNSON, Spokane, Wash. Filed July 16, 1906. Serial No. 326,482.

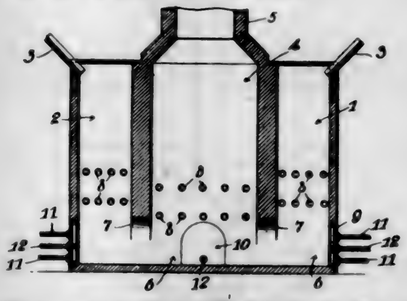

Claim.—1. An apparatus of the character described comprising primary furnaces, a secondary furnace interposed therebetween, said furnaces communicating at the bottoms thereof, means for directing air-blasts downward into the tops of the primary furnaces, a stack extending from the top of the secondary furnace, and twyers opening into the primary and secondary furnaces.

2. An apparatus of the character described comprising a secondary furnace, primary furnaces disposed at opposite sides thereof, said furnaces communicating through a slag-pit disposed thereunder, means for directing an air-blast downward into the primary furnaces, a stack extending upward from the secondary furnace, twyers opening into each furnace above the slag-pit, and a breast-jacket within one wall of each furnace.

3. An apparatus of the character described comprising a secondary furnace, a stack extending upward therefrom, primary furnaces at opposite sides of the secondary furnaces, a slag-pit extending under said furnaces, said furnaces communicating through the slag-pit, means for directing air-blasts downward into the tops of the primary furnaces, twyers opening into all of the furnaces adjacent the slag-pit, and a hollow breast-jacket in a wall of each furnace, and means for establishing circulations of fluid thereto.

4. In an apparatus of the character described the combination with a secondary furnace; and a stack extending therefrom; of primary furnaces at opposite sides of the secondary furnace, a slag-pit extending beneath and constituting a means of communication between the bottoms of the furnaces, means for directing a blast downward into each primary furnace from the top thereof, twyers opening into the lower portions of the furnaces, a breast-jacket in one wall of each furnace, a tap-pipe extending from each furnace, and means for establishing a circulation of fluid through each breast-jacket.

5. In an apparatus of the character specified comprising primary furnaces and an intermediate or secondary furnace, said furnaces communicating through arches at the bottoms thereof, means for directing air-blasts downward into the tops of the primary furnaces, a stack extending from the top of the secondary furnace, and twyers, opening into the primary and secondary furnaces.

849,687. ICE-DOOR. RICHARD E. JONES, Hagerstown, Md. Filed Nov. 9, 1905. Serial No. 286,570.

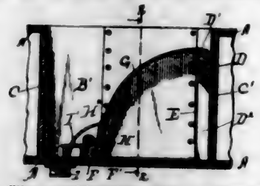

Claim.—1. The combination with a storage-room provided with an opening, of a chute provided with inclined top and bottom, secured in said opening, a V-shaped block secured to one of the sides of the room, and a curved door hinged to said block, a register secured to the outside, a lever connected to said door, and adapted to engage said register, for the purpose described.

2. The combination with a storage-room, provided with spaced walls, of an opening formed in said wall, a chute secured in said opening provided with an inclined top and bottom, a V-shaped block secured to the outside wall, a spring-actuated curved door hinged to said block, and a rod secured to said door, adapted to engage the register, for the purpose described.

849,688. COMBINED CHURN AND BUTTER-WORKER. GODFREY J. KAPLAN, Owatonna, Minn., assignor, by direct and mesne assignments, to Perfection Churn Company, a Corporation of Minnesota. Filed Aug. 6, 1906. Serial No. 329,385.

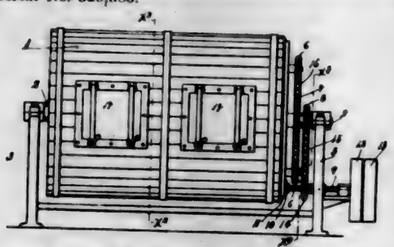

Claim.—1. The combination with a horizontally-disposed rotary drum having an axially-disposed abutment, of a paddle-roller mounted within said drum between said abutment and the peripheral shell thereof, and means for rotating said drum and roller in the same directions, substantially as described.

2. The combination with a horizontally-disposed rotary drum having a fixed central abutment, of a paddle-roller mounted within said drum between said abutment and the peripheral shell of the drum, and means for rotating said drum and said roller in the same direction, the latter at a relatively high rate of speed, substantially as described.

3. The combination with a horizontally-disposed rotary drum having an axially-disposed abutment fixed to the heads thereof, and which abutment is angular in cross-section, a paddle-roller mounted to work in said drum parallel with and adjacent to one of the angular projecting edges thereof, and means for rotating said drum and roller in the same directions, substantially as described.

4. The combination with a horizontally-disposed rotary drum having an axially-disposed abutment fixed to the heads thereof, a plurality of paddle-rollers carried by and working within said drum and coöperating in succession with said abutment, and means for rotating said drum and said rollers in the same direction, substantially as described.

5. The combination with a horizontally-disposed rotary drum having fixed to the heads thereof an axially-disposed abutment that is angular in cross-section, a plurality of paddle-rollers carried by and working within said drum, said rollers being located each adjacent to one of the projecting angular edges of said abutment, and means for rotating said drum and said rollers in the same direction, substantially as described.

6. The combination with a horizontally-disposed rotary drum having fixed to the heads thereof an axially-disposed abutment that is approximately square in cross-section, a pair of paddle-rollers carried by and working within said drum, said paddle-rollers being located diametrically opposite to each other in a plane that intersects the axis of the drum and two of the projecting edges of said abutment, and means for rotating said drum and said rollers in the same direction, substantially as described.

7. The combination with a horizontally-disposed rotary drum having a central abutment, of a plurality of paddle-rollers carried by and working within said drum and having projecting shafts equipped at their ends with sprockets, a pair of intermediate sprockets mounted on the projected axis of the drum at the exterior thereof, a power-driven sprocket-shaft, having a sprocket and a pinion, a sprocket-chain running over the sprocket of said shaft and over one of said intermediate sprockets, another sprocket-chain running over the other intermediate sprocket and over the roller-sprockets, and a ring-gear carried by said drum and meshing with the pinion of said power-driven shaft, substantially as described.

849,689. HARVESTING-MACHINE ATTACHMENT. OLE L. KLEVEN, East Grand Forks, Minn. Filed Apr. 9, 1906. Serial No. 310,672.

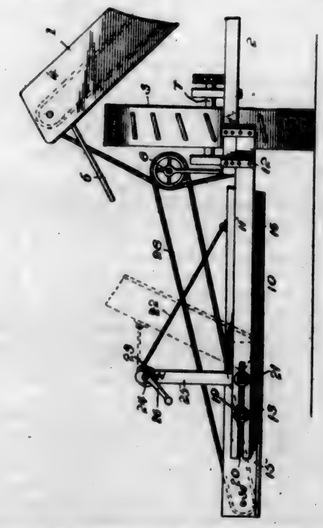

Claim.—1. The combination with a harvester, of a carrier mounted to receive the discharge from said harvester,

and means for shifting said carrier out of the path of the discharge from said harvester.

2. The combination with a harvester, of means mounted thereon for depositing every other row of flax or the like cut by it upon the ground, and for depositing the other alternate rows of flax upon the tops of the immediately-preceding rows of flax already deposited upon the ground, substantially as set forth.

3. The combination with a harvester, of an endless carrier having a swinging section to receive the discharge from said harvester, means for elevating said swinging section out of the path of the discharge from said harvester, means for driving said endless carrier, and means for throwing said driving means into and out of operation.

4. The combination with a harvester and its discharge element, of a flax or grain receiving means extending laterally with respect to the line of travel of the harvester and having an inner retractable section disposed adjacent to said discharge element to receive the flax or grain discharged from said element, and means for moving said retractable section out of the path of the discharge from said element.

5. The combination with a harvester and its discharge element, of a flax or grain receiving means extending laterally with respect to the line of travel of the harvester and having an inner retractable section disposed adjacent to said discharge element to receive the flax or grain discharged from said element, said retractable section being mounted for swinging movement to permit its free inner end to be elevated out of the path of the discharge from said element.

6. The combination with a harvester, of a carrier extending laterally with respect to the line of travel of the harvester, the inner end of said carrier being mounted for vertical swinging movement and adapted to receive the discharge from said harvester, and means for elevating the inner ends of said carrier out of the path of the discharge from said harvester and holding it in such elevated position.

7. The combination with a harvester, of a carrier extending laterally with respect to the line of travel of the harvester, the inner end of said carrier being mounted for vertical swinging movement and adapted to receive the discharge from said harvester, and a cable and windlass for elevating the inner end of said carrier to support it out of the path of the discharge from said harvester.

8. The combination with a harvester, of a supporting-frame extending laterally with respect to the line of travel of the harvester, a swinging frame pivoted at its outer end upon said supporting-frame, a carrier mounted in said supporting and swinging frames, the inner end of said carrier upon said swinging frame being adapted to receive the discharge from said harvester, and means for elevating the inner end of said swinging frame and the inner end of said carrier to hold the latter out of the path of the discharge from said harvester.

9. The combination with a harvester or the like, of a supporting-frame detachably mounted thereon and extending laterally with respect to the line of travel of the same, a carrier-frame slidably and adjustably mounted upon the supporting-frame and having a vertical swinging section at its inner end, an endless carrier mounted on said carrier-frame and having its inner end movable with the swinging section of the latter, said inner end of the carrier being adapted to receive the discharge from the harvester, and means for raising the swinging section of the carrier-frame and the inner end of the carrier out of the path of the discharge from the harvester and for holding the same in an elevated position.

10. The combination with a harvester or the like having a frame, a driving-shaft and a discharge element, of a supporting-frame upon said harvester-frame and projecting laterally with respect to the line of travel of the harvester, a carrier-frame mounted in the outer end of said supporting-frame, and adjustable toward and from the harvester, a swinging section upon the inner end of the carrier-frame, rollers in said carrier-frame and its said swinging section, an endless apron or carrier passed around said rollers, the inner end of said apron or carrier being disposed beneath the discharge element of the harvester and adapted to receive the discharge therefrom, means for elevating the inner end of the swinging section of the carrier-frame and the inner end of the apron or carrier to hold the latter out of the path of the discharge from said element, and means for driving said rollers from the driving-shaft of the harvester, substantially as described.

11. An attachment of the character described comprising a supporting-frame for detachable connection to a harvester or the like, a carrier-frame slidably and adjustably mounted upon the outer portion of the supporting-frame, a swinging frame-section at the inner end of said slidably and adjustably mounted carrier-frame, an endless carrier mounted in said carrier-frame and its swinging section, and means for raising and lowering the swinging section of the carrier-frame and the inner end of the endless carrier and holding the same in an elevated position, substantially as shown and for the purposes set forth.

12. An attachment of the character described comprising a supporting-frame for detachable connection to a harvester or the like, a carrier-frame slidably and adjustably mounted upon the outer portion of the supporting-frame, a swinging frame-section at the inner end of said slidably and adjustably mounted carrier-frame, rollers in said carrier-frame and its swinging section, an endless carrier-apron passed around said rollers, a windlass mounted upon the slidably and adjustably mounted outer section of the carrier-frame, and a cable connecting said windlass to the free inner end of the swinging section of the carrier-frame, substantially as shown and for the purposes set forth.

849,690. YELLOW WOOL-DYE. AUGUST L. LASKA, Offenbach-on-the-Main, Germany, assignor to Chemische Fabrik Griesheim-Elektron, Frankfort-on-the-Main, Germany, a Corporation. Filed Nov. 6, 1906. Serial No. 342,174. (Specimens.)

Claim.—1. The process of manufacturing yellow wool dyestuffs consisting in combining the diazotized paratoluidin meta-sulfonic acid ($CH_3.NH_2.SO_3H$—1.4.3) with pyrazolon derivatives of the general formula:

$$COOH.C_3H_2ON_2.C_6H_4X,$$

wherein X means a hydrogen atom or a sulfo group.

2. As a new article of manufacture the yellow wool dyestuffs, obtained by combining the diazotized paratoluidin meta-sulfonic acid ($CH_3.NH_2.SO_3H$—1.4.3) with prazolon derivatives of the general formula:

$$COOH.C_3H_2ON_2.C_6H_4X,$$

wherein X means a hydrogen atom or a sulfo group, forming yellow powders, dissolving in concentrated sulfuric acid to an orange solution, in water to a yellow one, which is hardly altered by the addition of caustic-soda lye or hydrochloric acid.

849,691. SHEEP-BRANDING MACHINE. JACOB A. MAGELSSEN, Melville, Mont. Filed Mar. 3, 1906. Serial No. 304,079.

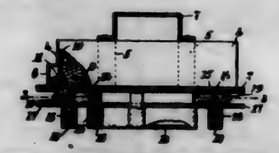

Claim.—1. A branding-machine comprising hollow type, tubular extensions telescoping in the hollow type, a reservoir for containing a marking-fluid, and means for feeding the marking fluid from the reservoir to said telescoping extensions.

2. A branding-machine comprising hollow type and telescoping extensions therefor, and a reservoir for containing a marking fluid, said extensions being provided with valves for controlling the supply of marking fluid from the reservoir to the said extensions.

3. In a branding-machine, the combination of two flat plates, each having hollow extensions which telescope, a reservoir for containing a marking fluid, means for feeding the marking fluid to the said extensions, and an air-cushion between said plates, substantially as described.

4. In a branding-machine, the combination of two flat plates, each having hollow extensions which telescope, a reservoir for containing a marking fluid, valves for controlling the supply of marking fluid to the extensions, and an air-cushion between said plates, one of said extensions having an absorbent face.

5. In a branding-machine, the combination of a plurality of flat plates, each having hollow extensions which telescope, the extensions of one plate having absorbent facings, and the extensions of the other plate having valved openings communicating therewith, and a reservoir in communication with the upper plate.

6. In a branding-machine, the combination of a flat plate having depressions and valved openings therein, hollow extensions communicating with said openings, hollow type in which the extensions telescope, and a reservoir communicating with said depressions.

7. In a branding-machine, the combination of a flat plate having depressions, and valved openings therein, hollow extensions communicating with said openings, a reservoir communicating with said depressions, and hollow type, said hollow extensions telescoping with the hollow type, the latter having absorbent faces.

8. In a branding-machine, the combination of two plates each having hollow extensions projecting from its under face, said extensions telescoping in one another, a yielding body between the said plates, a reservoir for containing a marking fluid, and means for feeding the marking fluid from the reservoir to the said extensions.

9. In a branding-machine, the combination of a plate having communicating depressions in its upper face and valved openings in said depressions, said plate also having hollow extensions projecting from its lower face around said openings, a reservoir for supplying a marking fluid to said plate, a second plate provided with depending hollow type in which the extensions of the first plate telescope, and an air-cushion between said plates.

10. In a branding-machine, the combination of a frame having communicating depressions and openings in its bottom and provided at one end with a chamber communicating with one depression, and with hollow extensions projecting from the under face of its bottom around the openings thereof, a reservoir on the frame and having a spout projecting into the chamber of the frame, and hollow type into which the said extensions telescope.

849,692. DOOR-CATCH. GEORGE W. MALLORY, Detroit, Mich. Filed Apr. 23, 1906. Serial No. 313,132.

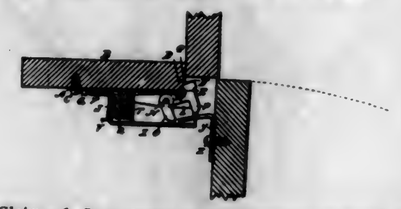

Claim.—1. In a device of the character described, the combination of a base-plate adapted to be secured to a door-casing, of a housing guided on said plate, a spring interposed between the rear wall of the housing and a shoulder on the base-plate, a dog pivoted in the housing and coöperating with the base-plate and a plate carried by the door adapted to trip the dog.

2. In a device of the character described, the combination of a base-plate formed with guides adapted to be secured to a door-casing, of a housing movable in said guides, a wall on the base-plate, a coil-spring interposed between said wall and the rear wall of the housing, a dog pivoted in the housing and coöperating with the base-plate to lock the housing in one position, fingers on said dog and an apertured plate carried by the door coöperating with said fingers to trip the dog.

3. In a device of the character described, the combination of a base-plate formed with longitudinal guides, a housing formed with lateral flanges sliding in said guides, a spring for normally holding said housing retracted, a dog formed with fingers pivoted in the housing, a shoulder on said dog coöperating with the base-plate and an apertured plate on the door coöperating with said fingers to trip the dog.

4. In a device of the character described, the combination of a base-plate formed with guides, a housing formed with lateral flanges traveling in said guides, a dog pivoted in said housing, a shoulder on said dog coöperating with a lip on the base-plate, a coil-spring within the housing for normally holding the same retracted, a lever for locking the housing in its retracted position and a plate on the door to trip the dog.

5. In a device of the character described, the combination of a base-plate formed with guides along its sides and stops at one end, shoulders terminating in spurs at its opposite end and a wall struck up from the base-plate at its middle, a housing movable in said guides, a coil-spring interposed between said wall and the rear wall of the housing, a dog pivoted in the housing and coöperating with the base-plate, fingers on said dog, an apertured plate carried by the door coöperating with said fingers to trip the dog and a lever for locking said housing.

6. In a device of the character described the combination of a base-plate formed with guides and a transverse wall struck up therefrom, a housing formed with lateral flanges traveling in said guides, a coil-spring interposed between said wall and the rear wall of the housing having a slot formed therein, a dog pivoted in the housing on a transverse pin, a slotted lever projecting through said slot and loosely engaging said pin, a finger-piece and a locking-lug on the free end of said lever coöperating with an aperture in the base-plate to lock the housing in its retracted position and a lug in said slots frictionally engaging said lever.

7. In a device of the character described, a base-plate, a movable member guided on said plate, a dog formed with fingers pivoted in the movable member and adapted to hold said member in its projected position, a spring for holding said member in its retracted position, and an apertured plate coöperating with the fingers to trip the dog and formed with a curved base adapted to be secured to a door.

849,693. TRIMMING FOR THE EDGES OF FABRICS. JOSEPH D. MORLEY, Utica, N. Y., assignor to Robert W. Scott, Leeds Point, N. J., and Louis N. D. Williams, Ogonts, Pa. Filed May 31, 1906. Serial No. 319,614.

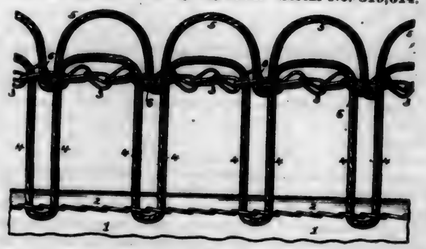

Claim.—1. Fabric-trimming comprising a row of stitches on the fabric, a row of stitches beyond the edge of the fabric, a thread passing back and forth between said rows of stitches and engaging with each, and a festoon-thread engaging the outer row of stitches only, and penetrated by stitches of said outer row in order to securely retain it at different points of connection therewith, substantially as specified.

2. Fabric-trimming comprising a row of stitches on the fabric, a double row of stitches beyond the edge of the

fabric, a thread passing back and forth between the rows of stitches and engaging with each, and a festoon-thread enveloped by stitches of one of the outer rows, and penetrated by stitches of the other of said outer rows, substantially as specified.

3. Fabric-trimming comprising an inner row of stitches on the fabric, a row of straight stitches and a row of zigzag stitches beyond the edge of the fabric, a thread passing back and forth between the inner and outer rows of stitches and engaging with each, and a festoon-thread engaging the outer rows of stitches only, said festoon-thread being enveloped by the zigzag stitches and penetrated by the straight stitches, substantially as specified.

849,694. BUILDING-BLOCK FOR CHIMNEYS. EDGAR C. NEWELL, Hoopeston, Ill. Filed Feb. 21, 1906. Serial No. 302,279.

Claim.—A chimney building-block comprising outer and inner walls spaced apart, the top and bottom of the respective walls being located above and below each other, so as to break joints, and connections between said walls, the connections being of less height than either wall, so that when set up openings between the connections are formed allowing circulation around the chimney, between the walls.

849,695. WAGON-REACH. JOHN A. NYBERG, Oakville, Iowa. Filed May 31, 1905. Serial No. 263,057.

Claim.—1. The combination with a front and rear axle, of a reach comprising an upper and a lower pole, the upper pole being connected with the rear axle, a plate secured upon the upper face of the front end of the lower pole and extending under the forward end of the upper pole when the running-gear is closely coupled, and having perforations therethrough and extending through the pole, a king-bolt passed through the front axle and front perforation of said plate, a band secured upon the forward end of the upper pole and encompassing the two poles, said band and upper pole having a perforation registering with the rear perforation of the plate of the lower pole and a perforation in the latter and a latch-pin in said registering perforations, whereby undue wear upon the plates and poles, and liability of splitting the latter is avoided.

2. The combination, with the front axle, of a reach comprising an upper and a lower pole, the upper pole being connected with the rear axle, a plate secured upon the upper face of the front end of the lower pole, and extending under the forward end of the upper pole when the running-gear is closely coupled, and having perforations therethrough and extending through the pole, a king-bolt passed through the front axle and front perforation of said plate, a band secured upon the forward end of the upper pole and encompassing the two poles, said band and upper pole having a perforation registering with the rear perforation of the plate of the lower pole and a perforation in the latter and a latch-pin removably engaged in said alining perforations, the lower pole having a longitudinal series of perforations therein in the rear of its plate, and additional bands secured to the upper pole and passing around the lower pole.

849,696. FLORAL DESIGN. LOUISE J. OLDEN, Boston, Mass. Filed Nov. 16, 1906. Serial No. 343,683.

Claim.—1. A process of forming designs which consists in aggregating the several essential features thereof as overlapped individual pieces attaching them to a cardboard having a suitable painted background, and touching up the interstices and in producing shadows, and covering the same with a coat of varnish.

2. A process of forming designs which consists in aggregating the several features thereof as overlapped individual pieces attaching them to a cardboard having a suitable painted background, and touching up the interstices and in producing shadows covering the same with varnish and reproducing the same.

3. A process of forming designs in colors which consists in aggregating the several essential features thereof as overlapped individual pieces attaching them to a cardboard having a suitable painted background, and touching up the interstices and in producing shadows, and covering the same with a coat of varnish.

849,697. CLUTCH. JAMES C. POTTER and JOHN JOHNSTON, Pawtucket, R. I., assignors to Potter and Johnston Machine Company, Pawtucket, R. I. Filed Jan. 17, 1902. Serial No. 90,159.

Claim.—1. In a clutch, the combination of independent unattached segment-form shoes, a surface for the latter to act on a wedge between separated ends of said segments, shoe-operating mechanism acting on said wedge to cause movement of the shoes in clutching and unclutching, a second wedge interposed between other separated ends of the segments, and mechanism acting on said second wedge, solely for adjustment of the shoes and independent of the shoe-operating mechanism, whereby it is operative independently of the latter and is not actuated when the shoe-operating mechanism is operated.

2. In a clutch, the combination of a pair of independent unattached segment-form shoes, a surface for the latter to act on a wedge interposed between the ends of the segments at one of their points of separation, shoe-operating mechanism acting on said wedge, solely to cause movement of the shoes in clutching and unclutching, said mechanism comprising a screw that engages the wedge, a pinion connected to the screw, and a reciprocable rack, a second wedge interposed between said shoes at another point of separation, and shoe-adjusting mechanism acting on the other wedge, solely for the purpose of adjustment and independent of the shoe-operating mechanism, whereby it is operative independently of the latter and is not actuated when the shoe-operating mechanism is operated.

849,698. ELECTRICAL INDICATING APPARATUS. ALBERT A. RADTKE, Chicago, Ill. Filed Oct. 23, 1905. Serial No. 283,891.

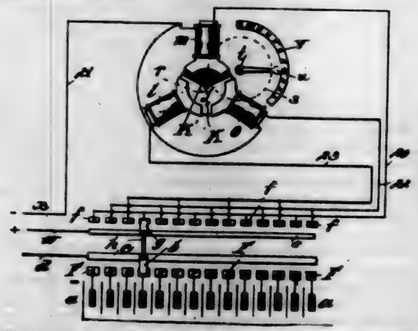

Claim.—1. In a device of the class described the combination of a rotatably-mounted armature magnetically unsymmetrical with reference to the axis of rotation, a plurality of electromagnets arranged around the axis of rotation of said armature, a series of insulated switch-contacts, each electromagnet being connected to periodically-recurring contacts of said series, and a relatively movable switch member coöperating with said contacts to close an electric circuit through said magnets in succession upon the relative movement of the switch member, said switch member serving in its movement to close circuit through one electromagnet before opening circuit through another, there being a magnetic pole induced in said armature to correspond with each and every effective magnetic pole of said electromagnetic system.

2. In a device of the class described the combination of a rotatably-mounted armature magnetically unsymmetrical with reference to the axis of rotation, a plurality of electromagnets arranged around the axis of rotation of said armature, the armature being subject to magnetic attraction by said electromagnets by means of a magnetic pole induced in said armature to correspond with each and every effective magnetic pole of said electromagnetic system, a series of switch-contacts of which periodically-recurring contacts are connected with each of said electromagnets, a source of current for energizing said electromagnets, a switch-arm coöperating with said contacts to close electric circuits through said electromagnets, the width of said arm being sufficient to span the space between adjacent contacts and an indicator controlled by the rotation of said armature.

3. In a device of the class described the combination of a rotatably-mounted armature magnetically unsymmetrical with reference to its axis of rotation, three electromagnets arranged around the axis of the armature, said armature being subject to magnetic attraction by said electromagnets by virtue of a magnetic pole induced in said armature to correspond with each and every effective magnetic pole in said electromagnets, a series of electrical contacts, each electromagnet being connected to periodically-recurring contacts of said series, a movable member, the position of which is to be indicated, and a switch-blade mechanically connected with said movable member and coöperating with said contacts to control the flow of current through said electromagnets, the switch-blade being of greater width than the space between adjacent contacts of said series.

4. In a device of the class described the combination of a rotatably-mounted non-polarized armature, said armature being magnetically unsymmetrical with respect to the axis of rotation, three electromagnets equidistantly spaced around the axis of rotation of said armature and each adapted upon energization to attract magnetically the associated armature by virtue of a magnetic pole induced in said armature to correspond with the attracting-pole of each of the energized electromagnets, a series of switch-contacts, an electrical connection between each electromagnet and every third contact of said series, a movable member the position of which is to be indicated, a switch-blade mechanically connected with said movable member and electrically associated with said contacts, said switch-blade having a width sufficient to span the space between adjacent contacts, and an indicating-pointer geared to said armature to indicate the degree of rotation thereof.

5. In combination, a storage battery, a movable end-cell switch for connecting the end cells of said battery in an electrical circuit, a rotatably-mounted armature magnetically unsymmetrical with reference to its axis of rotation, a plurality of electromagnets arranged to actuate said armature, a series of insulated switch-contacts, each electromagnet being connected to periodically-recurring contacts of said series, a relatively movable switch member mechanically connected with said movable end-cell switch and coöperating with said contacts to close electrical circuits through said magnets in succession upon the relative movement of said switch member, said switch member serving in its movements to close a circuit through one electromagnet before opening the circuit through another.

6. In combination, a storage battery, a series of main contacts connected with end cells of said battery, a main

switch-blade coöperating with said main contacts to connect a greater or less number of the cells of said battery in circuit, a series of auxiliary switch-contacts, an auxiliary switch-blade mechanically connected with said main switch-blade whereby the movements of one will be accompanied by similar movements of the other, a rotatably-mounted non-polarized armature magnetically unsymmetrical with reference to the axis of rotation, three electromagnets equidistantly spaced from one another around the axis of rotation of said armature and adapted to act magnetically upon said armature, an electrical circuit connecting each electromagnet with every third contact of the auxiliary series, the auxiliary switch-blade serving in conjunction with said auxiliary contacts to control the flow of current through said electromagnets, an indicating-dial, and a pointer associated with said dial and geared to the rotatable armature.

7. In a device of the class described, the combination of a rotatably-mounted armature magnetically unsymmetrical with reference to its axis of rotation, a plurality of electromagnets arranged around the axis of rotation of said armature, a series of insulated switch-contacts, said electromagnets being suitably connected with said contacts, and a relatively movable switch member actuated with said contacts to close an electrical circuit through said magnets in succession upon the relative movement of said switch member, the movement of said armature being entirely independent of polarity relations between said armature and magnets.

8. In a device of the class described, the combination of a rotatably-mounted armature magnetically unsymmetrical with reference to its axis of rotation, a plurality of electromagnets arranged about the armature, a series of insulated switch-contacts, each electromagnet being connected to periodically-recurring contacts of said series, and a relatively movable switch member actuated with said contacts to close an electric circuit through said magnets in succession on the relative movement of said switch member, the movement of said armature being entirely independent of polarity relations between said armature and electromagnets.

9. In a device of the class described, the combination with a rotatably-mounted armature, of a plurality of electromagnets arranged around the axis of rotation of said armature, a series of insulated switch-contacts, each electromagnet being connected to periodically-recurring contacts of said series, and a relatively movable switch member associated with said contacts and adapted upon actuation to close an electric circuit through said magnets in succession, said switch member serving in its movement to close circuit through one electromagnet before opening circuit through another, said armature being unsymmetrical with reference to the axis of rotation and adapted to assume a different position corresponding with the independent energization of each electromagnet and an equal number of other positions corresponding with the simultaneous energization of any two of said electromagnets.

10. In a device of the class described the combination with a plurality of electromagnetic coils, of switching mechanism adapted to maintain an energization of said coils while causing a change in the energization of said coils, and a rotatably-mounted non-polarized armature subject to the magnetic influence of said coils, said armature having but one position of stable equilibrum due to any given energization of said coils.

11. In a device of the class described, the combination with a storage battery, of a series of main contacts connected with end cells of said battery, a main switch-blade coöperating with said main contacts to connect a greater or less number of said batteries in circuit, a series of auxiliary contacts, an auxiliary switch-blade mechanically connected with said main switch-blades, whereby the movements of one will be accompanied by the movements of the other, three electromagnets, equidistantly spaced around the circumference of a circle, an electrical circuit connecting each electromagnet with every third contact of the auxiliary series, the auxiliary switch-blade serving in conjunction with said auxiliary contacts to control the flow of current through said electromagnets, and in its movement to close the circuit through one electromagnet before opening the circuit through another, a rotatably-mounted, unpolarized armature magnetically unsymmetrical with the axis of rotation and adapted to assume distinctive positions indicative of the independent energization of any of said electromagnets or the simultaneous energization of any two of them, an indicating-dial and a pointer associated with said dial, and geared to the rotatable armature.

12. In combination a storage battery, a series of main contacts connected with end cells of said battery, a main switch-blade coöperating with said main contacts to connect a greater or less number of the cells of said battery in circuit, a series of auxiliary switch-contacts, an auxiliary switch-blade mechanically connected with said main switch-blade whereby the movements of one will be accompanied by similar movements of the other, a rotatably-mounted non-polarized armature magnetically unsymmetrical with reference to the axis of rotation, three electromagnets equidistantly spaced from one another around the axis of rotation of said armature and adapted to act magnetically upon said armature by virtue of a magnetic pole induced in said armature to correspond with each attracting magnetic pole which may be caused by the energization at any one time of said electromagnets, an electrical circuit connecting each electromagnet with every third contact of the auxiliary series, the auxiliary switch-blade serving in connection with said auxiliary contacts to control the flow of current through said electromagnets, an indicating-dial and a pointer connected to said dial and geared to the rotatable armature.

13. In a device of the class described the combination of a rotatably-mounted armature magnetically unsymmetrical with reference to its axis of rotation, a plurality of electromagnets arranged around the axis of rotation of said armature, and serving when energised to attract said armature by virtue of a pole induced in said armature to correspond with each and every magnetic pole simultaneously produced by the energization of said electromagnets, and switching mechanism serving to energize said electromagnets in succession.

849,699. STEAM-TURBINE. FREDERICK C. ROBERTS, Paterson, N. J., assignor to said Roberts and Bertram D. McKenzie, Rutherford, N. J. Filed Dec. 27, 1906. Serial No. 349,735.

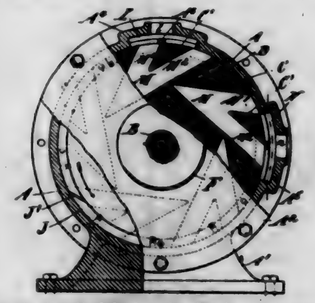

Claim.—1. A cylindrical casing having a steam-port and an exhaust-port arranged peripherally therein, a cylindrical rotary piston matching to and received in said casing, a series of pockets in said piston, and a bar dividing each of the pockets into two channels at the periphery of said piston.

2. A cylindrical casing having a steam-port and an exhaust-port arranged peripherally therein, a cylindrical rotary piston matching to and received in said casing, a series of pockets in said piston, a bar dividing each of said pockets into two longitudinal channels at the periphery of said piston, and longitudinally-extending packing-strips in said bars and in said piston between said pockets.

3. A cylindrical casing having a steam-port and an exhaust-port arranged peripherally therein, heads for said casing, a cylindrical rotary piston matching to and received in said casing, a series of pockets in said piston, a bar dividing each of said pockets into two longitudinal channels at the periphery of said piston, packing-rings between said heads and the ends of said piston, recesses in said ends, pins in said recesses extending into holes in said rings, shoulders on said pins engaging said rings, and springs in said recesses behind said pins.

4. A cylindrical casing having a steam-port and an exhaust-port arranged peripherally therein, heads for said casing, a cylindrical rotary piston matching to and received in said casing, a series of pockets in said piston, a bar dividing each of said pockets into two longitudinal channels at the periphery of said piston, tubular bearings on said heads, a shaft extending axially of said casing through said bearings and carrying said piston, an annular tapered recess in each of said bearings, a cylindrical split bushing in said recess and inclosing said shaft, a tapered split sleeve matching said recess and inclosing said bushing, and a follower on each of said bearings in engagement with said sleeve and adapted to move the latter axially and thereby center said bushing.

849,700. LIGHT-REFLECTING DEVICE. PETER J. SCHELB, Fort Worth, Tex. Filed Feb. 23, 1906. Serial No. 302,577.

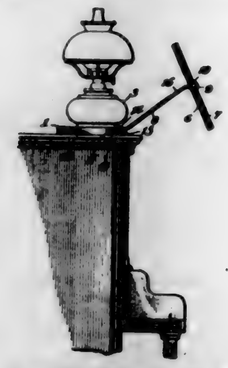

Claim.—1. A portable light-reflecting device comprising a base having a seat and consisting of a solid counterbalancing rear portion and a hollow front portion, the walls of the front portion being provided at their lower edges with notches, exterior rests projecting from the front portion at opposite sides thereof, supporting-arms extending from the front of the base and arranged in the said rests and provided at their inner ends with hooks engaging the side walls of the front portion of the base at the said notches, and a reflector spaced from the front portion of the base and mounted between the outer ends of the said arms.

2. A portable light-reflecting device comprising a base having a seat and consisting of a solid rear portion and a hollow front portion, inclined arms mounted on and extending from the front portion of the base and provided at their outer ends with terminal hooks forming open bearings, and a reflector provided with pivots arranged in and supported by the hooks, said reflector being spaced from the front of the base and the solid portion of the latter being extended a sufficient distance in rear of the said seat to counterbalance the reflector.

3. A portable light-reflecting device comprising a hollow base having an opening adjacent to its front edge to constitute a lamp-seat, a pair of arms detachably connected to the front of the base and diverging from said base, a reflector pivotally mounted on a longitudinal axis at the outer ends of the diverging arms and adapted to be tilted to reflect the light-rays downwardly in front of the base, and a weight retained within the hollow base at the rear side thereof and constituting a counterbalance for the supporting-arms and reflector located in advance of the base.

849,701. FLEECED-RIB-KNITTING MACHINE. ROBERT W. SCOTT, Philadelphia, Pa., assignor of one-half to Louis N. D. Williams, Ogonts, Pa. Filed Mar. 8, 1905. Serial No. 249,033.

Claim.—1. The combination of the two sets of needles, knitting-cams and knitting-yarn guide or guides of a rib-knitting machine, with a fleecing-yarn guide, a tying-yarn guide, and means for causing said tying-yarn to engage with said fleecing-yarn, and with wales of the ribbed fabric, substantially as specified.

2. The combination of the two sets of needles, knitting-cams and knitting-yarn guide or guides of a rib-knitting machine, with means for laying a fleecing-yarn behind the stitches carried by one set of needles, and delivering said yarn to needles of the other set, a tying-yarn guide, and means for causing said tying-yarn to engage with said fleecing-yarn, and with wales of the ribbed fabric, substantially as specified.

3. The combination of the two sets of needles, knitting-cams, and knitting-yarn guide or guides of a rib-knitting machine, with means operating on the inside of the machine for laying a fleecing-yarn behind the stitches carried by one set of needles and delivering said fleecing-yarn to needles of the other set, a tying-yarn guide and means for causing said tying-yarn to engage with said fleecing-yarn and also with wales of the ribbed fabric, substantially as specified.

4. The combination of the two sets of needles, knitting-cams, and knitting-yarn guide or guides of a rib-knitting machine, with means for displacing from their normal position the stitches carried by one set of needles, a guide for laying a fleecing-yarn behind said stitches and delivering it to needles of the other set, a tying-yarn guide and means for causing said tying-yarn to engage with said fleecing-yarn and also with wales of the ribbed fabric, substantially as specified.

5. The combination of the two sets of needles, knitting-cams, and knitting-yarn guide or guides of a rib-knitting machine, with means acting directly upon the stitches upon one set of needles to displace them from their normal position, a guide for laying a fleecing-yarn behind said deflected stitches and delivering it to needles of the other set, a tying-yarn guide and means for causing said tying-yarn to engage with said fleecing-yarn and also with wales of the ribbed fabric, substantially as specified.

6. The combination of the two sets of needles, knitting-cams, and knitting-yarn guide or guides of a rib-knitting machine, with a deflector operating on the inside of the machine and serving to displace from their normal position the stitches carried by one set of needles, a guide for laying a fleecing-yarn behind said deflected stitches and delivering it to needles of the other set, a tying-yarn guide and means for causing said tying-yarn to engage with said fleecing-yarn and also with wales of the ribbed fabric, substantially as specified.

7. The combination of the two sets of needles, knitting-cams, and knitting-yarn guide or guides of a rib-knitting machine, with a stitch means for displacing from their normal position the stitches carried by one set of needles, a guide for laying a fleecing-yarn behind said deflected stitches and applying it to needles of the other set, means for operating the latter needles to engage the fleecing-yarn, a tying-yarn guide and means for operating the needles so as to cause them to engage and draw loops of the tying-yarn and cast the loops of the fleecing-yarn onto

the same without casting the knitting-stitches carried by them, substantially as specified.

8. The combination of the two sets of needles, knitting-cams, and knitting-yarn guide or guides of a rib-knitting machine, with a combined fleecing-yarn guide and deflector operating to displace from their normal position the stitches carried by one set of needles, lay a fleecing-yarn behind said deflected stitches and deliver it to needles of the other set, a tying-yarn guide and means for causing said tying-yarn to engage with said fleecing-yarn and also with wales of the ribbed fabric, substantially as specified.

9. The combination of the two sets of needles, knitting-cams, and knitting-yarn guide or guides of a rib-knitting machine, with a combined fleecing-yarn guide and deflector operating on the inside of the machine and serving to displace from their normal position the stitches carried by one set of needles, lay a fleecing-yarn behind said deflected stitches and deliver it to needles of the other set, a tying-yarn guide and means for causing said tying-yarn to engage with said fleecing-yarn and also with wales of the ribbed fabric, substantially as specified.

10. The combination of the two sets of needles, knitting-cams, and knitting-yarn guide or guides of a rib-knitting machine, with a combined fleecing-yarn guide and deflector operating to displace from their normal position the stitches carried by one set of needles, lay a fleecing-yarn behind said deflected stitches and apply it to needles of the other set, means for operating the latter needles to engage the fleecing-yarn, a tying-yarn guide and means for operating the needles so as to cause them to engage said tying-yarn and cast the loops of fleecing-yarn onto the same without casting the knitting-stitches, substantially as specified.

11. The combination of the two sets of needles, knitting-cams, and knitting-yarn guide or guides of a rib-knitting machine, with a combined fleecing-yarn guide and deflector located on the inside of the machine and acting directly upon the stitches carried by one set of needles to displace the same from their normal position, lay a fleecing-yarn behind said deflected stitches and apply it to needles of the other set, means for operating the latter needles to engage the fleecing-yarn, a tying-yarn guide and means for operating the needles so as to cause them to engage said tying-yarn and cast the loops of fleecing-yarn onto the same without casting the knitting-stitches, substantially as specified.

849,702. GUARD AND MOISTENER FOR DENTAL TOOLS. CHARLES A. SEVIER, Jackson, Tenn. Filed July 12, 1906. Serial No. 325,918.

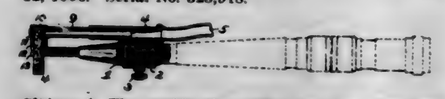

Claim.—1. The combination with a nozzle or handhold of a dental engine, of a collar or band to be inserted on the nozzle, a thumb-screw securing the collar to the nozzle, a tube secured to the collar, a second tube having telescopic connection with the first-mentioned tube, and a grindstone-shield on the last-mentioned tube.

2. The combination with a nozzle or handhold for dental engines, of a collar or band to be inserted on the nozzle, a thumb-screw securing the collar to the nozzle, a tube secured to the collar, a second tube having telescopic connection with the first-mentioned tube, a lug or key on one of said tubes movable in a slot and notch or offset in the other to lock the tubes together, and a grindstone-shield on the free end of the last-mentioned tube.

3. An attachment for dental grindstones, comprising a tube composed of telescopic sections, a collar secured to one section and adapted to be inserted on a dental-engine nozzle or handhold, a set-screw in the collar to secure the same onto the nozzle, a grindstone-shield on the free or outer end of the tube, and means for supplying moisture to the tube and shield.

4. An attachment for dental grindstones, comprising a tube composed of separable sections, means on one section to attach the tube to a dental-engine nozzle or handhold, a grindstone-shield on the end of the tube having an opening in its wall opposite the tube, and also having a notched central portion.

849,703. ELECTRIC RAILWAY. SAMUEL B. STEWART, Jr., Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Apr. 29, 1901. Serial No. 57,873.

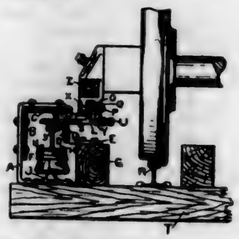

Claim.—1. A contact-shoe, which comprises a flat metal plate adapted to enter a narrow lateral slot in a third-rail housing, said plate being provided with a perforated angular portion serving as a support.

2. The combination with a contact-shoe support, of a shoe having a vertical portion which has a perforation larger than the support, to permit vertical play of the shoe, said shoe having a thin horizontal portion adapted to enter a narrow lateral slot of a third-rail housing.

3. The combination with a contact-shoe support, of a flat shoe carried horizontally on said support and having a vertical portion which has a perforation larger than the support, to permit vertical play of the shoe, of a spring which presses against said vertical portion to serve as a cushion during the vertical movements of the shoe.

4. The combination with a support, of a thin flat shoe having a vertical portion on which the shoe is so swung from said support, that the thin portion of the shoe has a vertical play, and means for positively limiting such swinging play.

5. A thin metal shoe having a perforated angular portion, in combination with a support for said angular portion which is smaller than the perforation therethrough, whereby the main portion of the shoe is supported horizontally to have a slight vertical play.

6. A thin metal shoe having a vertical portion provided with a countersunk perforation, in combination with a support which is smaller than the perforation therethrough, and a spring fitting in the countersunk portion to serve as a cushion for the shoe during its vertical movements.

7. The combination with brackets depending from a car, of bars or supporting-pins between said brackets, the vertical part of a collector structure freely mounted on said bars, whereby the horizontal portion of the shoe has a vertical swinging play, and a spring between said vertical portion and the inner bracket, whereby when the horizontal portion of the shoe is raised by an irregularity of the third rail the vertical shoe portion will be pivoted against the lower part of the outer bracket, and the spring will serve as a cushion, and when the horizontal portion of the shoe is depressed by its own weight the vertical portion of the shoe will be pivoted against the upper part of the outer bracket and the spring will again serve as a cushion.

849,704. CONCRETE-BLOCK MACHINE. AUGUSTUS O. THOMAS, Kearney, Nebr. Filed May 19, 1906. Serial No. 317,844.

Claim.—1. A block-molding machine comprising a mold-box and a vertically-movable pallet therein, said pallet comprising two horizontal sections arranged in different vertical planes and joined by a connecting member, the said horizontal sections extending in opposite directions from said planes, and said mold-box having a movable portion adapted to overlie the lower pallet-section and be rigidly held in such position when the said box is arranged for the reception of material to be molded and to be moved away from said position when the molded material is to be removed from said box.

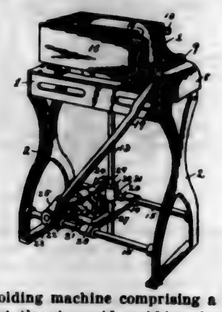

2. A block-molding machine comprising a mold-box and a movable pallet therein, said mold-box having a curved movable portion arranged at one end thereof and adapted to overlie said pallet and be rigidly held in such position when the said box is arranged for the reception of material to be molded and to give shape to a portion of the top of the block molded in said machine.

3. A block-molding machine comprising a stationary rectangular mold-box formed with four rigid lateral walls, a curved inwardly-extending wall-section pivoted to one of said walls and when in its closed position engaging portions of the adjacent side walls to produce a mold having a portion thereof covered over at the top to give shape to a portion of the top of the block to be molded in said box, said pivoted wall-section being adapted to be thrown out of engagement with said side walls, and means movable within said stationary walls for vertically ejecting a block from the mold when the pivoted wall-section is out of engagement with the said walls, substantially as described.

849,705. SYSTEM OF ELECTRICAL DISTRIBUTION AND REGULATION. WILLIAM A. TURBAYNE, Lancaster, N. Y., assignor to Gould Coupler Company, New York, N. Y. Filed Sept. 15, 1904. Serial No. 224,505.

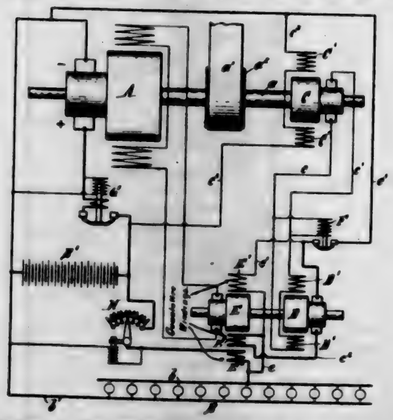

Claim.—1. The combination of a main generator, and an exciter apparatus therefor whose electromotive force varies in an inverse sense to but in greater proportion than the changes in speed of the main generator and also in a direct sense to changes in load on the work-circuit, substantially as set forth.

2. The combination of a main generator, an exciter apparatus therefor, a work-circuit, and means for changing the electromotive force of the exciter apparatus inversely with but in greater proportion than the speed changes of the main generator and in proportion to changes in the load on said work-circuit, substantially as set forth.

3. The combination of a main generator, an exciter apparatus therefor, a storage battery connected with the main generator, a work-circuit, and means for varying the electromotive force of the exciter apparatus in an inverse sense to changes in the electromotive force of the battery and in a direct sense to changes in the load on the work-circuit, substantially as set forth.

4. The combination of a main generator, an exciter apparatus therefor, a storage battery connected with the main generator, a work-circuit, and means for varying the electromotive force of the exciter apparatus in an inverse sense to changes in the speed of the generator and in the electromotive force of the battery and in a direct sense to changes in the load on the work-circuit, substantially as set forth.

5. The combination of a main generator, a work-circuit, an exciter-dynamo for said generator having a field-winding for changing the electromotive force of the exciter-dynamo in direct relation to changes in load on the work-circuit, and means for changing the electromotive force of the exciter-dynamo in an inverse sense to changes in speed of the main generator, substantially as set forth.

6. The combination of a main generator, a work-circuit, an exciter-dynamo for said generator having a field-winding in series with said work-circuit for changing the electromotive force of the exciter-dynamo in direct relation to changes in load on the work-circuit, and means for changing the electromotive force of the exciter-dynamo in an inverse sense to changes in speed of the main generator, substantially as set forth.

7. The combination of a main generator, a work-circuit, a motor, and an exciter-dynamo for said generator, which dynamo is driven by said motor and which is provided with a field-winding in series with the work-circuit, and with another field-winding in series with the armature of said motor, substantially as set forth.

8. The combination of a main generator, a work-circuit, a motor, and an exciter-dynamo for said generator, which dynamo is driven by said motor and which is provided with a field-winding in series with the work-circuit, a field-winding in series with the armature of said motor, and a field-winding in shunt across the work-circuit, substantially as set forth.

849,706. COOLING DYNAMO-ELECTRIC MACHINES. EDDY R. WHITNEY, Swampscott, and LEONARD A. TIRRILL, Lynn, Mass., assignors to General Electric Company, a Corporation of New York. Filed Oct. 19, 1903. Serial No. 177,576.

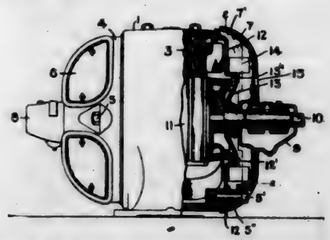

Claim.—1. In combination, a dynamo-electric machine provided with an inclosing casing, a shaft having a portion projecting out from said casing, a fan mounted on the projecting portion of said shaft, and a member for directing the current generated by said fan along said inclosing casing.

2. In combination, a dynamo-electric machine provided with an inclosing casing, a shaft having a portion pro-

jecting out of said casing, a fan mounted on said projecting portion, and a shield for protecting the fan having a portion arranged to deflect the current against the casing.

3. In combination, a dynamo-electric machine provided with an external field-ring, a rotating armature-shaft, a fan carried thereby, and a member for directing the current generated by said fan against the outer periphery of the field-ring.

4. In a dynamo-electric machine, an armature-shaft, a fan mounted thereon, and a shield for protecting the fan from injury and for directing the current generated by the fan against the exterior surface of the machine.

5. In a dynamo-electric machine, a field-ring, an armature, end members connected to the field-ring and provided with bearings in which the armature-shaft is journaled, one of said end members being separated from the ring by a passage, and means for causing currents of air to pass through said passage and against the outer surface of said ring.

6. In a dynamo-electric machine comprising a stationary member and a rotary member, one of said members being located outside the other member, means carried by the rotating member for generating a cooling-current, and a member for directing said current against the outer periphery of the outer member.

7. In an inclosed dynamo-electric machine, means for generating a cooling-current within the motor structure and for causing such current to flow over a considerable portion of the outer surface of the machine.

849,707. TANK-FLOAT. CHARLES WILLMS, Baltimore, Md. Filed July 28, 1905. Serial No. 271,623.

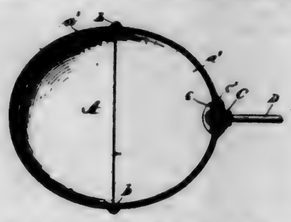

Claim.—1. A tank-float consisting of the combination substantially as hereinbefore set forth of thin sections of sheet metal, a stud passing through an opening in one of the sections, reinforcing-flanges on the exterior and interior of the float embracing the stud and float and a coating of enamel which hermetically seals the joint.

2. A hermetically-sealed tank-float consisting of the combination of sheet-metal sections united by a hermetically-sealed joint, a stud for the lever-arm passing through one of the sections, reinforcing clamping-flanges on the stud embracing the float, and a coating of enamel entirely enveloping the float.

849,708. FLUSHING-TANK. CHARLES WILLMS, Baltimore, Md. Filed Oct. 26, 1906. Serial No. 340,677.

Claim.—1. A hermetically-sealed hollow buoyant valve made in assembled sections covered with vitrified enamel and provided with holes in the upper and lower sections in line with each other, a rod extending through said holes, a nut above the upper section to which said rod is connected, a valve-stem connected with said nut and guide-rods attached to said first-mentioned rod and extending downwardly from the valve.

2. The combination of a water-containing tank, a condensation-collector associated therewith and having an air-space between its bottom and the bottom of the tank, a valve-seat extending through said air-space, a flush-pipe connected with the valve-seat, means for draining water from the condensation-collector into the flush-pipe, a flush-valve, downwardly-projecting guide-rods fitting the valve-seat, a valve-stem and a guide for the valve-stem secured to the water-containing tank and which acts as a stop to limit the upward movement of the valve.

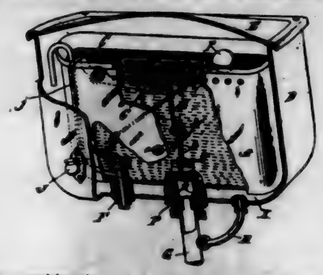

3. The combination of a water-containing tank, a condensation-collector surrounding it and having an air-space between its bottom and the bottom of the tank, a valve-seat extending through said air-space, a flush-pipe connected therewith and receiving flush-water from the valve-seat, means for draining water from the condensation-collector, a valve, the guide-rods extending downwardly therefrom and guided by the vertical walls of the valve-seat, and a stop attached to the front wall of the water-containing tank for so limiting the upward movement of the valve that the guide-rods are prevented from rising out of the valve-seat.

849,709. PORTABLE SCREEN-HOUSE. HARRY WINGREN, Genoa, Tex. Filed Sept. 4, 1906. Serial No. 333,147.

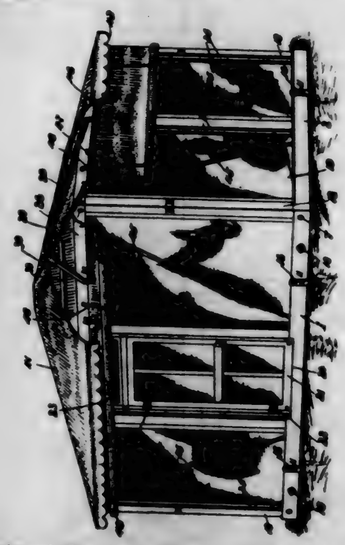

Claim.—1. In a house, the combination with the walls, of a roof structure supported upon said walls, said roof structure comprising ends and a central section, each end section comprising a mid-rafter having a double beveled, upper edge, hip-rafters hinged to said mid-rafter, each hip-rafter provided with an upper, beveled edge, jack-rafters hinged to said hip-rafters, each jack-rafter provided with an upper, beveled edge, said central section comprising a pair of pivotally-connecting rafters, each rafter of said central section beveled at its upper edge, and bonding means for securing all of said sections together.

2. In a house, the combination with the walls, of a roof structure supported upon said walls, said roof structure comprising end sections and an intermediate, central section, each end section comprising a mid-rafter, hip-rafters hinged to said mid-rafter, a jack-rafter hinged to each of said hip-rafters, said central section comprising rafters hinged together, and parallel bonding means connecting said central and jack rafters.

3. In a portable house, the combination with groundsills, of anchoring means for said groundsills, said anchoring means comprising anchors, each anchor formed from a bar and comprising a smooth, straight shank having a lower, pointed end, said shank bent intermediate its ends and forming a shoulder engaged by the lower end of a sill, said shoulder of the same thickness as said shank and a flat, apertured portion integral with the bent portion of the shank, and fastening means positioned within the apertures of the flat portion and securing the anchor to the sill.

4. In a portable screen-house, the combination of walls provided with wall-plates, said wall-plates provided with notches at and intermediate their corners, a roof structure carried by said body, said roof structure comprising end sections and an intermediate central section, each end section comprising a mid-rafter positioned in one of the notches intermediate the corners, hip-rafters hinged to said mid-rafter and positioned within the corner-notches, a jack-rafter hinged to each of said hip-rafters and positioned within a notch intermediate the corners, and bonding means connecting said central section and jack-rafters.

5. In a portable screen-house, the combination of walls provided with wall-plates, each wall-plate comprising an outer, an inner, and an intermediate section, the upper, horizontal edge of the inner and intermediate section lying in the same horizontal plane, the lower, horizontal edge of the inner and outer sections positioned in the same horizontal plane, the lower, horizontal edge of the intermediate section positioned in a horizontal plane above the lower edges of said intermediate and outer sections, thereby producing a longitudinally-extending groove in the lower edge of the wall-plate, a panel resting upon the upper edges of the inner and intermediate sections, the upper horizontal edges of the outer sections of the wall-plates positioned in a plane above the upper edges of the inner and intermediate sections of said plates, said outer sections of the wall-plates provided with corner and intermediate notches, a roof structure positioned above said wall-plates, said roof structure comprising end and central sections, said central section comprising rafters positioned within notches intermediate the ends of the wall-plates, each end section comprising a mid-rafter, the mid-rafter positioned within a notch of one of the wall-plates intermediate its ends, hip-rafters hinged at their upper ends to the mid-rafter and positioned in corner-notches of the wall-plates, jack-rafters hinged at their upper ends to the hip-rafters and positioned in notches intermediate the ends of the wall-plates, and parallel bonding means fastening all of said rafters together.

6. In a portable screen-house, the combination of walls, comprising detachable panels, removable sectional wall-plates positioned upon the upper end of said panels, horizontal and vertical rods securing all of said panels together, a roof structure engaging said wall-plates, said roof structure comprising a central and end sections, said central section comprising a pair of rafters pivotally connected, each end section comprising a mid-rafter provided with a beveled, upper end, hip-rafters beveled at their upper ends and hinged to the mid-rafters intermediate its ends, the beveled upper ends of the hip-rafters normally lying flat against the mid-rafter, jack-rafters beveled at their upper ends and hinged to the hip-rafters intermediate their ends, the beveled end of the jack-rafters normally lying flat against the hip-rafters, and bonding means securing all of said sections together.

7. In a portable screen-house, the combination with the walls, of a roof structure supported upon said walls, said roof structure comprising a central and end sections, the end sections only engaging the central section near the apex of the roof, each end section comprising a pair of hip-rafters abutting at their upper ends, a mid-rafter abutting at its upper end against the two contiguous edges of the hip-rafters, jack-rafters abutting at their upper ends against the hip-rafters, and means pivotally securing all of said rafters together.

849,710. EYEGLASS-MOUNTING. LEO F. ADT, Albany, N. Y. Filed Apr. 30, 1906. Serial No. 314,332.

Claim.—1. In eyeglasses, the combination with the lenses, and a bridge connecting them having resilient portions adapted to yield when the lenses are operated, of guards movable with the lenses and having parts arranged to coöperate with the resilient portions of the bridge to limit the relative movement of the lenses when the latter are operated to proximate and separate the guards.

2. In eyeglasses, the combination with the lenses, and a bridge connecting them having intermediate resilient loops formed therein, of nose-guards each having portions arranged on opposite sides of one of the loop-arms and serving to limit the relative movement of the lenses both in separating and proximating the nose-engaging surfaces of the guards.

3. In eyeglasses, the combination with the lenses, and a bridge attached thereto embodying a central portion, and downwardly-extending loops arranged intermediate of the points of attachment and arranged to permit relative movement of the lenses in line with their major geometrical axes, of nose-guards operated by the lenses each having parts arranged on opposite sides of one of the loop-arms to limit the relative movement thereof in both directions.

4. In eyeglasses, the combination with the lenses, and a bridge of resilient material embodying a central portion, and substantially vertical loops each having a forward arm attached to a lens and a rear arm connected to the central portion of the spring, of nose-guards operated by the lenses each having a part arranged at the outer side of said rear loop-arm to limit the relative inward movement of the lenses, and a part at the inner side of said loop-arm to limit the relative outward movement of the lenses.

5. In eyeglasses, the combination with the lenses, and a resilient bridge connecting them having intermediate loops for permitting relative tilting movement of the lenses, of nose-guards attached to the lenses and having portions arranged to coöperate with the bridge as fulcrums when the lenses are operated.

6. In eyeglasses, the combination with the lenses, attaching devices thereon, and a bridge-spring connecting the lenses and having intermediate portions thereof extending past the attaching devices, of nose-guards secured to the attaching devices each having a part arranged at the outer side of its respective intermediate portion of the spring and adapted to coöperate therewith as a fulcrum when a relative tilting movement is given the lenses to separate the guards.

7. In eyeglasses, the combination with the lenses, and a bridge-spring connecting them embodying a central portion, substantially vertical loops arranged between the inner edges of the lenses, one arm of each loop being attached to its respective lense, and a relatively movable arm connected to the central portion and extending into proximity to the points of attachment for the spring, of nose-guards secured to the lenses each embodying an arm arranged at the outer side of the relatively movable arm of the spring, and a nose-engaging portion arranged at the inner side of the movable arm of the spring.

8. In eyeglasses, the combination with the lenses having attaching devices thereon, and a bridge connecting them, of nose-guards connected to the attaching devices

and having arms arranged in rear of the latter, and yielding nose-engaging portions doubled inwardly from said arms, said arms and nose-engaging portions extending on opposite sides of the bridge ends.

9. In eyeglasses, the combination with the lenses, and a bridge connecting them, of nose-guards attached to the lenses, each composed of flat material and embodying an arm arranged in rear of the point of attachment and extending from above the latter, the lower end of said arm being doubled inwardly thence extended upwardly to form a yielding nose-engaging portion, said arms and nose-engaging portions being located on opposite sides of the bridge ends.

849,711. COOLING ATTACHMENT. THOMAS A. AITON, Cleveland, Ohio, assignor to Aiton Machine Company, New York, N. Y. Filed Sept. 13, 1905. Serial No. 278,290.

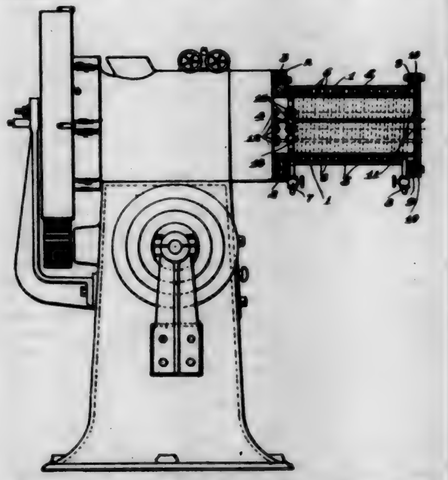

Claim.—1. A cooling attachment for a rubber-covering machine, consisting of a hollow casing with a chamber therein, and adapted to be detachably secured to the head of a rubber-covering machine and a coiled tube in said chamber provided with inlet and outlet valves said chamber and tube being independent of said head; said parts being combined substantially as described.

2. A cooling attachment for a rubber-covering machine, consisting of a cylindrical casing having flanged ends with bolt-openings therein, and provided with an annular chamber, a coiled tube in said chamber having inlet and outlet valves, and a head secured on the outer end of said casing having openings therein adapted to correspond with the dies of the rubber-covering machine substantially as described.

3. A cooling attachment for a rubber-covering machine, consisting of a casing having an annular chamber with a coiled tube therein, a bridge secured in said chamber having nipples therein corresponding with the dies of the rubber-covering machine and an end plate on said cylinder with openings therein; said parts being combined substantially as described.

4. A cooling attachment for a rubber-covering machine, consisting of a casing having flanged ends with openings therein, a coiled tube in an annular chamber in said casing having at its ends outside of said casing inlet and outlet valves, an end plate having openings and secured to said casing and a detachable bridge secured in said casing and provided with nipples corresponding to the dies of said rubber-covering machine; said parts being combined substantially as described.

5. A cooling attachment for a rubber-covering machine consisting of a casing having an annular chamber and provided with means for securing one end thereof to the head of a rubber-covering machine, a coiled tube in said chamber having ends outside thereof provided with inlet and outlet valves respectively, a bridge at the inner end of said casing having nipples corresponding to the dies of the head of the rubber-covering machine, and a plate at the outer end of the casing having openings also corresponding with said nipples and said dies; said parts being combined substantially as described.

6. A detachable cooling attachment for a rubber-covering machine consisting of a cylindrical casing with an annular chamber therein, having openings leading directly therefrom outside of said rubber-covering machine; a coil-tube with ends projecting through said openings and having therein inlet and outlet valves; and means connected with the ends of said casing for supporting the covered wire passing therethrough from the head of the wire-covering machine; said parts being combined substantially as described.

849,712. SPIKE. THOMAS J. AKERS, Riner, Va. Filed Oct. 19, 1904. Serial No. 229,139.

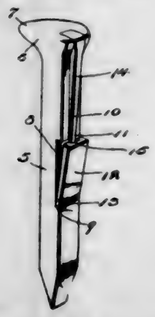

Claim.—A spike comprising a head and a shank, said shank having a recess formed in its rear face and extending the entire width of the shank, the bottom wall of the recess being undercut, a plate disposed within the recess and having its lower edge beveled to seat in the undercut lower wall of the recess to prevent movement of the lower end of the plate from the recess, said plate having a width equal to the width of the recess in which it is seated and being provided with a channel opening through its inner face and its upper edge, the recessed face of the shank of the spike being provided with a groove, and a wedge seated in the groove and arranged to be driven into position between the shank and plate to force the plate into the wood into which the spike is driven and at an angle to the shank of the spike, said wedge being tapered to such a degree that it may be driven to its fullest extent into such position without unseating the lower edge of the plate from the recess in the shank of the spike.

849,713. DYNAMO-ELECTRIC MACHINE. ERNST F. W. ALEXANDERSON, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 29, 1905. Serial No. 267,509.

Claim.—1. In a dynamo-electric machine, a field-winding provided with a rectifying-commutator, a slotted armature-core, a main armature-winding carried in said slots, retaining means for said armature-winding, and an auxiliary winding connected to said field-winding through said commutator, said auxiliary winding being composed of conducting-strips carried beneath said retaining means and above the main armature-winding.

2. In a dynamo-electric machine, a slotted core, a main winding carried in said slots, retaining-wedges for said winding provided with slots on their inner sides, and an auxiliary winding comprising conducting-strips carried in the slots in said wedges.

3. In a dynamo-electric machine, a field-winding provided with a rectifying-commutator, a slotted armature-core, a main armature-winding carried in said slots, retaining-wedges for said armature-winding having slots on their inner sides, and an auxiliary winding connected to said field-winding through said commutator, said auxiliary winding being composed of conducting-strips carried in the slots in said wedges.

849,714. PERMUTATION-LOCK. HANS A. ALM, Hankinson, N. D. Filed May 11, 1906. Serial No. 316,282.

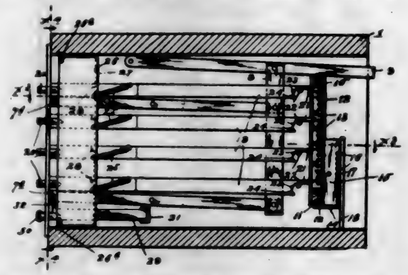

Claim.—1. In a permutation-lock, the combination with locking mechanism, of a releasing member arranged to release said locking mechanism, by a predetermined step-by-step movement, and a plurality of key members having portions exposed where they may be engaged by the fingers and operative on said releasing member, in a predetermined order of succession, to impart the successive step-by-step releasing movement thereto, substantially as described.

2. In a permutation-lock, the combination with locking mechanism, of a releasing member arranged to release said locking mechanism, by a predetermined step-by-step movement, means for setting said releasing member in different normal positions, a plurality of key members operative on said releasing member, in a predetermined order of succession, to impart a successive step-by-step releasing movement thereto, and means for changing the operative order of succession of said key members, substantially as described.

3. In a permutation-lock, the combination with locking mechanism, of a releasing-bolt having a plurality of pins or projections, and a plurality of key-bars and coöperating cam devices, which key-bars are operative on the pins or projections of said releasing-bolt, in a predetermined order or succession, to impart a step-by-step movement thereto, and thereby causing the same to release the said locking mechanism, substantially as described.

4. In a permutation-lock, the combination with locking mechanism, of a lock-releasing bolt operative, by a predetermined step-by-step movement, to release said locking mechanism, an adjustable stop-block for setting said bolt in different normal positions, adjustable combination-pins on said releasing-bolt, and a plurality of key-bars operative on the pins of said releasing-bolt, in a predetermined order of succession, to impart a step-by-step lock-releasing movement to said bolt, substantially as described.

5. In a permutation-lock, the combination with locking mechanism, of a lock-releasing bolt operative by a predetermined step-by-step movement to release said locking mechanism, a plurality of spring-retracted key-bars operative on said releasing-bolt, in a predetermined order of succession, to impart a step-by-step lock-releasing movement thereto, and a yieldingly-pressed latch-plate operative on said key-bars to hold the last operated key-bar in its operated position and to release the last previously-operated key-bar, substantially as described.

6. In a permutation-lock, the combination with locking mechanism, of a lock-releasing bolt having a plurality of adjustable combination pins or projections, and operative, under a predetermined step-by-step movement, to release said locking mechanism, an adjustable stop-block for setting said bolt in different normal positions, a plurality of key-bars operative on the pins of said releasing-bolt, in a predetermined order of succession, to impart a step-by-step lock-releasing movement to said bolt, a spring-pressed latch-plate operative to lock the last operated key-bar in an operated position, and to release the last previously-operated key-bar, and means whereby said latch-plate is given a key-bar-releasing movement, simultaneously with the last step of movement of said lock-bolt, substantially as described.

7. In a permutation-lock, the combination with locking mechanism, of a lock-releasing bolt or member arranged to release said locking mechanism, by a predetermined step-by-step movement, a plurality of key-bars operative on said releasing-bolt, in a predetermined order of succession, to impart a step-by-step lock-releasing movement thereto, a latch-plate for locking the last operated key-bar in an operated position, and for releasing the last previously-operated key-bar, and means independent of said key-bars for imparting a releasing movement to said latch-plate, at will, substantially as described.

8. The combination with locking mechanism, of a releasing-bolt having a plurality of pins, and arranged to release said locking mechanism by a predetermined step-by-step movement, and a plurality of key-bars and coöperating fixed cam pins or projections, said key-bars having cam-surfaces that act upon said fixed cam-pins, and having projecting fingers that operate on the pins of said releasing bolt or member, substantially as described.

9. The combination with a post-office box having a hinged door at its outer end, of a lock-lever coöperating with the locking element on said door, to lock the same in a closed position, a releasing bolt or member operative, by a predetermined step-by-step movement, to move said lock-lever and unlock said door, and a plurality of key-bars operative on said releasing-bolt, in a predetermined order of succession, to impart a step-by-step lock-releasing movement thereto, said key-bars having finger-pieces exposed at the exterior of said box, substantially as described.

10. The combination with a post-office box having a hinged door at its outer end, of a lock-lever coöperating with the locking element on said door, to lock the same, a lever connection extending to the inner end of said box, whereby the door may be unlocked, at will, a lock-releasing bolt operative, by a predetermined step-by-step movement, to impart a step-by-step lock-releasing movement to said bolt, and a plurality of key-bars operative on said releasing-bolt, in a predetermined order of succession, to impart a step-by-step lock-releasing movement thereto, said key-bars having finger-pieces exposed at the front of said box, substantially as described.

849,715. METHOD OF PRINTING. EDWIN E. ANGELL, Somerville, Mass., assignor to Angell Manufacturing Company, Boston, Mass., a Corporation of Massachusetts. Filed Aug. 14, 1905. Serial No. 274,047.

Claim.—1. The method of indelibly marking or printing on sheets consisting in offsetting a portion of the surface of the sheet, depositing solid masses of color in the concave side of the offset, and depositing an outline of color around the edges of the offset portions.

2. The method of indelibly marking on paper, which consists in compressing a sheet of paper between coöperating types or dies in the form of a conventional character, one of which is raised and solid, having a plane printing-surface, and the other of which has projecting ribs separated by recesses adapted to surround the solid type and forming the outlines only of the characters.

3. The method of indelibly marking on paper, consisting in raising a portion of the surface of the paper having the form of a legible character of extended area and sharply defining the edges of the character, inking solidly the concave side of the raised surface, and inking in the angles between the raised edges of the character and the surface of the sheet.

4. The method of indelibly marking on paper, which consists in clamping a sheet of paper between coöperating types, one of which is solid and the other having an edge adapted to surround the solid type, and applying ink to opposite sides of the sheet at the same time by means of said types.

5. Commercial paper having an offset or embossed portion colored in the concavity thereof, and the paper having on its opposite side a line following the edges of the embossed portion.

6. Commercial paper having a raised portion formed as a legible character colored on its concave side and surrounded on the opposite side of the paper close to its raised edges by a colored line.

7. Commercial paper having a raised portion formed as a legible character with an extended surface and sharply-defined edges, and inked in the angles between the surface of the sheet and the edges of the raised portion.

8. Commercial paper having a raised portion formed as a legible character with an extended surface and sharply-defined edges, inked over the entire concave surface of the raised portion, and inked in the angles formed between the outwardly-extending edges of the raised character and the surface of the sheet.

849,716. SPARKING MECHANISM FOR GASOLENE-ENGINES. HARRY B. ATWATER, Champlain, N. Y. Filed Feb. 23, 1906. Serial No. 302,841.

Claim.—1. In an igniter, the combination of a revoluble shaft, a gear secured thereto, a freely-revoluble annular gear concentric therewith provided with an actuator, an ignition device operated by said actuator, a pinion interposed between said gears and meshing with both, and means for adjusting the position of said pinion about the axis of said shaft and securing it in adjusted position.

2. In an igniter, the combination of a revoluble shaft, a spur-gear secured thereto, an annular gear freely revoluble about said shaft and provided with an actuator, an ignition device operated by said actuator, a pinion driven by said spur-gear and meshing with said annular gear, and means for moving said pinion about the axis of said shaft and securing it in any desired position.

3. In an igniter, the combination of a revoluble shaft, a spur-gear secured thereto, an annular gear freely revoluble upon said shaft and provided with an actuator, an ignition device operated by said actuator, an arm freely movable about the axis of said shaft, a pinion upon said arm interposed between said gears and meshing with each, and means for locking said arm in adjusted position.

4. In an igniter, the combination of a revoluble shaft, a spur-gear secured thereto, an annular gear freely revoluble upon said shaft and provided with an actuator, an ignition device operated by said actuator, an arm freely movable about the axis of said shaft, a pinion upon said arm interposed between said gears and meshing with each, and means for clamping said arm to a stationary part.

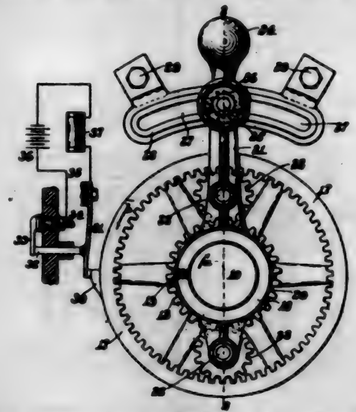

5. In an igniter, the combination of a revoluble shaft, an ignition device, an actuator therefor, mechanism carried by said shaft for operating said actuator, and means for adjusting said mechanism and securing it in adjusted position to accurately time the operation of said actuator.

6. In an igniter, the combination of a revoluble shaft, an ignition device, an actuator therefor, mechanism carried by said shaft for operating said actuator, and means mounted upon said revoluble shaft for adjusting said mechanism and securing it in adjusted position to accurately time the operation of said actuator.

7. In an igniter, the combination of a revoluble shaft, a gear secured thereto, a freely-revoluble annular gear concentric therewith provided with an actuator, a pinion mounted upon a stud interposed between said gears and meshing with both, and means for moving said pinion-stud about the axis of said shaft and securing it in adjusted position.

8. In an igniter, the combination of a revoluble shaft, a gear secured thereto, a freely-revoluble annular gear concentric therewith provided with an actuator, a member adapted to move about the axis of said shaft, a revoluble pinion thereon meshing with both of said gears, a bracket, and means for locking said member to said bracket in adjusted position.

9. In an igniter, the combination of a revoluble shaft, a gear secured thereto, a freely-revoluble annular gear concentric therewith provided with an actuator, a radial member adapted to move about the axis of said shaft, a revoluble pinion thereon meshing with both of said gears, a bracket, and means for locking said member to said bracket in adjusted position.

10. In an igniter, the combination of a revoluble shaft, a gear secured thereto, a freely-revoluble annular gear concentric therewith provided with an actuator, a radial member adapted to move about the axis of said shaft, a revoluble pinion thereon meshing with both of said gears, a slotted bracket, and a clamping member extending through said slot for locking said member to said bracket in adjusted position.

11. In an igniter, the combination of a revoluble shaft, an ignition device, an actuator therefor, mechanism carried by said shaft for operating said actuator, a device for adjusting said mechanism circumferentially of said shaft to accurately time the operation of said actuator, a fixed member, and means for securing said adjusting device to said fixed member in adjusted position.

849,717. MUSIC-LEAF TURNER. WILLIAM G. BENSON, Mooresville, Mo. Filed Mar. 30, 1906. Serial No. 308,069.

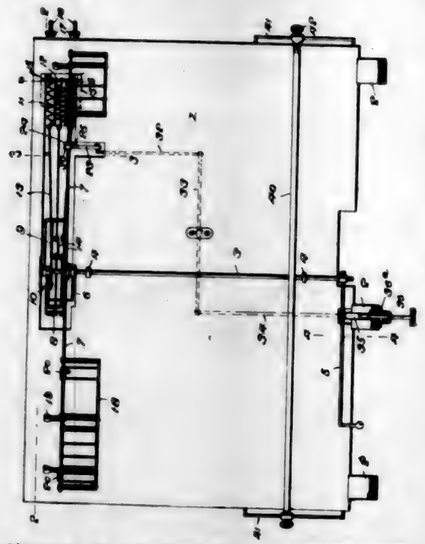

Claim.—1. In a leaf-turner, the combination with a frame; of a locking device comprising a pair of arms rigidly secured to said frame, a pair of vertically-movable arms secured to said rigid arms and parallel therewith, a swinging latch pivotally secured to the upper movable arm, a spring disposed between the end of said arm and latch whereby said latch is normally held in its lowered position a finger rigid with the lower movable arm and projecting upwardly therefrom, a controlling-bar rigidly secured to said movable arms, and means to operate said controlling-bar whereby the movable arms will be raised bodily and the devices interposed between said arms released one at a time.

2. In a leaf-turner of the class described, the combination with a frame having a shaft rotatably mounted thereon, leaf-engaging devices pivoted to said shaft and disposed in a common path, controlling members secured to said leaf-engaging devices, said controlling members having one of their ends curved and rotating around said shaft with the inner face of the curve engaging the shaft, and means secured at one end of the frame and at the opposite end to the controlling members to swing said leaf-engaging members on the shaft.

849,718. CLUTCH-PULLEY. GEORGE BEYER, New London, Wis. Filed Jan. 10, 1907. Serial No. 353,068.

Claim.—1. A clutch-pulley, comprising a hub adapted to be secured upon a shaft, a flange extending outward around the hub having its outer circumference formed into a friction-surface, a second hub or sleeve of a lesser diameter than that of the first-mentioned hub extending outward therefrom, a screw-thread formed upon the outer end of said smaller sleeve, a nut adapted to be screwed upon said threads, a washer arranged upon said smaller sleeve inside of said nut, a pulley loosely mounted upon said smaller sleeve between said washer and flange, a flaring flange extending outward around said pulley from one end thereof, the outer portion of the circumference of said flaring flange being a friction-surface corresponding with the friction-surface of the first-named flange, a plurality of levers hinged to the inside of said second-named flange so as to have a short and light inner end and a longer and heavier outer one, said inner ends being arranged for engaging the end face of the first-named hub by reason of the centrifugal action of the pulley upon the outer end of said levers as the pulley is revolved, and thereby separate the friction-faces of said second and first named flanges, a plurality of springs arranged in the outer end of said pulley adapted to be compressed by the screwing of said nut upon the sleeve against said washer for increasing the friction between the friction-faces of said second and first mentioned flanges, and a set-screw arranged in said nut for its retention in the desired position upon said sleeve.

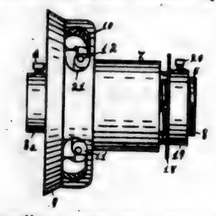

2. A clutch-pulley, comprising a hub adapted to be secured upon a shaft, a flange extending outward around the hub having its outer circumference formed into a beveled friction-surface, a second hub or sleeve of a lesser diameter than that of the first-mentioned hub extending outward therefrom, a screw-thread formed upon the outer end of said smaller sleeve, a nut adapted to be screwed upon said threads, a washer arranged upon said smaller sleeve inside of said nut, a pulley loosely mounted upon said smaller sleeve between said washer and flange, a flaring flange extending outward around said pulley from one end thereof, the outer portion of the circumference of said flaring flange being a beveled friction-surface corresponding with the friction-surface of the first-named flange, a plurality of levers hinged to the inside of said second-named flange so as to have a short and light inner end, and a longer and heavier outer one, said inner ends being arranged for engaging the end face of the first-named hub by reason of the centrifugal action of the pulley upon the outer ends of said levers as the pulley is revolved, and thereby separate the friction-faces of said second and first named flanges, a plurality of springs arranged in the outer end of said pulley adapted to be compressed by the screwing of said nut upon the sleeve against said washer for increasing the friction between the friction-faces of said second and first mentioned flanges, and a set-screw arranged in said nut for its retention in the desired position upon said sleeve.

849,719. PROPELLER-ADJUSTING DEVICE. WILLIAM E. BLAIR, Buffalo, N. Y., assignor to Buffalo Gasolene Motor Company, Buffalo, N. Y. Filed Feb. 23, 1906. Serial No. 302,350.

Claim.—1. A propeller-adjusting device comprising a shaft adapted to be operatively connected with a propeller, a hand-lever operatively connected with said shaft and capable of being adjusted into different positions relatively thereto, a segment also adjustable relatively to said shaft, and means for interlocking said hand-lever and segment, substantially as set forth.

2. A propeller-adjusting device comprising a shaft adapted to be operatively connected with the propeller, a hand-lever adjustable circumferentially on said shaft, a segment capable of circumferential adjustment about said shaft, and a dog mounted on said hand-lever and adapted to engage with said segment, substantially as set forth.

3. The combination of a driving-shaft, reversible propeller-blades mounted on said shaft, an adjusting-shaft op-

eratively connected with said blades, a hand-lever capable of circumferential adjustment on said adjusting-shaft, a toothed segment capable of circumferential adjustment about said adjusting-shaft, and a locking-dog mounted on said hand-lever and adapted to engage with the teeth of said segment, substantially as set forth.

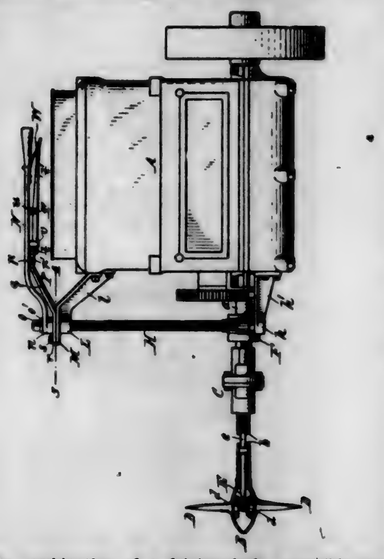

4. The combination of a driving-shaft, reversible propeller-blades mounted on said shaft, an adjusting-shaft operatively connected with said blades, a bracket having a bearing in which said adjusting-shaft is journaled, a hand-lever capable of circumferential adjustment on the adjusting-shaft, a toothed segment having a hub which receives said adjusting-shaft, means for securing said segment to said bracket in different positions about the adjusting-shaft, and a locking-dog mounted on the hand-lever and engaging with the teeth of said segment, substantially as set forth.

5. The combination of a driving-shaft, reversible propeller-blades mounted on said shaft, an adjusting-shaft operatively connected with said blades and having a square part, a hand-lever having a hub provided with a square opening which receives the square part of said adjusting-shaft, a bracket having a bearing in which said adjusting-shaft is journaled, and an annular flange, a toothed segment having a hub which is arranged on said adjusting-shaft between said flanged bearing and hand-lever hub, a fastening-screw arranged in an opening in the hub of said segment and one of four openings formed in a circumferential row in said flange, and a locking-dog arranged on said hand-lever and engaging with the teeth of said segment, substantially as set forth.

849,720. NUT-LOCK. LOUIS BLESSING and ALFRED JOHNS, Jackson, Mich. Filed Dec. 10, 1906. Serial No. 347,025.

Claim.—1. In a nut-lock, the combination with the bolt, of a holding-nut and a locking-nut, the locking-nut spaced from the holding-nut and provided with an interior keyway, and a locking-key in said keyway, extending through the locking-nut inwardly into contact with the face of the holding-nut, and engaging with the threads of the bolt to resist the endwise displacement of the holding-nut.

2. In a nut-lock, the combination with the bolt, of a holding-nut and a locking-nut, the locking-nut spaced from the holding-nut and provided with an interior keyway, and a locking-key in said keyway extending outwardly beyond the face of the locking-nut and inwardly through said nut into contact with the holding-nut, said locking-key

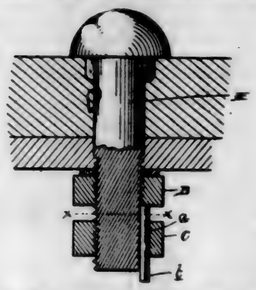

engaging with the screw-threads of the bolt to resist the endwise displacement of the holding-nut.

849,721. RAILWAY-TIE. LOUIS BLESSING, Jackson, Mich. Filed Dec. 17, 1906. Serial No. 348,112.

Claim.—1. In a railway-tie formed of cementitious material, the combination of a series of reinforcing members emoedded in the body of the tie and consisting of cables arranged with a straight portion extending adjacent to the upper surface of the body and a semicircular portion extending adjacent to the lower surface of the body and uniting the ends of the straight portion, the end portions of said cables being overlapped at the middle of the straight portion.

2. In a railway-tie formed of cementitious material, the combination of a series of reinforcing members embedded in the body of the tie and consisting of cables arranged with a straight portion extending adjacent to the upper surface of the body and a semicircular portion extending adjacent to the lower surface of the body and uniting the ends of the straight portion, the end portions of said cables being overlapped at the middle of the straight portion and the ends of said cables turned vertically downward.

3. In a railway-tie, the combination of blocks formed of cementitious material and provided with inwardly and downwardly inclined ends, reinforcing-cables embedded in said blocks, each cable being arranged in the form of a loop with a straight portion extending adjacent to the upper face of the block and a semicircular portion extending adjacent to the lower face of the block and uniting the ends of the straight portions, a bar at each side of the blocks, and tubular members extending through the blocks and bars and riveted at their outer ends to secure the bars to the blocks.

4. In a railway-tie, the combination of blocks formed of cementitious material and provided with inwardly and downwardly inclined ends and a plurality of chambers extending downward therein each having a hole leading from its bottom through the block, reinforcing-cables embedded in said blocks, each cable being formed of twisted strands of wire and arranged in the form of a loop with overlapping ends, a bar at each side of the blocks to unite the same and hold them apart, tubular members extending through the blocks inside the reinforcing-loops and through the bars to secure the bars to the blocks, a clamp in each of the chambers in the blocks having laterally-extending lugs, and a wedge in each chamber between one side thereof and the clamp to secure the clamp therein.

849,722. BRAKE-SHOE. CHARLES W. BOOTH, Milwaukee, Wis. Filed June 19, 1905. Serial No. 265,854.

Claim.—1. A brake-shoe comprising a cast body portion and a tie-plate secured in the back thereof, said plate being notched to form prongs or projections at the edges thereof and relatively narrow portions intermediate said prongs or projections, said intermediate portions being depressed and said plate being disposed with the backs of the prongs or projections thereof flush with the back of the shoe.

2. A brake-shoe comprising an integral body portion and attaching-lug of cast metal and a tie-plate secured to the back thereof comprising a skeleton portion which extends upwardly and is embedded in the attaching-lug, said skeleton comprising lateral webs and a transverse web which connects said lateral webs outside of the keyway in said attaching-lug, forming a hole or opening in alinement with the keyway in said attaching-lug.

3. A brake-shoe comprising an integral body portion and attaching-lug of cast metal and a tie-plate secured to the back thereof comprising a skeleton portion which extends upwardly and is embedded in the attaching-lug, said skeleton comprising lateral webs and a transverse web which connects said lateral webs outside of the keyway in said attaching-lug, forming a hole or opening in said skeleton portion in alinement with and larger than the keyway in said attaching-lug.

4. A brake-shoe comprising an integral body portion and attaching-lug of cast metal and a skeleton reinforcing-plate for said attaching-lug, the lower ends or edges of which are embedded in the body portion of said brake-shoe and which comprises lateral webs and a transverse web which connects said lateral webs outside of the keyway in said attaching-lug, forming a hole or opening therein in alinement with and larger than the keyway in said attaching-lug.

849,723. COMBINATION-TOOL. EUGENE F. CHAPMAN, Keytesville, Mo. Filed Mar. 6, 1906. Serial No. 304,544.

Claim.—1. In a combination-tool, a frame constructed of a single piece of material bent double and having a vertical portion and a horizontal portion, a disk pivotally mounted on the upper end of the vertical portion, and means whereby tools are clamped between the horizontal portions; substantially as specified.

2. In a combination-tool, a frame consisting of parallel members shaped to form a bit-stock and suitably placed to receive a series of pivoted tools which, when in inoperative position, sustain said members, and means for clamping said members upon the tools, as set forth.

3. In a combination-tool, a frame consisting of parallel members shaped to form a bit-stock, a pivoted disk at one end thereof, means for clamping the members upon a bit together with other tools mounted between the bit-supporting sections of the frame and adapted to give rigidity to the frame in inoperative position while coöperating with the same when projected, as set forth.

4. In a combination-tool, a frame consisting of two parallel members shaped to form a bit-stock, a slotted lever pivoted in the lower section of the members and having hooked extremities, a series of pivoted tools adapted to swing between the frame members and thereby support the same, and means for clamping said members on the tools, as set forth.

849,724. GAS-VALVE. RINEHART CHRIST, Hamilton, Ohio. Filed Oct. 23, 1905. Serial No. 284,095.

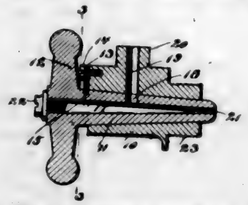

Claim.—A valve comprising a casing, a turning-plug therein, said plug having near one of its ends outside the casing a groove and a stop in the groove, and a half-collar secured to the casing and extending into the groove, and engageable with the stop.

849,725. CATAMENIAL BANDAGE. MARY A. COOK, Bridgeport, Conn. Filed June 23, 1906. Serial No. 323,055.

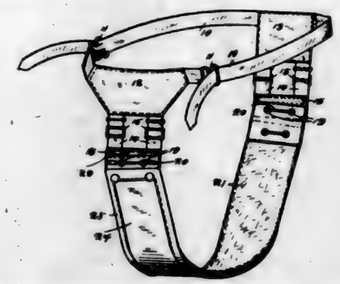

Claim.—A catamenial appliance comprising a waistband, two holders removably connected therewith, each holder having two tabs, means for removably connecting a bandage to the holders with its ends clamped between the tabs thereof, and a shield having its ends removably connected to the outer tabs of the holders, the construction stated enabling the holders, bandage, and shield to be removed from the waistband as a whole and then disconnected, said shield comprising a strip of rubber having its edges rendered relatively inelastic whereby its central portion may yield to form a pocket to receive and retain the main portion of the bandage.

849,726. POSTAL SOUVENIR-FOLDER. WILLIAM H. COWEE, Hackensack, N. J., assignor to Underwood & Underwood, Arlington, N. J., a Corporation of New Jersey. Filed Oct. 15, 1906. Serial No. 338,905.

Claim.—In combination, a postal card adapted to receive on the rear face thereof a picture, a letter-sheet having one section thereof detachably connected to one end of the postal card, the other portions of the sheet adapted to be folded over the connected part and the whole adapted to be folded over the face of the postal card, a detachably-connected flap at the other end of the card to fold over the free end of the letter-sheet when said letter-sheet is folded over the picture, an extension of postal-card dimensions detachably connected to the

lower edge of the postal card and adapted to fold over the letter-sheet, said extension having a slit therein, a tongue

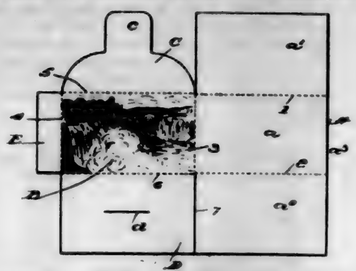

detachably connected to the upper edge of the postal card and adapted to fold over said extension with its tongue inserted in the groove in said extension as and for the purpose set forth.

849,727. LAMP-BRACKET. WILLIAM P. CRARY, New York, N. Y. Filed May 26, 1906. Serial No. 318,791.

Claim.—1. A lamp-bracket constructed to be clamped to the front fork of a bicycle or like vehicle, in combination with a rod fastened to said bracket and extending upwardly therefrom, constructed to engage with said fork-crown.

2. A lamp-bracket constructed to be clamped to the front fork of a bicycle or like vehicle, in combination with a rod in the form of a loop, having its ends fastened to said bracket and its bight bent to engage said fork-crown.

3. The new article of manufacture described, consisting of a lamp-bracket adapted to be clamped to the front fork of a bicycle or like vehicle, and an upward extension from said bracket adapted to engage the crown of a front fork to which said bracket is clamped.

849,728. DRINKING-TROUGH. JOSEPH DINTAMAN, Ithaca, Mich. Filed Mar. 26, 1906. Serial No. 308,029.

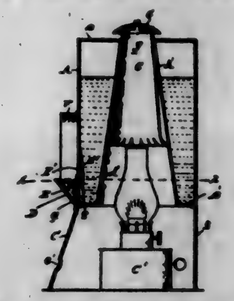

Claim.—1. In a poultry drinking-fountain the combination with a tubular member having a central conical lining forming an annular water-receptacle and a central heating-chamber and an apertured supporting-base for said receptacle arranged to inclose the lamp, of a trough secured to said receptacle, and a covered tubular jacket member in said heating-chamber projecting above and spaced from the receptacle, said receptacle having a fill-aperture and an aperture in its lower end communicating with said trough.

2. In a poultry drinking-fountain, the combination with an annular tubular receptacle, the center of said annular receptacle forming a heating-chamber, of a trough on the outside of said receptacle, said receptacle having an aperture communicating with said trough and a downwardly-extending water-sealed fill-channel having its lower end terminating above said aperture, whereby the level of the water in said fill-channel determines the level of the water in said trough substantially as described.

849,729. TIRE FOR VEHICLES. WILMER DUNBAR, Akron, Ohio. Filed Apr. 22, 1905. Serial No. 256,911.

Claim.—1. A tire for wheels formed of a yielding material and provided with pockets or recesses and plugs formed of a less yielding but resilient material secured in said pockets or recesses, the outer ends of the plugs forming with the surface of the tire a uniform and regular surface.

2. A tread portion of tires in combination with metal ferrules secured therein and a plug or filling in the ferrules, the wearing-surfaces of the tire, ferrules and plugs being normally in or approximately in the same plane.

3. A tread portion for tires in combination with metal ferrules provided with retaining-heads and secured in the tread portion and a plug of filling in the ferrules.

849,730. PEBBLE-MILL. GEORGE S. EMERICK, Nazareth, Pa. Filed Sept. 20, 1906. Serial No. 335,503.

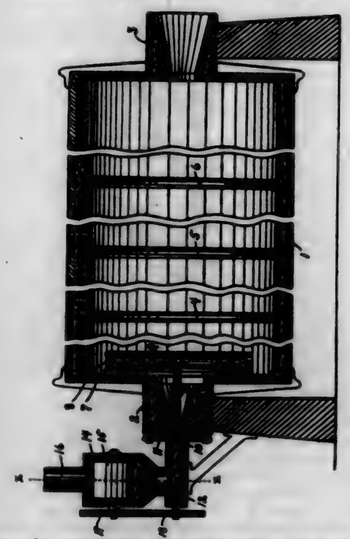

Claim.—In combination in a pebble-mill, means for separating and feeding material into said mill, consisting of a feed-spout delivering upon a feed-roll, an inclined screen in close juxtaposition to the surface of said feed-roll, a tailing-spout, a worm-casing and a worm adapted to rotate therein, and means for reducing the material fed into said mill, said means including a plurality of transverse, annular flanges progressively increasing in depth from the feed to the discharge end of said mill, whereby the passage of material through said mill may be retarded, substantially as and for the purposes described.

849,731. INSULATOR. SIEGMUND FEUERSTEIN, Rochester, N. Y. Filed Aug. 24, 1906. Serial No. 331,028.

Claim.—1. An insulator comprising a body portion with an inverted conical part with flange at its lower end, and a cap fitted thereover and resting on said flange and having a wire-receiving groove and cement supported by said flange between the cap and said part and wire-retaining members extended across said groove and confined within the boundary of said conical part.

2. An insulator comprising a body portion with an inverted conical part with a flange at its lower end, and a cap fitted thereover and resting on said flange and having a wire-receiving groove, cement supported by said flange between the cap and said part, and wire-retaining members extended across said groove and confined within the boundary of said conical part, said body portion being formed with an annular groove below and adjacent said flange.

849,732. CONCRETE-MIXER. ELLSWORTH E. FLORA, Chicago, Ill., assignor to W. O. Williams, South Bend, Ind. Filed Jan. 23, 1906. Serial No. 297,435.

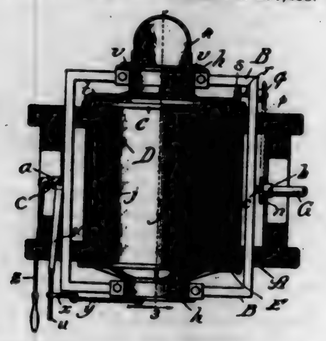

Claim.—1. In a machine of the character described, the combination of a frame, a mixing-receptacle on the frame having a non-perforated surrounding wall formed with a plurality of internal pockets of curved involute shape in cross-section, a ridge formed between the members of each pair of said pockets by their junction and forming a pouring edge from one pocket into the other in the rotation of the receptacle, and means for rotating the receptacle on the frame.

2. In a machine of the character described, the combination of a frame, a mixing-receptacle on the frame, means for rotating the receptacle on the frame, and means on the frame operating automatically to rock the receptacle endwise during its rotation.

3. In a machine of the character described, the combination of a frame, a mixing-receptacle on the frame, means for rotating the receptacle on the frame, attachable and detachable means for automatically rocking the receptacle endwise during its rotation, and means for upsetting the receptacle on the frame.

4. In a machine of the character set forth, the combination of a frame, a mixing-receptacle on the frame having a non-perforated surrounding wall formed with a plurality of pockets of curved involute shape in cross section, a ridge formed between the members of each pair of said pockets by their junction and forming a pouring edge from one pocket to the other in the rotation of the receptacle, said receptacle having heads provided centrally with inlet and outlet openings respectively, and means for rotating the receptacle on the frame.

849,733. ADJUSTABLE SUPPORT FOR WIND-SHIELDS. OSCAR C. GRAFF, Chicago, Ill., assignor to C. P. Kimball & Co., Chicago, Ill., a Corporation of Illinois. Filed Aug. 18, 1906. Serial No. 331,213.

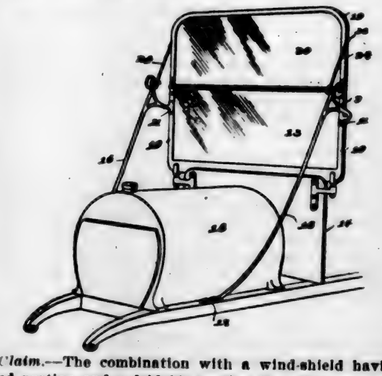

Claim.—The combination with a wind-shield having a fixed portion and a foldable portion hinged thereto, of an adjustable support for said hinged portion comprising a bracket secured to the fixed portion, a guide-sleeve provided with a threaded shank rotatably mounted in said bracket, a clamping-ring on said shank interposed between said guide-sleeve and said bracket, a brace pivoted to said hinged portion and slidably engaging said sleeve, and a clamp engaging the threads of said shank on the opposite side of said bracket from said clamping-ring, whereby a locking or releasing of the sleeve and braces is effected by the movement of a single clamp, substantially as described.

849,734. RING SPINNING AND TWISTING APPARATUS. JOEL HAYDEN, Jr., Boston, Mass., assignor to Hayden Machinery Company, Boston, Mass., a Corporation of Maine. Filed Jan. 27, 1906. Serial No. 298,205.

Claim.—1. The combination of a spinning-ring, a ring-rail, a weighted member secured to said ring and provided with recesses therein, and a plurality of members adjustably secured to said ring-rail so as to be adjustable toward and from the axis of said ring and coöperating with said recesses to prevent the continuous rotation of said member while permitting to it limited horizontal movement.

2. The combination of a spinning-ring a ring-rail, a weighted member secured to said ring and provided with recesses therein, and a plurality of members adjustably se-

cured to said ring-rail so as to be adjustable toward and from the axis of said ring and coöperating with said recesses to prevent the continuous rotation of said member while permitting to it limited axial movement.

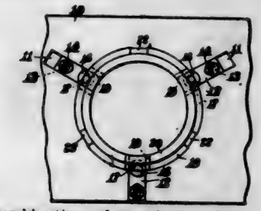

3. The combination of a spinning-ring, a ring-rail, a weighted member secured to said ring and provided with recesses therein, and a plurality of members adjustably secured to said ring-rail so as to be adjustable toward and from the axis of said ring and coöperating with said recesses to prevent the continuous rotation of said member while permitting to it limited horizontal and axial movement.

4. The combination of a spinning-ring, a ring-rail, a weighted member secured to said ring and provided with shouldered recesses therein, and a plurality of shouldered members coöperating with said recesses to prevent the continuous rotation of said member while permitting to it limited axial movement.

5. The combination of a spinning-ring, a weighted member secured to said ring and provided with a plurality of shouldered recesses, a ring-rail provided with a plurality of radial grooves, a slidable member in each groove provided with a shouldered head adapted to coöperate with said shouldered recesses, and means for securing said slidable members in adjusted position.

6. The combination of a spinning-ring, a weighted member secured to said ring and provided with a plurality of recesses, a ring-rail provided with a plurality of radial grooves, a slidable member in each groove provided with a head adapted to coöperate with said recesses, and means for securing said slidable members in adjusted position.

7. The combination of a spinning-ring, a weighted member having a plurality of radial grooves therein, and a plurality of clips secured within said grooves and adapted to engage said spinning-ring.

849,735. BOTTLE-FILLING MACHINE. SAMUEL M. HEULINGS, Haddonfield, N. J. Filed May 4, 1905. Serial No. 258,800.

Claim.—1. In a bottle-filling machine, the combination with a reservoir; of a vacuum-chamber; a valve in said reservoir arranged to be controlled by the movement of the bottle to be filled; and, means arranged to exhaust said vacuum-chamber in accordance with the opening of said valve, substantially as set forth.

2. In a bottle-filling machine; the combination, with a reservoir and a vacuum-chamber; of a movable conduit communicating with said reservoir, and having an adjacent but independent channel communicating with said vacuum-chamber; a valve controlling the communication between the reservoir and said movable conduit, and arranged to be actuated by movement of said conduit; means for exhausting said vacuum-chamber; and means, cooperating with the bottle, for effecting the movement of said conduit; substantially as set forth.

3. In a bottle-filling machine, the combination with a reservoir; of a valve in said reservoir arranged to be controlled by relative movement between said valve and the bottle to be filled; of a bell in contact with said valve arranged to receive the mouth of said bottle; and, a channel in said bell through which the surplus liquid or froth formed in said bottle may be withdrawn by communication with a vacuum, substantially as set forth.

4. In a bottle-filling machine, the combination with a reservoir; of a valve in said reservoir arranged to be opened by uplifting the bottle to be filled; a bell in contact with said valve arranged to receive the mouth of said bottle; a channel in said bell through which the surplus liquid or froth in said bottle may be withdrawn by communication with a vacuum; and, means arranged to uplift said bottle, substantially as set forth.

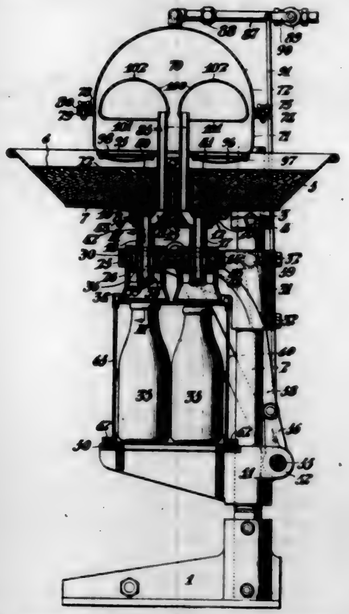

5. In a bottle-filling machine, the combination with a reservoir; of a valve in said reservoir arranged to be opened by uplifting, and closed by lowering, the bottle to be filled; a bell arranged for vertical reciprocation and arranged to receive the mouth of said bottle; a vacuum-chamber; a channel in said bell in communication with said vacuum-chamber; and, means arranged to uplift said bottle and contemporaneously exhaust said vacuum-chamber to respectively admit liquid to said bottle and withdraw the surplus liquid or froth therefrom, substantially as set forth.

6. In a bottle-filling machine, the combination with a reservoir; of a tube-head comprising a bifurcated channel; a valve arranged to control one branch of said channel; a vacuum-chamber; a tube connecting the other branch of said channel with said vacuum-chamber; and, means whereby uplifting the bottle to be filled contemporaneously opens said valve and exhausts said chamber to respectively fill said bottle with liquid and withdraw the surplus liquid or froth therefrom into said chamber, substantially as set forth.

7. In a bottle-filling machine, the combination with a reservoir; of a tube-head comprising a bifurcated channel; a valve arranged to control one branch of said channel; a vacuum-chamber; a tube connecting the other branch of said channel with said vacuum-chamber; means whereby the uplifting of the bottle to be filled contemporaneously opens said valve and exhausts said chamber to respectively fill said bottle with liquid and withdraw the surplus liquid or froth therefrom into said chamber; and, a deflecting-hood arranged to deflect said froth as it enters said chamber, substantially as set forth.

8. In a bottle-filling machine, the combination with means arranged to fill a bottle with liquid; of a vacuum-chamber; a valve in said chamber arranged to automatically close or open when vacuum is respectively established or terminated; a bell arranged to receive the mouth of said bottle; a channel connecting said bell with said chamber; and, means arranged to alternately establish and terminate a vacuum within said chamber, to respectively withdraw the froth from said bottle into said chamber, and discharge said froth from said chamber, substantially as set forth.

849,736. LEAF-SUPPORT. OZELLO R. HUNT, Kenosha, Wis., assignor to The Simmons Manufacturing Company, Kenosha, Wis., a Corporation of Wisconsin. Filed Nov. 10, 1906. Serial No. 342,811.

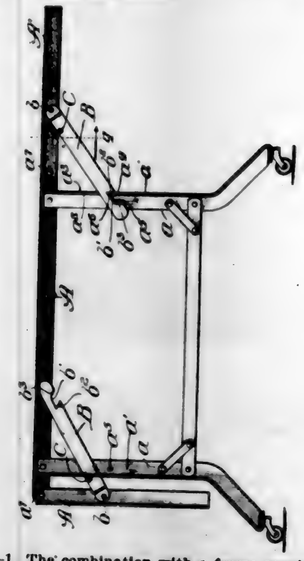

Claim.—1. The combination with a frame provided with a locking-shoulder, and a leaf pivotally connected with said frame, of a link pivotally connected with said leaf and equipped with a locking-shoulder and with a cam at its free end, and means located near the pivot of said link serving, when the leaf is moved to an abnormal position, to secure the link temporarily at a fixed angular relation to the leaf, whereby the link is carried bodily by the leaf and its locking-shoulder caused to clear the locking-shoulder of the frame in the releasing operation.

2. The combination with a frame provided with a locking-shoulder and with a cam-shoulder, and a leaf member pivotally connected with said frame, of a link member pivotally connected with said leaf member and equipped with a locking-shoulder coacting with said first-named locking shoulder and with a cam serving to turn the link with relation to the leaf member when the leaf member is raised to an abnormal high position, and means carried by one of said members near the pivot of the link member and serving to engage the other member and thereby secure the members together at a fixed angular relationship, whereby the leaf member serves to carry the link member bodily and cause the locking-shoulder of the link member to clear the coacting locking-shoulder of the frame in the releasing operation, the cam-shoulder on said frame serving to disengage the link member from its fixed relation to the leaf member during the descent of the leaf member.

3. The combination with a frame provided with a locking-shoulder and with two cam-shoulders, and a leaf member pivotally connected with said frame, of a link member pivotally connected with said leaf member and provided with a locking-shoulder and with a cam at its free extremity, said cam serving, when the leaf member is raised to an abnormally high position, to turn the link member with relation to the leaf member, and a stud connected with one of said members near the pivot of the link member and serving to bindingly engage the other member, whereby the link member is caused to be carried bodily by the leaf member so that the locking-shoulder of the link member will clear the locking-shoulder of the frame in the releasing operation, said link member engaging one of the cam-shoulders of the frame during the descent of the leaf member, thereby to free the link member from binding engagement with the leaf member.

4. The combination with a frame having an upright provided with a slot, at the lower end of which is a locking-shoulder and at the upper end of which is a cam-shoulder, a stud within the frame at a distance from said slot and serving as a cam-shoulder, and a leaf member pivotally connected with said frame, of a link member pivotally connected with said leaf member and provided with a locking-shoulder and a cam extremity adapted to ride upon the cam-shoulder afforded by said stud, and means connected with one of said members near the pivot of the link member serving to secure the link member at a fixed angular relationship to the leaf member, the link member engaging the cam-shoulder at the upper end of said slot when the leaf member is dropped, thereby freeing the link member from its fixed relationship to the leaf member to enable the link member to perform again its locking function when the leaf member is again raised.

5. The combination with a frame provided with a locking-shoulder and a leaf pivotally connected with said frame, of a link pivotally connected with said leaf and provided with a locking-shoulder, and a stud carried by said link near the pivot thereof, said stud adapted to engage the leaf and secure the link at a fixed angular relationship to the leaf when the leaf is raised to an abnormally high position, whereby the leaf serves bodily to carry the link and cause its locking-shoulder to clear the locking-shoulder of the frame during the descent of the leaf.

849,737. ADJUSTING DEVICE FOR MUSICAL INSTRUMENTS. PAUL B. KLUGH, Chicago, Ill., assignor to The Cable Company, Chicago, Ill., a Corporation of Illinois. Filed June 3, 1905. Serial No. 263,630.

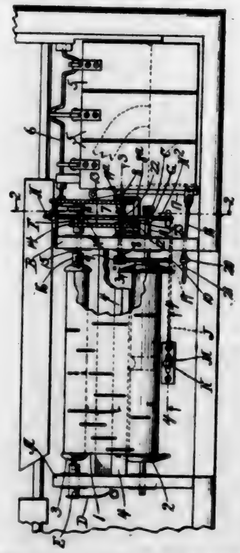

Claim.—1. In an automatic musical instrument or player, in combination with a fixed tracker-board, a control-

ling-sheet coöperating therewith; rolls by which said sheet is propelled; shafts or spindles by which the rolls are carried and rotated, movable longitudinally in their respective bearings; springs which yieldingly resist the movement of said shafts respectively in opposite directions, and means for moving the shafts at will against the action of their respective springs.

2. In an automatic musical instrument or player, in combination with a controller-sheet roll or spool and supports for the same; two springs acting in opposition to each other for longitudinal pressure on the spool, and means by which such pressure is transmitted to the spool.

3. In an automatic musical instrument or player, in combination with a controller-sheet take-up and rewind rolls or spools and supports for the same; springs which act in opposition to each other for longitudinal pressure upon both rolls, and means for transmitting such pressure to the rolls.

4. In an automatic musical instrument or player, in combination with a controller-sheet roll or spool and supports for the same, two springs acting in opposition to each other for longitudinal pressure on the spool; means by which such pressure is transmitted to the spool interposed between one of the springs and the spool, and means for adjusting said interposed element.

5. In an automatic musical instrument or player, in combination with a controller-sheet roll or spool and supports for the same, two springs acting in opposition to each other for longitudinal pressure on the spool; means by which such pressure is transmitted from one of the springs to the spool, said transmitting means being movable with and in opposition to the pressure of the spring, and means for securing it in adjusted position within the range of said movement.

6. In an automatic musical instrument or player, in combination with a controller-sheet, take-up and rewind rolls and supports for the same, springs acting in opposition to each other for longitudinal pressure on the spools, one spring being mounted for pressing one of the spools longitudinally in one direction and the other for pressing the other spool longitudinally in the opposite direction, and connections by which the pressure of each spring is transmitted to the other spool.

7. In an automatic musical instrument or player, in combination with a controller-sheet, take-up and rewind rolls or spools, a spring acting upon one of the spools for longitudinal pressure in one direction, and a second spring acting upon the other spool for longitudinal pressure in the opposite direction; connections for transmitting the pressure of each spring to the opposite end of the other roll from that at which the other spring acts on such other roll, said connections being adjustable and adapted to be secured in adjusted position to limit the pressure transmitted from either spring to the opposite roll.

8. In an automatic musical instrument or player, in combination with controller-sheet, take-up and rewind rolls, shafts or spindles for rotating said rolls, and springs mounted for pressure longitudinally in opposite directions upon the respective shafts or spindles; flanges on said shafts or spindles adapted for lateral pressure; connections between the two shafts or spindles mounted for lateral pressure on such flanges at opposite sides thereof respectively in opposition to the pressure of the respective springs, and means for adjusting and securing said connections to limit the transmission of the pressure of the springs in opposition to each other.

9. In an automatic musical instrument or player, in combination with controller-sheet take-up and rewind rolls or spools, supporting bearings or spindles for the same and springs acting upon the supporting bearings or spindles at the opposite ends of said rolls respectively for pressing them in opposite directions longitudinally; connections between the spring-pressed bearing or spindle of one roll and the bearing or spindle of the corresponding end of the other roll for transmitting the pressure of one spring-pressed part to the other, and means for adjusting and securing said connections.

10. In an automatic musical instrument or player, in combination with controller-sheet take-up and rewind rolls or spools, bearings or spindles for supporting the same; springs acting for pressure longitudinally with respect to the rolls; a rock-shaft extending transversely of the spindles at one end of the rolls having lever-arms by which it engages said spindles or bearings for pressure thereon in opposite directions opposed to the pressure of the springs respectively, and means for rocking and securing said shaft.

11. In an automatic musical instrument or player, in combination with the controller-sheet take-up and rewind rolls or spools, spindles or bearings for supporting the same; springs acting for longitudinal pressure in opposite directions upon the spindles or bearings of the respective rolls; connections for engaging the spindles or bearings at the same end of the two rolls adapted for moving said spindles respectively in opposite directions against the pressure of the respective springs; an adjustable stop for moving said connections and means for securing said stop in adjusted position.

849,738. REAMER. FRANCIS J. LAPOINTE, Roxbury, Mass. Filed Mar. 27, 1906. Serial No. 308,202.

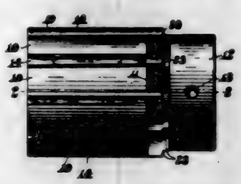

Claim.—1. In a reamer, the combination with a body provided with longitudinal peripheral grooves having one flat radial side and a curved side extending from the inner end of said radial side to a point nearer the outer end of said radial side than a point intermediate thereto, of a plurality of blades fitting said grooves and provided with cutting edges extending along the surface of said body.

2. In a reamer, the combination with a body provided with longitudinal peripheral grooves, of a plurality of semicylindrical blades having cutting edges extending along the surface of said body and adapted to fit the grooves therein, and means for retaining said blades in said grooves.

3. In a reamer, the combination with a body provided with longitudinal peripheral grooves having one flat side and wider at the top than at the bottom and provided with an intermediate portion wider than at the top, of a plurality of blades fitting said grooves and provided with cutting edges extending along the surface of said body.

849,739. YELLOW MONOAZO DYE AND PROCESS OF MAKING SAME. AUGUST L. LASKA, Offenbach-on-the-Main, Germany, assignor to Chemische Fabrik Griesheim-Elektron, Frankfort-on-the-Main, Germany, a Corporation. Filed Nov. 6, 1906. Serial No. 342,173.

Claim.—1. The process of manufacturing yellow monoazo dyestuffs, which consists in combining the diazotized chlorin derivatives of the orthoanilin-sulfonic acid with pyrazolon derivatives of the general formula:

$$COOH.C_6H_3ON_2.C_6H_4X,$$

wherein X means a hydrogen atom or a sulfo group.

2. As a new article of manufacture the dyestuffs obtained by combining the diazotized chlorin derivatives of the orthoanilin-sulfonic acid with pyrazolon derivatives of the general formula:

$$COOH.C_6H_3ON_2.C_6H_4X,$$

wherein X means a hydrogen atom or a sulfo group, forming orange-powders, soluble in concentrated sulfuric acid to an orange solution, in water to a yellow one, being hardly altered by addition of caustic-soda lye or hydrochloric acid.

849,740. BUTTON. ALFRED J. LEVY, St. Louis, Mo., assignor of one-half to Montefiore Levy, St. Louis, Mo. Filed Sept. 4, 1906. Serial No. 333,232.

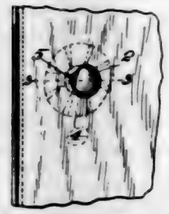

Claim.—1. The combination with a garment having an opening therein, of a button constructed with a head, and an integral flexible disk portion adapted to be inserted through the opening in the garment and secured to the garment fabric; substantially as specified.

2. A button, comprising a section of flexible material, a filler located in the center of said section of material, and which material is gathered and tied immediately beneath the center of the filler, and the outer portion of the section of material being extended horizontally from the gathered portion; substantially as specified.

3. The herein-described button, comprising a circular section of flexible material, a hemispherical body over which the center of the flexible section is stretched, which flexible section is gathered and tied immediately beneath the body, and the outer portion of the flexible material being formed into a horizontally-arranged disk; substantially as specified.

849,741. SOAP-DISPENSER. HERMAN J. S. LEWIS, New York, N. Y. Filed Nov. 17, 1905. Serial No. 287,889.

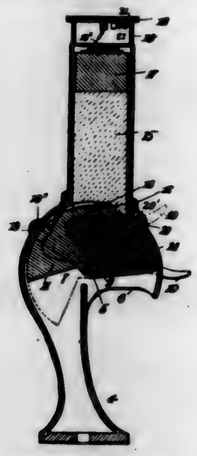

Claim.—1. A soap-dispensing receptacle comprising a knife-carrying frame having a counterweight and a knife-blade thereon and a rounded protuberance or rib extending transversely directly behind the edge of the knife-blade, scraper-blades bearing against said knife-carrying frame, and a soap-containing magazine.

2. A soap-shaving machine comprising a magazine, means therein to press the soap downwardly, a frame pivotally mounted below said magazine adapted to support the soap, means for advancing said frame, automatic means for retracting the same, a knife carried by said frame and so mounted as to shave off a thin layer of soap upon the operation of the frame, a soap-supporting protuberance upon said frame in proximity to said knife, and means for removing soap adhering to the exposed surface of the frame.

3. A soap-dispensing receptacle comprising a magazine, a knife-carrying frame having a knife-blade thereon, and having a cylindrical surface behind said blade for supporting the soap after the forward movement of the blade, said blade being separated from the cylindrical surface by a rounded protuberance, as and for the purpose set forth.

4. A soap-dispensing receptacle comprising a knife-carrying frame pivoted on a horizontal axis and having a counterweight, a knife-blade on said frame, said frame having a rounded protuberance behind said knife-blade and a magazine extending into proximity to said knife-carrying frame and adapted to contain a cake of soap.

849,742. METAL DOOR. ARTHUR MANDRY, New Orleans, La. Filed Dec. 21, 1906. Serial No. 348,905.

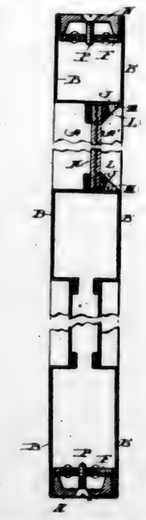

Claim.—1. A hollow door having for its opposite face-walls distinct sheets of thin metal, said sheets being connected at some distance from their corresponding margins by integral transverse metal webs.

2. A metal door having two face-sheets of thin metal connected on each of the four sides of the door by integral webs at some distance from their margins and parallel thereto, and further having a rigid-metal frame secured in the channels formed by said sheets and webs.

3. In a thin-metal door, the combination with two suitably-spaced face-sheets bent inward upon themselves to double their marginal thickness and connected together at some distance from their margins by integral interlocking flanges or webs, and rigid-metal bars flush with the margins of said plates and filling the spaces between their edges, respectively.

4. A metal door having for its opposite faces distinct sheets each made up of rigidly-connected thin-metal members and provided near all its outer margins with integral webs for rigidly securing it to its companion while holding it at some distance therefrom, and further provided with a rigid-metal frame lying without said webs, wholly within the planes of said margins and filling the space between the two sheets.

5. A door having distinct face-sheets of thin metal bent inward and interlocked around the margin of a panel-opening and between the planes of the sheets, to form a panel-supporting rib or seam, and provided with a projecting soft-metal strip locked in said seam, substantially as set forth.

6. In a thin-metal door, the combination with two metal sheets forming portions of the faces of the door, respectively, and provided with corresponding, alining perforations, of tubes extending perpendicularly from one sheet to the other and each having its bore in registry with a perforation in each of said sheets, substantially as set forth.

7. The combination with two separately-formed, connected face-sheets each made up of stile, rail and panel members simulating the like parts of wood doors, the stile and rail members being overlapped but made externally flush by offsetting, and the pairs of rail and stile members being connected near the margins of the door by integral flanges or webs, and rigid bars filling the spaces between said margins.

849,743. FISHING-TACKLE. SAMUEL D. MARTIN, Cincinnati, Ohio. Filed Apr. 8, 1905. Serial No. 254,465.

Claim.—1. In a device of the character described, the combination of a swivel for connection with a fish-line, a rod connected with a member of said swivel, a plane or flat metal strip carried on said rod and having its rear part bent laterally and forwardly inclined at an acute angle to the body portion thereof to impart whirling or rotatory movement to said strip, a swivel connected with the rear end of said rod, another rod connected with said last-named swivel and a plane or flat metal strip carried on the last-named rod and having its rear part bent laterally in a reverse direction to that of the other strip and forwardly inclined at an acute angle to the body portion thereof to impart whirling or rotatory movement to said last-named strip independent and reverse to that of the first-named strip.

2. A device of the character described comprising a rod mounted for rotative movement, a plane or flat metal strip the forward part of which has two perforations through which the rod is passed, and having its rear part bent laterally and forwardly inclined at an acute angle to its forward part to impart whirling movement to the strip when the device is drawn through the water and a hook connected with the rod at the rear of said strip.

3. A device of the character described comprising a rod mounted for rotative movement, a plane or flat metal strip the forward part of which has apertures through which the rod is passed and has corners or lateral parts pressed inwardly and upon the rod to hold the same to the strip and the rear end of which strip has laterally and forwardly inclined bent portions acute to the body portion for imparting whirling or rotatory movement thereto when the device is drawn through the water.

849,744. HEATING SYSTEM. WILLIAM L. MILLER, Chicago, Ill. Filed Aug. 25, 1905. Serial No. 275,706.

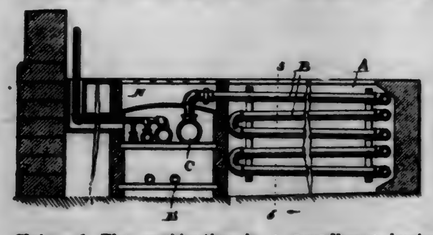

Claim.—1. The combination in a roundhouse having locomotive-pits, the side walls of which are undercut, of a source of steam-supply, an open-topped conduit adjacent to one of the walls of the roundhouse, heating-coils within the locomotive-pits and lying within the undercut spaces in the side walls, a steam-main lying in said open-topped conduit and connections between the steam-main and the source of steam-supply and between the steam-main and the heating-coils.

2. The combination in a roundhouse having locomotive-pits, the side walls of which are undercut, of a source of steam-supply, an open-topped conduit along the shorter curved wall of the roundhouse and adjacent to the doors therein, heating-coils within the locomotive-pits and lying in the undercut spaces formed in the side walls, a steam-main lying in said open-topped conduit, whereby heat is supplied to the doors, to keep them free from ice and snow and to permit them to be readily opened and shut, and suitable connections between said steam-main and the source of steam-supply and between said steam-main and said heating-coils.

3. The combination in a roundhouse having locomotive-pits, the side walls of which are undercut, of a source of steam-supply, open-topped conduits along the two curved walls of the roundhouse, heating-coils within the locomotive-pits and contained in the undercut spaces of the side walls thereof, steam-mains lying within said open-topped conduits and connections between said steam-mains and the source of steam-supply and between said steam-mains and the heating-coils.

849,745. ATTACHMENT TO TELEPHONE-TRANSMITTERS. FLORA G. MOULTON, Chicago, Ill. Filed Oct. 8, 1906. Serial No. 337,865.

Claim.—The combination with a telephone-transmitter and a U-shaped clamp thereon with block between its arms, and bolt through said arms and block, of eye-clamp on said bolt adjustable, simultaneously, in horizontal and vertical circles.

849,746. TOBACCO-PIPE. BERTRAM ODEGARD, Chicago, Ill. Filed Mar. 17, 1906. Serial No. 306,572.

Claim.—1. In a pipe, the combination with a pipe-bowl, of an imperforate core removably fitting said bowl, said core having a stem portion reduced in cross-diameter, and having spiral grooves in its exterior extending from the inner end to the stem, said stem being without grooves and having a perforated shoulder on its outer end, a sleeve removably fitting said bowl and surrounding said core for the greater part of its length and forming a smoke-channel around the reduced portion of said core, the outer end of said sleeve fitting closely the shoulder on the outer end of the stem.

2. In a pipe, the combination with a pipe-bowl, of an imperforate core removably fitting said bowl, said core having spiral grooves in its exterior communicating directly with the interior of the bowl, a sleeve removably fitting said bowl and core and forming the outer walls for the grooves of the core, said sleeve having an opening in its outer end and said core having a perforated and shouldered stem fitting said opening and said sleeve having a smoke-chamber surrounding the said stem.

849,747. STEREOSCOPE. CHARLES L. PAPPENHAGEN, Meadville, Pa., assignor, by mesne assignments, to Keystone View Company, a Corporation of Pennsylvania. Filed Feb. 15, 1905. Serial No. 245,669.

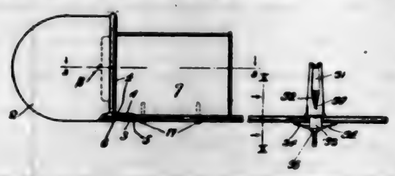

Claim.—1. In a stereoscope, the combination with a shaft and lens-frame, of a metallic septum consisting of side faces having overlapping flanges at their bottom, and fastening means adapted to act with said flanges to secure the septum to the shaft.

2. In a stereoscope, the combination with a shaft and lens-frame, of a metallic septum consisting of side faces having overlapping flanges at their rear, and fastening means adapted to act with said flanges to secure the septum to the lens-frame.

3. In a stereoscope, the combination with a shaft and lens-frame, of a metallic septum consisting of side faces having overlapping flanges at their bottom and rear, and fastening means adapted to act with the flanges to secure the septum to the shaft and lens-frame.

4. In a stereoscope, the combination with a shaft and lens-frame, of a metallic septum consisting of side faces having overlapping flanges at their bottom and rear, the flanges being provided with apertures, and fastening means adapted to engage with said apertures to secure the septum to the shaft and lens-frame.

5. In a stereoscope, the combination with a shaft and lens-frame, of a metallic septum consisting of side faces having overlapping flanges at their bottom and rear, the flanges being provided with threaded apertures and screws adapted to engage therewith to secure the septum to the shaft and lens-frame.

6. In a stereoscope, the combination with a shaft and lens-frame, of a metallic septum consisting of side faces having at their bottom overlapping flanges, fastening means adapted to act with said flanges to secure the septum to the shaft, the said side faces being flanged at their forward edges, and a member adapted to engage with the forward flanged edges of the side faces to hold them securely in position.

7. In a stereoscope, the combination with a shaft and lens-frame, of a metallic septum consisting of side faces having at their bottom overlapping flanges, fastening means adapted to act with said flanges to secure the septum to the shaft, the said faces being flanged at their forward edges, and a strip of metal flanged at its sides and bottom to engage with the flanges of the forward edges of the side faces and to fit over the overlapping bottom flanges of the latter.

8. In a stereoscope, the combination with a shaft and lens-frame, of a metallic septum consisting of side faces having overlapping flanges at their rear and bottom, fastening means adapted to act with the flanges to secure the septum to the shaft and lens-frame, said side faces being flanged at their forward edges, and a member adapted to engage with the forward flanged edges of the side faces to hold them in position.

9. In a stereoscope, the combination with a shaft and lens-frame, of a metallic septum consisting of side faces having overlapping flanges at their rear and bottom, fastening means adapted to act with the flanges to secure the septum to the shaft and lens-frame, said side faces being flanged at their forward edges, and a strip of metal flanged at its sides and bottom to engage with the flanges of the forward edges of the side faces and to fit over the overlapping bottom flanges of the latter.

10. In a stereoscope, the combination with a shaft and lens-frame, of a metallic septum consisting of side faces having overlapping flanges at their bottom and rear, the flanges being provided with apertures, fastening means adapted to engage with said apertures to secure the septum to the shaft and lens-frame, the side faces being flanged at their forward edges, and a member adapted to engage with the forward flanged edges of the side faces to hold them in position.

11. In a stereoscope, the combination with a shaft and lens-frame, of a metallic septum consisting of side faces having overlapping flanges at their bottom and rear, the flanges being provided with apertures, screws adapted to engage with said apertures to secure the septum to the shaft and lens-frame, the side faces being flanged at their forward edges, and a member adapted to engage with the forward flanged edges of the side faces to hold them in position.

12. In a stereoscope, the combination with a shaft and lens-frame, of a metallic septum consisting of side faces having overlapping flanges at their rear and bottom, the flanges being provided with apertures, screws adapted to engage with said apertures to secure the septum to the shaft and lens-frame, the side faces being flanged at their forward edges, and a strip of metal flanged at its sides and bottom to engage with the flanged forward edges of the side faces and to fit over the overlapping bottom flanges of the latter.

13. In a stereoscope, a lens-frame having a recessed portion extending rearwardly and having a flush lens-engaging face, a member conforming to the angles of the lenses having a forwardly-extending bridge and a rearwardly-indented portion at the base of said bridge serving to properly space the lenses, and means for securing the member to the recessed portion of the lens-frame.

14. As a constituent member of a stereoscope, a view-holder composed of a strip of sheet material having its edges formed into tubular beads and its ends flanged and bent in a curved form first inwardly and then outwardly, the said bent portion being provided with a slot adapted to receive the edges of the picture, and a pocket formed out of the flanged ends and at the base of said slot adapted to guide the picture to its proper position.

15. As a constituent member of a stereoscope, a view-holder composed of a strip of sheet material having its ends flanged and then bent inwardly and then outwardly in a curved form, said bent portion being provided with a slot adapted to receive the edges of the picture to retain the same in proper position, and pockets formed in the flanged end at the base of said slot and tapered downwardly adapted to guide the picture to its proper position.

16. As a constituent member of a stereoscope, a view-holder composed of a strip of sheet material having its end flanged and bent inwardly and then outwardly in a curved formation and provided in its curved portion with a slot adapted to receive the edges of the picture to hold the same in proper position, and a pocket formed in the flanged end and at the base of said slot adapted to guide the picture to its proper position.

17. In a stereoscope, a clamp comprising a bridge adapted to receive the shaft, wings extending at right angles to said bridge, said bridge and wings being slotted in their central portion, a strip of material passing through said slots adapted to bind together the wings and the bridge.

18. In a stereoscope, a clamp comprising a bridge adapted to receive the shaft, wings extending at right angles to said bridge, said bridge and wings being provided with slots in their central portion, and a strip of material bent through said slots and having its sides presented at right angles to the long axis of the shaft, said strip being adapted to bind together the bridge and the wings and to serve as a finger-thrust for the said clamp.

19. In a stereoscope, a spring-clamp comprised of a bridge adapted to receive the shaft, wings extending at right angles to said bridge and having their tips provided with pads to bear against the shaft, spurs formed in said tips adapted to hold said pads in position, said bridge and wings being provided with slots in their central portion, a strip of material adapted to be bent through said slots to bind together the bridge and wings.

20. In a stereoscope, a clamp comprised of a bridge adapted to receive the shaft, wings extending at right angles to said bridge and having their tips provided with

pads, spurs adapted to retain said pads in position, said bridge and wings being provided with slots in their central portion, a strip of metal adapted to be bent through said slots to bind together the bridge and wings, and having downwardly-extending faces extending at right angles to the long axis of the shaft and adapted to serve as a finger-thrust.

849,748. VALVE FOR ENGINES. PEDER PAULSEN, Pittsburg, Pa., assignor to Epping-Carpenter Company, Pittsburg, Pa., a Corporation. Filed Jan. 2, 1906. Serial No. 294,285.

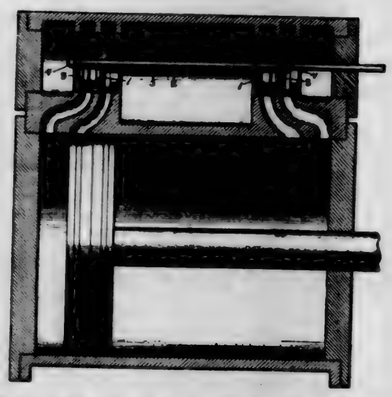

Claim.—1. A valve for engines having in combination two separable heads, split rings having their outer edges supported by the heads, a solid ring arranged between the split rings and means intermediate of and substantially parallel with the heads for supporting the solid ring concentric with the heads, and means for securing the heads together and thereby forcing the split rings against the solid ring to hold the latter as against lateral movement.

2. A valve for engines having in combination two separable heads, split rings having their outer edges supported by the heads, a solid ring arranged between the split rings, a disk intermediate of the heads and carried by one of the heads for supporting the solid ring, and means for securing the heads together.

3. A valve for engines having in combination a body portion consisting of two heads and a connecting-stem, heads separable from the body portion, split rings supported by each of the heads, solid rings arranged between each pair of split rings, disks carried by one of the heads of each pair for supporting the solid ring, and means for drawing the outer heads toward the inner heads to clamp the several rings.

849,749. CONTROLLER FOR ELECTRICALLY-PROPELLED VEHICLES. JOHN S. RAWORTH, Streatham, England. Filed Jan. 25, 1906. Serial No. 297,814.

Claim.—1. The combination with a controller for the series-parallel control of electric motors of the kind herein referred to, of means for inserting resistance in the armature-circuit of the motor when the motor connections are being changed from series to parallel and the motor-fields are at a maximum.

2. The combination with a controller for the series-parallel control of electric motors of the kind herein referred to and in which resistance is inserted in the armature-circuit in the interval which occurs while the motor connections are being changed from series to parallel and vice versa, of means for inserting a greater amount of resistance in the circuit when going into series than when going into parallel.

3. The combination with a controller for the series-parallel control of electric motors of the kind herein referred to whereby cycles of operations necessary to place the motors in parallel as compound machines after being in series as shunt-machines or in series as shunt-machines after being in parallel as compound machines are carried out, of means for altering the sequence of the changes in the cycle used in placing the motors in series after being in parallel from that which would be a simple reversal of the sequence used in placing the motors in parallel.

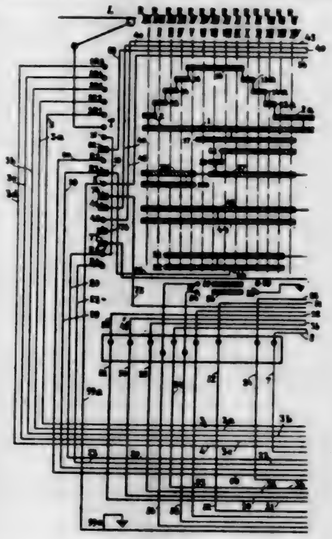

4. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so arranged as when moved relatively to the stationary contacts to alter the various circuits, and when moved in one direction so arranged as first to close the shunt-field circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually, to reduce the field excitation and then to break the armature-circuit and remake the same but with the armatures in parallel and in series with the series field-windings of the motors.

5. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as when moved relatively to the stationary contacts to alter the various circuits, and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, and then to break the armature-circuit, to insert resistance in the armature-circuit and to remake the armature-circuit but with the armatures in parallel and in series with the series field-windings of the motors.

6. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as when moved relatively to the stationary contacts to alter the various circuits, and so arranged as, when moved in one direction, to first close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in

series, to withdraw the resistance gradually and to reduce the field excitation, and then to break the armature-circuit, to increase the strength of the shunt-fields and remake the armature-circuit but with the armatures in parallel and in series with the series field-windings of the motors.

7. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields up to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw resistance gradually and to reduce the field excitation and then to break the armature-circuit, to increase the strength of the shunt-fields, insert resistance in the armature-circuit and remake the same but with the armatures in parallel and in series with the series field-windings of the motors.

8. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits, and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, and then to break the armature-circuit, to increase the strength of the shunt-fields, insert resistance in the armature-circuit, remake the same but with the armatures in parallel and in series with the series field-windings of the motors and then to cut out said resistance.

9. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the said circuits, and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually, and to reduce the field excitation and then to break the armature-circuit, to increase the strength of the shunt-fields, insert a resistance in the armature-circuit, remake the same but with the armatures in parallel and in series with the series field-windings of the motors and then to cut out said resistance and then to reduce the strength of the shunt-fields.

10. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of movable contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the said circuits, and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and, when moved again to break the armature-circuit and remake the same but with the armatures in series.

11. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts to alter the various circuits and, when moved in one direction, so arranged as first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and, when moved reversely to break the armature-circuit, reduce the strength of the shunt-fields and remake the armature-circuit but with the armatures in series.

12. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits, and when moved in one direction so arranged as first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and, when moved reversely to break the armature-circuit, insert resistance in the armature-circuit, and remake the same but with the armatures in series.

13. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts to alter the various circuits, and so arranged as, when moved in one direction, to first close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and, when moved reversely to break the armature-circuit, reduce the strength of the shunt-fields, insert resistance in the armature-circuit and remake the same but with the armatures in series.

14. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and, when moved again to break the armature-circuit, to reduce the strength of the shunt-fields, to insert resistance in the armature-circuit, to remake the same but with the armatures in series and then to cut out said resistance.

15. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and to reduce the strength of the shunt-fields and when moved reversely to increase the strength of the shunt-fields, break the armature-circuit and remake the same but with the armatures in series.

16. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved in relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradu-

ally and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and to reduce the strength of the shunt-fields and when moved reversely to increase the strength of the shunt-fields, to break the armature-circuit, to insert resistance in the armature-circuit and to remake said circuit but with the armatures in series.

17. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually, and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors, and to reduce the strength of the shunt-fields and when moved reversely to increase the strength of the shunt-fields, break the armature-circuits, reduce the strength of the shunt-fields, insert resistance in the armature-circuit and remake the armature-circuit but with the armatures in series.

18. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits, and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually, and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and to reduce the strength of the shunt-fields and when moved reversely to increase the strength of the shunt-fields, break the armature-circuits, reduce the strength of the shunt-fields and remake the armature-circuit but with the armatures in series.

19. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and to reduce the strength of the shunt-fields and when moved reversely to increase the strength of the shunt-fields, break the armature-circuits, reduce the strength of the shunt-fields, insert resistance in the armature-circuit, remake the same but with the armatures in series and then to cut out said resistance.

20. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and, when moved reversely to break the armature-circuit, reduce the strength of the shunt-fields, insert resistance in the armature-circuit, remake the same but with the armatures in series, then to cut out said resistance and increase the shunt-field excitation.

21. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and to reduce the strength of the shunt-fields and when moved reversely to increase the strength of the shunt-fields, break the armature-circuit, reduce the strength of the shunt-fields, insert resistance in the armature-circuit, remake the same but with the armatures in series, then to cut out said resistance and increase the shunt-field excitation.

22. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and to reduce the strength of the shunt-fields and when moved reversely to increase the strength of the shunt-fields, break the armature-circuits, reduce the strength of the shunt-fields, insert resistance in the armature-circuit, remake the same but with the armatures in series, then to cut out said resistance, increase the shunt-field excitation and when this is at a maximum gradually insert resistance in the armature-circuit.

23. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and when moved again to break the armature-circuit, reduce the strength of the shunt-fields, insert resistance in the armature-circuit, remake the same but with the armatures in series, then to cut out said resistance, increase the shunt-field excitation and when this is at a maximum gradually insert resistance in the armature-circuit.

24. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, and then to break the armature-circuit, to increase the strength of the shunt-fields, insert a resistance in the armature-circuit and to connect up the armatures in parallel and in series with the series field-windings and then to cut out said resistance and when moved reversely to break the armature-circuits, insert resistance in the armature-circuit and remake the same but with the armatures in series, the amount of resistance inserted in circuit when going into series being greater than that inserted in circuit when going into parallel.

25. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to break the armature-circuit, to increase the strength of the shunt-fields, insert a resistance in the armature-circuit and to connect up the armatures in parallel and in series with the series field-windings and then to cut out said resistance and when moved reversely to break the armature-circuits, reduce the strength of the shunt-fields, insert resistance in the armature-circuit, remake the same but with the armatures in series and then to cut out said resistance, the amount of resistance inserted in the armature-circuit when going into series being greater than that inserted in circuit when going into parallel.

26. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually, and to reduce the field excitation, then to break the armature-circuit, to increase the strength of the shunt-fields, insert a resistance in the armature-circuit and to connect up the armatures in parallel and in series with the series field-windings and then to cut out said resistance and when moved reversely to break the armature-circuits, reduce the strength of the shunt-fields, insert resistance in the armature-circuit, remake the same but with the armatures in series and then to cut out said resistance, the amount of resistance inserted in the armature-circuit when going into series being greater than that inserted in circuit when going into parallel.

27. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to break the armature-circuit, to increase the strength of the shunt-fields, insert a resistance in the armature-circuit and to connect up the armatures in parallel and in series with the series field-windings and then to cut out said resistance and when moved reversely to break the armature-circuits, reduce the strength of the shunt-fields, insert resistance in the armature-circuit, remake the same but with the armatures in series and then to cut out said resistance, the amount of resistance inserted in the armature-circuit when going into series being greater than that inserted in circuit when going into parallel.

28. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and being so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to break the armature-circuit, to increase the strength of the shunt-fields, insert resistance in the armature-circuit and to connect up the armatures in parallel and in series with the series field-windings, then to cut out said resistance and reduce the shunt-field excitation and when moved reversely to increase the strength of the shunt-fields, break the armature-circuits, insert resistance in the armature-circuit and remake the armature-circuit but with the armatures in series, the amount of resistance inserted in circuit when going into series being greater than that inserted in circuit when going into parallel.

29. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to break the armature-circuit, to increase the strength of the shunt-fields, insert resistance in the armature-circuit and to connect up the armatures in parallel and in series with the series field-windings, then to cut out said resistance and reduce the shunt-field excitation and when moved reversely to increase the strength of the shunt-fields, break the armature-circuits, reduce the strength of the shunt-fields, insert resistance in the armature-circuit, remake the latter but with the armatures in series, then to cut out said resistance and increase the shunt-field excitation, the amount of resistance inserted in circuit when going into series being greater than that inserted in circuit when going into parallel.

30. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to break the armature-circuit, to increase the strength of the shunt-fields, insert resistance in the armature-circuit and to connect up the armatures in parallel and in series with the series field-windings, then to cut out said resistance and reduce the shunt-field excitation, and when moved reversely to increase the strength of the shunt-fields, break the armature-circuits, reduce the strength of the shunt-fields, insert resistance in the armature-circuit, remake the latter but with the armatures in series, then to cut out said resistance, increase the shunt-field excitation and when this is at a maximum gradually insert resistance in the armature-circuit, the amount of resistance inserted in the armature-circuit when going into parallel being less than that inserted into the armature-circuit when going into series.

31. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, and then to place the armatures in parallel and in series with the series field-windings and at this change of connections to close the circuit for preventing a rush of current through the armature-coils by a change in the condition of the armature-circuit.

32. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so

adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and at this change of connections to close the circuit for preventing a rush of current through the armature-coils by a change in the condition of the armature-circuit and when the parallel connections are made removing the means by which such change in the condition of the armature-circuit is brought about.

33. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the fixed contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw said resistance gradually and to reduce the shunt-field excitation, then to place the armatures in parallel and in series with the series field-windings and at this change of connections to close the circuit for preventing a rush of current through the motor coils and windings by a change in the condition of the shunt field-circuit.

34. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the shunt-field excitation, then to place the armatures in parallel and in series with the series field-windings and at this change of connections to close the armature-circuit through a resistance thus preventing rush of current through the armature-coils.

35. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, to close first the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the said resistance gradually and to reduce the shunt-field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and at this change of connections to insert resistance in the armature-circuit and when the parallel connections are made removing this resistance from the armature-circuit.

36. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the shunt-field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and at this change of connections to insert resistance in the circuit of the motor coils and windings and to increase the shunt-field strength.

37. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the said resistance gradually, and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings and at this change of connections to insert resistance in the armature-circuit and to increase the shunt-field strength, thus preventing rush of current through the motor coils and windings and when the parallel connections are made removing the resistance from the armature-circuit.

38. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction to close first the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the said resistance gradually and to reduce the shunt-field excitation, then to place the armatures in parallel and in series with the series field-windings and after the motors are placed in parallel to remake the series connections and at this change of connections to close the circuit for preventing the braking effect thereby produced by a change in the condition of the armature-circuit.

39. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contact, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the shunt-field excitation, then to place the armatures in parallel and in series with the series field-windings and after the motors are placed in parallel to remake the series connections and at this change of connections to close the circuit for preventing the braking effect thereby produced by the insertion of resistance in the armature-circuit.

41. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits, and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the said resistance gradually and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings and after the motors are in parallel and on reversal of movement to remake the series connections and at this change of connections to reduce the excitation of the shunt-fields.

44. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance and with the armatures in series, to withdraw the resistance gradually and to reduce the field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and after the armatures are in parallel and on reversal of movement to remake the series connections and at this change of connections to insert resistance in the armature-circuit.

45. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the shunt-field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and after the motors are in parallel and on reversal of movement to remake the series connections and at this change of connections to alter the condition of the shunt field-circuit.

43. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit with the armatures in series and through resistance, to withdraw the resistance gradually and to reduce the excitation of the shunt-fields, then to place the armatures in parallel and in series with the series field-windings of the motors and after the motors are in parallel and on reversal of movement to remake the series connections and at this change of connections to reduce the excitation of the shunt-fields.

44. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance and with the armatures in series, to withdraw the resistance gradually and to reduce the shunt-field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and after the armatures are in parallel and on reversal of movement to remake the series connections and at this change of connections to insert resistance in the armature-circuit.

45. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction, first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance with the armatures in series, to withdraw the resistance gradually and to reduce the shunt-field excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and after the motors are in parallel and on reversal of movement to remake the series connections and at this change of connections to insert resistance in the armature-circuit and reduce the shunt-field excitation.

46. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction first to close the shunt field-circuit and bring the fields to their maximum excitation, then to place the armatures in parallel and in series with the series field-windings of the motors and after the motors are in parallel and on reversal of movement to remake the series connection and at this change of connections to insert resistance in the armature-circuit and when the series connections are made to remove the resistance from the armature-circuit.

47. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being so adapted as, when moved relatively to the stationary contacts, to alter the various circuits and so arranged as, when moved in one direction first to close the shunt field-circuit and bring the fields to their maximum excitation, then to close the armature-circuit through resistance and with the armatures in series, to withdraw the resistance gradually and to reduce the shunt-field excitation, then to place the armature in parallel and in series with the series field-windings of the motors and after the armatures are in parallel and on reversal of movement to remake the series connections and at this change of connections to insert resistance in the armature-circuit and reduce the shunt-field excitation and when the series connections are made to remove the resistance from the armature-circuit.

48. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being adapted when moved relatively to the stationary contacts to alter the various circuits, floating contacts loosely connected to said moving contacts and arranged to be moved over some of said stationary contacts and an operating-pin for engaging and positively driving the floating-contacts carrier.

49. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being adapted when moved relatively to the stationary contacts to alter the various circuits and floating contacts loosely connected to and adapted to be moved along with said moving contacts and arranged to be moved over some of said stationary contacts.

50. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being adapted when moved relatively to the stationary contacts to alter the various circuits, and floating contacts adapted during one part of the movement of said moving contacts to remain stationary and then to be moved at the same time as said moving contacts over some of said stationary contacts.

51. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being adapted when moved relatively to the stationary contacts to alter the various circuits, and floating contacts adapted during one part of the movement of said moving contacts to remain stationary and then to be connected to and moved at the same time as said moving contacts over some of said stationary contacts.

52. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts and a set of stationary contacts connected to various circuits, said moving contacts being adapted when moved relatively to the stationary contacts to alter the various circuits, and floating contacts adapted during a part of the movement of said moving contacts to remain stationary and then to be connected to and moved by said moving contacts over some of the said stationary contacts.

53. A controller for the series-parallel control of elec-

tric motors of the kind herein referred to, comprising a set of stationary contacts connected to various circuits to be controlled, a set of moving contacts carried by a main barrel and a floating ring or rings loosely connected to said main barrel, for the purpose specified.

54. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of stationary contacts connected to various circuits to be controlled, a set of moving contacts carried by a main barrel and a floating ring or rings loosely mounted on said main barrel for the purpose specified.

55. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of stationary contacts connected to various circuits to be controlled, a set of moving contacts carried by a main barrel and a floating ring or rings loosely connected to said main barrel and adapted at one part of the movement of the main barrel to remain stationary and then to be connected therewith and moved thereby for the purpose specified.

56. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of moving contacts carried by a main barrel and a set of stationary contacts connected to various circuits to be controlled and a floating ring or rings loosely mounted on said main barrel and adapted for a part of the movement of the main barrel to remain stationary and then to be connected therewith and moved thereby for the purpose specified.

57. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of stationary contacts connected to various circuits to be controlled and a set of moving contacts carried by a main barrel and a floating ring loosely connected to said moving contacts the connection comprising a pin carried by one part engaging and moving in a slot in another part, said pin when it reaches the end of the slot connecting the two parts together so that they move as one.

58. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of stationary contacts connected to various circuits to be controlled, a set of moving contacts carried by a main barrel and a floating ring loosely connected to said moving contacts, the connection between said ring and moving contacts comprising a pin carried by an arm on the main barrel engaging and moving within a slot in the floating ring loosely mounted on the main barrel and driving said ring when the pin comes into contact with the end of the slot.

59. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of stationary contacts connected to various circuits to be controlled, a set of moving contacts, and slip-contacts, said moving contacts being arranged to be moved over some of said stationary contacts and said slip-contacts over the remainder of the stationary contacts during a portion only of the movement of the moving contacts and when so moved to short-circuit resistance in the armature-circuit.

60. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of stationary contacts connected to various circuits to be controlled, a set of moving contacts, and slip-contacts, said moving contacts being arranged to be moved over some of said stationary contacts and said slip-contacts over the remainder of the stationary contacts during a portion only of the movement of the moving contacts first to short-circuit resistance in the armature-circuit when the armatures are in series and after continued movement and the motors are being placed in parallel to remove the short circuit on the resistance and afterward, when the motors are in parallel to short-circuit such resistance.

61. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of stationary contacts connected to various circuits to be controlled, a set of moving contacts, and slip-contacts, said moving contacts being arranged to be moved over some of said stationary contacts and said slip-contacts over the remainder of the stationary contacts during a portion only of the movement of the moving contacts and when so moved first to remove resistance from the armature-circuit when the armatures are in series and after continued movement and the motors are being placed in parallel to insert resistance and afterward, when the motors are in parallel to remove such resistance.

62. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of stationary contacts connected to various circuits to be controlled, a set of moving contacts and slip-contacts, said moving contacts being arranged to be moved over some of said stationary contacts and the slip-contacts over the remainder of the stationary contacts during a portion only of the movement of the moving contacts, said slip-contacts when the moving contacts are moved in a direction to place the motors in series first placing resistance in the armature-circuit, said resistance being greater than that placed in circuit thereby when going into parallel and then when the motors are in series removing said resistance from the armature-circuit.

63. A controller for the series-parallel control of electric motors of the kind herein referred to, comprising a set of stationary contacts connected to various circuits to be controlled, a set of moving contacts and slip-contacts, said moving contacts being arranged to move over some of the stationary contacts and said slip-contacts over the reminder of the stationary contacts during a portion only of the movement of the moving contacts, said slip-contacts when the moving contacts are moved in a direction to place the motors in series first removing a short circuit on resistance in the armature-circuit, such resistance so inserted in circuit being greater than that inserted in circuit when going into parallel and then when the motors are in series short-circuiting said resistance.

64. The herein-described improved method of regulating the power and speed of mechanism driven by a plurality of electric motors, consisting in inserting resistance in the armature-circuit while the motor connections are being changed from series to parallel and the motor-fields are at a maximum.

65. The herein-described improved method of regulating the power and speed of mechanism driven by a plurality of electric motors, consisting in inserting resistance in the armature-circuit while the motor connections are being changed from series to parallel and the motor-fields are at a maximum, and on changing back from parallel to series inserting a greater amount of resistance in the armature-circuit.

66. The herein-described improved method of regulating the power and speed of mechanism driven by a plurality of electric motors, consisting in first closing the shunt field-circuit to bring the fields to their maximum excitation, then closing the armature-circuit through the resistance with the armatures in series, gradually withdrawing said resistance and then breaking the series connection of the armatures with one another and establishing the parallel connection thereof but in series with the series field-windings.

67. The herein-described improved method of regulating the power and speed of mechanism driven by a plurality of electric motors, consisting in first closing the shunt field-circuit and bringing the fields to their maximum excitation, closing the armature-circuit through resistance with the armatures in series, withdrawing the resistance gradually, breaking the armature-circuit and inserting resistance therein, and then remaking the armature-circuit with the armatures in parallel and in series with the series field-windings of the motors.

68. The herein-described improved method of regulating the power and speed of mechanism driven by a plurality of electric motors, consisting in bringing the fields to their maximum excitation, inserting resistance in the circuit of the armatures in series, reducing the field excitation, increasing the strength of the shunt-fields, inserting resistance in the armature-circuit and connecting up the armatures in parallel and in series with the series field-windings, and reducing the shunt field excitation, and reversely increasing the strength of the shunt-field, breaking the armature-circuit, reducing the strength of the shunt-field, inserting increased resistance in the armature-circuit, placing the armatures in series, cutting out said resistance, and increasing the shunt field excitation.

849,750. VARIABLE-SPEED MECHANISM. RICHARD E. ROSEWARNE, Covington, Ky., assignor to The Miller, Du Brul and Peters Manufacturing Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Apr. 30, 1906. Serial No. 314,569.

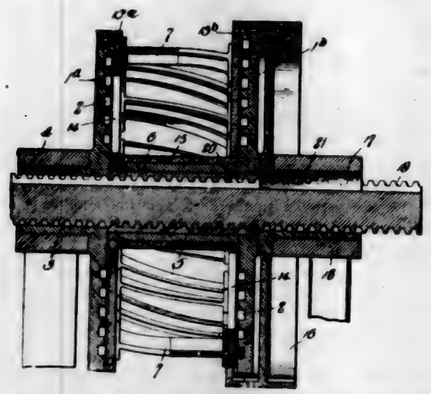

Claim.—1. The combination with a pair of guide-disks connected so as to turn together, of an internally-threaded member secured to said disks to cause the disks to turn therewith, a plurality of supports engaging the guide-disks, a pair of holding-disks engaging said supports, a pulley connected to said holding-disks so that the said holding-disks and pulley have no relative turning movement, an axially-movable screw provided with a longitudinal groove and extending axially through the pulley and both pairs of disks, and a key carried by the pulley causing the latter to turn with the screw.

2. The combination with a pair of spirally-grooved disks connected to rotate simultaneously, of an internally-threaded sleeve secured to said disks to cause the disks to turn therewith, a plurality of supports engaging the grooved disks at their ends, a pair of radially-slotted disks turning with one another, and engaging the supports, a pulley connected to the slotted disks so that the said slotted disks and pulley have no relative turning movement, an axially-movable screw provided with a longitudinal groove, and a key on the pulley fitting in the groove of the screw.

3. The combination with a pair of guide-disks connected so as to turn together, of a plurality of supports engaging the guide-disks, a pair of holding-disks engaging said supports, one of said disks projecting beyond the periphery of one of the guide-disks, a pulley secured to the projecting portion of the holding-disk, and an axially-movable screw extending axially through both pair of disks and the pulley, held against turning with the pulley and holding-disks, and connected to the guide-disks to cause their turning relatively to the holding-disks.

4. The combination with a pair of guide-disks, of an internally-threaded sleeve connecting said disks, a plurality of supports engaging said guides, a pair of holding-disks engaging the supports, surrounding said sleeve and connected together, a pulley secured to one of the holding-disks beyond the periphery of one of the guide-disks, and an axially-movable spiral engaging the threaded sleeve and connected to the pulley and the holding-disks in such a manner that no relative turning is permitted.

5. The combination with a pair of guide-disks connected so as to turn together, of a plurality of supports engaging the guide-disks, a pair of holding-disks engaging the supports and connected together, a pulley connected to the holding-disks to turn therewith, and an axially-movable spiral engaging the guide-disks to turn them relatively to the holding-disks and non-turnable relatively to the holding-disks and the pulleys.

6. In an expansible pulley, the combination with the relatively movable holding and guiding disks, of the supports connected to said disks, each arranged so that a portion thereof projects into the plane of an adjacent support, and movable to and from the axis of the pulley.

7. The combination with the spiral guides, of the supports connecting the spiral guides, and each arranged so that a portion projects into the plane of an adjacent support, and radially-slotted holding-disks engaging the supports.

8. The combination with the spirally-grooved disks, of a plurality of supports connecting said disks and arranged so that a portion of one is in advance of the rear portion of an adjacent one, and radially-slotted holding-disks engaging the supports.

9. In an expansible pulley, a rotating disk carrying a projection, and a spirally-grooved adjuster movable axially through the rotating member and engaging the projection.

10. In an expansible pulley, a rotating member, a rotating disk, and an axially-movable adjuster having a spiral thereon engaged by the disk to cause the rotation of the disk.

11. The combination with a pair of expansible pulleys, of a pair of axially-movable adjusters one for each pulley, and a forked lever each arm of which is connected to an adjuster to move said adjusters simultaneously in the same direction.

12. The combination with a pair of expansible pulleys, of a pair of axially-movable adjusters, each controlling one pulley, a projection on each adjuster, and a forked lever pivoted at its forked end and provided with slots in its arms to receive the projections on the adjusters and to move said adjusters simultaneously in the same direction.

13. The combination with the pair of expansible pulleys, of a belt connecting the pulleys, and an idler bearing on the belt between the pulleys.

14. The combination with the pair of expansible pulleys, of a belt connecting the pulleys, an idler bearing on the belt between the pulleys, and means for adjusting the idler.

849,751. CLUTCH FOR TYPE-WRITER PLATENS. WILLIAM RUGER, Jr., Janesville, Wis., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Aug. 15, 1905. Serial No. 274,260.

Claim.—1. In a type-writing machine, the combination with a revoluble platen, a line-space wheel and an intervening endless-band brake, of a lever for tightening said band-brake, said lever and band-brake being so related that when the lever is upon dead-center the band is taut; and a stop for arresting the band-tightening movement of said lever when the latter is about on dead-center.

2. In a type-writing machine, the combination with a revoluble platen, of a line-space wheel, a band-pulley connected to one of said elements, an endless brake-band encircling said pulley, and means for tightening and loosening said band; said brake-band, line-space wheel tightening means being revoluble with said platen.

3. In a type-writing machine, the combination with a revoluble platen having an axle, of a line-space wheel loosely mounted upon said axle and having a hub, a lever mounted upon said hub eccentrically to the platen-axle, and a brake-band engaged by said lever and encircling said platen-axle; said lever, hub and brake-band revoluble with the platen and line-space wheel.

4. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and an intervening endless-band brake, a part being encircled by the brake-band to enable the latter to make a frictional connection between the line-space wheel and the platen, of a lever for tightening said band-brake, said lever and band-brake

being so related that by a movement of the lever to its dead-center position the band is tightened; said band-brake and lever revoluble with said platen.

5. In a type-writing machine, the combination with a revoluble platen, a line-space wheel and an intervening endless-band brake, of a lever for tightening said band-brake, said lever and band-brake being so related that by the movement of the lever to its dead-center position the band is tightened, and a stop for arresting the band-tightening movement of said lever when the latter is about on dead-center; said band-brake, lever and stop revoluble with said platen.

6. In a type-writing machine, the combination of a platen fixed upon an axle, a hand-wheel fixed on the extreme end of the axle to rotate the platen at any time in either direction, a line-space wheel loose upon the axle, and endless-band brake surrounding said axle between the line-space wheel and the hand-wheel and frictionally engaging said axle, a lever pivoted eccentrically to the platen-axle and having a short arm within said band to draw the band taut or release the same, and means supporting said lever; said supporting means being directly connected to said line-space wheel.

7. In a type-writing machine, the combination of a platen fixed upon an axle, a hand-wheel fixed on the extreme end of the axle to rotate the platen at any time in either direction, a line-space wheel loose upon the axle, an endless-band brake surrounding said axle between the line-space wheel and the hand-wheel and frictionally engaging said axle, a lever pivoted eccentrically to the platen-axle and having a short arm within said band to draw the band taut or release the same, and means supporting said lever; said supporting means being directly connected to said line-space wheel, and means for arresting the lever when said short arm is in dead-center position and the band is drawn tighter.

849,752. ATTACHMENT TO PUMPS. HERBERT SEWELL, Fort Myers, Fla. Filed Aug. 3, 1906. Serial No. 329,106.

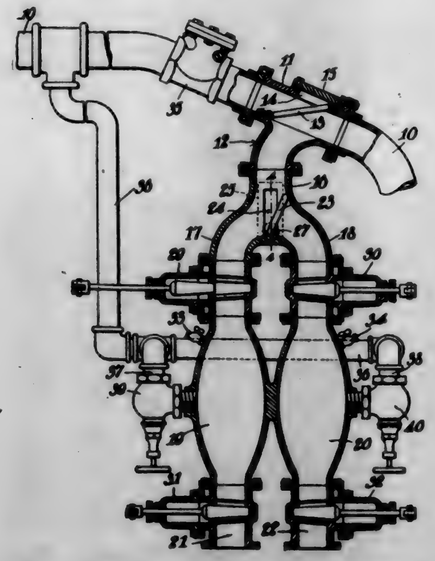

Claim.—1. In an apparatus of the class described, a receiving-chamber having means for connection into a pump-suction and provided with a depending branch, a grating within said receiving-chamber and adapted to deflect foreign matter into said branch, two precipitating-chambers independently connected to said branch, a swing-valve within said branch and operating to connect the same alternately with said precipitating-chambers, valves between said branch and the inlet ends of said precipitating-chambers, and valve at the discharge ends of said precipitating-chambers.

2. In an apparatus of the class described, a receiving-chamber having means for connection into a pump-suction and provided with a depending branch, a grating within said receiving-chamber and adapted to deflect foreign matter into said branch, two precipitating-chambers leading into one tubular section and coupled to said branch, by said tubular section, said tubular section having a transverse aperture, a closure to said aperture, a valve having a stem journaled through said closure and operating within said tubular section and adapted to alternately connect the same alternately with said precipitating-chambers, valves between said branch and the inlet ends of said precipitating-chambers and valves at the discharge ends of said precipitating-chambers.

3. The combination with the suction device of a pump, of a receiving-chamber connected into said suction device and provided with a depending branch, a grating disposed within said receiving-chamber and adapted to deflect foreign matter into said branch, two precipitating-chambers independently connected into said branch, a swing-valve operating to alternately connect said precipitating-chambers with said branch, valves between said precipitating-chambers and branch valves at the discharge ends of said precipitating-chambers, and independent connecting means between said suction device and said precipitating-chambers.

849,753. SPEED-LIMITING DEVICE. FRED L. STONE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 21, 1903. Serial No. 173,981.

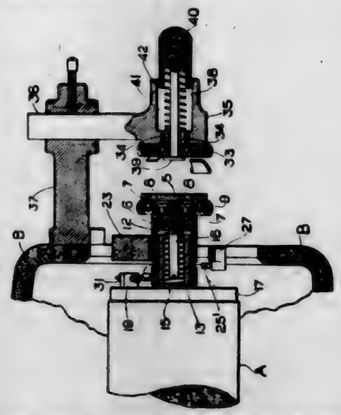

Claim.—1. In a speed-limiting device for rotary machines, the combination of a stationary contact, a spring-pressed movable contact mounted to rotate with the machine, and latch means controlled by centrifugal action for holding said movable contact in retracted position and automatically releasing it upon a predetermined speed being exceeded.

2. In a speed-limiting device for rotary machines, the combination of a stationary contact, a spring-pressed axially-movable contact mounted to rotate with the machine, and latch means controlled by centrifugal action for holding said movable contact in retracted position and automatically releasing it upon a predetermined speed being exceeded.

3. In a speed-limiting device for rotary machines, the combination of a stationary contact, a spring-pressed axially-movable contact, a support for said movable contact having a feathered connection therewith and adapted to be operatively connected with the rotary element of the machine, and latch means for holding said movable contact in retracted position and automatically releasing it upon a predetermined speed being exceeded.

4. In a speed-limiting device for rotary machines, the combination of a stationary contact, a spring-pressed movable contact, a latch mounted to rotate with the machine for holding said movable contact in retracted position, and a centrifugal lever for tripping said latch.

5. In a speed-limiting device for rotary machines, the combination of a stationary contact, a spring-pressed movable contact, a latch mounted to rotate with the machine for holding said movable contact in retracted position, and a spring-pressed centrifugal lever having a part extending into the path of said latch whereby the latter is tripped upon a predetermined speed being exceeded.

6. In a speed-limiting device for rotary machines, the combination of a stationary contact, a spring-pressed axially-movable plunger having a contact secured thereto, a latch mounted to rotate with the machine for engaging and holding said plunger in retracted position, a centrifugal lever having a part extended into the path of said latch, and adjustable spring means for holding said lever in its inner position.

7. In a speed-limiting device for rotary machines, the combination of a stationary contact, a support therefor, a movable contact mounted to rotate with the machine, and a push-rod carried by said support and adapted to engage and return said movable contact to its retracted position.

8. In a speed-limiting device for rotary machines, the combination of a stationary contact, means for supporting said contact in line with the rotary element, a movable contact carried by an axially-movable spring-pressed plunger, centrifugally-controlled latch means for holding said plunger in retracted position, and a push-rod carried by said supporting means for manually returning said plunger to its retracted position.

840,754. INCANDESCENT-ELECTRIC-LAMP SUPPORT. JOHN SULLIVAN, Fall River, Mass. Filed Oct. 24, 1906. Serial No. 340,321.

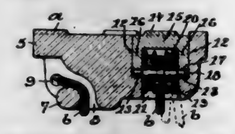

Claim.—1. A lamp-support embodying a base formed with an opening which extends through the top and bottom of said base, two of the side walls formed by said opening being formed with recesses which extend from the top of said base downwardly to points at a slight distance from the bottom of said base, said recesses terminating in semicircular bottoms, a pulley-carrying shaft engaging in said semicircular bottoms, and a filling member having a base of approximately the same width as the distance between said recesses of the side walls and depending arms which seat in said recesses to directly overlie and engage said shaft ends.

2. An incandescent-electric-lamp support comprising a base having a raised central portion formed with a cord-duct and with wire-ducts which lead into said cord-duct, wire connections disposed at the outer ends of said wire-ducts, said base being formed with an off-center opening, two of the walls formed by said opening being formed with wedge-shaped recesses terminating in semicircular bottoms, a filling member having a base closing the top of said opening and arms shaped to fit in said recesses and provided with semicircular concave ends coinciding with said concave bottoms of said recesses, a shaft extending across said opening and having its ends extending in said semicircular portions of the recesses and said ends of said arms, and a pulley on said shaft.

3. A lamp-support embodying a base formed with an opening extending through the top and bottom of said base, two of the opposing walls formed by said opening being formed with vertical recesses terminating in shaft-seats which latter are disposed intermediate the top and bottom of said base, a filling member having a base at the top of the opening and formed with depending arms to slide in said recesses of the side walls and have their lower ends overlie the shaft-seats and engage the shaft.

840,755. BRACELET. IRVING M. SYLVESTER, Providence, R. I., assignor to Parks Brothers and Rogers, Providence, R. I., a Copartnership. Filed June 2, 1906. Serial No. 319,834.

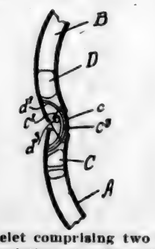

Claim.—1. A bracelet comprising two wings hinged together, the hinge consisting of a block in the end of one wing and having an arm curved in the direction opposite the curvature of the bracelet with a projection on the concave side at the free end, said end being so beveled as to lie in the curve of the outer wall of the bracelet, curved beads on opposite sides of the arm, and guide-blocks in the end of the adjoining wing, studs upon the adjacent faces of the guide-blocks, and grooves on the adjacent faces of said guide-blocks, said studs being in the path of said projection to be engaged thereby as the wings are moved on their hinge.

2. A bracelet comprising two wings hinged together, the hinge consisting of a block in the end of one wing and having an arm curved in the direction opposite the curvature of the bracelet with a projection on the concave side at the free end, said end being so beveled as to lie in the curve of the outer wall of the bracelet, curved beads on opposite sides of the arm, and guide-blocks in the end of the adjoining wing studs upon the adjacent faces of the guide-blocks, and grooves on the adjacent faces of said guide-blocks, said studs being adjacent the outer wall of the wing and extended toward each other at right angles to the plane of the said grooves and into the space between the guide-blocks to be engaged by said projection.

3. A bracelet comprising two wings hinged together, the hinge consisting of a block in the end of one wing and having an arm curved in the direction opposite the curvature of the bracelet with a projection on the concave side at the free end, said end being so beveled as to lie in the curve of the outer wall of the bracelet, curved beads on opposite sides of the arm, and guide-blocks in the end of the adjoining wing, studs upon the adjacent faces of the guide-blocks, and grooves on the adjacent faces of said guide-blocks, said studs being adjacent the outer wall of the wing and extended toward each other at right angles to the plane of the said grooves and into the space between the guide-blocks to be engaged by said projection, said guide-blocks each having its inner face cut away to receive said curved arm.

840,756. SELF-TRANSCRIBING CONDUCTOR'S TRAIN-REPORT. GEORGE E. TAYLOR, St. Louis, Mo. Filed Feb. 2, 1906. Serial No. 299,228.

Claim.—A self-transcribing conductor's train-report, constructed with a main sheet 1, the main portion of the face of which is ruled at regular intervals with the horizontally-arranged lines 2 and the spaces between said lines being consecutively numbered at the left-hand edge

of the sheet, there being a series of vertically-arranged ruled lines on the left-hand portion of the face of the sheet to form columns which are provided with headings indicating data concerning the markings, movements, and condition of individual cars, an auxiliary sheet 6 secured at its right-hand edge to the approximate center of the main sheet and with its left-hand edge terminating adjacent the consecutive numbers at the left-hand edge of the main sheet, there being vertically-arranged ruled lines 9 on the auxiliary sheet which register with the vertically-arranged ruled lines on the main sheet beneath said auxiliary sheet, there being horizontally-arranged lines

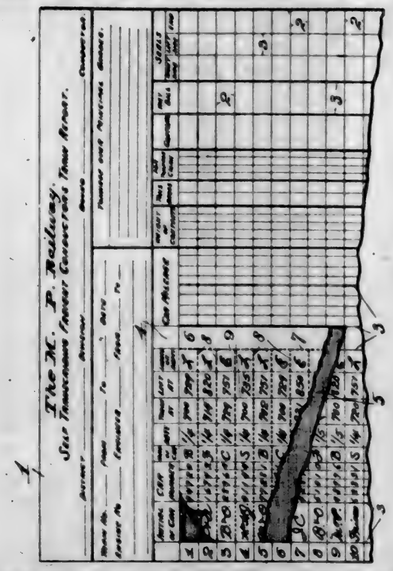

of perforations 8 in the auxiliary sheet which coincide with the horizontally-arranged ruled lines on the main sheet, there being a vertically-arranged row of perforations adjacent and parallel with the right-hand edge of the auxiliary sheet, a carbon-sheet 5 interposed between the auxiliary and main sheets and secured at its right-hand edge between said sheets, and the portion of the main sheet not covered by the auxiliary sheet being ruled with vertical lines to form columns which are provided with headings indicating data concerning the cars recorded on the auxiliary sheet; substantially as specified.

849,757. TOY BANK. HENRY THUMANN, Chicago, Ill. Filed Nov. 21, 1906. Serial No. 344,463.

Claim.—1. A toy bank comprising a casing having an opening therein, a coin-receptacle arranged to fit in and close said opening, and removable sidewise therefrom with respect to the longitudinal axis of the receptacle, and a spring-pressed plunger within the receptacle, having lugs extending through the sides thereof and engageable with the sides of the casing to hold the receptacle in said opening, the receptacle having a slot through which coins may be inserted, to force back the plunger and disengage the lugs from the sides of the casing.

2. A toy bank comprising a casing having an opening therein and shoulders on opposite sides at the edge of said opening, an openable coin-receptacle which fits in and closes said opening and is removable sidewise therefrom, and a yielding plunger in the receptacle having lugs extending through the sides thereof and arranged to engage behind the shoulders when the plunger is advanced, to hold the receptacle in position in the opening, said receptacle having a slot through which coins may be inserted to force back the plunger and disengage its lugs from the shoulders.

849,758. VISE. JOHN C. TITUS, Marion, Ohio. Filed Aug. 23, 1906. Serial No. 331,800.

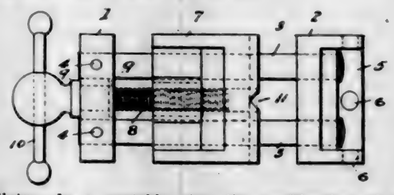

Claim.—In a portable vise, the combination of two blocks one of which constitutes a fixed jaw, two distance-rods connecting the blocks, a movable jaw running on said rods, and a screw engaging the movable jaw and having a bearing-seat in one of the blocks, the jaw and blocks having flat faces in planes at right angles to each other, and the corresponding faces of said jaw and blocks being all in the same plane.

849,759. CEMENT POST. WILLIAM E. VARNEY, Wellman, Iowa. Filed Sept. 5, 1906. Serial No. 333,725.

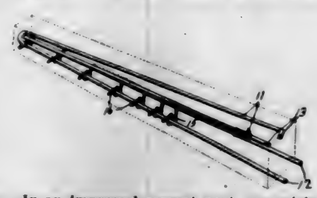

Claim.—In an improved cement post, comprising a post-body portion, two reinforcing-rods each made of a single piece of material doubled at its central portion, said rods arranged within the post with one side of each rod adjacent to the same one of the flat sides of the post, the other side of each post arranged at diametrically opposite portions of the post and a number of fence-wire-retaining loops, each made of a single piece of wire with its central portion formed into a hook and its end portions projected outwardly away from each other, said hooks placed in the post with their outwardly-projecting ends resting upon the sides of the reinforcing-wires that are adjacent to one side of the post, and with their hook portions projecting beyond the said side of the post between said parts of the reinforcing-rod.

849,760. MOLD FOR CEMENT POSTS. WILLIAM E. VARNEY, Wellman, Iowa. Filed Sept. 5, 1906. Serial No. 333,726.

Claim.—1. In a cement-post mold, the combination of a base, sides pivotally connected with the base and a holding device for the sides, comprising a plate fixed to the base, a rod pivoted in the plate with its end portions normally standing against the sides and its central portion formed with a loop normally lying flat against the base and extended upwardly at the end of the mold and spaced from said end to form a handle, said handle when turned to position projecting below the base throwing the ends of the rod to position below the sides.

2. The method of making a reinforced cement post, which consists in first providing a mold, then providing a reinforcing-rod doubled at its central portion with its sides approximately parallel, then pivotally connecting one of said sides at one end to the mold, then partially filling the mold and covering one side of the rod, then turning the rod to position with its other side resting on top of the material and then completing the filling of the mold.

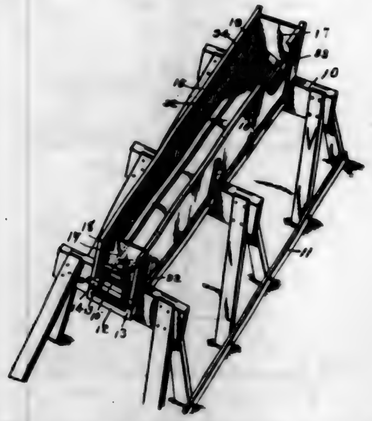

3. The method of making reinforced cement posts, which consists in first providing a mold, then providing two reinforcing-rods, each doubled at its central portion and having approximately parallel sides, then pivotally connecting one side of each reinforcing-rod to one end of the mold with the other side of the same rod resting against the adjacent side of the mold, then partially filling the mold and then turning both of said rods to position with their remaining sides resting on top of the material and then completing the filling of the mold.

4. The method of making a reinforced cement post, which consists in first providing a mold, then placing a layer of material in the mold, then providing two reinforcing-rods, each made of a single piece of material doubled at its central portion and having approximately parallel sides, then placing one side of each rod on top of the material and pivotally connecting the end of said side with the adjacent end of the mold, then filling the other layer of material, then turning both rods downwardly and inwardly in the mold to rest on top of the material and then completing the filling.

849,761. MOWING-MACHINE. JOHN R. WEATHERLY, Atlanta, Ga. Filed June 4, 1906. Serial No. 320,179.

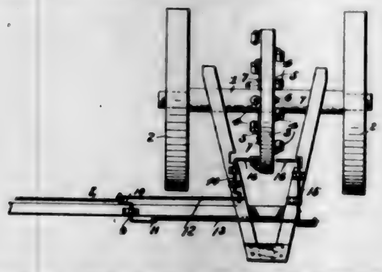

Claim.—A mower having a disk or wheel equipped with circular series of antifriction-rolls, the individual rolls having staggered relation upon opposite sides of the disk, a pitman for actuating the cutter-bar, three cranked rock-shafts, one having a shorter and a longer arm, said shorter arm being connected to said pitman and each of the other two rock-shafts having a shorter and a longer arm, and two connecting-rods, one arranged between the first-noted shorter arm and a corresponding arm of one other of said rock-shafts and the other connecting-rod being arranged between the first-noted longer arm and an arm of the third rock-shaft, said second and third rock-shafts having their cranks adapted to be engaged by said antifriction-rolls for their reciprocation.

849,762. AUTOMATIC PRESSURE-CONTROLLED ELECTRIC SWITCH AND AIR-GAGE. LOUIS H. WESTPHAL, Davenport, Iowa, assignor to Automatic Electric Pump Company, Davenport, Iowa. Filed Apr. 24, 1905. Serial No. 257,110.

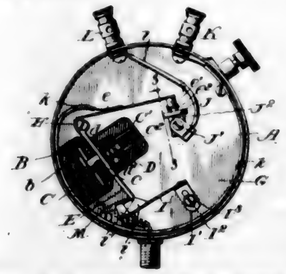

Claim.—1. In a pressure-controlled electric switch, the combination of a fixed contact, a movable contact mounted on a spring, a pivoted arm to which said spring is attached; a notched block adapted to engage the free end of said arm; an adjustable spring carrying said block; a reciprocating rod, a pneumatically-controlled plunger, adapted to move said rod in one direction, a spring for moving the rod in the opposite direction; an insulated block attached to said rod; and fingers attached to said insulated block and projecting on opposite sides of said arm, substantially as and for the purpose described.

2. In combination, a swinging arm, a spring engaging said arm having a notch for locking said arm in closed position, a movable contact carried by said arm; a contact fixed relatively to the arm, a rod adapted to be moved in one direction by fluid-pressure and in the opposite direction by a spring; and fingers attached to but insulated from said rod and projecting on opposite sides of said arm, for the purpose and substantially as described.

3. In a fluid-pressure electric switch, a pivoted arm, a movable contact connected therewith; a fixed contact opposite said movable contact; a spring having a notched block thereon engaging the free end of said arm to hold it in closed position; a fluid-pressure chamber, a plunger adapted to be operated in one direction by the fluid-pressure, a spring for retracting said plunger, a stop for limiting the spring-actuated movement of the plunger and arm, and devices attached to said plunger adapted to engage said arm on opposite sides, whereby the switch is snapped open when the pressure forces the arms out of the notch and is snapped closed when the spring forces the arm into the notch.

4. In a pressure-controlled electric switch, the combination of a fixed contact, a movable contact mounted on a spring, a swinging arm to which said spring is attached; a notched block adapted to engage the free end of said arm; a spring carrying said block, an adjustable support for said spring; a reciprocating rod, insulated fingers on said rod adapted to actuate said arm, a pneumatically-controlled plunger adapted to move said rod in one direction, and a spring for moving the rod in the opposite direction.

849,763. GARMENT-SUPPORTER. BURDETTE H. WHITE, Syracuse, N. Y. Filed July 28, 1905. Serial No. 271,574.

Claim.—1. A garment-supporter comprising a supporting element, a member connected to said element and

formed with an eye for receiving a portion of the garment and with a catch at one side of the eye, and a pin movable endwise relatively to the eye member into engagement with the catch, substantially as and for the purpose described.

2. A garment-supporter comprising two supporting elements, a member secured to one of said elements and formed with an eye for receiving a portion of a garment, and a pin secured to the other of said elements and coöperating with the eye member substantially as and for the purpose set forth.

3. A garment-supporter comprising two supporting elements, one lying upon the other, and one being longer than the other, a member formed with an eye secured to the shorter element, said member being also formed with a catch at one side of the eye, and a pin for coöperating with said eye pivoted to the end of the longer element, substantially as and for the purpose described.

4. A garment-supporter comprising a part having a bifurcated end composed of two supporting elements, one lying upon the other, and one being longer than the other, a member formed with an eye secured to the shorter element, and a pin for coöperating with said eye projecting from the end of the longer element, substantially as and for the purpose specified.

5. A garment-supporter comprising a part having a bifurcated end composed of two elements, one lying upon the other, and one being longer than the other, a member secured to the shorter element and formed with an eye and with a socket at one side of the eye, and a pin secured to the longer element and movable endwise across the eye and into the socket, substantially as and for the purpose specified.

849,764. METAL-BENDING MACHINE. GEORGE H. WHITE, Oil City, Pa., assignor to S. R. Dresser Manufacturing Company, Bradford, Pa. Filed Feb. 20, 1906. Serial No. 302,055.

Claim.—1. In a metal-bending machine, the combination with the main frame, a fixed roller mounted therein, a pivoted frame, a movable roller mounted therein, and mechanism for driving the fixed and movable rollers, of a stationary cam, on the main frame, a rotatable cam, constructed to engage the stationary cam, and having a part engaging the pivoted frame, for moving said movable roller toward the stationary roller, and operating means for said rotatable cam, substantially as described.

2. In a metal-bending machine, the combination with the main frame, a fixed roller mounted therein, a pivoted frame, a movable roller mounted therein, and mechanism for driving the fixed and movable rollers, of a stationary cam, on the main frame, a rotatable cam, constructed to engage the stationary cam, and having a part engaging the pivoted frame, for moving said movable roller toward the stationary roller, one of said cams being provided with an adjustable bearing part engaging said pivoted frame for varying the amount of movement of said pivoted frame and movable roller, and means for operating said rotatable cam, substantially as described.

3. In a metal-bending machine, the combination with a fixed roller and a roller movable with respect thereto, of means for moving said movable roller into operative relation with the fixed roller comprising among their members, a fixed cam, a rotatable cam in engagement therewith, an operating-shaft for said rotatable cam extending through said fixed cam, a part connected with said rotatable cam for engaging a part connected with the movable roller, and an operating device connected with said shaft, substantially as described.

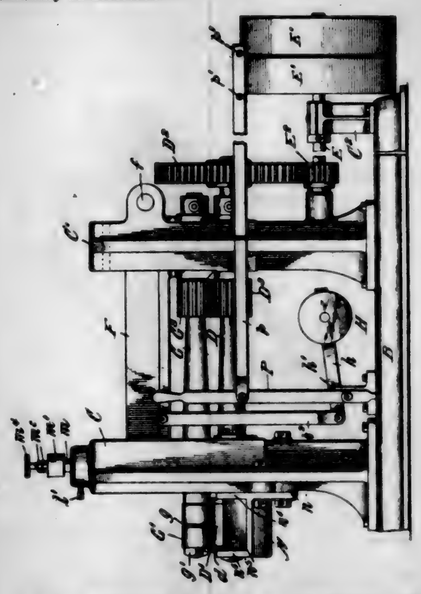

4. In a metal-bending machine, the combination with a fixed roller and a roller movable with respect thereto, of means for moving the movable roller into operative relation to the fixed roller, comprising among its members, a fixed cam, a rotatable cam engaging the same, and provided with a shaft extending through the fixed cam, an adjusting device extending longitudinally through said shaft and engaging a part connected with the movable roller, and an operating device connected with said shaft, substantially as described.

5. In a metal-bending machine, the combination with a main frame and a fixed and a movable roller, of a fixed cam having a horizontal cam-face, and a hollow sleeve of less diameter than the cam, engaging an aperture in a portion of said frame and secured therein, a rotatable cam engaging the fixed cam and provided with a hollow shaft extending through said sleeve, an operating device connected with said shaft, an adjusting-screw extending longitudinally through said shaft and the cam secured thereto and engaging a part connected with said movable roller, a hand-operating device for said screw, and locking means for securing said screw in its adjusted position, substantially as described.

6. In a metal-bending machine, the combination with the main frame, and a fixed roller mounted therein, of a frame pivotally connected to said main frame, a movable bending-roller mounted in said pivoted frame, driving mechanism for said fixed and movable rollers, a rotatable cam for moving said pivoted frame and movable roller toward the fixed roller, and an adjustable part coöperating with said cam for varying the position to which said movable roller is moved by equal movements of said rotatable cam, and an operating device connected to said cam, substantially as described.

7. In a metal-bending machine, the combination with the main frame, and a fixed roller mounted therein, of a frame pivotally connected to said main frame, a movable bending-roller mounted in said pivoted frame, driving mechanism for said fixed and movable rollers, a rotatable cam for moving said pivoted frame and movable roller toward the fixed roller, a bearing part carried by said cam, and engaging said pivoted frame, means for adjusting said bearing part with respect to said cam, and an operating device for said cam, substantially as described.

8. In a bending-machine, the combination with the main frame and a fixed bending-roller carried thereby, of a frame pivotally connected to the main frame, a movable bending-roller mounted in said pivoted frame, a rotatable cam having a cam portion on a face disposed at an angle to its axis of rotation, and interposed between said pivoted frame and a part connected with the main frame, a hand-operated lever for said shaft and an adjusting-screw extending longitudinally through said shaft and through said cam and engaging said pivoted frame, substantially as described.

9. In a metal-bending machine, the combination with the main frame, of a shaft mounted in fixed bearings in said frame, and having a portion extending beyond said frame and carrying a bending-roller, of a swinging frame, pivotally mounted in the main frame, a shaft mounted in said swinging frame, and having a projecting portion at the end farthest from the said pivotal connection carrying a bending-roller, adapted to coöperate with the fixed bending-roller, a counterbalance for said swinging frame normally holding the roller carried thereby out of operative relation with the fixed roller, and a rotatable cam having a part connected therewith for engaging said swinging frame, to move the roller carried thereby into operative relation with the fixed roller, substantially as described.

10. In a metal-bending machine, the combination with the main frame, a fixed shaft mounted therein and having one end projecting beyond the main frame, and a bending-roller carried by said projecting portion of the fixed shaft, of a vertically-movable frame pivoted to the main frame and having its free end working in a vertical slot in said main frame, a shaft mounted in said pivoted frame, having a projecting portion extending over the fixed bending-roller, a movable bending-roller mounted on the projecting portion of said movable shaft, and provided with a central annular groove, driving mechanism for said shafts, a bracket secured to the main frame adjacent to said fixed rollers and provided on one side thereof with a horizontal guide, having lateral guiding portions, and on the other side of said roller, with an inclined support, an adjustable bending-roll, located on said support, a counterbalance for said pivoted frame and the roller carried thereby, and means for forcing said movable frame toward the fixed bending-roller, substantially as described.

849,765. ADJUSTABLE WRENCH. GEORGE E. WOODBURY, San Francisco, Cal. Filed Jan. 23, 1907. Serial No. 353,719.

Claim.—The herein-described wrench, comprising the straight shank having a double head forming the fixed jaws on opposite sides of the shank, the slide-piece adjustable on the shank and provided with oppositely-set jaws adapted by their position to coact with the fixed jaws and situated in different planes with respect to each other, so as to produce in every adjustment of the slide-piece an opening between the fixed and the movable jaw on one side of the shank of relatively greater dimensions than the opening between the corresponding jaws on the opposite side, and a swinging jaw on the slide-piece provided with a serrated face and pivotally attached to the slide-piece on one side of its shank and removably fitted to cover the movable jaw on that side.

849,766. HAIR-COMB. EMELINE A. BAKER, New York, N. Y. Filed Feb. 27, 1906. Serial No. 303,180.

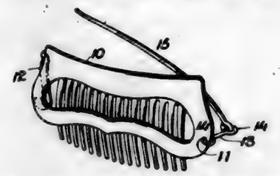

Claim.—In a hair-dressing comb, the combination with a comb, of a catch secured to the comb near one of its ends, a connecting member movably secured to the comb near its other end, and a pin movably secured to the connecting member.

849,767. TEMPERATURE-REGULATOR. BERT BARTON, Dryden, Mich. Filed May 18, 1906. Serial No. 317,446.

Claim.—In apparatus of the class described, the combination with a steam-boiler, of a temperature-regulating member, a casing having a pair of spaced flexible diaphragms, the adjacent faces of which are provided with buttons or blocks, a pipe connecting the lower portion of the casing to the steam-space of the boiler, a stem extending from the upper diaphragm, a lever connected to the stem and to the temperature-regulating member, a valve-chamber, a ported partition in said chamber, there being a discharge-port leading from said valve-chamber, a pair of valves controlling the ports, and a lever for operating both valves, a rock-shaft carrying the lever and ex-

tending out through the wall of the chamber, an armature hung on the rock-shaft, a pair of electromagnets between which the armature is arranged, electromagnetic connections between the thermostat and the electromagnets, a fluid-pressure-supply pipe connected to the valve-chamber, and a connecting-pipe leading from said chamber to the casing at a point between the two diaphragms.

849,768. POWER-TRANSMITTING DEVICE. GEORGE E. BLAKE, Greencastle, Ind. Filed Jan. 10, 1907. Serial No. 351,648.

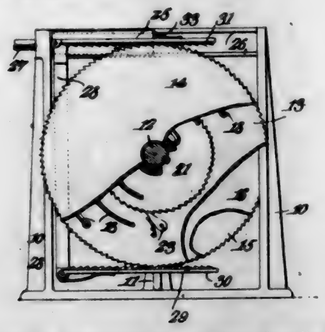

Claim.—1. In apparatus of the class described, a reciprocatory cross-head, two pairs of racks carried thereby, a shaft, two pairs of ratchet-wheels mounted loosely on the shaft and intermeshing with the racks, the ratchet-wheels of each pair being arranged for rotation in opposite directions, respectively, a spiral spring associated with each pair of wheels and having its opposite ends secured to different ratchet-wheels, a ratchet-wheel secured to the shaft adjacent each pair of said wheels, and a pawl carried by one of each pair of loose ratchet-wheels and engaging the adjacent fast ratchet-wheels to thereby transmit unwinding movement of the springs to the shaft.

2. In apparatus of the class described, a reciprocatory cross-head, a pair of sets of racks carried by the cross-head, one set of racks being operable during movement of the cross-head in one direction, and the other set of racks being operable during movement of the cross-head in the opposite direction, a shaft, two pairs of loose ratchet-wheels mounted on the shaft and engaged by one set of racks for movement in opposite directions, respectively, a spring connecting each pair of loose ratchet-wheels, said spring being wound from both ends during operative movement, two ratchet-wheels rigidly secured to the shaft, and two pawls carried by the loose ratchet-wheels and engaging the fast ratchet-wheel to thereby transmit the unwinding movement of the spring to the shaft.

3. In apparatus of the class described, the combination of a reciprocatory member, a pair of racks carried thereby having their teeth facing in opposite directions, a shaft, a pair of ratchet-wheels loosely mounted on the shaft and arranged to be in engagement with the racks, a coil-spring having one end connected adjacent the center of one ratchet-wheel and its other end connected adjacent the periphery of the second wheel, a ratchet-wheel keyed to the shaft, and a pawl on one of the loose ratchet-wheels and arranged to have a ratchet engagement with the said wheel keyed to the shaft.

4. In an apparatus of the class described, the combination of a reciprocatory member, a pair of racks carried thereby having their teeth facing in opposite directions, a shaft, a pair of ratchet-wheels loosely mounted on the shaft and arranged to be in engagement with the racks, a coiled spring having its inner end connected adjacent the center of one loose ratchet-wheel and the outer end connected adjacent the periphery of the second loose ratchet-wheel and arranged for both ends to uncoil at the same time whereby the inner end thereof transmits movement to the said reciprocatory member and the outer end to the shaft, a ratchet-wheel keyed to the shaft, a pawl on one of the loose ratchet-wheels arranged to have a ratchet engagement with the said ratchet-wheel keyed to the shaft, and a fly or band wheel keyed to the shaft.

849,769. SPARKING DEVICE FOR INTERNAL-COMBUSTION ENGINES. FRANCIS W. BRADY, Englewood, N. J. Filed Aug. 11, 1904. Serial No. 220,380.

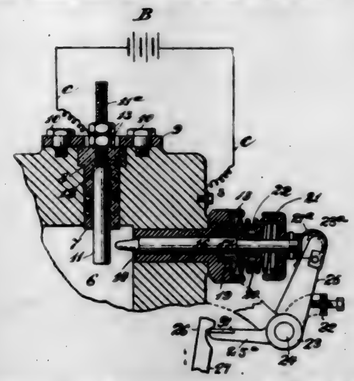

Claim.—1. An internal-combustion engine, having an electrical igniting device comprising an electric circuit including a generator, a fixed electrode of the circuit, which extends into the combustion-chamber of the engine, and a movable electrode of the circuit which also extends into the said chamber and may be moved into and out of contact with the fixed electrode, a spring which breaks the contact between the electrodes, a stop which limits the outward movement of the movable electrode, and means for moving the said electrode into contact for closing the circuit, said means consisting of the cam-shaft 3, the eccentric 28 thereon, the eccentric-rod 27 and its yoke, the link 30, to which said rod is pivoted, the trip 26 on said rod, the rocker 23, having an operating-arm in position to be engaged by said trip, an arm 25, and a cushion-spring 23^a mounted in said arm and so disposed as to impinge on the said movable electrode.

2. In an internal-combustion engine having a combustion-chamber, the combination with an electrode extending within said chamber, a bushing in a wall of said chamber, a nut at the outer end of said bushing, a second electrode passing through said bushing and nut, said second electrode having a shoulder located between said nut and the combustion-chamber and adapted to bear against said nut, and means for intermittently bringing the said electrodes into contact.

3. In an internal-combustion engine having a combustion-chamber, the combination with an electrode extending within said chamber, a bushing in a wall of said chamber having a housing-cup at its outer end, a nut also at the outer end of said bushing, a second electrode passing through said bushing and nut, said second electrode having a shoulder adapted to bear against the inside of said nut, a second housing-cup secured to the outer end of said second electrode, a spring interposed between said housing-cups and means for intermittently moving said second electrode inwardly.

849,770. CLIP-RIVET. HERBERT F. COBB, Cleveland, Ohio, assignor to The Brown Hoisting Machinery Company, Cleveland, Ohio. Filed Jan. 24, 1907. Serial No. 353,881.

Claim.—1. A clip-rivet made up of an upper and lower jaw, and a rivet surmounting the same substantially as shown and described.

2. A clip-rivet for fastening sheet metal, or other material, to flanges and like parts, made up of an upper and lower jaw, the upper jaw carrying an upright rivet, and being raised to a suitable height to bring the point of said rivet in near proximity to the level at which it is to penetrate said material, when said clip-rivet is in engagement with a flange, substantially as shown and described.

3. A clip-rivet for fastening sheet metal, or other material to flanges and like parts, made up of an upper and lower jaw, the upper jaw carrying an upright rivet and being raised to a suitable height to bring the point of said rivet in near proximity to the level at which it is to penetrate said material when said clip-rivet is in engagement with a flange, and being bent, or otherwise shaped, at an angle with the plane of the lower jaw, substantially as shown and described.

849,771. COMBINED LETTER-SHEET AND ENVELOP. WILLIAM A. COOKE, Jr., New York, N. Y. Filed Apr. 20, 1906. Serial No. 312,811.

Claim.—1. A combined letter-sheet and envelop consisting of a sheet of paper comprising a back section having end-sealing flaps thereon which are divided transversely by weakened lines into two parts, bottom sections and top flap-sections, the bottom sections foldable together on top of the back section and the top flap-sections foldable to form a relatively narrow flap with a doubled edge, which coincides with the transverse weakened lines of the end-sealing flaps, substantially as described.

2. A combined letter-sheet and envelop consisting of a sheet of paper divided by transverse folding-lines into a back section having end-sealing flaps divided therefrom by weakened lines and provided with transverse weakened lines which divide it into two parts, bottom sections which are foldable together over on top of the back section, and relatively narrow top flap-sections which are foldable over on top of the folded bottom section so that the double folded edge is between the top and bottom edges of the folded bottom sections thus forming a relatively narrow flap, said doubled edge, when said sections are thus folded and fastened by the end-sealing flaps, coinciding with the transverse weakened lines of the end-sealing flaps, substantially as described.

3. A combined letter-sheet and envelop consisting of a sheet of paper in which are comprised a back section having extensions at the end that form end-sealing flaps which are divided from the back section and also divided into two parts transversely by weakened lines, foldable bottom sections of the same width as the back section, and foldable top flap-sections adapted to be folded together over and on top of the back section and the top flap-sections adapted to be folded together on top of the folded bottom sections so as to form a top flap-section of less width than the back and folded sections, and of the same width as the space above the weakened lines of said end flaps.

4. A combined letter-sheet and envelop consisting of a sheet of paper divided into a back section having end-sealing flaps thereon which are divided from the back section and also divided into two parts transversely by weakened lines, foldable bottom sections of substantially the same width as the back section, foldable top flap-sections of less width than the back and bottom sections and corresponding to the parts of the end-sealing flaps above the transverse weakened lines, whereby when the bottom sections are folded over and on top of the back section and the top flap-sections folded down on top of the bottom folded sections, the double-folded edge of the top flap-section coincides with the transverse weakened lines of the end-sealing flaps, substantially as described.

849,772. BOTTLE-PUMP. GASTON E. CORDEAUX, New York, N. Y., assignor to Hanson & Van Winkle Company, Newark, N. J. Filed Aug. 1, 1906. Serial No. 328,081.

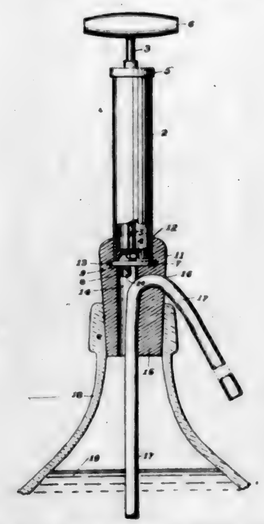

Claim.—1. In a liquid-dispensing device, a piston-pump provided with a disk base, said disk base extending beyond the periphery of the cylinder of said pump and adapted to engagement within a bottle-stopper adapted to seat said pump.

2. In a liquid-dispensing device a piston-pump provided with a disk base, said base extending beyond the periphery of the cylinder of said pump, a check-valve extending outwardly from said pump, the said disk base being adapted to engage an annular inner groove of a bottle-stopper substantially as described.

3. In a liquid-dispensing device, a stopper having a longitudinal opening therethrough and having an interior annular groove, part of said opening being round in cross-section above the interior annular groove and part of said longitudinal opening below said annular groove being of a smaller area than said round opening, said stopper also having a side opening communicating with the interior of said stopper, a tubing extending from the interior of said stopper through the said side opening, and an air-pressure pump adapted to be seated within the said round opening of said stopper, substantially as described.

4. In a liquid-dispensing device the combination of a piston-pump having a disk base which extends beyond the periphery of the cylinder of said pump, a hollow stopper adapted to seat said pump, and provided with a side opening and a hose or tubing extending through said hollow stopper from the center to and through said side opening below said pump, substantially as described.

849,773. THIRD-RAIL-PROTECTING MECHANISM FOR ELECTRIC RAILROADS. HAMLET CORRIGAN, Pittston, Pa., assignor of one-third to Charles Francis Curry and one-third to Michael H. Keating, Pittsburg, Pa. Filed May 3, 1906. Serial No. 315,046.

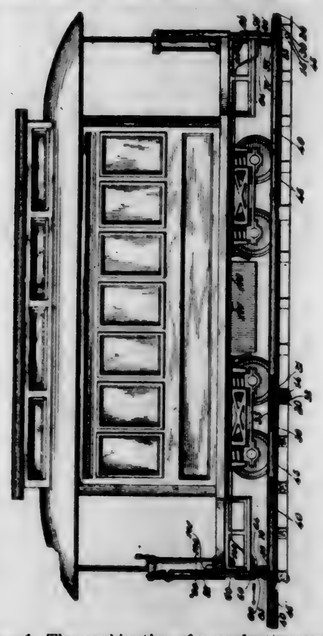

Claim.—1. The combination of a conductive contact-rail, a slotted tube partially inclosing said rail, and a rotary slotted sleeve disposed on said slotted tube for covering and exposing said rail, said rotary sleeve being provided with means engaged by actuating means on the car for opening and closing said sleeve.

2. The combination of a conductive contact-rail, a slotted protecting-tube for inclosing said rail, provided with a longitudinal skirt along one edge of its slot, and a rotary slotted sleeve disposed on said tube and adapted to oscillate thereon to cover or expose said rail, one edge of said slotted sleeve playing in and being protected by said skirt.

3. The combination of a conductive contact-rail, a slotted tube partially inclosing said rail, and a rotary slotted sleeve disposed on said slotted tube for covering and exposing said rail, one edge of said slotted sleeve having a recessed lip adapted to shut over the top of said rail without contact therewith.

4. The combination of a protecting-tube provided with a longitudinal slot, a conductive contact-rail disposed in and insulated from said tube and having its head projecting into the slot thereof, a rotary slotted sleeve disposed on said tube, and means for oscillating said sleeve to cover or expose said rail.

5. The combination of a protecting-tube provided with a longitudinal slot, rail-supports disposed in said tube, a conductive contact-rail disposed in said tube on said supports and insulated therefrom, the head of said rail projecting into the slot of said tube, insulating-strips between the head of said rail and the edges of the slot of the tube, a rotary slotted sleeve disposed on said tube, and means for oscillating said sleeve to cover or expose said rail.

6. The combination of a protecting-tube provided with a longitudinal slot, a conductive contact-rail disposed in said tube, a rotary slotted sleeve disposed on said tube and provided with an inclined opening-cam and with an inclined closing-cam adapted to be engaged by actuating means on the car for exposing and covering said rail.

7. The combination of a protecting-tube provided with a longitudinal slot, a conductive contact-rail disposed in said tube, a rotary slotted sleeve disposed on said tube and provided with opening-cams inclined in opposite directions, and closing-cams also inclined in opposite directions, a cam of each set being engaged in alternation to oscillate said sleeve to uncover and cover said rail.

8. The combination of a protecting-tube provided with a longitudinal slot, a conductive contact-rail disposed in said tube, and insulated therefrom, a rotary slotted sleeve disposed on said tube and provided on one side with opening-cams inclined in opposite directions, and on its opposite side with closing-cams inclined in opposite directions, sleeve-openers disposed on the car for engaging said opening-cams respectively, and sleeve-closers disposed on the car for engaging said closing-cams respectively according to the direction of movement of the car.

9. The combination of a protecting-tube provided with a longitudinal slot, a conductive contact-rail disposed in said tube and insulated therefrom, a rotary slotted sleeve disposed on said tube and provided on one side with opening-cams inclined in opposite directions, and on its opposite side with closing-cams inclined in opposite directions, sleeve-openers disposed on the car for engaging said opening-cams respectively, sleeve-closers disposed on the car for engaging said closing-cams respectively according to the direction of movement of the car, and means for adjusting said closers into operative and inoperative positions respectively.

10. The combination of a protecting-tube provided with a longitudinal slot, a conductive contact-rail disposed in said tube, and insulated therefrom, a rotary slotted sleeve disposed on said tube and provided on one side with opening-cams inclined in opposite directions, and on its opposite side with closing-cams inclined in opposite directions, sleeve-openers disposed on the car for engaging said opening-cams respectively, sleeve-closers disposed on the car for engaging said closing-cams respectively according to the direction of movement of the car, and means operative from either end of the car to simultaneously adjust one of said sleeve-closers into operative position and the other into inoperative position.

11. In a third-rail electric railway, the combination of a curved track, a third rail adjacent to said curved track and composed of a series of straight sections forming slight angles, an inclosing protective tube for said sections provided with exposing-slots therefor, and rotary slotted sleeves disposed on said sections and adapted to expose or cover said rail.

12. In a third-rail electric railroad, the combination of a curved track, a conductive third rail composed of straight sections disposed adjacent to one of the rails of said track at different distances therefrom, protecting-tubes inclosing said rail-sections and provided with longitudinal slots for exposing the heads thereof, and rotary sloted sleeves disposed on said tubes and adapted to oscillate to expose or cover said rail-sections.

13. In a third-rail electric railroad, the combination of a track, a third rail disposed adjacent thereto, a protecting-tube inclosing said third rail and provided with a longitudinal slot for exposing the contact-surface thereof, a series of rotary slotted sleeves disposed on said tube and provided with cams, and sleeve-actuators disposed on the car for engaging said cams, said actuators being adapted to yield vertically.

14. In a third-rail electric railroad, the combination of a track, a third rail disposed adjacent thereto, a protecting-tube inclosing said third rail and provided with a longitudinal slot for exposing the contact-surface thereof, a series of rotary slotted sleeves disposed on said tube and provided with cams, and sleeve-actuators disposed on the car for engaging said cams, said actuators being adapted to yield laterally.

15. In a third-rail electric railroad, the combination of a track, a third rail disposed adjacent thereto, a protecting-tube inclosing said third rail and provided with a longitudinal slot for exposing the contact-surface thereof, a series of rotary slotted sleeves disposed on said tube and provided with cams, and sleeve-actuators disposed on the car for engaging said cams, said actuators being adapted to yield vertically and laterally.

16. In a third-rail electric railroad, the combination of a track, a third rail disposed adjacent thereto, a protecting-tube inclosing said third rail and provided with a longitudinal slot for exposing the contact-surface thereof, a series of rotary slotted sleeves disposed on said tube and provided with cams, and sleeve-actuators disposed on the car for engaging said cams, and a traveling contact connected with said actuator.

17. The combination of a protecting-tube provided with a longitudinal slot, a conductive contact-rail disposed in said tube, a rotary slotted sleeve disposed on said tube provided with a projection, an actuator on the car adapted to engage said projection, for turning said sleeve, and means for lifting said actuator into and out of operative position.

18. The combination of a protecting-tube provided with a longitudinal slot, a conductive contact-rail disposed in said tube, a rotary slotted sleeve disposed on said tube and provided with a projection, an actuator on the car adapted to engage said projection for turning said sleeve, a vertical slide-rod carrying said actuator, and a pivoted lever engaging said slide-rod for lifting and lowering it.

19. The combination of a protecting-tube provided with a longitudinal slot, a conductive contact-rail disposed in said tube, a rotary slotted sleeve disposed on said tube and provided with projecting means for oscillating the tube, actuators disposed at different parts of the car for engaging said projecting means, vertical slide-rods carrying said actuators, pivoted levers engaging said slide-rods for lifting and lowering said actuators, foot-levers, interlocking devices between said foot-levers and said pivoted levers, and connecting mechanism between said slide-rods and foot-lever whereby the depression of one foot-lever disengages the locking mechanism of both and the actuation of one of said pivoted levers simultaneously shifts the other in the reverse direction.

20. The combination of a protecting-tube provided with a longitudinal slot, a conductive contact-rail disposed in said tube, a rotary slotted sleeve disposed on said tube and provided with projecting means adapted to be engaged for oscillating said sleeve, actuators disposed at different points on the car for engaging said projecting means, vertical slide-rods carrying said actuators, pivoted lifting-levers for raising and lowering said slide-rods, a longitudinal oscillating slide-rod, bell-crank levers connecting the opposite ends of said longitudinal rod with said vertical slide-rods, sleeves adapted to turn with said longitudinal rod and permit it to slide therein, said sleeves having lateral lugs, levers connected with said lugs for oscillating said longitudinal rod, and locking mechanism connecting each oscillating lever with its adjacent lifting-lever.

21. The combination of a protecting-tube provided with a longitudinal slot, a conductive contact-rail disposed in said tube, a rotary slotted sleeve disposed on said tube and provided with projecting means adapted to be engaged for turning said sleeve, an actuator disposed on the car for engaging said projecting means, said actuator comprising a pivoted arm composed of sliding members having an interposed spring.

22. The combination of a protecting-tube provided with a longitudinal slot, a conductive contact-rail disposed in said tube, a rotary slotted sleeve disposed on said tube and provided with projecting means adapted to be engaged for turning said sleeve, an actuator disposed on the car for engaging said projecting means, a vertical rod with which said actuator is connected, said actuator comprising a horizontal and vertical member, the horizontal member being pivoted at its outer end to said slide-rod and provided with a stop, and a spring interposed between the end of said slide-rod and a lug on said horizontal member.

840,774. FILE. EBENEZER G. DOW, London, England. Filed Dec. 23, 1903. Serial No. 186,303.

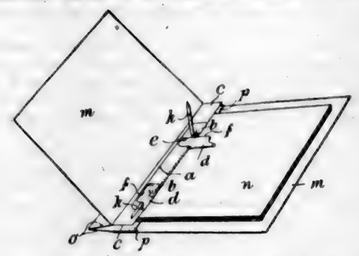

Claim.—In a binder, the combination of upper and lower members between which the papers are held, the upper member being provided at its edge with slots, a U-shaped plate embracing said upper member and having slots in its folded edge which register with said first-named slots, and U-shaped clamps arranged astride of said plate and pivoted thereto to swing laterally over said slots, each of said clamps having a wide upper portion extending substantially throughout the length of the clamp to grip the tag and hold the same down on said plate, the lower portion of each clamp being of less width than the upper portion and provided at its inner edge with a recess to receive the tag and thus prevent its lateral shifting in the corresponding slot.

840,775. SWING-DOOR FOR COLD-STORAGE ROOMS. JOHN F. DRUCKER, New York, N. Y. Filed Mar. 24, 1906. Serial No. 307,864.

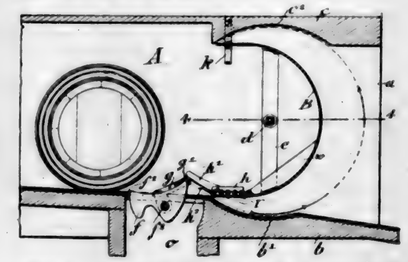

Claim.—1. In a door for cold-storage rooms, the combination, with a casing, of an approximately semicylindrical door journaled horizontally therein and arranged to swing upwardly, and means to swing said door back to its initial position.

2. In a door for cold-storage rooms, a casing, and an approximately semicylindrical door journaled therein and arranged to be swung upwardly by the outgoing barrel, said door being weighted to return it to its initial position after the passage of each barrel.

3. In a door for cold-storage rooms, the combination, with a casing having arcuate portions in the top and floor thereof, one above the other, of a door of semicircular cross-section journaled horizontally in said casing and having its top and bottom edges movable in close proximity to said arcuate portions.

4. The combination, with a casing having an inclined floor and upper and lower arcuate portions near its outer end, of a door of approximately semicircular cross-section journaled in the side walls of said casing and swinging in vertical direction, the upper and lower edges only of said door moving in close proximity to said arcuate portions of the casing.

5. The combination, with a vertically-swinging door, of stop-levers which are depressed by each outgoing barrel and returned by said door to their initial position.

6. The combination, with a vertically-swinging door, of

stop-levers which are depressed by each outgoing barrel, and automatically returned to their initial position by said door when the latter returns to its initial or normal position.

7. The combination, with a vertically-swinging door, counterweighted to maintain it normally in a predetermined position, of stop-levers in advance of said door, and means carried by said door to operate said levers when said door is returned to such predetermined position.

8. The combination, with a vertically-swinging door counterweighted to maintain it normally in a predetermined position, of stop-levers in advance of said door and arranged to be depressed by the outgoing barrel, and means carried by said door, and operating during the return movement of the latter, to simultaneously raise all of said levers.

9. In a door for cold-storage rooms, the combination, with a casing having an inclined floor and upper and lower arcuate portions, of a door having its top and bottom edges movable in close proximity to said arcuate portions and arranged to swing upwardly, weights for returning said door to its normal position, and pivoted stop-levers in advance of the door, said levers being rockable in one direction by the barrel and in the other direction by said door when the latter returns to its normal position.

10. The combination, with a casing having an inclined floor, of a vertically-swinging door journaled in the side walls of said casing, said door being counterbalanced to maintain it normally in a predetermined position, and stop-levers operating in the floor of said casing and rockable by said door.

11. The combination, with a casing having an inclined floor, of a vertically-swinging door journaled in the side walls of said casing, said door being counterbalanced to maintain it normally in a predetermined position, a shaft extending transversely to said casing and arranged beneath the floor thereof, stop-levers mounted on said shaft and operating in slots in said floor, a shaft-operating lever carried by said shaft, and means carried by the door for engaging and rocking said shaft-operating lever when said door returns to its normal position.

12. The combination, with a casing having an inclined floor, of a vertically-swinging door journaled in the side walls of said casing, said door being counterbalanced to maintain it normally in a predetermined position, a shaft extending transversely to said casing and arranged beneath the floor thereof, stop-levers mounted on said shaft and operating in slots in said floor, a shaft-operating lever carried by said shaft, and an arm on said door to engage and raise said shaft-operating lever.

13. In a door for cold-storage rooms, the combination, with the casing A having the inclined floor *b*, of the vertically-swinging door B journaled in said casing, the weights *w* carried by said door, the arm *h'* pivoted to the lower portion of said door, the shaft f^2 extending transversely to said casing below the floor thereof, the stop-levers *f* operating in slots *f'* in said floor, the actuating-lever *g* mounted on said shaft f^2 and disposed in the path of said arm *h'*, and the spring *k* engaging the door at one edge and limiting the movement thereof, as described.

849,776. VENTILATED FIREPROOF WALL. LEWIS D. EWING, Akron, Ohio. Filed May 26, 1905. Serial No. 262,459.

Claim.—1. A building-block having parallel long and shorter sides, oblique ends connecting said sides, interlocking lugs formed at the ends of the shorter side, and ventilating-passages formed entirely through the block.

2. A building-block having parallel long and shorter sides, oblique ends connecting said sides, locking-lugs at the ends of the shorter sides fashioned to form interlocking means, extensions formed on the ends of the longer sides, and openings extending vertically through the block.

3. A building-block having a long and short side, oblique ends connecting said sides, a locking-lug at the ends of the short side and a recess formed by each lug and the oblique ends, and plane extension projecting beyond the body of the block at each end of the long side.

4. A building-block having parallel long and short sides, the ends of the body of the block formed on oblique lines, angular locking-lugs projecting from the ends of the short side, extensions formed at the ends of the long side of a thickness of one-third of the body of the block, and vertical passages extending through the block.

5. A wall comprising an inner and an outer series of blocks each fashioned to extend inwardly beyond the inner line of the opposite series, continuous vertical passages formed in the outer series of blocks, and each block of each series having parallel long and short sides, and interlocking lugs formed at the ends of the short sides.

6. A building-block having a long and a short side, oblique ends connecting said sides, a V-shaped interlocking lug at the ends of the short side and a recess formed by each said lug and the oblique ends of the block, and plane extensions projecting beyond the body of the block at each end of the long side.

7. A wall comprising an exterior and an interior series of blocks, the blocks of each series alternating and arranged to extend inwardly beyond the inner line of the blocks of the opposite series, locking-lugs on the adjoining blocks of the two series, extensions formed at the ends of the blocks of each series, and ventilating-passages formed in the outer series of blocks.

8. A wall comprising an inner and an outer series of blocks fashioned to extend inwardly beyond the inner line of the blocks of the opposite series, continuous vertical passages formed in the outer series of blocks, an upper friezework communicating with said passages and a water-table near the bottom of the wall communicating with the lower end of the passages, the blocks in each series each having a parallel long and short side, oblique ends connecting said sides, locking means formed at the ends of the shorter sides, and extensions formed at the ends of the long sides.

9. A wall comprising an exterior and an interior series of blocks, the blocks of each series alternating and arranged to extend inwardly beyond the inner line of the blocks of the opposite series, each of said blocks having a long and a short side, locking-lugs formed at the ends of the short side, and extensions formed at the ends of the long sides of the blocks providing an air-space within the wall, and mortar-retaining grooves on a surface of each of the blocks.

10. A wall comprising an inner and an outer series of blocks each of said blocks having a long and a short side, an intermediate block having locking-lugs at its corners, and complementary lugs formed at the ends of the short sides of the blocks in the inner and outer series to engage the lugs on the intermediate blocks.

11. In a building-wall an exterior series of blocks and an interior series of blocks, the blocks of each series having a long and a short side and oblique ends connecting said sides, a locking-lug at the ends of the short side of each block adapted to fit a complementary lug on the adjoining block, and plane extensions projecting beyond the body of the blocks at the end of the long sides.

12. In a building-wall an exterior series of blocks and interior series of blocks, the blocks of each series having a long and a short side and oblique ends connecting said sides, a V-shaped interlocking lug at the ends of the short side of each block adapted to fit a complementary lug on the adjoining block, and extensions projecting beyond the body of the blocks at each end of the long sides.

13. In a wall construction, a filler-block having parallel sides and apex-formed ends, openings extending vertically through the blocks and oblique interlocking lugs formed at the ends of the sides.

14. In a wall construction, an exterior series of blocks having parallel long and short sides, oblique ends connecting said sides and said blocks formed with openings forming ventilating-passages communicating with the atmosphere, an interior series of blocks having parallel long and short sides, oblique ends connecting said sides, said block formed with cavities forming air-cells interiorly of the inner portion of the wall, and a central block having parallel sides, apex-formed ends, and openings extending vertically through the said block to form air-chambers disposed interiorly of and independent of the ventilating-passages and air-cells.

849,777. GLUING-MACHINE. CHARLES P. FREESTATE, Chicago, Ill. Filed May 25, 1906. Serial No. 318,653.

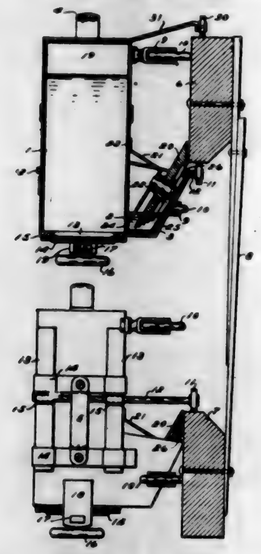

Claim.—1. In a gluing-machine, the combination of a portable receptacle for liquid glue, a fountain-feed for maintaining a uniform depth of glue in said receptacle, a conical wheel journaled on an inclined axis, having the lower portion of its periphery dipping below the surface of liquid in said receptacle and having the upper portion extending outwardly beyond one side of the receptacle for applying glue to an adjacent vertical surface, and means on said receptacle for guiding the gluing-wheel when the receptacle is moved along said surface.

2. A gluing-machine comprising a receptacle for liquid glue, a conical roller journaled therein on an inclined axis, having a portion of its periphery dipping into the glue in said receptacle and having another portion extending outward of the receptacle into position for applying glue to a vertical surface, a guide-roller journaled on a vertically-disposed axis on said receptacle and adapted to bear on such vertical surface when the gluing-roller is in contact therewith, and a second guide extending beyond the gluing-roller and adapted to engage a horizontal edge of such vertical surface.

3. A gluing-machine comprising a receptacle for liquid glue, a conical roller journaled therein on an inclined axis, having a portion of its periphery dipping into the glue in said receptacle and having another portion extending outward of the receptacle into position for applying glue to a vertical surface, a guide-roller journaled on a vertically-disposed axis on said receptacle and adapted to bear on such vertical surface when the gluing-roller is in contact therewith, and a second guide extending beyond the gluing-roller and adapted to engage a horizontal edge of such vertical surface, said second guide being readily movable to positions above and below said outwardly-extending part of the gluing-wheel for guiding the same along the upper or lower edges of such vertical surface.

4. The combination of a frame, a gluing-wheel journaled thereon and adapted to apply glue to one face of a bar, a guide mounted on said frame and extending beyond said wheel so as to engage either of the edges of said bar adjacent to said one face, said guide being adapted to shift on said frame, from one side of said gluing-wheel to the other, and stops limiting the shifting of said guide.

5. The combination of a frame, a glue-distributing member thereon, and a guide having limited movement on the frame to different sides of said member.

6. The combination of an open receptacle, a closed tank for liquid having an outlet communicating with said receptacle, said tank being adapted to be closed against the admission of air except at said outlet for maintaining a uniform depth of liquid in said receptacle, a frame removably seated in said receptacle and having journaled thereon a wheel dipping below the level of liquid in the receptacle and adapted to take up liquid from the receptacle and apply the same to a surface in contact with the periphery of said wheel, and guides mounted on said tank and adapted to hold the wheel in proper relation to such surface for applying a band of liquid thereto.

7. The combination of an open receptacle, a closed tank for liquid having an outlet communicating with said receptacle, said tank being adapted to be closed against the admission of air except at said outlet for maintaining a uniform depth of liquid in said receptacle, a frame removably seated in said receptacle and adapted to be sprung into and out of interlocking engagement therewith, a wheel dipping below the level of liquid in the receptacle and adapted to take up liquid therefrom and apply the same to a surface in contact with the periphery of said wheel, and guides mounted on said tank and adapted to hold the wheel in proper relation to such surface for applying a band of liquid thereto.

8. The combination of a frame, a gluing-wheel journaled thereon and adapted to roll along a vertical surface for applying glue thereto, means for uniformly feeding liquid glue to the periphery of said wheel, one or more guide-rollers adapted to bear on said surface, an additional guide-roller extending forward of said gluing-wheel and adapted to bear upon a horizontal surface for guiding the gluing-wheel in a horizontal direction, said additional guide-roller being movable on said frame between positions above and below said gluing-wheel, and stops limiting the movement of said guide-roller with respect to the gluing-wheel, for the purpose specified.

9. A gluing-machine comprising a receptacle for liquid glue, a conical roller journaled therein on an inclined axis, having a portion of its periphery dipping into the glue in said receptacle and having another portion extending outward of the receptacle into position for applying glue to a vertical surface, and means for guiding said roller along such surface.

10. The combination of a frame, a glue-distributing member thereon adapted to apply glue to one face of a bar, and a shifting guide member on said frame adapted to be moved into a guiding position on either side of the distributing member, through contact with the edge of said bar.

849,778. IMPERMEABLE CEMENT FOR RESISTING WATER. GIOVANNI FROLLO, Milan, Italy. Filed Dec. 14, 1906. Serial No. 347,779.

Claim.—1. A process for the manufacture of impermeable cement for resisting water characterized in that a mixture of liquid ingredients and a mixture of solid ingredients are required for the formation of the cement, said mixtures being composed of linseed-oil and water as liquid ingredients and of quicksand, colophony, tailors' chalk, marble and sulfate of zinc as solid ingredients substantially as described and for the purpose set forth.

2. As an article of manufacture, a cement composed of quicksand, colophony, tailors' chalk, linseed-oil, water, marble, sulfate of zinc.

849,779. PULVERIZING OR GRINDING MILL. JAMES W. FULLER, Jr., Catasauqua, Pa. Filed Jan. 5, 1906. Serial No. 294,682.

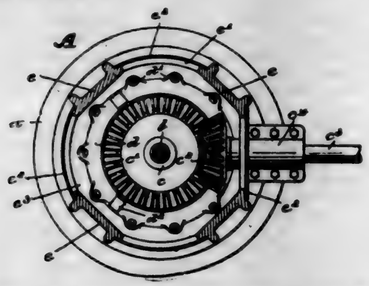

Claim.—In a pulverizing or grinding mill, a base having an annular depression substantially V-shape in cross-section and adapted to form a receptacle for a lubricant, a gear-wheel substantially V-shape in cross-section and terminating with the toothed portion thereof in the depression of said base, a sectional flange carried by said base and arranged substantially parallel to the toothed portion of said gear-wheel and substantially covering the depression of said base, said flange adapted when said wheel is rotated, to form a baffle-plate for the lubricant raised by the same and to conduct the lubricant back over the toothed portion of said wheel.

849,780. PULVERIZING OR GRINDING MILL. JAMES W. FULLER, Jr., Catasauqua, Pa. Filed Jan. 26, 1906. Serial No. 297,029.

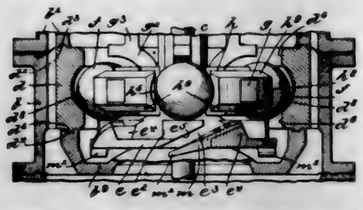

Claim.—1. In a mill of the character described, a grinding-ring having a curved grinding-surface arranged between straight portions thereof, means for supporting said ring, pushers, each having an inclined surface extending over the upper and lower faces to permit of free entrance of matter between said pushers and ring, means for supporting said pushers and actuating the same within said ring, grinding-balls arranged between said pushers and a carrier having projections supporting said balls and provided with slots in the periphery extending through said projections to permit of the formation of long guiding-surfaces therein.

2. In a mill of the character described, a grinding-ring, a casing for supporting said ring, pushers each having an inclined surface extending over the entire upper and lower faces thereof to permit of the free entrance of matter between said pushers and ring, means for supporting said pushers and for actuating the same within said ring, grinding-balls arranged between said pushers, a carrier having projections supporting said balls and provided with slots in the outer periphery extending through said projections to permit of the formation of long guiding-surfaces therein, means connected with said carrier and located in the slotted portions thereof and projecting below the carrier, said means adapted when actuated by said carrier to elevate matter resting on the bottom of said casing and conduct the same against the inclined surface of the lower faces of said pushers and by the same to said ring.

3. In a mill of the character described, a casing, a grinding-ring supported thereby, pushers arranged within said ring, each having inclined surfaces at their outer ends and forming in conjunction with said ring passage-ways for matter adapted to enter the ring from opposite sides thereof, grinding-balls arranged between said pushers and adapted to be rotated by the same within said ring, a carrier adapted to support said balls having slots in the outer periphery, scoops connected with said carrier and projecting below the same, said scoops when actuated by said carrier adapted to elevate matter resting on the bottom of said casing and conduct the same through said slots to the grinding-ring.

849,781. METAL RING FOR PULVERIZING OR GRINDING MILLS. JAMES W. FULLER, Jr., Catasauqua, Pa. Filed Jan. 26, 1906. Serial No. 297,930.

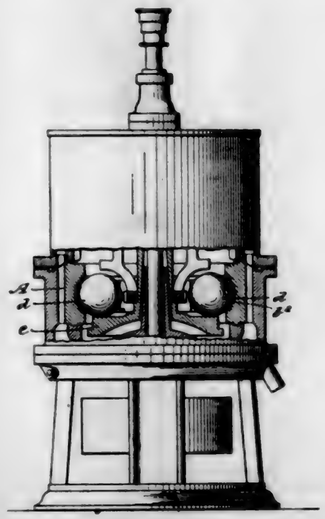

Claim.—The combination, in a pulverizing or grinding mill, of a metal ring or annulus provided with a concave wholly chilled central portion and unchilled portions on both sides thereof and balls operatively arranged and maintained in contact with the central portion only of said ring, and means adapted to prevent turning and displacement of said ring under the action of said balls and materials acted upon thereby, substantially as and for the purposes described.

849,782. PULVERIZING OR GRINDING MILL. JAMES W. FULLER, Jr., Catasauqua, Pa. Filed Mar. 13, 1906. Serial No. 305,743.

Claim.—The combination, in a pulverizing or grinding mill, of a grinding-ring, balls operatively engaging and maintained in contact with said ring, a housing provided with openings, a fine screen and sectional coarse screens, said fine screen surrounding said housing, and said sectional coarse screens fitting the openings of said housing and two series of rotatable wings or blades supported above said grinding means at different angles to each other and so arranged as to elevate materials of different degrees of fineness from said grinding means and by the upper series of said blades or wings to discharge by the force of said wings or blades through said screens, substantially as and for the purposes described.

849,782.

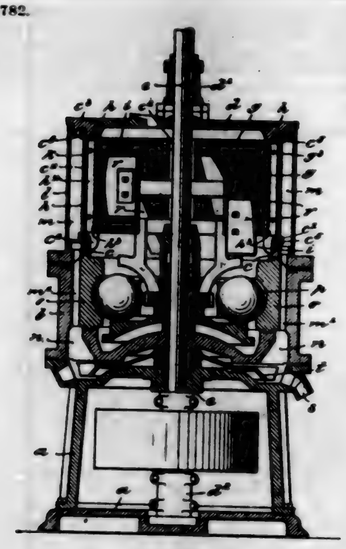

849,783. PILE-WIRE-OILING DEVICE FOR LOOMS. JOSEPH S. GILES, Worcester, Mass., assignor to Matthew J. Whittall, Worcester, Mass. Filed May 13, 1899. Renewed Sept. 21, 1906. Serial No. 335,648.

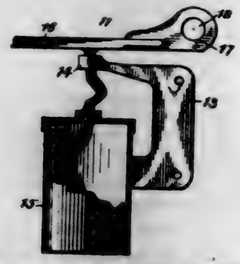

Claim.—In a loom, the combination of wires, each comprising a shank or body portion 16, an end piece 17 having its lower side flush with the bottom of the body portion, and its eye 18 above the same, a hook 10 for catching and withdrawing the wires, said hook being arranged to reciprocate above the plane of the wires, and a stationary oiling device comprising a wick-holder, a can, and a wick extending from the can up through the wick-holder in position to be engaged by the bottoms of the wires, substantially as described.

849,784. PILE-WIRE-OILING DEVICE FOR LOOMS. JOSEPH S. GILES, Worcester, Mass., assignor to Matthew J. Whittall, Worcester, Mass. Filed May 13, 1899. Renewed Sept. 21, 1906. Serial No. 335,649.

Claim.—1. In a loom, the combination of the wires, the hook for catching and withdrawing the same, a lubricating-wheel having its periphery cut away to clear the hook, and means for turning the lubricating-wheel to bring its periphery into engagement with the wires, substantially as described.

2. In a loom, the combination of the wires, the hook for catching and withdrawing the same, a lubricating-wheel having its periphery cut away to clear the hook, and connections for oscillating said wheel, substantially as described.

3. In a loom, the combination of the wires, the hook for catching and withdrawing the same, a lubricating-wheel having its periphery partly cut away, a weight for normally holding the wheel in position to clear the hook, and a flexible connection for turning the wheel to engage the wires, substantially as described.

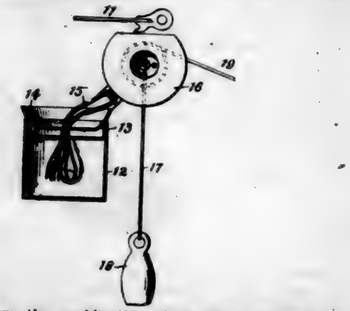

4. In a loom, the combination of the wires, the hook for catching and withdrawing the same, a lever connected to operate the hook, an oiling device comprising a reservoir or can, a lubricating-wheel having a part of its periphery cut away, wicking for supplying oil from the can to the periphery of the lubricating-wheel, a weight connected to normally hold the lubricating-wheel in position to clear the hook, and a flexible cord or connection extending from the lubricating-wheel to the lever which operates the hook for turning said lubricating-wheel to engage the wires, substantially as described.

849,785. COVER FOR RAILWAY-CARS. GOTTLIEB A. HEIMBUCHER, Chicago, Ill., assignor of one-half to Winnefred Kennedy, Chicago, Ill. Filed Jan. 2, 1907. Serial No. 350,395.

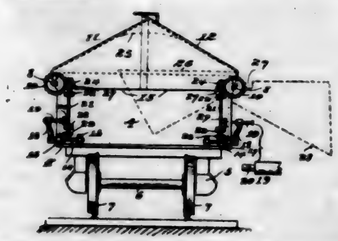

Claim.—1. A railway-car provided with a sectional top, pivot-pins running longitudinally of the car to which the sections are secured, a gear at one end of each pivot-pin, and means for independently rotating each gear, whereby the covers are adapted to cover or uncover the car, substantially as described.

2. A railway-car provided with a sectional top, pivot-pins mounted on the car-body to which said sections are rigidly secured, gears, one at one end of each pivot-pin, operating-handles, and connections between said gears and operating-handles for independently rotating each gear, whereby the cover-sections are moved to cover or uncover the car, substantially as described.

3. A railway-car provided with a sectional top, pivot-pins mounted on the car-body to which said sections are secured, said pivot-pins being situated near the upper edge of said car-body, gears, one at one end of each pivot-pin, cranks for operating said gears located adjacent to the lower edge of said car-body, and connections between said gears and cranks whereby the cover-sections are moved to cover or uncover the car upon a movement of said cranks, substantially as described.

4. A railway-car provided with a sectional top, pivot-pins mounted on the car-body near its upper edge and to which the sections are rigidly secured, gears, one at one end of each of said pivot-pins, a crank for each gear situated adjacent to the lower edge of said car-body, connections between said cranks and gears for rotating the latter to cover or uncover the car, and coöperating means upon said car-body and crank for the application of a seal thereto whereby, when said covers are closed, they can not be opened without breaking said seal, substantially as and for the purpose described.

849,786. GUN-CLEANING IMPLEMENT. CHARLES HILDENBRAND, Phœnixville, Pa. Filed Mar. 9, 1906. Serial No. 305,121.

Claim.—A swab-holder comprising a threaded stem having a collar at one end provided with a threaded projection adapted to be secured in a threaded socket of a cleaning-rod a rubber sleeve widest at the center tapering toward its ends arranged on said stem, a washer engaging said sleeve, a thumb-nut working on the ends of the stem and a cleaning fabric adapted to be secured between the washer and nut, for the purpose described.

849,787. PROCESS OF GROWING SWEET POTATOES AND OTHER TUBERS. GEORGE HITZ, Indianapolis, Ind. Filed Dec. 6, 1906. Serial No. 346,652.

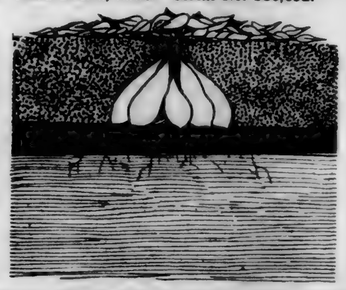

Claim.—1. The process of growing sweet potatoes and other tubers, which process consists in first selecting a hard unplowed soil; second, covering it with sand, and third, planting the tubers in the upper part or sand, whereby the roots of the tubers will penetrate the soil and the tubers will form in the sand and a little above the subsoil.

2. The process of growing sweet potatoes and other tubers, which process consists in taking hard ground and loosening up the surface thereof by a harrow or the like implement, so the loosened ground will be very shallow with a hard bottom covering the same with sand to the desired depth whereby a union will be effected between the soil and the sand, and third, planting tubers in the upper part of the sand whereby the roots will penetrate the loosened surfaces of the soil and the tubers form in the sand immediately above the subsoil.

849,788. JACK. JOHN HUMPHREYS, Henderson, Ky. Filed July 23, 1906. Serial No. 327,395.

Claim.—1. In a device of the class described, the combination of a frame, a lifting-bar guided thereby, a pawl for elevating the bar, an operating-lever, and a toggle connection between the pawl and lever capable of adjustment for varying the leverage.

2. In a device of the class described, the combination of a frame, a lifting-bar mounted therein, a pawl for elevating the bar, an operating-lever mounted on the frame, a lever on which the pawl is pivoted, an adjustable connection between the last-mentioned lever and operating-lever, and means coöperating with the pawl for elevating the said bar.

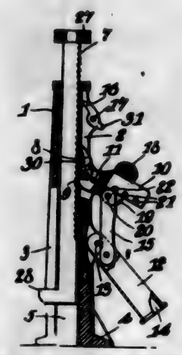

3. In a device of the class described, the combination of a frame, a lifting-bar mounted therein, a pawl for elevating the bar, a notched lever connected with the pawl, a slidable member on the lever, means on said member for interlocking with the notches of the lever, an operating-lever fulcrumed on the frame, and a connection between the operating-lever and said member.

4. In a device of the class described, the combination of a frame, a lifting-bar mounted therein, a pawl for elevating the bar, a notched lever connected with the pawl, a slidable member on the lever, a spring-pressed bolt on the sliding member for adjustably holding the latter on the lever, an operating-lever fulcrumed on the frame, and a link connecting the operating-lever with the said member.

5. In a device of the class described, the combination of a frame, a lifting-bar mounted therein, a pawl for elevating the bar, a notched lever connected with the pawl, a bifurcated member straddling one end of the lever, a bolt extending through one of the bifurcations of the member to engage with the notches, a spring-actuated latch mounted on one side of the member and engaging the bolt, an operating-lever fulcrumed on the frame, and a link pivoted at one end between the bifurcations of the member and at the other end to the operating-lever.

849,789. TWEEZERS. JAMES C. HURD, Springfield, Mass., assignor of one-half to Francis K. Williams, Springfield, Mass. Filed Feb. 7, 1906. Serial No. 299,907.

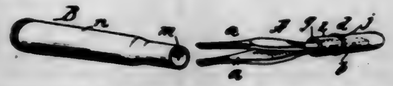

Claim.—1. In a device of the character described, a tweezers having a shank, and a handle therefor constructed with a forwardly open circular socket in which the tweezers-shank is tightly fitted, and said handle having its forward portion externally of cylindrical form, and a tubular case having its rear portion of cylindrical form to fit the externally cylindrical portion of the handle and having its forward portion of increased diameter to permit, during disuse of the incased tweezers, the distention of their spring members.

2. In a device of the character described, a tweezers having a shank and a handle therefor constructed with a forwardly open circular socket in which the opposite edges of the tweezers-shank tightly fit, said socket being of increased diameter at its forward portion and free of the separable portions of the tweezers thereby surrounded, and said handle having its forward portion externally of cylindrical form, and a tubular case having its rear portion of cylindrical form to fit the externally cylindrical portion of the handle and having its forward portion of increased diameter to permit, in disuse, the distention of the spring members of the tweezers.

849,790. PROCESS OF CURING CONCRETE BLOCKS. JOHN W. JACKSON, Richmond, Va. Filed July 12, 1906. Serial No. 325,925.

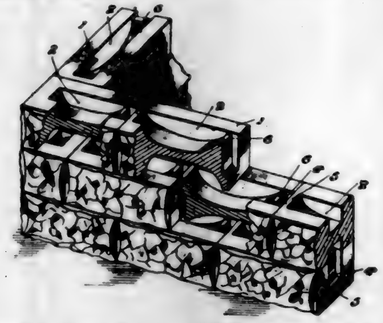

Claim.—1. The process of curing concrete blocks having a recess in one side of each block adapted to receive and retain water to an overflowing-point, consisting in placing said blocks in such position as to admit of water being placed in said recesses and keeping said blocks in a moist condition while curing by replenishing the supply of water in said recesses.

2. The process of curing concrete blocks having a recess in one face of each block adapted to receive water and an overflow-conduit to said recess, consisting in placing said blocks with their recessed sides turned upward and the overflow-conduit in position to convey an overflow of water to a plinth beneath said block and securing a superior adherence of said blocks by replenishing the supply of water in said recesses.

3. The process of curing concrete blocks having a recess in one face of each block, which consists in having the blocks with their recessed faces turned upward and with an open overflow-conduit leading from the recess of one block to the recess of the block beneath it and then filling the recesses in all the blocks with water by causing the water to flow from the upper tier of blocks by way of said conduits to the recesses of the blocks in the lower tiers.

4. The process of curing concrete blocks having a recess in one face of each block, which consists in hacking the said blocks with their recessed faces turned upward and with an open overflow-conduit leading from the recess of one block to the recess of the block beneath it and then filling the recesses in all the blocks with water by causing the water to flow from the upper tier of blocks by way of said conduits to the recesses of the blocks in the lower tiers, and replenishing the supply of water in the recesses of the blocks in said tiers.

849,791. CANOPY MOSQUITO-BAR. ALFRED J. JENNINGS, Martinez, Cal. Filed Nov. 12, 1906. Serial No. 342,947.

Claim.—1. In a device of the character described a rod adapted to be hooked to a molding or the like, an adjustable sleeve on said rod, a frame in hinged connection with said sleeve, mosquito-netting secured to said frame, and means for raising and lowering said frame, as set forth.

2. In a device of the character described a rod adapted to be hooked to a molding or the like, an adjustable sleeve thereon, a cross-bar on the lower end of said sleeve, a pulley at the upper end of said sleeve, a frame hinged to said cross-bar, netting on said frame, and a rope secured to said frame and extending over said pulley to any desired point, as set forth.

849,791.

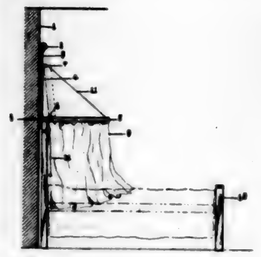

849,792. VISE. JOSIAH JOWITT, Leeds, England. Filed Dec. 26, 1906. Serial No. 349,468.

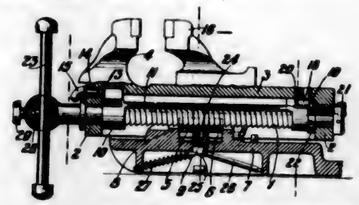

Claim.—1. In a parallel vise; the combination with a stationary member having a horizontal slideway formed therein and a recess in the base of the slideway, a sliding member located in the slideway of the stationary member, a revoluble screw, bearings in the sliding member to carry the screw, and a handle on the exterior end of the screw for operating the same, a half-nut located in the recess of the slideway, and a spring to normally force the half-nut upward into engagement with the screw; of a sleeve composed of two collars connected by a bar through which collars the screw loosely extends, an operating-arm extending from the sleeve to the exterior of the sliding member for manually rocking said sleeve to cause its bar to press the half-nut out of engagement with the screw substantially as set forth.

2. In a parallel vise; the combination with a stationary member having a horizontal slideway formed therein and a recess in the base of the slideway a sliding member located in the slideway of the stationary member having a central longitudinal recess on its under surface in the direction of said slideway, a revoluble screw located in said recess, bearings in the forward and rearward walls of said sliding member to carry said screw, said sliding member having a segmental slot through its forward wall concentric with the axis of said screw, and a handle on the exterior end of said screw for operating the same, a half-nut located in the recess of the slideway, and a spring to normally force the half-nut upward into engagement with the screw; of a sleeve composed of two collars connected by a bar through which collars the screw loosely extends and an operating-arm extending from the forward collar of the sleeve through the segmental slot of the sliding member for manually rocking the said sleeve about the screw-axis to cause the sleeve-bar to act on the half-nut to temporarily throw the latter out of engagement with the screw substantially as set forth.

3. In a parallel vise; the combination with a stationary member having a horizontal slideway formed therein and a recess in the base of the slideway, a sliding member located in the slideway of the stationary member and having a central longitudinal recess on its under surface in the direction of said slideway, a revoluble screw located in said recess, bearings in the forward and rearward walls of said sliding member to carry said screw, said sliding member having a segmental slot through its forward wall concentric with axis of said screw, and a handle on the exterior end of said screw for operating the same, a

half-nut located in the recess of the slideway, and a spring to normally force the half-nut upward into engagement with the screw; of a sleeve composed of two collars connected by a bar through which collars the screw loosely extends, an operating-arm extending from the forward collar of the sleeve through the segmental slot of the sliding member to the exterior for manually rocking said sleeve, an upstanding projection extending from one side of the half-nut against which the bar of the sleeve contacts when the latter is rocked to throw the half-nut out of engagement, substantially as set forth.

4. In a parallel vise; the combination with a stationary member having a horizontal slideway formed therein and a recess in the base of the slideway, a sliding member located in the slideway of the stationary member, a revoluble screw, bearings in the sliding member to carry the screw, a handle on the exterior end of the screw, a half-nut in the recess of the slideway and a spring to normally force said half-nut upward to engage with the screw, a sleeve composed of two collars connected by a bar through which collars the screw loosely passes, and an operating-arm extending from the forward collar of the sleeve to the exterior of the sliding member for rocking said sleeve to cause the bar to act upon the half-nut; of a double-toothed member freely pivoted on the sliding member of the vise, a radial tooth upon the rearward collar of the sleeve with which tooth one tooth of the pivoted member can coact, a pinion fixed on the rear end of the screw and having two segmental teeth with which the other tooth of the freely-pivoted member can coact, and means for holding the pivoted double-toothed member out of action when desired substantially as set forth.

5. In a parallel vise; the combination with a stationary member having a horizontal slideway formed therein and a recess in the base of the slideway, a sliding member located in the slideway of the stationary member, a revoluble screw, bearings in the sliding member to carry the screw, and a handle on the exterior end of the screw for operating the same, a half-nut located in the recess of the slideway, a spring to normally force the half-nut upward into engagement with the screw, a sleeve composed of two collars connected by a bar, through which collars the screw loosely extends, and means for manually rocking the sleeve about the axis of the screw to cause the sleeve-bar to act on the half-nut to temporarily throw the latter out of engagement with the screw; of a pinion having segmental teeth fixed on the rear end of the screw, and a tooth on the rear end of the sleeve, a pivot in the sliding member, and a member freely mounted on the pivot, a first tooth on said pivoted member calculated to be engaged by the pinion-teeth of the screw upon a counter-clockwise movement of said screw to rock the pivoted member, and a second tooth of the pivoted member to act on the sleeve-tooth to rock said sleeve and throw the half-nut out of engagement, and means for holding the pivoted double-toothed member out of action when desired substantially as set forth.

849,793. METAL-SAWING MACHINE. CHARLES A. JUENGST, Croton Falls, N. Y., assignor to Higley Machine Company, Croton Falls, N. Y., a Corporation of New York. Filed Mar. 29, 1904. Serial No. 200,509.

Claim.—1. In a metal-sawing machine, the combination with a movable carriage, a saw carried thereby, means for continuously revolving the saw with the movement of the carriage, and a feed device for moving the carriage, of a continuously-revoluble wheel, a series of continuously-revoluble parts, a series of parts adapted to be set in motion, and a means whereby the same may be moved into and out of contact with the continuously-revoluble wheel, and a device coupled to the feed device and adapted to be moved in opposite directions and which when moved in one direction engages the latter series of parts for the forward movement of the saw and its carriage, and which when disengaged therefrom and engaged with the first series of revoluble parts acts to move the saw and its carriage in an opposite or backward direction.

2. In a metal-sawing machine, the combination with a movable carriage, a saw carried thereby, means for continuously revolving the saw with the movement of the carriage, and a feed device for moving the carriage, of a continuously-revoluble wheel, a series of continuously-revoluble parts, a series of parts adapted to be set in motion and a means whereby the same may be moved into and out of contact with the continuously-revoluble wheel, a device coupled to the feed device and adapted to be moved in opposite directions and which when moved in one direction engages the latter series of parts for the forward movement of the saw and its carriage, and which when disengaged therefrom and engaged with the first series of revoluble parts acts to move the saw and its carriage in an opposite or backward direction, and means for manually applying a graduated tension to the second series of revoluble devices in proportion to the work required of the saw.

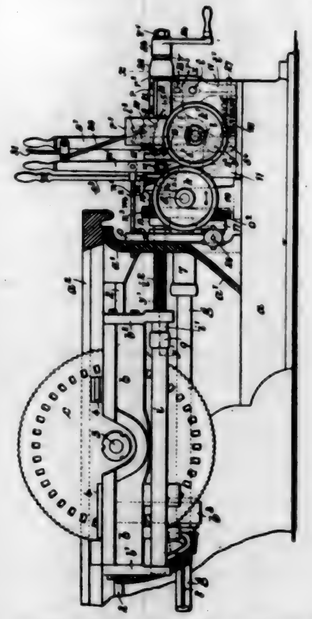

3. In a metal-sawing machine, the combination with a saw, a carriage, means for continuously revolving the saw during the movement of the carriage and a feed device for moving the carriage, of a friction-wheel and means for continuously revolving said wheel with the parts rotating the saw, a second and similar friction-wheel normally in close proximity to the continuously-revoluble wheel, said wheels arranged to have their perimeters engage, a shaft on which said second wheel is mounted, a worm upon said shaft, devices coacting therewith for effecting the movement of the devices for progressively feeding the saw and carriage along, means for moving said worm and its shaft and said second wheel to bring said friction-wheels into contact and for thereafter manually applying thereto a graduated tension according to the work required of the saw.

4. In a metal-sawing machine, the combination with a saw, a carriage and a power-shaft, of devices connecting the power-shaft with the saw for continuously revolving the saw, a screw-shaft, a connection therefrom to the carriage whereby with the rotation of the screw-shaft the carriage is moved, a continuously-revoluble wheel on the power-shaft, a wheel similar to the aforesaid continuously-revoluble wheel and a series of devices coacting therewith and adapted to be operated thereby, and means whereby the two wheels may be brought into contact to actuate the latter series of devices or separated and which devices are also adapted to be engaged with the device

movable on the screw-shaft for connecting the same with the screw-shaft to effect the forward movement of the saw and its carriage.

5. In a metal-sawing machine the combination with the power-shaft d, the shaft g and the screw-shaft f^2, of a bevel-wheel f and a belt-flange thereto on the shaft g, a bevel-pinion f^3 on the power-shaft d meshing with the bevel-wheel f, a gear and belt-flange o^2, an arbor on which the same is mounted, an adjustable swinging support for said arbor, a belt 17 passing around the belt-flange of the bevel-wheel f and around the belt-flange of the gear o^2, a sleeve n, gear n^2 and clutch-teeth n' on the screw-shaft f^2, the gear n^2 and the gear o^2 being in mesh, and said parts continuously revoluble as a series with the movement of the power-shaft d, and a clutch device splined to the screw-shaft f^2 and adapted with its movement in one direction to engage the clutch-teeth n' to revolve the screw-shaft f^2, substantially as set forth.

6. In a metal-sawing machine, the combination with the power-shaft d, the shaft g and the screw-shaft f^2, of a bevel-wheel f and a belt-flange thereto on the shaft g, a bevel-pinion f^3 on the power-shaft d meshing with the bevel-wheel f, a gear and belt-flange o^2, an arbor on which the same is mounted, a stud-plate o to which the said arbor is connected and supported, said stud-plate mounted and adapted to swing on the screw-shaft f^2 and lying against the frame of the machine, and bolts 18 for securing the said stud-plate in position when the proper tension is applied to the belt 17 by its movement, a belt 17 passing around the belt-flange of the bevel-wheel f and around the belt-flange of the gear o^2, a sleeve n, gear n^2 and clutch-teeth n' on the screw-shaft f^2, the gear n^2 and the gear o^2 being in mesh and said parts continuously revoluble as a series with the revolution of the power-shaft d, and a clutch device splined to the screw-shaft f^2 and adapted with its movement in one direction to engage the clutch-teeth n' to revolve the screw-shaft f^2, substantially as set forth.

7. In a metal-sawing machine, the combination with the power-shaft d and a friction-wheel k on one end of the same and which is continuously revoluble therewith, of a similar friction-wheel k', a shaft l therefor and a worm l' thereon, a screw-shaft f^2 adapted in its rotation to move the saw and carriage along in either direction, a worm-wheel P^2 loose upon the screw-shaft and meshing with the aforesaid worm l', a clutch connection between the shaft f^2 and the wheel P^2, a movable support having bearings for the shaft l, a lever, a shaft upon which said lever is mounted, cranks upon said shaft, a pivotally-mounted device acting upon the movable support of the shaft l, a yielding connection between the same and the aforesaid crank device, and means for applying a graduated tension to the devices in proportion to the pressure required at the surfaces of the friction-wheels k, k'.

8. In a metal-sawing machine, the combination with the power-shaft d and a friction-wheel k on one end of the same and which is continuously revoluble therewith, of a similar friction-wheel k', a shaft l therefor and a worm l' thereon, a screw-shaft f^2 adapted in its rotation to move the saw and carriage along in either direction, a worm-wheel P^2 loose upon the screw-shaft and meshing with the aforesaid worm l', a clutch connection between the shaft f^2 and the wheel P^2, a sleeve r and housing r', the housing r' having side prolongations forming bearings for the shaft l near its respective ends whereby the shaft and the wheel k' carried thereby are movable with the housing, the housing r' covering the worm-wheel P^2, a standard 11 with guides providing for the longitudinal movement of the sleeve and housing, a pin 26 passing through the lower portion of the housing, a shaft t, a yoke-rocker t' mounted on said shaft and having an upper end coming at either side of the pin 26, a lever s', a shaft s^2 on which the same is mounted, a crank device mounted on the shaft s^2, a pin 27 having a head at one end pivotally connected to the crank device and at its other end passing through the lower end of the yoke-rocker, a spring 28 around the shaft 27 and between the head thereof and the yoke-rocker, the movement of the lever s' swinging the crank device, the yoke-rocker and moving the sleeve, the housing, the worm-wheel, the shaft l and the friction-wheel l' longitudinally of the screw-shaft f^2 so as to bring the friction-wheels k, k' into forceful contact and engagement, the further movement of the lever s' serving to compress the spring 28 and increase the pressure of contact between the friction-wheels, and means for holding said parts at the desired point under tension.

9. In a metal-sawing machine, the combination with the power-shaft d and a friction-wheel k on one end of the same and which is continuously revoluble therewith, of a similar friction-wheel k', a shaft l therefor, and a worm l' thereon, a screw-shaft f^2 adapted in its rotation to move the saw and carriage along in either direction, a worm-wheel P^2 loose upon the screw-shaft and meshing with the aforesaid worm l', a clutch connection between the shaft f^2 and the wheel P^2, a sleeve r and housing r', the housing r' having side prolongations forming bearings for the shaft l near its respective ends whereby the shaft and the wheel k' carried thereby are movable with the housing, the housing r' covering the worm-wheel P^2, a standard 11 with guides providing for the longitudinal movement of the sleeve and housing, a pin 26 passing through the lower portion of the housing, a shaft t, a yoke-rocker t' mounted on said shaft and having an upper end coming at either side of the pin 26, a lever s', a shaft s^2 on which the same is mounted, a crank device mounted on the shaft s^2, a pin 27 having a head at one end pivotally connected to the crank device and at its other end passing through the lower end of the yoke-rocker, a spring 28 around the shaft 27 and between the head thereof and the yoke-rocker, the movement of the lever s' swinging the crank device, the yoke-rocker and moving the sleeve, the housing, the worm-wheel, the shaft l and, the friction-wheel l' longitudinally of the screw-shaft f^2 so as to bring the friction-wheels, k, k' into forceful contact and engagement, the further movement of the lever s' serving to compress the spring 28 and increase the pressure of contact between the friction-wheels, a toothed sector s secured to the standard 11 and having a part through which the shaft of the lever s' passes, a pawl connected to the lever and adapted to engage the teeth of the sector, and a hand-latch 31 by which the pawl is moved and its hold released and the parts permitted to return to an initial position.

11. In a metal-sawing machine, the combination with a power-shaft and continuously-revoluble friction-wheel thereon, a carriage and saw and a screw-shaft f^2, of, a clutch device splined to the shaft f^2 and a lever for moving the same longitudinally of the shaft, collars on the shaft for limiting the movement of the clutch device, a sleeve n, clutch-teeth n' and a gear n^2 as an integral structure loosely mounted on the shaft f^2 coming against one of the aforesaid collars and between the same and a further collar secured to said shaft, a series of devices continuously

actuated by the revolution of the power-shaft for continuously revolving the sleeve *n* and the parts formed therewith, a worm-wheel loosely mounted on the said shaft f^2 at the other side of the clutch device having clutch-teeth adapted to engage the clutch device, a series of devices associated with the said worm-wheel and manually operated for transmitting the revolution of the said friction wheel thereto when in contact, and which devices when engaged by the clutch device effect the rotation of the shaft in one direction, while the first-named series of revoluble devices effect the rotation of the screw-shaft in the opposite direction.

12. In a metal-sawing machine, the combination with a power-shaft and continuously-revoluble friction-wheel thereon, a carriage and saw and a screw-shaft f^2, of a clutch device splined to the shaft f^2 and a lever for moving the same longitudinally of the shaft, collars on the shaft for limiting the movement of the clutch device, a sleeve *n*, clutch-teeth *n'* and a gear n^2 as an integral structure loosely mounted on the shaft f^2 coming against one of the aforesaid collars and between the same and a further collar secured to said shaft, a series of devices continuously actuated by the revolution of the power-shaft for continuously revolving the sleeve *n* and the parts formed therewith, a worm-wheel loosely mounted on the said shaft f^2 at the other side of the clutch device having clutch-teeth adapted to engage the clutch device, a series of devices associated with the said worm-wheel and manually operated for transmitting the revolution of the said friction-wheel thereto when in contact, and which devices when engaged by the clutch device effect the rotation of the shaft in one direction, while the first-named series of revoluble devices effect the rotation of the screw-shaft in the opposite direction, and a series of coacting devices for moving the worm-wheel, and the devices associated therewith longitudinally of the screw-shaft and also for applying a graduated tension, substantially as set forth.

13. In a metal-sawing machine, the combination with a power-shaft, a friction-wheel *k* on one end thereof, a carriage and saw and a screw-shaft f^2, of a friction-wheel *k'* normally closely adjacent to but not in actual contact with the friction-wheel *k*, a shaft therefor parallel with a power-shaft, movable bearings in which the shaft is mounted, a worm on the shaft and a worm-wheel loose on the screw-shaft f^2 meshing therewith, a clutch device for coupling the worm-wheel to the shaft, and manually-operated devices adapted for moving the friction-wheel *k'*, its shaft and support parallel with the screw-shaft for bringing the friction-wheels *k*, *k'* into contact to turn the screw-shaft in one direction and move the carriage and saw.

14. In a metal-sawing machine, the combination with a power-shaft *d*, a friction-wheel *k* on one end thereof, a carriage and saw and a screw-shaft f^2, of a friction-wheel *k'* normally closely adjacent to but not in actual contact with the friction-wheel *k*, a shaft therefor parallel with the power-shaft, movable bearings in which the shaft is mounted, a worm on the shaft and a worm-wheel loose on the screw-shaft f^2 meshing therewith, a clutch device for coupling the worm-wheel to the shaft, manually-operated devices adapted for moving the friction-wheel *k'*, its shaft and support parallel with the screw-shaft for bringing the friction-wheels *k*, *k'* into contact to turn the screw-shaft in one direction and move the carriage and saw, and other devices associated with the aforesaid manually-operated devices, and an intervening spring to which said devices apply a regulatable tension for increasing the pressure between the surfaces of the friction-wheels according to the effort required of the saw.

849,794. ROTARY CUTTER FOR WOODWORKING-MACHINES. CHARLES KARPF, College Point, N. Y., assignor of one-half to H. Herrmann Lumber Co., New York, N. Y., a Corporation of New York. Filed Oct. 9, 1906. Serial No. 338,139.

Claim.—1. A device of the class described comprising a stock or head provided with a plurality of peripheral extensions and having intervening clearance-recesses, said extensions being provided with grooves, a plurality of tangentially-arranged cutters adjustably mounted on the said extensions and extending into the grooves thereof, and set-screws mounted on the stock or head and provided with heads engaging the cutters and securing the same in their adjustment.

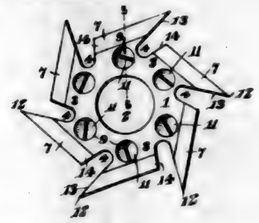

2. A device of the class described comprising a stock or head having a plurality of peripheral extensions and intervening recesses, said extensions being grooved and the stock or head being provided with transverse perforations, the latter being enlarged at one end to form recesses which intersect the grooves of the extensions, cutters mounted on the extensions and extending into the grooves thereof, and set-screws arranged in the said perforations and having heads located in the recesses and engaging the cutters at the points of intersection of the recesses and the grooves.

3. A device of the class described comprising a stock or head provided with spaced peripheral extensions having dovetailed grooves, said stock or head being also provided with transverse perforations enlarged at one end to form recesses, which intersect the dovetailed grooves, cutters having dovetail ribs arranged in the said grooves and exposed at the points of intersection of the grooves and the recesses, and screws mounted in the perforations and having heads located within the recesses and provided with flat inner faces for engaging the dovetail ribs at the side edges thereof.

4. A device of the class described comprising a stock or head provided with an annular series of peripheral extensions having tapered projections and provided with dovetailed grooves or ways and having flat bearing-faces at opposite sides of the grooves or ways at points beyond the same, said stock or head being also provided with inwardly-tapered clearance-recesses, located between the said extensions and having inwardly-converging side walls, and tangentially-arranged cutters provided with dovetail ribs adjustably mounted in the grooves or ways of the extensions, said cutters having flat inner faces at opposite sides of the ribs to fit against the flat faces of the extensions, and having beveled faces at their engaging or cutting ends arranged in the same plane as the contiguous side walls of the clearance-recesses.

5. A device of the class described comprising a stock or head provided with an annular spaced series of peripheral extensions having centrally-disposed dovetailed grooves or ways, which extend throughout the length of each extension and are open at each end, the outer face of each extension being inclined to the radius of the head, said stock or head being also provided with clearance-recesses located between each of the said extensions, and tangentially-arranged adjustable cutters of a width coincident with the width of the stock or head and having cutting edges of corresponding width, said cutters being also provided with central longitudinal dovetail ribs offset from the inner side faces of the cutters and mounted in the ways, and means for securing the cutters in their adjustment.

849,795. LINOTYPE-MACHINE. DAVID S. KENNEDY, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Feb. 18, 1907. Serial No. 358,098.

Claim.—1. In combination with the main frame, the distributer-rail, and the screws, the distributer-box connected to the main frame and removable endwise in a horizontal direction from the frame.

2. In a linotype-machine, the main frame, the fixed distributer-bar, and the feed-screws, in combination with the distributer-box, constructed and arranged to slide endwise to and from its operative position.

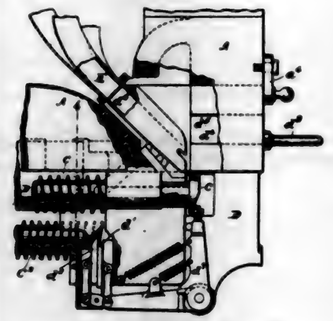

3. In a linotype-machine the main frame having the distributer-bar, the feed-screws, and the cam therein, in combination with the distributer-box, provided with matrix-controlling devices and their actuating-lever; said parts constructed and arranged to permit the box and lever to be withdrawn endwise from the bar and screws substantially as shown.

4. In a linotype-machine, the main frame in combination with the distributer-box provided with the lever d^7, and arranged to slide endwise, in relation to the distributer and screws, into and out of the frame.

5. In combination with the main frame, having the distributer, the feed-screws and the chute E, the horizontally-removable distributer-box having the passage d^8 to form a continuation of the chute E.

849,796. HAY-STACKER. FRANK A. KIME, Westfall, Oreg. Filed Feb. 13, 1906. Serial No. 300,894.

Claim.—1. In a hay-stacker, the combination with a supporting member, of a hay-fork pivotally and tiltably connected to said supporting member, latches carried on the supporting member adapted to engage different portions of the hay-fork to hold it in different tilted positions, means for simultaneously operating said latches comprising an operating member mounted on the supporting member aforesaid, and means connecting the latches to the operating member so that they will be simultaneously operated therefrom.

2. In a hay-stacker, the combination with a supporting member, of a hay-fork tiltably connected to said supporting member, latches adapted to engage different portions of the hay-fork, means for simultaneously operating said latches comprising a sheave, means for turning the sheave, and cables operably connected to the latches and adapted to wind on the sheave.

3. In a hay-stacker, the combination with a supporting member, of a hay-fork tiltably connected to said supporting member, latches adapted to engage different portions of the hay-fork, means for simultaneously operating said latches comprising a sheave, means for turning the sheave, and cables connected to said sheave at diametrically opposite points and adapted to wind thereon, whereby the latches are simultaneously operated.

4. In a hay-stacker, the combination with a supporting member, of a hay-fork tiltably connected to said supporting member, spring-actuated levers pivoted to said supporting member, latching-pins connected to the levers and adapted to engage different portions of the hay-fork, and means for simultaneously operating said levers to simultaneously operate the latching-pins.

5. In a hay-stacker, the combination with a supporting member, of a hay-fork tiltably connected to said supporting members, spring-actuated levers pivoted to said supporting member, latching-pins connected to the levers and adapted to engage different portions of the hay-fork, means for simultaneously operating said levers to simultaneously operate the latching-pins, said operating means comprising a rotary sheave, means for turning the sheave, and cables connected to the levers and connected to the sheave and adapted to wind thereon.

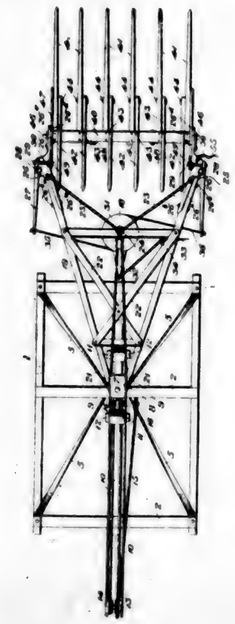

6. In a hay-stacker, the combination with a supporting member having slotted bearings, of a hay-fork having axles removably received in the said slotted bearings, and latches or retainers for holding the axles in the slotted bearings.

7. In a hay-stacker, a hay-fork comprising a beam extending longitudinally thereof, teeth or tines secured to the under side of the beam, and teeth or tines resting on and secured to the beam and also secured to the tines or teeth first mentioned.

8. In a hay-stacker, a tiltably-mounted hay-fork having latching-plates, braces connecting the latching-plates to the fork, and latches adapted to engage the latching-plates aforesaid.

9. In a hay-stacker, the combination with a supporting member, of a hay-fork tiltably mounted thereon which has latching-plates provided with trackways arranged in the arc of a circle in relation to the pivotal points of the hay-fork, and latching-pins on the supporting member which are received in the trackways aforesaid and adapted to engage with the latching-plates aforesaid.

10. In a hay-stacker, the combination with a supporting member, of a hay-fork tiltably mounted thereon which has latching-plates provided with trackways arranged in the arc of a circle in relation to the pivotal points of the hay-fork, said plates also having latching-pin openings in said trackways, and latching-pins on the supporting member which are received in the trackways and adapted to engage the openings aforesaid to lock the hay-fork in different tilted positions.

849,797. IGNITER FOR EXPLOSIVE-ENGINES. EDEN P. LAMB, Rockland, Me., assignor to Camden Anchor-Rockland Machine Co., Rockland, Me. Filed June 1, 1906. Renewed Nov. 27, 1906. Serial No. 345,353.

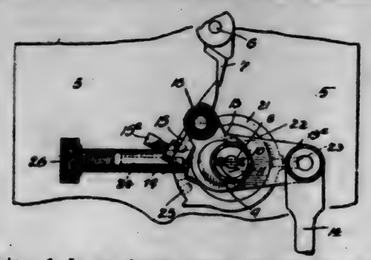

Claim.—1. In an electric igniter for explosive-engines, the combination with the latch for operating the movable electrode, of means for tripping such latch comprising a pin carried by the cylinder, an eccentric sleeve journaled on said pin, a segment adjustably clamped to the cylinder and having a series of radial recesses, an arm carried by said eccentric sleeve, a spring-pin carried by said arm for engaging the recesses in the segment, and a trip-lever mounted to oscillate on said eccentric sleeve, substantially as described.

2. In an explosive-engine a movable electrode-operating latch, a circular boss on the cylinder in proximity thereto, a ring clamped to said boss and having radial recesses, a pin projecting centrally of said boss, an eccentric sleeve journaled on said pin, a handle projecting from said sleeve having a spring-pin for engaging said recesses, a rocking trip-lever journaled on said eccentric sleeve, and a trip-dog carried by said trip-lever, substantially as described.

849,798. COMPOSITION RAILROAD-TIE. JOSEPH LE FAVOUR and ROBERT F. BRAMMER, Albany, Ind. Filed Nov. 5, 1906. Serial No. 342,119.

Claim.—1. As an improvement in railways, a composite tie of concrete-and-metal reinforce, equipped with a metal plate having an upstanding central portion or extension provided with interiorly-screw-threaded tubular terminals, and fastening means adapted to coöperate with the latter for securing the rail in place.

2. As an improvement in railways, a composite tie equipped with a plate having a central upstanding portion provided with interiorly-screw-threaded end tubular portions, and a screw-bolt engaging a tubular portion and effective to engage the rail base or flange.

3. As an improvement in railways, a composite tie equipped with a plate having an upstanding central portion provided with tubular terminals having interiorly-screw-threaded surfaces, a fastening-bolt engaging a tubular terminal and having a ledge or offset portion effective to engage the rail flange or base and provided with apertures extending therethrough and a pin or key insertible through any one of said apertures for engagement with the rail-flange.

4. As an improvement in railways, a composite tie equipped with a plate having an upstanding central portion or extension provided with interiorly-screw-threaded tubular terminals, a fastening-bolt effective for engagement with a tubular terminal, a washer having an elongated hole or slot therein, and adapted to engage the rail flange or base, and a pin or key insertible through an offset of said fastening-bolt and entering the elongated hole of said washer.

5. As an improvement in railways, a composite tie, comprising concrete-and-metal reinforce in the form of series of wires having right-angled end portions with rebent or inturned terminals embedded in said concrete, said series of wires having their respective upper and lower longitudinal portions alternating each other throughout said concrete.

849,799. PENCIL. FISHER H. LIPPINCOTT, Philadelphia, Pa., assignor to Lippincott Pencil Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Nov. 27, 1906. Serial No. 345,275.

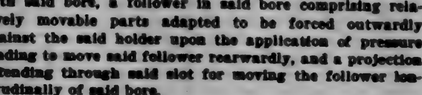

Claim.—1. In a device of the character described an elongated holder provided with a longitudinal bore, an insert in said bore and a follower disposed rearwardly of said insert, said follower being adapted to be widened or expanded within said bore to bring portions thereof into frictional locking engagement with said holder upon the application of pressure tending to move said follower rearwardly.

2. In a device of the character described, an elongated holder provided with a longitudinal bore, and a slot extending through the side of said holder and communicating with said bore, a follower in said bore having coacting portions adapted to be widened or expanded within said bore upon the application of pressure tending to move said follower rearwardly, and means extending outwardly through said slot for moving said follower longitudinally of said bore.

3. In a device of the character described an elongated holder provided with a longitudinal bore, and a follower in said bore having coacting parts adapted to be widened or expanded within said bore into frictional locking engagement with said holder upon the application of pressure tending to move the said follower rearwardly, one of said coacting parts having a serrated or toothed portion adapted to be pressed against said holder.

4. In a device of the character described an elongated holder provided with a longitudinal bore and a follower in said bore adapted to grasp a lead or other insert, said follower having one or more portions thereof adapted to move outward into frictional locking engagement with said holder upon the application of pressure tending to move said follower rearwardly.

5. In a device of the character described an elongated holder provided with a longitudinal bore and a slot extending through the side of said holder and communicating with said bore, a follower in said bore, frictional locking means embodied in said follower adapted to be forced outwardly into frictional contact with the walls of said bore to prevent the rearward movement of said follower upon the application of pressure tending to move the same rearwardly, and means extending through said slot for moving said follower longitudinally of said bore.

6. In a device of the character described an elongated holder provided with a longitudinal bore and a slot extending through the side of said holder and communicating with said bore, a follower in said bore comprising relatively movable parts adapted to be forced outwardly against the said holder upon the application of pressure tending to move said follower rearwardly, and a projection extending through said slot for moving the follower longitudinally of said bore.

7. In a device of the character described an elongated holder provided with a longitudinal bore and a slot extending through the side of said holder, and communicating with said bore, a follower in said bore adapted to grasp a lead or other insert, said follower embodying a braking element provided with an inclined surface and a second braking element movable with relation to said first-named element and adapted to be forced upwardly along said inclined surface to widen or expand the said parts into frictional locking engagement with the wall of said bore upon the application of pressure tending to move said follower rearwardly and a projection carried by said follower and extending through the said slot for manipulating said follower.

8. In a device of the type set forth an elongated holder provided with a longitudinal bore and a slot extending through the side of said holder and communicating with said bore, a follower in said bore, said follower comprising relatively movable parts adapted to be moved outwardly to engagement with said holder upon the application of pressure tending to move said follower rearwardly, means for normally holding said relatively movable parts in frictional contact with said holder and means carried by said follower and extending through said slot for moving the follower longitudinally of said bore.

9. In a device of the character described, an elongated holder provided with a longitudinal bore and a slot extending through the side of said holder and communicating with said bore, the wall of said bore being provided with a groove or recess extending longitudinally thereof, a follower in said bore having outstanding portions extending within said slot and within said groove or recess, and means extending through said slot for moving the follower longitudinally of said bore.

10. In a device of the character described an elongated holder provided with a longitudinal bore and a slot extending through the side of said holder and communicating with said bore, the walls of said bore being provided with a groove or recess extending longitudinally thereof at a point diametrically opposite the said slot, a follower having an outstanding rib at one side thereof engaged within said groove or recess and a projection carried by the opposite side of said follower extending through said slot.

11. In a device of the character described an elongated holder provided with a longitudinal bore and a slot extending through the side of said holder and communicating with said bore, the wall of said bore being provided with a longitudinal groove or recess opposite the said slot, an insert in said bore, a follower rearwardly disposed with reference to said insert, said follower being provided with means to rigidly hold said insert and follower together, said follower having portions thereof extending within and guided by said groove or recess and said slot, and means extending outwardly through said slot for moving said follower longitudinally of said bore.

12. In a device of the character described, a holder provided with a longitudinal bore and a slot extending through the side of said holder and communicating with said bore, the wall of said bore being provided with a groove or recess extending longitudinally of said bore opposite the said slot, a follower in said slot adapted to grasp a lead or other insert, said follower having portions thereof extending within the said groove or recess and said slot, means carried by said follower adapted to be moved outwardly into frictional locking engagement with the wall of said bore upon the application of pressure tending to move the said follower rearwardly, and means extending through said slot for moving said follower longitudinally of said bore.

849,800. SASH-LOCK. CHARLES S. LOWTHORP, Hope, Ark. Filed Sept. 24, 1906. Serial No. 335,929.

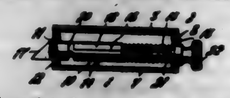

Claim.—1. A sash-lock comprising a casing, a bolt arranged for longitudinal movement within the casing, said bolt having parallel channels spaced apart and extending longitudinally of the same and a transversely-extending channel located at the ends of said longitudinally-extending channels, a flat-faced tongue located upon the casing and lying in the longitudinal channels when the bolt is in extended position and in the transverse channel when the bolt is in withdrawn position and a spring for actuating the bolt.

2. A sash-lock comprising a casing, a bolt arranged for longitudinal movement within the casing, said bolt having parallel channels spaced apart and extending longitudinally of the same and a transversely-extending channel located at the ends of the longitudinally-extending channel and having its ends located beyond the outer sides of the longitudinally-extending channels, a tongue located upon the casing and lying in the longitudinal channel when the bolt is in extended position and in the transverse channel when the bolt is in withdrawn position, and a spring for actuating the bolt.

3. A sash-lock comprising a casing, a bolt arranged for longitudinal movement within the casing and having a body portion and a reduced shank, said bolt having upon its body portion parallel channels spaced apart and extending longitudinally of the same from a point near the end of the bolt and terminating at the opposite end of the bolt-body, a transversely-extending channel located at the ends of said longitudinally-extending channel and connecting the same together, a tongue located upon the casing and lying in the longitudinal channels when the bolt is in extended position and in the transverse channel when the bolt is in withdrawn position and a spring for actuating the bolt.

849,801. GARMENT-SUPPORTER. HUGH G. MACWILLIAM, New Rochelle, N. Y. Filed Mar. 31, 1906. Serial No. 309,145.

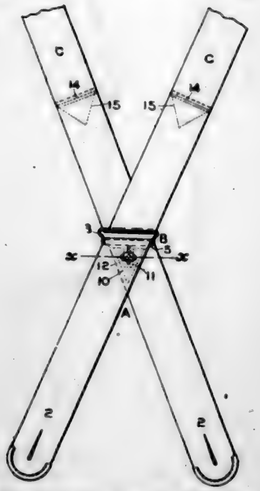

Claim.—1. In a garment-supporter of the class described, the combination, with a supporting member, of a loop member carried thereby, and means for anchoring the loop member against endwise movement with reference to the supporting member.

2. In a garment-supporter, the combination, with a loop member for running straps, of a supporting-strap folded over the lower bar of the loop member and secured upon itself, and means secured to said bar for anchoring it against endwise movement in the fold.

3. A loop member for running straps comprising two registering loops, a sleeve incasing the loop-bars of the loops, and a downwardly-projecting anchor carried by the sleeve.

4. The combination, with a supporting member, of a loop member secured thereon and having a downwardly-projecting anchor, and retaining means on either side of the anchor for holding it from the lateral movement upon the supporting member.

5. The combination, with a supporting-strap folded upon itself, of a loop member for running straps, the lower bar of the loop member passing through the fold and hav-

ing a downwardly-projecting anchor secured within the fold by stitching.

6. In a garment-supporter of the class described, in combination, a supporting member, a pair of registering loops carried thereby, a main strap passing through one of the loops, and an auxiliary strap secured at each of its ends upon the main strap by lines of stitching, and passing intermediately through the other loop, one of the lines of stitching running from the inner edges of the straps in a direction approximately parallel with the inner edges of the oppositely-working straps.

849,802. COUNTERBALANCE ATTACHMENT FOR PUMPS. FRANK C. MARSH, Trenton, Nebr. Filed May 5, 1906. Serial No. 315,404.

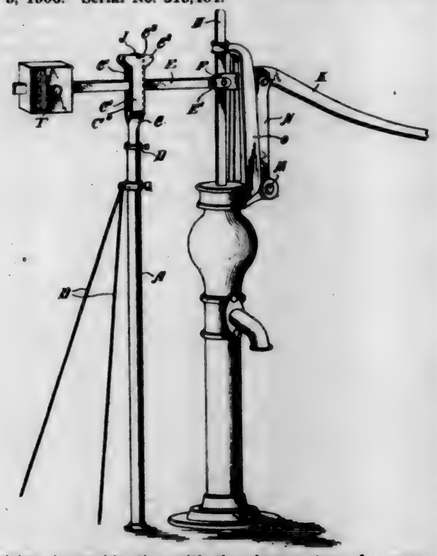

prising, in combination with the plunger-stem of a pump, a handle pivotally connected upon the casing of the pump and having pivotal connection with said stem, a standard separate from the pump, a yoke adjustably held upon said standard, a weighted bar pivotally connected to said handle, and a U-shaped member held by said yoke and having pivotal connection with said weighted member, as set forth.

2. In combination with the plunger-stem of a pump, a handle pivoted to the casing of the pump, a standard separate from the pump, a yoke adjustably held upon said standard and provided with arms which are spaced apart, a removable U-shaped member mounted between said arms, means for supporting the member upon the yoke, and a pivotal weighted bar connected to said handle and having pivotal connection with the member carried by the yoke, as set forth.

3. In combination with the plunger-stem of a pump, a handle pivoted to the casing of the pump, a standard separate from the pump, a yoke adjustably held upon said standard and provided with arms which are spaced apart, a removable U-shaped member mounted between said arms, pins projecting one from each face of said member supported in grooves in the arms of said yoke, and a weighted bar pivotally connected to the handle and having pivotal connection with said member, as set forth.

849,803. MACHINE FOR MAKING PICTURE-FRAMES. WILLIAM M. MEHLING, Detroit, Mich. Filed June 14, 1906. Serial No. 321,666.

Claim.—1. The combination with a wholly independent coiler-head of an endless chain supported in guide-wheels around which the chain is adapted to travel and partially infold the coiler-head in a portion of the chain between two proximate guide-wheels, said last-named guide-wheels forming abutments for the coiler-head adapted to hold it in position in the fold of the chain against the tension of the chain.

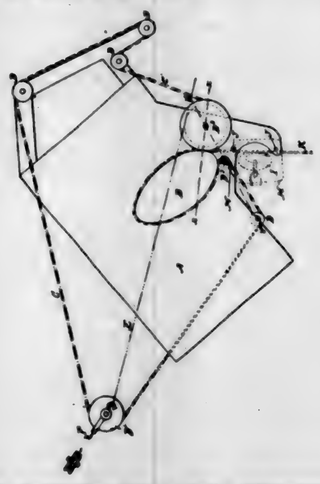

2. The combination with a wholly independent coiler-head, of an endless chain supported in guide-wheels around which the chain is adapted to travel under tension and partially infold the coiler-head between two proximate guide-wheels adapted to form abutments for the coiler-head against the tension of the chain and guide the same in its movements in the travel of the chain.

3. The combination with a wholly independent coiler-head, of an endless chain supported in guide-wheels around which the chain is adapted to travel and partially infold a coiler-head with a portion of the chain between two of the guide-wheels, said guide-wheels being fixed and proximate to each other and adapted to guide the coiler-head in the travel of the chain, the chain being under tension adapted to change the size of the fold within wide limits for coiler-heads of different sizes and forms.

4. The combination with a wholly independent coiler-head of an endless chain supported in guide-wheels around which the chain is adapted to travel under tension and partially infold the coiler-head in a portion of the chain between two proximate guide-wheels, said last-named guide-wheels being fixed and providing a limited opening between them for feeding the veneer strips to the coiler-head.

5. The combination with wholly independent coiler-heads of an endless chain supported in guide-wheels around which the chain is adapted to travel, two of said guide-wheels being fixed and in proximity to each other, a tension device adapting the chain to travel in a fold of varying size between said proximate guide-wheels, a coiler-head being placed in the fold of the chain, and means for revolving the coiler-head in traveling contact with the chain and proximate guide-wheels.

6. The combination with wholly independent coiler-heads of an endless chain supported in guide-wheels two of which are fixed and proximate to each other and adapted to form abutments for a coiler-head, the chain provided with a tension device adapting it to be guided in a fold around the coiler-head and revolve the same said tension device adapted to vary the size of the fold within wide limits for accommodating coiler-heads of various sizes and forms and provided with means under control of the operator for throwing the tension device into and out of operation.

7. The combination with independent coiler-heads of an endless chain, guide-wheels around which the chain is adapted to travel under tension in a circuitous path and infold a coiler-head within a variable portion of the chain between two of the guide-wheels adapted to guide the coiler-head in the fold of the chain, one of said guide-wheels adapted to impart motion to the chain and each provided with an outwardly-extending rim or flange extending above the portion which travels in contact with the chain.

8. In a machine for the purpose described, the combination with independent coiler-heads, of a work-table, an endless chain and guide-wheels around which said chain is adapted to travel, two of the guide-wheels being proximate to each other and adapted to guide the chain over the work-table and form abutments for a coiler-head, the chain being under tension and adapted to infold coiler-heads of different sizes and forms within a variable portion of the chain between said proximate guide-wheels, and means for revolving the coiler-head in frictional contact with the chain, the coiler-head being held in position by the proximate guide-wheels.

9. In a machine for the purpose described, the combination with independent coiler-heads, a work-table, of an endless chain and guide-wheels around which said chain is adapted to travel under tension, two of said guide-wheels being fixed and proximate to each other and adapted to guide a coiler-head upon the work-table in a fold of the chain between said guide-wheels the chain provided with a tension device adapting it to infold coiler-heads of different sizes and forms and revolve the same by the travel of the chain, one of the proximate guide-wheels adapted to impart motion to the chain.

849,804. BROOM-CORN-SAW MACHINE. ALBERT J. MIDDLETON, Indianapolis, Ind. Filed Oct. 4, 1906. Serial No. 337,465.

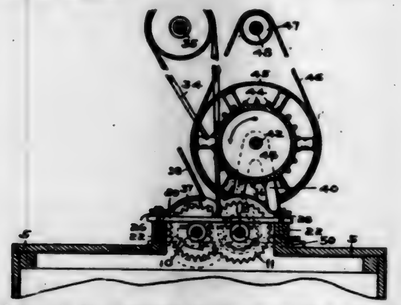

Claim.—1. In a machine for the purposes specified, the combination of a pair of horizontally-mounted shafts, a gang of saws mounted on each shaft, said shafts being arranged whereby the saws on one shaft extend into the space between the saws on the other shaft, stationary bars of approximately the same thickness as the saws extending across the machine from side to side of the latter between the saws whereby each saw of the machine is separated from its adjacent saw by a bar, each saw cutting against its adjacent bars, whereby all of the material passing through the machine must pass between the bars, means for rotating the shafts in opposite directions, and means for introducing material to be operated on to the saws.

2. In a machine for the purposes specified, the combination of a horizontal table having an opening through its middle portion, a pair of parallel shafts crossing said opening and mounted upon the table, a gang of saws mounted on each of said shafts whereby the saws on one shaft will interlap the saws on the other shaft, the saws on one shaft being greater in diameter than those on the other shaft, horizontal cutter-bars passing over both shafts transversely of the latter between the saws and supported at both ends by the table each saw cutting against its adjacent bar, said bars forming a division in the machine whereby all material passing through the machine must pass between said bars, a feed device in cylindrical form larger in diameter than the largest saws, mounted above and discharging upon the saws, said device having numerous longitudinal peripheral ribs, and means including separate pulleys and belts and line-shafts for operating the drum and two saw-shafts.

3. In a machine for the purposes specified, a table having an opening therethrough, a pair of parallel horizontal shafts crossing above said opening and supported by journal-boxes resting upon said table, said shafts being screw-threaded near one end of each and having shoulders near their opposite ends, circular saws mounted in series or gangs against said shoulders on each of said shafts, spacing-collars separating the saws of both gangs, nuts on the threaded portions of the shafts to hold the saws, said shafts being so mounted with relation to each other that the saws of one gang interlap with the saws of the opposite gang, cutter-bars passing horizontally and transversely over both shafts between the saws whereby each saw will be separated from its adjacent saw by a cutter-bar said saws cutting against their adjacent cutter-bars between which bars all of the material fed to the machine must pass.

4. In a machine for the purposes specified, a table having an opening therethrough, a pair of parallel horizontal shafts crossing above said opening and supported by journal-boxes resting upon said table, a gang of circular saws mounted on each of said shafts with the saws of one gang interlapping those of the other gang, horizontal cutter-bars supported at their ends and crossing both shafts transversely above the shaft and passing between each pair of saws against each of which bars both of its adjacent saws cut, and between which bars all of the material treated by the machine is compelled to pass, hoods located above both gangs of saws, and means for rotating the shafts in opposite directions.

5. In a shredding-machine for the purposes specified, a horizontal table having a middle opening, a shaft supported by the table, said shaft having an integral and inner flange, a gang of saws mounted on said shaft against said flange, the saws of said gang being separated from each other by collars, said shaft having a screw-threaded portion, a nut screwing on said threaded portion against the gang of saws to clamp them against the said annular flange, a second shaft parallel with the first shaft, a gang of saws mounted upon the second shaft and separated and secured in the same manner as the saws on the first shaft, cutter-bars supported at both ends on said table and passing through both gangs of saws above both shafts against each of which the adjacent saws cut, spacing-bars between each pair of cutter-bars, bolts passing through the cutter-bars and spacing bars or plates for locking said parts together, hoods over both of the gangs of saws, a feeding-drum having longitudinal ribs, mounted above the saws, and means for rotating the drum and both of said shafts.

849,805. ANTISLIPPING DEVICE FOR AUTOMOBILES. EDWARD NYE and ALONZO GRUNSBECK, Charlotte, Mich. Filed Oct. 11, 1906. Serial No. 338,522.

Claim.—1. The combination with a wheel, of a shoe carried by said wheel, said shoe comprising a body portion, flanges formed at the end of said body portion, a rib extending longitudinally of the body portion and transversely of said flanges and integral with said body portion and flanges.

2. The combination with a wheel, of a shoe carried by said wheel, said shoe comprising a body portion provided with flanges, a rib integral with said flanges and body por-

tion, each flange provided with apertures formed upon opposite sides of said rib, and means for securing said shoe upon said wheel.

3. A device of the character described, comprising shoes, each shoe comprising a body provided at its ends with flat, horizontal flanges, a rib integral with said body and flanges and extending longitudinally of the body and transversely of the flanges, each flange provided with vertical apertures formed upon opposite sides of said rib, and coupling means positioned within the apertures of the flanges of all of said shoes.

4. A device of the character described, comprising shoes, each shoe comprising a body provided at its ends with integral horizontal flanges, a rib integral with said flanges and body, each flange provided with vertical apertures formed upon opposite sides of said rib, and a pair of coupling devices for each two contiguous shoes, each device comprising bolts and a turnbuckle threaded thereon, each bolt provided with a hooked end positioned within a vertical aperture of a flange.

5. A device of the character described, comprising a body provided with horizontal flanges, each flange provided with vertical apertures, coupling devices for each two contiguous shoes, each of said coupling devices comprising bolts, one of said bolts provided with a looped end positioned in one of the vertical apertures of a flange, the other bolt provided with a hook positioned within a vertical aperture of the flange of another shoe, and said hook adapted to be quickly lifted from its engagement with said flange, and a turnbuckle threaded upon the contiguous ends of said bolts.

6. A device of the character described, comprising shoes, means connecting said shoes, each shoe comprising a longitudinally-curved body terminating at its ends in horizontal flanges, a rib integral with said body and flanges and extending contiguous to the outer edges of said flanges, and said flanges provided with apertures formed upon opposite sides of said rib.

7. A device of the character described, comprising shoes, means connecting all of said shoes, each shoe comprising a curved body terminating at its ends in flat flanges, a rib integral with said body and flanges and terminating near the outer edges of said flanges, said rib provided with an upper, straight, horizontal tread edge, and each flange provided with an aperture near each end.

8. As a new article of manufacture, a shoe for an anti-slipping device formed from a single piece of material, and comprising a body provided with parallel, flat flanges, the body formed at an obtuse angle to said flanges, a reinforcing-rib integral with the flanges and body, and each flange provided with a pair of vertical apertures.

849,806. GAME DEVICE. ALBERT OPPENHEIMER, London, England. Filed Aug. 13, 1906. Serial No. 330,333.

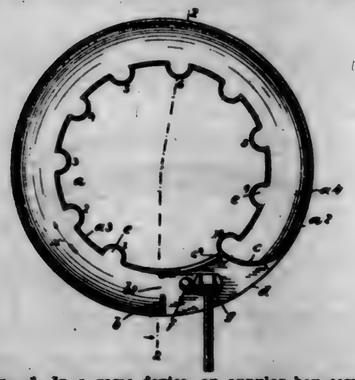

Claim.—1. In a game device, an annular box comprising an inner wall, an outer wall and a bottom, the bottom being inclined inwardly and the inner wall of the box being provided with pockets, said box being also provided at one side with a transverse partition having a door or opening and adjacent thereto on the right thereof with a curved terminating wall which closes the annular chamber formed by the inner and outer walls of the box.

2. In a game device, an annular box comprising an inner wall, an outer wall and a bottom, the bottom being inclined inwardly and the inner wall of the box being provided with pockets, said box being also provided at one side with a transverse partition having a door or opening and adjacent thereto on the right thereof with a curved terminating wall which closes the annular chamber formed by the inner and outer walls of the box, the outer wall of the box between said partition and said curved terminating wall being removed.

849,807. GASOLENE-INDICATOR. WILLIAM F. PAGEL, Minneapolis, Minn. Filed Mar. 23, 1906. Serial No. 307,622.

Claim.—1. The combination, with the casing 2, having an aperture in its bottom permitting liquid to flow into and out of said casing, of a float arranged in said casing, a dial-casing supported upon said casing 2, shafts mounted in said casing and geared together, an indicator-hand mounted on one of said shafts, a spring connected to said indicator-hand shaft, a pulley provided on the other shaft, and means connecting said float and said pulley.

2. The combination, with the casing 2, and the supply-pipe 6 to which said casing is connected, of the hollow standard 8, the dial-casing supported on said standard, a float arranged in said casing, shafts 10 and 15 mounted in said casing and geared together, the hand mounted on the shaft 15, the clock-spring connected to said shaft, the pulley 11 on the shaft 10 and the cord connected to said pulley and passing through said hollow standard and connected to said float, substantially as described.

849,808. CANOPY-FRAME. ISAAC E. PALMER, Middletown, Conn. Filed Mar. 6, 1906. Serial No. 305,496.

Claim.—A canopy-frame having its sides and ends formed of rods with their ends bent at an obtuse angle to the body, straight sleeves at each of the corners for receiving the bent ends of the side and end pieces, the sleeves being each provided with a perforated lug or ear, a central suspension device and cords or wires leading

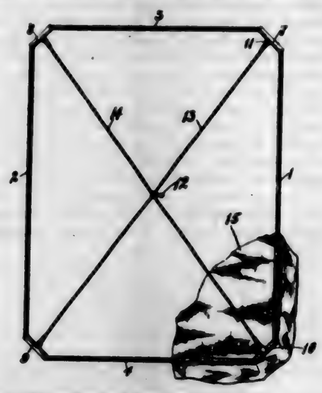

from the said perforated lugs or ears of the corner-sleeves to the central suspension device.

849,809. THREAD-GUIDE. ISAAC E. PALMER, Middletown, Conn. Filed Aug. 12, 1905. Serial No. 273,916.

Claim.—1. A thread-guide consisting of a piece of wire or narrow strip of material having a return-bend in its shank, in combination with a plate constructed to embrace the face and sides of the shank and means for locking the said plate and hence the shank to the finger-board in different lateral adjustments.

2. A thread-guide in combination with a clamping-plate and screws for locking the clamping-plate in engagement with the shank of the guide, the said clamping-plate being provided with elongated slots for the reception of the screws and with a groove for the reception of the shank of the thread-guide for adjusting the guide in different swinging adjustments.

3. A thread-guide in combination with a bearing-plate provided with lips for retaining the guide against displacement laterally, a clamping-plate and screws for locking the clamping-plate, shank of the thread-guide and bearing-plate to the finger-board, the said clamping-plate being provided with elongated slots for the screws to permit a swinging adjustment of the thread-guide.

4. The combination with the thread-guide and finger-board to which the guide is to be attached, of a bearing-plate adapted to engage the face of the finger-board and provided with lips at its edge for holding the shank of the thread-guide against lateral displacement and means for locking the shank in different swinging adjustments.

849,810. CREEL. ISAAC E. PALMER, Middletown, Conn. Filed Nov. 22, 1906. Serial No. 344,543.

Claim.—1. A creel comprising racks set at an angle to each other, spool-carrying bars pivoted to the racks, guide-bars arranged in proximity to the spools for determining the direction of thread from the spool and guide rods or rollers located at a greater distance from the spools for determining the direction of the thread as it leaves the rack.

2. A creel comprising racks set at an angle to each other, spool-carrying bars pivotally secured to the racks, means for swinging a spool-carrying bar from a position for holding the spools directed outwardly from the rack to a position for holding the spools directed inwardly from the rack, guide rods or rollers arranged to swing with the spool-carrying bars and supplemental guide rods or rollers fixed relatively to the spool-carrying bars.

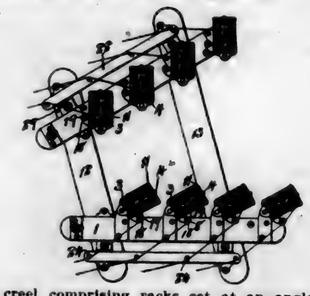

3. A creel comprising racks set at an angle to each other and provided with swinging spool-carrying bars and with guide rods or rollers and supplemental racks spaced from the said spindle-carrying racks and provided with guide bars or rollers.

4. In a creel, the combination with racks set at an angle to each other and provided with swinging spindle-carrying bars and with guide rods or rollers arranged to swing with the spindle-carrying bars, of supplemental racks provided with guide rods or bars and means for adjusting the supplemental racks relatively to the spindle-carrying racks.

849,811. FOOT-PROTECTING DEVICE. CHRISTOPHER E. PASSAGE, Milwaukee, Wis. Filed Feb. 11, 1907. Serial No. 356,776.

Claim.—1. A foot-protecting device comprising a set of jointed shields of comparatively rigid material having their inner faces covered with soft material and conforming in shape to the portion of the foot to which the device is to be applied, and having the connected ends recessed and adapted to receive a portion of the foot without bearing directly thereon.

2. A foot-protecting device comprising a set of jointed members, having cushioned inner surfaces, and recessed to receive a portion of the foot without bearing directly thereon.

3. A foot-protecting device comprising a set of members, having end hinge connection near one margin and having cushioned inner surfaces, with the jointed ends recessed between the joint and the unconnected margin, said recesses being adapted to receive a portion of the foot.

4. A foot-protecting device comprising a set of members, having end hinge connection near one margin, and having cushioned inner surfaces, with the jointed ends recessed between the joint and the unconnected margin, said recesses being adapted to receive a portion of the foot, and the inner surface of said members being dished outwardly around the recesses.

5. A foot-protecting device comprising a set of members, having end hinge connection near one margin, and having cushioned inner surfaces, with the jointed ends recessed between the joint and the unconnected margin, said re-

cesses being adapted to receive a portion of the foot, and said members being curved transversely.

6. A protecting device comprising comparatively rigid shields having end hinge connection with each other near one margin and a soft covering for each of the shields; the end margins of said shields being separated from each other between the hinge and the other margin.

849,812. DRAWING APPARATUS FOR SPINNING SHORT-STAPLED FIBERS. JOSEPH PERRIN, Cours, France. Filed Apr. 13, 1905. Serial No. 255,289.

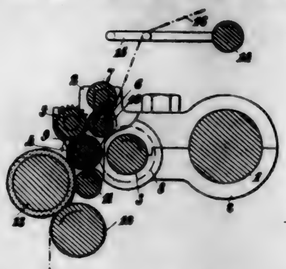

Claim.—In a drawing apparatus for short-staple fiber, a porcupine-roller composed of a series of alined sections independent of one another and each having a gear, a pair of fluted feeding-rolls also composed of alined independent sections of very small diameter and closely adjacent to said porcupine-roller, said feeding-rolls also having gears thereon, a pair of drawing-rolls closely adjacent to said porcupine-roller and adapted to receive the sliver therefrom, said feeding-rolls and said drawing-rolls being disposed at opposite points on said porcupine-roller less than one hundred and eighty degrees apart whereby all of the rolls are very closely arranged together, and a shaft having gears thereon arranged to positively drive all of said rolls.

849,813. WRENCH. GEORGE ROACH, Auburn, N. Y. Filed Nov. 12, 1906. Serial No. 343,017.

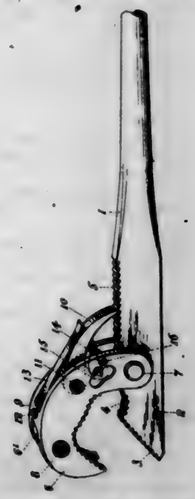

Claim.—In a wrench a handle or lever having at one end a lower jaw provided with a serrated angled end 3, a serrated concave 4, and a ratchet 5, on the upper edge in combination with an upper jaw consisting of two uniform members 6, 6', having irregular serrated under edges and connected to each other by a tie-post 8, and a tie-piece 9, the lower ends pivoted on either side of the said lower jaw of said handle or lever by a pivot 7, a pawl 10, pivoted between said members 6, 6', and adapted to engage on the ratchet 5, a spring 13, attached to the tie-piece 9, between said members 6, 6', and adapted to bear on the upper side of said pivoted pawl 10, a cam 14, having a thumb-piece 15, pivoted between said members 6, 6', and adapted to bear on the under side of said pivoted pawl 10, and a stop bolt or shaft 16, under said cam-piece and between the said members 6, 6', of said upper jaw substantially constructed and arranged in the manner and for the purpose herein described and shown.

849,814. VENTILATING SUBWAYS. THEODORE D. ROBINSON, Albany, N. Y. Filed May 1, 1906. Serial No. 314,679.

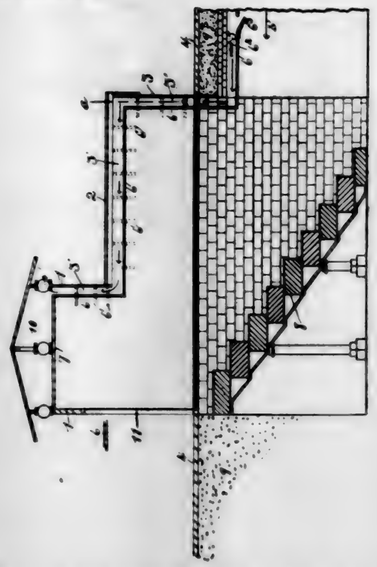

Claim.—1. The combination with a subway and an entrance thereto having the usual flight of steps, of a transparent housing or kiosk for said entrance comprising an elevated portion over the upper portion of said flight of steps and a dropped portion over the lower portion of the flight, and a transparent conduit leading from adjacent the roof of said subway upward along the end of said dropped portion, thence horizontally beneath the roof thereof, and thence upward to and through the roof of the elevated portion.

2. The combination with a subway and an entrance thereto having the usual flight of steps, of a transparent housing or kiosk for said entrance comprising an elevated portion over the upper part of said flight of steps and a dropped portion over the lower part of the flight, and a transparent conduit leading from adjacent the roof of said subway upward along the end of said dropped portion, thence horizontally beneath the roof thereof, and thence upward to and through the roof of the elevated portion, said conduit having its inner wall formed of a series of sections hinged to swing transversely of the conduit to facilitate cleaning.

849,815. PROCESS OF PRODUCING FORMALDEHYDE PREPARATIONS. PAUL ROSENBERG, Berlin, Germany. Filed June 23, 1906. Serial No. 323,178. (Specimens.)

Claim.—1. The process of producing a novel formaldehyde-lactose preparation for internal therapeutical use which contains one molecular proportion of lactose to five molecular proportions of formaldehyde consisting in evaporating the formaldehyde solution and lactose in a vacuum.

2. The process of producing a novel formaldehyde-lactose preparation for internal therapeutical use which contains one molecular proportion of lactose to five molecular proportions of formaldehyde consisting in evaporating the aqueous formaldehyde solution and lactose in a vacuum at a temperature of from 60° to 70° centigrade.

3. The process of producing a novel formaldehyde-lactose preparation for internal therapeutical use which contains one molecular proportion of lactose to five molecular proportions of formaldehyde consisting in evaporating the aqueous formaldehyde solution containing more than five molecular proportions of formaldehyde and one molecular proportion of lactose in a vacuum at a temperature of from 60° to 70° centigrade and drying the resulting product at the same temperature under ordinary pressure.

4. As a novel composition of matter a formaldehyde-lactose preparation for internal therapeutical use composed of one molecular proportion of lactose to five molecular proportions of formaldehyde, existing in form of a white crystalline substance devoid of the sharp odor of the formaldehyde and adapted to easily split into its two component parts when it is administered.

849,816. TRUCK. IVAR L. SJÖSTRÖM, Lawrence, Mass. Filed Sept. 11, 1905. Serial No. 277,837.

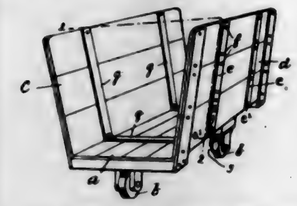

Claim.—A truck comprising a trough-like body entirely open at its ends and consisting of a flat wooden bottom and deep straight sides diverging upward therefrom, and external heavy semiyielding one-piece metal supports each having a central portion secured to and extending transversely across said bottom and upward-diverging side portions secured to and extending upward along said sides approximately to the tops thereof, the junctions between said central and side portions of the supports being bent on a long gentle curve overlying the junctions between the bottom and sides of the body.

849,817. ANCHORAGE FOR BUILDING PURPOSES. ROBERT P. SMITH, Winchester, Mass., assignor of one-third to Edmund W. Longley, Salem, Mass. Filed Dec. 20, 1906. Serial No. 348,712.

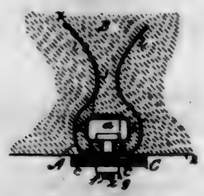

Claim.—1. The combination of a wall or ceiling of self-hardening plastic material with a holder or supporter made from sheet metal bent to form a channel having inwardly-extending ledges at its mouth, and its edges extending upward and outward, portions of the metal surfaces being flush with the face of the wall or ceiling as set forth.

2. The combination with a concrete wall or ceiling, of a holder or supporter made from sheet metal having a channel formed centrally thereof with inwardly-extending ledges at its mouth and with its ends flaring upward and outward, portions of the metal surfaces being flush with the face of the wall or ceiling as set forth.

3. A holder or supporter for the purpose described adapted to be inclosed in self-hardening plastic material, composed of sheet metal bent into a longitudinal channel having inwardly-extending ledges at its mouth, and wings extending from each side of the channel in an upward and outward manner, as set forth.

4. The combination of a wall or ceiling of self-hardening plastic material, with a metal holder or supporter for the purpose described having a channel with inwardly-extending ledges at its mouth, and wings extending from each side of the channel in an upward and outward manner, portions of the metal surfaces being flush with the face of the wall or ceiling as set forth.

5. The combination of a wall or ceiling of self-hardening plastic material, with a holder or supporter of sheet-steel having a central longitudinal channel formed therein, with ledges at its mouth extending toward each other, and wings from each side of the channel curving upward and outward, as set forth.

6. The combination of a wall or ceiling of concrete, with a holder of sheet metal having a central longitudinal channel formed therein, with ledges at its mouth extending toward each other and enlarged at suitable places to receive bolt-heads, and wings from each side of the channel extending upward and outward, as set forth.

7. A holder or supporter for the purpose described composed of sheet metal formed with a central longitudinal channel having hollow ledges on each side of its mouth and with wings extending upwardly and outwardly from each side of the channel, immersed in a self-hardening plastic material which fills in between the upper sides of the wings and forms a lock or matrix about the channel and also the lower and outer sides of the wings, leaving the mouth of the channel exposed, as set forth.

8. The combination of a wall or ceiling of self-hardening plastic material, with a holder of flexible sheet metal having a central longitudinal channel formed therein, with hollow ledges at its mouth extending toward each other, and wings from each side of the channel curving upward and outward.

9. As an article of manufacture a holder of thin sheet metal formed with a central inner channel having an outward opening of less diameter than itself, the metal being reversed on itself and spaced from the walls of the channel and opening, and contracting on each side over the said channel, and then flaring outwardly.

10. As an article of manufacture a holder of thin sheet metal formed with a central channel having an opening of less diameter than itself, and its edges extending away from the opening, a cross-section thereof presenting a zigzag or uneven contour.

11. As an article of manufacture a holder of thin sheet metal formed with a central channel having an opening of less diameter than itself, and its edges extending away from the opening, a cross-section thereof presenting a zigzag or uneven contour with a strip covering the opening and secured by bolts whose heads are located in the channel.

12. An article of manufacture a longitudinal hollow supporter made of thin sheet metal with a central channel opening outward, and its edges extending away therefrom, a cross-section thereof presenting an uneven or varying contour, adapted to be inclosed in moist concrete, as set forth.

13. The combination with a mass of concrete of a longitudinal hollow metal supporter having a central channel and its edges extending away from the same, portions of the metal surfaces being flush with the face of the wall or ceiling as set forth.

849,818. WITHDRAWN.

849,819. FIREPROOF COLUMN. JOHN J. TRESIDDER, New York, N. Y., assignor to American Column Company, Brooklyn, N. Y., a Corporation of New York. Filed Oct. 31, 1906. Serial No. 341,380.

Claim.—A fireproof column consisting of a metal shell, a bottom socket having an outwardly-extending flange upon which said shell is supported, and an inwardly-extending flange, a hollow cylindrical cap supported upon the upper edge of said shell and provided at its upper end with an inwardly-extending flange, an interior shell supported at its lower end on the inwardly-extending flange of said bottom socket and extending upwardly through the exterior shell and cap into abutment with the inwardly-extending flange at the upper end of the latter and a concrete filling for said shells and cap.

849,820. SPARK-IGNITION SYSTEM FOR EXPLOSION-ENGINES. RICHARD VARLEY, Englewood, N. J., assignor to The Autocoil Company, a Corporation of New Jersey. Filed Apr. 6, 1905. Serial No. 254,072.

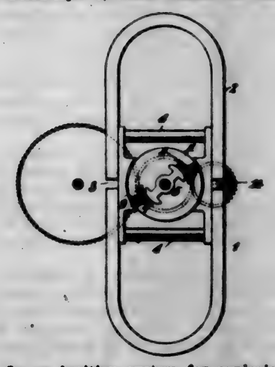

Claim.—In an ignition system for explosion-engines, a generator having a field-magnet with curved pole-faces, an armature having a single coil journaled concentrically between said faces, field-magnet poles adjustable in proximity to said pole-faces and having supplemental pole-faces also concentric with the armature, each of said field-magnet pole-faces being substantialy T-shaped in section whereby the magnetic path to the lines of force is substantially constant for all angular positions of said pole-faces, a distributing-switch having contacts, gear connections between the contacts of said distributing-switch and said field-magnet pole-pieces whereby said contacts and said pole-pieces are adjustable together, and means for closing and interrupting the circuit of said armature at a position of its rotation which varies angularly with the adjustment of the pole-pieces.

849,821. PENCIL-SHARPENER. JOHN J. VAUTIER, New York, N. Y. Filed Jan. 24, 1907. Serial No. 353,823.

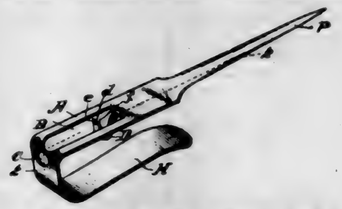

Claim.—1. A pencil-sharpener consisting of a sheet-metal plate provided with a longitudinal slot, and having a folded-over end provided with a hole cut therein, and a pencil-point-holding member movable relatively to said slot, substantially as described.

2. A pencil-sharpener consisting of a sheet-metal plate provided with a longitudinal slot and having a folded-over end provided with a circular hole cut therein, and a resilient pencil-point-holding member yieldingly movable within said slot, substantially as described.

3. A pencil-sharpener consisting of a sheet-metal plate provided with a longitudinal slot and having a folded-over end integral with said plate and provided with a circular hole cut therein, a clamp-piece beneath the face of said plate and integral therewith, and a resilient pencil-point-holding member integral with said plate and yieldingly movable within said slot substantially as described.

849,822. APPARATUS FOR FORMING FILAMENTS. MONTGOMERY WADDELL, New York, N. Y., assignor to Silas W. Pettit, Philadelphia, Pa. Filed Apr. 18, 1905. Renewed Feb. 19, 1907. Serial No. 358,219.

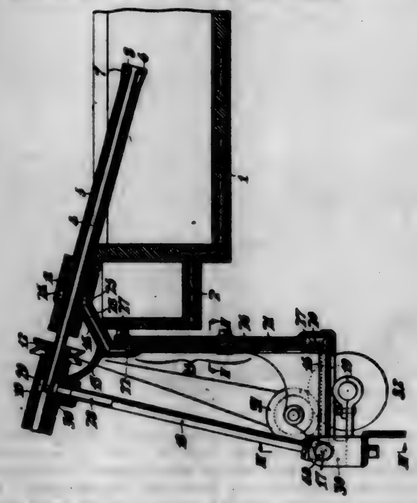

Claim.—1. The combination of a rotatable inner delivery-tube; an outer delivery-tube surrounding the same and isolated therefrom but rotatable therewith; bearings for said tubes; actuating devices for rotating said tubes; a conduit communicating with the interior of the inner delivery-tube; a conduit of extended interior area communicating with the outer delivery-tube; and a filtering-diaphragm disposed in said extended conduit, substantially as set forth.

2. The combination of a rotatable inner delivery-tube; an outer delivery-tube surrounding the same and isolated therefrom but rotatable therewith; bearings for said tubes; actuating devices for rotating said tubes; a conduit communicating with the interior of the inner delivery-tube; a conduit of extended interior area communicating with the outer delivery-tube; said conduits leading to said tubes from a common region of pivotal attachment, substantially as set forth.

3. The combination of a rotatable inner delivery-tube; an outer delivery-tube surrounding the same and isolated therefrom but rotatable therewith; bearings for said tubes; actuating devices for rotating said tubes; a conduit communicating with the interior of the inner delivery-tube; a conduit of extended interior area communicating with the outer delivery-tube; said conduits leading to said tubes from a common region of pivotal attachment; frictional driving mechanisms arranged substantially as set forth, whereby the spinneret is rotated only in a position corresponding with its delivery of viscose to the setting solution, but is withdrawn from operative engagement with the mechanism when tilted away from said operative position.

4. In a spinneret, the combination of an outer delivery-tube having an internally-coned end portion; and an inner delivery-tube having a correspondingly-coned external end portion, provided with longitudinal channels, substantially as and for the purposes set forth.

5. The combination with a rotatable inner delivery-tube; of an outer delivery-tube surrounding the same and isolated therefrom but rotatable therewith; bearings for said tubes; actuating devices for rotating said tubes; conduits communicating respectively with the interiors of said tubes; means whereby liquefied cellulose is supplied to the outer tube; and, means whereby a setting solution is supplied to the inner tube, substantially as set forth.

6. The combination with a rotatable inner delivery-tube; of an outer delivery-tube surrounding the same and isolated therefrom but rotatable therewith; bearings for said tubes; actuating devices for rotating said tubes; conduits communicating respectively with the interiors of said tubes; means whereby viscose is supplied to the outer tube; and, means whereby viscose setting solution is supplied to the inner tube, substantially as set forth.

7. The combination with an inner delivery-tube; of an outer delivery-tube surrounding the same but isolated therefrom; conduits communicating respectively with the interiors of said tubes; and, liquid means excluding the delivery ends of said tubes from the atmosphere, substantially as set forth.

8. The combination with a rotatable delivery-tube; of an outer delivery-tube surrounding the same and isolated therefrom, but rotatable therewith; bearings for said tubes; actuating devices for rotating said tubes; conduits communicating respectively with the interiors of said tubes; and, means whereby the delivery ends of said tubes are submerged in a liquid, substantially as set forth.

849,823. MANUFACTURE OF FILAMENTS AND FILMS FROM VISCOSE. CHARLES N. WAITE, Lansdowne, Pa., assignor, by mesne assignments, to Silas W. Pettit, Philadelphia, Pa. Filed May 3, 1904. Serial No. 206,174.

Claim.—1. The hereinbefore-described process of making viscose products, which consists in subjecting liquid viscose to the action of a solution comprising sodium bisulfite; and, then eliminating such residual constituents as sulfur and sodium hydrate, by steaming said products in the presence of sulfurous acid, substantially as set forth.

2. The hereinbefore-described process of making viscose products, which consists in subjecting liquid viscose to the action of a solution comprising sodium bisulfite; then eliminating such residual constituents as sulfur and sodium hydrate, by steaming said products in the presence of sulfurous acid; and, subjecting said products to tension during the steaming process, substantially as set forth.

3. The hereinbefore-described process of making viscose products which consists in initially subjecting liquid viscose to the action of a coagulating solution comprising sodium bisulfite; and, then eliminating such residual constituents as sulfur and sodium hydrate, by steaming said products in the presence of sulfurous acid, substantially as set forth.

849,824. APPARATUS FOR MAKING MOLDED BLOCKS. JAMES O. WINSTON, Richmond, Va. Filed Feb. 5, 1907. Serial No. 355,837.

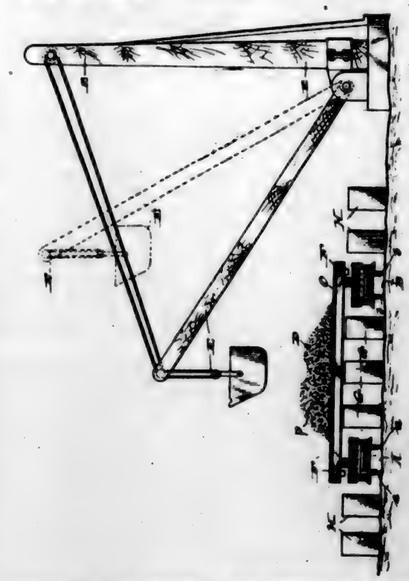

Claim.—1. An apparatus for manufacturing molded blocks, comprising a platform movable along a trackway, a plurality of molds arranged between the rails of the trackway, and a plurality of molds arranged alongside and outside of the trackway, the construction being such that the material may be distributed from the platform to the molds between the rails and to the molds outside the trackway.

2. An apparatus for manufacturing molded blocks, comprising a trackway, a plurality of molds arranged in the space between the rails of the trackway, a plurality of molds arranged alongside and outside of the trackway, a platform movable along the trackway and upon which the material is deposited in bulk and from which said material is distributed to the molds between the rails and to the molds outside the trackway as the platform is moved from place to place on the trackway, such platform being of sufficient height to pass over the molds between the rails.

849,825. HAMMER-LOCK FOR FIREARMS. MARTIN VAN BUREN ALLEN, New York, N. Y. Filed Jan. 30, 1906. Renewed Jan. 14, 1907. Serial No. 352,292.

Claim.—1. A hammer-lock for firearms, comprising a lever pivoted in one side of the frame rearwardly of the hammer and ranging forwardly and upwardly and downwardly and backwardly into the handle and the front end

of which is adapted to engage the hammer and lock it against both forward and backward movement, means within the handle for normally forcing the lower end of said lever outwardly, and a movable device mounted in the handle and operating when the handle is gripped in the operation of firing to force said end of said lever inwardly and disengage the hammer, substantially as shown and described.

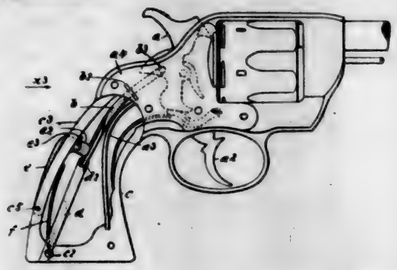

2. A hammer-lock for firearms, comprising a lever pivoted in one side of the frame rearwardly of the hammer and the front end of which projects forwardly and is adapted to engage the hammer and lock it against both forward and backward movement, and the rear end of which extends downwardly and backwardly into the handle, a spring secured in the handle and operating to force the lower end of said lever outwardly, and a movable device mounted in and movable through a part of the handle and normally projecting therefrom and adapted to bear on the outer side of the inner end of said lever and force it inwardly so as to disengage the hammer when the handle is gripped in the operation of firing, substantially as shown and described.

3. A hammer-lock for firearms, comprising a lever pivoted in the framework rearwardly of the hammer and the front end portion of which projects forwardly and is adapted to engage the hammer and lock it against both forward and backward movement, and the rear end of which projects downwardly and rearwardly into the handle, a spring within the handle and normally serving to force the rear end of said lever outwardly and the front end thereof to engage the hammer, and an arm pivoted in a longitudinal slot formed in the rear portion of the handle and normally projecting therefrom and provided with a nose-piece adapted to bear on the outer side of the rear end of said lever and to force said lever inwardly when the handle is gripped in the operation of firing, substantially as shown and described.

4. A firing-preventing device for guns, comprising a lever pivoted in one side of the frame and ranging forwardly and upwardly and downwardly and backwardly into the handle and the front end of which operates in connection with the hammer to prevent both the forward and backward movement of the hammer, means for forcing the rear end of the lever outwardly so that the front end thereof will operate in connection with the hammer, and a movable device mounted in the handle and operating when the handle is gripped in the operation of firing to force said end of said lever inwardly so that the front end thereof will not operate in connection with the hammer, substantially as shown and described.

5. A hammer-lock for firearms, comprising a lever pivoted in one side of the frame rearwardly of the hammer and ranging forwardly of and adjacent to one side of the hammer and downwardly and backwardly into the handle, said hammer being provided in the side thereof with a recess and the front end of said lever with a member adapted to enter said recess so as to lock the hammer against both forward and backward movement, a spring secured in the handle and normally forcing the rear end of said lever outwardly and the front end thereof into engagement with the hammer, and a movable device mounted in the handle and operating when the handle is gripped in the operation of firing to force said end of said lever inwardly and to cause the front end thereof to disengage the hammer, substantially as shown and described.

849,826. PASSENGER-CAR CONSTRUCTION. FRANCIS M. BRINCKERHOFF, New York, N. Y., assignor of one-third to Hugh Hazelton and one-third to Lewis B. Stillwell, New York, N. Y. Filed Dec. 14, 1906. Serial No. 347,822.

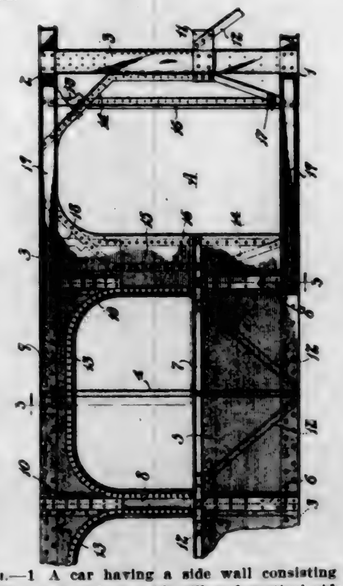

Claim.—1 A car having a side wall consisting of an upper side plate, a lower side sill and vertical side posts spaced apart to form an opening for a door or window, and an approximately octagonal-shaped frame arranged between said posts and consisting of a plurality of separate flanged members connected together and fastened to said side posts, side plate and side sill; substantially as described.

2. A car having a side wall consisting of a side plate member, a lower side sill, vertical posts connected to said member and sill and spaced apart from each other, and a member connected to each post and having its upper and lower ends inclined and connected respectively to the side plate member and side sill; substantially as described.

3. A car having a side wall consisting of an upper side plate member, a lower side sill, vertical posts connected to said parts and spaced away from each other to form an approximately square opening, and inclined braces arranged at the four corners of said opening and connected to the side posts and to the side sill and side plate member; substantially as described.

4. A car having a side wall consisting of an upper side plate member, a lower side sill, vertical posts connected to said parts and spaced away from each other to form an approximately square opening, inclined braces arranged at the four corners of said opening and connected to the side posts and to the side sill and side plate member, and members arranged parallel to the side posts and connected at their opposite ends to said braces to form a door-frame; substantially as described.

5. A car comprising a side wall consisting of a lower side sill and a side plate member, a vertical post connected to said parts, and a truss secured at its center to the post and at its upper and lower ends to the side plate member and side sill; substantially as described.

6. A car having a side wall which consists of an upper side plate, a lower side sill, a vertical post connected to said side plate and side sill, a member connected to one side of said post and having its opposite ends inclined at an angle thereto and connected to the side plate and side sill, a post extending parallel to the side post and connected at its opposite ends to the inclined parts of said member, and a brace interposed between the side plate and the inclined part at the upper end of said member; substantially as described.

7. A car having a side wall consisting of a side plate, a side sill, a vertical post connected to said parts, a continuous member connected at its center to the vertical post and having its ends bent away from said post and connected to the side plate and side sill, and a vertical Z-bar arranged parallel to the post and connected at its opposite ends to the inclined parts of said member, the flanges at the upper end of said bar being removed and its web being bent to conform to the shape of the upper inclined part of said member; substantially as described.

8. A passenger-car having a side wall provided with window-openings and consisting of a side plate, vertical posts spaced away from each other, and a continuous arched member extending between said posts and having its legs connected thereto to frame in a window-opening; substantially as described.

9. A passenger-car having a side wall provided with a window-opening and consisting of an upper side plate, side posts, a continuous arched member arranged between and connected to the side posts and having depending legs which extend to the lower edge of the window-opening, and a web-plate connected to said arched member and side plate and forming part of the outside sheathing of the side wall, the lower edge of said plate conforming to the curvature of the arched member; substantially as described.

10. A passenger-car having a side wall consisting of vertical posts spaced apart to provide a window-opening, a belt-rail connected to said posts below the window-opening, and a continuous arched member framing in the window-opening and provided with legs which extend down to the belt-rail, said legs being connected to the side posts; substantially as described.

11 A passenger-car having a side wall consisting of vertical posts, outside sheathing-plates connected to said posts and provided with a window-opening, and a continuous arched angle secured to the edge of said plate surrounding said opening and having downwardly-extending legs that are connected to the side posts, said angle framing in the sides and top of the window-opening; substantially as described.

12. A car having a side wall consisting of vertical side posts spaced apart to provide window-openings, a lower side sill, a belt-rail member, a V-shaped brace member arranged between a pair of posts and connected to said posts and to the side sill below the belt-rail member, and a continuous arched member connected to the side posts to frame in the window-opening and having downwardly-projecting legs that extend to the belt-rail; substantially as described.

13. A car having a side wall consisting of a side plate, a side sill, vertical posts spaced apart to provide openings for twin windows, an intermediate post arranged midway between each pair of vertical posts, gusset-plates connected to the vertical posts, inclined braces connected to said plates and to the side sill, outside sheathing-plates provided with window-openings, and continuous arched members secured to the edges of said plates around said openings and connected to the side posts; substantially as described.

849,827. CAR CONSTRUCTION. FRANCIS M. BRINCKERHOFF, New York, N. Y., assignor of one-third to Hugh Hazelton and one-third to Lewis B. Stillwell, New York, N. Y. Filed Dec. 14, 1906. Serial No. 347,823.

Claim.—1. In a car construction, the combination of a side sill having a channel-shaped side post connected directly thereto, a pair of transversely-extending flanged members, a pair of gusset-plates connected to the webs of said members and extending above the side sills and being arranged between the inwardly-projecting legs of said post, and vertically-disposed flanges at the outer edges of said plates which are connected to the side sill and to the web of said side post; substantially as described.

2. In a car construction, the combination of a flanged side sill, a vertical channel-shaped post having the flanges at the lower end thereof cut away so that its web will lie against the outside face of the side sill, fastening devices passing through said web to connect it to the side sill, a pair of transversely-extending flanged members arranged with their flanges projecting in opposite directions, a pair of gusset-plates arranged between said members and connected to the webs thereof, flanges at the outer edges of said gusset-plates arranged between the flanges on the side post above the side sill, and fastening devices passing through said flanges to connect them to the side sill and side post; substantially as described.

3. In a car construction, the combination of side sills, center sills, pairs of flanged members connected to the side sills and center sills, queen-posts projecting downwardly from the center sills, a truss-rod extending underneath said queen-posts and having its ends arranged between the pairs of flanged members, and fastening devices connecting said rod to said members; substantially as described.

849,828. CAR CONSTRUCTION. FRANCIS M. BRINCKERHOFF, New York, N. Y., assignor of one-third to Hugh Hazelton and one-third to Lewis B. Stillwell, New York, N. Y. Filed Dec. 14, 1906. Serial No. 347,824.

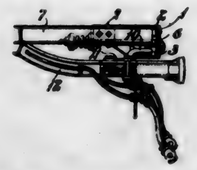

Claim.—1. In a car construction, the combination of a bowed platform end sill having an inwardly-extending flange, a radial draw-bar, and an arm rigidly connected

to said bar and adapted to travel on said flange to support said bar; substantially as described.

2. In a car construction, side sills, a bowed web-plate having angles connected to the upper and lower edges thereof, means for connecting said angles and plate to the side sills, center sills, and a transversely-extending member connected to said web-plate and supporting the ends of the center sills; substantially as described.

3. In a car construction, side sills, a bowed web-plate having angles connected to the upper and lower edges thereof, means for connecting said angles and plate to the side sills, center sills and a transversely-extending member connected to said web-plate and supporting the ends of the center sills, vertical stiffening devices connected to the web-plate and to said transversely-extending member, and a plate extending from side sill to side sill and connected to the upper angle on said web-plate; substantially as described.

849,829. TYPE-WRITING MACHINE. ALEXANDER T. BROWN, Syracuse, N. Y. Filed Oct. 16, 1902. Serial No. 127,543.

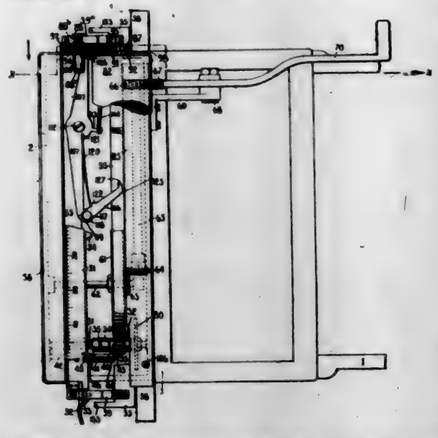

Claim.—1. In a type-writing machine, the combination of a carriage, a platen, means carried by the frame of the machine for returning the carriage to the right, and means independent of the returning means and effective at any position of the carriage for automatically effecting a line-spacing movement of the platen during the initial portion of the return movement of the carriage.

2. In a type-writing machine, the combination of a carriage, a platen, means for returning the carriage to the right, and means independent of the returning means and effective at any position of the carriage for automatically effecting a line-spacing movement of the platen during the initial portion of the return movement of the carriage, whereby a line-spacing movement of the platen may be automatically effected without making a complete return movement of the carriage.

3. In a type-writing machine, the combination of a platen, a carriage, line-spacing mechanism that is carried in part by the frame of the machine and in part by the carriage and which is automatically actuated by and at the initial portion of the return movement of the carriage irrespective of the position of the carriage, and a hand-actuated lever carried by the frame of the machine for returning the carriage.

4. In a type-writing machine, the combination of a carriage, a platen, a hand-lever carried by the frame of the machine and extending adjacent to the keyboard for effecting a return of the carriage to the right, and line-spacing mechanism that is carried in part by the frame of the machine and in part by the carriage and which is actuated automatically at the initial portion of the return movement of the carriage irrespective of the position of the carriage.

5. In a type-writing machine, the combination of a platen, a carriage-returning means for effecting a return of the carriage to the right, and line-spacing mechanism that is carried in part by the frame of the machine and in part by the carriage and which is actuated automatically and independently of the returning means by the return movement of the carriage and at the initial portion thereof and irrespective of the position of the carriage, whereby a line-spacing movement of the platen may be automatically effected independent of the returning means and without making complete return movement of the carriage.

6. In a type-writing machine, the combination of a carriage, a platen, line-spacing mechanism carried in part by the carriage and in part by the frame of the machine and which is automatically moved to one position during the travel of the carriage in the direction of its feed and which is automatically moved to another position during the travel of the carriage in an opposite direction to permit the carriage to move in one direction without line-spacing and to automatically start to effect a line-spacing movement of the line-spacing mechanism the instant the carriage moves in an opposite direction and irrespective of the position of the carriage.

7. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices therefor, a lever carried by the carriage and adapted to automatically actuate the line-spacing device, and means carried by a fixed portion of the machine and with which the lever is adapted at all times to coöperate during the travel of the carriage and at any point in the travel of the carriage to automatically effect a line-spacing movement of the platen.

8. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices therefor, an actuating device carried by the carriage and adapted to automatically actuate the line-spacing devices, and a rack carried by a fixed portion of the machine and with which the actuating device maintains contact during the travel of the carriage in the direction of its feed and with which the actuating device automatically coöperates when the carriage is moved in an opposite direction to automatically effect a line-spacing movement of the platen.

9. In a type-writing machine, the combination of a carriage, a platen, line-spacing mechanism, and actuating means for said line-spacing mechanism, said actuating means being automatically actuated by the carriage and at the initial portion of the return movement thereof, regardless of the position of the carriage at the time such return movement begins.

10. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices therefor, a lever pivoted to the carriage and operatively connected to the line-spacing devices, a pawl pivoted to said lever, and a rack carried by a fixed portion of the machine and with which the pawl is adapted to automatically coöperate during a travel of the carriage to effect a line-spacing movement of the spacing devices.

11. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices therefor, a spring-pressed lever pivoted to the carriage and operatively connected to the line-spacing devices, a spring-pressed pawl pivoted to said lever, a rack that extends longitudinally of the carriage and is carried by a fixed portion of the machine and with which the pawl is adapted to automatically coöperate during the initial portion of the travel of the carriage to effect a movement of the line-spacing devices.

12. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices therefor, a controlling-pawl for said line-spacing devices, a rack which coöperates with said pawl and permits a relative movement thereof in either direction, the movement of the controlling-pawl in one direction being ineffective to afford a line-spacing movement of the spacing devices, whereas a movement of the controlling-pawl in an opposite direction affords a line-spacing movement of said devices.

13. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices, a lever, a pawl carried thereby and movable independently thereof for a limited extent and a rack which coöperates with said pawl to automatically actuate the lever when the carriage is moved in one direction, to effect a line-spacing movement of the spacing devices.

14. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices therefor, a lever for actuating said line-spacing devices, a pawl that coöperates with said lever to afford an automatic shifting thereof, and a rack with which said pawl contacts throughout the travel of the carriage in either direction.

15. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices therefor, a lever for actuating said line-spacing devices, a pawl that travels with the carriage and coöperates with said lever to afford an automatic shifting thereof, and a fixed rack which affords a movement of the pawl over the teeth of the rack in either direction but actuates the lever when the carriage is moved in one direction to afford a line-spacing movement of the spacing device, and permits the lever to be restored to its normal position when the carriage is moving in an opposite direction.

16. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices therefor, a lever operatively connected to said line-spacing devices, a pawl that is pivoted to said lever, a rack with which said pawl coöperates, there being a movement of the pawl over the teeth of the rack in both directions, the pawl maintaining one position relative to the lever when the carriage moves in one direction and another position relative to the lever when the carriage is moved in an opposite direction.

17. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices therefor, a lever operatively connected to said line-spacing devices, a spring-pressed pawl that is pivoted to said lever and has a limited movement relative thereto, and a rack with which said pawl coöperates, there being a movement of the pawl over the teeth of the rack in both directions, the pawl maintaining one position relative to the lever when the carriage moves in one direction and another position relative to the lever when the carriage is moved in an opposite direction, whereby when the carriage moves in the direction of its feed the lever will be moved to its initial position and when the carriage is moved in an opposite direction the lever will be automatically shifted to effect a line-spacing movement of the spacing devices.

18. In a type-writing machine, the combination of a carriage, a platen, and automatically-actuated line-spacing mechanism including a rack and a coöperating controlling-pawl provided with a teat that coöperates with the teeth of the rack and having a shoe that slides over said teeth.

19. In a type-writing machine, the combination of a carriage, a platen, automatically-actuated line-spacing mechanism including a rack and a coöperating controlling-pawl provided with a teat that coöperates with the teeth of the rack and having a shoe that slides over said teeth and means for automatically affording a movement of the teat into contact with the teeth of the rack when the carriage moves in one direction and for automatically affording a movement of the teat out of contact with teeth of the rack and a movement of the shoe into contact therewith when the carriage is moved in an opposite direction.

20. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices for said platen, a rack, a coöperating controlling-pawl provided with a teat that is adapted to coöperate with the teeth of the rack and having a shoe that slides over said teeth, and intermediate connections between said line-spacing devices and said controlling-pawl.

21. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices for said platen, a rack, a coöperating controlling-pawl provided with a teat that is adapted to coöperate with the teeth of the rack and having a shoe that slides over said teeth, intermediate connections between said line-spacing devices and said controlling-pawl, and means for automatically affording a movement of the teat into contact with the teeth of the rack when the carriage moves in one direction and for automatically affording a movement of the teat out of contact with teeth of the rack and a movement of the shoe into contact therewith when the carriage is moved in an opposite direction.

22. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices for said platen, a rack, a coöperating controlling-pawl provided with a teat that is adapted to coöperate with the teeth of the rack and having a shoe that slides over said teeth, and a lever which is connected to said controlling-pawl and is operatively connected to the line-spacing devices, whereby a relative movement between the pawl and rack in one direction may be effected without affording a line-spacing movement and a relative movement between the pawl and rack in an opposite direction will effect a line-spacing movement of the platen.

23. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices for said platen, a rack carried by the frame of the machine and extending from side to side thereof, a coöperating controlling-pawl carried by the carriage and provided with a teat that is adapted to coöperate with the teeth of the rack during the movement of the carriage from side to side of the machine, and a shoe on said pawl that slides over said rack-teeth, and intermediate connections between said line-spacing devices and said controlling-pawl.

24. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices for said platen, a rack, a coöperating controlling-pawl provided with a teat that is adapted to coöperate with the teeth of the rack and having a shoe that slides over said teeth, and a lever which is pivoted to the carriage and is connected to said controlling-pawl and is operatively connected to the line-spacing devices, whereby a movement of the carriage in one direction may be effected without affording a line-spacing movement and a movement of the carriage in an opposite direction will effect a line-spacing movement of the platen.

25. In a type-writing machine, the combination of a carriage, a platen carried thereby, line-spacing devices for said platen, a rack, a coöperating controlling-pawl provided with a teat that is adapted to coöperate with the teeth of the rack, a shoe on said pawl that is adapted to bear against and slide over said teeth, a spring-pressed lever to which said pawl is pivoted, a spring which tends to maintain a given relation between the pawl and lever, and operative connections between the lever and said line-spacing devices.

26. In a type-writing machine, the combination of a carriage, a platen carried thereby, line-spacing devices for said platen, a rack carried by a fixed portion of the machine and which extends longitudinally of the run of the carriage, a coöperating controlling-pawl carried by the carriage and provided with a teat that is adapted to coöperate with the teeth of the rack when the carriage moves in one direction, and a shoe on said pawl that is adapted to bear against and slide over said teeth, a spring-pressed lever to which said pawl is pivoted, a spring which tends to maintain a given relation between the pawl and lever, and operative connections between the lever and said line-spacing devices, whereby the movement of the carriage in one direction is effective to automatically line-space and a movement of the carriage in an opposite direction may be effected without automatically line-spacing.

27. In a type-writing machine, the combination of a carriage, a platen, a line-spacing ratchet-wheel, a line-spacing pawl coöperating therewith, a lever connected to said pawl, a controlling-pawl carried by said lever, and a rack with which said controlling-pawl coöperates during the travel of the carriage to automatically actuate the line-spacing pawl when the carriage is moved in one direction and to afford a movement of the carriage in the opposite direction without line-spacing.

28. In a type-writing machine, the combination of a carriage, a platen, a line-spacing ratchet-wheel, a line-spacing pawl coöperating therewith, a spring-pressed lever connected to said pawl, a spring-pressed controlling-

pawl carried by said lever, and a rack with which said controlling-pawl coöperates during the travel of the carriage, to automatically afford a movement of the lever to actuate the line-spacing pawl when the carriage is moved in one direction and to afford a movement of the line-spacing pawl back to its initial position when the carriage moves in the opposite direction.

29. In a type-writing machine, the combination of a platen, a line-spacing ratchet-wheel, a pawl therefor, automatically-operated means for actuating said pawl, and a friction device for effecting an engagement of the pawl with the ratchet-wheel during the initial portion of the line-spacing movement of said pawl.

30. In a type-writing machine, the combination of a carriage, a platen, line-spacing devices therefor, means for automatically actuating said line-spacing devices by a movement of the carriage from left to right and at the initial portion of said movement, and means for throwing said line-spacing devices out of operation, so that the carriage may be moved from left to right and the automatic line-spacing mechanism be ineffectual to line-space the platen.

31. In a type-writing machine, the combination of a carriage, a platen, carriage-releasing devices, line-spacing devices for the platen, means for automatically actuating said line-spacing devices at the initial portion of the return movement of the platen, and means controlled by said carriage-releasing devices for throwing said line-spacing devices out of operation.

32. In a type-writing machine, the combination of a carriage, a platen carried thereby, escapement devices for said carriage, hand-operated means for releasing the carriage from said escapement devices, line-spacing devices for the platen, means for automatically actuating the line-spacing devices when the carriage is moved from left to right and at the initial portion of said movement, and means controlled by said carriage-releasing means for rendering the line-spacing devices inoperative to effect a line-space movement of the platen.

33. In a type-writing machine, the combination of a carriage, a platen, carriage-releasing means, line-spacing devices for the platen, means for automatically actuating said line-spacing devices, which actuating means are carried in part by the carriage and in part by the frame of the machine and coöperate at any point in the travel of the carriage without an adjustment of the parts, and means controlled by said carriage-releasing means for throwing the line-spacing devices out of effective operation.

34. In a type-writing machine, the combination of a carriage, a platen carried thereby, line-spacing mechanism, a handle for moving said carriage from left to right, and means independent of said handle for automatically actuating said line-spacing mechanism at the initial portion of the return movement of the carriage irrespective of the position of the carriage.

35. In a type-writing machine, the combination of a carriage, a platen carried thereby, carriage-feed mechanism, line-spacing mechanism, a handle carried by the frame of the machine and connected to said carriage-feed mechanism for moving the carriage from left to right, and means independent of said handle for automatically actuating said line-spacing mechanism at any point in the travel thereof.

36. In a type-writing machine, the combination of a carriage, escapement devices for said carriage, gear connections between the escapement devices and carriage, a handle connected to said gear connections and adapted to move the carriage through the gear connections from left to right, a platen carried by the carriage, line-spacing devices for the platen, and means for automatically actuating said line-spacing devices by a movement of the carriage.

37. In a type-writing machine, the combination of a carriage, escapement devices for said carriage, gear connections between the escapement devices and carriage, a handle connected to said gear connections and adapted to move the carriage through the gear connections from left to right, a platen carried by the carriage, line-spacing devices for the platen, means for automatically actuating said line-spacing devices, carriage-releasing mechanism, and means controlled by said carriage-releasing mechanism for rendering the line-spacing devices ineffective to turn the platen.

38. In a type-writing machine, the combination of a platen, a line-spacing wheel therefor, a movable carrier, a line-spacing pawl carried by said carrier and movable relatively thereto, means for actuating said pawl, and a friction device coöperating with said carrier and a relatively fixed part, whereby the pawl is first turned independently of the carrier to engage the line-spacing wheel.

39. In a type-writing machine, the combination of a platen, a line-spacing wheel therefor, a movable carrier, a line-spacing pawl carried by said carrier and movable relatively thereto, a friction device coöperating with said carrier and a relatively fixed part and automatically-actuated means connected to said pawl for moving the pawl and carrier, whereby the pawl will first be moved into or out of engagement with the ratchet-wheel and the pawl and carrier will then be moved together.

40. In a type-writing machine, the combination of a platen, a line-spacing wheel therefor, a movable carrier, a line-spacing pawl pivoted to said carrier, a stop which limits the movement of the pawl relative to its carrier, a friction-spring coöperating with said carrier and a relatively fixed part, whereby the pawl will first be moved into or out of engagement with the ratchet-wheel and the pawl and carrier will then be moved together.

41. In a type-writing machine, the combination of a carriage, a platen, a line-spacing ratchet-wheel therefor, a movable carrier, a line-spacing pawl carried by said carrier and movable for a limited distance relative thereto, a friction device coöperating with the carrier and a relatively fixed part, and a lever which is connected to the line-spacing pawl and is automatically moved in opposite directions by the travel of the carriage, whereby the line-spacing pawl will first be thrown into or out of engagement with the line-spacing ratchet-wheel and will then be moved with its carrier to effect a line-spacing movement of the ratchet-wheel or to restore the pawl to its initial position.

42. In a type-writing machine, the combination of a carriage, a platen, a line-spacing ratchet-wheel therefor, a movable carrier, a line-spacing pawl carried by said carrier and movable for a limited distance relative thereto, a friction device coöperating with the carrier and a relatively fixed part, a lever which is connected to the line-spacing pawl, a controlling-pawl carried by said lever, and a rack with which the controlling-pawl coöperates throughout the travel of the carriage.

43. In a type-writing machine, the combination of a revolving platen, that is shiftable to change the case position thereof, and constantly-intermeshing toothed gearing coöperating with the platen for affording a line-spacing thereof.

44. In a type-writing machine, the combination of a carriage, a platen that is shiftable relatively to said carriage, a line-spacing gear on the carriage, and intermediate gearing between said line-spacing gear and the platen.

45. In a type-writing machine, the combination of a platen, links on which said platen is adapted to swing, line-spacing devices, and means carried directly by one of said links for transmitting movement from said line-spacing devices to said platen.

46. In a type-writing machine, the combination of a platen, links on which said platen is adapted to swing, line-spacing devices, and a transmitting toothed gear carried by one of said links and transmitting line-spacing movement from the line-spacing devices to the platen.

47. In a type-writing machine, the combination of a platen, links on which said platen is adapted to swing, a gear that turns on the center on which said links swing, and geared connection between said gear and the platen to afford a line-spacing of the platen irrespective of the position to which the platen may be swung.

48. In a type-writing machine, the combination of a platen, links on which said platen is adapted to swing, a driving-gear that turns on the center on which said links swing, a driven gear that is connected to the platen, and a transmitting-gear on one of said links and intermediate of the driving and driven gears and meshing therewith.

49. In a type-writing machine, the combination of a platen, links on which said platen is adapted to swing, a driving-gear that turns on the center on which said links swing, a driven gear that is connected to the platen, a transmitting-gear on one of said links and intermediate of the driving and driven gears and meshing therewith, a line-spacing ratchet-wheel operatively connected to said driving-gar, and a line-spacing device coöperating with said ratchet-wheel.

50. In a type-writing machine, the combination of a platen, links on which said platen is adapted to swing, a driving-gear that turns on the center on which said links swing, a driven gear that is connected to the platen, a transmitting-gear on one of said links and intermediate of the driving and driven gears and meshing therewith, a line-spacing ratchet-wheel operatively connected to said driving-gear, a line-spacing device coöperating with said ratchet-wheel, and means for automatically actuating said line-spacing device when the platen is moved to the right.

51. In a type-writing machine, the combination of a platen that is shiftable transversely of its length, a gear that turns on the center around which the platen is shifted, intermediate operative connections between said gear and the platen, and line-spacing devices for actuating said gear.

52. In a type-writing machine, the combination of a revoluble platen, that is shiftable transversely of its length, a pinion that revolves with said platen, a gear that turns on the center around which the platen is shifted, an intermediate pinion between said gear and the first-mentioned pinion, and line-spacing devices for actuating said gear.

53. In a type-writing machine, the combination of a carriage, a platen, automatically-actuated line-spacing mechanism which is carried in part by the carriage and in part by the frame of the machine and is operable to automatically effect a line-spacing movemennt at the initial portion of the return movement of the carriage irrespective of the position of the carriage, and adjustable means for affording different extents of line-space movement to said line-spacing mechanism, whereby any one of several characters of line-spacing may be effected in accordance with the setting of said adjustable means.

54. The combination of a support, a hand-adjusted sliding plate 129 which is adapted to slide and be guided by said support, a spring-pressed ball interposed between said sliding plate and its support and adapted to retain the plate in any one of several positions to which it may be moved, and depressions or indentures in which the ball is adapted to be seated.

55. The combination of a platen, links on which said platen is adapted to swing, gears on one of said links and a protecting-housing on the gear-carrying link which housing surrounds said gears.

56. In a type-writing machine, the combination of a carriage, a platen, and line-spacing mechanism comprising a member carried by the carriage and a member carried by the frame of the machine and which members automatically coöperate at the initial part of the return movement of the carriage and irrespective of the position of the carriage, to automatically effect a line-spacing movement of the platen.

57. In a type-writing machine, the combination of a carriage, a platen, means for returning the carriage to the right, and means independent of the returning means and effective at any position of the carriage for automatically effecting a line-spacing movement of the platen during the return movement of the carriage.

58. In a type-writing machine, the combination of a carriage, a platen, and a line-space mechanism operated by the return movement of the carriage and effective at any position of the carriage, said line-space mechanism comprising a part mounted on the carriage and a coöperating part mounted on the main frame.

849,830. BACKING FOR MATRICES. FRANK H. BROWN and JOHN E. HANRAHAN, Baltimore, and GEORGE A. BOYDEN, Mount Washington, Md., assignors to National Compositype Company, a Corporation of Delaware. Filed May 17, 1905. Renewed Feb. 8, 1907. Serial No. 356,339.

Claim.—1. The combination of a matrix-plate having a metal filling containing an intaglio type character exposed at the front side of the plate, and a backing-plate having side flanges and in contact with said filling at its back and held to the matrix-plate solely by the frictional contact of the side flanges.

2. The combination of a matrix-plate having a metal filling containing a type character, and a plate having a recess for the reception of the matrix-plate and forming a backing for said filling during the casting operation.

849,831. ROLL-CARRYING MECHANISM FOR AUTOMATIC MUSICAL INSTRUMENTS OR PLAYERS. MELVILLE CLARK, Chicago, Ill. Filed Feb. 16, 1906. Serial No. 301,363.

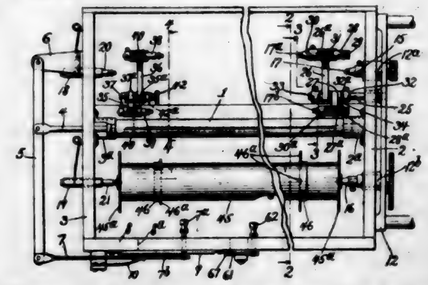

Claim.—1. An automatic playing mechanism for musical instruments comprising, in combination, a take-up roll, driving and centering spindles for the same spaced for a longer music-roll and supports for such spindles; swing-brackets and driving and centering spindles carried thereby spaced for a shorter roll, the driving-spindle on the swing-bracket being adapted to be engaged and driven by the first-mentioned driving-spindle; means for stopping and securing the swing-bracket carrying the centering-spindle with said spindle alined with the first-mentioned driving-spindle.

2. An automatic playing mechanism for musical instruments comprising, in combination, a take-up roll, driving and centering spindles spaced for a longer music-roll; two pairs of swing-brackets, the brackets of each pair having respectively a driving and a centering spindle, said spindles of the two pairs being spaced for shorter rolls of different lengths, the driving-spindles on said swing-brackets being both adapted to be engaged and driven by the first-mentioned driving-spindle, the corresponding spindles of the two pairs being mounted for swinging from opposite directions into alinement with the longer-spaced spindles.

3. An automatic playing mechanism for musical instruments comprising, in combination, a take-up roll, driving and centering spindles spaced for a longer music-roll and supports for such spindles; two pairs of swing-brackets, one bracket of each pair having a driving-spindle and the other a centering-spindle, said spindles of the two pairs being spaced for different-length shorter rolls, the driving-spindles on said swing-brackets being adapted to be engaged and driven by the first-mentioned driving-spindle,

and a fulcrum or pivot-post upon which both said last-mentioned swing-brackets are mounted.

4. In an automatic playing mechanism for musical instruments, in combination, a take-up roll, driving and centering spindles spaced for a longer music-roll and supports for said spindles; posts projecting inwardly from said supports parallel with the spindle-axis; two pairs of swing-brackets, the brackets of each pair having respectively a driving and a centering spindle, said spindles of the two pairs being spaced for different-length shorter rolls, the driving-spindles on said swing-brackets being adapted to be engaged and driven by the first-mentioned driving-spindles, and both said brackets carrying driving-spindles being mounted upon the same post, the two brackets carrying the centering-spindles being mounted on the other post, said posts being below or back of the first-mentioned spindles, two brackets on each post being mounted for swinging from opposite directions into alinement with the first-mentioned spindles and at their remote positions having the music-roll embraced in the angle between them.

5. An automatic playing mechanism for musical instruments comprising, in combination, a take-up roll, driving and centering spindles spaced for a longer music-roll and supports for said spindles; posts projecting from said supports below or back of said spindles; two pairs of swing-brackets, the brackets of each pair having respectively driving and centering spindles, the two driving-spindle brackets being mounted on one post and the two centering-spindle brackets on the other post; stop-collars on the post having the driving-spindle brackets, said brackets and collars having coöperating stop-shoulders which limit the swing of the brackets in opposite directions away from the position at which the driving-spindles on said brackets are alined with the first-mentioned driving-spindles.

6. An automatic playing mechanism for musical instruments comprising, in combination, a primary pneumatic chamber having primary pneumatic ducts issuing therefrom; two valve-slides having ducts adapted to register with a limited number of the primary pneumatic ducts at the opposite end portions of the chamber; a second pair of valve-slides having ducts adapted to register with a limited number of ducts of the pneumatic chamber next inward from said ducts at the opposite end portions; a track-board and flexible tubes connecting said valve-slides with corresponding ducts of the tracker-board; connections for moving the two first-mentioned slides into and out of registering position, and other connections for moving the second pair of valve-slides into and out of registering position of their respective ducts; all in combination with the take-up roll, music-roll supports spaced for longer music-rolls, and means for interposing music-roll supports spaced for shorter rolls.

7. An automatic playing mechanism for musical instruments comprising, in combination with a tracker-board, a take-up roll; driving and centering spindles for the music-roll adapted for the full range of the tracker-board; means for carrying driving and centering spindles adapted to interpose said spindles between the first-mentioned driving and centering spindles for carrying shorter rolls; a primary pneumatic chamber and flexible ducts leading therefrom to the corresponding ducts of the tracker-board, and corresponding valve-slides at the two end portions of the system interposed in said flexible connections for closing at will the air-passages from the primary pneumatics to the tracker-board, said corresponding slides being connected for simultaneous movement into and out of duct-closing position.

849,832. SAFETY ROPE-CLAMP. JOHN COLLINS, San Francisco, Cal. Filed June 13, 1906. Serial No. 321,497.

Claim.—1. A rope-clamp having in combination a socket-piece whose inner wall diverges substantially from one end to the other, a diaphragm within said piece and dividing the interior of said piece into two channels, a thimble disposed near the smaller end of the socket-piece, said diaphragm extending from the larger inner end of the socket-piece to a point short of the smaller outer end, and a rope passing around said thimble and having its two parts entering the smaller outer end of the socket-piece, said parts of the rope crossing each other in the smaller end of said socket-piece above the outer end of the diaphragm whereby the strands of the rope interlock at their crossing-point.

2. The combination with a socket-piece having an internal diaphragm which divides its interior into two channels, the inner wall of the socket-piece diverging from substantially one end of the socket-piece to the other, said diaphragm having its outer end terminating within the socket-piece, a thimble disposed contiguous to the outer end of the socket-piece, and being made tapering in shape toward the smaller end of the socket-piece, and a rope passing around the thimble and having its two parts entering the smaller or outer end of the socket-piece and crossing each other therein above the outer end of the diaphragm whereby the rope is fitted closely against the narrow end of the thimble and the strands of the rope are interlocked within the socket-piece, one of said ends of the rope being expanded and wedged in its channel in the socket-piece substantially as described.

849,833. UMBRELLA. LOUIS COWEN, Philadelphia, Pa. Filed Oct. 26, 1905. Serial No. 284,485.

Claim.—1. In an umbrella, the combination of a handle, provided with a tube having a slot near its free end, and of a stick or tube having a spring articulating in a slot and adapted to engage simultaneously the said two slots and a runner when they aline for the purpose specified.

2. In an umbrella the combination of a detachable handle having a tube, a guide-pin, and a spring-slot, of a tube or stick carrying a spring articulating in a slot, said spring operating with the runner and affording a means for detachably locking said handle to said stick substantially as described.

3. In an umbrella the combination of a detachable handle provided with a tube having a slot near its free end, of a stick or tube having a spring articulating in a slot and adapted to engage simultaneously the said two slots and a runner when they aline, and of a removable tip and means for removably fastening said tip in position in the end of an umbrella-stick, substantially as described.

849,834. TYPE-WRITING MACHINE. LOUIS P. DISS, Ilion, N. Y., assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y., a Corporation of New York. Filed Mar. 7, 1902. Serial No. 97,062.

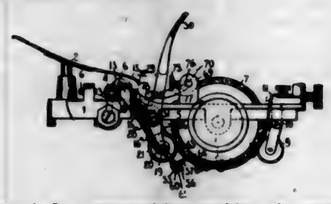

Claim.—1. In a type-writing machine, the combination with a rotary platen, of a side-edge paper-gage, that part of the gage by which the paper is guided being movable transversely to the axis of the platen to an inoperative position.

2. In a type-writing machine, the combination with a rotary platen, of a side-edge paper-gage, that part of the gage by which the paper is guided being movable transversely to the axis of the platen to an inoperative position, and means for holding the gage in either an operative or an inoperative position.

3. In a type-writing machine, the combination with a rotary platen, of a side-gage paper-gage, that part of the gage by which the paper is guided being adjustable at different distances from the proximate end of the platen-frame and being movable, while it is adjusted at a particular distance from said end of the platen-frame, from and back to its operative position.

4. In a type-writing machine, the combination of a platen, a paper-gage which is adjustable in the direction of the length and intermediate the ends of said platen and against which a side edge of the paper is adapted to abut, and means which afford a movement of said gage at right angles to the length of the platen and into and out of the operative position, the gage being over the platen and extending toward the front of the machine when it is in the inoperative position and extending toward the rear of the machine when it is in the operative position, whereby when the gage is thrown out of the operative position, paper of a width equal to or greater than the length of the platen may be employed.

5. In a type-writing machine, the combination of a platen, a platen-frame, a paper-gage which is pivoted to the platen-frame and is adjustable in the direction of the length and intermediate the ends of said platen and against which a side edge of the paper is adapted to abut, the pivot of said gage affording a movement of said gage at right angles to the length of the platen into and out of the operative position, the gage being over the platen and extending toward the front of the machine when it is in the inoperative position and extending toward the rear of the machine when it is in the operative position, whereby when the gage is thrown out of the operative position it no longer constitutes an abutment for a side edge of the paper and paper of a width equal to or greater than the length of the platen may be employed thereon, and spring-pressed means for retaining said gage in either the operative or inoperative position.

6. In a type-writing machine, the combination of a platen, a platen-frame, and a paper-gage secured to the left-hand end of said platen-frame, said gage comprising a pivoted rod or bar which is longitudinally adjustable in the direction of the length of the platen and a projection which extends from said rod at substantially right angles to its length and which is adapted to constitute a gage for one side edge of the paper, and spring-pressed means for retaining the gage in the operative or inoperative position when the rod is turned on its pivotal center.

7. In a type-writing machine, the combination of a platen, a platen-frame, spring-bearing arms carried by said frame, a pivoted block carried by said bearing-arms, one of said parts being provided with a pin and the other with a slot to maintain the block in either one of two positions, to which it may be moved, and a paper-gage which comprises a rod that extends longitudinally of the platen, and an arm projecting from said rod at substantially right angles to the length thereof, so as to constitute an abutment for one side edge of the paper, said rod being seated in said block and said bearing-arms and adjustable longitudinally therein, and adapted to turn in the bearing-arms and thus permit a movement of the angular arm into and out of operative position.

8. In a type-writing machine, the combination of a platen, a paper-feed roller which is movable into and out of contact with the platen, a paper-stop which is movable into and out of contact with the platen, and means for enabling a movement of said stop into contact with the platen before the said feed-roller is moved out of contact therewith.

9. In a type-writing machine, the combination of a platen, a paper-feed roller which is movable into and out of contact with the platen, a paper-stop which is movable into and out of contact with the platen, and means for enabling the feed-roller to contact with the platen or the paper thereon before the stop is moved out of contact therewith.

10. In a type-writing machine, the combination of a cylindrical platen mounted on a horizontal axis, a stop-bar extending lengthwise of the platen and movable toward and from the axis thereof, and a series of paper-stops mounted on the bar, said stops being separately movable in directions transverse to that of the movement of the bar to adjust them in alinement and render their alinement parallel to the axis of the platen.

11. In a type-writing machine, the combination of a platen, a stop-bar, independently-spring-pressed paper-stops carried by said bar, and independent means for adjusting said stops on the bar.

12. In a type-writing machine, the combination of a rotary platen mounted on a horizontal axis, a stop-bar extending from end to end of the platen and movable toward and from the cylindrical surface of the platen, and a series of paper-stops mounted on said bar, said paper-stops being separately movable transversely of the bar to adjust them in alinement and render their alinement parallel to the axis of the platen.

13. In a type-writing machine, the combination of a cylindrical platen mounted on a horizontal axis, a stop-bar extending lengthwise of the platen and movable toward and from the cylindrical surface of the platen, a series of adjustable holding devices on the bar, and a series of paper-stops mounted in said holding devices.

14. In a type-writing machine, the combination of a platen, a movable stop-bar, stop-guides which are carried by said bar, means for adjusting said guides relatively to one another and in a direction transverse to the length of the bar, and spring-pressed paper-stops which are movable in said guides.

15. In a type-writing machine, the combination of a platen, a movable stop-bar which extends substantially throughout the length of the platen and is perforated at intervals throughout its length, stop-guides which extend through said perforations in the stop-bar, means for adjusting said stop-guides relatively to one another and in a direction transverse to the length of the bar, a headed paper-stop movable in each of said guides, and a spring which bears upon the head of each of said stops and normally maintains it in the projected position.

16. In a type-writing machine, the combination of a platen, a paper-feed roller which coöperates therewith, a paper-stop which is out of contact with the platen when the paper-feed roller is in contact therewith, hand-operated means for moving said paper-feed roller out of contact with the platen, and means controlled by such movement for moving the paper-stop into contact with the platen in advance of the movement of the paper-feed roller away from the platen.

17. In a type-writing machine, the combination of a platen, a movable spring-pressed carrier, independently-spring-pressed paper-stops carried by said carrier and means which afford a movement of the carrier to move the spring-pressed pins into and out of contact with the platen.

18. In a type-writing machine, the combination of a platen, paper-feeding devices which coöperate with said platen, means for moving said paper-feeding devices toward and away from the platen, a movable carrier, spring-pressed paper-stops carried by said carrier, and means which are controlled by the moving means to afford a movement of the carrier, and thus cause the spring-pressed pins to be moved toward and away from the platen.

19. In a type-writing machine, the combination of a platen, a paper-feeding device which coöperates with said platen, hand-operated spring-restored means for moving said paper-feeding device into and out of contact with said platen, a movable spring-pressed carrier, paper-stops carried by said carrier and spring-pressed independently thereof, and means which are controlled by said moving means for retaining the carrier against the tension of its spring and the paper-stops away from the platen when said moving means are positioned to permit the paper-feeding device to contact with the platen, and for permitting said stops to be forced into contact with the platen when the moving means are so positioned that the paper-feeding device is moved away from the platen.

20. In a type-writing machine, the combination of a platen, a paper-feeding device which coöperates therewith, a paper-stop, means for moving one of said parts toward or away from the platen, and means for affording a movement of one of said parts by and in an opposite direction to that of the other and for permitting the paper-stop to have a movement toward the platen in advance of the movement of the paper-feeding device away from the platen.

21. In a type-writing machine, the combination of a platen, paper-feed rollers which coöperate therewith, means for moving said feed-rollers into and out of contact with the platen, a movable bar, spring-pressed paper-stops carried by and movable independently of said bar, a spring for forcing the bar toward the platen to bring the paper-stops into contact therewith, and means controlled by said moving means for rendering the spring of the bar effective to move it toward the platen and the stops thereon into contact with the platen.

22. In a type-writing machine, the combination of a platen, paper-feed rollers which coöperate therewith, means for moving said feed-rollers into and out of contact with the platen, a bar which has a limited movement independently of said movements of the feed-rollers, paper-stops carried by said bar, a spring for forcing the bar toward the platen to bring the paper-stops into contact therewith, and means controlled by said moving means for rendering the spring of the bar effective to move it toward the platen and the stops thereon into contact with the platen in advance of the movement of the feed-rollers away from the platen.

23. In a type-writing machine, the combination of a platen, paper-feed rollers which coöperate therewith, hand-operated spring-restored means for moving said feed-rollers into and out of contact with the platen, a bar which has a limited movement toward and away from the platen independently of said movements of the feed-rollers, spring-pressed paper-stops carried by and movable independently of said bar, a spring for forcing the bar toward the platen to bring the paper-stops into contact therewith, and means controlled by said moving means for rendering the spring of the bar effective to move it toward the platen and the stops thereon into contact with the platen in advance of the movement of the feed-rollers away from the platen.

24. In a type-writing machine, the combination of a platen, spring-pressed paper-feed rollers, a hand-operated rock-shaft with means thereon for moving the feed-rollers out of contact with the platen, a paper-stop, a spring which tends to force said stop toward the platen, and means carried by the rock-shaft for maintaining the paper-stop away from the platen when feed-rollers are in contact therewith.

25. In a type-writing machine, the combination of a platen, spring-pressed paper-feed rollers, pivoted arms on which said rollers are carried, a hand-operated rock-shaft with means thereon for moving the arms to force the feed-rollers out of contact with the platen, a paper-stop, a spring which tends to force said stop into contact with the platen, and means carried by the rock-shaft for maintaining the paper-stop against the tension of its spring and away from the platen when feed-rollers are in contact therewith.

26. In a type-writing machine, the combination of a platen, spring-pressed paper-feed rollers, a hand-operated rock-shaft with means thereon for moving the feed-rollers out of contact with the platen, a paper-stop, a spring which tends to force said stop toward the platen, and means carried by the rock-shaft for maintaining the paper-stop away from the platen when feed-rollers are in contact therewith and for permitting the stop to move toward the platen in advance of the movement of the feed-rollers away therefrom.

27. In a type-writing machine, the combination of a platen, spring-pressed paper-feed rollers, a hand-operated rock-shaft with means thereon for moving the feed-rollers out of contact with the platen, a paper-stop, a spring which tends to force said stop toward the platen, means carried by the rock-shaft for maintaining the paper-stop away from the platen when feed-rollers are in contact therewith, and adjustable means for determining the extent to which the paper-stop is maintained away from the platen.

28. In a type-writing machine, the combination of a platen, spring-pressed paper-feed rollers, a hand-operated rock-shaft with means thereon for moving the feed-rollers against the tension of their spring and out of contact with the platen, a movable bar, spring-pressed paper-stops carried thereby, a spring which tends to force the bar toward the platen and the stops on the bar into contact with the platen, and means carried by the rock-shaft for maintaining the bar away from and the stops out of contact with the platen when the feed-rollers are in contact therewith.

29. In a type-writing machine, the combination of a platen, an apertured paper-apron, spring-pressed paper-feed rollers, which are adapted to project through apertures in the apron and into contact with the platen, a hand-operated rock-shaft with means thereon for moving the feed-rollers against the tension of their spring and out of contact with the platen, a movable bar, spring-pressed paper-stops carried thereby, and which are adapted to project through apertures in the apron and into contact with the platen, a spring which tends to force the bar toward the platen and the stops on the bar into contact with the platen, and means carried by the rock-shaft for maintaining the bar away from and the stops out of contact with the platen when the feed-rollers are in contact therewith.

30. In a type-writing machine, the combination of a platen, paper-feed rollers which coöperate therewith, a spring which exerts a tension upon said rollers to maintain them in contact with the platen, a rock-shaft, hand-operated means for turning said rock-shaft, means on the shaft for moving the feed-rollers against the tension of their spring and out of contact with the platen, a swinging bar which extends longitudinally of and substantially throughout the length of the platen, paper-stops which are carried by the bar, a spring which tends to force the bar toward and the stops thereon into contact with the platen, and means carried by the rock-shaft for maintaining the bar away from and stops out of contact with the platen when the feed-rollers are in contact therewith.

31. In a type-writing machine, the combination of a platen, paper-feed rollers which coöperate therewith, a spring which exerts a tension upon said rollers to maintain them in contact with the platen, a rock-shaft, hand-operated means for turning said rock-shaft, means on the shaft for moving the feed-rollers against the tension of their spring and out of contact with the platen, a swinging bar which extends longitudinally of and substantially throughout the length of the platen, paper-stops which are carried by the bar, a spring which tends to force the bar toward and the stops thereon into contact with the platen, and means carried by the rock-shaft for maintaining the bar away from and the stops out of contact with the platen when the feed-rollers are in contact therewith and for permitting the bar to move toward and the stops to contact with the platen in advance of the movement of the feed-rollers away from the platen.

32. In a type-writing machine, the combination of a platen, an apertured paper-apron, paper-feed rollers which are adapted to project through apertures in the apron and into contact with the platen, a spring which exerts a tension upon said rollers to maintain them in contact with the platen, a rock-shaft, hand-operated means for turning said rock-shaft, means on the shaft for moving the feed-rollers against the tension of their spring and out of contact with the platen, a swinging bar which extends longitudinally of and substantially throughout the length of the platen, paper-stops which are carried by the bar and which are adapted to project through apertures in the apron and into contact with the platen, a spring which tends to force the bar toward and the stops thereon into contact with the platen, and means carried by the rock-shaft for maintaining the bar away from and the stops out of contact with the platen when the feed-rollers are in contact therewith.

33. In a type-writing machine, the combination of a platen, a fixed apertured paper-apron, paper-feed rollers which are carried by pivoted arms and are adapted to project through apertures in the apron and into contact with the platen, a spring which exerts a tension upon said rollers to maintain them in contact with the platen, a rock-shaft, hand-operated means for turning said rock-shaft, means on the shaft for moving the feed-rollers against the tension of their spring and out of contact with the platen, a swinging bar which extends longitudinally of and substantially throughout the length of the platen, independently-movable spring-pressed paper-stops which are carried by the bar and which are adapted to project through apertures in the apron and into contact with the platen, a spring which tends to force the bar toward and the stops thereon into contact with the platen, and means carried by the rock-shaft for maintaining the bar away from and the stops out of contact with the platen when the feed-rollers are in contact therewith and for permitting the bar to move toward and the stops to contact with the platen in advance of the movement of the feed-rollers away from the platen.

34. In a type-writing machine, the combination with the cylinder or roller-platen of the machine, of gage or stop pins, each pin having a separate endwise-bearing spring giving the pin a cushion action in engaging the cylinder or roller-platen.

35. In a type-writing machine, the combination with a rotary platen, of a side-edge gage mounted on an axis parallel to that of the platen, the gage being angularly movable on its axis to an inoperative position.

36. In a type-writing machine, the combination with a rotary platen, of a side-edge paper-gage mounted on an axis parallel to that of the platen, the gage being angularly movable on its axis to an inoperative position, and means for holding the gage in either an operative or inoperative position.

37. In a type-writing machine, the combination of a side-edge paper-gage mounted on an axis parallel to that of the platen, said gage being angularly movable to an inoperative position and being adjustable lengthwise of the platen.

849,835. TYPE-WRITING MACHINE. LOUIS P. DISS, Ilion, N. Y., assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y., a Corporation of New York. Filed Sept. 18, 1903. Serial No. 173,698.

Claim.—1. The combination with a platen and a platen-frame movable to move said platen bodily away from printing position, of a key-controlled device separate from said platen-frame and coöperating with said platen-frame to hold said platen away from printing position.

2. The combination of a platen movable to a non-printing position, and means normally operative to prevent such motion but operable to allow such motion and to retain said platen in such non-printing position.

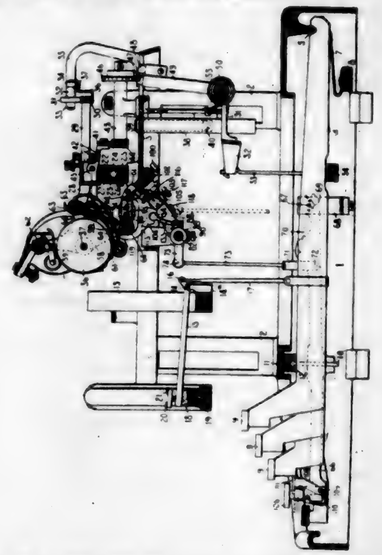

3. The combination of a platen mounted to have a case-shift motion; and means normally operative to limit such motion but releasable at will to permit a further motion of the platen to a non-printing position.

4. The combination of a platen having a case-shift motion and also a motion to a non-printing position, and a key carried by the frame of the machine and connections controlling such motion of said platen to non-printing position.

5. The combination of a platen having a case-shift motion and also movable to a non-printing position; means for holding said platen in such non-printing position; and a key for imparting said case-shift motion to said platen and also operable to release said holding means.

6. The combination with a platen, of a case-shift device therefor, comprising a case-shift key and an overthrow-preventer; and a special key for controlling said overthrow-preventer to permit said carriage to move to a non-printing position.

7. The combination with a platen having a normal position, a shifted printing position and a non-printing position, of key-controlled means for holding said platen in either its shifted printing position or its non-printing position.

8. The combination with a platen-frame, of a case-shift device having a limited motion; and key-controlled means for preventing said platen-frame from becoming disengaged from said case-shift device.

9. The combination with a platen mounted to have a case-shift motion and a motion to a non-printing position; of means for imparting said case-shift motion to said platen, and means connected to said case-shift means for holding said platen in said non-printing position.

10. The combination of a platen mounted in a pivoted frame that is adapted to rock on its pivot to impart to said platen a case-shift motion and also a motion to a non-printing position, and a key carried by the frame of the machine and connections controlling such motion of said platen to non-printing position.

11. The combination with a platen-frame, of a case-shift device, a key for operating said case-shift device, a detent connected to said case-shift device and coöperating with said platen-frame, and a special key controlling said detent.

12. The combination with a platen-frame, of a case-shift device comprising a key-operated rock-frame; a detent pivoted to said rock-frame, and key-operated means for controlling said detent.

13. The combination with a platen-frame, of a detent adapted to engage a portion of said frame on one side thereof, to prevent motion of said frame in one direction or to engage said frame portion on the other side thereof to prevent motion of said frame in the other direction; and means for operating said detent.

14. The combination with a platen of a case-shift mechanism comprising a pivoted key-lever; a finger-key connected to said lever by a piece pivoted to said lever; and a fixed part; the construction being such that said pivoted piece may be turned on its pivotal connection with the key-lever and pushed under said fixed part if desired, in order to lock the key-lever in depressed position.

15. A platen-frame comprising a bar; a case-shift device comprising means engaging said bar on one side to impart a case-shift motion thereto; and an overthrow-preventer coöperating with said bar on the opposite side; and means for moving said overthrow-preventer to inoperative position.

16. A platen; types adapted to strike said platen on its front vertical face; a frame supporting said platen and pivoted to the rear of said platen; and having a bar below the pivotal axis of said frame; a case-shift device comprising a movable part and an antifriction-roller mounted in said movable part and engaging said bar and supporting said frame; and an overthrow-preventer pivoted to said movable part.

17. In a front-strike type-writing machine, a platen; types adapted to strike the front face of said platen; a carriage-truck; a platen-frame pivoted directly to said truck and having its pivotal axis to the rear of the printing-point; said platen-frame comprising a rail extending lengthwise of the platen below said pivotal axis; in combination with a case-shift device engaging said rail, and controlling the oscillation of said frame on its pivots.

18. In a front-strike type-writing machine, a platen; types adapted to strike the front face of said platen; a carriage-truck; a platen-frame pivoted directly to said truck and having its pivotal axis to the rear of the printing-point; said platen-frame comprising a rail extending lengthwise of the platen below said pivotal axis; in combination with a case-shift device comprising an antifriction member engaging said rail, and means for moving said antifriction member to rock said platen-frame.

19. In a front-strike type-writing machine, a platen; types adapted to strike the front face of said platen; a pivoted platen-frame having its pivotal axis to the rear of the printing-point; said platen-frame comprising a rail extending lengthwise thereof below said pivotal axis; in combination with a platen-shifting device comprising an antifriction-roller journaled in a movable part and engaging said rail; an overthrow-preventer coöperating with said rail and connected to said movable part; and a case-shift key for controlling said movable part.

20. In a type-writing machine having a movable carriage, a platen-frame pivoted to the truck of the carriage, and a case-shift device engaging and supporting said platen-frame near the center of the machine and controlling the shifting movements thereof and affording a free travel of the carriage.

21. In a type-writing machine having a movable carriage, a platen; types adapted to strike against the front face of said platen; a platen-frame pivoted to the truck of the carriage; and a case-shift device engaging and supporting said platen-frame approximately in the transverse vertical plane of the printing-point.

22. In a type-writing machine, the combination with a pivotally-mounted platen-frame having a flat-faced rail; with a case-shift device comprising an oscillating part carrying a cylindrical antifriction-roller, engaging said flat-faced rail; one of said engaging members being pivotally supported, so that the roller may always engage the flat face of the rail.

23. The combination of a platen-frame having a flat-faced longitudinal bar, of a shift device for said platen-frame comprising a roller mounted on a pivoted frame and engaging said flat-faced bar.

24. In a type-writing machine, the combination of a platen-carrier, a guide-rail, a pivoted finger adapted to engage one side of the rail when in its normal position and to engage another side to support it when in an elevated position.

25. In a type-writing machine, the combination of a platen-carrier, a guide-rail secured to the carrier, a pivoted finger adapted to engage the lower side of the rail to support it when in an elevated position and be released to let the carrier drop into its normal position, and means for effecting a disengagement between the pivoted finger and rail.

26. In a type-writing machine, the combination of a truck, a carrier for the platen pivoted to the truck at each end, a guide-rail secured to the carrier, a rocking arm, a roller carried by the rocking arm and supporting the guide-rail, a hooked finger pivoted to the rocking arm and engaging the rail on the side opposite the roller, and key-actuated means for operating the rocking arm.

27. In a type-writing machine, the combination of a platen-carrier, a guide-rail thereon, a rocking arm, means for actuating same, a roller carried by the rocking arm, a hooked finger pivoted to the rocking arm and having a slot, a spring exerting a pressure on the finger, and a stud on the rocking arm playing in the slot of the finger to limit its movement.

28. In a type-writing machine, the combination of a platen-carrier, a rocking arm adapted to shift the platen-carrier, means for operating said arm, a hooked finger connected to the rocking arm and adapted to hold the carrier in an elevated position and operate independently of the rocking arm, and means for operating the finger.

29. In a type-writing machine, the combination of a platen-carrier, a guide-rail, a rocking arm, an antifriction-roller carried by the rocking arm and supporting and shifting the guide-rail, key-actuated means for operating the rocking arm, a hooked finger pivoted to the rocking arm and adapted to secure the rail against lateral movement on the side opposite the roller, and a key-actuated lever adapted to throw the finger on its pivot and release the guide-rail.

30. In a type-writing machine, the combination of a truck, a platen, a frame pivoted to the truck and supporting the platen, a guide-rail forming a part of the frame and having a flattened side, a roller operating on the flattened side of the rail and adapted to change the angle of its axis as the platen-frame is shifted, a rocking arm to carry the roller, a shaft carrying the rocking arm and means for actuating said shaft.

31. In a front-strike type-writing machine, a platen; types arranged to strike the front face of said platen; a carriage-truck; a platen-frame pivoted directly to said truck and having its pivotal axis to the rear of the printing-point, said platen-frame comprising a rail extending lengthwise of the platen below said pivotal axis; in combination with a case-shift device including a rock-shaft parallel to said rail and having an arm coöperating with said rail and controlling the oscillation of said frame on its pivots.

32. In a front-strike type-writing machine, a platen; types arranged to strike the front face of said platen; a carriage-truck; a platen-frame pivoted directly to said truck and having its pivotal axis to the rear of the printing-point, said platen-frame comprising a rail extending lengthwise of the platen below said pivotal axis; in combination with a case-shift device including a rock-shaft parallel to said rail and having an arm, an antifriction member mounted on said arm and engaging said rail, and means for oscillating said rock-shaft to rock said platen-frame.

33. The combination with rearwardly-striking types, of a platen against the front face of which said types are arranged to strike; a platen-frame; a carriage-truck upon which said platen-frame is pivotally mounted; a traverse-rail arranged back of said platen and supporting said truck; means back of said traverse-rail for preventing said truck from tilting about said rail; and a case-shift device for rocking said platen-frame about its pivot, and moving said platen up and down.

34. The combination with a carriage-truck and means for supporting and guiding the same, of an overhanging platen-frame carried by said carriage-truck forwardly of all of the means for supporting and guiding said truck, a platen in said platen-frame, types adapted to strike the front face of said platen, and means for imparting an up-and-down case-shift motion to said platen.

35. The combination with a carriage-truck and with means for supporting and guiding the same, of a platen-frame pivotally mounted on said carriage-truck forwardly of said supporting and guiding means and having a longitudinal bar below its pivotal support; a platen in said platen-frame; types arranged to strike the front face of said platen; a rock-shaft below said longitudinal bar, an arm on said rock-shaft engaging said longitudinal bar; and means for rocking said rock-shaft to impart a case-shift motion to said platen.

36. The combination with a carriage-truck and means for supporting and guiding the same, of a platen-frame pivotally mounted on said carriage-truck forwardly of said guiding and supporting means and having a longitudinal bar below its pivotal support; a rock-shaft having an arm engaging the rear face of said bar; a case-shift key for oscillating said rock-shaft, and adjustable means for limiting the motion of said arm.

37. A platen-frame mounted to have a case-shift motion and having a longitudinal rail, a crank-arm controlling the motion of said rail in both directions, means for oscillating said crank-arm, and adjustable means for limiting the motion of said crank-arm in both directions.

38. In a type-writing machine, the combination of a platen; types arranged to strike the front face of said platen; a pivoted platen-frame having its pivotal axis to the rear of the printing-point and having a longitudinal bar below said pivotal axis; a rock-shaft mounted in the frame of the machine and having an arm coöperating with said bar on both sides thereof; means for oscillating said rock-shaft; and adjustable means for limiting the motion of said arm in both directions.

39. In a front-strike type-writing machine, a platen; types arranged to strike the front face of said platen; a pivoted platen-frame having its pivotal axis to the rear of the printing-point, said platen-frame comprising a rail extending lengthwise thereof below said pivotal axis; in combination with a case-shift device comprising a member engaging said rail and supporting the same while permitting a free traverse of said frame; an adjustable part between which and said rail said member is interposed; and means for operating said member to impart a shifting motion to said platen-frame and platen.

40. The combination of a platen; types arranged to strike the front face of said platen; a platen-frame comprising end pieces pivotally supported at the rear of the platen and longitudinal bars connecting said end pieces above and below the platen; and a case-shift device coöperating with one of said bars.

41. The combination of a platen; types arranged to strike the front face of said platen; a pivoted platen-frame having its pivotal axis to the rear of the printing-point and having a longitudinal bar below said pivotal axis; a rock-shaft below said longitudinal bar; an arm on said rock-shaft coöperating with the rear face of said bar; and a shift-key for rocking said rock-shaft.

42. In a type-writing machine, the combination of a carriage, a platen-frame pivoted directly to said carriage and having a longitudinal bar below its pivotal support, and a member which engages said bar and limits the motion of said frame about its pivotal support.

43. In a type-writing machine, the combination of a carriage, a platen-frame pivoted directly to said carriage and having a longitudinal bar back of the printing-point, and a member engaging said bar and limiting the motion of said platen-frame about its pivotal support.

44. In a type-writing machine, the combination of a carriage, a platen-frame pivotally mounted on said carriage and having a longitudinal bar below its pivotal support, and an adjustable member engaging the rear side of said bar and limiting the motion of said platen-frame about its pivotal support.

45. In a type-writing machine, the combination of a carriage and platen-frame pivotally mounted on said carriage and having a longitudinal bar below its pivotal support; a relative fixed antifriction member engaging the rear side of said bar and limiting the motion of said platen-frame about its pivotal support; and means for adjusting said member.

46. The combination of a platen having a case-shift motion and also a motion to a non-printing position, means normally restraining said platen against motion to such non-printing position, and a key and connections controlling said restraining means.

47. The combination of a platen mounted in a pivoted frame that is adapted to rock on its pivot to impart to said platen a case-shift motion and also a motion to a non-printing position, means normally preventing such rocking to non-printing position, and a key and connections controlling said means.

849,836. TEMPORARY BINDER. EBENEZER G. DOW, Hornsey Rise, London, England. Filed June 24, 1904. Serial No. 213,959.

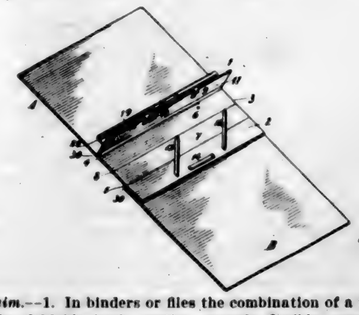

Claim.—1. In binders or files the combination of a transversely-foldable back-section, guards flexibly connected with opposite edges of the back, one of the said guards having flexible needles fastened to it and the other having slots in its edge to receive the needles when the guard is moved to its position on top of the papers, and a locking-plate slidably hinged to the slotted guard and having a lip on its free edge which when the plate is swung down on the guard and moved forward drops below the edge of the guard and when pushed back passes between the guard and the papers and holds the ends of the needles bent down on the guard, substantially as specified.

2. In binders or files a cover folded on itself to form upper and lower guards the upper guard having open slots in its free edge and the under guard having needles to receive the papers, a U-shaped plate placed over the upper guard to strengthen and reinforce the same and having slots therein coincident with the slots in the guard, substantially as specified.

3. In paper-binders the combination of a back, guards hinged thereto, one of said guards having flexible needles fastened thereto and the other having slots in its edge opposite and in line with the needles to receive the needles when the said guard is moved to its position on top of the papers on the needles, a slotted stiffening-plate fastened to the slotted guard having longitudinal grooves in it extending from the slots which receive the ends of the needles when bent down on the guard and means connected with the said stiffening-plate for holding the needles down in the grooves, substantially as specified.

4. In binders or files a cover folded on itself to form guards and a hinged back, one of said guards being provided with two or more slots cut in the edge thereof and the other guard being provided with impaling-needles adapted to pass into said slots, a locking-plate hinged to one of said guards and provided with a lip, said hinge being parallel with the hinged back and said locking-plate

being adapted to be moved so as to grip the edge of the said guard and hold the impaling-needles securely in their bent-down position, substantially as specified.

5. In binders or files a cover folded on itself so as to form two guards, a longitudinal hinge on each side of each guard and a longitudinal hinge in the back between the guards, one of said guards being provided with two or more slots cut in the edge thereof and the other guard being provided with impaling-needles adapted to pass into said slots, a locking-plate hinged to first-mentioned guard and provided with a lip, said hinge being disposed lengthwise with the fold of the cover and said locking-plate being adapted to be moved so as to grip the edge of said guard and to hold the impaling-needles securely in their bent-down position, substantially as specified.

849,837. VALVE-STEM PACKING. LEWIS W. EGGLESTON, Appleton, Wis. Filed Jan. 18, 1907. Serial No. 352,867.

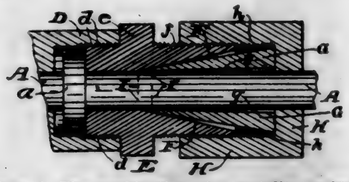

Claim.—1. The combination of a metallic packing and holder therefor, comprising a holder provided with a hole therethrough for a stem and with a tapering recess for the packing at one end of the valve-stem hole, a metallic packing provided with a tapering peripheral face of less taper than the adjacent face of the recess therefor, and such packing provided with a hole therethrough of diminishing diameter, and means to force the packing into the recess; substantially as described.

2. The combination of a stem, a holder provided with a hole therethrough for the stem, and provided with a tapering recess at one end of the valve-stem hole, a metallic packing provided with a tapering peripheral face of less taper than the adjacent face of the recess therefor, such packing provided with a hole therethrough of larger diameter than the valve-stem, the metallic wall of the tapering recess and the circumferential wall of the stem of harder metal than the metal of the packing and means to force the packing into the recess; substantially as described.

849,838. MOTOR-DRIVEN TRUCK. ARCHIBALD H. EHLE, Philadelphia, Pa. Filed Oct. 16, 1906. Serial No. 339,187.

Claim.—1. The combination of a truck-frame, two axles, bearings in the said frame for the axles, an engine mounted on the frame between the two axles, an extension at one end of the frame, and transmission-gear mounted on said extension, a longitudinal main shaft connected to the engine-shaft and to the transmission-gear, and means connecting one of the axles of the truck with the transmission-gear, substantially as described.

2. The combination of a truck-frame, two axles, wheels on said axles, the axles being mounted in bearings on the truck-frame, a trailer-truck connected to the truck-frame, an engine mounted between the axles of the main frame, and transmission-gear connected to the shaft of the engine and mounted on an extension of the truck-frame, the rear of said extension being supported by the trailer-truck, substantially as described.

3. The combination of a main truck, two axles mounted on said truck, an engine mounted on the truck between the axles having a longitudinal crank-shaft, an extension of the main truck, a swing-truck pivoted to said extension, transmission-gearing mounted on said extension and driven by the engine-shaft, and driving mechanism connecting the speed-box with the rear axle of the main truck, substantially as described.

4. The combination of a main truck, two axles mounted thereon, a longitudinally-arranged gas-engine mounted on the truck between the two axles, said truck having an extension, a swing-truck pivoted to said extension, a speed-box mounted on the extension and coupled to the engine-shaft, two transverse intermediate shafts in the speed-box, the second intermediate shaft having sprocket-wheels at each end, sprocket-wheels on the rear axle of the main truck, and chains passing from the sprocket-wheels of the second intermediate shaft to the sprocket-wheels on the axle, substantially as described.

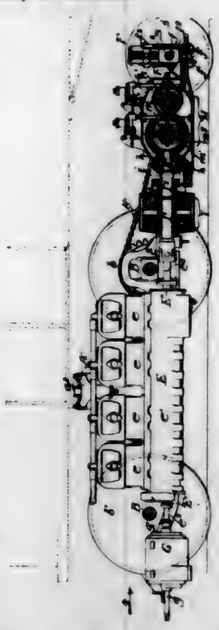

5. The combination of a main truck-frame, two axles mounted thereon, a longitudinally-arranged gas-engine mounted on the frame between the axles, a speed-box beyond one of the axles, the shaft of the speed-box being connected to the shaft of the engine, the driving-shaft being made in sections connected together by gimbal-joints, substantially as described.

6. The combination of a main truck-frame, two axles mounted in the frame, a longitudinally-arranged gas-engine mounted on the frame between the two axles, a driving-shaft extending under the rear axle, change-gearing connected to the said shaft, the said shaft being made in sections, one section being directly under the rear axle of the main truck so that on detaching this section the main axle can be removed from the truck-frame, substantially as described.

7. The combination of a truck-frame, two axles mounted therein, a gas-engine mounted on the frame between the two axles, a longitudinal shaft extending throughout the length of the truck and under both axles, said shaft having detachable sections directly under the two axles, so that both axles can be removed from the truck-frame on detaching the sections, substantially as described.

8. The combination of a truck-frame, two axles mounted thereon, a longitudinally-arranged gas-engine mounted between the two axles, a longitudinal shaft extending throughout the length of the truck, a dynamo mounted on one end of the truck, the shaft of the dynamo forming a continuation of the shaft of the gas-engine, substantially as described.

9. The combination of a truck, two axles mounted thereon, a gas-engine mounted on the truck between the two axles, a sectional longitudinal shaft extending rearwardly from the engine, a magnetic clutch arranged to couple two sections of the shaft together, speed-gearing driven by said shaft, and means connecting the speed-gearing with the driven axle, substantially as described.

10. The combination of a truck-frame, two axles arranged comparatively close together so as to provide a short wheel-base, a trailer-truck coupled to the main truck-frame, a gas-engine, and gearing mounted on the said main truck-frame for driving the same, substantially as described.

11. The combination of a main truck, two axles mounted thereon, equalizing-gear supporting the frame, a gas-engine longitudinally mounted on the frame between the two axles, a longitudinal shaft made in sections extending under the axles forming continuations of the engine-shaft, a dynamo mounted on the forward end of the truck, the dynamo-shaft forming a continuation of the engine-shaft and connected thereto by a gimbal-joint, a clutch coupling the two sections of the shaft, a change-gear driven by the said shaft, a gimbal-joint between the speed-gear and the clutch and between the clutch and the engine, with means connecting the speed-gear with the driven axle of the truck, substantially as described.

849,839. SKIRT-GUARD FOR BABY-COACHES. MARY L. FISKE and JESSIE R. SMITH, Port Chester, N. Y. Filed Nov. 9, 1906. Serial No. 342,615.

Claim.—1. A wheel-guard for coaches consisting of a guard for the wheel, combined with a part clamped to the axle, and a frame jointed to the part clamped to the axle in advance of the axle and supporting at its rear part the guard.

2. A wheel-guard for coaches consisting of a guard for the wheel, combined with a part clamped to the axle, and a frame jointed to the part clamped to the axle in advance of the axle and supporting at its rear part the guard and extensible so as to adjust the guard nearer to or farther from the axle.

3. A wheel-guard for coaches consisting of a guard for the wheel, combined with a part clamped to the axle, and a frame jointed to the part clamped to the axle in advance of the axle and supporting at its rear part the guard, said frame consisting of the hinge-arm E', the plate E^2 adjustably clamped to the arm E', and the transverse bar G' connecting the plate E^2 and guard.

4. In a wheel-guard for coaches, the combination of a frame hinged to the axle of the coach and extending rearwardly with freedom of upward movement at its rear or free part but supported against downward movement, and wheel-guards at each side of the frame and carried thereby in alinement with the wheels.

5. In a wheel-guard for coaches, the combination of the guard, an extensible hinged arm carrying the guard and hinged to the axle of the coach with freedom of upward movement at its rear or free end but supported against downward movement.

6. In a wheel-guard for coaches, the guard J having the lower portion K bent backward to form a foot at its bottom, combined with a hinged arm supporting the guard with fredom of upward motion.

7. In a wheel-guard for coaches, the combination of the transverse bar carrying the two guards, two hinge-arms carrying the transverse bar, and clamps for attachment to the axle and to which the arms are hinged.

8. In a wheel-guard for coaches, the combination of the transverse bar carrying the two guards, two extensible hinge-arms carrying the transverse bar, and clamps for attachment to the axle and to which the arms are hinged.

9. In a wheel-guard for coaches, the combination of the extensible transverse bar carrying the two guards, two hinge-arms carrying the transverse bar, and clamps for attachment to the axle and to which the arms are hinged.

849,840. MULTIPLE ELEVATOR SYSTEM. CLAIR FOSTER, Douglaston, N. Y., assignor to Jarvis Hunt, Chicago, Ill. Filed Apr. 12, 1906. Serial No. 311,266.

Claim.—1. In an elevator system, the combination of two separately-controllable cars operating between different sets of terminals in the same shaft, and means for preventing said cars from colliding.

2. In an elevator apparatus, the combination of a shaft, a plurality of independently-actuated cars movable both upward and downward in said shaft between different sets of terminals and means for preventing the cars from colliding, substantially as described.

3. In an elevator apparatus, the combination of a shaft, a plurality of independently-actuated cars starting from different terminals and movable both upward and downward in said shaft, and automatic mechanism for preventing the cars from colliding, substantially as described.

4. In an elevator system, the combination of a high-rise, and a low-rise car operating between different sets of terminals in the same shaft, and means for preventing said cars from colliding, substantially as described.

5. In an elevator system, the combination of two cars operating between different sets of terminals in the same shaft, and means whereby the actuating mechanism of one is controlled by the other, substantially as described.

6. In an elevator system, the combination of a high-rise and a low-rise car operating between different sets of terminals in the same shaft, and means whereby the actuating mechanism of one is controlled according to the position of the other, substantially as described.

7. In an elevator apparatus, the combination of a shaft, a plurality of independently-actuated cars starting from different terminals and movable both upward and downward in said shaft, and mechanism controlled by each car for limiting the approach of the other car, substantially as described.

8. In an elevator system, the combination of two cars operating in both directions in one shaft, one car being at all times above the other, and means for preventing said cars from colliding, substantially as described.

9. In an elevator system, the combination of two cars operating in the same shaft from different terminals, the upper car having its lower terminal at a floor above the lower terminal of the other car, and at all times remaining above

said other car, and means for preventing said cars from colliding, substantially as described.

10. In an elevator system, the combination of a high-rise and a low-rise car operating in the same shaft, the low-rise car being at all times below the high-rise car and controlling the descent of the high-rise car, and the high-rise car controlling the ascent of the low-rise car, substantially as described.

11. In an elevator apparatus, the combination of a shaft, a plurality of independently-actuated cars starting from different terminals and movable both upward and downward in said shaft, and automatic mechanism for stopping the upper car when it approaches to within a predetermined distance of the lower car, and for stopping the lower car when it approaches to within a predetermined distance to the upper car, substantially as described.

12. In an elevator apparatus, the combination of a shaft, a plurality of independently-actuated cars starting from different terminals and movable both upward and downward in said shaft, means for limiting the ascent of the lower car to an elevation intermediate the permitted travel of the upper car, and automatic mechanism for limiting the approach of the cars to a predetermined distance apart when both are below the upper limit of the lower car, substantially as described.

13. In an elevator apparatus, the combination of a shaft, a plurality of independently-actuated cars starting from different terminals and movable both upward and downward in said shaft, manually-controlled means on each car for independently controlling said cars, and automatic mechanism for stopping the upper car going down and the lower car going up, upon the approach of the two cars to within a predetermined distance of each other, substantially as described.

14. In an elevator system, the combination of two independently-actuated cars operating in one shaft, and means for preventing said cars from moving oppositely toward each other, substantially as described.

15. In an elevator system, the combination of two cars operating between different terminals in one shaft, one car being always above the other, means permitting operation of one or both cars simultaneously in the same direction, and means for automatically stopping the overtaking car when it is a predetermined distance from the other, substantially as described.

16. In an elevator system, the combination of two cars one above the other and operating between different terminals in the same shaft, and means whereby the upper car is prevented from going downward when the lower car is going upward, substantially as described.

17. In an elevator system, the combination of two cars operating between different sets of terminals in the same shaft, one car being always above the other, and means whereby the lower car cannot move upward until the upper car has moved a predetermined distance from said lower car, substantially as described.

18. In an elevator apparatus, the combination with a plurality of independently-actuated cars starting from different elevations, of means whereby the ascent of the lower car is controlled by the ascent of the upper car, and means whereby the descent of the upper car is controlled by the descent of the lower car, substantially as described.

19. In an elevator apparatus, the combination with a plurality of cars starting from different elevations in the same shaft, of means whereby the ascent of the lower car is controlled by the ascent of the upper car, and means whereby the descent of the upper car is controlled by the descent of the lower car, substantially as described.

20. In an elevator apparatus, the combination with a plurality of cars starting from different elevations in the same shaft, of means for keeping said cars at least a predetermined distance apart except when at their lower limits, substantially as described.

21. In an elevator apparatus, the combination with a plurality of cars starting from different elevations in the same shaft, of means whereby the lower car can go down independently of the upper car, and the upper car up independently of the lower car, means for controlling the ascent of the upper car, and means for controlling its descent by the descent of the lower car, substantially as described.

22. In an elevator apparatus, the combination with a plurality of cars starting from different elevations in the same shaft, of means whereby the lower car can go down independently of the upper car and the upper car go up independently of the lower car, means for controlling the ascent of the upper car, and means for automatically stopping the lower car going up and the upper car going down, when approaching within a predetermined distance of the other, substantially as described.

23. In an elevator apparatus, the combination of a shaft, a plurality of independently-actuated cars starting from different terminals and movable both upward and downward in said shaft between different terminals, and means for keeping said cars at least a predetermined distance apart except when at their lower terminals, substantially as described.

24. In an elevator apparatus, the combination of a shaft, a plurality of independently-actuated cars starting from different terminals and movable both upward and downward in said shaft, means whereby the lower car can go down independently of the upper car and the upper car can go up independently of the lower car, means for limiting the ascent of the upper car, and means for controlling its actuating mechanism by the descent of the lower car, substantially as described.

25. In an elevator apparatus, the combination of a shaft, a plurality of independently-actuated cars starting from different terminals and movable both upward and downward in said shaft, means whereby the lower car can go down independently of the upper car and the upper car can go up independently of the lower car, means for controlling the ascent of the upper car, and means for preventing the cars from moving in opposite directions toward each other, substantially as described.

26. In an elevator apparatus, the combination of a plurality of cars operating independently of each other in the same shaft both upward and downward, one car being below the other and having its starting-terminal below the starting-terminal of the upper car, the upper car having its upper terminal at a higher level than the upper terminal of the lower car, said cars being capable of stopping at all points between their respective terminals, and means whereby the cars are prevented from coming within a predetermined distance of each other except at their lower terminals, substantially as described.

27. In an elevator apparatus, the combination of a single shaft, an upper and a lower car starting from different terminals and movable both upward and downward in said shaft, a direct hydraulic plunger mechanism for supporting and actuating the lower car, cable mechanism from which the upper car is suspended and actuated, manually-controlled mechanism on each car for controlling it, and automatic mechanism for limiting the approach of the cars to within a predetermined distance apart, substantially as described.

28. In an elevator apparatus, the combination of a shaft, a plurality of independently-actuated cars in said shaft, said shaft having a portion which is common to the travel of all of said cars in both directions, manual mechanism on each car for controlling it in both directions, and automatic mechanism for preventing each car from approaching the other car within a predetermined distance thereof, substantially as described.

29. In an elevator system, the combination in a single shaft, of a suspended cable-actuated elevator and a direct hydraulic-plunger-actuated elevator, said elevators operating between different terminals and the cable-elevator being at all times above the plunger-elevator, independent actuating and controlling means for said elevators and means whereby the ascent of the plunger-elevator is controlled by the position of the cable-elevator, and the descent of the cable-elevator controlled by the position of the plunger-elevator, substantially as described.

30. In an elevator system, the combination in a single shaft, of a high-rise suspended cable-actuated elevator and a low-rise direct hydraulic-plunger-actuated elevator, said elevators having different lower terminals and the high-rise elevator being at all times above the low-rise elevator, independent actuating and controlling means for said elevators, and means whereby the ascent of the low-rise elevator is controlled by the position of the high-rise elevator and the descent of the high-rise elevator controlled by the position of the low-rise elevator, substantially as described.

31. In an elevator system, the combination in a single shaft, of two elevators operating in both directions between different terminals and having separate cable-connected counterweights, independent actuating and controlling mechanism for said elevators, and coacting connections between said cars and counterweights whereby one car is stopped when it comes within a predetermined distance of the other car, substantially as described.

32. In an elevator system, the combination in a single shaft, of two elevators operating in both directions between different terminals, independent actuating and controlling mechanism for said elevators, and automatic stopping mechanism actuated according to the differential movement between said elevators, whereby to stop one car when it comes within a predetermined distance of the other car, substantially as described.

33. In an elevator system, the combination in a single shaft, two elevators operating in both directions between different terminals, hydraulic mechanism for actuating the lower of said elevators, and electric mechanism for actuating the upper of said elevators, independent controlling mechanism for said elevators, and automatic stopping mechanism actuated according to the differential movement between said elevators, whereby to cut off the power from one car when it comes within a predetermined distance of the other car, substantially as described.

34. In an elevator system, the combination with a high-rise cable-elevator, and a low-rise hydraulic-plunger elevator, of independent operating and controlling means for said elevators, and means for automatically stopping the ascent of the plunger-elevator when it comes within a predetermined distance of the cable-elevator, substantially as described.

35. In an elevator system, the combination with an upper cable-elevator and a lower hydraulic elevator operating between different terminals in the same shaft and having independent operating and controlling means, of an automatically-actuated valve controlled by the differential movement between said elevators for stopping the ascent of the plunger-elevator when it comes within a predetermined distance of the cable-elevator, substantially as described.

36. In an elevator system, the combination with an upper electrically-actuated cable-elevator, and a lower hydraulic elevator, said elevators operating between different terminals in the same shaft and having independent actuating and controlling mechanism, of a controlling-valve varying in position according to the direction of, and differential movement between said elevators, and means operated by said valve for controlling the motor-circuits of said electric elevator, said valve controlling the hydraulic elevator, and acting to stop one or the other elevator when about to overtake the other, substantially as described.

849,841. PHYSIOGRAPHICAL INSTRUMENT. JOHN P. GOODE, Chicago, Ill. Filed Dec. 9, 1905. Serial No. 291,046.

Claim.—1. In a device of the kind described, in combination, a base having a protractor-scale ruled on its face, means for leveling the base, a disk rotatably mounted on the base and having a line ruled across its face, the edge of the disk registering with the protractor-scale, a frame mounted on the disk, and a plummet-cord suspended from the frame over the line.

2. In a device of the kind described, in combination, a base, a disk rotatably mounted on the base and having a scale ruled on its face, an apertured frame rising from the disk at the foot of the scale, and a plummet-cord crossing the aperture of the frame and registering with a line of the scale on the disk.

3. In a device of the kind described, in combination, a rotatable disk having a cotangent scale ruled on its face, and an arch-form frame rising from the disk at the foot of the scale.

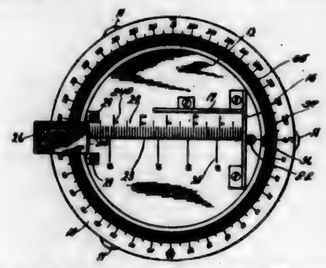

4. In a device of the kind described, in combination, a rotatable disk having a scale ruled on its face, and a tube hinged to the face of the disk at the foot of the scale.

5. In a device of the kind described, in combination, a rotatable disk having a scale ruled on its face, an arch-form frame rising from the disk at one end of the scale, and a tube facing the frame and hinged to the face of the disk at the farther end of the scale.

6. In a device of the kind described, in combination, a base having a protractor-scale ruled on its face, means for leveling the base, a disk rotatably mounted on the base and having a line ruled across its face and a linear scale dividing the line, the edge of the disk registering with the protractor-scale on the base, an apertured frame rising from the disk at the foot of the scale, and a plummet-cord crossing the aperture of the frame and registering with the line ruled on the disk.

840,842. SAFETY-GATE-CONTROLLING MEANS. CHARLES S. HELLER, Philadelphia, Pa. Filed Oct. 3, 1906. Serial No. 337,226.

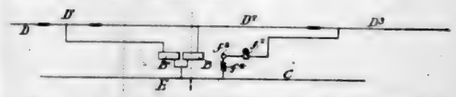

Claim.—1. A system employing gravity controlled by electricity, including a safety-gate, a movable weight constructed to cause closing of the gate when in one position and opening of the said gate when in another position, electromagnetic means for moving said weight from one position to the other, and means for governing the operation of said electromagnetic means, substantially as described.

2. A system including a safety-gate, two solenoids adjacent to the pivotal line of said gate, a common core for said solenoids movable from one side to the other of the pivotal line of the gate, and means for controlling the energization of the solenoids, substantially as described.

3. A system including a safety-gate, two solenoids therefor, a common core for said solenoids movable so as to close or open the gate, and means controlled by a moving vehicle for governing the energization of said solenoids, substantially as described.

4. The combination with the current-supply feeder of an electric railway, of a conductof divided into a plurality of sections insulated from each other, a safety-gate, solenoids for said gate, a common core for said solenoids constructed when in one position to cause opening of the gate and when in the other position to cause closing of the gate, and means including electrical connections between said conductor-sections and said solenoids for controlling the energization of the solenoids, substantially as described.

5. The combination with a railway system including conductors divided into a plurality of sections insulated from each other, of a safety-gate having a gravitational device for controlling its opening and closing, including two solenoids, means connected to one of the insulated sections

for causing one of the solenoids to be energized, to cause opening of the gate when a car is on said section, and other means connected to another insulated section for causing energization of the second solenoid and consequent closing of the gate when the car is on said second section, substantially as described.

6. The combination with the current-supply feeder of an electric railway, of a conductor engaged by a contact on a car and divided into a number of sections insulated from each other, means connecting said conductor-sections to said supply-feeder, a safety-gate having two solenoids, a common core for said solenoids so placed that in one position it causes opening of the gate and in another position closing of the same, with means whereby one solenoid is energized when an electric car receives current from one of said sections, and other means whereby the second solenoid is energized when such car receives current from another section, substantially as described.

7. The combination with the current-supply feeder of an electric railway, of conductors placed to be engaged by a contact on a car, said conductors being divided into a number of sections insulated from each other, of means including electromagnets respectively connecting the said sections and the said feeder, a safety-gate having means controlled by said electromagnets, for causing its opening and closing, and alarm devices connected to be actuated before a certain one of said electromagnets is energized, substantially as described.

8. The combination with the current-supply feeder of an electric railway, of a conductor divided into a number of sections, of which one is of greater length than the other, with a safety-gate placed adjacent to the longer of said sections, a pair of solenoids for causing operation of the safety-gate, and means for causing energization of one solenoid and consequent closing of the gate when a car is receiving current from the longer conductor-section, and other means for causing energization of the other solenoid and opening of the gate when the car is receiving current from the shorter conductor-section, substantially as described.

9. The combination with the current-supply feeder of an electric railway, of a conductor placed to be engaged by a contact device on a car and divided into a number of sections insulated from each other, magnets respectively connected between the sections and said feeder, switches controlled by said magnets, a safety-gate, and operating electromagnets therefor connected respectively in circuit with said switches and said current-feeder, substantially as described.

10. The combination of a safety-gate, a source of current-supply, and a conductor divided into sections for supplying current to an electrically-operated car, a solenoid connected between one of said sections and said source of supply having means for operating the gate, and an alarm device or devices connected in shunt to said solenoid, substantially as described.

11. The combination of a safety-gate, a source of current-supply, and a conductor divided into sections for supplying current to an electrically-operated car, a solenoid connected between one of said sections and said source of supply having means for operating the gate, and an alarm device or devices connected between said source and a section of the conductor other than that having said solenoid, said device or devices being constructed to be set in operation before the safety-gate closes, substantially as described.

849,843. WATERING-TROUGH. VICTOR H. HUGHES, Sabetha, and DAVID C. EVANS, Hiawatha, Kans., assignors of one-third to Fred G. Beaulieu, Sabetha, Kans. Filed Aug. 14, 1906. Serial No. 330,543.

Claim.—1. An article of manufacture comprising a siphon-tube, float-controlled inlet and discharge valves at the inlet and discharge ends thereof, a reservoir secured to the discharge end of the siphon-tube, and trough portions connected to the reservoir.

2. An article of manufacture comprising a siphon-tube, float-controlled inlet and discharge valves at the inlet and discharge ends thereof, a reservoir secured to the discharge end of the siphon-tube, trough portions connected to the reservoir, and means for removably securing the siphon-tube to the wall of a tank.

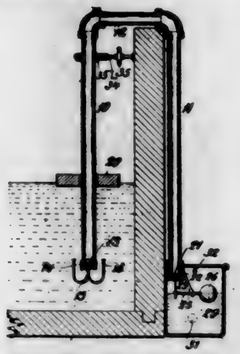

3. An article of manufacture, comprising a siphon-tube, an inwardly-opening valve arranged at the inlet end thereof, a float loosely fitted upon the inlet-leg of the siphon-tube, arranged in one position to engage the valve to close same, valve means at the discharge end of the tube controlled by the level of the water discharged therefrom, and a reservoir secured to the said discharge end of the tube for receiving the water so discharged.

4. A device of the character described, comprising a siphon-tube having inlet and discharge legs 10 and 11, a valve 13 fitted to the end of the inlet-leg 10, a float 20 loosely fitted upon the inlet-leg 10 of the siphon-tube and arranged to engage portions 16 connected with the said valve 13, a reservoir 29 secured to the lower end of the discharge-leg 11, trough portions 30 branching therefrom, a valve 29 fitted to the discharge end of the leg 11, and a float 26 for controlling the said valve, substantially as set forth.

849,844. VIBRATOR. JOSEPH S. C. LAURENCE, Oakland, Cal. Filed Jan. 5, 1907. Serial No. 351,032.

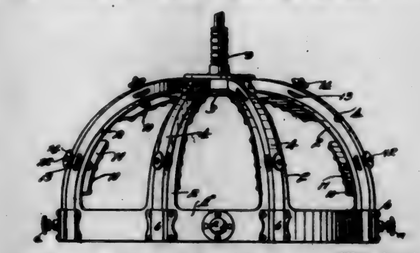

Claim.—1. A vibrator comprising a crown-like structure to fit the head, a plurality of independently-adjustable massaging devices carried by said structure, and means to operate said devices to produce a massaging effect.

2. A vibrator comprising a crown-like structure to fit the head, a plurality of independently-movable massaging devices carried by said structure, means to operate said devices to produce a massaging effect, and means for adjusting said devices toward and from the scalp.

3. A vibrator comprising a suitable curved support fashioned to fit over the head, a reciprocating member on said support and conforming to the curvature thereof, an applicator carried by said member, and means for reciprocating said member.

4. A vibrator comprising a crown-like structure, radially-arranged reciprocating ribs mounted on said structure, applicators carried by said ribs, and means to reciprocate the ribs.

5. A vibrator comprising a crown-like structure, radially-arranged reciprocating ribs mounted on said structure, applicators carried by said ribs, means to reciprocate the ribs, and means to adjust the applicators toward and from the scalp.

6. A vibrator comprising a suitable support to encircle the head, a reciprocating member mounted on said support and substantially conforming to the curvature thereof, an applicator carried by said member, and means to reciprocate the latter.

7. A vibrator comprising a suitable support to encircle the head, a reciprocating member mounted on said support, an applicator carried by said member, means to reciprocate the latter, and means for adjusting the applicator toward and from the scalp.

8. A vibrator comprising a crown-like structure, a plurality of radially-arranged reciprocating members thereon, means for reciprocating said members, and massaging devices carried by said members.

9. A vibrator comprising a crown-like structure, a plurality of radially-arranged reciprocating members thereon, means for reciprocating said members, massaging devices carried by the members, and means for independently adjusting said several massaging devices toward and from the surface to be operated on.

10. A vibrator comprising a crown-like structure, radially-arranged ribs on said structure, said ribs spring-supported at one end, means acting on the opposite end of the ribs to impart a reciprocating motion thereto, and massaging devices carried by said ribs.

11. A vibrator comprising a crown-like structure, radially-arranged ribs on said structure, said ribs spring-supported at one end, means acting on the opposite end of the ribs to impart a reciprocating motion thereto, massaging devices carried by said ribs, means for clamping said structure to the part of the body to be operated on, and means for adjusting said massaging devices to accommodate them to the surface to be operated over.

849,845. UMBRELLA. FRANK X. LOUGHERY, Sr., Santa Rosa, Cal. Filed Feb. 5, 1906. Serial No. 299,460.

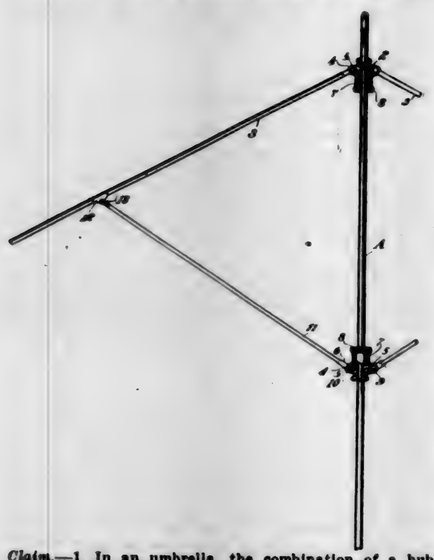

Claim.—1. In an umbrella, the combination of a hub fixed to the umbrella-staff, a hub slidable on said staff, said upper hub having a circumferential row of sockets, and said slidable hub having a slotted and globularly-chambered flange, a collar slidable on said slidable hub and having a corresponding slotted flange and sockets in said flange, ribs having heads fitting the sockets of the fixed hub, spreaders having globular heads fitting the sockets of the slidable hub, said spreaders being flattened contiguous to the heads whereby the spreaders are guided and turnable in the slots of the flanges.

2. In an umbrella, the combination with a hub slidable upon the umbrella-staff said hub having a circumferential row of sockets, and spreaders having globular heads fitting said sockets, of a hub fixed to the upper end of the staff and having a slotted and globularly-chambered flange, a collar circumscribing and slidable on said slidable hub, and having a corresponding slotted flange and socket therein, ribs having heads fitting the sockets of the fixed hub and having portions contiguous to said heads flattened whereby the ribs are guided and turnable in the slots of the flanges, and a nut threaded in the lower end of the fixed hub and bearing up under the collar which surrounds said hub.

3. In an umbrella, a hub fixed to the head of the umbrella-staff, a similar hub slidable on said staff, each having slotted and globularly-chambered flanges, collars slidable upon the hubs and having corresponding slotted flanges and sockets in said flanges, ribs having globular heads fitting the sockets and flattened contiguous portions guided and turnable in the slots, corrugated edges formed upon the contiguous flanges and adapted to engage when the slots of the two are in line, and a threaded nut whereby the parts are locked in position.

849,846. STRAP-LOOP. WILLIAM R. MEDEARIS, Nashville, Tenn., assignor of one-third to J. M. Gray, Jr., and one-third to H. A. Ellers, Nashville, Tenn. Filed May 24, 1906. Serial No. 318,531.

Claim.—An article of the character described formed from a sheet-metal strip or blank bent into a loop-shaped head portion with a bipronged shank set inwardly thereunder and comprising semitubular legs having their concave surfaces confronting, thereby adapting the shank to penetrate leather or other material and to be upset or clenched after the manner of a split tubular rivet.

849,847. MACHINE FOR SETTING OR AFFIXING PRONGED LOOPS TO LEATHER OR OTHER MATERIAL. WILLIAM R. MEDEARIS, Nashville, Tenn., assignor of one-third to J. M. Gray, Jr., and one-third to H. A. Ellers, Nashville, Tenn. Filed May 24, 1906. Serial No. 318,532.

Claim.—1. In a loop-setting machine, the combination of a presser for operating on the head of a pronged loop to drive its prongs into material, and a pattern-form adapted to receive and fit within the head of the loop, said form being carried by and under said presser and movably connected therewith, whereby said presser descends independently until it bears upon the head of the loop fitted on said form, and then the form descends with and under the action of the presser to effect the setting operation, said form being confined within the head of the loop until completion of said operation and thereby preserving its conformation.

2. In a loop-setting machine, the combination of a presser arranged to operate on the head of a pronged loop, a movable pattern-form adapted to receive and fit within the loop, said form being movable with the presser in the setting operation, and means for bracing the outer sides of the loop.

3. In a loop-setting machine, the combination of a presser arranged to operate on the head of a pronged loop and having extensions or projections at its sides for embracing the sides of the loop between them, and a form arranged to receive and fit within the loop to prevent

bending or distortion thereof in the setting operation, said form being movable with the presser.

4. In a loop-setting machine, the combination of a presser arranged to operate on the head of a pronged loop, a movable pattern-form adapted to receive and fit within the loop, said form being movable with the presser in the setting operation, and a gradually-receding prong-bracing device for bracing the prongs in the setting operation.

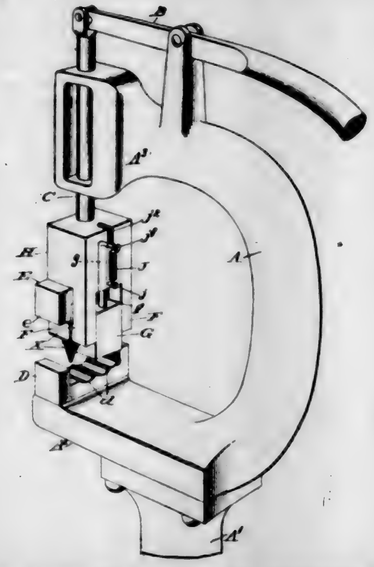

5. In a loop-setting machine, the combination of a presser arranged to operate on the head of a prolonged loop, a movable pattern-form adapted to receive and fit within the loop, said form being movable with the presser in the setting operation, and means for bracing the prongs and outer sides of the loop.

6. In a loop-setting machine, the combination of a presser arranged for operating on the head of a pronged loop, an anvil arranged to receive and clench or upset the points of said prongs, one of the said parts having side projections or extensions arranged to embrace the outer sides of the loop and prevent spreading thereof, and a movable form arranged to receive and fit within the loop and descend with the presser to prevent bending or distortion of the loop.

7. In a loop-setting machine, the combination of a plunger-rod, a presser affixed to the end thereof, said presser arranged for operating on the head of a pronged loop, a holder movably connected with said rod above the presser and having two pendent L-shaped legs whose feet are arranged to receive the loop and fit within opposite sides thereof to preserve its shape, and an intermediate foot movably connected to and carried by the holder and yieldingly spring-pressed downward, said intermediate foot arranged to fit between the loop-prongs and to recede into the space between the outer feet in the loop-setting operation.

8. In a loop-setting machine, the combination of a form comprising two parts arranged to receive a loop of the character described and to fit within said loop at opposite sides of the space between its prongs, an intermediate part yieldingly held below said form arranged to fit between the loop-prongs and adapted to recede into the medial space between the parts of the form as the latter descends, and a presser arranged to operate on the loop when fitted on said form to force said form with said loop downwardly and drive the loop-prongs into the material.

849,848. GAS-PRODUCER. WILLIAM R. MILLER, Pittsburg, Pa., assignor to Foster Miller Engineering Co., Pittsburg, Pa., a Corporation of Pennsylvania. Filed Nov. 12, 1906. Serial No. 343,084.

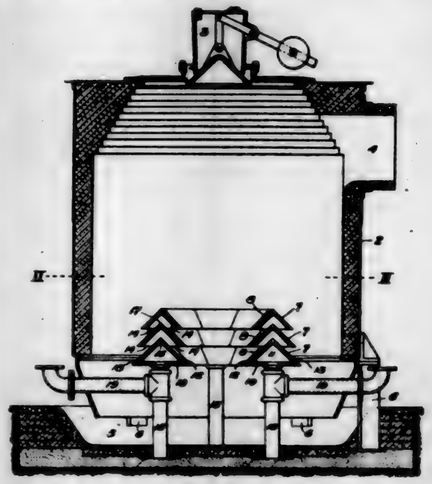

Claim.—1. A combined wind-box for gas-producers consisting of a plurality of hollow rings having an interior clearance-space and outer and inner downwardly-diverging sloping walls provided with air-supply openings, and means for furnishing a volume of air to the interior of one of the hollow rings, substantially as set forth.

2. In a wind-box, the combination of a lower hollow ring having an interior clearance-space, outer and inner downwardly-diverging sloping perforated walls, a lower closing-wall and air-apertures through its top, and a superimposed hollow ring having an interior clearance-space, and similar sloping walls mounted above the lower ring, with an intervening air-outlet opening at each side, substantially as set forth.

3. In a wind-box for gas-producers, the combination of a lower hollow ring having an interior clearance-space and one or more superimposed hollow rings, said rings having inner and outer downwardly-diverging sloping walls, and means providing a circulation of air to and from the interior of said rings, substantially as set forth.

4. In a wind-box, the combination of a lower circular hollow box triangular in cross-section and an upper box provided with transverse supporting-flanges conforming to the cross-section of the lower box, substantially as set forth.

5. In a wind-box, the combination of a lower circular hollow box triangular in cross-section and an upper box provided with transverse supporting-flanges conforming to the cross-section of the lower box, with means for establishing a circulation of air to and from the interior of said boxes, substantially as set forth.

849,849. VEHICLE-WHEEL. CLYDE S. MORSE, Shabbona, Ill. Filed Dec. 17, 1906. Serial No. 348,101.

Claim.—1. In a vehicle-wheel, the combination with an axle, of a hub mounted thereon, a plate mounted at each end of said hub to turn therewith and having in its periphery a series of radially-disposed openings enlarged inwardly, a felly surrounding said plates at a distance therefrom, forked holders having the inner ends of their prongs engaged in the openings of said plates and their outer portions provided with an aperture, a spring-actuated rod located in the aperture of each of said holders and having its outer end connected to the felly.

2. In a vehicle-wheel, the combination with an axle, of a hub mounted thereon, a plate mounted at each end of said hub to turn therewith and having in its periphery a series of radially-disposed openings, a felly surrounding said plates at a distance therefrom, forked holders having the inner ends of their prongs engaging in the openings of said plates and their outer portions provided with an aperture, a spring-actuated rod located in the aperture of each of said holders and having its outer end connected to the felly, and a protecting-plate mounted on each end of the hub outwardly against the first-named plates and overlapping a portion of the felly.

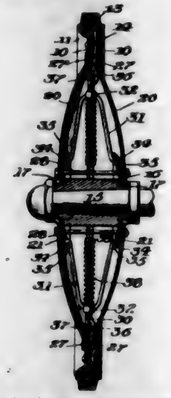

3. In a vehicle-wheel, the combination with an axle, of a hub mounted thereon, a plate mounted at each end of said hub to turn therewith and having in its periphery a series of radially-disposed openings enlarged inwardly, a felly surrounding said plates at a distance therefrom and having near its inner periphery a series of radially-disposed openings enlarged outwardly, forked holders having on the inner ends of their prongs heads adapted to be passed through the enlarged portions of the openings in the first-named plates, each of said holders having in its outer end an aperture, a spring-actuated rod located in the aperture of each of said holders and having at its outer end a head adapted to be passed through the enlarged portions of the openings in the felly, and a protecting-plate mounted on each end of the hub outwardly from the first-named plates and overlapping at its periphery a portion of the felly.

849,850. TELEPHONE SYSTEM. LEOPOLD F. MÜLLER, Passiac, N. J. Filed Aug. 7, 1905. Serial No. 272,971.

Claim.—1. A telephone system comprising a pair of line-wires connected to a battery, a pair of batteries having a positive wire in common, a pair of negative wires connected to the pair of batteries, a series of stations, each station containing a signal, a transmitter and a receiver, the signal being connected to one of the last-mentioned negative wires, the transmitter to the common positive wire, and the receiver to one of the line-wires and a series of line-wires connecting the stations.

2. A telephone system comprising a pair of line-wires connected to a battery, a pair of batteries having a positive wire in common, a pair of negative wires connected to the pair of batteries, a series of stations, each station containing a signal, a transmitter and a receiver, a switch to connect the signal with one of the last-mentioned negative wires, or the common positive wire, a switch to connect the transmitter with the common positive wire or one of the line-wires, and a switch to connect the receiver with one of the line-wires or the other negative of the wires of the pair of batteries and a series of line-wires connecting the stations.

3. A telephone system comprising a pair of line-wires connected to a battery, a pair of batteries having a positive wire in common, a pair of negative wires connected to the pair of batteries, a series of stations, each station containing a signal, a transmitter and a receiver, a switch to connect the signal with one of the last-mentioned negative wires, or the common positive wire, a switch to connect the transmitter with the common positive wire or one of the line-wires, a switch to connect the receiver with one of the

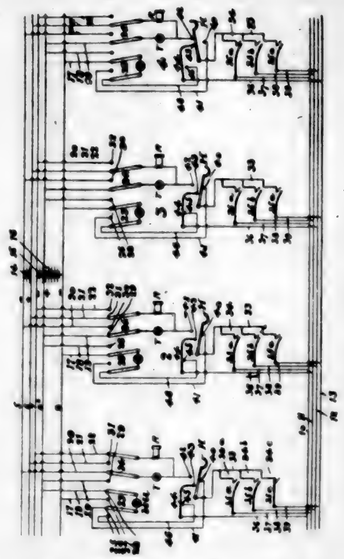

line-wires or the other negative of the wires of the pair of batteries, and means for operating the switches in unison and a series of line-wires connecting the stations.

849,851. SPEED-INDICATOR. EDD C. OLIVER, Minneapolis, Minn., assignor of one-half to H. E. Pence, Minneapolis, Minn. Filed Aug. 2, 1906. Serial No. 328,831.

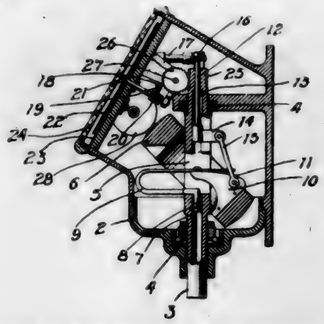

Claim.—1. A speed-indicating device actuated by centrifugal force, comprising a rotating spindle, a spring mounted thereon, a ring centrally pivoted on said spindle, a cam mounted on said ring and adapted to rock on said spring, and said spring being put under tension by the outward movement of said ring, a dial having uniform graduations and an indicator-hand arranged to travel over said graduations and operatively connected with said cam, substantially as described.

2. A speed-indicating device comprising a rotating spindle or shaft, a ring centrally pivoted thereon and normally in an oblique position with respect to said spindle but adapted to swing toward a horizontal position as the speed rises, a spring mounted on said spindle, a cam mounted on

said ring and arranged to bear on said spring and move back and forth thereon with the oscillation of said ring, and a dial having an indicating-hand operatively connected with said cam, substantially as described.

3. An indicating device comprising a rotating spindle, a ring centrally pivoted thereon, and adapted to swing from an oblique toward a horizontal position when the speed of the spindle rises, a U-shaped spring having one end mounted in said spindle and its free end extending transversely with respect thereto, a cam mounted on said ring and having a surface engaging the free end of said spring and adapted to rock thereon, the effective length of the spring increasing as the cam-surface moves outwardly thereon, and a dial having an indicating-hand operatively connected with said cam.

4. In a speed-indicating device, a rotating ring adapted to swing outwardly by centrifugal force from the axis of rotation, a cam mounted on said ring, a dial having uniform graduations and an indicating-hand operatively connected with said cam, and a spring arranged to bear on said cam and whose effective length increases with the oscillation of said ring from its axis of rotation, substantially as described.

5. In a speed-indicating device actuated by centrifugal force, the combination with a rotating spindle, of a ring pivoted thereon, the center of mass of said ring remaining substantially at the center of rotation during the oscillation of the ring, a cam mounted on said ring and passing substantially through the center of oscillation, a spring acting on said cam the effective length of said spring being increased as the speed of rotation increases, an indicating device and means for transmitting the movement of said ring to said indicating device.

6. In a speed-indicating device the combination, with a rotating spindle, of a weight centrally pivoted thereon, and having a cam-surface and spring arranged to bear on said cam, the effective length of said spring being increased as the speed of rotation increases, substantially as described.

849,852. STOP MECHANISM FOR PHONOGRAPHS. CHARLES OTZEN, Schenectady, N. Y. Filed Dec. 27, 1904. Serial No. 238,277.

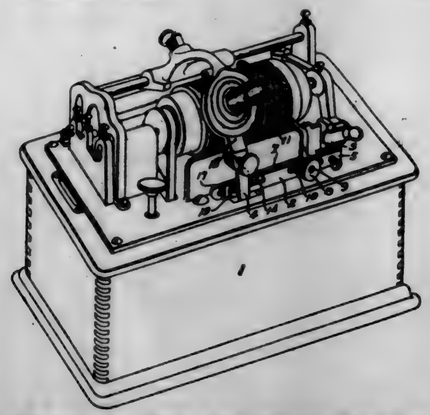

Claim.—1. In a device of the character described, the combination of a phonograph, a motor mechanism, a lever for starting and stopping said mechanism, an actuator adapted to bear against one side of the lever, and means controlled by said motor mechanism for moving said actuator against said lever to move it into a stop position.

2. In a device of the character described, a phonograph and a starting-lever therefor, in combination with an adjustable stop mechanism which is set by the movement of the lever when starting the phonograph into operation.

3. In a device of the character described, a phonograph and a starting-lever therefor, in combination with a stop mechanism comprising a carrier or support, an adjustable pivoted lever, means for adjusting the lever, an actuator in working relation with the starting-lever mounted in the carrier, a spring for actuating the actuator to move the starting-lever to its stop position, and means secured to the pivoted lever in the path of the reproducer-frame to be actuated thereby for tripping the lever to release the actuator.

4. In a device of the character described, the combination of a phonograph, a reproducer, a motor mechanism, a lever for starting and stopping said mechanism, an actuator adapted to bear against one side of the lever, and means controlled by said reproducer for moving the actuator against the lever to move said lever into its stop position.

5. In a device of the character described, a phonograph and a starting-lever therefor, in combination with a stop mechanism comprising a carrier or support having a slot therein which is provided with a shoulder, a pivoted lever on the carrier, means for tripping the lever by movement of the reproducer-frame, means in said slot for actuating the starting-lever which is adapted to engage with said shoulder and is released from the latter by movement of the lever, and a spring for actuating said means when the latter is released.

6. In a device of the character described, a phonograph and a starting-lever therefor, in combination with a stop mechanism comprising a carrier or support having a slot for the actuator which is provided with a shoulder for holding the latter in a set position, a pivoted lever therefor, an abutment on the lever, an actuator which operates the starting-lever, a spring secured to the actuator and carrier which is under tension when the actuator is in a set position, and a means for disengaging the actuator from the shoulder of the slot for actuating the starting-lever and thereby stopping further rotation of the phonograph-cylinder.

7. In a device of the character described, a phonograph and a starting-lever therefor, in combination with a stop mechanism comprising a carrier or support, an adjustable pivoted lever, means for adjusting the lever, an abutment or indicator on the lever, an actuator in working relation with the starting-lever mounted in the carrier, a spring for actuating the actuator to move the starting-lever to its stop position, and means secured to the pivoted lever in the path of the reproducer-frame to be actuated thereby for tripping the lever to release the actuator.

849,853. DEVICE FOR STRETCHING AND DRYING LACE CURTAINS. AUGUSTA PROCTOR, Viroqua, Wis. Filed Nov. 11, 1905. Serial No. 286,938.

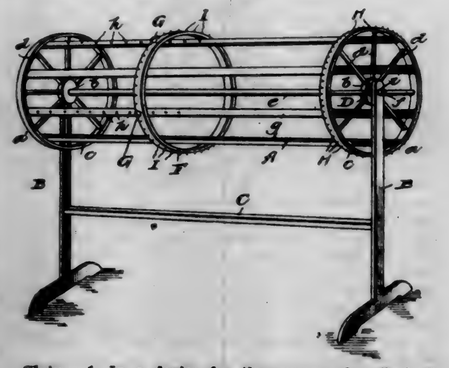

Claim.—1. In a device for the purpose described, the combination with a drum having one or more spurs or pins on its periphery adjacent to one of its ends; of a band surrounding the drum and adjustable in the direction of the length thereof and having one or more spurs or pins on its periphery, and means for adjustably fixing said band to the drum.

2. In a device for the purpose described, the combination with a drum comprising heads, one or more spurs or pins on the periphery of one head, and longitudinal strips connecting the heads and provided at intervals in their length with perforations; of a band surrounding the longitudinal strips of the drum and adjustable in the direction of the length thereof and having one or more spurs or pins on its periphery, and pegs carried by the band and arranged to be placed in apertures of the strips of the drum.

3. In a device for the purpose described, the combination with standards; of a drum comprising heads having hubs, spokes and rims, trunnions extending from the hubs of the heads and journaled in the standards, and longitudinal strips connecting the rims of the heads, a band surrounding the longitudinal strips of the drum and adjustable in the direction of the length of the same, means for adjustably fixing the band to the drum, one or more spurs or pins on the periphery of one head of the drum, one or more spurs or pins on the periphery of the band, and coacting devices on one standard and the drum for holding the latter against retrograde movement.

849,854. BALLAST-CAR. CLAUD A. PROCTOR and ALBERT GNAEGY, Chester, Ill. Filed Jan. 3, 1907. Serial No. 350,653.

Claim.—1. A car having a hopper with a gate, and a movable plow forming the closing means for the bottom thereof.

2. A car having hoppers on opposite sides of the center thereof, and a gate and a movable plow forming the closing means for the bottom of the hopper.

3. A car having a hopper with a plow forming part of the closing means for the bottom thereof, and movable upwardly thereinto.

4. A car comprising a body with hoppers on opposite sides of the center, and a movable plow coöperating with each hopper and forming part of the closing means therefor, each plow being adapted to be independently lowered.

5. A car comprising a body with outlet-hoppers, and a movable plow forming part of the closing means for each hopper, the plows of the hoppers being independently operable.

6. A car comprising a body with an outlet-hopper, a movable plow forming part of the closing means for the hopper, and a brace depending from the body and against which a portion of the plow has bearing.

849,855. CURTAIN-POLE. JOHN C. REPP, Pittsburg, Pa. Filed May 2, 1906. Serial No. 314,818.

Claim.—1. A curtain-pole comprising two telescoping sections both slotted from end to end, the outer of which sections has its edges flanged inwardly in opposite directions to form grooves which receive the edges of the inner section, each of said sections having tapered outer ends, removable knobs having sockets fitting on said tapered ends of the sections; said sockets having recesses, and lugs on the tapered ends of the sections to engage in said recesses.

2. A curtain-pole comprising two telescoping sections both slotted from end to end, the outer of which sections has its edges bent inwardly in opposite directions forming flanges between which and the body of the outer section the edges of the inner section are received and frictionally held, and removable knobs having sockets fitting on the outer ends of said sections.

849,856. LATHING. THOMAS E. RITCHIE, Beverly, Mass. Filed July 5, 1906. Serial No. 324,876.

Claim.—1. A series of laths, combined with series of staples arranged in a plurality of rows each staple driven through two abutting laths near the edges of the laths leaving interstices between the laths and forming a series of flexible connected laths.

2. A series of laths arranged in groups, each group of laths having its ends arranged so as to project longitudinally beyond the ends of the next group but alternately in opposite directions combined with series of staples ar-

ranged in a plurality of rows each staple driven through two abutting laths near the edges of the laths leaving interstices between the laths and forming a series of flexible connected laths.

849,857. GAME. GEORGE SANTEN, St. Paul, Minn., assignor of three-fourths to Frank J. Peterson, St. Paul, Minn. Filed May 18, 1906. Serial No. 317,537.

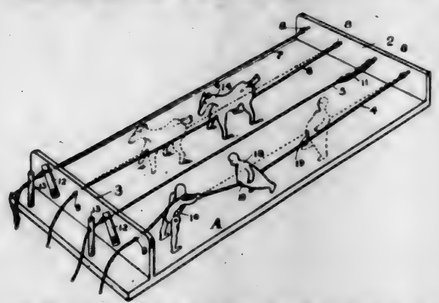

Claim.—1. A game of the class described, consisting of a cord secured at one end and slidably supported at its other end, and objects supported upon said cord in the manner and for the purpose set forth.

2. A game of the class described, comprising a cord secured at one end and slidably supported at its other end, and an object slidably supported upon said cord in such manner as to drop forward with each loosening of the cord.

3. A game of the class described, comprising cords each secured at one end and slidably supported at its other end, lay figures slidably supported upon said cords, said lay figures being formed with grooves to receive said cords.

4. A game of the class described, comprising a series of horizontal cords each secured at one end and slidably supported at its other end, lay figures supported upon said cords, each of said lay figures being formed in its under side with a groove to receive said cord in the manner and for the purpose set forth).

5. In a game of the class described, the combination of a cord secured at one end and slidably supported at its other end, tension means for said cord, and a lay figure slidably supported upon said cord.

6. In a game of the class described, the combination of a horizontal cord secured at one end and slidably supported at its other end, a tension-spring for the free end of said cord and a lay figure slidably supported upon said cord.

849,858. METALLIC-HOSE-WINDING MACHINE. WILHELM SCHWARZ, Pforsheim, Germany, assignor to Heinrich Witzenmann, Pforsheim, Germany. Filed Jan. 30, 1905. Serial No. 243,447.

Claim.—1. In a metallic-hose-winding machine having a winding-spindle, in combination, a shaft; two pairs of fast and loose belt-pulleys mounted thereon; belt-shifting gear for the said pulleys; two cams for actuating the said belt-shifting gear; means, normally idle, actuating the said cams; and means connected with the winding-spindle bringing the said cam-actuating means into operation on completion of a length of hose, whereby the cams are actuated and shift the one belt onto the loose pulley of the one pulley pair, and the other belt onto the fast pulley of the other pulley pair, thus first stopping the machine and then reversing its motion, substantially as described.

2. In a metallic-hose-making machine having a winding-spindle, in combination, a shaft; two pairs of fast and loose belt-pulleys mounted thereon; belt-shifting gear for the said pulleys; two cams for actuating the said belt-shifting gear; a shaft, normally idle, actuating the cams; fast and loose pulleys mounted thereon; a traveling device carrying the winding-spindle; a pivotal lever extending into the path of travel of the said device; a belt-shifting gear for the fast and loose pulleys of the said cam-actuating shaft; and lever mechanism connecting the said pivotal lever with the said latter belt-shifting gear; whereby on the spindle-carrying device striking the said pivotal lever, the said cam-actuating shaft is brought into operation and actuates the cams for the purpose of stopping and then reversing the motion of the machine, substantially as described.

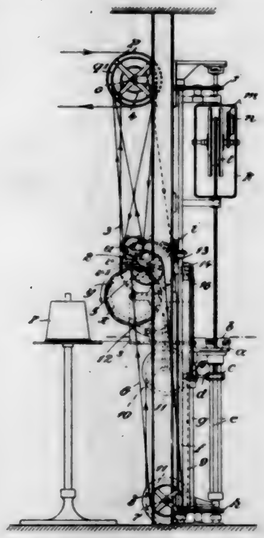

3. In a metallic-hose-making machine having a winding-spindle, in combination, a shaft; two pairs of fast and loose belt-pulleys mounted thereon; belt-shifting gear for the said pulleys; two cams for actuating the said belt-shifting gear; a shaft, normally idle, actuating the cams; fast and loose pulleys mounted thereon; a traveling device carrying the winding-spindle; two pivotal levers extending into the path of travel of the said device on opposite sides thereof; a belt-shifting gear for the fast and loose pulleys of the said cam-actuating shaft; and two sets of lever mechanism connecting the said pivotal levers with the said latter belt-shifting gear; whereby on the spindle-carrying device striking the one said pivotal lever, the said cam-actuating shaft is brought into operation, and on striking the other said pivotal lever brings the said shaft out of operation substantially as and for the purpose described.

4. In a metallic-hose-making machine having a winding-spindle, in combination, a shaft; two pairs of fast and loose belt-pulleys mounted thereon; belt-shifting gear for the said pulleys; two cams for actuating the said belt-shifting gear; a shaft, normally idle, actuating the cams; fast and loose pulleys mounted thereon; a traveling device carrying the winding-spindle; two pivotal levers extending into the path of travel of the said device on opposite sides thereof; a belt-shifting gear for the fast and loose pulleys of the said cam-actuating shaft; lever mechanisms connecting each of the said pivotal levers with the said latter belt-shifting gear; a belt attached to the said spindle-carrying device; two pulleys carrying the said belt; means actuated by the said cam-actuating shaft for separating the two said latter pulleys on reversal of the machine; and means for driving the one of the said latter pulleys; whereby the belt of the spindle-carrying device is caused to operate the spindle-carrying device, substantially as described.

5. In a metallic-hose-making machine having a winding-spindle, in combination, a shaft; two pairs of fast and loose belt-pulleys mounted thereon; belt-shifting gear for the said pulleys; two cams for actuating the said belt-shifting gear; a shaft, normally idle, actuating the cams; fast and loose pulleys mounted thereon; a traveling device carrying the winding-spindle; two pivotal levers extending into the path of travel of the said device on opposite sides thereof; a belt-shifting gear for the fast and loose pulleys of the said cam-actuating shaft; lever mechanisms connecting the said pivotal levers with the said latter belt-shifting gear; a belt attached to the said spindle-carrying device; two pulleys carrying the said belt; a vertically-sliding bracket carrying one of the said latter pulleys, a pivotal lever for lifting the same; a cam driven by the said cam-actuating shaft for operating the said latter pivotal lever; and means for transmitting to the other of the said latter pulleys the motion of the said cam-actuating shaft, substantially as described.

849,859. WATER-MOTOR. JAMES SCOTT, Denver, Colo., assignor of one-half to The New England Electric Company, Denver, Colo., a Corporation of Colorado. Filed Jan. 29, 1906. Serial No. 298,465.

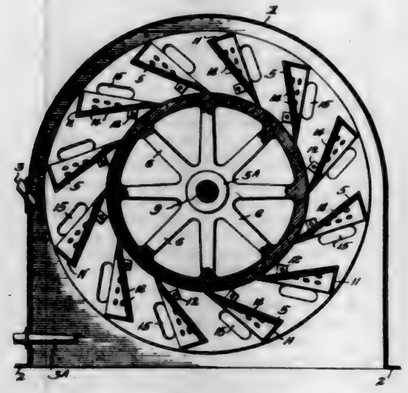

Claim.—1. In a water-motor, a rotary wheel, a wedge-shaped rim at the periphery of said wheel, a plurality of buckets having a wedge-shaped tapering concaved chamber or cup portion terminating in an end cap secured in said wedge-shaped peripheral rim, water-outlets in each side of said rim at each side of each bucket, and a plurality of air-escape apertures in the bottom of each of said buckets.

2. In a water-motor, a wheel rotatably mounted, having a wedge-shaped rim consisting of two radially-diverging flanges arranged to form a V-shaped space between them, a plurality of wedge-shaped water-jet-receiving buckets, having a tapering concaved cup portion terminating in an end cap, and secured between said flanges, a water-outlet aperture through each flange on each side of each bucket, and a plurality of air-escape perforations through the bottom portion of the bottom of each bucket.

3. In a water-motor, a water-wheel having a hollow wedge-shaped peripheral rim composed of two flanges, diverging from a rim portion, a plurality of wedge-shaped buckets secured in said rim, having an outwardly-curved end, a plurality of air-escape perforations directly through the bottom portion of each of said buckets, and a water-outlet aperture through each flange at the side of each bucket.

4. In a water-motor, the combination of a suitable casing, a water-nozzle, and a water-motor rotatably mounted in said casing, comprising a spoked wheel having a V-shaped peripheral rim, with a water-receiving wedge-shaped bucket, having a concaved cup portion terminating in a curved end closed by a curved cap, a plurality of air-escape apertures in the bottom of each bucket, and water-discharge apertures through the sides of said V-shaped rim between each pair of buckets, as specified.

5. In a water-motor, the combination with a water-nozzle, of a rotatably-mounted wheel, comprising a hub and a rim portion, said rim portion comprising two diverging flanges projecting radially from said rim at flaring angles from said rim, and forming a V-shaped space between them, a plurality of buckets each of which is wedge-shaped and each of which comprises a tapering concave cup portion terminating in a curved end at its broadest and deepest end and closed at this end by a cap, a plurality of air discharging and escape perforations in the lower narrower end of the bottom of the cup portion of said bucket, water-outlet apertures in each side flange of said wheel at the side of each bucket, and means for detachably securing said buckets in operative water-impact relation to said water-nozzle.

6. In a water-motor, the combination of the supporting-shaft rotatably journaled, a water-motor secured to said shaft, and a plurality of water-discharging nozzles arranged in operative water-impact relation to said wheel, said water-motor consisting of a V-shaped peripheral rim and wedge-shaped buckets, having a diverging cup-shaped body, terminating in a curved end closed by a rearwardly-sloping cap, a plurality of air-escape perforations through the bottom of the lower and narrower portions of each of said buckets, and water-outlets through both sides of said V-shaped rim at the sides of each bucket, as set forth.

7. In a water-motor, the combination of water-jet-discharging nozzles, and the rotatably-journaled shaft, with the water-motor having the V-shaped rim, and the V-shaped buckets, provided with a plurality of air-escape perforations through the narrower and tapering portion of each of said buckets, an imperforate water-impact portion at the wider portion of each bucket and above said air-escape perforations, and water-outlets in the opposite sides of said rim midway of the length of each bucket, as set forth.

8. In a water-motor, the combination with a rotatably-mounted shaft, the casing and water-jet-discharging nozzles, of a wheel having a V-shaped peripheral rim, containing lateral water-outlet passages, and buckets secured in said rim, each of which contains a water-impact portion arranged in the water-impact path of said nozzles, a plurality of perforated air-escape passages adjacent to the water-impact portion through the bottom of each bucket, and depending lugs arranged and adapted to be secured to said rim portion, as set forth.

849,860. SHAFT-COUPLING. GEORGE S. SEARLE, Rochester, N. Y. Filed May 28, 1903. Serial No. 159,162.

Claim.—1. In a shaft-coupling, the combination with a casing having oppositely-inclined surfaces therein, of a set of independently-operable jaws arranged to coöperate with each of said inclined surfaces and having shaft-engaging surfaces thereon, the adjacent edges of the jaws of each set being out of alinement with those of the other and devices connecting the jaws of one set with those of the other set.

2. In a shaft-coupling, the combination with a casing having oppositely-inclined cone-surfaces therein, of a set of jaws adapted to fit each cone-surface, the jaws of each set being independently adjustable in a direction axially of the casing and having shaft-engaging surfaces thereon, the adjacent edges of the jaws of one set being out of alinement with those of the other and bolts connecting the jaws of one set with those of the other set for drawing them together.

3. In a shaft-coupling, the combination with a casing having oppositely-inclined surfaces therein, of a set of

jaws adapted to coöperate with each of said surfaces and having shaft-engaging surfaces thereon, the jaws of one set having recesses formed therein at points opposite to the meeting edges of the jaws of the opposite set to admit a tool for removing the jaws.

4. In a shaft-coupling, the combination with a casing having oppositely-inclined surfaces formed therein, of a pair of jaws adapted to coöperate with each of said inclined surfaces, and having shaft-engaging surfaces thereon, the adjacent longitudinal edges of the jaws of one pair being arranged at right angles to those of the other pair, and clamping-bolts connecting the jaws of one pair with those of the other pair.

849,861. VALVE-GEAR FOR ENGINES. THEODORE SHADE, Greensburg, Pa., assignor to John Wilson Giffen, Greensburg, Pa. Filed Apr. 23, 1906. Serial No. 313,206.

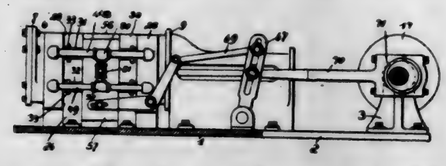

Claim.—1. In an engine, the combination with cylinders having ports therein, of heads carried by said cylinders, said heads having ports formed therein and registering with the ports of said cylinders, cylindrical valves mounted in said heads and controlling the ports of said cylinders, vertically-sliding plates carried by the sides of said cylinders, pins mounted in said cylindrical valves, and projecting through openings in said vertical sliding plates, thereby forming means by which said cylindrical valves are operated, a bell-crank lever carried by the cylinder-supporting means, a vertically-pivoted arm, a link connecting one extremity of said bell-crank lever with said vertical pivoted arm, the other end of said bell-crank lever pivoted on said vertically-sliding plate, a shaft operated by a piston carried within said cylinders, a lever pivotally mounted to said vertical arm, and eccentrically mounted on said shaft, for operating said vertically-sliding plate.

2. In an engine, the combination with a cylinder having exhaust-ports spaced from the ends and with intake-ports between the exhaust-ports and the ends of the cylinder, heads carried by said cylinder and provided with longitudinally-extending valve-bores and with ports corresponding to the exhaust-ports and intake-ports of the cylinder and registering therewith and with vertical guideways in its outer face, valves mounted for oscillation in said valve-bores and provided with transverse ports arranged for alternate registration with the ports in said cylinder and head, a plate slidable in said guideways, pins connected to said valves and extending through said slidable plate, a driven shaft adapted to be operated by the engine, an eccentric carried by said shaft, and coupling means between said eccentric and said slidable plate whereby the rotary motion of the shaft will cause the reciprocatory motion of the plate and cause the operation of the valves.

849,862. LIGHT-REFLECTING ATTACHMENT FOR TYPE-WRITERS. LEWIS J. SIMS, Lincoln, Ill. Filed Mar. 20, 1906. Serial No. 307,045.

Claim.—The combination with a type-writing machine, of a device for reflecting rays of light onto the platen-roll of the machine and comprising a rectangular plate bent upon itself at three of its edges forming shallow grooves or pockets, threaded pins projecting from the opposite side edges of the plate, a mirror in slidable engagement with the plate and adapted to take into the grooves thereof, brackets having apertures to receive the pins, said brackets being provided with slotted foot-pieces for adjustable attachment to the type-writer, and thumb-nuts threaded on the pins of the mirror-frame to frictionally engage the brackets, as herein shown and described.

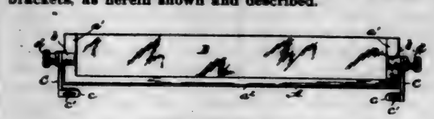

849,863. GRAIN BOLTER AND SEPARATOR. JAMES W. SMITH, Sycamore, Mo. Filed Jan. 5, 1906. Serial No. 294,796.

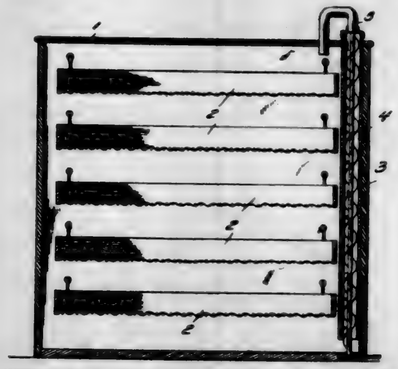

Claim.—In a bolter, the combination with a casing, a conveyer-tube located therewithin and extending upwardly through the top thereof, a cap removably engaged with the upper end of the tube, a pipe having one end engaged in the cap, said pipe extending upwardly from the cap and then laterally and then downwardly through the top of the casing, a conveyer within the tube arranged to discharge into the pipe, and mechanism within the casing arranged to receive matter from the pipe, said pipe being formed of transparent material.

849,864. ICE-MAKING MACHINE. JOHN SOUTHER, Newton, Mass. Filed May 3, 1906. Serial No. 315,043.

Claim.—1. In an ice-making machine, a stationary frame, a plurality of pyramid frustum-shaped receptacles arranged in a row rigidly connected at their adjacent sides, said receptacles pivoted to said frame, means to lock said receptacles in a substantially horizontal position, and means connected to one of said receptacles whereby they may be rocked upon their pivots to discharge their contents, said receptacles so arranged that air-spaces exist between their adjacent sides.

2. In an ice-making machine, a stationary frame, a plurality of intercommunicating pyramid frustum-shaped receptacles arranged in a row rigidly connected together at their adjacent sides, said receptacles pivoted to said frame, a handle connected to one of said receptacles whereby said receptacles may be rocked upon their pivots to discharge their contents, said receptacles so arranged that an air-space exists between their adjacent sides.

3. In an ice-making machine, a base provided with two upwardly-extending side members having jaws at their upper ends, respectively, a plurality of pyramid frustum-shaped receptacles arranged in a row rigidly connected together at their adjacent sides, two of said receptacles provided with slidable shafts fast thereto, said shafts journaled in said jaws, and a handle fast to one of said shafts, whereby said receptacles may be rocked to discharge their contents, said receptacles so arranged that an air-space exists between their adjacent sides.

4. In an ice-making machine, a stationary frame, a plurality of pyramid frustum-shaped receptacles arranged in a row rigidly connected together at their adjacent sides, said receptacles pivoted to said frame with their median pivotal line located above and closely adjacent to the center of gravity of said receptacles, and a handle connected to one of said receptacles, whereby said receptacles may be rocked upon their pivots to discharge their contents, said receptacles so arranged that an air-space exists between their adjacent sides.

5. In an ice-making machine, a stationary frame, and a plurality of pyramid frustum-shaped receptacles arranged in a row rigidly connected at their adjacent sides, said receptacles pivoted to said frame, whereby they may be rocked upon their pivots to discharge their contents, said receptacles so connected together that air-spaces exist between their adjacent sides.

849,865. KEEPER FOR DOOR-LOCKS, &c. CHANNING H. SPENCER, Maryland, N. Y. Filed Mar. 24, 1906. Serial No. 307,900.

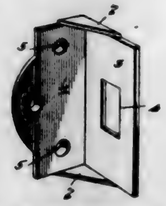

Claim.—A device of the class specified, constructed from a single piece of sheet metal comprising a securing-plate, and a striker or keeper bent at right angles thereto and provided with an intermediate slot, the striker or keeper also having integral triangular end tongues which are bent at right angles thereto and projected over and engage the ends of the securing-plate, the latter and the striker being of equal length.

849,866. SURFACE CONDENSER. CONSTANTIN N. TATARNICOFF, Yonkers, N. Y. Filed Feb. 7, 1907. Serial No. 356,280.

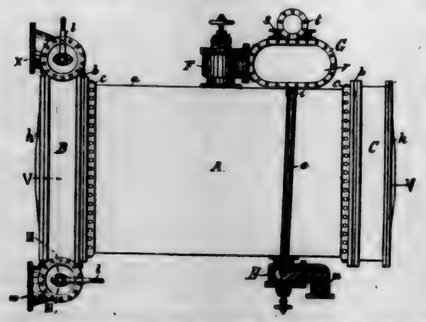

Claim.—1. A surface condenser comprising a series of chambers in a unitary body portion, with separate inlet and outlet valves for each of the chambers, and tubes through the chambers with separate inlet and outlet controlling-valves for the tubes of each chamber, substantially as described.

2. A surface condenser comprising a series of chambers in a unitary body portion, separate inlet and outlet valves for each of the chambers, heads with corresponding sets of chambers at the ends of the body portion, tubes connecting each of the sets of chambers of the heads through the corresponding chambers of the body portion, and separate inlet and outlet valves for each of the sets of chambers, substantially as described.

849,867. SOAP-RECEPTACLE. GEORGE L. THORNE, St. Louis, Mo., assignor of one-half to M. J. Pope and one-half to Frank D. Thorne, St. Louis, Mo. Filed Feb. 2, 1906. Serial No. 299,099.

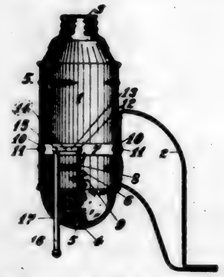

Claim.—1. In a device of the character described, the combination of a canister having an aperture, a valve controlling same, a valve-stem on which said valve is mounted, a pivoted lever, and a plunger pivoted within said canister to said lever and protruding exterior to said canister through the bottom thereof.

2. In a device of the character described, the combination of a canister having an aperture, a valve controlling same, a valve-stem on which said valve is mounted, a pivoted lever, and a plunger, both said plunger and said valve-stem being pivoted to said pivoted lever and being parallel to each other.

849,868. OIL-CUP FOR AIR-PUMPS. WALTER V. TURNER, Wilmerding, Pa., assignor, by direct and mesne assignments, to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed July 6, 1903. Renewed Apr. 19, 1906. Serial No. 312,577.

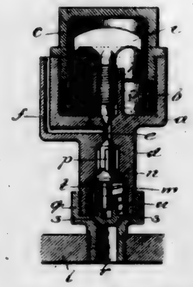

Claim.—1. A lubricator for air-pumps, comprising an oil-chamber, an outlet-passage leading from said chamber to the pump, a valve for controlling the flow of oil into said outlet-passage, an air-inlet port leading from said outlet-passage to a point at the upper portion of the oil-chamber, and a check-valve in said outlet-passage.

2. A lubricator for air-pumps, comprising an oil-chamber, an outlet-passage leading therefrom to the pump, a needle-valve for controlling the flow of oil from the chamber into the outlet-passage, a check-valve in said passage, and an air-inlet port leading from a point in said passage

above the check-valve to the upper portion of the oil-chamber.

3. A lubricator comprising an oil-chamber, an outlet-passage leading from said chamber, an air-inlet port having a restricted opening communicating with said passage to a point at the upper portion of the oil-chamber, and a check-valve in said outlet-passage.

4. A lubricator comprising an oil-chamber having an outlet-passage, a restricted opening communicating between the lower part of the oil-chamber and the outlet-passage, a check-valve in said passage, and an air-inlet port leading from said outlet-passage to the upper part of the oil-chamber and having free open communication with said check-valve.

5. A lubricator for air-pumps, comprising an oil-chamber, an outlet-passage leading from said chamber to the pump, a restricted opening communicating between the lower part of the oil-chamber and the outlet-passage, an air-inlet port leading from said passage to the upper part of the oil-chamber, a check-valve controlling said passage, and a spring to hold said valve seated.

849,869. CASH-REGISTER. EDWARD VAN CAMP, Brookston, Ind. Filed July 11, 1906. Serial No. 325,700.

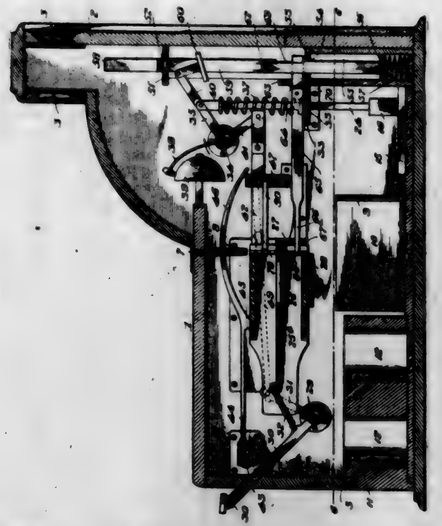

Claim.—1. The combination in a cash-register, of a casing, lower and upper fixed walls therein; the upper wall having openings disposed above the lower wall, bifurcated slides straddling the upper wall and having check-receiving grooves, annunciators complementary to the slides, and means for moving the annunciators when checks are placed in the slides and the register is operated.

2. The combination in a cash-register, of a casing, a drawer movable therein and having a tongue provided with a slot, a spring-fastener carried by the casing and arranged to enter the slot in the drawer-tongue when the drawer is pressed into the casing, a spring for forcing the drawer outward, a plunger movable through the slot in the drawer-tongue and adapted when depressed to release said tongue from the spring-fastener, and means for moving said plunger in opposite directions.

3. The combination in a cash-register, of a casing, a drawer movable therein and having a tongue provided with a slot, a spring-fastener carried by the casing and arranged to enter the slot in the drawer-tongue when the drawer is pressed into the casing, a spring for forcing the drawer outward, a plunger movable through the slot in the drawer-tongue and adapted when depressed to release said tongue from the spring-fastener, and check-controlled means for moving said plunger in opposite directions.

4. The combination in a cash-register of a casing, a drawer movable therein and having a tongue in which is a longitudinal slot, a resilient fastening-strip connected to the bottom of the casing and extending up into the slot of the drawer-tongue so as to engage the rear wall of said slot, a fixed plate disposed above the drawer-tongue and having an upwardly-extending sleeve, a plunger movable in said sleeve and arranged to depress the fastening-strip, means for moving said plunger down and up, and means for forcing the drawer outward.

5. The combination in a cash-register of a casing, a drawer movable therein and having a tongue in which is a longitudinal slot, a resilient fastening-strip connected to the bottom of the casing and extending up into the slot of the drawer-tongue so as to engage the rear wall of said slot, a fixed plate disposed above the drawer-tongue and having an upwardly-extending sleeve, a plunger movable in said sleeve and arranged to depress the fastening-strip, check-controlled means for moving the plunger down and up, and means for forcing the drawer outward.

6. The combination in a cash-register, of a check-carrying slide, a gravitating latch for holding the slide against movement in one direction, and means for engaging a check in the slide and moving the slide in the opposite direction and into engagement with the gravitating latch; said means being movable in the first-mentioned direction independent of the slide and being arranged on such movement to disengage the latch from the slide.

7. The combination in a cash-register, of a check-carrying slide, a latch for automatically engaging and holding the slide against movement in one direction, and means for engaging a check in the slide and moving the slide in the opposite direction and into engagement with the latch; said means being movable in the first-mentioned direction independent of the slide and being arranged on such movement to disengage the latch from the slide.

8. The combination in a cash-register, of a casing, a drawer movable therein, a spring for forcing the drawer outward, a spring-strip for holding the drawer against outward movement, a plunger for releasing the drawer from said spring-strip, a rock-shaft having an arm connected to the plunger, an actuating device, and check-controlled means intermediate the actuating device and the rock-shaft for operating the latter by the former.

9. The combination in a cash-register, of a check-carrying slide, means for engaging a check in the slide and moving the slide in one direction; said means being movable in the opposite direction independent of the slide, and a gravitating latch for automatically engaging and holding the slide against movement in the second-mentioned direction; said latch having a portion overhanging the said means and arranged to be raised by the same on the second-mentioned movement thereof.

10. The combination in a cash-register, of a casing, a drawer movable therein, means for forcing the drawer outward, means for fastening the drawer in its closed position, means for releasing the drawer from the fastening means, a gong, a hammer for striking the same, an actuating device, and check-controlled means intermediate the actuating device and the drawer-releasing means and hammer for operating the latter by the former.

11. The combination in a cash-register, of a casing, a drawer movable therein, a spring for forcing the drawer outward, means for fastening the drawer in its closed position, a plunger for releasing the drawer from said means, a gong, a rock-shaft carrying a hammer arranged to strike the gong and having an arm connected to the plunger, an actuating device, and means intermediate the actuating device and the rock-shaft for operating the latter by the former.

12. The combination in a cash-register, of a casing, a drawer movable therein, a spring for forcing the drawer outward, means for fastening the drawer in its closed position, a plunger for releasing the drawer from said means, a gong, a rock-shaft carrying a hammer arranged to strike the gong and having an arm connected to the plunger, an actuating device, and check-controlled means intermediate the actuating device and the rock-shaft for operating the latter by the former.

13. The combination in a cash-register, of a casing, check-carrying slides, means for engaging checks in the slides and moving the slides in one direction; said means being movable in the opposite direction independent of the slides, gravitating latches for automatically engaging and holding the slides against movement in the second-mentioned direction; said latches having portions overhanging the said means and arranged to be raised by the same on the second-mentioned movement thereof, an actuating device connected with the said means, movable, spring-pressed annunciators, means for forcibly moving the slides in the second-mentioned direction, means arranged when a slide carrying a check is moved in said direction to release the annunciator complementary to said slide, and latching means; the annunciator being engaged by said means prior to being released.

14. The combination in a cash-register, of a casing, movable, spring-pressed annunciators, check-carrying slides, means for engaging checks in the slides and moving the slides in one direction; said means being movable in the opposite direction independent of the slides, an actuating device connected with said means, gravitating latches for automatically engaging and holding the slides against movement in the second-mentioned direction; said latches having portions overhanging the said means and arranged to be raised by the same on the second-mentioned movement thereof, spring-pressed bars for holding the annunciators against movement under the impulse of the springs backing said annunciators; said bars being arranged to be moved by checks in the slides on the second-mentioned movement of the slides, means for depressing the annunciators, a spring for moving said means in one direction, and connections between said means and the slides for moving the latter by the former.

15. The combination in a cash-register, of a casing, movable, spring-pressed annunciators, check-carrying slides, means for engaging checks in the slides and moving the slides in one direction; said means being movable in the opposite direction independent of the slides, an actuating device connected with said means, gravitating latches for automatically engaging and holding the slides against movement in the second-mentioned direction; said latches having portions overhanging the said means and arranged to be raised by the same on the second-mentioned movement thereof, spring-pressed bars for holding the annunciators against movement under the impulse of the springs backing said annunciators; said bars being arranged to be moved by checks in the slides on the second-mentioned movement of the slides, a rock-shaft provided with means for depressing the annunciators, a spring for moving said rock-shaft in one direction, and connections between the rock-shaft and the slides for moving the latter by the former.

16. The combination in a cash-register, of an annunciator, a spring for moving the annunciator in one direction, a movable bar coöperating with means on the annunciator to hold the annunciator against movement under the impulse of the spring, and check-controlled means for moving the bar and thereby releasing the annunciator.

17. The combination in a cash-register, of an annunciator having a stem the rear edge of which is recessed, a spring arranged under the stem and adapted to raise the annunciator, a bar having a recess in its side receiving the annunciator-stem, a spring for pressing said bar in one direction, and check-controlled means for pressing the bar in the other direction and thereby releasing the annunciator.

18. In a cash-register, the combination with a plurality of vertically-movable annunciators having stems and lateral projections thereon, springs arranged under the stems and adapted to force the annunciators upward, means for holding the annunciator-stems against upward movement, a vertically-movable bar loosely receiving the stems of the annunciators and adapted to engage the projections on said stems, and check-controlled means for releasing the holding means from the annunciator-stems and moving the vertically-movable bar downward.

19. The combination in a cash-register, of a casing, movable, spring-pressed annunciators, check-carrying slides, means for engaging checks in the slides and moving the slides in one direction; said means being movable in the opposite direction independent of the slides, an actuating device connected with said means, gravitating latches for automatically engaging and holding the slides against movement in the second-mentioned direction; said latches having portions overhanging the said means and arranged to be raised by the same on the second-mentioned movement thereof, spring-pressed bars for holding the annunciators against movement under the impulse of the springs backing said annunciators; said bars being arranged to be moved by checks in the slides on the second-mentioned movement of the slides, a gong, a rock-shaft provided with a hammer for striking the gong and also provided with means for depressing the annunciators, a spring for moving said rock-shaft in one direction, and connections between the rock-shaft and the slides for moving the latter by the former.

20. The combination in a cash-register, of a check-carrying slide, a gravitating latch for holding the slide against movement in one direction, a bar movable independent of the slide and having a pin for engaging a check in the slide and moving said check in one direction, said bar being arranged in its movement in the opposite direction to disengage the latch from the slide, means for moving the slide, and means for moving the bar.

21. The combination in a cash-register, of a casing, check-carrying slides, gravitating latches therefor, a movable bar arranged to disengage the latches from the slides and having fingers adapted to engage checks in the slides, an actuating device connected with the movable bar, vertically-movable spring-pressed annunciators, means for forcibly moving the slides rearward, and means arranged when a slide carrying a check is moved rearward to release the annunciator complementary to said slide.

22. The combination in a cash-register, of a casing, vertically-movable annunciators, springs for pressing the annunciators upward, check-carrying slides, spring-pressed bars for holding the annunciators against upward movement; said bars being arranged to be moved by checks in the slides, a rock-shaft provided with means for depressing the annunciators, a spring for moving said rock-shaft in one direction, connections between the rock-shaft and the slides for moving the latter by the former, an actuating device, gravitating latches for holding the slides against movement in one direction, and a fore-and-aft-movable bar connected with the actuating device and arranged to disengage the latches from the slides and having pins extending toward the slides.

23. The combination in a cash-register, of a casing, movable, spring-pressed annunciators, check-carrying slides, means for engaging checks in the slides and moving the slides in one direction; said means being movable in the opposite direction independent of the slides, an actuating device connected with said means, gravitating latches for automatically engaging and holding the slides against movement in the second-mentioned direction; said latches having portions overhanging the said means and arranged to be raised by the same on the second-mentioned movement thereof, spring-pressed bars for holding the annunciators against movement under the impulse of the springs backing said annunciators; said bars being arranged to be moved by checks in the slides on the second-mentioned movement of the slides, a drawer movable in the casing, a spring for forcing the drawer outward, means for fastening the drawer in its closed position, a plunger for releasing the drawer from said means, a rock-shaft having an arm connected with said plunger and also having means for depressing the annunciators, a spring for moving said rock-shaft in one direction, and connections between the rock-shaft and the slides for moving the latter by the former.

24. The combination in a cash-register, of a casing, mov-

able, spring-pressed annunciators, check-carrying slides, means for engaging checks in the slides and moving the slides in one direction; said means being movable in the opposite direction independent of the slides, an actuating device connected with said means, gravitating latches for automatically engaging and holding the slides against movement in the second-mentioned direction; said latches having portions overhanging the said means and arranged to be raised by the same on the second-mentioned movement thereof, spring-pressed bars for holding the annunciators against movement under the impulse of the springs backing said annunciators; said bars being arranged to be moved by checks in the slides on the second-mentioned movement of the slides, a gong, a drawer movable in the casing, a spring for forcing the drawer outward, means for fastening the drawer in its closed position, a plunger for releasing the drawer from said means, a rock-shaft having a hammer for striking the gong, and an arm connected with said plunger, and also having means for depressing the annunciators, a spring for moving said rock-shaft in one direction, and connections between the rock-shaft and the slides for moving the latter by the former.

25. The combination in a cash-register, of a check-carrying slide, means for moving the slide in one direction, a bar having a pin arranged to engage a check in the slide, whereby the bar is enabled to move the slide in the opposite direction; said bar being movable in the first-mentioned direction independent of the slide, means for so moving the bar, and a gravitating latch for holding the slide against movement in the first-mentioned direction; said latch having a portion overhanging and arranged to be moved by the bar on the movement thereof in the first-mentioned direction.

849,870. APPARATUS FOR FORMING FILAMENTS. MONTGOMERY WADDELL, New York, N. Y., assignor to Silas W. Pettit, Philadelphia, Pa. Filed Apr. 19, 1905. Serial No. 256,368.

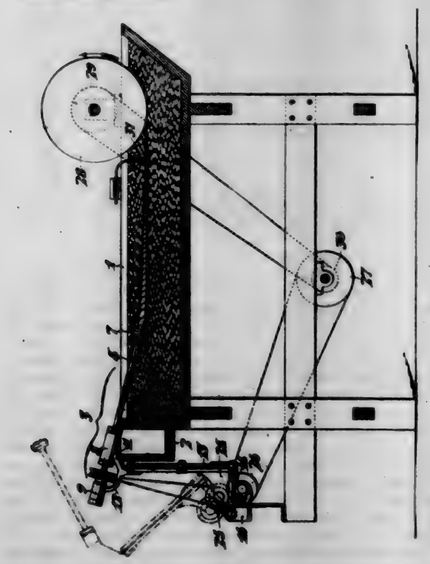

Claim.—1. The combination of a rotatable spinning-tube and spinneret; an oscillatory standard therefor; a main spinning-trough; and a drip-box adjacent to said main spinning-trough; whereby when the standard is oscillated to throw the spinneret out of its operative position, said spinneret will be supported above said drip-box, substantially as set forth.

2. The combination with the rotatable spinning-tube and spinneret, and its oscillatory standard; of driving mechanism for said spinning-tube, adapted to engage operatively when said standard is in one extreme position and to disengage when said standard is oscillated away from said position, substantially as set forth.

3. The combination with a spinning-trough; of a rotatable winding-spool, the radial projection of whose take-up surface extends below the top of the trough, within the latter; whereby, during rotation of said spool the wound filaments are subjected to protracted exposure to the setting solution, substantially as set forth.

4. The combination with a spinning-trough; of a rotatable spinning-tube having a spinneret adapted to be projected within said trough, the axis of said tube when in its operative position being inclined with relation to said trough, in combination with mains for maintaining the filament extending from said spinneret in a substantially horizontal position in said trough, substantially as set forth.

5. The combination of a rotatable spinning-tube and spinneret; a hollow standard for said tube communicating with the interior of said tube; a filter arranged within said standard; and means for rotating the spinning-tube, mounted to oscillate with said tube, substantially as set forth.

6. The combination of a rotatable spinning-tube and spinneret; an oscillatory standard arranged to support said tube; and means for rotating said tube carried by said standard, substantially as set forth.

7. The combination with a spinning device and spinning-trough containing liquid; of a pair of independently removable winding-spools mounted upon a common shaft; means maintaining said spools with their lower edges submerged in said liquid; and means for rotating said shaft, substantially as set forth.

8. The combination with a spinning device and spinning-trough containing liquid; of a pair of independently-removable winding-spools mounted upon a common shaft; means maintaining said spools with their lower edges submerged in said liquid; and an adjustable guide adapted to deliver the filament to either of said spools, substantially as set forth.

849,871. TROLLEY. RICHARD W. WALKER, Topeka, Kans. Filed Oct. 15, 1906. Serial No. 338,944.

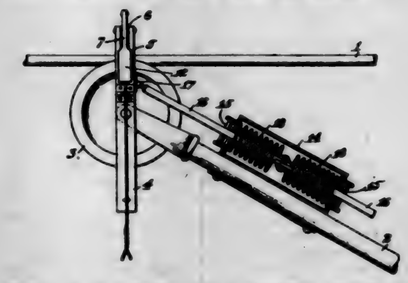

Claim.—1. In a trolley, the combination with the trolley-spindle, of a yoke pivotally hung thereon, laterally-swinging arms carried by the said yoke, dogs mounted on said arms and adapted to meet over the trolley-wire, and automatic means for swinging said arms as the yoke is vibrated.

2. In a trolley, the combination with the trolley-spindle, of a yoke pivotally hung thereon, laterally-movable arms carried by the yoke, dogs mounted on the arms, and automatic means for holding said arms normally over the yoke and causing them to move laterally when the yoke is vibrated.

3. In a trolley, the combination with the trolley-spindle, of a yoke pivotally hung thereon, outwardly-swinging arms hinged to the upper ends of the yoke, dogs pivoted in the upper ends of said arms and adapted to meet over the trolley-wire, and automatic means for moving the arms laterally when the yoke is vibrated.

4. The combination with the trolley-spindle, of a yoke pivotally hung thereon, laterally-swinging arms on the yoke, dogs pivoted on said arms and adapted to meet over the trolley-wire and having their lower ends weighted and provided with shoulders to bear against the outer sides of said arms, and means for moving the arms laterally as the yoke is vibrated.

5. In a trolley, the combination with the trolley-spindle of a yoke pivotally hung thereon, arms hinged to the upper ends of the yoke, dogs mounted in the upper ends of said arms, intersecting bars connected to said arms, and means for holding said bars normally together.

6. In a trolley, the combination with the trolley-spindle of a yoke pivotally hung thereon, arms hinged to the upper ends of the yoke, dogs carried by said arms, intersecting bars pivoted together and carried by the trolley-pole and having their upper ends connected to the said arms, a fixed part between the intersecting bars, and a spring around said bars between said fixed part and their pivot.

849,872. HEATING-STOVE. JAMES W. WELDON, Toledo, Ohio. Filed Oct. 30, 1906. Serial No. 341,355.

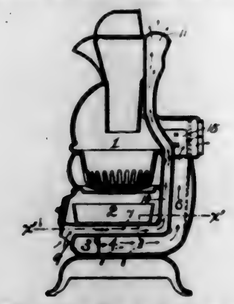

Claim.—1. The combination in a stove having communicating side descending flues at its rear, horizontal base-flues, and an ascending flue disposed between the descending flues, of vertical flues separating each side descending flue from the ascending flue and open to the atmosphere adjacent their tops, and hollow flue-strips separating the base-flues and having their bottoms opening below the stove and their rear ends communicating with the contiguous vertical flue, substantially as described.

2. The combination in a stove having two communicating side descending flues, horizontal base-flues, and an ascending flue for the products of combustion, of a vertical air-flue disposed between each side descending flue and the contiguous side of the ascending flue, the front walls of said air-flues forming a part of the rear wall of the ash-pan and combustion-chamber sections, and flue-strips separating the base-flues and having their bottoms open to the atmosphere and their rear ends communicating with the vertical air-flues.

3. The combination in a stove of horizontal base-flues, a central ascending and two side descending flues communicating with the base-flues and disposed at the rear of the stove, and a vertical air-flue disposed between each side descending flue and the contiguous side of the ascending flue and having its side walls forming the contiguous side walls of the descending and ascending flues, said air-flue having both ends open to the atmosphere.

4. The combination in a stove of horizontal base-flues, a central ascending and two side descending flues communicating with the base-flues and disposed at the rear side of the stove, a vertical air-flue between each side descending flue and the ascending flue and open at its top to the atmosphere, said air-flues having their side walls forming the contiguous side walls of the ascending and descending flues and their front walls exposed to the ash-pan and combustion-chamber sections, and hollow flue-strips separating the base-flues and having their bottoms open to the atmosphere and their rear ends communicating with the vertical air-flues, substantially as described.

849,873. CEMENT-KILN. JOHN S. WENTZ, Philadelphia, Pa. Filed Jan. 7, 1907. Serial No. 351,131.

Claim.—1. The combination of a cement-kiln having a hearth, a roof inclosing the hearth, means for reciprocating the hearth, means for feeding material onto the hearth at one end of the kiln, and means for discharging it at the opposite end of the kiln, means for feeding fuel into the discharge end of the kiln between the hearth and the roof, and a flue at the inlet end of the kiln communicating with the kiln so that the products of combustion will pass through the kiln between the roof and the hearth and in contact with the material, substantially as described.

2. The combination of a kiln having an elongated body portion, a hearth, a roof inclosing the hearth, means for reciprocating both the hearth and the roof, means for feeding material onto the hearth at one end of the kiln, an outlet for the discharge of material at the opposite end of the kiln, a stack at the feed end of the kiln communicating with the space between the hearth and the roof, and means for admitting fuel into the kiln above the hearth, substantially as described.

3. The combination of a kiln having an elongated body portion, a flat hearth, and an arched roof inclosing the hearth, a series of suspension-rods coupled to the body of the kiln, means for vertically adjusting the suspension-rods, means for reciprocating the entire body portion including the hearth and the roof, means for feeding material onto the hearth, an outlet for the discharge of material from the hearth, means for feeding fuel into the discharge end of the kiln between the hearth and the roof, and a stack communicating with the opposite end of the kiln so that the products of combustion will pass through the kiln in contact with the material, substantially as described.

4. The combination of the body portion of a kiln consisting of an elongated flat hearth and an arched roof covering said hearth, a rear hood into which the body of the kiln extends, a stack communicating with said hood, means

for feeding material into this end of the kiln, a front hood having a discharge-opening, and means for reciprocating the body portion of the kiln, substantially as described.

5. The combination in a kiln, of an elongated body portion having a flat hearth and an arched roof, a series of suspension-rods coupled to the body portion of the kiln, means for vertically adjusting the suspension-rods, and means for reciprocating the body portion, substantially as described.

6. The combination in a kiln, of an elongated body portion having a flat hearth and an arched roof, a fixed rear hood, a chimney connected to said hood, a front hood, a burner projecting through said front hood, means for reciprocating the body portion in both the front hood and the rear hood, carriers for the body portion, and means for vertically adjusting the carriers, substantially as described.

7. The combination in a kiln for burning cement, having an elongated body portion provided with a flat hearth and an arched roof inclosing the hearth, lateral projections on said body portion, suspension-rods connected to said projections, vertically-adjustable eyebolts to which the said rods are connected, a cam, means for driving said cam, a rock-shaft actuated by the cam and connected to the body portion of the kiln, a front hood and a rear hood, means for feeding material onto the hearth of the kiln, a discharge-opening for the escape of material, means for feeding fuel into the space between the hearth and the roof of the kiln, and a stack communicating with the opposite end of the kiln, substantially as described.

849,874. BALING-PRESS. HENRY L. WHITMAN, St. Louis, Mo. Filed Aug. 15, 1906. Serial No. 330,667.

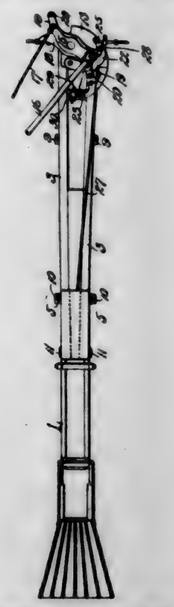

Claim.—1. In a baling-press, the combination of a baling-chamber, a plunger, a pull-rod having connection with said plunger, an operating-lever to which said pull-rod is connected, and a rotatable power-head provided with an arm and an inwardly-projecting cam arranged for successive operation upon said lever, substantially as set forth.

2. In a baling-press, the combination of a baling-chamber, a plunger, a pull-rod having connection with said plunger, an operating-lever to which said pull-rod is connected, and a rotatable power-head provided with an arm and an inwardly-projecting cam arranged for successive operation upon said lever; said cam being located closer to the axis of said power-head than the portion of said arm at which engagement with said lever is effected, and having its working face opposed to the axis of the power-head, substantially as set forth.

3. In a baling-press, the combination of a baling-chamber, a plunger, a pull-rod having connection with said plunger, an operating-lever to which said pull-rod is connected, and a rotatable power-head provided with an arm and an inwardly-projecting cam arranged for successive operation upon said lever; said cam having its working face located at its side nearest to and opposing the axis of said power-head, substantially as set forth.

4. In a baling-press, the combination of a baling-chamber, a plunger, a pull-rod having connection with said plunger, an operating-lever to which said pull-rod is connected, a rotatable power-head, a pin having an antifriction-roller and carried by said power-head and adapted to engage said lever, and an inwardly-projecting cam carried by said power-head and adapted to actively engage said lever after it has been engaged by said pin, substantially as set forth.

5. In a baling-press, the combination of a baling-chamber, a plunger, a pull-rod having connection with said plunger, an operating-lever to which said pull-rod is connected, a rotatable power-head, a pin having an antifriction-roller and carried by said power-head and adapted to engage said lever, and an inwardly-projecting cam carried by said power-head and adapted to engage said lever; said cam being located closer to the axis of said power-head than said antifriction-roller and having its working face opposing the axis of said power-head, substantially as set forth.

6. In a baling-press, the combination of a baling-chamber, a plunger, a pull-rod having connection with said plunger, an operating-lever to which said pull-rod is connected, a rotatable power-head, an antifriction-roller carried by said power-head and adapted to engage said lever, and a cam carried by said power-head and adapted to engage said lever after the lever has been engaged by said antifriction-roller; said cam being located closer to the axis of said power-head than said antifriction-roller and having its working face at its side nearest the axis of said power-head, substantially as set forth.

7. In a baling-press, the combination of a baling-chamber, a plunger, a pull-rod having connection with said plunger, an operating-lever to which said pull-rod is connected, a pin having an antifriction-roller and carried by said lever, a power-head, a pin having an antifriction-roller and carried by said power-head and arranged for engagement with said lever, and an inwardly-projecting cam carried by said power-head and arranged for engagement with the antifriction-roller carried by said lever, substantially as set forth.

8. The combination of a baling-chamber, a plunger, a pull-rod having connection with said plunger, power mechanism for actuating said pull-rod, means for retracting said pull-rod, and cushioning means, associated with said plunger, comprising a pair of spring-controlled rods, and a bumper-rod adapted to be engaged by said plunger, substantially as set forth.

9. The combination of a baling-chamber, a plunger, a pull-rod having connection with said plunger, power mechanism for actuating said pull-rod, means for retracting said pull-rod, and cushioning means associated with said plunger; said cushioning means comprising a pair of spring-controlled rods, and a bumper-rod supported by said spring-controlled rods and adapted to be engaged by said plunger, substantially as set forth.

10. In a baling-press, the combination of a baling-chamber, a plunger, a pull-rod having connection with said plunger, and means for operating said pull-rod; said pull-rod being composed of a rear section, rear links pivoted to the forward end of the rear section, an intermediate link pivoted to the rear links, forward links pivoted to the intermediate link, and a main member pivoted to the forward links, substantially as set forth.

11. In a baling-press, the combination of a baling-chamber, a plunger, a pull-rod having connection with said plunger and composed of a rear section, rear links pivoted to the forward end of the rear section, an intermediate link having upper and lower antifriction-rollers and pivoted to the rear links, forward links pivoted to the intermediate link, and a main member pivoted to the forward links, a funnel-shaped casing for guiding the rollers, and means for operating said pull-rod, substantially as set forth.

12. In a baling-press, the combination of a baling-chamber, a plunger, a pull-rod having connection with said plunger and composed of a rear section, rear links, pivoted to the forward end of the rear section, an intermediate link pivoted to the rear links, forward links having a plurality of staggered pin-holes and pivoted to the intermediate link, and a main member, having a pin whereby it is adjustably pivoted to one of the pin-holes, and means for operating said pull-rod, substantially as set forth.

13. In a baling-press, the combination of a baling-chamber, a plunger, a pull-rod, an operating-lever having a slight recess or depression in its outer or rear bearing-face, to which said pull-rod is connected, means for operating said lever, and a bumper for said lever arranged at the rear of the lever and having its lever-receiving face presented toward the pivotal point of the lever and adapted to enter the slight recess or depression, substantially as set forth.

849,875. SUPERHEATER FOR LOCOMOTIVES. HENRY V. WILLE, Philadelphia, Pa., assignor to Burnham, Williams & Co., Philadelphia, Pa., a Firm. Filed Nov. 20, 1905. Serial No. 288,188.

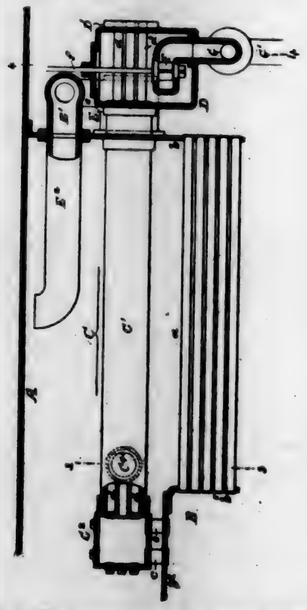

Claim.—1. The combination of a boiler having a front tube-sheet, a fire-box, a rear tube-sheet separating the fire-box from the body of the boiler, a crown for the fire-box, tubes extending from the rear tube-sheet to the front tube-sheet, a superheater mounted within the upper portion of the boiler and extending through the front tube-sheet, the rear end of the superheater resting upon and supported solely by the crown of the fire-box and connected to the fire-box, a steam-supply pipe extending from the upper portion of the boiler and communicating with the superheater, and pipes in the smoke-box leading to the cylinders and also communicating with the superheater, substantially as described.

2. The combination of a locomotive-boiler having a fire-box at one end, a smoke-box at the opposite end, longitudinal tubes extending from the fire-box to the smoke-box, a superheater mounted in that portion of the boiler above the tubes and extending through the front tube-sheet and resting upon the crown of the fire-box, the flue-space of the superheater being connected to the fire-box, a pipe extending from the steam-space of the boiler through the front tube-sheet and connected to the superheater within the smoke-box, and a valve-box in the smoke-box connected to the superheater and to the cylinders of the locomotive, substantially as described.

3. The combination of a locomotive-boiler having a fire-box, a rear tube-sheet and a crown separating the fire-box from the boiler, a front tube-sheet, tubes extending from the front tube-sheet to the rear tube-sheet, a superheater mounted within the upper portion of the boiler above the tubes and extending through the front header, the rear end of the superheater stopping short of the rear end of the boiler and resting upon the crown of the fire-box, the front of the superheater being connected with steam-pipes, one leading from the upper portion of the boiler and the other leading to the cylinders, both connections being within the fire-box of the locomotive, substantially as described.

4. The combination in a locomotive-boiler, of a fire-box, front and rear tube-sheets, longitudinal tubes extending from one sheet to the other, a series of cylindrical casings and rear headers forming a superheater, said superheater mounted within the boiler above the tubes, the rear headers being supported by the crown of the fire-box and connected thereto, a dry pipe leading from the steam-space in the boiler and communicating with two of a series of casings forming the superheater, a valve-box with which the other two of the series communicate, said valve-box communicating with the cylinders of the locomotive so that the steam will pass rearward through two of the casings and forward through the other two, substantially as described.

5. The combination of a locomotive-boiler having a fire-box at one end, a rear tube-sheet and crown separating the fire-box from the boiler, a front tube-sheet, tubes extending from one sheet to the other, a superheater mounted in the upper portion of the boiler above the said tubes, said superheater extending through the front tube-sheet and having a front header within the smoke-box of the boiler, the superheater having a rear header resting upon the crown of the fire-box, short tubes connecting the rear header with the crown-sheet and through which the products of combustion pass from the fire-box to the superheater, with two pipes communicating with the forward header of the superheater within the smoke-box of the boiler, one pipe leading from the boiler and the other pipe leading to the cylinders, substantially as described.

6. The combination of a locomotive-boiler having a fire-box at one end, a smoke-box at the opposite end, a rear tube-sheet and a crown-sheet separating the boiler from the fire-box, a front tube-sheet separating the boiler from the smoke-box, tubes extending from one tube-sheet to the other, a superheater mounted within the upper portion of the boiler and consisting of a cylindrical casing connected to headers at each end, a series of tubes within the casing also connected to the headers, the rear header of the superheater resting upon the crown-sheet of the boiler, tubes attaching said rear header to the crown-sheet and through which the products of combustion pass to the superheater, the said tubular casing extending through the front tube-sheet, and steam-pipes communicating with the front header of the superheater within the smoke-box, substantially as described.

7. The combination of a steam-boiler having a fire-box and a smoke-box, front and rear headers, a superheater mounted upon the fire-box and passing through the front header, said superheater consisting of four tubular casings, rear headers to which the tubes are attached, said headers communicating with the fire-box of the locomotive, connec-

tions between the casings at the rear end thereof, heads attached to the end casings and communicating with the steam-space of the boiler, a chest connecting with the two central casings, the tubes within the casings communicating with the smoke-box of the locomotive, the chest communicating with the cylinders, substantially as described.

8. The combination of a locomotive-boiler having a fire-box and a smoke-box, longitudinal tubes connecting the fire-box with the smoke-box, a superheater mounted in the upper portion of the boiler above the tubes and extending through the front tube-sheet, said superheater including a series of casings and rear headers resting on the fire-box and connected thereto, with a valve-box and steam connections therefor within the smoke-box, substantially as described.

849,876. CLOTHES-LINE SUPPORT AND HOLDER. LOUIS WINDT and GEORG MATLIKA, Spring Hill, Pa. Filed May 22, 1906. Serial No. 318,204.

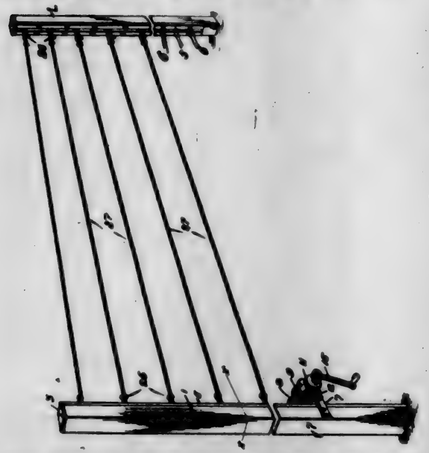

Claim.—In a clothes-line support, two hollow supporting-posts spaced apart and having open confronting faces, a pulley suspended interiorly of each post at the upper end thereof, a reel suspended from one of said posts and having two spools, a carrier-supporting line suspended from the pulley in one of said posts having one end connected to one of said spools, a plurality of carriers suspended from the other end of said line, and each having an arm projecting through the open face of the post, a carrier-supporting line suspended from the pulley in the other of said posts having one end attached to the other of said spools, a plurality of carriers suspended from the other end of said supporting-line, and each having an arm projecting through the open face of the post, and clothes-supporting lines connecting the arms of the carriers in one post to the arms of the carriers in the other post.

849,877. WOVEN PILE FABRIC. GEORGE ZIMMERMANN, Philadelphia, Pa. Filed Nov. 14, 1905. Serial No. 287,296.

Claim.—1. A pile fabric having weft-threads in sets of three, disposed one above and two beneath, and each set contained in one and the same shed of binder warp-threads, and pile-forming warp-threads which pass first down under and up around one of the outer weft-threads of the set, thence up over and down around the intermediate weft-thread of the set, and thence down under and up around the other outer weft-thread of the set.

2. A pile fabric having weft-threads in sets of three, disposed one above and two beneath and interposed separator warp thread or threads, and each set contained in one and the same shed of binder warp-threads, and pile-forming warp-threads which pass first down under and up around one of the outer weft-threads of the set, thence up over and down around the intermediate weft-thread of the set, and thence down under and up around the other outer weft-thread of the set.

3. A pile fabric having weft-threads in sets of three, disposed one above and two beneath an interposed stuffer warp-thread, independent of the pile-forming warp-threads, and each set contained in one and the same shed of binder warp-threads, and pile-forming warp-threads which pass first down under and up around one of the outer weft-threads of the set, thence up over and down around the intermediate weft-thread of the set, and thence down under and up around the other outer weft-thread of the set.

4. A pile fabric having weft-threads in sets, the threads of each set disposed both above and below interposed separator warp threads or thread, and each set contained in one and the same shed of binder warp-threads, and pile-forming warp-threads which engage each thread of the set of warp-threads.

849,878. HEATING APPARATUS FOR FLUIDS. ADOLF ZIVI, Mannheim, Germany. Filed Nov. 14, 1906. Serial No. 343,465.

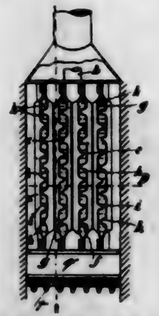

Claim.—1. In a heating apparatus a series of pairs of plates, the plates of each pair being arranged a small distance apart, each plate having a plurality of ribs projecting into the space between said plates, two reservoirs tightly connected to all the plates, and open to the spaces between the plates of each pair, means for tightly connecting those edges of the plates of each pair not connected to the chambers, fluid-channels connected to said chambers, gas-passages between each two pairs of plates, means for producing hot gases, passages situated to lead such gases to the passages between the pairs of plates, another gas-passage situated to lead the gases away after having passed through the spaces between the pairs of plates, substantially as set forth.

2. In a heating apparatus a series of pairs of plates, the plates of each pair being arranged a small distance apart, each plate having a plurality of ribs projecting into the space between said plates, the arrangement of said ribs being such, that the ribs of one plate of each pair of plates enter the space between the ribs of the other plate, two reservoirs tightly connected to all the plates, and open to the spaces between the plates of each pair, means for tightly connecting those edges of the plates of each pair not connected to the chambers, fluid-channels connected to said chambers, gas-passages between each two pairs of plates, means for producing hot gases, passages situated to lead such gases to the passages between the pairs of plates, another gas-passage situated to lead the gases away after having passed through the spaces between the pairs of plates, substantially as set forth.

3. In a heating apparatus a series of pairs of plates, the plates of each pair being arranged a small distance apart,

each plate having a plurality of ribs projecting into the space between said plates, two reservoirs tightly connected to all the plates, and open to the spaces between the plates of each pair, means for tightly connecting those edges of the plates of each pair not connected to the chambers, fluid-channels connected to said chambers, gas-passages between each two pairs of plates, means for producing hot gases, passages situated to lead such gases to the passages between the pairs of plates, another gas-passage situated to lead the gases away, having passed through the spaces between the pairs of plates, channels impressed into the plates in contrary direction to the said ribs and situated at an angle to the latter, substantially as set forth.

4. In a heating apparatus a series of pairs of plates, the plates of each pair being arranged a small distance apart, each plate having a plurality of ribs projecting into the space between said plates, the arrangement of said ribs being such, that the ribs of one plate of each pair of plates enter the space between the ribs of the other plate, two reservoirs tightly connected to all the plates, and open to the spaces between the plates of each pair, means for tightly connecting those edges of the plates of each pair not connected to the chambers, fluid-channels connected to said chambers, gas-passages between each two pairs of plates, means for producing hot gases, passages situated to lead such gases to the passages between the pairs of plates, another gas-passage situated to lead the gases away after having passed through the spaces between the pairs of plates, channels impressed into the plates in contrary direction to the said ribs and situated at an angle to the latter, substantially as set forth.

849,879. HORSESHOE. HENRY ADELMAN, Columbus, Ohio. Filed Jan. 25, 1907. Serial No. 354,116.

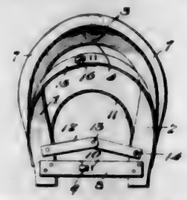

Claim.—A horseshoe comprising substantially equal sections pivotally united at the toe of the shoe, inclined hoof-embracing flanges on said sections, an arched spring having the opposite ends thereof permanently attached to the shoe-sections, means for drawing the sections toward each other or spreading the same apart, means for fastening the sections in rigid relation to each other, and a hoof-embracing strap for securing the shoe as a whole on the hoof.

849,880. REAMER ATTACHMENT FOR DIE-STOCKS. FRANK S. BARNES, Suffern, N. Y. Filed Apr. 20, 1906. Serial No. 312,865.

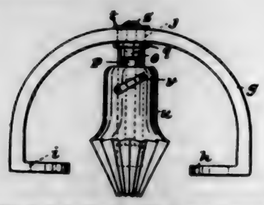

Claim.—The combination, with a pipe-cutting die-stock, of a bowed frame attached thereto and having a non-circular opening formed axially of the die-stock, a threaded stem extending axially of the die-stock and having a non-circular end fitted into said opening and a shoulder bearing against one face of the frame, means, coöperating with said shoulder and bearing against the other side of the frame, for securing the stem in the frame, a reamer arranged on, and having threading engaging that of, the stem, and a screw carried by the reamer and adapted to bear against the stem, substantially as described.

849,881. PUNCH AND DIE PRESS. GEORGE H. BARTLETT, San Francisco, Cal. Filed Nov. 21, 1906. Serial No. 344,462.

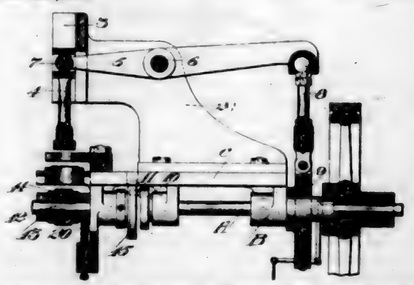

Claim.—1. In a device for producing an intermittent revolution of a shaft with stationary periods between said revolutions, a disk mounted upon the end of the shaft, there being a channel cut in the face of the disk, said channel forming two circular segments with an intervening connecting portion which curves inwardly toward the axis of the shaft, a second shaft having a crank-pin projecting into the channel of the disk, and means communicating a rotary motion to the crank-shaft.

2. In a device for producing an intermittent rotary motion of a shaft, an oval disk fixed to the shaft with its major axis intersecting the shaft, there being segmental grooves formed in each end of the disk, said grooves converging to meet on the minor axis of the disk and form a continuous channel, a driving-shaft journaled out of line with the first-named shaft and having a crank-pin entering the groove of the disk, and a spring-pressed plunger engaging a flattened part carried by the first-named shaft to hold it stationary during the movements of the crank-pin through the concentric portions of the disk-channel.

849,882. TRUCK. EDWARD BARTLEY, Chicago, Ill. Filed May 24, 1906. Serial No. 318,584.

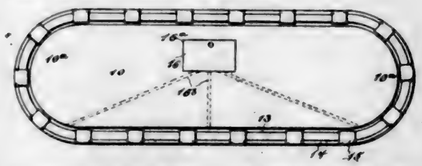

Claim.—1. A truck comprising runners having grooves in the sides thereof parallel to the rim, a platform supported on the runners, and belts of flexible material fitting the rims of the runners and slidable around the same and having clips engaging in said grooves.

2. A truck comprising runners, a platform supported thereon, belts extending around the rims of the runners and slidable thereon, and oil-cups carried by the runners and having ducts leading to the inner surface of the belts.

849,883. FLANGED METAL PIPE. LOUIS H. BRINKMAN, Hartford, Conn., assignor to Whitlock Coil Pipe Company, West Hartford, Conn., a Corporation of Connecticut. Filed July 20, 1905. Serial No. 270,500.

Claim.—1. As an article of manufacture, a pipe having a flange at its end, said flange being turned outwardly at an oblique angle to the axis of the pipe and returned in-

wardly upon itself, with the inturned portion in a plane at right angles to the axis of the pipe.

2. As an article of manufacture, a pipe having at its end an outwardly-projecting flange integral with the pipe, and consisting of outwardly and inwardly turned sections, with an intervening space between said sections.

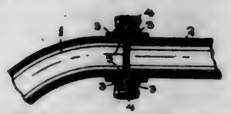

3. As an article of manufacture, a pipe having at its end an external flange integral with the pipe and comprising an inwardly-turned elastic section in a plane at right angles to the axis of the pipe.

4. As an article of manufacture, a pipe having its end bent outward at an oblique angle to the axis of the pipe, returned upon itself by an inward bend, with the return portion in a plane at right angles to the axis of the pipe to form a flange, leaving an inclosed annular space at the outer edge of said flange.

5. As an article of manufacture, a pipe having its end bent outwardly at an angle to the axis of the pipe, returned upon itself by an inward bend to form a flange, and with a restricted opening between the outward bend and the inturned member of the flange.

6. As an article of manufacture, a pipe having its end bent outward at an oblique angle to the axis of the pipe, returned upon itself by an inward bend with the return portion in a plane at right angles to the axis of the pipe to form a flange, and with a restricted opening between the outward bend and the inturned end of the pipe.

849,884. RECORDING SPEED-INDICATOR. RICHARD P. BROWN, Philadelphia, Pa. Filed Feb. 13, 1905. Serial No. 245,514.

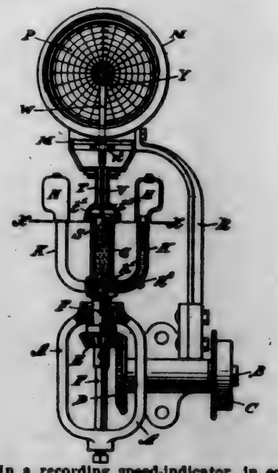

Claim.—In a recording speed-indicator, in combination, a frame having bearings for a horisontal and vertical shaft, said shafts, connections for said shafts, a central rotating fluid-chamber having a contracted opening therein carried by the vertical shaft, oppositely-arranged hollow arms the lower ends of which communicate with the fluid-chamber, eccentrically-adjustable reservoirs carried by the upper ends of said arms, a float carried in said central fluid-chamber, a rod carried by said float, a flexible stylus-arm adjustably connected to the rod, a stylus, a clock-operated chart adapted to be engaged by said stylus, and an arm carried by said shaft-carrying frame for carrying said clock mechanism and connected parts.

849,885. CONCRETE FORM. JOSEPH M. CARMODY, Washington, D. C. Filed Aug. 4, 1906. Serial No. 329,226.

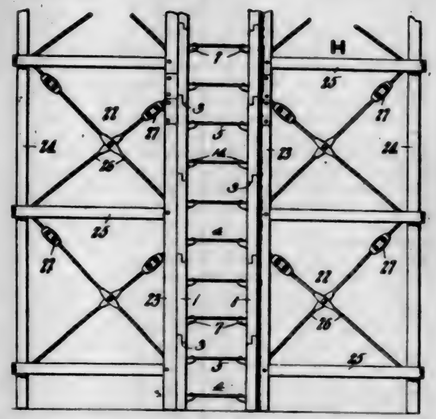

Claim.—1. In a molding apparatus, the combination of opposite mold-sections having transverse openings, and a coupling between said mold-sections comprising an intermediate member, end members removably arranged in the transverse openings of the mold-sections and movable rectilinearly outward through said openings, and adjustable devices carried by the end sections and detachably connecting the same with the intermediate sections.

2. In a molding apparatus, the combination of opposite mold-sections having transverse apertures, and a coupling comprising an intermediate member, end members removably arranged in the apertures of the mold-sections, and adjustable devices carried by the end members and detachably connecting the same to the intermediate member; said adjustable devices being arranged when disengaged from the intermediate member to assume positions entirely within the end members.

3. In a molding apparatus, the combination of opposite mold-sections having openings, and a coupling between said mold-sections, comprising an intermediate member, and end members removably arranged in the openings of the mold-sections and movable rectilinearly outward through said openings and having latches engaging the intermediate member and detachably connecting the members together.

4. In a molding apparatus, the combination of opposite mold-sections, and a coupling between said mold-sections comprising separable intermediate and end members latched together the end members arranged to move rectilinearly outward through the mold-sections when unlatched from the intermediate member.

5. In a molding apparatus, the combination of opposite mold-sections having apertures, and a coupling comprising an intermediate apertured member, end members removably arranged in the apertures of the mold-sections and provided with means for holding themselves against inward movement, and latches carried by the end members and detachably connecting the same to the intermediate member.

6. In a molding apparatus, the combination of opposite mold-sections having apertures, and a coupling comprising an intermediate member, end members removably arranged in the apertures of the mold-sections, and latches carried by the end members and detachably connecting the same to the intermediate member; the said end members being arranged when the latches are disengaged from the intermediate member to entirely receive said latches.

7. In a molding apparatus, the combination of opposite mold-sections having apertures, and a coupling comprising an intermediate member, end members removably arranged in the apertures of the mold-sections and open at their outer ends and having recesses in their inner portions, and latch-levers carried by and extending through the end coupling members and detachably connecting the same to the intermediate member.

8. In a molding apparatus, the combination of opposite mold-sections having apertures, and a coupling comprising an intermediate member having vertical apertures adjacent to its ends, end members removably arranged in the apertures of the mold-sections and open at their outer ends and having recesses in the upper sides of their inner portions, and latch-levers fulcrumed in and extending through the end coupling members and having pins removably arranged in the apertures of the intermediate member.

849,886. HORSE-RELEASER. ARTHUR W. CARWELL, Phillipsburg, Kans. Filed June 8, 1906. Serial No. 320,958.

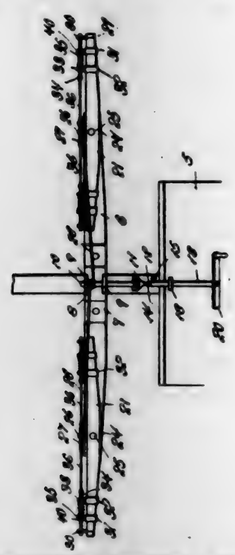

Claim.—A horse-releaser comprising a whiffletree, ears having stems engaged in the ends of the whiffletree, sleeves engaged with the ends of the whiffletree inwardly of the ears, ears carried by the sleeves, a trace-engaging bolt engaged in the sleeves at each end of the whiffletree, for movement into and out of operative position, means for holding the bolt yieldably in operative position, a plate secured upon the whiffletree, a finger carried by the plate, a lever pivoted upon the finger, connections between the lever and the bolt for simultaneous movement of the bolt against the action of the spring when the lever is moved, a bracket, a rod journaled in the bracket, connections between the rod and the lever for movement of the latter to move the bolts when the rod is revolved, a longitudinally-adjustable arm connected with the rod for rotation thereof, means for holding the arm at different points of its adjustment, an end piece carried by the arm, and a vertically-adjustable support for the arm.

849,887. LIFE-SAVING BUOY. WILLIAM F. CLARK, Oyster Bay, N. Y. Filed Mar. 28, 1906. Serial No. 308,606.

Claim.—1. A life-saving buoy comprising a body portion and a sea-top attached thereto, said sea-top being composed of a plurality of separate sections, and means for inflating said sections.

2. A life-saving buoy comprising a body portion and a sea-top attached thereto, said sea-top being composed of a plurality of sections, and means for separably inflating each section.

3. A life-saving buoy comprising a body portion and a collapsible sea-top attached thereto, said sea-top being composed of a plurality of separate sections, and means for separately inflating each section.

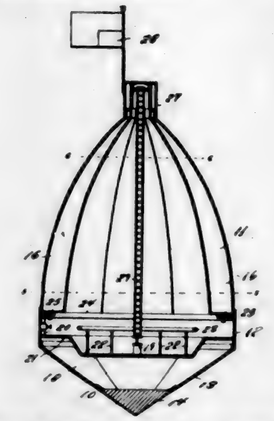

4. A life-saving buoy comprising a body portion of conical shape, the apex of said conical portion being composed of solid steel, a sea-top attached to said body portion and composed of a plurality of separate sections, and means for inflating said sections.

5. A life-saving buoy comprising in combination a conical body portion, means for ballasting said body portion, a sectional sea-top, and means for inflating said sections of said sea-top.

6. A life-saving buoy comprising in combination a body portion, and a sea-top; an air-tank in said body portion, and a supply-pipe connected with said air-tank; said sea-top being composed of said separate sections, and connections between said air-pipe and sections for separably inflating each section.

849,888. TYPE-WRITING MACHINE. LUCIEN B. COPELAND, Providence, R. I., assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y., a Corporation of New York. Filed Nov. 21, 1902. Serial No. 132,254.

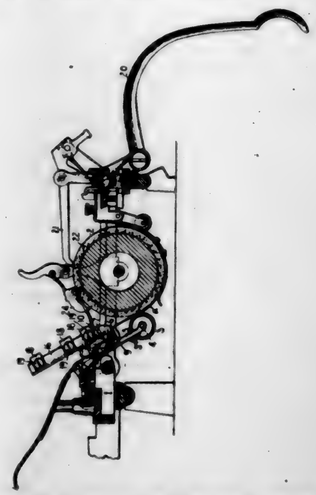

Claim.—1. In a type-writing machine, a guide adapted to coöperate with a side edge of the paper or card, in com-

bination with the means adapted to coöperate with the bottom edge of the paper or card for indicating the position of the paper or card with relation to the printing-line.

2. In a type-writing machine, a guide adapted to coöperate with a side edge of the paper or card to be fed into the machine and written upon, in combination with means adapted to coöperate with the bottom edge of the paper or card for indicating when any predetermined point on the paper or card reaches the printing-line.

3. In a type-writing machine, a platen, a guide adapted to coöperate with the side edge of the paper or card and to be adjusted longitudinally of the platen, in combination with means adapted to coöperate with the bottom edge of the paper or card for indicating the arrival of some predetermined point of the paper or card at the printing-line.

4. In a type-writing machine, a guide adapted to cooperate with the side edge of a paper or card to be fed into the machine and written upon, in combination with means adapted to coöperate with the bottom edge of the paper or card for indicating the arrival of a plurality of irregularly-spaced predetermined points of the paper or card at the printing-line.

5. In a type-writing machine, the combination of a guide adapted to coöperate with a side edge of the card or paper to be fed into the machine and to direct the same into the machine, a platen, means for adjusting the guide longitudinally of the platen and means adapted to coöperate with the bottom edge of the paper or card for indicating the position of the card or paper relatively to the printing-line.

6. In a type-writing machine, the combination of a carriage, a platen carried thereby, paper-feed rollers, an adjustable guide adapted to coöperate with a side edge of the card or paper to be written and to deliver the same to the bight between the paper-feed rollers and the platen, and an indicating device carried by said guide and adapted to cooperate with the bottom edge of the paper or card.

7. In a type-writing machine, the combination of a carriage, a platen carried thereby, an adjustable guide adapted to coöperate with a side edge of the card or paper and provided with index-fingers capable of adjustment to positions which will indicate when different predetermined points on the card or paper are successively brought to the printing-line.

8. In a type-writing machine, the combination of a carriage, a platen carried thereby, a guide that is adjustable longitudinally of the platen and which constitutes an abutment against which a side edge of the card or paper is adapted to bear so that the same may be squared and fed into the machine and the top and bottom edges thereof be maintained parallel with the printing-line, and means adapted to coöperate with the bottom edge of the paper or card for indicating the arrival of certain points of the card or paper at the printing-line.

9. In a type-writing machine, the combination of a carriage, a platen carried thereby, an adjustable guide adapted to coöperate with a side edge of the card or paper, so that the same is fed into the machine with the top and bottom edges thereof parallel to the printing-line and index-fingers adjustable along said guide and in a plane at right angles to the length of the platen, to indicate the arrival of certain predetermined points on the card or paper at the printing-line.

10. In a type-writing machine, the combination of a carriage, a platen carried thereby, an L-shaped guide adapted to coöperate with a side edge of the card or paper, and index-fingers carried by and adjustable along one member of said L-shaped guide to determine the position of the card or paper with relation to the printing-line.

11. In a type-writing machine, the combination of a carriage, a platen carried thereby, a shaft, an L-shaped guide carried by said shaft and adjustable longitudinally thereon and one face of which is adapted to coöperate with a side edge of card or paper, whereas the other face of the guide supports the face of the card or paper, and indicators carried by said guide, whereby an indication is afforded when certain predetermined points on the card or paper coincide with the printing-line.

12. In a type-writing machine, the combination of hinged blocks, and a shaft to which said blocks are adapted to be secured, one of the blocks carrying a side-edge guide.

13. In a type-writing machine, the combination of a platen, a shaft that extends longitudinally of the platen, hinged blocks adapted to engage said shaft and be clamped thereon, a set-screw entering said blocks and effecting the clamping thereof and a side-edge card or paper guide carried by one of said blocks.

14. In a type-writing machine, the combination of a platen, a shaft that extends longitudinally of the platen, hinged blocks provided with grooves for the reception of said shaft, a set-screw which unites said blocks and an upright angular card or paper guide carried by said blocks.

15. In a type-writing machine, the combination of a platen, relatively fixed line-indicating means located at or near the point of introduction of the paper and coöperative with the bottom edge of the paper for indicating when a given portion of the paper has been brought to the printing position.

16. In a type-writing machine, the combination of a platen, and indicating means located at or near the point of introduction of the paper and coöperating therewith to indicate when any predetermined point on the paper reaches the printing-line.

17. In a type-writing machine, the combination of a platen, and an indicating device located at or near the point of introduction of the paper and coöperating therewith and adjustable to indicate when any predetermined point on the paper reaches the printing-line.

18. In a type-writing machine, the combination of a platen, and a plurality of independently-adjustable indicating devices located at or near the point of introduction of the paper and coöperating therewith to successively indicate when a plurality of predetermined points on the paper are successively brought to the printing-line.

19. In a type-writing machine, the combination of a platen, and line-indicating means arranged to coöperate with the bottom edge of the card or paper to indicate when any predetermined point on the card or paper is at the printing-line.

20. In a type-writing machine, the combination of a platen, and a plurality of line-indicating devices arranged to coöperate with the bottom edge of the card or paper to successively indicate when predetermined points on the card or paper are brought successively to the printing-line.

21. In a type-writing machine, the combination of a platen, paper-feed rollers, means for directing cards or paper to the bight between the feed-rollers and platen, and carried by said directing means for indicating when any predetermined point on the card or paper reaches the printing-line.

22. In a type-writing machine, the combination of a platen, paper-feed rollers, means for directing the card or paper to the bight between the feed-rollers and platen, and a series of independently-adjustable indicating devices carried by said directing means, for indicating when predetermined points on the card or paper reach the printing-line.

23. In a type-writing machine, the combination of a platen, paper-feed rollers, means for directing cards or paper to the bight between the feed-rollers and platen, and a plurality of indicating devices that are carried by said directing means and are independently adjustable in a plane transverse to the length of the platen, whereby said indicating devices may be set to successively indicate when a number of points on the card or paper are brought to the printing-line.

24. In a type-writing machine, the combination of a platen, paper-feed rollers, a substantially L-shaped guide that directs the card or paper to the bight between the feed-rollers and platen, and one member of which constitutes a guide for a side edge of the card or paper, and indicating means carried by said guide and coöperating with the bottom edge of the card or paper to indicate when any predetermined point thereon arrives at the printing-line.

25. In a type-writing machine, the combination of hinged blocks, a set-screw, an upright angular guide composed of two sides or faces which are carried by said blocks, and index-fingers carried by one of the sides.

26. In a type-writing machine, the combination of hinged blocks, a set-screw for holding them together, an angular guide and an index-finger adapted to be secured to one side of the angular guide and to be held in proximity to and to have one face substantially parallel with the other side of said guide to permit the passage of paper between the finger and one side of the guide.

27. In a type-writing machine, the combination of hinged blocks, an upright angular guide, index-fingers carried thereby, and means for affording an independent adjustment of said fingers along said guide.

28. In an understrike type-writing machine the combination of a platen, indicating devices located at or near the point of introduction of the paper and adapted to coöperate with the paper, and means for affording an independent adjustment of said indicating devices.

29. In an understrike type-writing machine, the combination of a platen, feed-rollers therefor, a paper-guide which directs the card or paper to the bight between the feed-rollers and platen, and indicating means carried by said paper-guide and adapted to coöperate with the cards or paper to indicate when a predetermined point thereon arrives at the printing-line.

30. In a type-writing machine, the combination of means for directing cards or paper to the machine and comprising an L-shaped guide, indicating-fingers carried by and adjustable along said guide, each indicating-finger having a slotted block connected thereto and which is seated on one member of said guide, and a set-screw in each block and which is adapted to bear on the guide and retain the block and finger in the adjusted position.

31. In a type-writing machine, the combination of a platen, paper-feed rollers, means for directing cards or paper to the bight between the feed-rollers and platen, said directing means comprising an L-shaped paper-guide, indicating-fingers carried by and individually adjustable along one member of said guide and each having a slotted block that is seated on said member, and a set-screw carried by each block and adapted to bear on the guide to retain the fingers in their adjusted positions.

849,889. AUTOMATIC GAS LIGHTER AND EXTINGUISHER. NAPOLEON CORBEIL, Charlestown, Mass. Filed Aug. 21, 1905. Serial No. 274,978.

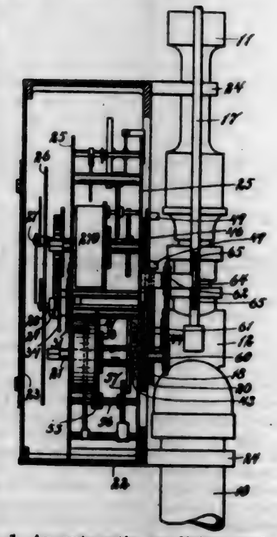

Claim.—1. An automatic gas lighter and extinguisher, comprising in its construction a burner, a gas-supply pipe having a valve, a pair of motors for alternately actuating the valve, a clock mechanism for controlling the operation of said motors, and means whereby said motors may continuously succeed each other in their alternate actuation of the valve.

2. An automatic gas lighter and extinguisher, comprising in its construction a burner, a gas-supply pipe having a valve, a pair of spring-motors for alternately actuating the valve, a clock mechanism including variable tripping devices for controlling the operation of said motors, and means whereby said motors may continuously succeed each other in their alternate actuation of the valve.

3. An automatic gas lighter and extinguisher, comprising in its construction a burner, a gas-supply pipe having a valve, a pair of spring-motors for alternately actuating the valves, a clock mechanism including variable tripping devices for controlling the operation of said motors, a pilot-burner leading from the valve-casing and having means whereby the gas supplied by said pilot-burner will be automatically ignited when the valve is shifted, and means whereby said motors may continuously succeed each other in their alternate actuation of the valve.

4. An automatic gas lighter and extinguisher, comprising in its construction a burner, a gas-supply pipe having a rotary valve, means for operating said valve step by step, a pair of motors for alternately actuating the valve, a clock mechanism for controlling the operation of said motors, and means whereby said motors may continuously succeed each other in their alternate actuation of the valve.

5. An automatic gas lighter and extinguisher, comprising in its construction a burner, a gas-supply pipe having a valve, a pair of spring-motors for alternately actuating the valve, means, including trip-cams for controlling the operation of said motors, and a clock mechanism for actuating said cams.

6. In a gas lighting and extinguishing apparatus, the combination with a gas-supply pipe and a rotary valve for controlling the flow of gas, of a disk connected to rotate with said valve and having four shoulders, twin motors for actuating said disk and valve, a clock mechanism, adjustable devices for permitting said clock mechanism to alternately release the motors, and a stop controlled by said clock mechanism to release said shouldered disk.

7. In a gas lighting and extinguishing apparatus, the combination with a clock mechanism including an hour-hand arbor and two setting-hand arbors, of tripping-cams carried by the latter, a pair of twin spring-motors having escapement devices adapted to be released by said tripping-cams, a burner, a gas-supply pipe having a valve, and means whereby said valve may be actuated by either of said motors.

8. In a gas lighting and extinguishing apparatus, the combination with a clock mechanism, of a disk operated by the hour-hand arbor of said mechanism, adjustable stops carried by said disk, a gas-supply pipe having a valve, means for actuating said valve, and a stop to limit the movement of the valve, said stop being adapted to be actuated by either of the stops of said disk.

9. In a gas lighting and extinguishing apparatus, the combination with a gas-supply pipe, a burner and valve, of a clock mechanism, means controlled by said clock mechanism for actuating said valve, a pilot-burner having connections whereby it will be supplied with gas intermittently, and an electrical device for igniting the gas supplied by the pilot-burner, connections being provided for controlling the operation of the electrical igniter by the movements of the gas-supply valve.

849,890. FURNACE. JAMES CROMIE, Pittsburg, Pa. Filed Nov. 20, 1906. Serial No. 344,239.

Claim.—1. A furnace comprising a combustion-chamber, a deflector supported in the upper end of said chamber, a heating-drum, above said deflector and combustion-chamber, and a flue resting on the upper end of the combustion-chamber comprising a chamber around the deflector and having a series of divergent branches supporting the drum.

2. A furnace comprising a combustion-chamber, a heating-drum having upper and lower chambers containing spi-

ral passages, and a flue resting on the combustion-chamber and having branches rising to and supporting the heating-drum and communicating with the lower chamber of the same.

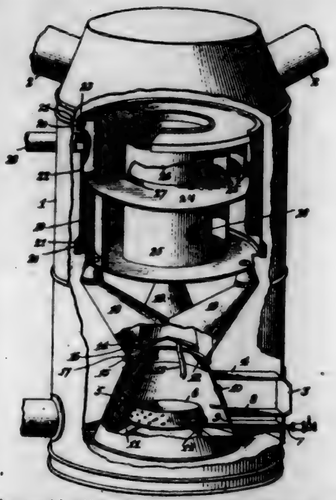

3. The combination of the combustion-chamber, an annular plate within the upper end thereof, a deflector above the same, and brackets having their upper ends secured to the deflector and their lower ends secured to the combustion-chamber wall and their intermediate portions supporting the annular plate.

4. The combination of the combustion-chamber, an inwardly-projecting annular plate on the inner face of the said chamber in the upper end of the same but below the upper edge of its wall, a conical deflector above but out of contact with said plate, brackets secured upon the inner wall of the combustion-chamber and supporting the annular plate and the conical deflector, and a flue supported by the upper edge of the wall of the combustion-chamber.

849,891. COMBINATION-WRENCH. EDWARD ELLINGSON, Havana, N. D. Filed Feb. 12, 1907. Serial No. 356,959.

Claim.—1. In a tool of the kind described, the combination with a lever bent upon itself to form laterally-spaced side portions and provided at its folded end with a diverging notch having teeth at one side, and a wrench-equipped lever pivotally connected to and working between the prongs or sides of said folded lever, substantially as described.

2. The combination with a lever 4 bent upon itself to form laterally-spaced sides and provided with a head portion 6 formed with a diverging notch 7 having teeth 7ª, of a wrench-lever 1 having the wrench-heads 2 and 3, which lever works frictionally between the laterally-spaced sides of said lever 4, and a screw pivotally connecting said levers 1 and 4 and adjustably to vary the frictional engagement between the two, substantially as described.

849,892. WINDOW-SHADE BRACKET. SAMUEL FOX, Paterson, N. J. Filed Nov. 21, 1906. Serial No. 344,406.

Claim.—The combination of two members, one being the shade-roller-trunnion-receiving member and the other an elongated part on which the first-named member is slidable longitudinally, said first-named member comprising a rebent part receiving the second-named member, a bolt extending through the portions of said rebent part, and a nut on said bolt coacting therewith to clamp the rebent

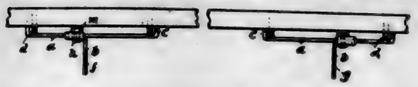

part of said first-named member to the other member, one portion of said rebent part having a lip extending in close proximity to one edge of the nut, substantially as described.

849,893. PAPER-RACK. JENNESS B. FREAR, Excelsior, Minn. Filed Feb. 16, 1906. Serial No. 301,485.

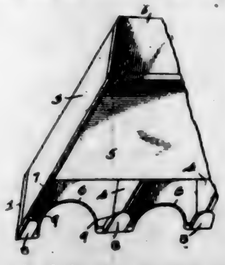

Claim.—A rack of the class specified having sides and ends, a plurality of partitions connecting the sides and successively increasing in distances apart from each other to form compartments, the rear side being at an angle to the front side to gradually increase the length of the compartments, a bottom extending from the rear side partially over the rack, openings being formed in the under side of the rack at the front portions of the compartments and the front side having finger-openings communicating with the said bottom openings and gradually increasing in dimensions proportionate to the size of the compartments, and guards secured to the under edges of the partitions at the points where the latter and the end strips intersect the lower edge of the front side, said guards having their upper portions downwardly curved to form bevels, the guards being so applied to the under edges of the partitions that one guard in each instance will extend beyond opposite sides of each partition to coöperate with two compartments.

849,894. SHOE-TREE. APOLLOS FULLER, Pasadena, Cal. Filed July 23, 1906. Serial No. 327,254.

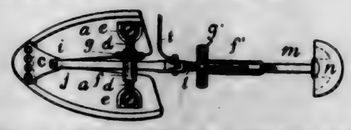

Claim.—1. The combination, in a shoe-tree, of the toe-sections *a a* pivotally connected at their forward ends, a rod *j* extending from the forward portion of the toe-sections rearwardly, a heel-plate, a rod *m* projecting forwardly therefrom, a rod *l* pivotally connected with the rod *j*, the rods *l* and *m* being screw-threaded in opposite directions, a tubular member *f'* threaded to engage the threads on said rods, and means to separate the rear ends of the toe-sections, substantially as shown.

2. The combination, in a shoe-tree, of toe-sections pivotally connected to a plate *c*, a rod *j* in pivotal connection with said plate and extending rearwardly, a rod *l* in pivotal connection with the rod *j*, the rod *l* being exteriorly threaded, a heel-plate and a rod *m* connected therewith, said rod being also threaded in reverse direction from the thread on the rod *l*, a tubular member *f'* threaded in reverse directions to engage the threads on the rods *l* and *m*, and a turnbuckle construction arranged to move the rear portions of the toe-sections inwardly or outwardly, as shown.

3. The combination, in a shoe-tree, of toe-sections pivotally mounted at the forward end, a heel-plate, rods extending between the heel-plate and the forward end of the toe-sections, and a turnbuckle therebetween, threaded rods pivotally mounted on the rear portion of the toe-sections, and a turnbuckle construction therebetween, whereby the toe-sections may be separated by rotating the turnbuckle therebetween and the toe and heel sections may be separated by rotating the turnbuckle therebetween.

849,895. CAR-TRUCK. THOMAS M. GALLAGHER, Old Orchard, Mo., assignor to Scullin Gallagher Iron & Steel Company, St. Louis, Mo., a Corporation. Filed Aug. 25, 1906. Serial No. 331,965.

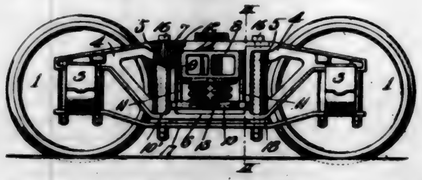

Claim.—1. In a car-truck, the combination of a pair of side frames having bolster-columns, formed with recesses flush therewith providing open sockets, combined spring-seats and hangers formed integral with each other and having pivot-bosses seated in the open sockets whereby they are swingingly supported by said bolster-columns, springs located upon said spring-seats, and a bolster supported by said springs upon said spring-seats and hangers, substantially as set forth.

2. In a car-truck, the combination of a pair of side frames having bolster-columns, formed with open sockets, combined spring-seats having stop-lugs engaging said columns and hangers formed integral with each other and having pivot-bosses seated in the open sockets whereby they are swingingly supported by said bolster-columns, springs located upon said spring-seats, and a bolster supported by said springs upon said spring-seats and hangers, substantially as set forth.

3. In a car-truck, the combination of a pair of side frames provided with bolster-columns, formed with open sockets, combined spring-seats and hangers integral with each other, the hangers being provided with pivot-bosses adapted to seat in said open sockets of said bolster-columns, springs located upon said spring-seats, compression members having tongues fitting in the open sockets over the pivot-bosses, and a bolster supported by said springs upon said spring-seats and hangers, substantially as set forth.

4. In a car-truck, the combination of a pair of side frames provided with bolster-columns formed with recesses flush therewith providing open sockets, combined spring-seats and hangers, springs located upon said spring-seats, and a bolster having stop-lugs and supported by said springs upon said spring-seats and hangers; said hangers being provided with pivot-bosses seated in said open sockets, substantially as set forth.

5. In a car-truck, the combination of a pair of side frames having bolster-columns, formed with recesses flush therewith providing open sockets, combined spring-seats and hangers formed integral with each other and having pivot-bosses seated in the open sockets whereby they are swingingly supported by said bolster-columns, springs located upon said spring-seats, a compression member mounted upon the upper ends of said bolster-columns, and a bolster supported by said springs upon said spring-seats and hangers, substantially as set forth.

6. In a car-truck, the combination of a pair of side frames having bolster-columns formed with recesses flush therewith providing open sockets, combined spring-seats and hangers, the hangers of which are provided with pivot-bosses seated in said open sockets, a bolster supported by said springs upon said spring-seats and hangers, and compression members mounted on said bolster-columns above said hangers, substantially as set forth.

7. In a car-truck, the combination of a pair of side frames having bolster-columns provided with sockets, combined spring-seats and hangers, the hangers of which are provided with pivot-bosses seated in said sockets, a bolster supported by said spring-seats and hangers, and compression members mounted on said bolster-columns above said hangers; said compression members being provided with tongues adapted to seat in said sockets, substantially as set forth.

849,896. INSULATOR. CHARLES GRIFFITH, Elizabeth, Pa. Filed Mar. 24, 1906. Serial No. 307,818.

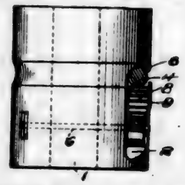

Claim.—An insulator comprising a body having a vertical opening eccentric to the vertical axis of said body, and having a recess in that side of body which is of greater thickness between the wall of said opening and periphery, the said body being also cut away at the end of said recess to form a lip, a bolt extending transversely through said body and into said recess, and a toothed cam mounted on said bolt within the recess substantially as described.

849,897. IMPLEMENT FOR HANDLING HOLLOW BRICKS. CHARLES S. HALL, Lohrville, Iowa. Filed Dec. 20, 1906. Serial No. 348,812.

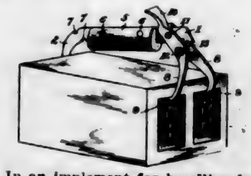

Claim.—1. In an implement for handling hollow bricks, the combination, of a bar having a jaw formed at one end thereof, a pair of jaws pivoted to the other end of the bar, one of said latter jaws being extended slightly beyond the opposite side of the pivot to form a thumb-piece for operating the pivoted jaws, and a hand-grasping portion on the bar between the fixed and pivoted jaws.

2. In an implement for handling hollow bricks, the combination, of a bar having a hook or jaw formed at one end thereof, a pair of jaws pivoted at the other end of the bar, one of said pivoted jaws being extended and formed into a thumb-piece, means for limiting the outward movement of the pivoted jaws, and a hand-grasping portion formed on the bar between the jaws.

3. In an implement for handling hollow bricks, the combination, of a bar having a hook or jaw at one end thereof, a pair of jaws pivoted on the other end of said bar, one at each side of the bar, a thumb-piece formed at the upper end of one of the pivoted jaws, a bolt connecting the pivoted jaws below the bar and adapted to limit the outward movement of said jaws, and a hand-grip attached to the bar between the sets of jaws.

4. In an implement for handling hollow bricks, the combination, of a bar having a hand-grasping portion at the center thereof, a hook formed on one end of the bar and a

perforation in the other end of said bar, the hook end of said bar having notches in its opposite edges; together with a pair of hooks 14 connected by bolts 18 18, the latter being adapted to engage the notches for securing said hooks to the bar, substantially as shown and described.

849,898. BOILER-TUBE-SCRAPING APPARATUS. ALEXANDER G. HAY, Camden, N. J. Filed Oct. 27, 1906. Serial No. 340,850.

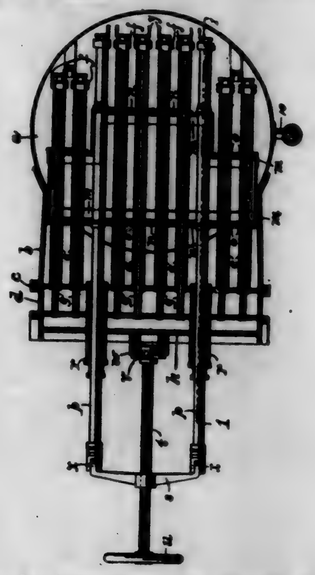

Claim.—In a boiler-tube-scraping apparatus, in combination, a boiler, a series of steam-pipes within said boiler, scrapers for each of said pipes, a frame carrying said scrapers, a pair of rods secured to said frame and passing out through the end of said boiler, stuffing-boxes carried by said boiler through which said rods pass, a yoke the ends of which are pivotally secured to the outer ends of said rods, a screw passing through said yoke, and an open cap carried by the boiler and adapted to engage a groove on the inner end of the screw.

849,899. BOTTLE. FRANK HAYDEN, Dexter, Mo. Filed Dec. 7, 1906. Serial No. 346,696.

Claim.—1. A bottle provided with a frangible cap fitting over the neck thereof, and a pair of oppositely-disposed metal springs secured at their upper ends to said bottle-neck and bearing at their lower ends against the inner face of said cap, to retain the latter in place thereon, the upper portion of said bottle-neck being inwardly beveled to force the lower ends of said springs outwardly, and means for securing said springs in place on said bottle-neck.

2. A bottle provided with a frangible cap fitting over the neck thereof, and a pair of metal springs secured at their upper ends to said bottle-neck and bearing at their lower ends against the lower face of said cap, to retain the same in place thereon, each spring comprising a body portion adapted to conform to the face of the bottle and a hollow bead formed on the upper end thereof, and means passing through said beads, to hold said springs in place, the upper portion of said bottle-neck being inwardly beveled, to force the lower ends of said springs outwardly.

3. A bottle provided with an annular groove formed at the meeting-point between its neck and body, a frangible cap fitting over said bottle-neck and having its lower end fitting in said groove, and means carried by said neck and bearing against the inner face of said cap to retain the same in place thereon.

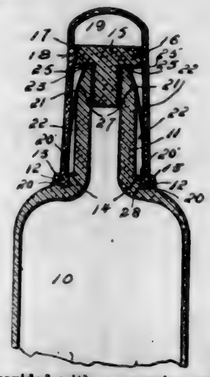

4. A bottle provided with an annular groove formed at the meeting-point between its neck and body, a frangible cap fitting over said bottle-neck and having its lower end fitting in said groove, and oppositely-disposed resilient means carried by said neck and bearing against the inner face of said cap to retain the same in place thereon.

5. A bottle provided with an annular groove formed at the meeting-point between its neck and body, a frangible cap fitting over said bottle-neck and having its lower end fitting in said groove, an inwardly-extending shoulder formed on said cap adjacent the lower end thereof and means carried by said bottle-neck in engagement with said shoulder, to retain said cap in place.

6. A bottle provided with an annular groove formed adjacent the meeting-point between its neck and body, a stopper fitted in the neck of the bottle and provided with a notch formed on its side face, a frangible cap fitted upon said neck and having its lower end fitted in said groove, an inwardly-directed shoulder formed on the inner face of said cap at the lower end thereof, an inwardly-directed finger formed on the inner face of said cap above said shoulder and adapted to be received in the notch in said stopper, and separate means provided upon said bottle-neck for engagement with said shoulder and neck to retain said cap in place.

7. A bottle provided with a stopper having a notch in the side face thereof, a frangible cap fitting over the neck of the bottle, and an inwardly-extending finger formed on the inner face of said cap and adapted to be engaged with said notch, to prevent rotation of the cap.

8. A bottle provided with an annular groove formed adjacent the meeting-point between its neck and body, a cap fitted upon said neck and having its lower end fitted in said groove, an inwardly-directed shoulder formed on the inner face of said cap at the lower end thereof, an inwardly-directed finger formed on the inner face of said cap above said shoulder, a stopper fitting in said bottle-neck and provided with a notch adapted for engagement with said finger, and resilient means carried by said bottle-neck and adapted to bear against the inner face of said cap at the shoulder portion thereof, to retain the same in place.

849,900. SINGLE CEMENTED OBJECTIVE-LENS, ALSO APPLICABLE AS DOUBLE OBJECTIVES. OSKAR G. HEIMSTÄDT, Vienna, Austria-Hungary. Filed Dec. 24, 1902. Serial No. 136,495.

Claim.—1. An objective for photographic purposes, composed of four cemented lenses, said objective consisting of one biconcave lens of intermediate refracting power located between two concavo-convex collecting-lenses of the least refracting power, to one of which the fourth lens of highest refracting power is adjacent.

2. An objective for photographic purposes composed of four cemented lenses, one a biconcave lens of intermediate refracting power located between two concavo-convex collecting-lenses of the least refracting power to one of which the fourth lens of highest refracting power is adjacent, the

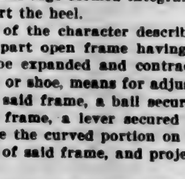

cemented surface between the concavo-convex lens not adjacent the fourth lens, and the biconvex lens being of the least radius and all other surfaces of a greater radius, substantially as described.

849,901. HEEL-CLIP. HUGO A. L. HEINICHEN, Chicago, Ill. Filed Nov. 11, 1905. Serial No. 286,801.

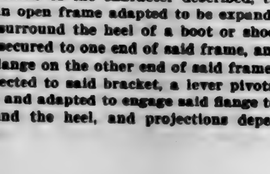

Claim.—1. In a device of the character described, the combination with an open frame having one end curved, a bail secured to the other end of said frame, a lever secured to said bail adapted to engage the curved portion on the opposite end of said frame for detachably securing said frame to a boot or shoe, projections depending from said frame, and means for adjusting the size of said frame to fit different sizes of boots or shoes.

2. In a device of the character described, the combination with a frame, of means for securing said frame around the heel of a boot or shoe, projections depending from and secured beneath the under edge of said frame, and lugs extending inwardly from said projections to support the heel.

3. In a device of the character described, the combination with a frame, of means for securing said frame around the heel of a boot or shoe, projections secured to said frame having grooves within which the lower edges of the frame is seated, and lugs formed integrally with said projections to support the heel.

4. In a device of the character described, the combination with a two-part open frame having one end curved and adapted to be expanded and contracted to surround the heel of a boot or shoe, means for adjustably connecting the two parts of said frame, a bail secured to one end of one part of said frame, a lever secured to said bail and adapted to engage the curved portion on the opposite end of the other part of said frame, and projections depending from said frame.

5. In a device of the character described, the combination with an open frame adapted to be expanded and contracted to surround the heel of a boot or shoe, an outwardly-extending flange on one end of said frame, a link pivotally secured to the other end of said frame, a lever pivotally connected to said link and adapted to engage said flange to clamp the frame around the heel, and projections depending from said frame.

6. In a device of the character described, the combination with an open frame adapted to be expanded and contracted to surround the heel of a boot or shoe, a bracket adjustably secured to one end of said frame, an outwardly-extending flange on the other end of said frame, a link pivotally connected to said bracket, a lever pivotally secured to said link and adapted to engage said flange to secure the frame around the heel, and projections depending from said frame.

849,902. BEDCLOTHES-HOLDER. LYDIA E. HENRY, Vandergrift, Pa. Filed Jan. 30, 1907. Serial No. 354,832.

Claim.—1. A bedclothes-holder consisting of two frames having loop ends, the ends of one frame connecting with the ends of the other frame, and depending hooks slidably mounted upon said frames.

2. A clothes-holder of the type described consisting of two frames having their ends loosely connected, and depending hooks slidably mounted upon said frames.

849,903. MOWING-MACHINE. EMANUEL KAUFMAN, Cleora, Ind. Ter. Filed Sept. 20, 1906. Serial No. 335,460.

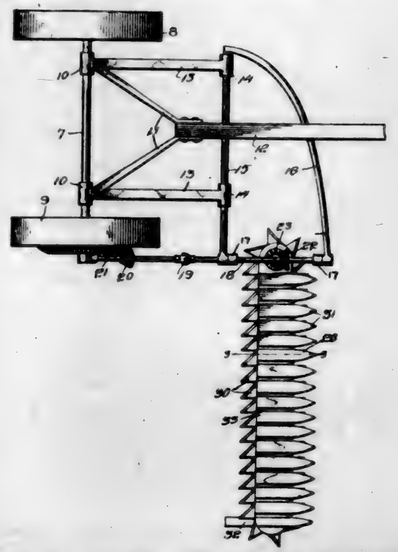

Claim.—1. A mowing-machine comprising in combination with an axle and a pair of traction-wheels carried thereby; a gear secured to the axle at one end thereof; a pair of rods pivotally connected with said axle intermediate the traction-wheels; means connecting said rods; a drive-shaft journaled in said connecting means, and extending in the direction of travel, said shaft comprising a pair of sections connected by a universal joint; a bracket carried by the front shaft-section; a gear mounted on the rear shaft-section in mesh with said axle-gear; cutting mechanism connected with said bracket; and a driving connection between said cutting mechanism and said drive-shaft.

2. A mowing-machine comprising in combination with an axle and a pair of traction-wheels carried thereby; a gear mounted upon one end of said axle; a swinging frame pivotally connected to said axle intermediate said traction-

wheels; a drive-shaft journaled in said frame and extending in the direction of travel, said shaft comprising a pair of sections connected by a universal joint; a bracket carried by the front shaft-section; a gear mounted on the rear shaft-section in mesh with said axle-gear; cutting mechanism connected with said bracket; and a driving connection between said cutting mechanism and said drive-shaft.

3. A mowing-machine comprising in combination with an axle and a pair of traction-wheels carried thereby; a gear mounted upon one end of said axle; a swinging frame pivotally connected to said axle intermediate said traction-wheels; a drive-shaft journaled in said frame and extending in the direction of travel, said shaft comprising a pair of sections connected by a universal joint; a bracket carried by the front shaft-section; a gear mounted on the rear shaft-section in mesh with said axle; a cutter-bar connected to said bracket; pins mounted on opposite ends of said cutter-bar; wheels loosely mounted upon said pins; a knife-chain passing around said wheels and comprising a plurality of knives connected together; a gear carried by said front shaft-section; and a gear formed upon the face of the adjacent wheel in mesh with said last-mentioned gear for driving said chain.

4. A mowing-machine comprising in combination with an axle and a pair of traction-wheels carried thereby; a pair of sleeves mounted upon said axle intermediate said traction-wheels; a pair of rods connected at one end to said sleeves and provided with eyes at their opposite ends; a rod mounted in said eyes and having one end bent upon itself; a drive-shaft journaled in the ends of said last-mentioned rod and extending in the direction of travel, said drive-shaft comprising a pair of sections connected by a universal joint; an armed bracket connected with the front shaft-section; a gear carried by the rear shaft-section; a gear carried by the axle in mesh with said gear; a cutter-bar connected with said bracket; pins mounted upon opposite ends of said cutter-bar; wheels loosely mounted upon said pins; a knife-chain passing around said wheels and comprising a plurality of knives connected together; a gear carried by said front shaft-section; and a gear formed on the face of the adjacent wheel in mesh with said last-mentioned gear for driving said chain.

849,904. VISE. DYÖNIS KOVÁCS, East Pittsburg, Pa. Filed Feb. 8, 1907. Serial No. 356,359.

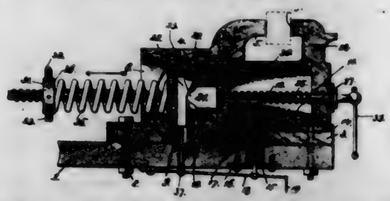

Claim.—1. In a vise, the combination with a bench, of a plate carried thereby, a housing revolubly mounted upon said plate and having a gripping-jaw, a cage formed within said housing, a movable jaw slidably mounted in said housing over said cage, a block mounted in said cage, a wedge-shaped member mounted in said cage and engaging said block, a threaded rod revolubly carried by said movable jaw, and passing through said block and said member, an adjustable collar carried by the outer end of said rod, a spring surrounding said rod between said collar and said cage, a spring-held plunger mounted in said bench and plate for holding said revoluble jaw in a fixed position, means to simultaneously lower said plunger and said wedge-shaped member, and means to lock said adjustable collar in a fixed position.

2. In a vise, the combination with a suitable support, of a housing revolubly mounted upon said support and having a gripping-jaw, a cage formed within said housing, a movable jaw mounted over said cage, a block carried within said cage, a wedge-shaped member adapted to engage said block, a revoluble screw carried by said movable jaw and passing through said cage, block and wedge-shaped member, an adjustable collar carried by said screw, a spring interposed between said collar and said cage, means to hold said collar in a fixed position, means to hold said revoluble jaw in a fixed position, means to move said wedge-shaped member.

3. In a vise, the combination with a suitable support, of a housing pivotally mounted thereon, and having a gripping-jaw, a cage carried by said housing, a movable jaw slidably mounted in said housing, a threaded rod carried by said movable jaw and passing through said cage, an adjustable collar carried by said rod, a spring interposed between said collar and said cage, means to hold said collar in a fixed position, means located within said cage for temporarily moving said movable jaw, means carried by said support for holding said revoluble jaw in a fixed position, and means to simultaneously actuate the last two means.

4. In a vise, the combination with a suitable support, of a revoluble housing having a gripping-jaw, a movable jaw slidably mounted in said housing, a block carried within said housing, a revoluble threaded rod carried by said movable jaw and passing through said block, an adjustable collar mounted upon said rod, means for temporarily moving said movable jaw, means engaging said collar for returning said movable jaw to its normal position, and means carried by said support for locking said movable jaw in a fixed position.

5. In a vise, the combination with a suitable support, a housing carried thereby and having a gripping-jaw, a wedge-shaped member mounted in said housing, a spring-held block engaging said wedge-shaped member, a movable jaw, means to move said wedge-shaped member, means to adjust said movable jaw, and means to adjust said housing.

849,905. BUSK FOR CORSETS. RUTH E. LEGGE, Sandwich, England. Filed Oct. 24, 1906. Serial No. 340,309.

Claim.—1. In combination with a busk having apertures near its ends, caps fitting on the ends of the busk and tongues projecting from opposite sides of the cap and passing through the openings of the busk.

2. In combination with a busk having apertures near its ends, caps fitting on the ends of the busk and tongues projecting from opposite sides of the cap and passing through the openings of the busk, said tongues being of such length as to have their free ends extending within the caps.

3. In combination, a busk having openings near its ends, caps fitting on the ends of the busk, tongues formed on opposite sides of the cap and adjacent opposite ends thereof said tongues passing through the openings in the busk.

849,906. GARMENT-SUPPORTER. HUGH G. MACWILLIAM, New Rochelle, N. Y. Filed Mar. 31, 1906. Serial No. 309,144.

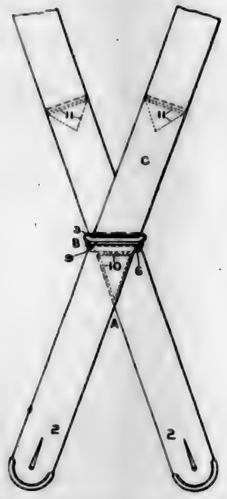

Claim.—1. In combination with a supporting-strap, a loop connection comprising two registering loops for running straps, and a connected attaching-loop, the attaching-loop being of just sufficient height to receive the supporting-strap, whereby bunching of the strap within said loop is prevented.

2. The combination with a supporting-strap, of a loop connection comprising two loop members formed with registering loops, and a cross-bar carried by one of said loop members in position to form a loop between it and the bottom of said loop member of just sufficient height to receive the supporting-strap, for the purpose set forth.

3. In an article of the class described, in combination, a supporting member, a pair of registering hinged loops and a pair of connected straps passing runningly, one through one loop, and the other through the other loop, both straps passing through said loops in the same direction, for the purpose set forth.

4. A loop connection for running straps, comprising two loop members, a sleeve inclosing the lower bars of the members and constituting a hinge therefor, the lower bar of one member lying in the same vertical plane within the sleeve as the lower bar of the other member, for the purpose set forth.

849,907. LOCK-SWITCH. JAMES A. MALLETTE, St. Louis, Mo. Filed Feb. 23, 1907. Serial No. 358,945.

Claim.—1. In combination with a rail, a tongue oscillating to and from the rail, a spring-controlled reciprocating stem mounted adjacent to the rail on the side opposite to the tongue, and a system of link-and-lever connections between the stem and tongue for forcibly holding the tongue at either limit of its arc of oscillation, substantially as set forth.

2. In combination with two converging rails, a tongue oscillating in the space between the rails, a lug or arm projecting from the side of the tongue through one of the rails, a lever mounted pivotally at an intermediate point in proximity to the end of the lug, a link connecting the lug to the adjacent end of the lever, a spring-controlled reciprocating stem mounted adjacent to one of the rails on the side of the link, a link coupling the adjacent ends of the stem and arm of the pivoted lever, the ends of the lever being adapted to oscillate through an arc extending on each side of the continuation of the axis of the stem, substantially as set forth.

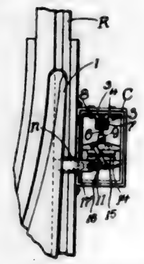

3. In combination with two converging rails, a tongue oscillating in the space or groove between the rails, a lug or arm projecting from the side of the tongue through one of the rails, a link pivotally carried at the end of the lug, a spring-controlled stem mounted adjacent to one of the rails on the side opposite from that of the tongue and reciprocating in a line parallel to said rail, a link at the end of the stem, an intermediate oscillating lever pivotally mounted between the links aforesaid, and having its respective arms coupled pivotally to said links, the stem, lever, and their connecting-link disposing themselves in the same straight line for the extreme reciprocation of the stem in one direction and for the maximum compression of the spring actuating the same, whereby upon a slight movement of the tongue from its position corresponding to the alined position of the stem, lever and link aforesaid, the expansion of the spring will snap or force the tongue to its extreme position against the rail toward which it initially moved, substantially as set forth.

4. In combination with two converging rails, a tongue oscillating in the space between the rails, a lug or arm projecting from the side of the tongue through one of the rails, a lever mounted pivotally at an intermediate point of its length and in proximity to the lug, a link connecting the lug to the adjacent end of the lever, a spring-controlled reciprocating stem mounted adjacent one of the rails on the same side with the lever, a link coupling the lever and stem, the stem, lever and connecting-link adapted to aline themselves with the axis of the stem for the extreme reciprocation of the stem in one direction, and means for permitting a joint lateral adjustment to and from the rail, of the axis of oscillation of the lever and of the reciprocating stem, whereby the disposition of the arc of oscillation of the lever with reference to the axis of the stem may be slightly varied to vary the resistance offered by the tongue to the power tending to oscillate it toward the opposite rail, substantially as set forth.

849,908. STEEL SUPPORTING STRUCTURE FOR ELECTRIC-TRANSMISSION CABLES. ALBERT K. MANSFIELD, Batavia, Ill. Filed Apr. 12, 1906. Serial No. 311,208.

Claim.—1. In a supporting structure for electrical-transmission cables, the combination with an upright structure, of a cross-arm fixed to said upright structure and comprising a plurality of angle-bars arranged about a central axis laced together, and means mounted upon said cross-arm for securing a cable thereto.

2. In a supporting structure for electrical-transmission cables, the combination with a laced angle-bar pole, of a cross-arm fixed to said pole comprising four angle-bars arranged about a central axis and laced together, and means mounted upon said cross-arm for supporting a cable thereon.

3. In a supporting structure for electrical-transmission cables, the combination with an upright structure, of a cross-arm fixed to said structure and composed of parallel

bars of angle-steel and lattice-bars rigidly connected at their ends to the alined flanges of said bars.

4. In a supporting structure for electrical-transmission cables, the combination with a plurality of columns formed of angle-steel, of lattice-bars rigidly united at their ends to the flanges of said columns, a cross-arm rigidly secured intermediate of its ends to said columns and composed of parallel bars of angle-steel and lattice-bars rigidly united to the alined flanges of the bars, and insulator-pins mounted upon said arm.

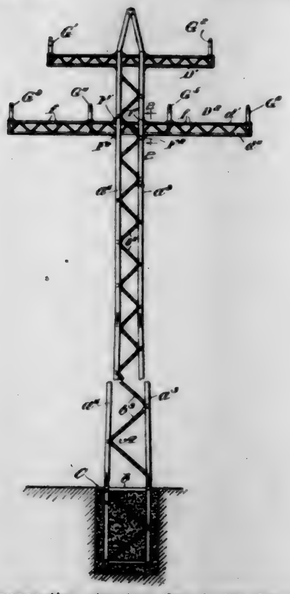

5. In a supporting structure for electrical-transmission cables, the combination with a plurality of columns formed of angle-steel, of diagonally-arranged lattice-bars rigidly united at their overlapping ends to the flanges of said columns, a cross-arm rigidly secured intermediate of its ends to said columns and composed of parallel bars of angle-steel and diagonal lattice-bars united at their overlapped ends to the alined flanges of said bars.

6. In a supporting structure for electrical-transmission cables, the combination with a plurality of metal columns, of diagonally-arranged lattice-bars rigidly united at their ends to said columns, a cross-arm rigidly secured intermediate of its ends to said columns, and composed of a plurality of bars of steel, and diagonal lattice-bars united at their ends to the said metal bars.

849,909. WATER-SEALED CONTINUOUS INGOT-HEATING FURNACE. WILLIAM R. MILLER, Pittsburg, Pa., assignor to Forter Miller Engineering Co., Pittsburg, Pa., a Corporation of Pennsylvania. Filed Nov. 12, 1906. Serial No. 343,083.

Claim.—1. In a furnace having a bottom and tracks thereon, and means for submerging and keeping submerged such bottom and tracks, the combination with tracks leading to the furnace at a higher level, of a vertically-adjustable turn-table adapted to aline with each of said tracks respectively, substantially as set forth.

2. A continuous furnace provided with a bottom and a pit, means for submerging and keeping submerged such bottom, and vertically-adjustable supporting mechanism arranged to locate a traveling buggy or the like with relation to the bed of the furnace, substantially as set forth.

3. A continuous furnace provided with tracks and a pit at each end, means for submerging the tracks and keeping them submerged, and vertically-adjustable devices mounted in said pits arranged to locate a traveling buggy or the like with relation to the bed of the furnace, substantially as set forth.

4. A continuous furnace provided along its bottom with supporting-tracks, means for submerging said bottom and tracks, a lower chamber at each end of the furnace communicating therewith, upper tracks leading thereto, and a vertically-adjustable turn-table having tracks arranged to be lowered into registering alinement with the furnace-tracks and to be raised into alinement with the upper tracks, substantially as set forth.

5. The combination with a continuous furnace provided with tracks along its bottom, a communicating chamber, means for submerging the furnace bottom, tracks and chamber, and a vertically-adjustable buggy-supporting device having tracks, adapted to be lowered into alinement with the tracks of the furnace, substantially as set forth.

6. The combination with a continuous furnace provided along its bottom with tracks, communicating chambers at each end, means for submerging the furnace bottom, tracks and chambers and for keeping them submerged, vertically-adjustable turn-tables having tracks located in said chambers, supplemental tracks leading to said turn-tables at a higher level, and means for raising and lowering the turn-tables, substantially as set forth.

7. The combination with a continuous furnace provided along its bottom with tracks, communicating chambers at each end, means for submerging the furnace bottom, tracks and said chambers, vertically-adjustable turn-tables having tracks located in said chambers, supplemental tracks leading to said turn-tables at a higher level, and means for raising, lowering and turning the turn-tables, substantially as set forth.

8. The combination with a continuous furnace provided with tracks and a communicating chamber, upper tracks leading to said chamber, and means for submerging said tracks and chamber, of a vertically-movable stem supporting a turn-table in said chamber having tracks arranged to aline with said furnace-tracks and with the upper tracks, rack-and-pinion mechanism for rotating the stem and turn-table, and fluid-actuated mechanism for raising and lowering the turn-table, substantially as set forth.

9. The combination with a furnace having a supporting-bottom and means for submerging said bottom, of a track leading to a higher level, a lower chamber communicating with the furnace interior, and a vertically-adjustable support mounted in said lower chamber arranged to be located in alinement with the furnace-bottom and with said higher track, substantially as set forth.

849,910. WIRE-STRETCHER. CHARLEY P. MOORE, Sardis, Tenn. Filed Dec. 18, 1906. Serial No. 348,388.

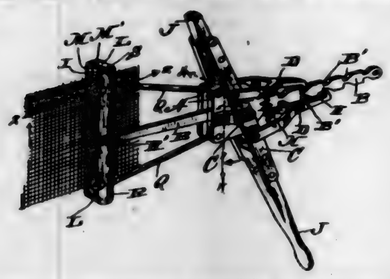

Claim.—A wire-stretcher comprising a ratchet-bar with notches upon the opposite edges thereof, plates between which said bar is guided, a rocking beam pivotally mounted upon said plates, dogs pivotally connected to said beam and having hooked ends which are grooved and adapted to engage one over each notched edge of said bar and be guided thereon by the grooves engaging over the edges of the bar intermediate the notches, springs connecting said dogs, and clamping members connected to said plates, as set forth.

849,911. PENHOLDER. ROY MOORE and ROBERT L. FERGUSON, Haran, Va. Filed Apr. 14, 1906. Serial No. 311,742.

Claim.—A device of the class described comprising a single strand of wire bent at its middle to form a loop and having its spaced portions, thus formed, arranged to close the loop, the said portions being diverged from the loop in a plane at right angles to that occupied by the loop, the said portions being then twisted together to form a second loop for the reception of a staff.

849,912. FURNACE. WILLIAM MCCLAVE, Scranton, Pa., assignor to McClave-Brooks Company, a Corporation of Pennsylvania. Filed Mar. 16, 1905. Serial No. 250,469.

Claim.—1. A furnace structure, comprising inclosing walls arranged to form a fire-box and a flame-chamber, a hollow bridge-wall arranged between the fire-box and the flame-chamber, means being provided for affording communication between the interior of the bridge-wall and the flame-chamber, air heating and conducting passages being formed in the floor of the flame-chamber, each of said passages being reduced in size at its ends and enlarged at its intermediate portion, each of the said passages communicating with the interior of the bridge-wall at one end, and means for delivering air to the other end of each of said passages.

2. A furnace structure, comprising inclosing walls arranged to form a fire-box and a flame-chamber, a hollow bridge-wall disposed between said fire-box and flame-chamber, the bridge-wall being formed with means of communication between its interior and the furnace-inclosure, air heating and conducting passages communicating with the interior of the bridge-wall, each of said passages being formed small at each end and enlarged intermediate its length, a distributing-chamber disposed transversely of the flame-chamber and communicating with the ends of the air heating and conducting passages farthest distant from the bridge-wall, and means for supplying air to said distributing-chamber.

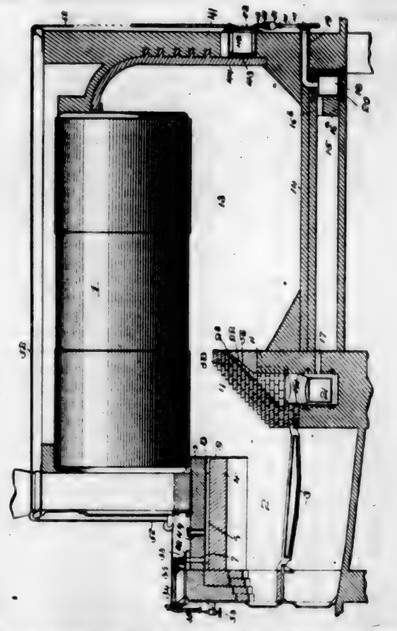

3. In an air-feeding mechanism for furnaces, the combination with a furnace-inclosure, of a hollow bridge-wall arranged therein and dividing the same into a fire-box and a flame-chamber, a flame-bed arranged in said chamber and formed with a plurality of longitudinally-arranged parallel passages, a transversely-arranged air-chamber communicating with said passages, each of the passages being relatively small at the point of communication with the air-chamber and relatively large beyond the air-chamber, means for supplying air under pressure to the air-chamber, means of communication between said passages and the interior of said bridge-wall, and means for delivering air from the bridge-wall to the furnace-inclosure.

4. In an air-feeding mechanism for furnaces, the combination with a furnace-inclosure, a hollow bridge-wall arranged therein, of air-heating passages formed in the floor of the furnace-inclosure and communicating with the interior of the bridge-wall, a supply-chamber arranged transversely of and communicating with the ends of said passages farthest from the bridge-wall, the bridge-wall being provided with means of communication between the interior of the bridge-wall and the furnace-inclosure, and an air-supply pipe extending from outside the furnace-inclosure into the same above the transversely-disposed chamber and bent downwardly and extending into said chamber through the top.

5. A furnace structure, comprising inclosing walls, a bridge-wall formed therein having angular bricks arranged at the upper edge thereof and formed with grooves or passages, the said angular bricks also supporting adjacent bricks in such a manner as to complete the air-passages along said grooves, and means for delivering heated air through the said grooves into the flame-chamber of the furnace.

6. A furnace structure, comprising inclosing walls and a bridge-wall formed therein, said bridge-wall being made hollow, approximately triangular bricks or blocks arranged across the upper edge of the bridge-wall each of said blocks having a plurality of stepped shouldered por-

tions leaving a space between them and top bricks fitting upon said shouldered portions and completing passages in connection with the spaces of the triangular blocks or bricks and means for delivering air in a heated condition through the said passages.

849,913. STOKING-GRATE MECHANISM. WILLIAM MCCLAVE, Scranton, Pa., assignor to McClave-Brooks Company, Scranton, Pa., a Corporation of Pennsylvania. Filed Apr. 12, 1906. Serial No. 311,391.

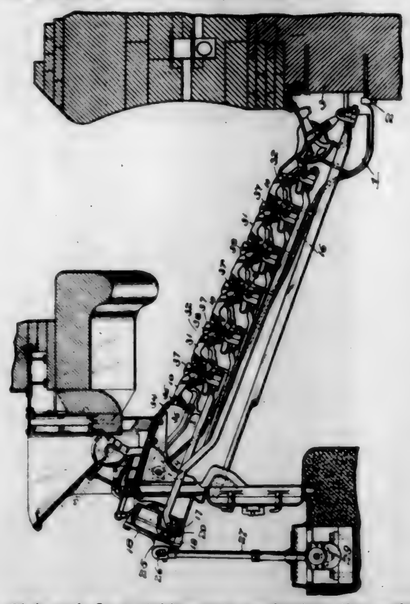

Claim.—1. In a stoking-grate mechanism, the combination with rocking grate-bars spaced apart, and caps carried thereby, of removable filler-caps interposed between the rocking-bar caps and movable independently of said rocking-bar caps.

2. In a stoking-grate mechanism, the combination with rocking grate-bars spaced apart, and caps carried thereby, of pivotally-mounted bars disposed between said rocking grate-bars and overbalanced at one side of its pivot, and filler-caps removably carried by said pivotally-mounted bars in position for at times resting by gravity upon some of the rocking grate-bar caps.

3. In a stoking-grate mechanism, the combination with rocking grate-bars spaced apart, and caps therefor, of filler-caps interposed between the grate-bar caps of the respective grate-bars, shanks for said filler-caps, and means pivotally and removably supporting said filler-bar shanks independently of the rocking grate-bars.

4. In a stoking-grate mechanism, the combination with rocking grate-bars spaced apart, and caps carried thereby, of filler-caps pivotally and removably supported between the rocking grate-bar caps independently thereof.

5. In a stoking-grate mechanism, the combination with rocking grate-bars spaced apart, and caps therefor, of a pivotally-mounted bar interposed between said grate-bars and independent thereof, said pivotally-mounted bar being formed with sockets, and filler-caps having shanks extending into said sockets and removably supported thereby.

6. In a stoking-grate mechanism, the combination with rocking grate-bars spaced apart, and caps therefor, of a bar interposed between said grate-bars, arms extending rearwardly from said interposed bar, means pivotally carrying said arms, and filler-caps carried by said interposed bar.

7. In a stoking-grate mechanism, the combination with rocking grate-bars spaced apart, and caps therefor, of a bar interposed between said grate-bars and independent thereof, and mounted to swing laterally therebetween, and removable filler-caps for said interposed bar.

8. In a stoking-grate mechanism the combination with rocking grate-bars spaced apart, and caps therefor, of a pivotally-supported bar interposed between said grate-bars, filler-caps carried by said interposed bar, and filler-bars interposed between said filler-caps and the caps of one of said grate-bars, said filler-bars being pivotally carried by said interposed bar.

9. In a stoking-grate mechanism the combination with rocking grate-bars spaced apart and caps therefor, of a pivotally-mounted bar interposed between said grate-bars, filler-caps carried by said interposed bar and extending forwardly of the same, lugs projecting rearwardly from said interposed bar, and a filler-bar pivotally carried by said lugs.

10. In a stoking-grate mechanism, the combination with rocking grate-bars spaced apart, and caps therefor, of a swinging bar interposed between said grate-bars, filler-caps carried by the swinging bar and means projecting in the path of movement of the swinging bar for normally sustaining the same with one edge of the caps thereof in contact with the caps of one of the grate-bars.

11. In a stoking-grate mechanism, the combination with carriages spaced apart, grate-bars journaled in said carriages and also spaced apart, and caps for said grate-bars, of a bar pivotally supported by said carriages between said grate-bars, the center of gravity of the pivoted bar being at one side of the pivot, lugs projecting laterally from one of the carriages for preventing downward pivotal movement of said pivoted bar, and filler-caps carried by said pivoted bar.

12. In a stoker-grate mechanism, the combination with carriages spaced apart, grate-bars journaled therein, actuating mechanism connected with said grate-bars for rocking the same on their journals, caps carried by said grate-bars, a pivotally-mounted bar arranged between each two of the grate-bars, lugs projecting from the carriages for normally sustaining the interposed bars against downward movement upon their pivots while permitting upward movement thereof, and caps carried by said interposed bars.

849,914. GRATE. WILLIAM MCCLAVE, Scranton, Pa., assignor to McClave-Brooks Company, Scranton, Pa., a Corporation of Pennsylvania. Filed Sept. 6, 1906. Serial No. 333,485.

Claim.—1. In a grate structure, the combination with a journal-bearing bar formed with a bearing and an opening leading therefrom to the upper edge of the bar, the bar being formed with a recess at each side of the opening inclined toward the opening, and a sectional cap for closing said opening, the sections of the cap engaging the said recesses and extending across the opening.

2. In a grate structure, the combination with a journal-bearing bar formed with a bearing and an opening leading therefrom to that portion of the bar designed to be subjected to the greatest amount of heat, recesses being formed in the material of the bar at the sides of the opening, said recesses being inclined and extending toward the outer portion of the opening, a grate-bar formed with a journal engaging the bearing of said journal-bearing bar, and a sectional cap having its sections engaging the said recesses and extending into said opening to retain the journal in its operative position.

3. In a grate structure, the combination with a journal-bearing bar formed with a bearing and an opening extending therefrom to the edge of the bar, the material of the bar at the sides of the opening being recessed and the recesses having their longitudinal axes disposed in planes converging in a direction toward the edge of the bar, a grate-bar formed with a journal engaging said bearing, and a sectional cap having its sections engaging the said recesses and extending beyond the same into said opening for retaining the journal in its operative position.

4. In a grate structure, the combination with a journal-bearing bar having a journal-bearing, and an opening extending from said bearing to the edge of the bar, of a sectional cap for closing said opening, the sections of the cap being arranged to extend in inclined planes and one of the sections to overlap the other.

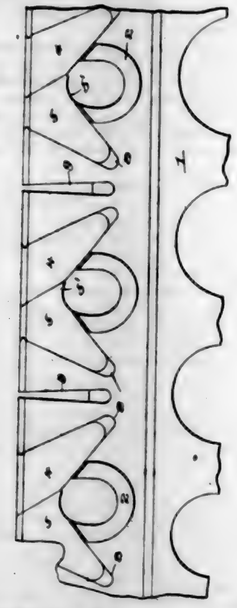

5. In a grate structure, the combination with a journal-bearing bar having a journal-bearing, and an opening extending therefrom to the edge of the bar and formed with recesses on both sides of said opening, of a sectional cap formed of overlapping sections adapted to be locked in position by engagement with said recesses.

6. In a grate structure, the combination with a journal-bearing bar formed with a bearing, and an opening extending therefrom to the edge of the bar, of a sectional cap for closing said opening, one of the sections of the cap engaging a portion of the bar for being retained in position and the other section of the cap engaging the first-mentional section of the cap and also engaging a portion of the bar for being retained in position.

7. In a grate structure, the combination with a journal-bearing bar having a journal-bearing, and an opening extending therefrom to the edge of the bar, and inclined recesses arranged at the sides of the opening, of a sectional cap formed with overlapping sections engaging said inclined recesses.

8. In a grate structure, the combination with a journal-bearing bar, having a journal-bearing and an opening extending therefrom to the edge of the bar, of a sectional cap for closing said opening, one of said sections overlapping the other, and means formed integral with the bar and coacting with the overlapping section for locking the cap in position.

9. In a grate structure, the combination with a journal-bearing bar having a bearing, and an opening leading therefrom to the edge of the bar, of a sectional cap for closing said opening, one section of the cap overlapping the other and the sections of the cap bearing angular relation with respect to each other, and means formed integral with the bar for preventing simultaneous romoval of the sections of the cap.

10. In a grate structure, the combination with a journal-bearing bar having a journal-bearing, and an opening leading therefrom to the edge of the bar, said bar being formed with undercut portions contiguous to said bearing, of a sectional cap for closing the opening, one of the sections of said cap engaging one of the undercut portions, and the other section of the cap overlapping the first section of the cap and engaging the other undercut portion.

11. In a grate structure, the combination with a journal-bearing bar having a journal-bearing, and an opening leading therefrom to the edge of the bar, the said bar being formed with undercut portions contiguous to the journal-bearing, of a sectional cap for closing the said opening, one section of said cap engaging one of the undercut portions and having an overhanging portion above the journal-bearing, and the other section of the cap engaging the other undercut portion and extending above the overhanging portion of the first-mentioned section.

12. In a grate structure, the combination with a journal-bearing bar having a journal-bearing and formed with an opening leading from said bearing to the edge of the bar, the said bar being provided with an inclined recess in each face at each side of the bearing leaving an intermediate web, of a sectional cap for closing said opening, the sections of said cap being bifurcated and positioned for inclosing the respective webs one of the sections of the cap overlapping the other.

13. In a grate structure, the combination with a journal-bearing bar having a journal-bearing and formed with an opening leading from said bearing to the edge of the bar, the said bar being provided with an inclined recess in each face at each side of the bearing leaving an intermediate web, of a sectional cap for closing said opening, each section of said cap being bifurcated and positioned for inclosing the respective web, the recesses being beveled off below the bifurcated ends of the sections of the cap for exposing said ends for facilitating the application of a removing tool.

849,915. FIRE-KINDLER. JAMES H. MCDONOUGH, Watertown, Mass. Filed Mar. 31, 1906. Serial No. 309,173.

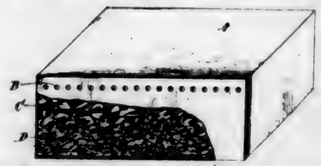

Claim.—1. A fire-kindler consisting of a substantially rectangular receptacle conforming generally to the shape of the usual cooking-stove grate and ventilated only near the top thereof and filled with pieces of charcoal.

2. A fire-kindler consisting of a receptacle ventilated only near the top thereof and filled with pieces of kindling material.

3. A fire-kindler consisting of a carton ventilated only near the top thereof and having a layer of ignitible material on the bottom thereof, and a mass of charcoal superimposed upon said ignitible material.

4. A fire-kindler consisting of a receptacle the walls of which are solid except near the top thereof where they are provided with a series of ventilating-apertures, a layer of ignitible material on the bottom thereof, and a mass of charcoal superimposed upon said ignitible material.

849,916. UNLOADING DEVICE FOR PUMP INLET-VALVES. WILLIAM R. MCKEEN, Jr., Omaha, Nebr. Filed May 20, 1905. Serial No. 261,387.

Claim.—1. In a pump-valve mechanism, the combination with an intake-valve of a pump, a spring normally pressing the said valve to its seat, and a weight suspended above the valve and adapted to be lowered into engagement with the stem thereof for overcoming the pressure of the spring.

2. In a valve mechanism, the combination with the intake-valve of a pump, a spring engaging the stem of said valve for normally mainthining the valve closed, a weight

suspended above said valve and adapted to be lowered into engagement with the stem for overcoming the pressure of the spring, the said weight being adapted to interlock with the free end of the stem when engaging the same.

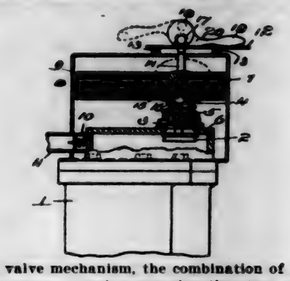

3. In a valve mechanism, the combination of the intake-valve of a pump, a spring engaging the stem of the same for normally maintaining the valve closed, a cam mounted above the valve-stem, a weight supported by said cam and adapted to be lowered into engagement with the valve-stem for overcoming the pressure of the spring, and means for supporting said cam in position for permitting free bodily upward movement of the cam.

4. In a valve mechanism, the combination of an intake-valve of a pump, a spring engaging the stem thereof, and normally maintaining the valve in a closed position, a weight suspended above said stem, a cam supporting said weight, a handle projecting from said cam in position for being operated for raising or lowering the weight, the handle being so positioned as to lie substantially flat in one of the extremes of movement of the cam, and a support for the cam permitting the cam to move freely upwardly but retaining the same against downward movement.

849,917. BEAM. GEORGE B. MCLEAN, Elizabeth, Ill., and GREGORY D. MCLEAN, Powersville, Mo. Filed Sept. 12, 1906. Serial No. 334,361.

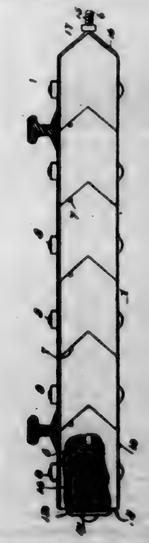

Claim.—1. A beam comprising a plurality of interchangeable sections, means for securing the same together, and means for cushioning the effect of said securing means.

2. A concrete beam comprising a plurality of interchangeable sections, and cushioning means for securing the same together.

3. A beam comprising a plurality of interchangeable sections formed with ways therein, a bar passing centrally of said sections for securing the same together, and a spring for cushioning the effect of said securing-bar.

4. A concrete beam comprising a plurality of interchangeable sections, a bar passing therethrough for securing the same together, and a cushioning means positioned at the end of said bar for taking up any loose motion between said sections.

5. A beam comprising a plurality of interchangeable sections, means for securing said sections together, means for taking up the lost motion between said sections, and means for adjusting the tension of said lost-motion means.

6. A beam comprising a plurality of sections, means for securing the same together, means for cushioning the effect of said securing means, and means for holding said cushioning means in position.

7. In a beam, the combination of a plurality of interchangeable sections fitting together end to end, each of said sections being provided at one end with a projection, and at the opposite end with a recess adapted to receive the projection upon the adjacent section, and means for connecting the sections together.

8. In a beam, the combination of a plurality of sections, each of which is provided with a bolt-receiving opening, and also with means for engaging a wire, and means for connecting the sections end to end.

9. In a beam, the combination of a plurality of interchangeable sections, each of said sections being formed at one end with a tongue, and at the opposite end with a recess adapted to receive the tongue on the adjacent sections, the said tongues being formed with grooves for the reception of wires, and means for holding the sections together.

849,918. VEHICLE-BRAKE. HARRY S. PARKER, Trenton, N. J. Filed Dec. 5, 1906. Serial No. 346,490.

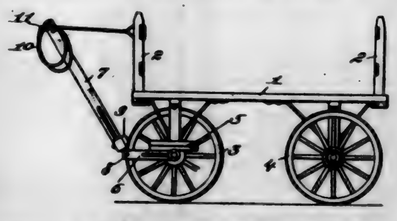

Claim.—1. The combination with a vehicle having a vertically-movable tongue connected to the front portion of the running-gear, of a pivotal coupling means for the tongue disposed in transverse alinement with the peripheries of the front portions of the forward wheels, and a brake-bar rigidly secured on the rear end of the tongue in advance of the said pivotal coupling means and having the ends thereof rigid and normally slightly in advance of the front portions of the forward wheels, whereby the elevation of the tongue will cause the opposite extremities of the brake-bar to gradually move closer toward the forward portions of the wheels to bring the said extremities of the bar into contact with the said forward portions of the wheels in planes at right angles to the latter.

2. The combination with a vehicle having a tongue coupled to the front portion of the running-gear thereof and vertically movable, a pivotal coupling means for the tongue disposed in transverse alinement with the peripheries of the front portions of the forward wheels, a flexible doubled strand connected at one extremity to the free end of the tongue and at the opposite extremity to the vehicle and having the intermediate portions connected, and a brake-bar rigidly secured to the rear end of the tongue in advance of the pivotal coupling means for the latter and provided with rigid extremities normally held slightly in advance of the front portions of the forward wheels of the running-gear.

849,919. TRANSMISSION OF SIGNALS. ALFRED PERRIN, Grenoble, France. Filed May 23, 1904. Serial No. 209,406.

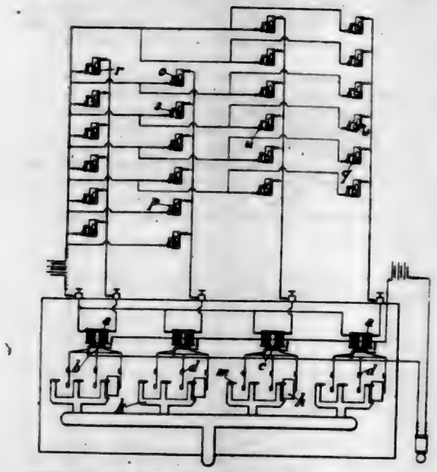

Claim.—A method of transmitting mechanical signals consisting in causing one frame carrying different pendulums at a receiving-station to be oscillated by pendulums synchronous to the first pendulums and situated at sending-stations, each pendulum of the receiving-station oscillating with the synchronous corresponding pendulum of a sending-station.

849,920. UNLOADING, SCREENING, AND LOADING APPARATUS. JOHN W. SEAVER, Cleveland, Ohio, and ALEXANDER LESLIE, Walkerville, Ontario, Canada, assignors to Wellman-Seaver-Morgan, Cleveland, Ohio, a Corporation of Ohio. Filed June 30, 1903. Serial No. 163,797.

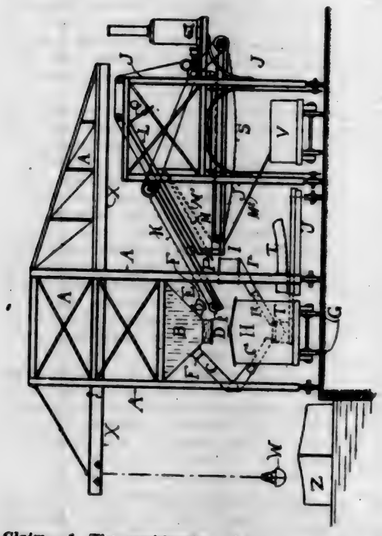

Claim.—1. The combination of a crane, having unloading devices thereon, a screen, mounted adjacent to said crane, and an elevating-conveyer for receiving the unloaded material and delivering the same to the head of the screen, substantially as specified.

2. The combination of a crane, having unloading devices thereon, a screen, mounted adjacent to said crane, an elevating-conveyer for receiving the unloaded material and delivering the same to the head of the screen, and means for simultaneously changing the angle of both the elevating-conveyer and the screen, substantially as specified.

3. The combination of a crane, having unloading devices thereon, a screen, mounted adjacent to said crane, an elevating-conveyer for receiving the unloaded material and delivering the same to the head of the screen, means for simultaneously changing the angle of both the elevating-conveyer and the screen, and a second conveyer for receiving the material which passes through the screen, substantially as specified.

4. The combination of a crane having unloading devices thereon, a railway-track adjacent to said crane, a car-loader adjacent to said track and mounted upon the crane structure, with means for directing the unloaded material to the distributing-chute of said car-loader, substantially as specified.

5. The combination of a crane having unloading devices thereon, a railway-track adjacent to said crane, a car-loader carried by the crane structure adjacent to said track, and means for directing the unloaded material either to the distributing-chute of the car-loader or directly into the car, substantially as specified.

6. The combination of a crane, having a hopper thereon, an unloading device constructed to discharge into said hopper, and an elbow-pipe on the hopper for discharging through the side door on a car run beneath the hopper, substantially as specified.

7. The combination of a crane, having a hopper thereon, an unloading device constructed to discharge into said hopper, an elbow-pipe extending from said hopper, and a movable discharge or delivery chute operating in conjunction with said elbow-pipe, whereby the contents of the hopper can be directed through the side door of a car run beneath the same, the chute being withdrawn to permit movement of the car or crane, substantially as specified.

8. The combination of a crane, having a hopper mounted thereon, an unloading device discharging into said hopper, a vertical spout and an elbow-spout, through either of which the contents of the hopper can be discharged into a car run beneath the hopper, substantially as specified.

9. The combination of a crane, having a hopper mounted thereon, an unloading device discharging into said hopper, and an elevating-conveyer mounted adjacent to the crane, said hopper having vertical, inclined and elbow discharge-spouts, whereby its contents can be directed onto the elevator or directly into an open-top or box car run in beneath the hopper, substantially as specified.

10. The combination of a crane having unloading devices thereon, a second crane adjacent to the first crane, a duplex screen mounted on said second crane for receiving the unloaded material, means for directing the tailings from each screen into separate receptacles, and a conveyer for delivering the material passing through the second section of the screen to a third receptacle or point of deposit, substantially as described.

11. The combination of a crane, having unloading devices thereon, with a subordinate crane having screening devices thereon and also carrying an elevating-conveyer for receiving the unloaded material and delivering the same to the head of the screen, substantially as specified.

12. The combination of a crane, having unloading devices thereon, with a subordinate crane having screening devices thereon and also carrying an elevating-conveyer for receiving the unloaded material and delivering the same to the head of the screen, and means for moving said conveyer inwardly and outwardly on said subordinate crane, substantially as specified.

13. The combination of a crane, having unloading devices thereon, a subordinate crane carrying screening devices, and movable independently of the first crane and a conveyer for receiving the material passing through said screen, substantially as specified.

14. The combination of a crane, having unloading de-

vices thereon, a subordinate crane carrying screening devices, and movable independently of the first crane an elevating-conveyer for carrying the unloaded material to the screen, and a conveyer for receiving the material passing through said screen, substantially as specified.

15. The combination of a crane having thereon a traveling trolley with unloading devices suspended therefrom, a screen mounted adjacent to said crane out of the path of said unloading device, and means for conveying the unloaded material to said screen, substantially as specified.

849,921. FASTENER FOR TAPES, SHOE-LACES, ELASTICS, AND OTHER ARTICLES. HERMANN F. SCHELLING, Weehawken, N. J. Filed Feb. 10, 1906. Serial No. 300,535.

Claim.—1. A fastening for a string comprising housings having a common flexible connecting base portion, said housings being placed longitudinally with respect to each other to form an intermediate opening, the adjacent edges of the housings being sufficiently near to each other to clamp therebetween the ends of the string when passed through the housings.

2. A fastener comprising two flexibly-connected housing portions, spaced from each other to form an intermediate opening, the adjacent edges of the housing portions serving to clamp together the two ends of a string passed through said opening when the housing portions are longitudinally alined.

3. As an article of manufacture, a piece of material bent on itself to form two housings flexibly associated with each other, the innermost edges of the latter being in proximity and forming an opening for receiving two ends of a string and serving to clamp the same when the two housings are arranged in longitudinal alinement.

849,922. REINFORCED CONCRETE CONSTRUCTION. EDSON M. SCOFIELD, Philadelphia, Pa. Filed Oct. 21, 1904. Serial No. 229,483.

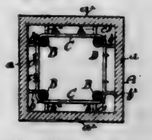

Claim.—1. The combination of a body of concrete, reinforcing-bars therefor and spacers for said bars each consisting of two substantially U-shaped members formed of round bar material, the extremities of each member being bent outwardly and extending to the surface of the concrete body, substantially as described.

2. The combination of a body of concrete, reinforcing-bars therefor and spacers for said bars each consisting of two substantially U-shaped members formed of round bar material, the extremities of each member being bent outwardly and extending to the surface of the concrete body, and the members being wired together and to the reinforcing-bars, substantially as described.

3. A spacer consisting of two substantially U-shaped pieces of round bar material, each having its extremities bent outwardly and extending to the surface of the concrete body, with means for holding said members together with the portions adjacent to their extremities respectively substantially parallel to each other, said bent-out extremities of the two pieces being also respectively parallel, substantially as described.

4. The combination in a body of concrete of a series of longitudinal bars therein, a series of spacers connected to said bars, said spacers each consisting of two substantially U-shaped pieces, one having its ends bent downwardly and then outwardly and the other having its ends bent upwardly and then outwardly, the end portions of each pair of said pieces being in interlocking engagement with one another, and the extremities of said end portions engaging the form to position the spacer, substantially as described.

5. The combination in a body of concrete of a series of longitudinally-extending reinforcing-bars therein, a series of spacers connected to said bars, said spacers each consisting of two substantially U-shaped pieces, one having its end portions bent downwardly and then outwardly and the other having its end portions bent upwardly and then outwardly, said portions being in engagement with one another and with the form, and the end of adjacent courses of spacers engaging the form in vertical lines, substantially as described.

849,923. CAR-MOVER. MASON N. SHELL, Eckman, W. Va. Filed Feb. 9, 1907. Serial No. 356,612.

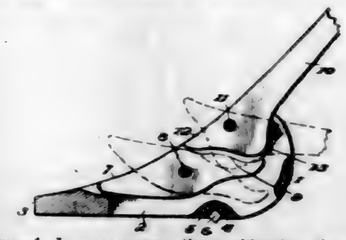

Claim.—1. In a car-mover, the combination of a frame, a wheel-engaging shoe carried by the frame, and an operating-lever mounted upon the frame and provided with means for directly engaging the wheel and also with means for operating the shoe, the said lever and shoe engaging the wheel successively.

2. In a car-mover, the combination of a frame, a wheel-engaging shoe carried by the frame, and an operating-lever mounted upon the frame and provided with a wheel-engaging point, the shoe and wheel-engaging point operating successively.

3. In a car-mover, the combination of a frame, a wheel-engaging shoe carried by the frame and having an end thereof curved, and an operating-lever mounted upon the frame and formed with a wheel-engaging point and with a cam engaging the curved end of the shoe for operating the latter.

4. In a car-mover, the combination of a frame, a shoe pivotally mounted at an intermediate point upon the frame, and an operating-lever mounted upon the frame, the inner end of the operating-lever comprising a wheel-engaging point and a cam, the said cam being spaced from the shoe when the operating-lever is elevated and being designed to engage the shoe when the wheel has moved away from the before-mentioned point.

5. In a car-mover, the combination of a frame comprising spaced side pieces, a shoe pivotally mounted at an intermediate point between the spaced side pieces, and an operating-lever pivotally mounted between the spaced side pieces, the inner end of the lever comprising a wheel-engaging point and a cam, the said cam engaging an end of the shoe for operating the latter.

6. In a car-mover, the combination of a frame, a wheel-engaging shoe carried by the frame, and an operating-lever mounted upon the frame and provided with means for directly engaging the wheel and also with a cam for operating the shoe, the said lever and shoe engaging the wheel successively.

849,924. MASSAGE INSTRUMENT. WILLIAM G. SHELTON, Chicago, Ill. Filed Nov. 13, 1905. Serial No. 287,167.

Claim.—1. The combination with a frame, of a rotary member carried thereby, a contact member, adjustable operating connections between said members and pivotally connected to said rotary member, and a pivotal joint carried by said frame and adjustable relatively thereto to vary said operating connections and connected at a fixed point with said contact member.

2. The combination with a frame, of a rotary member carried thereby, a contact member, adjustable operating connections between said members, and a pivotal joint one part of which is resiliently mounted on said frame and adjustable relatively thereto to vary said operating connections and the other connected at a fixed point with said contact member.

3. The combination with a frame, of a rotary member carried thereby, a contact member, adjustable operating connections between said members and pivotally connected to said rotary member, and a universal joint carried by said frame and adjustable relatively thereto to vary said operating connections and connected at a fixed point with said contact member.

4. The combination with a frame, of a rotary member carried thereby, a contact member, adjustable operating connections between said members and pivotally connected to said rotary member, and a pivotal joint carried by said frame and adjustable relatively thereto to vary said operating connections and connected with said contact member at a point fixed relatively to said contact member, said contact member being movable toward and away from said rotary member to adjust said operating connections.

5. The combination with a frame, of a rotary member carried thereby, a contact member, adjustable operating connections between said members and pivotally connected with said rotary member, and a universal joint carried by said frame and adjustable relatively thereto to vary said operating connections and connected at a fixed point with said contact member, said contact member being movable toward and away from said rotary member to adjust said operating connections.

6. The combination with a frame, of a rotary member carried threby, a contact member, a bar carrying said contact member and adjustably connected with said rotary member, and a universal joint carried by said frame and adjustable relatively thereto to vary said operating connections and connected to said bar at a point fixed relatively to said contact member.

7. The combination with a frame, of a rotary member carried thereby, a contact member, operating means connected with said contact member and making radial sliding connection with said rotary member, and a pivotal joint carried by said frame and adjustable relatively thereto to vary said operating connections and connected at a fixed point with said contact member.

8. The combination with a frame, of a rotary member carried thereby, a contact member, adjustable operating connections between said members and pivotally connected with said rotary member, a pivotal joint carried by said frame and connected with said contact member at a point fixed relatively to said contact member, and means for moving said contact member toward and away from said rotary member to adjust said operating connections.

9. The combination with a frame, of a rotary member carried thereby, a contact member, adjustable operating connections between said members and pivotally connected with said rotary member, a pivotal joint carried by said frame and adjustable relatively thereto to vary said operating connections and connected at a fixed point with said contact member, and means for locking said pivotal joint in position.

10. The combination with a frame, of a rotary member carried thereby, a contact member, adjustable operating connections between said members and pivotally connected with said rotary member, a pivotal joint carried by said frame and adjustable relatively thereto to adjust said operating connections and connected with said contact device, said contact device being movable toward and away from said rotary member to adjust said operating connections, and means for locking said joint in position.

11. The combination with a frame, of a rotary member carried thereby, a contact member, a bar carrying said contact member and adjustably connected with said rotary member, a universal joint adjustably carried by said frame and connected with said bar at a fixed distance from said contact device, means for adjusting said universal joint toward and away from said rotary member to adjust said operating connections, and means for locking said joint in position.

12. The combination with a frame, of an adjustable extension carried thereby, a contact member, a bar carrying said contact member at one end and adjustably connected at its other end with said rotary member, a universal joint adjustable relatively to said frame to vary the connection between said bar and rotary member and connected to said bar at a fixed distance from said contact device and carried by said extension, and means for locking said extension in position.

13. The combination with a frame provided with a screw-threaded opening, of a screw-threaded extension in said opening, a rotary member carried by said frame, a contact device, a bar carrying said contact device at one end and adjustably connected at its other end to said rotary member, a universal joint adjustable relatively to said frame to vary the connection between said bar and rotary member and carried by said extension and connected to said bar at a point intermediate said contact device and rotary member and fixed relatively to said contact member, means for moving said extension toward and away from said rotary member, and means for locking said extension against movement.

14. An apparatus of the character described comprising a driven shaft, a frame wherein said shaft is journaled and provided with a collar, a sleeve provided with a spherical bearing and movably located in the collar, an applicator-shaft adapted to engage and carry an applicator and having a spherical enlargement engaged in the spherical bearing of the sleeve, means for moving the sleeve and thereby throwing the applicator-shaft in and out of alinement with the driven shaft, and a connection between the driven shaft and applicator-shaft for operating the latter.

849,925. EXPLOSIVE. OSWALD SILBERRAD, Blackheath, England. Filed Sept. 27, 1906. Serial No. 336,460.

Claim.—A nitroglycerin-nitrocellulose explosive, containing about five per cent. of a mixture of ammonium perchlorate seventy-eight parts, and sulfur twenty-two parts, as and for the purposes described.

849,926. DRAFT-RIGGING FOR RAILWAY-CARS. WESLEY SLAYDEN, Wichita, Kans. Filed Dec. 13, 1906. Serial No. 347,664.

Claim.—1. A device of the class described comprising intermediate and outer draw-bar members flexibly connected at their adjacent ends, the intermediate draw-bar member being movable laterally, a guide arranged at a point intermediate of the length of the intermediate draw-bar member and forming a fulcrum on which the intermediate draw-bar member is adapted to swing in its lateral movement, and car-couplings connected with the outer draw-bar members.

2. A device of the class described comprising outer draw-bar members, car-couplings connected with the outer ends thereof, an intermediate draw-bar member flexibly connected with the inner ends of the outer draw-bar members and movable laterally, said intermediate draw-bar member consisting of a bar, a guide receiving the intermediate draw-bar member at a point between the ends thereof and forming a fulcrum on which the intermediate draw-bar

member is adapted to swing in its lateral movement, and coiled springs disposed on the outer draw-bar members for cushioning the car-couplings.

3. A device of the class described comprising outer draw-bar members, car-couplings connected with the outer ends thereof, an intermediate draw-bar member consisting of a bar flexibly connected at its ends to the inner end of the outer draw-bar members, a central guide having an opening through which the intermediate draw-bar member passes, said guide forming a fulcrum on which the intermediate draw-bar member is adapted to swing in the lateral movement thereof, and cushioning means for the car-couplings.

4. A device of the class described comprising intermediate and outer draw-bar members having their proximate ends tapered, approximately triangular links mounted on the tapered ends of the said members, rings linked into the said links, and car-couplings connected with the outer members.

5. A device of the class described comprising intermediate and outer draw-bar members, the outer draw-bar members being composed of separate sections detachably secured together, flexible coupling members connecting the draw-bar members and permitting the intermediate member to move laterally, draw-heads connected with the outer ends of the outer draw-bar members, and cushioning means connected with the latter.

6. In a device of the class described, the combination of a combined guide and support comprising a top wall or portion, terminal side walls extending inward from the ends of the combined guide and support, cross-pieces connecting the side walls and having guide-openings and a central guide, an intermediate draw-bar member arranged in the central guide, outer draw-bar members mounted in the openings of the cross-pieces and flexibly connected with the intermediate draw-bar member, draw-heads connected with the outer draw-bar members, and coiled springs mounted on the outer members and arranged at the opposite faces of the cross-pieces.

7. In a device of the class described, the combination of a combined guide and support comprising a top wall, terminal side walls, cross-pieces connecting the side walls and having guide-openings, an end wall having guide-recesses, intermediate and outer draw-bar members, the outer members being mounted in the openings of the cross-pieces and the recesses of the end walls, draw-heads connected with the outer members and forming stops for engaging the end walls, and cushioning-springs mounted on the outer members and engaging the cross-pieces.

8. In a device of the class described, the combination of a combined guide and support having cross-pieces provided with openings, draw-bar members mounted in the openings of the cross-pieces, springs disposed on the said members and engaging the cross-pieces, and substantially L-shaped keys mounted on the said members and forming stops for engaging the springs.

849,927. ALLOY. ALFRED H. SMITH, Philadelphia, Pa., assignor, by mesne assignments, to American Bronze Company, a Corporation of Pennsylvania. Filed Oct. 25, 1906. Serial No. 340,508.

Claim.—1. The process which consists in adding a mixture containing sal-ammoniac and potash to a mixture of zinc and tin, and then combining said mixture with copper, substantially as described.

2. The process which consists in adding a mixture of sal-ammoniac and potash to a mixture of tin and zinc, adding the resulting compound to a body of copper, and finally mixing the resulting alloy with a body of previously-made alloy having substantially the same composition, substantially as described.

3. The process which consists in adding a mixture of a chlorid and a hydrate of an alkali metal or metals to a mixture of tin and zinc, and then adding the resulting compound to a body of copper, substantially as described.

4. The process which consists in adding tin to melted zinc in about the proportion of four parts of the former to one of the latter, adding to the resulting mixture a mixture consisting of a chlorid and a hydrate of an alkali metal or metals in the proportion of one pound of the former to one ounce of the latter, then adding to a body of melted copper an amount of the resulting compound in about the proportion of twenty pounds of copper to three pounds two ounces of said compound, substantially as described.

5. The process which consists in adding tin to melted zinc in about the proportion of four parts of the former to one of the latter, adding to the resulting mixture a mixture consisting of a chlorid and a hydrate of an alkali metal or metals in the proportion of one pound of the former to one ounce of the latter, then adding to a body of melted copper a body of the compound previously formed in about the proportion of twenty pounds of copper to three pounds two ounces of the latter, and finally adding to the alloy a body of previously-made alloy in the proportion of two parts of the former to one of the latter, substantially as described.

849,928. HARROW-TOOTH. DAVIT M. SMITH, Sixmile, Ark. Filed Sept. 13, 1906. Serial No. 334,520.

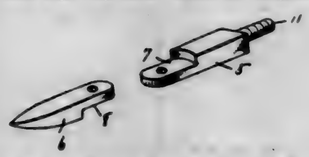

Claim.—1. A harrow-tooth comprising a shank provided at one end with an undercut seat formed on its inner face, and a blade pivotally mounted in said seat and adapted to move laterally therein.

2. A harrow-tooth comprising a shank provided at one end with an inclined undercut seat formed on its inner face, and a blade pivotally mounted in said seat and adapted for an independent lateral movement therein, said blade being inclined with respect to its shank.

3. A harrow-tooth comprising a shank provided at one end with an undercut seat formed on its inner face, and a blade having a reduced end pivotally mounted in said seat, whereby the lateral position of said blade may be adjusted with respect to its shank.

4. A harrow-tooth comprising a shank, and a blade set at an angle to said shank and adapted to be laterally adjusted with respect thereto.

5. A harrow-tooth comprising a shank portion provided at one end with an undercut seat formed in its inner face, the opposite ends of said seat being rounded, and a blade pivoted to said shank and provided with a reduced portion engaged in said seat and rounded at its inner end, whereby said blade may be laterally adjusted with respect to its shank.

6. A harrow-tooth comprising a shank portion provided at one end with an undercut inclined seat formed in its inner face, the opposite ends of said seat being rounded, and a blade pivoted to said shank and provided with a reduced portion engaged in said seat and rounded at its inner end, whereby said blade may be laterally adjusted with respect to its shank, said blade being inclined with respect to its shank.

849,929. CAN-OPENER. ARCHIBALD G. SNOWDON, Westmount, Quebec, Canada. Filed Aug. 2, 1906. Serial No. 328,930.

Claim.—1. A can-opener, comprising a case formed of the upper and lower pieces adapted to fit together and leave an opening at one end thereof and form a guideway in the interior, a bar freely sliding in said guideway and extending through said opening and having at the outer end thereof an offset, and a sharpened point from said offset, a rivet holding said pieces together, and means for retaining said bar in the case on the said bar reaching its extreme outer position, as and for the purpose specified.

2. A can-opener comprising a bar longitudinally slotted and having an offset spear-point at one end forming a pivot-journal bearing in an end wall of the can, a hollow handle, a pin projecting into said longitudinal slot from said handle, and a knife rigidly secured to said handle at the inner end thereof having the blade portion projecting therebeyond, as and for the purpose specified.

3. A can-opener comprising a hollow handle having longitudinal slideways arranged therein, and a recess on its lower side surface, an elongated bar having a longitudinal slot therein and a reduced and bent end terminating in a jabbing-point, said bar being adapted to slide in the aforesaid slideways, a knife introduced into said recess having the blade portion projecting beyond said handle, and adapted to engage the side wall of the can, and a pin extending through said slot and securing said handle and knife together, as and for the purpose specified.

4. A can-opener comprising a hollow handle formed of two pieces having an opening at the end thereof and slideways longitudinally arranged in the interior wall, a pivot member having a jabbing-point at one end and a longitudinal slot therethrough, a knife extending from the lower part of said handle and a rivet extending through said longitudinal slot and holding said handle-pieces securely together, as and for the purpose specified.

849,930. WIRE CLEAT. JOHN W. STEELE, Fresno, Cal. Filed Nov. 1, 1906. Serial No. 341,646.

Claim.—As an improved article of manufacture, the herein-described cleat constructed of wire bent at its intermediate portion in a compound curve and completely doubled upon itself at two spaced points with opposite overlapping portions, respectively, whereby to produce two completely-closed eyes for the reception of fastening devices, the wire being thence bent at its terminals in a compound curve, and in a plane at right angles to the plane of the eyes, as and for the purpose specified.

849,930.

849,931. GRAIN-SHOCKER. JOHN G. STEWART, Monmouth, Ill. Filed Dec. 26, 1905. Serial No. 293,265.

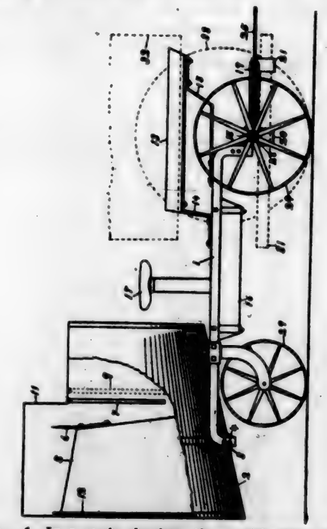

Claim.—1. In a grain-shocker, the combination with the shocker-frame, of the receptacle attached to the rear part of the said frame, having a divider placed in the receptacle, extending from the rear end to the central part of the said receptacle and forming a part of the receptacle, a fork secured to the top and forward part of the said divider, adjustable springs in the said receptacle attached to the sides of the receptacle between the said divider and the front end of the receptacle.

2. In a grain-shocker, the combination with the shocker-frame, of a receptacle attached to the rear part of the said frame, having a divider placed in the receptacle and forming a part of the receptacle, a deck secured to the forward part of the said shocker-frame, with a box secured to the central part of the said shocker-frame, for the purpose of catching all loose grain that falls when the bundles of grain are being moved from the said deck to the said receptacle.

3. The combination of a binder-frame with a shocker, said shocker comprising a shocker-frame, clamps 20 and 21 attached to the said binder-frame, the adjustable axle attached to the said clamps with a wheel journaled to the outer end of the said axle, clamps 26 and 27 attached to the said axle and adjustable thereon, with the said shocker-frame coupled to the said clamps.

4. In a grain-shocker, the combination of a shocker-

frame, a receptacle attached to the said frame, a divider placed in the said receptacle and forming a part thereof, with the fork secured to the top and front part of the said divider, to engage the bundle of grain placed on top of the said divider and hold the bundle close in with the shock.

5. In a grain-shocker, the combination of a shocker-frame, a receptacle attached to the rear part of the said frame in a normally horizontal position to receive the bundles of grain, having a divider placed in the receptacle and forming a part thereof, with the two adjustable springs attached to the sides of the receptacle between the said divider and the front end of the receptacle, the lower ends of the said springs normally set some distance up from the bottom of the receptacle, bent to conform to the shape of the receptacle when pressed down with the bundles of grain.

6. The combination of a binder-frame with a shocker, said shocker comprising a shocker-frame, a receptacle attached to the rear part of the said shocker-frame, having a divider placed in the receptacle and forming a part of the receptacle, a deck secured to the forward part of the said shocker-frame, a box secured to the said shocker-frame between the said receptacle and the said deck, clamps attached to the said binder-frame with the adjustable axle attached to the said clamps, clamps 26 and 27 attached to the said axle and adjustable thereon, with the said shocker-frame coupled to the said adjustable clamps.

849,932. DOOR STOP AND LOCK. CICERO J. TATUM, Port Arthur, Tex., assignor of one-half to Jan Van Tyen, Port Arthur, Tex. Filed Dec. 12, 1906. Serial No. 347,403.

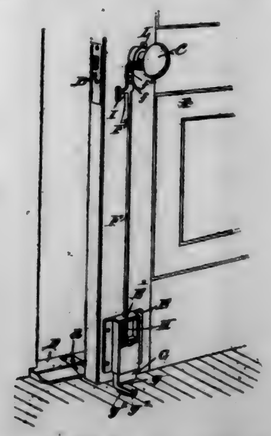

Claim.—1. The improved door fastener and lock herein described consisting of a connecting-plate having a circular opening adapted to embrace a knob-spindle and provided with fastening means whereby it may be secured to turn with said spindle and also having a crank projection, a rod connected at its upper end with the crank projection and provided below said connection with an abutment for a key, a casing through which said rod projects at its lower end, a bolt-block operating in said casing and connected with the lower end of said rod, the said block being provided at its lower end with a depending bolt and with a lateral lug having a cushion-surface, and a spring for depressing the block, substantially as and for the purpose set forth.

2. A door fastener and lock comprising a sliding bolt-block provided with a foot to engage the floor, a spring for depressing said block, a rod extending upwardly from said block and provided with means for operation by a key, a connecting-plate to which said rod is secured, said plate being adapted to fit on a knob-spindle, and means for securing said connecting-plate to turn with the spindle and adapted to be released to permit the free rotation of said spindle without operating the rod and its connected parts, substantially as set forth.

3. The combination with a door and its knob-spindle of a bolt-block, a rod connected therewith and provided with means for operation by a key and intermediate devices between said rod and the knob-spindle whereby the rod may be operated by the turning of said spindle, substantially as set forth.

4. The combination with the bolt-block of devices connected therewith extended upwardly therefrom and having means for operation by a key, substantially as set forth.

5. The combination of a door, a knob-spindle, a plate thereon and having a crank projection, a bolt-block, and a rod between said block and the plate on the knob-spindle and having an abutment for engagement by a key, substantially as set forth.

6. A door fastening and lock comprising a bolt-block having a bolt to enter a socket in the threshold and a foot to engage a floor-surface, a rod extending upwardly from said block and having an abutment for engagement by a key, a plate connecting the rod with the spindle, and means for securing said plate detachably to the spindle so it may be caused to revolve with the spindle or may be free on the spindle, substantially as set forth.

7. In a door fastener and lock, a bolt-block having a cushion-foot to engage a floor-surface and a depending bolt for locking engagement with a suitable socket, substantially as set forth.

8. The combination of the bolt-block, the rod projecting upwardly therefrom and having means for operation by a key, and means for connecting the rod with the knob-spindle and having devices whereby said connecting means may be clamped to the spindle or released therefrom to permit the independent operation of said spindle and connecting-rod, substantially as set forth.

849,933. BALL-COCK VALVE. CHARLES A. TAYLOR, Madison, Me., assignor of one-half to John W. Hannagan, Madison, Me. Filed Dec. 6, 1905. Serial No. 290,595.

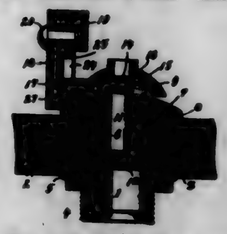

Claim.—1. The combination with a valve-casing, of a pivoted valve mounted therein and capable of a reciprocatory movement in the direction of its axis of rotation, said valve having a lever-arm extended in a direction transverse to its axis of rotation, a pivotal operating-lever whose axis of rotation is transverse to the direction of said reciprocatory movement having an arm slotted in a direction transverse to its axis of rotation, the slot in said arm engaging the lever-arm on said valve to move it about its pivot and lying in one position in the path of said lever-arm in the reciprocatory movement of the valve.

2. The combination with a valve-casing, of a rotary valve mounted therein for reciprocative movement and having a laterally-disposed lever, a bracket vertically disposed at one side of said casing and having a stop portion at its base, an angle-lever mounted in said bracket and provided with a flat-arm and a depending longitudinally-slotted arm to embrace said valve-lever, and stops carried by said slotted arm at opposite sides of the base to engage the stop portion thereof.

3. A valve comprising a casing, a rotary valve mounted therein and provided with a lever extending therefrom, a bracket, a crank-lever mounted in said bracket and provided with a slotted depending arm to receive said valve-lever, and stops disposed upon said arm at opposite sides of the slot therein to engage a portion of said bracket.

4. A valve comprising a valve-casing having a passage therethrough, a rotary valve provided with an apertured face in contact with the inner face of said casing, a valve-stem extended through said casing, a valve-head secured to said stem and provided with a concave under face above the passage in the valve-casing, a tension-spring disposed between said head and casing to retain the apertured face in contact, and means for oscillating the parts of said valve.

849,934. ELECTRICAL ROSETTE. GEORGE B. THOMAS, Bridgeport, Conn., assignor to The Bryant Electric Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Dec. 13, 1905. Serial No. 291,581.

Claim.—1. A rosette having a knob with a central hole, terminal plates, a lateral outlet from the central hole for the wire ends to the side of the knob between the terminal plates, and opposite this lateral outlet a radial slot from the central hole to the side of the knob also between the terminal plates, as and for the purpose described.

2. A rosette, having a base and a knob with a central hole, terminal plates, a lateral outlet from the central hole for the wire ends to the side of the knob between the terminal plates and opposite this lateral outlet a radial slot from the central hole to the side of the knob, this slot extending to the base of the rosette, between the terminal plates.

849,935. RAILROAD TRAIN-ORDER SYSTEM. GWILYM G. THOMAS, Amite, La. Filed Mar. 27, 1906. Serial No. 308,319.

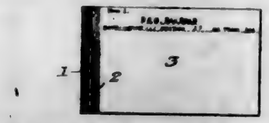

Claim.—A train-order system embodying a series of order-blanks, each having a space of suitable size and shape to receive a written message or set of instructions, said blanks being provided with red and green color lines or marks and arranged for use in pairs, one pair being adapted to designate by the colors thereon general instructions pertaining to possible contingencies ahead and the other pair being adapted to designate by the colors thereon general instructions pertaining to possible contingencies in rear, said colors indicating significant orders to be followed, detailed, explained or modified by the specific character of the written message, the colors upon the blanks of one pair preceding and those upon the blanks of the other pair following the message space, the colored lines upon the respective blanks of each pair being reversed in precedence of arrangement.

849,936. MOLD. JAMES THOMAS, Tacoma, Wash. Filed Dec. 4, 1906. Serial No. 346,283.

Claim.—1. In a molding apparatus, the combination of a front section, a rear section, an intermediate section tapering from the top to the bottom, blocks interposed between the sections, and a clamp holding the sections rigidly in position.

2. In a molding apparatus, the combination of a front section, a rear section, an intermediate section tapering from top to bottom, blocks interposed between the sections, the blocks between the front section and the intermediate section being of a greater size than those between the rear section and intermediate section, and a clamp holding the sections rigidly in position.

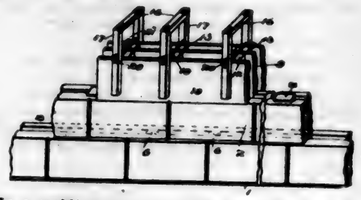

3. In a molding apparatus, the combination of a front section, a rear section, and a clamp comprising an upper horizontal section and a pair of upright sections having their upper ends notched and hinged to the horizontal section, the said upright sections being connected by a clamping-rod and constituting jaws which engage the front and rear sections of the mold.

849,937. CHOCK. JAMES M. THOMAS, Talladega, Ala. Filed Aug. 28, 1906. Serial No. 332,355.

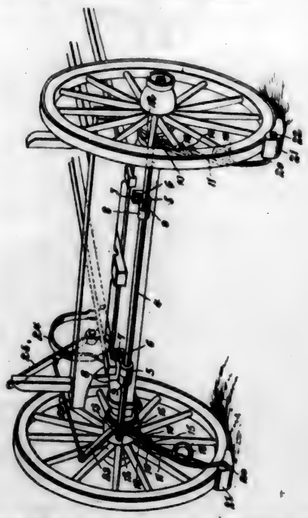

Claim.—1. The combination with a swinging arm comprising relatively movable sections, of means for normally holding the sections against movement, one of said sections being laterally yieldable, means connected to the other section for swinging the arm, and a chock carried by the yieldable section.

2. The combination with a swinging arm comprising slidably-associated sections, and means for holding the sections against sliding movement, of means connected to the inner section for pivotally mounting and swinging the arm, the other section being laterally yieldable, and a chock carried by the outer end of the yieldable section.

3. The combination with a pivotally-mounted arm-section having an offset terminal, of another arm-section slidably mounted in the offset terminal and having an offset terminal that adjustably interlocks with the first-mentioned arm-section, means for maintaining said interlocking engagement and holding said sections against sliding movement, a chock carried by the outer end of the slidable section, and means for swinging the sections.

4. The combination with a rock-shaft, of means for

mounting the same on a vehicle, means for operating the rock-shaft, laterally-yieldable arm-sections adjustably mounted on the rock-shaft and having intermediate coiled spring portions, and chock-blocks mounted on the outer ends of the adjustable yielding-arm sections.

5. The combination with a rock-shaft, of journal-boxes for said shaft, means for securing the journal-boxes to a vehicle, arms carried by the rock-shaft and comprising slidably-associated sections, means for holding the sections against their sliding movements, one of the sections of each arm having a coiled portion and an offset terminal, chock-blocks mounted on said offset terminals, one of the arms having a section that consists of a bell-crank lever, and actuating means for the chock connected to said bell-crank lever.

849,938. AUTOMATIC SPRINKLER. WINFIELD S. THURLOW, Boston, and WILLIAM G. FRASER, Somerville, Mass. Filed Apr. 17, 1905. Serial No. 255,927.

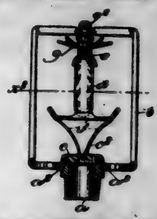

Claim.—1. In an automatic sprinkler, the combination with the water-nozzle; of a highly-combustible valve seated in contact with the outlet of said nozzle; and means for maintaining said valve seated.

2. A sprinkler-head provided with a nozzle and a yoke; a valve-seat located at the outlet of the nozzle; a highly-combustible valve coöperating with said valve-seat; and a destructible strut supported by the yoke and engaging said valve, said strut being hollow and containing a material capable of expanding when heated.

3. A sprinkler-head provided with a nozzle and a yoke projecting beyond said nozzle; a valve-seat at the outlet of said nozzle; a highly-combustible valve seated thereon; a destructible hollow strut containing an expansive material constituting the main support for the said valve; and a secondary supporting member formed of a plurality of pieces of sheet metal joined at their edges by a fusible material.

4. A sprinkler-head provided with a valve-seat and a yoke; a combustible valve; a hollow strut containing expansible material capable of bursting said strut when subjected to heat; and a secondary supporting member also destructible by heat, said strut and said supporting member both contributing in maintaining said valve seated.

5. A sprinkler-head having a valve-seat and a yoke; a valve of highly-combustible material in direct engagement with said seat; and a hollow glass strut containing compressed air to coöperate with the yoke in maintaining the valve seated.

6. A sprinkler-head having a valve-seat and a yoke; a valve of highly-combustible material in direct engagement with said seat; a hollow glass strut containing compressed air; and a metallic strut made in separable parts connected by fusible material, substantially as and for the purpose described.

849,939. GROUND-WIRE ATTACHMENT. CLARENDON L. TICHENOR and CHARLES D. STONEBURNER, Washington, D. C. Filed Mar. 19, 1906. Serial No. 306,789.

Claim.—1. A fixture for connecting a wire to a metal pipe, comprising jaws hinged together at one end and having alined apertures in their opposite end portions for the reception of a wire, and means connecting the said end portions of the jaws.

2. A fixture for connecting a wire to a metal pipe, comprising jaws hinged together at one end and having alined apertures in their opposite end portions for the reception of a wire, means connecting the said end portions of the jaws, and a binding-screw bearing in one end portion and arranged to engage a wire in the alined apertures.

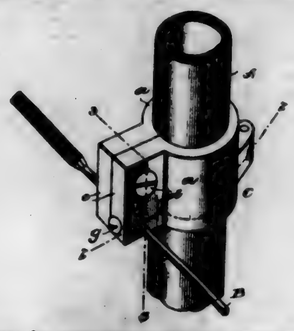

3. A fixture for connecting a wire to a metal pipe, comprising jaws hinged together at one end and having alined apertures in their opposite end portions for the reception of a wire, a binding-screw bearing in one end portion and arranged to engage a wire in the alined apertures, and a clamping-screw extending through an aperture in the end portion of one jaw and engaging a threaded aperture in the end portion of the other jaw.

4. A fixture shaped to embrace a metallic pipe and having end portions provided with alined apertures for the reception of a wire, and clamping means engaging the said end portions.

5. A fixture shaped to embrace a metallic pipe and having end portions provided with alined apertures for the reception of a wire, a binding-screw bearing in one end portion and arranged to engage the wire, and clamping means engaging the said end portions.

849,940. TOOL FOR LATHES. FRANK F. TIFFT, Watertown, N. Y. Filed May 12, 1906. Serial No. 316,560.

Claim.—1. A bit-holder provided with a slot adapting the bit-carrying portion of the holder to yield, and a plug insertible at different points in said slot for regulating the spring action of the bit-holding portion thereof.

2. A bit-holder embodying a head having a slot provided at intervals with enlarged portions, and a plug removable from and insertible in the enlarged portions of said slot.

849,941. BASE-BALL BACK-STOP. WELLINGTON S. TITUS, Glenmoore, N. J. Filed Dec. 20, 1906. Serial No. 348,785.

Claim.—1. A back-stop comprising a stationary main section, and an inclined upper section adjustably connected thereto.

2. A back-stop comprising a main vertical section and an upper section movably connected with said main section and adapted to be angularly adjusted with respect thereto.

3. A back-stop comprising a main vertical section, a lower section movably connected thereto, and an upper section movably connected with said main section and adjustable angularly with respect thereto.

4. A back-stop comprising a main vertical frame-section, a movable section connected to the lower portion of said main section, and a single screen carried by both of said sections.

5. A back-stop comprising a main vertical frame-section, a section pivotally connected to the lower portion of said main section and downwardly inclined normally with respect thereto, and a single screen carried by both of said sections.

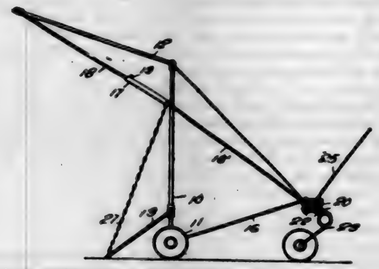

6. A portable back-stop comprising a main wheeled frame-section, a section pivotally connected to the lower portion of said main section and downwardly inclined with respect thereto in its operative position, a screen carried by said sections, and means for retaining said pivoted section in its raised or inoperative position with respect to said main section during bodily movement of the back-stop.

7. A portable back-stop including a main wheeled frame, a screen carried thereby, rearwardly-extending braces connected to said main frame, and a movable guiding-wheel carried by said braces.

8. A portable back-stop including a main wheeled frame, an upper section connected with said main frame, screens carried by said frame and upper section, rearwardly-extending braces connected to said upper section, and a movable guiding-wheel connected with the rear ends of said braces.

9. A portable back-stop including a main wheeled frame, an upper section connected with said main frame and angularly adjustable with respect thereto, screens carried by said frame and upper section, rearwardly-extending braces connected to said upper section, and a movable guiding-wheel connected with the rear ends of said braces.

10. A portable back-stop including a main wheeled frame, an upper section connected with said main frame and angularly adjustable with respect thereto, a movable section connected to the lower portion of said main frame and forming a construction thereof, a screen carried by said upper section and a screen carried by said frame and movable section, rearwardly-extending braces connected to said upper section, and a movable guiding-wheel connected with the rear ends of said braces.

11. A portable back-stop including a main wheeled frame, a section pivotally connected to the lower portion of said main frame and normally inclined downwardly with respect thereto, a screen carried by said frame and pivoted section, a flexible element connected at one end to said pivoted section, and a hook secured to the opposite end of said flexible element and adapted for engagement with said main frame to hold said pivoted section in raised position during bodily movement of the back-stop.

12. A portable back-stop including a main wheeled frame, a section pivotally connected to the lower portion of said main frame and normally inclined downwardly with respect thereto, a screen carried by said frame and pivoted section, rearwardly-extending braces connected to said main frame, a movable guiding-wheel secured to the rear end of said braces, a flexible element connected at one end to said pivoted section, and a hook secured to the opposite end of said flexible element and adapted for engagement with said main frame to hold said pivoted section in raised position during bodily movement of the back-stop.

13. A back-stop comprising a main section, a section pivoted to the upper portion of said main section, and supporting means for said upper section including braces each comprising a pair of separate members adapted to telescope with each other, whereby the inclination of the upper section may be adjusted with respect to the main section.

14. A portable back-stop comprising a main wheeled section, a section pivoted to the upper portion of said main section, rearwardly-extending braces connected to said sections, the upper-section braces each comprising a pair of separate members adapted to telescope with each other, whereby the inclination of the upper section may be adjusted with respect to the main section, and a movable steering-wheel connected with the rear ends of said braces.

15. A portable back-stop comprising a main wheeled section, a section pivotally connected to the upper portion of said main section, a section pivotally connected to the lower portion of said main section and normally downwardly inclined with respect thereto, a flexible element connected at one end to said lower section, a hook secured to the opposite end of said element for engagement with said main frame, to hold said lower section in raised position during bodily movement of said back-stop, rearwardly-extending braces secured to said main section, separate braces secured to said upper section, and a movable guiding-wheel secured to the rear ends of said braces.

16. A portable back-stop comprising a main wheeled section, a section pivotally connected to the upper portion of said main section, a section pivotally connected to the lower portion of said main section and normally downwardly inclined with respect thereto, a flexible element connected at one end to said lower section, a hook secured to the opposite end of said element for engagement with said main frame, to hold said lower section in raised position during bodily movement of said back-stop, rearwardly-extending braces secured to said main section, separate braces secured to said upper section, said last-mentioned braces each consisting of a pair of members adapted to telescope with each other, whereby the inclination of the upper member may be adjusted with respect to the main section and a movable guiding-wheel secured to the rear ends of said braces.

849,942. TURBINE-ENGINE. RICHARD TOENNES, Boonville, Mo. Filed Nov. 7, 1905. Serial No. 286,275.

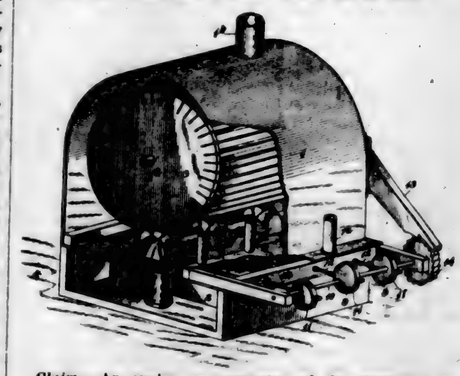

Claim.—An engine or apparatus of the character described, comprising a turbine-wheel, liquid or oil containing chambers arranged below said wheel, a plurality of nozzled pipes depending within, and effective for the delivery of the contents of said chambers upon said wheel, a ported plug arranged within, and common to all of said nozzled pipes and extending to the outside of the engine-casing, means for actuating said plug, a steam-chest equipped with inlet and exhaust valves, arranged with relation to said chamber, a shaft bearing a number of eccentrics whose points of connection with said shaft are at relatively varying radii of said eccentrics, said eccentrics having pitmen connection with said valves, and means for actuating said latter shaft from the wheel-shaft.

849,943. FOLDING BED. SHERMAN E. TWITCHELL, Mobile, Ala. Filed July 25, 1906. Serial No. 327,702.

Claim.—1. A folding bed comprising end sections, rails connecting the end sections, each rail comprising a pair of sections pivotally connected and provided with bracing

means at their inner ends, and pivotal connections between the outer ends of the rails and the end sections, each of said connections comprising interlocking members and a spring for holding said members connected and permitting of their relative movement and disengagement.

2. A folding bed comprising end sections provided with coupling members, sectional rails, the rails of each section being pivotally connected at their inner ends and provided at their outer ends with members to interlock with said coupling members, pivot connections uniting the coupling members of the end frames and rails, and springs associated with said pivot connections to hold the members in interlocking engagement and permit them to be separated to adapt the rails to fold.

3. A folding bed comprising end sections, and sectional rails connecting the end sections, each rail comprising a pair of sections pivotally connected and provided at their meeting ends with means for bracing them in extended position, and pivoted interlocking members connecting the outer ends of the rail-sections with the end sections of the bed, said interlocking members having springs associated with their pivotal connections to normally hold them in interlocking engagement and adapt them to be thrown out of locking engagement to permit the rails to fold.

849,044. SECTIONAL CONDENSER. WILLIAM VAN DEN HEUVEL, Los Angeles, Cal. Filed June 13, 1905. Serial No. 265,022.

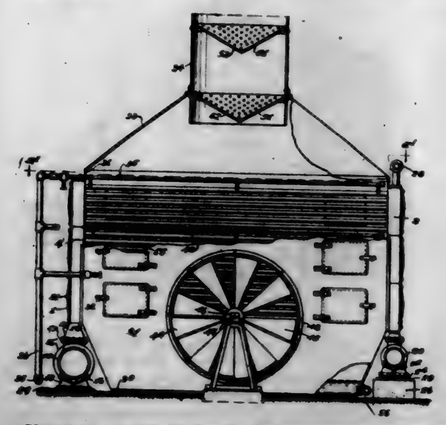

Claim.—1. A unit-section for heat-interchanging apparatus comprising two rectangular box-headers, and a plurality of tubes connecting said headers, each header having a rear wall, two side walls and top and bottom walls formed integrally with the rear wall, and each header provided with inwardly-extending flanged extensions at their front ends, and a cover-plate fastened to said flanged extension, the top and bottom walls of each header being similarly perforate and the aforesaid tubes being connected to and extending through the rear walls of the headers.

2. An evaporative surface condenser comprising tubes, water-supply tubes arranged above the condenser-tubes, and supporting means resting on the condenser-tubes and supporting the water-supply tubes, said water-supply tubes having outlets to deliver water onto the condenser-tubes.

3. An evaporative surface condenser comprising tubes, and water-supply tubes arranged above the condenser-tubes, and having longitudinal slots in the top thereof to deliver water onto the condenser-tubes.

4. An evaporative surface condenser comprising tubes, and water-supply tubes arranged above the condenser-tubes, and having upwardly-flaring longitudinal slots in the top thereof to deliver water onto the condenser-tubes.

5. The combination of a plurality of superimposed sections of substantially identical construction, each section comprising two box-headers with a plurality of tubes connecting the same, each box-header comprising a rear wall, side walls and top and bottom walls, all formed integrally with the rear wall, the adjoining top and bottom walls of adjacent headers having registering openings, bolts extending through the top and bottom walls of adjacent headers and extending from the inside of one header to the inside of adjacent header to fasten the headers together, and cover-plates removably fastened to the front of the walls of each header.

6. The combination of sectional units, each formed of end headers with connecting-tubes, said headers formed as boxes having a rear wall to which the tubes are connected, walls extending from said rear wall and provided with flanges extending inwardly therefrom, the top and bottom walls of adjacent headers abutting one another bolts extending through said abutting walls and securing the headers together, the ends of the bolts being wholly within the headers, and said top and bottom walls having openings for communication between said adjacent headers, and cover-plates secured to the inwardly-extending flanges by bolts independent of the bolts for fastening the headers together.

7. The combination of sectional units, each formed of end headers with connecting-tubes, said headers formed as boxes having a rear wall to which the tubes are connected, walls extending from said rear wall and provided with flanges extending inwardly therefrom, the top and bottom walls of adjacent headers abutting one another, bolts extending through said abutting walls and securing the headers together, the ends of the bolts being wholly within the headers, and said top and bottom walls having openings for communication between said adjacent headers, cover-plates secured to the inwardly-extending flanges by bolts independent of the bolts for fastening the headers together, and packing between the cover-plate and header, located inwardly from the fastening-bolts for the cover-plate.

8. The combination of sectional units, each formed of end headers with connecting-tubes, said headers formed as boxes having a rear wall to which the tubes are connected, walls extending from said rear wall and provided with flanges extending inwardly therefrom, the top and bottom walls of adjacent headers abutting one another, bolts extending through said abutting walls and securing the headers together, the ends of the bolts being wholly within the headers, and said top and bottom walls having openings for communication between said adjacent headers, and cover-plates secured to the inwardly-extending flanges by bolts independent of the bolts for fastening the headers together, and packing between the cover-plate and header, located inwardly from the fastening-bolts for the cover-plate, and packing between the adjacent walls of the headers.

9. An evaporative surface condenser comprising tubes, water-supply tubes arranged above the condenser-tubes and having longitudinal slots in their top to deliver water onto the condenser-tubes, said slots being flared upwardly.

10. An evaporative surface-condenser comprising tubes arranged in vertical series, water-distributing pipes extending over the top of the series to distribute water on the top of the tubes, and supplementary water-distributing pipes intermediately located in the vertical series to distribute water on the lower tubes of the series.

11. The combination of a tubular supply-header, a support therefor, superimposed box-headers resting on the supply-header, condenser-tubes connected to said box-headers, superimposed outlet-headers connected to said condenser-tubes, a tubular outlet-header connected to and supporting the last-named headers, and a base member whereon said outlet-header is movably supported to allow for expansion and contraction of the condenser-tubes.

12. The combination of a tubular supply-header, a support therefor, superimposed box-headers resting on the supply-header, condenser-tubes connected to said box-headers, superimposed outlet-headers connected to said condenser-tubes, a tubular outlet-header connected to and supporting the last-named headers, a base member whereon said outlet-header is movably supported to allow for expansion and contraction of the condenser-tubes, the movable support comprising a roller-bearing.

13. A surface condenser comprising end headers and connecting-tubes arranged in vertical and horizontal series, a casing surrounding said tubes and having an outlet at its top and opening in opposite sides, blowers located at the side openings, and a partition within the casing parallel to the aforesaid side walls and intermediate the blowers.

14. A condenser comprising end headers placed edge to edge to form end walls, tubes connecting the same, a casing surrounding said tubes and extending under same to form a drainage-pan and extending to the said end walls, and a stack connected with the top of said casing.

15. An evaporative surface condenser comprising end headers and connecting-tubes, a casing surrounding said tubes, a stack leading from the top of said casing and provided with inclined obstructing-plates, and water-supply means within the casing to distribute water on the aforesaid tubes the said obstructing-plates discharging the moisture condensed thereon directly back into the casing.

16. An evaporative surface condenser comprising end headers and connecting-tubes, a casing surrounding said tubes, a stack leading from the top of said casing and provided with perforate funnels, and water-supply means within the casing to distribute water on the aforesaid tubes the said obstructing-plates discharging the moisture condensed thereon directly back into the casing.

17. The combination of end headers with connecting-tubes, inlet and outlet tubes communicating with and supporting said end headers, and saddles provided with lining-up screws supporting said inlet and outlet headers.

18. The combination of end headers arranged edge to edge in a plurality of adjacent columns, tubular inlet and outlet headers extending under said headers and formed as T members of length equal to the width of the end headers, the top branch of the T members communicating with and mechanically connected to said box-headers, and the T members of adjacent columns being detachably connected and communicating with each other to form a continuous header extending under the several columns of end headers.

840,945. MACHINE FOR CUTTING MEAT. IRVING B. VAN SISE, Oyster Bay, N. Y. Filed July 27, 1906. Serial No. 328,064.

Claim.—1. In a cutting-machine, a conveyer, means for imparting intermittent motion to the conveyer, a support at one end of the conveyer, having a pocket adapted to receive material from the conveyer, said pocket being open at its rear and having an inner concave wall, a cutter mounted to reciprocate relative to the support, and the open portion of the pocket, which cutter comprises a body-plate that constitutes the outer wall of said pocket and is provided with an opening for material in the pocket, a series of vertical knives crossing said opening, and a horizontal knife crossing the vertical knives, the edges of the knives being in correlation.

2. In a cutting-machine, a frame, a conveyer mounted in said frame, means for driving the conveyer, the said frame being provided with a pocket adjacent to one end of the conveyer, being adapted to receive material therefrom, the said pocket being open at its rear and having its inner wall concaved, a cutter mounted to reciprocate at the open side of the pocket, which cutter consists of a body-plate constituting a closure for the open side of the pocket, the said body-plate being provided with an opening therein for the outlet of material in said pocket, a housing extending from the upper wall of the said opening in direction of the pocket, a horizontal knife extending downward from the outer edge of the said housing, and vertical knives located beneath the said housing and having convexed outer edges, the vertical and horizontal knives being adapted to the contour of the said pocket, and means for reciprocating the said cutter.

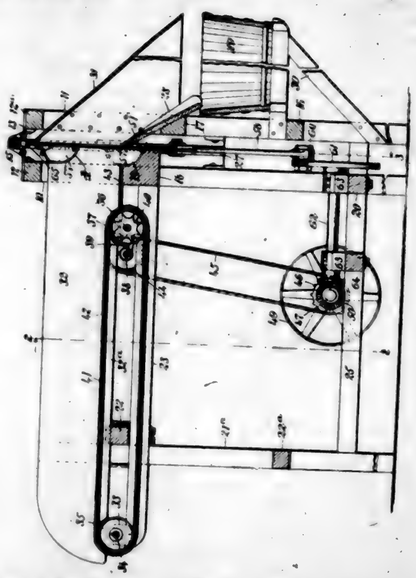

3. In a cutting-machine, a frame, a conveyer mounted in said frame, means for driving the conveyer, the said frame being provided with a pocket adjacent to one end of the conveyer, being adapted to receive material therefrom, the said pocket being open at its rear and having its inner wall concaved, a cutter mounted to reciprocate at the open side of the pocket, which cutter consists of a body-plate constituting a closure for the open side of the pocket, the said body-plate being provided with an opening therein for the outlet of material in said pocket, a housing extending from the upper wall of the said opening in direction of the pocket, a horizontal knife extending downward from the outer edge of the said housing and vertical knives located beneath the said housing and having convexed outer edges, the vertical knives and the horizontal knife being adapted to the contour of said pocket, a chute leading from the frame downward and rearward from a point opposite the said pocket at the rear of the body-plate of the cutter, a shield for the said chute, spaced therefrom at the upper edge of said chute, and a support for a receptacle located beneath the said chute.

4. In a cutting-machine, the combination with a frame having a pocket formed therein adapted to receive material to be chopped, which pocket is open at one side and at the top, shafts journaled in the said frame adjacent to said pocket, pulleys secured to the said shafts, a conveyer-belt passed over the said pulleys, a star-wheel secured to one of the pulley-shafts, a driven shaft located between the pulley-shafts, a finger extending from the driven shaft for engagement with said star-wheel, a drive-shaft, and a connection between the drive-shaft and the driven shaft, of a cutter mounted to reciprocate past the open side of the said pocket, the said cutter comprising a body-plate which forms a closure for the open side of the pocket, the said plate being provided with an opening for the outlet of material in the pocket, a housing above the said opening, and longitudinal and vertical knives which extend from the said housing, the vertical knives crossing the said open-

ing, and said knives being adapted to the contour of the said pocket, and a driving connection between the said cutter and the said drive-shaft.

5. In a cutting-machine, a cutter comprising a body-plate having a longitudinal opening therein for the outward passage of material that has been chopped, housing extending from the body-plate at the upper edge of the opening, vertical knives extending down from the housing and crossing the said opening, said knives being convex, and a knife forming a portion of the lower edge of the housing, which knife crosses the vertical knives, the cutting edges of the vertical knives and the cutting edge of the crossing knife being in engagement.

849,946. MEANS FOR PREVENTING RAILS FROM SPREADING. FREDERICK L. VOLZ, Baltimore, Md., assignor of one-half to Thomas Wright, Baltimore, Md. Filed July 26, 1906. Serial No. 327,931.

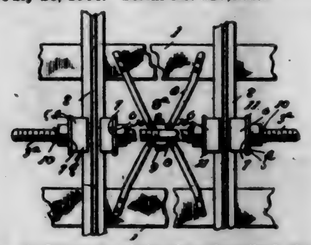

Claim.—1. In means of the class described, the combination of railroad-ties, rails thereon, a tie-bar connecting the rails and arranged parallel to the ties, clamping members carried by the tie-bar and engaging the rails, and lateral braces connecting the tie-bar intermediate of its ends with the ties adjacent thereto.

2. In means of the class described, the combination of spaced rails, a tie-bar for connecting the same, clamping members engaging opposite sides of each rail and having openings therein through which the tie-bar passes, opposite end portions of the tie-bar being threaded, nuts secured upon the threaded portions of the tie-bar and engaging the clamping members to hold the same in engagement with the rails, rings interlocked with the threaded portions of the tie-bar, and removable wedges coacting with the nuts in the manner specified.

3. In means of the class described, the combination of spaced rails, a tie-bar for connecting the same, clamping members engaging opposite sides of each rail and having openings therein through which the tie-bar passes, opposite end portions of the tie-bar being threaded, nuts secured upon the threaded portions of the tie-bar and engaging the clamping members to hold the same in engagement with the rails, lateral U-shaped members extending from opposite sides of the tie-bar and having the outer extremities thereof secured to adjacent ties on the track, and means connecting the intermediate portions of said members with the intermediate portion of the tie-bar.

849,947. APPARATUS FOR COKING BRIQUETS. BERNHARD WAGNER, Stettin, Germany. Filed Dec. 18, 1905. Serial No. 292,223.

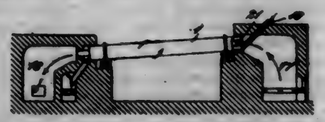

Claim.—1. In apparatus for treating briquets, an inclined, rotary drum, presenting a plurality of coking-chambers having a briquet-inlet at the upper end and a briquet-exit at the lower end, and an independent heating-gas chamber having an inlet at one end and an outlet at the opposite end, whereby the heating-gases heat the outer walls of the coking-chambers and thus act indirectly on the briquets, substantially as described.

2. In apparatus for treating briquets, an inclined, rotary drum, presenting a plurality of coking-chambers having a briquet-inlet at the upper end and a briquit-exit at the lower end, and an independent heating-gas chamber having an inlet at the lower end and an outlet at the upper end, whereby the heating-gases pass in counter direction to the briquets and act indirectly on them, substantially as described.

3. In apparatus for treating briquets, an inclined, rotary drum, presenting a plurality of groups of coking-chambers having a briquet-inlet at the upper end and a briquet-outlet at the lower end, and a plurality of heating-gas chambers having an inlet at one end and an outlet at the opposite end, whereby the heating-gases heat the outer walls of all the coking-chambers and thus act indirectly on all the groups of briquets simultaneously, substantially as described.

4. In apparatus for treating briquets, an inclined, rotary drum, presenting a plurality of coking-chambers having a briquet-inlet at the upper end and a briquet-exit at the lower end, and an independent heating-gas chamber having an inlet at one end and an outlet at the opposite end, and screw-shaped members located in the coking-chambers, whereby the heating-gases heat the outer walls of the coking-chambers and thus act indirectly on the briquets, while the said members insure thorough and uniform coking, substantially as described.

5. An apparatus for treating briquets comprising an inclined rotary cylinder having located therein a concentric cylinder, means for feeding briquets to one of said cylinders, a furnace and means for directing the furnace-gases through said concentric cylinders successively, substantially as described.

849,948. COLTER-BEARING. THOMAS R. WALLIS, Greenville, Miss. Filed Aug. 1, 1906. Serial No. 328,759.

Claim.—In a colter-bearing, the combination with the spaced members of the frame, of the colter-wheel provided with a metallic hub projecting upon each side of the wheel, a metallic bushing upon which the hub may rotate, a wooden sleeve within the hub, and a bolt passing through the sleeve and the frame members, to tightly clamp said bushing and sleeve between said frame members, whereby to prevent rotation of the bushing and sleeve with respect to the frame said hub being of less length than said bushing and sleeve.

849,949. TRANSMISSION MECHANISM. GEORGE A. WEAVER, Newport, R. I. Filed Feb. 16, 1906. Serial No. 301,368.

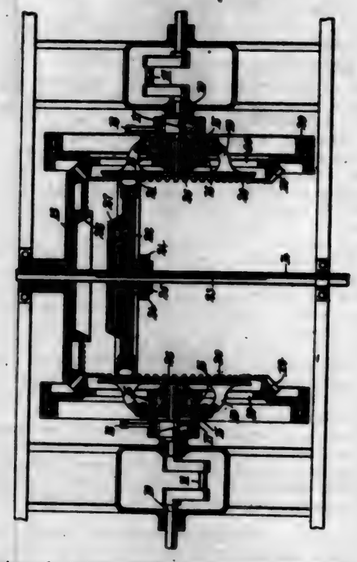

Claim.—1. A transmitting mechanism comprising alined driving-shafts spaced apart from each other, bevel-gears of equal size on the adjacent ends of the driving-shafts, a driven shaft between the alined shafts and at right angles thereto, a bevel-gear loosely mounted on said driven shaft and meshing with the bevel-gears on the alined shafts and provided with a clutch-face, a friction-wheel slidably mounted on the driven shaft and provided with a clutch-face coöperating with the clutch-face of the bevel-gear, friction-disks slidably mounted on the driving-shafts and keyed thereto, said disks engaging the periphery of the friction-wheel, and means for moving the friction-disks toward and from the friction-wheel.

2. A transmitting mechanism comprising alined driving-shafts spaced apart from each other, bevel-gears of equal size on the adjacent ends of the driving-shafts, a driven shaft between the alined shafts and at right angles thereto, a bevel-gear loosely mounted on said driven shaft and meshing with the bevel-gears on the alined shafts and provided with a clutch-face, a friction-wheel having a pneumatic tire slidably mounted on the driven shaft and provided with a clutch-face coöperating with the clutch-face of the bevel-gear, friction-disks slidably mounted on the driving-shafts and keyed thereto, said disks engaging the periphery of the friction-wheel, and means for moving the friction-disks toward and from the friction-wheel.

3. A transmitting mechanism comprising a plurality of driving-shafts, a driven shaft, means in connection with the driving-shafts and the driven shaft for equalizing the movements of the driving-shafts, a friction-wheel keyed to the driven shaft and movable longitudinally thereof, friction-disks on the driving-shafts engaged by the friction-wheel, and means for moving the friction-wheel whereby to vary the point of engagement with the disks.

4. A transmitting mechanism comprising a plurality of driving-shafts, a driven shaft, means in connection with the shafts for equalizing the movements of the driving-shafts, and a variable-speed connection between the driving-shafts and the driven shaft.

840,950. AXLE. GEORGE A. WEAVER, Newport, R. I. Filed Apr. 21, 1906. Serial No. 312,979.

Claim.—1. In combination, a frame having an arm rotatably mounted thereupon, said arm being inclined with respect to the axis of rotation thereof on said frame, a wheel carried by said arm, and means for rotating said arm to adjust the position of said wheel.

2. An axle having a rotatable arm, the axis whereof is inclined, a wheel mounted upon said arm, and means for rotating said arm to throw the axis thereof forwardly or rearwardly in steering.

3. An axle having an arm, the axis whereof is inclined to the body of said axle, a bushing having a bore therein receiving said arm, said bore being inclined to the axis of said bushing, a wheel rotatably mounted on said bushing, and means for controlling the position of said bushing upon said arm.

4. An axle having an inclined arm, a bushing having an inclined bore rotatably mounted on said arm, a wheel rotatably mounted on said bushing, and means for rotating said arm upon the axis of said axle.

5. In combination, a frame, arms rotatably mounted in said frame on opposite sides thereof and having their axes inclined with respect to the axis of rotation thereof, bushings having bores respectively therein, inclined with respect to the axes thereof and mounted upon said arms, wheels mounted on said bushings, and means for controlling the position of said bushings and said arms.

6. In combination, a frame, an axle extending continuously in one piece from one side to the other of said frame and supporting said frame, said axle having inclined arms at the extremities thereof, bushings mounted upon said arms and having their axes inclined to the axes of said arms, wheels carried on said bushings, and means for rotating said bushings.

849,951. METAL COLUMN. ROBERT B. WHITE, Boonville, Ind. Filed Nov. 23, 1906. Serial No. 344,766.

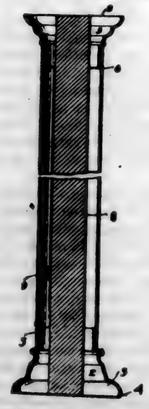

Claim.—1. A metallic column comprising a sheet-metal shaft, a hollow base-section arranged in the lower end thereof, a hollow cap-section in the upper end thereof, and a supporting-beam arranged in the shaft with its ends extending through said base-section and cap to support the weight of the roof.

2. A metallic column comprising a sheet-metal shaft, a hollow base-section detachably arranged in the lower end thereof, a hollow cap-section detachably arranged in the upper end thereof and a supporting-beam arranged in the shaft with its ends extending through said base-section and cap to support the weight of the roof.

3. A metallic column comprising a sheet-metal shaft, a hollow base-section arranged in the lower end thereof, a hollow cap-section in the upper end thereof and a centrally-disposed wooden supporting-beam arranged in the shaft, to support the weight of the roof and means to provide for the connection of a porch-rail to the column, substantially as described.

4. A metallic column comprising a sheet-metal shaft, a base-section arranged in the lower end of said shaft, said section having an inclined lower face, a cap-section arranged in the upper end of said shaft, a centrally-disposed wooden brace-bar arranged in said shaft, for supporting the weight of the roof and a segmental block adapted to be secured to said central support, said block having a curved outer surface to fit the curve of the inner wall of the sheet-metal shaft, substantially as described.

5. A metallic column comprising a sheet-metal shaft, a hollow cast-iron base arranged in the lower end of said column, said base having an inclined lower edge and grooves or notches formed in said edge to permit the escape of water, a cast-iron cap secured in the upper end of said column, a centrally-disposed wooden support arranged in said shaft, for supporting the weight of the roof, and a segmental block adapted to be secured to one side of said central support and to fit the interior wall of the sheet-metal shaft to facilitate the engagement of a porch-rail thereto, substantially as described.

849,952. AXLE-NUT. ALONZO C. WILLIS, Concord, N. H. Filed Mar. 14, 1906. Serial No. 306,078.

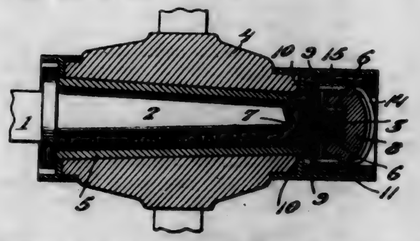

Claim.—1. A nut of the type described having a pair of transverse openings and provided with cam-lugs disposed remote from said openings, a spring locking member applied to the nut and provided with engaging portions movably disposed in said openings, and a nut-receiving element provided with transverse sockets to receive the inner ends of engaging portions, said locking members being arranged to ride onto the lugs for retracting the engaging portions from the sockets.

2. A nut of the type described having a transverse opening and provided with a cam-lug disposed remote from said opening, a spring locking member applied to the nut and having an arm adapted for movement over said lug, said arm being provided with an engaging portion movably disposed in said opening, and a nut-receiving element having a depression to receive the inner end of said engaging portion, the arm being adapted in riding onto the lug to retract the engaging portion from the depression.

3. A nut of the type described having a pair of transverse openings and provided with cam-lugs disposed remote from said openings, a substantially U-shaped spring locking member applied to the nut and presenting a pair of arms having inwardly-projecting engaging fingers movably disposed respectively in said openings, and a nut-receiving element having longitudinal grooves communicating at their inner ends with seats for the inner ends of said fingers, said arms being designed to ride onto the lugs for retracting the fingers from said seats.

849,953. TOY. CHARLES L. WOOD, Winthrop, Mass. Filed Sept. 28, 1906. Serial No. 336,540.

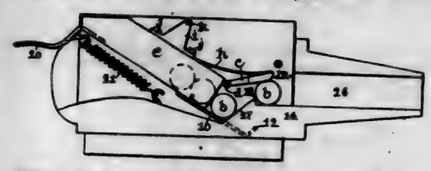

Claim.—1. In a toy of the character described, in combination, a hollow casing provided within it with a support for a ball and with a recess at the rear of said support, a magazine pivoted within said casing and coöperating with said support and recess, a lever pivoted to said magazine and coöperating with said support to engage a ball thereon, a spring to act on said lever and effect the discharge of the ball out of the toy, a stop for the ball movable with the magazine, a stop on the support to limit backward movement of the ball, a trigger to move said magazine in one direction, and a spring to move the magazine in the opposite direction, substantially as described.

2. In a toy of the character described, in combination, a hollow casing, a magazine for balls pivoted in said casing and normally inclined to effect a gravity-feed of said balls toward the outlet end of said magazine, a lever pivoted to said magazine to engage a ball fed from the magazine, a spring to act on said lever and cause it to discharge the ball from the toy, and means to move said magazine, substantially as described.

3. In a toy of the character described, in combination, a support for a ball, an ejector coöperating with said ball to engage the upper surface of the same while on said support, and means to move said ejector toward said support while in engagement with said ball, substantially as described.

4. In a toy of the character described, a support for a ball, a lever provided with a beveled end to engage the upper surface of said ball, a spring to act on said lever, and means for moving said lever toward said support while in engagement with said ball, substantially as described.

5. In a toy of the character described, a support for a ball, an ejector coöperating with said ball to engage the latter on its upper surface, said ejector having a slot to direct the ball and having an inclined front end to engage the ball, and means to effect a downward and backward movement of said ejector while in engagement with the upper surface of the ball, substantially as described.

6. In a toy of the character described, in combination, a magazine for a plurality of balls, a support to receive a ball fed from said magazine, an ejector to engage a ball on said support, means to effect a downward and backward movement of said ejector toward said support and cause the said ejector to project the ball forward, substantially as described.

7. In a toy of the character described, in combination, a support for a ball, an ejector coöperating with said ball to engage the upper surface of the same while on said support and provided with a beveled surface, and means to move said ejector toward said support to cause the beveled surface of the same to engage the ball, for the purpose specified.

849,954. VALVE. EDWIN L. WHITTEMAN, Hume, Ill. Filed Apr. 17, 1906. Serial No. 312,185.

Claim.—The combination with a boiler and a feed-pipe therefor, of a valve projecting within the boiler and in open communication with the feed-pipe, said valve comprising a body exteriorly threaded for connection with a threaded opening in the boiler-wall, the end of the body beyond the threaded portion being arranged for projection within the boiler, the threaded portion of the body being materially increased in diameter interiorly with respect to that portion of the body disposed within the boiler, whereby to insure a gravity discharge of water from that portion of the body within the boiler, and a valve-disk operatively mounted within the body and adapted to overlie the reduced end of the body.

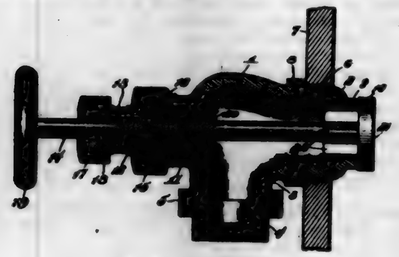

849,955. CAR-STEP. LLOYD YEAGER, Jr., Catawissa, Pa. Filed Sept. 29, 1906. Serial No. 336,752.

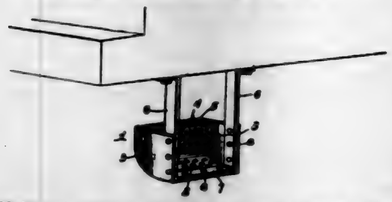

Claim.—A car-step formed of a single piece of foraminous metal provided with a curved back portion and angular ends, supporting-arms secured inside said step, said supporting-arms being connected by a tread portion at the front edge of the step, substantially as described.

849,956. CULTIVATOR ATTACHMENT. JOHN J. YOUNG, Denver, Colo. Filed Nov. 27, 1906. Serial No. 345,302.

Claim.—1. A cultivator attachment, comprising a disk-body provided with a series of sockets in one of its faces, an adjusting member mounted to turn upon the disk-body which adjusting member is provided with a recess in its inner face to receive an arm, and a spring-controlled locking device carried by the adjusting member and adapted to engage either of said sockets in the disk-body.

2. A cultivator attachment, comprising a disk-body, means for securing the disk-body to a beam of the cultivator, said disk-body being provided with a series of circularly-arranged apertures in one of its faces, an adjusting member mounted to turn on the apertured face of the disk-body, said adjusting member having an opening adapted to receive an arm, and a bolt carried by the said adjusting member, which bolt is adapted to enter any of the apertures in the disk-body.

3. A cultivator attachment, comprising a disk-body, said disk-body being provided with a series of circularly-arranged apertures in one of its faces, an adjusting member mounted to turn on the apertured face of said disk-body, which adjusting member is provided with an opening in its inner face to receive an arm, a bar or the like, means for securing the disk-body to a cultivator-beam, means for guiding the adjusting member relatively to the disk-body, and a spring-controlled bolt carried by the adjusting member, which bolt is adapted to enter any of the apertures in the disk-body.

4. In a cultivator attachment, the combination with a disk-body, means for securing the same to a cultivator-beam, said disk-body being provided with an annular groove in its outer face and apertures in its grooved portion, said disk-body being further provided with a peripheral groove, of an adjusting member mounted to revolve on the apertured face of the disk member, said adjusting member being provided with an opening for the reception of an arm, a bar or the like, a projection from an end of the adjusting member, having a rib thereon to enter the peripheral groove of the disk-body, and a spring-controlled bolt carried by the adjusting member, the inner end of which bolt enters the annular groove in the disk-body and is adapted to enter any aperture in said grooved portion of said disk-body.

5. The combination with a cultivator-beam, a shield or fender and a supporting-arm extending from said shield or fender, of a disk-body secured to the said beam, which body is provided with a peripheral groove and with an annular groove in its outer face, and apertures in the rear wall of said groove, an adjusting member mounted to turn on the apertured face of the disk-body, said adjusting member being provided with an opening to receive said supporting-arm, means for guiding the adjusting member in its movement relatively to the disk-body, and a spring-controlled bolt carried by the adjusting member, which bolt enters the annular groove in the disk-body and is adapted to enter any one of the apertures in the rear wall of said groove.

6. The combination with a cultivator-beam, a shield or fender and a supporting-arm extending from said shield or fender, of a disk-body, a bolt extending through the cultivator-beam and the disk-body and extending beyond the face of the disk-body, an adjusting member provided with a recess to receive said supporting-arm, a sleeve on the projecting portion of the bolt and passing through registering openings in the adjusting member and the said supporting-arm, the said sleeve bearing at its inner end against the disk-body, means on the bolt for engaging the outer end of said sleeve, and means for locking the adjusting member in different positions relatively to the disk-body.

7. A cultivator attachment comprising a disk-body, means for securing the disk-body to a beam of the cultivator, said disk-body being provided with a series of sockets in one of its faces, an adjusting member mounted to turn upon the said face of the disk-body and provided with a recess to receive an arm, a yoke on the outer face of the said adjusting member, and a bolt mounted to slide in said yoke and passing through an opening in the adjusting member, the said bolt being adapted to engage either of the said sockets in the disk-body.

8. A cultivator attachment comprising a disk-body provided with a peripheral groove, an adjusting member mounted to turn upon one of the faces of the disk-body, and having a projection at one end provided with a rib adapted to enter said peripheral groove, the said adjusting member being provided with a recess in its inner face to receive an arm, and means for locking the adjusting member in different positions relatively to the said disk-body.

849,957. POST-HOLE DIGGER. GEORGE W. ZWIEBEL, Papillion, Nebr. Filed June 26, 1906. Serial No. 323,526.

Claim.—1. A post-hole digger comprising a shovel portion of which the main body is in the form of a cylinder having a longitudinal opening in one side thereof, the said opening being relatively small at the upper part of the shovel-body but gradually increasing toward the lower end thereof, the inclosure from a point adjacent the lower edge of the shovel-body being less than a half-circle, and tongues integral with the shovel-body and extending upwardly therefrom to connect with a handle.

2. A post-hole digger comprising a handle, and a shovel-body connected therewith and consisting of a cylindrically-formed plate of such outline that the upper part thereof will inclose less than a complete circle and more than a half-circle, the amount of inclosure gradually decreasing therefrom to the lower edge of the shovel-body, and the

inclosure only being less than a half-circle from a horizontal line adjacent the lowest point of the shovel-body.

3. A post-hole digger comprising a handle, a shovel-body consisting of a transversely-bent plate of a form such that the upper part thereof will inclose nearly a complete cylinder, the amount of inclosure gradually decreasing therefrom to the lower edge of the shovel-body, tongues integral with the shovel-body and extending upwardly and inwardly therefrom as over an approximately conical surface, and means connecting said tongues with the handle.

849,958. STEAM-SAWYER. STEPHEN V. ABEGGO, Lake Charles, La. Filed May 6, 1905. Serial No. 259,128.

Claim.—A device for shifting the valves for controlling the admission of steam to a motor for operating a sawmill-carriage, comprising a steam-engine, a cross-head having connection with the stem of the piston in the engine, a connection between said cross-head and said controlling-valves, a slide-valve for controlling the admission of steam to the engine-cylinder, a stem extended from the slide-valve, a lever having connection at its lower end with said cross-head, a link extended from the upper end of said lever, another lever pivoted between its ends to said link and having a connection at its lower end with the slide-valve stem, a manually-operated lever, and a link connection between said manually-operated lever and the upper end of the lever having connection with the valve-stem.

849,959. ADJUSTABLE GARMENT-PATTERN. WALTER M. BARRY, Rochester, N. Y. Filed Sept. 9, 1905. Serial No. 277,693.

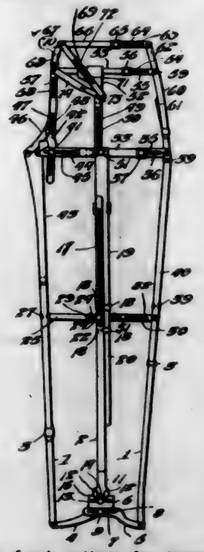

Claim.—1. A front pattern for trousers including a frame, means for adjusting said frame to alter the pattern, and means to independently adjust the waist measurement as a whole with relation to the rest of the pattern.

2. A front pattern for trousers comprising a frame including a plurality of connected strips, means for adjusting the strips to all of the pattern, a waist-pattern gage pivotally connected in the frame, and means for adjusting said gage as a whole relative to and independently of the rest of the pattern.

3. A front pattern for trousers including adjustably-connected strips, a waist-gage comprising a plurality of adjustable strips, said latter strips being pivotally connected with the pattern-strips, and means to adjust said waist-gage by moving one end of said gage in a direction away from the body of the pattern, said adjustment being effected independently of and relative to the main pattern and serving to increase one side length of said pattern.

4. A trousers-pattern including a waist-gaging section pivotally connected at one end to the body of the pattern, and slidably connected at the opposite end to the body of the pattern, and a strip adjustably connected with the body of the pattern and engaging the waist-pattern adjacent said slidable connection.

5. A trousers-pattern comprising a plurality of strips longitudinally adjustable to lengthen the pattern, means for adjusting the strips with relation to each other, a waist-gaging pattern having pivotal connection with the body of the pattern at one end, and a sliding connection therewith at the opposite end, and a strip engaging said waist-pattern and adjustably secured to the body of the pattern.

6. A trousers-pattern comprising outline-strips adjustable toward or from each other, a center strip longitudinally adjustable to increase the length of the pattern, and means for adjusting the outline-strips with relation to the center strip without disturbing the outline dimensions of the pattern.

7. A trousers-pattern comprising side strips, transverse strips joining the side strips at their lower ends, said transverse strips being adjustably connected at their inner ends, a center strip for longitudinally adjusting the side strips, and adjustable means connecting said transverse strips with the center strip.

8. A trousers-pattern comprising side strips, transverse strips joining the side strips at their lower ends, said transverse strips being adjustably connected at their inner ends, one of said transverse strips being formed with an enlargement, a center strip, adjustable means connecting said center strip and said enlargement.

9. A trousers-pattern comprising outline-strips and a center strip, and means for adjusting the center strip relative to the outline-strips without disturbing the outline dimensions of the pattern.

10. A trousers-pattern comprising side strips, bottom gage-strips, and a center strip adjustably connected with the bottom gage-strips for movement toward either of the side strips.

849,960. BOTTLE-CLOSURE. ADELINE E. BATCHELDER, New York, N. Y. Filed May 21, 1904. Renewed Sept. 14, 1906. Serial No. 334,595.

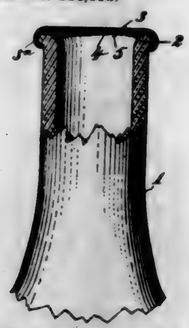

Claim.—1. A sheet-metal cap for closing the mouth of a bottle or the like, having in it a packing-disk of white wood (*Liriodendron tulipifera*) to close over the mouth of the bottle and interpose between the metal of the cap and a liquid in the bottle.

2. A flanged sheet-metal cap for closing the mouth of a bottle or the like, having a soft-paper lining extending to the margin of the flange to form a soft gas-tight packing, and a thin disk of white wood (*Liriodendron tulipifera*) within the lined cap to close over the mouth of the bottle when the cap is in place.

3. In a closure, the combination with a bottle or the like having a rounded fillet at and about its mouth, of a metal cap lined with soft packing which fits gas-tight about said fillet and forms the seal thereat, said cap having also a disk of white wood (*Liriodendron tulipifera*) which closes over the mouth of the bottle.

4. In a closure, the combination with a bottle having a rounded fillet about its mouth, of a flanged and non-corrugated metal cap, a lining of paper in said cap and extending down to the margin of its flange, and a disk of wood veneer in the cap and covering the mouth of the bottle, the flange of the cap taking under the fillet on the bottle and the packing in said flange taking under and forming the seal about the said fillet.

5. In a closure, the combination with a bottle having a rounded fillet about its mouth, of a flanged cap of stiff sheet metal lined throughout with soft packing material, the lined flange of said cap taking under the fillet on the bottle, and an interposing disk between said lining and the mouth of the bottle.

849,961. VIOLIN CHIN-REST PLATE. FREDERICK W. BECKER, New York, N. Y. Filed Mar. 3, 1906. Serial No. 304,005.

Claim.—1. A violin chin-rest plate, embodying a body portion having a plurality of apertures therethrough from top to bottom, and a covering of yielding absorbent anti-slipping material on the upper surface of said body portion.

2. A violin chin-rest plate, embodying a body portion having its upper surface recessed and having a plurality of apertures through said recessed portion, and a layer of yielding absorbent antislipping material fixed in and filling said recess.

849,962. HAY-CURING RACK. HENRY E. BELL, Burkeville, Va. Filed Aug. 14, 1906. Serial No. 330,617.

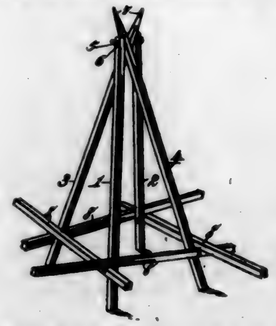

Claim.—1. A rack of the class specified, comprising a plurality of uprights pivotally connected to each other solely at their upper extremities and foldable into planes parallel with each other, and supports pivotally secured to the uprights above the lower ends thereof, each of the supports being connected to its upright nearer one end than the other and the opposite extremities of the supports projecting outwardly beyond the uprights, the several supports having their free ends in engagement or the one bearing on the other when arranged for use to provide a base-support for the rack.

2. A hay-curing rack comprising a plurality of uprights pivotally connected at their upper extremities and foldable into planes parallel with each other, and supports pivotally secured to the uprights above the lower extremities of the latter and disposable in approximately horizontal planes to form a lower frame, each support being connected to its upright nearer one end than the other and the several supports loosely bearing on the extremities of adjacent supports.

3. A hay-curing rack comprising a plurality of uprights pivotally connected at their upper extremities and foldable in planes parallel to each other, the inner pair of uprights being longer than the outer pair and having upper pointed extremities, and supports pivotally connected to the uprights above the lower ends of the latter, the extremity of one support being adapted to bear upon the extremity of the adjacent support to provide a lower approximately horizontal frame.

4. A hay-curing rack comprising a plurality of uprights

having the edges of the upper extremities thereof arranged contiguous and loosely pivoted, a supporting-bar pivotally attached to the lower portion of each upright above the lower end of the latter, each supporting-bar being attached to its upright nearer one end than the other, the longer extremities of the supporting-bars being brought to bear on the shorter extremities of adjacent bars when the rack is opened and arranged for use.

849,963. DUST-GUARD. HERMAN BENSCH, Davenport, Iowa. Filed Apr. 25, 1906. Serial No. 313,597.

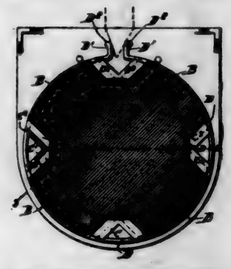

Claim.—1. A dust-guard substantially as herein described, comprising a carrier-plate provided with an opening for a journal and with a circular series of guides surrounding said opening and having plates projecting outwardly from the carrier-plate and notched in their outer edges and also provided with flange-plates projecting from the outer edges of said first plates in a plane approximately parallel with that of the carrier-plate, stop-pins projecting from the carrier-plate adjacent to the upper portion thereof, packing-blocks held at their ends in the guides of the carrier and movable radially toward and from the opening for the journal, and a spring-rod encircling the series of packing-blocks and engaging therewith to exert an inward tension thereon, the upper portion of said spring-rod lying below the stop-pins of the carrier-plate and having between said pins the outwardly turned and flared ends, substantially as and for the purpose set forth.

2. A dust-guard comprising a carrier-plate having an opening for a journal and provided with a circular series of guides surrounding the same and consisting of plates projecting outwardly from the carrier-plate and notched in their outer edges for a spring-rod, and flange-plates projecting from said outwardly-projecting plates and forming guides for the ends of the packing-blocks, packing-blocks held in said guides and movable therein toward and from the journal-opening, and the spring-rod embracing the series of packing-blocks and lying in the notches in the plates of the guides, substantially as set forth.

3. The combination in a dust-guard with a carrier and a circular series of packing-blocks held thereto and movable radially, of a spring-rod encircling the series of packing-blocks and exerting an inward tension thereon and having the outwardly turned and flared extremities, the ends of the spring-rod in use not overlapping but being spaced apart whereby a wedge may be driven between the flared extremities to expand the spring-rod, substantially as set forth.

4. A dust-guard comprising a carrier-plate having on one side a series of guide projections provided at their ends with keeper projections or flanges for the packing-blocks and notched in their outer edges for the spring-rod, the packing-blocks having at their ends tenons fitting in the guides of the keepers and grooved longitudinally in their outer edges to receive the spring-rod, and the spring-rod fitting in the notches of the guides and in the longitudinal grooves of the packing-blocks, substantially as set forth.

5. A dust-guard having a carrier-plate provided with an opening for a journal and also having a circular series of guides around said opening and each having a plate projecting laterally from the carrier-plate and extending parallel to a line radial to the axis of the journal-opening and flange-plates projecting from the outer edge of said first plates in a plane approximately parallel with that of the carrier-plate whereby to form keepers in which packing-blocks may move radially, substantially as set forth.

849,964. NAUTICAL SIGNAL. FREDERICK C. BERWICK, New York, N. Y. Filed Mar. 11, 1905. Renewed Oct. 13, 1906. Serial No. 338,843.

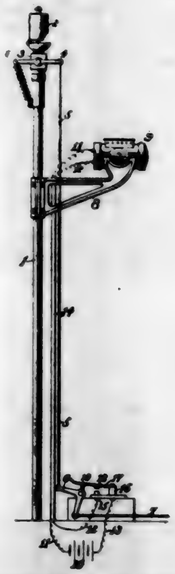

Claim.—In a nautical signal, the combination of a sound-producing device, a visual signaling device, a normally closed valve, a spring-restrained lever normally holding the sound-producing device inoperative, a bell-crank lever having one arm connected with the spring-restrained lever, a circuit-breaker carried by the bell-crank lever for making and breaking the circuit, and means for operating said bell-crank lever to cause the simultaneous sounding of an alarm and the flashing of a light.

849,965. DUMPING-WAGON. JACOB S. BLACKWOOD, Columbus, Ind. Filed Dec. 28, 1906. Serial No. 349,891.

Claim.—1. In a dumping-wagon, the combination of a framework, comprising side bars and end pieces, uprights projected upward from said end pieces, a wagon-body comprising similar sector-shaped sections, means pivotally connecting said sections to each other at their upper inner corners and to the respective uprights, rollers applied to the side bars of the framework adjacent to the end pieces to make contact with the sections of the body opposite the end pieces of the said body-sections, means for securing the sections of the body when closed, and means for opening said sections to effect discharge of the load.

2. In a dumping-wagon, the combination of a framework comprising side bars and end pieces, a body comprising similar sections pivotally connected and adapted to swing outward and upward, uprights at the ends of the framework, a rod journaled to said uprights and flexible connections between said rod and the sections of the body and adapted to effect an opening of the latter upon rotation of the said rod.

3. In a dumping-wagon, the combination of a framework, a body comprising sections adapted to open outward, bars applied to the sides of said sections for stiffening and

strengthening the same and catches coöperating with certain bars to hold the sections when closed.

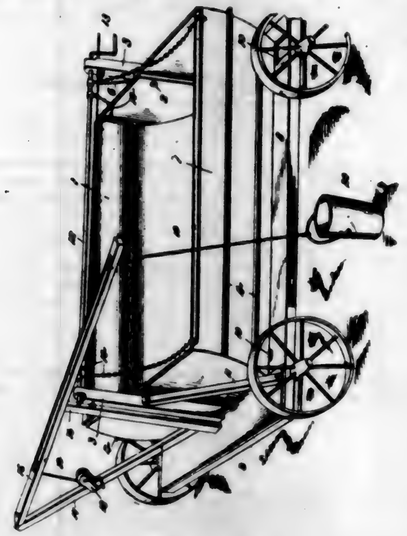

849,966. LUBRICATOR. GEORGE W. BLANK, Wilkinsburg, Pa. Filed Jan. 15, 1907. Serial No. 352,341.

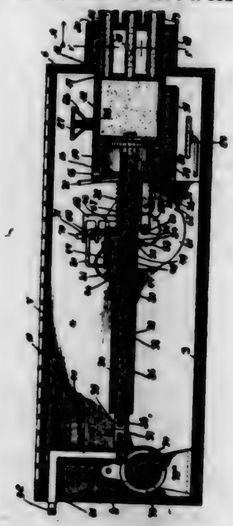

Claim.—1. In a lubricator, the combination with curved tracks, of a lubricator-casing mounted between said tracks, a reservoir carried within said casing, a plurality of tubes connecting said reservoir with the rails of said tracks, protecting-tubes surrounding the first-mentioned tubes, a plunger-head mounted within said reservoir for forcing the contents thereof into the first-mentioned tubes, a toothed plunger carried by said head, a reciprocatory casing mounted upon said plunger, an actuating-arm connected to the end of said plunger and protruding outside of said casing and into one of the rails of said tracks, a gripping-block movably mounted in said casing and normally supported above said plunger, a timing mechanism actuated by said casing and adapted to relieve said gripping-block to move said plunger, means located in said casing for moving said plunger rearwardly, means located within said casing for heating the contents of said reservoir and said tubes, and means whereby easy access may be had to said reservoir-casing, substantially as described.

2. In a lubricator, the combination with tracks, of a lubricator-casing mounted between said tracks, a lubricant-reservoir located in said casing, lubricant-conveying tubes connecting said reservoir with the rails of said tracks and protecting-tubes surrounding said conveying-tubes, a plunger-head mounted in said reservoir, a toothed plunger carried thereby, a reciprocatory casing mounted upon said plunger, an actuating-arm carried by said plunger, and extending into one of said tracks, a gripping-block carried by said casing for moving said plunger in unison therewith, a timing mechanism supported from said reservoir for controlling the movement of said plunger, means carried by said casing for actuating said timing mechanism, means located in said casing for moving said plunger rearwardly, means located within said casing for heating said conveying-tubes, and means whereby easy access may be had to said casing and reservoir.

3. In a lubricator, the combination with tracks, of a lubricating-casing mounted adjacent to said tracks, a lubricant-reservoir located in said casing, lubricant-conveying tubes connecting said reservoir with the rails of said tracks, a plunger-head mounted in said reservoir, a toothed plunger carried by said head, a reciprocatory casing mounted upon said plunger, an actuating-arm carried by said casing, and extending into one of the rails of said track, a gripping-block carried by said casing for moving said plunger, a timing mechanism for normally supporting said gripping-block out of engagement with said plunger and releasing said block at a predetermined time, means carried by said casing for actuating said timing mechanism, means for preventing a rear movement of said plunger, means located within said casing for moving said plunger rearwardly, means for protecting said conveyer-tubes, and means located within said casing for heating said conveyer-tubes.

4. In a lubricator, the combination with tracks, of a lubricator-casing, a lubricant-reservoir located therein, lubricant-conveying tubes connecting said reservoir with said tracks, a plunger for moving said lubricant from said reservoir into said tubes, a reciprocatory casing mounted upon said plunger, an actuating-arm carried by said casing and actuating from one of said tracks, means carried by said casing for gripping said plunger, a timing mechanism carried by said reservoir for controlling said means, means located within said casing for moving said plunger rearwardly, a braking mechanism controlling the rearward movement of said plunger, means for protecting said conveyer-tubes, and means located within said casing for heating said tubes.

5. In a lubricator, the combination with tracks, of a lubricator-casing, a lubricant-reservoir mounted therein, protected lubricant-conveying tubes connecting said reservoir with said tracks, a plunger for moving the contents of said reservoir, a reciprocatory casing mounted upon said plunger, an actuating-arm carried by said casing, and actuated from one of said tracks, means carried by said casing for gripping said plunger, a timing mechanism carried by said reservoir for controlling said means, a braking mechanism controlling the rearward movement of said plunger, and means located within said casing for moving said plunger rearwardly.

6. In a lubricator, the combination with curved tracks, of a lubricating-casing, mounted adjacent thereto, a lubricant-reservoir carried within said casing, a plurality of tubes connecting said reservoir with said tracks, a plunger for moving the lubricant of said reservoir into said tubes, means carried by said plunger and actuated from one of said tracks for moving said plunger, a timing mechanism carried by said reservoir for controlling said means, means including the first-named means for actuating said timing mechanism, means for moving said plunger rearwardly, a

brake mechanism controlling the rearward movement of said plunger, and means for protecting said conveyer-tubes.

7. In a lubricator, the combination with tracks, of a lubricating-casing, a lubricant-reservoir mounted therein, a plurality of tubes connecting said reservoir with said tracks, a plunger mounted in said reservoir for moving the contents thereof into said tubes, means carried by said plunger and actuated from one of said tracks for moving said plunger, a timing mechanism actuated by said means for controlling the movement of said plunger, means to move said plunger rearwardly, means whereby easy access may be had to said casing and said lubricant-reservoir, and means for protecting said tubes.

8. A lubricator for street-railway tracks embodying a casing, a reservoir mounted therein, a plurality of tubes connecting said reservoir with the rails of said system, a plunger for moving the contents of said reservoir into said tubes, means located within said casing and actuated from one of said rails for moving said plunger, a timing mechanism actuated by said means for controlling the movement of said plunger, means to move said plunger rearwardly, and means for protecting said tubes.

9. A lubricator for street-railway tracks, comprising a casing, a lubricant-reservoir located therein, tubes connecting said reservoir with the curved rails of said track, a plunger mounted in said reservoir for moving the contents thereof into said tubes, means located within said casing and actuated from one of said curved rails for moving said plunger, a timing mechanism carried by said reservoir and actuated by said means for controlling the movement of said plunger, and means for protecting said tubes.

10. A lubricator for street-railway tracks, comprising a lubricant-reservoir, tubes connecting said reservoir with the curved rails of said tracks, a plunger mounted in said reservoir for moving the contents thereof into said tubes, means carried by said plunger and actuated from one of said curved rails for moving said plunger, a timing mechanism carried by said reservoir and actuated by said means for controlling the movement of said plunger, means to protect said reservoir, plunger, and timing mechanism, and means for protecting said tubes.

11. A lubricator for street-railway tracks, comprising a lubricant-reservoir, a plurality of tubes connecting said reservoir with the rails of said tracks, means for moving the contents of said reservoir into said tubes, a timing mechanism for controlling the first-named means, and means to protect said tubes.

12. A lubricator for street-railway tracks, comprising a lubricant-reservoir, tubes for conveying said lubricant to the rails of said tracks, means for moving the contents of said reservoir into said tubes at predetermined times, said means including a timing mechanism, and an actuating-arm operated from one of the rails of said tracks.

13. A lubricator for street-railway tracks, comprising a lubricant-reservoir, lubricant-conveying tubes connecting said reservoir with the rails of said tracks, means for forcing the contents of said reservoir into said tubes, said means including a plunger actuated from one of the rails of said tracks, and means for controlling the operation of said plunger.

14. A lubricator for street-railway tracks, comprising a lubricant-reservoir, lubricant-conveying tubes connecting said reservoir with the rails of said tracks, and means actuated by cars traveling over said tracks for forcing the contents of said reservoir through said tubes to said rails.

15. A lubricator for street-railway tracks, comprising a lubricant-reservoir, lubricant-conveying means connecting said reservoir with the rails of said tracks, and means automatically actuated by cars traveling over said tracks for delivering lubricant from the reservoir through said conveying means to the rails of said tracks.

849,967. SHUTTLE-CHECK FOR POWER-LOOMS. JEAN F. BLUMER-KUHN, Engi, Switzerland. Filed Sept. 19, 1904. Serial No. 225,134.

Claim.—1. An improved shuttle-retaining device for power-looms, consisting of a shuttle-box having guide-strips between which the shuttle enters, a binding-bar rockably supported on a pivot arranged nearer the outer end of the bar than its inner end, said bar having two convex portions on its face, one at each side of the pivot, and means for adjusting the bar relative to the path of the shuttle in said shuttle-box.

2. An improved shuttle-retaining device for power-looms, consisting of a shuttle-box having guide-strips between which the shuttle enters, a binding-bar rockably supported on a pivot arranged nearer the outer end of the bar than its inner end, said bar having two convex portions on its face, one at each side of the pivot, and means for adjusting the bar relative to the path of the shuttle in said shuttle-box, said means consisting of an adjustable block in which the pivot of the binding-bar is mounted, and an adjusting-screw for said block.

849,968. VISE. WILHELM BOLEY and PAUL PFLEIDERER, Esslingen, Germany. Filed Mar. 6, 1906. Serial No. 304,462.

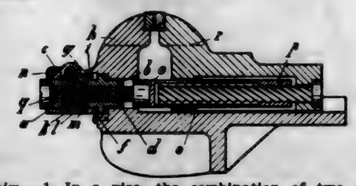

Claim.—1. In a vise, the combination of two screw-spindles of different pitch, a movable jaw connected with the high-pitched spindle, nuts disposed on the low-pitched spindle, a screw-head fixed on one of said nuts, clutches on said head and on the nut on which said head is not mounted to limit their rotation relatively to each other.

2. In a vise, the combination of two screw-spindles of different pitch, a movable jaw connected with the high-pitched spindle, nuts disposed on the low-pitched spindle, a ball-bearing and a flexible intermediate bearing disposed between said nuts, a screw-head fixed on one of said nuts whereby the nuts are pressed against each other and when rotated revolve the screw-spindle to actuate the high-pitched spindle, and clutches on said head and the nut on which it is not mounted to limit their rotation relatively to each other.

849,969. ANTI-PIG-ROOTING DEVICE. THOMAS W. BOX, Plymouth, England. Filed Aug. 2, 1906. Serial No. 328,918.

Claim.—1. An antirooting device for pigs comprising a plate having an outwardly-curved upper edge and an inwardly-curved lower edge, and means whereby said plate is attached to the nose of the animal, substantially as described.

2. An antirooting device for pigs comprising a plate having an upper outwardly-curved portion and a lower inwardly-curved portion and integrally-formed attaching-prongs adapted to be inserted through the cartilage on the nose of the animal.

3. An antirooting device for pigs comprising a plate having an outwardly-curved upper portion and an inwardly-curved lower portion, rearwardly and upwardly bent attaching-prongs adapted to be inserted through the cartilage of a pig's nose and to project through and above the top of the nose or snout, said projecting ends of the prongs being adapted to be coiled thereby preventing the withdrawal of the same, substantially as described.

849,970. AMUSEMENT DEVICE. PAUL BOTTON, St. Louis, Mo. Filed Aug. 27, 1904. Serial No. 222,441.

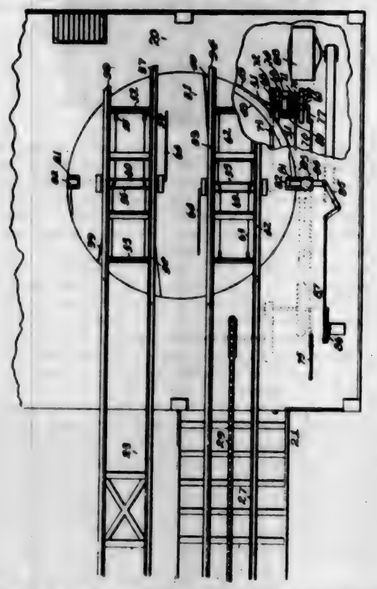

Claim.—In an amusement device, an inclined track, a turn-table arranged for operation at the upper end of said track, a track arranged on the turn-table and adapted to coincide with the inclined track, locking-plates fixed on the turn-table at right angles to the track thereon, a housing secured to the framework outside the turn-table, a locking-bolt operating through said housing and adapted to engage either one of the locking-plates, a bell-crank having one end pivotally connected to the locking-bolt, a rod pivotally connected at one end to the opposite end of the bell-crank, and a hand-lever pivotally connected to the opposite end of said rod; substantially as specified.

849,971. FLYING APPARATUS. ADOLF BRANDL, Munich, Germany. Filed Apr. 16, 1906. Serial No. 312,013.

Claim.—1. In a device of the character described, means for attaching the same to the operator, comprising a frame connected with the wing and having two sides joined at an angle to each other, an elbow-receiving cup arranged in the angle between the two sides, a third piece joining the two sides to complete the frame and serve as a handhold, and means for securing one side of the frame to the body of the operator.

2. In a device of the character described, means for attaching the same to the operator, comprising a frame connected with the wing and having two sides joined at an angle to each other and corresponding to the upper and fore arm of the operator in a bent position, an elbow-receiving cup arranged in the angle between the two sides, a curved piece joining the two sides to complete the frame and serve as a handhold, and means for securing the upper-arm side of the frame to the body of the operator.

3. In a device of the character described, means for attaching the same to the operator, comprising a frame connected with the wing and having two sides joined at an acute angle to each other and corresponding to the upper and fore arm of the operator in a bent position, an elbow-receiving cup arranged in the angle between the two sides, a third piece curved about the elbow-receiving cup as a center and joining the two sides to complete the frame and serve as a handhold, and means for securing the upper-arm side of the frame to the body of the operator.

4. In a device of the character described, means for attaching the same to the operator, comprising a frame connected with the wing and having two sides joined at an acute angle and corresponding to the upper and fore arm of the operator in bent position, an upholstered elbow-receiving cup arranged in the angle between the two sides, a third piece curved about the elbow-receiving cup as a center and joining the two sides near their extremity to complete the frame and serve as a handhold, and a universal connection between the extremity of the upper-arm side of the frame and the shoulder of the operator.

5. In a device of the character described, means for attaching the wing-frame to the body comprising a back piece *r* having shoulder-straps to which the arms carrying the universal joints *k* are attached, a waist-belt and means for suspending the same in the back piece, and front straps extending from the front of the shoulder-straps to the belt and means for adjusting the length of said front straps.

6. In a device of the character described, means for attaching the edges of the wings along the body of the wearer consisting of a stiffening-strip attached to the edge of the wing material, a belt to hold the same to the waist of the wearer and garter-like straps to attach the said strip at the back of the knee part of the legs and means for securing the upper ends to the back piece *r* and the lower ends to the rear part of the feet of the wearer.

7. In a device of the character described, means for attaching the edges of the wings to the rear of the wearer comprising the back piece *r*, stiffening-strips attached to the edges of the wings, means for attaching the tops of the said stiffening-pieces to the back piece and the bottoms to the rear of the heels, a waistband attachment for the central parts and garter-like attachment at the knee portions of the legs and elastic inlets arranged intermediate of the attachments substantially as described.

849,972. CURTAIN-FIXTURE. ASBURY G. W. BROWN, Saxtons River, Vt. Filed Jan. 27, 1906. Serial No. 298,154.

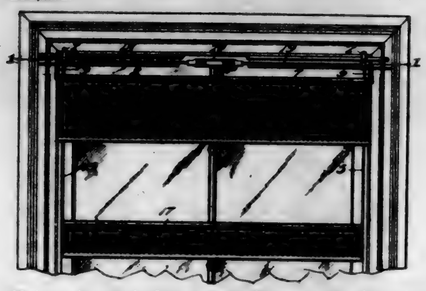

Claim.—A curtain-fixture comprising a pair of brackets provided in their outer faces with recesses containing pins or studs, hangers for a lower curtain-shade roller having their upper ends fitted in said recesses and engaged by said pins or studs, a rod supported upon said brackets, shade-brackets supported upon said rod, a window-shade mounted to rotate in said brackets and a spreader consisting of right and left hand threaded rods connected by an adjusting-turnbuckle and having their opposite extremities in engagement with said brackets.

849,973. LOOSE-LEAF BINDER. HUGH G. BUCHAN, Woodbridge, N. J. Filed Dec. 14, 1906. Serial No. 347,828.

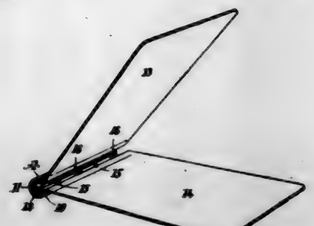

Claim.—1. In a loose-leaf binder, a back constructed of spring material in segmental form and in two hinged connected sections, covers extending from the free ends of the said sections of the back, pins extending in opposite directions from the said sections at their free ends, and a tension device for drawing the free or forward ends of the sections of the back together, said tension device having pivotal relation to the back at each end of said device.

2. In a loose-leaf binder, the combination with a segmental back constructed in two spring-metal sections of equal dimensions, each being of segmental form, the said sections being connected at their rear portions, of covers extending from the forward or free edges of the said sections, pins extending in opposite directions from the forward edges of the sections of the back, said pins having a rearward curvature, a socket pivotally secured to one section of the back, and a screw having guided movement in the opposing back-section, said screw entering the said socket.

849,974. TABLE FOR GAMES. ROBERT B. CANTRELL, New York, N. Y. Filed Mar. 22, 1906. Serial No. 307,449.

Claim.—1. A table, having a pocket composed of a frame and flexible material hinged to the under side of the table-top on horizontally-disposed hinging axes, whereby the pocket may be folded under the table when not in use, said flexible material being secured to the table along one edge of the material exterior to the hinging-line so that it is allowed to slacken when the pocket is unfolded and projects out from under the table, and means for holding and locking the pocket in both of its terminal positions.

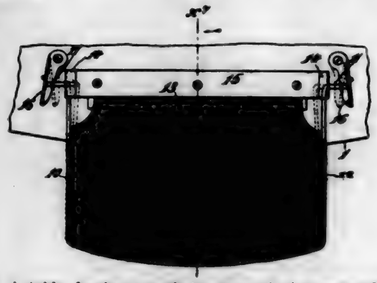

2. A table, having a pocket composed of a spring-frame and flexible fabric supported thereon, said frame being hinged to the under side of the table-top on horizontally-disposed axes so that the pocket may be folded under the table, and keepers which take under the frame in both of its terminal positions, the frame being held in engagement with the keepers by its own resiliency.

3. The combination with a table, of a pocket adapted to be folded under the table when not in use and consisting of a frame 10, of resilient metal, provided with journals 11 on the ends of its arms, and a flexible fabric 12, keepers 14 on the table, said keepers having bearings for the journals on the frame and forming supports for the frame in its terminal positions, and thumb-pieces for disengaging the frame from said keepers.

4. A table, provided on the under side of its top with a strip 15 having keepers 14 at its respective ends, a pocket-frame 10, of U shape, made from resilient metal and provided with journals 11 on its arms which journals have bearings in the respective keepers 14, a partition-bar 17, hinged on the plate 15 at 19 and connected at its outer end with the frame 10, a flexible fabric or material 12 on the frame, and thumb-pieces 16 on the table-top for freeing the frame from said keepers.

849,975. STOOL. PETER J. CARLSON, Laporte, Ind. Filed June 23, 1906. Serial No. 323,059.

Claim.—1. A stool comprising legs, a seat, a post secured to the seat and provided with a shoulder and a reduced extension, a member mounted upon the post and engaging the shoulder, another member mounted upon the reduced extension of the post, and springs secured to the members and to the legs.

2. A stool comprising legs, a seat, a post secured to the seat and provided with a shoulder and a reduced extension, a sleeve mounted upon the post and engaging the shoulder, said sleeve being provided with lugs, another sleeve mounted upon the reduced extension of the post and also provided with lugs, springs secured to the legs and to the lugs of the sleeves.

3. A stool comprising legs, a sleeve, springs secured to the legs and to the sleeve, a seat, and a post secured to the seat and revolubly mounted in the sleeve.

4. A stool comprising legs, a sleeve provided with lugs, springs secured to the legs and to the lugs of the sleeve, a seat, and a post secured to the seat and revolubly mounted in the sleeve.

5. A stool comprising legs, members resiliently supported from the legs in relative spaced relation, a seat, and a post secured to the seat and revolubly mounted upon the members.

849,976. FRUIT-PICKER'S BASKET. FRANK CARTMEL, Jacksonville, Fla. Filed Dec. 6, 1906. Serial No. 346,558.

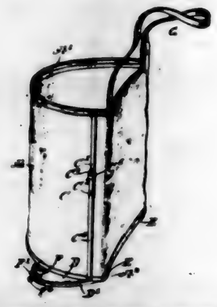

Claim.—1. A fruit-picker's basket comprising a flexible body open at the top and bottom and provided with hoops at the top and bottom, a hinged drop-door for the said open bottom, a locking device for the said door, a carrying-strap connected with the top hoop, stays pivotally connected with the said top and bottom hoops and made in sections pivotally connected with each other, one of the sections being extended beyond the pivotal connection of the said sections, and a collar slidable on the stays for locking the same in an extended position.

2. A fruit-picker's basket, comprising a flexible body provided with hoops at the top and bottom, a door forming the bottom of the basket, stays pivotally connected with the said top and bottom hoops and made in sections pivotally connected with each other, one of the sections being extended beyond the pivotal connection of the said sections, and a collar slidable on the stays for locking the same in an extended position.

849,977. FRESNEL LENS. WILLIAM CHURCHILL, Corning, N. Y., assignor to Corning Glass Works, Corning, N. Y. Filed Nov. 22, 1906. Serial No. 344,639.

Claim.—1. An integral Fresnel lens the inner surface of which consists of a series of connected rectangular planes angularly placed with respect to each other, each of the said planes being tangential to an inner circle which is concentric with the outer bounding circle of the lens, substantially as set forth.

2. An integral Fresnel lens the inner surface of which consists of a series of connected rectangular planes angularly spaced with respect to each other and producing in cross-section a polygonal figure, the axis of such figure being the center of curvature of the outer bounding circle of the lens and each of the said planes being tangential to an inner circle which is concentric with said outer bounding circle, substantially as set forth.

849,978. SOAP HOLDING OR RETAINING DEVICE. PAUL F. COX, Battle Creek, Mich. Filed Jan. 22, 1907. Serial No. 353,521.

Claim.—1. A cake of soap having a tubular core of flexible material embedded therein and extending therethrough, substantially as described.

2. A cake of soap having an internal tubular core embedded therein and extending therethrough, said core being larger at one end than at the other.

3. A cake of soap having a tubular core embedded therein and extending therethrough, said core having holes or apertures in its walls for locking it to the soap.

4. A cake of soap having an internal tubular core of flexible material embedded therein and extending therethrough, said core being larger at one end than at the other, and having holes in its walls for locking it in the soap.

5. A cake of soap having an internal tubular core embedded therein and extending therethrough, said core being larger at one end than at the other; in combination with a suspending device passing through the core, substantially as and for the purpose described.

6. The combination of a cake of soap, a tubular tapered core provided with holes in its walls and extending through and embedded in said soap, and a suspending device engaging the core, substantially as and for the purpose described.

7. The combination of a cake of soap, a tubular core of flexible material embedded in and passing through said cake, said core having holes in its walls; with a detachable rod passing through said core and suspending devices connected to the rod.

849,979. HORSESHOE. HUGO DAHMS, Berlin, Germany. Filed May 22, 1906. Serial No. 318,129.

Claim.—1. A horseshoe, having a tapered recess, a sleeve having an expansible portion mounted in said recess and adapted to interlock therewith and a calk forced into said sleeve through the small end of said recess, toward the large end thereof, and affording means for jamming said sleeve in said recess.

2. A horseshoe presenting a recess contracting toward the normal lower face of the shoe, a sleeve extending through said shoe and having an expansible portion disposed in said recess, and a calk forced into said recess and

said sleeve, from the lower face of said shoe, and affording means for expanding the inner extremity of said sleeve in said recess.

3. A horseshoe presenting a recess contracting in diameter toward the normal lower face of the shoe, a sleeve mounted in said recess and having tabs struck from the material thereof, and a calk adapted to be driven into said sleeve and engaging said tabs, said calk affording means for forcing said tabs against the wall of said recess to secure said sleeve and said calk in said shoe.

4. A horseshoe, having a recess contracting in diameter, a sleeve having an expansible portion mounted in said recess, a calk adapted to be driven into said sleeve to expand the inner extremity thereof, said shoe having a counterbore surrounding said sleeve, and a bushing received in said counterbore.

5. A horseshoe, presenting a recess, a sleeve having tabs presenting lips adapted to engage the wall of said recess and having inwardly-projecting ends, and a calk adapted to be driven into said sleeve and having grooves engaging the ends of said tabs.

6. A horseshoe, having a substantially conical recess formed therein, and a counterbore communicating therewith, a sleeve mounted in said recess and said counterbore, a portion of said sleeve within said recess having tabs struck from the body thereof with inwardly-projecting ends and outwardly-projecting lips, the outer portion of said sleeve lying adjacent to said counterbore having longitudinal flutes formed therein, an elastic bushing surrounding said sleeve and disposed in said counterbore, and a calk having a substantially conical body adapted to be driven into said sleeve to expand the outer portion thereof, and having a neck adapted to lie within said recess, said neck having grooves adapted to engage the inner extremities of said tongues to force said lips outwardly against the wall of said recess.

849,980. CLAMP. JOSEPH B. DANFORTH, Goliad, Tex. Filed Jan. 19, 1907. Serial No. 353,161.

Claim.—1. In a device of the class described, a rod provided with a perpendicularly-disposed head having a pipe-receiving opening, a primary clamping member adjustably entered through one wall of the head and to project into the opening, and an auxiliary clamping member slidably connected with the rod and adapted for entrance into said opening at a point opposite the first-named clamp.

2. In a device of the class described, a rod provided with a perpendicularly-disposed head having a pipe-receiving opening, a clamping-screw threaded through one wall of the head for entrance into said opening, and an auxiliary clamping member adapted for entrance into the opening at a point opposite said screw, said auxiliary clamp having a stem slidably connected with the rod.

849,981. ELECTRICAL HAIR-CURLER. HANS DRIBEL, Munich, Germany. Filed Jan. 16, 1907. Serial No. 352,616.

Claim.—1. In an electrical hair-curler, the combination, with an exterior casing and an electrical heating resistance therein, of an insulating-tube arranged intermediate the heating resistance and the casing, and means independent of said casing for conducting current to the heating resistance.

2. In an electrical hair-curler, the combination, with a casing and an electrical heating resistance within said casing, of means at each end of said casing arranged to receive a hair-retaining device.

3. In an electrical hair-curler, the combination, with a casing, a handle of insulating material at each end of said casing, and an electrical contact device within each handle and arranged to form connections with a source of current, of an electrical heating resistance within said casing and having its respective terminals connected to the contact devices.

4. In an electrical hair-curler, the combination, with a casing, a handle of insulating material at each end of said casing, and a lug carried by each handle, of an electrical heating resistance within the casing, and means for connecting said resistance with a source of current.

849,982. WINDOW-SASH FASTENER. LEO C. A. DENLEA, New York, N. Y. Filed May 23, 1906. Serial No. 318,386.

Claim.—As a new article of manufacture, a sash-fastener comprising a base-piece adapted for attachment to the sash and a locking member pivoted to the base-piece to swing in a vertical plane, said locking member being provided with a pair of downturned engaging fingers spaced relatively to receive the sash-cord between them and forming cams for securing the window in closed position.

849,983. CLOTHES-LINE FASTENER. LEO C. A. DENLEA, New York, N. Y. Filed Oct. 31, 1906. Serial No. 341,466.

Claim.—1. A rope-clamp comprising a clamping element having heads at opposite ends thereof and an intermediate connecting-stem of smaller diameter than the heads, there being openings in the heads to permit a rope to pass through the same and a sleeve fitted to the heads to slide over and cover the same and means for holding said sleeve in adjusted position.

2. In a device of the character described, a clamping element having heads at its opposite ends, means for connecting a rope to one of the heads, a shank extending from one head to the other, said heads provided with openings to admit a rope, one of said heads having a longitudinal groove and a sleeve mounted to slide upon said clamping element, said sleeve being provided with a headed stop conforming in shape to said groove, substantially as described.

3. A rope-clamp comprising a clamping element having oppositely-disposed heads connected by an intermediate shank or stem of reduced diameter, said heads being provided with means for permitting a rope to pass through the same, and a sliding sleeve for covering said clamping element and holding the free end of a rope, substantially as described.

849,984. GRAIN-BIN. THOMAS DOUGHERTY, Minneapolis, Minn. Filed June 27, 1905. Serial No. 267,266.

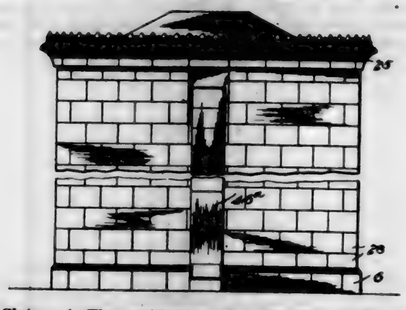

Claim.—1. The combination, in a structure of the character described, with a main wall, of a hollow inner wall in contact with said main wall and provided with air-passages therein having tributary passages opening at intervals throughout the inner surface of said inner wall for the purpose specified.

2. The combination, in a structure of the character described, with a main wall, of an inner wall provided with air-passages therein having obliquely-arranged tributary passages extending through to the inner surface of said inner wall.

3. The combination, in a structure of the character described, with a main wall, of an inner wall provided with air-passages therein having obliquely-arranged tributary passages therein extending downward and inward from said main passages through to the inner face of said inner wall.

4. The combination, in a structure of the character described, with a main wall, of an inner wall provided with air-passages therein having obliquely-arranged tributary passages extending downward and inward from said main passages through to the inner faces of said inner wall, the upper edge of the opening of said tributary passages upon the inner face of said inner wall being arranged below the lower edge of the opening of said tributary passage into said main passage.

5. In a structure of the character described, the combination with a main wall, of an outer wall and an inner wall arranged in juxtaposition to said main wall, said inner wall being hollow and having air-passages therein opening upon the interior of said wall, said walls all resting upon a common foundation.

6. In a structure of the character described, the combination with a foundation composed of interlocking blocks each having an upwardly-projecting lug arranged near the outer edge thereof and the corners of the upper inner edge cut away, of a wall superimposed upon said foundation, said wall comprising laterally-interlocking blocks each provided with a downwardly-extending lug on the lower inner edge adapted to engage the cut-out portion of adjacent foundation-blocks, each of said wall-blocks also having their lower rear corners cut out to receive the rear lug of a foundation-block, and upwardly-extending lugs on their upper outer edges.

7. In a structure of the character described, the combination with a foundation composed of interlocking blocks each having an upwardly-projecting lug arranged near the outer edge and centrally thereof, and the corners of the upper inner edge cut away, of a wall superimposed upon said foundation, said wall comprising laterally-interlocking blocks each provided with a downwardly-extending lug on the lower inner edge and centrally thereof, said lug adapted to engage the cut-out portions of adjacent foundation-blocks, each of said wall-blocks also having their lower rear corners cut out to receive the rear lugs of a foundation-block, and upwardly-extending lugs arranged centrally of their upper outer edges.

8. In a structure of the character described, the combination, with a main wall, of an outer wall, said main wall having upwardly-projecting lugs on its outer edge, and a cornice having a molding projecting down over and below the upper edge of the outer wall.

9. In a structure of the character described, the combination with a main wall built of rows of interlocking blocks, of an outer wall also constructed of rows of interlocking blocks, the upper row of the blocks of the main wall provided with an outer ledge and upper projecting lugs, and a cornice extending over both walls and comprising interlocking blocks having cavities to fit over said lugs and an overhanging molding extending down over and below the upper edge of the outer wall.

10. In a structure of the character described the combination with the walls, of the roof and a bridge arranged transversely across between the opposite sides of the walls just below the roof, the floor of said bridge provided with openings for filling the structure.

11. In a structure of the character described, the combination with a main wall, of an outer wall, a roof, a cornice, extending over both walls, secured to the main wall and having a molding projecting down over and below the upper edge of the outer wall, and coping-blocks arranged between the cornice and the roof, substantially as described.

849,985. INK-ERASER. THOMAS DRAPER, Middletown, Conn., assignor of one-half to John W. Hall, Middletown, Conn. Filed Dec. 5, 1906. Serial No. 346,477.

Claim.—1. An eraser comprising a handle and a sharpened blade carried thereby, said blade being disposed at an angle to the handle, an erasing member disposed on the lower face of the blade and having a roughened abrasive surface, and means for detachably securing the erasing member to the blade.

2. An eraser comprising a handle and a sharpened erasing-blade carried thereby, said blade being disposed at an angle to the handle and provided with a pair of spaced, transverse openings, an erasing member disposed on the lower face of the blade and having a roughened, abrasive surface and provided with a stud to seat in one of said openings, and a fastening member entered through the other opening and engaging with the erasing member for detachably securing the latter to the blade.

849,986. GRATE-BAR. CHARLES H. EATON, Eldonville, Me. Filed Jan. 7, 1907. Serial No. 351,152.

Claim.—1. A grate-bar having a strengthening-core embedded therein and a pivoting member attached to the core and terminated beyond the face of the bar in the pivoting-trunnion.

2. A grate-bar having a strengthening-core embedded

therein and a pivoting member attached to said core and embedded in part in the bar, said pivoting member being terminated beyond the face of the bar in a chain-engaging portion.

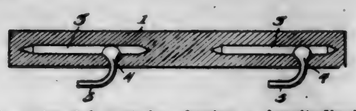

3. A cast-metal grate-bar having a longitudinally-extended strengthening-piece embedded therein and a pivoting member attached to said piece and embedded in part in the bar, said pivoting member terminated beyond the face of the bar in a chain-engaging portion.

849,987. ROTARY VALVE. JOHN W. EISENHUTH, Brooklyn, N. Y., assignor, by mesne assignments, to The Compound Motor Company, a Corporation of West Virginia. Filed July 20, 1905. Serial No. 270,568.

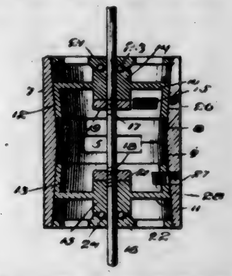

Claim.—1. In a valve, the combination of a cylindrical valve-casing the interior of which has a tapered formation, a longitudinally-adjustable rod extending through the casing and mounted to have a rotary movement, oppositely-disposed valve-disks mounted upon the rod and engaging the interior of the valve-casing, inwardly-extending peripheral flanges carried by the valve-disks and beveled to correspond to the taper of the interior of the casing, the said casing having a port formed therein at a point between the flanges, and also an opening adjacent each flange, the said flanges being provided with corresponding openings, cross-heads adjustably mounted within each end of the cylindrical casing, and antifriction-bearings interposed between the cross-heads and the valve-disks.

2. In a valve, the combination of a cylindrical valve-casing the interior of which is reversely inclined outwardly from the central portion, a longitudinally-adjustable rod extending through the casing and mounted to have a rotary movement, oppositely-disposed valve-disks carried by the rod and engaging the reversely-inclined inner walls of the casing, and inwardly-extending peripheral flanges carried by the valve-disks and beveled in opposite directions to correspond to the reversely-tapered walls of the interior of the valve-casing, the said casing having a port formed therein between the flanges and also an opening adjacent each flange, the said flanges being provided with corresponding openings and in conjunction with the valve-disks defining a space adapted to be brought into communication with either of the before-mentioned openings.

3. In a valve, the combination of a cylindrical valve-casing the interior of which is reversely tapered outwardly from the central portion, a rod extending through the casing, oppositely-disposed valve-disks provided with hubs by means of which they are mounted upon the rod, inwardly-extending peripheral flanges carried by the valve-disks and oppositely beveled to correspond to the reversely-tapered portion of the casing, the said casing being formed with a port between the flanges and also an opening adjacent each flange, the said flanges being formed with corresponding openings, cross-heads closing opposite ends of the casing, and bearings interposed between the cross-heads and the before-mentioned hubs formed in conjunction with the valve-disks.

4. In a valve, the combination of a cylindrical valve-casing the interior of which is reversely tapered outward from an intermediate point, a rod extending through the casing, oppositely-disposed valve-disks provided with hubs by means of which they are mounted upon the rod, inwardly-extending peripheral flanges carried by the valve-disks and beveled to correspond to the reversely-tapered walls of the casing, the said casing being formed with a port at a point between the flanges and also an opening adjacent each flange, the said flanges being provided with corresponding openings, a cross-head closing each end of the valve-casing, bearings interposed between the cross-heads and the before-mentioned hubs, and jam-nuts mounted upon the rod and engaging the hubs, the said jam-nuts and cross-heads co-operating with each other to hold the valve-disks in proper position.

849,988. HAND SEEDING IMPLEMENT. EPPY W. FERGUSON, Owensboro, Ky., assignor of one-half to Stinson Lambert, Owensboro, Ky. Filed Dec. 26, 1905. Serial No. 293,423.

Claim.—1. A seeder comprising a handle, blades projecting therefrom, and duplicate cutters carried at the free ends of the blades, said cutters curving toward each other to provide an approximately circular cutter at the operative end of the seeder, the relatively forward edge of each cutter being sharpened.

2. A seeder comprising a handle, blades projecting therefrom, and curved cutters carried by the ends of the blades, the edges of the cutters next the handle projecting at an angle to the plane of the blades to provide an approximately circular edge to engage the seed in the withdrawing operation.

849,989. VALVE. ROBERT G. FERGUSON, Lakewood, N. J. Filed Mar. 12, 1906. Serial No. 305,616.

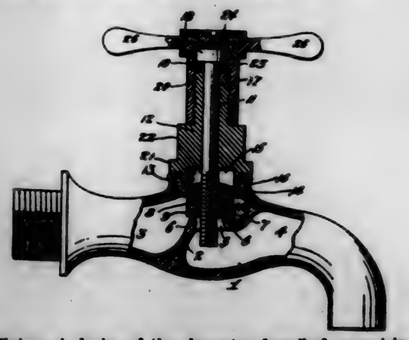

Claim.—A device of the character described comprising a casing having an annular valve-seat therein, a cap or plug secured in said casing and disposed concentrically with said valve-seat, said cap or casing having a concentric bore, a concentric guide-recess at its inner end and a screw-threaded reduced portion at its outer end, an operating-sleeve or handpiece engaged with said screw-threaded portion, and formed at its upper end with a screw-threaded opening and an annular shoulder therein, a valve-stem slidable in the bore of said cap or plug and having a head at its outer end to engage said annular shoulder, a screw-plug in the upper end of said sleeve for retaining the head of the valve-stem therein, a stop upon said valve-stem slidable in the guide-recess in said cap or plug, and a valve upon the screw-threaded inner end of said stem to coact with said valve-seat, substantially as described.

849,990. SLEIGH ATTACHMENT FOR BUGGY-WHEELS. GRANT G. FORD, Speed, Kans. Filed Oct. 22, 1906. Serial No. 340,055.

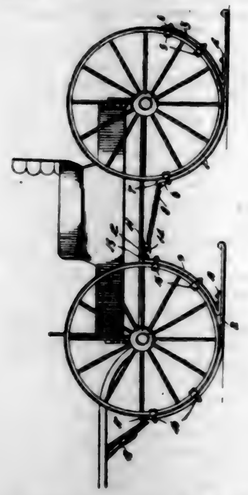

Claim.—1. A vehicle attachment of the character described, comprising sleigh-runners arranged to be secured to the wheels of a vehicle, said runners being provided with upwardly-extending bowed arms, and the bowed arms of the front runners being formed at their upper ends with rear extensions, hooks secured to said extensions, and springs arranged for attachment to said hooks and connected to the front ends of the rear runners, respectively.

2. A vehicle attachment of the character described, comprising independent front and rear sleigh-runners adapted to be attached to the wheels of a vehicle, the front runners being provided at their rear ends with hooks and the rear runners being provided with hooks at their front ends, and a pair of coil-springs secured to the hooks of the respective front and rear runners.

849,991. MOP-HOLDER. MARGERT E. FORREST, Jamestown, Pa. Filed June 20, 1906. Serial No. 322,614.

Claim.—1. The combination with a hose-nozzle, of arms fixedly secured thereto, said arms having their outer ends flattened to provide jaws formed with serrated acting faces and their inner ends bent at right angles to provide attaching members, said arms being bent at points beyond the attaching members to provide spring-loops adapted to yieldingly retain the jaws opened, and a jaw-operating member slidably mounted upon the arms.

2. The combination with a hose-nozzle, of arms fixedly secured thereto, said arms having their outer ends formed to provide jaws and their inner ends bent to provide attaching members, said arms being bent at points beyond the attaching members to provide spring-loops adapted to yieldingly retain the jaws opened, and a jaw-operating member slidably mounted upon the arms.

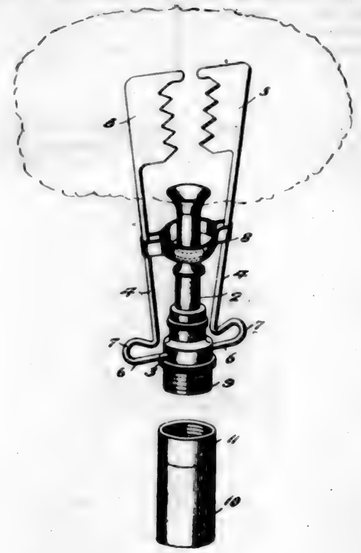

849,992. TURBINE-BLADE. JOHANN R. FRIKART and OSKAR JAEGER, Munich, Germany. Filed June 22, 1906. Serial No. 322,876.

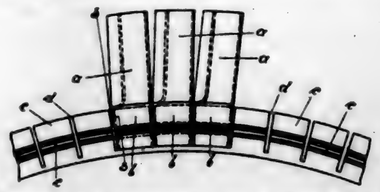

Claim.—1. The combination with a turbine-wheel, of blades having a tubular foot, and means for securing the foot to the rim of the wheel.

2. The combination with a turbine-wheel, of blades having a tubular foot arranged to embrace a portion of the wheel-rim, and means for securing the foot to the rim of the wheel.

3. The combination, with a turbine-wheel, of blades having a tubular foot arranged in telescopic relation to a portion of the wheel-rim.

4. The combination, with a turbine-wheel, of blades having a hollow foot of angular cross-section, and means for securing the foot to the rim of the wheel.

5. The combination, with a turbine-wheel, of blades having a hollow foot of angular cross-section arranged to embrace a portion of the wheel-rim, and means for securing the foot to the rim.

6. The combination with a turbine-wheel provided on the side of its rim with a circular groove, of blades having a hollow foot arranged to embrace a portion of the wheel-rim and provided with an inwardly-extending crease to engage the groove.

7. The combination with a turbine-wheel having its rim divided into sections, of blades each having a hollow foot arranged to receive a section of the rim.

8. The combination with a turbine-wheel having its rim divided into sections and provided on its sides with circular grooves, of blades each having a hollow foot arranged

to receive a section of the rim the material of said foot being forced into the said grooves at the sides.

9. The combination with a turbine-wheel having its rim divided into sections and provided on each side with a circular groove, of crescent-shaped hollow blades each having a four-cornered hollow foot arranged to receive a section of the rim, the material of the said foot being forced into the said grooves at the sides.

840,993. DISK-HARROW SCRAPER. ARTHUR C. GAYLORD, Galesburg, Ill., assignor to Galesburg Coulter-Disc Co., Galesburg, Ill. Filed Nov. 19, 1906. Serial No. 344,037.

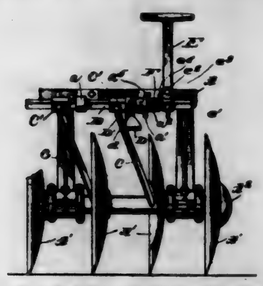

Claim.—1. In a disk harrow, the combination of a frame, brackets carried by said frame and a rock-shaft journaled in said brackets, one of said brackets having a cam-face, scraper-blades rigidly secured to scraper-heads, a head slidably and rotatably mounted on said rock-shaft and abutting one of said scraper-heads, said slidable and rotatable head having a cam-face abutting the cam-face of the aforesaid cam-faced bracket and provided with a projecting arm for rotating the same with respect to the rock-shaft, a treadle rigidly attached to said rock-shaft for rotating the same, and a spring bearing against the frame and bracket and against the treadle to regulate and control the distance of the scraper-blades from the inner faces of the disk and also to return the rock-shaft to its normal position and hold points of the scrapers against the face of the disks.

2. In a disk harrow, the combination of a frame, brackets carried by said frame, and a rock-shaft journaled in said brackets, one of said brackets having a cam-face, scraper-blades rigidly secured to scraper-heads, a head mounted on said rock-shaft and abutting one of said scraper-heads, said head having a cam-face abutting the cam-face of the aforesaid bracket, a treadle rigidly attached to said rock-shaft for rotating the same, and a spring bearing against the frame and bracket and against the treadle to return the rock-shaft to its normal position and hold the points of the scraper against face of disk.

3. In a disk harrow, the combination of a frame carrying disks, brackets carried by said frame, and a rock-shaft journaled in said brackets, one of said brackets having a cam-face, scraper-heads rigidly secured to said rock-shaft, scraper-blades carried by said scraper-heads, an arm having a head rotatably and slidably mounted on said rock-shaft and having a smooth face abutting one of the scraper-heads, the opposite side of said arm-head having a cam-face engaging the cam-face of the bracket, a stop-lug on the arm-head adapted to engage the frame to limit rotary movement of said arm-head, a treadle secured to the rock-shaft near its end and a coiled spring surrounding said rock-shaft, engaging the frame and bracket at one end and the treadle at its opposite end to swing the treadle back to its normal position against the faces of the disks.

840,994. ACUTE-ANGLE CROSSING FOR ELECTRIC RAILWAYS. EDWARD E. GILMORE, Philadelphia, Pa. Filed Sept. 27, 1905. Serial No. 280,320.

Claim.—1. An overhead crossing for electric trolley systems comprising a body, and end runners pivotally secured to said body and adapted to hold the trolley-wire on the body.

2. An overhead crossing for electric trolley systems comprising a body, and end runners removably pivoted to said body and adapted to automatically hold the trolley-wire thereon.

3. An overhead crossing for electric trolley systems comprising a body, guiding means secured to said body and end runners pivotally secured to said guiding means and adapted to automatically hold wires thereon.

4. An overhead crossing for electric trolley systems comprising a body, guiding means secured to said body, and end runners removably pivoted to said guiding means and adapted to hold the trolley-wire thereon.

5. An overhead crossing for electric trolley systems comprising a body, guiding-arms secured to said body and provided with wire-holding grooves, and extensions pivotally mounted on said guiding-arms and provided with grooves angularly displaced from the grooves of the guiding-arms.

6. An overhead crossing for electrical trolley systems comprising a body, guiding-arms integral therewith and provided with grooves, means for fastening the trolley-wire to the body, and extensions pivotally secured to said guiding-arms and provided with grooves approximately ninety degrees displaced from the grooves of said guiding-arms, said extensions adapted to hold the trolley-wire within the grooves of the guiding-arms.

7. An overhead crossing for electric trolley systems comprising a body having guiding-arms integral therewith, said guiding-arms provided with grooves, extensions removably pivoted to said guiding-arms and means carried by said extensions for clamping the trolley-wire within the grooves of the guiding-arms.

8. An overhead crossing for electric trolley systems comprising a body and guide-arms secured thereto, said guide-arms provided with grooves to receive the trolley-wire, end runners secured to said guide-arms and provided with a groove axially rotated or displaced with respect to the groove of said guide-arms, and flanges one of which is adapted to engage the trolley-wire to clamp it within the groove.

9. An overhead crossing for electric trolley systems comprising a body and guide-arms secured thereto, said guide-arms provided with grooves to receive the trolley-wire, and end runners secured to said guide-arms each provided with a groove axially displaced through a right angle from the groove of said guide-arms, and flanges one of which is adapted to engage the trolley-wire to clamp it within the groove, and cam extensions on said end runners adapted to engage the trolley-wire and hold it depressed within the groove of the guide-arms when under strain.

849,995. STUBBLE-TURNER. IRVING G. HARKER, Dodgeville, Wis. Filed Jan. 19, 1907. Serial No. 353,132.

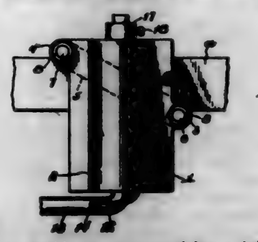

Claim.—1. A stubble-turner comprising a tubular bearing, means for securing said bearing to a plow-beam, a turner-rod journaled in said bearing and a spring within said bearing for holding the turner-rod in operative position.

2. A stubble-turner comprising a tubular bearing, means for securing said bearing to a plow-beam, a spiral spring mounted within said bearing, a tube within said spiral spring, a turning-rod having an angular upper end mounted in said tube, one end of said spring being secured to the bearing and the opposite end to the downwardly-bent end of the turning-rod, substantially as described.

3. In a stubble-turner, a tubular bearing provided with obliquely-disposed securing-lugs, an obliquely-disposed washer, and bolts for securing said bearing and washer upon the plow-beam, a spring mounted within said bearing, a tube within said spring, one end of said spring being secured in a notch in the bearing, and the opposite end secured to a bent portion of the turning-rod, and a turning-rod mounted within said tube and held in place by a collar and set-screw, substantially as described.

849,996. TROLLEY, HAND-TRUCK, AND THE LIKE. FERDINAND HASS, Ilford, England. Filed May 17, 1906. Serial No. 317,336.

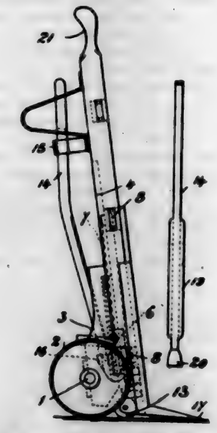

Claim.—1. In trolleys, hand-trucks, and the like, the combination of body-frame 4 fitted with rack 7, slidable underframe 3 carrying the axle 1 and wheels 2, and fitted with guide-block 6 carrying pivoted sector 9 engaging said rack 7 on the body-frame 4, substantially in the manner specified and for the purpose set forth.

2. In trolleys, hand-trucks, and the like, the combination of trolley-frame 4, rack 7, slidable underframe 3 carrying axle 1 and wheels 2, guide-block 6 on said underframe and carrying pivoted sector 9, bearing 18, lever 14, and rollers 13 on frame 4, substantially as described.

3. In trolleys, hand-trucks and the like having a frame fitted with a rack, a slidable under carriage having wheels, a guide-block, and sector eccentrically pivoted on said block and engaging said rack on the frame.

4. In trolleys, hand-trucks and the like having a frame provided with a rack, the combination of an under carriage having wheels, bars on said carriage, a guide-block mounted on said bars and carrying a pivoted sector engaging said rack on the frame.

5. In trolleys, hand-trucks and the like having a frame fitted with a rack, a slidable under carriage having wheels, a guide-block, a sector pivoted on said block adapted to engage said rack on the frame, and a treadle portion formed integral with said sector.

6. In trolleys, hand-trucks and the like, a frame having a shoe, a bearing located adjacent to said shoe, and a lever for removably engaging said bearing.

849,997. CARPET-STRETCHER. CHRISS HELM, Belpre, Ohio. Filed Apr. 11, 1906. Serial No. 311,194.

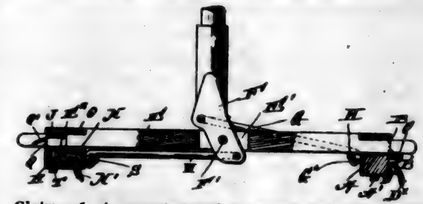

Claim.—1. A carpet-stretcher comprising two parallel heads, a cross-piece having sliding connection with said heads, a lever pivoted to the cross-piece, ball-shaped rods pivotally connected to said lever and fastened each to one of said heads, carpet-engaging teeth and spurs carried by the rear head, said spurs adapted to prevent slipping of the rear head, a vertically-movable toothed bar carried by the front head, spurs upon the front head, and means for operating said bar as the lever is worked backward or forward, as set forth.

2. A carpet-stretcher comprising two parallel heads, a cross-piece having sliding connection with said heads, a lever pivoted to the cross-piece, ball-shaped rods pivotally connected to said lever and fastened each to one of said heads, carpet-engaging teeth and spurs carried by the rear head, said spurs adapted to prevent slipping of the rear head, a vertically-movable toothed bar carried by the front head, spurs upon the front head, inclined lugs projecting from the cross-piece, and plates carried by said bar and adapted to be engaged by said lugs as the lever is moved backward or forward, as set forth.

3. A carpet-stretcher comprising two parallel heads, a cross-piece having sliding connection with said heads, a lever pivoted to the cross-piece, ball-shaped rods pivotally connected to said lever and fastened each to one of said heads, carpet-engaging teeth and spurs carried by the rear head, said spurs adapted to prevent slipping of the rear head, a vertically-movable spring-pressed toothed bar carried by the front head, spurs upon the front head, inclined lugs projecting from said cross-piece, and plates fixed to said bar and projecting into the paths of the lugs, said lugs contacting alternately with the upper and lower faces of said plates as the lever is moved backward and forward.

4. A carpet-stretcher comprising slotted front and rear heads, carpet-engaging teeth and spurs upon said rear head, said spurs being adapted to prevent slipping of the rear head, a cross-piece having ends passing through the slots in the heads, a lever pivoted to said cross-piece, ball-shaped rods connecting said lever with said heads, the front head having a recess formed therein, a spring-pressed bar mounted in said recess, teeth projecting from the lower face of the bar, means for holding the bar within its recess, floor-engaging spurs projecting from the front head, inclined lugs projecting from the opposite edges of the cross-piece, and plates secured to said bar and adapted to be alternately engaged by the opposite faces of said lugs as the lever is moved backward and forward, as set forth.

5. A carpet-stretcher comprising slotted front and rear heads parallel to each other, a cross-piece connecting said heads and having contracted ends mounted in the slots of the heads, an operating-lever pivoted to the cross-piece, ball-shaped rods connecting the lever upon the opposite sides of its pivotal point with said heads, carpet-engaging teeth and spring-actuated spurs mounted upon the rear head, stops for limiting the forward movement of said spurs, said front head having a recess therein, a horizontally-disposed and vertically-movable spring-pressed bar mounted in said recess, angled straps secured to the front head and designed to hold the bar within its recess, inclined spurs projecting from the lower face of the front head, teeth projecting from said bar, the latter having a recess, plates secured to said bar and having their inner ends projecting over the ends of said recess in the bar, and inclined lugs projecting from the opposite edge of the cross-

piece and designed to alternately engage the upper and lower faces of said plates as the operating-lever is swung backward and forward, as set forth.

849,998. COOLING APPARATUS. WILHELM HELM, Berlin, Germany. Filed Mar. 10, 1904. Serial No. 197,458.

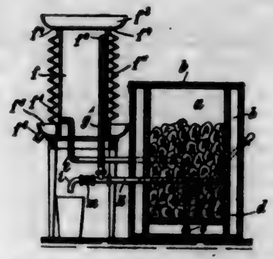

Claim.—1. An apparatus for cooling by means of ice or a cooling mixture, comprising in combination a receptacle *a* for containing the ice or cooling mixture, a pump for circulating liquid to the material to be cooled and over the ice again, means for withdrawing the melted liquid from the receptacle *a* and passing it to said pump, a removable strainer between said pump and the outlet of the receptacle *a*, a valve in said outlet, and means whereby the removal of said strainer causes the closing of said valve and the insertion of said strainer to its normal position causes the opening of said valve.

2. An apparatus for cooling by means of ice or cooling mixture, comprising an ice-containing receptacle, means for circulating the melted liquid to the material to be cooled and over the ice, said means including a pump, an outlet-valve in the bottom of said receptacle, a removable strainer between said pump and the outlet of the receptacle, and a projection carried by said strainer adapted to engage and open said valve, when said strainer is in place.

849,999. COMBINED PACKING-BOX AND STAND. AUGUSTIN HENDRICKS, Grand Rapids, Mich. Filed Dec. 27, 1905. Serial No. 293,522.

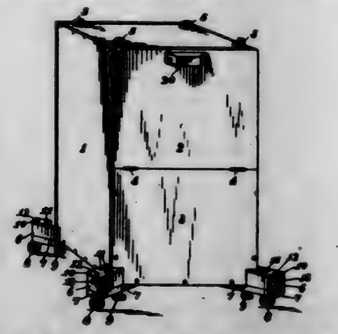

Claim.—1. In combination with a box adapted to serve as a shipping-case, supports adapted to be placed within the box when out of use, and engaging both the bottom and sides of the box when in use, means for detachably securing the supports to the box and a detachable divided and hinged side to the box, one part of which side is engaged and held by the supports when in use.

2. The combination of a shipping-case, detachable supports for the same, each support comprising a block having an extension beneath the case, means for securing the inner end of the extension to the case, and a leveling-screw in the block between said securing means and the outer end of the block and engaging the case.

3. In combination with a box adapted to serve as a shipping-case, a detachable support for the same comprising a block having a recess in its end to engage the corner of the box, a bottom extension to extend beneath the box, a fastening-screw and an adjusting-screw in said extension, and a plate adjustably mounted on the support and adapted to engage the sides of the box.

4. The combination of a box adapted to serve as a shipping-case, a detachable support for the box comprising a block having an angular recess to engage the corner of the box, a bottom extension to the block and extending beneath the box, a fastening-screw in said extension, a plate slidable on the top of the block, and having slots therein, and also provided with teeth to engage the sides of the box, and screws extending through the slots and into the block.

5. In combination with a box adapted to serve as a shipping-case, a support to the same comprising a block having an angular recess adapted to engage a corner of the box, a bottom extension adapted to support the box, a fastening-screw in the inner end of said extension, leveling means in the block and engaging the bottom of the box, and a screw recessed in the block and adapted to horizontally engage the box.

6. The combination of a box adapted to serve as a shipping-case, supports adapted to be placed within the box when out of use, each support consisting of a block having an angular recess to engage the corner of the box, an extension beneath the block and box, a fastening-screw and an adjusting-screw in said extension, a plate adjustably mounted on the block and having teeth to engage the box, and a screw recessed in the block and engaging the box.

7. The combination of a box adapted to serve as a packing-case, detachable supports for the box, each comprising a block having an angular recess to engage one corner of the box and an opening in its upper side, an extension beneath the block and box, means for securing the extension to the bottom of the box, and a plate adjustably mounted on the block adapted to engage the corner of the box and having a slot opposite the opening in the block.

850,000. CUSHION-WHEEL. JAMES P. HOLDEN, New York, N. Y. Filed Feb. 24, 1906. Serial No. 302,743.

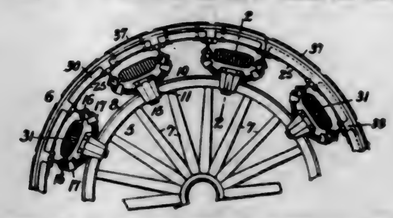

Claim.—1. In a vehicle-wheel, the combination with the felly carried by the spokes of a second concentric felly outside of the first and carrying the tire, a flat spring rigidly secured to the first felly and hinged to the second felly and resilient means between the ends of the flat springs.

2. In a vehicle-wheel the combination with felly carried by the spokes, of flat semi-elliptical springs secured to same, an outer concentric felly carrying the tire, segmental shoes secured to same, hinge members connecting the shoes with the ends of the flat springs and resilient means between the hinge members of each flat spring.

3. In a vehicle-wheel the combination with a tire and its felly, of a series of shoes carried by same, an inner concentric felly, flat semi-elliptical springs carried by same, hinged means between the ends of the flat springs and the shoes of the outer felly and resilient means between the ends of the flat springs.

4. In a vehicle-wheel the combination with a tire, of segmental shoes secured thereto, perforated ears on the shoes, hinge members, links connecting the ears with the hinge members, a felly concentric with the tire, semi-elliptical springs secured to the felly, eyes at the ends of same, binding means securing the eyes to the springs, pivots securing the eyes to the hinge members and a coil-spring connecting the ends of each spring.

5. In a vehicle-wheel, the combination with the felly of the wheel, a leaf-spring secured to the felly, another felly, a hinge connection between the ends of the leaf-spring and the other felly, and a coiled spring connected to the ends of the leaf-spring.

6. In a vehicle-wheel, the combination with the felly of the wheel, of a leaf-spring, a clip adapted to secure the leaf-spring to the felly, another felly, a hinge connection between the ends of the leaf-spring and the other felly, and a coiled spring connected to the ends of the leaf-spring.

7. In a vehicle-wheel, the combination with the felly of the wheel, of a leaf-spring, a clip adapted to secure the leaf-spring to the felly, eye-plates secured to the ends of the leaf-spring, members hingedly connected to the eye-plates, another felly, connection between said other felly and the members, and a coiled spring connected with the ends of the leaf-spring.

8. The combination with a vehicle-wheel, of springs secured thereto, eye-plates secured to the springs, members hingedly connected to the eye-plates, a felly, and connections between the felly and the members.

9. The combination with a vehicle-wheel, of springs secured thereto, a felly, a connection between the ends of the springs and the felly, and another spring connected to the ends of each of the first-named springs.

10. The combination with a vehicle-wheel, of springs secured thereto, a sectional felly, and hinge connections between the ends of the springs and the sections of the felly.

11. The combination with a vehicle-wheel, of springs secured thereto, a sectional felly, hinge connections between the ends of the springs and the sections of the felly, and other springs connected to the first-named springs.

850,001. PACKING. STEWART HOLMES, New York, N. Y. Filed Jan. 19, 1907. Serial No. 353,073.

Claim.—1. A packing for pistons and the like comprising a ring having a diagonal split, the walls of the split being beveled inwardly and said ring being provided with an integral seat on the inside of the ring at each side of the split, and extending in the direction of the said split, a spreader-bar triangular in cross-section and engaging the walls of the split with its sides, and a spring resting on said seats and engaging the base of the spreader-bar to force the latter outward.

2. A packing for pistons and the like comprising a ring having a diagonal split and provided with a seat integral on the inside of the ring and extending in the direction of the said split at the latter, a spreader-bar triangular in cross-section and extending with its sides into the said split, and a spring held on the said seat and engaging the base of the spreader-bar to force the latter outward.

850,002. CONVEYER-BELT. ERNEST A. HOUCHIN and ANTHONY HUBER, Brooklyn, N. Y. Filed Apr. 27, 1906. Serial No. 314,095.

Claim.—1. A conveyer-belt comprising semirigid strips, a plurality of spaced rods extending longitudinally of the belt and connecting the strips with the spaces between of greater width than the strips.

2. A conveyer-belt comprising semirigid strips provided with spaced openings along opposite edges, a plurality of spaced rods extending longitudinally of the belt, and having their ends hooked through the spaced openings, and extending backwardly along and adjacent to the rods.

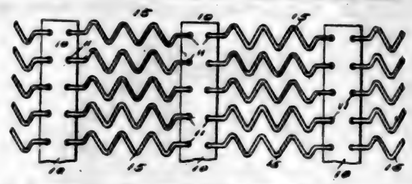

3. A conveyer-belt comprising semirigid strips, a plurality of spaced rods extending longitudinally of the belt and connecting the strips and with the ends of the rods bent backwardly along and adjacent to the rod and with the spaces between greater than the width of the strips.

4. A conveyer-belt comprising semirigid strips provided with spaced openings along opposite edges, a plurality of spaced rods extending longitudinally of the belt and having their ends hooked through the spaced openings and extending backwardly along and adjacent to the rods and with the spaces between of greater width than the strips.

5. In a conveyer-belt, a plurality of semirigid bars extending transversely entirely across the belt, and spaced apart longitudinally of the belt, a plurality of links pivotally connected to opposite sides of the bar, and provided with curves disposed between the bars.

850,003. PROCESS OF FORMING FLUTED SOAP SHEETS AND ARTICLES RESULTING THEREFROM. ERNEST A. HOUCHIN and ANTHONY HUBER, Brooklyn, N. Y. Filed Apr. 27, 1906. Serial No. 314,096.

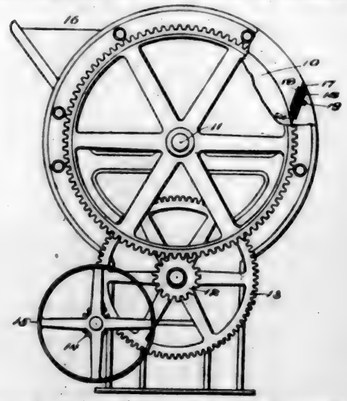

Claim.—1. The herein-described process consisting in removing from a smooth surface a sheet of plastic material in the form of a plurality of strips corrugated longitudinally upon both sides.

2. The herein-described process consisting in removing from a smooth curved surface a sheet of plastic material in the form of a plurality of strips corrugated longitudinally upon both sides.

3. The herein-described process consisting in removing from a soap-chilling cylinder a film of plastic soap in the form of corrugated strips.

4. The herein-described process consisting in removing from the exterior surface of a soap-chilling cylinder a sheet of plastic soap in the form of strips corrugated longitudinally thereof.

5. The herein-described process consisting in removing from the exterior of a soap-chilling cylinder a sheet of plastic soap by means of a scraper arranged to produce longitudinal corrugations in said strips.

6. As an article of manufacture, a sheet of plastic soap formed into strips and with corrugations extending longitudinally of the strip.

850,004. APPARATUS FOR FLUTING SHEETS OF SOAP. ERNEST A. HOUCHIN and ANTHONY HUBER, Brooklyn, N. Y. Filed Apr. 27, 1906. Serial No. 314,097.

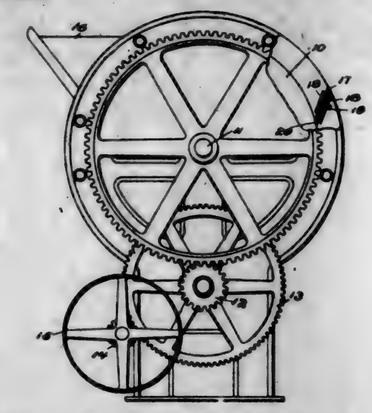

Claim.—1. In a device of the class described, the combination with a cylinder, of means in contact with said cylinder, and arranged to remove material from the cylinder in sheets fluted upon both sides.

2. In a device of the class described, the combination with a cylinder, of means in contact with the surface of the cylinder, arranged to remove material from the cylinder in strips fluted upon both sides.

3. In a device of the class described, the combination with a cylinder, of a scraper provided with an edge in contact with the periphery of the cylinder and of such conformation as to remove material therefrom in sheets fluted upon both sides.

4. In a device of the class described, the combination with a cylinder, of a scraper having one edge in contact with the said cylinder, and of such conformation that material is removed thereby from the cylinder in a plurality of fluted strips.

5. In a device of the class described, a scraper arranged for operation in association with a soap-chilling cylinder, and having one edge beveled and provided with spaced reversely-inclined chisel edges arranged for contact with the peripheral surface of the cylinder.

6. In a device of the class described, a scraper arranged for operation in association with a soap-chilling cylinder, and having a beveled edge provided with spaced substantially V-shaped notches, and with substantially perpendicular edges replacing the V-shaped notches at predetermined intervals thereupon.

7. In a device of the class described, a scraper arranged for use in association with a soap-chilling cylinder and having a beveled edge arranged for contact with the peripheral surface of the cylinder, provided with substantially V-shaped notches, and with spaced means for splitting the material upon the cylinder into strips.

8. In a device of the class described, a scraper arranged for use in association with a soap-chilling cylinder, and having an edge arranged for operative contact with the peripheral surface of said cylinder, means spaced along said edge for splitting the material into strips, and means spaced between the splitting means for forming material into fluted strips.

850,005. STREET-SWEEPER. VELO HOULE, Muskegon, and ABRAM W. KOHKLE, Manistee, Mich.; said Houle assignor to C. Peterson, Manistee, Mich. Filed Nov. 3, 1906. Serial No. 341,942.

Claim.—1. A device of the kind described comprising a tank, a tiltable frame, a sweeper carried by the frame, a conveyer carried by the frame adapted to discharge into the tank, a pivoted tongue carried by the frame, a lever adjustable vertically on the frame, means for locking the lever in its adjusted position, connecting means between the tongue and lever, and means for detachably securing the free end of the tongue to a fixed point on the tank.

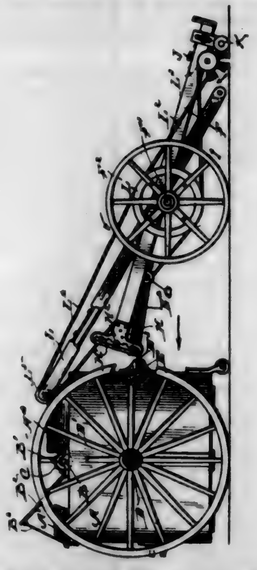

2. In a device of the kind described, a frame pivotally mounted upon a supporting-axle, a shaft carried by the frame, a tongue pivotally connected to the shaft, a tank, means for connecting the tongue and tank, a rack-plate having teeth carried by the frame, a lever pivoted to the frame and engaging the teeth of the rack-plate, a link connecting the lever and tongue, a brush carried by the frame, and a conveyer supported on the axle and discharging into the tank.

850,006. DITCHING-PLOW. CHARLES T. HOWELL, Kirkman, Iowa. Filed Nov. 3, 1906. Serial No. 341,845.

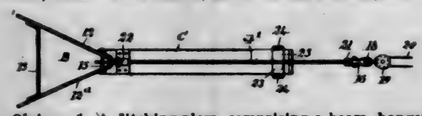

Claim.—1. A ditching-plow, comprising a beam, hangers extending down from the forward portion of the beam, an elevating element in the form of a flat plate, secured to the hangers and to the rear end of the beam, a blade on the forward end said plate, and a triangular cleaner pivoted to the rear end of the beam.

2. A ditching-plow, comprising a beam having an upward and forward inclination, downwardly-extending hangers at the forward end of the beam, said hangers having inwardly-extending lower ends, an elevating-plate having its forward end secured to the inwardly-extending ends of the hangers and its rear end secured to the rear end of the beam, and a blade at the forward end of said plate.

3. In a ditching-plow, the combination with a beam, a triangular cleaner pivotally connected to the heel of the said beam, the said beam having upward and forward inclination from the said cleaner, a clevis secured to the forward end of the beam, a draft device adjustably connected with the clevis, a draft-bar attached to the upper portion of the said clevis and the heel portion of the said beam, hangers extending down from the opposite sides of the beam, a conducting or elevating element secured to the lower portions of the hangers, having an upward and rearward inclination, said conducting or elevating element extending to the forward lower portion of the cleaner, means for connecting the elevating or conducting element to the heel-section of the beam, and a knife located at the forward end of the said elevating or conducting element for the purpose described.

4. In a ditching-plow, the combination with a triangular cleaner adapted to travel over the surface of the ground, the said cleaner being provided with an opening at the lower portion of its front projecting portion, and a beam having a sharpened lower edge passed through the opening in the cleaner and pivotally connected with said cleaner, of hangers connected with opposite sides of the beam, an elevating or conducting element secured to the lower portions of the said hangers at its forward end and attached at its rear end to said beam, the rear extremity of the said element being in close engagement with the forward portion of said cleaner, a knife attached to the forward end of the said elevating or conducting element, a clevis secured to the forward end of the beam, extending upward therefrom, and a draft-bar attached to the upper portion of the said clevis and to the rear portion of the said beam.

850,007. LAWN-SPRINKLER. FRED M. HUNTOON, Riverside, Cal. Filed July 15, 1905. Serial No. 269,839.

Claim.—1. A sprinkler comprising a hollow body, the upper half of which is hemispherical, said upper portion having perforations in the upper portion thereof, the outermost rows of which perforations are arranged on the arc of a circle, the end perforations of each row being equidistant from each other and distant from the horizontal or base line of the hemispherical portion the one-eighth of the circumference of the globe of which the upper portion forms one-half, the central perforations of said outer rows being equidistant from the end perforations and one-half closer to the apex of the top than the end perforations.

2. As an article of manufacture, a sprinkler comprising a hollow body having a convex or curved outer surface, the center or apex of such surface having perforations therein, in the general form of a rectangular figure, the corners of which extend opposite each other on the opposite sides of the surface so that the jets of water issuing from the perforations extend approximately all the way from horizontal at the extreme points to vertical at the apex of the dome or convex surface.

850,008. GRAIN AND STRAW SEPARATOR. JAMES HUTCHESON, Johnson county, Kans. Filed Nov. 10, 1906. Serial No. 342,863.

Claim.—In a grain-separator, the combination of a wheel comprising curved metal plates, fingers projecting from the outer edges of said plates, hubs to which said plates are secured at their outer ends, axles on said hubs, a straw-guide comprising parallel rods or guides between which said fingers are moved, said straw-guide being formed with a concave portion in rear of said wheel, a threshing-cylinder mounted to rotate in said concave portion, a beater mounted in the frame in rear of the threshing-cylinder, and means for rotating the wheel, the threshing-cylinder and the beater, substantially as described.

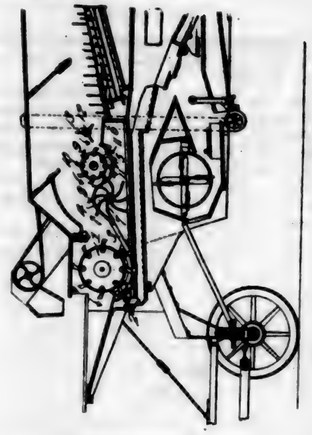

850,009. CASTER. WILLIAM IMBT, East Stroudsburg, Pa., assignor of one-third to Charles Decker, East Stroudsburg, Pa. Filed May 26, 1906. Serial No. 318,838.

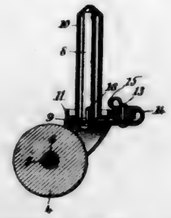

Claim.—1. In a caster, a bracket, a stem extending perpendicular thereto, a socket loosely embracing the stem having a friction-wheel at its lower end, and a friction-wheel journaled on the bracket and engaging said first-named friction-wheel at its outer periphery.

2. In a caster, a bracket comprising downwardly-bent wings, a roller journaled between the wings on the bracket, an extension directed rearwardly of the bracket and curled over to form means between which a friction-wheel is journaled, a spring-tongue cut from the extension and curled over the end of the extension as described, a vertical stem fixed to the bracket, a socket loosely passed over the stem having a friction-wheel at the end of the socket contacting with said first-named friction-wheel, and lugs on the stem at right angles to the common diameter of the friction-wheels, for the purpose described.

3. In a caster, a bracket made from a blank comprising extending wings forming a fork, an extension projecting rearwardly of the wings, and a spring-tongue cut from said extension.

4. In a caster, a bracket, a stem extending upwardly from the bracket and fixed thereto, said stem being of conical formation at its upper end, a socket having a friction-wheel at its lower end passed over said stem and having a conical end to fit the conical end of the stem, and a second friction-wheel journaled on the bracket and contacting with the outside of the friction-wheel on the socket, for the purpose described.

5. In a caster, a bracket, a stem fixed to the bracket and extending therefrom, a socket passed over the stem and loosely surrounding it having a friction-wheel at the lower end of said socket, a second friction-wheel journaled on the

bracket and in engagement with the first-named friction-wheel, and a spring carried by the bracket to prevent the accidental disengagement of the stem and socket.

850,010. PROCESS OF PURIFYING ACETYLENE GAS. GEORGES F. JAUBERT, Paris, France. Filed Nov. 24, 1905. Serial No. 288,984.

Claim.—1. The process for purifying acetylene gas which consists in passing the gas through concentrated hydrochloric acid, saturated with arsenious anhydrid or other arsenic derivative, whereby to regenerate the acid and obtain a complete purification of the gas.

2. The process for purifying acetylene gas, which consists in passing said gas through concentrated hydrochloric acid saturated with an arsenic derivative.

3. The process of purifying acetylene gas which consists in passing such gas through a concentrated acid saturated with an arsenic derivative.

850,011. PLOW. JOHN B. JOBSON, Atlanta, Ga. Filed Oct. 24, 1906. Serial No. 340,376.

Claim.—1. A plow-blade provided with a pair of soil-turning wings or moldboards disposed one above the other and both curved laterally and forwardly, one of said wings being designed to turn the subsoil beneath the ground-surface and the other to turn the surface soil over onto the subsoil.

2. A plow-blade having one of its edges recessed to form a pair of soil-turning wings or moldboards disposed one above the other and both curved laterally and forwardly, one of said wings being designed to turn the subsoil beneath the ground-surface and the other to turn the surface soil over onto the subsoil.

850,012. WIRE-GUIDE FOR CHECK-ROW PLANTERS. WILLIAM F. JOERST, Kent, Ill. Filed July 5, 1906. Serial No. 324,916.

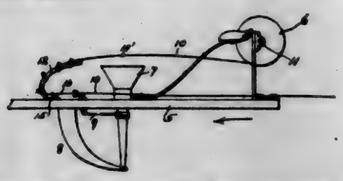

Claim.—1. In a device of the class described, a rigid vertical frame and a plurality of pairs of grooved wheels rotatably mounted on said frame, said wheels of each pair having their peripheries in contact to prevent the wire from leaving the grooves.

2. In a device of the class described, a rigid vertical frame and a plurality of pairs of grooved wheels rotatably mounted on said frame in the same vertical plane the wheels of each pair having their peripheries in contact.

3. In a device of the class described, a rigid curved vertical frame provided with a foot to secure it in position, a plurality of pairs of grooved wheels mounted on said frame in the same vertical plane and means for detachably securing said frame to a planter.

4. In a device of the class described, a check-row planter comprising a suitable frame, a furrow-opener, a seed-dropper and a wire-reel, and a detachable wire-guide arranged to be secured in a vertical position on said frame.

850,013. OVERALLS. MILTON JOHNSON, Danville, Va., assignor of one-half to John B. Anderson, Danville, Va. Filed Nov. 8, 1905. Serial No. 286,402.

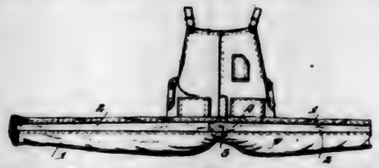

Claim.—The combination with an overall divided longitudinally of the legs and across the crotch portion, of a reinforce therefor comprising duplicate strips secured throughout their lengths between the divided portion of the overall, the edges of the strip and the edges of the side portion of the overall being each doubled upon themselves to provide four thicknesses of material at the point of attachment, each strip being of a length to extend from the end of the leg portion to a point beyond the center of the crotch whereby to provide a double thickness of material at the crotch portion of the garment, each strip gradually increasing in width from the bottom of the leg to the center line of the crotch.

850,014. GRINDING-MACHINE. ALLEN JOHNSTON, Ottumwa, Iowa. Filed May 26, 1906. Serial No. 318,900.

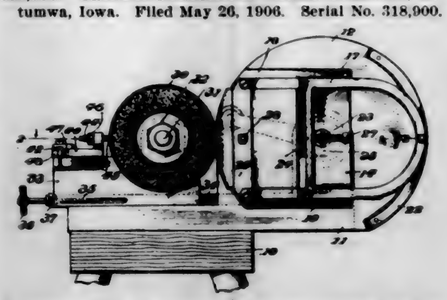

Claim.—1. In a grinding-machine for grinding dies for rolling knife-blades, the combination with a grinding-wheel; of a work-holder adapted to present a die to the peripheral edge of the grinding-wheel, said grinding-wheel and work-holder being relatively movable to advance or feed the die relative to the peripheral grinding-surface of the wheel; and means for imparting relative movement to the grinding-wheel and work-holder to grind a longitudinally curved and twisted surface on the die.

2. In a grinding-machine for grinding dies for rolling knife-blades, the combination with a grinding-wheel; of a work-holder adapted to present a die to the peripheral edge of the grinding-wheel, said grinding-wheel and work-holder being relatively rotatable to advance or feed the die relative to the peripheral grinding-surface of the wheel; and means for imparting relative movement to the grinding-wheel and work-holder to grind a longitudinally curved and twisted and laterally-concave surface on the die.

3. In a grinding-machine for grinding dies for rolling knife-blades, the combination with a grinding-wheel; of a work-holder adapted to present a die to the peripheral edge of the grinding-wheel, said work-holder being rotatable on an axis approximately parallel to the axis of rotation of the grinding-wheel to advance or feed the die to said wheel; and means for imparting relative movement to the grinding-wheel and work-holder to grind a longitudinally curved and twisted surface on the die.

4. In a grinding-machine for grinding dies for rolling knife-blades, the combination with a grinding-wheel; of a work-holder adapted to present a die to the peripheral edge of the grinding-wheel, said work-holder being rotatable on an axis approximately parallel to the axis of rotation of the grinding-wheel to advance or feed the die to said wheel; and means for relatively tilting the grinding-wheel and work-holder during said feed movement to impart a twist to the longitudinally-curved surface ground on the die.

5. In a grinding-machine for grinding dies for rolling knife-blades, the combination with a grinding-wheel; of a work-holder adapted to present a die to the peripheral edge of the grinding-wheel; means for rotating said work-holder on an axis to advance or feed the die longitudinally relative to the peripheral grinding-surface of the wheel; and means causing the grinding-wheel to advance toward and recede from the die as the latter is being ground and fed longitudinally, thereby grinding on the die a longitudinally curved and twisted surface.

6. In a grinding-machine for grinding dies for rolling knife-blades, the combination with a grinding-wheel; of a work-holder adapted to present a die to the peripheral edge of the grinding-wheel; means for rotating said work-holder on an axis to advance or feed the die longitudinally relative to the peripheral grinding-surface of the wheel; and means causing the work-holder to advance toward and recede from the grinding-wheel as the die is being ground and fed longitudinally, thereby grinding on the die a longitudinally curved and twisted surface.

850,015. BOTTLE. CHARLES E. JUSTISON, Wilmington, Del. Filed Nov. 17, 1906. Serial No. 343,884.

Claim.—1. A bottle or other receptacle comprising a body having a neck provided with a weakened portion, a lower stopper within the neck below said weakened portion, the neck being bulged above said weakened portion to provide a recess and rim-shoulder, an upper stopper composed of a body of hardened plastic material filling the neck between the weakened portion and shoulder, and a metallic guard interlocking with said shoulder and having anchoring portions embedded in said plastic stopper.

2. A bottle or other receptacle comprising a body having a neck provided with a weakened portion, a lower stopper within the neck below said weakened portion, the neck being bulged above said weakened portion to provide a recess and rimmed shoulder, an upper stopper composed of a body of hardened plastic material filling the neck between the weakened portion and shoulder, and a metallic guard interlocking the said shoulder and provided with depending anchoring-arms embedded in the plastic stopper and having angular flukes or wings.

850,016. DRYING FRAME AND STRETCHER. OSCAR J. KATZ, Rochester, N. Y. Filed Nov. 28, 1905. Serial No. 289,513.

Claim.—1. The combination of a flat frame approximating the form of a shirt-body and provided with sockets, flat one-piece arms and studs carried by the arms which spring into position in the sockets when the arms are extended, and serve to retain the arms in extended position.

2. The combination of a flat foldable frame having sockets, means for retaining the frame rigid in open position in approximate form of a shirt-body, flat bifurcated arms formed in one piece pivoted near the corners of the frame, and studs carried by the arms which may be sprung

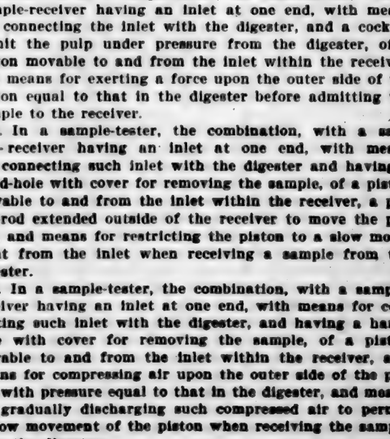

into the sockets when the arms are extended and serve to retain the arms in adjusted position.

850,017. SAMPLE-TESTER FOR PULP-MAKING APPARATUS. MICHAEL R. KENNEDY, Dansville, N. Y., assignor to The National Straw Pulp Company, New York, N. Y., a Corporation of South Dakota. Filed July 28, 1906. Serial No. 328,213.

Claim.—1. In a sample-tester, the combination, with a sample-receiver having an inlet at one end, with means for connecting the inlet with the digester, and a cock to admit the pulp under pressure from the digester, of a piston movable to and from the inlet within the receiver, and means for exerting a force upon the outer side of the piston equal to that in the digester before admitting the sample to the receiver.

2. In a sample-tester, the combination, with a sample-receiver having an inlet at one end, with means for connecting such inlet with the digester and having a hand-hole with cover for removing the sample, of a piston movable to and from the inlet within the receiver, a piston-rod extended outside of the receiver to move the piston, and means for restricting the piston to a slow movement from the inlet when receiving a sample from the digester.

3. In a sample-tester, the combination, with a sample-receiver having an inlet at one end, with means for connecting such inlet with the digester, and having a hand-hole with cover for removing the sample, of a piston movable to and from the inlet within the receiver, and means for compressing air upon the outer side of the piston with pressure equal to that in the digester, and means for gradually discharging such compressed air to permit a slow movement of the piston when receiving the sample from the digester.

4. In a sample-tester, the combination, with a sample-receiver having a closed rear end and an inlet at the front end with means for connecting the inlet to the digester, and a cock for closing the connection, of a piston movable

to and from the inlet within the receiver, means for exerting a fluid-pressure in the space between the piston and such rear end, and a vent-cock for discharging the fluid from such space when receiving a sample from the receiver.

5. In a sample-tester, the combination, with a sample-receiver having an inlet at the front end with means for connecting such inlet with the digester, and having a hand-hole with cover for removing the sample and a closed head at the rear end, of a piston movable to and from the inlet within the receiver, means for compressing air in the space between the piston and the rear head, and a pressure-gage connected with such space to determine the force exerted upon the rear side of the piston.

6. In a sample-tester, the combination, with a sample-receiver having inlet at one end extended within the wall of the digester, of a nozzle extended from the inlet into the digester, and having opening smaller than the inlet, with an expanded chamber between such opening and the inlet, as and for the purpose set forth.

850,018. MOTOR-VEHICLE. CORNELIUS KOHLMYER, Lorain, Ohio. Filed Feb. 7, 1907. Serial No. 356,229.

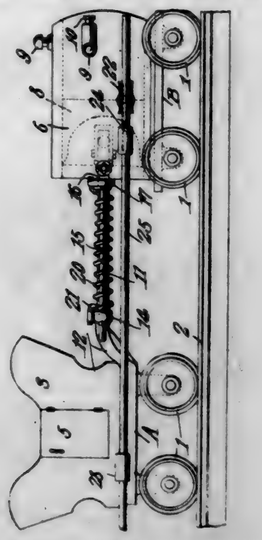

Claim.—1. A motor-vehicle comprising two connected members, means for causing said members to move to and from each other, and means for holding the members in succession against movement in one direction to produce a resultant movement in the other direction only.

2. A motor-vehicle comprising two interconnected members, a power unit carried by the vehicle and constructed to produce a relative movement of the two members to and from each other, and means for converting the relative movement of the two members into a resultant movement in one direction only.

3. A motor-vehicle comprising two members elastically connected, a power-generator upon one of the members and coupled directly to the other member and arranged to move the two members to and from each other, and means for holding both of said members against positive movement except in one direction only.

4. A motor-vehicle comprising two trucks, spring connections between the same, a reciprocating power-motor carried on one truck and connected to the other truck and arranged to produce a relative movement of the two trucks to and from each other, and connections to fixed parts along the line of way for converting the relative reciprocation of the trucks into resultant movement in one direction only.

5. A motor-vehicle comprising two trucks, spring connections between the same, an explosive-engine mounted upon one truck, connections between the piston of the engine and the other truck, and clutch members carried by each truck and arranged to engage fixed structures along the line of way.

6. A motor-vehicle comprising two trucks, spring connections therebetween, an explosive-engine mounted upon one of the trucks and having its piston connected directly to the other truck, fixed guide-rails along the line of travel of the trucks and on each side thereof, and clutch members traveling on said guide-rails and arranged to clutch the same when a force is applied tending to cause a retrograde movement of either of the trucks.

7. A motor-vehicle comprising two trucks, means for producing a relative movement of the trucks to and from each other, guide-rails along the line of way and on each side of the trucks, clutch-sleeves on said guide-rails, and connections between the clutch-sleeves and each truck whereby the clutches engage the guide-rails when a force is applied to either truck tending to move it in one direction and disengaging or unclutching the guide-rails when a force is applied tending to move the trucks in the other direction.

8. A motor-vehicle comprising two trucks, guide-rails therefor, one-way clutches carried by the guide-rails and connected to each truck, extension-springs connecting the two trucks, and an explosive-engine upon one truck having its piston connected directly to the other truck and tending to move the trucks away from each other.

9. A motor-vehicle comprising two trucks, spring connections between the same tending to draw the trucks toward each other, a power-generator on one of the trucks tending to move the trucks away from each other, and means for restricting the movement of the trucks to one direction only.

10. A motor-vehicle comprising two trucks, guide-rails on each side thereof, one-way clutches connected to each truck, springs connecting the trucks and tending to draw them toward each other, an explosive-engine having its piston impelled in one direction only by the explosion, and connections between the piston and the other truck whereby the power-stroke of the engine tends to move the trucks apart and to extend the springs.

11. A motor-vehicle comprising two trucks, guide-rails on each side of the same, clutch-sleeves on the guide-rails, link connections between the same and the trucks, rods carried by one truck and movably supported in the other, springs surrounding said rods and coupled to both trucks and tending to draw the trucks toward each other, and an explosive-engine carried by one truck and having its piston directly connected to the other truck and tending on its power-stroke to move the trucks away from each other against the action of the springs.

850,019. COMBINED POTATO-DIGGER AND COTTON-CHOPPER. ROMANUS KRAUSS, Swanquarter, N. C., assignor of one-half to Eugene B. Bell, Swanquarter, N. C. Filed May 29, 1906. Serial No. 319,894.

Claim.—1. In a machine of the character described, the combination with the main frame, and means for supporting the same, of a shaft journaled longitudinally of the main frame and at the center thereof, a subsidiary frame hinged to the main frame, means for raising and lowering the subsidiary frame, a shaft journaled centrally of the subsidiary frame and arranged longitudinally with respect to the main frame, a frame rigid with the shaft and comprising end members having openings for receiving the shaft, and side members spirally arranged with respect to the shaft, curved blades arranged in spaced relation on the side members and perpendicularly to the shaft, and means for positively turning the shaft in a direction opposite to the direction it would be turned by the action of a resisting medium when drawn through said medium in the direction of its axis.

2. In a machine of the character described, the combination with the frame and means for supporting the same, of a shaft journaled longitudinally of the frame at the center thereof, a frame rigid with the shaft and comprising end members having openings for receiving the shaft, and side members spirally arranged with respect to the shaft, curved blades arranged in spaced relation on the side members and perpendicularly to the shaft, and means for positively turning the shaft in a direction opposite to the direction it would be turned by the action of a resisting medium when drawn through said medium in the direction of its axis.

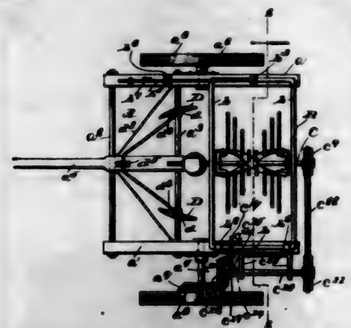

3. In a machine of the character described, a shaft having a plurality of series of blades arranged spirally thereon and perpendicularly thereto, means for positively turning the shaft in a direction opposite to the direction it would be turned by the action of a resisting medium when drawn through said medium in the direction of its axis, and means for supporting the shaft.

850,020. TROLLEY-WIRE HOLDER. VALCOURE J. LA BAUVE, Houston, Tex. Filed May 9, 1906. Serial No. 315,991.

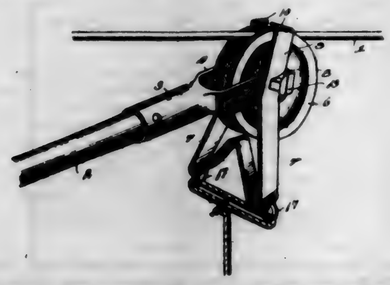

Claim.—The combination, with a trolley arm and wheel, of a holder comprising oppositely-arranged arms having portions projecting partially across the periphery of the wheel, a spring disposed intermediate said arms and formed integral therewith, a trolley-rope for moving said arms inward to release the trolley-wire, and a stationary shaft for the trolley-wheel having squared end portions passing through correspondingly-shaped openings in the holder whereby the holder is prevented from turning while the arms are permitted to move toward and away from each other, substantially as described.

850,021. MEANS FOR CONTROLLING THE PULP-STRAINER DRUMS OF PAPER-MAKING MACHINES. MARCEL LAMORT, Paris, France. Filed Jan. 18, 1907. Serial No. 352,995.

Claim.—Means for controlling the pulp-strainer drums of paper-making machines, whereby two movements are communicated to them, one a shaking or shogging movement which imparts to the drum a displacement of a few millimeters in the vertical direction, the other a rotary movement which imparts to said drum a very slow rotary movement of only a few revolutions per minute, said means consisting of carrier-straps for the drum, one of the ends

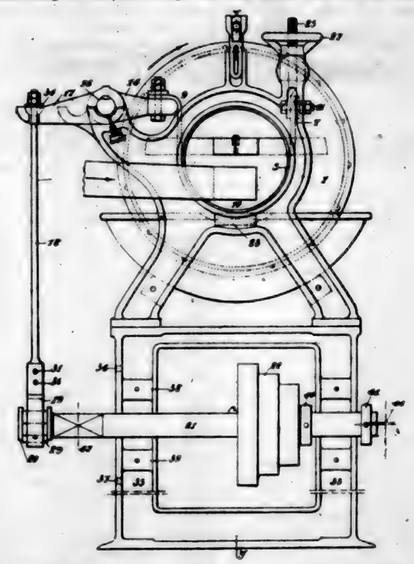

of which is fixed while the other is capable of receiving, at will, reciprocating movements of traction of variable amplitude, whereby the shakings or shoggings of the drum and, consequently, a slight rotary movement of this latter are effected.

850,022. PIE-CUTTER. CLARENCE B. LEWIS, Los Angeles, Cal. Filed Jan. 29, 1906. Serial No. 298,420.

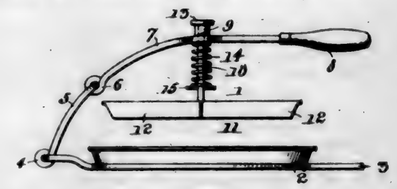

Claim.—A pie-cutter comprising a base, a substantially U-shaped hinge-link having its ends hingedly connected to said base, a lever hingedly connected to said U-shaped hinge-link, a guide upon said lever, a rod slidable in said guide, a stop upon the upper end of said rod, a stop upon the lower portion of said rod, a coiled spring surrounding said rod between said guide and the last-mentioned stop, and a cutter upon the lower end of said rod consisting of a plurality of radially-arranged blades, substantially as shown and described.

850,023. THAWING-POINT. FREDERICK LEWIS, Fairbanks, Alaska. Filed Aug. 6, 1906. Serial No. 329,374.

Claim.—A thawing-point consisting of a massive head having a solid body and having a main socket formed in the lower end thereof, a tubular bit received in said socket and having a point adapted to penetrate the earth, said head having a nipple-socket on the side thereof inclined downwardly and communicating with said first socket, and

a removable tubular nipple received in said nipple-socket opening to said main socket and adapted to have a hose attached thereto.

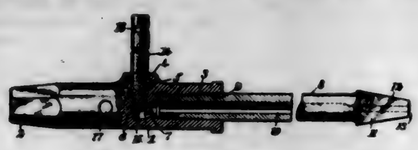

850,024. HAMMER. HARRY LEWIS, New York, N. Y. Filed July 26, 1905. Serial No. 271,380.

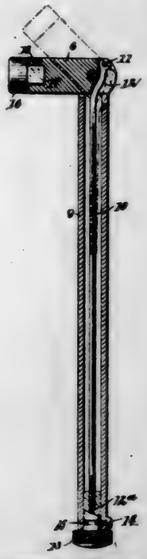

Claim.—1. A hammer comprising a handle and a head pivoted to the end thereof so as to be capable of being turned from a position in line with the handle to one at right angles thereto, in combination with means controllable from the other end of the handle for moving and holding the head in the position desired.

2. A hammer comprising a handle, a head pivoted thereto, and means operable at the inner end of the handle to swing the head on its pivot.

3. A hammer comprising a tubular handle, a head pivoted at one end of the handle, a thumb-piece revolubly mounted at the opposite end of the handle having a threaded bore, and a rod pivoted to the head passing through the handle and in threaded engagement with the thumb-piece whereby as the latter is operated the head is swung on its pivot.

850,025. HARNESS PLOW ATTACHMENT. GEORGE E. LILE and JOSEPH A. LILE, Cloverdale, Cal. Filed June 21, 1906. Serial No. 322,783.

Claim.—1. A device of the character described, having a downward extended or curved rear end portion, equipped with means for attaching the same to a plow or cultivator beam, and arms extended or curved laterally outward from said rear end portion and forward and provided with means for their attachment to the hames.

2. A device of the character described, having a downward extended or curved rear end portion provided with a hook-ended terminal, and with a link or latch for cooperation with said hook-ended terminal, and arms extending or curving laterally outward from said rear end portion and then forward and terminating at their forward ends into hooks for engaging the usual tug hooks or buckles on the hames.

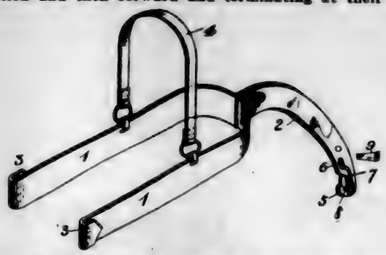

850,026. WINDOW-SCREEN. EDWIN L. LLOYD, Philadelphia, Pa. Filed Aug. 25, 1906. Serial No. 332,065.

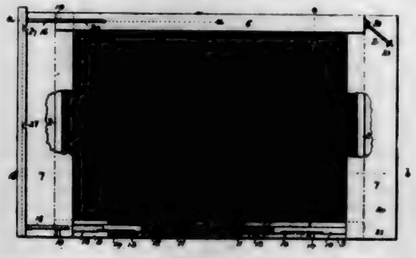

Claim.—1. A window-screen having a fixed frame composed of top, bottom and end bars and end expansion-wings, the top and bottom bars having internal grooves, supplementary top and bottom bars having tongues engaging said grooves, and screen-wire lying between the inner faces of the end bars of the frame and the expansion-wings and confined by the tongues and grooves of the composite top and bottom bars of said frame.

2. A window-screen having a fixed frame with top, bottom and end bars, the top and bottom bars being grooved, supplementary top and bottom bars, each having a groove and a projecting tongue, screen-wire bearing against the inner faces of the end bars of the frame and confined between the tongues and grooves of the composite top and bottom bars, and an expansion-wing at the end of the screen having inwardly-projecting tongues guided in the grooves of the supplementary top and bottom bars of the frame.

3. The combination, in a window-screen, of the main frame, an expansion-wing narrower than said main frame, guide-tongues on said wing adapted to recesses in the main frame and having recesses formed in them, springs for pressing said tongues outwardly, transverse pins on the bars of the main frame crossing said recesses and serving as stops for limiting such outward movement, and a filler-strip independent of said guide-tongues for closing the gap between the expansion-wing and the face of the sash, said filler-strip being flush with the face of the corresponding bar of the fixed frame.

4. The combination, in a window-screen, of the main frame, with an expansion-wing at the end of the same, said wing being of less width than the main frame, guide-tongues projecting from said expansion-wing into recesses in the main frame, and a filler-strip carried by the expansion-wing for closing the gap between the same and the face of the sash, said filler-strip sliding in a slot in the top bar of the main frame, which slot is narrower than the guide-tongue of the expansion-wing, whereby the slotted portion of the bar provides lateral support for said tongue.

5. The combination, in a window-screen, of the main frame, with an expansion-wing at the end of the same, said wing being of less width than the main frame, guide-tongues on said expansion-wing adapted to recesses in the main frame, and filler-strips carried by the expansion-wing one on each side of the same, said filler-strips being adapted to slots in the main frame, which slots are narrower than the guide-tongues of the expansion-wing, whereby the slotted portions of the bars provide lateral support for said tongues.

6. The combination, in a window-screen, of the main frame with an expansion-wing at one end of the same, and a duplex filler-trip having members on each side of the expansion-wing and a neck connecting said members and engaging a slot in the expansion-wing.

7. The combination of a window-screen having a main frame and a spring-pressed expansion-wing of less width than said main frame, a notched guide for said wing, and a strip carried by the wing for engaging said notched guide to hold the screen in an elevated position, said strip being flush with the face of the main frame and thereby serving to fill the gap between the expansion-wing and the face of the sash.

850,027. INDICATOR. MORRIS J. LYNCH, Ottawa, Kans. Filed Nov. 17, 1906. Serial No. 343,917.

Claim.—1. An indicator of the character described comprising an inclosing casing having an observation-opening, a trackway therein having a vertical portion disposed adjacent said observation-opening, a rear vertical portion and upper and lower inclined portions connecting said front and rear portions, said trackway being provided with supporting means at the juncture of the front vertical and upper inclined portions thereof, a series of signs arranged to travel said trackway and to be held by said supporting means, said signs being adapted to travel by gravity along said inclined portions, means for lifting the signs from the lower end of the lower inclined portion to the upper end of the upper inclined portion of the trackway, a motor for automatically operating said lifting means, and means for releasing the sign from said supporting means and setting the motor into operation.

2. An indicator of the character described comprising an inclosing casing having a trackway therein, signs arranged to travel by gravity along a portion of the trackway, operating mechanism for propelling the signs along the remaining portion, a motor for actuating said operating mechanism, means for holding the signs, means for releasing the signs from the holding means, means for normally holding the motor out of operation, and electrical means for simultaneously actuating said sign-releasing means and throwing the motor into operation.

3. An indicator of the character described comprising an inclosing casing having a trackway therein, signs arranged to travel by gravity along a portion of the trackway, operating mechanism for propelling the signs along the remaining portion, a motor for actuating said actuating mechanism, means for holding the signs, means for releasing the signs from the holding means, means for normally holding the motor out of operation, an electric circuit having an electrical magnet therein, and means controlled by said magnet for simultaneously actuating said sign-releasing means and rendering said means for normally holding the motor out of operation inoperative.

4. An indicator of the character described comprising an inclosing casing having a trackway therein provided with supporting means, signs adapted to travel by gravity along a portion of said trackway and be successively exposed for view by said supporting means, means embodying gearing adapted to engage and propel the signs along the remaining portion of the trackway, a motor for operating said gearing, a controlling device for normally holding the motor out of operation, a trip device for releasing the signs from said supporting means, lever mechanism for simultaneously projecting and retracting said controlling and trip devices, an electric circuit, an electromagnet therein, and an armature controlled by said electromagnet and operatively connected with said lever mechanism.

5. An indicator of the character described comprising an inclosing casing having an observation-opening, a trackway therein comprising guides having vertical front and rear portions and inclined upper and lower connecting portions, the vertical rear portion being longer than the vertical front portion and said guides being formed with supporting-shoulders at the upper ends of the front vertical portions, a series of signs having supporting-rods arranged to travel said guides, said signs being adapted to travel by gravity along the vertical front and inclined portions of the trackway and adapted to have their supporting-rods rest upon said supporting-shoulders, lifting mechanism arranged to engage the signs and elevate them along the rear vertical portion of the trackway, a motor for operating said mechanism, trip devices for releasing the sign-rods from engagement with said supporting-shoulders, a detent for normally holding the motor from operation, levers for simultaneously retracting the trip devices and detent, an electric circuit, an electromagnet therein, an armature controlled by the magnet and connected with the levers, and means for returning the levers to normal position after operation by the magnet.

850,028. COOKER. ALPHONSE MAJOR, Brooklyn, N. Y. Filed Nov. 15, 1906. Serial 343,544.

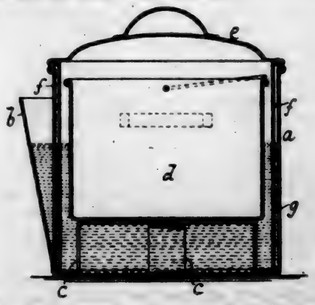

Claim.—In a cooker, the combination of an outer and inner vessel, the latter of decreased size so as to fit freely within the outer vessel, a spider at the interior of the outer vessel and having feet supported by the bottom

thereof for holding the inner vessel elevated from the bottom of the outer vessel and a cover made to sit on and close the top or mouth of the outer vessel and having a circular depending flange of greater diameter than the inner vessel and of less diameter than the outer vessel and extending to the bottom of the latter to form a water-space between the said outer vessel and flange, said flange having an opening forming communication between the interior of the outer vessel and the water-space formed by the flange.

850,029. METHOD OF SEALING METAL IN GLASS. GEORGE H. MEEKER, Media, Pa. Filed June 19, 1906. Serial No. 322,402.

Claim.—1. The process of sealing oxidizable wire within glass, which consists in heating the glass to plastic condition without heating the wire to oxidizing temperature, and so quickly pressing the plastic glass around said wire that the wire will be sealed therein and the air excluded therefrom before said wire has become heated to oxidizing temperature, substantially as set forth.

2. The process of sealing oxidizable wires within incandescent-lamp stems which consists in heating a portion of the tubular stem to plastic condition without heating said wires to oxidizing temperature, and so quickly pressing the plastic portion of said stem together that the wires will be sealed therein and the air excluded therefrom before said wires have become heated to oxidizing temperature, substantially as set forth.

3. The process of sealing oxidizable wires within incandescent-lamp stems, said wires having substantially the same coefficient of heat expansion and contraction as the stem, which consists in heating a portion of the tubular stem to plastic condition, at a point away from said wires, bringing the tubular stem to position inclosing said wires, and pressing the plastic portion of the stem together, embedding said wires therein before they have become heated to oxidizing temperature.

850,030. STAMP-SHAFT TAPPET. LLOYD MELLINGER, Rapid City, S. D. Filed Nov. 26, 1906. Serial No. 345,235.

Claim.—1. A stamp-shaft tappet comprising upper and lower sections, wedge-blocks arranged in said sections to engage the shaft, and means to draw said sections together and clamp the wedge-blocks into tight frictional engagement with the shaft, substantially as described.

2. A stamp-shaft tappet comprising upper and lower sections, each of which has formed therein a concentric, conical-shaped passage, segmental wedge-blocks arranged in engagement with said shaft and adapted to be engaged by the conical-shaped passages in said tappet-sections, and means whereby said sections are drawn together to forcibly clamp said wedge-blocks into engagement with the shaft, substantially as described.

850,030.

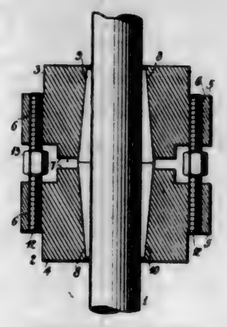

850,031. WASHING-MACHINE. JEFFERSON D. METCALF, Bewelcome, Miss., assignor of one-half to Joseph C. Causey, Gloster, Miss. Filed Oct. 17, 1906. Serial No. 339,414.

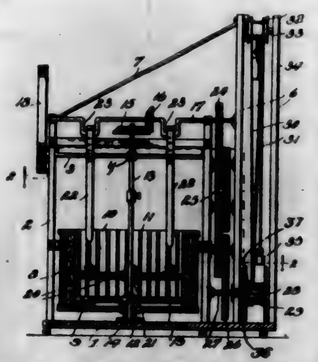

Claim.—1. In a washing-machine, a frame, a vessel sustained therein, a receptacle arranged for rotation in the vessel, a drive-shaft journaled in the frame and having crank portions, a second shaft driven from the first-named shaft and connected for operating the receptacle, a pounder disposed for reciprocation in the receptacle and for sliding movement on the second shaft, pitman connections between the crank portions of the drive-shaft and the pounder for operating the latter, and means for operating the drive-shaft.

2. In a washing-machine, a frame, a vessel sustained therein, a receptacle arranged for rotation in the vessel, a drive-shaft journaled in the frame and having crank portions, a driven shaft operated by the drive-shaft and connected for rotating the receptacle, a pounder slidably disposed on the driven shaft and for reciprocation in the receptacle, pitman connections between the crank portions of the drive-shaft and the pounder, and means for operating the drive-shaft comprising a drum having gearing connections with the said shaft, a cable wound in reverse directions on the drum, an idler-pulley sustained in the frame and having portions of the cable led for travel thereover, an operating-weight connected with the end of one of said portions of the cable, and a counterbalancing-weight connected with the end of the other of said portions.

850,032. REFRIGERATOR-FASTENING. GEORGE C. MILLER, Fairfax, Minn. Filed Apr. 27, 1906. Serial No. 257,702.

Claim.—In a fastening of the character described, the combination with a keeper which is wider at one end than at the other, of a fastening-lever and plate therefor, an annular tongue on said plate arranged to enter a corresponding groove in said fastening-lever, said lever comprising a cam-hook at one end for engagement with the under side of the keeper, a handle at the other end and a

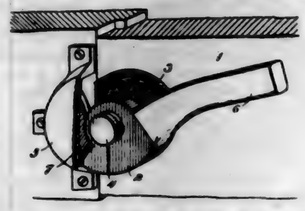

cam portion between said handle and the pivotal point of the lever, said cam portion being arranged to engage the outside of the keeper, substantially as described.

850,033. AUTOMATIC BUTTON CUTTING AND SAWING MACHINE. JOHN W. MILLER, Muscatine, Iowa, assignor of three-fifths to The McKee and Bliven Button Company, Muscatine, Iowa, a Partnership. Filed Apr. 20, 1905. Serial No. 258,084.

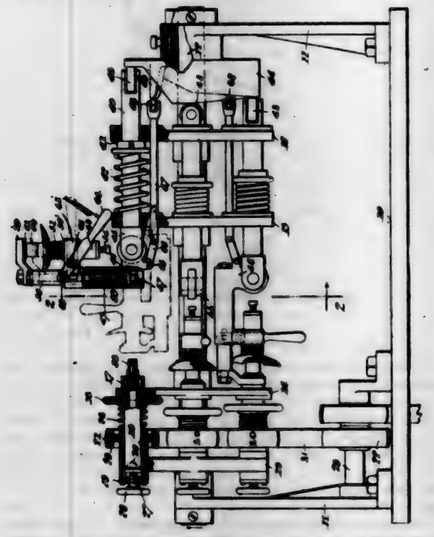

Claim.—1. In a machine of the class described, a carrier, a longitudinally-movable stem supported thereby, a work-clamp carriage pivoted to the stem, a pair of work-clamps mounted on the carriage, one of said members being yieldable with respect to the other, an operating-lever connected to the yieldable clamp to permit opening movement for the introduction or adjustment of work, and means for effecting the longitudinal movement of the stem.

2. In a blank-cutting machine, a revoluble tubular saw, a yieldably-mounted work-clamp through which said saw extends, a second work-clamp adapted to coact with the first in holding the material to be cut, means for feeding the clamps to present the material to the saw, and a spring forming a backing for the yieldable clamp and tending to resist the feeding movement of both clamps.

3. In a machine of the class described, a rotary clamp-carrier, a clamp pivotally connected thereto, and means for automatically moving the clamp about the pivot into or out of parallelism with the axis of its carrier.

4. In a machine of the class described, the combination with a revoluble carrier, of pivotally-mounted work-clamps supported by the carrier, and means adapted to automatically operate at the completion of each rotative movement of the carrier and move the clamps outward to inoperative position.

5. In a machine of the class described, the combination with a revoluble carrier, of a plurality of longitudinally-movable stems supported by the carrier, a work-clamp carriage pivotally connected to each stem, work-clamps supported thereby, a carriage-operating rod, and a pair of cams, one acting on the stems, and the other on the several rods during revoluble movement of the carrier.

6. In a machine of the class described, the combination with a revoluble carrier, of a plurality of longitudinally-movable stems supported by the carrier, work-clamp carriages pivoted to the stems, clamps on each of the carriages, a rod having a linked connection with each carriage, an antifriction-roller arranged at the outer end of each stem and rod, and fixed cams for engaging the antifriction-rollers during the revoluble movement of the carrier.

7. In a button-blank-cutting machine, the combination of a rotatable tool, a shell-clamp composed of a tubular member adjacent the tool, an opposed member, between which members the shell is to be clamped, and a yieldable shell-positioning device coöperating with said clamp; with means for causing the tool to operate on the shell through the tubular member.

8. The combination with a revoluble saw, of a saw-mandrel, and a pair of clamping members, one of which is tubular and adapted to form an additional support and guide for the saw-mandrel during the cutting operation, and means for causing the saw to enter such tubular member to cut the shell, substantially as described.

9. The combination with a revoluble tubular saw, of a shaft carrying the same, a collar or sleeve surrounding the shaft and extending over the saw, a spring extending over the sleeve and tending to hold the same in place, a work-clamp, means for moving the same in the direction of the saw against the resistance of said spring, and means for adjusting the position of said collar or sleeve with respect to the saw.

10. In a machine of the class described, the combination with a tool, of a work-clamp, and a rotatable work-clamp carrier, means for normally holding the clamp in alinement with the tool, said clamp being pivoted to the carrier, and being movable about the pivot into or out of alinement with the axis of the carrier.

11. In apparatus of the class described, a work-clamp for engagement with one side of the shell, a yieldable shell-positioning device coacting therewith, a yieldable clamp adapted to engage the opposite side of the shell and force it against the first clamp, and a tool for operating on the material while held by said clamps; with manually-operated devices for separating said clamps.

12. In a shell-cutting machine, the combination with a rotary carrier, of longitudinally-movable stems supported thereon, work-clamp carriages pivoted to the stems, means for moving said work-clamp carriages into or out of alinement with the stems, and means for causing the stems to move longitudinally during their orbital movement by the carrier.

13. In a shell-cutting machine, the combination of a rotatable saw, a shell-clamp composed of a relatively fixed member, and an opposed tubular movable member, and a yieldable shell-positioning device coöperating with said clamps to cause the shell to present a plane face to the saw; with means for causing the saw to engage the shell through the tubular member.

14. In a shell-cutting machine, the combination of a pair of shell-holding clamps having clamping-jaws; with an auxiliary yielding member surrounding one of the jaws and forming an initial yieldable support for the shell, the opposed jaw having an extended bearing contact with the shell.

15. In a shell-cutting machine, a pair of clamping members having clamping-jaws, one of the jaws being movable to and from the other; with a yieldable work-supporting member adjacent to one of the jaws and whereby the shell is positioned before it is clamped, the opposed jaw having an extended bearing contact with the shell.

16. In a shell-cutting machine, a shell-clamp member, a shell-positioning spring surrounding said member and coacting therewith and adapted to initially hold the shell in position for clamping; with an opposed clamp having an extended bearing contact with the shell and adapted to first press the shell against the spring, and then firmly bind it against the first clamp.

17. In a machine for cutting button-blanks from shells, the combination with a revoluble tubular saw, of a carriage, a clamp member carried thereby, a second clamp member also carried by said carriage and coöperating with the first clamp member to hold a shell, means for feeding said carriage toward said saw, and yielding means adapted to impinge upon the second clamp member during its movement toward said saw.

850,034. BOAT. URIAH R. MILLER, Salem, Ohio. Filed Aug. 16, 1906. Serial No. 330,824.

Claim.—1. A boat having its bottom provided with a flat forward portion, and a plurality of transversely-inclined planes connected together by risers narrower than said planes and arranged above the plane of the forward portion, substantially as shown and described.

2. A boat having its bottom provided with a flat forward portion, a plurality of transversely-inclined planes arranged above the plane of said forward portion and connected together by risers narrower than said planes, and a keel extending from said flat forward portion transversely of said inclined planes, substantially as shown and described.

3. A boat having a bottom provided with a flat forward portion and a plurality of transversely-inclined planes connected by risers narrower than said planes, and a keel extending transversely of said planes with its lower edge continuous with said flat forward portion, substantially as shown and described.

4. A boat having its bottom provided with a flat forward portion and a plurality of transversely-inclined planes connected together by risers narrower than said planes, and arranged at a right angle therewith, and a keel extending transversely of said planes continuous with said flat forward portion and increasing in width toward the stern of the boat, substantially as shown and described.

5. A boat having its bottom provided with a plurality of transversely-inclined, broad planes connected by narrow risers, and a keel extending transversely of said planes and risers, and provided with a sleeve extending longitudinally of said keel, inclined to the lower edge thereof, and adapted to support a propeller-shaft, substantially as shown and described.

6. A boat having its bottom formed with a plurality of transversely-inclined broad planes connected by narrow risers, a keel extending transversely of said planes and risers, an engine having a shaft journaled therein, and a propeller secured to the end of said shaft and arranged in line with the junction of one of said planes with its adjacent riser, substantially as shown and described.

7. A boat having its bottom formed with a flat bow portion, and with a plurality of transversely-inclined broad planes connected by narrow risers, and a keel extending transversely of said plane and risers with its lower edge in line with the flat portion of the bow of the boat, substantially as shown and described.

850,035. ATTACHMENT FOR TURNING-LATHES. JESSE MORGAN, Hughesville, Pa., assignor of one-half to Theodore A. Boak, Hughesville, Pa. Filed Feb. 19, 1906. Serial No. 301,816.

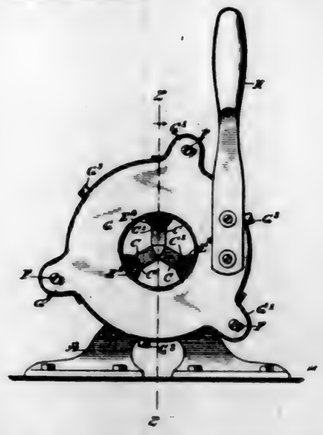

Claim.—1. In an attachment for turning-lathes, a rigid jaw-carrier having means for guiding jaw-bars, converging jaw-bars having recesses in the sides, a member rotatable relatively to said jaw-carrier, said rotatable member being provided with studs, and bell-crank levers fulcrumed to said jaw-carrier and having curved extremities engaging with said recesses of said jaw-bars and having slots at the other extremities engaging with the studs carried by said rotatable member.

2. In an attachment for turning-lathes, a support, a rigid jaw-carrier having means for guiding jaw-bars, converging jaw-bars, a member rotatable relatively to said jaw-carrier and having lateral extensions provided with studs, and bell-crank levers fulcrumed to said jaw-carrier having arms adapted to slide said jaw-bars and opposite arms extending laterally beyond said rotatable member, said opposite arms having slots engaging with said studs carried by said rotatable member.

3. In an attachment for turning-lathes, a support, a rigid jaw-carrier having recesses in the face thereof, converging guide-grooves in said recesses, jaw-bars mounted in said guide-grooves and having recesses, a member adjacent to the face of said jaw-carrier and rotatable relatively thereto, said rotatable member having extensions provided with studs, bell-crank levers in said recesses of said jaw-carrier and fulcrumed therewithin, an arm of each of said levers having a curved end adapted to engage with a recess of one of said jaw-bars, and an opposite arm of each of said levers extending laterally beyond said rotatable member and having a slot adapted to engage with one of said studs.

850,036. TELEGRAPHONE. GEORGES MORIN, Habana, Cuba. Filed June 6, 1905. Renewed Sept. 27, 1906. Serial No. 336,499.

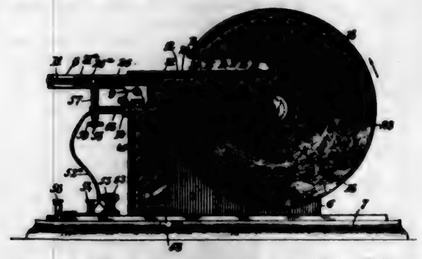

Claim.—1. The combination of a revoluble disk provided upon both of its faces with a magnetic record, magnets mounted upon opposite sides of said disk and energized thereby, one of said magnets being adapted to be energized when moving toward the center of said disk, and the other of said magnets being adapted to be energized when moving away from the center of said disk, and means for moving said magnets toward and from the center of said disks.

2. The combination of a revoluble disk provided upon both of its faces with a magnetic record, magnets mounted upon opposite sides of said disk and oppositely disposed in proximity to said faces, a carriage upon which said magnets are mounted, screw mechanism for propelling said carriage in one direction, other screw mechanism for propelling said carriage in the opposite direction, and means for shifting the control of said carriage from one of said screw mechanisms to the other of said screw mechanisms for the purpose of reversing the direction of travel of said carriage.

3. The combination of a revoluble disk provided with a magnetic record disposed upon opposite sides thereof, magnets disposed adjacent to said disk and coacting with the magnetic record thereof, a carriage for supporting said magnets, screw mechanism for propelling said carriage in one direction, screw mechanism for propelling said carriage in the opposite direction, and a manually-operated member for enabling said carriage to be moved independently of either of said screw mechanisms.

4. The combination of a revoluble disk having two faces and provided upon each of these faces with a record-surface, separate magnetic members coacting respectively with said faces for controlling an electric circuit, switch mechanism for energizing first one and then the other of the said magnetic mechanisms, and means for causing said magnetic mechanisms to travel first in one direction and then in the opposite direction.

5. The combination of a revoluble disk provided upon both of these faces with magnetic record-surfaces, a carriage movable relatively to the center of the said disk, separate magnetic members actuated by said carriage and disposed upon opposite sides of the said disk, and means completing an electric circuit through both of said magnetic mechanisms.

850,037. METHOD OF RAISING LIQUIDS FROM WELLS. FRED J. MOSER, Kane, Pa. Filed July 11, 1905. Serial No. 269,171.

Claim.—1. The method herein described of raising liquids from wells, which consists in applying pressure intermittently to the upper surface of a liquid resting freely within the well and otherwise unconfined, thereby elevating the said liquid piecemeal in the form of distinct charges to a slightly higher level, and finally raising to the surface of the earth the liquid thus elevated.

2. The method herein described of raising liquids from wells, which consists in intermittently applying pressure of an aeriform body to the upper surface of a liquid resting freely within the well and otherwise unconfined, so as to elevate the same piecemeal to a slightly higher level, and then applying a single charge of an aeriform body under comparatively high pressure so as to elevate to the surface of the earth the aggregate volume of liquid thus raised piecemeal.

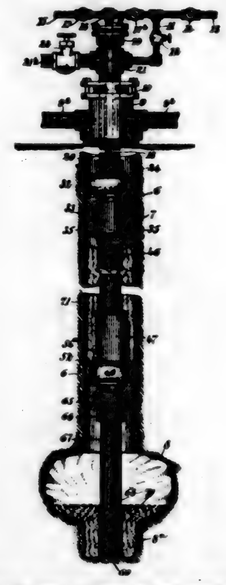

3. The method herein described of raising liquid from wells which consists in applying an aeriform body under pressure to a body of liquid in the well for the purpose of forcing a portion of said liquid to a position between two packings one disposed above the other in the drill-hole of the well, preventing retrogression of the same and finally applying an aeriform body under pressure between the two said packing for the purpose of forcing the liquid contained therein to the surface of the earth.

4. The method herein described of raising liquids from wells, which consists in subjecting a liquid resting freely within the well and otherwise unconfined to the action of an aeriform body so as to raise said liquid to a level slightly higher than the normal level of the liquid in the well, causing the supply of said aeriform body to be cut off when the upper surface of said liquid thus raised reaches a predetermined level, preventing retrogression of said liquid thus raised, and finally elevating the latter to the surface of the earth.

5. The method herein described of raising liquids from wells, which consists in causing an aeriform body under pressure to escape into the drill-hole of the well, and accumulating sufficient pressure upon the upper surface of a body of free liquid contained within the well to raise a portion of said free liquid to a point above a packing within said well, allowing the liquid thus raised to escape from the piping into the drill-hole of the well above said packing, preventing retrogression of the liquid thus raised above said packing, and finally making a separate application of an aeriform body to the portion of liquid thus treated so as to raise the same to the surface of the earth.

6. The method herein described of raising liquids from wells, which consists in applying an aeriform body under pressure to a body of free liquid contained within the well for the purpose of collecting it in the drill-hole in a slightly-elevated position above the packing, relieving the pressure thus employed so as to allow another supply of free liquid to accumulate within the well, then raising a portion of said supply thus accumulated in the same way, merging it with the portion first raised and finally applying an aeriform body under pressure within the drill-hole

in the well upon the upper surface of the liquid thus raised for the purpose of forcing the same to the surface of the earth.

850,038. BRICK-MOLD. FRIEDRICH MUELLER, St. Louis, Mo. Filed Aug. 27, 1904. Serial No. 222,440.

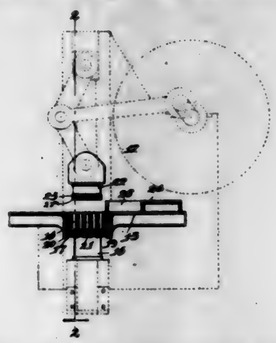

Claim.—In a brick-mold, a fixed bed-plate, provided with compression-chambers, a lower compression member, I-beams carried by the compression member and fitting in the compression-chambers, a finishing-plate carried by each I-beam, the tops of which I-beams and finishing-plates are perforated, plates secured to the under side of the bed-plate, pins secured to said plates and projecting upwardly through the perforations in the I-beams and finishing-plates, and upper compression members operating in opposition to the lower compression members, and being provided in their under sides with recesses to receive the upper ends of the pins and perforated finishing-plates rigidly fixed to the under sides of the upper compression members; substantially as specified.

850,039. ORE-ROASTING APPARATUS. ROBERT MCKNIGHT, Philadelphia, Pa. Filed July 6, 1903. Serial No. 164,842.

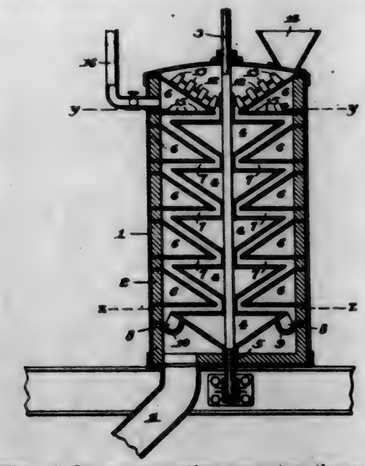

Claim.—1. In an ore-roasting apparatus, the combination with a hollow cylinder, of a vertically-arranged rotatable shaft therein, a series of obconic cones mounted on said shaft, a corresponding series of annuli extending from the sides of said cylinder and arranged in the spaces between said cones to form a continuous passage-way between the latter and said annuli, said cylinder having at its upper end an inlet for the ore and also at its lower end an exit for the ore, a trough arranged below the edges of the lower cone for receiving the ore from the latter, scrapers carried by said lower cone for discharging the ore from said trough into the exit in the lower end of the cylinder, the topmost annulus being perforated for collecting the fumes rising through the cylinder, and a pipe connected to said topmost annulus for leading the collected fumes therefrom.

2. In an ore-roasting apparatus, the combination with a hollow cylinder, of a vertically-arranged rotatable shaft therein, a series of obconic cones mounted on said shaft, a corresponding series of annuli extending from the sides of said cylinder and arranged in the spaces between said cones to form a continuous passage-way between the latter and said annuli, said cylinder having at its upper end an inlet for the ore and also at its lower end an exit for the ore, a trough arranged below the edges of the lower cone for receiving the ore from the latter, scrapers carried by said lower cone for discharging the ore from said trough into the exit in the lower end of the cylinder, the topmost annulus being perforated for collecting the fumes rising through the cylinder, a pipe connected to said topmost annulus for leading the collected fumes therefrom, and scrapers connected to said shaft and extending adjacent to the upper side of the topmost annulus.

850,040. CUSHION-HUB. JOHN A. MCMANUS, Philadelphia, Pa. Filed Oct. 30, 1905. Serial No. 284,954.

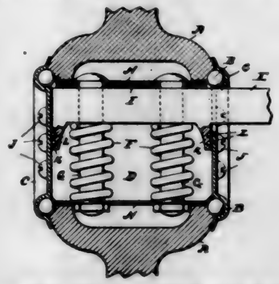

Claim.—1. In combination with the axle of the vehicle, a box having a slot therein for the reception of said axle, springs located within the box for supporting the axle, a sleeve secured around the box, two caps secured to the ends of the box, said caps having grooves therein, a hub having grooves in the ends thereof, and two sets of balls, one set adapted to run in each of the grooves formed in the caps and the hub, as specified.

2. The herein-described combination of the axle, a box having a slot therein for the reception of said axle, springs located within the box for supporting the axle, a sleeve surrounding the box, bolt-rods passing through the box and axle securing the sleeve in place, a cap secured to each end of the box, said caps having annular grooves formed therein, a series of balls adapted to travel in each of said grooves, a hub fitted around said sleeve and adapted to travel upon said balls, and depending brackets formed with the axle and having balls therein for riding upon the inner surface of the caps as specified.

850,041. CALCINING-FURNACE. THOMAS MCNEAL, Kansas City, Mo. Filed Dec. 19, 1906. Serial No. 348,524.

Claim.—1. The combination with a furnace, of a calcining vessel arranged therein and having a convex bottom, a shaft extended vertically in said vessel, a bar attached to the lower end of said shaft, a plurality of scrapers having link connection with the bar, and a central scraper consisting of two sections curved in opposite directions and pivotally connected together, said central scraper being carried by said bar.

2. In a calcining device, a furnace, a calcining vessel arranged therein and having a convex bottom, a vertically-extended shaft in the vessel, a bar carried by said shaft, a plurality of scrapers carried by the bar, and a central scraper consisting of two pivotally-connected sections curved in opposite directions, the inner or pivotal ends of said sections being extended outward at substantially right angles to the sections.

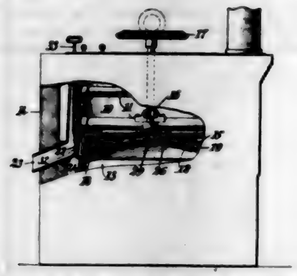

3. In a calcining device, a furnace, a calcining vessel arranged therein, a vertical shaft in the vessel, a bar carried by said shaft, a plurality of scrapers having swinging connection with the bar, a central scraper consisting of two pivotally-connected sections, the inner or pivotal ends thereof having outward extensions, and link connections between the outer ends of said sections and said bar.

4. In a calcining device, a furnace, a calcining vessel arranged therein and having a convex bottom, a shaft arranged vertically in the vessel, a bar carried by the shaft and conforming to the curvature of the bottom of the vessel, a plurality of scrapers carried by said bar, a central scraper consisting of two pivotally-connected sections curved in opposite directions and having outward projections at their inner ends, the lower edges of said sections being inclined to form cutting edges, and link connections between the outer ends of the sections and the bar.

850,042. HAY-LOADER. JOHN E. NORRIS, Tiskilwa, Ill. Filed Mar. 21, 1906. Serial No. 307,295.

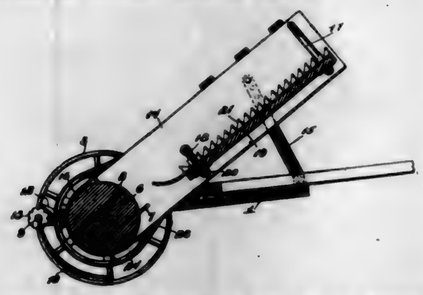

Claim.—1. In a hay-loader, a frame, an axle journaled therein and equipped with transporting-wheels, a pair of spaced side members sustained in the frame and arranged at an upward and forward inclination, a pair of substantially U-shaped crank-shafts journaled in the side members, a reciprocatory feed-table sustained by the crank-shafts between the side members and provided with rearwardly-projecting receiving-arms and with conveying-teeth, a feed-drum carried by and for rotation with the axle and having hay-engaging teeth, a rake sustained in rear of the drum, and operative connections between the axle and one of the crank-shafts for reciprocating the feed-table.

2. In a hay-loader, a main frame, an axle journaled for rotation therein and equipped with transporting-wheels, a feed-drum mounted on and for rotation with the axle, a rake sustained in rear of the drum for delivering material thereto, a pair of relatively spaced side boards sustained in the frame, said boards being arranged at an upward and forward inclination and having their rear ends recessed to receive the feed-drum, straps embracing the drum and attached to the side boards for connecting the same with the drum, a pair of substantially U-shaped crank-shafts journaled in the side boards, a reciprocatory feed-table sustained by the crank-shafts between the side boards and provided with rearwardly-projecting receiving-arms and with conveying-teeth, and operative connections between the axle and one of the crank-shafts for reciprocating the feed-table.

850,043. INTERLOCKING METAL SHEET-PILING. GEORGE E. NYE, Chicago, Ill., assignor of one-half to Gustavus A. Kreis, Chicago, Ill. Filed Dec. 13, 1906. Serial No. 347,663.

Claim.—1. A sheet-piling unit consisting of a channel-bar member having plane edge flanges thicker at their bases than at their free ends and provided inwardly of said flanges on its inner face with ribs disposed parallel with said flanges, two of said members being disposed parallel with each other and secured together to form a hollow unit provided with longitudinal slots in its sides, said units being disposed side by side so that their flanges overlap and engage each other on their inner faces to prevent relative lateral movement in one direction and said ribs engaging the outer faces of said flanges adjacent their free ends and preventing relative lateral movement of said units in the other direction.

2. Interlocking sheet-piling comprising units each consisting of two channel-bar members having plane edge flanges thicker at their bases than at their free ends, said members being disposed parallel with each other and secured together so that their flanges are in alinement with each other, there being longitudinal slots in the sides of said units, a rib on the inner face of each of said channel-bar members inwardly of and parallel with one of the flanges thereof, said units being disposed edge to edge and the flanges of adjacent units being oppositely disposed, one flange of each entering the other and engaging one of the flanges and one of said ribs of the other unit at its free end.

3. Interlocking sheet-piling comprising units each consisting of two channel-bar members secured together and disposed parallel with each other, said members having plane edge flanges thicker at their bases than at their free ends, the outer faces of the said flanges thereof being flush with each other, there being longitudinal slots in the sides of said units, said units being disposed side by side and one flange of each entering the other unit and engaging a flange of the latter to form a continuous hollow wall, the hollow spaces thereof being adapted to receive a packing to render said wall water-tight, and means integral with said units and disposed adjacent the flanges thereof and engaging the flanges of adjacent units to limit relative lateral movement of said units in one direction.

4. Interlocking metal sheet-piling comprising units each consisting of two channel-bar members disposed parallel with each other and secured together to form a hollow unit, the edge flanges of said members being plane and thicker at their bases than at their free ends and extending in the same direction, there being longitudinal slots in the sides of said hollow units, said units being disposed side by side and one flange of each entering the other, ribs integral with and disposed on the inner face of the web of one of said channel-bar members of each hollow unit adjacent the flanges thereof and engaging the free end of the entering flange to hold the same against lateral movement in a direction inwardly of said hollow unit.

850,044. INTERLOCKING METAL SHEET-PILING. GEORGE E. NYE, Chicago, Ill., assignor of one-half to Gustavus A. Kreis, Chicago, Ill. Filed Feb. 11, 1907. Serial No. 356,860.

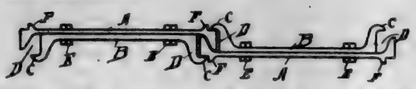

Claim.—1. In interlocking sheet-piling, a unit comprising two channel-bars of different widths, the smaller being secured within the larger and having the outer face of its web disposed in contact with the inner face of the web of the larger, there being free spaces between the outer faces of the flanges of the inner channel-bar and the inner faces of the flanges of the outer, and short flanges on the free ends of the flanges of said inner channel-bar overhanging said recesses, said overhanging flanges being of less depth than the greatest width of said free spaces, the latter being adapted to receive the flanges of adjacent channel-bars.

2. In interlocking sheet-piling, a unit comprising two channel-bars of different widths, the smaller being secured within the larger and having the outer face of its web disposed in contact with the inner face of the web of the larger, there being free spaces between the outer faces of the flanges of the inner channel-bar and the inner faces of the flanges of the outer, and short flanges on the free ends of the flanges of said inner channel-bar overhanging said recesses, said flanges of said channel-bars being thicker at their bases than at their free ends, and said overhanging flanges being of less depth than the greatest width of said free spaces, the latter being larger than and adapted to receive the flanges of adjacent channel-bars.

3. In interlocking sheet-piling, a unit comprising two channel-bars of different widths, the smaller being secured within the larger and having the outer face of its web disposed in contact with the inner face of the web of the larger, there being free spaces between the outer faces of the flanges of the inner channel-bar and the inner faces of the flanges of the outer, and short flanges on the free ends of the flanges of said inner channel-bar overhanging said recesses, said flanges of said channel-bars being thicker at their bases than at their free ends, and said overhanging flanges being of less depth than the greatest width of said free spaces, the latter being larger than and adapted to receive the flanges of adjacent channel-bars, and ribs on the outer faces of the webs of said outer channel-bars disposed adjacent to and parallel with the side edges thereof.

850,045. APPARATUS FOR CONTROLLING FEED-WATER. JOHN E. L. OGDEN, Liscard, England. Filed Mar. 10, 1906. Serial No. 305,317.

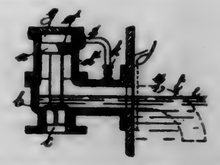

Claim.—1. In apparatus for controlling the supply of feed-water to boilers, the combination with the usual, boiler check-valve of a retarder automatically preventing the opening of the said valve for the further admission of water to the boiler when the level in the latter rises above the normal, substantially as set forth.

2. In apparatus for controlling the supply of feed-water to boilers, the combination with the exterior of a boiler of a feed-water check-valve, a casing with internal seating for the said valve, a piston integral with the valve, a cylinder for the said piston opening into the said valve-casing, a connection between the upper part of the said cylinder and the interior of the boiler, and a valve in the said connection, substantially as set forth.

3. In apparatus for controlling the supply of feed-water to boilers, the combination with the exterior of a boiler of a feed-water check-valve, a casing with internal seating for the said valve, a piston integral with the check-valve, a valve in the said piston, a cylinder for the piston opening into the said valve-casing, a connection between the upper part of the said cylinder and the interior of the boiler, and a valve in the said connection, substantially as set forth.

850,046. PANTS-CREASER. JAMES H. PEARSON, Bloomfield, Ind., assignor of one-half to William S. Bogy, Bloomfield, Ind. Filed Apr. 20, 1906. Serial No. 312,856.

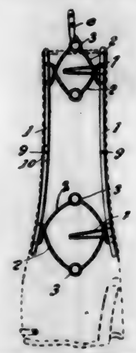

Claim.—A pants-creaser comprising spaced longitudinal bars, springs interposed between and connected with the bars, each of the bars being made in sections pivotally or hingedly connected together, and a sleeve slidably mounted on one of the bars to receive the pivot-joint thereof to hold the sections of the bars in alinement as when in use.

850,047. CAR JOURNAL-BOX. ARBOR V. PEPPARD, San Luis Potosi, Mexico. Filed July 20, 1906. Serial No. 327,010.

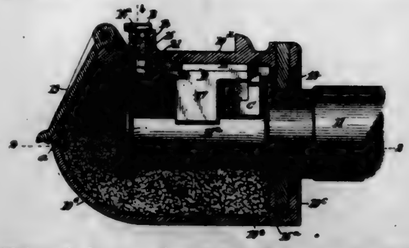

Claim.—1. In a car journal-box, the combination with the box, the shoe or wedge having recesses at its forward upper portion, and a liner mounted on the said shoe, having openings therein corresponding to the recesses in the shoe or wedge, the lower edges of the rear walls of the said openings being downwardly and rearwardly inclined, of keeper-bolts mounted to slide in openings in the top of the box registering with the openings in the liner and the recesses in the shoe or wedge, the said keeper-bolts being provided with recesses and inclined bottom lips extending rearwardly from their rear faces, which lips are adapted to enter the recesses in the shoe or wedge and the liner to enter the recesses in the keeper-bolts, bringing the inclined portions of the walls of said openings over the inclined portions of the lips of the bolts, thus drawing the bolts downward and locking them in active position.

2. In a car journal-box, the combination with the box having openings in its upper wall adjacent to its forward portion, a shoe or wedge for the bearing-brass of the box, which shoes or wedges are provided with recesses in their upper faces, and a liner located on the said shoe or wedge and provided with openings extending through from top to bottom, which openings register with the recesses in the shoe or wedge and with the openings in the box, the lower edges of the rear walls of the liner-openings being beveled downward and rearward, of keeper-bolts mounted to slide in the openings in the box and passed through the openings in the liner into the recesses of the shoe or wedge, each bolt being provided with a recess in its rear edge at its lower portion of sufficient size to receive the rear wall of the openings in the liner, a rearwardly-extending lip being formed at the lower end of each of the keeper-bolts, the said lips having their upper surfaces inclined for engagement by the inclined portions of the rear walls of the openings in the liner, and means for locking the bolts in active or in an inactive position.

3. In a car journal-box, the combination with the box provided with a transverse housing at its upper forward portion, said housing being provided with rectangular openings which extend vertically through the housing and through the top of the box, each of the said openings having an angular recess in its upper side wall at the top portion of the housing, a shoe or wedge for the bearing-brass of the box, having recesses produced in its upper face at its forward portion, and a liner mounted on the said shoe or wedge, having openings therein extending through from top to bottom, and registering with the openings in the housing and with the recesses in the shoe or wedge, the rear wall of each opening in the liner being inclined downwardly and rearwardly at its lower edge, of keeper-bolts comprising a head and a body rectangular in cross-section, which body is adapted to slide through the openings in the housing, the top of the box and the openings in the liner, and to enter the recesses in the shoe or wedge, the body portion of each of said keeper-bolts being provided with a recess in its rear wall at its bottom portion, capable of receiving the rear walls of the openings in the liner when the latter is moved forward, a rearwardly-extending lip being located at the lower portion of said recesses in the keeper-bolts, which lips have their upper faces downwardly inclined, and a spring secured to the outer side face of each keeper-bolt adjacent to its center, which springs extend upward practically to the heads of the said bolts and are located over the inclined recesses produced in the said outer side faces of the bolts, each spring terminating in an inclined head at its upper end, adapted when the bolts are in their operative position to enter the recesses in the openings of the housing, which springs also when the bolts are elevated hold said bolts in elevated position by engaging with the upper edge portion of the housing.

850,048. BUILDING-BLOCK. STERLING T. PLAYFORD, Cassopolis, Mich. Filed Jan. 20, 1906. Serial No. 297,043.

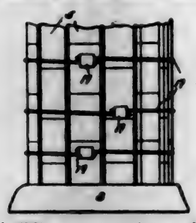

Claim.—1. In building construction, a plurality of blocks each having one longitudinal edge thereof convex and its opposite edge concave for the reception of the convex portion of an adjacent block, said blocks being laid in circular form and arranged in superposed courses, and a binding-rod engaging the side walls of the several blocks at convex ends thereof and spaced laterally from the concaved ends of the blocks.

2. In building construction, a plurality of blocks each having one longitudinal edge thereof convex and its opposite edge concave for the reception of the convex portion of an adjacent block, said blocks being laid in circular form and arranged in superposed courses, a binding-rod engaging the side walls of the several blocks at the convex ends thereof and spaced laterally from the concaved ends of said blocks, and means for adjusting the tension of the rod to thereby force the convex end of one block to its seat in the concavity of the mating block.

3. In building construction, a plurality of blocks each having one longitudinal edge thereof convex and its opposite edge concave for the reception of the convex portion of an adjacent block said block being laid in circular form and disposed in superposed courses, clips having perforated angular disposed arms the free ends of which bear against the blocks, threaded binding-rods passing through the perforation in the arms and engaging the walls of the blocks at the convex ends thereof said rods being spaced laterally from the concaved ends of the blocks, and nuts threaded on the binding-wires and adapted to engage the angular arms for adjusting the tension of said rods.

4. In building construction, a plurality of blocks each having one longitudinal edge thereof convex and its opposite edge concave for the reception of the convex portion of an adjacent block, said block being laid in superposed courses to form a circular wall, a diaphragm interposed between adjacent courses at one end of the wall, a central support for the diaphragm, and binding-rods embracing the wall and bearing against the walls of the blocks at the convex ends thereof, said rods being spaced laterally from the concaved ends of the blocks.

5. In building construction, a plurality of blocks each having one longitudinal edge thereof convex and its opposite edge concave for the reception of the convex portion of an adjacent block, said block being laid in superposed courses to form a circular wall, a diaphragm interposed between adjacent courses at one end of the wall and having a plurality of reinforcing-rods embedded therein and extending within the wall, a liquid coating for the interior surface of the wall, and binding-rods embracing the exterior surface of the wall and bearing against the walls of the blocks at the convex ends thereof.

6. In building construction, a plurality of blocks each having one longitudinal edge thereof convex and its opposite edge concave for the reception of the convex portion of an adjacent block, said blocks being laid in superposed courses to form a circular wall and having their mating edges covered with waterproof material, a diaphragm interposed between the adjacent courses at the lower end of the wall and provided with an annular shoulder spaced from said wall to form a pocket adapted to receive a plastic material, and a plurality of spaced binding-rods embracing the exterior of the wall and bearing against the walls of the blocks at the convex ends thereof.

850,049. ROTARY ENGINE. PAUL O. POULSON, Brigham, Utah. Filed Jan. 4, 1907. Serial No. 350,708.

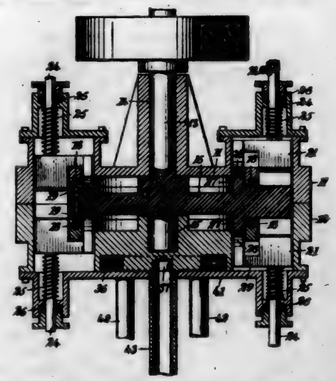

Claim.—1. In combination, a casing having an annular chamber, an abutment carried by the casing and extending

into said chamber, said casing being provided with an inlet and an exhaust port on opposite sides of the abutment, a rotary member within said casing, a piston carried thereby and movable in the annular chamber, and means carried by said rotary member adjacent said piston for moving the abutment out of the path of said piston.

2. In combination, a casing having an annular chamber, an abutment within said casing and extending into the annular chamber, said abutment comprising two members movable into said annular chamber from opposite sides thereof, a rotary member within the casing, a piston carried thereby and movable in the annular chamber, and means carried by said rotary member adjacent said piston for moving the members of the abutment out of the path of the piston.

3. In combination, a casing having an annular chamber, an abutment carried by the casing and extending into the annular chamber, said abutment comprising two members slidably mounted within recesses in said casing, cams carried by said members, a rotary member within said casing, a piston carried thereby and movable in the annular chamber, and means carried by said rotary member adjacent said piston for contacting with said cams to move the members of the abutment out of the path of the piston.

4. In combination, a casing having an annular chamber, an abutment carried by the casing and extending into the annular chamber, said abutment comprising two plates slidably mounted in recesses in said casing and entering said annular chamber from opposite sides thereof, means for normally forcing said members into the annular chamber and into engagement with each other, a rotary member, a piston carried thereby, and means carried by said rotary member adjacent said piston for moving the members of the abutment out of the path of the piston.

5. In combination, a casing having an annular chamber, an abutment carried by the casing and extending into the annular chamber, said abutment comprising two members slidably mounted in recesses in said casing, cams carried by each of said members, means for normally pressing said members into said chamber and into engagement with each other, and a rotary member having a portion thereof extending into said annular chamber and cams carried by said rotary member for contacting with the first-mentioned cams to move the members of the abutment out of the annular chamber.

6. In combination, a casing having an annular chamber, a rotary member within said casing, a plurality of pistons carried by said rotary member, a plurality of abutments carried by said casing and movable into the annular chamber, the number of said abutments being less than the number of said pistons, means carried by said rotary member adjacent each of said pistons for moving the abutments out of the path of said pistons, and means for directing a motive fluid to said annular chamber at either side of each abutment and permitting the exhaust from the opposite side.

7. In combination, a casing having an annular chamber, a rotary member located therein, a piston carried by said rotary member and movable in said annular chamber, an abutment within said casing and movable into said annular chamber, means carried by the rotary member for moving the abutment out of the path of the piston, said casing being provided with an inlet and an exhaust port upon opposite sides of said abutment, a supply-conduit, an exhaust-conduit, and means for connecting either of said conduits with either of said ports.

8. In combination, a casing having an annular chamber, a rotary member located therein, a piston carried by said rotary member and movable in said annular chamber, a plurality of abutments within said casing and movable into said annular chamber, means carried by the rotary member for moving the abutments out of the path of the piston, said casing being provided with a port adjacent each side of each of said abutments, a supply-conduit, an exhaust-conduit, and rotary means for connecting said supply-conduit to the ports upon one side of each abutment or with the ports upon the opposite sides of each abutment.

9. In combination, a casing having an annular chamber, a rotary member located therein, pistons carried by said rotary member and movable in said annular chamber, a plurality of abutments carried by said casing and movable into said annular chamber, said casing being provided with passages and ports leading into said chamber adjacent each side of each of the abutments, a supply-conduit, a plurality of discharge-conduits, and a movable ring intermediate said conduits and said casing, whereby the supply-conduit may be placed in communication with the passages leading to either side of said abutments and the exhaust-conduits placed in communication with the remaining passages.

10. In combination, a casing having an annular chamber, a rotary member within said casing, a piston carried by said rotary member and movable in said anular chamber, a plurality of abutments within said casing and movable into, said annular chamber, means carried by said rotary member for moving said abutments out of the path of said pistons, said casing being provided with a passage leading to each side of each of the abutments and having their opposite ends terminating equal distances apart and at equal distances from the center of the rotary member, a plate secured to said casing, supply and exhaust conduits connected to said plate, and a movable ring intermediate said plate and said casing for placing the supply-conduit in communication with the passages leading to either side of the abutments and placing the exhaust-conduits in communication with the passages leading to the opposite side of each abutment.

850,050. WATER-GAGE. ALBERT S. POWELL, Chicago, Ill. Filed May 10, 1905. Serial No. 259,810.

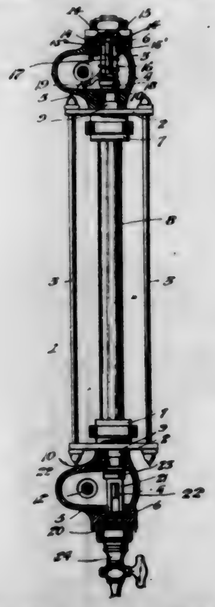

Claim.—A water-gage comprising a glass tube with casings at opposite ends having valve-seats therein, plugs tapped into the walls of the casings, a recess in one of the plugs, a guide having a base with a central opening therein, and provided with spaced-apart sections rising upwardly therefrom, each having semicircular inner faces and rounded outer faces, a stem mounted in the opening of the guide-base, a valve on the lower end of the stem to engage the valve-seat, said stem having vertical movement in said semicircular faces of the guide and its base, a spring lapped to the rounded outer faces of the guide-sections and having its ends secured respectively to the stem and the base of the guide, and a disk on the upper end of the stem having movement in said recess of the plug to regulate the action of the valve-stem, substantially as specified.

850,051. CANT-HOOK OR PEAVEY. PETER PRICE, Panther, W. Va. Filed June 2, 1906. Serial No. 319,872.

Claim.—1. A cant-hook, comprising a stock, and a socket having a hook pivoted thereto, said socket having a barbed tang for engaging an opening in the stock, and being longitudinally notched on opposite sides to form lips one of said lips being adjacent to the pivotal connection of the hook and provided with an opening, a truss-rod extending longitudinally through the stock, one end of said rod having a hook for engaging the opening of the lip, and the other being screw-threaded and projecting beyond the end of the stock, and a nut engaging the screw-threaded end of the rod substantially as described.

2. A cant-hook comprising a stock, and a socket for receiving the end of the stock, said socket having a hook pivoted thereto, and being notched on opposite sides to form lips, one of said lips being adjacent to the pivotal connection of the hook, and a truss-rod extending longitudinally through the stock, one end of said rod being connected with the lip adjacent to the hook, and the other end projecting beyond the stock and having a nut threaded thereon, whereby to tighten said truss-rod.

3. A cant-hook comprising a stock and a socket having a hook pivotally connected thereto, a truss-rod extending longitudinally through the stock, one end of said truss-rod being connected with the socket adjacent to the pivotal connection of the hook, and the other end of the rod projecting beyond the end of the stock and having a nut threaded thereon whereby to tighten said rod.

4. A cant-hook comprising a stock, and a socket having a hook pivoted thereto, a truss-rod within the stock, one end of said rod being connected with the socket adjacent to the pivotal connection with the hook, and the other end projecting beyond the end of the socket, and being provided with means whereby to tighten said rod.

850,052. CHALK-LINE HOLDER. MORLEY A. REARR, Los Angeles, Cal. Filed July 25, 1906. Serial No. 327,601.

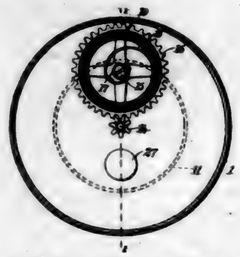

Claim.—1. A cord-holder comprising a case having a slot therein, a reel rotatably mounted within said case and adapted to have a cord wound thereupon and passing out through said slot, a fixed pinion mounted within said case, a gear-wheel carried by sad reel meshing with said pinion and having a planetary movement with respect to said pinion, and a spring having one end attached to said gear-wheel and one end fixed with respect to said reel, whereby said spring will be wound when said cord is extended.

2. A cord-holder comprising a case having a slot therein, a reel rotatably mounted within said case and adapted to have a cord wound thereupon and passing out through said slot, a fixed pinion mounted within said case, a gear-wheel carried by said reel meshing with said pinion and having a planetary movement with respect to said pinion, a spring having one end attached to said gear-wheel and one end fixed with respect to said reel, whereby said spring will be wound when said cord is extended, and means for locking said reel against rotation.

3. In a cord-holder, in combination, a case, a reel rotatably mounted therein and having a locking-plate presenting a plurality of openings disposed circumferentially with respect to the axis of rotation of said reel, a fixed pinion mounted on said case, a gear-wheel rotatably mounted on said reel and meshing with said pinion, a spring having one end fixed with respect to said reel and one end attached to said gear-wheel, whereby the rotation of said reel will wind said spring, a leaf-spring attached to said case and adapted to project into any of said openings to lock said reel against rotation, and a sliding sleeve running on said spring and affording means for disengaging the same from said reel.

4. In a cord-holder, in combination, a case, a reel rotatably mounted therein, a spring mounted on said case and tending to touch the face of said reel, and a sleeve guided on said case, sliding on said spring and affording means for disengaging said spring from said reel.

850,053. TUFT-FORMING MACHINE. MARTIN O. REHFUSS and JOHN G. REHFUSS, Philadelphia, Pa., assignors, by mesne assignments, to The National Cotton Tuft and Fibre Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Oct. 9, 1905. Serial No. 282,037.

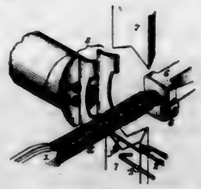

Claim.—1. In a tufting-machine, the combination of a feeder for the tufting-strands, a needle for the tying-cord, means for first forming a loop of tying-cord, then twisting the ends of said loop, then projecting the tuft-forming

into said chamber, said casing being provided with an inlet and an exhaust port on opposite sides of the abutment, a rotary member within said casing, a piston carried thereby and movable in the annular chamber, and means carried by said rotary member adjacent said piston for moving the abutment out of the path of said piston.

2. In combination, a casing having an annular chamber, an abutment within said casing and extending into the annular chamber, said abutment comprising two members movable into said annular chamber from opposite sides thereof, a rotary member within the casing, a piston carried thereby and movable in the annular chamber, and means carried by said rotary member adjacent said piston for moving the members of the abutment out of the path of the piston.

3. In combination, a casing having an annular chamber, an abutment carried by the casing and extending into the annular chamber, said abutment comprising two members slidably mounted within recesses in said casing, cams carried by said members, a rotary member within said casing, a piston carried thereby and movable in the annular chamber, and means carried by said rotary member adjacent said piston for contacting with said cams to move the members of the abutment out of the path of the piston.

4. In combination, a casing having an annular chamber, an abutment carried by the casing and extending into the annular chamber, said abutment comprising two plates slidably mounted in recesses in said casing and entering said annular chamber from opposite sides thereof, means for normally forcing said members into the annular chamber and into engagement with each other, a rotary member, a piston carried thereby, and means carried by said rotary member adjacent said piston for moving the members of the abutment out of the path of the piston.

5. In combination, a casing having an annular chamber, an abutment carried by the casing and extending into the annular chamber, said abutment comprising two members slidably mounted in recesses in said casing, cams carried by each of said members, means for normally pressing said members into said chamber and into engagement with each other, and a rotary member having a portion thereof extending into said annular chamber and cams carried by said rotary member for contacting with the first-mentioned cams to move the members of the abutment out of the annular chamber.

6. In combination, a casing having an annular chamber, a rotary member within said casing, a plurality of pistons carried by said rotary member, a plurality of abutments carried by said casing and movable into the annular chamber, the number of said abutments being less than the number of said pistons, means carried by said rotary member adjacent each of said pistons for moving the abutments out of the path of said pistons, and means for directing a motive fluid to said annular chamber at either side of each abutment and permitting the exhaust from the opposite side.

7. In combination, a casing having an annular chamber, a rotary member located therein, a piston carried by said rotary member and movable in said annular chamber, an abutment within said casing and movable into said annular chamber, means carried by the rotary member for moving the abutment out of the path of the piston, said casing being provided with an inlet and an exhaust port upon opposite sides of said abutment, a supply-conduit, an exhaust-conduit, and means for connecting either of said conduits with either of said ports.

8. In combination, a casing having an annular chamber, a rotary member located therein, a piston carried by said rotary member and movable in said annular chamber, a plurality of abutments within said casing and movable into said annular chamber, means carried by the rotary member for moving the abutments out of the path of the piston, said casing being provided with a port adjacent each side of each of said abutments, a supply-conduit, an exhaust-conduit, and rotary means for connecting said supply-conduit to the ports upon one side of each abutment or with the ports upon the opposite sides of each abutment.

9. In combination, a casing having an annular chamber, a rotary member located therein, pistons carried by said rotary member and movable in said annular chamber, a plurality of abutments carried by said casing and movable into said annular chamber, said casing being provided with passages and ports leading into said chamber adjacent each side of each of the abutments, a supply-conduit, a plurality of discharge-conduits, and a movable ring intermediate said conduits and said casing, whereby the supply-conduit may be placed in communication with the passages leading to either side of said abutments and the exhaust-conduits placed in communication with the remaining passages.

10. In combination, a casing having an annular chamber, a rotary member within said casing, a piston carried by said rotary member and movable in said annular chamber, a plurality of abutments within said casing and movable into said annular chamber, means carried by said rotary member for moving said abutments out of the path of said pistons, said casing being provided with a passage leading to each side of each of the abutments and having their opposite ends terminating equal distances apart and at equal distances from the center of the rotary member, a plate secured to said casing, supply and exhaust conduits connected to said plate, and a movable ring intermediate said plate and said casing for placing the supply-conduit in communication with the passages leading to either side of the abutments and placing the exhaust-conduits in communication with the passages leading to the opposite side of each abutment.

850,050. WATER-GAGE. ALBERT S. POWELL, Chicago, Ill. Filed May 10, 1905. Serial No. 259,810.

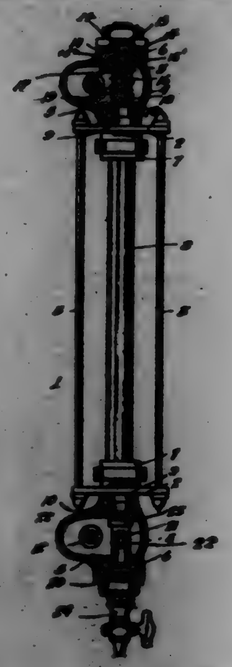

Claim.—A water-gage comprising a glass tube with casings at opposite ends having valve-seats therein, plugs tapped into the walls of the casings, a recess in one of the plugs, a guide having a base with a central opening therein, and provided with spaced-apart sections rising upwardly therefrom, each having semicircular inner faces and rounded outer faces, a stem mounted in the opening of the guide-base, a valve on the lower end of the stem to engage the valve-seat, said stem having vertical movement in said semicircular faces of the guide and its base, a spring lapped to the rounded outer faces of the guide-sections and having its ends secured respectively to the stem and the base of the guide, and a disk on the upper end of the stem having movement in said recess of the plug to regulate the action of the valve-stem, substantially as specified.

850,051. CANT-HOOK OR PEAVEY. PETER PRICE, Panther, W. Va. Filed June 2, 1906. Serial No. 319,872.

Claim.—1. A cant-hook, comprising a stock, and a socket having a hook pivoted thereto, said socket having a barbed tang for engaging an opening in the stock, and being longitudinally notched on opposite sides to form lips one of said lips being adjacent to the pivotal connection of the hook and provided with an opening, a truss-rod extending longitudinally through the stock, one end of said rod having a hook for engaging the opening of the lip, and the other being screw-threaded and projecting beyond the end of the stock, and a nut engaging the screw-threaded end of the rod substantially as described.

2. A cant-hook comprising a stock, and a socket for receiving the end of the stock, said socket having a hook pivoted thereto, and being notched on opposite sides to form lips, one of said lips being adjacent to the pivotal connection of the hook, and a truss-rod extending longitudinally through the stock, one end of said rod being connected with the lip adjacent to the hook, and the other end projecting beyond the stock and having a nut threaded thereon, whereby to tighten said truss-rod.

3. A cant-hook comprising a stock and a socket having a hook pivotally connected thereto, a truss-rod extending longitudinally through the stock, one end of said truss-rod being connected with the socket adjacent to the pivotal connection of the hook, and the other end of the rod projecting beyond the end of the stock and having a nut threaded thereon whereby to tighten said rod.

4. A cant-hook comprising a stock, and a socket having a hook pivoted thereto, a truss-rod within the stock, one end of said rod being connected with the socket adjacent to the pivotal connection with the hook, and the other end projecting beyond the end of the socket, and being provided with means whereby to tighten said rod.

850,052. CHALK-LINE HOLDER. MORLEY A. REARE, Los Angeles, Cal. Filed July 25, 1906. Serial No. 327,601.

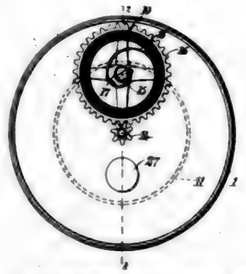

Claim.—1. A cord-holder comprising a case having a slot therein, a reel rotatably mounted within said case and adapted to have a cord wound thereupon and passing out through said slot, a fixed pinion mounted within said case, a gear-wheel carried by said reel meshing with said pinion and having a planetary movement with respect to said pinion, and a spring having one end attached to said gear-wheel and one end fixed with respect to said reel, whereby said spring will be wound when said cord is extended.

2. A cord-holder comprising a case having a slot therein, a reel rotatably mounted within said case and adapted to have a cord wound thereupon and passing out through said slot, a fixed pinion mounted within said case, a gear-wheel carried by said reel meshing with said pinion and having a planetary movement with respect to said pinion, a spring having one end attached to said gear-wheel and one end fixed with respect to said reel, whereby said spring will be wound when said cord is extended, and means for locking said reel against rotation.

3. In a cord-holder, in combination, a case, a reel rotatably mounted therein and having a locking-plate presenting a plurality of openings disposed circumferentially with respect to the axis of rotation of said reel, a fixed pinion mounted on said case, a gear-wheel rotatably mounted on said reel and meshing with said pinion, a spring having one end fixed with respect to said reel and one end attached to said gear-wheel, whereby the rotation of said reel will wind said spring, a leaf-spring attached to said case and adapted to project into any of said openings to lock said reel against rotation, and a sliding sleeve running on said spring and affording means for disengaging the same from said reel.

4. In a cord-holder, in combination, a case, a reel rotatably mounted therein, a spring mounted on said case and tending to touch the face of said reel, and a sleeve guided on said case, sliding on said spring and affording means for disengaging said spring from said reel.

850,053. TUFT-FORMING MACHINE. MARTIN O. REHFUSS and JOHN G. REHFUSS, Philadelphia, Pa., assignors, by mesne assignments, to The National Cotton Tuft and Fibre Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Oct. 9, 1905. Serial No. 282,037.

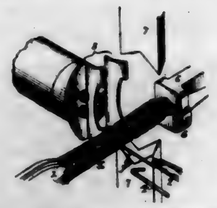

Claim.—1. In a tufting-machine, the combination of a feeder for the tufting-strands, a needle for the tying-cord, means for first forming a loop of tying-cord, then twisting the ends of said loop, then projecting the tuft-forming

strands into the loop, and then tightening the latter upon said strands.

2. In a tuft-forming machine, the combination of means for forming a succession of properly spaced and secured loops of tying-cord around the tufting-strands, means for feeding said tied strands forwardly, and means for cutting the strands between successive tying-loops.

3. In a tuft-forming machine, the combination of a feeder for the tufting-strands, a needle carrying a tying-cord, a twister having jaws for engaging said tying-cord, a looper for said tying-cord, and means for rotating the twister.

4. In a tuft-forming machine, the combination of a feeder for the tufting-strands, a needle for the tying-cord, a twister having jaws for engaging said tying-cord and means for moving the needle from and toward said twister, and also across the same, so that it can lay the tying-cord in the jaws of the twister.

5. In a tuft-forming machine, the combination of a feeder for the tufting-strands, a needle for the tying-cord, a twister having jaws for engaging said tying-cord, means for moving the needle from and toward said twister and also across the same, so that it can lay the tying-cord in the jaws of the twister, and means for opening and closing said jaws.

6. In a tuft-forming machine, the combination of a feeder for the tufting-strands, a needle for the tying-cord, a twister having jaws for engaging said tying-cord, means for moving the needle from and toward said twister, and also across the same, so that it can lay the tying-cord in the jaws of the twister, said jaws being so formed as to permit of the release of the tying-cord therefrom when said tying-cord is subjected to tension.

7. In a tuft-forming machine, the combination of a feeder for tufting-strands, a needle carrying a tying-cord, a twister having jaws for engaging said tying-cord, a looper for engaging said tying-cord, and means for rotating the twister and reciprocating the needle and looper.

8. In a tuft-forming machine, the combination of a feeder for tufting-strands, a needle carrying a tying-cord, a twister having jaws for engaging said tying-cord, a looper for engaging said tying-cord, and means for rotating the twister, reciprocating the looper, and imparting a combined sliding and swinging movement to the needle.

9. In a tuft-forming machine, the combination of a feeder for the tufting-strands, a needle carrying a tying-cord, a twister engaging said cord, a looper also engaging the same, and a take-up device acting independently of the needle for tightening the loop of tying-cord upon the tufting-strands.

10. In a tuft-forming machine, the combination of a feeder for the tufting-strands, nippers for engaging said tufting-strands and pulling them forward from the feeder, and means for looping a tying-cord for said strands and twisting the loop.

11. In a tuft-forming machine, the combination of means for looping a tying-cord and twisting the loop, a feeder for the tufting-strands, and nippers for engaging said tufting-strands and drawing them from the feeder, said feeder and nippers being on opposite sides of the looping and twisting devices.

12. In a tuft-forming machine, the combination of looping and twisting devices for a tying-cord, a feeder for the tufting-strands, nippers for engaging said strands and drawing them from the feeder, and a cutting-knife for severing the strands at a point between the feeder and nippers.

13. The combination, in a tuft-forming machine, of a tubular feeder for the tufting-strands having jaws for gripping the said strands, a tubular guide for said feeder, and means for moving the feeder independently of the guide, so as to effect opening-and-closing movement of the jaws of the feeder.

14. A tuft-forming machine having in combination, a feeder for the tufting-strands, nippers for engaging said strands and drawing them from the feeder, means for forming and twisting a loop of tying-cord, and means for moving said strands, feeder and nippers from and toward each other.

850,954. TELESCOPE FOR SUBMARINE BOATS. FRITZ REHM, Lichtenfels, and KARL WINDSTOSSER, Nuremberg, Germany. Filed Nov. 4, 1905. Serial No. 285,852.

Claim.—1. In a telescope for submarine boats, the combination with a barrel, of a main objective system adapted to produce a picture of a certain part of the horizon, a plurality of subsidiary objective systems adapted to produce smaller subsidiary pictures of other parts of the horizon, means for erecting the subsidiary pictures with respect to the main picture, means for projecting the various pictures downwardly within the barrel, and an ocular system arranged for observing the pictures all at a time.

2. In a telescope for submarine boats, the combination with a barrel, of a main objective system capable of producing a picture of a certain part of the horizon, subsidiary objective systems capable of producing smaller subsidiary pictures of other parts of the horizon, all objective systems being adapted to project the pictures downwardly within the barrel, means for erecting the subsidiary pictures with respect to the main picture, and an ocular system arranged for observing the pictures all at a time.

3. In a telescope for submarine boats, the combination with a barrel, of a main objective system adapted to produce a picture of a certain part of the horizon, a plurality of subsidiary objective systems adapted to produce smaller subsidiary pictures of other parts of the horizon, means for erecting the subsidiary pictures with respect to the main picture, diaphragms within the barrel having apertures, corresponding to the number, place, and shape of the pictures, means for projecting the various pictures downwardly within the barrel, and an ocular system arranged for observing the pictures all at a time.

4. In a telescope for submarine boats, the combination with a barrel, of a main objective system adapted to produce a picture of a certain part of the horizon, a plurality of subsidiary objective systems adapted to produce smaller subsidiary pictures of other parts of the horizon, means for erecting the subsidiary pictures with respect to the main picture, means for differently marking the subsidiary pictures, means for projecting the various pictures downwardly within the barrel, and an ocular system arranged for observing the pictures all at a time.

5. In a telescope for submarine boats, the combination with a barrel, of a main objective system capable of producing a picture of a certain part of the horizon, subsidiary objective systems capable of producing smaller subsidiary pictures of other parts of the horizon, all objective systems being adapted to project the pictures downwardly within the barrel, means for erecting the subsidiary pictures with respect to the main picture, means for differently marking the subsidiary pictures, intermediate lenses within the barrel and an ocular system arranged for observing the pictures all at a time.

6. In a telescope for submarine boats, the combination with a barrel, of a main objective system capable of producing a picture of a certain part of the horizon, subsidiary objective systems capable of producing smaller subsidiary pictures of other parts of the horizon, all objective systems being adapted to project the pictures downwardly within the barrel, means for erecting the subsidiary pictures with respect to the main picture, diaphragms within the barrel having apertures corresponding to the number, place, and shape of the pictures, means for differently marking the subsidiary pictures, intermediate lenses within the barrel and an ocular system arranged for observing the pictures all at a time.

7. In a telescope for submarine boats, the combination with a vertically-disposed barrel, of a main objective system capable of collecting rays of light, and deflecting them downwardly within the barrel, a plurality of subsidiary objective systems smaller than the main objective adapted to produce a similar effect with regard to other parts of the horizon, means for restraining part of the rays of light passing the main objective, so as to form recesses or dark places within the circular field of view, in which places the subsidiary pictures are produced by the subsidiary objectives, a plurality of lenses within the barrel, and an ocular system in the lower part of the barrel.

8. In a telescope for submarine boats, the combination with a vertically-disposed barrel, of a main objective system capable of collecting rays of light of a certain part of the horizon, and deflecting them downwardly within the barrel, a plurality of subsidiary objective systems smaller than the main objective, adapted to produce a similar effect with regard to other parts of the horizon, means for restraining part of the rays of light passing the main objective, so as to darken those parts of the main picture at which the subsidiary pictures are produced, means for erecting the different pictures, a plurality of intermediate lenses within the barrel, and an ocular system in the lower part of the barrel.

9. In a telescope for submarine boats, the combination with a vertically-disposed barrel, of a main objective system for a certain part of the horizon, disposed within the upper part of the barrel, a plurality of subsidiary objective systems disposed below the main objective and directed to other parts of the horizon, all objectives being composed of lenses and a refracting-face adapted to collect rays of light and deflect them downwardly within the barrel, the subsidiary objectives producing pictures on a smaller scale than the main objective, means for erecting the subsidiary pictures, intermediate lenses within the barrel, and an ocular system in the lower part of the barrel.

10. In a telescope for submarine boats, the combination with a vertically-disposed barrel, of lenses and a reflector at the upper end of the barrel, for collecting rays of light from one direction and deflecting such rays downwardly within the barrel, a plurality of other lenses and reflectors, also at the upper end of the barrel, for collecting rays of light from other directions and deflecting these rays downwardly within the barrel, a diaphragm beneath the lenses and reflector first named, provided with an aperture, a plurality of parallel diaphragms corresponding with the lenses and reflectors second named, each having apertures therein, a plurality of other lenses within the barrel, glass panes interposed in the path of the several beams of light-rays and provided with means for marking the pictures, and an ocular and further lenses and a reflector at the lower end of the barrel for deflecting the several beams of light rays.

11. In a telescope for submarine boats, the combination with a barrel, of a main system of lenses and a reflector at the upper end of the barrel and arranged for collecting the rays of light from a part of the horizon and sending them downward through the barrel, a plurality of subsidiary systems of lenses and a reflector at the upper end of said barrel and arranged for collecting the rays of light from other parts of the horizon and sending them downward through the barrel, a diaphragm beneath said main system and provided with an aperture, a plurality of parallel diaphragms for said plurality of subsidiary systems and each provided with apertures for the respective system or systems in addition to the apertures in the preceding diaphragm, all the apertures in the last diaphragm corresponding to the main and the subsidiary fields of view within a circle, a plurality of lenses in said barrel, and a system of lenses and a reflector with an ocular at the lower end of said barrel and arranged for deflecting the several beams of rays and producing the chief and the subsidiary pictures.

12. In a telescope for submarine boats, the combination with a barrel, of a main objective for a part of the horizon at the upper end of the barrel, a plurality of subsidiary objectives smaller than the main objective for other parts of the horizon at the upper end of said barrel, a main system of a reflector and lenses for said main objective and arranged for sending the collected rays of light downward through said barrel, a plurality of subsidiary systems of smaller reflectors and lenses for said plurality of subsidiary objectives and arranged for sending the collected rays of light separately downward through said barrel, a diaphragm beneath said main system and provided with an aperture, a plurality of parallel diaphragms for said plurality of subsidiary systems and each provided with apertures for the respective system or systems in addition to the apertures in the preceding diaphragm, all the apertures in the last diaphragm corresponding to the main and the subsidiary fields of view respectively within a circle, the main field of view having the full diameter of the circle and the subsidiary fields of view being disposed in the top part and if so preferred also in the bottom part of the area of the circle, a plurality of lenses in said barrel, and a system of lenses and a reflector with an ocular at the lower end of said barrel and arranged for deflecting the several beams of rays and producing the chief and the subsidiary pictures, said reflectors and said lenses being arranged for erecting all the pictures.

13. In a telescope for submarine boats, the combination with a barrel, of a main objective for the fore part of the horizon at the upper end of said barrel, a plurality of subsidiary objectives smaller than said main objective for other parts of the horizon at the upper end of said barrel, a main system of a reflector and lenses for said main objective and arranged for sending the collected rays of light downward through said barrel, a plurality of subsidiary systems of smaller reflectors and lenses for said plurality of subsidiary objectives and arranged for sending the collected rays of light separately downward through said barrel, a diaphragm beneath said main system and provided with an aperture, a plurality of parallel diaphragms for said plurality of subsidiary systems and each provided with apertures for the respective system or systems in addition to the apertures in the preceding diaphragm, all the apertures in the last diaphragm corresponding to the main and the subsidiary fields of view respectively within a circle, the chief field of view having the full diameter of the circle and the subsidiary fields of view being disposed in the top part and if so preferred also in the bottom part of the area of the circle, a plurality of lenses in said barrel, a system of lenses and a reflector with an ocular at the lower end of said barrel and arranged for deflecting the several beams of rays and producing the chief and the subsidiary pictures, and means for differently marking the subsidiary pictures.

14. In a telescope for submarine boats, the combination with an extensible barrel, of a main objective for a part of the horizon at the upper end of said extensible barrel, a plurality of subsidiary objectives smaller than said main objective for other parts of the horizon at the upper end of said extensible barrel, a main system of a reflector and lenses for said main objective and arranged for sending the collected rays of light downward through said extensible barrel, a plurality of subsidiary systems of smaller reflectors and lenses for said plurality of subsidiary objectives and arranged for sending the collected rays of light separately downward through said extensible barrel, a dia-

phragm beneath said main system and provided with an aperture, a plurality of parallel diaphragms for said plurality of subsidiary systems and each provided with apertures for the respective system or systems in addition to the apertures in the preceding diaphragm, all the apertures in the last diaphragm corresponding to the chief and the subsidiary fields of view respectively within a circle, the chief field of view having the full diameter of the circle and the subsidiary fields of view being disposed in the top part and also in the bottom part of the area of the circle, a plurality of lenses in said extensible barrel, a system of lenses and a reflector at the lower end of said extensible barrel and arranged for deflecting the several beams of rays, an ocular arranged for producing the main and the subsidiary pictures, said reflectors and said lenses being arranged for erecting all the pictures, and means for differently marking the subsidiary pictures.

850,055. SHOE-SEWING MACHINE. JOSEPH A. RHOULT, Haverhill, Mass., assignor of one-half to Harris W. Spaulding, Haverhill, Mass. Filed May 26, 1905. Serial No. 262,367.

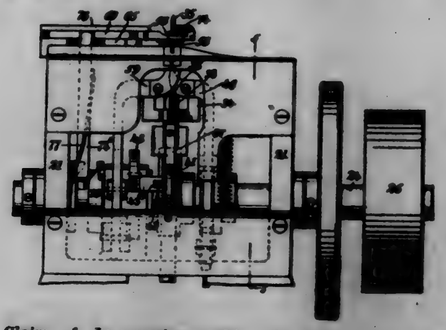

Claim.—1. In a sewing-machine, the combination with a thread-carrier, of a hooked needle, a needle-bar, means for reciprocating the same, a cast-off coacting with the needle, a laterally-yielding slide connected to the cast-off, a spring pressing the slide laterally to hold the cast-off engaged with the needle, and means for operating the slide.

2. In a sewing-machine, the combination with a frame, of a thread-carrying device, a needle-bar, a hooked needle attached thereto, means for operating the needle-bar, said bar having a groove therein, a cast-off adapted to lie in said groove, a laterally-yielding slide to which the cast-off is attached, a spring pressing the slide laterally to hold the cast-off in said groove of the needle-bar, and means for operating the slide.

3. In a sewing-machine, the combination with the thread-carrying devices, of a prime-mover shaft, a needle-bar, a needle carried thereby, means for operating the needle-bar from said prime-mover shaft, a cast-off, means for mounting the cast-off, devices for driving the cast-off from said prime-mover shaft, a lock-dog adapted to hold the work during the formation of the stitch, a slide carrying the lock-dog, means for operating the slide from the prime-mover shaft, a feed-dog, a vibrating and sliding lever to which the feed-dog is attached, and means for operating said lever from the prime-mover shaft.

4. A sewing-machine comprising a work-table, a work-guide mounted directly thereon and supported directly thereby, a thread-carrier also mounted directly on and supported by the table, stitch-forming devices including a hooked needle and a cast-off, the needle being movable through the table, means located below the table for operating the stitch-forming devices and thread-carrier, a work-locking dog located below the table and adapted to engage the work during the formation of the stitch, and means for operating said dog.

5. A sewing-machine comprising a work-table, a work-guide mounted directly thereon and supported thereby, a thread-carrier also mounted directly on the table and supported by the same, stitch-forming devices including a hooked needle and cast-off, located below the table the needle being movable through the same, means located below the table for operating the stitch-forming devices and thread-carrier, a work-locking dog mounted below the table and adapted to press the work against the said guiding means during the formation of the stitch, and means for operating the locking-dog.

6. A sewing-machine comprising a work-table, stitch-forming devices, a work-guide mounted on the table, a thread-carrier mounted on the table, alongside the work-guide, means for operating the thread-carrier and stitch-forming devices, the work-guide comprising parts adapted to grip a section of the work, and means for operating said parts of the work-guide, for the purpose specified.

7. In a sewing-machine, the combination of a work-table, stitch-forming devices, means for operating the same, a thread-carrier mounted on the work-table, means for operating the thread-carrier, a sliding member juxtaposed to the thread member and adapted to move back and forth across the stitch-line, a jaw mounted on the sliding member and coacting therewith to grip a section of the work, and means for operating said sliding member and jaw.

8. In a sewing-machine, the combination with a frame, of a thread-carrying means, a hooked reciprocating needle, a cast-off coacting with the needle, means for reciprocally mounting the cast-off, said means being also movable toward and from the line of movement of the needle, a spring for yieldingly pressing said means toward the line of the needle movement, and means for driving all of the parts in unison.

9. In a sewing-machine, the combination with a frame, of means for carrying the thread, a hooked needle, means for operating the thread-carrying means and the needle, a cast-off coacting with the needle, a slide mounting the cast-off, said slide having a slot therein, a stationary pin engaging in the slot of the slide, a spring pressing the slide laterally, and a means for reciprocating the slide.

10. In a sewing-machine, the combination with a frame, of means for carrying the thread, a needle, devices for operating the thread-carrying means and needle, a cast-off coacting with the needle, a slide mounting the cast-off, means connected with the slide to permit the same a limited lateral movement, a spring pressing the slide laterally, and a vibrating member engaging a part on the slide to reciprocate the slide, said engagement permitting lateral movement of the slide.

11. In a sewing-machine, the combination with a frame, of means for carrying the thread, a needle coacting therewith, a needle-bar attached to the needle and having a groove therein, means for operating the needle and thread-carrying means, a cast-off coacting with the needle and adapted to enter the groove of the needle-bar, a slide mounting the cast-off, devices engaging the slide to allow the same a limited lateral movement, a spring laterally pressing the slide, and means for reciprocating the slide.

12. In a sewing-machine, the combination of a frame having a horizontally-disposed work-table, a work-guide mounted on top of the table and supported thereby, a thread-carrier mounted on the work-guide and horizontally movable, a needle, and complementary stitch-forming devices located below the table, the needle being movable upward through the same to coact with the work-guide and thread-carrier, and means for driving the operative parts.

13. In a sewing-machine, the combination of a frame having a work-guiding means thereon, a thread-carrier movably mounted on said work-guiding means, a member movably mounted on the thread-carrier and having a part adapted to engage the work, for the purpose specified, stitch-forming devices, and means for driving the operative parts.

14. In a sewing-machine, the combination with a frame having a table, work-guiding means thereon, a movable thread-carrier juxtaposed to said work-guiding means, a movable member juxtaposed to the thread-carrier and having a jaw thereon, a rock-shaft mounted on the movable member, a jaw on the rock-shaft, the second-named jaw coacting with the first-named jaw, stitch-forming devices, and means for driving the operative parts in unison.

15. In a sewing-machine, the combination of a needle, a cast-off coacting therewith, means reciprocally mounting the cast-off, said means being also movable toward and from the line of movement of the needle to engage the cast-off with and disengage it from the needle, means for yieldingly pressing the cast-off toward the needle, complementary stitch-forming devices, and means for driving the operative parts.

16. In a sewing-machine, the combination of a needle, means for mounting the same, a cast-off movable longitudinally of the needle and also movable transversely toward and from the same, means for mounting the cast-off, means for yieldingly pressing the cast-off toward the needle, complementary stitch-forming devices, and means for driving the operative parts.

17. A machine for sewing the uppers to the soles of shoes, having a thread-carrier comprising a body, a reduced end portion, and a thread-carrying horn supported by the reduced end portion, said reduced end portion being arranged to enter between the upper and sole to place the thread-carrying horn within the shoe.

18. A machine for sewing the uppers to the soles of shoes, having a thread-carrier comprising a body, a reduced end portion, a thread-carrying horn supported by the reduced end portion, said reduced end portion being arranged to enter between the upper and sole to place the thread-carrying horn within the shoe, and a means engaged with the body for operating the thread-carrier.

19. A machine for sewing the uppers to the soles of shoes having a thread-carrier with a portion arranged to extend between the sole and upper, and having its end extended upward and outward within the shoe to carry the thread over the inturned lower edge of the upper.

20. A machine for sewing the uppers to the soles of shoes having a guide with a portion arranged to pass between the sole and upper, and extending upward and outward within the shoe to embrace the inturned lower edge of the upper, and a thread-carrier also arranged to pass between the sole and upper, and extending upward and outward inside of the shoe to carry the end of the thread over said lower edge of the upper.

21. A machine for sewing the uppers to the soles of shoes having a device arranged to extend between the sole and upper to grip the upper, for the purpose specified, and a thread-carrier arranged to enter between the sole and upper to carry the thread inside of the shoe.

22. A machine for sewing the uppers to the soles of shoes having a device arranged to extend between the sole and upper to grip the upper, for the purpose specified, and a work-guide arranged to extend between the sole and upper.

23. A machine for sewing the uppers to the soles of shoes having a device arranged to extend between the sole and upper to grip the upper, for the purpose specified, a work-guide arranged to extend between the sole and upper, and a thread-carrier arranged to extend between the sole and upper to carry the thread inside of the shoe.

24. A machine for sewing the uppers to the soles of shoes, having a support for the sole, and a thread-carrier spaced therefrom a distance substantially equal to the thickness of the sole and arranged to enter between the sole and the upper to carry the thread inside the shoe.

25. A machine for sewing the uppers to the soles of shoes, having a stitching device, a support for the sole, and a thread-carrier spaced therefrom a distance substantially equal to the thickness of the sole and arranged to enter between the sole and the upper to carry the thread inside of the shoe at a point adjacent the stitching device.

26. A machine for sewing the uppers to the soles of shoes, comprising a support for the sole, a thread-carrier supported thereon, one end portion of said carrier being arranged to enter between the sole and upper to carry the thread inside the shoe, and means engaged with the other end portion of said carrier to operate the same.

27. A machine for sewing the uppers to the soles of shoes, having a support for the sole, a thread-carrier comprising a body portion and a thread-carrying portion proper, the latter being spaced from the support a distance substantially equal to the thickness of the sole and arranged to enter and operate between the sole and upper to carry the thread inside the shoe, and means engaged with the body of the thread-carrier to operate the same.

28. A machine for sewing the uppers to the soles of shoes, having a guide arranged to enter between the upper and sole to hold said members in position for stitching, and a thread-carrier arranged to enter and operate between the upper and sole at a point adjacent said guide and to carry the thread inside of the shoe.

29. A machine for sewing the uppers to the soles of shoes, having a guide with a portion arranged to enter between the sole and upper and extending outwardly and upwardly within the shoe to impress the inturned lower edge of the upper, and a thread-carrier also arranged to enter between the sole and upper at a point adjacent the guide and to carry the thread inside of the shoe.

30. A machine for sewing the uppers to the soles of shoes, comprising in combination, a support for the sole, and a device carried thereby and arranged to enter between the sole and upper to grip the upper for the purpose specified.

31. A machine for sewing the uppers to the soles of shoes, comprising in combination, a stationary support for the sole, and a device spaced therefrom and having two jaws arranged to enter between the sole and upper to grip the upper for the purpose specified.

32. A machine for sewing the uppers to the soles of shoes, comprising in combination, a stitching device having a needle, a support for the sole, a device having a part lying in a plane substantially parallel to said support and arranged to extend between the sole and upper to grip the upper, and means for bodily reciprocating the said device laterally of the stitching-line.

33. A machine for sewing the uppers to the soles of shoes, comprising in combination, a support for the sole, a device spaced from said support a distance substantially equal to the thickness of the sole and having two jaws arranged to enter between the sole and upper to grip the upper, and means for bodily reciprocating the jaws laterally of the stitching-line.

850,056. CONVERTIBLE TABLE. FRANZ A. RICHTER, Dallas, Tex. Filed Aug. 1, 1906. Serial No. 328,765.

Claim.—1. A supporting device of the character described comprising two members slidably connected and each composed of a plurality of links pivotally connected

with each other; the pivotal joints of the links composing the two members being adapted to be placed in or out of registry with each other.

2. In a supporting device of the class described, a pair of members each composed of a plurality of links, means connected with the links of one member for slidably supporting the corresponding links of the other member, and a spring-actuated lug hingedly connected with a link of one member and carrying a stud engaging one of a plurality of perforations in the corresponding link of the other member.

3. A supporting device of the character described comprising two members slidably connected and each composed of a plurality of pivotally-connected links; in combination with means connected with a link of one member for engaging a corresponding link of the other member to lock the members together.

4. A supporting device of the character described comprising two members each composed of a plurality of links, the links of one member being provided with clips slidably supporting the corresponding links of the other member, locking means connected with the link of one member and adjustably engaging a corresponding link of the other member to secure the said members in related position at various adjustments; one or more links of one section being composed of slidably-connected sections.

5. A supporting device of the character described composed of slidably-connected members each comprising a plurality of pivotally-connected links and one or more links of one member being composed of slidably-connected sections, in combination with means for securing the members in adjusted relation when part or all of the pivots connecting the links of one member are brought into or out of register with the pivots connecting the corresponding links of the other member.

850,057. SOD OR WALK TRIMMER. DICKINSON L. ROSS, Mankato, Minn. Filed Aug. 30, 1906. Serial No. 332,599.

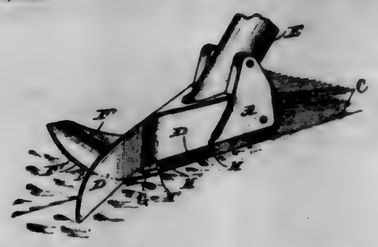

Claim.—1. A sod or walk trimmer, comprising a body portion having a wheel at its rear end, and provided at its front end with a laterally-projecting upwardly-inclined cutting-blade, having on its under side a laterally-projecting longitudinal extended shoulder to rest upon a guide-surface and having said shoulder prolonged laterally and forwardly forming a guide and scraper tongue, and provided in rear of the front cutting-blade with a scraper whose edge projects below the guide-shoulder and extends transversely, substantially as and for the purposes set forth.

2. A sod or walk trimmer comprising a body having at one side a cutting-blade set at an angle to which it is desired to cut or trim the sod or earth, and having at its opposite side a lateral projection forming a guide and gage and adapted to rest on a guiding-surface such as a cement walk, said guide being prolonged forwardly and inclined laterally to one side of the body substantially as set forth.

3. A sod or walk trimmer, comprising a body portion having its under side provided with a guide-shoulder to rest upon a sidewalk, having said shoulder prolonged forwardly and laterally to one side of the body portion, and having a cutting-blade projecting laterally to the opposite side of the body portion from the lateral extension of the shoulder, substantially as set forth.

4. A sod cutter or trimmer, comprising a body portion having at its front end a cutting-blade at one side and provided at its opposite side with a guide-gage and scraper extending at an angle to the line of movement of the device, and adapted to discharge accumulations to the cutting side of the tool in rear of the cutting-blade, substantially as set forth.

5. A sod cutter or trimmer, comprising an upwardly-inclined blade to trim the sod and provided in rear of and at the lower edge of the said blade with a transverse plow or scraper and also having an inclined scraper extending in rear of the transverse scraper and projecting at its respective ends in advance and in rear of said transverse scraper, substantially as set forth.

6. A sod cutter or trimmer, comprising a body portion having at its front end an inclined cutting-blade and provided in rear thereof with an inclined surface conforming to the excavation made by said blade and adapted to press against and smooth the surface of said excavation, substantially as set forth.

7. A sod cutter or trimmer, comprising a body portion having at its front end a cutting-blade inclined transversely to the direction of movement of the cutter and in rear thereof a surface conforming generally at an inclination to said blade and adapted to compress the wall of the excavation formed by the blade, and a wheel or roller in rear of said surface and having its side sloped or inclined generally in conformity with said inclined surface and adapted to roll and finish the said wall of the excavation, substantially as set forth.

8. A sod or walk trimmer having a body portion provided at its front edge with a cutting-blade and having in rear of said blade a surface conforming approximately to the cutting-blade to smooth the wall of the excavation formed by said blade, and also having in rear of said smoothing-surface a roller conforming to said wall of the excavation and adapted to smoothly roll the surface thereof, substantially as set forth.

9. A sod or walk trimmer, comprising a body portion having a cutting-blade at its front end, adapted to form an excavation along the edge of a sidewalk, and a roller in rear of said blade and adapted to finish the surface of the wall formed by said excavation, substantially as set forth.

10. A sod or walk trimmer for hand use, comprising a body portion having a cutting-blade at its front edge, and a wheel or roller at its rear edge and provided with an upwardly-projecting handle whereby it may be operated, substantially as set forth.

850,058. BROILER. JONAS W. ROSS, Chillicothe, Mo. Filed Nov. 14, 1906. Serial No. 343,359.

Claim.—1. A broiler consisting of a plate having its upper side inclining generally downward toward one edge and corrugated on said inclined edge in the direction of its inclination, and having a trough extending longitudinally along the lower ends of the corrugations in position to receive grease discharged therefrom and inclining downwardly from its upper to its lower end, the upper end of the trough being open to facilitate cleansing, and an outlet-opening being provided at the lower end of said trough, substantially as and for the purposes set forth.

2. A broiler consisting of a plate inclining on its upper face downwardly from its upper to its lower end and corrugated longitudinally on said inclined face from its upper to its lower end, and a trough extending the full width of the broiler across the lower end of the corrugations and inclining downwardly from one end toward the other or discharge end and provided at said discharge end with an outlet-opening and having its opposite or upper end open and unobstructed whereby to facilitate the cleansing of the said trough, all substantially as and for the purposes set forth.

850,059. SWITCH. JOSEPH T. SALVO, Charleston, S. C., assignor of one-half to John C. Jaudon, Charleston, S. C. Filed Jan. 11, 1907. Serial No. 351,783.

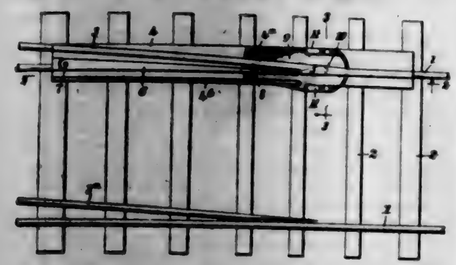

Claim.—The combination with a base-plate having a turnout-rail extending longitudinally thereof, a facial recess beneath said turnout-rail intermediate the ends thereof, and a guard-rail offset from the turnout-rail, a switch-block pivoted to the said base-plate in said recess and provided on opposite sides with inclined lugs extending above the turnout-rail, and a tongue pivoted at one end to said base-plate with its point pivotally attached to said switch-block, substantially as shown and described.

850,060. COOKER. AUGUST K. SCHULTE, Philadelphia, Pa. Filed May 12, 1906. Serial No. 316,579.

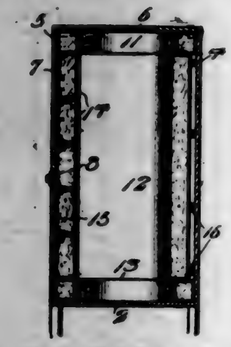

Claim.—1. A cooker embodying an outer substantially square or rectangular receptacle, an inner cylindrical wall, annular pads or cushions mounted within the cylindrical wall, a door covering a doorway extending through one side of the receptacle and through the cylindrical wall thereof, and a folding pad or cushion arranged at the inner side of said door and the body of the receptacle, substantially as described.

2. A cooker embodying an outer receptacle, an inner cylindrical wall, annular pads or cushions mounted within the cylindrical wall, a door covering a doorway through one side of the outer receptacle and through the cylindrical wall thereof, and a folding and sectional pad or cushion arranged at the inside of the door, the sections of said pad being adapted to be folded outward one at a time independently of each other and give access to the inner compartment of the receptacle, substantially as described.

850,061. WASHING-MACHINE. JOHN W. SEIFERT, East Point, Ga. Filed Oct. 27, 1906. Serial No. 340,836.

Claim.—1. The improved washing-machine comprising a hollow vertical body provided with a boiler supported in its upper portion, a movable cover, and a reticulated drum having laterally-projecting shafts, a lever pivoted on supports adjacent to the front of said body, and its free ends extended rearwardly, beneath the drum-shafts, the cover being provided with lateral projections for engaging such ends of the lever, whereby, when the front end of the lever is depressed, the cover is raised together with the closed drum and the latter removed from the body, as described.

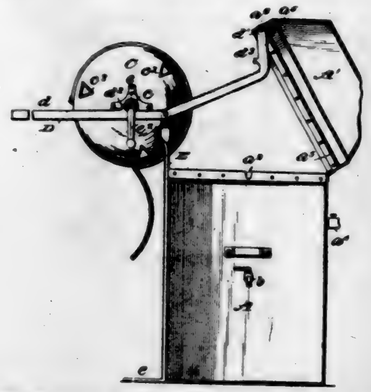

2. The improved washing-machine comprising a hollow body having an interior boiler, a hinged cover, and a rotatable clothes-drum inclosed in the space between the boiler and the cover, and provided with lateral shafts, and a lever pivotally connected with the body and having its inner portions constructed with an upward curve or angle and underlying the drum-shafts, the cover having lateral projections that overlie, and are thus adapted to engage, the ends of the lever when the lever is tilted, as shown and described.

3. The improved washing-machine comprising a hollow body, a cover hinged thereto, a lever pivoted upon fixed supports attached to the body, the inner ends of the levers having a sliding connection with the cover, and a rotatable clothes-drum having lateral shafts, which project over the lever and are adapted to ride thereon, whereby when the lever is tilted the cover is raised and the drum also raised out of the body and suspended from the levers exterior to said body, substantially as described.

4. The combination with a body, and a cover hinged thereto, of a lever pivoted to supports on the body, and provided with stops on opposite sides of the pivotal points, the inner ends of the lever being connected with the cover so that when the lever is tilted the cover is raised, and a rotatable clothes-drum supported normally in the body and having lateral projections adapted to ride on the lever when the same is tilted so that the drum is raised out of the body and supported laterally exterior thereto, substantially as described.

5. The combination with a hollow body, and a hinged cover having lateral flanges on opposite sides, of a lever pivoted to supports on the body, and having at its free inner ends projections which engage the said flange and the cover, so that the latter is raised when the lever is tilted, substantially as described.

6. The combination with a hollow body, having a cover hinged thereto and provided with horizontal flanges on opposite sides, the same having stops at the ends farthest from the hinge, of a lever pivoted upon supports connected with the body and having devices for engaging the aforesaid flanges and for sliding in contact therewith, so that the cover is raised and supported in an inclined position when the lever is depressed as described.

7. The combination with a hollow body, and a cover hinged thereto and provided with lateral guides having stops at their ends farthest from the hinges, and lever-bars projecting upward from the front of said body, of a two-arm lever pivoted upon the said bars, the inner free ends of the lever-arms engaging the guides of the cover

whereby when the outer end of the lever is depressed the cover is raised and locked in open position, substantially as described.

850,062. HOT-WATER HEATER. MICHEL J. SELZER, Akron, Ohio. Filed Apr. 12, 1906. Serial No. 311,406.

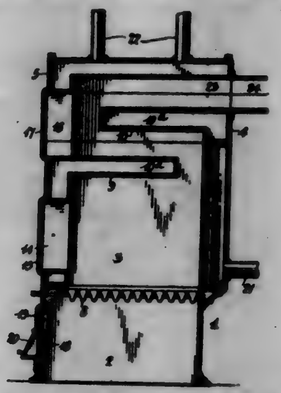

Claim.—In a hot-water heater, a plurality of intercommunicating, double-walled, hollow sections and an ash-pit, the lower section resting upon said pit and provided with a fire-box and a closable opening leading thereinto, and provided near its top with a hollow partition projecting toward but terminating at a distance from the rear wall, the top of the section being cut away above said opening down to the top of said partition, the intermediate section being provided with a forwardly-extending hollow partition intermediate its top and bottom and terminating at a distance from the front wall, the front wall being cut away opposite said partition to register with the cut-away portion in the bottom section and the rear wall being cut away down to the top of the partition, and the top section having a portion of its bottom raised to register with the cut-away portion of the rear wall and extending to the cut-away portion in the front wall of the intermediate section, the top section being adapted to communicate with outflow-pipes and the bottom section with an inflow-pipe and a door for closing the opening formed by the cut-away portions of the bottom and intermediate sections.

850,063. AMUSEMENT-TARGET. WILLIAM E. SHAW, Boston, Mass., assignor to Charles S. Bird, trustee, East Walpole, Mass. Filed June 6, 1906. Serial No. 320,393.

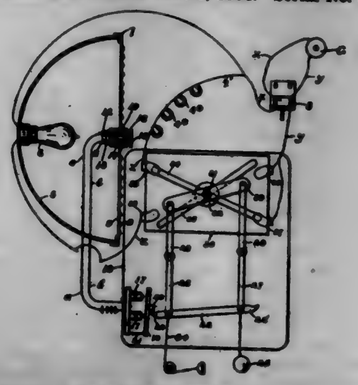

Claim.—1. A target comprising a compartment having a foraminous face, an electric lamp mounted in the compartment, electrical circuits for supplying current to said lamp, controlling means for said circuit, an electric-circuit closer movably mounted in the face of the target, an electric circuit having terminals adapted to be closed by said circuit-closer, a magnet in said latter circuit, and means normally held in the inoperative position by the armature of said magnet for operating the controller for the lighting-circuit.

2. A target comprising a face, a circuit-closer movably mounted on said face, an electric circuit including terminals, adapted to be closed by said circuit-closer, and a magnet, an armature for said magnet, an electric circuit exterior to the target and including electrically-operated devices, a controller for said exterior circuit, and actuating means for said controller normally held inoperative by said armature.

3. A target comprising a compartment having a foraminous face, interior and exterior electrical illuminating means for the target including electrical circuits and a switch for connecting said circuits alternately with a source of electric energy, a magnetically-controlled actuator for said switch, an electric circuit connected with said magnet and having terminals located adjacent the face of the target, and a circuit-closer for said terminals movably mounted on the face of the target and having a part adapted to receive the impact of a projectile, as and for the purpose described.

850,064. APPARATUS FOR MEASURING ELECTRIC CAPACITY. HARRY SHOEMAKER, Jersey City, N. J. Filed Oct. 9, 1906. Serial No. 338,100.

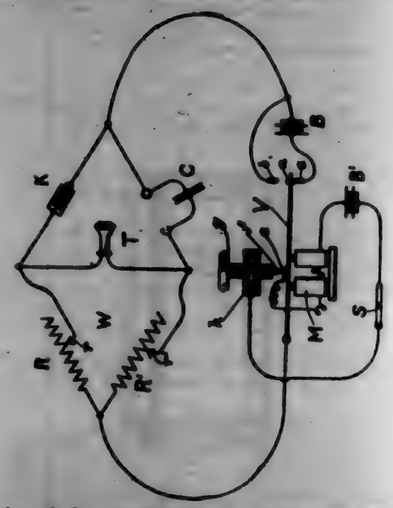

Claim.—1. In combination, a Wheatstone bridge, a known capacity connected in one arm thereof, an unknown capacity connected in the other arm thereof, and means for automatically charging and discharging said capacities.

2. In combination, a Wheatstone bridge, a known capacity and resistance connected in one arm thereof, a known resistance and an unknown capacity connected in another arm thereof, means for automatically charging and discharging said capacities, and an instrument for indicating when said bridge has been balanced.

3. In combination, a Wheatstone bridge, a known capacity connected in one arm thereof, an unknown capacity connected in another arm thereof, a vibrator and a source of energy, said bridge as a whole connected in series with said vibrator and source of energy, and means for discharging said capacities after each charge controlled by said vibrator.

4. In combination, a Wheatstone bridge, an automatic vibrator and source of energy serially connected with each other and with said bridge as a whole, a known capacity connected in one arm of the bridge, an unknown capacity connected in another arm of the bridge, and an instrument for indicating when the bridge has been balanced.

5. In combination, a Wheatstone bridge, a known capacity connected in one arm thereof, an unknown capacity connected in another arm thereof, and means for alternately and rapidly charging and discharging said bridge.

6. The combination with a Wheatstone bridge, a device to be tested included in an arm of said bridge, of an external source of energy, an indicating instrument and automatic means for rapidly and alternately charging and discharging said bridge.

7. In combination, known and unknown capacities and resistances, means for automatically charging and discharging said capacities, and an indicating instrument.

8. In combination, a Wheatstone bridge, resistances and known and unknown capacities in the arms thereof, an indicating instrument, a circuit including said bridge as a whole and a source of energy, and automatic means for alternately closing said circuit through said source of energy and a short circuit.

9. In combination, a Wheatstone bridge, known and unknown capacities connected in the arms thereof, an indicating instrument, a circuit including said bridge as a whole and a source of energy, and a vibrator for alternately closing said circuit through said source of energy and short-circuiting said bridge as a whole.

10. In combination, branched circuits containing respectively known and unknown capacities, an indicating instrument, a circuit containing a source of energy and said branched circuits, and means for alternately connecting said branched circuits through said source of energy and short-circuiting said branched circuits.

11. In combination, branched circuits, an indicating instrument, electrical devices of similar characteristics connected respectively in said branched circuits, one of said devices having a known quantity of electrical action, the other an unknown quantity of electrical action, a circuit including said branched circuits and a source of energy, and means for alternately closing the circuit through said source of energy and through a short-circuit.

12. In combination, a Wheatstone bridge, known and unknown capacities connected in the arms thereof, an indicating instrument, a circuit including a source of energy and said bridge as a whole, and an automatic vibrator alternately closing said circuit through said source of energy and short-circuiting said bridge as a whole.

850,065. HIGH-POTENTIAL-MEASURING INSTRUMENT. HARRY SHOEMAKER, Jersey City, N. J. Filed Oct. 29, 1906. Serial No. 340,962.

Claim.—1. In an electrical measuring instrument, chambers of practically equal volumes communicating through a tube of relatively small bore, separated terminals in one chamber adapted to have a discharge passed between them and a seal adapted to move in said tube of small bore to indicate restoration of equilibrium after the passage of discharge between said terminals.

2. In an electrical measuring instrument, a tube of relatively small bore, a seal adapted to move therein, a chamber communicating with said tube, and circuit-terminals separated from each other within said chamber and adapted to have a discharge passed between them.

3. In an electrical measuring instrument, the combination with a tube having a small bore, of a seal adapted to move therein, a chamber communicating with said tube, and electrical terminals separated from each other in said chamber and connected by a gas or vapor path.

4. In an electrical measuring instrument, the combination with chambers of practically equal volumes, of a tube of relatively small bore connecting the same, a seal adapted to move in said tube, circuit-terminals in one of said chambers, and a gas or vapor path bridging said terminals.

5. In an electrical measuring instrument, the combination with chambers of practically equal volumes, a tube of relatively small bore connecting said chambers, a seal adapted to move in said tube, one of said chambers comprising communicating bulbs, circuit-terminals disposed in said bulbs, and a gas or vapor path bridging said terminals.

6. In an electrical measuring instrument, the combination with a tube of small bore, of a seal movable therein, a chamber having separated circuit-terminals, a gas or vapor bridging said terminals for absorbing electrical energy to produce heat, and a ground-glass connection between said chamber and tube.

7. In an electrical measuring instrument, a tube of relatively small bore, a seal movable therein, a chamber communicating with said tube, a second chamber communicating with said tube, separated electrical terminals in said second chamber, means bridging said terminals to absorb electrical energy, and current-restraining means external to said chamber and in circuit with said terminals.

8. In an electrical measuring instrument, a tube of relatively small bore, a seal movable therein, a chamber communicating with said tube, a second chamber communicating with said tube, separated electrical terminals in said second chamber, means bridging said terminals to absorb electrical energy, and a condenser in circuit with said terminals.

9. In an electrical measuring instrument, the combination with chambers of practically equal volumes, a tube of small bore connecting said chambers, a short seal movable in said tube, a scale-plate associated with said tube whereby readings may be made from movement of said seal, separated electrical terminals in one of said chambers, and a gas or vapor path bridging said terminals.

10. In an electrical measuring instrument, glass chambers of practically equal volumes, a glass connecting-tube of small bore, a movable seal in said connecting-tube, one of said chambers being detachable from said tube, separated electrical terminals in said chamber, and a gas or vapor path bridging said terminals.

850,066. KILN. JOHN A. SHUMAKER, Hyndman, Pa., assignor of one-third to George William Brinham and one-third to Norman Reuben Shumaker, Hyndman, Pa. Filed Oct. 10, 1906. Serial No. 338,264.

Claim.—1. The combination with a kiln, and furnaces in the side walls of the kiln, of a bag-wall at the inner face of the side wall and having vertical flues arched away from the furnaces.

2. The combination with a kiln and furnaces in the side walls of the kiln, of a bag-wall at the inner face of the side wall and having vertical flues, said flues being arched from

the furnaces and of gradually-increasing cross-sectional area.

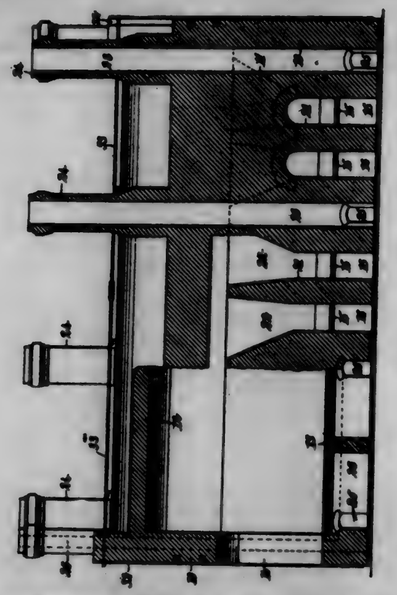

3. The combination with a kiln, and furnaces in the side walls of the kiln, of a bag-wall at the inner face of the side walls and having a vertical flue for each furnace, said flues being arched from the furnaces and flared outwardly at the sides, one side being flared more than the other.

850,067. BOTTLE. FRANK SMITH, Philadelphia, Pa. Filed Sept. 1, 1906. Serial No. 332,902.

Claim.—A bottle provided with a plain neck having an opening extending laterally through the same, a flat integral upper end or top, integral side portions connecting said top and the body portion of said neck, the inner surfaces of said side portions being rounded, and one side of said opening being larger than the other, and a wedge-shaped stopper fitted into said opening, said stopper being provided with notches in its opposite sides to engage the inner walls of said integral side portions, substantially as described.

850,068. GRINDING AND GRATING APPARATUS. WILLIAM W. SMITH, Kittyton, Tenn. Filed Nov. 7, 1905. Serial No. 286,255.

Claim.—1. A grinding apparatus of the character described comprising a casing provided with upper and lower compartments, the upper compartments having side chutes or inlets, grinding-shells in the lower compartments, hoppers in the upper compartments communicating with said chutes and shells, main and auxiliary grinding-shafts extending vertically through the compartments, grinding-burs operating in the shells and carried by said shafts, an armed brace secured to the casing and provided with bearings for the upper ends of the shafts, a master gear-wheel on the main shaft, and gears on the auxiliary shafts meshing with said master-gear, said gears being provided with means for throwing them into and out of meshing engagement.

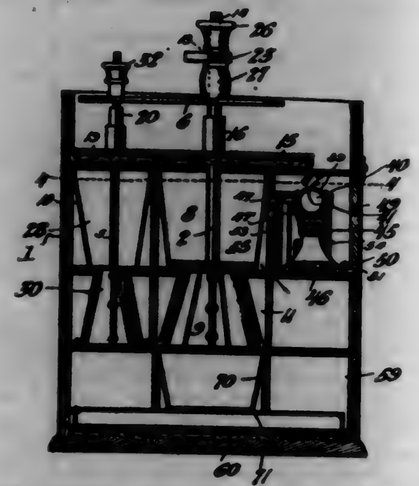

2. In a grinding-mill, a box or casing, a series of grinding devices arranged therein, an insertible and withdrawable support, and receptacles for the ground substances movably mounted on said support and adapted to be inserted and withdrawn therewith or independently thereof.

850,069. AGITATOR. BENITO SOLIS, Guadalupe de los Reyes, Mexico. Filed Oct. 30, 1906. Serial No. 341,354.

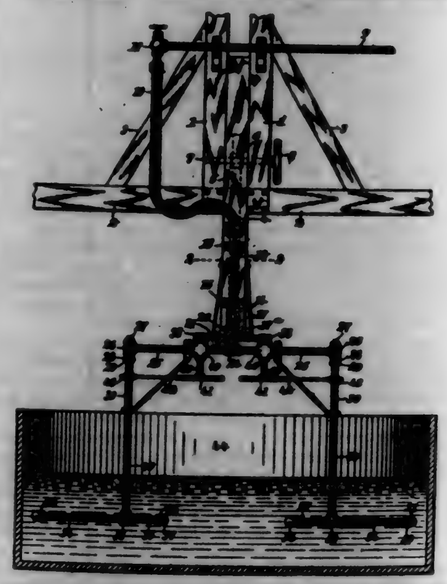

Claim.—1. The combination with a supply-pipe, of a tubular support rotatably connected with said supply-pipe by means of a rotary joint, and a discharge-head mounted upon said tubular support and connected therewith by means of a rotary joint.

2. The combination with a main frame, of a supply-pipe, a rotatable head comprising a vertical pipe having branching arms provided with discharge-orifices extending in opposite directions, a rotatable tubular support mounted on said main frame, a pinion mounted upon said support, a gear mounted upon the main frame, pulleys connected with said pinion and with the rotatable head, and belt connections extending between said pulleys, substantially as shown and described.

3. The combination with a supporting-frame, of a supply-pipe, oppositely-disposed rotatable heads having discharge-orifices, a tubular connection between said heads and supply-pipe, a central rotating head connected with said supply-pipe, and means for rotating the central head on its axis, and the outer heads bodily in circular lines, substantially as shown and described.

4. The combination with a supporting-frame, of a supply-pipe, oppositely-disposed rotatable heads having discharge-orifices, a tubular connection between said heads and supply-pipe, and means for rotating said heads simultaneously on their axis and bodily in circular lines, substantially as shown and described.

5. The combination with a supporting-frame, of a supply-pipe, rotatable heads having discharge-orifices, a tubular connection between said heads and supply-pipe, and means for rotating said heads simultaneously on their axes and bodily in circular lines, substantially as shown and described.

6. The combination with a supporting-frame, of a supply-pipe, a tubular support connected with said supply-pipe by means of a rotary joint, and provided with a stuffing-box rotatable on said pipe, heads rotatably mounted on said support by means of swivel-joints, a fixed gear, pinions mounted on said tubular support engaging said gear, and mechanism connecting said pinions and heads.

7. The combination of a tubular support adapted to rotate on an axis, and a head provided with discharge-orifices mounted to rotate on the free end of the said support, and connecting mechanism adapted to enable the rotation of said head on its axis to rotate said support on its axis, substantially as shown and described.

850,070. BEER-TAPPER. RICHARD B. SPIKES, Bisbee, Ariz., assignor of one-half to Marine C. Spires, Bisbee, Ariz. Filed Jan. 12, 1907. Serial No. 351,949.

Claim.—1. A beer-tapper, comprising two concentric tubes, the outer one being formed with chambered heads fixed to the opposite heads of the barrel, the inner tube being rotarily adjustable and having disks at its ends arranged in the chambered heads of the outer tube and having registering ports, the ports in one end being for beer and those at the other end for air, both of said tubes extending the full length of the barrel.

2. A beer-tapper, comprising two concentric tubes, the outer one being formed with chambered heads fixed to the opposite heads of the barrel, the inner tube being rotarily adjustable and having disks at its ends arranged in the chambered heads of the outer tube and having registering ports, and a dispensing-coupling having locking devices for the head and a tapered and rigidly-interlocking eduction-tube adapted to enter the inner tube and turn it as described.

3. A beer-tapper, comprising two concentric tubes with registering ports, the inner tube having a squared and tapered opening at its upper end and a coupling device having an eduction-pipe with a squared and tapered lower end adapted to fit in and turn the inner tube and a rigidly-attached cup having outwardly-projecting lugs, and a stationary chambered head with cam-grooves adapted to engage the lugs and draw the squared and tapered tubes to a tight fit.

4. A beer-tapper, comprising two concentric tubes the outer one having at one end a chambered head with a detachable closure and at the other end a chambered head with locking-cams both said heads having ports, the inner tube having a fixed disk at one end and a detachable disk at the other end and both provided with ports, and an interlocking dispensing-coupling arranged to engage the

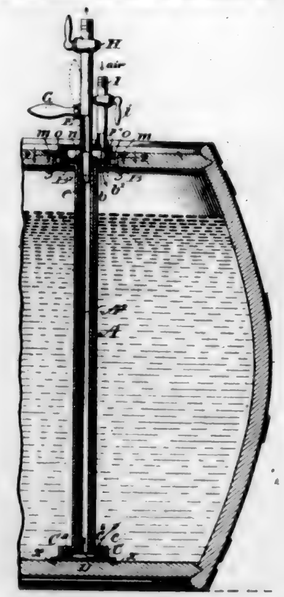

cams of the chambered head and also the inner tube to simultaneously turn it.

850,071. APPARATUS FOR SHARPENING LAWN-MOWERS. ERNEST C. SPRINGER, Mason City, Iowa. Filed Dec. 28, 1905. Serial No. 293,690.

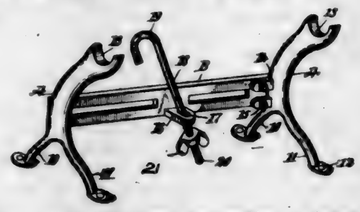

Claim.—1. An apparatus for holding a lawn-mower while being sharpened, consisting of curved cheek-pieces having their lower ends bifurcated to form feet and provided with recesses in their upper ends and with lugs on their inner faces intermediate of their ends, a connecting-bar secured to the lugs of the cheek-pieces and provided at its center of length with a slotted laterally-projecting tongue, and a hooked clamping-bolt working in the slot of the said tongue and provided with a nut on its lower end.

2. An apparatus for sharpening lawn-mowers, consisting of opposing curved cheek-pieces provided with feet at their lower ends and having their upper ends recessed to receive the axle of a lawn-mower, a connecting member for the cheek-pieces, provided with a lateral projection, and an adjustable hooked clamping-bolt carried by the projection of the connecting member, said bolt being adapted for use in connection with the part of the mower supported by said cheek-pieces.

3. An apparatus for sharpening lawn-mowers, consisting of curved cheek-pieces having their upper ends recessed to receive a member of a lawn-mower, a connecting-bar for the said cheek-pieces, a slotted tongue carried by said bar, and a hooked clamping-bolt adjustable in the slot of said tongue.

4. In an apparatus for sharpening lawn-mowers, opposing curved cheek-pieces having concavities in their upper

the furnaces and of gradually-increasing cross-sectional area.

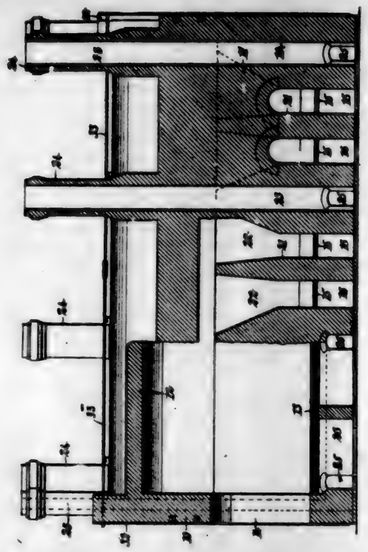

3. The combination with a kiln, and furnaces in the side walls of the kiln, of a bag-wall at the inner face of the side walls and having a vertical flue for each furnace, said flues being arched from the furnaces and flared outwardly at the sides, one side being flared more than the other.

850,067. BOTTLE. FRANK SMITH, Philadelphia, Pa. Filed Sept. 1, 1906. Serial No. 332,902.

Claim.—A bottle provided with a plain neck having an opening extending laterally through the same, a flat integral upper end or top, integral side portions connecting said top and the body portion of said neck, the inner surfaces of said side portions being rounded, and one side of said opening being larger than the other, and a wedge-shaped stopper fitted into said opening, said stopper being provided with notches in its opposite sides to engage the inner walls of said integral side portions, substantially as described.

850,068. GRINDING AND GRATING APPARATUS. WILLIAM W. SMITH, Kittyton, Tenn. Filed Nov. 7, 1905. Serial No. 286,255.

Claim.—1. A grinding apparatus of the character described comprising a casing provided with upper and lower compartments, the upper compartments having side chutes or inlets, grinding-shells in the lower compartments, hoppers in the upper compartments communicating with said chutes and shells, main and auxiliary grinding-shafts extending vertically through the compartments, grinding-burs operating in the shells and carried by said shafts, an armed brace secured to the casing and provided with bearings for the upper ends of the shafts, a master gear-wheel on the main shaft, and gears on the auxiliary shafts meshing with said master-gear, said gears being provided with means for throwing them into and out of meshing engagement.

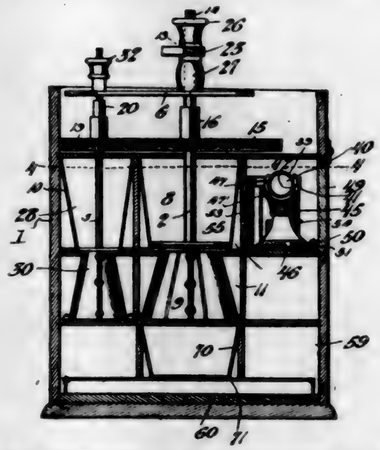

2. In a grinding-mill, a box or casing, a series of grinding devices arranged therein, an insertible and withdrawable support, and receptacles for the ground substances movably mounted on said support and adapted to be inserted and withdrawn therewith or independently thereof.

850,069. AGITATOR. BENITO SOLIS, Guadalupe de los Reyes, Mexico. Filed Oct. 30, 1906. Serial No. 341,354.

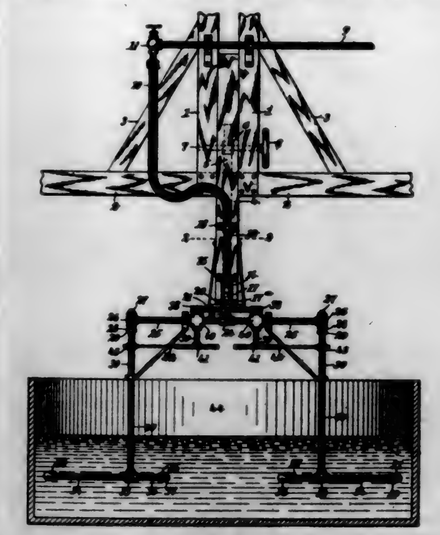

Claim.—1. The combination with a supply-pipe, of a tubular support rotatably connected with said supply-pipe by means of a rotary joint, and a discharge-head mounted upon said tubular support and connected therewith by means of a rotary joint.

2. The combination with a main frame, of a supply-pipe, a rotatable head comprising a vertical pipe having branching arms provided with discharge-orifices extending in opposite directions, a rotatable tubular support mounted on said main frame, a pinion mounted upon said support, a gear mounted upon the main frame, pulleys connected with said pinion and with the rotatable head, and belt connections extending between said pulleys, substantially as shown and described.

3. The combination with a supporting-frame, of a supply-pipe, oppositely-disposed rotatable heads having discharge-orifices, a tubular connection between said heads and supply-pipe, a central rotating head connected with said supply-pipe, and means for rotating the central head on its axis, and the outer heads bodily in circular lines, substantially as shown and described.

4. The combination with a supporting-frame, of a supply-pipe, oppositely-disposed rotatable heads having discharge-orifices, a tubular connection between said heads and supply-pipe, and means for rotating said heads simultaneously on their axis and bodily in circular lines, substantially as shown and described.

5. The combination with a supporting-frame, of a supply-pipe, rotatable heads having discharge-orifices, a tubular connection between said heads and supply-pipe, and means for rotating said heads simultaneously on their axes and bodily in circular lines, substantially as shown and described.

6. The combination with a supporting-frame, of a supply-pipe, a tubular support connected with said supply-pipe by means of a rotary joint, and provided with a stuffing-box rotatable on said pipe, heads rotatably mounted on said support by means of swivel-joints, a fixed gear, pinions mounted on said tubular support engaging said gear, and mechanism connecting said pinions and heads.

7. The combination of a tubular support adapted to rotate on an axis, and a head provided with discharge-orifices mounted to rotate on the free end of the said support, and connecting mechanism adapted to enable the rotation of said head on its axis to rotate said support on its axis, substantially as shown and described.

850,070. BEER-TAPPER. RICHARD B. SPIKES, Bisbee, Ariz., assignor of one-half to Marine C. Spires, Bisbee, Ariz. Filed Jan. 12, 1907. Serial No. 351,949.

Claim.—1. A beer-tapper, comprising two concentric tubes, the outer one being formed with chambered heads fixed to the opposite heads of the barrel, the inner tube being rotarily adjustable and having disks at its ends arranged in the chambered heads of the outer tube and having registering ports, the ports in one end being for beer and those at the other end for air, both of said tubes extending the full length of the barrel.

2. A beer-tapper, comprising two concentric tubes, the outer one being formed with chambered heads fixed to the opposite heads of the barrel, the inner tube being rotarily adjustable and having disks at its ends arranged in the chambered heads of the outer tube and having registering ports, and a dispensing-coupling having locking devices for the head and a tapered and rigidly-interlocking eduction-tube adapted to enter the inner tube and turn it as described.

3. A beer-tapper, comprising two concentric tubes with registering ports, the inner tube having a squared and tapered opening at its upper end and a coupling device having an eduction-pipe with a squared and tapered lower end adapted to fit in and turn the inner tube and a rigidly-attached cup having outwardly-projecting lugs, and a stationary chambered head with cam-grooves adapted to engage the lugs and draw the squared and tapered tubes to a tight fit.

4. A beer-tapper, comprising two concentric tubes the outer one having at one end a chambered head with a detachable closure and at the other end a chambered head with locking-cams both said heads having ports, the inner tube having a fixed disk at one end and a detachable disk at the other end and both provided with ports, and an interlocking dispensing-coupling arranged to engage the

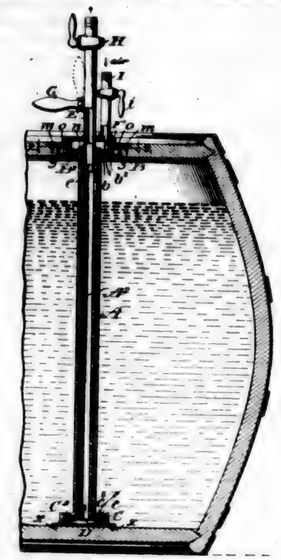

cams of the chambered head and also the inner tube to simultaneously turn it.

850,071. APPARATUS FOR SHARPENING LAWN-MOWERS. ERNEST C. SPRINGER, Mason City, Iowa. Filed Dec. 28, 1905. Serial No. 293,690.

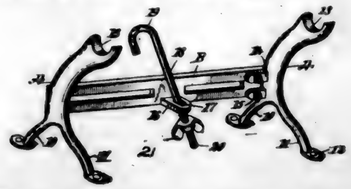

Claim.—1. An apparatus for holding a lawn-mower while being sharpened, consisting of curved cheek-pieces having their lower ends bifurcated to form feet and provided with recesses in their upper ends and with lugs on their inner faces intermediate of their ends, a connecting-bar secured to the lugs of the cheek-pieces and provided at its center of length with a slotted laterally-projecting tongue, and a hooked clamping-bolt working in the slot of the said tongue and provided with a nut on its lower end.

2. An apparatus for sharpening lawn-mowers, consisting of opposing curved cheek-pieces provided with feet at their lower ends and having their upper ends recessed to receive the axle of a lawn-mower, a connecting member for the cheek-pieces, provided with a lateral projection, and an adjustable hooked clamping-bolt carried by the projection of the connecting member, said bolt being adapted for use in connection with the part of the mower supported by said cheek-pieces.

3. An apparatus for sharpening lawn-mowers, consisting of curved cheek-pieces having their upper ends recessed to receive a member of a lawn-mower, a connecting-bar for the said cheek-pieces, a slotted tongue carried by said bar, and a hooked clamping-bolt adjustable in the slot of said tongue.

4. In an apparatus for sharpening lawn-mowers, opposing curved cheek-pieces having concavities in their upper

ends, one wall of each concavity extending upward beyond the other wall, a connecting-bar secured to the said cheek-pieces, a tongue extending from the said connecting-bar in the direction of the curvature of the cheek-pieces, which tongue is provided with an aperture, a bolt passed loosely through the said aperture of the tongue, having its upper end crooked and its lower end portion threaded, and a nut located on the threaded portion of the said bolt below the said tongue.

850,072. EXTENSION CAR-STEP. KETURAH STEVENS, Franklin, Ohio. Filed Oct. 3, 1906. Serial No. 337,286.

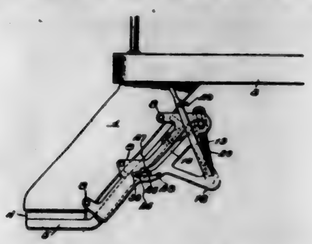

Claim.—1. The combination with the frame of a car-step, of an extension-step having supporting side bars, guide-brackets secured to the step-frame and provided with guide-slots, a rock-shaft, a hand-lever thereon, a slotted arm projecting from said shaft, pivotal links connected with said arm and having a pin-and-slot engagement with the supporting-bars of the extension-step, and latch mechanism for holding the extension-step in its upward or downward position.

2. The combination with the step-frame of a car, of an extension-step having supporting side bars, guide-brackets secured to the step-frame and between which said side bars are mounted to slide, a hand-lever operatively connected with said side bars for raising and lowering the extension-step, latching means for holding the side bars raised or lowered, and means carried by the hand-lever for tripping the latch mechanism.

850,073. VEHICLE-FRAME. OSCAR STOLP, New York, N. Y. Filed June 29, 1906. Serial No. 324,019.

Claim.—1. In a vehicle-frame, a bed, an elliptical spring in fixed relation to the rear end thereof, an equalising-lever pivotally connected to the lower member of said spring, a rear axletree secured to the rear end of said lever, and a spring for supporting the lever at its opposite and forward end.

2. In a vehicle-frame, a bed having a downwardly-turned arm at the rear end thereof, an elliptical spring secured to the bed and to the arm, said spring being cut out adjacent to said arm, an equalising-lever pivotally connected to the lower member of said spring, an axletree in fixed relation to one side of said lever, and a spring for supporting it at its opposite side.

3. In a vehicle-frame, a bed, an elliptical spring in fixed relation thereto at the forward end of the bed, an equalising-lever pivotally connected to the spring, an independent spring for sustaining the opposite end of the lever, and an axletree fixed to the lever between its pivotal connection and said last-named spring.

4. In a vehicle-frame, a bed, a spring in fixed relation thereto, an equalising-lever pivotally connected to the spring, guiding means carried by the bed for the opposite end of the lever, a spring carried by said guiding means between the bed and lever, and a buffer carried by the guiding means at the opposite side of the lever.

5. In a vehicle-frame, a spring in fixed relation at opposite ends thereof, equalising-levers pivotally connected to each spring, springs for sustaining the adjacent ends of the levers, and axletrees fixed to the levers at the rear of their pivotal connection.

850,073.

850,074. DOUGH DIVIDING AND SCALING MACHINE. FRANK STREICH, Cincinnati, Ohio, assignor to The Triumph Manufacturing Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Jan. 4, 1907. Serial No. 350,718.

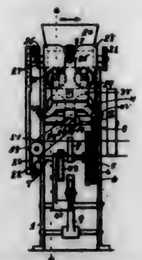

Claim.—1. The combination of a box, a plunger therein, feed-rolls mounted directly thereover, and means for alternately reciprocating the plunger and rotating said rolls.

2. The combination of a box provided with feed-rolls and with discharge-openings, a plunger therein, molds provided with pistons, means for moving and maintaining said molds in registration with said openings, and a weight arranged to move the plunger in the box toward said openings during the registration of the molds therewith.

3. The combination of a box provided with discharge-openings, a plunger therein, feed-rolls thereover, a ratchet mechanism for intermittently rotating said rolls, molds provided with pistons, and cam-actuated mechanism for alternately reciprocating the plunger and the molds in and out of registration with the discharge-openings.

4. The combination of a box provided with discharge-openings, a plunger therein, feed-rolls communicating with the box, ratchet mechanism for rotating the rolls intermittently, and a cam-actuated mechanism and a weight for respectively moving the plunger from and toward the openings.

5. The combination of a box provided with discharge-openings and with a plunger, molds provided with pistons, cam-actuated mechanism for intermittently reciprocating the molds in and out of registration with the discharge-openings, and a weight and cam-actuated mechanism for intermittently reciprocating the plunger between the respective movements of the molds and simultaneously actuating the pistons.

6. The combination of molds provided with pistons, means for moving and maintaining them in different vertical positions, means for moving the pistons to discharge the contents of the molds, and separating-rolls for receiving and delivering the contents of the molds separately on a driven conveyer.

7. The combination of molds formed with open ends and provided with pistons, adjustable means for limiting the forward movement of the pistons, a cam-actuated mechanism for moving the pistons in a rearward direction, and separating-rolls mounted at fixed points below the molds.

8. The combination of a box provided with discharge-openings, feed-rolls thereover, a plunger within the box, a weight for moving the plunger toward the openings, cam-actuated mechanism for moving the plunger in the opposite direction and means for actuating the feed-rolls intermittently.

9. The combination of a box provided with a discharge-opening, with a plunger and with feed-rolls, means for intermittently actuating said plunger and also said feed-rolls, cam-actuated mechanism and a mold movable thereby into and out of registration with the discharge-opening.

10. The combination of a box provided with feed-rolls, a discharge-opening and with a reciprocating plunger, means for intermittently actuating the feed-rolls and the plunger, a mold provided with a piston, adjustable means for limiting the movement of the piston, means for moving the mold in and out of registration with the discharge-opening, and means movable simultaneously with the plunger for actuating the piston.

11. The combination of a mold provided with a piston, a delivering-roll thereunder, and cam-actuated mechanism for reciprocating the mold vertically and also for moving the piston horizontally for discharging the contents of the mold on the delivering-roll.

12. The combination of a delivering-roll, a mold provided with a piston, means for moving and maintaining said mold in different predetermined positions, adjustable means for limiting the movement of the piston in one direction during the maintenance of the mold in one of said positions, and means for moving the piston in the opposite direction for discharging the contents from the mold upon said roll during its maintenance in another said position.

850,075. METHOD OF MAKING PICTURES. BEN B. STROPE, Coshocton, Ohio. Filed May 31, 1905. Serial No. 263,001. (Specimens.)

Claim.—That improvement in the art of lithographing in imitation of a pyrogravure including a colored design, which consists in applying the white to certain portions only of the surface, to wit, those portions called for by the design and those portions to which certain bright colors or tints, as for instance pink and green, are to be applied, allowing the white to dry, applying over the white the other colors called for by the design, applying a broad outline in brown around the design, and finally applying a narrow outline in black around the design and over the inner edge of the brown outline or border.

850,076. CUSPIDOR. NAPOLEON R. THIBERT, Worcester, Mass., assignor to Thibert Sanitary Cuspidor & Tool Company, Worcester, Mass., a Corporation of the District of Columbia. Filed Jan. 12, 1903. Serial No. 138,615.

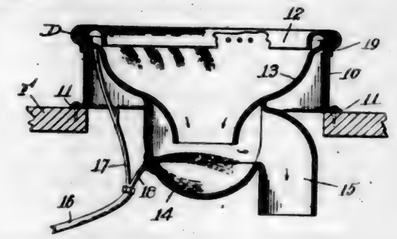

Claim.—1. As an article of manufacture, a sanitary cuspidor comprising an outside frame having a flange, a cuspidor bowl or funnel extending behind the flange to leave a narrow water-distributing slot, and an exterior beading mounted around the upper edge of the outside frame, the inside of said beading forming a chamber for antiseptic material, this chamber having means on one side for introducing water into the water-distributing slot, and means for supplying water to the side of the beading opposite said first-named means, whereby the water will pass in both directions around the chamber formed by the exterior beading to enter the distributing-slot.

2. As an article of manufacture, a sanitary cuspidor comprising an outside frame having an integral, inwardly-turned flange substantially semicircular in cross-section, a cuspidor bowl or funnel fitting up behind the turned-in flange to leave a narrow water-distributing slot, and an exterior beading mounted around the upper edge of the outside frame, the inside of said beading forming a chamber for antiseptic material, this chamber having perforations on one side through which it connects with the inside water-distributing slot, and means for supplying water to the side of the beading opposite the perforations, whereby the water will pass in both directions around the chamber formed by the exterior beading, and through half the length of said chamber on each side before passing into the cuspidor.

850,077. DRIVING AND BRAKING MECHANISM FOR CYCLES. HARRY P. TOWNSEND, New Britain, Conn., assignor to The New Departure Manufacturing Company, Bristol, Conn., a Corporation of Connecticut. Original application filed Oct. 10, 1898, Serial No. 693,117. Divided and this application filed Apr. 26, 1906. Serial No. 313,800.

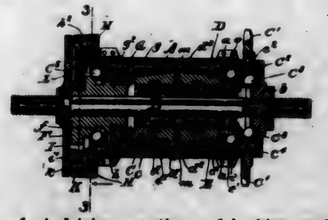

Claim.—1. A driving, coasting and braking mechanism for vehicles, comprising a driver, a brake normally in in-

operative position, a wheel which, when said driver is in normal position free from control of the operator, is operatively disconnected from said driver and said brake and is free to rotate independently forwardly and backwardly, and means whereby movement of said driver in one direction causes said driver to drive said wheel and movement of said driver in the opposite direction causes said driver to apply said brake; substantially as described.

2. The combination with a wheel, a brake therefor, and a driver, said wheel being, when said driver is in normal position free from control of the operator, free to rotate forwardly and backwardly independently of said driver and said brake, of clutch devices for operatively connecting said driver to said wheel and for permitting said driver to apply said brake, and means whereby said clutch devices are, only upon a positive turning movement of said driver, operable to effect braking action of said driver and to effect operative connection between said driver and said wheel; substantially as described.

3. In a device of the character indicated, the combination with a driven wheel, a brake therefor, and a driving element with relation to which said wheel can independently rotate, of a laterally-shiftable member adapted in one position to drive said wheel and in another position to apply said brake, and means for laterally shifting said member by said driving element; substantially as described.

4. The combination with a wheel-hub and brake, of a driver for the hub and brake normally disconnected therefrom, and a laterally-shiftable connecting device actuated by the driver for connecting said driver with the hub or brake; substantially as described.

5. The combination with a wheel and its rotatable propelling device provided with an interior clutch member, of a laterally-shiftable sleeve provided with a complementary clutch member, a rotatable driver provided with a laterally-extended actuating device projected into the laterally-shiftable sleeve, and suitable connections between the actuating device and sleeve for shifting the sleeve laterally to connect and disconnect said clutch members; substantially as described.

6. The combination with a wheel-hub, of a brake device located at one end of the hub, a driver for the hub and brake located at the opposite end of the hub, and a laterally-shiftable connecting device for connecting the driver with the hub or with the brake device; substantially as described.

7. The combination with a wheel and a brake for retarding the movement of the same, of a driver, a laterally-shiftable connector, means for shifting said connector laterally upon operation of said driver, means located at one side of said connector for connecting the same with said wheel, and means located at the opposite side of said connector for connecting the same with said brake; substantially as described.

8. The combination with a wheel-hub, of a brake, a driver for the hub and brake, a sleeve connected with the driver, a laterally-shiftable connecting device for connecting the driver with the hub or brake, and connections between the driver-sleeve and the connecting device for shifting the connecting device to connect the driver with the hub or brake or to disconnect it from both; substantially as described.

9. The combination with a wheel-hub, of a brake, a driver for the hub and brake, a sleeve connected with the driver, a laterally-shiftable sleeve mounted on the sleeve of the driver, connections between said sleeves arranged to laterally shift the shifting sleeve when the sleeve of the driver is turned, and means for connecting the laterally-shiftable sleeve with the hub or brake according to the direction in which it is shifted; substantially as described.

10. The combination with a wheel and a brake for retarding the movement of the same, of a driver, a laterally-shiftable connector rotatable with respect to said driver and having threaded connection therewith, means located at one side of said connector for connecting the same with said wheel, and means located at the opposite side of said connector for connecting the same with said brake; substantially as described.

11. The combination with a wheel and a brake for retarding the movement of the same, of a driver, a laterally-shiftable connector rotatable upon said driver and detachable therefrom, means whereby rotation of said driver serves to shift said connector laterally, means located at one side of said connector for connecting the same with said wheel, and means located at the opposite side of said connector for connecting the same with said brake; substantially as described.

12. The combination with a wheel and its rotatable propelling device, of a rotatable driver having a threaded part projecting within said propelling device, a laterally-shiftable connector rotatable upon said threaded part and receiving the thread thereof, a brake for retarding the movement of said wheel, means located at one side of said connector for connecting the same with said wheel, and means located at the opposite side of said connector for connecting the same with said brake; substantially as described.

13. In a bicycle, the combination with a wheel-hub, of a brake mechanism located at one end of the hub, a driver for the hub and brake mechanism located at the opposite end of the hub, a rotatable sleeve connected with the driver and extended within the hub, a laterally-shiftable sleeve mounted upon the driver-sleeve and having oppositely-disposed clutch-faces, a complementary spiral connection between the sleeves, and clutch-faces on the hub and brake mechanism arranged to be engaged by the clutch-faces of the sleeves; substantially as described.

14. The combination with a wheel-hub and a brake, of a driver for the hub and brake, a laterally-shiftable connecting device for connecting the driver with the hub or brake, means whereby a relative turning of the driver and the laterally-shiftable connecting device will impart a lateral movement to said connecting device to connect the driver with the hub or brake, and means for insuring the relative turning of the driver and laterally-shiftable connecting device; substantially as described.

15. The combination with a wheel-hub and a brake, of a driver for the hub and brake, a laterally-shiftable rotative connecting device for connecting the driver with the hub or brake, means whereby a relative turning of the driver and the laterally-shiftable connecting device will impart a lateral movement to said connecting device to connect the driver with the hub or brake, and means for retarding the rotation of the laterally-shiftable rotative connecting device to insure the relative turning of the driver and said connecting device; substantially as described.

16. A mechanism comprising a plurality of elements, one of which is capable of independent movement relative to the other, a braking mechanism, means for connecting and disconnecting one of the elements and the braking mechanism, and means adapted to engage a portion of the braking mechanism and the first-named means for resisting the operation of said first-named means; substantially as described.

17. A mechanism comprising a plurality of elements, one of which is capable of movement relative to the other, a braking mechanism for one of the elements, means for connecting and disconnecting one of the elements with the other or with the braking mechanism, and means carried by said first-named means and capable of engagement with one of the elements and with the braking mechanism for opposing the movement of said first-named means; substantially as described.

18. The combination with a wheel-hub provided with an interior tapered clutch-socket, of a laterally-shiftable sleeve provided with a correspondingly-tapered portion, a rotatable driver provided with a laterally-extended actuating device projected into the laterally-shiftable sleeve, and suitable connections between the actuating device and sleeve for shifting the sleeve laterally to connect said sleeve with or disconnect it from the clutch-socket according to the direction of rotation of the driver; substantially as described.

19. In a bicycle, the combination with a wheel hub and axle, of a brake mechanism, a driver for the hub and brake mechanism, a rotatable sleeve connected with the driver and mounted upon the axle within the hub, a laterally-shiftable rotatable sleeve mounted upon the sleeve of the driver and having tapered portions, a complementary spiral connection between said sleeves, and tapered clutch elements carried by the hub and brake mechanism with which the tapered portions of the shiftable sleeve may engage; substantially as described.

20. In a bicycle, the combination with a wheel-hub and a brake, of a driver for the hub and brake, clutch devices actuated by the driver for connecting said driver with the hub or brake or for disconnecting it from both, and a friction device acting upon the clutch devices for preventing a loose action of said driver; substantially as described.

21. The combination with a wheel-hub and brake, of a driver having a sleeve mounted on the axle within the hub, a laterally-shiftable connecting device mounted upon said sleeve, means whereby a relative turning of the sleeve and connecting device will shift the connecting device laterally to connect said device with the hub or brake actuating mechanism, and a friction device carried by the connecting device arranged to engage the hub or brake actuating mechanism to insure the relative turning of the sleeve and connecting device; substantially as described.

22. In a bicycle, the combination with a wheel-hub, of a brake mechanism, a driver for the brake mechanism and hub, a sleeve connected to the driver, a laterally-shiftable connecting device mounted on said sleeve and having tapered portions, a spiral connection between the connecting device and sleeve, tapered clutch elements carried by the hub and brake mechanism arranged to be engaged by the tapered portions of the connecting device, and a spring frictionally connecting the connecting device with the clutch elements for insuring a relative turning movement between the sleeve and connecting device; substantially as described.

23. The combination with a wheel-hub and brake, of a driver for said hub and brake, a laterally-shiftable connecting device controlled by the driver and having tapered portions, clutch elements carried by the brake and hub arranged to be engaged by the tapered portions of the connecting device, and oil grooves or ducts formed in the tapered surface of the connecting device; substantially as described.

24. The combination with a wheel-hub and a brake for retarding the movement of the wheel, of a driver at said hub, means for operatively connecting said driver and hub for driving the latter, and means for operating said brake through backward movement of said driver, said brake-operating means including a surface upon said driver for producing lateral thrust and laterally inclined with respect to the longitudinal axis of said hub, and a laterally-shiftable brake-operating part upon which said inclined surface operates; substantially as described.

25. A driving, coasting and braking mechanism for vehicles, comprising the combination with a wheel, a brake therefor, and a driver with relation to which said wheel can independently rotate, of a brake-anchoring device anchored to a relatively stationary structural element of the vehicle, a laterally-shiftable connector which in one position operatively connects said driver with said wheel for driving the latter and in another position permits said driver to apply said brake, said connector having rotary movement with respect to said driver and said wheel being rotatable with respect to said connector, and means for laterally shifting said connector upon movement of said driver; substantially as described.

26. A driving, coasting and braking mechanism for vehicles, comprising the combination with a wheel, a brake therefor, and a driver with relation to which said wheel can independently rotate, of a brake-anchoring device anchored to a relatively stationary structural element of the vehicle, a laterally-shiftable connector which in one position operatively connects said driver with said wheel for driving the latter and in another position permits said driver to apply said brake, said connector having rotary movement with respect to said driver and said wheel being rotatable with respect to said connector, and threaded operating connection between said driver and said connector; substantially as described.

27. A driving, coasting and braking mechanism for vehicles, comprising the combination with a wheel, a brake

therefor, and a driver with relation to which said wheel can independently rotate, of a brake-anchoring device anchored to a relatively stationary structural element of the vehicle, a laterally-shiftable connector which in one position operatively connects said driver with said wheel for driving the latter and in another position permits said driver to apply said brake, said connector having rotary movement with respect to said driver and said wheel being rotatable with respect to said connector, threaded operating connection between said driver and said connector, and means for yieldingly holding said connector against rotation with said driver; substantially as described.

28. A driving, coasting and braking mechanism for vehicles, comprising the combination with a wheel, a brake therefor, and a driver with relation to which said wheel can independently rotate, of a brake-anchoring device anchored to a relatively stationary structural element of the vehicle, a laterally-shiftable threaded connector with respect to which said wheel is rotatable, a threaded part upon said driver and telescoping with said connector, the threads of said threaded part coöperating with the threads of said connector, whereby said connector has rotary movement with respect to said driver, means whereby when said connector is in one position it is operatively connected with said wheel, and means whereby when said connector is in another position movement of said driver effects application of said brake; substantially as described.

29. A driving, braking and coasting mechanism for vehicles, comprising a wheel-hub, a brake therefor housed by said hub, an anchor for said brake anchored to a relatively stationary structural element of the vehicle, a driving-gear adjacent said hub and with relation to which said hub can rotate independently, a threaded part upon said driving-gear and projecting within said hub, a laterally-shiftable connector within said hub and with relation to which said hub is rotatable, said connector telescoping with said threaded part and having threads coöperating with the same, whereby said connector has rotary movement with respect to said driving-gear, means whereby when said connector is in one position it serves to operatively connect said driving-gear with said hub for driving the latter, and means whereby when said connector is in another position it permits said driving-gear to apply said brake; substantially as described.

30. A driving, braking and coasting mechanism for vehicles, comprising a wheel-hub, a brake therefor housed by said hub, an anchor for said brake anchored to a relatively stationary structural element of the vehicle, a driving-gear adjacent said hub and with relation to which said hub can rotate independently, a threaded part upon said driving-gear and projecting within said hub, a laterally-shiftable connector within said hub and with relation to which said hub is rotatable, said connector telescoping with said threaded part and having threads coöperating with the same, whereby said connector has rotary movement with respect to said driving-gear, means whereby when said connector is in one position it serves to operatively connect said driving-gear with said hub for driving the latter, means whereby when said connector is in another position it permits said driving-gear to apply said brake, and means for yieldingly holding said connector against rotation with said driving-gear; substantially as described.

31. A driving, coasting and braking mechanism for vehicles, comprising the combination with a wheel, a brake therefor, and a driving device including a gear adjacent said wheel and with relation to which said wheel can independently rotate, of a brake-anchoring device anchored to a relatively stationary structural element of the vehicle, a laterally-shiftable part which in one position permits said driving device to apply said brake and in another position permits said brake to be in inoperative position, said wheel being rotatable with respect to said part, means for laterally shifting said part upon movement of said driving device, and means for connecting said driving device to said wheel for driving the latter; substantially as described.

32. A driving, coasting and braking mechanism for vehicles, comprising the combination with a wheel, a brake therefor, and a driving device including a gear adjacent said wheel and with relation to which said wheel can inde-

pendently rotate, of a brake-anchoring device anchored to a relatively stationary structural element of the vehicle, a laterally-shiftable part which in one position permits said driving device to apply said brake and in another position permits said brake to be in inoperative position, said wheel being rotatable with respect to said part and said part having rotary movement with respect to said driving device, complementary inclined surfaces between said driving device and said part for shifting said part upon movement of said driving device, and means for connecting said driving device to said wheel for driving the latter; substantially as described.

850,078. WATER-LIFTING MOTOR. MILES M. VINEYARD, Foster county, N. D. Filed Jan. 22, 1906. Serial No. 297,307.

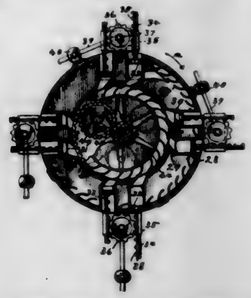

Claim.—1. The combination with a rotative casing having a plurality of pumps, of weights arranged to shift their position and to actuate said pumps as the casing revolves, an inlet-pipe, an outlet-pipe, and buckets arranged to receive water from the source of supply, said buckets being carried by the rotative casing.

2. In a device of the character described, the combination with a rotative casing, of means for applying power to said casing, an inlet-pipe leading to said casing, a secondary casing, a plurality of pumps, an outlet-pipe leading from said secondary casing, said pumps discharging into the secondary casing, and weights arranged to shift their position and actuate the pumps as the casing revolves.

3. In a device of the character described, the combination with an inner and outer casing, of an inlet-pipe leading to the interior of the outer casing, an outlet-pipe leading from the interior of the inner casing, a plurality of pumps arranged about the periphery of the outer casing and adapted to take water therefrom and discharge said water to the interior of the inner casing, means for imparting rotative movement to both of said casings, weights arranged to shift their positions by gravity to actuate said pumps as said casings revolve.

4. In a device of the character described, the combination with an inner and outer casing, of means for imparting rotative movement to said casing, an inlet-pipe leading to the interior of the outer casing, a plurality of buckets arranged about the inner periphery of said outer casing and adapted to receive the water discharged into said casing, a discharge-pipe leading from the interior of the inner casing, pumps arranged to receive water from the interior of the outer casing and discharge said water into the interior of the inner casing, a rotative cylinder loosely mounted in said inner casing and having buckets arranged about its periphery adapted to receive water discharged from the pumps, gearing between said cylinder and said inner casing, and weights adapted to be shifted by gravity upon the rotation of the casings and to actuate the pumps as their positions are shifted.

850,079. TELEPHONE-REPEATER SYSTEM. NATHANIEL G. WARTH, Columbus, Ohio. Filed Feb. 5, 1907. Serial No. 355,800.

Claim.—1. In a telephone-repeater system, the combination with a compound telephone-circuit and its telephones, of a twin telephone-repeater having twin local circuits, means connecting the twin repeater with the compound telephone-circuit inductively and to operate unidirectionally and reciprocally, the secondary windings of said inductive connection being included in the said compound circuit in separated divisions thereof, the primary windings of said inductive connection being included in the local twin circuits with said twin repeater, each twin local circuit with its respective receiver element of said twin repeater being mutually inductively associated with the secondary windings in one of the compound-circuit sections, and the receiver being active to the inward currents from such inductive association, twin local-battery and transmitter circuits embraced in said local twin circuits, and associated with the transmitter elements, so that each will operate the opposite or twin primary windings and produce a neutral state in their associated receiver elements, whereby, with associated means, the inward currents from one section of the compound circuit will operate its individually-associated receiver element, which, by actuating its mechanically-associated transmitter element, varies the battery-current associated therewith and sets up a coöperative flow in the opposite twin primary windings and a differential flow in their receiver-windings, and induces the reproduced facsimile currents into the associated compound-circuit section and prevents local self-action of the receiver.

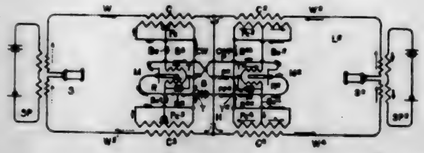

2. In a telephone-repeater system, the combination with a compound telephone-circuit and its telephones, of a twin telephone-repeater, means for connecting the same therewith inductively, balanced local circuits for said twin repeater and in circuit with said repeater, whereby the receiving elements of said twin repeater are rendered active to inward-induced telephonic impulses, but inactive to the renewed outward telephonic impulses from the transmitting elements of said twin repeater, for the purpose of providing retransmission of renewed power without interfering effects from local action in the twin-repeater apparatus.

3. In a telephone-repeater system, the combination with a twin repeater comprising two repeater units, each having a receiver element and a transmitter element united in repeater relation and a main-line circuit divided at the repeater-station and containing a telephone in each terminal section, of induction-coil windings in each line-section operating individually therewith for both the inward and the outward currents for the repeaters, and associated induction-coil windings having in circuit therewith the four elements of the repeaters with the receiving elements balanced against operation by the transmitting elements and associated local battery, the induction-coil windings operating with the line for the repeaters inductively and maintaining the aforesaid balance in the receiver elements.

4. The combination in a telephone-repeater system of a twin-repeater apparatus, comprising two units, each having a receiver element and a transmitter element united in repeater relation, a main-line circuit having telephones in circuit, induction-coil windings in said line-circuit for the repeater, and associated induction-coil windings having in circuit therewith both the receiving and transmitting elements of the repeaters which are operated inductively with said main-line circuit.

5. In a telephone-repeater system including a repeater-station, the combination of a twin-repeater apparatus comprising two units, each having a receiver element and a transmitter element united in repeater relation, a main-line circuit divided at the repeater-station and containing suitable telephones, induction-coil windings in each line-section that operate for both the inward and the outward currents for the repeaters, and associated induction-coil windings having in circuit therewith both elements of the repeaters which are operated inductively with said line sections.

6. In a telephone-repeater system, the combination of a twin-repeater apparatus comprising two units, each having a receiver element associated with a transmitting element and united in repeater relation, divided local circuits for such elements, the division being such that currents energizing either receiver element will not affect the associated receiver element, means for operating each receiver element inductively and individually with a line-section so that the inward currents in either line-section will energize its respective repeater and the resulting repeating-currents set up will be inductively transmitted to the associated line-section.

7. The combination in a telephone-repeater system, of a telephonic main-line circuit having sending and receiving stations, and a repeater-station at an intermediate point, a unidirectional-repeater apparatus at said repeater-station, and a repeating induction-coil inductively associating said main circuit and the said unidirectional-repeater apparatus for mutual operation.

8. In a reciprocal unidirectional repeater system, the combination of a main-line circuit with transmitting and receiving telephones, a unidirectional repeater at an intermediate point, and means inductively associating said main circuit and said unidirectional-repeater apparatus to prevent self-action in same.

9. In a telephone-repeater system, the combination of a main telephone-circuit divided into circuit-sections, twin repeaters and local circuits, substantially as described, associated inductively with the said main-circuit sections, and means controlled by said twin repeaters for reciprocally relaying the telephonic transmission, said relayed transmission being in one direction from each transmitter.

10. The combination in a twin-telephone-repeater system, of twin receivers and transmitters associated in repeater relation, a repeating induction-coil having plural windings both secondary and primary, a transmitting-line having a section on each side of a repeater-station, and means for balancing and operating the twin receivers of said twin repeaters and connecting them in circuit with the primary windings of said coil whereby they are rendered insensitive to the local currents, but are sensitive to the inducing-currents from their respectively associated line-circuits and corresponding secondary windings.

11. In a telephone-repeater system, the combination of main and local circuits, each of which is divided to prevent the initial telephonic currents in said main circuit from being transmitted directly beyond or across the repeater, a twin-repeater apparatus comprising twin receivers and transmitters, substantially as specified, associated in repeater relation, and a repeating induction-coil, the secondary windings of which are in the main circuit and the local windings of which are in circuit with the said repeater apparatus.

12. In a reciprocal unidirectional reinforcing telephone-repeater system, the combination of a compound through telephone-circuit comprising a plurality of main-line sections extending between telephone-stations at a distance, a plurality of repeater-stations dividing said main line, twin-unidirectional-repeater apparatus, substantially as described, at each repeater-station, repeating induction-coils at the repeater-stations, individual secondary windings of same in each main-line section at each repeater-station, with primary windings of said repeating-coils associated with the twin repeaters, a local circuit containing a balanced repeater-receiver for the primary windings associated inductively with each line-section, a bridge for each of said local circuits, having in circuit therewith the repeater-transmitter of its associated twin receiver, and a source of current-supply, whereby the currents set up by either transmitter are caused to induce like currents into the adjoining main-line circuit.

13. In a telephone-repeater system, the combination of a twin-repeater apparatus including twin receivers and transmitters, substantially as described, a main telephonic circuit, a bridge dividing said circuit, a repeating induction-coil having its secondary in said circuit, windings of said secondary being included in said circuit on each side of said bridge, local circuits containing balancing-bridges for the twin receivers and transmitters of said twin-repeater apparatus, said local circuits being balanced on each side of their respective bridges, and each containing primary windings of said coil associated with respective secondary windings thereof, each of said local balancing-bridges containing a repeater-transmitter and a battery, and each of said transmitters being actuated by the receiver in its twin opposite local circuit, each receiver having one winding shunted by a condenser, the said balancing means together with the said condensers causing the receivers to remain insensitive to their operating transmitter-currents, but sensitive and operative to the induced currents from their respective main-line sections.

14. The combination in a telephone-repeater system, of a transmission-line extending between transmitting and receiving telephones thereon and twin-repeater apparatus associated with said transmission-line for unidirectionally repeating the transmitted telephonic currents from one terminal telephone to the other, said twin-repeater apparatus comprising two electromagnetic receivers, each having associated in repeater relation with it a variable-resistance transmitter and a local battery, repeating induction-coil primary and secondary windings interposed between said twin-repeater apparatus and said transmission-line, the said line being divided or compounded into two sections at each repeater-station, the division into sections preventing direct transmission past a repeater and compelling the repeated currents to be effective only toward the receiving end of the compound circuit, each of the twin receivers being in circuit with the said primary windings of said repeating induction-coil secondary windings, and subject to direct inductive influence from the currents of one section of said compound circuit, each of the twin transmitters being in circuit with its opposed twin receiver and the primary windings in circuit therewith, and also being in circuit with said local battery, means for rendering each transmitter sensitive or active by its own receiver and for setting up currents in its said opposed receiver and associated primary windings, whereby the opposed receiver is rendered inert and the repeated currents are rendered inductively active for transmission to the associated or receiving section of line, and whereby the reciprocal of such effects is secured with each change in the direction of transmission.

850,080. STRAIN-EQUALIZER. JAMES W. WASH, Lawrenceburg, Ky. Filed May 26, 1906. Serial No. 318,840.

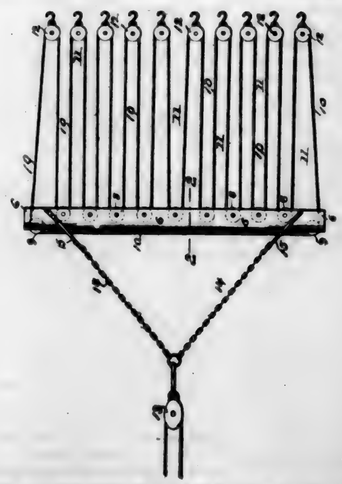

Claim.—A wire stringing and tightening device comprising a draft-bar, pulleys at the ends thereof and a series of

spaced pulleys arranged between said end pulleys, an endless rope extending around said end pulleys and between the rear sides of the same and also extending around the spaced pulleys from the front side thereof forming a series of loops, and blocks in the said loops and having means for engaging the different lengths of wire, each of the said loops and the blocks thereof being independent of its fellows, whereby since the rope is endless, when tension is exerted on the draft-bar, strain on the wires will be equalized by the various lengths of the loops.

850,081. AUTOMATIC PRESSURE-CONTROLLED ELECTRIC SWITCH AND AIR-GAGE. LOUIS H. WESTPHAL, Davenport, Iowa, assignor to Automatic Electric Pump Company, Davenport, Iowa. Filed Oct. 3, 1905. Serial No. 281,123.

Claim.—1. In a fluid-controlled electric switch, the combination of a swinging arm, a contact connected with said arm, a fixed contact, a retaining device engaging the free end of said arm and adapted to hold it in closed position, and means for positively actuating said arm in both directions against the resistance of the retaining device, said means being controlled in one direction by fluid-pressure and in the opposite direction by a spring.

2. In a pneumatically-controlled electric switch, the combination of a pivoted swinging arm, a contact yieldingly connected with the pivoted end of said arm, a fixed contact, a notched spring engaging the free end of said arm and adapted to retain it in closed position, means controlled in one direction by pneumatic pressure and in the opposite direction by a spring for positively actuating said arm in both directions and overcoming the resistance of the spring, substantially as described.

3. In combination, a pivoted block, an arm attached thereto, a spring engaging the free end of said arm having a notch for locking said arm in closed position, a movable contact connected to said block; a fixed contact, a rod adapted to be moved in one direction by fluid-pressure and in the opposite direction by a spring; and fingers attached to said rod and projecting on opposite sides of said arm, and adapted to move it against the resistance of said spring, substantially as described.

4. In combination, a swinging arm, a detainer-spring engaging said arm, a block on the detainer-spring for holding said arm in closed position, a spring attached to said arm; a movable contact carried by said spring, and a fixed contact; with a reciprocating rod adapted to be moved in one direction by fluid-pressure and in the opposite direction by a spring; and fingers attached to said rod and projecting on opposite sides of said arm, and adapted to move the arm against the resistance of the detainer-spring, substantially as described.

5. In a fluid-pressure electric switch, a pivoted arm, a movable contact yieldingly connected therewith; a fixed contact opposite said movable contact; and a spring having a block thereon engaging the free end of said arm to retain it in closed position; with a fluid-pressure chamber, a plunger operated in one direction by the fluid-pressure, a spring for retracting said plunger, fingers attached to said plunger, an insulated block on said arm between said fingers whereby the switch is snapped open when the pressure on the plunger forces the arm out of the notch and is snapped closed when the pressure forces the arm into the notch.

6. In a pressure-controlled electric switch, the combination of a relatively fixed contact, a movable contact mounted on a spring, a pivoted block to which said spring is attached, an arm attached to said block; a notched block adapted to engage the free end of said arm; a spring carrying said block; a reciprocating rod engaging an insulating-block on said arm, a pneumatically-controlled plunger adapted to move said rod in one direction against the resistance of the notched block, and a spring for moving the rod in the opposite direction.

7. In a pressure-controlled electric switch, the combination of a relatively fixed contact, a movable contact mounted on a spring, a pivoted arm to which said spring is attached; an adjustable spring carrying a notched block adapted to engage the free end of said arm; a reciprocating rod, a pneumatically-controlled plunger adapted to move said rod in one direction, a spring for moving the rod in the opposite direction; an insulated block attached to said arm, and fingers attached to said rod and projecting on opposite sides of said insulated block, substantially as and for the purpose described.

8. The combination of a swinging arm having a slotted end, a detainer-spring engaging the slotted end of the arm, a fixed contact, a movable contact connected with said arm, and means controlled in one direction by fluid-pressure, and in the opposite direction by a spring for actuating said arm against the resistance of the detainer-spring, substantially as described.

9. The combination of a swinging arm having a slotted end, a notched detainer-spring engaging the slotted end of the arm, an insulated block on the arm, a contact connected to said arm, a fixed contact; means for connecting said contacts to an electric circuit; with a movable stem adjacent the arm, a plate attached to said stem engaging the block thereon; means for moving said stem by pneumatic pressure in one direction, and a spring for moving the stem in the opposite direction whereby the resistance of the detainer-spring may be overcome and the switch opened and closed, substantially as set forth.

10. In an electric-switch contact, the combination of a metal head with a platinum contact-piece having its ends fastened in slots or incisions in the sides of the head, substantially as shown and described.

11. In an electric switch, a contact-piece consisting of a brass head having oppositely-inclined slots in its opposite sides, with a contact-piece of platinum underlying the head and having its ends fastened in said slots by swaging, substantially as described.

12. In a fluid-controlled electric switch, the combination of a movable arm, a contact connected with said arm, a contact fixed relatively to the arm, a spring engaging the free end of said arm and adapted to retain it in closed position, and means for positively actuating said arm in both directions, said means being actuated in one direction by fluid-pressure and in the opposite direction by a spring.

13. In a pneumatically-controlled electric switch, the combination of a pivoted arm, a contact connected with said arm, a contact fixed relatively to the arm, a notched spring engaging the free end of said arm and adapted to retain it in closed position, and means actuated in one direction by pneumatic pressure and in the opposite direction by a spring for positively actuating said arm in both directions.

14. In combination, a swinging arm, a spring engaging said arm and having a notch for locking said arm in closed position, a movable contact carried by said arm; a contact fixed relatively to the arm, a rod adapted to be moved in one direction by fluid-pressure and in the opposite direction by a spring; and fingers attached to said rod and projecting on opposite sides of said arm, for the purpose and substantially as described.

15. In combination, a swinging arm, a spring engaging said arm, a notched block on the spring for locking said arm in closed position, a spring attached to said arm and a movable contact carried by said spring; a contact fixed relatively to said arm, a reciprocating rod adapted to be moved in one direction by fluid-pressure and in the opposite direction by a spring; and fingers attached to said rod and projecting on opposite sides of said arm, for the purpose and substantially as described.

16. In a fluid-pressure electric switch, a pivoted arm, a movable contact connected therewith; a fixed contact opposite said movable contact; a spring having a notched block thereon engaging the free end of said arm to hold it in closed position; a fluid-pressure chamber, a plunger adapted to be operated in one direction by the fluid-pressure, a spring for retracting said plunger, and devices attached to said plunger adapted to engage said arm on opposite sides, whereby the switch is snapped open when the pressure forces the arms out of the notch and is snapped closed when the spring forces the arm into the notch.

17. In a pressure-controlled electric switch, the combination of a fixed contact, a movable contact mounted on a spring, a swinging arm to which said spring is attached; a notched block adapted to engage the free end of said arm; a spring carrying said block; a reciprocating rod adapted to actuate said arm, a pneumatically-controlled plunger adapted to move said rod in one direction, and a spring for moving the rod in the opposite direction.

18. In combination, a swinging arm, a spring engaging said arm, a notched block on the spring for locking said arm in closed position, a spring attached to said arm and a movable contact carried by said spring, a contact fixed relatively to said arm, a reciprocating rod adapted to be moved in one direction by fluid-pressure and in the opposite direction by a spring, a stop for limiting the spring-actuated movement of the rod, and fingers attached to said arm and projecting on opposite sides of said arm, for the purpose and substantially as described.

850,082. FENCE-POST. JAMES E. WRIGHT, Omaha, Nebr. Filed Feb. 19, 1906. Serial No. 301,867.

Claim.—A device of the character described comprising a core having notches in its ends, longitudinal wires upon said core engaged with said notches and united at the end of the core, and means for spacing said wires from the intermediate portions of the core-body, substantially as described.

850,083. LOADING APPARATUS. JOHN W. ATKISON, Pana, Ill. Filed Dec. 27, 1906. Serial No. 349,639.

Claim.—1. In an excavating and loading apparatus, the combination of a base, an inclined way carried thereby, an upper section pivoted on said base and constituting a continuation of said inclined way, a scraper, bails on said scraper, a cable secured to said bails, stops supported by said pivoted section for engaging said bails, and guiding means on said pivoted section for receiving said cable, substantially as described.

2. In an excavating and loading apparatus, the combination of a base, an inclined way carried thereby, an upper section pivoted on said base and constituting a continuation of said inclined way, a scraper, bails on said scraper, a cable secured to said bails, stops carried by said pivoted section for engaging said bails, guiding means on said pivoted section for receiving said cable, and buffers carried by said base for engaging said pivoted section upon its swing to discharging position, substantially as described.

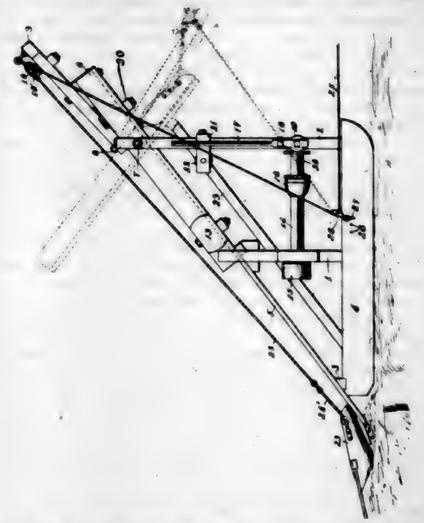

3. In an excavating and loading apparatus, the combination of a base, an inclined way carried thereby, an upper section pivoted on said base and constituting a continuation of said inclined way, a scraper, bails on said scraper, a cable secured to said bails, braces inclined upwardly from said pivoted section, stops supported by said braces for engaging said bails, and guiding means carried by said braces for receiving said cable, substantially as described.

4. In an excavating and loading apparatus, the combination of a base, an inclined way carried thereby, an upper section pivoted on said base and constituting a continuation of said way, a scraper, bails on said scraper, means for drawing said scraper upwardly along said way, stops supported by said pivoted section for engaging said bails, and means for adjusting said stops to shift the point of such engagement in the travel of said scraper at various predetermined points in the upward travel of said scraper.

5. In an excavating and loading apparatus, the combination of a base, an inclined way carried thereby, an upper section pivoted on said base and constituting a continuation of said way, means for tilting said pivoted section, and means for adjusting the leverage of said tilting means.

850,084. SHARPENING HOLDER FOR GRAVERS AND OTHER TOOLS. WALTER E. CROCKER, Providence, R. I., and FRED W. CROCKER, North Baltimore, Ohio; said Walter E. Crocker assignor to said Fred W. Crocker. Filed Aug. 9, 1906. Serial No. 329,904.

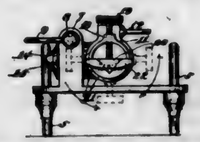

Claim.—1. In a hand-tool holder, a hand-bracket having a trunnion-bearing, a collar having a trunnion working in said bearing to revolve the collar, and a tool-carrying sleeve slidable through the collar and revoluble therein perpendicular to the axis of revolution of the collar.

2. In a hand-tool holder, a hand-bracket having a trunnion-bearing, a split collar having a trunnion on the side and working in said bearing to revolve the collar, means for clamping the trunnion in said bearing, a tool-carrying sleeve slidable through the collar and revoluble therein perpendicular to the axis of revolution of the collar, and means for clamping the sleeve in the collar.

3. In a tool-holder, the combination, with the hand-bracket for sliding the holder, and a sleeve adapted to hold a tool for sharpening its points at various angles, of a collar in which the sleeve is revolved and slid, and means connecting the collar with the hand-bracket to permit the sleeve to swing perpendicular to its revolution.

4. In a hand-tool holder, the combination, with a hand-bracket for sliding the holder, of a collar adapted to be revolved on the front of the bracket, a tool-holding sleeve revoluble in the collar and slidable across the axis of revolution of the collar, and means to fix the collar and the sleeve against said movements.

5. In a tool-holder the combination, with the tool-sleeve having a suitable set-screw, of a tool-keeper having arms engaging one end of the sleeve to anchor the keeper.

6. In a tool-holder the combination, with the tool-sleeve having a suitable set-screw, of a tool-keeper having a tool-groove terminating in a recess to fit one end of said sleeve, and arms projecting from the keeper upon the outside of said sleeve end to anchor the keeper.

7. In a hand-tool holder, the combination, with a slidable hand-bracket having a trunnion-bearing, and a collar having a trunnion working in the bearing for revolving the collar, of a tool-sleeve carried by the collar and adapted to turn therein, a suitable set-screw working through the sleeve, and a tool-keeper anchored to one end of the sleeve within the latter and adapted to adjust itself to a tool under pressure of said screw.

8. In a hand-tool holder, the combination, with a slidable hand-bracket having a trunnion-bearing formed on the front end thereof, of a collar having a trunnion extending through the bearing to permit revolution of the collar, a tool-sleeve slidable in the collar across its axis of revolution and adapted to be revolved by and with the collar to vary the elevation of the tool-point, said sleeve being revoluble in the collar perpendicular to the axis of revolution of the collar for turning the tool-point to various positions, and means for fixing the collar and the sleeve against said movements.

850,085. BORING-MACHINE. FRANK H. FRENCH, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Aug. 8, 1906. Serial No. 329,638.

Claim.—1. In a boring-machine, a holder for the blank, a rotatable tool-carrier, a boring-tool carried thereby, means to support and frictionally coöperate with the tool-carrier and by such frictional coöperation move the tool-carrier longitudinally to effect engagement of the tool and the end of the blank, to center the tool, and a device on the tool-carrier with which said means thereafter coöperates positively, to effect feed of the tool by such positive co-operation.

2. In a boring-machine, a holder for the blank, a rotatable tool-carrier, a boring-tool carried thereby coaxial with the blank and movable longitudinally thereof, and means supporting the tool-carrier and movable with and also relatively to the same, to first move said tool-carrier and bring the tool into engagement with the blank, to center the tool, and after a predetermined movement of said means longitudinally relatively to the tool-carrier to resume control thereof and positively continue the longitudinal movement of the tool-carrier and tool, to feed the latter into the blank.

3. In a bobbin-boring machine, a holder for the blank, a boring-tool, a rotating tool-carrier, means to effect frictional engagement therewith, and move the tool against the end of the blank to center the tool, means to provide positive engagement with the tool-carrier thereafter, to positively feed the tool and bore the blank, and a fixed guide for and adjacent the point of the tool when the latter is running free.

4. In a bobbin-boring machine, a holder for the blank, a tool-carrier having annular enlargements thereon, a boring-tool on the carrier, bearings in which the latter is rotatable and also movable longitudinally, a reciprocating carriage in which the bearings are mounted, and means to rotate the tool-carrier movement of the carriage toward the blank first causing friction-induced movement of the tool-carrier with its bearings until the tool engages the blank, the bearings thereafter moving into engagement with one of the enlargements on the tool-carrier, to positively move the latter forward and effect feed of the tool.

5. In a boring-machine, a reciprocating carriage, a plurality of rotating tools mounted thereon, one of the tools being movable longitudinally with and also relatively to the carriage, means to move that one of the tools with the carriage into engagement with the work, to center the tool, means to act upon the said tool after an interval of rest thereof, to again move it with the carriage and effect positive feed of the tool, and a work-holder to present the work successively to the action of the several tools.

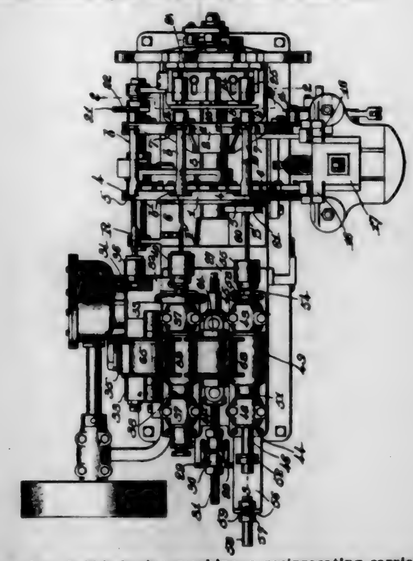

6. In a bobbin-boring machine, a reciprocating carriage, a starting and a finishing drill mounted thereon, a reamer also mounted on the carriage, means to rotate said drills and reamer, an intermittingly-movable work-holder to present blanks in succession opposite the drills and reamer, means to permit limited longitudinal movement of the starting-drill relatively to the carriage, whereby said drill is moved into engagement with the blank and temporarily stopped thereby, and means whereby said drill is thereafter positively moved forward with the carriage to effect feed of said drill.

7. In a bobbin-boring machine, a reciprocating carriage, a starting-drill and a finishing-drill of greater length mounted thereon, means to rotate them, a work-holder to present blanks to be drilled, a fixed guide to coöperate with the shorter, starting-drill, and prevent vibration of the point thereof when out of the work, and means connecting the starting-drill and the carriage to reciprocate the said drill by the carriage but with a stroke of less amplitude.

8. In a bobbin-boring machine, an intermittingly-movable blank-holder to present the blanks one by one in position to be bored, a carriage movable toward and from the blank-holder, a rotatable drill mounted on the carriage, and a lost-motion connection between said carriage and drill, whereby after the drill is brought into engagement with the work the carriage continues its movement a predetermined distance and then positively moves the drill in unison to effect feed of the drill.

9. In a bobbin-boring machine, a holder for the blank to be bored, a carriage movable toward and from the holder, a rotatable drill mounted on the carriage, a friction connection between the drill and the carriage, and means providing a positive engagement between the drill and carriage, whereby the drill is first moved longitudinally against the end of the blank by or through the friction connection, and afterward by the means providing the positive engagement, to effect thereby feed of the drill.

10. In a boring-machine, a reciprocating carriage, a plurality of tools rotatably mounted thereon, means to rotate said tools, an intermittingly-movable work-holder to present blanks in succession opposite the tools, means to permit limited longitudinal movement of one of said tools relatively to the carriage, whereby said tool is moved into engagement with the blank and temporarily stopped thereby, and means to thereafter positively move said tool forward with the carriage to effect feed of the tool.

11. In a boring-machine, a reciprocating carriage, a plurality of tools rotatably mounted thereon and of different lengths, an intermittingly-movable work-holder to present blanks in succession opposite the tools, a fixed guide to co-operate with the short tool and prevent vibration of the point thereof, and means connecting the said tool and the carriage, whereby the tool is reciprocated by the carriage, but with a stroke of less amplitude to maintain said tool within the guide throughout the reciprocation of the carriage.

12. In a boring-machine, a rotatable drill, its shaft, a reciprocating carriage on which the shaft is mounted and relatively to which it is movable longitudinally, and a fixed guide to coöperate with the point of the drill and prevent vibration thereof when out of the work, said drill being held by friction in the work when the carriage is retracted until the relative movement between the carriage and drill is taken up, the point of the drill remaining in the guide when the drill is fully retracted.

850,086. POWDER-CAN TOP. JOHN H. GOSS, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a Corporation of Connecticut. Filed June 9, 1906. Serial No. 321,012.

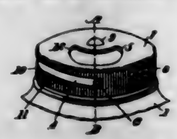

Claim.—1. A powder-can top provided with a fixed member having a suitable number of discharge-openings in its end and a suitable number of laterally-projecting lugs on its side, and a covering-shell inclosing the fixed member and turning upon the end thereof and having a number of discharge-openings equal to that in the end of the fixed member and adapted to be brought into and out of register with the openings in the fixed member, and also having cam-slots in its side wall corresponding in number with the lugs on the fixed member and coöperating therewith in the closing movement of the covering-shell to draw down the said shell tightly over the discharge-openings in the fixed member.

2. A powder-can top, provided with a fixed member, having a discharge-opening in its end and a lug on its side in alinement with said opening, and a rotary cover applied over and turning upon the end of the fixed member and having an opening adapted to be moved into and out of register with the opening in the fixed member and a slot in its side through which the lug projects, said slot having an inclined edge engaged by the lug, so that when the cover is turned to close the opening in the fixed member the cover will be drawn down tight over the said opening.

3. A powder-can top, provided with a fixed member, having a discharge-opening in its end and a lug on its side in alinement with said opening, and a rotary cover applied over and turning upon the end of the fixed member and inclosing it and having an opening adapted to be moved into and out of alinement with the opening in the fixed member and also having in its side an obliquely-arranged slot engaged by the lug and serving to draw down the cover tightly upon the fixed member when the opening therein is closed.

850,087. COMPOSITE RAILWAY-TIE. WILLIAM H. GRIFFITHS, Chester, Pa. Filed Oct. 5, 1906. Serial No. 337,532.

Claim.—1. As a new article of manufacture, a railway-tie consisting of a U-shaped channel-iron having the side walls thereof set inward, beveled flanges formed upon the outer edges of the side walls, spike-blocks fitted within the ends of the tie and clamp-plates engaging said flanges.

2. In combination, a railway-tie formed of a single piece of channel metal, the side walls of which are set inward, said side walls having beveled flanges formed thereon, spike-blocks located within the ends of the tie and clamp-plates engaging said flanges whereby the side walls are prevented from spreading and the spike-blocks held in place, as specified.

3. A composite railway-tie consisting of a hollow channel-iron having holes therein for the passage of the spikes, the side walls of said channel-iron being set inward, beveled flanges formed upon the lower edges of said side walls, spike-blocks fitted in the ends of the channel-iron and two clamp-plates adapted to engage said flanges to hold the spike-blocks in place and prevent the side walls of the channel-iron from spreading, as specified.

850,088. PICKER-STICK CONNECTION FOR LOOMS. CHARLES A. HYDE, Danielson, Conn., assignor to The E. H. Jacobs Manufacturing Company, Danielson, Conn., a Corporation of Connecticut. Filed Mar. 20, 1906. Serial No. 307,015.

Claim.—1. A plug for the lug-strap of a loom formed of compressed woven fabric in layers, and having an operating-surface formed by the edges of the fabric.

2. A picker mechanism for looms having an element formed of woven fabric, with a plurality of layers secured together, molded into a block and provided with an operating-face formed by the cut edges of the fabric.

3. A lug-strap for picker-sticks comprising a loop, and a plug fitted therein, said plug having a convex face for engagement with the picker-stick, and being made of compressed fabric in layers, and presenting the edges of the fabric to the picker-stick, said edges lying in said convex face.

850,089. CURTAIN-ROD. CHARLES W. KIRSCH, Three Rivers, Mich., assignor to Kirsch Manufacturing Company, Three Rivers, Mich., a Corporation of Michigan. Filed Dec. 6, 1906. Serial No. 346,636.

Claim.—A curtain-rod comprising a plurality of telescoping interfitting members, each of said members formed from a flat strip of sheet metal having overhanging edge flanges, the outer ends of the strips or members being curved inwardly to lie at an angle of approximately ninety degrees to the body of the strip or member, L-

2. In a hand-tool holder, a hand-bracket having a trunnion-bearing, a split collar having a trunnion on the side and working in said bearing to revolve the collar, means for clamping the trunnion in said bearing, a tool-carrying sleeve slidable through the collar and revoluble therein perpendicular to the axis of revolution of the collar, and means for clamping the sleeve in the collar.

3. In a tool-holder, the combination, with the hand-bracket for sliding the holder, and a sleeve adapted to hold a tool for sharpening its points at various angles, of a collar in which the sleeve is revolved and slid, and means connecting the collar with the hand-bracket to permit the sleeve to swing perpendicular to its revolution.

4. In a hand-tool holder, the combination, with a hand-bracket for sliding the holder, of a collar adapted to be revolved on the front of the bracket, a tool-holding sleeve revoluble in the collar and slidable across the axis of revolution of the collar, and means to fix the collar and the sleeve against said movements.

5. In a tool-holder the combination, with the tool-sleeve having a suitable set-screw, of a tool-keeper having arms engaging one end of the sleeve to anchor the keeper.

6. In a tool-holder the combination, with the tool-sleeve having a suitable set-screw, of a tool-keeper having a tool-groove terminating in a recess to fit one end of said sleeve, and arms projecting from the keeper upon the outside of said sleeve end to anchor the keeper.

7. In a hand-tool holder, the combination, with a slidable hand-bracket having a trunnion-bearing, and a collar having a trunnion working in the bearing for revolving the collar, of a tool-sleeve carried by the collar and adapted to turn therein, a suitable set-screw working through the sleeve, and a tool-keeper anchored to one end of the sleeve within the latter and adapted to adjust itself to a tool under pressure of said screw.

8. In a hand-tool holder, the combination, with a slidable hand-bracket having a trunnion-bearing formed on the front end thereof, of a collar having a trunnion extending through the bearing to permit revolution of the collar, a tool-sleeve slidable in the collar across its axis of revolution and adapted to be revolved by and with the collar to vary the elevation of the tool-point, said sleeve being revoluble in the collar perpendicular to the axis of revolution of the collar for turning the tool-point to various positions, and means for fixing the collar and the sleeve against said movements.

850,085. BORING-MACHINE. FRANK H. FRENCH, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Aug. 8, 1906. Serial No. 329,638.

Claim.—1. In a boring-machine, a holder for the blank, a rotatable tool-carrier, a boring-tool carried thereby, means to support and frictionally coöperate with the tool-carrier and by such frictional coöperation move the tool-carrier longitudinally to effect engagement of the tool and the end of the blank, to center the tool, and a device on the tool-carrier with which said means thereafter coöperates positively, to effect feed of the tool by such positive co-operation.

2. In a boring-machine, a holder for the blank, a rotatable tool-carrier, a boring-tool carried thereby coaxial with the blank and movable longitudinally thereof, and means supporting the tool-carrier and movable with and also relatively to the same, to first move said tool-carrier and bring the tool into engagement with the blank, to center the tool, and after a predetermined movement of said means longitudinally relatively to the tool-carrier to resume control thereof and positively continue the longitudinal movement of the tool-carrier and tool, to feed the latter into the blank.

3. In a bobbin-boring machine, a holder for the blank, a boring-tool, a rotating tool-carrier, means to effect frictional engagement therewith, and move the tool against the end of the blank to center the tool, means to provide positive engagement with the tool-carrier thereafter, to positively feed the tool and bore the blank, and a fixed guide for and adjacent the point of the tool when the latter is running free.

4. In a bobbin-boring machine, a holder for the blank, a tool-carrier having annular enlargements thereon, a boring-tool on the carrier, bearings in which the latter is rotatable and also movable longitudinally, a reciprocating carriage in which the bearings are mounted, and means to rotate the tool-carrier movement of the carriage toward the blank first causing friction-induced movement of the tool-carrier with its bearings until the tool engages the blank, the bearings thereafter moving into engagement with one of the enlargements on the tool-carrier, to positively move the latter forward and effect feed of the tool.

5. In a boring-machine, a reciprocating carriage, a plurality of rotating tools mounted thereon, one of the tools being movable longitudinally with and also relatively to the carriage, means to move that one of the tools with the carriage into engagement with the work, to center the tool, means to act upon the said tool after an interval of rest thereof, to again move it with the carriage and effect positive feed of the tool, and a work-holder to present the work successively to the action of the several tools.

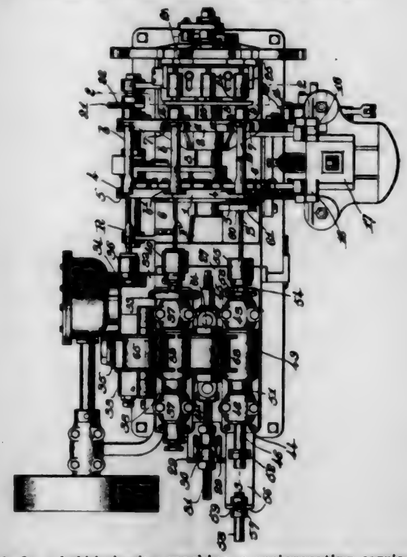

6. In a bobbin-boring machine, a reciprocating carriage, a starting and a finishing drill mounted thereon, a reamer also mounted on the carriage, means to rotate said drills and reamer, an intermittingly-movable work-holder to present blanks in succession opposite the drills and reamer, means to permit limited longitudinal movement of the starting-drill relatively to the carriage, whereby said drill is moved into engagement with the blank and temporarily stopped thereby, and means whereby said drill is thereafter positively moved forward with the carriage to effect feed of said drill.

7. In a bobbin-boring machine, a reciprocating carriage, a starting-drill and a finishing-drill of greater length mounted thereon, means to rotate them, a work-holder to present blanks to be drilled, a fixed guide to coöperate with the shorter, starting-drill, and prevent vibration of the point thereof when out of the work, and means connecting the starting-drill and the carriage to reciprocate the said drill by the carriage but with a stroke of less amplitude.

8. In a bobbin-boring machine, an intermittingly-movable blank-holder to present the blanks one by one in position to be bored, a carriage movable toward and from the blank-holder, a rotatable drill mounted on the carriage, and a lost-motion connection between said carriage and drill, whereby after the drill is brought into engagement with the work the carriage continues its movement a predetermined distance and then positively moves the drill in unison to effect feed of the drill.

9. In a bobbin-boring machine, a holder for the blank to be bored, a carriage movable toward and from the holder, a rotatable drill mounted on the carriage, a friction connection between the drill and the carriage, and means providing a positive engagement between the drill and carriage, whereby the drill is first moved longitudinally against the end of the blank by or through the friction connection, and afterward by the means providing the positive engagement, to effect thereby feed of the drill.

10. In a boring-machine, a reciprocating carriage, a plurality of tools rotatably mounted thereon, means to rotate said tools, an intermittingly-movable work-holder to present blanks in succession opposite the tools, means to permit limited longitudinal movement of one of said tools relatively to the carriage, whereby said tool is moved into engagement with the blank and temporarily stopped thereby, and means to thereafter positively move said tool forward with the carriage to effect feed of the tool.

11. In a boring-machine, a reciprocating carriage, a plurality of tools rotatably mounted thereon and of different lengths, an intermittingly-movable work-holder to present blanks in succession opposite the tools, a fixed guide to coöperate with the short tool and prevent vibration of the point thereof, and means connecting the said tool and the carriage, whereby the tool is reciprocated by the carriage, but with a stroke of less amplitude to maintain said tool within the guide throughout the reciprocation of the carriage.

12. In a boring-machine, a rotatable drill, its shaft, a reciprocating carriage on which the shaft is mounted and relatively to which it is movable longitudinally, and a fixed guide to coöperate with the point of the drill and prevent vibration thereof when out of the work, said drill being held by friction in the work when the carriage is retracted until the relative movement between the carriage and drill is taken up, the point of the drill remaining in the guide when the drill is fully retracted.

850,086. POWDER-CAN TOP. JOHN H. GOSS, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a Corporation of Connecticut. Filed June 9, 1906. Serial No. 321,012.

Claim.—1. A powder-can top provided with a fixed member having a suitable number of discharge-openings in its end and a suitable number of laterally-projecting lugs on its side, and a covering-shell inclosing the fixed member and turning upon the end thereof and having a number of discharge-openings equal to that in the end of the fixed member and adapted to be brought into and out of register with the openings in the fixed member, and also having cam-slots in its side wall corresponding in number with the lugs on the fixed member and coöperating therewith in the closing movement of the covering-shell to draw down the said shell tightly over the discharge-openings in the fixed member.

2. A powder-can top, provided with a fixed member, having a discharge-opening in its end and a lug on its side in alinement with said opening, and a rotary cover applied over and turning upon the end of the fixed member and having an opening adapted to be moved into and out of register with the opening in the fixed member and a slot in its side through which the lug projects, said slot having an inclined edge engaged by the lug, so that when the cover is turned to close the opening in the fixed member the cover will be drawn down tight over the said opening.

3. A powder-can top, provided with a fixed member, having a discharge-opening in its end and a lug on its side in alinement with said opening, and a rotary cover applied over and turning upon the end of the fixed member and inclosing it and having an opening adapted to be moved into and out of alinement with the opening in the fixed member and also having in its side an obliquely-arranged slot engaged by the lug and serving to draw down the cover tightly upon the fixed member when the opening therein is closed.

850,087. COMPOSITE RAILWAY-TIE. WILLIAM H. GRIFFITHS, Chester, Pa. Filed Oct. 5, 1906. Serial No. 337,532.

Claim.—1. As a new article of manufacture, a railway-tie consisting of a U-shaped channel-iron having the side walls thereof set inward, beveled flanges formed upon the outer edges of the side walls, spike-blocks fitted within the ends of the tie and clamp-plates engaging said flanges.

2. In combination, a railway-tie formed of a single piece of channel metal, the side walls of which are set inward, said side walls having beveled flanges formed thereon, spike-blocks located within the ends of the tie and clamp-plates engaging said flanges whereby the side walls are prevented from spreading and the spike-blocks held in place, as specified.

3. A composite railway-tie consisting of a hollow channel-iron having holes therein for the passage of the spikes, the side walls of said channel-iron being set inward, beveled flanges formed upon the lower edges of said side walls, spike-blocks fitted in the ends of the channel-iron and two clamp-plates adapted to engage said flanges to hold the spike-blocks in place and prevent the side walls of the channel-iron from spreading, as specified.

850,088. PICKER-STICK CONNECTION FOR LOOMS. CHARLES A. HYDE, Danielson, Conn., assignor to The E. H. Jacobs Manufacturing Company, Danielson, Conn., a Corporation of Connecticut. Filed Mar. 20, 1906. Serial No. 307,015.

Claim.—1. A plug for the lug-strap of a loom formed of compressed woven fabric in layers, and having an operating-surface formed by the edges of the fabric.

2. A picker mechanism for looms having an element formed of woven fabric, with a plurality of layers secured together, molded into a block and provided with an operating-face formed by the cut edges of the fabric.

3. A lug-strap for picker-sticks comprising a loop, and a plug fitted therein, said plug having a convex face for engagement with the picker-stick, and being made of compressed fabric in layers, and presenting the edges of the fabric to the picker-stick, said edges lying in said convex face.

850,089. CURTAIN-ROD. CHARLES W. KIRSCH, Three Rivers, Mich., assignor to Kirsch Manufacturing Company, Three Rivers, Mich., a Corporation of Michigan. Filed Dec. 6, 1906. Serial No. 346,636.

Claim.—A curtain-rod comprising a plurality of telescoping interfitting members, each of said members formed from a flat strip of sheet metal having overhanging edge flanges, the outer ends of the strips or members being curved inwardly to lie at an angle of approximately ninety degrees to the body of the strip or member, L-

shaped plates riveted to the inner faces of the inner ends of said strips, one flange or arm of each plate projecting outwardly at right angles, and being notched in their

lower edges to engage with securing-screws provided therefor.

850,090. AUTOMATIC COUPLING. PETER LAMCHE, Ratibor, Germany. Filed June 14, 1904. Renewed Mar. 14, 1907. Serial No. 362,414.

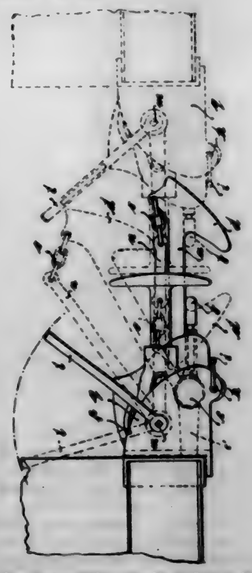

Claim.—1. An automatic coupling for railway-wagons comprising in combination, a horizontal coupling-hook *c* adapted to move only upward, a pivot *c*, stationary relatively to the respective wagon on which pivot said hook is revolubly mounted, a coupling-eye, *b*, a nose *d* on said hook, having a slide-surface, adapted to slide up and to engage with the clamping-eye, means for tightening the coupling and means adapted to be operated by hand for preventing at will the automatic engagement of the coupling.

2. An automatic coupling for railway-wagons comprising in combination, a horizontal coupling-hook *c* adapted to move only upward, a pivot *c* stationary relatively to the respective wagon on which pivot said hook is revolubly mounted, an adjustable coupling-eye, having a bow *e* provided with two shanks, one of which is screwed, a worm-wheel having a threaded nut arranged on the screwed shank, a worm engaging with said worm-wheel, means for operating said worm at will, a nose *d* on the coupling-hook, having a slide-surface adapted to slide up and to engage with the coupling-eye, a hand-lever, an axle on which said hand-lever is mounted a lever-arm fixed on said axle and, means connecting said lever-arm with the coupling-hook, whereby when the hand-lever is operated the automatic engagement of the hook in the coupling-eye is prevented.

850,091. TELEGRAPH AND CABLE CIPHER-CODE. FREDERICK W. LIETZOW, Chicago, Ill. Filed Sept. 10, 1906. Serial No. 333,926.

PART 1.

WORD	CHECK NUMBER	EXPRESSION
ABEL	1	REFERRING TO OUR CABLE OF THE 5TH INSTANT
		PART 2.
ABEL	2	IT IS IMPOSSIBLE TO DO BETTER.

THE SUM OF THE FIG. OF CHECK NOS. 1+2=3. TRANSPOSED INTO CHECK LETTER (FIGURE 2) WOULD BE "AP," WHICH WOULD ALSO MEAN TO DECIPHER FIRST EXPRESSION FROM "PART 1," SECOND FROM PART 2," COMPLETE WORD OF JOINED CIPHER WORDS, AND THEIR CHECK LETTERS "ABELAPABEL."

Claim.—1. In a cipher-code, a code-book the cipher-words of which contain less than half the number of letters allowable for a single word, are pronounceable both as single words and when any two such words are joined together at either end, and are accompanied by a check-number, which code-book also contains check-letters which when joined to any one word or a combination of two cipher-words are adapted to indicate the check-numbers thereof and enable the receiver to determine the accuracy or inaccuracy as may be of a cablegram containing a single or a combination of any two words therein.

2. In a cipher-code, a code-book the cipher-words of which contain less than half the number of letters permissible for a single word and are pronounceable both when alone and when any two such words are joined together, which book also contains check-letters indicating the number and location of a cipher word and words, and which when joined to two cipher-words will form therewith a single pronounceable word of not more than the number of letters allowable for a single word and indicate the check-number and location of said word and words.

3. In a cipher-code, a code-book divided in parts containing duplicate cipher-words differing in meaning in each part, and having a check-number for every such word, said code-book being also provided with check-letters indicating the part, and the check-number of a single code-word, and when a plurality of code-words are combined, the respective parts in which said words appear, and also the check-number thereof, when compared with the sum of the figures of the check-numbers of said words.

4. In a cipher-code, a code-book divided in parts containing duplicate cipher-words differing in meaning in each part, and having a check-number for every word, said code-book being also provided with check-letters combining with one and more words to form a single word, and indicating the part and the check-number of any single code-word used alone, and when a plurality of words are combined the part and parts in which said words appear, and also the check-numbers thereof when compared with the sum of the figures of the check-numbers of said words.

5. In a cipher-code, a code-book divided in parts of which contain duplicate cipher-words differing in meaning in each part, and having a check-number for every word, said code-book being also provided with check-letters grouped in fours and combining with one or more of said words to form a single word, and indicating the part and the check-number of a single code-word used alone, and when a plurality of code-words are combined the part and parts in which said words appear, and also the check-numbers thereof when compared with the sum of the figures of the check-numbers of said words.

6. In a cipher-code, a code-book divided in parts containing similar four-letter cipher-words differing in meaning in each part, and check-numbers for such every word, said code-book being also provided with check-letters combining with one or more of said words to form a single word, and indicating the part and the check-number of a single code-word used alone, and when a plurality of code-words are the part and parts in which said words appear, and also the check-numbers thereof when compared with the sum of the figures of the check-numbers of said words.

7. In a cipher-code, a code-book divided in parts containing similar four-letter cipher-words differing in meaning in each part, and having a check-number for every word, said code-book being also provided with a two-letter combination combining with one or more of said words to form a single word and indicating the part and the check-number of a single code-word used alone, and when a plurality of code-words are combined, the part and parts in which said words respectively appear, and also the check-number thereof when compared with the sum of the figures of the check-numbers of said words.

8. In a cipher-code, a code-book in which a substantial portion of the number of cipher-words therein are composed of alternating vowels and consonants and vice versa, four in number and any two of said words joined at either end to form a single pronounceable word, which code-book also includes differing check-numbers for each cipher-word, and a check-letter adapted to combine with a cipher-word to form a single pronounceable word and determine the accuracy of the use of said word in a cablegram.

9. In a cipher-code, a code-book, a substantial portion of the cipher-words of which are composed of four alternating vowels and consonants and vice versa, and provided with differing check-numbers, which book also contains check-letters comprising a vowel and consonant indicating the part and check-number of the cipher-word, and joined words to which it is attached, and which when joined to such word and words combines therewith to form a single pronounceable word of six or ten letters as may be.

10. In a cipher-code, a code-book, a substantial portion of the cipher-words of which are composed of four-letter pronounceable words, each of which have a differing check-number, a plurality of any of which words when joined together form a single pronounceable word, which book also contains a check letter or letters indicating the check-number of both single and joined cipher-words to which it or they are attached and which when joined to such word or words combines therewith to form a single pronounceable word.

11. In a cipher-code, a code-book, a substantial portion of the cipher-words of which are composed of four-letter pronounceable words, each of which have a differing check-number, a plurality of any of which words when joined together form a single pronounceable word, which book also contains a check letter or letters indicating the check-number of both single and joined cipher-words to which it or they are attached and which when joined to such word or words combines therewith to form a single pronounceable word of ten letters or less as may be.

850,092. PRESS FOR CLOSING AND OPENING SHEET-METAL RECEPTACLES. JOHN MERCKENS, Chicago, Ill. Filed Feb. 9, 1906. Serial No. 300,332.

Claim.—1. In a device of the class described, the combination of a pair of jaws having opposed coacting faces, each having projecting from its face a grooved rim adapted to engage one of the beaded heads of a can at opposite sides thereof, and means for pulling said jaws apart while in position to retain their grip on said heads.

2. In a device of the class described, the combination of a pair of jaws having opposed coacting faces, each having projecting from its face a U-shaped rim having an inner groove extending throughout its length, said rims being adapted to engage the heads of a receptacle for the purpose of pulling the respective members apart, and mechanism for forcing one of said jaws toward and away from the other.

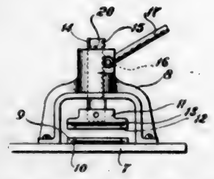

3. In a device of the class described, the combination of a pair of jaws having opposed coacting faces, each having projecting from its face a U-shaped rim having an inner groove extending throughout its length, said rims being adapted to engage the heads of a receptacle for the purpose of pulling the respective members apart, said rims having substantially the same inner size and form, and mechanism for forcing one of said jaws toward and away from the other.

4. In a device of the class described, the combination of a pair of jaws having opposed coacting faces, each having projecting from its face a rim extending around three sides thereof and open toward the other side, and each of said rims having an inner groove extending throughout the length of the rim; a member seated in the part of the rim opposite the open side, and having limited movement across the groove in the direction of said open side; and mechanism for forcing one of said jaws toward and away from the other.

5. In a device of the class described, the combination of a pair of jaws having opposed coacting faces, each having projecting from its face a rim extending around three sides thereof and open toward the other side, and each of said rims having an inner groove extending throughout the length of the rim; a member seated in the part of the rim opposite the open side, and having limited movement across the groove in the direction of said open side, said member being normally urged outwardly of said groove; and mechanism for forcing one of said jaws toward and away from the other.

850,093. ROTARY ICE-BREAKING MACHINE. GEORGE M. MILLS, Jersey City, N. J. Filed Dec. 11, 1905. Serial No. 291,216.

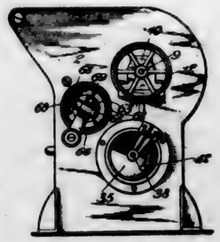

Claim.—1. In an ice-breaking machine, the combination of the casing having a side discharging-opening and a bottom discharging-opening, a discharging-conveyer and a chute for directing the discharge through the side or the bottom discharging-opening embodying pivoted sections adapted to be opened and closed below said conveyer, substantially as described.

2. In an ice-breaking machine, the combination of the

casing having a side discharging-opening and a bottom discharging-opening, a discharging-conveyer and a chute for directing the discharge through the side or the bottom discharging-opening embodying pivoted sections adapted to be opened and closed below said conveyer, and means for opening and closing said sections, substantially as described.

3. In an ice-breaking machine, the combination of the casing having a side discharging-opening and a bottom discharging-opening, a discharging-conveyer and a chute for directing the discharge through the side or the bottom discharging-opening embodying pivoted sections adapted to be opened and closed below said conveyer, and an oppositely-screw-threaded rotatable rod for opening and closing said sections, substantially as described.

4. In an ice-breaking machine, a cylinder having slots and screw-threaded holes, ice-breaking teeth provided with tongues projecting into said slots, wedges having undercut notches and projecting into said slots and engaging said tongues and set-screws projecting into said screw-threaded holes and their heads engaging the undercut notches in said wedges, substantially as described.

5. In an ice-breaking machine, a cylinder having slots and screw-threaded holes, ice-breaking teeth provided with tongues projecting into said slots, wedges having undercut notches and projecting into said slots and engaging said tongues and set-screws provided with spanner-holes and projecting into said screw-threaded holes and their heads engaging the undercut notches in said wedges, substantially as described.

6. In an ice-breaking machine, a cylinder having slots and screw-threaded holes, ice-breaking teeth provided with forwardly-projecting points having cutting edges and tongues projecting into said slots, wedges having undercut notches and projecting into said slots and engaging said tongues and set-screws projecting into said screw-threaded holes and their heads engaging the undercut notches in said wedges, substantially as described.

7. In an ice-breaking machine, the combination of the casing, a cylinder having ice-breaking teeth, means coöperating therewith for regulating the size of the pieces into which the ice is to be broken embodying a rotatable bar provided with varying numbers of ice-breaking teeth and means for adjusting and fixing said bar embodying a handle pivoted thereon and means on said casing adapted to be engaged by said handle, substantially as described.

8. In an ice-breaking machine the combination of the casing, a cylinder having ice-breaking teeth, means coöperating therewith regulating the size of the pieces into which the ice is to be cut embodying a rotatable bar provided with varying numbers of ice-breaking teeth and means for adjusting and fixing said bar embodying a disk secured to said bar, a spring-pressed handle pivoted thereon and a flange on said casing provided with notches adapted to be engaged by said handle, substantially as described.

9. In an ice-breaking machine the combination of the casing, a cylinder having ice-breaking teeth, means coöperating therewith for regulating the size of the pieces into which the ice is to be cut, embodying a rotatable bar provided with varying numbers of ice-breaking teeth and means for adjusting and fixing said bar embodying a spring-pressed handle pivoted thereon and means on said casing adapted to be engaged by said handle, substantially as described.

10. In an ice-breaking machine the combination of a cylinder having slots and screw-threaded holes, ice-breaking teeth having tongues projecting into said slots, wedges having undercut notches and projecting into said slots and engaging said tongues, set-screws projecting into said holes, and their heads engaging the undercut notches in said wedges and means coöperating with said teeth for regulating the size of the pieces into which the ice is to be cut embodying a rotatable bar having ice-breaking teeth, substantially as described.

11. In an ice-breaking machine the combination of a cylinder having ice-breaking teeth and means coöperating therewith embodying a rotatable angular bar provided with flattened corners and plates secured thereon and having varying numbers of ice-breaking teeth and flanges engaging said flattened corners, substantially as described.

850,094. MATRIX FOR MONOLINE-MACHINES. JAMES MCNAMARA, Montreal, Quebec, Canada, assignor to Mergenthaler Linotype Company, a Corporation of New York. Original application filed July 14, 1905, Serial No. 269,748. Divided and this application filed Dec. 29, 1906. Serial No. 350,070.

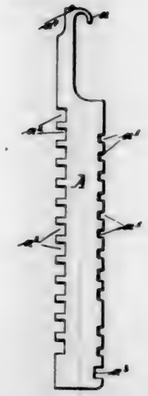

Claim.—1. A matrix for a monoline-machine comprising a body portion provided with a suspending-hook, with the matrix characters in one edge, with the alining-notches in the opposite edge, and also with a special detaining-notch a^3 below the characters.

2. A monoline-matrix comprising a body portion with a suspending-hook at the top, a series of matrix characters in one edge, and a single detaining-notch in said edge below the characters.

3. A monoline-matrix comprising a body portion having in one edge a series of characters, in the opposite edge a like number of alining-notches, and also at the lower end a special detaining-notch a^3.

850,095. BOX. TRUMAN G. PALMER, Chicago, Ill. Filed Nov. 28, 1904. Serial No. 234,481.

Claim.—1. In a cigar-box, the hinged cover composed of two separable sections connected by a weak bridge-joint.

2. In a cigar-box, the hinged cover composed of two separable sections connected by a weak bridge-joint, and a hinge extending across said joint.

3. A cigar-box, having a lid hinged at its rear edge to the box-body and scored on a line parallel to its rear edge to form separable sections connected by a weak bridge-joint, and having a supplemental hinge of flexible material extending over said joint.

4. A cigar-box, having a lid hinged at its rear edge to the body of the box, said lid being formed of a single integral piece of wood with the grain extending lengthwise of the box, and said lid being provided between its front and rear edges with a supplemental hinge, and being scored or cut between its front and back edges and upon a line parallel with and opposite said supplemental hinge, to permit the lid to be severed or broken into sections that will be held together by said supplemental hinge.

850,096. SCOOP-BUCKET FOR DREDGING PURPOSES. CHARLES PAY, Providence, R. I. Filed Jan. 21, 1907. Serial No. 353,391.

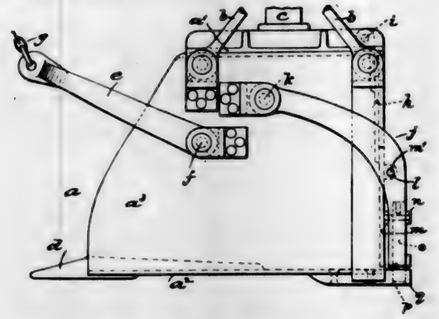

Claim.—1. In a scoop-bucket whose shell is substantially rectangular in cross-section and having a door pivoted to its top and of a size to partially close the discharge end of said bucket, a second door having an axle-shaft secured thereto, and said second door of a size to close the remaining portion of the discharge end of said bucket and overlapping the edge of first-mentioned door; a yoke pivoted to the sides of said bucket, near its top and having its lower portion to rest upon said second door, and said yoke provided with journal-bearings to receive the axle-shaft of the latter, and locking means carried by said yoke to operate in holding said two doors in a closed position upon said bucket.

2. The combination in a scoop-bucket for dredging purposes, of a door pivotally mounted on the top of said bucket and of a size to partially close the discharge end of the latter; a yoke to straddle said bucket, pivoted to the sides and near the top of the latter, and said yoke having its lower portion extending in front of the discharge end of said bucket; a second door pivoted upon said yoke, of a size to close the remaining portion of the discharge end of said bucket and overlapping the edge of first-mentioned door; a block secured on the bottom of said bucket and provided with an opening; a support extension secured on said yoke, in front of and beneath the pivot-center of said second door; a trip-lever pivoted on said extension; a latch-bar connected to said lever and adapted to enter the opening of said block, and a pull-chain connection from the free end of said lever to operate in unlocking whereby both said doors swing open in the same direction, in the discharge of the bucket-load.

3. In a scoop-bucket whose shell is substantially rectangular in cross-section and having a swinging door designed to partially close its discharge end, the combination therewith, of a yoke member pivoted to the sides of said bucket and having its lower portion extending in front of the discharge end of said bucket and opposite of the pivot-center of said door, and said member provided with journal-bearings; a second door having an axle-shaft secured thereto and mounted in the journal-bearings of said yoke member, and last-mentioned door resting upon the latter and overlapping the free lower portion of first-mentioned door, and means carried by said yoke member to permit of locking or releasing both said doors, at the time of dredging or discharging of the bucket-load.

4. The combination with a scoop-bucket which is substantially rectangular in cross-section and having a swinging door suspended from its top and designed to partially close the discharge end of said bucket, of a yoke whose end portions are pivoted to the sides of said bucket, near its top, and said yoke having its lower portion extending in front of the discharge end and near to the bottom of said bucket; a second door pivoted on said yoke, adapted to rest upon the latter and to overlap the edge portion of first-mentioned door, and means to hold both said doors in a locked position upon said bucket and to permit both said doors swinging outwardly together in the discharge of the bucket-load.

5. The combination with a scoop-bucket having its top properly secured on the end of a swinging post, and said bucket having a door pivoted on its top and of a size to partially close the discharge end thereof, of a yoke member whose lower portion extends in front of the discharge end of and near the bottom of said bucket, said member having its ends pivoted to the sides of the latter and provided with journal-bearings arranged opposite each other; a second door overlapping the outer edge portion of first-mentioned door and resting upon the lower portion or said yoke member, and said second door having a shaft secured thereto and whose ends are mounted in the journal-bearings of said yoke member; a block secured on the bottom of said bucket and provided with an opening; a support extending across and having its ends secured to said yoke member, and a locking device for said doors, comprising a lever pivoted to said support; a latch-bar connected to said lever and arranged to enter the opening of said block, and a pull-chain connection from the free end of said lever.

6. The combination with a scoop-bucket properly mounted on the end of a swinging post, and said bucket having a hinged door designed to partially close the discharge end thereof, of a yoke member whose free ends straddle over and are pivoted to the sides of said bucket, and said member provided with openings that form journal-bearings arranged opposite each other; a second door to rest upon the yoke member and overlapping the outer edge portion of first-mentioned door, and said second door having a shaft secured thereto and whose ends are mounted in the journal-bearings of said yoke member, and means carried by said yoke member to hold both said doors either in a locked or opened position upon said bucket.

7. In a scoop-bucket for dredging purposes, the combination with the bucket-shell, of two doors to close the discharge end of the shell and arranged to open inwardly of the latter by concussion with the water, and locking means to permit both doors to open outwardly from the shell in the discharge of the material.

8. The combination with a scoop-bucket having a handle, of a clamping structure consisting of a brace member having an eye to receive a fixed pin of the bucket; a second brace member provided with a circular opening at one end and a slotted opening formed through its other end; link-plates secured upon the free end of first-mentioned member, and each plate provided with circular openings that register opposite each other; a removable bolt to enter through the circular openings of said plate and through the circular opening of second-mentioned member; a head-plate secured upon the handle and having an integral hub which is bored to receive the slotted end portion of second-mentioned brace member; a gib to rest against the shoulder formed by the upper end of the slot in second-mentioned brace member, and a wedge-shaped key to bear against the hub of said head-plate and said gib respectively, whereby said key may exert a pull upon both said brace members.

9. In a scoop-bucket having a handle, the combination therewith, of head-plates secured on the sides of said handle and each plate having an integral hub which is provided with a bore; four brace connections arranged in pairs, each pair having one end connected to the sides of the bucket, near the top, thereof, and its other end to enter through the bore of the hub of each of said plates; means to hold the inner free ends of each pair of brace connections together, and means mounted in each hub of said plates to permit of exerting a pull upon each pair of said brace connections, all arranged substantially as shown and for the purpose specified.

10. A scoop-bucket having two pivotally-mounted doors to close the discharge end thereof, both doors arranged to open inwardly of the bucket-body by contact with the water, and means to hold both doors in either a closed position on the bucket-body, or to permit both doors to swing outwardly of the latter, substantially as set forth.

850,097. HANGER-SUPPORT FOR CONCRETE CEILINGS. ARTHUR J. PERKINS, Springfield, Mass., assignor of one-half to Stephen H. Howland, Springfield, Mass. Filed Sept. 19, 1906. Serial No. 335,229.

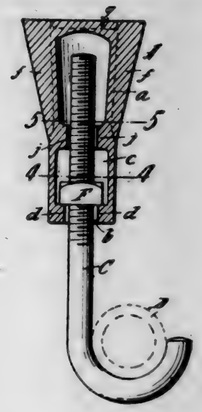

Claim.—1. A hanger-support consisting of a body designed to be embedded in structural material and provided in its exposed face with a slotted opening and communicating with said opening with a chamber substantially square in cross-section and formed to prevent lateral movement of a contained hanger in any direction, the portions of the body at either side of the opening constituting internal bearing-ledges.

2. An elongated hanger-support consisting of a hollow body provided in one end with a longitudinally leading slotted opening and with internal bearing-ledges at either side of said opening, in combination with a hanger having an enlarged head resting upon said ledges and contained within a restricted chamber whereby said head is confined against lateral movement in either direction.

3. In combination, a hanger-support consisting of a hollow body designed to be embedded in structural material and having its exposed face provided with a slotted opening communicating with the interior, said body being provided also with internal bearing-ledges at either side of said opening, a nut constructed to be slipped through said slotted opening and to be turned to rest upon the ledges, and a bolt or threaded hanger constructed to take into said nut, said slotted opening being of but slightly greater length than the width of said nut and of less width than said nut.

4. A hanger-support consisting of a long narrow hollow body provided in one end with a longitudinally leading slotted opening and with internal ledges at either side thereof, the portion of the interior of the hanger immediately in communication with said opening being substantially square in cross-section, whereby a contained nut is held against rotation, and lateral movement.

5. A hanger-support consisting of a hollow body provided with a slotted opening and with internal bearing-ledges at either side thereof, the portion of the interior of the hanger immediately in communication with said opening being constructed to prevent rotation of a contained nut, and said interior being provided at an intermediate point beyond said portion with a seat or stop to limit upward movement of a contained nut.

6. An elongated hanger-support consisting of a hollow body provided in one end with a longitudinally leading slotted opening and with internal bearing-ledges at either side thereof, the chambered interior of the body being constricted intermediate its length to arrest upward movement of a nut supported on said ledges and to permit passage through such constriction of a bolt threaded into the nut, the portion of said chambered interior between said ledges and said constriction being constructed to prevent rotation of the nut.

7. An elongated hanger-support consisting of a hollow body provided in one end with a longitudinally leading slotted opening and with internal bearing-ledges at either side thereof and internally intermediate its length with a flange having a circular aperture less in diameter than the width of said opening.

8. A hanger-support consisting of a hollow body having at the lower portion thereof a downwardly-leading opening with ledges at opposite sides thereof, the length of said opening in one direction being greater than the distance in another direction between the inner edges of said ledges, and said chambered body having at an intermediate portion of its height an internal flange surrounding an opening diametrically smaller than the width of the said lower opening.

9. An elongated hanger-support consisting of a hollow body open at one end for the reception of a hanger and having in the region of its opposite end transversely-disposed opposed flanges projecting widely beyond the outer contour of the body and in quadrature therewith longitudinally-disposed opposed flanges also projecting beyond the outer contour of the body and set clear of the overhang of said other flanges.

850,098. APPARATUS FOR EXTRACTING TURPENTINE FROM WOOD. HENRY RASCHE, Alki Point, Wash., assignor to American Wood Extract Co., a Corporation of the State of Washington. Filed Mar. 21, 1906. Serial No. 307,252.

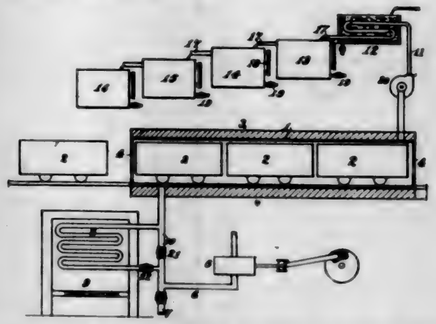

Claim.—1. An apparatus for producing turpentine from wood comprising a source of steam, means for superheating the steam to a temperature of from 250° Fahrenheit, up, when at atmospheric pressure, means for mixing therewith steam of a lower temperature, a retort for containing the wood being treated and receiving the superheated steam, means for drawing off the vapors from the retort and thereby keeping the pressure substantially at atmospheric, and means for condensing said vapors.

2. An apparatus for extracting turpentine from wood comprising a retort adapted to receive the wood to be treated, a source of steam at substantially atmospheric pressure, a superheater through which the steam may be passed before entering the retort, a by-pass by which the steam may be introduced within the retort without going through the superheater, a positive suction device for withdrawing the vapors from the retort to thereby prevent their rise above atmospheric pressure, and means for condensing said vaports.

3. An apparatus for extracting turpentine from wood comprising a retort adapted to receive loaded cars, cars for receiving the wood and entering said retort, a source of steam at substantially atmospheric pressure, a superheater for said steam before entering the retort, a by-pass about said superheater, a positive suction device for drawing the vapors from said retort and means for condensing said vapors.

850,099. BOBBIN-HOLDER. ALONSO E. RHOADES, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Apr. 12, 1906. Serial No. 311,269.

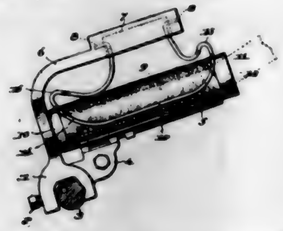

Claim.—1. In a holder for double-headed bobbins, a rest for the bobbin, and laterally-movable guards at the sides of the bobbin, each guard being up-curved at front and rear to extend above and out of contact with the bobbin-heads and thereby avoid interference therewith during unwinding of the yarn.

2. In a holder for double-headed bobbins, a rest for the bobbin, and laterally-movable wire guards at the sides of the bobbin, each guard having a straight lower portion to bear against the side of the yarn mass and curved upward and outward at front and rear from the straight portion, the upturned portions extending above and out of contact with the bobbin-heads to avoid interference therewith as the yarn is unwound.

850,100. MINING SIGNAL SYSTEM. NORMAN S. RICHMOND, Oshkosh, Wis. Filed Apr. 9, 1906. Serial No. 310,661.

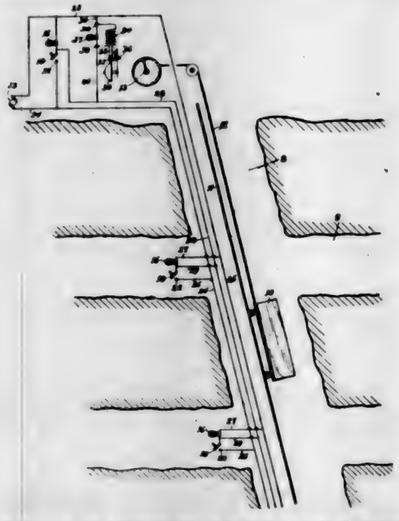

Claim.—1. In a mining signal system, a pair of terminal wires having connection with a suitable source of electrical supply and extending down the mine-shaft, a signal-wire also extending down the mine-shaft, signaling means at each of a number of levels of the mine connected between the signal-wire and one of the terminal wires, an engineer's signal at the engineer's station also connected between the signal-wire and said terminal wire, and signal-switches at each of said levels adapted to make connection between the signal-wire and the other terminal wire.

2. In a mining signal system, a pair of terminal wires having connection with a suitable source of electrical supply and extending down the mine-shaft, a signal-wire also extending down the mine-shaft, signal-lamps at different levels of the mine connected between the signal-wire and one of the terminal wires, an engineer's signal at the engineer's station also connected between the signal-wire and said terminal wire, and signal-switches at said levels adapted to make a connection between the signal-wire and the other terminal wire.

3. In a mining signal system, a pair of terminal wires having connection with a suitable source of electrical supply and extending down the mine-shaft, a signal-wire also extending down the mine-shaft, a waterproof signal-box at each of a number of levels containing a signal-lamp connected between the signal-wire and one of the terminal wires and a signal-switch connected between the signal-wire and the other terminal wire, and an engineer's signal means between the signal-wire and the terminal wire with which the signal-lamps are connected.

4. In a mining signal system, a pair of terminal wires having connection with a suitable source of electrical supply and extending down the mine-shaft, a signal-wire also extending down the mine-shaft, an engineer's signal between the signal-wire and one of the terminal wires, and a waterproof signal-box at a level comprising a box portion with a hinged front carrying a spring-retracted contact-lever adapted to engage a stationary contact and form a signal-switch therewith, said switch being connected between the signal-wire and the other terminal wire, an incandescent lamp in the box member connected between the signal-wire and the terminal wire with which the engineer's signal is connected, and a lens in the box-front through which the incandescent lamp may be seen.

5. In a mining signal system, a pair of terminal wires having connection with a suitable source of electrical supply and extending down the mine-shaft, a signal-wire also extending down the mine-shaft, signal means at each of a number of levels of the mine connected between the signal-wire and one of the terminal wires, a signal-switch at each of said levels of the mine connected between the signal-wire and the other terminal wire, and an engineer's signal comprising an incandescent lamp and an electric gong connected between the signal wire and the terminal wire with which the signal means are connected.

6. In a mining signal system, a pair of terminal wires having connection with a suitable source of electrical supply and extending down the mine-shaft, a signal-wire also extending down the mine-shaft, signal means at each of a number of levels of the mine connected between the signal-wire and one of the terminal wires, a signal-switch at each of said levels of the mine connected between the signal-wire and the other terminal wire, and an engineer's signal comprising an incandescent lamp and a solenoid connected between the signal-wire and the terminal wire with which the signal means are connected, a core operating within the solenoid, a spring-clapper adapted to be engaged by the core when the core is dropped by the solenoid, and a gong in the path of the clapper to be struck thereby.

7. In a mining signal system, a pair of terminal wires having connection with a suitable source of electrical supply and extending down the mine-shaft, signal means at each of a number of levels of the mine connected between the signal-wire and one of the terminal wires, a signal-switch at each level of the mine connected between the signal-wire and the other terminal-wire, and an engineer's signal comprising an incandescent lamp and a solenoid connected between the signal-wire and terminal wire with which the signal means are connected, a core operating within the solenoid, an adjustable spring-clapper adapted to be engaged by the core when the core is dropped by the solenoid, and a gong in the path of the clapper to be struck thereby, the incandescent lamp of the engineer's signal visibly indicating the periods during which the signal-switches remain closed and the gong audibly indicating the instant that the signal-switches are opened.

8. In a mining signal system, a pair of terminal wires having connection with a suitable source of electrical supply and extending down the mine-shaft, a signal-wire also extending down the mine-shaft, a signal-box at each of a

number of levels of the mine and comprising a signal-lamp connected between the signal-wire and one of the terminal wires and a signal-switch connected between the signal-wire and the other terminal wire, a signal-box at the engineer's station provided with a signal-lamp and a signal-switch having the same connections as the corresponding parts in the signal-boxes of the levels, and an engineer's signal at the engineer's station comprising a solenoid connected between the signal-wire and the terminal wire with which the signal-lamps are connected, a core operating therein, an adjustable spring-clapper beneath the core adapted to be struck thereby when the core is released by the solenoid, a gong beneath the clapper to be struck thereby, a hood inclosing the solenoid and a portion of the gong, and an incandescent lamp mounted on the hood and connected in shunt with the solenoid.

850,101. DROP FOR ELECTRIC CIRCUITS. WILLIAM H. ROBINS, Minneapolis, Minn., assignor to American Bank Protection Co., Minneapolis, Minn. Filed Dec. 6, 1905. Serial No. 290,570.

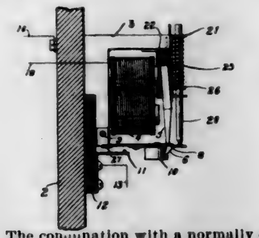

Claim.—1. The combination with a normally open alarm-circuit, of a normally open local circuit, a circuit-closer in said local circuit having a drop arranged when released to close said alarm-circuit, and a spring-pressed pin in said local circuit normally in contact with said drop and having a limited movement with the same when released, substantially as described.

2. The combination with a normally open alarm-circuit, of a normally open local circuit, a circuit-closer in said circuit having a drop arranged when released to close said alarm-circuit, a sliding pin in said local circuit, guides for said pin, a spring coiled on said pin and arranged to hold the same in yielding contact with said drop, and a stop for limiting the movement of said pin, substantially as described.

3. The combination, with a normally open alarm-circuit, of a normally open local circuit, a circuit-closer in said local circuit having a drop arranged when released to close said alarm-circuit, guides 21 provided on said circuit-closer, a pin 20 slidably mounted in said guides and having a stop 26 and a spring coiled on said pin between said stop and one of said guides, and said pin normally bearing with a yielding pressure on said drop and having a limited travel therewith when said drop is released, substantially as described.

4. The combination, with a normally open alarm-circuit, of a normally open local circuit, a circuit-closer comprising electromagnets, a drop-plate and an armature arranged to engage and normally lock said plate, a contact-point in the path of said plate and a sliding spring-pressed pin normally contacting with said plate and bearing thereon with a yielding pressure, and said pin being in said local circuit, whereby the circuit will continue unbroken for a predetermined period after the release of said plate by the movement of said armature, substantially as described.

5. The combination, with a normally open alarm-circuit, of a normally open local circuit, a circuit-closer in said local circuit, and having a drop arranged, when released to close said alarm-circuit, an insulating-block, a sliding pin mounted in guides on said block and connected with said local circuit, means for yieldingly holding said pin in engagement with said drop and means permitting a limited movement of said pin when said drop is released, whereby the said pin will follow said drop for a predetermined distance, and the circuit between them will be unbroken, substantially as described.

850,102. RANGE. JOHN F. RUTH and ERNST PREISLER, St. Louis, Mo. Filed Nov. 18, 1904. Serial No. 233,369.

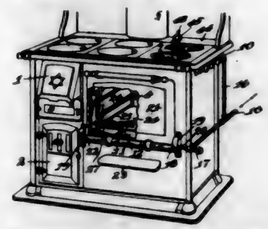

Claim.—1. The improved gas and coal range, comprising the usual fire-box 1; an oven-door, opposite hinge-brackets for said door, one of said brackets having a gas-passage therethrough; a mixing-chamber carrying a gas-bufner and removably mounted between said brackets, whereby said burner will project within the oven and the mixing-chamber may be supplied with gas from said passage in one of said brackets; and a suitable gas-valve for supplying gas to the passage of said last-mentioned bracket; substantially as specified.

2. In a gas and coal range, the combination of the usual fire-box; an oven; an oven-door; a mixing-chamber; a burner attached to said mixing-chamber and removable therewith from the range at a point below the said oven-door; and fixed means for supplying gas to the said mixing-chamber and which means remains undisturbed in its position when the said mixing-chamber and burner are removed; substantially as specified.

3. In a combined gas and coal range, the combination of the usual fire-box; an oven; an oven-door; the oven-bottom having burner slots or recesses formed therein and extending outwardly to the oven-door; a detachable mixing-chamber; burners attached to said mixing-chamber and removable therewith, but normally located within said oven slots or recesses; and a door-bracket having a gas-passage therein, and a gas-pipe for supplying gas to the said mixing-chamber; substantially as specified.

4. A combined gas and coal range, comprising the usual fire-box and oven, a gas-burner arranged to heat the oven independently of the heat from the fire-box, an opening for supplying air to the oven, a damper normally closing said opening, there being an opening for the exit of hot air from the oven, a hood over said opening, a damper pivotally connected to the hood for normally closing said opening, there being an opening from the hood into the exit-pipe for the range, and means whereby both dampers may be simultaneously opened or closed.

850,103. FOLDING BED. FERDINAND F. SCHAUER and JOHN GRAFF, New York, N. Y. Filed Sept. 21, 1906. Serial No. 335,562.

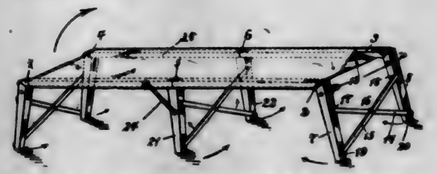

Claim.—A folding bed comprising side bars jointed between their ends a pair of legs at each end of the bed pivoted to each other, the meeting ends of the side bars and legs being mitered and kerfed, and a flat connecting-plate occupying the meeting kerfs of each leg and side bar, said

plates being rigidly fixed to the bars and pivoted to the legs, substantially as described.

850,104. PAPER-FEEDING MACHINE. WALTER SCOTT, Plainfield, N. J. Original application filed Aug. 11, 1902, Serial No. 119,212. Divided and this application filed Dec. 11, 1902. Serial No. 134,753.

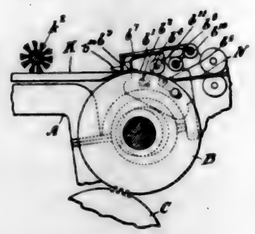

Claim.—1. In a machine of the character set forth, the combination with a cylinder having grippers or other means for receiving the sheet, and a feed-board, of gages for registering the sheet as it comes from the feed-board and is taken by the grippers on the cylinder, a primary gage located in advance of the gages proper, and mechanism for raising the primary gage first and the gages proper afterward whereby the speed of the sheet is checked before it reaches the gages proper.

2. In a machine of the character set forth, the combination with a cylinder having grippers or other means for receiving the sheet, and a feed-board, of gages for registering the sheet as it comes from the feed-board and is taken by the grippers on the cylinder, a primary gage located in advance of the gages proper, and presenting practically a solid front to the sheet as it advances, and mechanism for raising the primary gage first and the gages proper afterward whereby the speed of the sheet is checked before it reaches the gages proper.

3. In a machine of the character set forth, the combination with a cylinder having grippers or other means for receiving the sheet, and a feed-board, of gages for registering the sheet as it comes from the feed-board and is taken by the grippers on the cylinder, a primary gage located in advance of the gages proper, mechanism for raising the primary gage first and the gages proper afterward whereby the speed of the sheet is checked before it reaches the gages proper, and means for moving the sheet down to the gages proper after the speed of the said sheet has been checked.

4. In a machine of the character set forth, the combination with a cylinder having grippers or other means for receiving the sheet, and a feed-board, of gages for registering the sheet as it comes from the feed-board and is taken by the grippers on the cylinder, a primary gage mounted on a rock-shaft and located in advance of the gages proper, a binding-pulley adapted to assist in removing the sheet from the cylinder, mounted on the same rock-shaft as the primary gage, and mechanism for raising and lowering the primary gage and the binding-pulley once to each two revolutions of the cylinder, and means for raising the gages proper once to every two revolutions of the cylinder but subsequently to the raising of the primary gage and the binding-pulley.

5. In a machine of the character set forth, the combination with a cylinder having grippers or other means for receiving the sheet, and a feed-board, of gages for registering the sheet as it comes from the feed-board and is taken by the grippers on the cylinder, a plurality of primary gages extending transversely in alinement with each other over the feed-board and in advance of the gages proper, and mechanism for raising the primary gages first and the gages proper afterward whereby the speed of the sheet is checked before it reaches the gages proper.

850,105. BALING-PRESS. JULIUS A. SPENCER, Dwight, Ill. Original application filed June 24, 1905, Serial No. 266,895. Divided and this application filed Feb. 26, 1906. Serial No. 303,050.

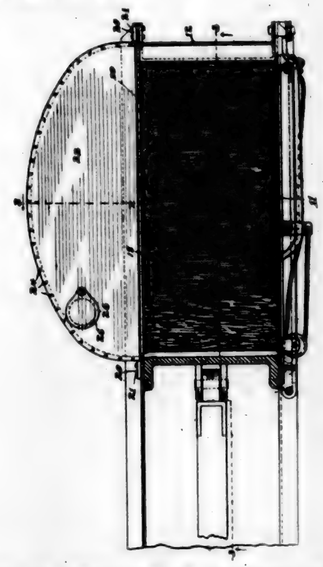

Claim.—In a baling-press, the combination with a baling-chamber having a slotted side, of a wire-guide secured externally to said slotted side and comprising a curved wire guiding and directing strip the ends of which terminate at the ends of the slot, and top and bottom plates secured to the upper and under sides of the latter and extending to the side wall of the baling-chamber, one of said plates being provided with a hand-hole, substantially as described.

850,106. BACK-SPACING MECHANISM. WILLIAM W. TORRENCE, Schenectady, N. Y., assignor, by direct and mesne assignments, to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Original application filed May 16, 1903, Serial No. 157,417. Continuation of abandoned renewal application filed Nov. 29, 1905, Serial No. 289,667. This application filed Nov. 6, 1906. Serial No. 342,303.

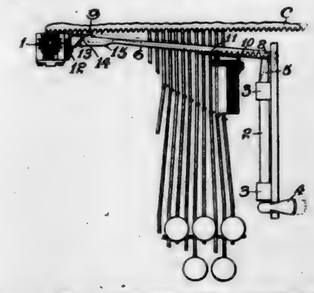

Claim.—1. The combination with a toothed bar, a stationary bracket having an inclined surface, and an outwardly-extending arm, of a dog or pawl which normally rests loosely upon the arm, and a spring connected with the pawl which acts normally to force the latter against the incline to remove the pawl from the toothed bar.

2. The combination with a toothed bar, a stationary bracket having an inclined surface, and an outwardly-extending arm, of a dog or pawl which normally rests loosely upon the arm, a spring which normally throws it toward the incline whereby to remove it from the teeth and means for causing it to engage the toothed bar when removed from the incline.

3. The combination with a toothed bar, a stationary bracket having an inclined surface, and an outwardly-extending arm, of a dog or pawl which normally rests loosely upon the arm, a spring which normally throws it toward the incline whereby to remove it from the teeth, means for causing it to engage the toothed bar when removed from the incline, and a rock-lever for operating the dog or pawl.

4. The combination with a toothed bar, bracket and arm, the bracket having an inclined surface thereon, of a pawl or dog constructed and adapted to be moved back and forth in proximity to the toothed bar, a spring acting to cause the dog or pawl to engage the toothed bar when moved in one direction and the inclined surface when it moves in the other direction, which surface removes it from the toothed bar.

850,107. CONVEYING APPARATUS. FRANKLIN H. WOLEVER, Chicago, Ill., assignor to Lamson Consolidated Store Service Company, Newark, N. J., a Corporation of New Jersey. Filed May 13, 1905. Serial No. 260,206.

Claim.—1. In a conveyer, a framework, pulleys mounted in said framework, an endless belt supported by said pulleys, means for driving said belt, means for feeding articles to said belt, and swinging means for diverting said articles discharged from said belt into a receiver located thereunder.

2. In a conveyer, a framework, pulleys mounted in said framework, a plurality of endless belts supported by said pulleys, means for driving said belts, means for feeding articles to said belts, and means located between and contiguous to said belts for feeding said articles from one belt to another, said swinging means adjustable to divert said articles from any one of said belts into a receiver located thereunder.

3. In a conveyer, a framework, pulleys mounted in said framework, a plurality of endless belts supported by said pulleys, means for driving said belts—said belts running contiguous with the side of said framework, means for feeding articles to said belts, and swinging means located between and contiguous to said belts for feeding said articles from one belt to another, said means adjustable to divert said articles from any one of said belts into a receiver located thereunder.

4. In a conveyer, a framework, pulleys mounted in said framework, a plurality of endless belts supported by said pulleys, means for driving said belts—said belts running contiguous with the side of said framework, means for feeding articles to said belts, and pivoted means located between and contiguous to said belts for feeding said articles from one belt to another, said means adjustable to divert said articles from any one of said belts into a receiver located thereunder.

850,108. FLUID-PRESSURE MOTOR. EDWARD B. BADCOCK, London, England, assignor to The Lamp Pump Syndicate, Limited, London, England. Filed July 7, 1906. Serial No. 325,078.

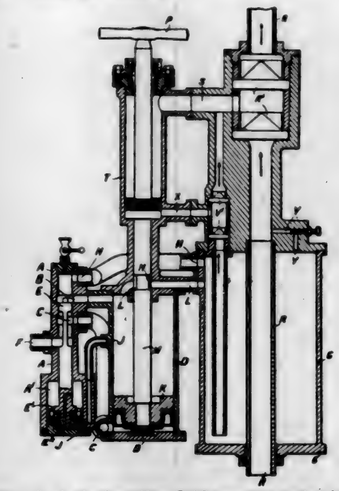

Claim.—1. A single-acting fluid-pressure motor having a cylinder fitted with a power-piston and formed with distributing-ports and a valve-actuating way communicating with a valve-casing formed with steam inlet and outlet ports and fitted with a controlling-valve adapted to connect the base of the cylinder to supply while opening the head to exhaust and to connect the two ends of the cylinder while closing the connections to supply and exhaust, with means for exhausting the cylinder at the completion of the effective stroke of the power-piston.

2. A single-acting fluid-pressure motor having a cylinder fitted with a power-piston and formed with distributing-ports and a valve-actuating way communicating with a valve-casing formed with steam inlet and outlet ports and fitted with a controlling-valve adapted to connect the base of the cylinder to supply while opening the head to exhaust and to connect the two ends of the cylinder while closing the connections to supply and exhaust, in combination with an exhaust-way at the head of the cylinder controlled by a cut-off valve.

850,109. SPEED-RECORDER. CLEMENT C. CLAWSON, Flagtown, N. J. Filed Oct. 1, 1906. Serial No. 336,923.

Claim.—1. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for causing the relative positions

of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the said blank-supporting means being arranged to support a blank in the form of a tape and including an elongated upright tape-supporting plate, a tape-presser at one end of said plate and in front of the same, a spool-support located behind said plate, and a tape-reel located behind said plate at one side of the spool-support, substantially as described.

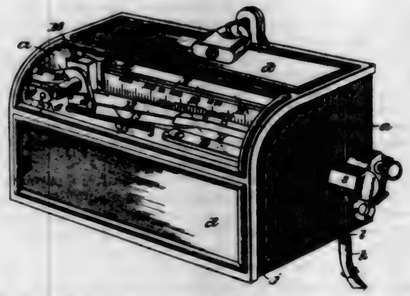

2. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for causing the relative positions of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the said blank-supporting means being arranged to support a blank in the form of a tape and including a tape-supporting plate which is provided at its lower edge with a flange and is thereby detachably connected with the frame of the recorder and also including a spool-support carried by said plate so as to be capable of attachment and removal therewith, substantially as described.

3. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for causing the relative positions of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the said blank-supporting means being arranged to support a blank in the form of a tape and including a tape-supporting plate detachably connected with the frame of the recorder, a spool-support carried by said plate so as to be capable of attachment and removal therewith, and a tape-presser mounted upon a journal-pin independent of said plate and having a spring underlying the plane of said spool-support behind said tape-supporting plate, substantially as described.

4. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for causing the relative positions of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the said blank-supporting means being arranged to support a blank in the form of a tape and including a tape-supporting plate and a spring-presser, which latter has a hinged carrier and a spring acting on said carrier to press it toward the plate or to hold it away from the same, according to the position of the carrier, substantially as described.

5. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for causing the relative positions of the record-blank and marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, which recorder includes as its blank-supporting means an elongated upright plate for supporting a record-blank in the form of a tape, a presser for holding such blank against the face of the plate at one end thereof, and a spool-support and a reel located side by side behind and in proximity to said plate, this last being detachably connected by a foot-flange with the frame of the apparatus and carrying said spool-support, and said presser being mounted on a journal-pin independent of said plate and being provided with a spring which extends back of said plate below the plane of said spool-support and acts upon the presser in such manner that the latter is thereby held against or away from said tape-supporting plate according to the position of the presser, substantially as described.

6. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for causing the relative positions of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the said blank-supporting means being arranged to support a blank in the form of a tape and including a tape-reel and a revolving gear which are provided one of them with a hub and the other with a forked friction-spring bearing against the periphery of said hub on opposite sides of the same, substantially as described.

7. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for causing the relative positions of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the said blank-supporting means being arranged to support a blank in the form of a tape and including a tape-reel and a stripper-plate, the latter movable endwise over the reel for stripping the tape record therefrom, substantially as described.

8. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for causing the relative positions of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the said blank-supporting means being arranged to support a blank in the form of a tape and including a tape-reel and a stripper-plate, the latter mounted on and turning with the said tape-reel, substantially as described.

9. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for causing the relative positions of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the said blank-supporting means being arranged to support a blank in the form of a tape and including a tape-reel and a stripper-plate, the tape-reel provided with recesses in its periphery and the latter with projections extending into the same, substantially as described.

10. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for causing the relative positions of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the said marking instrument being in the form of a pen with a lower-level ink-reservoir for feeding ink therefrom to the pen through jolting or other movement bodily of the recorder, substantially as described.

11. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for causing the relative positions of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the said marking instrument being in the form of a pen with a lower-level ink-reservoir, and the recorder including means movable within the recorder for raising the ink relatively to the pen in order to feed the latter, substantially as described.

12. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for causing the relative positions of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the said marking instrument being in the form of a pen with lower-level reservoir, and the recorder including means for tilting the reservoir and thereby raising the ink therein relatively to the pen in order to feed the latter, substantially as described.

13. A recorder which consists of blank-supporting means,

a marking instrument, means for supporting this latter, and means for causing the relative positions of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the said marking instrument being in the form of a pen with lower-level reservoir having ink-spaces on opposite sides of an intervening elevation under and in proximity to the pen feed-opening, substantially as described.

14. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for causing the relative positions of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the said marking instrument being in the form of a pen with lower-level reservoir having ink-spaces which are located on opposite sides of the pen and whose bottoms meet in an angle like the sides of an inverted V, the pen feed-opening being at about the apex of the V, substantially as described.

15. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for causing the relative positions of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the said marking instrument being in the form of a pen with lower-level ink-reservoir and being arranged to raise the ink in said reservoir to said pen through mechanical action as opposed to capillarity and cohesion, substantially as described.

16. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for causing the relative positions of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the said marking instrument being in the form of a pen with lower-level ink-reservoir which has ink-spaces on opposite sides of an intervening elevation under and in proximity to the pen feed-opening, and the pen-supporting means including a lever-arm which moves in a vertical plane and on which the pen and its reservoir are mounted with the ink-spaces at different distances from the fulcrum of said lever-arm, substantially as described.

17. A recorder which consists of blank-supporting means, a marking instrument, means for supporting this latter, and means for shifting the relative positions of the blank and the marking instrument in order to present fresh surfaces for marking, the said blank-supporting means being arranged to support in an upright position a blank in the form of a tape, the said means for shifting the relative positions of the blank and the marking instrument including appliances for feeding the tape-blank in the direction of its length, the said means for supporting the marking instrument including a lever with horizontally-disposed arms of unequal length on opposite sides of the fulcrum, which lever vibrates transversely to the length of said tape-blank in a vertical plane parallel with the face of said blank and on the long arm of which lever the marking instrument is mounted, and the said recorder also including a star-wheel which turns in a vertical plane and acts upon the short arm of said lever, the star-wheel and the marking instrument being located at opposite ends of the recorder at nearly the same level, substantially as described.

18. A recorder which consists of a box divided by a horizontal division-plate, means located above said plate for supporting in an upright position a record-blank in the form of a tape and for feeding the same in the direction of its length, a clockwork located below said division-plate and provided with a vertical arbor which projects through the said division-plate and is operatively connected with the overlying blank-feeding means, a lever with horizontally-disposed arms of unequal length located above said division-plate on opposite sides of the fulcrum and movable transversely to the length of said tape-blank in a vertical plane parallel with the face of said blank, a marking instrument on the long arm of said lever, a star-wheel located above said plate and arranged to act on the short arm of said lever, an upright shaft which projects through said division-plate and is operatively connected with the overlying star-wheel, and gearing located below said division-plate and operatively connected with the upright shaft last mentioned for transmitting thereto the movement to be recorded, substantially as described.

19. A recorder which consists of blank-supporting means, a marking instrument, means for supplying this latter, and means for causing the relative position of the record-blank and the marking instrument to be shifted in order that fresh surfaces of the blank may be presented to the marking instrument, the recorder including a box which incloses the recording appliances and which has a hinged cover forming both top and front of the box and provided with a curved transparent panel at the junction of said top and front, and the blank-supporting means arranged to support in an upright position at the front of the box and parallel thereto a blank in the form of a tape and to expose the marked blank to view behind said panel, substantially as described.

20. The combination with a driving-gear, a device driven thereby, and a forked friction-spring carried by one of said parts, the other of them being provided with a hub against the periphery of which the arms of said spring bear on opposite side of the hub, substantially as described.

21. The combination with a driving-gear, a reel driven thereby, and a forked friction-spring carried by one of said parts, the other of them being provided with a hub against the periphery of which the arms of said spring bear on opposite side of the hub, substantially as described.

850,110. TYPE-WRITING MACHINE. JAMES D. DAUGHERTY, Kittanning, Pa. Original application filed July 10, 1903, Serial No. 165,013. Divided and this application filed Aug. 26, 1904. Serial No. 222,217.

Claim.—1. In a type-writing machine, the combination with a platen and type-bars mounted to strike rearwardly against the front of the platen, of a pair of fingers curving down around the front side of the platen and close thereto for guiding the side edges of the paper; a rod upon which said paper-guiding fingers are independently adjustable along the platen; said rod being in front of the platen, above the paths of the types and below the line of vision; an index upon said guiding-finger, and a scale to coöperate with said index.

2. In a type-writing machine, the combination with a platen and type-bars mounted to strike rearwardly against the front of the platen, of a pair of fingers curving down around the front side of the platen and close thereto, for guiding the side edges of the paper, arms extending forwardly from said paper-guiding fingers, a rod in front of the platen, above the paths of the types and below the line of vision, means upon the front ends of said arms for clasping said rod so as to permit independent adjustment of the arms along the rod, an index upon each of said arms, and a coöperating scale.

3. In a type-writing machine, the combination with a carriage, a platen-frame shiftable up and down upon said carriage, a platen and type-bars mounted to strike rearwardly against the front of the platen, of a pair of fingers curving down around the front side of the platen and close thereto for guiding the side edges of the paper; a rod upon which said paper-guiding fingers are independently adjustable along the platen; arms extending forwardly from said fingers to said rod, and the latter being mounted upon said platen-frame in front of the platen, above the paths

of the types and below the line of vision; an index upon said guiding-finger, and a scale upon the framework of the machine to coöperate with said index.

850,111. BROMIN DERIVATIVE OF FATTY ACIDS. EMIL FISCHER, Berlin, Germany, assignor to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany, a Corporation of Germany. Original application filed June 23, 1906, Serial No. 323,037. Divided and this application filed Dec. 5, 1906. Serial No. 346,461.

Claim.—1. The herein-described salts of magnesium of the monobromin-substituted derivatives of high-molecular fatty acids having the following general formula:

$$(C_nH_{2n-2}O_2Br)_2Mg$$

obtained from the corresponding high-molecular acids of the oleic series, which are solid, stable bodies, tasteless, colorless and insoluble in water, substantially as hereinbefore described.

2. The herein-described magnesium salt of monobromobehenic acid, $(C_{22}H_{42}BrO_2)_2Mg$, obtained from monobromobehenic acid, which is a solid, stable body, tasteless, colorless and insoluble in water, substantially as hereinbefore described.

850,112. METHOD OF MANUFACTURING CONCRETE BLOCKS FOR BUILDING PURPOSES. SIDNEY W. HENDRICKSON, White Plains, N. Y. Original application filed Apr. 21, 1906, Serial No. 312,941. Divided and this application filed Feb. 13, 1907. Serial No. 357,159.

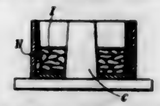

Claim.—1. The method described of producing artificial building-blocks comprising the turning of a mold partially down upon its side, introducing cement and fine material of the desired color and forming thereof a front layer in the temporarily-depressed side by the dry process, afterward righting the mold and applying strong and cheap material thereto for the body in a too wet condition, and allowing the water to penetrate therefrom through the front layer, all substantially as herein specified.

2. The method described of producing artificial building-blocks comprising the turning of a mold partially down upon its side, introducing cement and fine material of the desired color and forming thereof a front layer in the temporarily-depressed side by the dry process, afterward righting the mold and forcibly applying strong and cheap material thereto including a pier-like skeleton of natural stone, applying grout at an early stage and compacting and allowing the excess of moisture in the body to penetrate the dry face and set the latter without affecting its color, all substantially as herein specified.

3. The method described of producing artificial building-blocks comprising the construction of a front layer of cement and fine material of the desired color introduced dry in a temporarily-depressed side of a mold, turning the mold upright and placing a previously-formed face on the opposite side forcibly applying strong and cheap material between such faces, including a nearly-solid skeleton of natural stone, applying grout at an early stage and compacting and allowing the excess of moisture in the body to penetrate the dry face and set the latter without affecting its color, all substantially as herein specified.

4. The method described of producing artificial building-blocks comprising the construction of a front layer of cement and fine material of the desired color introduced dry in a temporarily-depressed side of a mold, turning the mold upright and placing a previously-formed face in the opposite side, forcibly applying strong and cheap material between such faces, including a nearly-solid skeleton of natural stone, introducing thin unyielding material as paper to temporarily line the other faces of the mold, applying grout and compacting, and allowing the excess of moisture in the body to penetrate the dry face and set the latter without affecting its color, all substantially as herein specified.

5. The method described of forming an air-space in a concrete block consisting in separately molding a layer of concrete in a horizontal position, inserting short metallic spacing-pieces therein, applying a layer of light loose material as sawdust to a height less than that of the tops of the metallic pieces, applying another layer of concrete to unite with the upper ends of such pieces, allowing the concrete in both layers to set, using the ventilated plate thus formed to constitute a part of a subsequently-molded concrete block, and finally removing the sawdust, all substantially as herein specified.

850,113. STONE-CUTTING MACHINE. ALBERT F. JONES, Salem, Mass., assignor to A. F. Jones Company, Salem, Mass., a Corporation of Maine. Filed Feb. 8, 1905. Serial No. 244,700.

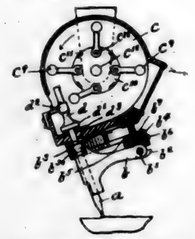

Claim.—1. In a stone-cutting machine, the combination of a tool adapted to bear upon the stone, a pivoted tool-holder, freely movable in a direction toward and from the stone in a circular path, which loosely supports the tool, and means for imparting blows to the tool, while said tool bears upon the stone, substantially as described.

2. In a stone-cutting machine, the combination of a tool adapted to bear upon the stone, a pivoted tool-holder, freely movable in a direction toward and from the stone in a circular path, and means for imparting blows to the tool, while said tool bears upon the stone, substantially as described.

3. In a stone-cutting machine, the combination of a tool adapted to bear upon the stone, a pivoted tool-holder, free to oscillate on an axis substantially in parallelism with the surface of the stone being cut, and means for imparting blows to the tool, while said tool bears upon the stone, substantially as described.

4. In a stone-cutting machine, the combination of a tool adapted to bear upon the stone, a tool-holder free to oscillate on an axis substantially in parallelism with the surface of the stone being cut, which loosely supports the tool, and means for imparting blows to said tool, while said tool bears upon the stone, substantially as described.

5. In a stone-cutting machine, the combination of a tool adapted to bear upon the stone, a pivoted tool-holder, freely movable in a direction toward and from the stone in a circular path, and a rebounding actuator for imparting blows to the tool, while said tool bears upon the stone, substantially as described.

6. In a stone-cutting machine, the combination of a tool adapted to bear upon the stone, a tool-holder free to oscillate on the axis substantially in parallelism with the surface of the stone being cut, and a rebounding actuator for imparting blows to the tool, while said tool bears upon the stone, substantially as described.

7. In a stone-cutting machine, the combination of a tool adapted to bear upon the stone, a pivoted tool-holder, freely movable in a direction toward and from the stone in a circular path, which loosely supports the tool, and a rebounding actuator for imparting blows to the tool while said tool bears upon the stone, substantially as described.

8. In a stone-cutting machine, the combination of a tool adapted to bear upon the stone, a tool-holder, free to os-

cillate on an axis substantially in parallelism with the surface of the stone being cut, which loosely supports the tool, and a rebounding actuator for imparting blows to the tool while said tool bears upon the stone, substantially as described.

9. In a stone-cutting machine, the combination of a tool-holder freely movable in a direction toward and from the stone in a circular path, a tool adapted to bear upon the stone, which is loosely supported by said tool-holder but which controls the movements of said tool-holder and which is movable longitudinally independently of said tool-holder when a blow is imparted to it and means for imparting blows to the tool while the tool bears upon the stone, substantially as described.

10. In a stone-cutting machine, the combination of a tool-holder free to oscillate on an axis substantially in parallelism with the surface of the stone being cut, a tool adapted to bear upon the stone, which is loosely supported by said tool-holder and controls the movement thereof, but which is movable longitudinally independently of said tool-holder when a blow is imparted to it, and means for imparting blows to the tool, while the tool bears upon the stone, substantially as described.

11. In a stone-cutting machine, the combination of tool-actuating means, a tool-holder freely movable in a circular path in a direction toward and from the stone, a tool adapted to bear upon the stone which is loosely supported by the tool-holder but which lifts the tool-holder in a direction toward the tool-actuating means when passing over a protuberance and falls with the tool-holder when passing over a cavity, substantially as described.

12. In a stone-cutting machine, the combination of tool-actuating means, a tool-holder freely movable in a circular path in a direction toward and from the stone, a tool adapted to bear upon the stone, which is loosely supported by the tool-holder but which rises and lifts the tool-holder toward the tool-actuating means to a position for the blows to be imparted to the tool when passing over protuberances and which falls with the tool-holder to a position that the blows of said actuating means will not be imparted to the tool when passing over the cavities, substantially as described.

13. In a stone-cutting machine, the combination of a tool-holder freely movable in a direction toward and from the stone in a circular path, a tool adapted to bear upon the stone, which is loosely supported by said tool-holder but which controls the movements of said tool-holder, a driver-engaging head on said tool-holder against which the tool bears, said head and tool both being movable independently of the tool-holder when a blow is imparted to the driver-engaging head, and means for imparting blows to the driver-engaging head, substantially as described.

14. In a stone-cutting machine, a tool adapted to bear upon the stone, a pivoted tool-holder movable in a direction toward and from the stone, which is constructed and arranged to loosely support the tool, whereby said tool is movable independently thereof when a blow is imparted to it, said tool-holder moving with the tool as the latter rises and falls while passing over the irregular surface of the stone, and means for imparting blows to the tool while the tool bears upon the stone, substantially as described.

15. In a stone-cutting machine, a tool adapted to bear upon the stone, a pivoted tool-holder movable in a direction toward and from the stone, which is constructed and arranged to loosely support the tool, whereby said tool is movable independently thereof when a blow is imparted to it, said tool-holder moving with the tool as the latter rises and falls while passing over the irregular surface of the stone, and a rebounding actuator for imparting blows to the tool while the tool bears upon the stone, substantially as described.

16. In a stone-cutting machine, a tool adapted to bear upon the stone, a pivoted tool-holder movable in a direction toward and from the stone, said tool-holder moving with the tool as the latter rises and falls while passing over the irregular surface of the stone, and means for imparting blows to said tool, while said tool bears upon the stone, substantially as described.

17. In a stone-cutting machine, a tool adapted to bear upon the stone, a pivoted tool-holder movable in a direction toward and from the stone, said tool-holder moving with the tool as the latter rises and falls while passing over the irregular surface of the stone, and a rebounding actuator for imparting blows to said tool, while said tool bears upon the stone, substantially as described.

18. In a stone-cutting machine, the combination of a tool adapted to bear upon the stone, a freely-movable tool-holder having a driver-engaging head, a driver into and out of engagement with which the head of said tool-holder is movable as the tool passes over the irregular surface of the stone, and means for imparting blows to said driver, substantially as described.

19. In a stone-cutting machine, the combination of a tool adapted to bear upon the stone, an oscillating tool-holder, freely movable on its axis as the tool passes over the irregular surface of the stone, having a driver-engaging head, a driver into and out of engagement with which the head of said tool-holder is movable, and means for imparting blows to said driver, substantially as described.

20. In a stone-cutting machine, the combination of a tool adapted to bear upon the stone, a freely-movable tool-holder having a driver-engaging head, a driver into and out of engagement with which the head of said tool-holder is movable as the tool passes over the irregular surface of the stone, and a rebounding hammer for imparting blows to said driver, substantially as described.

21. In a stone-cutting machine, the combination of a tool adapted to bear upon the stone, a tool-holder having a driver-engaging head, a driver into and out of engagement with which the head of said tool-holder is movable as the tool passes over the irregular surface of the stone, a stop for limiting the descent of said driver, and means for imparting blows to said driver, substantially as described.

22. In a stone-cutting machine, the combination of a tool adapted to bear upon the stone, a tool-holder having a driver-engaging head, a longitudinally-movable driver into and out of engagement with which the head of said tool-holder is movable as the tool passes over the irregular surface of the stone, a flange on the driver, a stop against which said flange strikes, and means for imparting blows to said driver, substantially as described.

23. In a stone-cutting machine, the combination of a tool adapted to bear upon the stone, an oscillating tool-holder having a driver-engaging head, a longitudinally-movable driver into and out of engagement with which the head of said tool-holder is movable, as the tool passes over the irregular surface of the stone, and a rebounding hammer for imparting blows to said driver, substantially as described.

24. In a stone-cutting machine, the combination of a tool, a freely-movable tool-holder loosely supporting said tool, and having a driver-engaging head, a driver, into and out of engagement with which said head is movable, and means for imparting blows to said driver, substantially as described.

25. In a stone-cutting machine, the combination of a tool, a freely-movable tool-holder supporting said tool, a driver-engaging head removably mounted on said tool-holder, a driver, into and out of engagement with which said head is movable, and means for imparting blows to said driver, substantially as described.

26. In a stone-cutting machine, the combination of a tool-holder having a tool-receiving socket adapted to loosely receive a tool, a driver-engaging head on said tool-holder, located at the upper end of said socket, against which the tool abuts, both said driver-engaging head and tool being movable independently of the tool-holder, a driver for engaging said head, and means for imparting blows to said driver, substantially as described.

27. In a stone-cutting machine, the combination of a tool adapted to bear upon the stone, a tool-holder, free to oscillate on an axis substantially in parallelism with the surface of the stone and located in advance of the tool, a support for said tool-holder, and a shell or case bearing said support, which is movable on a horizontal axis, whereby the angle of the tool relative to the surface of the stone being cut may be varied, substantially as described.

28. In a stone-cutting machine, the combination of a tool, an oscillating tool-holder, tool-actuating means, a support for said tool-holder, and means for adjusting said support in a circular path about the actuating means, substantially as described.

29. In a stone-cutting machine, the combination of a tool, an oscillating tool-holder, tool-actuating means, a support for said tool-holder, means for adjusting said support in a circular path about the actuating means, and a shell or case bearing the support for said tool-holder, which is movable on a horizontal axis, substantially as described.

30. In a stone-cutting machine, the combination of a tool, an oscillating tool-holder, having a driver-engaging head, a support for said tool-holder, a driver, into and out of engagement with which the head of the tool-holder is movable, means for imparting blows to said driver, and means for adjusting said tool-holder support in the arc of a circle about the driver as an axis, substantially as described.

31. In a stone-cutting machine, the combination of a shell or case, a hammer contained therein, movable in a circular path, a driver also contained therein, adapted to be struck by said hammer, the lower end of which projects through a hole in the bottom of the shell, an oscillating tool-holder having a driver-engaging head, which is movable into and out of engagement with the projecting end of said driver, and a tool held by the tool-holder, substantially as described.

850,114. LINOTYPE-MACHINE. DAVID S. KENNEDY, New York, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Aug. 30, 1906. Serial No. 332,603.

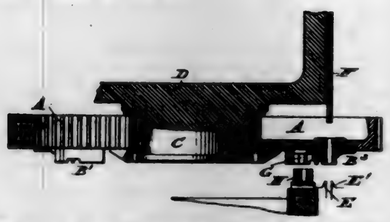

Claim.—1. In a linotype-machine, the combination of slug-trimming knives, a mold having a free or floating movement as described, and interlocking devices whereby the mold is brought positively into alinement with the knives when carried to the ejecting position.

2. In a linotype-machine, the combination of trimming knives, a mold, a mold-carrying wheel rotatable around an axis and also movable radially in relation thereto, and interlocking surfaces for insuring alinement of the mold and knives.

3. In a linotype-machine, a horizontally-movable slide D, the mold-carrying wheel A connected to the slide by a horizontal axis and movable radially in relation to said axis, in combination with knives to trim the slug as it is delivered from the mold, and interlocking surfaces fixed in relation to the mold and the knives respectively; whereby the alinement of the mold and knives is insured preparatory to the ejection of the slug.

4. In a linotype-machine, fixed knives to trim the slugs, an ejector for delivering the slugs from the mold and between the knives, an intermediate floating mold and interlocking surfaces to bring the mold in alinement with the knives when it is moved to the ejecting position.

HARNESS-TRACES. EDMOND B. KNAPP, Yuma, Ariz., assignor to Ada B. Knapp, Yuma, Ariz. Filed July 21, 1906. Serial No. 327,197.

Claim.—1. A buckle having a cockeye pivotally associated therewith, said cockeye being formed of a plurality of perforated plates spaced apart and provided with interlocking ends, and a strip of yieldable material interposed betwen the plates.

2. A buckle having a tongue-supporting bar, and a cockeye pivotally mounted for swinging movement on said bar and formed of arms spaced apart by a strip of yieldable material.

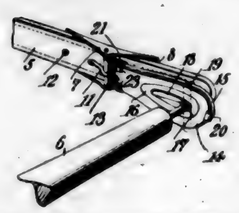

3. A buckle having a tongue-supporting bar, a cockeye pivotally mounted on said bar and formed of spaced plates one of which is provided with a lug adapted to engage the adjacent plate, and a strip of yieldable material interposed between the plates and provided with an opening.

4. A buckle having a tongue-supporting bar, and a cockeye pivotally mounted for swinging movement on said bar and formed of spaced plates provided with interlocking parts, and a strip of yieldable material interposed between the plates and provided with an opening.

5. A buckle having a tongue-supporting bar, a cockeye pivotally mounted for swinging movement on said bar and formed of spaced plates provided with interlocking parts, a strip of yieldable material interposed between the plates and having an opening formed therein, and a clamping member engaging the plates.

6. A buckle having a tongue-supporting bar, a cockeye pivotally mounted for swinging movement on said bar and formed of a single piece of metal an intermediate portion of which is bent to form a loop for the reception of the bar and its opposite ends spaced apart and provided with interlocking parts, a strip of yieldable material interposed between the plates, there being a slot formed in the plates at the transverse loop for the reception of the pivoted end of the tongue.

7. A buckle having a tongue-supporting bar, a cockeye pivotally mounted for swinging movement on said bar and formed of a single piece of metal bent upon itself to form a loop for the reception of said bar and having its opposite ends spaced apart, there being an opening formed in the walls of the loop for the reception of the tongue, and a strip of yieldable material interposed between the ends of the plate and bearing against the pivoted end of the tongue.

8. A buckle having a tongue-supporting bar, a cockeye pivotally mounted on said bar and formed of a single plate of metal bent upon itself to produce a loop for the reception of the bar and having its opposite ends spaced apart and one of said ends provided with a lug adapted to engage the adjacent end, said plate being provided with alined transverse openings, a strip of yieldable material interposed between the free ends of the plate and provided with an elongated slot, and a clamping-band slidably mounted on the plate at the pivoted end of the latter.

850,116. CORE-SEPARATOR. JOHN P. MALLETT, Madison, Wis., assignor to General Electric Company, a Corporation of New York. Filed Aug. 1, 1905. Serial No. 272,200.

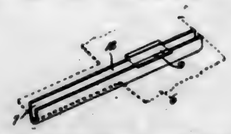

Claim.—1. In combination, a laminated core divided into sections, and separators between the sections consisting of pieces of sheet metal bent into the form of troughs open at each end.

2. In a dynamo-electric machine, an annular core, forme of laminated magnetic material divided into sections, and radially-extending spacers or separators placed between the sections and bearing against the laminæ, each spacer having a ventilating-passage formed in it.

3. In a dynamo-electric machine, an annular core formed of laminæ divided into sections, and a spacer or separator located between the sections extending from a point adjacent the inner edge of the core to a point adjacent the periphery of the core, said spacer having a ventilating-passage formed in it.

4. In a dynamo-electric machine, an annular core formed of laminated material divided into sections and having conductor-receiving slots separated by teeth formed at its periphery, and separators or spacers between the sections extending from a point adjacent the inner surface of the core to the peripheries of the teeth, said separators having ventilating-passages formed in them.

5. In combination, a core-lamina formed with an opening in it, a separator member, and means for securing it to said lamina comprising two projections side by side each of which enters said opening.

6. In combination, a core-lamina formed with an opening in it, a separator member, and means for securing it to said lamina comprising two projections side by side each of which enters said opening and is upset.

7. In combination, a core-lamina formed with an opening in it, a separator member, and means for securing it to said lamina comprising two projections side by side each entering said opening, the parts being so proportioned that the projections must be sprung together to allow of their insertion in said opening.

8. In combination, a lamina, and fingers secured thereto, each finger being in the form of a trough open at each end, the top edges of which bear against said lamina.

9. In combination, a core-laminæ, and a plurality of fingers secured thereto, each finger being in the form of a trough-shaped piece of metal U-shaped in cross-section with the ends of the U bearing against said laminæ, both ends of each trough being open.

850,117. ELECTRIC RAILWAY. WILLIAM B. POTTER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 24, 1902. Serial No. 124,634.

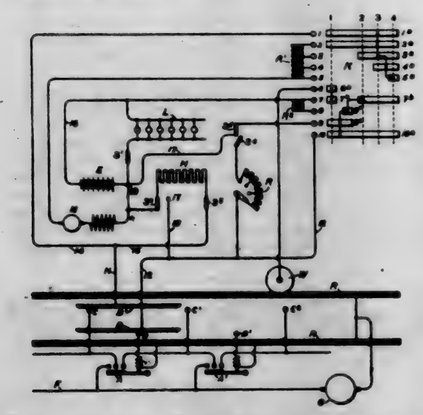

Claim.—1. In an electric railway, the combination with a feeder, of conductor-sections, electromagnetic switches for connecting the feeder to the conductor-sections, an auxiliary source of power carried by the car, a motor or motors, means for completing a circuit through said auxiliary source and said switch-coils to initially energize the latter, means for connecting said auxiliary source of power in series with said motor or motors and said switch-actuating coils, and an adjustable resistance in shunt to the auxiliary source of power whereby the rate of recharge of the said auxiliary source of power may be varied as desired.

2. In combination, a main source of power, an auxiliary source of power, translating devices, means for connecting said auxiliary source and one of said translating devices in series with each other to said main source of power, and means for connecting another of said translating devices to said main source of power either in shunt or in series with said auxiliary source of power.

3. In an electric railway, the combination with a feeder, of conductor-sections, switches for connecting the feeder to the conductor-sections, motors and an auxiliary source of power carried by the car, and a controller for completing a circuit through said auxiliary source and actuating-coils for said switch to initially energize the latter and for connecting said auxiliary source in series with said motors and said coils.

4. In a sectional-conductor electric-railway system, electromagnetic switches for connecting the feeder with the sectional conductor, car-motors, an auxiliary source of power carried by the car, and a controlling-switch adapted when in one position to connect the auxiliary source to the actuating-coils of the switches and when in another position to connect the motors and auxiliary source of power and the switch-actuating coils in series.

5. In combination, a main source of power, an auxiliary source of power, a translating device adapted to be energized from either source, a controller so constructed and arranged as to connect said translating device to said auxiliary source and then to connect said translating device and said auxiliary source in series with each other to said main source of power, and an adjustable resistance connected to shunt to said auxiliary source of power whereby the rate of recharge of the latter may be varied.

6. In combination, a main source of power, an auxiliary source of power, a translating device adapted to be energized from either source, a controller so constructed and arranged as to connect said translating device to said auxiliary source and then to connect said translating device and said auxiliary source in series with each other to said main source, and means for preventing said auxiliary source from being short-circuited while said connections are being changed.

7. In combination, a main source of power, an auxiliary source of power, a translating device adapted to be energized from either source, a resistance, and a controller so constructed and arranged as to connect said translating device to said auxiliary source and then to connect said translating device and said auxiliary source in series with each other to said main source and also to connect said resistance in circuit with said auxiliary source to prevent the latter from being short-circuited while said connections are being changed.

8. In a sectional-conductor electric-railway system, electromagnetic switches for connecting the feeder with the sectional conductor, car-motors, an auxiliary source of power carried by the car, a controller adapted when in one position to connect the auxiliary source to the actuating-coils of the switches and when in another position to connect the motors, the auxiliary source of power and the switch-actuating coils in series, and means for preventing said auxiliary source from being short-circuited while the controller is passing from one of said positions to the other.

9. In a sectional-conductor electric-railway system, electromagnetic switches for connecting the feeder with the sectional conductor, a car-motor, an auxiliary source of power, a controller adapted when in one position to complete a circuit through the auxiliary source of power and the actuating-coils of the electromagnetic switches to close said switches and when said switches are closed to connect the auxiliary source of power and the actuating-coils of said switches in shunt to each other and in series with the car-motor between the feeder and the return, and when in another position to connect the motor, the auxiliary source of power and the switch-actuating coils in series with each other between the feeder and the return.

10. In a sectional-conductor electric-railway system, electromagnetic switches for connecting the feeder with the sectional conductor, a car-motor, an auxiliary source of power, a controller adapted when in one position to complete a circuit through the auxiliary source of power and the actuating-coils of the electromagnetic switches to close said switches and when said switches are closed to connect the auxiliary source of power and the actuating-coils of said switches in shunt to each other and in series with the car-motor between the feeder and the return, and when in another position to connect the motor, the auxiliary source of power and the switch-actuating coils in series with each other between the feeder and the return, and means for preventing said auxiliary source of power from being short-circuited when the controller is moved from one of said positions to the other.

11. In combination, a main source of power, an auxiliary source of power, translating devices, a controller for connecting said auxiliary source of power to said main source of power through the translating devices and an adjustable resistance adapted to be connected in shunt to said auxiliary source of power whereby the whole or any desired part of the current taken by said translating devices may pass through said auxiliary source of power to vary the rate of recharge of the latter.

850,118. SPRING BED-BOTTOM. JOHN REILLEY, Brooklyn, N. Y. Filed May 9, 1906. Serial No. 315,913.

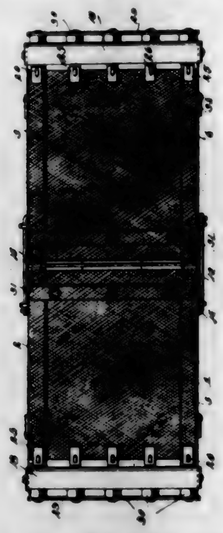

Claim.—1. A spring bed-bottom comprising a folding frame, said frame embodying hinged sections, each composed of side pieces and outer and inner end pieces, yielding tension devices upon the outer end pieces, said tension devices being provided with hooks, a folding bed-bottom proper composed of hinged sections and provided at its ends with coupling members to engage said hooks, cross-plates applied to the sections of the bottom on opposite sides of its joint, guide-pins carried by said plates and slidable vertically in the inner end pieces of the folding frame, and springs encircling said pins between said plates and end pieces.

2. A bed-bottom comprising a frame, brackets rising from the outer ends of the frame, transverse plates disposed upon the inner and outer sides of said brackets, pins slidably engaging the brackets and connecting said plates, a bed-bottom proper connected with the inner transverse plates, and elastic means between the bracket and outer transverse plate to maintain a desired tension on the bed-bottom.

3. A bed-bottom comprising a frame, brackets rising from and detachably secured to the ends thereof, each bracket having a top plate provided with a depending vertical flange, guide-pins slidably engaging said flange, inner and outer transverse plates connected by said pins, means between the brackets and outer transverse plates to normally force the inner transverse plates outwardly, and a spring bed-bottom detachably connected with said inner transverse plates.

4. In a spring bed-bottom, the combination of a frame, brackets applied to the ends of the frame, transverse plates disposed upon the inner and outer sides of said brackets, a bed-bottom proper connected with the inner transverse plates, pins slidably engaging the brackets and connecting the inner and outer transverse plates, and devices inclosing said pins between the brackets and outer transverse plates to hold the bed-bottom proper stretched and prevent undue sagging thereof.

5. A bed-bottom having a frame provided with fastenings to engage a bed-frame, each fastening comprising a slidably and pivotally mounted engaging device, slidably movable transverse of and toward and from the frame, and a spring for resisting the outward movement of said fastening.

850,119. EXPLOSIVE. OSWALD SILBERRAD, Blackheath, England. Filed Sept. 27, 1906. Serial No. 336,459.

Claim.—1. A nitroglycerin explosive containing a mixture consisting of eighty-six parts of nitroglycerin, from three to four parts of soluble nitrocellulose, 1.6 parts of pitch and an oxidizing agent equivalent to from three to four parts of oxygen, a mixture containing thirty parts of wood-meal and an oxidizing agent equivalent to twenty-five parts of oxygen; a mixture containing twelve parts of pitch, and an oxidizing agent equivalent to thirty-three parts of oxygen substantially as described and in the proportions specified.

2. A nitroglycerin explosive comprising fifty-eight parts of a mixture containing eighty-six parts of nitroglycerin, from three to four parts of soluble nitrocellulose, 1.6 parts of pitch and an oxidizing agent equivalent to from three to four parts of oxygen; from ten to thirty-seven parts of a mixture composed of thirty parts of wood-meal, and an oxidizing agent equivalent to twenty-five parts of oxygen, and about 2.5 parts of a mixture composed of twelve parts of pitch, and an oxidizing agent equivalent to thirty-three parts of oxygen, substantially as and for the purpose described.

850,120. MOLD FOR CONCRETE WALLS. WILLIAM H. ANTHONY, Allentown, Pa. Filed Apr. 12, 1906. Serial No. 311,328.

Claim.—1. A mold for concrete walls comprising two corresponding parallel sides, a series of connecting means rigidly secured to said sides, and screw-rods working in each of said connecting means and designed to engage a wall-section, whereby the lowering of said screw-rods will raise said sides while permitting one or more of said screw-rods to be raised without altering the position of said sides.

2. A mold for concrete walls comprising two corresponding parallel sides, a scaffold capable of being secured to either or both sides of the mold, a series of connecting means rigidly secured to said sides, and screw-rods working in each of said connecting means and designed to engage a wall-section whereby the lowering of said screw-rods will raise said sides and said scaffold while permitting one or more of said screw-rods to be raised without altering the position of said sides and scaffold.

3. A mold for concrete walls comprising two parallel sides, yokes connecting and rigidly secured to said sides, and screw-rods working in threaded openings in the upper horizontal portions of said yokes for engaging a completed wall-section to effect the raising of the mold, said screw-rods being extended beyond said yokes and having hand-wheels on their outer ends.

4. A mold for concrete walls comprising two parallel

sides having upper and lower apertured flanges, means for effecting the raising of the mold, a scaffold comprising hangers having flanged portions, and means for securing

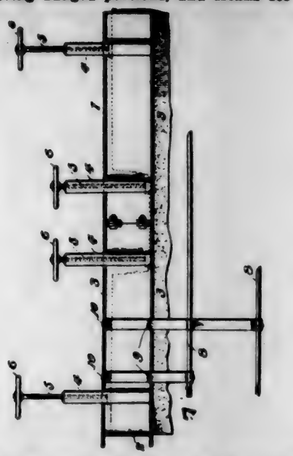

such flanged portions to the flanges of either side of the mold.

850,121. COUCH-BEDSTEAD. JAMES H. DIETT, Buffalo, N. Y., assignor to The Hard Manufacturing Company, a Corporation of New York. Filed Dec. 9, 1905. Serial No. 291,052.

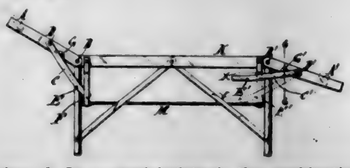

Claim.—1. In a couch-bedstead, the combination of a main body with extension parts, the notched supporting members pivotally attached to the extension parts, the stops, and the deflecting projections attached to the extension parts, substantially as set forth.

2. In a couch-bedstead, the combination of an extension part with a supporting member pivotally attached thereto, a stopping device, and a deflecting projection attached to the extension part, substantially as set forth.

3. A couch-bedstead embodying the main body K, extension parts A A', supporting members C C' pivotally attached to the extension parts and provided with notches E E' engaging suitable stops F F', the deflecting projections G G' attached to the extension parts A A' and engaging the supporting members when the extension parts are raised above the horizontal, substantially as set forth.

850,122. INTERLOCKING METAL SHEET-PILING. GEORGE E. NYE, Chicago, Ill., assignor of one-half to Gustavus A. Kreis, Chicago, Ill. Filed Feb. 4, 1907. Serial No. 355,669.

Claim.—1. Interlocking metal sheet-piling comprising in combination a channel-bar member having a plane edge flange, and a plane oppositely-disposed flange adjacent its edge, and a channel-bar member provided with an edge flange and an oppositely-disposed flange inwardly of its edge, the free end of said last-named flange being provided with a hook adapted to receive the free end of the edge flange of the first-named member.

2. Interlocking metal sheet-piling comprising in combination, a channel-bar member having a plane edge flange, and a plane oppositely-disposed flange adjacent its edge, and a channel-bar member provided with an edge flange and an oppositely-disposed flange inwardly of its edge, the free ends of said last-named flanges being bent over outwardly to form hooks adapted to engage the free ends of said flanges of the first-named member.

3. Interlocking metal sheet-piling comprising in combination, a channel-bar unit provided with plane edge flanges, and with plane flanges offset inwardly of its side edges and oppositely disposed relatively to said first-named flanges, and a channel-bar unit having similarly-disposed flanges having their free ends bent over outwardly to form hooks, the latter being adapted to receive the free ends of the oppositely-disposed flanges of said first-named unit.

REISSUES.

12,629. COVER-FASTENER FOR CANS. CHARLES E. BERTELS, Wilkes-Barre, Pa., assignor to Wyoming Valley Trust Company, trustee, Wilkes-Barre, Pa. Filed Nov. 12, 1906. Serial No. 343,164. Original No. 802,677, dated Oct. 24, 1905.

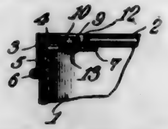

Claim.—1. The combination with a receptacle having a wired edge disposed on the inner side thereof, of a cover having inward-projecting bosses, fastening devices embodying buttons adapted to interlock with the edge, and rivets rigidly connected with the buttons and having nicked heads disposed within the bosses, the nicks being arranged lengthwise of the buttons.

2. The combination with a receptacle having an inturned rolled edge, of a cover, cover-fastening devices including buttons adapted to interlock with said inturned edge, and button-carrying members having nicked operating-heads shaped to indicate the positions of the buttons and bearing a definite relation thereto.

3. The combination with a receptacle having an inturned edge, of a flat cover stamped to form inward-projecting bosses, fastening devices embodying buttons adapted to interlock with the inturned edge, and button-carrying members having tool-engaging heads disposed within the bosses and shaped to indicate the positions of the buttons.

4. The combination with a receptacle having an inturned edge, of a flat cover having inward-extending bosses and fastening devices embodying buttons adapted to lock with the inturned edge, and button-carrying members having operating-heads located wholly within said recesses.

12,630. COMBINED FREEZER AND REFRIGERATOR CAR. OSCAR M. STIMSON, Chicago, Ill. Filed Feb. 1, 1907. Serial No. 355,331. Original No. 833,648, dated Oct. 16, 1906.

Claim.—1. The combination with a refrigerating-chamber, of an ice-box having openings in the front thereof, thereby establishing direct communication between the interior of the chamber and the ice-box, said box further provided with an enlarged opening in its bottom, and an ice-receiving and overflow tank having closed sides, bottom and an open uninterrupted top arranged directly below the said opening in the bottom of the ice-box, said tank having its top edge positioned at a point removed from the lower face of the bottom of the ice-box, thereby allowing the overflow from the tank to be discharged between the top edge of the walls of the tank and the bottom of the ice-box.

2. The combination with a refrigerating-chamber, of an ice-box having openings in the front, rear and sides thereof, thereby establishing direct communication between the interior of the chamber and the ice-box, said box further provided with an enlarged opening in its bottom, and an ice-receiving and overflow tank having closed sides, bottom and an open uninterrupted top and arranged directly below the said opening in the bottom of the ice-box, said tank having its top edge positioned at a point removed from the lower face of the bottom of the ice-box, thereby allowing the overflow from the tank to be discharged between the top edge of the walls of the tank and the bottom of the ice-box.

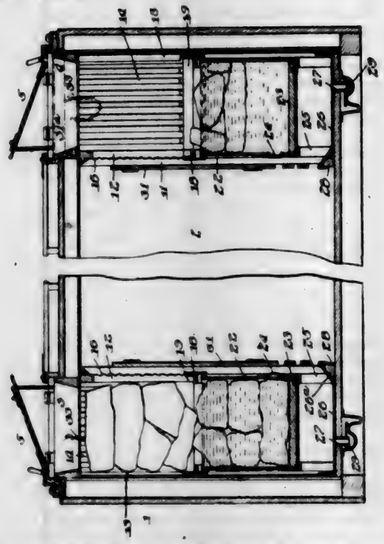

3. In combination, an ice-box having the rear, front and side walls thereof provided with openings and its bottom formed with bars spaced apart by openings, the open space between two of the said bars being of greater area than the open spaces between the other of the bars, and an ice-receiving and overflow tank having an open uninterrupted top arranged directly below said enlarged open space between two of the said bars, the top edge of said tank being positioned at a point removed from the lower face of the bottom of the ice-box, thereby permitting the overflow from the tank to be discharged between the top edge of the walls of the tank and the bottom of the ice-box.

4. In combination, an ice-box having its bottom formed with a series of bars spaced apart by openings, each series being separated from the other by an enlarged open space, and an ice-receiving and overflow tank having an open uninterrupted top arranged directly below each of said enlarged open spaces and at a point removed from the lower face of the said bars.

5. In combination, an ice-box having its bottom formed with bars spaced apart by openings, the open space between two of the said bars being of greater area than the open spaces between the other of the bars, and an ice-receiving and overflow tank having an open uninterrupted top arranged directly below said enlarged open space, the top edge of said tank being positioned at a point removed from the lower face of the bottom of the ice-box, thereby permitting the overflow from the tank to be discharged between the top edge of the walls of the tank and the bottom of the ice-box.

6. The combination of an ice-box having its bottom provided with an enlarged opening, a conductor-pan arranged below the bottom of said ice-box and having an opening registering with the enlarged opening in the bottom of the box, and an ice-receiving and overflow tank having an open top arranged below the opening in the conductor-pan.

7. The combination of an ice-box having its bottom provided with an enlarged opening, a conductor-pan arranged below the bottom of said ice-box and having an opening registering with the enlarged opening in the bottom of the box, and an ice-receiving and overflow tank independent of said pan and having an open top arranged below the opening in the conductor-pan.

8. The combination with a car having a loading-chamber, of an ice-box arranged at one end of the car and having a perforated front wall for establishing communication between said chamber and the ice-box, said ice-box having its bottom provided with an enlarged opening, a conductor-pan positioned below the bottom of said ice-box and having an enlarged opening arranged below the opening in the bottom of the ice-box, an ice-receiving and overflow tank having an open uninterrupted top arranged below the opening in said pan, said tank separated from the pan by a space, and a drip-pan arranged below said tank and having a suitable outlet.

9. A car having a loading-chamber, an ice-box arranged at one end thereof and provided in its bottom with an opening, a conductor-pan provided with a marginal flange, said conductor-pan arranged below the bottom of the ice-box and having an opening therein, one wall thereof formed with a depending flange, the opening in said conductor-pan positioned below the opening in the bottom of the ice-box, and an ice-receiving and overflow tank positioned below said conductor-pan so as to form a space between the said pan and the top edge of the tank.

10. The combination of an ice-box having the rear, front and side walls provided with openings and its bottom formed with spaced bars, the spaces between two pairs of said bars being greater than the spaces between the other of said bars, and an ice-receiving and overflow tank having an open uninterrupted top arranged directly below each of said enlarged spaces, the top edge of said tanks being positioned at a point removed from the bottom of the bars forming thereby a space to allow of the overflow of the tanks discharging between the tanks and the bars.

11. The combination of an ice-box having its bottom formed of spaced bars, the spaces between two of said bars being greater than the space between the other of said bars, a conductor-pan for supporting said bars, said conductor-pan provided with an opening positioned below the enlarged space between the said bars, and an ice-receiving and overflow tank having an open uninterrupted top arranged directly below the opening in said conductor-pan, said tank positioned at a point removed from the bottom of said conductor-pan.

12. The combination of an ice-box having its bottom formed of spaced bars, the space between two of said bars being greater than the space between the other of said bars, a conductor-pan for supporting said bars, said conductor-pan provided with an opening positioned below the enlarged space between the said bars, an ice-receiving and overflow tank having an open uninterrupted top arranged directly below the opening in said conductor-pan, said tank positioned at a point removed from the bottom of said conductor-pan, a drip-pan positioned below said tank and having an outlet, a trap communicating with the outlet of the drip-pan, and a conductor-pipe attached to the outlet of the trap.

13. The combination with a refrigerating-chamber, of an ice-box having openings in the front thereof, thereby establishing direct communication between the interior of the chamber and the ice-box, said box further provided with an enlarged opening in its bottom, and an ice-receiving and overflow tank having closed sides, bottom and an open uninterrupted top arranged directly below the said opening in the bottom of the ice-box whereby said tank serves to maintain the final portion of the charge of ice afloat adjacent the bottom of the ice-box and exposed to the circulation of the air from the refrigerating-chamber.

14. The combination with a loading-chamber, of an ice-box arranged in the upper portion of said chamber and

having openings for the free circulation of air between said chamber and said ice-box, said ice-box having its bottom open to permit the free passage therethrough of large, unbroken blocks of ice, and an ice-receiving and overflow tank located beneath said ice-box, said tank being closed against overflow except at its upper part and having an open top arranged immediately beneath the open bottom of the ice-box to receive the unbroken blocks of ice passing therethrough, whereby the water within said tank shall serve to hold the final portion of the charge of ice afloat adjacent the bottom of the ice-box and exposed to the circulation of air from the refrigerating-chamber.

15. The combination with a refrigerating-chamber, of means for receiving and storing the ice, comprising an ice-box having an enlarged bottom opening, and a subjacent ice-receiving and overflow tank having unobstructed communication with the bottom of said ice-box, whereby large, unbroken blocks of ice may be delivered to said tank; said ice-box having openings communicating with the refrigerating-chamber for free circulation of air and said tank being closed against escape of water except at its top; said tank serving, when filled with water, to maintain the final portion of the charge of ice afloat adjacent the bottom of the ice-box; a partition in the refrigerating-chamber arranged in front of said ice-box and tank with openings at the top and bottom to compel the circulation of air therearound and through the ice-box and against the face of the tank, and a drip-pan beneath said tank to catch the overflow therefrom.

16. A car having a refrigerating-chamber, and means for receiving and storing the ice comprising an elevated ice-box open at its front to the refrigerating-chamber and having a plurality of enlarged bottom openings to permit the free passage therethrough of large, unbroken blocks of ice, and a plurality of individual ice-receiving and overflow tanks located beneath the bottom openings of said ice-box and having uninterrupted communication therewith, whereby said blocks of ice may be stacked from the bottoms of said tanks to the top of the ice-box, said tanks being closed against overflow except at their tops to hold the final portion of the ice charge afloat adjacent the bottom of the ice-box; and means above the adjacent top edges of said tanks to direct the ice and drip-water thereto.

12,631. ROTARY ENGINE. JAMES L. STRICKLAND, Westport, Nova Scotia, Canada, assignor of fifty-one one-hundredths to Harry Richard McLellan, St. John, New Brunswick, Canada. Filed Mar. 2, 1907. Serial No. 360,624. Original No. 823,821, dated June 19, 1906.

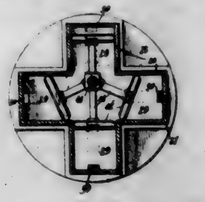

Claims.—1. In a rotary engine, the combination comprising a bed-plate, a plurality of bearings on the bed-plate, a shaft disposed in the bearings, a plurality of cylinders secured on the shaft, a bearing for the cylinders, means for admitting steam to the cylinders, means for exhausting steam from the cylinders, oscillating pistons depressed in the cylinders, and means for overcoming the thrust of the shaft.

2. In a rotary engine, the combination comprising a bed-plate, a main bearing on the bed-plate, a pair of cylinders carried on the main bearing, means for admitting steam to the cylinders, a ring connecting the cylinders and provided with steam-passages terminating in slots, a ring secured on the shaft and provided with steam-passages adapted to register with the slots, a plurality of cylinders secured on the shaft in connection with the steam-passages, oscillating pistons disposed in the cylinders on the shaft, and means for overcoming the thrust of the shaft.

3. In a rotary engine, the combination comprising a bed-plate, a main bearing on the bed-plate, a pair of cylinders carried on the main bearing, means for admitting steam to the cylinders, a ring connecting the cylinders and provided with steam-passages terminating in a pair of slots arranged in the same horizontal plane, a ring secured on the shaft and provided with four steam-passages, two of which are adapted to register with the slots at the same time, a plurality of cylinders secured on the shaft and provided with ports communicating with the steam-passages, oscillating pistons disposed in the cylinders on the shaft, and means for overcoming the thrust of the shaft.

4. In a rotary engine, the combination comprising a bed-plate, a main bearing on the bed-plate, a pair of cylinders carried on the main bearing, means for admitting steam to the cylinders, a ring connecting the cylinders and provided with steam-passages terminating in slots, a ring secured on the shaft and provided with steam-passages adapted to register with the slots in the ring, a plurality of cylinders secured on the shaft in connection with said steam-passages, oscillating pistons disposed in the cylinders on the shaft each comprising a pair of plates, packing arranged in sections disposed between the plates, and means for actuating the packing outward, and means for overcoming the thrust of the shaft.

5. In a rotary engine, the combination comprising a shaft, a ring secured to the shaft and provided with steam-passages, a plurality of cylinders secured to the ring and provided with ports communicating with said steam-pistons, oscillating passages disposed in the cylinders each comprising a plurality of plates, packing arranged in sections between said plates, and springs disposed behind said packing and adapted to actuate the same outwardly, means for admitting steam to said passages, and means for balancing the thrust of the shaft.

6. In a rotary engine, the combination comprising a bed-plate, a plurality of bearings on one end of the bed-plate, a shaft rotatably disposed in the bearings, a disk on the shaft, a second disk provided with a web connected to the disk on the shaft, said web being formed with cylinders, means for admitting steam to the cylinders, oscillating pistons disposed in the cylinders, and means for balancing the thrust of the shaft.

7. In a rotary engine, the combination comprising a bed-plate, a plurality of bearings on one end of the bed-plate, a main shaft disposed in the bearings, a plurality of cylinders secured on the shaft, oscillating pistons disposed in the cylinders, means for admitting steam to the cylinders, a disk secured to the cylinders and provided with a flanged opening, a bearing disposed in the opening and secured to the bed-plate, and means for balancing the thrust of the shaft.

8. In a rotary engine, the combination comprising a bed-plate, a plurality of bearings on one end of the bed-plate, a main shaft disposed in the bearings, a plurality of cylinders secured on the shaft, oscillating pistons disposed in the cylinders, means for admitting steam to the cylinders, a disk secured to the cylinders and provided with a flanged opening, a bearing disposed in the opening and secured to the bed-plate, a shaft secured to the bearings, a plurality of rods pivotally mounted on the shaft and connected to the pistons, and means for balancing the thrust of the shaft.

9. In a rotary engine, the combination comprising a bed-plate, a plurality of bearings on one end of the bed-plate, a main shaft disposed in the bearings, a plurality of cylinders secured on the shaft, oscillating pistons disposed in the cylinders, means for admitting steam to the cylinders, a disk secured to the cylinders and provided with a flanged opening, a bearing disposed in the opening and secured to the bed-plate, a shaft secured to the bearings eccentric to the main shaft, a plurality of rods pivotally mounted on the shaft and connected to the pistons, and means for balancing the thrust of the shaft.

10. In a rotary engine, the combination comprising a bed-plate, a plurality of bearings on one end of the bed-plate, a main shaft disposed in the bearings, a plurality of cylinders secured on the shaft, oscillating pistons disposed in the cylinders, means for admitting steam to the cylinders, a disk secured to the cylinders and provided with a flanged opening, a bearing disposed in the opening and secured to the bed-plate, a shaft secured to the bearings, a plurality of rods pivotally mounted on the shaft and connected to the pistons, an inlet-pipe, and an exhaust-pipe disposed through said bearing.

11. In a rotary engine, the combination comprising a bed-plate, bearings on the bed-plate, a shaft disposed in the bearings, a plurality of cylinders carried by one of the bearings, a plurality of cylinders disposed in the first cylinders, packing-rings and springs interposed between said cylinders, means for admitting steam to the cylinders, a plurality of cylinders rotatable with the shaft, means for admitting steam to the rotatable cylinders, oscillating pistons disposed in the rotatable cylinders, and means for balancing the thrust of the shaft.

12. In a rotary engine, the combination comprising a shaft, a pair of cylinders disposed adjacent the shaft, a ring disposed around the shaft and provided with a pair of cylinders, disposed within the first cylinders, a disk secured on the shaft and provided with steam-passages, said ring being provided with steam-passages connecting with the disk and the cylinders, a plurality of cylinders secured on the shaft in connection with the steam-passages in the disk, passages in the cylinder, and means for balancing the thrust of the shaft.

13. A rotary engine, including in combination a rotating cylinder, having a closed end, a piston closing the opposite end of the cylinder, means for varying the angular relation of the piston and cylinder, and means for introducing an expansive fluid between them, as and for the purpose specified.

14. A rotary engine, including in combination, a rotating cylinder having a closed end, a piston inclosing the opposite end, means for varying the angular relation of the piston and cylinder, means for introducing and exhausting an expansive fluid, and means for controlling the introduction and exhaustion, as and for the purpose specified.

15. A rotary engine including in combination, a plurality of cylinders rotating about a fixed center, pistons therein having each of their parts rotating with constant radius about a fixed center, which is eccentric to that about which the cylinders rotate, and means for introducing an expansive fluid between the cylinders and pistons, as and for the purpose specified.

16. A rotary engine, including in combination, a plurality of cylinders rotating about a fixed center, pistons therein having each of their parts rotating with constant radius about a fixed center, which is eccentric to that about which the cylinders rotate, means for introducing and exhausting a motive fluid in the cylinders, and means for controlling the said introduction and exhaustion, as and for the purpose specified.

17. A rotary engine, including in combination, a cylinder rotating about a fixed center, a piston therein, a rod rigidly connected to the piston, a pivoting-pin extending through the extremity of the rod at a point eccentric to the center about which the cylinder rotates, and means for exerting an expansive force between the cylinder and pistons, as and for the purpose specified.

18. A rotary engine, including in combination, a rotating rectangular cylinder having a closed end, a rectangular piston closing the opposite end, means for varying the angular relation of the piston and cylinder, and means for exerting an expansive force between the cylinder and the piston, as and for the purpose specified.

19. A rotary engine, including in combination, a plurality of cylinders rotating about a fixed center, pistons therein having each of their parts rotating with constant radius about a fixed center, eccentric to that center about which the cylinders rotate, means for admitting and exhausting an expansive fluid at the end of the cylinders, and a valve mechanism controlling the said admission and exhaustion, as and for the purpose specified.

20. The combination, in a rotary engine, of a rotating cylinder, a piston therein, means for causing a combined reciprocating and rocking movement between the cylinder and piston, and means for introducing an expansive fluid between the cylinder and piston, as and for the purpose specified.

21. A rotary engine, including in combination, a plurality of symmetrically-arranged cylinders, rotating about a fixed center, a plurality of pistons operating therein, having each of their parts rotating with constant radius about a fixed center, eccentric to that about which the cylinders rotate, and means for introducing an expansive fluid between the cylinders and pistons, as and for the purpose specified.

22. A rotary engine, including in combination, a plurality of cylinders centrally united to form a common central open space, means for rotatably supporting the same, a plurality of pistons operating in the cylinders, piston-rods rigidly connected to the pistons, a pivoting-pin extending through each of the piston-rods about which the pistons and piston-rods rotate with constant radii, and means for introducing an expansive fluid between the pistons and cylinders, as and for the purpose specified.

23. A rotary engine, including in combination, a plurality of cylinders, rotating about a fixed center, a plurality of pistons therein, a plurality of rods rigidly connected to the pistons, each rod, except one, being bifurcated, and adapted to fit one over the other, a pivoting-pin extending through the extremities of all the piston-rods, and about which the pistons are adapted to rotate with constant radius, and means for introducing an expansive fluid between the pistons and cylinders, as and for the purpose specified.

24. A rotary engine including in combination a plurality of cylinders rotating about a fixed center, pistons therein having each of their parts rotating with constant radius about a fixed center, eccentric to that about which the cylinders rotate, movable packing in the pistons, means for actuating the same outwardly, and means for exerting an expansive force between the cylinders and pistons, as and for the purpose specified.

25. A rotary engine, including in combination, a plurality of cylinders, having ports in their outer ends, means for rotatably supporting the cylinders, a plate adjacent to one side of the cylinder, having radial fluid passage-ways therein, means for conducting an expansive fluid to and exhausting it from the said passage-ways, a plurality of pistons operating in the cylinders having each of their parts rotating with constant radius about a fixed center eccentric to that about which the cylinders rotate, as and for the purpose specified.

26. A rotary engine, including in combination, a plurality of cylinders, a shaft, a bearing supporting the same, connecting means extending between the cylinders and the shaft, a plurality of pistons operating in the cylinders, piston-rods rigidly connected to the same, a pivoting-pin extending through the piston-rods about which the piston-rods and pistons rotate with constant radii, said pin being placed eccentrically to the shaft to which the cylinders are secured, and means for introducing an expansive fluid between the pistons and cylinders.

27. A rotary engine, including in combination, two disks, a connecting-web extending between the same and forming a plurality of cylinders, a shaft connected to one disk, means for rotatably supporting the opposite disk, a bearing for the shaft, pistons operating in the cylinders, piston-rods rigidly connected thereto, a pivoting-pin extending through each of the piston-rods and located eccentrically to the shaft about which the piston and piston-rods are adapted to rotate with constant radii and means for introducing an expansive fluid between the pistons and cylinders, as and for the purpose specified.

28. A rotary engine, including in combination, two disks, a plurality of webs extending between the same and forming a plurality of cylinders, plates connected to the disks, a shaft connected to one plate, means for rotatably supporting the other plate, a plurality of radial steam passage-ways through one plate, a plurality of pistons operating in the cylinders, piston-rods rigidly connected to the same, a pivoting-pin extending through the piston-rods about which they rotate with constant radii, and means for supporting the pin in position eccentric to the

shaft, and means for conducting an expansive fluid to and exhausting it from the passage-ways in the plate, as and for the purpose specified.

29. A rotary engine, including in combination, two disks, webs connecting the same and forming a plurality of cylinders, a shaft connected to one disk, a bearing for the opposite disk, a bearing for the shaft, a plurality of pistons operating in the cylinders, a plurality of piston-rods rigidly connected to the same, a pivoting-pin extending through the piston-rods, and means for rigidly supporting the pin in position eccentrically to the shaft, and means for introducing an expansive fluid between the pistons and cylinders.

30. A rotary engine, including in combination, two disks, a plurality of webs connecting the disks and forming a plurality of cylinders, two plates connected to the disks, a shaft connected to one plate, an annular flange formed integral with the opposite plate, a bearing contacting with the flange, a bearing for the shaft, a plurality of radial steam passage-ways in one disk, means for introducing steam to and exhausting it from said passage-ways, a plurality of pistons operating in the cylinders and plurality of piston-rods connected thereto, a pivoting-pin extending through the extremity of the piston-rods about which the same rotates with constant radii, and means for rigidly supporting the pin in a position eccentric to the shaft, as and for the purpose specified.

12,632. WATER-HEATER. EDWIN S. DECKER, Malden, Mass. Filed Mar. 19, 1907. Serial No. 363,326. Original No. 845,061, dated Feb. 26, 1907.

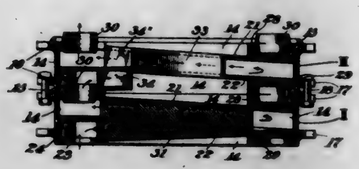

Claim.—1. In a water-heater, a series of superposed sections each comprising a cylindrical inclosing wall and a spiral water-chamber within it provided with vertically-alined tubular inlet and outlet ports, also within the wall, a dividing-diaphragm between the ports formed by a continuation of the lower portion of the top of the chamber, a connection between the outlet-port of one chamber and the inlet-port of the chamber next above, a separating-wall between the top and bottom of each chamber to cause the water to traverse the inlet half of each chamber before passing to the outlet half, and tubular and non-alined flues through the chambers for the products of combustion.

2. In a water-heater, a series of superposed sections each comprising a cylindrical inclosing wall and a spiral water-chamber within it provided with vertically-alined tubular inlet and outlet ports, also within the wall, a dividing-diaphragm between the ports formed by a continuation of the lower portion of the top of the chamber, a connection between the outlet-port of one chamber and the inlet-port of the chamber next above, a separating-wall between the top and bottom of each chamber to cause the water to traverse the inlet half of each chamber before passing to the outlet half, vertically-alined blind bosses on the top and bottom of each chamber diametrically opposite the inlet and outlet ports thereof, a boss and port at the bottom of one chamber being supported on a boss and port at the top of the chamber next below, external means to clamp adjacent sections together, and non-alined, tubular flues through the several chambers, for the passage of the products of combustion.

3. The combination, in a sectional water-heater, of a furnace and a top section, a series of intermediate sections interposed between them and superposed one upon the other, each intermediate section comprising a cylindrical inclosing wall and a water-chamber having a spiral top and bottom arranged in parallelism and provided with an upright wall to cause the water to traverse the lower half of the chamber before entering the upper half, an inlet-port opening into the bottom of each chamber and an outlet-port communicating with the top thereof, said ports being vertically alined within the cylindrical wall of each casing, a connecting-nipple between the outlet-port of one chamber and the inlet-port of the chamber next above it, and non-alined tubular flues through the several chambers for the passage of the products of combustion, the cylindrical wall of each section having a clean-out opening therein above the top of the water-chamber forming a part of such section.

4. A section for water-heaters, consisting of a cylindrical inclosing wall and a water-section having a spiral top and bottom arranged in parallelism and extending to the wall, a separating-wall between the top and bottom to cause the water to traverse the inlet half of the chamber before passing to the outlet half, vertically-alined tubular inlet and outlet ports for the chamber, open respectively into the inlet and outlet halves thereof, and a substantially horizontal diaphragm dividing the ports and forming a continuation of the lower portion of the top of the chamber.

5. In a water-section, a series of superposed sections each comprising a cylindrical inclosing wall and a water-section having a spiral top and bottom arranged in parallelism and extending to the wall, means to cause the water to traverse the inlet half of each chamber before passing to the outlet half thereof, vertically-alined inlet and outlet ports for each chamber, a connection between the outlet-port of one chamber and the inlet-port of the chamber next above, and a clean-out opening in the wall of each section having its lower edge flush with the adjacent portion of the top of its own water-chamber.

DESIGNS.

38,511. HANDLE OF SPOONS, FORKS, OR SIMILAR ARTICLES. GUSTAVE F. KOLB, Mount Vernon, N. Y., assignor to The Mauser Manufacturing Co., New York, N. Y., a Corporation of West Virginia. Filed Mar. 8, 1907. Serial No. 361,409. Term of patent 7 years.

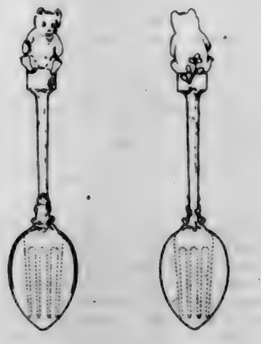

Claim.—The ornamental design for the handle of a spoon, fork, or similar article, as shown.

38,512. DISH. WILLIAM F. DONOVAN, Toledo, Ohio, assignor to The Libbey Glass Company, Toledo, Ohio, a Corporation of Ohio. Filed June 30, 1906. Serial No. 324,285. Term of patent 7 years.

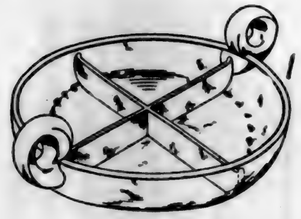

Claim.—The ornamental design for a dish, as shown.

38,513. URN AND PEDESTAL THEREFOR. OSCAR G. BRUSH, Bay City, Mich. Filed Mar. 4, 1907. Serial No. 360,623. Term of patent 7 years.

Claim.—The ornamental design for urn and pedestal therefor, as shown.

38,514. CLOCK-CASE. BURT A. CHUBBUCK, Medina, N. Y. Filed Feb. 23, 1907. Serial No. 359,035. Term of patent 7 years.

Claim.—The ornamental design for a clock-case.

38,515. SIPHON-HEAD. CHARLES DE LUKACSEVICS, New York, N. Y. Filed Mar. 5, 1907. Serial No. 360,793. Term of patent 14 years.

Claim.—The ornamental design for a siphon-head, as shown.

38,516. RADIATOR. ERIC SJODEN, Buffalo, N. Y., assignor to American Radiator Company, a Corporation of New Jersey. Filed Mar. 9, 1907. Serial No. 361,628. Term of patent 14 years.

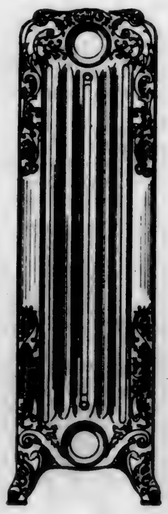

Claim.—The ornamental design for a radiator, as shown.

38,517. WALL-COVERING. LUDWIG PRONBERGER, Berlin, Germany, assignor to Alfred Peats Company, New York, N. Y., a Corporation of New York. Filed Oct. 24, 1906. Serial No. 340,410. Term of patent 7 years.

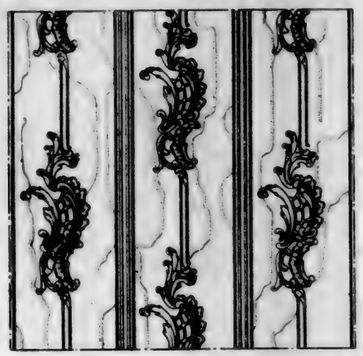

Claim.—The ornamental design for a wall-covering as shown.

38,518. WALL-COVERING. LUDWIG PRONBERGER, Berlin, Germany, assignor to Alfred Peats Company, New York, N. Y., a Corporation of New York. Filed Oct. 24, 1906. Serial No. 340,411. Term of patent 7 years.

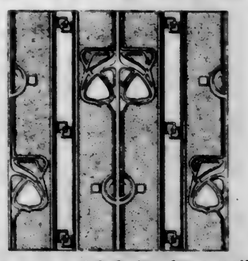

Claim.—The ornamental design for a wall-covering as shown.

38,519. WALL-COVERING. LUDWIG PRONBERGER, Berlin, Germany, assignor to Alfred Peats Company, New York, N. Y., a Corporation of New York. Filed Oct. 24, 1906. Serial No. 340,412. Term of patent 7 years.

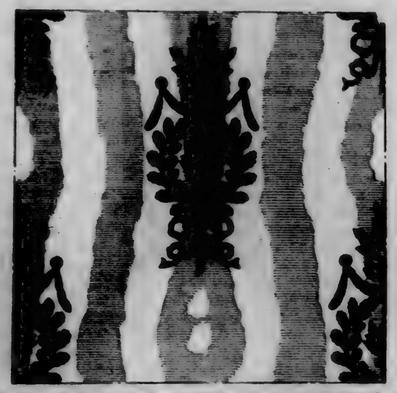

Claim.—The ornamental design for a wall-covering as shown.

38,520. WALL-COVERING. LUDWIG PRONBERGER, Berlin, Germany, assignor to Alfred Peats Company, New York, N. Y., a Corporation of New York. Filed Oct. 24, 1906. Serial No. 340,413. Term of patent 7 years.

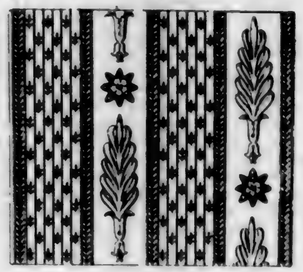

Claim.—The ornamental design for a wall-covering as shown.

38,521. WALL-COVERING. LUDWIG PRONBERGER, Berlin, Germany, assignor to Alfred Peats Company, New York, N. Y., a Corporation of New York. Filed Oct. 24, 1906. Serial No. 340,415. Term of patent 7 years.

Claim.—The ornamental design for a wall-covering as shown.

38,522. WALL-COVERING. LUDWIG PRONBERGER, Berlin, Germany, assignor to Alfred Peats Company, New York, N. Y., a Corporation of New York. Filed Oct. 24, 1906. Serial No. 340,416. Term of patent 7 years.

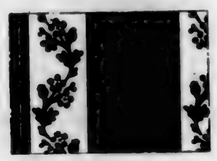

Claim.—The ornamental design for a wall-covering as shown.

38,523. WALL-COVERING. LUDWIG PRONBERGER, Berlin, Germany, assignor to Alfred Peats Company, New York, N. Y., a Corporation of New York. Filed Oct. 24, 1906. Serial No. 340,417. Term of patent 7 years.

Claim.—The ornamental design for a wall-covering as shown.

TRADE-MARKS

PUBLISHED APRIL 9, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 64. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) K K K MEDICINE COMPANY, Keokuk, Iowa. Filed Apr. 1, 1905.

KKK

Particular description of goods.—A Wild-Honey Ointment.

Ser. No. 386. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) CLAYTON ROCKHILL, New York, N. Y. Filed Apr. 4, 1905.

PURITAN

Particular description of goods.—Essential Oils.

Ser. No 1,713. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) THE OHIO COFFEE & SPICE COMPANY, Columbus, Ohio. Filed Apr. 15, 1905.

CAPITAL

Particular description of goods.—Coffee.

Ser. No. 1,880. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) FREIBERG & WORKUM, Cincinnati, Ohio. Filed Apr. 17, 1905.

EUREKA

Particular description of goods.—Whisky.

Ser. No. 3,312. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) LEFEBURE LEDGER COMPANY, Cedar Rapids, Iowa. Filed Apr. 27, 1905.

Particular description of goods.—Ledgers.

Ser. No. 4,037. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) KAMPFE BROS., New York, N. Y. Filed May 2, 1905.

Particular description of goods.—Safety-Razors and Safety-Razor Blades.

Ser. No. 5,197. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) HOUPPERT & WORCESTER, Birmingham, Ala. Filed May 11, 1905.

Particular description of goods.—A Carbonated Beverage.

Ser. No. 5,412. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) SIEGEL COOPER & Co., Chicago, Ill. Filed May 13, 1905.

Particular description of goods.—Sauces, Catsups, and Pickles.

Ser. No. 5,430. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) SIEGEL COOPER & Co., Chicago, Ill. Filed May 13, 1905.

Particular description of goods.—Olives and Olive-Oil.

Ser. No. 5,832. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) EASTERN IMPORTING & MANUFACTURING COMPANY, Boston, Mass. Filed May 16, 1905.

EASTERN STAR

Particular description of goods.—Catchup.

Ser. No. 6,070. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) WHITE, HENTZ & Co., Philadelphia, Pa. Filed May 19, 1905. Used ten years.

Particular description of goods.—Whisky.

Ser. No. 6,589. (CLASS 8. DETERGENTS.) DAVID BROWN & SON LIMITED, Donaghmore, Ireland. Filed May 25, 1905.

HIBERNIA

Particular description of goods.—Soap.

Ser. No. 7,032. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) B. A. CORBIN & SON COMPANY, Webster, Mass. Filed May 29, 1905.

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 7,812. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) GUTHMANN CARPENTER & TELLING, Chicago, Ill. Filed June 10, 1905. Used ten years.

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 8,054. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) JOHN ROBERTSON & SON, LIMITED, Dundee, Scotland. Filed June 13, 1905.

Particular description of goods.—Whisky.

Ser. No. 8,239. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) B. HELLER & Co., Chicago, Ill. Filed June 15, 1905.

Particular description of goods.—Cereal Flour for Binding and Blending Sausage-Meat.

Ser. No. 8,480. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) RHEINSTROM BETTMAN JOHNSON & Co., Cincinnati, Ohio. Filed June 19, 1905. Used ten years.

PREMIUM

Particular description of goods.—Prune-Juice.

Ser. No. 8,483. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) RHEINSTROM BETTMAN JOHNSON & Co., Cincinnati, Ohio. Filed June 19, 1905.

Particular description of goods.—Preserved Pineapple and Maraschino Cherries.

Ser. No. 8,927. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) JESSE MOORE HUNT Co., San Francisco, Cal. Filed June 24, 1905. Used ten years.

E. H. PAINE

Particular description of goods.—Whisky.

Ser. No. 9,186. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) PORTLAND PACKING COMPANY, Portland, Me. Filed June 27, 1905.

Particular description of goods.—Canned Corn.

Ser. No. 10,495. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE T. L. COOK MEDICINE Co., Winston Salem, N. C. Filed July 17, 1905.

Dr. COOK'S
CERTAIN CURE.

T. L. Cook

Particular description of goods.—Medicines for Rheumatism, Lame Back, Stiff Joints, Kidney and Liver Troubles, Headaches, Earache, Sprains and Bruises, Colic, Swellings, La Grippe, Croup, Coughs, Colds, Phthisic, Sore Throat, Cholera Morbus, Flux and Diarrhea, Pleurisy and Pneumonia, Fever and Ague, Indigestion, Female Weakness, Colic in Horses, and Toothache.

Ser. No. 11,991. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) THE MILLER RUBBER MANUFACTURING Co., Akron, Ohio. Filed Aug. 25, 1905.

Particular description of goods.—Seamless Rubber Gloves and Mittens.

Ser. No. 12,460. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) C. LÜTTERS & CIE., Solingen, Germany. Filed Sept. 11, 1905. Used ten years.

Particular description of goods.—Pocket-Knives, Scissors, and Razors.

Ser. No. 12,916. (CLASS 51. MALT LIQUORS.) ARTHUR GUINNESS SON & Co. LIMD., London, England. Filed Sept. 22, 1905. Used ten years.

Particular description of goods.—Stout.

Ser. No. 12,917. (CLASS 51. MALT LIQUORS.) ARTHUR GUINNESS SON & CO. LIMD., London, England. Filed Sept. 22, 1905. Used ten years.

Particular description of goods.—Stout.

Ser. No. 13,496. (CLASS 47. CONFECTIONERY.) "LUCERNA" ANGLO-SWISS MILK CHOCOLATE CO., Hochdorf-Luzern, Switzerland. Filed Oct. 11, 1905.

Particular description of goods.—Chocolate and Cocoa.

Ser. No. 13,499. (CLASS 47. CONFECTIONERY.) "LUCERNA" ANGLO-SWISS MILK CHOCOLATE CO., Hochdorf-Luzern, Switzerland. Filed Oct. 11, 1905.

Particular description of goods.—Chocolate and Cocoa.

Ser. No. 14,539. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) TANQUERAY GORDON & CO. LIMITED, London, England. Filed Nov. 13, 1905.

Particular description of goods.—Whisky.

Ser. No. 15,093. (CLASS 7. CORDAGE NOT INCLUDED IN CLASS 13.) THE AMERICAN MANUFACTURING COMPANY, New York, N. Y. Filed Dec. 1, 1905.

GRANGER

Particular description of goods.—Rope, Cord, Lines, and Twine Manufactured from Vegetable Fiber.

Ser. No. 15,381. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE HOLDEN DRUG CO., Stockton, Cal. Filed Dec. 13, 1905.

Particular description of goods.—Perfumes.

Ser. No. 15,797. (CLASS 72. MERCHANDISE NOT OTHERWISE CLASSIFIED.) THE MORGAN CRUCIBLE COMPANY LIMITED, Battersea, London, England. Filed Jan. 2, 1906.

Particular description of goods.—Crucibles, Cupels, Scorifiers, and Roasting-Dishes, (Both These Two Descriptions of Goods Being Articles in the Nature of Crucibles,) Crucible Covers, Stands, and Stirrers, Wedges, Chlorin-Tubes, and Coupie-Tubes, All the Above-Mentioned Goods Being of Fire-Clay or Similar Refractory Material; Clay Liners for Crucibles, Fire-Bricks, Plates, Slabs, Domes, and Tubes, All Said Goods Being of Clay or Similar Refractory Material; Patching Material for Furnace-Work, of Clay or Similar Refractory Material; Rehausses, Being Muffle-Rings or Removable Taps, (Accessories for Use with Crucibles,) of Clay or other Refractory Material.

Ser. No. 16,398. (CLASS 52. PACKING-HOUSE PRODUCTS.) BOVRIL LIMITED, London, England. Filed Jan. 22, 1906.

Particular description of goods.—Extracts and Essences of Meat.

Ser. No. 16,465. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE HOLDEN DRUG CO., Stockton, Cal. Filed Jan. 24, 1906.

Particular description of goods.—Liniments for Rheumatism, Gout, Sciatica, and Swollen Joints.

Ser. No. 16,839. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) SCHMIDT & ZIEGLER, LTD., New Orleans, La. Filed Feb. 8, 1906.

Particular description of goods.—Whisky.

Ser. No. 16,937. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) JOSEPH RODGERS & SONS (LIMITED), Sheffield, England. Filed Feb. 12, 1906. Used ten years.

Particular description of goods.—Manufactures of Silver, Both Solid and Plated, Comprising Flat Ware, Hollow Ware, and Tableware.

Ser. No. 18,730. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) AMALGAMATED PAINT COMPANY, Jersey City, N. J. Filed Apr. 12, 1906.

Particular description of goods.—Asphaltic and Composite Paints.

Ser. No. 18,886. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) WILLIAM D. CRAIG, Kansas City, Mo. Filed Apr. 17, 1906. Used ten years.

Particular description of goods.—Paint.

Ser. No. 19,040. (CLASS 57. DENTAL MACHINES, APPARATUS, AND SUPPLIES.) JOHN T. NOLDE, St. Louis, Mo. Filed Apr. 24, 1906.

Particular description of goods.—Dental Amalgam, Oxyphosphate of Zinc for Filling Teeth, Gutta-Percha Canal-Points, Tooth-Polishing Paper Disks, Enamel-Excavators, Enamel-Chisels, Enamel-Scalers, Nerve-Canal Broaches, Dental-Engine Burs, Rubber-Dam Clamps, Dental Engines, Extracting-Forceps, Vulcanite Dental Rubber, Dental Base-Plate Wax, Modeling Compound for Impression of the Mouth, Impression-Trays for the Mouth, Dental Vulcanizer-Flasks, Dental Gold Cylinders, Matrix for the Teeth, and Retainers for the Teeth.

Ser. No. 19,353. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) JAPANESE IMPORTING COMPANY, Los Angeles, Cal. Filed May 7, 1906.

Particular description of goods.—Table-Cloths, Napkins, and Doilies.

Ser. No. 19,960. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) A. LOTZES SONS & COMPANY, Cincinnati, Ohio. Filed May 31, 1906.

Particular description of goods.—Stoves, Laundry-Stoves, Cooking-Ranges, Hot-Air Furnaces, Hot-Water Heaters, School-Room Ventilating-Stoves, and Parts Thereof.

Ser. No. 20,087. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) ADOLF MAASS, FABRIK ANTISEPTISCHER ARTIKEL, Berlin, Germany. Filed June 6, 1906.

Particular description of goods.—Inlay-Soles of Pasteboard.

Ser. No. 20,722. (CLASS 8. DETERGENTS.) THE CINCINNATI SOAP COMPANY, Cincinnati, Ohio. Filed July 3, 1906.

Particular description of goods.—Soap.

Ser. No. 21,003. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE JOY CASTORIA COMPANY, Mineola and New York, N. Y. Filed July 18, 1906.

Particular description of goods.—A Liquid Medicinal Preparation to Correct the Ailments of Infants and Children.

Ser. No. 21,240. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) PARKER HOLMES AND COMPANY, Boston, Mass. Filed July 28, 1906.

£

Particular description of goods.—Leather Dressings, Blackings, and Polishes.

Ser. No. 21,373. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) S. STERNAU & CO., Brooklyn, N. Y. Filed Aug. 7, 1906. Used ten years.

HOLD FAST

Particular description of goods.—Bath-Sprays and Overhead Showers.

Ser. No. 21,419. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) SUSQUEHANNA SILK MILLS, New York, N. Y. Filed Aug. 9, 1906.

Orkeda

Particular description of goods.—Silk Piece Goods.

Ser. No. 21,420. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) SUSQUEHANNA SILK MILLS, New York, N. Y. Filed Aug. 9, 1906.

Scala

Particular description of goods.—Silk Piece Goods.

Ser. No. 21,544. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOHN WYETH AND BROTHER, INCORPORATED, Philadelphia, Pa. Filed Aug. 15, 1906.

Particular description of goods.—Medicated Wines, Elixirs, Syrups, Liquors, Solutions, Glycerols, Emulsions, Compressed and Molded Tablets and Pills.

Ser. No. 21,557. (CLASS 67. PHARMACEUTICAL PREPARATIONS. PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOHN WYETH AND BROTHER, INCORPORATED, Philadelphia, Pa. Filed Aug. 15, 1906. Used ten years.

Glycerole Chloride of Iron

Particular description of goods.—A Medicinal Solution of Iron Chlorid.

Ser. No. 21,558. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOHN WYETH AND BROTHER, INCORPORATED, Philadelphia, Pa. Filed Aug. 15, 1906. Used ten years.

SPENCER'S CHLORAMINE PASTILLES

Particular description of goods.—Pastils Used for the Cure of Hoarseness, Sore Throat, Bronchitis, Cough, and other Derangements of the Breathing Tubes and Lungs.

Ser. No. 21,561. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOHN WYETH AND BROTHER, INCORPORATED, Philadelphia, Pa. Filed Aug. 15, 1906. Used ten years.

CRYSTALLIZED LINIMENT.

Particular description of goods.—Medicinal Pencils or Cones for Alleviating Pain by Counter-Irritation.

Ser. No. 21,563. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio. Filed Aug. 15, 1906. Used ten years.

CELERY CITY

Particular description of goods.—Washboards.

Ser. No. 21,569. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio. Filed Aug. 15, 1906.

STAG

Particular description of goods.—Washboards.

Ser. No. 21,828. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) JACKSON COMPANY, Nashua, N. H. Filed Aug. 31, 1906. Used ten years.

WACHUSETT

Particular description of goods.—Cotton Piece Goods.

Ser. No. 22,136. (CLASS 68. PUBLICATIONS.) THE BUSINESS MAGAZINE CO., Knoxville, Tenn. Filed Sept. 17, 1906.

THE BUSINESS MAGAZINE

Particular description of goods.—A Magazine Periodical.

Ser. No. 22,218. (CLASS 18. AGRICULTURAL AND DAIRY MACHINERY AND PARTS OF SUCH MACHINERY.) ALBAUGH BROS. DOVER & CO., Chicago, Ill. Filed Sept. 21, 1906.

Particular description of goods.—Cream-Separators.

Ser. No. 22,301. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) PENINSULAR PAINT AND VARNISH COMPANY, LTD., Detroit, Mich. Filed Sept. 24, 1906.

PENINSULAR

Particular description of goods.—Dry Colors, Colors in Oil, Distemper Colors, Japan Colors, Driers, Enamels, Fillers, Finishes, Liquid Slating, Paints, Paint and Varnish Removers, Wood-Polishes, Putty, Shellac, Stains, Varnishes, and Finishing, Preserving, and Coating Waxes.

Ser. No. 22,330. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) BENEDICTUS, WEILL & COMPANY, New York, N. Y. Filed Sept. 26, 1906.

RUFFINETTE

Particular description of goods.—Malines and Netted Fabrics.

Ser. No. 22,333. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) BENEDICTUS, WEILL & COMPANY, New York, N. Y. Filed Sept. 26, 1906.

VEILINETTE

Particular description of goods.—Net Veilings.

Ser. No. 22,464. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) MORRIS SHERMAN MANUFACTURING COMPANY, Chattanooga, Tenn. Filed Oct. 3, 1906.

Particular description of goods.—Brickmaking Machinery.

Ser. No. 22,628. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) INTERNATIONAL COMBUSTION CORPORATION, Buffalo, N. Y. Filed Oct. 10, 1906.

PACKARD

Particular description of goods.—A Mechanical Device for the Purpose of Burning Comminuted or Pulverized Fuel.

Ser. No. 22,725. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) CHARLES E. CONGDON, Jamestown, Cal. Filed Oct. 16, 1906.

C.C. MALARIA CURE

Particular description of goods.—A Medicine Made Only in Tablet Form and Used in the Cure of Malaria, Chills, and Fever.

Ser. No. 22,730. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) MORRIS SHERMAN MANUFACTURING COMPANY, Chattanooga, Tenn. Filed Oct. 16, 1906.

Particular description of goods.—Brickmaking Machinery.

Ser. No. 22,761. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) ROBERTS, JOHNSON & RAND SHOE COMPANY, St. Louis, Mo. Filed Oct. 18, 1906.

Society

Particular description of goods.—Women's, Misses', and Children's Leather Boots and Shoes.

Ser. No. 22,810. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) JOHN D. TASH, Chicago, Ill. Filed Oct. 20, 1906.

PEPINA

Particular description of goods.—Compound Pepper.

Ser. No. 22,945. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) FREDERICK LOESER & Co., New York, N. Y. Filed Oct. 27, 1906.

Particular description of goods.—Hosiery.

Ser. No. 23,017. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) ROBERT A. SUFFERN, New York, N. Y. Filed Oct. 31, 1906.

Particular description of goods.—Cotton Piece Goods Consisting of Sheetings, Shirtings, and Drills.

Ser. No. 23,060. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) LINK-BELT COMPANY, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind. Filed Nov. 3, 1906. Used ten years.

DODGE CHAIN

Particular description of goods.—Drive-Chains, Conveyer-Chains, and Chain Cables.

Ser. No. 23,062. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) LINK-BELT COMPANY, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind. Filed Nov. 3, 1906.

Particular description of goods.—Drive-Chains and Conveyer-Chains.

Ser. No. 23,064. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) LINK-BELT COMPANY, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind. Filed Nov. 3, 1906.

Particular description of goods.—Drive-Chains and Conveyer-Chains.

Ser. No. 23,065. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) LINK-BELT COMPANY, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind. Filed Nov. 3, 1906.

MAXIMUM

Particular description of goods.—Drive-Chains and Conveyer-Chains.

Ser. No. 23,229. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) S. M. BIXBY & Co., New York, N. Y. Filed Nov. 10, 1906. Used ten years.

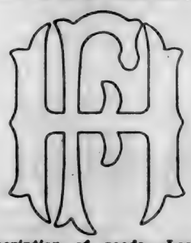

Particular description of goods.—Leather and Shoe Blackings, Paste, Polish, and Leather and Shoe Varnish.

Ser. No. 23,230. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) S. M. BIXBY & Co., New York, N. Y. Filed Nov. 10, 1906. Used ten years.

OILINE

Particular description of goods.—Leather and Shoe Blackings, Paste, Polish, and Leather and Shoe Varnish.

Ser. No. 23,232. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) S. M. BIXBY & Co., New York, N. Y. Filed Nov. 10, 1906. Used ten years.

Particular description of goods.—Cleaning and Whitening Compounds for Textile and Fibrous Fabrics and Leather Goods.

Ser. No. 23,233. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) S. M. BIXBY & Co., New York, N. Y. Filed Nov. 10, 1906. Used ten years.

Particular description of goods.—Cleaning and Whitening Compounds for Textile and Fibrous Fabrics and Leather Goods.

Ser. No. 23,234. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) S. M. BIXBY & Co., New York, N. Y. Filed Nov. 10, 1906. Used ten years.

Particular description of goods.—Cleaning and Whitening Compounds for Textile and Fibrous Fabrics and Leather Goods.

Ser. No. 23,235. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) S. M. BIXBY & Co., New York, N. Y. Filed Nov. 10, 1906. Used ten years.

Particular description of goods.—Cleaning and Whitening Compounds for Textile and Fibrous Fabrics and Leather Goods.

Ser. No. 23,236. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) S. M. BIXBY & Co., New York, N. Y. Filed Nov. 10, 1906.

ERMINO

Particular description of goods.—Cleaning and Whitening Compounds for Textile and Fibrous Fabrics and Leather Goods.

Ser. No. 23,238. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) S. M. BIXBY & Co., New York, N. Y. Filed Nov. 10, 1906. Used ten years.

BIXBY

Particular description of goods.—Stove Dressings and Polish.

Ser. No. 23,240. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) S. M. BIXBY & Co., New York, N. Y. Filed Nov. 10, 1906. Used ten years.

Particular description of goods.—Stove Dressings and Polish.

Ser. No. 23,520. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) MORRIS SILBERMAN, New York, N. Y. Filed Nov. 21, 1906.

Particular description of goods.—Rain-Coats Constructed of Waterproof Textile Fabrics and other Than Rubber Coats.

Ser. No. 23,623. (CLASS 10. FERTILIZERS.) VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Nov. 27, 1906. Used ten years.

SCOTT'S
ANIMAL AMMONIATED
GUANO

Particular description of goods.—Fertilizers.

Ser. No. 23,624. (CLASS 10. FERTILIZERS.) VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Nov. 27, 1906. Used ten years.

MARRIMAN'S
AMMONIATED BONE

Particular description of goods.—Fertilizers.

Ser. No. 23,793. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE J. A. POZZONI PHARMACAL CO., St. Louis, Mo. Filed Dec. 6, 1906. Used ten years.

Particular description of goods.—Complexion-Powder.

Ser. No. 23,795. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE J. A. POZZONI PHARMACAL CO., St. Louis, Mo. Filed Dec. 6, 1906. Used ten years.

POZZONI'S MEDICATED COMPLEXION POWDER

Particular description of goods.—Complexion-Powder.

Ser. No. 23,857. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MACK & GILMORE, Berwick, La. Filed Dec. 7, 1906.

M&G

Particular description of goods.—An Internal Remedy for Diarrhea, Flux, and Dysentery.

Ser. No. 23,861. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) RIO CHEMICAL CO., New York, N. Y. Filed Dec. 7, 1906.

UTONIA

Particular description of goods.—Uterine Tonics.

Ser. No. 23,878. (CLASS 5. ADHESIVES.) CROSS & COMPANY, New York, N. Y. Filed Dec. 8, 1906.

PAZOMITE

Particular description of goods.—A Cement for Mending Crockery and Household Articles.

Ser. No. 23,886. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) RIO CHEMICAL CO., New York, N. Y. Filed Dec. 8, 1906.

ABICAN

Particular description of goods.—Mucous Astringent for Internal and External Use.

Ser. No. 23,897. (CLASS 19. BOATS AND ROAD-VEHICLES.) THE MCINTOSH HARDWARE CORPN., Cleveland, Ohio. Filed Dec. 10, 1906.

HERCULES

Particular description of goods.—Bicycles and Automobiles.

Ser. No. 23,918. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) MAX ROSENWALD, New York, N. Y. Filed Dec. 10, 1906.

Particular description of goods.—Soft and Stiff Felt Hats.

Ser. No. 23,959. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) SAMUEL B. CRALL, Collingswood, N. J. Filed Dec. 12, 1906.

PREMIER

Particular description of goods.—Hard-Wood and Furniture Polish.

Ser. No. 24,108. (CLASS 72. MERCHANDISE NOT OTHERWISE CLASSIFIED.) MORGAN CRUCIBLE COMPANY LIMITED, Battersea, London, England. Filed Dec. 18, 1906.

Particular description of goods.—Furnaces, (Experimental,) Including Assayers' Furnaces, Muffles, Being Goods of the Nature of Experimental Furnaces or Assayers' Furnaces.

Ser. No. 24,269. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) GARNER & CO., New York, N. Y. Filed Dec. 26, 1906. Used ten years.

Particular description of goods.—Calicoes, Printed and Dyed; Percales, Printed and Dyed.

Ser. No. 24,422. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WILLIAM A. HORTON, Melrose, Mass. Filed Jan. 3, 1907. Used ten years.

New England Medical Institute
Of Boston, Mass.

Particular description of goods.—Tonic Pills.

Ser. No. 24,545. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JEAN CARRINGTON COMPANY, New York, N. Y. Filed Jan. 8, 1907.

Particular description of goods.—A Toilet Powder.

Ser. No. 24,573. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) THOMAS R. MCQUILLAN, Guymon, Okla. Filed Jan. 11 1907.

THE PHOTOTONE

Particular description of goods.—Coin-Controlled Vending-Machine.

Ser. No. 24,579. (CLASS 18. AGRICULTURAL AND DAIRY MACHINERY AND PARTS OF SUCH MACHINERY.) F. I. STONE & COMPANY, Atlanta, Ga. Filed Jan. 11, 1907. Used ten years.

Particular description of goods.—Plant-Fenders.

Ser. No. 24,667. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) PEROXIDENT MANUFACTURING COMPANY, St. Louis, Mo. Filed Jan. 16, 1907.

Peroxident

Particular description of goods.—An Antiseptic, Germicide, and Deodorant Surgical Dressing in Powder Form.

Ser. No. 24,673. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) PATTERSON-CABELL CO., New York, N. Y. Filed Jan. 16, 1907.

PATCA

Particular description of goods.—Stocks for Soups and Bouillons in Liquid or Paste Form.

Ser. No. 24,685. (CLASS 68. PUBLICATIONS.) CHICAGO HORSEMAN NEWSPAPER COMPANY, Chicago, Ill. Filed Jan. 16, 1907. Used ten years.

THE HORSEMAN

Particular description of goods.—Weekly Magazine Devoted to Horses and Like Subjects.

Ser. No. 24,762. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich. Filed Jan. 19, 1907. Used ten years.

Mexican

Particular description of goods.—Graphite Paint in Paste Form or Ready for Use, and Graphite Pipe "Cement," (a Preparation for Painting Pipe-Joints, Gaskets, Stay-Bolts, and Similar Articles.)

Ser. No. 24,766. (CLASS 2. MINERAL.) THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich. Filed Jan. 19, 1907. Used ten years.

THE UNITED STATES GRAPHITE CO.

Particular description of goods.—Silver-Lead or Plumbago Foundry-Facings and Pulverized Graphite.

Ser. No. 24,805. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) HERMAN C. MYERS, New York, N. Y. Filed Jan. 21, 1907.

Particular description of goods.—Cordials, Rums, Brandies, and Whiskies.

Ser. No. 24,815. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE PERFECT SAFETY PAPER CO., Franklin, Ohio, and Chicago, Ill. Filed Jan. 21, 1907. Used ten years.

PERFECT SAFETY PAPER

Particular description of goods.—Printing and Writing Paper Commonly Employed for Checks, Drafts, Tickets, Certificates, &c.

Ser. No. 24,846. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) BLACK SILK STOVE POLISH WORKS, Sterling, Ill. Filed Jan. 23, 1907.

Silk

Particular description of goods.—Stove-Polish.

Ser. No. 24,847. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) BLACK SILK STOVE POLISH WORKS, Sterling, Ill. Filed Jan. 23, 1907.

BLACK SILK

Particular description of goods.—Stove-Polish.

Ser. No. 24,896. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) KARBL CINTBURG & SON, New York, N. Y. Filed Jan. 25, 1907.

Karl Cintburg & Son

Particular description of goods.—Salve.

Ser. No. 24,928. (CLASS 29. BROOMS, BRUSHES, AND DUSTERS.) WM. L. MARTIN, New York, N. Y., assignor to Leitsch Brothers, New York, N. Y. A Firm. Filed Jan. 26, 1907.

Particular description of goods.—Hair, Tooth, and Nail Brushes.

Ser. No. 24,958. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FARBWERKE VORM. MEISTER LUCIUS & BRÜNING, Höchst-on-the-Main, Germany. Filed Jan. 28, 1907.

HOMORENON

Particular description of goods.—An Astringent and Hemostatic.

Ser. No. 24,961. (CLASS 72. MERCHANDISE NOT OTHERWISE CLASSIFIED.) EDWARD H. GRABSEEL, Watertown, Wis. Filed Jan. 28, 1907.

Particular description of goods.—Incubators, Brooders, Exhibition-Coops, Shipping-Coops, Colony-Houses, Poultry Feed-Receptacles, Poultry Drinking-Fountains, and Pigeon-Baths.

Ser. No. 25,015. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GEORGE E. FAIRBANKS, Worcester, Mass. Filed Jan. 30, 1907. Used ten years.

CHILDREN'S COMFORT

Particular description of goods.—A Medicinal Compound for Soothing or Allaying Pain During the Period of Teething, and for the Treatment of Dysentery, Cholera Infantum, and Colic, and for Correcting Acidity of the Stomach, and for Regulating the Digestive Organs.

Ser. No. 25,071. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) CASTLE BROTHERS, INCORPORATED, San Francisco, Cal. Filed Feb. 2, 1907. Used ten years.

PRIMROSE BRAND

Particular description of goods.—Dried Fruit.

Ser. No. 25,119. (CLASS 53. SACCHARINE FOODS NOT INCLUDED IN CLASS 47.) ALABAMA-GEORGIA SYRUP COMPANY, Montgomery, Ala. Filed Feb. 4, 1907.

AlaGA

Particular description of goods.—Syrups.

Ser. No. 25,134. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FRANCIS N. ROSS, San Francisco, Cal. Filed Feb. 4, 1907.

Particular description of goods.—Tooth-Powders.

Ser. No. 25,210. (CLASS 60. INKS AND INKING MATERIALS.) H. M. STORMS CO., New York, N. Y. Filed Feb. 8, 1907.

Particular description of goods.—Type-Writer Ribbons.

Ser. No. 25,223. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HARRY BENTLEY GARRIGUES, Massillon, Ohio. Filed Feb. 9, 1907.

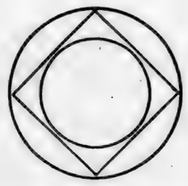

Particular description of goods.—An Ointment and a Medicinal Powder for the Cure of Diseases of the Skin, Rectum, and Piles, as Well as Diseases of the Stomach, Bowels, Liver, Kidneys, Blood, and Nervous System.

Ser. No. 25,264. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) H. E. BUCKLEN & COMPANY, Chicago, Ill. Filed Feb. 12, 1907. Used ten years.

DR. KING'S NEW LIFE PILLS

Particular description of goods.—Remedies for Disordered Liver, Biliousness, and Constipation, Headache, Loss of Appetite, Dizziness, Torpid Bowels, Jaundice, Fever and Ague, Malaria, Flatulency, Foul Stomach, and Nausea.

Ser. No. 25,266. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) JAMES CLAREY, New York, N. Y. Filed Feb. 12, 1907.

O-X-O

Particular description of goods.—Portable Baking-Ovens, Portable Revolving Baking-Ovens, Revolving Baking-Ovens, Stationary Baking-Ovens, Reel-Ovens, and Stoves and Burners.

Ser. No. 25,299. (CLASS 10. FERTILIZERS.) ALBAUGH BROS. DOVER & CO., Chicago, Ill. Filed Feb. 14, 1907.

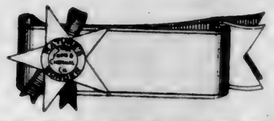

Particular description of goods.—A Food for Plants and Vegetables of All Kinds.

Ser. No. 25,329. (CLASS 68. PUBLICATIONS.) HELF & HAGER CO., New York, N. Y. Filed Feb. 15, 1907.

HITLAND

Particular description of goods.—Sheet-Music.

Ser. No. 25,340. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) PRESTON CLARK, Peoria, Ill. Filed Feb. 16, 1907. Used ten years.

Peoria Mineral Springs

Particular description of goods.—Mineral Waters and Carbonated Non-Alcoholic Beverages.

Ser. No. 25,350. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) SPEAR BROTHERS CO., Baltimore, Md. Filed Feb. 16, 1907.

The background appears in red color.

Particular description of goods.—Boots and Shoes of Leather.

Ser. No. 25,357. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) DRAKE INNESS GREEN SHOE CO., Charleston, S. C. Filed Feb. 18, 1907.

BLUE BELL

Particular description of goods.—Leather Shoes.

Ser. No. 25,358. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) DRAKE INNESS GREEN SHOE CO., Charleston, S. C. Filed Feb. 18, 1907.

GOLDEN BELL

Particular description of goods.—Leather Shoes.

Ser. No. 25,377. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) ROBERT ALBERT MORRISON, Denver, Colo. Filed Feb. 18, 1907.

20th CENTURY

Particular description of goods.—Metal Window Sashes and Frames and Metal Fittings for Mechanical Windows, Exclusive of Sash-Locks.

Ser. No. 25,441. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,442. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,443. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,454. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,456. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,460. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,461. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,463. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,464. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,468. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

JUBILEE

BRAND

Particular description of goods.—Canned Fish.

Ser. No. 25,470. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,473. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,513. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) THE KEYSTONE MFG. CO., Buffalo, N. Y. Filed Feb. 21, 1907.

MONARCH

Particular description of goods.—Hand-Ratchets for Operating Drills, Taps, Wrenches, and Stud-Drivers.

Ser. No. 25,536. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) THE KEYSTONE MFG. CO., Buffalo, N. Y. Filed Feb. 23, 1907. Used ten years.

KEYSTONE

Particular description of goods.—Hand-Ratchets for Operating Drills, Taps, Wrenches, and Stud-Drivers, and Nail-Sets.

Ser. No. 25,567. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) WEEKS & PARR, New York, N. Y. Filed Feb. 23, 1907.

HALB-SEIDEN

Particular description of goods.—Rye-Flour.

Ser. No. 25,585. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) HILLS BROS., San Francisco, Cal. Filed Feb. 25, 1907.

Particular description of goods.—Baking-Powder and Bicarbonate of Soda.

Ser. No. 25,597. (CLASS 64. MEDICAL AND SURGICAL APPARATUS, APPLIANCES, AND INSTRUMENTS.) GEO. P. MORGAN, New York, N. Y. Filed Feb. 25, 1907.

Fon-Do-Che

Particular description of goods.—An Article for Holding Shirts in Place While Acting as a Suspensory.

Ser. No. 25,611. (CLASS 47. CONFECTIONERY.) THE CATAWBA CANDY CO., Sandusky, Ohio. Filed Feb. 25, 1907.

Particular description of goods.—Candy.

Ser. No. 25,624. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) ROBT. L. LATIMER & CO., Philadelphia, Pa. Filed Feb. 26, 1907.

Particular description of goods.—Silk Bolting-Cloth.

Ser. No. 25,639. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WILLIAM MYRON REYNOLDS, New York, N. Y. Filed Feb. 27, 1907. Used ten years.

Particular description of goods.—Specific Medicines for Cough, Cold, and Grip.

Ser. No. 25,657. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) JOSEPH A. KIEFERLE, Allegheny, Pa. Filed Feb. 28, 1907.

FAIRI-KLOTH

Particular description of goods.—Polishing-Cloths.

Ser. No. 25,662. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) NORTH BRO'S M'F'G CO., Philadelphia, Pa. Filed Feb. 28, 1907.

YANKEE

Particular description of goods.—Hand-Drills and Drill-Bits.

Ser. No. 25,678. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) FRANK BROS. & CO., New York, N. Y. Filed Mar. 1, 1907. Used ten years.

UNIVERSAL

Particular description of goods.—Men's Knitted Underwear.

Ser. No. 25,680. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) HAMMEL, RIGLANDER & CO., New York, N. Y. Filed Mar. 1, 1907.

REX

Particular description of goods.—Pliers Without Cutting Edges.

Ser. No. 25,688. (CLASS 47. CONFECTIONERY.) THE GREAT ATLANTIC & PACIFIC TEA COMPANY, New York, N. Y. Filed Mar. 2, 1907. Used ten years.

A&P

Particular description of goods.—Cocoa and Chocolate.

Ser. No. 25,720. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 4, 1907. Used ten years.

KINGSTON

Particular description of goods.—Spool-Cotton, Sewing-Cotton, and Thread.

Ser. No. 25,722. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J. Filed Mar. 4, 1907. Used ten years.

DIXON'S

Particular description of goods.—Pencils.

Ser. No. 25,724. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J. Filed Mar. 4, 1907. Used ten years.

CARBURET OF IRON

Particular description of goods.—Stove-Polish.

Ser. No. 25,735. (CLASS 2. MINERAL.) THE CONSUMERS COAL CO., Springfield, Ohio. Filed Mar. 4, 1907. Used ten years.

ETNA

Particular description of goods.—Coal.

Ser. No. 25,747. (CLASS 68. PUBLICATIONS.) L'OPINIONE ITALIAN PUBLISHING CO., Philadelphia, Pa. Filed Mar. 4, 1907.

L'OPINIONE

Particular description of goods.—A Newspaper.

Ser. No. 25,748. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) J. B. PEARSON COMPANY, Boston, Mass. Filed Mar. 4, 1907.

TEDDY BEAR

Particular description of goods.—Youths', Boys', and Young Children's Play-Suits Made of Linen, Woolen, and Cotton Cloth.

Ser. No. 25,769. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) DOLGEVILLE FELT SHOE CO., Dolgeville, N. Y. Filed Mar. 5, 1907.

Particular description of goods.—Boots, Shoes, Slippers, Shoe-Soles, Boot-Soles, Slipper-Soles, Shoe-Uppers, Boot-Uppers, Shoe-Heels, Boot-Heels, Slipper-Heels, Shoe Welts and Rands, Said Boots, Shoes, Slippers, &c., Aforesaid Being Made Either of Leather or Felt, or Both.

Ser. No. 25,778. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) THE CABLE COMPANY, Chicago, Ill. Filed Mar. 5, 1907.

Corona

Particular description of goods.—Pianos, Automatic Players, and Self-Playing Pianos.

Ser. No. 25,780. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) THE CABLE COMPANY, Chicago, Ill. Filed Mar. 5, 1907.

MVSICABLE

Particular description of goods.—Pianos, Automatic Piano-Players, and Self-Playing Pianos.

Ser. No. 25,781. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) THE CABLE COMPANY, Chicago, Ill. Filed Mar. 5, 1907.

Euphona

Particular description of goods.—Pianos, Automatic Piano-Players, and Self-Playing Pianos.

Ser. No. 25,785. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 6, 1907. Used ten years.

REID'S

Particular description of goods.—Spool-Cotton, Sewing-Cotton, and Thread.

Ser. No. 25,786. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 6, 1907. Used ten years.

WINDSOR

Particular description of goods.—Spool-Cotton, Sewing-Cotton, and Thread.

Ser. No. 25,810. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE COLLINS COMPANY, Collinsville, Conn. Filed Mar. 7, 1907. Used ten years.

22

Particular description of goods.—Machetes and Tercados.

Ser. No. 25,811. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE COLLINS COMPANY, Collinsville, Conn. Filed Mar. 7, 1907. Used ten years.

23

Particular description of goods.—Machetes and Tercados.

Ser. No. 25,812. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE COLLINS COMPANY, Collinsville, Conn. Filed Mar. 7, 1907. Used ten years.

152

Particular description of goods.—Machetes and Tercados.

Ser. No. 25,826. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) ECLIPSE CEMENT & BLACKING CO., Philadelphia, Pa. Filed Mar. 7, 1907. Used ten years.

SNOW WHITE

Particular description of goods.—A Cleanser for All Articles of Canvas and Duck.

Ser. No. 25,827. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) THE GARLOCK PACKING COMPANY, Palmyra, N. Y. Filed Mar. 7, 1907.

GET WISE

Particular description of goods.—Sheet-Packing.

Ser. No. 25,836. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) THOMAS A. WILLSON, Reading, Pa. Filed Mar. 7, 1907. Used ten years.

Particular description of goods.—Spectacles and Eyeglasses.

Ser. No. 25,837. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) GILLESPIE-BENEDICT COMPANY, Chicago, Ill. Filed Mar. 8, 1907.

EVERLASTIC

Particular description of goods.—Special Paints for Steel Structures, Metal, Wood, Composition Roofs, &c.

Ser. No. 25,838. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) GILLESPIE-BENEDICT COMPANY, Chicago, Ill. Filed Mar. 8, 1907.

The circle being colored red.

Particular description of goods.—Special Paints for Steel Structures, Metal, Wood, Composition Roofs, &c.

Ser. No. 25,843. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) HAMILTON C. APPLEGATE, Louisville, Ky. Filed Mar. 8, 1907.

Particular description of goods.—Whisky.

Ser. No. 25,854. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) SARAH C. MORRILL, New York, N. Y. Filed Mar. 8, 1907. Used ten years.

MORRILL

Particular description of goods.—Hand-Punches with Cutting Edges, Cut-Nippers and Pliers with Cutting Edges.

Ser. No. 25,855. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) THE NARROW FABRIC CORPORATION, Orange, Conn. Filed Mar. 8, 1907.

Particular description of goods.—Elastic Webbing.

Ser. No. 25,856. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) PAUL BROTHERS, Philadelphia, Pa. Filed Mar. 8, 1907.

Particular description of goods.—Leather Boots, Shoes, and Slippers.

Ser. No. 25,862. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) WEINGARTEN BROS., INCORPORATED, New York, N. Y. Filed Mar. 8, 1907. Used ten years.

W. B.

Particular description of goods.—Corsets.

Ser. No. 25,863. (CLASS 31. FILTERS AND REFRIGERATORS.) WHITE ENAMEL REFRIGERATOR COMPANY, St. Paul, Minn. Filed Mar. 8, 1907.

Particular description of goods.—Refrigerators.

Ser. No. 25,870. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) AMERICAN LADY CORSET CO., Detroit, Mich. Filed Mar. 9, 1907.

La Corsella

Particular description of goods.—Corsets.

Ser. No. 25,871. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) AMERICAN LADY CORSET CO., Detroit, Mich. Filed Mar. 9, 1907.

ORCHID

Particular description of goods.—Corsets.

Ser. No. 25,877. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) THE IMPERIAL DRY PLATE COMPANY, LIMITED, London, England. Filed Mar. 9, 1907.

Particular description of goods.—Photographic Plates Chemically Prepared, Photographic Sensitized Paper, and Photographic Sensitized Films.

Ser. No. 25,879. (CLASS 59. HOROLOGICAL INSTRUMENTS.) AUGUSTA Y. JANSEN, Chicago, Ill. Filed Mar. 9, 1907.

FLASH LIGHT

Particular description of goods.—Clocks.

Ser. No. 25,880. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) LINDSTROM MILL CO., Lindstrom, Minn. Filed Mar. 9, 1907.

RED CROSS

Particular description of goods.—Wheat-Flour.

Ser. No. 25,883. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE GEORGE WORTHINGTON COMPANY, Cleveland, Ohio. Filed Mar. 11, 1907.

Particular description of goods.—Saws.

Ser. No. 25,887. (CLASS 2. MINERAL. JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J. Filed Mar. 11, 1907. Used ten years.

Flake

Particular description of goods.—Graphite.

Ser. No. 25,895. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) THE AMERICAN GARTER CO., New York, N. Y. Filed Mar. 11, 1907.

Particular description of goods.—Garters.

Ser. No. 25,896. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) ARMS & KIDDER, Rosedale, Kans. Filed Mar. 11, 1907.

Particular description of goods.—Wheat-Flour.

Ser. No. 25,903. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) FRANK BROS. & CO., New York, N. Y. Filed Mar. 11, 1907.

Particular description of goods.—Knit Underwear.

Ser. No. 25,907. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) THE P. G. MANUFACTURING COMPANY, Homewood, Ill. Filed Mar. 11, 1907.

Particular description of goods.—Golf Clubs and Implements and Parts Thereof.

Ser. No. 25,922. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) FLEISHMAN, MORRIS & CO., Richmond, Va. Filed Mar. 12, 1907. Used ten years.

"OLD VIRGINIA"

Particular description of goods.—Leather Shoes.

Ser. No. 25,935. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) THE ULLMAN-EINSTEIN CO., Cleveland, Ohio. Filed Mar. 12, 1907.

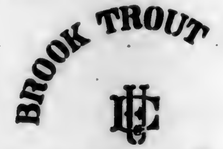

Particular description of goods.—Brandy, Rum, and Gin.

Ser. No. 25,944. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) TOCH BROTHERS, New York, N. Y. Filed Mar. 13, 1907.

Particular description of goods.—Scenic and Fresco Colors.

Ser. No. 25,947. (CLASS 47. CONFECTIONERY.) BALDUIN EMIL ENGE, Oberlössnitz, near Dresden, Germany. Filed Mar. 13, 1907.

Kakaolate

Particular description of goods.—Cocoa, Chocolate, and Preparations Thereof.

Ser. No. 25,949. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) THE FISK RUBBER CO., Chicopee Falls, Mass. Filed Mar. 13, 1907.

NEW DEPARTURE

Particular description of goods.—Pneumatic Tires.

Ser. No. 25,950. (CLASS 54. SEA FOODS.) SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Mar. 13, 1907.

MORNING GLORY

Particular description of goods.—Canned Salmon.

Ser. No. 25,965. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) L. & E. STIRN, New York, N. Y. Filed Mar. 14, 1907.

LA MARQUISE

Particular description of goods.—Ribbons.

Ser. No. 25,966. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) L. & E. STIRN, New York, N. Y. Filed Mar. 14, 1907.

Particular description of goods.—Ribbons.

Ser. No. 25,969. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) JAMISON BROS. & JOHNTZ BAKERS' SUPPLY CO., Kansas City, Mo. Filed Mar. 14, 1907.

KA-CI-MO

Particular description of goods.—Flavoring Extracts, Canned Fruits, Pie-Fillings, and Glucose Jelly Compound.

Ser. No. 25,975. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) HOOD RUBBER COMPANY, East Water Town, and Boston, Mass. Filed Mar. 14, 1907.

SKIPPER

Particular description of goods.—Rubber Boots and Shoes.

Ser. No. 25,976. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) THE LUNKENHEIMER COMPANY, Cincinnati, Ohio. Filed Mar. 14, 1907.

JUNIOR

Particular description of goods.—Lubricators.

Ser. No. 25,977. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) THE LUNKENHEIMER COMPANY, Cincinnati, Ohio. Filed Mar. 14, 1907.

SENIOR

Particular description of goods.—Lubricators.

TRADE-MARKS

REGISTERED APRIL 9, 1907.

61,798. SANDPAPERS, GARNET-PAPERS, EMERY A-PERS, AND EMERY-CLOTHS. AMERICAN GLUE COMPANY, Boston, Mass.

Filed December 3, 1906. Serial No. 23,742. PUBLISHED FEBRUARY 12, 1907.

61,799. HONES FOR RAZORS AND OTHER EDGED TOOLS. R. E. BRACKETT & Co., Lansing, Mich.

Filed September 20, 1905. Serial No. 12,805. PUBLISHED FEBRUARY 12, 1907.

61,800. GAS-BURNERS OF ORDINARY METAL. GEO. BRAY & Co. LTD., Leeds, England.

Filed September 26, 1905. Serial No. 13,022. PUBLISHED FEBRUARY 12, 1907.

61,801. GAS-BURNERS OF ORDINARY METAL. GEO. BRAY & Co. LTD., Leeds, England.

Filed September 26, 1905. Serial No. 13,023. PUBLISHED FEBRUARY 12, 1907.

61,802. METAL GAS-BURNERS. GEO. BRAY & Co. LTD., Leeds, England.

Filed September 26, 1905. Serial No. 13,024. PUBLISHED FEBRUARY 12, 1907.

61,803. GAS-BURNERS OF ORDINARY METAL. GEO. BRAY & Co. LTD., Leeds, England.

Filed September 26, 1905. Serial No. 13,025. PUBLISHED FEBRUARY 12, 1907.

61,804. GAS-BURNERS OF ORDINARY METAL. GEO. BRAY & Co. LTD., Leeds, England.

Filed September 26, 1905. Serial No. 13,026. PUBLISHED FEBRUARY 12, 1907.

61,805. GAS-BURNERS OF ORDINARY METAL. GEO. BRAY & Co. LTD., Leeds, England.

Filed September 26, 1905. Serial No. 13,027. PUBLISHED FEBRUARY 12, 1907.

61,806. OILS AND GREASES FOR GAS-ENGINES AND AUTOMOBILES. HAVEMEYER OIL COMPANY, New York, N. Y.

Filed December 8, 1906. Serial No. 23,890. PUBLISHED FEBRUARY 12, 1907.

61,807. LUBRICATING-OILS, ENGINE-OILS, CYLINDER-OIL, AND MINERS' OIL. GEO. P. JONES, St. Louis, Mo.

Filed December 3, 1906. Serial No. 23,734. PUBLISHED FEBRUARY 12, 1907.

61,808. MIXED PAINTS. THE KNICKERBOCKER PAINT COMPANY, New York, N. Y.

Filed December 12, 1906. Serial No. 24,000. PUBLISHED FEBRUARY 12, 1907.

61,809. RAZOR-PASTE. JOHN H. LEEK, New York, N. Y.

Filed January 18, 1907. Serial No. 24,752. PUBLISHED FEBRUARY 12, 1907.

61,810. CIGARS. M. W. DIFFLEY, INC., Chicago, Ill.

Filed May 23, 1905. Serial No. 6,406. PUBLISHED FEBRUARY 12, 1907.

61,811. VARNISH-STAINS, PRIMING, AND FILLERS. THE MARTIN-SENOUR CO., Chicago, Ill.

Filed December 22, 1906. Serial No. 24,229. PUBLISHED FEBRUARY 12, 1907.

61,812. LUBRICATING OILS AND GREASES. MUTUAL AUTO ACCESSORIES CO. OF AMERICA, New York, N. Y.

Filed January 19, 1907. Serial No. 24,774. PUBLISHED FEBRUARY 12, 1907.

61,813. VARNISHES, STAINS, JAPANS, SURFACERS, AND INTERIOR AND EXTERIOR FINISHES. NOAKE-WHEELER-CLOUGH COMPANY, Chicago, Ill.

Filed August 25, 1905. Serial No. 12,001. PUBLISHED FEBRUARY 12, 1907.

61,814. OIL FOR LUBRICATING, CLEANING, AND POLISHING PURPOSES, AND FOR PREVENTING RUST. WILLIAM F. NYE, New Bedford, Mass.

Filed January 15, 1907. Serial No. 24,661. PUBLISHED FEBRUARY 12, 1907.

61,815. CIGARS, CHEROOTS, AND LITTLE CIGARS. LEO SCHWAGER & Co., Brooklyn, N. Y.

Filed January 18, 1907. Serial No. 24,755. PUBLISHED FEBRUARY 12, 1907.

61,816. CERTAIN LUBRICANTS. THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich.

Filed January 19, 1907. Serial No. 24,765. PUBLISHED FEBRUARY 12, 1907.

61,817. CHOCOLATE-CREAM CANDY. WILLIAM H. BATMAN, Topeka, Kans.

Filed September 22, 1905. Serial No. 12,905. PUBLISHED FEBRUARY 12, 1907.

61,818. LEATHER-DRESSINGS. THE FRANK MILLER CO., New York, N. Y.

Filed February 24, 1906. Serial No. 17,335. PUBLISHED AUGUST 14, 1906.

61,819. SOAPS. MEXICAN AMOLE SOAP CO., Peoria, Ill.

Filed July 24, 1905. Serial No. 10,766. PUBLISHED FEBRUARY 12, 1907.

61,820. DENTAL WAX. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayers, Argentina, Berlin, Germany, and St. Petersburg, Russia.

Filed July 26, 1905. Serial No. 10,845. PUBLISHED FEBRUARY 12, 1907.

61,821. DENTAL ALLOYS. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia.

Filed September 21, 1905. Serial No. 12,861. PUBLISHED FEBRUARY 12, 1907.

61,822. COTTON-SEED OILS. THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La.

Filed July 27, 1905. Serial No. 10,889. PUBLISHED FEBRUARY 12, 1907.

61,823. CORNMEAL. J. R. THOMAS' SONS, Youngstown, Ohio.

Filed June 22, 1906. Serial No. 20,482. PUBLISHED JANUARY 1, 1907.

61,824. PANCAKE-FLOUR. THE TOWLE SYRUP COMPANY, St. Paul, Minn.

Filed June 29, 1905. Serial No. 9,383. PUBLISHED FEBRUARY 12, 1907.

61,825. OLIVES. AMERICAN OLIVE COMPANY, Los Angeles, Cal.

Filed August 17, 1906. Serial No. 21,631. PUBLISHED FEBRUARY 12, 1907.

61,826. SYRUPS. BEACH AND CLARRIDGE COMPANY, Boston, Mass.

Filed October 18, 1906. Serial No. 22,780. PUBLISHED FEBRUARY 12, 1907.

61,827. JAMS. BEACH AND CLARRIDGE COMPANY, Boston, Mass.

Filed October 18, 1906. Serial No. 22,781. PUBLISHED FEBRUARY 12, 1907.

61,828. CANNED SALMON. HANHAM & Co., Port Elizabeth, Cape Colony, South Africa.

Filed September 8, 1906. Serial No. 21,929. PUBLISHED FEBRUARY 12, 1907.

61,829. SOAP. COLGATE & Co., New York, N. Y.
Filed January 18, 1907. Serial No. 24,735. PUBLISHED FEBRUARY 12, 1907.

61,830. OLIVES, OLIVE-OIL, AND DRIED AND EVAPORATED FRUITS. THE F. C. BUSHNELL CO., New Haven, Conn.
Filed December 13, 1906. Serial No. 23,977. PUBLISHED FEBRUARY 12, 1907.

61,831. CARAMELS. PAUL F. BEICH CO., Bloomington, Ill.
Filed October 1, 1906. Serial No. 22,396. PUBLISHED FEBRUARY 12, 1907.

61,832. CERTAIN FOODS. ST. LOUIS SYRUP & PRESERVING COMPANY, St. Louis, Mo.
Filed January 12, 1907. Serial No. 24,595. PUBLISHED FEBRUARY 12, 1907.

61,833. HORSE-RADISH, MUSTARD, AND HORSE-RADISH MUSTARD. THE UNITED STATES HORSE-RADISH COMPANY, Saginaw, Mich.
Filed December 7, 1906. Serial No. 23,864. PUBLISHED FEBRUARY 12, 1907.

61,834. LOCKS AND PARTS THEREOF AND KEYS. THE YALE & TOWNE MFG. CO., Stamford, Conn.
Filed January 21, 1907. Serial No. 24,788. PUBLISHED FEBRUARY 19, 1907.

61,835. CHAIN-BLOCKS. THE YALE & TOWNE MFG. CO., Stamford, Conn.
Filed January 21, 1907. Serial No. 24,789. PUBLISHED FEBRUARY 19, 1907.

61,836. CHAIN-BLOCKS. THE YALE & TOWNE MFG. CO., Stamford, Conn.
Filed January 21, 1907. Serial No. 24,790. PUBLISHED FEBRUARY 19, 1907.

61,837. LOCKS AND PARTS THEREOF AND KEYS THEREFOR. THE YALE & TOWNE MFG. CO., Stamford, Conn.
Filed January 21, 1907. Serial No. 24,792. PUBLISHED FEBRUARY 19, 1907.

61,838. LOCKS, PARTS THEREOF, AND KEYS. THE YALE & TOWNE MFG. CO., Stamford, Conn.
Filed January 21, 1907. Serial No. 24,793. PUBLISHED FEBRUARY 19, 1907.

61,839. ALL KINDS OF CANDIES. ADVANCE NOVELTY COMPANY, New York, N. Y.
Filed March 20, 1906. Serial No. 18,061. PUBLISHED FEBRUARY 12, 1907.

61,840. TOASTED CORN-FLAKES. AMERICAN HOMINY COMPANY, Indianapolis, Ind.
Filed December 13, 1906. Serial No. 23,983. PUBLISHED FEBRUARY 12, 1907.

61,841. SEWING-COTTON OR COTTON THREAD. THE CLARK THREAD CO., Newark, N. J.
Filed October 17, 1905. Serial No. 13,676. PUBLISHED FEBRUARY 12, 1907.

61,842. PRINTED BOOKS OF FICTION. CUPPLES & LEON, New York, N. Y.
Filed December 10, 1906. Serial No. 23,899. PUBLISHED FEBRUARY 12, 1907.

61,843. LUMBER AND TIMBER. CHARLES ESTE, Philadelphia, Pa.
Filed March 20, 1906. Serial No. 18,356. PUBLISHED FEBRUARY 12, 1907.

61,844. CANNED SALMON. THE F. C BUSHNELL CO., New Haven, Conn.
Filed December 13, 1906. Serial No. 23,979. PUBLISHED FEBRUARY 12, 1907.

61,845. RAISINS. GRIFFIN & SKELLEY CO., San Francisco, Cal.
Filed October 20, 1906. Serial No. 22,969. PUBLISHED FEBRUARY 12, 1907.

61,846. CERTAIN MEDICAL AND SURGICAL APPLIANCES. WILLIAM READ & SONS, Boston, Mass.
Filed December 4, 1906. Serial No. 23,750. PUBLISHED FEBRUARY 12, 1907.

61,847. HOSE AND MACHINERY PACKINGS. REVERE RUBBER COMPANY, Boston, Mass.
Filed December 6, 1906. Serial No. 23,808. PUBLISHED FEBRUARY 12, 1907.

61,848. COTTON TWINE. JAMES E. REYNOLDS, New York, N. Y.
Filed December 9, 1905. Serial No. 15,210. PUBLISHED FEBRUARY 12 1907.

61,849. COTTON-SEED OILS. THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La.
Filed July 27, 1905. Serial No. 10,891. PUBLISHED FEBRUARY 12, 1907.

61,850. CIRCULARS, PAMPHLETS, AND LIBRETTOS. STEINWAY & SONS, New York, N. Y.
Filed December 14, 1906. Serial No. 24,031. PUBLISHED FEBRUARY 12, 1907.

61,851. TOASTED CORN-FLAKES. AMERICAN HOMINY COMPANY, Indianapolis, Ind.
Filed December 13, 1906. Serial No. 23,984. PUBLISHED FEBRUARY 12, 1907.

61,852. WIRE BRUSHES. AMERICAN WIRE BRUSH COMPANY, New York, N. Y.
Filed January 15, 1907. Serial No. 24,653. PUBLISHED FEBRUARY 12, 1907.

61,853. HIGH EXPLOSIVES. FRANK H. BRIGGS. Painesville, Ohio.
Filed January 10, 1907. Serial No. 24,553. PUBLISHED FEBRUARY 12, 1907.

61,854. FERTILIZERS. CRAVEN CHEMICAL COMPANY, Newbern, N. C.
Filed January 5, 1907. Serial No. 24,462. PUBLISHED FEBRUARY 12, 1907.

61,855. WHEAT-FLOUR. EAGLE ROLLER MILL COMPANY, New Ulm, Minn.
Filed January 15, 1907. Serial No. 24,634. PUBLISHED FEBRUARY 12, 1907.

61,856. WHEAT-FLOUR. EAGLE ROLLER MILL COMPANY, New Ulm, Minn.
Filed January 15, 1907. Serial No. 24,635. PUBLISHED FEBRUARY 12, 1907.

61,857. RAISINS. GRIFFIN & SKELLEY CO., San Francisco, Cal.
Filed October 29, 1906. Serial No. 22,968. PUBLISHED FEBRUARY 12, 1907.

61,858. ARTIFICIAL FUEL. GEORGE W. HERBEIN, Seattle, Wash.
Filed November 1, 1906. Serial No. 23,036. PUBLISHED FEBRUARY 12, 1907.

61,859. CIGARETTE-PAPER. ALEXANDER A. KOHÁRY, Pittsburg, Pa.
Filed January 10, 1907. Serial No. 24,558. PUBLISHED FEBRUARY 12, 1907.

61,860. CANNED FISH. CHARLES E. MOODY & Co., Boston, Mass.
Filed January 18, 1907. Serial No. 24,739. PUBLISHED FEBRUARY 12, 1907.

61,861. HOSE AND MACHINERY PACKINGS. REVERE RUBBER COMPANY, Boston, Mass.
Filed January 7, 1907. Serial No. 24,501. PUBLISHED FEBRUARY 12, 1907.

61,862. TABLE-SYRUPS, MOLASSES, SORGHUM, AND MAPLE-SYRUP. ST. LOUIS SYRUP & PRESERVING COMPANY, St. Louis, Mo.
Filed January 12, 1907. Serial No. 24,594. PUBLISHED FEBRUARY 12, 1907.

61,863. LEATHER BOOTS AND SHOES. A. W. TEDCASTLE & Co., Boston, Mass.
Filed January 17, 1907. Serial No. 24,725. PUBLISHED FEBRUARY 12, 1907.

61,864. COFFEE AND TEA. W. S. QUINBY COMPANY, Boston, Mass.
Filed December 31, 1906. Serial No. 24,260. PUBLISHED FEBRUARY 12, 1907.

61,865. MONTHLY NEWSPAPER. JEFFERSON P. WEISS Emporia, Va.
Filed January 14, 1907. Serial No. 24,630. PUBLISHED FEBRUARY 12, 1907.

61,866. MEDICATED TOILET SOAP. GEORGE C. WILSON, Tyrone, Pa.
Filed December 22, 1906. Serial No. 24,217. PUBLISHED FEBRUARY 12, 1907.

61,867. RELISH WRIGHT SMITH M'F'G. CO., St. Louis, Mo.
Filed September 4, 1906. Serial No. 21,890. PUBLISHED FEBRUARY 12, 1907.

61,868. CHAMPAGNE. BLONDEAU, BERQUE & Co., Rheims, France.
Filed January 24, 1906. Serial No. 16,452. PUBLISHED OCTOBER 9, 1906.

61,869. HOSIERY AND KNIT GLOVES. CARLETON DRY GOODS COMPANY, St. Louis, Mo.
Filed June 26, 1905. Serial No. 9,025. PUBLISHED FEBRUARY 12, 1907.

61,870. CORSETS, BUSTLES, AND BUST-FORMS. CORONET CORSET COMPANY, Jackson, Mich.
Filed January 19, 1906. Serial No. 16,321. PUBLISHED FEBRUARY 12 1907.

61,871. WHEAT-FLOUR. EAGLE ROLLER MILL COMPANY, New Ulm, Minn.
Filed January 15, 1907. Serial No. 24,636. PUBLISHED FEBRUARY 12, 1907.

61,872. INSECTICIDES. ERNST FICHTENAU, Friedeck, Austria-Hungary.
Filed January 14, 1907. Serial No. 24,617. PUBLISHED FEBRUARY 12, 1907.

61,873. INCANDESCENT ELECTRIC LAMPS. THE FRANKLIN ELECTRIC MFG. CO., Hartford, Conn., and New York, N. Y.
Filed January 31, 1906. Serial No. 16,648. PUBLISHED FEBRUARY 12, 1907.

61,874. CIDER. GUSTAV B. GEHLERT, Benton Harbor, Mich.
Filed June 26, 1905. Serial No. 9,074. PUBLISHED FEBRUARY 12, 1907.

61,875. WHEAT-FLOUR. GEORGE URBAN MILLING COMPANY, Buffalo, N. Y.
Filed January 16, 1907. Serial No. 24,668. PUBLISHED FEBRUARY 12, 1907.

61,876. WHEAT-FLOUR. GEORGE URBAN MILLING COMPANY, Buffalo, N. Y.
Filed January 16, 1907. Serial No. 24,669. PUBLISHED FEBRUARY 12, 1907.

61,877. WHEAT-FLOUR. GEORGE URBAN MILLING COMPANY, Buffalo, N. Y.
Filed January 16, 1907. Serial No. 24,670. PUBLISHED FEBRUARY 12, 1907.

61,878. WHEAT-FLOUR. GEORGE URBAN MILLING COMPANY, Buffalo, N. Y.
Filed January 16, 1907. Serial No. 24,671. PUBLISHED FEBRUARY 12, 1907.

61,879. GLASS CHIMNEYS, LANTERN-GLOBES, AND REFLECTORS. GILL BROTHERS COMPANY, Steubenville, Ohio.
Filed January 17, 1907. Serial No. 24,723. PUBLISHED FEBRUARY 12, 1907.

61,880. METAL COMPOUNDS FOR USE IN THE PROCESS OF WELDING METALS. GOLDSCHMIDT THERMIT CO., New York, N. Y.
Filed April 9, 1906. Serial No. 18,635. PUBLISHED FEBRUARY 12, 1907.

61,881. KEY-RINGS AND KEY-CHAINS. L. HUET & E. LIGIER, Paris, France.
Filed October 18, 1905. Serial No. 13,723. PUBLISHED FEBRUARY 12, 1907.

61,882. KEY-RINGS AND KEY-CHAINS. L. HUET & E. LIGIER, Paris, France.
Filed October 18, 1905. Serial No. 13,724. PUBLISHED FEBRUARY 12, 1907.

61,883. BICYCLES, VELOCIPEDES, AND MOTOR-CYCLES THE MIAMI CYCLE AND MFG. CO., Middletown, Ohio.
Filed April 13, 1906. Serial No. 18,761. PUBLISHED FEBRUARY 12, 1907.

61,884 CERTAIN ELECTRICAL APPARATUS. THE NORTH ELECTRIC COMPANY, Cleveland, Ohio.
Filed May 9, 1906. Serial No. 19,395. PUBLISHED DECEMBER 25, 1906.

61,885. NATURAL LITHIA SPRING WATER. LOUIS M. PARK, Minneapolis, Minn.
Filed February 17, 1906. Serial No. 17,145. PUBLISHED JUNE 19, 1906.

61,886. COATS, PANTS, AND VESTS. ROSENBAUM CO., Pittsburg, Pa.
Filed January 14, 1907. Serial No. 24,626. PUBLISHED FEBRUARY 12, 1907.

61,887. CORSET-STIFFENERS. WEINGARTEN BROS. INC., New York, N. Y.
Filed December 19, 1906. Serial No. 24,155. PUBLISHED FEBRUARY 12, 1907.

61,888. REAMERS AND TWIST-DRILLS. THE WHITMAN & BARNES MANUFACTURING CO., Akron, Ohio.
Filed December 14, 1906. Serial No. 24,017. PUBLISHED FEBRUARY 12, 1907.

61,889. CERTAIN BEVERAGES. THE BLUE RIBBON MINING, MILLING, AND INVESTMENT CO., Idaho Springs and Denver, Colo.
Filed December 13, 1906. Serial No. 23,985. PUBLISHED FEBRUARY 12, 1907.

61,890. WHISKY. BLUTHENTHAL & BICKART, Atlanta, Ga.
Filed January 18, 1907. Serial No. 24,746. PUBLISHED FEBRUARY 12, 1907.

61,891. RINGS, BROOCHES, AND BADGES. CARL ENTENMANN JEWELRY COMPANY, Los Angeles, Cal.
Filed October 24, 1906. Serial No. 22,891. PUBLISHED FEBRUARY 12, 1907.

61,892. METALLIC BOTTLE-STOPPER. THE CROWN CORK AND SEAL CO. OF BALTIMORE CITY, Baltimore, Md.
Filed April 3, 1905. Serial No. 294. PUBLISHED FEBRUARY 12, 1907.

61,893. COTTON DUCK. DENISON COTTON MILL CO., Denison, Tex.
Filed December 6, 1906. Serial No. 23,800. PUBLISHED FEBRUARY 12, 1907.

61,894. WHISKY. FRIEDMAN, KEILER & Co., Paducah, Ky.
Filed January 18, 1907. Serial No. 24,750. PUBLISHED FEBRUARY 12, 1907.

61,895. WHISKY. THE HENRY M. RUBEL COMPANY, Cincinnati, Ohio.
Filed December 3, 1906. Serial No. 23,724. PUBLISHED FEBRUARY 12, 1907.

61,896. WHISKY. THE HENRY M RUBEL COMPANY, Cincinnati, Ohio.
Filed December 3, 1906. Serial No. 23,726. PUBLISHED FEBRUARY 12, 1907.

61,897. POLISHED-STEEL BUTTONS. L. HUET AND E. LIGIER, Paris, France.
Filed January 16, 1907. Serial No. 24,677. PUBLISHED FEBRUARY 12, 1907.

61,898. BUTTONS. L. HUET AND E. LIGIER, Paris, France.
Filed January 16, 1907. Serial No. 24,678 PUBLISHED FEBRUARY 12, 1907.

61,899. GIN, WHISKY, AND BRANDY. I. L. LAMM CO., Superior, Wis.
Filed January 18, 1907. Serial No. 24,732. PUBLISHED FEBRUARY 12, 1907.

61,900. GIN, WHISKY, AND BRANDY. I. L. LAMM CO., Superior, Wis.
Filed January 18, 1907. Serial No. 24,733. PUBLISHED FEBRUARY 12, 1907.

61,901. BEER. THE INDIANAPOLIS BREWING COMPANY, Indianapolis, Ind.
Filed August 16, 1906. Serial No. 21,619. PUBLISHED FEBRUARY 12, 1907.

61,902. LADIES' AND CHILDREN'S FELT AND STRAW HATS. KING, BRINSMADE MERCANTILE COMPANY, St. Louis, Mo.
Filed April 14, 1905. Serial No. 1,547 PUBLISHED FEBRUARY 12, 1907.

61,903 BICYCLES, VELOCIPEDES, AND MOTOR-CYCLES. THE MIAMI CYCLE AND MFG. CO., Middletown, Ohio.
Filed April 13, 1906. Serial No. 18,762. PUBLISHED FEBRUARY 12, 1907.

61,904. SAWS, DIE-STOCKS, SCREW-PLATES, AND PIPE-CUTTERS. NEUSS. HESSLEIN & Co., New York, N. Y.
Filed October 23, 1906. Serial No. 22,847. PUBLISHED FEBRUARY 12, 1907.

61,905. WHEAT-FLOUR. NEW PRAGUE FLOURING MILL COMPANY, New Prague, Minn.
Filed January 18, 1907. Serial No. 24,741. PUBLISHED FEBRUARY 12, 1907

61,906. WHEAT-FLOUR. NEW PRAGUE FLOURING MILL COMPANY, New Prague, Minn.
Filed January 18, 1907. Serial No. 24,742. PUBLISHED FEBRUARY 12, 1907.

61,907. SPRING-WATER. LOUIS M. PARK, Minneapolis, Minn.
Filed July 5, 1906. Serial No. 20,746. PUBLISHED OCTOBER 2, 1906.

61,908. WHEAT BREAKFAST-FOOD. PILLSBURY-WASHBURN FLOUR MILLS CO., LTD., Minneapolis, Minn.
Filed November 13, 1906. Serial No. 23,301. PUBLISHED FEBRUARY 12, 1907.

61,909. WHEAT BREAKFAST-FOOD. PILLSBURY-WASHBURN FLOUR MILLS CO., LTD., Minneapolis, Minn.
Filed November 13, 1906. Serial No. 23,302. PUBLISHED FEBRUARY 12, 1907.

61,910. CLOTHING OF KNITTED OR NETTED MATERIALS. WILLIAM READ & SONS, Boston, Mass.
Filed January 17, 1907. Serial No. 24,724. PUBLISHED FEBRUARY 12, 1907.

61,911. COTTON PIECE GOODS. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed November 20, 1906. Serial No. 23,502. PUBLISHED FEBRUARY 12, 1907.

61,912. SILK PIECE GOODS. SAUQUOIT SILK MANUFACTURING COMPANY, Philadelphia, Pa.
Filed July 21, 1906. Serial No. 21,070. PUBLISHED FEBRUARY 12, 1907.

61,913. VEILINGS MADE OF WOVEN FABRIC. WEIL BROTHERS, New York, N. Y.
Filed January 17, 1907. Serial No. 24,712. PUBLISHED FEBUARY 12, 1907.

61,914. VEILINGS MADE OF WOVEN FABRIC. WEIL BROTHERS, New York, N. Y.
Filed January 17, 1907. Serial No. 24,713. PUBLISHED FEBRUARY 12, 1907.

61,915. WHEAT-FLOUR. WELLS FLOUR MILLING COMPANY, Wells, Minn.
Filed January 18, 1907. Serial No. 24,743. PUBLISHED FEBRUARY 12, 1907.

61,916. WHEAT-FLOUR. WELLS FLOUR MILLING COMPANY, Wells, Minn.
Filed January 18, 1907. Serial No. 24,744. PUBLISHED FEBRUARY 12, 1907.

61,917. WHISKY. WEST OVERTON DISTILLING CO., Pittsburg, Pa.
Filed January 18, 1907. Serial No. 24,757. PUBLISHED FEBRUARY 12, 1907.

61,918. SHOE-PINCERS AND SHOE-JACKS. FRANK W. WHITCHER, Boston, Mass.
Filed October 22, 1906. Serial No. 22,843. PUBLISHED FEBRUARY 12, 1907.

61,919. TWIST-DRILLS AND REAMERS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.
Filed December 14, 1906. Serial No. 24,016. PUBLISHED FEBRUARY 12, 1907.

61,920. PHOTOGRAPHIC DEVELOPERS. ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany.
Filed September 7, 1906. Serial No. 13,230. PUBLISHED FEBRUARY 12, 1907.

61,921. PREPARATION FOR THE CURE OF DYSPEPSIA. BOOTH'S HYOMEI COMPANY, Buffalo, N. Y.
Filed December 26, 1906. Serial No. 24,298. PUBLISHED FEBRUARY 12, 1907.

61,922. DISINFECTANTS, DEODORIZERS, AND GERMICIDES. AMÉDÉE CASTAING, New York, N. Y.
Filed November 30, 1906. Serial No. 23,680. PUBLISHED FEBRUARY 12, 1907.

61,923. LAP-ROBES. LOUIS DUSENBURY, New York, N. Y.
Filed November 30, 1906. Serial No. 23,683. PUBLISHED FEBRUARY 12 1907.

61,924. CERTAIN MEDICINAL PREPARATIONS. THE ELI LILLY & COMPANY, Indianapolis, Ind.
Filed December 18, 1906. Serial No. 24,117. PUBLISHED FEBRUARY 12, 1907.

61,925. CERTAIN MEDICINAL PREPARATIONS. JOHN FLETCHER FAIRCHILD, Mount Vernon, N. Y.
Filed December 15, 1906. Serial No. 24,064. PUBLISHED FEBRUARY 12, 1907.

61,926. REMEDIES FOR AFFECTIONS OF THE THROAT, CHEST, AND LUNGS. FOLEY & COMPANY, Chicago, Ill.
Filed April 11, 1905. Serial No. 1,098. PUBLISHED MAY 15, 1906.

61,927. ANTISEPTICS, DISINFECTANTS, DEODORIZERS, ANIMAL POISONS, AND INSECTICIDES. KATHAIRO CHEMICAL CO., New York, N. Y.
Filed April 4, 1906. Serial No. 18,490. PUBLISHED FEBRUARY 12, 1907.

61,928. FELT, FUR, CLOTH, AND STRAW HATS AND CAPS. MENDEL, WEINSTOCK & COMPANY, Louisville, Ky.
Filed January 5, 1907. Serial No. 24,468. PUBLISHED FEBRUARY 12, 1907.

61,929. WHEAT-FLOUR. MONTE VISTA MILLING & ELEVATOR COMPANY, Monte Vista, Colo.
Filed December 24, 1906. Serial No. 24,265. PUBLISHED FEBRUARY 12, 1907.

61,930. BITTERS. WM. H. MULLER, New York, N. Y.
Filed October 5, 1905. Serial No. 13,322. PUBLISHED FEBRUARY 12, 1907.

61,931. WOOLEN FABRICS IN THE PIECE. PHOENIX WOOLEN CO., Stafford, Conn.
Filed January 11, 1907. Serial No. 24,575. PUBLISHED FEBRUARY 12, 1907.

61,932. CORSETS AND CORSET-WAISTS. PURITAN CORSET CO., Kalamazoo, Mich.
Filed December 20, 1906. Serial No. 24,171. PUBLISHED FEBRUARY 12, 1907.

61,933. CHEESE MADE FROM COWS' MILK. J. R. THOMAS' SONS Youngstown, Ohio.
Filed July 13, 1905. Serial No. 10,248. PUBLISHED AUGUST 21, 1906.

61,934. TONIC. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
Filed August 2, 1905. Serial No. 11,202. PUBLISHED FEBRUARY 12, 1907.

61,935. HAIR-RESTORER. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
Filed October 25, 1905. Serial No. 13,948. PUBLISHED FEBRUARY 12, 1907.

61,936. RADIATORS FOR AUTOMOBILES. THE A-Z. CO., New York, N. Y.
Filed March 14, 1906. Serial No. 17,815. PUBLISHED FEBRUARY 12, 1907.

61,937. CORN AND BUNION PLASTERS. BAUER & BLACK, Chicago, Ill.
Filed January 5, 1907. Serial No. 24,457. PUBLISHED FEBRUARY 12, 1907.

61,938. COTTON SHRUNKS. COLLINS & COMPANY, New York, N. Y.
Filed January 8, 1907. Serial No. 24,509. PUBLISHED FEBRUARY 12, 1907.

61,939. COTTON SHRUNKS. COLLINS & COMPANY, New York, N. Y.
Filed January 8, 1907. Serial No. 24,511. PUBLISHED FEBRUARY 12, 1907.

61,940. ELASTIC WEBBING. GEORGE S. COLTON, Easthampton, Mass.
Filed January 3, 1907. Serial No. 24,370. PUBLISHED FEBRUARY 12, 1907.

61,941. CERTAIN CHEMICAL COMPOUNDS. THE COTTO-WAXO COMPANY, St. Louis, Mo.
Filed September 4, 1906. Serial No. 21,897. PUBLISHED NOVEMBER 6, 1906.

61,942. MACHINE-SIFTERS. THE FRED. J. MEYERS MANUFACTURING COMPANY, Hamilton, Ohio.
Filed January 7, 1907. Serial No. 24,499. PUBLISHED FEBRUARY 12, 1907.

61,943. WHISKY. A. FRIEDMAN & Co., Denver, Colo.
Filed June 15, 1905. Serial No. 8,367. PUBLISHED FEBRUARY 20, 1906.

61,944. CAUSTIC POTASH OR LYE. ELIZA N. HALL, New York, N. Y.
Filed April 24, 1905. Serial No. 2,771. PUBLISHED FEBRUARY 12, 1907.

61,945. TOILET ROUGE. EVA M. HETZEL, Scranton, Pa.
Filed January 7, 1907. Serial No. 24,493. PUBLISHED FEBRUARY 12, 1907.

61,946. MEDICINAL VEHICLE OR CARRIER IN FLUID FORM. JOHN WYETH AND BROTHER, INCORPORATED, Philadelphia, Pa.
Filed August 15, 1906. Serial No. 21,551. PUBLISHED FEBRUARY 12, 1907.

61,947. CRACKERS. JOHNSON EDUCATOR FOOD CO., Boston Mass.
Filed December 31, 1906. Serial No. 24,358. PUBLISHED FEBRUARY 12, 1907.

61,948. SEWING-MACHINES, ATTACHMENTS, STANDS, TABLES, AND COVERS. ALBERT G. MASON, Cleveland, Ohio.
Filed December 29, 1906. Serial No. 24,326. PUBLISHED FEBRUARY 12, 1907.

61,949. HAIR TONICS AND RESTORERS. MILLIGAN & DONOVAN, Kirkwood, Mo.
Filed December 20, 1906. Serial No. 24,170. PUBLISHED FEBRUARY 12, 1907.

61,950. REMEDY FOR SEASICKNESS. JOHN A. NORDIN, Atlantic City, N. J.
Filed March 13, 1906. Serial No. 17,788. PUBLISHED FEBRUARY 12, 1907.

61,951. CERTAIN EDGE-TOOLS. OHIO TOOL COMPANY, Auburn, N. Y., and Columbus, Ohio.
Filed January 2, 1907. Serial No. 24,383. PUBLISHED FEBRUARY 12, 1907.

61,952. WHEAT-FLOUR. PHOENIX MILL CO., Minneapolis, Minn.
Filed December 7, 1905. Serial No. 15,695. PUBLISHED FEBRUARY 6, 1906.

61,953. WHEAT-FLOUR. PHOENIX MILL CO., Minneapolis, Minn.
Filed December 8, 1905. Serial No. 15,696. PUBLISHED FEBRUARY 6, 1906.

61,954. CERTAIN PHARMACEUTICAL PREPARATIONS. THE POMPEIAN MFG. CO., Cleveland, Ohio.
Filed December 11, 1906. Serial No. 23,925. PUBLISHED FEBRUARY 12, 1907.

61,955. CERTAIN MEDICINAL PREPARATION. RADWAY & COMPANY, New York, N. Y.
Filed November 13, 1906. Serial No. 23,306. PUBLISHED FEBRUARY 12, 1907.

61,956. MEDICINES FOR BLOOD DISEASES. JACOB SCHNEIDER & CO., Chicago, Ill.
Filed January 2, 1907. Serial No. 24,394. PUBLISHED FEBRUARY 12, 1907.

61,957. ROLLED OATS. SCHUMACHER CEREAL CO., Riverside, Iowa.
Filed May 14, 1906. Serial No. 19,515. PUBLISHED FEBRUARY 12, 1907.

61,958. TABLETS OR LOZENGES FOR DYSPEPSIA. CHARLES A. SIEGEMUND, Boston, Mass.
Filed April 16, 1906. Serial No. 18,829. PUBLISHED FEBRUARY 12, 1907.

61,959. RICE. SPRAGUE, WARNER & COMPANY, Chicago, Ill.
Filed January 12, 1907. Serial No. 24,605. PUBLISHED FEBRUARY 12, 1907.

61,960. CERTAIN MEDICINAL PREPARATION. FRANZ STOHR, Vienna, Austria-Hungary.
Filed August 29, 1906. Serial No. 21,789. PUBLISHED FEBRUARY 12, 1907.

61,961. CERTAIN MEDICINAL PREPARATIONS. EDWIN D. SUTTON, Millville, N. J.
Filed December 7, 1906. Serial No. 23,863. PUBLISHED FEBRUARY 12, 1907.

61,962. MAPLE-SYRUP AND MOLASSES. THE TOWLE SYRUP COMPANY, St. Paul, Minn.
Filed June 29, 1905. Serial No. 9,380. PUBLISHED FEBRUARY 12, 1907.

61,963. SYRUP. THE TOWLE SYRUP COMPANY, St. Paul, Minn.
Filed June 29, 1905. Serial No. 9,381. PUBLISHED FEBRUARY 12, 1907.

61,964. SYRUP. THE TOWLE SYRUP COMPANY, St. Paul, Minn.
Filed June 29, 1905. Serial No. 9,382. PUBLISHED FEBRUARY 12, 1907.

61,965. CARDBOARDS AND BOX-BOARDS. UNITED BOX BOARD & PAPER COMPANY, New York, N. Y.
Filed December 8, 1906. Serial No. 23,888. PUBLISHED FEBRUARY 12, 1907.

61,966. MEDICINAL DIGESTIVE PREPARATIONS. HENRY SOLOMON WELLCOME, London, England.
Filed August 11, 1906. Serial No. 21,494. PUBLISHED FEBRUARY 12, 1907.

61,967. CERTAIN CUTTING-TOOLS. WIEBUSCH & HILGER LIMITED, New York, N. Y.
Filed January 10, 1907. Serial No. 24,565. PUBLISHED FEBRUARY 12, 1907.

61,968. UNFERMENTED GRAPE-JUICE. WILSON FRUIT JUICE CO., Lawton, Mich.
Filed December 13, 1906. Serial No. 23,989. PUBLISHED FEBRUARY 12, 1907.

61,969. HAIR-DRESSING AND DANDRUFF-REMOVER. WM. B. RIKER & SON COMPANY, New York, N. Y.
Filed June 7, 1906. Serial No. 20,126. PUBLISHED AUGUST 21, 1906.

LABELS

REGISTERED APRIL 9, 1907.

13,454.—*Title:* "WEDGWOOD CIGARS." (For Cigars.) STEWART BROTHERS COMPANY, Omaha, Nebr. Filed January 28, 1907.

13,455.—*Title:* "EL ORIHENAL." (For Cigars.) J. C. JOHNSTON, Chicago, Ill. Filed March 12, 1907.

13,456.—*Title:* "PUROCK GINGER ALE." (For Ginger-Ale.) THE CHARLES E. HIRES COMPANY, Philadelphia, Pa. Filed March 20, 1907.

13,457.—*Title:* "EXQUISITE." (For Malt Liquors and Dark Beers.) FRED FEIL BREWING COMPANY, Philadelphia, Pa. Filed March 16, 1907.

13,458.—*Title:* "DR. FRENCH'S-QUINSY KIT." (For Medicine.) WALLACE F. DUNN, Minneapolis, Minn. Filed March 14, 1907.

13,459.—*Title:* "DR. FRENCH'S-QUINSY KIT." (For Medicine.) WALLACE F. DUNN, Minneapolis, Minn. Filed March 14, 1907.

13,460.—*Title:* "DR. FRENCH'S-QUINSY KIT." (For Medicine.) WALLACE F. DUNN, Minneapolis, Minn. Filed March 14, 1907.

13,461.—*Title:* "McKAY'S KING OF OILS." (For a Medical Composition.) THOMAS A. McKAY, Bisbee, N. D. Filed March 18, 1907.

13,462.—*Title:* "BAYLE'S HIGH GRADE HORSERADISH CATSUP." (For Catsup.) GEO. A. BAYLE, St. Louis, Mo. Filed March 18, 1907.

13,463.—*Title:* "'VIRGINIA CURED' BRAND HAMS AND BACON DRESSED MEATS." (For Hams, Bacon, and Dressed Meats.) JOHN L. C. MONTAGUE, Christiansburg, Va. Filed March 7, 1907.

13,464.—*Title:* "MA'S FAVORITE." (For Starch.) ALBERT F. HOGUE, Lowell, Mass. Filed March 18, 1907.

13,465.—*Title:* "PREMIUM B-I-G 5-3 CORD." (For Thread and Spool-Cotton.) THE BULLARD THREAD CO., Holyoke, Mass. Filed March 13, 1907.

13,466.—*Title:* "CONTINENT BRAND." (For Hats.) JONES PAYNE HAT CO., St. Joseph, Mo. Filed March 15, 1907.

13,467.—*Title:* "THE GRADUATE." (For Clothing.) BECKER, MAYER & CO., Chicago, Ill. Filed March 20, 1907.

13,468.—*Title:* "KAMPUS KLOTHES." (For Young Men's Clothing.) HENRY J. BROCK, Rochester, N. Y. Filed March 19, 1907.

PRINTS

REGISTERED APRIL 9, 1907.

1,950.—*Title:* "SCOTCH MINTS." (For Candy.) A. SLAUSON & Co., New York, N. Y. Filed March 20, 1907.

1,951.—*Title:* "ANTIPHLOGISTINE GIRL # 7." (For Medicine.) THE DENVER CHEMICAL MFG. CO., Denver, Colo. Filed March 15, 1907.

1,952.—*Title:* "ANTIPHLOGISTINE GIRL # 6." (For Medicine.) THE DENVER CHEMICAL MFG. CO., Denver, Colo. Filed March 15, 1907

1,953.—*Title:* "ANTIPHLOGISTINE GIRL # 5." (For Medicine.) THE DENVER CHEMICAL MFG. CO., Denver, Colo. Filed March 15, 1907.

1,954.—*Title:* "PRATTS GERM-A-THOL, SANITARY DISINFECTANT." (For a Disinfectant.) PRATT FOOD CO., Philadelphia, Pa. Filed March 14, 1907.

1,955.—*Title:* "MEN'S AND BOYS' APPAREL." (For Men's and Boys' Apparel.) H. C. LITTON, Chicago, Ill. Filed March 13, 1907.

1,956.—*Title:* "PERRY'S FASHIONS FOR SPRING, 1907, SHEET NO. 2." (For Men's Clothing.) PERRY & Co., Philadelphia, Pa. Filed March 14, 1907.

1,957.—*Title:* "STICK TO THE SIGN OF THE FISH." (For Oiled Clothing.) A. J. TOWER CO., Boston, Mass. Filed February 20, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

DIXON v. McELROY.

Decided January 11, 1907.

INTERFERENCE—PRELIMINARY STATEMENT—AMENDMENT OF.

Where D. was notified that his preliminary statement was indefinite and should be amended, but no amendment was made, and the present motion was not brought until eight months later and after testimony had been taken by D., and was inspired by a statement placed on the record by his opponent, *Held* that the motion was properly denied in the absence of a showing in excuse for the long delay in bringing the motion or the failure to respond to the requirement for a more definite statement or of a satisfactory showing of accident or mistake or of newly-discovered evidence.

APPEAL on motion.

STEAM-JACKET.

Messrs. Warfield & Duell for Dixon.

Mr. Robert M. Pierson for McElroy.

ALLEN, *Commissioner:*

This is an appeal by Dixon from the decision of the Examiner of Interferences denying his motion to amend his preliminary statement.

Dixon alleged conception, drawings, disclosure, and reduction to practice "prior to November 30, 1900" in his original preliminary statement. He now desires by amending his preliminary statement to carry back his date of conception, drawings, and disclosure to February 18, 1892, and his reduction to practice to "the years 1892, 1893, and 1894."

The Examiner of Interferences upon the receipt of Dixon's original preliminary statement notified him on February 2, 1906, that the words "prior to" were indefinite and fixed no date and informed him that an amended preliminary statement "stating the first dates upon which Dixon relies" must be filed by February 19, 1906, or he would be restricted to the date named in the original statement. No amended statement, however, was filed by Dixon in response to this notice. The present motion was brought October 31, 1906, over eight months later and after testimony had been taken by Dixon.

It appears from the brief filed in behalf of Dixon that his attempt to amend his preliminary statement at this time is inspired by the following statement placed on the record during the taking of testimony by counsel for McElroy:

Notice is here given by counsel for McElroy that the testimony of witnesses for Dixon including those who have already testified, in so far as such testimony bears upon the statutory bar of public use, will be offered as evidence for McElroy in this or a proper proceeding, and counsel for Dixon is offered the opportunity to cross examine his own witnesses or rebut their testimony so far as it relates to public use.

Dixon contends that the amendment should be permitted in view of this statement on the record, as without the amendment he cannot have the benefit of the early dates in the interference proceeding, while testimony concerning them might be effective for McElroy in case a public-use proceeding should be instituted.

This contention is hypothetical and is entitled to little weight. No showing is made in excuse for the long delay in bringing the motion or the failure to respond to the requirement of the Examiner for a more definite statement. No showing is made of accident or mistake or of newly-discovered evidence. Such a showing of a satisfactory character is uniformly required as a basis for the granting of a motion to amend the preliminary statement.

For the reasons stated the decision of the Examiner of Interferences is affirmed.

KARPENSTEIN v. HERTZBERG.

Decided January 17, 1907.

INTERFERENCE—PRELIMINARY STATEMENT—AMENDMENT OF.

The question of amending the preliminary statement is a matter largely within the discretion of the Examiner of Interferences. Unless it be shown that such discretion has been abused his decision will not be disturbed.

APPEAL on motion.

MASSAGE APPARATUS.

Mr. James H. Westcott for Karpenstein.

Messrs. Griffin, Bernard & Cavanagh and *Messrs. Griffin & Bernard* for Hertzberg.

ALLEN, *Commissioner:*

This is an appeal by Hertzberg from the decision of the Examiner of Interferences granting Karpenstein's motion to amend his preliminary statement.

Karpenstein's amended statement carries back his date of reduction to practice from February 1, 1903, to July 1, 1902. Hertzberg's alleged date of reduction to practice is December 2, 1902.

Notice of the motion was given prior to the taking of testimony, and a stipulation was entered into that said amendment should be argued at final hearing.

Karpenstein claims that he was not advised of the true meaning of the term "reduction to practice" and that he understood it to mean "a device that was commercially practical and which could be put upon the market and sold at a profit." The Examiner of Inter-

ferences found the testimony in behalf of Karpenstein to be consistent with the allegations of the amended statement, and he was of the opinion that—

This seems to be one of those cases of honest mistake in making the preliminary statement where the rule against amendment should not be enforced with such strictness as to deprive an inventor on technical grounds of the right to prove his true dates.

The question of amending the preliminary statement is a matter largely within the discretion of the Examiner of Interferences. Unless it be shown that such discretion has been abused his decision will not be disturbed. I find no such abuse of discretion in this case.

The decision of the Examiner of Interferences is affirmed.

EX PARTE PIETRO.

Decided February 12, 1907.

1. TRADE-MARK—REGISTRATION BY FOREIGNERS—MUST CORRESPOND WITH FOREIGN REGISTRATION.

The only mark which a foreign applicant is entitled to register in this country is the mark which he has registered in the country in which he is located. Such mark is presumably that set forth and shown in the foreign registration, and the Office must so assume until furnished with proofs to the contrary.

2. SAME—SAME—SAME—DRAWING.

Where a foreigner applies for registration in this country, his registration in the country in which he is located will be presumed to set forth and show his trade-mark, and in the absence of proof to the contrary the drawing of his application for registration in this country will be required to conform to such foreign registration.

ON PETITION.

TRADE-MARK FOR STOMACH-TONIC.

Messrs. Wilkinson & Fisher for the applicant.

ALLEN, *Commissioner:*

This is a petition from the action of the Examiner of Trade-Marks requiring a new drawing.

The applicant is a subject of the King of Italy, residing in that country. He has furnished the Office with a certified copy of his registration there, as required by Rule 17. The Italian registration comprises applicant's entire label. The drawing of the application in this country comprises a signature and fanciful device taken from the label, but fails to include a large amount of printed matter found on the latter. The applicant contends that the portions of the label omitted from the drawing are not portions of the trade-mark. The Examiner requires that they be shown in the application without regard to their actual relation to the mark in order that the registration in this country may conform to that secured abroad.

Section 4 of the Trade-Mark Act of 1905 provides:

SEC. 4. That an application for registration of a trade-mark filed in this country by any person who has previously regularly filed in any foreign country which, by treaty, convention, or law, affords similar privileges to citizens of the United States an application for registration of the same trade-mark shall be accorded the same force and effect as would be accorded to the same application if filed in this country on the date on which application for registration of the same trade-mark was first filed in such foreign country: *Provided*, That such application is filed in this country within four months from the date on which the application was first filed in such foreign country: *And provided*, That certificate of registration shall not be issued for any mark for registration of which application has been filed by an applicant located in a foreign country until such mark has been actually registered by the applicant in the country in which he is located.

Under this section of the statute the only mark which the applicant is entitled to register in this country is the mark which he has registered in Italy. The mark registered in Italy is presumably that set forth and shown in the Italian registration, and the Office must so assume until furnished with proofs to the contrary. There appears to be no evidence in this case that the Italian registration is a registration of a trade-mark right in that country in the mark shown upon the drawing of this application. There was therefore no error in the Examiner's action requiring modification of the same to conform to the registration abroad.

Petition denied.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

LARKIN *v.* RICHARDSON.

Decided December 7, 1906.

INTERFERENCE—ORIGINALITY—EMPLOYER AND EMPLOYEE—ANCILLARY INVENTION.

Where a person has discovered an improved principle in a manufacture and employs others in assisting him to carry out that principle, and these in that employment make valuable additions to the preconceived design of the employer, such suggested improvements are in general to be regarded as the property of the party who discovered the original improved principle and may be embodied in his patent as part of his invention. (See *Agawam Co. v. Jordan*, 7 Wall., 583, 602; *Gedge v. Cromwell*, 19 App. D. C., 198; *Milton v. Kingsley*, 7 App. D. C., 537.)

Mr. H. N. Low, *Mr. Edmond Adcock*, and *Mr. L. A. Welles* for Larkin.

Mr. L. S. Bacon, *Mr. C. K. Offield*, *Mr. H. S. Towle*, *Mr. C. C. Linthicum*, and *Mr. Earl D. Babst* for Richardson.

MCCOMAS, *J.:*

Bernard H. Larkin appealed from a decision of the Commissioner of Patents that John D. Richardson is the prior inventor of certain improvements in the construction of sheet-metal display-cans for bakery products. Richardson is the advertising manager of the National Biscuit Company to which he assigned his application. Larkin was at the time to which this interference relates, a district manager of the western factories of the American Can Company, to which company his application was assigned. At the time the testimony was taken he was no longer in the employment of this assignee. The issues of the interference are as follows:

1. A receptacle of the class described, consisting of a sheet-metal can having a cover, and its front wall provided with oblong panel-like openings, the margins of the sheet-metal surrounding said panel-openings being inturned, and sheets of material removably secured behind said openings, the upper sheet constituting a name-plate and the lower being transparent to display the contents in the bottom of said receptacle and held against the inturned margin of the metal surrounding the lower panel, substantially as described.

2. A receptacle of the class described, comprising a sheet-metal can having its front plate or side provided with two oblong panel-openings of substantially equal size and extending substantially across the front of the can, a name-plate fitted behind the upper panel-opening, the margins of the sheet along the lower panel-opening being inturned to provide a narrow ledge or bearing and a sheet of glass removably secured behind the lower panel-opening in contact with said ledge, substantially as described.

3. A sheet-metal display can or box, comprising in combination a body having three sheet-metal sides, furnished at their upper ends with hollow, triangular strengthening bars or braces, and provided with a hollow, triangular strengthening bar or brace at its front, and a sheet-metal front plate having an upper or sign opening therein, and provided with sheet-metal guides having horizontal and upright flanges soldered to said front plate to form a pocket thereon to receive a removable sign-plate, said front strengthening-bar and said front plate forming a slot between them for removal and insertion of the sign-plate, substantially as specified.

4. A sheet-metal display can or box, comprising in combination a bottom, a body, and a hinged cover, the front of the body having two openings therein, two removable plates for closing said openings, fixed guides for holding one of said plates in place, and fastening means for holding the other removable plate in place, substantially as specified.

5. A sheet-metal display can or box having a bottom, a body and a cover, the sheet-metal front of said body having two openings therein, two removable plates for closing said openings, guides for holding one of said plates in place, and a turn-button guide for holding the other plate in place, substantially as specified.

6. A sheet-metal display can or box having a bottom, a body and a cover, the sheet-metal front of said body having two openings therein, two removable plates for closing said openings, guides for holding one of said plates in place, a turn-button guide for holding the other plate in place, said turn-button guide being mounted on one of the guides for said first-mentioned plate, substantially as specified.

The Patent Office tribunals have determined that the subject-matter of this interference is invention. Counsel for Larkin claim that such invention broadly stated is a combination of six features, which are the front plate of the display-can, an additional opening at the upper part of the brass front plate, a removable sign-plate, fixed guides of triangular pieces secured on the inside of the front plate for holding the removable sign-plate in place behind the upper opening, a removable glass plate behind the lower opening in the front plate. Counsel for Richardson say the gist of the invention consists in the can having two front openings with two removable plates applied thereto, one to display the goods and the other the name of the National Biscuit Company, whose cans of the older style were provided with a single opening covered by a large removable sheet of glass which displayed the contents of the can but which large opening was more expensive, more fragile, and also greatly weakened the can-front. The Board of Examiners-in-Chief, which awarded priority to Larkin, took the former view, while the Examiner of Interferences and the Commissioner of Patents inclined to the latter view, and these awarded priority to Richardson, who was, in the opinion of the Commissioner, "the inventor of the broad idea of the can with the two openings, with removable panels."

In his preliminary statement, Larkin alleged conception, disclosure, and drawings on June 15, 1902, and reduction to practice about June 20, 1902, while Richardson alleged conception and disclosure in May, 1902, drawings, June 1, 1902, and reduction to practice on the first day of July, following. Richardson filed his application on November 1, 1902, and Larkin filed his application January 14, 1904. Each party here claims to have originated the idea in the display-can, and we must determine which of the two suggested the material improvements in the can which constitute the invention.

The officers of the National Biscuit Company wanted a can wherein to pack its various bakery products that should be distinctive in appearance and thus easily identified with its products, and so pleasing as to be acceptable to its customers. Early in 1902, officials of the National Biscuit Company, considered a new style of display-can for their goods. They were dissatisfied with the old can, which had one large opening in the front covered by a glass plate, removably fitted. Above this opening the name of the company appeared in embossed letters. Richardson at the head of the advertising department, actively engaged in the search for a new can, and about the first of May, 1902, he says he had in his own mind completed the can and about the sixth of May, he spoke about it to Fraser and described to him the can. Fraser, a draftsman, was Richardson's chief clerk and assistant, who undertook after his return from a trip to New York to produce for Richardson working drawings. Richardson's instructions to Fraser were to make drawings for cans with two openings, showing the openings in various proportions. Fraser consulted with Richardson from time to time while the drawings were in progress and worked them out to meet his approval, and about June 2, Fraser submitted the drawings, which were satisfactory to Richardson, and Richardson directed Fraser to have such cans made at once. Fraser reported to Richardson that he had placed the order with the American Can Company and had turned over to Wells, the sales agent of that company these sketches and instructed him to send cans so constructed to Richardson's office as soon as possible. Fraser testified that he returned to Chicago June 2, 1902, and made about eight drawings for the can, and he produced from memory four drawings which he said were essentially the same. It is difficult to excavate the actual statements of Fraser, buried as they are under the long leading questions of counsel examining the witness and too often testifying for him. Enough, however, is found to show that Fraser in the presence of Barnard, an officer of the Biscuit Company, in its purchasing department, gave to Wells, the sales agent of the Can Company, the original eight drawings about June 16, or 17, 1902. Wells suggested to Fraser, that he should visit the factory and then gave Fraser a letter of introduction to Larkin, which is dated June 17, 1902. Fraser had his interview with Wells in the purchasing department of the Biscuit Company, and Fraser wrapped up the drawings and Wells took them away with him. Later by telephone, Fraser talked with Wells about the delivery of the sample cans. Wells, however, died before the taking of the testimony. Fraser identified the can with two openings shown him as one similar in construction and appearance to the cans made by the Can Company after his working drawings. Fraser fixes the date of his drawings by another circumstance. Before he talked to Wells, by a letter in evidence to the Burdick Sign Company, dated June 14, 1902, Fraser had ordered four sample enameled signs, ten inches in length, which Richardson's counsel claim was the inside length dimension of the standard size made by the Can Company after Fraser delivered his drawings to Wells.

Fraser says when he gave the drawings to Wells, the explanation and directions given at same time, were given by Fraser alone. Barnard, who was present, says that prior to this interview, Fraser had brought to him a number of sketches for sample-cans, and that because Barnard received from Wells his letter presenting Fraser to Larkin, which letter Barnard sent to Fraser, Barnard can swear positively that the interview between Wells and Fraser was either on June 17 or a day or two before. Barnard's testimony-in-chief is practically the answer "yes" to very long, leading questions of Richardson's counsel. It seems just to say from Barnard's answers upon cross-examination that he substantially confirms Fraser. Barnard now says he saw Fraser's drawings but once, on the occasion when Fraser gave them to Wells, and the eight drawings shown him seemed to be the same drawings

that Fraser gave to Wells. Barnard remembers that Fraser told Wells that he wanted him to make the cans in accordance with the drawings of Fraser, and Barnard thinks it was two or three weeks after this interview that the first sample display-can, having two openings in its front, one containing a sign-plate and one a glass plate, was delivered by the Can Company to the Biscuit Company. Evans, an officer of the Biscuit Company, says that just prior to August 1, 1902, he was with others, in a conference in Richardson's office, when they selected a can which was Richardson's original can, containing two openings. He identified this can by his own marks thereon and he fixes the time of the conference because on August 1, 1902, he gave an order for three thousand of these cans to be shipped to Kansas City. In frequent subsequent talks with Wells and Maas, they always referred to this can as the Biscuit Company's can, and the witness produced a circular sent to the managers of various bakery plants dated September 4, 1902, in which Evans notified them that the new can to be known as "501 can" had been adopted for general use. The circular recites the important features of the can described in this issue. Maas testifies that he brought the drawings from Barnard to Wells and Wells sent them to the Maywood factory where Larkin was employed by the Can Company. Maas only remembers one drawing having two openings, the one for the Biscuit Company's name at the top and the other covered by glass to display goods. It was Maas who at Wells's instance delivered to Barnard of the Biscuit Company, the can actually made by the Can Company in accordance with this drawing and Maas thinks this occurred about a week after he had given the sample drawing to Wells, and the Richardson exhibit can is to Maas's best knowledge the first sample-can. Upon cross-examination, Maas testified that none of the eight drawings shown to him was the drawing he delivered to Wells. But Maas remembered the drawing marked "B" and finally said that he had seen these drawings in Mr. Wells's office to which they had been sent from the Can Company's factory.

On March 30, 1903, Evans for the Biscuit Company wrote to the Can Company to stamp on the backs of all the "501 cans" the words "patent applied for." Whether the cans thereafter were so marked is disputed. It is undisputed that the Can Company made no objection to the request.

Richardson has the burden of proving beyond a reasonable doubt that he was the original inventor of the subject-matter in controversy. Where a person has discovered an improved principle in a manufacture and employs others in assisting him to carry out that principle, and these in that employment make valuable additions to the preconceived design of the employer, such suggested improvements are in general to be regarded as the property of the party who discovered the original improved principle and may be embodied in his patent as part of his invention. (See *Agawam Co.* v. *Jordan*, 7 Wall., 583, 602; *Gedge* v. *Cromwell*, 19 App. D. C., 198; *Milton* v. *Kingsley*, 7 App. D. C., 537.)

Whatever weight be given to the argument that the issues contained specific limitations which Richardson did not disclose, Fraser makes clear Richardson's disclosure to him of a two-opening can with the removable plates and that several of the drawings he gave to Wells disclose such a can and that the American Can Company made such a can for the Biscuit Company and the Commissioner says that such can with two openings with plates to be removably secured behind the opening constitute the main and predominating structural features of this invention. The details of the fastening means if they call for anything more than the skill of a mechanic are merely ancillary features suggested by the general plan, and according to the cases last cited, in the absence of specific proof that they were suggested by Richardson, are to be regarded as part of his invention. The circumstances we have mentioned and the testimony to which we have adverted not only overcome the burden upon Richardson but create a strong presumption that in trying to satisfy the desire of his company for a new design for a display-can, Richardson became the real inventor and that Larkin, the employee of the Can Company, called upon to make the can Richardson desired, made his present claim after the Can Company had failed to procure a long-term contract, such as it desired, for the manufacture of the new cans.

Larkin is the junior party who filed more than one year after Richardson had filed, about a year and a half after the Can Company began to furnish the new can to the Biscuit Company and about nine months after Evans, for the Biscuit Company, directed the Can Company to stamp on the can the words "patent applied for." The burden of proof upon the junior party and the still heavier burden upon one employed to carry out the ideas of another, if he would claim, originality in the thing produced, must be remembered even though Larkin's testimony may show that he added specific elements in completing the sample-cans. Much must appear in Larkin's behalf if his reduction to practice in this case is not to be deemed a reduction to practice on the part of Richardson which should inure to Richardson's benefit as the person who proposed and outlined the invention. Under all the circumstances Larkin's reduction to practice appears to be the result of Richardson's communication to Larkin's employer. If so, Larkin must prove beyond a reasonable doubt that what he did was his independent invention. Richardson's disclosure was not as ample as it might have been but several of the drawings made by Fraser and delivered through Wells to the Can Company and to Larkin suffice to make out a sufficient disclosure on his part. Larkin's disclosure was not complete. The drawings sent to his company through Fraser and Wells impute notice to Larkin of what they disclose. The letter of Wells to Fraser shows he intended Larkin to have these drawings, and Larkin admits that Wells told him the Biscuit Company wanted to change the style of their packages, though Larkin said they wanted to leave off embossed lettering and lithograph instead and that Larkin suggested another opening for the lettering, to be removable and held by cleats on the inside of the front. Branninger made the first can under his instruction

and Larkin had the first sheet-metal can, embodying the invention made about June 27, 1902.

Larkin says the only suggestion he had from Wells was that the Biscuit Company wanted a lithographed front instead of the embossed front and that after he had conceived this invention and had constructed a sample-can, he told Wells there should be a patent applied for and Wells promised to attend to it. It was stipulated that five workmen would testify that they each saw a can constructed like the Larkin exhibit can, which embodies the issues, on the dates named by him, and that they constructed cans like the exhibit can, and other cans like the patterns described by Larkin. It was also agreed that three officers of the Can Company would testify that they had never seen the eight drawings lettered A, B, C, D, E, F, G, H until a search for them was made after Fraser testified he had delivered them to Wells nor could they after full inquiry find any employee of theirs who had seen Fraser's drawings and that Wells would naturally have shown these drawings to these witnesses if to any one; that the display-can in controversy was commonly called the Biscuit Company's can because it was their custom to name a can as that of the particular customer for whom it was made, and such designation was a matter of convenience and in no manner signified the designer of each particular can. After Fraser had testified concerning his drawings to Richardson, Larkin testified that these lettered drawings were sent to him from Wells just before July 14 and thereupon he had his workmen make cans with the single opening on July 14, the date being fixed by the memoranda of his workmen and between June 30, and July 18, his workmen made eight cans with two openings, in each instance differing somewhat in size; that he had never seen or heard of the drawing referred to by Maas, nor did he know that the lettered drawings were in the possession of the Can Company. It is conceded that the five workmen would testify that they for the first time saw these eight drawings shortly before July 14, and then proceeded to make the display-cans as Larkin stated, and they were sent to the Biscuit Company, and after a search these drawings were found in the main work factory on January 30, 1905. It was about June 7, 1902, that Larkin claims the conception of the invention, and on that day the first display-can was made and this was the reduction to practice claimed by both parties. Branninger made this can under instructions from his foreman, Xavier, and from Larkin. Six patterns for the front of the can, between June 30, and July 15, were in evidence as Larkin's patterns and it was testified that the seventh pattern representing the style accepted by the Biscuit Company was delivered to the machinery department of the Can Company as a guide in making dies used in producing cans like the accepted sample. Under all the circumstances we are convinced that the lettered drawings were sent to the Can Company near about the time Fraser gave them to Wells for that purpose and written and oral evidence convince us that Larkin received them before he made the sample-can which contains the two openings clearly shown in the drawings lettered A and B. For while the four drawings produced by Fraser from memory have two openings and Fraser was mistaken in saying that all of the eight original drawings showed two openings; the two drawings "A" and "B" of the series of eight do contain two openings, and Richardson says these two are in accordance with his instructions to Fraser, and he believes they are the original drawings; and that Fraser did show him additional drawings with single openings which did not embody Richardson's idea. Richardson urged and Fraser urged speedy delivery of the sample can and Fraser by telephone after he had given Wells the drawings, talked with Wells concerning the time of delivery. We are convinced Larkin is mistaken as to the time he received the patterns from Wells. We believe when Wells directed Larkin to construct the cans desired by the Biscuit Company, that Wells gave or sent to Larkin the drawings showing the style of can Richardson asked for. Not only do the circumstances impute notice to the Can Company and Larkin, but these circumstances and the related evidence justify the inference that early in June Larkin actually received the drawings and verbal instructions from Wells, now dead, relating thereto. There is not a scintilla of evidence to support Larkin's recollection that Wells told him that the Biscuit Company only wanted lithographed lettering on the can-front.

We cannot agree with counsel for Larkin that the testimony that Larkin's exhibit can produced from the middle of July, 1902, with the particular size and proportion is very significant, since the earlier sample-can made for Richardson embodied the main elements of the issue; size and shape of the opening, are only details. We will not discuss the Smith patent glass-holder, the invention of an employee of the Biscuit Company, as an explanation of the silence of the Can Company when asked to mark the cans "patent applied for." It suffices to say it does not appear that any employee of the Can Company had knowledge of Smith's existence or of his application for this patent. The actual existence of this application at the time unknown to the Can Company, is not a good reason for its silence when requested to mark the cans made for the Biscuit Company "patent applied for." It was then the Can Company should have protested if it believed that the tin package was the invention of their employee Larkin. The details of the fastening means which the Commissioner regards as the skill of the mechanic, or merely ancillary features were not suggested by Larkin to Branninger who made the first can. Inasmuch as Richardson was the inventor of the idea of the can with the two openings with removable panels, and by his draftsman instructed the Can Company to make them, we need not further discuss the lesser details in the can produced. We think this case is well characterized in *Gallagher* v. *Hastings* (21 App. D. C., 91.) There Justice Shepard said:

> These were not independent inventors, working out the same conception separately and unknown to each other, but each claims a conception, and reduction to practice, of a construction that was set on foot by one, to meet a novel condition, and was manufactured by the other.

The decision of the Commissioner of Patents is affirmed and this opinion will be certified to him in accordance with the statute.

Patent, Trade-Mark, and Copyright Laws of the United States of America Extended to and Made Effective Within the Canal Zone to the Extent Indicated.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 3, 1907.

The following inclosure in a letter to this Office from the Secretary of the Isthmian Canal Commission is published for the information of those concerned.

F. I. ALLEN,
Commissioner.

THE ISTHMIAN CANAL COMMISSION.
WASHINGTON, D. C., *March 15, 1907.*

CIRCULAR No. 30.

The following order of the Secretary of War is published for the information and government of all concerned:

EXECUTIVE ORDER.

By authority of the President, it is ordered:

That the patent, trade-mark, and copyright laws of the United States of America are hereby extended to and made effective within the Canal Zone, to the extent that any patent or copyright issued under the laws of the United States, or any trade-mark duly registered in the Patent Office of the United States, shall vest in the person to whom issued or in whose name registered, his assigns and licensees, subject to the protection of the circuit and supreme courts of the Canal Zone, the same exclusive right of property therein that such person would possess in the United States.

Effective April 15, 1907.

WM. H. TAFT,
Secretary of War.

WAR DEPARTMENT,
Washington, D. C., March 12, 1907.

JOSEPH BUCKLIN BISHOP,
Secretary.

Notice.

(ORDER No. 1,706.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 1, 1907.

In all cases where service is required by the rules, proof of service must be made in accordance with the provisions of Rule 154 (2). Nothing in the decision in the case of *Browne* v. *Stroud* (126 O. G., 3041) shall be interpreted to the contrary.

F. I. ALLEN,
Commissioner.

Attorneys.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 4, 1907.

This Office has been advised by the Secretary of the Interior of the disbarment of the following attorneys from practice before the Department or any Bureau thereof: John Kinahan, San Antonio, Tex., March 30, 1907; John A. Miller, Veterans Home, Cal., April 2, 1907.

C. M. IRELAN,
Chief Clerk.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 1, 1907.

Empire Soap Company, its assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Magnolia Healing Soap Company, of Muscatine, Iowa, for registration of a trade-mark, an application for registration of a trade-mark filed by The Southern Cotton Oil Company, of Jersey City N. J., and a trade-mark registered to the Empire Soap Company, of St. Louis, Mo. The notice of said declaration mailed by the Patent Office in the usual manner to the said Empire Soap Company at its address as above given has been returned by the Post-Office Department undelivered, and it has been impossible to locate said company.

Notice is therefore hereby given to the Empire Soap Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE *Assistant Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 29, 1907.

Fred W. Smith, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of The New Era Milling Company, of Arkansas City, Kans., for registration of a trade-mark and a trade-mark registered to Fred W. Smith, of New York, N. Y. The notice of said declaration mailed by the Patent Office in the usual manner to the said Fred W. Smith at his known address, 4 State street, New York, N. Y., has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said Fred W. Smith, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 27, 1907.

Jeptha J. Lamb and James H. Patton, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application for patent filed by Winne Gordon, of Sharon Springs, N. Y., and an application for patent filed by Jeptha J. Lamb and James H. Patton, of Bellevue, Idaho. It appears from the record of the interference that the present whereabouts of said Jeptha J. Lamb and James H. Patton is unknown, and all communications directed to their address above given within the past two years have been returned unclaimed by the Post-Office Department.

Notice is therefore hereby given to the said Jeptha J. Lamb and James H. Patton, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 16, 1907.

James H. Brookmire & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between the application of The Morgan Oyster Company, of San Francisco, Cal., for registration of a trade-mark and a trade-mark registered to James H. Brookmire & Company, of St. Louis, Mo., and a statement has been filed in the case to the effect that the said James H. Brookmire & Company are no longer in business.

Notice is therefore hereby given to James H. Brookmire & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 16, 1907.

James H. Brookmire & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Nininger & Frantz, of Daleville, Va., for registration of a trade-mark and a trade-mark registered to James H. Brookmire & Company, of St. Louis, Mo., and a statement has been filed in the case to the effect that the said James H. Brookmire & Company are no longer in business.

Notice is therefore hereby given to James H. Brookmire & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[*BY AUTHORITY OF CONGRESS.*]

VOL. 127—No. 7. TUESDAY, APRIL 16, 1907. PRICE—$5 per year.

CONTENTS.

	Page.
ISSUE OF APRIL 16, 1907	2398
INTERFERENCE NOTICES	2399
APPLICATIONS UNDER EXAMINATION	2400
NOTICE	2400
PATENTS GRANTED	2401
REISSUES	2781
DESIGNS	2784
TRADE-MARKS—REGISTRATION APPLIED FOR	2787
TRADE-MARKS—REGISTERED	2809
LABELS	2814
PRINTS	2814
COMMISSIONER'S DECISIONS—	
Ex parte Hoey	2815
Ex parte Trebon	2815
Bastian v. Champ	2816
Ex parte Continental Car and Equipment Company	2816
Daggett v. Kaufmann	2817
DECISIONS OF THE U. S. COURTS—	
In re Hoey	2817
NOTICE	2819
INTERFERENCE NOTICES	2830

ISSUE OF APRIL 16, 1907.

Patents	768	No. 850,123 to No. 850,890, inclusive.
Designs	8	No. 38,524 to No. 38,531, inclusive.
Trade-Marks	155	No. 61,970 to No. 62,124, inclusive.
Labels	16	No. 13,469 to No. 13,484, inclusive.
Prints	6	No. 1,958 to No. 1,963, inclusive.
Reissues	3	No. 12,633 to No. 12,635, inclusive.
Total issue	956	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	4	1	New Hampshire	1	.....
Alaska, District of	.....	.....	New Jersey	26	5
Arizona Territory	.....	.....	New Mexico Ter't'y	.....	.....
Arkansas	3	.....	New York	128	37
California	26	2	North Carolina	8	1
Colorado	8	1	North Dakota	.....	.....
Connecticut	21	4	Ohio	62	16
Delaware	8	2	Oklahoma Territ'y	4	.....
District of Columbia	5	1	Oregon	4	1
Florida	2	.....	Pennsylvania	79	9
Georgia	8	.....	Philippine Islands	.....	.....
Idaho	2	.....	Porto Rico	.....	.....
Illinois	61	21	Rhode Island	9	1
Indian Territory	2	.....	South Carolina	2	.....
Indiana	16	3	South Dakota	3	.....
Iowa	11	.....	Tennessee	5	1
Kansas	12	3	Texas	15	4
Kentucky	6	2	Utah	1	.....
Louisiana	4	.....	Vermont	2	.....
Maine	4	1	Virginia	6	1
Maryland	8	2	Washington	12	2
Massachusetts	31	11	West Virginia	7	1
Michigan	25	4	Wisconsin	10	5
Minnesota	6	10	Wyoming	3	.....
Mississippi	3	.....	U. S. Army	.....	.....
Missouri	23	2	U. S. Navy	.....	.....
Montana	3	.....			
Nebraska	8	3	Total to citizens of the United States	607	157
Nevada	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	1	.....	Natal	.....	.....
Austria-Hungary	7	.....	Netherlands	2	.....
Belgium	3	.....	Newfoundland	.....	.....
Brazil	1	.....	New South Wales	.....	.....
British West Indies	.....	.....	New Zealand	.....	.....
Canada	13	.....	Norway	.....	.....
Cape Colony	.....	.....	Persia	.....	.....
Chile	.....	.....	Queensland	.....	.....
China	.....	.....	Roumania	.....	.....
Costa Rica	.....	.....	Russia	.....	.....
Cuba	.....	.....	Scotland	1	2
Denmark	.....	.....	South Australia	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	12	5	Sweden	2	.....
France	3	2	Switzerland	.....	.....
Germany	27	11	Transvaal, South Africa	1	.....
Haiti	.....	.....	Victoria	1	.....
Ireland	2	.....	Western Australia	.....	.....
Italy	1	.....			
Japan	1	.....			
Java	.....	.....	Total to citizens of foreign countries	79	20
Mexico	1	.....			

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 16, 1907

James H. Brookmire & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between the application of The Morgan Oyster Company, of San Francisco, Cal., for registration of a trade-mark and a trade-mark registered to James H. Brookmire & Company, of St. Louis, Mo., and a statement has been filed in the case to the effect that the said James H. Brookmire & Company are no longer in business.

Notice is therefore hereby given to James H. Brookmire & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 16, 1907.

James H. Brookmire & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Nininger & Frantz, of Daleville, Va., for registration of a trade-mark and a trade-mark registered to James H. Brookmire & Company, of St. Louis, Mo., and a statement has been filed in the case to the effect that the said James H. Brookmire & Company are no longer in business.

Notice is therefore hereby given to James H. Brookmire & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business April 9, 1907.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Apr. 3	Apr. 4	88
308	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Apr. 3	Mar. 11	126
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	Mar. 27	Mar. 13	190
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Mar. 27	Mar. 11	104
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Mar. 26	Mar. 11	146
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Mar. 26	Mar. 11	224
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	Mar. 26	Mar. 8	248
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Mar. 26	Feb. 12	362
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Mar. 25	Mar. 11	300
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Mar. 25	Mar. 4	221
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Mar. 23	Mar. 19	271
109	XVI. Telegraphy and Telephony.	Mar. 22	Mar. 7	179
327	XVIII. Steam-Engineering, etc.	Mar. 22	Mar. 5	210
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Mar. 22	Mar. 2	307
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Mar. 21	Mar. 11	319
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Mar. 21	Mar. 8	265
344	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Mar. 21	Feb. 26	476
170	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Mar. 19	Feb. 26	223
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Mar. 18	Mar. 19	192
376	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Mar. 18	Feb. 25	379
142	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Beverages.	Mar. 16	Mar. 9	380
122	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Mar. 15	Mar. 13	226
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Mar. 15	Mar. 2	311

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Woodworking.	Mar. 14	Feb. 4	302
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Mar. 13	Mar. 9	571
307	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	Mar. 12	Feb. 19	199
167	V. Bookbinding, Harvesters, Jewelry, and Music.	Mar. 11	Mar. 12	334
362	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	Mar. 11	Mar. 11	309
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Mar. 11	Mar. 8	352
122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Mar. 7	Mar. 11	321
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Mar. 7	Feb. 25	423
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Mar. 6	Mar. 2	284
178	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Mar. 2	Feb. 18	330
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	Mar. 2	Feb. 7	329
332	X. Carriages and Wagons.	Mar. 1	Mar. 4	488
329	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making, etc.	Feb. 28	Feb. 21	425
343	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Feb. 27	Feb. 23	620
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Feb. 23	Feb. 2	384
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Feb. 14	Feb. 25	325
	Total number of applications awaiting action			11,842
139	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	Apr. 8	Apr. 3	145
	Designs	Apr. 4	Apr. 2	24
	Labels and Prints			

Notice.

(ORDER No. 1,709.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 6, 1907.

Acting with the approval of the Secretary of the Interior, Rule 208 of the Rules of Practice of this Office is amended by erasing from that portion thereof which fixes the prices of uncertified copies of specifications and accompanying drawings of patents the following:

"And when the entire set of all patents granted is ordered, each..... $1."

F. I. ALLEN,
Commissioner.

PATENTS

GRANTED APRIL 16, 1907.

850,123. MINNOW-TRAP. ARTHUR J. ALGATE, Toronto, Ontario, Canada. Filed Sept. 10, 1906. Serial No. 334,043.

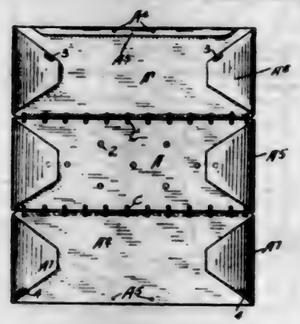

Claim.—1. A minnow-trap comprising sides flexibly connected together at the edges and having inwardly-extending end flaps forming funnel-shaped ends one of said end flaps having movement in relation to the other flaps as and for the purpose specified.

2. A minnow-trap comprising sides flexibly connected together at the edges and having inwardly-extending end flaps forming funnel-shaped ends, and a supplemental flap at the edge of one side overlying the adjacent side, and means for connecting these two sides and the supplemental flap together as and for the purpose specified.

3. A minnow-trap comprising sides flexibly connected together at the edges and having inwardly-extending end flaps forming funnel-shaped ends, and a supplemental flap at the edge of one side overlying the adjacent side, and a wire handle extending through holes in the connected sides and overlying flap as and for the purpose specified.

4. A minnow-trap comprising sides connected together at the edges and having inwardly-extending end flaps forming funnel-shaped ends, one of said flaps having self-closing movement in relation to the others when moved therefrom, substantially as described.

5. A minnow-trap comprising sides connected together and inwardly-extending end flaps forming funnel-shaped ends one of said end flaps having yielding movement in relation to the other end flaps.

6. A minnow-trap comprising sides suitably connected together at their longitudinal edges and having end flaps extending inwardly and forming funnels, the side end flaps being provided with straddling lips, as and for the purpose specified.

850,124. MACHINE FOR MANUFACTURING COMPOSITION PIPE. EUGENE F. BADGLEY, San Francisco, Cal.; Helen Henry administratrix of said Eugene F. Badgley, deceased. Filed July 12, 1893. Serial No. 480,321.

Claim.—1. The combination of a receptacle for a hot adhesive mixture, supporting devices at the sides of said receptacle having a plurality of bearings, a roller vertically adjustable in said bearings, a reel adapted to carry a web of suitable material, a mandrel mounted on the receptacle, and steam-pipes adapted to press on each side of the web as it is drawn from the reel to be passed through the mixture under the roller and thence onto the mandrel, substantially as described.

2. The combination of a receptacle adapted to contain an adhesive mixture, a rotary mandrel mounted above said receptacle so as to take up a web of suitable material passed through the mixture and form it into a pipe or tube, and an ironer having a plurality of concave faces mounted above the receptacle and constructed to bear upon the mandrel and upon the material being wound thereon.

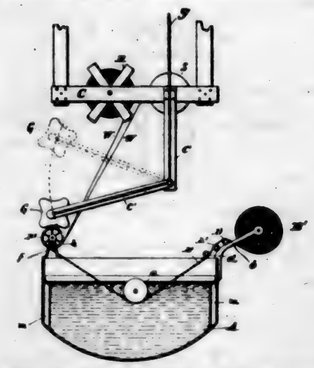

3. The combination of a receptacle for an adhesive mixture, a mandrel, means constructed to carry a web of foraminated material through the mixture and to wind the same on the mandrel and a spool carrying wire and located to feed the wire between the layers of the web as the same are wound on the mandrel.

4. The combination of a receptacle for an adhesive mixture, a rotary mandrel mounted thereover, means constructed to carry a web of suitable material through the mixture and wind the same upon the mandrel, and an adjustable, pivoted ironer having a concave face, located above the receptacle to coact with the material on the mandrel.

5. The combination of a receptacle for an adhesive mixture, a rotary mandrel, means for winding a web of suitable material upon the mandrel, said mandrel being movably mounted above said receptacle, and an ironer so disposed above the receptacle that the material on the mandrel may be brought into contact therewith by moving one of the two elements last named.

6. The combination of a receptacle for an adhesive mixture, a mandrel mounted above said receptacle, means for winding on said mandrel a web of suitable material passed through said mixture, a spool carrying wire to be wound on the mandrel at the same time and together with said web, and a pivoted ironer adapted to bear on the web and wire as the same are wound on the mandrel and embed the wire into the mixture on the web as the web and wire are being wound.

7. In apparatus for making pipe, the combination of a mandrel, and means for supplying to said mandrel a sheet having coating material thereon, for winding said web onto said mandrel, and for winding wire simultaneously with the convolutions of the pipe and between them.

8. In a machine for forming pipe of bituminous material, the combination with a mandrel, of means for wind-

ing material thereon, means for coating the material with bituminous material, and devices for feeding wire into the convolutions of the material as the same is wound upon the mandrel.

9. In a pipe-making apparatus, the combination of a power-driven mandrel; means for supplying to said mandrel a sheet having coating material thereon; means for pressing the coated sheet against the mandrel; and means for feeding wire into the convolutions of the sheet as the same is wound upon the mandrel.

10. The combination of a receptacle for a liquid, supports at the sides of said receptacle having a plurality of bearings, a roller vertically adjustable on said supports by the use of said bearings, a reel adapted to carry a web of suitable material, and a mandrel within the inside area of the receptacle and adapted to wind the web onto itself.

11. The combination of a receptacle for a liquid, a rotary mandrel over said receptacle and adapted to wind onto itself a web of suitable material passed through the liquid to form it into a pipe or tube, and a pivoted ironer having a concave face and mounted to bear on the material on said mandrel.

12. In a pipe-making apparatus, the combination of a liquid-receptacle, a mandrel, and means for drawing a web through said liquid, for winding said web onto said mandrel, and for winding wire simultaneously with the convolutions of the pipe and between them.

13. In a pipe-making apparatus, the combination of a power-driven mandrel; means supplying to said mandrel a sheet having coating material thereon; means capable of being heated for pressing the coated sheet against the mandrel; and means for feeding wire into the convolutions of the sheet as the same is wound on the mandrel.

14. The combination of a receptacle for a liquid, a rotary mandrel over said receptacle and adapted to wind onto itself a web of suitable material passed through the liquid to form it into a pipe or tube, a pivoted ironer having a concave face and mounted to bear on the material on said mandrel, and means for heating said ironer.

15. The combination of a receptacle for a liquid, a rotary mandrel adapted to wind onto itself a web of suitable material passed through the liquid to form it into a pipe or tube, an ironer capable of bearing against the material on the mandrel, and means for heating said ironer.

16. The combination of a receptacle for a liquid, a rotary mandrel adapted to wind onto itself a web of suitable material passed through the liquid to form it into a pipe or tube, an ironer having a concave face and capable of bearing against the material on the mandrel and means for heating said ironer.

17. The combination of a receptacle for a liquid, a rotary mandrel adapted to wind onto itself a web of suitable material passed through the liquid to form it into a pipe or tube, a pivoted ironer having a concave face and capable of bearing against the material on the mandrel, and means for heating said ironer.

18. The combination of a mandrel, means for coating material and for winding it on the mandrel, and a spool carrying wire and located to feed the wire between the layers of the material as the same is wound on the mandrel.

850,125. CYCLE-SLED. JOSEF BALDAUF, Oberstaufen, Germany. Filed Feb. 6, 1906. Serial No. 299,765.

Claim.—1. A cycle-sledge comprising in combination a frame, a back wheel mounted in said frame, a revoluble steering-bar mounted on said frame, a bearing for supporting said steering-bar, a front wheel mounted on said steering-bar and an adjustable runner also fixed to said steering-bar, the center of pressure between the runner and the ground being behind a point vertically under the central point of the steering-rod bearing.

2. A cycle-sledge comprising in combination a frame, a back wheel mounted in said frame, a revoluble steering-bar mounted on said frame, forks fixed to said steering-bar, a bearing for supporting said steering-bar, a front wheel mounted in the forks on said steering-bar and a runner fixed to said forks, the means for fixing said runner consisting of two bars detachably attached to the forks one at each side, and two bars revolubly mounted on the front-wheel axle one at each side whereby the runner can when not in use be placed in front of the front wheel, the center of pressure between the runner when in use and the ground being behind a point vertically under the central point of the steering-rod bearing.

850,126. CHIMNEY-TOP. PERRY H. BAYLEY, Sidney Ohio. Filed Feb. 26, 1907. Serial No. 359,401.

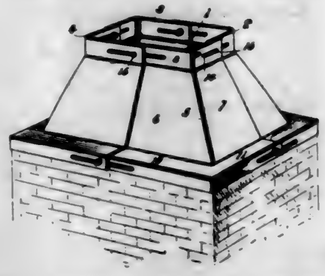

Claim.—1. A chimney-top formed of a plurality of sections, means for adjustably connecting the lower ends of the sections, and means for adjustably connecting the upper ends of the sections.

2. A chimney-top formed of a plurality of duplicate sections, means for adjustably connecting the lower ends of the sections, and means for adjustably connecting the upper ends of the sections.

3. A chimney-top comprising a plurality of sections, said sections being formed at their upper ends to receive a chimney-cowl, and at their lower ends to engage the chimney proper, and means for adjustably connecting the upper ends of the sections to adapt the same to cowls of varying sizes.

4. A chimney-top comprising a plurality of sections, each formed at their upper ends to provide cowl-receiving flanges and formed at their lower ends to provide chimney-engaging flanges, means for adjustably connecting the cowl-receiving flanges, and means for adjustably connecting the chimney-receiving flanges.

6. A chimney-top comprising a plurality of sections, each section comprising approximately one-quarter the surface of the top and each formed at its upper end with an upwardly-extending cowl-receiving flange, the lower end of each section being bent laterally to provide a ledge and downwardly from the edge of the ledge to provide a chimney-engaging flange, and means for adjustably uniting the sections.

6. A chimney-top comprising a plurality of sections, each section including a plate bent to form approximately right-angle faces, and means for adjustably connecting the respective sections, the faces of any one section respectively overlying and underlying the faces of the adjacent sections.

7. A chimney-top comprising a plurality of sections, each section including a plate bent to form approximately right-angle faces, means for adjustably connecting the respective sections, the faces of any one section respectively overlying and underlying the faces of the adjacent sections, and means for adjustably connecting the sections to permit their bodily movement relative to each other.

850,127. ELECTROLYTIC APPARATUS. ANSON G. BETTS, Troy, N. Y. Filed May 11, 1904. Serial No. 207,367.

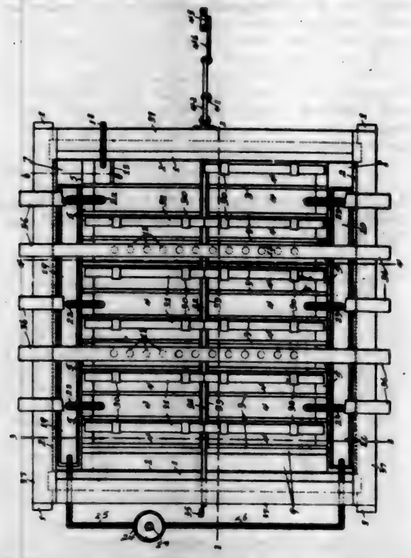

Claim.—1. In an electrolytic tank and in combination, a lining of lead, certain compartments in said tank containing an anolyte which contains dissolved a peroxidised compound of a metal, and certain other compartments in the tank containing a catholyte substantially free from said compound; an intervening layer of catholyte between the anolyte and said lining; and anodes immersed in the anolyte and cathodes in the catholyte.

2. In an electrolytic apparatus, the combination with a vat or tank; an electrolyte containing an oxidizable ingredient; of insoluble anodes, and means for imparting to the anodes a reciprocating movement through the electrolyte.

3. In an electrolytic apparatus, and in combination, a vat or tank having compartments separated from one another by walls pervious to the electric current and substantially impervious to the electrolytes; in certain of said compartments insoluble anodes, and an anolyte containing peroxidized compound of a metal; in the other of said compartments, a catholyte containing a compound of the same metal in a lower state of oxidation, and cathodes on which metal is electrodeposited; and means for imparting to the anodes a movement through the anolyte.

4. In an electrolytic apparatus, and in combination, a vat or tank, having compartments separated from one another by walls pervious to the electric current and impervious to the electrolytes; in certain of said compartments insoluble anodes, and an anolyte containing ferric and ferrous sulfates; in the other of said compartments a catholyte containing ferrous and cupric sulfates, and cathodes on which copper is electrodeposited; and means for imparting to the anodes a movement through the anolyte.

5. In an electrolytic tank, and in combination, anode-compartments containing a liquid, in which is dissolved an oxidizable ingredient, and insoluble anodes immersed therein, and cathode-compartments separated from said anode-compartments by suitable electrolytic diaphragm, containing a solution in which is immersed a cathode; and means for imparting to the anodes motion through the anolyte.

6. In an electrolytic tank, and in combination; anode and cathode compartments therein, separated by suitable electrolytic diaphragms; troughs exterior to said compartments, and horizontally placed at an angle to said diaphragms, said troughs containing anolyte, and communicating with the anode-compartments by means of siphons; with means for causing a motion of anolyte from one of said troughs to the other.

7. In combination with an electrolytic tank, containing separate compartments for anolyte and catholyte, said compartments being separated by suitable electrolytic diaphragms, a movable frame above said tank, from which depend insoluble anodes, dipping into the anolyte, and means for imparting to said frame a reciprocating motion.

8. In combination with an electrolytic tank, containing separate compartments for anolyte and catholyte, said compartments being separated by suitable electrolytic diaphragms, a movable frame above said tank, from which depend carbon anodes, dipping into the anolyte, and means for imparting to said frame a reciprocating motion.

850,128. PNEUMATIC KNEE-BOOT FOR HORSES. ROBERT C. BEVER, Worcester, Mass. Filed Feb. 24, 1906. Serial No. 302,709.

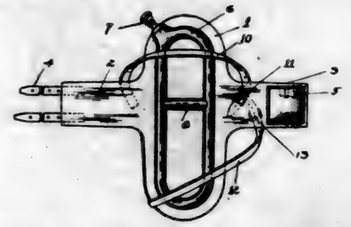

Claim.—1. In combination, a horse-boot, an inflatable tube secured to a face of the body thereof, said tube, approximating the contour of the body, and a branch tube communicating with the first-named tube and arranged transversely of the body to prevent chafing of a horse's leg by the boot proper when said boot is in applied position.

2. In combination, a horse-boot, an inflatable tube thereon approximating the shape of an oval and a branch tube connecting the sides of the oval to prevent chafing of a horse's leg by the boot proper when said boot is in applied position.

3. In combination, a horse-boot, an inflatable tube thereon approximating the shape of an oval, a branch tube connecting the opposite sides of the oval at a point above the center thereof to prevent chafing of a horse's leg by the boot proper when said boot is in applied position.

850,129. PORTABLE ELECTRIC MEASURING INSTRUMENT. HENRI BOURGEOIS, Damprichard, France. Filed July 31, 1905. Serial No. 271,941.

Claim.—1. A portable electrical measuring instrument comprising an outer casing, a plate of insulating material secured within the same, means to indicate electrical measurements carried by said plate, a solenoid adapted to actuate said indicating means, one end of the wire forming said solenoid being connected with a pin extending without the said casing and means adapted to normally cover and conceal the exposed end of said pin, the other end of said wire being in electrical communication with a spring-actuated drum, a flexible, insulated, electrical conductor extending without said casing and wound around and in electrical communication with said drum, and means secured to the outer end of said electrical conductor to prevent the latter being drawn wholly within said drum, the parts being so arranged that said electrical conductor may be partially drawn without said casing against the tension of the spring adapted to actuate said drum and automatically rewound upon said drum by said spring when the said conductor is released.

2. A portable electrical measuring instrument comprising a casing, means secured therein for indicating electrical measurements, means to actuate said measurement-

indicating means, contact-pins connected by current-conducting wires with said actuating means, one of said contact-pins being movable, a head secured about portions of said last-named pin, and a portion of the current-conducting wire connected with said last-named pin being normally wound around a spring-actuated drum adapted to exert tension upon said wire tending to draw the same wholly within the drum.

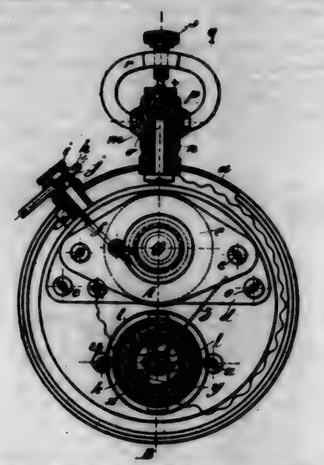

3. A portable electrical measuring instrument comprising an outer casing, means secured therein for indicating electrical measurements, means to actuate said measurement-indicating means, contact-pins connected by current-conducting wires with said actuating means, one of said pins being located within a stem secured to said casing, a ring pivotally secured to said stem, and means adjustably carried by said ring for normally covering the outer portion of said pin, substantially as described.

850,130. DETACHABLE TEMPLE FOR SPECTACLES. NELSON A. BOWEN, Erie, Pa. Filed Nov. 27, 1905. Serial No. 289,280.

Claim.—1. A detachable temple for spectacles comprising a part for attachment to the head and a clamp comprising the bifurcated end of the temple the branches of which extend lengthwise of the temple ending in the jaws of the clamp arranged at an angle to the branches, the jaws of the clamp being operated by the relative movement of the prongs forming the bifurcated ends.

2. A detachable temple for spectacles comprising a part for attachment to the head; a clamp comprising the bifurcated end of the temple the branches of which extend lengthwise of the temple ending in the jaws of the clamp arranged at an angle to the branches, the jaws of the clamp being operated by the relative movement of the prongs forming the bifurcated ends; and a ring arranged around the prongs adjacent to the jaws of the clamp.

3. A detachable temple for spectacles comprising the part for attachment to the head; and a clamp including a bifurcated end of the temple and jaws extending therefrom, the prongs of the bifurcated end being normally apart and arranged relatively to the jaws to open the jaws as the prongs are pressed together.

4. A detachable temple for spectacles comprising the part for attachment to the head; a clamp including a bifurcated end of the temple and jaws extending therefrom, the prongs of the bifurcated end being normally apart and arranged relatively to the jaws to open the jaws as the prongs are pressed together; and means arranged on the prongs adjacent to the jaws for securing the prongs together, one of said prongs being free to slide in said means.

5. A detachable temple for spectacles, comprising the part for attachment to the head and a clamp including a bifurcated end of the temple and jaws extending at an angle therefrom, the prongs of the bifurcated end being normally apart and arranged relatively to the jaws to open the jaws when the prongs are pressed together.

850,131. RACK FOR DRYING LEATHER. RUDOLPH BUCHHOLD, Louisville, Ky. Filed Sept. 21, 1904. Serial No. 225,349.

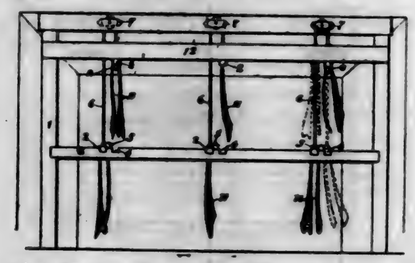

Claim.—1. In a rack for drying leather, the combination of hide-suspending bars arranged transversely in pairs at such a distance apart that they may pass each other without interfering, a low pair of longitudinal bars upon which the ends of said hide-suspending bars may rest, a pair of longitudinal bars above said low pair of longitudinal bars under which said hide-suspending bars may rest, pulleys attached near the ceiling of the drying-room, ropes working over said pulleys having their ends attached to corresponding parts intermediate the middle and the ends of said hide-suspending bars so that as one hide-suspending bar is lowered the corresponding one is raised, and means for fastening said hide-suspending bars in position, substantially as specified.

2. In a rack for drying leather, the combination of stationary vertical bars, longitudinal horizontal bars connecting the upper ends of said vertical bars, longitudinal horizontal bars connecting said vertical bars for limiting the upward movement of transverse suspending-bars, horizontal longitudinal bars for limiting the downward movement of transverse suspending-bars, transverse hide-suspending bars disposed in pairs arranged to operate between said longitudinal horizontal bars, pulleys attached to the first-named longitudinal horizontal bars, ropes working over said pulleys and having their ends secured to said hide-suspending bars in such a manner as to balance said hide-suspending bars, and catches on said lower longitudinal horizontal bars for securing said hide-suspending bars, substantially as specified.

850,132. BOX-CAR LOADER. BENJAMIN C. BUXTON, Buxton, Iowa. Filed May 8, 1906. Serial No. 315,852.

Claim.—1. The combination with a stationary chute provided with a curved guideway, of a chute provided with a V-shaped bottom and guide-blocks mounted in said chute and means for raising and lowering said chute, for the purpose described.

2. The combination with uprights provided with beams, of a chute suspended from said beams provided with curved slots in its sides adjacent its lower end, a chute provided with guide-blocks slidably mounted in said slots pivotally suspended from said beams, and adjusting means connected to said chute, for the purpose described.

3. The combination with uprights and supporting-beams, of a chute suspended from said beams, provided with guide-

ways adjacent its lower end, a chute provided with guide-blocks mounted in said guideways, suspended from said beams, and a windlass carried by said uprights, for adjusting said chute, for the purpose described.

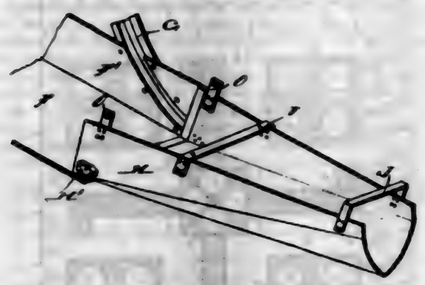

4. The combination with uprights and supporting beams, of a chute suspended from said beams provided with guideways adjacent its lower end, a chute suspended from said beams provided with a V-shaped bottom adjacent its lower end, guide-blocks secured to the sides of said chute, adjacent its upper end adapted to work in the guideways of the first-mentioned chute, braces connecting the side of the chute with the V-shaped bottom, pulleys carried by said beams and a windlass carrying cables adapted to pass over said pulleys, having their ends connected to the upper end of the sliding chute, for the purpose described.

850,133. CLOSURE FOR RETORTS. MALCOLM J. CAMPBELL, Sumrall, Miss. Filed Aug. 2, 1905. Serial No. 272,573.

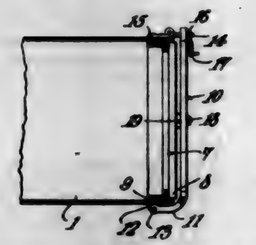

Claim.—The combination with a retort; of an annulus secured on the interior of one end thereof, a door of substantially the same diameter as the internal diameter of the retort, ears upon the retort, a locking-bar having a curved forked end overlapping the end of the retort and pivoted to the ears, a spacing-block upon the center of the door and immovably connecting the door and bar, a bolt pivoted to the retort and detachably seated in one end of the bar, and means upon the bolt for drawing the bar toward the retort to clamp the door evenly upon the annulus to seal the retort.

850,134. SPRING-WHEEL. SAMUEL S. CHILDS, Bernardsville, N. J. Filed Dec. 27, 1906. Serial No. 349,702.

Claim.—1. A spring-wheel comprising a body portion having a felly, a rim surrounding the felly at a distance therefrom forming a circular space between them, a set of flat straight springs arranged in this space and secured at their centers to the felly, and having their ends in engagement with the inside of the rim, the rim being provided with recesses on its inner face between the adjacent ends of the springs, and a second set of springs, one in each recess and bearing on the end walls of the recess, and also being in contact with the ends of the adjacent flat springs.

2. A spring-wheel comprising a body portion having a felly, a rim surrounding the felly at a distance therefrom forming a space between them, and being provided with recesses on its inner face, a set of flat straight springs in the space between the felly and the rim, and having their ends

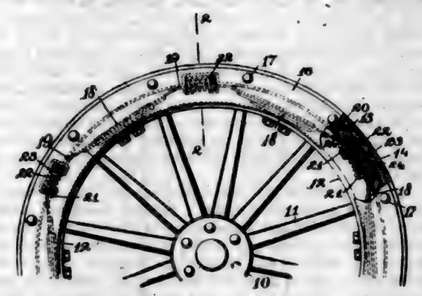

alongside the end walls of the recesses, and spiral springs arranged in the recesses and arranged to bear on the ends of the adjacent flat springs.

850,135. BELT-TIGHTENER. WILLIAM A. CHRISTENSEN, Barron, Wis. Filed Nov. 9, 1906. Serial No. 342,688.

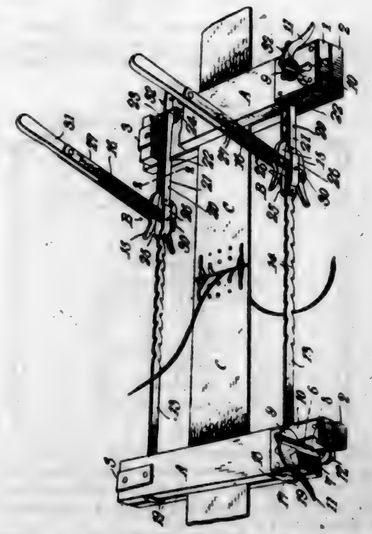

Claim.—1. In an apparatus of the class described, a clamping-jaw comprising a pair of members, an adjustable hinge connection between the members at one end, said connection being composed of two pintle-connected parts one fixedly secured to one jaw member and the other adjustably secured to the opposite jaw member, and an adjustably-mounted cam at the opposite end of the jaw from the connection which coöperates with the latter for gripping belts of different thicknesses.

2. In an apparatus of the class described, a clamping-jaw comprising a pair of members of which one is slotted, an adjustable hinge connection between the members at one end, a device extending through the slot of the slotted member and turnably mounted in the other member, a cam on the device mounted for pivotal movement and adapted to be adjusted in alinement with the slot for permitting the jaw members to open and close.

3. In a device of the class described, the combination of a pair of gripping devices, a rack-bar secured to one of the

same, a frame secured to the other device comprising a pair of spaced strips between which the rack-bar moves, a tubular guide secured between the strips, an operating-lever fulcrumed on the guide, and pawls mounted on the lever.

4. In a device of the class described, the combination of a pair of gripping devices, a rack-bar secured to one of the same, a frame secured to the other device comprising a pair of spaced strips between which the rack-bar moves and having oppositely-disposed offset portions, a tubular guide secured between the strips at the offset portions thereof, an operating-lever having a pair of members extending into the space between the guide and offset portions, fulcrums on the guides for the said members, and pawls mounted on the lever.

5. In a device of the class described, the combination of a gripping device comprising a pair of members having slots in their exposed faces, a pair of spaced strips extending through the slots and having laterally-turned ends engaging the sides of the members, a rack-bar movable between the strips, a guide for the rack-bar, means for connecting the guide with the said strips, an operating-lever fulcrumed on the guide, and pawls mounted on the lever.

6. In a device of the class described, the combination of a gripping device comprising a pair of parallel members having slots in their opposed faces, a rack-bar movable through the slots, a stop on the end of the rack-bar, an operating-lever, a frame on the gripping device, means for fulcruming the lever on the frame, and a pair of dogs on the lever.

850,136. AMUSEMENT RIDING DEVICE. JOHN A. COLE, Hackensack, N. J., assignor to Altro Park Company, New York, N. Y. Filed Feb. 28, 1907. Serial No. 359,813.

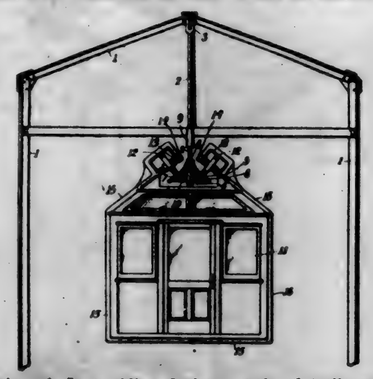

Claim.—1. In a riding device, a pair of trolley-wheels acting in coöperation with an overhead track of suitable form, the shafts of said trolley-wheels being supported in journals connected with bands surrounding the cars, substantially as set forth.

2. In riding devices, an inverted-V track, a boss integrally connected therewith, sectional supporting-rods, one of said sections extending through said boss and an adjusting-screw adapted to fit over the end of the lower section of said sectional supporting-bar, a turnbuckle connecting the sections of said supporting-bar and means for supporting the same.

850,137. GAME-BOARD. ALFRED COLLINS, London, England. Filed Jan. 23, 1906. Serial No. 297,560.

Claim.—1. A game-board having vacant corners and on each of the margins thereof the representations of thirteen playing-cards, the whole fifty-two representing a pack of playing-cards, and a cross surrounded by four squares in the center, substantially as described.

2. A game-board having open corners and the representation of a playing-pack of ordinary playing-cards on its margin, thirteen on each margin, a central cross, four squares surrounding said cross, each square being provided with four circles and four circular spaces in the center of said cross, substantially as described.

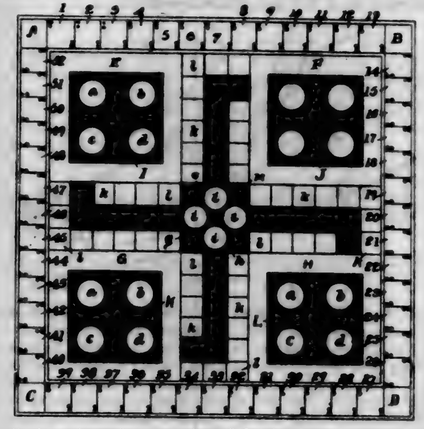

3. A rectangular game-board having open corners and the representation of a pack of playing-cards on its margin, thirteen on each side, a cross located centrally within said margin, said cross being subdivided into rectangles and the central part of said cross being a square divided into four equal parts by diagonal lines and with a circle in each part and four squares symmetrically located between the arms of said cross and said margin, each of said last-named squares being provided with four circles, substantially as described.

850,138. HAY-LOADER. HILAS V. CONGROVE, Bendena, Kans., assignor of one-half to Howard Schwab, Bendena, Kans. Filed Apr. 13, 1906. Serial No. 311,409.

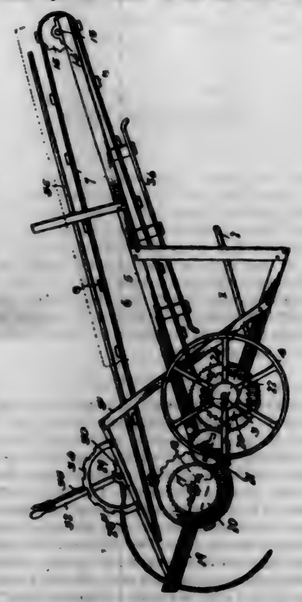

Claim.—In a hay-loader, a wheeled inclined elevator-frame, a gatherer-drum arranged at the lower end of the frame and consisting of sprocket-heads provided with inwardly-projecting supporting-lugs, a plurality of spaced longitudinal body-slats secured at their ends to said lugs, and a series of spaced gathering-fingers mounted on each of said slats, and each having a helically-coiled spring-body encircling the slat, an upper conveyer-shaft carrying sprockets, an endless elevating-conveyer passing over the slats of the gatherer-drum and also over the upper conveyer-shaft, said conveyer having chains engaging both sets of sprockets, driving mechanism for the gatherer-drum, and an independently-adjustable lifting-rake arranged in rear of the gatherer-drum and projecting below the plane of the latter.

850,139. HANDLE-BAR FOR BICYCLES AND THE LIKE. DANIEL CRONSIOE, Malmo, Sweden. Filed Mar. 15, 1905. Serial No. 250,289.

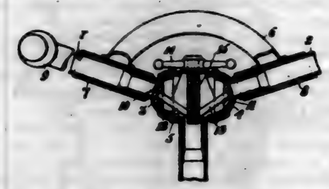

Claim.—1. In a handle-bar for bicycles and the like, a bearing, pivoted arms, ball-shaped end pieces on the inner ends of said arms engaging the said bearing, and a freely-turnable bow connecting the said arms to each other and having its ends slidably connected to the said arms, substantially as and for the purpose set forth.

2. In a handle-bar for bicycles and the like, a bearing, pivoted arms, ball-shaped end pieces on the inner ends of said arms engaging the said bearing, a bow connecting the said arms to each other and having its ends slidably connected to the said arms, friction-pieces engaging the inner surfaces of the said ball-shaped end pieces, and means for pressing the said ball-shaped friction-pieces against the said inner surfaces of the end pieces, substantially as and for the purpose set forth.

850,140. TAB FOR SHEETS OF LEDGERS, &c. EUGENE DAVIS, Chicago, Ill. Original application filed Nov. 4, 1905, Serial No. 285,926. Divided and this application filed Mar. 19, 1906. Serial No. 306,873.

Claim.—1. A tab consisting of stiff material and provided with points punched up therefrom and a raised portion thereto, and a gummed tape through which the points of the tab are forced and onto the gummed side whereof such points are turned to secure the tab and tape together and to permit such tab to be attached to a sheet of paper and to project beyond the edge thereof, by gumming the tape to such sheet with the tab imposed on the tape; substantially as described.

2. A tab consisting of a metal plate provided with points punched up therefrom in combination with gummed tape, the points of the tab forced through such tape and turned over thereonto; substantially as described.

850,141. HOLDER OR RECEPTACLE FOR MATCH-BOXES, &c. EDUARD DAMELIUS, Hamburg, Germany. Filed Dec. 28, 1905. Serial No. 293,558.

Claim.—In a device of the character described, the combination with an elongated box, having pieces of goods stored, a strip of paper pasted over the lowest piece of goods, a second strip of paper pasted over the second piece of goods covering the first strip of paper, a third strip of paper pasted over the third piece of goods covering the first and second strips of paper, a fourth strip of paper pasted over the fourth piece of goods, covering the first, second and third strips of paper, and so on, substantially

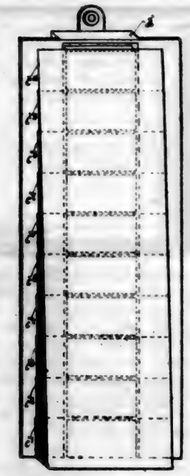

as shown and described, means for hanging and standing the box.

850,142. STEP-LADDER. ALDEN W. DERBY, Leominster, Mass. Filed Mar. 8, 1906. Serial No. 304,879.

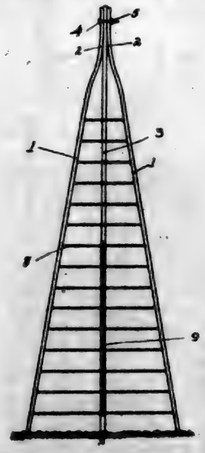

Claim.—1. In a ladder, suitable sides, a standard pivotally connected thereto, rungs connecting the sides, a brace attached to the rungs, and a link pivoted to the standard adapted to engage the end of the brace.

2. In a ladder, suitable sides, a standard therebetween, a bolt for pivotally connecting the standard and sides, means for clamping the sides and standard to hold them frictionally against displacement, rungs for the ladder, a brace connecting certain rungs.

3. In a ladder, a suitable ladder-section, a brace connecting rungs of said ladder-section, and extending slightly beyond the last of said rungs to which it is attached, a standard pivoted to the ladder, and a link pivoted to the standard and adapted to swing over the end of the brace.

850,143. COOKING UTENSIL. JOHN R. DONNELLY, Fairfield, Me. Filed Nov. 10, 1904. Renewed July 7, 1906. Serial No. 268,736.

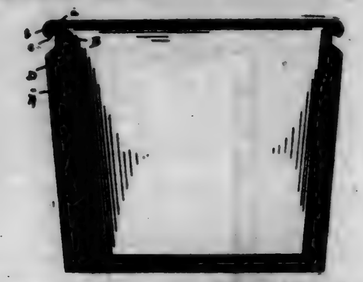

Claim.—An insulated cooking-dish consisting of a body portion having an inner and an outer shell of sheet metal, the metal of the upper edge of the outer shell being drawn and bent inward and upward to form an annular recess, a wire hoop fitting over said edge and within said recess, the upper edge of the inner shell being folded outward and over the hoop and the edge of the outer shell and rolled down to form a tight joint, a layer of asbestos paper or felt inserted between the inner and outer shells and a cover for said dish composed of a lower sheet-metal disk, a tapering hook having an outward-extending annular flange resting against the under side of said disk, an upper disk, the outer edge of which is turned over the edge of the lower disk and the flange of said tapering ring to hold them in place and a sheet of asbestos paper or felt held between said disks.

850,144. STAVE-JOINTING MACHINE. ALEXANDER DUNBAR, Liverpool, England. Filed Oct. 20, 1902. Serial No. 127,978.

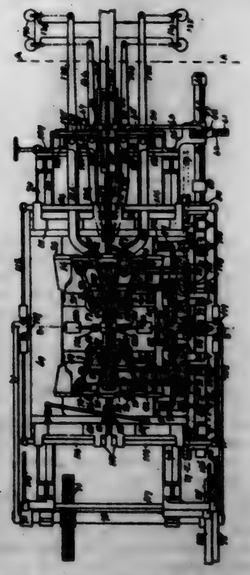

Claim.—1. In combination with stave-jointing machinery a templet of contour varying from nearly a straight line longitudinally at one edge to any desired curve at the other edge, a movable frame carrying a cutter-shaft, connections from the movable cutter-frame bearing on the templet adapted to regulate the lateral position of the cutter, mechanism adapted to maintain the cutter-frame connections in contact with the templet, and mechanism adapted to vary the position of the cutter-frame connections and templet relatively to each other and transversely to the longitudinal travel of the templet, substantially as described.

2. In combination with stave-jointing machinery, a pair of feelers arranged to touch the center of the edges of a stave, a templet of contour varying from nearly a straight line longitudinally at one edge to any desired curve at the other edge, a movable frame carrying a cutter-shaft, connections from the movable cutter-frame bearing on the templet adapted to regulate the lateral position of the cutter, mechanism adapted to maintain the cutter-frame connections in contact with the templet, and mechanism connected with the feelers and adapted to vary the position of the cutter-frame connections and templet relatively to each other and transversely to the longitudinal travel of the templet, substantially as described.

3. In combination with stave-jointing machinery a pair of pivoted centering-guides provided with lever-arms, a link connected to the outer end of each arm the other ends of said links being connected to a common block movable in a slide, as described.

4. In combination with stave-jointing machinery a slide-block carrying a pair of guides for centering one part of a stave, a second slide-block mounted and movable in the first slide-block and carrying a second pair of guides for centering another part of the stave, means for adjusting the second slide-block relatively to the first, and means for moving the slide-blocks laterally, substantially as described.

5. In stave-jointing machinery, cutter-shaft carriers supported at one point on camways, which are adapted to maintain one edge of the cutters at a certain perpendicular distance with relation to the flat side of the stave, mechanism for regulating the position of the cutter-shaft carriers on the camways, and mechanism for moving a different part of the cutter-shaft carriers and the cutters laterally; substantially as described.

6. In combination with stave-jointing machinery, stave-clamping bars mounted and arranged to receive a rocking motion, and a weighted roller arranged to press on the stave-clamping bars near the cutting-point, substantially as described.

850,145. STEERING-GEAR. LEONARD H. DYER, East Orange, N. J. Filed Jan. 9, 1905. Serial No. 240,192.

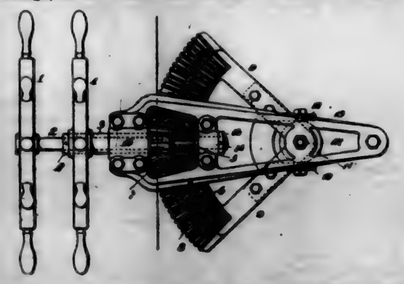

Claim.—1. In a steering-gear, the combination with a frame, of a plurality of change-speed gearings thereon, and separate wheels for such gearings, the said gearings differing in the amount of speed reduction.

2. In a steering-gear, the combination in a single structure of means for controlling the steering member, such means comprising gearings, which differ in the amount of speed reduction, and a separate wheel for each gearing.

3. In a steering-gear, the combination with a plurality of wheels, of a steering member, a quadrant controlling the latter, gears on the quadrant, a plurality of pinions engaging with the gears and separate connections between each of the wheels and a pinion, for rotating the latter.

4. In a steering-gear, the combination with a shaft, a wheel thereon and gearing connecting the shaft to the steering member, of a second wheel, a sleeve supporting the wheel and surrounding the shaft, and gearing connecting the steering member to the sleeve, the gearings differing in the amount of speed reduction.

5. A steering-gear, wherein two wheels are connected to the steering member, each through a gearing independently of the others, the several gearings differing in the amount of speed reduction, and the two wheels being sufficiently close together to be actuated by the same person.

850,146. PROCESS OF SCUDDING SKINS AND HIDES. KARL A. ERNST, Jersey City Heights, N. J., assignor of one-half to Friedrich Ernst, Jersey City Heights, N. J. Filed Nov. 13, 1906. Serial No. 343,310.

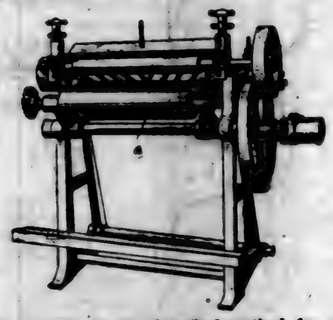

Claim.—1. The herein-described method for scudding hides and skins, consisting in treating the latter in a solution of sesquicarbonate of ammonia, potash and borax and thereupon in a mechanical treatment thereof in an ordinary rubber-roll fleshing-machine.

2. The herein-described method for scudding hides and skins, consisting in the chemical treatment of the latter in a solution of three grams sesquicarbonate of ammonia, three grams potash and three grams borax in one gallon of water, and thereupon in the mechanical treatment thereof in an ordinary rubber-roll fleshing-machine.

850,147. AUTOMATIC VENTILATING-LOCK. JOHN C. FOSTER, Cleveland, Ohio, assignor of one-third to S. S. Piper, Cleveland, Ohio. Filed Apr. 10, 1906. Serial No. 310,968.

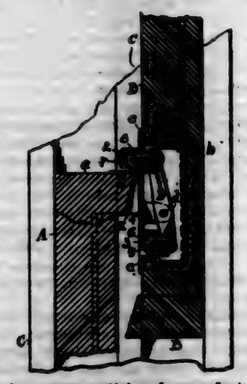

Claim.—1. As a new article of manufacture, an automatic ventilating-lock for window-sashes, comprising a pivoted lever, a locking-bolt pivotally connected with one end of said lever and a plunger pivotally engaged with the other end thereof, and a casing carrying said parts and constructed with flanged openings for said bolt and plunger, whereby bolt and plunger are guided and firmly held in working position.

2. In automatic ventilating-locks for windows, an upper sash and a plunger and a bolt pivotally connected in a recess therein and a face-plate over said recess having openings through which said plunger and bolt operate, in combination with a lower sash and a projection thereon adapted to press against the end of said plunger and thereby throw the bolt forward into the path of said sash.

850,148. ACETYLENE-GAS GENERATOR. HOMER S. GALLUP, Waurika, Okla. Filed May 7, 1906. Serial No. 315,604.

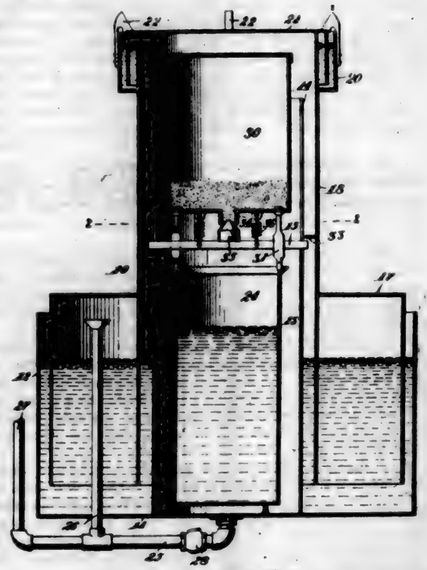

Claim.—1. In acetylene-gas apparatus, a gasometer including an annular tank and an annular bell, the inner walls of both the bell and tank being vertically extended, a generating-tank arranged in the lower central portion of the tank, a carbid-holder mounted above the generating-tank and provided with a discharge-opening, a valve for closing the opening, springs tending to maintain the valve in closed position, a bar carrying the valve, means on the inner wall of the bell for engaging and depressing the bar, and a removable cap for the inner portion of said bell.

2. In acetylene-gas apparatus, a gasometer including an annular tank and an annular bell, a removable cap for the central portion of the bell, a connecting-pipe between the central and annular spaces of the gasometer, a check-valve arranged in the pipe and serving to prevent backflow of gas from the annular space, a removable generating-tank in the lower central space of the main tank, a carbid-holder, a spring-closed valve therefor, a bar carrying the valve, and means on the bell for engaging said bar and moving the valve to open position.

850,149. CONVEYER-CHAIN. MICHAEL GARLAND, Bay City, Mich. Filed Sept. 15, 1905. Serial No. 278,565.

Claim.—1. The combination with a conveyer-chain link of laterally-extending wings carried by said link, said laterally-extending wings having their front faces inclined rearwardly and upwardly for the purposes set forth.

2. The combination with a conveyer-chain link of laterally-extending wings carried by said link, said laterally-extending wings having their front faces inclined rear-

wardly and upwardly; together with a socket having its front face beveled rearwardly and upwardly, for the purposes set forth.

3. The combination with a conveyer-chain link of laterally-extending wings carried by said link, said laterally-extending wings having their front faces inclined rearwardly and upwardly; together with a socket having its front face beveled rearwardly and upwardly and projecting above the side members of the link, for the purposes set forth.

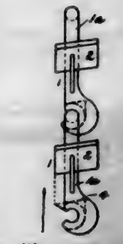

4. In combination with a conveyer-chain link; a pair of laterally-extending wings formed integral with said link, said wings having their front faces beveled rearwardly and upwardly and extending obliquely to the line of travel of the chain.

5. The combination in a conveyer, with a suitable link, of wings projecting laterally from each side thereof, the outer free ends of the wings located in advance of their opposite ends attached to said link, the front faces of the wings being inclined rearwardly.

6. A conveyer comprising links, wings projecting laterally from the links, said wings being inclined relative to the links to direct the material to be conveyed toward the links, and brace-rods located back of the wings and extending between the links and the wings, the outer ends of the braces being secured to the wings near the outer free ends of the latter.

7. A conveyer comprising a plurality of skeleton links, the links each formed with a socket at their rear ends to receive the front end of the next succeeding link, the front face of each socket being faced to form a scoop, wings carried by the opposite sides of each link, the inner ends of the wings being spaced apart by the width of the link, the scoop-face lying between the sides of the link.

8. A conveyer comprising links socketed at one end, separate wings projecting laterally from opposite sides of each link, the forward end of each socket being faced to form a scoop whose lower edge is approximately on a plane with the lower edges of the wings to coöperate therewith.

850,150. MECHANICAL CARD. LOUIS H. GLAZIER, New York, N. Y., assignor to J. Ottmann Lithographing Co., New York, N. Y., a Corporation of New York. Filed Oct. 13, 1906. Serial No. 338,768.

Claim.—1. In a mechanical card, a blank folded into three sections, and means for holding said sections operatively together, whereby the middle section may be used as a spring to operate said card.

2. In a mechanical card, a blank folded into three sections, two of said sections being decorated and provided with tenons and slits for holding said sections operatively together, whereby the card may be operated by pressing the top and bottom.

3. In a mechanical card, a blank folded into three sections, the middle section being longer than either one of the other sections to permit the middle section to be used as a spring and means for holding said sections operatively together.

850,151. PROCESS OF MAKING GARMENT-PADS. GUSTAV GOLDMAN, Baltimore, Md. Filed May 19, 1906. Serial No. 261,257.

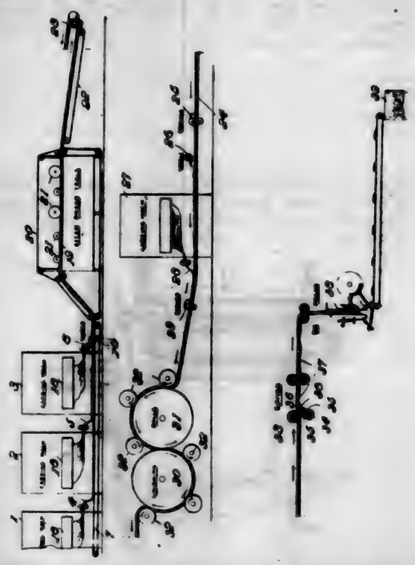

Claim.—1. The process of making pads which consists in forming a mass of fibers into a bat of tapering cross-section, veneering one side of said bat with a film of non-woven fibers, and then cutting the pad from said veneered bat.

2. The process of making pads which consists in laying down a continuous bat or strip of fibers of tapering cross-section, veneering one side of said bat or strip with a film of non-woven fibers, and then cutting the pad from said veneered bat or strip.

3. The process of making pads which consists in laying down a continuous bat or strip of fibers of tapering cross-section, applying a binder to one side of said bat or strip, then laying a film of non-woven fibers on said binder, whereby the film is united as a veneer to the bat or strip, and then cutting the pad from said veneered bat or strip.

4. The process of making pads which consists in laying down a continuous bat or strip of fibers of tapering cross-section, applying a binder to one side of said bat or strip, laying a veneering film of non-woven fibers on said binder, subjecting the whole to pressure, and then cutting the pad from said veneered bat or strip.

5. The process of making pads which consists in laying down a continuous bat or strip of fibers of tapering cross-section, applying a binder to one side of said bat or strip, laying a veneering film of non-woven fibers on said binder, subjecting the whole to heat and pressure, and then cutting the pad from said veneered bat or strip.

6. The process of making pads which consists in forming a bat or strip of fibers of tapering cross-section, veneering one side of said bat or strip with a film of non-woven fibers, forming transverse channels in the non-veneered side of said bat or strip, and then cutting the pad from said bat or strip.

7. The process of making pads which consists in forming a mass of fibers into a bat of tapering cross-section, applying a binder to one side of said bat, laying a veneering film of non-woven fibers on said binder, subjecting said bat to pressure, and then cutting the pad from said veneered bat.

8. The process of making pads which consists in forming a mass of fibers into a bat of tapering cross-section, veneering one side of said bat with a film of non-woven fibers, then cutting the pad from said veneered bat, and then stitching a woven fabric to the non-veneered side of said pad.

9. The process of making pads which consists in forming a mass of fibers into a bat of tapering cross-section, applying a binder to one side of said bat, laying a veneering film of non-woven fibers on said binder, subjecting said bat to pressure, then cutting the pad from said veneered bat, and then stitching a woven fabric to the non-veneered side of said pad.

10. The process of making pads which consists in laying down a continuous bat or strip of fibers, imparting a tapering cross-sectional form to said bat or strip, veneering one side of said bat or strip with a film of non-woven fibers, forming transverse channels on the non-veneered side of said bat or strip, cutting the pad from said channeled bat or strip, and then stitching a woven fabric to the non-veneered side of said pad.

850,152. BRAKE FOR HOISTING-MACHINES. GUY C. GRABLE, Minneapolis, Minn., assignor, by mesne assignments, to W. L. McBride, Minneapolis, Minn. Filed June 1, 1905. Serial No. 263,308.

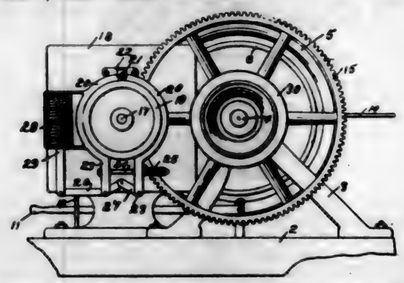

Claim.—1. In a hoisting-machine, the combination, with a shaft and a pulley mounted thereon, of a motor located to one side of said pulley-shaft and having its shaft parallel with and geared to said pulley-shaft, and a brake device arranged to be mechanically set and electrically released upon the stopping and starting of said motor, substantially as described.

2. The combination, with a shaft and its pulley, of an electric motor located to one side of said pulley-shaft and having its shaft parallel with and geared to said pulley-shaft, a solenoid in circuit with said motor, and a brake device arranged to be released when the circuit is closed through said motor and solenoid, substantially as described.

3. The combination, with a shaft and its pulley, of an electric motor located to one side of said pulley-shaft and having its shaft parallel with and geared to said pulley-shaft, a solenoid in circuit with said motor, a brake device arranged to be released when the circuit is closed through said motor and solenoid, and means for mechanically setting said brake device when the circuit is broken through said motor and solenoid.

4. The combination, with a shaft and its pulley, of a motor located to one side of said pulley-shaft and having its shaft parallel with and geared thereto, a brake-disk, shoes therefor, a solenoid having its armature connected with said shoes and arranged to release them when the circuit is closed through said solenoid, substantially as described.

5. The combination, with a shaft and its pulley, of an electric motor having its shaft geared to said pulley-shaft, a solenoid in circuit with said motor, a disk mounted on said motor-shaft, brake-shoes arranged to grip said disk and having a toggle-joint connection with the armature of said solenoid whereby when the circuit is closed through said solenoid said brake-shoes will be released, said toggle-joint connection consisting of a bar having a deflected end and pivoted to an extension of one of the shoes, and a link connecting said deflected end with an extension of the other shoe, substantially as described.

6. The combination, with a motor-shaft and a disk secured thereon, of brake-shoes arranged to grip said disk, a spring mechanism normally tending to draw said shoes together against said disk, a solenoid, and toggle-links connecting the armature of said solenoid and said shoes whereby when the circuit is closed through said solenoid said brake-shoes will be separated to release said disk, said toggle-links comprising a bar having a deflected end and pivoted to an extension of one of said shoes, and a link connecting said deflected end with an extension of the other shoe.

7. The combination of a motor-shaft and a disk secured thereon, a pulley-shaft geared with said motor-shaft, brake-shoes located to grip said disk and each having an extension, a spring normally drawing said shoes toward the disk to grip the same, a bar pivoted to the extension of one of said shoes and having an end deflected between the extensions of the shoes, a link pivoted to the extension of one shoe and pivotally connected with the deflected end of said bar, and a solenoid having its armature connected with one end of said bar having the deflected end for actuating said bar and its link to spread and release the shoes when a circuit is closed through the solenoid, substantially as described.

850,153. CURTAIN-ROLLER. HENRY GROSS, New York, N. Y. Filed June 28, 1906. Serial No. 323,817.

Claim.—1. In a curtain-roller the combination with a roller, of a tube carried by one end of the said roller, a spring interposed between the roller and the end of the tube, and a screw passing through the head of the extension and into the roller and adapted to move the extension on the end of the roller and against the pressure of the spring.

2. In a curtain-roller, the combination with a roller, of a tube carried by one end of the roller, a spring interposed between the end of the roller and the head of the tube, a threaded member carried by the roller, and a screw passing through the head of the tube and engaging the threaded member.

850,154. CAR-MOVER. RANDOLPH F. HAGEMAN, New Madison, Ohio. Filed Dec. 26, 1906. Serial No. 349,474.

Claim.—1. A car-mover comprising a shoe arranged for engagement with the rail, a wheel-engaging block pivoted at its lower end to the shoe above and at the rear of the

point of engagement of the latter with the rail, and a lever fulcrumed to the shoe at a point to the rear of the wheel-engaging block and provided with a cam-shaped nose coacting with the rear face of the block above its pivotal point to have rolling contact with the block from its upper end toward its fulcrum as the lever is depressed.

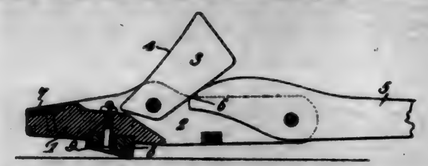

2. A car-mover comprising a shoe, an extended frictional gripping-face for the rail rigidly secured to the shoe, a wheel-engaging block pivoted at its lower end to the shoe above and to the rear of the gripping-face of the latter, and a lever fulcrumed to the shoe at a point to the rear of the wheel-engaging block and provided with a cam-shaped nose engaging the rear face of the block above its pivotal point and coacting with said block to have rolling contact therewith and to approach the fulcrum of the block as the lever is depressed.

3. A car-mover comprising a shoe arranged for engagement with a rail, a lever fulcrumed at one end of said shoe and having its short end formed with a cam-shaped nose, a wheel-engaging block pivoted in the shoe and having its rear face in the path of the cam-shaped nose of the lever, a block having its lower surface inclined to the plane of the bottom of the shoe and provided with an extended gripping-face for engagement with the rail, said block being rigidly secured to said shoe, and a hard wearing-plate secured to the front end of the shoe.

850,155. WATER-COOLED FURNACE-FRONT. ARNDT L. HAMMERBERG, Youngstown, Ohio. Filed Nov. 10, 1905. Serial No. 286,693.

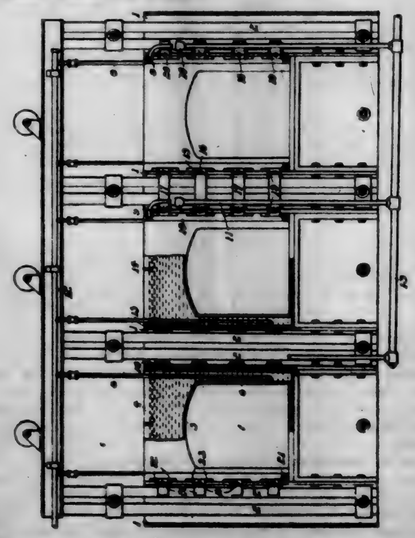

Claim.—1. In a furnace-front having therein a plurality of openings, U-shaped buckstays between consecutive openings, removable door-frames for each opening, clamping-bars having their ends respectively on adjacent door-frames, bolts anchored in the buckstays and passing through the clamping-bars, and means for securing the bolts and clamping-bars together.

2. In a furnace having therein a plurality of openings, U-shaped buckstays located between consecutive openings and having therein lateral grooves with enlarged inner ends, removable door-frames for each opening, clamping-bars having their ends respectively on adjacent door-frames, bolts in said grooves, the heads of the bolts being in the enlarged portions of said grooves, and means for securing the bolts and bars together.

3. In a furnace-front having therein a plurality of openings, U-shaped buckstays between consecutive openings, removable hollow door-frames for each opening, clamping-bars having their ends respectively on adjacent door-frames, bolts anchored in the buckstays and passing through the clamping-bars, means for securing the bolts and clamping-bars together, and means for leading a cooling fluid into and from said door-frames.

4. In a furnace-front having therein a plurality of openings, a door-frame for each opening, bars having their opposite ends on the edges of adjacent door-frames, and means for causing the bars to hold the frames against the furnace-front.

850,156. RESILIENT ATTACHING MEANS FOR RUBBER HEELS. ALTON B. HEIMBACH, Duluth, Minn. Filed Nov. 5, 1906. Serial No. 342,085.

Claim.—In a device of the character described, the combination with a shoe, of a bowed spring-plate secured to said shoe at or near its middle portion and having downturned free ends, and a detachable heel having a recess formed therein, the walls of said recess being undercut to engage over the downturned free ends of the spring-plate, there being an open space left between the under side of the spring-plate and the base of the recess between the points at which the ends of the spring engage the walls of the detachable heel to permit said spring to act.

850,157. WINDOW FOR CARS. WILLIAM H. HEULINGS, Jr., Philadelphia, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed May 11, 1906. Serial No. 316,267.

Claim.—1. In a device of the class described, posts with grooves forming slideways, two sashes moving in said slideways, and means for positively locking one sash to the other when the two are raised into the roof-chamber.

2. In a device of the class described, posts with slideways, an upper and a lower sash moving in said slideways, and means on the upper sash for positively engaging and locking the lower sash when the two are raised into the roof-chamber.

3. In a device of the class described, posts with slideways, upper and lower sashes moving in said slideways, and automatic means for causing said sashes to interlock when raised together in said slideways.

4. In a device of the class described, posts with slideways, a pair of sashes moving in said slideways, a guiding strap for determining the movement of the sashes, a projection on the upper sash engaging said band, flanges on said upper sash adapted to receive said lower sash, and means on one of said sashes for causing them to interlock when raised.

5. In a device of the class described, posts with slideways therein, a pair of sashes movable in said slideways, a guiding-strap, a projection on one of said sashes for engaging said strap, flanges on one of said sashes adapted to receive and inclose the edges of the other sash, a projection on the flanged sash, at the upper edge thereof, which is adapted to be engaged by the lower sash and interlocking means adapted to lock the sashes together when they are raised.

6. In a device of the class described, posts with slideways, upper and lower sashes movable in said slideways, a guiding-strap for determining the movement of said sashes, flanges on the upper sash adapted to receive the lower sash, a socket-piece in the lower sash, a standard secured to the upper edge of the upper sash, a bell-crank catch pivoted in said standard, an arm adapted to be engaged by the upper edge of the lower sash, and two projections, one adapted to engage said strap, and the other adapted to engage said socket-piece.

7. In a device of the class described, posts with slideways, upper and lower sashes moving therein, a bell-crank catch pivotally mounted on one sash and adapted to be engaged by the other and means for positively holding said catch in engagement with a sash when the sashes are raised together.

8. In a device of the class described, posts with slideways, upper and lower sashes moving therein and a guiding-strap, a bell-crank catch pivotally mounted on the upper sash, two projections on said catch, one adapted to engage said lower sash, and one adapted to engage said guiding-strap.

850,158. CAR-VENTILATING APPARATUS. DAVID HILL, Washington, N. C. Filed Mar. 8, 1906. Serial No. 304,968.

Claim.—1. In a car-ventilating apparatus, the combination with a ventilating-conduit extending through the car from one end to the other, and provided at intervals within the car with discharge-apertures, of rotary devices located in the said conduit adjacent to said discharge-apertures for forcing portions of the air out through said apertures, substantially as described.

2. In a car-ventilating apparatus, the combination with a conduit extending through the car from one end to the other and provided within the car with a series of discharge-apertures, of a rotary fan mounted in said conduit adjacent to each of said apertures, and operated by the current of air passing therethrough for forcing portions of the air through said discharge-apertures, substantially as described.

3. In a car-ventilating apparatus, the combination with a conduit extending through the car from one end to the other and provided within the car with a series of discharge-apertures, of a rotary fan mounted in said conduit adjacent to each of said apertures, and operated by the current of air passing therethrough for forcing portions of the air through said discharge-apertures, and a controlling-valve located in each end of said conduit, substantially as described.

4. In a car-ventilating apparatus, the combination with a conduit extending through the car from one end to the other, and provided within the car with a series of enlarged portions, each having a discharge-aperture therein, of a freely-rotating fan located in said conduit adjacent to each of said apertures and having portions extending into the main portion of the conduit for driving the fan by means of the air-current flowing therethrough, and valves controlling said discharge-apertures, substantially as described.

5. In a car-ventilating apparatus, the combination with a conduit extending through the car from one end to the other and having discharge-apertures within the car, said conduit being provided at each end with a longitudinally-movable connecting-piece of elastic material adapted to telescope within the conduit, and to be projected therefrom to connect said conduit with a conduit of an adjacent car, substantially as described.

6. In a car-ventilating apparatus, the combination with a conduit extending through the car from one end to the other, and having discharge-apertures within the car, said conduit being provided at each end with a longitudinally-movable connecting-piece of elastic material and means for projecting said connecting-piece, substantially as described.

7. In a car-ventilating apparatus, the combination with a conduit extending through the car from one end to the other, and having discharge-apertures within the car, said conduit being provided at each end with a longitudinally-movable connecting-piece of elastic material, means for projecting said connecting-piece including operating-levers, a catch located on each end of the conduit or car for engaging the operating-lever of an adjacent car, and springs for returning said connecting-pieces, substantially as described.

8. In a car-ventilating apparatus, the combination with a conduit extending through the car from one end to the other, and having discharge-apertures within the car, said conduit being provided at each end with a longitudinally-movable connecting-piece of elastic material, means for projecting said connecting-pieces, and springs for automatically returning said connecting-pieces, substantially as described.

9. In a car-ventilating apparatus, the combination with a conduit extending through the car from one end to the other, and provided at each end with an extensible connect-

ing-section, of means for extending and retracting said connecting-section including among their members, a ratchet-wheel, a pivoted lever carrying a pawl engaging said wheel, a spring operatively connected to said ratchet-wheel, for retracting said extensible section, a retaining-pawl, and means for disengaging said pawls when the lever is moved to its highest position, substantially as described.

10. In a car-ventilating apparatus, the combination with a conduit extending through the car from one end to the other, and provided at each end with an extensible connecting-section, of means for extending and retracting said connecting-section including among their members, a ratchet-wheel, a pivoted lever carrying a pawl engaging said wheel, a spring operatively connected to said ratchet-wheel, for retracting said extensible section, a retaining-pawl, a retracting-spring for said lever, said pawls being provided with engaging surfaces for simultaneously disengaging both pawls from the ratchet when the lever is in its highest position, substantially as described.

11. In a car-ventilating apparatus, the combination with two conduits extending through the car from one end to the other and provided at each end with extensible connecting-sections, of means at each end of the car for simultaneously extending and retracting the adjacent connecting-sections, including a shaft operatively connected with both of said extensible sections, a retracting-spring connected with said shaft for retracting said sections, a ratchet-wheel on said shaft, a lever pivoted on said shaft, a pawl connected with said lever, a retaining-pawl, a retracting-spring for said lever and means for disengaging said pawls when the lever is drawn into its highest position, substantially as described.

850,159. PACKING FOR PISTON-RODS. WILLIAM HILLMAN, Mount Vernon, N. Y. Filed May 10, 1906. Serial No. 316,069.

Claim.—1. A packing for piston-rods and the like comprising, a metallic strip having a continuous exposed bearing-face and a slitted or recessed rear face, and a flexible and elastic backing applied to the rear face of said metallic portion.

2. A packing for piston-rods and the like comprising, a metallic strip having a continuous bearing-face and a slitted or recessed rear face, and a flexible elastic backing applied to the rear face of said metallic portion, said metallic portion being formed of two thicknesses of metal connected at one edge.

3. A packing for piston-rods and the like comprising, a metallic strip having a continuous bearing-face and a slitted or recessed rear face, and a flexible elastic backing applied to the rear face of said metallic portion, said metallic portion being formed of two thicknesses of metal connected at both edges.

4. In a packing for piston-rods, an exposed facing member having an unbroken bearing-face, an elastic and flexible backing of fabric-like material built up in layers, said layers being cemented together, and slits or recesses in the rear surface of the facing member, a portion of said backing projecting into said slitted or recessed portion thereof.

5. In a packing for piston-rods and the like, a metallic facing-strip having a continuous unbroken exposed bearing-surface, a recessed rear face, a backing portion of flexible material in engagement with said recessed surface of the facing, and a retaining-flap extending from one side of said backing portion to the other side thereof and over said facing member.

850,160. VENTILATOR. SCHUYLER C. HODGE and PERRY DOUGLAS, Milwaukee, Wis. Filed July 11, 1904. Serial No. 216,000.

Claim.—1. A ventilator comprising inner and outer longitudinally-extending walls forming an air-inlet passage, and a transversely-disposed wall extended inwardly from the outer wall and across the end of the inner wall and backwardly along the inner side of said inner wall so as to form therewith an outlet-passage for the air.

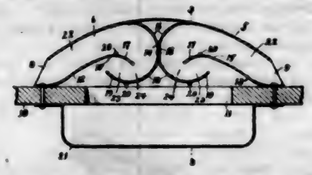

2. In a ventilator, the combination with a member provided with an opening or passage leading to the space to be ventilated, of a hood or casing having an open inner side bridging the opening of said member, and also provided with top and bottom pieces, an outer wall connecting said top and bottom pieces and forming a closed outer side, an upright wall extending longitudinally of the hood or casing from the outer end of the same, and a transverse wall extending from the outer wall, the said longitudinal walls forming an air-inlet passage, and the transverse wall forming a transverse continuation of the air inlet passage discharging into the passage leading to the space to be ventilated.

3. In a ventilator, the combination with a member provided with an opening or passage leading to the space to be ventilated, of a hood or casing provided with an open inner side bridging the opening or passage of said member, and also provided with top and bottom pieces, an outer wall connecting said top and bottom pieces and forming a closed outer side, longitudinal walls forming an air-inlet passage, and transverse walls extending inwardly from the outer longitudinal wall and at a distance from the ends of the inner longitudinal walls, the said longitudinal walls in conjunction with the outer wall and with the top and bottom pieces forming inwardly-extending passages with their inlet-openings at the outer ends thereof, and the said longitudinal walls in conjunction with the transverse walls and the top and bottom pieces forming transverse passages in continuation of the inwardly-extending passages, the said transverse passages being adapted to discharge into the spaces on the inner sides of the longitudinal walls in position to permit the air to pass through the opening or passage leading to the space to be ventilated.

4. In a ventilator, the combination with a member provided with an opening or passage leading to the space to be ventilated, of a hood or casing having an open inner side bridging the opening or passage of the said member, and also provided with top and bottom pieces and an outer wall connecting said top and bottom pieces and forming a closed outer side, a longitudinal wall forming an air-inlet passage with the outer wall and having its inner end curved inwardly, and a curved transverse wall extending from the outer wall at a distance from the inner wall and outwardly beyond the inner curved end of the inner wall, the said curved transverse wall presenting an air-passage around the end of the inner longitudinal wall discharging into the space to be ventilated.

5. In a ventilator, the combination with a member having an opening or passage leading to the space to be ventilated, of a hood or casing having an open inner side bridging the opening or space of said member, and also having top and bottom pieces and an outer wall connecting said top and bottom pieces and forming a closed outer side, longitudinal walls having their inner ends projected toward the outer wall, and transverse curved walls extending from the outer wall around and beyond the inner ends of the longitudinal walls, the said several walls forming air-passages leading from the ends of the hood and discharging into the passage leading to the space to be ventilated.

6. In a ventilator, the combination with a member provided with an opening or passage leading to the space to be ventilated, of a hood or casing having an open inner side bridging the opening or passage of said member, and also having top and bottom pieces and an outer wall connecting said top and bottom pieces and forming a closed outer side, longitudinal walls extending inward from the ends of the hood, and transverse walls extending from the outer wall beyond the ends of the longitudinal wall, the said walls being constructed to provide a dust-passage above the bottom of the hood or casing, and the several walls forming air-passages leading from the ends of the hood to the space to be ventilated.

7. In a ventilator, the combination with a member provided with an opening or passage leading to the space to be ventilated, of a hood or casing having an open inner side bridging the opening or passage of the said member, and also having top and bottom pieces, an outer wall connecting said top and bottom pieces and forming a closed outer side, a longitudinal inner wall extending from the end of the hood, and a transverse wall extending from the outer wall beyond the end of the inner longitudinal wall, the outer and inner longitudinal walls forming an air-inlet passage and the transverse wall forming with the longitudinal walls a continuation of the air-inlet passage discharging into the space on the inner side of the inner longitudinal wall.

8. In a ventilator, the combination of a member provided with an opening or passage leading to the space to be ventilated, of a hood or casing having an open inner side bridging the opening or passage leading to the space to be ventilated, and also having top and bottom pieces, an outer wall connecting said top and bottom pieces and forming a closed outer side, a longitudinal wall extending inward from the end of the hood, and a transverse wall extending from the outer wall at a distance from the end of the longitudinal wall, and outwardly beyond the end of said wall, the outer and inner longitudinal walls forming an air-inlet passage, and the transverse wall with the inner longitudinal wall forming an air-passage extending from the end of the inlet-passage and discharging into the space on the inner side of the longitudinal wall to permit the air to escape into the space to be ventilated.

9. A ventilator comprising a casing having an open inner side bridging an opening to the space to be ventilated and provided with open ends, longitudinal walls extending inward from the open ends of the casing, the inner ends of said longitudinal walls being turned slightly toward the space to be ventilated, and transverse walls extending around the inner ends of the longitudinal walls, the ends of the said walls being turned away from the space to be ventilated and terminating short of said longitudinal walls between the ends of the same.

10. A ventilator comprising a casing having an outer wall and side openings, walls forming air-passages, and other walls extending inwardly from said outer wall.

11. A ventilator comprising a casing having an outer wall with rearwardly-extending curved portions, and having side openings, and walls located in said casing, two of said walls being curved to correspond to the outer wall of said casing, the two others being curved outwardly from the middle of the casing at which point they are connected with said outer wall.

12. A ventilator comprising a casing having an outer wall with rearwardly-extending curved portions, and having side openings, and walls located in said casing, two of said walls being curved to correspond to the outer wall of said casing, the two others being curved outwardly from the middle of the casing at which point they are connected with said outer wall, said central walls being provided with backwardly-turned ends.

13. A ventilator comprising a casing having an outer wall and side openings, walls forming air-passages, other walls extending inwardly from said outer wall, and a bottom for said casing, longitudinal dust-passages being provided between the said bottom and the partitions.

850,161. RAIL-LOCK FOR DRAWBRIDGES. JOSEPH M. HYSAN, Baltimore, Md., assignor of one-third to M. Hale Dinneen, Baltimore, Md. Filed Feb. 23, 1907. Serial No. 358,988.

Claim.—1. In a rail-lock for drawbridges, the combination with the abutment track-section and the draw-span track-section spaced from each other at a considerable interval, of a pair of rail-sections disposed to extend between and connect said track-sections, transverse pivotal mounting for the ends of said rail-sections adjacent the end of the draw-span track-section, means rigidly connecting said rail-sections to constitute one tiltable member, means whereby said member is swung upward and downward, and sockets for the reception of the free ends of said rail-sections when in normal horizontal position.

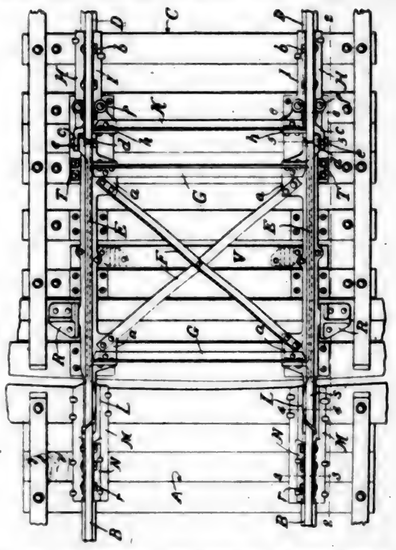

2. In a rail-lock for drawbridges, the combination of a pair of rail-sections hingedly mounted at one end on a transverse axis and having their free ends solid and formed with substantially straight upright side walls, said castings each consisting of a horizontal rail-supporting base, and a pair of opposed upright flanges on the forward portion of said base constituting an open-top socket for the reception of the free ends of said rail-sections, one of said flanges being extended rearward and formed to embrace the top of one basal flange and the side of the web of a stationary rail end, a clamp-plate for each casting formed to embrace the top of the basal flange and the web at the opposite side of such rail end, and means for clamping said flange extensions and clamp-plates together upon the intermediate rail end.

3. In a rail-lock for drawbridges, the combination with the abutment having a track-section and the draw-span also bearing a track-section, of a pair of rail-sections disposed to extend between the ends of said track-sections, transverse pivotal mounting for the draw-span ends of said rail-sections, means whereby said rail-sections are swung upward and downward, sockets on said abutment for receiving the free ends of the rail-sections when in normal horizontal position, and guides extended upward from said draw-span and constructed and arranged to prevent lateral displacement of said rail-sections when elevated.

4. In a rail-lock for drawbridges, the combination with the abutment having a track-section and the draw-span also bearing a track-section, of a pair of rail-sections disposed to extend between the ends of said track-sections, transverse pivotal mounting for the draw-span ends of said rail-sections, means whereby said rail-sections are swung upward and downward, sockets on said abutment for receiving the free ends of the rail-sections, and upright bearing-brackets adjacent the pivotal ends of said rail-sections for taking up side thrust therein.

5. In a rail-lock for drawbridges, the combination with

the abutment track-section and the draw-span track-section spaced from each other at a considerable interval, of a pair of rail-sections disposed to extend between and bridge the interval intermediate said track-sections, said rail-sections being provided with inward-extending horizontal flanges, transverse pivotal mounting for the ends of said rail-sections adjacent the end of the draw-span track-sections, crossed diagonal irons secured to said flanges and connecting said rail-sections, and a pair of connecting-irons normal to said rail-sections and secured to said flanges adjacent the ends of said diagonal irons.

6. In a rail-lock for drawbridges, the combination of a pair of rails forming part of a draw-span track-section, said rails having laterally-offset lugs at one end transversely apertured, a pair of rail-sections having one end contiguous said rail ends, said ends of said rail-sections having laterally-offset lugs received within said other lugs and having transverse apertures registering with the apertures therein, and pivots passing through said registering apertures.

7. In a rail-lock for drawbridges, the combination of a pair of rails forming part of a draw-span track-section, a pair of castings clamping the opposite sides of the ends of said rails, the outer of each pair of castings having a laterally-offset pivot-lug and the inner having a securing-flange, a pair of rail-sections having one end contiguous the ends of said rails and provided with laterally-offset pivot-lugs overlapping said other lugs, pivots connecting said lugs, and an angle-iron secured to and connecting said flanges.

8. In a rail-lock for drawbridges, the combination with the abutment having a track-section and the draw-span also bearing a track-section, of a pair of rail-sections disposed to extend between the ends of said track-sections and to bridge the space between said abutment and draw-span, transverse pivotal mounting for the draw-span ends of said rail-sections, sockets on said abutment for receiving the free ends of the rail-sections when in normal horizontal position, a transverse shaft beneath the floor of said draw-span and having an arm, a link connecting said arm and said rail-sections, and a second transverse shaft and connections for operating said other shaft.

850,162. PLOW. NILE JENNINGS, Cormorant, Minn. Filed Feb. 15, 1907. Serial No. 357,558.

Claim.—1. A plowshare having a landside, a bar attached thereto and having a point-supporting shank, a strip lying under the under edges of the landside and bar and being capable of vertical adjustment along its entire length.

2. A plowshare having a landside, bolts attached thereto, a bar located upon said bolts and having a shank which projects in advance of the forward edge of the landside and below the lower edge thereof, a strip lying under the lower edges of the landside and said bar, said strip having vertically-disposed lugs provided with elongated perforations which receive said bolts.

850,163. MACHINE FOR FORMING ARTIFICIAL-FUEL BLOCKS. MICHAEL M. KLINE, St. Louis, Mo. Filed July 30, 1906. Serial No. 328,361.

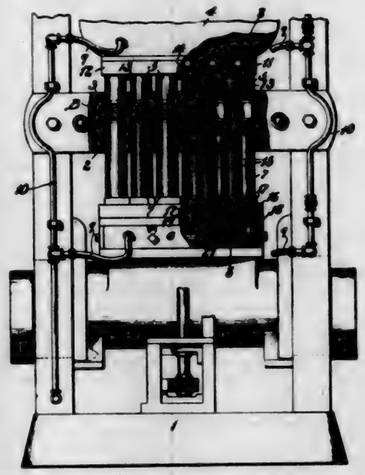

Claim.—1. A machine for forming artificial-fuel blocks, comprising a die-carrying member provided with a chamber for receiving a heating fluid, means for supplying a heating fluid to said chamber, a plate connected to said die-carrying member and provided on its underneath face with conduits or passage-ways, ports leading from the chamber, in the die-carrying member to said conduits, dies mounted on the upper face of said plate and provided with central bores, and nipples for holding said dies in position and for establishing communication between the bores in said dies and the conduits in the plate; substantially as described.

2. A machine for forming artificial-fuel blocks, comprising a die-carrying member provided on its interior with a chamber for receiving a heating fluid, a flexible tube extending into said chamber for supplying a heating fluid thereto, a plate connected to said die-carrying member and provided on its underneath face with a plurality of circular recesses, and grooves connecting said recesses together to form passage-ways for the circulation of the heating fluid, ports leading from the chamber in the die-carrying member to points in said passage-way, dies carried by said plate and provided with central bores, and headed nipples for securing said dies to the plate, the heads of said nipples resting in the circular recesses in the plate and being of less dimensions than said recesses; substantially as described.

850,164. CLUTCH. WILLIAM H. KLOCKE, New York, N. Y., assignor to E. W. Bliss Company, a Corporation of West Virginia. Filed May 26, 1905. Serial No. 262,323.

Claim.—1. The combination of a driving and a driven member having opposed clutch-surfaces, a key rotating with the driven member and movable lengthwise thereof for disengaging the said members, a friction-roll carried by the said key, a latch having a tapered portion for engaging with the roll carried by the key so as to cause the latter to disengage the members, means for normally holding the members in engagement and for causing the key to extend into the plane of the latch, means for withdrawing the latch so as to allow the members to become engaged, and a latch-moving mechanism for imparting a movement to the latch to cause the key to entirely free the members from each other, controlled independently of the means for withdrawing the latch.

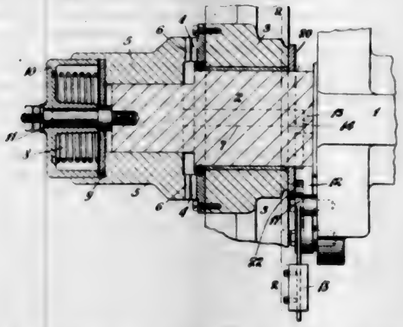

2. The combination of a driving and a driven member having opposed clutch-surfaces, a key rotating with the driven member and movable lengthwise thereof for disengaging the said members, a truncated cone-shaped friction-roll carried by the said key, a latch having a tapered and downwardly-beveled portion for acting upon the key to cause the latter to disengage the members, means for normally holding the members in engagement and for causing the key to extend into the plane of the latch, means for withdrawing the latch so as to allow the members to become engaged, and a latch-moving mechanism for imparting a movement to the latch to cause the key to entirely free the members from each other controlled independently of the means for withdrawing the latch.

3. The combination of a driving and a driven member having opposed clutch-surfaces, a key rotating with the driven member and movable lengthwise thereof for disengaging the said members, a friction-roll carried by the said key, a latch having a tapered portion for acting upon the key to cause the latter to disengage the members, means for normally holding the members in engagement and for causing the key to extend into the plane of the latch, means for withdrawing the latch so as to allow the members to become engaged, a latch-moving mechanism for imparting a movement to the latch to cause the key to entirely free the members from each other, and means movable with the driven member controlling the said latch.

4. The combination of a driving and a driven member having opposed clutched surfaces, a key rotating with the driven member and movable lengthwise thereof for disengaging the said members, a truncated cone-shaped friction-roll carried by the said key, a latch having a tapered and downwardly-beveled portion for acting upon the key to cause the latter to disengage the members, means for normally holding the members in engagement and for causing the key to extend into the plane of the latch, means for withdrawing the latch so as to allow the members to become engaged, a latch-moving mechanism for imparting a movement to the latch to cause the key to entirely free the members from each other, and means moving with the driven member controlling the said latch-moving mechanism.

5. The combination of a driving and a driven member having opposed clutch-surfaces, a key rotating with the driven member and movable lengthwise thereof for disengaging the said members, a friction-roll carried by the said key, a latch having a tapered portion for acting upon the key to cause the latter to disengage the members, means for normally holding the members in engagement and for causing the key to extend into the plane of the latch so as to allow the members to become engaged, a latch mechanism for imparting a movement to the latch to cause the key to entirely free the members from each other, and a cam moving with the driven member for releasing and restoring the said latch-moving mechanism.

6. The combination of a driving and a driven member having opposed clutched surfaces, a key rotating with the driven member and movable lengthwise thereof, a latch for acting upon the key to cause the latter to disengage the members, a truncated cone-shaped friction-roll carried by the said key, a latch having a tapered and downwardly-beveled portion for acting upon the key to cause the latter to disengage the members, means for normally holding the members in engagement and for causing the key to extend into the plane of the latch, means for withdrawing the latch so as to allow the members to become engaged, a latch-moving mechanism for imparting a movement to the latch to cause the key to entirely free the members from each other, and a cam moving with the driven member for releasing and restoring the said latch-moving mechanism.

7. The combination of a driving and a driven member having opposed clutch-surfaces, a key rotating with the driven member and movable lengthwise thereof for disengaging the said members, a pivoted latch free to move transversely on its pivotal axis for acting upon the key to cause the latter to disengage the members, means for normally holding the members in engagement and for causing the key to extend into the plane of the latch, means for withdrawing the latch so as to allow the members to become engaged, a pivoted dog adapted to move said latch transversely to its pivotal axis to effect the complete disengagement of the members, and means for releasing and restoring said pivoted dog by the rotation of the driven member.

8. In a clutch, the combination of two clutch members, opposed teeth in said clutch members adapted to engage with each other, and a spring-seated spacing member adjacent to one of said teeth for facilitating the engagement of the members and for preventing them from falling one ahead of the other as they rotate.

850,165. ELECTRIC-MOTOR-STARTING DEVICE. DAVID R. KNAPP, Philadelphia, and HOWARD E. CADE, Pencoyd, Pa. Filed Dec. 7, 1906. Serial No. 346,748.

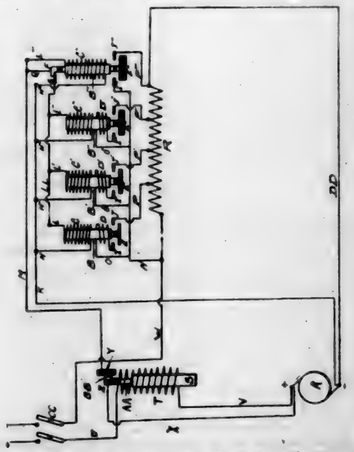

Claim.—1. In the combination of an electric motor and starting resistance, leads connected to the positive and negative side of the said electric motor, said leads forming a variable-voltage circuit, electromagnets each with variable weight-cores, said electromagnets being energized by the aforesaid variable-voltage distribution-circuit, and electromagnet having its windings in series with aforesaid

electric motor, the core of the aforesaid electromagnet carrying the means to open the aforesaid variable-voltage distribution-circuit upon a predetermined movement of said core, all substantially as and for the purpose shown and described.

2. In a starting-panel of the character described in combination with an electric motor and a starting resistance, leads connected to the positive and negative side of the said electric motor, said leads forming a variable-voltage circuit, an electromagnet having its winding in series with the aforesaid electric motor, the core of the aforesaid electromagnet carrying means to open the aforesaid variable-voltage distribution-circuit upon a predetermined movement of said core, electromagnets each having a shunt and series winding, said each shunt-winding connected across the aforesaid variable-voltage distribution-circuit, said series winding being connected in shunt to a respective section of the aforesaid resistance through contacts, said contacts engaging upon the movement of the respective cores, all substantially as and for the purpose shown and described.

3. In a starting-panel of the character described in combination with an electric motor and its starting resistance, leads connected to the positive and negative side of the aforesaid electric motor, said leads forming a variable-voltage circuit, an electromagnet having its winding in series with the aforesaid electric motor, the core of the aforesaid electromagnet carrying means to open the aforesaid variable-voltage distribution-circuit upon a predetermined movement of said core, an electromagnet having a shunt-winding and electromagnets having each a shunt and series winding, said each shunt-winding being connected across the variable-voltage distribution-circuit, said each series winding of the magnets having each a shunt and series winding being connected in shunt to a respective section of the aforesaid resistance through contacts, said contacts engaging upon the movement of the respective cores, all substantially as and for the purpose shown and described.

4. In a starting-panel of the character described, in combination with an electric motor and a starting resistance, leads connected to the positive and negative side of said electric motor, said leads forming a variable-voltage circuit, an electromagnet having its winding in series with the aforesaid electric motor, the core of the aforesaid electromagnet carrying means to open the aforesaid variable-voltage distribution-circuit upon a predetermined movement of said core, electromagnets each having a shunt-winding, said shunt-winding being energized from the aforesaid variable-voltage distribution-circuit, one of the said cores of the aforesaid shunt-magnets carrying means to open the aforesaid shunt-windings, with the exception of its own, said openings of the shunt-windings taking place upon the movement of said core, all substantially as and for the purpose shown and described.

5. In a starting-panel of the character described the combination of an electric motor and starting resistance, leads connected to positive and negative side of said electric motor, said leads forming a variable-voltage circuit, a combination of electromagnets having a shunt-winding, and electromagnets having each a shunt and series winding, said each shunt-winding being connected across the aforesaid variable-voltage distribution-circuit, said electromagnets each having variable-weight cores, said cores of the electromagnets having each a shunt and series winding, each carrying means for short-circuiting a portion of the aforesaid resistance, through each of the above-mentioned series windings and suitable contacts, the core of the aforesaid shunt-winding magnet carrying means to short-circuit its respective section of resistance upon its movement through suitable contacts, and carry means to open each of the shunt-windings, on each of the aforesaid magnets, having each a shunt and series winding, all substantially as and for the purpose shown and described.

6. In a starting-panel of the character described in combination with an electric motor and starting resistance, leads connected to positive and negative side of said electric motor, said leads forming a variable-voltage circuit, electromagnets having each a shunt-winding, said each shunt-winding being connected across the aforesaid variable-voltage distribution-circuit, said electromagnets each having variable-weight cores, said cores carrying means for short-circuiting a portion of the aforesaid resistance through suitable contacts upon a movement of each of the aforesaid cores, one of the said cores carrying means to open the aforesaid shunt-windings with the exception of its own, said opening of the shunt-windings taking place on the movement of said core, an electromagnet having its winding in series with the aforesaid electric motor, the core of the aforesaid electromagnet carrying means to open the aforesaid variable-voltage distribution-circuit upon a predetermined movement of said core, all substantially as and for the purpose shown and described.

7. In a starting-panel of the character described with a combination of an electric motor and a starting resistance leads connected to the positive and negative side of said electric motor, said leads forming a variable-voltage circuit, a combination of electromagnets having a shunt-winding and electromagnets having each a shunt and series winding, said each shunt-winding being connected across the aforesaid variable-voltage distribution-circuit, said electromagnets each having variable-weight cores, said cores of the electromagnets having each a shunt and series winding, each carrying means for short-circuiting a section of the aforesaid resistance through each of the aforesaid mentioned series windings and suitable contacts, the core of the aforesaid shunt-winding magnet carrying means to short-circuit its respective section of resistance upon its movement, through suitable contacts, and carry means to open each of the shunt-windings on each of the aforesaid magnets having each a shunt and series winding, an electromagnet having its windings in series with the aforesaid electric motor, the core of the aforesaid electromagnet carrying means to open the aforesaid variable-voltage distribution-circuit upon a predetermined movement of said core, all substantially as and for the purpose shown and described.

8. In a starting-panel of the character described in combination with an electric motor and a starting resistance, leads connected to the positive and negative side of the said electric motor, said leads forming a variable-voltage circuit, an electromagnet having its winding in series with the aforesaid electric motor, the core of the aforesaid electromagnet provided with means to open the variable voltage distribution-circuit upon a predetermined movement of said core, electromagnets connected across the aforesaid variable-voltage distribution-circuit, said electromagnets provided with electrical and mechanical means to cause the said cores to operate singly and consecutively as the voltage is increased from zero to one hundred per cent. of the voltage of the variable-voltage distribution-circuit, the windings of the aforesaid electromagnets connected across the aforesaid variable-voltage distribution-circuit each core carrying means for short-circuiting a respective section of the aforesaid resistance through suitable contacts, upon the movement of each of the aforesaid cores, one of the said cores carrying means to open the aforesaid magnet-windings connected across the variable-voltage distribution-circuit, with the exception of its own winding, said opening of the magnet-windings taking place upon the movement of the said core, all substantially as and for the purpose shown and described.

9. The combination with a motor having an armature, of a resistance, supply-mains and a controller for cutting out the said resistance step by step comprising a series of electromagnets one of the said magnets having a shunt-winding, the remainder having each a shunt and series winding, said series winding being connected in shunt to a respective section of the aforesaid resistance upon the operation of the core of the said magnets having each a shunt and series winding, through contacts, said shunt-windings being connected across a circuit, the said circuit being in parallel with the said armature, an electromagnet having its windings in series with the aforesaid motor, the core of the aforesaid electromagnet provided with means to open the aforesaid circuit which is in parallel with the armature upon a predetermined movement of said core, all substantially as and for the purpose shown and described.

10. The combination with a motor having an armature, of a resistance, supply-mains and a controller for cutting out said resistance step by step, comprising a series of electromagnets, one of the said electromagnets having a shunt-winding the remainder having each a shunt and series winding, said series winding being connected in shunt to a respective section of the aforesaid resistance upon the operation of the core of the said magnets having each a shunt and series winding through contacts, said shunt-windings being connected across a circuit, the said circuit being in parallel with the said armature, one of the aforesaid electromagnets having a core, said core provided with means to open the aforesaid shunt-wound coils, with the exception of its own, upon a predetermined movement of said core, an electromagnet having its winding in series with the aforesaid motor, the core of the said electromagnet provided with means to open the aforesaid circuit in parallel with the armature upon a predetermined movement of said core, all substantially as and for the purpose shown and described.

850,166. ELECTRICAL CONDENSER AND METHOD OF MAKING THE SAME. ROBERT C. LANPHIER, Springfield, Ill., assignor to Sangamo Electric Company, Springfield, Ill., a Corporation of Illinois. Filed Dec. 13, 1905. Serial No. 291,650.

Claim.—1. The process of insulating a condenser, which consists in immersing the same in a bath of sulfur heated to the point at which the sulfur becomes a thin liquid, substantially as described.

2. The process of insulating a condenser, which consists in first thoroughly drying the same and then immersing the same in a bath of sulfur heated to the point at which the sulfur becomes a thin liquid, substantially as described.

3. The method of insulating a condenser composed of strips of conducting metal between and separated by strips of thin insulating material, which consists in immersing the same in a bath of sulfur heated to the point at which the sulfur becomes a thin liquid, substantially as described.

4. The method of making an electrical condenser, which consists in constructing the condenser of thin layers of conducting metal between and separated by layers of paper and then immersing the same in a bath of sulfur heated to the point at which the sulfur becomes a thin liquid, substantially as described.

5. The method of making an electrical condenser, which consists in winding strips of metal foil between and separated by strips of paper tightly together, thoroughly drying the same, and then immersing the whole in a bath of sulfur heated to the point at which the sulfur becomes a thin liquid, substantially as described.

6. The method of making an electrical condenser, which consists in rolling tightly upon a core two strips of metal foil between and separated by strips of paper, thoroughly drying the same, inclosing the same in a casing, and then immersing the whole in a bath of sulfur heated to the point at which it becomes a thin liquid, until the air is all expelled from the same and the condenser is completely impregnated with the sulfur between the layers of the metal foil and the paper, substantially as described.

7. The condenser formed by the herein-described method of winding upon a central core strips of conducting metal between and separated by strips of paper and then immersing the same in a bath of sulfur heated to the point at which the sulfur becomes a thin liquid, until the same is completely impregnated with sulfur, substantially as described.

8. The electrical condenser formed by the herein-described method of rolling tightly upon a core two strips of metal foil, between and separated by strips of paper, and then immersing the same in a bath of sulfur heated to a point at which the sulfur becomes a thin liquid, until the air is completely expelled and the condenser thoroughly impregnated with sulfur between the layers of metal foil and the paper, substantially as described.

9. An electrical condenser consisting of thin strips of conducting material separated by strips of paper and having, between the strips of paper and the conducting material, thin layers of sulfur introduced therein by immersing the condenser in a bath of sulfur heated to a point at which the sulfur becomes a thin liquid.

10. An electrical condenser consisting of thin strips of metal foil separated by strips of paper and having, between the strips of paper and the metal foil, thin layers of sulfur introduced therein by immersing the condenser in a bath of sulfur heated to a point at which the sulfur becomes a thin liquid until the air is completely expelled and the spaces between the paper and the metal foil become filled with a layer of sulfur.

850,167. REFUSE-CAN. THOMAS LEE, Home City, Ohio. Filed Jan. 2, 1906. Serial No. 294,037.

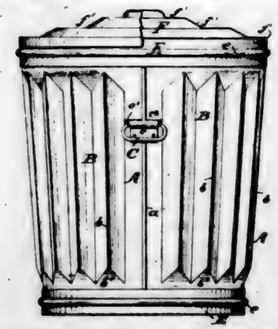

Claim.—A refuse-can of sheet metal having a flaring body, the wall of which, extended inwardly from upper and lower edges respectively, is left plain for a limited distance and provided with upright flutings between these plain surface portions, the outside ridges of these flutings at their upper ends being even with the plain surface of the wall of the body and the inside ridges being even at their lower ends with the plain surface of the inside of the wall in the lower part of the body, whereby the taper of all inside surface portions of the wall is continued uninterruptedly and increasingly from bottom to the open, upper part of the can and whereby any inwardly-projecting surface portions, reducing the taper between these points are avoided.

850,168. MOLDING PROCESS. AARON R. MARSTELLER, St. Louis, Mo. Filed Dec. 10, 1906. Serial No. 347,151.

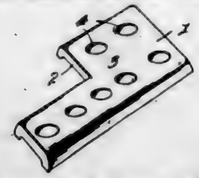

Claim.—The herein-described process of producing molds which consists in first embedding a pattern in molding-sand leaving one side of the pattern exposed, tamping plastic material adapted to be hardened, upon said exposed side, said sand and plastic material receiving in negative the impression of the opposite sides of the pattern, hardening said plastic material, then tamping upon the impressed surfaces thus formed plastic material adapted to be hardened, said last-named plastic material receiving positive

impressions of the sides of said pattern, hardening said plastic material to produce durable rigid matrices and finally in producing the drag and cope halves of a mold from said matrices, substantially as described.

850,169. WEIGHING ATTACHMENT FOR ICE-BOXES. NELSON S. MERCER, Omaha, Nebr. Filed Dec. 10, 1906. Serial No. 347,080.

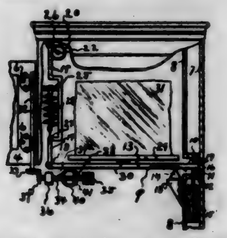

Claim.—1. Weighing attachments as described, in combination with an ice-receptacle having a swinging door, weighing means secured to the ice-receptacle, and means operated by said swinging door to terminate the operation of said weighing means upon closing said door.

2. Weighing attachments as described, in combination with an ice-receptacle having a swinging door, weighing means secured to the ice-receptacle, and means operated by said swinging door to terminate the operation of said weighing means upon opening said door.

3. In combination, weighing attachments for an ice-receptacle having a swinging door; of weighing means, comprising a weight-indicating member, a balanced platform within said ice-receptacle and a resilient member having a connection with said weight-indicating member and said balanced platform; means operated by the swinging door of the ice-receptacle to cause a movement of said balanced platform upon closing said swinging door, to terminate the operation of said weighing means.

4. In combination, weighing attachments for an ice-receptacle having a swinging door; of weighing means, comprising a weight-indicating member, a balanced platform within said ice-receptacle and a resilient member having a connection with said weight-indicating member and said balanced platform; means operated by the swinging door of the ice-receptacle to cause a movement of said balanced platform upon opening said swinging door to terminate the operation of said weighing means.

850,170. SASH-FASTENER. CHARLES H. MILLER, Bowie, Tex. Filed Jan. 25, 1907. Serial No. 353,947.

Claim.—1. A sash-fastener comprising a bracket to be attached to the window-facing and provided with a bearing-arm intermediate the ends thereof, a locking-bar running through said bearing-arm to be attached to the window-sash, a lever fulcrumed in said bracket and carrying a wedge clamping said bar in said bearing-arm against downward movement, and pivoted catch coöperating with said wedge to engage said locking-bar and clamp the same against upward movement.

2. A sash-fastener comprising a bracket to be attached to the window-facing, a bearing-arm formed on said bracket intermediate the ends thereof and provided with a slot therethrough, a locking-bar having notches therein to be attached to the window-sash operating in said slot, a lever fulcrumed in said bracket and carrying a wedge to be inserted in said slot with said bar and to clamp said bar in said slot, and a catch pivotally mounted in a recess in the outer part of said bearing-arm and engaging said bar and pressing the same against the back wall of said slot to clamp said bar in said slot.

850,171. STOVE OR FURNACE ATTACHMENT. LEVI D. MOHLER, McPherson, Kans. Filed May 17, 1904. Serial No. 208,341.

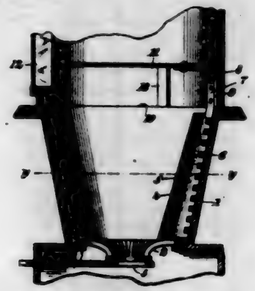

Claim.—1. A slack and smoke burner attachment for stoves or furnaces comprising a conductor having an open side, the edges of which are adapted to engage loosely against the inner side of a fire-pot which forms a wall for the open side of the conductor, the said conductor being of such form in cross-section as to produce a lining for a portion of the fire-pot but so spaced from the fire-pot as to form an air-passage between the conductor and fire-pot, and a deflector over the conductor adapted to convey air horizontally over the fuel.

2. A slack and smoke burning attachment for stoves or furnaces, comprising a conductor open at its ends and having air-outlet openings, the said flue being adapted to be removably placed in the fire-pot of the stove or furnace, and a deflector attached to the upper end of the flue and extended partly across the fire-pot.

3. A slack and smoke burning attachment for stoves or furnaces, comprising a conductor having an open side, the edges of which are adapted to engage the inner side of a fire-pot which forms a wall for the open side of the conductor, the said conductor being of such shape in cross-section as to coöperate with the inner side of the fire-pot as to form a passage to convey air upward into and above the fuel, and a horizontally-disposed deflector-plate attached to the upper end of the conductor.

4. A smoke and slack burning attachment for a stove or furnace comprising a conductor adapted to rest against the inner surface of a fire-pot, the said conductor being open at its ends and provided with air-outlets, an upward extension on said conductor, a bracket to which said extension is attached, the said bracket having a portion for resting upon the upper edge of the fire-pot, a horizontally-disposed deflector-plate attached to said bracket, and legs on said plate for resting on the upper edge of the fire-pot.

850,172. FIRE-RESISTING SHUTTER. EDWARD H. MCCLOUD, Columbus, Ohio, assignor to The Kinnear Manufacturing Company, Columbus, Ohio, a Corporation of West Virginia. Filed Jan. 27, 1906. Serial No. 298,169.

Claim.—1. The combination with a corrugated curtain and walls forming a channel in which said curtain operates, of shields applied to the edge of said curtain adapted to close substantially entirely openings between the concave sides of the corrugations at one face of the curtain and the opposed wall forming the channel.

2. The combination with a corrugated fire-resisting curtain and walls forming a channel in which said curtain operates, of shields applied to the edge and from opposite faces of said curtain adapted to close substantially entirely openings between the concave sides of the corrugations and the opposed walls forming the channel.

3. The combination with a corrugated curtain and walls forming a channel in which said curtain operates, a head or web secured to the edge of the curtain and adapted to close substantially entirely the openings between the concave side of the corrugation and the opposed wall forming the channel, and means adapted to prevent contact of the face of the curtain at its margin with the wall of the channel.

4. The combination with a corrugated curtain and walls forming a channel in which said curtain operates, a head or web secured to the edge of the curtain and adapted to close substantially entirely the openings between the concave side of the corrugation and the opposed wall forming the channel, and means adapted to prevent contact of the face of the curtain at its margin with the opposed wall of the channel.

5. In combination with a corrugated curtain and channel-walls between which said curtain operates, a head or web secured to the edge of the curtain and adapted at one side to close the opening substantially entirely between the concave side of the corrugation and the opposed wall forming the channel, and at the opposite side to serve as a wear-point between the curtain and channel-wall.

6. In combination with a corrugated curtain and channel-walls between which said curtain operates, a head or web secured to the edge of the curtain and adapted at one side to close substantially entirely the opening between the concave side of the corrugation and also adapted to prevent contact of the curtain with the opposed wall of the channel, and at the opposite side to serve as a wear-point between the curtain and the wall of the channel opposed to said opposite side.

7. A device for application to the edge of a corrugated curtain comprising a head or web adapted to close substantially the opening between the concave side of the corrugation, and a shank extending laterally therefrom adapted to be secured to the edge of the curtain, substantially as described.

8. A device for application to the edge of a corrugated curtain comprising a head or web of substantially triangular form, and a shank extending laterally therefrom adapted to be secured to the edge of the curtain, substantially as described.

9. A device for application to the edge of a corrugated curtain comprising a head or web of substantially triangular form and adapted when applied to the curtain to close substantially entirely the opening between the concave side thereof and the opposing wall of the channel in which the curtain is to run, and a shank having a curved surface extending laterally therefrom and adapted to be applied to the crown of a corrugation.

850,173. ELECTRIC TRANSPORTATION SYSTEM. WILLIAM C. MCMURRAY, Wellsville, Ohio. Filed Nov. 20, 1905. Serial No. 288,219.

Claim.—1. In a system of the character indicated, the combination of a series of posts, outgoing and return circuits supported on said posts, each of said circuits comprising two wires, one of which is arranged above the other, a car-frame, a support mounted at each end of said frame, wheels arranged on said supports and adapted to rest on said wires so that the front and back of the car will be supported from different wires, a motor mounted on the said frame, and means for electrically and mechanically connecting said motor and said wheels.

2. In a system of the character indicated the combination of a series of posts, outgoing and return circuits arranged on said posts, each of said circuits comprising two wires, one of which is arranged above the other, a car-frame, a support arranged on each end of said frame, a cross-head pivotally secured to each support, wheels mounted on said cross-heads, the wheels on one cross-head being arranged to rest on the upper wire and the wheels on the other cross-head being arranged to rest on the lower wire, a motor mounted on said car-frame and means for electrically and mechanically connecting said motor and said wheels.

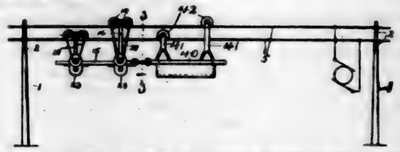

3. In a system of the character indicated the combination of a series of posts, outgoing and return circuits supported on opposite sides of said posts, each of said circuits comprising two wires one of which is arranged above the other and means for forming a station and for transferring cars from one circuit to the other comprising curved tracks arranged between the outgoing and the return circuits and switches connecting said curved tracks with both of said circuits.

850,174. METERING PANEL-BOARD. ARTHUR C. MCWILLIAMS, Chicago, Ill. Filed Apr. 19, 1906. Serial No. 312,591.

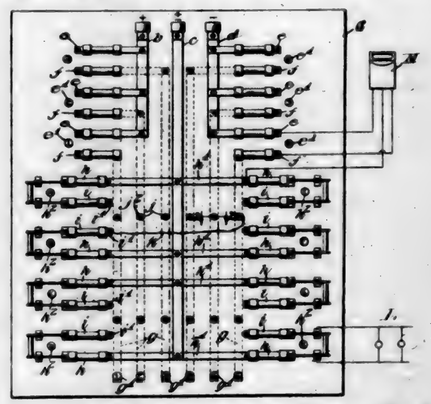

Claim.—1. In combination; a plurality of pairs of stationary meter-terminals; a plurality of pairs of stationary load-terminals; a bus-bar permanently connected to the first meter-terminal of each pair; another bus-bar of different potential permanently connected to the first load-terminal of each pair; a set of substantially parallel conductor-bars permanently connected to the second meter-terminal of each pair; removable conductors and contact-pieces connected to each one of said parallel bars, there being one of said contact-pieces adjacent to each pair of load-terminals whereby any load-circuit may be thrown onto any meter-circuit by means of a single removable conductor connected at one end to the second load-terminal of such load-circuit and at the other end to the adjacent contact-piece leading to the proper meter-circuit.

2. In combination; a plurality of pairs of stationary meter-terminals; a plurality of pairs of stationary load-terminals; a bus-bar permanently connected to the first meter-terminal of each pair; another bus-bar of different potential permanently connected to the first load-terminal of each pair; a set of substantially parallel conductor-bars

permanently connected to the second meter-terminal of each pair; a plurality of contact-pieces connected to each one of said parallel bars, there being one of said contact-pieces adjacent to each pair of load-terminals and a wire whereby any load-circuit may be thrown onto any meter-circuit by attaching said wire at one end to the second load-terminal of such load-circuit and at the other end to the adjacent contact-piece leading to the proper meter-circuit.

3. In a panel-board, the combination of a board of insulating material; a plurality of pairs of meter-terminals mounted thereon; a plurality of pairs of load-terminals also mounted on said board; a bus-bar on said board permanently connected to the first meter-terminal of each pair; a bus-bar of different potential permanently connected to the first load-terminal of each pair; a set of substantially parallel conductor-bars permanently connected to the second meter-terminal of each pair; removable conductors and binding-studs connected to each one of said parallel bars, there being one of said studs adjacent to each pair of load-terminals whereby any load-circuit may be thrown onto any meter-circuit by means of a single removable conductor attached at one end to the second load-terminal of such load-circuit and at the other end to the adjacent binding-stud leading to the proper meter-circuit.

4. In a panel-board, the combination with loose conducting-wires of a board of insulating material; a plurality of pairs of meter-terminals arranged in a row thereon; a plurality of pairs of load-terminals in a row also mounted on said board; a bus-bar on said board permanently connected to the first meter-terminal of each pair; another bus-bar of different potential from the first one permanently connected to the first load-terminal of each pair; a set of conductor-bars, permanently connected to the second meter-terminal of each pair, said conductor-bars running parallel to the row of load-terminals; and a plurality of binding-studs permanently connected to each one of said conductor-bars at intervals, there being one of said studs adjacent to each pair of load-terminals whereby any load-circuit may be thrown onto any meter-circuit by means of a single loose wire attached at one end to the second load-terminal of such load-circuit and at the other end to the adjacent binding-stud leading to the proper meter-circuit.

5. In a metering panel-board, the combination with the board and meter and load bus-bars of different potentials permanently mounted thereon, and removable conductors *k* of parallel conductor-bars permanently mounted on said board; contact-pieces connected thereto; a plurality of pairs of meter-terminals one terminal of each pair being connected to a meter bus-bar and the other to one of said parallel conductors; and load-terminals arranged in pairs in two rows each row lying on opposite sides of a median line running parallel to said parallel conductor-bars one load-terminal of each pair being connected to a load bus-bar and the other adapted to be electrically connected to a removable conductor, the load-terminals being arranged also in groups of four pairs to a group on each side of said median line, and the free load-terminals of each group lying nearest each other with a row of the aforesaid contact-pieces between them, one contact-piece for each parallel conductor, whereby any load-circuit may be thrown onto any meter-circuit by merely running a removable conductor from a free load-terminal to one of the contact-pieces in the nearest row without such conductors of necessity crossing any other removable conductors running to such row of contact-pieces.

6. In a metering panel-board, the combination with the board removable conductors and meter and load bus-bars of different potentials, permanently mounted thereon of parallel conductor-bars permanently mounted on back of the board; contact-studs coming through said board from said parallel bars and adapted to have removable conductors detachably connected thereto on the front of the board; a plurality of pairs of meter-terminals one terminal of each pair being connected to a meter bus-bar and the other meter-terminal being permanently connected to one of said parallel conductors; and load-terminals arranged in pairs in two rows each row lying on opposite sides of a median line running parallel to said parallel conductor-bars, one load-terminal of each pair being permanently connected to a load bus-bar and the other adapted to be detachably connected to a removable conductor, the load-terminals being arranged also in groups of four pairs there being two pairs on each side of said median line and the free load-terminal of each group lying nearest each other with a row of the aforesaid studs between them, one stud in said row for each parallel conductor; for the purpose described.

7. In a metering panel-board the combination with the board and parallel conductor-bars *g* and a removable conductor; of meter-terminals grouped in pairs and load-terminals also grouped in pairs, one terminal in every pair being adapted for connection with the proper side of a supply-circuit, the remaining terminals of one kind being attached to said parallel bars *g* and the remaining terminals of the other kind being attachable to said removable conductor and arranged in a row parallel to said bars *g*, said bars *g* being also attachable to the removable conductor, whereby any load-circuit may be thrown onto any meter-circuit by merely attaching one end of the removable conductor to a proper terminal and bridging straight over across the bars *g* until the proper one of them is reached.

8. In a metering panel-board the combination with the board, a removable conductor, permanent bus-bars and permanent parallel conductor-bars *g*; of meter-terminals grouped in pairs and load-terminals also grouped in pairs, one terminal *e* in every pair being permanently connected with the proper one of said bus-bars and the remaining terminals *f* of one kind being permanently attached to said bars *g*, and the remaining terminals *f'* of the other kind being attachable to said removable conductor and arranged in a row parallel to said bars *g*, said bars *g* being also attachable to said removable conductor.

9. In a metering panel-board the combination with the board, removable-conductor, bus-bars and parallel bars *g*; of meter-terminals and load-terminals, one side of each being connected to the proper bus-bar, the remaining side of one kind of terminal being attached to said bars *g* and the remaining side of the other kind of terminal being attachable to said removable conductor, the last-mentioned terminals being arranged in a row parallel to bars *g*, and said bars *g* being also attachable to said removable conductor.

10. In a panel-board the combination with the board, bus-bars and a removable conductor; of a set of parallel conductors *g* and a row of load-terminals *f'* arranged alongside of them, said terminals and parallel conductors being attachable to said removable conductor; other load-terminals, which are companions to the ones above mentioned and are connected to the proper one of the bus-bars; and meter-terminals, one side whereof are connected to the proper one of the bus-bars and the other side whereof are connected to said parallel conductors.

11. In a panel-board the combination with the board, bus-bars and a removable conductor; of a set of parallel conductors *g* and a row of load-terminals *f'* arranged alongside of them and adapted to be attached to said removable conductor; means on each of said parallel conductors at a point approximately as near as can be to said load-terminals for establishing connection with said removable conductor; a meter-terminal connected to each of said parallel conductors; and other load and meter terminals, companions to the ones above mentioned, properly connected to said bus-bars.

850,175. GAS-ENGINE VALVE-GEAR. MARVIN A. NEELAND, Youngstown, Ohio. Filed Aug. 3, 1904. Serial No. 219,272.

Claim.—1. In an explosive-engine, a mixing-chamber, a gas-inlet port leading to the chamber, and compound valve means for controlling the gas-inlet port, one member of said valve being arranged to control the time of gas admission to the mixing-chamber, and another member being arranged to control the time of cutting off the gas-supply through said port, and actuating connections for the valve means whereby the point of admission may be changed without changing the point of cut-off; substantially as described.

2. In an explosive-engine, a mixing-chamber, a gas-inlet port leading to the chamber, valve means for controlling the time of admission of gas to the chamber, other valve means for controlling the time of cut-off of gas and air to the chamber, and governor connections for operating the valve means, whereby as the load on the engine decreases gas will be admitted and cut off later in the suction-stroke; substantially as described.

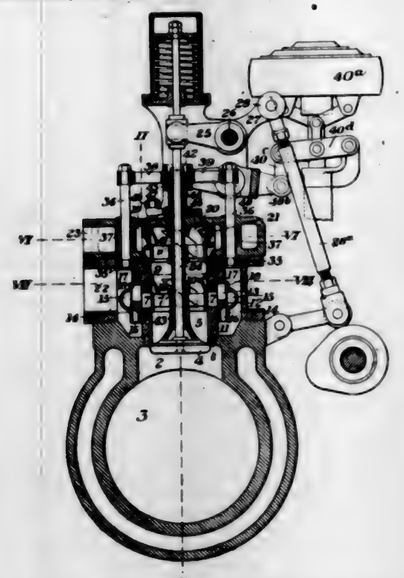

3. In an explosive-engine, a mixing-chamber, an inlet-port between the mixing-chamber and the explosive-chamber, a valve controlling said port, said mixing-chamber having a gas-inlet port, a compound valve controlling said port, one member of said valve being controlled by the engine-governor and controlling the point of admission, and another valve member being actuated with the inlet-port-controlling valve and determining the time of cut-off; substantially as described.

4. In an explosive-engine, a mixing-chamber, a gas-inlet port leading to the chamber, a plurality of valves controlling said port, one of said valves being arranged to control the time of inlet, and the other valve being arranged to control the time of shutting off the supply through said port; and connections for actuating said valves; substantially as described.

5. In an explosive-engine, an inlet-valve, a mixing-chamber, a gas-inlet port leading to the chamber, a plurality of valves controlling said port, one of said valves being arranged to control the time of inlet, and the other valve being arranged to control the time of shutting off the supply through said port, and connections for actuating said valves; substantially as described.

6. In an explosive-engine, an inlet-valve, a mixing-chamber, a gas-port leading into the mixing-chamber, an admission-valve for said port, a governor, connections between said valve and the governor, a cut-off valve for said port, and means for actuating the cut-off valve in synchronism with the cylinder-inlet valve, together with connections between the cut-off valve and the governor for changing the time of action of the cut-off valve without affecting the time of action of the admission-valve; substantially as described.

7. In an explosive-engine, a mixing-chamber having a gas-admission port, and three valves controlling said port, connections between one of said valves and the engine-governor arranged to vary the time of gas admission, and connections between another of said valves and the governor to vary the time of cut-off; substantially as described.

8. In an explosive-engine, an inlet-valve, a mixing-chamber, a port admitting combustible to the mixing-chamber, three valves controlling said port, a governor connected to one of said valves, another of said valves coöperating with the governor-connected valve to control the point of admission, and connections arranged to actuate the third valve to cut off the supply of combustible to the mixer; substantially as described.

9. In an explosive-engine, a main inlet-valve controlling the discharge from the mixer into the cylinder, and three valves controlling the mixer-ports, two of said valves controlling the gas-ports one of said valves being connected with the governor, the second valve coöperating therewith to control the time of admission of gas, and connections arranged to actuate the third valve to shut off the gas and air; substantially as described.

10. In an explosive-engine, a main inlet-valve controlling the discharge from the mixer into the cylinder, and three valves controllifig the mixer-ports, one of said valves being connected with the governor, the second valve cooperating therewith to control the time of admission of gas, the third valve being connected to and movable with the main inlet-valve; substantially as described.

11. In an explosive-engine, a mixing-chamber having air and gas inlet-ports, a valve for controlling the inlet and also the cut-off at the air-port, a valve for controlling the admission at the gas-port, a separate valve for controlling the cut-off at the gas-port, governor connections for varying the time of action of the air-inlet-controlling valve, and governor connections for the gas-inlet and cut-off-controlling valves, whereby their time of action is varied; substantially as described.

12. In an explosive-engine, a mixing-chamber having air and gas inlet ports, valves for the said ports, means for reciprocating said valves over said ports, governor-actuated means for changing the relative positions of the valves and ports to vary the points of air and gas cut-off, and supplemental valve means controlled by the governor for varying the point of gas admission; substantially as described.

13. In an explosive-engine, a mixing-chamber having air and gas inlet ports, valves for the said ports, governor-actuated means for changing the relative positions of the valves and ports, and supplemental governor-controlled valve means for varying the point of gas admission independently of the air admission; substantially as described.

14. In an explosive-engine, a main inlet-valve, a mixing-chamber, gas and air ports leading into said mixing-chamber, and valves connected to the inlet-valve to move in unison therewith, and respectively over the gas and air ports, and a governor arranged to rotate the said valves with respect to their ports, together with a supplemental independently-controlled valve, for controlling the gas admission; substantially as described.

15. In an explosive-engine, a main inlet-valve, a mixing-chamber, gas and air ports leading into the said chamber, valves fixed to the stem of the inlet-valve to reciprocate therewith, but capable of an angular movement on said stem, and a governor arranged to effect the angular movement of said valves to thereby change the point of cut-off, together with a gas-admission valve, and means for controlling the same independently of the other valves; substantially as described.

16. In an explosive-engine, a mixing-chamber having air and gas inlet ports, and a plurality of valves controlling the said ports, and actuating connections therefor, said valves, ports and actuating connections being arranged to vary the time of admission of gas to the mixing-chamber relatively to the time of air admission, and independently thereof and to cut off the air and gas from the mixing-chamber simultaneously and independently of the point of admission of the gas; substantially as described.

17. In an explosive-engine, a main inlet-port, a mixing-chamber having a gas-inlet port, a governor-actuated valve

controlling the point of admission of gas to said chamber, and a separate valve, actuated in unison with the main inlet-valve, and controlling the time of cutting off the gas admission; substantially as described.

18. In an explosive-engine, a mixing-chamber having air and gas inlet ports, a valve controlling the admission and cut off of air to said chamber, a valve for cutting off the gas admission simultaneously with the air cut-off, and supplemental valve means for varying the time of gas admission independently of the time of air admission; substantially as described.

19. In an explosive-engine, a main inlet-valve, a mixing-chamber, having air and gas inlet ports, a valve arranged to admit air to the chamber at a predetermined point in the stroke, valve means for varying the time of gas admission independently of the time of air admission, and governor-controlled means for changing the volume of air and gas admitted to chamber; substantially as described.

20. In an explosive-engine, a mixing-chamber having gas and air inlet ports, valves within said chamber arranged to traverse the said ports, a valve member surrounding the mixing-chamber and having a port arranged to be moved into register with the gas-inlet port, connections between the valve member and the engine-governor, and a gas-admission valve seated on the last-named valve, and means for actuating the gas-admission valve independently of the other valves; substantially as described.

21. In an explosive-engine, a mixing-chamber having inclined air and gas inlet-ports, circular valves having correspondingly-inclined ports, means for reciprocating said valves over the said ports, and a governor arranged to effect a gradual change in the position of the valves to thereby gradually vary the volume of mixture admitted to the cylinder with a corresponding variation in compression; substantially as described.

22. In an explosive-engine, a mixing-chamber having air and gas inlet ports, valves for said ports, a governor for changing the relative positions of the valves and ports to vary the volume of mixture in said chamber with a corresponding variation in cylinder compression, and supplemental valve means for varying the time of gas admission independently of the time of air admission; substantially as described.

23. In a gas-engine, a gas-admission valve, a gas-cut-off valve, a movable ported seat for the gas-admission valve, means controlled by a moving part of the engine for moving the valve relatively to its seat, and governor-controlled means for shifting the seat relatively to the valve; substantially as described.

24. In a gas-engine, the combination of a cylinder, a mixing-chamber having air and gas inlets, governor-controlled valve means for controlling the air admission and cut-off and the gas cut-off, and independent governor-controlled auxiliary valve means for varying the point of gas admission; substantially as described.

25. In an explosive-engine, a mixing-chamber having air and gas inlet ports, and a plurality of valves controlling said ports, together with actuating and governing means for said valves, whereby the time of admission of gas to the mixing-chamber is automatically controlled independently of the time of air admission, and the air and gas are simultaneously cut off independently of the point of admission of the gas; substantially as described.

850,176. BEEHIVE. CHESTER A. OLMSTEAD, East Bloomfield, N. Y. Filed May 14, 1906. Serial No. 316,874.

Claim.—1. In a beehive, an entrance comprising a passage-way extending upwardly through the bottom and within the brood-chamber and connecting therewith a passage-way extending in an approximately horizontal direction through a downward projection carried by the bottom and such last-named passage-way closed on its rear side by a hinged flap adapted to be opened by a current of air directed toward the opening from without the hive and adapted to be closed and held closed by a current of air in an opposite direction.

2. In a beehive, an entrance comprising a passage-way extending upwardly through the bottom and within the brood-chamber and connecting therewith a passage-way extending in an approximately horizontal direction through a downward projection carried by the bottom and a screen extending over the rear opening in such last-named passage-way.

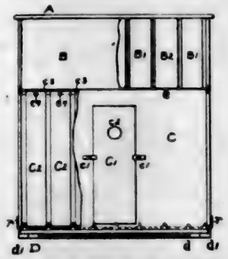

3. In a beehive as a means for ventilating the brood-chamber thereof, an opening through the bottom of the hive having one of its walls extending obliquely downward and inwardly and coöperating therewith a correspondingly-beveled section adapted to close such opening and removable therethrough, means for supporting such beveled section in operative position closing such opening and a member slidably supported on the under side of such bottom and adapted to cover the joints between such opening and such coöperating beveled section.

4. In a beehive, a separating-fence between adjacent section honey-box frame comprising a series of horizontally-disposed wires and means for supporting the same under tension between such section honey-box frames, and means for adjusting the tension on such wires.

5. In a beehive, a separating-fence between adjacent section honey-box frames comprising a series of horizontally-disposed wires and means for supporting the same under tension between such section honey-box frames and means for adjusting the tension on such wires, such wires comprising the horizontal wires of a wire screen.

6. In a beehive, a separating-fence between adjacent section honey-box frames comprising a series of horizontally-disposed wires and means for supporting such wires under tension on one of such frames and between such frame and an adjacent frame and means for adjusting the tension on such wires.

7. In a beehive, a separating-fence between a section honey-box frame and an adjacent one on each side thereof comprising a series of horizontally-disposed wires and means for supporting such wires under tension on such section-frame and between such section-frame and such adjacent frame on each side thereof and means for adjusting the tension on such wires.

8. In a beehive, a separating-fence between a section honey-box frame and an adjacent one on each side thereof comprising a series of horizontally-disposed wires and means for supporting such wires under tension on such section-frame and between such section-frame and such adjacent frames on each side thereof, such wires adapted and operating to clamp the section honey-boxes together in such frame on which they are supported.

9. In a beehive, a separating-fence between a section honey-box frame and an adjacent one on each side thereof comprising a series of horizontally-disposed wires and means for supporting such wires under tension on such section-frame and between such section-frame and such adjacent frames on each side thereof, such wires adapted and operating to clamp the section honey-boxes together in such frame on which they are supported and means for adjusting the tension on such wires.

10. In a beehive, a series of section honey-box frames and between them a series of separating-fences and means carried by alternate ones of such frames for supporting such separating-fences between each one of such alternate frames and an adjacent frame on each side thereof.

11. In a beehive, a removable section in one of the side walls of the brood-chamber and independent of such removable section a removable brood-frame adapted to be withdrawn outwardly from such brood-chamber through the opening formed by the removal of such removable section in the side wall thereof.

12. In a beehive, a removable section in one of the side walls of the brood-chamber, adapted to be withdrawn from the brood-chamber through the opening formed by the removal of such removable section a brood-frame comprising top, bottom and end pieces, such top piece carrying a guide-plate, coöperating with such guide-plate guiding and supporting bars carried by a member supported within the brood-chamber and also carried by such member metallic cleats adapted, when such removable brood-frame is in position in the brood-chamber, to cover such guide-plate on the top piece thereof and also to cover such guiding and supporting bars and to engage with their lower edges the top piece of such brood-frame and adapted to cover and to prevent a cementing together by the bees of such top piece, guide-plate and guiding and supporting bars.

13. In a beehive, a removable section in one of the side walls of the brood-chamber, adapted to be withdrawn from the brood-chamber through the opening formed by the removal of such removable section a brood-frame comprising top, bottom and end pieces, such top piece carrying a guide-plate, coöperating with such guide-plate guiding and supporting bars carried by a member supported within the brood-chamber and also carried by such member metallic cleats adapted, when such removable brood-frame is in position in the brood-chamber, to cover such guide-plate on the top piece thereof and also to cover such guiding and supporting bars and to engage with their lower edges the top piece of such brood-frame and adapted to cover and to prevent a cementing together by the bees of such top piece, guide-plate and guiding and supporting bars, in such removable brood-frame a compartment adapted to receive queen-cells, such compartment closed by a queen-excluding screen removably secured thereto and a passage-way from such compartment outwardly through the side wall of such brood-chamber, such passage-way permitting a queen bee in such compartment to leave and enter the same and adapted to prevent a contact within the brood-chamber between a queen in such compartment and a queen in such brood-chamber outside of such compartment.

14. In a beehive and in the brood-chamber thereof, a brood-frame having therein a compartment adapted to receive queen-cells, such compartment closed by a queen-excluding screen and a passage-way from such compartment outwardly through the side wall of such brood-chamber adapted to prevent a contact within the brood-chamber between a queen in such compartment and a queen in such brood-chamber outside of such compartment.

15. In a beehive and in the brood-chamber thereof, a brood-frame having therein a compartment adapted to receive queen-cells, such compartment closed by a queen-excluding screen removably secured thereto and a passage-way from such compartment outwardly through the side wall of such brood-chamber adapted to prevent a contact within the brood-chamber between a queen in such compartment and a queen in such brood-chamber outside of such compartment.

16. In a beehive, means for supporting the brood-frames in the brood-chamber thereof, comprising supporting-wires extending outwardly from the upper corners of such brood-frames and metallic cleats supported near the upper edges of opposite side walls of such brood-chamber and having notches therein adapted to receive the supporting-wires in such brood-frames and suitable bars adapted to rest upon the upper edges of such cleats and supporting-wires and adapted to hold such supporting-wires in place and to cover and prevent the filling up or cementing of the space between such supporting-wires and between such cleats and the adjacent side walls of such brood-chamber.

17. In a beehive, for spacing and holding the bottom bars of the brood-frames in the brood-chamber a spacing device pivotally supported and adapted to be moved when desired to an inoperative position beneath the bottom bars of such brood-frames.

18. In a beehive, a series of section honey-box frames each adapted to receive and support two or more section money-boxes independently of any other one of each section honey-box frames and with the open ends of the section honey-boxes in each frame facing the open ends of the section honey-boxes in an adjacent frame, a separating-fence between the open ends of the section honey-boxes in adjacent frames comprising a series of horizontally-disposed wires and means for supporting the same between such section-box frames under longitudinal tension operating to oppose a lateral movement of such wires.

19. In a beehive, a series of section honey-box frames each adapted to receive and support two or more section honey-boxes independently of any other one of such section honey-box frames and with the open ends of the section honey-boxes in each frame facing the open ends of the section honey-boxes in an adjacent frame, a separating-fence between the open ends of the section-boxes in adjacent frames comprising a series of horizontally-disposed wires and means for supporting the same between such section-box frames under longitudinal tension operating to oppose a lateral movement of such wires, such wires comprising the horizontal wires of a wire screen.

20. In a beehive, a series of section honey-box frames each adapted to receive and support two or more section honey-boxes independently of any other one of such section honey-box frames and with the open ends of the section honey-boxes in each frame facing the open ends of the section honey-boxes in an adjacent frame, a separating-fence between the open ends of the section-boxes in one frame and the open ends of the section-boxes in an adjacent frame comprising a series of horizontally-disposed wires and means for supporting such wires under tension on such frame and between such frame and such adjacent frame.

21. In a beehive, a series of section honey-box frames each adapted to receive and support two or more section honey-boxes independently of any other one of such section honey-box frames and with the open ends of the section honey-boxes in each frame facing the open ends of the section honey-boxes in an adjacent frame, a separating-fence between the open ends of the section-boxes in one frame and the open ends of the section-boxes in adjacent frames on each side comprising a series of horizontally-disposed wires and means for supporting the same under tension on such section-frame and between such section-frame and such adjacent frames on each side thereof.

22. In a beehive, a separating-fence between the open ends of adjacent section honey-boxes comprising a series of horizontally-disposed wires and means for supporting the same under tension between such section honey-boxes and means for adjusting the tension on such wires.

23. In a beehive, a separating-fence between the open ends of adjacent section honey-boxes comprising a series of horizontally-disposed wires and means for supporting the same under tension between such section honey-boxes and means for adjusting the tension on such wires, such wires comprising the horizontal wires of a wire screen.

24. In a beehive, a removable section in one of the side walls of the brood-chamber and independent of such removable section a removable brood-frame adapted to be withdrawn outwardly from such brood-chamber through the opening formed by the removal of such removable section in the side wall thereof, such brood-frame having therein a compartment adapted to receive queen-cells, such compartment closed by a queen-excluding screen and a passage-way from such compartment outwardly through the side wall of such brood-chamber adapted to prevent a contact within the brood-chamber between a queen in such compartment and a queen in such brood-chamber outside of such compartment.

25. In a beehive, a removable section in one of the side walls of the brood-chamber and independent of such removable section a removable brood-frame adapted to be withdrawn outwardly from such brood-chamber through the opening formed by the removal of such removable section in the side wall thereof, such brood-frame having therein a compartment adapted to receive queen-cells, such compartment closed by a queen-excluding screen and a passage-way from such compartment outwardly through the removable section in the side wall of such brood-chamber adapted to prevent a contact within the brood-cham-

ber between a queen in such compartment and a queen in such brood-chamber outside of such compartment.

850,177. AUGER-BIT. JAMES T. PARKER, Hattiesburg, Miss. Filed Oct. 20, 1906. Serial No. 339,875.

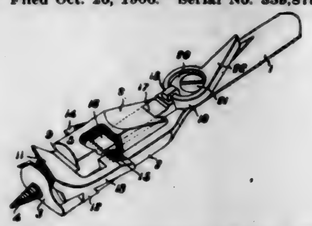

Claim.—1. In an auger-bit the combination with a shank having a head at one end thereof, and a housing upon the shank adjacent the head and having a transverse and a longitudinal passage; of a cutting-blade slidably mounted upon and engaging the shank adjacent the head, a rack integral with said blade and slidably mounted within the transverse passage, said rack having a beveled toothed portion, a plunger slidably mounted within the longitudinal passage and having a beveled toothed end constituting a wedge for engaging the rack, and means upon the shank for moving the end of the plunger into engagement with the rack and for wedging said end between the housing and rack.

2. In an auger-bit the combination with a shank having a head at one end thereof, and a housing upon the shank: of a cutting-blade extending transversely of the shank, an integral portion upon the blade and movable transversely within the housing, said portion having a beveled face, a plunger slidably mounted within the housing and having a beveled end constituting a wedge, and means for actuating the plunger to force this beveled end between the housing and the beveled face of said integral portion to bind said portion to the shank.

3. An auger-bit comprising a shank having a cutting-head, a housing adjacent the cutting-head and having communicating transverse and longitudinal passages, one end of said housing being reduced and having a dovetailed groove, a cutting-blade slidably mounted on the reduced portion of the housing, a tongue thereon within and engaging the walls of the groove, a rack integral with the cutting-blade and slidably mounted within the transverse passage, a plunger in the longitudinal passage, an eccentric movably mounted on the shank for shifting the plunger into or out of engagement with the rack.

4. An auger-bit comprising a shank having a cutting-head, a housing adjacent the cutting-head and having communicating transverse and longitudinal passages, one end of said housing being reduced and having a dovetailed groove, a cutting-blade slidably mounted on the reduced portion of the housing, a tongue thereon within and engaging the walls of the groove, a rack integral with the cutting-blade and slidably mounted within the transverse passage, said rack having a beveled toothed portion, a plunger slidably mounted within the longitudinal passage and having a beveled toothed portion, and an eccentric upon the shank for moving the plunger into or out of engagement with the rack.

850,178. PUMP. GUSTAV B. PETSCHE, Philadelphia, Pa., assignor to Southwark Foundry & Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Apr. 22, 1903. Serial No. 153,775.

Claim.—1. In a pump having an admission-valve, the device for operating said valve and varying its time of closing, consisting of a link O, means for imparting to one end of said link a constant rotary motion, means for guiding the other end of said link through a reciprocating path, means for shifting said guiding device to vary the motion of the link, and a link N, pivotally connected to an intermediate point on the link O, and to the admission-valve rod.

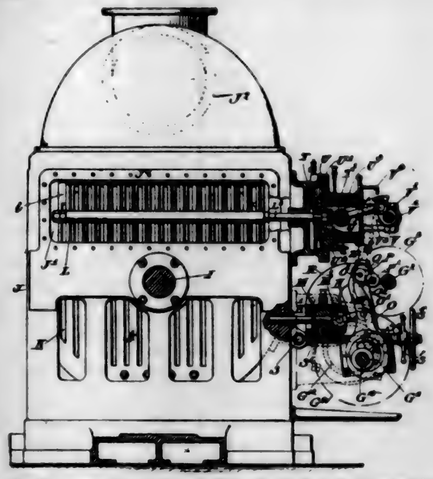

2. In a pump having an admission-valve, the device for operating said valve and varying its time of closing, consisting of a link O, means for imparting to one end of said link a constant rotary motion, means for guiding the other end of said link through a reciprocating path, means for shifting said guiding device to vary the motion of the link, a link N, pivotally connected to an intermediate point on the link O, and to the admission-valve rod, and means actuated by the pressure of the receiver in the pump, for shifting the guiding device aforesaid to vary the closing of the valve.

3. In a pump having an admission-valve, the device for operating said valve and varying its time of closing, consisting of a link O, means for imparting to one end of said link a constant rotary motion, a link P, pivoted to the other end of link O, and to a movable pivot P', means for shifting the position of the movable pivot P', to vary the motion of link O, and a link N, pivotally connected to an intermediate point on the link O, and to the admission-valve rod.

4. In a pump having an admission-valve, the device for operating said valve and varying its time of closing, consisting of a link O, means for imparting to one end of said link a constant rotary motion, a rock-shaft Q', an arm Q, secured to said shaft, a link P, pivoted to the arm Q, and to the end of link O, means for turning the rock-shaft and thus varying the position of the pivot on arm Q, and a link N, pivotally connected to an intermediate point on the link O, and to the admission-valve rod.

850,179. LOCK AND LATCH. BYRON PHELPS, Seattle, Wash. Filed Apr. 13, 1906. Serial No. 311,621.

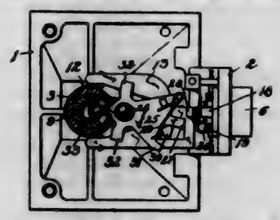

Claim.—1. In a lock-and-latch mechanism, a bolt, a pair of knobs, a continuous spindle connecting said knobs, a lock in each knob, a continuous lock-spindle in said knob-spindle, operative means of connection between said knob-spindle and said bolt, an oscillating latch-dogging device operable by said locking-spindle and a pivot for said dogging device, said pivot being mounted at one side of both spindles.

2. In a lock-and-latch mechanism, a frame including a sleeve, a side plate and an end plate, a bolt adapted to protrude through the end plate, a knob-spindle rotatable in said sleeve, a lock-spindle rotatable in said knob-spindle and independently thereof, means of connection between said knob-spindle and said bolt, and an oscillating pivotally-mounted dogging device operatively connected at one end with said lock-spindle.

3. In a lock-and-latch mechanism, a bolt, a knob-spindle, a roll-back thereon, a shoe connecting said roll-back and said bolt, and dogging mechanism including a detachable oscillating plate removably holding said shoe in its operative position.

4. In a lock-and-latch mechanism, a knob-spindle, a lock-spindle mounted therein, a bolt, a shoe connecting said bolt and knob-spindle, an oscillating latch-dogging plate engaged by said lock-spindle, and stops for limiting the swinging movement of said dogging-plate in both directions.

5. In a lock-and-latch mechanism, a bolt, a pair of knobs, means of connection between said knobs and said bolt including a knob-spindle, a locking-spindle mounted in said knob-spindle, and a pivoted dogging device directly connected to said lock-spindle and having a limited oscillating movement.

6. In a lock-and-latch mechanism, a bolt, a pair of knobs, a knob-shank, a pivoted dogging device preventing the rotation of said knobs, a lock mounted in each knob, a lock-spindle directly connected to said dogging device, said dogging device being operable by turning a key inserted in a lock in one direction for retracting the dogging device and in the opposite direction for setting said dogging device.

7. In a latch mechanism, a frame including a sleeve, a bolt carried by said frame, a knob-spindle rotatable in said sleeve and having oppositely-arranged notches, and a roll-back having lugs adapted to be seated in said notches clearance-slots in said shank communicating with said notches to permit said roll-back to be assembled with the said shank.

8. In a latch mechanism, a frame including a sleeve, a bolt, a knob-shank rotatably mounted in said sleeve, said sleeve having a slot, a roll-back mounted in said slot and having lugs engaging in notches in said knob-shank, said knob-shank having slots at right angles to said notches and out of line with the normal position of the roll-back whereby said roll-back may be removed laterally after a limited longitudinal movement thereof on said knob-shank.

9. In a lock-and-latch mechanism, a bolt, a continuous knob-spindle, a knob permanently secured to one end and a knob removably secured to the other end, a continuous lock-spindle mounted in said knob-spindle, operative means of connection between said knob-spindle and said bolt, and a dogging device pivoted externally of both of said spindles and operable by said lock-spindle.

10. In a lock-and-latch mechanism, a bolt, a knob-spindle, a lock-spindle, operative means of connection between said knob-spindle and said bolt, and a dogging device pivoted externally of both spindles and having a portion extending through said knob-spindle and engaging said lock-spindle.

11. In a lock-and-latch mechanism, a bolt, a hollow knob-spindle, a roll-back carried thereby, means of connection between said roll-back and said bolt, a lock-spindle mounted in said knob-spindle, and rotatable independently thereof, and a dogging device pivoted externally of both spindles and operable by said lock-spindle.

12. In a lock-and-latch mechanism, a bolt, an easy spring therefor, a knob-spindle, a roll-back therefor, a shoe, a spring for said shoe, and means of connection between said shoe and said bolt including a portion carried by said shoe having an inclined slot and a pin carried by the bolt operating in said slot.

850,180. PNEUMATIC SPRING FOR VEHICLES. VACLAV H. PODSTATA and FRANK M. PREUCIL, Chicago, Ill. Filed Mar. 12, 1906. Serial No. 305,444.

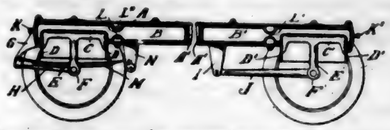

Claim.—1. In a vehicle, the combination of an elongated sill hollow on its interior to provide a chamber, and provided at one end of the chamber with an opening, a horizontally-elongated cushion lying within the chamber and having a portion of the cushion extending over the opening, a piston bearing at substantially right angles against the extended portion of the cushion, a guideway for the piston, an axle for the wheels of the vehicle, and a stem connecting the piston with the axle, substantially as described.

2. In a vehicle, the combination of an elongated sill hollow on its interior to provide a chamber, and provided at one end of the chamber with an opening surrounded by depending walls furnishing a guideway, a horizontally-elongated cushion within the chamber and having a portion of the cushion extending over the opening, a piston bearing at substantially right angles against the exposed portion of the cushion and operable within the guideway, an axle for the wheels of the vehicle, and a stem connecting the piston with the axle, substantially as described.

3. In a vehicle, the combination of a sill hollow on its interior to form front and rear chambers, each of the chambers having near its outer end an opening, front and rear pneumatic cushions within the chambers, part of each cushion extending over the opening, front and rear pistons operable within the openings and bearing against the exposed portions of the respective cushions, front and rear axles, and stems connecting the front and rear pistons with the respective axles, substantially as described.

4. In a vehicle, the combination of a sill hollow on its interior to provide a chamber and provided at one end of the chamber with an opening surrounded by depending walls furnishing a guideway, a cushion within the chamber provided with a contraction intermediate of its length, a piston bearing against one of the uncontracted portions of the cushion and operable within the guideway, an axle for the wheels of the vehicle, and a stem connecting the piston with the axle, substantially as described.

850,181. PNEUMATIC CUSHION. VACLAV H. PODSTATA, Dunning, Ill. Filed Apr. 21, 1906. Serial No. 313,033.

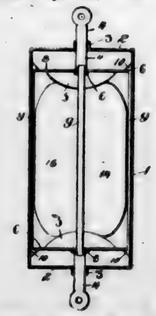

Claim.—1. A cushion consisting of a rigid outer casing, a pneumatic receptacle inside the casing, two oppositely-disposed plunger-bodies slidably mounted in the casing, and a connection between each section of the structure to be cushioned and the adjacent plunger-body adapted to actuate such plunger-body by an inward thrust due to the bound, and a connection between each section of the structure to be cushioned and the opposite plunger-body for ac-

tuating such plunger-body on the rebound, substantially as described.

2. A cushion consisting of a rigid outer casing, a pneumatic receptacle within the casing, two oppositely-disposed plunger-bodies slidably mounted within the casing, each of the plunger-bodies provided with a connection with the adjacent portion of the structure to be cushioned for receiving the inward thrust due to the bound, and oppositely-disposed side bars connecting the sections of the structure to be cushioned with the non-adjacent plunger-body for actuating such plunger-body by the rebound after the initial compression of the pneumatic receptacle, substantially as described.

3. A cushion consisting of a rigid outer casing, a pneumatic receptacle inside the casing, oppositely-disposed plungers slidably mounted in the casing, each of the plungers consisting of a plunger-head and a stem slidably mounted with respect to one another, and bars connecting the plunger-head of one plunger with the plunger-stem of the companion plunger and other bars connecting the plunger-stem of the first-mentioned plunger with the plunger-head of the second-mentioned plunger for minimizing the rebound, substantially as described.

4. In a cushion, the combination of a rigid elongated cylindrical casing, a pneumatic receptacle within the casing, oppositely-disposed plungers slidably mounted within the casing and adapted to bear against the opposite ends of the pneumatic receptacle, each of the plungers consisting of a tubular plunger-stem having outwardly-extending arms and a plunger-head having a stud slidably mounted within the stem and having outwardly-extending fingers arranged at right angles to the arms, and slidably-mounted bars connecting the arms of one stem with the fingers of the companion head and similar bars connecting the fingers of the first-mentioned plunger with the arms of the second-mentioned plunger, substantially as described.

5. In a cushion, the combination of a rigid elongated cylindrical casing, a pneumatic receptacle within the casing consisting of an elastic inner bag and a non-elastic surrounding sheath, oppositely-disposed plunger-bodies slidably mounted within the casing, each connected with a portion of the structure to be cushioned and adapted to be inwardly projected by a thrust due to the bound of such portion, and each of the plunger-bodies being further connected to the companion portion of the structure to be cushioned for receiving a compressing movement due to the rebound, substantially as described.

6. In combination with a vehicle axle and body, a cushion consisting of a rigid elongated outer shell or casing having slidably mounted therein oppositely-arranged plunger-bodies, one of the plunger-bodies being connected with the axle and adapted to receive an inward thrust therefrom due to the bound, and the other plunger-body being connected to the vehicle-body and adapted to receive an inward thrust therefrom due to the bound, a pneumatic receptacle within the casing adapted to be compressed from either direction by the oppositely-disposed plunger-bodies for providing a cushioning action between the vehicle-body and the axle, a connection between the first-mentioned plunger-body and the vehicle-body, and a connection between the second-mentioned plunger-body and the axle for providing an inward compressing action for the plungers to prevent an excessive rebound after the inward compression, substantially as described.

850,182. CIGARETTE-BOX. SAMUEL S. POOR, Westfield, N. J. Filed Dec. 20, 1906. Serial No. 348,792.

Claim.—1. A cigarette-box comprising a body part, a cover hinged thereto below the upper edge of the box and a flexible cigarette-lifting web secured to the inner side of the bottom of the box parallel with the hinge-wall thereof and a suitable distance inward from the said wall, the other end of said web being secured to the inner side of the cover a suitable distance from the hinge, said web being of such length that when the cover is open it will be drawn taut across the edge of the hinge-wall and lift the ends of the cigarettes lying thereon, and take the strain off the hinge.

2. A box for cigarettes comprising a body part and a cover hinged thereto, of a flexible, foldable lifting-strip secured to the bottom of the box a suitable distance inward from the hinge-wall and on which the cigarettes lie, said strip extending up the hinge-wall and being secured to the cover at a suitable distance from the hinge, whereby when the box is open said strip will be drawn taut across the hinge-wall and lift the cigarettes lying thereon.

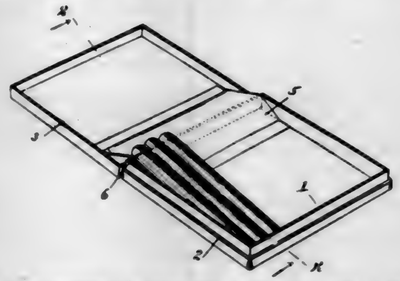

3. A cigarette-box comprising a body part and a cover hinged thereto below the upper edge of the box, of a flexible, foldable lifting-web secured to the inner side of the box parallel with the hinge-wall and extending the entire length thereof and on which one end of the cigarettes lie, said web extending up the hinge-wall and secured at its other end to the cover a suitable distance from the hinge, the free portion of said web being long enough to permit the cover to be opened to bring its top in the same horizontal plane with the bottom of the box, the web being drawn taut over the hinge-wall and lifting the ends of the cigarettes lying thereon, and in its full-open position relieving the cover-hinge of all strain.

4. A cigarette-box comprising a body part and a cover hinged thereto below the upper edge of the box, of a broad lifting-web lying within the box under one end of the cigarettes therein and extending up the hinge-wall thereof and being secured to the inner surface of the cover a suitable distance from the hinge thereof, whereby when the cover is thrown to its open position the lifting-web will be drawn over the edge of the hinge-wall of the box and the cigarettes lying thereon within the box will be raised at their ends adjacent the hinge-wall.

850,183. SAFETY-RAZOR. JEREMIAH REICHARD, New York, N. Y., assignor, by mesne assignments, to American Safety Razor Company, New York, N. Y., a Corporation of New York. Filed Mar. 5, 1906. Serial No. 304,254.

Claim.—1. In a safety-razor, a blade-holder casing struck up from a single piece of sheet metal and having a bottom, a front, a top and a holding-spring, made integral with the top and extending downward and frontward from the rear edge of said top, said top being provided with a series of projections on its upper surface beneath said holding-spring to form abutments for a shoulder on the blade, substantially as set forth.

2. In a safety-razor, a blade-holder casing struck up from sheet metal and having a bottom, a front, a top and a holding-spring on the rear edge of the top, which holding-spring extends downward and frontward over said top, the casing being provided on its upper surface with projections near the front edge of the top and also provided on its upper surface with projections adjacent to said holding-spring to form abutments for a shoulder on the blade, substantially as set forth.

3. In a safety-razor, the combination with a blade-holding case, having a bottom, a front, a top and a holding-spring extending over the top, all made of a single and continuous piece of sheet metal, said casing having projections on its upper surface adjacent to said holding-spring and a removable blade having a shoulder on its under surface near the rear edge, which shoulder can rest against said projections, substantially as set forth.

4. In a safety-razor, the combination with a blade-holding casing having a bottom, a front, a top and a holding-spring extending upward from the rear edge of the top and downward and frontward over the top, all made of a single and continuous piece of sheet metal, said casing having guard-teeth and having projections on its upper surface adjacent to the front of the top and also having projections to its upper surface adjacent to the said holding-spring and a blade provided on its under side with a shoulder adjacent to the rear edge, which blade when in place in the holder rests against the projections at the holding-spring and on the projections adjacent to the front of the top, substantially as set forth.

850,184. CORK-PULLER. CHARLES S. REES, Philadelphia, Pa. Filed June 20, 1906. Serial No. 322,509.

Claim.—A cork-pulling device, comprising a lever element having a channeled or hollowed-out portion extending longitudinally thereof, a plate bent transversely to conform to the shape of said hollowed-out portion fixed therein to said lever element and having two sets of ears bent up into said hollowed-out portion from the opposite sides thereof, a corkscrew and a fulcrum-piece, each pivotally mounted between the ears of one of said sets to swing in the same plane, said fulcrum-piece being bent transversely to fit when folded within said hollowed-out portion and to then receive in the channeled or hollowed-out face the corkscrew when folded.

850,185. CLIP. RICHARD W. ROBERTS, Chicago, Ill. Filed Mar. 14, 1905. Serial No. 250,114.

Claim.—1. A clip, comprising a bar of material bent intermediate its length into a connecting member and into loops beyond said connecting member, said loops being spaced apart at the point of their connection, and one of said loops being smaller than the other, the smaller loop being arranged with its free edge disposed within the larger loop.

2. A clip comprising a bar bent intermediate its length into a spacing member and beyond said spacing member at each side thereof formed into a loop, the said spacing member being formed to limit the lateral movement of the free ends of the loops.

3. A clip, comprising a pair of loops and a member connecting said loops, said connecting member being arranged across the path of movement of the free end of each of the loops and forming a stop therefor.

4. A clip, comprising a bar bent intermediate its length into a connecting member, the said connecting member being disposed at an acute angle to each of the portions of the bar extending beyond the connecting member, the portions of the bar extending beyond the connecting member being bent into loops with the free end of each loop extending beneath an overhanging portion of the connection member.

850,186. WINDOW CURTAIN OR SHADE FIXTURE. SOREN R. SKOV, Cleveland, Ohio, assignor of one-half to Terance Scullin, Cleveland, Ohio. Filed Nov. 19, 1906. Serial No. 344,045.

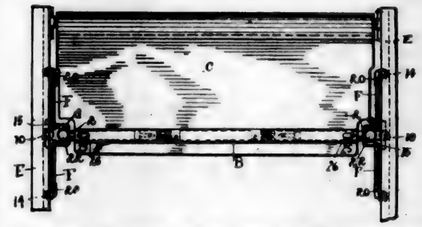

Claim.—1. A fixture for the free ends of window-shades comprising a tube and end pieces removably fixed and adapted to slide therein, springs bearing against the ends of said end pieces in said tube, rigid guide-arms pivotally mounted on said end pieces to turn sidewise therein, and the said end pieces having bearing portions in the same vertical plane as the outer ends of said guide-arms and adapted to hold said pieces in right working relations in the window-frame.

2. A window-frame having channels in its sides, in combination with a shade-rod and shade-guides thereon operatively engaged in said channels and constructed to prevent turning sidewise therein, and rigid arms pivoted in the said guides and having inwardly-extended portions engaged in said channel.

3. In window-shade fixtures, a shade-rod and guides thereon each comprising a guide-head having a substantially flat-sided guide portion at its end and rigid arms pivoted on said guide-head having bearings on their ends in the same working plane as said flat-sided guide portion and free to move in a plane at right angles to said rod.

4. A guide-fixture for window-shades comprising a rod having tubular ends and slots lengthwise in said ends, guides for the shade mounted in said rod, and projections thereon extending into said slots, springs behind said guides and said guides having bearings at their front constructed to hold the fixture in right working position, and rigid guide-arms having right-angled ends pivoted in said guides and free to move in a plane at right angles to the said rod.

5. The combination of the tubular shade-rod, the guides on the ends thereof adapted to slide lengthwise in said ends and springs holding said guides out in working position, rigid guide-arms pivotally mounted on said guides and free to move in a plane at right angles to the said rod and outward projections on said guides adapted to be grasped by hand to press them inward and release them from the window.

850,187. TYPE-WRITING MACHINE. GEORGE H. SMITH, Evanston, Ill., assignor to Densmore Typewriter Company, Syracuse, N. Y., a Corporation of New York. Filed Jan. 24, 1905. Serial No. 242,472.

Claim.—1. In a type-writing machine, the combination of an escapement-rack; a dog-carrier; a pair of dogs pivoted on said carrier and adapted to coöperate with said escapement-rack, each of said dogs having a tail or extension; and a shift member mounted upon the dog-carrier and adapted to coact with the tail of either dog to hold the dog in a fixed relation with the dog-carrier.

2. In a type-writing machine, the combination of an escapement-rack; a dog-carrier; a pair of dogs pivoted on said carrier and adapted to coöperate with said escapement-rack, each of said dogs having a tail or extension; a spring coacting with each dog; and a shift member mounted upon the dog-carrier and adapted to coact with the tail of either dog to overcome the force of its spring.

3. In a type-writing machine, the combination of an escapement-rack; a dog-carrier; a pair of dogs pivoted on said carrier and adapted to coöperate with said escapement-rack, each of said dogs having a tail or extension; a spring coacting with each dog; and a shift member mounted upon the dog-carrier and adapted to coact with the tail of either dog to overcome the force of its spring and to hold the dog in a fixed relation with the dog-carrier.

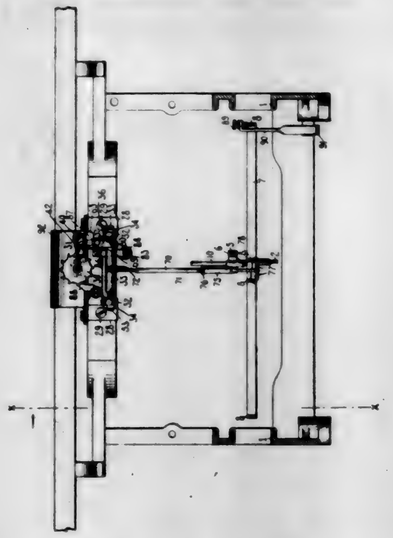

4. In a type-writing machine, the combination of an escapement-rack; a dog-carrier; a pair of dogs pivoted in the top of said dog-carrier and adapted to coöperate with said escapement-rack, each of said dogs having a tail or extension; a contractile spring adapted to coöperate with each of said dogs to swing it away from the dog-carrier; and a shift member mounted upon the dog-carrier and adapted to coact with the tail of either of said dogs to overcome the force of its contractile spring and hold the dog in a fixed relation with the dog-carrier.

5. In a type-writing machine, the combination of an escapement-wheel; a dog-rocker pivoted to rock transversely of said wheel; a pair of dogs pivoted upon said dog-rocker and adapted to coöperate with said escapement-wheel at the side thereof; a contractile spring cooperating with each dog and constantly tending to swing said dog upward about its pivot; and a shift member adapted to coöperate with either dog to overcome the force of its contractile spring and to maintain the dog in a fixed relation with the dog-rocker.

6. In a type-writing machine, the combination of an escapement-wheel; a dog-rocker pivoted to rock transversely of said escapement-wheel; a pair of dogs pivoted in the top of said dog-rocker and adapted to coöperate with said escapement-wheel at the side thereof, each of said dogs having a tail or extension; a contractile spring adapted to coöperate with each dog member to swing it upward about its pivot; and a shift member mounted upon said dog-rocker and adapted to be interposed between the face of the dog-rocker and the tail of either dog to overcome the force of the contractile spring as associated with said dog and to hold said dog in a fixed relation with said dog-rocker.

7. In a type-writing machine, the combination of an escapement-rack; a dog-carrier; a pair of dogs pivoted on said carrier and adapted to coöperate with said escapement-rack, each of said dogs having a tail or extension; a shift member mounted upon the dog-carrier and adapted to coact with the tail of either dog to hold the dog in a fixed relation with the dog-carrier; and a stop member adapted to be simultaneously positioned to limit the movement of the other dog.

8. In a type-writing machine, the combination of an escapement-rack; a dog-carrier; a pair of dogs pivoted on said carrier and adapted to coöperate with said escapement-rack, each of said dogs having a tail or extension; and a combined shift and stop member which is mounted upon the dog-carrier and coöperates with the dogs, one part of said member being adapted to coact with the tail of either dog to hold the dog in a fixed relation with the dog-carrier while at the same time another part of said member is positioned to limit the movement of the other dog.

9. In a type-writing machine, the combination of an escapement-rack; a dog-carrier; a pair of dogs pivoted on said carrier and adapted to coöperate with said escapement-rack, each of said dogs having a tail or extension; means coacting with the tail of either dog to lock the dog against movement; and means combined with said first-named means and coacting with the body portion of the unlocked dog for simultaneously limiting the movement of the unlocked dog in one direction, so that the working face of said unlocked dog will at all times be in advance of the working face of the locked dog.

10. In a type-writing machine, the combination of an escapement-rack; a dog-carrier; a pair of dogs pivoted on said carrier and adapted to coöperate with said escapement-rack, each of said dogs having a tail or extension; a spring coacting with each dog; a shift member mounted on the dog-carrier and adapted to coact with the tail of either dog to overcome the force of its spring and to lock the dog in a fixed relation with the dog-carrier; and a stop member combined with said shift member and adapted to limit the movement of the unlocked dog so that the working face of said unlocked dog will be in advance of the working face of the locked dog at all times.

11. In a type-writing machine, the combination of an escapement-wheel; a dog-rocker pivoted to rock transversely of said wheel; a pair of dogs pivoted on said dog-rocker and adapted to coöperate with said escapement-wheel at the side thereof, a contractile spring coöperating with each dog, each spring constantly tending to swing its dog upward about its pivot; a shift member adapted to coöperate with either dog to overcome the force of its contractile spring and to lock the dog in a fixed relation with the dog-rocker; and a stop member combined with said shift member and adapted to coöperate with the unlocked dog to limit the downward movement of said dog, the combined shift and stop members serving to maintain the working face of the unlocked dog above the working face of the locked dog at all times.

12. In a type-writing machine, the combination of an escapement-wheel; a dog-rocker pivoted to vibrate transversely of said escapement-wheel; a pair of dogs pivoted in ears in the top of said dog-rocker and adapted to contact with the top of the dog-rocker between the ears; means for locking either of said dogs in contact with the top of the dog-rocker; and means for stopping the movement of the unlocked dog before it contacts with the top of the dog-rocker, so that the working face of the unlocked dog will be in advance of the working face of the locked dog at all times.

13. In a type-writing machine, the combination of a vertically-disposed escapement-wheel; a dog-rocker pivoted to vibrate transversely of said wheel; a pair of dogs pivoted coaxially in said dog-rocker and adapted to coöperate with said escapement-wheel at the side thereof; a contractile spring coöperating with each dog and constantly tending to swing the dog upward about its pivot; a combined shift and stop member pivoted in said dog-rocker and adapted to coact with one dog on one side of its axis to lock said dog from movement and at the same time to coöperate with the other dog at the opposite side of its axis to limit the movement of said dog; and manually-operated means for swinging said member about its pivot to cause its locking and stopping elements to act alternately upon the dogs.

14. In a type-writing machine, and in an escapement mechanism, the combination of an escapement-rack; a dog-carrier pivoted to vibrate transversely of said rack; and a pair of dogs mounted upon said carrier and adapted to coöperate with said escapement-rack, the working faces of said dogs being shaped to conform substantially to the arc in which they move about the pivot of the dog-carrier.

15. In a type-writing machine and in an escapement mechanism, the combination of an escapement-wheel; a dog-rocker pivoted to vibrate transversely of said escapement-wheel; and a pair of dogs pivoted on said dog-rocker and adapted to coact with the teeth of said escapement-wheel at the side thereof; the working faces of said dogs being rounded or shaped to conform substantially to the arc in which they move about the pivot of the dog-rocker.

16. In a type-writing machine, the combination of a universal bar, means for actuating said bar, a carriage-feeding element, a connecting-rod detachably connected with said carriage-feeding element at one end and provided at the other end with a pivot portion which pivotally engages with the under side of said universal bar.

17. In a type-writing machine, the combination of a universal bar; means for actuating said bar; a feed-dog carrier; a connecting-rod detachably connected with said feed-dog carrier at one end and provided at the other end with a transverse pivot-pin which engages with cut-aways in the under side of said universal bar.

18. In a type-writing machine, the combination of a universal bar, means for actuating the same, a feed-dog carrier, a two-piece, longitudinally-adjustable connecting-rod detachably connected with said feed-dog carrier at one end and provided at the other end with a transverse pivot-pin which engages with cut-aways in the under side of said universal bar, the construction being such that the connecting-rod may be readily removed and adjusted.

19. In a type-writing machine, the combination of a pivoted dog-rocker having a depending arm; means for actuating said dog-rocker; an expansible spring having one end connected with a fixed part of the machine and having a nut member secured in its other end; and a tension-adjusting screw passing through the depending arm of said dog-rocker and engaging with the nut in the end of said spring, the arrangement being such that when the dog-rocker is actuated from normal position the spring is expanded and thereafter upon contracting serves to restore the dog-rocker to normal position.

20. In a type-writing machine, the combination of a dog-rocker having a perforated depending arm; means for actuating said dog-rocker; an expansible spring connected at one end with a fixed part of the machine; a nut member connected with said spring; a headed tension-adjusting screw passing through the perforation in the depending arm of said dog-rocker and engaging with said nut member; and means for preventing accidental rotation of said screw.

21. In a type-writing machine, the combination of a dog-rocker having a perforated depending arm; means for actuating said dog-rocker; an expansible spring connected at one end with a fixed part of the machine; a nut member connected with said spring; a headed tension-adjusting screw passing through the perforation in the depending arm of said dog-rocker and engaging with said nut member; the inner face of the head of said screw being formed with lugs or projections which engage with depressions or nicks in the depending arm of the dog-rocker, the construction serving to prevent the accidental rotation of said screw.

22. In a type-writing machine, the combination of a pivoted dog-rocker; means for actuating the same; a coiled expansible spring having one end connected with a fixed part of the machine; a nut member connected with said spring and within its coils; a tension-adjusting screw cooperating with said nut member and adapted to pass through said spring, said screw adjustably engaging with the dog-rocker, the arrangement being such that as the dog-rocker is actuated from normal position said spring is expanded, and thereafter serves, as it contracts, to restore the dog-rocker to normal position.

850,188. VIBRATILE APPARATUS. LAMBERT SNYDER, Rochelle Park, N. J. Filed Oct. 18, 1904. Serial No. 228,937.

Claim.—1. A vibratory massage apparatus comprising a staff; a vibrator-head mounted on said staff, said vibrator-head being arranged to travel, under pressure suitably applied thereto, step-by-step to and fro along, and hence impart vibrations to, said staff; and adjustable mechanical means connected to the head for reinforcing and modulating the vibrations so produced, substantially as herein specified.

2. A vibratory massage apparatus comprising a staff; a vibrator-head mounted on said staff, said vibrator-head being arranged to travel, under pressure suitably applied thereto, step-by-step to and fro along, and hence impart vibrations to, said staff; a resilient arm projecting from said vibrator-head; and a modulator, the latter mounted on and shiftable along said arm, for modulating the vibrations thus produced, substantially as herein specified.

3. A vibratory massage apparatus comprising a staff; a vibrator-head mounted on said staff, said vibrator-head being arranged to travel, under pressure suitably applied thereto, step by step to and fro along, and hence impart vibrations to said staff; an arm projecting from said vibrator-head, said arm comprising a rigid portion adjacent to said head and a resilient portion leading from said rigid portion; a finger-piece on the rigid portion of said arm; and means for transmitting to the body of a patient the vibrations so produced, substantially as herein specified.

4. A vibratory massage apparatus comprising a staff; a vibrator-head mounted on said staff, said vibrator-head being arranged to travel, under pressure suitably applied thereto, step by step to and fro along, and hence impart vibrations to said staff; an arm projecting from said vibrator-head, said arm comprising a rigid portion adjacent to said head and a resilient portion leading from said rigid portion; a finger-piece on the rigid portion of said arm; a modulator shiftably mounted on the resilient portion of said arm; and means for transmitting to the body of a patient the vibrations thus produced, substantially as herein specified.

5. A vibratory massage apparatus comprising a staff provided with a contact member; a vibrator-head mounted on said staff, said vibrator-head being arranged to travel, under pressure suitably applied thereto, step by step to and fro along, and hence impart vibrations to said staff; and a soft elastic shield arranged upon and protecting said contact member, substantially as herein specified.

6. A vibratory massage apparatus comprising a staff; a vibrator-head mounted on said staff, and adapted, under pressure suitably applied thereto, to momentarily engage and release said staff, and hence impart vibrations thereto; an arm projecting from said head, said arm being provided with a finger-piece, a modulator, and a sleeve between said finger-piece and modulator; and means for transmitting to the body of a patient the vibrations thus produced, substantially as herein specified.

7. A vibratory massage apparatus comprising a rigid staff; a rigid head, said head being arranged to travel under pressure suitably applied thereto, step by step to and fro along, and hence momentarily engage and release, said staff, the engaging effect of said head with said staff being accordingly non-elastic, and vibrations adequate for massage purposes being accordingly imparted to said staff; means whereby pressure may be applied to said head as stated, and a resilient arm projecting from said head and serving to reinforce the vibrations of the head on the staff.

8. A vibratory massage apparatus comprising a staff; a vibrator-head mounted on said staff, said vibrator-head being arranged to travel, under pressure suitably applied thereto, step by step to and fro along, and hence impart vibration to, said staff, and adjustable means carried by the head and adapted to vary the vibrations of the head on the staff.

850,189. COMBINED SCRIBER AND PENCIL-HOLDER. THOMAS B. STEPHENSON, Belle Plaine, Kans. Filed May 24, 1906. Serial No. 318,571.

Claim.—1. A tool comprising a tubular holder having a coupling-socket at one end, and a reversible tubular handle member provided at one end with a socket and adapted to have either end fitted in the coupling-socket of the tubular holder, and a scriber-blade having a shank to fit the socket of the tubular handle member when the latter has one end fitted in the coupling-socket, said shank and blade being arranged within the tubular handle member when the other end of the latter is fitted in the coupling-socket.

2. A tool comprising a tubular holder having a coupling-socket at one end, a reversible tubular handle member having one end tapered and closed and open at the other end, either end being capable of fitting within the coupling-socket of the tubular holder, and a scriber-blade having a shank to fit in the open end of the tubular handle member, when the closed end of the latter is fitted in the coupling-socket of the tubular holder, so as to cause the blade to project from that end of the device, said blade and its shank being received within the tubular handle member when the open end of the latter is fitted within the coupling-socket.

850,190. METAL-TRANSFER DEVICE. RICHARD H. STEVENS, Munhall, Pa. Filed June 19, 1905. Serial No. 265,868.

Claim.—1. In a transfer for hotbeds and similar apparatus, a device comprising two parts, namely, a movable carrier and a frame mounted thereon and shiftable relatively thereto, a swinging dog pivoted to one of said parts and arranged to be tilted by relative movement of the parts, and connections arranged to move one of said parts relatively to the other; substantially as described.

2. In a transfer for hotbeds and similar apparatus, a movable device comprising two parts, namely, a carrier and a shifting frame thereon, a swinging dog pivoted to one of said parts and arranged to be tilted by relative movement of the parts, and connections extending to the shifting frame and arranged to move the device across the hotbed; substantially as described.

3. In a transfer for hotbeds and similar apparatus, a movable device comprising two parts, namely, a carrier and a frame mounted thereon and shiftable relatively thereto, a swinging dog pivoted to one of said parts, the other part having a projection arranged to tilt the dog upon relative movement of the parts, and connections extending to the shifting frame and arranged to move the device in opposite directions across the hotbed; substantially as described.

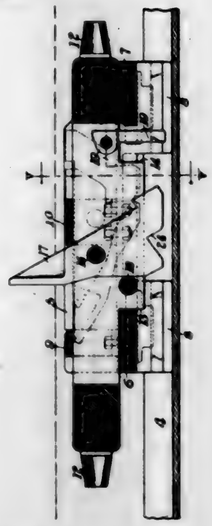

4. In a transfer device for hotbeds and similar apparatus, a movable carrier, a pushing-dog pivotally mounted therein, dog-tilting mechanism operated by the backward movement of the carrier, means on the carrier for locking the dog in its tilted position and means coupled to the carrier for releasing said dog at any desired point in the travel of the carrier; substantially as described.

5. In a transfer device for hotbeds and similar apparatus, a movable carrier, a shifting frame on said carrier, a dog pivoted to the shifting frame, connections coupled to the frame for moving the carriers endwise in either direction, and mechanism on the carrier by which the dog is tilted when the carrier is moved in the reverse direction; substantially as described.

6. In a transfer for hotbeds and similar apparatus, a movable device comprising a carrier, a shifting frame mounted on and movable relatively to said carrier, a dog pivoted to the shifting frame, the carrier having a projection arranged to tilt the dog upon relative motion of the two parts, and flexible connections leading to the opposite end of the shifting frame and arranged to move the device transversely of the hotbed and tilt the dog when desired; substantially as described.

7. In a transfer device for hotbeds and similar apparatus, a movable carrier, an endwise-shifting frame thereon, a dog pivoted on the frame connections secured to the ends of the shifting frame for moving the carrier endwise in either direction and means on the carrier adapted to tilt the dog when the direction of movement of the carrier is reversed; substantially as described.

8. In a transfer device for hotbeds and similar apparatus, a movable carrier, a shifting frame on the carrier having a pivoted dog, an abutment on the carrier arranged to tilt the dog and a latch device arranged to hold the dog in its tilted position; substantially as described.

9. In a transfer device for hotbeds and similar apparatus, a carrier, a shifting frame on said carrier, a tilting dog mounted thereon, a tail-supporting device for the dog at one end of the travel of the carrier and means for shifting the frame and locking the dog in its tilted position; substantially as described.

10. In a transfer device for hotbeds and similar apparatus, a carrier having a locking-abutment and an endwise-shifting frame therein having a pivoted dog; substantially as described.

11. In a transfer device for hotbeds and similar apparatus, a carrier, an endwise-shifting frame thereon having a pivoted dog, an abutment on the carrier arranged to tilt the dog and a locking device for the dog on said carrier; substantially as described.

12. In a transfer device for hotbeds and similar apparatus, a carrier, an endwise-shifting frame thereon, actuating connections at the ends of the shifting frames, a dog pivoted on the shifting frame, an abutment on the carrier arranged to tilt the dog and a latch on the shifting frames arranged to hold the dog in its tilted position; substantially as described.

13. In a transfer device for hotbeds and similar apparatus, a carrier, an endwise-shifting frame thereon having a pivoted dog, a support for said dog near one end of the travel of the carrier, a locking-strap on the carrier for the dog and an abutment on the carrier arranged to tilt the dog; substantially as described.

850,191. STEAM-GENERATOR. JOSEPH M. STORY, Owosso, Mich. Filed May 31, 1906. Serial No. 319,538.

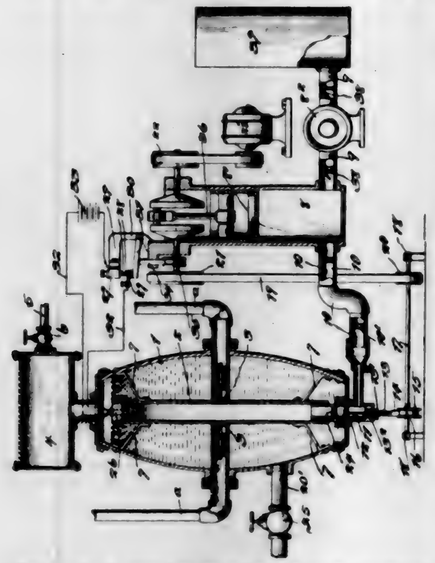

Claim.—In a steam-generator of the class described a boiler, an explosion-chamber supported within the boiler, means for intermittently admitting explosive-gases into the explosion-chamber, intermittently-operating means for igniting said gases, escape-pipes connected with the explosion-chamber and extending through packing-glands in the walls of the boiler and spring-actuated escape-valves within said pipes normally engaging escape-ports in the side walls of the combustion-chamber.

850,192. MINING-MACHINE. EDWARD G. TILLMAN, Thayer, W. Va. Filed July 17, 1906. Serial No. 326,626.

Claim.—1. In a mining-machine, a main frame comprising corner-posts provided with vertical grooves and upper and lower side members, the upper side members being provided with vertical mortises; a vertically-adjustable frame having bars guided through the mortises and bars connecting the guiding-bars and having threaded perforations and terminal tongues guided in the grooves in the corner-posts; adjusting-screws extending through the theaded perforations in the connecting-bars and journaled in the upper and lower side members of the main frame; and a cutter-carrying head longitudinally and transversely movable in the vertically-adjustable frame.

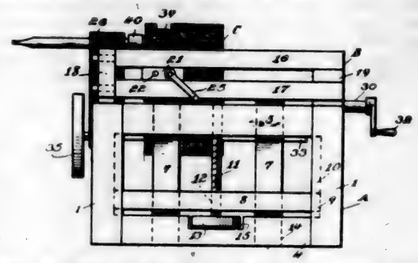

2. In a mining-machine, a main frame, comprising upper and lower side members the former being provided with mortises, and the latter being provided with recesses and corner-posts being provided with grooves; a vertically-adjustable frame comprising guide-bars and bars connecting the guide-bars and provided with threaded perforations and terminal tongues, the guide-bars operating through the mortises in the main frame and having their terminals adapted to enter the recesses in the lower side bars of the main frame, and the terminal tongues being adapted to move in the grooves in the corner-posts; and adjusting-screws extending through the perforations in the connecting-bars, journaled in the upper and lower side members and having hand-wheels arranged in the recesses in the lower side members.

3. In a mining-machine, a vertically-adjustable frame, formed with spaced side members and a slot at its rear end, a stirrup-plate transversely movable upon the front end of said frame, a block transversely movable in the slot in the rear end of said frame, blocks supported for longitudinal movement between the spaced side members, a cutter-carrying head supported for transverse movement in the longitudinally-movable blocks, bit-carrying shafts supported for rotation in the cutter-carrying head, an operating-shaft extending through the latter and journaled in the stirrup-plate and in the transversely-movable block of the vertically-adjustable frame, driving means slidably connected with the operating-shaft, means for transmitting motion from the latter to the bit-carrying shafts, a feed-screw connected with the stirrup-plate and extending through the cutter-carrying head, and a nut upon said feed-screw having peripheral teeth meshing with the driving means upon the operating-shaft.

4. In a mining-machine, a vertically-adjustable frame having spaced side members, blocks supported for longitudinal movement between said side members, a cutter-head supported for transverse movement in the longitudinally-movable blocks, bit-carrying shafts supported for rotation in the cutter-head, a fly-wheel-carrying shaft extending through the latter, a suitably-supported feed-screw extending through the cutter-head, a nut located within the cutter-head upon the feed-screw, a suitably-supported operating-shaft extending through the cutter-head, and means for transmitting motion from said shaft to the bit-carrying shafts, to the fly-wheel-carrying shaft, and to the nut upon the feed-screw.

850,193. VESTIBULE-CURTAIN HOLDER. WILLIAM E. TIPPETT, Washington, D. C. Filed Oct. 18, 1906. Serial No. 339,514.

Claim.—1. In a device of the kind described, the combination with a curtain, of a fixed socket, a revoluble member carried by the curtain and engaging the socket and means for operating the said member from the curtain to disengage it from the said socket when the curtain is subject to excessive strain, for the purpose described.

2. In a device of the kind described, the combination with a curtain, of a fixed socket, a revoluble member carried by the curtain and engaging the socket and means for imparting a turning movement to said member from the

curtain to cause it to be automatically disengaged from the socket when the cars are uncoupled.

3. In a device of the kind described, the combination with a curtain, of a fixed socket, a revolubly-mounted member carried by the curtain for engaging the socket and a connection between the curtain and revoluble members to automatically disengage said member from the socket when the cars are uncoupled for the purpose described.

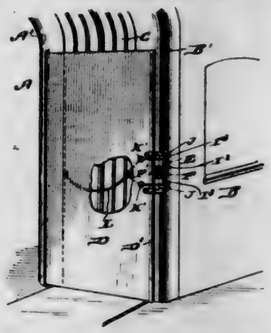

4. In a device of the kind described, the combination with a curtain, of a fixed socket, a revoluble member carried by the curtain and adapted to enter the said socket and a flexible connection between the revoluble member and curtain, for the purpose described.

5. The combination with a curtain, of a fixed stop, a revoluble member carried by the curtain and engaging the socket, said member having a projection for engaging the edge of the stop when turned a given distance and a connection between the said members and curtain, whereby the members will be automatically disengaged from the socket when the cars are uncoupled for the purpose described.

6. The combination with a curtain, of a fixed socket, a bar carried by said curtain, a sleeve revolubly mounted on said bar adapted to fit in said socket and means connected to said sleeve for revolving said sleeve for the purpose described.

7. The combination with a curtain, of a fixed socket a bar carried by said curtain, a sleeve revolubly mounted on said bar provided with a projection and means connected to said sleeve for bringing said projection into engagement with the edge of the socket, for the purpose described.

8. The combination with a curtain, of a fixed socket a bar detachably connected to the free end of said curtain, a sleeve mounted on said bar adapted to fit in said socket provided with a projection and with lugs and means connected to said lugs for turning said projection into engagement with the edge of the socket, for the purpose described.

9. The combination with a spring-actuated curtain, of a fixed socket, a bar detachably connected to the free end of said curtain, a sleeve revolubly mounted on said bar adapted to fit in said socket provided with a rib having a square edge, and means for turning the square edge of the rib into engagement with the edge of the socket, for the purpose described.

10. The combination with a spring-actuated curtain, of a fixed socket, a bar carried by the free end of said curtain, a sleeve revolubly mounted on said bar, adapted to fit in said socket provided with a rib having a square edge, and spaced cam-shaped lugs and means connected to said lugs for turning said sleeve in said socket until the square edge of the rib engages the edge of the socket for disengaging said sleeve from the socket, for the purpose described.

11. The combination with a spring-actuated roller carrying a curtain, of a fixed socket, a bar carried by the free end of said curtain, a sleeve revolubly mounted on said bar adapted to fit in the socket, provided with a rib having a square edge and with spaced cam-shaped lugs, and cords connected to said lugs for turning said square edge of the ribs into engagement with the edge of the socket, for the purpose described.

12. The combination with a spring-actuated curtain carrying a rod in its end, of a fixed socket, a bar provided with split sleeves secured on said rod, a sleeve secured on said bar adapted to fit in said socket provided with a rib having a square edge and means for turning said square edge of the rib into engagement with the edge of the plate, for disengaging said sleeve, from the socket.

13. The combination with a pair of vestibule-cars, of a spring-actuated curtain carried by one of the cars, a fixed socket carried by the other car, a revoluble member provided with a projection carried by the free end of the curtain adapted to fit in said socket and means connecting said member to the car for turning said projection into engagement with the edge of the socket for disengaging said member from the socket.

14. The combination with a pair of vestibule-cars, of a spring-actuated curtain carried by one of the cars, a fixed socket carried by the other car, a bar carried by the free end of the curtain, a sleeve revolubly mounted on said bar provided with a projection, and cords connecting said sleeve to the car carrying the curtain for turning said projection into engagement with the edge of the socket for disengaging said sleeve from said socket.

15. The combination with a pair of vestibule-cars, of a spring-actuated curtain carried by one of the cars provided with a rod, at its free end, a bar provided with split sleeves secured over said rod, a sleeve revolubly mounted on said bar provided with a rib and spaced lugs and cords connecting said lugs to the car carrying the curtain for turning said ribs into engagement with the edge of the socket for disengaging said sleeve from said socket.

16. The combination with a pair of vestibule-cars, of a spring-actuated curtain carried by one of said cars provided with a rod at its free end, an arm carrying a bar provided with a split sleeve secured over said rod, an arm provided with a split sleeve secured over said rod connected to said bar, a sleeve revolubly mounted on said bar, adapted to fit in said socket provided with a rib having a square edge and with spaced cam-shaped lugs and cords connecting said lugs to the car carrying the curtain for turning the square edge of the rib into engagement with the edge of the socket for disengaging said sleeve, from said socket.

850,194. WITHDRAWN.

850,195. BOX-FASTENER. CURTIS H. VEEDER, Hartford, Conn. Filed May 24, 1906. Serial No. 318,464.

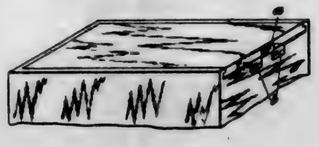

Claim.—1. The combination with a box having a sliding cover, of a fastener for the cover, said fastener being adapted to fit upon the top edge of one of the sides of the box and to be held thereon by the cover and having a projection adapted to be bent upwardly against the cover so as to lie substantially in the plane of the side of the box upon which the fastener is fitted.

2. The combination with a box having a sliding cover, of a fastener for the cover, said fastener being substantially U shape in cross-section so as to fit upon the top edge of one of the sides of the box and having a projection formed by cutting one side which projection is adapted to be bent upwardly against the cover so as to lie substantially in the plane of the side of the box upon which the fastener is fitted.

850,196. TURBINE-MOTOR. WILLIAM A. WARMAN, New York, N. Y., assignor to Keller Mechanical Engraving Company, New York, N. Y., a Corporation of New York. Filed Nov. 20, 1905. Serial No. 288,124.

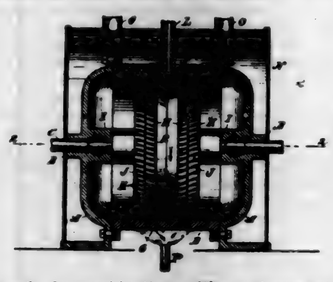

Claim.—1. In combination with a steam-generating chamber, a motor located therein and comprising a rotatable disk having a circumferential channel forming an annular steam-chamber with vanes at each side thereof, and stationary vanes on each side of the rotatable disk.

2. A steam-turbine motor comprising a casing, a motor including a rotatable disk having a groove extending around its circumference forming an annular steam-chamber with vanes on each side thereof, stationary vanes on each side of the rotatable disk, and means for generating steam within the casing.

3. A steam-turbine motor comprising a rotating and stationary disks formed with vanes, said rotatable disk being contained between a pair of stationary disks, and being circumferentially channeled to form a steam-chamber and a casing inclosing the same and having a steam-generating chamber located within said casing, substantially as described.

4. A steam-turbine motor comprising a rotating disk and stationary disks located on either side thereof, said disks being provided with vanes, said rotatable disk being contained between a pair of stationary disks, and being circumferentially channeled to form a steam-chamber, a casing inclosing said disks and having a steam-generating chamber located within the same, substantially as described.

5. A steam-turbine motor comprising a rotating disk formed with a peripheral steam-chamber and with vanes on each side thereof, a stationary disk on each side of the rotating disk and provided with vanes, and a casing surrounding said disks, substantially as described.

6. A steam-turbine motor comprising a rotating disk, the rim of which is formed with a steam-chamber and with vanes on each side thereof, a stationary disk located on each side of said rotating disk and provided with vanes, and a casing surrounding said disks, substantially as described.

7. A steam-turbine motor comprising a motor proper, said motor including spaced stationary disks provided with vanes and an intermediate rotating disk having an annular steam-chamber and vanes on each side thereof, a casing inclosing said motor and having a steam-generating chamber located within the same, a water-inlet pipe leading through said casing, and means for heating said casing, whereby the steam is generated within said casing, substantially as described.

8. A steam-turbine motor comprising a motor proper provided with an annular steam-generating chamber with vanes on each side thereof and stationary vanes on each side of the disk, a casing inclosing said motor, an inlet-pipe leading through said casing, means for heating said casing, and a hood covering said casing for confining the heat, substantially as described.

9. A turbine-motor comprising a casing, a shaft passing through and journaled in said casing, a wheel secured to said shaft and provided with a chamber in the center thereof and vanes on either side of said chamber, a stationary disk located on either side of said rotating wheel and fastened to said casing, and an inlet-pipe passing through said casing and communicating with the chamber in said rotating wheel, substantially as described.

10. A steam-turbine motor comprising a double casing, a shaft journaled in said casing, a rotating wheel secured to said shaft and provided with vanes, a stationary disk located on each side of said rotating wheel and provided with vanes, an inlet-pipe leading through said casing to said rotating wheel, means for heating said casing, and a hood covering said casing for confining the heat therein, substantially as described.

850,197. COMBINED TRAP, HOLDER, AND CHUTE FOR LIVE STOCK. WILLIAM E. WILLHOIT, Shelbina, Mo., assignor of one-half to John N. Sherwood, Kansas City, Mo. Filed Nov. 30, 1906. Serial No. 345,741.

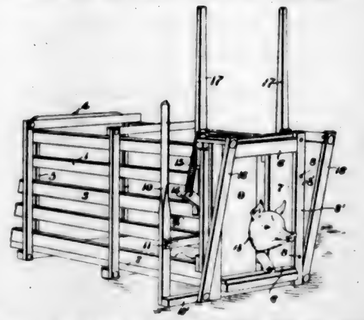

Claim.—1. A device of the character described comprising a body, a gate slidably located thereon, a lever fulcrumed to the body, a link connecting said lever with the gate, and a gate-retaining means mounted upon the body and adapted to engage said link.

2. A device of the character described comprising a body, a gate slidably located thereon, a lever fulcrumed to the body, a link pivotally connected at its ends to the gate and lever and having ratchet-teeth located between its pivotal connections and a spring-actuated pawl pivoted to the body and adapted to engage said ratchet-teeth.

850,198. RAIL-JOINT. BENJAMIN WOLHAUPTER, New York, N. Y., assignor to The Rail Joint Company, New York, N. Y., a Corporation of New York. Filed July 12, 1906. Serial No. 325,862.

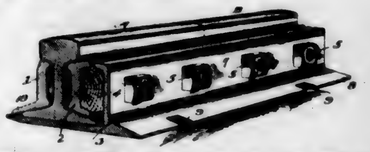

Claim.—1. A rail-joint having a side plate, and a universally-reversible filler-block coöperating therewith.

2. A rail-joint having a reversible side plate, and a reversible filler-block coöperating therewith.

3. A rail-joint having a reversible side channel-plate, and a reversible filler-block registering with said channel-plate.

4. A rail-joint having a reversible side plate, and a filler-block coöperating therewith and reversible from side to side and from top to bottom.

5. A rail-joint having a reversible side channel-plate, and a filler-block registering with said channel-plate and reversible from side to side and from top to bottom.

6. In a rail-joint, a side plate of uniform design and angles at top and bottom, and a reversible filler-block cooperating with said side plate.

7. In a rail-joint, a side plate of uniform design at top and bottom with the angle of its rail-adjoining faces cor-

responding with the angle of the under side of the rail-head and the upper side of the rail-flange, a rail-shoe, and a reversible filler held between said shoe and said side plate.

8. In a rail-joint, a reversible side channel-plate of uniform design, a rail-shoe, and a reversible filler-block interposed between the shoe and the channel-plate.

9. In a rail-joint, the side plates one of which is reversible, a rail-shoe, and a reversible filler-block clamped between the shoe and the reversible side plate.

10. In a rail-joint, the side plates, the rail-shoe, and a filler-block interposed between a side plate and the shoe and reversible from side to side and from top to bottom.

11. In a rail-joint, the side plates, the rail-shoe, and a filler-block interposed between the shoe and a side plate and reversible from side to side, from top to bottom, and from end to end.

12. In a rail-joint, the side plates, one of which is reversible from top to bottom, the rail-shoe, and a universally-reversible filler interposed between the shoe and said reversible side plate.

13. In a rail-joint, the side plates one of which is provided with uniform duplicate head and foot flanges formed on their inner sides with inclined bearing-faces, a rail-shoe provided at the top edge of its upright member with an inturned head-rib having an inclined face, and a universally-reversible filler-block.

14. In a rail-joint, the side plates, one of which is provided with uniform duplicate head and foot flanges formed on their inner sides with inclined bearing-faces, a rail-shoe provided at the top edge of its upright member with an inturned head-rib having at its under side an inclined face of a corresponding angle to the angles of said bearing-faces of said side plate, and a universally-reversible filler-block provided with flat side faces and with uniform double beveled upper and lower sides.

15. In a rail-joint, the side plates, one of which is of a uniform channeled design and reversible from top to bottom, a rail-shoe provided with a head-rib having an inclined face, and a universally-reversible filler-block provided with flat side faces and with uniform double beveled upper and lower sides.

16. In a rail-joint, the combination with the side plates and a filler-block, of a rail-shoe engaging the block, said block and shoe having means for drawing the shoe-base against the under side of the rail-base when the bolts are tightened.

17. In a rail-joint, the side plates, an angle-shoe, and a filler-block interposed between the shoe and one of the side plates, said shoe and filler having coöperating elements providing means, upon the tightening of the joint-bolts, for drawing the shoe-base against the under side of the rail-base.

18. In a rail-joint, the side plates, an angle-shoe, and filler-block, said shoe and filler having coöperating elements providing means, upon the tightening of the joint-bolts, for lifting the shoe-base against the under side of the outer flange of the rail-base.

19. In a rail-joint, the side plates, an angle-shoe, and an elastic filler, said shoe and filler coöperating to provide means, when the filler is placed under compression, for lifting the shoe-base against the under side of the inner flange of the rail.

20. In a rail-joint, the side plates, an angle-shoe, and an elastic filler, said shoe and filler having separate coöperating means to provide respectively, when the joint-bolts are tightened, for drawing the shoe-base against the under side of both the outer and inner flanges of the rail-base.

21. In a rail-joint, the side plates, an angle-shoe, and a filler, said angle-shoe having a camming-up action on the filler when the bolts are tightened.

22. In a rail-joint, the side plates, an angle-shoe, and an elastic filler, said shoe having an inclined clamp member interlocked with the filler and arranged to be drawn against the same, whereby the outward pressure of the latter when under compression, exerts a fulcrum action on said clamp member to lift the shoe against the under side of the rail-base.

23. In a rail-joint, the side plates, an angle-shoe, and an elastic symmetrical filler, said shoe having an inclined clamp member interlocked with the filler and arranged to be drawn against the same, whereby the outward pressure of the latter when under compression exerts a fulcrum action on said clamp member to lift the shoe against the under side of the rail-base.

24. In a rail-joint, the side plates, an angle-shoe having an upright member inclined from the vertical and provided with a head-rib having an under inclined camming-face, and an elastic filler interposed between one of the side plates and said upright member of the shoe, said filler having a beveled face engaged by said camming-face of the head-rib.

25. In a rail-joint, the side plates, an angle-shoe, having an upright member inclined from the vertical and provided with a head-rib having an under inclined camming-face, and an elastic symmetrically-reversible filler interposed between one of the side plates and said upright member of the shoe, said filler having a beveled face engaged by said camming-face of the head-rib.

26. In a rail-joint, the side plates, a clamp member arranged opposite one of the side plates, and a universal filler interposed between said side plate and clamp member.

27. In a rail-joint, the side plates, one of which is provided with uniform duplicate head and foot flanges formed on their inner sides with inclined bearing-faces, a rail-shoe provided at the top edge of its upright member with an inturned head-rib having an inclined face, and a filler-block.

28. In a rail-joint, the side plates, one of which is provided with uniform duplicate head and foot flanges formed on their inner sides with inclined bearing-faces, a rail-shoe provided at the top edge of its upright member with an inturned head-rib having an inclined face, and a reversible filler-block.

850,199. APPARATUS FOR WASHING BOTTLES. RALPH G. WRIGHT and KIRK K. WRIGHT, Buffalo, N. Y. Filed July 28, 1903. Serial No. 167,261.

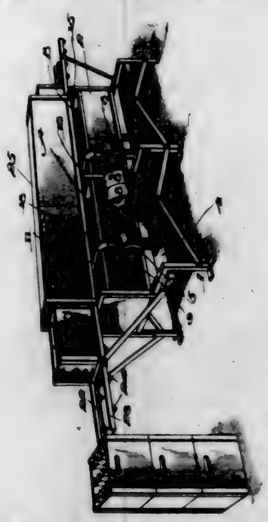

Claim.—1. In an apparatus for washing and sterilizing bottles, a tank divided into compartments, means for supporting the bottles over the tank, a series of branch pipes in one compartment, means for forcing water through said pipes to wash the bottles, a series of pipes in another compartment, means for supplying water to these pipes to rinse the bottles, and means for supplying a drying and sterilizing medium to the bottles after they have been rinsed.

2. In an apparatus for washing and sterilizing bottles, a tank divided into compartments, a series of branch pipes in one compartment, means for forcing water through said pipes to wash the bottles, a series of pipes in the other compartment, means for supplying water to these pipes to rinse the bottles, and another series of pipes in this second compartment through which steam may be forced to dry and sterilize the bottles after being rinsed.

3. In a bottle washing and sterilizing apparatus, a tank divided into two compartments, a track adapted to support bottles to be washed extending across the tank, a water-supply pipe extending into the first compartment, branches connected to this pipe having openings therein through which water may be forced, means for forcing the water through the openings for the purpose of washing the bottles, a pipe extending into the second compartment, branches connected to this pipe having openings therein through which water may be forced into the bottles, means for forcing the water into the pipes through the openings to rinse the bottles, another pipe extending into the second compartment, branches connected thereto having openings therein, said last-mentioned pipes adapted to have steam forced therein to dry and sterilize the bottles.

4. In a bottle-washing apparatus, a tank divided into compartments, a track extending longitudinally over the tank, a series of pipes having openings therein located in one compartment, means for forcing water through said pipes to wash the bottles, a trough located under said pipes, a partition in said compartment, a series of pipes in the second compartment having openings therein through which water is forced to rinse the bottles, means for forcing water through said openings, and another series of pipes having openings therein through which steam may be forced to dry and sterilize the bottles.

5. In an apparatus for washing bottles, a tank divided into compartments, pumps, an inlet-pipe leading from one pump to one compartment, branch pipes connected to said pipe having openings therein through which water may be forced to wash bottles, a trough or plate in the tank under said branch pipes, a partition under said troughs, a return-pipe leading from said compartment to the pump, a pipe leading from another pump to another compartment, an outlet-pipe leading from this compartment to the pump, branch pipes connected to said first-mentioned pipe and having openings therein through which a rinsing medium may be supplied to the bottles, another pipe leading to the second compartment, a series of branches connected to this latter pipe, there being openings therein through which steam may be forced to dry and sterilize bottles after being rinsed, supporting means over the tank and adapted to support crates containing bottles to be washed and a hood over the tank and supporting means, as and for the purpose set forth.

6. In an apparatus for washing bottles, a frame, longitudinal strips connected to said frame at two ends thereof, cross-pieces connected to said strips, said frame adapted to be placed over crate containing bottles to engage the sides of the crate whereby the frame is held in place in the crate and the bottles are prevented from falling out of the crate when the crate is inverted.

7. In an apparatus for washing bottles, a frame, strips dividing the frame, said strips being connected to ends of the frames, cross-pieces connected to said strips and rods connected to the ends of the cross-pieces, said frame adapted to be placed over crate containing bottles to hold the bottles in place in the crate when crate is inverted.

850,200. TURBINE BUCKET AND NOZZLE. KARL AHLQUIST, Rugby, England, assignor to General Electric Company, a Corporation of New York. Filed Nov. 28, 1905. Serial No. 289,453.

Claim.—1. A bucket for a turbine, comprising a body portion having curved entrance and exit edges.

2. A bucket for a turbine, comprising a body portion having curved entrance and exit edges, the curve of the exit edge being of greater radius than that of the entrance.

3. A bucket for a turbine, comprising a body portion which is crescent-shaped in cross-section, with curved entrance and exit edges, the inlet edge being shorter than the exit, and the angle of entrance greater than the angle of exit.

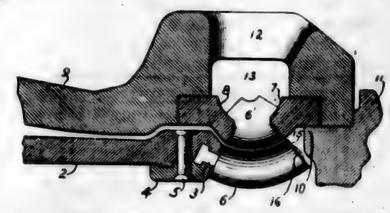

4. In a turbine, the combination of a support, with a plurality of buckets mounted thereon, each bucket comprising a body portion having curved entrance and exit edges, the entrance edge being shorter than that of the exit, the buckets being so arranged on the support that the angle of entrance of the adjacent walls of the inlet side is greater than the angle on the exit side.

5. In a turbine, the combination of a support, a plurality of buckets having curved entrance and exit edges, and a shank for each bucket that is mounted in the support, the buckets being so disposed on the support that the angle of entrance for the fluid is greater than the angle of exit.

6. In a turbine, the combination of a support, buckets situated on opposite sides of the plane thereof, each bucket having curved entrance and exit edges, and a nozzle situated between and discharging against both rows of buckets.

7. In a turbine, the combination of a support, buckets situated on opposite sides of the plane thereof, each bucket being crescent-shaped in cross-section, with curved entrance and exit edges, and a nozzle situated between and discharging against both rows of buckets, the discharge ends of the nozzle being curved to correspond to the curvature of the inlet edge of the buckets.

8. In a turbine, the combination of a support having a groove, buckets having curved entrance and exit edges and arranged in rows which are situated on opposite sides of the plane of the support, shanks for the buckets which are located in said groove, means for securing the buckets in place, and nozzles concentric with said buckets.

9. In a turbine, the combination of a casing having an internal shoulder, wheel-buckets, a partition supported by the shoulder, and a nozzle carried by the partition and held between it and the shoulder.

10. In a turbine, the combination of a casing having an internal shoulder, wheel-buckets, a partition supported by the shoulder, a nozzle carried by the partition and comprising an inner and an outer member with portions between forming passages, the said outer member being held between the partition and the shoulder.

850,201. WINDOW-LIGHT REGULATOR. HENRY ALRICH, El Paso, Tex., assignor of one-half to John Stockmeyer, El Paso county, Tex. Filed Jan. 16, 1907. Serial No. 352,510.

Claim.—1. The combination with a pair of shade-rollers, of means for raising and lowering the shade-rollers simultaneously, shades carried by the rollers, and a pair of endless cables for independently operating the shades, each connected to a shade, and rollers arranged at the top and the bottom of a window and around which the endless cables pass.

2. A means for holding and stretching shade-operating cables, comprising a plate, an arm pivoted to the plate, a roller on the outer end of the arm, a cam on the inner end of the arm, and a spring acting on the cam.

3. The combination with a guide member of a bracket-carrying member and an endless cable for moving said bracket-carrying member on the guide member, and a locking means for the bracket-carrying member, operated by the endless cable.

4. In a device of the class described, a guide member formed of two bars, the opposed faces of which are recessed, a bracket-carrying member movable on the guide

and having two spring-arms the ends of which are adapted to enter the recesses, and a cable for operating the spring-arms and moving the bracket-carrying member on the guide member.

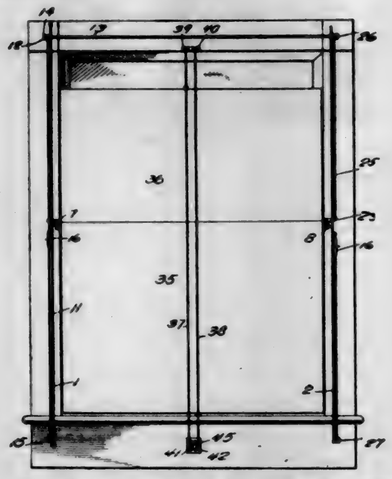

5. In a device of the class described, a guide member formed of two bars, the opposed faces of which are recessed, a bracket-carrying member movable on the guide and having two spring-arms, the ends of which are adapted to enter the recesses, and cable for operating the spring-arms and moving the bracket-carrying member on the guide member.

6. The combination with a bracket-carrying member, of a locking means therefor, and a controlling-cable for operating the locking means and moving the bracket-carrying member.

7. The combination of a pair of guide members, one of which is formed of two bars, the opposed faces of which are recessed, a pair of connected bracket-carrying members moving on the guide members, a pair of spring locking-arms, carried by one of the bracket-carrying members, a controlling-cable for each bracket-carrying member, one of said cables being connected with the spring locking-arms, and means connecting both controlling-cables to cause one to move the other.

850,202. SLACK-ADJUSTER. CHARLES O. ANDERSON, Omaha, Nebr., assignor of one-half to A. T. Austin, Omaha, Nebr. Filed June 7, 1906. Serial No. 320,520.

Claim.—1. In a slack-adjuster for brake-rigging, an adjustable clevis adapted to connect a pivoted lever of the brake-rigging to other parts of said rigging, means for controlling the operative length of said clevis, and means positioned in the path of said pivoted lever for controlling the operation of said adjusting means.

2. In a slack-adjuster for brake-rigging, an adjustable clevis adapted to connect a pivoted lever of the brake-rigging to other parts of said rigging, means for controlling the operative length of said clevis and means mounted upon said clevis with a part positioned in the path of said lever for controlling the operation of said adjusting means.

3. In a slack-adjuster for brake-rigging, an adjustable clevis adapted to connect a pivoted lever of the brake-rigging to other portions of the rigging, comprising a member provided with a longitudinal opening, a screw fitted to said opening, and by its position controlling the operative length of the clevis, a ratchet mounted upon said screw and adapted to operate the same and means positioned in the path of said lever for operating said ratchet when the movement of said lever exceeds a certain limit.

4. In a slack-adjuster for brake-rigging, an adjustable clevis adapted to connect a pivoted lever of the brake-rigging to other parts of the rigging, comprising a member provided with a longitudinal opening, a screw fitted to said opening and by its position controlling the operative length of said clevis, and means positioned in the path of said lever for changing the position of said screw when the movement of said lever exceeds a certain limit.

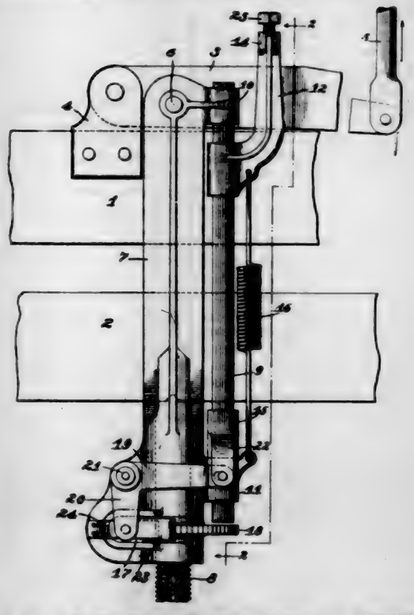

5. In a slack-adjuster for brake-rigging, an adjustable clevis adapted to connect a pivoted lever of the brake-rigging to other portions of said rigging, comprising a member provided with a longitudinal opening, a screw fitted to said opening and by its position controlling the operative length of said clevis, a screw-threaded ratchet mounted upon said screw and engaged by said member, whereby the longitudinal position of said screw in said opening is controlled by said ratchet, and means positioned in the path of said lever for rotating said ratchet.

6. In a slack-adjuster for brake-rigging, the combination with two beams and an operating-arm pivoted on one of the same, of a connecting member pivoted to said arm, a screw operating in the connecting member and engaged with the second beam, a ratchet adapted to operate the screw, a pawl coacting with the ratchet, an elbow-lever pivoted to the ratchet, a sliding member having connection with the elbow-lever, a bracket attached to said sliding member and adapted to be engaged by said operating-arm upon excessive movement of the same, and means adapted to operate said pawl.

7. In a slack-adjuster for brake-rigging, the combination with two brake-beams and an operating-arm pivoted to one, of a clevis pivoted to the operating-arm connected to the second beam, a screw operating in the clevis, and means for automatically operating the screw to take up the slack in the brake-rigging.

8. In a slack-adjuster for brake-rigging, the combination with two brake-beams and an operating-arm pivoted to one, of a clevis pivoted to the arm and connected to the second beam, a screw operating in the clevis, a ratchet mounted upon the screw to operate the same, and means operated by the excessive movement of said arm for turning the ratchet.

9. In a slack-adjuster for brake-rigging, the combination with two brake-beams and an arm pivoted to one, of a clevis pivoted to the arm and connected to the second beam, a screw operating in the yoke, a ratchet mounted on the screw, a pawl coacting with the ratchet, a lever carrying the pawl to operate the same, and devices in connection with the lever for operating it upon excessive movement of said arm of the brake-rigging.

10. In a slack-adjuster for brake-rigging, the combination with two brake-beams and an arm pivoted to one, of a clevis pivoted to the arm and connected to the second beam, a screw operating in the clevis, a ratchet mounted on the screw, a pawl coacting with the ratchet, a lever carrying the pawl to operate the same, and devices in connection with the lever for operating it upon excessive movement of said arm of the brake-rigging, said devices comprising a sliding member having connection with the elbow-lever, a bracket attached to said sliding member and having shoulders lying at opposite sides of the arm, whereby to move the sliding member upon excessive movement of the arm, and means for returning said sliding member to its normal position upon releasing the brake.

850,203. ELECTRIC MOTOR. RALPH E. BARKER, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Mar. 12, 1906. Serial No. 305,463.

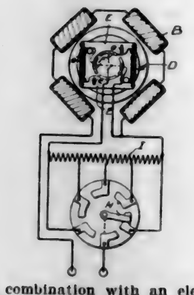

Claim.—1. In combination with an electric motor, an impedance normally in series with said motor, and automatic means for short-circuiting said impedance at starting.

2. In combination with an electric motor, an impedance normally in series with said motor, and a centrifugally-actuated switch connected to said motor and arranged to short-circuit said impedance when the motor is at rest.

3. In combination with an electric motor, an impedance in series with the motor, a manually-operated switch arranged to cut variable portions of said impedance out of circuit, and means for automatically short-circuiting said impedance at starting.

4. In combination with an electric motor, an impedance in series with the motor, a manually-operated switch arranged to cut variable portions of said impedance out of circuit, and a centrifugally-actuated switch connected to said motor and arranged to short-circuit said impedance when the motor is at rest.

5. In combination with an electric motor, manually-operated means for controlling the voltage impressed on the motor, and automatic means for rendering said manually-operated controlling means inoperative at starting.

6. In combination with an electric motor, manually-operated means for controlling the voltage impressed on the motor, and a centrifugally-actuated switch connected to the motor and arranged to render said manually-operated controlling means inoperative when the motor is at rest.

7. The combination with an induction-motor, an inductance in series with the motor, a manually-operated switch arranged to cut variable portions of said inductance out of circuit, and means for automatically short-circuiting said inductance at starting.

8. In combination with an induction-motor, an inductance in series with the motor, a manually-operated switch arranged to cut variable portions of said inductance out of circuit, and a centrifugally-actuated switch connected to said motor and arranged to short-circuit said inductance when the motor is at rest.

9. In combination with an induction-motor, an inductance in series with the motor, stationary contacts connected to terminals of said inductance, and a contact member carried by the rotor of the motor arranged to bridge said stationary contacts when the motor is at rest and to be moved out of engagement therewith by centrifugal force when the motor speeds up.

10. In combination with an induction-motor, an inductance in series with the motor, a manually-operated switch arranged to cut variable portions of said inductance out of circuit, stationary contacts connected to terminals of said inductance, and a contact member carried by the rotor of the motor arranged to bridge said stationary contacts when the motor is at rest and to be moved out of engagement therewith by centrifugal force when the motor speeds up.

850,204. ATTACHMENT FOR DRILLING-MACHINES. ALBERT G. BAUMEISTER, Sandusky, Ohio. Filed Jan. 22, 1906. Serial No. 297,311.

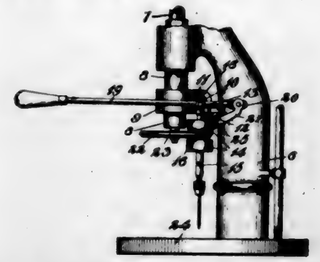

Claim.—1. A drilling attachment comprising a clamp having an arm projecting laterally therefrom, a vertically-movable spindle carried at the outer end of the arm, and means to drive the spindle.

2. An attachment for a drilling-machine comprising a clamp adapted to be secured to the feeding device of the machine, and having an arm projecting laterally therefrom, a manually-operated drill-spindle carried by said arm, and means to drive the spindle from the main drill-spindle of the machine.

3. A sensitive-drill attachment for a drilling-machine, comprising a clamp supported on and operated by the feeding devices of the machine, an arm projecting laterally from the clamp, a drill-spindle carried by said arm, a lever fulcrumed on the arm and connected to the head of the spindle to advance or retract the same, and driving connections between the said spindle and the main spindle of the machine.

4. The combination with a drill-press having a feeding-sleeve and a spindle working within the same, of a clamp secured to the sleeve and having a jointed arm projecting therefrom, a drill-spindle carried at the outer end of the arm, an operating-lever fulcrumed on the arm and connected to the head of the spindle, to advance or retract the same, pulleys on the spindles, and a belt connecting the pulleys.

5. An attachment for drills consisting of an arm adapted to be clamped upon the spindle-bearing of a drilling-machine, a shaft journaled in said arm and adapted to carry a chuck, a pulley-wheel mounted upon said shaft, means to revolve said pulley from the spindle of the drill, and means to clamp said arm upon the spindle-bearing of the drill.

850,205. AUTOMATIC DEVICE FOR INDUCTION-MOTORS. SVEN R. BERGMAN, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Mar. 20, 1906. Serial No. 307,019.

Claim.—1. In combination with a single-phase induction-motor having different connections for starting and for

running, a switch adapted to change said connections from starting to running conditions, a magnet-winding controlling said switch, and connections from the motor-winding to said magnet for impressing on said magnet an electromotive force substantially proportional to the cross-field produced in said motor by the secondary currents.

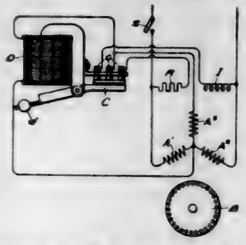

2. In combination with a single-phase induction-motor having different connections for starting and for running, a switch controlling said connections, and a magnet controlling said switch and connected in shunt to a portion of the motor-winding of different phase from the portion connected across the source of current.

3. In combination with a single-phase induction-motor having different connections for starting and for running, a switch adapted to change said connections from strting to running conditions, a magnet-winding controlling said switch, and connections for supplying to said magnet-winding an electromotive force proportional to the electromotive force induced in the motor-winding substantially in quadrature with the impressed electromotive force.

4. In combination with a single-phase induction-motor having a polyphase winding and different connections for starting and for running, a switch controlling said connections, and a magnet-winding controlling said switch and conneted in shunt to a phase of the motor-winding not connected to the source of current.

5. In combination with a single-phase induction-motor having a three-phase winding and different connections for starting and for running, a switch controlling said connections, and a magnet-winding controlling said switch and connected between the motor-terminal not connected to the source and a neutral point.

6. In combination with a single-phase induction-motor, a phase-splitting starting device, a switch for breaking the circuit of said device, and a magnet-winding controlling said switch and connected in shunt to a portion of the motor-winding of different phase from the portion connected across the source of current.

7. In combination with a single-phase induction-motor, a phase-splitting starting device, a switch adapted to break the circuit of said device, a magnet-winding adapted to open said switch, and connections for supplying to said winding an electromotive force substantially proportional to the electromotive force induced in the motor-winding in quadrature with the impressed electromotive force, said switch being arranged to return automatically to closed position when said magnet-winding is deënergized.

8. In combination with a single-phase induction-motor, a phase-splitting starting device, a switch adapted to break the circuit of said device, and a magnet-winding adapted to open said switch and connected in shunt to a portion of the motor-winding of different phase from the portion connected across the source, said switch being arranged to return automatically to closed position when said magnet-winding is deënergized.

850,206. DIVIDING-PLATE FOR BLOCK-MOLDS. FRANK A. BORST, South Bend, Ind., assignor to Ideal Concrete Machinery Company, South Bend, Ind., a Corporation of Indiana. Filed Aug. 20, 1906. Serial No. 331,248.

Claim.—1. In a building-block mold, the combination of a frame, a back plate having notches at its upper edge, a front plate hinged to said frame and normally parallel to the back plate, said front plate also provided with notches at its upper edge, end plates, a bottom plate extending across said mold and connected to said front plate and provided with grooves, and a dividing-plate adapted to fit in said grooves and provided with extensions to engage the notches in the front and back plates.

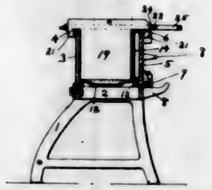

2. In a building-block mold, the combination of a bottom and sides, one of the sides having a lateral bead or flange along its upper edge, a dividing-plate adapted to be securely held in said mold to permit the forming of a plurality of blocks simultaneously, and a guide comprising a bar having a slot through which said plate may pass and provided with a hook to engage the bead or flange of the side of the mold.

850,207. SWITCH-LOCK. FRANK B. BRADLEY, Chicago, Ill., assignor to Ajax Forge Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 4, 1906. Serial No. 333,220.

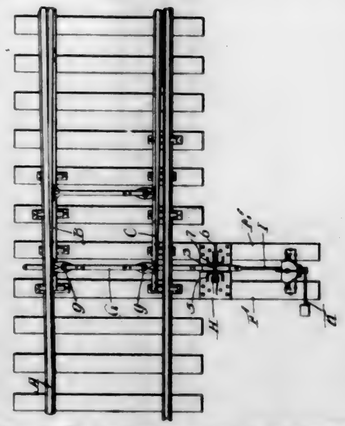

Claim.—1. The combination with a pair of switch-rails, of a continuous head-rod connecting said rails and projecting beyond one side of the main track and provided with a transverse abutment on said projecting end, a stationary support, and a bar arranged to be manually brought into and out of engagement with said abutment on the head-rod and arranged to be secured to said support so as to prevent the longitudinal movement of said head-rod.

2. The combination with a pair of movable switch-rails, of the head-rod connected therewith, means on said head-rod for adjusting the distance between said movable rails, a switch-stand arranged to throw the rails and a lock arranged to engage said head-rod at either of two points whereby the switch-rails may be positively locked at either extreme position.

3. The combination with a pair of movable switch-rails, of a head-rod connected therewith and projecting at one side of the track and provided with a transverse abutment, of a saddle secured across a pair of adjacent ties and provided with a slot within which said head-rod travels, a bar pivoted to said saddle at one side of said head-rod and adapted to be swung transversely of said head-rod and into engagement with abutment upon said head-rod, and means upon said saddle for anchoring said bar when said bar is in engagement with the abutment on said head-rod.

4. The combination with a main-track point-rail of a switch, of the head-rod connected therewith and extending beyond one side of the track, a switch-stand, a connecting-bar between the switch-bar and the head-rod, means on the switch-stand for throwing the point-rail, and a lock for the point-rail comprising means connected with the road-bed and adapted to directly and positively engage the head-rod whereby the point-rail will be positively locked in position adjacent to the main-track rail.

5. The combination with a pair of movable switch-rails, of a head-rod connected therewith and provided with an abutment, a saddle secured to a stationary support, a bar arranged to be manually placed in engagement with said abutment on the head-rod, and means for anchoring said bar to said saddle when said bar is in engagement with said abutment.

6. The combination with a pair of movable switch-rails, of a head-rod connected therewith and provided with an abutment, a stationary support, a bar pivoted thereto and arranged to be manually swung across said head-rod and into engagement with said abutment, and means for securing said bar, when in engagement with said abutment, so as to prevent longitudinal movement of said head-rod.

7. The combination with a switch-rail, of a head-rod connected therewith, a switch-stand, means on the switch-stand for moving the switch-rail, a bar connecting the head-rod with said switch-operating means, whereby said switch-operating means and said head-rod will at all times move simultaneously, and a lock for the switch-rail, said lock comprising a stationary support and means arranged to be manually brought into and out of positive engagement with said head-rod and with said stationary support, so as to prevent longitudinal movement of said head-rod.

850,208. AIR-COMPRESSOR. EINAR J. BRING, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed May 7, 1904. Serial No. 206,913.

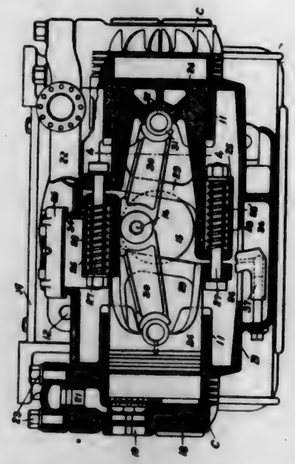

Claim.—1. The combination of two piston-heads, elastic means connecting said piston-heads and tending to draw them together, a bearing in each head, a crank-pin between said bearings, and a connecting-rod located between each of said bearings and the crank-pin and held in position by said elastic means.

2. The combination of two piston-heads, a bearing in each head, a crank-pin between said bearings, a pair of connecting-rods each loosely engaging one of said bearings and said crank-pin, and an elastic connection between said piston-heads for holding the parts together.

3. The combination of two piston-heads, elastic means connecting said heads together and tending to draw said heads toward each other, a driving-shaft located between said heads, and transmitting means between said shaft and heads including a pair of connecting-rods connected so that the wear of the parts is automatically taken up by the said elastic means.

4. The combination of two piston-heads, elastic means connecting said heads together and tending to draw said heads toward each other, a driving-crank located between said heads, and connecting-rods compressed between said crank and said piston-heads by said elastic means.

5. The combination of two piston-heads, a spring connecting said heads and tending to draw them together, a driving-crank located between said heads, and two connecting-rods bearing at their inner ends against the crank-pin and at their outer ends against said heads.

6. The combination with an electric motor and a crank driven thereby, of an air-compressor comprising a double-acting piston having two heads, a spring connecting said heads and tending to draw them together, and connecting-rods between said crank and piston located so as to have the wear of their parts taken up automatically by said springs.

7. The combination of a double piston made up of two castings each comprising one piston-head and a spring-case formed integral therewith, springs located in said cases and arranged to draw the parts of the piston toward each other, and driving means connected with said piston so that the wear of the parts is automatically taken up by said springs.

8. The combination of a double-headed piston, a driving-crank located between the piston-heads, bearings on said heads, connecting-rods extending between said crank and bearings, and springs extending between said bearings and elastically pressing said bearings into engagement with the connecting-rods so as to automatically take up wear.

9. The combination of two piston-heads, elastic means tending to draw said heads toward each other, driving means located between said heads and operating to separate said heads against the action of said elastic means during their reciprocation, and means for limiting the amount of separation.

10. The combination of two piston-heads, a spring connection between said heads tending to draw them together, a driving-crank and connecting-rods located between said heads, acting to separate said heads against the spring tension during the rotation of the crank, and stops arranged to prevent a separation in excess of that needed by the connecting-rods.

850,209. LIFTING-JACK. JOHN H. BURKHOLDER, Ashland, Ohio. Filed Dec. 31, 1906. Serial No. 350,133.

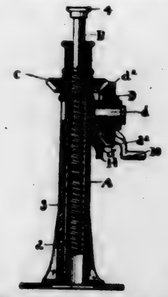

Claim.—1. A lifting-jack having a standard with a vertical guideway inside and a recess in its upper portion and having the top of the standard above the said recess and supported by arms 5, an internally-threaded gear in said recess, a threaded lift member projecting through said gear and having its lower end slidably engaged with said

guideway in the standard, and an operating-lever loosely pivoted on the side of the standard-neck below said gear, a loosely-mounted pinion in mesh with said gear and a double-armed pawl in said lever engaged with said pinion.

2. In lifting-jacks, a standard having a spindle rigidly affixed at one side thereof, a threaded lift member and drive-gear therefor mounted upon said standard, an operating-lever sleeved upon said spindle between the standard and said drive-gear and held in operating position thereby, a pawl on said lever adapted to operatively engage said drive-gear, and a crank rigid with said drive-gear at the outer side thereof.

3. In lifting-jacks, a lifting-screw and a threaded miter-gear to operate the same, a hollow standard for said parts and a spindle secured to one side of said standard, a compound bevel and spur gear free to rotate on said spindle and meshing with said miter-gear and having an integral crank at its outer side, a lever sleeved upon said spindle and having bearing engagement therewith at the inner end thereof nearest to the center of rest of said standard and on the inside of said drive-gear, and a double-acting pawl on said lever adapted to engage said compound bevel and spur gear.

850,210. CABINET FOR MUSIC-SPOOLS. ROBERT J. CADY, Detroit, Mich. Filed Dec. 19, 1904. Serial No. 237,473.

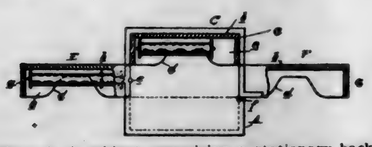

Claim.—1. A cabinet comprising a stationary back section and a plurality of overlapping sections pivoted forward of said back sections to swing outwardly therefrom and to be compelled in swinging to pass into the same transverse plane forward of and upon opposite sides of said rear section, the respective sides of said pivoted sections forming in their closed positions complementary portions of the sides of said cabinet.

2. In a cabinet, the combination with a stationary back section and a base and top, of a plurality of overlapping sections pivoted in said base and top forward of said back section to swing outwardly therefrom and to be compelled in swinging to pass into the same transverse plane on opposite sides and forward of said rear section, the sides of said sections forming in their closed positions complementary portions of the sides of said cabinet.

3. A cabinet comprising a stationary back section, and a pair of overlapping sections pivoted forward of said back section, each of said sections being in the form of a tray, the forward pair facing rearward and the rear section facing forward and the sides of all being in alinement in closed position, the pivots for said forward sections being so located as to permit of swinging said sections oppositely outward and to compel them to pass into the same transverse plane parallel with but forward of the plane of the rear section whereby all of the sections are open in front and a symmetrical arrangement is obtained.

4. A cabinet comprising a stationary back section and a plurality of overlapping sections pivoted forward of said back section to swing outwardly therefrom and to be compelled in swinging to pass into the same transverse plane on opposite sides of said rear section, each of said sections being in the form of a tray, and all opening to the frout in the open position of the sections, and holders in said sections for a vertical series of articles.

850,211. AUTOMATIC MOTOR CUT-OUT. FRANK E. CASE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 18, 1906. Serial No. 326,708.

Claim.—1. In a motor-control system, a plurality of groups of motors, an automatic cut-out device associated with each of the motors, and means controlled by said devices for cutting out corresponding motors from said groups upon the operation of one of said devices.

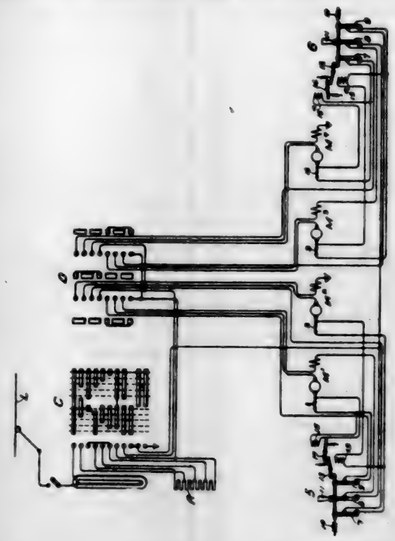

2. In a motor-control system, a plurality of groups of motors, a fuse in the circuit of each motor, and means for automatically disconnecting corresponding motors from said groups when one of the fuses blows.

3. In a motor-control system, a plurality of groups of motors, cut-out switches for said motors, fuses in the motor-circuits, and means for operating said switches to cut out corresponding motors from said groups when one of the fuses blows.

4. In a motor-control system, a plurality of groups of motors, fuses in the motor-circuits, and means for cutting out corresponding motors from said groups when any one of the fuses blows.

5. In a motor-control system, a plurality of groups of motors, an automatic cut-out device associated with each motor for opening the circuit thereof, an electroresponsive device in shunt to each of said cut-out devices, and means controlled by each of said electroresponsive devices for cutting out corresponding motors from said groups upon the operation of one of said cut-out devices.

6. In a motor-control system, a plurality of groups of motors, a fuse in the circuit of each motor, cut-out switch mechanisms arranged to cut out corresponding motors from said groups and electroresponsive devices arranged in shunt to said fuses for causing the operation of one of the cut-out switch mechanisms upon the blowing of the fuse in the circuit of one of the motors affected by said latter switch mechanism.

7. In a motor-control system, a plurality of groups of motors each comprising a plurality of motors connected in parallel, motor-control apparatus arranged to connect said groups in series and in parallel, fuses in the motor-circuits, and means for automatically cutting out corresponding motors from said groups when one of the fuses blows.

8. In a motor-control system, a plurality of groups of motors each comprising a plurality of motors connected in parallel, motor-control apparatus arranged to connect said groups in series and in parallel, a fuse in the circuit of each motor, switch mechanisms arranged to cut out corresponding motors from said groups, and an electroresponsive device in shunt to each of said fuses arranged to cause the operation of one of said switch mechanisms upon the blowing of a fuse associated with one of the motors controlled by the latter switch mechanism.

850,212. POWER-HAMMER. JOHN H. CONLEN, Philadelphia, Pa. Filed Nov. 6, 1906. Serial No. 342,278.

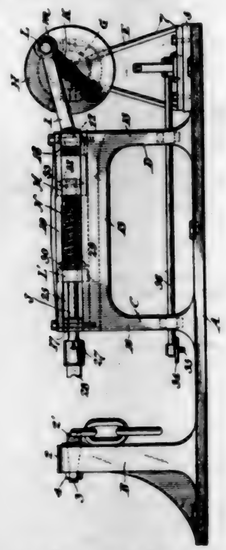

Claim.—1. A chain-welding machine comprising a frame, an anvil, a carriage within the frame, said carriage comprising a guiding-block and a cross-head, a rammer carried by said carriage, a cushioning means carried by said rammer and interposed between the cross-head and the guiding-block, and a power-driven means operatively connected to said cross-head.

2. A chain-welding machine comprising a frame, an anvil, a carriage within the frame, said carriage comprising a guiding-block and a cross-head, a rammer carried by the carriage and keyed to the guiding-block, a cushioning means carried by said rammer and interposed between the cross-head and the guiding-block, and a power-driven means operatively connected to said cross-head.

3. A chain-welding machine comprising a frame, an anvil, a carriage within the frame, said carriage comprising a guiding-block and a cross-head independently arranged, said cross-head having a perforation, a rammer keyed to the guiding-block and fitting loosely within the perforation of the cross-head, a cushioning means carried by said rammer and interposed between the cross-head and the guiding-block, and a power-driven means operating said cross-head.

4. A chain-welding machine comprising a frame having guideways, an anvil, a carriage within the frame, said carriage comprising a guiding-block having wings, and a cross-head provided with wings and a perforation, the wings of said guiding-block and cross-head adapted to reciprocate within said guideways, a rammer keyed to the guiding-block and fitting loosely within the perforation of the cross-head, a cushioning means carried by said rammer and interposed between the cross-head and the guiding-block, and a power-driven means for operating said cross-head.

5. A chain-welding machine comprising a frame having spacing-blocks and truss-bars to provide ways, an anvil, a reciprocating carriage within the ways, said carriage comprising a guiding-block, and a cross-head having a perforation, a cushioned rammer keyed to the guiding-block and fitting loosely within said perforation of the cross-head, and a power-driven means for operating said cross-head.

6. A chain-welding machine comprising a frame having spacing-blocks and truss-bars to provide ways, an anvil, a carriage adapted to reciprocate within said ways, said carriage comprising a guiding-block, and a cross-head having a perforation, a cushioned rammer keyed to the guiding-block, and adapted to play within the perforation of the cross-head, and a power-driven means for operating said cross-head.

7. A chain-welding machine comprising a frame having spacing-blocks and truss-bars to provide ways, an anvil, a carriage, said carriage comprising a guiding-block having wings, and a cross-head having wings and a perforation, said wings adapted to reciprocate within the ways of the frame, a cushioned rammer keyed to the guiding-block, and adapted to play within the perforation of the cross-head, and a power-driven means for operating said cross-head.

8. In a chain-welding machine, the combination of a standard supporting an anvil, standards supporting a frame, said frame comprising spacing-blocks and truss-bars to provide ways, a carriage adapted to reciprocate in said ways, said carriage comprising a guiding-block, and a cross-head having a perforation, a rammer keyed to the guiding-block and loosely connected to the cross-head, end of said rammer locked within and adapted to play in the perforation of said cross-head, a cushioning means carried by the rammer and interposed between the cross-head and the guiding-block, and a power-driven means for operating the cross-head.

9. A chain-welding machine comprising a frame, an anvil, a carriage within the frame, said carriage comprising a guiding-block and a cross-head, a rammer carried by said carriage, a cushioning means interposed between the cross-head and the guiding-block, and a power-driven means operatively connected to said cross-head.

10. A chain-welding machine comprising a frame, an anvil, a carriage within the frame, said carriage comprising a guiding-block and a cross-head, a rammer keyed to said guiding-block intermediate its ends, one end of said rammer loosely connected to the cross-head, a cushioning means interposed between the cross-head and the guiding-block, and a power-driven means operatively connected to said cross-head.

850,213. EYEGLASSES. ALFRED A. DAY, Brockton, Mass. Filed Oct. 3, 1906. Serial No. 337,208.

Claim.—1. A pair of eyeglasses having a pair of nose-pieces each formed of a depending and an upwardly-extending inverted-U-shaped arm and a spring-coil connecting the arms together, said coil extending at right angles with respect to said arms.

2. A pair of eyeglasses having a pair of nose-pieces each formed of a depending and an upwardly-extending inverted-U-shaped arm and a spring-coil connecting the arms together, said coil extending at right angles with respect to said arms, said depending arm having a hooked-shaped upper end.

3. A pair of eyeglasses comprising a pair of lens-posts, a lens secured to each of the posts, a closely-coiled spring member constituting a nose-bridge and having a notched arm at each end, and a pair of nose-pieces each provided with a pair of arms one of which having its upper end hooked shaped, and means engaging said notched arms and hooked-haped arms for securing the brige and nose pieces in position.

4. In an eyeglass a pair of nose-pieces each formed of a depending arm and an upwardly-extending inverted-U-shaped arm, and a spring-coil connecting the arms together, a spring nose-bridge consisting of coiled material, and lens-posts to which said nose-pieces and bridge are connected.

5. A pair of eyeglasses comprising a pair of lens-posts, lens secured to said posts, a coiled spring member constituting a nose-bridge and having an arm at each end, a pair of nose-pieces each provided with arms, and means for securing the arms of the nose-pieces and the arms of the nose-bridge to the lens-posts.

850,214. DUMPING-FLOOR. JOHN F. DORNFELD, Chicago, Ill. Filed Feb. 17, 1905. Serial No. 246,115.

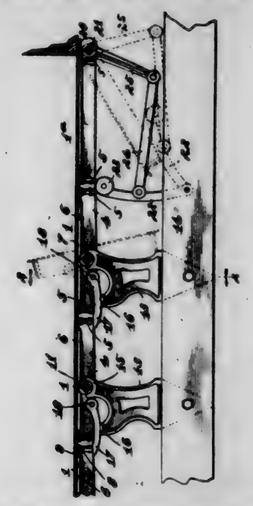

Claim.—1. A dumping-floor comprising a series of pivoted sections, each of said sections having pivotally connected thereto a locking-arm arranged to move with its section and adapted, when the section is in a horizontal position, to support the next adjacent section and means for supporting the free end of said arm.

2. A dumping-floor comprising two pivotally-mounted sections, a pivoted locking-arm on one section adapted to underlie and support the other section when both are horizontal, and means for supporting the free end of said locking-arm.

3. A dumping-floor comprising a movably-mounted section, a stationary member, and means for moving said section comprising a cam-lever pivotally mounted on said stationary member and adapted to bear against said section, and means for pivotally moving said lever.

4. A dumping-floor comprising two pivotally-mounted sections, and means for supporting said sections comprising a pivoted lever adapted to underlie said sections.

5. A dumping-floor comprising two pivotally-mounted sections, and means for supporting said sections comprising a pivoted lever provided at its free end with a roller adapted to underlie said sections.

6. In a dumping-floor, in combination, a floor-section; means for pivotally supporting said floor-section comprising a standard; means for supporting the unbalanced weight of said section; an arm pivoted to said section adapted to support the unbalanced weight of an adjacent section; and means on said standard for supporting the free end of said arm.

7. In a dumping-floor, in combination, a floor-section; a shaft fixed thereto and located somewhat at one side of the longitudinal center of said section; means for rotatably supporting said shaft comprising a standard; means for supporting the unbalanced weight of said section; a locking-arm pivoted to said section and adapted to support the unbalanced weight of an adjacent section; and a seat on said standard adapted to support the free end of said arm.

850,215. VALVE FOR STEEP-TANKS. JOHN F. DORNFELD, Chicago, Ill. Filed Oct. 7, 1905. Serial No. 281,854.

Claim.—1. In a valve for steep-tanks, in combination, a valve-casing having a valve-opening therein; a closure for said opening; a link connecting one side of said closure with said casing, said closure being capable of a considerable amount of movement with relation to said link; and a member mounted at one side of said valve-casing and arranged to have a movement in a line at right angles with the axis of said valve-opening, the inner end of said member being adapted to engage the rear side of said closure for moving said closure with relation to said link.

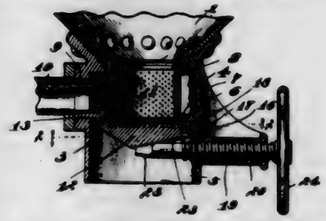

2. In a valve for steep-tanks, in combination, a valve-casing having an opening therein; a closure for said opening; a link connecting one side of said closure with said casing, said closure being capable of a considerable amount of movement with relation to its link, said casing having at one side an interiorly-screw-threaded tubular stem; a screw engaging the screw-threads in said tubular stem and extending in a line substantially at a right angle with the axis of said valve-opening, the inner end of said screw being arranged to bear against the rear side of said valve-closure for moving said closure with relation to said link; and means for rotating said screw.

3. In a valve for steep-tanks, in combination, a valve-casing adapted to be secured to the lower end of a steep-tank, said casing having two chambers therein separated by a partition, said partition having a valve-opening therein, the upper chamber communicating with the interior of the steep-tank, and the lower chamber being open at its lower side; a valve-closure in said lower chamber; a link for connecting said closure at one side with said valve-casing said closure being capable of a considerable amount of movement with relation to said link; and means located at one side of said lower chamber and withdrawable from said chamber for pivotally moving said valve-closure with relation to said link.

4. In a valve for steep-tanks, in combination, a valve-casing adapted to be secured to the lower end of a steep-tank, said casing having two chambers therein separated by a horizontal partition, said partition having a valve-opening therein, the upper one of said chambers communicating with the interior of the steep-tank; a packing-ring located upon the under side of said partition and surrounding said valve-opening; a closure adapted to be seated on said valve-ring and having a link connection with said valve-casing, said closure being arranged to drop by gravity into a substantially vertical position against one wall of the lower chamber; and a screw extending into said lower chamber in a line at right angles with the axis of said valve-opening and arranged to force said closure against said packing-ring, the inner end of said screw being withdrawable from said lower chamber.

5. In a valve for steep-tanks, in combination, a valve-casing adapted to be secured to the lower end of a steep-tank, said casing having a lower chamber therein; a cylindrical screen connecting the interior of said steep-tank with said lower chamber; an upper chamber in said valve-casing surrounding said screen and communicating with a source of water-supply; a closure having a link connection at one side with said valve-casing for closing communication between the steep-tank and said lower chamber; and means located at one side of said lower chamber and withdrawable from said chamber for pivotally moving said valve-closure upon its link connection.

850,216. SPRAYING-NOZZLE. JOHN F. DORNFELD, Chicago, Ill. Filed Oct. 7, 1905. Serial No. 281,855.

Claim.—1. A spraying-nozzle comprising a chambered body portion having an inlet and a discharge orifice; and a disk removably supported within said chambered body portion, said disk permitting the passage of liquid around its edges and being provided with a plurality of curved vanes.

2. A spraying-nozzle comprising a chambered body portion provided with an inlet and an outlet, a member extending across the chamber in said body portion and lying between the inlet and the outlet and adapted to permit the passage of the liquid around its edges, and a plurality of curved vanes on said member arranged to prevent the passage of the liquid through said outlet save between the adjacent ends of said vanes.

3. A spraying-nozzle comprising a chambered body portion, an inlet in one wall of said body portion, an outlet in the opposite wall of said body portion, a member extending transversely between said end walls and adapted to permit the passage of liquid past its edges, and curved vanes extending between said member and the end wall provided with the outlet, said vanes being arranged to form an inclosure open to the inflowing fluid only between the adjacent ends of said vanes.

4. A spraying-nozzle comprising a cylindrical chamber body portion having an inlet in one of its walls; a central conical tip in its opposite wall, said tip being provided with a discharge-orifice, an imperforate disk extending across the interior of said body portion, lugs located upon the periphery of said disk for spacing it in said body portion, and a plurality of curved vanes on the side of said disk adjacent to said discharge-orifice, said disk and vanes preventing the passage of liquid from said outlet to said discharge-orifice save between the adjacent ends of said vanes.

5. A spraying-nozzle comprising a substantially cylindrical body portion having a chamber therein, a closure-disk for closing one end of said body portion, said disk having a central tubular stem, a wall closing the opposite end of said body portion, said wall having a central conical tip provided with a discharge-orifice, a disk extending transversely between said tubular stem and said discharge-orifice, and means extending between said disk and the end wall having the discharge-orifice for giving the liquid passing through said body portion a gyratory motion.

6. A spraying-nozzle comprising a substantially cylindrical body portion having a chamber therein, a closure-disk for closing one end of said body portion, said disk having a central tubular stem, a wall closing the opposite end of said body portion, said wall having a central conical tip provided with a discharge-orifice, a disk extending transversely between said tubular stem and said discharge-orifice, and curved vanes on said disk extending between said disk and the end wall having the discharge-orifice for breaking up the stream entering said body portion through said tubular stem into a plurality of streams and for giving said streams a gyratory motion.

7. A spraying-nozzle comprising a substantially cylindrical body portion having a chamber therein; a closing-disk for closing one end of said body portion, said disk having a tubular cylindrical securing-stem fixed thereto, an end wall closing the opposite end of said body portion and having a central discharge-orifice, a disk lying transversely between said tubular stem and said discharge-orifice, said disk having a plurality of curved vanes upon its side adjacent to said discharge-orifice, and a spring lying between said closing-disk and said other disk tending to force them apart.

850,217. SYSTEM OF DISTRIBUTION. BUDD FRANKENFIELD, Norwood, Ohio, assignor to Allis-Chalmers Company, a Corporation of New Jersey, and The Bullock Electric Manufacturing Company, a Corporation of Ohio. Filed Mar. 17, 1906. Serial No. 306,573.

Claim.—1. In combination, a dynamo-electric-machine unit having motor and generator armature windings, a field-winding, an auxiliary generator-armature winding, and a separate field-winding therefor, said two field-windings producing shunt and series magnetic effects.

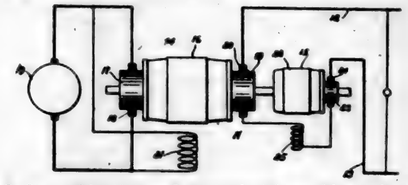

2. In combination, a dynamo-electric-machine unit comprising motor and generator armature windings having shunt field excitation, and an auxiliary generator-winding in series with the first-mentioned generator-winding and having series field excitation whereby the unit has a compound characteristic.

3. In combination, a dynamo-electric-machine unit having main motor and generature armature windings having shunt field excitation, and an auxiliary generator comprising an armature and a separate magnetic field, the winding of said auxiliary generator-armature being connected to the main generator-armature winding and having a field excitation depending on load conditions.

4. In a system of distribution, a main source of current, feeder-conductors, a dynamo-electric-machine unit connected to said source of current, and adapted to supply current to said feeder-conductors, said unit having main motor and generator armature windings having substantially constant field excitation, and an auxiliary generator comprising an armature-winding and one or more field-windings for producing a field excitation which varies substantially with the load conditions.

5. In a system of distribution, a main source of current and supply-circuit, feeder-conductors, a dynamo-electric-machine unit having three separate armature-windings, one of said windings being connected to the source of current and the other two being connected to the feeder-conductors and adapted to supply current thereto, and means for creating independent fields for said two last-named windings, one of said fields varying with the pressure of the main supply-circuit and the other varying with the current flowing in the feeder-conductor.

6. In a system of distribution, a main source of current-supply, feeder-conductors, a dynamo-electric-machine unit comprising two main armature-windings, one or more shunt field-windings therefor, and an auxiliary compounding-generator having an armature-winding and one or more field-windings for creating a magnetic field which varies with load conditions.

7. In a system of distribution, a main source of current-supply, feeder-conductors, a dynamo-electric-machine unit comprising two main armature-windings and one or more shunt field-windings, one of said armature-windings being adapted to receive current from said source of supply and the other being adapted to supply current to the feeder-conductors, and an auxiliary armature-winding located in a magnetic field which varies substantially with the current in a feeder-conductor.

8. In a system of distribution, a main source of current-supply, feeder-conductors, a dynamo-electric-machine unit comprising two armature-windings and one or more shunt field-windings, and a separate generator having a series field-winding and an armature-winding in series with one of the other windings.

9. In a system of distribution, a main source of current, feeder-conductors, and a dynamo-electric-machine unit adapted to receive current from said main source and to supply current to the feeder-conductors, said unit comprising a motor-armature winding and a generator-armature winding having shunt field excitation, and an auxiliary generator-armature winding having series excitation, the two generator-armature windings being in series.

10. In a system of distribution, a main source of current, a plurality of feeder-conductors, a dynamo-electric-machine unit adapted to receive current from said main

source and to supply current to the feeder-conductors, said unit comprising two main armature-windings and one or more shunt field-windings, and an auxiliary generator having an armature-winding and a field-winding adapted to be connected in series with one of the main armature-windings and with one of the feeder-conductors.

850,218. SYSTEM OF DISTRIBUTION. BUDD FRANKENFIELD, Norwood, Ohio, assignor to Allis-Chalmers Company, a Corporation of New Jersey, and The Bullock Electric Manufacturing Company, a Corporation of Ohio. Filed Mar. 31, 1906. Serial No. 309,059.

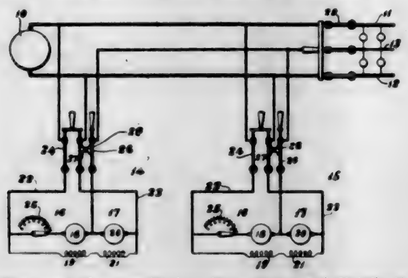

Claim.—1. In a multiple-voltage system of distribution, a plurality of conductors comprising main and neutral or compensating conductors, a balancer comprising armature-windings, and means comprising conductors and interlocked switches for connecting the windings to said main and compensating conductor.

2. In a multiple-voltage system of distribution, a plurality of conductors comprising two main conductors and a neutral or compensating conductor, a balancer having two armature-windings, a switch for connecting the windings to the main conductors, and a switch for connecting the windings to the neutral or compensating conductor, said switches being so arranged that the opening of the second-named switch is controlled by the first, and that the second-named switch cannot be closed unless the first-named switch is also closed.

3. In a multiple-voltage system of distribution, a plurality of conductors comprising main conductors and a neutral or compensating conductor, one or more balancers adapted to be connected to said system, each balancer having a main switch for connecting the balancer to the main conductors, and a neutral or compensating switch for connecting the balancer to a neutral or compensating conductor, said switches being so arranged that when the main switch is opened it will engage and open the neutral switch, and that the neutral switch cannot be closed unless the main switch is at the same time or previously closed.

4. In a multiple-voltage system of distribution, a plurality of main and compensating conductors, a plurality of balancers adapted to be connected to said system in parallel, an equalizer, each balancer having a main switch and an equalizer-switch, said switches being so interlocked that by opening the main switch the equalizer-switch is also opened.

5. In a multiple-voltage system of distribution, a plurality of conductors comprising two main and a compensating conductor, a plurality of balancers adapted to be connected thereto in parallel, an equalizer, and a plurality of switches for connecting each balancer to the main conductors, to the neutral or compensating conductor, and to an equalizer, said switches being mechanically interlocked so that they will all be opened when the main switch is opened and cannot be closed unless the main switch is also closed.

6. In a multiple-voltage system of distribution, a plurality of conductors comprising main and neutral or compensating conductors, a plurality of balancers adapted to be connected thereto in parallel, an equalizer, and a plurality of switches for connecting each balancer to the main conductors, to the neutral or compensating conductor and to the equalizer, each switch having a portion extending over or in the path of movement of another switch or a portion thereof so that all the switches will be opened when the switch connecting the balancer to the main conductors is opened and cannot be closed unless the main switch is also closed.

7. In a multiple-voltage system of distribution, a plurality of conductors comprising two main conductors and a neutral or compensating conductor, a plurality of balancers adapted to be connected thereto in parallel, an equalizer, each balancer consisting of compound-wound dynamo-electric machines, a main multiple switch for connecting the balancer to the main conductors, and a multipole switch for connecting the balancer to the neutral or compensating conductor and to the equalizer, said switches being interlocked so that when the first-named switch is opened the second-named switch is also opened and cannot be closed unless the main switch is also closed.

8. In a multiple-voltage system of distribution, a plurality of conductors comprising main conductors and a neutral or compensating conductor, a plurality of balancers adapted to be connected thereto in parallel, an equalizer for said balancers, each balancer consisting of compound-wound dynamo-electric machines, and having a main multipole switch for connecting the balancers to the main conductors, and a multipole switch for connecting the balancer to the neutral or compensating conductor and to the equalizer, the last-named switch having a portion overlapping or in the path of movement of the main switch, so that when the main switch is opened it will engage and open the other switch, and the latter cannot be closed unless the main switch is also closed.

9. In a multiple-voltage system of distribution, a plurality of conductors comprising main and neutral or compensating conductors, one or more balancers having one or more main switches and one or more neutral or compensating switches, the latter being interlocked with the former so that they are opened when the former are opened and cannot be closed unless the former are also closed.

10. In a multiple-voltage system of distribution, a plurality of main and compensating conductors, a balancer adapted to be connected thereto, and a plurality of main and compensating switches interlocked so that the opening of the former controls the opening of the latter and the latter cannot be closed without the former being closed.

11. In combination, a main source of current, a plurality of balancers, a plurality of main, compensating, and equalizer conductors, and a plurality of main and equalizer switches for each balancer, the said switches being so arranged that the opening of the latter is controlled by the former, and the latter cannot be closed without the former being closed.

12. In combination, a main source of current, a plurality of balancers, a plurality of main, compensating, and equalizer conductors, and a plurality of switches for connecting each balancer to said conductors, the said switches being so interlocked that by the opening of a main switch the switch or switches connecting the balancer to the compensating and equalizer conductors are opened and the latter cannot be closed unless the said main switch is closed.

850,219. CAR-COUPLING. JAMES L. FRAZIER, Peoria, Ill., assignor, by mesne assignments, to Gravity Coupler Company, a Corporation of Illinois. Filed June 5, 1905. Renewed Aug. 13, 1906. Serial No. 330,489.

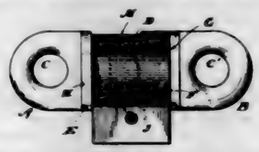

Claim.—1. A coupling of the character described comprising three members, two of them adapted to interlock transversely, the third member being carried by one of the two first said means and operated by gravity to lock the said two members together or preventing voluntary separation thereof.

2. In a device of the class described, two coupling members adapted to interlock in a transverse direction, and means permanently carried by one of the members and fitting entirely around the same and adapted to support the other member, there being a transverse opening through the means, for exposing the last-named member while maintaining a relatively fixed position with respect to longitudinal movement on the member carrying it to permit said last-named member to pass out of and leave its companion.

3. A coupling of the character described comprising two interlocking members adapted for separation in a transverse direction and a third member carried on one of the members for inclosing both said third member acting by gravity to inclose said members and adapted when given a half-revolution to permit of uncoupling the members, the movement of such revoluble member taking place in a fixed position relative to the length of the member carrying it.

4. In a coupling, two interlocked members separable in a transverse direction and a gravity-operated member carried by one of the members and inclosing both when both are conected, the said third member adapted when operated by the force of gravity to hold the first two members in connected relation or permit separation when moved against the force of gravity.

5. In a coupling, two interlocked members separable in a transverse direction, a third member carried wholly by one of the said interlocking ones and serving when in one position to lock both members from becoming separated and to permit separation of the members when altered in position, said third member revoluble on the member carrying it without changing its position relatively to the length of the last-named member.

6. A coupling comprising two members arranged and adapted to interlock with one another there being a socket in one and a tongue on the other, a sleeve carried on the socket member and adapted for revoluble movement thereon, there being an opening in the sleeve to permit passage of the tongue of the other member therethrough into the socket member when the said opening is in register with the socket of the member, the sleeve being normally in position to close the socket-opening.

7. A coupling comprising a grooved member, a member having a tongue adapted to enter and engage the grooved member and adapted for separation only in a transverse direction, and a revoluble sleeve rotatably mounted on one of the members, there being a notch in said sleeve adapted to register with the groove of the said grooved member, said sleeve being weighted to normally keep the notch out of register with said groove to prevent separation of the coupled members.

8. In a coupling of the character described, two members adapted to interlock and separable in a transverse direction, a sleeve carried by one of said members and adapted to turn upon the same and surrounding the interlocking portions, the opposite member resting thereon, the sleeve being weighted to retain a normal position, there being a notch in the sleeve opposite the weighted portion thereof for permitting separation of both members when the notch is brought into register with the member resting upon said sleeve, as set forth.

9. A coupling of the character described comprising two interlocking members adapted for separation in a transverse direction, there being a transverse recess extending part way through one of said members, said recess opening through the bottom of said member substantially as described, the opposite member adapted to enter said recess from below, and a sleeve carried on the recessed member and adapted to close the recess to prevent the opposite member from falling out, there being a weight on said sleeve to retain it in a position to prevent separation, there also being a notch in the sleeve for permitting the opposite member leaving the recess when said notch is brought into register with said recess, substantially as set forth.

10. A coupling comprising two interlocking members adapted for separation in a transverse direction and a gravity-operated device inclosing the two members and normally preventing separation in said transverse direction.

11. A coupling comprising two separate interlocking members and a third member carried by one of them and surrounding both when interlocked, there being a notch in said third member for the purposes described, said third member being weighted to normally hold the notch out of register with the place of separation of the members.

12. In a coupling, a member for connection with a car, a gravity-operated member carried thereon and surrounding it and shiftable on said member, and a third member for connection with a car and adapted to engage the first member, the shiftable member adapted to inclose both the first and third members for keeping them interlocked but adapted also to permit the release of the said engaged members, one from the other, when the shiftable member is operated against the force of gravity

13. In a coupling a member for connection with a car, a second member connected with another car and adapted for engagement with the first and having a tongue with an enlargement at its extremity there being a socket in the first member to receive it, a third member surrounding the first member, there being a notch therein to register with the socket of the said first member to admit the tongue and to permit its removal, said third member being weighted to normally hold said notch out of register with the socket and tongue.

14. A coupling comprising a member having a substantially vertical T-shaped socket therein, a second member having a correspondingly-shaped tongue to engage said socket, the socket and tongue extending transversely of the respective members, a revoluble sleeve carried by and inclosing the socket member, there being a notch in said sleeve to correspond with the socket and tongue and register therewith to permit withdrawal of the tongue, and a weight on the sleeve to normally keep the notch out of register with the socket and interlocking tongue.

15. In a coupling a member having a substantially T-shaped transverse socket extending part way through the same, a second member having a correspondingly-shaped tongue for engaging the socket, a sleeve surrounding the socket member and normally closing said socket to retain the tongue therein and a weight for holding the sleeve in that position, there being a groove in which the sleeve seats and turns substantially as described.

16. In a coupling, a transversely-socketed member, a companion member having a tongue to transversely engage the same and a revoluble sleeve surrounding both members when engaged the same operated by gravity to cover the members at their engaging ends.

17. A coupling comprising two transversely-locking separable members and a gravity-operated sleeve carried by and inclosing one of the members and normally adapted to close the opening into which the opposite member enters.

18. A coupling of the character described comprising a member having a socket extending up thereinto from below and communicating with and forming part of a narrow socket opening through the end of the member, a second member having a head at one end to enter the socket from below and having a narrow neck connecting the head with the main body, the neck entering the narrow opening in the end of the first-described member, and a third member for closing the opening of the socket to prevent separation of the said first and second members.

19. A coupling comprising two members adapted to interlock in a transverse direction as by a transverse opening in one member, and a tongue on the other member to enter such opening, and a sleeve surrounding one of the members and adapted for rotary movement thereon in one plane to close the opening against the removal of the tongue and also for exposing the opening to permit removal of said tongue therefrom.

20. A coupling comprising two members, one having a socket in its under side, the other having a head to enter said socket from below, and a member for closing the opening of the socket to prevent separation of the members.

21. A coupling comprising a member having a socket extending partially therethrough in a transverse direction, a second member for entering it, and a sleeve upon one of the members for closing the opening of the socket for normally holding the two members together.

22. A coupling comprising a member having a socket extending partially therethrough in a transverse direction as described, a second member for entering it, and a sleeve for closing the opening of the socket for normally holding the two members together.

23. A coupling comprising two members, one having a socket in its side, the other having a head to enter it, and a member for closing the opening of the socket to prevent separation of the members, there being a notch in the sleeve to register with the socket to permit the said second member to leave the first as described.

24. In a coupling of the class described, the body F having a socket J therein and the opening K therein connecting with socket J, the body A having the head D to enter the said socket J of the body F, the head having the neck E for entering the opening K substantially as described, and the rotatable gravity-operated sleeve L having the notch M therein to register with the socket J and opening K for the purposes set forth.

850,220. TUBE FOR PAINT. THEODOR GÖTZE, Hamburg, Germany. Filed Mar. 2, 1906. Serial No. 303,817.

Claim.—1. In a fountain paint-brush the combination; a tube *e* having thread at the top, a hollow cylinder *i* provided with an internally-screw-threaded nipple *k* screwed on said tube and having a brush, an elastic tube *f* drawn upon the tube *k* and extending among the bristles, a case *b* forming a bow with two slits on the opposite sides and surrounding said tube *e* and said hollow cylinder *i*, a key *a* projecting out of the slits of said case and connected with the end of said tube, substantially as shown.

2. In a fountain-brush the combination; a tube *e* having thread at the top, a hollow cylinder *i* provided with an internally-screw-threaded nipple *k* screwed on said tube and having a brush, an elastic tube *f* drawn upon the tube *k* and extending among the bristles, a case *b* forming a bow with two slits on the opposite sides and surrounding said tube *e* and said hollow cylinder *i*, a key *a* projecting out of the slits of said case and connected with the end of said tin tube, a projecting ridge *m* on the outer side of the cylinder *i* and an edge *m'* on the case *b*, means for instance a ring *c* to keep together the case *b*, and fitting the edge *m'* into the ridge *m* substantially as described and shown.

850,221. DISPLAY-RACK. ALONZO B. HALL, Moultrie, Ga. Filed June 22, 1906. Serial No. 322,923.

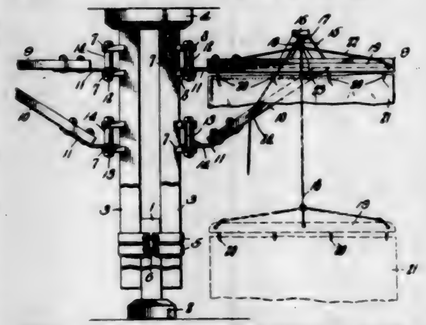

Claim.—1. A display device comprising an upright supporting structure composed of a plurality of adjustable parts arranged in overlapping relation at their ends, clamping-bands extending around the overlapping ends for adjustably connecting the parts in line with each other, means at the ends of the structure for holding the same in an upright position on the floor and ceiling of a room, and a plurality of movable devices arranged in sets on opposite sides of the supporting structure for displaying articles of sale.

2. A display device comprising a post provided with a supporting-base, a pair of uprights adjustable along the post, a common means for rigidly holding the uprights at their upper ends, a band extending around the uprights and post, means for drawing the ends of the band together, a plurality of cross-bars mounted on the uprights, and pivotally-supported frames or brackets on the cross-bars for holding articles to be exhibited.

3. A display device comprising an upright, horizontally-disposed cross-bars arranged thereon in pairs, vertically-extending bolts on each pair of cross-bars, and brackets pivoted on the bolts.

4. A display device comprising an upright, a plurality of horizontal bars arranged thereon in pairs, vertically-extending bolts on each pair of cross-bars, sleeves on the bolts, a plurality of frames, and eyes on the frames which are retained on the bolts between the ends of the sleeves and adjacent cross-bars.

5. A display device comprising a supporting structure, horizontal cross members arranged in pairs one above another, pivots on the cross members arranged with those of one pair vertically in line with those of another pair, sleeves on the pivots, a plurality of frames, and eyes on the frames for engaging the pivots and disposed between corresponding ends of the sleeves and the adjacent cross members.

6. In a display device, the combination of a pivotally-mounted bracket having an arched structure, a cross-plate mounted on said structure, a pulley at each end of the cross-bar, a suspending-cord passing around the pulley, and a frame attached to the pulley for suspending articles to be exhibited.

7. In a display device, the combination of a bracket having an arched structure, a plurality of suspending-cords, means on opposite sides of the arched structure for guiding the suspending-cords, a frame attached to each of the suspending-cords, and fastening devices on the frame for attaching articles to be exhibited.

8. In a display device, the combination of a horizontal member, an arch arranged thereon, a diagonal brace connected with the said member, a supporting-post on which the member and brace are mounted for swinging movement, a suspending-cord, a frame attached thereto which is normally disposed along the side of the said member, hooks on the frame for receiving articles to be exhibited, means adjacent the arch for guiding the cord, and a fastening device on the bracket for the free end of the cord.

850,222. GRAIN-ELEVATOR. THOMAS F. HALL, Omaha, Nebr. Filed Mar. 12, 1906. Serial No. 305,523.

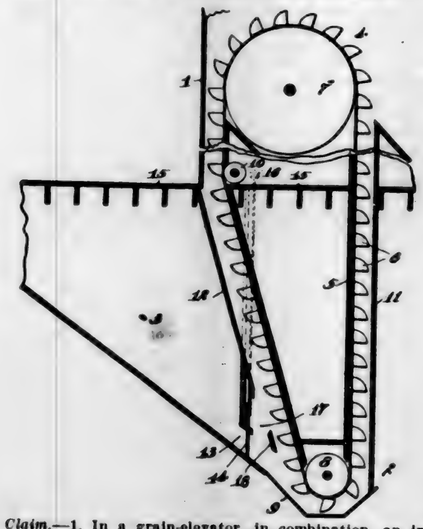

Claim.—1. In a grain-elevator, in combination, an inclined conveyer; and means extending along said conveyer at the under side thereof for conducting the overflow away from the conveyer.

2. In a grain-elevator, in combination, an inclined conveyer; a grain-spout; and a relief-chamber between said grain-spout and the lower end of said conveyer.

3. In a grain-elevator, in combination, an inclined conveyer; an inclined elevator-leg inclosing said conveyer; a grain-spout; and a relief-chamber between said grain-spout and the lower end of said elevator-leg.

4. In a grain-elevator, in combination, an inclined conveyer; a grain-spout; a barrier adjacent to the path of the conveyer-cups and between said cups and the discharge end of the grain-spout; and means for conducting the overflow from the ascending conveyer-cups to the space between said grain-spout and said barrier.

5. In a grain-elevator, in combination, an inclined conveyer; an inclined leg inclosing said conveyer; a grain-spout; a barrier adjacent to the path of the conveyer-cups; and a relief-chamber communicating with the lower end of said inclined leg and with the space in front of the discharge end of said grain-spout.

850,223. CARBURETER. WILLIAM E. HALLETT, Hillsdale, Mich. Filed Apr. 23, 1906. Serial No. 313,339.

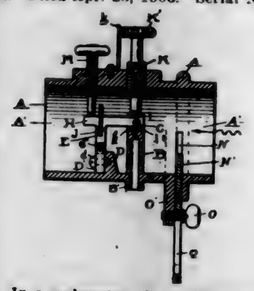

Claim.—1. In a carbureter, the combination with a hollow casing forming an air-passage and a gasolene-nozzle projecting into said passage, in the path of the air-current of a lever pivoted adjacent to said nozzle, a disk on said lever in the path of the air-current in said passage, a projection on said lever extending over said nozzle and a valve pivoted on said projection, for the purpose described.

2. In a carbureter, the combination with a hollow casing and a gasolene-nozzle projecting therein, having a plane surface on its end of a pivoted block arranged to seat on said plane surface, for the purpose described.

3. In a carbureter, the combination with a hollow casing and a gasolene-nozzle projecting therein having a plane surface forming a valve-seat, of a pivoted block-valve arranged to seat on said nozzle and means for automatically raising said block, for the purpose described.

4. In a carbureter, the combination with a hollow casing and a gasolene-nozzle projecting therein, of a block pivoted and arranged to seat on said nozzle, automatic means for raising said block, and means for positively raising said block, said means being adjustable and self-sustaining in all positions of adjustment for the purpose described.

5. In a carbureter, the combination with a hollow casing and a gasolene-nozzle projecting therein, of a valve for said nozzle, automatic means for lifting said valve and adjustable self-sustaining means for positively lifting and holding said valve in its lifted position.

6. In a carbureter, the combination with a hollow casing forming a passage for the air-current and a gasolene-nozzle projecting therein, of an angled lever pivoted adjacent to said nozzle, a valve for said nozzle pivoted on said lever whereby the rocking of said lever will raise said valve, means for automatically rocking said lever to lift said valve, said means operating on the passage of a predetermined volume of air through said passage, and adjustable means for positively lifting said valve, for the purpose described.

7. In a carbureter, an oil-nozzle having a plane surface on its end and a pivotally-supported valve arranged to seat on said plane surface.

8. In a carbureter, the combination with a casing, of an oil-nozzle therein, a pivoted block-valve arranged to seat on said nozzle, and adjustable means operating to hold said valve open, for the purpose described.

850,224. GAME APPARATUS. HENRY L. HASKELL, Ludington, Mich., assignor to Carrom-Archarena Company, Ludington, Mich. Filed Apr. 8, 1905. Serial No. 254,470.

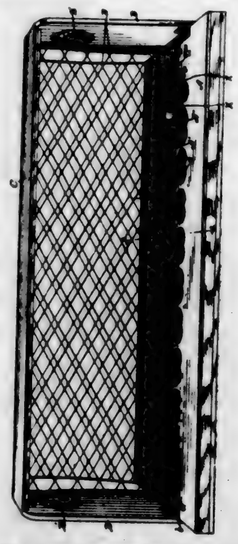

Claim.—1. In a game apparatus, the combination of a hollow base portion made up of a top and a bottom board

with interposed side pieces or rails, said side pieces being rabbeted away at their upper inner corners; a plurality of impelling wires having downturned ends arranged in suitable holes in the rabbeted portions of said side pieces of said base; a centrally-located longitudinal slot in said top board of said base; holes in said top of said base beyond the ends of said slot; a series of holes in said top board of said base at each side of said slot, through which the said wires may be engaged; end pieces hinged to said base so that they may be folded thereon; a top piece arranged to engage said end pieces, whereby said top piece is supported and said end pieces are retained in their open position; pocket-openings in said end pieces; suitable pockets for said pocket-openings; nets secured to the top board of said base at each side of the said slot therein, and to said top piece; and a suitable ball, for the purpose specified.

2. In a game apparatus, the combination of a hollow base portion made up of a bottom and a top board with interposed side pieces or rails, said side pieces being rabbeted away at their upper inner corners; a plurality of impelling-wires having downturned ends arranged in suitable holes in the rabbeted portion of the said side pieces of said base; a centrally-located longitudinal slot in said top board of said base; a series of holes in said top board of said base at each side of the said slot, through which the said wires may be engaged; end pieces hinged to said base so that they may be folded thereon; a top piece arranged to engage said end pieces, whereby said top piece is supported and said end pieces are retained in their open position; pocket-openings in said end pieces; suitable pockets for said pocket-openings; nets secured to the top board of said base at each side of the said slot therein, and to said top piece; and a suitable ball, for the purpose specified.

3. In a game apparatus, the combination of a hollow base portion made up of a top and a bottom board with interposed side pieces or rails, said side pieces being rabbeted away at their upper inner corners; a plurality of impelling-wires having downturned ends arranged in suitable holes in the rabbeted portions of said side pieces of said base; a centrally-located longitudinal slot in said top board of said base; holes in said top board of said base beyond the ends of said slot; a series of holes in said top board of said base at each side of said slot, through which the said wires may be engaged; end pieces hinged to said base so that they may be folded thereon; a top piece arranged to engage said end pieces, whereby said top piece is supported and said end pieces are retained in their open position; nets secured to the top board of said base at each side of the said slot therein, and to said top piece; and a suitable ball, for the purpose specified.

4. In a game apparatus, the combination of a hollow base portion made up of a top and a bottom board with interposed side pieces or rails, said side pieces being rabbeted away at their upper inner corners; a plurality of impelling-wires having downturned ends arranged in suitable holes in the rabbeted portions of said side pieces of said base; a centrally-located longitudinal slot in said top board of said base; a series of holes in said top board of said base at each side of said slot, through which the said wires may be engaged; end pieces hinged to said base so that they may be folded thereon; a top piece arranged to engage said end pieces, whereby said top piece is supported and said end pieces are retained in their open position; nets secured to the top board of said base at each side of the said slot therein, and to said top piece; and a suitable ball, for the purpose specified.

5. In a game apparatus, the combination of a hollow base portion made up of a bottom and a top board with interposed side pieces or rails, said side pieces being rabbeted away at their upper inner corners; a plurality of impelling-wires having downturned ends arranged in suitable holes in the rabbeted portions of the said side pieces of said base; a centrally-located longitudinal slot in said top board of said base; holes in said top board of said base beyond the ends of said slot; a series of holes in said top board of said base at each side of said slot, through which the said wires may be engaged; end pieces; a top piece; pocket-openings in said end pieces; suitable pockets for said pocket-openings; nets arranged at each side of said slot in the said top board of said base; and a suitable ball, for the purpose specified.

6. In a game apparatus, the combination of a hollow base portion made up of a bottom and a top board with interposed side pieces or rails, said side pieces being rabbeted away at their upper inner corners; a plurality of impelling-wires having downturned ends arranged in suitable holes in the rabbeted portions of the said side pieces of said base; a centrally-located longitudinal slot in said top board of said base; a series of holes in said top board of said base at each side of the said slot, through which the said wires may be engaged; end pieces; a top piece; pocket-openings in said end pieces; suitable pockets for said pocket-openings; nets arranged at each side of said slot in the said top board of said base; and a suitable ball, for the purpose specified.

7. In a game apparatus, the combination of a hollow base portion made up of a bottom and a top board with interposed side pieces or rails, said side pieces being rabbeted away at their upper inner corners; a plurality of impelling-wires having downturned ends arranged in suitable holes in the rabbeted portions of the said side pieces of said base; a centrally-located longitudinal slot in said top board of said base; holes in said top board of said base beyond the ends of said slot; a series of holes in said top board of said base at each side of the said slot, through which the said wires may be engaged; end pieces; a top piece; nets arranged at each side of said slot in the said top board of said base; and a suitable ball, for the purpose specified.

8. In a game apparatus, the combination of a hollow base portion made up of a bottom and a top board with interposed side pieces or rails, said side pieces being rabbeted away at their upper inner corners; a plurality of impelling-wires having downturned ends arranged in suitable holes in the rabbeted portions of the said side pieces of said base; a centrally-located longitudinal slot in said top board of said base; a series of holes in said top board of said base at each side of the said slot, through which the said snapping-wires may be engaged; end pieces; a top piece; nets arranged at each side of said slot in the said top board of said base; and a suitable ball, for the purpose specified.

9. In a game apparatus, the combination of a base provided with a longitudinal slot and with holes therein beyond the ends of said slot, and provided with a series of holes at each side of said slot; a plurality of impelling devices arranged in said base, transversely to said slot therein; end pieces hinged to said base so that they may be folded thereon; a top piece arranged to engage said end pieces, whereby they are retained in their open position and the said top piece is supported; pocket-openings in said end pieces; suitable pockets for said pocket-openings; and nets secured to said base at each side of the said slot therein, and to said top piece, for the purpose specified.

10. In a game apparatus, the combination of a base provided with a longitudinal slot and with a series of holes at each side of said slot; a plurality of impelling devices arranged in said base transversely to said slot therein; end pieces hinged to said base so that they may be folded thereon; a top piece arranged to engage said end pieces, whereby they are retained in their open position and the said top piece is supported; pocket-openings in said end pieces; suitable pockets for said pocket-openings; and nets secured to said base at each side of the said slot therein, and to said top piece, for the purpose specified.

11. In a game apparatus, the combination of a base provided with a longitudinal slot and with holes therein beyond the ends of said slot, and provided with a series of holes at each side of said slot; a plurality of impelling devices arranged in said base transversely to said slot therein; end pieces hinged to said base so that they may be folded thereon; a top piece arranged to engage said end pieces, whereby they are retained in their open position and the said top piece is supported; and nets secured to the said base at each side of the said slot therein, and to said top piece, for the purpose specified.

12. In a game apparatus, the combination of a base provided with a longitudinal slot and with a series of holes at each side of said slot; a plurality of impelling devices arranged in said base transversely to said slot therein; end pieces hinged to said base so that they may be folded thereon; a top piece arranged to engage said end pieces, whereby they are retained in their open position and the said top piece is supported; pocket-openings in said end pieces; suitable pockets for said pocket-openings; and nets secured to said base at each side of the said slot therein, and to said top piece, for the purpose specified.

13. In a game apparatus, the combination of a base provided with a longitudinal slot and with holes therein beyond the ends of said slot, and provided with a series of holes at each side of said slot; a plurality of impelling devices arranged in said base transversely to said slot therein; end pieces; pocket-openings in said end pieces; suitable pockets for said pocket-openings; and nets arranged at each side of the slot in said base, for the purpose specified.

14. In a game apparatus, the combination of a base provided with a longitudinal slot and with a series of holes at each side of said slot; a plurality of impelling devices arranged in said base transversely to said slot therein; end pieces; pocket-openings in said end pieces; suitable pockets for said pocket-openings; and nets arranged at each side of the slot in said base, for the purpose specified.

15. In a game apparatus, the combination of a base provided with a longitudinal slot and with holes therein beyond the ends of said slot, and provided with a series of holes at each side of said slot; a plurality of impelling devices arranged in said base transversely to said slot therein; and nets arranged at each side of the slot in said base, for the purpose specified.

16. In a game apparatus, the combination of a base provided with a longitudinal slot and with a series of holes at each side of said slot; a plurality of impelling devices arranged in said base transversely to said slot therein; and nets arranged at each side of the slot in said base, for the purpose specified.

17. In a game apparatus, the combination of a base provided with a longitudinal slot and with holes therein beyond the ends of said slots; a plurality of impelling devices arranged in said base transversely to said slot therein; end pieces; pocket-openings in said end pieces; suitable pockets for said pocket-openings; and nets arranged at each side of the slot in said base, for the purpose specified.

18. In a game apparatus, the combination of a base provided with a longitudinal slot; a plurality of impelling devices arranged in said base transversely to said slot therein; end pieces; pocket-openings in said end pieces; suitable pockets for said pocket-openings; and nets arranged at each side of the slot in said base, for the purpose specified.

19. In a game apparatus, the combination of a base provided with a longitudinal slot and with holes therein beyond the ends of said slot; a plurality of impelling devices arranged in said base transversely to said slot therein; and nets arranged at each side of the said slot in said base, for the purpose specified.

20. In a game apparatus, the combination of a base provided with a longitudinal slot; a plurality of impelling devices arranged in said base transversely to said slot therein; and nets arranged at each side of the slot in said base, for the purpose specified.

21. In a game apparatus, the combination with a base of a plurality of impelling devices arranged thereon to form supports for the missile; end pieces; pocket-openings in said end pieces; suitable pockets for said pocket-openings; and suitable nets, for the purpose specified.

22. In a game apparatus, the combination with a base of a plurality of impelling devices arranged thereon to form supports for the missile; and suitable nets, for the purpose specified.

23. In a game apparatus, the combination with a base of a plurality of impelling devices arranged thereon to form supports for the missile; end pieces; pocket-openings in said end pieces; suitable pockets for said pocket-openings; and a ball or missile retainer, for the purpose specified.

24. In a game apparatus, the combination with a base of a plurality of impelling devices arranged thereon to form supports for the missile; and a suitable ball or missile retainer, for the purpose specified.

850,225. VEHICLE-BRAKE. EARL HOFFMAN, Comstock, Nebr. Filed Apr. 6, 1906. Serial No. 310,310.

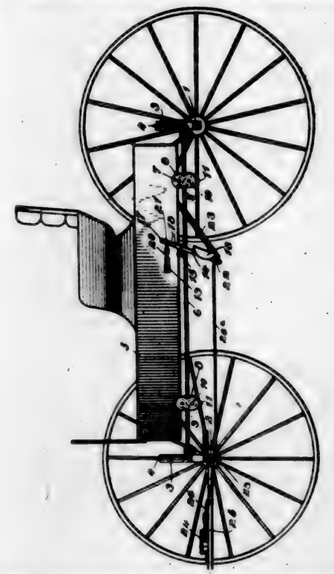

Claim.—A vehicle-brake, comprising a frame, having guide-rods on each side of said vehicle, bearings mounted on the front and rear of said rods, transverse rods connecting the bearings and forming supports for the vehicle-body, said rods having a pair of front and rear L-shaped projections to limit the movement of said vehicle-body, a rock-shaft having brake-shoes thereon, and a pair of vertically-disposed arms, adapted to apply said brakes, when the vehicle is traveling downgrade.

850,226. VENTILATING-FAN. LEWIS L. HOLLADAY, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Aug. 14, 1903. Serial No. 169,485.

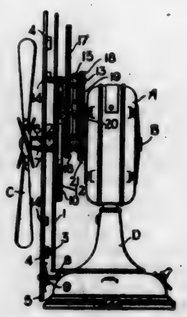

Claim.—1. The combination with a pivotally-supported ventilating-fan, of an eccentrically-pivoted screen supported in proximity to the blast-impelling member of the fan, means for intermittently holding said screen in operative positions on opposite sides of the pivotal axis of the

fan and releasing it therefrom, and means controlled by the revolution of the blast-impelling member on its axis for automatically shifting said screen from one position to the other.

2. The combination with a pivotally-supported ventilating-fan, of an eccentrically-pivoted screen supported in proximity to the blast-impelling member of the fan, means for intermittently holding said screen in operative positions on opposite sides of the pivotal axis of the fan and releasing it therefrom, and spring-controlled means for shifting said screen from one position to the other.

3. The combination with a pivotally-supported ventilating-fan, of an eccentrically-pivoted screen pivotally supported in proximity to the blast-impelling member of the fan, means for intermittently holding said screen in operative positions on opposite sides of the pivotal axis of the fan and releasing it therefrom, and spring-controlled means for shifting said screen from one position to the other.

4. The combination with a pivotally-supported ventilating-fan, of an eccentrically-pivoted screen pivotally supported in proximity to the blast-impelling member of the fan, stops for holding said fan in operative positions on opposite sides of the pivotal axis of the fan, means for putting spring tension on said screen, and means for intermittently releasing the screen from said stops.

5. The combination with a pivotally-supported ventilating-fan, of an eccentrically-pivoted screen pivotally supported in proximity to the blast-impelling member of the fan, a continuously-revoluble part having spring connection with said screen, means for holding the screen in either of its operative positions on opposite sides of the pivotal axis of the fan, and means for periodically releasing said screen from said holding means.

6. The combination with a pivotally-supported ventilating-fan, of an eccentrically-pivoted screen pivotally supported in proximity to the blast-impelling member of the fan, a reciprocating rod provided with stops adapted to engage a part of said screen and hold it in operative position with reference to the pivotal axis of the fan, and a continuously-revoluble part having spring connection with said screen and adapted to periodically engage and reciprocate said rod to release said screen therefrom.

850,227. PINLESS CLOTHES-LINE. ADDISON C. HOOK and ROBERT P. ROBINSON, Charlotte, N. C. Filed June 1, 1904. Serial No. 210,718.

Claim.—A pinless clothes-line formed of a plurality of links, each formed of a single piece of wire including a main untwisted and continuous strain-receiving bar extending from end to end of the link, the wire at each end of the link being thence bent to form an eye for connection to an adjacent link and being coiled around the strain-receiving bar, the wire being thence bent to form an eye having its largest portion toward the end of the link, and thence gradually narrowing toward the central portion of the link, said wire being bent thence around the strain-receiving bar, and each end of the wire being coiled around the opposite end thereof, and the strain-receiving bar.

850,228. RAKE. ANDREW JACKSON, Winnetka, Ill. Filed Sept. 21, 1906. Serial No. 335,606.

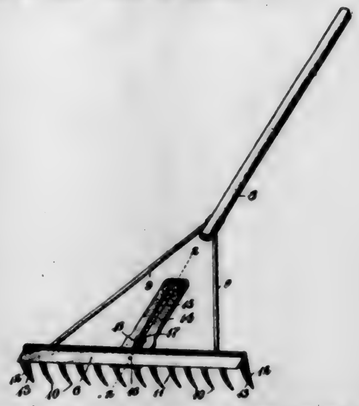

Claim.—1. A rake having an outwardly-extending blade formed on the head thereof and corresponding side blades formed on the end teeth and joined to the ends of the aforesaid blade.

2. A rake having a spud attachment comprising a blade attached to the rake-head and movable in and out therein, and means to hold the blade in either position.

3. A rake having a projecting lug and thumb-screw on the head thereof, and a blade movable in and out on the head and having a slot through which the lug and thumb-screw extend.

850,229. FLOOR-SURFACING MACHINE. GEORGE J. KIEBLER and JOHN P. STAHL, Toledo, Ohio. Filed May 17, 1906. Serial No. 317,391.

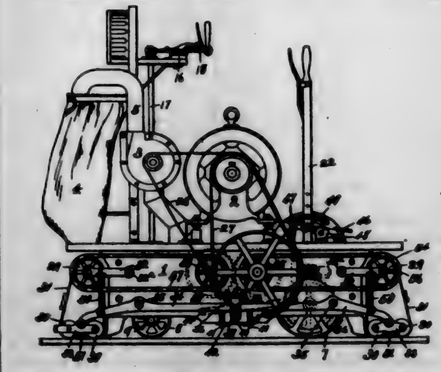

Claim.—1. The combination in a floor-surfacing machine, of a frame, levers carried on opposite sides thereof, a plurality of idler-rolls carried in spaced relation by said levers at one end of the frame in position to have contact

with the floor, arms pivoted to the frame above the levers, a roll carried thereby, a sandpaper-belt carried by said rolls, connection between the levers and superimposed arms whereby a movement of one imparts a like movement to the other, means for driving the belts, and means for causing a simultaneous oscillation of the levers.

2. The combination in a floor-surfacing machine, of a frame, levers fulcrumed on opposite sides thereof and projecting beyond one of its ends, bearing-blocks carried by the projecting end of each lever, a plurality of rolls carried by said blocks, a roll mounted to have a vertical movement above said rolls, a surfacing-belt carried by all of said rolls, connection between the vertically-movable roll and said levers whereby to cause both to move in unison, means for driving the belt, and means for effecting an oscillation of the levers.

3. The combination in a floor-surfacing machine, of a plurality of horizontally-spaced rolls adapted to normally have contact with the floor and being vertically movable, a superimposed vertically-movable roll having adjustable connection with the floor-rolls whereby a vertical movement of one is communicated to the other, a surfacing-belt encircling said rolls, means for driving the belt, and means for effecting a vertical movement of the rolls.

4. The combination in a surfacing-machine, of a frame, levers projecting from one end thereof, a bearing-block carried at the end of each lever, a pair of idler-rolls journaled in said blocks in spaced horizontal relation, a roll mounted above said idler-rolls, a belt carried by said three rolls, a gravity-plate carried by the bearing-blocks loosely between the pair of rolls and adapted to maintain a pressure on the belt as it passes from one idler-roll to the other, means for driving the belt, and means for oscillating the levers to raise and lower the bearing-blocks.

5. The combination in a floor-surfacing machine, of a frame, a pair of levers projecting from the end thereof, a bearing-block pivotally carried by the projecting end of each lever, a plurality of idler-rolls carried in horizontally-spaced relation by the bearing-blocks, a vertically-movable roll carried above the idler-rolls, connection between the levers and said movable roll, a belt carried by said roll and idler-rolls, a pressure-plate carried by the bearing-blocks between the idler-rolls and adapted to coact with the inner surface of the belt, means for driving the belt, and means for oscillating the levers.

6. In a floor-surfacing machine, a pair of vertically-movable bearing-blocks, a plurality of rolls carried thereby, a roll mounted above said rolls, a surfacing-belt carried by said rolls, and means for imparting vertical movement to the bearing-blocks.

7. In a floor-surfacing machine, a pair of bearing-blocks, a plurality of idler-rolls journaled in said blocks in spaced horizontal relation, a roll mounted above said idler-rolls, a belt carried by said several rolls, a gravity-plate disposed loosely between the idler-rolls and adapted to maintain a pressure on the belt as it passes from one idler-roll to another, and means for driving the belt.

850,230. PIPE CONNECTION. JAMES M. KIEHLE, Coudersport, Pa., assignor of one-third to Albert A. Mulkin and one-third to W. H. Richards, Coudersport, Pa. Filed Oct. 31, 1905. Serial No. 285,333.

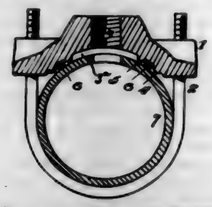

Claim.—A pipe connection, comprising a saddle provided with a concave inner side to conform to the peripheral portion of the pipe and having an opening extending therethrough centrally of said concave portion, the concave portion of the saddle being formed with two spaced-apart concentric ribs surrounding the opening therein and outstanding from the concave surface, said ribs having their sides sloping in opposite directions, whereby to produce a flared space between them, a packing-ring received between said ribs and initially substantially V-shaped in cross-section, with a flat base, and clips adapted to receive the pipe therein and arranged to clamp the saddle to said pipe, so as to flatten the packing-ring to fill the space between the said outstanding ribs, the inner one of said ribs producing a space 3^a leading into the opening in the concaved portion of the saddle, as and for the purpose set forth.

850,231. TELEGRAPHY. ISIDOR KITSEE, Philadelphia, Pa., assignor of one-half to William J. Latta, Philadelphia, Pa. Filed Apr. 24, 1906. Serial No. 313,420.

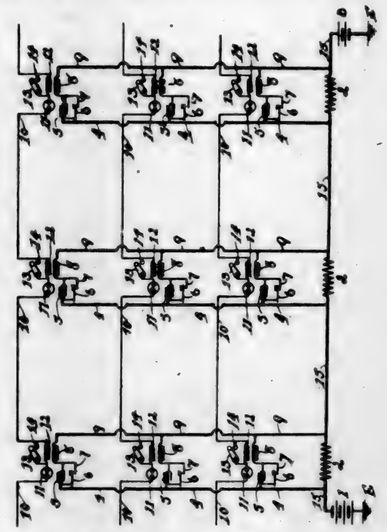

Claim.—1. In telegraphy, a feed-circuit, a source of current therefor, a working circuit associated with said feed-circuit and deriving its energy solely from said feed-circuit, a transmitting device connected in parallel with the feed-circuit and including a converter the primary of which is connected to the feed-circuit and the secondary of which is connected to the working circuit, means associated with the primary to normally prevent flow of the current therethrough, and means to shunt said means in accordance with the characters to be transmitted.

2. In telegraphy, a feed-circuit, a source of current therefor, a working circuit associated with said feed-circuit and deriving its energy solely from said feed-circuit, a transmitting device connected in parallel with the feed-circuit and including a converter the primary of which is connected to the feed-circuit and the secondary of which is connected to the working circuit, a condenser connected in series with said primary to normally prevent flow of the current therethrough, and a key connected around said condenser to shunt the latter in accordance with the characters to be transmitted.

3. In telegraphy, a feed-circuit, a source of current therefor, a working circuit associated with said feed-circuit and deriving its energy solely from said feed-circuit, a transmitting device connected in parallel with the feed-circuit and including a converter the primary of which is connected to the feed-circuit, and the secondary of which is connected to the working circuit, a resistance device arranged in the feed-circuit and bridging the terminals of the transmitting device, said resistance device having a

greater resistance value than said primary to deflect the current to the transmitting device, means associated with the primary to normally prevent flow of the current therethrough, and means to shunt said means in accordance with the characters to be transmitted.

4. In telegraphy, a feed-circuit, a source of current therefor, a working circuit associated with said feed-circuit and deriving its energy solely from said feed-circuit, a transmitting device connected in parallel with the feed-circuit and including a converter the primary of which is connected to the feed-circuit and the secondary of which is connected to the working circuit, a resistance device arranged in the feed-circuit and bridging the terminals of the transmitting device, said resistance device having a greater resistance value than said primary to deflect the current to the transmitting device, a condenser connected in series with said primary to normally prevent flow of the current therethrough, and a key connected around said condenser to shunt the latter in accordance with the characters to be transmitted.

5. In telegraphy, a feed-circuit, a source of current therefor, a working circuit associated with said feed-circuit, and deriving its energy solely from said feed-circuit, a transmitting device connected in parallel with the feed-circuit and including a converter the primary of which is connected to the feed-circuit and the secondary of which is connected to the working circuit, means associated with the primary to normally prevent flow of the current therethrough, means to shunt said means in accordance with the characters to be transmitted, and a polarized receiving device connected in the working circuit with the secondary of said converter.

6. In telegraphy, a feed-circuit, a source of current therefor, a working circuit associated with said feed-circuit and deriving its energy solely from said feed-circuit, a transmitting device connected in parallel with the feed-circuit and including a converter the primary of which is connected to the feed-circuit and the secondary of which is connected to the working circuit, means associated with the primary to normally prevent flow of the current therethrough, means to shunt said means in accordance with the characters to be transmitted, a polarized receiving device connected in the working circuit with the secondary of said converter, and a switch connected around said secondary to short-circuit the latter when the same is idle.

7. In telegraphy, the combination with a feed-circuit, and a source of current therefor, of a series of branch circuits leading from said feed-circuit, resistance devices included in said feed-circuit and bridging the terminals of the branch circuits, a series of working circuits associated with the feed-circuit and deriving their energy solely from the feed-circuit, a series of stations for each of said working circuits, an inductorium at each of said stations, a condenser connected with the primary of said inductorium and bridged across the branch circuit, the secondary of said inductorium being connected in series with the working circuit, and means to shunt said condenser in accordance with the characters to be transmitted.

8. In telegraphy, the combination with a feed-circuit, and a source of current therefor, of a series of branch circuits leading from said feed-circuit, resistance devices included in said feed-circuit and bridging the terminals of the branch circuits, a series of working circuits associated with the feed-circuit and deriving their energy solely from the feed-circuit, a series of stations for each of said working circuits, an inductorium at each of said stations, a condenser connected with the primary of said inductorium and bridged across the branch circuit, the secondary of said inductorium being connected in series with the working circuit, and a key arranged around said condenser to shunt the latter in accordance with the characters to be transmitted.

850,232. ARTIFICIAL-FUEL BLOCK AND METHOD OF PRODUCING SAME. MICHAEL M. KLINE, St. Louis, Mo. Filed July 30, 1906. Serial No. 328,262.

Claim.—1. An artificial-fuel block comprising pulverized slack coal, a binding agent, sulfate of iron, sulfate of magnesia and oxid of manganese intimately mixed with each other and compressed into a solid mass; substantially as described.

2. An artificial-fuel block comprising ninety-seven and three-fifths per cent. of pulverized slack coal, one per cent. of starch, one per cent. of glucose and one-fifth of one per cent. of sulfate of iron, one-tenth of one per cent. of sulfate of magnesia and one-tenth of one per cent. of oxid of manganese intimately mixed with each other and compressed into a solid mass; substantially as described.

3. The method of producing an artificial-fuel block which consists in mixing pulverized slack coal, a binding agent, and a hardening and smoke-destroying substance with a liquid to form a plastic mass, heating said mass and then subjecting a portion thereof to great pressure and to heat to mold it into predetermined form; substantially as described.

4. The method of producing an artificial-fuel block which consists in mixing pulverized slack coal, glucose, starch, sulfate of iron, sulfate of magnesia, oxid of manganese with enough water to cause the ingredients to mix thoroughly, heating the mass and then subjecting a portion thereof to great pressure between heated members to mold it into predetermined form; substantially as described.

850,233. GLASS-FURNACE. CHRISTIAN J. KOENIG, Alton, Ill. Filed Nov. 30, 1906. Serial No. 345,631.

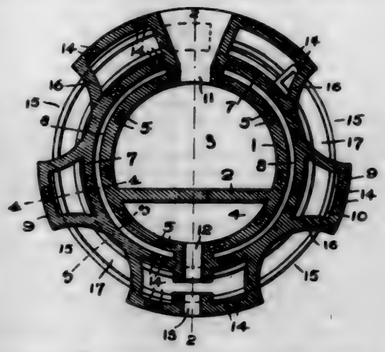

Claim.—1. The combination with a glass-furnace, of a trough of circular-arc form which receives molten glass from said glass-furnace.

2. The combination with a glass-furnace, of a trough of circular-arc form which receives molten glass from said glass-furnace, and means whereby reciprocating rotary motion is imparted to said trough.

3. The combination with a glass-furnace, of an annular chamber formed around the furnace, and a trough of circular-arc form arranged for operation in said annular chamber and which trough receives molten glass from the furnace.

4. The combination with a glass-furnace, of an annular chamber formed around the furnace, a trough of circular-arc form arranged for operation in said annular chamber and which trough receives molten glass from the furnace, and means whereby reciprocating rotary motion is imparted to the trough.

5. The combination with a glass-furnace, of a trough of circular-arc form which receives molten glass from the glass-furnace, and means whereby the glass is heated while in the trough.

6. The combination with a glass-furnace, of a trough of circular-arc form which receives molten glass from the glass-furnace, means whereby the glass is heated while in the trough, and means whereby reciprocating rotary motion is imparted to said trough.

7. The combination with a glass-furnace, of walls arranged around the furnace to form a circular chamber, there being an annular air-space between the furnace-wall and the adjacent wall of the chamber, and a trough arranged for operation in said circular chamber which trough receives molten glass from the furnace.

8. The combination with a glass-furnace, of walls arranged around the furnace to form a circular chamber, there being an annular air-space between the furnace-wall and the adjacent wall of the chamber, a trough arranged for operation in said circular chamber which trough receives molten glass from the furnace, and means whereby reciprocating rotary motion is imparted to said trough.

850,234. SNAP-HOOK. WILLIAM H. LAMBERT, Slocan Junction, British Columbia, Canada. Filed Dec. 15, 1906. Serial No. 347,940.

Claim.—1. A snap-hook comprising a shank having an integral eye at one end and a hook at its opposite end terminating in a flattened and broadened plate, and a spring secured to the shank adjacent the eye and provided with a coil extending beneath the flattened plate and also provided with recesses in its opposite sides adjacent the flattened plate.

2. A snap-hook comprising a shank having an integral eye at one end and a hook at its opposite end terminating in a flattened and broadened plate, and a spring secured to the shank adjacent the eye and provided with a coil extending beneath the flattened plate and also provided with recesses in its opposite sides adjacent the flattened plate, said coil portion being broader than said reduced portion.

850,235. CLOTHES-LINE HANGER. BARTLEY J. LEE, Poughkeepsie, N. Y., assignor of one-half to Albert J. Ryder, Poughkeepsie, N. Y.; Margaret A. Lee administratrix of said Bartley J. Lee, deceased. Filed Nov. 24, 1906. Serial No. 344,998.

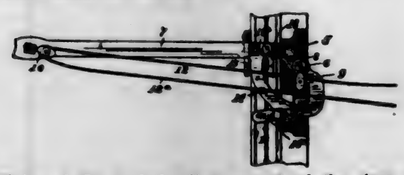

Claim.—1. In a clothes-line support of the class described, a supporting element, an arm having one end pivoted thereto, line-guides at opposite ends thereof, a locking-pawl carried by the supporting element for engaging the arm to hold it in a horizontal position, locking-pawl carried by the arm, and a lug on the supporting element adapted to be engaged by said last-named pawl to hold the arm in vertical position, substantially as described.

2. In a clothes-line support of the class described, a supporting element, an arm having one of its ends pivoted thereto, line-guides for an endless traveling line carried at opposite ends of said arm, means supported from said arm for detachably engaging the lower portion of said endless line, and locking means for said arm controlled by the engagement or disengagement of the line with said means, substantially as described.

3. In a clothes-line support of the class described, a supporting element, an arm having one of its ends pivoted thereto, line-guides for an endless traveling line carried at opposite ends of said arm, a locking-dog pivoted on said arm, a device for detachably engaging the lower portion of said endless line, carried by said dog, and a stop on the supporting element with which the dog engages when the line is disengaged from said device, substantially as described.

4. In a clothes-line support of the class described, a supporting element, an arm having one of its ends pivoted thereto, line-guides for an endless line carried at opposite ends of said arm, a segmental portion or member rigidly carried by said arm concentric to the pivot, and a guiding-lug on the supporting element engaging said segmental portion, substantially as described.

5. In a clothes-line support of the class described, a supporting element, an arm having one of its ends pivoted thereto, line-guides for an endless line carried at opposite ends of said arm, a segmental portion or member rigidly carried by said arm concentric to the pivot, and a guiding-lug on the supporting element engaging said segmental portion, and a locking-pawl on the arm for engaging said guiding-lug, substantially as described.

6. In a clothes-line support of the class described, a supporting element, an arm having an angularly-extending portion pivoted to said supporting element, line-guides carried at opposite ends of said arm, said arm having a segmental brace concentric to the pivot, a guiding-lug engaging said segmental brace, a locking-dog pivoted to said brace and adapted to engage the guide-lug, and a line-engaging hook carried by said dog, substantially as described.

7. In a clothes-line support of the class described, a supporting element, having a boss or projection, an arm having one end provided with a bearing-socket turning upon said boss, a pulley-block supported from said boss, a second pulley-block carried by the free end of the arm, locking means for locking the arm in either vertical or horizontal position, and means carried by said arm near the pivot-point for detachably engaging a line, said means automatically controlling one of the locking means, substantially as described.

850,236. REEL. ALBERT M. MAGUIRE, Indianapolis, Ind. Filed Aug. 28, 1906. Serial No. 332,399.

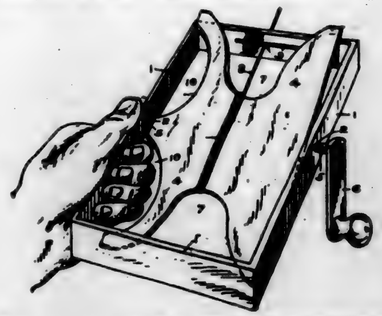

Claim.—1. In a reel of the character described comprising the frame, a reel-shaft with blades movably mounted in said frame, said blade being provided with notches to form passage-ways for the fingers.

2. In a reel of the character described comprising the frame, a reel-shaft with blades movably mounted in said frame, said frame being provided with a notch to receive the end of the reel-shaft, for locking the latter against rotation.

3. In a reel of the character described comprising the frame, a reel-shaft with blades movably mounted in said frame, said blades being provided with notches to form passage-ways for the fingers, said frame being provided with a recess to receive the reel-shaft and adapted to lock the reel against rotation.

850,237. BRUSH-HOLDER. JOHN P. MALLETT and THOMAS E. DROHAN, Madison, Wis., assignors to Northern Electrical Manufacturing Company, Madison, Wis., a Corporation of Wisconsin. Filed May 10, 1901. Serial No. 59,557.

Claim.—1. A brush-holder, comprising a frame, a brush rigidly connected with said frame, an engaging part asso-

ciated with the frame and rigidly connected with a support, a spring bent back upon itself and interposed between the engaging part and the frame, so that the brush will be elastically forced against its opposed surface when the engaging device is properly adjusted, and a flexible connection between the brush and the engaging device and having a stationary contact with each.

2. A brush-holder, comprising a frame movably mounted on a support and to which the brush is rigidly connected, an engaging part rigidly connected to the support and associated with said frame, a U-shaped spring fixed at one end to the frame and passing around a holding part on the engaging part, the other end of said spring loosely engaging the engaging part, and a flexible electrical connection between the engaging part and the brush.

3. A brush-holder, comprising a frame movably mounted on a support and to which the brush is rigidly connected, an engaging part rigidly connected to the support and associated with said frame, a U-shaped spring fixed at one end to the frame and passing around a holding part on the engaging part, the other end of said spring loosely engaging the engaging part, a flexible electrical connection between the engaging part and the brush, and an insulating-piece connected with said frame, so as to limit the movement of the frame toward the commutator when the brush becomes worn a predetermined amount.

4. A brush-holder comprising a frame to which the brush is rigidly connected, a stud upon which said frame is movably mounted, an engaging part rigidly connected with said stud, a spring interposed between the engaging part and the frame, a flexible connection between said engaging part and the brush and a protecting device mounted upon said frame for preventing the frame from engaging the commutator.

5. A brush-supporting device comprising a brush-carrying frame formed with two side pieces spaced apart, a stud upon which said frame is movably mounted, an engaging member rigidly connected to said stud and formed with the projecting part extending between the side pieces of the frame, and a U-shaped spring, one end of said spring engaging the projecting part of said member and the other end of said spring engaging the frame while the body of said spring is located between the side pieces of said frame.

6. A brush-holder comprising a brush-carrying frame movably mounted on a support, a member rigidly connected to the support and provided with a holding part and a U-shaped spring looped around the holding part of the member, one end of said spring engaging said member and the other end of said spring engaging said frame.

7. In a brush-supporting device, a stud, a brush-carrying frame loosely mounted thereon, a member rigidly secured to the stud and extending between the arms of the frame, and an elongated U-shaped spring also located between the arms of the frame with one end engaging the frame and the other end engaging said member.

8. In combination, a movable frame adapted to carry a brush at one of its ends, a fixed member located between the arms of said frame, and a U-shaped spring the legs of which extend substantially parallel to and between the arms of said frame, one end of said spring engaging said member and the other end of said spring engaging said frame.

9. In a brush-supporting device, a stud, a brush-carrying frame loosely mounted thereon, a member rigidly secured to the stud and extending between the arms of the frame, and an elongated U-shaped spring located between, and with its legs parallel to, the arms of the frame with its bowed portion adjacent the stud and with one end engaging the frame and the other end engaging said member.

10. In a brush-holder, a movable brush-carrying frame, means for pressing said frame toward the commutator and a protective device carried by said frame in position to limit the movement of said frame toward said commutator by reason of the engagement of the device with the commutator.

11. In a brush-supporting device, a stud, a brush-carrying frame comprising two arms the ends of which are loosely mounted on said stud, a member rigidly secured to the stud and extending between the arms of the frame, and an elongated U-shaped spring also located between the arms of the frame with one end engaging the frame and the other end engaging said member, the yoke of said spring being adjacent the stud and the ends adjacent to the brush.

12. In a brush-holder, a metallic frame, and a non-metallic protective device carried thereby in a position to prevent engagement between the frame and the commutator by reason of its interposition between them.

13. In a brush-holder, a movable metallic brush-carrying frame and a non-metallic protecting device carried by the frame in position to engage the commutator to prevent the frame from coming into contact with the commutator.

14. In a brush-holder, the combination with a pivot-shaft, of a brush-supporting frame pivoted thereto, a brush rigidly secured to said frame, spring means engaging said frame to hold the brush against the commutator with which the brush-holder is associated, and a block of insulating material for engaging the commutator as the brush wears down to prevent engagement of the commutator with the metallic brush-frame.

850,238. PIPE-LAYING MACHINE. MICHAEL S. MANNING, Morton, Pa. Filed Dec. 13, 1906. Serial No. 347,656.

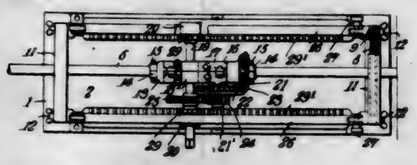

Claim.—1. In a pipe-laying machine, the combination of a supporting structure, guideways thereon, bearing-blocks slidably mounted in the said ways, a shaft mounted in the bearing-blocks, bearings on the structure for the pipe to be laid, and separate means for rotating and longitudinally moving the pipe through the agency of the shaft.

2. In a pipe-laying machine, the combination of a supporting structure, bearings thereon for the pipe to be laid, a sleeve surrounding the pipe, split bushings fitted in the sleeve for clamping the latter to the pipe, means for rotating the sleeve, and means for moving the sleeve longitudinally.

3. In a pipe-laying machine, the combination of a supporting structure, bearings thereon for the pipe to be laid, a sleeve adapted to be clamped to the pipe, a two-part frame in which the sleeve rotates, a driving-shaft extending through the two-part frame, means for moving the shaft and thereby the frame on the supporting structure, and a gearing between the shaft and sleeve having one of its members supported on the two-part frame.

4. In a pipe-laying machine, the combination of a stationary supporting structure, stationary bearings thereon for the pipe to be laid, a driving-shaft extending transversely to the pipe and mounted on the structure to have a bodily lateral movement independently of the latter, a mechanism for moving the shaft laterally, a connection between the shaft and the pipe for moving the latter longitudinally, and means for rotating the pipe by the driving-shaft.

5. In a pipe-laying machine, the combination of a supporting structure, bearings thereon for the pipe to be laid, a sleeve split bushings for clamping the sleeve to the pipe, and a mechanism for simultaneously rotating the sleeve and feeding the same longitudinally, said mechanism including a driving-shaft which receives the power for both rotating and longitudinally moving the sleeve.

6. In a pipe-laying machine, the combination of a supporting structure, bearings thereon for the pipe to be laid, a sleeve adapted to be clamped to the pipe to rotate the same and move it longitudinally, a non-rotatable frame sleeved on the sleeve, a transverse shaft mounted on the structure to have a lateral movement, a bearing on the frame for the shaft through which the latter moves the frame and sleeve longitudinally, and a speed-multiplying device between the shaft and sleeve for rotating the latter.

7. In a pipe-laying machine, the combination of a supporting structure for the pipe to be laid, guideways on the structure, bearing-blocks therein, a driving-shaft mounted on the bearing-blocks for bodily lateral movement, means for connecting the shaft with the pipe for moving the latter longitudinally by the bodily movement of the shaft, a feed mechanism arranged to cause the rotation of the shaft to move the latter bodily, and a gearing between the shaft and pipe for rotating the latter.

8. In a pipe-laying machine, the combination of a supporting structure for the pipe to be laid, guideways thereon, a driving-shaft, bearing-blocks in the guideways for rotatably mounting the shaft, and separate means for rotating the pipe and feeding the same by the rotation of the driving-shaft.

9. In a pipe-laying machine, the combination of a supporting structure for the pipe to be laid, guideways thereon, a driving-shaft, bearing-blocks in the guideways for rotatably mounting the shaft, a feed mechanism arranged to move the shaft along the guideways by its rotation, and a mechanism arranged to rotate the pipe by the driving-shaft at a higher speed than the latter.

10. In a pipe-laying machine, the combination of a supporting structure for the pipe to be laid, guideways thereon, a driving-shaft, bearing-blocks in the guideways for rotatably mounting the shaft, racks on the structure, pinions meshing with the racks and secured to the shaft for moving the latter bodily, means for connecting the shaft with the pipe, and a gearing between the shaft and pipe for rotating the latter.

11. In a pipe-laying machine, the combination of a supporting structure for the pipe to be laid, a laterally movable and rotatable shaft on the structure, a sleeve adapted to be clamped to the pipe to rotate and move longitudinally therewith, a non-rotatable frame sleeved to the pipe and connected with the shaft to move the sleeve by the latter, and a power-transmitting mechanism between the shaft and sleeve and supported on the frame for rotating the sleeve by the driving-shaft.

12. In a pipe-laying machine, the combination of a supporting structure for the pipe to be laid, a laterally movable and rotatable shaft on the structure, a sleeve adapted to be clamped to the pipe to rotate and move longitudinally therewith, a supporting means on the sleeve connected with the shaft to move the sleeve by the latter, a gearing including a gear-wheel on the shaft and a pinion on the supporting means, and a miter-gearing between the pinion and sleeve for rotating the latter by the driving-shaft.

13. In a pipe-laying machine, the combination of a supporting structure for the pipe to be laid, a laterally movable and rotatable shaft on the structure, a sleeve through which the pipe extends, means for removably clamping the sleeve to the pipe, a frame on the sleeve and connected with the shaft to move with the latter and to be held from rotation thereby, a gear on the shaft, a pinion mounted on the frame, a miter-gear connected with the pinion, and a miter-gear on the sleeve.

850,239. BOAT LAUNCHING AND STOWING APPARATUS. FRED E. MARTIN, Oakville, Ontario, Canada, assignor of one-third to William John Kivell and two-thirds to Charles H. Riches, Toronto, Canada. Filed Apr. 14, 1906. Serial No. 311,760.

Claim.—1. A boat launching and stowing apparatus comprising fixed trackways leading to the ship's side, davit-cranes movable on said trackways, a releasable bolt for securely holding the davit-cranes in their inboard position, means for arresting the davit-cranes at the limit of their outboard position and other releasable means to resist the return of the davit-cranes to their inboard position.

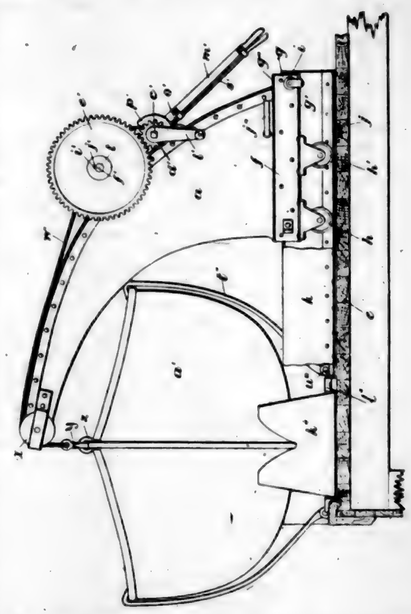

2. A boat launching and stowing apparatus comprising fixed trackways leading to the ship's side, davit-cranes movable on the trackways, releasable means for securely holding the davit-cranes at their inboard position, means for arresting the davit-cranes at their outboard position, means for resisting the return of the davit-cranes to their inboard position, and means for releasing the resisting means comprising a rock-shaft engaging therewith.

3. A boat launching and stowing apparatus comprising fixed trackways leading to the ship's side, two davit-cranes rigidly coupled together, a carriage for each davit-crane movable on its respective trackway, a winding-shaft journaled in bearings connected with the davit-cranes comprising two shaft-sections coupled together by a universal coupling, winding-drums mounted on the winding-shaft, guide-pulleys connected with the davit-cranes, davit-falls passing over the guide-pulleys and wound on the winding-drums, and means for causing the revolution of the winding-shaft.

4. A boat launching and stowing apparatus comprising fixed trackways leading to the ship's side, two davit-cranes rigidly coupled together, a carriage for each davit-crane movable on its respective trackway, a winding-shaft journaled in bearings connected with the davit-cranes, comprising two shaft-sections coupled together, winding-drums mounted on the winding-shaft, guide-pulleys connected with the davit-cranes, davit-falls passing over the guide-pulleys and wound on the winding-drums, means for causing the revolution of the winding-shaft consisting of a pinion-shaft journaled in a bearing connected with one of the davit-cranes, a pinion mounted on the pinion-shaft, means for causing the revolution of the pinion-shaft and pinion, and a spur-wheel mounted on the winding-shaft meshing with the pinion.

5. A boat launching and stowing apparatus comprising fixed trackways leading to the ship's side two davit-cranes rigidly coupled together, a carriage for each davit-crane movable on its respective trackway, a winding-shaft

journaled in bearings connected with the davit-cranes, comprising two shaft-sections coupled together, winding-drums mounted on the winding-shaft, guide-pulleys connected with the davit-cranes, davit-falls passing over the guide-pulleys and wound on the winding-drums, means for causing the revolution of the winding-shaft consisting of a pinion-shaft journaled in a bearing connected with one of the davit-cranes, a pinion mounted on the pinion-shaft, means for causing the revolution of the pinion-shaft and pinion, a spur-wheel loosely mounted on the winding-shaft meshing with the pinion, and a removable locking means for causing the united revolution of the spur-wheel and winding-shaft.

6. A boat launching and stowing apparatus comprising fixed trackways leading to the ship's side, two davit-cranes rigidly coupled together, a carriage for each davit-crane movable on its respective trackway, a winding-shaft comprising two shaft-sections coupled together journaled in bearings connected with the davit-cranes, winding-drums mounted on the winding-shaft, guide-pulleys connected with the davit-cranes, davit-falls passing over the guide-pulleys and wound on the winding-drums, means for causing the revolution of the winding-shaft consisting of a pinion-shaft journaled in a bearing connected with one of the davit-cranes, a pinion mounted on the pinion-shaft, means for causing the revolution of the pinion-shaft and pinion, and a spur-wheel mounted on the winding-shaft meshing with the pinion, a brake-wheel fixed on the winding-shaft, a movable brake-lever, and a band passing partly around the brake-wheel and connected at one end with one of the davit-cranes and at the other end with the movable brake-lever.

7. A boat launching and stowing apparatus comprising fixed trackways leading to the ship's side, two davit-cranes rigidly coupled together, a carriage for each davit-crane movable on its respective trackway, a winding-shaft journaled in bearings connected with the davit-cranes comprising two shaft-sections coupled together, winding-drums mounted on the winding-shaft, guide-pulleys connected with the davit-cranes, davit-falls passing over the guide-pulleys and wound on the winding-drums, means for causing the revolution of the winding-shaft consisting of a pinion-shaft journaled in a bearing connected with one of the davit-cranes, a pinion mounted on the pinion-shaft, means for causing the revolution of the pinion-shaft and pinion, a spur-wheel mounted on the winding-shaft meshing with the pinion, a brake-wheel fixed on the winding-shaft, a movable brake-lever, a brake-band passing partly around the brake-wheel and connected at one end with one of the davit-cranes and at the other end with movable brake-lever, a detent-dog for the brake-lever, a link connected with the detent-dog and having a hand-grip whereby it can be acfuated, and a toothed segment connected with the davit-crane to be engaged by the detent-dog.

8. A boat launching and stowing apparatus comprising fixed trackways leading to the ship's side, guards at the sides of the fixed trackways and extending above the same with inturned flanges at their upper ends and an unoccupied interval between the flanges, two davit-cranes rigidly coupled together and movable above the guards, a carriage for each davit-crane movable between the guards, antifriction-rollers for the carriages movable upon the trackways, other antifriction-rollers connected with the carriages movable between the guards to engage the top flanges thereof, and a boat raising and lowering means carried by the davit-cranes.

9. A boat launching and stowing apparatus comprising fixed trackways leading to the ship's side, guards at the sides of the fixed trackways and extending above the same with inturned flanges at their upper ends and an unoccupied interval between the flanges, two davit-cranes rigidly coupled together and movable above the guards, a carriage for each davit-crane movable between the guards, antifriction-rollers for the carriages movable upon the trackways, other antifriction-rollers connected with the carriages movable between the guards to engage the top flanges thereof, a boat raising and lowering means carried by the davit-cranes, releasable means for securely holding the davit-cranes at their inboard position, and means to arrest the movement of the davit-cranes at their outboard position.

10. A boat launching and stowing apparatus comprising fixed trackways leading to the ship's side, guards at the sides of the fixed trackways and extending above the same with inturned flanges at their upper ends and an unoccupied interval between the flanges, two davit-cranes rigidly coupled together and movable above the guards a carriage for each davit-crane movable between the guards, antifriction-rollers for the carriages movable upon the trackways, other antifriction-rollers connected with the carriages movable between the guards to engage the top flanges thereof, a boat raising and lowering means carried by the davit-cranes, releasable means for securely holding the davit-cranes at their inboard position, means to arrest the movement of the davit-cranes at their outboard position, and a releasable resisting means to prevent the inboard movement of the davit-cranes when the latter are at their outboard position.

11. A boat launching and stowing apparatus comprising fixed trackways leading to the ship's side, guards at the sides of the fixed trackways and extending above the same with inturned flanges at their upper ends, and an unoccupied interval between the flanges, two davit-cranes rigidly coupled together and movable above the guards, a carriage for each davit-crane movable between the guards, antifriction-rollers for the carriages movable upon the trackways to support the davit-cranes therefrom, other antifriction-rollers connected with the carriages movable between the guards to engage the top flanges thereof, a boat raising and lowering means carried by the davit-cranes, releasable means for securely holding the davit-cranes at their inboard position, means to arrest the movement of the davit-cranes at their outboard position, releasable resisting means to prevent the inboard movement of the davit-cranes when the latter are at their outboard position, and means for releasing the resisting means.

12. A boat launching and stowing apparatus comprising two davit-cranes rigidly coupled together, a carriage for each davit-crane, a winding-shaft consisting of two shaft-sections journaled in bearings connected with the davit-cranes, a universal coupling uniting the inner ends of the winding-shaft, winding-drums mounted on the winding-shaft, guide-pulleys connected with the davit-cranes, davit-falls passing over the guide-pulleys and wound on the winding-drums, and means for causing the revolution of the winding-shaft and winding-drums.

13. A boat launching and stowing apparatus comprising two davit-cranes rigidly coupled together, a carriage for each davit-crane, a winding-shaft consisting of two shaft-sections journaled in bearings connected with the davit-cranes, a universal coupling uniting the inner ends of the winding-shaft, a winding-drum mounted on the winding-shaft, davit-falls passing over the guide-pulleys and wound on the winding-drums, means for causing the revolution of the winding-shaft and winding-drums, consisting of a pinion-shaft journaled in a bearing connected with one of the davit-cranes, a pinion mounted on the pinion-shaft, a spur-wheel mounted on the winding-shaft and meshing with the teeth of the pinion, and means for causing the revolution of the pinion-shaft.

14. A boat launching and stowing apparatus comprising two davit-cranes rigidly coupled together, a carriage for each davit-crane, a winding-shaft consisting of two shaft-sections journaled in bearings connected with the davit-cranes, a universal coupling uniting the inner ends of the winding-shaft, a winding-drum mounted on the winding-shaft, guide-pulleys connected with the davit-cranes, davit-falls passing over the guide-pulleys and wound on the winding-drums, means for causing the revolution of the winding-shaft and winding-drums, consisting of a pinion-shaft journaled in a bearing connected with one of the davit-cranes, a pinion mounted on the pinion-shaft a spur-wheel mounted on the winding-shaft and meshing with the teeth of the pinion, means for causing the revolution of the pinion-shaft, and a braking mechanism for the winding-shaft consisting of a brake-wheel mounted thereon, a toothed segment, a movable lever having a releasable detent-dog to engage with the toothed segment and a brake-band to engage the brake-wheel connected at one end with the davit-crane and at the other end with the brake-lever.

15. A boat launching and stowing apparatus comprising two davit-cranes rigidly coupled together, a carriage for each davit-crane, an arm connected with the davit-cranes having a bolt-aperture therein, bolt-guides at the inboard position of the davit-cranes, a locking-bolt movable in the bolt-guides to enter the bolt-aperture in the arm, a lever to actuate the bolt, stops to arrest the movement of the davit-cranes at their outboard position, racks, and gravity-dogs carried by the davit-cranes adapted to engage with the racks to resist the return of the davit-cranes from their outboard position.

16. A boat launching and stowing apparatus comprising two davit-cranes rigidly coupled together, a carriage for each davit-crane, an arm connected with the davit-cranes having a bolt-aperture therein, bolt-guides at the inboard position of the davit-cranes, a locking-bolt movable in the bolt-guides to enter the bolt-aperture in the arm, a lever to actuate the bolt, stops to arrest the movement of the davit-cranes at their outboard position, racks, gravity-dogs carried by the davit-cranes to engage with the racks to resist the return of the davit-cranes from their outboard position, and a rock-shaft carried by the davit-cranes having cranks to engage with the gravity-dogs and raise them out of engagement with the racks.

17. A boat launching and stowing apparatus comprising two davit-cranes rigidly coupled together, a carriage for each davit-crane, an arm connected with the davit-cranes having a bolt-aperture therein, bolt-guides at the inboard position of the davit-cranes, a locking-bolt movable in the bolt-guides to enter the bolt-aperture in the arm, a lever to actuate the bolt, stops to arrest the davit-cranes at their outboard position, racks, gravity-dogs carried by the davit-cranes to engage with the racks to resist the return of the davit-cranes from their outboard position, a rock-shaft carried by the davit-cranes having rock-shaft cranks to engage with the gravity-dogs and raise them out of engagement with the racks in combination with boat-supporting saddles to engage the boat at its inboard position, an actuating-lever and links connected with the actuating-lever to cause the saddles to fall outward when operated.

18. A boat launching and stowing apparatus comprising two davit-cranes rigidly coupled together, a carriage for each davit-crane, fixed trackways, an arm connected with the davit-cranes having a bolt-aperture therein, bolt-guides at the inboard position of the davit-cranes, a locking-bolt movable in the bolt-guides to enter the bolt-aperture in the arm, a lever to actuate the bolt, stops to arrest the davit-cranes at their inboard position, racks, gravity-dogs carried by the davit-cranes adapted to engage with the racks to resist the return of the davit-cranes from their outboard position, a rock-shaft carried by the davit-cranes having cranks to engage with the gravity-dogs and raise them out of engagement with the racks, in combination with boat-supporting saddles to engage the boat at its inboard position, an actuating-lever, links connected with the actuating-lever to cause the saddles to fall outward when operated, and lashing-arms pivotally connected with the deck to engage the gunwale of the boat when seated upon the saddles and automatically disengage themselves therefrom by gravity when the saddles have been lowered by the saddle-actuating means.

850,240. HOSE-SUPPORTER. EDNA MIDDLETON, Savannah, Ga. Filed Jan. 5, 1907. Serial No. 351,002.

Claim.—1. A hose-supporter, comprising a plate, means for attaching one end of said plate to a garment, a pair of straps threaded through said plate, each strap comprising a main portion and an integral, auxiliary portion, the auxiliary portion secured to the main portion of the other strap between the plate and its outer end, the lower end of each strap folded back upon the main portion and forming a loop, a reinforcing-sleeve positioned within the loop, said sleeve provided with parallel lips for preventing rotation of said sleeve within said loop, a hook pivotally mounted within the sleeve, an auxiliary stud-plate strap in engagement with the folded portion of the first-mentioned strap and having its upper end folded between the main portion of the strap and its folded portion and the extreme upper end of said stud-plate strap positioned contiguous to the lips of the sleeve, means fastening the interfolded ends of the first-mentioned strap and the stud-plate strap together and fixedly securing the sleeve in the folded portion of the first-mentioned strap, a stud-plate provided with a stud, carried by said stud-plate strap, the lower end of the stud-plate strap folded parallel to and between two portions of the stud-plate strap.

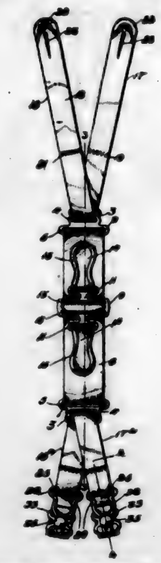

2. A hose-supporter provided with a strap, said strap provided with a loop at its lower end, a stud-plate strap folded over the extreme lower end of the strap and having its upper end positioned between two portions of said strap, a reinforcing-sleeve positioned in the loop of the first-mentioned strap, means extending from one side of said sleeve for preventing rotary movement, a hook pivotally mounted in said sleeve, a stud-plate provided with a stud, secured to said stud-plate strap and coöperating with said hook.

3. A hose-supporter, comprising plates, means adjustably connecting the inner ends of said plates, pairs of straps extending outwardly and connected to the outer ends of said plates, each strap of each pair comprising a main and an auxiliary portion, the auxiliary portion threaded through a plate and secured to the other strap of the pair intermediate the plate and its outer end, one pair of said straps provided with stud-plate straps, the upper ends of the stud-plate straps interfolded with the lower ends of said straps, means securing the interfolded ends together, hooks pivotally mounted within the folded ends of said straps, reinforcing means surrounding said hooks and positioned within the folded ends of said straps, means for preventing rotary movement of said reinforcing means, and studs secured to said stud-plate straps and coöperating with said hooks.

4. A hose-supporter, comprising a pair of connecting-plates, means adjustably connecting said plates, a strap secured to and extending from each plate, one of said straps provided with a loop formed near its outer end, a stud, means securing said stud to the looped end of said last-mentioned strap, a reinforcing-sleeve provided with an extension projecting from one side, positioned within the said loop, and said extension preventing rotary movement of said sleeve within said loop, and a hook pivotally mounted in said sleeve and coöperating with said stud.

850,241. CENTRIFUGAL MACHINE. HENRY G. MORRIS, Philadelphia, Pa. Filed Jan. 4, 1907. Serial No. 350,706.

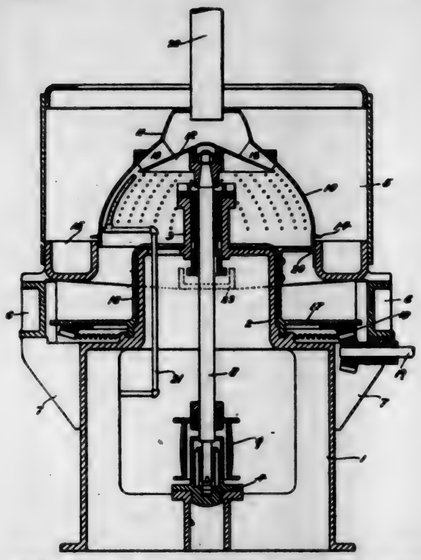

Claim.—1. A centrifugal separator comprising a dome-shaped perforated rotary basket, a fixed annular trough around the outside rim of the basket for receiving molasses, a rotary table beneath the inside rim of the basket for receiving sugar, and feed connections arranged centrally of the basket and including a dome-shaped baffle-plate for introducing raw sugar, substantially as described.

2. A centrifugal separator comprising a fixed housing and a superposed fixed casing and legs for supporting the latter above the former, a revoluble spindle journaled in the housing and extending into the casing, a dome-shaped basket arranged on the upper end of the spindle and provided with a centrally-disposed intake having a baffle-plate, a trough in the casing around the rim of the basket, and a rotary table mounted on the housing beneath the casing and basket, substantially as described.

3. A centrifugal separator comprising a dome-shaped perforated rotary basket, a fixed trough around the rim of the same, a rotary table beneath the basket, and a scraper carried by the table and operatively arranged in respect to one of the walls of the trough, substantially as described.

850,242. PASTING DEVICE. SYLVANUS T. MURCHIE, Kaukauna, Wis., assignor to Union Bag & Paper Company, Jersey City, N. J., a Corporation of New Jersey. Filed Jan. 21, 1903. Serial No. 139,896.

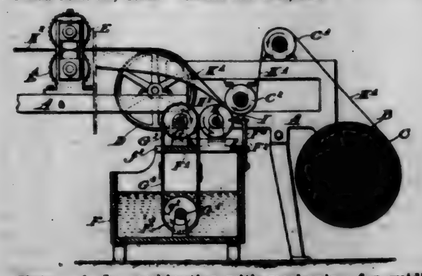

Claim.—1. In combination with mechanism for guiding a web of paper including a roll over which the web passes, a paste-box, a rotating sprocket-wheel seated above the paste-box, a sprocket-chain passing around said sprocket-wheel and depending into the paste-trough, and a rotating paste-applying disk for applying a line of paste to the web as it passes around said roll, geared to rotate positively with said sprocket-wheel, and having its periphery passing in close proximity to and receiving paste from a vertical portion of said chain.

2. In combination with mechanism for guiding a web of paper, including a roll over which the web passes, a rotating paste-applying disk operating to apply a line of paste to the web as it passes around said roll, a paste-box, a rotating sprocket-wheel situated above said box and having its axis parallel to and in the same horizontal plane with the axis of said disk, and a sprocket-chain passing over said sprocket-wheel and depending vertically into said paste-box, a vertical portion of said sprocket-chain passing close to the paste-disk so as to supply it with paste.

850,243. DISPLAY APPARATUS. WILLIAM A. MCKENT, Cleveland, Ohio. Filed June 2, 1906. Serial No. 319,826.

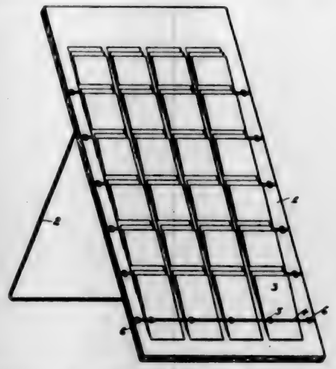

Claim.—1. In a display apparatus, the combination of a support, a series of packages thereon, a rod extending across such packages and securing means engaging the rod and passing through the packages into the support.

2. In a display apparatus, the combination of a support, a series of packages thereon, a rod extending across such packages, and staples passing across the rod through the packages into the support.

3. In a display apparatus, the combination of a supporting-board, a series of cross-bars secured thereto, several sets of superimposed packages beneath each cross-bar, and means for securing each package so that its removal breaks the package.

4. In a display apparatus, the combination of a supporting-board, a series of cross-rods fastened thereto on the face thereof, a series of sets of packages, each set extending beneath one of said cross-rods, and staples for each set passing across the corresponding rod and through all the packages of the set.

5. The combination of a supporting-board, a series of parallel cross-rods on the face thereof, a series of sets of envelops, each set extending beneath one of said cross-rods, and staples for each set passing across the corresponding rods and through all the envelops of the set, each set of envelops having its individuals projecting beyond those thereabove, whereby all are conveniently accessible.

6. The combination of a supporting-board, a series of parallel cross-rods fastened thereto on the face thereof, a series of sets of envelops, each set extending beneath one of said cross-rods, and staples for each set passing across the corresponding rods and through all the envelops of the set, each set of envelops having its individuals projecting beyond those thereabove, and each set having its upper end overlapping the lower end of the set next above it.

850,244. MEANS FOR PROTECTING RIVER-BANKS. JOHN A. NABERS, Vernon, Tex. Filed Oct. 22, 1906. Serial No. 340,049.

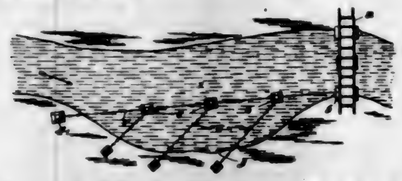

Claim.—1. Means for protecting the bank of a river, stream, or similar watercourse, the same consisting of a series of wires arranged to form a fence extending in a straight line approximately at a tangent to the current of the water and piers between which said wires are stretched.

2. Means for protecting the bank of a river or other watercourse, the same consisting of a wire fencing arranged approximately at a tangent to the current of the water, and other wire fencing extended from the tangentially-arranged wire fence and inclined therefrom in a direction upstream.

3. Means for protecting the bank of a river, stream or similar watercourse, the same consisting of a series of wires arranged to form a fence and located in the course of the water, the said fence extending approximately at a tangent to the current of the water and including terminal piers and intermediate piers, another wire fence extending from the intermediate piers toward the shore and inclined from said intermediate piers in a direction upstream, and other piers connected to the shore ends of the last-named wire fence.

4. Means for protecting the banks of rivers, streams, or similar watercourses, the same consisting of a line of wires 7 located within the stream and extending approximately tangentially to the current of the stream, terminal piers and intermediate piers between which said wires are stretched, the intermediate piers being located within the stream, and a plurality of parallel other wires 8 connected to the intermediate piers and extending therefrom in an inclined direction upstream and piers secured to the shore ends of the said last-named wires.

850,245. ADJUSTABLE-TAB GUIDE-CARD. EDWARD M. NEWALD, Gillett, Wis. Filed July 25, 1906. Serial No. 327,824.

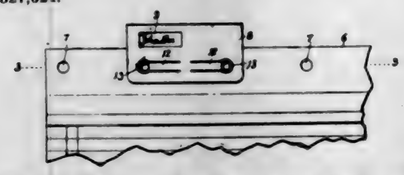

Claim.—1. A guide-card having openings therein, and a tab movably mounted on the card and provided with means for engaging the openings for holding it in its adjustments.

2. A guide-card provided with a series of openings along its edge and a tab slidable on the edge of the card and having spring means for engaging the openings to hold it in its adjustments.

3. A guide-card having openings therein, and a tab formed by a plate of sheet metal bent upon itself to embrace the edge of the card and provided with spring-tongues struck up therefrom with projections thereon for engaging the openings in the card.

4. A guide-card having openings therein, a tab formed by a plate of sheet metal bent upon itself to embrace the edge of the card and provided with spring-tongues struck up therefrom with rounded projections for engaging the openings in the card, and a removable strip located in the bend of the plate and containing an index character showing through an opening in the plate.

850,246. DEVICE FOR CLEANING SHIP-BOTTOMS. JOHN H. PEGRAM, Longspur, Va. Filed Nov. 14, 1906. Serial No. 343,405.

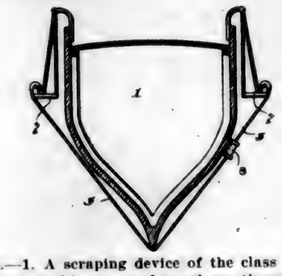

Claim.—1. A scraping device of the class described, including a frame having end members, tie-rods connecting the same, straps associated with said tie-rods, strips carried by the end members and each having a concaved edge, scrapers extending slightly beyond the edges of said strips, and a float removably supported between said straps and scrapers.

2. A scraping device of the class described, including a frame having end members, tie-rods connecting the same, straps associated with said tie-rods, strips carried by the end members and each having a concaved edge, scrapers extending slightly beyond the edges of said strips, a float removably supported between said straps and scrapers, and flexible means having connection at opposite sides of the frame for actuating the same.

3. A scraping device of the class described, including a frame having end members, tie-rods connecting the same, straps associated with said tie-rods, strips carried by the end members and each having a concaved edge, scrapers extending slightly beyond the edges of said strips, a float removably supported between said straps and scrapers, flexible means having connection at opposite sides of the frame for actuating the same, and suspended stages associated with the flexible means.

850,247. REVERSIBLE TRANSMISSION-GEAR. OTTO PETRI, Stuttgart, Germany. Filed July 17, 1905. Serial No. 270,072.

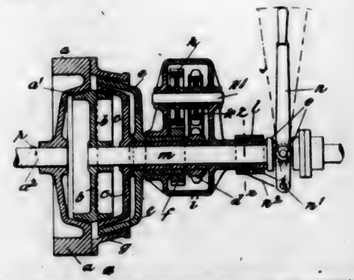

Claim.—In reversible transmission-gear the combination with a driving-shaft and a driven shaft of a fly-wheel having two clutch-surfaces driven in one direction by said driving-shaft, an interior clutch member rigidly mounted on the driven shaft and adapted to coöperate with one of said clutch-surfaces, an intermediate clutch member loosely mounted on said driven shaft and adapted to coöperate with said interior clutch member, an outer clutch member mounted on said intermediate member and adapted to coöperate with the other said clutch-surface, spur-and-sprocket gearing between the outer and intermediate members for rotating the latter member in the opposite direction and adapted to be disconnected from the driving-shaft when out of action, a casing containing said gearing and means for throwing the various clutch members into and out of operation, substantially as described.

850,248. PUMP. GUSTAV B. PETSCHE, Philadelphia, Pa., assignor to Southwark Foundry & Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Original application filed Apr. 22, 1903, Serial No. 153,775. Divided and this application filed May 11, 1904. Serial No. 207,379.

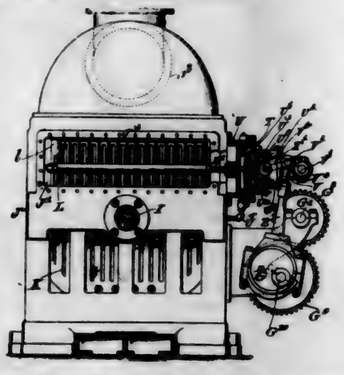

Claim.—1. In a pump, a delivery-valve in combination with intermittently-acting means acting with a yielding pressure to open said valve at a time in the motion of the compressing-piston when the pressure in the pump-cylinder and receiver are about equal, a positively-actuated oscillating shaft V', an arm V^2, secured to said shaft, a slide, and a connecting-rod V^4, connecting said slide and the arm V^2, said slide being arranged when moved in one direction, to act on the valve to close it, and when moved in the other direction, to leave the valve free to open under the action of the intermittently-acting device aforesaid.

2. In a pump, a delivery-valve, in combination with a valve-actuating cylinder U, having a cylindrical extension from its outer head and a choke-conduit opening from its outer end, a piston T, connected with the valve and having a hollow cylindrical extension T', fitting in the cylindrical extension from the rear head of the cylinder, a valve-closing slide U^2, fitting and moving in the extension T', of the piston and supporting a pivot U^3, a positively-actuated oscillating arm V^2, a link V^4, connecting said arm with the pivot U^3, and means for admitting and exhausting actuating fluid to and from the inner end of the cylinder U.

850,249. COMBINED PLANTER AND FERTILIZER-DISTRIBUTER. GEORGE T. PURVIS and JOHN KING, Wilson, N. C., assignors to A. J. Joyner, Wilson, N. C. Filed Jan. 4, 1906. Serial No. 294,583.

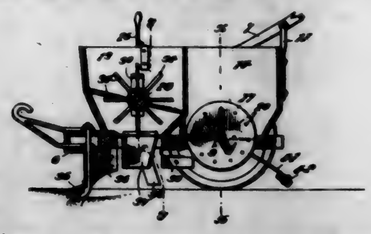

Claim.—1. The combination with a horizontal frame, a hopper-frame, a hopper carried by the frame, and divided into two compartments, a shaft mounted upon the frame and extending through the rear compartment, supporting-wheels carried by the ends of the shaft, a vertical disk mounted upon the shaft and extending through a slot in the bottom of the compartment, and horizontal pins carried by the inner side of the disk.

2. The combination with a horizontal elongated frame, an elongated hopper carried by the frame and divided into two compartments, a shaft mounted upon the upper face of the frame and extending through the rear compartment, supporting-wheels carried by the ends of the shaft, a vertical disk mounted upon the shaft within the compartment, and extending through the bottom thereof, and horizontally-arranged pins carried by the inner sides of the disk and passing through slots in the bottom of the compartment.

3. The combination with a horizontal frame, a hopper mounted thereon and divided into two compartments, a vertical plate dividing the rear compartment longitudinally of its length, a shaft carried by the upper face of the frame, and extending through the rear compartment, supporting-wheels carried by the outer ends of the shaft, a disk mounted upon the shaft within the rear compartment and having its inner face in a line with the vertical divisional plate, and laterally-extending pins carried by the inner face of the disk and adapted to travel through slots in the bottom of the compartment.

4. The combination with a horizontal frame, a hopper mounted thereon and divided into two compartments, a vertical plate dividing the rear compartment longitudinally of its length and having an opening in its lower edge, a shaft mounted upon the face of the frame and extending through the rear compartment and through the opening in the divisional plate, a disk mounted upon the shaft and having one edge flush with the vertical divisional plate, laterally-extending pins carried by the inner face of the disk and a bottom carried by the rear compartment and having openings through which the lateral pins are adapted to pass.

5. The combination with a horizontal frame, a hopper mounted thereon and divided into two compartments, a vertical plate dividing the rear compartment longitudinally of its length, a shaft carried by the upper face of the frame and extending through the rear compartments, supporting-wheels carried by the outer ends of the shaft, a disk mounted upon the shaft within the rear compartment and having its inner face in a line with the vertical divisional plate, laterally-extending pins carried by the inner face of the disk and adapted to travel through slots in the bottom compartment, a furrow-opener in advance of the discharge-opening of the front compartment, covers carried by the frame in rear of the discharge-opening, a second furrow-opener in rear of the covers and in advance of the discharge-opening of the rear compartment and having its lower end in a plane above the front furrow-opener, and a cover carried by the frame in rear of the discharge-opening of the rear compartment.

6. The combination with a frame, a hopper carried thereby, and divided into a front and rear compartment having discharge-openings in their bottoms, a slide for controlling the size of the discharge of the forward compartment, a lever intermediately pivoted to the side of the hopper and having its lower end pivotally connected to the slide, a rack-bar for holding the upper end of the lever in its adjusted position, a shaft mounted upon the frame and extending through the rear compartments, a feeding mechanism carried directly by the shaft and draft-wheels carried by the outer ends of the shaft.

850,250. MEANS FOR OPERATING LOG-HAUL CLUTCHES. FLOYD P. QUINN, Vancouver, British Columbia, Canada. Filed Jan. 23, 1907. Serial No. 353,686.

Claim.—1. In a friction-clutch, means for imparting an endwise movement to a freely-rotatable mechanism to bring it into frictional contact with the driving mechanism on a shaft on which the freely-rotatable mechanism runs, a nut secured to the shaft, a screw operable in said nut, and means for holding the screw against rotation by a fluid-pressure from the pipe which serves the engine of the driving mechanism.

2. In a friction-clutch, means for imparting an endwise movement to a freely-rotatable mechanism to bring it into driving contact with the driving mechanism on a shaft on which the freely-rotatable mechanism runs, a nut secured to the shaft, a screw operable in said nut, means for holding the screw against rotation by a fluid-pressure from the pipe which serves the engine of the driving mechanism, and a spring between the nut and the screw to withdraw the screw from the nut.

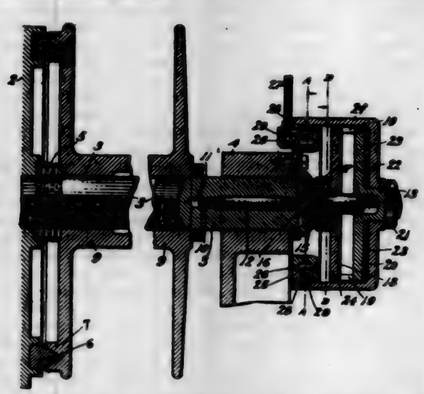

3. In a friction-clutch, whereby a freely-rotating mechanism is secured to a driving mechanism on a shaft on which the free mechanism runs, means for imparting an endwise movement to the free mechanism to bring it into contact with the driving mechanism said means comprising a nut secured to the end of the shaft of the driving mechanism, a screw operable in said nut and contacting with the means for transmitting the endwise movement to the free mechanism, a friction-disk in driving engagement with the screw, a coil-spring between the nut and the screw, a second friction-disk in contact with the one before mentioned, means for holding said disks in frictional contact, and means operative by a fluid-pressure from the engine for holding the last-named friction-disk against rotation whereby the screw is rotated in the nut.

4. In a friction-clutch whereby a freely-rotating mechanism is secured to a driving mechanism on a shaft on which the free mechanism runs, means for imparting an endwise movement to the free mechanism to bring it into contact with the driving mechanism said means comprising a nut secured to the end of the shaft of the driving mechanism, a screw operable in said nut and contacting with the means for transmitting the endwise movement to the free mechanism, a rotatable part in driving engagement with the screw, a second rotatable part in frictional engagement with the aforementioned part and having means for varying the pressure of such frictional engagement, means for frictionally securing the last-mentioned part to a fixed part of the machine-frame said means being operative by a fluid-pressure from the pipe which serves the engine of the driving mechanism, and a spring to withdraw the screw from engagement with the endwise communicating mechanism of the clutch.

5. In a friction-clutch for a log-haul, the combination with a driving-gear secured to a shaft of a wire-rope reel freely rotatable on the shaft of the driving-gear, of a frictional driving-surface between the wire-rope reel and the driving-gear, a cotter loosely fitted through the shaft of the driving-gear and bearing on the wire-rope reel, a stem endwise movable in the shaft one end of which stem bears on the cotter and the other end projects beyond the end of the shaft outside of the bearing, a nut secured to the outer end of the shaft, a screw operable in said nut and bearing on the outwardly-projecting end of the stem, a driving-arm secured to said nut, a spring between the nut and the driving-arm that will rotate the screw from engagement with the end of the stem, a friction-disk in driving engagement with the driving-arm of the screw, a member rotatable on and in frictional engagement with the last-named friction-disk, means for regulating the pressure and varying the friction between the two last-named parts, a ring concentric with the driving-shaft and secured to the frame of the machine said ring having an annular chamber and means for delivering a fluid-pressure thereto from the steam-pipe which serves the engine of the driving-gear, a series of plungers radially projecting through the ring and in communication with the annular chamber therein, a friction band or ring surrounding the outer end of such plungers, and a hollow cylinder against the inner side of which said friction-ring contacts which cylinder is integral with or secured to the outer rotatable friction member.

850,251. STOP AND WASTE COCK. WILLIAM H. RAWE, Pawtucket, R. I. Filed Apr. 14, 1906. Serial No 311,689.

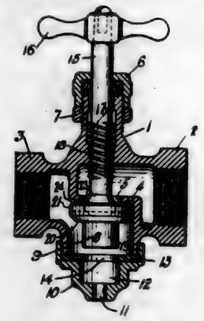

Claim.—1. In a stop and waste cock the combination with the valve case and seat, of a valve-rod mounted in the case and concentrically traversing the valve-seat, a shoulder upon the rod below the valve-seat and a floating packing-ring interposed between the shoulder and valve-seat.

2. In a stop and waste cock the combination with the valve case and seat, of a valve-rod mounted in the case and traversing the valve-seat, a shoulder upon the rod below the valve-seat, an annular vertical flange upon the shoulder, and a packing-ring upon the shoulder tightly engaged by the flange and removable by the flow of the water.

3. In a stop and waste cock the combination with the valve case and seat, of a valve-rod mounted in the case and traversing the seat, a shoulder upon the rod below the valve-seat and adapted to coöperate therewith, a channel upon the upper face of the shoulder, and a packing-ring interposed between the shoulder and seat adapted to rest snugly in the channel when the valve-rod is at the limit of its upward travel, and to leave the channel when the valve-rod descends.

4. In a stop and waste cock the combination with the casing and the partition and its opening, of a waste-cap upon the casing, a packing-ring fixed within the cap, a valve-rod in the casing, a shoulder upon the rod adapted when elevated to close the opening in the partition, and means upon the extremity of the rod coacting with the packing-ring for controlling the discharge of the waste water through the cap when the shoulder of the rod is free of the partition-opening and a packing on the upper side of said shoulder removable by the flow of the water.

5. In a stop and waste cock the combination with the casing and the partition and its opening, of a waste-cap upon the casing provided with a cylindrical chamber and waste-educt leading therefrom, a packing-ring fixed within the cap at the margin of the chamber, a valve-rod in the casing traversing the partition-opening, a shoulder upon the rod positioned to register with the partition-opening when the rod is elevated and to rest upon the packing-ring when depressed, a head upon the extremity of the rod adapted to traverse the packing and enter the chamber when the shoulder of the rod is free of the partition-opening and a floating packing-ring carried by said head.

6. In a stop and waste cock the combination with the casing, partition, and valve-opening therein, of a waste-cap upon the casing, a waste packing-ring fixed within the cap, a valve-rod in the casing, a shoulder upon the rod, a floating packing-ring upon the upper face of the shoulder

adapted to coöperate with the shoulder to close the valve-opening in the partition when the rod is elevated, and a head upon the extremity of the rod adjacent the shoulder adapted to traverse the waste packing-ring and permit the shoulder to rest upon the waste packing-ring when the rod is depressed.

850,252. ADJUSTING DEVICE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Apr. 23, 1900. Serial No. 13,867.

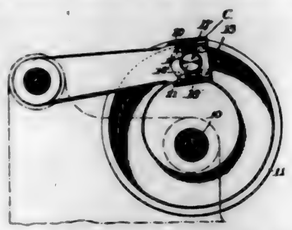

Claim.—1. The combination with a pair of members adjustable relatively to each other, of an actuator for effecting such adjustment, one of said members having a smooth-walled socket in which said actuator is located, and the other member having shoulders engaging with shoulders on the actuator; and a device operatively connected with the member on which the shoulders are formed and which moves toward a locking position and into engagement with the other member when the actuator is operated.

2. The combination with a pair of members adjustable relatively to each other, of an actuator for effecting such adjustment, one of said members having a smooth-walled socket in which said actuator is located, and the other member having shoulders engaging with shoulders on the actuator; and a device operatively connected with the member on which the shoulders are formed and constructed with a friction member for frictional engagement with the other of said members and which moves toward a locking position when the actuator is operated, said friction member being shifted into its engaging position when the device is moved to its locking position.

3. The combination with a pair of members adjustable relatively to each other, of a pair of actuators for effecting such adjustment, one of said members having a pair of sockets in which said actuators are located, and the other member having shoulders engaging with shoulders on the actuators, and said actuators having friction parts adapted to seat themselves in cavities of the respective sockets.

4. The combination with a pair of members adjustable relatively to each other, of an actuator for effecting such adjustment, one of the members having a socket in which said actuator is located, and the other member having shoulders engaging with shoulders on the actuator, and said actuator having a friction part adapted to seat itself in a cavity of said socket.

5. The combination with a pair of members, one of which is adjustable longitudinally and rotarily with respect to the other member, of an actuator for effecting such adjustment; one of said members having a socket in which said actuator is located and the other member having shoulders engaging with shoulders on the actuator, and a device operatively connected with the member on which the shoulders are formed and which moves toward the other member and into a locking position when the actuator is operated.

6. In a device of the class specified, the combination with a pair of members one of which is rotatably and longitudinally shiftable with respect to the other and the other of which members is provided with a pair of sockets, of a pair of rotative actuators operatively connected with the said rotatable member and each of which is adapted to move the rotatable member in one direction and to lock it from movement in the reverse direction, said members being adapted to fit frictionally tight in said sockets.

7. The combination with a pair of members, one of which is rotatably mounted in the other, a pair of screws engaging with a worm formed on the rotative member for effecting the rotary adjustment of the member, said screws being located in sockets formed in the other member.

8. The combination with a pair of members, one of which is rotatably mounted in the other, a pair of screws each having a tapering end portion and engaging with a worm formed upon the rotative member for effecting the rotary adjustment of the member, said screws being located in sockets formed in the other member and being adapted to seat themselves in tapering cavities formed at the bottom of said socket.

9. In a device of the class specified, the combination with a pair of members one of which is rotatable and longitudinally shiftable and is provided with shoulders, of a pair of screws engaging with the shoulders, one of said members having cavities with the side walls of each of which a corresponding screw engages when the screw is actuated to lock the parts.

10. In a device of the class specified, the combination with a pair of members one of which is rotatable and is provided with shoulders and has a threaded portion for effecting its longitudinal adjustment, of a pair of screws engaging with the shoulders, one of said members having cavities with the side walls of each of which a corresponding screw engages when the screw is actuated to lock the parts.

11. In a device of the class specified, the combination with a longitudinally-shiftable member provided with shoulders, of a tapering cam-roll mounted on the member; a cam having a similarly-formed cam-surface with which the cam-roll is adapted to engage, an actuator engaging with shoulders on the rotatable member, and means for locking the member when adjusted.

12. In a device of the class specified, the combination with a rotatable and longitudinally-shiftable member provided with shoulders, of tapering cam-rolls mounted on the member, cams having similarly-formed cam-surfaces with which the rolls are adapted to engage; an actuator engaging with shoulders on the rotatable member; and means for locking the member when adjusted.

13. In a device of the class specified, the combination with a pair of members, one of which is rotatable and is provided with shoulders and has a threaded portion for effecting its longitudinal movement, of a pair of screws engaging with shoulders on the rotatable member, one of said members having cavities with the side walls of each of which a corresponding screw engages when the screw is actuated to lock the parts; tapering cam-rolls mounted on the rotatable member; and cams having similarly-formed cam-surfaces with which the rolls are adapted to engage.

14. The combination with a pair of members, one of which is provided with a worm and bearing portions on opposite sides thereof, of a pair of oppositely-disposed screw-like actuators engaging with said worm and each of which is adapted to move to a locking position upon the actuation of the other to adjust the worm-provided member.

15. The combination with a pair of members, one of which is provided with threaded portions adapted to engage with a threaded opening in the other member, and with a worm disposed between such threaded portions; of a screw-like actuator engaging with said worm and means for locking the members when adjusted.

16. The combination with a pair of members, one of which is provided with threaded portions adapted to engage with a threaded opening in the other member and with a worm disposed between such threaded portions; of a pair of screw-like actuators engaging with said worm and for locking the members when adjusted.

17. The combination with a pair of members, one of which is provided with threaded portions adapted to engage with a threaded opening in the other member and with a worm disposed between such threaded portions; of a pair of screw-like actuators having tapering end portions adapted to engage with the walls of tapering cavities formed in the other member.

18. A cam provided with a pair of oppositely-facing inclined cam-faces combined with a pair of independently-movable inclined cam-rollers, a stud upon which the cam-rollers are mounted, said stud having threaded portions engaging with a threaded opening in the member on which the said stud is mounted, and a worm intermediate said threaded portions, and a pair of screw-like actuators engaging with said worm.

19. The combination with a pair of members, one of which is provided with threaded portions adapted to engage with a threaded opening in the other member, a worm disposed between such threaded portions, and means for locking the members when adjusted.

20. The combination with a movable member, of a rotating body for actuating the said member and a connection between said member and body embodying a roller and a stud carried by one of these and having a wrist-pin carrying said roller, and means for adjusting said stud and roller in a direction parallel to the axis of the rotating body.

21. The combination with a movable member, of a rotating body for actuating the said member, and a rotary connector between said member and body, and means for adjusting said connector and roller in a direction transverse to the plane of movement of said member and body by its rotation, and for locking said connector in its adjusted position.

22. The combination with a movable member, of a rotating body for actuating the said member, a connector between said member and body and adjustable for varying the distance between the same, and a pair of members respectively for adjusting and locking said adjustable member in its various positions of adjustment in relation to the rotating body.

23. The combination with a pair of members, of a connector member therefor, having means for causing it to move longitudinally in either direction when rotated in the proper direction, and means for rotating the said member for longitudinally adjusting the same.

24. The combination with a connector member having means to cause it to move longitudinally when rotated and means to rotate the said member to longitudinally adjust the same embodying a rack upon said member, and a worm-shaft engaging therewith.

25. The combination with a pair of members, one of which is rotatably mounted in the other, said rotative member having a worm formed upon it and the other of said members having sockets, of a pair of screws located in said sockets and engaging with said worm for effecting the adjustment of the said rotary member.

26. The combination with a pair of members, of a connector member therefor carried by one of them and engaging the other, and having means of connection with the member carrying it for causing it to move longitudinally in either direction when rotated in the proper direction, and means for rotating the said member in each direction for longitudinally adjusting the same.

27. The combination with a pair of members, of a connector therefor carried by one of them and so mounted thereon that it will move longitudinally when rotated, and a pair of members in engagement therewith, either of which is adapted to rotate said member in one direction for longitudinally adjusting it and the other of which during such rotation and adjustment will act as a limiter.

28. The combination with a member having a socket, of a member mounted in such socket and having worm-teeth upon it, and a pair of worms engaging such teeth, one for adjusting the said member in its socket and the other for limiting such adjustment.

850,253. PROCESS OF MAKING PLAYING-BALLS. FRANCIS H. RICHARDS, Hartford, Conn. Filed June 2, 1902. Serial No. 109,905.

Claim.—1. A process of making a playing-ball consisting in applying to a hollow spherical elastic center piece an envelop of gutta-percha, then applying a fabric-lined envelop, and finally placing the structure under distention by injecting into the center piece a mass of material rendered fluent by heat and adapted to harden on cooling.

2. A process of making a playing-ball consisting in applying to a spherical hollow center piece a loose envelop of gutta-percha, then applying a loose fabric-lined envelop, and finally placing the structure under distention by injecting into the center piece a mass rendered fluent by heat and adapted to harden on cooling.

3. A process of making a playing-ball consisting in applying to a hollow spherical elastic center piece an envelop of gutta-percha while hot, then applying a fabric-lined envelop also under heat, and finally placing the structure under distention by injecting thereinto a mass rendered fluent by heat and adapted to harden on cooling.

4. A process of making a playing-ball consisting in applying to a hollow spherical elastic center piece an envelop of gutta-percha, then applying a fabric-lined envelop, and finally placing the structure under distention by injecting into the center piece a mass of gutta-percha rendered fluent by heat and allowing the mass to cool.

5. A process of making a playing-ball consisting in applying to a hollow spherical elastic center piece a loose envelop of gutta-percha, then applying a loose envelop of fabric-lined material, and finally placing the structure under distention by injecting fluent gutta-percha into the center piece and allowing the mass to cool.

6. A process of making a playing-ball consisting in applying to a hollow spherical elastic center piece an envelop of gutta-percha, then applying an envelop of fabric-lined material, and finally placing the structure under distention by injecting thereinto a mass rendered fluent by heat and adapted to harden on cooling, and simultaneously imparting to the structure a spherical form externally.

7. A process of making a playing-ball consisting in applying to a hollow spherical elastic center piece a loose envelop of gutta-percha, then applying a loose envelop of fabric-lined material, and finally placing the structure under distention by injecting thereinto a mass rendered fluent by heat and adapted to harden on cooling, and simultaneously imparting to the structure a spherical form externally.

8. A process of making a playing-ball consisting in applying to a hollow spherical elastic center piece an envelop of gutta-percha, then applying an envelop of fabric-lined material, and finally placing the structure under distention by injecting fluent gutta-percha into the center piece, and simultaneously imparting to the structure a spherical form externally.

9. A process of making a playing-ball consisting in applying to a hollow spherical elastic center piece a loose envelop of gutta-percha, then applying a loose envelop of fabric-lined material, and finally injecting fluent gutta-percha into the center piece and simultaneously imparting to the structure a spherical form externally.

850,254. PIPE-WRENCH. EDWARD J. ROBBINS, Boston, Mass. Filed Apr. 24, 1906. Serial No. 313,367.

Claim.—In a pipe-wrench of the character described, a tubular handle, a swinging jaw, a shank extending from said swinging jaw into the tubular handle and pivotally connected therewith, and a pair of springs inside the tubular handle and extending therefrom and bearing against the opposite sides of the shank of the movable jaw for the purpose of holding it normally in line with the handle.

850,254.

850,255. COMBINATION DEVICE. JOHN ROYSE, Sherman, Tex. Filed Sept. 10, 1906. Serial No. 334,011.

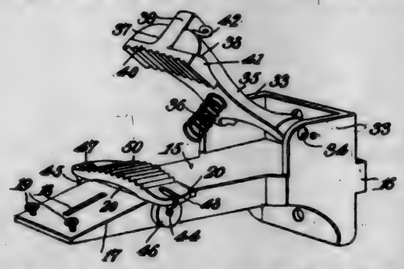

Claim.—1. In a device of the class described, a supporting-frame having an anvil-face, an arm swinging upon said frame and with a socket at its free end and a recess transversely of the socket, an implement comprising a body having a die-face at one side and formed to bear within said recess at the other side and with a stock which passes through said socket and is exposed above the arm, and means for detachably coupling said stock to said arm.

2. In a device of the class described, a supporting-frame, disks journaled thereto and having ears which are adapted to be located above the upper surface of the frame, an anvil-faced member having slots which receive said ears, an arm swinging upon said frame and an implement carried by said arm for engagement with said anvil-faced member.

850,256. PHONOGRAM. WALTER C. RUNGE, Camden, N. J., assignor to International Royal Phone Company, Boston, Mass., a Corporation of Maine. Filed June 23, 1906. Serial No. 323,030.

Claim.—1. A graphophone-mandrel sleeve adapted to be placed on a graphophone-mandrel, comprising longitudinal, segmental sections and means carried wholly by said sections for preventing relative displacement of said sections.

2. The combination of a graphophone-mandrel sleeve adapted to be placed on a graphophone-mandrel, comprising longitudinal, segmental sections; means carried wholly by said sections for preventing relative displacement of said sections; and a thin, flexible record-film mounted on said sleeve and solidly supported thereby during reproduction.

3. A graphophone-mandrel sleeve adapted to be placed on a graphophone-mandrel comprising longitudinal, segmental sections provided with internal bearing-rings adapted to frictionally engage the graphophone-mandrel and means carried wholly by said sections for preventing relative displacement of said sections.

4. A graphophone-mandrel sleeve adapted to be placed on a graphophone-mandrel comprising longitudinal, segmental sections, dowels projecting from one longitudinal edge of a section, the other longitudinal edge being provided with holes adapted to receive said dowels projecting from an adjacent section.

5. A graphophone-mandrel sleeve adapted to be placed on a graphophone-mandrel comprising longitudinal, segmental sections, dowels projecting from one longitudinal edge of a section, the other longitudinal edge being provided with holes adapted to receive the dowels of an adjacent section, a channel extending circumferentially around the outer face of said sleeve and means in said channel to prevent the complete separation of the sections.

6. The combination of a tapered graphophone-mandrel a sleeve tapered inside and adapted to engage said mandrel, the outer face being substantially cylindrical and concentric with the mandrel; a substantially cylindrical record-film carried on the outer face of said sleeve concentrically with the mandrel; said sleeve being composed of a series of longitudinal, segmental sections and means carried wholly by said sections for preventing relative displacement of the sections.

850,257. GEAR-TRANSMISSION MECHANISM. CHARLES H. SCHABINGER, Detroit, Mich. Filed Oct. 20, 1906. Serial No. 339,873.

Claim.—1. In a gear-transmission mechanism, the combination of a drive-shaft and a shaft to be driven, a clutch member fast on said driven shaft, the drive-shaft being provided with a keyway, a loose gear-wheel on the drive-shaft and provided with a keyway adapted to register with the keyway of said shaft, a clutch member movable longitudinally on the drive-shaft and provided with a key working in the keyway of said shaft, means whereby said key will enter the keyway of the loose gear-wheel when the clutch member is moved in one direction, a gearing connection between said loose gear-wheel and the shaft to be driven, and means whereby the said clutch member may be caused to engage the first-named clutch member whereby to directly couple the drive-shaft to the driven shaft.

2. In a gear-transmission mechanism, the combination of a drive-shaft and a shaft to be driven, a clutch member fast on said driven shaft, the drive-shaft being provided with a keyway, loose gear-wheels on the drive-shaft and provided with keyways adapted to register with the keyways of said shaft, a clutch member movable longitudinally on the drive-shaft and provided with a key working in the keyway of said shaft, a thrust-collar interposed between said clutch member and the adjacent loose gear-wheel on the drive-shaft, means whereby said key will enter the keyways of the respective loose gear-wheels when the clutch member is moved in one direction, a gearing connection between said loose gear-wheels and the shaft to be driven, and means whereby said clutch member may be caused to engage the first-named clutch member whereby to directly couple the drive-shaft to the driven shaft, the proportion of parts being such that in this direct coupling engagement, the key of the clutch will rest within the said thrust-collar.

3. In a gear-transmission mechanism, the combination of a shaft to be driven, said shaft being provided at one end with a hollow sleeve and a clutch member formed on the end of said sleeve, a fast gear-wheel on said sleeve, a driving-shaft having one end journaled in said sleeve, a series of loose gears mounted on the drive-shaft in spaced relation to the fast gear-wheel and clutch member of the driven shaft, a complemental clutch member mounted to turn with and movable longitudinally on the drive-shaft in the space between said loose gear-wheels and the fast gear-wheel and other clutch member, and mounted for direct coupling engagement with said other clutch member whereby to directly couple the drive-shaft to the driven shaft, means for coupling said complemental clutch member to any one of said loose gears on the drive-shaft, and other gearing operatively connecting the said loose gear-wheels with the fast gear-wheel on the driven shaft.

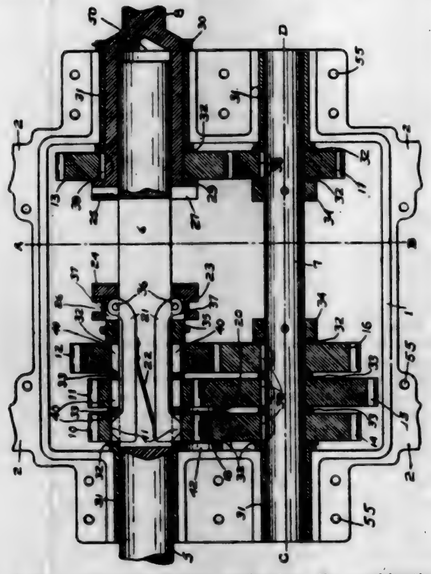

4. In a gear-transmission mechanism, the combination of a shaft to be driven, said shaft being provided at one end with a hollow sleeve and a clutch member formed on the end of said sleeve, a fast gear-wheel on said sleeve, a driving-shaft having one end journaled in said sleeve, a series of loose gears mounted on the drive-shaft in spaced relation to the fast gear-wheel and clutch member of the drive-shaft, a complemental clutch member mounted to turn with and movable longitudinally on the drive-shaft in the space between said loose gear-wheels and the fast gear-wheel and other clutch member, and mounted for direct coupling engagement with said other clutch member whereby to directly couple the drive-shaft to the driven shaft, means for coupling said complemental clutch member to any one of said loose gears on the drive-shaft, a counter-shaft, a fast gear-wheel on said counter-shaft and meshing with the fast gear-wheel on the driven shaft, and other fast gear-wheels on the counter-shaft in spaced relation to the first-named gear-wheel on said shaft, and operatively connected with the respective loose gears on the drive-shaft.

850,258. CIRCUIT-DETECTING DEVICE. LOUIS M. SCHMIDT, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Oct. 8, 1904. Serial No. 227,645.

Claim.—In a current-detecting device, a laminated U-shaped core having its inner sides diverging from the base of the U to accommodate conductors of different sizes, a handle attached to the base of said core, a winding carried

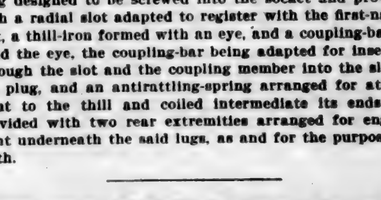

by said core at the base of the U, and an electroresponsive device connected in series with said winding.

850,259. THILL-COUPLING. ROBERT D. SEIBERT, Millville, Pa. Filed Oct. 16, 1906. Serial No. 339,259.

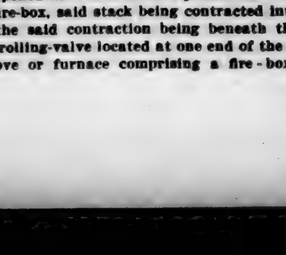

Claim.—1. A thill-coupling comprising a main coupling member adapted to be attached to an axle, said member being formed at its forward end with a transversely-extending threaded socket, and a slot opening outwardly from said socket to the rear of the vertical diameter thereof, a threaded plug adapted to screw in said socket and provided with a radial slot designed to register with the first-named slot, and a thill-iron provided at one end with an eye, and a coupling-bar beyond the eye, the said bar being arranged for insertion through the slot of the main coupling member into the slot of the plug, for the purpose specified.

2. A thill-coupling provided with a main coupling member adapted to be attached to the front axle of a vehicle and formed with a transversely-extending threaded socket and a slot opening outwardly from said socket and extending throughout the width of the member, the member also being provided with oppositely-extending lugs, a threaded plug designed to be screwed into the socket and provided with a radial slot adapted to register with the first-named slot, a thill-iron formed with an eye, and a coupling-bar beyond the eye, the coupling-bar being adapted for insertion through the slot and the coupling member into the slot of the plug, and an antirattling-spring arranged for attachment to the thill and coiled intermediate its ends and provided with two rear extremities arranged for engagement underneath the said lugs, as and for the purpose set forth.

850,260. STOVE OR FURNACE. EDWIN J. SELLEY, New York, N. Y. Filed Oct. 6, 1906. Serial No. 337,827.

Claim.—1. A stove or furnace comprising a fire-box having a Bunsen tube or stack extending vertically through it, said stack having means for admitting gas from the fire-box and being reduced in diameter below the fire-box.

2. A stove or furnace comprising a fire-box and a vertical stack opened at both ends and perforated to admit gas from the fire-box, said stack being contracted intermediate its ends, the said contraction being beneath the fire-box and a controlling-valve located at one end of the stack.

3. A stove or furnace comprising a fire-box, a stack

opened at both ends extending vertically through the fire-box and provided with perforations to receive gas from the fire-box, said stack being contracted intermediate its length, said contraction being beneath the fire-box.

4. A stove or furnace comprising a fire-box having a tube or stack extending vertically through it with gas-openings through the stack and within the fire-box, said stack having a restricted air-passage below the fire-box and means for regulating the admission of air.

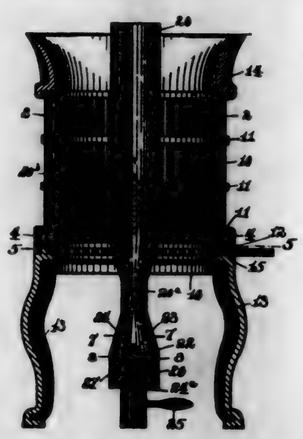

5. A structure such as described comprising a fire-box, having skeleton sides, shutters carried by the sides a stack extending vertically through it with gas-openings communicating with the fire-box, a pipe-coil forming the bottom of the fire-box, and means for regulating the flow of air into the stack.

6. A structure such as described comprising a skeleton-like fire-box having a Bunsen stack extending vertically through it and receiving its gas-supply from the fire-box, a pipe-coil forming the bottom of the fire-box, and a grate below the pipe-coil.

7. The combination with a fire-box adapted to contain coal, of a Bunsen stack extending through the fire-box, said stack receiving its gas-supply from the fuel in the fire-box being contracted intermediate its ends said contraction being beneath the fire-box.

8. A structure such as described comprising a skeleton-like fire-box having a Bunson stack extending vertically through it, and to a point well below the fire-box, and receiving its gas-supply from the fire-box, said stack being contracted intermediate its ends said contraction being beneath the fire-box.

9. A structure such as described comprising a fire-box to contain coal, a Bunsen stack extending vertically through the fire-box and to a point well below it, the said stack having means for admitting gas from the fire-box, a pipe-coil forming the bottom of the fire-box, and a grate below the pipe-coil.

850,261. WATCH-GUARD. PAUL B. SMITH, Philadelphia, Pa. Filed Nov. 24, 1906. Serial No. 344,979.

Claim.—As a new article of manufacture, the herein-described watch-guard consisting of an integral piece of metal returned upon itself at one end whereby to form a loop, and a tongue beyond the loop and said piece being bent upon itself at its opposite end, first in an offset direction, then toward the tongue and finally curled inwardly and past the extremity of the tongue, the said loop being adapted to accommodate the ring of a watch, and the extremity of the tongue and the other extremity of the device being adapted for frictionally engaging the cloth of a pocket between them.

850,261.

850,262. RAIL CLAMP OR FASTENING. JOHN G. SNYDER, Altoona, Pa. Filed Apr. 26, 1906. Serial No. 313,797.

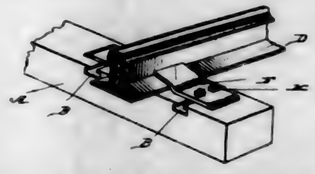

Claim.—1. A hollow rail-tie having recesses in the sides and upper face thereof and also provided with transverse slots in the upper face, clamping members having lips to engage said transverse slots and adapted to engage the foot of a rail, and fastenings secured in the recesses of the tie and engaging the clamping members.

2. A hollow rail-tie having transverse slots in the upper face thereof, enlarged openings in the sides contiguous with said slots, and slots adjoining the transverse slots, clamping-plates provided with lips to engage the last-named slots, and headed fastenings engaged in the transverse slots and openings, to secure the clamping-plates.

3. A hollow rail-tie having transverse slots in the upper face thereof, enlarged openings in the side walls of the tie contiguous with said slots, slots on the outside of the transverse slots and parallel thereto, clamping-plates having lips to engage the last-named slots and adapted to engage the foot of the rail at the other end, bolts having their heads engaged in the transverse slots and passing through the clamping-plates, and nuts on said bolts.

850,263. SANITARY CLOSET. JAMES W. SOFTLEY, Winnipeg, Manitoba, Canada. Filed Aug. 24, 1906. Serial No. 331,944.

Claim.—1. A sanitary closet, comprising a bowl and a hinged seat therefor, a closure hinged within the bowl, and connected to said seat, a valve upon said closure, a vent-pipe communicating with the bowl, a disinfecting-receptacle, a pipe leading therefrom to the bowl, a valve located in said pipe, and means connected to said valve, and actuated by said closure for causing the valve to open as the closure is lowered, as set forth.

2. A sanitary closet, comprising a bowl and a hinged seat therefor, a closure hinged within the bowl, and connected to said seat, a valve upon the closure, a vent-pipe the exit end of which is designed to be closed by said valve as the closure is lowered within the bowl, a receptacle designed to contain a disinfecting-chemical, a pipe leading from said receptacle to the bowl, a slide-valve in said pipe, a tilting lever, one end of which is pivoted to said sliding valve, a pin connected to the other end of said tilting lever, as set forth.

850,263.

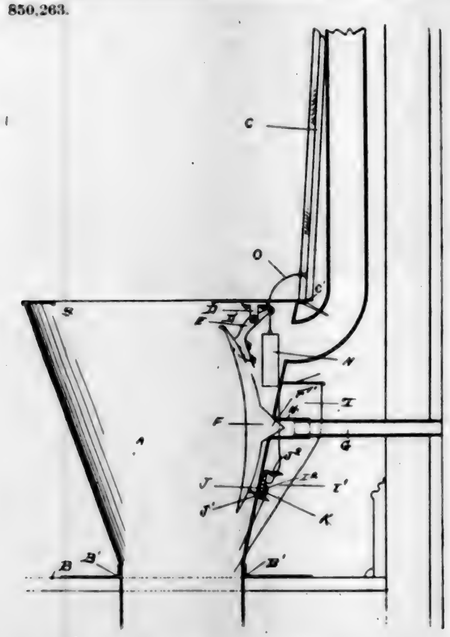

850,264. SKIRT. CHRISTINA J. SORENSEN, New York, N. Y., assignor to Gilbert Manufacturing Company, New York, N. Y., a Corporation of New York. Filed Dec. 31, 1906. Serial No. 350,128.

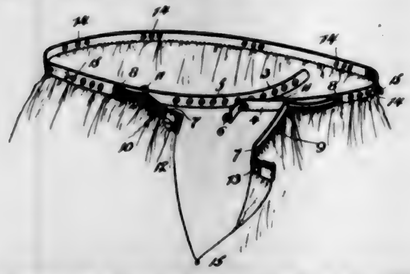

Claim.—1. A skirt having a waistband of non-resilient material adapted to surround the waist, and a supplemental band for a portion of the waist, said supplemental band being of a resilient material and secured to the non-resilient band, the skirt being secured to both the said bands and supported thereby.

2. A skirt having a non-resilient waistband adapted to surround the waist, said band being disconnected from the skirt for a portion of its length, a resilient supplemental band secured to the main band, the skirt being secured to the supplemental band for that portion where disconnected from the main band, the said skirt being so secured to the supplemental band as to expand therewith.

3. A skirt having a waistband of non-resilient material secured part way round the same, and a supplemental waistband secured to the main band between the points of disconnection of the skirt and main band, the skirt being secured to the supplemental band by shirring or gathering so as to expand therewith, the main and supplemental bands forming a continuous support for the skirt.

4. A skirt having a non-resilient waistband adapted to encircle the waist, having separate ends, and secured to the skirt for a portion of its length, a supplemental resilient band on the skirt between the points of disconnection of the skirt and main band, said supplemental band having separable ends and means for securing the ends of the supplemental band together.

5. A skirt having a non-resilient waistband adapted to encircle the waist and secured part way round the skirt and having free ends adapted to be secured together, a central placket in the rear of the skirt, and a supplemental resilient band, in separate sections, secured to the skirt by shirring or gathering, on opposite sides of the placket, said sections of the supplemental band being secured to the main band and whose ends may be secured together, the main and supplemental bands forming a continuous support for the skirt.

850,265. SPRING-WHEEL. JACOB D. SOWER, Elmo, Kans. Filed Nov. 24, 1906. Serial No. 344,970.

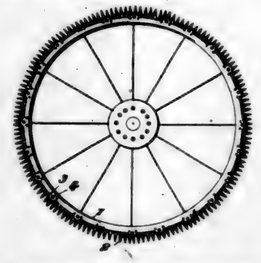

Claim.—1. A yieldable tire for vehicle-wheels, the same comprising a channeled rim, a spring-coil seated in the channel thereof, transverse rods, or bars, supported at their ends in the side portions of the rim and engaging with the elements of the spring-coil to prevent circumferential movement thereof, and fastening means connecting the portions of the spring-coil between said transverse rods to the side portions of the rim.

2. A yieldable tire comprising a channeled rim having the edges of its side portions indented to form depressions and elevations in alternation, a spring-coil seated in the channel of said rim, transverse rods, or bars, extended across the spring-coil and secured at their ends in openings formed in the elevated portions of the rim, and fastenings connecting side portions of the spring-coil with the depressed edge portions of the rim.

850,266. WATTERPROOF COMPOSITION FOR EXPLOSIVES. FIN SPARRE, Wilmington, Del., assignor to The E. I. du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed Oct. 24, 1905. Serial No. 284,152.

Claim.—A composition for waterproofing explosives containing of nitrocellulose one to fifteen per cent., of a normally solid nitro compound less than twenty-five per cent. and of a liquid nitro compound sixty to ninety-five per cent. in which the solid nitro compound and nitrocellulose is dissolved, substantially as described.

850,267. AMMONIUM-NITRATE METALLIC EXPLOSIVE AND PROCESS OF MAKING SAME. FIN SPARRE, Wilmington, Del., assignor to The E. I. du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed Nov. 28, 1905. Serial No. 289,422.

Claim.—1. The process of making safety-explosives which consists in incorporating an ammonium-nitrate metallic explosive powder with a coating ingredient and then incorporating the mixture with a sensitising ingredient substantially as described.

2. The process of making safety-explosives which con-

sists in incorporating an ammonium-nitrate metallic explosive powder with a coating ingredient and then incorporating the mixture with ungelatinized nitrocellulose substantially as described.

3. The process of making safety-explosives which consists in preparing a solution of guncotton in a liquid nitro compound to form a coating ingredient, then incorporating a nitrate-of-ammonia metallic explosive powder with the coating ingredient, and then incorporating the mixture with ungelatinized nitrocellulose substantially as described.

4. The process of making safety-explosives which consists in dissolving a normally solid nitro compound in a liquid nitro compound, then dissolving guncotton in the solution, thus forming a coating ingredient, then incorporating a nitrate-of-ammonia metallic explosive powder with the coating ingredient, and then incorporating the mixture with ungelatinized nitrocellulose substantially as described.

5. An explosive composition consisting of a nitrate-of-ammonia metallic explosive powder coated with a coating ingredient, and ungelatinized nitrocellulose substantially as described.

850,268. EXPLOSIVE. FIN SPARRE, Wilmington, Del., assignor to The E. I. du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed Feb. 8, 1906. Serial No. 300,090.

Claim.—1. An ammonium-nitrate metallic explosive containing trinitrotoluol and ungelatinized nitrocellulose substantially as described.

2. An ammonium-nitrate metallic explosive containing, of ammonium nitrate sixty-five to eighty-five per cent., of a metallic ingredient five to twenty per cent., of trinitrotoluol five to twenty per cent., and of ungelatinized nitrocellulose less than twelve per cent. substantially as described.

3. An ammonium-nitrate metallic explosive containing a trinitro compound and ungelatinized nitrocellulose substantially as described.

4. An ammonium-nitrate metallic explosive containing, of ammonium nitrate sixty-five to eighty-five per cent., of a metallic ingredient five to twenty per cent., of a trinitro compound five to twenty per cent., and of ungelatinized nitrocellulose less than twelve per cent. substantially as described.

5. An ammonium-nitrate metallic explosive containing five to twenty per cent. of trinitrotoluol and less than twelve per cent. of ungelatinized nitrocellulose substantially as described.

6. An ammonium-nitrate metallic explosive containing five to twenty per cent. of a trinitro compound and less than twelve per cent. of ungelatinized nitrocellulose substantially as described.

850,269. RAIL-JOINT. HENRY SPUNAUGLE, St. Joseph, Mo. Filed Jan. 16, 1907. Serial No. 352,565.

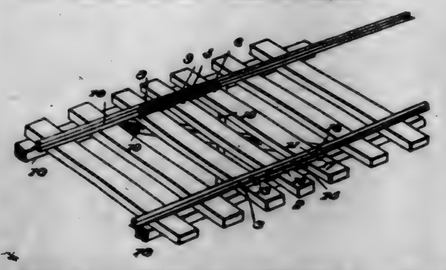

Claim.—In a rail-joint, the combination of a series of ties formed with recessed portions, a base-plate spanning the ties and fitting within the recessed portions thereof, a pair of rail ends, a second plate riveted to the upper face of the base-plate and interposed between the same and the rails, one of the longitudinal edges of the second plate lying flush with the corresponding edge of the base-plate, while the opposite longitudinal edge of the second plate is provided with an upward extension comprising an inclined section fitting against the base of the rails and a vertical extension fitting against the web of the rails, the said upward extension carrying a bridge which lies flush with the tread portion of the rails, a splice-plate fitting against the opposite side of the rails and comprising a base portion resting upon the second-mentioned plate, an inclined portion fitting over the base of the rails, and a vertical portion corresponding to the web of the rails, bolts passing through the base-plate, the second plate and base of the splice-plate, and bolts extending through the webs of the rail ends and the vertical portions of the splice-plate and the upward extension of the second plate.

850,270. VAPOR ELECTRIC APPARATUS. CHARLES P. STEINMETZ, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 17, 1904. Serial No. 228,660.

Claim.—1. In a vapor electric apparatus, a heater traversed by current through the apparatus, and means traversed by current through the apparatus for cutting such heater out of circuit.

2. The combination of a vapor electric apparatus, a heating-coil, and a device in shunt thereto having a negative temperature-resistance coefficient.

3. In a vapor electric apparatus, the combination of a heater-coil, an actuating or starting coil, each of which is traversed by current passing through the other, and means for practically short-circuiting the heater-coil.

4. The combination of a vapor electric apparatus, a heater, and a shunt therefor containing magnetite.

5. The combination of a vapor electric device, counter-magnetizing coils one of which is of such resistance as to serve as a heater, and means in said vapor electric device responsive to the magnetising effect of said coils.

6. The combination of a vapor electric device, an armature associated with said device, a magnetic device having a time element, said magnetic device being in operative relation with said armature.

7. The combination of a vapor electric device, an armature therefor, coils associated with said armature, and a device for temporarily eliminating the magnetising action of the coils.

8. The combination of a vapor electric device, an armature therefor, counter-magnetising coils associated with said armature, one of which coils is of such resistance as to serve as a heater, and a device having a time element for practically eliminating the magnetising action of the heater-coils.

850,271. TILE. GEORGE B. STAPLES, Philadelphia, Pa. Original application filed May 16, 1905, Serial No. 260,663. Divided and this application filed Nov. 28, 1905. Serial No. 289,517.

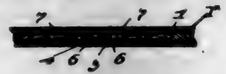

Claim.—1. In combination, a pair of recessed tiles, foundation-plates secured to the tiles and means independent of the tiles extending beneath the marginal portion of the foundation-plates and engaging the recesses to hold the tiles together, each tile being removable upwardly, independently of the adjacent tile.

2. In combination, a pair of tiles having metal foundations and resilient facing material thereon, and means for securing the tiles together having its terminal end sprung into recesses formed in the foundations back from the edge thereon and adapted to resist upward displacement until sufficient force is applied to the tile, substantially as described.

3. In combination, a tile of resilient material having a recess on its under side back from the edge and means for securing the tile to an adjacent tile comprising a member extending between them having an upwardly-projecting portion with its terminal end bent over and downwardly forming a shoulder below which the resilient wall of the recess may grip, substantially as described.

4. In combination, a tile of resilient material having a recess on its under side back from the edge and means for securing the tile to an adjacent tile comprising a tongue extending into the recess and having a laterally-projecting terminal portion to engage the wall of the recess, substantially as described.

5. In combination a tile having a recess on its under side back from the edge and means for securing the tile to an adjacent tile comprising a tongue extending into the recess, said tongue having a laterally-projecting terminal portion extending from one wall of the recess to the other substantially as described.

6. In combination with tiles recessed on their under sides, resilient means for holding said recessed tiles together and having terminal projections adapted to be sprung into the said recesses, said recessed tiles resting over the said projections substantially as described.

7. In combination with a tile recessed on its under side, back from the edge means for securing the tile to an adjacent tile comprising a tongue extending into the recess and having a lateral resilient terminal projection.

8. In combination, tiles composed of resilient material having recesses and clips independent of each other having a main portion extending across the joint between the tiles with terminal projections locked in the said recesses, substantially as described.

850,272. TILE. GEORGE B. STAPLES, Philadelphia, Pa. Filed Oct. 13, 1904. Renewed Nov. 24, 1905. Serial No. 288,903.

Claim.—1. A tile comprising a foundation-plate and a facing material applied thereto with a part extending from said foundation-plate up into the facing material, the said tile having projecting tongues and recesses to interlock with adjacent tiles, the said tongues being on the foundation-plate, substantially as described.

2. A tile comprising a foundation-plate and facing material applied thereto and held by a projecting part extending up from the said plate and engaging the facing material, said tile having tongues on the foundation-plate and recesses in the facing material opening downwardly, substantially as described.

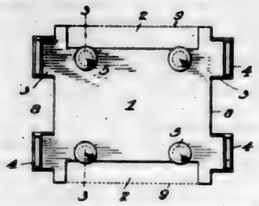

3. A tile comprising a foundation-plate and a facing material and tongues on the foundation-plate extending laterally beyond the facing material and upwardly to interlock with adjacent tiles, substantially as described.

4. A tile comprising a foundation-plate and a composition facing therefor, with pins or wearing-points extending up from the foundation-plate through the composition material, the said tile having projecting tongues and recesses to interlock with adjacent tiles, the said tongues being on the foundation-plate and the said recesses being formed in the composition material, substantially as described.

5. In combination in a tile, a foundation-plate having indented sides and a projecting tongue and a composition facing overhanging the indented sides and provided with recesses to interlock with tongues on the adjacent tile, substantially as described.

6. A tile composed of a metal foundation and a composition facing overhanging a part of the same provided with means for interlocking with an adjacent tile, substantially as described.

7. A tile composed of a metal foundation and a composition facing overhanging a part of the same, and a recess in the overhanging part for interlocking with an adjacent tile, substantially as described.

8. A tile having a foundation-plate and a facing material secured thereto, said facing material having a recess on its under side to receive the locking-tongue to hold said tile to the adjacent tile, substantially as described.

9. A tile having a foundation-plate with indented sides and a facing extending over the indented sides and provided with recesses on the under face thereof to receive a locking-tongue, substantially as described.

850,273. TILE OR STAIR-TREAD. GEORGE B. STAPLES, Philadelphia, Pa. Filed Mar. 24, 1905. Renewed Mar. 21, 1907. Serial No. 363,746.

Claim.—1. A tile comprising a foundation-plate having an indented side and a facing material overhanging the indented side, the indented side of the foundation-plate being bridged by a part of the metal of said plate leaving an opening for a locking-tongue to pass up therethrough, substantially as described.

2. A tile comprising a foundation-plate having an indented side and a facing material overhanging the indented side, the indented side of the foundation-plate being bridged by a part of the metal of said plate leaving an opening for a locking-tongue to pass up therethrough, said opening extending up into the facing material, substantially as described.

3. A tile having a foundation-plate and a facing material applied thereto, said facing material having a recess in its under face and a foundation-plate having an opening therethrough registering with the said recess to receive a locking-tongue, substantially as described.

4. A tile comprising a foundation-plate having an indented side and a projecting tongue and a facing material overhanging the indented side and provided with a recess to receive a tongue said indent being bridged by a part of

the metal plate leaving an opening for the tongue of an adjacent tile to pass up through, substantially as described.

5. A tile having a foundation-plate and a facing material applied thereto, said foundation-plate having an opening formed therethrough to receive the tongue of an adjacent tile and having a tongue to engage the opening of an adjacent tile, substantially as described.

6. A tile having a foundation-plate and a facing material applied thereto said facing material having a recess in its under face and the foundation-plate having an opening therethrough registering with the said recess and a tongue on the plate to engage the opening and recess of an adjacent tile, substantially as described.

850,274. TILE. GEORGE B. STAPLES, Philadelphia, Pa. Filed May 16, 1905. Serial No. 260,663.

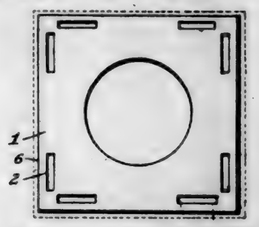

Claim.—1. In combination, a pair of tiles, one having recesses and the other having resilient projections to engage the recesses and resist the upward movement of the recessed tile, said projections and recesses being concealed beneath the tiles and the recessed tile being capable of withdrawal upwardly from said projections, substantially as described.

2. In combination, a pair of tiles, one having recesses and the other having interlocking tongues provided with spring lips or projections to engage the said recesses and resist the upward movement of the recessed tile, said recesses being formed back from the edge of the tile and said projections and recesses being concealed beneath the tiles and the recessed tiles being capable of withdrawal upwardly from said projections, substantially as described.

3. In combination, a pair of tiles, one having a recess or recesses on its under side and the other having a tongue with a turned-over projection providing resiliency to engage the said recess, substantially as described.

4. In combination, a pair of tiles, each comprising a foundation-plate of sheet metal with facing material applied thereto, one of said foundation-plates having recesses therein and the other having projections adapted to snap and hold in the said recesses, substantially as described.

5. In combination, the two tiles, each formed of sheet-metal foundation with a facing material applied thereto, one of said foundations having a recess or recesses therein and the other having an interlocking projection with a tongue rolled or bent over and adapted to pass up through the recess and to be held therein by its resilience, substantially as described.

6. In combination a pair of tiles having metal foundations and composition facings with recesses in the foundations concealed beneath the tile, and resilient means for securing the tiles together sprung into recesses in the foundations and adapted to resist upward displacement until sufficient force is applied to the tile when it may be removed independently of the adjacent tiles, substantially as described.

7. A tile consisting of a foundation-plate and a facing material, said foundation-plate having an opening extending therethrough near its edge to receive a tongue, substantially as described.

8. A tile consisting of a foundation-plate and a facing material, said foundation-plate having an opening therein to receive a tongue and the facing material having a recess forming an extension of the said opening in the foundation-plate, substantially as described.

9. A tile consisting of a foundation-plate indented at its side and facing material applied to the face of the tile and overhanging the indented side of the foundation-plate, said overhanging portion being recessed on its under side, substantially as described.

10. A tile consisting of a plate indented at its side, said indented portion comprising an opening extending up through the plate and a marginal bridge portion elevated in respect to the lower face of the plate, and means extending under said bridge portion and up into said opening to secure adjacent tiles together, substantially as described.

850,275. TILING. GEORGE B. STAPLES, Philadelphia, Pa. Filed Oct. 27, 1906. Serial No. 340,916.

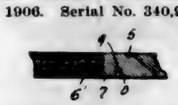

Claim.—1. In combination, with tiles having recesses, a clip having upwardly-extending projections with the ends thereof turned over from one side of the recess to the other presenting edges to lock with the material of the tile, substantially as described.

2. In combination with tiles, a clip having projections entering recesses in the tiles and having the upper ends of the said projections turned over from one side of the recess to the other and downwardly to lock with the wall of the recess presenting a gripping edge to engage the material of the tile, substantially as described.

3. In combination with tiles having recesses, a clip having upwardly-extending projections and upper ends turned over at right angles reaching from one side of the recesses to the other.

4. In combination, tiles having recesses and a clip having upwardly-extending projections with upper ends turned over from one side of the recesses to the other and downwardly alongside the main portion of the projection, substantially as described.

5. In combination, tiles having recesses extending through from the bottom to the top of the tiles and a clip having upwardly-extending projections entering the said recesses at the bottom and exposed at the upper ends thereof, substantially as described.

850,276. DYNAMO-ELECTRIC MACHINE. KARL SULZBERGER, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed Apr. 3, 1906. Serial No. 309,640.

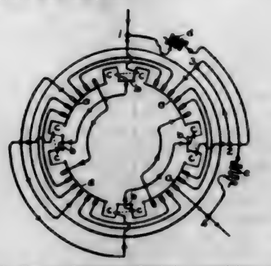

Claim.—1. In a dynamo-electric machine of the commutator type, a field structure provided with a compensating and commutating winding, the commutating portions of the winding for the several poles of the machine being connected in a group and the remaining portions of the winding being connected in another group.

2. In a dynamo-electric machine of the commutator type, a field structure provided with a compensating and commutating winding, the commutating portions of the winding for the several poles of the machine being connected in a group and the remaining portions of the winding being connected in another group, and means for adjusting the relative amounts of current-flow through said commutating portions and the rest of the winding.

3. In a dynamo-electric machine of the commutator type, a field structure provided with a compensating and commutating winding, the commutating portions of the winding for the several poles of the machine being connected in a group and the remaining portions of the winding being connected in another group, and means for varying the relative amounts of current-flow through the two groups.

4. In a dynamo-electric machine of the commutator type, a field structure provided with a compensating and commutating winding, the commutating portions of the winding for the several poles of the machine being connected in a group and the remaining portions of the winding being connected in another group, said groups being connected in series, and a shunting resistance for adjusting the relative amounts of current-flow through said groups.

5. In a dynamo-electric machine of the commutator type, a field provided with a compensating and commutating winding, the commutating portions of the winding for the several poles being connected in a group and the remaining portions of the winding being connected in another group, said groups being connected in series, and independent resistance-shunts for the two groups.

6. In a dynamo-electric machine of the commutator type, a field structure with a compensating and commutating winding, the commutating portions of the winding for the several poles being connected in a group and the remaining portions of the winding being connected in another group, said groups being connected in series, and two adjustable resistances shunting said groups respectively.

850,277. SYSTEM OF MOTOR CONTROL. CLIFFORD R. TATEM, Buffalo, N. Y., assignor to Allis-Chalmers Company, a Corporation of New Jersey, and The Bullock Electric Manufacturing Company, a Corporation of Ohio. Filed Mar. 31, 1906. Serial No. 309,018.

Claim.—1. In a starter for electric motors, a motor, main supply-conductors, an autotransformer, taps from the autotransformer, electrically-operated switches for first connecting the autotransformer to the main conductors and the taps from the autotransformer to the motor, and then connecting the motor directly to the main conductors.

2. In a starter for electric motors, a motor, main conductors, an autotransformer, taps from the autotransformer, and electrically-operated switches for first connecting the autotransformer to the main conductors and the taps from the autotransformer to the motor, and then connecting the motor directly to the main conductors and cutting out the autotransformer.

3. A starter for electric motors, comprising an induction-motor, an autotransformer, a tap therefrom, a plurality of magnetic switches, one of said switches adapted when energized to connect one end of the transformer to the line, and another of said switches adapted when de-energized to connect one motor-terminal to the tap from the autotransformer, and when energized to connect said motor-terminal to the line.

4. In combination, an induction-motor, a supply-circuit, a transformer, a plurality of automatically-operated switches for first connecting the motor to the supply-circuit through the transformer and then connecting the motor directly to the supply-circuit.

5. In combination, an alternating-current electric motor, an alternating-current-supply circuit, a transformer, a plurality of separately-actuated switches for first connecting the motor to the supply-circuit through the transformer and then connecting the motor directly to the supply-circuit.

6. In combination, an alternating-current motor, an alternating-current-supply circuit, a transformer, a plurality of automatically-operated switches for first connecting the motor to the supply-circuit through the transformer and then connecting the motor directly to the supply-circuit.

7. In combination, an induction-motor, a supply-circuit, a transformer, a plurality of magnetic switches, a master-controller for the magnetic switches, the master-controller in one position causing the magnetic switches to connect the motor to the supply-circuit through the transformer and in another position causing the magnetic switches to connect the motor directly to the supply-circuit.

8. In combination, an alternating-current motor, an alternating-current-supply circuit, a transformer, a plurality of magnetic switches, a master-controller for the magnetic switches, the master-controller in one position causing the magnetic switches to connect the motor to the supply-circuit through the transformer and in another position causing the magnetic switches to connect the motor directly to the supply-circuit.

9. A main motor-controller, comprising a plurality of separately-actuated contacts, a master controlling device for said main motor-controller, a source of current-supply, an electric motor, a transformer, and connections whereby when the master-controller is in one position the contacts are actuated to connect the motor to the source of supply by means of the transformer and when in another position the contacts are actuated to connect the motor directly to the source of supply.

10. A source of current-supply, an electric motor, a pump driven thereby and supplying fluid to a reservoir, a switch controlled by the fluid in the reservoir, an automatically-operated master-controller controlled by the fluid-operated switch, autotransformer-windings, and means controlled by the master-controller for first connecting the motor to the source of current-supply through the autotransformer-windings and then connecting the motor directly to the source of supply.

11. A source of current-supply, an electric motor, a pump driven thereby to supply fluid to a reservoir, a switch controlled by the fluid in the reservoir, an automatically-operated master-controller controlled by the fluid-controlled switch, means for controlling the rate of movement of the master-controller, autotransformer-windings, and means controlled by the master-controller for connecting the motor to the source of supply through the autotransformer-windings in one position of the master-controller and for connecting the motor directly to the source of current-supply in another position of the master-controller.

12. In a fluid-pressure system, a source of current-supply, an electric motor, a pump driven thereby, a reservoir supplied by the pump, a controlling device for the motor responsive to the condition of the fluid in the reservoir, autotransformer-windings, and means controlled by the controlling device for first connecting the terminals of the autotransformer-windings to the source of supply and taps from the autotransformer-windings to the motor-terminals, and then connecting the motor-terminals directly to the source of supply.

13. A motor, a source of current-supply, a master-controller, transformer-windings, and means controlled by the master-controller for connecting the motor and source of supply through the transformer-windings in one position of the master-controller and for connecting the motor and the source of supply directly in another position of the master-controller.

14. An electric motor, a source of current-supply, transformer-windings, an automatically-operated master-controller, a main motor-controller controlled by the master-controller and adapted to connect the motor and the source of supply through the transformer-windings in one position of the master-controller and to connect them directly in another position of the master-controller.

15. A source of current-supply, an electric motor, transformer-windings, a pump operated by the motor, a reservoir supplied by the pump, an automatically-operated master-controller controlled by the fluid in the reservoir, a main motor-controller adapted to entirely disconnect the motor from the source of supply in one position of the master-controller, to connect the motor and the source of supply through the transformer-windings in another position of the master-controller, and to connect the motor and source of supply directly in a third position of the master-controller.

16. In an electric motor, a source of current-supply, transformer-windings, an automatically-operated master-controller, a main motor-controller consisting of a plurality of separately-actuated contacts and controlled by the master-controller, these contacts being adapted to connect the motor and the source of supply through the transformer-windings in one position of the master-controller and to connect the motor and the source of supply directly in another position of the master-controller.

17. In a fluid-pressure system, a motor, a pump driven thereby, a reservoir supplied by the pump, a snap-switch adapted to be opened and closed in accordance with the condition of the fluid in the reservoir, a solenoid controlled by the snap-switch, a master-controller operated by the solenoid, means for regulating the rate of movement of the master-controller, a main motor-controller controlled by the master-controller and consisting of a plurality of separately-actuated contacts, a source of current-supply, autotransformer-windings, the main motor-controller being adapted to connect the ends of the autotransformer-windings to the source of supply and taps from the autotransformer-windings to the motor-terminals when the master-controller is in one position, and to connect the motor-terminals directly to the source of supply when the master-controller is in another position.

18. An electric motor, a main controller therefor consisting of a plurality of groups of separately-actuated contacts, a master-controller controlling the operation of the contacts, and adapted in one position to cause one group of contacts to be actuated to supply the motor with current at one potential and in another position to cause another group of contacts to be actuated to supply the motor with current at a higher potential.

19. An electric motor, a main controller therefor consisting of a plurality of groups of switches, a source of supply, autotransformer-windings, one group of said switches adapted when operated to connect the ends of the autotransformer-windings with the source of supply, another group of said switches adapted when in one position to connect the motor-terminals to taps from the autotransformer-winding and in another position to connect the motor-terminals to the source of supply.

20. An electric motor, a main controller therefor consisting of a plurality of groups of contacts, a source of supply, autotransformer-windings, one group of said contacts adapted when operated to connect the ends of the autotransformer-windings with the source of supply, another group of said contacts adapted when in one position to connect the motor-terminals to taps from the autotransformer-winding and in another position to connect the motor-terminals to the source of supply, and a master-controller controlling the operation of the main controller.

21. An electric motor, a main controller therefor consisting of a plurality of pairs of contacts, a source of supply, autotransformer-windings, one pair of said contacts adapted when operated to connect the ends of the autotransformer-windings with the source of supply, another pair of said contacts adapted when in one position to connect the motor-terminals to taps from the autotransformer-winding and in another position to connect the motor-terminals to the source of supply, a master-controller controlling the operation of the main controller, and means for limiting the rate of movement of the master-controller.

22. An electric motor, a main controller therefor consisting of a plurality of groups of contacts, a source of supply, autotransformer-windings, one group of said contacts adapted when operated to connect the ends of the autotransformer-windings with the source of supply, another group of said contacts adapted when in one position to connect the motor-terminals to taps from the autotransformer-winding and in another position to connect the motor-terminals to the source of supply, an electrically-operated master-controller controlling the operation of the main controller, and a float-switch controlling the master-controller.

23. An electric motor, a main controller therefor consisting of a plurality of pairs of contacts, a source of supply, autotransformer-windings, one pair of said contacts adapted when operated to connect the ends of the autotransformer-windings with the source of supply, another pair of said contacts adapted when in one position to connect the motor-terminals to taps from the autotransformer-winding and in another position to connect the motor-terminals to the source of supply, an electrically-operated master-controller controlling the operation of the main controller, a fluid-pressure switch controlling the master controller, and means for regulating the rate of movement of the master-controller.

24. An electric motor, a main controller therefor consisting of a plurality of groups of contacts, a source of supply, autotransformer-windings, one group of said contacts adapted when operated to connect the ends of the autotransformer-windings with the source of supply, another group of said contacts adapted when in one position to connect the motor-terminals to taps from the autotransformer-winding and in another position to connect the motor-terminals to the source of supply, a master-controller adapted in one position to cause the operation of said first group of contacts and in another position to cause the operation of said second group of contacts.

25. An electric motor, a main controller therefor consisting of a plurality of groups of contacts, a source of supply, autotransformer-windings, one group of said contacts adapted when operated to connect the ends of the autotransformer-windings with the source of supply, another group of said contacts adapted when in one position to connect the motor-terminals to taps from the autotransformer-winding and in another position to connect the motor-terminals to the source of supply, a solenoid for each contact, and a master-controller adapted in one position to energize the solenoid of said first group of contacts and in another position to energize the solenoids of said second group of contacts.

26. An electric motor, a main controller therefor consisting of a plurality of groups of contacts, a source of supply, autotransformer-windings, one group of said contacts adapted when operated to connect the ends of the autotransformer-windings with the source of supply, another group of said contacts adapted when in one position to connect the motor-terminals to taps from the autotransformer-winding and in another position to connect the motor-terminals to the source of supply, a solenoid for each contact, an automatically-operated master-controller adapted in one position to energize the solenoids of said first group of contacts and in another position to energize the solenoids of said second group of contacts, means for retarding the action of the master-controller, and means for varying the amount of such retardation.

27. In combination, an electric motor, a supply-circuit, an autotransformer, and a plurality of separately-actuated contacts for first connecting the motor to the supply-circuits through the autotransformer and then connecting the motor directly to the supply-circuit.

28. An electric motor, a main controller therefor consisting of a plurality of groups of separately-actuated contacts, all of the contacts of a group being arranged to be operated simultaneously, a master-controller controlling the operation of the contacts, and adapted in one position to cause one group of contacts to be actuated to supply the motor with current at one potential and in another position to cause another group of contacts to be actuated to supply the motor with current at a higher potential.

29. An electric motor, a main controller therefor consisting of a plurality of groups of contacts, all of the contacts of a group being arranged to be operated simultaneously, a source of current-supply, autotransformer-windings, one group of said contacts adapted when operated to connect the ends of the autotransformer-windings with the source of supply, another group of said contacts adapted when in one position to connect the motor-terminals to taps from the autotransformer-winding and in another position to connect the motor-terminals to the source of supply, an electrically-operated master-controller controlling the operation of the main controller, and a float-switch controlling the master-controller.

30. Polyphase transformer-windings connected to a source of polyphase current-supply, taps leading from corresponding points in said windings, a polyphase motor, and separately-actuated contacts simultaneously operated to connect corresponding taps from said windings to the motor in order to supply thereto an alternating current at reduced voltage.

31. A source of alternating current, transformer-windings connected thereto, taps leading from said windings, a translating device, and a plurality of separately-actuated contacts simultaneously operated to connect the taps from the transformer-windings to the translating device.

850,278. SYSTEM OF DISTRIBUTION. LEWIS L. TATUM, Norwood, Ohio, assignor to Allis-Chalmers Company, a Corporation of New Jersey, and The Bullock Electric Manufacturing Company, a Corporation of Ohio. Filed Mar. 31, 1906. Serial No. 309,019.

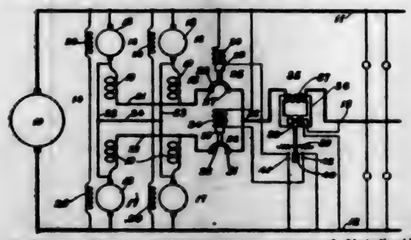

Claim.—1. In a multiple-voltage system of distribution, a balancer comprising compound-wound dynamo-electric machines connected to the conductors of the system, and means for automatically open-circuiting the series field-winding of one of said machines when the loads become unbalanced.

2. In a multiple-voltage system of distribution, a balancer comprising a plurality of compound-wound dynamo-electric machines connected to conductors of the system, and means responsive to an unbalancing of the loads for automatically opening the circuit of the series field-winding of any one of said machines.

3. In a multiple-voltage system of distribution, a balancer comprising a plurality of dynamo-electric machines each having series and shunt field-windings, and means responsive to a predetermined flow of current in one of the conductors of the system for open-circuiting the series winding of any one of said machines.

4. In a multiple-voltage system of distribution, main and compensating conductors, a balancer comprising a plurality of dynamo-electric machines each having series and shunt field-windings, and electromagnetically-operated means responsive to a predetermined unbalancing of the loads for open-circuiting the series winding of any one of said machines.

5. In a multiple-voltage system of distribution, main and compensating conductors, one or more balancers comprising a plurality of compound-wound dynamo-electric machines connected to said conductors, one or more normally closed switches in circuit with the series windings, and automatically-operated means for controlling said switch or switches.

6. In a multiple-voltage system of distribution, a balancer comprising compound-wound dynamo-electric machines, and means comprising a switch for opening the circuit of one of the field-windings of one of said machines when the loads become unbalanced.

7. In a multiple-voltage system of distribution, a plurality of conductors, a balancer comprising a plurality of compound-wound dynamo-electric machines, and means comprising one or more automatically-operated switches for opening the circuit of either one of the series field-windings when the loads become unbalanced.

8. In a multiple-voltage system of distribution, a plurality of conductors, a balancer comprising a plurality of compound-wound dynamo-electric machines, and means comprising a switch and a reverse-current relay for opening the circuit of either one of the series field-windings upon a predetermined unbalancing of the loads.

9. In a multiple-voltage system of distribution, a plurality of main and compensating conductors, a balancer comprising a plurality of compound-wound dynamo-electric machines, and means comprising a plurality of switches and a reverse-current relay having a coil in a compensating conductor for open-circuiting the series coils of the machines acting as motors when the loads are unbalanced.

10. In a multiple-voltage system of distribution, a plurality of conductors, a plurality of balancers connected in parallel to the conductors of said system, each balancer consisting of compound-wound dynamo-electric machines, and means for open-circuiting the series winding of those machines acting as motors when the loads are unbalanced.

11. In a multiple-voltage system of distribution, a plurality of conductors, a plurality of balancers connected in parallel to the conductors of the system, each balancer consisting of two compound-wound dynamo-electric machines, and automatic means responsive to a predetermined unbalancing of the loads for open-circuiting the series windings of the machines acting as motors.

12. In a multiple-voltage system of distribution, a balancer comprising compound-wound dynamo-electric machines connected to the conductors of the system, and means for open-circuiting the series winding of one of said machines when the loads become unbalanced without opening the armature-circuit of that machine.

13. In a multiple-voltage system of distribution, a balancer comprising compound-wound dynamo-electric machines connected to the conductors of the system, and means responsive to a predetermined unbalancing of the loads for opening the circuit of the series winding of the machine acting as a motor, and means for completing the motor-armature circuit when the series winding is open-circuited.

14. In a multiple-voltage system of distribution, a plurality of conductors, a balancer comprising two compound-wound dynamo-electric machines, and automatic means for open-circuiting the series winding of the machine acting as a motor when the loads are unbalanced, and means comprising an auxiliary conductor for completing the motor-armature circuit when its series winding is open-circuited.

15. In a multiple-voltage system of distribution, a plurality of conductors, one or more balancers connected across the legs of the system, each balancer consisting of a plurality of compound-wound dynamo-electric machines, automatically-operating means for opening the circuit of the series winding or windings of the machine or machines acting as motors when the loads are unbalanced, and means comprising one or more auxiliary conductors for completing the motor-circuit of each balancer when its series winding is open-circuited.

16. In a multiple-voltage system of distribution, a plurality of conductors, a balancer comprising two compound-wound dynamo-electric machines having their armatures connected to the legs of the system and the series windings being connected together and to a compensating conductor between said armatures, a low-resistance conductor shunting the series windings and means for disconnecting the series winding of either machine from the compensating conductor on a predetermined unbalancing of the loads.

17. In a multiple-voltage system of distribution, a plurality of conductors, a balancer comprising two compound-wound dynamo-electric machines having their armatures connected to the legs of the system and the series windings connected directly to each other and to a compensating conductor between the armatures, a conductor connecting a point between the armature and series field-winding of one machine to a point between the armature and series field-winding of the other machine, and means comprising one or more switches for automatically disconnecting the series field-winding of either machine from the compensating conductor.

18. In a multiple-voltage system of distribution, a plurality of main and compensating conductors, a plurality of balancers connected to said conductors in parallel, each balancer consisting of two compound-wound dynamo-electric machines having their armatures connected to the main conductors respectively, and their series windings normally connected together and to the compensating conductor, means comprising a switch between the compensating conductor and the series windings on each side of said compensating conductor for disconnecting the compensating conductor from the series windings of those machines acting as motors on a predetermined unbalancing of the loads, and an auxiliary conductor connected to points between the armatures and series windings of each balancer for conveying the motor-armature current from or to the compensating conductor when the series windings thereof are disconnected from the compensating conductor.

850,279. CUT-OUT FOR VAPOR ELECTRIC APPARATUS. TYCHO VAN ALLEN, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 12, 1904. Serial No. 228,146.

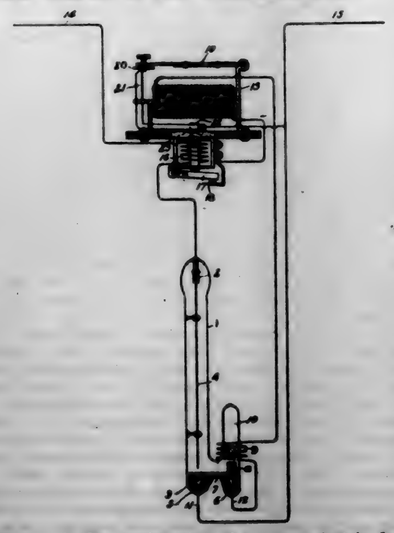

Claim.—1. The combination of a vapor electric device having a main circuit and an auxiliary-arc-starting circuit, a magnetic cut-out device energized by current in the main circuit, and a time-limit cut-out device responsive to current in the auxiliary-arc-starting circuit.

2. The combination of a vapor electric device, a circuit for producing a starting-arc in said device, and means for automatically interrupting the starting-arc after an interval in case the device fails to start.

3. The combination of a vapor electric device, a starting-arc circuit, a main circuit, and cut-out devices one responsive to current in the main circuit and the other responsive to current in the starting-arc circuit.

4. The combination of a vapor electric apparatus, a starting resistance therefor, and a thermostat responsive to heat generated in said resistance and operating upon failure of the apparatus to start to close a circuit about said apparatus.

5. The combination of a vapor electric apparatus, and a time-limit device for closing a circuit about said apparatus in the event of a failure of the apparatus to start within a predetermined time.

6. The combination of a vapor electric device, an auxiliary-starting-arc circuit, means for cutting out the starting-circuit when the apparatus commences to operate, and automatic means for closing a circuit about said device in case it fails to start.

850,280. SAW-HANDLE. HARRY M. WALKER, Butterworth, Va. Filed Oct. 2, 1906. Serial No. 337,147.

Claim.—1. The herein-described saw-handle comprising a stem provided at its lower end with a threaded portion, a slightly-dished nut adjustably mounted on said threaded portion and provided with serrations in its upper face, said stem being provided with an integral cylindrical extension constituting a socket for the handle proper, a handle in said socket, a pin extending through the cylindrical extension and through the handle proper, to secure the latter in place, the ends of said pin projecting, the lever having a bifurcated end embracing said extension and fulcrumed on the projecting ends of said pin, a collar mounted to slide on said extension and provided in its lower edge with diametrically opposite notches, and also provided with projecting integral studs, and links connecting said studs with the bifurcated end of the lever.

2. A device of the character described, comprising a stem adapted to lie against the side face of a saw-blade, and provided at one end with a cylindrical extension constituting a socket for the handle proper, a handle in said socket, means whereby the lower end of said shank or stem may be engaged with the lower edge of a saw-blade, a collar mounted to slide on the said extension and adapted to clamp the upper edge of the saw-blade, a lever fulcrumed on said extension, and a connection between said lever and said collar, as and for the purpose set forth.

3. In a device of the character described, the combination of a stem provided with a handle-socket at one end and an adjustable blade-clamping nut at its other end, a collar mounted to slide upon the said socket and adapted to clamp the upper edge of the saw-blade, and a lever fulcrumed on the outer wall of the said socket and having a link connection with said collar, as and for the purpose set forth.

850,281. BANDAGE. JEANNE WALTER, New York, N. Y. Filed Apr. 15, 1904. Serial No. 203,359.

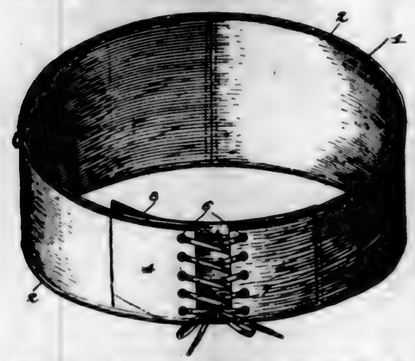

Claim.—1. A bandage composed of soft rubber, and having a flap for bridging the ends of the bandage thus to present a continuous structure, the flap being also of soft rubber.

2. A bandage composed of soft-rubber and having its terminals reinforced, adjusting means associated with the reinforced portion, and a soft rubber flap bridging the gap between the terminals.

850,282. CURRYCOMB. WILLIAM D. WHEAT, Jamestown, Ky., assignor of one-half to Elmer Wheat, Jamestown, Ky. Filed Feb. 1, 1907. Serial No. 355,306.

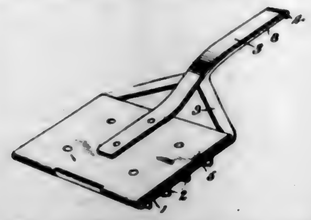

Claim.—The herein-described currycomb, comprising a base-plate provided with currying-bars, and a handle provided at its outer end with a spring-hook, a cleaning-plate provided with a series of slots adapted to accommodate said currying-bars, the cleaning-plate being hinged at one end to the base-plate and provided with a handle, the outer end of which is adapted to spring into said hook and the other end of which is forked, the members of the fork being attached to the cleaning-plate at the sides thereof, where they will not interfere with the said slots.

850,283. RAILROAD-TIE. JOSEPH P. ANGELL, Pine Bluff, Ark. Filed Feb. 5, 1907. Serial No. 355,941.

Claim.—1. A railway-tie, composed of superimposed strips or boards, arranged so that the tie is triangular in cross-section.

2. A railway-tie, composed of layers of strips or boards arranged to break joints and so that the tie is triangular in cross-section.

3. A railway-tie, composed of layers of strips or boards, the layers being successively narrower.

850,283.

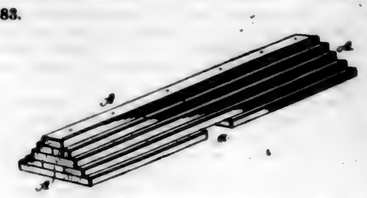

850,284. VEHICLE-BRAKE. ROBERT F. ARMSTRONG, Freeport, Ohio. Filed Jan. 15, 1906. Serial No. 296,196.

Claim.—A vehicle-brake, employing duplicate brake-straps encompassing wheel-hub collars, hangers or brackets having their inner ends fixed to the vehicle-axle and their outer ends formed into eyes or loops, a shaft or rod received by said eyes or loops and adapted to turn therein and equipped with upstanding fixed bails near their ends, said brake-straps having their lower ends looped around, and fixed to said rod or shaft and their opposite ends loosely connected to said bails, and said bails standing astride of the points of connection between said rod or shaft and the first-noted ends of said brake-straps.

850,285. HAY-RACK. CHARLES W. BAIRD, Millersburg, Iowa. Filed Oct. 19, 1906. Serial No. 339,671.

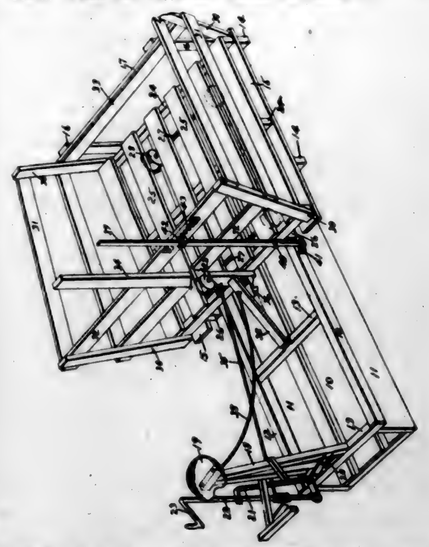

Claim.—1. In a hay-rack, the combination of a stationary rack member, a movable rack member slidingly mounted on the stationary one, means for moving the movable rack member toward the front of the stationary rack member and a brake device carried by the movable rack member to engage the stationary rack member.

2. In a hay-rack, the combination of a stationary rack member, a movable rack member slidingly mounted upon the stationary one, a rope attached to the movable rack

member, a rope-winding device arranged near the front of the stationary rack member and having said rope attached thereto, means for locking the movable member to the stationary one and a friction brake device carried by the movable rack member.

3. In a hay-rack, the combination of a stationary rack member, a movable rack member slidingly mounted on the stationary one, means for moving the movable rack member toward the front of the stationary rack member, a brake device carried by the movable rack member to engage the stationary rack member, means for locking said movable rack member at its rearward limit and means for locking it at its forward limit.

4. In a hay-rack, the combination of a stationary rack member, longitudinal tracks thereon, a crank-shaft at the forward end thereof, a rope fixed to and wound upon said shaft, a movable rack member having flanged wheels resting on said tracks and also having said rope attached thereto, an arm hinged to the stationary rack member and capable of extending rearwardly to engage the movable rack member and also capable of swinging forwardly out of the path of the movable rack member, a rope fixed to said arm and extended to the front of the stationary rack member and a pawl hinged to the movable rack member to engage a part of the stationary rack member when the movable rack member is at its forward limit.

5. In a hay-rack, the combination of a stationary rack member, a movable rack member slidingly mounted thereon, a lever fulcrumed to the movable rack member, a brake-shoe thereon to engage a part of the stationary rack member and a notched bar on the movable rack member to engage and hold said lever in different positions of adjustment.

6. In a hay-rack, the combination of a stationary rack member, and a stationary cross-rail above its rear end, angle-bars arranged longitudinally of the stationary member, a standard at the front of the stationary member, a crank-shaft adjacent to the said standard, a rope fixed to and wound thereon, a hinged arm connected with the stationary member, a rope fixed thereto and extended to position adjacent to the said standard, a movable rack member comprising a platform, flanged wheels carried by the platform to rest upon the angle-bars, arms carried by the movable member to pass under the angle-bars, a board hinged to the forward portion of the movable rack member to engage a part of the stationary rack member, uprights on the movable rack member, horizontal rails supported by said uprights, a lever fulcrumed to the movable rack member, a brake-shoe at its lower end to engage one of the angle-bars, a hook near its upper end and a notched bar on the movable rack member to be engaged by said hook.

850,286. HORSESHOE-CALK. JESSE T. BELL, Washington, N. J. Filed Jan. 16, 1905. Serial No. 241,371.

Claim.—A horseshoe-calk adapted to be welded to the shoe and designed to advantageously affect the welding operation, the said calk consisting of a body portion provided with an attaching-spur on one edge and a middle recess in its other edge, producing a relatively thin portion in the body of the calk, said thin portion of the calk enabling the heat to quickly bring the parts to the proper temperature for welding and striking up a clip at the same operation, without injuriously affecting the biting edges of the calk.

850,287. COMBINED FIRE AND BURGLAR ALARM. ALEXANDER M. BENNETT, Ellsworth, Mich., assignor of one-half to Charles Bennett, Ellsworth, Mich. Filed Apr. 18, 1906. Serial No. 312,471.

Claim.—1. In a combined fire and burglar alarm, a plurality of contacts, an energized circuit connected to the contacts and including an alarm, a chamber, a closure for one end of the chamber, a circuit-breaker interposed between the contacts for normally holding the same separated and operatively connected with the closure, said circuit-breaker being movable to inoperative position to sound the alarm when the closure is removed.

2. In a combined fire and burglar alarm, a plurality of contacts, an energized circuit connected to the contacts and including an alarm, a chamber, an explosive charge arranged within the chamber, a fuse communicating with the explosive charge, a closure for the chamber, a circuit-breaker interposed between the contacts and operatively connected with the closure, said circuit-breaker being movable to inoperative position to sound the alarm under the impulse of the explosive charge.

3. In a combined fire and burglar alarm, a casing, a pair of contacts, an energized circuit connected to the contacts and including an alarm, a chamber, an explosive charge disposed within the chamber, a fuse communicating with the explosive charge and provided with a torch, a closure for the explosive-chamber, a circuit-breaker interposed between the contacts, and a connection between the circuit-breaker and closure, said circuit-breaker being movable to inoperative position under the impulse of the explosive charge.

4. In a combined fire and burglar alarm, a casing having one end thereof provided with a chamber and its opposite end formed with a pocket, a pair of contact members seated in the pocket, an energized circuit connected to the contacts and including an alarm, an explosive charge disposed within the chamber, a closure for said chamber, and a circuit-breaker interposed between the contacts and operatively connected with the closure, said circuit-breaker being moved to inoperative position to sound the alarm under the impulse of the explosive charge.

5. In a combined fire and burglar alarm, a pair of contact-arms having their ends bifurcated, an energized circuit the terminals of which are extended to form loops seated in the bifurcated ends of the contact-arms, strips interposed between the loops and the adjacent faces of said arms, an alarm included in the circuit, and a circuit-breaker interposed between the contact-arms and movable to inoperative position to sound the alarm.

6. In a combined fire and burglar alarm, a pair of contact-arms having their ends bifurcated and their opposite longitudinal edges formed with grooves, an energized circuit the terminals of which are seated in said grooves and provided with terminal loops engaging the bifurcated ends of the contact-arms, strips interposed between the loops and the adjacent faces of said contact-arms, an alarm included in the circuit, a circuit-breaker interposed between the contact-arms, and a flexible connection secured to the circuit-breaker for withdrawing the same from engagement with the contact-arms thereby to actuate the alarm.

7. In a combined fire and burglar alarm, a casing having one end thereof bent to form a pocket and its opposite end curved laterally to produce a tube the opposite ends of which extend beyond the adjacent walls of the pocket to form a chamber, a pair of spring-contacts seated in the pocket, an energized circuit connected to the contacts and including an alarm, an explosive charge disposed within the chamber, a closure for one end of the tube, a circuit-breaker interposed between the contacts, and a flexible connection between the circuit-breaker and closure.

850,288. BOTTLE-CAPPING MACHINE. OTTO S. BEYER, East Rutherford, N. J., assignor to Thomas H. Penlston, Orange, N. J. Filed Nov. 16, 1906. Serial No. 343,659.

Claim.—1. In a bottle-capping machine, means for supporting a bottle, and non-rotatable means for first bending certain portions of a metallic cap into sealing relation with the bottle, leaving intermediate unbent portions, and then subsequently bending the said intermediate portions into sealing relation with the bottle.

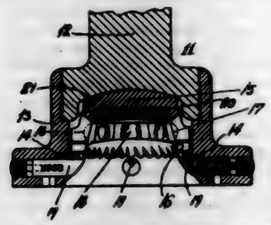

2. In a bottle-capping machine, means for supporting a bottle, and means for first bending substantially alternate corrugations of a metallic cap into sealing relation with the bottle, leaving intermediate unbent corrugations, and then subsequently bending the said intermediate corrugations into sealing relation with the bottle.

3. In a bottle-capping machine, means for supporting a bottle, and non-rotatable means for first bending substantially alternate corrugations of a metallic cap into sealing relation with the bottle, leaving intermediate unbent corrugations, and then subsequently bending said intermediate corrugations into sealing relation with the bottle.

4. In a bottle-capping machine, an upper supporting member, a lower supporting member secured thereto and having an inwardly-extending flange, a bending-die resting loosely upon said flange between the two supporting members, and spring-detents, for yieldingly supporting the bottle-cap, carried by the lower supporting member.

5. In a bottle-capping machine, a bending-die having a plurality of bending-faces divided into two sets located in different vertical planes and alternating with each other.

6. In a bottle-capping machine, a hollow substantially circular bending-die having a plurality of internal bending-faces divided into two sets located in different vertical planes and alternating with each other circumferentially.

7. In a bottle-capping machine, a bottle-support, a bending-head, means for causing the bottle-support and bending-head to approach and recede from each other, a bending-die, within the bending-head, capable of lateral motion and having a plurality of bending-faces divided into two sets located in different vertical planes and alternating with each other, whereby the lower set of bending-faces will bend certain portions of a metallic cap into sealing relation with the bottle, leaving intermediate unbent portions, and will tend to center the bottle and bending-die with relation to each other, the upper set of bending-faces acting subsequently to bend the said intermediate portions into sealing relation with the bottle.

8. In a bottle-capping machine, a bottle-support, a bending-head, means for causing the bottle-support and bending-head to approach and recede from each other, a bending-die, within the bending-head, capable of lateral motion, and having a plurality of bending-faces divided into two sets located in different vertical planes and alternating with each other, whereby the lower set of bending-faces will bend substantially alternate corrugations of a metallic cap into sealing relation with the bottle, leaving intermediate unbent cofrugations, and will tend to center the bottle and bending-die with relation to each other, the upper set of bending-faces acting subsequently to bend the said intermediate corrugations into sealing relation with the bottle.

9. In a bottle-capping machine, a bottle-support, a bending-head, means for causing the bottle-support and bending-head to approach and recede from each other, a bending-die, within the bending-head, capable of lateral motion and having a plurality of bending-faces divided into two sets located in different vertical planes and alternating with each other, whereby the lower set of bending-faces will bend certain portions of a metallic cap into sealing relation with the bottle, leaving intermediate unbent portions, and will tend to center the bottle and bending-die with relation to each other, the upper set of bending-faces acting subsequently to bend the said intermediate portions into sealing relation with the bottle, and an elastic cushion seated within the said bending-die adapted to be compressed by the top of the bottle-cap and to assist in releasing the said cap from the bending-faces on the withdrawal of the bottle.

10. In a bottle-capping machine, a bottle-support, a bending-head, means for causing the bottle-support and bending-head to approach and recede from each other, a bending-die, within the bending-head, capable of lateral motion, and having a plurality of bending-faces divided into two sets located in different vertical planes and alternating with each other, whereby the lower set of bending-faces will bend substantially alternate corrugations of a metallic cap into sealing relation with the bottle, leaving intermediate unbent corrugations, and will tend to center the bottle and bending-die with relation to each other, the upper set of bending-faces acting subsequently to bend the said intermediate corrugations into sealing relation with the bottle, and an elastic cushion seated within the said bending-die adapted to be compressed by the top of the bottle-cap and to assist in releasing the said cap from the bending-faces on the withdrawal of the bottle.

11. In a bottle-capping machine, a bottle-support capable of a vertical movement, a bifurcated pivoted lever on which the said bottle-support rests, an arm shorter than the bifurcated lever extending in a direction opposite from that of the said bifurcated lever and connected thereto, and a spring bearing against the end of the short arm.

12. In a bottle-capping machine, a bottle-support consisting of a sleeve capable of vertical movement, a bottle-socket adjustably carried by the said sleeve, a bifurcated pivoted lever on which the said sleeve rests, an arm shorter than the bifurcated lever extending in a direction opposite from that of the said bifurcated lever and connected thereto, and a spring bearing against the end of the short arm.

850,289. OFFICE FOLDING TYPE-WRITER COVER. GEORGE R. BRIGHT, Sutton, W. Va. Filed Apr. 9, 1906. Serial No. 310,733.

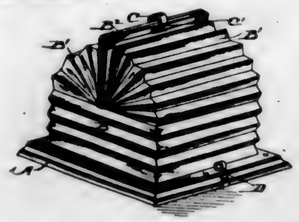

Claim.—1. A type-writer cover comprising a flexible, collapsible body portion secured to the base of a type-writer and inclosing the same, the upper portion of said cover being split at the ends forming dome-sections arching over the top of the machine, when in use, and means for locking the said dome-sections to each other as and for the purpose set forth.

2. A type-writer cover comprising a rectangular body portion formed of a flexible, accordion-plaited material, the upper portion of said material being split at the ends, frames carried by said split portions and adapted to meet above the machine, and means for fastening said frames together.

3. A type-writer cover comprising a flexible accordion-plaited body adapted to inclose the sides of the type-writer, integral, flexible dome-sections carried by said body portion and adapted to arch over the type-writer, and means for fastening said dome-sections together at a point above the type-writer.

4. A type-writer comprising an accordion-plaited portion adapted to inclose the sides of the type-writer, integral accordion-plaited dome-sections, carried by opposite sides of the said body and adapted to arch over the space inclosed

by the body portion, angled frames secured to said dome-portions, the frames being adapted to lie face to face when the cover is in a closed position, means for locking the frames to each other, and means for locking the frames to the base of the type-writer when the cover is in a collapsed state.

850,290. STAPLING-MACHINE. THOMAS A. BRIGGS, East Greenwich, R. I., assignor to Boston Wire Stitcher Company, East Greenwich, R. I., a Corporation of Maine. Filed June 12, 1905. Serial No. 264,794.

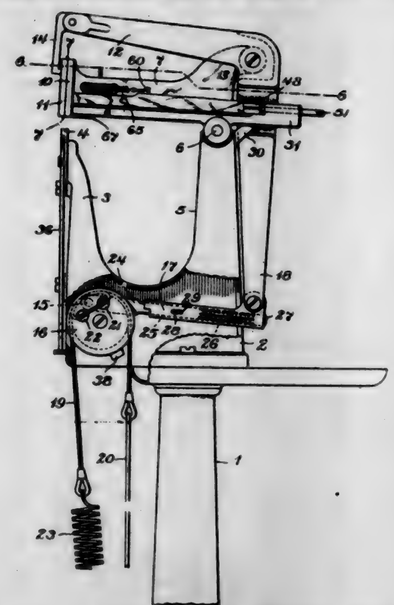

Claim.—1. A stapling-machine, comprising staple driving and setting devices, a rotary actuating member closely adjacent the line of movement of said devices and having provisions for operating one of them, a bell-crank lever having one arm transverse and the other substantially parallel to such line, connected for actuating the other of said devices, and a link joining said actuating member and lever approximately parallel to the transverse arm of the lever.

2. A stapling-machine, comprising staple driving and setting devices in line, a rotary actuator closely adjacent the line of movement of said devices, said actuator having a projection for operating one of said devices, located adjacent such line of movement, a bell-crank lever having one arm transverse and the other substantially parallel to such line, connected for actuating the other of said devices, and a yielding link joining said actuator and lever.

3. A stapling-machine comprising a work-support, an arm having a guideway adapted to receive and guide a staple to be driven, a staple-driver movable in said guideway toward and away from the work-support, a detachable staple-holder, means on said arm for retaining said holder in position to feed staples into the guideway, a feeder for the staples arranged to move the latter into the guideway, and a single resilient member normally under tension connected to the retaining means and feeder.

4. A stapling-machine comprising a work-support, a staple-driver movable toward and away from the work-support, an actuating-lever, a link pivoted to the lever and detachably engaged with the driver, being movable about its pivot away from the driver and having an eccentric surface adjacent the pivot, and a yieldingly-projected stud arranged to engage said surface and hold the link in engagement with the driver.

5. A stapling-machine comprising a work-support, a staple-supporting arm having a guideway, a face-plate on the arm covering the guideway, a driver movable therein toward and from the work-support, a staple-holder supported on the arm adapted to hold a series of ready-formed staples and to discharge them into the guideway, and a stop for retaining staples slidingly mounted on said arm beneath the staple-holder and having a smoothly-beveled end projecting across the guideway adapted to be engaged and wholly retracted by the driver, said stop having also a recess in its beveled end, and the face-plate having slots to receive the stop and an intermediate tongue to enter the recess in the stop for retaining the staples in the guideway.

6. A stapling-machine comprising a work-support, an arm having a guideway, a driver movable therein toward and away from the work-support, a detachable staple-holder comprising a bar having staples arranged thereon, mounted with one end adjacent the guideway, a loose abutment bridging the guideway and engaging the said end of the bar to hold the latter out of the guideway, a retainer engaged with the other end of the bar yieldingly impelled to hold the bar against said abutment, means for feeding staples from the bar into the guideway, and means for actuating the driver.

7. A stapling-machine comprising driving and clenching instrumentalities, a staple-holder consisting of a bar on which the staples are placed in order, with their legs embracing the sides thereof, an envelop surrounding the staples, and a feeder shaped to embrace the bar and arranged to press upon the staples, force them into operative proximity to the driving and clenching instrumentalities, and to divide the envelop.

8. A stapling-machine comprising driving and clenching instrumentalities, a staple-holder consisting of a bar on which the staples are placed in order, partly surrounding the same, and a feeder having a central portion resting on the bar and side portions embracing the bar, said bar and feeder having interengaging members to permit movement of the feeder longitudinally of the bar to feed staples and prevent separation therefrom in a transverse direction.

9. A stapling-machine comprising driving and clenching instrumentalities, a staple-holder consisting of a bar on which the staples are placed in order, with their legs embracing the sides thereof, and a feeder constructed of sheet metal having a central portion resting on the bar, side portions bent down to engage the sides of the bar arranged to press upon the staples and force them into operative proximity to the driving and clenching instrumentalities, and flanges turned inward to retain the feeder on the bar.

10. A stapling-machine comprising driving and clenching instrumentalities, a staple-holder consisting of a bar on which the staples are placed in order, with their legs embracing the sides thereof, a feeder constructed of sheet metal having a central portion resting on the bar, side portions bent down to engage the sides of the bar arranged to press upon the staples and force them into operative proximity to the driving and clenching instrumentalities, an upward projection, a spring connected to said projection arranged to yieldingly impel the feeder in a direction to feed the staples, and inwardly-turned portions engaging the bar below said projection to prevent the spring separating the feeder from the bar.

11. A stapling-machine comprising driving and clenching instrumentalities, a staple-holder consisting of a bar supporting and partly surrounded by staples, and a retaining-envelop surrounding the staples, and a feeder for moving staples from the holder into operative proximity with said instrumentalities, consisting of a central portion resting on the bar, downwardly-extending sides embracing the sides of the bar to engage and feed the staples, and an outward projection having an edge for dividing the envelops as the feeder is advanced.

12. A stapling-machine comprising a supporting-arm, a plate having a guideway secured to said arm, a staple-driver movable in the guideway, a loose abutment engaged with the plate at the sides thereof and bridging the guideway, a staple-container carrying a line of staples mounted with one end adjacent the guideway, and means for feeding the staples from the container into the guideway.

13. A stapling-machine comprising a supporting-arm, a plate having a guideway secured to said arm, a staple-driver movable in the guideway, a loose abutment engaged with the plate at the sides of the guideway bridging the latter, a staple-container carrying a line of staples mounted with one end adjacent the guideway, means for feeding the staples from the container into the guideway, and a stop mounted beneath the container and movable toward the guideway, being provided with a projection having an inclined surface of uniform inclination from upper side to end adapted to extend across the guideway and arrest a descending staple and a shoulder located to engage the abutment.

14. A stapling-machine comprising staple-driving mechanism, a lever for operating said mechanism connected thereto, clenching mechanism for bending over the ends of a staple after driving, a link connected to said lever, and a single actuator for both said mechanisms, including a rotary arm connected to the link for operating the lever, and a projection for subsequently engaging and operating the clenching mechanism.

15. A stapling-machine comprising staple-driving mechanism, an operating-lever therefor connected thereto, a link connected thereto, a drum pivotally connected to the link, clenching mechanism arranged to bend over the ends of a staple after it has been driven, means for rotating the drum to bring the points of attachment of the link therewith and with the lever into line with the axis thereof to actuate the lever to drive a staple, and provisions on the drum arranged to actuate the clenching mechanism after the driver-operating lever has been actuated.

16. A stapling-machine comprising a staple-driver, a work-support, staple-clenchers on the work-support for bending over the ends of a staple after it has been driven, an actuator for said clenchers, a rotatable drum, connections between the drum and driver whereby rotation of the former actuates the latter, a projection on the drum arranged to engage and operate the clencher-actuator during the rotation of the drum and after the drum has operated the staple-driver, and means for rotating the drum.

850,291. WASHING-MACHINE. FRANCIS BRUCKER and ABRAHAM L. STUMP, Shelby, Ohio. Filed Apr. 28, 1905. Serial No. 257,951.

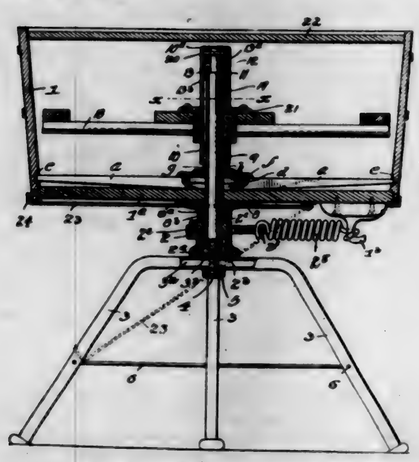

Claim.—1. In a washing-machine, the combination with a rotary tub and stationary rubber, of a stand or support comprising a hub having horizontal grooves or recesses on its lower face, and supporting members clamped within said recesses, substantially as described.

2. In a washing-machine, the combination with a rotary tub, of a stand or support comprising a hub having open horizontal recesses or grooves in the bottom thereof of different depths, and supporting members having horizontal portions crossing each other and resting in said grooves or recesses with means for clamping them therein, substantially as described.

3. In combination, a stand or support, a vertical rod rigidly carried thereby, a tub, a tubular sleeve passing through and secured centrally to the bottom of the tub and encircling the rod, an antifriction-bearing between said sleeve and the upper portion of the rod, a second sleeve secured to the rod above said bearing and depending outside of the first-named sleeve, and a rubber having a sliding and non-rotating connection with the depending portion of said second-named sleeve, substantially as described.

4. In combination, a stand having a hub, a tub rotatably mounted on said hub, a yoke pivotally held at one side of said hub and having a limited rocking movement thereon, an arm extending from the opposite side of said yoke and a spring connection between said arm and the tub, substantially as described.

5. In combination, a stand having a hub, a tub rotatably mounted on the hub, a rib projecting from one side of the hub, a yoke loosely encircling the hub and having a recess engaged by said rib, an arm projecting from the opposite side of said yoke and a spring connecting the arm with the tub, substantially as described.

850,292. ICE-SAW. THOMAS M. BUTLER, Dallas, Tex. Filed Feb. 15, 1906. Serial No. 301,314.

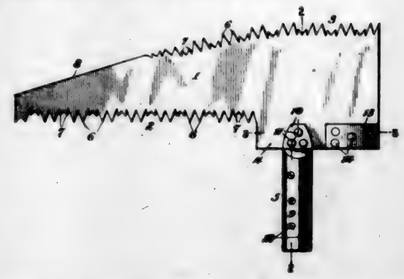

Claim.—1. An ice-saw comprising a substantially oblong blade provided with opposite longitudinal cutting edges extending from the opposite ends of the blade and being of a length less than the length of the blade to leave smooth longitudinal edges, the latter being arranged at the opposite ends of the blade, and a handle attached to the blade at one of the said smooth longitudinal edges, the other smooth longitudinal edge forming a guard to prevent injury to the walls of an ice-receptacle when the saw is operated at the side of a cake of ice.

2. An ice-saw comprising a substantially oblong longitudinally-tapered blade, provided at its longitudinal edges with opposite cutting portions extending from the opposite ends of the blade, and being of a length less than the length of the blade to leave smooth longitudinal edges at the opposite ends of the blade, one of the said cutting portions being curved, and the blade being provided at its opposite longitudinal edge with an extension, and a handle secured to the said extension.

3. An ice-saw comprising a blade provided at its longitudinal edges with cutting portions extending from the opposite ends of the blade and being of a length less than the length of the blade to leave smooth longitudinal edges at the opposite ends of the blade, the latter being provided with an extension at one of the smooth portions, and a handle extending from the blade at right angles thereto and spaced from the side edges of the extension a sufficient distance to provide hand-guards.

4. An ice-saw comprising a saw-blade, and a wedge secured flat against one of the side faces of the saw-blade and extending throughout its length along the said saw-blade and having its small end located at one edge of the same, whereby the wedge is adapted to be introduced into a kerf cut by the saw for separating a partially-severed piece of ice from the rest of the cake.

5. An ice-saw comprising a blade having a substantially rectangular extension located at one side of the blade at one end thereof, a handle attached to the extension, and a wedge also secured to the extension at one corner thereof, one end and side of the wedge being flush with the adjacent edge of the blade.

6. An ice-saw comprising a blade, a handle arranged at an angle to the blade at a point between the ends thereof, and a wedge arranged longitudinally of and fitted to the blade at the corner thereof at one side of and at an angle to the handle.

7. An ice-saw comprising a blade, a handle extending from the blade at an angle thereto, and a wedge fitted to and against the blade and arranged at right angles to and at one side of the handle, the small end of the wedge being located at one edge of the blade and the large end of the wedge being disposed toward the handle.

8. An ice-saw comprising a substantially oblong blade provided with opposite longitudinal cutting edges, one of the cutting edges terminating short of the length of the blade, from which point the blade is formed into a transverse enlargement or extension, and a handle projecting from the blade at the enlargement or extension and arranged at an angle thereto, said extension being arranged to form a guard to prevent the hand of the operator from coming in contact with the ice or the ice-box.

9. An ice-saw comprising a substantially oblong blade provided with opposite longitudinal cutting edges, each of which is less than the length of the blade, a transverse extension being provided at one end of the blade, and a handle attached to the said extension at a point between the opposite edges thereof.

850,293. APPARATUS FOR SEPARATING MATERIAL. ALBERT C. CALKINS, Los Angeles, Cal. Filed Dec. 17, 1904. Serial No. 237,327.

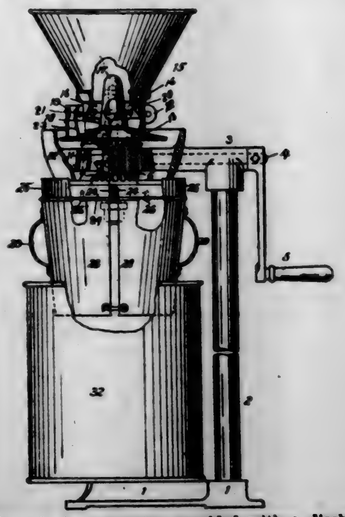

Claim.—1. An apparatus provided with a discharging-disk, respectively open and closed receiving devices therebelow and means for simultaneously imparting a rotary motion to said disk and devices in opposite directions, whereby the material will be separated in predetermined portions.

2. An apparatus provided with a discharging-disk, dividing-receptacles having respectively open and closed bottoms and means for imparting rotary motion to said disk and receptacles in opposite directions, whereby a predetermined quantity of material will pass through some of said receptacles, and a predetermined quantity thereof will be retained in the other receptacle.

3. An apparatus provided with a hopper, a rotatable disk therebelow to discharge the material therefrom, dividing-receptacles having open and closed bottoms respectively, and means for imparting motion in opposite directions to said disk and receptacles to effect the predetermined division of material introduced into the hopper.

4. An apparatus provided with a discharging device, means for regulating the quantity of material passing thereover, dividing-receptacles and mechanism for imparting rotary motion in opposite directions to said device and receptacles, to effect a predetermined division of material.

5. An apparatus provided with a hopper, an adjustable collar thereon having deflecting portions, a discharging-disk below said hopper, dividing-buckets and means for imparting a rotary motion in opposite directions to said disk and buckets respectively, whereby the material will be divided into predetermined quantities.

6. An apparatus provided with means for supplying material, a device therebelow for discharging material received by said means, an adjustable feed-regulator to control the passage of the material from said means, buckets to receive the material, and mechanism for imparting rotary motion to the discharging device and the buckets.

7. An apparatus provided with means for supplying material having lateral discharge-openings, a device adjustably mounted upon said means to regulate the passage of material through said openings, a discharging-disk below said device constructed to receive and discharge the material received from said means and buckets to receive the material, mechanism for imparting rotary motion to the discharging device and the buckets.

8. An apparatus provided with means for supplying material thereto having discharge-openings, a discharge-disk rotatably mounted below said means, a ring adjustably mounted on said means contiguous to said disk to regulate the passage of material through said openings and carrying deflecting portions, and mechanism for operating the parts.

9. An apparatus provided with a support, a discharging device mounted therebelow, means for supplying material to said device, receptacles connected with said support and mechanism for imparting rotary motion in opposite directions to the discharging device and receptacles.

10. An apparatus provided with a support, a tubular arm supported from the same, a shaft mounted within the tubular arm, a discharging-disk upon said shaft having an extension, a hopper above said disk having a central supporting portion upon said shaft inclosing said extension and means for operating the parts.

11. An apparatus provided with a supporting portion, a shaft mounted therein, a hopper having a supporting portion upon said shaft, a discharging device upon said shaft partially inclosed by said portion of said hopper, receptacles carried by said support below said device and means for moving said device and receptacles.

12. An apparatus provided with a supporting portion, a shaft mounted therein, a hopper having a supporting portion upon said shaft, an adjustable ring upon said hopper having deflecting portions, a discharging device upon said shaft partially inclosed by said portion of said hopper, receptacles carried by said support below said device and means for moving said device and receptacles.

850,294. TRAMWAY-SWITCH. ROBERT H. CARLISLE, Covington, Ky. Filed Jan. 4, 1907. Serial No. 350,832.

Claim.—1. A switch of the type set forth comprising a pivoted switch member, a leaf-spring, a movable member connected with said spring, and operative connections between said switch member and said movable member, one member of said connections being adapted for engagement with said movable member at selected points on either side of said spring.

2. A switch of the type set forth comprising a pivoted switch member, a leaf-spring, a slidable member connected therewith, operative connections between said slidable member and said switch member, one member of said connections being adapted for engagement with said slidable member at points on either side of the line of force of said spring.

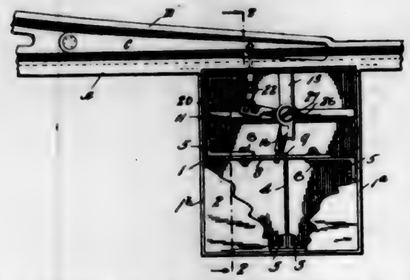

3. A switch of the type set forth comprising a pivoted switch member, a leaf-spring, a slidable element connected therewith, a rock-shaft, angularly-extending arms fixed on said shaft and connections between one of said arms and said switch member, the other of said arms being designed to be engaged with said slidable element at points on either side of its connection with said spring, said rock-shaft being slidable in its bearing and being spring-pressed to maintain said last-named arm in engagement with said element.

850,295. MOTOR. GEORGE H. CHAPPELL, Westwood, N. J., assignor to Progressive Co_2 Power Company, New York, N. Y., a Corporation of South Dakota. Filed Dec. 15, 1906. Serial No. 346,423.

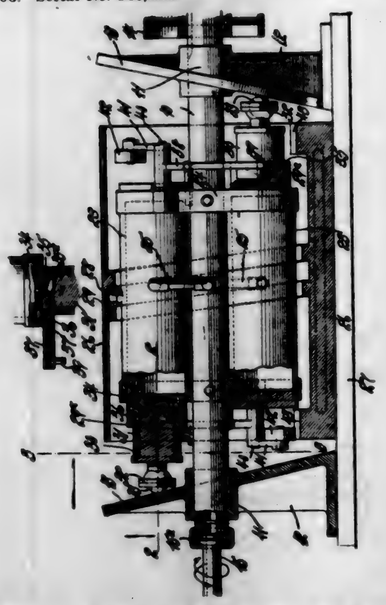

Claim.—1. A motor having a driving-shaft, opposed cylinders turning and sliding with the driving-shaft, inclined abutment-plates opposite the cylinder ends, a sliding piston opposite each cylinder, having a sliding connection with one of the abutment-plates, and a valve controlling the inlet of pressure-gas to the cylinders.

2. A motor comprising a rotating and reciprocating driving-shaft, cylinders arranged parallel with and moving with the shaft, oppositely-inclined abutments at the ends of the cylinders, pistons working from the cylinders and against the abutments, means for admitting pressure to the cylinders, and means for transforming the sliding movement of the cylinders and shaft into rotary motion.

3. A motor comprising a driving-shaft, opposed cylinders arranged parallel with the shaft and sliding and turning therewith, means for admitting pressure to the cylinders, oppositely-inclined abutments at the cylinder ends, pistons operated from the cylinders and working against the abutments, and means as the cam-groove and roller for converting the sliding movement of the cylinders and shaft into rotary motion.

4. In a motor, the combination of the opposed cylinders and their shaft, and means for driving the cylinders and shaft endwise, of a shell inclosing the cylinders, and a cam-groove on the shell receiving an abutment on one of the cylinders.

5. A motor comprising a hollow driving-shaft, means for admitting pressure into the shaft, cylinders arranged parallel with and turning with the shaft, means for admitting gas from the shaft to the cylinders, oppositely-inclined abutments near the cylinder ends, pistons worked by the cylinders and engaging the abutments, and means for converting the sliding movement of the cylinders into a rotary movement.

6. In a motor, the combination of the sliding and rotatable cylinders and their shaft, of a stationary shell inclosing the cylinders, the said shell having a cam-groove therein, and a roller on one of the cylinders to enter the cam-groove.

7. The combination with the sliding and rotating cylinders and shaft, of the inclined abutments, pistons operated from the cylinders and engaging the abutments, valves controlling the pressure-supply to the cylinders, and automatic means for alternately operating the valves.

8. The combination with the rotating cylinders, and the slide-valves controlling the inlets to the cylinders, of tilting levers connected with the slide-valves, and cam-tracks in the path of the outer ends of the levers to operate them.

9. In a motor, the combination with rotating cylinders and their shaft, of the opposed and oppositely-inclined abutment-plates at the cylinder ends, pistons working from the cylinders and against the plates, a cam-track held opposite the cylinders, and an abutment on one of the cylinders to engage the cam-track.

10. The combination with the sliding and rotating cylinders, of the oppositely-arranged inclined abutments rigidly supported in a stationary position at the cylinder ends, pistons operated from the cylinders, and a ball-joint connection between the pistons and the abutments.

11. The combination with the sliding and rotating cylinders, of the inclined and oppositely-arranged abutments near the cylinder ends, a stationary shell inclosing the cylinders, a ball-joint connection between the cylinders and the abutments, a cam-track on the shell, and an abutment on one cylinder to engage the cam-track.

12. The combination with the sliding and rotating cylinders, of the inclined and oppositely-arranged abutments near the cylinder ends, the inclined plates turning on the abutments, pistons operated from the cylinders, and a free connection between the piston and the revolving plate.

850,296. HARROW. WILLIAM C. COOK, Schaller, Iowa. Filed Oct. 20, 1906. Serial No. 341,086.

Claim.—1. A swiveled runner for sectional harrows adapted to be attached to the pivoted tooth-carrying bars thereof.

2. A runner attachment for sectional harrows consisting of an arm having an eyed head, and a stem carrying a curved shoe swivelly held in said eyed head, for the purpose set forth.

850,296.

850,297. CURTAIN-HOLDING DEVICE. GEORGE H. DAVIS, Portland, Me. Filed Mar. 17, 1904. Renewed Feb. 18, 1907. Serial No. 358,113.

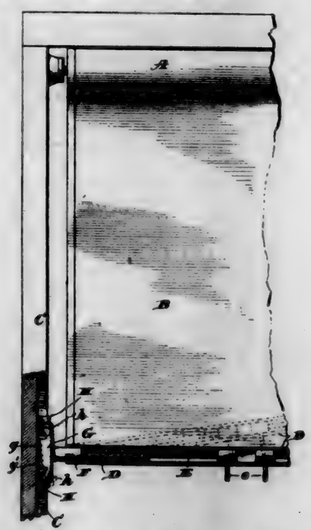

Claim.—1. A friction holding device for curtain-fixtures consisting of an elongated shoe having separated and independent-movable elongated bearing-blocks pivotally secured intermediate their ends at opposite ends of the shoe on pivots transverse to the head and stick and extending beyond the ends of the shoe, the bearing-surfaces of which being continuous and flat.

2. A friction holding device for curtain-fixtures consisting of an elongated shoe having separated and independently-movable elongated bearing-blocks pivotally secured intermediate their ends at opposite ends of the shoe on pivots transverse to the head and stick and extending beyond the ends of the shoe, the shoes having metallic frictional continuous flat engaging surfaces.

3. A friction holding device for curtain-fixtures consisting of an elongated shoe having separated and independently-movable elongated bearing-blocks pivotally secured intermediate their ends at opposite ends of the shoe on pivots transverse to the head and stick and extending beyond the ends of the shoe, said shoes having a frictional engaging surface comprising a plurality of closely-associated transversely-arranged sections of relatively hard and soft metals.

4. A friction holding device for curtain-fixtures consisting of an elongated shoe having separated and independently-movable elongated bearing-blocks pivotally secured intermediate their ends at opposite ends of the shoe on pivots transverse to the head and stick, and extending beyond the ends of the shoe.

850,298. SUSPENSORY. FRANK E. DE MARS, New York, N. Y. Filed May 14, 1906. Serial No. 316,868.

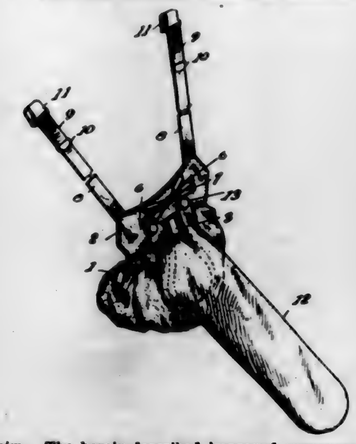

Claim.—The herein-described improved suspensory comprising a pad 2, extensible tabs 8 secured at their lower ends to the opposite upper corners of the pad and provided at their upper ends with button-holders 11 adapted to be inserted over the front pants-buttons, a pouch secured to the lower edge of said pad, the said pad being provided with one member of detachable spring socket-fasteners, and a sack provided at its rear end with the complemental parts of said fasteners whereby it may be detachably secured to the pad.

850,299. ART OF SETTING BOILER-TUBES. WILLIAM M. DICKERSON, Indianapolis, Ind. Filed Sept. 10, 1906. Serial No. 333,972.

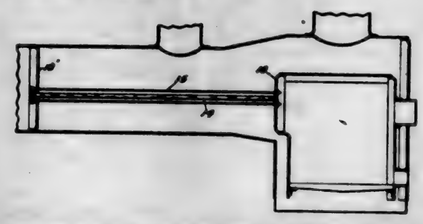

Claim.—1. That improvement in the art of setting boiler flues or tubes which consists in forcing them into a tapered opening and expanding their outer ends while under the forcing pressure.

2. That improvement in the art of setting boiler tubes or flues which consists in forcing the end of the tube through an opening in a plate, which opening is tapered outwardly in opposite directions from an intermediate point, and swelling the outer end of said tube while maintaining the forcing pressure longitudinally of the tube.

3. That improvement in the art of setting boiler tubes or flues which consists in forcing the end of the tube through an opening in a plate, which opening is tapered outwardly in opposite directions from an intermediate point, and swelling the outer end of said tube while maintaining the forcing pressure longitudinally of the tube, and forming a bead on the outer end of the tube.

4. That improvement in the art of setting boiler tubes or flues which consists in tapering the end of the tube or flue to correspond with the taper of one end of a flue-receiving opening, which opening is also tapered in the opposite direction toward the outer face of the head-plate, maintaining a pressure on the flue tending to force its tapered end into and through the tapered opening of the head-plate, and during said maintenance, swelling the outer end of the tube into the aforesaid oppositely-tapered portion of the flue-receiving opening.

5. That improvement in the art of setting boiler tubes or flues which consists in tapering the end of the tube or flue to correspond with the taper of one end of a flue-receiving opening, which opening is also tapered in the opposite direction toward the outer face of the head-plate, maintaining a pressure on the flue tending to force its tapered end into and through the tapered opening of the head-plate, and during said maintenance, swelling the outer end of the tube into the aforesaid oppositely-tapered portion of the flue-receiving opening, and forming a bead on the outer end of the tube.

850,300. VEHICLE. FRANK EDER, Thayer, Mo. Filed Nov. 7, 1906. Serial No. 342,364.

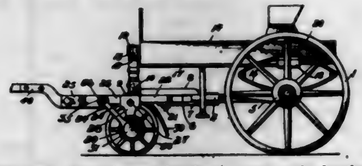

Claim.—1. In a buggy having a rear axle having two wheels, and a running-gear, of a frame pivotally connected to the forward end of the gear, a wheel-supporting yoke straddling and connected to said frame, a front wheel journaled in said yoke, braces connected to the yoke and the forward end of the frame, and means whereby a draft device is connected to the forward end of the frame.

2. In a buggy, the combination of a body, longitudinal strips secured to the bottom and extending nearly the full length thereof, said strips being provided with hooked forward ends, a transverse strip also carried by the bottom of the body and having angled terminals, a running-gear, a forward spring carried by the running-gear and connected to the hooked ends of the longitudinal strip, rear springs connected to the angled terminals of the transverse strip, a frame pivotally connected to the forward end of the running-gear, a wheel-supporting yoke straddling and connected to said frame, a front wheel journaled in said yoke, means whereby a draft device is connected to the forward end of the frame, and a pair of rear wheels carried by the running-gear.

3. In a buggy, the combination of a body, longitudinal strips secured to the bottom and extending nearly the full length thereof, said strips being provided with hooked forward ends, a transverse strip also carried by the bottom of the body having angled terminals, a running-gear, a forward spring carried by the running-gear and connected to the hooked ends of the longitudinal strips, rear springs carried by the running-gear and connected to the angled terminals of the transverse strip, a fifth-wheel connected to the forward end of the running-gear, a single wheel connected to the fifth-wheel, means for securing a draft device to the front wheel, a rear axle, and two rear wheels journaled upon the rear axle.

4. In a buggy, the combination of a body, longitudinal strips secured to the bottom and extending nearly the full length thereof, said strips being provided with hooked forward ends, a transverse strip also carried by the bottom of the body and having angled terminals, a running-gear, a forward spring carried by the running-gear and connected to the hooked ends of the longitudinal strips, rear springs carried by the running-gear and connected to the angled terminals of the transverse strips, upper and lower fifth-wheel supports connected to the forward end of the said gear, a frame pivotally mounted between said supports and forming the fifth-wheel, a yoke carried by said frame, an axle carried by said yoke, a front wheel mounted between the yoke upon the axle, and means whereby a draft device is connected to the forward end of the frame.

850,301. CAR-COUPLING. JAMES L. FRAZIER, Peoria, Ill., assignor to Gravity Coupler Company, a Corporation of Illinois. Filed Aug. 14, 1905. Serial No. 274,229.

Claim.—1. A device of the class described comprising two interlocking members separable only in a transverse direction and a device rotatable about the interlocked members and having a transverse opening therein for permitting entrance and removal of one of said interlocking members in said transverse direction, said device having provision for holding it at any position placed.

2. A coupling comprising two members adapted to interlock only in a transverse direction, and a device carried by and fitting closely around one of the members, the same adapted to normally prevent separation of said members transversely when they are interlocked, there being provision in such device for exposing the place of separation of the member by a partial turn thereof and permitting removal of one member from the other therethrough in said transverse direction only and having provision for maintaining any position at which it may be placed.

3. The combination with a coupling member having a socket extending into it laterally, of a coacting coupling member having a part adapted to enter said socket and to be removed therefrom only in a transverse direction, and frictionally-held means adapted to be moved into and out of position for preventing such removal, substantially as set forth.

4. A coupling of the class described comprising two members adapted to interlock, a sleeve carried by and closely fitting around one of the members and adapted to inclose both said members, there being a transverse notch in part of the sleeve to permit the passage of one of the members therethrough only in a transverse direction, and means for frictionally holding the sleeve normally in a position to prevent separation of said members.

5. A coupling comprising two interlocking members adapted for separation only in a transverse direction, one having a socket and the other a tongue to enter and engage such socket, a sleeve carried by one of the members for closing the socket for the purposes described, a spring carried by one of the members and a depression in the inside of the sleeve for receiving the spring substantially as set forth.

6. In a coupling of the character described, a pair of interlocking members adapted to separate only in a transverse direction, there being a peripheral channel in one of them, a sleeve seated in said channel and adapted to turn

therein and preventing the separation of the members when in one position, there being a notch in the sleeve to permit separation when said notch is in register with the place of separation, and a spring carried on one of the members for engaging the sleeve and holding it in a desired position, there being provision for preventing separation of the interlocking members except in a transverse direction.

7. A coupling of the character described comprising two members adapted to interlock only in a transverse direction, a third member carried on one of such interlocking members and revoluble thereon but stationary at its position of revolution and serving when in one position to lock both members from separating but permit separation of the members when changed in position, and means for frictionally holding said third member in a desired position.

8. In a coupling of the character described, two members adapted to interlock, there being a socket in one end and a tongue on the other, a revoluble member carried by one of the engaging members for holding the said members normally engaged, and a spring for positively holding the revoluble member in a position to expose the socket transversely through the revoluble member, and likewise to hold it in a positive position covering the socket.

9. In a coupling of the character described, a pair of interlocking members adapted to separate in a transverse direction, there being a peripheral channel in one of them, a rotatable sleeve seated in said channel adapted for preventing the voluntary separation of the members, there being a notch in the sleeve for permitting separation of said member when desired, one of the members being removed from its companion through said notch, and a spring carried on one of the members for engaging the sleeve and normally holding it in a position to cover the place of separation of the members.

10. A coupling comprising two interlocking members, one having a socket and the other a tongue to enter and engage such socket, a sleeve carried by one of the members, a spring also carried by one of the members, and a depression in the inside of the sleeve for receiving the spring for the purposes set forth.

11. A coupling of the class described comprising a member provided with a socket having an enlarged opening, a companion member therefor having a tongue with an enlargement at its end to engage with the socket in a transverse direction as described, a friction-held sleeve carried by the socket member for covering the socket and tongue when interlocked, and adapted also to expose the said socket and tongue by a partial shifting movement thereof to permit the separation of the members in a transverse direction.

850,302. EMERGENCY-BRAKE FOR VEHICLES. DANIEL F. GREASER and HARRISON H. GREASER, Pittsburg, Pa. Filed June 28, 1903. Serial No. 267,440.

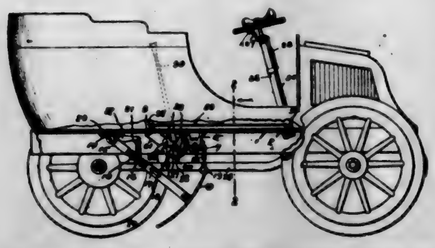

Claim.—1. The combination with a vehicle, of an emergency-brake therefor, consisting of means adapted to be wedged between the wheels of the vehicle and the ground, means for holding the same out of engagement with the wheels and ground, means operable from the steering mechanism of the vehicle for releasing the wedging means, and automatic means set in operation by said releasing means whereby the wedging means are placed in contact with the wheels and the ground.

2. The combination with a vehicle, of an emergency-brake therefor, consisting of means adapted to be wedged between the wheels of the vehicle and the ground, means for holding the same out of engagement with the wheels and ground, means operable from the steering mechanism of the vehicle for releasing the wedging means, automatic means set in operation by said releasing means whereby the wedging means are placed in contact with the wheels and the ground, and means for returning the wedging means to inoperative position.

3. The combination with a vehicle, of an emergency-brake therefor, consisting of a pair of shoes adapted to be wedged between the wheels and the ground, means for holding said shoes out of engagement with the wheels and ground, means operable from the steering mechanism of the vehicle for releasing said shoes, and automatic means set in operation by said releasing means whereby the shoes are placed between the wheels and the ground.

4. The combination with a vehicle, of an emergency-brake therefor, consisting of a pair of shoes adapted to be wedged between the wheels and the ground, means for holding said shoes out of engagement with the wheels and ground, means operable from the steering mechanism of the vehicle for releasing said shoes, means for automatically wedging the shoes between the wheels and the ground after said shoes are released, and means for returning the shoes to inoperative position.

5. The combination with a vehicle, of an emergency-brake therefor, consisting of a pair of shoes adapted to be wedged between the wheels and the ground, means for holding the shoes out of engagement with the ground, spring-actuated means for exerting a tension to throw the shoes in operable position, and means operable from the steering mechanism of the vehicle for releasing the holding means and allowing the spring-actuated means to place the shoes in contact with the wheels and ground.

6. The combination with a vehicle, of an emergency-brake therefor, consisting of a pair of shoes adapted to be wedged between the wheels and the ground, means for holding the shoes out of engagement with the ground, spring-actuated means for exerting a tension to throw the shoes in operable position, means operable from the steering mechanism of the vehicle for releasing the holding means and allowing the spring-actuated means to place the shoes in contact with the wheels and ground, and means for returning the shoes to inoperative position.

7. The combination with a vehicle, of an emergency-brake therefor, consisting of a shaft pivoted below the floor thereof, a pair of arms carried by the shaft, a sleeve connected to each of said arms and projecting downwardly, a shoe pivotally connected to each sleeve, means connecting both shoes so that they operate in unison, means for holding the shoes in inoperative position, means for releasing said shoes, and means for automatically placing the shoes in engagement with the wheels and ground after they have been released.

8. The combination with a vehicle, of an emergency-brake therefor, consisting of a shaft pivoted below the floor thereof, a pair of arms carried by the shaft, a pair of shoes carried by said arms adapted to contact the wheels and the ground when in operable position, means for connecting the shoes together, means for holding the shoes in inoperative position, means for releasing said shoes operable from the steering mechanism of the vehicle, and means for automatically placing the shoes in engagement with the wheels and the ground after the shoes have been released.

9. The combination with a vehicle, of an emergency-brake therefor, consisting of a shaft pivoted below the floor thereof, a pair of shoes carried thereby and adapted to swing in an arc of a circle to engage the wheels and the ground simultaneously, means for holding the shoes in inoperative position, means for releasing the shoes operable from the steering mechanism of the vehicle, and means for automatically placing the shoes in engagement with the wheels and ground after the shoes are released.

10. The combination with a vehicle, of an emergency-brake therefor, consisting of a shaft pivoted to the floor thereof, a pair of shoes carried by said shaft and adapted to swing in an arc of a circle to engage the wheels and the ground when in operable position, means for holding the shoes in inoperative position, means for releasing the shoes operable from the steering mechanism of the vehicle, means for automatically placing the shoes in engagement with the wheels and ground after the shoes are released, and means for returning the shoes to inoperative position.

11. The combination with a vehicle, of an emergency-brake therefor, consisting of a shaft pivoted below the floor thereof, a pair of arms carried by the shaft, a sleeve connected to each of said arms and projecting downwardly, a shoe pivotally connected to each sleeve, means connecting said shoes together, means for holding the shoes in inoperative position, means for releasing said shoes, means for automatically placing the shoes in engagement with the wheels and the ground after the shoes are released, and means for returning the shoes to inoperative position.

12. The combination with a vehicle, of an emergency-brake therefor, consisting of a shaft pivoted below the floor thereof, a pair of arms carried by the shaft, a pair of shoes carried by said arms, adapted to contact the wheels and the ground when in operable position, means for connecting the shoes together, means for holding the shoes in inoperative position, means for releasing said shoes operable from the steering mechanism of the vehicle, means for automatically placing the shoes in engagement with the wheels and the ground after the shoes are released, and means for returning the shoes to inoperative position.

13. The combination with a vehicle, of an emergency-brake therefor, consisting of means adapted to be wedged between the wheels and the ground, means for holding the same out of engagement with the wheels and ground, means operable from the steering mechanism of the vehicle for releasing the wedging means, and means set in operation after the wedging means is released, whereby the wedging means is placed in engagement with the wheels and the ground.

14. The combination with a vehicle, of an emergency-brake therefor, consisting of means adapted to be wedged between the wheels and the ground, means for holding the same out of engagement with the wheels and ground, means operable from the steering mechanism of the vehicle for releasing the wedging means, means set in operation after the wedging means is released, whereby the wedging means is placed in engagement with the wheels and ground, and means for returning the wedging means to inoperative position.

15. The combination with a vehicle, of an emergency-brake therefor, consisting of means adapted to be wedged between the wheels and ground, means for holding the same out of engagement with the wheels and ground, means operable from the steering mechanism of the vehicle for releasing the wedging means, means set in operation after the wedging means is released, whereby the wedging means is placed in engagement with the wheels and ground, and manually-operated means for returning the wedging means to inoperative position.

16. The combination with a vehicle of an emergency-brake therefor, consisting of a shaft pivoted below the floor thereof, a pair of arms carried thereby and provided with reduced portions, sleeves for the reception of said arms projecting downwardly, a shoe carried by each sleeve, means for connecting the shoes together, a spring exerting a tension downwardly so as to place the shoes simultaneously in engagement with the wheels and the ground, and means whereby the shoes are raised simultaneously.

17. The combination with a vehicle, of an emergency-brake therefor, consisting of a shaft pivoted below the floor thereof, a pair of arms carried by said shaft, sleeves for the reception of said arms projecting downwardly, a shoe pivotally connected to each sleeve, means for connecting both of said shoes, spring-actuated means for exerting a tension downwardly so as to place the shoes simultaneously in engagement with the wheels and the ground, and means operable from the vehicle for releasing the exerting means, whereby the shoes are placed in contact with the wheels and ground.

850,303. EXPRESSION MECHANISM FOR SELF-PLAYING MUSICAL INSTRUMENTS. JOHN J. HEALY, Cohocton, N. Y., assignor of one-half to Solomon F. Hess, Rochester, N. Y. Filed May 15, 1905. Serial No. 260,402.

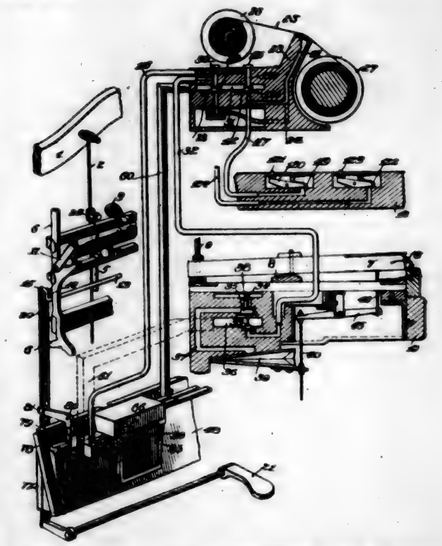

Claim.—1. In a pneumatically-operated musical instrument, the combination with an action embodying string-dampers and keys, key-pneumatics and devices for operating said dampers, a power-pneumatic connected to the latter, separate exhaust-bellows for operating the pneumatics and valves for controlling them, of separate feeder-bellows for the exhaust-bellows, a valved passage connecting the latter, means for operating the feeder and means for controlling the operation of the valves.

2. In a pneumatically-operated musical instrument, the combination with an action embodying string-dampers and keys, key-pneumatics, operating devices for the dampers and a power-bellows for actuating them, of separate reservoirs for operating the key-pneumatics and power-bellows, feeder-bellows exhausting said reservoirs and a passage connecting said reservoirs, a valve controlling it and means for governing the operation of the key-pneumatics and power-bellows.

3. In a pneumatically-operated musical instrument, the combination with an action embodying keys, pneumatic devices for operating them and feeder and main bellows for operating the key-pneumatics, of means for operating a part of the instrument independent of the keys, a bellows for actuating said independent part and a separate feeder and main bellows for said actuating-bellows and means for simultaneously operating the two feeder-bellows, a passage connecting the two main bellows, a valve controlling said passage and means for operating it.

4. In a pneumatically-operated musical instrument, the combination with an action embodying keys, pneumatic devices for operating them and feeder and main bellows for operating the key-pneumatics, of means for operating a part of the instrument independent of the keys, a bellows for actuating said independent part and a separate feeder and auxiliary main bellows for said actuating-bellows, means for simultaneously operating the two feeder-bellows, a passage connecting the main and auxiliary main bellows, a valve normally closing the passage and means for opening it when the air is exhausted from the auxiliary main bellows.

5. In air-exhausting devices for pneumatically-operated instruments, the combination with a main reservoir,

a feeder-bellows exhausting air therefrom and pneumatically-operated devices connected to the reservoir, of a separate feeder attached to the main feeder, an auxiliary reservoir connected to the separate feeder, power-bellows, a passage connecting it to the auxiliary reservoir and a valve controlling said passage, another passage connecting the auxiliary reservoir and main reservoir, a valve controlling it, means for closing the latter when the other valve is opened and means for operating the feeders.

6. In air-exhausting devices for pneumatically-operated instruments, the combination with a main reservoir, a feeder-bellows exhausting air therefrom and pneumatically-operated devices connected to the reservoir, of a separate feeder attached to the main feeder, an auxiliary reservoir connected to the separate feeder, power-bellows, a passage connecting it to the auxiliary reservoir and a valve controlling said passage, a primary valve controlling the first-mentioned valve and a tracker-board having a passage controlling said primary valve, a supplemental passage under the control of the operator for governing the operation of the power-bellows independently of the passage in the tracker-board and means for operating the feeder.

850,304. MEASURING-MACHINE. WARREN T. HOLLIS, Boston, Mass. Filed Oct. 5, 1906. Serial No. 337,523.

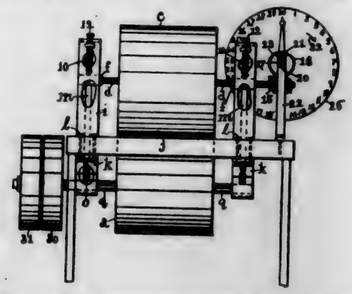

Claim.—1. In a measuring-machine, in combination, a rotatable member actuated by the material to be measured, and provided with a shaft, boxes in which said shaft is journaled, upright guides in which said boxes slide, adjustable supports for said boxes, a worm on said shaft, a worm-gear in mesh with said worm, a shaft on which said worm-gear is mounted, a pointer on the worm-gear shaft, a dial loosely mounted on said pointer-shaft and coöperating with said pointer, and means to guide said dial in its movement with said pointer-shaft, substantially as described.

2. In a measuring-machine, in combination, a rotatable member actuated by the material to be measured, a shaft on which said member is mounted, sliding boxes in which said shaft is journaled, a pointer or index, a shaft on which said pointer or index is mounted to turn, sliding boxes in which said pointer-shaft is journaled, and gearing connecting said pointer-shaft with the shaft of said rotatable member, substantially as described.

3. In a measuring-machine, in combination, a bed-roll, a rotatable member coöperating with the said bed-roll and actuated by the material passed between the same, a shaft on which said rotatable member is mounted, sliding boxes in which said shaft is journaled, a pointer, and dial coöperating therewith, a shaft on which said pointer and dial are mounted, sliding boxes in which said pointer-shaft is journaled, gearing connecting said shafts, and means to restrain said dial from rotary movement on said pointer-shaft while permitting said dial to move therewith, substantially as described.

4. In a measuring-machine, in combination, a rotatable member actuated by the material to be measured and bodily movable to compensate for different thicknesses of material, means for guiding said member in a substantially straight path in its bodily movement, a pointer, a bodily-movable shaft on which said pointer is mounted, means for guiding said pointer-shaft in a substantially straight path in its bodily movement, and means for connecting said pointer-shaft with the shaft of said rotatable member, substantially as described.

5. In a measuring-machine, in combination, a bed-roll, a rotatable member coöperating with said bed-roll and actuated by the material passed between the same, means for exerting a yielding pressure on said member, means for regulating the said pressure, a pointer or index, a shaft on which said pointer is mounted to turn therewith, and gearing for positively connecting said pointer-shaft with said rotatable member, said gearing being bodily movable with said member, substantially as described.

850,305. DUPLEXING TELEGRAPH-LINE. ISIDOR KITSEE, Philadelphia, Pa. Filed Aug. 9, 1906. Serial No. 329,884.

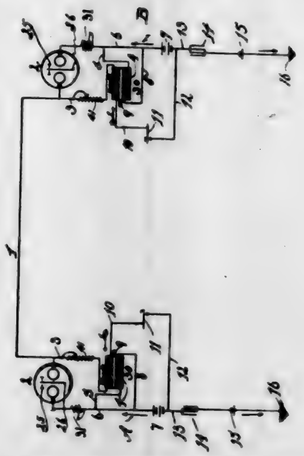

Claim.—1. In duplex telegraphy without artificial line, the combination with the line, of a receiving instrument having a single winding, and means for preventing response of the receiving instrument to current transmitted from the same station comprising an induction-coil, the secondary of said induction-coil connected to the winding of said receiving instrument, the primary including a source of energy and transmitting-key.

2. In duplex telegraphy, the combination with the line, of a receiving instrument having a single winding connected in series therewith and with a source of energy, an induction-coil having its secondary connected to said receiving instrument, and its primary including said source of energy and a key.

3. In duplex telegraphy, the combination with the line, of a receiving instrument having a single winding, an induction-coil having its secondary connected to said receiving instrument, its primary including a key and a source of current, and means for adjusting the mutual induction between said primary and secondary windings.

4. In duplex telegraphy without artificial line, the combination with the line, of a receiving instrument connected in series therewith, and in series with two oppositely-disposed sources of energy of different magnitudes, a shunt-circuit including one of said sources of energy, a key and the primary of an induction-coil, the secondary of said induction-coil connected to said receiving instrument.

5. In duplex telegraphy without artificial line, the combination with the line, of a receiving instrument connected in series therewith and with a condenser and with two sources of energy oppositely disposed and of different magnitudes, a shunt-circuit including one of said sources of energy, a key and the primary of an induction-coil, the secondary of said induction-coil being connected to said receiving instrument.

6. In duplex telegraphy without artificial line, the combination with the line, of a return-circuit, a receiving instrument, a source of energy, a condenser and another source of energy connected in series between said line and return circuit, said sources of energy being of different magnitudes, a circuit in shunt to one of said sources of energy and including a key and primary of an induction-coil, the secondary of said induction-coil being connected to said receiving instrument.

7. In duplex telegraphy, the combination with the line, of a receiving instrument, a transmitter for impressing upon the line successive impulses of approximately equal duration and opposite polarities, and means for rendering ineffective in the receiving instrument impulses transmitted from the same station.

8. In duplex telegraphy, the combination with the line, of a polarized receiving device, means for transmitting to line successive impulses of approximately equal duration and alternating in polarity, and an induction-coil associated with said transmitting means for rendering the receiving instrument unresponsive to impulses transmitted from the same station.

9. In duplex telegraphy, the combination with the line, of a receiving device having a single winding, means for transmitting to line impulses of different polarities, and an induction-coil associated with said transmitting means and having its secondary connected to the winding of said receiving instrument.

10. In duplex telegraphy, the combination with the line, of a polarized receiving device, means for transmitting to line impulses of different polarities, and an induction-coil associated with said transmitting means and having its secondary connected to the winding of said receiving device.

11. In duplex telegraphy, the combination with the line, of a receiving device, oppositely-disposed sources of energy, a shunt-circuit including only one of said sources of energy, and means controlled by said shunt-circuit for rendering said receiving instrument unresponsive to current transmitted from the same station.

12. In duplex telegraphy, the combination with the line, of a receiving instrument having a single winding, a plurality of sources of electrical energy, a circuit in shunt to one of said sources of energy, and means controlled by said circuit for delivering current to the winding of said receiving instrument to render it unresponsive to current transmitted from the same station.

13. In duplex telegraphy, the combination with the line, of a receiving instrument, a plurality of unequal sources of energy, a circuit in shunt to only one of said sources of energy and including the primary of an induction-coil, the secondary of said induction-coil being connected to said receiving instrument.

14. In duplex telegraphy, the combination with the line, of a receiving instrument, a plurality of sources of energy connected in series with the winding of said instrument, a circuit in shunt to only one of said sources, a key and the primary of an induction-coil included in said circuit, the secondary of said induction-coil connected to said receiving instrument.

15. In duplex telegraphy, the combination with the line, of a receiving instrument at each station, oppositely-disposed sources of energy at each station, a circuit in shunt to only one of said sources of energy, and means controlled by said circuit for rendering said receiving instrument unresponsive to current transmitted from the same station.

16. In duplex telegraphy, the combination with the line, of a receiving instrument, oppositely-disposed sources of energy, a condenser intervening between said sources, a circuit in shunt to one of said sources, and means controlled by said shunt-circuit for rendering said receiving instrument unresponsive to current transmitted from the same station.

17. In duplex telegraphy, the combination with the line, of a receiving instrument, oppositely-disposed sources of energy, a condenser intervening between said sources, a circuit in shunt to one of said sources and including the primary of an induction-coil, the secondary being connected to said receiving instrument.

18. In duplex telegraphy, the combination with the line, of a transmitter for impressing upon said line impulses of different polarities, a receiving instrument associated with said line, and means for impressing upon said receiving instrument impulses of opposite polarity to those transmitted to line.

19. In duplex telegraphy, the combination with the line, of a transmitter for impressing upon the line impulses of different polarities, a receiving instrument associated with said line, the winding of said receiving instrument being connected with the secondary of an induction-coil.

20. In duplex telegraphy, the combination with the line, of oppositely-disposed sources of energy, a circuit in shunt to one of said sources and including a key, a receiving instrument associated with said line, and means for rendering said receiving instrument unresponsive to current transmitted from the same station.

21. In duplex telegraphy, the combination with the line, of oppositely-disposed sources of energy, a condenser intervening between said sources, a circuit in shunt to one of said sources and including a key, a receiving instrument associated with said line, and means for rendering said receiving instrument unresponsive to current transmitted from the same station.

22. In duplex telegraphy, the combination with the line, means for transmitting to line impulses of different polarities, a receiving device having a single winding, and an induction-coil having its secondary connected with the winding of said receiving device, the primary and secondary windings of said induction-coil being adjustable with respect to each other.

23. In duplex telegraphy, the combination with the line, of a polarized receiving instrument, means for impressing upon the line impulses of different polarities, and an induction-coil having its secondary connected to said receiving instrument, the primary and secondary windings of said induction-coil being adjustable with respect to each other.

24. In duplex telegraphy, the combination with the line, of branched circuits, a branch circuit including a receiving instrument having a single winding, another branch including the secondary of an induction-coil, and means for transmitting to line impulses of different polarities and the primary of said induction-coil associated with said transmitting means.

25. In duplex telegraphy, the combination with the line, of branched circuits, a branch including a receiving instrument having a single winding, another branch including the secondary of an induction-coil, a source of energy associated with said line, and the primary of said induction-coil included in a circuit with said source of energy.

26. In duplex telegraphy, the combination with the line, of a receiving instrument, and secondary of an induction-coil connected in parallel, a current-limiting device in the circuit of said secondary, a source of energy associated with said line, and a circuit including said source of energy and the primary of said induction-coil.

27. In duplex telegraphy, the combination with the line, of a receiving instrument having a single winding, the secondary of an induction-coil connected in parallel therewith, a source of energy associated with said line, and a circuit including said source of energy and the primary of said induction-coil, the primary and secondary windings of said induction-coil being adjustable with respect to each other.

28. In duplex telegraphy, the combination with the line, of means for impressing upon said line impulses of different polarities, a polarized receiving instrument associated with said line and having a single winding, the secondary of an induction-coil connected to said receiving instrument the primary associated with said impressing means.

850,306. DRUM. ULYSSES G. LEEDY and CHARLES B. WANAMAKER, Indianapolis, Ind., assignors to Leedy Manufacturing Company, Indianapolis, Ind., a Corporation of Indiana. Filed Nov. 13, 1905. Serial No. 286,995.

Claim.—1. The combination, of a drum, snare-holders carried thereby, one of said snare-holders comprising a portion movable toward and from the drumhead independent

of the tension of the snares, and means for holding said part in either position.

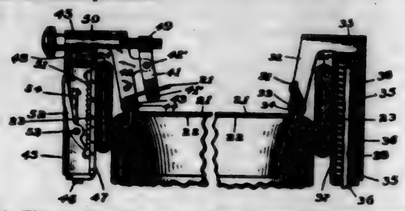

2. The combination, of a drum, snare-holders mounted thereon, one of said snare-holders comprising a part movable toward and from the drumhead independent of the tension of the snares, means for holding said part in its different positions relative to the drumhead, and means carried by said movable part, independent of its adjusting means, for adjusting the tension of the snares.

3. A snare-holder composed of two parts, one of which is connected to the hoop of the drum, and the other of which is spring-mounted on said first-mentioned part, and capable of traveling bodily toward and from the face of the drum-head to accommodate the relative movements incident to manipulation of the drum.

4. A snare-holder composed of two parts, one part mounted to move longitudinally on the other, and a spring interposed between said parts.

5. The combination, with a snare-holder body having a snare-bar-receiving portion, of a removable snare-bar receivable in said receiving portion, and having two series of perforations through which the snares may be threaded, whereby the snares may be threaded through and doubled over said snare-bar and the bar thereafter associated with the receiving portion of the snare-holder body.

6. The combination, in a snare-holder, of the body thereof having a snare-bar-receiving portion, a removable snare-bar having two series of perforations through which the snares may be threaded, whereby the snares may be threaded through the snare-bar, and the snare-bar thereafter associated with the receiving portion of the snare-holder body, and a grooved roller journaled on the snare-holder body and around which the snares may be passed.

7. The combination, of a drum, a snare, and a snare-holder, said snare-holder being composed of a fixed part, a movable part, a spring interposed between said two parts, a ratchet on one part, and a pawl on the other part.

8. The combination, in a snare-holder for drums, of the snare-holder body, a lever pivoted upon said body intermediate its ends, means carried by one end of said lever for holding the snares, a nut swiveled on the other end of said lever, and a screw journaled in the snare-holder body, and threaded through the swiveled nut, whereby said lever may be swung on its pivot to adjust the tension of the snares.

9. The combination, with a drum and its snares, of a pair of movable holders for the opposite ends of said snares, means for normally yieldingly urging said holders toward the drumhead, and means independent of the snares for holding one of said holders away from the drumhead in opposition to its urging means.

10. The combination, with a drum and its snares, of a holder for one end of said snares movable toward and from the snared head, means for normally yieldingly urging said holder toward the snared head, and means independent of the snares for holding the holder away from the snared head in opposition to said urging means.

11. The combination, with a drum and its snares, of a holder for one end of said snares movable bodily toward and from the snared head, and means independent of the snares for holding said holder in position to keep one end of the snares out of engagement with the snared head.

12. The combination, with a drum and its snares, of a holder for one end of said snares movable bodily toward and from the snared head, means for normally urging said holder toward the snared head, and means for preventing said urging means from causing engagement of the holder and of the snares with said head.

850,307. MEANS FOR HEATING COMPRESSED AIR OR OTHER GASES. EDWARD W. LLOYD and WILLIAM H. SODEAU, Newcastle-upon-Tyne, England, assignors to W. G. Armstrong, Whitworth & Co., Limited, Newcastle-upon-Tyne, England. Filed June 22, 1906. Serial No. 322,936.

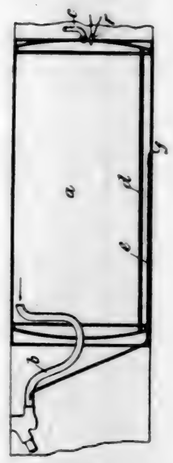

Claim.—1. The combination of a reservoir suitable for containing compressed air, means for supplying fuel to the reservoir at a point above its bottom, means for igniting the charge in the reservoir, a pipe suitable for conducting compressed air and the products of combustion from the reservoir, and a second pipe having one end near the bottom of the reservoir and its other end connected to the first pipe.

2. The combination of a reservoir suitable for containing compressed air, means for supplying fuel to the reservoir at a point above its bottom, means for igniting the charge in the reservoir, a pipe suitable for conducting compressed air and the products of combustion from the reservoir, and means whereby the flow of air and combustion products in the pipe withdraws unburnt fuel from the reservoir.

3. The combination of a reservoir suitable for containing compressed air, means for supplying fuel to the reservoir, a pipe suitable for conducting compressed air and the products of combustion from the reservoir, a false bottom to the reservoir and a second pipe below the false bottom and having one end near the bottom of the reservoir and its other end connected to the first pipe.

4. The combination of a reservoir suitable for containing compressed air, means for supplying fuel to the reservoir, a pipe suitable for conducting compressed air and the products of combustion from the reservoir, a second pipe having one end near the bottom of the reservoir and its other end connected to the first pipe and a strainer on the lower end of the second pipe.

5. The combination of a reservoir suitable for containing compressed air, means for supplying fuel to the reservoir, a pipe suitable for conducting compressed air and the products of combustion from the reservoir, a false bottom to the reservoir, a second pipe below the false bottom and having one end near the bottom of the reservoir and its other end connected to the first pipe, and a strainer on the lower end of the second pipe.

6. The combination of a reservoir suitable for containing compressed air, means for supplying fuel to the reservoir at a point above its bottom, a pipe suitable for conducting compressed air and the products of combustion from the reservoir and a false bottom to the reservoir.

850,308. WIRE FENCING. GEORGE S. MACLEOD, East End, Saskatchewan, Canada. Filed Nov. 10, 1906. Serial No. 342,892.

Claim.—1. The combination with a fence-wire composed of strands, of a rotary spur or rowel arranged outside of the strands and extending along the same, whereby the tension on the fence-wire will not interfere with the rotary movement of the spur or rowel, and means for connecting the spur or rowel with the fence-wire.

2. The combination with a fence-wire composed of strands, of a pivot mounted on the fence-wire and having an exteriorly-projecting portion, and a rotary spur or rowel mounted on the projecting portion of the pivot, whereby the spur or rowel is arranged along the outside of the strands and not between the same.

3. The combination with a fence-wire composed of twisted strands, of a pivot fitting between the strands and projecting beyond the same, and a rotary spur or rowel mounted on the projecting portion of the pivot, whereby the spur or rowel is arranged along the outside of the strands and not between the same.

4. The combination with a fence-wire composed of strands, of a pivot provided with opposite grooves receiving the strands, whereby the pivot is interlocked with the fence-wire, said pivot being also provided with an exteriorly-projecting portion, and a rotary spur or rowel mounted on the projecting portion of the pivot, whereby the spur or rowel is arranged along the outside of the strands and not between the same.

5. The combination with a fence-wire composed of twisted strands, of a pivot provided at its inner portion with opposite grooves receiving the strands of the fence-wire, said pivot having an exteriorly-projecting portion provided with a head, and a rotary spur or rowel arranged on the projecting portion of the pivot and located between the fence-wire and the said head, whereby the spur or rowel is arranged along the outside of the strands and not between the same.

6. The combination with a fence-wire composed of twisted strands, which are separated at one or more points to provide an elliptical-shaped space or opening, a spur, and means retained within said space or opening by the clamping action of the strands for supporting the spur at one side of the fence-wire.

850,309. PERMUTATION-LOCK. WILLIAM A. MATROLIS, Cumbola, Pa. Filed May 3, 1905. Serial No. 258,632.

Claim.—1. In a lock, a horizontal plate mounted for vertical movement, step-by-step means for raising said plate, and sliding bolts actuated by said plate, substantially as shown and described.

2. In a lock, in combination with the casing, a post secured therein, a sleeve mounted on said post, a plate slidably mounted on the post and resting on said sleeve, and means to raise said sleeve, substantially as shown and described.

3. In a lock, in combination with the casing, a post, a sleeve adjustably mounted on the post, a plate slidably mounted on the post and resting on said sleeve, and means to rotate and elevate said sleeve, substantially as shown and described.

4. In a lock, in combination with the casing, a post, a sleeve adjustably mounted on the post, a plate slidably mounted on the post and resting on said sleeve and step-by step means to rotate and elevate said sleeve, substantially as shown and described.

5. In a lock, in combination with the casing, a post having a spiral groove therein, a sleeve mounted on the post and having a pin to ride in said spiral groove, a plate slidably mounted on the post and resting on said sleeve, teeth secured to said sleeve, and a series of spindles having lugs to engage said teeth, substantially as shown and described.

6. In a lock, in combination with the casing, a post having a spiral groove therein, a sleeve mounted on the post and having a pin to ride in said groove, a plate slidably mounted on the post and resting on said sleeve, teeth rigidly secured to said sleeve, a spring-actuated dog pivotally connected with said sleeve, means to engage said teeth and dog to actuate said sleeve, and means to hold said dog in an inoperative position, substantially as shown and described.

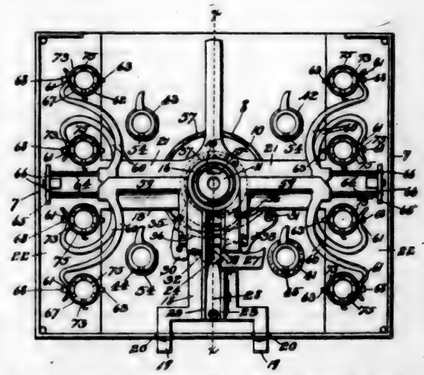

7. In a lock, in combination with the casing, a tube set in the lower plate of the casing having its upper edge inclined, a post secured in said tube having a spiral groove therein, a sleeve mounted on said post and having a pin to ride in said spiral groove, means to rotate said sleeve, and a plate slidably mounted on said post and adapted to be raised by said sleeve, substantially as shown and described.

8. In a lock, in combination with the casing, a post secured therein and having a spiral groove in its surface, a tube surrounding said post having an inclined upper edge, a plate slidably mounted on said post, a sleeve mounted on the post and having a pin to ride in said groove, teeth secured to said sleeve and riding on the upper edge of said tube, and a series of spindles having lugs to engage said teeth, substantially as shown and described.

9. In a lock, in combination with a casing, a post secured therein having a spiral groove in its surface, a tube surrounding said post having an inclined upper edge, a plate slidably mounted on the post and having a pin to ride in said groove, teeth rigidly secured to said sleeve and riding on the upper edge of said tube, a spring-actuated dog pivotally connected with the sleeve, a series of spindles having lugs to engage said sprocket-teeth and dog, and means to hold said dog in an inoperative position, substantially as shown and described.

10. In a lock, in combination with a casing, a post secured therein, a sleeve adjustably mounted on the post, a plate slidably mounted on the post and resting on said sleeve, teeth rigidly secured to said sleeve, a spring-actuated dog pivotally connected with said sleeve, spindles provided with lugs to engage said teeth and dog, and a pawl pivotally mounted on the plate and adapted to engage said dog to keep it from engagement by said spindles, substantially as shown and described.

11. In a lock, in combination with a casing, a post secured therein, a plate slidably mounted on said post, a sleeve adjustably mounted on the post, teeth rigidly secured to said sleeve, a spring-actuated dog pivotally connected with the sleeve, spindles provided with lugs to engage said teeth and dog, a pawl pivotally mounted on the plate to engage said dog, spring-actuated bolts having

means to prevent said pawl from being actuated to release said dog, and means to actuate said bolts, substantially as shown and described.

12. In a lock, in combination with a casing, a post secured therein, a sleeve adjustably mounted on the post, a plate slidably mounted on the post and resting on said sleeve, teeth rigidly secured to said sleeve, a spring-actuated dog pivotally connected with the sleeve, spindles provided with lugs to engage said teeth and dog, a pawl pivotally mounted on the plate to engage said dog, spring-actuated bolts having pins integral therewith to engage said pawl, and spindles having means to actuate said bolts to hold said pins from engagement with said pawl, substantially as shown and described.

13. In a lock, in combination with a casing, a tube secured therein having an inclined upper edge, a post secured in said tube having a spiral groove in its surface, a plate slidably mounted on the post, a sleeve mounted on said post and having a pin to ride in said spiral groove, teeth rigidly secured to said sleeve and resting on the said inclined upper edge, a spring-actuated dog pivotally connected with said sleeve, spindles provided with lugs to engage said teeth and dog, a pawl pivotally mounted on the plate to engage said dog, spring-actuated bolts having pins integral therewith to engage said pawl, spindles rotatively mounted having flanges, and the ends of said bolts provided with bearing-surfaces to be engaged by said flanges, substantially as shown and described.

850,310. TYPE-WRITING MACHINE. HARRY S. MCCORMACK, New York, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Feb. 19, 1907. Serial No. 358,282.

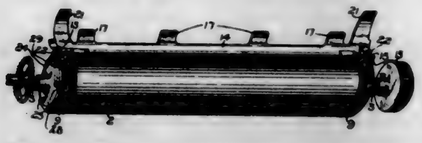

Claim.—1. Sheet-gaging mechanism for type-writing machines, comprising, in combination, sheet-alining means, a platen in operative relation to said alining means and rotatable independently thereof, and means for coupling said platen and alining means to revolve together.

2. Sheet-gaging mechanism for type-writing machines, comprising, in combination, sheet-alining means, a platen in operative relation to said alining means and rotatable independently thereof, and means automatically releasable after a predetermined travel of the platen for coupling said platen and alining means to revolve together.

3. In a type-writing machine and in combination, a revoluble platen having a cylindrical uninterrupted printing-surface, a paper clip extending along said platen, means for normally supporting said clip so as to permit continued revolutions of said platen independently of the clip, means for causing said clip to press the paper directly upon the printing-surface of the platen, and means for connecting the paper-clip to the platen to revolve therewith.

4. In a type-writing machine, the combination with a revoluble platen, and pressure devices coöperating with the platen to feed the paper, of a paper-clip having means to connect it to the platen to revolve therewith, and means for automatically releasing the clip after passing said pressure devices.

5. In a type-writing machine, the combination with a revoluble platen and pressure devices coöperating therewith to feed the paper, of means, connectible to the platen at will, to introduce the leading edges of the sheets between the platen and the pressure devices, and means for automatically releasing the sheets from the control of said means.

6. In a type-writing machine, the combination with a revoluble platen, and devices for pressing paper against the platen, of a paper-clip, the platen being revoluble independently of the clip, means for connecting the paper-clip to the platen at will, and a spring tending to disconnect said clip from the platen; means being provided for causing said pressure devices to maintain the connection of said clip with the platen.

7. In a type-writing machine and in combination, a revoluble platen having a cylindrical uninterrupted printing-surface, a paper-clip so mounted with respect to said platen as to permit continued revolutions of the platen independently of the clip, means for causing said clip to press the paper directly upon the printing-surface of the platen, means for causing the clip to revolve with the platen, and means for releasing the paper from the clip and the clip from the platen.

8. In a type-writing machine, the combination with a revoluble platen, of a clip mounted so that the platen may be rotated independently of the clip, means to connect the clip to the platen to rotate therewith and cause the clip to grip the paper, and a spring tending to release the clip from the platen and thereby release the paper from the clip.

9. In a type-writing machine and in combination, a revoluble platen having a cylindrical uninterrupted printing-surface, a bar extending along said platen, means for supporting the said bar at its ends to permit continued revolutions of the platen independently of the bar, means operable at the will of the operator for connecting the bar to the platen to revolve therewith, a paper-clip carried by said bar, and means for causing said clip to press the paper directly against the printing-surface of the platen.

10. In a type-writing machine, the combination with a revoluble platen, of a bar extending along the platen and having at its ends collars or hubs whereby it is loosely journaled, concentrically with the platen, so that the platen may rotate independently of the bar, releasable means for connecting the bar to the platen to rotate therewith, and means upon the bar for holding the leading edges of the sheets of paper.

11. In a type-writing machine, the combination with a revoluble platen having ratchet-wheels fixed upon its ends, of a paper-clip device extending along the platen and having means at its ends whereby it is journaled concentrically with the platen, and means upon said paper-clip device for engaging said ratchet-wheels.

12. In a type-writing machine, the combination with a revoluble platen having ratchet-wheels fixed upon its ends, of a paper-clip device extending along the platen and having means at its ends whereby it is journaled concentrically with the platen, and means upon said paper-clip device for engaging said ratchet-wheels, a spring tending constantly to release the paper from the clip and to release the paper-clip from said ratchet-wheels, and pressure devices for holding sheets against the platen; said pressure devices operating to hold said clip pressed against the paper, and in engagement with said ratchet-wheels, while the sheets are being drawn by the clip between the pressure devices and the platen.

13. In a type-writing machine, the combination with a revoluble platen provided with ratchet-wheels on its ends and having pressure devices to coöperate with the platen to feed paper around the same, a bar extending along the platen, collars rigidly connected by said bar and loosely journaled upon the ends of the platen, a paper-clip connected to said bar by a hinge and having projections movable into engagement with said ratchet-wheels, and a spring tending to throw said clip away from the platen, release the same, and withdraw said projections from said ratchet-wheel; said clip being constructed to be held against the paper by said paper-feeding pressure devices.

14. In a type-writing machine, the combination with a revoluble platen provided with ratchet-wheels on its ends and having pressure devices to coöperate with the platen to feed paper around the same, a bar extending along the platen, collars rigidly connected by said bar and loosely journaled upon the platen between the ends thereof and the said ratchet-wheels, a paper-clip connected to said bar by a hinge and having projections movable into engagement with said ratchet-wheels, and a spring tending to throw said clip away from the platen, release the same, and withdraw said projections from said ratchet-wheel; said clip being constructed to be held against the paper by said paper-feeding pressure devices.

15. In a type-writing machine, the combination with a revoluble platen provided with ratchet-wheels on its ends and having pressure devices to coöperate with the platen to feed paper around the same, a bar extending along the platen, collars rigidly connected by said bar and loosely journaled upon the ends of the platen, a paper-clip connected to said bar by a hinge and having projections movable into engagement with said ratchet-wheels, and a spring tending to throw said clip away from the platen, release the same, and withdraw said projections from said ratchet-wheels; said clip being constructed to be held against the paper by said paper-feeding pressure devices; said clip provided with finger-pieces for closing the same.

16. In a type-writing machine, the combination with a revoluble platen provided with ratchet-wheels on its ends and having pressure devices to coöperate with the platen to feed paper around the same, a bar extending along the platen, collars rigidly connected by said bar and loosely journaled upon the ends of the platen, a paper-clip connected to said bar by a hinge and having projections movable into engagement with said ratchet-wheels, and a spring tending to throw said clip away from the platen, release the same, and withdraw said projections from said ratchet-wheel; said clip being constructed to be held against the paper by said paper-feeding pressure devices and having tongue-like extensions to prolong the time during which the clip is held closed by said paper-feeding pressure devices.

17. In a type-writing machine, the combination with a revoluble platen, of a paper-clip extending along the platen and mounted so that the platen may revolve independently of the clip, releasable means for connecting the clip to the platen to revolve therewith, and means upon the platen-frame in the path of said paper-clip to prevent the same from rotating with the platen when the clip is not in use.

18. In a type-writing machine and in combination, a revoluble platen having a cylindrical uninterrupted printing-surface, a paper-clip extending along said platen, means for normally supporting said clip so as to permit continued revolutions of said platen independently of the clip, releasable means for connecting the clip to the platen to revolve therewith, means to hold the clip in partially-open position during the introduction of the paper between the said clip and platen, and means to cause the clip to press the paper directly upon the printing-surface of the platen.

19. In a type-writing machine having a platen-frame and a platen revolubly mounted therein, the combination of collars or journals loosely mounted upon the ends of the platen, a clip extending along the platen and connected by hinges to said collars, a spring to hold said clip open, and means coöperating with the spring to hold said clip in a position substantially radial of the platen, stops upon the platen-frame normally engaging said open clip to prevent the same from rotating with the platen, and means rendered effective by a closing movement of the clip to connect the same with the platen to rotate therewith.

20. In a type-writing machine having a platen-frame and a platen revolubly mounted therein, the combination of collars or journals loosely mounted upon the ends of the platen, a clip extending along the platen and connected by hinges to said collars, a spring to hold said clip in a position substantially radial of the platen, stops upon the platen-frame normally engaging said open clip to prevent the same from rotating with the platen, and means rendered effective by a closing movement of the clip to connect the same with the platen to rotate therewith; said stops being in rear of the platen, so that said clip normally lies open in a level position behind the platen but above the entrance for paper.

21. In a type-writing machine having a platen-frame and a platen revolubly mounted therein, the combination of collars or journals loosely mounted upon the ends of the platen, a clip extending along the platen and connected by hinges to said collars, a spring to hold said clip open, and means coöperating with the spring to hold said clip in a position substantially radial of the platen, stops upon the platen-frame normally engaging said open clip to prevent the same from rotating with the platen, and means rendered effective by a closing movement of the clip to connect the same with the platen to rotate therewith; said stops being in rear of the platen, so that said clip normally lies open in a level position behind the platen but above the entrance for paper; said stops being at such a distance from the rear side of the platen as to hold the paper-clip partly open for the introduction of sheets when the clip is rotated down to a position between the stops and the platen.

22. In a type-writing machine having a platen-frame, and a platen revolubly mounted therein, the combination of collars or journals loosely mounted upon the ends of the platen, a clip extending along the platen and connected by hinges to said collars, a spring to hold said clip open, and means coöperating with the spring to hold said clip in a position substantially radial of the platen, stops upon the platen-frame normally engaging said open clip to prevent the same from rotating with the platen, and means rendered effective by a closing movement of the clip to connect the same with the platen to rotate therewith; said stops being in rear of the platen, so that said clip normally lies open in a level position behind the platen but above the entrance for paper; said stops being at such a distance from the rear side of the platen as to hold the paper-clip partly open for the introduction of sheets when the clip is rotated down to a position between the stops and the platen; said stops being in the form of rolls, finger-pieces being provided upon the ends of the paper-clip for manipulating the same, and said rolls being adapted to engage said finger-pieces to hold the clip partly open as aforesaid.

23. In a type-writing machine, the combination with a revoluble platen, of a paper-clip extending along the platen and so mounted that the platen may revolve independently of the clip, and releasable means for connecting the clip to the platen, to revolve therewith; said clip having a gage for the leading edge of the paper.

24. In a type-writing machine, the combination with a revoluble platen, of a paper-clip extending along the platen and so mounted that the platen may revolve independently of the clip, and releasable means for connecting the clip to the platen, to revolve therewith; said clip in the form of a strip of sheet metal bent in along one edge to form a ledge to serve as a gage for the leading edge of the paper sheet.

25. In a type-writing machine, the combination with a revoluble platen, of a pair of collars loosely mounted upon the ends of the platen, a bar extending along the platen from one collar to the other and having ears whereby it is rigidly attached to said collars, said bar being beveled to facilitate entrance between the platen and the pressure-rolls running thereon, a paper-clip lying alongside of said bar close to the platen and connected by hinges to said collars, and releasable means for connecting said collars to the platen to rotate therewith.

26. Sheet-gaging mechanism for type-writing machines, comprising, in combination, a revoluble platen, sheet-alining means loosely mounted on said platen, and means for coupling said platen and alining means to revolve together.

27. Sheet-gaging mechanism for type-writing machines, comprising, in combination, a revoluble platen, automatically-releasable sheet-alining means loosely mounted thereon, said alining means being manipulable to engage said platen and revolve therewith.

28. Sheet-gaging mechanism for type-writing machines, comprising, in combination, a revoluble platen, sheet-alining means loosely mounted on said platen and normally disconnected therefrom, said alining means being manipulable to lock it to said platen.

29. Sheet-gaging mechanism for type-writing machines, comprising, in combination, a revoluble platen, sheet-alining means loosely mounted on said platen and normally disconnected therefrom, said alining means being manipulable to lock it to said platen and being automatically releasable after a predetermined travel of said platen.

850,311. ANNUNCIATOR. JAMES L. MCQUARRIE, New York, N. Y., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 2, 1906. Serial No. 281,102.

Claim.—1. The combination in an annunciator, of the U-shaped frame having an extension, contact-springs mounted on said extension, a lamp-socket mounted on said frame below the extension, an electromagnet with its armature, both supported on said frame between the parallel sides or legs thereof, the side of said frames extending beyond the armature serving as the support for the annunciator, said frame, from the heel of the magnet to the armature, serving as the return-pole of the magnet, substantially as and for the purpose specified.

2. An electric lamp and its socket, and an electromagnet and its armature, all supported on a common iron frame, in combination with contact-springs mounted on an extension of the said frame and extending parallel above the electromagnet, one of said springs being adapted to be moved to close the contacts when the magnet is excited and thereupon to lock the armature in position uptil released, substantially as and for the purpose specified.

3. In an electric annunciator, the combination with an electromagnet and its armature, of an electric circuit including a signal device, a pair of springs controlling said circuit, one of said springs being adapted to be moved to close the circuit when the magnet is excited, and thereupon to lock the armature in closed position until manually released, substantially as described.

4. In an electric annunciator, the combination with an electromagnet and its armature, of an electric circuit including a signal device, a spring for controlling said circuit, a shoulder on said spring adapted to be engaged by said armature when in its unattracted position to hold open said circuit upon the attraction of the armature to engage the same and lock it in closed position until manually released, substantially as described.

5. In an electric annunciator, the combination with a U-shaped bracket, of an electromagnet and its armature and a signal mounted on said bracket, a pair of contact-springs secured to an extension of said bracket and insulated therefrom, a shoulder on one of said springs adapted when the magnet is energized to lock the armature in its attracted position with said contact-springs held in closed position until released, substantially as described.

6. The combination with an electromagnet and its armature, of a circuit including a signal, a spring switching member normally held open by the armature in its unattracted position, and means carried by said spring member for locking said armature in its attracted position, thereby maintaining the circuit closed until the switching member is manually operated to open the same.

850,312. KNAPSACK. LACY M. NORWOOD, Portland, Oreg. Filed May 15, 1906. Serial No. 316,964.

Claim.—1. A device of the character described comprising inner and outer vests, and a knapsack-body arranged between the backs of said vests and permanently attached thereto.

2. A device of the character described comprising inner and outer vests having their backs spaced by bottom and end walls to provide a knapsack-body, and a cover for the open top of said knapsack-body.

3. A device of the character described comprising inner and outer vests having their backs spaced by bottom and end walls to provide a knapsack-body, and means for adjustably connecting the front side sections of the inner vest.

4. A device of the character described comprising inner and outer vests having their backs spaced by bottom and end walls to provide a knapsack-body, means for connecting the front side sections of the inner vest and means for adjustably connecting the front side sections of the outer vest to the inner vest.

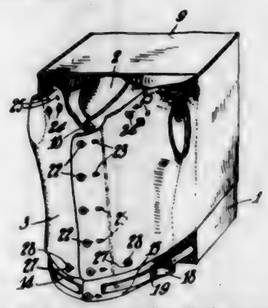

5. A device of the character described comprising inner and outer vests having their backs spaced by bottom and end walls to provide a knapsack-body, means for adjustably connecting the front side sections of the inner vest, means for adjustably connecting the front side sections of the outer vest, and means for connecting the front side sections of the outer vest to the front side sections of the inner vest.

850,313. SHEET-DELIVERY MECHANISM OF PRINTING-MACHINES. THOMAS M. NORTH, London, England, assignor to Linotype and Machinery Limited, London, England. Filed Mar. 20, 1906. Serial No. 307,102.

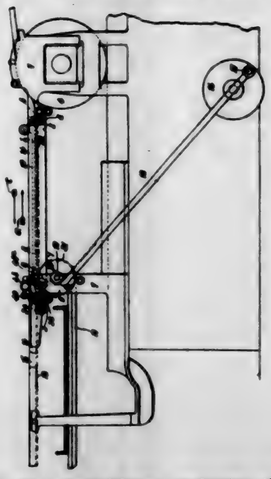

Claim.—1. In a sheet-delivery mechanism the combination of a first set of endless tapes adapted to receive the sheet from the impression-cylinder, a carriage adapted to travel in a direction parallel with the direction of travel of the first set of tapes, tape-rollers rotatable in the two ends of the carriage, endless tapes on and rotated by the said rollers, margin-tapes adapted to make frictional contact with the carriage-tapes or sheets on the said tapes, rollers around which the margin-tapes rotate, one of said rollers rotating about an axis which is fixed relatively to the carriage and the other rotating about an axis adjustable above and below the carriage-tapes.

2. In a sheet-delivery mechanism the combination with the delivery-board, of a carriage adapted to travel backward and forward thereover in the direction of the travel

of the sheets, tape-rollers rotatable in the two ends of the carriage, endless carriage-tapes on and rotated by the said rollers, and margin-tapes adapteld to make frictional contact with the carriage-tapes or the sheets on the said tapes, rollers around which the margin-tapes rotate, one of said rollers rotating about an axis which is fixed relatively to the carriage and the other rotating about an axis adjustable above and below the carriage-tapes.

3. In a sheet-delivery mechanism the combination of a carriage, means for reciprocating the carriage in the direction of the travel of the sheets, tape-rollers rotatable in the two ends of the carriage, endless carriage-tapes on and rotated by the said rollers, margin-tapes adapted to make frictional contact with the carriage-tapes or the sheets on such tapes, rollers around which the margin-tapes rotate, one of said rollers rotating about an axis which is fixed relatively to the carriage, an arm angularly adjustable about the said relatively fixed axis and carrying the second of the margin-tape rollers on its adjustable end so that the said roller may be adjusted above and below the carriage-tapes.

4. In a sheet-delivery mechanism the combination of a carriage adapted to travel backward and forward in the direction of the travel of the sheets, tape-rollers rotatable in the two ends of the carriage, endless carriage-tapes on and rotated by the said rollers, margin-tapes adapted to make frictional contact with the carriage-tapes or the sheets on such tapes, rollers around which the margin-tapes rotate, one of said rollers rotating about an axis which is fixed relatively to the carriage, and the other roller rotatable on an arm pivoted to the carriage coaxially with the relatively fixed axis, and the said arm, this arm being capable of adjustment so as to bring the last-mentioned roller above or below the adjacent carriage-tape.

5. In a sheet-delivery mechanism the combination of a carriage adapted to travel backward and forward in the direction of the travel of the sheets, tape-rollers rotatable in the two ends of the carriage, endless carriage-tapes on and rotated by the said rollers, margin-tapes adapted to make frictional contact with the carriage-tapes or the sheets on such tapes, rollers around which the margin-tapes pass, but loosely, so as to form a bight, one of the said rollers rotating about an axis which is fixed relatively to the carriage, and the other roller rotatable on an arm pivoted to the carriage coaxially with the relatively fixed axis, and the said arm, this arm being capable of adjustment so as to tighten the margin-tape upon its rollers by causing the front carriage-roller to occupy the bight in such tape.

6. In a sheet-delivery mechanism the combination of a carriage adapted to travel backward and forward in the direction of the travel of the sheets, a roller rotatable in the front end of the carriage, a margin-tape adapted to make frictional contact with the sheets passed over the carriage-roller, rollers around which the margin-tape passes, but loosely, so as to form a bight, one of the said rollers rotating about an axis which is fixed relatively to the carriage and the other roller rotatable on an arm pivoted to the carriage coaxially with the relatively fixed axis, and the said arm, this arm being capable of adjustment so as to tighten the margin-tape upon its rollers by causing the bight in such tape to be occupied by the carriage-roller.

7. In a sheet-delivery mechanism the combination of a carriage adapted to travel backward and forward in the direction of travel of the sheets, a tape-roller rotatable in the front end of the carriage, a margin-tape adapted to make frictional contact with the sheets passed over the carriage-roller, rollers around which the margin-tape passes, but loosely, so as to form a bight, one of the said rollers rotating about an axis which is fixed relatively to the carriage, and the other roller rotatable on an arm pivoted to the carriage coaxially with the relatively fixed axis, the said arm, and a bight-roller free to rotate about a relatively fixed axis and so located that in one position of the pivoted arm the said bight-roller occupies the bight of the margin-tape, which bight in the other position of the pivoted arm is occupied by the roller in the front end of the carriage.

8. In a sheet-delivery mechanism the combination of a carriage adapted to travel backward and forward in the direction of travel of the sheets, a roller rotatable in the carriage, a spur-wheel on the shaft of the carriage-roller, a counter-shaft rotatable in the carriage, a spur-wheel on the counter-shaft gearing with the before-mentioned spur-wheel, a spur-pinion on the counter-shaft, a stationary toothed rack gearing with the spur-pinion, and means intermediate the spur-pinion and the carriage-roller shaft, adapted to automatically release this shaft from and operatively connect it with the rack during the travel of the carriage in respectively opposite directions.

9. In a sheet-delivery mechanism the combination of a carriage adapted to travel backward and forward in the direction of travel of the sheets, a tape-roller rotatable in the carriage, a spur-pinion on the shaft of the carriage-roller, gearing with a fixed rack, the said rack, a spur-wheel "feathered" to the said shaft, a counter-shaft rotatable in the carriage, a spur-wheel on this counter-shaft, adapted to gear with the "feathered" wheel, a spur-pinion on the counter-shaft gearing with the fixed rack, and means intermediate the rack and the carriage-roller shaft adapted to automatically release that shaft from and operatively connect it with the rack during the travel of the carriage in either direction.

10. In a sheet-delivery mechanism the combination of a carriage adapted to reciprocate in a direction parallel with the direction of travel of the sheets, a roller rotatable in the carriage, a margin-tape adapted to make frictional contact with the sheets passed over the carriage-roller, rollers around which the margin-tape rotates, one of said rollers rotating about an axis which is fixed relatively to the carriage, the other rotating about an axis adjustable above and below the carriage-roller, and means adapted to rotate the carriage-roller during either the backward or forward travel of the carriage and always in one and the same direction.

11. In a sheet-delivery mechanism the combination of a carriage adapted to reciprocate in a direction parallel with the direction of travel of the sheets, a tape-roller rotatable in the carriage, a margin-tape adapted to make frictional contact with the sheets passed over the carriage-roller, rollers around which the margin-tape rotates, one of said rollers rotating about an axis which is fixed relatively to the carriage, and the other roller is adjustable above and below the carriage-roller, a spur-pinion on the shaft of the carriage-roller, means adapted to automatically clutch this pinion to and release it from its shaft during the travel of the carriage in respectively opposite directions, and a stationary toothed rack gearing with the spur-pinion.

12. In a sheet-delivery mechanism the combination of a carriage adapted to reciprocate in a direction parallel with the direction of travel of the sheets, a tape-roller rotatable in the carriage, a margin-tape adapted to make frictional contact with the sheets passed over the carriage-roller, rollers around which the margin-tape rotates, one of said rollers rotating about an axis which is fixed relatively to the carriage, and the other adjustable above and below the carriage-roller, a spur-wheel on the shaft of the carriage-roller, a counter-shaft rotatable in the carriage, a spur-wheel on the counter-shaft gearing with the before-mentioned spur-wheel, a spur-pinion on the counter-shaft, a stationary toothed rack gearing with the spur-pinion, and means intermediate the spur-pinion and the carriage-roller shaft adapted to automatically release this shaft from and operatively connect it with the rack during the travel of the carriage in respectively opposite directions.

13. In a sheet-delivery mechanism the combination of a carriage adapted to reciprocate in a direction parallel with the direction of travel of the sheets, a tape-roller rotatable in the carriage, a margin-tape adapted to make frictional contact with the sheets passed over the carriage-roller, rollers around which the margin-tape rotates, one of said rollers rotating about an axis which is fixed relatively to the carriage, and the other adjustable above and below the carriage-roller, a spur-pinion on the shaft of the carriage-roller, gearing with a fixed rack, the said rack, a spur-wheel "feathered" to the said shaft, a counter-shaft

rotatable in the carriage, a spur-wheel on this counter-shaft, adapted to gear with the "feathered" wheel, a spur-pinion on the counter-shaft gearing with the fixed rack, and means intermediate the rack and the carriage-roller shaft adapted to automatically release that shaft from and operatively connect it with the rack during the travel of the carriage in either direction.

850,314. AUTOMATIC BOILER-FEED. MOSES L. PHIPPS, Galax, Va., assignor of one-half to Troy Cox and Z. F. Ward, Galax, Va. Filed Sept. 13, 1906. Serial No. 334,491.

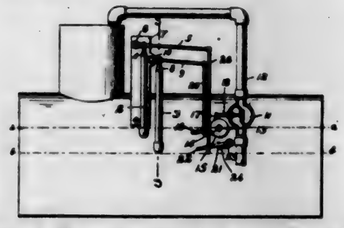

Claim.—1. The combination of a steam-boiler and means for controlling the feed of water thereto, of thermostatic bodies in communication with the boiler adjacent to its high and low water marks, a device actuated by one of said thermostatic bodies for operating said water-feeding means to supply water to the boiler, means for holding said device in its operative position, and means actuated by the other of said thermostatic bodies for actuating said holding means to release said device.

2. The combination of a steam-boiler and means for controlling the feed of water thereto, of thermostatic bodies in communication with the boiler adjacent to its high and low water marks, an oscillatory element for actuating said water-feeding means, operating means between said element and one of said thermostatic bodies, means for holding said element in its operative position, and operating connections between said holding means and the other of said thermostatic bodies for releasing said element.

3. The combination of a steam-boiler and means for controlling the feed of water thereto, of thermostatic bodies in communication with the boiler adjacent to its high and low water marks, an oscillatory element for actuating said water-feeding means, said element having a segmental ratchet portion and a projecting arm, a lever actuated by one of said thermostatic bodies, a rod connected to said lever and having a loop to receive said arm, a spring-actuated lever having a pawl to coact with the said segmental ratchet, a lever actuated by the other of said thermostatic bodies, and a rod connected to the last-mentioned lever and having a forked portion to engage said pawl-carrying lever.

4. The combination with a steam-boiler, a steam-pipe leading therefrom to a feed-water pump, and a valve in said steam-pipe, of thermostatic tubes in communication with said boiler adjacent to its high and low water marks, an oscillatory element for opening said valve actuated by one of said thermostatic tubes, means for holding said element against movement to retain the valve in its open position, and means actuated by the other of said thermostatic tubes for releasing said holding means.

5. The combination with a steam-boiler, a steam-pipe leading therefrom to a feed-water pump, and a valve in said steam-pipe, of thermostatic tubes in communication with said boiler adjacent to its high and low water marks, an oscillatory, valve-actuating element having a projecting arm and ratchet-teeth, a lever actuated by one of said thermostatic tubes, a rod connected to said lever and having a loop to receive said arm, a spring-actuated lever having a pawl to engage the ratchet-teeth on said element, a lever actuated by the other of said thermostatic tubes, and a rod connected to said lever and having a forked portion to engage said pawl-carrying lever, substantially as described.

850,315. WRENCH. NOAH W. RASNICK, Dickenson county, Va. Filed Dec. 3, 1906. Serial No. 346,111.

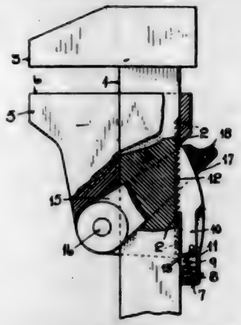

Claim.—1. In a wrench, the combination of a shank having a fixed jaw and ratchet-teeth on its rear edge, a movable jaw slidable on said shank and having a cam member pivoted therein and provided with teeth to engage the shank-teeth, and a locking-lever pivoted to said movable jaw and cut out to straddle said shank and cam member, the end wall of said cut-out portion engaging said cam member to lock it to said shank.

2. In a wrench, the combination of a shank having a fixed jaw and ratchet-teeth on its rear edge, a movable jaw slidable on said shank and having a cam member pivoted therein and provided with teeth to engage the shank-teeth, said cam member being pivoted in slots in said jaw, and a locking device pivoted to said movable jaw and having means to engage said cam member to lock it in engagement with the shank.

3. In a wrench, the combination of a shank having a fixed jaw with ratchet-teeth on one edge thereof, a hollow movable jaw slidable on said shank with the edge thereof adjacent the toothed edge of the shank cut out, a toothed cam member pivoted in said movable jaw with its cam-face projecting beyond the edges of said cut-out portion and with its tooth in position to engage the teeth of the shank, a slotted locking-lever pivoted to said movable jaw and straddling said shank and cam member and provided at its free end with a finger-piece projecting through the opening in said movable jaw.

4. In a wrench, the combination of a shank having a fixed jaw with ratchet-teeth on one edge thereof, a hollow movable jaw slidable on said shank with the edge thereof adjacent the toothed edge of the shank cut out, a toothed cam member pivoted on said movable jaw with its cam-face projecting beyond the edges of said cut-out portion and with its tooth in position to engage the teeth of the shank, a lug on the lower end of said cam member and a spring housed in said movable jaw with one end engaging said lug and bearing on said cam member and a slotted locking-lever pivoted to said movable jaw and straddling said shank and cam member and provided at its free end with a finger-piece projecting through the opening in said movable jaw.

850,316. FISH-TANK ON TRANSPORTING-CAR OR THE LIKE. GOTTHOLD REINHARDT, Dresden, Germany. Filed Nov. 8, 1904. Serial No. 231,964.

Claim.—In an apparatus for transporting live fish the combination of a truck, wheels, axles connecting said wheels, cog-wheel mechanism attached to one of said axles, an air-pump fixed on the truck, said air-pump being actuated by the cog-wheel mechanism, a tank containing water, a pipe conveying the pumped air into the lower part of the tank, and a distributer at the end of said pipe inside the tank, said distributer being provided with a number of apertures, and adapted to distribute the air evenly through the whole mass of water, all substantially as and for the purpose set forth.

850,316.

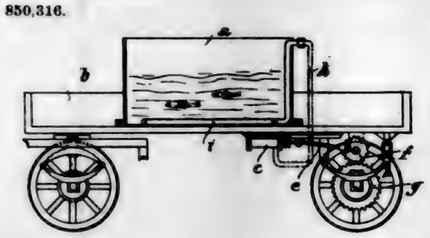

850,317. PAPER-HANGER'S SMOOTHING-ROLLER. CHARLES T. RIDGELY, Springfield, Ohio, assignor to The Standard Trimmer Company, Springfield, Ohio, a Corporation of Ohio. Filed Sept. 24, 1906. Serial No. 335,854.

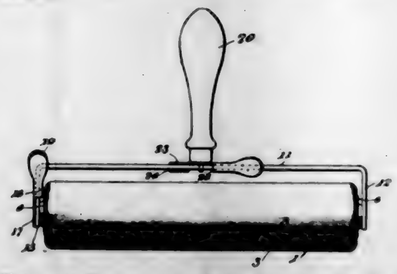

Claim.—1. In an article of the character described, a connecting device comprising a connecting member rigidly secured to one of the parts to be connected and adapted to rotate therewith, and a resilient clamp carried by said connecting member and adapted to engage the other part to be connected when said first-mentioned part is revolved about its longitudinal axis, substantially as described.

2. In an article of the character described, a connecting device comprising a connecting member rigidly secured to one of the parts to be connected, means for pivotally connecting said connecting member to the second part to be connected, and a resilient clamp carried by said connecting member and adapted to engage said last-mentioned part to be connected, substantially as described.

3. In an article of the character described, a connecting device comprising a connecting member rigidly secured to one of the parts to be connected, a pivot-lug carried by one of said parts, the other part to be connected having an aperture therein adapted to receive said lug, and a resilient clamp carried by said first-mentioned part and adapted to engage the last-mentioned part, substantially as described.

4. In a device of the character described, a supporting-frame, a detachable pivot-lug therefor comprising a connecting member, a pivot-lug secured thereto and adapted to engage said supporting-frame, and a resilient clamp carried by said connecting member and adapted to engage said frame, substantially as described.

5. In a device of the character described, a supporting-frame, a pivot-lug secured to one end thereof, an aperture in the other end of said frame, a connecting-plate, a pivot-lug carried thereby and adapted to enter the aperture in said frame, and means for clamping said plate to said frame, substantially as described.

6. In a device of the character described, a supporting-frame, a pivot-lug secured near one end thereof, an aperture near the opposite end thereof, a connecting-plate, a pivot-lug carried by said connecting-plate and adapted to enter the aperture in said frame, an extension on said connecting-plate bent to occupy a position substantially parallel to said connecting-plate and adapted to engage said frame, substantially as described.

7. In a device of the character described, the combination, with a roller having annular recesses in the opposite ends thereof, a removable cover for said roller, ferrules adapted to enter said annular recesses and secure the ends of said removable cover therein, a supporting-frame for said roller, a pivot-lug secured at one end of said frame, and a detachable pivot-lug secured at the opposite end of said frame, said pivot-lugs being adapted to engage the opposite ends of said roller, substantially as described.

8. In a device of the character described, the combination, with a roller having a body portion provided with bearing-recesses in the opposite ends thereof and having an annular recess in each end thereof surrounding said bearing-recess, a removable cover for said roller, and a ferrule adapted to secure said removable cover in said annular recess, of a supporting-frame for said roller having a pivot-lug secured at one end thereof and adapted to engage the bearing-recess in one end of said roller, and a detachable pivot-lug secured to the opposite end thereof and adapted to engage the aperture in the adjacent end of said roller, substantially as described.

850,318. STREET-RAILWAY SWITCH. CLARENCE A. RIDLEY, New Orleans, La. Filed June 21, 1906. Serial No. 322,708.

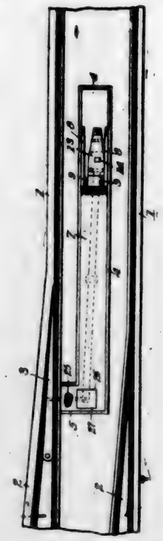

Claim.—1. A railway-switch comprising a casing provided with a removable cover, the cover having an opening, guiding-ribs mounted upon the cover, a switching-block provided with grooves in its under face for sliding engagement with the said ribs and also having a depending portion projecting through said opening, and a switching-lever arranged within the casing and having connection with said depending portion of the block.

2. A railway-switch comprising a casing provided with curved ribs, a block pivoted to slide upon the casing and provided with curved grooves in its under face for sliding engagement upon the ribs, and a lever arranged within the casing and having connection with said block.

3. A railway-switch comprising a casing provided with a removable cover, the cover having an opening, a switching-block arranged to slide upon the cover and having a depending portion projecting through said opening, a switching-lever arranged within the casing, and having connection with said depending portion of the block, the cover having a hand-opening, and a removable cover for the hand-opening.

4. A railway-switch comprising a casing, guiding-ribs mounted upon the casing, a switching-block mounted to

slide upon said ribs, and a switching-lever mounted within the casing and having connection with the switching-block to throw the switch.

5. A railway-switch comprising a casing, guiding-ribs mounted upon the casing, a switching-block mounted to slide upon said ribs, a switching-lever mounted within the casing and having connection with the switching-block to throw the switch and a hand-opening in the casing.

6. A railway-switch comprising a casing provided with exterior ribs and an opening intermediate the ribs, a switching-block pivoted to slide upon the casing and provided with grooves in its under face for sliding engagement with the corresponding ribs, and a lever arranged within the casing, the said block having means projecting through said opening for engagement with the lever.

850,319. COMBINATION-TOOL. WILLIS E. ROBINSON, Denver, Colo., assignor of one-half to Henry Williams, Denver, Colo. Filed Feb. 26, 1906. Serial No. 303,137.

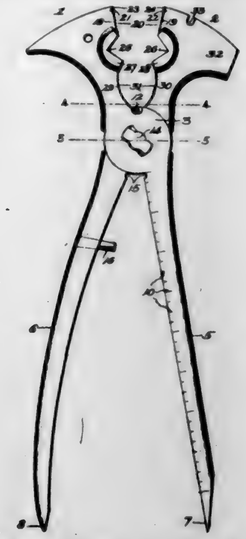

Claim.—In a combination-tool wrench, the combination in a tong type of wrench, of a pair of handles and nut and pipe jaws, having a pair of pivotally-centering disks, one disk of which is provided with a hub, a bolt secured to said hub and its disk, an oblong-shaped axial aperture in the opposite disk in which said hub projects rotatably and even with its opposite side, having a circular central portion fitting the body of said bolt, and an oblong head on said bolt fitting loosely the oblong hole in said disk and bearing against said disk's outer surface, and concentrically-curved recesses in each half of said handle in which each disk fits snugly and rotatably.

850,320. METHOD OF TRANSFERRING SHIPS OR VESSELS. FRANZ ROEDER, Wiesbaden, Germany, assignor of one-half to The Felten & Guilleaume Lahmeyerwerke, A. G., Frankfort-on-the-Main, Germany. Filed Jan. 15, 1906. Serial No. 296,158.

Claim.—The method herein described, of transferring ships or vessels from one body of water to another in a different plane, consisting in first floating said ship or vessel in a suitable chamber in one body of water, then raising said chamber and contents, then moving said chamber and contents approximately horizontally until the same is suspended over the other body of water, then lowering said chamber and contents into said other body of water, and releasing said ship or vessel from said chamber.

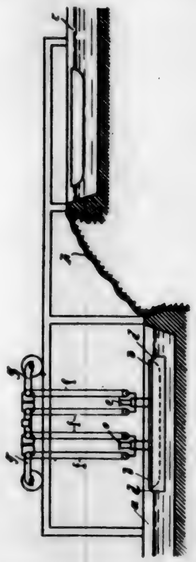

850,321. TIRE-ARMOR. CARL A. SCHLACHTER, Rockwell City, Iowa. Filed May 1, 1906. Serial No. 314,696.

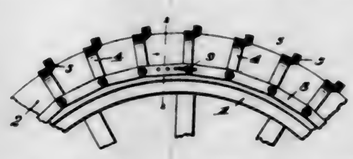

Claim.—1. In a shoe for vehicle-tires, the combination of a plurality of antiskidding members comprising substantially semicircular pieces extending around the outside of the tire and apertured at their ends and each provided with a middle portion wider than the rest and formed with a radially-extending integral web which is arc-shaped in the direction of its length and is straight at the outer edge, two sets of apertured links, rivets for connecting the apertured ends of the said members with the links to form a chain structure, and devices for adjustably connecting the ends of the said structure together.

2. A shoe for vehicle-tires, comprising a plurality of antiskidding members extending around the outside of the tire, links for connecting the ends of said members to form a chain structure, and means for connecting the ends of said structure, comprising a plurality of members pivoted to each side of the latter and provided with oppositely-extending slots, and devices on the other end of the structure engaging in the said slots.

3. A shoe for vehicle-tires, comprising a plurality of antiskidding members extending around the outside of the tire, links for connecting the ends of said members to form a chain structure, and means for connecting the ends of said structure, comprising a pair of links arranged on each side of the structure and pivoted to one end thereof and provided with oppositely-extending and correspondingly-inclined slots, and rivets on the opposite end of said structure adapted to engage in the said slots.

850,322. DOOR-BOLT. ERNST SCHLEGTENDAL, Barmen, Germany. Filed Aug. 13, 1906. Serial No. 330,508.

Claim.—1. A bolt for water-closets bathing-cells and the like comprising an ordinary bolt, a pin projecting therefrom and through a slot of the door, a plate connected with said pin and a cover or lid screwed over said plate as described and for the purpose set forth.

2. A bolt for water-closets bathing-cells and the like comprising an ordinary bolt, a pin projecting therefrom and through a slot of the door, and a cover or lid screwed over said pin as described and for the purpose set forth.

3. A bolt for water-closets bathing-cells and the like comprising an ordinary bolt a lever turnably arranged in said slot and engaging the bolt and a cover or lid screwed over said pin as described and for the purpose set forth.

850,323. FLOWER-POT MACHINE. CHARLES SCHWARZKOPF, St. Louis, Mo. Filed Feb. 20, 1907. Serial No. 358,479.

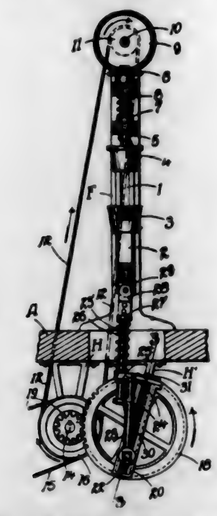

Claim.—1. In a molding-machine, a suitable frame, a rotatable former carried thereby, a reciprocating mold cooperating with said former, a drive-shaft, intermediate gearing between the former and shaft, and the shaft and mold respectively for rotating the former and reciprocating the mold, a connecting-rod having a relatively fixed section and a spring-controlled yielding section coupled at one end to the mold, and having its opposite end revolving about a fixed center, and means for adjusting the length of the radius of the circle described by said opposite end about the fixed center, whereby the length of the stroke of the connecting-rod is correspondingly altered, substantially as set forth.

2. In a molding-machine, a suitable frame, a reciprocating head mounted in said frame, a mold on the head, a connecting-rod comprising a relatively fixed section and a spring-controlled yielding section, coupled at one end to the head, a rotating gear-wheel, a diametrically-disposed guideway on one face of the gear-wheel, a stud-block mounted in the guideway and pivotally coupled to the opposite end of the connecting-rod aforesaid, an adjusting-screw disposed in the guideway and passed through the stud-block whereby the latter may be adjusted to and from the axis of rotation of the gear-wheel, a drive-shaft, a pinion on the shaft meshing with the gear-wheel, a rotatable former, and intermediate connections between the former and drive-shaft for rotating the said former during the reciprocations of the head and mold carried thereby, substantially as set forth.

850,324. LABEL-HOLDER FOR INDEX-TAB CARDS. JOSEPH C. SEYL and DANIEL G. BUTTS, Chicago, Ill., assignors to Yawman & Erbe Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Nov. 21, 1906. Serial No. 344,389.

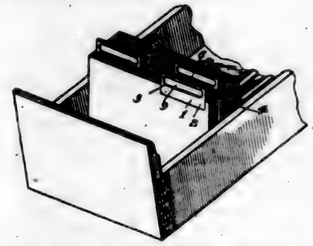

Claim.—1. A card or label holder embodying a member adapted to contain the label or inscribed card, and having an attaching portion; and a separate fastening member adapted to coöperate therewith and having a portion arranged to yieldingly compress an edge of a card or other support between it and the attaching portion of the other member.

2. A card or label holder embodying a member having flanges turned up from its edges to form a receptacle for the label, and having an attaching portion thereon, and a securing member having portions arranged to coöperate with the said flanges of the first-mentioned member, and having a portion arranged to engage a card or other support and compress the latter between it and the said attaching portion of the other member.

3. In a card or label holder, the combination with a body portion having a receptacle formed therein to receive the label, and an attaching portion adapted to engage one surface of a card or other suitable support, of a fastening member having a sliding engagement with the body portion and having portions for confining the label and for engaging a surface of the supporting-card for compressing the latter between it and the said attaching portion on the body portion.

4. In a card or label holder, the combination with a body portion embodying a plate having its edges turned and doubled to form flanges spaced from one side of said plate to form a receptacle for a label, and having an attaching portion adapted to engage a surface of a card or other support and having gripping devices thereon, of a coöperating securing member embodying a plate having a portion adapted to slide beneath the flanges on the body portion, and arranged to compress the supporting-card into coöperative relation with the said attaching portion.

850,325. AMMONIUM-NITRATE EXPLOSIVE. FIN SPARRE, Wilmington, Del., assignor to The E. I. du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Original application filed Oct. 24, 1905, Serial No. 284,152. Divided and this application filed May 31, 1906. Serial No. 319,491.

Claim.—1. A nitrate-of-ammonia explosive containing of nitrate of ammonia fifty to eighty-five per cent., of a liquid nitro compound three to thirty per cent., and of nitrocellulose dissolved in the liquid nitro compound less than 4.5 per cent. substantially as described.

2. A nitrate-of-ammonia explosive containing of nitrate of ammonia fifty to eighty-five per cent., of a liquid nitro compound three to thirty per cent., of a normally solid

nitro compound less than 7.5 per cent., and of nitrocellulose less than 4.5 per cent. substantially as described.

3. A non-hygroscopic nitrate-of-ammonia explosive containing a nitrate-of-ammonia powder coated with a liquid nitro compound in which has been dissolved nitrocellulose, in substantially the described proportions.

4. A non-hygroscopic nitrate-of-ammonia explosive containing a nitrate-of-ammonia powder coated with a liquid nitro compound in which has been dissolved nitrocellulose, and a normally solid nitro compound, in substantially the described proportions.

5. A nitrate-of-ammonia explosive containing of nitrate of ammonia fifty to eighty-five per cent., of mononitrotoluol three to thirty per cent., and of nitrocellulose dissolved in the liquid nitro compound less than 4.5 per cent. substantially as described.

6. A nitrate-of-ammonia explosive containing nitrate of ammonia fifty to eighty-five per cent., mononitrotoluol three to thirty per cent., trinitrotoluol less than 7.5 per cent., and of nitrocellulose less than 4.5 per cent. substantially as described.

7. A non-hygroscopic nitrate-of-ammonia explosive containing a nitrate-of-ammonia powder coated with mononitrotoluol in which has been dissolved nitrocellulose in substantially the described proportions.

8. A non-hygroscopic nitrate-of-ammonia explosive containing a nitrate-of-ammonia powder coated with mononitrotoluol in which has been dissolved nitrocellulose and trinitrotoluol in substantially the described proportions.

850,326. EXPLOSIVE AND PROCESS OF MAKING SAME. FIN SPARRE, Wilmington, Del., assignor to The E. I. du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed Jan. 25, 1907. Serial No. 353,965.

Claim.—1. An explosive comprising a mixture of ammonium nitrate and a waterproof coating therefor, incorporated with a mixture of a solid, uncoated, non-hygroscopic inorganic oxidizing agent, ferrosilicon, and a nitrated organic sensitizing agent, substantially as described.

2. An explosive comprising a mixture of ammonium nitrate and a waterproof coating therefor containing a nitro compound of a hydrocarbon, incorporated with a mixture of a solid, uncoated non-hygroscopic inorganic oxidizing agent, ferrosilicon, and a nitrated organic sensitizing agent, substantially as described.

3. An explosive comprising a mixture of ammonium nitrate and a waterproof coating therefor containing a solid nitro compound of a hydrocarbon and a liquid nitro compound of a hydrocarbon, incorporated with a mixture of a solid, uncoated, non-hygroscopic inorganic oxygen carrier, ferrosilicon, and a nitrated organic sensitizing agent, substantially as described.

4. An explosive comprising a mixture of ammonium nitrate and a waterproof coating therefor containing a solid nitro compound of a hydrocarbon and a liquid nitro compound of a hydrocarbon, incorporated with a mixture of ungelatinized nitrocellulose, ferrosilicon and uncoated potassium nitrate, substantially as described.

5. An explosive comprising a waterproof coating mixture containing a liquid nitro compound of a hydrocarbon less than five per cent. and a solid nitro compound of a hydrocarbon five to fifteen per cent., ammonium nitrate less than sixty-five per cent. incorporated therewith, and a mixture containing a nitrated organic sensitizing agent five to twenty-five per cent., ferrosilicon five to twenty per cent. and uncoated potassium nitrate ten to forty per cent., substantially as described.

6. An explosive comprising a mixture of ammonium nitrate less than sixty-five per cent., a waterproof coating therefor six to twenty per cent., incorporated with a mixture of a solid, uncoated, non-hygroscopic, inorganic oxidising agent ten to forty per cent., ferrosilicon five to twenty per cent, and a nitrated organic sensitising agent five to twenty-five per cent., substantially as described.

7. An explosive comprising a mixture of ammonium nitrate less than sixty-five per cent., a waterproof coating therefor six to twenty per cent. containing a nitro compound of a hydrocarbon, incorporated with a mixture of a solid, uncoated, non-hygroscopic inorganic oxidising agent ten to forty per cent., ferrosilicon five to twenty per cent. and a nitrated organic sensitising agent five to twenty-five per cent., substantially as described.

8. An explosive comprising a waterproof coating mixture containing a liquid nitro compound of a hydrocarbon less than five per cent. and a solid nitro compound of a hydrocarbon five to fifteen per cent., ammonium nitrate less than sixty-five per cent. incorporated therewith, and a mixture containing a nitrated organic sensitising agent five to twenty-five per cent., ferrosilicon five to twenty per cent. and a solid, uncoated, non-hygroscopic, inorganic oxidising agent ten to forty per cent., substantially as described.

9. The process of making an ammonium-nitrate metallic explosive containing a nitrated organic sensitizing agent which consists in incorporating ammonium nitrate with a waterproof coating ingredient, separately incorporating ferrosilicon and the sensitizing agent with a solid, uncoated, non-hygroscopic, inorganic oxidising agent, and then incorporating the two mixtures, substantially as described.

10. The process of making an ammonium-nitrate metallic explosive containing a nitrated organic sensitizing agent which consists in incorporating ammonium nitrate with a waterproof coating ingredient containing a nitro compound of a hydrocarbon, separately incorporating ferrosilicon and the sensitizing agent with a solid, uncoated, non-hygroscopic, inorganic oxidising agent, and then incorporating the two mixtures, substantially as described.

11. The process of making an ammonium-nitrate metallic explosive containing a nitrated organic sensitizing agent which consists in incorporating ammonium nitrate with a liquid nitro compound of a hydrocarbon and a solid nitro compound of a hydrocarbon, separately incorporating ferrosilicon and the sensitizing agent with a solid, uncoated non-hygroscopic, inorganic oxidizing agent, and then incorporating the two mixtures, substantially as described.

12. The process of making an ammonium-nitrate metallic explosive containing ungelatinized nitrocellulose which consists in incorporating ammonium nitrate with a waterproof coating ingredient, separately incorporating the nitrocellulose, ferrosilicon and potassium nitrate, and then incorporating the two mixtures, substantially as described.

850,327. PNEUMATIC TREAD FOR BOOTS AND SHOES. ISIDOR TAUBER, Vienna, Austria-Hungary. Filed Nov. 16, 1906. Serial No. 343,707.

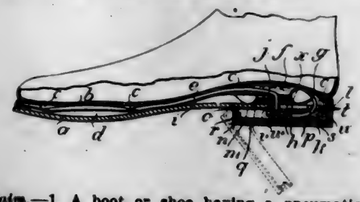

Claim.—1. A boot or shoe having a pneumatic tread comprising separated sole and insole thereby forming between them a recess, a pneumatic cushion inserted between the sole and insole in the forward part of the shoe, a second pneumatic cushion inserted between the insole and the heel-seat, fluid-supply connections for said cushions, a hollow hinged heel member having a recess therein adapted to receive said supply connections and means for securing said heel member in place on the boot.

2. A boot or shoe with a pneumatic tread, comprising separated sole and insole thereby forming between them a recess arranged to receive a separate pneumatic cushion in the forward and the heel section of the shoe, said recess at the heel-section having an aperture extending outward, a separable heel member arranged to cover said aperture normally and to be removed so that said cushions may be inserted through said aperture.

3. A boot or shoe with a pneumatic tread, comprising separated sole and insole thereby forming between them a recess arranged to receive a separate pneumatic cushion in the forward and the heel section of the shoe, said recess at the heel-section having an aperture extending outward, a heel consisting of an upper section connected with the sole and having a recess therein and an opening connected with the recess formed between the heel-seat of the sole and the insole, and a hollow lower heel-section arranged to be detachably connected with the upper section and having a space therein to receive pneumatic connections for supplying air to the cushions.

850,328. WHEEL-HUB. FERDINAND F. UNCKRICH, Galion, Ohio, assignor to Buckeye Wheel Company, Galion, Ohio. Filed Nov. 24, 1905. Serial No. 288,924.

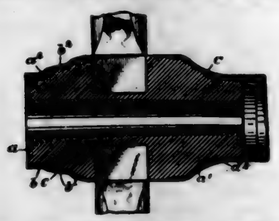

Claim.—1. A wheel-hub, comprising a body having a depression in its surface, an apertured metallic shell on the body, a pin entering the said body with its head in the aperture of the shell, and a soft-metal plug in the opening and enveloping the head of the pin.

2. A wheel-hub, comprising a body having a depression in its periphery, and a metallic shell fitting on the body and having a projection entering the depression, said projection being struck up from the shell forming an opening therein, and a soft-metal plug in the said opening.

3. In a wheel the combination of a wooden body having a depression in its surface, a metallic shell upon said body, said shell having an inwardly-extending projection and an opening adjacent to said projection, a nail entering said body and having the head in said opening, and a plug in the opening enveloping the head.

850,329. ELECTRIC AND PNEUMATIC GOVERNOR. HARRY W. YOUNG, Philadelphia, Pa., assignor to John E. Reyburn, Philadelphia, Pa. Filed Jan. 22, 1906. Serial No. 297,147.

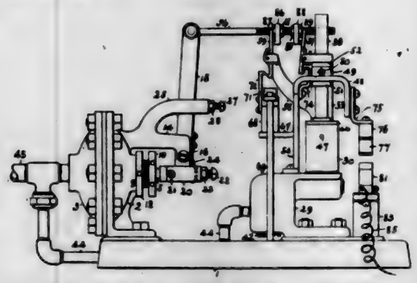

Claim.—1. In an electric and pneumatic governor, a diaphragm operative by pneumatic pressure; a cylinder, a piston having a hollow piston-rod and a valve therein; fixed carbons having electrical conductors thereto and therefrom; movable carbons carried by the piston and its rod, and means operative by pneumatic pressure to lift the piston and the movable carbons and break the circuit upon the accumulation of a maximum pressure, and to drop the piston and the movable carbons and close the circuit when a minimum pressure is reached, substantially as and for the purposes specified.

2. In a governor, a diaphragm actuated by fluid-pressure; a cylinder, a piston in the cylinder actuated in one direction by fluid-pressure, and in the opposite direction by gravity; fixed and movable carbons and electrical conductors therefor; and means operative by the diaphragm to release the piston and carbons for action by gravity to form the electrical circuit, and by fluid-pressure to break the circuit.

3. In a governor, a diaphragm actuated by fluid-pressure in one direction and by resilient means in the opposite direction; a lever movable by the diaphragm, a rod thereto attached and arms on the rod; a cylinder having a piston and rod operative in one direction by fluid-pressure and in the opposite direction by gravity; a support; latches on the support which engage the arms aforesaid; a catch adapted to engage one of the latches; a weight, and a latch thereon adapted to engage the other latch; fixed carbons having electrical conductors; movable carbons supported by the piston and its latch; a support for the weight, also carried by the piston, to the weight's latch; a pressure-passage to the piston, a valve controlling the passage, a stem projecting from the valve and adapted to be depressed by the falling of the weight, to open the valve, admit pressure to the cylinder, lift the piston and movable carbons and break the circuit.

4. The combination of a fluid-pressure diaphragm, a cylinder having a piston actuated by fluid-pressure in one direction and by gravity in an opposite direction; movable carbons and a weight elevated by the piston; fixed carbons and electrical conductors therefor; a fluid-passage to the cylinder and a valve to control it; means to suspend the piston and the carbons; means to release the piston and movable carbons to form an electrical circuit, by gravity; and means to release the weight and by its gravity open the valve and break the circuit.

5. In a governor, a fluid-pressure diaphragm, a cylinder, a piston therein, movable carbons supported by the piston, fixed carbons and electrical conductors, a weight elevated by the piston, means to suspend the piston and movable carbons until a minimum pressure is reached, and then to release the piston and carbons to act by gravity to form the electrical connection; means to suspend the weight before the piston descends, and to hold it in suspension until a predetermined increase of pressure is reached, and to then release the weight to act by gravity to apply pressure to the piston for its elevation, the elevation of the carbons and the breaking of the circuit.

6. In a governor, a diaphragm deflected in one direction by fluid-pressure, and in the opposite direction by resilient means, means to adjust the resiliency, and means for its relief when subjected to extreme pressure.

7. In a governor, a cylinder mounted over a fluid-pressure passage and open to the same, a piston in the cylinder, a hollow piston-rod extending through the piston, a valve suspended from the piston-rod to leave a free passage through the piston and its rod when the piston is not subjected to pressure, and to close the passage when pressure is introduced into the cylinder for the movement of the piston.

8. In a governor, a stand, a chamber in the stand, a valve in the chamber having a stem projecting above the stand, resilient means to close the valve, a fluid-pressure passage to the chamber, a fluid-pressure passage from the chamber and controlled by the valve; a cylinder mounted above and open to the latter passage, a piston in the cylinder, and means operative by gravity to open the valve, admit pressure to the cylinder and operate the piston.

850,330. SELF-PLAYING MUSICAL INSTRUMENT. EDWIN D. ACKERMAN, New York, and CHARLES E. CLINTON and ROBERT N. ELTOM, Corona, N. Y., assignors, by direct and mesne assignments, to The Pianora Company, a Corporation of New York. Filed Feb. 7, 1906. Serial No. 299,972.

Claim.—1. A mechanical action for playing instruments comprising a horizontal bar, a plurality of spaced levers fulcrumed upon and transversely of the bar, a contact-shoe pivoted upon each lever, means to actuate the shoe, a

strike-rod pivotally connected with the shoe, means for actuating the lever, means carried by the bar to limit the downward movement of the levers, a strip carried by the bar and spaced above the bar and levers, and means carried by the strip to adjustably limit the upward movement of the levers.

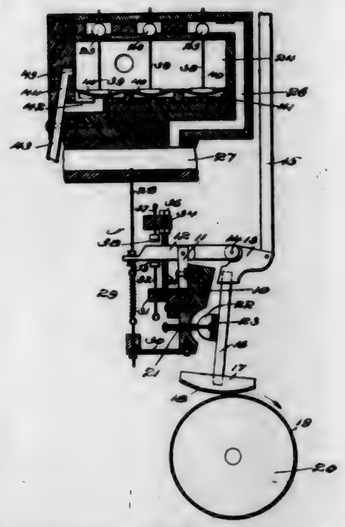

2. A mechanical action for playing instruments comprising a horizontal bar, a plurality of spaced levers fulcrumed upon and transversely of the bar, a bell-crank lever pivoted upon each lever, a contact-shoe carried rigidly by each bell-crank lever, means to actuate the shoe, a strike-rod pivotally connected with the shoe, means for actuating the lever, means carried by the bar to adjustably limit the downward movement of the levers, a strip carried by the bar and spaced above the bar and levers, and means carried by the strip to adjustably limit the upward movement of the levers.

3. A mechanical action for playing instruments, comprising a horizontal bar, a plurality of spaced levers fulcrumed upon and transversely of the bar, a contact-shoe pivoted upon each lever, a rotating roller for contact with and to actuate the shoe, a strike-rod pivotally connected with the shoe, a pneumatic for actuating the levers, means carried by the bar to adjustably limit the downward movement of the levers, a strip carried by the bar and spaced above the bar and levers, and means carried by the strip to adjustably limit the upward movement of the levers.

4. A mechanical action for playing instruments, comprising a horizontal bar, a plurality of spaced levers fulcrumed upon and transversely of the bar, a contact-shoe pivoted upon each lever, means to actuate the shoe, a strike-bar pivotally connected with the shoe, a pneumatic connected with each lever, means to exhaust the pneumatic, a padded screw carried by the bar to adjustably limit the downward movement of the levers, a strip carried by the bar and spaced above the bar and levers, and a padded screw carried by the strip to adjustably limit the upward movement of each lever.

5. A mechanical action for playing instruments, comprising a horizontal bar, a plurality of spaced levers fulcrumed upon and transversely of the bar, a bell-crank lever pivoted upon each lever, a contact-shoe rigidly connected with each bell-crank lever, a mechanically-rotated roller disposed for contact with and to actuate the shoes, a strike-rod pivotally connected with each lever, pneumatics, means connecting the pneumatics and levers, means to exhaust the pneumatics, a padded screw carried by the bar to adjustably limit the downward movement of the inner end of each lever, a strip carried by the bar and spaced above the bar and levers, a padded screw carried by the strip to adjustably limit the upward movement of the inner end of the lever, and a screw carried by the bar and provided with a swiveled pad to limit the movement of the shoe.

850,331. APPARATUS FOR TREATING COTTON-SEED HULLS. DOW L. ADELSPERGER, Springfield, Ohio, assignor to The Foos Manufacturing Company, Springfield, Ohio, a Corporation of Ohio. Filed May 23, 1906. Serial No. 318,301.

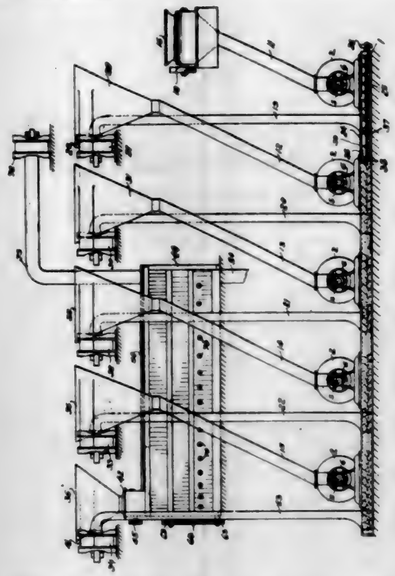

Claim.—1. In an apparatus of the character described, a series of grinding-mills all set alike in operation, a feed-chute and a discharge-chute for each mill, each discharge-chute discharging into the feed-chute of the next succeeding mill, and an agitator-casing into which the discharge-chute of the last mill discharges, said agitator-casing having agitating means proper to shake out the ground mass so fed to it, and having a bran-discharge passage and air-inlet means, and means for passing a current of air through said agitator-casing to carry off the fiber, while the bran gravitates and escapes.

2. In an apparatus of the character described, a series of grinding-mills all set alike in operation, a feed-chute and a discharge-chute for each mill, a fan-blower for each discharge-chute and connecting with the feed-chute of the next succeeding mill, and an agitator-casing into which the blower of the last mill discharges, said agitator-casing being divided into two compartments, a revoluble agitator proper in one of said compartments to shake out and carry the ground mass in and along said compartment, a fan-blower connected to said compartment, a wall between the compartments partly imperforate and partly perforated, the lower compartment having air-inlet orifices through which said fan-blower draws air-currents through said perforated walls and into the other compartment, whereby the fiber is carried off by such air-currents, while the bran is discharged through said perforated wall.

3. In an apparatus of the character described, a series of grinding-mills, a feed-chute and a discharge-chute for each mill, the discharge-chute of each preceding mill arranged to discharge into the feed-chute of the succeeding mill, and an agitator-casing into which the discharge-chute of the final mill discharges, agitating means proper operating within the agitator to shake out the mass of ground material, the agitator-casing having means for the discharge of the bran and air-inlet orifices, and an air-fan to draw currents of air through said orifices and into and out of the agitator-casing to carry off the fiber.

4. In an apparatus of the character described, a series of grinding-mills each having a feed-chute and a discharge-chute, the discharge-chute of each preceding mill discharging into the feed-chute of the next mill, an agitator-casing into which the discharge-chute of the last mill discharges, the agitator-casing being divided into two compartments, agitating means proper operating in one of the compartments to shake out the mass of ground material fed into it, the wall between the two compartments being partly imperforate and partly perforated, said agitator proper operating above said wall, and conveyer means below the wall to carry off the bran, there being air-inlet orifices below said wall, a fan-blower connected to the compartment above the wall and adapted to draw air-currents through said orifices and through the perforated portion of said wall, whereby the bran may gravitate through said perforated wall to the conveyer and whereby the lint is carried away from the bran and out of the agitator.

5. In an apparatus of the character described, a series of grinding-mills, a feed-chute and a discharge-chute for each mill, a fan-blower connected with each discharge-chute and with the feed-chute of the next succeeding mill, an agitator connected with the fan of the discharge-chute of the last mill, said agitator comprising a casing having an upper and lower compartment, a wall between them partly imperforate and partly perforated, a revoluble agitator proper mounted in the upper compartment and adapted to shake out the matted ground material and to move it lengthwise of the compartment, partitions across the lower compartment and a conveyer near the bottom thereof, the lower compartment having a series of air-inlet orifices between said partitions and below the perforated wall, and a fan-blower connected with the upper compartment and adapted to draw air through said orifices and said perforated wall and to gather the fiber as the material is shaken out and passed along in the upper compartment, said perforated wall allowing the escape of the bran to the conveyer.

6. In an apparatus of the character described, a series of grinding-mills all set alike in operation, a conveyer and trough beneath them, a feed-chute for each mill, a discharge-chute for each mill connecting with said trough, a fan-blower connected with each discharge-chute and discharging into the feed-chute of the next succeeding mill, and an agitator-casing in which the fan-blower of the discharge-chute of the last mill discharges, said agitator-casing comprising two compartments divided by a wall partly imperforate and partly perforated, one compartment having partitions, air-inlet orifices and a bran-conveyer, and the other compartment a revoluble agitator consisting of a shaft having beating and feeding arms to shake out and carry the mass of ground material in and along that compartment, a fan-blower connected with this compartment and operating to draw air-currents through said orifices and through the perforated wall, and thence through and out of this compartment, to gather up the fiber particles, while the bran gravitates through the perforated wall and past the air-currents.

7. In an apparatus of the character described, an agitator comprising a frame and casing, a concave wall within the casing partly imperforate and partly perforated, teeth carried by the imperforate portion, a revoluble agitator proper mounted above the concave and having radial arms with blades set to advance the material through the compartment while shaking it up, the compartment below the concave having inclined side walls terminating in a trough and provided with apertures, a conveyer in the trough, and having cross-partitions and a series of air-inlet orifices, and a fan-blower connected with a compartment above the concave and adapted to pass a current of air through both of said compartments, substantially as described.

850,332. DOUGH-DIVIDING MACHINE. ROBERT J. F. ALDRED and ALFRED E. ALDRED, Glencoe, Ontario, Canada. Filed Dec. 29, 1906. Serial No. 349,975.

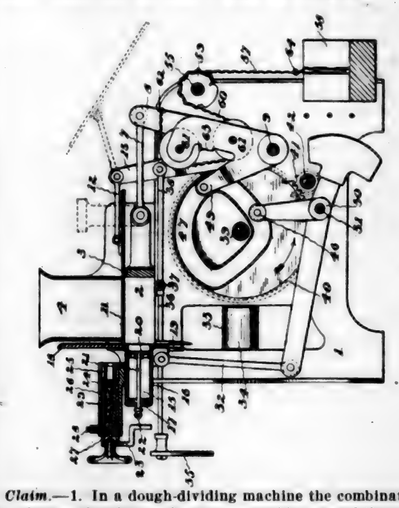

Claim.—1. In a dough-dividing machine the combination of a plunger-chamber; a hopper removably secured thereon; a dividing-knife, guideways for the knife being formed between the walls of the chamber and the hopper; and a plunger in said chamber, the chamber being shaped to permit of the removal of the plunger through the hopper side of the chamber when the hopper has been removed, substantially as described.

2. In a dough-dividing machine the combination of a plunger-chamber; a hopper removably secured thereon; and a plunger in said chamber, the chamber being shaped to permit of the removal of the plunger through the hopper side of the chamber when the hopper has been removed, substantially as described.

3. In a dough-dividing machine the combination of a plunger-chamber; a hopper removably secured thereon; a dividing-knife, guideways for the knife being formed between the walls of the chamber and the hopper; a suitably-fulcrumed lever; and a connecting-rod having a pivoted connection with the lever and the plunger whereby the knife may be swung out of its guideways after removal of the hopper, substantially as described.

4. In a dough-dividing machine the combination of a plunger-chamber; a hopper removably secured thereon; a plunger in said chamber, the chamber being shaped to permit of the removal of the plunger through the hopper side of the chamber when the hopper has been removed; a suitably-fulcrumed lever; and a connecting-rod having a pivoted connection with the lever and the plunger whereby the plunger may be swung out of the chamber when the hopper has been removed, substantially as described.

5. In a dough-dividing machine the combination of a reciprocating dividing-knife; a reciprocating discharger; a suitably-fulcrumed bell-crank lever; a revoluble cam with which one arm of the bell-crank lever is adapted to engage; and two connecting-rods pivotally connected to the other arm of the bell-crank lever, and to the knife and discharger respectively, substantially as described.

6. In a dough-dividing machine the combination of a hopper; a plunger-chamber below the same; a knife adapted to reciprocate between the two; a plunger adapted to reciprocate in said chamber; means for moving the same; a measuring-chamber adapted to be moved transversely of the plunger-chamber; means for moving the measuring-chamber into and out of alinement with the plunger-chamber; a piston movable in said measuring-chamber; a piston-rod secured to said piston; a reciprocating discharger

adapted to engage the piston-rod when the measuring-chamber has been moved out of alinement with the plunger-chamber; and means for simultaneously operating the knife and discharger, substantially as described.

7. In a dough-dividing machine the combination of a hopper; a plunger-chamber below the same; a knife adapted to reciprocate between the two; a plunger adapted to reciprocate in said chamber; means for moving the same; a measuring-chamber adapted to be moved transversely of the plunger-chamber; means for moving the measuring-chamber into and out of alinement with the plunger-chamber; a piston movable in said measuring-chamber; a piston-rod secured to said piston; a reciprocating discharger adapted to engage the piston-rod when the measuring-chamber has been moved out of alinement with the plunger-chamber; a suitably-fulcrumed lever; means for rocking the same; and two connecting-rods pivotally connected to the lever and to the knife and discharger respectively, substantially as described.

8. In a dough-dividing machine the combination of a plunger-chamber; a plunger movable therein; a suitably-fulcrumed lever; a link pivoted on the plunger and lever; a second lever suitably fulcrumed; mechanism adapted to rock said lever; a weight; a chain connection between the weight and the first lever; and idlers on the second lever and the frame round which the chain is carried so that by the rocking of the second lever the first lever is caused to raise and lower the weight and move the plunger, substantially as described.

9. In a dough-dividing machine the combination of a plunger-chamber; a plunger movable therein; a suitably-fulcrumed lever; a link pivoted on the plunger and lever; a second lever suitably fulcrumed; mechanism adapted to rock said lever; a weight; a chain connection between the weight and the first lever; idlers on the second lever and the frame round which the chain is carried so that by the rocking of the second lever the first lever is caused to raise and lower the weight and move the plunger; and a stop limiting the forward movement of the first lever relative to the second, substantially as described.

10. In a dough-dividing machine the combination of a plunger-chamber; a plunger movable therein; a suitably-fulcrumed lever; a driving connection between the lever and the plunger; a second lever suitably fulcrumed; mechanism adapted to rock said lever; a weight; a chain connection between the weight and the first lever; and idlers on the second lever and the frame round which the chain is carried so that by the rocking of the second lever the first lever is caused to raise and lower the weight and move the plunger, substantially as described.

11. In a dough-dividing machine the combination of a plunger-chamber; a plunger movable therein; a suitably-fulcrumed lever; a driving connection between the lever and the plunger; a second lever suitably fulcrumed; mechanism adapted to rock said lever; a weight; a chain connection between the weight and the first lever; idlers on the second lever and the frame round which the chain is carried so that by the rocking of the second lever the first lever is caused to raise and lower the weight and move the plunger; and a stop limiting the forward movement of the first lever relative to the second, substantially as described.

12. In a dough-dividing machine the combination of a measuring-chamber; a piston movable therein; a piston-rod connected thereto; a stop with which the end of the piston-rod may engage; a cylindrical slide to which said stop is connected, having a longitudinal groove in its surface; a stationary cylindrical guide in which said slide is movable; means for adjusting said slide lengthwise in the guide; and a radially-movable pin adapted to engage said slot, substantially as described.

13. In a dough-dividing machine a plunger; a weight having a cylindrical recess formed in its under side; a chain passing down through said recess; a coil-spring engaged with the lower end of the chain and the upper end of the recess; and means for drawing on the chain to raise the weight and to bring its gravity to bear on the plunger, substantially as described.

14. In a dough-dividing machine the combination of a plunger-chamber; a plunger movable therein; a suitably-fulcrumed lever; a link pivoted on the plunger and lever; a second lever suitably fulcrumed; mechanism adapted to rock said lever; a weight; a chain connection between the weight and the first lever; an idler on the second lever adjacent to the fulcrum; an idler on the said lever near its end, and an idler on the frame, the chain running from the idler on the frame around the idler adjacent to the fulcrum of the lever, and thence around the other idler on the lever to its point of connection with the first lever, substantially as described.

15. In a dough-dividing machine the combination of a plunger-chamber; a plunger movable therein; a suitably-fulcrumed lever; a driving connection between the lever and the plunger; a second lever suitably fulcrumed; mechanism adapted to rock said lever; a weight; a chain connection between the weight and the first lever; an idler on the second lever adjacent to the fulcrum; an idler on the said lever near its end, and an idler on the frame, the chain running from the idler on the frame around the idler adjacent to the fulcrum of the lever, and thence around the other idler on the lever to its point of connection with the first lever, substantially as described.

16. In a dough-dividing machine the combination of a plunger-chamber; a plunger movable therein; a suitably-fulcrumed lever; a link pivoted on the plunger and lever; a second lever suitably fulcrumed; mechanism adapted to rock said lever; a weight; a chain connection between the weight and the first lever; an idler on the second lever adjacent to the fulcrum; an idler on the said lever near its end; an idler on the frame, the chain running from the idler on the frame around the idler adjacent to the fulcrum of the lever, and thence around the other idler on the lever to its point of connection with the first lever; and a stop limiting the forward movement of the first lever relative to the second, substantially as described.

17. In a dough-dividing machine the combination of a plunger-chamber; a plunger movable therein; a suitably-fulcrumed lever; a driving connection between the lever and the plunger; a second lever suitably fulcrumed; mechanism adapted to rock said lever; a weight; a chain connection between the weight and the first lever; an idler on the second lever adjacent to the fulcrum; an idler on the said lever near its end; an idler on the frame, the chain running from the idler on the frame around the idler adjacent to the fulcrum of the lever, and thence around the other idler on the lever to its point of connection with the first lever; and a stop limiting the forward movement of the first lever relative to the second, substantially as described.

850,333. LOCK. FRANK S. ALIANO, New York, N. Y. Filed Sept. 26, 1905. Serial No. 280,152.

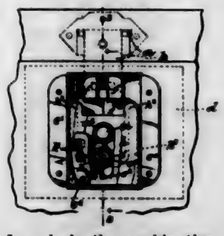

Claim.—1. In a lock, the combination of a lock casing or cup, a face-plate therefor having an opening therein adapted to permit the entrance of a coöperating latch member, a spring-pressed latch-jaw mounted in said cup and extending below said opening, a reciprocating locking-plate inclosing said jaw and adapted to be forced into engagement therewith to positively lock it against movement, means whereby said locking-plate may be reciprocated by means of a key and a depressible plunger adapted to engage and actuate said jaw to release a coöperating member independently of the key, all contained in said cup, and a coöperating member carrying means adapted to engage said jaw through the opening in said face-plate.

2. In a lock, the combination of a lock casing or cup, a face-plate therefor having an opening therein adapted to permit the entrance of a coöperating latch member, a spring-pressed latch-jaw mounted in said cup and extending below said opening, a reciprocating locking-plate inclosing said jaw and adapted to be forced into engagement therewith to positively lock it against movement, means whereby said locking-plate may be reciprocated by means of a key, means whereby said plate may be locked against movement in either direction, and a depressible plunger adapted to engage and actuate said jaw to release a coöperating member independently of the key, all contained in said cup, and a coöperating member carrying means adapted to engage said jaw through the opening in said face-plate.

3. In a lock, the combination of a lock casing or cup, a face-plate therefor having an opening therein adapted to permit the entrance of a coöperating latch member, a spring-pressed latch-jaw mounted in said cup and having the end extended upwardly into engagement with said top plate and below said opening, a reciprocating locking-plate adapted to engage the section between said upwardly-raised end and the shank of said jaw and adapted to be forced into engagement therewith to positively lock it against movement, means whereby said locking-plate may be reciprocated by means of a key and means adapted to actuate said jaw to release a coöperating member independently of a key, all contained in said cup, and a coöperating member carrying means adapted to engage said jaw through the opening in said face-plate.

4. In a lock, the combination of a lock casing or cup, a face-plate therefor having an opening therein adapted to permit the entrance of a coöperating latch member, a spring-pressed latch-jaw mounted in said cup and having the end extended upwardly into engagement with said top plate and below said opening, a reciprocating locking-plate adapted to engage the section between said upwardly-raised end and the shank of said jaw and adapted to be forced into engagement therewith to positively lock it against movement, means whereby said locking-plate may be reciprocated, by means of a key, means whereby said plate may be locked against movement in either direction, and means adapted to actuate said jaw to release a coöperating member independently of the key, all contained within said cup, and a coöperating member carrying means adapted to engage said jaw through the opening in said face-plate.

5. In a lock, the combination of a lock casing or cup, having a bearing-pin near one end thereof, a face-plate therefor having an opening therein adapted to permit the entrance of a coöperating latch member, a plurality of latch-jaws mounted in said casing on opposite sides of said bearing-pin and extending below said opening, means normally closing said jaws, a reciprocating locking-plate inclosing said jaws and said means and adapted to positively lock same against movement, means whereby said locking-plate may be reciprocated by means of a key and means adapted to actuate said jaws to release a coöperating member independently of the key, all contained within said cup, and a coöperating member carrying means adapted to engage said jaw through the opening in said face-plate.

6. In a lock, the combination of a lock casing or cup, a face-plate therefor having an opening therein adapted to permit the entrance of a coöperating latch member, a spring-pressed latch-jaw mounted in said cup and extending below said opening, a locking-plate inclosing said jaw having an opening or openings therein whereby it is permitted to reciprocate, an end arm adapted to be interposed between said jaw and said casing and positively lock it against movement, a shoulder thereon whereby said plate may be reciprocated by means of a key, means whereby said plate may be locked against movement in either direction, and means adapted to actuate said jaw to release a coöperating member independently of the key, all contained in said cup, and a coöperating member carrying means adapted to engage said jaw through the opening in said face-plate.

7. In a lock, the combination of a lock casing or cup having a bearing-pin near one end thereof, a face-plate therefor having an opening therein adapted to permit the entrance of a coöperating latch member, a plurality of latch-jaws mounted in said casing on opposite sides of said bearing-pin and extending below said opening, means normally closing said jaws, a locking-plate inclosing said jaws having an opening therein whereby it is permitted to reciprocate, and arms adapted to engage said jaws respectively and positively lock them against movement, a shoulder thereon whereby said plate may be reciprocated by means of a key, means whereby said plate may be locked against movement in either direction, and means adapted to actuate said jaws to release a coöperating member independently of the key, all contained in said cup, and a coöperating member carrying means adapted to engage said jaws through the opening in said face-plate.

8. In a lock, the combination of a lock casing or cup, having a bearing-pin near one end thereof, a face-plate therefor having an opening therein adapted to permit the entrance of a coöperating latch member, a plurality of latch-jaws mounted in said casing on opposite sides of said bearing-pin and extending below said opening, means normally closing said jaws, a locking-plate mounted on the bottom of said cup by means of side flanges and inclosing said jaws, having an opening therein whereby it is permitted to reciprocate, end arms adapted to engage said jaws respectively and positively lock them against movement, a shoulder thereon whereby said plate may be reciprocated by means of a key, means whereby said plate may be locked against movement in either direction, and means adapted to actuate said jaws to release a coöperating member independently of the key, all contained in said cup, and a coöperating member carrying means adapted to engage said jaws through the opening in said face-plate.

9. In a lock, the combination of a lock casing or cup, having a bearing-pin and a tumbler-pin near one end thereof, a face-plate therefor having an opening therein adapted to permit the entrance of a coöperating latch member, a plurality of latch-jaws mounted in said casing on opposite sides of said bearing-pin and extending below said opening, means normally closing said jaws, a locking-plate mounted on the bottom of said cup inclosing said jaws having an opening therein whereby it is permitted to reciprocate and arms adapted to engage said jaws respectively and positively lock same against movement, a shoulder thereon whereby said plate may be reciprocated by means of a key, a tumbler or tumblers mounted on said tumbler-pin, a locking-stud carried by said plate and adapted to engage said tumblers whereby said plate may be locked against movement in either direction, a key-support adjoining said tumblers whereby said tumbler may be released and said plate reciprocated, and means adapted to actuate said jaws to release a coöperating member independently of the key, all contained in said cup, and a coöperating member carrying means adapted to engage said jaws through the opening in said face-plate.

10. In a lock, the combination of a lock cup or casing having a bearing-pin and a tumbler-pin near one end thereof, and an opening in the bottom thereof adjoining said tumbler-pin, a face-plate therefor having an opening therein adapted to permit the entrance of a coöperating latch member and a second opening alined with the opening in the bottom of said cup, a plurality of latch-jaws mounted in said cup on opposite sides of said bearing-pin and extending below said opening for a coöperating latch member, and having recesses therein at a point above the opening in the bottom of said cup whereby a seat is formed adjacent to said last-mentioned opening, a key-barrel passing through said jaws and mounted in said opening in the bottom of the cup and the alined opening in the face-plate, means normally closing said jaws, a locking-plate mounted on the bottom of said cup inclosing said jaws having an opening therein whereby it is permitted to reciprocate and arms adapted to engage said jaws respectively and positively lock same against movement, a shoulder thereon adjoining said key-barrel whereby said plate may be reciprocated by means of a key, a tumbler or tumblers mounted on said tumbler-pin, a locking-stud carried by said plate and adapted to engage said tumbler or

tumblers, whereby said plate may be locked against movement in either direction, and means adapted to actuate said jaws to release a coöperating latch member independently of the key, all contained in said cup, and a coöperating member carrying means adapted to engage said jaws through the opening in said face-plate.

11. In a lock, the combination of a lock casing or cup having a bearing-pin near one end thereof, a face-plate therefor having an opening therein adapted to permit the entrance of a coöperating latch member, a plurality of latch-jaws mounted in said casing on opposite sides of said bearing-pin and extending below said opening, means normally closing said jaws, a reciprocating locking-plate inclosing said jaws and said means and adapted to positively lock same against movement, means whereby said locking-plate may be reciprocated by means of a key and a depressible wedge member adapted to enter between said jaws whereby said jaws are actuated to release a coöperating member independently of the key, all contained within said cup, and a coöperating member carrying means adapted to engage said jaws through the opening in said face-plate.

12. In a lock, the combination of a lock casing or cup having a bearing-pin near one end thereof, a face-plate therefor having an opening therein adapted to permit the entrance of a coöperating latch member, a plurality of latch-jaws mounted in said casing on opposite sides of said bearing-pin and extending below said opening, means normally closing said jaws, a reciprocating locking-plate inclosing said jaws and said means and adapted to positively lock same against movement means whereby said locking-plate may be reciprocated by means of a key, a pin carried by said cup, a conical wedge mounted in the face-plate above said pin and encircling said pin, a spring interposed between said plunger or wedge and said cup, said wedge being adapted to enter between said jaws and actuate them to release a coöperating member, independently of the key, all contained within said cup and a coöperating member carrying means adapted to engage said jaws through the opening in said face-plate.

13. In a lock, the combination of a lock casing or cup having a bearing-pin and a tumbler-pin near one end thereof and an opening in the bottom thereof adjoining said tumbler-pin, a face-plate therefor having an opening therein adapted to permit the entrance of a coöperating latch member, a second opening for a key-barrel, and a third opening for a release-plunger, a plurality of latch-jaws mounted in the bottom of said cup on opposite sides of said bearing-pin and having the ends thereof extended upwardly into engagement with said top plate and below said opening for the coöperating latch member, and having a recess therein below said key-barrel opening, and spaced apart below said plunger-opening in said face-plate respectively, a key-barrel mounted in the openings in said cup and said face-plate, a spring engaging said jaws adjoining said pivot whereby they are normally closed, a locking-plate inclosing said jaws and said spring, having an opening therein whereby it is permitted to reciprocate and arms thereon adapted to engage the extended portion of said jaws respectively and positively lock same against movement, a shoulder thereon adjoining said key-barrel whereby said plate may be reciprocated by means of a key, a tumbler or tumblers mounted on said tumbler-pin, a locking-stud carried by said plate and adapted to engage said tumbler or tumblers whereby said plate may be locked against movement in either direction, a pin carried by said cup, a conical plunger mounted in the face-plate plunger-opening and encircling said pin, a spring interposed between said plunger and said cup, said conical portion being adapted to enter between said jaws and actuate them to release a coöperating member, independently of the key, all contained in said casing or cup, and a coöperating member carrying means adapted to engage said jaws through the opening in said face-plate.

14. In a lock, the combination of a lock casing or cup, a face-plate therefor having an opening therein adapted to permit the entrance of a coöperating latch member, a plurality of laterally-movable spring-pressed latch-jaws mounted in said casing, a reciprocating forked locking-plate, the end arms of which are adapted to engage said jaws and lock them against movement, means whereby said locking-plate may be reciprocated by means of a key, a depressible plunger adapted to enter between said jaws and separate them to release a coöperating member independently of the key, all contained within said casing or cup, and a coöperating latch member carrying means adapted to engage said jaws through the opening in said face-plate.

850,334. AUTOMATIC CUT-OUT OR FUSE-BOX. SWAN C. ANDERSON, Oak Park, and CHARLES H. FRENBERG, Chicago, Ill. Filed Oct. 18, 1906. Serial No. 339,460.

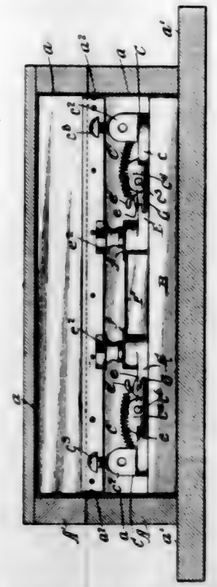

Claim.—1. In a device of the class described the combination with rigid plates adapted to receive trunk-wires, of a plate hinged to each and adapted to extend longitudinally thereof intermediate the same, and a fuse connected in said last-named plates.

2. In a device of the class described the combination with a pair of rigidly-fixed plates adapted to receive trunk-wires, of a plate hinged to the inner edge of each and adapted to normally extend longitudinally thereof intermediate the fixed plates, a fuse engaged on said hinged plates and springs engaged at one end on said fixed plates and at the opposite end on said hinged plates and adapted to normally exert their tension approximately longitudinally of said plates.

3. In a device of the class described the combination with trunk-wire binding-posts, of fuse binding-posts hinged thereon and adapted to lie in alinement therewith intermediate the same, a fuse connecting said last-named posts and means adapted to swing said posts oppositely when the fuse blows.

4. In a device of the class described the combination with binding-posts for the trunk-wire, of movable fuse binding-posts, a fuse connected in said last-named posts and adapted to normally hold them in alinement with the aforesaid posts and intermediate the same, and means adapted to move said fuse binding-posts oppositely when the fuse blows.

5. In a device of the class described the combination with an insulating-slab of binding-posts rigidly engaged thereon and adapted to receive trunk-wires, fuse binding-posts hinged longitudinally thereof and adapted to be turned upwardly from said slab, a fuse connected in said last-named posts and springs connecting said trunk-wire binding-posts with the fuse binding-posts and adapted to turn said fuse binding-posts at an angle with the trunk-wire binding-posts and prevent an arc when the fuse blows.

6. In a device of the class described the combination with an insulating-slab of a plate rigidly engaged near each end thereof and each having an apertured lug thereon adapted to receive a trunk-wire, a longitudinally-directed plate hinged on one edge of each of said plates and adapted to normally lie flat on the slab intermediate the same, a fuse connecting said hinged plates, and coiled springs extending longitudinally of said plates and engaged at their ends thereto and adapted to turn the hinged plates at an angle to the rigid plates when the fuse blows.

7. In a device of the class described the combination with a casing having a vent-aperture therein, of an insulating-slab rigidly engaged in said casing, a plate rigidly engaged on said slab, near each end thereof and each having an apertured lug thereon adapted to receive the trunk-wire, a swinging plate hinged on each of said rigid plates and adapted to normally lie in longitudinal alinement therewith in close contact with the slab, a fuse connected to said swinging plates, a hook on each plate and coiled springs each having one end thereof engaged to the hook on said rigid plate and the other end thereof engaged to the hook on the swinging plate.

8. In a device of the class described the combination with a casing having a vent-aperture in one side thereof, of an insulating-slab in said casing, trunk-wire binding-posts rigidly engaged to said slab, fuse binding-posts hinged to the inner or adjacent sides of said trunk-wire binding-posts and adapted to normally lie flat on said slab intermediate the trunk-wire binding-posts, a fuse connected with said fuse binding-posts, and resilient means attached at their ends to said plates and acting normally to swing said fuse binding-posts oppositely.

9. In a device of the class described the combination with a casing having a cover hinged thereon and a plurality of apertures in one side thereof, a resilient clasp for said cover, an inner lining of non-combustible material in the casing, a slab of insulating material in said casing, trunk-wire binding-posts on said slab, oppositely-movable fuse binding-posts hinged thereto and adapted to normally lie in close contact with the slab, springs acting normally to raise said fuse binding-posts to a position perpendicular to the slab and a fuse connected in said fuse binding-posts.

850,335. BRAKE-BEAM. JAMES H. BAKER, Allegheny, Pa. Filed July 16, 1906. Serial No. 326,435.

Claim.—1. A brake-beam having in combination a compression member having a channel shape, portions of the legs of said shape being bent outwardly, a tension member and a brake-shoe head provided with ears or lugs having their end portions bent outwardly.

2. A brake-beam having in combination a compression member having a channel shape, a brake-shoe head arranged on the web side of the channel, the legs of the channel having portions in planes forming angles greater than right angles with the web, and the shoe-head provided with ears or lugs fitting the sides or legs of the channel.

3. A brake-beam having in combination therewith a compression member, having a channel shape, a tension member, passing through the web of the compression member at an angle to the axis of the latter, portions of the legs of the compression member adjacent to the ends being bent outwardly to such an angle that the rivets or bolts for securing the brake-shoe head to the compression member may be passed to position above the tension member while the latter is in position.

850,335.

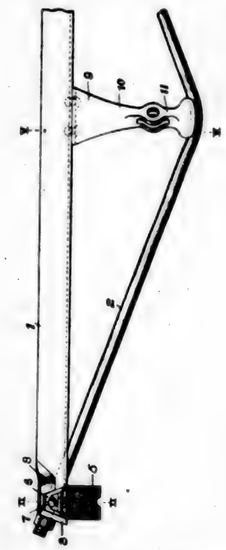

850,336. WEFT-REPLENISHING MECHANISM FOR LOOMS. JOSEF RIM, Vienna, Austria-Hungary, assignor to Union Bank, Vienna, Austria-Hungary. Filed Dec. 30, 1904. Serial No. 238,950.

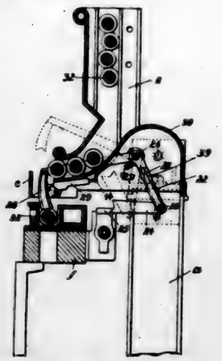

Claim.—1. A bobbin-magazine, means for discharging bobbins singly therefrom, an oscillating feeler-lever, 18, pivotally connected with said magazine, a latch for engaging and disengaging the oscillating lever aforesaid, and a movable part controlled by the lever 18 and thrown into position to operate the bobbin-discharging means aforesaid.

2. A bobbin-magazine, means for discharging bobbins singly therefrom, an oscillating feeler-lever, 18, pivoted at one side of said magazine, a latch, 15, for engaging and disengaging the oscillating lever aforesaid, a movable shaft for operating said latch, and a movable part controlled by the lever 18 and thrown into position to operate the bobbin-discharging means as aforesaid.

3. A bobbin-magazine, means, including a lever carrying a hammer for discharging bobbins singly therefrom, an oscillating feeler-lever 18, pivotally connected with said magazine, a latch for engaging and disengaging the lever 18, a spring released by said lever 18, and a movable part

mounted on the lever which carries the hammer and thrown into position to operate the bobbin-discharging means aforesaid.

4. A bobbin-magazine, means including a lever 27, carrying a hammer, for discharging bobbins singly therefrom, an oscillating feeler-lever, 18, pivoted at one side of said magazine, a latch, 15, for engaging and disengaging the lever 18, a movable shaft, 10, and connections for raising the latch, a lever 19, pivoted beneath the magazine and which engages lever 18, an arm, 24, carried by the lever 27, and connections, including the arm 24 and a striker on the slay of the loom, which coöperate to operate the discharging-hammer aforesaid.

5. Weft-replenishing mechanism for looms, comprising a shuttle-race and shuttle-box, a feeler-lever 18, having an end adapted to enter the shuttle-race in front of the shuttle-box when the shuttle is in proper position, a bobbin-hammer, means for causing the lever 18 to swing back to its original position when the bobbin-hammer descends, and a latch, 15, for holding the lever in said position.

850,337. TOOL FOR DRESSING, SHAPING, AND CLEANING RUBBER ERASERS. GILBERT H. BLAKESLEY, Bristol, Conn., assignor to The Blakesley Novelty Company, Bristol, Conn., a Corporation of Connecticut. Filed June 23, 1906. Serial No. 323,048.

Claim.—1. A tool for dressing, shaping and cleaning rubber erasers, comprising a shank, a stud or fulcrum projecting therefrom at one end and a device carried by said shank at its opposite end for acting upon the edge of the eraser, substantially as described.

2. A tool for dressing, shaping and cleaning erasers, comprising a shank carrying at one end a stud or fulcrum arranged to have a longitudinal adjustment along said shank, a block at the other end of the shank provided with substantially V-shaped notches and a knob or handle, substantially as described.

3. A tool for dressing, shaping and cleaning circular erasers, comprising a shank carrying at one end a longitudinally-adjustable stud or fulcrum and provided at its opposite end with the overhanging substantially V-shaped sharpened edges arranged to engage the peripheral edge of the eraser, substantially as described.

850,338. APPARATUS FOR SECURING THE COMPONENT PARTS OF COMPOUND LUMBER TOGETHER. PAUL F. BOLTON, Toronto, Ontario, Canada. Filed Nov. 1, 1905. Serial No. 285,454.

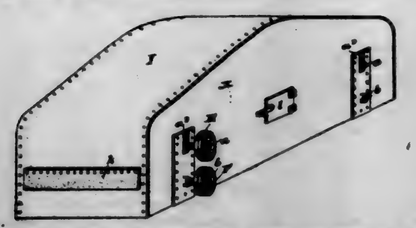

Claim.—1. In an apparatus of the class described, the combination with two endless belts, one operating above the other, consisting of sprocket-chains to which are secured a plurality of strips which when in operative position present an unbroken and level surface so that the compound lumber held between said endless belts will be subjected to uniform and constant pressure; the sprocket-wheels for said upper belt; the sprocket-wheels for said lower belt; the shafts for said upper and lower sets of sprocket-wheels, and a fixed frame in which have bearing the shafts for said sprocket-wheels for said lower belt, of a rigid frame supporting the shafts for the sprocket-wheels of said upper belt; antifriction devices rigidly mounted within said frame and against which operates said upper endless belt; the said frame being mounted to yield and yet maintain portion of the upper belt parallel to portion of the lower belt, and antifriction devices rigidly mounted in said fixed frame so as to maintain portion of said lower belt parallel to portion of said upper belt, and upon which said lower belt operates.

2. In an apparatus of the class described, the combination with two endless belts one operating above the other, consisting of sprocket-chains to which are secured a plurality of strips which when in operative position present an unbroken and level surface so that the compound lumber held between said endless belts will be subjected to uniform and constant pressure; the sprocket-wheels for said upper belt; the sprocket-wheels for said lower belt; the shafts for said upper and lower sets of sprocket-wheels, and a fixed frame in which have bearing the shafts for said sprocket-wheels for said lower belt, of a rigid frame supporting the shafts for the sprocket-wheels of said upper belt; rods secured to said fixed frame; the upper cross-pieces held on said rigid frame; antifriction devices rigidly mounted within said rigid frame and against which operate said upper endless belt; springs held on said rods so that said rigid frame may yield and yet maintain portion of said upper belt parallel to portion of the lower belt; the lower cross-pieces secured to said fixed frame, and antifriction devices rigidly mounted in said fixed frame so as to maintain portion of said lower belt parallel to portion of said upper belt and upon which said lower belt operates.

3. In an apparatus of the class described, the combination with two endless belts one operating above the other, consisting of sprocket-chains to which are secured a plurality of strips which when in operative position present an unbroken and level surface so that the compound lumber held between said endless belts will be subjected to uniform and constant pressure; the sprocket-wheels for said upper belt; the sprocket-wheels for said lower belt; the shafts for said upper and lower sets of sprocket-wheels, and a fixed frame in which has bearing the shafts for said sprocket-wheels for said lower belt, of an adjustable frame supporting the shafts for said sprocket-wheels for said upper belt; rods secured to said fixed frame; the upper cross-pieces held thereon and supporting said adjustable frame; springs held on said rods so as to exert pressure upon said upper belt; antifriction devices interposed between said upper cross-pieces and said upper belt and consisting of a plurality of rollers having bearing in retaining-strips; lower cross-pieces secured to said fixed frame; antifriction devices interposed between said lower cross-pieces and said lower belt and consisting of a plurality of rollers having bearing in retaining-strips, and means for giving said endless belts uniform movement in the same direction.

4. In an apparatus of the class described, the combination with two endless belts one operating above the other, consisting of sprocket-chains to which are secured a plurality of strips which when in operative position present an unbroken and level surface so that the compound lumber held between said endless belts will be subjected to uniform and constant pressure; the sprocket-wheels for said upper belt; the sprocket-wheels for said lower belt; the shafts for said upper and lower sets of sprocket-wheels, and a fixed frame in which has bearing the shafts for said sprocket-wheels for said lower belt, of an adjustable frame supporting the shafts for said sprocket-wheels for said upper belt; rods secured to said fixed frame; the upper cross-pieces held thereon and supporting said adjustable frame; springs held on said rods so as to exert pressure upon said upper belt; antifriction devices interposed between said upper cross-pieces and said upper belt and consisting of a plurality of rollers having bearing in retaining-strips; lower cross-pieces secured to said fixed frame; antifriction devices interposed between said lower cross-pieces and said lower belt and consisting of a plurality of rollers having

bearing in retaining-strips; means for giving said endless belts uniform movement in the same direction, and a housing inclosing said parts and provided with suitable openings.

5. In an apparatus of the class described, the combination with two endless belts one operating above the other, consisting of sprocket-chains to which are secured a plurality of strips which when in operative position present an unbroken and level surface so that the compound lumber held between said endless belts will be subjected to uniform and constant pressure; the sprocket-wheels for said upper belt; the sprocket-wheels for said lower belt; the shafts for said upper and lower sets of sprocket-wheels, and a fixed frame in which has bearing the shafts for said sprocket-wheels for said lower belt, of an adjustable frame supporting the shafts for the sprocket-wheels for said upper belt; rods secured to said fixed frame; the upper cross-pieces held thereon and supporting said adjustable frame; springs held on said rods so as to exert pressure upon said upper belt; antifriction devices interposed between said upper cross-pieces and said upper belt; nuts screwing on said rods and upon which said upper cross-pieces rest; lower cross-pieces secured to said fixed frame; antifriction devices interposed between said lower cross-pieces and said lower belt, and means for giving said endless belts uniform movement in the same direction.

6. In an apparatus of the class described, the combination with two endless belts one operating above the other and consisting of sprocket-chains to which are secured a plurality of stiff strips which when in operative position abut each other so as to present an unbroken and level surface so that the compound lumber held between said endless belts will be subjected throughout to uniform and constant pressure; sprocket-wheels over which said sprocket-chains pass; the shafts for said sprocket-wheels; a suitable frame for supporting the shafts for the lower sets of sprocket-wheels; an adjustable frame supporting the shafts for the upper set of sprocket-wheels; means for moving said adjustable frame so as to regulate the pressure exerted by said endless belts; means placed so as to keep said belts a constant distance apart at all points while in operative position, and means for giving said endless belts uniform movement in the same direction.

850,339. CARBURETER FOR GASOLENE-ENGINES. FREDSON E. BOWERS, New Haven, Conn., assignor to The F. E. Bowers Co., New Haven, Conn., a Corporation. Filed July 28, 1906. Serial No. 328,171.

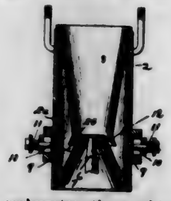

Claim.—1. In a carbureter, the combination with an upper shell and a lower shell made independent of each other and constructed and arranged to form an air-intake space between their adjacent ends, of an outer shell inclosing the said upper and lower shells and forming a concentric vacuum-chamber about the same, a spray-nozzle entering the said lower shell, and means for automatically controlling the entrance of air into the said chamber from which the air enters the said upper shell through the said air-intake space.

2. In a carbureter, the combination with a tapering upper and a tapering lower shell made independent of each other, the former being made larger in diameter than the latter to produce an annular air-intake space between their adjacent ends, of an outer shell inclosing the said upper and lower shells and forming a concentric vacuum-chamber about the same, a spray-nozzle entering the lower shell, and means for automatically controlling the entrance of air into the said vacuum-chamber.

3. In a carbureter, the combination with a tapering upper and a tapering lower shell having an air-intake space between them, an annular flange located at the lower end of the upper shell and producing an inclined annular passage leading to the said air-intake space, an outer shell inclosing the said upper and lower shells and forming a concentric vacuum-chamber about the same, a spray-nozzle entering the lower shell, and means for automatically controlling the entrance of air into the said vacuum-chamber.

4. In a carbureter, the combination with a tapering upper and a tapering lower shell, the former being made larger in diameter than the latter to form a concentric air-intake space between their adjacent ends, of an outer shell inclosing the said upper and lower shells and forming a concentric vacuum-chamber about the same, and two or more valves automatically controlling the inlet of air into the said vacuum-chamber and arranged to equalize the air-pressure therein.

5. In a carbureter, the combination with a conical upper shell, of a conical lower shell, the upper shell being made larger in diameter than the lower shell for the production of an annular air-intake space between the two shells, an outwardly-flaring flange located at the lower end of the upper shell and extending down over the upper end of the lower shell to form an inclined air-passage leading to the said air-intake space, an outer shell inclosing the upper and lower shells and forming a vacuum-chamber around the same, a spray-nozzle entering the lower shell, and means for automatically controlling the inlet of air into the said vacuum-chamber.

850,340. TAILOR'S APPLIANCE. MICHAEL J. BROSNAHAN, St. Louis, Mo. Filed June 18, 1906. Serial No. 322,215.

Claim.—A tailor's appliance comprising an angle-piece composed of two legs, a yielding member opposite one of the legs having a terminal tooth for embedding itself in the garment, of the wearer, over which the measurement is being taken, a swivel pivoted to rotate in the plane of the legs and having an offset positioned to aline with the inner edge of one of the legs when swung to a position parallel with the contiguous leg, and a tape-measure secured to the swivel and terminating at the offset, substantially as set forth.

850,341. UMBRELLA. PATRICK J. CALLAHAN, Central City, S. D. Filed June 28, 1906. Serial No. 323,809.

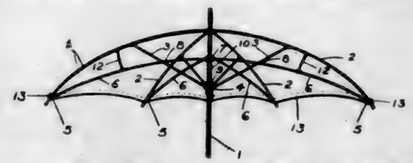

Claim.—In an umbrella, a staff provided with a rigid stop above the upper runner-catch, a ring loosely mounted on the staff above said stop, a spring loosely mounted between the ring and the stop, truss-brace bars pivotally se-

cured to said ring and to the outer ends of the ribs of the umbrella, and flexible braces secured to said bars intermediate their ends and to said ribs between the ends thereof and the points of attachment to said ribs of the runner-braces.

850,342. RAILWAY-SWITCH. CARL S. CHAMBERLIN and DANIEL HARRINGTON, Colorado Springs, Colo. Filed Mar. 5, 1907. Serial No. 360,774.

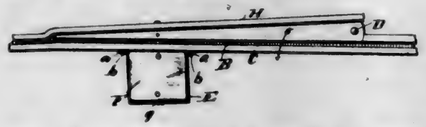

Claim.—1. The combination in a railway, of a movable switch-tongue, a plunger connected with and extending laterally from the tongue and terminating in a square head, and a keeper having resilient arms provided with lips of right-angle form opposed to the head of the plunger on the switch-tongue and normally resting adjacent to and at opposite sides of the said head.

2. The combination in a railway, of a movable switch-tongue, a plunger pivotally connected with and extending laterally from the tongue and terminating in a square head, and a keeper having resilient arms provided with lips of right-angle form opposed to the head of the plunger on the switch-tongue and normally resting adjacent to and at opposite sides of the said head.

3. The combination in a railway, of a movable switch-tongue, a plunger connected with and extending laterally from the tongue and having a head, a keeper having resilient arms provided with lips for engaging the head of the plunger and thereby holding the tongue against casual movement, and means whereby the arms of the keeper may be adjustably fixed at various distances apart to increase or diminish the tension thereof.

4. The combination in a railway, of a rail structure, a movable switch-tongue therein, a casing fixed with respect to the rail structure and arranged at one side of the same, a plunger connected with and extending laterally from the tongue and having a head, and a keeper formed of one piece of resilient metal arranged in the casing and having an end cross-bar fixedly connected to one wall of the casing and also having resilient arms reaching from the end cross-bar, and lips on said arms opposed to and adapted to engage the head of the plunger.

5. The combination in a railway, of a rail structure, a movable switch-tongue therein, a casing fixed with respect to the rail structure and arranged at one side of the same and having a removable cover, a plunger connected with and extending laterally from the tongue and having a head of square form movable in the casing, a keeper formed of one piece of metal, arranged in the casing and having an end cross-bar fixedly connected to one wall of the casing and also having resilient arms reaching from the end cross-bar and lips of right-angle form on said arm and opposed to and adapted to engage the head of the plunger, and means whereby the arms of the keeper may be adjustably fixed at various distances apart to increase or diminish the tension thereof.

850,343. FENCE-MACHINE. EMMETT W. CHANNELL, Lake Charles, La. Filed Jan. 8, 1906. Serial No. 295,172.

Claim.—1. In a wire-fence machine, a picket-feeding means, means for moving the pickets into the apex of the shed, a twister arranged to hold the wires spread to form such shed, means for clamping the successive pickets and the wires, and means for moving the twisters away from the pickets during the twisting operation.

2. In a wire-fence machine, means for feeding pickets, means for moving the pickets into the apex of the shed, twisters, means for operating the twisters, means for clamping the wires on the successively-fed pickets, and means for effecting gradual spacing of the twisters and the picket during the progress of the twisting operation.

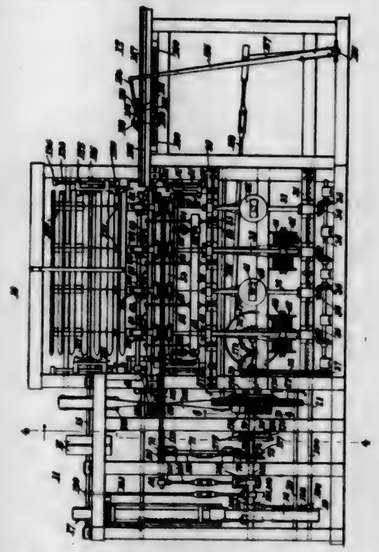

3. In a wire-fence machine, a shed-forming means including twisters, means for feeding pickets into the shed, means for moving the pickets into the apex of the shed, means for clamping the wires on the successively-fed pickets, means for revolving the twisters, and means for gradually separating the pickets and the twisters as the twisting operation progresses.

4. In a wire-fence machine, a shed-forming means including twisters, means for feeding pickets into the shed, means for moving the pickets into the apex of the shed, means for clamping such pickets, means for raising the twisters close to the clamped picket, and means for revolving the twisters.

5. In a wire-fence machine, the combination with a picket-feeding means, of a pair of clamps, clamp-operating means including springs through which yielding pressure is exerted on the clamps, and detachable wear-blocks carried by such clamps and having grooved picket-engaging faces for the reception of the wires.

6. In a wire-fence machine, the combination with a picket-feeding means, of picket-clamps, and wear-blocks carried by the clamps, said blocks having wire-receiving grooves, and the end portions of such grooves being tapered to permit initial twisting of the wire.

7. In a wire-fence machine, a picket-lifter mechanism comprising a movable bar or frame, a plurality of picket-engaging pins, a bar carrying such pins, and a return-cam for moving said bar and engaging and disengaging the pins and pickets.

8. In a wire-fence machine, a picket-lifter mechanism comprising a frame, a plurality of pins supported by the frame, a bar secured to all of said pins, a pair of cams in which the opposite ends of said bars are entered, a spring tending normally to throw the pins outward into picket-engaging position, and switch members at the upper portions of the cams for permitting the withdrawal of said pins from engagement with the pickets.

9. In a wire-fence machine, a main gear-wheel, arranged to revolve once for the introduction of each picket and each twisting operation, mutilated gears carried by said main wheel, a picket-feeding device receiving motion from one of said mutilated gears, and a twister-actuating device arranged to receive motion from the second mutilated gear.

10. In a wire-fence machine, the combination with the picket-feeding devices, of twisters, means for revolving the twisters, means for moving the pickets into the shed, a take-up means for feeding the finished fence, a saw for trimming the pickets, a cam-shaft, a plurality of cams mounted on said shafts, and levers arranged to be operated upon by the cams, said levers being connected to the twisting, picket-lifting, picket-feeding, and sawing mechanisms, and serving to operate the same in proper order.

850,344. TELEPHONE-EXCHANGE SYSTEM. EDWARD E. CLEMENT, Washington, D. C. Filed Mar. 20, 1905. Serial No. 251,047.

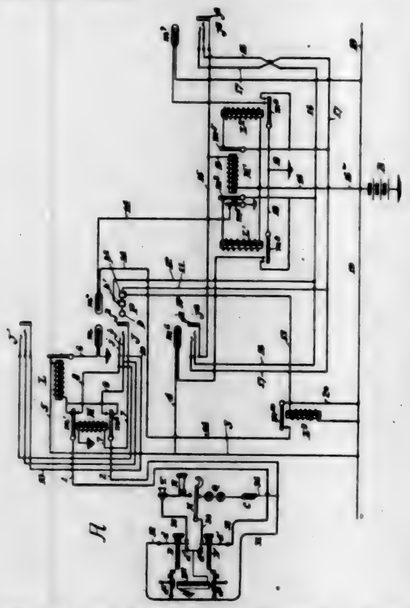

Claim.—1. In a telephone-exchange system, a plurality of subscribers' lines and substations, a central-office switchboard for interconnecting the same arranged in several divisions or parts, multiple terminals for each line in some one of the switchboard-divisions only, one of said terminals being provided with a signal and serving as an answering-terminal, the other terminals for each line being distributed upon different portions of its division, trunk-lines containing selective apparatus extending unbroken between said divisions, boards, or exchanges and means by which a subscriber may affect said selective apparatus and differentiate so as to manifest a particular trunk-signal at the particular division upon which a terminal of the line wanted is to be found and no other, substantially as described.

2. In a telephone-exchange system, a subscriber's line, a controlling-relay, means at the substation for grounding one side or the other of the line through the controlling-relay, a line-signal at the central office displayed in response to the subscriber's act in calling, a trunk-line extending to multiple terminals at a plurality of switchboard divisions or exchanges, selective relays connected to said trunk-line, means to supply current thereto and to the line, and signals to designate a particular division or exchange wanted, controlled by said relays, and responsive to the grounding of a subscriber's line, substantially as described.

3. In a telephone-exchange system, a plurality of subscribers' lines, a central office, a plurality of central-office switchboards each containing answering-terminals and multiple terminals for a particular group of said lines, a telephone set at a subscriber's station and a signaling set thereat comprising a circuit-closer and a retaining-magnet therefor, a line-signal device normally connected to the line at central and associated with the answering-terminal thereof, together with trunk-lines extending between the switchboards, and each provided with a connective terminal upon each board, signals associated with the said trunk-line terminals, one for each, and circuit-closing devices for said signals normally connected to the trunk to be affected by the subscriber's circuit-closing device so as to display the particular signal desired upon a particular board of the set, containing one or more multiple terminals of the line wanted, substantially as described.

4. In a telephone-exchange system, a central service-bureau divided into a plurality of switchboards or exchanges, subscribers' lines each terminating at one division only; trunk-lines less in number than the number of subscribers' lines and extending between the several exchanges or divisions, each trunk-line having connective terminals at two or more of said exchanges or divisions; a plurality of selective relays connected to opposite sides of each trunk-line, with means to supply current thereto and to the lines, and signals associated with the trunk-terminals and controlled by said relays; together with circuit-controlling devices at each subscriber's station arranged to coöperate with and affect said relays; whereby a subscriber may signal his own division for a connection, and being trunked may selectively signal an operator at the division or exchange in which a line wanted is terminated, substantially as described.

5. In a telephone-exchange system, a divided switchboard and subscribers' lines each terminating in one division, each line composed of two wires both normally connected to a line-annunciator at the terminal division; a pair of circuit-closers and a locking-magnet therefor at the subscriber's station, whereby one side or the other of the line may be held grounded at will and the line-signal thereby set; a trunk-line between the divisions having two wires each connected to a generator and ground through suitable relays, trunk-terminal signals at the different divisions controlled by said relays; and operator's connective circuits in each division; the whole so arranged that when a calling subscriber is trunked his line-signal is disabled and the trunk-relays brought under the control of the line to set one of the trunk-signals at the predetermined division; and means whereby an operator at the desired division may complete the connection between the trunk-terminal and the line of the wanted subscriber, and in so doing may disable the trunk-signals, and in finally breaking the connection may actuate a trunk disconnect-signal at the calling-subscriber's division, substantially as described.

6. In a telephone-exchange system, a plurality of subscribers' stations, a central station, and a plurality of switchboard devices each containing terminals for a particular group of the subscribers' lines, a plurality of trunk-lines extending between the switchboard divisions, a common battery supplying current for the lines and trunks, a plurality of terminals and associated signals for the trunks, the same being distributed on the several boards or divisions, and a controlling-magnet for each signal connected between the battery and one or the other side of the trunk, together with means at a subscriber's station for determining the flow of current from said battery through one or the other side of the trunk, and the corresponding signal-controlling magnet, substantially as described.

7. In a telephone-exchange system a plurality of subscribers' lines and stations, a plurality of central-office switchboards with answering and multiple terminals upon each board for a particular group of subscribers' lines, trunk-lines extending unbroken between the boards, each trunk having terminals upon more than one of the switchboards, a trunk-signal associated with each terminal, and a controlling-magnet therefor, a plurality of separate circuits composed in part of the members of the trunk, and means at a subscriber's station to complete one or another of said circuits at will, so as to display a desired signal, substantially as described.

8. In a telephone-exchange system, a subscriber's station having selective devices, and a central switchboard divided into distinct parts, together with trunk-lines normally extending unbroken to all the parts, and means whereby the subscriber may set a signal therethrough on any division of the switchboard, substantially as described.

9. In a telephone-exchange system, a subscriber's line, a talking set therefor at the subscriber's station, and a signaling set comprising a circuit-closer and a retaining-magnet therefor, a line-signal device normally connected to the line at central, and a terminal connective device, together with a trunk-line extending unbroken to more than one division of the exchange or system, and provided with a connective terminal at each, signals associated with said trunk-line, one for each terminal, and circuit-closing devices for said signals normally connected to the trunk to be effected by the subscriber's circuit-closing device so as to close the circuit of any particular signal desired, so as to select a particular division of the switchboard, substantially as described.

10. In a telephone-exchange system a plurality of subscribers' lines and a plurality of central-office-switchboard divisions, with line-circuits extending from the subscribers' stations to the said switchboards, each line terminating upon less than the full number of boards, a number of line extensions or trunk-lines passing unbroken between the several switchboards, each having multiple terminals on the said boards and signals associated therewith, all of said trunks being normally disconnected from the lines, a calling-signal for each line, and means for connecting a line when calling to an extension or trunk, together with means at the subscriber's station for actuating one or the other of the signals associated with said trunk, according to the particular board upon which the line of the wanted subscriber terminates, substantially as described.

850,345. CARTON. HARVEY CONOVER, Dayton, Ohio. Filed June 8, 1906. Serial No. 320,774.

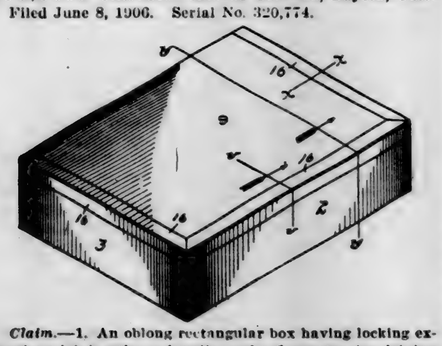

Claim.—1. An oblong rectangular box having locking extensions joining the end walls, and a flap extension joining end walls of the box and the flap extension on the side walls said cover extension having end and side flaps which are adapted to be folded against the locking extensions on the end walls of the box and the flap extension on the side walls of the box, the flap extensions of the cover having inwardly-extended beads which interlock with inwardly-extended beads arranged in a different plane on the locking extensions and the flap extension of the side and end walls of the box.

2. An oblong rectangular carton, one of the side walls of said carton having an extended flap with an inwardly-projecting bead, the cover of said carton having a similar flap with an inwardly-projecting bead adapted to interlock below the bead on the extended flap of said side wall, the end walls of the carton having extended locking-flaps with inwardly-projecting beads, and the cover of said carton having end flaps with similar beads which interlock below the beads on said locking-flaps.

3. A four-sided paper box, having a flap extension extending from one of the side walls and lying inwardly against said side wall, said flap extension having a longitudinal rib adjacent to its line of fold, said rib extending inwardly, a cover extension on the other side wall having a flap extension provided with an inwardly-extended longitudinal rib, said flap extension adapted to lie against the flap extension on the side wall of the box in a position that enables the ribs to interlock one below the other.

4. A four-sided paper box having its cover joined to one of the sides of said box, the other side and the ends of said box having extended flaps adapted to be folded inwardly against the inner side of the ends and sides of the box, said flaps having longitudinal ribs projecting inwardly when the flaps are given their inward folds, the cover of said box having end and side extensions with longitudinal ribs thereon projecting inwardly and adapted to engage below the ribs on the end and side extensions of the box when the cover-flaps are folded inwardly against the end and side flaps of the box.

5. A carton or paper box of oblong rectangular shape having side and end walls joined by triangular folds which lie inwardly when the sides and ends are bent at right angles to the body of the box, a flap extending from each of the end walls of the box with their ends provided with locking-tongues engaging the folds on the inside of the box, said flaps having longitudinal ribs projecting inwardly when the flaps are folded, one of the side walls of the box having an extended flap with a similar longitudinal rib projecting inwardly when the flap is folded inwardly, the other side wall of the box having an extended cover, said cover having end and side extensions or flaps provided with inwardly-projecting longitudinal ribs interlocking below the ribs on the flap extensions on the end and side walls of the box, and a sealing-strip closing the adjacent edges of the extension-flaps on the cover and the body of the box.

850,346. BUTTON AND LOOP CLASP. JACOB D. CONOVER, Middletown, N. J. Filed May 11, 1904. Serial No. 207,381.

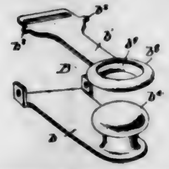

Claim.—1. In a device of the character described, the combination of a strap, a stud thereon formed of rubber or similar material and provided with a hollow head and shank, said head and shank being formed with a central opening extending therethrough, a rivet connected to said strap and extending through said opening to secure the stud in position, and formed with a head engaging the upper face of the stud-head, and an eyelet to coöperate with said stud said eyelet being provided with a cushioned engaging face, the distance between any two diametrically opposite points on the said face of said eyelet being less than the largest diameter of said stud, the cushioned engaging face of the eyelet closely engaging the shank of the stud when the stud and eyelet are in coöperative position.

2. In a device of the character described, the combination of a strap, a stud thereon formed of rubber or similar material and provided with a head and neck formed with an annular chamber, said head and neck having a central opening extending therethrough, a rivet connected to the strap and extending through said opening to secure the stud in position, and an eyelet to coöperate with said stud.

3. In a device of the character described, the combination of a strap, a stud thereon formed of rubber or similar material and provided with a head and neck formed with an annular chamber concentric with the common axis of the head and neck, said head and neck having a central opening extending therethrough, a rivet connected to the strap and extending through said opening to secure the stud in position, and an eyelet to coöperate with said stud.

4. In a device of the character described, the combination of a strap, a stud thereon formed of rubber and comprising a head and neck formed with an annular chamber, means for securing the stud to the strap, and an eyelet to coöperate with said stud.

5. In a device of the character described, the combination of a strap, a stud thereon formed of rubber and comprising a head and neck formed with an annular chamber having a central sustaining-wall integral with the said head and neck, means for securing the stud to the strap, and an eyelet to coöperate with said stud.

6. In a device of the character described, the combination of a strap, a stud thereon formed of rubber and comprising a head and neck having an annular chamber, means for securing the stud to the strap, an eyelet snugly surrounding the neck, and cushioning means carried by the inner marginal edge of the eyelet, whereby the fabric of the stocking is yieldingly supported upon the upper face of the stud and is yieldingly clamped between the neck of the stud and the eyelet.

850,347. RATCHET MECHANISM. HARRIS J. COOK, New Britain, Conn., assignor to Stanley Rule & Level Company, New Britain, Conn., a Corporation of Connecticut. Filed May 17, 1906. Serial No. 317,255.

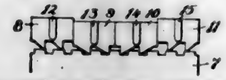

Claim.—In a ratchet mechanism, a driving part, a driven part, a spindle carried by one part and rotatable relative to the other, a vertically-slotted hub carried by the other part, two divided pawl members substantially filling the space between said spindle and said hub, each part of each pawl member having a projection extending through said hub-slots, a ratchet member for coöperation with said pawl member, an operating member for controlling said pawl members, the teeth on one part of one pawl member being spaced to engage against the side of the ratchet-teeth, while the teeth on the companion pawl part are spaced to bear upon the ends of the ratchet-teeth.

850,348. CORNER-CLAMP FOR PLATE-GLASS STRUCTURES. DUNCAN A. COWAN, Toledo, Ohio. Filed May 6, 1904. Serial No. 206,626.

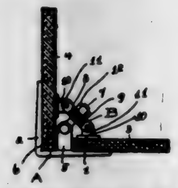

Claim.—1. In a corner structure, the combination with two plates joined at an angle with the side of one plate abutting the end of the other and forming a corner, of a marginal incut in the end of one of the plates, extending away from the end and beyond the inner face of the other plate; and a corner-clamp comprising an outer clamping member adapted to engage the outer face of each plate, an inner clamping member adapted to engage the inner face of each plate opposite the outer clamping member, and a coupling member extending through the incut, and adapted to connect the outer and inner clamping members and compress them oppositely on the plates, said coupling member being entirely on one side of and free from the plate abutting the plate having the incut through which the coupling member extends.

2. In a corner structure, the combination with two plates joined at an angle, with the side of one plate abutting the end of the other and forming a corner, of a marginal incut in the abuting end of the end abutting plate, extending from the plane of the joint; an outer clamping member adapted to engage the outer face of each plate; an inner clamping member adapted to engage the inner face of each plate; and a coupling member extending through the incut and adapted to connect the outer and inner clamping members and compress them oppositely on the plates, said coupling member being entirely on one side of the plane of the joint, and free from the side abutting plate.

3. In a corner-clamp for plate-glass structures, in combination, an outer clamping member comprising legs inwardly faced and extending at an angle from each other; an inner clamping member comprising a brace-bar having a central orifice, and end shoes adapted respectively to be brought each face to face and parallel with the inner face of a leg of the outer clamping member; a coupling-bolt connected with one of the legs of the outer clamping member at a distance away from the inner angle formed by the legs equal to the thickness of one or two plates joined to form a corner, said coupling-bolt having a threaded end portion adapted to extend through the orifice of the brace-bar, and a nut adapted to be run on the threaded end portion of the bolt.

4. In a corner-clamp for plate-glass structures the combination with an outer clamping member adapted to engage the outer faces of plates formed as a corner, and having a coupling member extending through the corner, of an inner clamping member comprising a brace-bar adapted to be engaged by the coupling member, and shoes pivotally secured to the ends of the brace-bar, said shoes being adapted to be automatically adjusted, at different angles to the brace-bar, to face engagement with the inner faces of the plates forming the corner, when compressed thereon by the coupling member.

5. In a device of the class described, in combination, a pair of angularly-disposed legs adapted to rest against the outer face of two abutting plates, a member attached to one of said legs and having an inclined extension lying in the angle between said legs, and a clamping-block attached to said extension.

6. A fastening device for connecting plates, comprising a member having angularly-disposed legs, a stud attached to one of said legs, adapted to pass between the edges of said plates and having an inclined threaded extension lying in the angle between said legs, and a clamping member attaching to the same and engaging the faces of said plates.

850,349. CIRCUIT FOR COIN-COLLECTORS. HENRY M. CRANE, New York, N. Y., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 13, 1906. Serial No. 300,928.

Claim.—1. The combination with a signaling-circuit including an indicating device, of normally open contacts in said circuit adapted to be closed by a coin to actuate the indicating device, an electromagnetically-operated test-signaling device adapted to be connected to said circuit, a resistance in the circuit rendering said signaling device inoperative, and a short circuit of said resistance having coin-controlled contacts.

2. The combination with a signaling-circuit including an indicating device, of normally open contacts in said circuit adapted to be closed by a coin to actuate the indicating device, an electromagnetically-operated test-signaling device adapted to be connected to said circuit, a resistance in the circuit rendering said signaling device inoperative, and a short circuit of said resistance having normally closed contacts adapted to be opened by a coin.

3. The combination with a telephone-line extending from a subscriber's station to a central office, of a coin-receiving apparatus at the subscriber's station, a branch circuit of said telephone-line including an electromagnet for controlling the disposal of coin deposited in the coin-receiving apparatus, an electromagnetically-operated test-signal device included in a circuit adapted to be connected to said telephone-line, a resistance in said branch circuit rendering said test-signal inoperative, a short circuit of said resistance having coin-controlled contacts, an additional short circuit of said resistance having normally open contacts, a relay in the branch circuit controlling said short circuit, said relay being unresponsive to signaling-currents, and

means at the central office for impressing upon the telephone-line current which will operate said relay to short-circuit said resistance, thereby removing said resistance from the circuit of said coin-controlling magnet.

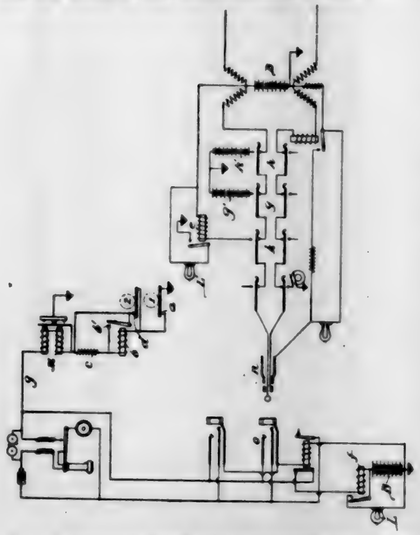

4. In a telephone system, the combination with a signaling-circuit extending from a subscriber's station to a central office, of an indicating device included in said circuit, a coin-receiving apparatus at the subscriber's station, normally open contacts in said circuit adapted to be closed by a coin to actuate the indicating device, an electromagnetically-operated test-signaling device adapted to be connected to said circuit, a resistance in the circuit rendering said signaling device inoperative, a short circuit of said resistance having coin-controlled contacts, an electromagnet for controlling the disposal of coin deposited in said coin-receiving apparatus, a relay in the signaling-circuit, a short circuit of said resistance controlled by said relay, and means at the central office for impressing upon the circuit current which will operate said relay to cut out said resistance from the circuit of the coin-controlling magnet.

850,350. CUFF-BUTTON. EMIL R. CRECELIUS, Providence, R. I., assignor to Parks Brothers and Rogers, Providence, R. I., Copartners. Filed Nov. 27, 1906. Serial No. 345,358.

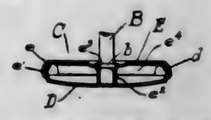

Claim.—1. In a cuff-button, the combination with the bean and bar, of a back plate fixed to the bar and having an outwardly-tapering flange, a front plate having an inturned tapering flange engaging the flange of the back plate, the back plate being formed with a tubular projection with annular shoulder, and the said bar with an annular shoulder received therein.

2. In a cuff-button, the combination with the bean and bar, of a back plate fixed to the bar and formed with an outwardly-tapering flange provided with a base and a tubular projection, said base and projection having a common axis, radially-disposed reinforcing-ribs upon the back plate, a front plate engaging said tubular projection and having an inturned tapering flange frictionally engaging the tapering flange of the back plate and a portion abutting against said base.

3. In a cuff-button, the combination with the bean and a bar provided with an annular shoulder, of a back plate having a tubular projection receiving said bar and provided at its base with a shoulder in which the shoulder of the bar is seated and frictionally held, and a front plate frictionally held to said back plate and bearing against said tubular projection.

4. In a cuff-button, a back plate having a marginal flange, a front plate having inturned tapering flange frictionally engaged over the flange of the back plate, said back plate having radial ribs, and a bar held at one end at the central point of union of said ribs and a bean on the outer end of said bar.

850,351. SAW-BENCH. FRANK A. CRUM, Newark, N. J. Filed Apr. 3, 1906. Serial No. 309,611.

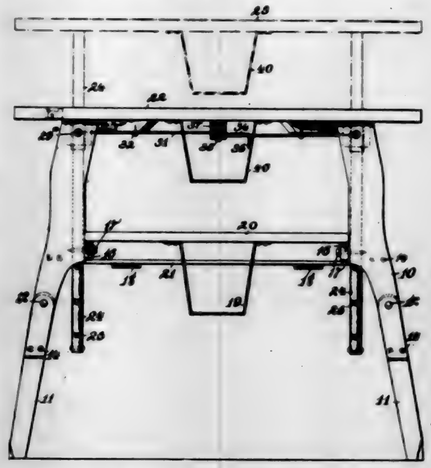

Claim.—1. A device of the kind described, comprising a table having pivoted legs, extension means on the legs, a tray adapted to fold between the legs when the device is folded, a fixed top portion, a vertically-movable top portion, and means for securing the movable top portion in its adjusted position.

2. A device of the kind described, comprising a table having legs pivoted thereto, extension means on the legs, a tray adapted to fold, and pivoted to the legs, a fixed top portion, a movable top portion, supports for the top portion running through the fixed top portion and having notches in their surfaces, spring-actuated means for engaging the notches in the supports, and means for simultaneously releasing the spring-actuated means.

3. An article of the kind described, comprising a table portion having a top, part of the top being fixed, a movable top portion, tubular supports for the movable top portion having notches in their surfaces, spring-actuated bars for engaging the notches in the supports, and means for simultaneously locking and unlocking the holding means on the supports.

4. A device of the kind described, comprising a table portion having a fixed top, a movable top, rods for supporting the movable top, a spring-actuated bar adapted to engage each rod, a pivoted lever engaging each bar and being pivoted together on their free ends, a lever for operating the pivoted levers, and means for locking the operating-lever to prevent the release of the bars.

5. A device of the kind described, comprising a table having legs pivoted to swing transversely of the table, extensions on the legs arranged to swing longitudinally of the table, and a tray hinged longitudinally and pivoted at its corners in the table-leg.

6. In a device of the kind described, a movable table-top, supports for the table-top having notches in their surfaces, a spring-actuated rod to engage the notches in each support, a lever engaging each rod and being pivoted intermediate of its ends, these rods having their free ends pivoted together, an operating-rod on the pivot of the two rods, a support having a slot for the reception of the pivot of the rods, a wall in the support, and a right-angled extension on the operating-lever to engage the wall of the support to lock the levers, and a handle on the operating-lever.

850,352. CIRCUIT FOR COIN-COLLECTORS. HIRAM D. CURRIER, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 13, 1906. Serial No. 300,933.

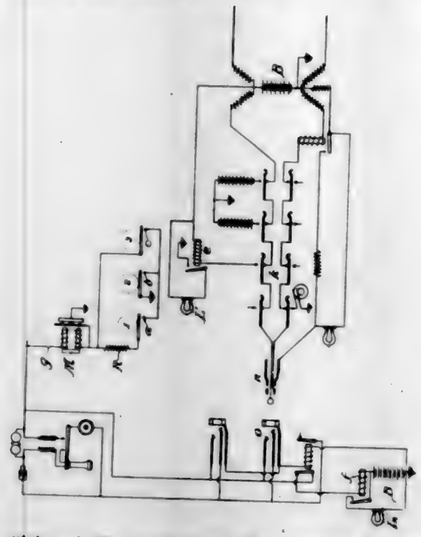

Claim.—1. The combination with a signaling-circuit including an indicating device, of normally open contacts in said circuit adapted to be closed by a coin to actuate the indicating device, an electromagnetically-operated test signaling device adapted to be connected to said circuit, a resistance in the circuit normally rendering said signaling device inoperative, and a normally open short circuit of said resistance having coin-controlled contacts.

2. The combination with a signaling-circuit, of two electromagnetically-operated signaling devices, a resistance in the circuit normally rendering one of said signaling devices inoperative, a normally open contact in the circuit adapted to be closed by a coin to actuate the normally operative signaling device, and a short circuit of said resistance having normally open contacts adapted to be closed by an additional coin, thereby permitting the operation of the normally inoperative signaling device.

3. In a telephone system, the combination with a signaling-circuit extending from a subscriber's station to a central office, of an electromagnetically-operated line-signal in said circuit, a normally open contact in said circuit adapted to be closed by a coin to actuate said line-signal, an electromagnetically-operated test-signal adapted to be connected to said circuit, means for normally rendering said test-signal inoperative, and means, controlled by an additional coin, for causing the display of the test-signal.

4. The combination with a telephone-line, extending from a subscriber's station to a central office, of a coin-receiving apparatus at the substation, a branch circuit of said telephone-line, two normally open contacts in said branch circuit adapted to be closed respectively by the deposit of two coins in said coin-receiving apparatus, a signal in the circuit at the central office, operated upon closure of both of said contacts, an electromagnetically-operated test-signal adapted to be connected to said circuit, and means controlled by an additional coin, for controlling the display of the test-signal.

5. The combination with a telephone-line, extending from a subscriber's station to a central office, of a coin-receiving apparatus at the substation, a branch circuit of said telephone-line, two normally open contacts in said branch circuit adapted to be closed respectively by the deposit of two coins in said coin-receiving apparatus, and a signal in the circuit at the central office, operated upon closure of both of said contacts, a test-signal adapted to be connected to the line, a resistance in said branch circuit normally preventing the display of said test-signal, and a short circuit of said resistance having a normally open contact adapted to be closed by the deposit of a third coin in said coin-receiving apparatus.

850,353. REPEATING DETONATING-CANE. ANTONIO DELGRANDE and NICHOLAS DEL GRANDE, Berea, Ohio. Filed Mar. 14, 1904. Serial No. 198,109.

Claim.—1. A detonating device comprising an explosion-head, a body member having a plunger reciprocally connected to said explosion-head, a removable receptacle for an unfixed explosive supported by said body member, and means for dividing said explosive into charges and feeding the same into said explosion-head, substantially as described.

2. The device comprising an explosion-head and body member having a plunger reciprocally connected, and a receptacle for an unfixed explosive removably supported in said body member, said parts constructed to measure the quantity of explosive to the explosion-chamber with each reciprocation of the parts, and the said body having a cavity beneath said receptacle to receive the explosive and lateral outlets therefor at the bottom of said cavity, and the said head having cavities to measure the explosive received through said outlets.

3. A detonating device comprising a body, a handle at one end thereof, a plunger at the opposite end, said body having a space between said handle and said plunger, a removable magazine adapted to be supported within said space, an explosion-head fitting closely around said plunger

and reciprocating thereon, and means for connecting said space to said explosion-head, substantially as described.

4. In a detonating device, the combination, with an explosion-head, of a plunger fitting closely in said explosion-head and reciprocating therein, said plunger having a recess therein, a removable magazine adapted to have one end inserted in said recess, arms thereon forming a support for said magazine, and means for connecting said recess with said explosion-head, substantially as described.

5. A detonating device comprising a body portion, a lug at one end of said body portion having a recess therein adapted to receive a handle, a plunger at the opposite end thereof, a space formed between said lug and said plunger, a magazine adapted to be supported in said recess, an explosion-head fitting closely around said plunger and reciprocating thereon, and means for connecting said magazine with said explosion-chamber, substantially as described.

6. A detonating device comprising a body and a handle in the end thereof, of a plunger at the opposite end thereof, a magazine, means between said handle and said plunger for removably holding the magazine, an explosion-head closely surrounding said plunger and reciprocating thereon, a measuring-cavity formed in the wall of said explosion-head, and a passage in said plunger adapted to connect said magazine with said measuring-cavity, substantially as described.

7. In a detonating device, the combination, with an explosion-head and a body portion carrying a plunger and having a cut-away portion intermediate its ends, of a magazine adapted to be removably mounted in said cut-away portion, and means for connecting the same with said explosion-chamber, substantially as described.

850,354. REPEATING DETONATING-CANE. ANTONIO DELGRANDE and NICHOLAS DEL GRANDE, Berea, Ohio. Filed Mar. 14, 1904. Serial No. 198,110.

Claim.—1. The combination, with a detonating device having an ammunition-passage therein, and means to sustain a magazine, of a temporary magazine adapted to be removably secured to said sustaining means, substantially as described.

2. A detonating device comprising a charge-exploding apparatus, a handle therefor, a passage leading thereto, a magazine detachably connected to said passage, and a cap adjustably secured to said handle and adapted to engage the end of said magazine, substantially as described.

3. A detonating device comprising a charge-exploding apparatus, and a handle therefor, a plurality of passages leading to said charge-exploding apparatus, a plurality of magazines connected to said passages, and a cap adjustably secured to said handle and engaging the ends of said magazines, substantially as described.

4. In a detonating device, the combination, with the body portion having an explosion-chamber, of a plunger fitting closely within said body portion and reciprocating therein and having a socket in the upper end thereof, a handle engaging said socket, passages extending through said plunger to said explosion-chamber, magazines secured to the outer ends of said passages and supported by said handle, and means for closing said magazines, substantially as described.

5. In a detonating device, the combination, with the hollow body portion having an explosion-chamber therein, and a plurality of measuring-cavities in the walls thereof, a plunger fitting closely within said body portion and reciprocating therein, a plurality of passages extending through the side walls of said plunger and adapted to register with said measuring-cavities when said plunger is in its lower position, and magazines secured to the outer ends of said passages, substantially as described.

6. In a detonating device, the combination, with the hollow body portion having an explosion-chamber, and measuring-cavities in the side walls thereof, of a plunger fitting closely within said body portion and reciprocating therein, an enlarged upper end having a cavity therein adapted to receive a handle, passages leading from the opposite sides of said handle-cavity through said plunger and adapted to register with said measuring-cavities, and a coiled spring surrounding said plunger and having one end bearing against said body portion and the opposite end against the enlarged end of said plunger, substantially as described.

7. In a detonating device, the combination, with the charge-exploding apparatus, of receptacles adapted to contain the separate elements of an explosive, and means for feeding fixed quantities of each of said elements to said charge-exploding apparatus, substantially as described.

850,355. FRUIT-GATHERER. ERASTUS H. DENTON, Atlanta, Ga. Filed Jan. 20, 1906. Serial No. 297,066.

Claim.—In a fruit-picker the combination with a handle having a beveled end; of a strip bent into substantially circular form and arched over the beveled end of the handle, the ends of the strip being secured to the handle and said strip being sharpened to constitute a knife, a substantially circular frame secured to the handle, a chute suspended therefrom, a strip bent into the form of a circular knife and a U-shaped lever, said lever embracing the handle and the ends of the first-mentioned knife, and disposed at an angle to the plane occupied by the cutting edge of the knife of the lever, and the knife of said lever being interposed between the frame and the first-mentioned knife, a spring secured at its ends to the central portion of the frame and the knife of the lever, said spring and the handle coöperating to retain a fruit above the chute, and actuating means connected to the lever.

850,356. EXCAVATOR-BEAM. LOUIS A. DÉRY, Montreal, Quebec, Canada, assignor to Joseph William Harris, Montreal, Canada. Filed Jan. 21, 1907. Serial No. 353,184.

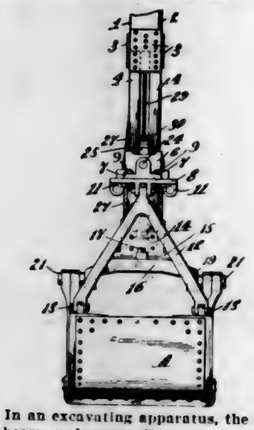

Claim.—1. In an excavating apparatus, the combination comprising a beam, and means for connecting a bucket to the beam to permit the bucket being shifted axially.

2. In an excavating apparatus, the combination comprising a beam, bucket-supporting members carried by the beam, and means for adjustably securing the bucket-supporting members on the beam to permit axial shifting thereof.

3. In an excavating apparatus, the combination comprising a beam, and an axially-shiftable bucket on the beam.

4. In an excavating apparatus, the combination comprising a beam, and an axially-shiftable vertically-movable bucket on the beam.

5. In an excavating apparatus, the combination comprising a beam, and an axially-shiftable bucket detachably secured to the beam.

6. In an excavating apparatus, the combination comprising a beam, a casing slidably disposed on the beam, a circular plate provided with openings, securing members removably disposed through the casing and the openings, bucket-operating members connected to the circular plate, a bucket to which the operating members are connected, and means for supporting the bucket on the beam.

7. In an excavator-beam, a plurality of channel-iron members, a plate secured to one side of said members, straps riveted to the lower ends of said members, angle-iron members riveted to the straps and abutting against the lower ends of said channel-iron members, braces connecting the lower ends of the angle-iron members, a digging-bucket pivotally secured to the lower ends of the angle-iron members, and means slidable on the angle-iron members for opening and closing the bucket.

8. A built-up excavator-beam of hollow construction having an open side.

9. A built-up excavator-beam of hollow construction open side, actuating-ropes inside of the beam and disposed over the sheaves, and a bucket on the beam adapted to be operated by the ropes.

10. In an excavating apparatus, the combination of a hollow beam, a casing slidably disposed on the beam, a bucket-actuating member axially adjustable on the casing and provided with bearings, links disposed in the bearings, a bucket pivoted to the links, and means for pivotally connecting the bucket to the lower end of the beam.

11. In an excavating apparatus, the combination of a beam, a bucket-actuating member slidably disposed on the beam, a plate provided with a circle of openings, securing means disposed through a portion of the actuating member and the openings, a shoe secured to the lower end of the beam, a bucket-supporting member provided with a circle of openings, securing members disposed through a portion of the shoe and said openings, a bucket, means for connecting the bucket to said plate and said shoe, and means for moving said bucket-actuating member.

12. In an excavating apparatus, the combination of a beam, a bucket-actuating member slidably disposed on the beam, a plate provided with a circle of openings, securing means disposed through a portion of the actuating member and the openings, a shoe secured to the lower end of the beam, a bucket-supporting member provided with a circle of openings, securing members disposed through a portion of the shoe and said openings, said plate and said supporting member being provided with ears having openings, links having their upper ends disposed between said ears and pivotally connected therewith, a bucket pivotally secured to the lower ends of the links, and means for moving said actuating member.

13. In combination with a hollow beam having an open side, a casing slidably disposed on the beam, a shaft carried by the casing, sheaves rotatably disposed on the shaft, sheaves within the lower end of the beam, an eye secured to the outside of the beam, an actuating-rope disposed around the sheaves and having its lower end connected to the eye, a rope-retaining member fixed within the beam, an elevating-rope secured thereto, actuating-sheaves projected into the open side of the beam and adapted to receive said ropes, and a bucket connected with the casing and the lower end of the beam and adapted to be actuated by said ropes.

14. In combination with a beam, a pair of bucket-supporting members, each provided with a circle of openings, and each provided with link-receiving members, means coöperating with said circle of openings for adjustably attaching said supporting means to the beam, and a bucket pivotally connected with said supporting means.

850,357. MASSAGE INSTRUMENT FOR APPLYING OINTMENTS, LOTIONS, &c. WILLIAM DOYLE, New York, N. Y. Filed Dec. 9, 1905. Serial No. 291,148.

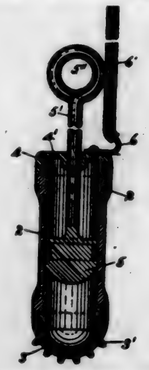

Claim.—1. A massage instrument for applying ointments and lotions comprising a cylindrical barrel, adapted

to form a handle, said barrel being open at one end, a perforated circular massage-terminal of the same diameter as the said barrel forming the other end of said barrel and closing it and convex upon its outer face, removable from but having a liquid-tight engagement with the open end of said barrel, alternate ribs and depressions formed on the outer face of said massage-terminal forming a corrugated rubbing-face, and a piston fitting the interior of the barrel and movable within the same and having a piston-rod projecting out at one end thereof.

2. A massage instrument for applying ointments and lotions comprising a cylindrical barrel-like receptacle, a piston movable therein having a piston-rod projecting out at one end of said receptacle, a perforated massage-terminal at the other end thereof, and a spring mounted on the cylinder having an elastic tact with the piston to hold it set at any desired point.

3. A massage instrument for applying ointments and lotions comprising a cylindrical barrel-like receptacle, a piston movable therein having a piston-rod projecting out at one end of the receptacle, a perforated massage-terminal at the other end thereof, and a resilient pressure device elastically acting on the piston to hold it set at any desired point.

4. A massage instrument for applying ointments and lotions comprising a cylindrical barrel adapted to form a handle, said barrel being open at one end, a circular massage-terminal of the same diameter as the barrel removable from but having a liquid-tight engagement with the open end thereof and closing it, said massage-terminal being convex upon its outer face and provided with alternate ribs and depressions thereon, forming a corrugated rubbing-face and a piston fitting the interior of the barrel and movable within the same, having a piston-rod projecting out at one end thereof, said terminal being provided with openings from the interior face thereof to the apex of the corrugations.

5. A massage instrument for applying ointments and lotions comprising a cylindrical barrel adapted to form a handle, said barrel being open at one end, a perforated circular massage-terminal of the same diameter as the barrel removable from but having a liquid-tight engagement with the open end thereof and closing it, said massage-terminal being convex upon its outer face and provided with alternate ribs and depressions thereon, said ribs being arranged concentrically to the axis of the cylindrical receptacle, forming a corrugated rubbing-face and a piston fitting the interior of the barrel and movable within the same and having a piston-rod projecting out at one end thereof.

850,358. WATER-TUBE BOILER. WILLIAM S. ELLIOTT, Pittsburg, Pa. Filed June 15, 1906. Serial No. 321,836.

Claim.—1. In a boiler, an upper drum, a partition therein dividing the same into front and rear compartments, a lower drum, a partition dividing the same into front and rear compartments, tubes connecting the front compartments, tubes connecting the rear compartments, tubes connecting the lower rear compartment and the upper front compartment, and a baffle between the tubes common to the rear compartments.

2. In a boiler, an upper drum, a partition therein dividing the same into front and rear compartments, a lower drum, a partition dividing the same into front and rear compartments, tubes connecting the front compartments, tubes connecting the rear compartments, tubes connecting the lower rear compartment and the upper front compartment, and means for causing a cycle of circulation between the said rear receptacles.

3. In a water-tube boiler, upper front and rear receptacles, lower front and rear receptacles, tubes connecting the front upper and lower receptacles, tubes connecting the rear upper and lower receptacles, tubes connecting the rear lower receptacles with the upper front receptacle, baffling dividing the first-named tubes, and baffling dividing the second-named tubes so as to cause two cycles of circulation.

4. In a water-tube boiler, an upper front and rear receptacle, a lower front and rear receptacle, tubes connecting the front upper receptacle with the front lower receptacle, tubes connecting the rear upper receptacle with the lower rear receptacle, means for causing an up and down circulation in the tubes connecting the rear receptacles and an up and down circulation in the tubes connecting the front receptacles, and means for supplying water from the lower rear receptacle to the front upper receptacle.

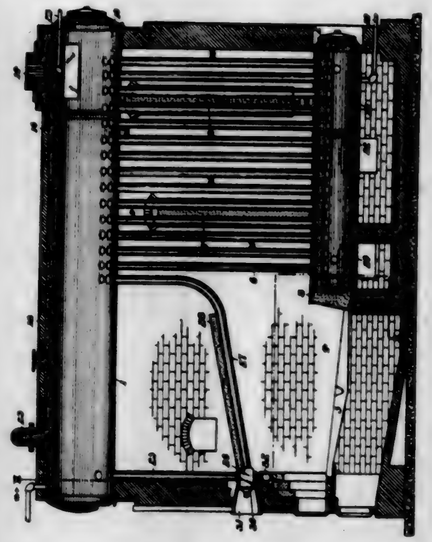

5. In a water-tube boiler, an upper front and rear receptacle, a lower front and rear receptacle, tubes connecting the front upper receptacle with the front lower receptacle, tubes connecting the rear upper receptacle with the lower rear receptacle, means for causing an up and down circulation in the tubes connecting the rear receptacles and an up and down circulation in the tubes connecting the front receptacles, and means for supplying water from the lower rear receptacle to the front upper receptacle.

6. In a water-tube boiler, a lower mud-drum, an upper steam and water drum parallel therewith, a furnace in front of the mud-drum, junction-boxes located between the levels of the mud-drum and the steam and water drum, and tubes connected at their lower ends to said junction-boxes and at their upper ends to the upper steam and water drum, one of the tubes connected to each junction-box forming a part of the roof of the furnace.

7. In a water-tube boiler, a lower mud-drum, an upper steam and water drum parallel therewith, a furnace in front of the mud-drum, junction-boxes located between the levels of the mud-drum and the steam and water drum, and tubes connected at their lower ends to said junction-boxes and at their upper ends to the upper steam and water drum, one of the tubes connected to each junction-box forming a part of the roof of the furnace and supporting the furnace-covering.

8. In a water-tube boiler, steam and water drums, mud-drums parallel thereto, water-tubes connecting steam and water drums and the mud-drums, a furnace in front of the mud-drum, junction means near the front wall, tubes connecting it to different portions of the steam and water drums and extending over the furnace, and baffle-plates above the said junction means and over the furnace.

9. In a water-tube boiler, steam and water drums, mud-drums parallel thereto, water-tubes connecting steam and water drums and the mud-drums, a furnace in front of the mud-drum, a series of water-chambers near the front wall, tubes connecting these chambers to different portions of the steam and water drums and extending over the furnace, and baffle-plates above the tubes and over the furnace.

850,359. SAFETY DRAFT-HOOK. CHESTER W. FANTON, Wellsville, N. Y. Filed Apr. 19, 1906. Serial No. 312,643.

Claim.—1. A device of the class described comprising a frame consisting of spaced arms united by a connecting-bar, a hook pivotally mounted for swinging movement between said arms, attaching means carried by the connecting-bar, and a plate carried by one of the spaced arms and forming a guard for the bill of the hook.

2. A device of the class described comprising a frame consisting of a pair of spaced arms united by a connecting-bar, a block pivotally mounted between said arms and provided with a squared aperture, and a hook having a squared shank adapted to engage said aperture, one of said arms being extended to form a guard for the bill of the hook.

3. A device of the class described comprising a supporting-frame, a reversible hook pivotally mounted for lateral movement in said frame, and a segmental plate constituting a part of the frame and forming a guard for the bill of the hook.

4. A device of the class described comprising a pair of spaced arms one of which is extended to form a guard and provided with oppositely-disposed recesses, and a reversible hook pivotally mounted for lateral movement between said arms.

5. A device of the class described comprising a pair of spaced arms one of which is extended laterally beyond the adjacent arm and provided with an enlarged head having its free end curved or rounded to form a guard, the side walls of said arm at the juncture of the guard being cut away to form oppositely-disposed recesses, and a reversible hook pivotally mounted for lateral movement between said arms and having its bill disposed at the curved end of the guard.

850,360. ATTACHMENT FOR POOL-TABLES. FREDERICK W. FLINT, Chicago, Ill. Filed Dec. 28, 1905. Renewed Oct. 4, 1906. Serial No. 337,460.

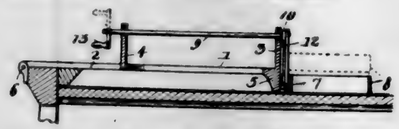

Claim.—1. In a device of the character described, the combination with a hinged supporting-frame, of a "spotting-frame" slidably mounted thereon, a lifting mechanism to raise and lower said "spotting-frame," and guides to cause said frame to rise squarely and perpendicularly above the pool-table, substantially as described.

2. In a device of the character described, the combination with a supporting-frame adapted to be hingedly connected to one end of a pool-table, of a "spotting-frame," vertically-disposed guide-rods to slidably connect said "spotting-frame" to the supporting-frame, a longitudinally-disposed shaft, journaled on said supporting-frame, a crank formed on one end thereof, a pitman-rod to connect said crank with the "spotting-frame," and a crank-handle arranged on the opposite end of the shaft, substantially as described.

850,361. SKYLIGHT. JOHN FLYNN, Narbeth, Pa. Filed Jan. 30, 1905. Serial No. 243,182.

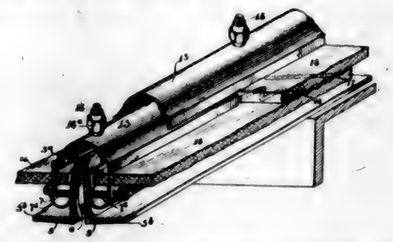

Claim.—A skylight comprising a pair of angle-bars each having an upwardly-inclined laterally-disposed member to form conducting-gutters, a block between upright members of said bar, a bolt passing through the upright members of said bars and channels and said block, plates supported by said channels, a cap covering the upright members of said bars and having legs resting on said plates, and a bolt connected with said block for holding said cap in place.

850,362. STUMP-PULLER. JOSEF W. FOLGERT, Phillips, Wis. Filed Nov. 15, 1906. Serial No. 343,559.

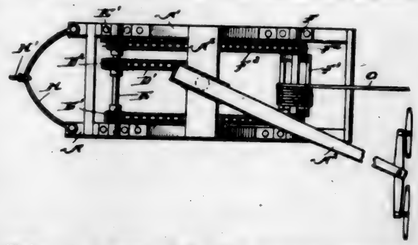

Claim.—1. A device of the kind described comprising a sled, transverse shafts at each end of the sled, sprocket-wheels upon said shafts adjacent the sides of the sled, sprocket-chains running over said wheels, a drum mounted upon one of said shafts between the sprocket-wheels upon said shaft, a sweep mounted above the sled and carried thereby, and means for transmitting rotation of the sweep to the shaft opposite the one carrying the drum.

2. A device of the kind described comprising a sled, brackets carried thereby, cross-pieces supported by the brackets, a vertical shaft journaled in said cross-piece, a sweep mounted upon the upper end of the shaft, a beveled gear carried by the lower end of the shaft, a shaft below and parallel to the cross-piece, a beveled gear on said shaft meshing with the first-mentioned beveled gear, a sprocket-chain on said shaft, a shaft adjacent one end of the sled, a sprocket-wheel thereon, a sprocket-chain running over said sprocket-wheels, a shaft adjacent the opposite end of the sled, a drum thereon, sprocket-wheels upon said shaft at the ends of the drum, sprocket-wheels arranged upon the shaft adjacent the first-mentioned end of the sled and in alinement with those upon the drum-shaft, sprocket-chains connecting said alining sprocket-wheels, and a cable adapted to wind upon the drum.

850,363. BRACKET FOR CLOTHING-CABINETS. HARRY FRANKEL, New York, N. Y. Filed May 2, 1906. Serial No. 314,734.

Claim.—1. A bracket, comprising a tubular guide, a carriage having rollers mounted to travel in said guide, a stop-block mounted in said guide to limit the movement of the

carriage, and a handle extending from the front for adjusting said stop-block.

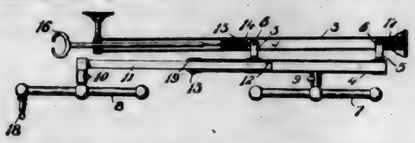

2. A bracket, comprising a tubular guide, a carriage having rollers supported in said guide, a spring-buffer at the rear end of said tubular guide, an extensible member telescoping in said carriage, antifriction-bearings carried by the inner end of said extensible member at the top, and antifriction-bearings carried at the front of said carriage member beneath said extensible member.

3. A bracket, comprising a guide, a carriage adapted to travel longitudinally thereof, a spring mounted in the guide normally tending to move the carriage, and swinging rods carried by said carriage and adapted to support garment-hangers.

4. A bracket, comprising a guide, a carriage adapted to travel longitudinally thereof and having an extensible member and swinging rods carried by the main portion, an extensible member of said carriage adapted to support garment-hangers engaging means in the guide to secure the carriage in any desired position, and means for operating said engaging means.

5. A bracket, comprising a guide, a carriage adapted to travel longitudinally thereof and having an extensible member, a bar rotatably carried by said extensible member, a handle carried by said bar an adjusting stop-block movable in the guide, and means for adjusting the stop-block to limit the movement of the carriage.

6. A bracket, comprising a guide, a carriage adapted to travel longitudinally thereof, a rod carried by said carriage and having a limited swinging movement and adapted to support garment-hangers an adjusting stop-block in the guide, means to adjust the stop-block to limit the movement of the carriage, and a spring normally tending to hold the carriage against the stop-block.

7. A bracket, comprising a tubular guide, a carriage having antifriction-bearings supported in said guide, an adjustable stop for said carriage in said guide, and a spring mounted in the guide normally tending to move said carriage.

850,364. KEYBOARD TELEGRAPH-TRANSMITTER. GEORGE M. GODDARD, Rutland, Vt., assignor of one-half to George C. Thrall, Rutland, Vt. Filed Apr. 30, 1906. Serial No. 314,411.

Claim.—1. A telegraphic transmitter, comprising a continuously-rotating shaft having its surface formed by longitudinal flutings into continuous longitudinal teeth along its length, commutating-disks axially hung upon said shaft and recessed centrally and clutch devices for coupling the shaft to the disks arranged in the central recess of the disks.

2. A telegraphic transmitter comprising a continuously-rotating shaft having its surface formed by longitudinal flutings into continuous longitudinal teeth along its length, commutating-disks hung upon said shaft and recessed centrally and also out to the periphery on one side and clutch devices for coupling the shaft to the disks, said clutch devices being housed within the plane of the disk in the recess and having one end extending out to the periphery of the disk.

3. A telegraphic transmitter, comprising a continuously-rotating shaft longitudinally fluted to form continuous teeth along its length, a series of commutating-disks axially hung thereon side by side and formed with recesses on the side, a locking-dog pivoted within the recess of each disk and having one end constructed to engage the teeth of the shaft, a spring surrounding the shaft for throwing the dog into such engagement, a movable unlocking device for the dog, a key-lever operating thereupon, and an electrical contact for each disk.

4. A telegraphic transmitter, comprising a continuously-rotating shaft formed with teeth throughout its length, a series of commutating-disks arranged thereon side by side, said disks being recessed centrally and out on one side to the periphery, a locking-dog arranged in this recess and having a spring to throw it into engagement with the teeth of the shaft, an electrical spring-contact riding on the edge of the disk, an unlocking device for the dog made thin enough to enter the recessed opening to serve both to unlock the dog and to act as a stop to limit the rotation of the disk, and a key-lever for each disk connected to and operating the unlocking device.

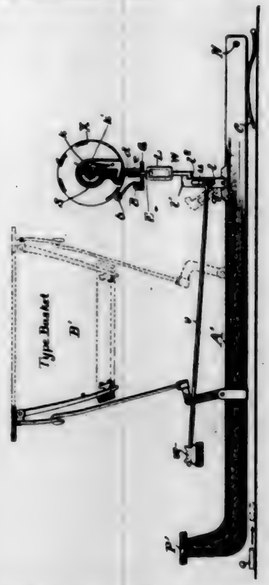

5. A telegraphic transmitter, comprising a continuously-rotating shaft formed with teeth throughout its length, a series of commutating-disks arranged thereon side by side, said disks being recessed centrally and out on one side to the periphery, a locking-dog pivoted in this recess and having its outer end extended across the recessed opening, a coil-spring wound about the shaft within the recess and connected at one end to the disk and at the other end to the dog, a key-lever for each disk and means operated thereby to normally hold the dog in an unlocked position.

6. In a telegraphic transmitter, a commutating-disk recessed centrally and along one side out to the periphery and a clutch device pivoted within said recess and lying within the plane of the disk.

7. A telegraphic transmitter comprising a continuously-rotating shaft, commutating-disks with clutch devices arranged therein and normally disconnected from the shaft, a key-lever for each disk having a clutch-operating device bearing peripherally against each disk and arranged immediately below the same and a slip connection between the key-lever and the clutch-operating device, whereby the key may immediately return after the downward movement without affecting the clutch-operating device.

8. A telegraphic transmitter, comprising a continuously-rotating shaft, commutating-disks arranged thereon and having each a locking device within it for connecting it with the shaft and two opposite recesses in the periphery of the disk, a double-stop device arranged, one upon one side of the disk and the other upon the opposite side to simultaneously enter and leave the two recesses and to alternately act upon the locking device therein and a key-lever operating the double-stop device.

9. A telegraphic transmitter, comprising a continuously-rotating shaft, commutating-disks arranged thereon and having each a locking device within it for connecting it with the shaft and two opposite recesses in the periphery of the disk, two opposite stop devices, a yoke H, with lever a carrying one of the stop devices, and a key-lever connected to said yoke and also carrying the other stop device.

10. The combination with the key-levers in a type-writer; of a telegraphic transmitter consisting of a series of translating-disks with means for setting any one of them into rotation, said disks being individually arranged above the corresponding type-writer key-levers, a vertical-pull device arranged centrally beneath each disk for connecting each key-lever to its own disk mechanism, said pull device having upper and lower separable members immediately beneath the disks and between them and the key-levers, a horizontal cross-rod slidably connected to the lower members and a bail connected to the ends of the rod and adapted to connect or disconnect the separable members of the vertical-pull devices.

11. The combination with the key-levers, in a type-writer; of a telegraphic transmitter consisting of translating-disks with means for setting any one of them into rotation, said disks being individually arranged above the corresponding type-writer key-levers, slotted hook-stems pivoted to the key-levers and having hooks at their upper ends, corresponding hooks for each disk-operating devices, a rod passing through the slots of the hook-stems and means for projecting the latter hook-stems into engagement with the hooks above or out of engagement, for coupling or uncoupling the transmitter to the type-writer.

850,365. ALARM-FUSE. WILLIAM E. HARKNESS, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 24, 1906. Serial No. 302,067.

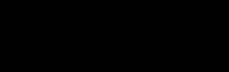

Claim.—1. An alarm-fuse comprising a body portion of metal, a terminal at one end of said body portion formed integrally therewith, an insulated terminal upon the other end of said body portion, a spring-tongue secured at one end to said body portion, an extension of said insulated terminal on the side of the body portion opposite said tongue, and a fuse passing through an opening in said body portion and uniting said extension with the free end of said tongue, and maintaining said tongue under tension.

2. An alarm-fuse comprising a metal body portion, a terminal at one end thereof formed integrally therewith, an insulated terminal at the other end of said body portion, a spring-tongue struck out from said body portion, an extension of said insulated terminal, and a fuse connecting said tongue and extension and holding said tongue under tension.

3. An alarm-fuse comprising a body portion and terminal at one end thereof, said parts being stamped from a single piece of metal, a flat metal collar or terminal fitting over the other end of said body portion, an insulating-sleeve between said collar and body portion, an angular extension of said collar, a spring-tongue stamped from said body portion and lying on the side of the body portion opposite said extension, and a fuse-wire connecting said tongue and extension to maintain said tongue under tension.

4. An alarm-fuse comprising an integrally-formed metal body portion, spring-tongue, and terminal, an insulated terminal carried by said body portion, and a fuse-wire electrically connecting said tongue and insulated terminal and maintaining said tongue under tension.

850,366. PNEUMATICALLY-OPERATED MUSICAL INSTRUMENT. JOHN J. HEALY, Monroe, N. Y., assignor of one-half to Solomon F. Hess, Rochester, N. Y. Filed Dec. 9, 1904. Serial No. 236,251.

Claim.—1. In a wind instrument, the combination with keys, key-pneumatics, a feeder-bellows and a main bellows, of a wind-trunk connecting the latter and the key-pneumatics, controlling devices interposed therein comprising a seat having an aperture and a relatively larger opening, a valve-head coöperating alternately with the aperture and opening and means for operating the head.

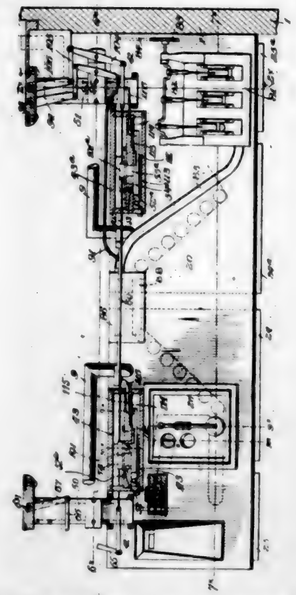

2. In a wind instrument, the combination with keys, key-pneumatics, a feeder-bellows and a main bellows, of a wind-trunk connecting the latter and the key-pneumatics, controlling devices interposed therein comprising a seat having an aperture and a relatively larger opening, a valve-head coöperating alternately with the aperture and opening and means for operating the head.

3. In a wind instrument, the combination with keys, key-pneumatics, a feeder-bellows and a main bellows, of a wind-trunk connecting the latter and the key-pneumatics, controlling devices interposed therein comprising a seat having an aperture and a relatively larger opening which is graduated smaller at one end than at the other, a valve-head coöperating with said seat-openings to close them alternately, and means for operating the head.

4. In a wind instrument, the combination with keys, key-pneumatics, a feeder-bellows and a main bellows, of a wind-trunk connecting the latter and the key-pneumatics, controlling devices interposed therein comprising a seat having an aperture, a relatively larger opening graduated smaller toward the end farthest away from the aperture and a sliding valve-head coöperating alternately with said seat-openings and means for operating it.

5. In a wind instrument, the combination with keys, key-pneumatics, a feeder-bellows and a main bellows, of a wind-trunk connecting the latter and the key-pneumatics, controlling devices interposed therein comprising a seat having two apertures therein, means for adjusting the area of one of them, a sliding valve-head adapted to close said apertures and devices for operating it into alternate engagement with them.

6. In a wind instrument, the combination with keys, key-pneumatics, a feeder-bellows and a main bellows, of a wind-trunk connecting the latter and the key-pneumatics, controlling devices interposed therein comprising a seat having two apertures, one of them of a size to permit the minimum amount of air to pass required to operate the key-pneumatics and the other of a size to permit a larger amount of air to pass to said bellows, a valve-head coöperating with said apertures and means for operating it.

7. In a wind instrument, the combination with keys, key-pneumatics, a feeder-bellows and a main bellows, of a wind-trunk connecting the latter and the key-pneumatics, controlling devices interposed therein comprising a seat having two apertures, one of them of a size to permit the minimum amount of air to pass required to operate the key-pneumatics and the other of a size to permit the maximum amount of air to pass to said bellows, a valve-head coöperating with both apertures and arranged to open the minimum passage as it commences closing the maximum passage and means for operating the head.

8. In a wind instrument, the combination with keys, key-pneumatics, a feeder-bellows and a main bellows, of a wind-trunk connecting the latter and the key-pneumatics, controlling devices interposed therein comprising a seat having two apertures, one of them of a size to permit the minimum amount of air to pass required to operate the key-pneumatics and the other of a size to permit a larger amount of air to pass to said bellows, said last-mentioned aperture being graduated smaller toward one end, a valve-head normally closing the smaller aperture and coöperating with the larger aperture to vary the size thereof and means for operating the valve-head.

9. In a wind instrument, the combination with keys, key-pneumatics arranged in groups, a feeder-bellows and a main bellows, of separate wind-trunks connecting each group of key-pneumatics with the main bellows, controlling devices interposed in each wind-trunk comprising a valve-seat having a minimum and a maximum aperture and a valve-head coöperating alternately with said apertures, devices connecting said heads and means for operating the latter simultaneously to permit equal volumes of air to pass through the separate wind-trunks.

10. In a wind instrument, the combination with keys, key-pneumatics, a bellows and a wind-trunk connecting the latter to the pneumatics, of a valve for controlling the passage of air in said trunk and means for operating it, a separate valve for permitting an additional supply of air to pass therethrough, a pneumatic device for operating it, a normally closed passage controlling said device and means for flushing it.

11. In a wind instrument, the combination with keys, key-pneumatics, a bellows and a wind-trunk connecting the latter to the pneumatics, of a valve for controlling the passage of air in said trunk and means for operating it, a separate valve for permitting an additional supply of air to pass therethrough, a pneumatic device for operating it, a controlling-passage therefor and means for flushing the passage.

12. In a wind instrument, the combination with keys, key-pneumatics, a bellows and a wind-trunk connecting the latter to the pneumatics, of a valve-seat board arranged across the trunk provided with two apertures, an adjustable valve-head coöperating with one aperture means for operating it and a second valve-head normally closing the other aperture, a pneumatic device controlling said head and means for flushing the pneumatic.

13. In a wind instrument, the combination with keys, key-pneumatics, and bellows, and a wind-trunk connecting the latter to the pneumatics, of a valve-seat board arranged across the trunk provided with an aperture, a valve-head for closing the aperture and a normally collapsed pneumatic device for operating the head arranged on the bellows side of the seat-board and means for flushing said device.

14. In a wind instrument, the combination with keys, key-pneumatics, a bellows and a wind-trunk connecting the latter to the pneumatics of a valve-seat board arranged across the trunk provided with an aperture, a valve-head for closing the aperture and a normally collapsed pneumatic device for operating the head opening in the direction of the movement of air in the trunk and means for flushing said device.

15. In a wind instrument, the combination with keys, key-pneumatics and a bellows, a tracker-board, sheet-winding mechanism and a motor for operating it, of a wind-trunk connecting the bellows to the pneumatics, a second wind-trunk connecting it to the motor and a valve-seat board arranged in the first wind-trunk provided with two apertures, a valve-head for alternately closing said apertures and means for operating it, a valve for opening and closing the motor wind-trunk, an auxiliary valve-head, for closing one of the aforementioned apertures and connected to the motor wind-trunk valve and coöperating with the other valve-head to close the other aperture when the motor wind-trunk valve is opened and means for operating said valve-head.

16. In a wind instrument, the combination with keys, key-pneumatics and feeder and main bellows, of a wind-chest having passages leading therefrom, a plurality of valves controlling said passages, a wind-trunk leading from the bellows and connected to the chest at various points.

17. In a wind instrument, the combination with keys, key-pneumatics and feeder and main bellows, of a wind-chest having passages leading therefrom, a plurality of valves controlling said passages, a wind-trunk leading from the bellows and connected to the chest and a perforated partition arranged in the chest and located between the wind-trunk entrance and the valves.

18. In a wind instrument, the combination with keys, key-pneumatics and valves controlling the latter arranged in groups, of a plurality of bellows, a common wind-trunk connecting them, separate wind-trunks leading from the latter to each group of valves, valves in the separate wind-trunks and means for operating them, a normally closed by-pass valve also located in each wind-trunk, and means for opening and closing said valves.

19. In a wind instrument, the combination with keys, key-pneumatics and valves controlling them, of bellows, a wind-trunk connecting the latter to the pneumatics, a valve controlling the passage of air in the wind-trunk, a by-pass valve for increasing said passage of air and means for operating it.

20. In a wind instrument, the combination with keys, key-pneumatics, valves controlling the latter arranged in groups and a tracker-board having passages controlling the valves, a plurality of bellows, a common wind-trunk connecting them, of a separate branch wind-trunk leading from the latter to each group of valves, valves in the branch wind-trunks and normally closed by-pass valves also located therein, pneumatic devices for operating them and means for flushing said devices controlled by a passage in the tracker-board.

21. In a wind instrument, the combination with keys, key-pneumatics, valves controlling the latter arranged in groups and a tracker-board having passages controlling the valves, a plurality of bellows, a common wind-trunk connecting them, of a separate branch wind-trunk leading from the latter to each group of valves, valves in the branch wind-trunks and normally closed by-pass valves also located therein, pneumatic devices for operating them and a passage at the tracker-board and a normally closed manually-operable valve in the passage.

22. In a wind instrument, the combination with a casing, keys therein and key-pneumatics, valves controlling the latter, a tracker-board having passages controlling the valves and a music-sheet-winding mechanism, of a hollow support forming a wind-trunk removably mounted in the casing, bellows arranged at one side of the support and communicating with its interior and a branch wind-trunk leading to the pneumatics and detachably connected to said support, a wind-motor mounted on the latter, driving connections between it and the winding devices, and a valve-box mounted on the support and also communicating with its interior, a wind-trunk connecting said motor and box, a valve located in the latter and means for operating it.

850,367. BATH-CABINET. JOHN HERMANN, Saginaw, Mich. Filed Mar. 29, 1906. Serial No. 308,734.

Claim.—1. A cabinet of the class described, having its side wall made in sections disposed angularly with reference to one another, each section comprising an inner plate and an outer plate spaced therefrom, tubular bars in the angles between the sections and between the inner and outer plates, clamping-bars on the inner sides of the inner plates, in the angles formed at the joints thereof, screws securing said clamping-bars to the tubular bars, clamping-bars on the outer sides of the outer plates, on the joints thereof, and screws securing the last-mentioned clamping-bars to the tubular bars; substantially as described.

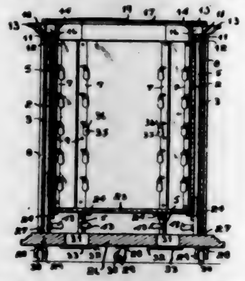

2. A cabinet of the class described, having an inner plate and an outer plate spaced therefrom, said plates having alining-openings, a conducting element slidable in the said openings, having its ends projecting beyond the outer sides of said plates and provided with openings, said slidable element also having a contact device projecting therefrom at a point near the inner plate, a contact-plate secured to the outer plate and in permanent contact with the slidable element, and a contact device mounted on the inner plate for engagement by the contact device of the slidable element when the latter is in one position.

3. A joint for the sides of cabinets of the character described, comprising inner and outer spaced plates, an upright between said plates, inner and outer clamping-bars, fastening means for securing said bars to said upright, and packing means between said plates said bars and said upright.

4. A joint for the sides of cabinets of the character described, comprising inner and outer spaced plates, a tubular upright between said spaced plates, inner and outer clamping-bars, packing between the abutting ends of said plates and said upright, and fastening-screws passed through said clamping-bars and into said upright, substantially as described.

850,368. BLOCK-MOLDING MACHINE. JAMES C. HERRING, Greensboro, N. C. Filed Apr. 20, 1906. Serial No. 312,829.

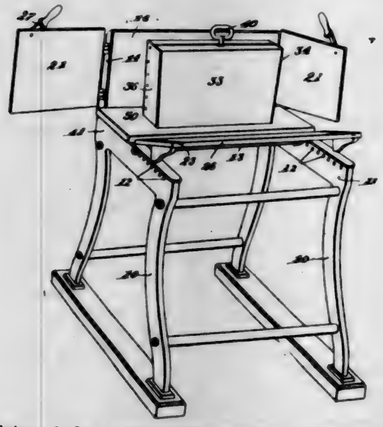

Claim.—1. In a block-molding machine, the combination of a frame including a pair of spaced standards, of a movable face-plate supported by said standards, interengaging lugs for locking the plate to the standards, end plates pivoted to the standards, a pivoted back plate, and means for locking the back plate to the end plates.

2. In a machine of the class described, the combination with a frame including a pair of spaced standards, of a face-plate carried by the standards, end plates pivoted to the standards, a pivoted back plate having grooves for the reception of the free edges of the end plates, and pivoted cam-levers carried by the end plates and arranged to lock against the back plate.

3. In a machine of the class described, the combination with a frame, having a pair of spaced standards and provided with lugs or shoulders at the bases of the standards, a removable face-plate resting on said lugs, interfitting lugs for holding the face-plate to the standards, a removable pallet, a pivotally-mounted back plate having grooves near its opposite ends, end plates pivoted to the standards and having their free ends arranged to enter said grooves, and cam-levers carried by the end plates and arranged to interlock with the back plate.

4. In a machine of the class described, the combination with a frame including a pair of horizontally-disposed parallel bars, each provided with a plurality of openings, a hinge-rod adjustable into any of said openings, a back plate carried by the hinge-rod, a face-plate rigidly secured to the frame, end plates pivoted to the frame, and means for locking the end plates to the back plate.

5. In a machine of the class described, the sectional core, a spring-plate connecting the sections of the core at one end and tending to force the opposite ends of the sections toward each other, and a cam-rod for spreading said sections.

6. In a machine of the class described, a core formed of sections, a spring-plate forming a hinge between the sections at one end of the core, and tending to force the opposite ends of such sections toward each other, a guard-plate covering the free epds of the sections, a rod extending through the core, and cams carried by the rod and movable to expand the core.

7. In a machine of the class described, a mold-box including a pallet member having an opening, an expansible core, and a core spreading and lifting rod, the lower end of which finds a bearing in the pallet-opening.

850,369. SCREEN-HANGER. HENRY B. HIGGINS, Denver, Colo. Filed May 21, 1906. Serial No. 317,975.

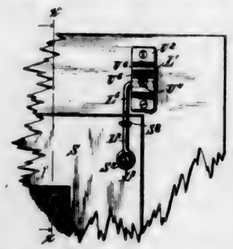

Claim.—1. A hanger or separable hinge for screens and the like, comprising a box or block, provided with relatively perpendicular pintle-seats, in combination with a member for attachment to a screen and having a pintle, substantially as described.

2. A separable hinge or hanger for screens and the like, comprising a member or block which contains two relatively perpendicular pintle-seats, in combination with another member, comprising a pintle portion, a riser portion, an offset portion and an attaching portion formed, substantially as described.

3. In a separable hinge or hanger for screens and the like, a box-like member adapted to be secured to a window-frame or its blind-stops and containing a notch or opening of irregular form providing two relatively perpendicular pintle-seats, substantially as described.

4. In a window-screen hanger, a block adapted to be secured to a window-frame or its blind-stops, provided with relatively perpendicular vertical and horizontal slots, forming two pintle-seats, and providing openings for the entrance of a pintle through either side or front of the block, substantially as described.

5. A window separable hinge member for attachment to a window-screen or storm-sash, composed of wire and comprising an attaching portion L^2, an offset horizontal portion L^4, a riser portion, L^3, and a pintle portion, L', the latter being perpendicular to the plane which includes the other portions, substantially as described.

6. In the combination of a window-frame with a screen or sash, a hinge member comprising a block containing relatively perpendicular pintle-seats and provided with a horizontal slot or notch to admit a pintle to either of said seats, means securing said block to a window-frame or its blind-stops, and a second hinge member attached to the top of said screen or sash and having a horizontal pintle pivoted in one of the seats of said block, substantially as described.

850,370. WATER-AUTOMOBILE. WILLIAM L. HYNES, Elgin, Ill. Filed June 5, 1906. Serial No. 320,253.

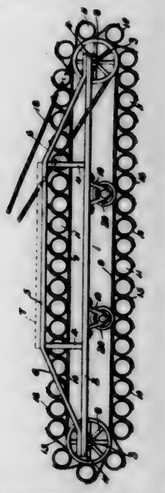

Claim.—1. In an apparatus of the class described, the combination with a frame, revoluble end supports carried by said frame, of an endless carrier positioned upon said end supports, a float carried by said carrier, means for securing said float at its lower portion to said carrier, and auxiliary fastening means connected to said float and said carrier and adapted to retain the same in a rigid position with respect to said carrier, as said float passes around the end supports.

2. In an apparatus of the class described, the combination with a frame, an endless carrier positioned upon said frame, of a float, a band surrounding said float, means securing said band to said carrier, a flexible member secured at one end to said band and at its opposite end to said carrier, and means for driving said carrier.

3. In an apparatus of the class described, the combination with a frame, revoluble end supports carried thereby, of pairs of endless carriers positioned upon said frame, floats positioned transversely to said carriers, bands connecting said floats to said carriers, and means for rigidly holding said floats in their normal position when passing around the revoluble end supports.

4. In an apparatus of the class described, the combination with a frame, revoluble end supports carried thereby, an endless carrier positioned upon said revoluble supports, of a float, means securing said float to said carrier, and means connected to said float near its top and to said carrier for retaining said float rigidly upon said carrier as said float passes around said end supports.

5. In an apparatus of the class described, the combination with a frame, an endless carrier positioned upon said frame, of a band provided with a base, means securing said base to said carrier, a float or tube positioned within said band, and auxiliary fastening means connecting said band to said carrier.

6. In an apparatus of the class described, the combination with a frame, an endless carrier positioned upon said frame, of a band provided with a base, means connecting said base to said carrier, said band provided with an eye, fastening means secured to said eye and to said carrier, and a float positioned within said band.

7. In an apparatus of the class described, the combination with a frame, a carrier positioned upon said frame, of a pair of surrounding means or bands, each of which is provided with a base, means for securing said base to said carrier, tubes or floats secured within said bands, a flexible connecting member secured to the base of one of said bands and to the other band above said base, and means for driving said carrier.

8. In an apparatus of the class described, the combination with a frame, an endless carrier carried by said frame, of bands secured to said carrier, each band provided with a base, an eye formed upon said base, eyes formed upon said bands, means connecting the eye of one band to the eye of the base of the other band, floats or tubes positioned within said bands, and means for driving said carrier.

9. In an apparatus of the class described, the combination with a support, a carrier mounted upon said support, a float positioned contiguous to said carrier, means securing said float to said carrier, of auxiliary fastening means connected to said carrier at one side of said float and to said float above said carrier.

10. In an apparatus of the class described, the combination with a support, revoluble end supports carried by said support, an endless carrier positioned upon said revoluble supports, of a float, means securing said float to said carrier, and means connected to said carrier at one end, and to said float above said carrier for retaining said float rigidly upon said carrier, as the float passes around an end support.

850,371. SHUT-OFF FOR TUBE-COMPRESSORS. ELBERT O. JERALDS, Stamford, Conn., assignor to William A. Tooper, Jr., Stamford, Conn. Filed Feb. 1, 1907. Serial No. 355,316.

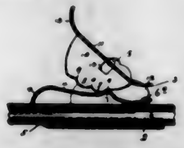

Claim.—1. A clamp or stop-cock for flexible tubes, having a body or frame comprising side pieces and a compression-arm located between the same, and a finger-piece pivoted between the said side pieces and formed with one or more cam-like wings which engage with the upper face of the arm and force the same downward upon the tube passing through the frame.

2. A clamp or stop-cock for flexible tubes, having a frame or body comprising a compression-arm and two side pieces between which the said arm is located, and a finger-piece pivotally mounted in the upper ends of the said side pieces and having two parallel cam-like wings extending downward between the said side pieces and formed with scallops coacting with a rib upon the arm.

3. A clamp or stop-cock for flexible tubes having a frame or body comprising a base-plate, two side pieces extending upward therefrom, a bow and a compression-arm extending forward from the said bow between the side pieces and bent to form a rib; and a pivotal finger-piece pivoted between the said side pieces and formed with wings the lower edges of which are adapted to coact with the said rib.

850,372. CHIMNEY-TOP. SOLOMON M. KEMP, Baltimore, Md. Filed Oct. 17, 1905. Renewed Sept. 28, 1906. Serial No. 336,563.

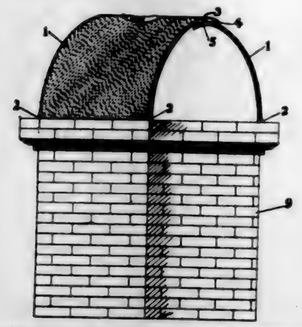

Claim.—An article of manufacture, a chimney-top comprising two semi-oval-shaped sections, made of cement, interwoven with wire-gauze, each section being cut out at the top part thereof so that when placed together an oval draft-hole is formed in the top part therein, one section being shaped of a greater semicircumferential degree than the other whereby one will overlap the other at the top forming a joint whereby they may be cemented together, all in combination substantially as described.

850,373. RAILWAY-TRACK CONSTRUCTION. ALPHONSE KING, San Antonio, Tex. Filed May 15, 1906. Serial No. 316,951.

Claim.—A composition tie, for railroads, having transverse arches on its lower side and having a longitudinal depression in its upper side of less extent than the tie, both in length and breadth, in combination with a rail-supporting plate located in said depression and having recurved ends to receive the outer edges of rails, clamps to be secured to said plate against the inner edges of said rails, and bolts for securing the clamps in place and for securing the plate in the recess and having their heads located in the said arches on the under side of the tie, substantially as and for the purpose set forth.

850,374. GRINDING-MACHINE. CHARLES KING, Richmond, Ind., assignor to The F. & N. Lawn Mower Company, Richmond, Ind., a Corporation. Filed Nov. 9, 1906. Serial No. 342,611.

Claim.—1. In combination with a grinding-machine for lawn-mowers or the like, means for adjustably mounting the lawn-mower in the machine, a carriage carried back and forth from end to end of the blades of the lawn-mower, a resiliently-mounted bar carried by the carriage, a roller carried by said bar and adapted to hook over the cutter-bar of the lawn-mower, a pin extending up from said bar on which pin the blades of the lawn-mower may slide, and a continuously-revolving abrasion-wheel carried by the carriage for operating on said blades opposite to and above said pin, all substantially as described.

2. In a grinding-machine for lawn-mowers, the means for centering and retaining a lawn-mower at the proper points for operation thereon, a carriage operative longitudinally of the blades of the lawn-mower, means carried by the carriage to resiliently engage the cutter-bar of the lawn-mower and for providing a support for the blades when being ground, means mounted on the carriage for guiding the blades by power as the carriage travels to and fro, and means for gaging the grinding whereby the ground blades will have a predetermined shearing contact with the cutter-bar, all substantially as shown and described.

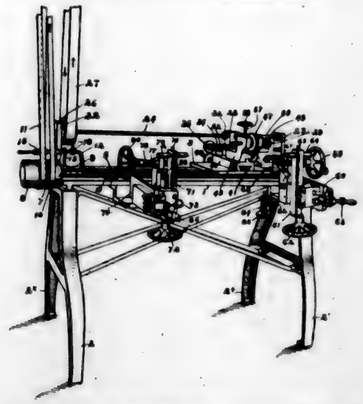

3. In a mechanism for grinding lawn-mower blades and fitting them to operate in conjunction with their cutter-bar, the combination of the following elements: an adjustable carriage 45, having forwardly and upwardly extending arms carrying revolubly therebetween an abradant disk, a bar 36 slidably mounted on the carriage and extendable forward under said disk, springs for resiliently drawing said bar to the rear, a roller mounted on the under side of the forward portion of said bar to engage over the cutter-bar of a lawn-mower, a pin extending up from the forward portion of said bar for supporting the blades of the lawn-mower, one at a time, while they are being ground by the abradant disk corresponding to the periphery of said cutter-bar.

4. In a machine for operating on a lawn-mower having a reel carrying blade and having a cutter-bar, of a carriage operated by power over a bed-plate, an abradant disk revoluble continuously by power in one direction and carried by said carriage, a spring-controlled bar operative under the abradant disk and carried with said carriage, a roller mounted to the under side of said bar to engage over the cutter-bar of the lawn-mower, a pin extending up from said bar to provide a support at that point for the blade then being operated on by the abradant disk located thereabove, and means for securing the lawn-mower in position for the blades to be operated on and for allowing the reel of the lawn-mower to turn as the abradant wheel is advanced by the carriage.

5. A machine for operating on a lawn-mower having a shaft carrying spiral blades, and a cutter-bar and an axle, a jointing-machine for grinding the blades to conform to the cutter-bar, adjustable means for supporting said axle at its ends, adjustable means for pivoting said shaft at its ends, means for bringing the cutter-bar to the proper point and for supporting it at the height desired, a carriage movable longitudinally of the blades, an abrading-disk carried by the carriage, means for adjusting the carriage to bring said disk to the proper working point, means carried by the carriage for supporting the blade, being ground, in position to be operated on by the abrading-disk, said means being controlled by the edge of the cutter-bar substantially as shown and described.

6. The herein-described machine comprising a bed-plate, a carriage movable from end to end of and carried on the bed-plate, a screw-shaft for operating the carriage, a clamping and pivoting mechanism for supporting a lawn-mower

in position, a bar carried by the carriage and slidable thereon and at right angles to the movement thereof and being resiliently mounted to pull away from the lawn-mower, means for frictionlessly connecting said bar to the lawn-mower cutter-bar, means carried by said bar for supporting the blade of the lawn-mower being operated on, and an abradant disk carried by the carriage and adapted to grind the edge of the blade to the desired clearance in order to give it a shearing contact with the cutter-bar, all substantially as shown and described.

7. In a grinding-machine for lawn-mowing machines, the combination with a suitable supporting-frame, of a carriage operable horizontally on said frame, means for operating said carriage by power in combination with means for reversing the movements of the carriage, a circular revoluble abradant carried on the carriage, means for operating the abradant continuously by power independent of the means for operating the carriage, means for holding a lawn-mower in position for the blades thereof to be ground by said abradant, and resilient means for gaging the grinding of the blades whereby when ground they will correspond to and have a shearing contact with the cutter-bar therefor, all subtantially as shown and described.

8. A grinding-machine for lawn-mowers or the like, comprising means for securing a lawn-mower thereto in position for the blades thereof to be operated on, means for adjusting the cutter-bar of the lawn-mower, a carriage adapted to be carried from end to end of the lawn-mower blades, a continuously-revolving grinding-disk mounted on the carriage, a bar slidable in and out on said carriage, springs for normally retaining said bar to the rear limit of its movement, a roller carried on the under side of the front portion of said bar and adapted to hook over and be held resiliently in contact with the edge of the cutter-bar, a pin extending up from the front end of said bar to provide a rest for the blade being ground at that point by the grinding-disk located directly thereabove, means for advancing the carriage for moving said pin and roller and the grinding-disk from end to end of the blade and the cutter-bar whereby the blade will be ground to conform to the cutter-bar, all substantially as shown and described.

9. The combination in a grinding-machine for lawn-mowers, of a lawn-mower retaining and centering mechanism, a guide for the lawn-mower blade being ground, a yielding support for said guide which support is controlled by the edge of the lawn-mower cutter-bar, a revolving abrasion-disk carried above said guide and its yielding support, means for adjusting said disk with relation to the blade being ground, means for carrying said guide and its yielding support and said disk from end to end of the cutter-bar by power, and means for revolving the disk by power, all substantially as shown and described.

10. In a mechanism for supporting the cutter-bar of a lawn-mower, means for holding the lawn-mower rigidly in position at same time allowing the blades of the lawn-mower to revolve, yielding means controlled by the cutter-bar for supporting the blade being ground, means for grinding the blades from end to end, and means for allowing said supporting means and the grinding means to pass beyond either end of the blades to allow the other blades to be brought into position to be ground without disconnecting said supporting means, all substantially as shown and described.

850,375. FOLDING HORN. OTTO KRAUS, New York, N. Y. Filed Nov. 12, 1906. Serial No. 342,960.

Claim.—1. A folding horn, comprising a plurality of springs, having normally an outwardly-expanding tendency with relation to each other, a body of flexible fabric held to the ends of said springs, and means for forcing the ends of said springs inwardly.

2. A folding horn comprising a plurality of springs normally having an outwardly-expanding tendency with relation to each other, a body of fabric fastened to the springs, loops on said springs, for engaging a cord or flexible member, and an elastic portion secured to one end of said body.

3. A folding horn comprising a plurality of springs, secured to a sleeve and normally having an outwardly-expanding tendency with relation to each other, a body of fabric fastened to the springs, an elastic member connected to the fabric, loops on said springs, and a flexible member engaging said loops.

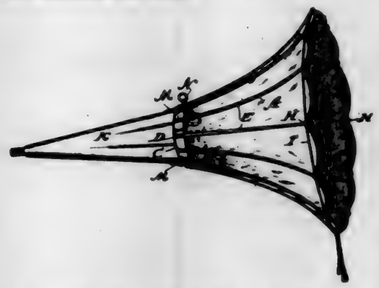

4. A folding horn, comprising a plurality of springs, normally having an outwardly-expanding tendency relative to each other, loops near the ends of said springs and contiguous to the horn-mouth, and a cord or flexible member within said loops.

5. A folding horn, comprising a sleeve, a plurality of springs secured to said sleeve, and normally having an outwardly-expanding tendency with relation to each other, a conical portion in detachable relation to said sleeve, and a locking-spring to prevent the accidental disengagement of said conical portion.

6. A folding horn, comprising a plurality of springs and contiguous to the horn-mouth, loops near the ends of said springs, eyelets in said loops, a cord passing through the eyelets, and a body of flexible fabric attached to said springs.

7. A folding horn, comprising a sleeve, a plurality of springs normally having an outwardly-expanding tendency relative to each other, loops on said springs, a cord, a body of fabric, and an elastic portion adapted to lie between said body of fabric and said sleeve.

8. A folding horn, comprising a sleeve, a plurality of springs secured to said sleeve and normally having an outwardly-expanding tendency relative to each other, and a conical portion adapted to lie within said sleeve in a reverse position.

9. A folding horn, comprising a plurality of springs and normally having an outwardly-expanding tendency relative to each other, a body of flexible fabric connected to said springs and a conical portion adapted to lie within said body when the horn is in a folded condition.

10. A folding horn comprising a horn-body of flexible material, and means for normally expanding and holding expanded said body to the limit of its expanding capacity and means for contracting said body.

850,376. PROCESS OF PRODUCING LIGHT METALS BY ELECTROLYSIS. FRANZ VON KÜGELGEN and GEORGE O. SEWARD, Holcombs Rock, Va. Filed May 4, 1905. Serial No. 258,821.

Claim.—1. The process of producing light metals from their salts, which consists in electrolyzing the fuse salt in the presence of a soluble anode of heavy metal beneath, and a cathode above, thereby forming a salt of the heavy metal overlying the anode, and remote from the cathode, and preventing circulation of said heavy-metal salt upward through the electrolyte, whereby to avoid contact of such salt with the cathode.

2. The process of producing light metals from their salts, which consists in electrolyzing the fused salts in the presence of a soluble anode of heavy metal beneath, and a cathode above, thereby forming a salt of the heavy metal overlying the anode, and dividing the electrolyte by a diaphragm between such salt and the cathode whereby to prevent circulation and confine such salt to the lower part of the cell to prevent its reaching the cathode.

3. The process of producing light metals from their salts, which consists in electrolyzing the fused salt in the presence of a soluble anode of heavy metal beneath and a cathode above, whereby is formed a salt of the heavy metal, and periodically permitting the precipitation of the heavy-metal salt which has become mixed with the electrolyte.

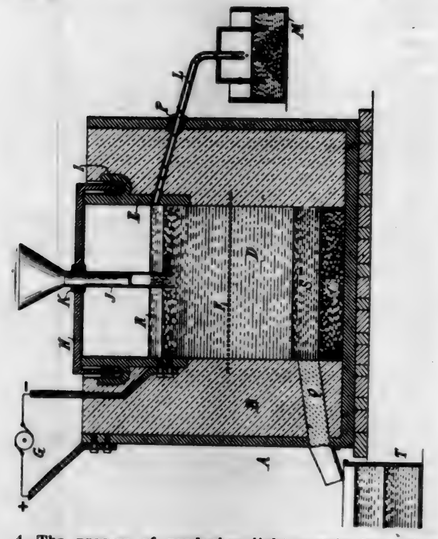

4. The process of producing light metals from their salts, which consists in electrolyzing the fused salt in the presence of a soluble anode of heavy metal beneath and a cathode above, whereby is formed a salt of the heavy metal, and discontinuing the electrolysis at intervals to permit the precipitation of the heavy-metal salt which has become mixed with the electrolyte.

5. The process of producing light metals from their salts, which consists in electrolyzing the fused salt in the presence of a soluble anode of heavy metal beneath, and a cathode above, thereby forming a salt of the heavy metal, and drawing off the latter salt periodically to keep its level remote from the cathode.

6. The process of producing light metals from their chlorids, which consists in electrolyzing the fused chlorid in presence of a soluble anode of heavy metal beneath, and a cathode above, with a horizontal metal diaphragm dividing the electrolyte, and periodically drawing off the salt of the heavy anode metal beneath said diaphragm, and adding fresh electrolyte above the diaphragm.

850,377. DRAFT ATTACHMENT FOR WHIFFLETREES. HARTWELL LAMBERT, Fitzgerald, Ga. Filed Apr. 17, 1906. Serial No. 312,157.

Claim.—1. A device of the character described comprising a casing for attachment to a draft-pole, a plate for attachment to a whiffletree and having a groove or seat and a concentric pivot, a bolt or rod slidable in said casing and having a cross piece or head adapted to engage the seat in said plate, a cushion upon said bolt, and a guide and bearing for said pivot, substantially as described.

2. A device of the character described comprising a casing adapted for attachment to a draft-pole and having openings in its sides and forward end and a longitudinal slot in its top, a slotted base-plate for said casing, a pivot-plate for attachment to a whiffletree and having a vertically-disposed groove or seat and a depending pivot arranged concentric with said groove or seat, said pivot being adapted to turn and slide in the slot in said base-plate, a T-bolt having its forward end projecting through the opening in the end of said casing and the cross piece or head upon its rear end seated in the groove or seat in said pivot-plate and sliding in the longitudinal slot in the top of the casing, and a coiled spring surrounding said bolt and confined between its head and the inner face of the front end of said casing, substantially as shown and described.

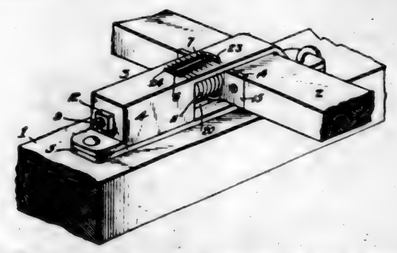

3. The combination with a draft-tongue and a whiffletree, of a casing upon said tongue having a guide therein, a guide upon said tongue in alinement with the guide in said casing, a pivot-plate upon said whiffletree having a groove or seat and a pivot-stud arranged concentric therewith and engaged with the guide upon said tongue, a bolt or rod slidable in said casing and having a head seated in said groove or seat and slidable in the guide in said casing, and a cushion in said casing engaged with the head of said rod, substantially as described.

4. The combination with a draft-tongue and a whiffletree, of a casing attached to said tongue and having openings in its sides and front end, and a longitudinal slot in its top, a base-plate secured upon said tongue beneath said casing and formed with a longitudinal slot to aline with the slot in the top of the casing, an angle-plate secured upon the front and bottom faces of the whiffletree and formed with a vertically-extending groove or seat, and a concentrically-arranged depending pivot adapted to turn and slide in the slot in said plate, a T-bolt having its threaded end projecting through the opening in the front end of the casing, a nut upon said end, the cross piece or head of said bolt being adapted to engage the seat or groove in said angle-plate and to slide in the slot in the top of the casing, and a coiled spring upon said bolt between its head and the inner face of the front end of the casing, substantially as shown and described.

5. The combination with a draft-tongue and a whiffletree, of a casing upon said tongue having a guide therein, a guide upon said tongue in alinement with the guide in said casing, a pivot-plate upon said whiffletree having a groove or seat and a pivot-stud arranged concentric therewith and engaged with the guide upon said tongue, a bolt or rod slidable in said casing and having a head seated in said groove or seat and slidable in the guide in said casing, a cushion in said casing engaged with the head of said rod, and a pointer carried by said rod to coact with a scale upon said casing, substantially as described.

850,378. SMUT-MACHINE. OLE L. LARSON, Minneapolis, Minn. Filed Jan. 29, 1906. Serial No. 298,426.

Claim.—1. In a machine of the kind described, the combination with a tank and an inclined deck leading upward therefrom, of an endless conveyer having transversely-extended slats arranged to pass upward over said deck to elevate the grain from said tank, and means for holding said slats slightly above said deck when they are moved upward thereover, whereby the grain will be elevated by said slats and the water carried by the grain from the tank will be permitted to freely run backward and downward over the said inclined deck, substantially as described.

2. In a machine of the kind described, the combination with a tank, of means for delivering grain into said tank and for elevating the washed grain out thereof, a rotary skimming device having one or more blades for lifting the screenings or floating particles out of said tank, and a

scraper normally lying in the path of movement of said skimmer-blade, and engageable therewith, to clean the same, substantially as described.

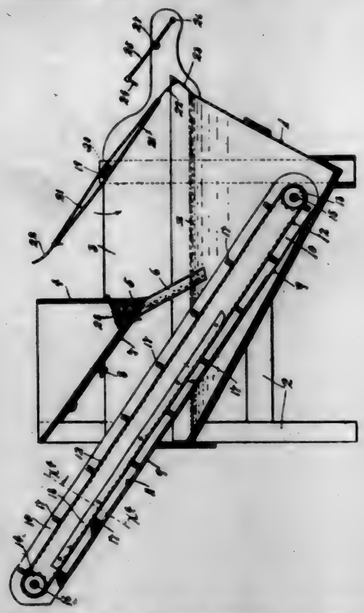

3. In a machine of the kind described, the combination with a tank, of means for delivering grain into said tank and for elevating the washed grain out thereof, a rotary skimming device having one or more blades for lifting the screenings or floating particles out of said tank, and a pivotally-movable scraper normally lying in the path of movement of said skimmer-blade and engageable therewith, to clean the same, substantially as described.

4. In a machine of the kind described, the combination with a tank adapted to contain a liquid, of a grain-supply hopper arranged to deliver into said tank, a rotary skimming-reel having blades arranged to pass downward into the liquid in the vicinity of the point where the grain is discharged from said hopper into said tank, and to pass upward and out of the liquid in said tank at one extremity of the tank, to thereby discharge floating particles from the tank, and a scraper arranged to engage with the blades of said reel as they are moved upward from said tank, substantially as described.

850,379. JULEP-STRAINER. THOMAS B. LASHAR, Bridgeport, Conn., assignor to International Silver Company, Bridgeport, Conn., a Corporation of New Jersey. Filed Nov. 7, 1906. Serial No. 342,379.

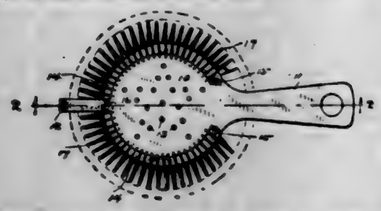

Claim.—1. A strainer consisting solely of two parts, said parts comprising a plate having semicircular arms formed from the metal thereof, and with an opening between their free ends, and a coil of wire detachably secured to the plate by means of the arms.

2. The plate 10 having a handle and semicircular arms integral therewith the arms being offset laterally from the plate and their free ends being separated by an opening.

3. The plate 10 having a handle and having also semicircular arms integral therewith and offset laterally therefrom, the free ends of said arms being separated by an opening, and a curved lip adapted to engage the edge of a glass.

4. A strainer of the character described, comprising a plate having a handle projecting from one edge, and having two semicircular arms of substantially equal length said arms being integral with the plate and separated by an opening at their free ends opposite the handle, and a curved lip integral with the plate projecting beyond the space or opening between the free ends of the arms.

850,380. MECHANISM FOR UTILIZING SUPERHEATED STEAM. CHARLES DE LOEWENSTEIN, Chateau Durouze, near Arles, France. Filed Dec. 14, 1903. Serial No. 185,040.

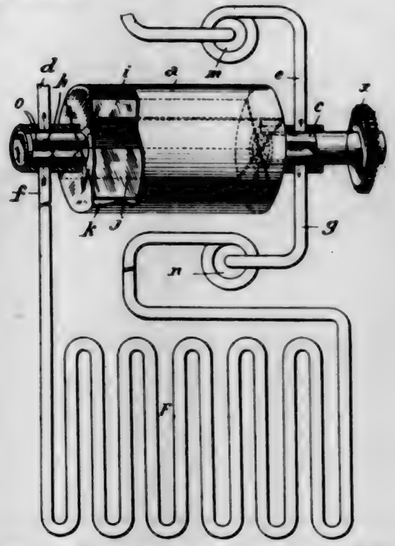

Claim.—1. The combination of a superheater and its inlet and outlet ducts with the inlet and outlet ducts of a boiler and means adapted to successively and automatically open and close these ducts, thereby cutting off communication between the boiler and superheater at regular intervals and directing a part of the superheated steam back to the boiler also at regular intervals substantially as set forth.

2. The combination of a superheater and its inlet and outlet ducts with the inlet and outlet ducts of a boiler and a rotary device arranged between these two pairs of ducts and adapted to open and cut off communication between them in regular series substantially as and for the purpose set forth.

3. The combination of a superheater and its inlet and outlet ducts with the inlet and outlet ducts of a boiler, a rotary device arranged between these two pairs of ducts and adapted to open and cut off communication between them in regular series and fans arranged in the duct leading from the boiler to said device and from said device to the superheater substantially as and for the purpose set forth.

4. The combination of a superheater and its inlet and outlet ducts with the inlet and outlet ducts of a boiler and a hollow rotary drum arranged between these two pairs of ducts, the said drum being longitudinally divided into compartments and provided with journals having inlet and outlet passages making communication between said ducts and said compartments as explained, the said drum, ducts and passages being arranged to permit at intervals the return of superheated steam to the boiler and the supply of steam from the boiler to the superheater but to cut off at intervals communication between the boiler and the superheater all substantially as and for the purpose set forth.

5. The combination of a superheater and its inlet and outlet ducts with the inlet and outlet ducts of a boiler, the inlet-duct of a motor, fans arranged to increase the circulation through said ducts and a hollow rotary drum, longitudinally divided into compartments and provided with journals which have inlet and outlet passages communicating with said ducts, the said drum, passages and ducts being constructed and arranged to permit the return at intervals of a part of the superheated steam to the boiler while another part thereof goes to the motor and also at intervals to insure cutting off the superheater from the boiler substantially as and for the purpose set forth.

850,381. SUPPORT FOR DRYING-MEDICINE-BOTTLES. CARL LOHMANN, Gelsenkirchen, Germany. Filed Jan. 15, 1906. Serial No. 296,102.

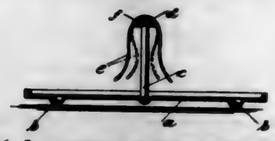

Claim.—1. In a support for drying bottles, the combination of elastic metal tongues, said tongues being bent over and downward, forming a springy head adapted to receive the neck of a bottle, a base-plate, and means to attach said elastic tongues to said base-plate, substantially as and for the purpose set forth.

2. A support for drying bottles comprising elastic metal tongues and a base-plate stamped out of one sheet of metal, said tongues being bent to a suitable form for receiving the neck of a bottle in an inverted position, and a base-board to which said base-plate is fastened, substantially as and for the purpose set forth.

850,382. PROCESS FOR SURFACING PAVEMENTS. GEORGE H. LUTZ, Kansas City, Mo., assignor to Equitable Asphalt Maintenance Company, a Corporation of Missouri. Filed Nov. 26, 1906. Serial No. 345,061.

Claim.—1. The process of surfacing pavements consisting of heating a base, of applying a wash of a bituminous nature thereto, and in applying a coat of thick asphalt, or like material to said base when so treated.

2. The process of surfacing pavements consisting of heating a base of stone or like blocks, and applying a coat of heated asphalt thereto.

3. The process of surfacing pavements, consisting of heating a solid base, applying a coat of adhesive substance thereto, and surfacing with a coat of heated asphalt or like material, for the purpose set forth.

4. A pavement comprising a base of granite or like blocks, a coat of adhesive substance covering said blocks, and a surface of asphalt or like material.

850,383. PROPELLER. CHARLES J. MACRAE, St. Louis, Mo. Filed Oct. 26, 1906. Serial No. 340,733.

Claim.—1. A device of the class described comprising a propeller consisting of a frame, endless carriers, swinging buckets, endless carriers provided with clutches and endless carriers provided with prongs whereby said buckets are guided, supported and retained in perpendicular position during their operation, substantially as specified.

2. A propeller of the class described comprising a frame, sprocket-wheels supported by the frame, endless carriers supported by the sprocket-wheels, buckets swingingly connected to and carried by the endless carriers, trunnions formed on the buckets, endless chains supported by the frame, clutches carried by endless chains, prongs carried by separate chains, said prongs to engage the lower edge of the buckets while traveling out of the water, and the clutches to engage with the trunnions supporting the buckets while traveling through the water, and means for placing the propeller in operation, substantially as specified.

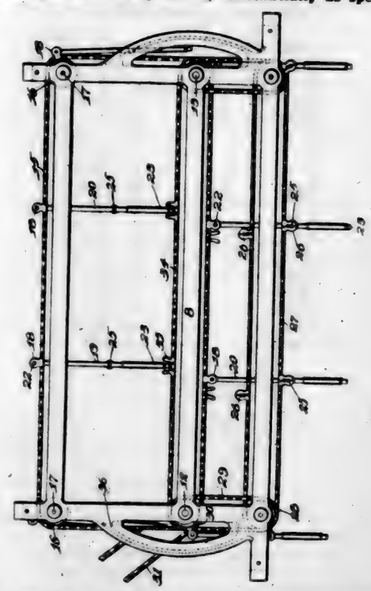

3. A propeller of the class described comprising a frame having guideways, endless carriers supported by the frame, a plurality of buckets carried by the endless carriers and located at equal intervals apart, an endless chain provided with prongs supported by the frame, the said chain operated so that the prongs may engage with the lower end of the buckets and prevent the same from swinging while traveling out of the water, an endless chain provided with clutches secured to the under side of the frame and operated to permit said clutches to engage with trunnions formed on the buckets and support said buckets in rigid position while operating in the water, said buckets while descending and ascending in the frame operate in the guideways formed in the frame, substantially as specified.

850,384. DIGESTER FOR WOOD FIBER. GUY H. MALLAM, Kansas City, Mo. Filed Nov. 1, 1900. Serial No. 341,520.

Claim.—1. A digester for wood fiber consisting of a chamber having the space for the fiber free from transverse obstruction; a grating for supporting the fiber at a little distance above the bottom of the digester, the chamber having a lateral opening adapted for discharge of the fiber immediately above the level of the grating, and a multiplicity of steam-jets converging toward said discharge-opening.

2. A digester for wood fiber comprising an upright cylinder provided with steam-supply connections and having a fiber-supporting grating near the bottom, the fiber-space above the grating being free from transverse obstruction, such cylinder having a lateral discharge-opening immediately above the grating, and a spiral conveyer operating immediately above the grating for feeding the fiber transversely toward the discharge-opening.

3. A wood-fiber digester comprising an upright cylinder having a lateral discharge-opening near the bottom; a grating to support the fiber below the discharge-opening; mechanical means for feeding the fiber transversely toward the discharge-opening; and connections into the cylinder for maintaining a supply of water under pressure to said cylinder.

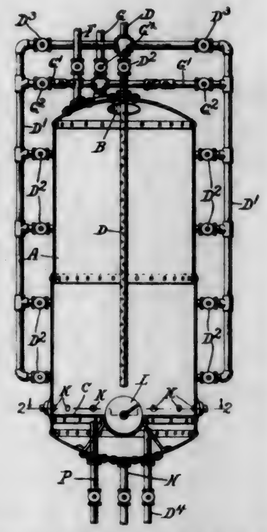

4. A wood-fiber digester consisting of an upright cylinder having a lateral discharge-opening at the bottom; a grating for supporting the fiber extending below the discharge-opening; a multiplicity of steam-jets discharging transversely into the cylinder and converging toward the discharge-opening, and a valved water-supply connection into the cylinder for maintaining a supply of water under pressure thereto during discharge.

5. A wood-fiber digester comprising an upright cylinder having a lateral discharge-opening near the lower end; a grating for supporting the fiber below such opening; a spiral conveyer extending transversely above the grate for feeding toward the lateral discharge-opening; a multiplicity of steam-jets projecting transversely into the cylinder immediately above the grating and converging toward the discharge-opening, and a valved water-supply connection into the cylinder for maintaining a supply of water under pressure thereto during discharge.

6. A wood-fiber digester consisting of an upright cylinder having near the bottom a grating or transverse reticulated diaphragm for supporting the fiber; a lateral fiber-discharge opening immediately above such diaphragm; a steam-pipe extending longitudinally within the cylinder and perforated within the same for discharge of steam at a multiplicity of points throughout the length thereof; a drainage connection for the liquids leading from the lower end of the cylinder below the diaphragm, and vapor-pipe connections leading to the upper end of the cylinder.

7. A digester for wood fiber consisting of an upright cylinder having a lateral fiber-discharge opening at the bottom; a grating to support the fiber; steam-pipe connections for admitting steam to the space above the grating for digesting the fiber; a steam connection into the space below the grating for vaporizing the liquid derived from the soluble elements of the wood, and a vapor-discharge-pipe connection at the upper part.

8. A digester for wood fiber consisting of a chamber having space for the fiber and a grating for supporting the latter at a little distance above the bottom of the digester, the chamber having a lateral discharge-opening above the grating, said grating being inclined upward from the lower side of the discharge-opening, in combination with a multiplicity of fluid-discharge jets projecting into the cylinder above the grating and converging toward the discharge-opening.

9. A digester for wood fiber consisting of a chamber having space for the fiber and a grate for supporting the latter a little distance above the bottom of the digester, such chamber having a lateral discharge-opening above the grating, such grating being inclined upward from the lower side of the discharge-opening, in combination with a conveyer operating along the incline above the grating toward the discharge-opening.

850,385. SELF-HEATING SOLDERING-IRON. ROY W. MARVELL and HILL M. ASHMAN, Baltimore, Md., assignors, by mesne assignments, to E. A. Scott, Philadelphia, Pa. Filed Feb. 16, 1906. Serial No. 301,348.

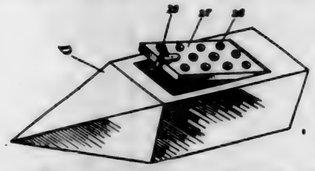

Claim.—1. The combination of a self-heating soldering-iron comprising a hollow metal handle, a hollow connecting-rod casting, a hollow pointed iron provided with a perforated door secured thereto and a latch on the door for securing it shut, substantially as described.

2. The combination of a self-heating soldering-iron comprising a hollow metal handle, a combination filling means and valve in the handle, a hollow connecting-rod casting provided with a needle-valve therein, a hollow pointed iron, a perforated cylinder on one end of the rod and adapted to be extended within the iron, a perforated door hinged to the said iron and provided with a latch for securing the door shut substantially as described.

850,386. SELF-HEATING SOLDERING-IRON. ROY W. MARVELL, Philadelphia, Pa., assignor to Bennett-Marvell Manufacturing Company, a Corporation of Delaware. Filed July 11, 1906. Serial No. 325,559.

Claim.—1. In a self-heating soldering-iron, the combination of a hollow handle constituting a fuel-reservoir, a hollow fitting secured at its rear end portion to the forward end of said handle and twice right-angled to carry its forward end portion parallel to and offset from said handle, a second hollow twice-right-angled fitting offset in the opposite direction, a pipe-section connecting the opposed ends of said fittings, a needle-valve extending longitudinally forward into the forward end portion of the second fitting, and a burner-head connected with the forward end portion of the second fitting and carrying a soldering-point, said fittings and pipe-section constituting the fuel-duct and being the sole support for said head and soldering-point.

2. In a self-heating soldering-iron, the combination of a hollow handle constituting a fuel-reservoir, a fitting secured at its rear end portion to the forward end of said handle and comprising a casting cored out to provide passage for the fuel and twice right-angled to carry its forward end portion parallel to and offset from said handle, a second twice-right-angled cored-out casting having its rear end portion and its forward end portion in alinement with the forward end portion and the rear end portion respectively of said other casting, a short straight pipe-section screwed into the opposed ends of said castings and containing a wick, a needle-valve disposed in substantial alinement with the handle and extending longitudinally forward into the forward end portion of the second casting, and a burner-head and soldering-point connected with the forward end portion of the second casting, said castings and pipe-section constituting the sole support for said head and soldering-point.

3. In a self-heating soldering-iron, the combination of a fuel-reservoir, a fuel-duct leading therefrom, a burner-head having a tubular portion connected to said duct and having also an enlarged combustion-chamber at the outer end

of said tubular portion, a soldering-point, and connecting devices extending from such point longitudinally of the combustion-chamber and having enlarged heads bearing against the outside of the rear wall thereof.

850,387. PNEUMATIC SPRING. ALONZO C. MATHER, Chicago, Ill. Filed Aug. 22, 1906. Serial No. 331,572.

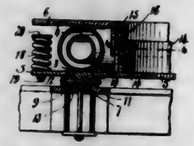

Claim.—1. The combination of a pneumatic spring, an angle-plate resting upon said pneumatic spring, a disk supporting said pneumatic spring, a cylindrical flange on said disk engaging a depending flange on said angle-plate, and means for interposing said parts between the body and truck of a car, substantially as described.

2. The combination of a pneumatic spring, an angle-plate resting upon said pneumatic spring, a disk supporting said pneumatic spring, a cylindrical flange on said disk, a depending flange fitting around said cylindrical flange, rollers mounted between said cylindrical flange and said depending disk and means for interposing said parts between the body and truck of a car, substantially as described.

3. The combination of a pneumatic spring, an angle-plate above said spring carrying the body of a car, a disk below the said pneumatic spring secured to the truck, and coil-springs to separate said angle-plate and said disk, substantially as described.

4. The combination of a pneumatic spring, an angle-plate above said pneumatic spring adapted to be secured to the body of a car, a depending flange on said angle-plate, a disk below said pneumatic spring, means for securing said disk to the truck of a car, a cylindrical rib on said disk around which fits the said depending flange, rollers located between said depending flange and said cylindrical rib, coil-springs, and bolts to secure the same to said disk, substantially as described.

850,388. CHECK OR OTHER FINANCIAL-INSTRUMENT BLANK. JAMES S. METCALFE, New York, N. Y. Filed Dec. 14, 1905. Serial No. 291,703.

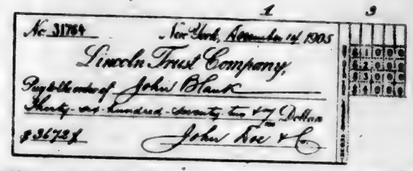

Claim.—1. A check or other financial instrument comprising a body portion and an extension, the extension having thereon a group of characters comprising a column of numerals followed by several columns of ciphers, the individual ciphers of the columns being arranged horizontally in lines with the respective numerals.

2. An instrument of the class described having at its end and forming part thereof a rectangular group consisting of the nine digits arranged in numerical order in a vertical column, each digit followed by an indefinite number of ciphers in a horizontal line, said ciphers terminating near an edge of the instrument whereby any or all of the digits and ciphers are adapted to be conveniently removed from the rest of the instrument in vertical columns or horizontal rows, or parts of columns or rows, the last of the remaining rows expressing the sum mentioned in the instrument, or approximating that sum.

850,389. DEVICE FOR DRIVING AND FORMING PILES. WILLIAM T. MCCLINTOCK, Springfield, W. Va. Filed Nov. 9, 1905. Serial No. 286,619.

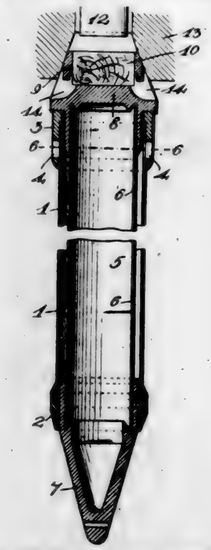

Claim.—1. A pile-forming device comprising a hollow pile adapted to be driven into the ground to receive a plastic pile-forming material, a tool to enable said pile to be driven, a tamping-block removably connected to said tool, and means to facilitate the withdrawing of said tool and pile-forming device, substantially as described.

2. A pile-forming device comprising a hollow pile having on its lower end a beveled reinforcing band or collar, an annular driving ring or collar arranged on its upper end, a driving-tool adapted to be inserted into said hollow pile, said tool having on its lower end a driving-point, a driving

head or anvil arranged on its upper end, and means adapted to be removably connected to the driving-point to force concrete or other plastic material into said hollow pile, substantially as described.

3. A concrete-pile-forming device consisting of a hollow pile having formed on its lower end a beveled driving ring or collar, an annular driving ring or band arranged on its upper end, said driving-ring having formed therein slots to receive an extracting device, a driving-tool adapted to be inserted into said hollow pile, said tool having on its lower end a conically-shaped driving-point, a driving head or anvil arranged on the upper end of said tool, said head having formed in its sides recesses to receive the ends of extracting devices and in its top a socket, a wooden block arranged in said socket and a tamping-block adapted to be removably attached to the lower end of said driving-point, substantially as and for the purposes described.

4. The combination, with an outer form or casing, of a pile-core having an enlarged and non-detachable point and adapted to be driven under pressure, and a cap for adjustment to the point of said core, substantially as described.

850,300. CORN-GATHERING MACHINE. ELMER P. MCCLURE, Western Springs, and JAMES B. LOEWENSTEIN, Chicago, Ill. Filed Mar. 10, 1906. Serial No. 305,255.

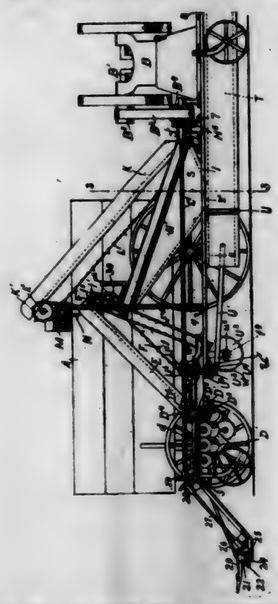

Claim.—1. In a corn-gatherer, in combination with a frame having supporting-wheels and means for attaching it to draft appliances, stalk-cutting mechanism, ear-detaching mechanism and husking mechanism mounted on the frame successively one behind another; a motor mounted on the frame in the rear of all said other mechanisms, and a fore-and-aft power-shaft extending forward from the motor and operatively connected with said other mechanisms for driving them.

2. In a corn-gatherer, in combination with a frame having wheels on which it may be mounted for travel and means by which it may be attached to a wagon for drawing it over the ground, stalk-severing mechanism, ear-detaching mechanism and husking mechanism mounted on the frame one behind another, the frame having a portion offset stubblewardly from said detaching, severing and husking mechanisms, and a power-generator mounted on said offset portion.

3. In a corn-gatherer, in combination with a frame having wheels on which it is mounted for travel and means for attaching it to draft appliances, stalk-severing mechanism, ear-picking mechanism, husking mechanism and husk-baling mechanism, all said mechanisms being mounted on the frame in the fore-and-aft path of the stalk-gathering devices, and a motor for driving all said mechanisms also mounted on the frame.

4. In a corn-gatherer, in combination with a frame having wheels on which it is mounted for travel and means by which it may be attached to a wagon for drawing it over the ground, stalk-severing mechanism, ear-detaching mechanism and husking mechanism mounted on the frame one behind another, the frame having a portion offset stubblewardly from the fore-and-aft line of said severing, detaching and husking mechanisms; a power-generator mounted on said offset portion, the means for attaching the wagon to the frame for drawing it being adapted for locating the wagon in the angle between said fore-and-aft portion and said offset portion of the frame directly forward of the motor-supporting portion thereof.

5. A corn-gathering machine comprising a frame provided with wheels for supporting it in travel, having a fore-and-aft extending portion and a stubblewardly-offset portion; stalk-severing, ear-detaching and husking mechanisms mounted one behind another on said fore-and-aft portion; a wagon located at the stubbleward side of said fore-and-aft portion and forward of the offset portion and means connected with both said portions for drawing the machine; a motor mounted on said offset portion of the frame operatively connected with the husking, picking and stalk-severing mechanisms, and means for delivering the ears from the husking mechanism to the wagon.

6. A corn-gathering machine comprising a frame having a fore-and-aft extending portion and a stubblewardly-offset portion at the rear end thereof; means for attaching a wagon to said frame in the angle forward of said offset portion and stubbleward of the fore-and-aft extending portion; stalk-severing, ear-detaching, husking and ear-delivering mechanisms, and a motor for driving them mounted on said frame, and caster-wheels on which said frame is carried during travel.

7. A corn-gathering machine comprising a rigid frame consisting of a fore-and-aft portion and a stubblewardly-offset portion at the rear thereof; means for attaching a wagon thereto for drawing it in the angle between said stubblewardly-offset portion and said fore-and-aft extending portion; a motor mounted on the stubblewardly-offset portion; ear-detaching and husking mechanisms mounted on the fore-and-aft extending portion; means for delivering the ears stubblewardly from the husking mechanism and connections from the motor for driving all said mechanisms.

850,301. ORE-CONCENTRATING TABLE. HOWARD D. MCLEOD, Great Falls, Mont. Filed Feb. 8, 1905. Serial No. 244,723.

Claim.—1. An ore-concentrating device comprising a vibratory table, a stationary rigid frame beneath said vibratory table, a plurality of inflexible bodily-adjustable supports positively secured both to said table and to said frame for resisting both tensile and compressive strains, and means for simultaneously and equally adjusting said supports bodily, whereby the distance between said table and said frame may be altered.

2. An ore-concentrating device comprising a vibratory table, a plurality of separately, longitudinally bodily adjustable inflexible supports at one side of said table, a stationary rigid frame beneath said table, and operative connections between the upper ends of said supports and said table and between the lower ends of said supports and said frame for maintaining said supports either in tension or in compression.

3. An ore-concentrating device comprising a vibratory table, a stationary rigid frame beneath said table, a plurality of series of separately, longitudinally bodily adjustable inflexible supports between said table and said frame for resisting both tensile and compressive strains, and means for vertically and bodily adjusting one side of said table through one series of said supports independently of the other series, said adjusting means being operative while the table is in vibration.

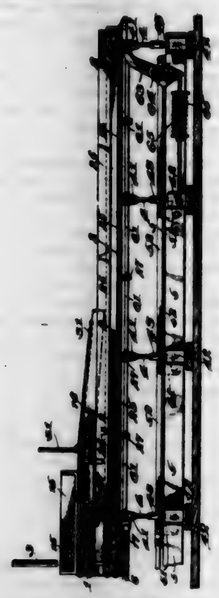

4. An ore-concentrating device comprising a table, a stationary rigid frame beneath said table, a series of adjustable inflexible supports at each side of said frame and extending to said table, said supports being pivotally attached both to said frame and to said table for resisting both tensile and compressive strains, and means for simultaneously and equally adjusting the length of all of the supports in one of said series.

5. An ore-concentrating device comprising a table, a stationary rigid frame beneath said table, a series of inflexible supports at each side of said frame and extending to said table, said supports being pivotally attached both to said frame and to said table for resisting both tensile and compressive strains, means for simultaneously and bodily adjusting the length of the supports in one of said series, and independent means for separately adjusting the length of each of the supports in said series.

6. An ore-concentrating device comprising a table, a stationary rigid frame beneath said table, a series of inflexible supports at each side of said frame and extending to said table, said supports being pivotally attached both to said frame and to said table for resisting both tensile and compressive strains, each of the supports of one of said series being composed of two inflexible threaded portions united by a turnbuckle.

7. An ore-concentrating device comprising a table, a stationary rigid frame beneath said table, a series of inflexible supports at each side of said frame and extending to said table, said supports being pivotally attached both to said frame and to said table for resisting both tensile and compressive strains and also for resisting lateral movement of said table, and pivoted braces between said table and said frame for additionally resisting lateral movement of the table.

8. An ore-concentrating device comprising a table, a stationary rigid frame beneath said table, a series of inflexible supports at each side of said frame and extending to said table, said supports being pivotally attached both to said frame and to said table for resisting both tensile and compressive strains, and transverse braces pivoted to said frame and secured to said supports adjacent to their upper ends for additionally resisting lateral movement of the table.

9. An ore-concentrating device comprising a vibratory table, a stationary rigid frame beneath said table, a series of inflexible supports at each side of said table and extending to said frame for resisting both tensile and compressive strains, said supports being so transversely pivoted to one of said parts as to permit longitudinal vibration, and so pivoted to the other of said parts as to permit longitudinal vibration and lateral adjustment of the table, the series of supports at one side of said table being longitudinally adjustable, for the purpose specified.

10. An ore-concentrating device comprising a vibratory table, a stationary rigid frame beneath said table, a series of inflexible supports at each side of said table and extending to said frame for resisting both tensile and compressive strains, said supports being so transversely pivoted to said frame as to permit longitudinal vibration, and so pivoted to said table as to permit longitudinal vibration and lateral adjustment of the table, the series of supports at one side of said table being longitudinally adjustable, for the purposes specified.

11. An ore-concentrating device comprising a vibratory table, a stationary rigid frame beneath said table, a series of inflexible supports at each side of said table, and extending to said frame, said supports being so transversely pivoted to one of said parts as to permit longitudinal vibration and so pivoted to the other of said parts as to permit longitudinal vibration and lateral adjustment of the table, said supports being positively attached both to said frame and said table to resist both tensile and compressive strains, for the purposes specified.

12. An ore-concentrating device comprising a vibratory table, a stationary rigid frame beneath said table, a series of inflexible supports at each side of said table and extending to said frame, said supports being so transversely pivoted to said frame as to permit longitudinal vibration and so pivoted to said table as to permit longitudinal vibration and lateral adjustment of the table, said supports being positively attached both to said frame and said table to resist both tensile and compressive strains, the series of supports at one side of said table being longitudinally adjustable, for the purposes specified.

13. An ore-concentrating device comprising a vibratory table, a stationary rigid frame beneath said table and a series of inflexible supports at each side of said table for resisting both tensile and compressive strains and comprising legs so transversely pivoted to one of said parts as to permit longitudinal vibration, and lugs transversely pivoted to said legs and longitudinally pivoted to the other of said parts, the series of supports at one side of said table being longitudinally adjustable, whereby the lateral inclination of the table may be adjusted, for the purposes specified.

14. An ore-concentrating device comprising a vibratory table, a stationary rigid frame beneath said table, a series of inflexible supports at each side of said table and extending to said frame for resisting both tensile and compressive strains, said supports being so transversely pivoted to one of said parts as to permit longitudinal vibration, and so pivoted to the other of said parts as to permit longitudinal vibration and lateral adjustment of the table, and means for simultaneously and equally adjusting the length of the supports in one of said series, for the purposes set forth.

15. An ore-concentrating device comprising a vibratory table, a stationary rigid frame beneath said table, a series of inflexible supports at each side of said table and extending to said frame for resisting both tensile and compressive strains, said supports being so transversely pivoted to one of said parts as to permit longitudinal vibration and so pivoted to the other of said parts as to permit longitudinal vibration and lateral adjustment of the table, means for simultaneously and equally adjusting the length of the supports in one of said series, and means for separately adjusting the length of each of the supports in said series, for the purposes set forth.

16. An ore-concentrating device comprising a vibratory

table, a stationary rigid frame beneath said table, a series of inflexible supports at each side of said table for resisting both tensile and compressive strains and comprising legs so transversely pivoted to one of said parts as to permit longitudinal vibration and lugs transversely pivoted to said legs and longitudinally pivoted to the other of said parts, each of the legs in one of said series being composed of two threaded portions united by a turnbuckle, for the purposes set forth.

850,392. PROCESS OF OXIDIZING ATMOSPHERIC NITROGEN. ALBERT NEUBURGER, Berlin, Germany. Filed Dec. 24, 1904. Serial No. 238,263.

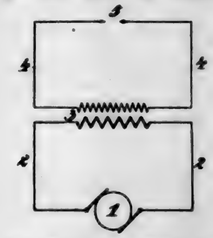

Claim.—1. The process of oxidizing nitrogen, which consists in subjecting a mixture of nitrogen and oxygen to the action of an electric arc employing a maximum energy of one hundred and twenty watts.

2. The process of oxidizing atmospheric nitrogen, which consists in subjecting air to the action of an electric arc employing a maximum energy of one hundred and twenty watts.

850,393. VIOLIN. IRVIN A. NORTHROP, Medina, Ohio. Filed Mar. 23, 1906. Serial No. 307,974.

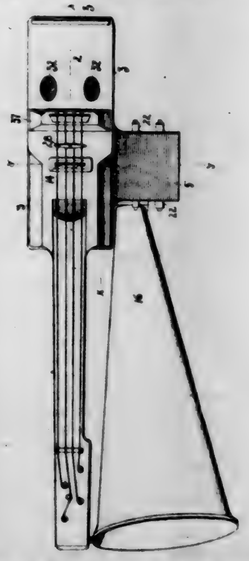

Claim.—1. In a violin or other string instrument, the combination of a body and strings and a bridge for the strings, a transmitting member projecting laterally from beneath the bridge, and a set of elliptical diaphragms connected with said member.

2. In a violin or other string instrument, the combination of a body and strings, a bridge and a transmitting member extending therefrom, a plurality of diaphragms connected with said transmitting member, separate sound-receiving chambers for said diaphragms, a horn and passages leading from said chambers to said horn.

3. In a violin or other string instrument, the body and strings and a bridge for the strings, a transmitting member for said bridge, and a set of diaphragms of different sizes connected with said member adapted to equalize the tones produced.

4. In a sound-producing instrument, means to produce sound, and means to convey sound from the instrument comprising a set of diaphragms of different tone-producing qualities and a transmitting member connected with said diaphragms.

5. A violin or other string instrument, having a body with a sounding-chamber and a laterally and downwardly extending chamber connected therewith provided with a division-wall between its upper and lower portions and an opening in said wall, a diaphragm over said opening, and a transmitter to communicate sound to said diaphragm from the strings of the instrument.

6. A violin or other string instrument, and a laterally and downwardly extending chamber at the side thereof, a wall dividing said chamber into upper and lower spaces and having an opening therein, a diaphragm over said opening, and a transmitter to carry the sound from the strings to said diaphragm.

7. In a violin or other like instrument, a body having a laterally and downwardly extending chamber at its side subdivided into upper and lower spaces, a wall forming said subdivision having one or more openings between said spaces and a diaphragm over each opening, in combination with a sound-conveying member and connecting mechanism between said member and diaphragm, and means beneath said diaphragm to convey the sound to the outside air.

8. In a violin or other instrument, a body having a laterally and downwardly extending chamber tapered from said body outward and a division-wall separating the chamber into upper and lower spaces, said wall provided with one or more openings through the same, a diaphragm over each opening and a channel open beneath each diaphragm curved outward through the lower space of said tapered chamber to convey the sound to the atmosphere.

9. In a violin or other string instrument, a body having a laterally and downwardly extending sounding-chamber with a division-wall substantially midway between its upper and lower portions, said wall having openings, diaphragms over said openings and sound-conveying channels connecting the said openings at their bottom and arranged to discharge to the outside atmosphere, a sound-conveying device and a bridge mechanically connected therewith, and means connecting said device with said diaphragms to transmit the sound thereto.

10. In a violin or other string instrument, a body having a sounding-chamber and a laterally and downwardly tapered supplemental chamber, a division-wall in said latter chamber having openings down through the same and sound-conveying channels connecting with the bottom of said openings, a diaphragm over each opening, a connecting-bar uniting said diaphragms and a transmitting device to convey the vibrations of the instrument to said connecting-bar.

11. In a violin or other string instrument, a body and a laterally-extending and tapered sounding-chamber openly connected therewith, said chamber provided with a division-wall between its top and bottom having openings through the same, diaphragms over said openings, a connecting-bar uniting said diaphragms and a transmitting device adapted to convey the vibrations of the instrument to said connecting-bar tapered from the instrument down to said bar and having a flexible connection with the bar.

12. In a violin or other string instrument, a body having a sounding-chamber and a laterally and downwardly extended chamber open thereto and a wall in said second chamber having openings, diaphragms over said openings, a bar connecting said diaphragms, a tapered member engaged centrally with said bar and a string-bridge supported directly upon the top of said member.

13. In a violin or other string instrument, a body having a sounding-chamber and a laterally and downwardly extending chamber open thereto, a division-wall between the upper and lower portions of said lateral chamber having openings therethrough, sound-conveying channels from each opening to the outer air, a diaphragm over each opening and means bearing upon the edges of said diaphragms to increase or decrease the pressure thereupon according to the effect desired in the sound, and means connecting said diaphragms with the string-bridge of the instrument.

14. In a violin or other string instrument, a body having a laterally and downwardly extending chamber, a wall subdividing said chamber into upper and lower spaces, said wall having openings, diaphragms over said openings, a device laid upon the edges of said diaphragms and means to uniformly increase or decrease the pressure upon said device according to the effect desired.

15. In a violin or other string instrument, a body having a laterally and downwardly extending sounding-chamber, a wall dividing said chamber into upper and lower spaces and having openings down through the same, sound-conveying channels from said openings to the outer air, diaphragms over said openings, a series of rings engaged upon the edges of each of said diaphragms, cross-bars resting upon said rings and rotatable means bearing upon said cross-bars and constructed to increase or decrease the pressure thereupon as said rotatable means are turned.

16. In a violin or other string instrument, a body having a sounding-chamber extending laterally and downwardly therefrom, a division-wall dividing said chamber into lower and upper spaces and having an opening between said spaces, a diaphragm over said opening, means to convey sound from the instrument to said diaphragm, a channel extending from said opening in said wall to the outer air, and a horn to receive the sound from said channel.

17. In a violin or other string instrument, a body having a laterally and downwardly extending sounding-chamber connected therewith, a wall dividing said chamber into upper and lower spaces and having a plurality of openings through the same, converging sound-conveying channels extending from said opening at the bottom of said wall and a horn to receive the sound from said channels, in combination with diaphragms over said openings and means to communicate sound to said diaphragms from the instrument.

18. In a violin, a violin-body and strings therefor, a bridge for said strings and a transmitter member for said bridge having an opening centrally beneath the same, and a ridged cross-bar secured upon the said body and extending transversely through said opening to provide a single rest for said member and bridge.

19. In a violin, a body and strings thereon and a transmitter member for the strings, in combination with a set of diaphragms of different thickness connected with said transmitter member, and a horn open to both said diaphragms.

850,394. DOOR CHECK AND CLOSER. PAUL PAPENFOTH, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Mar. 22, 1905. Serial No. 251,364.

Claim.—1. In a door check and closer, the combination of a piston and cylinder, a spring, a connecting-rod, an operating-spindle, a cam carried thereby, a pair of pivoted levers for engagement by said cam, and connecting-links from said levers to said rod permitting the spindle to be turned in either direction.

2. In a door check and closer, the combination of a piston and a horizontally-movable cylinder, a connecting-rod, a spring therefor, an operating-spindle, and duplicate pivoted connecting mechanism from each side of said spindle to said rod permitting the spindle to be turned in either direction and intermediate connecting mechanism between said spindle and said pivoted mechanism.

3. In a door-closer, the combination of a rod, a spring for propelling the same in one direction, an operating-cam, a pair of oppositely-arranged pivoted levers engaging said cam, and a pivotal link connection between each of said levers and said rod.

4. In a door-closer, the combination of a longitudinally-movable rod, a spring therefor, said rod having a head with upper and lower arms, a pair of pivoted levers, links connecting said levers and said rod located and held in place between the arms of its head and an operating-spindle and cam for the purpose specified.

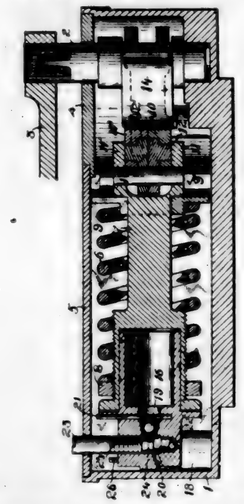

5. In a door-check, a stationary hollow piston having a contracted outlet, a movable rod having a cylindrical end portion adapted to inclose and move on said piston to form therewith a liquid-checking chamber, a ball-valve for said contracted outlet, said ball-valve being normally withdrawn from but adjacent to the narrower end of the contracted portion of said outlet, a rotatable post having a cam portion adjacent to said outlet for varying the permissive movement of said ball for the purpose specified.

6. In a door-check, a stationary hollow piston having a contracted outlet, a movable rod having a cylindrical end portion adapted to inclose and move on said piston to form therewith a liquid-checking chamber, the lower side of said contracted outlet being inclined downwardly from the contracted end of said outlet, a ball-valve supported on said incline and normally standing away from said outlet end, and an adjustable device for varying the permissive operative movement of said ball in said outlet.

7. In a door-check, a stationary hollow piston having a contracted outlet and an auxiliary inlet passage leading to said contracted outlet, a valve in said inlet-passage, a movable rod having a cylindrical end portion adapted to inclose and move on said piston to form therewith a liquid-checking chamber, the lower side of said contracted outlet being inclined downwardly from the contracted end of said outlet, a ball-valve supported on said incline and normally standing away from said outlet end and an adjustable device for varying the permissive operative movement of said ball in said outlet.

8. In a door-check, a stationary hollow piston having a contracted outlet, a movable rod having a cylindrical end adapted to inclose and move on said piston to form therewith a liquid-checking chamber, the lower side of said contracted outlet being inclined downwardly from the contracted end of said outlet, a ball-valve supported on said incline and normally standing away from said outlet end, an adjustable device for varying the permissive operative movement of said ball in said outlet, and a removable stop for holding the ball against accidental displacement.

9. In a door check and closer, a stationary hollow piston having a contracted outlet, a movable rod having a cylindrical end portion adapted to inclose and move

on said piston to form therewith a liquid-checking chamber, a ball-valve seated in said contracted outlet, being normally withdrawn from but adjacent to the contracted portion thereof, means for adjusting the extent of closure of said valve, an operating-spindle, oppositely-positioned pivotal means of connection between the operating-spindle and said rod, a spring for bringing the parts to their normal position, and a casing for inclosing said parts.

10. In a door-closer, the combination of a rod, a spring for propelling said rod in one direction, a spindle, an operating-cam carried thereby, a pair of oppositely-arranged pivoted levers engaging said cam, and means of connection between said levers and said rod.

11. In a door-check, the combination of a piston member, a relatively movable cylindrical member forming in conjunction therewith a liquid-checking chamber, one of said members having a contracted outlet-passage leading from said chamber, a normally unseated check-valve in said passage, and adjustable means for varying the permissive closing movement of said valve.

12. In a door-check, a stationary hollow piston, a restricted outlet-passage, an inlet-passage, and an auxiliary inlet-passage in communication with said outlet-passage, a movable rod having a cylindrical end portion fitting on said piston and forming in conjunction therewith a liquid-checking chamber, a normally unseated check-valve in said outlet-passage, a normally seated check-valve in said auxiliary inlet, and a normally unseated check-valve in the passage between the interior of the hollow piston and the auxiliary inlet.

13. In a door check and closer, a hollow piston member, a relatively movable cylindrical member forming in conjunction therewith a liquid-checking chamber, said piston member having an outlet-passage, a ball-valve therefor, a removable pin for holding said ball in place, and means for adjusting the permissive closing action of said valve.

14. In a door-check, a stationary piston member and a cylindrical member movable relatively thereon, one of said members having a contracted outlet-passage, a valve in said passage normally withdrawn from but adjacent to the contracted portion, and means for adjusting the permissive closure of said valve.

15. In a door-check, a stationary piston member and a cylindrical member movable relatively thereon, one of said members having a contracted outlet-passage and an inlet-passage, a valve in said outlet-passage normally withdrawn from but adjacent to the contracted portion, means for adjusting the permissive closure of said valve, and a valve in said inlet-passage.

16. In a door check and closer, the combination of a casing, a spindle, a normally stationary but removable hollow piston member having an outlet and mounted in said casing, a cylinder mounted to reciprocate on said piston, a rod connected to said cylinder having an enlarged head, operative means of connection between said head and said spindle, an adjustable abutment-ring screw-threaded on the cylinder, an abutment-plate through which said rod passes, said casing having a stationary abutment against which said plate normally rests, a spring coacting between said abutment-plate and said abutment-ring, said abutment-plate having a passage of less diameter than said enlarged head for the purpose specified.

17. In a door check and closer, the combination of a spindle, a checking-cylinder, a connecting-rod, a spring surrounding said rod and having an abutment at one end thereof, a removable U-shaped abutment-plate for the other end of said spring, an enlarged head beyond said abutment-plate, means of connection between said spindle and said head, and a casing surrounding the operating parts and affording an abutment for said abutment-plate.

18. In a door check and closer, the combination of a piston and cylinder, a connecting-rod, a spring surrounding said rod, a rotary spindle, a cam carried thereby, a pair of pivoted levers for engagement with the opposite sides of said cam, and means of connection between said levers and said rod.

19. In a door-closer, the combination of a longitudinally-movable rod, guides therefor, a spring for moving said rod in one direction, a rotary spindle, a cam mounted to rotate therewith, a pivoted lever disposed on each side of said cam adapted to be operated thereby, and means of connection between each lever and said rod.

20. In a door-closer, the combination of a rod, a spring for moving said rod in one direction, a rotary spindle, a pair of oppositely-disposed pivoted levers one on each side of said spindle, means of connection between said levers and said rod, and means carried by said spindle for coacting with one or the other of said levers according as the spindle is rotated in one direction or the other.

21. In a door check and closer, the combination of a piston member and a cylinder member, a spring for moving one of said members longitudinally with relation to the other, a rotary spindle, a pair of oppositely-disposed pivoted levers, means of connection between each of said levers and said movable member, and means carried by said spindle for coacting with either one of said levers according as said spindle is rotated in one direction or the other.

22. In a door-check, the combination of a cylindrical member and a piston member, one of said members being movable relative to the other to provide in conjunction with the other member a fluid-checking chamber, one of said members having an outlet-passage with a normally unseated valve adapted to be partially seated by the closing action of the mechanism and two branch passages communicating with said outlet-passage, and a normally seated valve in one of said branch passages.

23. In a door-check, a casing, a cylindrical member, a piston member, one of said members being movable relative to the other to provide in conjunction with the other member a fluid-checking chamber, removable means for rigidly securing one of said members in said casing, said removable member having a contracted outlet-passage, a ball-valve in said passage normally unseated, a pin for holding said valve in its normal position, and means for adjusting the permissive closing action of said valve, said pin and said adjusting means being carried by said removable member and removable with it.

850,395. FEED MECHANISM FOR GAS-PRODUCERS. ALONZO L. PARKER, St. Joseph, Mo. Filed Aug. 25, 1906. Serial No. 331,998.

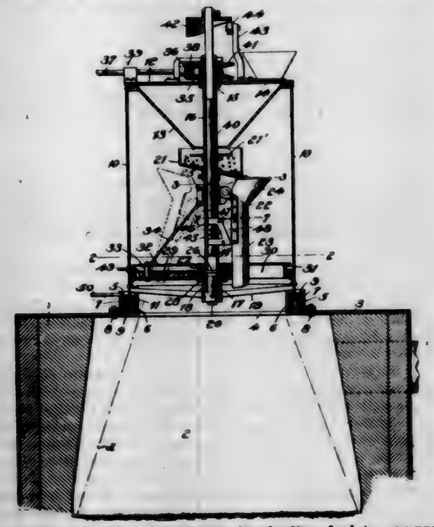

Claim.—1. In a mechanism for feeding fuel to gas-producers, the combination of a fuel-chute, a pivoted distributer-chute, means for rotating both chutes, and means for causing the distributer-chute to move from and toward the center.

2. In a mechanism for feeding fuel to gas-producers, the combination with an outer rotatable shaft carrying a feed-chute and a distributer-chute, of an inner rotatable shaft carrying means for causing the distributer-chute to move from and toward the center.

3. In a mechanism for feeding fuel to gas-producers, the combination with an outer rotatable shaft carrying a feed-chute and a distibuter-chute, of an inner rotatable shaft provided with a cam for vertically moving said shaft, and with a cam for causing the distributer-chute to move outward and inward.

4. In a mechanism for feeding fuel to gas-producers, the combination with a rotatable feed-chute, of a rotatable distributer-chute, and means for imparting an oscillatory movement to said distributer-chute.

5. In a mechanism for feeding fuel to gas-producers, the combination with outer and inner rotatable shafts, a feed-chute and a distributer-chute carried by the outer shaft, of a cam arranged to vertically move the inner shaft in either direction, and a wedge-cam, and means for imparting an oscillatory movement to the distributer-chute.

6. In a mechanism for feeding fuel to gas-producers, the combination with the outer and inner rotatable shafts, a feed-chute and a distributer-chute carried by the outer shaft, of a cam arranged to vertically move the inner shaft in either direction, and a wedge-cam, loosely attached to the inner shaft and moving with the outer shaft, for imparting an oscillatory movement to the distributer-chute.

7. In a mechanism for feeding fuel to gas-producers, the combination with an outer shaft carrying a feed-chute, a distributer-chute and a water-base, means for rotating said shaft and attachments, of an inner shaft carrying mechanism arranged to cause the oscillation of the distributer-chute, and means for rotating said shaft.

8. In a mechanism for feeding fuel to gas-producers, the combination with an outer shaft carrying a feed-chute, a distributer-chute, and a water-base, and means for rotating said shaft and attachments, of an inner shaft carrying a cam for vertically moving the same, means for rotating said shaft, and a cam arranged on the inner shaft for causing the oscillation of the distributer-chute.

850,396. SHOE-CLEANING DEVICE. JOHN J. POLT, Newark, N. J. Filed Nov. 23, 1906. Serial No. 344,672.

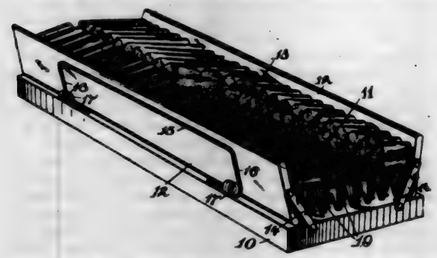

Claim.—1. An article of the kind described comprising a base-plate having a brush portion thereon, side members having brush portions to extend across and above the brush portion on the base-plate, springs bearing on the outside of the side members to force them together, and a link on each end of each side member, each link being pivoted, on one end, to the end of the side member, and having its other end pivoted to the end of the base-plate.

2. An article of the kind described, comprising a base-plate having a brush portion thereon, side members having brush portions to project across and above the brush portion of the base-plate, springs arranged on the base-plate and in sliding relation with the outside of the side members, and links on the ends of the base-plate connecting the base-plate with the side members.

850,397. ELASTIC-FLUID TURBINE. HEINRICH P. R. L. PÖRSCKE, Hamburg, Germany. Filed Oct. 12, 1906. Serial No. 338,612.

Claim.—1. In a turbine the combination of a casing containing helical passages increasing progressively in pitch and in cross-sectional area, and having their axes disposed in circles about the axis of said casing said casing having also a chamber extending from the axis of the casing and intersecting the said helical passages on two sides in the plane of a diameter thereof, and a wheel journaled axially in said casing extending with said chamber and having vane-crowns where said wheel intersects the helical passages.

2. In a turbine the combination of a casing containing a plurality of helical passages increasing progressively in pitch and in cross-sectional area, and having their axes disposed in circles about the axis of said casing said casing having also a chamber extending from the axis of the casing and intersecting the said helical passages on two sides in the plane of a diameter thereof, a wheel journaled axially in said casing extending with said chamber and having vane-crowns where said wheel intersects the helical passages, and means for controlling the admission of expansive fluid to said passages.

3. In a turbine the combination of a casing containing a plurality of helical passages opposite in helical direction and increasing progressively in pitch and in cross-sectional area, and having their axes disposed in circles about the axis of said casing said casing having also a chamber extending from the axis of the casing and intersecting the said helical passages on two sides in the plane of a diameter thereof, a wheel journaled axially in said casing extending with said chamber and having vane-crowns where said wheel intersects the helical passages, and means for controlling the admission of expansive fluid to said passages respectively.

4. In a turbine the combination of a casing containing a plurality of helical passages increasing progressively in pitch and in cross-sectional area, and having their axes disposed in circles about the axis of said casing said casing having also a chamber extending from the axis of the casing and intersecting the said helical passages on two sides in the plane of a diameter thereof, a wheel journaled axially in said casing extending with said chamber and having a plurality of vane-crowns where said wheel intersects the helical passages, means for passage of the expansive fluid from one helical passage to another in series, and means for controlling the admission of expansive fluid to said passages.

5. In a turbine the combination of a casing containing helical passages increasing progressively in pitch and in cross-sectional area, and having their axes disposed in circles about the axis of said casing said casing having also a chamber extending from the axis of the casing and intersecting the said helical passages on two sides in the plane of a diameter thereof, a wheel journaled axially in said casing extending with said chamber and having vane-crowns where said wheel intersects the helical passages, the vanes of said vane-crowns being obliquely directed to the plane of intersection of the helical passage, those of one crown being oppositely directed to those of the other crown, and means for controlling the admission of expansive fluid to said passages.

6. In a turbine, the combination, with a revoluble wheel having an inner and an outer series of vanes at its periphery, of a casing provided with segmental passages arranged in helical form at the opposite sides of the said wheel and with a progressively-increasing pitch and operating to conduct the motor fluid from the vanes of one series to the vanes of the other series continuously and in a helical path.

850,398. DRIER. AUGUSTO RAMOS, Sao Paulo, Brazil, assignor to Marcus Mason & Company, New York, N. Y., a Corporation of New York. Filed Mar. 30, 1906. Serial No. 308,835.

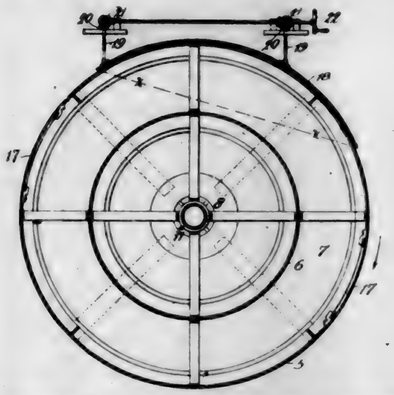

Claim.—1. In a drier, the combination with two concentric perforated cylinders, arranged one within the other, the diameter of the inner cylinder being not less than one-half that of the outer cylinder and the annular space between them being substantially clear, whereby said space is continuous and the material contained therein will be capable of moving freely therein, of heads secured fast to both said cylinders, and a shaft carrying said heads and cylinders, said drier having means for admitting air under pressure through said shaft to the interior of the inner cylinder.

2. In a drier, the combination with two concentric perforated cylinders arranged one within the other, of means for admitting air under pressure to the interior of the inner cylinder, and means coacting with the outer cylinder for controlling the passage of air by restricting the discharge through the said outer cylinder.

3. In a coffee-drier, the combination of two concentric perforated cylinders, arranged one within the other, and adapted to receive a charge of coffee-berries in the annular space between them, the width of said annular space being about equal to, but slightly greater than, the depth of the space exposed by the normal shrinkage during drying, of a full charge, and means for admitting air to the interior of the inner cylinder.

4. In a coffee-drier, the combination of two concentric perforated cylinders, arranged one within the other, and adapted to receive a charge of coffee-berries in the annular space between them, the width of said annular space being about equal to, but slightly greater than, the depth of the space exposed by the normal shrinkage during drying, of a full charge, and means for admitting air to the interior of the inner cylinder, at opposite ends thereof.

5. In a drier, the combination with two concentric perforated cylinders arranged one within the other, and means for admitting air to within the inner cylinder, of a shield arranged above the outer cylinder partially surrounding the same.

6. In a drier, the combination with two concentric perforated cylinders, arranged one within the other, and means for admitting air to within the inner cylinder, of a shield arranged above the outer cylinder partially surrounding the same, and means for adjusting the shield toward and away from the cylinder.

850,399. JOURNAL-BEARING. GEORGE T. REISS, Hamilton, Ohio, assignor to Niles-Bement-Pond Company, Jersey City, N. J. Filed Feb. 28, 1907. Serial No. 359,711.

Claim.—1. A journal-bearing comprising a ring-shaped bearing having a circumferential series of internal pockets, a segmental block fitted in each pocket and adapted for radial adjustment therein and having its inner face longitudinally grooved, adjusting devices acting between the outer walls of the pockets and the outer surfaces of the blocks and serving to adjust the blocks radially, a liner carried by one side of each block and adapted for inward sidewise movement relative to the block, screws carried by the blocks and engaging said liners and serving to adjust said liners inwardly sidewise, and a journal disposed within said bearing and having a peripheral journal-surface engaging said liners and having a peripheral rib with one of its sides engaged by the inner side surface of said liners and with its other side engaged by suitable bearing-surfaces carried by the blocks, combined substantially as set forth.

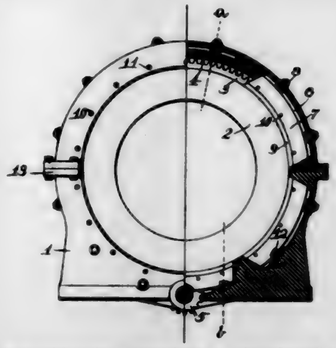

2. A journal-bearing comprising a ring-shaped bearing having a circumferential series of internal pockets, a segmental block fitted in each pocket and adapted for radial adjustment therein and having its inner face longitudinally grooved, screws threaded through the outer walls of the pockets and impinging against the outer surfaces of the blocks and serving to adjust the blocks radially, a liner carried by one side of each block and adapted for inward sidewise movement relative to the block, screws carried by the blocks and engaging said liners and serving to adjust said liners inwardly sidewise, and a journal disposed within said bearing and having a peripheral journal-surface engaging said liners and having a peripheral rib with one of its sides engaged by the inner side surface of said liners and with its other side engaged by suitable bearing-surfaces carried by the blocks, combined substantially as set forth.

3. A journal-bearing comprising a ring-shaped bearing having a base and provided with circumferential series of internal pockets, a segmental block fitted in each pocket and adapted for radial adjustment therein and having its inner face longitudinally grooved, screws threaded through the exterior wall of some of the pockets and having their inner ends impinging upon the outer surfaces of the blocks, wedges disposed across some of the pockets and engaging between the outer walls of the pockets and the outer surfaces of the blocks and provided at their ends with screws exterior to the sides of the bearing for moving the wedges endwise, a liner carried by one side of each block and adapted for inward sidewise movement relative to the block, screws carried by the blocks and engaging said liners and serving to adjust said liners inwardly sidewise, and a journal disposed within said bearing and having a peripheral journal-surface engaging said liners and having a peripheral rib with one of its sides engaged by the inner side surface of said liners and with its other side engaged by suitable bearing-surfaces carried by the blocks, combined substantially as set forth.

850,400. SLUG OR BUNCH CATCHER FOR YARN. THOMAS J. SANDS, Utica, N. Y. Filed May 23, 1903. Renewed Aug. 11, 1906. Serial No. 330,148.

Claim.—1. In a device of the character described, the combination of a pivoted catcher having a toothed face eccentric to the pivot, an opposite rotating member mounted to be temporarily displaced and automatically returned to its operative position, and a yarn-guide eye arranged in advance of the opening between the face of the catcher and the opposite member, substantially as set forth.

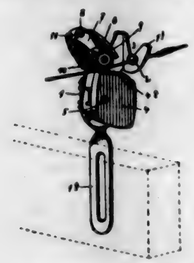

2. In a device of the character described, the combination of a pivoted catcher having a toothed face eccentric to the pivot, an opposing roller, a swinging hanger in which the roller is mounted to be temporarily displaced and automatically returned to its operative position, and a yarn-guide eye arranged in advance of the opening between the face of the catcher and the roller, substantially as set forth.

3. The combination in a bunch-catching device for yarn, of a main body or frame supporting a fixed yarn-guide eye, a pivoted bunch-catcher having a toothed face and means for adjusting the same toward and from the yarn passing through the device, and a member opposite the face of the bunch-catcher, a hanger in which the opposing member is mounted adapted to be moved temporarily out of operative position, substantially as set forth.

850,401. CHAFING-DISH. GEORGE E. SAVAGE and JAMES W. CHAPMAN, Meriden, Conn., assignors to Manning, Bowman & Company, Meriden, Conn., a Corporation of Connecticut. Filed May 31, 1905. Serial No. 263,109.

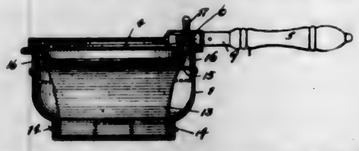

Claim.—1. A lamp, comprising a reservoir having a tapering outer surface, a casing surrounding said reservoir and spaced apart therefrom to form an air-passage having an inlet near the bottom and an outlet at the top, and a valve or damper ring vertically adjustable in said passage.

2. A lamp, comprising a reservoir, a casing spaced apart from said reservoir and having an air-inlet near the bottom and an outlet at the top, with a passage between the inlet and outlet, a pair of shutters at the top of the reservoir, means of connection between said shutters, one of said shutters being pivoted and having teeth arranged around one side of its pivotal axis, a valve or damper for said air-passage, a toothed rack movable with said valve, a rotatable handle, a pinion rotatable therewith and engaging the valve-rack and shutter-teeth.

3. A lamp comprising a reservoir, a casing surrounding said reservoir and spaced apart therefrom to form an air-passage, one of said parts having a tapering surface, said air-passage having an inlet near the bottom and an outlet at the top, and a valve or damper ring vertically adjustable in said passage.

850,402. RELAY. CHARLES E. SCRIBNER, Jericho, Vt., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 31, 1906. Serial No. 309,060.

Claim.—1. In a relay, the combination with a magnet, of an armature having a knife-edge, a pole-piece forming a seat for said armature, said pole-piece being inclined upwardly from the seating-point of the armature.

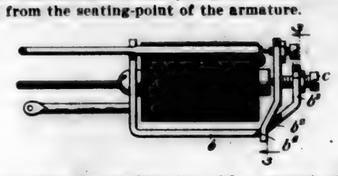

2. In a relay, the combination with a magnet, of an armature having a knife-edge, a pole-piece forming a seat for said armature, said pole-piece being inclined obliquely upward from the seating-point of the armature.

3. In a relay, the combination with a magnet, of an armature and a pole-piece, each having a knife-edge bearing against the other.

4. In a relay, the combination with a magnet, of an armature, a pole-piece forming a seat therefor, said armature and pole-piece each having a knife-edge bearing against the other, and said pole-piece being inclined upwardly from the seating-point of the armature.

5. In a relay, the combination with a magnet, of an armature, a pole-piece forming a seat therefor, said armature and pole-piece each having a knife-edge bearing against the other, and means for retaining the armature in its seated position.

6. In a relay, a magnet, an armature, a pole-piece forming a tongue-and-groove seat for the armature, said pole-piece and armature each having a knife-edge bearing against the other.

7. In a relay, a magnet, an armature, a pole-piece forming a tongue-and-groove seat for the armature, said pole-piece and armature each having a knife-edge bearing against the other, and said pole-piece being inclined upwardly from the seating-point of the armature.

8. In a relay, a magnet, an armature, a pole-piece forming a tongue-and-groove seat for the armature, said pole-piece and armature each having a knife-edge bearing against the other, and each extending obliquely upward from said bearings.

850,403. COMBINED CORK-HOLDER AND BOTTLE-STOPPER FOR BOTTLES. JAMES M. SELDEN, Crafton, Pa. Filed Oct. 26, 1906. Serial No. 340,674.

Claim.—1. The combination of a bottle-neck, a cork, and a removable ring on the end of said neck having an opening therein which has its wall flared outwardly toward the top of the same and said flared wall having a series of projections extending out therefrom and forming indentations therein for holding and carrying said cork within the same and for permitting the cork to extend into said neck.

2. The combination of a bottle-neck, a cork, and a removable ring on the end of said neck having an opening therein provided with a series of indentations in the wall of the same for holding and carrying said cork within the same and for permitting the cork to extend into the said neck, said indentations being outwardly flared from the bottom of said ring.

850,404. TOBACCO-PIPE. JAMES SHIELDS, Frankfort, Ind. Filed Jan. 24, 1906. Serial No. 297,656.

Claim.—A cleaner for tobacco-pipes consisting of a rod having a trough-shaped form in cross-section, and longitu-

dinally and rotatably mounted in the pipe-bowl and stem said rod having a head at one end for manipulating the

rod and tapered from said head toward the opposite end of the rod.

850,405. GARMENT SUSPENDER OR HOLDER. FERDINAND SPANINGER, Stuttgart, Germany. Filed Oct. 8, 1906. Serial No. 338,073.

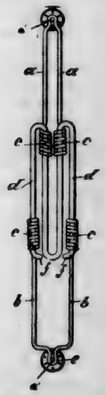

Claim.—1. A garment supporting and adjusting device, including a plurality of slidably-engaging members having terminal coils which serve to bind and hold the sections in adjusted position; substantially as described.

2. In a device of the class described, end members having terminal coils and adapted for attachment to a garment, and an intermediate frame having arms on which said coils may slide, the coils serving to grip the arms and retain the parts in adjusted position; substantially as described.

3. In a device of the class described, a pair of end members having eyes at one end, member-attaching studs extending through said eyes, the adjacent ends of said members being turned to form closed helices, and an intermediate frame having four parallel arms which are surrounded and grouped by said helices; substantially as described.

850,406. COMPOSITION FOR RAILROAD-TORPEDOES. FIN SPARRE, Wilmington, Del., assignor to The E. I. du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed Dec. 21, 1905. Serial No. 292,814.

Claim.—1. An explosive composition containing chlorate of potash, sulfur, a coating substance and ferrosilicon.

2. An explosive composition containing chlorate of potash, sulfur, a coating substance, and ferrosilicon in comminuted form.

3. An explosive composition containing chlorate of potash, sulfur, a coating substance, and coarse-grained ferrosilicon.

4. An explosive composition containing chlorate of potash, sulfur, a coating substance, ferrosilicon in comminuted form, and coarse-grained ferrosilicon.

5. An explosive composition containing chlorate of potash thirty to seventy per cent., of sulfur ten to forty per cent., of a coating substance five to twenty-five per cent., and of ferrosilicon, in comminuted form less than twenty per cent.

6. An explosive composition containing chlorate of potash, ferrosilicon, and a coating composition consisting of a liquid nitro compound containing in solution a normally solid nitro compound and nitrocellulose.

7. An explosive composition containing chlorate of potash, sulfur, and a coating composition consisting of a liquid nitro compound containing in solution a normally solid nitro compound and nitrocellulose.

8. An explosive composition containing chlorate of potash, sulfur, ferrosilicon, and a coating composition consisting of a liquid nitro compound containing in solution a normally solid nitro compound and nitrocellulose.

850,407. TRAVELING CRANE. VICTOR O. STROBEL and ARTHUR E. HOGREBE, Philadelphia, Pa., assignors to Niles-Bement-Pond Company, Jersey City, N. J. Filed Jan. 23, 1907. Serial No. 353,727.

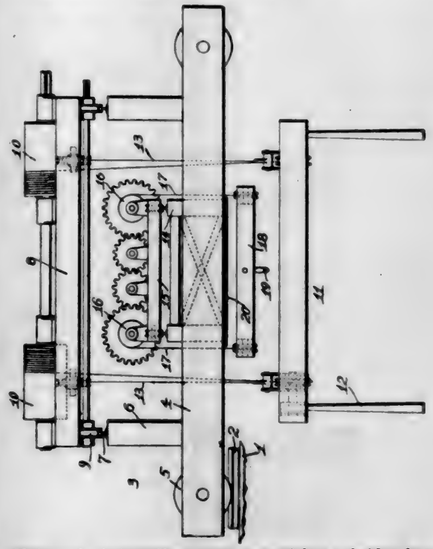

Claim.—1. A traveling crane comprising a bridge having a pair of main cross-girders parallel with each other and a pair of secondary cross-girders parallel therewith, rails on the tops of said girders, a main trolley traveling on the rails of the main cross-girders, a double main hoisting-drum mounted on the main trolley, main hoisting-ropes connected with the main hoisting-drum and falling through the spaces between the main and secondary cross-girders, a secondary trolley traveling on the rails of the secondary cross-girders, secondary hoisting-drums mounted on the secondary trolley and having portions projecting into the planes of the spaces between the main and secondary cross-girders, and secondary hoisting-ropes connected with the secondary hoisting-drums and falling through the spaces between the main and secondary cross-girders, combined substantially as set forth.

2. A traveling crane comprising a bridge having a pair of main cross-girders parallel with each other and a pair of secondary cross-girders parallel therewith, rails on the tops of said girders, a main trolley traveling on the rails of the main cross-girders, a double main hoisting-drum mounted on the main trolley, main hoisting-ropes connected with the main hoisting-drum and falling through the spaces between the main and secondary cross-girders, a secondary trolley traveling on the rails of the secondary cross-girders, secondary hoisting-drums mounted on the secondary trolley and having portions projecting into the planes of the spaces between the main and secondary cross-girders, secondary hoisting-ropes connected with the main hoisting-drum and falling through the spaces between the main and secondary cross-girders, and secondary hoisting-ropes connected with the secondary hoisting-drums and falling through the spaces between the main and secondary cross-girders, and cross-bracing extending between the secondary cross-girders, combined substantially as set forth.

3. A traveling crane comprising a bridge having a pair of main cross-girders parallel with each other and a pair of secondary cross-girders parallel therewith, rails on the tops of said girders, a main trolley traveling on the rails of the main cross-girders, a double main hoisting-drum mounted on the main trolley, main hoisting-ropes connected with the main hoisting-drum and falling through the spaces between the main and secondary cross-girders, a secondary trolley traveling on the rails of the secondary cross-girders, secondary hoisting-drums mounted on the secondary trolley and having portions projecting into the planes of the spaces between the main and secondary cross-girders, secondary hoisting-ropes connected with the secondary hoisting-drums and falling through the spaces between the main and secondary cross-girders, and a shield supported by the secondary cross-girders between the secondary hoisting-ropes, combined substantially as set forth.

850,408. DOCUMENT-HOLDER. MATTHEW I. SULLIVAN, San Francisco, Cal. Filed June 4, 1906. Serial No. 320,132.

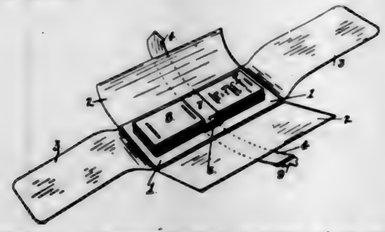

Claim.—1. A document-holder consisting of an envelop composed of a back and folding flaps forming the front thereof, and a relatively wide fastening-band freely slidable through opposite slots adjacent the edges of the back and forming a keeper-loop on the inner face of the back between said slots, the ends of the band encircling said envelop.

2. A document-holder consisting of an envelop composed of a back and folding flaps forming the front thereof, and a relatively wide unattached fastening-band freely slidable through and forming a keeper-loop on the inner face of the back, the ends of the band encircling said envelop, and said ends being provided with complemental means for adjustably securing them.

3. A document-holder comprising a rigid back, flexible flaps foldable over the edges of the back to form an envelop, and a relatively wide fastening-band freely slidable through slotted portions of the back and forming a keeper-loop on the inner face of the back, the ends of the band encircling the envelop, and provided with means for adjustably securing them.

4. A document-holder comprising an envelop formed with a rigid back, flexible foldable flaps forming the front, said flaps having a common center covering the outer face of the rigid back, an opening with an entrance-slit in said center covering, to receive a title-card, and a fastening-band freely slidable through and forming a keeper-loop on the inner face of the back, its ends encircling the envelop and provided with means for adjustably securing them.

850,409. SHELF-TONGS. BARNARD L. WARD, Ottumwa, Iowa. Filed Mar. 30, 1906. Serial No. 308,851.

Claim.—1. In a device of the class described, the combination of a carrying-arm having gripping-fingers suitably mounted at one of its ends, a tightening-lever carried at the opposite end of said arm, a rod connecting said gripping-fingers and lever and adapted to close said fingers upon the depression of said lever, and a grip intermediate said lever and fingers whereby said fingers are retained in their holding position by the pressure of said grip on said rod.

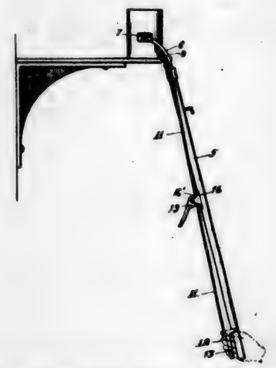

2. In a device of the class described, the combination of a carrying-arm having gripping-fingers at one end, means for retaining said fingers in a normally open position, a pull-rod connected with said fingers and extending to a lever on the opposite end of said arm, a handle on said lever adapted to be grasped by one hand by the operator, a bracket on said carrying-rod intermediate said gripping-fingers and lever having ears straddling said pull-rod, a cam-head pivoted between said ears and adapted for engagement with said pull-rod, and a lever-handle on said cam-head adapted to be grasped by the free hand of the operator, substantially as and for the purpose set forth.

3. In can-tongs, the combination with a handle, of two jaws mounted on the handle one movable toward and from the other, a rod longitudinally movable on the handle, means by which, when said rod is reciprocated, the movable jaw is moved toward and from the other jaw, a cam-lever pivoted upon the handle, and means by which, when said lever is swung, the cam portion will be forced against and grip the operating-rod.

4. In can-tongs, the combination with a handle, of two jaws mounted thereon, one movable toward and from the other, a longitudinally-movable rod, means for moving one jaw toward and from the other when said rod is reciprocated, an operating-lever pivoted to the handle and connected to the rod, and releasable means intermediate the jaws and lever for gripping said rod.

5. In can-tongs, the combination with a handle, of two jaws mounted thereon, one movable toward and from the other, a longitudinally-movable rod, and clamping means for gripping said rod and holding it against lengthwise movement.

6. In can-tongs, the combination with a handle, of two jaws mounted thereon, one movable toward and from the other, a longitudinally-movable rod, means for moving one jaw toward and from the other when the rod is reciprocated, an operating-lever connected to the rod and pivoted to the handle, and a locking-lever pivoted to the handle and provided with means, when swung in the proper direction, for gripping and locking said rod against lengthwise movement.

7. In can-tongs, the combination with a handle, of two jaws mounted thereon, a longitudinally-movable rod, means for moving one jaw toward and from the other when the rod is reciprocated, a lever pivoted to the handle and connected to the rod, a spring for swinging said lever in one direction, and releasable means intermediate the jaws and lever for locking said rod against lengthwise movement.

8. In can-tongs, the combination with a handle, of two jaws mounted thereon, a longitudinally-movable rod, means for moving one jaw toward and from the other when the rod is reciprocated, a lever pivoted to the handle and connected to the rod, a spring for swinging said lever in one direction, and a locking-lever intermediate the jaws and

lever provided with means, when swung in the proper direction, for gripping said rod.

9. In can-tongs, the combination with a handle, of two jaws mounted thereon, one pivoted so as to swing toward and from the other, a longitudinally-movable rod pivotally connected to the pivoted jaw, spring-actuated means normally forcing said rod in one direction, and a cam-lever pivoted to the handle for clampingly engaging said rod.

10. In can-tongs, the combination with a handle, of two jaws mounted thereon, one pivoted so as to swing toward and from the other, a longitudinally-movable rod pivotally connected to the pivoted jaw, an operating-lever connected to the rod and pivoted to the handle, and releasable means intermediate the jaws and operating-lever for gripping said rod.

11. In can-tongs, the combination with a handle, of two jaws mounted thereon, one pivoted so as to swing toward and from the other, a longitudinally-movable rod pivotally connected to the pivoted jaw, an operating-lever connected to said rod and pivoted to the handle, and a locking-lever pivoted to the handle and provided with means intermediate the jaws and operating-lever, when properly swung, for gripping said rod.

12. In can-tongs, the combination with a handle, of two jaws mounted thereon, one pivoted so as to swing toward and from the other, a longitudinally-movable rod pivotally connected to the pivoted jaw, an operating-lever connected to the said rod and pivoted to the handle, a spring for swinging said lever in one direction, and releasable means intermediate the jaws and operating-lever for gripping said rod.

13. In can-tongs, the combination with a handle, of two jaws mounted thereon, one pivoted so as to swing toward and from the other, a longitudinally-movable rod pivotally connected to the pivoted jaw, an operating-lever connected to the rod and pivoted to the handle, a spring for swinging said lever in one direction, and a locking-lever pivoted to the handle and provided with means intermediate the jaws and operating-lever for releasably gripping said rod.

14. In can-tongs, the combination with a handle, of two jaws mounted thereon, one pivoted so as to swing toward and from the other, a longitudinally-movable rod pivotally connected to the pivoted jaw, an operating-lever connected to the rod and pivoted to the handle, a spring for normally forcing said rod in one direction, and a lever pivoted to the handle intermediate the jaws and operating-lever and provided with means for releasably gripping the rod.

850,410. LIQUID-TAPPING DEVICE. EDWARD H. WEATHERHEAD, Cleveland, Ohio. Filed June 5, 1905. Serial No. 263,726.

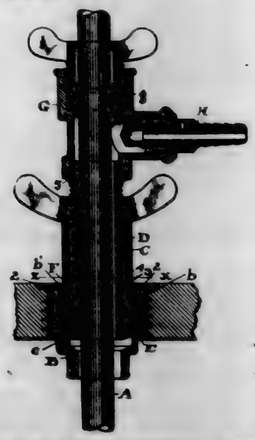

Claim.—In liquid-tapping mechanism, a bushing having an annular interior channel about its top, in combination with bung mechanism in said bushing, comprising a tube, a packing-ring about the bottom of said tube adapted to press laterally against the wall of the bushing, a collar over said packing-ring to bear upon the same and lock said tube against rotation, said collar constructed to rotatively engage in the said channel of the bushing, and a nut threaded upon said tube and bearing down upon said collar.

850,411. BRACE FOR ROUNDABOUTS. JAMES W. ARMITAGE, North Tonawanda, N. Y., assignor to Armitage-Herschell Company, North Tonawanda, N. Y. Filed May 24, 1905. Serial No. 261,006.

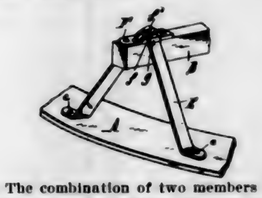

Claim.—1. The combination of two members of a structure, a connecting-brace for holding the same in fixed relation, said brace being fastened to one of said members and having a part at an angle to its main portion for engagement with the said other member, a seat on said other member in which the brace detachably engages, and a guard arranged to hold the brace in one position thereof from disengagement from said seat and to release the brace in another position thereof, the brace being held from movement to such releasing position by its attachment to said first member of the structure, substantially as set forth.

2. The combination of a supporting member, a brace having a substantially horizontal portion supported by said supporting member and a depending portion, a member which is secured to the depending portion of said brace and is supported thereby, a seat on said supporting member in which the horizontal portion of the brace is held from lateral movement, and a guard which overhangs said brace and holds it from lifting out of said seat in one position of the brace and releases the brace in another position thereof, the brace being held from movement to such releasing position by its attachment to said supported member, substantially as set forth.

3. The combination of two members of a structure, a connecting-brace for holding the same in fixed relation, said brace being fastened to one of said members and having a part at an angle to its main portion for engagement with said other member, a socket-piece secured to said other member and having a seat in which the brace rests, and a guard overhanging said seat which prevents said brace from moving endwise out of said seat, said brace being removable from said seat by detaching it from said first member and moving it to a position at an angle to its normal position, substantially as set forth.

4. The combination of a substantially horizontal supporting-arm, a platform below the same, a brace connecting said arm and platform and having a substantially horizontal portion, a socket-piece secured to said arm and having a seat in which the horizontal portion of said brace rests, and a guard overhanging said seat which prevents said brace from lifting vertically out of said seat, the brace being removable from said seat by detaching it from said platform and moving it to a position at an angle to its attached position, substantially as set forth.

5. The combination of a substantially V-shaped brace, a retaining-socket piece for the same having a body part provided with a seat in which the angle portion of said brace engages, and a guard which projects over said seat at an inclination and prevents the disengagement of the brace from said seat in one position of the brace, said brace being removable from said seat by the movement thereof to a position at an inclination to said body part but being normally held from movement to such inclined position, substantially as set forth.

6. The combination with a frame member and a platform, of a connecting-brace for the same secured to one of said members, and a plate secured to the other member, said brace and plate having interlocking parts which are shaped to be disengaged by sliding the one relative to the other, substantially as set forth.

850,412. AUTOMATIC FLUID-PRESSURE AND MOTOR CONTROLLER. WALTER J. BELL, Los Angeles, Cal., assignor of one-half to Leon F. Moss, Los Angeles, Cal. Filed June 3, 1905. Serial No. 263,638.

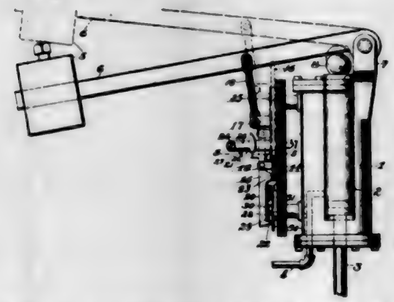

Claim.—1. In combination, a cylinder, a piston in said cylinder movable by fluid under pressure, resisting and retracting means for said piston, a pivoted contact to which one end of a circuit is adapted to be connected and a swing-contact to which the other end of said circuit is adapted to be connected, said swing-contact being movable with the piston to engage and move the pivoted contact before separation.

2. In combination, a fluid-pressure-actuated piston, a pivoted contact movable with the piston, a pivoted contact in the path of the aforesaid contact, said contacts arranged to interengage and travel together during part of the movement in one direction of said piston.

3. In combination, a fluid-pressure-actuated piston, a pivoted contact movable with the piston, a pivoted contact in the path of the first-named contact, said contacts arranged to interengage and travel together during part of the movement in one direction of said piston and a dog in the path of the first-named contact adapted to position the latter to engage the second-named contact.

850,413. ORGAN KEY-ACTION. JACOB BINNIG, Boston, Mass., assignor of one-half to Mason & Hamlin Company, Cambridge, Mass., a Corporation of Delaware. Filed Mar. 10, 1906. Serial No. 305,209.

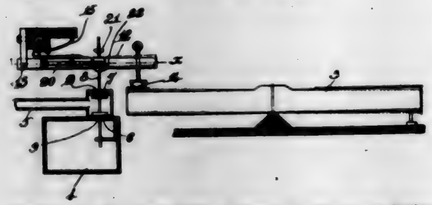

Claim.—1. In a key-action, a key, a valve, and devices including two frictionally-connected members for transmitting the movement of the key to the valve.

2. In a key-action, a key, a valve, and devices including two frictionally-connected members for transmitting the movement of the key to the valve, said key having a greater movement than is necessary to operate the valve.

3. In a key-action, a key, a valve, and means to open the valve during the first part of the movement of the key in one direction, and to close the valve during the first part of the movement of the key in the opposite direction.

4. In a device of the class described, in combination, a wind-chest, a valve therefor, and a spring-pressed pivotally-mounted member for actuating the valve frictionally connected thereto.

5. In a key-action in combination, a wind-chest, a valve therefor, a spring-pressed valve-actuator frictionally connected to the valve, and a key for operating the actuator in one direction.

6. In a key-action in combination, a wind-chest, a valve therefor having a valve-stem, a pivotally-mounted spring-pressed valve-actuator frictionally connected to the valve-stem, and a key for moving the actuator in one direction.

7. In a key-action, a key, a valve operated thereby, said key having a greater movement than necessary to operate the valve, and means whereby the valve is completely shifted during the first part of the movement of the key in either direction and before said key completes its movement.

8. In a key-action, a key, a valve-actuator operated thereby, a valve, and connections, including a friction device, between the valve-actuator and the valve, said friction device operating to shift the valve upon the first part of the movement of the actuator and allowing said actuator to move relative to the valve after the valve has been shifted.

9. In a key-action, a valve having a valve-stem 8 and a valve-actuator 12 frictionally connected to the valve-stem and a key for moving the actuator.

10. In a key-action, a valve having a valve-stem 8, a valve-actuator 12 frictionally connected to the valve-stem, said actuator having a greater range of movement than the valve, and a key for moving the valve-actuator in one direction.

11. In a key-action, in combination, a wind-chest 4, a valve to control the supply of wind therefrom, said valve having a stem 8, and a pivoted device having a frictional engagement with said stem for actuating the valve.

850,414. EMERGENCY-BRAKE. JOHN A. BIRDSALL, Bethel, Conn. Filed Nov. 9, 1906. Serial No. 342,656.

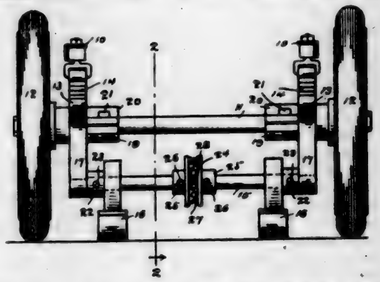

Claim.—1. A brake of the character described comprising an oscillatory shaft, means for suspending said shaft rigidly below the rear axle of a vehicle, shoes carried directly by said shaft, and means for directly oscillating the shaft to force the shoes downward against the ground and raise the axle.

2. The combination with a vehicle, of rigidly-supported brackets extending below the rear axle of the vehicle, an oscillatory shaft journaled in said brackets, shoes extending rearwardly from said oscillatory shaft and rigidly connected therewith, and means for directly oscillating the shaft to force the shoes against the ground to raise the axle.

3. A brake of the character described comprising an oscillatory shaft, shoes carried thereby, a bolster having slots to receive the axle, and bearing-pieces, cap-pieces secured to the bearing-pieces and inclosing the axle loosely, brackets depending from the bolsters in which the shaft is journaled, and means for oscillating the shaft, substantially as described, for the purpose specified.

4. A brake of the character described comprising an os-

ciliatory shaft, shoes carried directly thereby in position to bear on the ground, a pulley on said shaft, an operating-chain passing over said pulley and secured thereto and brackets adapted for attachment to an axle in which the shaft is journaled.

850,415. VANNER. GEORGE O. BRADLEY, Salt Lake City, Utah. Filed May 28, 1906. Serial No. 319,142.

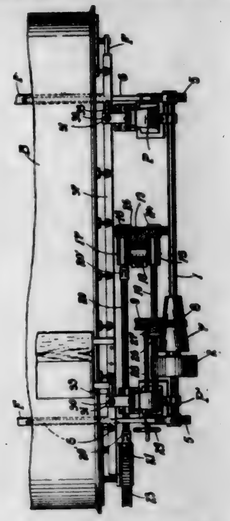

Claim.—1. In a vanner, a drive-shaft, a cone-pulley carried thereby, a second pulley coöperatively connected thereto, a shaft for said second pulley, capable of oscillation about a fixed point, a jointed shaft located adjacent to said oscillating shaft, and having a section capable of conjoint oscillation with the oscillation shaft, intermediate gearing between the oscillating and jointed shafts, located contiguous to the point of oscillation of the shafts, a vanner-belt, and suitable gearing between the jointed shaft and belt for imparting motion to the belt, substantially as set forth.

2. In a vanner, a drive-shaft, a cone-pulley carried thereby, a flange-pulley located in proximity thereto, a shaft for said flange-pulley, a belt connecting the pulleys, means for shifting the flange-pulley along the shaft, a vanner-belt, a jointed shaft located adjacent to the flange-pulley shaft, intermediate gearing between the vanner-belt and jointed shaft, and suitable gearing between the jointed shaft and the shaft of the flange-pulley, substantially as set forth.

3. In a vanner, a drive-shaft, a cone-pulley carried thereby, a flange-pulley coöperatively connected thereto, a shaft for said flange-pulley capable of vertical oscillation about a fixed point, a terminal gear-wheel on said second shaft, a jointed shaft adjacent to said oscillating shaft, a gear-wheel on said jointed shaft meshing with the first gear-wheel, a post to which the free end of the oscillating shaft is secured, a vanner-belt, a frame therefor, a gear-wheel on said frame, a worm on the jointed shaft meshing therewith, and means for varying the velocity of rotation of the flange-pulley shaft, substantially as set forth.

4. In a vanner, a drive-shaft, a cone-pulley carried thereby, a flange-pulley, a vertically-oscillating and belt-tightening shaft for said flange-pulley, a jointed shaft having a section oscillating conjointly with the oscillating shaft, terminal intermeshing gears connecting the jointed shaft with the oscillating shaft, a vanner-belt, and intermediate gearing between the jointed shaft and vanner-belt for imparting motion to the latter, substantially as set forth.

5. In a vanner, a drive-shaft, a cone-pulley carried thereby, a flange-pulley located in proximity thereto, a shaft for said flange-pulley, a belt connecting the pulleys, means for shifting the flange-pulley along the shaft and thereby adjusting the velocity of the shaft, a vanner-belt, a jointed shaft located adjacent to the flange-pulley shaft, intermediate gearing between the vanner-belt and jointed shaft, and terminal intermeshing gearing between the jointed shaft and the flange-pulley shaft, substantially as set forth.

6. In a vanner, a vanner-belt frame, suitable supporting-posts, vertically-adjustable hangers depending from the posts, saddles hung from their lower ends and coupled to the frame, and side members forming a part of said frame and pivotally connected to the saddles and capable of angular adjustment relatively to the hangers with any variation of the length of the latter, substantially as set forth.

7. In a vanner, a vanner-belt frame, suitable supporting-posts, vertically-depending adjustable hangers carried by the posts, saddles at the lower ends of the hangers, grooves formed in the saddles having inwardly-convexed bounding-walls, longitudinal structural members received by the grooves of the saddles, and means for coupling the structural members to the saddles, the parts operating substantially as, and for the purpose set forth.

850,416. MEANS FOR PURIFYING AND STERILIZING WATER BY OZONIZED AIR. JAMES H. BRIDGE, Philadelphia, Pa. Filed Feb. 7, 1907. Serial No. 356,154.

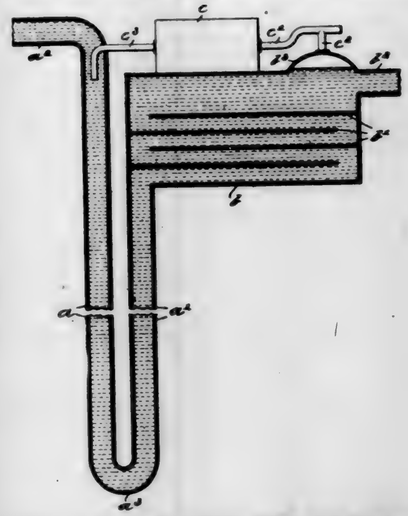

Claim.—1. Means for purifying or sterilizing water, comprising a pipe having an uptake leading therefrom and a receptacle provided with obstructions, the latter directly connected with said uptake, the construction and arrangement being such that ozonized air, by the suction action of the flowing water, is drawn into the body of water by a gradually-increasing pressure, and then, by a gradually-decreasing pressure induced by the water, presented to the obstructions of said receptacle for prolonging the ozonized air in intimate contact with the water for variable periods to insure thorough sterilization of the water.

2. Means for sterilizing a liquid by a gas, comprising a generator for the gas, an arrangement of pipes for drawing by gravity the sterilizing-gas into the liquid under treatment, a pipe or well in which the mingled gas and liquid are gradually compressed by their own weight, an uptake leading therefrom and in which the gas and liquid are held in continuous contact while subject to a gradually-diminishing pressure as they ascend, and a receptacle continuing the admixture of gas and liquid by causing them to travel laterally through or about obstructions placed in the path of the flowing fluids.

3. Means for sterilizing a liquid by a gas, comprising a generator for the gas, an arrangement of pipes for drawing by gravity the sterilizing-gas into the liquid under treatment, a pipe or well in which the mingled gas and liquid are gradually compressed by their own weight, an uptake leading therefrom and in which the gas and liquid are held in continuous contact while subject to a gradually-diminishing pressure as they ascend, and a receptacle continuing the admixture of gas and liquid by causing them to travel laterally through or about obstructions placed in the path of the flowing fluids and a chamber for separating unabsorbed gas from the liquid for further utilization.

4. Means for sterilizing a liquid by a gas, comprising a generator for the gas, an arrangement of pipes for drawing by gravity the sterilizing-gas into the liquid under treatment, a pipe or well in which the mingled gas and liquid are gradually compressed by their own weight, an uptake leading therefrom and in which the gas and liquid are held in continuous contact while subject to a gradually-diminishing pressure as they ascend, and a receptacle continuing the admixture of gas and liquid by causing them to travel laterally through or about obstructions placed in the path of the flowing fluids, a chamber for separating unabsorbed gas from the liquid, and means for passing it into the generator for regeneration.

5. Means for sterilizing a liquid by a gas, comprising a generator for the gas, an arrangement of pipes for drawing by gravity the sterilizing-gas into the liquid under treatment, a pipe or well in which the mingled gas and liquid are gradually compressed by their own weight, an uptake leading therefrom and in which the gas and liquid are held in continuous contact while subject to a gradually-diminishing pressure as they ascend, a receptacle continuing the admixture of gas and liquid by causing them to travel laterally through or about obstructions placed in the path of the flowing fluids, a chamber for separating unabsorbed gas from the liquid and means for drawing it then by the suction action of a current of water into the same.

6. Means for sterilizing water by ozone, comprising an ozonizer, an arrangement of pipes to utilize the suction action of a moving body of water to draw air into the ozonizer and ozonized air therefrom into the body of water, a pipe or well through which the admixture is led to subject it to a gradually-increasing pressure by the gravitative action of the descending column of gas and water, an uptake leading therefrom in which the gas and water are maintained in continuous contact while subject to a gradually-decreasing pressure as the mingled gas and water ascend, a receptacle in which the admixture of gas and water is prolonged by baffles or other obstructions placed in the path thereof to cause the same to travel successively in more or less horizontal planes.

7. Means for sterilizing water by ozone, comprising an ozonizer, an arrangement of pipes to utilize the suction action of a moving body of water to draw air into the ozonizer and ozonized air therefrom into said body of water, a pipe or well through which the admixture is led while subject to a gradually-increasing pressure by the gravitative action of the descending column of gas and water, an uptake leading therefrom in which the gas and water are maintained in continuous contact while subject to a gradually-decreasing pressure as the mingled gas and water ascend, a receptacle in which the admixture of gas and water is prolonged by baffles or other obstructions placed in the path thereof to cause the same to travel in successive more or less horizontal planes, a chamber in which unabsorbed ozone is separated from the water and an arrangement of pipes by which the unabsorbed ozone is withdrawn for utilization.

8. Means for sterilizing water by ozone, comprising an ozonizer, an arrangement of pipes to utilize the suction action of a moving body of water to draw air into the ozonizer and ozonized air therefrom into said body of water, a pipe or well through which the admixture is led to subject it to a gradually-increasing pressure by the gravitative action of the descending column of gas and water, an uptake leading therefrom in which the gas and water are maintained in continuous contact while subject to a gradually-decreasing pressure as the mingled gas and water ascend, a receptacle in which the admixture of gas and water is prolonged by baffles or other obstructions placed in the path thereof to cause the same to travel successively in more or less horizontal planes; a chamber in which unabsorbed ozone is separated from the water and an arrangement of pipes by which the unabsorbed ozone is drawn into a current of water by its suction action to purify the same.

9. Means for purifying and sterilizing a liquid, which consists of a pipe for thoroughly commingling and compressing a sterilizing gas and a fluid and expanding the mixture of gas and fluid therein by a gradually-decreasing pressure and a receptacle provided with obstructions across the path of the currents therethrough to prolong the admixture of the gas and fluid therein, the construction being such as to be adapted to maintain the sterilising-gas and liquid in intimate and continuous contact during entire circuit of said means.

10. An aspirator-sterilizer, comprising a pipe or well for thoroughly commingling ozonized gas and water, an uptake leading therefrom for expanding the admixture of gas and water and holding while subject to a diminishing pressure and a receptacle provided with obstructions, across the path of the current therethrough, to prolong the admixture of the gas with the fluid.

11. An aspirator-sterilizer, comprising a pipe or well for thoroughly commingling ozonized gas and water, an uptake leading therefrom for expanding the admixture of gas and water and holding while subject to a diminishing pressure and a receptacle provided with obstructions, across the path of the current therethrough, to prolong the admixture of the gas with the fluid, and a chamber for separating the excess of ozone from the fluid.

12. An aspirator-sterilizer, comprising a pipe or well for thoroughly commingling ozonized gas and water, an uptake leading therefrom for expanding the admixture of gas and water and holding while subject to a diminishing pressure, and a receptacle provided with obstructions, across the path of the current therethrough, to prolong the admixture of the gas with the fluid, and a chamber for separating the excess of ozone from the fluid and means for leading the excess of ozonized gas from the separating-chamber directly into a current of flowing fluid.

850,417. SEPARATOR. WALTER I. BROCK, Erie, Pa. Filed Jan. 17, 1907. Serial No. 352,828.

Claim.—1. The combination, in a separator, of a vertical cylindrical outer body having a removable top nozzle bolted thereto, an axially-located inlet-pipe extending downward from said nozzle, a vertical cylindrical inner separating and collecting chamber axially and centrally located with a removable bottom containing as a part thereof an extended hollow radial projection forming a drain, a hollow connection extending inward through the outer body and coupling to said radial projection to form a continuous drain from the bottom of said collecting-chamber to the outer atmosphere also to support and brace the lower end of said chamber, substantially as shown and described.

2. The combination, in a separator, of a vertical cylindrical outer body, a vertical cylindrical inner separating and collecting chamber, a vertical cylindrical perforated sheet-metal or woven-wire guard with a flared and serrated lower edge secured on the inner wall of said chamber, a moisture-absorbing material surrounding said guard on its circumference, substantially as shown and described.

3. The combination, in a separator, of a vertical cylindrical outer body, a vertical cylindrical inner separating and collecting chamber, a vertical cylindrical perforated sheet-metal or woven-wire guard with a flared and serrated lower edge secured on the inner wall of said chamber, a moisture-absorbing material surrounding said guard on its circumference, a perforated dome-shaped baffle filling the lower end of said cylindrical guard and being

firmly secured thereto, substantially as shown and described.

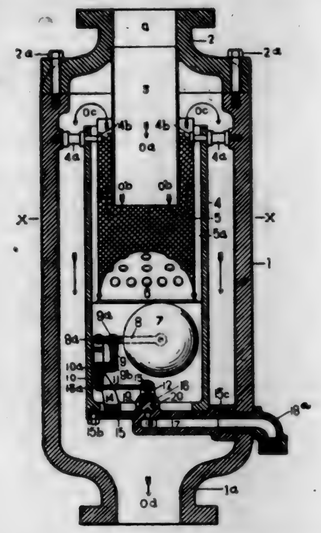

850,418. GRASS-CATCHING RECEPTACLE. LEVI BROWN, Richmond, Ind., assignor to F. & N. Lawn Mower Company, Richmond, Ind., a Corporation. Filed Dec. 31, 1906. Serial No. 350,274.

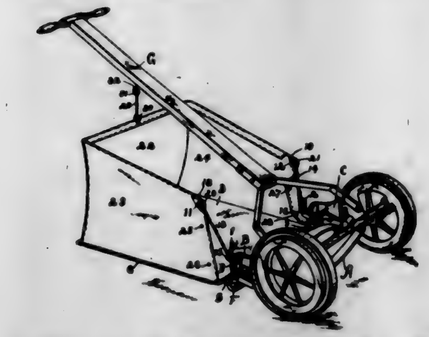

Claim.—1. In combination with a lawn-mower, a grass-catching receptacle comprising a sheet-metal bottom, arms extending up from the forward corners of the bottom and then extending downward forming resilient arms, coils integral with and connecting the upper portions of each pair of said arms, eyes formed on the lower ends of said resilient arms and turned out at right angles thereto, hooks secured to the lawn-mower to pass through said eyes, a frame formed of integral length of wire-rod extending rearward from and pivoted in said coils, a fabric uniting said frame and bottom on two sides and the rear, and a link pivoted to the rear portion of said frame with means for connecting the link to the lawn-mower handle, all substantially as shown and described and for the purposes set forth.

2. In combination with a lawn-mower, the hooks 1 and 2 extending back and upward therefrom, a receptacle comprising a sheet-metal bottom, an upper frame, arms extending upward and pivoted in the front portion of said bottom, spring-arms extending downward from the upper portion of the first-named arms and having eyes to engage with said hooks, a fabric covering the sides and the rear of the receptacle and attached to said bottom and to said upper frame, a link extending up from said upper frame, and means for detachably connecting said link to the lawn-mower handle, all substantially as shown and described and for the purposes set forth.

3. A grass-catcher having its sides and rear formed of fabric, a metal bottom, an upper frame, arms extending upward from the forward corners of the bottom, means for connecting said fabric to the upper frame, the metal bottom, and to said arms, coils formed integral with the upper portions of said arms, resilient arms depending from said coils and formed integral therewith, eyes formed to extend out at right angles from the lower ends of said resilient arms, a lawn-mower, hooks attached to the lawn-mower for engagement with said eyes, and means for suspending the rear of the receptacle from the lawn-mower handle, all substantially as shown and described.

4. In combination with a lawn-mower, a pair of L-shaped hooks spaced apart and secured to the rear portion of the lawn-mower, a grass-catching receptacle comprising a sheet-metal bottom for the receptacle, a rod 4 around which the front portion of the bottom is coiled, the arms 9 and 10 formed by bending said rod upward at its end portions at right angles thereto, coils terminating the upper portions of said arms and integral therewith, depending arms extending down from said coils and integral therewith, an eye formed on the lower portion of each of said depending arms and integral therewith and extending out at right angles thereto to receive said hooks, an upper frame formed of a single length of wire with its ends pivoted in said coils, a fabric connecting said bottom, the upper frame, and the arms 9 and 10, and means for supporting the rear portion of the receptacle by the lawn-mower handle, all substantially as shown and described.

850,419. APPARATUS FOR SEPARATING LIQUIDS OF DIFFERENT SPECIFIC GRAVITIES. JAMES H. CAYFORD, Buenos Ayres, Argentina. Filed Nov. 29, 1905. Serial No. 289,620.

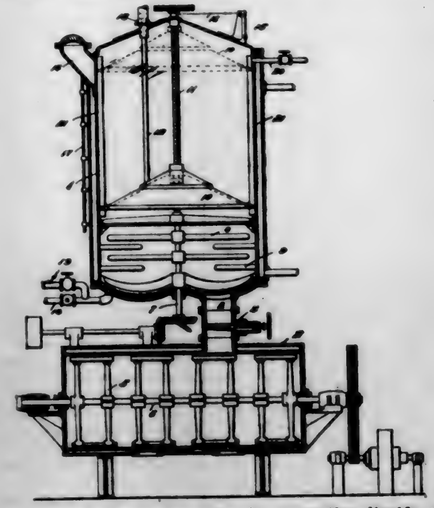

Claim.—1. In an apparatus for separating liquids of different specific gravities, the combination of a liquid-containing vessel, provided with means for introducing a charge at the side thereof, a vertically-adjustable funnel movably mounted within said vessel and connected to a discharge-conduit thereof, means for moving the same from a point below to a point above the charging-orifice, and means for creating in such vessel a greater pressure than in the discharge-conduit.

2. In an apparatus for separating liquids of different specific gravities, the combination of a liquid-containing vessel, provided with means for introducing a charge at the side thereof, a vertical screw-shaft therein adapted to be rotated, a vertically-adjustable funnel mounted upon said screw-shaft and forming a nut therefor, and vertically-movable within said vessel from a point below to a point above the bottom of the charging-opening, and means for carrying away liquid from said funnel.

3. In an apparatus for separating liquids of different specific gravities, the combination of a liquid-containing vessel, provided with means for introducing a charge at the side thereof, a vertical screw-shaft therein adapted to be rotated, a vertically-adjustable funnel mounted upon said screw-shaft and forming a nut thereof, and vertically movable within said vessel from a point below to a point above the bottom of the charging-opening, a discharge-conduit to which the funnel is connected, and means for creating in such vessel a greater pressure than in the discharge-conduit.

4. In an apparatus for separating liquids of different specific gravities, the combination of a liquid-containing vessel having a discharge-pipe, a vertical screw-shaft arranged to be rotated, and a funnel mounted on said screw-shaft and forming a nut thereof, and having a telescopic connection with such discharge-pipe for carrying away oil and grease.

5. In a combined digester and grease-extractor, the combination of a cylindrical liquid-containing vessel, stirring and agitating means in the base thereof, a valved charging-inlet on the side near the top, a rotatable threaded shaft extending through the top to a point near the stirring mechanism, a non-rotatable inverted funnel threaded on the shaft and adapted to travel from the end of the shaft to a point above said inlet, and grease-tapping means connected to said funnel.

6. In a combined digester and grease-extractor, the combination of a cylindrical liquid-containing vessel, internally-projecting blades in the base thereof, a rotatable stirrer in the base with arms mounted to rotate between said blades, a valved charging-inlet on the side of the vessel near the top, a rotatable threaded shaft extending through the top to a point near the stirring mechanism, a non-rotatable inverted funnel threaded on the shaft and adapted to travel from the end of the shaft to a point above said inlet, and grease-tapping means connected to said funnel.

850,420. KNIFE-HANDLE. JAMES E. COOPER and PRINCE A. OLIVER, Perry, N. Y., assignors to Robeson Cutlery Company, Rochester, N. Y., a Corporation of New York. Filed Mar. 19, 1906. Serial No. 306,725.

Claim.—1. In a knife-handle, the combination with a bolster-scale and a handle-piece thereon provided with a recess in its lower side, of bolsters engaging the ends of the handle and preventing it from outward and longitudinal movement relatively to the bolster-scale and a locking projection on the latter coöperating with said recess to secure the handle against transverse movement.

2. In a knife-handle, the combination with a bolster-scale and a removable handle-piece fitting thereon having a recess in its lower side, of a locking projection movable transversely of the bolster-scale and engaging in the recess and means for holding the handle in contact with the bolster-scale.

3. In a knife comprising a bolster-scale and bolsters thereon, of a handle-piece provided with a recess and fitted between the bolsters and held in contact with the bolster-scale and a movable locking projection on the latter engaging the recess.

4. In a knife, the combination with a bolster-scale, a yielding finger formed therein having an outwardly-projecting end and a handle-piece provided with a recess coöperating with the end of said finger, of bolsters secured to the bolster-scale abutting and overlapping the ends of the handle-piece.

5. In a knife, the combination with a bolster-scale, an integrally-formed finger thereon having a lateral projection, of a handle-piece provided with a recess coöperating with said projection and bolsters engaging the handle to hold it in contact with the bolster-scale.

6. In a knife, the combination with a bolster-scale, bolsters thereon and a handle-piece provided with a recess and movable laterally of the bolster-scale between the bolsters and held in engagement therewith by said bolsters, of a spring-finger on the bolster-scale and a projection thereon coöperating with the recess to lock the handle in operative position.

7. In a knife, the combination with a bolster-scale, a handle-piece thereon having a recess in its lower side and a locking projection on the bolster-scale entering the recess, of bolsters abutting the ends of the handle-piece and rivets passing through the bolsters and engaging the ends of the scale-piece.

8. In a knife, the combination with a bolster-scale, a handle-piece thereon having a recess in its lower side and a locking projection on the bolster-scale entering the recess, of bolsters secured to the bolster-scale having their inner ends projecting over the ends of the handle-piece and rivets passing through the bolsters at an angle and engaging the underlying ends of the handle-piece.

9. In a pocket-knife, the combination with a bolster-scale, and a handle-piece thereon, of bolsters on the bolster-scale abutting the ends of the handle-piece and rivets passing through the bolsters at an angle to the faces of said abutting parts and engaging the ends of the handle-piece beneath their outer sides.

10. In a pocket-knife, the combination with a bolster-scale and a handle-piece thereon, having beveled ends, of bolsters on the bolster-scale provided with undercut ends overhanging the ends of the handle-piece and rivets passing through the bolsters and engaging the ends of the handle-piece.

11. In a pocket-knife, the combination with bolster-scales provided with apertures at their ends and bolsters arranged on the outer surfaces of the scales having lugs adapted to pass through said apertures and be upset against the inner surfaces of the scales, of blades located between the bolster-scales and pintles passing through the bolsters, scales and blades.

12. In a pocket-knife, the combination with blades, bolster-scales arranged at each side thereof and provided with apertures at their ends and pintles securing the blades and scales, of bolsters arranged on the outer faces of the latter provided with integrally-formed lugs passing through the apertures and securing the bolster-scales by engaging the inner faces thereof.

850,421. SPIKE. OMAR M. DE WITT, Hood River, Oreg. Filed Sept. 24, 1906. Serial No. 335,898.

Claim.—1. A spike having an expanding portion and a longitudinal groove below the head thereof, a wedge in the groove arranged to expand the spike when drawn upwardly in the groove, and a laterally-projecting head on the wedge engageable with the parts to be held by the spike, for operating the wedge.

2. A spike having an expanding portion and a longitudinal groove below the head thereof, and said spike-head having a recess in alinement and communicating with the groove, a wedge in the groove arranged to expand the spike when drawn upwardly in the groove, and a laterally-projecting head on the wedge engageable with the parts to be held by the spike, for operating the wedge, and extensible into the recess in the spike-head.

3. A spike having an expanding portion and a longitudinal groove below the head thereof, and said spike-head having a recess in alinement and communicating with the groove and the outside of the head, a wedge in the groove arranged to expand the spike when drawn upwardly in the groove, and a laterally-projecting head on the wedge engageable with the parts to be held by the spike, for operating the wedge, and extensible into the recess in the spike-head.

850,422. HINGE FOR DOORS AND LIKE MOVABLE OBJECTS. OLIVER M. EDWARDS, Syracuse, N. Y. Filed Mar. 16, 1905. Serial No. 250,486.

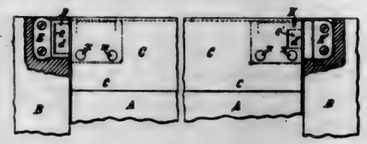

Claim.—1. In a hinge the combination, substantially as set forth, of a shell portion adapted to receive pivotal means, pivotal means adapted to be received by and be secured to such portion so as to move therewith as such portion moves, and other pivotal means adapted to coact with the pivotal means secured to the shell portion.

2. In a hinge the combination, substantially as set forth, of a shell portion adapted to be attached to a door and to receive pivotal means to be directly secured to such portion, pivotal means adapted to be received by and secured to such portion, and other pivotal means adapted to be secured to a structure and hinge the door thereto.

3. In a hinge the combination, substantially as set forth, of a shell portion provided with flange portions by which the shell portion may be attached to a door, pivotal means directly secured to the shell portion, and other pivotal means adapted to be secured to a structure and hinge the door thereto.

4. In a hinge the combination, substantially as set forth, of a shell portion provided with flange portions adapted to receive a portion of a door between them to directly secure the door thereto, pivotal means secured to the shell portion, and other pivotal means adapted to be secured to a structure and hinge the door thereto.

5. In a hinge the combination, substantially as set forth, of a shell portion provided with two substantially parallel portions between which separate portions of material to form pivotal means may be received and secured thereto, pivotal means composed of pieces of material separate from the shell portion adapted to be secured to the parallel portions thereof, and other pivotal means adapted to be secured to a structure and hinge the door thereto.

6. In a hinge the combination, substantially as set forth, of a shell portion adapted to receive two pivotal members, one of which is provided with an opening longitudinally of the same adapting such member to receive another part, and other pivotal means adapted to be secured to a structure and hinge such shell portion thereto.

7. In a hinge the combination substantially as set forth, of a shell portion formed up from sheet metal by bending and adapted to receive pivotal means, pivotal means adapted to be received by and be secured to such portion, and other pivotal means adapted to coact with the pivotal means secured to the shell portion.

8. In a hinge the combination, substantially as set forth, of a shell portion formed up from sheet metal of differing thicknesses by bending and adapted to receive pivotal means, pivotal means adapted to be received and secured to such portion, and pivotal means adapted to coact with the pivotal means secured to the shell portion.

850,423. WATER-TUBE BOILER. WILLIAM S. ELLIOTT, Pittsburg, Pa. Filed June 25, 1906. Serial No. 323,198.

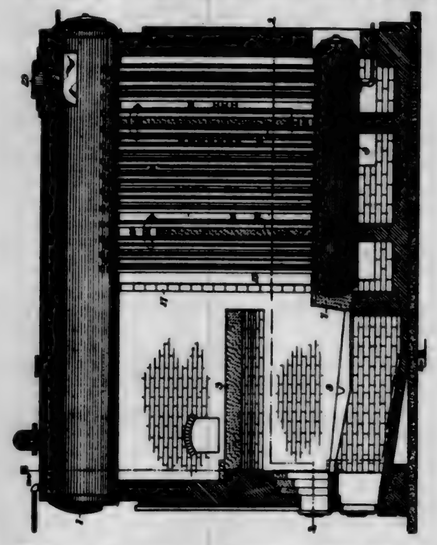

Claim.—1. In a water-tube boiler, upper and lower horizontal drums connected by a bank of tubes, a fire-chamber of greater width than the space occupied by the bank of tubes, and means for confining the gases within the bank of tubes from the front to the rear of said bank.

2. In a water-tube boiler, a plurality of upper horizontal drums and a plurality of lower horizontal drums, banks of tubes connecting the upper drums with the lower drums, a fire-chamber of greater width than the space occupied by banks of tubes, and means for confining the furnace-gases within the banks of tubes from the front to the rear of said banks.

3. In a boiler having vertical water-tubes, a fire-chamber of greater width than the space included between the extreme lateral tubes, front baffles to deflect the gases among the tubes and to prevent them from traveling in the dead spaces where there are no tubes, and rear baffles having extensions to direct the gases into the spaces occupied by the tubes.

4. In a boiler, a plurality of upper drums and a plurality of lower drums extending longitudinally of the setting, a bank of tubes connecting each upper drum to one lower drum, a fire-chamber of greater width than the spaces occupied by the respective banks of tubes, and a baffle to prevent the gases from traveling in the space between the banks of tubes.

5. In a boiler, a plurality of upper drums and a plurality of lower drums extending longitudinally of the setting, a bank of tubes connecting each upper drum to one lower drum, a fire-chamber of greater width than the spaces occupied by the respective banks of tubes, and baffles to prevent the gases from traveling in the space between the bank of tubes and between the chamber-walls and the banks of tubes.

6. In a water-tube boiler, upper and lower horizontal drums, transverse rows of vertical tubes connecting same, and baffles arranged transversely of the drums and forming passes for the gases, there being in each pass spaces between the rows of tubes sufficient for the removal and insertion of tubes, some spaces extending entirely across the bank, other spaces being alternately at opposite sides of the bank.

7. In a water-tube boiler, upper and lower horizontal drums, transverse rows of vertical tubes connecting same, and baffles arranged transversely of the drums and forming passes for the gases, there being in each pass spaces between the rows of tubes sufficient for the removal and insertion of tubes, some spaces extending entirely across the bank, other spaces being alternately at opposite sides of the bank, the tubes in the rows being in staggered relation to the adjacent rows.

8. In a water-tube boiler, upper and lower drums, a bank of vertical water-tubes connecting the same and arranged in rows transverse of the drums, and baffles arranged transversely of the drums and forming passes for the furnace-gases, there being in each pass spaces between the rows of tubes sufficient for the removal and insertion of tubes, one space extending entirely across the bank and the others partly across the same.

9. In a water-tube boiler, upper and lower drums, a bank of vertical water-tubes connecting the same and arranged in rows transverse of the drums, and baffles arranged transversely of the drums and forming passes for the furnace-gases, there being in each pass spaces between the rows of tubes sufficient for the removal and insertion of tubes, one space extending entirely across the bank, and other spaces being open alternately at opposite sides of the bank.

10. In a boiler, upper and lower drums, a bank of vertical water-tubes connecting the drums and arranged in transverse rows containing different numbers of tubes, some of the longer rows being spaced apart their entire length for the removal and insertion of tubes, and other rows being spaced apart to contain two shorter rows, one adjacent to each longer row, leaving a space between each longer row and the second shorter row for the removal and insertion of tubes.

850,424. PEELING-MACHINE FOR VEGETABLES. THOMAS FRANKLIN and GEORGE L. BELDING, West Point, N. Y. Filed June 5, 1906. Serial No. 320,260.

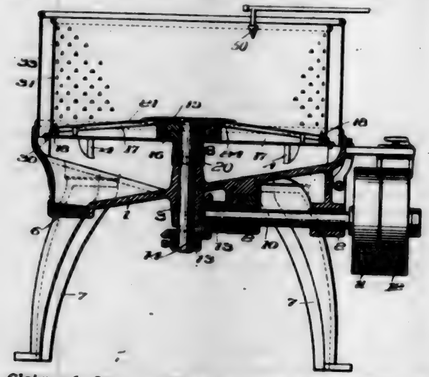

Claim.—1. In a peeling-machine for vegetables and fruits, the combination with a hollow, circular supporting-base, of a spider concentrically journaled thereon, said spider being composed of a central hub and radiating arms, hooks secured on the outer ends of the arms, a disk having its outer edge fitting within the hooks, a clamping-plate fitting over the central portion of the disk, screws to secure the clamping-plate to the hub, means to rotate the spider and disk, a cylinder secured on the base to surround the disk, said cylinder and disk being perforated and having picking projections on their inner surfaces, and an imperforate shell on the base surrounding the cylinder.

2. In a peeling-machine, the combination with a circular base, of a spider concentrically and substantially horizontally journaled therein, said spider being composed of a central hub, integral, radiating arms and upward projections on the ends of said arms, one of said arms being longitudinally slotted, a disk of thin metal arranged on the spider with its margin engaging said projections, said disk having a central opening and being split from said opening to its margin and with the slit so formed arranged to register with the slot in the slotted arm, a clamping-plate arranged to engage with the inner portion of the disk, means to secure the plate to the hub to clamp the disk in place, a cylinder on the base concentrically arranged to surround the disk, said cylinder and disk being perforated and roughened on their inner surfaces, and means to rotate the disk.

3. In a peeling-machine, the combination with a circular base, of a spider concentrically journaled thereon, said spider being composed of a central hub and radiating arms slightly downwardly inclined toward their ends, one of said arms being longitudinally slotted, beveled hooks on the ends of arms, a disk of thin metal arranged on the spider with its margin forced into the hooks, said disk having a central opening and split from said opening to its margin, a clamping-plate having an annular shoulder fitting within the central opening and forming an abutment for the inner edge of the disk, and a portion outside of the shoulder engaging with the upper surface of the disk, screws to secure the plate to the hub and to clamp the disk on the spider, the disk being arranged with the slit between its split ends to register with the slot in said slotted arm, a cylinder on the base around the disk, said cylinder and disk being perforated and having projections on their inner surfaces, a shell on the base surrounding the cylinder and means to rotate the disk, substantially as shown.

4. In a potato-peeling machine, the combination with a suitable cast-metal, circular base, of a disk journaled thereon in horizontal position, means to rotate the disk, a sheet-metal cylinder secured on the base to surround the disk and concentric therewith, said cylinder and disk being perforated and provided with picking projections on their inner surfaces, a corresponding piece of thin metal secured on a suitable frame and hinged to form a door to said opening, and an outwardly-extending stop-arm on the door adapted to engage with the edge of the opening when the door is swung in, to stop the door substantially at an angle of forty-five degrees to a tangent to the cylinder at the point at which the door is hinged.

5. In a peeling-machine, the combination with a suitable base, of a support for the disk journaled therein, said support having its upper surface slightly downwardly inclined toward the periphery, a thin metal disk secured on said support, a cylinder of thin metal secured on the base to surround the disk, said cylinder and disk being perforated and having picking projections on their inner surfaces and the cylinder having a side opening, a door, composed of a frame and a sheet of thin metal curved and formed to correspond to the cylinder, hinged in said opening to swing in and the hinges arranged not in vertical alinement whereby the door swings parallel to the inclined disk, an imperforate shell surrounding the cylinder and provided with a corresponding side opening, and a chute secured on the base within the shell and extending through said shell-opening, substantially as described and shown.

6. In a peeling-machine, the combination with a suitable base, of an imperforate, sheet-metal shell supported thereon, a perforated sheet-steel cylinder secured on the base concentrically within the shell, a spider journaled on the base within the cylinder and concentrically therewith, said spider being composed of a central hub and radiating arms, the arms being inclined slightly down from the hub, a perforated sheet-steel disk secured on the spider, and means to rotate the spider and the disk, said disk and cylinder having picking projections on their inner surface.

7. In a peeling-machine, the combination with a hollow or dished base having its bottom inclined toward the center, a waste-spout adjacent to its outer edge and a channel leading with a slight downwardly inclination from the center to the waste-spout, of suitable supporting-legs for

the base, a vertical shaft fitted to a bearing in the base, a spider composed of a central hub and radiating arms secured on the upper end of the shaft, a thin metal disk secured on the spider, a cylinder secured on the base and inclosing the disk, and a cylindrical shell inclosing the cylinder, said disk and cylinder being perforated and having picking projections on their inner surfaces, and said radiating arms being slightly inclined downwardly toward their ends and having their ends free and disconnected except by the disk.

8. In a potato-peeling machine, the combination with a suitable metal base, of a disk journaled thereon in substantially a horizontal position, means to rotate the disk in one direction, a sheet-metal cylinder secured on the base to surround the disk and having a side opening, said cylinder and disk being perforated and provided with picking projections on their inner surfaces, a door hinged by one of its vertical edges in said opening and adapted to be swung in to intercept the peeled articles and direct them out through the opening, and a piece of sheet metal secured to the inner surface of the door, said piece being curved and perforated and provided with picking projections to correspond to the cylinder, and being adapted to fit the opening so that the inner surface of the cylinder is continuous and uniform when the door is closed.

9. In a peeling-machine, the combination with a suitable base, of a disk journaled thereon in substantially a horizontal position, means to rotate the disk in one direction, a cylinder on the base surrounding the disk, a shell on the base surrounding the cylinder, corresponding side openings in the cylinder and the shell, a door hinged adjacent to said openings and adapted to swing inwardly through the cylinder-opening, and a stop on the door adapted to engage with the edge of the shell-opening to limit the inward swing of the door, and limit the extent of inward movement of the door, so that the peeled articles will strike the outer surface of the door and be directed outwardly through the opening.

10. In a peeling-machine, the combination with a suitable base, of a disk journaled thereon in substantially a horizontal position, means to rotate the disk in one direction, a cylinder secured on the base around the disk, said cylinder and disk being perforated and provided with picking projections on their inner surfaces, a cylindrical shell on the base around the cylinder, said shell and cylinder having corresponding side openings, a metal frame set in said openings and having an outwardly-extending chute, a door hinged in said frame by one of its vertical edges and adapted to swing in through the cylinder-opening, and a stop on the outer surface of the door near the top, said stop being adapted to engage with the edge of said frame and limit the inward swing of the door, so that the peeled articles will strike the outer face of the door, when the door is swung in, and be directed out through the opening.

850,425. STAMPING AND NUMBERING MACHINE. JOSEPH FRENCH, Woonsocket, R. I. Filed Oct. 30, 1906. Serial No. 341,323.

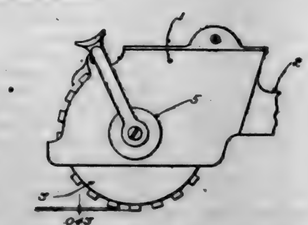

Claim.—1. In a stamping and numbering machine, a printing-head provided with settable type-wheels or printing-wheels, and having the letters of the alphabet, in consecutive order, divided between two wheels which are located side by side.

2. In a stamping and numbering machine, a printing-head provided with settable type-wheels or printing-wheels having the letters of the alphabet, divided between two wheels which are located side by side, and also having the ten digits upon each of a plurality of numeral-wheels next adjacent the second of the said alphabet-wheels.

3. In a stamping and numbering machine, a printing-head provided with settable type-wheels or printing-wheels having the letters of the alphabet, divided between two wheels which are located side by side, the second of such wheels also bearing the ten digits, and also having the ten digits upon each of a plurality of numeral-wheels next adjacent the said second alphabet-wheel.

4. In a stamping and numbering machine, a printing-head provided with settable type-wheels or printing-wheels having the letters of the alphabet, divided between two wheels which are located side by side, the second of such wheels also bearing the ten digits, and also having two sets of digits differing in appearance upon each of a plurality of digital or numeral wheels next adjacent the said second alphabet-wheel.

850,426. SEWING-MACHINE. GEORGE E. GILBERT, Haverhill, Mass., assignor of one-half to Aime J. La Rose, Haverhill, Mass. Filed Feb. 11, 1907. Serial No. 356,663.

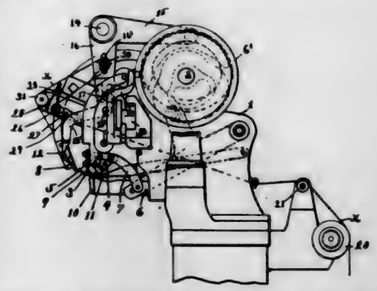

Claim.—1. A shoe-sewing machine of the character described comprising a tension device, a needle and operating means therefor, a feeding device and an operating-lever for moving said device to and from the work, a thread-engaging device on said lever, a relatively stationary thread-guide between said engaging device and the needle, disposed to permit the thread from the tension device to be passed about it and thence about said thread-engaging device to the needle, and means for moving said lever to carry said thread-engaging device away from said guide, as the needle is advanced to take up thread and to pull off thread from said tension device, and, by the same movement, to retract the feeding device from the work, and, upon opposite movement of said lever, to give off thread to the needle as it is retracted, and to advance the feeding device to the work, substantially as described.

2. A shoe-sewing machine of the character described comprising a tension device, a needle and operating means therefor, a feeding device and an operating-lever for moving said device to and from the work, a thread-sheave mounted on said lever and adjustable longitudinally thereof, a relatively stationary thread-guide between said sheave and the needle disposed to permit the thread from the tension device to be passed about it and thence about said sheave to the needle, and means for moving said lever to carry said sheave away from said guide, as the needle is advanced, to take up thread and to pull off thread from said tension device, and, by the same movement, to retract the feeding device from the work, and, upon opposite movement of said lever, to give off thread to the needle, as it is retracted, and to advance the feeding device to the work, substantially as described.

850,427. DEVICE FOR MAKING ORNAMENTAL BRICK. ALEX H. GRANT, Middleport, and MILTON N. GRANT, Columbus, Ohio, assignors to The Columbus Clay Products Company, Columbus, Ohio, a Corporation of Ohio. Filed Jan. 21, 1907. Serial No. 353,231.

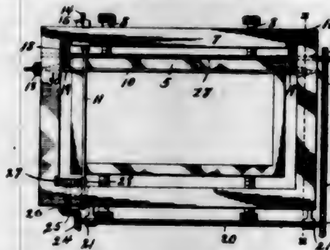

Claim.—1. In a device of the character described, the combination with a machine having a die through which a mass of clay is discharged, of a wire arranged at the mouth of said die and adapted to engage and roughen the outer face of the mass of clay which passes through said die, and positive means for imparting vibration to said wire.

2. In a device of the character described, the combination with a machine having a die through which a mass of clay is discharged, of wires arranged at the mouth of said die and adapted to engage and roughen the outer face of the mass of clay which passes through said die, and positive means for imparting vibration to said wires.

3. In a device of the character described, the combination with a machine having a die through which a mass of clay is discharged, of wires arranged at the sides of the mouth of said die and adapted to engage and roughen the outer face of the mass of clay which passes through said die, and positive means for imparting vibration to said wires.

4. In a device of the character described, the combination with a machine having a die through which a mass of clay is discharged, of wires arranged at the sides of the mouth of said die and adapted to engage and roughen the outer face of the mass of clay which passes through said die, and rotative members the peripheries of which engage said wires, said rotative members being adapted to impart a positive vibration to said wires.

5. In a device of the character described, the combination with a machine having a die through which a mass of clay is discharged, of wires arranged at the sides of the mouth of said die and adapted to engage and roughen the outer face of the mass of clay which passes through said die, and ratchet-wheels the peripheries of which engage said wires, said ratchet-wheels being adapted to impart a positive vibration to said wires.

850,428. DEVICE FOR MAKING ORNAMENTAL BRICK. ALEX H. GRANT, Middleport, and MILTON N. GRANT, Columbus, Ohio, assignors to The Columbus Clay Products Company, Columbus, Ohio, a Corporation of Ohio. Filed Jan. 21, 1907. Serial No. 353,232.

Claim.—1. In a device of the character described, the combination with a machine adapted to discharge a continuous mass of clay therefrom, of a plate pivoted above said mass of clay, and the free edge of which engages the face of said clay, and means for imparting rapid vibratory movement to said plate.

2. In a device of the character described, the combination with a machine having a die through which a continuous mass of clay is discharged, of a plate pivoted at an angle above said clay, the free edge of said plate being opposed to the movement of said clay, and a rotative member adapted to impart rapid vibratory movement to said plate.

3. In a device of the character described, the combination with a machine having a die through which a continuous mass of clay is discharged, of a plate pivoted at an angle above said clay, the free edge of said plate being opposed to the movement of said clay, a rotative member adapted to impart rapid vibratory movement to said plate, and spring means for holding the plate into engagement with the clay.

4. In a device of the character described, the combination with a conveyer adapted to support a moving mass of clay, of a frame, a plate pivoted at one edge in said frame and above said mass of clay, the free edge of said plate engaging the upper surface of the mass of clay, spring means for holding the free edge of said plate into engagement with the mass of clay, and a rotative member adapted to impart a rapid vibratory movement to said plate.

5. In a device of the character described, the combination with a machine adapted to discharge a continuous mass of clay therefrom, of a member which engages the face of the mass of clay, and positive means for imparting rapid vibratory movement to said member to thereby roughen the face of the mass of clay.

850,429. PHOTOGRAPHIC-PLATE HOLDER. PETER GRASSMANN, Gross-Lichterfelde-Ost, Germany. Filed May 5, 1905. Serial No. 259,030.

Claim.—1. A photographic-plate holder comprising a carrier and provided with a mask *f*, a retaining-strip *d* secured to the top edge of said holder and projecting outwardly and downwardly and a casing of light-proof material slidable over said holder and having its end edges adapted to pass under the edges of the retaining-strip.

2. A photographic-plate holder comprising a carrier made of cardboard, a metal strip secured to the top edge thereof, said strip having projecting edges and a casing also made of cardboard sliding over said carrier and having its end edges passing under the edges of the metal strip said casing having its edges bound in metal.

850,430. SHAVING APPARATUS. FRANZ J. HALBEKANN, Solingen, Germany, assignor to The Firm of Dieckmann & Wille vorm. Ferd. Wester, Solingen, Germany. Filed Sept. 14, 1906. Serial No. 334,588.

Claim.—1. In a shaving apparatus, the combination with a support provided with a central hole, of two blades each having two parallel cutting edges, a blade-holder provided with a central hole and adapted to rest on said support and to reversibly hold said two blades, a cover provided with a central hole and adapted to cover said two blades while allowing their external cutting edges to project, and a handle engaging in the holes of said support, said blade-holder and said cover, adapted to compress said parts for tightening said two blades.

2. In a shaving apparatus, the combination with a rec-

tangular metallic plate bent to form a channel and provided with a central hole, of two blades each having two parallel cutting edges, a blade-holder provided with a central hole and adapted to rest on the longitudinal edges of said rectangular metallic plate and to reversibly hold said two blades, a cover provided with a central hole and adapted to cover said two blades while allowing their external cutting edges to project, and a handle engaging in the holes of said rectangular metallic plate, said blade-holder and said cover, adapted to compress said parts for tightening said two blades.

3. In a shaving apparatus, the combination with a rectangular metallic plate bent to form a channel and provided with a central hole, of two blades each having two projections at both ends and two parallel cutting edges, a blade-holder adapted to rest on the longitudinal edges of said rectangular metallic plate and consisting of a substantially rectangular metallic plate which is longitudinally bent in four parallel lines and is provided with a central hole, also with a plurality of protecting-ears along the long sides and with eight studs on the two short sides, the eight studs of said blade-holder being adapted to reversibly hold the projections of said two blades, a cover provided with a central screw-threaded hole and adapted to cover said two blades while allowing their external cutting edges to project, and a handle provided with a shoulder and with a screw-threaded end which is adapted to engage through the holes of said rectangular metallic plate and said blade-holder into the screw-threaded hole of said cover, said handle being adapted by means of its shoulder to compress all the parts for tightening said two blades.

4. In a shaving apparatus, the combination with a rectangular metallic plate bent to form a channel and provided with a central hole, of a blade-holder adapted to rest on the longitudinal edges of said rectangular metallic plate and consisting of a substantially rectangular metallic plate which is longitudinally bent in four lines and is provided with a central hole, also with a plurality of protecting-ears along the long sides and with eight studs on the two short sides, two blades each having one projection on each of the ends and two parallel cutting edges, they being adapted to reversely engage with their projections between the eight studs of said blade-holder, a cover provided with a central screw-threaded hole and with two projections and adapted to engage with its projections between the eight studs of said blade-holder and to cover said two blades while allowing their external cutting edges to project, and a handle provided with a shoulder and with a screw-threaded end which is adapted to engage through the holes of said rectangular metallic plate and said blade-holder into the screw-threaded hole of said cover, said handle being adapted by means of its shoulder to compress all the parts for tightening said two blades.

850,431. BRACE FOR ROUNDABOUTS AND ANALOGOUS STRUCTURES. ALLAN HERSCHELL, North Tonawanda, N. Y., assignor to Herschell-Spillman Company, North Tonawanda, N. Y. Filed Mar. 12, 1906. Serial No. 305,571.

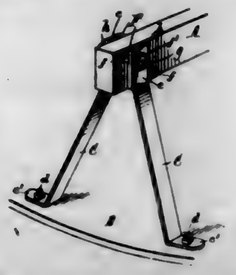

Claim.—1. The combination with a frame member and a platform, of separate connecting-braces for the same secured to one of said members, and plates secured to the other member, said braces and plates having separate interlocking parts which are shaped to be disengaged by sliding said braces relative to said plates, substantially as set forth.

2. The combination with a frame member and a platform, of a connecting-brace for the same secured to one of said members, and a plate secured to the other member, said brace and plate having interlocking parts consisting of a headed stud on the one and a keyhole-slot in the other, substantially as set forth.

3. The combination with a frame member and a platform, of a connecting-brace for the same secured to one of said members, and a plate secured to the other member, a projection on said plate having an enlarged portion, and said brace having a slot shaped to receive and hold said projection, substantially as set forth.

4. The combination with a frame member and a platform, of a connecting-brace for the same secured to one of said members, a plate secured to the other member, said brace and plate having interlocking parts consisting of a headed stud on the one and a keyhole-slot in the other, and means for holding said brace and plate from a relative swinging movement, substantially as set forth.

5. The combination with a sweep and a platform, of a connecting-brace for the same secured to said platform, a plate secured to said sweep, a headed stud on said plate, and said brace having a keyhole-slot to receive and hold said stud, substantially as set forth.

850,432. NUT-LOCK. LUIS H. KENNEDY, Columbia, S. C., assignor of two-thirds to Mary Francis Livingston and John R. Livingston, jointly, Columbia, S. C. Filed Feb. 2, 1907. Serial No. 355,428.

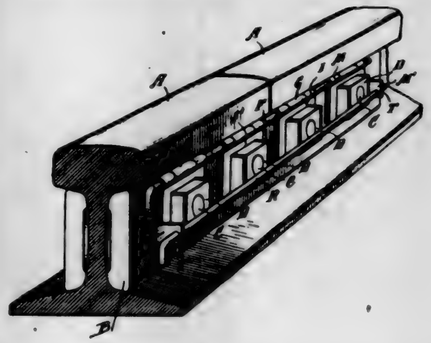

Claim.—1. A nut-lock comprising, in combination with the rails and fish-plate, bolts passing through the same, nuts upon said bolts, a series of apertured plates, a rod upon which the same are hinged, bolts passing through the aperture of each plate, a swinging recessed plate also hinged to said rod, flanges upon the marginal edges of the recess in said plate and adapted to engage the edges of the nuts, and a rod engaging the edges of said flanges and adapted to hold the latter in engagement with said nuts, as set forth.

2. A nut-lock comprising, in combination with the rails and fish-plate, bolts passing through the same, nuts upon said bolts, a series of apertured plates, a rod upon which the same are hinged, bolts passing through the aperture of each plate, a swinging recessed plate also hinged to said rod, flanges upon the marginal edges of the recess in said plate and adapted to engage the edges of the nuts, lugs carrying plates mounted upon said rod, and a retaining-rod passing through the apertures of said lugs and adapted to engage the outer edges of said flanges, as set forth.

850,433. TELEPHONE APPARATUS. KOBY KOHN, New York, N. Y., assignor of one-half to Louis A. Ksensky, Denver, Colo. Filed Oct. 24, 1903. Serial No. 178,431.

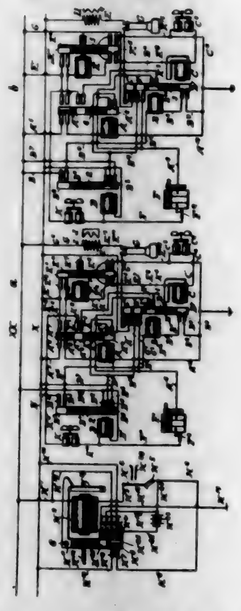

Claim.—1. In a telephone system for party-lines, the combination of the main-line wires leading from a central office, of a series of telephone-receivers each connected to the line-wires by an open electric circuit, a source of electric-current supply at the central office connected to the line-wires by an open circuit, means including a magnet and an armature, under the control of the user of one receiver for closing this receiver-circuit and for closing said open circuit at the central office for sending current over the line-wires to operate devices for preventing the closure of all the other receiver-circuits, substantially as set forth.

2. In a telephone system for party-lines, the combination of the main-line wires leading from a central office of a series of telephone-receivers each connected to the line-wires by an open electric circuit, a source of electric-current supply at the central office, a magnet and an armature at each receiver-station both connected to one of the line-wires, means under the control of an operator at the central office for sending a current from said source of supply over the line-wires to operate said armatures and magnets at all the receiver-stations to prevent the closure of the receiver-circuits by users thereof, and means under the control of the operator at the central office for subsequently closing each receiver-circuit selectively, substantially as set forth.

3. In a telephone system, the combination with the main-line wires, of a series of telephone-receivers each independently connected to said wires by an open electric circuit, a generator adjacent to each receiver, and means operated by each generator for closing its receiver-circuit and preventing the closure of all the other receiver-circuits, substantially as set forth.

4. In a telephone system for party-lines, the combination with the main-line wires of said party-line, of a series of telephone-receivers each independently connected to said wires by an open electric circuit, a generator adjacent each receiver, means operated by each generator for closing its receiver-circuit and preventing the closure of the other receiver-circuits, and a signal which may be operated by the generator at such stations where the receiver-circuits are not closed when the line is in use, substantially as set forth.

5. In a telephone system for party-lines, the combination with the main wires of the said party-line leading from a central office, of a series of telephone-receivers each independently connected to said wires by an open electric circuit, a generator adjacent to each receiver, means controlled by each generator for sending a current of electricity from a central office over the line-wires, and devices operated by said current for closing the receiver-circuit adjacent to the active generator and for preventing the closure of all the other receiver-circuits, substantially as set forth.

6. In a telephone system for party-lines, the combination with the main-line wires leading from a central office, of a series of telephone-receivers each independently connected to the line-wires by an open electric circuit, a circuit-closer for each receiver-circuit including an armature, a magnet for each armature, means for energizing each of said magnets selectively to close its receiver-circuit, and means for preventing the closure of all the other receiver-circuits, substantially as set forth.

7. In a telephone system for party-lines, the combination with the main-line wires connected to central, of a plurality of telephone-receivers not exceeding four connected to said wires independently by open electric circuits, a circuit-closer for each circuit including a polarized armature, a magnet for each armature electrically connected to one of the line-wires, and each including in its circuit a polarized bell, two only of said magnets and bells being connected to one line-wire, and the polarities of the two bells being opposite, and the polarities of the armatures coöperating with the magnets being also opposite, whereby when a current of one polarity is sent over said line-wire it will ring one bell and operate one armature to close its receiver-circuit but will not affect the other bell and armature on the same line-wire, substantially as and for the purpose set forth.

8. In a telephone system for party-lines, the combination with the main-line wires leading from a central office, of a plurality of telephone-receivers, each independently connected to said wires by an open electric circuit, a circuit-closer including an armature for each circuit, a magnet B for each armature, a generator F adjacent to each magnet B, means controlled by the generator for establishing electrical connection between a main-line wire, its magnet B and the earth, a magnet A adjacent to each receiver electrically connected to one of the main wires and the earth, and devices operated by the magnets A for preventing the closure of all the receiver-circuits except the one to the generator which was operated, substantially as set forth.

9. In a telephone system for party-lines, the combination with the main-line wires leading from a central office, of a plurality of telephone-receivers each independently connected to said wires by an open electric circuit, a circuit-closer including an armature for each circuit, a magnet B for each armature, a generator F adjacent to each magnet B, means controlled by the generator for establishing electrical connection between a main-line wire, its magnet B and the earth, a magnet A adjacent to each receiver electrically connected to one of the main wires and the earth, means controlled by the generator for sending a current over the main wires through all the magnets A and the magnet B adjacent the generator operated, and devices operated by the magnets A for preventing the closure of all the receiver-circuits except the one to the generator which was operated, substantially as set forth.

10. In a telephone system, the combination of a series of magnets and their armatures for making and breaking circuits, said armatures being pivoted and normally tending to remain in any position to which they are moved, a resetting-magnet, and an armature to be operated by the latter magnet and normally in position to be engaged by arms on the other armatures when the latter are operated, and said resetting-armature when attracted by its magnet acting to restore all the other armatures which engage it to normal position, substantially as set forth.

11. In a telephone system, the combination of a series of magnets and their armatures for making and breaking cir-

cuits, said armatures being pivoted and normally tending to remain in any position to which they are moved, a resetting-magnet, an armature to be operated by the latter magnet and normally in position to be engaged by arms on the other armatures when the latter are operated, and said resetting-armature when attracted by its magnet acting to restore all the other armatures which engage it to normal position, and means for restoring the resetting-armature to normal position when released by its magnet, substantially as set forth.

850,434. TELEPHONE APPARATUS. KOBY KOHN, New York, N. Y., assignor of one-half to Louis A. Ksensky, Denver, Colo. Filed Feb. 11, 1904. Serial No. 193,116.

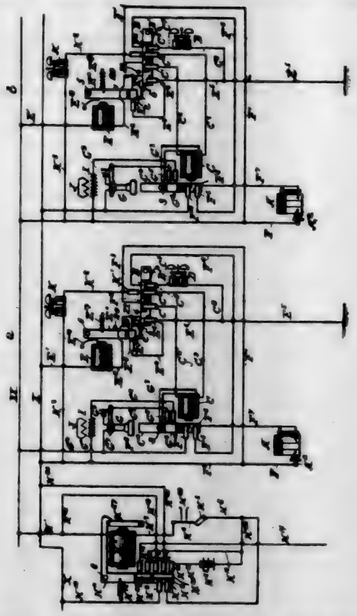

Claim.—1. In a telephone system for party-lines, the combination with the main-line wires leading from a central station, of a series of telephone-receivers each independently connected to the line-wires by an open electric circuit, a polarized magnet and an armature at each substation for closing the circuit of its receiver, and a generator at each substation under the control to the person thereat for sending an alternating current through said magnet to energize it, substantially as set forth.

2. In a telephone system for party-lines, the combination with the main-line wires leading from a central station, of a series of telephone-receivers each independently connected to the line-wires by an open electric circuit, a polarized magnet and an armature at each substation for closing the circuit of its receiver, and means at each substation under the control of a person thereat for sending a current through said magnet to energize it, to first close its own receiver-circuit, and then close a circuit at the central station for sending a current over the main-line wires to operate devices for preventing the closure of the receiver-circuit at any other substation on the line by a person thereat, substantially as set forth.

3. In a telephone system for party-lines, the combination with the main-line wires leading from a central station, of a series of telephone-receivers each independently connected to the line-wires by an open electric circuit, a receiver-circuit closer at each substation including a polarized magnet and an armature, a signal at the central station, and a generator at each substation under the control of a person thereat for sending an alternating current through said magnet to energize it and cause it to close its own receiver-circuit, and also close a circuit to the central station to operate the signal thereat, substantially as set forth.

4. In a telephone system for party-lines, the combination with the main-line wires leading from a central station, of a series of telephone-receivers each independently connected to the line-wires by an open electric circuit, a receiver-circuit closer at each substation including a polarized magnet and an armature, a signal at the central station, and a generator at each substation under the control of a person thereat for sending an alternating current through said magnet to energize it and cause it to close its own receiver-circuit, and also close a circuit to the central station to operate the signal thereat, and also close a circuit at the central station for sending a current over the main-line wires to operate devices for preventing the closure of the receiver-circuit at any other substation on the line by a person thereat, substantially as set forth.

5. In a telephone system, the combination with the main-line wires leading from a central station, of a telephone-receiver connected to said line-wires by an open electric circuit, a polarized magnet and an armature adjacent to said receiver, means for sending a current of the desired polarity through the magnet to operate its armature to close the receiver-circuit, and means for preventing said magnet from breaking said receiver-circuit when a current of opposite polarity is sent through it, substantially as set forth.

6. In a telephone system, the combination with the main-line wires leading from a central station, of a telephone-receiver connected to said line-wires by an open electric circuit, a polarized magnet and an armature adjacent said receiver, an arm pivotally supported adjacent said armature and carrying devices for closing said receiver-circuit and means for transmitting movement from the armature to said arm to close the receiver-circuit when the magnet is energized by a current of one polarity but inoperative to move said arm when the magnet is energized by a current of opposite polarity, substantially as set forth.

7. The combination with main-line wires, of a telephone-receiver connected thereto by an open electric circuit, a polarized magnet and a pivoted armature, an arm carrying devices for closing the receiver-circuit, said arm having an opening into which the armature loosely fits and being pivotally supported on the pivots of the armature, and a bar secured to the arm and extending across said opening to be engaged by one end of the armature, substantially as set forth.

8. In a telephone system for party-lines, the combination of main-line wires leading from a central station, of a series of telephone-receivers each connected to the line-wires by an open electric circuit, a polarized magnet and armature at each substation for closing its own receiver-circuit, a polarized bell at each substation, a non-polarized magnet at each substation, and means operated by the non-polarized magnet for electrically connecting the polarized magnet, the polarized bell and itself in series to receive a polarized current over the main-line wires from the central station, substantially as set forth.

9. In a telephone system for party-lines, the combination of main-line wires leading from a central station, of a series of telephone-receivers each independently connected to the line-wires by an open electric circuit, a polarized magnet and armature at each substation for closing its own receiver-circuit, a non-polarized magnet at each station, means for sending a current from the central station over the line-wires to energize the non-polarized magnets, means operated by the non-polarized magnets to prevent the closure of their respective receiver-circuits by persons at the respective substations, and means for sending a polarized current from the central station for operating the polarized magnets selectively to close their respective receiver-circuits, substantially as set forth.

10. In a telephone system for party-lines, the combination of main-line wires leading from a central station, of a series of telephone-receivers each independently connected to the main-line wires by an open electric circuit, a polarized magnet and armature at each substation for closing its own receiver-circuit, a polarized bell at each substation, a non-polarized magnet and armature at each substation connected to one of the line-wires, the said magnets and bell being normally deënergized, and circuit-closing devices controlled by said non-polarized magnet for electrically connecting the bell and magnets at each station in series, substantially as set forth.

11. In a telephone system for party-lines, the combination of main-line wires leading from a central station, of a series of telephone-receivers each independently connected to the main-line wires by an open electric circuit, a polarized magnet and armature at each substation for closing its own receiver-circuit, a polarized bell at each substation, a non-polarized magnet and armature at each substation connected to one of the line-wires, the said magnets and bell being normally deënergized, a pivoted arm carrying circuit-closing devices normally biased to move in one direction and restrained from such movement by the armature of the non-polarized magnet, and means for sending a current through said non-polarized magnets for releasing said arm to close circuits for connecting the bell and magnets at each station in series, substantially as set forth.

12. In a telephone system for party-lines, the combination of main-line wires leading from a central station, of a series of telephone-receivers each independently connected to the main-line wires by an open electric circuit, a polarized magnet and armature at each substation for closing its own receiver-circuit, a polarized bell at each substation, a non-polarized magnet and armature at each substation connected to one of the line-wires, the said magnets and bell being normally deënergized, a pivoted arm carrying circuit-closing devices normally biased to move in one direction and restrained from such movement by the armature of the non-polarized magnet, means for sending a current through said non-polarized magnets for releasing said arm to close circuits for connecting the bell and magnets at each station in series, and means operated by the non-polarized magnet for restoring the arm to normal position, substantially as set forth.

13. The combination with the main-line wires, of a telephone-receiver connected thereto by an open electric circuit, a magnet C and armature for closing said circuit, a bell, a second magnet E connected to one of the line-wires, an armature for said magnet, said magnets and bell being normally out of circuit with each other, a pivoted arm carrying circuit-closing devices, said arm being normally biased to move in one direction and restrained from such movement by the armature of the magnet E, means for sending a current through the magnet E to attract its armature and release said arm to close circuits for connecting the said magnets and bell in series, substantially as set forth.

14. The combination with the main-line wires, of a telephone-receiver connected thereto by an open electric circuit, a magnet C and armature for closing said circuit, a bell, a second magnet E connected to one of the line-wires, an armature for said second magnet, said magnets and bell being normally out of circuit with each other, a pivoted arm carrying circuit-closing devices, said arm being normally biased to move in one direction and restrained from such movement by the armature of the magnet E, means for sending a current through the magnet E to attract its armature and release said arm to close circuits for connecting the said magnets and bell in series, a pivoted bar forming a stop to limit the movement of the said arm, and connections between said bar and the armature of the magnet E for restoring said arm to its normal position, substantially as set forth.

850,435. BRICK-MACHINE. OSWALD KUTSCHE, York, Pa., assignor to Gustave A. Woltman, York, Pa. Filed June 8, 1906. Serial No. 320,760.

Claim.—1. In a brick-press, the combination with a power-shaft, of a lever journaled thereon, a changing fulcrum for said lever and toggle-links eccentrically journaled on the outer end of said lever.

2. In a brick-press, a crank-lever journaled on said crank, a changing fulcrum for and in constant engagement with said lever, and two toggle-links eccentrically journaled on the outer end of said lever.

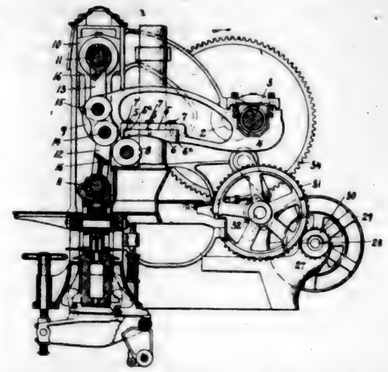

3. In a brick-press, the combination with the pitman-lever having two journal-bearings in its outer end positioned eccentrically to each other, journals carried thereby, and toggle-links with eccentric heads mounted on said journals.

4. In a brick-press, the combination with a pitman-lever, of toggle-links separately mounted on the outer end of said lever eccentrically to each other and provided with eccentric heads adapted to contact during a part of the movement of the toggle and a continuously-rotating crank-shaft operating the pitman-lever.

5. In a brick-press, the combination with a mold and plungers working therein, of side bars carrying the lower plunger, a toggle-link pivotally secured at one end to the upper ends of the side bars, a pitman-lever to which the other end of said link is pivotally secured, a toggle-link pivotally secured at its upper end to the pitman-lever, and carrying the upper plunger, said links having eccentric heads adapted to contact during a portion of the movement of the toggle.

6. In a brick-press, the combination with the pitman-lever, of two shafts mounted in the outer end and extending from each side thereof; of a double toggle-link journaled on each shaft with their ends abutting.

7. In a brick-press, a double toggle-link, the inner ends of which each have an eccentric enlargement.

8. In a brick-press, a double toggle-link terminating in a cam-face on the inner end.

9. In a brick-press, the combination with the pitman-lever, of two double toggle-links pivoted at their inner ends to the sides of said lever, one above the other.

10. In a brick-press, the combination with the pitman-lever, of two double toggle-links independently pivoted at their inner ends to the sides of said lever, and cam-faces on the inner end of said links.

850,436. BRAKE. VAN BUREN LAMB, New Haven, Conn., assignor to Keystone Brake Shoe Company, New York, N. Y., a Corporation of New York. Filed May 26, 1906. Serial No. 318,808.

Claim.—1. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion provided with undercut side walls converging toward each end of the shoe, a head comprising a pair of laterally-separable portions each of which engages one of said side walls, and means adapted to hold the portions of said head in assembled condition.

2. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion provided with undercut side walls converging toward each end of the shoe, a head comprising a pair of laterally-separable portions each of which is adapted to fit one of said side walls, and

means adapted to hold the portions of said head in assembled condition.

8. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion provided with undercut side walls converging toward each end of the shoe, a head comprising a pair of laterally-separable portions each of which is adapted to fit one of said side walls, the portions of said head being provided with laterally-extending intermeshing projections, and means adapted to hold the portions of said head in assembled condition.

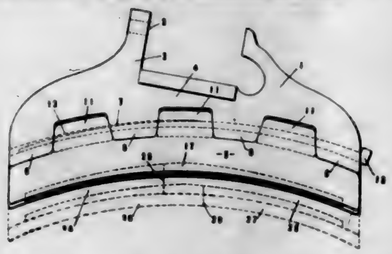

4. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion provided with undercut side walls converging toward each end of the shoe, a head comprising a pair of laterally-separable portions each of which is adapted to fit one of said side walls substantially throughout the entire length thereof, and means adapted to hold the portions of said head in assembled condition.

5. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion provided with undercut side walls converging toward each end of the shoe, a head comprising a pair of laterally-separable portions each of which is adapted to fit one of said side walls adjacent each end thereof, and means adapted to hold the portions of said head in assembled condition.

6. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion provided with undercut side walls converging toward each end of the shoe, a head comprising a pair of laterally-separable portions each of which is adapted to fit one of said side walls adjacent each end thereof, said head being provided with intermeshing projections, and means adapted to hold the portions of said head in assembled condition.

7. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion provided with undercut side walls converging toward each end of the shoe, a head comprising a pair of laterally-separable portions each of which is adapted to fit one of said side walls adjacent each end thereof, said head being provided with intermeshing projections, and a key passing through said projections and adapted to hold the portions of said head in assembled condition.

8. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion of decreasing thickness toward the ends of the shoe and provided with undercut side walls converging toward each end of the shoe, a head comprising a pair of laterally-separable portions each of which is adapted to fit one of said side walls, and means adapted to hold the portions of said head in assembled condition.

9. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion of decreasing thickness toward the ends of the shoe and provided with undercut side walls converging toward each end of the shoe, a head comprising a pair of laterally-separable portions each of which is adapted to fit one of said side walls, the portions of said head being provided with laterally-extending intermeshing projections, and means adapted to hold the portions of said head in assembled condition.

10. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion of decreasing thickness toward the ends of the shoe and provided with undercut side walls converging toward each end of the shoe, a head comprising a pair of laterally-separable portions each of which is adapted to fit one of said side walls adjacent each end thereof, and means adapted to hold the portions of said head in assembled condition.

11. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion provided with undercut side walls converging toward the end of the shoe, a second shoe adapted to fit about said projecting portion and having upon its rear surface a similar projecting portion, a head comprising a pair of laterally-separable portions each of which is adapted to fit one of the side walls of the projecting portion of said second shoe adjacent each end thereof, and means adapted to hold the portions of said head in assembled condition.

12. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion provided with undercut side walls converging toward each end of the shoe, a second brake-shoe fitted about said projecting portion and provided with a similar projecting portion upon its rear surface, a brake-head comprising a pair of laterally-separable portions each of which is adapted to fit one of the side walls of the projecting portion of said second shoe adjacent each end thereof, said portions of said head being provided with laterally-extending projections adapted to intermesh one with another, and a key passing through said projections and holding said portions of said head in assembled condition.

13. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion provided with undercut side walls, a brake-head comprising a pair of laterally-separable portions each of which is adapted to fit one of said side walls adjacent each end thereof, the portions of said head being provided with laterally-extending intermeshing projections, and means adapted to hold the portions of said head in assembled condition.

14. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion provided with undercut side walls, a brake-head comprising a pair of laterally-separable portions each of which is adapted to fit one of said side walls adjacent each end thereof, the portions of said head being provided with laterally-extending intermeshing projections, and a key passing through said intermeshing projections and adapted to hold the portions of said head in assembled condition.

15. In brake construction, in combination, a brake-shoe having a rearwardly-extending projecting portion provided with undercut side walls, a brake-head comprising a main portion and a laterally-separable auxiliary portion, said portions of said head being adapted respectively to fit said undercut side walls adjacent each end thereof and said main portion being provided with a plurality of recesses, laterally-extending intermeshing projections respectively formed upon said main and said auxiliary portions, said projections upon said auxiliary portions being adapted to fit within said recesses upon said main portion, and means adapted to hold said portions of said head in assembled condition.

16. In brake construction, in combination, a brake-shoe having a rearwardly-extending projecting portion provided with undercut side walls, a brake-head comprising a main portion and a laterally-separable auxiliary portion, said portions of said head being adapted respectively to fit said undercut side walls adjacent each end thereof and said main portion being provided with a plurality of recesses, laterally-extending intermeshing projections formed upon said main portion and upon said auxiliary portion, an abutment formed upon said main portion, said projections upon said auxiliary portion being adapted to rest upon said abutment and within said recesses, and means adapted to hold the portions of said head in assembled condition.

17. In brake construction, in combination, a brake-shoe having a rearwardly-extending projecting portion provided with undercut side walls, a brake-head comprising a main portion and a laterally-separable auxiliary portion, said portions of said head being adapted respectively to fit said undercut side walls adjacent each end thereof and said main portion being provided with a plurality of recesses, laterally-extending intermeshing projections formed upon said main portion and upon said auxiliary portion, an abutment formed upon said main portion, said projections upon said auxiliary portion being adapted to rest upon said abutment and within said recesses, an abutting surface formed upon said auxiliary portion adapted to rest against said abutment, and means adapted to hold said portions in assembled condition.

18. In brake construction, in combination, a brake-shoe having a rearwardly-extending projecting portion of decreasing thickness toward the ends of the shoe and provided with undercut side walls, a brake-head comprising a main portion and a laterally-separable auxiliary portion, said portions of said head being adapted respectively to fit said undercut side walls adjacent each end thereof and said main portion being provided with a plurality of recesses, laterally-extending intermeshing projections formed upon said main portion and upon said auxiliary portion, an abutment formed upon said main portion, said projections upon said auxiliary portion being adapted to rest upon said abutment and within said recesses, an abutting surface formed upon said auxiliary portion adapted to rest against said abutment, and means adapted to hold said portions in assembled condition.

19. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion provided with undercut side walls, a second brake-shoe fitted about said projecting portion and provided upon its rear surface with a similar projecting portion, a brake-head comprising a pair of laterally-separable portions each of which is adapted to fit the side walls of the projection upon said second shoe adjacent each end thereof, and means adapted to hold the portions of said head in assembled condition.

20. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion provided with undercut side walls, a second brake-shoe fitted about said projecting portion and provided upon its rear surface with a similar projecting portion, a brake-head comprising a pair of laterally-separable portions each of which is adapted to fit the side walls of the projection upon said second shoe adjacent each end thereof, laterally-extending intermeshing projections respectively formed upon the portions of said head, and a key passing through said intermeshing projections and adapted to hold the portions of said head in assembled condition.

21. In brake construction, in combination, a brake-shoe having a rearwardly-projecting portion provided with undercut side walls, a second brake-shoe fitted about said projecting portion and provided upon its rear surface with a similar projecting portion, a brake-head comprising a pair of laterally-separable portions each of which is adapted to fit the side walls of the projection upon said second shoe adjacent each end thereof, laterally-extending intermeshing projections formed upon the portions of said head, an abutment formed upon one portion of said head over which the projections upon the other portion thereof rest, said latter portion being provided with an abutting surface adapted to rest against said abutment, and a key passing through said projections upon said head and adapted to hold the portions of said head in assembled condition.

22. In brake construction, in combination, a brake-shoe having a rearwardly-extending projecting portion provided with undercut side walls converging toward each end of the shoe, a brake-head comprising a main portion and a laterally-separable auxiliary portion, said portions of said head being adapted respectively to fit said undercut side walls adjacent each end thereof and said main portion being provided with a plurality of recesses, laterally-extending intermeshing projections formed upon said main portion and upon said auxiliary portion, an abutment formed upon said main portion, said projections upon said auxiliary portion being adapted to rest upon said abutment and within said recesses, and means adapted to hold the portions of said head in assembled condition.

23. In brake construction, in combination, a brake-shoe having a rearwardly-extending projecting portion provided with undercut side walls converging toward each end of the shoe, a brake-head comprising a main portion and a laterally-separable auxiliary portion, said portions of said head being adapted respectively to fit said undercut side walls adjacent each end thereof and said main portion being provided with a plurality of recesses, laterally-extending intermeshing projections formed upon said main portion and upon said auxiliary portion, an abutment formed upon said main portion, said projections upon said auxiliary portion being adapted to rest upon said abutment and within said recesses, an abutting surface formed upon said auxiliary portion adapted to rest against said abutment, and means adapted to hold said portions in assembled condition.

24. In brake construction, in combination, a brake-shoe, a brake-head, one of said members having a projecting portion provided with undercut side walls converging toward each end thereof and the other of said members comprising a pair of laterally-separable portions each of which is adapted to fit one of said side walls adjacent each end thereof, and means adapted to hold the portions of said last-mentioned member in assembled condition.

25. In brake construction, in combination, a brake-shoe, a brake-head, one of said members having a projecting portion of decreasing thickness toward its ends and provided with undercut side walls and the other of said members being formed in two laterally-separable portions each of which is adapted to fit one of said side walls adjacent each end thereof, and means adapted to hold the portions of said last-mentioned member in assembled condition.

26. In brake construction, in combination, a brake-shoe, a second brake-shoe having a dovetailed connection therewith, and a brake-head having a dovetailed connection with said second brake-shoe, said members being formed to permit the lateral separation of the parts forming the female member of one of said dovetailed connections.

850,437. BOTTLE-CLOSURE. DANIEL O. LYNCH, Wilkes-Barre, Pa., assignor of one-fourth to Charles H. Caspar and one-fourth to Henry T. Schulz, Wilkes-Barre, Pa. Filed June 8, 1906. Serial No. 320,837.

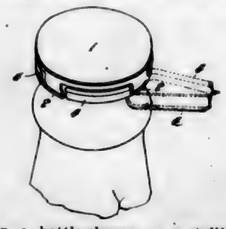

Claim.—1. In a bottle-closure, a metallic disk and a band or flange depending therefrom and encircling the bottle-neck, said band comprising a series of lips and a series of arms extending laterally from the lips, said lips and said arms being in engagement with the bead of the bottle throughout the lengths of their lower edges, whereby said arms may be bent away from the bottle and out of engagement with the bead thereof to form means for effecting the removal of the disk.

2. The herein-described bottle-closure consisting of a metallic disk having a plurality of depending lips designed to be bent at their lower ends into engagement with the bead of the bottle-neck, arms engaging said bead throughout their lengths and located between said lips to which they are secured, each arm being free at one end, two of the arms being secured to the same lip and all capable of being readily bent outwardly to form levers for effecting the disengagement of any one of the lips for removing the disk.

850,438. CURRENT-WHEEL. MAGNUS J. MILLER, Granger, Wyo. Filed July 14, 1906. Serial No. 326,271.

Claim.—1. The combination with a current water-wheel constructed and adapted to be submerged, of a pivoted induction-pipe adapted to be submerged and leading to said wheel and discharging at its small end against the same and arranged to be swung up on its pivot to vary its inclination.

2. In combination, a horizontal current water-wheel

constructed and arranged to be submerged, and a tapered induction-pipe adapted to be submerged and extending at an incline downwardly toward said wheel, the blades of the wheel being inclined to receive the impact of the discharge from said pipe, and the pipe being adjustable to vary its inclination, and to render it inoperative by lifting its inlet end above the surface of the water.

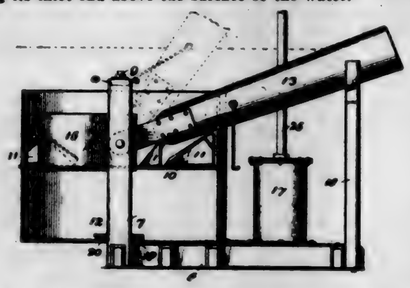

3. In combination, a frame, a horizontal submerged current-wheel therein, a pump mounted on the frame beside the wheel, having a casing submerged and open at its lower end, and with a discharge-pipe leading from its upper end, and a counter-shaft geared to the wheel-shaft and having a crank under said casing connected to the pump-rod.

850,439. OVERHEAD TRAVELING CRANE. WILLIAM H. MORGAN, Alliance, Ohio, assignor to The Morgan Engineering Company, Alliance, Ohio. Filed Apr. 14, 1906. Serial No. 311,714.

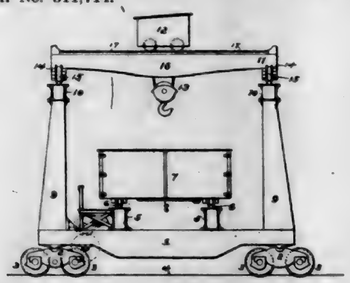

Claim.—1. In an overhead traveling crane, the combination with a main crane having hoist mechanism, of an auxiliary crane mounted to travel on the main crane and having hoist mechanism.

2. In an overhead traveling crane, the combination with a main crane and a traveling trolley thereon of an auxiliary crane carried by the main crane and a traveling trolley on said auxiliary crane.

3. The combination with a main crane carrying a traveling trolley, of an auxiliary crane carried by the main crane and in a plane above the main trolley.

4. The combination with a main crane carrying a traveling trolley, of an auxiliary crane carried by the main crane, the girders of the auxiliary crane being above and at right angle to the girders of the main crane.

5. The combination with a main crane, and a traveling trolley thereon, of an auxiliary traveling crane carried by the main crane and located above the main-crane girders, and hoisting mechanism on said auxiliary crane.

6. The combination with a main crane and a traveling trolley thereon, of an auxiliary traveling crane carried by the main crane and located in a plane above the girders of the latter, the girders of the auxiliary crane being at right angles to the main-crane girders.

7. The combination with a main crane, and a traveling trolley thereon, of an auxiliary crane carried by the said main crane, and located in a plane above the girders of the latter, and a traveling trolley on said auxiliary crane.

8. The combination with a main crane and hoisting mechanism carried thereby, of an auxiliary crane carried by said main crane, the girders of the auxiliary crane being at right angles to the girders of the main crane, and hoisting mechanism carried by said auxiliary crane.

9. In an overhead traveling crane, the combination with a main traveling bridge and hoist mechanism thereon, of upright frames carried by said bridge, top girders connecting said frames, a bridge carried by said top girders and hoist mechanism on said bridge.

10. In an overhead crane the combination with a traveling bridge and a traveling trolley thereon, of upright posts carried by said bridge, a pair of top girders parallel with the main-crane girders and carried by said posts, an auxiliary traveling bridge mounted on said top girders and hoist mechanism carried by said auxiliary bridge.

11. The combination with a main traveling crane and a traveling trolley thereon, of upright posts at the opposite ends of said main crane, top girders secured to said posts, an auxiliary crane mounted to travel on said top girders and hoisting mechanism on said auxiliary crane.

12. The combination with a main traveling crane and a traveling trolley thereon, of upright posts at the opposite ends of said main crane, top girders secured to said posts, an auxiliary crane mounted to travel on said top girders, and a trolley on said auxiliary crane.

13. The combination with a traveling bridge and a traveling trolley thereon of an auxiliary hoist mechanism carried by the bridge in a plane above the traveling trolley.

14. In an overhead traveling crane, the combination with a main bridge carrying hoisting mechanism, of an auxiliary bridge carried by the main bridge, the girders of the auxiliary bridge being above and at right angles to the girder of the main bridge, and hoist mechanism on said auxiliary bridge.

15. In an overhead traveling crane the combination with a main bridge having a traveling trolley thereon, of an auxiliary crane carried by the main bridge, the hoist mechanism of the auxiliary crane being in a plane above the hoist mechanism on the main bridge.

16. In an overhead traveling crane, the combination with a main crane and a traveling trolley thereon, of an auxiliary crane mounted to travel on the main crane, and a traveling trolley on said auxiliary crane.

850,440. HYDROCARBON-BURNER. JAMES MCCARRON and ANDREW DUFFY, Jr., Osborne, Kans. Filed Oct. 26, 1906. Serial No. 340,711.

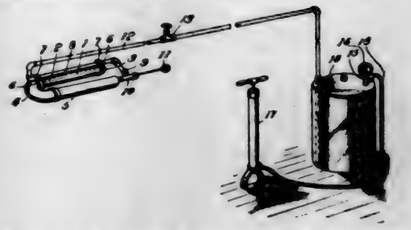

Claim.—1. In a hydrocarbon-burner, the combination with a U-shaped pipe, one of the arms of the U being provided with perforations on its side at right angles to the plane of the U, the other arm of the U being imperforated, of a fuel-conducting pipe mounted on top of the perforated arm of the U and passing over the perforated portion and terminating in front of the end of the imperforated section of the U.

2. In a hydrocarbon-burner, the combination with a U-shaped pipe having one of its arms perforated on the side at right angles to the plane of the U, said perforated arm having its end closed, the other arm of the U being imperforate with its end opened, of a pipe for supplying fuel located over the perforations of the perforated arm and terminating in front of the opening of the other arm, a tank connected to said pipe, means for forcing air into the tank, whereby the fuel will be caused to flow through the pipe and into the open end of the U and a valve located in the end of the pipe adjacent the U and adapted to regulate the supply of fuel into the U.

3. In a hydrocarbon-burner, the combination with an imperforated pipe, a perforated pipe parallel thereto, said pipes being connected together at one end, whereby a U-shaped construction is formed, the front end of the imperforated pipe being opened and the corresponding end of the perforated pipe being closed, the perforations in the perforated pipe being located at right angles to the plane of the U, a pipe for supplying fuel supported on the perforated pipe and extending parallel thereto and over the perforations, said fuel-conducting pipe terminating in front of the open end of the imperforated pipe, said parts being so constructed as to be adapted to be entirely inclosed within the fire-pot of the stove with the U lying flat upon the supporting-surface therein.

850,441. AUTOMATIC GATE-OPENER. THOMAS J. MCGINNIS, Boise, Idaho. Filed Aug. 26, 1904. Renewed Oct. 18, 1906. Serial No. 339,576.

Claim.—The combination with a closure for irrigating-ditches consisting of a partition 6 having an opening therein and a gate for the opening hinged for movement into and out of operative position, of a lever pivoted to the gate at the opposite side thereof from the water-supply of the ditch, said lever extending above the gate and having a laterally-extending arm at its upper end and extending over the partition beyond the gate, a latch-block secured to the partition, a rod secured to the lever and engaged in the latch-block, said rod and block being arranged for coöperation to hold the gate in closed position, said lever being movable upon its pivot to bring the rod out of coöperative relation to the block, a spring-operated mechanism removably engaged with the partition, said spring-operated mechanism including a lever pivoted for movement to move the first-named lever to bring the rod out of the latch-block, and timing mechanism for the spring-operated mechanism, said timing mechanism being arranged for operation to permit movement of the second-named lever at any predetermined time.

850,442. FREEZER. JOHN H. MCKINNEY, Shreveport, La. Filed Aug. 29, 1905. Serial No. 276,278.

Claim.—In an ice-cream freezer the combination with supports; of an outer polygonal casing, a door constituting one wall of the casing, those walls of said casing adjoining the door being inclined toward the door to constitute a hopper when the casing is inverted, trunnions extending from the ends of the casing and journaled on the supports, polygonal heads secured upon the inner faces of the ends of the outer casing, an inner casing secured upon and surrounding said heads to form an inner casing concentric with the outer casing, there being an outer annular compartment around the inner casing, said annular compartment extending uninterruptedly throughout the length of the inner compartment, a door constituting one wall of the inner casing and disposed adjacent the inner face of the door of the outer casing, two walls of the inner casing being inclined toward the door-opening in said casing to form a hopper when the casing is inverted, and means for rotating the casings simultaneously to invert them.

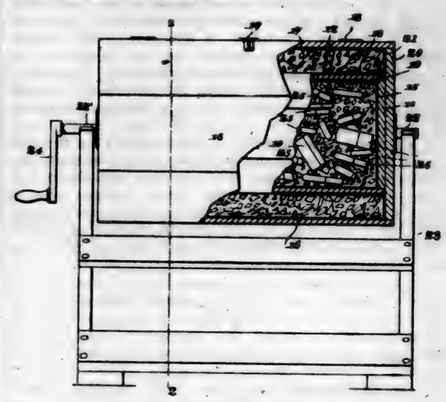

850,443. MOTOR-CONTROLLER. ADOLPH PEDERSEN, Cleveland, Ohio, assignor to The Van Dorn-Elliott Electric Company, Cleveland, Ohio, a Corporation of Ohio. Filed Aug. 16, 1905. Serial No. 274,397.

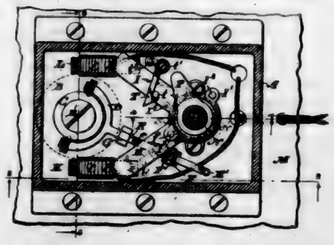

Claim.—1. In motor-controllers, the combination of a movable contact member; means for actuating the same; a second contact member mechanically retained in its "on" position; and manually-operable means adapted to release said second member from such mechanical retention whereupon the circuit is automatically opened, said latter means being also adapted to actuate said second member to its "on" position.

2. In motor-controllers, the combination of a movable contact member; means for actuating the same; a second contact member mechanically retained in its "on" position; and manually-operable means adapted to release said second member from such mechanical retention whereupon the circuit is automatically opened, said latter means being also adapted to actuate both of said contact members to their "on" position, respectively.

3. In motor-controllers, the combination of a movable contact member; means adapted to hold the same normally in a predetermined position; a second contact member mechanically retained in its "on" position; and manually-operable means adapted to release said second member from such mechanical retention whereupon the circuit is automatically opened, said latter means being also adapted to actuate said second member to its "on" position and said first member to positions other than said predetermined position.

4. In motor-controllers, the combination of a movable contact member; means adapted to hold the same normally in its "off" position; a second contact member mechanically retained in its "on" position; and manually-operable means adapted to release said second member from such mechanical retention whereupon the circuit is automatically opened, said latter means being also adapted to actu-

ats both of said members to their "on" positions, respectively.

5. In motor-controllers, the combination of a movable contact member; means adapted to hold the latter normally in its "off" position; a second movable contact member mechanically retained in its "on" position and adapted to move said first member to its "on" position; and a handle adapted to control the movements of said second member and to release the same from said mechanical retention.

6. In motor-controllers, the combination of a movable contact member; a second movable contact member mechanically retained in its "on" position and adapted to move said first member to its "on" position; means adapted to hold both of said contact members normally in their "off" positions; and a handle adapted to control the movements of said second contact member and to release the same from said mechanical retention.

7. In motor-controllers, the combination of two movable contact members, one of said members being electrically operated to break the circuit when a certain electrical condition therein is attained, and the other of said members being only manually operable to control the stopping and starting in normal operations; means tending to throw both of said members into their "off" position; means adapted to effect such manual operation, such latter means adapted to move said first member to its "on" position; and means adapted to effect such electrical operation.

8. In motor-controllers, the combination of two independently-movable contact members in series, one of said members being electrically operated to break the circuit when a certain electrical condition therein is attained, and the other of said members being only manually operable to control the stopping and starting in normal operations; means adapted to effect such electrical operation; and means adapted to effect such manual operation, the movement of said first member to its "on" position, after said electrical operation, being effected by said last-named means and resulting in the movement of said second member to its "off" position.

9. In motor-controllers, the combination of a movable handle; a pointer fixed thereon; two switches rotatable thereon; a solenoid in the motor-circuit, means connected with the core of the latter and adapted to retain one switch in its "on" position when said core is in its outermost position and to release the same upon the inward stroke of said core; a catch adapted to retain the other switch in its "on" position, said pointer adapted to disengage said catch, means tending to throw both switches into their "off" positions, and lugs upon one switch, some of said lugs adapted to engage said pointer and others adapted to engage the other switch.

10. In motor-controllers, the combination of a movable handle; a pointer fixed thereon; two switches independently rotatable thereon; a solenoid in the motor-circuit; a lever connected with the core of the latter and provided with means adapted to retain one switch in its "on" position when said core is in its outermost position, a predetermined flux in the solenoid-field adapted to effect the inward stroke of its core whereby said switch is released; a catch adapted to retain the other switch in its "on" position, said pointer adapted to disengage said switch from said catch; a retractile spring tending to throw both switches to their "off" positions; a lug upon said second switch adapted to engage and move said first switch; and lugs upon said second switch adapted to be engaged by said pointer.

11. In motor-controllers, the combination of two switches; manually-operable means for actuating one of said switches, said switch having a movement independent of said actuating means, the other of said switches adapted to be moved to its "on" position when said first switch is moved to its "off" position.

12. In motor-controllers, the combination of two switches; manually-operable means for actuating one of said switches, said switch having a movement independent of said actuating means; electrically-controlled means for operating the other switch to its "off" position; and means for actuating said latter switch to its "on" position.

13. In motor-controllers, the combination of two switches; manually-operable means for actuating one of said switches, said switch having a movement independent of said actuating means; and electrically-controlled means for operating the other switch to its "off" position, the actuation of said first switch to its "off" position effecting the actuation of the second switch to its "on" position.

14. In motor-controllers, the combination of two switches; manually-operable means for actuating one of said switches, said switch having a movement independent of said actuating means; electrically-controlled means tending to operate the other switch to its "off" position; and means for actuating said latter switch to its "on" position.

15. In motor-controllers, the combination of two switches; manually-operable means for actuating one of said switches, said switch having a movement independent of said actuating means; and electrically-controlled means tending to operate the other switch to its "off" position, the actuation of said first switch to its "off" position effecting the actuation of the second switch to its "on" position.

16. In motor-controllers, the combination of two switches; manually-operable means for actuating one of said switches, said switch having a movement independent of said actuating means, the other switch being actuated to its "off" position only by means of a predetermined current; means controlled by said current for so actuating said second switch to its "off" position; and means for actuating said latter switch to its "on" position.

17. In motor-controllers, the combination of two switches; manually-operable means for actuating one of said switches, said switch having a movement independent of said actuating means, the other switch being actuated to its "off" position only by means of a predetermined current; means controlled by said current for so actuating said second switch to its "off" position, the actuation of said first switch to its "off" position effecting the actuation of the second switch to its "on" position.

18. In devices of the general character described, the combination of the motor and a suitable casing therefor; a controller supported upon said casing and comprising two movable switches; manually-operable means adapted to control the movements of one of said switches; and a solenoid mounted in said casing and adapted to control the movements of the other switch.

19. In devices of the general character described, the combination of the motor and a suitable casing therefor; a controller supported upon said casing and comprising two movable switches; manually-operable means adapted to control the movements of one of said switches for normal operations of the tool; and a solenoid mounted in said casing and adapted to control the movements of the other switch so as to enable the same to open the circuit when a predetermined electrical condition is reached therein.

20. In devices of the general character described, the combination of the motor and a suitable casing therefor; a controller-casing mounted upon said motor-casing; a handle for moving and guiding the tool; a pointer fixed to said handle; circuit-breaking means within said controller-casing, said pointer adapted to control the movements of said circuit-breaking means for normal operations; and a solenoid adapted to control the movements of said means so as to enable the same to open the circuit when a predetermined electrical condition is reached therein.

21. In devices of the general character described, the combination of a motor and a suitable casing therefor; a controller-casing mounted upon said motor-casing; a handle for moving and guiding the tool extending exteriorly from within said controller-casing; a pointer fixed to said handle within said controller-casing; circuit-breaking means tending to hold the circuit open, said pointer adapted to control the movements of said circuit-breaking means for normal operations of the tool; and a solenoid mounted in the motor-casing and adapted to control the movements of said circuit-breaking means so as to enable the same to open the circuit when a predetermined electrical condition is reached therein.

22. In devices of the general character described, the combination of the motor and a suitable casing therefor; a controller-casing mounted upon said motor-casing, a handle for moving and guiding the tool and extending exteriorly from within said controller-casing; a pointer fixed to said handle within said controller-casing; two movable switches, said pointer adapted to control the movements of one of said switches for normal operations of the tool; and a solenoid adapted to control the movements of the other switch so as to enable the same to open the circuit when a predetermined electrical condition is reached therein.

850,444. PROCESS OF MAKING INDIGO. ARNOLD RAHTJEN and CARL STEPHAN, Hamburg, Germany; said Stephan assignor to said Rahtjen. Filed Jan. 29, 1906. Serial No. 298,556.

Claim.—1. In a process of producing indigo, reacting upon α-isatin anilid with hydrogen sulfid.

2. In a process of producing indigo, passing hydrogen sulfid into a liquid containing α-isatin anilid.

3. In a process of producing indigo, passing hydrogen sulfid into liquid holding α-isatin anilid in suspension.

4. In a process of producing indigo, passing hydrogen sulfid into alcohol containing α-isatin anilid.

5. In a process of producing indigo, reacting upon α-isatin anilid with hydrogen sulfid and subjecting the intermediate products thus formed to heat.

6. In a process of producing indigo, reacting upon α-isatin anilid with hydrogen sulfid and heating the resulting material until indigo is precipitated.

7. In a process of producing indigo, reacting upon α-isatin anilid with hydrogen sulfid in the presence of a liquid and heating the resulting material to a temperature of from 25° to 100° Celsius.

8. In a process of producing indigo, first reacting upon α-isatin anilid, suspended in alcohol, with hydrogen sulfid, heating the resulting material to a temperature of from 25° to 100° C. and separating the resulting precipitate from the remaining liquid.

850,445. UMBRELLA RIB-HOLDER AND RUNNER. WILLIAM W. REAM, Voganaville, Pa. Filed July 2, 1906. Serial No. 324,475.

Claim.—1. In combination, a runner, a cage at one end of the runner, a bead formed on the runner intermediate its length, a sleeve loosely mounted on the runner between the bead and cage, a flange on the end of the sleeve adjacent the cage, a recess in the upper edge of the flange and a split ring embracing the runner intermediate the sleeve and the bead.

2. In combination, a runner, a cage at one end of the runner, a bead formed on the runner intermediate its length, a sleeve loosely mounted on the runner between the bead and cage, a flange on the sleeve adjacent the cage, a recess on the upper edge of the flange, said recess having its bottom inclined and a split ring embracing the runner intermediate the sleeve and the bead.

3. In combination, a runner, a bead formed on the runner intermediate its length, a sleeve loosely mounted on the runner between the bead and cage, a flange on the end of the sleeve adjacent the cage, a recess in the flange and a split ring embracing the runner intermediate the sleeve and the bead.

4. In combination, a runner, a cage at one end of the runner, a bead formed on the runner intermediate its length, a sleeve loosely mounted on the runner between the bead and cage, a flange on the end of the sleeve adjacent the cage and a split ring embracing the runner intermediate the sleeve and bead.

5. In combination, a runner, a cage at one end of the runner, a bead formed on the runner intermediate its length, a sleeve loosely mounted on the runner between the bead and cage, a flange on the sleeve, said flange having a recess in its upper edge, a split ring embracing the runner intermediate the sleeve and the bead, said flange being also provided with a groove to receive the ends of the cage.

850,446. KEYHOLE-GUARD FOR LOCKS. ALEXANDER ROBBINS, Allegheny, Pa. Filed Jan. 19, 1907. Serial No. 353,023.

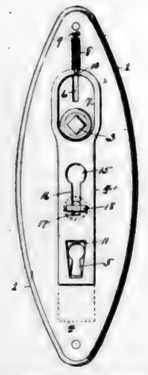

Claim.—The herein-described keyhole guard or shield for locks, comprising in combination with the lock-plate 1, the sliding piece 4 arranged at the rear of said plate and adapted to cover the keyhole 5, an opening 11 in said sliding piece to register with said keyhole, a spring to keep the sliding piece in its normal position, a thumb-piece 19 projecting beyond the face of the lock-plate, said thumb-piece operating in a slot 6, and a means for locking said sliding piece 4 in its lowered position, said means consisting of a lock operated by a key to engage with a shouldered slot, substantially as described.

850,447. SEPARATING OR GRADING MACHINE. CHARLES F. SHUMAKER, Silver Creek, N. Y., assignor to Invincible Grain Cleaner Company, Silver Creek, N. Y. Filed Nov. 1, 1905. Serial No. 285,480.

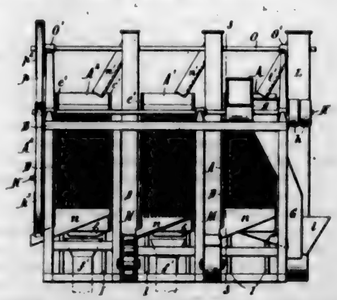

Claim.—1. In a grading-machine, the combination of a plurality of inclined screens arranged side by side, each composed of several sets of longitudinal fingers arranged in stepped order with the free rear ends of the fingers of

one set above the attached front ends of the fingers of the next lower set, the fingers being spaced alike in the several sets in the same screen but differently in the different screens, means for shaking said screens in a longitudinal direction, means for collecting the grades of material passing through the different screens, and conveyers for carrying the material escaping from the tail end of one screen to the head end of the next screen, substantially as set forth.

2. In a grading-machine, the combination of a plurality of screens arranged side by side and all inclining in the same direction, each composed of several sets of longitudinal fingers arranged in stepped order with the free rear ends of the fingers of one set above the attached front ends of the fingers of the next lower set, the fingers being spaced alike in the several sets in the same screen but differently in the different screens, means for shaking said screens in a longitudinal direction, means for collecting the grades of material passing through the different screens, and conveyers arranged between said screens and extending upwardly from the tail end of one screen to the head end of the next screen, substantially as set forth.

3. In a grading-machine, the combination of a plurality of screens arranged side by side, each comprising a shoe having an inclined bottom provided at its lower end with a discharge-opening and a screen-surface composed of several sets of longitudinal fingers arranged in stepped order with the free rear ends of the fingers of one set above the attached front ends of the fingers of the next lower set, the fingers being spaced alike in the several sets in the same screen but differently in the different screens, means for shaking said screens in a longitudinal direction, conveyers arranged between said screens extending from the lower end of one screen to the head end of the next screen, and chutes at the lower ends of said screens for directing the material tailing off of one screen into the conveyer for the next screen, substantially as set forth.

4. A screen comprising spaced, sheet-metal fingers having convex upper faces and having their side portions folded under into their concave under sides, whereby folded longitudinal side edges are formed on the fingers, substantially as set forth.

850,448. RIDING-GALLERY. ALBERT J. STICKNEY, North Tonawanda, N. Y., assignor to Herschell-Spillman Company, North Tonawanda, N. Y. Filed Nov. 7, 1903. Serial No. 180,162.

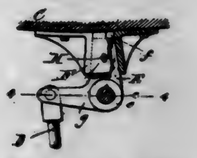

Claim.—1. The combination of a figure or seat, a socket-piece secured externally to and depending from said figure or seat and having a downwardly-opening wedge-shaped socket, a pivoted support for said seat or figure having an upright wedge-shaped arm which wedges into and is detachable from said socket and a lateral arm, and means connected to said lateral arm for rocking said support, the figure or seat being wholly supported by said upright arm, substantially as set forth.

2. The combination of a figure or seat, a socket-piece secured externally to and depending from said figure or seat and having a downwardly-opening tapering socket, a rock-shaft, a sleeve thereon having an integral upright wedge-shaped supporting-arm which detachably fits in said socket and an integral laterally-projecting arm, and means connected to said laterally-projecting arm for rocking said figure or seat, said wedge-shaped arm constituting the sole support for said figure or seat, substantially as set forth.

850,449. BRACE FOR ROUNDABOUTS AND ANALOGOUS STRUCTURES. EDWARD O. SPILLMAN, North Tonawanda, N. Y., assignor to Herschell-Spillman Company, North Tonawanda, N. Y. Filed Mar. 12, 1906. Serial No. 305,570.

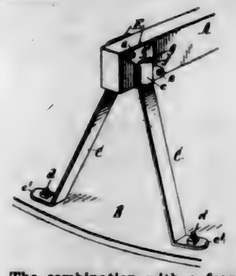

Claim.—1. The combination with a frame member and a platform, of a connecting-brace for the same, and a brace-plate secured to said frame member, one of said parts having a slot, and a hook on the other part shaped to engage in said slot, said hook being held from withdrawal from said slot in the normal position of the brace and being removable from the slot when the brace is moved to a position at an angle to said normal position, substantially as set forth.

2. The combination with a frame member and a platform, of a connecting-brace for the same, and a brace-plate secured to said frame member, said plate having a slot, and a hook on said brace shaped to engage in said slot and interlock with said plate in one position and to be removed from said slot when turned to another position, substantially as set forth.

3. The combination with a sweep and a platform, of a connecting-brace for the same secured to said platform and having an offset hook at its upper end, and a plate secured to said sweep and having a slot in which said hook interlocks, said hook being removable from said slot by turning the brace to a substantially horizontal position, substantially as set forth.

4. The combination with a sweep and a platform, of a brace-plate secured to said sweep and having a slot, a brace secured to said platform and having at its upper end an upwardly-projecting hook which is joined to the brace by a horizontal shoulder portion, said hook being shaped to enter said slot and bear against the inner side of said brace-plate, and said shoulder portion being shaped to bear against the edges of said slot, substantially as set forth.

850,450. ROTARY ENGINE. EDWIN F. TAYLOR, New Decatur, Ala. Filed Feb. 15, 1904. Serial No. 193,694.

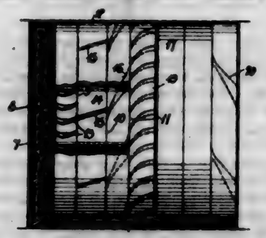

Claim.—1. In a rotary engine of the character described, moving parts each carrying vanes or buckets, reaction-nozzles and a series of passages between said vanes or buckets and said nozzles, a stationary part having an impact-nozzle arranged to discharge steam against said vanes or buckets, and stationary abutments against which the wheel-nozzles discharge.

2. In a rotary engine of the character described, a moving part having in one side vanes or buckets constructed and arranged to provide between them diverging channels, reaction-nozzles in the opposite side of the moving parts and an intervening steam-passage communicating with said channels and nozzles.

3. In a rotary engine of the character described, a series of moving parts, each provided in one side with vanes or buckets and in the opposite side with reaction-nozzles, passages carried by the wheels and communicating with the channels between the vanes or buckets and with said nozzles, a stationary impact-nozzle adjacent to the vanes or buckets of the first wheel, and rest-chambers between the wheels, each chamber having in one wall reacting-channels and in the opposite walls impact-nozzles.

4. In a rotary engine of the character described, a series of moving parts carrying impact-surfaces, and a series of sections of an adiabatic nozzle, each arranged to deliver the steam against the impact-surfaces of one of the moving parts, and all arranged to effect a continuous adiabatic expansion of the steam, and means for utilizing the steam before admission to said nozzles and parts for effecting a uniform heating thereof.

5. In a rotary engine of the character described, a series of moving parts carrying impact-surfaces, sections of an adiabatic nozzle each arranged to deliver steam against the impact-surfaces of one of said wheels, a steam-chest arranged to deliver steam to the first nozzle-section, and a steam chamber or jacket having an inlet and communicating with said steam-chest.

6. In a rotary engine of the character described, a series of moving parts carrying impact-surfaces, sections of an adiabatic nozzle, each arranged to discharge steam against the impact-surfaces of one of said wheels, a steam-chest, a steam-jacket communicating at one end with said chest, and a steam-pipe arranged to deliver into the other end of said jacket.

850,451. PROCESS OF PRESERVING FISH. JOSEPH THOMLINSON, Portland, Oreg. Filed Feb. 27, 1905. Serial No. 247,593.

Claim.—The process herein described which consists in preserving fish by cutting off the head and tail portions splitting, rinsing the interior, placing a piece of set plaster-of-paris within the fish, inclosing the fish in a bag, placing the same in oil and raising the same to a temperature of approximately 338° Fahrenheit, withdrawing the bag from the oil, treating the same with powdered and liquid plaster-of-paris and then glazing.

850,452. HAIR-WAVER. SCOTT H. TOLMAN, Boston, Mass. Filed Mar. 15, 1907. Serial No. 362,567.

Claim.—1. A hair-waver comprising a single piece of smooth cylindrical wire, bent to form an elongated loop having a recess at one end formed by the central portion of the piece, the end portions of the wire being bent outwardly from the sides of the loop to form curved shoulders, and inwardly from said shoulders to form alined head members above the shoulders, and a sheet-metal coupling-ferrule embracing the opposed ends of said members, and separated by said shoulders from the hair-engaging side portions of the loop, the said head members and ferrule forming a head provided with means for engaging an elastic band and preventing the same from slipping at its point of engagement from the head onto the loop.

2. A hair-waver comprising a single piece of smooth cylindrical wire, the end portions of which are bent inwardly to form alined head members, while the main portion is bent to form an elongated loop having a recess at the end opposite the head, and a sheet-metal coupling-ferrule embracing the ends of the head members, the said ferrule and head members forming a head which is provided with a band-engaging loop.

3. A hair-waver comprising a single piece of smooth cylindrical wire, the end portions of which are bent inwardly to form alined head members, while the main portion is bent to form an elongated loop having a recess at the end opposite the head, and a slotted sheet-metal ferrule embracing the ends of the head members, one of said members having a loop which projects through the slot of the ferrule and forms a band-engaging eye.

850,453. COUNTER-STOOL. WESLEY G. WINANS, Spokane, Wash., assignor, by direct and mesne assignments, of three-eighths to Frank R. Culbertson and one-fourth to Lee Eisenberg, Spokane, Wash. Filed Mar. 23, 1906. Serial No. 307,611.

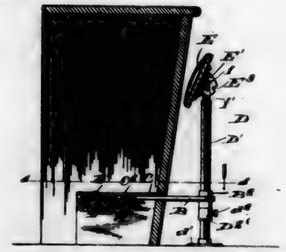

Claim.—1. The combination substantially as herein described, of a pedestal, a keeper extending over the upper edge of and secured to said pedestal and having a longitudinal slot, a stool-carrying slide operating at its inner end within said keeper and having a series of sockets and a stop-pin fitted thereto and operating in the slot of the keeper, the said slide being provided at its outer end with an upright tubular portion to receive a standard, a stool-standard fitting in said upright tubular portion, the seat provided on its under side with depending lugs having slotted pivot-openings and the notches in their lower edges, and the shank having the pivot-studs and stop-pins and fitting and turning in the upper end of the standard, all substantially as and for the purposes set forth.

2. The combination, of a pedestal, a keeper extending over the upper edge of, and secured to, said pedestal, and having a longitudinal slot, a stool-carrying slide operating at its inner end within said keeper and having a series of sockets, and a stop-pin fitted thereto and operating in the slot of the keeper, the said slide being provided at its outer end with an upright tubular portion to receive a standard, and a stool-carrying standard fitted in said tubular portion, substantially as described.

850,454. BELT-STRETCHER. ORRIS M. WOLFE, Dubois, Pa. Filed Dec. 21, 1905. Serial No. 292,862.

Claim.—A belt-stretcher comprising spaced pairs of clamping members having broad, flat bearing-surfaces for engagement with the belt, one pair of clamping members having a head at each end, the upper member of said pair having its front face cut away to form a projection intermediate the heads thereof, an eye secured to said projection and to the heads of said upper member, said eyes being disposed in alinement with each other, screw-rods connecting the spaced pairs of clamping members for moving them toward or from each other, gears secured to one end of said rods adjacent the heads formed on said first-mentioned pair of clamping members, a worm-shaft rotatably mounted in said eyes and having worm-sections for engagement with the corresponding gears, means for holding

the members of each pair of clamps together with respect to each other, and a lever at each end of said worm-shaft for actuating the latter to rotate said screw and move the

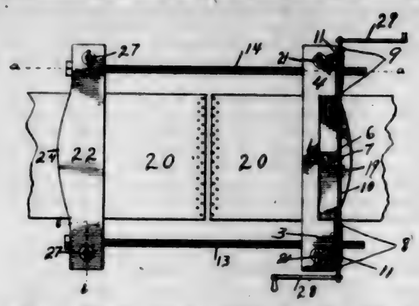

pairs of clamping members toward or away from each other.

850,455. LANTERN. FREDERICK K. WRIGHT, Syracuse, N. Y., assignor to R. E. Dietz Company, New York, N. Y. Filed May 20, 1904. Serial No. 208,828.

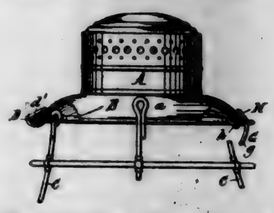

Claim.—The combination of a lantern-top, a lantern-frame, and a connecting wire hinge consisting of a cross-piece which rests upon the top and end portions which extend downwardly through openings in the top, then outwardly underneath the top ring of the lantern-frame, and then upwardly and inwardly over the marginal portion of the top against which they are closed down, substantially as set forth.

850,456. WEEDER. ROY D. ABRAHAM, Dayton, Wash. Filed Sept. 13, 1906. Serial No. 334,534.

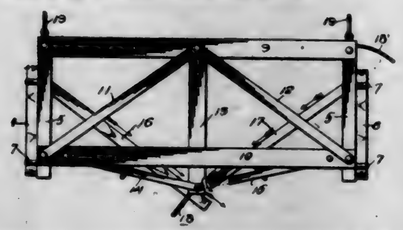

Claim.—1. A weed-cutting machine embodying in its construction runners, a supporting-framework, a long cutting-blade connecting at its forward end with the forward end of a runner and extending diagonally across the longitudinal center of the machine to beyond the rear thereof, and a second cutting-blade connected at its forward end to the forward end of the other runner and extending diagonally inward and rearward toward the first-mentioned blade, but stopping short of it.

2. A weed-cutting machine embodying in its construction runners, a supporting-framework, a long cutting-blade connected at its forward end with the forward end of a runner and extending diagonally across the longitudinal center of the machine to beyond the rear thereof, and a second cutting-blade connected at its forward end to the forward end of the other runner and extending diagonally inward and rearward toward the first-mentioned blade, but stopping short of it, combined with a weed-guard connected with the runner on the side of the standing weeds, as set forth.

850,457. PROPORTIONAL METER. JAMES C. ANDERSON, Highland Park, Ill. Filed June 15, 1903. Renewed Mar. 22, 1907. Serial No. 363,957.

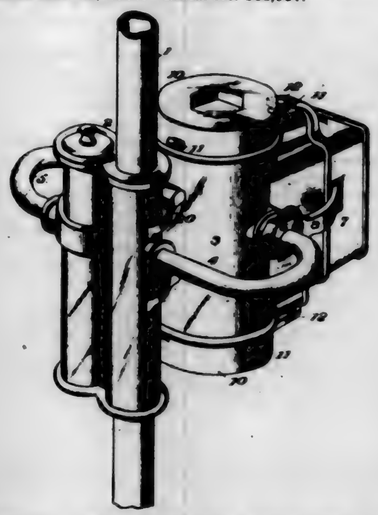

Claim.—1. In combination with a meter-cylinder closed by heads adapted to be secured in position by a threaded connection with the cylinder and provided with radial lugs or projections, a cover or cap locked in position to protect and guard the registering devices and provided with a fixed arm extending within the rotative plane of the lugs or projections on the heads of the cylinder and adapted to contact therewith, whereby fraudulent removal of the heads is prevented, as hereinbefore set forth.

2. In combination with the meter and registering mechanism, and inlet and outlet pipes connected with the meter by polygonal couplings; a cap or cover locked in position over the registering mechanism and formed with rigid integral yokes terminating in forks adapted to embrace the polygonal couplings, whereby both the registering mechanism and the polygonal couplings are protected against fraudulent manipulation substantially as hereinbefore set forth.

3. In a meter provided with a coupling intermediate of the main supply-pipe and the meter and formed with a passage for, and provided with a controller-valve for proportionately dividing the column of water delivered through the main supply-pipe; a threaded bushing secured in position at the end of the valve-seat; a lock member secured to the threaded bushing by a screw, and a second lock member located within the lock member attached to the bushing and adapted to be locked to the first-named lock member, substantially as and for the purpose set forth.

850,458. FOOT-REST. WALTER D. BAGLEY, Erick, Okla. Filed Aug. 7, 1906. Serial No. 329,608.

Claim.—A foot-rest comprising a base-plate, means for securing said plate to a suitable support, a standard consisting of the section 1^a provided with teeth longitudinally thereof and the section 1^b of hollow form to receive the section 1^a and admit of longitudinal adjustment of said sections relatively to one another, a catch carried by the section 1^b of the standard and engaging the teeth of the

section 1^a to adjust the positions of said sections, a foot-piece pivoted to the upper end of the section 1^b of the standard and having a toothed segment, a catch pivoted to the upper end of the section 1^b and arranged to engage the toothed segment of the foot-piece to hold the latter in a

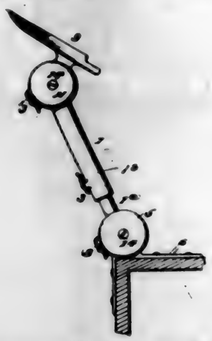

predetermined adjustment, the lower end of the section 1^a of the standard having a toothed segment, and a catch pivoted to the base-plate and arranged to engage the toothed segment last mentioned to hold the section at a predetermined adjustment.

850,459. NUT-LOCK. WILEY BARTLEY, Oconee, Ind. Ter. Filed Mar. 28, 1906. Serial No. 308,558.

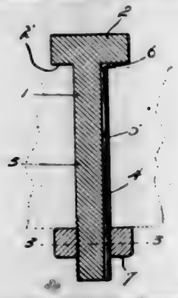

Claim.—1. As an article of manufacture, a nut-lock comprising a bolt including a head and having a longitudinal seat therein terminating at the head, a nut having an internal groove located for registration with the key-seat, and a key adapted for engagement in the key-seat and having one end bent laterally at an acute angle, said bent portion being arranged to lie against the head of the bolt.

2. In a nut-lock, the combination with a bolt including a head and having a longitudinal key-seat in its body portion terminating at its head, a key engaged in the seat and having its end portion adjacent to the head turned laterally at an acute angle and engaging the head, and a nut engaged with the bolt and having an interior groove for registration with the key-seat.

850,460. SHOCK-ABSORBER. FLETCHER W. BATTERSHALL, Albany, N. Y. Filed Feb. 10, 1906. Serial No. 300,452.

Claim.—1. In a machine for restraining a moving body by friction, two friction-plates acting upon that body and a link or links movably connecting said friction-plates and pivoted on both of them so as to allow one friction-plate to move longitudinally and toward and away from the other.

2. In a machine for restraining a moving body by friction, two friction-plates acting upon that body and a link or links movably connecting said friction-plates and pivoted on both of them, and a spring or springs forcing said friction-plates into contact with said moving body.

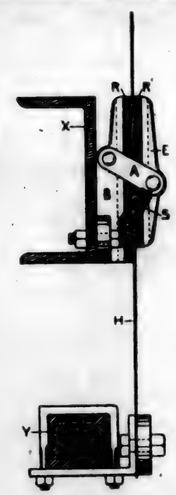

3. In a machine for restraining the recoil of springs of vehicles by friction, a friction-clutch fastened to the superstructure of said vehicle and acting upon a bar fastened to the running-gear of said vehicle, said friction-clutch consisting of two friction-plates and a link or links movably connecting said friction-plates and pivoted on both of them so as to allow one friction-plate to move longitudinally and toward and away from the other.

4. In a machine for restraining the vibration of springs of vehicles by friction, a friction-clutch adapted to act upon a bar fastened to the spring-seat of said vehicle, said friction-clutch consisting of two friction-plates and a link or links movably connecting said friction-plates and pivoted on both of them, and a spring or springs forcing said friction-plates into contact with said bar.

5. In a machine for restraining the recoil of springs of vehicles by friction, a means of automatically proportioning the amount of said friction to the violence of the recoil, said means consisting of a friction-plate attached to the superstructure of said vehicle and connected with another friction-plate by a link or links pivoted on said friction-plates, a spring or springs urging said friction-plates toward each other, and a bar attached to the running-gear of said vehicle and interposed between and acted upon by said friction-plates.

6. In a machine for restraining the recoil of springs of vehicles, in combination with the superstructure and running-gear of said vehicle, a friction-plate attached to said superstructure and connected with another friction-plate by one or more links pivoted on said friction-plates, a bar interposed between said friction-plates and attached to the running-gear of said vehicle.

7. In a machine for restraining the recoil of springs of vehicles, in combination, a friction-plate attached to the superstructure of said vehicle, another friction-plate opposed to the first, a link or links connecting said friction-plates and pivoted on both of them, a spring or springs connected with both of said friction-plates and urging them together, a bar interposed between said friction-plates and attached to the running-gear of said vehicle.

850,461. MEANS FOR REMOVABLY ATTACHING BUGGY-TOPS. FRANK BEASLEY, Lyons, N. C. Filed Mar. 17, 1906. Serial No. 306,673.

Claim.—1. In a device of the character described, the combination of outwardly-projecting brackets, a supporting-rail resting upon the brackets, U-shaped link members, the

opposite arms of which are connected to the supporting-rail upon opposite sides of the outwardly-projecting brackets, and clamping members carried by the U-shaped link members and engaging with the brackets to hold the supporting-rail in position.

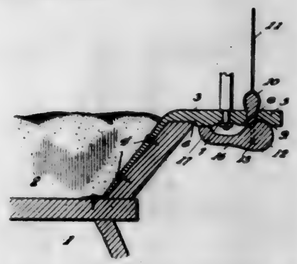

2. In a device of the character described, the combination of outwardly-projecting brackets provided with openings, a supporting-rail resting upon the brackets and formed with projections which fit in the openings therein, U-shaped links, the two arms of which are secured to the supporting-rail upon opposite sides of the bracket, and clamping members carried by the links and engaging with the brackets to hold the supporting-rail in position.

3. In a device of the character described, the combination of outwardly-projecting brackets, a supporting-rail resting upon the brackets, U-shaped link members, the two arms of which are connected to the supporting-rail upon opposite sides of the brackets, and eccentric clamping members carried by the U-shaped links, the said eccentric clamping members having an approximately spherical formation and being adapted to engage with the brackets to hold the supporting-rail in position.

4. In a device of the character described, the combination of outwardly-projecting brackets having openings therein and provided on their lower faces with depressions, a supporting-rail resting upon brackets and provided with lugs which fit within the openings therein, a top secured to the supporting-rail, and eccentric clamping members having an approximately spherical formation so as to engage with the depressions in the lower faces of the brackets, the said clamping members being employed for detachably connecting the supporting-rail to the brackets.

5. In a device of the character described, the combination of outwardly-projecting brackets having openings formed therein, a supporting-rail resting upon the brackets and provided with lugs which fit within the openings therein, U-shaped link members, the two arms of which are connected to the supporting-rail upon opposite sides of the brackets, and eccentric clamping members carried by the U-shaped link members and adapted to be engaged by the brackets to hold the supporting-rail in position.

850,462. FRICTION-COUPLING. HANS H. BENN, Prerau, Austria-Hungary. Filed Apr. 17, 1902. Serial No. 103,466.

Claim.—1. The herein-described friction-coupling, comprising the cylindrical casing, the hub located therein and having the radial arms, the bearing-pins carried by said arms, the friction-rings mounted upon said pins, the pairs of toggles interposed between the bearing-faces of the friction-rings, a shifting sleeve, and a yielding connection between said sleeve and the pair of toggles for operating the latter; substantially as described.

2. The herein-described friction-coupling, comprising the cylindrical casing, the hub located therein and having the radial arms, the bearing-pins carried by said arms, the friction-rings mounted upon said pins, the pairs of toggles interposed between the bearing-faces of the friction-rings at opposite sides of the coupling, links connected to the joints of said toggles and extending inward toward the axis of the coupling in substantially the plane of the radial arms, a shifting sleeve, and yielding connections between said sleeve and links for operating the toggles; substantially as described.

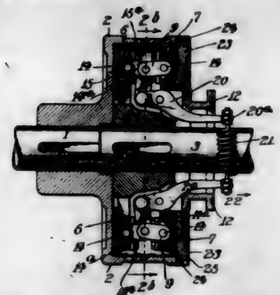

3. The herein-described friction-coupling, comprising the cylindrical casing, the hub located therein and having the radial arms, the bearing-pins carried by said arms, the friction-rings mounted upon said pins, the pairs of toggles interposed between the bearing-faces of the friction-rings at opposite sides of the coupling, links connected to the joints of said toggles and extending inward toward the axis of the coupling, a shifting sleeve, and yielding or spring connections for said links carried on said sleeve independently of each other, and operating to press the inner ends of their connected links outward; substantially as described.

4. The herein-described friction-coupling comprising the cylindrical casing having friction-faces, the hub located therein and having radial arms, friction-rings carried by such arms to coöperate with the friction-faces on the casing and provided on their inner adjacent faces with substantially V-shaped notches, toggles interposed between the friction-rings and having the outer ends of their members arranged to bear in said notches, and means for operating the toggles; substantially as described.

5. The herein-described friction-coupling comprising the cylindrical casing having friction-faces, the hub located therein and having radial arms, friction-rings carried by such arms to coöperate with the friction-faces on the casing and provided on their inner adjacent faces with substantially V-shaped notches, toggles interposed between the friction-rings and having the outer ends of their members provided with pins arranged to bear in said notches, means for confining said pins in the notches and a shiftable sleeve operatively connected with said toggles; substantially as described.

6. The herein-described friction-coupling comprising the cylindrical casing having friction-faces, the hub located therein and having radial arms, friction-rings carried by such arms to coöperate with the friction-faces on the casing and provided on their inner adjacent faces with substantially V-shaped notches, toggles interposed between the friction-rings and having the outer ends of their members provided with pins arranged to bear in said notches, means for confining said pins in the notches, a shiftable sleeve, and a yielding or spring connection between said sleeve and toggles for operating the latter; substantially as described.

7. The herein-described friction-coupling comprising the cylindrical casing having friction-faces, the hub located therein and having radial arms, friction-rings carried by such arms to coöperate with the friction-faces on the casing, and provided on their inner adjacent faces with V-shaped notches, toggles interposed between the friction-rings and provided at the outer ends of their members with pins bearing in said notches, means for confining the pins in the notches and means for operating the toggles; substantially as described.

8. The herein-described friction-coupling comprising the cylindrical casing having friction-faces, the hub located therein and having radial arms, friction-rings carried by such arms to coöperate with the friction-faces on the casing, and provided on their inner adjacent faces with V-shaped notches and with an intermediate and deeper recess, toggles interposed between the friction-rings and provided at the outer ends of their members or links, with pins bearing in said notches, the links fitting in the intermediate recesses, and means for operating the toggles; substantially as described.

9. The herein-described friction-coupling comprising the cylindrical casing having friction-faces, the hub located therein and having radial arms, friction-rings carried by such arms to coöperate with the friction-faces on the casing, and provided on their inner adjacent faces with V-shaped notches and with an intermediate recess, toggles interposed between the friction-rings and comprising the pivoted members or links 8, 9 having bearing-pins 14 near their outer ends, said ends of the links bearing in said intermediate recesses and the pins bearing in said V-shaped notches, and means for operating the toggles; substantially as described.

10. The herein-described friction-coupling comprising the cylindrical casing having friction-faces, the hub located therein and having radial arms, friction-rings carried by such arms to coöperate with the friction-faces on the casing, and provided on their inner adjacent faces with V-shaped notches and with an intermediate recess, toggles interposed between the friction-rings and comprising the pivoted members or links 8, 9 having bearing-pins 14 near their outer ends, said ends of the links bearing in said intermediate recesses and the pins bearing in said V-shaped notches, plates secured to the inner face of the rings adjacent the toggle-bearings and arranged to hold the bearing-pins 14 in place, and means for operating the toggles; substantially as described.

11. The herein-described friction-coupling, comprising the cylindrical casing, the hub located therein having radial arms, bearing-pins carried by said arms, pairs of toggles interposed between the bearing-faces of the friction-rings, links connected to the joint of the toggles and extending inward toward the axis of the coupling, a shifting sleeve, and resilient rods directly and independently connecting said links with said sleeve; substantially as described.

12. The herein-described friction-coupling, comprising a cylindrical casing, having two internal bearing-faces lying in the plane of rotation of said coupling, one of said bearing-faces being adjustable toward and away from the other bearing-face, a hub located within said casing and having lateral arms, bearing-pins carried by said arms, friction-rings slidably mounted upon said pins, pairs of toggles interposed between the bearing-faces of the friction-rings, links connected to the joints of the toggles and extending inwardly toward the axis of the coupling in substantially the plane of the radial arms, a shifting sleeve, and resilient parts directly and independently connecting said links with said sleeve, said resilient parts being adapted to maintain said sleeve in the position to which it is moved in actuating the toggles to bring the bearing-faces of the coupling into engagement; substantially as described.

850,463. QUILL-WINDING MACHINE. EDWARD E. BRADLEY, Stonington, Conn., assignor to The Atwood-Morrison Company, Stonington, Conn., a Corporation of New Jersey. Filed Oct. 2, 1906. Serial No. 337,134.

Claim.—1. A quilling-spindle composed of a front section and a back section and means for swinging the front section at an angle to the back section.

2. A quilling-spindle comprising a front section and back section, means for locking the front section to and releasing it from the back section and means for swinging the front section at an angle to the back section.

3. A quilling-spindle comprising a front section and back section and a hinged support for the front-section bearing for swinging the front section at an angle to the back section.

4. The combination with the reciprocating rod for carrying the guide feed-roller of the quilling-spindle, of a spindle for receiving the quill and means for adjusting the quill-carrying spindle into parallelism with the reciprocating rod.

5. The combination with a quilling-spindle and means for operating it, of a reciprocating rod for guiding the thread, the said rod having two parts one part formed eccentric to the other part, a guide feed-roller mounted on the reciprocating rod and means for holding the rod in different rocked positions to vary the distance of the roller from the spindle.

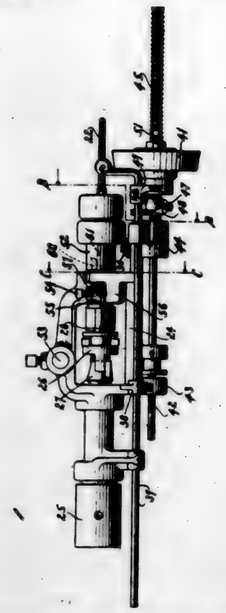

6. The combination with a reciprocating rod having two parts the outer part being eccentric to the inner part, a guide feed-roller thereon and a quill-carrying spindle mounted in relation thereto, of a reciprocating rod provided with a guide for directing the thread to the quill and an arm engaged with the said reciprocating arm and with the thread-guide rod for holding the reciprocating rod in different rotary adjustments.

850,464. BUTTER-CUTTING MACHINE. PETER BRAHM, Milwaukee, Wis. Filed Mar. 2, 1907. Serial No. 360,141.

Claim.—1. A butter-cutting machine comprising a stand, a stock-board and follower movable on the stand, provision being had for automatic clearance of said stand by the stock-board at a predetermined time in the forward movement of same; a cross-wired frame movable on the aforesaid stand in temporary engagement with said board; a butter backing in connection with the aforesaid follower, horizontal wires supported at various elevations in the forward path of butter carried by the stock-board, a vertically-movable tray normally in position to receive said board when the same clears the stand and frame aforesaid, a vertically-movable presser-block in line with the tray, and means for synchronous lowering and lifting of said presser-block and tray.

2. A butter-cutting machine comprising a stand, a stock-board and follower movable on the stand, provision being had for automatic clearance of said stand by the stock-board at a predetermined time in the forward movement of same; a cross-wired frame movable on the aforesaid stand in temporary engagement with said board; a butter backing in connection with the aforesaid follower, horizontal wires supported at various elevations in the forward path of butter carried by the stock-board, a ver-

tically-movable tray normally in position to receive said board when the same clears the stand and frame aforesaid, a vertically-movable independently-adjustable presser-block in line with the tray, and means for synchronous lowering and lifting of said presser-block and tray.

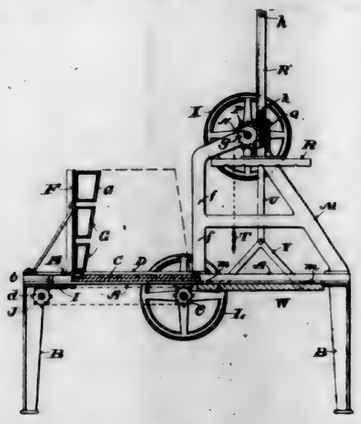

3. A butter-cutting machine comprising a stand, a stock-board and follower movable on the stand, provision being had for automatic clearance of said stand by the stock-board at a predetermined time in the forward movement of same; a cross-wired frame movable on the aforesaid stand in temporary engagement with said board; a back standard on the aforesaid follower, blocks secured to the standard and having their faces inclined and contoured to correspond with a conical mass of butter forward of same, horizontal wires supported at various elevations in the forward path of butter carried by the stock-board, a vertically-movable tray normally in position to receive said board when the same clears the stand and frame aforesaid, a vertically-movable presser-block in line with the tray, and means for synchronous lowering and lifting of said presser-block and tray.

4. A butter-cutting machine comprising a stand having horizontal guide-rails provided with recesses, a stock-board having laterally-projecting end ledges that slide upon said rails and clear the recesses of same, a cross-wired frame movable on the aforesaid rails in temporary engagement with the stock-board, a follower in sliding engagement with the aforesaid rails and provided with a butter backing, lugs depending from the follower, link belts engaged by said lugs, shafts for which the stand is provided with bearings, sprocket-wheels in connection with the shafts and engaging said belts, a turning device in connection with one of said shafts, standards rising from the aforesaid stand, horizontal wires in connection with the standards at various elevations in the forward path of butter carried by the stock-board, a presser-block having a rack-shank for which a cross-bar connecting the standards is provided with a guide, a shaft for which said standards are provided with bearings, a pinion, sprocket-wheels and a turning device fast on the latter shaft, the pinion being engageable with said shank, sections of link belts engaging the latter sprocket-wheels, and a tray hung from said sections of link belting to receive the aforesaid stock-board, this tray and the presser-block being movable in synchrony.

5. A butter-cutting machine comprising a presser-block having a suitably-guided rack-shank provided with upper and lower lateral lugs, an actuating-pinion for the shank, and a bell-crank lever fulcrumed on the shank-guide to engage with either of said lugs and thereby bring said shank out or in engagement with said pinion, pinion clearance being provided in the aforesaid shank above and below the teeth of same.

850,465. CAN CUTTER AND SPOUT. EARNEST F. CAVELIER, Jacksonville, Fla. Filed May 29, 1906. Serial No. 319,346.

Claim.—1. A device of the class described comprising a spout provided with depending spaced cutters arranged to partially sever a portion of the metal of a can and leave the partially-severed portion within the spout, said device being also provided with means for interlocking it with the partially-severed portion.

2. A device of the class described comprising a spout provided with depending cutters adapted to pierce a can, said device being also provided with longitudinal and transverse slots, the longitudinal slot spacing the cutters end extending upwardly from the lower terminals of the cutters to leave an unsevered portion of the can within the spout, and the transverse slot extending from the longitudinal slot and arranged to receive such unsevered portion, whereby the device is interlocked with the can.

3. A device of the class described comprising a substantially cylindrical spout provided with depending cutters, and having a longitudinal slot spacing the cutters to leave an unsevered portion of the can within the spout, said device being also provided with a horizontal slot extending from the vertical slot and arranged to receive the said unsevered portion of the can, when the device is partially rotated.

4. A device of the class described having a spout provided with depending spaced cutters arranged to partially sever a portion of a can, the unsevered portion being arranged within the spout and adapted to be bent into the said can, and means carried by the device for engaging the partially-severed portion, whereby the device is interlocked with the can.

850,466. WHIP-SOCKET. PETER L. CONRAD, Sunbury, Pa. Filed May 29, 1906. Serial No. 319,389.

Claim.—1. In a device of the character described, the combination of a whip-socket provided with a flange, a pair of locking-arms pivotally connected to the flange and adapted to fit around a whip in such a manner as to hold the same against removal from the socket, the said locking-arms also being provided with means for engaging with the before-mentioned flange.

2. In a device of the character described, the combination of a whip-socket provided with an annular flange, bolts passing through the flange and securing the socket in position, nuts coöperating with the bolts and bearing against the flange, and a pair of locking-arms loosely connected to the flange and fitting over the before-mentioned nuts, the said locking-arms being adapted to engage with the whip to lock the same against removal from the socket.

3. In a device of the character described, the combination of a whip-socket provided with an annular flange, bolts passing through the flange and securing the whip-socket in position, nuts coöperating with the bolts and bearing against the flange, a pair of locking-arms fitting over the nuts and adapted to lock the whip against removal from the socket, the said locking-arms being provided with flanges which embrace the before-mentioned flange upon the socket.

4. In a device of the character described, the combination of a whip-socket, means for securing the whip-socket to a support, and a locking device for locking a whip within the socket, the said locking device also serving to prevent removal of the whip-socket from the support.

5. In a device of the character described, the combination of a whip-socket provided with a basal flange and also with an annular flange, a base-plate, fastening members passing through corresponding openings in the base-plate, basal flange and upper flange, and a pair of locking-arms loosely connected to the upper flange and adapted to prevent a whip from being removed from the socket.

6. In a device of the character described, the combination of a whip-socket provided at its lower end with a basal flange fitting against the support and at its upper end with an annular flange, fastening members passing through the support and corresponding openings in the basal flange and annular flange, and a pair of locking-arms loosely connected to the annular flange and adapted to prevent the whip from removal from the whip-socket.

850,467. BOTTLE-WRAPPER MACHINE. MAURICE COSTELLO, Dayton, Ohio. Filed June 8, 1906. Serial No. 320,819.

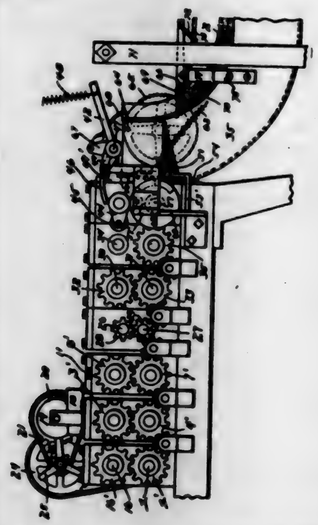

Claim.—1. In a bottle-wrapper machine, an initial supporting-roller to guide the wrapper into the machine and to support said wrapper while receiving adhesive substance to one corner of the wrapper, a wiper-arm mounted above said roller carrying a paster adapted to engage a corner of the wrapper and to apply adhesive substance thereto, a glue-receptacle, a rotating disk partially submerged in said receptacle, and a series of wiper-arms interposed between said disk and the paster to transfer the adhesive substance from the disk to the paster.

2. In a bottle-wrapper machine, a roller for initially conducting the wrapper into the machine, a rotating paster mounted above said roller, a disk rotating in a paste-receptacle, and means interposed between said disk and said rotating paster for intermittently transferring adhesive substance from the disk to the paster.

3. In a bottle-wrapper machine, scoring-rollers, and initial feeding-roller to feed the wrapper to said scoring-rollers and to support the wrappers while being pasted at one corner, a paster rotating above said initial roller, a glue-receptacle, a glue-transferring device partially submerged in said receptacle, and means interposed between said glue-transferring device and said rotating paster by which adhesive substance is intermittently conveyed to said paster.

4. In a bottle-wrapper machine, an initial feeding-roller to support the wrappers while being supplied at one end with adhesive substance, a rotating paster above said roller and adapted to apply adhesive substance to one end of the wrapper while supported upon said roller, a receptacle to contain said adhesive substance, a device rotating in said adhesive substance, a device interposed between the device within the adhesive-receptacle, and the paster to intermittently apply the adhesive substance to said paster, scoring-rollers to score the wrapper on a line between the portion receiving the adhesive substance and the body of the wrapper, and bending-devices to unite the portion of the wrapper so pasted and scored.

5. In a bottle-wrapper machine, an initial feeding-roller to feed the wrappers and support them while each is being supplied at one corner with adhesive substance, a rotating paster above said roller and applying adhesive substance to one corner of the wrapper while supported upon said roller, a receptacle containing said adhesive substance, a member rotating in said adhesive substance, a device interposed between said member and the paster to intermittently supply the adhesive substance to the paster, scoring-rollers to score the wrappers on lines between the corner receiving the adhesive substance and the body of the wrapper, and means for bending the portion of the wrapper upon the score-line to cause the same to adhere.

6. In a bottle-wrapper machine, a receiver, delivery-rollers mounted at the entrance to said receiver, one of said rollers having a peripheral recess into which the ends of the wrappers are deflected to enter the receiver, and means for directing the ends of said wrappers into said recess.

7. In a bottle-wrapper machine, a receiver, delivery-rollers at the entrance of said receiver, one of said rollers having a peripheral recess to receive the ends of the wrappers, means for pressing the ends of the wrappers into said recess, and means for counting the wrappers entering the receiver.

8. In a bottle-wrapper machine, corrugating-rollers, delivery-rollers receiving the corrugated wrapper from said corrugated rollers, one of said delivery-rollers having an annular peripheral recess and the other of said delivery-rollers having a peripheral recess, means for depressing the ends of the wrappers into said peripheral recess to deflect their force of travel from the machine, and a receiver to receive said wrappers.

9. In a bottle-wrapper machine, delivery-rollers, one of which has a peripheral recess, vibrating arms to depress the ends of the wrappers into said peripheral recess, means for imparting movements to said arms as described, a receiver to receive the wrappers from the delivery-rollers after acted upon by the vibrating arms, and means for counting and marking the wrappers entering the receiver.

10. In a bottle-wrapper machine, delivery-rollers, one of which has an annular peripheral depression, and the other of which has a peripheral recess in a portion of its circumference, a device for initially deflecting the ends of the wrappers into said recess, vibrating arms to complete the depression of the ends of the wrappers into said recess, means for imparting longitudinal reciprocating movement to said arms, and means for imparting in the meantime an oscillating movement to said arms, and a receiver to receive the wrappers in parallel positions after being acted upon by said arms.

11. In a bottle-wrapping machine, the combination with a receiver, delivery-rollers mounted at the entrance of said receiver, one of said rollers having a peripheral recess to receive the pointed ends of the wrappers, means for pressing said ends of the wrappers into said recess, means for deflecting the ends of said wrappers as they leave the rollers, a counter to count the wrappers as they leave said rollers, and a marking device by which a predetermined number of the blanks are marked as fed from said rollers and counted.

12. In a bottle-wrapping machine, the combination with delivery-rollers, a receiver, means for dedecting the rearward ends of the wrappers into said receiver, a counting device to count the wrappers entering said receiver, a marker to mark one of said wrappers after a predetermined number have entered the receiver, a carriage upon which said marker is supported, a flexible connection, a lever to which one end of said flexible connection is attached and the other end of said flexible connection being attached to said carriage, a bar upon which said carriage is slidingly mounted, and means for maintaining said bar and carriage in their normal positions.

850,468. INKSTAND CONSTRUCTION. EMET DAVIS, New York, N. Y. Filed June 2, 1906. Serial No. 319,836.

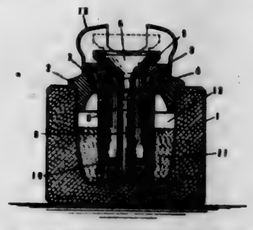

Claim.—1. In inkstand construction, in combination, a plunger and rigid means provided with an opening below the plane of its uppermost portions and extending above the plane of the top of the plunger.

2. In inkstand construction, in combination, a plunger and rigid detachable means provided with an opening below the plane of its uppermost portions and extending above the plane of the top of the plunger.

3. In inkstand construction, in combination, a plunger and rigid means extending above the plane of the top of the plunger and provided with a lateral opening leading thereto.

4. In inkstand construction, in combination, a plunger and rigid detachable means extending above the plane of the top of the plunger and provided with a lateral opening leading thereto.

5. In inkstand construction, in combination, a plunger and rigid means provided with an opening through the top thereof and below the plane of its uppermost portions extending above the plane of the top of the plunger.

6. As an article of manufacture, a cap adapted to be detachably mounted upon an inkstand and provided with an opening affording access thereto.

7. As an article of manufacture, a cap adapted to be detachably mounted upon an inkstand and cut away at its top and one side to afford access thereto.

8. As an article of manufacture, a cap stamped out of sheet metal adapted to be detachably mounted upon an inkstand and cut away transversely across its upper portion and down upon one side to afford access to the ink.

850,469. CONCRETE-MIXER. WILLIAM C. DAYHOFF, Bradley, Ill. Filed May 14, 1906. Serial No. 316,673.

Claim.—1. In a concrete-mixer, the combination with a revoluble drum having an opening in one end, and two uprights adjacent to said opening, of a chute leading into said drum and having a diagonal housing across each side slidably engaging one of said uprights, and a block on each of said uprights for supporting said chute.

2. In a concrete-mixer, the combination of a drum mounted revolubly between two standards and having an opening in each end, a chute leading from said drum, said chute having a diagonal housing on each side slidably engaging one of said standards, parallel rods extending through said drum and connecting said standards, and a hook on each side of said chute near its upper end engaging said rods.

3. In a concrete-mixer, the combination of a revoluble drum, a plate pivoted at its edge near the inner surface of the drum and adapted to be swung into and out of position to elevate the materials in the drum as it is rotated, means outside the drum for turning the plate into and out of elevating position and locking it in place, and a rod 46 carried by the drum for supporting the plate in elevating position.

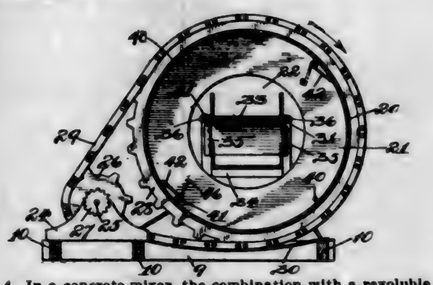

4. In a concrete-mixer, the combination with a revoluble drum and a chute leading therefrom, of a rod slidably pivoted near the inner surface of the drum and extending through one end of the same, a lever on the outer end of the rod, a stop on the end of the drum for locking said lever in position, said rod being movable longitudinally to free said lever from contact with said stop, and a plate secured to said rod inside said drum.

5. In a concrete-mixer, the combination with a revoluble drum and a chute leading therefrom, of a rod slidably pivoted near the inner surface of the drum and extending through both ends of the drum, a head on one end of said rod, a spring interposed between said head and said end of the drum, a lever on the other end of said rod, a stop on the end of the drum for locking said lever in position, said rod being movable longitudinally to free said lever from contact with said stop, and a plate secured to said rod inside said drum.

850,470. TELEPHONE TRUNKING SYSTEM. WILLIAM W. DEAN, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed July 16, 1902. Serial No. 115,764.

Claim.—1. The combination with a trunk-line extending in two limbs only between different switchboards and having switch-sockets only at one end and a connecting-plug only at the other to establish talking connections, of means at each end of the trunk operative from the other end thereof over the metallic circuit of the trunk, for attracting the attention of the operator, whereby the trunk is adapted for reciprocal operation, substantially as described.

2. The combination with a trunk-line extending in two limbs only between different switchboards and having a switch-socket only at one end and a connecting-plug only at the other for establishing talking connections through the trunk, of means actuated over the metallic circuit of the trunk to signal the operator at the plug end of the trunk from the socket end, and a calling-signal at said socket end placed under the control of the operator at the plug end, whereby the trunk-circuit is adapted for reciprocal operation, substantially as described.

3. The combination with a trunk-line extending between different switchboards and having multiple-switch sockets at one end for establishing connection with the trunk, of a calling-signal at said end placed under the control of the operator at the other end of the trunk, said sockets being normally disconnected from the trunk but adapted to be connected therewith when the talking-circuit is established with one of said sockets, substantially as described.

4. The combination with a trunk-line extending between different switchboards and having normally disconnected switch connections at one end, of a signal at said end placed under the control of the operator at the other end of the trunk, a cut-off relay actuated when a connection is established with one of said switch connections to render said signal inoperative and to operatively connect the switch connections with the trunk-circuit, substantially as described.

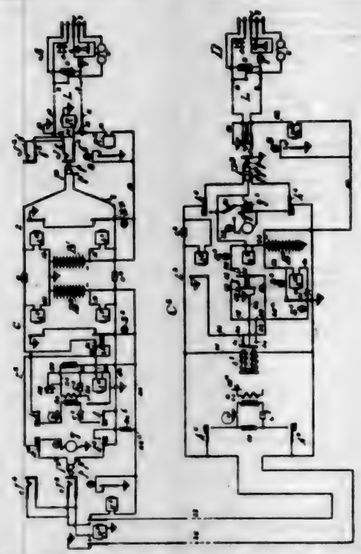

5. The combination with a trunk-line extending between different switchboards and adapted for reciprocal operation, of switch connections for said trunk-line at one end normally disconnected from the trunk, a calling-signal at said end normally connected with the trunk, and means for disconnecting said signal and connecting the switch connections with the trunk when a talking-circuit is established with one of said switch connections, substantially as described.

6. The combination with a trunk-line extending between different switchboards and having switch-sockets at one end normally in inoperative relation with the line, of a signal associated with said end and having its operation controlled from the opposite end of the trunk, and a cut-off relay actuated over a portion of the talking-circuit when connection is established with the line to operatively connect said sockets with the trunk-line and to render said signal inoperative, substantially as described.

7. The combination with a trunk-line extending between different switchboards and having switch-sockets at one end, a signal associated therewith, said sockets being normally disconnected from the trunk-line, a cut-off relay permanently connected with one of the talking contacts of the switch-sockets, and means when a connection is established with one of the sockets to actuate the cut-off relay to render the signal inoperative and to connect the sockets with the line, substantially as described.

8. The combination with a trunk-line extending between different switchboards and adapted to interconnect telephone-lines for conversation, of switch-sockets at one end, a line-signaling device and source of current normally connected therewith at said end, whereby the operator at the other end of the trunk is enabled to operate said signal by completing the circuit thereof, and means actuated over a portion of the talking-circuit for rendering said signal inoperative when connection is established with said sockets, substantially as described.

9. The combination with a trunk-line extending between different switchboards and adapted to interconnect telephone-lines for conversation, of switch-sockets at one end, a line-signaling device and a source of current normally bridged in series between the limbs of said line at said end a key at the other end whereby the operator at the other end is enabled to actuate the signaling device by completing the circuit of the same, and means for rendering said signal inoperative when the connection is established at that end, substantially as described.

10. The combination with a trunk-line extending between different switchboards and adapted to interconnect telephone-lines for conversation, of switch-sockets at one end, a line-signaling device and a source of current normally connected with the trunk at said end, a key to enable the operator at the opposite end of the trunk to complete the circuit of said source and said signaling device to operate the same, and means for disconnecting said signal from the trunk when connection is established with any of said sockets, substantially as described.

11. The combination with a trunk-line extending between different switchboards and adapted to interconnect telephone-lines for conversation, of spring-jacks for said trunk at one end, a line-signaling device and a source of current normally bridged in series between the limbs of the trunk-line at said end, whereby said signal may be actuated from the other end of the trunk and a cut-off relay actuated over a talking-strand of the trunk-line when a connection is established with one of said spring-jacks to render said signaling device inoperative, substantially as described.

12. The combination with a trunk-line extending between different switchboards and adapted to interconect telephone-lines for conversation, a line-signaling device and a source of current normally connected with the trunk, whereby the operator at the other end of the trunk is enabled to operate said device by completing a path for current over the two limbs of the trunk-line in series, spring-jacks for said end of the trunk, a cut-off relay having its circuit closed through talking contacts of said jack when a connecting-plug is inserted therein, and means for directing current through said cut-off relay when a connection is established at one of said jacks to cut off said line-signaling device, substantially as described.

13. The combination with a trunk-line extending between different switchboards and adapted to interconnect telephone-line circuits for conversation, of spring-jacks for said trunk-line at one end, a cut-off relay connected between one side of the talking-circuit and a third conductor, said jacks being normally disconnected from the trunk-line, a line-signaling device and a source of current normally connected with said trunk-line, and means for connecting a source of current between said third conductor and the contact of the spring-jack with which said cut-off relay is connected when the cord-circuit is connected with the jack, whereby said cut-off relay is operated to render the signaling device inoperative and to connect the spring-jacks with the trunk-line, substantially as described.

14. The combination with a trunk-line extending between different switchboards and adapted to interconnect telephone-lines for conversation, of a signal at one end of the trunk, a polarized relay of high resistance at said end connected with the trunk, a source of current normally connected with the other end of the trunk and sending current thereover and through said polarized relay to operate it in such direction as to prevent the operation of said signal, a signaling device at said other end of the trunk in the path of said current but not operated thereby owing to the resistance of said polarized relay, and means under the control of the operator at the first-named end of the trunk for closing a low-resistance path for said current to operate said signaling device, substantially as described.

15. The combination with a trunk-circuit extending between different switchboards and adapted to interconnect telephone-line circuits for conversation, of a signal located at one end, a high-resistance polarized relay bridged across the metallic circuit of the trunk-line at said end, a source of current and a signaling device connected between the line conductors at the opposite end, said source sending current over the trunk-line and through said high-resistance relay in the proper direction to prevent its operating said signal, the flow of said current being limited by the high resistance of said relay to prevent the simultaneous operation of the said signaling device at the opposite end of the trunk, means under the control of the operator for short-circuiting the polarized relay to permit the operation

of the said signaling device from said current source, substantially as described.

16. The combination with a trunk-circuit extending between different switchboards and adapted to interconnect telephone-line circuits for conversation, of a signal located at one end, a high-resistance polarized relay bridged across the metallic circuit of the trunk-line at said end, a source of current and a signaling device connected between the line conductors at the opposite end, said source sending current over the trunk-line and through said high-resistance relay to actuate it in the proper direction to prevent the operation of said signal, the flow of said current being limited by the high resistance of said relay to prevent the simultaneous operation of the said signaling device at the opposite end of the trunk, means under the control of the operator for short-circuiting the polarized relay to permit the operation of said signaling device by the increased current-flow, and means when a connection is established with the second-mentioned end of the trunk to disconnect said source and signaling device and to complete a path for current over the trunk-line in the opposite direction to operate the polarized relay in the reverse direction, whereby said signal at the latter end is operated, substantially as described.

17. The combination with a trunk-line extending between different switchboards and adapted to interconnect telephone-lines for conversation, of a signal at one end of the trunk, a polarized relay of high resistance at said end connected with the trunk, a source of current normally connected with the other end of the trunk and sending current thereover and through said polarized relay to operate it in such direction as to prevent the operation of said signal, a line-signaling device at the opposite end of the trunk in the path of said current but not normally operated thereby owing to the resistance of said polarized relay, means under the control of the operator at the first-named end of the trunk for closing a low-resistance path for said current to cause said signaling device at the opposite end of the trunk to operate, and means when a connection is established with said second-named end to render said signaling device inoperative, substantially as described.

18. The combination with a trunk-line extending between different switchboards and adapted to interconnect telephone-lines for conversation, of a signal at one end of the trunk, a polarized relay of high resistance at said end connected with the trunk, a source of current normally connected with the other end of the trunk and sending current thereover and through said polarized relay to operate it in such direction as to prevent the operation of said signal, a line-signaling device at the opposite end of the trunk in a path of said current but not operated thereby owing to the resistance of said polarized relay, means under the control of the operator at the first-named end of the trunk for closing a low-resistance path for said current to cause said signaling device at the opposite end of the trunk to operate, and means when a connection is established at the second-mentioned end of the trunk to render the signaling device at said end inoperative, and to reverse current through said polarized relay to cause it to operate said signal, substantially as described.

19. The combination with a trunk-circuit extending between different switchboards and adapted to interconnect telephone-lines for conversation, of a source of current and a signaling device normally connected with one end of said trunk, switch-sockets for said end, a cut-off relay therefor, a polarized relay at the opposite end of the trunk, and a signal whose actuation depends upon said relay, the said current source serving normally to send current in one direction through said polarized relay, and means when a connection is established with one of said sockets to render said signaling device inoperative and to reverse the direction of current through said polarized relay, substantially as described.

20. The combination with a trunk-circuit extending between different switchboards and adapted to interconnect telephone-lines for conversation, of a polarized relay at the incoming end of the trunk, a calling-signal at said end operated by said relay when a connection is established at the outgoing end of the trunk, and a second relay at said incoming end actuated over a local circuit independent of the talking-circuit to render said signal inoperative when a connection is established with the called line, substantially as described.

21. The combination with a trunk-line extending between different switchboards and adapted to interconnect telephone-line circuits for conversation, of a polarized trunk-relay at the incoming end of the trunk, a disconnect-signal at said end, current being directed through said polarized relay in one direction during conversation to prevent the operation of said disconnect-signal, and means for reversing current through said polarized relay when the connection is severed at the outgoing end to actuate it in the reverse direction to cause said signal to operate, substantially as described.

22. The combination with a trunk-line extending between different switchboards and adapted to interconnect telephone-line circuits for conversation, of a disconnect-signal at the incoming end of the trunk, a polarized trunk-relay bridged across the trunk-circuit and receiving current in a direction to prevent it from operating said signal during conversation, a second relay energized over a local circuit independent of the talking-circuit when the incoming end of the trunk is connected with the called line to place said signal in condition to operate, and means for reversing the current through said polarized relay when the connection is taken down at the outgoing end to cause the operation of the signal to give a disconnect indication, substantially as described.

23. The combination with a trunk-circuit extending between different switchboards and adapted to interconnect subscribers' lines for conversation, of a polarized trunk-relay bridged across the circuit at the incoming end and a second relay adapted to be actuated over a local circuit independent of the talking-circuit when the incoming end of the trunk is connected with the called line, a signal at said incoming end actuated when the second relay is deënergized and the trunk-relay is energized by current flowing therethrough in one direction when the cord-circuit has been connected with the outgoing end of the trunk to give a call indication, said signal being actuated to give a disconnect indication when the second-named relay is energized and the trunk-relay is actuated by current in the reverse direction when the cord-circuit has been disconnected at the outgoing end, substantially as described.

24. The combination with a trunk-circuit extending between different switchboards and adapted to interconnect telephone-line circuits, of a ringing-signal for the incoming end of the trunk, and a relay actuated over a local circuit when the trunk is connected with a called line for placing said signal in condition to operate, and a second relay actuated by current in the line from the outgoing end when the called subscriber responds for rendering said signal inoperative, substantially as described.

25. The combination with a trunk-circuit between different switchboards and adapted to interconnect subscribers' lines for conversation, of a polarized trunk-relay bridged across the circuit at the incoming end, and a second relay adapted to be actuated over a local circuit independent of the talking-circuit when the incoming end of the trunk is connected with the called line, a signal at said incoming end actuated when the second relay is deënergized and the trunk-relay is energized by current flowing therethrough in one direction when the cord-circuit has been connected with its outgoing end to give a call indication, said signal being actuated to give a disconnect indication when the second-named relay is energized and the trunk-relay is actuated by current in the reverse direction when the cord-circuit has been disconnected at its outgoing end, and a pilot signaling device actuated whenever said signal is actuated, substantially as described.

26. The combination with a trunk-line extending between different switchboard-sections and adapted to interconnect telephone-lines for conversation, of a cord-circuit at the outgoing end of the trunk, and a source of current associated therewith, a polarized trunk-relay at the incoming end of the trunk, a signal at said end whose actuation depends upon said relay, said source of current serving to actuate said relay in one direction during conversation, and to furnish current to the called-subscriber's line for conversation, and means when connection is severed at the outgoing end to actuate said relay in the reverse direction by current over the trunk-line, substantially as described.

27. The combination with a trunk-circuit adapted to interconnect telephone-lines for conversation, of a series of switch-sockets for one end of the trunk, a source of current normally impressed upon the trunk-line, testing-terminals for said sockets, normally disconnected from the line, whereby an idle test is secured when the trunk-line is not busy, and means for connecting said terminals with the trunk-line talking-circuit during conversation whereby their electrical condition is altered, and they are in condition to test busy, substantially as described.

28. The combination with a trunk-line extending between different switchboards, of a cord-circuit to connect with one end and having a source of current and supervisory signal associated therewith, said signal being rendered operative by current over a portion of the talking-circuit when connection is established with the line, a called-subscriber's line to connect with the other end of the trunk, the established circuit being such that current from said source flows over the trunk and called line to furnish current thereto for the operation of the transmitters, said supervisory signal being rendered inoperative by current over the metallic circuit of the called line and trunk when the called subscriber answers his call and completes his line for steady currents, substantially as described.

29. The combination with a trunk-line adapted to connect with a cord-circuit at its outgoing end and with a called line at its incoming end, a source of current associated with the cord-circuit and included in the through metallic circuit when connection is established and the called subscriber has responded, said source serving to charge the called-subscriber's transmitter for talking and to control the supervisory signals associated with the cord-circuit, a polarized relay bridged across the metallic circuit at the incoming end of the trunk, a signal at said end whose actuation depends upon said relay, said relay being of high resistance and impedance to prevent the short-circuiting of either the steady or voice currents, substantially as described.

30. The combination with a plurality of subscribers' lines terminating at a central office, each of said lines having a line-signal and a cut-off relay to render the line-signal inoperative when a connection is established, said cut-off relay being adapted to be actuated over a portion of the talking-circuit when a connection exists therewith, of a plurality of trunk-lines also terminating at said office and provided with switch connections, signals and cut-off relays of the same type as the subscribers' lines, whereby the apparatus at said office and the method of establishing connections is made uniform throughout, substantially as described.

850,471. CUSHIONED HOLDER FOR DATING-STAMPS. ELY ENSIGN, Dallas, Tex., assignor to Walter Nolte, Seguin, Tex. Filed Oct. 3, 1906. Serial No. 337,171.

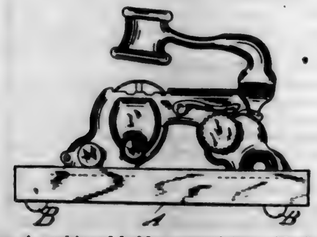

Claim.—A cushioned holder comprising a block having a cavity formed therein for the base-pieces of a dating-stamp and having projections in said cavity to prevent sliding motion of said stamp, sound-deadening legs supporting said block, and a covering of soft material placed on the bottom of said cavity.

850,472. CENTRIFUGAL MACHINE. ERIK A. FORSBERG, Stockholm, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden. Filed May 19, 1905. Serial No. 261,136.

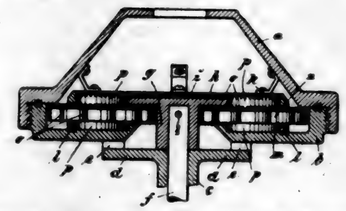

Claim.—1. In a centrifugal machine, the combination with the rotary bowl, of a hollow shaft, there being an outlet between the walls of the bowl and the shaft, a second shaft projecting through said hollow shaft into the interior of the bowl, a cross-piece rigidly secured to said second shaft within the bowl and embracing the naves of one or more scraper-wheels, imparting to them a planetary movement along the entire periphery of the bowl, and a ring within the bowl having contact-surfaces in frictional contact with said scraper-wheels for imparting a rotary movement to said scraper-wheels around their own axes.

2. In a centrifugal machine, the combination with a rotary bowl, of one or more scraper-wheels rotatably mounted, and movable around the bowl, and a disk within the bowl having a contact-surface, said scraper-wheels being in frictional contact with said surfaces.

3. In a centrifugal machine, the combination with a rotary bowl, of one or more scraper-wheels rotatably mounted and movable around the bowl, a disk within the bowl having a contact-surface, said scraper-wheels being in frictional contact with said surface, the scraper-wheels and disks being supported to be adapted to have a differential rotation with respect to each other on the axial line of the bowl.

4. In a centrifugal machine, the combination with a rotary bowl, of one or more scraper-wheels rotatably mounted, a disk having a contact-surface, said scraper-wheels being in frictional contact with said surface, said disk and scraper-wheels being supported to be adapted to move around on the axis of the bowl at different speeds.

5. In a centrifugal machine, the combination with a rotary bowl, of one or more scraper-wheels rotatably mounted, and movable around the bowl, and a disk having contact-surfaces corresponding to said scraper-wheels in frictional contact with the scraper-wheels, said disk being connected with the bowl.

6. In a centrifugal machine, the combination with a rotary bowl, of one or more scraper-wheels rotatably mounted, a disk having a contact-surface in frictional contact with said scraper-wheels, said disk being connected with the bowl, and said scraper-wheels being adapted to move on the axis of the bowl at a speed different from that of the rotation of the disk.

7. In a centrifugal machine, the combination with a rotary bowl, of one or more rotating scraper-wheels therein for conveying the solid matters stratified on the wall of said bowl to a point near the central line of the bowl, a shaft, separate from the bowl-driving shaft, for driving said scraper-wheels, and a disk within the bowl having a contact-surface in frictional contact with said scraper-wheels.

8. In a centrifugal machine, the combination with a rotary bowl, of one or more rotating scraper-wheels therein for conveying the solid matters stratified on the wall of said bowl to a point near the central line of the bowl, a shaft, separate from the bowl-driving shaft, for driving said scraper-wheels, a disk connected with the bowl hav-

ing a contact-surface in frictional contact with the upper portion of said scraper-wheels, and a ring secured to the bowl having a contact-surface in frictional contact with the lower portion of said scraper-wheels.

9. In a centrifugal machine, the combination with a rotary bowl, of one or more rotating scraper-wheels therein for conveying the solid matters stratified on the wall of the said bowl to a point near the central line of the bowl, a shaft, separate from the bowl-driving shaft, for driving said scraper-wheels, a disk connected with the upper part of the bowl and having a contact-surface in frictional contact with the upper portion of said scraper-wheels and a ring set into a groove in the bottom part of the bowl and having a contact-surface in frictional contact with the lower portion of said scraper-wheels.

10. In a centrifugal separator, the combination, with the rotary bowl and its driving-shaft, of a secondary shaft extending within the bowl and adapted to be rotated at a speed different from that of the bowl, rotating scraper-wheels within the bowl for conveying the solid matters stratified on the wall to a point near the central line of the bowl, a rotating member consisting of a cross-piece having holes in which the naves of the scraper-wheels revolve, and a disk having a contact-surface in frictional contact with said scraper-wheels, the cross-piece being connected with the secondary shaft and the disk turning with the bowl.

850,473. GOVERNING DEVICE FOR MARINE ENGINES. WILHELMUS J. H. FRESEN, Brussels, Belgium. Filed Mar. 10, 1906. Serial No. 305,354.

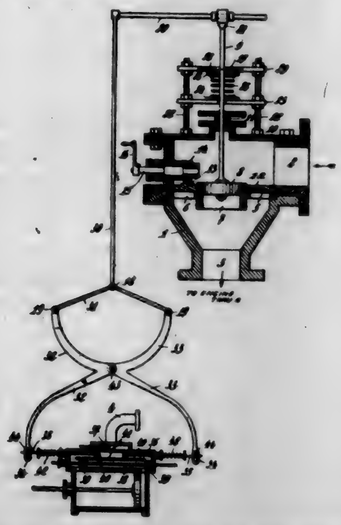

Claim.—1. In combination with the steam-distributing gear, the steam-distribution chamber and the steam-supplying pipe of a marine engine, closing members independent of the distributing-gear properly so called, said closing members being located in the steam-distribution chamber and a governor arranged in the steam-supplying pipe of the engine, said governor acting to partially or totally close the steam-passage to the distributing-gear by means of the closing members when the engine tends to race, substantially as described.

2. In combination with the cylinder, the expansion slide-valve, the distributing slide-valve and the steam-supplying pipe of a marine engine, closing members located between the expansion slide-valve and the distributing slide-valve and a governor arranged in the steam-supplying pipe and acting on said closing members to partially or totally close the steam-passage between the expansion-valve and the distributing-valve when the engine tends to race substantially as described.

3. In combination with the cylinder the expansion slide-valve, the distributing slide-valve and the steam-supplying pipe of a marine engine, closing members located between the expansion slide-valve and the distributing slide-valve, a governor comprising a piston, a cylinder open at both ends, arranged in the steam-supplying pipe and in which cylinder said piston is adapted to move, a spring tending to lift said piston and a piston-rod passing out of the steam-supplying pipe and a suitable transmission connecting said piston-rod to the closing members substantially as described and for the purpose set forth.

4. In combination with the cylinder, the expansion slide-valve the distributing slide-valve and the steam-supplying pipe of a marine engine, closing members located between the expansion slide-valve and the distributing slide-valve, rods for actuating said closing members, the said rods extending out of the steam-distribution chamber, a governor, the action of which depends upon the variation of the steam-pressure in the steam-supplying pipe, a rod moved by said governor and two rocking levers acted upon by said governor and moving the rods of the closing members to close the passage of the steam between the expansion slide-valve and the distributing slide-valve when the governor is moved by the variations of pressure in the steam-supplying pipe, substantially as described and for the purpose set forth.

850,474. CAR-FENDER. IVERD R. GUILFORD, Los Angeles, Cal. Filed Jan. 18, 1907. Serial No. 352,852.

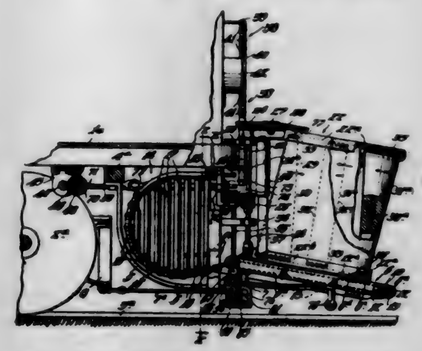

Claim.—1. In a street-car fender, a bifurcated frame; a horizontal fender pivotally secured therein; a series of curving shafts rigidly mounted in the sides of the casings, a series of revoluble spools mounted thereon and a flexible belt rotating on the periphery of said spools, and means for rotating said belt.

2. In a street-car fender; a horizontal fender pivotally supported; a series of spools revolubly mounted on a series of rigid curving shafts; a belt on said spools; means for rotating the belt; and means for causing the fender to follow the curvature of the surface track, without disengaging the rotative mechanism.

3. In a street-car fender, the combination of an inclined fender pivotally supported; a belt rotating on a series of spools revolubly mounted on rigid curving shafts on said inclined fender; vertical side fenders pivotally secured to the car and slidably mounted on the inclined fender; a series of vertical frusto-cone pulleys on said vertical side fenders; belts rotating on said pulleys; means for rotating the belts on said inclined and vertical fenders in unison; and means for turning the inclined fender and the vertical side fenders, to follow the curvature of the track.

850,475. ELECTRIC MOTOR AND CONTROLLER FOR THE SAME. JOHN H. HERTNER, Cleveland, Ohio, assignor of one-half to De Witt Cookingham, Cleveland, Ohio. Filed May 28, 1906. Serial No. 319,031.

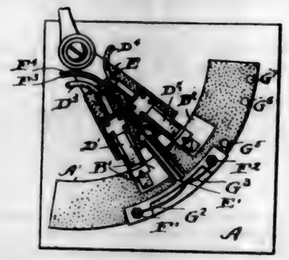

Claim.—1. In combination, an electric motor, the field of which is controlled by a series winding, a shunt-winding and connections therefor arranged to cause it to act in opposition to the series winding upon said field independently of fluctuations in the flow of current through the series winding.

2. In combination, an electric motor, the field of which is controlled by a series winding, a shunt-winding arranged to act in opposition to the series winding upon said field, and means for cutting the shunt-winding in or out while current is passing through the series winding.

3. In combination, an electric motor, the field of which is controlled by a series winding, a shunt-winding arranged to act upon the said field and means whereby current may be passed through the shunt-winding in either direction while the direction of the current through the series remains constant.

4. In combination, an electric motor, the field of which is controlled by a series winding, a shunt-winding arranged to act upon the said field, and means whereby current through the shunt-winding may be passed in either direction or cut out at will while the direction of the current through the series winding remains constant.

5. In combination, an electric motor, and two battery groups, one group having its positive and negative terminals connected respectively with a pair of contacts, the second group being likewise connected with a pair of contacts movable relatively to and adapted to engage with the first-mentioned pair, and connections between one brush of the motor and the positive pole of one of said battery groups and between the opposite brush and the negative pole of the other battery group.

6. In combination, an electric motor and two battery groups, one battery group having its positive and negative terminals connected respectively with a pair of contacts, the second battery group being likewise connected with a pair of contacts movable relatively to and adapted to engage with the first-mentioned pair, the arrangement of the parts being such that when the two pairs of contacts are in engagement, the terminals having the same sign shall be connected, and connections between one brush of the motor and the positive pole of one of said battery groups and between the opposite brush and the negative pole of the other battery group.

7. In combination, an electric motor, and two battery groups, one group having its positive and negative terminals connected respectively with a pair of contacts, the second group being likewise connected with a pair of contacts movable relatively to and adapted to engage with the first-mentioned pair, the arrangement of parts being such that when but one of each pair of contacts is in engagement a terminal of one group is connected with a terminal of opposite sign in the second group, and connections between one brush of the motor and the positive pole of one of said battery groups and between the opposite brush and the negative pole of the other battery group.

850,476. SPLICING YARN-FEED DEVICE FOR KNITTING-MACHINES. HARRY A. HOUSEMAN, Philadelphia, Pa., assignor to Standard Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Oct. 12, 1906. Serial No. 338,550.

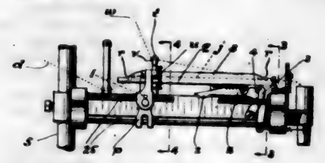

Claim.—1. In a circular-knitting machine, in combination, a block having a groove adapted to receive a thread, a frame slidable longitudinally of said block, a pivoted thread-holder, pivoted to said block and a cam-guide in line of movement of said block, said cam-guide having an intermediate high and inclined end portions, and means to move said frame.

2. In a circular-knitting machine, in combination, a block having a groove adapted to receive a thread, a frame slidable longitudinally of said block, a pivoted thread-holder, pivoted to said block, and a cam-guide in line of movement of said block, said cam-guide having an intermediate high and inclined end portions, and means to move said frame in each direction, at predetermined times.

3. In a circular-knitting machine, in combination, a block having a groove adapted to receive a thread, a frame slidable longitudinally of said block, cutters in front of said block, a pivoted clamp carried by said frame, said clamp holding the thread in the groove in line with the cutters, and a cam having an upward incline in line of movement of said pivoted clamp adapted in the rearward movement of the frame to release said clamp and in the forward movement to clamp the thread, and means to move said frame.

4. In a circular-knitting machine, in combination, a grooved block adapted to receive a thread in the groove thereof, cutters in front of said block, a spring-lever normally holding said cutter closed, a frame, means to move said frame longitudinally of the block, a pin carried by said frame adapted in one direction of movement of the frame to operate said lever to open said cutters, and a locking device interlocking with said lever in said last-mentioned position.

5. In a circular-knitting machine, in combination, a grooved block adapted to receive a thread in the groove thereof, cutters in front of said block, a spring-lever normally holding said cutter closed, a frame, means to move said frame longitudinally of the block, a pin carried by said frame adapted in one direction of movement of the frame to operate said lever to open said cutters, and a locking device interlocking with said lever in said last-mentioned position, said pin in the opposite movement of said frame releasing said locking device.

850,477. SHAFT-MOUNTING FOR CENTRIFUGAL MACHINES. MATTHEW L. HOYT, Little Falls, N. Y., assignor to D. H. Burrell & Company, Little Falls, N. Y. Filed Jan. 30, 1907. Serial No. 354,818.

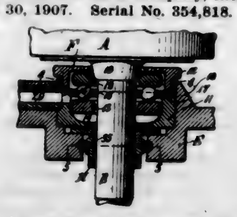

Claim.—1. A mounting for a vertical shaft comprising a self-centering supporting-bearing arranged near the upper end of the shaft, a load carried by the shaft above

said supporting-bearing, and a bearing arranged near the lower end of the shaft, the self-centering supporting-bearing carrying the load and permitting the upper portion of the shaft to move sidewise in self-centering, and the lower bearing holding the lower portion of the shaft against sidewise movement, substantially as set forth.

2. A mounting for a vertical shaft comprising a self-centering ball-bearing arranged near the upper end of the shaft and supporting the load, a load attached to the shaft above said supporting-bearing, and a lower bearing which holds the lower portion of the shaft against sidewise movement without supporting the load, substantially as set forth.

3. A mounting for a vertical shaft carrying the load at its upper end, said mounting comprising a self-centering supporting-bearing which is arranged near the upper end of the shaft and carries the load, and a restraining-bearing having a bore which is larger in diameter than the shaft and permits the latter to move freely sidewise within the ordinary range of positions, but restrains excessive sidewise movement of the shaft, substantially as set forth.

4. A mounting for a vertical shaft carrying the load at its upper end, said mounting comprising a self-centering supporting-bearing which is arranged near the upper end of the shaft and carries the load, a restraining-bearing having a bore which is larger in diameter than the shaft and permits the latter to move freely sidewise within the ordinary range of positions but restrains excessive sidewise movement of the shaft, and a bearing which holds the lower portion of the shaft against sidewise movement without supporting the load, substantially as set forth.

5. A mounting for a vertical shaft carrying the load at its upper end, such mounting comprising a self-centering ball-bearing which supports the load and is arranged near the upper end of the shaft below the load, said supporting-bearing being capable of tilting in its support and the shaft being capable of tilting in the bearing and of moving sidewise in finding its natural axis of rotation, substantially as set forth.

6. In a self-centering shaft-mounting, the combination of a stationary support having a spherical cavity, a lower supporting-ring capable of tilting in said cavity, balls resting on said ring, an upper supporting-ring resting on said balls and capable of sidewise movement thereon, and a shaft having a spherical neck by which it can tilt in said upper supporting-ring, substantially as set forth.

7. In a self-centering shaft-mounting, the combination of a stationary support having a spherical cavity, a lower supporting-ring capable of tilting in said cavity, balls resting on said ring, a spacing-ring for said balls resting in said stationary support and capable of lateral movement therein, an upper supporting-ring resting on said balls and capable of lateral movement thereon, and a shaft resting on said upper supporting-ring, substantially as set forth.

8. In a self-centering shaft-mounting, the combination of a stationary support having a spherical cavity and above the same an internal shoulder, a lower supporting-ring capable of tilting in said cavity, balls resting on said ring, a spacing-ring for said balls resting on said shoulder and capable of lateral movement thereon, an upper supporting-ring resting on said balls and capable of lateral movement thereon, and a shaft capable of tilting in said upper supporting-ring and capable of sidewise movement in said lower supporting-ring, substantially as set forth.

9. In a self-centering shaft-mounting, the combination of a stationary support having a spherical cavity, a lower supporting-ring capable of tilting in said cavity, balls resting on said ring, and an upper supporting-ring resting on said balls and capable of lateral movement thereon, said rings being alike in form and interchangeable, substantially as set forth.

10. In a self-centering shaft-mounting, the combination of a stationary support having a spherical cavity, a lower supporting-ring capable of tilting in said cavity, balls resting on said ring, and an upper supporting-ring resting on said balls and capable of lateral movement thereon, each of said rings being of the same form on its upper and lower sides and reversible, substantially as set forth.

11. In a self-centering shaft-mounting, the combination of a stationary support having a spherical cavity, a lower supporting-ring capable of tilting in said cavity, balls resting on said ring, and an upper supporting-ring resting on said balls and capable of lateral movement thereon, each of said rings being reversible and both rings being alike in form and interchangeable, substantially as set forth.

850,478. INK-WELL. JAMES W. JACOBUS, Great Neck, N. Y. Filed Nov. 28, 1906. Serial No. 345,426.

Claim.—1. An ink-well comprising, an integral body portion, semicylindrical in form, and having a laterally-projecting flange adjacent the top and having a laterally-projecting integral extension at the base provided with an upwardly-opening mouth, said mouth being but slightly larger than necessary to admit an ordinary pen and said extension beneath the lower edge of said mouth being only deep enough to supply the pen with ink.

2. An ink-well comprising an integral body entirely closed at the top and substantially cylindrical at the base and having a lateral extension with a mouth at one side of a size and elevated above the bottom a distance only sufficient to permit the dip of an ordinary pen.

3. An ink-well comprising an integral body permanently closed at the top and at the bottom and having only one opening at one side near the bottom and a removable tube extending upwardly from said opening substantially to the line of the top of the body and of sufficient internal diameter to permit dipping an ordinary pen to the bottom of the body.

4. An ink-well comprising a body having a laterally-projecting flange adjacent the upper end, an integral laterally-projecting extension at the base, an upwardly-projecting tubular extension from said laterally-projecting extension and a protecting-top.

5. An ink-well comprising, a body closed at the top and having a mouth at one side adjacent the base and a permanently-attached protecting-top projecting laterally of said body.

6. An ink-well comprising, a body closed at the top and having a mouth at one side adjacent the bottom, a removable tubular extension mounted in said mouth and a protecting top member for said body and said tubular extension.

7. An ink-well comprising, a body having a mouth at one side near the base, a protecting-top having an opening over said mouth and a tubular member extending upwardly from said mouth and removable through said opening.

8. An ink-well comprising, a body having a mouth near the bottom, a protecting-top having an opening above said mouth, and a rotary cover having an opening adapted to register with said top opening.

9. An ink-well comprising, a body having a mouth near the bottom and having a laterally-projecting flange at the top, an arched top member having a raised peripheral rim and having an opening above said mouth, and a rotary arched cover having an opening adapted to register with said top opening.

10. An ink-well comprising, a body having a single opening at one side, a top member secured to the body and projecting laterally thereof and having a raised rim, said top having an opening above said body-opening and a rotary cover having an opening adapted to register with said top opening.

850,479. INK-WELL. JAMES W. JACOBUS, Great Neck, N. Y. Filed Nov. 28, 1906. Serial No. 345,427.

Claim.—1. An ink-well comprising, an integral jointless reservoir cylindrical in form, closed at the bottom and provided with a single restricted orifice at the upper end but otherwise imperforate, a pen-tube extending downward through said orifice into said reservoir, means for effecting an air-tight joint between said tube and said reservoir, and a protecting top member.

2. An ink-well comprising, a reservoir having a plurality of laterally-projecting lugs adjacent the upper end, a pen-tube extending down into said reservoir, and a top member carrying said tube and having a central disk portion provided with an opening above said tube, a depending flange and a plurality fingers interlocking with said lugs.

3. An ink-well comprising, a reservoir having a restricted orifice in its upper end, a pen-tube fitting in said orifice, a top member adapted to be secured to said reservoir and yielding means of connection between said pen-tube and said top member.

4. An ink-well comprising, a reservoir, a pen-tube, a top member, and means of connection between said tube and top permitting a limited rotary movement of said top relative to said reservoir.

5. An ink-well comprising, a reservoir having a single restricted orifice in its upper end but otherwise imperforate, a pen-tube extending downward through said opening, and having a flange making an air-tight joint therewith; a protecting top member and a cover.

6. As an article of manufacture, an ink-well reservoir comprising, an integral, jointless body, cylindrical in form, closed at the bottom and top, except that the top is provided with a single restricted orifice, said body being provided at the top with integral laterally-projecting means for resting upon a supporting-shoulder, as shown and described.

7. An ink-well comprising, a reservoir having a restricted orifice at its upper end, a protecting top member adapted to be removably secured to said reservoir and a pen-tube carried by said top member and extending downward through said orifice into said reservoir to a point near the bottom thereof.

850,480. MORTISING-GAGE. HARRY D. JERNIGAN, Orlinda, Tenn. Filed Mar. 22, 1906. Serial No. 307,542.

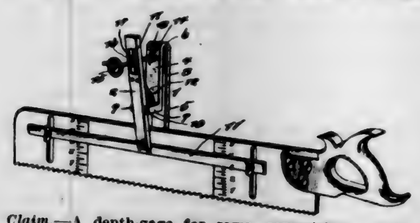

Claim.—A depth-gage for saws, comprising a pair of vertically-disposed parallel members; each having an elongated jaw at its lower end thereof, one of said members being pivotally connected to the other member; the other member comprising two vertical parallel portions, one of said portions having ears to receive the pivot of the pivotally-mounted member, a leaf-spring interposed between said portion and said pivotally-mounted member, and a screw to operate with said pivotally-mounted member.

850,481. HANDSAW. VICTOR LOMOFF, New York, N. Y. Filed Feb. 20, 1907. Serial No. 358,436.

Claim.—1. A saw having the opposite edges thereof provided with teeth, the end opposite to the handle being notched, combined with sheaths adapted to cover and protect said teeth, the sheaths being provided with means adapted to engage one of said notches, the opposite end of said sheaths being provided with means adapted to adjustably secure said end to the handle of said saw.

2. A saw having the opposite edges thereof provided with teeth, the end opposite to the handle being provided with a series of notches, combined with a sheath adapted to cover and protect one of the sawing edges of said saw, said sheath being provided with means adapted to engage one of said notches, the opposite end of said sheath being provided with slots adapted to aline with holes in the handle of said saw through which bolts are adapted to pass.

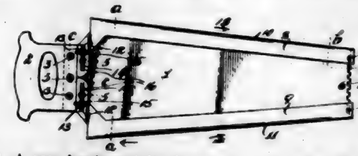

3. A saw having at its forward end a series of notches, combined with a sheath adapted to cover and protect the teeth of said saw, said sheath being provided with pins adapted to engage one of said notches, the opposite end of said sheath being provided with slots adapted to aline with holes in the handle of said saw, and bolts adapted to pass through said slots and holes.

4. A saw having the opposite edges thereof provided with teeth, sheaths adapted to cover and protect said teeth, said sheaths being adapted to engage the end of the saw opposite the handle thereof, the opposite end of said sheaths being provided with slots adapted to receive securing-bolts carried by the handle of said saw.

850,482. AGRICULTURAL IMPLEMENT. FREDRICK W. MILLER, Caledonia, N. Y. Filed Apr. 6, 1904. Serial No. 201,836.

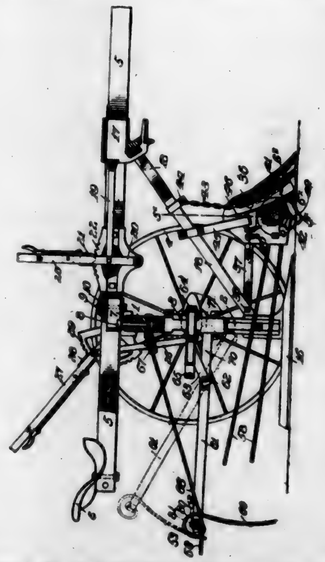

Claim.—1. In an agricultural implement, the combination with a main frame, and supporting-wheels thereon, a rake-frame comprising side portions journaled on the main frame in rear of the centers of the wheels and teeth on said rake-frame, of an arm on one of said side portions of the rake-frame and a device on one of the wheels coöperating therewith to raise the frame.

2. In an agricultural implement, the combination with a

main frame and supporting-wheels thereon, of a rake-frame extending rearwardly from the main frame and journaled thereon, rake-teeth on said frame, packing-arms attached to the main frame above the rake-frame and extending rearwardly and downwardly beneath the latter and means for automatically raising the rake-frame.

3. In an agricultural implement, the combination with a main frame and supporting-wheels thereon, of a rake-frame extending rearwardly from the main frame and journaled thereon, rake-teeth on said frame, spring packing-arms attached to the main frame above the rake-frame and extending rearwardly and downwardly into proximity with said frame and a device on one of the wheels coöperating with the rake-frame to operate it.

4. In an agricultural implement, the combination with a main frame and supporting-wheels thereon, of a rake-frame extending rearwardly on the main frame and journaled thereon, rake-teeth on said rake-frame, spring packing-arms attached to the main frame above the rake-frame having the ends extending downwardly beneath the rake-frame and means for operating the rake-frame.

5. The combination with a main frame, axles thereon and wheels journaled on the latter, of a pivoted rake-frame having teeth, a cam adapted to coöperate with the frame and fitting over one of the axles at one side of the wheel, laterally-projecting ears on the cam, clamping-plates bearing against the other side of the wheel and bolts connecting said plates and the ears on the cam.

6. The combination with a main frame having downwardly-extending side brackets and supporting-wheels journaled thereon and a rake-frame in rear of the main frame having forwardly-extending arms, of bearings carried on the main frame and pivotally supporting the ends of said arms, an operating-arm on the rake-frame and a cam carried on one of the wheels and coöperating with the arm.

7. The combination with a main frame having side portions, axle-pieces adjustably mounted on the latter and supporting-wheels journaled on the axle-pieces, of a rake-frame having side arms, journals on the axle-pieces supporting said arms, teeth on said frame and a cam carried on one of the wheels and coöperating with the rake-frame.

8. In an agricultural implement, the combination with a main frame, wheels supporting it, gathering-fingers arranged at opposite sides of the center of the frame and converging at their rear ends, of a pivoted rake-frame having teeth arranged in rear of the gathering-fingers, packing-arms arranged above the latter and extending into proximity with the rake-teeth and means for raising the rake-frame.

9. In an agricultural implement, the combination with a main frame, wheels supporting it, yielding gathering-fingers arranged at opposite sides of the center of the frame and converging at their rear ends, of a pivoted rake-frame having yielding teeth thereon located in rear of the gathering-fingers, spring packing-arms located above the rake-frame and extending rearwardly and downwardly into proximity with the rake-frame and an operating device for raising the latter actuated by one of the wheels.

10. In an agricultural implement, the combination with a rake-frame, a clamping-bar and means for connecting it to the frame, of spring rake-teeth, loops at their upper ends surrounding the frame and bar and lateral extensions on said teeth secured between the bar and frame.

11. In an agricultural implement, the combination with a rake-frame, a recessed clamping-bar and means for detachably connecting it to the frame, of spring rake-teeth, loops at their ends surrounding the frame and bar on the teeth and lateral extensions, lying in the recess in the bar and secured between the latter and the frame.

12. In an agricultural implement, the combination with a rake-frame, a clamping-bar having longitudinally and transversely extending recesses and means for attaching it to the rake-frame of spring rake-teeth provided with loops at their upper ends extending over the bar and lying in the transverse recesses and provided with the laterally-extending ends lying in the longitudinal recesses and secured between said bar and frame.

850,483. CHECK-VALVE FOR WATER-GAGES. CHARLES E. MISER, Watertown, N. Y. Filed Jan. 5, 1907. Serial No. 350,981.

Claim.—1. A safety device of the class described, comprising a pair of interchangeable casings interiorly divided to form two chambers connected by a port or passage, a water-gage forming a fluid-passage for one casing to the other, a pair of free spherical check-valves disposed in corresponding chambers in said casings adapted to be simultaneously seated in said port or passage and thereby allow only a slight flow of fluid from the check-valve chambers into the other chambers when said gage-glass breaks, the said check-valves adapted to be unseated simultaneously by gravity when a new gage-glass has been installed, a flange having a groove forming part of a circle formed on each of said casings concentric with said gage-glass, and a shield comprising a sheet of metal adapted only to be inserted in said grooves after said casings have been attached to a boiler and thereby form a shield to partly surround said gage-glass, substantially as described.

2. A safety device of the class described, comprising a pair of interchangeable casings threaded at their inner ends to connect with a boiler, and interiorly divided to form an inner and an outer chamber in each casing, the inner chamber communicating with the boiler by means of a reduced passage or opening, the said chambers being connected with each other by a central port disposed in line with said reduced passage or opening, and each of said casings provided with a threaded opening formed through the wall leading to the inner chamber, a gage-glass supported by and connecting the outer chambers of said casings, free check-valves capable of being inserted into said inner chambers through said threaded openings and confined therein by screw-plugs fitting said threaded openings, the check-valve in the lower casing adapted when at rest to stand upon the inner end of said screw-plug, and the check-valve in the upper casing adapted when at rest to stand upon the lower floor of the inner chamber, in a position opposite the screw-plug, a flange having a groove forming part of a circle formed on each casing concentric with said gage-glass, and a sheet of metal adapted to be inserted in said groove after the casings have been attached to a boiler, for the purpose of forming a shield to partly surround said gage-glass, substantially as described.

3. A safety device of the class described, comprising interchangeable casings threaded at one end to connect with a boiler, and interiorly divided to form horisontal and vertical chambers, the horisontal chambers communicating with the boiler by means of an unrestricted opening or passage having a smaller area than said chamber, the chambers of each casing being connected by a port disposed in line with said opening or passage, and each casing provided with a threaded opening leading to the horisontal chamber, a gage-glass connecting the vertical chambers of said casings, a spherical check-valve capable of being inserted into said horisontal chambers through said threaded openings and confined therein by screw-plugs fitting said threaded openings, a flange formed on each casing having a groove forming part of a circle concentric with said gage-glass, and a shield comprising a thin sheet of metal adapted to be inserted in and removed from said grooves after the casings have been secured to a boiler, substantially as described.

850,484. REINFORCING TELEPHONES. CHARLES NEWMAN, Elizabeth, N. J. Filed June 15, 1906. Serial No. 321,881.

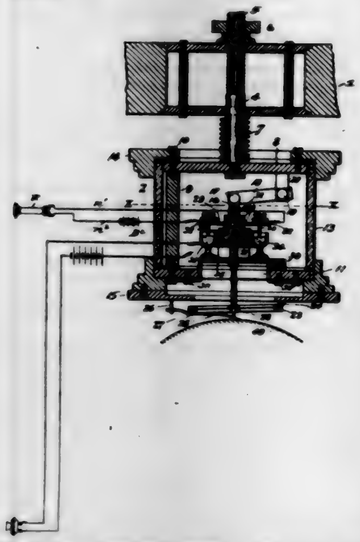

Claim.—1. In a telephonic relay, a vibratory member arranged to vary the resistance of a repeating-circuit, means for vibrating said member, and a continuously-movable cylinder in contact with said member.

2. In a telephonic relay, a vibratory member, a repeating-circuit having a telephone-receiver, means whereby the vibrations of said member vary the resistance of said circuit, and a continuously-rotating phonographic substance in contact with said member.

3. In a telephonic relay, a vibratory member having a stylus, a continuously-moving phonographic substance in contact therewith, a magnet for vibrating said stylus, and a repeating-circuit having means whereby its resistance is varied by the movements of said member.

4. In a telephonic relay, a vibratory member having an armature thereon, a magnet in a telephone-circuit acting on said armature, a repeating-circuit, means whereby the resistance thereof is varied by the movements of said armature, and a continuously-moving phonographic substance in contact with said member.

5. In a telephonic relay, a support, a housing adjustably connected to said support, a continuously-moving phonographic substance in proximity to said housing, a vibratory member supported within said housing and extending into contact with said phonographic substance, a repeating-circuit, and means whereby the resistance thereof is varied by the movements of said member.

6. In a telephonic relay, a support, a housing adjustably connected thereto, a continuously-moving phonographic substance in proximity to said housing, a vibratory member within the housing, telephonic means for vibrating said member, and a repeating-circuit arranged to have its resistance varied by the movements of said member.

7. In a telephonic relay, a housing, a vibratory member axially disposed therein, link connections for supporting said member at its upper end, a diaphragm connected to said member at its lower end, and telephonic means for vibrating said member.

8. In a telephonic relay, a housing, a vibratory member axially disposed therein, link connections for supporting said member at its upper end, a diaphragm loosely hinged upon the housing and supporting said member at its lower end, and telephonic means within the housing for vibrating said member.

9. In a telephonic relay, a housing, a vibratory member within said housing, link connections for supporting said member at its upper end, a diaphragm loosely hinged upon the housing and supporting said member at its lower end, an armature on said member, telephonic means acting on said armature, a repeating-circuit, and means whereby the resistance of said repeating-circuit is varied by the movements of said member.

10. In a telephonic relay, a housing having a base, links swiveled to said base, a vibratory member pivoted to said links and axially disposed within the housing, a supplemental base supported from said first-named base, a diaphragm connected to said supplemental base, and means for guiding said vibratory member by said diaphragm.

11. In a telephonic relay, a housing having a base, a vibratory member supported therefrom to have a movement axially within the housing, a supplemental base, a diaphragm thereon and guiding said vibratory member, and telephonic means supported on said supplemental base for imparting vibrations to said member.

12. In a telephonic relay, a housing, a vibratory member axially disposed therein, a continuously-moving phonographic substance in contact with said member, telephonic means for vibrating said member, contacts supported by said member, and a repeating-circuit arranged to have its resistance varied by the movements of said contacts.

850,485. APPARATUS FOR PRODUCING RUBBER STRIPS. JOHN F. OTT, Orange, N. J., assignor to Edison Storage Battery Company, West Orange, N. J., a Corporation of New Jersey. Filed Mar. 18, 1905. Serial No. 250,731.

Claim.—1. In an apparatus of the character described, a heated table, means for clamping upon said table the material to be treated, a cutter, and means for passing said cutter through said material in close proximity to the clamping means, substantially as set forth.

2. In an apparatus of the character described, a heated table, means for clamping upon said table the material to be treated, a cutter, means for passing said cutter through the material in close proximity to the clamping means, and means for straightening the severed portion, substantially as set forth.

3. In an apparatus of the character described, means for heating the material to be treated, means for rigidly holding the softened material, a cutter, means for passing said cutter through the material in close proximity to the holding means, means for straightening the severed portion and means for cooling the same, substantially as set forth.

4. In an apparatus of the character described, a heated table, means for clamping a sheet of material upon said table adjacent one edge thereof and a cutter mounted to move in shearing relation to said edge, substantially as set forth.

5. In an apparatus of the character described, a heated table, a guide, a cutter-support moving on said guide, a cutter carried by said support, a clamp for holding a sheet of material upon said table and a gage for determining the width of material to be cut, substantially as set forth.

6. In an apparatus of the character described, a heated table, a guide, a cutter-support moving on said guide, a cutter carried by said support, a clamp for holding a sheet of material upon said table, and an adjustable gage for determining the width of material to be cut, substantially as set forth.

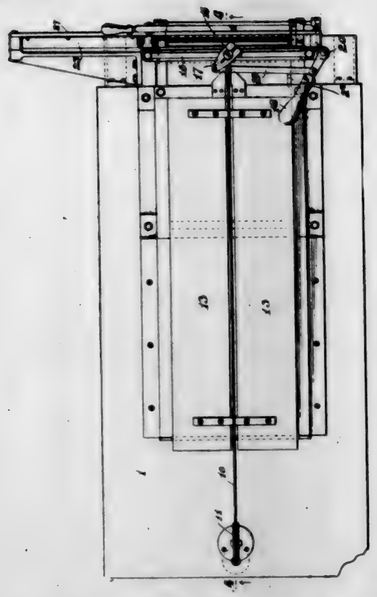

7. In an apparatus of the character described, a heated table, means for clamping a sheet of material upon said table adjacent one edge thereof, a cutter mounted to move in shearing relation to said edge and means for progressively feeding a sheet of material along said table toward said cutter, substantially as set forth.

8. In an apparatus of the character described, a heated table, means for clamping a sheet of material upon said table adjacent one edge thereof, a cutter mounted to move in shearing relation to said edge, and feeding means exerting a constant stress for progressing the sheet of material along said table toward said cutter, substantially as set forth.

9. In an apparatus of the character described, the combination of a vertically-moving clamping-block 14, a fixed member 2, a screw 15 for depressing the block 14, means for operating said screw, and springs for elevating the block 14 when the depressing-screw is reversed, substantially as set forth.

10. In an apparatus of the character described, a fixed member 27, having a horizontal guide 26, a slide 23 moving on said guide and provided with a cutter 24 and a gage 34, substantially as set forth.

11. In an apparatus of the character described, a fixed member 27 having a horizontal guide 26 and a slide 23 moving on said guide and provided with a cutter 24 and a deflector 37 having a substantially vertical portion close to and substantially in line with the cutting edge of the cutter, whereby it is adapted to deflect the severed material away from the stock, substantially as set forth.

12. In an apparatus of the character described, a holder having vertical walls which diverge at the top forming a hopper to catch the cut strips, a movable packer to force the strips between the vertical walls and a cooling device surrounding the lower portion of said holder, substantially as set forth.

13. In an apparatus of the character described, a movable cutter, a holder having vertical walls which diverge at the top forming a hopper to catch the cut strips, a spring for pressing the strips against one of the walls of the holder and a movable packer distinct from said cutter to force the strips downward in the holder, substantially as set forth.

14. In an apparatus of the character described, a holder having vertical walls which diverge at the top forming a hopper to catch the cut strips, a spring for pressing the strips against one of the walls of the holder, a movable packer to force the strips downward in the holder, and a cooling device surrounding the lower portion of said holder, substantially as set forth.

15. In an apparatus of the character described, a holder having vertical walls which diverge at the top forming a hopper to catch the cut strips, a movable packer to force the strips between the vertical walls, said packer comprising a pivotally-supported strip movable into and out of said hopper, and means for operating said packer, substantially as set forth.

16. In an apparatus of the character described, a movable clamping-block, a movable cutter, a holder for receiving the severed strips, a packer for forcing said strips into said holder, means for operating said clamping-block, and connections whereby each operation of the clamping-block is accompanied by an operation of the packer, substantially as set forth.

17. In an apparatus of the character described, a heated table having a longitudinally-extending depression, means for clamping a sheet of material upon said table adjacent one edge thereof, a cutter mounted to move in shearing relation to said edge, means for progressively feeding a sheet of material above said table in the depression thereof and toward said cutter, and means for holding said sheet against one side of said depression, substantially as set forth.

18. In an apparatus of the character described, a heated table, means for clamping a sheet of material upon said table adjacent one edge thereof, a cutter mounted to move in shearing relation to said edge, and a fixed stop or abutment so situated as to offer lateral support to that portion of the strip projecting beyond the edge of said table, substantially as set forth.

850,486. TRAIN-PIPE COUPLING. EDWARD D. PIPER, Chicago, Ill., assignor to Couplers Accommodator Co., Chicago, Ill., a Corporation of Illinois. Filed Aug. 13, 1906. Serial No. 330,375.

Claim.—1. In a train-pipe coupling, the combination of a spring-support having a comparatively large aperture in its forward end and a coupling-stem normally disposed axially in said aperture and out of contact with the wall of the same to permit deflection from the line of its axis relatively to the support.

2. In a train-pipe coupling, the combination of a spring-support having a comparatively large aperture in its forward end, a coupling-stem less in cross-section than the diameter of the aperture, and a foot-plate on the rear end of the stem.

3. In a train-pipe coupling, the combination of a spring-support having a comparatively large aperture in its forward end, a coupling-stem less in cross-section than the diameter of the aperture, a foot-plate on the rear end of the stem, and a pipe-coupling member.

4. In a train-pipe coupling, the combination of a spring-support having a comparatively large aperture in its forward end, a coupling-stem less in cross-section than the diameter of the aperture, a foot-plate, a pipe-coupling member and a spring element.

5. In a train-pipe coupling, the combination of a spring-support having a comparatively large aperture in its forward end, a coupling-stem less in cross-section than the diameter of the aperture, a foot-plate on the stem, a plurality of springs, and a pipe-coupling member.

6. In a train-pipe coupling, the combination of a spring-support having a comparatively large aperture in its forward end and a coupling-stem normally out of contact with the wall of said aperture, and a car-coupler.

7. In a train-pipe coupling, the combination of a spring-support having a comparatively large aperture in its forward end, a coupling-stem less in cross-section than the diameter of the aperture, a foot-plate on one end of the stem, and a car-coupler.

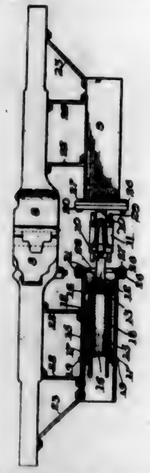

8. In a train-pipe coupling, the combination of a spring-support having a comparatively large aperture in its forward end, a coupling-stem less in cross-section than the diameter of the aperture, a foot-plate on one end of the stem, a pipe-coupling member, and a car-coupler.

9. In a train-pipe coupling, the combination of a spring-support having a comparatively large aperture in its forward end, a coupling-stem less in cross-section than the diameter of the aperture, a foot-plate, a pipe-coupling member, a spring element, and a car-coupler.

10. In a train-pipe coupling, the combination of a spring-support having a comparatively large aperture in its forward end, a coupling-stem less in cross-section than the diameter of the aperture, a foot-plate on the stem, a plurality of springs, a pipe-coupling member, and a car-coupler.

850,487. SKYLIGHT STRUCTURE. WILLIAM F. PLASS, New York, N. Y. Filed Mar. 15, 1906. Serial No. 306,205.

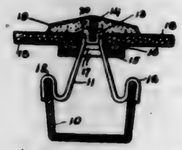

Claim.—1. In a skylight structure, a drip-trough, a stirrup removably carried thereby, a bar extending in parallelism with the trough and supported by the stirrup, and a cap located above said bar and adapted to bear upon the glass surfaces, said stirrup extending into the space between said glass surfaces.

2. In a skylight structure, a drip-trough, a stirrup removably carried thereby, a bar extending in parallelism with the trough and supported by the stirrup, a cap located above said bar and adapted to bear upon the glass surfaces, said stirrup extending into the space between said glass surfaces and means for yieldingly binding the stirrup and cap together.

3. In a skylight structure, a drip-trough, a stirrup removably carried thereby, said stirrup extending into the space formed between adjacent panes of glass and being bent to form a central recess, a cap extending in parallelism with the trough, and a bar extending in parallelism with the cap and in juxtaposition thereto, said bar extending into the recess of the stirrup and being supported in position thereby, whereby a firm support against downward pressure on the cap is provided.

4. In a skylight structure, a drip-trough, a stirrup removably carried thereby, a cap extending in parallelism with the trough, a flat plate for supporting the panes of glass, and a bar carried by said stirrup for supporting said cap, said bar extending above the plane of the panes of glass and in parallelism with the trough and cap, the stirrup extending into the space between said panes of glass and having a recess to receive the bar, whereby a firm support against downward pressure on the cap is provided.

5. In a skylight structure, a drip-trough, a cap extending in parallelism with the trough, a bar located below and supporting said cap, a series of spaced stirrups for supporting said bar, and means carried by some of the stirrups for yieldingly binding the cap and stirrups together at spaced intervals, the bar being of a length less than the distance from one of said binding means to the next one.

850,488. PROTECTOR FOR RUBBER TIRES. JAMES A. POSEY, Midlothian, Tex., assignor of one-third to W. W. Major and one-third to H. H. Posey, Midlothian, Tex. Filed Dec. 10, 1906. Serial No. 347,008.

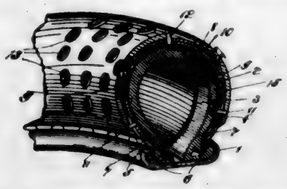

Claim.—1. A tire-protector comprising a cover provided with clips riveted thereto and terminating with hooks for engaging the rim of a wheel, puncture-resisting shields consisting of flexible spring-metal plates arranged transversely of said cover and riveted thereto and lapping on each other in series, a tread covering said shields and riveted to said cover below the ends of said shields and riveted to said cover through substantially the middle part of each shield.

2. A tire-protector comprising a cover provided with clips riveted thereto and terminating with hooks for engaging the wheel-rim, a series of puncture-resisting shields consisting of flexible metal plates arranged transversely of said cover and riveted thereto and lapping on each other, a tread covering said shields and riveted to said cover and said clips below the ends of said plates and binding said cover and clips together and riveted to said cover substantially through the middle of each shield.

3. A tire-protector comprising a canvas-lined cover provided with clips riveted thereto and terminating with hooks engaging the wheel-rim, a series of puncture-resisting shields consisting of flexible spring-metal plates arranged transversely of said cover and riveted thereto and lapping on each other, a tread covering said shields and riveted to said cover below the ends of said shields and binding said clips and cover together and riveted to said cover substantially through the middle of each shield.

4. A tire-protector comprising a canvas-lined cover provided with clips riveted thereto and terminating with hooks engaging the wheel-rim, a series of puncture-resisting shields consisting of reversible spring-metal plates arranged transversely of said cover and riveted thereto and lapping on each other, a tread binding said cover and shields in operative relation, and split traction-rivets clenched in said tread.

5. A tire-protector comprising a canvas-lined cover coextensive with the exposed portion of the tire and pro-

vided with spring-clips riveted thereto and terminating with hooks for engaging the wheel-rim, a reversibly-flexible metal shield attached to the exterior of said cover, and a tread substantially coextensive with said cover and attached to said cover and said clips beyond the edges of said shield and permitting freedom of movement of the edges of said shield relative to said tread, and split traction-rivets clenched and carried in said tread.

850,489. GAME APPARATUS. JOHN H. PRICE, New York, N. Y., assignor to McLoughlin Brothers, New York, N. Y. Filed May 23, 1906. Serial No. 318,379.

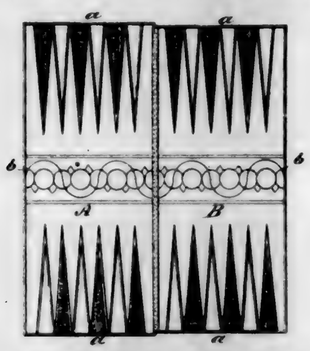

Claim.—1. A game apparatus, having a box or receptacle consisting of two similar sections each consisting of a half game-board, properly marked, provided with two upright ends and a side, of equal width, and an upright side of lesser width, the said narrower sides of the two sections being hinged together, one of said sections being slightly larger than the other so that when folded together the wider sides and ends of one section will embrace and house those of the other, substantially as and for the purposes set forth.

2. A game apparatus, having a receptacle consisting of two half game-boards, each having about its margins upright ends and sides, one side being substantially one-half the width of the other side and ends, the said narrower sides of the receptacle being hinged together, at their upper edges by flexible means and the wider sides and ends on one-half of the game-board being adapted to embrace and house on the other half thereof.

850,490. NESTED TOY BLOCKS. JOHN H. PRICE, New York, N. Y. Filed June 9, 1906. Serial No. 320,976.

Claim.—1. As an improved article of manufacture, an open, box-like structure, made up of four members, namely, an outer, square tube of paper-board, which constitutes plies of the four sides, an inner, square tube of paper-board, which also constitutes plies of the four sides, and two like reinforcing members of strong paper, each of said reinforcing members comprising two side plies and an end ply, the end plies of said members being superposed, and the several side plies thereof interposed between side plies of the said inner and outer members.

2. As an improved article of manufacture, a box-like toy block made wholly of paper-board and the structure consisting of the open-ended, square tube *a*, secured at its meeting edges by a strip *b*, the open-ended, square lining-tube *d*, and the two like members *c*, which have their middle sections superposed to form end plies and their end sections interposed between the plies of the said tubes *a* and *d*.

850,491. GYRATORY CRUSHER. OLIVER C. REDDING, Chicago, Ill., assignor of one-half to William K. Kenly, Chicago, Ill. Filed Mar. 25, 1905. Serial No. 252,030.

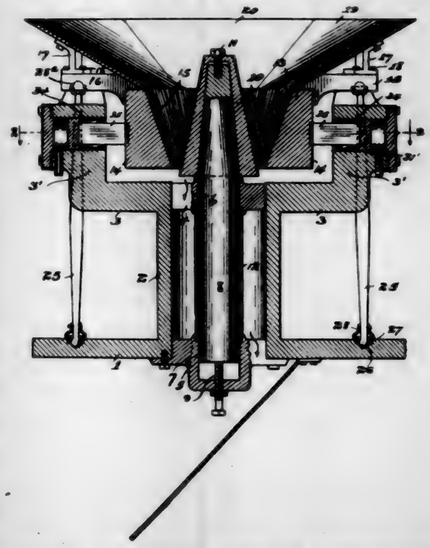

Claim.—1. In a gyratory crusher, the combination with a central crushing-head, of a surrounding crusher-jaw member supported to move bodily in a plane perpendicular to the axis of the central crusher-head, and means for gyrating said surrounding crusher-jaw member in its said plane of movement.

2. In a gyratory crusher, the combination with a relatively fixed or bodily-immovable central crusher-head, of a surrounding coöperating crusher-jaw member supported to move bodily in a plane perpendicular to the axis of the central crusher-head, and means for gyrating said surrounding crusher-jaw member in its said plane of movement.

3. In a gyratory crusher, the combination with a non-oscillating circular crusher-head having its axis disposed substantially vertically, of an internally-circular annular crusher member surrounding said crusher-head and supported to move bodily in a plane perpendicular to its own axis of generation, and means for gyrating said annular crusher member in its said plane of movement.

4. In a gyratory crusher, the combination with a suitable supporting-frame, of a centrally-disposed, upwardly-tapering crusher-head, a surrounding upwardly and outwardly flaring crusher member having a completely-open mouth, and means for gyrating said surrounding member.

5. In a gyratory crusher, the combination with a suitable supporting-frame, of a centrally-disposed, upwardly-tapering crusher-head journaled to rotate about its own vertical axis but confined against substantial oscillatory movement, a surrounding internally-circular crusher member having its acting face formed upwardly and outwardly flaring, said member having a completely-open mouth, supports carrying said surrounding crusher member and affording bodily lateral movement of the crusher member in all directions, and means for imparting gyratory movement to said surrounding crusher member.

6. In a gyratory crusher, the combination with a suitable supporting-frame, of a centrally-disposed crusher-head having substantially upright lateral acting surfaces, an open-topped hopper-shaped surrounding crusher member mounted upon supports affording lateral bodily movement thereof in all directions and independent of the movement of the central crusher-head, and means for gyrating said surrounding crusher member relatively to the central cutter-head.

7. In a gyratory crusher, the combination with a suitable supporting-frame, of a centrally-disposed crusher-head and a surrounding crusher member, said crusher-head and crusher member having laterally-opposed upwardly-divergent jaw-surfaces between which the material is reduced, means movably supporting the surrounding crusher member and mechanism for gyrating the latter member bodily, in a plane perpendicular to the axis of the central crusher-head.

8. In a gyratory crusher, the combination with a centrally-disposed crusher-head, a surrounding crusher member, means supporting said surrounding member to shift bodily laterally relatively to the crusher-head, a plurality of actuating mechanisms arranged at angularly-separated intervals around the exterior of said surrounding crusher member and connecting radially upon the latter, and means for operating said actuating devices to impart gyratory movement to the said crusher member.

9. In a gyratory crusher, the combination with a suitable supporting-frame, of a centrally-disposed upright crusher-head mounted upon said frame, a surrounding hopper-shaped crusher member mounted to move bodily in a plane substantially perpendicular to the vertical axis of the central crusher-head, a plurality of actuating devices disposed at angularly-separated intervals around said outer crusher member and operatively connected with the latter, and means for simultaneously operating said several actuating mechanisms and actuating them so that their several cycles of movements occur in progressive order.

10. In a gyratory crusher, the combination with a suitable supporting-frame, of a crusher-head and a hopper-like annular crusher member, means supporting said hopper member to move bodily and laterally in all directions, a series of thrust-links operatively engaging the exterior of said hopper member and extending substantially radially therefrom, and means for imparting endwise reciprocation to said thrust-links in progressive order around the series.

11. In a gyratory crusher, the combination with a suitable supporting-frame, of a crusher-head and a hopper-like annular crusher member, means supporting said hopper member to move bodily and laterally in all directions, a series of thrust-links operatively engaging the exterior of said hopper member and extending substantially radially therefrom, and means for imparting endwise reciprocation to said thrust-links in progressive order around the series, comprising a hydraulic piston operatively connected with each.

12. In a gyratory crusher, the combination with a suitable supporting-frame, of a central circular crusher-head, a surrounding annular crusher member, means supporting said annular crusher member comprising a series of upright supports each having ball-and-socket conections with the crusher-head and with a suitable fixed support at its respective ends, and means for imparting gyratory movement to said annular crusher member.

13. In a gyratory crusher, the combination of a main frame comprising a base, a central column and a horizontal upper frame member provided with a circumferential upstanding extension or rim, of a crusher-head supported concentrically within the upstanding or rim portion of the main frame, a hopper-like annular crusher member surrounding said central crusher-head and interposed between the latter and the upstanding rim of the frame, a series of oscillatory struts supporting said hopper-like crusher member and affording movement of the latter in substantially all horizontal directions, and a series of actuating devices mounted upon said rim and arranged to act radially upon said movable crusher member.

14. In a gyratory crusher, the combination of a main frame comprising a base, a fixed horizontally-extending upper frame member provided with a circumferential rim, and one or more supports connecting the upper horizontal frame member with the base-frame, of a crusher-head supported concentrically with said upstanding rim, a hopper-like annular crusher member surrounding said central crusher-head between the latter and the rim, a series of upright struts having their lower ends seated upon the base-frame and their upper ends engaging beneath and supporting the annular crusher member, and a series of actuating devices mounted upon the main frame and adapted to impart gyratory movement to the annular crusher member.

15. In a gyratory crusher, the combination of a main frame provided with a central main shaft and a crusher-head mounted thereon, of a rim forming a part of said main frame and encircling said crusher-head, a hopper-like crusher member interposed between the crusher-head and rim, and a series of hydraulic cylinders formed within said rim with their longitudinal axes radial to the axis of the hopper-like crusher member, pistons in the respective cylinders and piston-rods operatively connecting said pistons with the hopper-like crusher-body, means for supplying hydraulic pressure to said cylinders, and means supporting said hopper-like crusher member to move upon the main frame under the action of said hydraulic pistons.

16. In a gyratory crusher, the combination with a suitable main frame provided with upper and lower shaft-bearings, of a crusher-head shaft journaled in said bearings and carrying at its upper end a crusher-head, a hopper-like crusher member surrounding said crusher-head and movably supported to gyrate upon the main frame relatively to the crusher-head, means for gyrating said hopper-like crusher member, and means for adjusting said central crusher-head vertically and relatively to the hopper-like crusher member.

17. In combination with a gyratory crusher and a plurality of hydraulic cylinders arranged in a circumferential series, a pump mechanism comprising a set of pump-cylinders corresponding in number to, and severally connected with, the hydraulic cylinders and intergeared driving connections for actuating the set of pump-cylinder pistons, whereby the pistons of the hydraulic cylinders are actuated in timed relation to each other.

18. In combination with a gyratory crusher and a plurality of hydraulic cylinders arranged in a circumferential series around the gyratory member of the crusher and each having its piston operatively connected with said gyratory member, a pump mechanism, comprising a set of pump-cylinders corresponding in number to, and respectively connected with the hydraulic cylinders, a plunger member working in each pump-cylinder, a connecting-rod for each plunger member and a series of intergeared pitmen-wheels respectively connected with the several plunger members through said connecting-rods, for the purpose set forth.

19. In combination with a gyratory crusher and a plurality of hydraulic cylinders arranged in a circumferential series around the gyratory member of the crusher, and each having its piston operatively connected with said gyratory member, said hydraulic cylinders being arranged in diametrically opposite pairs, a pump mechanism comprising a set of pump-cylinders corresponding in number to, and respectively connected with, the hydraulic cylinders by individual pipe connections, said pump-cylinders being arranged in coöperative pairs, and each pair of pump-cylinders connected with a corresponding pair of diametrically-opposed hydraulic cylinders, a plunger member working in, and common to, each pair of pump-cylinders, a connecting-rod for each plunger member, and a series of intergeared driving connections for operating the several plunger members in timed relation to each other.

20. In combination with a gyratory crusher and a plurality of hydraulic cylinders arranged in a circumferential series to act upon the gyratory member of the crusher, and each having its piston operatively connected with said stationary member, said hydraulic cylinders being arranged in diametrically-opposed pairs, a pump mechanism comprising a set of pump-cylinders corresponding in number to, and respectively connected with, the hydraulic cylinders by individual pipe connections, said pump-cylinders being arranged in coöperative pairs corresponding to the diametrically-opposed pair of hydraulic cylinders, means for moving the plunger of one pump-cylinder inwardly and the

plunger of its mate cylinder outwardly together, a by-pass connection between the circulating systems of each pair of pump-cylinders, and a pressure-relief mechanism controlling and normally holding said by-pass closed.

21. In a gyratory crusher, the combination of a main frame having a central passage therethrough from top to bottom for the discharge of the product, a crusher-head shaft carrying at its upper end a crusher-head, skeleton supports or spider bridging said central passage and supporting said crusher-head shaft centrally therein, an open-topped gyratory annular crusher member surrounding the crusher-head, and means for gyrating said gyratory member.

22. In a gyratory crusher, the combination of a main frame having a central passage therethrough for the discharge of the product, a crusher-head shaft carrying at its upper end a crusher-head, skeleton supports or spiders bridging the central passage and provided with journal-bearings supporting said crusher-head shaft vertically and centrally within said passage, a tubular casing inclosing said shaft completely between the proximate sides of the journal portions of said spiders and a lower end closure inclosing the lower end of the journal-opening of the lower spider, whereby a well is formed for the retention of oil to keep both upper and lower journal-bearings flooded.

850,492. WAVE-MOTOR. ALVA L. REYNOLDS and GEORGE A. REYNOLDS, Huntington Beach, Cal. Filed Oct. 16, 1906. Serial No. 339,272.

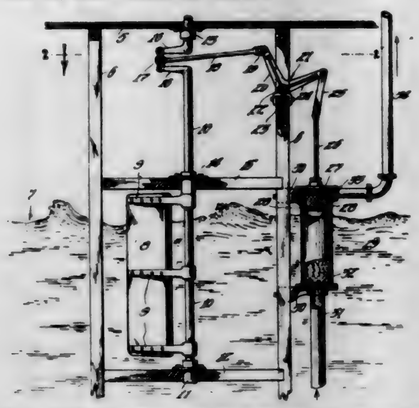

Claim.—1. A wave-motor, comprising a vertically-disposed crank-shaft revolubly mounted in bearings; a cylinder having a piston mounted therein, said cylinder having an inlet and outlet; connecting means between said crank-shaft and piston; and a vane rigidly secured to said shaft, adapted to be operated by the incoming and outgoing waves, whereby the shaft is rotated.

2. A device of the class described, comprising a frame secured to the bed of a body of water; a vertically-disposed revoluble crank-shaft mounted in bearings secured to said frame; a vane rigidly secured to said crank-shaft at an angle thereto, adapted to be operated by the incoming and outgoing waves; a bell-crank lever pivotally mounted in said frame; a pitman connecting said crank and an arm of said bell-crank lever; a cylinder having a piston mounted therein; said cylinder having an inlet and outlet and a link having its ends pivotally secured to said piston and to one of the bell-crank arms.

850,493. DOUBLE-ENDED WRENCH. GEORGE W. ROWELL, Hollis, Okla. Filed Dec. 31, 1906. Serial No. 350,187.

Claim.—1. In a wrench, the combination of a bar having teeth along one edge, said teeth being in sets and oppositely inclined from the middle, jaws on the ends of the bar and extending from the edge opposite the teeth, a locking-bar having two sets of teeth adapted to match the teeth on the main bar, a double jaw adapted to be positioned between the jaws on the main bar, links securing the locking-bar to the double jaw, and a shell or guard extending over the locking-bar and the adjacent ends of the links.

2. In a wrench, the combination of a flat main bar having oppositely-inclined set of teeth along one edge and jaws extending from the opposite edge, a locking-bar having teeth adapted to engage the teeth on the main bar, a double jaw, and links to connect the locking-bar and double jaw, one of the jaws on the main bar and one end of the double jaw being provided with teeth to adapt the wrench to hold round objects.

850,494. GRAMOPHONE RECORD-TABLET. JOSEPH SANDERS, Washington, D. C. Filed Jan. 17, 1905. Serial No. 241,485.

Claim.—1. A disk-shaped sound-record tablet consisting of an annular fibrous base having its inner and outer diameters so related as to include between them a surface approximately that of a possible sound-record, a layer of sound-record-receiving material on the annulus, and a disk-shaped insert of fibrous material secured centrally in and to the annulus.

2. A disk-shaped sound-record tablet consisting of an annular fibrous base impregnated with rosin and carrying on one or both surfaces a thin layer of gramophone-record material, and a disk-shaped insert of fibrous material secured centrally in and to the annulus.

3. A gramophone tablet-blank composed of an annulus of cardboard impregnated with sizing and having its inner and outer diameters so related as to include a surface approximately that of a possible sound-record, and a sheet of paper or other thin fibrous material coated with a thin layer of gramophone-record material and fast on one or both surfaces of the annulus.

4. A gramophone record-blank composed of an annulus of fibrous material carrying on one or both surfaces a thin layer of gramophone-record material, and a central web of fibrous material fitted in and secured to said annulus.

5. A gramophone tablet-blank composed of an annulus of cardboard or other stiff fibrous material impregnated with a sizing, and a central web of fibrous material thinner than the annulus and fitted to the latter.

6. A gramophone tablet-blank composed of an annulus of fibrous material impregnated with rosin and carrying upon one or both surfaces a thin layer of gramophone-record material, and a central web thinner than the annulus and fitted to the latter.

7. A gramophone tablet-blank consisting of an annulus of fibrous material impregnated with a sizing and carrying upon one or both surfaces a thin layer of gramophone-record material, and a central web of like fibrous material of different thickness than the annulus and fitted to the latter.

8. A gramophone tablet-blank consisting of an annulus of cardboard or other stiff fibrous material, sized with rosin and having on one or both surfaces a layer of paper or other thin fibrous material coated with a thin layer of gramophone-record material, and a central web of fibrous material fitted in and secured to said annulus.

9. A gramophone tablet-blank composed of an annulus of stiff fibrous material impregnated with a sizing and carrying on one or both surfaces a thin layer of gramophone-record material, and a thinner central web of like material impregnated with a sizing and fitted to the annulus, substantially as described.

10. A gramophone tablet-blank composed of a cardboard annulus impregnated with a sizing that softens under heat and carrying on one or both surfaces a thin layer of gramophone-record material, and a central web of sized cardboard fitted to the annulus, substantially as described.

11. A gramophone tablet-blank, composed of a cardboard annulus impregnated with a sizing that softens under heat and carrying on one or both surfaces a thin layer of gramophone-record material, and a central web of sized cardboard thinner than the annulus and fitted to the latter, substantially as described.

12. A gramophone tablet-blank composed of a cardboard annulus impregnated with a sizing that softens under heat and bearing on one or both surfaces a sheet of paper or other thin fibrous material coated with a thin layer of gramophone-record material, and a central web of sized cardboard fitted to the annulus, substantially as described.

13. A gramophone tablet-blank composed of a cardboard annulus impregnated with a sizing that softens under heat and bearing on one or both surfaces a sheet of paper or other thin fibrous material coated with a thin layer of gramophone-record material, and a central web of sized cardboard thinner than the annulus and fitted to the latter, substantially as described.

14. A gramophone record-tablet composed of an annulus having a record-groove upon one or both surfaces, and a central web of a different thickness than the annulus and centrally cemented to and within the same, substantially as described.

15. A gramophone record-tablet consisting of an annulus having a record-groove on one or both surfaces, and a central web thinner than the annulus, centrally cemented to and within the same, substantially as described.

16. A gramophone record-tablet consisting of a stiff fibrous annulus carrying a record-groove upon one or both surfaces, with a central web of like fibrous material of different thickness than the annulus and centrally cemented to and within the same, substantially as described.

17. A gramophone record-tablet consisting of an annulus of stiff fibrous material impregnated with a sizing and carrying upon one or both surfaces gramophone-record material with a sound-record impressed therein, and a central web of like fibrous material of different thickness than the annulus and centrally cemented to and within the annulus, substantially as described.

18. A gramophone record-tablet consisting of an annulus of stiff fibrous material impregnated with a sizing that softens under heat and carrying gramophone-record material upon one or both surfaces, with a sound-record groove impressed therein, and a central web of like fibrous and sized material of different thickness than the annulus and centrally cemented within and to the annulus, substantially as described.

19. A gramophone record-tablet consisting of an annulus of cardboard impregnated with a sizing that softens under heat and carrying on one or both surfaces gramophone-record material impressed with a sound-record groove and a central web of sized cardboard centrally cemented within and to the annulus, substantially as described.

20. A gramophone record-tablet consisting of an annulus of cardboard impregnated with a sizing that softens under heat and carrying upon one of its surfaces gramophone-record material impressed with a sound-record groove and a central web of cardboard thinner than the annulus, flush with the under side of the annulus and centrally cemented to and within the latter, substantially as described.

21. A gramophone record-tablet consisting of an annulus of cardboard impregnated with a sizing that softens under heat and carrying on one of its surfaces gramophone-record material impressed with a sound-record groove; a central web of sized cardboard which is thinner than the annulus and flush with the under side thereof and centrally cemented to and within the same, and a label cemented onto the face of the central web and over the inner edge of the annulus, substantially as described.

22. A gramophone record-tablet consisting of an annulus of cardboard impregnated with a suitable sizing and bearing on one or both surfaces a sheet of paper or other flexible fibrous material coated with a thin layer of record material having a sound-record impressed therein, and a central web of sized cardboard of different thickness than the annulus and centrally cemented to and within the latter, substantially as described.

23. A gramophone record-tablet consisting of an annulus of cardboard impregnated with a sizing that softens under heat and bearing on one side a sheet of paper thinly coated with gramophone-record material, and a central web of sized cardboard thinner than the annulus and flush with the under side thereof and centrally cemented to and within the annulus, substantially as described.

24. A gramophone record-tablet consisting of an annulus of cardboard impregnated with a sizing that softens under heat, having on one side cemented to it a sheet of paper thinly coated with gramophone-record materjal, a central web of sized cardboard thinner than the annulus, flush with the under side thereof and centrally cemented to and within the same, and a label cemented onto the face of the central web and over the inner edge of the annulus, substantially as described.

850,495. SASH-LOCK. WILLIAM SCHUCH, West Hoboken, N. J., assignor of one-half to George H. Hyde, New York, N. Y. Filed Aug. 22, 1906. Serial No. 331,560.

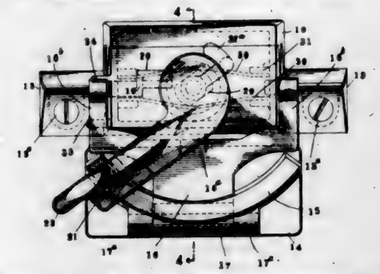

Claim.—1. A sash-lock, comprising a member adapted for attachment to a sash-rail, a second member unattached to, but adapted to fit against the second sash-rail, and a finger-lever supported on the first member and connected to the swinging member, which causes the said member to engage the said rail and be placed in the path of the lever and to lift the swinging member from the second rail when the finger-lever is withdrawn.

2. A sash-lock, comprising a member adapted to be attached to one of the sash-rails, a second member unattached to but adapted to fit against the second rail, a finger-lever pivoted on the first-mentioned member, and an operative connection between the finger-lever and the swinging member whereby the swinging member is thrown in the path of the lever when the lever is moved to lock the sashes, and moved away from the second sash-rail when the lever is withdrawn.

3. A sash-lock, comprising a casing adapted for attachment to a sash-rail, a foot-piece unattached to but adapted to fit flatwise against the top of the second sash-rail, a finger-lever on the casing, and mechanism within the casing operated by the finger-lever and pivotally connected to the foot-piece so as to swing the latter into and out of the path of the second sash-rail.

4. A sash-lock, comprising a member adapted for attachment to a sash-rail, a finger-lever on said member, a swinging arm hung on said member and operated from the finger-lever, and a foot-piece carried by the said arm and adapted to extend against the top of the second sash-rail, the said

foot-piece having an inclined track thereon to engage the finger-lever.

5. A sash-lock, comprising a casing adapted for attachment to a sash-rail, a finger-lever on the casing, a swinging arm extending through the wall of the casing, an operative connection between the finger-lever and the swinging arm, and a foot-piece pivoted to the swinging arm and constructed to clamp down snug against the top of the second sash-rail.

6. A sash-lock, comprising a casing adapted for attachment to a sash-rail, a finger-lever mounted on the casing, a shaft extending into the casing and operated by the finger-lever, a swinging arm mounted on the casing and operated from the aforesaid shaft, and a foot-piece carried by the swinging arm and adapted to swing into the path of the second sash-rail, the said foot-piece having an inclined track formed to engage the finger-lever.

7. A sash-lock, comprising a member adapted for attachment to a sash-rail, a finger-lever pivoted on the member and adapted to swing over the second sash-rail, a foot-piece adapted to contact with the second sash-rail and having an inclined track thereon to engage the finger-lever, and a swinging arm connecting the foot-piece to the first member.

8. A sash-lock, comprising a casing adapted for attachment to a sash-rail, a swinging arm pivoted on the casing and adapted to extend over the second sash-rail, said arm having cranks extending into the casing, a foot-piece pivoted on the swinging arm and adapted to strike the top of the second sash-rail, a finger-lever on the casing operatively connected with the cranks to turn them, and a locking connection between the finger-lever and the foot-piece.

9. A sash-lock, comprising a member adapted for attachment to a sash-rail, a foot-piece forming the second member and adapted to swing against the top of the second sash-rail, a lever pivoted on the first member and adapted to swing into locking engagement with the foot-piece, a swinging arm or support connecting the foot-piece and the first member and arranged between the finger-lever and the sash-rails, and means for operating the swinging arm by movement of the finger-lever.

10. A sash-lock, comprising a casing adapted for attachment to a sash-rail, a finger-lever pivoted on the casing, a shaft turned by the finger-lever and extending downward into the casing, said shaft having a crank thereon, a swinging arm pivoted on the casing and having a crank extending into the path of the first-mentioned crank, a foot-piece carried by the swinging arm and adapted to strike the top of the second sash-rail, and a locking engagement between the foot-piece and the finger-lever.

850,496. SHEET-PILING. PAUL A. SCHUEHART and GOVERNEUR G. BROWN, New York, N. Y., assignors to Composite Pile Construction Company, New York, N. Y., a Corporation of New York. Filed Feb. 23, 1906. Serial No. 302,404.

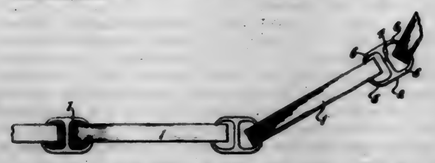

Claim.—1. A composite sheet-piling comprising alternating wood planks and metal beams arranged longitudinally and interlocked together, the metal beams being provided with jaws having portions thereof embedded in the opposite faces of the wood planks along their side edges.

2. A composite sheet-piling comprising alternating wood planks and metal beams arranged longitudinally and interlocked together, the metal beams being provided with pairs of jaws embedded in the opposite faces of the wood planks for protecting the edges of the planks along their side edges.

3. A composite sheet-piling comprising alternating wood planks and metal beams interlocked together, the metal beams being provided with pairs of jaws embedded in the opposite faces of the wood planks the parts being so arranged as to leave cavities around the edges of the planks within the said beams.

4. A composite sheet-piling comprising alternating wood planks and metal beams interlocked together, the metal beams being provided with pairs of jaws embedded in the opposite faces of the wood planks the parts being so arranged as to leave cavities around the edges of the planks within the said beams and a filling for said cavities.

5. A composite sheet-piling comprising alternating wood planks and metal beams arranged longitudinally and interlocked together, the metal beams being provided with pairs of jaws having their edges embedded in the opposite faces of the wood planks along their side edges.

6. A composite sheet-piling comprising alternating wood planks and metal beams interlocked together, the metal beams being provided with pairs of jaws having their edges embedded in the opposite faces of the wood planks, one of the jaws of each pair being shorter than the other jaw.

7. A composite sheet-piling comprising alternating wood planks and metal beams arranged longitudinally and interlocked together, the metal beams being provided with pairs of jaws having their edges turned inwardly and embedded in the opposite faces of the wood planks along their side edges.

8. A composite sheet-piling comprising alternating wood planks and metal beams arranged longitudinally and interlocked together, each metal beam being provided with two pairs of jaws having their edges embedded in the opposite faces of two adjacent wood planks along their side edges.

850,497. SHEET-PILING. PAUL A. SCHUCHART, New York, N. Y., assignor to Composite Pile Construction Company, New York, N. Y., a Corporation of New York. Filed Aug. 16, 1906. Serial No. 330,795.

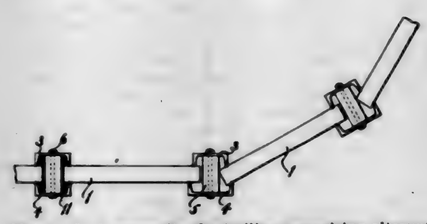

Claim.—1. A composite sheet-piling comprising alternating wood planks and plank-connecting beams interlocked together, the plank-connecting beams comprising two flanged beams and a wood plank rigidly secured together with the flanges of the beams extended inwardly to form jaws having portions thereof embedded in the opposite faces of the wood planks.

2. A composite sheet-piling comprising alternating wood planks and plank-connecting beams interlocked together, the plank-connecting beams comprising two flanged beams and a wood plank rigidly secured together with the flanges of the beams extended inwardly to form jaws having portions thereof embedded in the opposite faces of the wood planks, one of said flanged beams being of greater width than the other.

3. A composite sheet-piling comprising alternating wood planks and plank-connecting beams interlocked together, the plank-connecting beams comprising two flanged beams and a wood plank rigidly secured together with the flanges of the beam extended inwardly to form jaws having portions thereof embedded in the opposite faces of the wood planks, the parts being so arranged as to leave cavities around the edges of the planks within the said beam.

4. A composite sheet-piling comprising alternating wood planks and plank-connecting beams interlocked together, the plank-connecting beams comprising two flanged beams and a wood plank rigidly secured together with the flanges of the beams extended inwardly to form jaws having portions thereof embedded in the opposite faces of the wood planks, the parts being so arranged as to leave cavities around the edges of the planks within the said beams and a filling for said cavities.

850,498. DRAFT-GEAR RIGGING. GEORGE W. SCOTT and OSCAR A. THELIN, Chicago, Ill., assignors, by direct and mesne assignments, to The National Malleable Castings Company, Cleveland, Ohio, a Corporation of Ohio. Filed July 13, 1903. Serial No. 165,204.

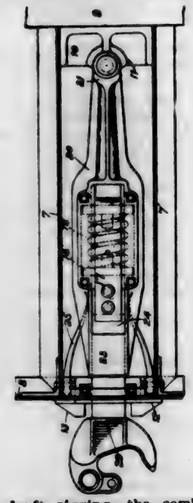

Claim.—1. In draft rigging, the combination with a pivotally mounted holder for the draw-bar of a carrier allowing lateral movement of the bar, and means for taking up the sidewise shock in extreme cases.

2. In draft rigging, the combination with a draw-bar having a pivotal mounting, of a draw-bar carrier provided with a wide bearing-seat to allow of lateral movement of the bar, and thrust blocks for directly taking up sidewise thrust of the bar in extreme movements.

3. The combination with a draw-bar head having an upwardly projecting safety lug or bracket, of a draw-bar carrier provided with thrust blocks to co-operate with said lug upon the draw-bar head in case of extreme angular concussive shocks.

4. The combination with a draw-bar head having an upwardly projecting safety lug or bracket, of a draw-bar carrier provided with thrust blocks to co-operate with said lug upon the draw-bar head in case of extreme concussive shocks.

5. The combination with a car frame and a pivoted housing for the draw bar and spring therefor, of a draw bar holder or bearing inserted in the car frame and having a broad seat allowing lateral play of the bar, and a pair of integral stops extending outside of the car frame and adapted to engage the coupler head on its sides when pressed inward to extreme position, substantially as described.

6. In draft gear rigging the combination with the car frame of a bracket thereon, and a swinging draw bar casing pivoted in the bracket and provided with thrust shoulders engaging the bracket, to relieve the pivoting pin of pressure, substantially as described.

7. The combination of an integral cast draw bar casing adapted to contain a spring and followers, and having a slot for the draw bar yoke, a draw bar provided with a yoke and a coil spring and followers removably retained in the casing, springs to retain the pivoted casing normally in central alinement with the car, and side stops on the car frame engaging the coupler head when pressed inward to its extreme position, substantially as described.

8. In draft rigging, a drawbar head having a safety horn or projection, and a drawbar carrier having a thrust lug at each side of the draw-head for engagement with the horn or projection in cases of extreme angular concussive shocks: substantially as described.

9. In draft rigging, a pivoted draft rigging holder forming a housing for the drawbar, and drawbar spring, yoke and followers, springs arranged to bear upon opposite sides of the holder, and co-operating thrust projections or bearings adapted to take up the side thrust in cases of extreme angular concussive shocks; substantially as described.

850,499. HOLDER FOR BOWLS AND THE LIKE. HERMAN SIEMUND, Chicago, Ill. Filed Dec. 24, 1906. Serial No. 349,342.

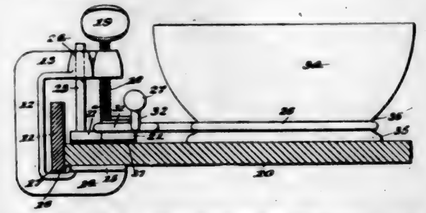

Claim.—1. In a bowl-holder, the combination with a vertically-disposed clamp-bracket having a laterally-extended arm at each of its ends, the lower one of said arms having its upper portion broadened to form a jaw of the clamp and spaced from the upright portion of the bracket to form a recess between the same, said jaw adapted to rest on the lower surface of the support, of a movable jaw interposed between said arms and having on one of its ends an upwardly-projecting catch, a screw extended through the upper of said arms and swiveled to said movable jaw, and a ring to embrace the bowl or vessel secured at one of its ends to one end of the movable jaw and adapted to detachably engage the said catch on the other end of said member.

2. In a bowl-holder, the combination with a vertically-disposed clamp-bracket having a laterally-extended arm at each of its ends, the lower one of said arms having its upper portion broadened to form a jaw of the clamp and spaced from the upright portion of the bracket to form a recess between the same, said jaw adapted to rest on the lower surface of the support, of a movable jaw interposed between said arms and having on one of its ends an upwardly and laterally projecting catch and on its other end a horizontally-apertured lug, a screw extended through the upper of said arms and swiveled to said movable jaw, a guide-rod mounted on the movable jaw and extended through the upper arm of the bracket, a ring to embrace the bowl or vessel having one of its ends secured in the aperture of the lug on the movable jaw or member and bent near its other end to form a loop one portion of which is adapted to engage the catch on the movable jaw, and the other portion of which loop is provided with an upwardly and outwardly projecting extension, and a handle mounted on said extension, substantially as described.

850,500. VEHICLE. HARVEY D. SMITH, Battle Creek, Mich. Filed Dec. 16, 1905. Serial No. 292,072.

Claim.—In a device of the class described and in combination with a vehicle axle and bolster, a fifth-wheel arranged between said parts and comprising an upper and a lower circle, means for securing said lower circle to the axle, recessed lugs provided on the upper circle for engagement with the bolster, a reach-beam extended through the

foot-piece having an inclined track thereon to engage the finger-lever.

5. A sash-lock, comprising a casing adapted for attachment to a sash-rail, a finger-lever on the casing, a swinging arm extending through the wall of the casing, an operative connection between the finger-lever and the swinging arm, and a foot-piece pivoted to the swinging arm and constructed to clamp down snug against the top of the second sash-rail.

6. A sash-lock, comprising a casing adapted for attachment to a sash-rail, a finger-lever mounted on the casing, a shaft extending into the casing and operated by the finger-lever, a swinging arm mounted on the casing and operated from the aforesaid shaft, and a foot-piece carried by the swinging arm and adapted to swing into the path of the second sash-rail, the said foot-piece having an inclined track formed to engage the finger-lever.

7. A sash-lock, comprising a member adapted for attachment to a sash-rail, a finger-lever pivoted on the member and adapted to swing over the second sash-rail, a foot-piece adapted to contact with the second sash-rail and having an inclined track thereon to engage the finger-lever, and a swinging arm connecting the foot-piece to the first member.

8. A sash-lock, comprising a casing adapted for attachment to a sash-rail, a swinging arm pivoted on the casing and adapted to extend over the second sash-rail, said arm having cranks extending into the casing, a foot-piece pivoted on the swinging arm and adapted to strike the top of the second sash-rail, a finger-lever on the casing operatively connected with the cranks to turn them, and a locking connection between the finger-lever and the foot-piece.

9. A sash-lock, comprising a member adapted for attachment to a sash-rail, a foot-piece forming the second member and adapted to swing against the top of the second sash-rail, a lever pivoted on the first member and adapted to swing into locking engagement with the foot-piece, a swinging arm or support connecting the foot-piece and the first member and arranged between the finger-lever and the sash-rails, and means for operating the swinging arm by movement of the finger-lever.

10. A sash-lock, comprising a casing adapted for attachment to a sash-rail, a finger-lever pivoted on the casing, a shaft turned by the finger-lever and extending downward into the casing, said shaft having a crank thereon, a swinging arm pivoted on the casing and having a crank extending into the path of the first-mentioned crank, a foot-piece carried by the swinging arm and adapted to strike the top of the second sash-rail, and a locking engagement between the foot-piece and the finger-lever.

850,496. SHEET-PILING. PAUL A. SCHUCHART and GOVERNEUR G. BROWN, New York, N. Y., assignors to Composite Pile Construction Company, New York, N. Y., a Corporation of New York. Filed Feb. 23, 1906. Serial No. 302,404.

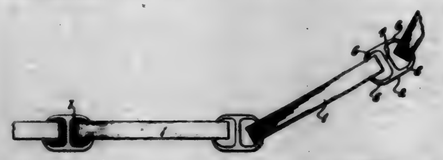

Claim.—1. A composite sheet-piling comprising alternating wood planks and metal beams arranged longitudinally and interlocked together, the metal beams being provided with jaws having portions thereof embedded in the opposite faces of the wood planks along their side edges.

2. A composite sheet-piling comprising alternating wood planks and metal beams arranged longitudinally and interlocked together, the metal beams being provided with pairs of jaws embedded in the opposite faces of the wood planks for protecting the edges of the planks along their side edges.

3. A composite sheet-piling comprising alternating wood planks and metal beams interlocked together, the metal beams being provided with pairs of jaws embedded in the opposite faces of the wood planks the parts being so arranged as to leave cavities around the edges of the planks within the said beams.

4. A composite sheet-piling comprising alternating wood planks and metal beams interlocked together, the metal beams being provided with pairs of jaws embedded in the opposite faces of the wood planks the parts being so arranged as to leave cavities around the edges of the planks within the said beams and a filling for said cavities.

5. A composite sheet-piling comprising alternating wood planks and metal beams arranged longitudinally and interlocked together, the metal beams being provided with pairs of jaws having their edges embedded in the opposite faces of the wood planks along their side edges.

6. A composite sheet-piling comprising alternating wood planks and metal beams interlocked together, the metal beams being provided with pairs of jaws having their edges embedded in the opposite faces of the wood planks, one of the jaws of each pair being shorter than the other jaw.

7. A composite sheet-piling comprising alternating wood planks and metal beams arranged longitudinally and interlocked together, the metal beams being provided with pairs of jaws having their edges turned inwardly and embedded in the opposite faces of the wood planks along their side edges.

8. A composite sheet-piling comprising alternating wood planks and metal beams arranged longitudinally and interlocked together, each metal beam being provided with two pairs of jaws having their edges embedded in the opposite faces of two adjacent wood planks along their side edges.

850,497. SHEET-PILING. PAUL A. SCHUCHART, New York, N. Y., assignor to Composite Pile Construction Company, New York, N. Y., a Corporation of New York. Filed Aug. 16, 1906. Serial No. 330,795.

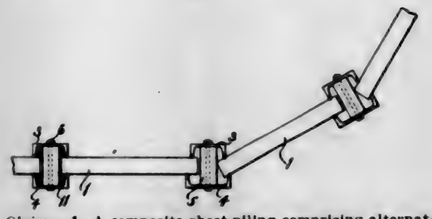

Claim.—1. A composite sheet-piling comprising alternating wood planks and plank-connecting beams interlocked together, the plank-connecting beams comprising two flanged beams and a wood plank rigidly secured together with the flanges of the beams extended inwardly to form jaws having portions thereof embedded in the opposite faces of the wood planks.

2. A composite sheet-piling comprising alternating wood planks and plank-connecting beams interlocked together, the plank-connecting beams comprising two flanged beams and a wood plank rigidly secured together with the flanges of the beams extended inwardly to form jaws having portions thereof embedded in the opposite faces of the wood planks, one of said flanged beams being of greater width than the other.

3. A composite sheet-piling comprising alternating wood planks and plank-connecting beams interlocked together, the plank-connecting beams comprising two flanged beams and a wood plank rigidly secured together with the flanges of the beam extended inwardly to form jaws having portions thereof embedded in the opposite faces of the wood planks, the parts being so arranged as to leave cavities around the edges of the planks within the said beam.

4. A composite sheet-piling comprising alternating wood planks and plank-connecting beams interlocked together, the plank-connecting beams comprising two flanged beams and a wood plank rigidly secured together with the flanges of the beams extended inwardly to form jaws having portions thereof embedded in the opposite faces of the wood planks, the parts being so arranged as to leave cavities around the edges of the planks within the said beams and a filling for said cavities.

850,498. DRAFT-GEAR RIGGING. GEORGE W. SCOTT and OSCAR A. THELIN, Chicago, Ill., assignors, by direct and mesne assignments, to The National Malleable Castings Company, Cleveland, Ohio, a Corporation of Ohio. Filed July 13, 1903. Serial No. 165,204.

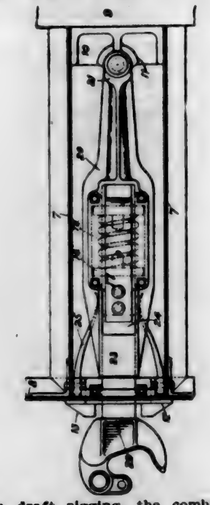

Claim.—1. In draft rigging, the combination with a pivotally mounted holder for the draw-bar of a carrier allowing lateral movement of the bar, and means for taking up the sidewise shock in extreme cases.

2. In draft rigging, the combination with a draw-bar having a pivotal mounting, of a draw-bar carrier provided with a wide bearing-seat to allow of lateral movement of the bar, and thrust blocks for directly taking up sidewise thrust of the bar in extreme movements.

3. The combination with a draw-bar head having an upwardly projecting safety lug or bracket, of a draw-bar carrier provided with thrust blocks to co-operate with said lug upon the draw-bar head in case of extreme angular concussive shocks.

4. The combination with a draw-bar head having an upwardly projecting safety lug or bracket, of a draw-bar carrier provided with thrust blocks to co-operate with said lug upon the draw-bar head in case of extreme concussive shocks.

5. The combination with a car frame and a pivoted housing for the draw bar and spring therefor, of a draw bar holder or bearing inserted in the car frame and having a broad seat allowing lateral play of the bar, and a pair of integral stops extending outside of the car frame and adapted to engage the coupler head on its sides when pressed inward to extreme position, substantially as described.

6. In draft gear rigging the combination with the car frame of a bracket thereon, and a swinging draw bar casing pivoted in the bracket and provided with thrust shoulders engaging the bracket, to relieve the pivoting pin of pressure, substantially as described.

7. The combination of an integral cast draw bar casing adapted to contain a spring and followers, and having a slot for the draw bar yoke, a draw bar provided with a yoke and a coil spring and followers removably retained in the casing, springs to retain the pivoted casing normally in central alinement with the car, and side stops on the car frame engaging the coupler head when pressed inward to its extreme position, substantially as described.

8. In draft rigging, a drawbar head having a safety horn or projection, and a drawbar carrier having a thrust lug at each side of the draw-head for engagement with the horn or projection in cases of extreme angular concussive shocks; substantially as described.

9. In draft rigging, a pivoted draft rigging holder forming a housing for the drawbar, and drawbar spring, yoke and followers, springs arranged to bear upon opposite sides of the holder, and co-operating thrust projections or bearings adapted to take up the side thrust in cases of extreme angular concussive shocks; substantially as described.

850,499. HOLDER FOR BOWLS AND THE LIKE. HERMAN SIEMUND, Chicago, Ill. Filed Dec. 24, 1906. Serial No. 349,342.

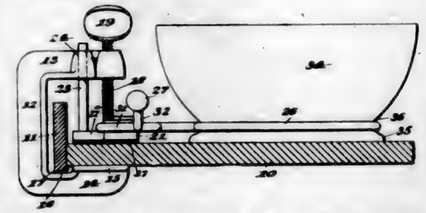

Claim.—1. In a bowl-holder, the combination with a vertically-disposed clamp-bracket having a laterally-extended arm at each of its ends, the lower one of said arms having its upper portion broadened to form a jaw of the clamp and spaced from the upright portion of the bracket to form a recess between the same, said jaw adapted to rest on the lower surface of the support, of a movable jaw interposed between said arms and having on one of its ends an upwardly-projecting catch, a screw extended through the upper of said arms and swiveled to said movable jaw, and a ring to embrace the bowl or vessel secured at one of its ends to one end of the movable jaw and adapted to detachably engage the said catch on the other end of said member.

2. In a bowl-holder, the combination with a vertically-disposed clamp-bracket having a laterally-extended arm at each of its ends, the lower one of said arms having its upper portion broadened to form a jaw of the clamp and spaced from the upright portion of the bracket to form a recess between the same, said jaw adapted to rest on the lower surface of the support, of a movable jaw interposed between said arms and having on one of its ends an upwardly and laterally projecting catch and on its other end a horizontally-apertured lug, a screw extended through the upper of said arms and swiveled to said movable jaw, a guide-rod mounted on the movable jaw and extended through the upper arm of the bracket, a ring to embrace the bowl or vessel having one of its ends secured in the aperture of the lug on the movable jaw or member and bent near its other end to form a loop one portion of which is adapted to engage the catch on the movable jaw, and the other portion of which loop is provided with an upwardly and outwardly projecting extension, and a handle mounted on said extension, substantially as described.

850,500. VEHICLE. HARVEY D. SMITH, Battle Creek, Mich. Filed Dec. 16, 1905. Serial No. 292,072.

Claim.—In a device of the class described and in combination with a vehicle axle and bolster, a fifth-wheel arranged between said parts and comprising an upper and a lower circle, means for securing said lower circle to the axle, recessed lugs provided on the upper circle for engagement with the bolster, a reach-beam extended through the

latter and recessed bearing-ears provided on the upper circle to receive the reach-beam.

850,501. TURBINE. FREDERICK T. SNYDER, Oak Park, Ill. Filed Apr. 20, 1904. Serial No. 203,982.

Claim.—1. In multiple-impact turbines, the combination of a turbine-wheel, provided with a series of radial buckets having working faces concave in circumferential direction and rearwardly-inclined edge portions, a forwardly-inclined nozzle on one side of the wheel delivering into said buckets and a reversing guide-bucket on the other side of said wheel opposite said nozzle, said guide-bucket being wider at its outer end than at its inner end and having an inclined working face with a rearwardly-leading inlet portion and a forwardly-leading outlet portion, both inlet and outlet portions being inclined in the same direction and at an angle to the plane of rotation of said wheel.

2. In multiple-impact turbines, the combination of a turbine-wheel, a series of radial buckets thereon opening on opposite sides of the wheel and having working faces concave in circumferential direction, a forwardly-inclined nozzle on one side of the wheel delivering into said buckets and a set of reversing guide buckets or channels alternately arranged on opposite sides of the said wheel-buckets, said guide-channels being wider at their outer ends than at their inner ends and having inclined working faces, each provided with a rearwardly-inclined inlet and a forwardly-inclined outlet portion connected by a concave portion.

3. In multiple-impact turbines, the combination with a ring-like or annular casing, oppositely-arranged circular heads fitted within said casing, a shaft journaled in said heads, a turbine-wheel on said shaft having a series of radially-disposed buckets, and a series of guide-buckets formed in said heads, and extending radially to the peripheral surface thereof, the outer ends of said guide-buckets being closed by said annular casing.

4. In a multiple-impact turbine, the combination of a turbine-wheel, a series of radial buckets thereon, ring-disks arranged on opposite sides of the wheel and provided with radially-disposed guide-buckets and a ring-frame about said disks closing the outer ends of said buckets, substantially as set forth.

5. In multiple-impact turbines, the combination with a turbine-wheel having radially-disposed buckets and opening on opposite sides of the wheel, circular heads having enlarged peripheral flanges arranged on opposite sides of the wheel, radially-disposed guide-buckets formed in said heads and extending radially to the peripheral surface thereof, and an inclosing covering ring or frame encircling said heads and closing the outer ends of said guide-buckets, substantially as set forth.

6. In multiple-impact turbines, the combination of a turbine-wheel having radial buckets opening on opposite sides of the wheel, a nozzle delivering into said buckets and two sets of reversing guide-buckets arranged on opposite sides of the wheel and leading in opposite directions from said nozzle about the wheel.

7. In multiple-impact turbines, the combination with the turbine-wheel and the inlet-nozzle, of the two sets of reversing gnide-buckets extending in opposite directions from the nozzle about the wheel, said guide-buckets arranged to direct the current of fluid alternately in opposite directions through the wheel-buckets.

8. In multiple-impact turbines, the combination with the turbine-wheel having radial buckets opening on opposite sides of the wheel, of an inlet-nozzle and two sets of reversing guide-buckets leading therefrom in opposite directions about the wheel to a common exhaust, said guide-buckets arranged to pass the motor fluid alternately in opposite directions through the wheel-buckets.

9. In multiple-impact turbines, the combination with the turbine-wheel having radial buckets opening on opposite sides of the wheel, of two expansion inlet-nozzles therefor and two sets of reversing guide-buckets leading from said nozzles respectively in opposite directions about the wheel, said guide-buckets being arranged on opposite sides of the wheel to pass the current of motor fluid alternately through the wheel-buckets in opposite directions.

850,502. EXPLOSIVE. FIN SPARRE, Wilmington, Del., assignor to The E. I. du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed Feb. 8, 1906. Serial No. 300,091.

Claim.—1. An explosive composition containing nitrocellulose, ferrosilicon, sodium nitrate and sulfur in substantially the described proportions.

2. An explosive composition containing nitrocellulose, ferrosilicon and sodium nitrate in substantially the described proportions.

3. An explosive composition containing nitrocellulose, ferrosilicon, sodium nitrate, sulfur and charcoal in substantially the described proportions.

4. An explosive composition containing nitrocellulose, ferrosilicon, sodium nitrate, ammonium nitrate, sulfur and charcoal in substantially the described proportions.

850,503. APPARATUS FOR TREATING LIQUIDS. HARRY H. SUTRO, New York, N. Y. Filed Aug. 25, 1906. Serial No. 331,980.

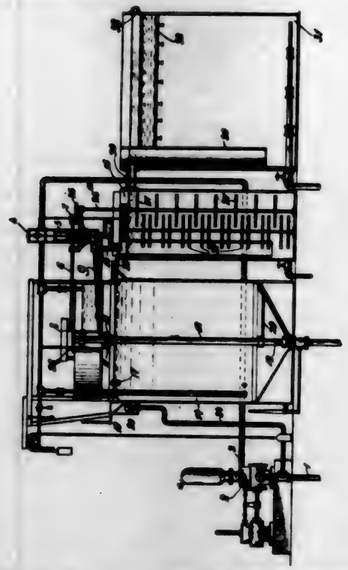

Claim.—1. In an apparatus for purifying liquids the combination with a reaction-tank of a chemical reagent-tank, means for supplying liquid to the reaction-tank, means for supplying a proportionate amount of reagent from the reagent-tank to the liquid as or before it enters the apparatus and means for supplying a proportionate part of the reagent to the reaction-tank, substantially as and for the purposes set forth.

2. In an apparatus for purifying liquids the combination with a reaction-tank of a chemical reagent-tank, means for supplying a proportionate part of the liquid to be treated to the chemical reagent-tank, means for supplying the balance of the liquid to be treated to the reaction-tank, means for supplying a proportionate amount of the discharge from the reagent-tank to the liquid as or before it enters the apparatus and means for supplying the balance of the discharge from the reagent-tank to the reaction-tank, substantially as and for the purposes set forth.

3. In apparatus for purifying liquids the combination with a reaction-tank of a chemical reagent-tank, means for supplying liquid to the reaction-tank, means for supplying a portion of the reagent to the liquid to be purified before it reaches the reaction-tank and means for supplying the balance of the reagent necessary to complete the purification to the liquid after it enters the reaction-tank, substantially as and for the purposes set forth.

4. In an apparatus for treating liquids the combination with a reaction-tank, of a reagent-tank, means for dividing the liquid to be treated into proportionate parts and conducting one of said parts to the reaction-tank and the other portion to the reagent-tank, means for separating the liquid discharged from the reagent-tank into proportionate parts, means for conducting one of said proportionate parts to the reaction-tank and the other proportionate part to the liquid to be treated before it enters the reaction-tank, substantially as and for the purposes set forth.

5. In apparatus for treating water a reagent-tank with two reagent-outlets and means for conducting the discharge from such outlets to different destinations, substantially as and for the purposes set forth.

6. In apparatus for treating water, a reagent-tank, a reaction-tank, means for discharging reagent from the reagent-tank, means for conveying a predetermined portion of such discharge to the reaction-tank and means for conveying the balance of the discharge from said reagent-tank to the water to be purified before it enters the reaction-tank, substantially as and for the purposes set forth.

7. In apparatus for purifying water, the combination with a reagent-tank of a reaction-tank, means for conveying a proportionate part of the discharge from the reagent-tank to the liquid to be purified before it enters the reaction-tank and means for conveying a predetermined proportionate part of the discharge from the reagent-tank to the reaction-tank, substantially as and for the purposes set forth.

8. In apparatus for treating liquids a reagent-tank provided with a plurality of discharge-outlets and means for conducting the discharge from each of said outlets to the water to be purified at different points during its passage through the apparatus, substantially as and for the purposes set forth.

9. In apparatus for treating liquids a reagent-tank provided with a plurality of discharge-outlets and means for conducting the discharge from each of such outlets to the liquid to be purified at different points, substantially as and for the purposes set forth.

10. In apparatus for treating liquids a reagent-tank, means for dividing the reagent-discharge from such tank into separate parts and means for conducting such separate parts to different destinations, substantially as and for the purposes set forth.

850,504. DIFFERENTIAL CLIP FOR AERIAL ROPE-WAYS, &c. YUSUKE TAMAMURA, Ahio, Japan. Filed Jan. 4, 1907. Serial No. 350,846.

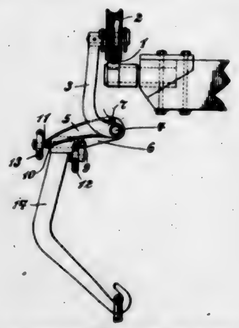

Claim.—1. In apparatus of the class described, a grip formed of two jaw-levers of different length flexibly connected to the carriage in such manner as to be moved differential angular distances by a common vertical movement of their free ends.

2. In apparatus of the class described, a grip formed of two levers having a common axis and their shorter ends formed into jaws and means for causing said levers to move different angular distances for a given common vertical movement of their longer ends.

3. In apparatus of the class described, a grip formed of two mutually-journaled jaw-levers of differential length and means for moving said levers an unequal angular distance for a given common vertical displacement of their free ends.

4. In apparatus of the class described, a rope-grip formed of two levers having a common axis, a jaw formed

on one end of each lever, and means for causing said levers to move in the same direction differential angular distances when their free ends are displaced vertically a common distance.

5. In apparatus of the class described, a jaw formed by the short ends of two levers of unequal length having a common axis and a flexible connection of the carriage-sustaining member to the free ends of such differential arm.

6. In apparatus of the class described, a supporting member, a lever hinged to the upper part thereof, a second lever hinged to the upper part thereof by an axis capable of motion normal to its length, a common fulcrum for said levers and jaws formed in said levers beyond said fulcrum.

7. In apparatus of the class described, a supporting member, a lever hinged to the upper part thereof, a second lever hinged to the upper part thereof by an axis capable of motion normal to its length, a common fulcrum for said levers and jaws formed in said levers beyond said fulcrum and means for relieving said levers of the weight of said supporting member at terminal stations.

8. In apparatus of the class described, a clip or grip for rope composed of two clip members having a common axis and lever-arms of different length, a supporting member flexibly connected to the free ends of such lever-arms, and means for relieving such lever-arms of the weight of such supporting member at terminal stations.

9. In apparatus of the class described, a clip or grip for engaging a rope composed of two clip members having a common axis and lever-arms of different length, and means for operating said clip by the differential action of the sustained weight on the free ends of such lever-arms.

10. In a rope-grip, jaws formed by the ends of mutually-hinged levers of unequal length and means for causing the free ends of said levers to move equal distances in a common direction, but different angular distances.

11. In a rope-grip, a pair of mutually-hinged levers each provided with a jaw, said jaws respectively approximated, and means for causing said levers to move differential angular distances under the effect of a weight applied to their free ends.

850,505. CLOSET-SEAT. WILLIAM F. TILL and JOHN C. NEWTON, Brooklyn, N. Y. Filed Dec. 4, 1906. Serial No. 346,201.

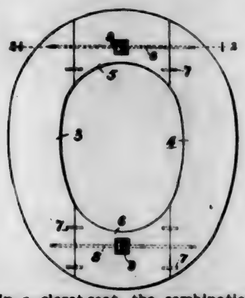

Claim.—1. In a closet-seat, the combination with side pieces of integral end pieces having holes extending through them and recesses formed in the under side of the end pieces and communicating with said holes, and double-ended right and left hand wood-screws located in the holes in the end pieces and extending into the side pieces and a removable turning hub upon the middle of each of said screws located in the recess in its respective end piece.

2. A closet-seat consisting of side pieces, intermediate end pieces provided with recesses in their under sides and with holes extending laterally through the end pieces and the recesses, a double-ended right and left hand wood-screw located in the hole of each end piece and having a removable turning hub upon its middle and within the respective recess, said hub being provided with holes for a turning lever and having a pin passing from the bottom of one hole through the hub and screw for the purpose set forth.

850,506. ELECTRIC SWITCH. CHRISTIAN J. TORRING, Philadelphia, Pa. Filed Nov. 24, 1905. Serial No. 288,948.

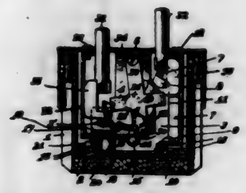

Claim.—1. In a two-button snap electric switch, a rocking pallet-latch operated by push-buttons and mounted upon a fixed stud, a spring carried by said stud and arranged to be tensioned by said latch, a swinging scape-lever movable across the end of the stud and controlled by the latch and moved by the spring when released by the latch, in combination with fixed blades connected to one circuit-terminal and a pivoted switch-arm connected to the other terminal, the said switch-arm being connected to the scape-lever at a point near its pivot whereby the free or contact end of the switch-arm has a long range of movement, substantially as described.

2. An electric switch comprising a fixed member connected to one circuit-terminal and a movable member or pivoted switch-arm connected to the other circuit-terminal, in combination with a swinging scape-lever connected to the switch-arm near its pivot, a rocking latch controlling the scape-lever and itself connected to operating push-buttons, and a spring tensioned by the movement of the latch and operating through the scape-lever to throw the switch-arm when the said scape-lever is released by the latch, substantially as described.

850,507. PEDAL FOOT-REST FOR AUTOMOBILES. SIDNEY D. WALDON, Detroit, Mich., assignor to Packard Motor Car Company, Detroit, Mich., a Corporation of West Virginia. Filed Sept. 20, 1906. Serial No. 335,494.

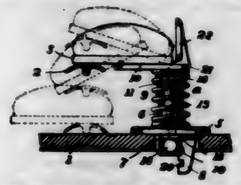

Claim.—1. The combination, in a motor-vehicle, with a pedal, and with the footboard of a foot-support independent of and adjacent to the pedal, said support and pedal being above the footboard and arranged to be simultaneously engaged by the foot of the operator.

2. The combination, in a motor-vehicle, with a pedal, of an adjustable foot-support, independent of and adjacent to the pedal, said support and pedal being arranged to be simultaneously engaged by the foot of the operator.

3. The combination, in a motor-vehicle, with a pedal, of an adjustable foot-support independent of and adjacent to the pedal, said support and pedal being arranged to be simultaneously engaged by the foot of the operator, and means for locking said foot-support in any position of adjustment.

4. The combination with a motor-controlling pedal, of a vertically-adjustable foot-support independent of and adjacent to the pedal, said support and pedal being arranged to be simultaneously engaged by the foot of the operator, and means for locking said foot-support in any position of adjustment.

5. The combination with a motor-controlling pedal, of a foot-rest comprising an adjustable support independent of and adjacent to the pedal, and locking means for said support, said pedal, support and locking means being so arranged that they may be simultaneously engaged by the foot of the operator.

6. A foot-rest comprising a support, adapted to be engaged and depressed by the foot, a spring for moving said support to an upper position, and means for locking said support when depressed, in combination with a pedal independent of and adjacent to said foot-rest.

7. The combination in a motor-vehicle, with the pedal, and with the footboard of a foot-support above the footboard and at one side of the pedal, and independent thereof, said pedal and foot-support being so related that the pedal may be operated by a movement of the foot without removing it from the support.

8. A foot-rest comprising a support, adapted to be moved in a downward direction by foot-pressure, a spring adapted to move said support in an upward direction, and locking means for said support, said means being movable by lateral pressure of the foot to release the support.

9. A foot-rest comprising a support, adapted to be moved in a downward direction by foot-pressure, a spring adapted to move said support in an upward direction, and a latch movable with the support and adapted to lock the support against movement, said latch having a tongue adjacent to the support adapted to be engaged by the operator's foot.

10. An adjustable foot-rest comprising a base having a sleeve or guideway, a rack, a longitudinally-grooved post movable within said guideway, a latch arranged within said groove, said latch having a tongue projecting above the post and having a tooth normally engaging said rack, and a spring interposed between the base and a shoulder on the post.

11. An adjustable foot-rest comprising a base having a suitable guideway, a rack secured to said base, a slotted post movable within the guideway and having a shoulder near one end, a coiled spring surrounding the post and interposed between said shoulder and base, a latch pivotally arranged within the slot in the post and having a cam-surface adapted to be engaged by the spring, said latch having means at one end for engaging the rack and a tongue or part at the other end adapted to be engaged by the foot of the operator.

850,508. WEIGHING-SCALE. GEORGE WALKER, New Britain, Conn., assignor to Landers, Frary and Clark, New Britain, Conn., a Corporation. Filed Sept. 17, 1906. Serial No. 335,000.

Claim.—1. In a weighing-scale, the combination of a case with a load-receiving bar or frame, the rack-carrying lever and swinging frame pivotally mounted in the case by their rear ends and also pivotally connected with the said load-receiving bar or frame, a spring connected with the said load-receiving bar or frame acting in opposition to the load on the said bar, a rack carried by the forward part of the said rack-carrying lever with a portion of the said rack forward of the front of the case, the said front having a central portion with a bearing for a shaft therein, a detachable dial secured on the front of the said case and having a shaft, pointer and pinion, mounted on the said dial to be removed therewith, and to be placed in position with the inner end of the said shaft in the shaft-bearing of the said central portion of the front and with the pinion in engagement with the said rack.

2. In a weighing-scale, the combination of a case having an inclined front, with the rack-carrying lever of the weighing mechanism pivotally mounted within the said case with its forward part arranged to swing vertically, an upwardly-projecting arm at the forward part of the said lever, a rack pivoted by its upper end to said arm with a portion of the said rack forward of the central portion of the case-front, and a shaft, pinion, and pointer, with the pinion in engagement with the said rack on the outside of the case forward of the said inclined front.

3. In a weighing-scale, the combination of a case having an inclined front with the rack-carrying lever of the weighing mechanism pivotally mounted within the said case with its forward part arranged to swing vertically, an upwardly-projecting arm at the forward part of the said lever, a rack pivoted by its upper end to the said arm on an axis at a right angle to the axis of the said rack-bearing lever, a rack-support 46 on the forward end of the said lever against which the lower end of the said rack rests, and a rotary shaft, pointer, and pinion mounted with the said pinion in engagement with the said rack.

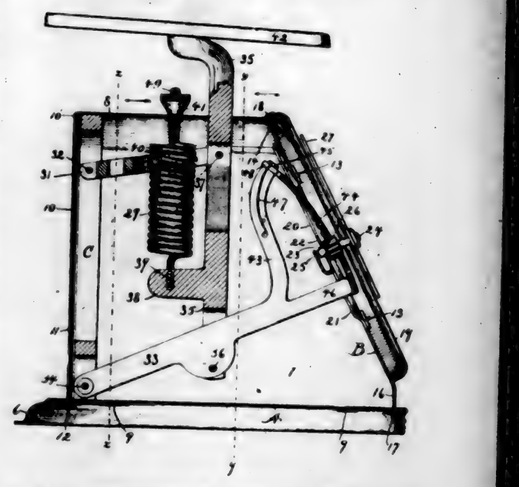

4. In a weighing-scale, the combination of a case having an inclined front with the rack-carrying lever of the weighing mechanism pivotally mounted within the said case with its forward part arranged to swing vertically, an upwardly-projecting arm at the forward part of the said lever, a plate-like rack pivoted by its upper end to said arm and curved flatwise from end to end to conform to the arc of a circle described by the front end of the said upwardly-projecting arm, and a rotary shaft, pointer, and pinion mounted with its pinion in engagement with the said rack.

5. In a weighing-scale, the combination of a case having an inclined front with the rack-carrying lever of the weighing mechanism pivotally mounted within the said case with its forward part arranged to swing vertically, an upwardly-projecting arm at the forward part of the said lever, a rack pivoted by its upper end to said arm on an axis at a right angle to the axis of the said lever and with a portion of the said rack forward of the central portion of the case-front, a dial detachably mounted on the said case-front, a rotary shaft, pointer, and pinion mounted on the said dial to be removed therewith, and to be placed in position with the inner end of the said shaft having a bearing in the central portion of the case-front while the pinion is in engagement with the said rack, and a fastening-screw for the dial located to one side of the pinion with the body of the rack passing through the space between the said screw and pinion.

6. In a weighing-scale, the combination of a base A with the case, sides and top in one piece with themselves, the middle portion of which piece forms the top with a flange at the rear edge, a separately-formed case-front secured to the front edge of the said sides and top, a separately-formed main frame the weighing mechanism with the major part thereof mounted on the said frame, the said frame being secured within the rear part of the case with a space between it and the rear flange of the sides and top, and a back slipped in from below into the space between the said flange and frame, the said sides, front and back being mounted on the top of and secured to the said base.

850,509. DEVICE FOR LIGHTING GAS-LAMPS. HAROLD K. WILSON, New Bedford, Mass. Filed Mar. 13, 1906. Serial No. 305,896.

Claim.—1. In a device of the character described, the combination with an induction-coil, comprising a primary and a secondary circuit, of a plurality of sparking mechanisms located in the secondary circuit, a source of electrical energy located in the primary circuit, a switch comprising a plurality of pairs of spring contact members, one member of each of said pairs of springs being connected to the sparking mechanism and the other member of each of said pairs of springs being connected to the secondary winding of the induction-coil, and a bus-rod and means for forcing said springs into contact with each other and for then bringing said springs into electrical connection with the bus-rod.

2. In a device of the character described, a switch comprising a casing, a plurality of pairs of contacting members located in said casing, a bus-rod with which one of the springs of each pair is in contact at all times, a second bus-rod and means for forcing the other spring of each pair into contact with the adjacent spring and for then forcing both of said springs into electrical connection with the second bus-rod.

3. In a device of the character described, the combination with an induction-coil comprising a primary and a secondary circuit, of a plurality of sparking mechanisms located in the secondary circuit, a source of electrical energy located in the primary circuit, a switch comprising a plurality of pairs of spaced movable contacts, one member of each of said pairs of contacts being connected to the sparking mechanism and the other member of each of said pairs of contacts being connected to the secondary winding of the induction-coil, a stationary contact electrically connected with the primary circuit of said coil and means for electrically and initially engaging said springs with one another and for then engaging them in electrical connection with said stationary contact.

4. In a device of the character described, a switch comprising a pair of spaced spring contact members, a stationary contact member, and a rotatable key between said spring members for establishing initial electrical connection therebetween and for moving one of the members of said pair to engage said stationary contact.

5. In a device of the character described, a switch comprising a plurality of pairs of spaced spring contact members, a stationary contact member, simultaneously-rotatable keys between each respective pair of said spring members adapted in one position to initially engage the respective members of each pair in electrical connection, in a second position to force one member of each of said pairs into engagement with said stationary contact and in another position to disengage said members, and sliding pins disposed severally adjacent the respective pairs and designed upon disengagement of said keys upon individual actuation to force one of the members of a selected pair into contact with the other member of said pair, and by further movement to force both of said spring members while still in contact with one another into engagement with said stationary contact.

6. In a device of the character described a switch comprising a plurality of pairs of spaced contact members, means for initially and simultaneously engaging the respective members of all of said pairs in electrical connection and means designed in the inoperative relation of said first-named means to engage the members of a selected individual pair in electrical connection with one another.

7. In a device of the character described, a switch comprising a plurality of pairs of spaced movable contact members, a common stationary contact member, means for initially and simultaneously engaging the respective members of all of said pairs in electrical connection with one another and then for finally engaging said members while still electrically connected with one another, with said stationary contact and means designed in the inoperative relation of said first-named means to initially electrically engage the members of a selected individual pair with one another and for finally electrically engaging said members while still engaged with one another with said stationary contact.

850,510. TRAP. HENRY YTURRI, San Antonio, Tex. Filed Jan. 18, 1907. Serial No. 352,993.

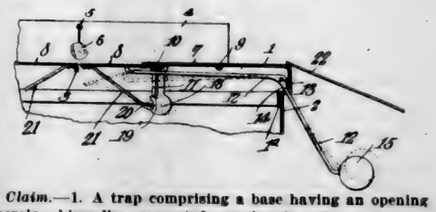

Claim.—1. A trap comprising a base having an opening therein, hingedly-connected overlapping doors secured within the opening, one of said doors being hinged to the base, gravity-operated means for holding the doors normally in closed position, a lock-engaging device upon one of the doors, means for engaging said device to lock one of the doors in closed position, and means operated by the other door for actuating the locking means and to release the door supported thereby.

2. In a trap the combination with a base having an opening therein; of a main door hinged to the base and partly closing the opening, a lock-engaging device upon one of the doors, means for engaging said device to secure said door in position, a tripping-door hinged to and overlapped by the main door, gravity-operated means bearing upon the tripping-door for holding the two doors normally closed, and means operated by the depression of the tripping-door for shifting the door-securing means to release the main door.

3. A trap comprising a base having an opening therein, a main door hinged to the base and partly closing the opening, a gravity-catch suspended from the base, means upon the main door disposed to be engaged by the catch for securing the main door in closed position, a tripping-door hinged to and overlapped by the main door, gravity-operated means bearing upon the tripping-door for returning the doors to normal position subsequent to being depressed, and means operated by the depression of the tripping-door for moving the catch to release the main door.

4. A trap comprising a base having an opening therein, a door hinged to the base for closing the opening, said door consisting of hinged overlapping sections, yielding means for holding the door normally in closed position, a lock-engaging device upon one of the door-sections, means for engaging said device to lock one of the door-sections in closed position, and means operated by the depression of the other door-section for shifting said locking means to release the door.

5. A trap comprising a base having an opening therein, a door hinged to the base for closing the opening, said door consisting of overlapping sections hinged together, yielding means bearing upon one of the sections for holding the door normally in closed position, a lock-engaging device upon one of the door-sections, gravity-operated means for engaging said device to lock one of the door-sections in closed position, and means operated by the depression of the other door-section for actuating the locking means to unlock the door.

6. In a trap the combination with a base having an opening therein, walls at opposite sides of the opening, and means between the walls for supporting bait; of a door for closing the opening, said door being hinged to the base and consisting of hingedly-connected overlapping sections, yielding means bearing upon one of the sections for normally holding the door in closed position, a gravity-operated catch suspended from the base, arms movable with one of the door-sections and normally resting upon the catch, and means operated by the depression of the other door-section for withdrawing the catch from the arms to release the door.

7. In a trap the combination with a base having an opening therein, and a catch pivotally connected to and suspended from the base, said catch having a seat in one face and a shoulder; of a door hinged to the base and consisting of hingedly-connected overlapping sections, an arm rigidly connected to one of the sections and normally bearing upon the shoulder of the catch, gravity-operated means bearing upon one of the sections for normally holding the door in closed position, and an arm extending from one of the sections and projecting into the seat.

8. A trap comprising a base having an opening therein, side walls upon the base and adjacent the opening and oppositely-disposed doors within and adapted to close the opening, each door being hinged to the base and comprising overlapping hingedly-connected sections, gravity-operated means bearing upon one of the sections for holding each door normally closed, a pivoted catch suspended from the base adjacent each door, an arm rigidly connected to one of the sections of each door and normally supported by the adjoining catch, and an arm rigidly connected to and suspended from the other section of each door and contacting with the adjoining catch.

9. A trap comprising a base having an opening therein, a door hinged to the base and consisting of hingedly-connected overlapping sections, a lock-engaging device upon one of the sections, yielding means for supporting the door in closed position within the opening, means for engaging said device to lock one of the door-sections in closed position, and means operated by the opening of the other door-section for unlocking the door.

10. A trap comprising a yieldingly-supported sectional door, separate means for locking one of the door-sections in closed position, and a supporting device engaging one of said means for holding the other section in closed position, said device being disposed when its section is depressed to unlock the door.

850,511. TRAIN SIGNALING SYSTEM. JAMES S. ANDERSON, Ames, Nebr. Filed May 29, 1906. Serial No. 319,330.

Claim.—1. The combination with a plurality of coupled cars, of a normally open circuit extending throughout the length of the connected cars, a circuit-closer carried by each car and arranged for operation on the separation of any car from coupled position, and means operated in the manual uncoupling of the cars to render the circuit-closer inoperative.

2. The combination with a plurality of coupled cars, of a normally open circuit extending throughout the length of the connected cars, a circuit-closer carried by each car and automatically operable on the separation of any car from coupled position, and means automatically operated in the manual uncoupling of the cars to prevent operation of the circuit-closer.

3. The combination with a plurality of coupled cars, of a normally open circuit extending throughout the length of the connected cars, said circuit including contact members carried by each car and arranged for coupling in the coupling of cars, a contact-bar in circuit with one of said contact members and supported adjacent the path of the other of said members, and means for normally locking said contact-bar beyond the influence of the adjacent contact member.

4. The combination with a plurality of coupled cars, of a normally open circuit extending throughout the length of the connected cars, said circuit including contact members carried by each car and arranged for coupling in the coupling of the cars, a contact-bar in circuit with one of said contact members and supported adjacent the path of the other of said members, means for normally locking said contact-bar beyond the influence of the adjacent contact member, and means for releasing the contact-bar from the locking means in the coupling operation of the cars.

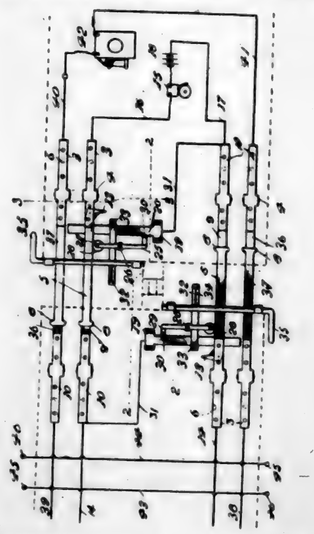

5. The combination with a plurality of coupled cars, of a normally open circuit extending throughout the length of the connected cars, said circuit including contact members carried by each car and arranged for coupling in the coupling of the cars, a contact-bar in circuit with one of said contact members and supported adjacent the path of the other of said members, means for normally locking said contact-bar beyond the influence of the adjacent contact member, and means carried by the contact member of one car for releasing the contact-bar of the adjacent car from said locking means in the coupling operation of the cars.

6. The combination with a plurality of coupled cars, of a normally open circuit extending throughout the length of the connected cars, said circuit including contact members carried by each car and arranged for coupling in the coupling of the cars, a contact-bar in circuit with one of said contact members and supported adjacent the path of the other of said members, and a hook-lever for normally depressing the contact-bar beyond the influence of the adjacent contact member.

7. The combination with a plurality of coupled cars, of a normally open circuit extending throughout the length of the connected cars, said circuit including contact members carried by each car and arranged for coupling in the coupling of the cars, a contact-bar in circuit with one of said contact members and supported adjacent the path of the other of said members, a hook-lever for normally depressing the contact-bar beyond the influence of the adjacent contact member, and means carried by the contact member of one car for operating the hook-lever of the adjacent car to release the contact-bar.

8. The combination with a plurality of coupled cars, of a normally open circuit extending throughout the length of the connected cars, said circuit including contact members carried by each car and arranged for coupling in the coupling of the cars, a contact-bar in circuit with one of said contact members and supported adjacent the path of the other of said members, a hook-lever for normally depressing the contact-bar beyond the influence of the adjacent contact member, means carried by the contact member of

one car for operating the hook-lever of the adjacent car to release the contact-bar, and means for depressing the contact-bar within the influence of the hook-lever in the manual uncoupling of the cars.

9. The combination with a plurality of coupled cars, of a normally open circuit extending throughout the length of the connected cars, said circuit including contact members carried by each of said cars and arranged for coupling in the coupling of the cars, a contact element in circuit with one of said contact members and supported adjacent to the path of the other of said members, a lever for holding the contact element normally beyond the influence of the adjacent contact member, means carried by the contact member of one car for operating the lever of the adjacent car to release the contact element, and manually-operative means for moving the contact element within the influence of the lever.

10. The combination with a plurality of coupled cars, of a normally open circuit extending throughout the length of the connected cars, said circuit including contact members carried by each car and arranged for coupling in the coupling of the cars, a contact-bar in circuit with one of said contact members and supported adjacent the path of the other of said members, a hook-lever for normally depressing the contact-bar beyond the influence of the adjacent contact member, means carried by the contact member of one car for operating the hook-lever of the adjacent car to release the contact-bar, and a slide-bar automatically operated in the manual uncoupling of the cars to depress the contact-bar within the influence of the hook-lever.

11. The combination with a plurality of coupled cars, of a normally open circuit extending throughout the length of the connected cars, said circuit including contact members carried by each of said cars and arranged for coupling in the coupling of the cars, a yieldably-supported swinging contact-bar in circuit with one of said contact members and disposed adjacent to the path of other of said members, a hook-lever for normally depressing the contact-bar beyond the influence of the adjacent contact member, a detent carried by the contact member of one car for operating the hook-lever of the adjacent car to release the contact-bar, and a slide-bar for depressing the contact-bar within the influence of the hook-lever.

12. The combination with a plurality of coupled cars, of a normally open circuit extending throughout the length of the connected cars, said circuit including contact members carried by each of said cars and arranged for coupling in the coupling of the cars, a yieldably-supported swinging contact-bar in circuit with one of said contact members and supported adjacent to the path of the other of said members, a lever for normally depressing the contact-bar beyond the influence of the adjacent contact member, said lever having a beveled hook at one end and a head at its opposite end, a pivoted detent upon the contact member of one car for engaging the head upon the hook-lever of the adjacent car and releasing the contact-bar, and a slide-bar for depressing the contact-bar beneath the beveled hook of said lever.

13. The combination with a plurality of coupled cars, of a normally open circuit extending throughout the length of the connected cars, said circuit including contact members carried by each of said cars and arranged for coupling in the coupling of the cars, a yieldably-supported swinging contact-bar in circuit with one of said contact members and supported adjacent to the path of the other of said members, a lever for normally depressing the contact-bar beyond the influence of the adjacent contact member, said lever having a beveled hook at one end and a head at its opposite end, a pivoted detent upon the contact member of one car for engaging the head upon the hook-lever of the adjacent car and releasing the contact-bar, a slide-bar for depressing the contact-bar beneath the beveled hook of said lever, and means for manually operating said slide-bar.

14. In an electrical coupling device, the combination with two coupled cars, of pivot-plates carried by said cars, a contact-plate pivoted in said pivot-plate on one car and formed at its outer end with a loop portion, a contact-arm pivoted upon the pivot-plate on the other of said cars and adapted to enter the loop portion of said contact-plate, springs for actuating said contact-plate and contact-arm, and means for limiting the swinging movements of said contact-plate and contact-arm.

15. In an electrical coupling device, the combination with two coupled cars, of pivot-plates thereon, coacting members pivoted intermediate their ends in said pivot-plates, one of said members having a loop portion at its outer end to receive the outer end of the other of said members, and set-screws in the short inner ends of said members for engagement with said pivot-plates to limit the swinging movement of said members.

850,512. SNAP-HOOK. DELBERT E. BARTON, Racine, Wis. Filed Mar. 16, 1906. Serial No. 306,365.

Claim.—1. A snap-hook comprising a hook member, a tongue member pivotally connected thereto, a spring seated in a spring-space between the hook member and the tongue member, there being a throatway between the hook member and the tongue member along which the spring may be forced into the spring-space, and stop-lugs on the hook member and the tongue member on opposite sides of the throatway to compel the spring to be inclined in order to reach the spring-space and serving to retain the spring in the spring-space.

2. A snap-hook comprising a hook member, a tongue member pivotally connected thereto, a spring seated in a spring-space between the hook member and the tongue member, flanges on the hook member and the tongue member forming a throatway therebetween along which the spring may be forced to reach the spring-space, and stop-lugs on the hook member and the tongue member on opposite sides of the throatway to compel the spring to be inclined in order to reach the spring-space and serving to retain the spring in the spring-space.

3. A snap-hook comprising a hook member, a tongue member pivotally connected thereto, a spring located in a spring-space between the hook member and the tongue member, there being a throatway between the hook member and the tongue member through which the spring may be forced to enter the spring-space, and cam-shaped stop-lugs on the hook member and on the tongue member located on different sides of the throatway to incline the spring as it is forced along them and serving to prevent the accidental removal of the spring from the spring-space.

4. A snap-hook comprising a hook member, a tongue member pivotally connected thereto, a spring seated in a spring-space between the hook member and the tongue member, guide-walls on the hook member and the tongue member forming opposite channels to produce a throatway along which the spring may be forced into the spring-space, and cam-shaped stop-lugs in the channels of the hook member and the tongue member located on different sides of the throatway to incline the spring as it is forced along them and serving to prevent the accidental removal of the spring from the spring-space.

5. A snap-hook comprising a hook member, a tongue member pivotally connected thereto, and a coil-spring seated in a spring-space between the hook member and the tongue member, there being opposite openings in the hook member and the tongue member leading to the spring-space and through which dirt and moisture may be ejected from the spring-space.

6. A snap-hook comprising a hook member, ears standing up from the hook member, a tongue member with oppositely-extending trunnions journaled between the ears and having the ears bent down therearound to form trunnion-bearings, a coil-spring seated in a spring-space between the tongue member and the hook member, guide-walls on the hook member and the tongue member forming opposite channels to produce a throatway between the hook member and the tongue member along which the spring may be forced to enter the spring-space, and cam-lugs in the channels of the hook-member and the tongue member and located on opposite sides of the throatway adapted to incline the spring as it is forced thereon and serving as stops for holding the spring in the spring-space, there being a socket in the hook member forming a part of the spring-space and within which the spring is seated, said hook member and tongue member being provided with openings leading to the spring-space through which dirt and water may be ejected.

7. A snap-hook comprising a hook member, a tongue member pivotally connected thereto, a coil-spring seated between the hook member and the tongue member, there being a throatway leading to the spring-seat along which the spring may be forced into place, and a cam on the tongue member adapted to compress the spring as the spring is forced along it and engage and hold the spring on its seat after the spring has snapped behind it.

8. A snap-hook comprising a hook member, a tongue member pivotally connected thereto, a coil-spring seated between the hook member and the tongue member, there being a throatway leading to the spring-seat along which the spring may be forced into place, and a cam on the hook member adapted to compress the spring as the spring is forced along it and engage and hold the spring on its seat after the spring has snapped behind it.

9. A snap-hook comprising a hook member, a tongue member pivotally connected thereto, a coil-spring seated between the hook member and the tongue member, there being a throatway leading to the spring-seat along which the spring may be forced into place, a cam on the hook member, and a cam on the tongue member, the cams being adapted to compress the spring as the spring is forced along them and engage and hold the spring on its seat after the spring is snapped behind them.

850,513. TILE-MACHINE. WILLIAM H. BEEBY, Celina, Ohio. Filed Aug. 11, 1906. Serial No. 330,267.

Claim.—1. A tile-machine including a vertically-movable core and an adjustable core-guide.

2. A tile-machine including a frame provided with a cross-head, a vertically-movable core, and an adjustable core-guide consisting of a polished rod having a threaded upper end extending through said cross-head and provided with a plurality of adjusting-nuts.

3. A tile-machine including a plunger provided with a U-shaped suspension-rod, and a core provided with a U-shaped suspension-rod.

4. A tile-machine including a plunger provided with a U-shaped suspension-rod, and a core provided with a U-shaped suspension-rod, said suspension-rods being disposed at right angles with respect to each other.

5. A tile-machine including a frame provided with a cross-head, a movable core having a U-shaped suspension-rod extending through said cross-head, and a plunger having a U-shaped suspension-rod disposed at a right angle with respect to the suspension-rod of said core and extending downward on opposite sides of said cross-head.

6. A tile-machine including a cross-head, a movable core provided with a suspension-rod extending through said cross-head, and a pivoted catch mounted upon said cross-head and adapted to engage the upper end of said suspension-rod for locking the core in lowered position.

7. A tile-machine including a frame provided with a pair of uprights and a cross-head, a pair of spaced perforated arms on one of said uprights, an adjusting-pin extending through said perforated arms, a lever fulcrumed upon said pin and having a hook, and a movable core having a U-shaped suspension-rod extending through said cross-head and adapted to be engaged by the hook of said lever for raising the same.

8. A tile-machine including a frame provided with a cross-head, oppositely-extending bracket-arms secured to said cross-head and provided with perforations, and a plunger having a detachable U-shaped suspension-rod extending through some of the perforations of said bracket-arms.

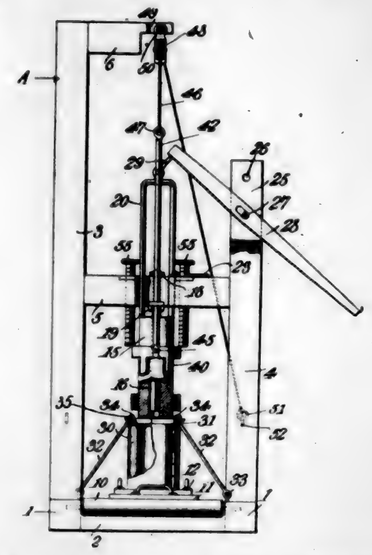

9. A tile-machine including a plunger, and guide means for said plunger adapted to receive a number of plungers of different sizes.

10. A tile-machine including a plunger provided with a suspension-rod and bracket-arms for guiding said suspension-rod, said bracket-arms being adapted to receive suspension-rods of different sizes of plungers.

11. A tile-machine including a vertically-movable core, a vertically-movable plunger, and means for holding the plunger in lowered position to permit the core to be raised.

12. A tile-machine including a cross-head, a movable core, a movable plunger, and adjustable stops extending through the cross-head for holding the plunger in lowered position.

13. A tile-machine including a cross-head, a core-guide connected with said cross-head, a core movable upon said core-guide, a movable plunger, and rods extending through said cross-head and constituting adjustable stops for holding said plunger in lowered position.

14. A tile-machine including a frame, a movable core, an adjustable core-guide, a movable plunger, a jacket normally surrounding said core and having removable hinge-rods, and locking means connected with said frame and engaging said hinge-rods for holding said jacket in position.

15. A tile-machine including a frame, a movable core, an adjustable core-guide, a movable plunger, a jacket surrounding said core and having removable hinge-rods, and hooks pivotally connected with said frame and engaging the said hinge-rods for holding said jacket in position.

16. A tile-machine comprising a frame having sills, rollers journaled in said sills, a pair of uprights connected with said sills and having a cross-head, an adjustable core-guide connected with said cross-head, a core movably mounted upon said core-guide and having a U-shaped suspension-rod extending through said cross-head, a plunger surrounding said core and having a U-shaped suspension-rod disposed at a right angle to the suspension-rod of the core, bracket-arms connected with said cross-head and serving as guides for the suspension-rod of the plunger, said bracket-arms being adapted to receive different sizes

of suspension-rods, means for raising and lowering said core and plunger, a carriage mounted upon the rollers of said sills, a pallet mounted upon said carriage, a jacket mounted upon said pallet and having removable hinge-rods, and hooks connected with said sills and engaging said hinge-rods for locking said jacket in position.

17. A tile-machine including a jacket, a core member movable vertically to operative position within the jacket, a vertically-adjustable core-guide, and a removable plug interposed between the core and jacket for producing an opening in the walls of the tile.

18. A tile-machine including a jacket, a core member movable vertically to operative position within the jacket, a vertically-adjustable core-guide, and a die-block engaging the interior walls of the jacket for shaping one end of the tile.

19. A tile-machine including a jacket, a vertically-slidable core member movable to operative position within the jacket, a vertically-adjustable core-guide, a die-block, engaging the interior walls of the jacket for shaping one end of the tile, and a tamping element adapted to engage the die-block.

850,514. TOY TRAIN. ADOLPH W. BENSON, Minneapolis, Minn., assignor, by mesne assignments, to A. W. Benson Manufacturing Co., Minneapolis, Minn., a Corporation of Minnesota. Filed Jan. 22, 1906. Serial No. 297,128.

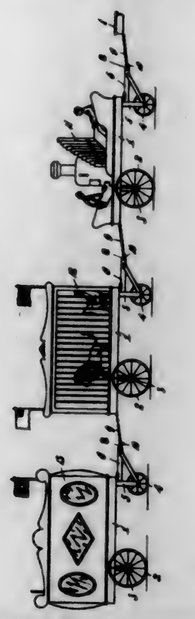

Claim.—A toy train made up of a plurality of trailing carts having mounted thereon ornamental body portions, said carts having at their rear portions slack steering-chains 9, and having at their forward portions pivoted steering-trucks with short forwardly-projecting poles, and means for connecting the poles of rear carts to the intermediate portions of the steering-chains 9 of forward carts in the train, substantially as described.

850,515. COMMODITY CABINET AND RECEPTACLE. JAMES H. BOYD, Chicago, Ill. Filed Sept. 12, 1906. Serial No. 334,285.

Claim.—1. The combination with a commodity-cabinet carrier having a plurality of chambers therein, of a plurality of plates in said receptacles, each plate equipped with a plurality of longitudinal guides, each comprising suitably-spaced alined pairs of flanged lugs, and cases having grooves at their lower ends engaging the flanges of said lugs, for the purpose set forth.

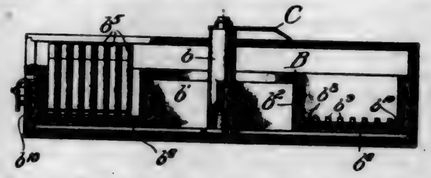

2. A needle-case comprising a cylinder having a closed lower end and equipped with a removable top, said cylinder having near its lower end a circumferential groove, for the purpose set forth.

850,516. WRENCH. CECIL D. BRADSTREET, San Francisco, Cal. Filed Oct. 13, 1906. Serial No. 338,788.

Claim.—A wrench of the character described having a fixed jaw, a movable jaw having a threaded stem, a nut for said stem, a guide receiving said nut and pivoted to the fixed jaw, and springs controlling said guide, the stem of the movable jaw having on each side a longitudinal reinforcing-rib, and the guideway being suitably conformed to fit closely around said ribs, substantially as described.

850,517. ACID-CONDENSER. JOSEPH BROOME, Bayonne, N. J. Filed Feb. 20, 1906. Serial No. 301,999.

Claim.—1. In an acid-condenser the combination of a tower, a column therein with an inner and an outer wall, and having an opening at its upper portion, and an opening at its lower portion through its walls, the said openings connecting the inside of the column with the inside of the tower, inlet-piping connected with the tower, means to force a vapor through the inlet-opening into the tower and column, outlet-piping extending from the tower, perforated division-plates in the tower, and in the column, a spray-pipe between the walls of the column, means to conduct a fluid through the spray-pipe, an outlet-pipe extending from the space between the walls of the column, a siphon supported in the top of the column, a loop connected with the siphon, a tube extending below the loop with openings, means to lead a liquid through the siphon and the openings in the tube, and perforated division-plates in the column.

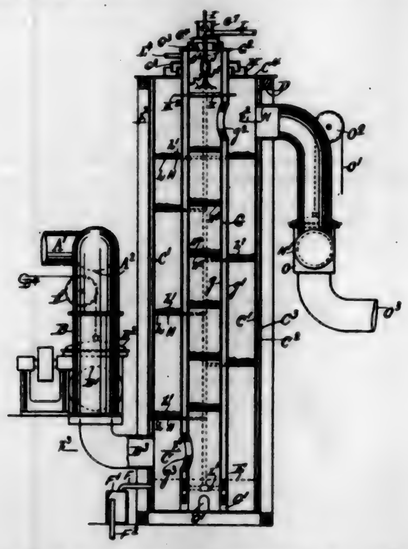

2. In an acid-condenser the combination of a tower, a column therein with an inner and an outer wall and having an opening at its upper portion, and an opening at its lower portion and through its walls, the said openings connecting the inside of the column with the inside of the tower, inlet-piping connected with the tower means to force a vapor through the inlet-opening into the tower and column, outlet-piping extending from the tower, perforated division-plates in the tower, and in the column, a spray-pipe between the walls of the column, means to conduct a fluid through the spray-pipe, an outlet-pipe extending from the space between the walls of the column, a siphon supported in the top of the column, a loop connected with the siphon, a tube extending below the loop with openings, an umbrella-shaped hood extending below the tube, means to lead a liquid through the siphon and the openings in the tube, and perforated division-plates in the column.

3. In an acid-condenser the combination of a tower, a column therein with an inner and an outer wall, and having an opening at its upper portion and an opening at its lower portion and through both of the walls, a cover on the column, a liquid-sealed opening in the cover, a cover on the chamber having a liquid-sealed opening for the column, an inverted cup over the liquid-sealed opening of the column, a receptacle extending from said inverted cup, a pipe leading to the cup, a siphon with an inverted nozzle in the cup, the siphon extending through the cover of the column, a loop extending from the siphon, a tube extending below the loop having openings, an umbrella-shaped hood extending below the tube, means to force a vapor through the tower and column, means to spray a fluid between the walls of the column, an outlet-pipe connected with the space between the walls of the column, means to force a fluid through the tower and column, and means to lead a condensed fluid from the tower and column.

850,518. WINDOW-SHADE AND CURTAIN-POLE SUPPORTER. THOMAS W. BROWN, St. Louis, Mo. Filed Oct. 4, 1906. Serial No. 337,407.

Claim.—1. The combination of a pair of overlapping extensible bars, having longitudinal slots, means for securing the extensible bars to their adjusted position, consisting of U-shaped binding-plates, a clamping-bolt, connecting the extensible bars at a single point, extending through the unslotted portion of one extensible bar and through the slot of the other extensible bar, L-shaped end brackets formed with longitudinal arms having longitudinal slots registering with the longitudinal slots of the adjacent extensible bars and with upright portions having forwardly-projecting wings provided with notches adapted to receive the tips of a shade, inner clamping-bolts seated in the unslotted portions of the end brackets and extending through the longitudinal slots of the extensible bars, and outer bolts seated in the unslotted portions of the extensible bars and extending through the slots of the longitudinal arms.

2. The combination of a pair of overlapping extensible bars, having longitudinal slots, means for securing the extensible bars to their adjusted position, L-shaped end brackets formed with longitudinal arms having longitudinal slots registering with the longitudinal slots of the adjacent extensible bars and with upright portions having forwardly-projecting wings provided with notches adapted to receive the tips of a shade, and perforations, and lateral extensions having vertical open slots, inner clamping-bolts seated in the unslotted portions of the end brackets and extending through the longitudinal slots of the extensible bars, outer clamping-bolts seated in the unslotted portions of the extensible bars and extending through the slots of the longitudinal arms, and supporting-arms formed with socket portions adapted to receive the ends of a pole, downwardly-extending portions, in the form of standards, bent portions extending in front of the lateral extensions, inwardly-projecting right-angle portions seated in the vertical open slots and terminating in horizontal hooks inserted in the perforations of the bracket-wings and bent upwardly.

850,519. APPARATUS FOR CUTTING CORK WAFERS. HERMAN F. BUSCH, Millvale, Pa., assignor to Armstrong Cork Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Mar. 26, 1906. Serial No. 307,985.

Claim.—1. In cork-wafer-cutting mechanism, a holding-chuck, a guide for cork blanks extending therefrom, a gage-plate, and means for projecting the cork blanks against the gage-plate, the gage-plate being arranged to project the blanks a distance at least as great as the width of the holding-chuck; substantially as described.

2. In cork-wafer-cutting mechanism, a holder or magazine, a chuck at its end, and means for projecting the blanks to a predetermined distance, the thickness of the gripping-chuck being not substantially greater than the thickness of the projected cork portion; substantially as described.

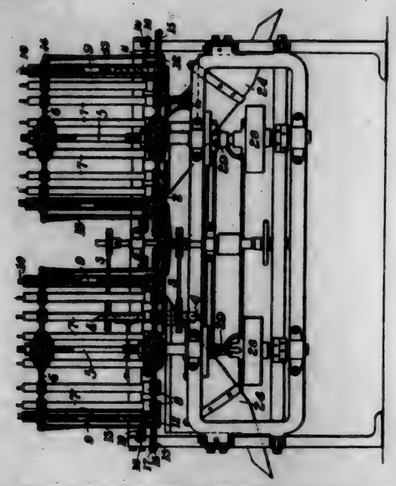

3. In cork-wafer-cutting mechanism, a movable carrier, a series of holding-chucks thereon, magazines for the chucks each arranged to hold a series of cork blanks, mechanism for actuating the chucks, and separated gages against which the cork blanks are moved successively to allow the bark wafer to drop between said gages; substantially as described.

850,520. CULTIVATOR. WILLIAM E. BUTTERFIELD, Ventura, Cal. Filed Dec. 3, 1906. Serial No. 346,125.

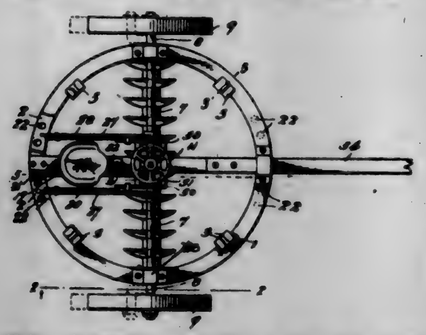

Claim.—A cultivator comprising a supporting annular wheeled frame, an annular frame rotatably suspended therefrom in coincident relation, cultivator-disks carried by said last-named frame, upper and lower bars spanning said frames and passing through the centers thereof, said bars having fixed connection with said respective frames, and a vertical shaft journaled in the uppermost of said bars and having its end fixed in the lowermost of said bars and a handle provided upon said shaft.

850,521. ILLUMINATED SIGN. CHARLES L. CARTER, Marion, Ind. Filed Nov. 20, 1906. Serial No. 344,313.

Claim.—A sign comprising a casing having the front composing a lettered illuminatory sign hinged to the casing, and the back board also hinged to the casing, each capable of being swung open on its hinges, and an individual light and reflector for each letter removably supported in the casing.

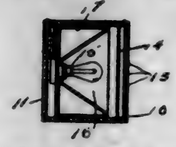

850,522. SPRING-BED. JOHN M. COHRON, Fort Worth, Tex. Filed Feb. 23, 1907. Serial No. 358,842.

Claim.—1. A spring-bed having a frame provided with cross-beams at the lower part, a bed-bottom composed of a spring-frame and springs attached to said frame, spring-supports for said bed-bottom attached to said cross-beams, and pivotal connection at each corner of said bed-bottom for connecting said supports to the corners of said bed consisting of bars pivotally connected to said supports and castings bolted to the corners of said bed-bottom and pivotally connected to said bars.

2. A spring-bed having a frame provided with cross-beams at the lower part thereof, a spring-frame, woven-wire springs attached to said spring-frame, spiral springs reinforcing said woven-wire springs, longitudinal springs attached to said spring-frame and supporting said spiral springs, spring-supports attached to said cross-beams, and pivotal connections for connecting each corner of said bed to said supports consisting of castings rigidly attached to the corners of said bed and bars pivotally connected to said supports and pivotally connected to said castings.

3. A spring-bed having a frame provided with cross-beams at the lower part and a foot-board at upper part thereof, a spring-frame carrying a headboard, woven-wire springs attached to said spring-frame, spiral springs reinforcing said woven-wire springs, longitudinal springs carrying bars to support said spiral springs attached to said spring-frame, spring-supports attached to said cross-beams, and pivotal connection of each corner of said bed with said supports consisting of castings rigidly attached to said bed, bars, bolts provided with ball-bearings connecting said bars to said supports, and bolts provided with ball-bearings connecting said castings with said bars.

850,523. INCUBATOR. JASON L. COUSINS, Warren, Pa., assignor to Cousins Incubator Company, Warren, Pa., a Corporation of Pennsylvania. Filed Nov. 1, 1906. Serial No. 341,589.

Claim.—1. An incubator, comprising a main casing in which there is formed an egg-chamber, and a combined fresh-air and moisture containing chamber walled off from the egg-chamber; a heat-radiator located in the upper portion of the egg-chamber and separated by an air-space over its top and at its sides from the inner walls of the said casing; a heat-pipe extending upward through said fresh-air chamber into said radiator, and a tube leading from the upper portion of said fresh-air and moisture containing chamber and opening for the delivery of air from said chamber at a point over the top of said radiator between the same and the top wall of said casing.

2. An incubator, comprising a main casing in which there is formed an egg-chamber, and a combined fresh-air and moisture containing chamber walled off from the egg-chamber; a heat-radiator located in the upper portion of the egg-chamber and separated by an air-space over its top and at its sides from the inner walls of the said casing; a heat-pipe extending upward through said fresh-air chamber into said radiator, a tube leading from the upper portion of said fresh-air and moisture containing chamber and opening for the delivery of air from said chamber at a point over the top of said radiator between the same and the top wall of said casing, and a moisture-receptacle slidable into said fresh-air and moisture chamber from the outside.

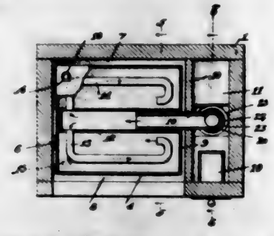

3. An incubator, comprising a main casing in which there is formed an egg-chamber, and a combined fresh-air and moisture containing chamber walled off from said egg-chamber; a heat-radiator located in the upper portion of the egg-chamber and comprising a hot-air tank separated by an air-space over its top and around its sides from the inner walls of said casing; a heat-pipe extending upward through said fresh-air chamber into said tank, and a tube passing from said fresh-air and moisture containing chamber over the top of said radiator between the same and the top wall of said casing to a point substantially at the center of the radiator-top where the said tube discharges air from said chamber.

4. An incubator, comprising a main casing in which there is formed an egg-chamber, and a combined fresh-air and moisture containing chamber walled off from said egg-chamber; a heat-radiator comprising an air-tank and radiator-pipes inclosed in and discharging into said tank, said tank located in the upper portion of the egg-chamber and separated by an air-space over its top and around its sides from the inner walls of said casing; a heat-pipe extending upward through said fresh-air and moisture containing chamber and connected to the radiator-pipe in said tank; a tube passing from said fresh-air and moisture containing chamber to a point over the top of said radiator-tank between the same and the top wall of said casing, and adapted to discharge air from said chamber at said point, and air-outlets leading from said air-tank through the top of said main casing.

5. An incubator, comprising a main casing in which there is formed an egg-chamber having ventilating-openings through its bottom, and a combined fresh-air and moisture containing a chamber walled off from the egg-chamber; a heat-radiator located in the upper portion of the egg-chamber and separated by an air-space over its top and at its sides from the inner walls of the said casing; air-outlets from said radiator through the top of the incubator, a heat-pipe extending upward through said fresh-air and moisture containing chamber into said radiator; a tube passing from said fresh-air and moisture containing chamber to a point substantially over the center of the top of said radiator between the same and the top wall of said casing where said tube discharges air from said chamber, and slide-valves to control said ventilating-openings in the bottom of the egg-chamber.

6. An incubator, comprising a main casing in which there is formed an egg-chamber and a combined fresh-air and moisture containing chamber walled off from said egg-chamber at one end of said casing, said air and moisture containing chamber having an opening through its bottom connecting said chamber with the outside air; a tubular jacket extending from said opening below the bottom of said casing; a heat-radiator in the upper portion of said egg-chamber; a lamp-tube extending through said jacket with an air-space between the two for fresh air to pass through into said fresh-air and moisture containing chamber, said lamp-tube passing to the upper portion of said fresh-air and moisture containing chamber and thence to said radiator, and a jacket surrounding said lamp-tube and separated therefrom by air-space.

850,524. WASHING-MACHINE. CHARLES C. DAVIS, Gaffney, S. C. Filed Feb. 12, 1906. Serial No. 300,730.

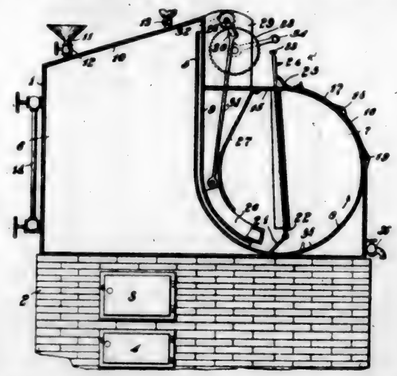

Claim.—1. A washing-machine having a clothes-receptacle provided with a substantially semicylindrical bottom, an arcuate plunger in said receptacle, and means for admitting steam into the lower portion of the receptacle in substantial parallelism with the bottom thereof.

2. A washing-machine having a clothes-receptacle provided with a substantially semicylindrical bottom, an arcuate plunger in said receptacle, means to admit steam into the lower portion of the receptacle in substantial parallelism with the bottom thereof, and means for deflecting the discharge of steam into the receptacle.

3. In a washing-machine, the combination of a case, a partition dividing the case into a boiler-compartment and a clothes-compartment, an arcuate plunger mounted in the clothes-compartment adjacent said partition and a steam-passage leading from the boiler to the clothes-compartment and discharging into the bottom of the compartment in a direction to impart a rotary movement to the mass of articles being cleansed.

4. A washing-machine comprising a case, an upright partition dividing the case into a boiler-compartment and a clothes-compartment, said partition terminating short of the top of the case with its lower portion directed forwardly to form a substantially semicylindrical bottom for the clothes-compartment, another partition leading downwardly from the top of the case in substantial parallelism with the front of the first-mentioned partition and terminating short of the bottom thereof, the space between the two partitions constituting a steam-passage leading from the boiler into the clothes-compartment, and an arcuate plunger in the clothes-compartment mounted adjacent said last-mentioned partition.

5. A washing-machine comprising a clothes-receptacle, means for admitting steam into the receptacle in a direction to impart a rotary movement to the mass of clothes as a whole, a steam-deflector pivotally mounted within the clothes-receptacle, a controlling-rod for the deflector, and means coöperating with the rod to hold the deflector at any adjustment.

6. A washing-machine comprising a clothes-receptacle, means for admitting steam-pressure into direct contact with the clothes to rotate the mass of clothes as a whole, a tiltable deflector-plate mounted across the steam-outlet,

an adjusting-rod connected to the plate and provided with teeth, and a ratchet coöperating with the teeth.

850,525. CHURN. NATHAN P. DAZEY, Dallas, Tex. Filed May 15, 1906. Serial No. 317,032.

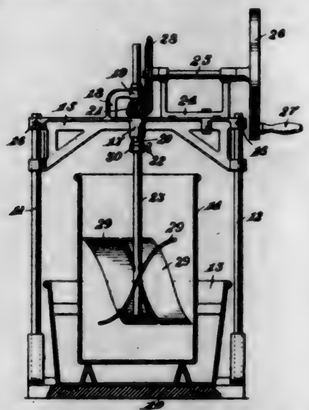

Claim.—Combined in a churn, a base-plate, an upright on oppositely-disposed sides of said base-plate, a churn-body supported on said base-plate, a vertical standard mounted in each upright, a frame having sockets on its ends slidably mounted on said standards, means on said frame to secure it in adjusted position on said standards, a bearing on said frame, a bracket also on said frame and carrying a bearing above the first-mentioned bearing the two bearings being vertically disposed above the center of the churn-body, a sleeve rotatably mounted in said bearings and provided with a pinion, a dasher-rod slidable in said sleeve and means for clamping the sleeve to the rod, and mechanism for rotating said dasher-rod through its connection to said pinion.

850,526. AUTOMATIC CARD-STOP FOR TIME-RECORDERS. JOHN DEY and ALEXANDER DEY, Syracuse, N. Y., assignors to Dey Time Register Company, Syracuse, N. Y., a Corporation of New York. Filed May 26, 1905. Serial No. 262,388.

Claim.—1. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack connected with said stop, actuating and holding pawls coacting with said rack, clock-actuated means adapted intermittently to operate said actuating-pawl, means adapted to release said pawls, and means upon said clock-actuated means adapted to actuate said releasing means.

2. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack connected with said stop, actuating and holding pawls coacting with said rack, clock-actuated means adapted intermittently to operate said actuating-pawl, releasing means adapted to coact with said pawls, means controlled in accordance with the position of the said rack adapted to place said releasing means in operative condition and means upon said clock-actuated means adapted to operate said releasing means.

3. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack connected with said stop, actuating and holding pawls coacting therewith, a clock-actuated member, means actuated from said clock-actuated member adapted upon the same rotating in one direction to operate said actuating-pawl and adapted upon said clock-actuated member rotating in the opposite direction to remain inoperative with respect to said actuating-pawl, and means controlled in accordance with the position of said rack and operated by means upon said clock-actuated member adapted to release said actuating and holding pawls.

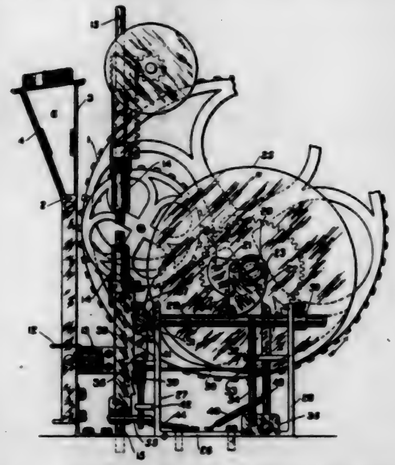

4. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack operatively connected with said stop, actuating and holding pawls coacting therewith, clock-actuated means adapted intermittently to operate said actuating-pawl, means adapted to release said pawls, means upon said clock-actuated means adapted to actuate said releasing means, and means controlled in accordance with the position of said rack adapted to place said releasing means in operative condition.

5. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the movement in one direction of a coacting record-card, a rack connected with said stop, actuating and holding pawls coacting with said rack, clock-actuated means adapted intermittently to operate said actuating-pawl, means adapted to release said actuating and holding pawls, means on said clock-actuated means adapted to operate said releasing means, and means controlled in accordance with the position of said rack to move said releasing means into operative relation to both pawls.

6. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack connected with said stop and actuating and holding pawls coacting therewith, clock-actuated means adapted intermittently to operate said actuating-pawl, a releasing member, means operated by said clock-actuated means adapted to operate said releasing member, and means carried by said rack adapted to throw said releasing member into operative relation to said actuating and said holding pawls.

7. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack connected with said stop, actuating and holding pawls coacting therewith, a releasing member adapted to throw said actuating and holding pawls into inoperative position, clock-actuated means adapted intermittently to operate said actuating-pawl and to move said releasing member, and means controlled in accordance with the position of said rack adapted to throw said releasing member into operative relation to both said actuating and said holding pawls.

8. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack connected with said stop, actuating and holding pawls coacting therewith, a clock-actuated member, a cam carried by said clock-actuated member adapted intermittently to operate said actuating-pawl, a releasing member adapted to swing into contact with said actuating and said holding pawls and throw the same into inoperative condition, means controlled by said clock-actuated member adapted to actuate said releasing member, and means carried by said rack adapted to move said releasing member into operative relation to both of said pawls.

9. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack connected with said stop, actuating and holding-pawls coacting therewith, a clock-actuated member, a cam carried by said clock-actuated member adapted upon being rotated in one direction intermittently to operate said actuating-pawl, a releasing member adapted to swing into contact with said actuating and said holding pawls and throw the same into inoperative position, means controlled by said clock-actuated member adapted to actuate said releasing member, means carried by said rack adapted to place said releasing member in operative relation to both of said pawls, and means adapted upon said clock-actuated member being rotated in the opposite direction to prevent the operation thereby of said actuating pawl or releasing member.

10. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack connected with said stop, actuating and holding pawls coacting therewith, a clock-actuated member, a cam carried by said clock-actuated member adapted upon the same being rotated in one direction intermittently to operate said actuating-pawl and upon said clock-actuated member being rotated in an opposite direction to remain inoperative with respect to said actuating-pawl, a releasing member adapted to swing into contact with said actuating and said holding pawls and throw the same into inoperative position, means controlled by said clock-actuated member adapted to actuate said releasing member, means carried by said rack adapted to move said releasing member into operative relation to both of said pawls, and means adapted visually to indicate the position of said stop.

11. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a toothed member operatively connected with said stop, means adapted to move said toothed member, means adapted to hold the same in a predetermined position, and means adapted to throw said toothed member upon said holding means.

12. In a time-recorder, in combination, printing mechanism, means controlling the position of a coacting record-receiving member, a toothed member operatively connected therewith, means adapted to actuate said toothed member and means adapted to remove said actuating means from engagement therewith immediately after each actuation thereof.

13. In a time-recorder, in combination, printing mechanism, means adapted to determine the position of a coacting record-receiving member, a toothed member operatively connected with said means, a pawl adapted to actuate said toothed member, a pawl adapted to hold the same substantially in the position in which it has been moved and means adapted to operate said actuating-pawl and to release the same from engagement with said rack immediately subsequent to each operation thereof.

14. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the movement in one direction of a coacting record-card, a rack operatively connected with said stop, actuating and holding pawls coacting with said rack, clock-actuated means adapted intermittently to operate said actuating-pawl, and means adapted to withdraw said actuating-pawl from engagement with said rack immediately subsequent to each operation thereof.

15. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack operatively connected with said stop, an actuating-pawl coacting with said rack and adapted to raise the same, a holding-pawl adapted to swing beneath one of the teeth of said rack in the position into which it has been raised by said actuating-pawl, said holding-pawl having a clearance with reference to said tooth, clock-actuated means adapted to operate said actuating-pawl, and means adapted to release said actuating-pawl from said rack subsequent to each operation thereof and permit the same to rest upon said holding-pawl.

16. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack operatively connected to said stop, an actuating-pawl coacting with said rack and adapted to raise the same, a holding-pawl adapted to swing beneath one of the teeth of said rack in the position into which it has been raised by said actuating-pawl, said holding-pawl having a clearance with reference to said tooth, clock-actuated means adapted to operate said actuating-pawl, means adapted to release said actuating-pawl from said rack subsequent to the operation thereof and permit the same to rest upon said holding-pawl, and means adapted to release both pawls upon said rack being moved throughout a predetermined distance.

17. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack operatively connected with said stop, actuating and holding pawls coacting with said rack, clock-actuated means adapted intermittently to operate said actuating-pawl, means adapted to release said pawls, means upon said clock-actuated means adapted to actuate said releasing means, and means adapted immediately subsequent to each operation of said actuating-pawl to withdraw the same from engagement with said rack and permit said rack to be supported by said holding-pawl.

18. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack operatively connected with said stop, actuating and holding pawls coacting therewith, clock-actuated means adapted intermittently to operate said actuating-pawl, means adapted to release said pawls, means controlled in accordance with the position of said rack adapted to place said releasing means in operative condition, and means adapted immediately subsequent to each operation of said actuating-pawl to withdraw the same from engagement with said rack.

19. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack operatively connected with said stop, actuating and holding pawls coacting therewith, clock-actuated means adapted upon being driven in one direction intermittently to operate said actuating-pawl and upon being driven in the opposite direction to remain inoperative with respect to said actuating-pawl, means adapted to release said pawls, means controlled in accordance with the position of said rack adapted to place said releasing means in operative condition, and means adapted immediately subsequent to each operation of said actuating-pawl to withdraw the same from engagement with said rack.

20. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack operatively connected with said stop, actuating and holding pawls coacting therewith, clock-actuated means adapted intermittently to operate said actuating-pawl, means adapted to release said pawls from engagement with said rack, means controlled in accordance with the position of said rack adapted to place said releasing means in operative condition and means controlled by said clock-actuated means adapted to cause said releasing means to withdraw said actuating-pawl from operative relation with said rack immediately subsequent to each operation thereof.

21. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the relative movement in one direction of a coacting record-card, a rack operatively connected with said stop, actuating and holding pawls coacting therewith, clock-actuated means adapted upon being rotated in one direction intermittently to operate said actuating-pawl and upon being rotated in the opposite

direction to remain inoperative with respect to said actuating-pawl, means adapted to release said pawls from engagement with said rack, means controlled in accordance with the position of said rack adapted to place said releasing means in operative condition, and means controlled by said clock-actuated means adapted to withdraw said actuating-pawl from operative relation with said rack immediately subsequent to each operation thereof.

22. In a time-recorder, in combination, printing mechanism, means controlling the position of a coacting record-receiving member with relation to the printing mechanism, a member operatively connected with said means, means adapted to actuate said member, and means adapted to remove said actuating means from engagement with said member immediately after each actuation thereof.

23. In a time-recorder, the combination of printing mechanism, means to determine the position of a card relative to said mechanism, actuating means arranged to engage said determining means to impart an intermittent step-by-step movement thereto, a holding device to hold the determining means in each of the positions to which it is moved and means to disengage the actuating means from the determining means after each actuation of the latter.

24. In a time-recorder, the combination of printing mechanism, means to determine the position of a card relative to said mechanism, actuating means arranged to engage said determining means to impart an intermittent step-by-step movement thereto, a holding device to hold the determining means in each of the positions to which it is moved, means to disengage the actuating means from the determining means after each actuation of the latter, and means to cause the disengaging means to move both the actuating and holding means from operative engagement with the determining means after the latter has completed a cycle of movements.

25. In a time-recorder, the combination of printing mechanism, means to determine the position of a card relative to said mechanism, actuating means arranged to engage said determining means to impart an intermittent step-by-step movement thereto, a holding device to hold the determining means in each of the positions to which it is moved, means to disengage the actuating means from the determining means after each actuation of the latter, and means operating in accordance with the position of the determining means, to cause the disengaging means to move both the actuating and holding means from operative engagement with the determining means after the latter has completed a cycle of movements.

26. In a time-recorder, the combination of printing mechanism, means to determine the position of a card relative to said mechanism, actuating means arranged to engage said determining means to impart an intermittent step-by-step movement thereto, a holding device to hold the determining means in each of the positions to which it is moved, and clock-actuated means for disengaging the actuating means from the determining means after each actuation of the latter.

27. In a time-recorder, the combination of printing mechanism, means to determine the position of a card relative to said mechanism, a clock-controlled actuating means arranged to engage said determining means to impart an intermittent step-by-step movement thereto, a holding device to hold the determining means in each of the positions to which it is moved, and clock-actuated means for disengaging the actuating means from the determining means after each actuation of the latter.

28. In a time-recorder, the combination of a printing mechanism, means to determine the position of a card relative to said mechanism, clock-controlled actuating means arranged to engage said determining means to impart an intermittent step-by-step movement thereto, and clock-actuated means for disengaging the actuating means from the determining means after each actuation of the latter.

29. In a time-recorder, the combination of printing mechanism, a card-stop movable relative to the printing mechanism, clock-controlled actuating means arranged to engage said stop to impart thereto an intermittent step-by-step movement, a holding device to hold the stop in the several positions to which it is moved, a releasing device to disengage the actuating means from the stop after each movement of the latter and operating in accordance with the position of the stop to disengage both the actuating means and the holding device from the stop after the stop has completed a cycle of movements.

30. In a time-recorder, the combination of a printing mechanism, a card-stop movable relative to the printing mechanism, clock-controlled actuating means arranged to engage said stop to impart thereto an intermittent step-by-step movement, a holding device to hold the stop in the several positions to which it is moved, means to automatically disengage the actuating means from the stop after each movement of the latter and means to disengage both the actuating and holding means from the stop when the latter has completed a cycle of movements.

31. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the movement in one direction of a coacting record-card, a toothed member connected with said stop, actuating and holding pawls coacting with said toothed member, clock-controlled means adapted upon rotation in one direction intermittently to operate said actuating-pawl, and adapted to be rotated in a reverse direction without affecting said actuating-pawl.

32. In a time-recorder, in combination, printing mechanism, a stop adapted to limit the movement in one direction of a coacting record-card, a toothed member connected with said stop, actuating and holding pawls coacting therewith, and a clock-actuated cam adapted upon rotation in one direction intermittently to operate said actuating-pawl, said cam being mounted to become ineffective to operate said actuating-pawl upon rotation in the opposite direction.

33. In a time-recorder, in combination, printing mechanism, a movable abutment adapted to limit the movement in one direction of a coacting record-card, a toothed member operatively connected with said abutment, an actuating-pawl and a holding-pawl coacting with said toothed member, clock-actuated means adapted to operate said actuating-pawl, and means controlled by said toothed member and movable relative thereto to throw said holding member into inoperative position.

34. In a time-recorder, in combination, a toothed member, holding and actuating pawls coacting therewith, a clock-controlled means adapted intermittently to operate said actuating-pawl, a single automatically-acting means adapted simultaneously to maintain said holding and said actuating pawls out of engagement with said toothed member, and means adapted to render said last-mentioned means operative upon said actuating-pawl being operated a predetermined number of times.

35. In a time-recorder, in combination, printing mechanism, an abutment adapted to limit the movement in one direction of a coacting record-card, a toothed member operatively connected with said abutment, holding and actuating pawls coacting with said toothed member, clock-controlled means adapted intermittently to operate said actuating-pawl, and a single member adapted upon said actuating-pawl being operated a predetermined number of times to hold said actuating and holding pawls simultaneously out of engagement with said toothed member.

36. In a time-recorder, in combination, printing mechanism, an abutment adapted to limit the movement in one direction of a coacting record-card, a toothed member operatively connected with said abutment, holding and actuating pawls coacting with said toothed member, clock-controlled means adapted intermittently to operate said actuating-pawl, and a single member adapted upon said actuating-pawl being operated a predetermined number of times to hold said actuating and holding pawls simultaneously out of engagement with said toothed member, said last-mentioned single member being controlled in accordance with the position of said toothed member.

37. In a time-recorder, in combination, printing mechanism, an abutment adapted to limit the movement in one direction of a coacting record-card, a clock-actuated member, means adapted to be actuated by the rotation of said clock-actuated member in one direction to move said abutment, said clock-actuated member being ineffective for the operation of said moving means upon being rotated in the opposite direction.

38. In a time-recorder, in combination, printing mechanism, an abutment adapted to limit the movement in one direction of a coacting record-card, a clock-actuated member, means adapted to move said abutment, a cam upon said clock-actuated member adapted to actuate said moving means upon said cam being rotated in one direction, said cam being ineffective for the operation of said moving means upon being rotated in another direction.

39. In a time-recorder, in combination, printing mechanism, an abutment adapted to limit the movement in one direction of a coacting record-card, means adapted to move said abutment, a rotatable clock-actuated member, and a cam on said clock-actuated member pivoted at a point eccentric to the axis thereof adapted to engage and actuate said moving means.

40. In a time-recorder, in combination, printing mechanism, an abutment adapted to limit the movement in one direction of a coacting record-card, means adapted to move said abutment, a clock-actuated member, a cam pivoted on said clock-actuated member eccentric to the axis thereof adapted to engage and actuate said moving means, and a stop adapted to limit the movement of said cam in a direction away from said axis.

850,527. BICYCLE-SUPPORT. CHARLES P. ELLIS, New York, N. Y. Filed Oct. 19, 1906. Serial No. 339,635.

Claim.—1. In a bicycle-support, a brace member having two downwardly and laterally diverging legs, each of which constitutes a socket, a brace-rod adapted to be inserted in either one of the sockets, and means for securing said member to a bicycle-frame; substantially as described.

2. In a bicycle-support, the combination with a socket-plate removably secured to the lower portion of the seat-post, said plate having oppositely-extending bell-mouthed sockets, of a brace arranged to be inserted in either socket, and clips upon the frame arranged to hold the brace when not in use.

3. The combination with the seat-post of a bicycle-frame, of a ring secured thereto, a brace having a collar arranged to rest upon the ring, and a spring-clip arranged to hold the upper portion of the brace.

4. The combination with the seat-post of a bicycle-frame, of a ring secured thereto, a brace having a collar provided with a gasket resting upon and within the ring, a spring-clip arranged to hold the upper end of the brace, said brace having an upper gasket arranged to contact with the clip and also an intermediate gasket to contact with the pedal, the gaskets being arranged to prevent rattling and defacing of the parts.

850,528. SETTING-GAGE FOR CREAM-SEPARATORS. FRANK A. GEHRMAN, Frances, Wash. Filed May 9, 1906. Serial No. 316,018.

Claim.—1. A separator-setting-up gage, comprising a plate adapted to be loosely supported on the separator, a plate adjustably secured thereto and having a slot adapted to receive a lug on the separator to hold said first plate in position, and an offset cross-plate secured to said first plate and projecting adjacent to the rotating spindle.

2. A separator-setting-up gage, comprising a plate adapted to be loosely supported on the separator, a plate adjustably secured thereto and having a slot adapted to receive a lug on the separator to hold said first plate in position, and an offset cross-plate adjustably secured to said first plate and projecting adjacent to the rotating spindle.

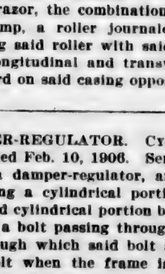

850,529. SAFETY-RAZOR. FRANK X. GEORGE, Jr., Brooklyn, N. Y. Filed Dec. 21, 1906. Serial No. 348,964.

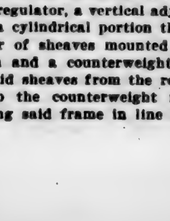

Claim.—1. In a safety-razor, the combination with the blade and casing of means for giving the blade a cutting stroke in a direction oblique to the line of travel of the razor.

2. In a safety-razor, the combination with the blade and casing of means for giving to the blade a reciprocating motion longitudinally and transversely.

3. In a safety-razor, the combination with the casing, of a roller, a reciprocating blade and gearing connecting the blade with the roller.

4. In a safety-razor, the combination with a casing, of a clamp for holding a razor-blade, rotary crank-disks, to which said clamp is connected at its ends, a roller journaled in said casing and gearing for transmitting motion from the roller to said crank-disks.

5. In a safety-razor, the combination with a casing, of a razor-blade clamp, a roller journaled to said casing, gearing connecting said roller with said clamp for giving to the latter a longitudinal and transverse reciprocating motion and a guard on said casing opposite to said roller.

850,530. DAMPER-REGULATOR. CYRUS S. HOOD, Corning, N. Y. Filed Feb. 10, 1906. Serial No. 300,376.

Claim.—1. In a damper-regulator, an adjusting-rod, a pulley-frame having a cylindrical portion through which the rod passes, said cylindrical portion being provided with a transverse slot, a bolt passing through said slot, a supporting-block through which said bolt also passes, a nut to tighten the bolt when the frame is in position, two sheaves mounted in the frame one above the other, a damper connection, a chain running from the rod under the upper pulley to said connection, a counterbalancing-weight, and a chain passing over the under pulley and connecting said weight to the lower end of the rod.

2. In a damper-regulator, a vertical adjusting-rod, a pulley-frame having a cylindrical portion through which the rod passes, a pair of sheaves mounted in the frame, a damper connection and a counterweight, chains running under and over said sheaves from the rod to the damper connection and to the counterweight respectively, and means for fastening said frame in line with the damper connection.

850,530.

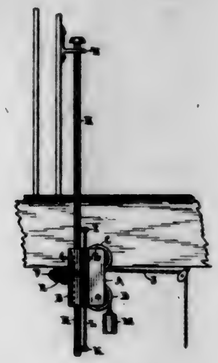

850,531. COTTON-CHOPPER. FREDERICK M. HUTCHINSON, Nashville, Ark. Filed July 25, 1906. Serial No. 327,756.

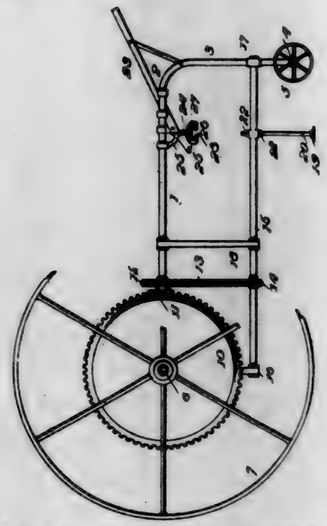

Claim.—1. In a cotton-chopper, the combination of a supporting-frame, ground-wheels applied thereto at the front portion thereof, guide-wheels attached to the frame at the rear portion of the same; and chopping mechanism including a hoe-shaft, means for operating said hoe-shaft, an arm projecting from the shaft in advance of and proximate to the guide-wheels, and a blade attached to the arm; and a cleaner comprising a frame pendent from the frame of the implement and including cleaning members adjustably mounted on said frame and adapted to engage the blade of the chopping mechanism as the latter rotates.

2. In a cotton-chopper, the combination of a supporting-frame, chopping mechanism including a chopping-blade, means for operating the chopping-blade, and a cleaner for removing foreign matter from the chopping-blade as it operates.

3. In a cotton-chopper, the combination of a supporting-frame, chopping mechanism mounted thereon including an adjustable chopping-blade, means for actuating said chopping-blade, and an adjustable cleaner carried by the frame and coöperating with said blade.

4. In a cotton-chopper, the combination of a supporting-frame, a drive-shaft mounted thereon, chopping mechanism including an arm adjustably mounted on said drive-shaft, a blade carried by said arm, a cleaner comprising a frame attached to the frame of the implement, and a bar adjustably mounted on said frame and having cleaning members coacting with the blade as it rotates with the shaft by which it is carried.

850,532. BROOM-MACHINE. CLINTON R. LEE, Lincoln, Nebr. Filed Sept. 5, 1906. Serial No. 333,329.

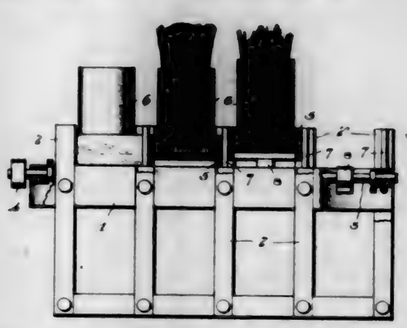

Claim.—1. In a broom-straw evener, a straw-holder having a solid flat bottom, in combination with a suitable mechanism adapted to jounce said holder to cause the tips or brush ends of the straws contained therein to assume a uniform evenness.

2. In a broom-straw evener, the combination with a rotatable shaft provided with one or more cams rigidly secured thereon, of a loosely-seated broom-straw holder having a solid flat bottom, and means for imparting rotation to said shaft to cause said cams to contact with said holders, whereby a jouncing movement is imparted to said holders to cause a uniform evenness of the tips or brush ends of the broom-corn contained therein.

850,533. EARTH-AUGER. THOMAS F. LITAKER, Concord, N. C. Filed May 29, 1906. Serial No. 319,376.

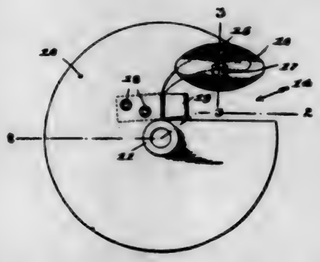

Claim.—1. In an earth-auger, a body having an operating-stem, a cutter extending at an angle to the radius of the body, and a cutting-disk mounted for rotation transversely of the cutter.

2. In an earth-auger, a body having an aperture extending thereinto from the periphery thereof and an operating-stem, a cutting-disk mounted for rotation in said aperture, and a cutting-blade between said disk and stem.

3. In an earth-auger, a body having an operating-stem, a cutter detachably connected to said body and extending at an angle to the radius of the same, a cutting-disk, and means for detachably connecting said disk to said body for rotation at an angle to the cutter.

4. In an earth-auger, a body having an aperture projecting thereinto from its periphery and an operating-stem, a cutting-disk, means for detachably connecting said disk to said body for rotation in said aperture, and a cutter depending from said body and connected thereto between the disk and the center of the body.

5. In an earth-auger a body having an operating-stem, and a cutting-disk mounted for rotation upon the body at an incline to the plane thereof and at an angle to the radius of the body.

6. In an earth-auger a body having an operating-stem, a cutting-disk mounted for rotation upon the body and inclined to the plane thereof and at an angle to the radius of said body, and a stationary cutter attached to the body and depending therefrom.

7. In an earth-auger, a body having an operating-stem and provided with a recess, and a cutting-disk mounted for rotation upon one of the walls of said recess and inclined to the plane of the body.

8. In an earth-auger, a body having an operating-stem and provided with a recess, a cutting-disk mounted for rotation upon one of the walls of said recess and inclined to the plane of the body, and a stationary cutter depending from said body.

9. In an earth-auger, a body having an earth-penetrating stud and with an operating-stem and provided with a recess having one wall at an angle to the radius of the body, and a cutting-disk mounted for rotation upon said wall and disposed at an angle to the plane of the body.

10. In an earth-auger, a body having an earth-penetrating stud and with an operating-stem and provided with a recess having one wall at an angle to the radius of the body, a cutting-disk mounted for rotation upon said wall and disposed at an angle to the plane of the body, and a stationary cutter depending from said body.

11. In an earth-auger, a body having a recess, one wall of which is at an angle to the radius of the body and with a threaded aperture, a threaded stem, and a threaded earth-penetrating stud detachably engaging said threaded aperture from opposite sides of the body, and a cutting-disk mounted for rotation upon said wall of the recess and at an angle to the plane of the plate.

12. In an earth-auger, a body having a recess, one wall of which is at an angle to the radius of the body and with a threaded aperture, a threaded stem, and a threaded earth-penetrating stud detachably engaging said threaded aperture from opposite sides of the body, a cutting-disk mounted for rotation upon said wall of the recess and at an angle to the plane of the plate, and a stationary cutter depending from said body.

850,534. BELT. IRWIN G. LONGENECKER, Elizabethtown, Pa. Filed June 8, 1906. Serial No. 320,881.

Claim.—1. A belt adapted to engage the exterior walls of the trousers and having a plurality of loops slidably mounted thereon and retained in position by a transverse row of stitching, one end of each loop being projected beyond the stitching to form a flexible extension adapted to engage the buttons of said trousers, said loops being reinforced by U-shaped metallic strips.

2. A belt adapted to engage the exterior walls of the trousers and having a plurality of rigid loops slidably mounted thereon and each provided with a flexible extension adapted to be folded over the free edge of the waistband of the trousers for engagement with the adjacent suspender-buttons.

3. The combination with an outer garment having fastening devices secured to the inner walls thereof, an undergarment supported by said fastening devices, and a belt engaging the exterior walls of the outer garment and having a plurality of loops slidably mounted thereon and provided with flexible extensions adapted to be folded downwardly over the adjacent edge of said outer garment and in contact with the undergarment for engagement with said fastening devices.

850,534.

850,535. DRAFT-EQUALIZER. WILLIAM MATTESON, Doland, S. D. Filed Apr. 14, 1906. Serial No. 311,647.

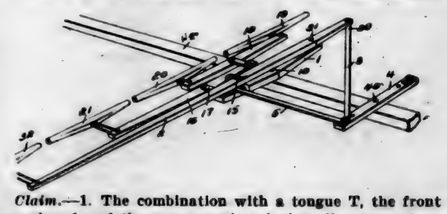

Claim.—1. The combination with a tongue T, the front cross-bar 1 and the rear cross-bar 4 pivotally mounted on the said tongue; of an equalizer-bar 5 pivotally secured at its opposite ends to the said front and rear cross-bars, a diagonally-disposed side-draft bar 3 secured at one end to the rear cross-bar at a point adjacent the bar 5, the pull-lever 2 pivotally connected to the front end of the diagonally-disposed draft-bar 3 and pivotally mounted on the end of bar 1 adjacent the said bar 3, a singletree 32 connected to the front end of the lever 2, a doubletree 16 pivotally connected to the front cross-bar 1 adjacent the pivotal connection of the bar 5 therewith, and the singletree 21 and doubletree 18 connected with the doubletree 16, all being arranged substantially as shown and described.

2. The combination with a draft-tongue, the front and rear cross-bars, the longitudinally-extended draft-bar 5 and diagonally-extended draft-bar 3, said bars being both connected with one, the inner, end of the cross-bar 4, one of the said bars 5 being connected with the corresponding end of the cross-bar 1, the pull-lever 2 pivotally mounted on the outer end of the cross-bar and pivotally connected with the outer end of the diagonal bar 3, the U-shaped stop member 15 mounted on the draft-bar 1 and having rearwardly-extending fingers adapted to project over the lever 2, the front of said member 15 being closed to form an abutment for the lever 2 and single and double trees connected to the lever 2, substantially as shown and described.

3. As an improvement in equalizers, the combination with the tongue T, the front and rear cross-bars 1 and 4,

the equalizer-bar 5 connected to the adjacent ends of the cross-bars 4 and 1, the diagonally-extended draft-bar 3, adjustably and pivotally connected with the inner end of the cross-rod 4, the lever 2 pivotally connected to the outer end of the cross-bar 1 and the outer end of the bar 3, the doubletree 16 pivotally connected to the front cross-bar 1 at a point adjacent the connection of the bar 3 therewith and the singletree 32 connected to the outer end of the lever 2, as set forth.

4. A draft-equalizer as described, the combination with the tongue T, the front and rear cross-bars 4, the longitudinal brace-bar 5 and the diagonally-disposed equalizer-bar 3, the lever 2 pivotally connected to the outer end of the cross-bar 1 and the outer end of the member 3, a loop projected forwardly from the draft member 1 having a turn-back that slips over the lever 2, and forms a stop for engaging its front edge, a clip member 17 secured to the extreme outer edge of the member 1 and having eyes or brackets to receive the single or double tree, substantially as shown.

5. A draft-equalizer, in combination with a draft-tongue, the front and rear cross-bars pivotally mounted thereon, a connection joining the two bars, a draft-distributing bar disposed diagonally with respect to the draft-tongue, and having its outer or front end projected substantially in alinement with the adjacent end of the front cross-bar, a long pull-lever pivotally connected at its outer end to the outer end of the diagonal bar and to the front cross-bar adjacent its connection to the diagonal bar and a loop stop member mounted on the inner end of the front cross-bar and adapted to project over and limit the forward pull of the lever 2, for the purposes specified.

850,536. GUARD-RAIL SYSTEM. ANDREW MORRISON, Pittsburg, Pa. Filed Mar. 6, 1906. Serial No. 304,491.

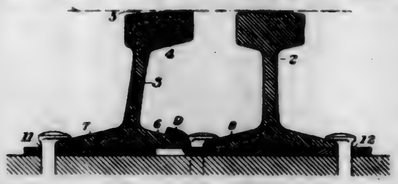

Claim.—1. As a new article of manufacture, a rolled guard-rail having a T-head, an inclined web, and rolled base-flanges, one of said flanges being of less width than the other, the vertical plane of the edge of the narrower flange passing through the head of the rail at a point beyond the juncture of the head and flange; substantially as described.

2. In a guard-rail system, a main rail, and a guard-rail having a T-head whose upper surface is at least as low as the tread-surface of the main rail, the guard-rail also having an inclined web and rolled base-flanges, one of which is of less width than the other the vertical plane of the edge of the narrower flange passing outside of the junction of the head and web; substantially as described.

3. In a guard-rail system, a main rail, and a guard-rail having an inclined web, rolled base-flanges, one of which is of less width than the other, and a T-head having an inclined top surface whose inner edge is higher than its outer edge and is approximately in the plane of the tread-surface of the main rail; substantially as described.

4. In a guard-rail system, a guard-rail having an inclined web, a T-head lying mainly to one side of the web, and rolled base-flanges, one of which is narrower than the other, the narrower flange being below the larger portion of the head, and a tie-plate extending under both the main rail and the guard-rail, said plate having a clip engaging an opening in the narrower flange of the guard-rail; substantially as described.

5. As a new article of manufacture, a rolled guard-rail having a T-head, an inclined web, and rolled base-flanges one of said flanges being of less width than the other and having an opening therein to receive a securing-clip, the vertical plane of the edge of said flange passing outside of the junction of the head and web; substantially as described.

6. In a guard-rail system, a guard-rail having a narrower inner flange provided with an opening therein, and a tie-plate extending under both the main rail and the guard-rail, said plate having a clip lying in the opening of the guard-rail flange and provided with holes to receive spikes for both rails, one set of spike-holes being spaced at different distances from the transverse axis of the tie-plate; substantially as described.

7. In a guard-rail system, a guard-rail having a narrower inner flange provided with a notch, and a tie-plate extending under both the main rail and the guard-rail, said plate having a clip lying in the notch of the guard-rail and provided with holes to receive spikes for both rails; substantially as described.

8. As a new article of manufacture, a rolled guard-rail having a T-head, an inclined web, and rolled base-flanges, one of said flanges being of less width than the other, the vertical plane of the edge of the narrower flange passing through the head of the rail at a point beyond the juncture of the head and flange, and a tie-plate extending under the guard-rail and having a clip engaging the narrower flange of said rail; substantially as described.

850,537. CRATE. NORMAN J. MCLEOD, Rock Island, Tex., assignor of one-half to Hezakiah S. Lundy, Rock Island, Tex. Filed Mar. 5, 1906. Serial No. 304,240.

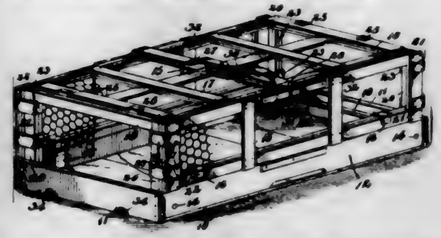

Claim.—1. In a crate, the combination with folding side and end walls, hooks on opposite walls, and a sectional top with a toggle-joint between the sections for extending the free ends thereof under the aforesaid hooks.

2. In a crate, the combination with folding side and end walls, said end walls having top, bottom and end bars, of hooks extending from the ends of the side walls and over end bars and engaging the bottom of the top bars of the end walls.

850,538. GLASS ORNAMENTATION FOR PANELS, FLOORS, &c. CHARLES O. NEWMAN, Jackson county, Mo. Filed Dec. 19, 1905. Serial No. 292,466.

Claim.—1. The process of making decorative work for panels, floors and similar purposes, consisting in cutting from sheet-glass pieces corresponding in shape to the elements respectively forming the foreground of a design, then placing the glass pieces face down in a mold in separated positions corresponding to the design, then inserting in the mold between the glass pieces and in the places forming the background a filler of less thickness than the glass pieces, then placing in the mold upon the filler and the glass pieces a plastic hardening material, then permitting the plastic material to set and finally removing the molded body from the mold and filler.

2. The process of making decorative work for panels, floors and similar purposes, consisting in cutting from sheet-glass pieces corresponding in shape to the elements respectively forming the foreground of a design, then placing the glass pieces face down in a mold in separated positions corresponding to the design, then inserting in the mold between the glass pieces and in the places forming the background, a filler of less thickness than the glass

pieces, then placing in the mold upon the filler and the glass pieces a plastic hardening material, then permitting the plastic material to set, then removing the molded body from the mold and filler, and finally coating the face of the body so molded with enamel.

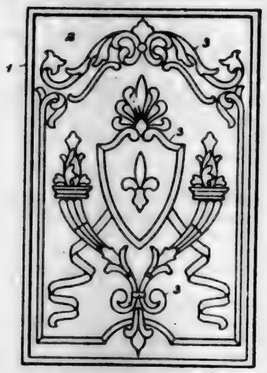

3. The process of making decorative work for panels, floors and similar purposes, consisting in placing face down in a mold, glass pieces corresponding in shape respectively to the elements forming the foreground of a design and in separated positions corresponding to the design, then inserting in the mold in the places forming the background a filler of less thickness than the glass pieces, then placing in the mold upon the filler and the glass pieces a plastic mixture of calcined magnesia, mixed with a solution of chlorid of magnesia, then permitting the plastic mixture to set and removing the molded body from the mold and filler.

4. The process of making decorative work for panels, floors and similar purposes, consisting in placing face down in a mold in separated positions, glass pieces corresponding in shape to the elements respectively forming the foreground of a design and in positions corresponding to the design, then inserting in the mold in the places forming the background between and around the glass pieces, a filler of less thickness than the glass pieces, then placing in the mold upon the filler and the glass pieces, a plastic mixture of calcined magnesia mixed with a solution of chlorid of magnesia, then permitting the plastic mixture to set, then removing the molded body from the mold and filler, and finally covering the face of the molded body with enamel.

850,539. WASHING-MACHINE. JAMES S. PARRISH, Richmond, Va. Filed Jan. 21, 1907. Serial No. 353,373.

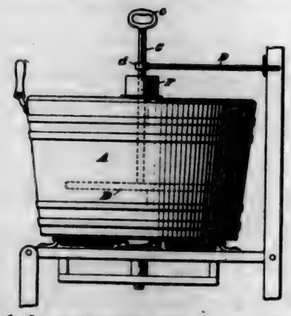

Claim.—1. In combination with a support, a horizontally-rotatable tub mounted thereon, a rubbing-disk within the tub and provided with a shaft extending up through the cover thereof, means engaging the upper end of this shaft to hold it against rotation, a vertically-adjustable collar on this shaft carrying radial pins, and a cam device secured to the top of the tub and engaging said pins, for the purpose set forth.

2. The combination of a support, an oscillating tub having a cover, a rubber in the tub carrying a shaft extending up out through the cover, means engaging this shaft for holding it against rotation, and means for raising and lowering said shaft during the oscillation of the tub, said means consisting of two members one a cam and the other a radial device, one member being on the shaft and the other on the cover of the tub, for the purpose set forth.

3. The combination of a support, an oscillating tub having a cover, a rubber in the tub carrying a shaft extending up through a hole in the cover, means engaging this shaft for holding it against rotation, and means for raising and lowering said shaft during the oscillation of the tub, said means consisting of a cylinder affixed to the top of the tub and carrying an internal cam, and a radial device attached to said shaft and engaging in said cam, for the purpose set forth.

850,540. DEVICE FOR LOCKING BOLTS. WALLACE W. PARSONS, Washington, D. C. Filed Jan. 9, 1907. Serial No. 351,507.

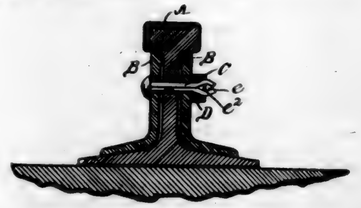

Claim.—1. A collar or nut for use on bolts, having a threadless, elongated channel or opening extending from one face of the collar partly therethrough, and from thence having the longer sides, in cross-section, of the channel flaring, and having the opening terminating in a circular form, in cross-section, on the other face of the collar; for the purposes described.

2. In combination with a split bolt, a collar or nut thereon having a threadless, elongated channel or opening extending from one face of the collar partly therethrough, and from thence having the longer sides, in cross-section, of the channel flaring, and having the opening terminating in a circular form, in cross-section, on the other face of the collar; for the purposes described.

3. In combination with a split bolt, a collar or nut thereon having a threadless, elongated channel or opening extending from one face of the collar partly therethrough, and from thence having the longer sides, in cross-section, of the channel flaring, and having the opening terminating in a circular form, in cross-section, on the other face of the collar, and means for locking the collar on the bolt.

4. In combination with a split bolt, a collar or nut thereon having a threadless, elongated channel or opening extending from one face of the collar partly therethrough, and from thence having the longer sides, in cross-section, of the channel flaring, and having the opening terminating in a circular form, in cross-section, on the other face of the collar, and a mandrel for forcing apart the ends of the bolt.

5. In combination with a split bolt, a collar or nut thereon having a threadless, elongated channel or opening extending from one face of the collar partly therethrough, and from thence having the longer sides, in cross-section, of the channel flaring, and having the opening terminating in a circular form, in cross-section, on the other face of the collar, and a mandrel for forcing apart the ends of the bolt and formed with an elongated head and a wedge-shaped wing extending therefrom.

850,541. BOOT FOR ELEVATORS. FRANK C. PAYNE, Manteno, Ill. Filed July 2, 1906. Serial No. 324,334.

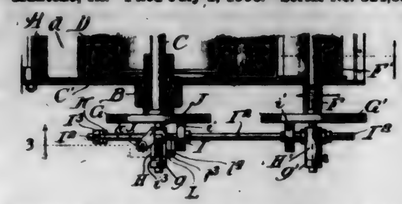

Claim.—1. The combination with an elevator and a hopper opening adjacent thereto, the lower end of the hopper terminating in a horizontal surface over which grain will not pass by its own weight, of a paddle adapted to receive grain from the hopper in advance of its front face, and means for moving said paddle to pass said grain across said horizontal surface.

2. The combination with an elevator and a hopper opening adjacent thereto, the lower end of the hopper terminating in a horizontal surface over which grain will not pass by its own weight, of a rotating paddle-wheel above said horizontal surface, and means for rotating said paddle-wheel.

3. The combination with an elevator-roller and a feeding paddle-wheel and shafts carrying said roller and wheel, friction-disks on said shafts, boxes loosely mounted on said shafts, collars giving outer bearings for said boxes, counter-shaft bearing-boxes guided on said boxes, means for pressing said counter-shaft bearing-boxes normally toward said friction-disks, a counter-shaft journaled in said counter-shaft bearing-boxes, and a pinion on said counter-shaft and in engagement with said disks.

4. The combination with an elevator-roller and a feeding paddle-wheel and shafts carrying said roller and wheel, friction-disks on said shafts, boxes loosely mounted on said shafts, collars giving outer bearings for said boxes, counter-shaft bearing-boxes guided on said boxes, means for pressing said counter-shaft bearing-boxes normally toward said friction-disks, a counter-shaft journaled in said counter-shaft bearing-boxes, a pinion on said counter-shaft in engagement with said disks, and means for shifting the counter-shaft.

5. The combination with an elevator-roller and a feeding paddle-wheel and shafts carrying said roller and wheel, friction-disks on said shafts, boxes loosely mounted on said shafts, collars giving outer bearings for said boxes, counter-shaft bearing-boxes guided on said boxes, means for pressing said counter-shaft bearing-boxes normally toward said friction-disks, a counter-shaft journaled in said counter-shaft bearing-boxes, a pinion on said counter-shaft in engagement with said disks, and means accessible from above the elevator-boot for shifting the counter-shaft.

6. The combination with an elevator-roller and a feeding paddle-wheel and shafts carrying said roller and wheel, friction-disks on said shafts, boxes loosely mounted on said shafts, collars giving outer bearings for said boxes, counter-shaft bearing-boxes guided on said boxes, means for pressing said counter-shaft bearing-boxes normally toward said friction-disks, a counter-shaft journaled in said counter-shaft bearing-boxes, a pinion on said counter-shaft in engagement with said disks, a collar on said counter-shaft, a forked member engaging with a groove in said collar, a pinion engaging with a rack on said forked member, and a rod extending upward from said pinion and secured against rotation with respect thereto.

7. The combination with an elevator-roller and a feeding paddle-wheel and shafts carrying said roller and wheel, friction-disks on said shafts, boxes loosely mounted on said shafts, collars giving outer bearings for said boxes, counter-shaft bearing-boxes guided on said boxes, means for pressing said counter-shaft bearing-boxes normally toward said friction-disks, a counter-shaft journaled in said counter-shaft bearing-boxes, a pinion on said counter-shaft in engagement with said disks, a collar on said counter-shaft, a forked member engaging with a groove in said collar, a pinion engaging with a rack on said forked member, a rod extending upward from said pinion and secured against rotation with respect thereto and longitudinally movable therein.

8. The combination with an elevator-roller and a feeding paddle-wheel and shafts carrying said roller and wheel, friction-disks on said shafts, boxes loosely mounted on said shafts, collars giving outer bearings for said boxes, counter-shaft bearing-boxes guided on said boxes, means for pressing said counter-shaft bearing-boxes normally toward said friction-disks, a counter-shaft journaled in said counter-shaft bearing-boxes, a pinion on said counter-shaft and in engagement with said disks, and means for moving one of said counter-shaft bearing-boxes away from the adjacent friction-disk.

850,542. CROSS-TIE. JOHN W. PEPLOE, Long Island City, N. Y. Filed Aug. 30, 1906. Serial No. 332,597.

Claim.—1. A cross-tie comprising a shell composed of an inner member; an outer member surrounding said inner member; said members being formed with alining rail-receiving recesses; means for connecting said members; and means secured to said members for retaining the rails in said recesses.

2. A cross-tie comprising a shell composed of an inner member formed with a pair of rail-receiving recesses in its sides; an outer member inclosing said inner member and provided with a pair of rail-receiving recesses similar to and in alinement with the recesses in said inner member; means for connecting said members; and a cheek-piece secured to said outer member adjacent each pair of alining recesses to retain a rail in place therein.

3. A cross-tie comprising a shell having a U-shaped inner member; an inverted-U-shaped outer member inclosing said inner member; said members being provided at each end with alining rail-receiving recesses; means for connecting said members; and means secured to said outer member adjacent each pair of recesses for retaining a rail in place therein.

4. A cross-tie comprising inner and outer members each formed with a rail-receiving recess at its opposite ends, the corresponding recesses of said members being in alinement with each other; means for connecting said members; and a pair of cheek-pieces of inverted-U shape secured to said outer member adjacent each pair of recesses for retaining a rail in place thereon.

5. A cross-tie comprising inner and outer members, each formed with a rail-receiving recess at its opposite ends, the corresponding recesses of said members being in alinement with each other, and extending forwardly at their outer ends to form inclined shoulders in said members; means for connecting said members; and a pair of cheek-pieces secured to said outer member adjacent each pair of recesses, each cheek-piece being provided with an inclined shoulder coöperating with the shoulder formed by the corresponding pair of recesses, to retain a rail in place therein.

6. A cross-tie comprising a U-shaped inner member; an outer member of inverted-U shape inclosing said inner member, said members being provided at each end with a pair of alining rail-receiving recesses, the outer end of each pair of recesses being extended forwardly to form rearwardly-inclined shoulders; means for connecting said members; and a pair of cheek-pieces of inverted-U shape secured to said outer member adjacent each pair of corresponding recesses, each cheek-piece being provided with a forwardly-inclined shoulder coöperating with the shoulder formed by the corresponding pair of recesses, to retain a rail in place therein.

7. A cross-tie formed on its upper face with a pair of rail-receiving recesses provided with rearwardly-inclined shoulders; and a cheek-piece secured to said cross-tie adjacent each recess, and provided with a forwardly-inclined shoulder coöperating with the shoulder formed by each recess to retain a rail in place therein.

8. A cross-tie comprising inner and outer members, each formed with a rail-receiving recess at opposite ends, the corresponding recesses of said members being in alinement; means for connecting said members; and a cheek-piece secured to said outer member adjacent each pair of alining recesses, each cheek-piece having a rearwardly-extending tongue adapted to fit against the under face of the outer member, and a forwardly-extending shoulder projecting longitudinally of said pairs of recesses, to retain a rail in place therein.

850,543. CORN-SHOCK LOADER. DARIUS T. PHILLIPS, Chicago, Ill. Filed July 18, 1906. Serial No. 326,662.

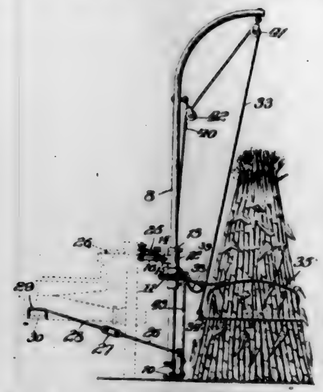

Claim.—1. In a shock-loading derrick, of the character described, the combination with the derrick-leg having a laterally-extending upper portion, of means on the derrick for attaching it pivotally to a wagon, power-operated draft mechanism on the derrick, for engaging and lifting the shock, provided with means operating in its final lifting movement to swing the upper part of the derrick laterally, for the purpose set forth.

2. In a shock-loading derrick, of the character described, the combination with the derrick-leg having a laterally-extending upper portion, of means on the derrick for attaching it pivotally to a wagon, power-operated draft mechanism on the derrick provided with means for engaging the shock and upsetting it in the initial movement of the draft mechanism, provided also with means for attaching it to the shock whereby in its further movement the shock is lifted, and provided with means operating in its final lifting movement to swing the upper part of the derrick laterally, for the purpose set forth.

3. A shock-loader comprising, in combination, a derrick-leg, a traveling support on which the leg is pivotally mounted, means for pivotally attaching the leg to a wagon, pulleys on the leg, a shock engaging and lifting rope, or the like, extending over the pulleys adapted at one end for attachment to a power, a rope, or the like, eccentrically engaging the leg and so disposed with relation to the shock-engaging rope as to be drawn upon in the final shock-lifting movement of the latter to turn the leg on its axis, for the purpose set forth.

4. A shock-loader comprising, in combination, a derrick-leg, a traveling support on which the leg is pivotally mounted, means for pivotally attaching the leg to a wagon, pulleys on the leg, a shock engaging and lifting rope, or the like, extending over the pulleys and forming draft mechanism adapted at one end for attachment to a shock, and at its opposite end for attachment to a power, a shock-engaging loop on the rope operating in the initial movement of the draft mechanism to upset and then disengage the shock, a rope, or the like, eccentrically engaging the leg and so disposed with relation to the shock-engaging rope as to be drawn upon in the final shock-lifting movement of the latter to turn the leg on its axis, for the purpose set forth.

5. In a shock-loading derrick of the character described, the combination with the derrick-leg and runner on which the leg is pivotally mounted, of means for connecting the runner with the reach of a wagon, and means for connecting the leg pivotally to a side-board of the wagon.

850,544. UMBRELLA ATTACHMENT. CHARLES A. PILTZ, Van Buren, Me. Filed Jan. 3, 1907. Serial No. 350,570.

Claim.—1. The combination with an umbrella, of a ring adapted to slide freely over the umbrella when in a closed and rolled condition, and a flexible connection between the ring and the umbrella at a point between the free ends of the ribs and the tip of the umbrella.

2. The combination with an umbrella, of a ring adapted to slide freely over the umbrella when in a closed and rolled condition, and a ribbon secured at one end to said ring and at its other end to the umbrella-cover at a point midway the length of the ribs.

3. The combination with an umbrella, of a ring adapted to slide freely over the umbrella when in a closed or rolled condition, and a ribbon secured at one end to said ring and at its other end to the umbrella-cover at a point midway between the ends of the ribs of the umbrella, said ribbon being of a length that will limit movement of the ring between the free ends of the ribs and the tip of the umbrella.

850,545. DOOR CLOSER AND CHECK. GEORGE RISCHMULLER, San Francisco, Cal. Filed June 7, 1905. Serial No. 264,157.

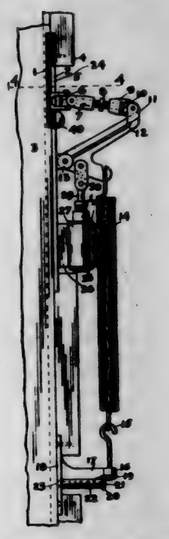

Claim.—1. In a door-closer, the combination, with the jamb having an aperture, of a two-armed lever pivoted at the rear of the jamb, a link connected with one arm of said lever, a plate secured to the hinged side of the door and provided with means to permit said link to be pivotally connected thereto, a spring attached at one end to the other arm of said lever, a fixed device with which the other end of the spring is connected, and means for adjusting the length of said link, substantially as described.

2. In a door closer and check, the combination with a jamb having an aperture, of a correspondingly apertured hinge-plate secured thereto, a hinge-plate secured to the door and pivotally connected to the jamb-plate, a two-armed lever pivoted to the rear of the jamb-plate to swing vertically thereon, a link passing through said apertures and pivotally connected with one arm of the lever and with the door-plate, a spring attached to the other arm of said lever, a fixed device on the rear of the jamb with which the other end of the spring is connected, and means for controlling the action of the spring, substantially as described.

3. In a door closer and check, the combination with a jamb having an aperture, of a correspondingly-apertured plate secured thereto, a plate secured to the door, a two-armed lever pivoted to the rear of the jamb-plate to swing vertically thereon, a link passing through said apertures and movably connected with one arm of said lever, said arm swinging into a position substantially parallel with said jamb-plate when the door is open, a spring attached to the other arm of said lever behind the jamb and operating to close the door, said other arm swinging through a horizontal position in closing the door, a fixed device on the rear of the jamb with which the other end of the spring is connected, and means for controlling the action of the spring, substantially as described.

4. In a door closer and check, the combination, with the jamb having an aperture, of a correspondingly-apertured plate secured to the jamb, a lever having a long arm and a short arm, pivoted to the rear surface of said plate to swing vertically thereon, a link connected with the long arm of the lever, a plate secured to the hinged side of the door and pivotally connected with said link, a spring attached to the short arm of the lever behind the jamb and operating to close the door, and means for controlling said spring, comprising a cylinder and a piston sliding therein, one of the elements of said controlling mechanism being operatively connected with the short arm of the lever between the pivot and the spring, and the other element being connected, with the plate, said cylinder being provided with means for permitting the free movement of the piston in one direction, but obstructing the close of its movement in the opposite direction, substantially as described.

5. In a door closer and check, the combination, with a jamb having an aperture, of an apertured plate secured to the jamb, provided with two rearward projections, a lever pivoted on the first projection, a check-cylinder and a piston movable in said cylinder, one of said check members being supported by the second projection, and the other check member being movably connected with the lever, a link movably connected with said lever, and a second plate secured to the door and connected with said link, substantially as described.

6. In a door closer and check, the combination of an apertured plate provided on one side with a fulcrum for a lever and with means for supporting a checking device, a lever pivoted on said fulcrum, a check comprising a cylinder and a piston whereof one member is secured to said supporting means and the other member is secured to said lever, a link connected at one end to an arm of said lever and arranged to pass through the aperture in the plate, a spring connected to said lever, a door, and means for securing the other end of the link to the door, and a door-jamb to which said plate is secured, said jamb having an aperture sufficiently large to permit the check, lever, and link to be passed thereinto, substantially as described.

7. In a door closer and check, the combination of an apertured plate provided on one side with a fulcrum for a lever and with means for supporting a check member, a lever pivoted on said fulcrum, a check comprising a cylinder and a piston whereof one member is secured to said supporting means and the other member is secured to said lever, a link connected at one end to an arm of said lever and arranged to pass through the aperture in the plate, a spring connected to said lever, a door, and means for securing the other end of the link to the door, a second plate and means carried thereby for attaching the other end of the spring, and a door-jamb to which said plate is secured, said jamb having an aperture sufficiently large to permit the check, lever, and link to be passed thereinto, and having also an aperture permitting the insertion of parts carried by the second plate, substantially as described.

8. In a door closer and check, the combination of a lever, an operative connection between said lever and door for closing the same, a spring for operating said lever, and means for controlling the operation of said spring, said means comprising a cylinder, a piston sliding therein and operatively connected with said lever, the cylinder having a passage between the upper and lower portions thereof and the piston having a tortuous passage, formed with a valve-chamber, the lower end of said valve-chamber forming a valve-seat, and a ball on said seat, substantially as described.

9. In a door-closer, the combination of a lever pivotally secured behind the jamb of the door, a link connected to said lever and to the door, a spring for operating said lever, and means for adjusting the tension of said spring, comprising a hook attached to the end of the spring and threaded at its other end, a nut on said threaded end having bevel-teeth, a bracket having a bearing through which the hook passes and also having a bearing for a shaft, a shaft in said latter bearing having bevel-teeth on its end engaging the bevel-teeth on the nut, and means provided at the other end of the shaft for turning the same to move the hook longitudinally, substantially as described.

850,546. WEDGE SPLITTING AND SHAVING MACHINE. FRANK B. SCHUYLER, San Francisco, Cal. Filed Mar. 14, 1905. Serial No. 250,027.

Claim.—In a machine of the character described, the combination of a frame having side flanges, a knife-holder having underhanging sides forming grooves engaging said flanges, a knife depending from said holder and secured thereto by means of screws, the holder being bent down at its front edge to form a lip bearing upon said knife, and an adjusting-screw through said holder and bearing upon said knife behind said supporting-screws, whereby the inclination of the knife relatively to the holder can be varied,

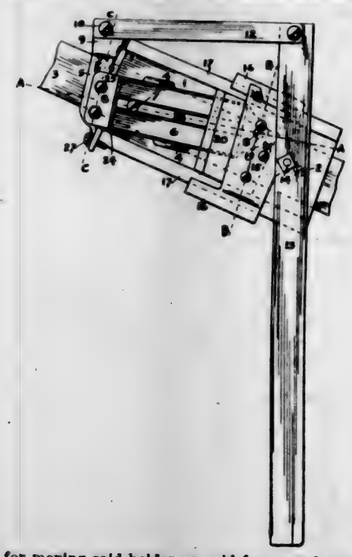

means for moving said holder on said frame and a support within the frame for the article to be cut by the knife, substantially as described.

850,547. NAIL-TONGS. GEORGE E. SMITH, Oyster Bay, N. Y. Filed May 21, 1906. Serial No. 318,104.

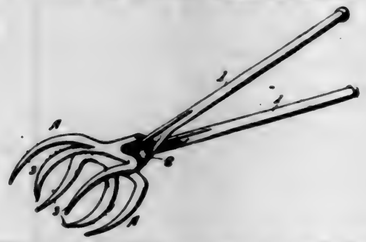

Claim.—A nail-handling device of the class described, comprising handles pivotally connected intermediate of their ends, one end portion of each handle being formed with a fork embodying outside teeth and intermediate teeth, all of which are curved lengthwise, the intermediate tooth of each fork being of greater curvature than the outer teeth of said fork, and the ends of all the teeth being in transverse alinement with each other.

850,548. METHOD OF COATING METAL SHEETS. LAWRENCE C. STEELE, Wheeling, W. Va., assignor to American Sheet & Tin Plate Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Dec. 19, 1905. Serial No. 292,462.

Claim.—1. The method of coating metal plates or sheets, consisting in feeding them upwardly from a molten-metal coating-bath, and forcing a liquid against the face of the upwardly-moving plate, above and after it leaves the molten-metal bath; substantially as described.

2. The method of coating metal plates or sheets, consisting in feeding them upwardly from a molten-metal coating-bath, and forcing a liquid against the face of the upwardly-moving plate, above and after it leaves the molten-metal bath; substantially as described.

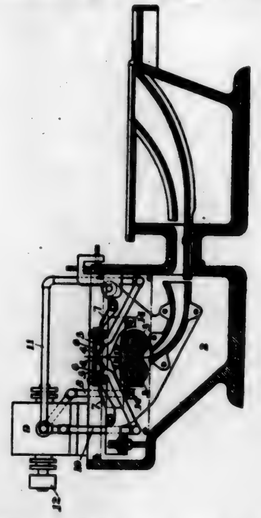

3. The method of coating metal plates or sheets, consisting in feeding them upwardly through a bath of molten coating metal, and forcing a jet or sheet of liquid against both faces of the plate after it leaves and while it is moving upwardly above the molten-metal bath; substantially as described.

4. In the process of coating metal plates with molten metal, the step consisting of driving a jet or sheet of liquid against the face of the plate as the successive portions of the plate leave a coating-bath; substantially as described.

5. In the process of coating metal plates with molten metal, the step consisting of driving a downwardly-directed sheet of liquid against the face of the plate as it is moved upwardly above a coating-bath; substantially as described.

6. In the process of coating metal plates with molten metal, the step consisting of driving a sheet or jet of liquid other than the coating metal against the face of the plate after it has left and as it is moving upwardly above the molten-metal coating-bath; substantially as described.

7. The method of tinning, consisting in feeding the plate upwardly from the molten-metal bath through oil, and forcing the oil against the face of the plate; substantially as described.

8. The method of tinning, consisting in feeding the plate upwardly from the molten-metal bath through oil, and forcing sheets of hot oil against the opposite faces of the rising plate; substantially as described.

9. The method of tinning, consisting in feeding the plate upwardly from the molten-metal bath through oil, and pumping oil from the bath and driving it against the faces of the rising plate; substantially as described.

10. The method of coating metal sheets or plates, consisting in feeding them upwardly from a molten-metal coating-bath, and forcing a heated liquid against the face of the plate, after it leaves the molten-metal bath; substantially as described.

850,549. HOISTING APPARATUS FOR DEEP WELLS. WALTER S. SUTTON, Kansas City, Kans. Filed Aug. 26, 1905. Serial No. 275,889.

Claim.—1. A hoisting apparatus for pumps, &c., comprising a main supporting-frame, a vibrating frame, an axial support for said vibrating frame on the main supporting-frame, a cable-winding wheel independently mount-

ed on said axial support, power-energized reciprocating means actuating said vibrating frame, separate pawls on the main supporting and vibrating frames and ratchet-teeth on said winding-wheel adapted to be engaged by said pawls.

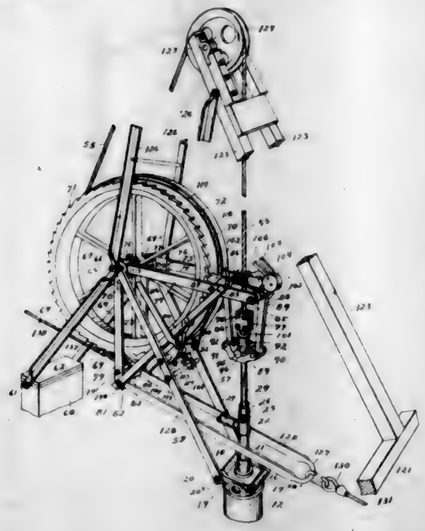

2. A hoisting apparatus for pumps, &c., comprising a main supporting-frame, a vibrating frame, an axial support for said vibrating frame on the main supporting-frame, a cable-winding wheel or drum independently mounted on said axial support, a pawl on the vibrating frame, ratchet-teeth on the winding-wheel adapted to be engaged by said pawl and yielding pressure-imparting means to the said pawl on the vibrating frame.

3. In a hoisting apparatus for pumps, &c., a cable-winding wheel, a supporting-frame therefor, means for imparting rotary motion to said wheel and alternately-acting wheel-retarding devices on said supporting-frame connected with each other.

4. The combination with the main frame, of the hoisting-wheel, an axial support therefor on said frame, ratchet-teeth on said wheel, a vibrating frame independently mounted on said axial support, a pawl on said vibrating frame, an arm pivotally connected with the vibrating frame a link connecting said pawl with said arm and a weight on said arm acting by gravity to hold said pawl in or out of engagement with said ratchet-teeth.

5. In a hoisting apparatus for pumps, &c., a cable-winding wheel, a supporting-frame therefor, means for imparting rotary motion to said wheel, a brake-band on said wheel connected at one end with said frame, a sleeve on said frame, and a pawl and an arm on said sleeve said arm being operatively connected with the other end of the brake-band on said cable-winding wheel and a lever operating the pawl and brake-controlling arm.

6. In combination a main supporting-frame, a winding-drum and ratchet-teeth thereon, a sleeve on said frame and a pawl and a brake-controlling arm on said sleeve and a brake and operating means connected with the pawl and brake-arm and acting by gravity to hold the said pawl in engagement with the ratchet-teeth.

7. In a hoisting apparatus a main supporting-frame, a cable-winding wheel, an axial support for said wheel upon said frame, a vibrating frame independently mounted upon said axial support, a cable upon said winding-wheel an enlargement upon said cable, means for imparting power to and vibrating said frame and intermittently-engaging power-transmitting devices on the said vibrating frame engaging with said wheel and adapted to contact with said enlargement on said cable and to be automatically disengaged thereby from the wheel in the downstroke of the vibrating frame.

8. The combination in a hoisting apparatus with a vibrating frame and cable-winding wheel and cable of intermittently-acting wheel-engaging devices on said frame, a pivoted radial arm on the vibrating frame and a weight, and an arm on said weight adapted to be extended past said cable and connecting devices connecting said radial arm with the wheel-engaging devices.

9. A hoisting apparatus comprising a main supporting-frame, a cable-winding wheel, an axial support therefor on said frame, a vibrating frame independently mounted upon said axial wheel-support, wheel-engaging devices on said vibrating frame imparting rotary motion to said wheel, a suspended wheel above said winding-wheel and a cable extending over said wheel and power-energized reciprocating means actuating said vibrating frame.

10. In a hoisting apparatus a main supporting-frame, a cable-winding wheel upon said frame and cable upon said wheel, means for imparting rotary motion to said wheel, and a derrick, means on the derrick for holding down the main supporting-frame, a cable-sheave on the derrick over which said cable extends, a vibrating frame on said supporting-frame and power-actuated reciprocating devices for winding the cable and devices connected with the power-actuated reciprocating devices for taking up the slack.

9. A hoisting apparatus comprising a main supporting-frame, a cable-winding wheel, an axial support upon said frame for said wheel and a vibrating frame upon said axial support and a horizontally-extended portion of said vibrating frame, self-engaging power-transmitting devices upon the said vibrating frame acting to impart rotary motion to said wheel, an elevated cable-supporting sheave, a hoisting-cable on said wheel extending over said sheave, suspended cable-supports upon the vibrating frame and cable-clamping devices on said cable within said supports and reciprocating power, energized devices imparting a circular reciprocating movement to the vibrating frame and a vertical reciprocating movement to the suspended cable-support on the vibrating-frame.

12. The combination with the main supporting-frame of a cable-winding wheel mounted on said frame, an axial support for said wheel and hollow journals supporting said wheel mounted on said axial support, a vibrating frame independently mounted upon said hollow journals, means on said vibrating frame imparting rotary motion to said cable-winding wheel and power-energized reciprocating means actuating said vibrating frame.

13. In hoisting mechanism, a main frame, a vibrating frame mounted thereon, means for communicating a reciprocating motion to said frame, a cable-winding wheel independently mounted on said main frame, and means on said vibrating frame for communicating an intermittent rotary motion to said wheel, in combination with a cable, suspensory devices on said vibrating frame and a cable-protecting tube carried by said suspensory devices.

14. A hoisting apparatus comprising a main supporting-frame, a cable-winding wheel, an axial support for said wheel upon said frame, a vibrating frame independently connected with said axial support, a horizontal extension of said frame extending beyond the periphery of said wheel, an elevated sheave, a cable upon said wheel extending over said sheave, suspensory devices upon said vibrating frame and cable attachments supporting said cable within said suspensory devices, a pawl pivotally connected with the extended portion of said vibrating frame and ratchet-teeth on said wheel, means for holding the pawl under pressure in engagement with the ratchet-teeth, a brake-band on said wheel connected at one end with said main supporting-frame, a sleeve adapted to be partially rotated and a support therefor upon said main frame, an arm on said sleeve operatively connected with the other end of the brake-band a pawl connected with said sleeve and engaging with the ratchet-teeth on said cable-winding wheel, a lever for removing said pawl from engagement with the ratchet-teeth and applying the brake-band in the same movement and power-conveying reciprocating means actuating the vibrating frame.

850,550. ATTACHMENT FOR ENGRAVING-MACHINES. CHARLES A. C. WAGENFÖHR, New York, N. Y. Filed Sept. 20, 1905. Serial No. 279,248.

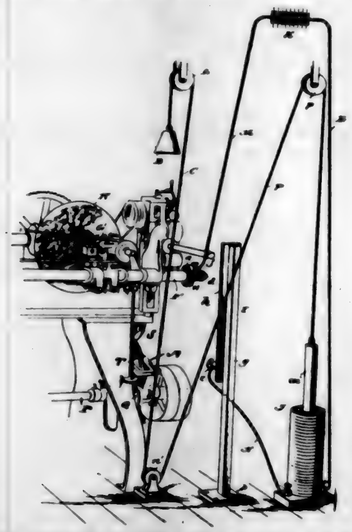

Claim.—1. In an engraving-machine, the combination of a speed-controlling device, a model, a tracer, a contact movable with the tracer, a contact arranged to be engaged by the first-mentioned contact, means for moving the speed-controlling device in one direction and normally holding it in one position, and electromechanical means for moving said device in the opposite direction and holding it in another position; said electromechanical means being arranged in an electric circuit with the said contacts and a source of electric energy.

2. In an engraving-machine, the combination of a model, a tracer, a contact movable with the tracer, a contact arranged to be engaged by the first-mentioned contact, a speed-controlling device, means for moving said device in one direction and normally holding it in one position, and a solenoid for moving said device in the opposite direction and holding it in another position; the said solenoid being arranged in an electric circuit with the said contacts and a source of electric energy.

3. In an engraving-machine, the combination of a model, a tracer, a tracer-carrying bar, a contact comprising a collar mounted on but insulated from the tracer-carrying bar and a spring-pressed plunger carried by said collar, a fixed contact comprising a support, a plate connected to but insulated from the support, means backing said plate for adding to its springiness, a speed-controlling device, means for moving said device in one direction and normally holding it in one position, and an electromechanical device connected with the speed-controlling device; the said electromechanical device being arranged in an electric circuit with the said contacts and a source of electric energy.

850,551. TOILET ARTICLE. GEORGE H. WAGNER and SIGNOR S. HERNE, Springfield, Mass. Filed Feb. 13, 1907. Serial No. 357,216.

Claim.—1. A toilet article consisting of a brush-body provided with an edgewise-opening pocket, a mirror disposed within and outwardly movable from said pocket, and a spring-catch with which said body is provided, for engaging and detachably retaining the mirror within the said pocket.

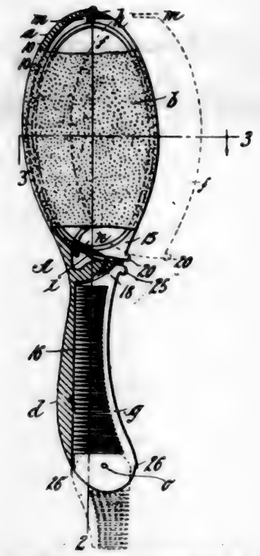

2. In an article of the character described, a brush-body having an edgewise-opening pocket, the wall of which at its one end is provided with a shoulder, and having therewithin, at its other end portion a retaining-spring, and a mirror disposed within, and outwardly movable from said pocket having at opposite ends shoulders, one thereof to acquire an engagement with the first-named shoulder and the other to be detachably engaged by the said retaining-spring.

3. In an article of the character described, a brush-body provided with a handle extension and constructed with edgewise-opening pockets both in the body and the handle extension, a mirror disposed within and outwardly movable from the pocket in the body and means for detachably retaining the mirror within its said pocket, and a comb endwise pivoted to the handle extension and adapted to be disposed within said pocket in the handle, and to be outwardly swung therefrom.

4. In an article of the character described, a brush-frame, comprising a body and a handle extension and composed of complemental sections, both having at their inner sides shallow recesses opening to one edge thereof, one of the sections having in its edge wall at one end a shoulder and having at its portion near the junction of its body portion with the handle a spring, formed with an angular nose, and having a portion thereof anchored to a wall of the section, and said complemental sections being adjoined and cemented together, a mirror disposed within and outwardly movable from the pocket produced within the recessed sections having shoulders at opposite ends thereof, one adapted to acquire an engagement with the first-named shoulder and the other to be detachably engaged by the nose of said spring, and a comb pivoted within the pocket produced within the handle and adapted to be swung outwardly therefrom.

850,552. DRAWING-BOARD. EMIL WERNER, Philadelphia, Pa., assignor of one-half to Adrian St. Clair Garman, Philadelphia, Pa. Filed Oct. 12, 1906. Serial No. 338,592.

Claim.—1. In a drawing-board, a base, a drawing-board proper, means on the one member engaging the other to hold the two in proper relation and a compound implement-holder having its members extending at an angle to

each other and independently mounted on said base with their adjacent ends movably and slidably united over said board.

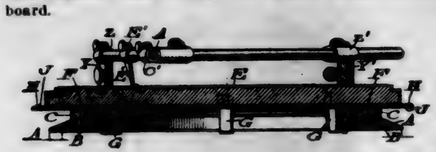

2. A rotatable drawing-board, a base, bearing-balls interposed between the board and base, and angular means on one member extended beneath the other to hold the parts in proper relation, combined with a compound implement-holder mounted on the base outside the periphery of said board and extended over the latter.

3. A rotatable drawing-board, a base, bearing-balls interposed between the board and base, resilient means interposed between adjacent balls, and angular means on the one member extended beneath the other to hold the parts in proper relation, combined with a compound implement-holder mounted on the base outside the periphery of said board and extended over the latter.

4. A rotatable drawing-board, a base, means on said board extended beneath the base to hold said parts in proper relation, a circular runway in the upper face of said base, bearing-balls for said board occupying said runway, and a compound implement-holder having its members extending at an angle to each other and independently mounted on said base outside the periphery of said board with their adjacent ends pivotally and slidably united over said board.

5. A rotatable drawing-board, a base, means on said board extended beneath the base to hold said parts in proper relation, a circular runway in the upper face of said base, bearing-balls for said board occupying said runway, resilient means in said runway alternating with said balls, and a compound implement-holder having its members extending at an angle to each other and independently mounted on said base outside the periphery of said board with their adjacent ends pivotally and slidably united over said board.

6. A rotatable drawing-board, a rim thereon with a circular row of vertically-disposed degree-spacing openings therein, a detent adapted to engage with either of said openings, a device for holding said detent removed from said openings and a rotatable device independent of said detent having means to engage said openings.

7. A rotatable drawing-board, a rim thereon with a circular row of degree-spacing openings therein, a tooth adapted to engage either of said openings, a rotary shaft carrying said tooth, a bearing for said shaft, a serrated wheel on said shaft and means on said bearing adapted to engage either of the serrations of said wheel to control the latter.

8. A rotatable drawing-board, a tooth adapted to rotate the same, a rotary shaft carrying said tooth, a bearing for said shaft and means for pivotally mounting said bearing, whereby said tooth may be disengaged from said board.

9. A rotatable drawing-board, a tooth adapted to rotate the same, a shaft carrying said tooth, a movable bearing for said shaft, and means adapted to engage said bearing to hold said tooth removed from the board.

10. A rotatable drawing-board, a tooth adapted to rotate the same, a rotary shaft carrying said tooth, a movable bearing for said shaft, means for holding said tooth from the board and means for holding said tooth engaged with the board.

11. In a drawing-board, the combination with a rotatable board, of an implement-holder extended over the same and formed of independently-movable arms independently pivoted outside the periphery of said board and disposed at an angle to each other, a movable sleeve on one of said arms, and means for adjustably and pivotally connecting said sleeve to the other of said arms.

12. In a drawing-board, a rotatable board, an arm pivotally mounted and extended thereover, pattern or design holding points adjustably pendent from said arm, and a pivoted spring-pressed holder for said points carried by the pendent support.

13. In a drawing-board, pattern or design holding points thereon, a head carrying said points, an adjusting and connecting screw connecting said head and a resilient device adapted to bear against a member of said head.

14. A rotatable drawing-board, a tooth adapted to engage therewith, a pivotally-mounted shaft carrying said tooth to rotate the same, a serrated wheel on said shaft and means adapted to engage the serrations of said wheel to control the rotation of said tooth and consequently of the board to a smaller extent than the degrees of a circle in which said board is spaced.

850,553. HAIR-CURLING DEVICE. HELEN I. WEST, New York, N. Y. Filed Apr. 30, 1906. Serial No. 314,401.

Claim.—1. A device for curling the hair, comprising a fork, the side members of which are tapered at the ends, and a tubular flexible cord into the ends of which the ends of the side members of the fork are adapted to be inserted.

2. A device for curling the hair, comprising a fork, the side members of which are tapered at the ends, and a tubular flexible cord into the ends of which the ends of the side members of the fork are adapted to be inserted, said fork being also provided with a handle.

850,554. DISPLAY-RACK ATTACHMENT. EDWARD B. WESTON, Dayton, Ohio. Filed Feb. 12, 1906. Serial No. 300,673.

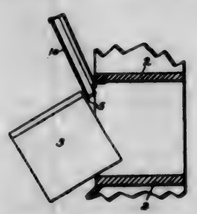

Claim.—1. In a display-rack attachment, the combination with a box having a lid, of a detachable strip of suitable material, and means for fastening same at front and rear to the box-lid, with loop permanently secured to the front edge of the rack above the box, for holding said strip adjustably to the rack and through which loop the strip is passed before fastening the lid.

2. In a display-rack attachment, the combination of a box having a lid, of a metal strip with ends bent to engage detachably the lid of the box at front and rear, and loop permanently secured to the front edge of the rack above the box, through which loop the metal strip passes to hold same adjustably to the rack.

3. In a display-rack attachment, the combination of a box, having a lid, of a metal strip, with ends bent to engage the lid of the box at front and rear, loop secured to the front edge of the rack above the box through which loop the metal strip passes to hold same adjustably to the rack, and a stop to limit the movement of the strip.

4. In a display-rack attachment, the combination of a box having a lid, of a metal strip, with ends bent to engage the lid of the box at front and rear, loop secured to the front edge of the rack above the box through which loop the metal strip passes to hold same adjustably to the rack, with a bend in the strip to form a stop to limit the movement of the strip.

850,555. ROTARY ENGINE. GUY [redacted] WHITMAN, Greenland, Mich. Filed Mar. 20, 1906. Serial No. 306,963.

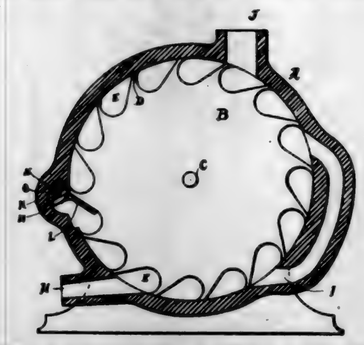

Claim.—In a rotary engine, a cylinder, a piston fitted to revolve therein, blades formed upon the periphery of the piston, spring-actuated packing-blocks fitted in each wing, a primary exhaust for conveying the steam from the pockets of the blades at a certain point to the pockets of the blades at another point, and a spring-actuated partition contacting with the blades and extending therebetween, as specified.

850,556. PROTECTOR FOR BUCKET-FASTENERS. JOSEPH B. BARIANI, Encampment, Wyo. Filed Feb. 16, 1907. Serial No. 357,624.

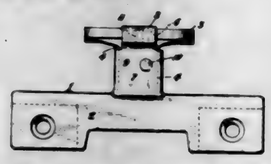

Claim.—1. The combination with a cast-metal bucket hanger or fastener of the character described having a connecting-neck, of a case-hardened protector secured to said neck.

2. The combination with a cast-metal bucket hanger or fastener of the character described having a connecting-neck, of a protecting-band surrounding said neck and a fastening passed through said neck and said collar.

3. The combination with a bucket hanger or fastener of the character described having a plate or body and a neck projecting therefrom, of a protector arranged upon said neck and having arms engaged with said plate or body.

4. The combination with a bucket hanger or fastener of the character described having a plate or body and a neck projecting therefrom, of a protecting-collar surrounding said neck and having oppositely-disposed arms bent around said plate or body.

5. The combination with a bucket hanger or fastener of the character described having a plate or body and a neck projecting therefrom, of a protecting-collar surrounding said neck and having oppositely-disposed arms bent around said plate or body and fastening devices passed through said arms in the plate or body and through said neck and its protecting-collar.

6. The combination with a bucket hanger or fastener of the character described having the bar 2, the plate 3 and the connecting-neck 4, said plate being formed in its top with a seat, of a protector comprising a band bent around said neck and formed with arms bent over said plate at opposite points and having their ends engaged with the seat in said plate, and fastening devices for securing said protector upon said hanger or fastener, substantially as shown and described.

850,557. CLEANING COMPOUND. WILLIAM J. BARRICKMAN and JOSEPH C. BYERS, Butler, Pa. Filed Oct. 20, 1905. Serial No. 283,698.

Claim.—1. The herein-described composition of matter, consisting of clay eighty-two per cent., oil ten per cent., soap five per cent., tallow one per cent., and glycerin two per cent., substantially as described and for the purpose set forth.

2. The herein-described composition of matter, consisting of finely-pulverized clay, oil, soap, tallow and glycerin, substantially as described and for the purpose set forth.

850,558. ATTACHMENT FOR TELEPHONES. MORTIMER H. BLACK, Pittsburg, Pa. Filed Mar. 6, 1907. Serial No. 360,876.

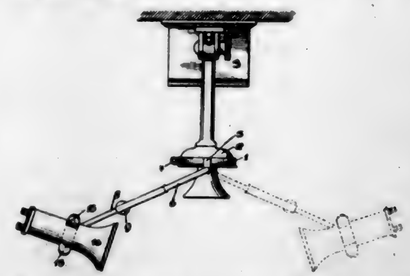

Claim.—1. A telephone attachment consisting of a band or clamp adapted to embrace the transmitter of a telephone, diametrically-opposed pierced lugs carried by said band, a yoke pivotally mounted in said lugs, a tubular arm carried by said yoke, a rod adjustably mounted in said arm, a head carried by said rod, a support adjustably mounted in said head, and a resilient clasp carried by said support, and adapted to embrace the telephone-receiver, substantially as described.

2. The combination with a telephone transmitter and receiver, of a clamp embracing said transmitter, a yoke pivotally connected to said clamp, an arm carried by said yoke, and an adjustable rod mounted in said arm, an adjustable support carried by said rod, and a resilient clasp carried by said support and adapted to embrace said receiver.

3. The combination with the transmitter and receiver of a telephone, of a yoke pivotally supported by said transmitter, a rod adjustably supported by said yoke, a support adjustably carried by said rod, a resilient clasp adapted to embrace said receiver, and means for attaching said yoke to said transmitter.

850,559. WHEEL. CHARLES C. BRABANT, Alpena, Mich. Filed Feb. 10, 1906. Serial No. 300,531.

Claim.—1. A wheel comprising body-sections detachably connected together and having inner angular portions, rim portions, and spoke portions connecting said inner portions and the rim-body, an annular shell arranged and secured between the inner annular portions of the body-sections, annular sections arranged between the inner annular portions of the body-sections and having flanges opposed to

the inner edges of said inner annular portions, packing interposed between said flanges and edges, antifriction devices arranged in the race or casing formed between the annular shell and the annular section, a portion adapted to receive an axle, and cushioning means interposed between said portion and the annular sections.

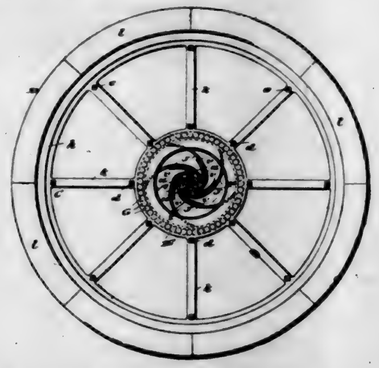

2. In a wheel, the combination of a central portion arranged to receive an axle and having spring-holding devices, an annular body, an annular section arranged therein, antifriction devices interposed between the body and section, and springs interposed between the central portion and the annular section; the said springs being respectively formed of a strip of material bent upon itself, and each spring being looped to receive one of the spring-holding devices and having its bight portion laid or lapped against the outer portion of the next spring.

3. The combination in a wheel, of a central portion arranged to receive an axle and having spring-holding devices, an annular section surrounding the central portion, and springs interposed between the central portion and the annular section; the said springs being respectively formed of a strip of material bent upon itself, and each spring being looped to receive one of the spring-holding devices and having its bight portion laid or lapped against the outer portion of the next spring.

850,560. DRESS-WAIST PROTECTOR. JOHN R. BRANTLY, Athens, Ga. Filed Feb. 6, 1906. Serial No. 299,810.

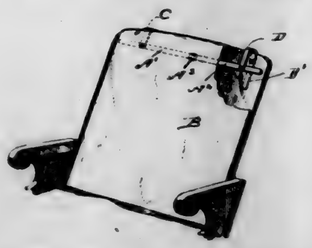

Claim.—1. In a dress-waist protector, the combination with metal strips hinged together, of a strip of cloth secured to said strips, and flexible sectional strips of metal pivoted to said strips adjacent each end, for the purpose described.

2. In a dress-waist protector the combination with metal strips connected together by a link carrying a strip of cloth, of flexible metal strips pivotally connected to the said strips adjacent their free ends and flexible strips pivoted to the free ends of said flexible strips, for the purpose described.

850,561. DELIVERY-CASE FOR BOTTLED GOODS. NELSON BREAKENRIDGE, Redlands, Cal. Filed July 10, 1906. Serial No. 325,532.

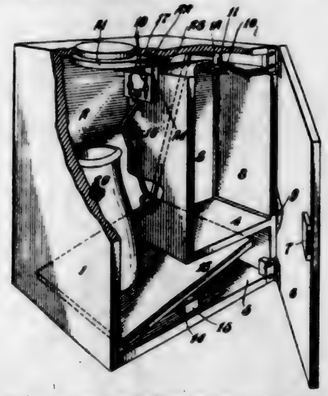

Claim.—1. A case for delivering bottled goods containing two compartments having adjacent openings, and also having separated openings; a single closure for said adjacent openings; means to lock said single closure; closures for said separated openings; and mechanism for locking said separated closures, said mechanism being arranged to alternately lock one and unlock the other of said separated closures.

2. A case having two compartments therein, one of which is smaller than the other, said compartments having adjacent openings; a door secured to said case adapted to close said adjacent openings; a lock for said door; an independent door for the smaller of said compartments; an independent door for the larger of said compartments; and mechanism within the larger of said compartments to alternately lock and unlock the independent doors of said compartments, said mechanism being operatable by a bottle placed within the larger of the compartments to unlock the door of the smaller compartment and lock the door of the larger compartment.

3. The herein-described bottle-delivery case having two compartments therein provided with adjacent openings, one of said compartments being larger than the other and projecting below the smaller compartment; a door provided with a lock, said door being adapted to close the adjacent openings of said compartments; an independent door for the smaller of said compartments; hinges secured to the bottom of latter door; a lug having an aperture therein secured to the top of said last door; a door having a lug on the lower face thereof at the rear in the top of the case opening downwardly and inwardly into the larger of said compartments; a pivoted platform at the bottom of the larger compartment; and a locking-bar and a locking-slide carried by the outer end of said platform, said bar being adapted to lock the door of the smaller compartment and the slide to lock the door of the larger compartment.

850,562. TRUCK. GEORGE A. BROWNE, Tacoma, Wash. Filed Dec. 19, 1905. Serial No. 292,411.

Claim.—1. The combination with a truck-frame having a centrally-arranged axle and carrying-wheels, said frame being adapted to support lumber or other material with the ends of the load projecting beyond the ends of said frame, of means mounted in one end of said frame for raising one end of the load off the truck to allow a support to be placed under its projecting end, the frame of said truck being utilized as a lever to lift the opposite projecting end of the load and allow a support to be placed under that end, substantially as described.

2. The combination, with a truck-frame having a centrally-arranged axle and carrying-wheels, and a vertically-movable block on one end, said truck being adapted to support a load of material having ends projecting beyond the ends of said truck, of means mounted on said truck and adapted to engage said block to elevate the same and allow a support to be placed under one of the projecting ends of the load and the frame of the truck being utilized as a lever to lift the opposite end of the load to allow a support to be placed under that end, substantially as described.

3. The combination with a two-wheeled truck, of a vertically-movable head-block, an oscillating cam arranged to lift said head-block and having a notch or recess, and a latch adapted to drop into said recess and lock said cam in its raised position.

4. The combination, with a two-wheeled truck having a vertically-movable block and adapted to support a load of material with its end projecting beyond the ends of said truck, of means detachably mounted on said truck and adapted to engage said block to elevate the same and one end of the load a sufficient distance to allow a support to be placed on the ground under that end, the frame of the truck being utilized as a lever to elevate the opposite end of the load and permit a support to be placed on the ground under that end, substantially as described.

5. The combination with a truck having side rails and a cross bar or beam connecting them, of a head-block, a hanger secured to said block and depending through a slot provided in said cross-beam, angle-plates secured to said cross-beam, and a cam having a curved surface to engage said hanger and detachably supported on said plates, substantially as described.

6. The combination with a truck having side rails and a cross-beam, of a head-block resting on said rails and having a hanger depending through a slot provided in said beam, brackets detachably supported on said beam, a cam carried by said brackets and arranged to engage said hanger, and a shaft whereon said cam is mounted, substantially as described.

7. The combination with a truck, of a vertically-movable head-block mounted thereon, brackets detachably supported on said truck, a cam carried by said brackets and arranged to lift said head-block, and means for operating said cam, substantially as described.

8. The combination with a truck-frame having a centrally-arranged axle and carrying-wheels, of a vertically-movable head-block provided at one end of said truck, and a cam device arranged to raise said head-block to lift the load, substantially as described.

9. The combination with a truck-frame having centrally-arranged axle and carrying-wheels, of a head-block and a cam device mounted on said frame and arranged to lift said head-block to lift the load on the truck, and said cam device being detachable from said truck, for the purpose specified.

850,563. LUMBER-TRUCK. GEORGE A. BROWNE, Tacoma, Wash. Filed Dec. 29, 1905. Serial No. 293,734.

Claim.—1. The combination with a wheeled frame provided with a housing, of a toothed bar vertically movable in said housing, a beam carried by said bar and having a comparatively long horizontal bearing-surface adapted to engage the bottom of the lumber, means for lifting said bar step by step, and means for locking it, substantially as described.

2. A lumber-truck comprising a frame having carrying-wheels and a housing, a toothed bar vertically movable in said housing, a beam mounted on said bar and arranged at an angle to the truck-axle and having a horizontal upper surface adapted to engage the bottom of the lumber, a lever detachably mounted in said housing and adapted to engage said teeth to elevate said bar, and a locking-dog for said teeth, substantially as described.

3. A lumber-truck comprising a frame having carrying-wheels and a housing, a toothed bar vertically slidable in said housing, a beam mounted on said bar, a draft-handle for said frame, said handle being detachable from said frame and having a pivot that is slidable in slots provided in said housing, and the end of said handle being adapted to engage the teeth of said bar to elevate the same when said handle is depressed, and means for locking said bar during its upward movement, substantially as described.

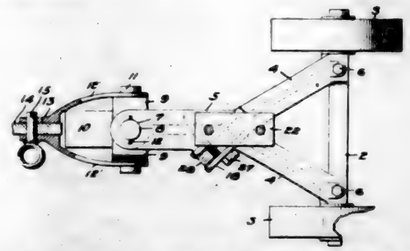

4. A lumber-truck comprising a rear axle, a frame having legs supported on said axle, a fork swiveled on said frame, carrying-wheels mounted on said axle and in said fork, a bail connected to said fork, a draft-handle detachably connected with said bar, a toothed bar vertically movable in guides provided on said frame, a beam mounted on said bar, and said frame having slots near said bar wherein the detachable pivot of said handle is slidable toward and from said bar and whereby the end of said handle may be moved into or out of engagement with said teeth, and a spring-pressed dog arranged to engage said teeth and lock said bar in its raised position, substantially as described.

5. A lumber-truck comprising a three-wheeled frame having a housing thereon and a toothed bar vertically movable in said housing, a beam mounted on said bar and adapted to engage the bottom of the pile of lumber, a draft-handle pivotally and detachably connected to said frame, the pivot of said handle being slidable in slots provided in said housing near the teeth of said bar to allow the said handle to be moved toward or from said bar, and said handle having a toe to engage the teeth of said bar and whereby said bar and block will be raised with a step-by-step movement when said handle is depressed, and a spring-pressed dog for locking said bar in its raised position, substantially as described.

6. A lifting-truck comprising a frame having rearwardly-depending legs, an axle having carrying-wheels secured to said legs, a forward carrying-wheel swiveled on said frame, a housing provided on said frame, a bar vertically movable in said housing, a beam carried by said bar and adapted to engage the under side of the load, and means for raising said bar, substantially as described.

7. A truck comprising a frame having rearwardly-depending legs, a rear axle having carrying-wheels secured to said legs, a forward carrying-wheel swiveled on said frame, a housing provided on said frame, a toothed bar vertically movable in said housing, a beam carried by said bar and adapted to engage the under side of a load, a lever device having bearings in said housing for raising said bar step by step, and means for locking said bar.

8. A lifting-truck comprising a frame 5, having depending legs 4, a rear axle having carrying-wheels secured to said legs, a forward carrying-wheel swiveled in said frame, a housing provided in said frame, a toothed bar vertically movable in said housing, a beam carried by said bar and adapted to engage the under side of the load, means for raising said bar and means for locking it, substantially as described.

850,564. AIR-BRAKE MECHANISM. JOHN J. COIT, Venice, Cal. Filed Nov. 15, 1906. Serial No. 343,560.

Claim.—1. The combination of a reservoir charged with fluid under pressure; a controller-valve; fluid-pressure-operated wheel-brake mechanism; fluid-pressure-operated

track-brake mechanism; a triple-valve device having a plurality of ports and passages in the casing thereof; connections from said reservoir to said controller-valve and to said triple-valve device; connections from said triple-valve device to said controller-valve and to said wheel-brake mechanism, whereby fluid-pressure from the reservoir will pass through the controller-valve and through the triple-valve device to operate said wheel-brake mechanism; a second connection from said reservoir to said triple-valve device and a connection from said triple-valve device to said track-brake mechanism; and mechanism in said triple-valve device to cut off the fluid-pressure therethrough to the wheel-brake mechanism and to permit the flow of fluid-pressure to the track-brake mechanism when the pressure in the triple-valve device reaches a predetermined point.

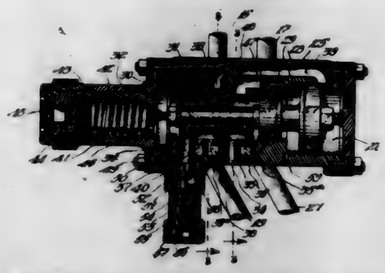

2. The combination of a reservoir charged with fluid under pressure; a controller-valve; fluid-pressure-operated wheel-brake mechanism; fluid-pressure-operated track-brake mechanism; a triple-valve device having a plurality of ports and passages in the casing thereof and mechanism therein, whereby the initial pressure will flow through the triple valve to the wheel-brake mechanism and when a predetermined pressure has been reached in the triple valve the flow of fluid-pressure to the wheel-brake mechanism will be cut off and the fluid-pressure will then flow through the valve to the track-brake mechanism; and connections between said parts.

3. In an air-brake mechanism, the combination of a reservoir charged with fluid under pressure; fluid-pressure-operated wheel-brake mechanism; fluid-pressure-operated track-brake mechanism; means for connecting said reservoir with said wheel-brake mechanism, whereby the initial pressure will operate the same; and means for connecting said reservoir with said track-brake mechanism and for cutting off the connection to said wheel-brake mechanism when there is an emergency application of brakes to be made.

4. The combination of a reservoir charged with fluid under pressure; a controller-valve; fluid-pressure-operated wheel-brake mechanism; fluid-pressure-operated track-brake mechanism; a triple-valve device having means therein to permit the initial pressure from said reservoir to pass to and operate said wheel-brake mechanism and when the pressure therein reaches a predetermined point to cut off the pressure to the wheel-brake mechanism and establish communication between said reservoir and said track-brake mechanism.

5. In an air-brake mechanism, a triple-valve device having a plurality of ports and passages therein and having a chamber therein with the front end thereof of larger diameter than the other portion, said larger portion having an exhaust-port at the rear thereof; pistons in said chamber, one in the larger front end and the other in the reduced portion of the chamber, said piston being connected; a slide-valve having a plurality of recesses therein in the smaller end of said chamber at the rear of the pistons and operatively connected thereto; and a spring operating to resist the movement of the pistons toward the rear end of the chamber.

6. In an air-brake mechanism, a triple-valve device having a plurality of ports and passages therein and having a chamber therein with the front end thereof of larger diameter than the other portion; pistons in said chamber, one in the larger front end and the other in the reduced portion of the chamber; a stem connected to said piston; a stem carried by the smaller of said pistons; a slide-valve having a plurality of recesses therein; a spring in the smaller end of the chamber; and a relief-valve connected to the smaller end of the chamber in the triple-valve and adapted to be thrown into communication with a port in the casing which is connected to the wheel-brake mechanism.

850,565. SUPERHEATER. FRANCIS J. COLE, New York, N. Y., assignor to American Locomotive Company, New York, N. Y., a Corporation of New York. Filed Apr. 30, 1906. Serial No. 314,348.

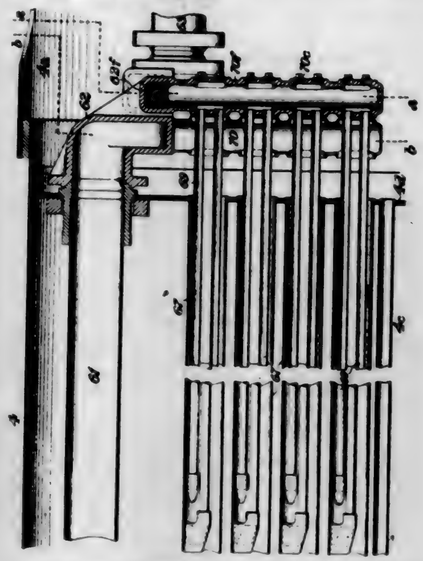

Claim.—1. The combination, with a tubular steam-boiler, of a superheating-tube, a pair of superheater-pipes extending longitudinally therein and connected at their rear ends, a vertical saturated steam-header located in front of the superheating-tube and connected to the forward end of one of the pair of superheater-pipes, a similarly located vertical superheated steam-header having its walls entirely separated from those of the saturated steam-header and connected to the forward end of the other superheater-pipe, and a T-head comprising a supply-compartment communicating with the saturated steam-header and a delivery-compartment communicating with the superheated steam-header.

2. The combination, with a tubular steam-boiler, of a superheating-tube, a pair of superheater-pipes extending longitudinally therein and connected at their rear ends, a vertical saturated steam-header located in front of the superheating-tube and connected to the forward end of the pair of superheater-pipes, a similarly located vertical superheated steam-header having its walls entirely separated from those of the saturated steam-header and connected to the forward end of the other superheater-pipe, and a T-head comprising a supply-compartment communicating with the saturated steam-header and a delivery-compartment having its wall which is adjacent to that of the supply-compartment separated therefrom by an open space, and communicating with the superheated steam-header.

3. The combination, with a tubular steam-boiler, of a vertical row of superheating-tubes, pairs of superheater-pipes extending longitudinally therein, fittings connecting the ends of the pipes of each pair nearer the fire-box, a main steam-supply pipe, a steam-delivery pipe, a vertical saturated steam-header and a vertical superheated steam-header located in front of the row of superheater-tubes, having entirely separated walls, and communicating, respectively, with the receiving and the delivery ends of the steam-channels formed by the vertical row of pairs of superheater-pipes, and a T-head comprising a supply-compartment communicating with the steam-supply pipe and with the saturated steam-header and a delivery-compartment communicating with the superheated steam-header and with the steam-delivery pipe.

4. In a steam-boiler superheater, the combination of superheating-tubes, pairs of superheater-pipes extending longitudinally therein and constituting steam-channels, a T-head structure comprising a supply-compartment communicating with a steam-supply pipe and a delivery-compartment communicating with a steam-delivery pipe and having its wall which is adjacent to that of the supply-compartment separated therefrom by an open space, a plurality of vertical saturated steam-headers extending downwardly from the T-head supply-compartment and connected on their rear sides to the receiving ends of the steam-channels, a plurality of vertical superheated steam-headers extending downwardly from the T-head delivery-compartment and having their walls entirely separated from those of the saturated steam-headers, said superheated steam-headers being connected on their rear sides to the delivery ends of the steam-channels, and removable plugs closing openings in the front sides of the headers opposite the ends of the superheater-pipes.

5. In a steam-boiler superheater, the combination of a T-head structure comprising a supply-compartment communicating with a steam-supply pipe and a delivery-compartment located in front of the supply-compartment and communicating with a steam-delivery pipe, a plurality of saturated steam-headers extending downwardly from the supply-compartment, a plurality of superheated steam-headers extending downwardly from the delivery-compartment, and a plurality of superheater-pipes forming steam-channels, the opposite ends of which are connected to the rear side of the saturated and the superheated steam-headers, respectively.

850,566. RATCHET MECHANISM. HARRIS J. COOK, New Britain, Conn., assignor to Stanley Rule & Level Company, New Britain, Conn., a Corporation of Connecticut. Filed Feb. 24, 1905. Serial No. 247,207.

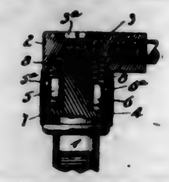

Claim.—In a ratchet mechanism for tools, a driving part, a driven part rotatively connected to said driving part, a crown-ratchet upon one of said parts having six teeth with two oppositely-disposed faces to each tooth, four pawls carried by the other part and arranged at equal intervals around its axis, two adjacent pawls having shoulders facing in one direction, and the other two adjacent pawls having shoulders facing in the other direction, and means for holding both pawls of either set out of engagement with the ratchet.

850,567. MACHINE FOR TAKING AND EXHIBITING PICTURES. JAMES A. CROSBY and JOHN J. PINK, Chicago, Ill., assignors to Sidney H. Selig, trustee, Chicago, Ill. Filed Feb. 15, 1906. Serial No. 301,135.

Claim.—1. In a device of the class described, the combination with mechanism for guiding and intermittently advancing the ribbon, of a cylindrical light-shutter cooperating therewith having two diametrically opposite openings in its shell arranged to be brought into register to expose the ribbon and having a narrow wall in one of said openings which passes the exposed ribbon.

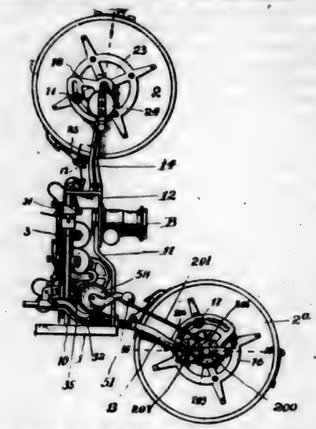

2. In a device of the class described, the combination with mechanism for guiding and intermittently advancing the ribbon, of a cylindrical light-shutter coöperating therewith having two diametrically opposite openings in its shell arranged to be brought into register to expose the ribbon and having a plurality of narrow walls in said openings arranged to pass the exposed ribbon in opposite directions.

3. In a device of the class described, the combination with a suitably-operated shutter of ribbon-advancing mechanism comprising a frame having pins for engagement with the ribbon, a pair of parallel suitably-driven shafts, flanged cams upon said shafts constructed and arranged to support, guide and actuate the ribbon-advancing frame, said frame being unprovided with any other guiding or supporting means.

4. In a device of the class described, the combination with a suitably-operated shutter of ribbon-advancing mechanism comprising a frame having pins for engagement with the ribbon, a pair of parallel suitably-driven shafts, a pair of flanged cams upon said shafts arranged to reciprocate the frame transversely with respect to the ribbon and a cam upon one of the shafts arranged to reciprocate the frame longitudinally of the ribbon and upon the first-named cams, the frame being unprovided with any other supporting or guiding means.

5. In a device of the class described, the combination with mechanism for intermittently advancing the ribbon, of a guide therefor, a pair of suitably-supported friction-shoes engaging the edges thereof and guided to move transversely, a spring, and connections between the spring and the shoes, said connections engaging the shoes approximately midway between their ends.

6. In a device of the class described, the combination with mechanism for intermittently advancing the ribbon, of a guide therefor, a gate, a pair of friction-shoes guided upon the gate and movable transversely thereof, a spring, and connections between the spring and the shoes, said connections engaging the shoes approximately midway between their ends.

7. In a device of the class described, the combination with mechanism for intermittently advancing the ribbon, and a shutter coöperating therewith, of two rotatably-mounted magazines, ribbon-spools journaled therein, means connected with the ribbon-advancing mechanism for winding the ribbon upon one of the spools, gates in said magazines through which the ribbon passes to and from the magazine and means for operating the other spool to rewind the ribbon upon the spool from which it was unwound without passing it back through the machine.

8. In a device of the class described, the combination

with a support, a boss on said support, and a magazine rotatably mounted upon said boss, of means for clamping the magazine in place, a spindle journaled in said support, a spool removably mounted upon the spindle and suitable means for rotating the spindle.

9. In a device of the class described, the combination with a ribbon-spool, of a magazine inclosing the same and having a slot across its periphery through which the ribbon can be passed, and a gate having means for closing up that portion of the slot beyond the edge of the ribbon.

10. In a device of the class described, the combination with a ribbon-spool, of a magazine inclosing the same and having a slot across its periphery through which the ribbon can be passed, and a spring-pressed gate having means for closing up that portion of the slot beyond the edge of the ribbon.

11. In a device of the class described, the combination with a ribbon-spool, of a magazine inclosing the same and having a slot across its periphery through which the ribbon can be passed, guide-rollers adjacent to the slot, a gate hinged to the magazine and adapted to partially close said slot and rollers journaled upon said gate, and adapted to coact with the first-mentioned rollers to guide the ribbon in its passage from the magazine.

12. In a device of the class described, the combination with mechanism for intermittently advancing the ribbon, and a shutter coöperating therewith, of a spool, connections between the ribbon-advancing mechanism and the spool for rotating the spool, a friction device interposed in said connecting device, and means for regulating the friction incorporating a handle located upon a stationary portion of the machine whereby the tension device may be operated while the spool is in motion.

13. In a device of the class described, the combination with mechanism for guiding and intermittently advancing the ribbon, and a shutter coöperating therewith, of a ribbon-spool, driving connections between the ribbon-advancing mechanism and spool, a friction device interposed in said driving mechanism, means for regulating said friction device, and a dial coöperating with said regulating device to indicate the degree of friction.

14. In a device of the class described, the combination with mechanism for guiding and intermittently advancing the ribbon, and a shutter coöperating therewith, of a ribbon-spool, driving connections between the ribbon-advancing mechanism and spool, and a friction device interposed in said connection device comprising substantially two friction members, one of which is rigidly connected to the spool, a stationary spring engaging with the other friction member, and means for regulating the tension of the spring.

15. In a device of the class described, the combination with mechanism for guiding and intermittently advancing the ribbon, and a shutter coöperating therewith, of a ribbon-spool, driving connections between the ribbon-advancing mechanism and spool, and a friction device interposed in said connection device comprising substantially two friction members, one of which is rigidly connected to the spool, a stationary spring engaging the other friction member, and a regulating-screw engaging said spring.

16. In a device of the class described, the combination with mechanism for guiding and intermittently advancing the ribbon, and a shutter coöperating therewith, of a ribbon-spool, driving connections between the ribbon-advancing mechanism and spool, and a friction device interposed in said connection device comprising substantially two friction members, one of which is rigidly connected to the spool, a spring engaging the other friction member, a regulating-screw engaging said spring, and an indicating-dial coöperating with said screw to indicate the degree of friction upon the friction members.

17. In a device of the class described, the combination with mechanism for guiding and intermittently advancing the ribbon, and a shutter coöperating therewith, of a ribbon-spool, driving connections between the ribbon-advancing mechanism and spool, and a friction device interposed in said connection device comprising substantially two friction members, one of which is rigidly connected to the spool, a spring engaging the other friction member, a regulating-screw engaging said spring and bearing a spring-pointer, and a dial having radial grooves coöperating with said pointer to indicate the degree of tension upon the friction members.

18. In a device of the class described, the combination with mechanism for guiding and intermittently advancing the ribbon, and a shutter coöperating therewith, of a ribbon-spool, a spindle carrying the same, a spool-supporting arm in which said spindle is journaled, driving connections between the advancing mechanism and the spindle, a regulatable friction device interposed in said connecting mechanism, and an antifriction-bearing adapted to take up the end thrust of said friction device.

19. In a device of the class described, the combination with feed-sprockets, a long ribbon-guideway having an opening therethrough, ribbon-advancing mechanism adjacent thereto incorporating engagement-pins, a pair of long friction-shoes adapted to bear upon the edges of the ribbon and extending beyond the opening and the engagement-pins, and a spring having means for egagement with said shoes approximately midway between their ends.

850,568. INVERTED-BURNER GAS-LAMP. WILLIAM DE FREITAS, New York, N. Y., assignor to Consolidated Gas Company, New York, N. Y., a Corporation of New York. Filed Jan. 27, 1905. Serial No. 242,848.

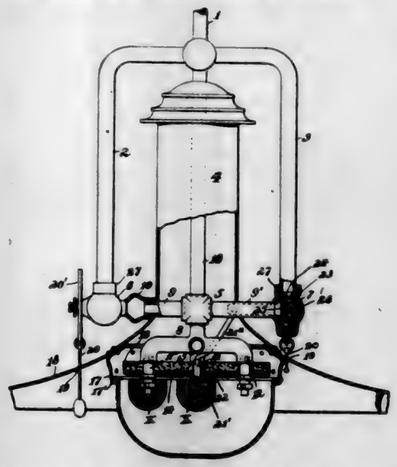

Claim.—1. In an inverted-burner gas-lamp, an inverted burner-head and a shouldered burner-tube attached thereto, in combination with an apertured deflector-plate receiving said tube and adapted to be held between the shoulder thereof and the said burner-head.

2. In a gas-lamp, a burner-head or spider, a plurality of inverted burner-tubes carried thereby each provided with means for supporting a mantle and with a shoulder above said means, in combination with a heat-deflector plate supported upon said shoulders.

3. In an inverted-burner gas-lamp, an inverted burner-tube, means for supporting a mantle in association therewith, and a dish-like deflector-plate having a filling of refractory material and an aperture for receiving said tube.

4. In an inverted-burner gas-lamp, an inverted burner-tube, means for supporting a mantle at the end thereof and a heat-deflector adapted to be located above said mantle consisting of a dish-like receptacle containing a filling of refractory material.

5. In an inverted-burner gas-lamp, a gas-supply pipe and burner-head, an inverted burner-tube depending from said head adapted to support a mantle and a deflector of greater diameter than said head interposed between the same and the mantle and a backing of refractory material for said deflector.

6. The combination in an inverted-burner gas-lamp having an inverted burner-tube and a deflector-plate above the lower end of the same, of a casing above said plate forming a stack, a gas-supply pipe for said tube entering said casing through the lateral wall thereof and above the deflector-plate, and an air and gas mixing chamber for said tube exterior to said casing.

7. An inverted-burner gas-lamp, comprising an inverted burner-tube adapted to support a mantle, a heat-deflector above the flame thereof and a casing above said deflector forming an escape-passage for the burnt gases, in combination with a gas-supply pipe for said burner provided with an air and gas mixing chamber exterior of said passage.

8. An inverted-burner gas-lamp, comprising a burner-head provided with a plurality of inverted burner-tubes, a deflector between said head and the openings of said tubes, and a casing above said deflector, adapted to form an escape-passage for the burnt gases, in combination with a gas-supply pipe provided with an air and gas mixing chamber outside of said passage.

9. In an inverted-burner gas-lamp, a stack and a horizontal cross-pipe passing transversely through the same, a burner-tube connected with said pipe to project its flame downwardly and means for supporting a mantle in said flame, in combination with a deflector-plate below the cross-pipe and an air and gas mixing chamber in said cross-pipe exterior to the stack.

10. In a gas-lamp, a central depending support and two side pipes connected therewith in combination with a cross-pipe, a burner-head carried by said cross-pipe, a stack mounted on said cross-pipe above the burner-head, and means for detachably connecting said cross-pipe with the side pipes.

11. In a gas-lamp, a central depending support and two side pipes forming terminations thereof, in combination with a cross-pipe detachably connected with said side pipes, a burner-head carried on said cross-pipe, and a rod extended from said central support into engagement with said cross-pipe.

12. In an inverted-burner gas-lamp, a central depending support terminating in two side pipes, a cross-pipe, detachably connected with said side pipes, a burner-head and stack carried by said cross-pipe between the side pipes, and a reinforcing-rod extended from said central support, through the stack, and seated in a recess in said cross-pipe.

13. In a gas-lamp, a central depending support and two side pipes forming terminations thereof, in combination with a cross-pipe, a burner-head carried thereby, elbow-unions joining the ends of said cross-pipe to the ends of said side pipes and a gas-controlling cock formed in one of said elbow-unions.

14. In an inverted-burner gas-lamp, a central depending support, terminating in two substantially vertical side members and a vertical stack disposed between them, a cross member piercing said stack near its base and adapted to support the burner-head beneath the same, in combination with a reinforcing-rod extended from said central support through the stack to said cross member.

15. In an inverted-burner gas-lamp, a supply-pipe, a burner-head connected with and depending therefrom, a plurality of burner-tubes mounted on said head to project their flames downwardly and a deflector-plate disposed between said head and the lower ends of said tubes.

16. In an inverted-burner gas-lamp, a cross-pipe containing an air and gas mixing chamber, a burner-head depending from said pipe and provided with a plurality of burner-tubes arranged to project their flames downwardly, in combination with a stack covering and containing said burner-head but excluding the said mixing-chamber, and a heat-deflector of greater diameter than the body of the stack located above said flames.

17. In an inverted-burner gas-lamp, a central depending supply pipe terminating in side pipes, and a stack supported between the side pipes, in combination with an inverted burner beneath the stack fed by one of said side pipes and a pilot-light for said burner fed by the other side pipe.

18. In an inverted-burner gas-lamp, a stack and gas-supply pipes on opposite sides thereof, a cross member joining the side pipes and forming a support for said stack, in combination with an inverted burner having a gas-supply connection through said cross member with one side pipe, and a pilot-light having an isolated gas-supply connection through said cross member with the other side pipe.

19. In an inverted-burner gas-lamp, a cross supporting member with one end provided with a passage containing a gas-mixing chamber and the other end provided with an isolated passage, a burner-head supported by said member and connected with the first-mentioned passage and a pilot-light for the burner connected with the isolated passage.

20. In an inverted-burner gas-lamp, a central vertical stack and side pipes, a cross member joining said pipes, a burner-head and a pilot-light burner supported on the cross member and having isolated gas-supply connections therethrough respectively to the side pipes and a cock at each end of the cross member for controlling the said connections.

21. In an inverted-burner gas-lamp, side pipes and a stack supported between them, a cross member joining said pipes, an inverted burner depending therefrom having connection with a side pipe therethrough and a controlling-cock for said connection at the elbow of side pipe and member, in combination with a reflector supported by said stack below the cross member and a perforation in the reflector receiving the operating means of said cock.

22. In an inverted-burner gas-lamp, the combination with a burner-head provided with one or more burner-tubes arranged to project their flames downwardly, and mantel-supporting means, of a stack for the escape of gases, a reflector and globe-base both joined to the base of the stack on a line above the horizontal plane of the said mantle.

23. In an inverted-burner gas-lamp, the combination with the inverted burner-head provided with a plurality of burner-tubes arranged to project their flames downwardly, of a pilot-light centrally disposed with respect to said tubes and a gas-supply connection for said pilot arranged above the lower ends of said tubes.

24. In an inverted-burner gas-lamp, the combination with a plurality of inverted burner-tubes, of a pilot-light, comprising a vertical tube provided with a plurality of gas-apertures and a projecting-plate beneath the latter, and gas-supply connections for said pilot-light arranged above the lower ends of said burner-tubes.

25. In an inverted-burner gas-lamp, the combination with a plurality of inverted burner-tubes, of a pilot-light comprising a vertical tube provided at its lower end with an attached deflecting-plate, a plurality of burner-tips on said tube above the plate respectively arranged to project their flames toward the burner-tubes.

26. In an inverted-burner gas-lamp, a burner-head, an inverted burner-tube thereon adapted to project its flame downwardly, and a heat-deflector between said burner-head and the flame, in combination with a pilot-light located in an aperture in said deflector.

27. In an inverted-burner gas-lamp, a burner-head and an inverted burner-tube adapted to project its flame downwardly, in combination with a heat-deflector located in a position above said flame and a pilot-light carried by said deflector.

850,569. REGULATING-VALVE FOR GAS-BURNERS. FREDERICK EGGE, Bridgeport, Conn. Filed June 8, 1906. Serial No. 320,776.

Claim.—A regulating-valve for gas-burners, comprising a base-section provided with a single central gas-duct, a reduced, threaded nipple at the upper end of said section, a valve-seat overlying said gas-duct and being formed below the top of said nipple, a pair of ears projecting upwardly from said nipple and on opposite sides of said valve-seat, a ball-valve on said seat, and a gravity-dog

having its upper end pivotally supported from the upper portions of said ears and having its lower end engaging said ball-valve.

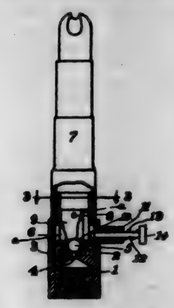

850,570. HEADLIGHT FOR VEHICLES. FREDERICK G. FRANKENBERG, Chicago, Ill. Filed Sept. 18, 1905. Serial No. 278,840.

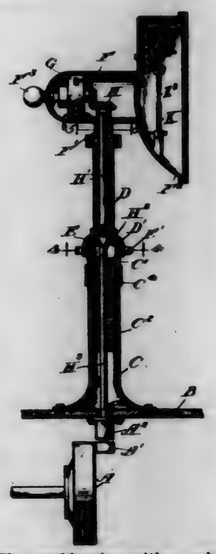

Claim.—1. The combination with a vehicle, of a stand mounted upon and secured to said vehicle, a headlight carried upon the upper end of said stand and swivelingly connected thereto, and a joint in said stand intermediate its ends whereby said headlight is manually adjustable to positions other than the swiveling positions.

2. The combination with a vehicle, of a standard supported by said vehicle, a second standard slidably supported above the first-named standard and provided with a joint intermediate its ends, a spring inclosed by the lower standard and serving to support the upper standard, and an electric light supported on the upper standard and operated by energy conveyed through the interior of said standards.

3. The combination with a vehicle, and a headlight therefor, of a support for said light consisting of a plurality of sections, one of said sections being slidably connected to another section, a spring between the sections and serving to support the weight of the upper one, a light supported on the upper end of the upper section, and a joint near the lower end of the upper section, substantially as described.

4. The combination with a casing, of a stand upon which said casing is swiveled, a joint in said stand intermediate its ends whereby said casing may be moved manually in different directions, electric-lighting devices in said casing, and means for conveying power through the jointed stand to cause the operation of the electric-lighting devices.

5. The combination with a casing, and a dynamo supported therein, of a stand upon which said casing is supported, a joint in said stand intermediate its ends whereby said casing may be moved manually in different directions, and means for conveying power through said jointed stand to cause the operation of said dynamo.

6. The combination with a vehicle furnishing a source of power, of an electric headlight yieldingly supported at an elevated position on said vehicle, means by which said headlight is manually adjustable to different positions, connections for conveying energy from the source of power to the electric headlight to cause its operation, and means provided in said connections for compensating for the variations in the elevation of said headlight due to the yielding character of its support.

7. The combination with a vehicle furnishing a source of power, of a jointed stand supported on said vehicle and manually adjustable to different positions, a dynamo supported on said stand, a shaft for conveying power from the source to the dynamo, and a joint in said shaft corresponding to the joint in said stand.

8. The combination with a vehicle furnishing a source of power, of a jointed stand supported on said vehicle and manually adjustable to different positions, a dynamo carried on said stand, a shaft extending through the interior of said stand for conveying power from the source to the dynamo, and a universal joint in said shaft coincident with the joint in said stand.

9. The combination with a vehicle furnishing a source of power, a stand divided into upper and lower sections, a spring between the sections, a dynamo supported on the upper section, a shaft extending through the sections for conveying power from the source to the dynamo, and means for compensating for variations in the driving distance between the source of power and the dynamo due to variations in compression of said spring.

10. The combination with a vehicle, and a headlight therefor, of a stand supported on said vehicle, said stand being provided at its upper end with a swiveling connection to said headlight and having a joint intermediate its ends whereby the swiveling connection may be moved in different directions.

850,571. MANUFACTURING ARTIFICIAL THREADS, FILMS, AND THE LIKE. ERNST W. FRIEDRICH, Blaton, Belgium. Filed Dec. 10, 1906. Serial No. 347,029.

Claim.—1. The herein-described process of manufacturing artificial glossy products from fibrous substances soluble in ammoniacal solutions of metallic compounds, by first preparing a solution from a part of the substance that is to be dissolved, in presence of such metallic compound, in a solution of ammonia containing the proportion of ammonia usual for that quantity of said substance, and then adding to the solution thus obtained the rest of said substance in several portions together with corresponding quantities of metallic compound and at the same time further portions of ammonia in solutions of successively-diminishing strength, avoiding however precipitating the dissolved substance by an undue excess of water, and finally converting the solution into glossy products by giving the material a convenient form and coagulating the so-called products, substantially as described.

2. The herein-described process of manufacturing artificial threads from fibrous substances soluble in ammoniacal solutions of metallic compounds, by first preparing a solution from a part of the substance that is to be dissolved, in presence of such metallic compound, in a solution of ammonia containing the proportion of ammonia usual for that quantity of said substance, and then adding to the solution thus obtained the rest of said substance in several portions together with corresponding quantities of metallic compound and at the same time further portions of ammonia in solutions of successively-diminishing strength, avoiding however precipitating the dissolved substance by an undue excess of water, and finally converting the solution into threads by spinning the solution in any convenient manner and coagulating the so-formed threads, substantially as described.

3. The herein-described process of manufacturing artificial threads from cellulose, by first preparing a solution from a part of the cellulose that is to be dissolved, in presence of a metallic compound the ammoniacal solution of which is capable of dissolving cellulose, in a solution of ammonia containing the proportion of ammonia usual for that quantity of cellulose, and then adding to the solution thus obtained the rest of the cellulose in several portions together with corresponding quantities of metallic compound and at the same time further portions of ammonia in solutions of successively-diminishing strength, avoiding however precipitating the cellulose by an undue excess of water, and finally converting the solution into threads by spinning the solution in any convenient manner and coagulating the so-formed threads, substantially as described.

4. The herein-described process of manufacturing artificial threads from cellulose, by first preparing a solution from a part of the cellulose that is to be dissolved, in presence of a copper compound the ammoniacal solution of which is capable of dissolving cellulose, in a solution of ammonia containing the proportion of ammonia usual for that quantity of cellulose, and then adding to the solution thus obtained the rest of the cellulose in several portions together with corresponding quantities of copper compound and at the same time further portions of ammonia in solutions of successively-diminishing strength, avoiding however precipitating the cellulose by an undue excess of water, and finally converting the solution into threads by spinning the solution in any convenient manner and coagulating the so-formed threads, substantially as described.

850,572. STREET-CAR FENDER. MANUEL GREENBAUM, Kansas City, Mo. Filed Sept. 13, 1906. Serial No. 334,426.

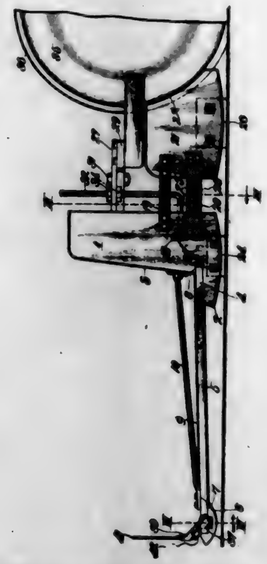

Claim.—1. A street-car fender, comprising a pair of standards, a frame projecting forward therefrom, a cover connecting the front edges of the standards and extending forward and forming a bed for said forwardly-projecting frame, a plate held yieldingly in a substantially vertical position at the front end of said frame, and means to limit the forward swinging movement of said plate.

2. A street-car fender, comprising a pair of standards, a frame projecting forward therefrom, a cover connecting the front edges of the standards and extending forward and forming a bed for said forwardly-projecting frame, a swing-frame carried at the front end of said fender-frame, a plate, and means to press said plate yieldingly forward against said swing-frame.

3. A street-car fender, comprising a pair of standards, a frame projecting forward therefrom, a cover connecting the front edges of the standards and extending forward and forming a bed for said forwardly-projecting frame, a swing-frame carried at the front end of said fender-frame, a plate, and a spring-frame secured to the main or fender frame and to said plate and holding the latter pressed forward against said swing-frame.

4. The combination with the truck-frame of a car, of bars secured to said truck-frame and projecting forward therefrom and provided with holes, a fender-frame forward of the truck-frame, rigid screws carried by said fender-frame and extending through the holes of said bars, and nuts mounted on said screws and engaging the upper and lower sides of said bars.

5. The combination with the truck-frame of a car, of bars secured to and projecting forward from said frame, a fender carried by said bars, a transverse tie-rod for the lower part of the fender, angle-bars secured at their front ends to said tie-rod and extending up through said forwardly-projecting bars, and nuts engaging said angle-bars at the upper and lower sides respectively of said forwardly-projecting bars.

6. The combination with the truck-frame of a car, of bars secured to and projecting forward from said frame, a fender carried by said bars, a transverse tie-rod for the lower part of the fender, angle-bars secured at their front ends to said tie-rod and extending up through said forwardly-projecting bars, nuts engaging said angle-bars at the upper and lower sides respectively of said forwardly-projecting bars, bars projecting rearwardly from the sides of the fender, and blocks secured rigidly to the rear ends of said bars in the vertical plane of the wheels of the truck and at the outer sides of the flanges of such wheels.

7. The combination with the truck-frame of a car, of bars secured to and projecting forward from said frame, a fender carried by said bars, a transverse tie-rod for the lower part of the fender, angle-bars secured at their front ends to said tie-rod and extending up through said forwardly-projecting bars, nuts engaging said angle-bars at the upper and lower sides respectively of said forwardly-projecting bars, bars projecting rearwardly from the sides of the fender, blocks secured rigidly to the rear ends of said bars in the vertical plane of the wheels of the truck and at the outer sides of the flanges of such wheels, plates depending from said blocks and the fender-frame, and a brace-rod connecting the undermost bars which connect the fender-frame with said blocks.

850,573. MOQUETTE OR TUFTED CARPET. GEORGE W. GROSVENOR, Broome House, near Stourbridge, England. Filed Jan. 3, 1903. Serial No. 137,673.

Claim.—A moquette or tufted carpet in which one or more stitches or complete cycles of shots of the backing without any pile-tufts, is or are woven between each stitch or complete cycle of shots containing the pile-tufts, and with the pile-tufts passing round two wefts namely an upper and a lower weft, substantially as set forth.

850,574. CLOD-FENDER. MYRON L. HARRIS, Bazaar, Kans. Filed Feb. 1, 1906. Serial No. 298,906.

Claim.—1. A clod-fender comprising a plurality of arches, and longitudinal bars connecting and bearing a movable relation to the same.

2. A clod-fender, comprising a plurality of arches, and longitudinal bars connecting said arches; certain of said bars being laterally adjustable.

3. A clod-fender, comprising a plurality of arches and longitudinal bars pivotally connecting the lower ends of the arches and forming runners for the same, and a series of longitudinal bars connecting the arches and adjustable toward or from each other.

4. A clod-fender, comprising a plurality of slotted arches, bars pivotally connecting the lower ends of said arches, longitudinal bars connecting said arches between the first-named bars, and clamping devices extending through the slots of the arches and engaging said longitudinal bars.

850,575. DUST-CLEANER. GÁBOR HEGYI, Los Angeles, Cal. Filed Aug. 20, 1906. Serial No. 331,382.

Claim.—1. A composition of matter of one hundred pounds consisting of the following ingredients and proportions: sawdust forty-five pounds, ground apricot stones and kernels twenty-five pounds, Arizona field-salt fourteen pounds, refined coal-oil eight pounds, river-sand five pounds, pine-tree tar one and one-half pounds, geolin one-half pound, carmin one-half pound, bichlorid of mercury one-half pound, substantially as described.

2. A composition of one hundred pounds weight, consisting of, sawdust forty-five pounds, ground apricot stones and kernels twenty-five pounds, Arizona field-salt fourteen pounds, refined coal-oil eight pounds, river-sand five pounds, carmin one-half pound, bichlorid of mercury one-half pound, viscous material in quantity sufficient with the above ingredients to make one hundred pounds, substantially as described.

3. A composition of matter of one hundred pounds weight, containing the following ingredients and proportions: sawdust forty-five pounds, ground apricot stones and kernels twenty-five pounds, chlorid of sodium fourteen pounds, oleaginous material eight pounds, silica five pounds, carmin one-half pound, bichlorid of mercury one-half pound, viscous material two pounds, substantially as described.

850,576. BROOM-HOLDER. FRANK A. HESS and JAMES DUNN, Detroit, Mich. Filed June 19, 1905. Serial No. 265,895.

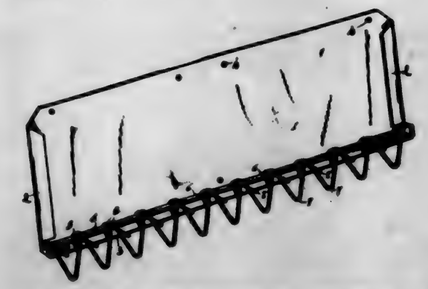

Claim.—1. In a broom-holder, in combination with a tabular holder provided with an outwardly-projecting lower edge having an upwardly-projecting shoulder at each end thereof, a rod suspended between said shoulders over said outwardly-projecting edge, and a plurality of clamps suspended from said rod and normally depending therefrom and engaging against said edge, each clamp member having a loop portion for a two-point engagement against a broom-handle and eye portions at each end through which said rod passes, said eye portions terminating in inwardly-projecting spurs adapted to serve as opposite points of contact against the broom-handle to those formed by the loop portion, substantially as described.

2. In a broom-holder, in combination with a supporting tabular part provided with an outwardly-projecting lower edge, each end of said edge and an adjacent portion of said tabular part being bent to an angle with its connected part to form a terminal shoulder at each lower corner, a spindle-rod supported at each end by said shoulders and extending across said tabular part just above said projecting edge, and a plurality of unitary clamp members depending from said rod, with their body portions kept in an approximately vertical position, when not in use, by engagement against said projecting edge, each clamp consisting of a resilient looped body portion terminating at its outer end in an acute angle, and bent-over portions engaging about said spindle-rod, each end constituting an inwardly-projecting spur adapted to coöperate with its companion spur and with the arms of the body portion in a clamping engagement about a broom-handle inserted therebetween, substantially as described.

3. In a broom-holder, in combination with a spindle-rod, a supporting tabular part provided at each end with projecting shoulders between which said rod extends in a horizontal position, said tabular part having a projecting lower edge intermediate said shoulders and beneath said rod, a clamp member adapted to engage about and be supported by said rod, said member consisting of a unitary piece of wire having its center portion bent to an acute angle and with each terminal bent upon itself and around said spindle-rod, the ends being brought to an angle with the central portions in position to force a broom-handle inserted therebetween and the central portion of the clamp against said central portion, substantially as described.

850,577. GLASS-MOLD. STEPHEN HIPKINS, Martins Ferry, Ohio. Filed Feb. 27, 1907. Serial No. 359,567.

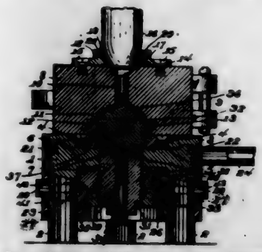

Claim.—1. In a device of the character described, a circular base having supporting-legs, a top plate carried by said base, a removable guide-head mounted upon said top plate, said base and said guide-head having registering vertical centrally-located apertures therein, a revoluble apron having inclined slots therein at regular intervals depending from said base, a vertically-movable disk supported upon laterally-directed pins projected through said slots, said disk having a threaded hole therein in register with the central apertures of the base and top plate, a plunger adjustably mounted in the threaded hole of the disk and projected upward through said apertures, and a leg-molding portion fitted about said guide-head, said portion having a leg-aperture and a foot-recess therein.

2. In a device of the character described, a circular base having supporting-legs, a top plate carried by said base, a removable guide-head mounted upon said top plate, said base and said guide-head having registering vertical centrally-located apertures therein, a revoluble apron depending from said base, said apron having inclined slots therein at regular intervals, a vertically-movable disk supported upon pins directed outwardly through said slots, said disk having a threaded hole therein in register with the apertures of the base and top plate, a plunger adjustably mounted in the hole in said disk and projected upward through said apertures, said plunger comprising a body portion and a removable head carried by said body portion, and a leg-molding portion fitted about said guide-head.

3. In a device of the character described, a circular base having supporting-legs, a centrally-apertured top plate carried by said base, said top plate having an internal annular recess therein, a guide-head having an annular flange removably mounted in said annular recess, said base and said guide-head having registering centrally-located apertures therein, a revoluble apron depending from said base, said apron having inclined slots therein at regular intervals, a vertically-movable disk supported upon pins projected outwardly through said slots, said disk having a threaded hole therein in register with the apertures of the base and top plate, a plunger adjustably mounted in the hole in said disk and projected upward through said apertures, said plunger consisting of a threaded body portion and a removable head, said head being adjustable with relation to said body portion, and a leg-molding portion fitted about said guide-head.

4. In a device of the character described, a circular base having supporting-legs, a centrally-apertured top plate carried by said base, a guide-head mounted upon said top plate, said guide-head and top plate having interfitting flanges, said base and said guide-head provided with registering centrally-located apertures therein, a revoluble apron depending from said base, said apron having inclined slots therein, a vertically-movable disk supported upon pins projected outwardly through said slots, said disk having a threaded hole therein in register with the apertures of the base and top plate, a plunger adjustably mounted in the hole of said disk and projected upward through said apertures, said plunger consisting of a threaded body portion, a removable head, and means for adjusting said removable head with respect to said body portion, and a leg and foot molding portion fitted about said guide-head.

5. In a device of the character described, a circular base having supporting-legs, a centrally-apertured top plate carried by said base, a guide-head mounted on said top plate, said top plate and said guide-head having interfitting flanges, said base and said guide-head having registering centrally-located apertures therein, a revoluble apron depending from said base, said apron having inclined slots therein, a vertically-movable disk supported upon pins directed outwardly through said slots, said disk having a threaded hole therein in register with the apertures of the base and top plate, a plunger adjustably mounted in the hole in said disk and projected upward through said apertures, said plunger comprising a body portion and a removable head carried by said body portion, and a leg-molding portion fitted about said guide-head.

6. In a device of the character described, a circular base having supporting-legs, a centrally-apertured top plate carried by said base, a guide-head mounted on said top plate, said top plate and said guide-head having interfitting flanges, said base and said guide-head having registering centrally-located apertures therein, a revoluble apron depending from said base, said apron having inclined slots therein, a vertically-movable disk supported upon pins projected outwardly through said slots, said disk having a threaded hole therein in register with the apertures of the base and the top plate, a plunger adjustably mounted in the hole of said disk and projected upward through said apertures, said plunger consisting of a threaded body portion having a shouldered lower end, a removable head carried by said body portion, and means for securing said head in fixed position with respect to said body portion, and a leg and foot molding portion mounted on said top plate with which said plunger is adapted to coöperate, said leg and foot molding portion consisting of a body having a vertical leg-aperture therein which terminates at its lower end in a foot-recess, and a removable plate surmounting said body and having a seat formed therein for the reception of a blown bowl.

7. In a device of the character described, the combination with a suitably-supported base, a guide-head carried thereby, said base and guide-head having registering apertures therein, and a leg and foot molding portion surmounting said base and inclosing said guide-head, of a revoluble, vertically-immovable apron carried by said base and having inclined slots therein, a vertically-movable disk inclosed by said apron and supported by pins projected through said slots, a vertically-adjustable plunger mounted in said disk and projected upward through and vertically movable in the apertures of said base and guide-head and adapted to coöperate with said leg and foot molding portion, said plunger consisting of a threaded body portion having a lower shouldered end and having a socket in its upper end, and a removable head surmounting said body portion and having a stem seated in said socket, and means for immovably holding said head in place on said body portion.

8. In a device of the character described, the combination with a suitably-supported base, a guide-head carried thereby, said base and guide-head having registering central apertures therein, and a leg and foot molding portion surmounting said base and inclosing said guide-head, of a revoluble, vertically-immovable apron carried by said base and having inclined slots therein, a vertically-movable disk inclosed by said apron and supported by pins projected through said slots, a vertically-adjustable plunger mounted in said disk and projected upward through and vertically movable in the apertures of said base and guide-head and adapted to coöperate with said leg and foot molding portion, said plunger consisting of a threaded body portion having a lower shouldered end and having a socket in its upper end, and a head having a stem removably mounted in said socket, said stem also having a threaded socket in its end, and a bolt directed upwardly through a central bore provided in said body portion and having its upper end threaded and in engagement with said threaded socket whereby the plunger held is retained in fixed position with respect to said body portion.

9. In a device of the character described, the combination with a plunger and means for operating the same, of a leg and foot mold for coöperating with said plunger for molding stems and feet and casting the same to blown-glass bowls, said mold comprising a plurality of hinged sections having a leg-aperture therein which terminates at its lower end in a foot-recess, and a removable sectional plate surmounting said hinged sections, said plate having a head and a bowl-seat formed therein, the latter being provided with an internal annular asbestos-filled channel.

850,578. SHADE AND SHADE-ROLLER FIXTURE. ADRIAN HITT, Jersey City, N. J., assignor of one-half to Henry Berg, Orange Valley, N. J. Filed Apr. 4, 1905. Serial No. 253,776.

Claim.—1. In a window-shade adjuster, the combination, with a pair of fixed bearings, a main actuating device consisting of a hollow rod 7 and a rod 8, the hollow portion of said rod 7 and the rod 8 being of an angular polygonal cross-section to permit the adjustment of said rods 7 and 8 laterally, but preventing any torsional movement of said rods, a spool 25 on said rod 8 and an operating-tape connected with said spool 25, a spool 9 upon one end of the rod 8 and a spool 12 upon one end of the rod 7, a plate and pintle upon one end of the spool 9, and a chambered shell arranged over one end of the spool 12, a ratchet-hub 16 in said shell provided with holding depressions 21, a plate 14 within said shell and secured upon the end of the spool 12, a pair of holding-dogs connected with said plate 14 and adapted to engage with the ratchet-hub, a flat stud extending from said ratchet-hub, the pintle at one end and said flat stud at the other end being operatively connected

with the respective bearings, suspension-tapes extending from said spools 9 and 12, and a Hartshorn or spring shade-roller provided with the journals rotatably connected with the end portion of said suspension-tapes to permit of the independent rotary motion of the shade-roller, substantially as and for the purposes set forth.

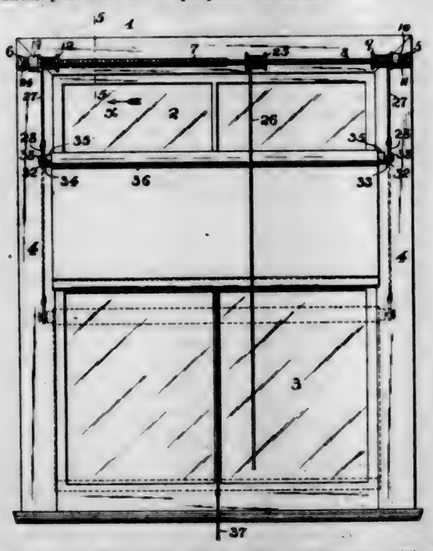

2. In a window-shade adjuster, the combination, with a pair of fixed bearings, a main actuating device consisting of a hollow rod 7 and a rod 8, the hollow portion of said rod 7 and the rod 8 being of an angular polygonal cross-section to permit the adjustment of said rods 7 and 8 laterally, but preventing any torsional movement of said rods, a spool 25 on said rod 8 and an operating-tape connected with said spool 25, a spool 9 upon one end of the rod 8 and a spool 12 upon one end of the rod 7, a plate and pintle upon one end of the spool 9, and a chambered shell arranged over one end of the spool 12, a ratchet-hub 16 in said shell provided with holding depressions 21, a plate 14 within said shell and secured upon the end of the spool 12, a pair of holding-dogs connected with said plate 14 and adapted to engage with the ratchet-hub, a flat stud extending from said ratchet-hub, the pintle at one end and said flat stud at the other end being operatively connected with the respective bearings, suspension-tapes extending from said spools 9 and 12, a hanger attached to the lower end of each suspension-tape formed with a receiving portion and a slot, and a Hartshorn or spring shade-roller provided with journals 31 and 32 each arranged in a receiving portion and slot of the hangers, and means connected with the journals 31 and 32 to prevent the lateral displacement of said journals from the hangers which are connected with said tapes, substantially as and for the purposes set forth.

3. In a window-shade adjuster, the combination, with a pair of fixed bearings, a main actuating device consisting of a hollow rod 7 and a rod 8, the hollow portion of said rod 7 and the rod 8 being of an angular polygonal cross-section to permit the adjustment of said rods 7 and 8 laterally, but preventing any torsional movement of said rods, a spool 25 on said rod 8 and an operating-tape connected with said spool 25, a spool 9 upon one end of the rod 8 and a spool 12 upon one end of the rod 7, a plate and pintle upon one end of the spool 9, and a chambered shell arranged over one end of the spool 12, a ratchet-hub 16 in said shell provided with holding depressions 21, a plate 14 within said shell and secured upon the end of the spool 12, a pair of holding-dogs connected with said plate 14 and adapted to engage with the ratchet-hub, a flat stud extending from said ratchet-hub, the pintle at one end and said flat stud at the other end being operatively connected with the respective bearings, suspension-tapes extending from said spools 9 and 12, a hanger attached to the lower end of each suspension-tape formed with a receiving portion and a slot, and a Hartshorn or spring shade-roller provided with journals 31 and 32 each arranged in a receiving portion and slot of the hangers, and an enlargement 38 upon the free end of each journal 31 and 32 to prevent the lateral displacement of said journals from the hangers which are connected with said tapes, substantially as and for the purposes set forth.

850,579. HOLDER FOR LAMP-SHADES. WALTER O. HOLT and RALPH L. FOSTER, Providence, R. I., assignors to Livermore & Knight Company, Providence, R. I., a Corporation of Rhode Island. Filed Jan. 11, 1907. Serial No. 351,816.

Claim.—1. The improved holder for lamp-shades herein described, consisting of a single piece of tempered wire bent at its center to form two strands; two hooks each made of said two strands and opening in opposite directions; a stem composed of a twist of said two strands; two single strands each bent into two divergent arms; and two hooks at the end of each arm lying in one plane and opening in opposite directions.

2. The improved holder for lamp-shades herein described, consisting of a single piece of tempered wire, having the two-stranded hooks *a b* and *b c* oppositely directed and bent to form coöperating gripping-surfaces *f* and *g*; the rigid stem portion *d*; the two single-stranded arms *e*, *e*; and the two oppositely-directed hooks *m* and *n* in one plane at the end of each arm *e*.

850,580. FISHING-REEL. ERNEST HOLZMANN, New York, N. Y. Filed Oct. 20, 1905. Serial No. 283,710.

Claim.—1. In a fishing-reel, the combination with a casing and spool, of gearing for turning the spool, a handle for operating the gearing, means for automatically preventing the handle from turning backward, when the spool, while engaged with the winding-gear, rotates in the inverse direction of the winding direction, substantially as set forth.

2. In a fishing-reel, the combination with a frame, a spool therein, a winding-gear and a handle, of a clutch-disk for engaging the winding-gear and means for automatically throwing the clutch-disk out of gear with the winding-wheel and locking the clutch-disk, when the spool is turned in the inverse direction of winding, substantially as set forth.

3. In a fishing-reel, the combination with a frame, a spool therein, a winding-gear and a handle, of a clutch-disk connected with the handle, which clutch-disk can engage the winding-gear, and a tripping-lever for automatically throwing the clutch-disk out of gear with the winding-gear when the spool is turned in the inverse direction of winding, substantially as set forth.

4. In a fishing-reel, the combination with a frame, a spool therein, a winding-gear and a handle, of a clutch-disk connected with the handle, a spring-pawl on said clutch-disk for automatically engaging the winding-gear when the handle is turned to wind in the line, and a tripping-lever for engagement with said pawl and thereby locking the clutch-disk and also disengaging the pawl from the winding-gear and preventing the handle from turning backward, substantially as set forth.

5. In a fishing-reel, the combination with a frame, a spool therein, and a handle, of a winding cog-wheel for turning the spool, a pin in said cog-wheel, a clutch-disk connected with the handle, a spring-pawl on said clutch-disk, a stud on the winding-wheel for engagement with said spring-pawl, a tripping-lever for throwing said pawl out of engagement with the pin on the clutch-disk and thereby holding the clutch-disk and preventing the handle from turning backward, substantially as set forth.

6. In a fishing-reel, the combination with a casing, a spool therein, a winding cog-wheel and a handle, of a clutch-disk connected with the handle, a spring-pawl pivoted on said clutch-disk, a pin on the winding-wheel for engagement with said pawl, a tripping-lever adapted to engage said pawl and thereby throw the pawl out of gear with the winding-wheel, and a spring acting on said tripping-lever to hold it in the path of the pawl, substantially as set forth.

7. In a fishing-reel, the combination with a casing, spool, winding cog-wheel and handle, of a clutch-disk for engagement with said winding cog-wheel, a tripping-lever for throwing the clutch-disk out of gear with the winding-wheel, friction-disks interposed between the clutch-disk and winding-wheel, and means for adjusting the pressure on said friction-disk, substantially as set forth.

8. In a fishing-reel, the combination with a casing, a spool and a winding-wheel having a recess and a sleeve projecting from the center of said winding-wheel, of a clutch-disk within the recess of the winding-wheel, a sleeve on said clutch and surrounding the sleeve of the winding-wheel, a friction-washer interposed between the clutch-disk and winding-wheel, the handle being secured to the sleeve of the clutch-disk, a ratchet-wheel on the sleeve of the winding-wheel, and a spring-pawl pivoted on the handle and engaging said ratchet-wheel, substantially as set forth.

9. In a fishing-reel, the combination with a casing, a spool and a winding cog-wheel having a circular recess in one face, of a casing, a pin projecting from the same, the winding cog-wheel being contained in said casing and having a sleeve surrounding said pin, a clutch-disk within the recess of the winding-wheel and having a sleeve surrounding the sleeve of the winding-wheel, a handle secured to the sleeve of the clutch-disk, the sleeve of the winding-wheel projecting beyond the handle and the sleeve of the clutch-disk, and a tightening-nut screwed on the outer end of the sleeve of the winding-wheel, substantially as set forth.

10. In a fishing-reel, the combination with a frame, spool, and a winding cog-wheel having a circular recess in one face, of a casing having a central fixed pin, the winding cog-wheel being within this casing and having a sleeve which surrounds the fixed pin, a clutch-disk within the recess of the winding-wheel and having a sleeve which surrounds the sleeve of the winding-wheel, a handle secured on the sleeve of the clutch-disk, a ratchet-wheel on the sleeve of the winding-wheel and resting loosely on the handle, a washer on said ratchet-wheel, and a nut screwed on the free end of the winding-wheel sleeve projecting beyond the handle, which nut bears on the washer of the ratchet-wheel, and a pawl on the handle for engagement with said ratchet-wheel, substantially as set forth.

11. In a fishing-reel, the combination with a casing, spool and a winding cog-wheel having a circular recess in one face, of a casing, a central pin secured in said casing, the winding cog-wheel being within said casing and having a sleeve surrounding said pin, a clutch-disk within the recess of the winding-wheel and having a sleeve surrounding the sleeve of the winding-wheel, a handle secured on the sleeve of the clutch-disk, a friction-disk between the clutch-disk and the winding-wheel, a nut screwed on the free end of the winding-wheel sleeve, and serving to increase the pressure between the winding-wheel and clutch-disk, substantially as set forth.

12. A fishing-reel having a drag and an automatic stop, substantially as set forth.

850,581. BLOWPIPE. GEORGE W. HOPKINS, Cleveland, Ohio. Filed Sept. 28, 1906. Serial No. 336,623.

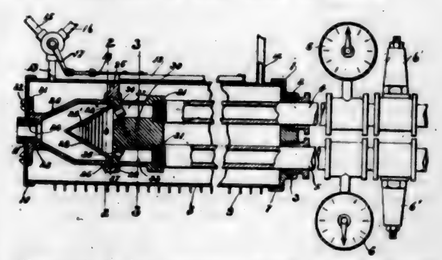

Claim.—1. In an acetylene-burner, in combination, means for supplying a mixture of gases to said burner, and means for cooling such mixture to prevent the decomposition of the acetylene gas.

2. In an acetylene-burner, in combination, means for supplying a mixture of gases to said burner and a water-jacket for cooling such mixture to prevent decomposition of the acetylene gas.

3. In an acetylene-blowpipe, in combination, a burner, means for supplying a mixture of gases to said burner, and means for cooling the same to prevent decomposition of the gas.

4. In an acetylene-blowpipe, in combination, a burner, means for supplying a mixture of gases to said burner, and a jacket for varying the temperature thereof to prevent decomposition of the gas.

5. In an acetylene-burner, in combination, means for supplying a mixture of gases to said burner, and a jacket adapted to be supplied with a medium for preventing a rise in the temperature of the parts of said burner above the point of decomposition.

6. In an acetylene-burner, in combination, means for supplying a mixture of gases to said burner, and a water-jacket for retaining the temperature of the parts of said burner below the point of decomposition of the acetylene gas.

7. In an acetylene-burner, in combination, means for supplying a mixture of gases to said burner, and means for automatically supplying a medium for retaining the temperature of the mixture and of the parts of said burner below the point of decomposition of the acetylene gas.

8. In an acetylene-burner, in combination, means for supplying a mixture of gases to said burner, and means for retaining the parts of said burner at substantially a fixed temperature irrespective of the effect of the heat radiating from the flame produced by said burner.

9. In a burner, in combination, means for supplying a mixture of gases thereto, a water-jacket for said burner, and means for supplying hot and cold water to said jacket.

10. In an acetylene-burner, in combination, a burner, a mixer for said burner, means for supplying air and gas to said mixer, a water-jacket surrounding said parts, and means for supplying water to said jacket.

11. In an acetylene-burner, in combination, a burner-tube, a mixer for said tube, means for supplying air and gas to said mixer, a water-jacket for said parts, means

for supplying water to said jacket, and means controlled by the temperature about said parts for regulating the flow of water to said jacket.

12. In an acetylene-burner, in combination, a burner-tube, a mixer mounted within the same, means for supplying air and gas to said mixer, a water-jacket surrounding said burner-tube, means for supplying water to said jacket, a water-supply pipe, a valve controlling said supply, and a thermostat for controlling said valve.

13. In a blowpipe, in combination, a burner-tube, a mixer carried thereby, a gas-supply, an air-supply, a jacket inclosing all of said parts, a water-supply pipe, a valve in said pipe, an operating device for said valve, and a thermostatic bar for operating said valve, whereby the expansion of said bar will shift said valve to admit water to said jacket.

14. In a blowpipe, in combination, a burner-tube, a hollow mixing-cone carried by said burner-tube, said cone being provided with openings for the exit of the mixture and being closed at the apex, a gas-inlet nozzle, and an air-inlet nozzle, said nozzles being adapted to project their streams into said mixing-cone.

15. In a blowpipe, in combination, a burner-tube, a hollow mixing-cone mounted therein and having its apex closed and extending toward the discharge end of said burner-tube, a member provided with a gas-admission nozzle and an air-admission nozzle, both of which project their streams toward a common point within said mixing-cone, and means for supplying air and gas to said air and gas nozzles.

16. In an acetylene-burner, in combination, a burner-tube, a hollow mixing-cone having its apex toward the opening in said burner-tube and provided internally with annular ridges and with discharge-openings near the base thereof, an air-nozzle, a gas-nozzle, said nozzles being adapted to project their streams into said mixing-cone toward the apex thereof, and means for supplying air and gas to said nozzles.

17. In an acetylene-burner, in combination, a burner-tube having an annular shoulder, a mixing-cone abutting against said shoulder and provided with internal annular ridges and discharge-openings near the base thereof, a member secured in said burner-tube and holding said mixing-cone in place, said member being provided with a gas-nozzle and an air-nozzle, both of which are adapted to project their streams within said cone and toward the apex thereof, and means for supplying air and gas to said nozzles.

18. In an acetylene-burner, in combination, a burner-tube having a burner mounted therein at one end, a hollow mixing-cone secured at the other end and having its apex toward said burner, said mixing-cone being provided internally with annular ridges and near its base with discharge-openings, a member secured in said burner-tube and holding said cone in place, a gas-nozzle carried by said member, an air-nozzle carried by said member, said nozzles being adapted to converge their streams within said hollow cone, an air-supply pipe for said member, and a gas-supply pipe for said member.

19. In an acetylene-blowpipe, in combination, a burner-tube, a conical-shaped mixer mounted in said burner-tube and having internal annular ridges and also having discharge-openings near the base thereof said mixer being hollow and closed at the apex, air and gas nozzles adapted to converge their streams within said mixer, means for supplying air and gas to said nozzles, a water-jacket for said parts, and means for supplying water to said jacket.

20. In an acetylene-blowpipe, in combination, a burner, means for supplying a mixture of gases to said burner, a water-jacket for said burner, and cooling-ribs mounted upon said jacket.

21. In a blowpipe, in combination, a burner-tube provided with an annular shoulder, a hollow mixing-cone having its apex toward the opening in said burner-tube and provided internally with annular ridges and at its base with discharge-openings, a member secured in said burner-tube for holding said mixing-cone in place, a gas-nozzle carried by said member, an air-nozzle carried by said member, pipes secured in said member for supplying air and gas to their respective nozzles, a jacket-head secured to said burner-tube, another jacket-head provided with stuffing-boxes about said air and gas pipes, a jacket mounted between said head, and means for supplying water to said jacket.

22. In a blowpipe, in combination, a burner, pipes for supplying air and gas to said burner, and a jacket surrounding said burner and said pipes and having a sliding connection between it and said pipes to permit expansion and contraction of said jacket.

850,582. CULINARY UTENSIL. MARY C. HORTON, Woonsocket, R. I. Filed Jan. 16, 1907. Serial No. 352,578.

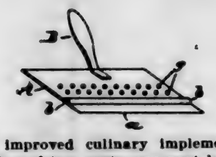

Claim.—The improved culinary implement herein described, consisting of two parts, one part having a handle and a flat blade mounted thereon and provided with a cutting edge and a half-round, longitudinally-extending groove parallel and contiguous to said cutting edge, and the other part having a handle and a transversely-curved scoop mounted thereon, which has a beaded, wired edge, which edge is insertible in and engageable with said groove.

850,583. PISTON-HEAD. JESSE C. HOWARD, Columbus, Ohio, assignor of one-half to Dwight H. Fobes, Columbus, Ohio. Filed Dec. 16, 1905. Serial No. 291,975.

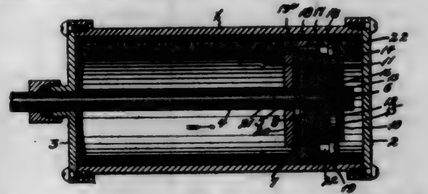

Claim.—1. In a device of the character described, the combination with a cylinder, of a piston-rod, a small piston, means for clamping said small piston upon one end of the piston-rod, a cup-like sleeve in which said small piston is slidably disposed, a second cup-like sleeve which partially incloses the first-named cup-like sleeve, means for clamping said sleeves together, and packing members also clamped in position by said means, there being ports formed in both of the cup-like sleeves adapted to admit fluid to one side of the small piston when said piston is moving in one direction and to admit fluid to the opposite side of said piston when said piston is moving in the opposite direction.

2. In a device of the character described, the combination with a cylinder, of a piston-rod, a piston comprising a plurality of metallic washers and cup-leathers, means for clamping said washers and cup-leathers upon the end of the piston-rod, a cup-like sleeve in which said piston is slidably disposed, said cup-leathers bearing against the inner periphery of said sleeve to form a fluid-tight packing therebetween, a second cup-like sleeve partially inclosing the first cup-like sleeve, each of said cup-like sleeves having outstanding flanges, and cup-leathers clamped between said outstanding flanges and forming a fluid-tight packing between said sleeves and the inner periphery of the piston, there being ports formed in both of the cup-like sleeves adapted to admit fluid to one side of the piston when said piston is moving in one direction and to admit fluid to the opposite side of said piston when said piston is moving in the opposite direction.

3. In a device of the character described, the combination with a cylinder, of a piston-rod, a small piston, means for clamping said small piston upon one end of the piston-rod, a cup-like sleeve in which said small piston is slidably disposed, a second cup-like sleeve which partially incloses the first cup-like sleeve, means for clamping said sleeves together, packing members between the sleeves and the inner periphery of the piston, and packing members between the small piston and the inner periphery of the first-named cup-like sleeve, there being ports formed in both of the cup-like sleeves adapted to admit fluid to one side of the small piston when said piston is moving in one direction and to admit fluid to the opposite side of said piston when said piston is moving in the opposite direction.

850,584. CLOTHES-WRINGER CLAMP. GUSTAVE H. JANTZ, Wyoming, Ohio. Filed May 11, 1905. Serial No. 260,035.

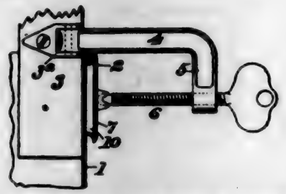

Claim.—1. In a device of the character described, a disk or bearing-plate comprising a single circular piece of material whose contacting face is annular or circular in form and projects from the back of the disk and has at one side thereof a circumferential arc-shape groove and at the other side a concavity.

2. A clothes-wringer clamp comprising an arm, a thumb-screw carried by and engaging a threaded opening in said arm, and a disk or swiveled bearing-plate comprising a single circular piece of material having the inner, peripheral edge of its circular contacting face circumferentially concaved in arc shape and, also, having an integral socket on its outer face for accommodating the inner end of the said thumb-screw.

850,585. FOLDING STAKE FOR RAILWAY-CARS. JOHN W. KENDRICK, Chicago, Ill. Filed Nov. 28, 1906. Serial No. 345,494.

Claim.—1. A railway-car having a transverse recess across its floor, a stake-pocket adjacent one end of the recess, a stake removably mounted in the pocket, and a flexible connection between the end of the stake and the end of the pocket.

2. A railway-car having a transverse recess in its floor, a stake removably mounted on the side of the car and resting in said recess when in operative position, a permanent connection between one end of the stake and the side of the car, and a detachable connection between the opposite end of the stake and the side of the car.

850,586. CURVED PIPE. WILLIAM C. KIRK, Chattanooga, Tenn. Filed June 11, 1906. Serial No. 321,118.

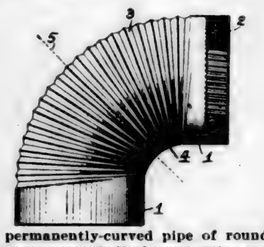

Claim.—A permanently-curved pipe of round cross-section, having a continuous helical corrugation varying regularly in depth and pitch, the pitch increasing and the depth decreasing from the inner toward the outer edge of the curve.

850,587. DUMPING-BUCKET. COLOMON KÖRTVÉLLYESSY, Brooklyn, N. Y. Filed Dec. 8, 1906. Serial No. 346,833.

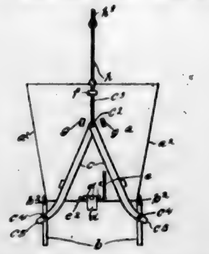

Claim.—A dumping-bucket having two parallel sides, a hoisting-yoke, link members arranged in pairs on the parallel sides of the bucket and connected with said hoisting-yoke, the bottom of said bucket being composed of two doors hinged to opposite sides thereof and adapted to close on the bottom of the bucket and to the opposite ends of which the link members are pivotally connected, the connection of said link members with the ends of said doors being closer to the hinges of said doors than to the free edges thereof, stops connected with the parallel sides of the bucket to limit the outward movement of the link members, and means for locking said doors in the closed position.

850,588. MAIL-BAG-DELIVERY APPARATUS. DANIEL F. LAHMAN, Lahmansville, W. Va. Filed Mar. 5, 1907. Serial No. 360,636.

Claim.—1. In a mail-bag-delivery apparatus, a horizontally-swinging delivery-arm carried by the car, bag-holding means on the arm, and stops engageable by the delivery-arm to oppose the pull thereon upon removal of the bag from said arm, said stops operating with the car traveling in either direction.

2. In a mail-bag-delivery apparatus, a horizontally-swinging delivery-arm carried by the car, bag-holding means on the delivery-arm, a stop engageable by the delivery-arm to oppose the pull thereon upon removal of the bag from said arm with the car traveling in one direction,

and a removable stop engageable by the arm for the same purpose when the car is traveling in the opposite direction.

3. In a mail-bag-delivery apparatus, a yielding receiver, and means operable by the impact of the bag to release the same.

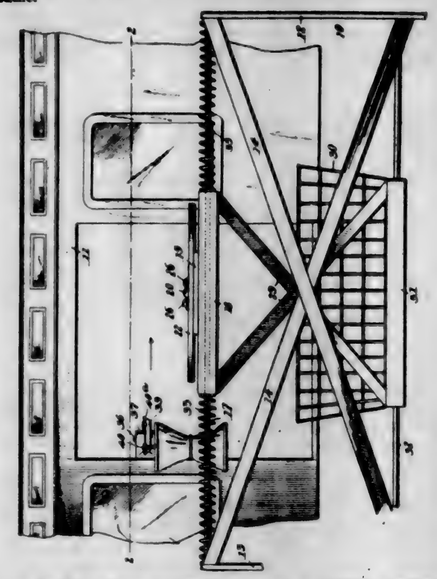

4. In a mail-bag-delivery apparatus, a receiver comprising a supporting-frame, a basket slidably mounted thereon, and yielding stops for the basket.

5. In a mail-bag-delivery apparatus, a receiver comprising a supporting-frame, a basket slidably mounted thereon, and bag-releasing means movable with the basket.

6. In a mail-bag-delivery apparatus, a receiver comprising a supporting-frame, a track thereon, a carriage mounted on the track and having a bag-receptacle, jaws pivoted to the carriage, and means operable by the impact of the bag to close the jaws around the same.

7. In a mail-bag-delivery apparatus, a receiver comprising a supporting-frame, a track thereon, a carriage slidable on the track and having a bag-receptacle, a rack-bar slidably mounted on the carriage and having its ends in the path of the bag, and bag-holding jaws geared to the rack-bar and operable by the impact of the bag thereagainst.

8. In a mail-bag-delivery apparatus, a receiver comprising a supporting-frame, a track thereon, a carriage slidable on the track and having a bag-receptacle, a rack-bar slidably mounted on the carriage and having its ends in the path of the bag, segment-gears meshing with the rack-bar, and jaws on the segment-gears operable by the impact of the bag against the rack-bar to close around the bag.

9. In a mail-bag-delivery apparatus, a receiver comprising an overhead track, a carriage mounted on the track, a bag-receptacle suspended from the carriage, and bag-releasing means on the carriage operable by the impact of the bag thereagainst.

850,589. NON-HYGROSCOPIC COMPOUND AND EXPLOSIVE TREATED THEREWITH. ARTHUR LA MOTTE, Wilmington, Del., assignor to The E. I. du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed Oct. 24, 1904. Serial No. 229,763.

Claim.—1. An explosive compound comprising nitrate of ammonia treated with a nitronaphthalene and a nitrotoluene.

2. An explosive compound comprising nitrate of ammonia, in which is incorporated a nitronaphthalene and a nitrotoluene.

3. An explosive compound comprising nitrate of ammonia, a nitronaphthalene and a nitrotoluene.

850,590. BOILER. WILLIAM J. LANE and GEORGE LANE, Poughkeepsie, N. Y. Filed Sept. 21, 1904. Serial No. 225,351.

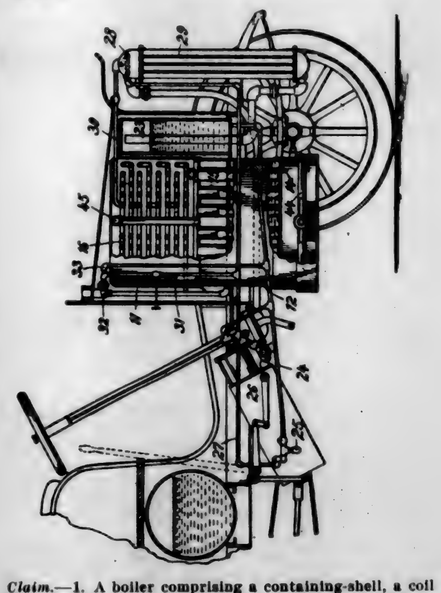

Claim.—1. A boiler comprising a containing-shell, a coil portion through which the feed-water is introduced, a tubular portion situated below the coil portion, and means located between the two for separating the steam and water derived from the coil portion, and introducing these bodies separately into the steam and water space of the tubular portion.

2. A boiler comprising a containing-shell, a coil portion through which the feed-water is introduced, a tubular portion situated under the coil portion, and a structurally independent device situated between the two and adapted to separate the steam and water derived from the coil portion, and deliver these bodies respectively into the steam-space and the water-space of the tubular portion.

3. A boiler comprising a containing-shell, a coil portion through which the feed-water is introduced, a tubular portion situated under the coil portion; a separating device into which the water and steam from the coil portion are collectively delivered, and from which they are separately conveyed, the steam to the steam-space and the water to the water-space of the tubular portion of the boiler.

4. A boiler comprising a containing-shell, a coil portion through which the feed-water is introduced, a tubular portion situated under the coil portion, a steam-separating device, a pipe connecting the interior of the separating device to the lower end of the coil portion, a pipe connecting the upper end of the separating device to the steam-space of the tubular portion, and a pipe connecting the lower end of the separating device to the water-space of the tubular portion.

5. A boiler comprising a containing-shell, a portion having the characteristics of a flash-boiler located in the upper portion of the shell, and a portion having the characteristics of a different type of boiler located in the lower portion of the shell, together with centrifugally-acting means for separating the steam and heated feed-water derived from said flash portion and for delivering said bodies respectively into the steam-space and water-space of the boiler portion having different characteristics.

6. A boiler having a vertical fire-tube portion and a flash portion, together with centrifugally-acting means for separating the steam and heated feed-water derived from the flash portion, and for delivering said bodies continuously respectively into the steam-space and water-space of the vertical fire-tube boiler.

7. A boiler comprising an inclosing shell, two steam-generating devices situated in such shell, together with means for continuously carrying the steam and water from one generating device to the other, and separating them by centrifugal force in their passage.

8. A boiler comprising an inclosing shell, a steam-generating device in the upper portion of said shell through which the feed-water is introduced, a steam-generating device in the lower portion of said shell into which a portion of the feed-water is finally delivered, and a centrifugally-acting device intermediate of said steam-generating devices, by means of which the steam and water conveyed from the first-mentioned device is separated and delivered continuously, respectively into the steam-space and water-space of the second-named device.

9. A boiler comprising an inclosing shell, a coil portion, a tubular portion situated under the coil portion, a steam-separating device arranged external to the shell and communicating with the lower end of the coil portion and respectively with the steam-space and water-space of the tubular portion.

10. In combination, a boiler comprising an inclosing shell, two steam-generating devices differing in characteristics situated therein, means for delivering feed-water to one of said generating devices, means for utilizing the difference in momentum of the commingled steam and water derived from one of said generating devices to effect the separation of these bodies, and means for continuously delivering them in the separated state respectively into the steam-space and water-space of the other generating device.

11. In combination, a boiler comprising an inclosing shell, two steam-generating devices differing in characteristics therein, means for supplying feed-water to one of said generating devices, means controlled by the water-level in the other generating device for controlling the supply of feed-water, together with means for separating the commingled steam and water derived from one generating device and separately feeding said bodies respectively to the steam-space and water-space of the other generating device.

12. In combination, a boiler comprising a shell, two steam-generators in said shell, and a device intermediate of said generators, acting through the difference in velocity of impact of the steam and water introduced into it, to separate the steam and water derived from the first generator and constantly deliver said steam into the steam-space and the water into the water-space of the second generator.

13. In combination, a boiler comprising a shell, two steam-generators in said shell having independent and separate water-spaces, and a device introduced between the two, adapted by reason of the difference of velocity of impact and specific gravity of the steam and water introduced into it from the first generator, to separate these bodies and constantly deliver them respectively the steam to the steam-space and the water to the water-space of the second generator.

14. In combination, a boiler comprising a shell, two steam-generators in said shell having independent and separate water-spaces, and means external to the shell, adapted to separate the water and steam derived from one of said generators, and to constantly deliver the steam to the steam-space, and the water to the water-space of the other generator.

15. In combination, a boiler comprising a shell, two steam-generators therein, and a device interposed between said generators cylindrical in form, into which the steam and water from the first generator are delivered tangentially, and which serves by reason of the rotary motion imparted to said bodies to separate them, whereby the steam will be continuously delivered to the steam-space and the water to the water-space of the second generator.

16. In combination, a boiler comprising a shell, two steam-generators, one having the characteristic of a flash-boiler and the other of a tubular boiler, and a steam-separator introduced between the two, adapted to separate the steam and water derived from the first generator through the action of applied centrifugal force due to the movement of the steam and water, and continuously deliver said steam into the steam-space and the water into the water-space of the second generator.

17. In a boiler, means for introducing feed-water at a distance from the source of heat, means for conveying said feed-water together with any steam generated therefrom to a separating device, means for centrifugally separating the commingled steam and water, and means for continuously conveying the separated steam and water respectively to a steam-space and water-space adjacent to the source of heat.

850,591. LEATHER-TRIMMER. ALFRED LARSON, Rockford, Ill. Filed May 7, 1906. Serial No. 315,633.

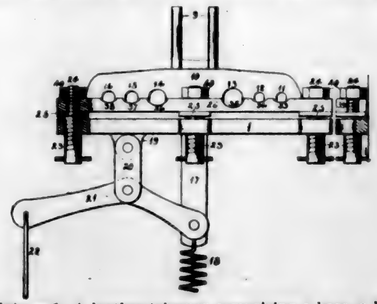

Claim.—1. A leather-trimmer comprising a base, a knife with a series of concave cutting edges supported by the base, a clamping-plate located adjacent to the cutting edges and provided with a series of recesses, one for each cutting edge, the clamping-plate having a bodily movement toward and from the knife, and means for raising the plate.

2. A leather-trimmer comprising a base, a knife with a series of concave cutting edges supported by the base, a clamping-plate located adjacent to the cutting edges and provided with a series of recesses of varying sizes, one for each cutting edge, the clamping-plate having a bodily movement toward and from the knife, means for raising the plate, and yielding means for holding it down.

3. A leather-trimmer comprising a base, a knife with a series of concave cutting edges supported by the base, a clamping-plate located adjacent to the cutting edges and provided with a series of recesses of varying sizes, one for each cutting edge, the clamping-plate having a bodily movement toward and from the knife, means for raising the plate, and means for adjusting the knife bodily toward and from the clamping-plate.

850,592. PNEUMATIC VIBRATOR OR HAMMER. WILFRED LEWIS, Philadelphia, Pa., assignor to The Tabor Manufacturing Company, Camden, N. J., a Corporation of New Jersey. Filed Oct. 5, 1906. Serial No. 337,502.

Claim.—1. In a fluid-actuated hammering device, a relatively stationary member having a recess formed in its outer surface, a tubular hammer surrounding said stationary member and provided with an inwardly-projecting portion entering said recess and axially movable therein, and means for alternately admitting fluid under pressure to

said recess at one side of said projection and exhausting the fluid so admitted.

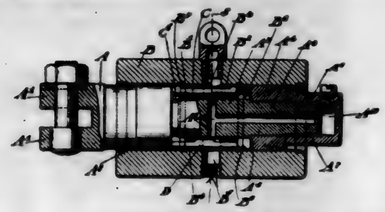

2. In a fluid-actuated hammering device, a relatively stationary cylindrical member, having a circumferentially-extending recess formed in its periphery, a tubular hammer member surrounding the first-mentioned member and provided with an inwardly-extending circumferential rib entering and axially movable in said recess and means for alternately connecting the portions of the recess at opposite sides of the projection to a source of fluid under pressure and while one of said portions is so connected exhausting the fluid from the other portion.

3. In a fluid-actuated hammering device, a member having a recess formed in its outer surface, a tubular member surrounding the first-mentioned member and provided with an inwardly-projecting portion entering said recess and relatively movable therein in an axial direction, means for alternately admitting fluid under pressure to said recess at one side of said projection and exhausting the fluid so admitted, said projection having valve-passages formed in it and valve members located in said passages and actuated jointly by the fluid-pressure in the recess and movement of one member relative to the other to control the admission and exhaust.

4. In combination, a cylindrical member having a circumferential recess formed in its periphery, a tubular member surrounding said cylindrical member and provided with an inwardly-projecting rib or flange entering said recess and axially movable therein, said rib having a valve-passage formed in it extending axially from end to end of the rib and communicating with an inlet-port formed in the wall of the tubular member and a valve member located in said passage and provided with a cylindrical body portion fitting said passage and reduced end portions, said body and end portions being so arranged that the movement of one member to the limit of its movement relative to the other in either direction causes the valve member to engage said cylindrical member and be moved to admit fluid from the inlet-port to the proper end of the recess, to produce the return movement of the hammer member.

5. In combination, a tubular member provided with an inner circumferential flange or rib, a member surrounded by said tubular member and provided with a recess in which said rib is received and is axially movable, said rib having an axially-extending valve-passage formed in it, an exhaust-valve in said passage, said exhaust-valve comprising end portions adapted to close the corresponding ends, of the valve-passage, and a reduced body portion of a length substantially equal to the thickness of the rib.

6. In combination, a tubular hammer member provided with an inner circumferential flange or rib, a relatively stationary member surrounded by said hammer member and provided with a recess in which said rib is received and between the end walls of which said rib is axially movable, said rib having an axial valve-passage formed in it communicating between its ends with an exhaust-port, and an exhaust-valve, in said passage, said exhaust-valve comprising end portions adapted to close the corresponding ends of the valve-passage and a connecting stem portion of a length substantially equal to the thickness of the rib.

7. In combination, a tubular member provided with an inner circumferential flange or rib, a member surrounded by said tubular member and provided with a recess in which said rib is received and between the end walls of which said rib is movable, said tubular member having a valve-passage formed in it extending between opposite sides of said rib and having an inlet-port communicating with said valve-passage between its ends, and an inlet-valve in said valve-passage provided with a body portion filling the passage and of a length sufficient to close the inlet-port, and end stem portions, said end portions being of such a length that they project beyond the sides of the rib when the body portion is in a position to close the inlet-port.

8. In combination, a tubular hammer member provided with an inner circumferential flange or rib and a relatively stationary member surrounded by said hammer member and provided with a recess in which said rib is received and between the end walls of which the rib is axially movable, said rib having axially-extending inlet and outlet valve passages formed in it, valve members in said valve-passages controlling the admission of a working fluid to and its exhaust from the portion of the recess at each side of the rib, said valves being so arranged that the movement of the hammer member to the limit of its movement in one direction causes the valves to be actuated to produce the return movement of the hammer and so that the fluid acting on the valves tends to hold them in the position into which they have moved until the hammer approaches the limit of its movement in the opposite direction.

850,593. ROTARY MOTOR. WILLIAM P. MARSH, Dayton, Ohio. Filed Jan. 16, 1907. Serial No. 352,587.

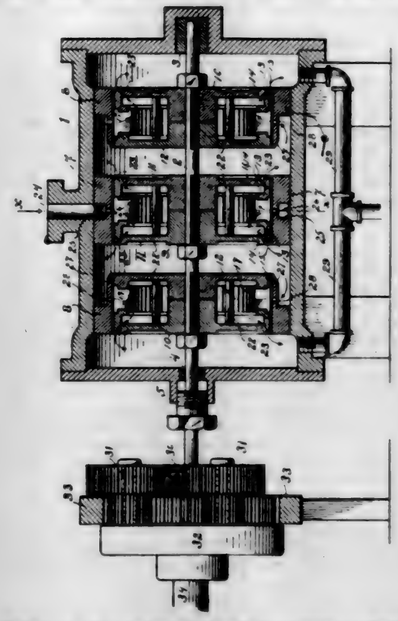

Claim.—1. In a motor as described a casing, a shaft, a rotor mounted on said shaft having a hollow interior, vanes arranged in the periphery of the rotor at an inclination to the radius, discharge-conduits directed to said vanes whereby the steam will strike the vanes and pass to the interior of the rotor and outlet-ports in said rotor arranged obliquely to the axis thereof, substantially as specified.

2. In a motor as described a casing, a shaft, a rotor mounted thereon having a hollow interior, vanes about the periphery of said rotor discharging to the interior thereof and outlet-ports in said rotor arranged obliquely to the axis thereof, substantially as specified.

3. In a mechanical motor a casing, a shaft, a series of rotors mounted on said shaft, inlet-ports in the periphery of said rotors, oblique outlet-ports in said rotors, means for leading the actuating medium from the outlet-ports of one rotor to the peripheral inlet-ports of the next successive rotor, substantially as specified.

4. In a mechanical motor as described a casing, a shaft, a rotor mounted on said shaft, a conduit for actuating medium in said case and surrounding said rotor, discharge-nozzles leading from said conduit arranged tangent to a common circle concentric with said shaft and in a plane common with said rotor outlet-ports in the side of said rotor arranged oblique to the axis thereof, substantially as specified.

5. In a mechanical motor, a casing, a shaft, a rotor mounted on said shaft comprising two parallel disks, curved vanes intermediate said disks, and adjacent to the periphery thereof, outlet-ports extending through said disks in a direction at an angle to the axis thereof, substantially as specified.

6. In a mechanical motor, a case, a shaft, a rotor on said shaft including parallel disks, annular flanges on the adjacent faces of said disks, recesses in said annular flanges, curved vanes extending within said recesses, projecting portions on said vanes extending on opposite sides of said annular flanges beyond the depth of said recesses, means to hold said disks in their adjusted positions, and means for conducting actuating medium to said rotor, substantially as specified.

7. In a mechanical motor, a case, a shaft, a rotor on said shaft comprising parallel disks, inward-projecting flanges on said disks, said flanges having a peripheral rabbet curved vanes having recessed ends adapted to engage said flanges and means for impinging said vanes between said flanges, substantially as specified.

8. In a motor as described, a case, a shaft, a rotor on said shaft comprising parallel disks, inward-projecting flanges on said disks, curved recesses in the adjacent faces of said flanges, curved vanes having recessed ends engaging said curved recesses, said flanges projecting within the recessed ends of the curved vanes, means for retaining said disks in their adjusted relation and means for conducting actuating medium to said vanes, substantially as specified.

9. In a motor as described, a case, a shaft, a rotor mounted thereon comprising parallel disks, curved vanes intermediate said disks and adjacent to the periphery thereof forming inlet-ports to the interior of said rotor, outlet-ports extending diagonally through one of said disks, substantially as specified.

10. In a motor as described, a case, a shaft, a rotor thereon comprising parallel disks, inward-projecting flanges on said disks having internal annular recesses, curved vanes interposed between said projecting flanges, outlet-opening extending from said annular recess to the exterior of the disk and means for conducting actuating medium to said vanes, substantially as specified.

11. In a motor as described, a case, a shaft, a primary rotor on said shaft adapted to receive the actuating medium on the periphery thereof, outlet-ports in the sides of said rotor adapted to discharge the same laterally in opposite directions, a plurality of secondary rotors also on said shaft adapted to receive the medium on the peripheries thereof having outlet-ports in the sides thereof adapted to discharge the same laterally in a direction away from the primary rotor to the next successive secondary rotor of the series, substantially as specified.

12. In a motor as described, a casing, a shaft, a series of rotors having hollow interiors and adapted to receive the actuating medium on the periphery thereof and to discharge the same laterally into said casing, a ring having an annular conduit therein and discharge-openings leading therefrom directed to the periphery of the primary rotor flanged rings surrounding the secondary rotors, said rings being open on the side adjacent the next preceding rotor, discharge-conduits in the flange of said ring, said discharge-conduits being directed to the periphery of said secondary rotor, substantially as specified.

13. In a motor as described, a case, a shaft, a series of rotors mounted on said shaft having hollow interiors, a primary rotor adapted to receive the actuating medium through the periphery thereof and discharge same laterally through outlet-ports in the sides of said rotor in opposite directions, secondary rotors adapted to receive the medium through the periphery thereof and discharge same laterally through outlet-ports in the sides thereof away from said primary rotor, and exhaust-outlet conduits adjacent to the ends of said case, substantially as specified.

850,594. COAL-WASHING APPARATUS. ROBERT L. MARTIN, Jr., and HARVEY CORY, Pittsburg, Pa., assignors to Pittsburgh Coal Washer Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Oct. 5, 1905. Serial No. 281,374.

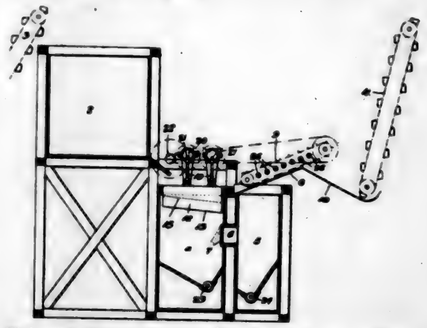

Claim.—1. In a coal-washing apparatus, the combination of a coal-bin, an adjacent tank adapted to contain water, a jig fitting snugly therein and provided with means for sustaining the contents and for permitting an upward flow of water on downward movement of the jig and for preventing downward flow on upward movement of the jig, means for reciprocating said jig in said tank, a screen arranged adjacent to and adapted to receive the overflow contents from the jig, a separate drain-tank beneath said screen, a suction-valve permitting the flow of water from said drain-tank to the jig-tank, and means for removing the coal from said screen, substantially as set forth.

2. In a coal-washing apparatus, the combination of a tank adapted to contain water, a jig fitting snugly in said tank and provided with means for sustaining the contents and for permitting an upward flow of water on downward movement of the jig and for preventing downward flow on upward movement of the jig, means for reciprocating said jig in said tank, a screen arranged adjacent to and adapted to receive the overflow contents from the jig, a separate drain-tank beneath said screen, and a valve-controlled passage permitting a flow of water from said drain-tank to the jig-tank, substantially as set forth.

3. In a coal-washing apparatus, the combination of a tank adapted to contain water, a jig fitting snugly in said tank and provided with means for sustaining the contents and for permitting an upward flow of water on downward movement of the jig and for preventing downward flow on upward movement of the jig, means for reciprocating said jig in said tank, means for receiving the washed coal from the jig, a tank arranged to receive the overflow water from the jig-tank, and a valve-controlled passage therefrom to the jig-tank, substantially as set forth.

850,595. LOOM. GEORGE C. MOORE, Revere, Mass. Filed Sept. 15, 1906. Serial No. 334,797.

Claim.—1. In a double vertical loom, in combination, opposite vertically-moving lays operatively connected to act with mutual counterbalancing effect, and operating means therefor.

2. In a double vertical loom, in combination, opposite vertically-moving lays, and operating connections whereby the said lays are caused to move simultaneously in oppo-

site directions with respect to each other and with counterbalancing effect.

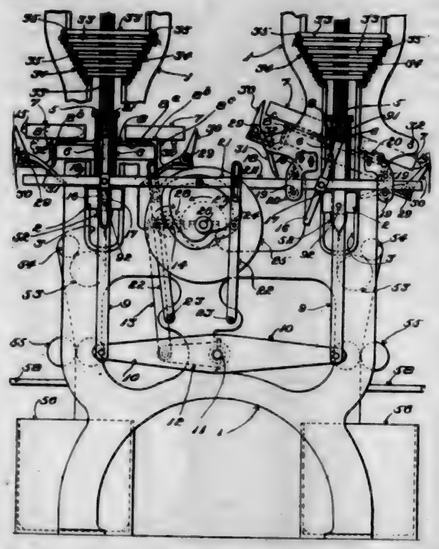

3. In a double vertical loom, in combination, opposite vertically-moving lays, an intermediate rocker connected with the said lays whereby the latter are caused to move simultaneously in opposite directions with respect to each other, and means for occasioning reciprocating movements of the lays.

4. In a double vertical loom, in combination, opposite vertically-moving lays, a rock-shaft having opposite arms with which, respectively, the respective lays are operatively connected, and a crank-shaft operatively connected with the said rock-shaft.

5. In a vertical loom, a lay, combined with means to tilt the shuttle-guiding portion thereof alternately in opposite directions with respect to the length of the warps to cause gravity to act in moving the shuttle through the respective sheds.

6. In a loom, harnesses, and means for supporting and operating the same, combined with a lay, and means for tilting the shuttle-guiding portion thereof alternately in opposite directions transversely with respect to the harness-frames and warps, to cause gravity to act in moving the shuttle through the respective sheds.

7. In a vertical loom, a lay, and means to tilt the shuttle-guiding portion thereof alternately in opposite directions with respect to the length of the warps to cause gravity to act in moving the shuttle through the respective sheds, combined with shuttle-picking devices.

8. In a loom, harnesses, and means for supporting and operating the same, combined with a lay, means for tilting the shuttle-guiding portion thereof alternately in opposite directions transversely with respect to the harness-frames and warps to cause gravity to act in moving the shuttle through the respective sheds, and shuttle-picking devices.

9. In a loom, a reciprocating lay, and a reed thereon supported at a fixed angle transversely of the loom, combined with means to tilt the shuttle-guiding portion of the lay alternately in opposite directions to cause gravity to act in moving the shuttle through the respective sheds.

10. In a loom, a reciprocating lay, and a reed thereon supported at a fixed angle transversely of the loom, combined with means to tilt the shuttle-guiding portion of the lay alternately in opposite directions transversely, and shuttle-picking devices.

11. In a vertical loom, in combination, a lay, a reed thereon, shuttle-guides located at opposite sides of the warps, and means to tilt the said guide alternately in opposite directions with respect to the length of the warps to cause gravity to act in moving the shuttle through the shed.

12. In a vertical loom, in combination, a lay, a reed thereon, shuttle-guides located at opposite sides of the warps, means to tilt the said guides alternately in opposite directions with respect to the length of the warps to cause gravity to act in moving the shuttle through the shed, and shuttle-picking devices.

13. In a double vertical loom, in combination, opposite lays, means to move the same simultaneously in opposite directions, and means to tilt the respective shuttle-guides of the respective lays for the movements of the respective shuttles through the sheds.

14. In a loom, in combination, the heddles thereof, means to move the same longitudinally of the loom, a lay provided with a reed having the dents thereof extending longitudinally of the loom, a web-turner, and a take-up roll having its axis extending longitudinally of the loom.

15. In a multiple-web loom, in combination, the heddles thereof, means to move the same longitudinally of the loom, a lay provided with reeds having the dents thereof extending longitudinally of the loom, a series of shuttles, means to occasion movement of the same transversely of the loom, web-turning devices, and a take-up roll having the axis thereof extending longitudinally of the loom.

16. In a vertical loom, in combination, a lay, shuttle-guides movable therewith, means to tilt the said shuttle-guides alternately in opposite directions for the movements of the shuttles through the sheds, picking rock-shafts provided with devices for propelling the shuttles, and actuating means for said rock-shafts.

17. In a vertical loom, in combination, a lay, a reed carried thereby, a tilting carrier provided with shuttle-guides, picking rock-shafts mounted on said carrier and having shuttle-propelling devices in connection therewith, and actuating means for the said rock-shafts.

18. In a loom, in combination, the horizontal harness-frames, and the stepped series of rolls serving to support said harness-frames and also to restrain the same from transverse movement.

19. In a loom, in combination, the harness-frames of graduated width, means to move the same for shedding, and stepped supports on which the side edges of said harness-frames rest, the said supports also constituting guides for the side edges of the harness-frames.

20. In a loom, in combination, the harness-frames of graduated width, means to move the same for shedding, and rolls on which the side edges of the said harness-frames rest.

21. In a loom, in combination, the harness-frames of graduated width, means to move the same for shedding, and rolls supporting the side edges of the said harness-frames and also constituting side guides for the latter.

22. In a loom in which a plurality of webs is woven in parallel vertical planes extending transversely of the loom, in combination, a lay carrying suitable reed-dents extending longitudinally of the loom, a plurality of shuttles, means for operating the said shuttles transversely of the loom, and shed-forming mechanism comprising heddles extending longitudinally of the loom and having a plurality of warp-eyes, one for each web of a series of webs.

23. In a loom, in combination, the weaving instrumentalities, a container or holder within which a chain of warps is deposited loosely, and tension devices acting upon the said chain on its way to the said weaving instrumentalities.

24. In a loom, in combination, the weaving instrumentalities, a container or holder for a chain of warps, and a tension device having oppositely-located guides through which the chain is conducted in alternating succession, and provided with means tending to move the opposite guides away from each other.

25. In combination, a container or holder for a chain of warps, and a series of guide-bars around which in alternating succession the chain is conducted on leaving the said container or holder.

26. In combination, a container or holder for a chain of warps, a series of guide-bars around which in alternating succession the chain is conducted on leaving the said container or holder, and a yielding tension device acting upon the said chain on its way from the said guide-bars.

27. In a loom, in combination with the weaving instrumentalities for the production of a woven web, a tier of warp-containers each adapted to have a chain of warps loosely deposited therein, and yielding tension-regulating devices acting directly upon the respective chains.

28. In a loom, in combination with the weaving instrumentalities for the production of a woven web, a plurality of warp-containers, each adapted to have a chain of warps loosely deposited therein, yielding tension-regulating devices acting directly upon the respective chains, and a support on which the said tension-regulating devices are mounted with capacity for lateral movement to separate one from another thereof.

29. In a loom, in combination with the weaving instrumentalities for the production of a woven web, a plurality of warp-holders, a series of yielding tension devices, substantially as described, a support on which the said tension devices are hung, and loosely-mounted division-pieces separating the tension devices from one another.

30. A bank of warp-containers comprising two or more tiers, side by side, each warp-container having a chain of warps loosely deposited therein, and tension-regulating devices acting upon the respective chains.

31. A bank of warp-containers comprising two or more tiers side by side, each warp-container having a chain of warps loosely deposited therein, guides for the respective chains, and yielding tension-regulating devices, one for each chain.

32. In combination, a series of supports, one above another, warp-containers removably resting upon the said supports and each adapted to have a chain of warps loosely deposited therein, guides for the respective chains, and individual tension devices for the respective chains.

33. In a loom, in combination, the heddles thereof, means to move the same longitudinally of the loom, a lay provided with a reed having the dents thereof extending longitudinally of the loom, a shuttle and means to move the same at an angle to the length of the loom, and a take-up roll having its axis extending longitudinally of the loom.

34. In a multiple-web loom, in combination, the heddles thereof, means to move the same longitudinally of the loom, a lay provided with reeds having the dents thereof extending longitudinally of the loom, a series of shuttles, means to occasion movement of the same at an angle to the length of the loom, and a take-up roll having the axis thereof extending longitudinally of the loom.

850,596. CRUSHING-MILL. JEAN MORIN, Dayton, Ohio. Filed Oct. 21, 1905. Serial No. 283,727.

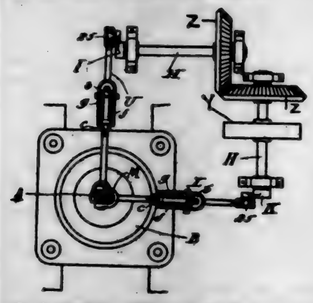

Claim.—1. A crushing-mill consisting of complementary crushing members, one of which is movable and susceptible of being given a conical rotation; and means for giving said movable member a conical rotation, said means comprising a driving mechanism; a pair of coöperating connecting-rods; means for connecting said connecting-rods to said movable member; and means comprising a ball-and-socket joint for connecting said connecting-rods separately to said driving mechanism.

2. A crushing-mill consisting of complementary crushing members, one of which is movable and susceptible of being given a conical rotation; and means for giving said movable member a conical rotation, said means comprising a driving mechanism; a pair of coöperating connecting-rods; means for connecting said rods to said movable member; and means separately connecting said connecting-rods to said driving mechanism.

3. A crushing-mill consisting of complementary crushing members, one of which is movable and susceptible of being given a conical rotation; and means for giving said movable member a conical rotation, said means comprising a pair of coöperating shafts; and a pair of coöperating connecting-rods, one end of each of said connecting-rods being attached to said movable member, and the other end of each of said connecting-rods being operatively connected with one of said shafts.

4. A crushing-mill consisting of complementary crushing members, one of which is movable and susceptible of being given a conical rotation; and means for giving said movable member a conical rotation, said means comprising a driving mechanism; a pair of coöperating connecting-rods, each of which is provided with yielding means for preventing rupture of parts of the machine; means connecting said connecting-rods with said movable member; and means which separately connect said connecting-rods with said driving mechanism.

850,597. GEARING. JOHN F. MCCANNA, Chicago, Ill., assignor to McCord & Company, Chicago, Ill., a Corporation of New Jersey. Filed Dec. 21, 1905. Serial No. 292,678.

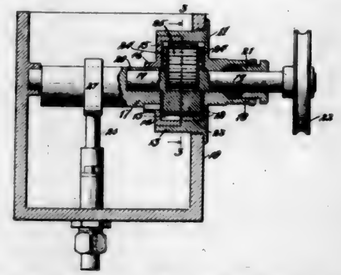

Claim.—1. In a device of the class described, a fixed internal gear having a collar and a rotatable internal gear having a bearing in the said collar, a two-part shaft coaxial with such gears, an offset block connecting the parts of the shaft and provided with a pair of arms, and a pinion pivoted in the arms eccentrically to the shaft and having a planetary movement in engagement with the fixed gear to drive the rotatable gear at a slower speed than but in the same direction as the shaft.

2. A device for converting high-speed rotary motion into low-speed reciprocating motion, comprising a fixed internal gear and a rotatable internal gear, said gears having different numbers of teeth, an eccentric fixed to the rotatable gear for moving a reciprocating element, a two-part driving-shaft coaxial with and journaled in the gears, an offset block connecting the parts of the shaft and bifurcated opposite the offset, and a pinion pivoted on the bifurcations of the block and having its pivot eccentric to the shaft whereby the pinion has a planetary movement about the shaft in engagement with the fixed gear to impart a relatively slow movement to the rotatable gear.

850,598. METALLIC TIE AND RAIL-FASTENER. JOSEPH B. NOVACH, Epton, Pa. Filed Feb. 5, 1907. Serial No. 355,785.

Claim.—1. In a metallic tie and rail-fastener, the combination with a beam having seats formed therein, and rails,

of rail-supporting plates detachably mounted in said seats, said plates having connected rail-seats providing sockets, rail-clamps adapted to engage in said sockets and engaging said rails, and tie-rods mounted between said rail-seats and passing through said rail-clamps for holding said clamps in engagement with said rail-supporting plates and said rails.

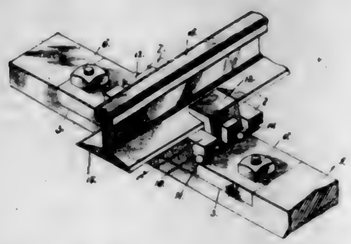

2. In a metallic tie and rail-fastener, the combination with a beam having a seat formed therein, of a rail-supporting plate detachably mounted in said seat and formed with rail-seats, a web connecting said rail-seats, rail-clamps adapted to engage in the ends of said seats, a tie-rod passing through said rail-clamps and said web, and a head carried by said tie-rod and engaging the inner side of said web.

3. A rail-fastener consisting of a rail-supporting plate having seats and sockets, a web between said seats, rail-clamps adapted to engage in said sockets, and a tie-rod passing through said web for holding said clamps between said seats.

4. In combination with a cross-tie having a recess in its upper face, a plate seated in said recess and secured to the tie with its upper face flush with the upper face of the tie, rail-seats carried by said plate and lying above the upper face of the tie and having notched ends, rail-clamps fitted between the rail-seats, and having trunnions engaging the notched ends of said seats, and means for connecting the rail-clamps together.

850,599. FASTENING DEVICE. JOHN J. O'CONNELL, Lima, N. Y. Filed Jan. 12, 1906. Serial No. 295,729.

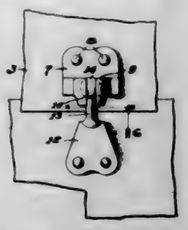

Claim.—A fastening device comprising a plate having an outwardly-projecting lug provided with a socket having its axis parallel with said plate, and said socket tapering from one end toward the other end and said lug having a hole extending through it from said latter end of the socket and its wall having a longitudinal slot extending from end to end thereof, a second plate having a flattened shank that is too wide to pass through said slot when the parts are in their normal position, but is adapted to slip through said slot into said socket when the shank is rotated a quarter-turn, and said shank terminating in a ball that is adapted to enter the larger end of said socket but is too large to pass entirely therethrough, and said shank having a limited longitudinal movement in said socket, whereby the disengagement of said ball from the said socket in separating the parts is permitted, substantially as described.

850,600. SHIFTING-RAIL LOCK FOR VEHICLE-TOPS. JAMES D. PILGRIM, Auburn, Ind. Filed May 11, 1906. Serial No. 316,261.

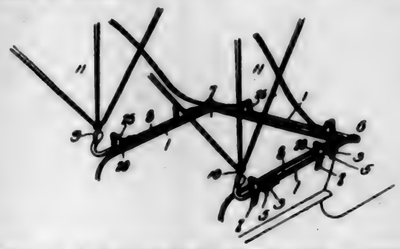

Claim.—1. A fastener for the shifting rails of vehicle-seats comprising a pin depending from the shifting rail and loosely engaging a perforation in a lateral member on a seat-iron, a loop formed of a section of bent wire loosely connected at the bent end to the shifting rail adapted to pass under said lateral member and surround said depending pin, a bent lever on the other side of the shifting rail from said depending pin, and two spaced lugs on one end of said lever, in which the free ends of said loop are eccentrically pivoted, as and for the purpose set forth.

2. A fastener for the shifting rails of vehicle-seats comprising a pin depending from the shifting rail and loosely engaging a perforation in a lateral member on a seat-iron, a loop loosely connected at one end to the shifting rail adapted to pass under said lateral member and surround said depending pin, a bent lever on the other side of the shifting rail from said depending pin, and two spaced lugs on one end of said lever, in which the free ends of said loop are eccentrically pivoted, one of said free ends being detachable from its lug, as and for the purpose set forth.

3. A fastener for the shifting rails of vehicle-seats comprising a pin depending from the shifting rail and loosely engaging a perforation in a lateral member on a seat-iron, a loop loosely connected at one end to the shifting rail adapted to pass under said lateral member and surround said depending pin, a bent lever on the other side of the shifting rail from said depending pin comprising a stem portion having a longitudinal groove and two spaced lugs forming the bent portion of the lever, in which the free ends of said loop are eccentrically pivoted, one of said free ends being detachable from its lug, as and for the purposes stated.

4. A fastener for the shifting rails of vehicle-seats comprising a seat-iron, a loop, having a two-part body portion, engaging the shifting rail at one end and adapted to couple the shifting rail to the seat-iron, means pivotally attached to said body portion for keeping the two parts thereof in proper juxtaposition, and means for connecting the opposite end of said loop to the shifting rail.

850,601. WATCH-GUARD. REGINALD S. POPE, Boston, Mass. Filed Jan. 19, 1907. Serial No. 353,116.

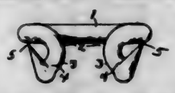

Claim.—1. In a device of the class described, a resilient stem-encircling loop having ends approaching each other, said ends terminating in diverging hooks.

2. In a device of the class described, the combination of a resilient stem-encircling loop having ends approaching each other, said ends thereafter diverging, and a guard-hook depending below the plane of said stem-loop.

850,602. DUMB-WAITER SHAFT. GUSTAVE RADER, Montclair, N. J. Filed May 4, 1906. Serial No. 315,126.

Claim.—A dumb-waiter shaft of rectangular cross-section, each wall of which is formed of a plurality of superposed blocks having cut-away portions or recesses at diagonally opposite upper and lower corners, and projections formed by said recesses, the recesses and projections of the blocks of each wall interlocking respectively with

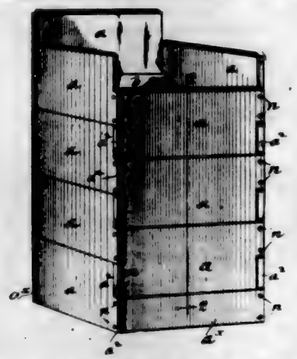

the projections and recesses of the blocks of the adjacent wall, the front and rear blocks breaking joint with the side blocks.

850,603. SLIPPER FOR SOAKING THE FEET. GEORGE REITER, Pleasant Ridge, Ohio. Filed May 16, 1905. Serial No. 260,642.

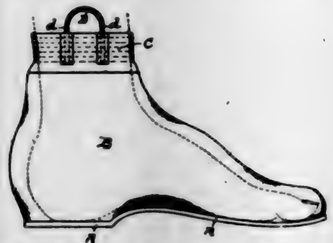

Claim.—1. In a slipper, the combination of an elastic waterproof body large enough to provide a space about the foot, with an elastic ankle portion provided with ribs adapted to closely contact with the ankle, substantially as specified.

2. In a slipper, the combination of an elastic waterproof body large enough to provide a space about the foot, with an elastic ankle portion of heavier material than the body portion and provided with ribs adapted to closely contact with the ankle, substantially as specified.

3. In a slipper, the combination of sole A; light elastic body portion B; heavier ankle portion C having ribs *a*; and handpieces D, substantially as specified.

850,604. SWITCH-OPERATING DEVICE. ELTON J. RICE, Spokane, Wash., assignor to The Rice Electric Switch Company, Spokane, Wash., a Corporation of Washington. Filed Jan. 25, 1907. Serial No. 354,065.

Claim.—1. A switch-operating device comprising a pair of arms pivoted to a railway-car, magnets carried by the arms, a crank-shaft, links connecting said arms to said cranks, whereby said magnets may be swung from one side of the rail to the other.

2. A switch-operating device, comprising a pair of arms pivoted to a railway-car, magnets carried by the arms, a shaft having two oppositely-extending cranks, a pair of links connecting said arms to one of said cranks and a second pair of links connecting arms to the other of said cranks, one pair of links being connected to the arms on one side of their pivots and the other pair on the other side.

3. A switch-operating device comprising an arm pivoted to a railway-car, a magnet carried by the arm and means for swinging the arm on its pivot to move the magnet from one side to the other of the rails.

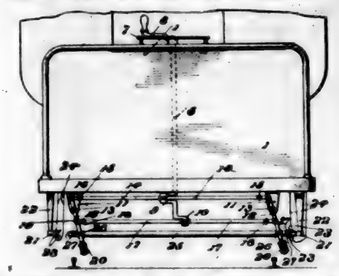

4. A switch-operating device comprising an arm pivoted to a railway-car, a magnet carried by the arm, a crank mounted on the car and a link connecting the crank and arm whereby the magnet can be swung from one side to the other of the rail.

5. A switch-operating device comprising an arm pivoted to a railway-car, of a magnet carried by the arm, a shaft provided with a pair of oppositely-extending cranks, a pair of links connected to the cranks at one end and to the arms at the other on opposite sides of the pivot of the arm whereby the operation of the crank-shaft will swing the magnet from one side to the other of the rail.

6. A switch-operating device comprising an arm pivoted to a railway-car, a magnet carried by the arm, means for swinging the arm on its pivot to move the magnet to one side or the other of the rail, a pair of stationary contacts on opposite sides of the pivoted arm movable contacts connected to the arm whereby when the arm is moved to either of its side positions the contacts will come together, and electrical connections between said contacts and said magnet.

7. A switch-operating device comprising an arm pivoted to a railway-car, a magnet carried by the arm, a shaft provided with a pair of oppositely-extending cranks, links connecting each of the cranks with the arm, connections between the links and the arm being on opposite sides of the pivot of the arm, a bar connected to the arm and provided with contacts at its ends, a pair of stationary contacts and electrical connections between the contacts on the bar and the magnet.

8. A switch-operating device comprising a pair of arms pivoted to a railway-car, magnets carried by the arms, a crank-shaft, links connecting said arms to said cranks and a bar connected near its extremities to said arms and carrying at its ends contacts, stationary contacts with which said first-mentioned contacts are adapted to alternately engage and connections between said movable contacts and said magnets.

9. A switch-operating device comprising a pair of arms pivoted to a railway-car, magnets carried by the arms, a shaft having two oppositely-extending cranks, a pair of links connecting said arms to one of said cranks, a second pair of links connecting said arms to the other of said cranks, one pair of links being connected to the arm on one side of the pivots and the other arm on the other side, a bar connected to both said arms, contacts mounted on said bar, stationary contacts with which said movable contacts are adapted to alternately engage and connections between the contacts on the bar and the magnets.

850,605. PAPER-BAG MACHINE. MURRAY SCHENCK, Chicago, Ill., assignor to The Union Bag & Paper Company, Jersey City, N. J., a Corporation of New Jersey. Filed May 25, 1901. Serial No. 61,852.

Claim.—In a paper-bag machine, a reciprocating carriage having transverse guideways formed in it on opposite sides in combination with shaft-bearings L' movable in said guideways said bearings having depending pins L².

oscillating slotted bars M engaged with the pin L^3, means for reciprocating the carriage and for oscillating said slotted bars, holding-down fingers moving with bearings

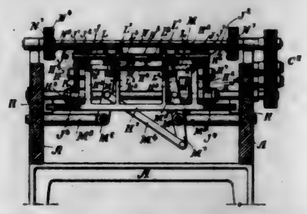

L', shafts L L also moving with said bearings and having at their ends distending-fingers L^4 and means for oscillating said shafts and fingers as described.

850,606. PROCESS OF STERILIZING AND PRESERVING SUBSTANCES. ADOLPH SCHROEDER, Berlin, Germany, assignor to Alfred Krause, Berlin, Germany. Filed Mar. 29, 1904. Serial No. 200,627.

Claim.—1. Process of sterlizing and preserving food substances and potable liquids consisting in generating oxygen in the nascent state within the substances to be sterilized and preserved by admixing thereto peroxid of magnesium and decomposing same by substances of an acid character which form with the peroxid non-injurious and medicinal by-products.

2. Process of sterilizing and preserving food substances and potable liquids consisting in generating oxygen in the nascent state within the substances to be sterilized and preserved by admixing thereto peroxid of magnesium and decomposing same by organic acids which form with the peroxid non-injurious and medicinal by-products.

3. The process of sterilizing and preserving substances containing germs and bacteria consisting in generating oxygen in the nascent state within the substances to be preserved by admixing therewith peroxid of magnesium and decomposing same by carbonic-acid gas.

4. Process of sterilizing and preserving food substances and potable liquids consisting in generating oxygen in the nascent state within the substances to be sterilized and preserved by admixing thereto peroxid of magnesium and decomposing same partly by organic acids normally contained in the substances to be sterilized and preserved and partly by decomposing substances of an acid character added thereto and forming non-injurious and medicinal by-products with the peroxid of magnesium.

850,607. PROCESS OF MAKING SANITARY CARBONATED ICE. ADOLPH SCHRÖDER, Hoboken, N. J., assignor to Alfred Krause, Berlin, Germany. Filed Nov. 5, 1904. Serial No. 231,536.

Claim.—1. The process of producing artificial sanitary ice consisting in freeing clear water from bacteria by adding peroxid of magnesium, introducing pure carbonic-acid gas, reducing the temperature to near the freezing-point, saturating the water while under normal pressure with carbonic-acid gas at this temperature and freezing said water.

2. The process of producing artificial sanitary ice consisting in freeing clear water from bacteria by adding peroxids of the earth alkali metals, introducing into the water while under normal pressure pure carbonic-acid gas whereby the peroxids are transformed into soluble bicarbonates and nascent oxygen is evolved until all bacteria are destroyed, reducing the temperature of the water thus treated to near the freezing-point and continuing to saturate while under normal pressure with carbonic-acid gas at this temperature, and freezing said water.

850,608. IRONING-MACHINE. STANLEY J. TOBIAS, Chicago, Ill. Filed Aug. 22, 1905. Serial No. 275,330.

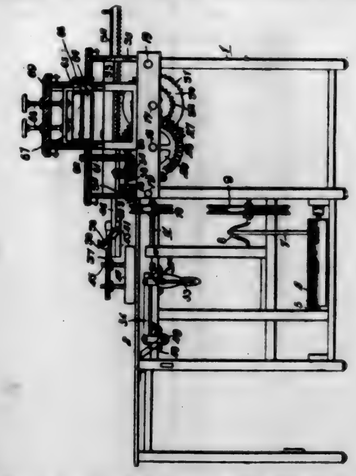

Claim.—1. In a device of the class described, the combination of a reciprocating rack-bar, a flat-iron secured to and movable with the rack-bar, gear-wheels meshing with each other and adapted to rotate continuously in opposite directions, each of the gear-wheels being provided with rack-teeth around a portion of its periphery, the two sets of rack-teeth being adapted to alternately engage the teeth of the rack-bar, a driving gear-wheel meshing with one of the rack-actuating gear-wheels, and a slidable frame within which the rack-actuating gear-wheels are journaled for engaging and disengaging one of said gear-wheels from the driving gear-wheel, substantially as described.

2. In a device of the class described, the combination of a stationary frame consisting of side rails and end rails, a movable frame slidably mounted with respect to the stationary frame, two rack-actuating shafts carried by the movable frame, intermeshing gear-wheels mounted on the shafts, one of said gear-wheels being provided with a toothed bevel-face and each of the gear-wheels being provided around a portion of its periphery with rack-teeth, a rack-bar slidably mounted on the stationary frame and adapted to be alternately engaged by the teeth of the intermeshing gear-wheels, a bevel driving gear-wheel adapted to engage the bevel-faced gear-wheel, an ironing-table connected with the stationary frame, and a flat-iron connected with the rack-bar and movable thereby, substantially as described.

3. In a device of the class described, the combination of a reciprocating member, an arm pivoted to the reciprocating member and provided at one end with a socket, a removable arm adapted to have its inner end entered into the socket, a swinging bracket pivoted to the pivot-arm and provided with a cross-head adapted to embrace the removable arm and hold it within its socket, a flat-iron provided with upwardly-extending studs or posts passing through the removable arm, and a swinging finger pivoted to the removable arm, and provided with notches on its inner edge adapted to engage the projecting studs or posts, substantially as described.

850,609. FAN. ISAAC WAKEFIELD, New Eagle, Pa. Filed Dec. 9, 1904. Serial No. 236,217.

Claim.—1. In a device of the class described, a supporting-shaft, hubs spaced apart upon said shaft and provided with radial arms terminating in lateral offsets, annular members secured upon said offsets and having central openings, and annular end plates secured to said annular members and with radial projections within said openings corresponding to said radial arms and secured thereto, curved primary blades extending between said end plates and with end flanges secured to said plates, said primary blades extending nearly to said shaft at the inner edges, and curved auxiliary fan-blades of less width than the primary blades and having end flanges secured to said end plates.

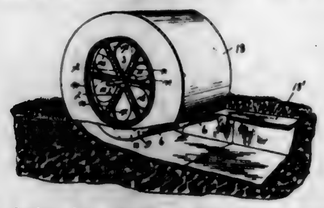

2. In a device of the class described, a main supporting-shaft, hubs spaced apart upon said shaft and provided with spaced radial arms terminating in lateral offsets, annular members bearing upon said offsets and secured thereto, circular plates secured to said annular members and with central openings and with radial projections adapted to be connected to said radial arms, an intermediate hub carried by said shaft, an intermediate plate having concentric openings divided by spaced radial arms connected to said intermediate hub, a plurality of curved primary fan-blades provided with flanges secured to said end plates and to the opposite sides of said intermediate plate, and curved auxiliary blades of less width than the primary blades and disposed between each pair of the same and provided with end flanges secured respectively to said end plates and the opposite sides of said intermediate plate.

850,610. ADJUSTABLE SPLINT. JAMES R. WARD, Detroit, Mich. Filed Aug. 16, 1906. Serial No. 330,766.

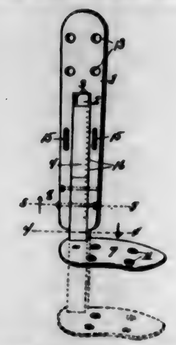

Claim.—1. A splint, comprising a relatively fixed section rigid throughout its length, a relatively movable extensible section mounted upon the fixed section and lying wholly within the plane thereof, a foot-rest upon the extensible section, and means for locking the extensible section when adjusted.

2. A splint, comprising a relatively fixed section rigid throughout its length and having a longitudinal slot, having means for attachment to the upper portion of a limb, a movable extensible section mounted to slide in the slot of said relatively fixed section, having means for attachment to a foot, and means for locking the extensible section of the splint firmly to the relatively fixed section at any desired point of adjustment.

3. In a splint, the combination of a relatively fixed section adapted to be secured to the upper limb and having a central longitudinal slot, an extensible section carrying a foot-rest adapted for attachment to the lower limb, said extensible section lying within said slot and having a plurality of apertures therethrough and a bolt lying in the relatively fixed section adapted to be passed through any one of the apertures in the extensible section, and means for securing the bolt in place.

850,611. MACHINE FOR CUTTING OR SHEARING METAL SHEETS OR PLATES. JAMES ABBOTT, Newport, England. Filed May 10, 1904. Serial No. 207,316.

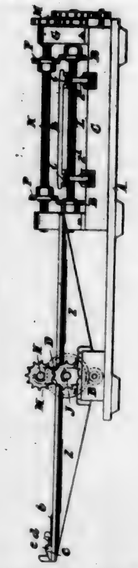

Claim.—1. A machine for cutting or shearing metal sheets or plates comprising a suitably-mounted base or bed having a pair of base-plates attached thereto at right angles to each other, each of said base-plates supporting a pair of standards or supports, between which and borne thereby are arranged a pair of shafts situated one above the other and having circular knives or cutters adjustably mounted thereon, with means for rotating said knives or cutters and supporting and retaining the metal sheets or plates in position during the cutting or shearing operations, substantially as herein described and shown.

2. A machine for cutting or shearing up metal sheets or plates in two operations, comprising a suitably-mounted base or bed, having base-plates attached thereto at right angles to each other, one of said base-plates supporting a pair of standards between which and borne thereby are arranged a pair of shafts situated one above the other, and connected by suitable gearing, and each having a pair of knives or cutters adjustably mounted thereon in suitable relation, one of said base-plates similarly supporting at right angles to the standards before mentioned a pair of standards forming bearings for a pair of shafts arranged in like manner to the shafts carried by the other base-plate, and each having a pair of knives or cutters adjustably mounted thereon in suitable relation, each of said base-plates having connected thereto one or more pairs of guides or supports provided with traveling and retaining means for supporting and retaining the sheets or plates in position during the cutting or shearing operation, substantially as, and in the manner herein described and shown.

3. A machine for cutting or shearing up metal sheets or plates in two operations, comprising a suitably-mounted base or bed A having duplicate pairs of standards or supports D E and F G directly attached thereto at right angles to each other, and respectively forming bearings for shafts

H J and K L connected to suitable gearing, the former pair of shafts H J having respectively a pair of circular knives or cutters N N, O O, adjustably mounted thereon in suitable relation, and the latter pair of shafts K L, having respectively a plurality of pairs of circular knives or cutters P R and P' R' adjustably mounted thereon in suitable relation, each said pairs of standards being provided with cross supporting plates or platforms h h' respectively, upon each of which may be connected one or more pairs of guides or supports Z Z or Z^2 Z^2 provided with traveling and retaining means for supporting and retaining the sheets or plates in position during the cutting or shearing operations, the whole connected, combined, and operating substantially as and for the purposes herein described and shown.

4. In the improved means for cutting or shearing metal sheets or plates, the combination therewith of means for adjustably mounting the circular knives or cutters upon their respective shafts, consisting of a partly-split parallel liner T' externally threaded and adapted to receive a pair of split lock-nuts V V' for tightly retaining a knife or cutter N' upon a rod or shaft, substantially as and in the manner herein described and shown.

5. In the improved means herein set forth for cutting or shearing metal sheets or plates, the combination therewith of a circular knife or cutter consisting of a cutter-block having a renewable cutting-ring and a threaded ring having its outer diameter tapered, said threaded ring being adapted when screwed onto said cutter-block to wedge said cuting-ring tight to the block and when unscrewed to permit said cutting-ring to be quickly and easily removed and replaced by a new one substantially as described and shown.

850,612. WIRE-FENCE TIGHTENER. LEWIS H. BELTZER, Dewey, Ind. Ter. Filed Sept. 22, 1906. Serial No. 335,683.

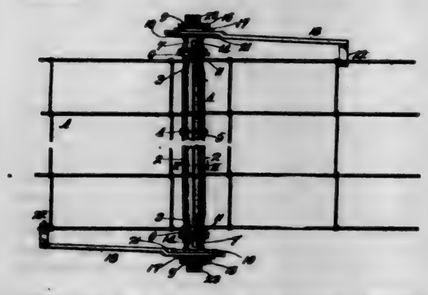

Claim.—1. In a device of the character described, a winding-drum provided with diametrically opposite notches, a hub and a ratchet-wheel, in combination with a lever provided with an elongated slot engaging the hub, a tooth to engage the ratchet-wheel and a hook to engage the wire tightened.

2. In a device of the character described, a winding-drum provided with diametrically opposite notches, a hub and a ratchet-wheel, in combination with a lever provided with an elongated slot engaging the hub, a tooth to engage the ratchet-wheel and a hook to engage the wire tightened, and means to hold the lever snugly against the ratchet-wheel.

3. In a device of the character described the combination of a winding-rod consisting of two sections adapted to be clamped against opposite sides of a strand-wire fence and project above and below the same, a pair of cross-pins mounted in the projecting ends of the rod, a winding-drum fitted upon each end of the rod, provided with radial notches engaging the adjacent cross-pin, a hub rigid with the drum, a ratchet-wheel rigid with the drum, a lever provided with an elongated slot engaging the hub of the drum, and with a tooth adapted to engage the ratchet-wheel, and a hook rigid with the outer end of the lever and adapted to engage the contiguous strand-wire of the tensioned fence, the hooks of said levers being disposed at opposite sides of the winding-rod and facing in opposite directions.

850,613. CLOSURE FOR BOTTLES. FRANK H. BILLS, Springfield, Mass. Filed Nov. 9, 1906. Serial No. 342,743.

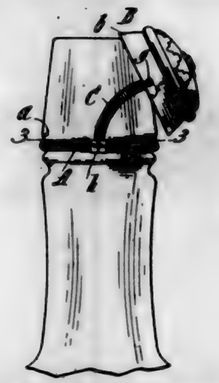

Claim.—1. A closure for a bottle having a shoulder below the mouth portion, consisting of an elastic band comprising a helical spring adapted to entirely, and constrictively, encircle the mouth of the bottle below the shoulder thereof, a hollow dome-shaped cap, and oppositely-located arms, consisting of lengths of helical springs which by their lower ends are connected with opposite portions of said elastic band, and by their other ends are connected with the opposite edgewise portions of said hollow dome-shaped cap.

2. A closure for a bottle having a shoulder below the mouth portion, consisting of an elastic band comprising a helically-coiled wire spring adapted to entirely, and constrictively, encircle the mouth portion of the bottle below the shoulder thereof, a hollow dome-shaped cap, oppositely-located arms, consisting of lengths of helical springs, by their lower ends connected with opposite portions of said wire coiled elastic band, and by their upper ends connected with the opposite edgewise portions of said hollow dome-shaped cap, and metallic ferrules encircling the portionus of the wire-coiled elastic band at the opposite places of connection therewith of said oppositely-located helically-coiled spring-arms.

3. A closure for a bottle having a shoulder below the mouth portion, consisting of an elastic band comprising a helical spring adapted to entirely, and constrictively, encircle the mouth portion of the bottle below the shoulder thereof, a hollow thin metal dome-shaped cap having a downwardly-flaring annular wall having opposite side perforations near its lower edge, oppositely-located arms, consisting of lengths of helically-coiled wire springs which by their lower ends are connected with opposite portions of said elastic neck-encircling band and which have their upper extremities formed with eye-coils, in parallel planes and disposed within the opposite lower edge portions of said downwardly-flaring cap, at the places of said perforations, and rivets passed through said eye-coils of said arms, and said perforations in the cap and headed at their opposite ends.

850,614. DUPLEX EDGE-FOLDING AND SEAM-CLOSING MACHINE. JEREMIAH BINGHAM, Toledo, Ohio, assignor to The Toledo Machine and Tool Company, Toledo, Ohio, a Corporation of Ohio. Filed June 4, 1906. Serial No. 320,029.

Claim.—1. In combination, two relatively movable parts, edge-folding dies carried by said parts, and a gage member carried by one of said parts and mounted for horizontal angular adjustment relative to the die on said part.

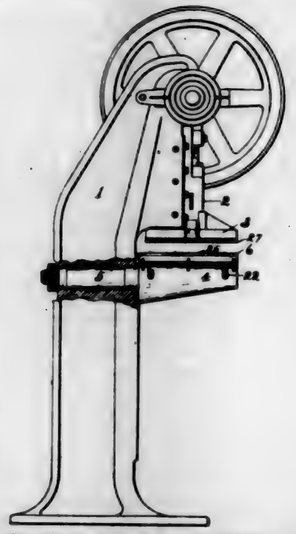

2. In combination, two relatively movable parts, edge-folding dies carried by said parts and one part having pockets formed therein, a gage-bar adjustably mounted on the part having the pockets and having portions projecting freely within the pockets, and means coöperating with the portions of the bar projecting within the pockets and with the pocket part for effecting an adjustment of the bar.

3. The combination with one of the die-carrying parts of an edge-folding apparatus, said part having pockets therein, of a gage-bar adjustably mounted thereon and having legs projecting within the pockets for lateral movement therein, adjusting-screws carried by said part and having their inner ends threaded transversely to the legs whereby to cause a lateral adjustment of the gage-bar when turned.

4. In combination, a die-carrying part, a head yieldingly spaced therefrom, edge-folding dies carried in registering relation by said part and head, a portion of said dies being mounted to have lateral swinging movement relative to the carrying part whereby it may assume a position at an angle to the plane of movement of the head, means for normally retaining the swinging dies in one position relative to the carrying part, and means for applying a compressing force to the head.

5. In combination, a horn, a head yieldingly spaced therefrom, work-gaging bars adjustably carried by the horn, edge-folding dies carried in registering relation by the horn and head, the female die having its recess disposed at a slight angle to the plane of movement of the head and the male die being mounted to have a movement relative to its carrying part, whereby it is enabled to automatically adjust itself to the incline of the female recess, and means for applying force to the head.

6. In combination, a die-carrying part, a normally spaced head yieldingly carried thereby, a male and a female edge-folding die carried by the head, registering male and female dies carried by the die-carrying part, an adjustable gage-bar for each set of coöperating dies, and means for applying force to the head.

7. The combination with one of the die-carrying parts of an edge-folding apparatus, of a gage-bar movably carried thereby, and screws coöperating with the bar and part for effecting an adjustment of the bar when turned.

8. In combination, a pressure-foot, a horn, a member disposed between said parts and yieldingly carried by one, coöperating edge-folding dies carried by said member and the part by which it is yieldingly carried, and coöperating seam-closing surfaces provided on said member and the other of said parts.

850,615. RIVETING-MACHINE. JEREMIAH BINGHAM, Toledo, Ohio, assignor to The Toledo Machine and Tool Company, Toledo, Ohio, a Corporation of Ohio. Filed June 4, 1906. Serial No. 320,030.

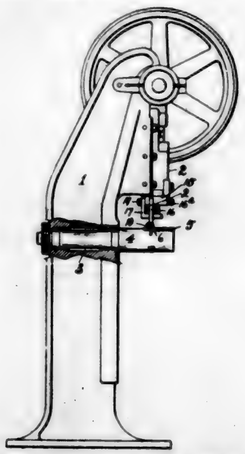

Claim.—1. The combination with the reciprocatory head, attached rivet sets, and work-support in a riveting-machine, of an L-shaped pressure-foot yieldingly carried by the head and having a portion projecting thereunder and perforated to receive the rivet sets, said foot having its working face normally positioned in advance of the ends of the rivet sets, pendent members carried by the head and shouldered to normally lock with the foot to retain it in fixed position relative to the head, and means carried by the work-support for effecting a release of said members at a predetermined point in the movement of the foot.

2. In a riveting-machine, a work-support, a reciprocatory head, a rivet set fixed thereto, a pressure-foot yieldingly carried by the head and having a subjacent portion perforated to permit a working of the rivet set therethrough, pendent dogs pivoted to the head and normally shouldered intermediate their ends on the pressure-foot to retain it in fixed relation to the head, and means carried by the work-support for coöperating with the lower ends of the dogs at a predetermined point in their descent to effect a release of the pressure-foot.

3. In a riveting-machine, a work-support, a reciprocatory head, rivet sets fixed thereto, an L-shaped pressure member having its leg slotted and slidingly secured to the head and its foot projecting under the head and perforated to permit a working of the sets therethrough, springs interposed between the foot and head, dogs pivotally carried by the head and shouldered intermediate their ends to engage the sides of the foot and retain it in fixed relation to the head, means normally retaining the dogs shouldered on the foot, and means carried by the work-support to effect a release of the dogs at a predetermined point in their descent.

4. The combination with the rivet sets and work-support in a riveting-machine, of a yieldingly-mounted pressure-foot normally having its working face positioned in advance of the ends of the rivet sets, shouldered dogs normally locking with the pressure-foot to retain it in fixed position relative to the rivet sets and having extensions projecting below the pressure-foot, and means coacting with the extensions for effecting a release of the dogs at a predetermined point in the movement of the foot.

5. The combination with the work-support and coöperating riveting part in a riveting-machine, of fixed work-gages mounted on the support and a gage-pin yieldingly mounted on the support and having a conical work-engaging end, substantially as described.

6. The combination with the work-support and coöperating riveting part in a riveting-machine, of fixed work-gages mounted on the support, and a gage-pin yieldingly carried by the support, substantially as described.

850,616. FLYING-MACHINE. ALONZO P. BLIVEN, Brooklyn, N. Y. Filed Dec. 17, 1906. Serial No. 348,305.

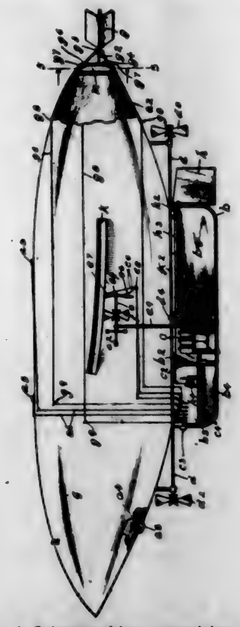

Claim.—1. A flying-machine, comprising a main balloon or gas-container consisting of a casing tapered at both ends and substantially cylindrical in cross-section and provided at the bottom thereof with a supplemental casing which is of approximately one-third the length thereof, said casing containing an engine-room, a saloon and a gas-tank, an engine placed in the engine-room, a propeller-shaft passing between the supplemental casing and the main casing of the balloon or gas-container and geared in connection with said engine, and means for guiding or steering the flying-machine.

2. In a flying-machine, a balloon or gas-container, comprising a main outer casing substantially cylindrical in cross-section and tapered at both ends and provided with an interior bag adapted to be filled with gas, said casing being provided with valves to allow of the escape of air therefrom and with means for filling the bag therethrough, and said casing being also provided at the bottom with a supplemental casing approximately one-third the length thereof and containing an engine-room, a gas-tank and a saloon, an engine placed in the engine-room, a main propeller-shaft passing longitudinally between the balloon or gas-container and the supplemental casing and geared in connection with said engine, supplemental propeller-shafts mounted on the opposite sides of the balloon or gas-container and geared in connection with said engine, a main rudder connected with the rear end of the balloon or gas-container, means for operating said rudder from the saloon of the supplemental casing, a supplemental rudder connected with the rear end of the supplemental casing, and means for operating said supplemental rudder from the saloon of the supplemental casing.

3. In a flying-machine, a balloon or gas-container, comprising a main outer casing substantially cylindrical in cross-section and tapered at both ends and provided with an interior bag adapted to be filled with gas, said casing being provided with valves to allow of the escape of air therefrom and with means for filling the bag therethrough, and said casing being also provided at the bottom with a supplemental casing approximately one-third the length thereof and containing an engine-room, a gas-tank and a saloon, an engine placed in the engine-room, a main propeller-shaft passing longitudinally between the balloon or gas-container and the supplemental casing and geared in connection with said engine, supplemental propeller-shafts mounted on the opposite sides of the balloon or gas-container and geared in connection with said engine, a main rudder connected with the rear end of the balloon or gas-container, means for operating said rudder from the saloon of the supplemental casing, a supplemental rudder connected with the rear end of the supplemental casing, and means for operating said supplemental rudder from the saloon of the supplemental casing, the supplemental propeller-shafts at the opposite sides of the balloon or gas-container being provided with means whereby the rear end thereof may be swung in a vertical plane from the saloon of the supplemental casing.

4. In a flying-machine, a balloon or gas-container, comprising a main outer casing substantially cylindrical in cross-section and tapered at both ends and provided with an interior bag adapted to be filled with gas, said casing being provided with valves to allow of the escape of air therefrom and with means for filling the bag therethrough, and said casing being also provided at the bottom with a supplemental casing approximately one-third the length thereof and containing an engine-room, a gas-tank and a saloon, an engine placed in the engine-room, a main propeller-shaft passing longitudinally between the balloon or gas-container and the supplemental casing and geared in connection with said engine, supplemental propeller-shafts mounted on the opposite sides of the balloon or gas-container and geared in connection with said engine, a main rudder connected with the rear end of the balloon or gas-container, means for operating said rudder from the saloon of the supplemental casing, a supplemental rudder connected with the rear end of the supplemental casing, and means for operating said supplemental rudder from the saloon of the supplemental casing, the supplemental propeller-shafts at the opposite sides of the balloon or gas-container being provided with means whereby the rear end thereof may be swung in a vertical plane from the saloon of the supplemental casing, and the side of the main balloon or gas-container being also provided with longitudinal wings or vanes mounted over the supplemental propeller-shafts and extending outwardly thereover.

5. A flying-machine, comprising a balloon or gas-container composed of a main outer casing substantially cylindrical in cross-section and tapered at both ends and provided with a manhole and outlet-valves, a bag placed in said main outer casing and adapted to be inflated through said manhole, said balloon or gas-container being provided with a bottom supplemental casing which ranges longitudinally thereof and is separated therefrom and contains an engine-room, a gas-tank and a saloon, an engine placed in the engine-room, a main propeller-shaft mounted longitudinally between the balloon or gas-container and the supplemental casing and provided at its front end with a propeller and geared in connection with said engine, supplemental propeller-shafts mounted on the opposite sides of the balloon or gas-container and geared in connection with said engine, a four-blade rudder mounted in the rear end of the balloon or gas-container and having a swivel-support, means for operating said rudder from the saloon of the supplemental casing, a supplemental rudder connected with the rear end of the supplemental casing, and means for operating said rudder from the saloon of the supplemental casing.

6. A flying-machine, comprising a balloon-body or gas-container composed of an oblong casing approximately cylindrical in cross-section and tapered at both ends and provided with a manhole and outlet-valves, an inflatable bag placed in said body or gas-container and adapted to be inflated through said manhole, a supplemental boat-shaped casing connected with the bottom of the main oblong casing and approximately one-third the length thereof and provided with a saloon, a gas-tank, and an engine-room, an engine placed in said room, propellers at the sides of the balloon-body and at the opposite ends of said supplemental casing and geared in connection with said engine, rudders at the rear end of the balloon-body and the rear end of the supplemental casing, and means for operating said rudders from the supplemental casing.

7. A flying-machine, comprising a main balloon-body, having a rigid casing and adapted to be inflated, a supplemental casing suspended longitudinally of the bottom of the balloon member, an engine placed in said supplemental casing, a main propeller-shaft arranged longitudinally of the bottom of the main balloon member and geared in connection with said engine, and supplemental propeller-shafts at the opposite sides of the main balloon member and geared in connection with said engine and adapted to swing in vertical planes.

8. A flying-machine, comprising a main balloon member composed of a main casing approximately cylindrical in cross-section and tapered at both ends and having an inflatable bag, a supplemental casing suspended longitudinally of the bottom of the balloon member, an engine placed in said supplemental casing, a main propeller-shaft arranged longitudinally of the bottom of the main balloon member and geared in connection with said engine, and supplemental propeller-shafts at the opposite sides of the main balloon member and geared in connection with said engine and adapted to swing in vertical planes.

9. A flying-machine, comprising a main balloon member composed of a main casing approximately cylindrical in cross-section and tapered at both ends and having an inflatable bag, a supplemental casing suspended longitudinally of the bottom of the balloon member, an engine placed in said supplemental casing, a main propeller-shaft arranged longitudinally of the bottom of the main balloon member and geared in connection with said engine, and supplemental propeller-shafts at the opposite sides of the main balloon member and geared in connection with said engine and adapted to swing in vertical planes, said supplemental propeller-shafts being provided with longitudinally-arranged and inclined shields which are placed thereover.

850,617. WIRE-FENCE MACHINE. CHARLES A. BLUME and IRA D. BLUME, Farmland, Ind., assignors to Auto Fence Machine Company, Farmland, Ind., a Corporation of Indiana. Filed Aug. 9, 1906. Serial No. 329,805.

Claim.—1. In a wire-fabric machine, parallel tubes through each of which a wire may pass, said tubes arranged in series at varying distances apart, shuttles parallel with said tubes and each adapted to carry a wire to be woven with wires passing through said tubes, means on said tubes for revolving said shuttles severally about said tubes, means for shifting each shuttle periodically from one tube to an adjacent tube, gears of the same size on all of said tubes in each series that successively intermesh, there being gears of two series on each tube between adjacent series of tubes, and a single means for driving one tube in all the series, substantially as set forth.

2. In a wire-fabric machine, parallel rotary tubes through each of which a wire may pass, a pair of disks secured on each shaft of substantially similar conformation and each provided with a pair of diametric teeth with an indentation beside the teeth, the disks of adjacent tubes overlapping each other, a guide-plate hugging said disks on each side, and a shuttle carrying a wire adapted to be woven with the wires extending through said tubes that projects between said disks beside the teeth thereof, whereby said shuttle will be caused to revolve about said tubes.

3. In a wire-fabric machine, parallel rotary tubes each having a wire passing through it, disks on said tubes that overlap each other and have coacting projections and indentations, a plate about said disks and conforming to the curvature thereof, and a shuttle carrying a wire adapted to be woven with the wires extending through said tubes that projects between said plate and disks in the indentations thereof, and means for shifting said shuttle from one disk to the other alternately.

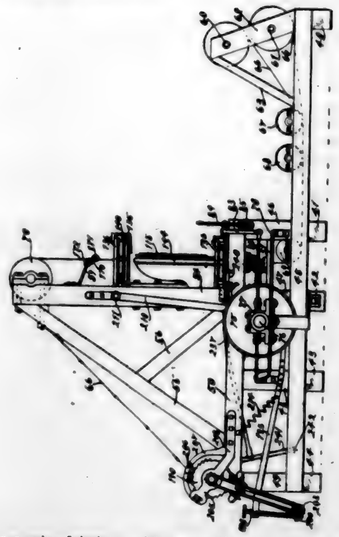

4. In a wire-fabric machine, parallel rotary tubes having each a wire through it, a twister-head secured on said tubes and having two parallel disks of similar form each having diametrically extending teeth with a recess adjacent thereto and said teeth and recesses being in vertical alinement with each other, a pair of plates with openings therethrough to provide a guide within which each of said twister-heads operate, and a shuttle carrying a wire adapted to be woven with wires extending through said tubes that projects between said twister-heads and said plates, whereby the rotation of the tubes will cause the rotation of the shuttles.

5. In a wire-fabric machine, parallel rotary vertical tubes having each a wire passing through it, a twister-head secured to each end of said tubes and having disks with diametrically extending teeth and an indentation beside each tooth, a shield-plate hugging each side of said upper and lower twister-heads, a shuttle carrying a wire adapted to be woven with the wires that pass through said tubes that projects between said disks and plate in the indentations of the disk, and loops on said shuttle through which said teeth project, whereby said shuttle will be held in its vertical position and revolved about said tubes.

6. In a wire-fabric machine, parallel rotary tubes through each of which a wire may pass, shuttles adapted to carry other wires to be woven with wires passing through said tubes, means on said tubes for revolving said shuttles about said tubes, a periodically-movable shifter-bar, arms extending rigidly from said shifting-bar, shifting-arms pivoted on said rigid arms that are pointed with a curved bevel on each side of the end, and a stop for limiting the movement of said shifting-arms.

7. In a wire-fabric machine, parallel tubes through each of which a wire may pass, said tubes being in different series, the distance of the tubes apart differing in the different series, shuttles adapted to carry other wires to be woven with the wires passing through said tubes, disks varying in their diameters for revolving the shuttles about said tubes, a shifting-bar mounted at each side of the row of tubes, means for periodically operating said shifting-bars in opposite directions simultaneously, and shifting-

arms extending from said shifting-bars in the proximity of said disks, the shifting-arms for the narrow disks being stationary and the shifting-arms for the larger disks being pivoted, said shifting-arms being pointed and having a concave edge at each side of the point, so that each shuttle will be shifted from one disk to the next.

8. In a wire-fabric machine, a frame, means for maintaining the longitudinal strand-wires of the fabric in a vertical position, means for weaving other wires across and with said strand-wires, a transverse rod secured to the frame behind the fabric above the weaving mechanism, a sheave-pulley mounted at each side of the machine on the rod for bearing against the front surface of the lateral strand-wires, and wheels mounted upon said rod that engage the inner surfaces of said strand-wires, substantially as set forth.

9. In a wire-fabric machine, a reel upon which the fabric is wound as it is woven, consisting of a removable shaft, heads loosely mounted on said shaft, and longitudinal bars loosely mounted in said heads.

10. In a fence-fabric machine, a reel having a shaft removably mounted at one end on the framework and a central socket in the other end, and a reel-actuating shaft mounted in the framework upon which the socketed end of the reel may be placed or removed, whereby the reel is readily mounted and removable.

11. In a fence-fabric machine, a reel upon which the fabric is wound as it is woven, a lever fulcrumed coaxially with the reel, means connected with said lever for actuating the reel in one direction, a reciprocating bar movably engaging said lever, a screw passing through said reciprocating bar, means connected with said lever on which said screw is mounted rotatably, and means for transmitting power from the reel to said screw, whereby the screw will move said bar gradually farther away from the fulcrum of said lever as the operation of the reel proceeds.

12. In a fence-fabric machine, a reel upon which the fabric is wound as it is woven, a lever fulcrumed coaxially with the reel, means connected with said lever for actuating the reel in one direction, a reciprocating bar movably engaging said lever, a screw passing through said reciprocating bar, means on said lever in which said screw has bearing, a bevel-gear on the end of said screw, a worm-wheel mounted in said lever that engages said bevel-gear, a sprocket-wheel connected with said worm-wheel, a sprocket-wheel on the reel-shaft, and a sprocket-chain connecting said sprockets, substantially as set forth.

13. In a fence-fabric machine, a reel for receiving the fabric as it is being woven, a reciprocating bar for intermittently actuating the reel in one direction, a suspended bar to which said reciprocating bar is pivoted, a driving-wheel near said bar, means connected with said swinging bar that is engaged periodically by said wheel for actuating said reciprocating bar in one direction, and adjustable means for limiting the return movement of said swinging bar, whereby the limit of movement of said reel may be regulated.

14. In a fence-fabric machine, a reel for receiving the fabric as it is being woven, a reciprocating bar for intermittently actuating the reel in one direction, a suspended bar to which said reciprocating bar is pivoted, a driving-wheel near said bar, means connected with said swinging bar that is engaged periodically by said wheel for actuating said reciprocating bar in one direction, and adjustable means for limiting the return movement of said swinging bar, whereby the limit of movement of said reel may be regulated.

15. In a fence-fabric machine, a reel for receiving the fabric as it is woven, a reciprocating bar for actuating said reel, a driving-wheel with a pin mounted eccentrically on it, adjustable means engaged by said pin at each revolution of the wheel for moving said reciprocating bar in one direction, and a cam-guide for regulating the position of said means so it will be engaged by the pin on said wheel during various adjustments.

16. In a fence-fabric machine, a reel for receiving the fabric as it is woven, a reciprocating bar for actuating said reel, a driving-wheel with a pin mounted eccentrically on it, adjustable means engaged by said pin at each revolution of the wheel for moving said reciprocating bar in one direction, a cam-guide for regulating the position of said means so it will be engaged by the pin on said wheel during various adjustments, and means actuated by the coil of wire on the reel for adjusting the position of said moving means.

850,618. ELEVATOR SIGNALING APPARATUS. JOHN D. BOWNE, New York, N. Y., assignor to Slawson-Graham Company, New York, N. Y. Filed June 30, 1906. Serial No. 324,209.

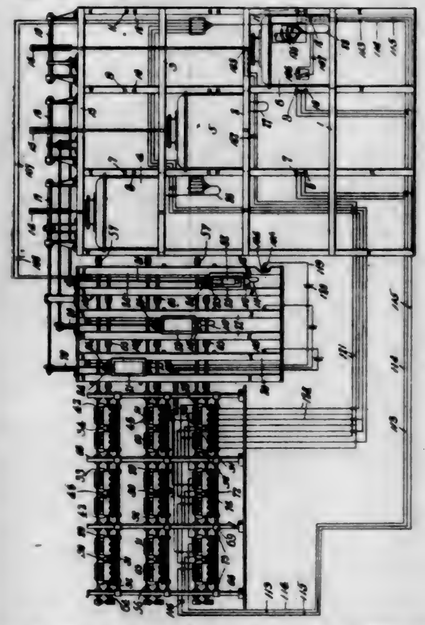

Claim.—1. In elevator signaling apparatus, the combination with an elevator and shaft, of a push-button and circuit for each floor, a magnet included in each push-button circuit, an independent circuit for each floor, a magnet included in each independent circuit, devices actuated by the elevator and adapted to make and break the said independent circuits, an indicator borne by the elevator, indicator-circuits leading from the elevator to the electromagnetic units for each floor, circuit-making means in the indicator-circuits adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means arranged to reset the circuit-making means.

2. In elevator signaling apparatus, the combination with an elevator and shaft, of up-signal and down-signal push-buttons and circuits, magnets included in the said circuits, independent circuits, magnets included in the said circuits, devices actuated by the elevator and adapted to make and break the independent circuits, an indicator borne by the elevator, indicator-circuits, circuit-making means in the indicator-circuits adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means arranged to reset the said circuit-making means.

3. In elevator signaling apparatus, the combination with an elevator and shaft, of independent circuits, magnets included in the said circuits, push-buttons and push-button circuits, magnets included in said circuits, devices actuated by the elevator and adapted to make and break the independent circuits, an indicator borne by the elevator, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit

only by the sum of the actions of magnets in a push-button circuit and independent circuit, and resetting means arranged to reset the said circuit-making means.

4. In elevator signaling apparatus, the combination with an elevator, of electromagnetic units having magnets arranged near each other, push-buttons and circuits and independent circuits connected with said magnets, the said magnets having pivoted armatures provided with means for limiting their movements, a pivotally-supported switch-arm, a transversely-disposed rocking bar pivotally attached to the switch-arm and having a limited movement, the said armatures being constructed and arranged to support the ends of the said rocking bar thereby carrying the weight of the switch-arm when no current flows, the said armatures being movable out of contact with the said rocking bar when attracted thus permitting the switch-arm to drop, the said rocking bar being arranged to fall in rear of the armatures preventing them from moving from the magnets when the current ceases, and means operated by the elevator for raising the said switch-arm.

5. In elevator signaling apparatus, the combination with an elevator and shaft, of a push-button and circuit for each floor, a magnet included in each push-button circuit, an independent circuit for each floor, a magnet included in each independent circuit, devices actuated by the elevator and adapted to make and break the said independent circuits, an indicator borne by the elevator, indicator-circuits leading from the elevator to the electromagnetic units for each floor, circuit-making means in the indicator-circuits adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and mechanical resetting devices constructed to be operated by the movements of the elevator and arranged to reset the circuit-making means.

6. In elevator signaling apparatus, the combination with an elevator and shaft, of up-signal and down-signal push-buttons and circuits, magnets included in the said circuits, independent circuits, magnets included in the said circuits, devices actuated by the elevator and adapted to make and break the independent circuits, an indicator borne by the elevator, indicator-circuits, circuit-making means in the indicator-circuits adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and mechanical resetting devices constructed to be operated by the movements of the elevator and arranged to reset the circuit-making means.

7. In elevator signaling apparatus, the combination with an elevator and shaft, of independent circuits, magnets included in the said circuits, push-buttons and push-button circuits, magnets included in said circuits, devices actuated by the elevator and adapted to make and break the independent circuits, an indicator borne by the elevator, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and independent circuit, and mechanical resetting devices constructed to be operated by the movements of the elevator and arranged to reset the circuit-making means.

8. In elevator signaling apparatus, the combination with a plurality of elevators and shafts, of push-buttons and circuits for each elevator for each floor, a magnet included in each push-button circuit, an independent circuit for each elevator for each floor, a magnet included in each independent circuit, devices actuated by the elevators and adapted to make and break the independent circuits, indicators borne by the elevators, indicator-circuits leading from each indicator to the electromagnetic units for each floor, circuit-making means in the said indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means constructed and arranged to be actuated by the movements of every elevator and arranged to reset the said circuit-making means for all the indicator-circuits for each floor.

9. In an elevator signaling apparatus, the combination with a plurality of elevators and shafts, of up-signal and down-signal push-buttons and circuits for each elevator for each floor, a magnet included in each push-button circuit, an independent circuit for each elevator for each floor, a magnet included in each independent circuit, devices actuated by the elevators and adapted to make and break the independent circuits, indicators borne by the elevators, indicator-circuits leading from each indicator to the electromagnetic units for each floor, circuit-making means in the said indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means constructed and arranged to reset the said circuit-making means for all the indicator-circuits.

10. In elevator signaling apparatus, the combination with a plurality of elevators and shafts, of independent circuits, magnets included in the said circuits, push-buttons and push-button circuits, magnets included in said circuits, devices actuated by the elevators and adapted to make and break the independent circuits, indicators borne by the elevators, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means constructed and arranged to reset the said circuit-making means for all the indicator-circuits.

11. In elevator signaling apparatus, the combination with a plurality of elevators and shafts, of push-buttons and circuits for each elevator for each floor, a magnet included in each push-button circuit, an independent circuit for each elevator for each floor, a magnet included in each independent circuit, devices actuated by the elevators and adapted to make and break the independent circuits, indicators borne by the elevators, indicator-circuits leading from each indicator to the electromagnetic units for each floor, circuit-making means in the said indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means constructed to be actuated by the movements of every elevator and arranged to reset the said circuit-making means for all the indicator-circuits for each floor.

12. In an elevator signaling apparatus, the combination with a plurality of elevators and shafts, of up-signal and down-signal push-buttons and circuits for each elevator for each floor, a magnet included in each push-button circuit, an independent circuit for each elevator for each floor, a magnet included in each independent circuit, devices actuated by the elevators and adapted to make and break the independent circuits, indicators borne by the elevators, indicator-circuits leading from each indicator to the electromagnetic units for each floor, circuit-making means in the said indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means constructed and arranged to be actuated by the movements of every elevator and to reset the said circuit-making means for all the indicator-circuits.

13. In elevator signaling apparatus, the combination with a plurality of elevators and shafts, of independent circuits, magnets included in the said circuits, push-buttons and push-button circuits, magnets included in said circuits, devices actuated by the elevators and adapted to make and break the independent circuits, indicators borne by the elevators, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means constructed and arranged to be actuated by the movements of every elevator and to reset the said circuit-making means for all the indicator-circuits.

14. In elevator signaling apparatus, the combination with a plurality of elevators and shafts, of push-buttons and circuits for each elevator for each floor, a magnet included in each push-button circuit, an independent circuit for each elevator for each floor, a magnet included in each independent circuit, devices actuated by the elevators and

adapted to make and break the independent circuits, indicators borne by the elevators, indicator-circuits leading from each indicator to the electromagnetic units for each floor, circuit-making means in the said indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and mechanical resetting devices constructed and arranged to be actuated by the movements of every elevator and to reset the circuit-making means for all the indicator-circuits for each floor.

15. In an elevator signaling apparatus, the combination with a plurality of elevators and shafts, of up-signal and down-signal push-buttons and circuits for each elevator for each floor, a magnet included in each push-button circuit, an independent circuit for each elevator for each floor, a magnet included in each independent circuit, devices actuated by the elevators and adapted to make and break the independent circuits, indicators borne by the elevators, indicator-circuits leading from each indicator to the electromagnetic units for each floor, circuit-making means in the said indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and mechanical resetting devices arranged to be actuated by the movements of every elevator and to reset the said circuit-making means for all the indicator-circuits.

16. In elevator signaling apparatus, the combination with a plurality of elevators and shafts, of independent circuits, magnets included in the said circuits, push-buttons and push-button circuits, magnets included in said circuits, devices actuated by the elevators and adapted to make and break the independent circuits, indicators borne by the elevators, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and mechanical resetting devices arranged to be actuated by the movements of every elevator and to reset the said circuit-making means for all the indicator-circuits.

17. In elevator signaling apparatus, the combination with a passenger-elevator and shaft, of a miniature elevator actuated by the movements of the said passenger-elevator in correspondence therewith, independent circuits, magnets included in the said circuits, push-buttons and push-button circuits, magnets included in said circuits, devices actuated by the miniature elevator and adapted to make and break the independent circuits, an indicator borne by the passenger-elevator, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and independent circuit, and resetting means arranged to reset the said circuit-making means.

18. In elevator signaling apparatus, the combination with a passenger-elevator and shaft, of a miniature elevator actuated by the movements of the said passenger-elevator in correspondence therewith, independent circuits, magnets included in the said circuits, push-buttons and push-button circuits, magnets included in said circuits, devices actuated by the miniature elevator and adapted to make and break the independent circuits, an indicator borne by the passenger-elevator, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and mechanical resetting devices constructed and arranged to be operated by one of said elevators and to reset the said circuit-making means.

19. In elevator signaling apparatus, the combination with a passenger-elevator and shaft, of a miniature elevator actuated by the movements of the said passenger-elevator in correspondence therewith, independent circuits, magnets included in the said circuits, push-buttons and push-button circuits, magnets included in said circuits, devices actuated by the miniature elevator and adapted to make and break the independent circuits, an indicator borne by the passenger-elevator, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and mechanical devices constructed and arranged to be operated by the movements of the said miniature elevator and to reset said circuit-making means.

20. In elevator signaling apparatus, the combination with a plurality of passenger-elevators and shafts, of the same number of miniature elevators actuated by the movements of said passenger-elevators and in correspondence with them, independent circuits, magnets included in the said circuits, push-buttons and push-button circuits, magnets included in said circuits, devices actuated by the miniature elevators and adapted to make and break the independent circuits, indicators borne by the passenger-elevators, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means constructed and arranged to reset the said circuit-making means for all the indicator-circuits.

21. In elevator signaling apparatus, the combination with a plurality of passenger-elevators and shafts, of the same number of miniature elevators actuated by the movements of said passenger-elevators and in correspondence with them, independent circuits, magnets included in the said circuits, push-buttons and push-button circuits, magnets included in said circuits, devices actuated by the miniature elevators and adapted to make and break the independent circuits, indicators borne by the passenger-elevators, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means constructed and arranged to be actuated by one member of every couple comprising a passenger-elevator and a miniature elevator, the said resetting means being adapted to reset the said circuit-making means for all the indicator-circuits.

22. In elevator signaling apparatus, the combination with a plurality of passenger-elevators and shafts, of the same number of miniature elevators actuated by the movements of said passenger-elevators and in correspondence with them, independent circuits, magnets included in the said circuits, push-buttons and push-button circuits, magnets included in said circuits, devices actuated by the miniature elevators and adapted to make and break the independent circuits, indicators borne by the passenger-elevators, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and mechanical resetting devices constructed and arranged to be actuated by the movements of every miniature elevator and to reset the said circuit-making means for all the indicator-circuits.

23. In elevator signaling apparatus, the combination with an elevator and shaft, of independent circuits, magnets included in the said circuits, push-buttons and push-button circuits, magnets included in said circuits, vertically-adjustable metal contacts included in said independent circuits, devices actuated by the elevator and adapted to make and break the independent circuits by touching the said contacts, an indicator borne by the elevator, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means arranged to reset the said circuit-making means.

24. In elevator signaling apparatus, the combination with a plurality of elevators and shafts, of independent circuits, magnets included in the said circuits, push-buttons and push-button circuits, magnets included in said circuits, vertically-adjustable metal contacts included in said independent circuits, devices actuated by the elevators and adapted to make and break the independent circuits by touching the said contacts, indicators borne by the elevators, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means constructed and arranged to reset the said circuit-making means for all the indicator-circuits.

25. In elevator signaling apparatus, the combination with a plurality of passenger-elevators and shafts, of the same number of miniature elevators actuated by the movements of the said passenger-elevators and in correspondence with them, independent circuits, magnets included in the said circuits, push-buttons and push-button circuits, magnets included in the said circuits, vertically-adjustable metal contacts included in said independent circuits, devices actuated by the miniature elevators and adapted to make and break the independent circuits by touching the said contacts, indicators borne by the passenger-elevators, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means constructed and arranged to reset the said circuit-making means for all the indicator-circuits.

26. In elevator signaling apparatus, the combination with a plurality of elevators and shafts, of independent circuits, magnets included in the said circuits, up-signal and down-signal push-buttons and circuits, magnets included in the said circuits, the circuit of each up-signal push-button on any floor being arranged to include all the magnets in all the up-signal push-button circuits for the same floor whereby any such up-signal push-button pressed effects the magnetization of all such magnets, the circuit of each down-signal push-button on any floor being arranged to include the magnets in all the down-signal push-button circuits for the same floor whereby any such down-signal push-button pressed effects the magnetization of all such magnets, devices actuated by the elevators and adapted to make and break the independent circuits, indicators borne by the elevators, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to move a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means constructed and arranged to reset the said circuit-making means for all the indicator-circuits.

27. In elevator signaling apparatus, the combination with a plurality of passenger-elevators and shafts, of the same number of miniature elevators actuated by the movements of said passenger-elevators and in correspondence with them, independent circuits, magnets included in the said circuits, up-signal and down-signal push-buttons and circuits, magnets included in said circuits, the circuit of each up-signal push-button on any floor being arranged to include all the magnets in all the up-signal push-button circuits for the same floor whereby any such up-signal push-button pressed effects the magnetization of all such magnets, the circuit of each down-signal push-button on any floor being arranged to include all the magnets in all the down-signal push-button circuits for the same floor whereby any such down-signal push-button pressed effects the magnetization of all such magnets, devices actuated by the said miniature elevators and adapted to make and break the independent circuits, indicators borne by the passenger-elevators, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means constructed and arranged to reset the said circuit-making means for all the indicator-circuits.

28. In elevator signaling apparatus, the combination with a plurality of elevators and shafts, of independent circuits, vertically-adjustable metal contacts included in said independent circuits, magnets included in the said circuits, up-signal and down-signal push-buttons and circuits, magnets included in said circuits, the circuit of each up-signal push-button on any floor being arranged to include all the magnets in all the up-signal push-button circuits for the same floor whereby any such up-signal push-button pressed effects the magnetization of all such magnets, the circuit of each down-signal push-button on any floor being arranged to include all the magnets in all the down-signal push-button circuits on the same floor whereby any such down-signal push-button pressed effects the magnetization of all such magnets, devices actuated by the elevators and adapted to make and break the said independent circuits by touching the said contacts, indicators borne by the elevators, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means constructed and arranged to reset the said circuit-making means for all the indicator-circuits.

29. In elevator signaling apparatus, the combination with a plurality of passenger-elevators and shafts, of the same number of miniature elevators actuated by the movements of said passenger-elevators and in correspondence with them, independent circuits, magnets included in the said circuits, vertically-adjustable metal contacts included in said independent circuits, up-signal and down-signal push-buttons and circuits, magnets included in said circuits, the circuit of each up-signal push-button on any floor being arranged to include all the magnets in all the up-signal push-button circuits for the same floor whereby any such up-signal push-button pressed effects the magnetization of all such magnets, the circuit of each down-signal push-button on any floor being arranged to include all the magnets in all the down-signal push-button circuits for the same floor whereby any such down-signal push-button pressed effects the magnetization of all such magnets, devices actuated by the miniature elevators and adapted to make and break the said independent circuits by touching the said contacts, indicators borne by the passenger-elevators, indicator-circuits, circuit-making means in the indicator-circuits each adapted to be operated and to make a circuit only by the sum of the actions of magnets in a push-button circuit and in an independent circuit, and resetting means constructed and arranged to reset the said circuit-making means for all the indicator-circuits.

30. In a signaling apparatus, the combination with a movable signal-controller comprising separately-operative portions, of controller-operating means for actuating a portion of the said signal-controller, controller-operating means for actuating the remaining portion of the said signal-controller thereby completing the operation of the said signal-controller, and resetting devices constructed and arranged to reset the said signal-controller.

31. In a signaling apparatus, the combination with a movable signal-controller comprising separately-operative portions, of controller-operating means for actuating a portion of the said signal-controller, controller-operating means for actuating the remaining portion of the said signal-controller thereby completing the operation of the said signal-controller, signal-giving means constructed to be set in operation by the complete operation of the said signal-controller, and resetting devices arranged to reset the said signal-controller thereby stopping the action of the said signal-giving means.

850,619. ELEVATOR VALVE MECHANISM. ROBERT C. BROMLEY, Ben Avon, Pa. Filed May 9, 1906. Serial No. 315,888.

Claim.—1. The combination with a stop-motion device, a normally straight vertically-pendent stationary element connected therewith, and a cam; of a normally stationary and a swinging sheave-wheel mounted on an elevator-car, and an arm adapted to actuate the sheave-wheel provided with a bearing portion arranged to engage the cam, substantially as set forth.

2. The combination with a stop-motion device, a normally straight vertically-pendent stationary element connected therewith, and an adjustable cam-bar; of a normally stationary and a swinging sheave-wheel mounted on an elevator-car, and an arm adapted to actuate the sheave-wheel provided with a bearing portion arranged to engage the cam, substantially as set forth.

3. In an elevator, the combination with a motor and a valve controlling the circulation of the operating fluid thereof; of an elevator-car, a normally straight vertically-pendent stationary element connected with the lever of said valve, a cam, a normally stationary sheave-wheel mounted on the car, and a swinging frame also mounted on

the car provided with a swinging wheel and an arm having a terminal arranged to engage the cam at the desired limit of travel to deflect the swinging sheave-wheel, substantially as set forth.

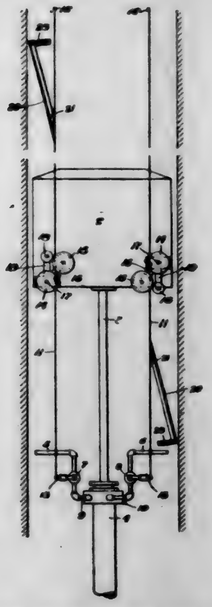

4. In an elevator, the combination with a motor and separate supply and exhaust valves controlling the circulation of fluid to and from said motor; of an elevator-car, normally straight vertically-pendent stationary cables depending from the top of the elevator-well and connected with the levers of the supply and exhaust valves respectively, a cam-bar located at the top and bottom of the well respectively, and separate actuating mechanisms for operating one or the other of said cables to operate either the supply or exhaust valve consisting of a relatively stationary sheave-wheel and a swinging frame carrying a sheave-wheel and an arm having a terminal arranged to engage its appropriate cam, substantially as set forth.

5. In an elevator, the combination with a stop-motion device and a normally straight vertically-pendent stationary cable connected therewith, of a stationary sheave-wheel, and a swinging sheave-wheel arranged to coöperate therewith and engage the cable, and means for actuating the swinging sheave-wheel, substantially as set forth.

6. In an elevator, the combination with a stop-motion device and a normally straight vertically-pendent stationary cable connected therewith, of a vertically-traveling sheave-wheel, a swinging frame provided with a sheave-wheel adapted to engage the cable, said frame having a bearing device, and a relatively stationary element adapted to engage said bearing device, substantially as set forth.

7. In an elevator, the combination with a stop-motion device and a vertically-pendent stationary cable connected therewith, of a vertically-traveling sheave-wheel, a swinging frame provided with a sheave-wheel adapted to engage the cable, said frame having a bearing device, and a relatively stationary inclined cam adapted to engage said bearing device, substantially as set forth.

8. In an elevator, the combination with a stop-motion device, of a vertically-pendent stationary cable connected therewith, a vertically-traveling sheave-wheel mounted on the elevator-car, a swinging frame mounted on the journal of said wheel and provided with a sheave-wheel arranged to engage the cable and swing with relation to said first-named sheave-wheel, said frame having a terminal bearing-roller, and a relatively stationary inclined cam arranged to engage said bearing-roller to actuate the device, substantially as set forth.

850,620. HOT-WATER HEATER. THOMAS H. CAMPBELL, Pittsburg, Pa.. Filed Dec. 8, 1905. Serial No. 290,913.

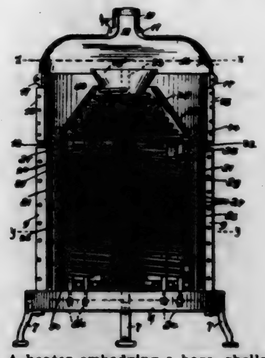

Claim.—1. A heater embodying a base, shells supported by said base, coils of tubing arranged within said shells and surrounding one another, burners located between said coils of tubing, means to support said coils of tubing, and means to support said burners, substantially as described.

2. A heater embodying a base, shells supported by said base, coils of tubing arranged within said shells, said coils of tubing being arranged one within the other, and having a common outlet, burners located between said coils of tubing, means to support said coils and tubing and means to support said burners.

3. A heater having a central opening passing vertically therethrough, said heater embodying the base, shells supported by said base, coils of tubing arranged within said shells, said coils being arranged one within the other, the innermost of said coils surrounding said central opening, burners located between said coils of tubing, means to support said coils of tubing, and means to support said burners substantially as described.

4. A heater embodying the base and having a central opening passing therethrough, a plurality of shells arranged one within the other, coils of tubing supported by said shells, burners arranged between said shells and coils of tubing, and means for supporting said burners substantially as described.

850,621. MECHANICAL MUSICAL INSTRUMENT. ARTHUR T. CHESTER, Pelham, N. Y. Filed June 8, 1906. Serial No. 320,700.

Claim.—1. In combination with a bellows-pneumatic, a suction-chamber 11 and passages from the pneumatic to the atmosphere and to the suction-chamber, a valve-stem and two valves thereon for the respective passages opening outward therefrom, one of said valves being in the form of a diaphragm in the said chamber for actuating the said stem, and means for applying suction or atmosphere on the side of said diaphragm-valve remote from the said passages.

2. In combination with a suction-chest and with a pneumatic-passage 14 to be controlled, ports leading therefrom to atmosphere and to the said chest, a diaphragm-valve in the said chest for closing and opening the said port leading to said chest, a valve-stem, and a valve thereon for the port leading to atmosphere, and connections for varying the pressure action on the side of said diaphragm remote from the said ports.

3. In a mechanical musical instrument, a plurality of striking-pneumatics, a chest common thereto, passages from the said pneumatics to the said chest and to atmosphere, valves for the said passages, one of said valves being in the form of a valve-actuating pneumatic controlling the said passages of each of the said striking-pneumatics, valves for controlling each said valve-actuating pneumatics, and separable casings in which the last said valves are mounted separately for each of the said valve-actuating pneumatics, a diaphragm and connections for actuating the last said valves and mounted in the respective casings, and two pneumatic connections for each of the said casings, one for connecting the said valve-actuating pneumatic with its controlling valves, and the other for supplying actuating-wind for the said diaphragm.

850,622. EQUALIZING AND DISTRIBUTING FITTING. GEORGE W. CLARK, New York, N. Y. Filed Sept. 12, 1903. Serial No. 172,885.

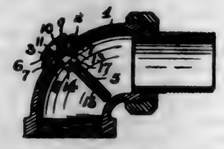

Claim.—1. A fitting for pipes for preventing more or less the flow of a liquid through the pipe, comprising a shell having an opening, a plug in said opening having a tubular portion and a cone-seat, a stem rotatively arranged in said tubular portion of said plug, said stem having a cone-shaped head arranged on said cone-seat, said stem being provided with a flattened part, a washer on said flattened part, a lock-nut on said stem, and a disk or baffle-plate on the lower end portion of said stem for retarding the flow of a liquid through said fitting, substantially as and for the purposes set forth.

2. A fitting for pipes for preventing more or less the flow of a liquid through the pipe, comprising a shell having an opening, a plug in said opening having a tubular portion and a cone-seat, a stem rotatively arranged in said tubular portion of said plug, said stem having a cone-shaped head arranged on said cone-seat, said stem being provided with a flattened part, a washer on said flattened part, a lock-nut on said stem, a disk or baffle-plate on the lower end portion of said stem for retarding the flow of a liquid through said fitting, said cone-shaped head of the stem being provided with a slot for setting said disk or plate at different angles across the interior of the fitting, substantially as and for the purposes set forth.

850,623. PIPE-HANGER. ROBERT W. CLARK, Buffalo, N. Y. Filed Jan. 2, 1907. Serial No. 350,500.

Claim.—1. A pipe-hanger consisting essentially of a suspending-jaw, an elongated shank on such jaw provided with a closed slot, a second jaw pivoted to the first jaw, a shank on such second jaw provided with an open slot adapted to register with the closed slot of the first jaw, a locking-pin riding in the closed slot and adapted for locking engagement with the open slot of the second jaw and releasing disengagement therefrom and means for securing the first jaw to the ceiling, all combined and operating as and for the purpose stated.

2. A pipe-hanger consisting essentially of a suspending-jaw, an elongated shouldered upper shank on such jaw provided with a closed slot, a second jaw pivoted to the first jaw and overlapping the same, an upper shank on such second jaw provided with an open slot adapted to register with the closed slot of the first jaw, a locking-pin riding in the closed slot and adapted for locking engagement with the open slot of the second jaw and releasing disengagement therefrom and swiveled means for adjustably securing the first jaw to the ceiling, all combined and operating as and for the purpose stated.

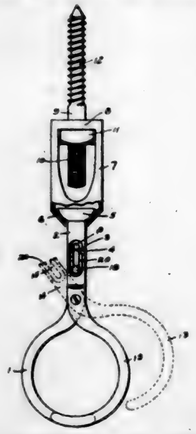

850,624. APPARATUS FOR LIFTING INVALIDS. WILLIAM B. CLOSSON, Magnolia, Mass. Filed Oct. 26, 1906. Serial No. 340,615.

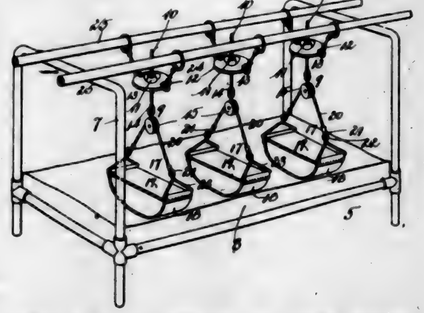

Claim.—1. In an apparatus for lifting invalids, a sling, a rod upon which said sling is supported, a carrier, a nut supported on said carrier and having screw-threaded engagement with said rod, and means to support said carrier.

2. In an apparatus for lifting invalids from a bed, a sling, a rod upon which said sling is supported, a carrier, a nut supported on said carrier and having screw-threaded engagement with said rod, two supporting members extending longitudinally of said bed, and means for connecting said carrier to said supporting members.

3. In an apparatus for lifting invalids from a bed, a sling, a rod upon which said sling is supported, a carrier, a nut supported on said carrier and having screw-threaded engagement with said rod, two rods extending longitudinally of said bed and supported at their opposite ends on said bed, and hangers connecting said carrier to said rods.

4. In an apparatus for lifting invalids from a bed, a sling, a rod upon which said sling is supported, a carrier, a nut supported on said carrier and having screw-threaded engagement with said rod, two rods extending longitudinally of said bed and supported at their opposite ends

on said bed, hangers connecting said carrier to said rods, each consisting of a pair of rings connected together by a flexible connection, one of said rings adapted to engage said carrier, the other to engage one of said rods.

5. In an apparatus for lifting invalids a carrier and means to support the same, a nut supported on said carrier, a rod having screw-threaded engagement with said nut and extending downwardly therefrom, a pulley-block and pulley supported upon the lower end of said rod, and a sling supported upon said pulley.

6. In an apparatus for lifting invalids, a carrier and means to support the same, a nut supported on said carrier, a rod having screw-threaded engagement with said nut and extending downwardly therefrom, a pulley-block and pulley supported upon the lower end of said rod, and a sling supported upon said pulley, said sling consisting of a flexible band, a brace extending longitudinally of said band and between the opposite ends thereof, and a flexible member extending over said pulley, the opposite ends of said flexible member and band, respectively, being connected together.

7. In an apparatus for lifting invalids, a carrier and means to support the same, a nut supported on said carrier, a rod having screw-threaded engagement with said nut and extending downwardly therefrom, a pulley-block and pulley supported upon the lower end of said rod, and a sling supported upon said pulley, said sling consisting of a flexible band, a brace extending longitudinally of said band between the opposite ends thereof, a cord extending over said pulley, hooks fast to the opposite ends of said cord, and a triangular link fast to each of said opposite ends of said band, said links each having an eye adapted to engage one of said hooks, respectively.

850,625. APPARATUS FOR THREADING OR LAYING ELECTRIC CONDUCTORS IN CONDUITS OR PIPES. THOMAS J. COPE, Philadelphia, Pa. Filed June 11, 1906. Serial No. 321,117.

Claim.—1. In an apparatus of the character stated, a sleeve, a stem therefor, an arm mounted on said sleeve, a shoe journaled on said arm, a wedge with which said stem is connected and means for operating said sleeve, means within the sleeve for interlocking the same with the stem said stem and the opening in said sleeve in which said stem is guided being of angular form.

2. In an apparatus of the character stated, a wedge, a shoe on the side thereof, a sliding device carrying the bearing-piece of said shoe and means for operating said device, said shoe being adapted to contact with said wedge and freely embracing the adjacent portions of the wedge so as to be prevented from lateral disengagement therefrom.

3. In an apparatus of the character stated, a wedge, a shoe on the side thereof, a carrier for said shoe and a sliding device adapted to actuate said carrier, the contacting faces of said wedge and shoe being respectively of concave and convex forms and the carrier having its sides freely embracing the adjacent portions of the wedge, preventing lateral displacement of the shoe from the wedge.

4. In an apparatus of the character stated, a member embodying a shoe and means for moving the same into frictional contact with the wall of a conduit, means for intermittently advancing said member, means for withdrawing said shoe from said contact and independent slidingly-disengageable means for causing such withdrawal in the event of an obstruction in the path of the apparatus, whereby the latter may be run back.

5. In an apparatus of the character stated, a traveling member embodying a shoe, and means for moving the same into frictional contact with the wall of a conduit, means for intermittently advancing said member, means for withdrawing said shoe from said contact and independent slidingly-disengageable means for causing such withdrawal in the event of an obstruction in the path of the apparatus, whereby the latter may be run back.

6. In an apparatus of the character stated, a traveling member, a stem connected therewith, a sleeve on said stem, means within the sleeve for interlocking said sleeve with said stem, and means for releasing said interlocking means.

7. In an apparatus of the character stated, a traveling member provided with a shoe for engaging the wall of a conduit, pieces fitted together so as to slide one on the other, one piece being connected with said member, a detent on one piece in the path of and adapted to engage the other piece, means adapted to release said detent from its place of engagement, a connection with the sliding piece and said member and a spring for moving said sliding piece, whereby said shoe may be withdrawn from its contact with the conduit.

8. In an apparatus of the character stated, a traveling member provided with a shoe adapted for contact with the wall of a conduit, a stem connected therewith, a sleeve telescopically fitted on said stem, a spring bearing against said sleeve to move the same, a connection for said sleeve and member, a slide in said sleeve, means for connecting said slide and sleeve and a detent in the path of said stem for locking said stem with said sleeve, said slide being adapted to engage with the stem to release said detent from said sleeve, whereby the latter is free to move and cause the withdrawal of said shoe from its contact.

9. In an apparatus of the character stated, a member of a traveler provided with a shoe adapted to engage the wall of a conduit, said member and shoe being pivotally mounted and of such construction and arrangement as to conform to and press against and interlock with the angles of a conduit of angular shape.

850,626. SAFETY-VALVE. WILLIAM H. CREIGHTON, New Eagle, Pa. Filed Aug. 8, 1906. Serial No. 329,779.

Claim.—1. In a safety-valve, the combination with a suitable gas-supply pipe, of a valve-body connected to said supply-pipe and having an outlet-port formed therein, upwardly-extending arms carried by said valve-body, a valve-head slidably mounted in said valve-body, a stem carried by said head and extending upwardly through said valve-body between said arms, a locking-disk pivotally mounted between said arms and engaging said stem, a tooth carried by said disk and adapted to limit the movement thereof, substantially as described.

2. In a safety-valve, a valve-body having an outlet-port, upwardly-extending arms carried by said valve-body, a valve-head slidably mounted in said valve-body, a stem carried by said head and extending upwardly through said

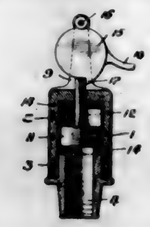

body between said arms, a locking-disk pivotally mounted between said arms and engaging said stem, and a tooth on said disk adapted to impinge against the stem and limit the rotative movement of the disk in one direction.

850,627. LEATHER-SKIVING MACHINE. DAN DANIELS. Dover, N. H. Filed Dec. 6, 1906. Serial No. 346,529.

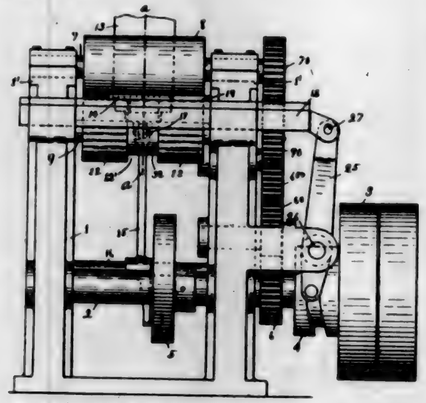

Claim.—1. A skiving-machine, comprising a die-roll having a blank-receiving recess and a presser-roll tapered at each end to fit into said recess longitudinally of the die-roll, and mounted to rotate adjacent thereto, means for causing said presser-roll to hold the blank against the bottom of said recess, and a knife disposed to split the blank as it is passed between said rolls, substantially as described.

2. A skiving-machine comprising a pair of feed-rolls, one of said rolls having a blank-receiving recess, and the other having an annular groove opposite said recess, a movable support, a presser-roll rotatably mounted in said support and disposed in said groove, means for moving said support to cause said presser-roll to press the blank into said recess, means for driving said feed-rolls, and a knife disposed to split the blank as it is fed between said rolls, substantially as described.

3. A skiving-machine comprising a feed-roll having a blank-receiving recess therein, a support, a presser-roll mounted on said support to rotate about an axis parallel to said feed-roll, means for positively moving said support to force said roll into said recess to press the blank against the bottom thereof as it passes between said rolls, and a knife disposed to split the blank during said movement, substantially as described.

4. A skiving-machine comprising a feed-roll having a blank-receiving recess therein, a support, a presser-roll mounted on said support to rotate about an axis parallel to said feed-roll, a cam rotatably mounted adjacent said presser-roll for positively moving the same into said recess to press the blank against the bottom thereof as it passes between said rolls, and a knife disposed to split the blank during said movement, substantially as described.

5. A leather-skiving machine comprising an upper and a lower feed-roll, said upper roll having a blank-receiving recess and said lower roll having an annular groove therein opposite said recess, a vertically-movable arm independently supported adjacent said roll and extending into said groove adjacent said upper roll, a presser-roll mounted to rotate freely in said arm, a cam on said lower roll for lifting said arm in time to cause its roll to press the blank into said recess, and a knife disposed to split the blank as it is fed between said rolls, substantially as described.

6. A leather-skiving machine comprising an upper and a lower feed-roll, said upper roll having a blank-receiving recess and said lower roll having an annular groove therein opposite said recess, a vertically-movable arm independently supported adjacent said roll and extending into said groove adjacent said upper roll, a presser-roll mounted to rotate freely in said arm, a cam on said lower roll for lifting said arm in time to lift said presser-roll above the surface of said lower roll to press the blank against the bottom of said recess, and a knife disposed to split the blank as it is passed between said rolls, substantially as described.

7. A leather-skiving machine comprising an upper and lower feed-roll, said upper roll having a blank-receiving recess and said lower roll having an annular groove therein opposite said recess, a pair of vertically-movable arms supported independently of said rolls, and extending into said groove adjacent said upper roll, a presser-roll rotatably mounted at its ends in said arms between said feed-rolls, a cam mounted on said lower roll for engaging said arms in time to raise said presser-roll to press the blank into said recess and a knife disposed to split the blank as it is fed between said rolls, substantially as described.

8. A leather-skiving machine comprising an upper and a lower feed-roll, said upper roll having a blank-receiving recess and said lower roll having an annular groove therein opposite said recess, a portion of the surface of the bottom of said groove adjacent each end being eccentric to the axis of the roll, a pair of vertically-movable arms extending into said groove adjacent the ends thereof and disposed to be engaged by the eccentric bottom portion thereof, a presser-roll rotatably mounted in said arms, said eccentric bottom portion being adapted and disposed to engage said arms to lift said presser-roll beyond the surface of said lower roll in time to press the blank into said recess, and a knife disposed to split the blank as it is passed between said rolls, substantially as described.

9. A leather-skiving machine, comprising an upper and a lower feed-roll, said lower roll having an annular groove in the middle portion thereof and said upper roll having therein a blank-receiving recess disposed opposite said groove and an adjacent portion of said lower roll, a support, a presser-roll rotatably mounted thereon and disposed in said groove between said feed-rolls, means for moving said presser-roll vertically to press the blank into said recess, and a knife disposed to split the blank as it is held between said upper roll, and said lower and presser roll, substantially as described.

10. A leather-skiving machine, comprising an upper and a lower feed-roll, said lower roll having an annular groove in the middle portion thereof and said upper roll having therein a blank-receiving recess disposed opposite said groove and an adjacent portion of said lower roll at each end of said groove, a support, a presser-roll rotatably mounted thereon and disposed in said groove between said feed-rolls, means for moving said presser-roll vertically to press the blank into said recess, and a knife disposed to split the blank as it is held between said upper roll, and said lower and presser roll, substantially as described.

850,628. WINDMILL. CHARLES B. DEMPSTER and HARRY S. MOLONY, Beatrice, Nebr., assignors to Dempster Mill Manufacturing Company, Beatrice, Nebr. Filed Jan. 22, 1907. Serial No. 353,463.

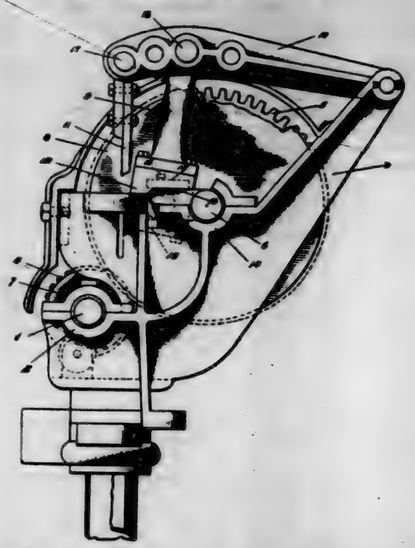

Claim.—1. In a windmill, the combination of the wind-wheel shaft, a crank-shaft mounted parallel with said wheel-shaft, a crank, a pitman pivoted on said crank to move in a vertical plane, bearings for said crank-shaft on each side of the plane of movement of the pitman, a pinion on said wheel-shaft, a gear driven by said pinion and loosely mounted on said crank-shaft in juxtaposition with a radial arm of the crank, means for connecting said gear with said radial arm so that the rotation of the gear will turn the crank, a plunger, and suitable operative connections between said plunger and said pitman.

2. In a windmill, the combination of the wind-wheel shaft, a crank-shaft parallel with said wheel-shaft, a crank, a pitman pivoted on said crank to move in a vertical plane, bearings for said crank-shaft on each side of the plane of movement of the pitman, a pinion on said wheel-shaft, a gear loosely mounted on said crank-shaft and driven by said pinion, lugs projecting from the face of said gear, upon each side of the crank and bearing against said crank to rotate the same in either direction, a plunger, and means for operatively connecting said plunger with the pitman.

3. In a windmill, the combination of the wind-wheel shaft, a crank-shaft parallel with said wheel-shaft, a crank, a pitman mounted on said crank to move in a vertical plane, bearings for said crank-shaft on each side of the plane of movement of the pitman, a pinion on said wheel-shaft, a gear loosely mounted on said crank-shaft and driven by said pinion, said pinion and gear having lateral extensions at the pitch-line of their teeth, adapted to bear against each other and prevent said teeth from meshing too closely, lugs projecting from the face of said gear, upon each side of the crank, and bearing against said crank to rotate the same in either direction, a plunger, and operative connections between said plunger and the pitman.

4. In a windmill-head, the combination of the main frame, the wind-wheel shaft, a crank-shaft parallel with said wheel-shaft, a crank, a pitman mounted on said crank to move in a vertical plane, bearings for said crank-shaft on each side of the plane of movement of the pitman, a pinion on said wheel-shaft, a gear driven by said pinion and mounted on said crank-shaft in juxtaposition with a radial arm of the crank, means for connecting said gear with said radial arm so that the rotation of the gear will turn the crank, a rocking arm pivoted to the main frame and actuated by said pitman, and a vertically-acting plunger operated by said rocking arm.

850,629. MOLD. FRANK T. DICKINSON, Chicago, Ill., assignor to American Brake Shoe & Foundry Company, Jersey City, N. J., a Corporation of New Jersey. Filed Dec. 5, 1905. Serial No. 290,341.

Claim.—1. In combination in a casting machine, a cam and a mold movable relative thereto, and comprising an upper molding member and another co-operating member movable downward to substantially a vertical position to permit of the discharge of the casting by its own weight and having means to co-operate continuously with the cam whereby the movable section may be operated.

2. In combination in a mold, an upper member comprising one side of the mold, a section movable relative thereto comprising the opposite side of the mold and opposing cheek plates movably mounted and adapted to be moved into position by the movement of the movable member.

3. In combination in a mold, an upper member comprising one side of the mold, a member movable relative thereto comprising the opposite side of the mold, and opposing cheek plates movably mounted and having cam surfaces adapted to co-act with the upper mold, whereby the side pieces are moved into proper position as the movable section is made to approach the upper section.

4. In combination in a mold, a section having a cam surface adjacent its face, a member movable relative thereto, comprising the other side of the mold and a cheek plate movably mounted upon one of the members and having a cam surface to co-act with the cam surface of the first section, all so arranged that a relative movement of the first two sections operates to move the cheek plate in its position.

5. In combination in a casting machine, a relatively movable cam track and mold comprising an upper mold member having a cam surface adjacent its face, a section movable relative thereto and co-acting with the cam track, constituting the lower side of the mold and a cheek piece provided with a cam surface to co-act with the cam surface on the upper mold member and movably mounted, all so arranged that a movement of the mold bodily, relative to the cam track, raises the lower mold member and causes the cheek plate to advance in position.

6. In combination in a casting machine, a relatively movable cam track and mold comprising an upper mold section having a cam surface adjacent its face, a lower mold member hinged at the end and co-acting with the cam-track, and a cheek plate provided with a cam surface to co-act with the cam surface of the upper mold member and movably mounted all so arranged that a movement of the mold bodily successively raises the hinged section camming the cheek plate into position and then release such hinged member so that it may swing open.

7. In combination in a casting machine, a relatively movable cam track and mold comprising an upper mold member having cam surfaces adjacent its face, a lower mold member hinged at the end and co-acting with the cam track, and opposing cheek plates provided with cam surfaces to co-act with the cam surfaces on the upper mold member and slidably mounted, all so arranged that the movement of the mold relative to the cam track successively raises the hinged mold member thereby camming the cheek plates into position and then releases such hinged mold member so that it swings open.

8. In combination, a relatively movable cam rail and a mold comprising an upper mold member constituting the top and ends of the mold and having cam surfaces adjacent the face, a lower mold member extending out past the mold surface of the upper mold member and constituting the bottom of the mold, and being provided with a part to co-act with the cam track, and cheek plates with cam surfaces adapted to co-act with the cam surfaces on the upper mold member, slidably mounted and adapted to contact with the upper surface of the hinged mold member, all so arranged that a movement of the track relative to the mold will successively raise the hinged member camming the cheek plates into position and release such hinged member allowing it to swing open.

9. In combination, a mold comprising a metal body portion provided at its top with a pouring opening, a removable casing shaped to fit such opening and to support a green sand gateway plug and extending through the body portion, and a green sand gateway plug therefor.

10. In combination, a mold comprising a metal body portion provided in its top with a tapering opening, a removable externally and internally tapered casing adapted to fit and line such opening, and a green sand gateway plug fitting the casing and entirely supported thereby.

11. In combination, a mold comprising a metal body portion provided in its top with a pouring opening, a removable casing adapted to fit and line such opening, and tapering internally, and a green sand gateway plug fitting the casing and entirely supported thereby.

12. In a casting machine, in combination, a metal mold comprising an upper member and a lower movable member for releasing the casting, the upper member being provided with a pouring plug of green sand having a core fixed therein.

13. In a brake shoe casting machine in combination, a metal mold comprising an upper member and a lower movable member for releasing the casting, the upper member having a removable casing provided with a pouring plug of green sand and a baked core fixed in the sand.

14. In combination in a mold, a frame, a top section slidingly engaging the frame, an arm pivotally connecting the top section and the frame, a swinging bottom section, and means for operating such bottom section.

850,630. ALTERNATING-CURRENT-MOTOR-CONTROLLING APPARATUS. WILLIAM N. DICKINSON, Jr., Brooklyn, N. Y., assignor to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed July 20, 1905. Serial No. 270,460.

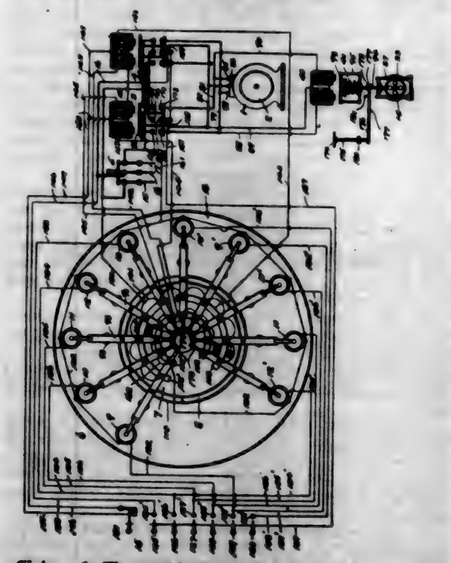

Claim.—1. The combination with an electric motor, of a repulsion electroresponsive device, and motor-controlling means dependent upon a brief action of said electroresponsive device for effecting the operation of said motor.

2. The combination with a motor, of repulsion-magnets, and means set into operation by an initial energization of short duration of one of said repulsion-magnets for controlling said motor.

3. The combination with an alternating-current motor, of repulsion-magnets, and means controlled by an initial energization of short duration of any one of said repulsion-magnets for operating said motor.

4. The combination with a motor, controlling means therefor, and a repulsion electroresponsive device operated by momentary current to control a single-phase circuit to said motor-controlling means.

5. The combination with an alternating-current motor, controlling means therefor, and single-phase repulsion-magnets set into action by brief currents for operating said controlling means.

6. The combination with a multiphase motor, of controlling means therefor, a repulsion-magnet, and means in a circuit connected across any two of the mains of said motor and controlled by said magnet for closing circuits to said motor-controlling means.

7. The combination with an alternating-current motor, of controlling means therefor, a repulsion electroresponsive device connected in a single-phase circuit to mains of said motor, and means for closing a circuit to said electroresponsive device to effect the operation of said controlling means.

8. The combination with a motor, of a controller-board, repulsion-magnets mounted on said controller-board, and means operated by said repulsion-magnets for effecting the closure of the motor-circuit and the maintaining of same in firmly-closed position to control said motor.

9. The combination with a motor, of reversing-switches therefor, repulsion-magnets, and means controlled by said repulsion-magnets for closing circuits to said reversing-switches.

10. The combination with a motor, of controlling means therefor, circuits and connections for said controlling means, a circuit-closer normally in open position, a repulsion-magnet, and means operated by said repulsion-magnet to effect a closure of said circuit-closer and the operation of said motor.

11. The combination with a motor, of motor-controlling means, a normally open circuit-closer, a tripping device, an electromagnet for operating said tripping device to effect the closure of said circuit-closer by gravity, circuits and connections between said circuit-closer and motor-controlling means, and means independent of current being maintained in the main line for automatically restoring said circuit-closer to normal position.

12. The combination with a motor, of reversing-switches, a controller-board, a plurality of repulsion-electromagnets on said controller-board, a plurality of normally open circuit-closers on said board, a plurality of tripping devices operable by said electromagnets to effect the automatic closure of said circuit-closers, and circuits and connections for starting the motor upon the closure of any one circuit-closer.

13. The combination with a motor, of motor-controlling means, a circular board, a series of radially-arranged circuit-closers, tripping devices normally holding said circuit-closers in open position, a series of circularly-arranged electromagnets for operating said tripping devices to release said circuit-closers to closed position, and circuits and connections between said circuit-closers and said motor-controlling means.

14. The combination with a motor, of motor-controlling means, a circuit-closer, means for normally holding said circuit-closer in open position, an electromagnet for actuating said holding means to release said circuit-closer, circuits and connections between said circuit-closer and said motor-controlling means, and means independent of current being maintained in the main line for automatically restoring said circuit-closer to normal position.

15. The combination with an alternating-current motor, of motor-controlling means, a circuit-closer, means for normally holding said circuit-closer in open position, a

repulsion-electromagnet for actuating said holding means to release said circuit-closer, circuits and connections between said circuit-closer and said motor-controlling means, and mechanical means for automatically restoring said circuit-closer to normal position.

16. The combination with a motor, of motor-controlling means, a circuit-closer, means for normally holding said circuit-closer in open position, an electromagnet for actuating said holding means to release said circuit-closer, circuits and connections between said circuit-closer and said motor-controlling means, and means for automatically restoring said circuit-closer to normal position upon the stopping of the motor.

17. The combination with a motor, of reversing-switches therefor, brake mechanism, a circuit-closer, means for normally holding said circuit-closer in open position, means for tripping said holding means to effect the closure of said circuit-closer, circuits and connections between said circuit-closer and said reversing-switches, and means actuated by said brake mechanism to restore said circuit-closer to normal position when said brake mechanism operates to stop the motor.

18. The combination with a motor, of reversing-switches for said motor, multiphase circuits for said reversing-switches, circuit-closers, and single-phase magnets for operating said circuit-closers to close said multiphase circuits.

19. The combination with an alternating-current motor, of reversing-switches, circuit-closers, single-phase repulsion-magnets for effecting the operation of said circuit-closers, and circuits and connections between said circuit-closers and said reversing-switches.

20. The combination with a polyphase motor, of reversing-switches, circuit-closers, single-phase electromagnets for effecting the closure of said circuit-closers, and multiphase circuits and connections for said circuit-closers and the reversing-switches.

21. The combination with a motor, of motor-controlling means, a circuit-closing lever, means for holding said lever normally in open position, an electromagnet for operating said holding means to effect the closure of the circuits controlled by said circuit-closing lever, and a cam for automatically restoring said lever to normal position at will.

22. The combination with a motor; of motor-controlling means; a plurality of radially-arranged circuit-closing levers; means for normally holding said levers in open position, a plurality of circularly-arranged electromagnets for operating said holding means to trip said levers to closed position; circuits and connections for said motor-controlling means, said circuit-closing levers; and said tripping-electromagnets, and an arc-shaped cam for restoring said levers and holding means to normal position.

23. The combination with a polyphase motor, of motor-controlling means, radially-arranged circuit-closing levers, means for normally holding said levers in open position, electromagnets for operating said holding means to trip said levers to closed position, multiphase circuits and connections for said reversing-switches, single-phase circuits and connections for said electromagnets, and an arc-shaped cam for restoring said levers to normal position.

24. The combination with a motor, of motor-controlling means, a table provided with a circular slot dividing said table into an inner disk and an outer annulus, a plurality of arc-shaped contact-strips mounted on the disk, a plurality of radially-arranged levers, contacts carried by said levers to coöperate with said contact-strips, means for normally holding said levers in raised position with their contacts out of engagement with the contact-strips, a plurality of circularly-arranged electromagnets for operating said holding means to trip said levers and effect the engagement of said contacts and strips, circuits and connections for the aforementioned elements, and an arc-shaped cam movable in said circular slot for restoring said levers and holding means to normal position.

25. The combination with a motor, of motor-controlling means, a plurality of circuit-closers, means for normally holding said circuit-closers in open position, electromagnets for actuating said holding means to effect the closure of said circuit-closers, circuits and connections between said circuit-closers and motor-controlling means, brake mechanism, and means operable by said brake mechanism for positively actuating said circuit-closers to restore the same to normal position.

26. The combination with a motor, of motor-controlling means, circuit-closing levers, circuits and connections between said levers and said motor-controlling means, means for holding said levers in open position, electromagnets for releasing said holding means, brake mechanism and means coacting with said brake mechanism for restoring said levers to open position.

27. The combination with a motor, of controlling means therefor, a table, a plurality of radially-arranged circuit-closing levers mounted on said table, circuits and connections for said motor-controlling means and said levers, means for holding said levers in open position, electromagnets for releasing said holding means, means extending through an opening in said table for positively actuating the inner ends of said levers to restore the same to open position, brake mechanism, and connections between said restoring means and said brake mechanism.

28. The combination with an alternating-current motor, of motor-controlling means, a plurality of circuit-closers, means for holding said circuit-closers in open position, single-phase electromagnets for releasing said holding means, and circuits and connections between said circuit-closers and said motor-controlling means, and means coacting with said circuits and connections permitting the closure of only one circuit-closer at a time.

29. The combination with a polyphase motor, of motor-controlling means, a plurality of circuit-closers, means for holding said circuit-closers in open position, single-phase electromagnets for releasing said holding means, circuits and connections, means coacting with said circuits and connections for permitting the closure of only one circuit-closer at a time, brake mechanism for the motor, and means coacting with said brake mechanism for automatically restoring the closed circuit-closer to open position.

30. The combination with a motor, of motor-controlling means, a plurality of radially-arranged circuit-closing levers, electromagnetic mechanism for effecting a closure of the circuits controlled by said levers, circuits and connections between said levers and motor-controlling means, means for preventing the operation of more than one circuit-closing lever at a time to closed position, and adjustable means for restoring the operated lever after the motor has made a predetermined number of revolutions.

31. The combination with a motor, of motor-controlling means, a plurality of circuit-closers, electromagnetic mechanism for operating said circuit-closers, circuits and connections between said circuit-closers and said motor-controlling means, means coacting with said circuits and connections for permitting the closure of only one circuit-closer at a time, means for restoring the closed circuit-closer upon the motor completing a predetermined number of revolutions, and means for adjusting said restoring means to vary said number of revolutions.

32. The combination with a motor, of controlling means therefor, main-line circuits and connections for said motor-controlling means, a cylinder rotatably and positively connected to the motor-shaft, limit-switches in said main-line circuits, and cams carried by said cylinder to open said switches to stop the motor after the same has made a predetermined number of revolutions.

33. The combination with an alternating-current motor, of motor-controlling means, polyphase circuits for said motor-controlling means, and circuits and connections of a single push-button-controlled elevator system comprising a floor-controller and single-phase magnets for operating the same.

34. The combination with a multiphase motor; of motor-controlling means; multiphase circuits for said motor-controlling means; and circuits and connections of an automatic push-button-controlled elevator system comprising single-phase magnets corresponding to the various floors, and a floor-controller.

35. The combination with a car and its motor, of motor-controlling means, a floor-controller, and means controlled from the car or from a landing and operated by current of short duration for setting said floor-controller, so that the car shall automatically stop at a predetermined point in its travel.

36. The combination with a car, of hoisting mechanism therefor, a motor for operating said hoisting mechanism, motor-controlling means, a floor-controller, means operated by current of short duration for setting and locking said floor-controller from a distant point, and circuits and connections for effecting the starting of said motor upon the setting of said floor-controller, and means for restoring said floor-controller to normal upon the car reaching the selected point in its travel.

37. The combination with a car and its motor, of motor-controlling means, a floor-controller, circuits and connections of an automatic push-button-controlled elevator system for effecting the setting of the floor-controller upon the operation of one of the push-buttons, means for preventing interference by any floor push-button after one button has been operated, and means for automatically restoring said floor-controller to normal upon the car reaching the selected floor.

38. The combination with a car and its motor, of reversing-switches for said motor, a floor-controller comprising repulsion-electromagnets, circuits and connections for said floor-controller, and means coacting with said reversing-switches for rendering said repulsion-magnets inoperative.

39. The combination with a car and its motor, of motor-controlling means, a floor-controller comprising single-phase repulsion-electromagnets, circuits and connections of an automatic push-button-controlled elevator system including said floor-controller, and means coacting with said motor-controlling means for preventing a circuit from being completed through any of said electromagnets during the operation of the motor.

40. The combination with a car, of a multiphase motor, reversing-switches for said motor, multiphase circuits for said motor and reversing-switches, limit-switches, means for operating said limit-switches to effect the automatic stopping of the car at the limits of its travel, a floor-controller comprising single-phase repulsion-electromagnets, circuits and connections of an automatic push-button-controlled elevator system including said floor-controller, means coacting with said reversing-switches for rendering said repulsion-magnets inoperative during the travel of the car, and means for automatically restoring said floor-controller to normal upon the car arriving at the selected floor.

850,631. BAG-FRAME FASTENER. BENNO VOM EIGEN, Newark, N. J., assignor to Aug. Goerts & Co., a Corporation of New Jersey. Filed Jan. 17, 1907. Serial No. 352,802.

Claim.—1. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing slidably arranged upon said main casing, a post rotatably arranged in said upper casing, and a bolt in said upper casing, said bolt having an end portion in slidable frictional holding engagement with said post for retaining said post in its variously-rotated positions, substantially as and for the purposes set forth.

2. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing slidably arranged upon said main casing, a post rotatably arranged in said upper casing, a bolt slidably arranged in said upper casing, and a spring in engagement with said bolt for forcing an end portion of said bolt in slidable frictional holding engagement with said post for retaining said post in its variously-rotated positions, substantially as and for the purposes set forth.

3. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing slidably arranged upon said main casing, a post rotatably arranged in said upper casing, and a bolt in said upper casing, said bolt having an end portion in slidable frictional holding engagement with said post for retaining said post in its variously-rotated positions, and a stop on said main casing with which a portion of said post is in retaining engagement when said post is in one of its rotated positions, substantially as and for the purposes set forth.

4. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing slidably arranged upon said main casing, a post rotatably arranged in said upper casing, a bolt slidably arranged in said upper casing, and a spring in engagement with said bolt for forcing an end portion of said bolt in slidable frictional holding engagement with said post for retaining said post in its variously-rotated positions, and a stop on said main casing with which a portion of said post is in retaining engagement when said post is in one of its rotated positions, substantially as and for the purposes set forth.

5. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing slidably arranged upon said main casing, a post rotatably arranged in said upper casing, a right-angled extension upon the lower end portion of said post, and a bolt in said upper casing, said bolt having a pointed end portion adapted to be brought in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, substantially as and for the purposes set forth.

6. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing slidably arranged upon said main casing, a post rotatably arranged in said upper casing, a right-angled extension upon the lower end portion of said post, a bolt slidably arranged in said upper casing, said bolt having a pointed end portion, and a spring in engagement with the opposite end portion of said bolt for forcing the pointed end portion of said bolt in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, substantially as and for the purposes set forth.

7. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing slidably arranged upon said main casing, a post rotatably arranged in said upper casing, a right-angled extension upon the lower end portion of said post, and a bolt in said upper casing, said bolt having a pointed end portion adapted to be brought in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, a downwardly-extending teat upon the extension of said post, and a stop on said main casing with which said teat is in retaining engagement when said post is in one of its rotated positions, substantially as and for the purposes set forth.

8. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing slidably arranged upon said main casing, a post rotatably arranged in said upper casing, a right-angled extension upon the lower end portion of said post, a bolt slidably arranged in said upper casing, said bolt having a pointed end portion, and a spring in engagement with the opposite end portion of said bolt for forcing the pointed end portion of said bolt in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, a downwardly-extending teat upon the extension of said post, and a stop on said main casing with which said teat is in retaining engagement when said post is in one of its rotated positions, substantially as and for the purposes set forth.

9. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-

lug, an upper casing upon said main casing, a guiding element arranged within said upper casing, means on said guiding element for slidably connecting said element and upper casing with said main casing, a post rotatably arranged within said upper casing, and a bolt in said upper casing and said guiding element, said bolt having an end portion in slidable frictional holding engagement with said post for retaining said post in its variously-rotated positions, substantially as and for the purposes set forth.

10. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing upon said main casing, a guiding element arranged within said upper casing, means on said guiding element for slidably connecting said element and upper casing with said main casing, a post rotatably arranged within said upper casing, a bolt slidably arranged in said upper casing and said guiding element, and a spring in engagement with said bolt for forcing an end portion of said bolt in slidable frictional holding engagement with said post for retaining said post in its variously-rotated positions, substantially as and for the purposes set forth.

11. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing upon said main casing, a guiding element arranged within said upper casing, means on said guiding element for slidably connecting said element and upper casing with said main casing, a post rotatably arranged within said upper casing, and a bolt in said upper casing and said guiding element, said bolt having an end portion in slidable frictional holding engagement with said post for retaining said post in its variously-rotated positions, and a stop on said main casing with which a portion of said post is in retaining engagement when said post is in one of its rotated positions, substantially as and for the purposes set forth.

12. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing upon said main casing, a guiding element arranged within said upper casing, means on said guiding element for slidably connecting said element and upper casing with said main casing, a post rotatably arranged within said upper casing, a bolt slidably arranged in said upper casing and said guiding element, and a spring in engagement with said bolt for forcing an end portion of said bolt in slidable frictional holding engagement with said post for retaining said post in its variously-rotated positions, and a stop on said main casing with which a portion of said post is in retaining engagement when said post is in one of its rotated positions, substantially as and for the purposes set forth.

13. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing upon said main casing, a guiding element arranged within said upper casing, means on said guiding element for slidably connecting said element and upper casing with said main casing, a post rotatably arranged within said upper casing, a right-angled extension upon the lower end portion of said post, and a bolt in said upper casing and said guiding element, said bolt having a pointed end portion adapted to be brought in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, substantially as and for the purposes set forth.

14. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing upon said main casing, a guiding element arranged within said upper casing, means on said guiding element for slidably connecting said element and upper casing with said main casing, a post rotatably arranged within said upper casing, a right-angled extension upon the lower end portion of said post, a bolt slidably arranged in said upper casing and said guiding element, said bolt having a pointed end portion, and a spring in engagement with the opposite end portion of said bolt for forcing the pointed end portion of said bolt in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, substantially as and for the purposes set forth.

15. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing upon said main casing, a guiding element arranged within said upper casing, means on said guiding element for slidably connecting said element and upper casing with said main casing, a post rotatably arranged within said upper casing, a right-angled extension upon the lower end portion of said post, and a bolt in said upper casing and said guiding element, said bolt having a pointed end portion adapted to be brought in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, a downwardly-extending teat upon the extension of said post, and a stop on said main casing with which said teat is in retaining engagement when said post is in one of its rotated positions, substantially as and for the purposes set forth.

16. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing upon said main casing, a guiding element arranged within said upper casing, means on said guiding element for slidably connecting said element and upper casing with said main casing, a post rotatably arranged within said upper casing, a right-angled extension upon the lower end portion of said post, a bolt slidably arranged in said upper casing and said guiding element, said bolt having a pointed end portion, and a spring in engagement with the opposite end portion of said bolt for forcing the pointed end portion of said bolt in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, a downwardly-extending teat upon the extension of said post, and a stop on said main casing with which said teat is in retaining engagement when said post is in one of its rotated positions, substantially as and for the purposes set forth.

17. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing upon said main casing, a guiding element arranged within said upper casing, means on said guiding element for slidably connecting said element and upper casing with said main casing, a hook-shaped portion at each end of said guiding element, a spring connected with one of said hook-shaped portions and with a part of said main casing, a post arranged within said upper casing and said guiding element, and a spring connected with said other hook-shaped portion and with said bolt for forcing an end portion of said bolt in slidable frictional holding engagement with said post for retaining said post in its variously-rotated positions, substantially as and for the purposes set forth.

18. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing upon said main casing, a guiding element arranged within said upper casing, means on said guiding element for slidably connecting said element and upper casing with said main casing, a hook-shaped portion at each end of said guiding element, a spring connected with one of said hook-shaped portions and with a part of said main casing, a post arranged within said upper casing and said guiding element, a bolt slidably arranged in said upper casing and said guiding element, and a spring connected with said other hook-shaped portion and with said bolt for forcing an end portion of said bolt in slidable frictional holding engagement with said post for retaining said post in its variously-rotated positions, and a stop on said main casing with which a portion of said post is in retaining engagement when said post is in one of its rotated positions, substantially as and for the purposes set forth.

19. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing upon said main casing, a guiding element arranged within said upper casing, means on said guiding element for slidably connecting said element and upper casing with said main casing, a hook-shaped portion at each end of said guiding element, a spring connected with one of said hook-shaped portions and with a part of said main casing, a post arranged within said upper casing and said guiding element, a right-angled extension upon the lower end portion of said post, a bolt slidably arranged in said upper casing and said guiding element, said bolt having a pointed end portion, and a spring connected with said other hook-shaped portion and with the opposite end portion of said bolt for forcing the pointed end portion of said bolt in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, substantially as and for the purposes set forth.

20. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, an upper casing upon said main casing, a guiding element arranged within said upper casing, means on said guiding element for slidably connecting said element and upper casing with said main casing, a hook-shaped portion at each end of said guiding element, a spring connected with one of said hook-shaped portions and with a part of said main casing, a post arranged within said upper casing and said guiding element, a right-angled extension upon the lower end portion of said post, a bolt slidably arranged in said upper casing and said guiding element, said bolt having a pointed end portion, and a spring connected with said other hook-shaped portion and with the opposite end portion of said bolt for forcing the pointed end portion of said bolt in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, a downwardly-extending teat upon the extension of said post, and a stop on said main casing with which said teat is in retaining engagement when said post is in one of its rotated positions, substantially as and for the purposes set forth.

21. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, said casing being provided in its upper face with elongated openings, an upper casing upon said main casing, a guiding element arranged within said upper casing, downwardly-extending lugs on said guiding element, said lugs being movably arranged in said elongated openings of the main casing and extending through said openings, a lock-plate movably arranged within the chambered part of said main casing, to which the lugs of said guiding element are secured, a post rotatably arranged within said upper casing, a right-angled extension upon the lower end portion of said post, and a bolt in said upper casing and said guiding element, said bolt having a pointed end portion adapted to be brought in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, substantially as and for the purposes set forth.

22. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, said casing being provided in its upper face with elongated openings, an upper casing upon said main casing, a guiding element arranged within said upper casing, downwardly-extending lugs on said guiding element, said lugs being movably arranged in said elongated openings of the main casing and extending through said openings, a lock-plate movably arranged within the chambered part of said main casing, to which the lugs of said guiding element are secured, a post rotatably arranged within said upper casing, a right-angled extension upon the lower end portion of said post, a bolt slidably arranged in said upper casing and said guiding element, said bolt having a pointed end portion, and a spring connected with said other hook-shaped portion and with the opposite end portion of said bolt for forcing the pointed end portion of said bolt in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, substantially as and for the purposes set forth.

23. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, said casing being provided in its upper face with elongated openings, an upper casing upon said main casing, a guiding element arranged within said upper casing, downwardly-extending lugs on said guiding element, said lugs being movably arranged in said elongated openings of the main casing and extending through said openings, a lock-plate movably arranged within the chambered part of said main casing, to which the lugs of said guiding element are secured, a post rotatably arranged within said upper casing, a right-angled extension upon the lower end portion of said post, and a bolt in said upper casing and said guiding element, said bolt having a pointed end portion adapted to be brought in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, a downwardly-extending teat upon the extension of said post, and a stop on said main casing with which said teat is in retaining engagement when said post is in one of its rotated positions, substantially as and for the purposes set forth.

24. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, said casing being provided in its upper face with elongated openings, an upper casing upon said main casing, a guiding element arranged within said upper casing, downwardly-extending lugs on said guiding element, said lugs being movably arranged in said elongated openings of the main casing and extending through said openings, a lock-plate movably arranged within the chambered part of said main casing, to which the lugs of said guiding element are secured, a post rotatably arranged within said upper casing, a right-angled extension upon the lower end portion of said post, a bolt slidably arranged in said upper casing and said guiding element, said bolt having a pointed end portion, and a spring in engagement with the opposite end portion of said bolt for forcing the pointed end portion of said bolt in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, a downwardly-extending teat upon the extension of said post, and a stop on said main casing with which said teat is in retaining engagement when said post is in one of its rotated positions, substantially as and for the purposes set forth.

25. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, said casing being provided in its upper face with elongated openings, an upper casing upon said main casing, a guiding element arranged within said upper casing, downwardly-extending lugs on said guiding element, said lugs being movably arranged in said elongated openings of the main casing and extending through said openings, a lock-plate movably arranged within the chambered part of said main casing, to which the lugs of said guiding element are secured, a hook-shaped portion at each end of said guiding element, a spring connected with one of said hook-shaped portions and with a part of said main casing, a bolt slidably arranged in said upper casing and said guiding element, a post rotatably arranged in said upper casing and said guiding element, a right-angled extension upon the lower end portion of said posts, and a spring connected with said other hook-shaped portion and with said bolt for forcing an end portion of said bolt in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, substantially as and for the purposes set forth.

26. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, said casing being provided in its upper face with elongated openings, an upper casing upon said main casing, a guiding element arranged within said upper casing, downwardly-extending lugs on said guiding element, said lugs being movably arranged in said elongated openings of the main casing and extending through said openings, a lock-plate movably arranged within the chambered part of said main casing, to which the lugs of said guiding element are secured, a hook-shaped portion at each end of said guiding element, a spring connected with one of said hook-shaped portions and with a part of said main casing, a

bolt slidably arranged in said upper casing and said guiding element, a post rotatably arranged in said upper casing and said guiding element, a right-angled extension upon the lower end portion of said post, and a spring connected with said other hook-shaped portion and with said bolt for forcing an end portion of said bolt in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, a downwardly-extending teat upon the extension of said post, and a stop on said main casing with which said teat is in retaining engagement when said post is in one of its rotated positions, substantially as and for the purposes set forth.

27. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, said casing being provided in its upper face with elongated openings, an upper casing upon said main casing, a guiding element arranged within said upper casing, downwardly-extending lugs on said guiding element, said lugs being movably arranged in said elongated openings of the main casing and extending through said openings, a lock-plate movably arranged within the chambered part of said main casing, to which the lugs of said guiding element are secured, a hook-shaped portion at each end of said guiding element, a spring connected with one of said hook-shaped portions and with a part of said main casing, a bolt slidably arranged in said upper casing and said guiding element, a post rotatably arranged in said upper casing and said guiding element, a right-angled extension upon the lower end portion of said post, said bolt having a pointed end portion, and a spring connected with said other hook-shaped portion and with the opposite end portion of said bolt for forcing the pointed end of said bolt in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, substantially as and for the purposes set forth.

28. A bag-frame fastener comprising a main casing provided with a receiving-opening for the reception of a hasp-lug, said casing being provided in its upper face with elongated openings, an upper casing upon said main casing, a guiding element arranged within said upper casing, downwardly-extending lugs on said guiding element, said lugs being movably arranged in said elongated openings of the main casing and extending through said springs, a lock-plate movably arranged within the chambered part of said main casing, to which the lugs of said guiding element are secured, a hook-shaped portion at each end of said guiding element, a spring connected with one of said hook-shaped portions and with a part of said main casing, a bolt slidably arranged in said upper casing and said guiding element, a post rotatably arranged in said upper casing and said guiding element, a right-angled extension upon the lower end portion of said post, said bolt having a pointed end portion, and a spring connected with said other hook-shaped portion and with the opposite end portion of said bolt for forcing the pointed end of said bolt in slidable frictional holding engagement with the opposite sides of said extension for retaining said post in its variously-rotated positions, a downwardly-extending teat upon the extension of said post, and a stop on said main casing with which said teat is in retaining engagement when said post is in one of its rotated positions, substantially as and for the purposes set forth.

29. In a bag-frame fastener, the combination, with a chambered main casing provided with hasp-lug-receiving openings in its side and a lock-plate slidably arranged within said main casing, of a second chambered casing slidably arranged upon said main casing, said second casing being provided with mechanism for actuating said lock-plate, a rotatable post, a right-angled extension upon said post, said post being adapted to produce a sliding movement of said mechanism and indirectly of said lock-plate, and a stop with which the extension of said post is adapted to be brought in engagement for retaining the movable parts of the fastener in their immovable positions, substantially as and for the purposes set forth.

30. In a bag-frame fastener, the combination, with a chambered main casing provided with hasp-lug-receiving openings in its side and a lock-plate slidably arranged within said main casing, of a second chambered casing slidably arranged upon said main casing, said second casing being provided with mechanism for actuating said lock-plate, a rotatable post, a right-angled extension upon said post, said post being adapted to produce a sliding movement of said mechanism and indirectly of said lock-plate, and a stop with which the extension of said post is adapted to be brought in engagement for retaining the movable parts of the fastener in their immovable positions, and a spring within said second casing, arranged, when the mechanism has been moved longitudinally within said casing, for returning said mechanism to its normal initial position, substantially as and for the purposes set forth.

850,632. SCISSORS. ALBERT T. EKLUND, Jamestown, N. Y. Filed Aug. 25, 1906. Serial No. 332,034.

Claim.—1. Scissors or shears comprising a handle, shear-blades pivotally mounted on the handle and adapted to fold therein, springs acting on the blades to hold them in folded or closed position, said springs being adapted to permit relative movement of the blades for a cutting action, and a connection between the blades, whereby they are adapted to be simultaneously opened by a pulling action upon one of the blades, said connection permitting free relative movement of said blades in the cutting action.

2. Scissors or shears comprising a handle, shear-blades coaxially mounted upon a common pivot to fold within the handle, springs acting upon the blades to hold them in folded or open position and adapted to permit relative movement thereof for a cutting action, and a connection between the blades adapting them to be simultaneously withdrawn by a pulling action upon one of the blades, said connection being designed to allow free relative movement of the blades in the cutting action.

3. Scissors comprising a handle, blades pivotally mounted to fold therein and to swing outwardly therefrom, said blades having a pin-and-groove connection for free movement one upon the other and to connect them so that they may be simultaneously opened by a pulling action upon one of the blades and springs for holding the blades in retracted position, and adapted to permit of their relative movement for a cutting action.

850,633. PROTECTIVE DEVICE FOR FRAGILE VESSELS. SAMUEL FERGUSON, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Nov. 7, 1904. Serial No. 231,658.

Claim.—1. The combination of a chamber having a fragile wall, a body of mercury in said chamber, a perforated diaphragm rigidly mounted in the path of movement of said mercury whereby sudden impact of said mercury against the fragile wall is prevented.

2. The combination with a mercury-vapor apparatus having a fragile containing-wall, a body of mercury, and a perforated metallic diaphragm rigidly mounted in the path of movement of said mercury.

3. The combination, with a mercury-vapor apparatus having a tubular chamber and containing a body of mercury, of a perforate diaphragm rigidly secured in proximity to the end wall of said tubular chamber to prevent the sudden impact of mercury against said wall.

4. The combination, with a mercury-vapor apparatus having a tubular chamber and containing a body of mercury, of a submerged perforate diaphragm in proximity to the end wall of said tubular chamber to prevent sudden impact against said wall.

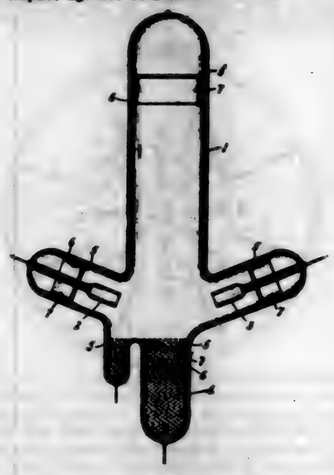

850,634. WATER-HEATER. HARVEY L. FESSLER, Kansas City, Kans., and ROBERT MICHAELS, Kansas City, Mo., assignors of one-third to Della Dieren, Kansas City, Mo. Filed Feb. 15, 1906. Serial No. 301,211.

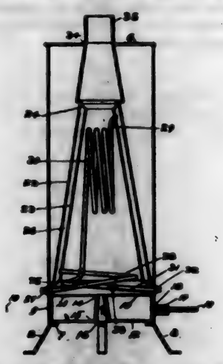

Claim.—1. In a water-heater a water-receptacle comprising outer and inner concentric shells having a water-chamber between said shells a water-heating coil within the receptacle connected at its upper end with the upper portion of said water-chamber and the lower discharging end of said coil extending outwardly from said receptacle below the said water-chamber, an independent heating-coil within the said receptacle having one end connected with the lower portion of said water-chamber and the other end extending outwardly from said receptacle below the said water-chamber and connected with the source of supply of water and means for heating said coils.

2. In a water-heater a receptacle for the water comprising outer and inner shells having a water-chamber between said shells and the upper portions of said shells reduced in circumference a pendent heating-coil within the upper portion of said receptacle having one end connected with the upper portion of said water-chamber and having the lower discharging end of said coil extending outwardly from said receptacle an independent heating-coil within the receptacle at the lower end thereof having one end connected with the lower portion of the water-chamber and the other or discharging end extending outwardly from said receptacle and connected with the source of liquid-supply and means for heating said coils.

850,635. PNEUMATIC VALVE FOR MUSICAL INSTRUMENTS. AUGUST W. FLEGEL, Cranford, N. J., assignor to The Aeolian Company, New York, N. Y., a Corporation of Connecticut. Filed Oct. 18, 1906. Serial No. 339,439.

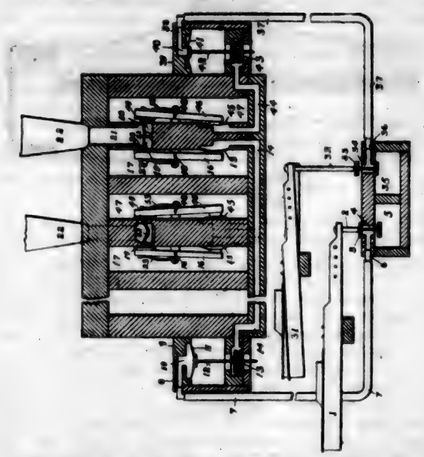

Claim.—1. In a musical instrument, a sounding device, two valves for controlling said device, independent means for opening each of said valves, and a connection between said valves whereby the opening of one valve operates to hold the other in its closed position.

2. In a musical instrument, a sounding device, two oppositely-disposed normally closed valves for controlling said device, independent means for opening each of said valves, and a flexible connection between said valves whereby the opening of one valve operates to hold the other in its closed position.

3. In a musical instrument, a sounding device, two air-chambers, an air-passage leading from said sounding device to both said chambers, two oppositely-disposed normally closed valves, one for cutting off said sounding device from each of said chambers, independent means for opening each of said valves, and a connection between said valves whereby the opening of one valve operates to hold the other in its closed position.

4. In a musical instrument, a sounding device, two air-chambers, an air-passage leading from said sounding device to both said chambers, two oppositely-disposed normally closed valves, one for cutting off said sounding device from each of said chambers, and a flexible connection between said valves whereby the opening of one valve operates to hold the other in its closed position.

5. In a musical instrument, a sounding device, two air-chambers, an air-passage leading from said sounding device and having oppositely-disposed lateral openings, one into each of said chambers, a diaphragm forming part of the wall of each of said chambers, a lever in each of said chambers carrying a valve for closing an opening in said passage and operatively connected to the diaphragm in said chamber, and independent means for actuating said diaphragms for opening said valves.

6. In a musical instrument, a sounding device, two air-chambers, an air-passage leading from said sounding device and having oppositely-disposed lateral openings, one into each of said chambers, a diaphragm forming part of the wall of each of said chambers, a lever in each of said chambers carrying a valve for closing an opening in said passage and operatively connected to the diaphragm in said chamber, independent means for actuating said diaphragms for opening said valves, and a flexible connection

between said valves whereby the opening of one valve operates to hold the other in its closed position.

850,636. VEHICLE-WHEEL. JOHN E. FOLEY, Pontiac, Mich. Filed Jan. 25, 1907. Serial No. 354,003.

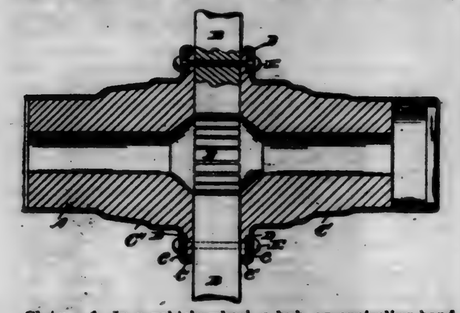

Claim.—1. In a vehicle-wheel, a hub, an encircling band formed in two parts provided with apertures through which the spokes project, outside bands with upstanding flanges located on either side of the first-named band, and means for connecting the upstanding flanges of the outside bands with the first-named band, substantially as described.

2. In a vehicle-wheel, an encircling band channel-shaped and formed in two parts, said band provided with apertures through which the spokes project, in combination with outer bands sleeved on the hub, said outer bands provided with upstanding flanges adapted to overlap the walls of the channel-shaped flange, and bolts for securing the bands together and upon the hub, substantially as described.

3. In a vehicle-wheel, a hub, bands sleeved upon the hub from either end provided with upstanding flanges, a channel-shaped band housed within the upstanding flanges, said channel-shaped band provided with openings through which the spokes of the wheel project, and bolts securing the outer and inner bands and spokes to the hub, substantially as described.

4. In a vehicle-wheel, a hub, a channel-shaped band formed in two parts and provided with openings through which the spokes project, encircling bands adapted to be sleeved upon the hub from either end provided with upstanding flanges, said flanges having an inwardly-bent annular rim to project over and embrace the channel-shaped band when assembled, and bolts for securing the bands together upon the hub, substantially as described.

5. In a vehicle-wheel, a hub, bands sleeved upon the hub from either end provided with upstanding flanges, a channel-shaped band housed within the upstanding flanges, said channel-shaped band provided with openings through which the spokes of the wheel project, bolts engaging the outer and inner bands, and dowel-pins to secure the spokes to the hub, substantially as described.

850,637. VEHICLE-WHEEL. EVERLYN A. FOUNTAIN, San Diego, Cal. Filed Jan. 30, 1906. Serial No. 298,683.

Claim.—1. A wheel comprising a hub, a felly, an inner rim fixed to the felly and provided with openings therein, a plurality of radially-arranged guide-pins pivotally connected at their inner ends with the hub and suitably connected at their outer ends with the rim to have radially-slidable and pivotal movement circumferentially to the hub, springs surrounding said pins between the rim and hub, and means upon the outer ends of the pins and disposed within the rim-openings for adjusting the springs to vary their resistance.

2. A wheel comprising a hub, a felly, an inner rim fixed to the felly and provided with openings therein, a plurality of radially-arranged guide-pins pivotally connected at their inner ends with the hub and extending at their outer ends through the openings in the rim, stationary nuts bearing against the inner surface of the rim, coiled springs surrounding the guide-pins and bearing at their inner ends against the hub, and adjusting-screws mounted upon the outer ends of the guide-pins and movable in the rim-opening and engaging the outer ends of the springs.

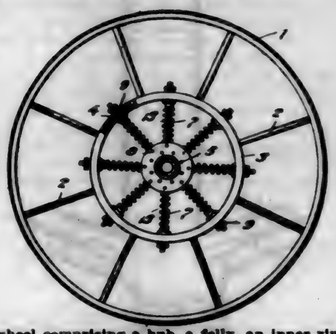

3. A wheel comprising a hub, a felly, an inner rim fixed to the felly, connections between the hub and rim pivotally attached to the hub and slidably and pivotally connected with the rim, cushioning-springs associated with said connections, and shields disposed on opposite sides of said connections and springs between the hub and rim and fixedly connected with one of said parts and movably engaging the other part.

4. A wheel comprising a hub, a felly, an inner rim fixed to the felly, guide-pins pivotally connected at their inner ends to the hub and slidably and pivotally connected at their outer ends to the rim, cushioning-springs associated with said pins, and cover-plates on opposite sides of said pins and springs, said plates being fixed to the hub and movably engaging the rim.

850,638. GARMENT-SUPPORTER. MAMIE FREEKSON, Mount Pleasant, Iowa. Filed Nov. 7, 1905. Renewed Nov. 3, 1906. Serial No. 341,943.

Claim.—A garment-supporter comprising shoulder-straps, front and rear union-pieces, said straps having their ends fastened to said union-pieces, front union-piece being provided with suspender-ends, button and buttonhole supporting means, rear union-piece having button and loop supporting means, a front hose-supporter fastened to front union-piece and a rear hose-support fastened to front and rear union-pieces.

850,639. PNEUMATIC DEVICE FOR DRAWING OUT GRAINS AND SIMILAR GOODS. PAUL GEBHARDT and CARL GEBHARDT, Straiau, near Berlin, Germany. Filed Sept. 24, 1906. Serial No. 335,029.

Claim.—In a pneumatic device for drawing out grains and similar materials, a mouthpiece consisting of two concentric tubes, the jacket-tube serving for feeding air, a nozzle formed at its free end by bending the same inwardly, the diameter of said nozzle being smaller than that of the inner tube, and a flange-ring fixed to an outer

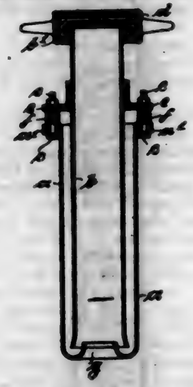

tube, a flange fixed to the jacket-tube, screws for connecting both the tubes and springs to regulate the passage formed between the nozzle of the jacket-tube and the free end of the inner tube, substantially as described.

850,640. STOCK-LOADER. JOHN GIBSON, Star Prairie, Wis. Filed May 4, 1906. Serial No. 315,242.

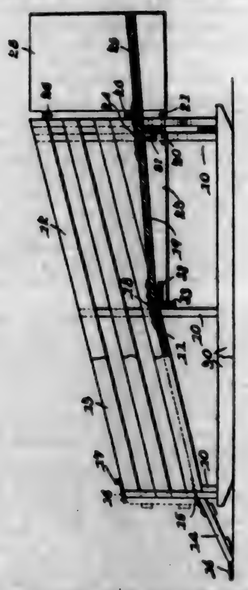

Claim.—1. In a device of the class described, a supporting-frame including transverse members intermediately thereof and spaced vertical members at the discharge end, continuous spaced side members carried by said frame, an inclined stationary floor-section disposed between said sides and extending inwardly from the receiving end and bearing at the inner end upon one portion of said transverse frame members, a movable floor-section swinging from the inner end of the stationary floor-section and bearing upon the remainder of said transverse frame members and extending to the discharge ends of said sides, a supporting-bar extending between said spaced vertical members and bearing beneath the free end of said movable floor-section, and means for coupling said bar adjustably to said spaced vertical members.

2. In a device of the class described, a supporting-frame including transverse members intermediately thereof and spaced vertical members at the discharge end, continuous spaced side members carried by said frame, an inclined stationary floor-section disposed between said sides and extending inwardly from the receiving end and bearing at the inner end upon one portion of said transverse frame members, a movable floor-section swinging from the inner end of the stationary floor-section and bearing upon the remainder of said transverse frame members and extending to the discharge ends of said sides, a supporting-bar extending between said spaced vertical members and bearing beneath the free end of said movable floor-section, flexible connecting means between said bar and the movable floor-section, and means for adjustably coupling said bar to said spaced vertical members.

850,641. SPOOL-HOLDER. MARY HALSTED, Canal Dover, Ohio. Filed Dec. 15, 1906. Serial No. 347,990.

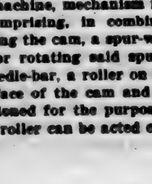

Claim.—1. A spool-holder comprising a fastening device, a clasp supported by the fastening device and having spaced jaws, and spool-holding arms pivotally mounted between the jaws, said arms having their pivotal portions arranged to frictionally engage the jaws to hold the arms in any of their adjusted positions.

2. A spool-holder comprising a fastening device, a suspending member composed of a folded piece of sheet metal forming a supporting portion engaging the fastening device and depending parallel jaws, a pivot-pin connecting the jaws, and spool-holding arms pivotally mounted upon the pin, the pivotal portions of the arms being frictionally engaged with the jaws to adapt the arms to be held in adjusted position.

3. A spool-holder comprising a fastening device, a suspending member composed of a folded piece of sheet metal forming a supporting portion engaging the fastening device and depending parallel jaws, a pivot-pin connecting the jaws, and spool-supporting arms having their upper ends pivotally mounted upon the pin between the jaws and flattened for frictional engagement with each other and the jaws, whereby the arms are adapted to be frictionally held in adjusted position.

850,642. SEWING-MACHINE. THOMAS D. HAMILTON, JOHN RUSK, and WILLIAM A. ROBERTSON, Belfast, Ireland. Filed Jan. 29, 1906. Serial No. 298,801.

Claim.—1. In a sewing-machine, mechanism for moving the needle-bar laterally, the same comprising in combination, a cam, means for rotating the cam, a rod connected with the needle-bar, means on said rod for direct contact with said cam, a spring acting on said rod in opposition to said cam, and means for moving said rod and its cam-contacting means vertically to vary the throw of the rod.

2. In a sewing-machine, mechanism for laterally moving the needle-bar, comprising, in combination, a face-cam, means for supporting the cam, a spur-wheel connected with the cam, means for rotating said spur-wheel, a rod connected with the needle-bar, a roller on said rod adapted to contact with the face of the cam and a rod connected to the rod aforementioned for the purpose of moving it vertically so that the roller can be acted on by different parts of the cam.

3. The combination in a sewing-machine of a spur-pinion on the shaft of the machine, a cam, a spur-wheel connected with the cam, means for supporting the cam, a rod connected with the needle-bar, a roller at the end of said rod,

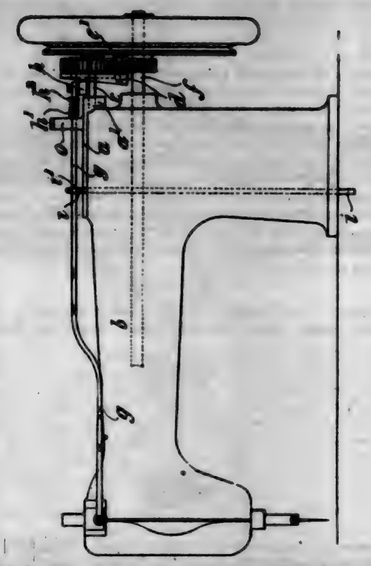

a guide for the rod, a spring acting on said rod and a second rod connected with the first one and adapted to shift the same to shift said roller on the said rod relatively to the cam with which it contacts.

850,643. APPARATUS FOR TRANSPORTING AND LAUNCHING BOATS. JOHN J. HARPAIN, San Francisco, Cal. Filed Apr. 23, 1906. Serial No. 313,267.

Claim.—1. A marine vessel adapted to transport and to launch smaller vessels, provided with a plurality of reversely-disposed tapered transverse compartments extending above and below the water-line, doors closing the wide end of each compartment and opening outboard and adapted to permit the ingress and egress of the smaller vessel, and means for securing the smaller vessel in the compartment, substantially as described.

2. A marine vessel adapted to transport and to launch smaller vessels, provided with a plurality of reversely-disposed tapered transverse compartments extending above and below the water-line, doors closing the wide end of each compartment and opening outboard and adapted to permit the ingress and egress of the smaller vessel, means for flooding and emptying the compartment, and means for securing the smaller vessel in the compartment when the compartment is wholly or partly emptied of water, substantially as described.

3. A marine vessel adapted to transport and to launch smaller vessels, provided with a plurality of reversely-disposed tapered transverse compartments extending above and below the water-line, sliding doors closing the wide end of each compartment and opening outboard and adapted to permit the ingress and egress of the smaller vessel, and means for securing the smaller vessel in the compartment, substantially as described.

4. A marine vessel adapted to transport and to launch smaller vessels, provided with one or more compartments extending above and below the water-line, doors on one side of the compartment opening outboard and adapted to permit the ingress and egress of the smaller vessel, a guiding-buffer on the side of the compartment opposite said doors, a cradle in said compartment, and means for securing the smaller vessel on said cradle, substantially as described.

5. A marine vessel adapted to transport and to launch smaller vessels, provided with one or more compartments extending above and below the water-line, doors on one side of the compartment opening outboard and adapted to permit the ingress and egress of the smaller vessel, a guiding-buffer on the side of the compartment opposite said doors, a cradle in said compartment, means for securing the smaller vessel on said cradle, means for flooding and for emptying the compartment, and means for securing the smaller vessel in place on said cradle when the compartment is wholly or partly emptied of water, substantially as described.

6. A marine vessel adapted to transport and to launch smaller vessels, provided with a plurality of reversely-disposed tapered transverse compartments extending above and below the water-line, sliding doors closing the wide end of each compartment and opening outboard and adapted to permit the ingress and egress of the smaller vessel, a buffer on the side of said compartment opposite said doors, and means for securing the smaller vessel in the compartment, substantially as described.

7. A marine vessel adapted to transport and to launch smaller vessels, provided with a plurality of reversely-disposed tapered transverse compartments extending above and below the water-line, substantially water-tight sliding doors normally closing the wide end of each compartment and adapted when open to permit the ingress and egress of the smaller vessel, means for flooding and for emptying the compartment, and means for securing the smaller vessel in the compartment when the compartment is wholly or partly emptied of water, substantially as described.

8. A marine vessel adapted to transport and to launch smaller vessels, provided with a plurality of reversely-disposed tapered transverse compartments extending above and below the water-line, substantially water-tight sliding doors normally closing the wide end of each compartment and adapted when open to permit the ingress and egress of the smaller vessel, a cradle in said compartment, and means for securing the smaller vessel on the cradle, substantially as described.

9. A marine vessel adapted to transport and to launch torpedo-boats, provided with transverse compartments extending above and below the water-line, with doors opening outboard and adapted to permit the ingress and egress of the torpedo-boat, torpedo-magazines at one or both sides of said chambers, and means for securing the smaller vessel in the compartment, substantially as described.

10. A marine vessel adapted to transport and to launch torpedo-boats, provided with transverse compartments extending above and below the water-line, doors opening outboard and adapted to permit the ingress and egress of the torpedo-boat, torpedo-magazines located at the side of each compartment, means for flooding and emptying the compartment, and means for securing the torpedo-boat in the compartment when the compartment is wholly or partly emptied of water, substantially as described.

11. A marine vessel adapted to transport and to launch torpedo-boats, provided with transverse compartments extending above and below the water-line, sliding doors opening outboard and adapted to permit the ingress and egress of the torpedo-boat, torpedo-magazines located on each side of each compartment, and means for securing a smaller vessel in the compartment, substantially as described.

12. A marine vessel adapted to transport and to launch a torpedo-boat, provided with a compartment extending above and below the water-line, substantially water-tight sliding doors normally closing said compartment but opening outboard and adapted to permit the ingress and egress of the torpedo-boat, means for flooding and for pumping out said compartment, means for securing the torpedo-boat in the compartment when it is wholly or partly emptied of water, and torpedo-magazines located at each side of said compartment and opening into said compartment, substantially as described.

13. A marine vessel adapted to transport and to launch a torpedo-boat, provided with a compartment extending above and below the water-line, substantially water-tight sliding doors normally closing said compartment but opening outboard and adapted to permit the ingress and egress of the torpedo-boat, means for flooding and for pumping out said compartment, means for securing the torpedo-boat in the compartment when it is wholly or partly emptied of water, torpedo-magazines located at each side of said compartment and opening into said compartment, with torpedo-carriers removably mounted in said magazines, and means for raising and lowering said torpedo-carriers, substantially as described.

14. A marine vessel adapted to transport and to launch torpedo-boats, provided with compartments extending above and below the water-line, substantially water-tight sliding doors normally closing said compartment but opening outboard and adapted to permit the ingress and egress of the torpedo-boat, means for flooding and pumping out each compartment, means for securing the torpedo-boat in the compartment when the compartment is wholly or partly emptied of water, and torpedo-magazines located at each side of said compartment and opening into said compartment, substantially as described.

15. A marine vessel adapted to transport and to launch torpedo-boats, provided with compartments extending above and below the water-line, substantially water-tight sliding doors normally closing said compartment but opening outboard and adapted to permit the ingress and egress of the torpedo-boat, means for flooding and pumping out each compartment, means for securing the torpedo-boat in the compartment when the compartment is wholly or partly emptied of water, torpedo-magazines located at each side of said compartment and opening into said compartment with torpedo-carriers removably mounted in said magazines, and means for raising and lowering said torpedo-carriers, substantially as described.

16. A marine vessel adapted to transport and to launch torpedo-boats, provided with transverse compartments extending above and below the water-line, with doors opening outboard and adapted to permit the ingress and egress of the torpedo-boat, torpedo-magazines at one or both sides of said compartments, torpedo-carriers in said magazines comprising a series of shelves with means for attaching a torpedo to each shelf, means for raising and lowering said carriers, and means for securing the torpedo-boat in the compartment, substantially as described.

17. A marine vessel adapted to transport and to launch torpedo-boats, provided with transverse compartments extending above and below the water-line, doors opening outboard and adapted to permit the ingress and egress of the torpedo-boat, torpedo-magazines located at the side of each compartment, torpedo-carriers in said magazines comprising a series of shelves with means for attaching a torpedo to each shelf, means for raising and lowering said carriers, means for flooding and emptying the compartment, and means for securing the torpedo-boat in the compartment when the compartment is wholly or partly emptied of water, substantially as described.

18. A marine vessel adapted to transport and to launch torpedo-boats, provided with transverse compartments extending above and below the water-line, sliding doors opening outboard and adapted to permit the ingress and egress of the torpedo-boat, torpedo-magazines located on each side of each compartment, torpedo-carriers in said magazines comprising a series of shelves with means for attaching a torpedo to each shelf, means for raising and lowering said carriers, and means for securing the torpedo-boat in the compartment, substantially as described.

19. A marine vessel adapted to transport and to launch a torpedo-boat, provided with a compartment extending above and below the water-line, substantially water-tight sliding doors normally closing said compartment but opening outboard and adapted to permit the ingress and egress of the torpedo-boat, means for flooding and for pumping out said compartment, means for securing the torpedo-boat in the compartment when it is wholly or partly emptied of water, torpedo-magazines located at each side of said compartment and opening into said compartment, torpedo-carriers in said magazines comprising a series of shelves with means for attaching a torpedo to each shelf, and means for raising and lowering said carriers, substantially as described.

20. A marine vessel adapted to transport and to launch a torpedo-boat, provided with a compartment extending above and below the water-line, substantially water-tight sliding doors normally closing said compartment but opening outboard and adapted to permit the ingress and egress of the torpedo-boat, means for flooding and for pumping out said compartment, means for securing the torpedo-boat in the compartment when it is wholly or partly emptied of water, torpedo-magazines located at each side of said compartment and opening into said compartment, with torpedo-carriers comprising a series of shelves removably mounted in said magazines with a torpedo-holder pivoted to each shelf, and means for raising and lowering said torpedo-carriers, substantially as described.

21. A marine vessel adapted to transport and to launch torpedo-boats, provided with compartments extending above and below the water-line, substantially water-tight sliding doors normally closing said compartment but opening outboard and adapted to permit the ingress and egress of the torpedo-boat, means for flooding and pumping out each compartment, means for securing the torpedo-boat in the compartment when the compartment is wholly or partly emptied of water, torpedo-magazines located at each side of said compartment and opening into said compartment, torpedo-carriers in said magazines comprising a series of shelves with means for attaching a torpedo to each shelf, and means for raising and lowering said carriers, substantially as described.

22. A marine vessel adapted to transport and to launch torpedo-boats, provided with compartments extending above and below the water-line, substantially water-tight sliding doors normally closing said compartment but opening outboard and adapted to permit the ingress and egress of the torpedo-boat, means for flooding and pumping out each compartment, means for securing the torpedo-boat in the compartment when the compartment is wholly or partly emptied of water, torpedo-magazines located at each

side of said compartment and opening into said compartment with torpedo-carriers comprising a series of shelves removably mounted in said magazines with a torpedo-holder pivoted to each shelf, and means for raising and lowering said torpedo-carriers, substantially as described.

23. A marine vessel adapted to transport and to launch torpedo-boats, provided with transverse compartments extending above and below the water-line, with doors opening outboard and adapted to permit the ingress and egress of the torpedo-boat, torpedo-magazines at one or both sides of said compartments, torpedo-carriers in said magazines comprising a series of shelves with means for attaching a torpedo to each shelf, racks and gearing meshing in said racks, for raising and lowering said carriers, and means for securing the torpedo-boat in the compartment, substantially as described.

24. A marine vessel adapted to transport and to launch torpedo-boats, provided with transverse compartments extending above and below the water-line, doors opening outboard and adapted to permit the ingress and egress of the torpedo-boat, torpedo-magazines located at the side of each compartment, torpedo-carriers in said magazines comprising a series of shelves with means for attaching a torpedo to each shelf, racks and gearing meshing in said racks for raising and lowering said carriers, means for flooding and emptying the compartment, and means for securing the torpedo-boat in the compartment when the compartment is wholly or partly emptied of water, substantially as described.

25. A marine vessel adapted to transport and to launch torpedo-boats, provided with transverse compartments extending above and below the water-line, sliding doors opening outboard and adapted to permit the ingress and egress of the torpedo-boat, torpedo-magazines located on each side of each compartment, torpedo-carriers in said magazines comprising a series of shelves with means for attaching a torpedo to each shelf, racks and gearing meshing in said racks for raising and lowering said carriers, and means for securing the torpedo-boat in the compartment, substantially as described.

26. A marine vessel adapted to transport and to launch a torpedo-boat, provided with a compartment extending above and below the water-line, substantially water-tight sliding doors normally closing said compartment but opening outboard and adapted to permit the ingress and egress of the torpedo-boat, means for flooding and for pumping out said compartment, means for securing the torpedo-boat in the compartment when it is wholly or partly emptied of water, torpedo-magazines located at each side of said compartment and opening into said compartment, torpedo-carriers in said magazines comprising a series of shelves with means for attaching a torpedo to each shelf, and racks and gearing meshing in said racks for raising and lowering said carriers, substantially as described.

27. A marine vessel adapted to transport and to launch a torpedo-boat, provided with a compartment extending above and below the water-line, substantially water-tight sliding doors normally closing said compartment but opening outboard and adapted to permit the ingress and egress of the torpedo-boat, means for flooding and for pumping out said compartment, means for securing the torpedo-boat in the compartment when it is wholly or partly emptied of water, torpedo-magazines located at each side of said compartment and opening into said compartment, with torpedo-carriers comprising a series of shelves removably mounted in said magazines with a torpedo-holder pivoted to each shelf, and racks and gearing meshing in said racks for raising and lowering said torpedo-carriers, substantially as described.

28. A marine vessel adapted to transport and to launch torpedo-boats, provided with compartments extending above and below the water-line, substantially water-tight sliding doors normally closing said compartment but opening outboard and adapted to permit the ingress and egress of the torpedo-boat, means for flooding and pumping out each compartment, means for securing the torpedo-boat in the compartment when the compartment is wholly or partly emptied of water, torpedo-magazines located at each side of said compartment and opening into said compartment, torpedo-carriers in said magazines comprising a series of shelves with means for attaching a torpedo to each shelf, and racks and gearing meshing in said racks for raising and lowering said carriers, substantially as described.

29. A marine vessel adapted to transport and to launch torpedo-boats, provided with compartments extending above and below the water-line, substantially water-tight sliding doors normally closing said compartment but opening outboard and adapted to permit the ingress and egress of the torpedo-boat, means for flooding and pumping out each compartment, means for securing the torpedo-boat in the compartment when the compartment is wholly or partly emptied of water, torpedo-magazines located at each side of said compartment and opening into said compartment with torpedo-carriers comprising a series of shelves removably mounted in said magazines with a torpedo-holder pivoted to each shelf, and racks and gearing meshing in said racks for raising and lowering said torpedo-carriers, substantially as described.

850,644. GEAR FOR TRACTION-ENGINES. AMOS HAROLD, Newark, Ohio. Filed Mar. 8, 1904. Serial No. 197,164.

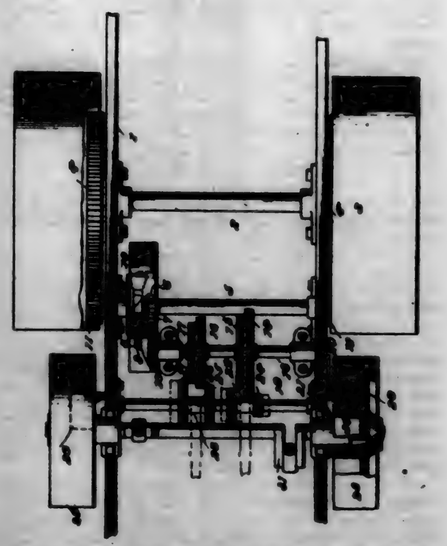

Claim.—1. In a gear for traction-engines, the combination of a frame, an axle journaled in the frame, driven wheels secured to said axle, a gear fixed to each of said wheels, a compensating shaft, an internal gear loosely mounted thereon, a pinion fixed to said compensating shaft and meshing with one of the gears on the driven wheels, two beveled gears, mounted adjacent each other, a beveled gear carried by the internal gear interposed between said two beveled gears, a sleeve, one of said beveled gears located on the sleeve, a pinion on the sleeve which meshes with one of the gears on the driven wheels, a counter-shaft journaled in the frame, different-sized gears fixed on the counter-shaft, a pinion on the counter-shaft which meshes with the internal gear, a third shaft, sleeves slidably mounted on the third shaft, pinions of different diameters on the sleeves, said pinions adapted to mesh with the different-sized gears on the counter-shaft, eccentric bearings for the third shaft, friction-wheels fixed to the third shaft, an engine-shaft, wheels secured thereto having rims and hubs, the friction-wheels being located intermediate the hubs and inner surface of the rims of the wheels on the engine-shaft and adapted for alternate contact therewith.

2. In a gear for traction-engines, the combination of a frame, an axle journaled in the frame, driven wheels secured to said axle, a gear fixed to each driven wheel, eccentric bearings, a shaft mounted in said eccentric bearings, different-sized gears and friction-wheels on the latter shaft, an engine-shaft, wheels mounted on the engine-shaft, the friction-wheels on the eccentrically-mounted shaft being located between the hubs and rims of the wheels on the engine-shaft, a counter-shaft, different-sized gears mounted on the counter-shaft, said latter gears adapted to mesh with the first-mentioned different-sized gears, a compensating-gear shaft, a pinion mounted on the latter shaft and meshing with the gear fixed to one of the driven wheels, an internal gear mounted on the compensating-gear shaft, a pinion on the counter-shaft, said latter pinion meshing with the internal gear, a sleeve on the compensating-gear shaft, a pinion mounted on the sleeve, said pinion meshing with the gear fixed to one of the driven wheels, a beveled gear mounted on the sleeve, a beveled-gear wheel revolving with the compensating-gear shaft, and a beveled pinion carried by the internal gear between the beveled gears on the sleeve and the compensating shaft.

8. In a gear for traction-engines, the combination of an axle, driven wheels mounted on said axle, gears on the driven wheels, a compensating-gear shaft, a pinion mounted on the compensating-gear shaft, said pinion meshing with one of the gears on the driven wheels, a sleeve, a pinion on the sleeve, said pinion meshing with one of the gears on the driven wheels, a counter-shaft, a pinion on the counter-shaft, a series of different-sized gears on the counter-shaft, gearing interposed between the pinion on the counter-shaft and the pinions on the sleeve and compensating-gear shaft to revolve the latter and the sleeve, a shaft, a series of different-sized pinions on the latter shaft adapted to mesh with the different-sized gears on the counter-shaft, friction-wheels on the shaft carrying the different-sized pinions, an engine-shaft, wheels with rims and hubs mounted on the engine-shaft, and means for engaging the friction-wheels with the hubs or rims of the wheels on the engine-shaft.

850,645. MACHINE FOR CLEANING CARPETS. WILLIAM H. HEFFERNAN, North Adams, and ALMON E. HALL, Williamstown, Mass. Filed May 8, 1905. Serial No. 259,280.

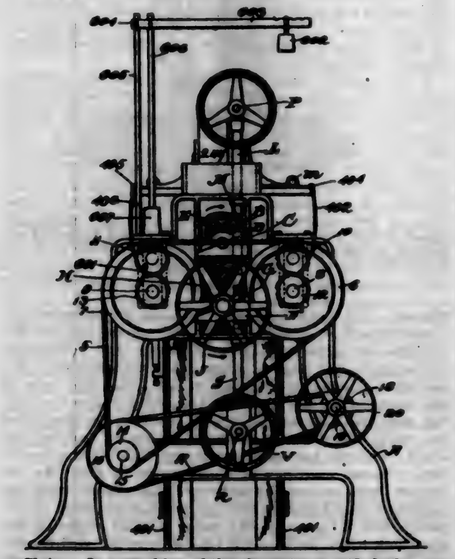

Claim.—In a machine of the character specified, the combination of a frame, a pair of oppositely-disposed brush-rolls acting at substantially the same point on opposite sides of an article to be cleaned, boxes mounted in the said frame, central supports for the said brush-rolls, adjusting-screws for the said boxes and central supports, gears thereon, a horizontal shaft provided with gears engaging the gears on the said adjusting-screws for the upper brush-roll, and a corresponding horizontal shaft similarly provided with gears for adjusting the lower brush-roll, whereby the boxes and supports for each brush-roll may be adjusted vertically and simultaneously by the rotation of the horizontal shaft appertaining thereto.

850,646. AUTOMATIC CAR-LIFT. GRANT HOLMES, Danville, Ill., assignor to Robert Holmes & Brothers, Danville, Ill., a Corporation of Illinois. Filed Sept. 26, 1906. Serial No. 336,246.

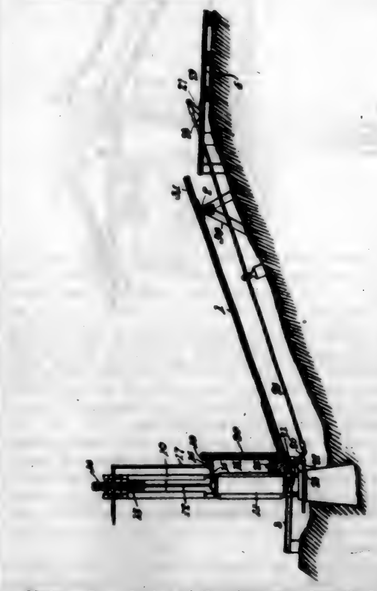

Claim.—In a device of the character described, the combination, with a track having a section pivotally supported at a point intermediate the ends thereof, of means for raising and lowering that end of said track-section farthest removed from said pivotal support to incline the same in opposite directions, thus causing that portion of said track-section in the rear of said pivotal support to be elevated above the track when said track-section is inclined in one direction and to be in alinement with said track when said track-section is inclined in the opposite direction.

850,647. AUTOMATIC LIFTING MECHANISM. GRANT HOLMES, Danville, Ill., assignor to Robert Holmes & Brothers, Danville, Ill., a Corporation of Illinois. Filed Feb. 4, 1907. Serial No. 355,534.

Claim.—1. In a device of the character described, the combination, with a movable track-section, and means for elevating one end thereof, of a pivotal support for the opposite end of said track-section movable in a longitudinal direction, substantially as described.

2. In a device of the character described, the combination, with a movable track-section, means for elevating one end thereof, and means for holding said end against longitudinal movement, of a pivotal support for the opposite end of said track-section movable in a longitudinal direction, substantially as described.

3. In a device of the character described, the combination, with a pivoted track-section, and means for moving

the same about its pivotal center, of means for shifting said pivotal center, substantially as described.

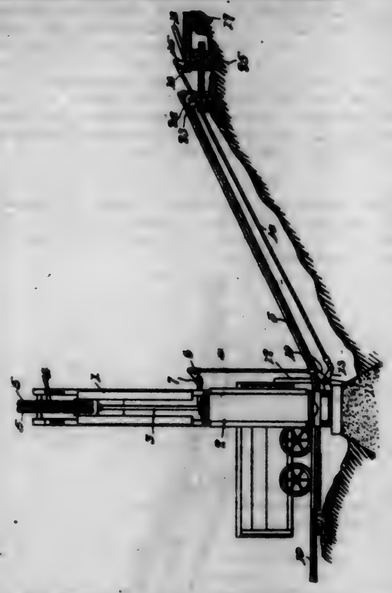

4. In a device of the character described, the combination, with a movable track-section, and means for elevating one end thereof, of a guideway near the other end of said track-section and extending longitudinally thereof, and a guide carried by said track-section and adapted to engage said guideway, substantially as described.

5. In a device of the character described, the combination, with a movable track-section, and means for elevating one end thereof, of guideways on the opposite side of said track-section and extending longitudinally thereof, and guides carried by said track-section on opposite sides thereof and adapted to engage said guideways, substantially as described.

6. In a device of the character described, the combination, with a movable track-section, and means for elevating one end thereof, of tracks near the other end of said track-section extending longitudinally thereof, an axle secured near the end of said track-section, and wheels journaled on said axle and adapted to engage said rails, substantially as described.

7. In a device of the character described, the combination, with a movable track-section, means for elevating one end thereof, vertically-extending guideways, and guides carried by said ends of said track-section and adapted to engage said guideways, of a pivotal support for the opposite end of said track-section movable in a longitudinal direction, substantially as described.

8. In a device of the character described, the combination, with a movable track-section, means for elevating one end thereof, a vertically-extending frame, guideways on opposite sides of said frame, an axle rigidly secured near the forward end of said track-section, rollers journaled on said axle adapted to engage the guideways on said vertical members, of a pivotal support for the opposite end of said track-section comprising an axle secured thereto, wheels journaled on said axle, and a fixed guideway for said wheels, substantially as described.

9. In a device of the character described, the combination, with a movable track-section, means for elevating one end thereof, of a pivotal support for the opposite end of said track-section movable in a longitudinal direction and adapted to form a buffer when said track-section is in its lowermost position, substantially as described.

850,648. DUMPING APPARATUS. SAMUEL W. HOPKINS, Enterprise, Kans. Filed May 11, 1906. Serial No. 316,389.

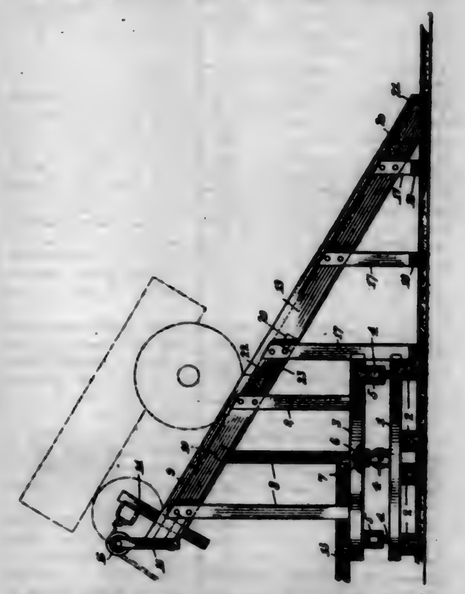

Claim.—1. In dumping apparatus, a rotatable platform, inclined guideways mounted on said platform in an elevated position, a fixed approach, inclined guideways on said approach leading to the lower ends of the guideways on the platform, and means for locking both guideways together.

2. In dumping apparatus, a rotatable platform, inclined guideways mounted on said platform in an elevated position, an adjustable catch operating to hold a vehicle on said guideways, a pulley mounted in the line of travel on said guideways, a fixed approach, and inclined guideways on said approach leading to the lower ends of said guideways on the platform.

3. In dumping apparatus, a base, a platform rotatable on said base and provided with a bearing in its under side, a pivot on said base and journaled in said bearing, wheels interposed between said base and said platform to carry the latter, inclined guideways mounted on said platform in an elevated position, a catch operating to hold a vehicle on said guideways, a fixed approach, inclined guideways on said approach leading to the lower ends of said guideways on the platform, means for locking both guideways together, and a pulley mounted in the line of travel of the guideways on the platform.

850,649. DISPLAY DEVICE. SAMUEL W. HUNTINGTON, Aberdeen, S. D. Filed June 30, 1905. Serial No. 267,795.

Claim.—In a display device, a casing, and a plurality of display-frames removable and interchangeable from the rear of the casing and movable outward from the front of the casing to display position, said casing having top, bottom and side members, and being open at the front and rear, stop-ribs extending downward from the top and upwardly from the bottom of the casing, the interchangeable display-frames each having stops projecting from the upper and lower surfaces of their rear ends, the stops of the frames slidably engaging the upper and lower walls of the casing, and the stops of the casing slidably engaging the upper and lower walls of the frames, whereby said frames are guided and supported during movement to and from display position.

850,649.

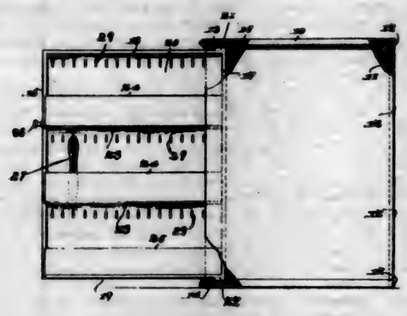

850,650. BEARING FOR GRINDING-WHEEL SHAFTS. DAVID B. HYDE, Springfield, Ohio, assignor to the Safety Emery Wheel Co., Springfield, Ohio, a Corporation of Ohio. Filed July 24, 1903. Serial No. 166,821.

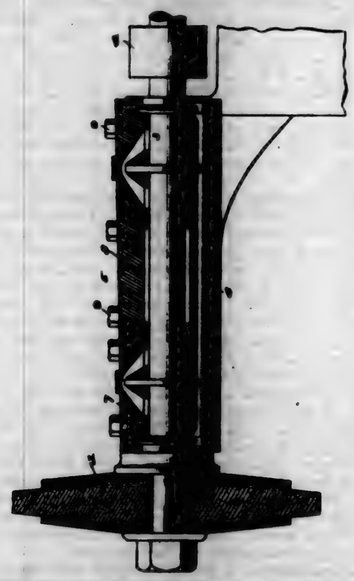

Claim.—In a bearing of the character described, a three-part bearing-box adapted to completely inclose the journal and comprising a continuous bottom portion extending throughout the length of said journal, an upper portion divided near one end to form two parts, the longer part being at that end which receives the minimum pressure from the journal and the shorter part being at that end which receives the maximum pressure from the journal, and independent means for adjusting each part of the upper portion of said bearing-box relatively to the lower portion thereof, whereby one end of said bearing may be tightened to take up wear without disturbing the other end thereof, substantially as described.

850,651. ANVIL FOR RIVETING-MACHINES. CHRISTIAN JOHANNSEN, Oeversee, Near Flensburg, Germany. Filed Oct. 13, 1905. Serial No. 282,626.

Claim.—1. In an anvil for riveting-machines, the combination with a cylinder, of a head having a shank movable in said cylinder, a piston in said cylinder to the rear of and engaging said shank, yielding means behind said piston, and yielding means acting on said shank.

2. The herein-described anvil for riveting-machines, the same comprising a cylinder with enlargement at the end, a head having a shank extending into said cylinder, a collar on said shank within said enlargement, springs upon opposite sides of said collar, a piston in said cylinder against the end of which the inner end of said shank directly bears, and resilient means at the other end of said piston.

850,652. RAIL-ADJUSTER. CALVIN A. JONES, Trilby, Fla. Filed July 11, 1906. Serial No. 325,631.

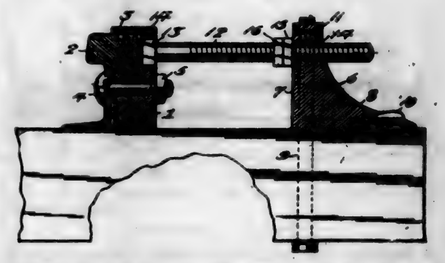

Claim.—1. The combination with a railroad-rail, of means operating in alinement with the rail-tread only for adjusting the position of the tread portion of said rail.

2. The combination with a railroad-rail, of means operating in alinement with the rail-tread only for adjusting the position of the tread portion of the rail without interfering with the rail-fastening means.

3. A rail-adjuster comprising a member to be secured to the rail, a relatively fixed member, and means for adjusting the rail member relative to the fixed member, said means engaging the rail-blocks at a point in alinement with the tread portion of the rail.

4. A rail-adjuster comprising a rail-block shaped to conform to the sectional contour of the rail, a tie-block adapted to be secured to a tie, and means for adjusting the rail-block relative to the tie-block, said means engaging the rail-blocks at a point in alinement with the tread portion of the rail.

5. A rail-adjuster comprising a rail-block adapted to be secured to a rail, a tie-block adapted to be secured to a tie, and an adjusting-bolt connecting the blocks, said bolt en-

gaging the rail-block directly opposite the tread portion of the rail.

6. A rail-adjuster comprising a rail-block adapted to be secured to a rail, a tie-block adapted to be secured to a tie, a bolt bearing against the rail-block and passing loosely through the tie-block, and a nut coöperating with said bolt and adapted to bear against the tie-block, said bolt engaging the rail-block at a point directly opposite and in alinement with the tread portion of the rail.

7. A rail-adjuster comprising a rail-block adapted to be secured to a rail, a tie-block adapted to be secured to a tie, a bolt bearing against the rail-block and passing loosely through the tie-block, a nut coöperating with said bolt and adapted to bear against the tie-block, and means to lock said nut against independent movement, said bolt being disposed in horizontal alinement with the tread portion of the rail and engaging the rail-block at a point directly opposite said tread portion.

850,653. CASTING-MACHINE. HARRY JONES, Chicago, Ill., assignor to American Brake Shoe & Foundry Company, Jersey City, N. J., a Corporation of New Jersey. Filed Dec. 5, 1905. Serial No. 290,385.

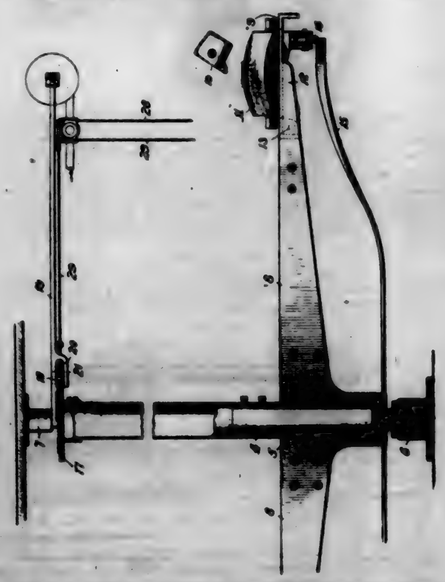

Claim.—1. In combination, a rotatable frame carrying a mold thereon, comprising an upper member and a swinging lower member, a pouring means opposite one point of travel of the rotating frame, a cam track beneath the rotatable frame and contacting with the swinging lower member and adapted to hold such lower member closed as the mold passes the pouring means and later allow the lower member to swing open gradually in a downward direction to permit of the discharge of the casting by its own weight.

2. In combination, a rotatable frame carrying a plurality of molds thereon each comprising an upper member and a swinging lower member, a pouring means opposite one point of travel of the rotatable frame, a cam track beneath the rotatable frame and contacting with such swinging members and adapted to hold the lower members closed as the mold passes the pouring means and later to allow such members to swing open downwardly and discharge the castings by gravity.

3. In combination, a rotatable frame carrying a mold thereon, comprising an upper member and a swinging lower member, a cam track beneath the rotatable frame contacting with such swinging member and adapted to hold the swinging member closed at that portion of the travel of the rotatable frame at which the casting is to be done, to allow the mold to swing open downwardly to discharge the casting by gravity and finally to close it again, preparatory to another operation.

4. In combination, a rotatable frame carrying a plurality of molds thereon each comprising an upper member and a swinging lower member, a cam track beneath the rotatable frame and contacting with the swinging member, and adapted to hold such members closed at that portion of the travel of the rotatable frame at which the pouring is to be done, then allow the molds to swing open downwardly to discharge the casting by gravity and finally to close them again, preparatory to another operation.

5. In combination, a rotatable frame carrying a mold thereon, having a swinging lower member provided with a flanged wheel, and a cam track whose edge fits the flanged wheel and is substantially vertical and close enough to the mold at one portion of its travel to keep the lower hinged portion closed and in position and in succeeding positions gradually changing from the vertical position to a horizontal one, so removed that the lower hinged portion may swing open and then be closed again by the first portion of the cam track.

6. In combination, a rotatable frame carrying a plurality of molds thereon, each having a swinging lower member provided with a flanged wheel, and a cam track whose edge fits the flanged wheels, and is substantially vertical and close enough to the molds at one portion of the travel of the molds to keep the lower hinged portions closed and in position for casting and in a succeeding position gradually changing from the vertical position to a horizontal one so removed that the lower hinged portions may swing open and then be closed again by the first portion of the cam track.

7. In combination, a rotatable frame carrying an automatically releasable casting machine, and a mechanism for intermittently rotating the frame, comprising a ratchet gear having a catch and an operating lever and a piston connected thereto, fluid operated in one direction and spring operated in the other, the fluid supply having a three-way valve and a connection between the catch and the three-way valve so that a movement of the valve handle in one direction admits fluid and operates the piston, while a movement in the other direction cuts off the fluid, opens the exhaust and withdraws the catch.

8. In combination, a rotatable frame carrying a mold thereon having a lower member provided with a flanged engaging member, and a cam track whose edge fits the flanged engaging member and is substantially vertical and close enough to the mold at one portion of its travel to keep the lower hinged member closed and in position and in succeeding positions gradually changing from the vertical position to a horizontal one, so removed that the lower hinged member may swing open and then be closed again by the first portion of the cam track.

9. In combination, a rotatable frame carrying a mold thereon comprising an upper member and a swinging lower member provided with a wheel, and a cam track whose edge engages the wheel and is close enough to the mold at one portion of its travel to keep the lower hinged member closed and in position and in succeeding positions is so removed that the lower hinged member may swing open and then be closed again by the first portion of the cam track.

850,654. BROILER. JAMES J. JONES, New York, N. Y. Filed Dec. 16, 1904. Serial No. 237,057.

Claim.—1. A broiler comprising a corrugated sheet-metal plate having elongated longitudinally-disposed openings in spaced-apart positions and similarly located in alternate corrugations, a frame having a base and upper side members inclined relatively thereto, and clips on opposite sides of the plate adapted to fit over the inclined sides of the frame.

2. A broiler, comprising a corrugated sheet-metal plate in which there are alternating series of corrugations, the apices of one series of which are in a parallel plane with the apices of the other series.

3. A broiler comprising a corrugated sheet-metal plate in which there are alternating series of corrugations, the apices of one series of which are in a parallel plane with the apices of the other series, and series of longitudinally-disposed apertures near the apices of the lower of the series of corrugations.

4. A broiler comprising a corrugated sheet-metal plate in which there are alternating series of corrugations, the apices of one series of which are in a parallel plane with the apices of the other series and the bases of both said series in the same plane.

850,655. PROCESS OF PEELING FRUITS AND VEGETABLES. EDWARD J. JUDGE, San Francisco, Cal. Filed Jan. 21, 1907. Serial No. 353,349.

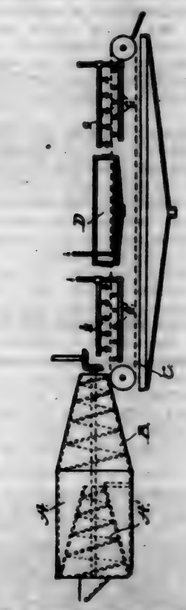

Claim.—1. The process herein described of peeling fruits and vegetables which process consists in subjecting the fruit or vegetable to a bath of skin-disintegrating solution for the purpose of loosening the skin thereof; then passing the fruit across the range of action of fluid sprays of sufficient force to remove the loosened skin; and then subjecting the peeled product to a steam-bath for the purpose of removing any remaining traces of solution and to blanch said product.

2. The process herein described of peeling fruits and vegetables said process consisting in subjecting the fruit or vegetable to successive baths of hot water and a skin-disintegrating solution for the purpose of softening the fruit and breaking the skin thereof; then passing the fruit or vegetable into the range of action of opposed fluid sprays of sufficient force to remove the loosened skin; and then subjecting the peeled fruit or vegetable to a steam-bath for the purpose of eliminating any remaining traces of solution and to blanch said fruit or vegetable.

3. The process herein described of peeling fruits and vegetables said process consisting of the subjection of the fruit or vegetable to a bath of hot water and then to a bath of skin-disintegrating solution whereby the fruit or vegetable is washed and softened and its skin broken and loosened; then passing the fruit or vegetable into the range of action of opposed hydraulic sprays of sufficient force to detach the loosened skin; then steaming the peeled fruit or vegetable to eliminate any remaining traces of solution and to blanch the fruit or vegetable; and, finally, subjecting the fruit or vegetable to the action of hydraulic sprays of substantially low temperature.

850,656. DEVICE FOR ADJUSTING THE HEIGHT OF THE CUT IN HAIR-CLIPPING MACHINES. ROBERT KLEIN, Solingen, Germany. Filed Oct. 22, 1906. Serial No. 340,032.

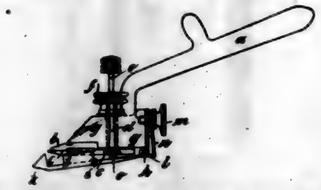

Claim.—1. In a machine for cutting hair, the combination with the cutting-blades, of a comb acting in conjunction therewith, and pivotally mounted at one end and having a heel-piece, a spring acting on said heel-piece, and means connected with said comb between its pivot and its free end for adjusting said comb.

2. In a machine for cutting hair, the combination with the cutting-blades, of a comb acting in conjunction therewith, and pivotally mounted at one end and having a heel-piece, a spring acting on said heel-piece, and means connected with said comb between its pivot and its free end for adjusting said comb, and means for adjusting the tension of said spring.

3. In a machine for cutting hair, the combination with the cutting-blades, of a comb acting in conjunction therewith, and pivotally mounted at one end and having a heel-piece, a spring acting on said heel-piece, and means connected with said comb between its pivot and its free end for adjusting said comb, and means for adjusting the tension of said spring, said comb having side laps adjacent said cutting-blades.

850,657. PULP-WASHING APPARATUS. WILLIAM B. KLEIN, Chicago, Ill. Filed Feb. 23, 1906. Serial No. 302,345.

Claim.—1. A pulp-washing apparatus comprising a container for the reception of the pulp, said container having an outer perforated wall and paddles extending longitudinally of said container and adjustable toward and from said wall, substantially as specified.

2. A pulp-washing apparatus comprising a cylindrical body provided with perforations for the flow of liquid therefrom and a plurality of paddles extending longitudinally of said body and adjustable toward and from the outer shell thereof, substantially as specified.

3. A pulp-washer container comprising a cylindrical body provided with means for supplying liquid centrally thereof and with a plurality of paddles extending longitudinally of said body and radially adjustable therein, substantially as specified.

4. In a pulp-washer, the combination of a perforated shaft, a hollow cylindrical perforated body mounted on said shaft, means for supplying liquid to said shaft, and a plurality of longitudinally-extending paddles in said body,

said paddles being of considerably less width than the radius of said cylinder and being radially adjustable therein, substantially as specified.

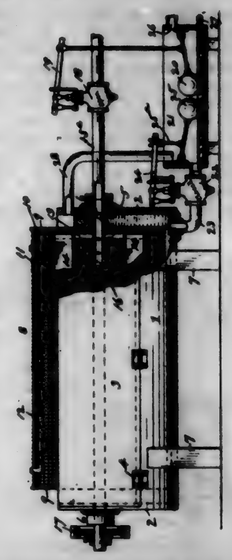

5. In a pulp-washer, the combination of a shaft, a hollow cylindrical perforated body mounted on said shaft, means for supplying liquid to the interior of said body, and a plurality of longitudinally-extending paddles in said body, said paddles being of considerably less width than the radius of said cylinder and being radially adjustable therein, substantially as specified.

6. A pulp-washer comprising a rotatable cylinder having heads, paddles extending longitudinally of said cylinder and having their opposite ends adjustably engaging said heads, and a perforated cylindrical wall extending between said heads, substantially as specified.

7. A pulp-washer comprising a rotatable cylinder having heads, ribs on said heads extending radially thereof, paddles extending longitudinally of said cylinder and having their opposite ends slidably fitted between said ribs, and a perforated cylindrical wall extending between said heads, substantially as specified.

8. In a pulp-washing apparatus, the combination of an outer tank having a door therein, a pulp-container within said tank, said container comprising a cylindrical body of perforated material, said body being provided with a door of similar material, substantially as specified.

9. In a pulp-washing apparatus, the combination of an outer tank having a door therein, and a pulp-container rotatably supported within said tank, said container comprising a cylindrical body of perforated material, said body being provided with a door of similar material, substantially as specified.

10. In a pulp-washing apparatus, the combination of a tank, said tank being provided with a door, a rotatable pulp-container within said tank, said container comprising a casing of perforated material and a door in said casing, substantially as specified.

11. In a pulp-washing apparatus, the combination of a tank, said tank being provided with a door extending from the top edge of the same and being hinged a short distance above the bottom thereof, a rotatable pulp-container within said tank, said container having heads, an outer casing of perforated material extending between said heads, and a door in said casing, substantially as specified.

12. In an apparatus for washing pulp and like material, the combination of a tank, a container within said tank for said pulp, means for supplying water to said tank, and means for automatically emptying said tank when the water reaches a predetermined depth therein, substantially as specified.

13. In an apparatus for washing pulp and like material, the combination of a tank, a cylinder or container within said tank for said pulp, means for supplying water to said tank, means for rotating said cylinder, and means for automatically emptying said tank when the water reaches a predetermined depth therein, substantially as specified.

14. In an apparatus for washing pulp, the combination of a tank, a pulp-container mounted therein, said container being provided with perforations for the passage of liquid therethrough, means for supplying liquid to the interior of said container, and means for automatically emptying the tank when the water therein reaches a predetermined depth, substantially as specified.

15. In an apparatus for washing pulp, the combination of a tank, a perforated supply-pipe in said tank, a pulp-container mounted on said pipe, said container being provided with perforations for the passage of liquid therethrough, means for supplying liquid through said pipe to the interior of said container, and means for automatically emptying the tank when the water therein reaches a predetermined depth, substantially as specified.

16. In an apparatus for washing pulp and similar material, the combination of a tank, a hollow shaft journaled in said tank, a rotary container on said shaft, a pipe connected to said shaft and having a valve therein, a drain-pipe connected with said tank and having a valve therein, and means for automatically closing the former valve and for automatically opening the latter valve when the liquid in the tank has reached a predetermined depth, substantially as specified.

17. In an apparatus for washing pulp and similar material, the combination of a tank, a container in said tank, a pipe extending into said container and having a valve therein, a drain-pipe connected with said tank and having a valve therein, and means for automatically closing the former valve and for automatically opening the latter valve when the liquid in the tank has reached a predetermined depth, substantially as specified.

18. In a pulp-washing apparatus, the combination of a perforated rotary cylinder for the pulp, a tank wherein said cylinder is mounted for rotation, and an overflow for said tank located at a slight distance below the upper surface of the cylinder, substantially as specified.

19. In a pulp-washing apparatus, the combination of a perforated rotary cylinder for the pulp, a tank wherein said cylinder is mounted for rotation, means for supplying water to said tank and cylinder, said tank having an outlet so arranged as to permit the cylinder to be nearly submerged in the water in said tank, substantially as specified.

850,658. PORTABLE WARDROBE. MORRISSY S. KOONCE, Washington, D. C. Filed Mar. 24, 1906. Serial No. 307,886.

Claim.—1. A portable wardrobe, comprising rods, fastenings into which said rods telescope, means for securing said rods in said fastenings, supports for articles of apparel carried by said frame, the upper one of said supports being composed of horizontal rods mounted in cross-rods which fasten into the telescoping joints of the main frame, a curtain-support located above said rack and comprising a rectangular frame and provided with swinging front rods and rods telescoping into said last-named frame and said main frame and supporting the curtain-support, substantially as described.

2. A portable wardrobe-frame comprising rods jointed together, joints into which said rods telescope, means for securing said rods in said joints, apparel-supports carried by said frame, one of said supports swinging thereon and the upper of said apparel-supports being a flat horizontal rack composed of rods secured in rods which are fastened in the telescoping joints of the main frame, a curtain-supporting frame mounted above said rack and composed of a rectangular frame and having two swinging sides, and rods telescoping into the curtain-supporting frame and main frame, substantially as described.

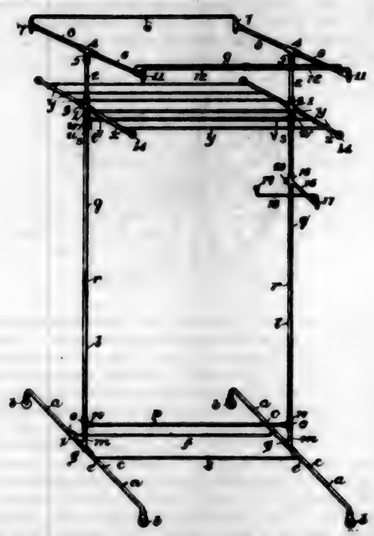

3. In a portable wardrobe-frame, the combination of base-rods, vertical rods carried thereby, a rectangular top frame supported on the top of said vertical rods and acting as a curtain-support, one member of said top frame carrying a spring-clip, and a pair of rods pivotally supported in said top frame and adapted to carry curtains and swing inward and outward like a door, and having ends adapted to engage said spring-clip, substantially as described.

850,659. LOOSE-LEAF BINDER. GEORGE LABARRE, New Orleans, La. Filed June 20, 1906. Serial No. 322,618.

Claim.—The herein-described loose-leaf binder comprising oppositely-arranged leaf-holding members, upright posts secured to one end of said members and projecting through openings in the other member, notched jaws, each provided with a slot, screws passing through said slots to connect said notched jaws to the last-named member to permit said jaws to slide thereon, said jaws having lugs extending upward therefrom, and provided with oppositely-threaded openings, and a manually-operated rock-shaft provided at its opposite ends with right and left hand threads which engage the threaded openings in said lugs on the jaws, said rock-shaft comprising a rod having a centrally-disposed integral lever-arm bent therefrom for operating the same, essentially as described.

850,660. RAILWAY FROG-SWITCH. ALLIE M. LEWIS, Terre Haute, Ind. Filed July 9, 1906. Serial No. 325,305.

Claim.—1. A device of the character described, having a pivoted "frog" or switch-point, pivoted bars or shoes arranged laterally of track and siding rails, and a toggle lever or joint arrangement of parts comprising duplicate levers with the relatively inner ends thereof linked to opposite sides of said "frog" or switch-point and the opposite ends of said levers connected to sliding rods or bars actuated by said pivoted bars or shoes.

2. A device of the character described, having a pivoted switch-point or "frog," pivoted bars or shoes arranged laterally of track and siding rails, duplicate levers about centrally pivoted upon bars outstanding from rail-sections of the track, said levers having their relatively inner ends connected by pivoted links about centrally to opposite sides

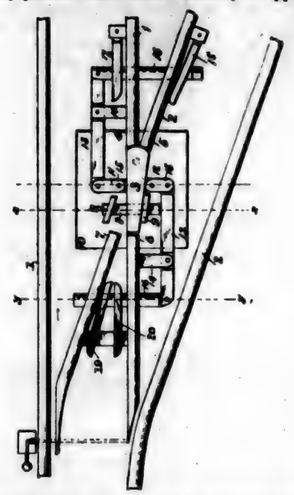

of said switch-point or "frog," and duplicate rods or bars slidably arranged in apertures or orifices in said track and siding rails and connected to the relatively outer ends of said rods, said pivoted bars or shoes being adapted to actuate and rest upon said sliding rods or bars, near their outer or free ends.

850,661. DENTAL ENGINE. JESSE A. LEWIS, Elgin, Nebr. Filed Dec. 30, 1905. Serial No. 293,058.

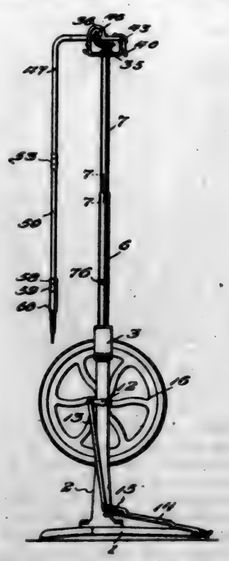

Claim.—1. In a dental engine, the combination of a standard, a yoke-shaped bracket member carried by the top

of the standard, a movable bracket member hinged to the stationary member and arching over the top thereof, a detachable connection between the bracket members, a drive-shaft carried by the standard and projecting into the space between the bracket members, means for driving said shaft, a gear carried by the drive-shaft and located between the bracket members, a counter-shaft carried by the movable bracket member, and a gear carried by the counter-shaft and in mesh with the first-mentioned gear.

2. In a dental engine, the combination of a supporting-standard, a tool-driving shaft carried thereby, a friction-gear on said shaft, a drive-gear having undercut retaining-grooves around the rim thereof, a resilient friction-ring stretched around the rim and having flanges sprung into said grooves, and means for operating the drive-wheel.

3. In a dental engine, the combination of a standard, a bracket carried by the standard and having a stationary and a hinged portion provided with interlocking means, a drive-shaft carried by the standard and projecting into the space between the bracket members, means for driving said shaft, a gear carried by the drive-shaft and located between the bracket members, a counter-shaft carried by the movable bracket member, and a gear carried by said shaft and in mesh with the first-named gear.

850,662. BRACKET FOR SUPPORTING SCAFFOLDING AND THE LIKE. ERNST LORENZ, Berlin, Germany. Filed May 1, 1906. Serial No. 314,687.

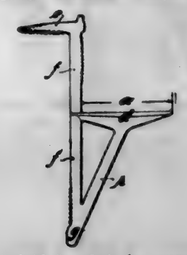

Claim.—1. A rigid bracket for supporting scaffolding and the like, comprising, a back, having at the top an integral member adapted when laid upon a wall or the like to hold the loaded bracket without the aid of a special counter member; a sole integral with the back; and a stay extending from the lower part of the back to the sole and integral with these parts; substantially as described.

2. A rigid bracket for supporting scaffolding and the like, comprising, a back whose bottom presents a smooth swelling and whose top has an integral member, roughened on the under face, adapted when laid upon a wall or the like to hold the loaded bracket without the aid of a special counter member; a sole integral with the back; and a stay extending from the lower part of the back to the sole and integral with these parts; substantially as described.

3. A rigid bracket for supporting scaffolding and the like, comprising, a back, having at the top an integral member adapted when laid upon a wall or the like to hold the loaded bracket without the aid of a special counter member; a sole integral with the back and projecting from it at some distance below the top; and a stay extending from the lower part of the back to the central portion of the sole and integral with these parts; substantially as described.

850,663. ICE-BOX. GEORGE E. LOVELL, Albany, Ga., assignor of one-half to Leopold H. Marks, Albany, Ga. Filed June 30, 1906. Serial No. 324,258.

Claim.—1. A refrigerator of the character described comprising a receptacle adapted to be partly filled with a refrigerant, a rotating carrier within said receptacle vertically arranged to turn upon a horizontal axis, said carrier being provided with radial pockets opening through the periphery thereof, and a trackway having a bottom portion disposed concentric to the axis of the carrier and sides diverging upwardly and outwardly from the carrier and terminating below the bottom portion thereof, said carrier being adapted to progressively force the bottles into the pockets and to permit progressive projection thereof in the descending and ascending movements of the pockets in the rotation of the wheel.

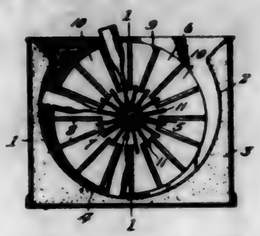

2. A refrigerator of the character described comprising a receptacle adapted to be partially filled with a refrigerant, said receptacle having an open top, a carrier arranged vertically within the receptacle to rotate upon a horizontal axis, said carrier being provided with a series of radial pockets opening through the periphery thereof, supporting-springs at the inner ends of the pockets for yieldingly holding the bottles therein, and a trackway having a bottom portion concentric with the axis of the carrier and diverging sides leading away from the carrier and terminating below the open top of the receptacle, said trackway being adapted to hold the bottles below the open top of the receptacle seated in the pockets, whereby as the pockets pass beyond the trackway across the open top of the receptacle the bottles will be projected by the springs.

850,664. DYNAMO-ELECTRIC MACHINE. CAMPBELL MACMILLAN, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed May 25, 1906. Serial No. 318,728.

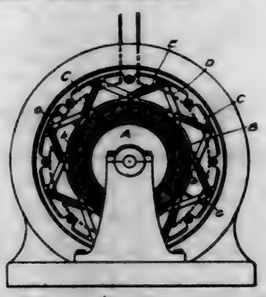

Claim.—1. An alternating-current unipolar machine, comprising a revolving armature, a stationary ring-shaped core adjacent to said armature, coils carried by said core provided with brushes engaging said armature so as to form therewith a closed winding around said core, and means for producing a circumferential flux in said core for inducing current in said closed winding and a flux perpendicular to the surface of the armature between said brushes.

2. An alternating-current unipolar machine, comprising a revolving armature, stationary coils provided with brushes engaging said armature so as to form therewith a closed secondary winding, and a primary winding arranged to induce current in said secondary winding, at least one of said windings including conductors extending circumferentially with respect to said armature so as to produce a flux perpendicular to the surface of said armature between said brushes.

3. An alternating-current unipolar machine, comprising a revolving armature, a stationary ring-shaped core adjacent to said armature, coils carried by said core provided with brushes engaging said armature so as to form therewith a closed secondary winding around said core, and a primary winding arranged to produce a circumferential flux in said core threading said secondary winding, one at least of said windings including conductors extending circumferentially with respect to said armature so as to produce a flux perpendicular to the surface of said armature between said brushes.

4. An alternating-current unipolar machine, comprising a revolving armature, conductors carried thereby, a stationary ring-shaped core adjacent to said conductors, coils carried by said core provided with brushes engaging said conductors so as to form therewith a closed winding around said core and means for producing a circumferential flux in said core for inducing current in said closed winding and a flux perpendicular to said conductors and their direction of motion.

5. An alternating-current unipolar machine, comprising a revolving armature, conductors carried thereby, a stationary ring-shaped core adjacent to said conductors, coils carried by said core provided with brushes engaging said conductors so as to form therewith a closed secondary winding around said core, and a primary winding arranged to produce a circumferential flux in said core threading said secondary winding, said windings being arranged to produce a flux perpendicular to said conductors and their direction of motion.

6. An alternating-current unipolar machine, comprising a revolving armature, conductors carried thereby, stationary coils provided with brushes engaging said conductors so as to form therewith a plurality of closed circuits, and means for producing a transformer flux threading said circuits so as to induce current therein and a motor flux perpendicular to said conductors and their direction of motion.

7. An alternating-current unipolar machine, comprising a revolving armature, conductors carried thereby, a stationary ring-shaped core adjacent to said conductors, coils carried by said core provided with brushes engaging said conductors so as to form therewith a closed secondary winding around said core, and a primary winding around said core, said primary and secondary winding being arranged at an angle to each other on said core so as to produce a component flux perpendicular to said conductors and their direction of motion.

8. An alternating-current unipolar machine, comprising a revolving armature, conductors carried thereby, stationary coils provided with brushes engaging said conductors so as to form therewith a closed secondary winding, and a primary winding arranged to induce current in said secondary winding, at least one of said windings including conductors extending circumferentially with respect to said armature so as to produce a flux perpendicular to said conductors and to their direction of motion.

9. An alternating-current unipolar machine, comprising a revolving drum-armature laminated in axial planes, conductors carried thereby, a stationary field-magnet laminated in axial planes, a ring-shaped core laminated in planes perpendicular to the axis carried by said field-magnet and surrounding the armature-conductors, coils carried by said core provided with brushes engaging said conductors so as to form therewith a closed secondary winding around said core, and means for producing a circumferential flux in said core for inducing a current in said secondary winding and a radial flux cutting said conductors.

10. An alternating-current unipolar machine, comprising a revolving drum-armature laminated in axial planes, conductors carried thereby, a stationary field-magnet laminated in axial planes, a ring-shaped core laminated in planes perpendicular to the axis carried by said field-magnet and surrounding the armature-conductors, coils carried by said core provided with brushes engaging said conductors so as to form therewith a closed secondary winding around said core, and a primary winding arranged to produce a circumferential flux in said core threading the secondary winding, at least one of said windings including conductors extending circumferentially so as to produce a radial flux cutting the armature-conductors.

850,665. NUT-LOCK. HOWARD E. MARSCH, Catasauqua, Pa. Filed Sept. 29, 1906. Serial No. 336,716.

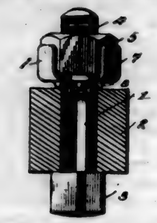

Claim.—A nut-lock comprising a washer provided with radial arms and a series of steel locking-pins fitted in apertures in said washer, said locking-pins each provided with a shank, the upper surface of which is flush with the upper surface of the washer, substantially as described.

850,666. TRAP. WILLIAM E. MAULL, St. Louis, Mo. Filed Feb. 13, 1906. Serial No. 300,908.

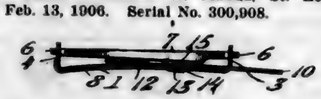

Claim.—A spring-jaw trap comprising a frame-plate having a central aperture therein, jaws pivotally connected to said plate, a jaw-actuating spring-plate connected with the frame-plate and having a central aperture of the same size as the aperture in the frame-plate and disposed coincidently thereto and a combined bait-holder and trigger connected to the frame-plate and disposed within the aperture in said frame-plate, and said trigger provided with a hook to engage the inner edge of the aperture in the spring-plate, substantially as described.

850,667. CISTERN-FORMER. CHARLES A. MITCHELL, Indianapolis, Ind. Filed Mar. 13, 1906. Serial No. 305,858.

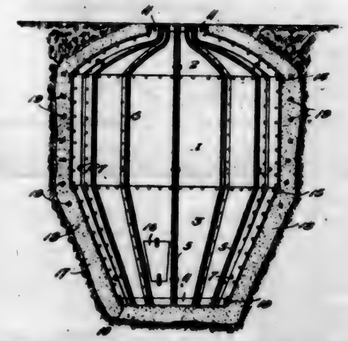

Claim.—1. A cistern-former embodying a cylindrical body part, a dome-shaped top part, and a frusto-conical lower part, each of said parts being composed of a circular series of detachably-connected sections or staves, the sections of one part embracing and overlapping the sections of the adjoining next lower part or parts and all of the parts being provided with abutting flanges formed with oblong holes, bolts having oblong heads removably fitted to the holes in said flanges, and braces connecting said flanges.

2. A cistern-former embodying a cylindrical body part, a dome-shaped top-part, and a frusto-conical bottom part, each of said parts being composed of a plurality of detachably-connected sections having abutting flanges extending

from top to bottom and having slots, means for securing said flanges together, and annular braces or hoops fitted to the slots in all of said flanges of the stave-sections of the top and bottom parts of the former, substantially as described.

3. A cistern-former embodying a circular series of sections or staves having inwardly-projecting flanges extending from top to bottom thereof and provided at the top and bottom of the former with open slots, means for securing said flanges together, and hoops removably fitted in all of the slots at the top and bottom of the former, substantially as and for the purpose described.

4. A cistern-former embodying a circular series of sections or staves provided with inwardly-projecting flanges extending from top to bottom thereof and having slots in their upper and lower ends, means for securing said flanges together, and hoops removably fitted in all of said slots and made extensible in size, substantially as and for the purpose set forth.

850,668. COMBINED RECORD-MAKING AND SELF-PLAYING ATTACHMENT FOR PIANOS. GOTTLIEB MOHR, Cedarville, W. Va. Filed Feb. 20, 1906. Serial No. 302,066.

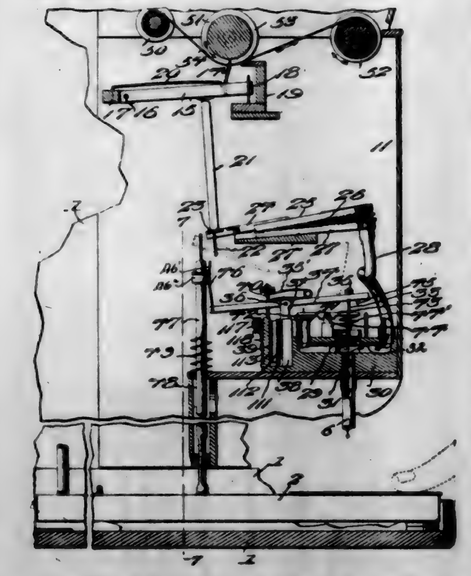

Claim.—1. In combination, a piano, a record-making mechanism including a series of recording devices and pneumatic operating mechanism therefor, elements controlled by the manual manipulation of the keys for governing said pneumatic mechanism, and a reproducing mechanism having pneumatic means for actuating said elements to mechanically manipulate the keys.

2. In combination, a piano, record-producing means controlled by the piano-action, reproducing means adapted to be controlled by the produced record for mechanically operating the piano-action, and means for automatically and simultaneously operating the record-producing means with the reproducing means for the production of a duplicate of the record.

3. In a combined record-making and self-playing appliance for pianos, record-making mechanism controlled by the piano-keys, reproducing mechanism adapted to be operated by a record produced by the record-making mechanism to effect the mechanical operation of the keys, and means for throwing the record-making mechanism into and out of operation independent of the reproducing mechanism.

4. In a combined record-making and self-playing attachment for pianos, record-making mechanism, self-playing mechanism, said mechanisms including controlling elements operative by the manual manipulation of the keys to control the record-making mechanism and by the action of the self-playing mechanism to mechanically actuate the keys, and means for throwing said controlling elements into and out of operative relation to the keys.

5. In a combined record-making and self-playing attachment for pianos, record-making mechanism, self-playing mechanism, pneumatically-controlled operating means for said mechanisms, and members controlling and controlled by said pneumatic operating means, said members being governed by the manual manipulation of the keys to effect the actuation of the pneumatic operating devices of the record-making mechanism and by the pneumatic devices of the self-playing mechanism to actuate the piano-keys.

6. In an apparatus of the character described, and in combination with the keys of a piano, a series of plungers resting upon the keys, recording mechanism including a series of recording devices, pneumatic means for actuating said recording devices, said means including governing-valves and pivoted operating-levers therefor, said levers having a loose pivotal connection with the plungers, spring means for depressing the plungers and operating the levers to open the valves upon the downward movement of the keys, the latter serving to maintain the plungers and levers in normal position against the pressure of the said spring means, and a reproducing mechanism including pneumatically-controlled devices connected with the plungers for forcibly depressing the same to mechanically manipulate the piano-keys.

7. In a combined record-making and self-playing attachment for pianos and in combination with the keys of the piano, a series of plungers, a series of recording devices, pneumatic means for actuating said devices, valves controlling said pneumatic means, pivotally-mounted levers controlling said valves, said levers being loosely connected with the plungers, springs for depressing the plungers and operating the levers to open the valves upon the manual depression of the keys, said plungers being normally held by the keys from movement so as to restrain the levers from movement, a reproducing mechanism including pneumatically-controlled actuating devices for mechanically depressing the plungers, and means adapted to be thrown into operation to hold the levers from movement when the plungers are depressed.

8. In an apparatus of the character described, a series of vertically-movable plungers, springs for depressing the same, pivotally-supported valve-actuating levers, loose controlling connections between the levers and plungers, whereby the levers are normally held in valve-closing position, springs for moving said levers to valve-opening position when the plungers are depressed, a series of recording devices, pneumatic means for operating the same including valves controlled by said levers, and means for vertically adjusting the valve-levers.

9. In an apparatus of the character described, a series of vertically-movable plungers, springs for depressing the same, pivotally-supported valve-actuating levers, loose controlling connections between the levers and plungers, whereby the levers are normally held in valve-closing position, springs for moving said levers to valve-opening position when the plungers are depressed, a series of recording devices, pneumatic actuating means therefor controlled by the valves, and means for vertically adjusting the levers.

10. In an apparatus of the character described, a set of sheet-perforating devices, a set of reproducing devices controlled in action by perforations in a music-sheet, pneumatic operating means for the sheet-perforating devices, a set of elements movable when the keys are manually manipulated to control said pneumatic operating means, and pneumatic means controlled by the action of the reproducing devices to actuate said elements to mechanically manipulate the keys.

11. In a record-making and self-playing attachment for pianos the combination of a recording mechanism including a series of recording devices, a series of plungers controlled by the keys, pneumatic means controlled by the movement of the plungers when the keys are manually manipulated to actuate the recording devices, a reproducing mechanism comprising a series of reproducing devices, pneumatic means controlled by said devices for actuating the plungers to mechanically manipulate the keys, sheet supporting and feeding devices associated with the recording and reproducing mechanisms, and means for operating said devices in unison.

12. In an apparatus of the character described, and in combination with the keys of a piano, a series of plungers associated with the keys, a pneumatic record-making mechanism having controlling-valves, levers controlling said valves, adjustable supports for the levers, means for simultaneously locking said supports in adjusted position, loose pivotal connections between the plungers and levers, and springs for operating said plungers and levers when the keys are manually depressed.

13. In an apparatus of the character described, and in combination with the keys of a piano, plungers controlled by said keys, a pneumatic record-making mechanism having controlling-valves, adjustable levers governing said valves, and connected with and controlled by the plungers, means for fixing the set of levers in adjusted position, springs for moving the plungers and levers when the keys are manually depressed, and means for holding the levers from movement against the action of their springs.

850,669. FURNITURE CONSTRUCTION. GEORGE W. MYERS, West Cheshire, Conn. Filed Oct. 27, 1906. Serial No. 340,840.

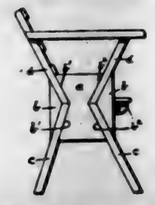

Claim.—1. A supporting member of furniture construction consisting of a body part, both the front and rear sides of which have oppositely inwardly inclining surfaces, and legs and uprights secured to said inclining surfaces.

2. A supporting member of furniture construction consisting of a body part, both the front and rear sides of which have oppositely inwardly inclining surfaces, legs and uprights secured to said inclining surfaces, and a brace for said legs and uprights.

3. A supporting member of furniture construction consisting of a body part, oppositely inwardly inclining surfaces on said body part, legs and uprights secured to said surfaces, and a brace for said legs and uprights.

4. A supporting member of furniture construction consisting of a body part, the sides of said body part being formed to V shape, legs and uprights secured to said V-shaped sides, and a brace for said legs and uprights.

5. A supporting member of furniture construction consisting of a body part, the front and rear sides of said body part being V-shaped, legs and uprights secured to said V-shaped sides, and a triangular block bracing said legs and uprights.

6. A supporting member of furniture construction consisting of a body part, the sides of which have oppositely inwardly inclining surfaces, abutting legs and uprights secured to said surfaces, and a brace for said legs and uprights.

850,670. MOLDING PROCESS. TIMOTHY W. MCCLENAHAN, York, Pa. Filed Apr. 5, 1906. Serial No. 310,068.

Claim.—1. The herein-described process of molding composition bodies, consisting in initially molding the composition in a moistened state and adding thereto a layer of a vehicle saturated with moisture.

2. The herein-described process of molding composition bodies consisting in initially forming a moistened layer of the composition and adding thereto a layer of sand saturated with moisture.

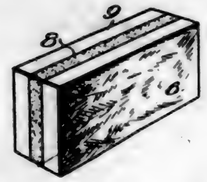

3. The process of producing a building-block consisting in shaping a layer of moistened composition, adding thereto a layer of sand saturated with moisture, and shaping a second layer of moistened composition upon the sand layer.

4. The process of producing a building-block consisting in molding a layer of composition in moistened state, imposing thereon a layer of material saturated with moisture, and disposing on said material a second layer of the composition in a moistened state.

5. The process of producing a building-block consisting in molding a layer of composition in moistened state, imposing thereon a layer of material saturated with moisture, and disposing on said material a second layer of the composition in a moistened state, and removing the article from the mold with all layers intact.

6. The process of producing a building-block consisting in molding a layer of composition in moistened state, disposing thereon a layer of liquid-saturated sand, and disposing on said sand a second layer of the composition in a moistened state.

850,671. ELECTRIC TOWER FOR DISPLAYING CARRIAGE-NUMBERS. JOHN H. MCDANIEL, St. Louis, Mo. Filed May 8, 1906. Serial No. 315,847.

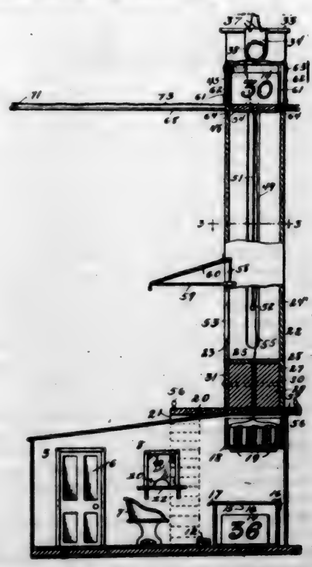

Claim.—A device for displaying carriage-signals comprising a vertical tower provided with number-openings adjacent the top thereof, a horizontal platform movable through said tower, a light on said platform, means for raising and lowering said platform, and a number-box provided with transparent digits and designed to be mounted upon said platform surrounding said light.

850,672. COVERING FOR HAY AND THE LIKE STACKS. OLDŘICH NOVÁK, Peterhof, near Netolic, Austria-Hungary. Filed Oct. 25, 1906. Serial No. 340,507.

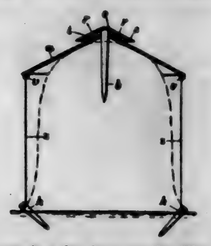

Claim.—A covering for hay or the like stacks, comprising a hood of weatherproofed material having an aperture at the top, a strengthened edge around said aperture, ribs upon said edge radiating from said aperture, a cap adapted to cover said aperture and rest on said ribs, a rod centrally secured to the under side of said cap, adapted to be projected through said aperture and into the stack, and means for holding down said covering against being carried away by the wind, substantially as set forth.

850,673. STATION-INDICATOR. TIMOTHY J. O'NEILL, New York, N. Y. Filed Apr. 7, 1906. Serial No. 310,538.

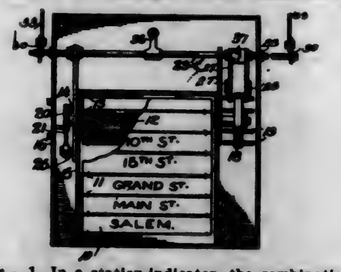

Claim.—1. In a station-indicator, the combination with a series of slats arranged as an endless band and carried within a case, of a shaft held in a normal position by means of equalising-springs, a cross-arm carried by the shaft, and normally vertical dogs hung on the cross-arm, adjustable arms carried by said shaft for actuating the same and means carrying the band and adapted to be operated by the dogs so that the said band is advanced one slat at a time.

2. In a station-indicator, the combination with a series of slats containing the names of stations, of a drum carrying the same, a ratchet-wheel connected with the drum, a brake with adjustable band on the drum-shaft, a shaft held in one position by equalising-springs and carrying gravity-dogs adapted to operate the ratchet-wheel and operating-arms carried at the ends of said shaft and adapted to be adjusted to accommodate various operative obstructions.

3. In a station-indicator, the combination with a journaled drum, a belt mounted thereon, and a disk secured to the drum and provided with pins; of a shaft, a cross-arm secured to the shaft, dogs secured to the cross-arm and disposed in operative relation to the pins, and means by which the shaft may be oscillated.

4. In a station-indicator, the combination with a journaled drum, a belt mounted thereon, and a disk secured to the drum and provided with pins; of a shaft, a cross-arm secured to the shaft, dogs pivotally secured to the cross-arm and having their free ends disposed in operative relation to the pins, and means by which the shaft may be oscillated.

5. In a station-indicator, the combination with a journaled drum, a belt mounted thereon, and a disk secured to the drum and provided with pins; of a shaft, a cross-arm secured to the shaft, dogs secured to the cross-arm and disposed in operative relation to the pins, and means by which the shaft may be oscillated, said means being adjustable.

6. In a station-indicator, the combination with a journaled drum, a belt mounted thereon, and a disk secured to the drum and provided with pins; of a shaft, a cross-arm secured to the shaft, means by which the cross-arm is normally held in horizontal position, dogs secured to the cross-arm and disposed in operative relation to the pins, and means by which the shaft may be oscillated.

7. In a station-indicator, the combination with a journaled drum, a belt mounted thereon, and a disk secured to the drum and provided with pins; of a shaft, a cross-arm secured to the shaft, means engaging the shaft and adapted to normally retain the cross-arm in horizontal position, dogs carried by the shaft and disposed in operative relation to the pins, and means by which the shaft may be oscillated.

8. In a station-indicator, the combination with a journaled drum, a belt mounted thereon, and a disk secured to the drum and provided with pins; of a shaft, a cross-arm secured to the shaft, an arm secured to the shaft, springs engaging the arm to normally retain the cross-arm in horizontal position, dogs carried by the cross-arm and disposed in operative relation to the pins, and means by which the shaft may be oscillated.

9. In a station-indicator, the combination with a journaled drum, a belt mounted thereon, and a disk secured to the drum and provided with pins; of a shaft, a cross-arm secured to the shaft, an arm secured to the shaft, springs engaging the arm to retain the cross-arm in horizontal position, dogs pivotally secured to the cross-arm and disposed in operative relation to the pins, and an adjustable means carried by the shaft and by which the shaft may be oscillated.

850,674. COMPRESSED-AIR SPRAYER. CLARENCE W. PARKS and AGNES E. PARKS, Lowell, Mich. Filed Sept. 9, 1905. Serial No. 277,759.

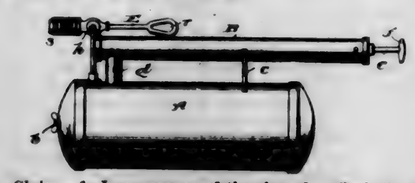

Claim.—1. In a sprayer of the class described, the combination with a tank and a pump supporting said tank and arranged to constitute a handhold, of a discharge-pipe extending from the tank contiguous to one end of the pump, and a valve device supported by the exterior end of the discharge-pipe and comprising relatively fixed and movable ported valve members, one of which is fitted directly to the pipe, a discharge-nozzle carried by one of the valve members and an operating-lever also carried by one of the valve members and arranged contiguous to the handhold portion of the pump.

2. In a sprayer of the class described, the combination with a tank and a pump supporting said tank and arranged to constitute a handhold, of a discharge-pipe extending from the tank alongside of one end of the pump and provided with a rigid laterally-deflected portion, and a valve device supported by the terminal of said laterally-deflected portion of the pipe and having a movable valve member provided with an operating-lever arranged contiguous to the handhold.

3. In a sprayer of the class described, the combination with a tank, and a pump supporting the tank and constituting a handhold therefor, of a discharge-pipe extending from the tank and provided with an exterior laterally-deflected portion, a ported valve-seat carried by the laterally-deflected pipe portion, and a rocking valve-body member mounted on said seat and carrying at one side a nozzle, and at the directly opposite side an operating-handle arranged contiguous to the handhold portion of the pump.

4. In a sprayer of the class described, the combination with a tank, and a pump supporting the tank, of a discharge-pipe extended from the tank alongside of one end of the pump, a fixed valve-plug arranged on the external extremity of said pipe, and a valve-sleeve journaled on said plug and provided at one side of its axis with a spray-nozzle, and at the directly opposite side of its axis with an operating-lever arranged at one side of the handhold portion of the pump.

5. In a sprayer of the class described, the combination with the tank and the pump, of a discharge-pipe extended from the tank contiguous to the handle portion of the pump, a taper valve-seat plug rigidly fitted to the external end of said pipe and provided with a discharge-aperture, and a rocking taper sleeve constituting a valve-body fulcrumed on said plug and carrying at one side a discharging-nozzle and at its directly opposite side provided with a handle located contiguous to the handhold portion of the pump.

850,675. PISTON-REPLACING DEVICE. CHARLES J. RICHARDSON, Baltimore, Md. Filed July 28, 1906. Serial No. 328,267.

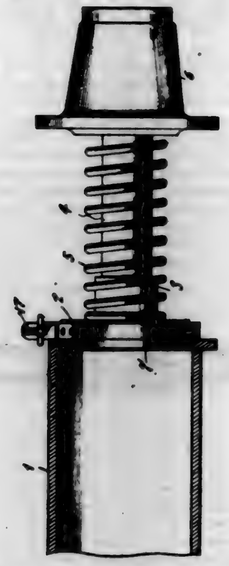

Claim.—1. A piston-replacing ring comprising a pair of hingedly-connected sections, and means for locking the sections in active position, said ring being provided with a forwardly-projecting marginal flange designed to enter the end of a cylinder.

2. A piston-replacing device comprising a band adaptable to embrace the piston-head and consisting of a pair of hingedly-connected sections, and means for locking the sections in active position, said band being provided with a forwardly-projecting marginal flange designed to enter the end of the cylinder and with a stop-shoulder for limiting the entrance of the flange.

850,676. BRICK-MACHINE. DAVID P. SANDERS, Reading, Pa. Filed Feb. 20, 1907. Serial No. 358,432.

Claim.—1. In a brick-machine, a compression-chamber having fixed side walls and movable top and bottom walls, a rotatable power-shaft movable to and from said compression-chamber, connections between the shaft and the top wall of the compression-chamber participating in the movement of the shaft with relation to its axis but not participating in its rotative movement, cams on the shaft and rotatable therewith, and connections from the cams to the bottom wall of the compression-chamber for moving the said bottom wall independent of the movement of the shaft toward and from said compression-chamber.

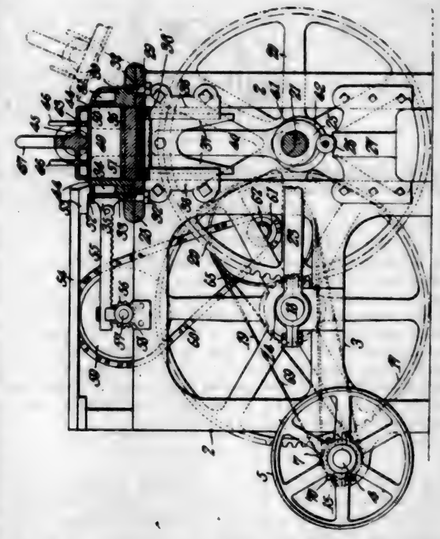

2. In a brick-machine, a shaft having cams engaging fixed supports to move said shaft laterally, other cams upon the shaft, a follower engaged by said other cams, a compression-chamber having fixed side walls and entered by said follower, and a cap for said compression-chamber carried by said shaft at a fixed distance therefrom.

3. In a brick-machine, a shaft having cams thereon engaging fixed supports, a compression-chamber having fixed side walls, a cap for said chamber, link connections between the shaft and said cap, a follower forming the bottom of said compression-chamber, other cams upon the shaft, and connections between the follower and said cams for moving the follower with relation to the shaft.

4. In a brick-machine, a power-shaft, a pinion thereon, a clutch for connecting the pinion to the power-shaft, a gear-wheel on another shaft in the machine meshing with said pinion, another gear-wheel meshing with the pinion on the second shaft, a third shaft supporting the second gear-wheel, link connections between the second and third shafts whereby the third shaft may be moved about the second shaft's axis, a compression-chamber having fixed side walls, a cap for the compression-chamber movable with the third shaft at a fixed distance therefrom, a follower constituting the bottom of the compression-chamber, and cams on the third shaft for operating the follower.

5. In a brick-machine, a compression-chamber, division-plates movable into and out of the same, and means for operating said division-plates comprising a rack for each division-plate, a series of pinions engaging the racks, driving means for the pinions, a power-shaft, and a two-way clutch mechanism between the power-shaft and the pinion drive-shaft.

6. In a brick-machine, a compression-chamber, division-plates therefor, racks connected to said division-plates, pinions controlling said racks and mounted on a common drive-shaft, a power-shaft, and a clutch device between the power-shaft and the pinion-shaft comprising a friction member in constant connection with the pinion-shaft and two friction members movable in opposite directions and arranged for engagement with the common member of the friction device.

850,677. KETTLE-COVER. ABRAHAM SEYS, Grand Rapids, Mich. Filed Mar. 9, 1906. Serial No. 305,156.

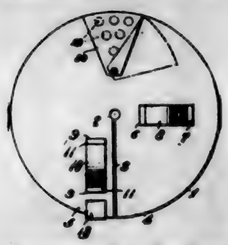

Claim.—A contractible cover for kettles and the like comprising a disk having a slit extending thereinto from its periphery, said slit terminating in an enlarged central aperture, a knob, a stem projecting therefrom and through the aperture, a frusto-conical enlargement upon the stem and overlapping the wall of the aperture to prevent the withdrawal of the stem therefrom, a slit within the disk near the periphery thereof, a guard-strip extending through the slit and bearing upon opposite faces of the disk, one end of said strip overlapping the edge of the disk and extending thereunder to constitute a disk-guide, said disk also having slots at opposite sides of the slit, handle-strips bearing upon the disk and having angular ends projecting through and fitting snugly within the slots, said ends bearing upon the opposite face of the disk.

850,678. ADJUSTABLE WALL AND VENTILATOR FOR STOCK-CARS. JOSEPH SHAW, Fort Dodge, Iowa, assignor of one-half to S. T. Meservey, Fort Dodge, Iowa. Filed Jan. 9, 1905. Renewed Oct. 15, 1906. Serial No. 339,104.

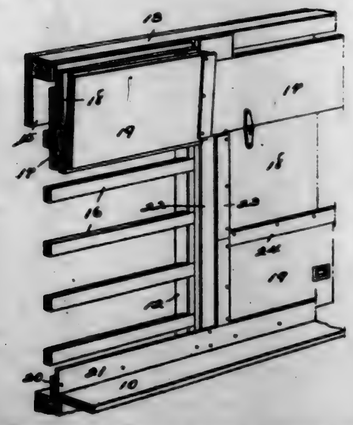

Claim.—1. In a stock-car having a skeleton side wall composed of uprights and horizontal bars, a board fixed to the inside faces of the uprights of the side wall and covers composed of two parts, an upper and a lower one, hinged together at their edges and the upper one hinged to the lower edge of the fixed board for the purposes stated.

2. In a stock-car having a skeleton side wall composed of uprights and horizontal bars, a board fixed to the inside faces of the uprights of the wall and covers composed of two parts, an upper and a lower one, hinged together at their edges and the upper one hinged to the lower edge of the fixed board and means for detachably fastening the lower edge of the cover to the skeleton wall, for the purposes stated.

3. In a stock-car having a skeleton wall composed of uprights and horizontal bars, a board fixed to the inside faces of the uprights of the wall, a foldable cover composed of two parts, an upper and a lower one, hinged together at their edges and the cover hinged to the lower edge of the fixed board, a strip of wood fixed to the uprights in a horizontal position at their lower ends, a strip of metal fixed to the strip of wood to project above the strip of wood for detachably fastening the lower edge of the hinged cover to the skeleton wall and a strip of wood fixed to the uprights in a vertical position, for the purposes stated.

4. In a stock-car having a skeleton wall composed of uprights and horizontal bars, a board fixed to the inside faces of the uprights of the wall, a foldable cover composed of two parts, an upper and a lower one, hinged to the lower edge of the fixed board, a strip of wood fixed to the uprights, a strip of metal fixed to the strip of wood to project above the strip of wood for detachably fastening the lower edge of the hinged cover to the skeleton wall, strips of wood fixed to the inside faces of the uprights and strips of metal fixed to the ends of the inside faces of the hinged covers to overlie the wooden strips on the uprights, for the purposes stated.

5. In a stock-car having a skeleton wall composed of uprights and horizontal bars, a board fixed to the inside faces of the uprights of the wall, a foldable cover composed of two parts, an upper and a lower one, hinged together and the upper one hinged to the lower edge of the fixed board, a strip of wood fixed to the uprights and a strip of metal fixed to the strip of wood to project above the strip of wood for detachably fastening the lower edge of the hinged cover to the skeleton wall, strips of wood fixed to the inside faces of the uprights, strips of metal fixed to the ends of the inside faces of the hinged cover to overlie the wooden strips on the uprights and strips of metal fixed to the inside faces of the lower edges of the upper part of the hinged cover to overlie the inside faces of the top edges of the lower part, for the purposes stated.

850,679. COMPRESSION-COCK. DAVID SMITH, San Francisco, Cal. Filed Dec. 19, 1905. Serial No. 292,502.

Claim.—1. An improved compression-cock comprising a casing having a fluid-passage through it, said casing having a stuffing-box, a shaft passing through said stuffing-box, having its inner end provided with a crank or eccentric, a rod arranged at right angles to the shaft and having one end connected to said crank or eccentric, a valve-stem having a flat inner portion pivotally connected to the other end of said rod, said stem having a width about equal to the portion of the fluid-passage in which it operates whereby said stem is guided in its movements by the inner wall of said passage, said stem having, also, a threaded portion a cup fitted upon the threaded portion of the stem and having a packing adapted to bear against the inlet end wall of the fluid-passage, and means for securing the cup to the stem.

2. An improved compression-cock consisting of a casing having a fluid-passage through it, said casing having a tube fitted within its inlet end and projecting beyond the end of the casing to form a narrow-edge valve-seat, a shaft turnably mounted in the casing and having a cranked or eccentric inner end, a rod connecting with the cranked end of the shaft, a valve-stem having a relatively thin flat portion pivotally connected to the rod said flat portion having a width about equal to the inner diameter of said tube whereby the stem is guided in its movements, said stem having its opposite end threaded, a cup fitted to the threaded end of the stem and having a packing to engage the narrow-edge valve-seat formed on the end of said tube, and a nut on the threaded end of the stem and bearing against said cup.

850,680. PROCESS OF PURIFYING GAS. GEORGE G. SMITH, Florence, Italy. Filed Dec. 17, 1900. Serial No. 40,127. Divided and this application filed Dec. 12, 1901. Serial No. 85,545.

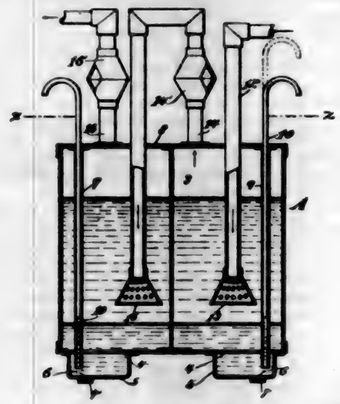

Claim.—1. The process which consists in rapidly passing gas from a generator in small streams through liquid vaseline, thereby throwing down water from the gas and mixing the gas and vaseline to depurate the gas, and removing the water thrown down from beneath the vaseline.

2. The process which consists in passing acetylene gas from a generator through liquid vaseline, thereby throwing down water carried by the gas and collecting the water below such vaseline, automatically ejecting the water therefrom, and then passing the same gas through other liquid vaseline, throwing down water carried by the gas, collecting the water below such vaseline, and automatically ejecting the water.

3. The process which consists in rapidly passing gas from a generator in small streams through liquid vaseline, thereby throwing down water from the gas and mixing the gas and vaseline to depurate the gas, and removing the water thrown down from beneath the vaseline, then passing the same gas in small streams through other liquid vaseline, throwing down water from the gas and mixing the gas and vaseline to further depurate the gas, and removing the water thrown down from below the vaseline.

4. The process which consists in rapidly passing gas in small streams through two or more vessels containing liquid vaseline, thereby throwing down the water from the gas and mixing the gas and vaseline to depurate the gas.

5. The process of depurating acetylene gas, which consists in passing the gas rapidly in small streams through two or more chambers containing liquid vaseline and permitting the gas-bubbles to expand and break in the passages from the respective chambers.

6. The process which consists in rapidly passing gas from a generator in small streams through liquid vaseline, thereby throwing down the water from the gas and mixing the gas and vaseline to depurate the gas, and removing the water from below the vaseline.

7. The process of depurating acetylene gas which consists in passing the gas rapidly in small streams through liquid vaseline, drawing off the gas, and expanding the bubbles or film rising therewith and breaking the bubbles or film.

8. The process of purifying acetylene gas, which consists in passing the gas rapidly into a body of vaseline; then dividing out the impurities from the gas and liberating the gas from the vaseline, precipitating the impurities, and then ejecting the impurities by the pressure of the gas.

9. The process of drying acetylene gas received in a chamber intermittently from the source of generation thereof, which consists in mixing the gas and the moisture carried thereby with vaseline, then condensing and precipitating the moisture, then causing the gas to separate from the vaseline, then leading the gas from the chamber, then expanding the bubbles carried thereby, then breaking the bubbles and returning the vaseline from the bubbles to the chamber, and removing the precipitate from beneath the vaseline.

10. The process of drying acetylene gas in a chamber, which consists in mixing the gas and the moisture carried thereby with liquid vaseline, then condensing and precipitating the moisture, then causing the gas to separate from the vaseline, then leading the gas from the chamber, then expanding the bubbles carried by the gas, then breaking the bubbles and returning the vaseline from the bubbles to the chamber, and removing the precipitate from beneath the vaseline by pressure of the gas.

850,681. FIRE AND TEMPERATURE ALARM OR INDICATOR. GEORGE L. SMITH, Aberdeen, Scotland. Filed July 23, 1906. Serial No. 327,286.

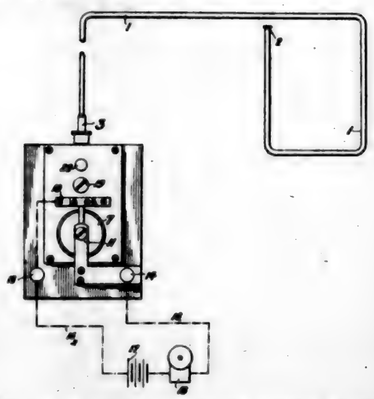

Claim.—1. In fire and temperature alarms; the combination of a metal tube of small diameter having a correspondingly small bore containing air and closed at one end a closed chamber with the interior of which the open end of the tube communicates, said tube having a vent for permitting air to pass slowly to and from the bore of the tube upon a gradual and ordinary variation of temperature, and means for regulating said vent, two electrical contacts, means operated by a sudden and unusual increase of pneumatic pressure in the tube and chamber for mechanically closing said contacts, an electrical conductor having its ends respectively electrically connected to said contacts, and an electric battery and an alarm device located in the electric circuit composed by the conductor aforesaid substantially as set forth.

2. In fire and temperature alarms; the combination of a metal tube of small diameter having a correspondingly small bore containing air, means for closing one end of said tube, a plate having a passage formed therein and having an air-vent communicating with said passage, means for adjustably regulating the passage of air through said vent, said plate having a test-aperture communicating with said passage for testing the action of the alarm by air-pressure admitted through said test-aperture, and a screw-plug for closing the test-aperture, means for connecting the open end of said metal tube to one end of said passage in said plate, a chamber capable of expansion by interior air-pressure and having a bore communicating with the passage in the plate aforesaid, a movable electric contact carried upon said expansible chamber, a stationary electric contact, means for supporting the latter contact above the movable contact, an electric conductor having its ends respectively electrically connected to said contacts, and an electric battery and an alarm device located in the electric circuit composed by said conductor, substantially as set forth.

850,682. POTATO-DIGGER. JOSEPH SMITH, Elyria, Ohio, assignor of one-half to George T. Biggs, Elyria, Ohio. Filed Mar. 17, 1906. Serial No. 306,640.

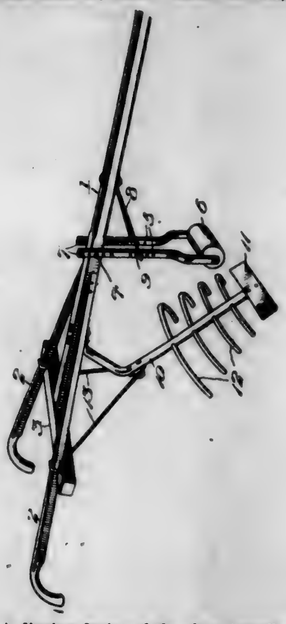

Claim.—A digging device of the class described comprising a frame, a downwardly and forwardly inclined standard connected therewith, a blade carried at the lower end of the standard for opening the soil, and a plurality of vertically-spaced tines extended transversely of the standard above the blade, said tines being of relatively decreasing lengths from the uppermost to the lowermost and curved downwardly and rearwardly throughout their entire length from end to end in planes perpendicular to the longitudinal axis of the standard.

850,683. LIGHTER OR BARGE. FRANCIS A. M. SMULDERS, Rotterdam, Netherlands. Filed Feb. 5, 1907. Serial No. 355,800.

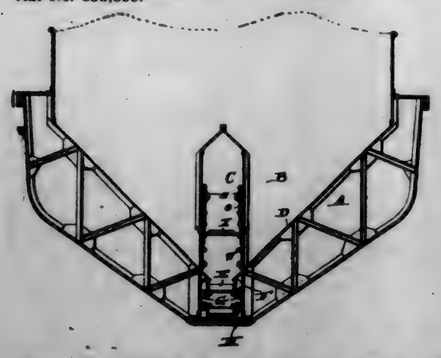

Claim.—1. A barge or the like, provided with a hopper having a tunnel extending therethrough; an endless conveyer mounted in the lower portion of the tunnel below openings formed in the sides thereof through which material from the hopper may be discharged; a series of doors for controlling said openings; a platform extending through the tunnel above the openings; and means located in the upper portion of the tunnel at a point above the platform for controlling the opening and closing of said doors.

2. A barge or the like, provided with a hopper having a tunnel extending throughout the length thereof, the lower portion of the tunnel being at a point below the bottom of the hopper; an endless conveyer mounted in the lower portion of the tunnel and adapted and designed to receive the material discharged through openings formed in the side walls of the tunnel at a point adjacent to the bottom of the hopper; a platform extending through the tunnel at a point out of line with the discharge-openings; a series of doors for controlling said openings; and means located in the upper portion of the tunnel and above the platform for opening and closing the doors.

3. A barge or the like provided with a hopper having inclined floors discharging toward a centrally-disposed tunnel extending throughout the length of the hopper; an endless conveyer mounted in the lower portion of the tunnel, the upper stretch of the conveyer standing adjacent to the inwardly-projecting portions of the inclined floors of the hopper; a series of doors for controlling openings formed in the side walls of the tunnel adjacent to the bottom of the hopper; a platform extending throughout the length of the tunnel; and means for opening and closing the doors, said means being located within the tunnel at a point above the platform.

4. A barge or the like, provided with a hopper; a tunnel extending through the hopper; an endless conveyer mounted in the lower portion of the tunnel and adapted to receive the material discharged from the hopper through openings formed in the side walls of the tunnel; a series of doors for controlling said openings, each of said doors being provided with a rack-bar extending upwardly therefrom; a pair of lugs extending inwardly from the side walls of the tunnel adjacent to each rack-bar; a cross-bar secured to said lugs; and a locking dog or detent arranged to coact with the rack-bar and to hold the same in its adjusted position.

5. A barge or the like provided with a hopper; a tunnel extending through the hopper; an endless conveyer mounted in the lower portion of the tunnel and adapted to receive the material discharged from the hopper through openings formed in the side walls of the tunnel; a door for each of said openings; rollers bearing upon the inner faces of said doors and serving to guide and sustain the same; a rack-bar extending upwardly from each door; means for engaging and moving said rack-bar; and a locking dog or detent for holding the rack-bar in its adjusted position.

850,684. ENDLESS CONVEYER. FRANCIS A. M. SMULDERS, Rotterdam, Netherlands. Filed Feb. 5, 1907. Serial No. 355,900.

Claim.—1. In combination with an endless chain or belt, a series of buckets mounted thereon, each bucket comprising a series of sections secured to the chain or belt, said sections having overlapping end walls provided with undercut beveled portions.

2. A conveyer comprising a pair of endless chains, each chain being composed of a series of pivotally-connected links; a floor-piece secured to each pair of oppositely-disposed links, the forward edge of each floor-piece being curved downward and projecting under the straight edge of the adjacent floor-piece; a vertically-disposed wall extending upwardly from each alternate floor-piece; and a wing or end wall projecting upward from each end of each floor-piece, the wings being undercut at their lower portions and provided with beveled faces, substantially as and for the purpose described.

3. An endless conveyer comprising a chain; a series of buckets mounted thereon; a track; rolls for supporting said chain upon the track; and a clearer secured to the chain and movable in line with the track, said clearer serving to remove extraneous material therefrom.

4. In a conveyer, the combination of an endless chain; a series of buckets carried thereby; a supporting-track; rolls

mounted upon the chain and resting upon the track; and a clearer secured to the chain and resting upon the track, said clearer being provided with an inclined deflecting-face, substantially as described.

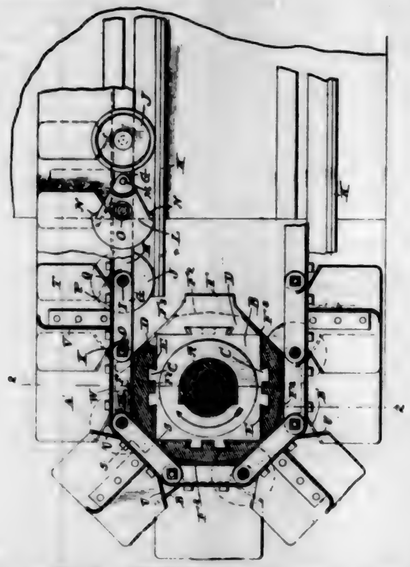

5. An endless conveyer comprising a chain; a series of buckets mounted thereon; a series of rolls for supporting said chain; tracks located in the line of the upper and lower stretches of said chain; and a clearer secured to the chain, said clearer being provided with inclined faces at the upper and lower sides thereof, whereby it will serve to remove extraneous material from both the upper and lower tracks.

6. An endless conveyer comprising a chain; a series of buckets carried thereby; rolls for supporting said chain; upper and lower tracks located in line with the upper and lower stretches of the chain; and a clearer carried by the chain, said clearer being of a height equal to the diameter of the rolls and provided with faces adapted to deflect material from the tracks, substantially as described.

7. In combination with an endless conveyer, and the supporting tracks or rails therefor; a clearer for the supporting rails or tracks carried by the conveyer.

8. In combination with a driving-shaft; a series of toothed members secured thereto, the face between the oppositely-disposed teeth being inclined outwardly to cause the discharge of any extraneous matter, substantially as described.

9. In combination with a driving-shaft; a series of members secured thereto, each member being provided with a pair of outwardly-extending teeth spaced apart in line with the shaft; and inclined faces formed between the teeth, to cause the discharge of extraneous matter from between the teeth.

10. In combination with a driving-shaft, a series of members secured thereto, each member being provided with a pair of outwardly-extending teeth, the face of the member between the teeth being inclined downwardly from the center toward each side, and the outer edge of the body at each side of the teeth being beveled or inclined so as to prevent accumulation of any matter thereon.

11. In combination with a driving-shaft, a block or casting secured thereto, said block being polygonal in cross-section and provided with a pair of undercut or beveled faces; lugs extending outwardly from each face thereof; a toothed member arranged to be secured upon each face of the block, each of said members being provided on its under surface with bevel-faced recesses adapted to receive the corresponding lugs; and keys or wedges for securing the lugs in the recesses.

850,685. MACHINE FOR MAKING FEATHER DUSTERS AND BRUSHES. JAMES E. SNEVELY, San Francisco, Cal. Filed Jan. 11, 1906. Serial No. 295,599.

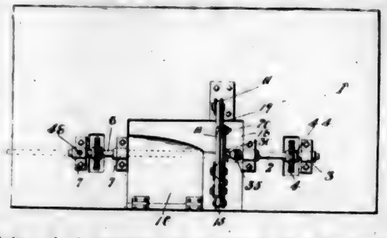

Claim.—1. A machine for making feather dusters and the like, having means for rotating the core, means for guiding a metallic ribbon so that it will coil about the core as the core rotates, and a guide-shield on which the stock may be guided to position in the coils of the ribbon, all combined.

2. In a machine for coiling feather dusters, the combination of mechanism for rotating the brush-core, means for directing feathers toward the core, and means for crimping the ribbon and guiding it to the core.

3. In a machine for forming feather dusters, the combination of means for rotating the core, and means for crimping a metallic ribbon and guiding it to said core.

4. In a machine for forming feather dusters, the combination of means for holding and rotating the core, means for crimping a metallic ribbon and guiding it to the core, and a guide-plate over which the stock is fed to the coils.

5. In a machine for making feather dusters, a clamping-spindle for holding the core, means for rotating the same, means for guiding a metallic ribbon to said core, and means for guiding a wire to said core.

6. In a machine for making brushes, means for rotating the core of the brush and thereby coiling the binding device thereon, means for directing brush stock to the core, and means for bending over the ends of the stock while the core is in rotation, all combined.

7. In a machine for making feather dusters, the combination of core-rotating mechanism, a feather-guide, and adjustable means for guiding a metallic ribbon to the core when rotated by said mechanism.

8. In a machine for making feather dusters and the like, the combination of core-rotating mechanism, means for guiding the binding means to the core as the same rotates so as to coil around said core, and a quill-turner supported on the machine so as to move back as the coil increases in size.

9. In a feather-duster machine, a rotating spindle and means for clamping a core therein, a tail-stock in line with the core when so clamped and means for retiring said tail-stock, and a movable guide-shield covering said tail-stock.

10. In a feather-duster machine, a rotating spindle and means for holding a core therein, a tail-stock in line with said spindle, and a feed-plate movably connected to the frame so as to retire as the coil increases.

850,686. RECEPTACLE. WILLIAM SOWERBY, Indiana, Pa. Filed Dec. 5, 1905. Serial No. 290,472.

Claim.—In a device of the class described, a vessel having a lateral flange around its rim, a seat bearing upon said flange and extending beyond the same, a cover hingedly connected to said seat, a resilient clip connected to said seat at the side opposite to the hinge of said cover and yieldably engaging the adjacent portion of said flange, a clip of resilient material connected to said cover at the side adjacent to the hinge thereof and adapted to yieldably engage said flange, and a support for said lid when in open

position and connected to said seat by the same means by which the last-mentioned clip is secured thereto.

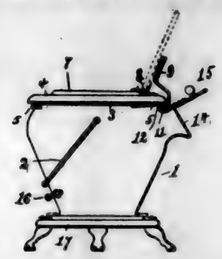

850,687. METER. WILLIAM STANLEY, Great Barrington, Mass., assignor to General Electric Company, a Corporation of New York. Filed Nov. 10, 1904. Serial No. 232,123.

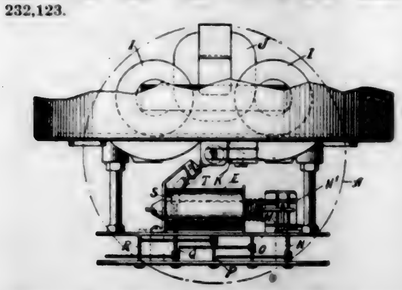

Claim.—1. In a meter, the combination of energizing-coils connected in permanently-closed circuits, a body adapted to be rotated thereby continuously in the same direction, a registering-train, an independent electromagnetic device located in a shunt-circuit and in series with a resistance and adapted when energized and deënergized to operate said train, and means coöperating with said body for periodically short-circuiting said electromagnetic device.

2. In a meter, the combination of shunt-energizing coils and series-energizing coils, a body adapted to be rotated thereby continuously in the same direction, a registering-train, an independent electromagnetic device in series with said shunt-coils and operating said train, and means coöperating with said body for periodically short-circuiting said electromagnetic device.

3. In a meter, the combination of shunt-energizing coils and series-energizing coils, a body adapted to be rotated thereby, a registering-train, an independent electromagnetic device operating said train consisting of a solenoid having a reciprocating core and a pawl engaging said train, said solenoid being in series with said shunt-coils, and means coöperating with said body for short-circuiting said solenoid so as to energize and deënergize the same.

4. In a meter, the combination of shunt-energizing coils and series-energizing coils, a body adapted to be rotated thereby, a registering-train, an independent electromagnet device operating said train and consisting of a solenoid having a reciprocating core and a pawl engaging said train, means coöperating with said body for controlling the circuit of said electromagnet device so as to energize and deënergize the same, and a revolving bearing geared to said train and actuated by said solenoid.

850,688. RAILWAY-CROSSING. GETTIS E. STARNER, Dunkirk, Ohio. Filed Aug. 15, 1906. Serial No. 330,756.

Claim.—1. In a railway-crossing, line-rails and intersecting rails having notches adjacent to the points of intersection, filling members pivoted to the rails and having cam-shaped heads and extended filling portions adapted to enter the notches in the rails, a rock-shaft having oppositely-extended arms, and suitably-guided flexible connections between said arms and the cam-heads of the filling members.

2. In a railway-crossing the line-rails and crossing-rails having notches adjacent to the points of intersection, angle-plates secured at the corners or intersecting portions of the rails and having wings spaced from the webs of the latter, and filling members pivoted between the wings of the angle-plates and the rails and adapted to engage the notches in the latter.

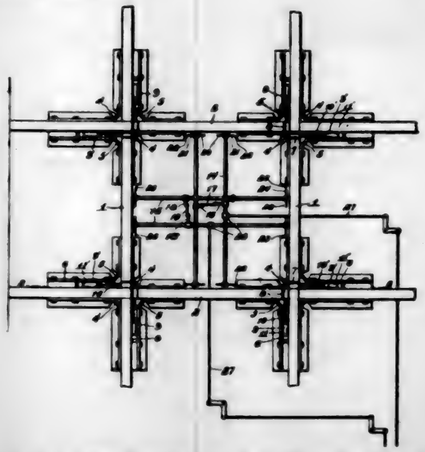

3. In a railway-crossing the line-rails and intersecting rails having notches adjacent to the points of intersection, angle-plates secured at the corners and having wings spaced from the webs of the rails, filling members pivoted between the wings and the rails and havng cam-shaped heads and extended filling portions adapted to engage the notches in the rails, and supporting-blocks secured between the wings of the angle-plates and the rails and having inclined faces adapted to support the filling members.

4. In a railway-crossing the line-rails and intersecting rails having notches adjacent to the points of intersection, angle-plates secured at the corners and having wings spaced from the rails, filling members pivoted between the wings and the rails and having cam-shaped heads and extended filling portions adapted to engage the notches in the rails, and suitably-connected pairs of rock-shafts having oppositely-extending arms and suitably-guided flexible members connecting said arms with the upper and under sides of the cam-heads of the filling members.

5. In a railway-crossing the line-rails and intersecting rails having notches adjacent to the points of intersection, angle-plates secured at the corners and having wings spaced from the rails, filling members pivoted between the wings and the rails and having cam-shaped heads and extended filling portions adapted to engage the notches in the rails, rock-shafts having oppositely-extending arms, and suitably-guided flexible members connecting said arms with the cam-heads of the filling members.

850,689. PROCESS FOR MANUFACTURING ARTIFICIAL STONE. JACOB STAUDT, Bonn, Germany. Filed Aug. 6, 1906. Serial No. 329,469.

Claim.—1. The process of manufacturing artificial stone which consists in mixing a resinous substance, having catalytic properties with an oily or fatty binding agent and a pulverized filling substance in quantity sufficient to produce a moist and porous mixture, exposing the mixture as a thin layer to the action of the air until solidification occurs, then pressing the solidified powder into objects of the required shape and subjecting them to a temperature not exceeding 200° centigrade.

2. The process of manufacturing artificial stone, which consists in mixing a dissolved resinous substance, having catalytic properties with an oily or fatty binding agent and a pulverized filling substance in quantity sufficient to produce a moist and porous mixture, exposing the mixture as a thin layer to the action of the air and at an elevated temperature of 100° to 130° centigrade until solidification occurs, then pressing the solidified powder into objects of the required shape and subjecting them to a temperature not exceeding 200° centigrade.

3. The process of manufacturing artificial stone, which consists in dissolving a resinous substance, having catalytic properties in linseed-oil, adding a pulverized filling substance in quantity sufficient to produce a moist and porous mixture, exposing the mixture as a thin layer to the action of the air until solidification of the required shape and subjecting them to a temperature not exceeding 200° centigrade.

4. The process of manufacturing artificial stone, which consists in mixing a resinous substance, having catalytic properties with linseed-oil and ground quartz-sand and pulverized clay in quantity sufficient to produce a moist and porous mixture exposing the mixture as a thin layer to the action of the air at an elevated temperature of 100° to 130° centigrade, during fifteen to twenty minutes, then pressing the solidified powder into objects of the required shape and hardening them at a temperature not exceeding 200° centigrade.

850,690. MAIL-BAG-DELIVERY APPARATUS. PETER H. SUDBROCK, New Melle, Mo. Filed Feb. 9, 1907. Serial No. 356,654.

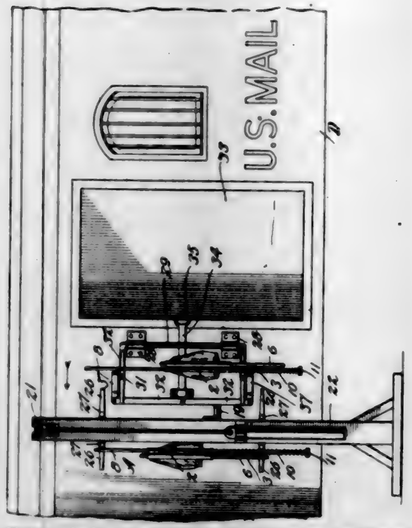

Claim.—1. In apparatus for transferring mail-bags, a supporting frame or yoke, a bag-holding frame having sleeves slidably engaging the side members of said yoke, and springs upon said side members engaging the sleeves to force the bag-holding frame in the direction of the cross-bar of the yoke.

2. A supporting frame or yoke having a cross-bar provided with rings or hoops in combination with a bag-holding frame slidably engaging the side members of the supporting frame or yoke, said bag-holding frame having a cross-bar provided with rings or hoops.

3. A supporting frame or yoke having a cross-bar provided with rings or hoops in combination with a bag-holding frame slidably engaging the side members of the frame or yoke, said bag-holding frame having a cross-bar provided with rings or hoops, and springs upon the side members of the yoke or frame for forcing the bag-holding frame in the direction of the cross-bar of said yoke.

4. A supporting frame or yoke having a cross-bar provided with a large and a small ring or hoop, in combination with a bag-holding frame slidably mounted upon the side members of the supporting yoke or frame, said bag-holding frame being provided with a large and a small ring or hoop formed upon the cross-bar which is distant from the cross-bar of the yoke, and springs upon the side members of the frame or yoke whereby the bag-holding frame is forced in the direction of the cross-bar of the frame or yoke.

5. A supporting frame or yoke having a cross-bar provided with rings or hoops in combination with a bag-holding frame having sleeves slidably engaging the side members of the frame or yoke, said bag-holding frame being provided with rings or hoops formed upon the cross-bar which is distant from the cross-bar of the yoke; bag-supporting hooks connected with the bag-supporting frame; and suitably-arranged springs for forcing the bag-holding frame in the direction of the cross-bar of the supporting frame or yoke.

6. In mail-bag-transferring apparatus, a bag-supporting device comprising slidably-connected spring-actuated frames having rings or hoops connected therewith in combination with a supporting device comprising a rock-shaft having arms provided with cross-bars adapted to engage the rings or hoops of the supporting device.

7. In mail-bag-transferring apparatus, a bag-holding device comprising slidably-connected spring-actuated frames each provided with a pair of rings or hoops of different dimensions, in combination with supporting-rings consisting of a rock-shaft having arms provided with cross-bars adapted to engage the rings or hoops of the holding-device, and means for locking the rock-shaft against oscillation.

8. In mail-bag-transferring apparatus, a bag-holding device comprising slidably-connected spring-actuated frames provided with rings or hoops of different dimensions, in combination with a supporting device including a rock-shaft supported for slidable movement longitudinally of its axis, means for counterbalancing said rock-shaft, arms connected with the rock-shaft and having cross-bars adapted to engage the rings or hoops of the bag-holding device, and means for locking the rock-shaft in different positions against oscillation.

9. In mail-bag-transferring apparatus, a crane including an upright having a rock-shaft provided with suitably-spaced radially-extending arms having cross-bars, means for securing the rock-shaft in various positions against oscillation, a rock-shaft supported upon a mail-car adjacent to the door of said car and having suitably-spaced arms provided with cross-bars, means for locking said rock-shaft against oscillation, and a bag-holding device comprising slidably-connected spring-actuated frames each provided with rings or hoops of different dimensions, one of said frames being also provided with bag-holding hooks.

850,691. ELECTRICAL INDICATOR. JESSE SUMMERS and JOHN J. BERRY, Indianapolis, Ind., assignors to The Indianapolis Watchman Clock Company, Indianapolis, Ind., a Corporation of Indiana. Filed Apr. 5, 1906. Serial No. 310,065.

Claim.—1. In an electrical indicator, a grounded receiving-station with a plurality of indicators, a grounded call-station, a pair of lines connecting said stations and connected with each other at the receiving-station, means at the receiving-station connected with each line for controlling the operation of an indicator, and a single means at the call-station for grounding said lines that automatically ground them a predetermined number of times but grounds only one wire at a time.

2. In an electrical indicator, a grounded receiving-station with a plurality of indicators, a grounded call-station, a pair of lines connecting said station, means at the receiving-station connected with each line for controlling the operation of an indicator, means at the call-station for normally connecting said lines, manually-actuated means that

temporarily disconnects said lines, and means at the call-station for grounding said lines during the operation of said disconnecting means that automatically grounds them a predetermined number of times but grounds only one wire at a time.

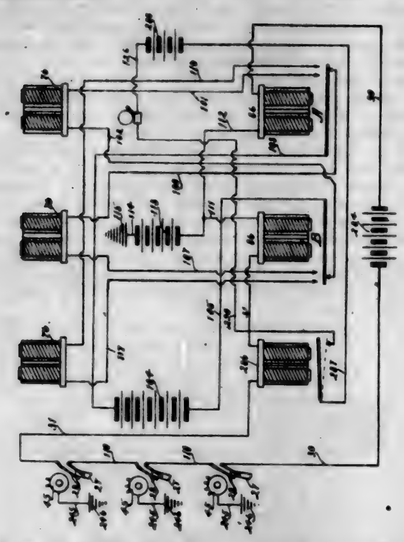

3. In an electrical indicator, a grounded receiving-station with a plurality of indicators, a grounded call-station, a pair of lines connecting said stations, means at the receiving-station connected with each line for controlling the operation of an indicator, means at the call-station for normally maintaining a connection between said lines, manually-actuated means for temporarily removing said connection from between said lines, means at the call-station for connecting said lines one at a time with the ground during the operation of said disconnecting means, and a spring for returning said connecting means to its normal position.

4. In an electrical indicator, a grounded receiving-station with a plurality of independent indicators, a grounded call-station, a pair of lines connecting said stations, means at the receiving-station connected with each line for controlling the operation of the indicator, two contact-plates in the call-station, one connected with each of said lines, a wheel with a series of pins thereon in position to engage the respective contact-plates and establish a connection between either of said contact-plates and the ground, said pins of the different series being out of line with each other transversely of the wheel, and means for operating said wheel.

5. In an electrical indicator, a grounded receiving-station with a plurality of indicators, a series of call-stations each of which is grounded, a pair of lines connecting said receiving and call stations in series and connected with each other at the receiving-station, means at the receiving-station connected with each line for controlling the operation of an indicator, means at each call-station for connecting said lines one at a time with the ground, and means at each call-station for normally maintaining a connection between said lines.

6. In an electrical indicator, a grounded receiving-station with a plurality of independent indicators, a series of call-stations each of which is grounded, a pair of lines connecting said receiving and call stations in series, means at the receiving-station connected with each line for controlling the operation of an indicator, and means at the call-station for grounding said lines one or both at a time for a certain number of times and in a certain order.

7. In an electrical indicator, a grounded receiving-station with three indicators, a grounded call-station, a pair of lines connecting the two stations, means at the receiving-station connected with each line for controlling the operation of two indicators, a connection at the receiving-station with both lines for controlling the operation of the third indicator, and means at the call-station for grounding both lines simultaneously or one at a time as desired.

8. In an electrical indicator, a grounded receiving-station with three indicators, a grounded call-station, a pair of lines connecting the two stations, two relays at the receiving-station, one connected with each line for controlling the operation of an indicator, a connection between said relays so that both relays will be operated for controlling the operation of the third indicator, and means at the call-station for grounding said lines simultaneously or one at a time as desired.

9. In an electrical indicator, a grounded receiving-station with three indicators, a grounded call-station, a pair of lines connecting the two stations, means at the receiving-station connected with each line for controlling the operation of an indicator, a connection at the receiving-station with both lines for controlling the operation of a third indicator, two contact-plates in the call-station connected respectively with said lines, a wheel with three series of contact-pins, two series of pins adapted to engage respectively said contact-plates, and a third series adapted to engage both contact-plates, and means for actuating said wheel.

10. In an electrical indicator, a grounded receiving-station with three independent indicators, a grounded call-station, a pair of lines connecting said stations, means at the receiving-station connected with each line for controlling the operation of an indicator, a connection between the lines at the receiving-station with a battery in it for operating the third indicator, and a single means at the call-station for grounding said lines one at a time for actuating two indicators and connecting said lines for actuating the third indicator.

11. In an electrical indicator, a grounded receiving-station with three independent indicators, a grounded call-station, a pair of lines connecting said stations, means at the receiving-station connected with each line for controlling the operation of two indicators, a connection between the lines at the receiving-station with a battery in it for operating the third indicator, and means at the call-station for grounding said lines one at a time for actuating two indicators and connecting and grounding said lines for actuating the third indicator and predetermining the number of times and the order in which the lines are grounded and connected.

850,692. MACHINE FOR APPLYING BILGE-HOOPS TO CASKS AND BARRELS. ERNEST C. THORSCHMIDT, New York, N. Y. Filed Feb. 17, 1906. Serial No. 301,532.

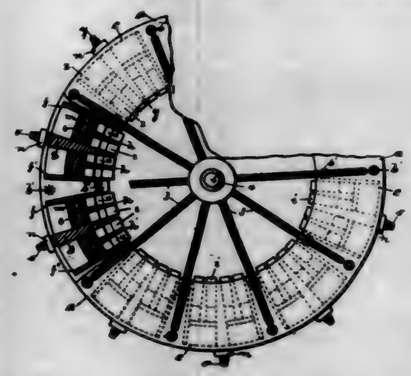

Claim.—1. In a machine for applying bilge-hoops to barrels, the combination with annular plates, of means for securing the said annular plates together, a circularly-arranged series of outwardly-yielding devices between the said annular plates and means for radially adjusting the positions of the said yielding devices.

2. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, means for securing the said annular plates together, a circularly-arranged series of outwardly-yielding devices in groups between the said annular plates and means for radially adjusting the position of each group of yielding devices.

3. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, means for securing the said annular plates together, a series of frames between the said annular plates, a series of radially-placed outwardly-yielding devices in each of said frames and means for radially adjusting the position of the said frames and yielding devices.

4. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, a series of frames between the said annular plates, a series of radially-placed outwardly-yielding devices in each of said frames, means for radially adjusting the position of each of said frames and the yielding devices therein and means for securing together the said annular plates with the said frames and yielding devices between them.

5. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, a series of frames between the said annular plates, a series of radially-placed outwardly-yielding devices in each of said frames, means for moving the said frames, means for limiting the movement of each of said frames to a radial direction and means for securing the said annular plates together with the said frames and the yielding devices between them.

6. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, a series of frames circularly arranged between the said plates, each of said frames comprising a base member and a cap member, means for securing the base and the cap member together, a series of radially-placed outwardly-yielding devices within each of said frames, means for radially adjusting the positions of the said frames and means for clamping the said annular plates together with the said frames between them.

7. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, a series of frames circularly arranged between the said plates, each of said frames comprising a base member and a cap member, a series of dogs, radial ways in the base member to receive the said dogs, means for projecting the said dogs inwardly, means for limiting the projecting positions of the said dogs, means for radially adjusting the position of each of said frames and means for clamping the annular plates together with the said frames between them.

8. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, having radially-disposed recesses in its upper face, a series of frames circularly arranged between the said plates, each of said frames comprising a base member and a cap member, a series of dogs, radial ways in the base member to receive the said dogs, means for projecting the said dogs inwardly, means for limiting the projected positions of the said dogs, means for radially adjusting the position of each of said frames, a tongue secured to the base member of each of said frames and adapted to be received in one of the aforesaid recesses within the upper face of the second annular plate to cause the said frames in being adjusted to move in a radial direction and means for securing the said annular plates together with said frames intervening.

9. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, a series of frames circularly arranged between the said plates, each of said frames comprising a base member and a cap member, dogs each provided with a circular recess in one end thereof and recesses in similar positions in each face thereof, radial ways in the base member of each of said frames to receive the said dogs, stop-bars secured in the said ways and adapted to be received in the said recesses in the faces of the said dogs to limit the movement thereof, springs for normally projecting the said dogs inwardly, means for radially adjusting the said frames and means for securing the said annular plates together with the said frames intervening.

10. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, a series of frames circularly arranged between the said plates, each of said frames comprising a base member and a cap member, dogs each provided with a circular recess in one end thereof and recesses in similar positions in each face thereof, radial ways in the base member of each of said frames to receive the said dogs, stop-bars secured in the said ways and adapted to be received in the said recesses in the faces of the said dogs to limit the movement thereof, springs for normally projecting the said dogs inwardly, means for radially adjusting the said frames, a series of spaced-apart downwardly-projecting lugs on the outer surface of the upper annular plate, an adjusting-screw passing through each of said downwardly-projecting lugs and into the base member of one of the said frames for adjusting the position of the same radially and a series of bolts passing through said annular plates to clamp the same together with the said frames intervening.

11. In a machine for applying bilge-hoops to barrels, the combination with an annular device to be brought down over the head of the barrel, of a circularly-arranged series of outwardly-yielding devices which with the annular device occupy a common plane at right angles to the axis of the barrel, and said yielding devices arranged within said annular device and operating in the plane thereof and means for radially adjusting the position of the said yielding devices.

12. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular device adapted to be brought down over the head of the barrel, of a circularly-arranged series of outwardly-yielding devices in a common plane and at right angles to the axis of the barrel and arranged in groups within said annular device and means for radially adjusting the position of each group of said yielding devices.

13. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular device adapted to be brought down over the head of the barrel, of a series of frames within the said annular device, a series of radially-placed outwardly-yielding devices in each of said frames and means for radially adjusting the position of the said frames and yielding devices.

14. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular device adapted to be brought down over the head of the barrel, of a series of frames within the said annular device, a series of radially-placed outwardly-yielding devices in each of said frames, means for moving the said frames and means for limiting the movement of each of said frames to a radial direction.

850,693. EGG-PRESERVATIVE AND METHOD OF MAKING SAME. ERNST UTESCHER, Hamburg, Germany, assignor to Garantol-Gesellschaft M. B. H., a Firm, Dresden, Germany. Filed June 8, 1904. Serial No. 211,690.

Claim.—1. Process of manufacturing a preserving liquid for eggs which consists in pouring a slaked-lime solution containing an excess of slaked lime into a receptacle and adding to it pulverized egg-shells in the quantity above stated, then during a period of two weeks stirring up the liquid repeated, substantially as described.

2. Process of manufacturing a preserving liquid for eggs which consists in pouring a slaked-lime solution containing an excess of slaked lime into a receptacle, adding to it a composition containing carbonate of lime, carbonate of magnesium, phosphate of lime and phosphate of magnesium in the proportions above stated, then during a period of two weeks, stirring up the liquid repeatedly, substantially as described.

temporarily disconnects said lines, and means at the call-station for grounding said lines during the operation of said disconnecting means that automatically grounds them a predetermined number of times but grounds only one wire at a time.

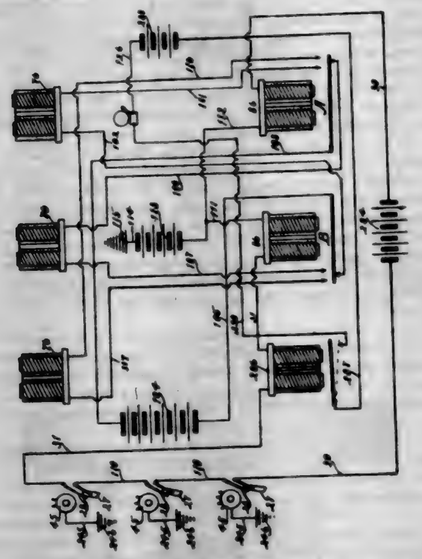

3. In an electrical indicator, a grounded receiving-station with a plurality of indicators, a grounded call-station, a pair of lines connecting said stations, means at the receiving-station connected with each line for controlling the operation of an indicator, means at the call-station for normally maintaining a connection between said lines, manually-actuated means for temporarily removing said connection from between said lines, means at the call-station for connecting said lines one at a time with the ground during the operation of said disconnecting means, and a spring for returning said connecting means to its normal position.

4. In an electrical indicator, a grounded receiving-station with a plurality of independent indicators, a grounded call-station, a pair of lines connecting said stations, means at the receiving-station connected with each line for controlling the operation of the indicator, two contact-plates in the call-station, one connected with each of said lines, a wheel with a series of pins thereon in position to engage the respective contact-plates and establish a connection between either of said contact-plates and the ground, said pins of the different series being out of line with each other transversely of the wheel, and means for operating said wheel.

5. In an electrical indicator, a grounded receiving-station with a plurality of indicators, a series of call-stations each of which is grounded, a pair of lines connecting said receiving and call stations in series and connected with each other at the receiving-station, means at the receiving-station connected with each line for controlling the operation of an indicator, means at each call-station for connecting said lines one at a time with the ground, and means at each call-station for normally maintaining a connection between said lines.

6. In an electrical indicator, a grounded receiving-station with a plurality of independent indicators, a series of call-stations each of which is grounded, a pair of lines connecting said receiving and call stations in series, means at the receiving-station connected with each line for controlling the operation of an indicator, and means at the call-station for grounding said lines one or both at a time for a certain number of times and in a certain order.

7. In an electrical indicator, a grounded receiving-station with three indicators, a grounded call-station, a pair of lines connecting the two stations, means at the receiving-station connected with each line for controlling the operation of two indicators, a connection at the receiving-station with both lines for controlling the operation of the third indicator, and means at the call-station for grounding both lines simultaneously or one at a time as desired.

8. In an electrical indicator, a grounded receiving-station with three indicators, a grounded call-station, a pair of lines connecting the two stations, two relays at the receiving-station, one connected with each line for controlling the operation of an indicator, a connection between said relays so that both relays will be operated for controlling the operation of the third indicator, and means at the call-station for grounding said lines simultaneously or one at a time as desired.

9. In an electrical indicator, a grounded receiving-station with three indicators, a grounded call-station, a pair of lines connecting the two stations, means at the receiving-station connected with each line for controlling the operation of an indicator, a connection at the receiving-station with both lines for controlling the operation of a third indicator, two contact-plates in the call-station connected respectively with said lines, a wheel with three series of contact-pins, two series of pins adapted to engage respectively said contact-plates, and a third series adapted to engage both contact-plates, and means for actuating said wheel.

10. In an electrical indicator, a grounded receiving-station with three independent indicators, a grounded call-station, a pair of lines connecting said stations, means at the receiving-station connected with each line for controlling the operation of an indicator, a connection between the lines at the receiving-station with a battery in it for operating the third indicator, and a single means at the call-station for grounding said lines one at a time for actuating two indicators and connecting said lines for actuating the third indicator.

11. In an electrical indicator, a grounded receiving-station with three independent indicators, a grounded call-station, a pair of lines connecting said stations, means at the receiving-station connected with each line for controlling the operation of two indicators, a connection between the lines at the receiving-station with a battery in it for operating the third indicator, and means at the call-station for grounding said lines one at a time for actuating two indicators and connecting and grounding said lines for actuating the third indicator and predetermining the number of times and the order in which the lines are grounded and connected.

850,692. MACHINE FOR APPLYING BILGE-HOOPS TO CASKS AND BARRELS. ERNEST C. THORSCHMIDT, New York, N. Y. Filed Feb. 17, 1906. Serial No. 301,532.

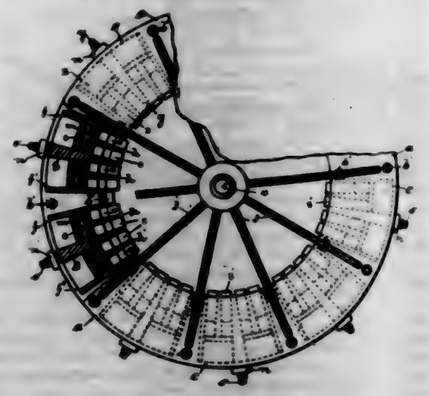

Claim.—1. In a machine for applying bilge-hoops to barrels, the combination with annular plates, of means for securing the said annular plates together, a circularly-arranged series of outwardly-yielding devices between the said annular plates and means for radially adjusting the positions of the said yielding devices.

2. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, means for securing the said annular plates together, a circularly-arranged series of outwardly-yielding devices in groups between the said annular plates and means for radially adjusting the position of each group of yielding devices.

3. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, means for securing the said annular plates together, a series of frames between the said annular plates, a series of radially-placed outwardly-yielding devices in each of said frames and means for radially adjusting the position of the said frames and yielding devices.

4. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, a series of frames between the said annular plates, a series of radially-placed outwardly-yielding devices in each of said frames, means for radially adjusting the position of each of said frames and the yielding devices therein and means for securing together the said annular plates with the said frames and yielding devices between them.

5. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, a series of frames between the said annular plates, a series of radially-placed outwardly-yielding devices in each of said frames, means for moving the said frames, means for limiting the movement of each of said frames to a radial direction and means for securing the said annular plates together with the said frames and the yielding devices between them.

6. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, a series of frames circularly arranged between the said plates, each of said frames comprising a base member and a cap member, means for securing the base and the cap member together, a series of radially-placed outwardly-yielding devices within each of said frames, means for radially adjusting the positions of the said frames and means for clamping the said annular plates together with the said frames between them.

7. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, a series of frames circularly arranged between the said plates, each of said frames comprising a base member and a cap member, a series of dogs, radial ways in the base member to receive the said dogs, means for projecting the said dogs inwardly, means for limiting the projecting positions of the said dogs, means for radially adjusting the position of each of said frames and means for clamping the annular plates together with the said frames between them.

8. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, having radially-disposed recesses in its upper face, a series of frames circularly arranged between the said plates, each of said frames comprising a base member and a cap member, a series of dogs, radial ways in the base member to receive the said dogs, means for projecting the said dogs inwardly, means for limiting the projected positions of the said dogs, means for radially adjusting the position of each of said frames, a tongue secured to the base member of each of said frames and adapted to be received in one of the aforesaid recesses within the upper face of the second annular plate to cause the said frames in being adjusted to move in a radial direction and means for securing the said annular plates together with said frames intervening.

9. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, a series of frames circularly arranged between the said plates, each of said frames comprising a base member and a cap member, dogs each provided with a circular recess in one end thereof and recesses in similar positions in each face thereof, radial ways in the base member of each of said frames to receive the said dogs, stop-bars secured in the said ways and adapted to be received in the said recesses in the faces of the said dogs to limit the movement thereof, springs for normally projecting the said dogs inwardly, means for radially adjusting the said frames and means for securing the said annular plates together with the said frames intervening.

10. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular plate, of a second annular plate, a series of frames circularly arranged between the said plates, each of said frames comprising a base member and a cap member, dogs each provided with a circular recess in one end thereof and recesses in similar positions in each face thereof, radial ways in the base member of each of said frames to receive the said dogs, stop-bars secured in the said ways and adapted to be received in the said recesses in the faces of the said dogs to limit the movement thereof, springs for normally projecting the said dogs inwardly, means for radially adjusting the said frames, a series of spaced-apart downwardly-projecting lugs on the outer surface of the upper annular plate, an adjusting-screw passing through each of said downwardly-projecting lugs and into the base member of one of the said frames for adjusting the position of the same radially and a series of bolts passing through said annular plates to clamp the same together with the said frames intervening.

11. In a machine for applying bilge-hoops to barrels, the combination with an annular device to be brought down over the head of the barrel, of a circularly-arranged series of outwardly-yielding devices which with the annular device occupy a common plane at right angles to the axis of the barrel, and said yielding devices arranged within said annular device and operating in the plane thereof and means for radially adjusting the position of the said yielding devices.

12. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular device adapted to be brought down over the head of the barrel, of a circularly-arranged series of outwardly-yielding devices in a common plane and at right angles to the axis of the barrel and arranged in groups within said annular device and means for radially adjusting the position of each group of said yielding devices.

13. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular device adapted to be brought down over the head of the barrel, of a series of frames within the said annular device, a series of radially-placed outwardly-yielding devices in each of said frames and means for radially adjusting the position of the said frames and yielding devices.

14. In a machine for applying bilge-hoops to casks and barrels, the combination with an annular device adapted to be brought down over the head of the barrel, of a series of frames within the said annular device, a series of radially-placed outwardly-yielding devices in each of said frames, means for moving the said frames and means for limiting the movement of each of said frames to a radial direction.

850,693. EGG-PRESERVATIVE AND METHOD OF MAKING SAME. ERNST UTESCHER, Hamburg, Germany, assignor to Garantol-Gesellschaft M. B. H., a Firm, Dresden, Germany. Filed June 8, 1904. Serial No. 211,690.

Claim.—1. Process of manufacturing a preserving liquid for eggs which consists in pouring a slaked-lime solution containing an excess of slaked lime into a receptacle and adding to it pulverized egg-shells in the quantity above stated, then during a period of two weeks stirring up the liquid repeated, substantially as described.

2. Process of manufacturing a preserving liquid for eggs which consists in pouring a slaked-lime solution containing an excess of slaked lime into a receptacle, adding to it a composition containing carbonate of lime, carbonate of magnesium, phosphate of lime and phosphate of magnesium in the proportions above stated, then during a period of two weeks, stirring up the liquid repeatedly, substantially as described.

3. As an article of manufacture an egg-preservative composed of a slaked-lime solution containing an excess of slaked lime and an addition of powdered egg-shells substantially in the proportions specified.

4. As an article of manufacture an egg-preservative composed of a slaked-lime solution containing an excess of slaked lime and an addition of a composition containing carbonate of lime, carbonate of magnesium, phosphate of lime, phosphate of magnesium, substantially in the proportions specified.

850,604. AUTOMATIC STOP FOR ELECTRIC HOISTING APPARATUS. HERBERT S. VALENTINE, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, Stamford, Conn. Filed Jan. 10, 1907. Serial No. 351,062.

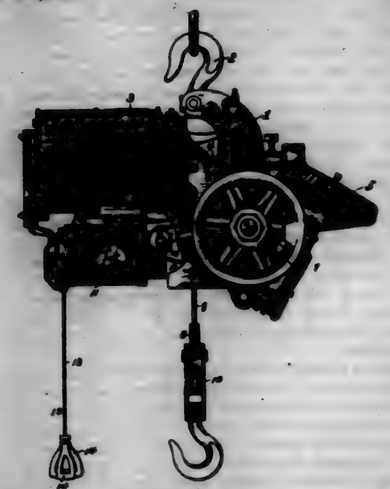

Claim.—1. The combination with a motor-controller and a screw rotating with the motor, of means for manually operating the controller, a sleeve, means actuated by the screw for rotating the sleeve under certain conditions, and gearing connecting the sleeve and controller-shaft, one member of said gearing being coupled to the controller-shaft by a connection which permits of a partial rotation of said shaft independent of said gearing member.

2. The combination with a motor, a controller having a rotating shaft, and a screw rotating with the motor, of a sleeve, means actuated by the screw for rotating the sleeve when the limit of the hoisting or lowering movement of the hoist-rope has been reached, gearing actuated by said sleeve, and alined stops on one member of said gearing and the controller-shaft whereby the latter is actuated by the rotation of said gearing.

3. In a stop mechanism for hoisting devices the combination with a hoist-drum, a motor, a hoist-rope, a controller and devices for manually actuating said controller, of a gear-wheel loose on the controller-shaft and having a clutch member or shoulder adapted to engage a similar member on the controller-shaft, the clutch members being so located as to permit full operating motion of the controller-shaft manually, and means for rotating said gear-wheel when the hoist-block reaches a predetermined point in either hoisting or lowering.

4. The combination with a carrying-frame, a motor, a controller, hoist-drum, and gearing connecting the motor and drum, of a screw-shaft geared to the drum so as to rotate therewith and provided with shouldered stops, a nut mounted to travel on said screw and provided with shoulders, a sleeve embracing the screw and having a groove to receive a spline on the nut, a gear-wheel loose on the screw-shaft, clutch members connecting the sleeve and gear-wheel, a gear-wheel loose on the controller-shaft and meshing with the gear-wheel clutched to the sleeve, and coupling means on the controller-shaft and the gear thereon whereby the controller-shaft is actuated by the gear-wheel when the hoist-block reaches a predetermined point either in hoisting or lowering.

5. The combination with a motor, a hoist-drum, a controller and means for manually operating the controller-shaft, of a gear-wheel loose on the controller-shaft and having a shoulder adapted to engage a shoulder on the controller-shaft and turn the latter to its off position, the said shoulders being so located as to allow free manual operation of the controller-shaft without interference from said gear, and means for rotating said gear at the limits of the hoisting or lowering movements of the hoist-chain.

6. The combination with a frame, and a motor-controller and drum carried thereby, and means for manually operating the controller, of a screw-shaft, gearing connecting the latter and drum, a gear-wheel loose on the screw-shaft, a gear-wheel meshing said first-mentioned gear and loosely mounted on the controller-shaft, means on the controller-shaft adapted to be engaged by means on the gear-wheel on said shaft whereby a turning movement may be imparted to said shaft, and means actuated by said screw-shaft for rotating the gear-wheels when the hoist-rope reaches the limits of hoisting and lowering movements.

850,605. PROCESS OF MANUFACTURING CUPRAMMONIUM SOLUTIONS. JULIEN J. M. A. VERMEERSCH, Schaerbeek-les-Brussels, Belgium. Filed Sept. 25, 1906. Serial No. 336,113.

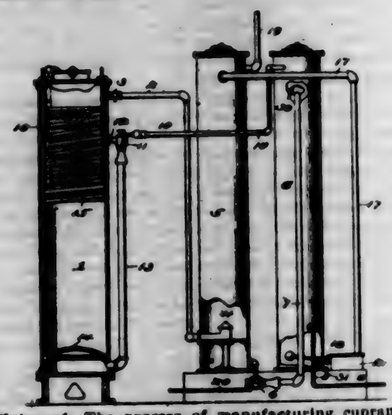

Claim.—1. The process of manufacturing cuprammonium solutions, which consists in introducing copper into an ammonium-hydroxid solution, mixing air with ammonia-gas, and then passing the air commingled with ammonia-gas through the said ammonium-hydroxid solution.

2. The process of manufacturing cuprammonium solutions, which consists in introducing copper into an ammonium-hydroxid solution, and in causing the uncombined ammonia to be brought into repeated contact with the copper by circulation.

3. The process of manufacturing cuprammonium solutions, which consists in introducing copper into an ammonium-hydroxid solution, in mixing some of the ammonium-hydroxid solution with air commingled with ammonia, and in introducing the mixture thus obtained into the main body of the ammonium-hydroxid solution where it can act upon the copper.

4. The process of manufacturing cuprammonium solutions, which consists in introducing copper into an ammonium-hydroxid solution, in condensing the uncombined ammonia escaping from the solution, commingling air with the condensed ammonia, mixing the commingled air and ammonia thus obtained with some of the ammonium-hydroxid solution, and in introducing this mixture into the main body of the ammonium-hydroxid solution where it can act upon the copper.

5. The process of manufacturing cuprammonium solutions, which consists in introducing copper into an ammonium-hydroxid solution, in producing a constant circulation of the ammonium-hydroxid solution through an outside channel, and in passing air commingled with ammonia through the outside channel, whereby the commingled air and ammonia is thoroughly mixed with the ammonium-hydroxid solution before being brought into contact with the copper.

6. The process of manufacturing cuprammonium solutions, which consists in introducing copper into an ammonium-hydroxid solution, in producing a constant circulation of the ammonium-hydroxid solution through an outside channel by means of an injector, and operating the injector by means of air commingled with ammonia whereby the commingled air and ammonia is thoroughly mixed with the ammonium-hydroxid solution before being brought into contact with the copper.

7. The process of manufacturing cuprammonium solutions, which consists in introducing copper into an ammonium-hydroxid solution, in atomizing ammonia-water, in passing a current of air through the atomized ammonia-water, and in passing the air commingled with ammonia thus obtained through the ammonium-hydroxid solution where it is brought into contact with the copper.

8. The process of manufacturing cuprammonium solutions, which consists in introducing copper into an ammonium-hydroxid solution, condensing the uncombined ammonia escaping from the ammonium-hydroxid solution by bringing the same into contact with water, withdrawing the ammonia-water thus obtained from the condenser by means of a steam-injector, the heat of the steam facilitating the escape of ammonia from the liquid, atomizing the products of condensation, passing a current of air through the said atomized products of condensation whereby the air becomes commingled with ammonia, and in passing the commingled air and ammonia thus obtained through the ammonium-hydroxid solution where it is brought into contact with the copper.

850,606. PIPE-WRENCH. MOSES Z. VIAU, Plattsburg, N. Y. Filed Feb. 9, 1907. Serial No. 356,537.

Claim.—1. A pipe-wrench comprising a handle member, a chain having one end permanently secured thereto, means for detachably securing the other end of the chain thereto, and a second handle member pivoted to the first-mentioned member and having one end adapted to enter the loop formed by the chain at a point intermediate the points of attachment of the chain.

2. A pipe-wrench comprising a handle member, a chain permanently secured adjacent one end thereof, a catch or hook carried by said member and adapted to receive the free end of the chain, and a second handle member pivotally connected to the first-mentioned member at a point intermediate the points of attachment of the chain, and having an end adapted to enter the loop formed by the chain when the handle members are brought together.

3. A pipe-wrench comprising a handle member, a chain permanently secured adjacent one end thereof, a catch or hook carried by said member and adapted to receive the free end of the chain, and a second handle member pivotally connected to the first-mentioned member at a point intermediate the points of attachment of the chain, and having an end provided with gripping-teeth and adapted to enter the loop formed by the chain when the handle members are brought together.

4. A pipe-wrench comprising a handle member, a chain permanently secured to one end thereof and having outwardly-extending pivot-pins, a hook or catch carried by said member and adapted to engage with the pivot-pins of the free end of the chain, a second handle member pivotally connected to the first-mentioned member intermediate the points of attachment of the chain and having an end provided with gripping-teeth adapted to enter the loop formed by the chain and engage with the pipe when the handle members are brought together, and means normally tending to separate said handle members.

5. A pipe-wrench comprising two handle members, one of said members being channel-shaped in cross-section and the other of said members adapted to fit within the channel of the first-mentioned member, a chain, means for permanently attaching one end of said chain to the first-mentioned member, means for detachably securing the other end of said chain to the same member, and means for pivotally connecting said members whereby the end of one member may enter the loop formed by the chain attached to the other member when said members are brought together.

6. A pipe-wrench having a handle member, a chain secured adjacent one end thereof, a catch or hook carried by said member and adapted to receive the free end of the chain, a second handle member pivotally connected to the first-mentioned member at a point intermediate the points of attachment of the chain and having an end provided with gripping-teeth adapted to enter the loop formed by the chain when the handle members are brought together, and a detachable jaw having a smooth face and adapted to be secured to said last-mentioned member to cover the gripping-teeth thereof.

850,697. LAUNDRY-BAG. WILLIAM E. VOSS, Columbia, Tenn. Filed Feb. 4, 1907. Serial No. 355,627.

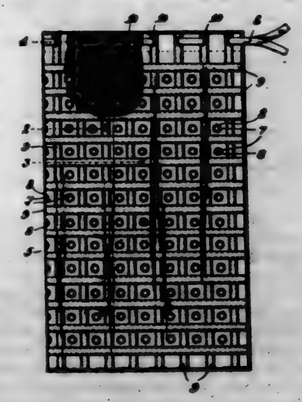

Claim.—1. A new article of manufacture comprising a flexible bag provided throughout its body with perforations permitting free ingress and egress of fluids and having

flexible strips permanently secured to its body between the perforations.

2. A new article of manufacture comprising a flexible laundry-bag having its body provided throughout with perforations permitting free ingress and egress of fluids and flexible reinforcing-strips permanently secured to the body in parallel transverse and longitudinal rows between the perforations.

3. A new article of manufacture comprising a flexible laundry-bag having its body provided with perforations permitting free ingress and egress of fluids, and flexible reinforcing-strips permanently secured to the body in parallel rows between the perforations, the longitudinal strips being extended to the mouth of the bag and provided with bound openings to receive a fastening means.

850,698. BELT-TIGHTENER FOR SAWMILL FEED MECHANISMS. NICHOLAS H. WARNOCK, Ashford, Ala. Filed Nov. 8, 1906. Serial No. 342,537.

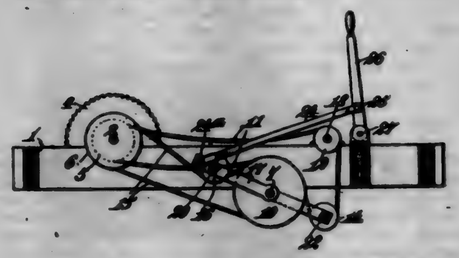

Claim.—A feed mechanism comprising a drive-shaft, a pair of pulleys mounted upon said shaft and one of which is of greater diameter than the other, a driven shaft, a pair of pulleys fixed upon said driven shaft, a rotatably-supported idler-pulley, a belt 11 loosely engaging the pulley of smaller diameter and the said idler and one of the pulleys upon said driven shaft, a belt 15 loosely engaging the said pulley of greater diameter and the other of the pulleys upon said driven shaft, a rocking arm pivoted intermediate its ends upon said driven shaft, a pair of arms pivoted at one end upon said driven shaft, extending in opposite directions with respect to each other and each of which is of less length than the rocking arm, connections between the free end of one of said short arms and one end of said rocking arm, an idler-pulley carried by said connections and adapted to be moved into engagement with the belt 11 and draw it taut when said rocking arm is shifted in one direction causing thereby the operation of one of the pulleys upon said drives shaft and the operation of said latter shaft, connections between the free end of the other of said short arms and the other end of said rocking arm, an idler-pulley mounted upon the last-mentioned connection and adapted when the rocking arm is shifted in the opposite direction to draw the belt 15 taut thereby causing the operation of the other of the pulleys upon the driven shaft, and the reversal of movement of said latter shaft, a pair of inclined links connected with one end of said rocking arm and with one end of one of the short arms, and a lever pivoted to said links for actuating them.

850,699. GATE. WILLIAM M. WATSON, Brantford, Ontario, Canada, assignor to himself and Benjamin Batchelor, Brantford, Canada. Filed Oct. 30, 1906. Serial No. 341,292.

Claim.—1. In combination, a gate-post, a hinge-rod carried thereby, a gate slidably connected to said hinge-rod, a half-wheel mounted on the upper end of said hinge-rod, arms pivotally connected to the gate-post, means connecting the ends of said arms with said gate, and means connecting said half-wheel to the opposite ends of said arms, whereby the gate may be simultaneously raised and moved in a lateral plane.

2. In combination, a gate-post, a hinge-rod carried thereby, a second rod carried by said hinge-rod and parallel thereto, and a gate having rollers in engagement with said hinge-rod and having one of said rollers intermediate the hinge-rod and the last-mentioned rod.

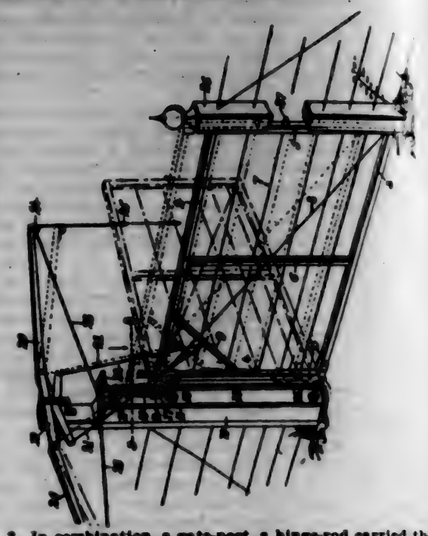

3. In combination, a gate-post, a hinge-rod carried thereby, a second rod supported parallel to said hinge-rod and carried thereby, means whereby the second rod may move longitudinally of the first rod but is prevented from rotating in relation thereto, a gate slidably connected to said hinge-rod and having a portion thereof in engagement with said second rod, and means connected to said hinge-rod for rotating the same and moving the gate in a lateral direction.

4. In combination, a gate-post, a hinge-rod carried thereby, a gate having rollers in engagement with opposite sides of said hinge-rod, arms pivotally connected to said gate-post, means connecting said arms to said gate whereby, when the end of either arm is depressed, the gate is raised in a vertical plane, and independent means secured to said gate and supported by the outer end of said arms, whereby the gate may be rotated to open the same.

5. In combination, a gate-post, a gate, means for slidably connecting the gate to the gate-post, arms carried by said post, means connecting the ends of said arms with said gate, and cords connected to said gate and supported by said arms at their outer ends whereby the gate may be raised in a vertical plane by the action of the arms and rotated to open the same by the action of said cords.

6. In combination, a gate-post, a gate, a hinge-rod connecting said gate and gate-post, a half-wheel mounted on the upper end of said hinge-rod, arms pivotally connected to the gate-post, and means connecting said half-wheel to the outer ends of said arms whereby the hinge-rod may be rotated to open the gate.

7. In combination, a gate-post, a vertically-slidable gate, a hinged rod connecting said gate and gate-post and rotatably mounted in respect to one of them, arms connected to said gate-post and extending in opposite directions therefrom, and cords connected to the ends of said hinged rod and supported by the outer ends of said arms, whereby the hinged rod may be rotated to swing the gate laterally.

850,700. PNEUMATIC COTTON-HARVESTER. JAMES R. WORSWICK, Montgomery, Ala., assignor of one-half to George P. Haardt, Montgomery, Ala. Filed May 19, 1906. Serial No. 317,781.

Claim.—1. A pneumatic cotton-harvester, comprising a suction apparatus, a receiving-chamber, an inclosing heating-chamber and a plurality of suction hose-pipes extending through the heating-chamber and opening into the receiving-chamber and having terminal nozzles adapted to be manually presented to the individual cotton-bolls by the operators.

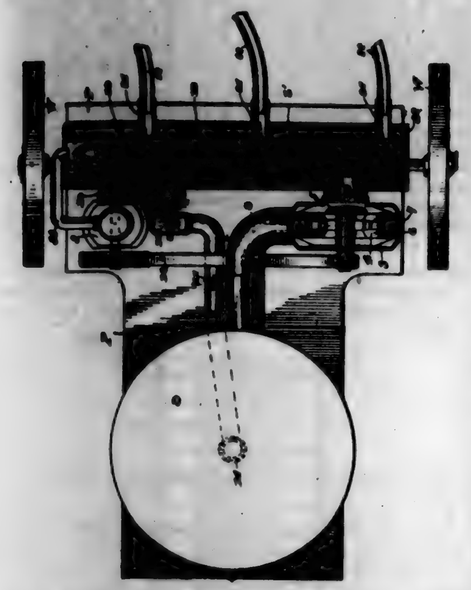

2. A pneumatic cotton-harvester, comprising a suction apparatus, one or more flexible hose-pipes connecting therewith and having nozzles made of sheet metal having an inturned circular flange cut with notches to form a circular marginal ring of inturned teeth.

3. A pneumatic cotton-harvester, comprising a suction apparatus and one or more flexible hose-pipes connected therewith and each having a nozzle provided with an inturned flange and a concentric conical deflector adjustable to or from said flange.

4. A pneumatic cotton-harvester, comprising a suction apparatus and one or more flexible hose-pipes connected therewith and having nozzles provided with a concentric conical deflector and means for adjusting the same longitudinally.

5. A pneumatic cotton-harvester, comprising a suction apparatus and one or more flexible hose-pipes connected therewith, each pipe having a nozzle provided interiorly with a conical shell-deflector armed with inwardly pointed teeth located on the cone and brackets sustaining the shell in concentric position.

6. A pneumatic cotton-harvester, comprising a suction apparatus and one or more flexible hose-pipes connected therewith, nozzles each having inturned teeth around its mouth and a concentric deflector also having inturned teeth around the outer surface of the same.

7. A pneumatic cotton-harvester, comprising suction hose-pipes with nozzles, a suction-fan, and an intermediate receiving-chamber having flexible cushions fixed to the side of the receiving-chamber immediately opposite the points of entry of the hose-pipes for receiving the impact of the seed-cotton.

8. A pneumatic cotton-harvester having a suction-fan provided concentrically with a flexible cushion for receiving the impact of the seed-cotton.

9. A pneumatic cotton-harvester, comprising suction hose-pipes with nozzles, a suction-fan, and an intermediate receiving-chamber connecting the hose-pipes and fan and provided with means for artificially heating the same.

10. A pneumatic cotton-harvester, comprising suction hose-pipes with nozzles, a suction-fan, and an intermediate receiving-chamber connecting the hose-pipes and fan, a surrounding casing for the intermediate chamber, and an engine for running the fan having its waste heat turned into the surrounding casing of the intermediate receiving-chamber for drying the cotton in transit.

11. A pneumatic cotton-harvester, comprising suction hose-pipes with nozzles, a suction-fan and an intermediate horizontal receiving-chamber having a false bottom of reticulated form and a plurality of lateral inlet connections for the hose-pipes and a lateral opening into the suction-fan, and below said opening a trap device for receiving sand and condensed water and a detachable closure for the same.

12. A pneumatic cotton-harvester, comprising suction-pipes and a suction-fan, said fan having an inner peripheral lining of reticulated material extending both above and below the fan, and a casing having an axially concentric inlet and a tangentially-arranged outlet and in its lower portion, near the outlet, a retaining-trap with outlet-door in the bottom of the same communicating with the space between the fan-casing and reticulated lining.

13. A pneumatic cotton-harvester, comprising suction-pipes and a suction-fan, said fan having an inner circular lining of woven wire or perforated material and two traps, one being in communication with the space between the fan-casing and perforated lining and the other having a raised deflector with a screen in front of it.

14. A pneumatic cotton-harvester, comprising a suction-fan for picking the cotton, a storage-receptacle for receiving it formed as an open or ventilated structure and a special pressure-blower having its discharge-pipe tapped directly into the storage-receptacle for continuously delivering a supplemental blast of air into the same to dry and clean the cotton.

15. A pneumatic cotton-harvester, comprising a suction-fan for picking the cotton, a storage-receptacle for receiving the same formed as an open or ventilated structure, a perforated or open-mesh standpipe arranged centrally in the receptacle and means for introducing a blast of air into the lower end of the same.

16. A pneumatic cotton-harvester, comprising a suction-fan for picking the cotton, a storage-receptacle for receiving the same formed as an open or ventilated structure, a perforated or open-mesh standpipe in the receptacle, a balanced air-float in said standpipe and a pressure-blower having its discharge-pipe tapped into the lower end of said standpipe for introducing a blast of air into the standpipe beneath the float.

17. A pneumatic cotton-harvester, comprising a platform, a transverse horizontal receiving-chamber mounted thereon and having hose-couplings on one side of the transverse receiving-chamber and extending to the front of the machine, a suction-fan having its suction-pipe connected to said receiving-chamber, a storage-receptacle communicating with the discharge-pipe of the suction-fan, a blast-fan having its outlet-pipe discharging directly into the storage-receptacle and an engine for driving the two fans.

18. A pneumatic cotton-harvester, comprising a platform, a transverse horizontal receiving-chamber mounted thereon and having hose-couplings on one side, a suction-fan connected to said receiving-chamber, a storage-receptacle communicating with the discharge of the suction-fan, a blast-fan also discharging into the storage-receptacle, an engine for driving the two fans, a casing surrounding the receiving-chamber and having a pipe connecting the same to the engine to utilize its waste heat to heat the receiving-chamber.

850,701. BOILER-TUBE CLEANER. HENRY F. WEINLAND, Springfield, Ohio, assignor to The Lagonda Manufacturing Company, Springfield, Ohio, a Corporation of Ohio. Filed Mar. 21, 1906. Serial No. 307,173.

Claim.—1. A boiler-tube cleaner comprising a rotatory driver and a cleaner-head connected therewith by a universal coupling at its rear end, the front end of the head being free, said head comprising a body having integral rigid cutting-teeth projecting outwardly therefrom and separated from each other by wide and deep clearance-spaces, said teeth being arranged in a plurality of circumferential groups of forwardly-decreasing length, the teeth of the groups being in longitudinal alinement, and the body being

provided with longitudinal cutting-ribs connecting the alined teeth and of less height than the teeth, substantially as described.

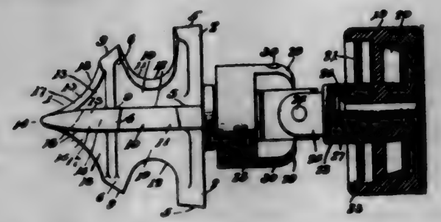

2. A boiler-tube cleaner comprising a rotatory driver and a cleaner-head connected therewith by a universal coupling at its rear end, the front end of the head being free, said head comprising a body having integral rigid cutting-teeth projecting outwardly therefrom and separated from each other by wide and deep clearance-spaces, said teeth being arranged in a plurality of circumferential groups of forwardly-decreasing length, the teeth of the groups being in longitudinal alinement, and the body being provided with inwardly-curved longitudinal cutting-ribs connecting the alined teeth and having cutting edges which are continuous with the cutting edges of the teeth, substantially as described.

3. A boiler-tube cleaner comprising a rotatory driver and a cleaner-head connected therewith by a universal coupling at its rear end, the front end of the head being free, said head comprising a body having integral rigid cutting-teeth projecting outwardly therefrom, separated from each other by wide and deep clearance-spaces, and arranged in circumferential groups of forwardly-decreasing length, the teeth of the groups being in longitudinal alinement, said body having cutting-ribs extending and converging forwardly from the front teeth, substantially as described.

4. A boiler-tube cleaner comprising a rotatory driver and a cleaner-head connected therewith by a universal coupling at its rear end, the front end of the head being free, said head comprising a body having integral rigid cutting-teeth projecting outwardly therefrom, separated from each other by wide and deep clearance-spaces, and arranged in circumferential groups of forwardly-decreasing length, the teeth of the groups being in longitudinal alinement, said body having cutting-ribs extending and converging forwardly from the front teeth, said ribs being alternately curved inward and outward, substantially as described.

5. A boiler-tube cleaner comprising a rotatory driver and a cleaner-head connected therewith by a universal coupling at its rear end, the front end of the head being free, said head comprising a body having integral rigid cutting-teeth projecting outwardly therefrom and separated from each other by wide and deep clearance-spaces, said teeth being arranged in a plurality of circumferential groups of forwardly-decreasing length, the teeth of the groups being in longitudinal alinement, said body also having longitudinal cutting-ribs connecting the alined teeth and of less height than said teeth, said body also having cutting-ribs extending and converging forwardly from the front teeth, substantially as described.

6. A boiler-tube cleaner comprising a rotatory driver and a cleaner-head connected therewith by a universal coupling at its rear end, the front end of the head being free, said head comprising a body having integral rigid cutting-teeth projecting outwardly therefrom and separated from each other by wide and deep clearance-spaces, said teeth being arranged in a plurality of circumferential groups of forwardly-decreasing length, the teeth of the groups being in longitudinal alinement, said body also having longitudinal cutting-ribs connecting the alined teeth and of less height than said teeth, said body also having cutting-ribs extending and converging forwardly from the front teeth, the cutting edges of each longitudinal group of teeth and ribs lying in substantially the same longitudinal plane, substantially as described.

7. A boiler-tube cleaner comprising a rotatory driver and a cleaner-head connected therewith by a universal coupling at its rear end, the front end of the head being free, said head comprising a body having integral rigid cutting-teeth projecting outwardly therefrom and separated from each other by wide and deep clearance-spaces, said teeth being arranged in a plurality of circumferential groups of forwardly-decreasing length, the teeth of the groups being in longitudinal alinement, said body being provided with inwardly-curved cutting-ribs connecting the alined teeth, and also with cutting-ribs extending and converging forwardly from the front teeth and alternately curved inwardly and outwardly, substantially as described.

850,702. WOVEN TAPE OR BAND. ANDREW WEIMAR, Cheltenham, Pa., assignor of one-half to William Weimar, Philadelphia, Pa. Filed May 23, 1906. Serial No. 318,390.

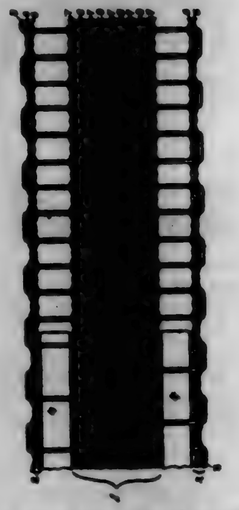

Claim.—1. A woven tape or band comprising a central strip and opposite selvage strips and a weft-thread interwoven with the warp-threads comprised in each of said strips, said warp-threads being twisted between successive shots of the weft-thread to effect separation of the same.

2. A woven tape or band consisting of a strip comprising a series of pairs of cross-woven warp-threads alternating with pairs of evenly-shedded warp-threads, and a weft-thread interwoven with the warp-threads of said strip and forming loops projecting beyond the edges of the same, the successive shots of the weft-thread being separated from each other by the twisting between them of the cross-woven warp-threads.

3. A woven tape or band having a central strip and selvage strips spaced apart therefrom, each strip having pairs of cross-woven warp-threads, and the central strip having alternating pairs of evenly-shedded warp-threads, and a weft-thread interwoven with the warp-threads of both the central strip and the selvage strips, the successive shots of said weft-thread being separated from each other by the twisting of the cross-woven warp-threads between them.

850,703. DEVICE FOR AUTOMATIC REGULATION OF OUTLET-SLUICES. IGNAZ F. WESSELY, Linz, Austria-Hungary. Filed Aug. 8, 1906. Serial No. 329,670.

Claim.—1. In a device for the automatic regulation of sluices, the combination with the spindle carrying the operating-gear of the sluice-gate, of a slide, means operated by the said sluice-gate-operating spindle for moving said slide in accordance with the position of the sluice-gate, a balanced bell-crank lever, pivoted to said slide, a float connected to one arm and a control-spindle connected to the other arm of said bell-crank lever, so as to move therewith, and means on said control-spindle for causing the said sluice-gate-operating spindle to be driven in either direction.

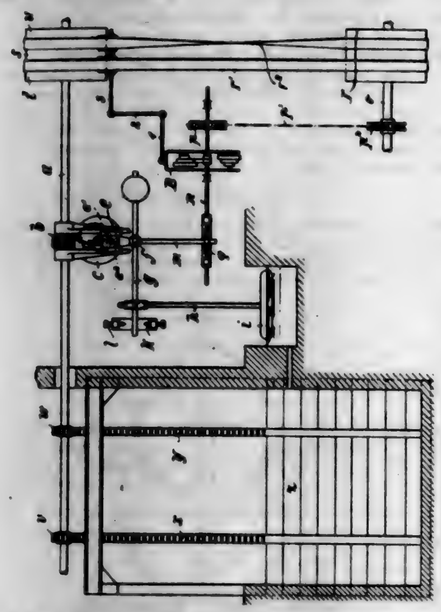

2. In a device for the automatic regulation of sluices, the combination with a spindle carrying the operating-gear of the sluice-gate, of a slide, means operated by the said sluice-gate-operating spindle for moving the said slide in accordance with the position of the sluice-gate, a balanced bell-crank lever pivoted to the said slide, a float connected to one arm and a control-spindle connected to the other arm of the said bell-crank lever, so as to move therewith, and means on said control-spindle for causing the said sluice-gate-operating spindle to be driven in either direction, and adjustable stops for the float-carrying arm of the bell-crank lever to determine the length of its movement in a predetermined position of the sluice-gate.

850,704. GRAIN-LIFTER. LESTER WIKOFF, Cherry Valley, N. Y. Filed Nov. 22, 1906. Serial No. 344,607.

Claim.—1. A grain-table having an end board, a strip of flexible metal attached to the end board, a guard mounted upon the strip and a lever mechanism connected with said guard for raising and lowering the same.

2. A grain-table having an end board, a strip of flexible material mounted upon the end board and having a laterally-extending pin, a guard having a vertically-disposed slot which receives said pin, a guide on said guard receiving said strip and a lever mechanism connected with the guard for raising and lowering the same.

3. A grain-table having an end board, a strip of flexible metal attached to the end board, said strip having a laterally-extending pin, a guard having a vertically-disposed slot which receives said pin; and a guide which receives said strip, a rod pivoted at one end to said guard in the vicinity of the forward end thereof and at its other end to the frame of the harvester, a bell-crank lever fulcrumed to the frame of the harvester and having its working end connected with said rod, a treadle pivoted upon the frame of the harvester and a link connecting said treadle with the power end of the bell-crank lever.

850,704.

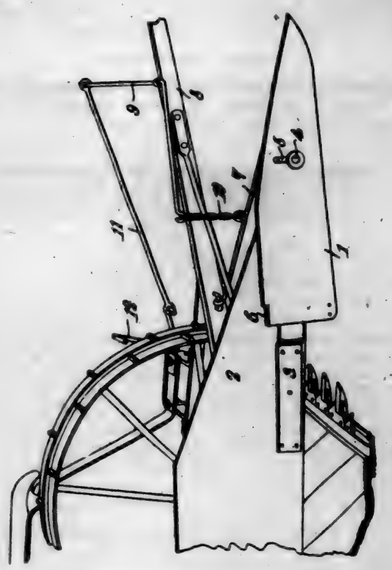

850,705. BUNDLE-CARRIER. HENRY M. WILLIS, East Williston, N. Y. Filed Apr. 12, 1906. Serial No. 311,214.

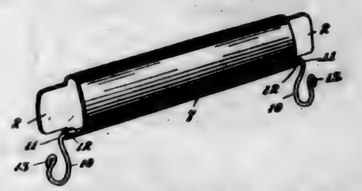

Claim.—1. A bundle-carrier made of a single piece of sheet material bent into substantially oval form to provide a grip or handle, in combination with a cord-holder extending longitudinally of and journaled on said handle and having supporting-loops bent so as to extend at substantially a right angle to the holder.

2. The combination in a bundle-carrier, with a tubular grip or handle portion, of a cord-holder consisting of a single piece of wire having a supporting-loop at each end, means for journaling said holder upon said handle or grip so that it may swing, and means for retaining the loops within the compass of the handle when the said loops are turned out of operative position.

3. A bundle-carrier having, in combination, a handle portion or grip, a cord-holder having supporting-loops, said holder being journaled upon the handle portion so that it may be turned back within the compass of the latter, and ears extending beyond the handle portion at opposite ends for shielding the loop when turned back, as described.

4. A blank for bundle-carriers composed of a single sheet of material having the oppositely-disposed ears and adjacent the same the oppositely-disposed wings separated for a portion of their length from the blank-body.

5. A bundle-carrier having in combination a handle or grip portion provided with journal extensions and also having end ears, and a wire carried by the journal extensions and having loop portions which may be turned back against the said ears, substantially as described.

6. The combination in a bundle-carrier, of a grip or handle portion, with a cord-holder journaled on the handle portion provided with recurved, spring-loops, and means

whereby the said loops may be housed within the compass of the handle when they are turned out of operative position and sprung past the handle portion.

850,706. MEANS FOR INFLATING PNEUMATIC TIRES. ALBERT A. WITHERS, Balaclava, Victoria, Australia. Filed Aug. 28, 1905. Serial No. 276,178.

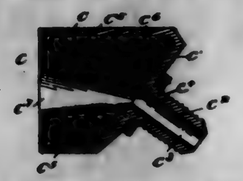

Claim.—A pump-nipple comprising a hollowed body portion and a securing portion formed at an angle to said body portion and threaded on the periphery thereof for securing said nipple to a pump, the hollowed-out portion of said body portion being internally threaded, and a filling for said hollowed-out portion having a conical-shaped aperture passing therethrough and a thread formed on the outer portion thereof for engaging the threads on said body portion.

850,707. FEED-WATER HEATER. GEORGE W. WRIGHT and PATRICK W. CASEY, Norwich, Conn. Filed Aug. 20, 1906. Serial No. 331,277.

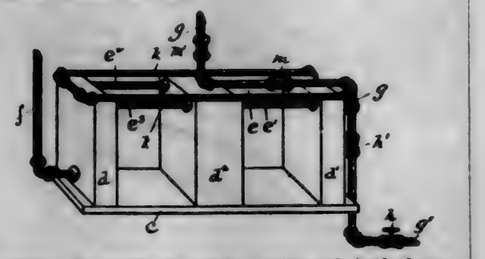

Claim.—In combination with a boiler and the feed-opening of a furnace, water-chambers forming the side walls of said opening, connections between said chambers and the boiler, a feed-water pipe discharging into one of said chambers, and means between said feed-water pipe and said chambers whereby the water is heated before being discharged into said chambers.

850,708. DUST-COLLECTOR FOR WHEELED VEHICLES. JOHN M. WEAVER, New Oxford, Pa. Filed Nov. 14, 1906. Serial No. 343,368.

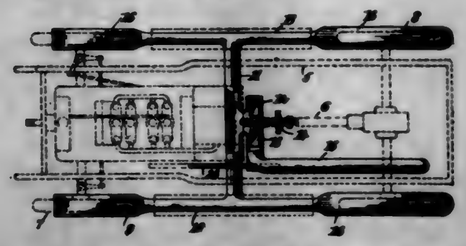

Claim.—1. The combination with an automobile or like device, of a dust-collector comprising dust-receiving devices arranged over the front and rear wheels of the vehicle, a cross-pipe with which said dust-collectors communicate, a dust-receiving receptacle having communication with said cross-pipe, a suction-fan arranged in said receptacle, a discharge-pipe leading from the receptacle, and an exhaust-pipe leading into the discharge-pipe.

2. The combination with an automobile or like vehicle, of a dust-collector comprising dust-receiving devices arranged over the front and rear wheels of the vehicle, a cross-pipe with which said receivers communicate, a dust-receptacle having communication with said cross-pipe, a suction-fan in said receptacle, a discharge-pipe leading from the receptacle, an exhaust leading into said discharge-pipe, and means for closing communication between the dust-receivers over the wheels and said cross-pipe.

3. The combination with an automobile or like device of a dust-collector, comprising dust-receiving devices arranged over the front and rear wheels of the vehicle, a suction-fan arranged centrally of the automobile, a connection between said fan and the dust-collectors, and a discharge-pipe leading from the fan.

850,709. COFFEE-PERCOLATOR. LOUIS WOJIDKOW, Brooklyn, N. Y., assignor to New York Stamping Company, Brooklyn, N. Y., a Corporation of New York. Filed Apr. 10, 1906. Serial No. 310,983.

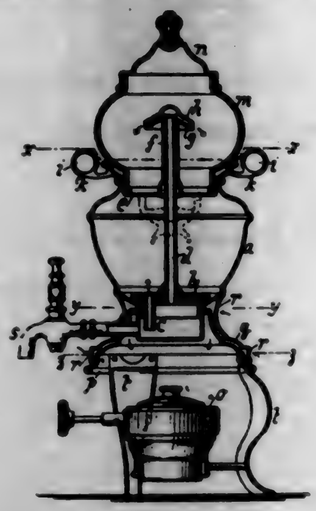

Claim.—A lamp or heater having a protector for preventing the flame from being blown sidewise, and a coffee-percolator urn having a depending hollow neck portion made to extend from the lower part of the urn downward and to sit over and surround the protector while leaving an annular space between said parts, said neck portion having upper and lower air-passages to allow air to enter and pass along the protector and cool the same so that the heat from the flame will not strike or tarnish the exterior of the urn.

850,710. PERCOLATOR. LOUIS WOJIDKOW, Brooklyn, N. Y., assignor to The New York Stamping Co., Brooklyn, N. Y., a Corporation of New York. Filed July 7, 1906. Serial No. 325,139.

Claim.—1. A percolator and a standard therefor, said standard comprising legs, a wall secured to the legs and a second wall made to surround and secured to the inner wall, said inner wall being made to direct a flame or heat, and the outer wall being made to detachably support the percolator.

2. A percolator and a standard, the said standard comprising legs, a wall secured to the legs, and a second wall secured to the lower part of the first wall and made to surround such first wall to leave an annular space between the two, said outer wall being made to detachably engage the percolator, and the inner wall being made to extend up to near the bottom of the percolator to direct heat thereagainst.

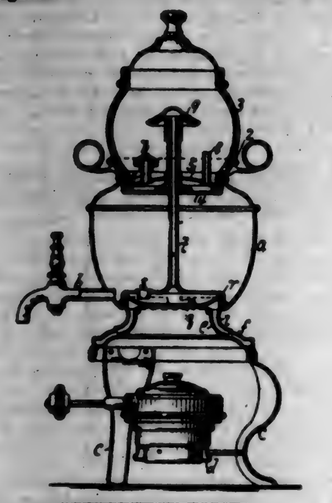

850,711. SIGHT FOR LUBRICATORS.. WALTER L. ABATE, Mount Vernon, N. Y., assignor to Nathan Manufacturing Company, New York, N. Y. Filed Feb. 27, 1907. Serial No. 359,252.

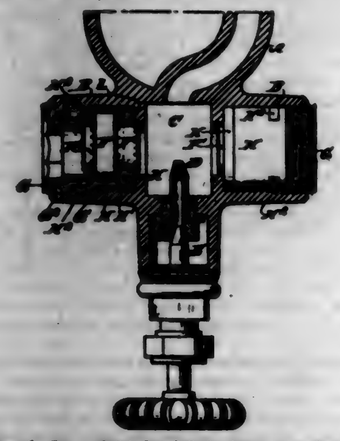

Claim.—1. In a sight for lubricators, a casing, a shell, a glass contained and held in the shell, and a follower connected to, but capable of revolution independently of, the shell, the shell, glass and follower adapted to be inserted in and withdrawn from the casing as a unit, substantially as and for the purposes hereinbefore set forth.

2. In a sight for lubricators, a casing provided with a seat for a washer, a shell adapted to fit in the casing and bear against the washer, a glass held in the shell with its inner end protruding therefrom through the washer, a follower engaging the casing and connected to, but capable of revolving independently of, the shell, and adapted to push into, or pull out from, the casing, the shell and its contents as a unit, substantially as and for the purposes hereinbefore set forth.

3. In a sight for lubricators, a shell with a flanged inner end, a glass provided with an intermediate portion which rests against the flange in the shell, and with an end portion of less diameter which protrudes through the flanged end of the shell, a follower having an externally-screw-threaded head and a circular external groove in that portion of it beyond the head, and retaining means on the shell to enter and engage said groove, substantially as and for the purposes set forth.

850,712. RAIL-JOINT. JOHN C. ABBOTT, Pittsburg, Pa. Filed Feb. 8, 1907. Serial No. 356,856.

Claim.—1. A rail-joint comprising a rail end having its head and web cut away thus leaving a projecting base portion which is provided with an end tenon and an adjacent vertical post that is separated from the web, the head of the rail having a socket open at the top, and the other rail end having an overhanging head or top portion, the head provided with an end tenon, and an adjacent pendent prong that is spaced from the web and base, the latter having an end socket that is open on the under side, whereby the two rail ends are adapted to fit together and interlock as shown and described.

2. A rail-joint formed by the combination of the rail ends whose heads are provided, respectively, with an end socket and tenon and with a vertical post and a pendent prong adapted to engage each other, the parts being thus adapted for engagement when one rail end is dropped upon the other, the tenon thus resting on the base of the socket and the prong upon the base of the opposite rail while the post is in contact with the overhanging head of the other rail, as shown and described.

850,713. IRON-HOLDER. MARIE AGNERSSENS, New York, N. Y. Filed Sept. 22, 1906. Serial No. 335,716.

Claim.—1. An iron-holder comprising two wings hinged together adapted to support the iron in an inverted position, and metal binding-strips covering the top edges of the wings for the purpose described.

2. An iron-holder comprising two wings hinged together adapted to support the iron in an inverted position, metal binding-strips covering the upper edges of said wings, and feet carried by the wings for holding them in a slightly-elevated position.

3. An iron-holder comprising two wings hinged together, adapted to support an iron in an inverted position, and metal binding-strips secured to the upper edges of the wings and slightly elevated thereabove to form air-spaces therebetween, for the purpose described.

4. An iron-holder comprising wings hinged together adapted to support the iron in an inverted position, and links pivotally connected together and to the wings for limiting the extent to which the wings may be separated.

5. An iron-holder comprising two wide members adapted to be seated on edge and arranged in vertical planes, the upper edges of said members providing seats to hold the iron in an inverted position thereon, and means connecting the two members together, adapting them to be laterally separated.

6. An iron-holder comprising two wide members adapted to be seated on edge and arranged in vertical planes, metal binding-strips covering the upper edges of said members, means hingedly connecting the members together at

one end, and means limiting the extent to which said members may be separated.

850,714. TRANSFORMER. CLAXTON B. ALLEN and SVEN R. BERGMAN, Lynn, Mass., assignors to General Electric Company, a Corporation of New York. Filed Apr. 24, 1906. Serial No. 313,375.

Claim.—1. In combination, a winding, and a core portion surrounded thereby comprising a central layer of relatively wide laminæ, two layers of relatively narrow laminæ parallel to and placed one at each side of said central layer, and at opposite edges thereof, and two other layers of laminæ transverse to those of the central layer placed one at each side of the central layer, the thickness of each of said other layers being equal to the difference in width between one of said relatively wide laminæ and one of said relatively narrow laminæ.

2. In a transformer, a core consisting of a main unit and two auxiliary units, said auxiliary units being laminated transversely to the main unit, said main unit consisting of a central bundle of laminæ having two transverse coil-receiving windows separated by a central portion and two side bundles of laminæ one at each side of said central bundle and each having one coil-receiving window formed in it, the window in one of said side bundles registering with one window in the central bundle and the window in the other side bundle registering with the second window in the central bundle, said central portion being wider than the corresponding portion of the side bundles, the auxiliary units being composed each of a bundle of laminæ having one coil-receiving window formed in it, said auxiliary units being arranged at opposite sides of said main unit with the edges of the laminæ of each auxiliary unit abutting against the portion of said central portion projecting by the corresponding side bundle.

850,715. ROOT AND STALK PULLING MACHINE. JOSEPH L. ANDERS, Pittsbridge, Tex. Filed Aug. 28, 1906. Serial No. 332,834.

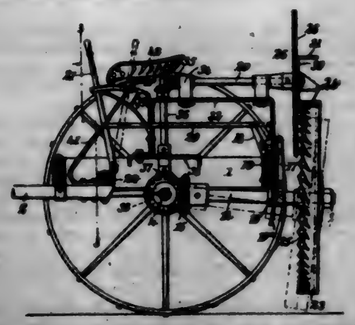

Claim.—In an implement of the class described, in combination, a frame having a transverse axle, wheels mounted on said axle and affording means for rotating the same, a hub rotatably mounted on said axle, a shaft rotatably mounted in said hub, bevel-gears carried by said axle and said shaft for rotating said shaft, means for raising and lowering the extremity of said shaft remote from said hub, a toothed wheel carried by said shaft and adapted to dig into the ground, a wiper-shaft, means for driving the same from said axle, and a wiper-frame carried by said wiper-shaft and having arms adapted to clear the teeth of said wheel.

850,716. MEANS FOR CONTROLLING FEED OF COTTON. THOMAS A. ANDREWS, Grantville, Ga. Filed Nov. 11, 1905. Serial No. 286,953.

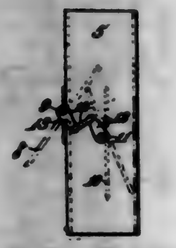

Claim.—1. The combination with an elevator, chutes and feeding mechanism coöperating therewith, of an air-pipe connected to the elevator and having an opening solely in one side thereof, an outer door fulcrumed at an intermediate point and coöperating with said opening, an inner valve also fulcrumed at an intermediate point and simultaneously movable with the door to open and close the pipe, and means for creating a suction through the pipe.

2. The combination with a cotton-elevator, of an air-pipe connected thereto and having an opening therein, intermediately-fulcrumed closing means for the said opening, means in the air-pipe for closing the latter and connected to the closing means for the opening for simultaneous operation therewith, said pipe-closing means having one end bearing against an intermediate portion of closing means for the opening when the latter closing means clears the opening, and a device for creating a suction of air through the said pipe.

3. The combination with a cotton-elevator, of an air-pipe connected thereto and having an opening therein, a closing-valve for the air-pipe, a closing-door for the said opening fulcrumed at an intermediate point in the opening of said pipe and connected to the valve for simultaneous operation therewith, the door when moved to open position closing the valve, and means for creating a suction through the air-pipe.

4. The combination with a cotton-elevator, of an air-pipe connected thereto and having an opening therein, a door for the opening, a valve for closing the air-pipe connected to the door for simultaneous operation therewith, the door when opened being disposed at an angle to and engaging the upper end of the valve, the latter being closed when the door is opened, and means for creating a suction through the air-pipe and elevator.

5. The combination with a cotton-elevator, of an air-pipe connected thereto and having an opening provided with a movable door, a valve for closing the air-pipe connected to the door for simultaneous operation therewith, the door when opened being disposed at an angle to and engaging the upper end of the valve, the valve being closed when the door in the side of the air-pipe is open, the upper extremity of the valve being in contact with the upper extremity of the door, and lower extremity in contact with wall of air pipe or conduit, thus destroying the suction through elevator, and diverting suction through partially-opened door in side of air pipe or conduit, and means for creating a suction through the air-pipe and elevator.

6. The combination with a cotton-elevating means, of an air-pipe connected thereto and provided with a device for interiorly opening and closing the same and also with means for permitting the ingress of air thereto and simultaneously operative with the said device, and suction mechanism coöperating with the pipe, the interior closing device for the pipe being structurally independent of the means for controlling the admission of air to the pipe from the exterior of the latter.

7. In an apparatus of the class set forth, the combination with a plurality of cotton-cleaning devices having an air-pipe connected therewith and projected at one extremity therefrom, a suction-fan connected to said projected extremity of the air-pipe, the latter having an opening formed therein between the fan and the adjacent cleaning device, and structurally independent valves respectively coöperating with the opening in the air-pipe and located interiorly of said air-pipe, said valves being connected for simultaneous operation.

8. In an apparatus of the class specified, the combination with a cotton-elevator, of an air-pipe connected thereto and having an opening in one side, and closing means for the said opening and for the pipe having a simultaneous operation, the closing means for the opening being movable to leave portions of said opening clear both above and below the said latter closing means.

9. In an apparatus of the class specified, the combination with a cotton-elevator, of an air-suction pipe connected thereto and having an opening therein, the portion of the pipe opposite the opening being closed, closing means for the opening and for the pipe, and means for connecting the said closing means to cause simultaneous operation thereof and to reversely position said closing means when the one is opened and the other is closed.

850,717. PLOW ATTACHMENT. ALPHEUS ARTER, Lisbon, Ohio. Filed Oct. 29, 1906. Serial No. 341,157.

Claim.—1. The combination of the beam of a plow, and a weed-drag connected with the forward end of said beam, extending under said beam between its ends and then along one side of the beam.

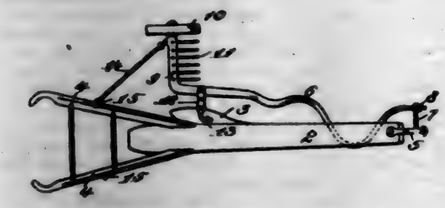

2. The combination of the beam of a plow, and a weed-drag connected with the forward end of said beam, extending under said beam between its ends and then along one side of the beam, said weed-drag being of serpentine form.

3. The combination of the beam of a plow, a weed-drag connected with said beam, extending under said beam between its ends and along one side thereof, and a leveling-rake connected with said weed-drag.

4. The combination of the beam of a plow, a weed-drag connected with said beam, extending under said beam between its ends and along one side thereof, and a leveling-rake connected with said weed-drag, and provided at its outer side with a guide-wheel.

5. The combination of the beam of a plow, a weed-drag connected at its forward end with the forward end of said beam, said weed-drag being extended between its ends under the beam and then continuing rearwardly along one side of said beam, and a leveling-rake connected with the rear end of the weed-drag, extending outward therefrom and provided with a guide-wheel.

6. The combination of the beam of a plow, a weed-drag of serpentine form connected with the forward end of said beam, extending under said beam and then rearwardly along one side of same, a leveling-rake extending outward from the rear end of the weed-drag, an operative connection between the weed-drag and beam, a rod connected with said rake to raise and lower the same, and separated pins upon the handles of the plow for engagement by said rod.

850,718. GAS-ENGINE. WILLIAM H. ASH, Bay Shore, N. Y. Filed May 1, 1906. Serial No. 314,669.

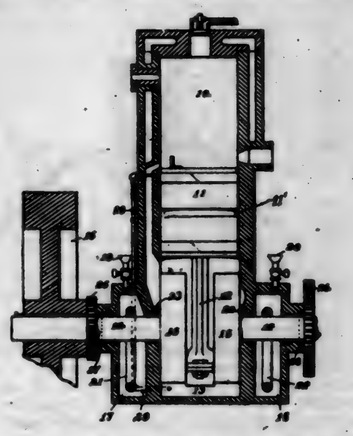

Claim.—1. In combination with a gas-engine, having a cylinder, crank-chamber and driving-shaft, a lubricating system comprising an oil-chamber adjacent to said crank-chamber and a passage other than the shaft-bearing between said oil and crank chambers.

2. In combination with a gas-engine, having a cylinder, crank-chamber and driving-shaft, a lubricating system comprising a chamber, means for supplying oil to said chamber, a stirring means therein and communications other than the shaft-bearing between said oil-chamber and the crank-chamber for supplying oil thereto.

3. In combination with a gas-engine having a cylinder, crank-chamber and driving-shaft, a lubricating system comprising an oil-chamber adjacent to said crank-chamber and a passage connecting said oil-chamber and crank-chamber, and means for lubricating the interior of the cylinder from the crank-chamber.

4. In combination with a gas-engine, having a cylinder and piston, a crank-chamber and driving-shaft, a lubricating system comprising an oil-chamber adjacent to the crank-chamber, a passage connecting said chambers, and a pipe leading from one of said chambers for lubricating another part of the engine.

5. In combination with a gas-engine, having a cylinder and piston, a crank-chamber and driving-shaft, a lubricating system comprising an oil-chamber adjacent to the crank-chamber, a passage connecting said chambers, and means to prevent leakage from said oil-chamber at the shaft-bearing.

6. In combination with a gas-engine, having a cylinder and piston, a crank-chamber and driving-shaft, a lubricating system comprising an oil-chamber adjacent to the crank-chamber, a passage connecting said chambers, a pipe leading from one of said chambers for lubricating the piston, and means for regulating the flow therethrough.

7. In combination with a gas-engine having a cylinder and piston, a crank-chamber and driving-shaft, a lubricating system comprising an oil-chamber adjacent to the crank-chamber, a passage connecting said chambers, a pipe leading from one of said chambers for lubricating the piston, and means for observing the flow through said pipe.

8. In combination with a gas-engine, having a cylinder, and annularly-grooved piston, a crank-chamber, and driving-shaft, a lubricating system comprising a pipe leading from the crank-chamber to the cylinder to supply oil to the groove in the piston.

9. In combination with a gas-engine having a cylinder and piston, and a crank-chamber, a lubricating system comprising an oil-chamber, a passage between the oil-chamber and the crank-chamber, and a check-valve for closing said passage, on the return stroke of the piston.

one end, and means limiting the extent to which said members may be separated.

850,714. TRANSFORMER. CLAXTON E. ALLEN and SVEN R. BERGMAN, Lynn, Mass., assignors to General Electric Company, a Corporation of New York. Filed Apr. 24, 1906. Serial No. 313,375.

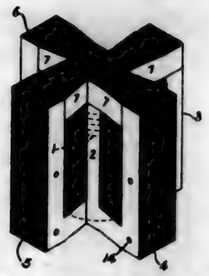

Claim.—1. In combination, a winding, and a core portion surrounded thereby comprising a central layer of relatively wide laminæ, two layers of relatively narrow laminæ parallel to and placed one at each side of said central layer, and at opposite edges thereof, and two other layers of laminæ transverse to those of the central layer placed one at each side of the central layer, the thickness of each of said other layers being equal to the difference in width between one of said relatively wide laminæ and one of said relatively narrow laminæ.

2. In a transformer, a core consisting of a main unit and two auxiliary units, said auxiliary units being laminated transversely to the main unit, said main unit consisting of a central bundle of laminæ having two transverse coil-receiving windows separated by a central portion and two side bundles of laminæ one at each side of said central bundle and each having one coil-receiving window formed in it, the window in one of said side bundles registering with one window in the central bundle and the window in the other side bundle registering with the second window in the central bundle, said central portion being wider than the corresponding portion of the side bundles, the auxiliary units being composed each of a bundle of laminæ having one coil-receiving window formed in it, said auxiliary units being arranged at opposite sides of said main unit with the edges of the laminæ of each auxiliary unit abutting against the portion of said central portion projecting by the corresponding side bundle.

850,715. ROOT AND STALK PULLING MACHINE. JOSEPH L. ANDERS, Pittsbridge, Tex. Filed Aug. 28, 1906. Serial No. 332,334.

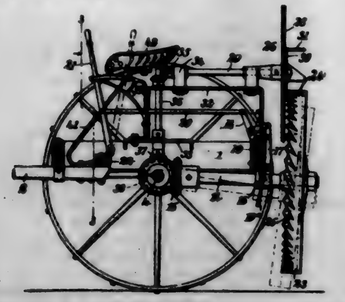

Claim.—In an implement of the class described, in combination, a frame having a transverse axle, wheels mounted on said axle and affording means for rotating the same, a hub rotatably mounted on said axle, a shaft rotatably mounted in said hub, bevel-gears carried by said axle and said shaft for rotating said shaft, means for raising and lowering the extremity of said shaft remote from said hub, a toothed wheel carried by said shaft and adapted to dig into the ground, a wiper-shaft, means for driving the same from said axle, and a wiper-frame carried by said wiper-shaft and having arms adapted to clear the teeth of said wheel.

850,716. MEANS FOR CONTROLLING FEED OF COTTON. THOMAS A. ANDREWS, Grantville, Ga. Filed Nov. 11, 1905. Serial No. 286,953.

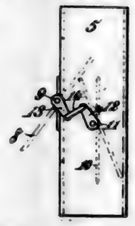

Claim.—1. The combination with an elevator, chutes and feeding mechanism coöperating therewith, of an air-pipe connected to the elevator and having an opening solely in one side thereof, an outer door fulcrumed at an intermediate point and coöperating with said opening, an inner valve also fulcrumed at an intermediate point and simultaneously movable with the door to open and close the pipe, and means for creating a suction through the pipe.

2. The combination with a cotton-elevator, of an air-pipe connected thereto and having an opening therein, intermediately-fulcrumed closing means for the said opening, means in the air-pipe for closing the latter and connected to the closing means for the opening for simultaneous operation therewith, said pipe-closing means having one end bearing against an intermediate portion of closing means for the opening when the latter closing means clears the opening, and a device for creating a suction of air through the said pipe.

3. The combination with a cotton-elevator, of an air-pipe connected thereto and having an opening therein, a closing-valve for the air-pipe, a closing-door for the said opening fulcrumed at an intermediate point in the opening of said pipe and connected to the valve for simultaneous operation therewith, the door when moved to open position closing the valve, and means for creating a suction through the air-pipe.

4. The combination with a cotton-elevator, of an air-pipe connected thereto and having an opening therein, a door for the opening, a valve for closing the air-pipe connected to the door for simultaneous operation therewith, the door when opened being disposed at an angle to and engaging the upper end of the valve, the latter being closed when the door is opened, and means for creating a suction through the air-pipe and elevator.

5. The combination with a cotton-elevator, of an air-pipe connected thereto and having an opening provided with a movable door, a valve for closing the air-pipe connected to the door for simultaneous operation therewith, the door when opened being disposed at an angle to and engaging the upper end of the valve, the valve being closed when the door in the side of the air-pipe is open, the upper extremity of the valve being in contact with the upper extremity of the door, and lower extremity in contact with wall of air pipe or conduit, thus destroying the suction through elevator, and diverting suction through partially-opened door in side of air pipe or conduit, and means for creating a suction through the air-pipe and elevator.

6. The combination with a cotton-elevating means, of an air-pipe connected thereto and provided with a device for interiorly opening and closing the same and also with means for permitting the ingress of air thereto and simultaneously operative with the said device, and suction mechanism coöperating with the pipe, the interior closing device for the pipe being structurally independent of the means for controlling the admission of air to the pipe from the exterior of the latter.

7. In an apparatus of the class set forth, the combination with a plurality of cotton-cleaning devices having an air-pipe connected therewith and projected at one extremity therefrom, a suction-fan connected to said projected extremity of the air-pipe, the latter having an opening formed therein between the fan and the adjacent cleaning device, and structurally independent valves respectively coöperating with the opening in the air-pipe and located interiorly of said air-pipe, said valves being connected for simultaneous operation.

8. In an apparatus of the class specified, the combination with a cotton-elevator, of an air-pipe connected thereto and having an opening in one side, and closing means for the said opening and for the pipe having a simultaneous operation, the closing means for the opening being movable to leave portions of said opening clear both above and below the said latter closing means.

9. In an apparatus of the class specified, the combination with a cotton-elevator, of an air-suction pipe connected thereto and having an opening therein, the portion of the pipe opposite the opening being closed, closing means for the opening and for the pipe, and means for connecting the said closing means to cause simultaneous operation thereof and to reversely position said closing means when the one is opened and the other is closed.

850,717. PLOW ATTACHMENT. ALPHEUS ARTER, Lisbon, Ohio. Filed Oct. 29, 1906. Serial No. 341,157.

Claim.—1. The combination of the beam of a plow, and a weed-drag connected with the forward end of said beam, extending under said beam between its ends and then along one side of the beam.

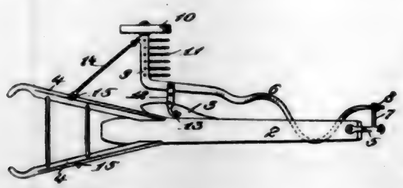

2. The combination of the beam of a plow, and a weed-drag connected with the forward end of said beam, extending under said beam between its ends and then along one side of the beam, said weed-drag being of serpentine form.

3. The combination of the beam of a plow, a weed-drag connected with said beam, extending under said beam between its ends and along one side thereof, and a leveling-rake connected with said weed-drag.

4. The combination of the beam of a plow, a weed-drag connected with said beam, extending under said beam between its ends and along one side thereof, and a leveling-rake connected with said weed-drag, and provided at its outer side with a guide-wheel.

5. The combination of the beam of a plow, a weed-drag connected at its forward end with the forward end of said beam, said weed-drag being extended between its ends under the beam and then continuing rearwardly along one side of said beam, and a leveling-rake connected with the rear end of the weed-drag, extending outward therefrom and provided with a guide-wheel.

6. The combination of the beam of a plow, a weed-drag of serpentine form connected with the forward end of said beam, extending under said beam and then rearwardly along one side of same, a leveling-rake extending outward from the rear end of the weed-drag, an operative connection between the weed-drag and beam, a rod connected with said rake to raise and lower the same, and separated pins upon the handles of the plow for engagement by said rod.

850,718. GAS-ENGINE. WILLIAM H. ASH, Bay Shore, N. Y. Filed May 1, 1906. Serial No. 314,669.

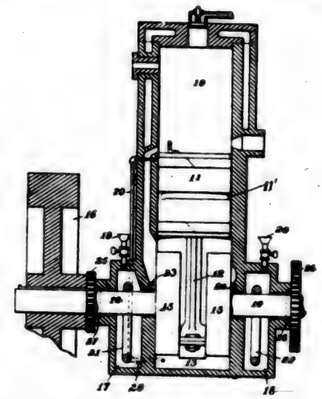

Claim.—1. In combination with a gas-engine, having a cylinder, crank-chamber and driving-shaft, a lubricating system comprising an oil-chamber adjacent to said crank-chamber and a passage other than the shaft-bearing between said oil and crank chambers.

2. In combination with a gas-engine, having a cylinder, crank-chamber and driving-shaft, a lubricating system comprising a chamber, means for supplying oil to said chamber, a stirring means therein and communications other than the shaft-bearing between said oil-chamber and the crank-chamber for supplying oil thereto.

3. In combination with a gas-engine having a cylinder, crank-chamber and driving-shaft, a lubricating system comprising an oil-chamber adjacent to said crank-chamber and a passage connecting said oil-chamber and crank-chamber, and means for lubricating the interior of the cylinder from the crank-chamber.

4. In combination with a gas-engine, having a cylinder and piston, a crank-chamber and driving-shaft, a lubricating system comprising an oil-chamber adjacent to the crank-chamber, a passage connecting said chambers, and a pipe leading from one of said chambers for lubricating another part of the engine.

5. In combination with a gas-engine, having a cylinder and piston, a crank-chamber and driving-shaft, a lubricating system comprising an oil-chamber adjacent to the crank-chamber, a passage connecting said chambers, and means to prevent leakage from said oil-chamber at the shaft-bearing.

6. In combination with a gas-engine, having a cylinder and piston, a crank-chamber and driving-shaft, a lubricating system comprising an oil-chamber adjacent to the crank-chamber, a passage connecting said chambers, a pipe leading from one of said chambers for lubricating the piston, and means for regulating the flow therethrough.

7. In combination with a gas-engine having a cylinder and piston, a crank-chamber and driving-shaft, a lubricating system comprising an oil-chamber adjacent to the crank-chamber, a passage connecting said chambers, a pipe leading from one of said chambers for lubricating the piston, and means for observing the flow through said pipe.

8. In combination with a gas-engine, having a cylinder, and annularly-grooved piston, a crank-chamber, and driving-shaft, a lubricating system comprising a pipe leading from the crank-chamber to the cylinder to supply oil to the groove in the piston.

9. In combination with a gas-engine having a cylinder and piston, and a crank-chamber, a lubricating system comprising an oil-chamber, a passage between the oil-chamber and the crank-chamber, and a check-valve for closing said passage, on the return stroke of the piston.

850,719. CONVERTIBLE DUMPING-CAR. HERBERT L. AULLS, Denver, Colo. Filed Jan. 9, 1907. Serial No. 351,559.

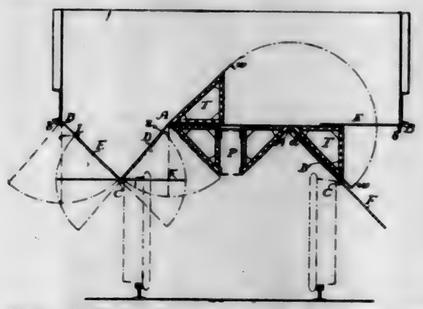

Claim.—1. The combination in a car or other container, the bottom of said car or container having a longitudinally-fixed portion, a pair of doors at each side of the fixed portion, one door for each set being pivoted at the edge of the fixed portion and the other door of each set being pivoted at the side, and means arranged to be shifted so as to form an inverted-V-shaped rib above the central fixed portion of the floor or to form with the outer doors a level floor.

2. The combination in a car or other container, of a floor made up of a central member and two sets of hinged doors, one set at each side of the central member, one door of each set being hinged at the edge of the central member, and the other door of each set being hinged at the side of the car or other container, a balanced door pivoted at a point directly under where the two doors of each set come together, with means for operating the several doors, the said balanced doors acting as a lock for both doors when in its central position, and when shifted to one side or the other acting to release one or the other of the doors of each set.

3. The combination of a car having a floor composed of four longitudinally-hinged doors, two of said doors being hinged to the outer side of the car and one on each side of the center of the car, means for operating said doors, means for locking the doors in the positions to which they are adjusted, and means for forming a ridge throughout the longitudinal center of the car.

4. The combination in a car having a floor made up of a central fixed member and four hinged doors, the outer doors being hinged at the sides of the car and the inner door being hinged one to each side of the fixed member, means for operating the doors so that the doors can swing on their pivots, and a pair of members between and above the inner depending doors, so arranged that the members can be raised to form an inverted-V-shaped longitudinal rib, or lowered to form a flat bottom for the car.

5. The combination in a car-body, of a central fixed member extending the full length of the car, a door hinged to each side of said central member and a door hinged to each side of the car, a balanced door pivoted below the pivots of the first-mentioned doors and about midway between said pivots, said doors being so arranged as to lock the doors on each side of the center when in the mid-position, and acting to release one door and lock the other when in one of its other two positions.

6. The combination in a car, of a central fixed member, two doors on each side of the said fixed member, one door of each set being hinged to said fixed member and the other door being hinged at the side of the car, a balanced door acting to lock the two doors closed or lock one closed, allowing the other to open, said balanced door also acting as a chute.

7. The combination in a car, of a central longitudinal member, two sets of doors one on each side of the central member, one door of each set being pivoted to the central member and the other door at the side of the car, two pivoted members arranged to swing over the central member so as to form an inverted-V-shaped ridge, or lowered so as to form, with the doors pivoted to the sides of the car, a flat bottom for the car.

8. The combination in a car, of a longitudinal fixed member, two sets of doors, one set on each side of the central member, one door of each set being pivoted to the central member and the other being pivoted at the side of the car, longitudinal ribs at the pivots of the said doors arranged to operate the said doors, balanced doors pivoted at a point under the pivots of the first-mentioned doors, and means for turning the first-mentioned doors, members pivoted to each side of the fixed member of the car and arranged to rest upon the fixed member to form an inverted-V-shaped projecting rib or to be turned down to form, with the doors pivoted to the side of the car, the flat bottom of the car, substantially as described.

9. In combination, a car having two oppositely-inclined swinging doors, forming a V-shaped hopper, and a balanced door beneath said swinging doors for locking said doors in position, substantially as described.

10. In combination, a car having a convertible floor, a depending door hinged to each side of the central longitudinal axis thereof, a door hinged to each side of the car, said doors forming a longitudinal hopper at each side of the car with the said depending central doors, and a balanced door for holding said doors in position.

11. In combination, a car having a convertible floor, a depending door hinged to each side of the central longitudinal axis thereof, a door hinged to each side of the car, said doors forming with the said depending central doors a longitudinal hopper at each side of the car, and a door for holding said first-mentioned doors in locked position and adapted to form a chute for directing the discharge of the load.

12. In combination, a car having a convertible platform, a depending door hinged to each side of the longitudinal axis thereof, pivoted members adapted to form an inverted-V-shaped ridge, a door hinged at each side of the car, said doors forming a V-shaped hopper at each side of the car.

13. In combination, a car having a convertible floor, a rod at each side of the central longitudinal axis thereof, a door hinged to said rod, a rod at each side of the car, a door hinged to each of said rods, said doors forming a V-shaped hopper, and an inverted-V-shaped partition along the central axis of the car forming continuous sloping sides with said central depending doors.

14. In combination, a car having a convertible floor, a rod at each side of the central longitudinal axis thereof, a triangular member hinged thereto, a rod at each side of the car, a door hinged to each of said rods, said triangular members and side doors adapted to be converted into a level floor.

15. In combination, a car having a convertible floor, a rod at each side of the central longitudinal axis thereof, a triangular member and a door hinged to each of said rods, a rod at each side of the car, two doors hinged thereto, one of said doors adapted to be converted into a level floor with one of said triangular members.

16. In combination, a car having two inclined swinging doors forming a longitudinal V-shaped hopper, and a balanced door beneath said swinging doors, substantially as described.

850,720. FARRIER'S KNIFE. DANIEL R. BALDWIN, Ravenden Springs, Ark. Filed July 13, 1906. Serial No. 325,995.

Claim.—1. In a hoof-trimmer, a paring-blade, a clamping-jaw for engaging the side of the hoof, means pivotally connecting the jaw with the blade, and a handhold slidable on said means for holding the jaw when the blade is operated.

2. In a hoof-trimmer, a paring-blade, a bar pivotally connected to the outer end thereof, and means slidable on the bar adapted to engage the side of a hoof and frictionally engage the bar when the blade is operated.

3. In a hoof-trimmer, paring means, means pivotally connected thereto, and clamping means having a handhold adjustable on said pivotally-connected means for the purpose described.

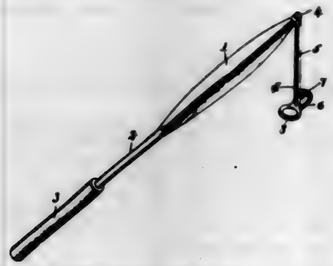

4. In a hoof-trimmer, a paring-blade, a bar pivotally connected at the outer end thereof, clamping means having a handhold adjustable on the bar, and means for limiting the outward movement of the clamping means.

850,721. SLEEVE-HOLDER. HERMINIA M. M. BARNES, Ludlow, England. Filed Feb. 5, 1907. Serial No. 355,963.

Claim.—1. A sleeve-holder comprising an elastic tape having a ring secured at each end thereof and with one end of said tape passing through one of said rings to form a loop for bindingly embracing a sleeve, and a ribbon-loop having the free ends thereof attached to said elastic loop for expanding and withdrawing it from said sleeve.

2. A sleeve-holder comprising an elastic tape having a ring secured at each end thereof with one end of said tape passing through one of said rings to form a loop for bindingly embracing a sleeve and the other of said rings serving as a finger-ring.

3. A sleeve-holder comprising an elastic tape having a ring secured at each end thereof and with one end of said tape passing through one of said rings to form a loop for bindingly embracing a sleeve, and means for releasing the holder from the sleeve.

4. A sleeve-holder comprising an elastic member having one end thereof slidably connected to the opposite end to form a loop for bindingly embracing a sleeve, and a device attached to the free end of the member adapted to be passed over the finger for retaining the holder in operative position.

5. A sleeve-holder comprising an elastic tape having one end thereof slidably connected to the opposite end to form a loop for bindingly embracing a sleeve, a device attached to the free end of the member adapted to be passed over the finger for retaining the holder in operative position, and means attached to the loop of the tape for releasing it from the sleeve.

6. A sleeve-holder comprising an elastic tape having one end thereof slidably connected to the opposite end to form a loop for bindingly embracing a sleeve, and a ribbon-loop having the free ends thereof attached to the elastic loop for releasing the latter from said sleeve.

850,722. BOTTLE-STOPPER ATTACHMENT. HARRY BARTOW, Seanor, Pa. Filed Aug. 29, 1906. Serial No. 332,552.

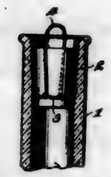

Claim.—As a new article of manufacture, a stopper-extractor composed of a single length of material bent into shape to form a stopper-engaging portion or girdle designed to embrace the stopper at a point between its ends, and an extractor portion or loop disposed in a plane perpendicular to that of the girdle and forming side portions which lie at the sides of the stopper, the material after formation of the loop being attached to the girdle.

850,723. COMPOUND FOR FACING THE PORTS OF OPEN-HEARTH STEEL-FURNACES. ADDISON H. BEALE and ELWOOD F. MCDOWELL, Pottsville, Pa. Filed May 8, 1906. Serial No. 315,833.

Claim.—1. A compound for facing the ports of open-hearth furnaces, said compound consisting of chrome ore, magnesite and a binding agent, substantially as specified.

2. A compound for facing the ports of open-hearth furnaces, said compound consisting of chrome ore, magnesite and an anhydrous binding agent, substantially as specified.

3. A compound for facing the ports of open-hearth furnaces, said compound consisting of chrome ore, magnesite and a hydrocarbon such as anhydrous pitch or tar, substantially as specified.

850,724. RAILWAY SIGNAL-TORPEDO. CHARLES E. BECKWITH, Peoria, Ill. Filed June 28, 1905. Serial No. 267,474.

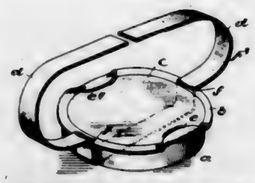

Claim.—1. An improved torpedo, comprising an outer cup-shaped case having an externally-arranged annular flange at its edge, a rail-engaging member connected to the outer case through the medium of the said flange, and means for connecting the two parts of the case independently of the rail-engaging member.

2. An improved torpedo, comprising an outer cup-shaped member provided with an externally-arranged annular flange at its edge, an inner member therefor, a portion of the annular flange extending over the inner member and locking the two parts together, a detonating compound within the case, the said annular flange provided with openings, a rail-engaging member extending across the outer side of the outer member and through the said openings, and means for connecting the two parts of the case independently of the rail-engaging member.

850,725. POULTRY-BROODER. EDWARD E. BILLINGS, Bay City, Mich., assignor of one-eighth to John Parker, Bay City, Mich. Filed Sept. 22, 1906. Serial No. 335,798.

Claim.—A poultry-brooder comprising a casing having a circular heating-chamber in the lower portion thereof, a partition above the heating-chamber, a floor above the partition and providing a hot-air chamber between the parti-

tion and the floor, a flue extending upward from said floor, a nursery-chamber above the floor, air-inlets in the walls of the heating-chamber, a hinged wire screen at the top of

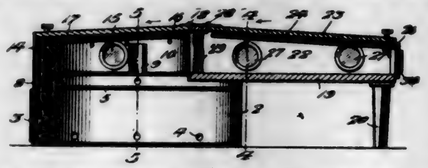

said nursery-chamber, a heat-insulating curtain and an exercising-chamber separated from the nursery-chamber by said heat-insulating curtain, substantially as described.

850,726. APPARATUS FOR RECOVERING TIN AND SOLDER. JOHN H. BILLS, Laramie, Wyo., assignor to United States Tin, Solder & Iron Company, Denver, Colo., a Corporation of Colorado. Filed July 11, 1906. Serial No. 325,610.

Claim.—1. An apparatus for recovering tin and solder from old tin-plate, including a foraminous container supported for rotation, means beneath the container for heating the latter and its contents, side walls beneath the container having their upper portions inclined in the direction of each other, molds disposed alongside of the side walls, and a hood arranged over the drum and the molds and fitting snugly against the latter.

2. In an apparatus of the class described, a foraminous drum supported for rotation, a furnace arranged beneath the drum and having side walls the upper portions of which are inclined in the direction of each other, receiving-molds disposed along the side walls and in contact therewith, and a hood or shield constituting a covering for the drum, the furnace and the molds, and fitting snugly against the latter.

850,727. FODDER-CUTTER. GEORGE A. BOOZE, Straight Creek, Ky. Filed Dec. 21, 1905. Serial No. 292,806.

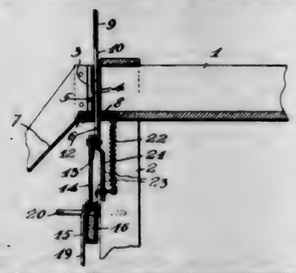

Claim.—In a fodder-cutter the combination with a trough, of a vertically-disposed guide-frame secured to one end of said hopper, a cutting-blade mounted to reciprocate in said frame and provided with downwardly-projecting guide-bars adapted to slide in said guide-frame, a cross-bar secured to the lower ends of said guide-bars, a link pivotally connected to said cross-bar and provided with a stirrup, a foot-lever passing through said stirrup and pivotally connected to a laterally-extended base, a depending bar connected to said cross-bar and having a series of vertically-spaced apertures, a coiled spring connected at one end to the bottom of the trough and having means at its other end for adjustably engaging the apertures in said depending bars.

850,728. VEHICLE-AXLE. ELZA D. BRANCH, Chardon, Ohio. Filed Sept. 8, 1906. Serial No. 333,830.

Claim.—1. An axle comprising opposing body-sections, the meeting faces of said sections being formed with grooves, and a metallic core of cruciform shape having its flanges projecting into said grooves.

2. An axle comprising top and bottom wooden sections, the meeting faces of said sections being formed with grooves, and a metallic core of cruciform shape having its flanges projecting into said grooves.

850,729. AUTOMATIC SCALE. WILLIAM E. BURKS, Ashland, Ky., assignor of one-half to V. V. Adkins, Ashland, Ky. Filed May 12, 1906. Serial No. 316,550.

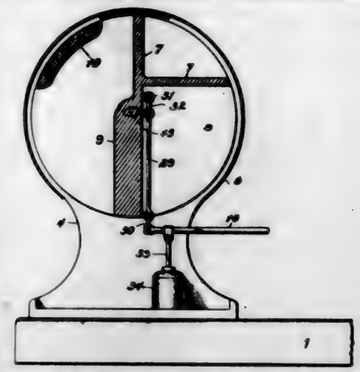

Claim.—1. A computing-scale comprising a scale-beam, a platform supported thereby, a dial-casing, a dial rotatably supported within the casing and comprising face-plates and a framework upon which said face-plates are secured, a portion of said framework being enlarged to provide a counterbalance for the dial, and a connection between the scale-beam and framework.

2. A computing-scale comprising a scale-beam, a platform supported thereby, a dial-casing, a dial rotatably supported within the casing and comprising face-plates and a framework upon which said face-plates are secured, a portion of said framework being enlarged to provide a counterbalance for the dial, and a series of connected links providing a flexible connection between the scale-beam and framework, one end of said connection being secured to the adjacent end of the scale-beam and the opposite end thereof secured to the framework above the support of the latter.

3. A computing-scale comprising a scale-beam, a platform supported thereby, a dial-casing, a dial rotatably supported within the casing and comprising face-plates and a framework upon which said face-plates are secured, a portion of said framework being enlarged to provide a counterbalance for the dial, and a series of connected links providing a flexible connection between the scale-beam and framework, one end of said connection being secured to the adjacent end of the scale-beam and the opposite end thereof secured to the framework above the support of the latter, the face-plates of the dial being divided above and below the center into a series of radially-disposed columns, and a casing being formed with sight-openings to permit the exposure of a predetermined number of said columns above and below the center of the casing in any position of the dial.

4. A computing-scale comprising a scale-beam, a platform supported thereby, a dial-casing, a dial rotatably supported within the casing and comprising face-plates and a framework upon which said face-plates are secured, a portion of said framework being enlarged to provide a counterbalance for the dial, and a series of connected links providing a flexible connection between the scale-beam and framework, one end of said connection being secured to the adjacent end of the scale-beam and the opposite end thereof secured to the framework above the support of the latter, the face-plates of the dial being divided above and below the center into a series of radially-disposed columns, and a casing being formed with sight-openings to permit the exposure of a predetermined number of said columns above and below the center of the casing in any position of the dial, the opposing edges of the respective sight-openings being provided with fixed scale-strips formed on their relatively free edges with a series of indicating-numbers.

850,730. SECTION-BRAKE. JOSEPH CARR, Lexington, Mo. Filed Nov. 14, 1905. Serial No. 287,285.

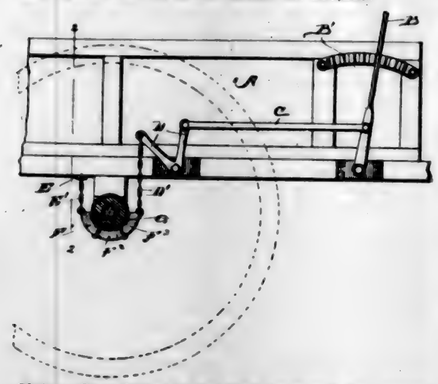

Claim.—In a device of the kind described, the combination with a wagon having a plate secured to the body provided with a crank, of a chain connected to the bottom of said body connected to an apertured lug, of a curved block, spaced apertured lugs, projecting out from the other end of said block, a curved block provided with an apertured lug at one end pivoted between said lugs, on a bolt, apertured lugs formed on the other end of said block, and an apertured lug of a curved block pivoted on a bolt between said lugs, an apertured lug formed on the other end of said block connected to one end of the crank by a chain, and a hand-lever pivoted to said body connected to said crank by a rod, for the purpose described.

850,731. PIPE-COUPLING. ERICK T. CHRISTENSEN and DAVID M. TULLOCH, New York, N. Y. Filed July 28, 1906. Serial No. 328,205.

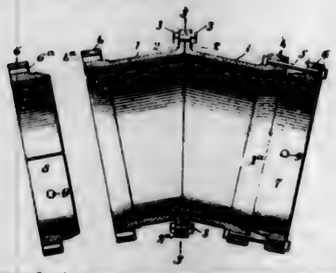

Claim.—1. A pipe-coupling comprising similar cylindrical sleeves having flaring outer ends, and provided on their adjacent inner ends with flanges extending in a plane inclined to the axial line of said sleeves, each flange being provided with a series of apertures evenly disposed from each other, and adapted to register with the apertures of the adjacent flange, bolts engaging said apertures and clamping said flanges together, set-rings bolted to the outer ends of said sleeves independently of each other, and provided with an inner diameter extending flush with the inner diameter of the respective sleeves, substantially as shown and described.

2. A pipe-coupling comprising similar cylindrical sleeves having flaring outer ends, and provided on their adjacent inner ends with flanges extending in a plane inclined to the axial line of said sleeves, each flange being provided with a series of apertures evenly disposed from each other and adapted to register with the apertures of the adjacent flange, bolts engaging said apertures and clamping said flanges together, rings bolted to the outer ends of said sleeves independently of each other and having their inner wall extending flush with the inner wall of said sleeves, and constructed in sections adapted to be adjusted laterally relatively to each other, means for clamping the sections of said rings together, and for securing said ring to the end of the adjacent sleeve, substantially as shown and described.

3. A pipe-coupling comprising similar cylindrical sleeves having flaring outer ends, and provided on their adjacent inner ends with flanges extending in a plane inclined to the axial line of said sleeves, each flange being provided with a series of apertures evenly disposed from each other and adapted to register with the apertures of the adjacent flange, bolts engaging said apertures and clamping said flanges together, set-rings provided with a beveled inner end adapted to telescope with the flaring end of the adjacent sleeve, and with their walls extending flush with the inner walls of their adjacent sleeves, substantially as shown and described.

850,732. BOW-NECKTIE. WILLIAM A. CLARKE, London, England. Filed Apr. 6, 1906. Serial No. 310,289.

Claim.—1. In a bow-necktie, the combination with a bow having spaced vertical slots at the rear, of two independent pairs of spring clamping-tongues, each pair of tongues having one of its members extending through a slot into the material of the bow, and means for pivotally connecting the pairs of clamping-tongues with each other.

2. In a bow-necktie, the combination with a bow, of pairs of clamping-tongues, each pair of tongues comprising two members having curved ends in lapping engagement, and means for loosely connecting the said pairs of tongues.

3. In a bow-necktie, the combination with a bow, of pairs of spring-tongues, each pair of tongues comprising two members having curved ends, said curved ends being in lapping and interlocking engagement and a link encircling the curved ends of the pairs of tongues.

4. In a bow-necktie, the combination with a bow, of pairs of spring clamping-tongues, each pair of tongues comprising two members having curved ends, the curved ends being notched and in lapping and interlocking engagement, and a link encircling the curved portions of the pairs of tongues at the notches thereof.

5. In a bow-necktie, the combination with a bow, of pairs of spring clamping-tongues, each pair of tongues comprising two members having curved ends, said ends being notched and in lapping engagement, one end being

apertured and the other provided with a spur entering the aperture, and a link encircling the curved lapping portions of the pairs of tongues and in the notches thereof.

6. The combination with a necktie, of two independent pairs of spring-tongues pivotally connected with each other, each pair of tongues having one of its members within the material of the tie.

850,733. BLOCK SYSTEM. FRED B. COREY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 20, 1905. Serial No. 283,616.

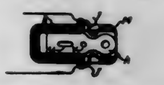

Claim.—1. In a block system, two staff-boxes, a plurality of staves in each box, said boxes being arranged normally to permit the withdrawal of one staff at a time from either box, and means operative upon the withdrawal of a staff from one box to lock the second box against withdrawal of staves.

2. In a block system, two staff-boxes, a plurality of staves in each box, said boxes being arranged normally to permit the withdrawal of one staff at a time from either box, means operative upon the withdrawal of a staff from one box to lock the second box against withdrawal of staves, and means for unlocking said second box operative upon the insertion of said staff therein.

3. In a block system, two staff-boxes, a plurality of staves in each box, said boxes being arranged normally to permit the withdrawal of one staff at a time from either box, a step-by-step mechanism operative upon the withdrawal of each staff from one box and arranged when displaced to lock the second box against withdrawal of staves, and means for moving said mechanism one step in the reverse direction upon the insertion of each staff in the second box.

4. In a block system, two receptacles, staves in each receptacle, a mechanism for each receptacle arranged when displaced in a given direction to lock said receptacle against withdrawal of staves, means operative upon the withdrawal of a staff from either receptacle for displacing both mechanisms but in opposite directions, and means operative upon the insertion of said staff in the other receptacle for returning both mechanisms to their original positions.

5. In a block system, two receptacles, staves in each receptacle, a step-by-step mechanism arranged when displaced one or more steps in a given direction to lock said receptacle against withdrawal of staves, means operative upon the withdrawal of each staff from one of said receptacles for displacing both mechanisms one step but in opposite directions, and means operative upon the insertion of each of said staves in the other receptacle for returning both mechanisms one step toward their original positions.

6. In a block system, two receptacles, staves in each receptacle, two synchronously but relative oppositely moving mechanisms each arranged when displaced in a given direction to lock one of said receptacles against the withdrawal of staves, means for moving said mechanisms upon the withdrawal of each staff from one receptacle, and means for returning said mechanism by an equal amount toward their original positions upon the insertion of each staff in the second receptacle.

7. In a block system, two receptacles, staves in each receptacle, two ratchet-wheels each arranged when moved in a given direction to lock one of said receptacles, pawls adapted to move said ratchet-wheels in either direction, means operating said pawls to move said ratchet-wheels in relatively opposite directions, upon the withdrawal of a staff from either receptacle, and means for operating said pawls to move said ratchet-wheels in the reverse directions upon the insertion of a staff in the other receptacle.

8. In a block system, two receptacles, staves in each receptacle, two ratchet-wheels each arranged when moved in a given direction to lock one of said receptacles, pawls adapted to move said ratchet in either direction, means for operating said pawls to move said ratchet-wheels one step in relatively opposite directions upon the withdrawal of each staff from one of said receptacles, and means for operating said pawls to return said wheels one step in the reverse direction upon the insertion of each of said staves in the second receptacle.

9. In a block system, two receptacles, staves therein, a mechanism for each receptacle controlling the withdrawal of staves therefrom and arranged normally to permit the withdrawal of one staff at a time, means operative upon the withdrawal of one or more staves from one of said receptacles for locking the mechanism controlling the second receptacle to prevent withdrawal of staves therefrom, and means for unlocking said mechanism only upon the insertion in the second receptacle of staves equal in number to those withdrawn from the first receptacle.

10. In a block system, two receptacles, staves in each receptacle, an electrically-controlled locking mechanism for each receptacle, a circuit arranged to be closed upon the withdrawal of a staff from either receptacle and when closed to energize the locking mechanism of the other receptacle, and a circuit arranged to be closed by the insertion of a staff in the other receptacle and when closed to energize the locking mechanism of that other receptacle to unlock said receptacle.

11. In a block system, two receptacles, staves in each receptacle, an electrically-controlled locking mechanism for each receptacle arranged normally to permit the withdrawal of one staff at a time, and circuits for said mechanisms energized upon the withdrawal and insertion of staves in said receptacles whereby one of said mechanisms is energized to lock its receptacle upon the withdrawal of one or more staves from the other receptacle and to unlock its receptacle upon the subsequent insertion in its receptacle of an equal number of staves.

12. In a block system, two receptacles, staves in each receptacle, a mechanism for each receptacle arranged when displaced in a given direction to lock said receptacle against withdrawal of staves, means operative upon the withdrawal of a staff from either receptacle for displacing both mechanisms but in opposite directions, and means operative upon the failure of either mechanism to move for preventing the complete withdrawal of said staff.

13. In a block system, two receptacles, staves in each receptacle, a locking mechanism operative upon the withdrawal of a staff from one receptacle to lock the other receptacle, and means operative upon the failure of said mechanism to operate for preventing the complete withdrawal of said staff.

14. In a block system, two receptacles, staves in each receptacle, a locking mechanism for each receptacle, two coils controlling each locking mechanism, and means operative upon the partial withdrawal of the staff from one receptacle to vary the circuits of said coils to permit the complete withdrawal of said staff and to lock the other receptacle against withdrawal of staves.

15. In a block system, two receptacles, staves in each receptacle, a locking mechanism for each receptacle, two coils controlling each locking mechanism, one coil being normally open-circuited and the other normally closed-circuited and said coils being arranged to permit the complete withdrawal of a staff upon the opening of the circuit of both coils, and then closing the circuit of one coil, and means operative upon the partial withdrawal of a staff from one receptacle to open and then close again the circuit of the normally closed-circuited coil of that receptacle and to close the circuit of the normally open-circuited coil of the other receptacle.

16. In a block system, two staff-boxes, a locking mechanism for each box, two coils controlling each locking mechanism, a step-by-step mechanism operative upon the partial withdrawal of a staff from one box and arranged to vary the circuits of said coils to permit the complete withdrawal of a staff from that box and to lock the other box against withdrawal of staves, and means for moving said mechanism one step in the reverse direction upon the insertion of a staff in the second box.

850,734. MACHINE FOR REELING TWINE. ALSTON J. CRANDALL, Ashaway, R. I. Filed Aug. 3, 1905. Serial No. 272,515.

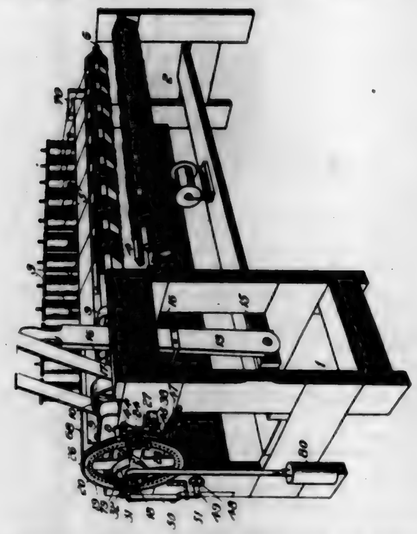

Claim.—1. In a machine for reeling twine, the combination with a counting-wheel, loosely mounted on a shaft and provided with an annular row of holes, of a counting-arm, also mounted on said shaft and provided with a slot, a screw for locking the counting-arm to the counting-wheel, whereby the number of coils to be wound may be regulated, and means for automatically resetting the counting-wheel.

2. In a machine for reeling twine, the combination with a counting-wheel, loosely mounted on a shaft and provided with an annular row of holes, of a counting-arm, also loosely mounted on said shaft and provided with a slot, a screw for locking the counting-arm to the counting-wheel, whereby the number of coils to be wound may be regulated, a spacer-bar, means for moving the spacer-bar, and means for automatically resetting the counting-wheel.

3. In a machine for reeling twine, the combination with a counting-wheel, loosely mounted on a shaft and provided with an annular row of holes, of a counting-arm, also loosely mounted on said shaft and provided with a slot, a screw for locking the counting-arm to the counting-wheel, whereby the number of coils to be wound may be regulated, a spacer-bar, means for moving the spacer-bar, means for automatically resetting the counting-wheel, and means for automatically stopping the machine when the required number of coils have been wound.

4. In a machine for reeling twine, the combination with a counting-wheel and means for rotating the same, of a counting-arm adapted to be locked to the counting-wheel at predetermined points, to regulate the number of coils to be wound, means for automatically resetting the counting-wheel, and means for preventing the recoil of said wheel.

5. In a machine for reeling twine, the combination with a counting-wheel and means for rotating the same, of a counting-arm adapted to be locked to said wheel at predetermined points, to regulate the number of coils to be wound, a spacer-bar, means for moving the spacer-bar, means for automatically resetting the counting-wheel, and means for preventing the recoil of said wheel.

6. In a machine for reeling twine, the combination with a counting-wheel and means for rotating the same, of a pawl arranged to prevent reverse movement of the counting-wheel, a counting-arm adapted to be locked to said wheel at predetermined points, means arranged on the counting-arm to disengage the pawl from the counting-wheel, means for automatically resetting said wheel, and means arranged to prevent the recoil of the counting-wheel.

7. In a machine for reeling twine, the combination with a counting-wheel and means for rotating the same, of a counting-arm adapted to be locked to the counting-wheel at predetermined points, a pawl arranged to prevent reverse movement of the counting-wheel, means arranged on the counting-arm to disengage the pawl from said wheel, means for automatically resetting the counting-wheel, and a brake mechanism arranged to prevent the recoil of the counting-wheel.

8. In a machine for reeling twine, the combination with a counting-wheel and means for rotating the same, of a counting-arm adapted to be locked to the counting-wheel at predetermined points, a pawl arranged to prevent reverse movement of the counting-wheel, means arranged on the counting-arm to disengage the pawl from said wheel, means for resetting the counting-wheel, a brake-lever and a brake, and mechanism arranged between the brake-lever and the brake, whereby said brake is operated to prevent the recoil of the counting-wheel.

9. In a machine for reeling twine, the combination with a counting-wheel and means for rotating the same, of a counting-arm adapted to be locked to the counting-wheel at predetermined points, a pawl arranged to prevent reverse movement of the counting-wheel, a spacer-bar, means for moving the spacer-bar, means arranged on the counting-arm to disengage the pawl from the counting-wheel, means for resetting said wheel, and a brake mechanism arranged to prevent the recoil of the counting-wheel.

10. In a machine for reeling twine, the combination with a counting-wheel and means for rotating the same, of a counting-arm adapted to be locked to the counting-wheel at predetermined points, a pawl arranged to prevent reverse movement of the counting-wheel, a spacer-bar, means for moving the spacer-bar step by step, means arranged on the counting-arm to disengage the pawl from the counting-wheel, means for resetting said wheel, a brake mechanism arranged to prevent the recoil of the counting-wheel, and means for automatically stopping the machine when the required number of coils have been reeled.

11. In a machine for reeling twine, the combination with a counting-wheel and means for rotating the same, of a counting-arm adapted to be locked to the counting-wheel at predetermined points, to regulate the number of coils to be wound, a spacer-bar, automatic means for moving the spacer-bar step by step, and automatic means for stopping the machine when the required number of coils have been wound.

12. In a machine for reeling twine, the combination of a rotatable toothed counting-wheel, a counting-arm adapted to be locked to said counting-wheel at predetermined points, to regulate the number of coils to be wound, means for preventing a reverse movement of the counting-wheel, means for automatically releasing said wheel, and a curved guide and a weight for insuring a rapid and positive return of the counting-wheel to normal or starting position.

13. In a machine for reeling twine, the combination of a rotatable toothed counting-wheel, a counting-arm adapted to be locked to said counting-wheel at predetermined points, to regulate the number of coils to be wound, means for preventing a reverse movement of the counting-wheel, means for automatically releasing said wheel, a curved guide and a weight for insuring a rapid and positive return of the counting-wheel to normal position, and means for preventing the recoil of said counting-wheel.

850,735. BOOK-COVER PROTECTOR. MICHAEL W. CUMMINGS and THOMAS F. JORDAN, Olyphant, Pa. Filed Jan. 20, 1906. Serial No. 297,078.

Claims.—1. A blank for a book-cover protector of rectangular form having a longitudinal series of parallel equally-spaced scale-lines bearing marks representing the distance from one longitudinal edge of the blank to each member of such series, and a transverse series of parallel equally-spaced scale-lines bearing marks representing the distance from a transverse edge of the blank to each member of such series.

2. A blank for a book-cover protector of rectangular form having a central longitudinal series of parallel equally-spaced scale-lines, such series consisting of a line in the exact center of the blank bearing a mark representing the distance therefrom to each longitudinal edge of the blank, and lines on each side of said center line each bearing a mark representing the distance therefrom to the longitudinal edge of the blank farthest removed, and a transverse series of parallel equally-spaced scale-lines located at each side of a central transverse space, each member of each such transverse series bearing a mark representing the distance therefrom to the transverse edge of the blank farthest removed.

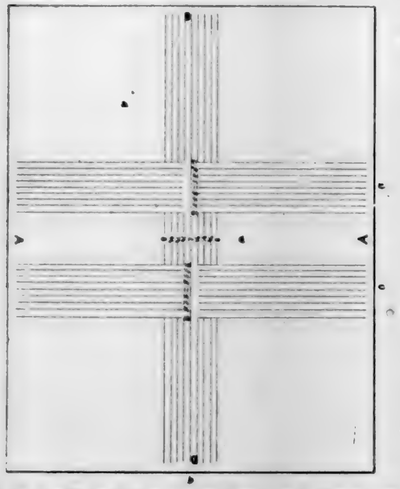

3. A blank for a book-cover protector of rectangular form having a central longitudinal series of parallel equally-spaced scale-lines, such series consisting of a line in the exact center of the blank bearing a mark representing the distance therefrom to each longitudinal edge of the blank, and lines on each side of said center line each bearing a mark representing the distance therefrom to the longitudinal edge of the blank farthest removed, and a transverse series of parallel equally-spaced scale-lines, each member of said transverse series bearing a mark representing the distance therefrom to the transverse edge of the blank farthest removed.

4. A blank for a book-cover protector of rectangular form having a longitudinal series of parallel equally-spaced scale-lines, such series consisting of a line in the exact center of the blank bearing a mark representing the distance therefrom to each longitudinal edge of the blank and lines on one side of said center line each bearing a mark representing the distance therefrom to the longitudinal edge of the blank farthest removed, and a transverse series of parallel equally-spaced scale-lines, each member of such transverse series bearing a mark representing the distance therefrom to the transverse edge of the blank farthest removed.

850,736. HOE. DUNCAN B. CURRY, JR., Agricultural College, Miss. Filed Nov. 19, 1906. Serial No. 344,109.

Claim.—1. A weeding-hoe comprising a hoe-blade having a lower longitudinal cutting edge and one end pointed, a handle, and means adjustably connected to the side of the handle and to the blade for securing the blade to and at an angle with respect to the handle.

2. A weeding-hoe comprising a hoe-blade, a handle, a pair of braces, one of said braces being longer than the other, means for securing the forward end of shorter brace to near one end of the hoe-blade, means for securing the forward end of the other brace to the hoe-blade at one side of the center and toward the other end of the blade, and means for securing the rear end of the braces to the sides of the handle.

3. A weeding-hoe comprising an angularly-disposed hoe-blade, a pair of braces, means for securing one end of said braces to the hoe-blade, a handle, means for pivotally connecting said braces at a point intermediate their ends to the handle, and means for adjustably connecting the ends of the braces to the handle.

4. A weeding-hoe comprising an angularly-disposed hoe-blade, a pair of braces, means for securing one end of said braces to the hoe-blade, a handle, means for pivotally connecting said braces at a point intermediate their ends to the handle, means for adjustably connecting the ends of the braces to the handle, and means to prevent the slipping of the braces when adjusted.

850,737. PLATE-LIFTER. DAVID P. DELLINGER, Cleveland, N. C. Filed Mar. 13, 1906. Serial No. 305,880.

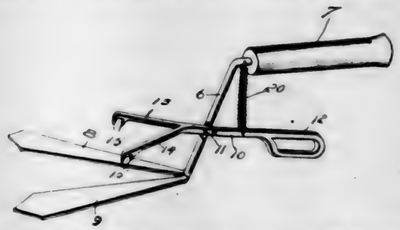

Claim.—A pan-lifter comprising a vertical shank having an inclined handle at one end and provided at its opposite end with a plurality of flat, outwardly-divergent members adapted to support the under side of a pan, a lever pivoted intermediate its ends to said shank and provided at one end with a handle and at the other with a pair of outwardly-divergent clamping members having their free ends formed with depending teeth adapted to engage the rim of a pan and coöperating with said supporting members to grasp and hold a pan, and a spring connecting said shank and lever adjacent the handles thereof and adpated to hold the clamping end of the lever normally depressed.

850,738. ELECTRICALLY-OPERATED VALVE. JOHN T. H. DEMPSTER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 13, 1901. Serial No. 64,485.

Claim.—1. The combination of a conduit of magnetic material, a valve for opening and closing the conduit, a spool of non-magnetic material independent of the conduit and having an integral portion extending between the end of the conduit and the valve forming a seat for the latter, and a magnet-winding on the spool for actuating the valve.

2. In combination, a magnet-spool composed of non-magnetic material, a winding therefor, a tubular conduit of magnetic material which extends through the spool and is attached thereto, a perforated flange that is carried by the spool, a non-magnetic cap which is detachably secured to the spool by a fluid-tight joint, and a valve which normally rests on the cap and is actuated by the magnet.

3. In combination, a screw-threaded tube of magnetic material, a spool of non-magnetic material which slips over the tube and is held by the screw-thread, a winding therefor, a perforated flange formed on the spool, a screw-threaded extension also formed on the spool which incloses the perforated flange, a cap detachably secured to the extension by the thread, and a valve actuated by the magnet which is normally supported by the cap and is in line with the perforation.

850,739. BOILER-TUBE CLEANER. SAMUEL F. DIBBDALE, Philadelphia, Pa., assignor to The Lagonda Manufacturing Company, Springfield, Ohio, a Corporation of Ohio. Filed Sept. 1, 1905. Serial No. 276,683.

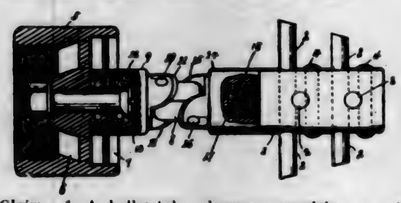

Claim.—1. A boiler-tube cleaner comprising a rotary driver adapted to substantially fit the tube to be cleaned, a universal coupling carried by said driver, a cleaner-head reduced in diameter compared with the driver, and connected to the driver by said universal coupling, and rigid picking fingers or pins projecting outwardly from the cleaner-head, separated from each other by wide and deep clearance-spaces, the fingers or pins composing a forward group of shorter length than the diameter of the driver and a rear group of length substantially equal to the diameter of the driver, whereby the driver will properly fill the tube to center the machine, whereby the head may gyrate as well as rotate, and whereby the fingers or pins will enter within the incrustation in the tube and yet will cut the same away out to the tube.

2. In a boiler-tube cleaner of the character described, a cleaner-head comprising a body having formed therethrough two parallel apertures and a third aperture intersecting said parallel apertures at right angles, all of said apertures being transverse to the longitudinal axis of the body, pins passing through two of said apertures at right angles to each other and extending beyond the body to form picking-fingers, one of said pins being notched to cause said pins to interlock and the other of said pins being notched to interlock with a locking-pin, and a locking-pin secured in the third aperture and engaging the pin notched to receive it, substantially as described.

850,740. VALVE. ABRAHAM L. DOW, Lyons, Colo. Filed Sept. 20, 1906. Serial No. 335,416.

Claim.—1. In combination, a valve-casing having inlet and outlet ports, one of which is located at the end of the casing and the other of which is located at the side of the casing, an inwardly-directed partition at the end of the casing having the port, the inner surface of the partition being beveled, a tube screw-threaded to the casing at the opposite end thereof and adapted to contact with the beveled surface of said inwardly-directed flange, a valve adapted to close the inner end of the tube, and a valve-stem carrying said valve and extending outward through the tube at the opposite end thereof and having a passage, the ends of which communicate with the interior of the tube and with the outside thereof when the valve is closed.

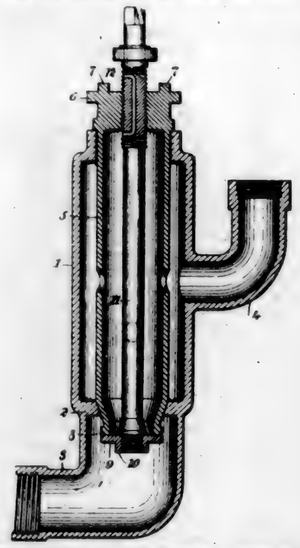

2. In combination, a substantially cylindrical valve-casing having an inlet-port and an outlet-port, one of which is located at the end of the casing and the other of which is located at the side of the casing, an inwardly-directed flange adjacent the end of the casing having the inlet-port, the inner edge of said flange being tapered, a perforated tube screw-threaded into the opposite end of the casing and having the inner end thereof conical and adapted to be forced into contact with the tapered edge of the inwardly-directed flange, a valve adapted to close the inner end of the tube, and a valve-stem extending longitudinally of the tube and supporting said valve, the opposite end of the valve-stem extending outward through the outer end of the tube and being provided with means whereby it may be rotated to operate the valve, said valve-stem being provided with a passage, the ends of which normally communicate with the tube and with the outside atmosphere when the valve is closed.

850,741. BOTTLE. JAMES H. DUNSTAN, Susanville, Oreg. Filed Apr. 24, 1906. Serial No. 313,408.

Claim.—A bottle having an interior stopper-supporting shoulder or offset formed in the neck thereof and provided with diametrically opposite laterally-extending lugs upon the neck and with notches forming seats in the upper edge of the neck in registry with said lugs, in combination with a stopper supported upon the shoulder, a metallic guard-plate seated upon the stopper in the mouth of the bottle, and a wire bail straddling the stopper, seated in the recesses at the upper edge of the neck and having its side

members bent around the lugs, carried back through the seat-recesses, and bent upon the guard member adjacent to the crown of the bail, and a seal of solder securing the free ends and the crown of the latter upon the metallic guard-plate.

850,742. MACHINE FOR MAKING CONICAL CIGARETTES. RICHARD ERMELER, Berlin, Germany. Filed June 18, 1906. Serial No. 322,288.

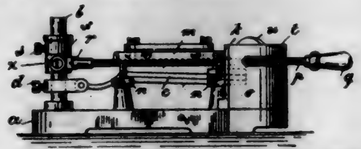

Claim.—1. A machine for rolling conical cigarettes, comprising a table, a roller and a curved guide-plate formed with a guiding-slot for said roller, said table lying at an angle to the plane of movement of the roller and said guide-slot having a clearance at its rear end to permit the roller to be moved vertically from the table to facilitate the removal of the finished cigarette.

2. A machine for rolling conical cigarettes, comprising a base, an inclined segmental table, a roller, a pivot element therefor at a point coincident with the apex of the table, a support for the apex of said table coincident with said pivot element, and a curved plate having a guide-slot for the said roller, supporting the same during the operation thereof at an angle to the said table.

850,743. CLASP. OLIVER FISHER, Sloan, Iowa. Filed Sept. 21, 1906. Serial No. 335,586.

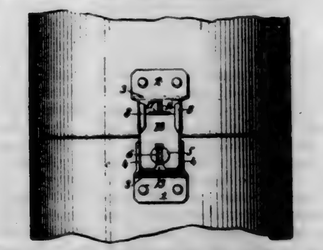

Claim.—1. A clasp comprising sheet-metal end pieces each having guideways, a member provided with an aperture connected to one of said end pieces and adapted to be passed over the guideways of the other, and a plate slidable in the guideways of both end pieces for locking them together.

2. A clasp comprising sheet-metal end pieces each having guideways, a member provided with an aperture connected to one of said end pieces and adapted to be passed over the guideways of the other, a locking-plate slidable in the guideways of both end pieces for locking them together, and a spring member having a projection to provide a stop for the locking-plate.

3. A clasp comprising end pieces one of which is provided with guiding means, a locking member slidably mounted in the guiding means, and a member connected to the end piece having the guiding means and adapted to engage with the other end piece.

4. A clasp comprising sheet-metal end pieces each having guideways, an apertured member connected to one of said end pieces adapted to be passed over the guideways of the other, and a locking-plate slidably mounted in the guideways of one end piece and having a bifurcation at one end for engaging in the guideways of the other.

5. A clasp comprising sheet-metal end pieces each having guideways, a locking-plate slidable in the guideways of one end piece having a bifurcation for engaging in the guideways of the other, and means for connecting the end pieces together.

6. A clasp comprising end pieces, means for connecting the end pieces together, slidable means for locking the connecting means in place, and a spring member for binding the locking means and forming a stop therefor to prevent its accidental displacement.

7. A clasp comprising sheet-metal end pieces each provided with an offset and guideways, a locking-plate slidable in the guideways of one end piece and having a bifurcation for engaging the guideways of the other, means for connecting the end pieces together, and spring means for normally pressing the connecting means in a direction to bindingly engage the locking-plate when the latter is in locked position.

8. A clasp comprising sheet-metal end pieces, each having guideways formed as an integral part thereof, an apertured flap connected to one end piece, a locking-plate slidably mounted in the guideways of said end piece, a spring member provided with a pocket engaged by said end piece, spring-arms carried by said spring member acting to normally press the flap in a direction to bindingly engage the locking-plate when the latter is in locked position, and a projection carried by the spring member to form a stop for the locking-plate, for the purpose described.

9. A clasp comprising sheet-metal end pieces, each having guideways formed as an integral part thereof, a locking-plate slidably mounted in the guideways of one end piece, an apertured flap connected to said last-named end piece adapted to be passed over the guideways of the other, and a spring member having means at its ends to normally press the flap in a direction to bindingly engage the locking-plate when the latter is in locked position and form a stop to prevent the accidental displacement of the locking-plate.

850,744. BED. LORIN H. FLANDERS, Memphis, Tenn. Filed Oct. 12, 1906. Serial No. 338,582.

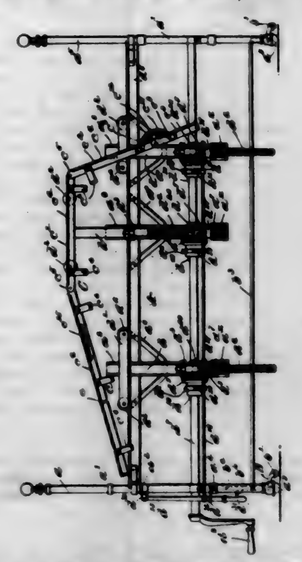

Claim.—1. A bed comprising a headboard and a footboard, side rails connecting the head and the foot board, vertical slideways arranged transversely of the bed, said slideways comprising U-shaped frames, the arms of the frames being connected with the side rails and the body of the frames having a bearing at the center thereof, an internally-threaded sleeve provided at its upper end with a bevel-gear journaled in the bearing, slides comprising U-shaped frames having the arms thereof movable in the arms of the slideways, and the body portion thereof provided with a screw-threaded rod depending from its center and passing through the screw-threaded sleeve, a transverse shaft journaled upon the body portion of each of the slideways, and provided at each end with a bevel-gear, one of said bevel-gears meshing with the bevel-gear on the sleeve, a shaft journaled longitudinally of the bed, a plurality of bevel-gears mounted upon the said shaft, each engaging the bevel-gear of a transverse shaft, means for rotating said shaft, means at the head of the bed for moving the bevel-gears on the longitudinal shaft in and out of mesh with the gears on the transverse shafts, a mattress-frame in connection with the bed, said frame comprising a plurality of hinged sections, and a connection between the respective slides and the section of the mattress-frame adjacent thereto.

2. A bed comprising a headboard and a footboard, side rails connecting the head and the foot board, vertical slideways arranged transversely of the bed, said slideways comprising U-shaped frames, the arms of the frame being connected with the side rails and the body of the frame having a bearing at the center thereof, an internally-threaded sleeve provided at its upper end with a bevel-gear journaled in the bearing, slides comprising U-shaped frames having the arms thereof movable in the arms of the slideways, and the body portion thereof provided with a screw-threaded rod depending from its center and passing through the sleeve, a transverse shaft journaled upon the body portion of each of the slideways, and provided at each end with a bevel-gear, one of said bevel-gears meshing with the bevel-gear on the sleeve, a shaft journaled longitudinally of the body, a plurality of bevel-gears mounted for longitudinal movement upon said shaft, each of said bevel-gears being adjacent to a bevel-gear of the transverse shaft, means for moving the bevel-gears on the transverse shaft into and out of engagement with the bevel-gears on the horizontal shafts, a mattress-frame comprising a plurality of hinged sections, and a connection between the respective slides and the section of the mattress-frame adjacent thereto.

3. A bed comprising a headboard and a footboard, side rails connecting the head and the foot board, vertical slideways arranged transversely of the bed, said slideways comprising U-shaped frames, the arms of the frames being connected with the side rails and the body of the frames having a bearing at the center thereof, an internally-threaded sleeve provided at its upper end with a bevel-gear journaled in the bearing, slides comprising U-shaped frames having the arms thereof movable in the arms of the slideways, and the body portion thereof provided with a screw-threaded rod passing through the sleeve, means engaging each of said bevel-gears for turning the sleeve whereby to raise and lower the rod, means for connecting and disconnecting each of said means from said respective bevel-gears, a mattress-frame in connection with the bed, said frame comprising a plurality of hinged sections, and a connection between the respective slides and the section of the mattress-frame adjacent thereto.

4. A bed comprising a headboard and a footboard, side rails connecting the head and the foot board, vertical slideways arranged transversely of the bed, said slideways comprising U-shaped frames, the arms of the frames being connected with the side rails and the body of the frames having a bearing at the center thereof, slides comprising U-shaped frames having the arms thereof movable in the arms of the slideways, and the body portions thereof provided with a screw-threaded rod passing through the bearing, a screw-threaded sleeve journaled in each of the bearings and engaging the rod, means engaging each of the sleeves whereby to rotate the same, a sectional mattress-frame in connection with the bed, and a connection between the respective slides and the section of the mattress-frame adjacent thereto.

5. A bed comprising a headboard and a footboard, side rails connecting the head and the foot board, vertical slideways arranged transversely of the bed, said slideways comprising U-shaped frames, the arms of the frames being connected with the side rails, slides comprising U-shaped frames having the arms thereof movable in the arms of the slideways, means for elevating and depressing the slides with respect to the slideways, a mattress-frame in connection with the bed, said frame comprising a plurality of hinged sections, and a connection between the respective slides and the section of the mattress-frame adjacent thereto.

6. A bed comprising a headboard and a footboard, side rails connecting the head and the foot board, a mattress-frame in connection with the bed, said frame comprising a plurality of hinged sections, means for moving said sections bodily and in unison with respect to the bed, and means for connecting and disconnecting each of said sections from said moving means.

7. A bed comprising a headboard and a footboard, a mattress-frame comprising a plurality of hinged sections in connection with the bed, means for moving said sections bodily with respect to the bed and means for connecting and disconnecting each of said sections from said moving means.

8. The combination with a bed-frame, of vertical slideways arranged transversely thereof, slides movable in the slideways, means for elevating and depressing the slides with respect to the slideways, a mattress-frame in connection with the bed, said frame comprising a plurality of sections, a connection between the respective slides and the sections of the mattress-frame adjacent thereto, and means for connecting and disconnecting the slides and the sections.

9. A bed comprising a headboard and a footboard, and a mattress-frame in connection with the bed, said headboard and footboard comprising each posts connected by cross-bars below the level of the mattress-frame, and gates hinged to each of the posts above the level of the mattress-frame.

850,745. SPEED-INDICATOR. THOMAS W. FLORY, London, England. Filed Jan. 4, 1906. Serial No. 294,580.

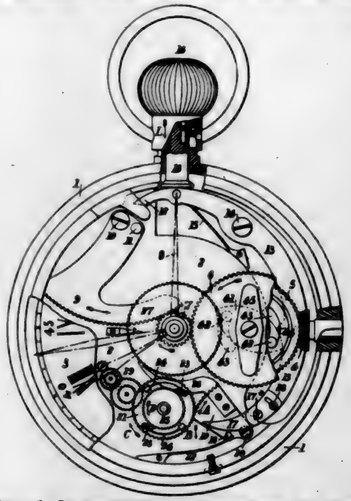

Claim.—1. In speed-indicating apparatus, the combination with continuously-acting clockwork, of a shaft having a toothed wheel and adapted to be rotated from a rotating part of the apparatus the speed of which is to be ascertained, a wheel geared to said toothed wheel and another wheel in frictional contact with said second wheel, a pinion gearing with said other wheel, an indicator-pointer carried thereby, a ratchet-wheel integral with the said pinion, a detent engaging the said ratchet-wheel to prevent the indicator being rotated, a spring-operated toothed sector carrying the said detent, an arbor rotated by the clockwork, a toothed wheel loosely mounted thereon and gear-

ing with said toothed sector, a ratchet-wheel fast on said arbor, spring-pawls carried by said loosely-mounted wheel and gearing with said ratchet-wheel, a pivoted lever adapted to actuate against its spring, the spring-actuated detent which locks the ratchet and pinion wheels controlling the movement of the indicator-pointer and means to actuate said lever.

2. In speed-indicating apparatus, the combination with continuously-acting clockwork of a shaft having toothed wheel and adapted to be rotated from a rotating part of the apparatus, the speed of which is to be ascertained, a wheel geared to said toothed wheel and another wheel in frictional contact with said second wheel, a pinion gearing with said other wheel, an indicator-pointer carried thereby, a ratchet-wheel integral with the said pinion, a detent engaging the said ratchet-wheel to prevent the indicator being rotated, a spring-operated toothed sector carrying the said detent, an arbor rotated by the clockwork, a toothed wheel loosely mounted thereon and gearing with said toothed sector, a ratchet-wheel fast on said arbor, spring-pawls carried by said loosely-mounted wheel and gearing with said ratchet-wheel, a pivoted lever adapted to actuate against its spring, the spring-actuated sector and detent which locks the ratchet and pinion wheels controlling the movement of the indicator-pointer, means to actuate said lever and means to return the indicator-pointer to its starting-point.

3. In speed-indicating apparatus, the combination with continuously-acting clockwork, of an indicator, means for conveying thereto motion from the body, the speed of which is to be indicated, a ratchet-wheel fast to the axis of said indicator, a pivoted toothed sector provided with a detent adapted to engage said ratchet-wheel, a spring tending to bring the said sector into a position in which the said detent engages the said ratchet-wheel, an arbor rotated by the clockwork, a toothed wheel mounted thereon, gearing with said sector and adapted to be turned in one direction independently of the clockwork, means to prevent its rotation in the other direction faster than the clockwork, and means to rotate said sector until its detent is out of engagement with the ratchet-wheel.

4. In speed-indicating apparatus, the combination with continuously-acting clockwork, of an indicator, means for transmitting thereto motion from a rotary part of the apparatus the speed of which is to be ascertained, a detent, lever means for removing said detent, together with a spring-actuated toothed sector carrying said detent, an arbor rotated by the clockwork, a toothed wheel loosely mounted on said arbor, and gearing with said sector, a ratchet-wheel fast upon said arbor, spring-pawls carried by said loose wheel and adapted to engage the teeth of said ratchet-wheel, said teeth and pawls being arranged to permit the rotation of said loose wheel independent of the said ratchet-wheel on the movement of the sector to disengage the detent, but to oppose its rotation in the opposite direction at a speed faster than that of the ratchet-wheel.

5. In speed-indicating apparatus, the combination with continuously-acting clockwork of a revoluble indicator, a detent, means for removing said detent for a predetermined length of time, and means for transmitting to the indicator motion from a rotating part of the apparatus, the speed of which is to be ascertained, said means consisting in a toothed wheel rotated by the apparatus last mentioned, a wheel gearing therewith, a toothed wheel in frictional contact with the latter and a toothed wheel revolving with the indicator and gearing with the wheel adapted to be revolved by frictional contact.

6. In speed-indicating apparatus, the combination with continuously-acting clockwork, of an indicator, a detent, lever means for removing said detent for a predetermined length of time, and means for transmitting to the indicator motion from a rotating part of the apparatus the speed of which is to be ascertained.

850,746. BICYCLE. HILDEBRANDO GARZA, Monterey, Mexico. Filed Oct. 10, 1906. Serial No. 338,262.

Claim.—1. The combination with the bicycle and the driving mechanism therefor, of a handle-bar comprising a plurality of sections pivotally connected, a bevel gear-wheel having ratchet-teeth on the periphery thereof loosely journaled on the front fork, a horizontal shaft secured to the fork above the bevel-wheel, a sleeve loosely journaled on the horizontal shaft and provided with a sprocket-wheel and with a bevel-gear meshing with the horizontal bevel-gear, a sprocket-wheel on the rear wheel of the bicycle, a sprocket-chain connecting said sprocket-wheel and the sprocket-wheel on the sleeve, a pawl-arm loosely mounted on the front fork, a spring-pressed pawl for engaging the ratchet-teeth of the bevel-gear, and a link connecting the pawl-arm with the movable section of the handle-bar.

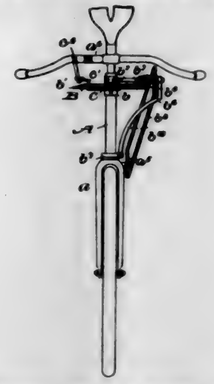

2. The combination with the bicycle and the driving mechanism therefor, of an auxiliary driving mechanism comprising a bevel-gear loosely journaled on the front fork, and provided on its periphery with ratchet-teeth, a horizontal shaft arranged above the bevel gear-wheel and provided with a bevel-gear meshing therewith, a sprocket-wheel rigid with said last-named bevel-gear, a sprocket-wheel on the rear wheel of the bicycle, a sprocket-chain connecting said sprocket-wheels, a handle-bar comprising a plurality of pivotally-connected sections, a pawl-arm having a pawl for engaging the ratchet-teeth of the bevel gear-wheel, and a connection between the movable section of the handle-bar and the pawl-arm.

3. The combination of the bicycle having a handle-bar provided with a movable section, of a bevel-gear loosely journaled on the front fork, and provided on its peripheral surface with ratchet-teeth, a pawl-arm having a pawl for engaging the ratchet-teeth, a link connecting the movable section of the handle-bar and the pawl-arm, and a connection between the bevel-gear and a wheel of the bicycle, for transmitting motion thereto.

4. The combination of the bicycle having a handle-bar provided with a movable section, driving mechanism for the bicycle, means connected with the movable section of the handle-bar for actuating the driving mechanism, and means for normally retaining the sections of the handle-bar in alinement.

850,747. MANUFACTURE AND APPLICATION OF RUBBER TIRES TO WHEEL-RIMS. ISAAC W. GILES, New Bedford, and CHARLES W. TOBEY, Fairhaven, Mass. Filed Feb. 6, 1906. Serial No. 299,844.

Claim.—1. The method herein described of manufacturing rubber-tired wheels, consisting of performing the complete operation of molding the rubber tire directly on the rim of the wheel, then vulcanizing the tire so molded to varying degrees of hardness, its hardest portion being immediately adjacent to the rim.

2. The method herein described, of manufacturing rubber-tired wheels, consisting in performing the complete process of molding the rubber directly on the rim of the wheel provided with retaining means adapted to embed themselves in the tire so molded, and then vulcanizing said tire directly on the wheel to varying degrees of hardness, its hardest portion being immediately adjacent to the rim and beneath the retaining means.

850,748. RUBBER-TIRE FASTENER. ISAAC W. GILES, New Bedford, and CHARLES W. TOBEY, Fairhaven, Mass. Filed Sept. 14, 1906. Serial No. 334,686.

Claim.—1. The combination, with an iron tire and a rubber tire applied thereto, of means for compressing the latter and holding it securely on said iron tire, the same comprising annular side rods having interiorly-projecting threaded studs, and a sleeve-nut connecting the inner ends of alined studs, the iron tire having openings opposite such nuts to permit the application of a wrench for rotating the latter, substantially as described.

2. The combination, with the rim of a vehicle-wheel, of an elastic tire applied thereto and having interior recesses, compressing-rods arranged on the sides of the tire, and a device connecting said rods and arranged in the said recesses, substantially as described.

3. The combination, with a wheel rim or tire, of an elastic tire applied thereto, rods arranged on the sides of the elastic tire and having inwardly-projecting threaded studs, nuts connecting the inner ends of the studs and serving as means for adjusting the pressure of the rods on the tire, and a device projecting through the inner rim or tire and engaging the nut, for locking it against rotation, substantially as described.

4. The combination, with the inner rim or tire and an elastic tire applied thereto and having interior recesses, of rods mounted on the sides of the elastic tire and having inwardly-projecting threaded studs, a nut arranged in each of the said recesses and portions of the nut being in contact with the lateral sides of the recess, and a device projecting through the inner rim or tire and engaging the nut whereby its lateral movement is prevented, substantially as described.

5. The combination, with a wheel rim or tire, of an elastic tire applied thereto and having interior recesses, of compressing devices arranged in the sides of the elastic tire, means arranged between and connecting said devices, and means for preventing lateral movement of the tire and its compressing devices, substantially as described.

6. The combination, with a wheel-rim having a series of central openings and an elastic tire applied thereto and having a corresponding series of interior recesses, of compressing devices arranged on the sides of the elastic tire, threaded studs projecting inward therefrom, a sleeve-nut applied to the alined studs and having a central polygonal portion, and a locking device consisting of a slotted lug projecting through the openings in the tire and engaging the polygonal portion of the nut, and means for securing the locking device to the tire, substantially as described.

7. The combination, with a wheel having an inner rim or tire and an elastic tire applied thereto, of rods arranged on the sides of the elastic tire, and provided with ribs or teeth which take into the body of the tire, and means for connecting the opposite rods and adjusting their pressure upon the elastic tire, substantially as described.

850,749. GANG-PLOW. GEORGE W. HAMMERS, La Junta, Colo. Filed Oct. 5, 1906. Serial No. 337,605.

Claim.—1. In a gang-plow the combination with a portable frame; of a plurality of beams supported by the frame, and means operated by a fluid under pressure for simultaneously raising the beams or pressing them downward.

2. In a gang-plow the combination with a portable frame; of beams carried thereby, a spring bearing upon each beam, and fluid-operated means for simultaneously raising the beams and for simultaneously tensioning the springs to direct the beams against the ground.

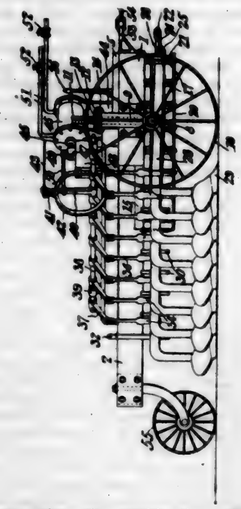

3. In a gang-plow the combination with a portable frame; of a plurality of beams movably connected thereto, independent yielding means for exerting a constant downward pressure upon the beams, operating means connected to the beams, and means for directing fluid into said operating means to simultaneously raise the beams, or to simultaneously increase the tension of the yielding means to press the beams toward the ground.

4. In a gang-plow the combination with a portable frame; of a plurality of beams pivotally connected thereto, an elongated loop surrounding each beam, a spring interposed between each beam and the upper end of each loop, and means for simultaneously lifting the loops to raise the beam and for simultaneously lowering the loops to tension the springs.

5. In a gang-plow the combination with a portable frame; of a plurality of beams pivotally connected thereto, an elongated loop surrounding each beam, a spring interposed between each beam and the upper end of each loop, actuating means connected to the loops, and means for directing fluid under pressure against said means to simultaneously raise the loops and beams and to direct fluid against said means to simultaneously lower the loops to compress the springs.

6. In a gang-plow the combination with a portable frame; of a plurality of beams movably connected to the frame, a loop loosely surrounding each of the beams, a spring interposed between the upper end of each loop and the beam thereunder, a rock-shaft, arms extending therefrom, connections between the arms and loops, and fluid-operated means for rocking the shaft in either direction to simultaneously lift the loops and beams or to simultaneously lower the loops to compress the springs upon the beams.

7. In a gang-plow the combination with a portable frame; of a plurality of beams, simultaneously-adjustable pivots at the front ends of the beams, flexible guides for the beams, means for raising and lowering the rear ends of the beam in unison, each beam being movable vertically independently of the others, and means for preventing independent lateral movement of the beams.

8. In a gang-plow the combination with a portable

frame having a plurality of rigid guides depending therefrom; of a beam movably mounted within each guide, adjustable pivots at the front ends of the beams, a rock-shaft, power mechanism for actuating said shaft, and means operated by the shaft for raising or lowering the rear ends of the beams in unison.

9. In a gang-plow the combination with a portable frame having a plurality of rigid guides depending therefrom; of a beam movably mounted within each guide, adjustable pivots at the front ends of the beams, a rock-shaft, power mechanism for actuating said shaft, arms extending from the shaft, loops suspended therefrom and movable therewith, one beam extending through and adapted to move vertically within each loop, and a spring within each loop and bearing upon the beam therein.

10. In a gang-plow the combination with a portable frame having a plurality of rigid guides depending therefrom; of a beam movably mounted within each guide, adjustable pivots at the front ends of the beams, a rock-shaft, power mechanism for actuating said shaft, arms extending from the shaft, loops suspended therefrom and movable therewith, one beam extending through and adapted to move vertically within each loop, a spring within each loop and bearing upon the beam therein, an eye upon one face of each beam, and a yoke upon the other face of each beam, said yokes being movable vertically within the eyes of the adjoining beams.

11. In a gang-plow the combination with a portable frame, beams carried thereby, and means for raising or lowering the beams in unison; of a sleeve secured upon one side of the frame, a vertically-movable axle mounted within the sleeve and having a lateral extension, a traction-wheel mounted upon said extension, and an adjusting-wheel threaded upon the axle and engaging the sleeve.

12. In a gang-plow the combination with a portable frame; of a plurality of beams supported by the frame, and means operated by fluid under pressure for simultaneously pressing the beams toward the ground.

13. In a gang-plow the combination with a portable frame; of a plurality of independently-movable beams supported by the frame, separate means for imparting a constant yielding downward pressure upon each of the beams, and means operated by a fluid under pressure for simultaneously pressing the beams downward.

850,750. CEMENT-KILN. WILLIAM H. HARDING, Philadelphia, Pa. Filed Feb. 1, 1907. Serial No. 355,223.

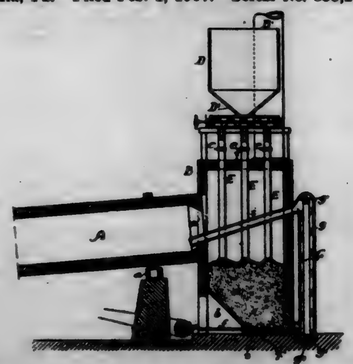

Claim.—1. The combination of a kiln, a combustion-chamber at the rear of the kiln having a space below the mouth of the kiln and out of the path of the products of combustion, means for supplying material to the space, and means for removing the material from the space and introducing it into the kiln, substantially as described.

2. The combination of a kiln, a combustion-chamber at the rear of the kiln having a storage-space below the mouth of the kiln and out of the path of the products of combustion, means for supplying material to the space across the path of the products of combustion, and means for removing the material from the storage-space and introducing it into the kiln, substantially as described.

3. The combination of a kiln, a combustion-chamber at the rear of the kiln having a storage-space below the mouth of the kiln and out of the path of the products of combustion, one or more tubes extending through the upper portion of the combustion-chamber in the path of the products of combustion, means for feeding material through the tubes, said tubes discharging material into the storage-space in the combustion-chamber, and means for removing material from the storage-space and introducing it into the kiln, substantially as described.

4. The combination of a kiln, a combustion-chamber at the rear of the kiln, a storage-space in the combustion-chamber below the mouth of the kiln, a stack communicating with the combustion-chamber at one side of the longitudinal line of the kiln, one or more tubes in the upper portion of the combustion-chamber extending across the path of the products of combustion passing from the kiln to the stack, said tubes discharging material into the storage-space in the lower portion of the combustion-chamber, and means for removing material from the storage-space and delivering it to the kiln, substantially as described.

5. The combination of a rotary kiln, a combustion-chamber at the rear of the kiln and having a storage-space below the mouth of the kiln out of the path of the products of combustion, a stack communicating with the combustion-chamber, a bin, a screw conveyer, a tube leading from the screw conveyer into the combustion-chamber and across the path of the products of combustion, a screw conveyer in the bottom of the storage-space in the combustion-chamber, a bucket elevator into which the last-mentioned screw conveyer feeds material, and a tube leading from the upper end of the elevator into the rotary kiln, substantially as described.

6. The combination of a rotary kiln, a combustion-chamber at the rear of the said kiln having a storage-space below the mouth of the rotary kiln and out of the path of the products of combustion, a bin for the material, a series of tubes leading from the bin into the combustion-chamber to a point below the opening in the rotary kiln so that the tubes are heated by the products of combustion in their passage to the stack, a conveyer for removing material from the bottom of the storage-space and delivering in into the mouth of the rotary kiln, substantially as described.

850,751. AUTOMATIC SAFETY DEVICE FOR BOILERS. WARNER S. G. HARRIS, San Luis Obispo, Cal. Filed Nov. 3, 1906. Serial No. 341,855.

Claim.—1. An automatic safety device for boilers, comprising a hollow plug fitted through the crown-sheet of the furnace; a valve-holding rod passing from said plug through the boiler to its exterior; a readily-fusible anchor securing the lower end of the rod to the top of the plug; a valve-body having an inlet and an outlet; a valve therein controlling the passage through said body, and arranged to receive the fluid-pressure of the body-inlet under it, to lift it from its seat; a connection between said valve and the anchored holding-rod, to hold said valve down against said fluid-pressure; a suitable fluid-pressure connection with the inlet to said valve-body; and a delivery connection with the outlet of said valve-body.

2. An automatic safety device for boilers, comprising a hollow plug fitted through the crown-sheet of the furnace; a casing secured at its lower end to the top of said plug and extending upwardly through the crown-plate of the boiler to the exterior; a valve-body secured upon the upper end of said casing, having an inlet and an outlet, said body having an upper valve-seat and a lower valve-seat; a double-flanged valve fitted to said seats, to control the passage through the body, and arranged to receive the fluid-pressure of the body-inlet under its upper flange to lift said valve; a rod in the casing; a readily-fusible anchor securing the lower end of the rod to the hollow plug in the furnace crown-sheet; a connection between the upper end of the rod and the valve to hold said valve down against the fluid-pressure; a suitable fluid-pressure connection with the inlet to said valve-body; and a delivery connection with the outlet of said valve-body.

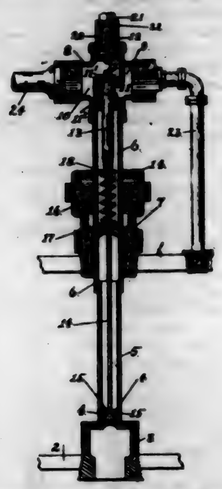

3. An automatic safety device for boilers, comprising a hollow plug fitted through the crown-sheet of the furnace; a valve-holding rod passing from said plug through the boiler to its exterior; a readily-fusible anchor securing the lower end of the rod to the top of the plug; a valve-body having an inlet and an outlet; a valve therein controlling the passage through said body, and arranged to receive the fluid-pressure of the body-inlet under it, to lift it from its seat; a connection between said valve and the anchored holding-rod, to hold said valve down against said fluid-pressure; a suitable fluid-pressure connection with the inlet to said valve-body; a delivery connection with the outlet of said valve-body; and a set-screw passing through the top of the valve-body, adapted to reset the valve against its lifting pressure.

4. An automatic safety device for boilers, comprising a hollow plug fitted through the crown-sheet of the furnace; a casing secured to the top of said plug, and tapped through the crown-plate of the boiler to the exterior; a valve-body secured upon the upper end of the casing, having an inlet and an outlet; a valve seated in said body to control the passage through it, and arranged to be lifted by fluid-pressure through the inlet; a stem of said valve extending downwardly into the casing; a rod to the upper end of which the valve-stem is secured; said rod extending downwardly in the casing to the hollow plug; a readily-fusible anchor securing the lower end of the rod to said plug whereby the valve is normally held down; a pipe connecting the inlet of the valve-body with the boiler; and a delivery-pipe from the outlet of said valve-body.

5. An automatic safety device for boilers, comprising a hollow plug fitted through the crown-sheet of the furnace; a casing secured to the top of said plug and tapped through the crown-plate of the boiler to the exterior; a valve-body secured on the upper end of the casing, having an inlet and an outlet; a valve seated in said body to control the passage through it, and arranged to be lifted by fluid-pressure through the inlet; a stem of said valve extending downwardly into the casing; a rod to the upper end of which the valve-stem is secured, said rod extending downwardly into the casing and to the hollow plug; a readily-fusible anchor securing the lower end of the rod to said plug, whereby the valve is normally held down; a spring in the casing tending to lift said valve; a pipe connecting the inlet of the valve-body with the boiler; and a delivery-pipe from the outlet of said valve-body.

6. An automatic safety device for boilers, comprising a hollow plug fitted to the crown-sheet of the furnace, and having a nipple on its top; a tube screwed to said nipple; a connecting-tube screwed to said nipple-tube and tapped through the crown-plate of the boiler to the exterior; a valve-body screwed to the connecting-tube and having an inlet and an outlet; a valve seated in said body to control the passage through it, and arranged to be lifted by fluid-pressure through the inlet; a stem of said valve extending downwardly into the connecting-tube; a rod upon the upper end of which the valve-stem is screwed, said rod extending downwardly to the nipple of the furnace-plug; a readily-fusible anchor securing the lower end of the rod to said plug-nipple; a spring in the connecting-tube tending to open the valve; a pipe connecting the inlet of the valve-body with the boiler; and a delivery-pipe from the outlet of said valve-body.

7. An automatic safety device for boilers, comprising a hollow plug fitted through the crown-sheet of the furnace, and having a nipple on its top; a tube screwed to said nipple; a connecting-tube screwed to said nipple-tube and tapped through the crown-plate of the boiler to the exterior; a valve-body screwed to the connecting-tube and having an inlet and an outlet; a valve seated in said body to control the passage through it, and arranged to be lifted by fluid-pressure through the inlet; a stem of said valve extending downwardly into the connecting-tube; a rod upon the upper end of which the valve-stem is screwed, said rod extending downwardly to the nipple of the furnace-plug; a readily-fusible anchor securing the lower end of the rod to said plug-nipple; a spring in the connecting-tube tending to open the valve; a set-screw passing through the top of the valve-body to reset the valve against the lifting pressure; a pipe connecting the inlet of the valve-body with the boiler; and a delivery-pipe from the outlet of said valve-body.

8. An automatic safety device for boilers, comprising a hollow plug fitted through the crown-sheet of the furnace; a casing secured to the top of said plug and tapped through the crown-plate of the boiler to the exterior; a valve-body secured to the top of the casing and having an inlet and an outlet; a valve seated in said body to control the passage through it and arranged to be lifted by fluid-pressure through the inlet; a stem of said valve extending downwardly into the casing; a rod to the upper end of which the valve-stem is secured, said rod extending downwardly to the furnace-plug; a readily-fusible anchor securing the lower end of the rod to said plug; a spring in the casing tending to open the valve; a set-screw passing through the top of the valve-body to reseat the valve; a lead nut under the head of the set-screw; a pipe connecting the inlet of the valve-body with the boiler; and a delivery-pipe from the outlet of said valve-body.

850,752. REGULATOR FOR MANTLE-FIRING FLAMES. HUGO HEIDORN, Hamburg, Germany. Filed Jan. 21, 1905. Serial No. 242,148.

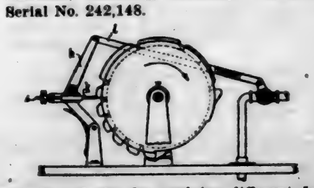

Claim.—1. In a device for applying different degrees of flame intensity in machines for firing incandescent bodies, the combination with a plurality of cam-disks side by side on a common shaft, of a lever regulating the gas-cock of the burner, and of a number of adjusting-screws on said lever, each screw being in line with one of said cam-disks

and being provided with means to adjust it with respect to the cams, for varying the different stages of the flame, substantially as described.

2. In a device for applying different degrees of flame intensity in machines for firing incandescent bodies, the combination with a cam-disk having different adjustable cams in one and the same plane, of a lever regulating the gas-cock of the burner having a fixed pin in line with the cam-disk and of cams on said disk being provided with means to adjust them on the disk radially, substantially as described.

3. In a device for applying different degrees of flame intensity in machines for firing incandescent bodies, the combination with a cam-disk having different adjustable cams in one and the same plane, of a lever regulating the gas-cock of the burner having a fixed pin in line with the cam-disk and of cams on said disk being provided with means to adjust them on the disk tangentially, substantially as described.

850,753. PRODUCING A METALLIC COATING ON A NON-VITREOUS SURFACE. SIEGMUND HELLER and CARL BAUMGARTL, Teplitz, Austria-Hungary. Filed Aug. 5, 1905. Serial No. 272,930.

Claim.—1. The herein-described process of producing a metallic coating on a non-vitreous surface, consisting in fusing upon the surface to be provided with the coating a mixture of enamel, calcined borax and gilt-enamel tombac, and then plating this metallic base by electrodeposition.

2. The herein-described process of producing a metallic coating upon a non-vitreous surface, consisting in fusing upon such surface a metallic composition containing gilt-enamel tombac, and plating this fused coating by electro-deposition.

850,754. WHEEL. JOHN W. HILL, Monclova, Ohio, assignor of one-fifth to S. J. Eckenrode, Maumee, Ohio, one-fifth to B. S. Stapleton, Cleveland, Ohio, one-fifth to C. E. Bartenback, and one-fifth to E. L. Johnson, Toledo, Ohio. Filed Sept. 10, 1906. Serial No. 334,046.

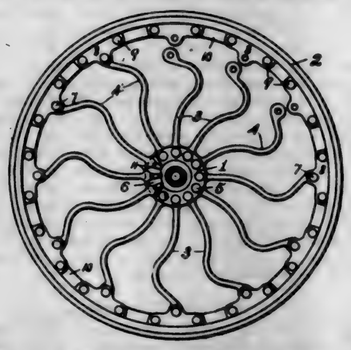

Claim.—1. A wheel having spring-metal spokes each pivotally attached to the hub and rim at radially-alining points and bowed in the plane of the rim adjacent their outer ends.

2. A wheel having curved spring-spokes applied thereto under an initial tension and having their opposite ends pivotally attached in direct radial alinement to the hub and rim.

3. A wheel having its spokes longitudinally resilient and pivoted at their ends in direct radial alinement to the rim and hub to permit a resilient rotary movement of the hub in either direction relative to the rim.

4. A wheel having curved spring-metal spokes the ends of which are pivoted in radial alinement to the hub and rim and having their hub ends formed contiguous to the hub periphery with opposite shoulders which normally abut the shoulders of the spoke, but turn past each other when the hub has a turning movement in either direction relative to the rim.

5. A wheel having bowed spring-metal spokes pivoted to the rim and hub and normally maintained in an expanded state thereby, and having their hub ends formed with shoulders which normally abut, but turn past each other when the hub has a turning movement relative to the rim.

6. A wheel having its hub peripherally channeled and spring-metal spokes having their inner ends mounted in contiguous position within such channel and pivoted to the hub and their outer ends pivoted to the rim in radial alinement with their inner ends, said spokes being bowed intermediate their ends.

850,755. PREPAYMENT MECHANISM. JOHN E. HUBBELL, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 30, 1904. Serial No. 218,906.

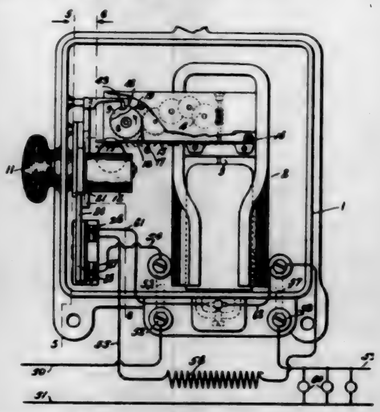

Claim.—1. In a prepayment mechanism, a movable member, a switch, a credit-purchasing mechanism, connections between said mechanism, switch and member whereby an initial movement of the member after the insertion of a coin will cause said mechanism to be operated, and subsequent movements of the member without the insertion of other coins will cause the switch to be opened and closed without operating said mechanism.

2. In combination, a switch, a credit-purchasing mechanism, and a movable member arranged to close said switch and operate said credit mechanism on its initial movement and to open and close said switch on its further movement as long as the original credit remains unexhausted.

3. In combination, a switch, a credit-purchasing mechanism, a movable member arranged to close said switch and operate said credit mechanism on its initial movement and to open and close said switch on its further movement as long as the original credit remains unexhausted, and means for preventing a retrograde movement until the initial movement of the movable member is completed.

4. In combination, a movable member, a credit-purchasing mechanism operated by an initial movement of the member after the insertion of a coin, a switch opened by a further movement of the member, means for preventing a retrograde movement of the member prior to completion of said initial movement, and means for allowing a retrograde movement of the member after the completion of the initial movement of the member and before the switch has moved into the switch-opening position.

5. In combination, a consumption-circuit, a switch controlling said circuit, manually-actuated operating means for opening and closing the switch normally disconnected therefrom, and a prepayment mechanism which permits the switch to be opened and closed by the operating means

as long as credit corresponding to the coin deposited remains in the device.

6. In an electric prepayment device, a movable switch member, a manually-actuated shaft, and coin-controlled means for connecting the shaft and switch member, the connection between the shaft and switch member being such that a partial rotation of the shaft will move the switch into the closed position and a further movement of the shaft will move the switch member into an open position without canceling the credit purchased in the device by the previous insertion of coins.

7. In an electric prepayment device, a switch, credit-purchasing means, a manually-actuated means for moving the credit-purchasing means on the insertion of a coin, value-canceling means for returning the credit-purchasing means to its original position, and means controlled by the position of the credit-purchasing means for operatively connecting the manually-actuated means and the switch.

8. In combination, a consumption-circuit, a switch controlling said circuit, manually-actuated operating means for the switch, and coin-controlled means for connecting the switch and operating means upon the insertion of a coin so that the switch may be opened or closed at will.

9. In an electric prepayment mechanism, a switch, actuating means therefor, and coin-controlled means for rendering said actuating means operative to open or close the switch at will while credit purchased by the insertion of one or more coins remains unconsumed.

10. In an electric prepayment mechanism, a switch, actuating means therefor, coin-controlled means for rendering said actuating means operative to open or close the switch at will while credit purchased by the insertion of one or more coins remains unconsumed, and separate means also controlled by the coin-controlled means for opening said switch when the credit purchased by the coins inserted is entirely consumed.

11. In a prepayment mechanism, a switch, a credit-purchasing mechanism, a device for operating said mechanism on the insertion of each of a plurality of coins, and means controlled by the mechanism for rendering said device operative to open or close said switch so long as the credit purchased by the insertion of the coins is not consumed.

12. In a prepayment mechanism, a member moved away from an initial position upon the insertion of coins and toward said position by the delivery of the commodity for which the coins are inserted, a switch, and means controlled by the position of said member for opening and closing said switch at will while said member is out of said initial position.

13. In an electric prepayment mechanism, a member moved from an initial position upon the insertion of coins and returned to said position by the delivery of the commodity purchased by the coins, a switch, a movable device for moving said member away from the initial position upon the insertion of each coin up to a maximum prior to the consumption of the commodity purchased by the inserted coins without opening said switch, and means connecting said device and said switch whereby the latter may be operated by said device at will while said member is out of said initial position without the insertion of additional coins.

14. In a prepayment mechanism, a member moved from an initial position upon the insertion of coins and returned to said initial position by the delivery of the commodity purchased by the coins, a movable device for moving said member away from the initial position upon the insertion of a second coin prior to the consumption of the commodity purchased by a previously-inserted coin or coins without opening said switch, and means connecting said device and said switch whereby the latter may be operated by said device at will while said member is out of its initial position without the insertion of additional coins.

15. In a prepayment mechanism, a switch, a credit-purchasing mechanism, means for operating the credit-purchase means upon the insertion of a coin prior to the delivery of the commodity purchased by a previously-inserted coin or coins without disturbing the switch, and a connection between said means and said switch whereby the means may be operated to open and close the switch at will without the insertion of additional coins prior to the delivery of the commodity purchased by the coins already inserted.

16. In a prepayment mechanism, a switch, a coin-carrier, a credit-purchasing mechanism operated by the movement of the coin-carrier after the insertion of a coin from a coin-receiving position to a coin-discharging position, and a connection between the switch and the coin-carrier whereby said movement after the insertion of the coin from the coin-receiving position will cause the switch if open to be closed and further movement of the coin-carrier will cause the switch to be opened.

17. In a prepayment mechanism, a switch, a coin-carrier, a credit-purchasing mechanism operated by the movement of the coin-carrier from a coin-receiving position to a coin-discharging position, a connection between the switch and the coin-carrier whereby said movement after the insertion of the coin from the coin-receiving position to the coin-discharging position will cause the switch if open to be closed and further movement of the coin-carrier will cause the switch to be opened, and means preventing retrogression of the coin-carrier prior to the completion of the movement from the coin-receiving position to the coin-discharging position.

18. In a prepayment mechanism, a switch, a coin-carrier for actuating said switch freely movable from a coin-discharging position either to a position in which it causes the switch to be opened or to a coin-receiving position, and means for preventing retrogression of the carrier during movement from the coin-receiving position to the coin-discharging position.

19. In a prepayment mechanism, a switch, a coin-carrier, and a connection between the coin-carrier and the switch whereby the movements of the former may operate the latter, said coin-carrier being freely movable from a coin-discharging position to a switch-opening position or to a coin-receiving position.

20. In a prepayment mechanism, a switch, a coin-carrier, a credit-purchasing mechanism operated by the movement of the coin-carrier after the insertion of a coin from a coin-receiving position to a coin-discharging position, and a connection between the switch and the carrier by means of which further movement of the coin-carrier will cause the switch to be opened.

21. In a prepayment mechanism, a controlling device, a coin-carrier movable from an intermediate coin-discharge position either to a position in which it will actuate said controlling device in a predetermined manner, or to a coin-receiving position.

22. In a prepayment mechanism, a controlling device, a coin-carrier movable from an intermediate coin-discharge position either to a position in which it will actuate said controlling device in a predetermined manner, or to a coin-receiving position, and means for causing the coin-carrier to move without retrogression from the coin-receiving position to the coin-discharging position.

850,756. WRENCH. JOHN R. HUNT, Floyd, Cal. Filed Aug. 18, 1906. Serial No. 331,166.

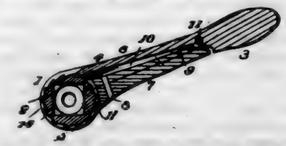

Claim.—1. A wrench comprising a shank formed with a longitudinal groove and an apertured end recessed upon one side, a head rotatable in the aperture in said end and formed at one end with an annular series of ratchet-teeth disposed in said recess in the shank, said head having in its opposite projecting ends sockets to receive a nut or bolt-head, and a handle pivoted in said groove at the outer end of the shank and formed with a pawl to work in said groove and engage said ratchet-teeth.

2. A wrench comprising a tapering shank composed of

upper and lower sections each having its larger end recessed upon one side and formed with a bearing-aperture, the upper section being also formed with a longitudinal groove, a rotary head having at its center an annular groove to receive the apertured ends of said shank-sections and in its projecting sockets to engage a nut or the like, an annular series of ratchet-teeth formed on one end of said rotary head and disposed in the recessed portion of said shank, and a handle pivoted in said groove at the small inner end of the shank and formed with an integral pawl to enter said groove in the shank and engage said ratchet-teeth.

850,757. HOIST. WILLIAM E. HUTCHINGS, Louisville, Ky. Filed Oct. 29, 1906. Serial No. 341,162.

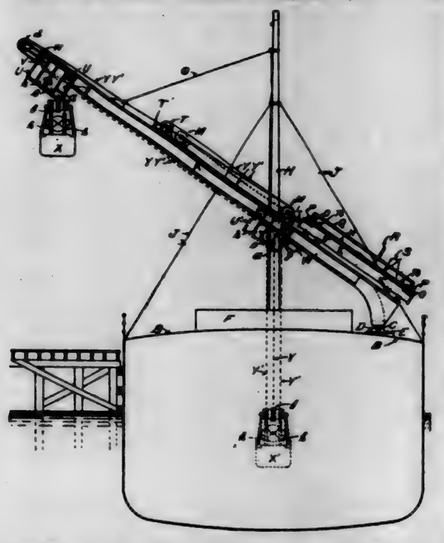

Claim.—1. In a hoist for ships, the combination of a boom, a plurality of cylinders mounted on said boom, a carriage mounted on said boom and adapted to reciprocate thereon, means for supporting a bucket from said carriage, means for supporting said carriage, means for opening and closing said bucket, means connected to one of said cylinders for operating said bucket-supporting means, means connected to the other of said cylinders for operating said bucket opening and closing means, and means for permitting the boom and mechanism carried thereby to be moved the entire length of said ship.

2. In a hoist for ships, the combination of a pivotally-mounted boom, cylinders mounted on said boom, a plurality of sheaves operated by said cylinders, a plurality of sheaves secured to said boom, a plurality of cables passing over said sheaves for supporting a bucket, a reciprocating carriage mounted on said boom for regulating the movement of said bucket, means secured to said cylinders for regulating the operation thereof, means for moving said boom pivotally, and means for permitting said boom to be moved longitudinally of said ship.

3. In a hoist for ships, the combination with a boom of hoisting mechanism and means for operating the same mounted thereon, a pivotally-mounted bearing for said boom, a sliding plate upon which said bearing is positioned and a plurality of guideways extending the entire length of the ship for guiding the movement of said plate and pivotal bearing and for permitting said boom and mechanism and means for operating said mechanism carried thereby to operate at any point upon said ship.

4. In a hoist, the combination of a hoisting mechanism, a boom for supporting said hoisting mechanism, cylinders mounted on said boom, movable sheaves operated by said cylinders, said sheaves being supported by antifriction means, and a plate secured to said boom for forming a bearing for said antifriction means.

5. In a hoist, the combination with a pivotally-mounted boom, a plurality of cylinders mounted on said boom, a carriage and bucket, a plurality of cables operated by said cylinders for operating said carriage and bucket, and a plurality of stops positioned upon said boom for regulating the movement of said carriage and bucket.

6. In a hoist for ships, the combination with a boom, of a carriage and bucket mounted on said boom, cables secured to said carriage and bucket for operating the same, a plurality of independent cylinders and operating mechanism mounted on the lower end of said boom, a plurality of sheaves engaging said cables for independently operating said carriage and said bucket, means for limiting the movement of said carriage, and means for varying the position of said boom on said ship, the mounting of the operating means on the boom permitting the movement of the boom without effecting the operation of the mechanism mounted thereon.

7. In a hoist for ships, the combination of a hoisting mechanism, a boom for supporting said hoisting mechanism, a cylinder mounted on said boom, movable sheaves carried by said cylinder and antifriction means for guiding the movement of said sheaves.

850,758. MAKING CONCRETE WALLS. FRED M. JACKSON, Akron, N. Y. Filed Mar. 22, 1906. Serial No. 307,424.

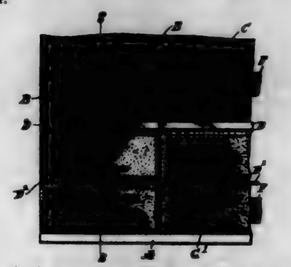

Claim.—1. A concrete wall comprising a concrete main portion, a concrete face portion, a metal reinforcing means interposed between the main and face portions and having interstices, the said concrete face portion being cemented through the interstices of the said reinforcing means with the said concrete main portion, the face portion being divided longitudinally, a lathing, and means for spacing the latching from the rear face of the concrete main portion.

2. A concrete wall, comprising a studding, a concrete filling between adjacent studs of the said studding, the rear face of the filling terminating a distance from the back of the studding, and a lathing attached to the back of the studding.

3. A concrete wall, comprising a studding, a concrete filling between adjacent studs of the said studding, the rear face of the filling terminating a distance from the back of the studding, a lathing attached to the back of the studding, a metal covering on the front of the studding and forming a reinforcement for the wall, and a concrete face portion on the said metal lath.

4. A concrete wall comprising a studding, perforate means attached to the front of the studding, a concrete main portion filling the space between adjacent studs of the studding, and spaced from the back of the studding, a concrete face portion on the front of said perforate means and integrally connected with the concrete main portion through the perforations in said means, and a plaster receiving furring on the back of the studding.

5. A concrete wall comprising a studding, a concrete filling between adjacent studs of said studding, the rear face of the filling terminating a distance from the back of the studding, a concrete face portion divided longitudinally and vertically, perforate means on the front of the studding and interposed between the said filling and face portions, and a plaster-receiving furring on the back of the studding.

6. A concrete wall, comprising a studding, a concrete filling between the adjacent studs of the said studding, and spaced from the back of the studding, a concrete face portion at the front of the studding, and a lathing attached to the back of the studding.

7. A concrete wall, comprising a concrete main portion, a concrete face portion, reinforcing means interposed between the main and face portions, the said main and face portions being integrally connected with each other through interstices in the said reinforcing means, a lathing spaced from the rear face of the concrete main portion, and means for supporting the lathing.

850,759. CAR-RAIL AND BED. REGINALD JACKSON, Kennett Square, Pa. Filed Oct. 12, 1906. Serial No. 338,584.

Claim.—1. A substantially Z-shaped bed-plate having the side portions thereof lying in a horizontal plane and the intermediate portion thereof lying in a vertical plane, a railroad-rail adapted to be supported upon said bed-plate and having a body portion substantially rectangular in cross-section and a dependent flange adapted to engage with the vertical portion of the bed-plate.

2. A bed-plate, substantially Z-shaped in cross-section and having the side portions thereof adapted to lie in a horizontal plane, and the intermediate portion thereof adapted to lie in a vertical plane, a railroad-rail adapted to be supported upon said bed-plate and having a dependent flange in engagement with the vertical portion of the bed-plate, and a lateral flange in engagement with one of the horizontal portions of the bed-plate, and means for securing the rail to the bed-plate to prevent lateral or vertical displacement.

3. A railroad-track, comprising longitudinal bed-plates, rails supported thereon, each of said bed-plates having substantially horizontal and substantially vertical portions, and each of said rails having a body portion substantially rectangular in cross-section, a dependent flange and a lateral flange in engagement with the corresponding bed-plate, means for securing said rails to said bed-plates, and tie-rods connecting said bed-plates.

4. In combination, a substantially Z-shaped bed-plate having the side portions lying in substantially horizontal planes and the intermediate portion thereof lying in a vertical plane, a railroad-rail adapted to be supported upon said bed-plate and having a dependent flange adapted to engage with the vertical portion of the bed-plate, a lateral flange adapted to be supported on said bed-plate, and means for securing the rail to the bed-plate, said means comprising a bolt having one end thereof passing through an opening in the bed-plate and in engagement with the lateral flange of the rail and having the opposite end thereof passing through the vertical portion of the bed-plate and the dependent flange of the rail.

5. In combination, a track composed of a plurality of railroad-rails each having a dependent flange and a lateral flange, a plurality of bed-plates substantially Z-shaped in cross-section, each having the end portions thereof lying in substantially horizontal planes and the intermediate portion thereof adapted to lie in a vertical plane, means for securing the rails to the bed-plates with the dependent flanges of the rails in engagement with the vertical portions of the bed-plates, and tie-rods connecting said bed-plates, said tie-rods comprising bars bolted thereto and extending beneath said bed-plates at right angles thereto and having upturned ends in engagement with the outer sides of the bed-plates.

850,760. WRENCH. CASSIUS M. C. KIRK, Nahcotta, Wash. Filed Jan. 29, 1907. Serial No. 354,604.

Claim.—1. A wrench having a main shank provided on one end with a jaw fixedly secured thereto, and on the opposite end with a collar, a sleeve adapted to serve as a handle member having a sliding engagement with said shank and collar, and provided with a jaw, an auxiliary shank pivoted to said last-named jaw and adapted to serve as a handle member, and a feed-screw rotatably mounted at its ends on said auxiliary shank and adapted to engage segmental threads formed on the under surface of the main shank and be released from engagement therewith, substantially as shown and described.

2. A wrench having a main shank provided on one end with a fixed jaw, and on the opposite end with a collar, a sleeve adapted to serve as a handle member having a sliding engagement with said shank and collar, and provided with a jaw, an auxiliary shank pivoted to said last-named jaw adapted to serve as a handle member, and provided on its inner end with a shoulder, and a feed-screw rotatably mounted at its ends on said auxiliary jaw and adapted to engage the segmental threads formed on the under side of the main shank, and be released from engagement therewith, and provided on its inner end with a head bearing against the shoulder of the auxiliary shank, substantially as shown and described.

3. A wrench having a main shank provided on one end with a fixed jaw, and on its opposite end with a collar, a sleeve adapted to serve as a handle member having a sliding engagement with said shank and collar, and provided with a jaw, an auxiliary shank pivoted to said last-named jaw, a feed-screw rotatably mounted at its ends on said auxiliary shank, and adapted to engage the segmental threads formed on the under surface of the main shank, and be released from engagement therewith, and means for locking the main and auxiliary shanks together, substantially as shown and described.

4. A wrench having a main shank provided on one end with a fixed jaw, and on the opposite end with a collar, a sleeve adapted to serve as a handle member having a sliding engagement with said shank and collar and provided with a jaw, an auxiliary shank pivoted to said last-named jaw and provided on its inner end with a shoulder, and a feed-screw rotatably mounted at its ends on said auxiliary shank so as to engage segmental threads formed on the inner surface of the main shank, and be released from engagement therewith, bearing at its inner end against the shoulder of the auxiliary shank, and provided with a hand-wheel at the end of the main and auxiliary shanks, substantially as shown and described.

850,761. TOBACCO-PIPE. EDWARD KNEBELL, El Paso, Tex. Filed Jan. 16, 1907. Serial No. 352,609.

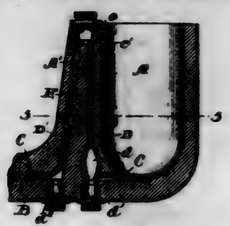

Claim.—1. In a pipe, the combination of the bowl thereof, the wall of which is extended laterally terminating in a stem and provided with an upwardly-extending passage and a downwardly-extending passage, and passages in the stem and bowl portion connecting with said passages respectively, said first-named passages being enlarged at their upper and lower ends and communicating with holes bored into the top and bottom of said bowl respectively, and screw-threaded plugs having their interiors bored out screwed into said holes, substantially as described.

2. A pipe, comprising a bowl and a stem therefor, said stem having a passage therethrough and said bowl having one wall thereof extending rearwardly, a vertical passage in said rear wall, a passage connecting said vertical passage with the cavity in the pipe-bowl, an inclined passage connected to the passage in the pipe-stem and communicating with said first-named vertical passage, said pipe having holes bored thereinto at the ends of said upright passages, and screw-threaded plugs engaging said holes, said plugs being hollowed out to form cups, and said vertical passage being provided with an enlargement near its lower end, substantially as described.

850,762. WATER-SPOUT CUT-OFF. JOHN P. KOLLA, Akron, Ohio, assignor of one-third to A. H. Landwher, and one-third to G. C. Bowman, both of Holland, Mich. Filed Feb. 19, 1906. Serial No. 301,803.

Claim.—In cut-offs for water-spouts, a one-part body having two separate branches at its bottom and a single neck at its top having a wall with straight vertical sides and opposite notches in its top edge, in combination with a cut-off in said body having a curved lower deflecting portion for the water open across its bottom and provided with a circular straight walled upper portion fitting rotatably in said neck and an integral rim about its top extending over the top of said body, said cut-off being removably seated in said body through the neck thereof and having lugs on the bottom of said rim adapted to engage in said notches, whereby said parts interlock as the cut-off is rotated to discharge through either of said separate lower branches.

850,763. AUTOMOBILE SLED. JOSEPH M. LAMBERT, Montague, Mass. Filed July 15, 1905. Serial No. 269,795.

Claim.—In a device of the class described, a vehicle provided with a runner comprising a pair of spaced side members, a plurality of pulleys journaled between the side members of the runner, a propelling-chain arranged for travel on said pulleys and having surface-engaging portions, a drive-shaft sustained beneath the vehicle and having one of the chain-carrying pulleys idly mounted thereon, and means for clutching said pulley to or releasing it from the shaft at will for operating the propelling-chain.

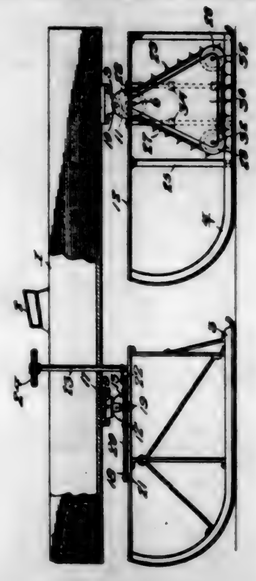

850,764. DUSTER. WILLIAM LAYCOCK, Libertyville, Ill. Filed Nov. 24, 1906. Serial No. 344,934.

Claim.—A duster-head consisting of a unitary construction formed of one piece of wire bent in rectangular form, the ends of said wire overlapping each other on one side of said rectangle, one of the ends of said wire being bent or coiled to form a socket adapted to be placed at any angle to the rectangular portion of said duster-head while the other end of the wire lies close against the adjacent portion of the frame, and a covering of lamb's or sheep's wool surrounding the rectangular frame and secured thereon by stitching.

850,765. HAY-STACKER. LEROY J. LINDSAY, Ottumwa, Iowa, assignor to C. P. Barrickman, Seymour, Iowa. Filed July 12, 1906. Serial No. 325,946.

Claim.—1. In a hay-stacker, a flat base, a fork-carrier consisting of two mating uprights pivoted to the front end portion of the base a leaf-spring fixed to the upper end portions of the uprights, a fork-carrier uprights, a fulcrum pivoted to the rear end portion of the base, a lever pivoted to the fulcrum and pivotally connected with the fork and tackling connected with the base and the short arm of the lever, to operate as set forth.

2. In a hay-stacker, a flat base a fork-carrier pivoted to the end portion of the base, a fork fixed to the top of the fork-carrier, a fulcrum pivoted to the base, a lever pivoted to the fulcrum and pivotally connected with the fork and tackling connected with the base, and the short arm of the lever and a leaf-spring fixed to the uprights of the rake-carrier, to operate as set forth.

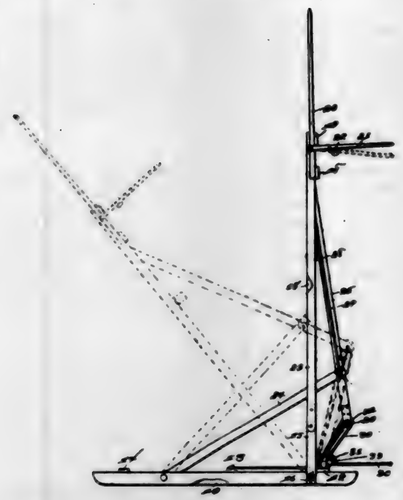

3. In a hay-stacker, a flat base, a casting having an integral journal fixed to the side and end portion of the base and an upright of a fork-carrier pivoted to the journal to swing in a vertical plane.

4. A hay-stacker comprising, a base composed of two parallel sides and a plurality of cross-bars fixed to the sides, a rake-carrier composed of two mating uprights pivoted to the base, a leaf-spring fixed to the mating uprights, a fork fixed to the end portions of the uprights, a fulcrum composed of two mating parts pivoted to the sides of the base, lever-bearers fixed to the fork, a lever pivoted to the fulcrum and its long arm pivoted to the lever-bearers, a rope connected with the short arm of the lever, a direction-pulley at the center of a cross-bar at the end of the base, a pulley at the end of the short arm of the lever and a second pulley at the center of the said cross-bar, arranged and combined for raising and lowering the fork-carrier and fork as set forth.

850,766. ELECTRIC SIGNAL. EMILE LIONAIS and WILLIAM T. SUTTON, Montreal, Quebec, Canada. Filed May 5, 1906. Serial No. 315,413.

Claim.—1. A device of the class described, comprising a relay-magnet and an armature therefor, a bell, a magnet for the bell, and an armature for the magnet provided with a hammer for the bell, a battery, an electric circuit between the terminals of the battery and the relay-magnet, a shunt-circuit in connection with said first-named circuit and including the bell-magnet, and means whereby the closing of the main circuit will close the shunt-circuit and whereby the opening of the main circuit will positively open the shunt-circuit.

2. The combination of a relay provided with a magnet and with an armature, an electric bell provided with a magnet and with an armature, a battery common to said relay and to said electric bell, and mechanism controllable by movements of the armature of said relay for the purpose of energizing and deënergizing said magnet of said bell.

850,766.

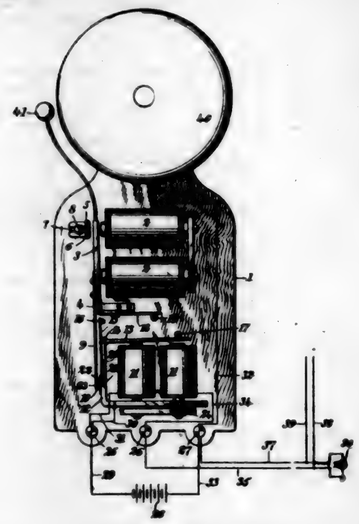

850,767. TEMPORARY HOLDER FOR SAFETY-RAZOR BLADES. DARE A. MACBETH, New York, N. Y. Filed Jan. 17, 1906. Serial No. 296,495.

Claim.—A holder for safety-razor blades, comprising a body constructed of a single piece of resilient material, said body consisting of a handle substantially circular in cross-section, parallel jaws extending from the edges of the body at one end thereof, said body being slotted in alinement with the opening between the jaws, one of said jaws having spaced bosses on the inner face thereof, and a clamp consisting of a body adapted to slide over the body of the holder, and wings extending from the body for engagement with the outer faces of said jaws.

850,768. MOLD-FORMING MACHINE. JAMES MACPHAIL, Moline, Ill., assignor, by mesne assignments, to Killing Molding Machine Company, Davenport, Iowa, a Corporation. Filed Nov. 27, 1905. Serial No. 289,295.

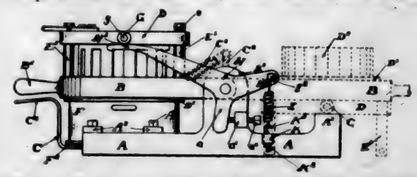

Claim.—1. In a mold-forming machine, the combination of a base, a swinging flask-receiving frame pivoted to said base, a movable pattern member arranged to operate in said frame, and a spring-controlled stop for restricting the movement of said pattern member, substantially as set forth.

2. In a mold-forming machine, the combination of a base, a swinging flask-receiving frame pivoted to said base,

a movable pattern member arranged to operate in said frame, a movable stop for restricting the movement of said pattern member, and adjustable means whereby said stop is restricted in its movement, substantially as set forth.

3. In a mold-forming machine, the combination of a base, a swinging flask-receiving frame pivoted to said base, a movable pattern member arranged to operate in said frame, a spring-controlled stop for restricting the movement of said pattern member, and adjustable means whereby said stop is restricted in its movement, substantially as set forth.

4. In a mold-forming machine, the combination of a base, a swinging flask-receiving frame pivoted to said base, a movable pattern member arranged to operate in said frame, and a vibratory stop for restricting the movement of said pattern member, substantially as set forth.

5. In a mold-forming machine, the combination of a base, a swinging flask-receiving frame pivoted to said base, a movable pattern member arranged to operate in said frame, and a vibratory spring-controlled stop for restricting the movement of said pattern member, substantially as set forth.

6. In a mold-forming machine, the combination of a base, a swinging flask-receiving frame pivoted to said base, a movable pattern member arranged to operate in said frame, a vibratory stop for restricting the movement of said pattern member, and adjustable means whereby said stop is restricted in its movement, substantially as set forth.

7. In a mold-forming machine, the combination of a base, a swinging flask-receiving frame pivoted to said base, a movable pattern member arranged to operate in said frame, a vibratory spring-controlled stop for restricting the movement of said pattern member, and adjustable means whereby said stop is restricted in its movement, substantially as set forth.

8. In a mold-forming machine, the combination of a base, a swinging flask-receiving frame pivoted to said base, a pattern member arranged to operate in said frame, arbors carried by said pattern member, and movable stops arranged to be engaged by said arbors, substantially as set forth.

9. In a mold-forming machine, the combination of a base, a swinging flask-receiving frame pivoted to said base, a pattern member arranged to operate in said frame, arbors carried by said pattern member, and movable spring-controlled stops arranged to be engaged by said arbors, substantially as set forth.

10. The stop mechanism for arresting, lowering, and withdrawing a pattern-plate, consisting of a lever having a long arm, against which the pattern-plate impinges, and two short arms, a spring connected with one short arm so as to seat the long arm, and means against which the other short arm is adapted to impinge so as to limit the movement of the long arm.

11. The stop mechanism for arresting, lowering, and withdrawing a pattern-plate, consisting of a lever having a long arm, against which the pattern-plate impinges, and two short arms, a spring connected with one short arm so as to seat the long arm, means for adjusting the tension of the spring and means against which the other short arm is adapted to impinge so as to limit the movement of the long arm.

12. The stop mechanism for arresting, lowering, and withdrawing a pattern-plate consisting of a lever having a long arm, against which the pattern-plate impinges, and two short arms, a spring connected with one short arm so as to seat the long arm, a lug, an eye-screw connected with the spring and adjustable in the lug for adjusting the tension of the spring, and means against which the other short arm is adapted to impinge to limit the movement of the long arm.

13. The stop mechanism for arresting, lowering, and withdrawing a pattern-plate consisting of a lever having a long arm, against which the pattern-plate impinges, and two short arms, a spring connected with one short arm so as to seat the long arm, a lug, and a set-screw working in the lug against which the other short arm is adapted to impinge so as to limit the movement of the long arm.

14. A mold-forming machine comprising a base-frame, a swinging frame, a pattern-plate, and a stop pivoted to the base-frame, and consisting of a long arm, two short arms, a spring connected with one short arm, and means located upon the base-frame against which the other short arm is adapted to impinge for limiting the movement of the long arm.

15. A mold-forming machine comprising a base-frame, a swinging frame, a pattern-plate, and a stop pivoted to the base-frame, and consisting of a long arm, against which the pattern-plate impinges, two short arms, a spring connected with one short arm so as to seat the long arm, means located upon the base-frame for adjusting the tension of the spring, and means located upon the base-frame against which the other short arm is adapted to impinge so as to limit the movement of the long arm.

16. A mold-forming machine comprising a base-frame, a swinging frame, a pattern-plate, and a stop pivoted to the base-frame and consisting of a long arm against which the pattern-plate impinges, two short arms, a spring connected with one short arm so as to seat the long arm, a lug located upon the base-frame, an eye-screw connected with the spring and adjustable in the lug for adjusting the tension of the spring, and means against which the other short arm is adapted to impinge to limit the movement of the long arm.

17. A mold-forming machine comprising a base-frame, a swinging frame, a pattern-plate, and a stop pivoted to the base-frame consisting of a long arm, against which the pattern-plate impinges, two short arms, a spring connected with one short arm so as to seat the long arm, a lug located upon the base-frame and a set-screw working in the lug against which the other short arm is adapted to impinge so as to limit the movement of the long arm.

18. In a mold-forming machine, the combination with a base, of a swinging frame pivoted therein adapted to receive a flask, guides secured to the swinging frame, a pattern-plate slidingly mounted upon the guides, a stripping-plate secured to the swinging frame, and arbors secured to the pattern-plate, and stops secured to the base-frame to engage the arbors.

19. In a mold-forming machine, the combination with a base-frame of a swinging frame pivoted therein adapted to receive a flask, guides secured to the pivoted frame substantially at right angles thereto, a pattern-plate slidingly mounted upon the guides and arbors secured to the pattern-plate adapted to be engaged by spring-stops adjustably secured to the base-frame.

20. In a mold-forming machine, the combination with a base-frame, of a swinging frame pivoted therein with a stripping-plate secured on the swinging frame adapted to receive a flask, a pattern slidingly mounted in the stripping-plate upon a pattern-plate, trunnions secured to the pattern-plate adapted to be engaged by adjustable spring-stops secured to the base-frame.

850,769. MOLD-FORMING MACHINE. JAMES MACPHAIL, Moline, Ill., assignor, by mesne assignments, to Killing Molding Machine Company, Davenport, Iowa, a Corporation. Filed Nov. 27, 1905. Serial No. 289,296.

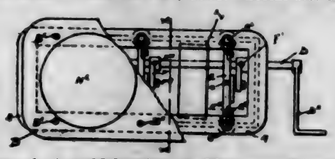

Claim.—1. A mold-forming machine comprising vertical guides, a frame supported by the guides, cross-heads having lower and upper bars and slidable on the guides, a pattern-plate carried by the cross-heads, a stripping-plate mounted upon the guides above the pattern-plate, and means for lifting and lowering the cross-heads with the pattern-plate toward and from the stripping-plate consisting of a shaft mounted in the frame, slotted crank-arms secured to the shaft, curved links pivoted to the lower bars of the cross-heads, and pivot-bolts connecting the slotted crank-arms adjustably with the curved links.

2. A mold-forming machine comprising vertical guides, a frame supported by the guides, cross-heads having lower and upper bars and slidable on the guides, a pattern-plate carried by the cross-heads, a stripping-plate mounted upon the guides above the pattern-plate and means for lifting and lowering the cross-heads with the pattern-plate toward and from the stripping-plate consisting of a shaft mounted in the frame, crank-arms secured to the shaft, curved links, vertical bolts whereby the curved arms are adjustably connected to the lower bar of the cross-heads, and pivot-bolts connecting the crank-arms with the curved links.

3. A mold-forming machine comprising vertical guides, a frame supported by the guides, cross-heads having lower and upper bars and slidable on the guides, a pattern-plate carried by the cross-heads, a stripping-plate mounted upon the guides above the pattern-plate and means for lifting and lowering the cross-heads with the pattern-plate toward and from the stripping-plate consisting of a shaft mounted in the frame, crank-arms secured to the shaft, curved links connected to the lower bar of the cross-heads, and having adjustable stops adapted to impinge against the shaft and pivot-bolts connecting the crank-arms with the curved links.

850,770. MOLD-FORMING MACHINE. JAMES MACPHAIL, Moline, Ill., assignor, by mesne assignments, to Killing Molding Machine Company, Davenport, Iowa, a Corporation. Filed Dec. 11, 1905. Serial No. 291,349.

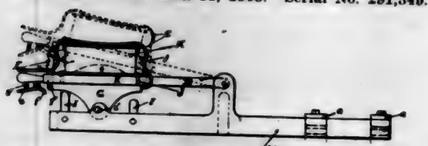

Claim.—1. In a mold-forming machine, the combination of a base, a swinging flask-receiving frame pivoted to said base, and a detachable clamp for holding the flask against said frame; said clamp having an inturned rear end adapted to engage the frame, substantially as set forth.

2. In a mold-forming machine, the combination of a base, a swinging flask-receiving frame pivoted to said base, and a detachable clamp for holding the flask against said frame; said clamp having an inturned forked rear end adapted to engage said frame, substantially as set forth.

3. In a mold-forming machine, the combination of a base, a swinging flask-receiving frame pivoted to said base and provided at its forward end with a handle, and a clamp for holding the flask to said frame; said clamp having a forwardly-turned rear end adapted to engage said frame and being provided with a handle at its forward end, substantially as set forth.

4. In a mold-forming machine, the combination of a base, a pattern-supporting member having pivotal connection with said base, and a swinging flask-receiving frame pivoted to said base and arranged for movement to said pattern-supporting member, substantially as set forth.

5. In a mold-forming machine, the combination of a base, a pattern-supporting member having pivotal connection with said base, a swinging flask-receiving member pivoted to said base, and a stripper carried by said swinging frame, substantially as set forth.

6. In a mold-forming machine, the combination of a base, a pattern-supporting member pivoted to said base, a swinging flask-receiving frame pivoted to said base, and guide-pins projecting from said pattern-supporting member and adapted to enter said swinging frame, substantially as set forth.

7. In a mold-forming machine, the combination of a base, a pattern-supporting member supported by said base, a swinging flask-receiving frame pivoted to said base, and means for supporting said frame above said pattern-supporting member to permit the removal of a flask from said frame, substantially as set forth.

8. In a mold-forming machine, the combination of a base, a pattern-supporting member supported by said base, a swinging flask-receiving frame pivoted to said base, and catch members carried by said pattern-supporting member and said frame and arranged for engagement with each other to support said frame above said pattern-supporting member, substantially as set forth.

9. In a mold-forming machine, the combination of a base, a pattern-supporting member supported by said base, a swinging flask-receiving frame pivoted to said base, a catch member pivoted to said pattern-supporting member, and a catch member carried by said frame arranged for engagement with said pivoted catch member, substantially as set forth.

10. In a mold-forming machine, the combination of a base, a pattern-supporting member supported by said base, a swinging flask-receiving frame pivoted to said base, a rack pivoted to said pattern-supporting member and extending through said frame, and a spring-controlled catch carried by said frame and arranged for engagement with said rack, substantially as set forth.

11. The combination, with a flask and swinging frame, of the clamp having a forked end and adapted to detachably embrace the flask and swinging frame.

12. In a mold-forming machine, the combination with a base-frame, of a swinging frame pivoted therein adapted to receive a flask, a handle on the outer end of the swinging frame, a removable clamp having one end bent to engage the swinging frame, the other end formed into a handle adapted to be grasped by the hand of the operator together with the handle of the swinging frame, and the intermediate portion bent to secure a flask or flask and bottom board in position during the partial revolution of the swinging frame.

13. In a mold-forming machine, the combination with a swinging frame pivoted in a base-frame, of a pattern-plate eccentrically pivoted upon the base-frame.

14. In a mold-forming machine, the combination with a swinging frame pivoted in a base-frame, of a pattern-plate pivoted to the base-frame, a stripping-plate secured to the swinging frame, and guide-pins secured to the pattern-plate entering openings in the swinging frame.

15. In a mold-forming machine, the combination with a swinging frame pivoted in a base-frame, of a pattern-plate secured upon the base-frame, and a segmental rack secured to the pattern-plate, adapted to engage a spring-catch pivoted to the swinging frame.

16. In a mold-forming machine, the combination with a swinging frame pivoted in a base-frame, of a pattern-plate secured upon the base-frame, a stripping-plate secured to the swinging frame, and a segmental rack secured to the pattern-plate adapted to engage a spring-catch pivoted to the swinging frame.

17. In a mold-forming machine, the combination with a base-frame, of a swinging frame pivoted thereon, a pattern-plate pivoted upon the base-frame, guides secured to the pattern-plate adapted to enter holes in the swinging frame, a handle on the outer end of the swinging frame, a removable clamp having one end bent to engage the swinging frame, the other end formed into a handle adapted to be grasped by the hand of the operator together with the handle of the swinging frame, and its intermediate portion bent to secure a flask or bottom board and flask in position upon the swinging frame or a stripping-plate secured thereto during the partial revolution of the swinging frame.

18. In a mold-forming machine, the combination with a swinging frame pivoted in a base-frame, of a pattern-plate pivoted upon the base-frame, a stripping-plate secured to the swinging frame, guide-pins secured to the pattern-plate adapted to enter suitable openings in the swinging frame, a handle formed on the outer portion of the swinging frame, a segmental rack secured to the pattern-plate, a spring-catch pivoted to the handle of the swinging frame adapted to engage the segmental rack, a separable clamp having one end bent to engage the swinging frame, the

other end formed into a handle adapted to be grasped by the hand of the operator together with the handle of the swinging frame and its intermediate portion adapted to secure a flask or bottom board and flask upon the swinging frame or stripping-plate during the partial revolution of the swinging frame, cross-braces secured to the base-frame at the end opposite to the pattern-plate, adapted to receive the bottom board and flask and having a depressed middle portion adapted to allow the clamp to slide therein without disturbing the bottom board or flask when resting upon such braces.

850,771. VAPORIZING DEVICE FOR LUBRICANTS. WILLIAM P. MAINGAULT, Memphis, Tenn. Filed Dec. 11, 1906. Serial No. 347,339.

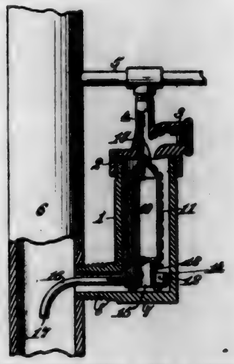

Claim.—1. The combination with a steam-supply conduit, of a receiver connected at its upper extremity to said conduit, an oil-supply means at the upper portion of the receiver, a connection at the lower portion of the receiver with the conduit, a cone or bell within the receiver having a gutter at its lower extremity, the body of the cone or bell being spirally grooved from the top to the bottom thereof, and a reduced pipe attached to the gutter and also projecting into the conduit.

2. A lubricant-vaporizing device of the class specified, comprising a receiver having a steam and lubricant feed connection at the upper portion thereof, and an outlet connection at the lower extremity of the same, a hollow cone or bell within the receiver having a groove extending spirally thereover from the top to the bottom and also provided with a gutter at its lower extremity, and an outlet-pipe connected to the said gutter.

3. A lubricant-vaporizing device of the class specified, comprising a receiver having a steam and oil connection at the upper portion thereof, a cone or bell disposed in the receiver and having the apex projecting up in a position to first receive the lubricant and steam fed to the receiver, the lower extremity of the cone or bell having a circumferential gutter, and an outlet-pipe attached to the said gutter.

4. The combination with a steam-supply conduit, of a receiver having a cap with an opening therethrough and provided with steam-supply and lubricant connections above the opening, the lower extremity of the receiver having an outlet connection, a cone or bell disposed in the receiver and having the apex thereof projecting upwardly into the opening to first receive the steam and lubricant, the body of the cone or bell being imperforate and open at the bottom and having a groove extending spirally downward thereover from the apex to the bottom of the same, and an outlet-pipe connected to the lower extremity of the cone or bell.

5. The combination with a steam-supply conduit, of a receiver having the upper portion thereof connected to said conduit, and also provided with an upper lubricant-supply connection and a lower outlet, a tubular cone or bell disposed in the receiver and having an open bottom and the remaining portion of the body thereof imperforate, the body of the cone or bell also having a groove spirally extending downwardly thereover from the apex to the bottom of the same, and a diametrically-reduced pipe connected to the lower extremity of the cone or bell.

850,772. RAIL-JOINT. GEORGE J. MILLER, Doon, Iowa. Filed May 26, 1906. Serial No. 318,889.

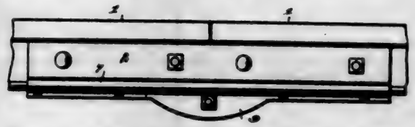

Claim.—In a rail-joint, a pair of rail-sections assembled in endwise relation and formed to present a head, a web and a base-flange, splicing members applied to opposite sides of said rail and comprising an outwardly-extending flange arranged to overlie the rail-base and an inwardly-extended flange formed on the first-named flange to lie beneath said base, connecting members extended transversely through the splicing members and rail-web, a pair of opposed depending perforated ears formed respectively on and at the outer edges of the splicing members, the opening in one of said ears being conically tapered, a transversely-extending tie-bolt centered beneath the meeting ends of the rail-sections and engaged with the ears, said bolt having a head at one end thereof and a reduced threaded extension at its other end and being conically tapered in rear of said extension to fit the tapered opening itn the adjacent ear, and a tensioning-nut applied to the threaded extension of the bolt.

850,773. FENCE-POST. ELIJAH D. MINER, Rathdrum, Idaho. Filed Nov. 22, 1906. Serial No. 344,588.

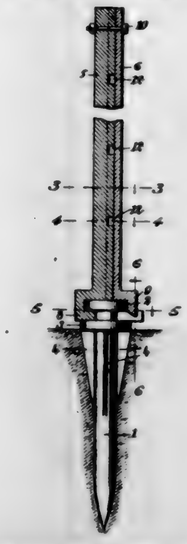

Claim.—1. A fence-post comprising a base having a head, a longitudinally-divided post-body, one member of said body having a slotted foot sidewise movable for engaging and disengaging the head of the base, means carried by the other member for engaging the foot and locking the two members and base together, and means for securing said members at their upper ends.

2. A fence-post comprising a base having a head, a longitudinally-divided post-body, one member of said body having a slotted foot arranged at right angles thereto for engaging the head of the base, and means carried by the other member for engaging the slot in the foot and locking the two members and the base together.

3. A fence-post comprising a ground-spike having a double head, a longitudinally-divided post-body having means for detachably engaging and locking with the upper head of said spike, and means for securing the members of said body together at their upper ends.

4. A fence-post comprising a ground-spike having a head, and a post-body longitudinally divided into two members, said members being tongued and grooved with one member thereof having a slotted foot for engaging the head of the spike, the other member of said body having means adapted to engage a groove in said foot, whereby the members are locked to the head of the spike, said members having registering notches for receiving the wires of the fence.

5. A fence-post comprising a base having a head, a post-body detachably engaged therewith, said body being longitudinally divided into two members, one of said members having an offset slotted foot for engaging the head, the other member having an offset portion for engaging a groove in the foot whereby the two members and head are locked together, and a tongue carried by one of said members of the post-body engaging a corresponding groove of the opposite member, for the purpose described.

850,774. AXLE-BEARING. BENTON MOORE, Cherryvale, Kans. Filed Aug. 15, 1906. Serial No. 330,731.

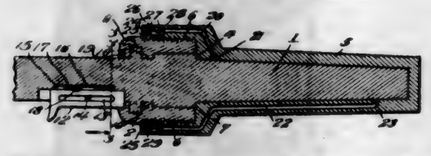

Claim.—An axle-bearing comprising a sectional nut fitted to the axle, an axle-box provided with a threaded portion to engage said nut, a sliding bolt mounted in said axle, and a spring having a projection to engage a notch in the bolt for holding the latter in retracted position, substantially as described.

850,775. CHIN-REST AND SHOULDER-PAD SUPPORT. JOHN J. MORRISSEY, Providence, R. I., assignor of one-half to Philip H. Rose, Providence, R. I. Filed May 10, 1906. Serial No. 316,158.

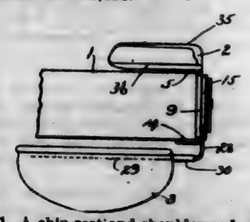

Claim.—1. A chin-rest and shoulder-pad support for violins comprising a carrier provided with tubular sockets, means for clamping said carrier to an instrument, a shoulder-pad provided with a stiffened cap, a pad-support comprising a ring-like wire body engaging said cap and terminating in outwardly-extended horizontal arms the ends of which are bent upwardly at right angles to form flexible fingers to enter said sockets, and a bridge-piece uniting said horizontal arms.

2. A chin-rest and shoulder-pad support for violins comprising a carrier having its side edges provided with longitudinally-arranged tubular sockets, means for clamping said carrier to an instrument, a shoulder-pad provided with a stiffened cap, a pad-support comprising a ring-like wire body engaging said cap and terminating in outwardly-extended horizontal arms the ends of which are bent upwardly at right angles to form flexible fingers to enter said sockets, and a bridge-piece uniting said horizontal arms.

3. A chin-rest for violins comprising a carrier, a clamping member slidingly mounted therein, a rotatable shaft provided with means for adjusting said clamping member, means for locking the rotatable shaft, and a chin-rest secured to said carrier.

4. A shoulder-rest for violins comprising a carrier provided with sockets, a clamping member slidingly mounted therein, a rotatable shaft provided with means for adjusting said member, means for locking said shaft, and a pad provided with flexible fingers fitting in said sockets.

5. A chin-rest and shoulder-pad support comprising a carrier, a clamping member slidingly mounted therein, means including a rack and pinion for adjusting said sliding member, means for locking said clamping member in any adjusted position, a chin-rest secured to said carrier, and a shoulder-pad also secured to said carrier.

6. A chin-rest and shoulder-pad support comprising a carrier, a clamping member slidingly mounted therein, means including a rack and pinion for adjusting said clamping member, means for locking said pinion against movement, and a chin-rest and shoulder-pad respectively secured to said carrier.

7. A chin-rest and shoulder-pad support comprising a main member, a clamping member adapted to slide in said main member, means including a rack and pinion for drawing said members together, means for locking said members in the desired position when clamping a violin, a chin-rest secured to said main member, a shoulder-pad, and a pair of flexible fingers on said pad, said main member being provided with recesses adapted to receive said fingers whereby said pad is removably held to the said supporting device.

8. A chin-rest and shoulder-pad support comprising a main member, a pair of receiving-tubes fixed to said main member, a clamping member adapted to slide in said main member, means including a rack and pinion for drawing said members together, means for preventing said pinion from turning backward, a chin-rest secured to the upper portion of said main member, a shoulder-pad and a pair of flexible fingers on said pad adapted to enter said tubes whereby said pad is removably held to the support.

9. A chin-rest and shoulder-pad support comprising a carrier, a clamping member slidingly mounted therein, means including a rack and pinion for adjusting said clamping member, a cam-like locking member for said pinion, a chin-rest secured to the upper portion of said carrier, and a shoulder-pad secured to the lower portion of said carrier.

10. A chin-rest and shoulder-pad support comprising a carrier provided with tubular sockets, a clamping member slidingly mounted in said carrier, means incinding a rack and pinion for adjusting said clamping member, a cam-like locking member for said pinion, a chin-rest secured to the upper portion of said carrier, and a pad provided with flexible fingers which are sprung into said sockets.

850,776. CHIN-REST AND SHOULDER-PAD SUPPORT. JOHN J. MORRISSEY, Providence, R. I., assignor of one-half to Philip H. Rose, Providence, R. I. Filed Oct. 6, 1906. Serial No. 337,732.

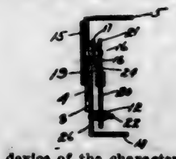

Claim.—1. A device of the character described comprising a main member, a clamping member adapted to slide in said main member, an engaging jaw on each of said members, an instrument to which said device may be attached, a cam pivotally held in said main member, means

on the outside of said main member by which said cam may be rotated, and a connection between said cam and the sliding member whereby when said cam is rotated the said clamping-jaws are moved either toward or from each other to grip or release the instrument.

2. A device of the character described comprising a main member, a clamping member adapted to move on said main member, an engaging jaw on each of said members, locking means including a rotatable cam supported in said main member whereby the clamping-jaws may be moved either toward or from each other, means whereby said cam may be rotated, an instrument to which the device may be attached, and an adjusting-nut extending through the wall of the clamping member for regulating the distance between said jaws with a movement independent of that imparted by the locking means while the device is in position on said instrument.

3. A device of the character described comprising a main member, a clamping member adapted to slide in said main member, an engaging jaw on each of said members, a cam pivotally held in said main member, means on the outside of said main member by which said cam may be rotated, an instrument to which the device may be attached, a cam-strap on said cam and a connecting-rod between said strap and the sliding member whereby the rotation of said cam causes said clamping-jaws to move either toward or from each other to grip or release the instrument.

4. A device of the character described comprising a main member, a clamping member adapted to slide in said main member, an instrument to which the device may be attached, a shaft, a cam and a stop-plate mounted on said shaft, and means also mounted on said shaft whereby said cam may be rotated to move the jaws toward or away from each other to grip or release the instrument.

5. A device of the character described, comprising a main member, a clamping member adapted to slide in said main member, an engaging jaw on each of said members, an instrument to which the device may be attached, a shaft, a cam and stop-plate mounted on said shaft, means whereby said cam may be rotated, a strap engaging said cam and an adjustable connection between said strap and the sliding member through which connection the rotation of said cam moves the clamping-jaws to grip or release the instrument.

6. A device of the character described comprising a main member, a clamping member adapted to slide in said main member, an engaging jaw on each of said members, a cam pivotally held in said main member, a wheel on the outside of said main member by which said cam is rotated, an instrument to which said device may be attached, a cam-strap on said cam and a connecting-rod between said strap and the sliding member whereby the rotation of said cam causes said clamping-jaws to move either toward or from each other to grip or release the instrument.

7. A device of the character described comprising a main member, a clamping member adapted to slide in said main member, an engaging jaw on each of said members, an instrument to which said device may be attached, a shaft in said main member, a cam and a stop-plate mounted on said shaft, an actuating-wheel also mounted on said shaft by which said cam may be rotated, a strap engaging said cam, and an adjustable connection between said strap and the sliding member through which connection the rotating of said cam causes the clamping-jaws to move either toward or from each other to grip or release the instrument.

8. A device of the character described, comprising a main member, a clamping member adapted to slide in said main member, an engaging jaw on each of said members, a cam pivotally held in said main member, means for rotating said cam, a stop-plate for limiting the movement of said cam, a threaded connecting-rod between said cam and the sliding member whereby when said cam is rotated the said clamping-jaws are moved either toward or from each other, an adjusting-nut on said threaded rod, an instrument to which the device may be attached, said nut being adapted to be rotated to adjust the jaws with a movement independent of that of the locking means when the device is in position on said instrument.

9. A device of the character described comprising a main member, a clamping member adapted to slide in said main member, an engaging jaw on each of said members, an instrument to which the device may be attached, a shaft in said main member, a cam and a stop-plate mounted on said shaft, actuating means by which said cam may be rotated, a threaded connecting-rod between said strap and the sliding member whereby the rotating of said cam causes the clamping-jaws to move either toward or from each other to grip or release the instrument, a raised ear in said clamping member through which said rod passes, an adjusting-nut on said threaded rod resting on the under side of said ear, and said clamping member being also provided with an aperture through which said nut may be actuated.

850,777. LAWN-CLEANER. CLARENCE H. MOSHER, Salisbury Mills, N. Y. Filed Mar. 24, 1906. Serial No. 307,868.

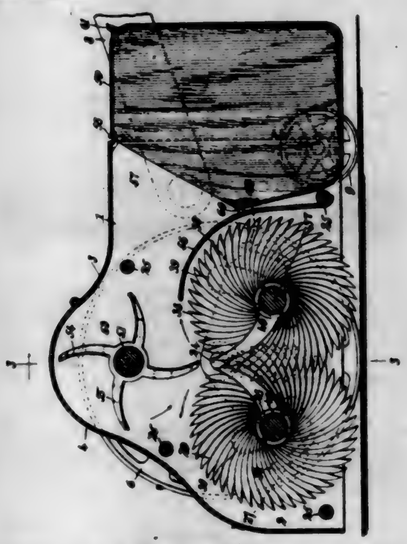

Claim.—1. In a machine of the class described, in combination, a case, a gear-wheel mounted thereupon, driving-wheels, means for driving said gear-wheel from one of said driving-wheels, rotatable rakes, pinions carried by said rakes and meshing with said gear-wheels, and means for fixing said rakes to adjust the distance therebetween.

2. In a machine of the class described, in combination, a case presenting an end plate, a side plate, a gear-wheel rotatably mounted on said side plate, means for driving said gear-wheel with the advance of said machine, circumferentially-disposed guide-slots in said side plates, rotatable rakes having shafts passing through said slots and having pinions meshing with said gear-wheel, and means for fixing the axes of said rakes to said side plates.

3. In a machine of the class described, in combination, a case presenting side plates, a gear-wheel rotatably mounted on said side plates, means for continuously driving said gear-wheel with the advance of the machine, arms mounted on said side plates, rotatable rakes carried by said arms, means for continuously driving said rakes from said gear-wheel, and means for adjusting the angular position between said arms.

4. In a machine of the class described, in combination, a case presenting side plates, a gear-wheel rotatably mounted on said side plates, means for rotating said gear-wheel with the advance of the machine, said side plates having circumferentially-disposed slots therein, rotatable rakes having shafts passing through said slots, pinions carried by said shafts engaging said gear-wheel to rotate said rakes, arms attached to said case on the axis of said gear-wheel and carrying said shafts, and means for adjusting said arms.

5. In a machine of the class described, in combination, a case, a pair of rotatable rakes mounted in the lower portion thereof, means for adjusting the distance between said rakes, a fan disposed above said rakes, means for continuously rotating said rakes and said fan, and a receptacle to which said fan delivers.

850,778. PROCESS OF MAKING HYDRAULIC CEMENT. EMIL MUHLLER, Aisen, N. Y. Filed Feb. 11, 1907. Serial No. 356,745.

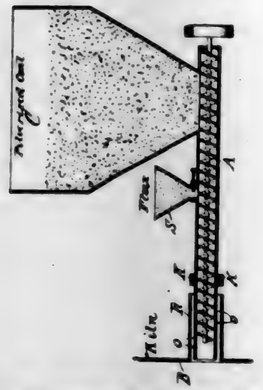

Claim.—1. The process of facilitating the calcination of cement clinker, which consists in intimately mixing a carbonaceous fuel and a pulverized flux and simultaneously introducing them into the calcining-kiln.

2. The process of facilitating the calcination of cement clinker, which consists in intimately mixing pulverized coal and a pulverized flux and simultaneously introducing them into the calcining-kiln.

3. The process of facilitating the calcination of cement clinker, which consists in intimately mixing pulverized coal and calcium fluorid and simultaneously introducing them into the calcining-kiln.

850,779. AWL. GEORGE A. PEACOCK, Hanford, Cal. Filed June 2, 1906. Serial No. 319,956.

Claim.—1. A harness-awl comprising a tubular shank having a head and means for holding a needle, a ferrule movably applied to the shank, a needle secured to the shank and projectable through the ferrule, thread-carrying means held in the head and provided with mechanism for controlling the feed of the same, said mechanism consisting of a toothed device on one extremity of the thread-carrying means, a fulcrumed detent operative to hold the said carrying means against movement or to liberate said means to permit the thread to play off therefrom, and an exteriorly-projecting device engaging the detent and operative to release the latter from the thread-carrying means.

2. A harness-awl comprising a tubular shank having a head and means for holding a needle, a ferrule movably supported by the shank, a needle projectable through the ferrule, a thread-carrying bobbin removably disposed in the head, and mechanism for engaging a portion of the bobbin to prevent the latter from turning, said mechanism consisting of a toothed device on one end of the bobbin and a pivoted detent which may be released by exteriorly-projecting means and operative to hold the bobbin against movement or to liberate said bobbin to permit the thread to play off therefrom.

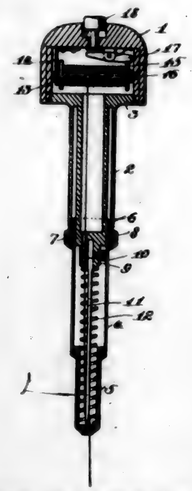

3. In a harness-awl, the combination of a tubular shank having a head and also provided with means for holding a needle, a movable member engaging the shank, a needle held by the shank and projectable through the said member, means for automatically restoring the movable member to normal position, and thread carrying and feeding mechanism provided with an exteriorly-projecting releasing device, the thread being drawn taut by the operation of the awl.

4. In a harness-awl, the combination of a tubular shank having a head, a needle secured to the shank, a ferrule having a telescopic organization with respect to the shank and through which the needle is projectable, a thread-carrying bobbin removably mounted in the head, a catch device for coöperating with a part of the bobbin to limit the movement thereof, and exteriorly-projecting means for disengaging the catch device from the bobbin.

5. In a harness-awl, the combination of a tubular shank having a head, a needle secured to the shank, a spring-actuated ferrule telescopically engaging the shank, the needle being projectable through the ferrule, and thread carrying and feeding mechanism disposed in the said head and including an intermediately-fulcrumed member exteriorly operative to release the thread.

6. A harness-awl, comprising a shank and head, a needle secured to the shank, a spring-actuated ferrule telescopically engaging the shank and normally inclosing the needle and provided with a reduced extremity operating as a stay and reinforce for the needle, the needle being projectable through one terminal of the ferrule, and devices for carrying and feeding thread to the needle, said devices including a movable member exteriorly operative to release the thread-carrying device and permit the thread to play off to the needle.

850,780. MACHINE FOR ENVELOPING A METAL CORE IN A PLASTIC BODY. WILLIAM POPPENDIECK, Carlstadt, N. J. Filed Aug. 3, 1905. Serial No. 272,546.

Claim.—1. In hair-pin machines, an intermittently-rotating drum, forming-jaws mounted on said drum, means to relatively move coöperating forming-jaws, a heated cutter-plate and stop coöperating with said jaws, a movable cutter and forming-punch coöperating with said cutter-plate to sever a sheet of heated plastic material and force the same within said forming-jaws, metal-core-feeding

means to coöperate with said forming-jaws at another station to feed a metal core within said material inserted in said jaws, said jaws thereafter closing to force said covering material around said core and sever the excess of said material, said jaws remaining in closed position until said material has set.

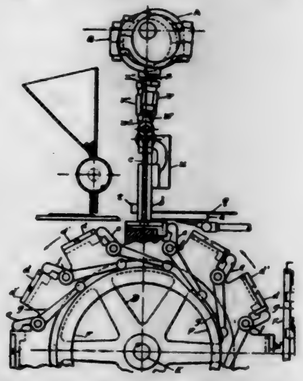

2. In hair-pin machines, an intermittently-rotating drum, series of forming-jaws on said drum, means to relatively move coöperating jaws as said drum rotates, a heated cutter-plate, means to sever a sheet of plastic material and force the same within a set of coöperating jaws and means coöperating with said jaws at another station to feed a metal core within said material, said jaws thereupon closing to force said material around said core and sever the excess of said material.

3. In hair-pin machines, an intermittently-rotating drum, series of coöperating jaws on said drum, means to relatively move said coöperating jaws, means to feed a curved sheet of plastic material between said jaws, means to feed a metal core within said material to be inclosed thereby.

4. In hair-pin machines, an intermittently-rotating drum, series of coöperating forming-jaws mounted on said drum, means to feed a sheet of plastic material in curved form into said jaws, means to feed a core of less length than said sheet within the same in said jaws, means to close said jaws to completely inclose said core within said material and sever the excess of said material.

5. In hair-pin machines, an intermittently-rotating drum, a series of coöperating forming-jaws on said drum, means to feed plastic material within said forming-jaws, means to feed a core within said jaws and means to close said jaws to cause said material to inclose said core.

6. In hair-pin machines, coöperating forming-jaws, automatic means to feed plastic material and a core to said forming-jaws and means to close said jaws to cause said material to inclose said core.

7. In hair-pin machines, a movable support coöperating forming-jaws on said support, means to feed plastic material within said forming-jaws, means to feed a core within said forming-jaws and means to close said jaws to cause said material to envelop said core.

8. In hair-pin machines, coöperating forming-jaws, means to feed a curved strip of plastic material within said forming-jaws, means to feed a core of less length than said strip within said strip and means to close said jaws to cause said material to completely envelop said core and to sever the excess of plastic material.

9. In hair-pin machines, coöperating forming-jaws, means to feed a strip of heated plastic material in curved form within said jaws, means to feed a core within said material and automatic means to close said jaws to cause said material to engage said core and envelop an end of the same.

10. In hair-pin machines, coöperating forming means, means to feed a portion of plastic material and automatic means to feed a core within said forming means and means to operate said forming means to bring said plastic material and core into engagement and cause said material to envelop an end of said core.

11. In hair-pin machines, coöperating forming means, means to feed within said forming means a strip of plastic material in curved form to receive a core and means for operating said forming means to bring said plastic material into engagement with said core.

12. In apparatus for making hair-pins, a platen and a pair of relatively movable forming-dies thereon, normally held in separated position, in combination with a forming-punch adapted to enter between said dies to force the work therebetween and automatic means including a rotating member for moving the dies into engagement to compress said work.

13. Apparatus for making wire-core hair-pins, comprising a pair of relatively movable forming-dies, adapted to support a strip of sheet material over the gap between them when in open position in combination with a forming-punch and means for moving the same into said gap to bend the strip into V shape to receive the core, and automatic means including a rotating member for closing said forming-dies upon the bent strip.

14. Apparatus for making wire-core hair-pins comprising a pair of relatively movable forming-dies and a gage for holding a strip of covering material over the gap between said dies, in combination with a forming-punch adapted to coöperate with said dies to crease the strip longitudinally, and automatic means including a rotating member for closing said forming-dies upon said creased strip.

15. In hair-pin machines, a rotating drum, coöperating forming-jaws carried by the drum, automatic means to feed plastic material and a core to said forming-jaws, and means to close said jaws to cause said material to inclose said core.

850,781. MOP-WRINGER. JACOB L. POTTS, Ithaca, Mich. Filed June 20, 1906. Serial No. 322,613.

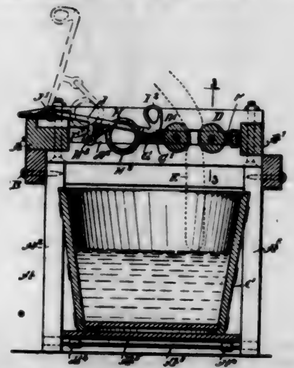

Claim.—1. A mop-wringer, comprising a frame, wringing-rolls, bearings for one of the wringing-rolls and fixed in the said frame, bearings slidable in the said frame and in which the other wringing-roll is journaled, springs, and a lever for placing the springs under tension, one of the springs being held on the frame and the other having its terminals engaging the said slidable bearings.

2. A mop-wringer, comprising a frame, wringing-rolls, bearings for one of the wringing-rolls fixed in the said frame, slidable bearings in which the other wringing-roll is journaled, springs, of which one is connected with the frame and the other having its ends engaging the said slidable bearings, and a lever fulcrumed on the said spring attached to the frame and pivotally connected with the said spring connected with the slidable bearings.

3. A mop-wringer, comprising a frame, wringing-rolls, bearings for one of the wringing-rolls fixed in the said frame, slidable bearings in which the other wringing-roll is journaled, springs, of which one is connected with the frame and the other with the said slidable bearings, a lever fulcrumed on the said spring attached to the frame and pivotally connected with the said spring connected with the slidable bearings, and a stop-rod for the lever and attached to the said slidable bearings.

4. A mop-wringer, comprising a frame, rollers mounted in the frame, sliding bearings for one of the rollers, a spring having its ends secured to the frame, a second spring having its ends engaging the sliding bearings, and a lever fulcrumed on the first-named spring and provided intermediate of its ends with an arm pivotally connected with the second spring.

5. A mop-wringer, comprising a frame, rollers mounted in the frame, sliding bearings for one of the rollers, a spring having its ends secured to the frame, a second spring having its ends engaging the sliding bearings, a lever fulcrumed on the first spring and provided intermediate of its ends with a downwardly-extending arm pivotally connected with the second spring, and a rod connecting the sliding bearings and serving as a stop for said lever.

850,782. ROLLER APPLIANCE FOR ROCKING-CHAIRS. EDWIN W. RAYMOND, Los Angeles, Cal. Filed Dec. 14, 1906. Serial No. 347,836.

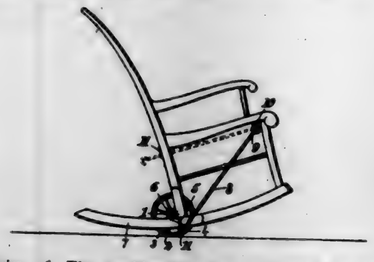

Claim.—1. The combination of a rocking-chair, and a carrying device comprising an axle mounted upon carrying-wheels, a swinging carrying-bar adapted to bear against the lower edge of the rockers, and means for holding the carrying-bar in advance of the axle, substantially as shown and described.

2. The combination of a rocking-chair, and a carrying device comprising an axle mounted upon carrying-wheels having resilient tires, a swinging carrying-bar loosely mounted on said axle and adapted to bear against the lower edge of the rockers in advance of the axle, and a tie-rod connected with said carrying-bar and chair, substantially as shown and described.

3. The combination with a rocking-chair and a carrying device comprising an axle mounted upon carrying-wheels, a swinging carrying-bar mounted on said axle adapted to bear against the lower edge of the rockers of said chair in advance of the axle, and a tie-rod detachably connecting said carrying device and chair, substantially as shown and described.

4. The combination of a rocking-chair, a carrying device having a transverse axle mounted upon carrying-wheels, a yoke comprising a transverse bar having offset ends rotatably mounted on said axle, and a tie-rod connected with said yoke and chair.

850,783. VEHICLE RUNNING-GEAR. PHINEAS RICHARDSON, Kennebago Lake, Me. Filed Sept. 20, 1906. Serial No. 335,294.

Claim.—1. A vehicle running-gear comprising a lower frame and an upper frame, upright springs arranged between the two frames, a system of springs diagonally extending at each side of the center of the upper frame and connected to the opposite ends of the lower frame, and a system of transverse, diagonally-arranged springs connecting the two frames together near each end.

2. A vehicle running-gear comprising an upper and a lower frame, upright springs arranged between the two frames, a plurality of longitudinal springs and connecting-links arranged at each side of the transverse center of the frames connecting said frames together, and a plurality of transverse, diagonally-extending springs and connecting-links connecting said frames together near each end.

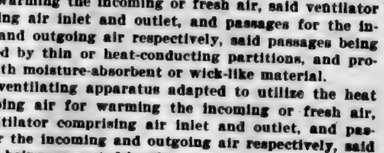

3. A vehicle running-gear comprising a lower frame and an upper frame, each frame consisting of side sills and a central sill connected together by end beams and a central beam, an upright spring intermediate the two frames at the intersection of each sill and beam, longitudinally and diagonally arranged springs connecting the two frames together, and transversely and diagonally arranged springs connecting the two frames together for the purpose described.

4. A vehicle running-gear comprising two frames, upright springs arranged therebetween, a series of longitudinal springs and connecting-links arranged at each side of the transverse center of the frames and connecting said frames together, a plurality of springs, and connecting-links transversely and diagonally extending between the two frames connecting them together near each end, for the purpose described.

850,784. VENTILATING APPARATUS. HAROLD S. RICHMOND, Brooklyn, N. Y. Filed Sept. 13, 1906. Serial No. 334,490.

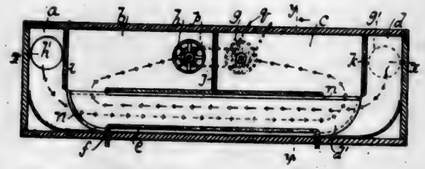

Claim.—1. A ventilator comprising two extreme and two intermediate chambers, each extreme chamber having an inlet and each intermediate chamber having an outlet and each extreme chamber being respectively made to communicate with the non-adjacent or farther intermediate chamber by suitably-partitioned alternating passages.

2. A ventilator comprising inlet-chambers and intermediate outlet-chambers and partitions under the outlet-chambers alternately arranged to form communicating passages connecting each inlet-chamber with the farther outlet-chamber, said passages being made in each case to lead into the outlet-chamber at the farthest point from the communicating inlet-chamber so as to enable the outgoing air to warm the incoming air.

3. A ventilator adapted to utilize the heat of outgoing air for warming the incoming or fresh air, said ventilator comprising air inlet and outlet, and passages for the incoming and outgoing air respectively, said passages being separated by thin or heat-conducting partitions, and provided with moisture-absorbent or wick-like material.

4. A ventilating apparatus adapted to utilize the heat of outgoing air for warming the incoming or fresh air, said ventilator comprising air inlet and outlet, and passages for the incoming and outgoing air respectively, said passages being separated by thin or heat-conducting partitions, a partitioned inlet-space and receiving-box at opposite portions of the inlet-passages, and a partitioned entrance-space and receiving-box at opposite portions of the outlet-passages.

850,785. EXTENSIBLE WAGON. EDWARD RIEDINGER, New York, N. Y., assignor to himself and Alfred F. Riedinger, New York, N. Y. Filed May 10, 1906. Serial No. 316,110.

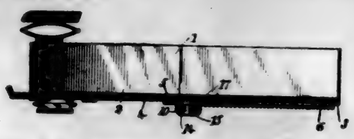

Claim.—1. In combination, a wagon comprising an extensible body having racks attached to the under side thereof and transversely-movable shoes adapted to engage said racks to lock the body in an extended position.

2. In combination, a wagon having a fore body and an after body movable with respect to each other, racks attached to said fore body, means for guiding said racks upon the after body, pinions coöperating with said racks, to extend the parts, and shoes coöperating with said racks, for locking the body in an extended position.

3. In combination, a wagon-body comprising a fore body and an after body movable with respect to each other, racks attached to said body, means for guiding the same longitudinally on said after body, a transverse shaft rotatably mounted on said after body, pinions guided by said shaft, engaging said racks, a transversely-disposed locking-bar carried on said after body, and shoes on said locking-bar, engaging said racks.

4. In combination, a wagon-body comprising a fore body and an after body movable with respect to each other, racks attached to said body, means for moving the same longitudinally on said after body, a transverse shaft rotatably mounted on said after body, pinions guided by said shaft, engaging said racks, a transversely-disposed locking-bar carried on said after body, shoes on said locking-bar, engaging said racks, and means for fixing said locking-bar when said shoes are in engagement with said racks.

850,786. KNITTING-MACHINE. AUGUST RIEFFEL and EDUARD ITTERSHAGEN, Philadelphia, Pa.; said Ittershagen assignor to said Rieffel. Filed June 24, 1903. Serial No. 162,891.

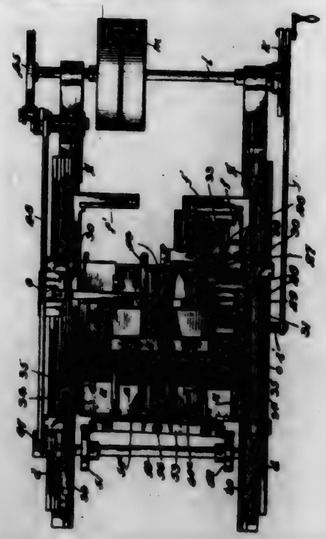

Claim.—1. In a knitting-machine, in combination, a needle-bed, a movable jack-bed, needles carried by said needle-bed, jacks carried by said jack-bed, a cam-carrying plate adapted to be reciprocated across said needle and jack beds, and two sets of cams carried by said cam-plate one set adapted to operate said needles and the other said jacks.

2. In a knitting-machine, in combination, a needle-bed, a movable jack-bed, needles carried by said needle-bed, jacks carried by said jack-bed, a cam-carrying plate adapted to be reciprocated across said needle-bed, two sets of cams carried by said cam-carrying plate, one set adapted to operate the needles directly, the other to operate the needles through the jacks, and means whereby either or both sets of cams may be thrown into or out of operative action.

3. In a knitting-machine, in combination, a bed one portion of which is stationary and the other movable, needles carried by one portion of said bed, jacks carried by the other portion of said bed, means for actuating said needles directly and means for actuating said needles through said jacks.

4. The combination in a knitting-machine of a horizontal rising-cam formed in two pieces, the upper part, or apex, of which is vertically movable in relation to the lower part or base, means for automatically lifting and for automatically lowering the movable part of said cam at predetermined intervals, needles, jacks operated by said raising-cam, adapted to engage and lift said needles, cams for returning said jacks to their lowered positions and stitch-cams adapted to return said needles to their lowered positions.

5. In a knitting-machine, in combination, a horizontal rising-cam formed in two pieces, the upper part, or apex, of which is vertically movable in relation to the lower part or base, a stem upon which the movable part of said cam is carried, a ratchet-wheel surrounding said stem, a collar upon said stem, said wheel and collar carrying one a notch and the other a tooth, a pawl adapted to engage and rotate said ratchet-wheel, a stop carried by the stationary frame of the machine for actuating said pawl, jacks with heels of unequal lengths adapted to be raised by said cam, needles adapted to be engaged and raised by said jacks, cams for returning said jacks to their lowered positions, and stitch-cams for returning said needles to their lowered positions.

6. In a knitting-machine, in combination, a needle-bed and a jack-bed, the latter of which is lengthwise movable in relation to the former, needles and jacks carried by said beds, cams for operating said needles and jacks, a pivoted lever the free end of which is connected to the movable bed, a cam adapted to rock said lever, and means for rotating said cam.

7. In a knitting-machine in combination, a needle-bed and a jack-bed the latter of which is movable lengthwise in relation to the former, needles and jacks carried by said beds, a set of cams for operating said needles, a set of cams for operating said jacks, means for carrying and means for reciprocating said cams, means whereby either set of said cams may be thrown into or out of operative action, a pivoted lever the free end of which is connected to the movable bed, a cam adapted to engage and rock said lever, a shaft upon which said cam is carried, a ratchet-wheel upon said shaft, a pawl engaging said ratchet-wheel, an arm connected with said pawl, a cam upon the driving-shaft of the machine for operating said arm, and said driving-shaft.

8. In a double plate, or pyramid, knitting-machine, in combination, oppositely-inclined plates each of which comprises a stationary needle-bed and a jack-bed beneath said needle-bed, which is lengthwise movable in relation to said needle-bed, needles carried by said needle-bed, jacks carried by said jack-bed, cams for operating said needles and jacks, a pivoted lever the free ends of which are adapted to be attached one to one jack-bed, the other to the other jack-bed, and means for rocking said lever a predetermined distance.

9. The combination with the needle-bed of a knitting-machine, of a bifurcated slide adapted to hold certain, or all, of the needles out of operative contact with the needle-actuating mechanism.

10. In a knitting-machine, in combination, a needle-bed, a jack-bed movable lengthwise of said needle-bed, needles carried by said needle-bed, jacks having heels of unequal lengths carried by said jack-bed, means substantially as set forth for elevating said jacks to cause said needles to make a full or a tuck stitch, cams for returning said needles and jacks to their first position, and means for moving said jack-bed so that a particular jack may engage and operate different needles as may be desired.

850,787. NUT-LOCK. GEORGE W. ROBERTS, Minersville, Pa. Filed Nov. 12, 1906. Serial No. 342,983.

Claim.—In a nut-lock, the combination of a bolt having a keyway, a nut screwing on the said bolt and having its outer face provided with a recess having enlargements at diametrically opposite points and with apertures leading from the said enlargements, the wall of the recess between the said enlargements being formed with teeth, a locking member having a smooth bore fitting over the end of the bolt and into the said nut-recess, the locking member having a key for engagement with the said keyway and the peripheral face of the said locking member being provided with teeth, sundry of which extend into the said enlargements, and the remaining teeth meshing with the said teeth on the nut, and a retaining-cover for the said locking member and having its ends provided with lugs extending into the said enlargements and out through the apertures in the nut and bent down upon the outside of said nut, the said retaining-cover having a central aperture for the passage of the threaded end of the bolt.

850,788. SECONDARY-BATTERY PLATE AND METHOD OF MAKING SAME. LOUIS N. J. ROSELLE, Paris, France. Filed Feb. 13, 1905. Serial No. 245,474.

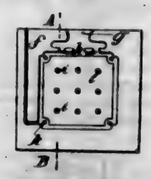

Claim.—1. The process of manufacturing plates for secondary electric batteries, which consists in casting or molding in a mold a core of active material, casting around said core while being in hot condition a ramified grid in a second mold, at the same time forming on the entire surface of said core between the ramifications of the grid a thin film of metal, then allowing the whole to cool slowly and finally removing the thin film of metal.

2. The method herein described of manufacturing plates for secondary batteries, which consists in casting a core of active material, and casting about said core a grid provided with ramifications, said grid being provided between said ramifications with a comparatively thin film of metal, allowing the entire mass to cool, and finally removing said thin film of metal.

3. The process of manufacturing plates for secondary electric batteries which consists in molding or casting a core of active material in the first mold shaped so as to form at the angles of the core notches terminating in an eye, then casting around said core while in a hot condition a ramified grid or support in a second mold shaped so as to form at the angles of the grid notches terminating in an eye, which eye corresponds to the notches in the core, the said grid having a thin film of metal between the ramifications thereof, permitting the plates to cool slowly and removing the film from the grid.

850,789. ATTACHMENT FOR SEWING-MACHINES. ANDREW G. ROSENTHAL, Chicago, Ill. Filed Dec. 21, 1906. Serial No. 348,888.

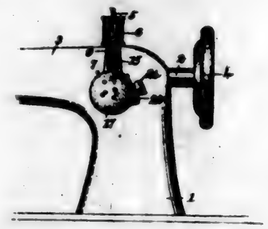

Claim.—1. A device of the class described, having a depending body with a pincushion attached thereto, and having an upwardly-projecting tongue adapted to be hung about the spool-stud of a sewing-machine, and a sheet of abrasive material attached on the outer face of said tongue.

2. An attachment for a sewing-machine, consisting of a plate having a pincushion attached to the outer face thereof, and having an upwardly-projecting curved tongue with an opening in the upper extremity thereof, adapted to be received over the stud or spool-holder of the sewing-machine, and a sheet of abrasive material attached on the outer face of said tongue on the curve thereof.

3. An attachment for a sewing-machine, consisting of a plate having a body with openings formed therethrough, a pincushion set over said body and having a cover with its edge turned under against said body, a keeper-plate engaging said edge and adapted to clamp the same against said body, said keeper-plate having fingers projecting through said openings and clenched upon the rear side of said body, said plate further having an upwardly-projecting tongue with an opening adapted to receive the stud of the spool-holder of said sewing-machine, said tongue above said cushion having outwardly-offset nibs, and a sheet of abrasive material held on the outer side of said tongue by said nibs.

4. An attachment of the class described, having an upwardly-projecting tongue with an opening therethrough adapted to be received over a stud or spool-holder, and a washer of compressible material disposed under said tongue at said opening, and having a slit therein whereby the material of said washer becomes forced up into the said opening.

850,790. RAILWAY SAFETY APPARATUS. GEORGE E. RYAN, New York, N. Y. Filed Sept. 28, 1906. Serial No. 336,532.

Claim.—In apparatus of the class described, in combination, a plurality of track devices adapted to be disposed at intervals along the roadway, a plurality of contact devices, circuits connecting said contact devices with said track devices and affording means for setting a track device in advance of the train and a track device in the rear of said train, and affording means for releasing the track devices in succession in the rear of said train, a second set of contact devices and circuits connecting the same with said contact devices and affording means for releasing the contact devices in advance of the train.

850,790.

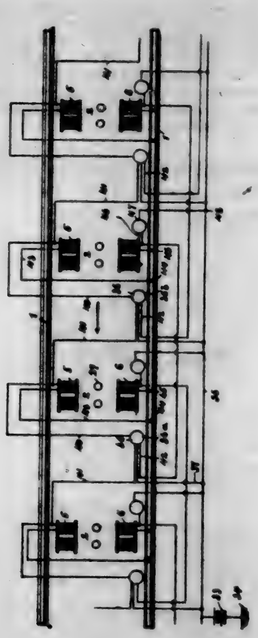

850,701. WATER-GAP. PETER SCHAFER, Jr., Fairview, Ill. Filed Apr. 30, 1906. Serial No. 314,556.

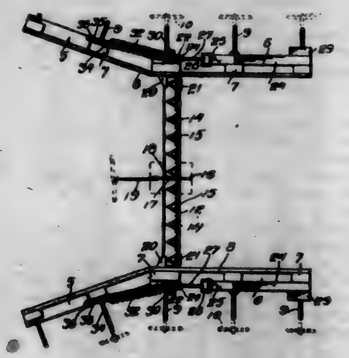

Claim.—1. A water-gap comprising a frame, a gate, comprising a rock-shaft mounted in the frame and a plurality of pickets carried by the rock-shaft, a weighted lever-arm mounted for rocking movement upon the frame, a yoke member hingedly connected with the arm, a link connecting the yoke member and the rock-shaft, and a spring connected at one of its ends with the rock-shaft and adjustably connected at its other end to the frame.

2. A water-gap comprising a frame, a shaft mounted for rocking movement in the frame, a gate carried by the shaft, a weighted lever-arm mounted upon the frame, a crank-arm carried by the shaft, connections between said crank-arm and said lever-arm, and a spring connected with said crank-arm and adjustably connected with said frame.

850,792. WIRE BUCKLE. WILLIAM A. SCHLEICHER, Cleveland, Ohio, assignor to The Eberhard Manufacturing Company, Cleveland, Ohio, a Corporation of Ohio. Filed June 14, 1906. Serial No. 321,627.

Claim.—1. A buckle having its frame composed of a single piece of wire bent to form a tongue-loop and a tuck-loop, with a straight intermediate transverse bar common to both loops and forming a pin or pintle for the tongue, said intermediate bar being formed in part by an intermediate portion of the wire and in part by the free end portions of the wire which are brought into the same vertical plane with the said intermediate portion and closed vertically against the same; substantially as described.

2. A buckle having its frame composed of a single integral piece of wire bent to form a tuck-loop and a tongue-loop, with a transverse bar intermediate of the two loops, said bar having a flattened surface against which the free inwardly-turned end portions of the wire are pressed and secured; substantially as described.

850,793. WIRE BUCKLE. WILLIAM A. SCHLEICHER, Cleveland, Ohio, assignor to The Eberhard Manufacturing Company, Cleveland, Ohio, a Corporation of Ohio. Filed June 14, 1906. Serial No. 321,628.

Claim.—1. A buckle having its frame formed from a single piece of wire bent to form parallel tuck and tongue loops, said loops having a common bar or side formed by superimposed intermediate portions of the wire and the ends of the wire meeting in and forming the other bar of one of the loops; substantially as described.

2. A buckle having its frame formed from a single piece of wire bent to form tuck and tongue loops having a common bar or side formed by superimposed intermediate portions of the wire whose adjacent faces are secured together, the free ends of the wire meeting in an opposite side of one of the loops; substantially as described.

850,794. BUCKLE. WILLIAM A. SCHLEICHER, Cleveland, Ohio, assignor to The Eberhard Manufacturing Company, Cleveland, Ohio, a Corporation of Ohio. Filed June 14, 1906. Serial No. 321,629.

Claim.—1. A buckle having its frame formed from a single piece of wire, whose end portions are bent to form tuck and tongue loops respectively, with its intermediate portion forming a transverse oblique connection between said loops, the free ends of the wire being abutted against opposite sides of said connection, and one of said ends being reduced and secured to a reduced portion of the connection to form a bearing for the eye of the buckle-tongue; substantially as described.

2. A buckle having a frame composed of a single piece of wire bent to form tuck and tongue loops, with a transverse member connecting the two loops and forming a bearing for the buckle-tongue, one of the free ends of the wire being reduced and fitted to a reduced portion of the transverse member to form a part of the tongue-bearing; substantially as described.

850,795. BUCKLE. WILLIAM A. SCHLEICHER, Cleveland, Ohio, assignor to The Eberhard Manufacturing Company, Cleveland, Ohio, a Corporation of Ohio. Filed June 14, 1906. Serial No. 321,630.

Claim.—A buckle having its frame composed of a single piece of wire, whose end portions are bent to form tuck and tongue loops respectively, and whose intermediate portion forms a transverse oblique connection between said loops, the free ends of the wire being fitted and secured to the opposite oblique sides of the said connection, and a tongue carried by said connection; substantially as described.

850,796. TROLLEY STAND AND POLE. GEORGE Q. SEAMAN, New York, N. Y., assignor of one-half to Thomas O. Connor, Brooklyn, N. Y. Filed Mar. 26, 1906. Serial No. 308,088.

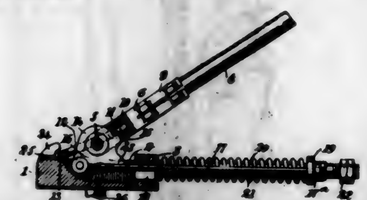

Claim.—1. In a trolley-stand, in combination, a base, an arm pivotally mounted upon said base, a trolley-pole carried on said arm, a trigger, a spring pressing said trigger, a shackle slidably mounted at its upper portion upon said arm and having its lower end constantly resting upon said base and adapted to slide across said base, said trigger having a tooth adapted to be engaged by said shackle, said base having a projection adapted to be engaged by said shackle to release said tooth.

2. In a trolley-stand, in combination, a base, an arm having forks pivotally mounted on said base, a trigger pivotally mounted between said forks and having an upwardly-projecting tooth, a spring pressing said trigger, a shackle having its upper end slidably mounted in the said forks and adapted to engage said tooth, the lower portion of said shackle resting on said base, said base having a projection adapted to engage said shackle when said trigger is moved by said spring to release said tooth.

3. In a trolley-stand, in combination, a base, an arm having forks pivotally mounted on said base, said forks having slots formed therein, a trigger pivotally mounted between said forks, a guide-bar rigid with said base and projecting substantially horizontally therefrom, a spring on said guide-bar, a cross-head slidably mounted on said guide-bar, draw-bars connecting said cross-head with said trigger, said trigger having a tooth formed thereupon normally lying near said slots, a shackle having its cross-bar passing through said slots and adapted to engage said tooth, the lower portion of said shackle resting upon said base, said base having a projection adapted to engage said shackle to release said tooth.

4. In a trolley-stand, in combination, a base, a trolley-arm pivotally attached to said base and having slots formed therein, a shackle having an upper cross-bar passing through said slots and a lower cross-bar resting on said base, a trigger pivotally mounted adjacent to said arm and engaging said upper cross-bar, a spring connected with said trigger and normally affording means for supporting said arm, said base having a projection adapted to engage said lower cross-bar when said arm is in an abnormally-raised position.

5. A trolley-pole having a tubular extremity, in combination with a wheel-fork having a shank mounted in said extremity, said shank having a reduced tip, and a transverse pin passing through said tip and attaching the same to said pole.

850,797. CONDUIT-TRAVELER. LEWIS D. SHAFFER, Paint Borough, Pa. Filed Nov. 25, 1905. Serial No. 289,024.

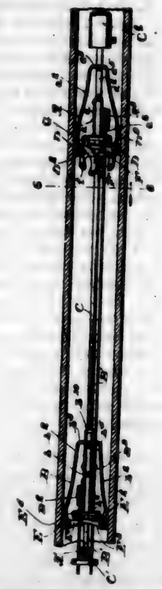

Claim.—1. A machine substantially as herein described, comprising a front traveler and a rear traveler, each having a body portion, a cross-head thereon, and spring-arms movable longitudinally relative to the body portion, grippers pivoted to said spring-arms and provided with inwardly-projecting crank-arms connected with the cross-head, the spring-arms of the front traveler being extended rearwardly beyond their pivotal connection with the grippers, double-armed stirrups having their outer arms pivoted to said extensions of the traveler-springs and their inner arms formed with cam-surfaces, links connecting said inner arms of the stirrups with the cross-head of the front traveler, the rear traveler being provided with a body portion having a forward extension arranged to engage the cam-surfaces of the inner arms of the stirrups of the front traveler, and also having in connection with its spring-arms portions for engagement by the inner arms of the stirrups whereby the extension of the body portion of the rear traveler may operate upon said stirrups to contract the grippers of the front traveler, and the said stirrups may operate upon the spring-arms of the rear traveler to contract the grippers thereof, the said front and rear travelers being arranged for operation by ropes, and a connecting-bar secured to the front traveler and projecting thence through the rear traveler, substantially as set forth.

2. A machine for wiring conduits comprising a front traveler, a rear traveler, and a connecting-bar projecting from the front traveler through the rear traveler, the said travelers being provided with spring-arms arranged in pairs on opposite sides of the connecting-bar, and with grippers pivoted thereto, means in connection with the front traveler whereby the engagement of the rear traveler therewith may operate to contract the grippers of the front traveler, and means whereby the grippers of the rear traveler may be contracted by such engagement of the rear traveler with the front traveler, substantially as set forth.

3. In a machine for wiring conduits, a traveler having spring-arms, a body portion and grippers pivoted to the

spring-arms and having arms connected with the body portion and the spring-arms being slidable relative to the body portion whereby the grippers will form a toggle connection between the spring-arms and the body portion, substantially as set forth.

4. The combination of the front traveler, a connecting-bar projecting rearwardly from the front traveler, a rear traveler movable on the said bar and having a body portion and spring-arms, the body portion extending in advance of the spring-arms, said front and rear travelers being provided with spring-actuated grippers, and means in connection with the grippers of the front traveler arranged in the path of the forward extension of the rear traveler for operation thereby to free the grippers of the front traveler from engagement with a conduit, substantially as set forth.

5. In a machine for wiring conduits, a traveler having a body portion, spring-arms slidable relative thereto, grippers pivoted to the spring-arms and having inwardly-extending arms pivotally connected with the body portion, stirrups having outer arms pivoted in connection with the spring-arms and inner arms connected with the body portion, and a second traveler having means operating upon the stirrups whereby to contract the grippers, substantially as set forth.

6. The combination of the front traveler having grippers, a rear traveler having grippers and a body portion provided with an extension in advance of its grippers, and devices in connection with the grippers of the front traveler and arranged for engagement by the forward extension of the rear traveler whereby the latter may operate to contract the grippers of the front traveler, substantially as set forth.

7. In a machine for wiring conduits, a traveler having spring-arms and grippers pivoted in connection therewith and having inwardly-projecting arms extending past the longitudinal center of the traveler, and a body portion slidable relative to the spring-arms and to which the gripper-arms are pivoted, substantially as set forth.

8. In a machine for wiring conduits, a traveler having opposite spring-arms and grippers in connection therewith, a main plate connecting said spring-arms, and opposite guide-arms extending rearwardly from said front plate between the spring-arms, substantially as set forth,

9. A machine for wiring conduits, comprising two travelers, each provided with grippers for engagement with a conduit and with spring-arms supporting said grippers, two ropes for imparting forward movement, respectively, to said travelers and devices in connection with the grippers of the several travelers for engagement by the other traveler whereby to contract the grippers of the said first traveler and also contract the grippers of the second traveler, substantially as set forth.

10. In a machine for wiring conduits, a traveler provided with opposite spring-arms flaring outwardly toward their rear ends, guide-arms projecting rearwardly between the spring-arms, and grippers on the free ends of the spring-arms, substantially as set forth.

11. In a machine for wiring conduits, the combination of the spring-arms, the traveler-body and grippers pivoted to the spring-arms and having inwardly-projecting arms connected with the body portion and forming toggles by which to effect uniform in-and-out movement of the grippers, substantially as set forth.

12. A machine for wiring conduits, comprising two travelers each provided with grippers to engage within the conduit, means for advancing said travelers alternately, and means on one of the travelers for engagement with parts on the other traveler to contract the grippers of said other traveler when the rear traveler is moved forcibly against the rear end of the other traveler, substantially as set forth.

850,798. LINE-CARRIER. LEWIS D. SHAFFER, Paint Borough, Pa. Filed Nov. 25, 1905. Serial No. 289,025.

Claim.—1. The line-carrier herein described, comprising the front traveler having a rearwardly-projecting bar and a line-guide on the said bar, a rear carrier slidable along the bar between the front carrier and its line-guide, guide-pulleys on the front and rear carriers, bars pivoted to their respective carriers and projecting upwardly therefrom and provided with line-guides and in rear thereof with detent portions, the pivoted bar of the front carrier being provided with a downward extension below its pivot and said carrier being also provided with a rearwardly-projecting portion to engage the pivoted bar of the rear carrier when the carriers are moved into engagement with each other and the rear carrier being provided with a forwardly-projecting portion to engage with the downward extension of the pivoted bar of the front carrier when the carriers are moved into engagement, whereby the detents of the front and rear carriers may be released in such position of the parts, and cords for advancing the front and rear travelers alternately, substantially as set forth.

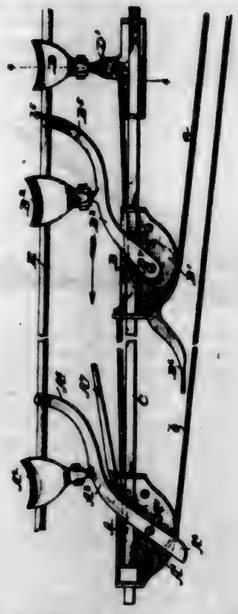

2. In a line-carrier, a traveler provided with a line-guide and in rear thereof with a detent portion for engaging a supporting-line to prevent any backward movement of the carrier.

3. A line-carrier having a line-guide which may be opened for the application of the guide to and its removal from a line and may be closed when on the line, substantially as set forth.

4. A carrier having a line-guide consisting of a hook pivoted at one end and having its free end or point springing into and out of engagement with a suitable abutment whereby the guide may be opened or closed, substantially as set forth.

5. In a line-carrier, a traveler having a body portion, a bar pivoted thereto, a line-guide and a detent in rear thereof and carried by the said bar substantially as set forth.

6. The combination in a traveler for line-carriers of a body portion, a bar pivoted thereto and having a detent at its upper rear end and a line-guide on the bar in advance of said detent.

7. The combination in a line-carrier of a front traveler having a line-guide and a detent operating in connection therewith, a rear traveler having a line-guide and a detent operating in connection therewith, means on the front carrier for releasing the detent of the rear carrier and means on the rear carrier for releasing the detent of the front carrier, substantially as set forth.

8. A line-carrier comprising a front traveler having guide and detent devices, a bar projecting rearwardly from said front carrier, a line-guide on the said bar, a rear traveler on the bar between its line-guide and the front carrier and provided with a line-guide and a detent, and means for alternately advancing the said travelers, substantially as set forth.

9. A line-carrier comprising a front traveler having a rearwardly-projecting bar, a rear traveler slidable on said bar, said travelers being provided with line-guides and detent devices operating in connection therewith, a forwardly-extending portion on the rear traveler for releasing the detent of the front traveler, and a rearwardly-projecting portion on the front traveler for releasing the detent of the rear traveler, substantially as set forth.

850,799. DUMPING-WAGON. ROY A. SHOWERS, Shenandoah, Iowa. Filed Jan. 3, 1907. Serial No. 350,595.

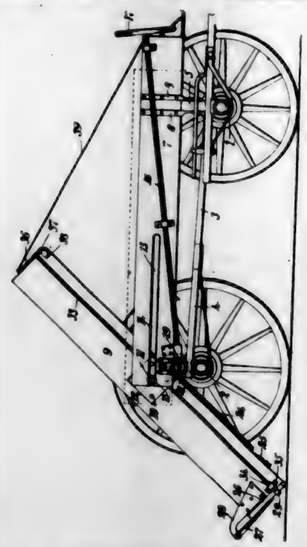

Claim.—1. A dumping-wagon comprising a running-gear, auxiliary sides having slots supported by said running-gear, a wagon-body having trunnions projecting from the opposite sides thereof passing through said slots, rack-bars secured to the under side of said body, a shaft having gears fixed thereto in engagement with said rack-bars, and means for operating said shaft whereby said body is shifted on said trunnions in said slots.

2. A dumping-wagon comprising auxiliary sides having longitudinal slots therein, a body having trunnions fixed thereto passing through said slots, rack-bars secured to the under side of said body, a shaft having gears fixed thereto in mesh with said rack-bars, and means for operating said shaft whereby said body is shifted on said trunnions in said slots.

3. A dumping-wagon comprising auxiliary sides having longitudinal slots arranged in the rear ends thereof, a wagon-body having trunnions fixed to its opposite sides passing through said slots, rollers journaled on the trunnions in engagement with the edges of the slots, rack-bars fixed to the under side of said body, a shaft having gears fixed thereto in mesh with said rack-bars, means for revolving said shaft whereby the body is shifted on said rollers in said slots, and means automatically operating to remove the weight of the body from said shaft when said body is in normal position.

4. A dumping-wagon comprising a body having a tail-gate hingedly mounted to swing upwardly and outwardly at the rear end thereof, a bell-crank lever having a toe adapted to be passed in the path of said tail-gate for locking the same in position, and means operable at the forward end of the wagon to work said lever.

5. A dumping-wagon comprising a running-gear, auxiliary sides having slots supported by said running-gear, a body having trunnions fixed to the opposite sides thereof passing into said slots, means for shifting said body on said trunnions in said slots, and blocks having inclined faces fixed to the running-gear and to said body automatically operating to remove the weight of said body from said shifting means when said body is in normal position.

6. A dumping-wagon, comprising a running-gear, a wagon-body supported on the running-gear, auxiliary sides having longitudinal slots supported by said running-gear and running the full length of the body, trunnions fixed to said body and projecting through said slots, and means for shifting said body on said trunnions in said slots.

7. A dumping-wagon comprising a running-gear, a wagon-body supported on the running-gear, auxiliary sides having longitudinal slots supported by said running-gear and running the full length of the body, trunnions fixed to said body and projecting through said slots, a shaft having a hand-wheel operable at the front of the wagon journaled in bearings carried by one of said auxiliary sides, and means gearing said shaft with the wagon-body, whereby as said hand-wheel is operated, the body is shifted on said trunnions in said slots.

850,800. AIR-SHIP. JOHN SHUKWECH, New York, N. Y. Filed Nov. 2, 1906. Serial No. 341,723.

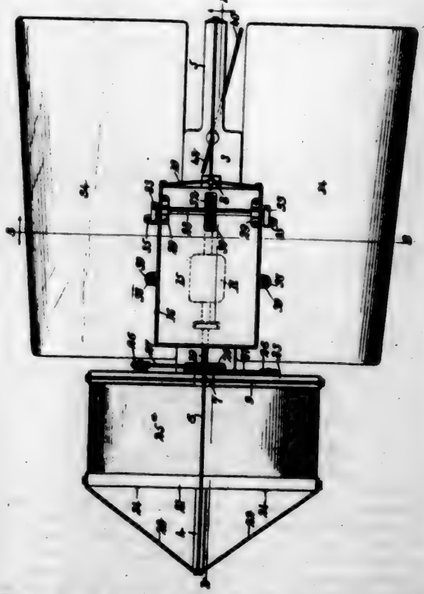

Claim.—1. An air-ship having a wing pivoted at each side thereof with downwardly-curved ends, a propeller journaled at each side and at the forward part of the ship adapted to direct a current of air under each wing, and means for causing said currents to diverge and impinge on the downwardly-curved portions of said wings.

2. An air-ship comprising a box-shaped support, a main deck carried by said support, wings pivoted at each side of the main deck, a propeller journaled at each side and forward of said deck, and a motor mounted on the deck operable to oscillate the wings and drive the propellers.

3. An air-ship comprising a main deck, wings pivoted at each side thereof, a propeller journaled at each side of the deck forward of the wings, a hood covering the upper half of said propellers, and means for causing the currents of air directed rearwardly when said propellers are in operation, to diverge, for the purpose described.

4. An air-ship comprising a main deck, a motor mounted on the main deck, a shaft journaled on said deck operable by the motor, an upper deck supported above the main deck, a crank-shaft journaled on the upper deck, wings pivoted at each side of the main deck, means connecting the crank-shaft with said wings, and means connecting the driving-shaft and crank-shaft.

5. An air-ship comprising a box-support having a wedge-shaped forward end, a main deck carried by the support, wings pivoted at each side of the main deck, means for operating said wings, means for assisting said operating means when moving the wings in one direction, a propeller journaled at each side and forward of the main deck adapted to direct a current of air under each wing, and means covering the upper half of the propellers.

6. An air-ship having a wing pivoted at each side thereof, with downwardly-curved ends, means for oscillating the wings on their pivots, bolts fixed to the wings slidable in fixed bearings, and springs interposed between the wings and bearings surrounding said bolts.

7. An air-ship having a wing pivoted at each side thereof with downwardly-curved ends, a propeller journaled at each side and at the forward part of the ship adapted to direct a current of air under each wing, means inclosing the upper portion of said propellers, and means for causing said currents to diverge and impinge on the downwardly-curved portions of said wings.

8. An air-ship having a wing pivoted at each side thereof with downwardly-curved ends, a propeller journaled at each side and at the forward part of the ship adapted to direct a current of air under each wing, means for causing said currents to diverge and impinge on the downwardly-curved portions of said wings, means for oscillating said wings, and means for assisting said oscillating means in moving the wings in one direction.

850,801. NUT-LOCK. EVERETT E. SMITH, Leon, W. Va. Filed Jan. 9, 1907. Serial No. 351,531.

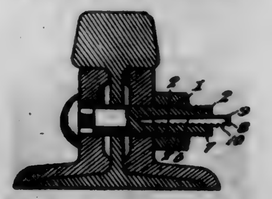

Claim.—1. A nut-lock including a bolt formed with a longitudinally-extending kerf, one wall thereof being formed with a guide-recess and the opposite wall with a series of teeth, and a key designed to coöperate with the walls of the kerf, said key being formed on one surface with a guide-rib to engage the recess in the kerf-wall, and on the opposite surface with a series of teeth designed to engage the teeth of the opposite kerf-wall.

2. A nut-lock including a bolt formand with a longitudinally-extending kerf, one wall thereof being formed with a guide-recess and the opposite wall with a series of teeth, and a key designed to coöperate with the walls of the kerf, said key comprising a metallic body wedge-shaped in longitudinal section, said key being formed on one surface with a guide-rib to engage the recess in the kerf-wall, and on the opposite surface with a series of teeth designed to engage the teeth of the opposite kerf-wall.

850,802. LOCOMOTIVE-HEADLIGHT. RICHARD M. SPILMAN, Princeton, Ind. Filed Nov. 26, 1906. Serial No. 345,124.

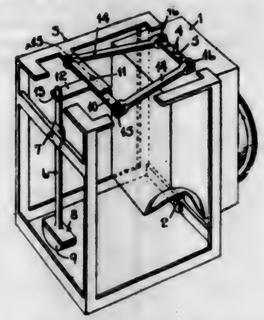

Claim.—In combination with a supporting-frame, a locomotive-headlight in the front side thereof partially incased thereby and having pivots at its upper and lower ends in bearings in the upper and lower sides of the frame and pivotally mounting said headlight for horizontal angular movement in the front portion of the frame, a pendulum-bar pivotally mounted in the rear side of said frame and having a weight at its lower end, a bar pivotally mounted under the upper side of said frame and having a rearwardly-extending frame connected to the upper end of said pendulum-bar for angular movement with reference thereto, and link-bars, each having its front end pivotally connected to the upper side of the headlight and its rear end pivotally connected to one end of said pivotally-mounted bar.

850,803. PUNCH. WILLIAM H. STEDHAM and JOHN N. MILLER, Royse City, Tex. Filed Dec. 13, 1906. Serial No. 347,061.

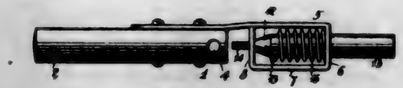

Claim.—1. A punch of the character described comprising an anvil portion having formed in its outer end a longitudinally-disposed passage and a transversely-disposed passage communicating with the end of said longitudinal passage, a punch-supporting bracket arranged on said anvil and projecting longitudinally from one end of the same, a punch slidably mounted in said passage, and a spring on said punch to project the same into engagement with the work, substantially as described.

2. A punch of the character described comprising an anvil portion having formed in one end a longitudinally-disposed passage and a transversely-disposed passage communicating with the inner end of said longitudinally-disposed passage, a punch-supporting bracket arranged on said anvil, said bracket having formed thereon a punch-supporting frame provided with alined punch-receiving apertures, a punch slidably mounted in said apertures, said punch having a reduced inner end and a work-engaging point, a transversely-disposed stop-pin in said punch, and a coil-spring arranged between said stop-pin and the outer end of the frame on said supporting-bracket, substantially as described.

850,804. APPLIANCE FOR SHIFTING THE POINT OF APPLICATION OF THE WEIGHT ON THE TRUCKS OF CARS AND THE LIKE. PERRY STEPPER, Missoula, Mont. Filed Sept. 11, 1906. Serial No. 334,127.

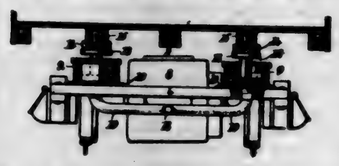

Claim.—1. In an appliance of the character described, in combination, a car-body or the like, a truck for supporting the same comprising a central bolster and an end sill, a cylinder having a working piston therein mounted on the end sill, and means at one end of the car operable to admit an actuating agent to the cylinder.

2. In an appliance of the character described, in combination, a car-body or the like, trucks for supporting the same comprising central bolsters and end sills, air-operated means mounted on adjacent end sills, and means at one end of the car operable to simultaneously operate said means to shift the point of application of the weight of the body, on said adjacent end sills.

3. In an appliance of the character described, in combination, a car-body or the like, trucks for supporting the same comprising central bolsters and end sills, a plurality of cylinders fixed to each adjacent end sill, an air-tank intermediate said cylinders, and means for forming communication between the air-tank and cylinders whereby the weight of the car-body is shifted from the bolster to said adjacent end sill.

4. In an appliance of the character described, in combination, a car-body or the like, trucks for supporting the body comprising bolsters and end sills, a cylinder fixed to each adjacent end sill, a tank supported intermediate said cylinders, a piston movably mounted in each cylinder, and means for forming communication between the tank and cylinder whereby the pistons are actuated and the weight of the car-body is shifted from the bolsters to the end sills.

5. In an appliance of the character described, in combination, a car-body or the like, a truck for supporting the same comprising a bolster and an end sill, a cylinder fixed to the end sill and having a working piston thereon, a ball-bearing carried at the upper end of the piston adapted to contact with the bottom of the car, and means for actuating the piston whereby the weight of the car-body is shifted from the bolster to the end sill.

6. In an appliance of the character described, in combination, a car-body or the like, a truck for supporting the same comprising a bolster and an end sill, a cylinder fixed to the end sill having a working piston therein, a tank, a pipe leading from the tank to the cylinder, a three-way cock in the pipe, and means operable at one end of the car for moving the cock to form communication between the tank and cylinder whereby as the piston is actuated the weight of the car-body is shifted from the bolster to the end sill.

850,805.

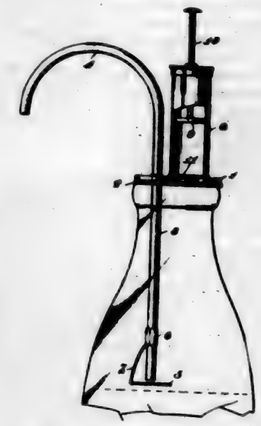

850,806. HAIRCLOTH-LOOM. GEORGE TAYLOR, Philadelphia, Pa. Filed Aug. 8, 1904. Serial No. 219,988.

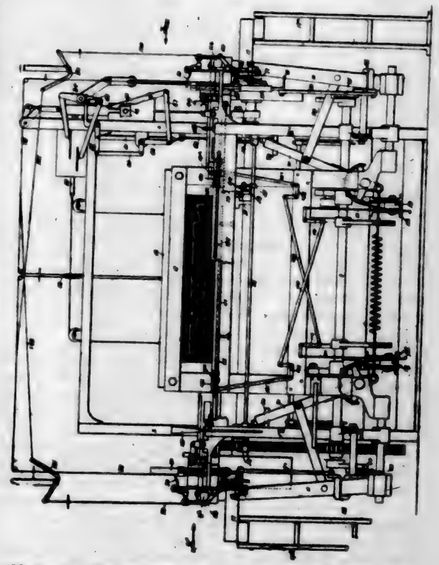

Claim.—1. The combination, in a haircloth-loom, of the hair-pan, the selecting-nippers, a movable carrier therefor, means for opening the nippers, a trigger for retaining them in the open position, and a trip for said trigger, substantially as specified.

2. The combination, in a haircloth-loom, of the hair-pan, the selecting-nippers, a movable carrier therefor, means for opening the nippers, a trigger for retaining them in the open position, a trip for said trigger, and a connection between said trip and the heddle mechanism of the loom, substantially as specified.

3. The combination in a haircloth-loom, of hair-pans; and selecting-nippers at opposite ends of the loom, movable carriers for the nippers, means for opening the nippers, triggers for retaining them in the open position, trips for

---

850,807. CREAM-SEPARATOR. SHERMAN W. STEWART, Spencer, Ind. Filed Aug. 28, 1906. Serial No. 332,333.

Claim.—1. In a cream-separator, means for forming an air-tight joint with the mouth of a bottle or the like, a tube passing through said means, a diaphragm carried at the lower end of the tube, and means for forcing air into the bottle.

2. In a cream-separator, a cap having a rubber covering on its under face, a tube passing through the cap, having an outer curved end, a diaphragm carried at the lower end of the tube, and an air-compressor carried by the cap.

said triggers, a connection between the same and the heddle mechanism of the loom, and an independent connection for each of said trips operated by the hair which is lifted by the nippers at the opposite end of the loom, substantially as specified.

4. The combination, in a haircloth-loom, of a hair-pan, a pair of hair-selecting nippers, a movable carrier therefor, and an opening device for said nippers consisting of a shaft having an arm thereon and a hook for engaging said arm as the lay swings rearwardly, substantially as specified.

5. The combination, in a haircloth-loom, of a hair-pan, a pair of hair-selecting nippers, a movable carrier therefor, an opening device for said nippers consisting of a shaft having an arm thereon, a hook for engaging said arm as the lay swings rearwardly, and a trigger for retaining the nippers in the open position, substantially as specified.

6. The combination in a haircloth-loom, of a hair-pan, and a pair of selecting-nippers at each end of the loom, movable carriers for said nippers, triggers for retaining the nippers in the open position, trips for said triggers, and connections whereby a hair caught by the nippers at either end of the loom is caused to operate the trigger for the nippers at the opposite end of the loom, each of said connections having as elements a swinging finger movable into and out of engagement with the device which raises and lowers the adjoining nippers, and means whereby said finger is swung into engagement with said device by the lifted hair, substantially as specified.

7. The combination, in a haircloth-loom, of a hair-pan, mounted so as to be movable back and forth, a pair of hair-selecting nippers, means for raising and lowering the same, a shaft having a ratchet-wheel thereon, and also having connection with the hair-pan to move the same back and forth as the shaft is rotated, a pawl engaging the ratchet-wheel and a pawl-carrier acted upon by the device which operates the hair-selecting nippers, substantially as specified.

8. The combination, in a haircloth-loom, of hair-pans and selecting-nippers at opposite ends of the loom, means for raising and lowering the nippers, and means whereby the closing of the nippers at one end of the loom is governed by a hair raised by the nippers at the opposite end of the loom.

9. The combination in a haircloth-loom, of the lay and its shuttle-picking mechanism, a supplementary pusher for moving the shuttle to its full outward position in the shuttle-box, and means for operating said pusher on each forward beat of the lay, the picking member including a member constructed to yield before the shuttle as said pusher moves it outwardly, substantially as specified.

10. The combination in a haircloth-loom, of the swinging lay and its shuttle-picking mechanism, means for arresting the outward movement of the picker before it has reached the end of the shuttle-box, a supplementary pusher for moving the shuttle to the end of the box, and means for operating said pusher on each forward beat of the lay, the picker being constructed to yield in advance of the shuttle as the lay swings forward, substantially as specified.

11. The combination, in a haircloth-loom, of the swinging lay and its shuttle-picking mechanism, means for arresting the outward movement of the picker before it has reached the end of the shuttle-box, and a supplementary pusher for moving the shuttle to the end of the box, the means which arrests the outward movement of the main picker being so disposed that, as the lay swings forward, it will permit such outward movement of the picker, substantially as specified.

12. The combination, in a haircloth-loom, of the swinging lay and its shuttle-picking mechanism, an arm forming part of said shuttle-picking mechanism, a cam for arresting the outward movement of said arm, but permitting such outward movement as the lay swings forward, and a supplementary pusher for pushing the shuttle to the outer end of the shuttle-box, substantially as specified.

13. The combination, in a haircloth-loom, of the swinging lay and its shuttle-picking mechanism, a supplementary pusher for moving the shuttle to the outer end of the shuttle-box, and a shaft having thereon devices for operating both the main picking mechanism and the supplementary pusher, substantially as specified.

14. The combination, in a haircloth-loom, of the swinging lay having shuttle-picking mechanism at each end of the same, a shuttle having clamps thereon, a device at each end of the lay for opening the shuttle-clamps as the shuttle leaves the shed, and mechanism whereby said clamp-opening device at either end of the lay is operated by the picker mechanism at the opposite end of the lay, substantially as specified.

15. The combination, in a haircloth-loom, of the swinging lay having shuttle-picking mechanism at each end of the same, a shuttle having clamps thereon, clamp-releasing devices mounted on the lay and movable into and out of range of the clamps on the shuttle, and an intermediate system of levers, links and wires also mounted upon the lay and serving as a means whereby the picker-operating treadle at either end of the lay is caused to operate the clamp-releasing lever at the opposite end of the lay, substantially as specified.

16. The combination, in a haircloth-loom, of the swinging lay and its shuttle-picking mechanism, the knock-off lever, a supplementary pusher for moving the shuttle to the outer end of the shuttle-box, said supplementary pusher being mounted upon a sliding carrier, and a connection between said sliding carrier and the knock-off lever, whereby the stoppage of the loom is effected when the shuttle fails to properly enter the shuttle-box, substantially as specified.

17. The combination in a haircloth-loom, of the swinging lay and its shuttle-picking mechanism, the hair-selecting devices, the shuttle having hair-engaging clamps thereon, and a contact device for engaging and opening said clamps as the lay swings forwardly, substantially as specified.

18. The combination, in a haircloth-loom, of hair-pans and selecting-nippers at opposite ends of the loom, means for raising and lowering the nippers, and means whereby the closing of the nippers at either end of the loom is controlled by the heddle mechanism of the loom and also by a lifted hair at the opposite end of the loom from that at which the controlled nipper is located.

850,807. NON-REFILLABLE BOTTLE. JOHN C. UHLEIN, Watertown, N. Y. Filed Sept. 7, 1906. Serial No. 333,702.

Claim.—1. A non-refillable bottle having a neck with a tapering valve-seat, a valve, and an irregular-outlined tube held within the neck and its inner end bearing against the outer tapering portion of the valve-seat, as set forth.

2. A non-refillable bottle having a neck with a tapering valve-seat, a valve, an irregular-outlined tube, the inner end of which is flaring and adapted to bear against the outer bearing portion of the valve-seat, and means for holding said tube within the neck of the bottle, as set forth.

3. A non-refillable bottle having a neck with a tapering valve-seat, a valve, an irregular-outlined tube, an inner end of which is flaring and adapted to bear against the outer bearing portion of the valve-seat, and a cement filling within the neck of the bottle and about said irregular-outlined tube, as set forth.

4. A non-refillable bottle having an apertured neck with a tapering valve-seat, a valve, an irregular-outlined tube, the inner end of which is flaring and adapted to bear against the outer bearing portion of the valve-seat, a cement filling within the neck of the bottle and about said irregular-outlined tube, and fastening means extending through the apertures in the neck and embedded in said cement filling, as set forth.

5. A non-refillable bottle having an apertured neck with a tapering portion forming a valve-seat, a conical-shaped valve, an undulating tube, the inner end of which is flaring and adapted to bear against the outer tapering portion of the valve-seat, a cement filling intermediate the tube and the neck of the bottle, pins extending through apertures in the neck of the bottle and seated in the cement filling within the latter, as set forth.

6. A non-refillable bottle having an apertured neck with a tapering portion forming a valve-seat, a valve, and the outer part of the neck of cylindrical outline and provided with apertures, a tube having a compound curve therein, the inner end of the tube flaring and bearing against the outer tapering part of the neck, a cement filling intermediate the tube and cylindrical portion of the neck, and pins inserted through said apertures in opposite directions and each embedded in the cement intermediate the curves of the tube, as set forth.

850,808. NON-REFILLABLE BOTTLE, JOHN C. UHLEIN, Watertown, N. Y. Filed Oct. 23, 1906. Serial No. 340,201.

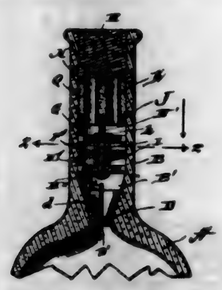

Claim.—1. A non-refillable bottle having a neck with a contracted portion forming a valve-seat, a hollow conical-shaped valve therefor, a series of independent apertured disks spaced apart and having recesses, which are out of registration with one another, in the edges thereof, an angled rod, separate from the disks, and passing through the apertures therein and serving to hold said disks so that the recesses therein will be out of registration with one another, an apertured cork mounted in said neck and in contact with the outer end of said rod and spaced apart from the outer of said disks, a plurality of open-ended tubes passing through the apertures in said cork, and means for securing the tubes within the neck of the bottle, as set forth.

2. A non-refillable bottle having a neck with a contracted portion forming a valve-seat, a hollow conical-shaped valve therefor, a series of independent apertured disks spaced apart and having recesses in the edges thereof, an angled rod separate from the disks, and passing through the apertures therein and serving to hold the disks so that the recesses therein will be out of registration with one another, and a plurality of open-ended tubes mounted within the neck of the bottle, and means for holding said tubes in place, as set forth.

850,809. TIRE-BOLTING MACHINE. ARTHUR H. WILSON, Loogootee, Ill., assignor of one-half to D. Pryor, Loogootee, Ill. Filed June 14, 1906. Serial No. 321,773.

Claim.—1. In a machine of the character described the combination with a support, of a hub-post longitudinally adjustable on said support, a base-plate mounted to swing in a horisontal plane on said support, and an appliance mounted on said base-plate for operating upon bolts.

2. In a machine of the character described, the combination of a bench designed to support a wheel in position to be operated upon, said bench being provided with a pivoted stud, a base-plate pivotally mounted upon said stud intermediate of its ends to swing in a horizontal plane, means for limiting said swinging movement of the base-plate and bolt-and-nut tools mounted upon said base-plate.

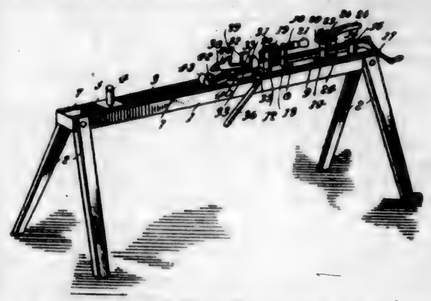

3. In a machine of the character described the combination of a bench adapted to support a wheel in position to be operated upon, said bench being provided with a pivot-stud and with transversely-elongated slots, a base-plate, and bolt-operating tools mounted thereon, said base-plate being pivotally mounted on said stud and provided with stop-lugs working in said slots as and for the purpose set forth.

4. In a machine of the character described the combination of a support adapted to hold a wheel in position to be operated upon a drive-shaft journaled in suitable standards on said support, a counter-shaft arranged to be actuated by said drive-shaft, both the drive-shaft and counter-shaft having a longitudinally-slidable as well as rotary movement, and a wrench-head carried by said counter-shaft.

5. In a machine of the character described, the combination of a support adapted to hold a wheel in position to be operated upon, a wrench-head operatively mounted upon said support, a standard projecting upwardly from the support in proximity to said wrench-head, means for actuating said wrench-head, the upper end of said standard being provided with a fork, and a bolt-clamping lever provided with a clamping-tooth adapted to project through the fork, said clamping-tooth being pivoted on the lever, as and for the purpose set forth.

6. In a machine of the character described, the combination of a bench adapted to support a wheel in position to be operated upon, a wrench-head operatively mounted upon said bench, a fork projecting upwardly above the bench in proximity to said wrench-head, a clamping-lever fulcrumed on the outer side of said fork, a bolt-clamping tooth provided with a plurality of apertures, and a pivot-stud projecting from said lever and designed to be received in any one of said apertures whereby to pivotally mount the said tooth on said lever.

7. In a machine of the character described the combination of a bench adapted to support a wheel in position to be operated upon, a stand mounted on said bench, said stand consisting of two angular members the upwardly-projecting ends of which produce shoulders 32, against which the tire of the wheel is adapted to rest, a bolt-starting hook pivotally mounted between said members and facing said shoulders, means for supporting said hook in a raised position and against the inner end of a bolt, and means for moving said hook outwardly for the purpose specified.

8. In a machine of the character described the combination of a bench adapted to support a wheel in position to be operated upon, a stand mounted on said bench, said stand consisting of two angular members the upwardly-projecting ends of which produce shoulders 32, against which the tire of the wheel is adapted to rest, a bolt-starting hook pivotally mounted between said members and fac-

ing said shoulders, removable means for supporting said hook against the inner end of a bolt, said means being adapted to allow said hook to drop when removed from underneath the same, and means for moving said hook outwardly.

9. In a device of the character described the combination of a bench adapted to support a wheel in position to be operated upon, a stand mounted upon said bench, a bolt-starting hook pivotally mounted on said stand, and a transversely-movable disk adapted to be moved underneath said hook to support the same in operative position and away from said hook to allow the latter to drop to an operative position.

10. In a device of the character described, the combination of a bench adapted to support a wheel in position to be operated upon, a stand mounted on said bench, a bolt-extracting claw pivotally mounted upon said stand and provided at one side with a slot, and an arm 38 pivotally mounted at one end in said slot eccentrically of the axis of said claw.

11. In a machine of the character described, a stand, a bolt-clipper mounted upon said stand and comprising a main jaw pivotally mounted on the stand to swing in a vertical plane whereby it may be turned downwardly into an inoperative position and upwardly into an operative position, and a movable jaw pivotally connected to said main jaw, an eccentrically-mounted arm arranged for connection to said movable jaw, and means for actuating said arm.

12. In a machine of the character described, a stand, a bolt-clipper mounted upon said stand and embodying a main jaw and a movable jaw, an eccentrically-mounted arm arranged for detachable connection on said movable jaw, and means for actuating said arm.

13. In a machine of the character described, a stand, a bolt-clipper mounted on said stand and embodying a main jaw and a movable jaw pivoted thereto and provided with a laterally-extending side at its handle end, a counter-arm mounted in said standard, and means for actuating said arm, said arm being provided on its upper side with an outwardly-facing hook and in its lower edge with a downwardly-facing recess arranged for engagement with said stud.

14. In a machine of the character described, the combination of a bench adapted to support a wheel in position to be operated upon, a stand mounted on said bench and arranged to support the tire of a wheel as against outward movement, a bolt-starting hook pivotally connected to said stand to swing in a vertical plane, means for supporting said hook in a raised position against the inner end of the bolt, and means for moving said hook outwardly, for the purpose specified.

15. In a device of the character described, the combination of a bench adapted to support a wheel in position to be operated upon, a standard mounted on said bench, a bolt-extracting claw pivotally mounted on said standard, and a bolt-starting hook pivotally connected to the claw eccentrically thereof.

16. In a machine of the character described, the combination of a standard, a bolt-clipper mounted on said standard, a bolt-extracting claw pivotally mounted on said standard, and an operative connection between said claw and said bolt-clipper.

17. In a machine of the character described, the combination of a standard, a bolt-clipper mounted on said standard and embodying a main jaw and a movable jaw, a bolt-extracting claw pivotally mounted on the standard, and a detachable operative connection between said claw and the movable jaw of the bolt-clipper.

18. In a machine of the character described, the combination of a standard adapted to receive the rim of a wheel for operation thereon, a bolt-clipper mounted on the standard and embodying a main jaw pivotally connected to the standard, and a relatively movable jaw connected to the main jaw.

19. In a machine of the character described, the combination of a standard, a bolt-clipper mounted on said standard, a bolt-extracting claw pivotally connected to said standard, means for swinging said claw about one end, a bolt-starting hook connected to said claw, and a bolt-starting hook, said hook constituting a hinged connection between the claw and the bolt-clipper.

20. In a machine of the character described, the combination of a standard, a bolt-clipper mounted on said standard, a bolt-extracting clutch pivoted at one end upon said standard, means for actuating said claw, and a bolt-starting hook concentrically pivoted to said claw and constituting a link connection between the latter and the bolt-clipper.

850,810. TUBE OR BAR STRAIGHTENING MACHINE. JOHN S. WORTH and WILLIAM F. HARRISON, Coatesville, Pa., assignors to said John S. Worth and William P. Worth, Coatesville, Pa. Filed Feb. 14, 1906. Serial No. 301,105.

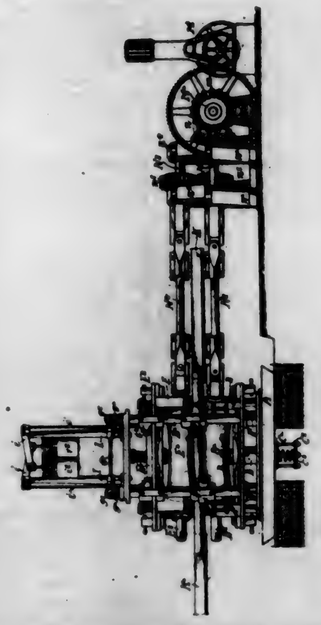

Claim.—1. The combination in a tube or bar straightening machine, of a base, a bed mounted thereon and arranged to be turned end for end, two straightening-rolls carried by the bed, and means whereby either end of the straightening-rolls can be coupled to the driving mechanism, substantially as described.

2. The combination in a tube or bar straightening machine, of a base, a bed pivoted thereto so that it can be turned end for end, two rolls carried by the bed, and means by which driving mechanism can be coupled to either end of the straightening-rolls, substantially as described.

3. The combination in a tube or bar straightening machine, of a base, a bed pivoted to the base, means for securing the bed to the base, a saddle adjustably mounted on the bed, a lower roll carried by the saddle, standards, a frame adjustable on said standards, an upper saddle carried by said frame, and a roll carried by said saddle, with means for coupling either end of the rolls to the driving mechanism, substantially as described.

4. The combination in a tube or bar straightening machine, of a base, a bed-plate mounted thereon, rolls carried by the bed-plate, with a spring for supporting the bed-plate so that the bed-plate and the mechanism carried thereby can be turned end for end, substantially as described.

5. The combination of a base-plate, a bed mounted on the base-plate, a central pivot carried by the base and extending into the bed-plate, a spring for supporting said pivot tending to counterbalance the weight of the bed and the mechanism carried thereby, and rolls mounted on the bed-plate, the rolls being so arranged that when the bed-plate is turned end for end the rolls can be coupled to the driving mechanism, substantially as described.

6. The combination of a base-plate, a bed-plate mounted thereon, a pivot for the bed-plate, means for securing the bed-plate in its adjusted position, standards projecting from the bed-plate, a top plate secured to the upper end of the standards, a saddle pivoted to the bed-plate, means for securing the saddle in the position to which it is adjusted, a straightening-roll carried by the saddle, an upper frame mounted on the standards, an upper saddle adjustably mounted on said frame, a straightening-roll carried by the said saddle, and means for raising and lowering the said frame carrying the upper roll, substantially as described.

7. The combination of a base, a bed-plate pivotally mounted thereon, four standards mounted on the bed-plate, a lower saddle pivoted to the bed-plate, means for locking the saddle to the bed-plate when in the position to which it is adjusted, a frame mounted on the standards, a saddle pivoted to the frame, each saddle having bearings, rolls carried by the bearings, adjusting-screws mounted in the standards engaging nuts carried by the frame, and means for turning the adjusting-screws in unison, substantially as described.

8. The combination of a base, a bed-plate pivoted thereon, standards mounted on the bed-plate, a lower roll carried by the bed-plate, an upper roll, a saddle for the upper roll, a frame to which the saddle is pivoted, and a spring mounted between the pivot and the frame, counterbalancing the weight of the saddle and the roll, substantially as described.

9. The combination of a base, a bed, standards on said bed, upper and lower straightening-rolls, boxes for the upper rolls, caps for the boxes, and springs connected to the caps acting to counterbalance the weight of the upper roll, substantially as described.

10. The combination of a base, a bed-plate mounted thereon, standards on the bed-plate, a lower roll mounted on the bed-plate, an upper roll, a saddle having boxes for the upper roll, caps for the boxes, a frame mounted on the standards and carrying the saddle, rods extending from the caps through the boxes, and springs mounted between the ends of the rods and the saddle tending to counterbalance the weight of the roll, substantially as described.

11. The combination in a tube-straightening machine, of a bed, standards thereon, a frame arranged to travel on the standards, a lower roll mounted on the bed, an upper roll carried by the frame, tube-guides mounted between the upper and lower rolls, screws for simultaneously adjusting the frame and the tube-guides, the screws having threaded sections of different pitch so that the tube-guides will be adjusted one-half the distance of the adjustment of the upper roll, substantially as described.

12. The combination in a tube or bar straightening machine, of a bed-plate, a saddle pivoted thereon, means for securing the saddle in the adjusted position, standards carried by the bed-plate, a frame arranged to slide on the standards, a saddle pivoted to the frame, a roll carried by each saddle, screw-shafts mounted in each standard, means by which the screw-shafts are geared together, nuts carried by the frame, and means for counterbalancing the weight of the frame and the mechanism carried thereby, substantially as described.

13. The combination of a base-plate, a bed-plate pivoted thereto, means for securing the bed-plate to the base-plate, a spring for taking the weight of the bed-plate, a saddle pivoted to the bed-plate, a roll mounted in the saddle, standards projecting from the bed-plate, a frame mounted on the standards, an upper saddle carried by the frame, a roll mounted in bearings carried by the saddle, springs tending to draw the caps of the bearings toward the saddle, a spring tending to draw the saddle toward the frame, counterbalance mechanism for the said frame, lifting-screws, nuts on the frame with which the lifting-screws engage, and means for turning the lifting-screws, substantially as described.

14. The combination in a machine for straightening tubes or bars, of a base-plate, a pivot-pin mounted therein and carried by a plate, a spring mounted under the plate, a bed-plate mounted on the projecting portion of the pivot and having an abutment for the pivot, with straightening-rolls carried by the bed-plate, whereby the bed-plate with the straightening-rolls can be turned end for end on the pivot, the spring tending to counterbalance the weight of the mechanism, substantially as described.

15. The combination in a tube or bar straightening machine, of a base-plate, a bed-plate pivoted thereto, standards projecting from the bed-plate, a saddle pivoted to the bed-plate, a lower roll carried by the saddle, the pivot-pin of the saddle forming the abutment for the pivot-pin of the bed-plate, a spring carrying the pivot-pin and tending to counterbalance the weight of the mechanism mounted on the bed-plate, an upper roll, and means for adjusting the upper roll, substantially as described.

16. The combination of a base-plate, a bed-plate mounted thereon, a lower saddle pivoted to the bed-plate, a roll mounted in boxes carried by the said saddle, standards projecting from the bed-plate, a frame adjustably mounted on the standards, an upper saddle pivoted to the frame, an upper roll mounted in boxes carried by the saddle, a spring for counterbalancing the weight of the saddle and the weight of the roll, mechanism for counterbalancing the frame, vertical lifting-screws each having two distinct threads, one thread double the pitch of the other, nuts on the frame meshing with the steep-pitch thread, guide-plates on the frame, boxes carrying the guide-plates and each box having a nut meshing with the other thread of the lifting-screw, so that when the lifting-screws are turned the guide-plates will move one-half the distance of the upper roll and its frame, substantially as described.

850,811. ASSAYER'S POURING-MOLD. JOHN J. BAILEY, Victor, Colo. Filed June 11, 1906. Serial No. 321,267.

Claim.—1. An assayer's pouring-mold provided with a receptacle containing two compartments communicating with each other by a relatively small orifice.

2. An assayer's mold provided with a receptacle composed of two compartments of unequal size, communicating with each other by a relatively small orifice.

3. An assayer's mold provided with a receptacle composed of two intercommunicating compartments of unequal size, the lower compartment being the smaller.

4. An assayer's mold provided with a receptacle containing two intercommunicating compartments, one being cup-shaped and the other conical, the conical compartment being lowermost and communicating at its smaller extremity with the bottom of the cup-shaped compartment.

5. An assayer's pouring-mold, provided with a series of receptacles, each receptacle containing two compartments of unequal size, the larger compartment being uppermost and communicating at its bottom with the smaller compartment by way of a relatively small orifice.

6. An assayer's pouring-mold provided with a plurality of receptacles, each consisting of two intercommunicating compartments of unequal size, the larger compartment being uppermost.

850,812. VALVE DEVICE. JACOB BINNIG, Boston, Mass., assignor of one-half to Mason & Hamlin Company, Cambridge, Mass., a Corporation of Delaware. Filed May 11, 1906. Serial No. 316,273.

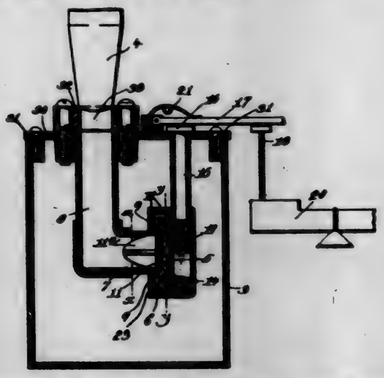

Claim.—1. A valve device comprising a valve-chamber having an inlet-port and a discharge-port on one side thereof and a vent-port on the opposite side thereof, combined with a valve loosely sustained in said chamber and adapted in one position to close the discharge-port and in another position to close the vent-port, and means separate from said valve to vary the pressure in the valve-chamber, thereby to operate the valve.

2. A valve device comprising a valve-chamber having an inlet-port and a discharge-port located on the same side thereof and a vent-port located on the opposite side, combined with a disk valve loosely sustained in the valve-chamber and adapted in one position to close the discharge-port and in another position to close the vent-port, and means separate from said valve to vary the pressure thereon, thereby to operate the latter.

3. A valve device comprising a valve-chamber having on the same side thereof both an inlet-port in communication with a source of air-tension and a discharge-port, a vent-port extending through the opposite side thereof, combined with a disk valve loosely sustained in said chamber and adapted in one position to close the discharge-port and in another position to close the vent-port, and means to vary the pressure on that side of the valve facing the vent-port, thereby to operate said valve.

4. A valve device comprising a valve-chamber having inlet and discharge ports on the same side thereof, combined with a loosely-sustained disk valve in said chamber, and means separate from the valve to cause said valve to seat itself to close the discharge-port.

5. A valve device comprising a valve-chamber having inlet and discharge ports on the same side thereof, combined with a wind-chest communicating with the inlet-port, a valve loosely sustained in said chamber and seated and unseated by the change of pressure on the side thereof opposite to that facing the inlet-port and means separate from the valve to vary said pressure.

6. A valve device comprising a valve-chamber having an inlet-port and a discharge-port on the same side thereof and a vent-port on the opposite side thereof, combined with a disk valve loosely sustained in said valve-chamber, a vent-pipe separate from the valve communicating with the vent-port, and means to close the vent-pipe.

7. A valve device comprising a valve-chamber having an inlet and a discharge port on the same side thereof and a vent-port on the opposite side, combined with a pressure-chamber communicating with the inlet-port, a disk valve loosely sustained within the valve-chamber, the diameter of the valve being slightly smaller than that of the chamber, whereby the pressure of the air entering the valve-chamber through the inlet-port and accumulating in the valve-chamber keeps the valve seated to close the discharge-port, and means separate from the valve to vent the valve-chamber through the vent-port to permit the valve to open.

8. A valve device comprising a valve-chamber having an inlet-port and a discharge-port on the same side thereof, combined with a vent-pipe separate from the valve opening into the opposite side of the valve-chamber, and a disk valve loosely sustained in said valve-chamber, and means to open and close the vent-pipe.

9. A valve comprising a valve-chamber 6 having inlet-ports 9 and a discharge-port 7 on the same side thereof, combined with a vent-pipe 15 separate from the valve communicating with the valve-chamber on the opposite side thereof, and a disk valve 5 loosely sustained in the valve-chamber.

10. A valve device comprising a valve-casing having an inlet and a discharge port on one side thereof and a vent-port extending through the opposite side thereof, combined with a valve loosely sustained in said chamber and adapted in one position to close the discharge-port and in another position to open the discharge-port and close the vent-port, and means to vary the pressure in the valve-chamber, thereby to operate the latter.

850,813. CARPENTER'S BENCH. WILHELM BRÜCKER, Duisburg-Meiderich, Germany. Filed Aug. 13, 1906. Serial No. 330,410.

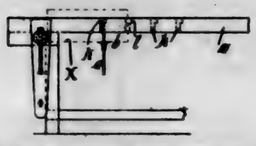

Claim.—A block or support for carpenters' benches, comprising in combination with the bench A provided with the notched bench-holes, a rack *a* placed in one of the bench-holes from down below, a support *b* adjustably attached to said rack and adapted to support said working piece, projections *f*, *g* provided on said support and designed to guide the latter along said rack, pivotal links *c*, *d* provided on said support, a connecting-pin *e* attached to said links and designed to hold said support in one of the teeth of said rack, a projection A provided on the upper end of said rack and designed to catch into one of said notched bench-holes, and a blade-spring *i* provided also on the upper end of said rack and designed to hold the latter in said notched bench-hole, substantially as described and shown.

850,814. LIQUID-APPLYING DEVICE. GEORGE A. BURDETT, Boston, Mass., assignor to William T. Abbott, trustee, Boston, Mass. Filed Dec. 9, 1905. Serial No. 291,057.

Claim.—1. A liquid-applying device comprising a reservoir having a contracted mouth, a strip of compressible material in said mouth, means for adjustably compressing the walls of said mouth against said interposed material, and wiping members projecting beyond said mouth comprising an absorbent member and a relatively non-absorbent member.

2. A liquid-applying device having a reservoir provided with a contracted elongated mouth portion, wiping-strips of absorbent material secured to the walls of said reservoir to lie beyond the mouth thereof, a strip of elastic and non-absorbent material also lying beyond said mouth and presenting a surface to the outcoming liquid and adjacent an absorbent surface and means for regulating the feed.

3. A liquid-applying device comprising a reservoir having a contracted mouth, a strip of compressible material in said mouth, means for adjustably compressing the walls of said mouth against said interposed material, and wiping members projecting beyond said mouth comprising a plurality of absorbent members and an interposed relatively non-absorbent member.

4. A liquid-applying device comprising a reservoir having a contracted mouth, wiping members projecting beyond said mouth comprising a plurality of absorbent members and an interposed relatively non-absorbent member, and adjustable means to compress the walls of the reservoir-mouth and to clamp the wiping members in position.

850,815. DOUGH-RAISER. MAY BURGESS, Green Bay, Wis. Filed Jan. 20, 1906. Serial No. 296,985.

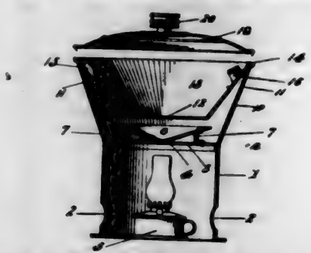

Claim.—1. A bread-raiser, consisting of a bottomless sheet-metal casing having a cylindrical base with side openings therein, a partition above this cylindrical part of the casing and having a central opening, a deflecting-cone above said opening, a flared section of the casing above said base, and a flared pan having its outer edge resting on the upper edge of the casing.

2. A bread-raiser consisting of a sheet-metal casing with cylindrical base and outwardly-flared upper section, a horizontal partition between the sections having a central opening and a deflecting-cone above said opening, a flared pan in the upper section of the casing and resting on the edge thereof, handles on the interior of the flared pan, and a cover to said pan.

850,816. BUTTON-PROTECTOR FOR TUFTING-MACHINES. WILLIAM E. BUSER, Chillicothe, Ohio. Filed Nov. 7, 1905. Serial No. 286,289.

Claim.—1. A button-protector, comprising parallel pivoted spring telescoping-jaws adapted to hold the cloth on the button-holder of a tufting-machine.

2. A button-protector, comprising two semicircular jaws having extended pivotal portions, handles extending parallel with the jaws, and a spring within the handle for normally holding the jaws together.

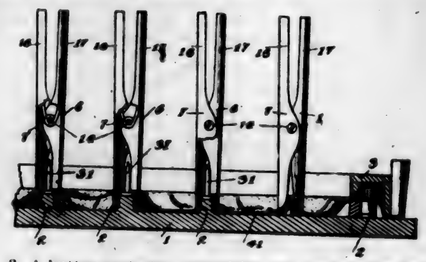

3. A button-protector, comprising two semicircular jaws of different circumference and having extended pivotal portions, a pivot passing through the pivotal portions, handles carried by the jaws parallel therewith and a spring surrounding the pivot and extending within the handles for normally holding the jaws closed one within the other.

4. A button-protector, comprising two semicircular jaws having rounded ends and longitudinal slots, extended pivotal portions carried by the jaws overlapping each other, a pivot passing through the pivotal portions, handles carried by the jaws parallel therewith and a spring surrounding the pivot and extending within the handles for normally holding the jaws closed one within the other.

5. A button-protector, comprising two parallel jaws having extended pivoted portions, and parallel handles extending parallel with the jaws.

6. A button-protector, comprising two parallel telescoping jaws, and parallel handles carried by the jaws and extending parallel therewith.

7. A button-protector, comprising two parallel telescoping jaws pivoted together and normally held in their telescoped position by a spring, and handles carried by the jaws and extending parallel with the jaws, and parallel with each other.

8. A button-protector, comprising two semicircular parallel jaws of different circumferences, and having extended telescoping ears, a pivot passing through the ears, handles carried by the jaws and parallel therewith and parallel with each other, and a spring surrounding the pivot and extending within the handles and holding the handles in an outward position with the jaws closed in their telescoped position.

9. A button-protector, comprising two semicircular elongated parallel jaws of different circumferences, and having inwardly-extending overlapping ears, the outer ends of said jaws opposite each other provided with slots, a pivot passing through the ears, handles carried by the jaws and forming a continuation of the jaws and parallel therewith, and a spring coiled around the pivot and having its free ends extending within the handles and normally holding the handles in an outward position with the jaws closed in their telescoped position.

10. A button-protector for a tufting-machine, comprising two semicircular elongated parallel jaws formed of pieces of sheet metal and having their upper ends extending and rolled forming continuous parallel handle portions, inwardly-extending ears intermediate the handle and jaw portions, and overlapping each other, the outer ends of said jaws being provided with elongated slots, a pivot passing through the ears, and a coiled spring coiled upon the pivot and having its free ends extending within the rolled handles and normally holding the handles outward with the jaws in their closed telescoped position.

850,817. COIN-CONTROLLED MACHINE. AUGUSTE A. CAILLE, GUY HAMILTON, and OTIS C. CURRIE, Detroit, Mich., assignors to The Caille Company, Detroit, Mich., a Copartnership. Filed Sept. 11, 1905. Serial No. 277,903.

Claim.—1. In a coin-controlled machine, the combination with the casing and means for controlling the opera-

tion of the machine adapted to be operated by a coin, of a coin-chute opening inside the casing, a way extending outside the casing and opening into the chute, and means within the chute above the open end of the way whereby the course which the coin will take is made uncertain.

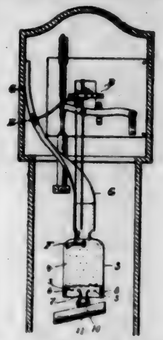

2. In a coin-controlled machine, the combination with a casing having an opening in its forward side, of a coin-chute within the casing, a glass plate secured over the opening in the case and forming one side of an enlargement of the chute, a back forming the other side of said enlargement and spaced from the glass with the chute opening into the upper end of said space, pins on the back extending across the space, strips extending upward into the lower end of said space and forming between them a way extending through the front of the casing, a bell projecting at one side into the way below the back, and a cup on the outside of the casing to receive the coins from the way.

850,818. HEATER. EDMUND G. M. CAPE and RICHARD J. DURLEY, Montreal, Quebec, Canada. Filed May 2, 1904. Serial No. 206,083.

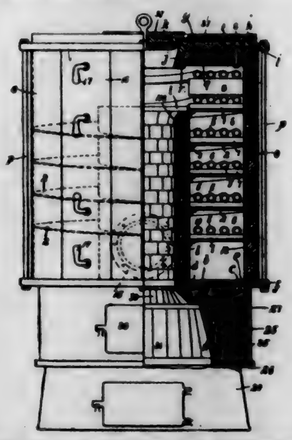

Claim.—1. In a fluid-heater, the combination with a combustion-chamber and a chimney connection, of a spiral flue or passage leading from the combustion-chamber to the chimney connection, and a fluid-conducting section extending through the interior of the spiral flue or passage, and means in contact throughout its length with one of the walls of such flue for deflecting the current of heated gases of combustion as they flow through such spiral flue or passage and causing the gases to come into contact with the fluid-conducting section.

2. In a fluid-heater, the combination with a combustion-chamber, a chimney connection, and a flue or passage leading from the combustion-chamber to the chimney connection, of a fluid-conducting section extending through the interior of the flue or passage, and means in contact throughout its length with one of the walls of such flue for deflecting the current of heated gases of combustion flowing through the flue or passage and causing the same to come in contact with the fluid-conducting section.

3. In a fluid-heater, the combination with a combustion-chamber, a chimney connection, and a flue or passage leading from the combustion-chamber to the chimney connection, of a fluid-conducting section extending longitudinally through the interior of the flue or passage, and means independent of and supporting the fluid-conducting section above the floor of such flue or passage, such means in contact throughout its length with one of the walls of such flue acting as deflectors for mixing the current of heated gases of combustion flowing through the flue or passage and causing the same to come in contact with the fluid-conducting section for the purpose set forth.

4. In a heater, the combination with a fire-chamber, a cylindrical member communicating at one end with the fire-chamber, a chimney connection located adjacent to the fire-chamber, and means separating the chimney connection from the fire-chamber, a spiral flue or passage communicating at one end with the end of the cylindrical member opposite to the fire-chamber the said spiral flue or passage communicating at its other end with the chimney connection, and means whereby the heat emanating from the heated gases of combustion flowing through the flue or passage is taken up.

5. In a heater, the combination with a vertically-elongated combustion-chamber, an outlet for the gases of combustion located on a level with the lower end thereof and separated therefrom, of a vertical spiral flue or passage communicating at its upper end with the upper end of the elongated combustion-chamber, and at its lower end with the chimney connection and means whereby the heat emanating from the heated gases of combustion flowing through the flue or passage is taken up.

6. In a heater, the combination with a vertically-elongated combustion-chamber, a chimney connection located on a level with the lower end thereof and separated therefrom, of a vertical spiral flue or passage communicating at its upper end with the upper end of the elongated combustion-chamber, and at its lower end with the chimney connection, and means whereby the heat emanating from the heated gases of combustion flowing through the flue or passage is taken up.

7. In a heater, the combination with a vertical elongated cylindrical combustion-chamber, of a spiral plate wound around the exterior of the cylindrical chamber, an inclosing casing encircling and fitting closely the outer edge of the spiral plate, the spiral flue or passage thus formed communicating at its upper end with the upper end of the combustion-chamber and at its lower end with a chimney connection communicating with the lower end of the inclosing casing, and means whereby the heat emanating from gases of combustion flowing through the flue or passage is taken up.

8. In a heater, the combination with a vertical elongated cylindrical combustion-chamber, of a spiral plate wound around the exterior of the cylindrical chamber, means securing the inner edge of the spiral plate rigidly to the cylindrical chamber, an inclosing casing encircling and fitting closely the outer edge of the spiral plate and having a chimney connection near the lower end thereof, the spiral flue or passage thus formed communicating at its upper end with the upper end of the combustion-chamber and at its lower end with the chimney connection, and means whereby the heat emanating from the heated gases of combustion flowing through the flue or passage is taken up.

9. In a heater, the combination with a vertical elongated cylindrical combustion-chamber having a fire-brick lining, of a spiral plate wound around the exterior of the cylindrical chamber, means securing the inner edge of spiral plate rigidly to the cylindrical combustion-chamber, an inclosing casing encircling and fitting closely the outer edge of the spiral plate and having a chimney connection near the lower end thereof, the spiral flue or passage thus formed communicating at its upper end with the upper end of the combustion-chamber and at its lower end with the chimney connection and a non-heat-conducting jacket encircling the said inclosing casing, and means whereby the heat emanating from the heated gases of combustion flowing through the flue or passage is taken up.

10. In a heater, the combination with a vertical elongated combustion-chamber, of a spiral plate wound around the exterior of the cylindrical chamber, means securing the inner edge of the spiral plate rigidly to the cylindrical combustion-chamber, an inclosing casing encircling and fitting closely the outer edge of the spiral plate and having a chimney connection near the lower end thereof, the spiral flue or passage thus formed communicating at its upper end with the upper end of the combustion-chamber and at its lower end with the chimney connection and a fluid-conducting section extending in connection with and subjected to the heat emanating from the products of combustion flowing through such spiral flue or passage.

11. In a heater, the combination with a vertical elongated cylindrical combustion-chamber, of a spiral plate wound around the exterior of the cylindrical chamber, means securing the inner edge of the spiral plate rigidly to the cylindrical combustion-chamber, an inclosing casing encircling and fitting closely the outer edge of the spiral plate and having a chimney connection near the lower end thereof, the spiral flue or passage thus formed communicating at its upper end with the combustion-chamber and at its lower end with the chimney connection, and a series of fluid-conducting sections independent of one another, and subjected to the heat emanating from the products of combustion flowing through such spiral flue or passage.

12. In a heater, the combination with a vertical elongated cylindrical combustion-chamber, of a spiral plate wound around the exterior of the cylindrical chamber means securing the inner edge of the spiral plate rigidly to the cylindrical combustion-chamber, an inclosing casing encircling and fitting closely the outer edge of the spiral plate and having a chimney connection near the lower end thereof, the spiral flue or passage thus formed communicating at its upper end with the upper end of the combustion-chamber and at its lower end with the chimney connection, and a spiral fluid-conducting section extending longitudinally through the interior of the spiral flue or passage.

13. In a heater, the combination with a vertical elongated cylindrical combustion-chamber, of a spiral plate wound around the exterior of the cylindrical chamber, means securing the inner edge of the spiral plate rigidly to the cylindrical combustion-chamber, an inclosing casing encircling and fitting closely the outer edge of the spiral plate and having a chimney connection near the lower end thereof, the spiral flue or passage thus formed communicating at its upper end with the upper end of the combustion-chamber and at its lower end with the chimney connection, and a fluid-conducting section extending in connection with and subjected to the heat emanating from the products of combustion flowing through the spiral flue or passage, and means for deflecting the current of heated gases of combustion as they flow through the spiral flue or passage and causing the gases to come into contact with such fluid-conducting section.

14. In a heater, the combination with a vertical elongated cylindrical combustion-chamber, of a spiral plate wound around the exterior of the cylindrical chamber means securing the inner edge of the spiral plate rigidly to the cylindrical combustion-chamber, an inclosing casing encircling and fitting closely the outer edge of the spiral plate and having a chimney connection near the lower end thereof, the spiral flue or passage thus formed communicating at its upper end with the upper end of the combustion-chamber and at its lower end with the chimney connection, and a spiral fluid-conducting section extending longitudinally through the interior of the spiral flue or passage, and means for deflecting the current of heated gases of combustion flowing through the flue or passage and causing the same to come in contact with such fluid-conducting section.

15. In a heater, the combination with a vertical elongated cylindrical combustion-chamber, of a spiral plate wound around the exterior of the cylindrical chamber means securing the inner edge of the spiral plate rigidly to the cylindrical combustion-chamber, an inclosing casing encircling and fitting closely the outer edge of the spiral plate and having a chimney connection near the lower end thereof, the spiral flue or passages thus formed communicating at its upper end with the upper end of the combustion-chamber and at its lower end with the chimney connection, and a spiral fluid-conducting section extending longitudinally through the interior of the spiral flue or passage, and means supporting the fluid-conducting section above the floor of such flue or passage.

16. A heater consisting of an annular base-plate, a cylindrical member of slightly-greater diameter than the opening in such annular base-plate and supported upon the latter concentrically to the opening therein, a fire-brick lining within the cylindrical member and resting upon the portion of the base-plate within the same, a spiral plate wound around the exterior of the cylindrical member, means securing the inner edge of the spiral plate rigidly to the cylindrical member, a series of inverted-T irons supported upon the spiral plate, a tubular fluid-conductor of spiral form wound around the cylindrical member within the spiral space formed by the spiral plate and having one end terminating above the level of the top of the cylindrical member, and its other end located near the bottom of the latter, such spiral tube resting upon the inverted-T irons, a cylindrical member encircling and fitting closely the outer edge of the spiral plate and supported upon the annular base-plate, and a capping-plate supported upon the last-mentioned cylindrical member, a chimney connection leading from the inclosing cylindrical member, and means whereby the ends of the spiral tubular conductor are connected to piping outside of the heater.

17. A heater consisting of an annular base-plate, a cylindrical member of slightly-greater diameter than the opening in such annular base-plate and supported upon the latter concentrically to the opening therein, a fire-brick lining within the cylindrical member and resting upon the portion of the base-plate within the same, a spiral plate disposed horizontally and wound around the exterior of the cylindrical member, means securing the inner edge of the spiral plate rigidly to the cylindrical member, a series of inverted-T irons supported upon the spiral plate, a series of tubular fluid-conductors of spiral form wound around the cylindrical member within the spiral space formed by the spiral plate and having one end terminating above the level of the top of the cylindrical member, and its other end located near the bottom of the latter, such spiral tube resting upon the inverted-T irons, a cylindrical member encircling and fitting closely the outer edge of the spiral plate and supported upon the annular base-plate, and a capping-plate supported upon the last-mentioned cylindrical member, a chimney connection leading from the inclosing cylindrical member, and means whereby the ends of the series of tubular conductors are connected to piping outside of the heater.

18. A heater consisting of an annular base-plate, a cylindrical member of slightly-greater diameter than the opening in the annular base-plate and supported upon the latter concentrically to the opening therein, a fire-brick lining within the cylindrical member and resting upon the portion of the base-plate within the same, a spiral plate disposed horizontally and wound around the exterior of the cylindrical member, means securing the inner edge of the spiral plate rigidly to the cylindrical member, a series of inverted-T irons supported upon the spiral plate, a tubular fluid-conductor of spiral form wound around the cylindrical member within the spiral space formed by the spiral plate and having one end terminating above the level of the top of the cylindrical member, and its other end located near the bottom of the latter, such spiral tube resting upon the inverted-T irons, a cylindrical member encircling and fitting closely the outer edge of the spiral plate and supported upon the annular base-plate, an annular capping-plate supported upon the last-mentioned cylindrical member, a cover for the opening in the annular capping-plate,

a chimney connection leading from the inclosing cylindrical member, and means whereby the ends of the spiral tubular conductor are connected to piping outside of the heater.

19. In a heater comprising a spiral plate, a spiral fluid-conducting section, and a pair of cylindrical members forming with the spiral plate a spiral flue or passage, and means whereby the spiral plate and spiral fluid-conducting section are supported by one of the cylindrical members independently of the other cylindrical member, a base-plate for supporting the cylindrical member, and a capping-plate extending across and closing the top of the outermost cylindrical member with a space therebetween and the top of the innermost cylindrical member for the purpose set forth.

20. In a heater comprising a spiral plate, a spiral fluid-conducting section, extending parallel to the spiral plate and above the same, and a pair of cylindrical members forming with the spiral plate a spiral flue or passage inclosing the spiral fluid-conducting section, and means whereby the spiral plate and spiral fluid-conducting section are supported, a base-plate for supporting the cylindrical member, and a capping-plate extending across and closing the top of the outermost cylindrical member with a space therebetween and the top of the innermost cylindrical member, the outer cylindrical member having an elongated hand-hole therein, and a removable door for closing such hand-hole, substantially as described and for the purpose set forth.

850,819. RATCHET MONKEY-WRENCH. FRED H. M. DAVIS, Los Angeles, Cal. Filed Feb. 15, 1906. Serial No. 301,215.

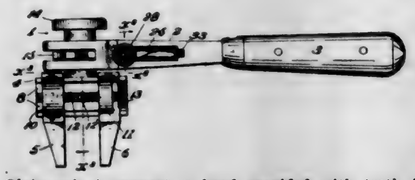

Claim.—1. A support, a head provided with teeth for rotation thereof, a pair of longitudinally reciprocatory pawls each having oppositely-inclined tooth-engaging ends, and means for moving said pawls into and out of a position in which an inclination at the end of one pawl forms a continuation of an inclination at the end of the other pawl.

2. A support, a rotary head provided with teeth, a pair of pawls adapted to rotate said head in reverse directions, said pawls being pivoted together at the end farthest from the rotary head, a plunger engaging both of said pawls at said end, and a spring acting on said plunger to force said pawls toward said head.

3. A rotary head provided with teeth, a pair of pawls adapted to rotate said head in reverse directions, said pawls being each provided with an extension at the end farthest from said head, a support on which said head and pawls are mounted, said support having a socket into which the extensions of the pawls project, and a spring-pressed plunger operating in said socket to press said pawls toward said head.

4. In a ratchet-wrench, a head provided with teeth for rotation thereof, and a pair of pawls adapted to swing edgewise and simultaneously occupy the space between adjacent teeth for locking said head against rotation in either direction.

5. A head provided with teeth for rotation thereof and a pair of pawls pivoted to swing at right angles to the plane of rotation of said head, said pawls each having reversely-inclined end portions adapted to rotate said head in reverse directions.

6. A head provided with teeth for rotation thereof, a pair of pawls which has reversely-inclined tooth-engaging portions to rotate said head in reverse directions, said pawls being movable longitudinally away from said head, and means for yieldingly holding said pawls in engagement with said teeth.

7. In a ratchet-wrench, a slotted pawl having a tooth-engaging end different portions of which are adapted to rotate the jaws of the wrench in reverse directions, a slotted support, and means movable lengthwise of the slots in the pawl and support to change the position of the tooth-engaging end of the pawl.

8. In a ratchet-wrench, a slotted pawl having a tooth-engaging end different portions of which are adapted to rotate the jaws of the wrench in reverse directions, a slotted support, and a pin movable lengthwise of the slots in the pawl and support to change the position of the tooth-engaging end of the pawl.

9. In a ratchet-wrench, a pawl having a slot extending in different directions, a support having a straight slot and means in said slots movable lengthwise thereof for the purpose specified.

10. In a ratchet-wrench, a pawl having a slot extending in different directions, a support having a straight slot and a pin in said slots movable lengthwise thereof for the purpose specified.

11. In a ratchet-wrench, a slotted support, two slotted pawls movable with relation to each other and to said support, the slot in each pawl extending in different directions, and means movable longitudinally along the slot in the support for the purpose specified.

12. In a ratchet-wrench, a slotted support, two slotted pawls movable with relation to each other and to said support, the slot in each pawl extending in different directions, and a pin movable transversely to itself and longitudinally along the slot in the support for the purpose specified.

13. In a ratchet-wrench, two slotted pawls, the slot in one pawl extending in different directions, a pin movable transversely to itself and longitudinally along said slots to move said pawls relatively to each other, and means for yieldingly holding said pin stationary.

14. In a ratchet-wrench, a support provided with depressions, pawls carried by said support, the slot in one pawl extending in different directions, a pin movable along the slots in the support and pawls, and means for yieldingly holding said pin stationary, said means including a part moving with said pin into and out of depressions in one of said members.

15. In a ratchet-wrench a support provided with depressions, two slotted pawls carried by said support, the slot in one pawl extending in different directions, a pin movable along the slots in the support and pawls, and means for yieldingly holding said pin stationary, said means including a part moving with said pin at each end thereof into and out of depressions in said support.

16. A ratchet-wrench provided with a slotted pawl; a support having slots and depressions adjacent said slots, and a pawl-adjusting device slidable along said slots, said device including a pin extending through said slots, a spring, and a part at each end of said pin movable into said depressions by said spring.

17. A ratchet-wrench provided with a jaw-actuating wheel, a slotted pawl engaging said wheel and pivoted to swing at right angles to the plane thereof, a support provided with a recess in which said pawl swings and oppositely-disposed slots leading into each side of said recess there being depressions in the shank adjacent each of said slots, a pawl-adjusting pin extending through said oppositely-disposed slots and the slot in said pawl, said pin having an inwardly-extending lug fixed to one end thereof adapted to engage the depressions at one side of the shank, the other end of the pin being provided with a head and a collar under said head, said collar having lugs adapted to engage the depressions at that side of the shank, and a spring between said head and said collar.

18. In a wrench, a jaw-carrying member provided with opposite longitudinal ways, a pair of jaws slidable along said member and having jaws lying within said ways, each of said jaws embracing and holding in place an arm carried by the other jaw, and means for sliding said jaws along said member.

19. In a ratchet-wrench, a support having intersecting slots, a toothed wheel carried by said support, a pivoted pawl in one of said slots engaging said wheel, and means movable along the other slot to adjust pivotally the position of said pawl.

20. In a ratchet-wrench, a support having intersecting slots, a toothed wheel carried by said support, a slotted pawl pivotally mounted in one of said slots in engagement with said wheel, and a pin movable along the other slot of the support and extending through the slot in the pawl.

21. A ratchet-wrench provided with a pair of pawls pivoted together at one end, each pawl having a slot extending lengthwise thereof, and means extending through said slots and slidable therealong to vary the pivotal position of said pawls relative to each other.

22. In a ratchet-wrench a support provided with a socket, a toothed wheel, a pair of pawls each provided at the rear end with an extension engaging said socket, said pawls being pivoted together by a pivot extending through said extension, means for swinging said pawls relatively to each other, and a spring in said socket for holding said pawls in engagement with said wheel.

850,820. APPARATUS FOR NITRATING SULFUR DIOXID. PATRICK J. DERRIG, North Weymouth, Mass., assignor to The American Agricultural Chemical Company, New York, N. Y., a Corporation of Connecticut. Filed Sept. 5, 1905. Serial No. 276,917.

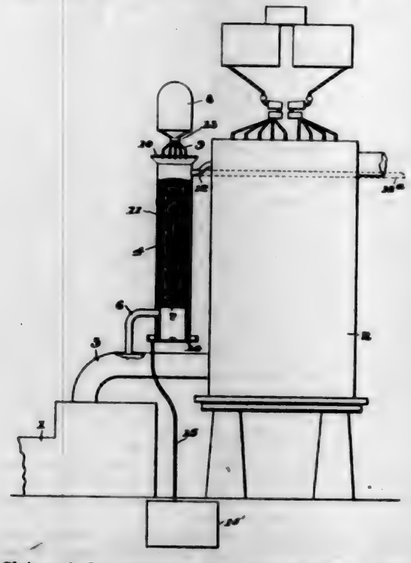

Claim.—1. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfuric dioxid, a chamber succeeding thereto and adapted to receive sulfur dioxid from said furnace, a nitrating-chamber in communication with said furnace and with said first-mentioned chamber and adapted to receive sulfur dioxid from said furnace and to conduct the same to said first-mentioned chamber and a receptacle connected with said nitrating-chamber and adapted to discharge thereinto a solution of nitrating liquid, said receptacle being out of free communication with said first-mentioned chamber.

2. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfur dioxid, a Glover tower adapted to receive sulfur dioxid from said furnace, a lead-chamber succeeding said Glover tower and in communication therewith, a nitrating-chamber having an inlet and outlet of relatively small cross-section and adapted to receive sulfur dioxid and to discharge the same, a receptacle connected with said chamber and adapted to discharge thereinto a solution of nitrating liquid, said receptacle being out of free communication with said Glover tower.

3. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfur dioxid, a Glover tower adapted to receive sulfur dioxid from said furnace, a lead-chamber in communication with said Glover tower, a nitrating-chamber having an inlet and an outlet of materially less cross-section than that of said nitrating-chamber and adapted to receive sulfur dioxid and to discharge the same, a receptacle connected with said chamber and adapted to discharge thereinto a nitrating solution, said receptacle being out of free communication with said Glover tower.

4. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfur dioxid, a Glover tower adapted to receive sulfur dioxid from said furnace, a lead-chamber succeeding said Glover tower and in communication therewith, a nitrating-chamber adapted to receive sulfur dioxid and to discharge the same, a receptacle connected with said chamber and adapted to discharge thereinto a solution of nitrating liquid, said receptacle being out of free communication with said Glover tower, and provisions for conveying surplus acid from the nitrating-chamber to a storage-receptacle.

5. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfur dioxid, a Glover tower adapted to receive sulfur dioxid from said furnace, a lead-chamber in communication with said Glover tower, a nitrating-chamber having an inlet and an outlet of materially less cross-section than that of said nitrating-chamber and adapted to receive sulfur dioxid and to discharge the same, a receptacle connected with said chamber and adapted to discharge thereinto a nitrating solution, said receptacle being out of free communication with said Glover tower, and provisions for preventing surplus acid from passing into the sulfuric-acid system.

6. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfur dioxid, a Glover tower adapted to receive sulfur dioxid from said furnace, a lead-chamber succeeding said Glover tower and in communication therewith, a nitrating-chamber having a mass of finely-divided distributing material therein, said nitrating-chamber being adapted to receive sulfur dioxid and to discharge the same, a receptacle connected with said chamber and adapted to discharge thereinto a solution of nitrating liquid, said receptacle being out of free communication with said Glover tower.

7. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfur dioxid, a Glover tower adapted to receive sulfur dioxid from said furnace, a lead-chamber succeeding said Glover tower and in communication therewith, a nitrating-chamber adapted to receive sulfur dioxid and to discharge the same, a receptacle connected with said chamber and gravity spraying means for conveying nitrating liquid therefrom to said chamber, said receptacle being out of free communication with said Glover tower.

8. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfur dioxid, a chamber succeeding thereto and adapted to receive sulfur dioxid from said furnace, a nitrating-chamber in communication with said furnace and the said first-mentioned chamber and adapted to receive sulfur dioxid from said furnace and to conduct the same to said first-mentioned chamber, a receptacle connected with said nitrating-chamber and adapted to discharge thereinto a solution of nitrating liquid and means for conducting surplus acid from said nitrating-chamber to a storage-receptacle.

9. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfur dioxid, a Glover tower adapted to receive sulfur dioxid from said furnace, a lead-chamber succeeding said Glover tower and in communication therewith, a nitrating-chamber adapted to receive sulfur dioxid and to discharge the same, a receptacle connected with said nitrating-chamber and adapted to discharge thereinto a solution of nitrating liquid, said receptacle being out of free communication with said Glover tower and means for conducting surplus acid from said chamber to a storage-receptacle extraneous to the sulfuric-acid system.

10. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfur dioxid, a Glover tower adapted to receive sulfur dioxid from said furnace, a lead-chamber succeeding said Glover tower and in communication therewith, a nitrating-chamber adapted to receive sulfur dioxid and to discharge the same, a receptacle connected with said nitrating-chamber and adapted to discharge thereinto a regulated quantity of nitrating fluid, said receptacle being out of free communication with said Glover tower and provisions for conveying surplus acid from the nitrating-chamber to a storage-receptacle extraneous to the sulfuric-acid system.

11. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfur dioxid, a Glover tower adapted to receive sulfur dioxid from said furnace, a lead-chamber succeeding said Glover tower and in communication therewith, a nitrating-chamber adapted to receive sulfur dioxid and to discharge the same, a receptacle connected with said nitrating-chamber and adapted to discharge thereinto a regulated quantity of nitrating fluid, said receptacle being out of free communication with said Glover tower, and means for conveying surplus acid from said nitrating-chamber to a storage-receptacle extraneous to said sulfuric-acid system.

12. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfur dioxid, a Glover tower adapted to receive sulfur dioxid from said furnace, a nitrating-chamber interposed between and in communication with said furnace and said Glover tower, and a nitrating-solution receptacle connected with said nitrating-chamber and out of free communication with said Glover tower.

13. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfur dioxid, a Glover tower adapted to receive sulfur dioxid from said furnace, a nitrating-chamber interposed between and in communication with said furnace and said Glover tower, a receptacle connected with said nitrating-chamber and adapted to discharge thereinto a solution of nitrate of soda, said receptacle being out of free communication with said Glover tower, and means for conducting surplus acid from said nitrating-chamber to a storage-receptacle.

14. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfur dioxid, a chamber succeeding thereto and in communication therewith, a nitrating-chamber adapted to receive sulfur dioxid and to discharge the same, means for conveying to said nitrating-chamber a regulated quantity of nitrating fluid and a conduit for conveying surplus acid from said nitrating-chamber to a storage-receptacle.

15. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfur dioxid, a chamber succeeding thereto and in communication therewith, a nitrating-chamber adapted to receive sulfur dioxid and to discharge the same, means for conveying to said nitrating-chamber a regulated quantity of nitrating fluid, said conveying means being out of free communication with the sulfuric-acid system, and a conduit for conveying surplus acid from said nitrating-chamber to a storage-receptacle.

16. In apparatus for manufacturing sulfuric acid, a furnace for supplying sulfur dioxid from said furnace, a nitrating-chamber interposed between and in communciation with said furnace and said Glover tower, means for conveying to said nitrating-chamber a regulated quantity of nitrating fluid, said conveying means being closed from full receipt of the acid of the sulfuric-acid system and a conduit for conveying surplus acid from said nitrating-chamber to a storage-receptacle.

850,821. PAPER-FEEDING MACHINE. TALBOT C. DEXTER, Pearl River, N. Y. Filed Aug. 9, 1906. Serial No. 329,898.

Claim.—1. In a paper-feeding machine, the combination of a sheet-moving device, and mean for operating the sheet-moving device, of a rock-arm adapted to engage and elevate the sheet-moving device, a spring mechanism tending to move said rock-arm in one direction, mechanism adapted to periodically move the rock-arm in the opposite direction, a latching-bar connected with the rock-arm, toggle-levers engaging the latching-bar and retaining the rock-arm in one position with the spring mechanism under tension, and sheet-actuated means adapted to trip said toggle-levers to allow the spring mechanism to operate.

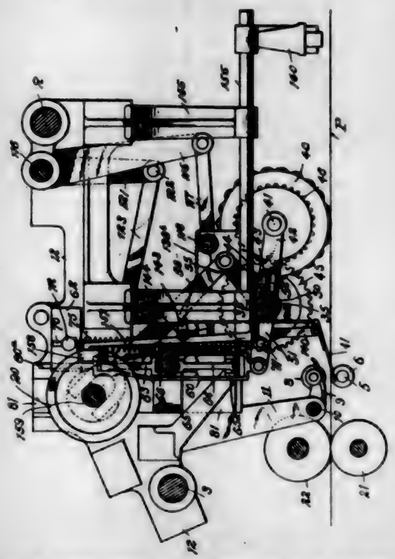

2. The combination of a support for a pile of sheets, a rotary shaft, a rotary sheet-moving instrument driven from said shaft and adapted to engage the top of the pile of sheets, a rock-arm supporting the rotary sheet-moving instrument, a second rock-arm adapted to raise and lower the sheet-moving instrument, cam mechanism suitably connected with said second rock-arm, a spring device also connected with said second rock-arm, a latching-bar connected with said second rock-arm, toggle-levers connected respectively with said latching-bar and a stationary part of the machine-frame, and sheet-actuated means adapted to trip said toggle-levers for releasing said spring mechanism.

3. The combination of a sheet-moving instrument adapted to be moved into and out of engagement with the sheet, a spring device adapted to elevate the sheet-moving instrument, a latching-bar having toggle-levers for restraining the action of the spring device, a longitudinally-movable throw-out shaft adapted to trip said toggle-levers, and sheet-controlled mechanism for effecting the longitudinal movement of the throw-out shaft.

4. The combination of a sheet-moving instrument adapted to be moved into and out of engagement with a sheet, a spring device adapted to elevate the sheet-moving instrument, a latching-bar for restraining the action of the spring device, toggle-levers connecting the latching-bar with a stationary bracket, a longitudinally-movable throw-out shaft adapted to release said restraining means, sheet-controlled mechanism for effecting the longitudinal movement of the throw-out shaft, and cam mechanism adapted to reset the restraining means.

5. In a paper-feeding machine, the combination of a sheet-moving device, and means for operating said device, with a rock-arm adapted to elevate the sheet-moving device, a spring mechanism connected with said rock-arm and adapted to move it in one direction, a latching-bar also connected to said rock-arm, a bracket-arm, toggle-levers connecting respectively with said latching-bar and said bracket-arm, and sheet-actuated means adapted to trip said toggle-levers.

6. In a paper-feeding machine, the combination of a sheet-moving device, and means for operating said device, with a rock-arm adapted to elevate the sheet-moving device, a spring mechanism connected with said rock-arm and adapted to move it in one direction, a latching-bar also connected to said rock-arm, said latching-bar being in the form of an elongated yoke or loop, a bracket-arm projecting into the loop of the latching-bar, pivotally-connected toggle-levers pivoted respectively to the latching-bar and bracket-arm, and sheet-actuated means adapted to trip said toggle-levers.

7. In a paper-feeding machine, the combination of a sheet-moving device, and means for operating said device, with a rock-arm adapted to elevate the sheet-moving device, a spring mechanism connected with said rock-arm and adapted to move it in one direction, a latching-bar also connected to said rock-arm, said latching-bar being in the form of an elongated yoke or loop, a bracket-arm projecting into the loop of the latching-bar, pivotally-connected toggle-levers pivoted respectively to the latching-bar and bracket-arm, an antifriction-roller journaled upon the knuckle-joint of said toggle-lever, a longitudinally-movable throw-out shaft adapted to engage said antifriction-roller, and sheet-actuated means adapted to cause said shaft to move longitudinally for tripping said toggle-levers.

8. In a paper-feeding machine, the combination of a sheet-moving device and means for operating said device, with suitable throw-out mechanism comprising a sectional shaft, a slip-clutch connecting said shaft-sections, means for operating said sectional shaft, a gear secured to one of said shaft-sections, a rack-bar meshing with and driven by said gear, and sheet-actuated means for arresting the movement of said driven rack-bar.

9. In a paper-feeding machine, the combination of a sheet-moving device and means for operating the said device, with throw-out mechanism for said sheet-moving device including a sectional shaft, a slip-clutch connecting the sections of said shaft, gear-wheels secured to said shaft-sections, a positively-driven rack-bar meshing with the one of said gears for driving said shaft, a second rack-bar meshing with and driven by the other gear-wheel, and sheet-actuated means adapted to arrest the movement of said driven rack-bar.

10. In a paper feeding-machine, the combination of a sheet-moving device and means for operating said device, with means for moving the sheet-moving device out of operation including a longitudinally-movable shaft-section carrying a gear-wheel, a rack-bar meshing with said gear-wheel and driving said shaft-section, means for operating said rack-bar, a second shaft-section carrying a second gear-wheel, slip-clutch members mounted upon the respective shaft-sections, a combined rack and ratchet bar the rack portion of which meshes with said second gear-wheel, a controlling-pawl, and a sheet-actuated finger suitably connected with said pawl.

11. The combination of a sheet-support, a sheet-moving instrument, means for elevating the sheet-moving instrument, a shaft-section movable longitudinally and about its axis, means actuated by the longitudinal movement of said shaft-section for releasing the elevating means, a second shaft-section movable about its axis, slip-clutch members secured upon the respective shaft-sections, means acting upon one of said shaft-sections for moving both shaft-sections about their axis, a gear upon the other section, a rack-bar meshing with and driven by said gear, and sheet-controlled means acting upon the rack-bar for the purpose set forth.

12. The combination of a sheet-support, a sheet-moving instrument, means for elevating the sheet-moving instrument, a shaft-section movable longitudinally and about its axis, means actuated by the longitudinal movement of said shaft-section for releasing the elevating means, a second shaft-section movable about its axis, slip-clutch members secured upon the respective shaft-sections, a gear mounted upon one of said shaft-sections, a positively-driven reciprocatory rack meshing with said gear for moving both shaft-sections about their axis, a second gear upon the second shaft-section, a rack-bar meshing with and driven by said second gear, and sheet-controlled means acting upon the rack-bar to arrest the movement of one shaft-section about its axis and cause the other shaft-section to move longitudinally.

13. The combination of a sheet-moving instrument, means for elevating the sheet-moving instrument from a pile, a rotary longitudinally-movable shaft-section, means actuated by the longitudinal movement of said shaft-section for releasing the elevating means, a second rotary shaft-section, slip-clutch members secured upon the respective rotary shaft-sections, means yieldingly connecting the shaft-sections, a gear-wheel upon each of said rotary shaft-sections, a stationary track bar or frame, a reciprocating carriage mounted upon the track-bar, and carrying a rack-bar which meshes with one of said gears for driving said sectional shaft, a combined rack and ratchet bar also mounted upon said track bar or frame and meshing with the other gear, and a sheet-actuated pawl adapted to engage said ratchet.

14. In a paper-feeding machine, the combination of a sheet-moving device and means for operating said device, with means for moving the sheet-moving device out of operation including a longitudinally-movable shaft-section carrying a gear-wheel, a rack-bar meshing with said gear-wheel and driving said shaft-section, a reciprocating link operating said rack-bar, a second shaft-section carrying a second gear-wheel, slip-clutch members mounted upon the respective shaft-sections, a slotted combined rack and ratchet bar, the rack portion of which meshes with said second gear-wheel, a pin projecting from said link into the slot of said rack and ratchet bar, a controlling-pawl, and a sheet-actuated finger suitably connected with said pawl.

15. In a paper-feeding machine, the combination of a sheet-moving device and means for operating the said device, with throw-out mechanism for said sheet-moving device including a sectional shaft, a slip-clutch connecting the sections of said shaft, gear-wheels secured to said shaft-sections, the track-bar 110, the reciprocating carriage 111 carrying rack 112, the combined rack and ratchet bar 136 formed with slot 136^c, a stop for limiting the movement of bar 136 in one direction, the link 117, pin 118, connecting the carriage and link and engaging the slot 136^b, means for imparting movement to link 117, and a sheet-controlled pawl adapted to engage the ratchet.

850,822. RECEPTACLE FOR LIQUIDS. HAROLD W. EDEN, Detroit, Mich., assignor to Parke, Davis & Co., Detroit, Mich., a Corporation. Filed Nov. 26, 1906. Serial No. 345,024.

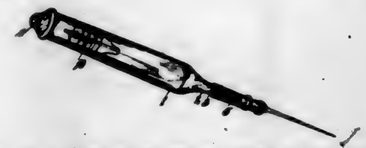

Claim.—1. A guard-cap for the frangible conical terminals of fluid-containing receptacles, having a screw-terminal for the engagement therewith of a cap, and a corrugated body part adapted to expand over and conform to the surface of the receptacle, substantially as described.

2. A guard-cap for the frangible discharge-terminal of a fluid-containing receptacle, having a corrugated body portion adapted to be gently forced thereover, and a detachable cap serving as an end closure therefor, substantially as described.

3. A guard member for the frangible terminal of a fluid-containing receptacle, having a detachable cap and a corrugated body portion adapted to expansibly engage over a part of said receptacle, substantially as described.

4. In combination with a fluid-containing receptacle, a guard member having a slightly-expansible body portion adapted to engage over the discharge-terminal thereof, and a detachable guard-cap adapted to close the end of said guard member and said receptacle, substantially as described.

5. A guard-cap for the frangible terminal of a fluid-con-

taining receptacle comprising a body portion adapted to expansibly engage thereover, and a terminal portion adapted to have attached to it an end-closure cap member or the complementary inner end of an injecting-needle, substantially as described.

850,823. ANODE FOR ELECTROPLATING-CELLS. GEORGE M. ELLIOTT, Belvidere, Ill., assignor to Zucker & Levett & Loeb Company, New York, N. Y., a Corporation of New York. Filed May 7, 1906. Serial No. 315,467.

Claim.—An anode for electroplating-cells, comprising a series of slightly-tapering teeth or columns, a severable transverse bar connecting said teeth at one end, all of said parts being integral and composed of a pure metal to be deposited on the cathode or article to be plated.

850,824. STEAM-COOKER. CHARLES S. EPPLEY and MERVIN E. STONESIFER, York, Pa.; said Stonesifer assignor to said Eppley. Filed Mar. 21, 1906. Serial No. 307,204.

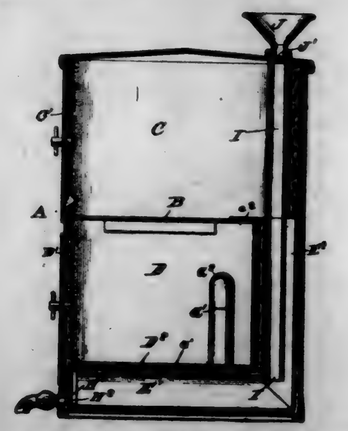

Claim.—1. The improvement in steam-cookers herein described, comprising a casing having a horizontal partition dividing it into an upper steaming-compartment and a lower baking-compartment, said partition forming the bottom of the steaming-compartment, a bottom for the baking-compartment located above the bottom of the casing, the casing-bottom plate spaced below the bottom of the baking-compartment and forming a boiler-chamber below the same, said casing-bottom having openings admitting heat to the boiler-chamber and an intermediate plate between the said openings and forming a guard for the boiler, means for conducting the heat from the boiler-chamber into the baking-compartment, a boiler having a horizontal branch extending within the boiler-chamber and above the intermediate plate between the openings in the casing-bottom and an upright branch or section extending from the rear end of the heating branch upwardly to and discharging into the steaming-chamber and supported at said upper end from the bottom of the steaming-compartment and a faucet having its threaded nipple extending through the casing and screwed into connection with the front end of the heating branch of the boiler, all substantially as and for the purposes set forth.

2. The combination in a steam-cooker, of a casing having a steaming-compartment and a baking-compartment and provided below the baking-compartment with a boiler-chamber and with a bottom plate for said boiler-chamber and a boiler having a heating branch extending within the boiler-chamber and an upright branch extending to and discharging into the steam-chamber, substantially as set forth.

3. The combination in a steam-cooker with a casing provided at its lower end with a boiler-chamber and below the same with a bottom plate having openings and an intermediate plate between the same and a boiler having a heating branch within the boiler-chamber and extending above the said intermediate plate and spaced apart therefrom, substantially as set forth.

850,825. ADJUSTING MEANS FOR INTERLOCKING CONDUITS. JOHN L. FAY, St. Louis, Mo. Filed Sept. 16, 1905. Serial No. 278,791.

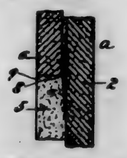

Claim.—In a conduit of the character described, the combination with a series of interlocking blocks having a channel in their meeting faces respectively, adapted to form a continuous duct longitudinally through the conduit in the assembled position of the blocks and having a rabbet at each side of one of the said faces and a flange at each side of the other said face opposite to the said rabbet, of wedges interposed between the inner faces of the said rabbets and flanges respectively, the said wedges being of equal thickness and adapted to bear at their bases against the said faces of the rabbets and having their apices coincident with the meeting end faces of the corresponding adjoining said flanges, substantially as described.

850,826. CIRCULAR-DISTRIBUTER. ROBERT G. FRASER, Philadelphia, Pa. Filed Feb. 2, 1906. Serial No. 299,182.

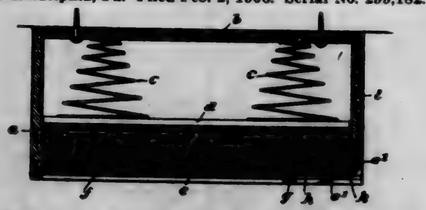

Claim.—1. A circular-distributer comprising a casing having an opening near one end thereof, said opening being bounded on its outer edge by a projection extending inwardly toward the interior of the casing and outwardly beyond the plane of the circular to be withdrawn.

2. A circular-distributer comprising a casing having a front panel provided with a wall located near the end thereof, the inner surface of said wall serving as a stop for circulars within the casing, said casing having an end wall adjacent to the wall of said panel, said end wall having a portion thereof projecting outwardly beyond the rear surface of the first-named wall.

3. A circular-distributer comprising a casing having a front panel provided with a wall located near the end thereof, the inner surface of said wall serving as a stop for circulars within the casing, said casing having an end wall adjacent to the wall of said panel, said end wall having a portion thereof projecting outwardly beyond the rear surface of the first-named wall, said end wall also projecting inwardly and serving as a surface over which circulars may be withdrawn, and providing means for retaining circulars normally within the casing and preventing their accidental withdrawal.

4. A circular-distributer having a space in the front wall thereof, a surface for bearing on circulars within the distributer located at the rear of said space, an end wall located at the front of said space and terminating in the plane of the surface bearing on the circulars, and a wire extending across the top of the end wall located inside of said space and projecting beyond the inner plane of said circular-bearing surface.

850,827. THIO-INDOXYL DERIVATIVE AND PROCESS OF MAKING SAME. PAUL FRIEDLAENDER, Vienna, Austria-Hungary, assignor to The Firm of Kalle and Company Aktiengesellschaft, Biebrich, Germany. Filed Nov. 16, 1905. Serial No. 287,727. (Specimens.)

Claim.—1. A process for the preparation of thio-indoxyl-carboxylic acid by reacting on phenyl-thio-glycol-ortho-carboxylic acid with dehydrating agents.

2. A process for the formation of thio-indoxyl by heating the thio-indoxyl-carboxylic acid.

3. A process for the formation of thio-indoxyl by heating thio-indoxyl-carboxylic acid with the addition of acids.

4. As new products of manufacture thio-indoxyl derivatives obtainable as hereinbefore described, being difficultly soluble in water, easily soluble in alkalies and which are transformed into red dyes containing sulfur on treatment with oxidising agents.

5. As a new product, the thio-indoxyl-carboxylic acid, obtainable by treating phenyl-thio-glycol-ortho-carboxylic acid with dehydrating agents, being a colorless crystalline body difficultly soluble in water easily soluble in alkalies, giving off carbon dioxid on heating, and which by treatment with oxidising agents is transformed into a red dye containing sulfur.

850,828. ADJUSTABLE COMBINATION-ACTION FOR ORGANS. JACOB O. FUNKHOUSER, Hagerstown, Md. Filed July 11, 1905. Serial No. 269,188.

Claim.—1. An apparatus of the character described, comprising a stop-rod, a tip-shoe mounted on said rod and provided with a member arranged to tilt in a plane parallel with the longitudinal axis of the rod, said member having a face bearing with frictional contact against said rod, means for tilting said member, and means acting on said member to move the stop-rod.

2. An apparatus of the character described, comprising a stop-rod, a trip-shoe mounted thereon and provided with a tilting member bearing with frictional engagement against said rod and having two arms arranged to alternately project beyond the rod when said member is tilted to one oblique position or the other, means for tilting said member, and means for engaging the projecting arm of said member to move the stop-rod in one direction or the other.

3. An apparatus of the character described, comprising a stop-rod, a trip-shoe mounted on said rod and provided with a tilting member having two arms arranged to alternately project beyond said rod when said member is tilted to one oblique position or the other, the ends of said arms being provided with hooks extending over said rod whereby said hooks may alternately engage the same and limit the movement of said member, means for tilting said member, and means acting against one or the other of said arms for the purpose set forth.

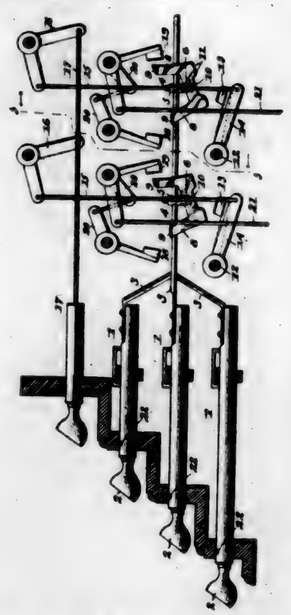

4. A device of the character described, comprising a stop-rod, a trip-shoe mounted thereon and provided with a one-piece tilting member, said member bearing with frictional engagement against the rod and being provided with two arms the ends of which constitute hooks to limit the movement, and said member also being provided with a middle recess producing two end lugs, a movable device in juxtaposition to said tilting member and arranged to be brought into operative contact therewith, the longitudinal position of the stop-rod determining the points of contact, as specified, and means for engaging said arms whereby to move said stop-rod.

5. In an apparatus of the character described, a trip-shoe comprising a binding-post arranged for attachment to a stop-rod and provided at one end with a longitudinal slit, and a tilting member pivoted in said slit and provided with a recess, producing two end lugs and also provided with arms whose ends are curved to form hooks, for the purpose set forth.

6. In an organ the combination of stop-bars, a swinging catch on one side of each of said bars, said catch having engaging ends and overhanging ears for limiting its swinging movement, and devices for engaging the ends of said catches for moving the bars, the catches being arranged to swing sufficiently to bring the ends into the paths of the device.

850,829. METAL-CASTING APPARATUS. HENRY GEISENHÖNER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Dec. 4, 1902. Serial No. 133,866.

Claim.—1. The combination of a pivoted sectional mold, an inclined track supported above said mold and having sliding engagement with a section of said mold, and means for holding the sections of the mold in alinement.

2. The combination with means for subjecting molten metal to pressure, of a block provided with a spout connecting therewith, a pivoted sectional mold provided with a latch adapted to be moved into engagement with said block, and a circular inclined track supported above said

mold and having sliding engagement with a section of said mold.

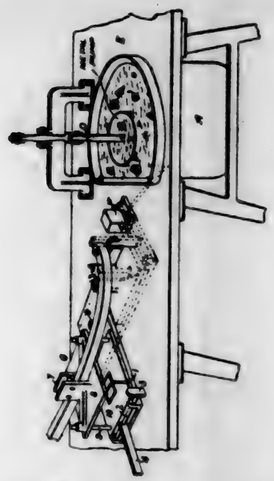

850,830. VEHICLE-JACK. ANTHONY GORDON, Sourisford, Manitoba, Canada. Filed May 9, 1906. Serial No. 315,905.

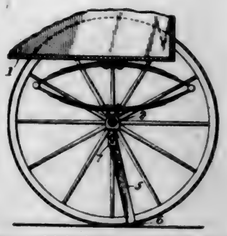

Claim.—1. In a vehicle-jack, a split ring, an axle-receiving aperture in the split ring, a tooth in the aperture, a bolt for securing the ends of the split ring together, an undercut slot in one side of the split ring, a U-shaped bracket having a headed pin for engaging the slot, a leg pivoted to the bracket having an enlarged foot, and means for attaching the leg to an axle.

2. In a vehicle-jack, means adapted to be secured to a vehicle, and a leg rotatably and pivotally carried by said means for the purpose specified.

3. In a vehicle-jack, means having a flat bottom face, adapted to be secured to an axle, and a slotted leg rotatably and pivotally carried by said means for the purpose specified.

4. In a vehicle-jack, means adapted to be secured to an axle, a leg rotatably and pivotally carried by said means, and means for attaching the leg to the axle at its free end.

5. In a vehicle-jack, split rings, means for securing the split rings at opposite ends of an axle, and a leg rotatably and pivotally carried by each ring for the purpose specified.

6. In a vehicle-jack, clamping means adapted to embrace an axle near each end, a leg rotatably and pivotally carried by each clamping means, and means for attaching the free end of each leg to the axle.

7. In a vehicle-jack, split ring, means for securing the split ring near each end of an axle, said split ring having undercut slots and flat seating-faces, headed pins engaging the slots, U-shaped brackets connected by the pins adapted to be seated on said flat faces, slotted legs pivoted in the brackets, enlarged feet at the ends of said legs, and means for detachably supporting the legs near the feet upon the axle.

8. In a vehicle-jack, clamping means adapted to embrace an axle near each end, brackets having pins for rotatably engaging the clamping means, legs pivoted in the brackets, and means for holding the legs folded on an axle.

9. In a vehicle-jack, clamping means adapted to embrace an axle near each end, brackets having pins for rotatably engaging the clamping means, legs pivoted in the brackets, said legs having enlarged feet and hooks for detachably supporting the legs on the axle near the feet.

850,831. SUBMARINE BOAT. JOHN J. HARPAIN, U. S. Navy. Filed Apr. 23, 1906. Serial No. 313,266.

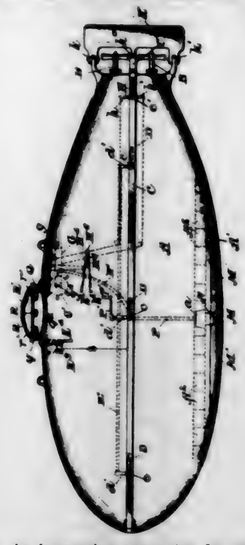

Claim.—1. An immersion apparatus for submarine boats comprising a rail secured to each side of the boat and spaced therefrom, diving rudders journaled between said rail and the boat-body, means located in the interior of the boat for simultaneously operating all of these rudders, balancing-rudders pivoted near the stern of the boat and adapted to tilt the longitudinal axis of the boat, means operable from the interior of the boat for rocking said balancing-rudders in either direction, and a detachable keel, comprising two members connected to the hull-body, a locking-block normally engaging said members, and a screw-rod projecting into the boat and adapted to engage and to release said locking-block, substantially as described.

2. In a submarine boat, a detachable keel, comprising two members pivotally connected at their outer ends to the bottom of the boat and provided with lugs on their inner ends, in combination with a recessed block adapted to engage said lugs and to release same when desired, and means for drawing said block into position for locking said keel in place and for releasing said block when desired, substantially as described.

3. In a submarine boat, a detachable keel comprising two members pivotally connected at their outer ends to the bottom of the boat and provided with lugs on their inner ends, in combination with a recessed block adapted to engage said lugs and to release same when desired, a nut secured to or integral with said block, and a rod provided with screw-threads adapted to engage said nut and projecting into the interior of the boat, with means for turning said rod and causing it to engage or to release said block, substantially as described.

4. In a submarine boat, the combination with a keelson provided with a recess adapted to receive a detachable keel, with notches at each end of said recess, two keel members having lugs on their outer ends adapted to engage said notches, and also being provided with lugs on their inner ends, a recessed block adapted to engage said lugs on the inner end, and means operable from the interior of the boat for drawing up said recessed block to lock said keel members into position or for releasing said recessed block and the keel members and allowing them to fall away form the boat, substantially as described.

5. In a submarine boat, the combination with a keelson provided with a recess adapted to receive a detachable keel, with notches at each end of said recess, two keel members having lugs on their outer ends adapted to engage said notches, and also being provided with lugs on their inner ends, a recessed block adapted to engage said lugs on the inner end, a nut secured to or integral with said block, and a rod provided with screw-threads and projecting into the interior of the boat and adapted to engage said nut, with means for rotating said rod to cause said screw-threads to engage or to release said nut, substantially as and for the purposes described.

850,832. FABRIC-TESTER. RICHARD C. HARRIS, Roselle, N. J. Filed June 8, 1906. Serial No. 320,745.

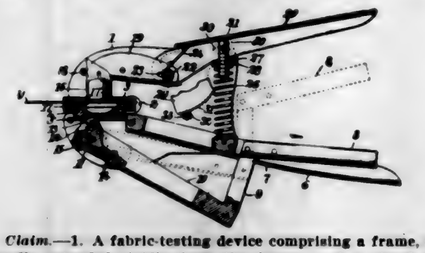

Claim.—1. A fabric-testing device comprising a frame, a handle extended rigidly from the frame, a ring attached to the frame, a concaved disk movable with relation to the said ring, a plunger movable through the opening in the ring, a hand-lever having sliding connections with the frame, a pivotally-sliding connection between the lever and plunger, a spring for moving the hand-lever in one direction and a pressure-indicating device operated by said swinging hand-lever.

2. A fabric-testing device comprising a frame, a ring rigidly mounted in the frame, a disk movable relatively to said ring, a lever for causing a movement of said disk toward the ring, a handle rigidly fixed to the frame, a plunger movable through the ring, a lever carrying the said plunger, a handle having sliding connection with the frame and sliding pivotal connection with said plunger-carrying lever, a rack operated by said swinging handle, a pinion engaged by said rack, a pointer carried on the stub of said pinion, a graduated disk loosely mounted on the stub and having an arc-slot, a small disk arranged inward of the graduated disk, a pin extended from said small disk through said slot and into line of movement of the pointer, and a spring for moving the swinging handle in one direction.

3. A fabric-tester comprising a frame, a ring rigidly supported in said frame, a disk movable toward and from said ring, a lever having sliding connection with the frame, a block adjustable on said lever for engaging with said disk, a plunger movable through the opening of said ring, a swinging and sliding handle for operating said plunger in one direction, and pressure-indicating means controlled by said swinging handle.

4. A fabric-testing device comprising a frame, a ring supported in said frame, a disk in the frame and movable with relation to said ring, means for causing a clamping movement of said disk toward the ring, a plunger movable in the opening of the ring, a swinging and sliding handle, a lever connected with said handle for operating the plunger, an adjustable spring for moving said handle in one direction, a rack operated by the handle, and pressure-indicating means operated by said rack.

850,833. METHOD OF TREATING GLASS. WILLIAM E. HEAL, Coffeyville, Kans. Filed Apr. 5, 1906. Serial No. 310,014.

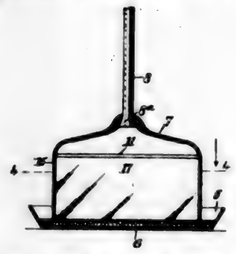

Claim.—1. The method herein described of treating glass, which consists in drawing out said glass while in a molten state, so as to form a cylinder having sheets of glass extending across the same and separated from each other, and applying compressed air to maintain the shape and lateral dimensions of said cylinder and of said sheets of glass as the same are drawn out.

2. The method herein described of treating glass, which consists in bringing into contact with said glass while in a molten state, a member capable of adhering thereto, such member being closed upon itself so as to form a cylinder-like member of glass, said member being further provided with rods extending across it and capable of adhering to the molten glass so as to form sheets, gradually raising said member from the main body of said glass, and applying compressed air within said member so as to maintain the distention of said member of glass and thereby maintain the thickness and shape of the material being drawn out into sheets.

3. The method herein described of treating glass which consists in forming a closed member of molten glass, having a sheet of glass extending directly across said member, applying compressed air within said member for the purpose of maintaining said member and said sheet in a predetermined relation, and gradually separating said member from the main body of glass as said compressed air is applied.

4. The combination of a vessel for containing molten glass, a dome provided with rods for engaging said molten glass and capable of adhering thereto, means for separating said dome so as to draw out said molten glass, and means for applying compressed air within said dome.

5. As an article of manufacture, a tubular member adapted to transmit compressed air, and a dome connected with one end of said tubular member and provided with a plurality of bars capable of adhering to the surface of the molten glass.

6. The method herein described of treating glass, which consists in drawing out said glass while in a molten state so as to form a sheet adhesively connected at its edges with a body of glass drawn out at the same time, for the purpose of maintaining the lateral dimensions of said sheet, and allowing said glass to harden while said sheet is thus supported at its edges by said body of glass.

850,834. WINDOW FOR VEHICLES. HEINRICH HEIDEMANN, Horstermark, Germany. Filed Jan. 25, 1906. Serial No. 297,914.

Claim.—A device for making windows of vehicles when closed water-tight, comprising in combination with the window *a*, bearings *m* provided on the lower window edge, a shaft *k* movably mounted in said bearings *m*, a weather-strip *l* of sector-like cross-section fixed to said shaft *k*, spiral springs *n* provided at both ends of said shaft *k* and fixed with one end to said shaft *k* and with the other end

to said bearings *m*, iron ribs *p* fixed to the inner side of the vehicle-door and adapted to receive said weather-strip *l*, and rubber buffers *o* provided on the base-rail of the ve-

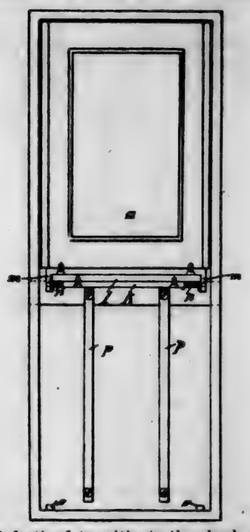

hicle-door and destined to mitigate the shock on said rail, of said bearings *m* when the latter are being lowered, substantially as described and shown.

850,835. ATTACHMENT FOR TRACTION-ENGINES. JAMES E. HOLLAND, Whitesburg, Ga. Filed Apr. 18, 1906. Serial No. 312,499.

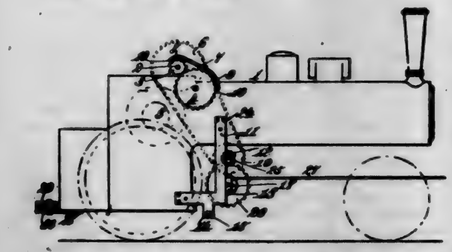

Claim.—1. A traction-engine having an attachment in advance of the fire-box for assisting in drawing it over soft or uneven surfaces, consisting of depending supporting means having an upper shaft with a driving-pulley and gear on opposite ends, an intermediate drum having a gear on one extremity meshing with the gear of the shaft, an antifrictional roller held in the lower part of the supporting means at a plane below the maximum dependence of the fire-box bottom, the shaft carrying the driving-pulley being operative from the driving mechanism of the engine, and a rope or cable coöperating with the drum.

2. The combination with a traction-engine, of supporting means connected to the forward portion thereof, a drum rotatably mounted in the said supporting means, a lower antifrictional roller held below the drum in the supporting means, a pulley device attached to the rear extremity of the engine, a draft device having a pulley disposed thereon, means for operating the drum from the driving mechanism of the engine, and a rope or cable coöperating with the drum and movable over the roller and through the said pulleys, the cable being terminally attached to the forward extremity of the tongue in advance of the pulley on the latter.

3. The combination with a traction-engine, of a transversely-extending drum supported by the forward portion thereof, means for operating the drum from the driving mechanism of the engine, a horizontally-disposed pulley carried by the rear extremity of the engine, a draft device for attachment to machines or vehicles transported by the engine and having a pulley horizontally disposed thereon, and a rope or cable coöperating with the drum and engaging the pulleys on the engine and draft device and terminally secured to the forward extremity of the latter.

4. The combination with a traction-engine, of a drum held by the forward portion thereof, means for operating the said drum from the driving mechanism of the engine, a draft device attachable to a machine or vehicle adapted to be transported by the engine and having thereon a pulley, and a rope or cable coöperating with the drum and engaging the said pulley and terminally secured to the adjacent extremity of the draft device.

5. The combination with a traction-engine having the usual driving mechanism including intermeshing gears, of a drum supported by the forward portion of the engine, means connected to the driving mechanism of the engine for operating the drum, a rope or cable engaging the drum and operative to draw machinery or vehicles toward the engine, and a blocking-latch having curved extremities and terminal teeth to engage portions of the meshing gear of the driving mechanism to hold the traction-wheels of the engine in stationary position.

6. The combination with a traction-engine having driving mechanism including meshing gears, of a blocking-latch removably applicable to portions of said gears and having opposite curved extremities and terminal teeth.

850,836. CUT-OUT BLOCK FOR CONNECTING FUSE IN CIRCUIT. HARRY H. HORNSBY, Chicago, Ill., and EDWARD W. ANGER, Jr., Adrian, Mich. Filed Dec. 10, 1903. Serial No. 184,589.

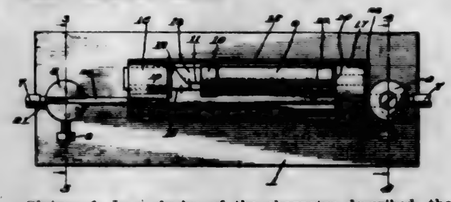

Claim.—1. In a device of the character described, the combination with a suitable base, of terminal supports mounted upon said base, each of said terminal supports being provided with a differently-shaped aperture so that a conducting-wire which exactly fits an aperture in one support will not fit the aperture in the other support, and a protective device of definite current capacity provided with terminals formed to exactly fit the apertures in said terminal supports.

2. In a device of the character described, the combination with a suitable base, of terminal supports mounted upon said base and having means for fastening the wires of an electric circuit thereto, a protective device, differently-formed terminal pieces carried by said protective device, said terminal pieces being of a definite size dependent upon the current-carrying capacity of said protective device, means arranged on said terminal supports to prevent the connection therebetween of any conductor other than a protective device having the proper current-carrying capacity, and binding-screws for fastening said terminal pieces to said terminal supports and arranged to prevent a conductor from being fastened between said terminal supports unless it has terminals similar to said device.

3. In a device of the character described, the combination with a suitable base, of terminal supports mounted upon said base, each of said terminal supports being provided with apertures of different shape and size, a protective device, terminals carried by said protective device, said terminals being shaped to be similar in cross-sectional outline to said apertures in said terminal supports, and said

terminals being of a definite size dependent upon the current-carrying capacity of said protective device to prevent said device from being connected in circuit between said terminal supports unless it has the desired current-carrying capacity.

4. In a device of the character described, the combination with a suitable base, of terminal supports, each of said terminal supports being provided with differently-formed recesses of a size dependent on the current, a protective device, terminals carried by said device, said terminals being of a definite size dependent on the current and formed to fit snugly into said recesses in said supports when designed for the same current to prevent a device not having the desired current-carrying capacity from being connected between said terminal supports.

5. In a device of the character described, the combination with a suitable base, of terminal posts mounted upon said base and having means for fastening the wires of an electric circuit thereto, a suitable instrumentality having terminal pieces entering apertures formed in said posts, and binding-screws for fastening said terminal pieces in the respective apertures therefor in said posts, one of said binding-screws extending across the aperture for one of said terminals and the other of said binding-screws having the distance it may project into the aperture for the other terminal limited, said binding-screws having the heads thereof closely fitting recesses formed in said posts and the threads therefor arranged to be disengaged when said heads are removed from said recesses.

6. In a device of the character described, the combination with a suitable base, of terminal supports, each of said terminal supports being provided with differently-formed recesses of a size dependent on the current, a protective device, terminals carried by said device, said terminals being of a definite size dependent on the current, and formed to fit snugly into said recesses in said supports when designed for the same current to prevent an ordinary conductor of uniform cross-section or a protective device not having the desired current-carrying capacity from being connected between said terminal supports, and means for connecting line-wires to said terminal supports.

7. In a device of the character described, the combination with a suitable base, of terminal posts or supports mounted upon said base and having means for connecting the wires of an electric circuit thereto, an inclosed fuse, differently-formed terminal pieces carried by said fuse and closely fitting recesses in said posts, said terminal pieces being of a definite size dependent upon the current-carrying capacity of said fuse so as to prevent the wrong fuse being connected in circuit between said posts unless it has the desired capacity, means for fastening said terminal pieces in said recesses, a signal carried by one of said posts, an attenuated member controlling said signal and adapted to be broken when said fuse has blown.

8. In a device of the character described, the combination with a suitable base, of terminal posts or supports mounted upon said base and having means for connecting the wires of an electric circuit thereto, an inclosed fuse, differently-formed terminal pieces carried by said fuse and closely fitting recesses in said posts, said terminal pieces being of a definite size dependent upon the current-carrying capacity of said fuse so as to prevent said fuse from being connected in circuit between said posts unless it has the desired capacity, means for fastening said terminal pieces in said recesses, and a signal carried by one of said posts, a spring normally tending to move said signal into its indicating position, and an attenuated member restraining said signal against the tension of said spring, said attenuated member being adapted to be broken when said fuse has blown so as to release said signal.

9. In a device of the character described, the combination with a suitable base, of terminal posts or supports mounted upon said base and having means for connecting the wires of an electric circuit thereto, an inclosed fuse, differently-formed terminal pieces carried by said fuse, and closely fitting recesses therefor in said posts, said terminal pieces being of a definite size dependent upon the current-carrying capacity of said fuse so as to prevent said fuse from being connected in circuit between said posts unless said fuse has the desired capacity, binding-screws for fastening said terminal pieces to said posts, said binding screws being arranged to prevent a conductor from being connected between said posts unless it has terminals similar to said fuse, a signal carried by one of said posts, and an attenuated member controlling said signal and adapted to be broken when said fuse has blown.

10. In a device of the character described, the combination with a suitable base, of terminal supports, each of said terminal supports being provided with differently-formed recesses of a size dependent on the current, a protective device, terminals carried by said device, said terminals being of a definite size dependent on the current, and formed to fit snugly into said recesses in said supports when designed for the same current to prevent an ordinary conductor or a protective device not having the desired current-carrying capacity from being connected between said terminal supports, and screws in said terminal supports for securing said terminals in position.

11. In a device of the character described, the combination with a suitable base, of terminal supports, each of said terminal supports being provided with differently-formed recesses of a size dependent on the current, a protective device, terminals carried by said device, said terminals being of a definite size dependent on the current, and formed to fit snugly into said recesses in said supports when designed for the same current to prevent an ordinary conductor of uniform cross-section or a protective device not having the desired current-carrying capacity from being connected between said terminal supports, screws in said terminal supports for securing said terminals in position, and means for preventing the fastening by said screws of an ordinary conductor of uniform cross-section between said supports.

850,837. SELECTIVE CALL APPARATUS. JOHN A. HULIT, Topeka, Kans. Filed July 13, 1905. Serial No. 269,470.

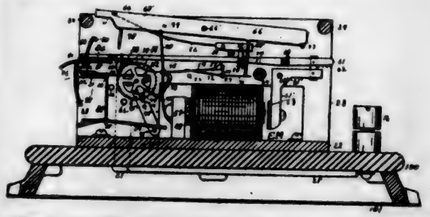

Claim.—1. The combination of the switch-shifting ratchet, a propelling device and a holding-pawl therefor, and a compound balance-bar adapted to move slowly by the force of gravity in both directions.

2. The combination of the switch-shifting ratchet, a propelling device and a holding-pawl therefor, and a compound balance-bar adapted to move slowly by the force of gravity in both directions.

3. The combination of the switch-shifting ratchet, a propelling device and a holding-pawl therefor, a compound balance-bar adapted to move slowly by the force of gravity in both directions, together with suitable connections whereby the balance-bar in one position throws off the holding-pawl and in another position engages it with the ratchet.

4. The combination of a switch-shifting ratchet, a propelling device and a holding-pawl therefor, and a compound balance-bar adapted to move slowly by the force of gravity both ways between two positions and adapted in one position to throw off the holding-pawl and in the other position to throw it into engagement with the ratchet.

5. The combination in an apparatus of the kind set forth of the combination-ratchet and propelling and holding pawls therefor, a compound balance-bar adapted to move slowly by the force of gravity both ways between two posi-

tions and adapted in one position to throw off, and in the other position to throw on, the holding-pawl, and suitable means for operating the propelling-pawl and the balance-bar.

6. The combination of a switch-shifting ratchet, a propelling device and a holding-pawl therefor, a compound balance-bar adapted to two positions and to move slowly by the force of gravity both ways therebetween, means for operating the propelling devices and the balance-bar, and suitable connections intermediate the balance-bar and the holding-pawl whereby the balance-bar is adapted in one position to throw off, and in the other position to throw on, the holding-pawl.

7. The combination of the switch-shifting ratchet, a propelling device and a holding-pawl therefor, a compound balance-bar adapted to two positions and to move slowly by the force of gravity both ways therebetween, and suitable means intermediate the balance-bar and the ratchet whereby the balance-bar is adapted in one position to throw off the holding-pawl, and in the other position to throw it on.

8. The combination of the switch-shifting ratchet, a propelling device and a holding-pawl therefor, a balance-bar adapted to two positions and to move slowly therebetween, suitable means intermediate the balance-bar and the ratchet whereby the balance-bar is adapted in one position to throw off the holding-pawl, and in the other position to throw it on, and means selectively arranged to prevent the return of the ratchet notwithstanding the throw-off signal.

9. The combination of the switch-shifting ratchet, a propelling device and a holding-pawl therefor, a balance-bar adapted to two positions and to move slowly both ways therebetween, suitable means intermediate the balance-bar and the ratchet whereby the balance-bar is adapted in one position to throw off the holding-pawl and in the other position to throw it on, and means selectively arranged and coöperating with the ratchet for preventing the balance-bar from throwing off the holding-pawl.

10. The combination of the switch-shifting ratchet, a propelling device and a holding-pawl therefor, a balance-bar adapted to two positions and to move slowly both ways therebetween, suitable means whereby the ratchet is adapted in one position to throw off the holding-pawl and in the other position to throw it on, a trip device for preventing the balance-bar from throwing off the holding-pawl and means coöperating with the ratchet and selectively arranged for bringing said trip device into play.

11. The combination with the ratchet, a propelling device and a holding-pawl therefor, a balance-bar adapted to two positions and to move slowly both ways therebetween, suitable means whereby the balance-bar is adapted in one position to throw off the holding-pawl and in the other to throw it on, a trip device for preventing the return of the ratchet notwithstanding the operation which normally throws off the holding-pawl, and means coöperating with the ratchet and selectively arranged for bringing said trip device into play.

12. The combination with the ratchet, a propelling device and a holding-pawl therefor, a balance-bar adapted to two positions and to move slowly both ways therebetween, suitable means whereby the balance-bar is adapted in one position to throw off the holding-pawl and in the other to throw it on, a trip device to prevent the balance-bar from throwing off the holding-pawl and teeth of extra depth in the ratchet engaged by the holding-pawl and selectively arranged to bring said trip device into operation.

13. The combination of a retractile switch-shifting device, propelling and detaining means therefor, and a compound balance-bar adapted to two positions and to move slowly by the force of gravity both ways therebetween, and suitable means whereby the balance-bar in one position throws off the detaining means and in the other position throws it on.

14. The combination of a retractile switch-shifting device, propelling and detaining means, therefor, a balance-bar adapted to two positions and to move slowly both ways therebetween, suitable means whereby the balance-bar in one position throws off the detaining means and in the other position throws it on, and devices coöperating with the switch-shifting device for selectively preventing the return of said device notwithstanding the operation of the balance-bar normally tending to throw off the detaining means.

15. The combination with a ratchet and propelling and holding pawls therefor, of a throw-off for the holding-pawl and actuating means for the propelling-pawl and the throw-off, a trip to prevent the said throw-off from engaging the holding-pawl, and notches of extra depths selectively arranged for bringing said trip into operation.

16. The combination with a ratchet and propelling and holding pawls therefor, of a balance-bar for controlling the holding-pawl, and notches in the ratchet of other than normal depth and selectively arranged for preventing at times the balance-bar from throwing off the holding-pawl.

17. The combination with a ratchet having two depths of teeth and propelling and holding pawls therefor, a balance-bar controlling the holding-pawl, actuating means for the propelling-pawl and for the balance-bar, and devices controlled by the ratchet-teeth for preventing at times according to the depth of the tooth engaged the return of the ratchet notwithstanding the action of the balance-bar normally tending to throw off the holding-pawl.

18. The combination of the ratchet and propelling and holding pawls therefor, a main propelling-lever and an electromagnet for actuating the same, a main balance-bar tending normally to throw off the holding-pawl and adapted in another position to throw it on, and an auxiliary balance-bar tending naturally to force the main balance-bar to its second position but held normally in a secondary position permitting the main balance-bar to assume its normal position, a trip for preventing the main balance-bar from throwing off the holding-pawl and means coöperating with the ratchet and selectively arranged for bringing the trip into operation.

19. The combination of the ratchet and propelling and holding pawls therefor, a main propelling-lever and an electromagnet, a main balance-bar adapted to two positions and tending naturally to one position, and an intermediate balance-lever tending naturally to force the main balance-bar from its natural position and connected in one-way engagement with the main propelling-lever.

20. The combination of the ratchet and the holding and propelling pawls therefor, a main propelling-lever and an electromagnet, the main balance-bar and an auxiliary balance-bar actuating the main balance-bar in one direction whereby the main balance-bar moves slowly in both directions, and devices whereby in one position the main balance-bar throws off the holding-pawl and in the other throws it on.

21. The combination of the electromagnet and a main propelling-lever, a ratchet and push and holding pawls therefor, a gravity-operated main balance-bar, and a gravity-operated auxiliary balance-bar actuating the main balance-bar in one direction whereby the main balance-bar moves slowly by the force of gravity in both directions.

22. The combination of the ratchet and push and holding pawls therefor, an electromagnet and a main propelling-lever, a balance-bar adapted to move slowly in both directions between two positions and to throw off the holding-pawl in one position and to throw it on in the other, a supporting-rod to support the balance-bar free from the holding-pawl, and selective devices coöperating with the ratchet for operating said supporting-rod.

23. The combination of a switch-shifting ratchet and push and holding pawls therefor, an electromagnet and a main propelling-lever, a main balance-bar tilted in one way by gravity, an auxiliary balance-bar tilted in one way by gravity to move the main balance-bar against the force of gravity and connected in one-way engagement with the main propelling-lever, and the selective devices coöperating with the ratchet to prevent the balance-bar from throwing off the holding-pawl.

24. The combination of a switch-shifting ratchet and push and holding pawls therefor, an electromagnet and a main propelling-lever, a main balance-bar tilted in one way to throw off the holding-pawl by gravity, an intermediate balance-lever connected in one-way engagement with the main propelling-lever, and also connected in one-way engagement with the main balance-bar and adapted to move the main balance-bar by gravity to throw on the holding-pawl, and devices selectively arranged and coöperating with the ratchet to prevent the return of the ratchet notwithstanding the operation of other parts normally adapted to return the ratchet.

25. The combination of a switch-shifting ratchet and push and holding pawls therefor, an electromagnet and a main propelling-lever, a main balance-bar tilted in one way by gravity to throw off the holding-pawl, and an intermediate balance-lever connected in one-way engagement with the main propelling-lever and also connected in one-way engagement with the main balance-bar and adapted by gravity to move the main balance-bar to throw on the holding-pawl,

26. In mechanism of the kind described, the combination of the shaft 35 and a tripper therefor controlled by the ratchet and having the pin 12, the ratchet and mechanism for operating the same, the spring-switch S, and the contact 13.

27. In mechanism of the kind set forth, the combination of the switch-shifting ratchet, propelling mechanism therefor, a balance-bar, a holding-pawl tending naturally to engage the ratchet and adapted to be thrown off by the balance-bar, a trip-support 58 tending naturally to free the holding-pawl from the ratchet and adapted to be thrown from its natural position by the balance-bar.

28. The combination of the switch-shifting ratchet and propelling and holding pawls therefor; a circuit including a battery and an electromagnet; a propelling-lever controlled by the electromagnet; together with suitable mechanism whereby a stroke of the lever will propel the ratchet a short stroke not holding it progressed and a long stroke throwing on the holding-pawl and whereby a short space between strokes will not throw off the holding-pawl and a long space will return the ratchet.

29. The combination of the switch-shifting ratchet and propelling and holding pawls therefor; a circuit including a battery and an electromagnet; a propelling-lever controlled by the electromagnet; together with suitable mechanism whereby a stroke of the lever will propel the ratchet a short stroke not holding it at its progressed stage and a long stroke throwing on the holding-pawl and whereby a short space between strokes will not throw off the holding-pawl and a long space will return the ratchet; together with devices selectively arranged to prevent the return of the ratchet notwithstanding the long space.

30. The combination of a series of selective calling devices of the kind set forth, each comprising a switch-shifting ratchet, a circuit including a battery and an electromagnet; a propelling-lever controlled by the electromagnet; suitable mechanism whereby a stroke of the lever will propel the ratchet a short stroke not holding it at its progressed stage and a long stroke throwing on the holding-pawl and whereby a short space between strokes will not throw off the holding-pawl and a long space will return the ratchet; together with devices selectively arranged to prevent the return the ratchet notwithstanding the long space; whereby all the ratchets are progressed at each stroke and all the ratchet-returning mechanisms are operated in unison, and whereby said last-mentioned mechanisms are selectively prevented from returning the ratchet notwithstanding the long space.

31. The combination of a ratchet; a balance-bar, a main propelling-lever and a propelling-pawl; a holding-pawl; a trip-support for the balance-bar adapted in one position to sustain the bar away from the holding-pawl, and in another position to permit the bar to throw off the holding-pawl; and devices selectively arranged to control said trip-support.

32. A series of ratchets; a holding-pawl, a propelling-pawl, and a balance-bar coöperating with each ratchet; and a trip device controlled selectively by the ratchet and adapted in one position to permit the balance-bar to throw off the holding-pawl and in another position to keep the bar free from the holding-pawl.

33. The combination of the main lever; a ratchet and holding and propelling pawls therefor; a balance-bar; and a trip device selectively controlled by the ratchet for controlling the action of the balance-bar with relation to the holding-pawl.

34. The combination of a switch-shifting ratchet, a propelling device and a holding-pawl therefor, a balance-bar adapted to move between two extreme positions and to be moved in at least one direction by the force of gravity, together with suitable means whereby the bar in one position throws off the holding-pawl and in the other extreme position throws it back into engagement with the ratchet, the holding-pawl being so arranged as not to be returned to the ratchet until positively acted upon by the balance-bar at the end of its stroke.

35. The combination of a switch-shifting ratchet, a propelling device and a holding-pawl therefor, a balance-bar adapted to move slowly both ways between two extreme positions and being adapted in one of said extreme positions to throw off the holding-pawl and in the other of said extreme positions to throw it into engagement with the ratchet, and said holding-pawl being so arranged as not to engage the ratchet until so acted upon by the balance-bar.

36. The combination of a switch-shifting ratchet, a propelling device and a holding-pawl therefor, a balance-bar adapted to move slowly both ways between two extreme positions and being adapted in one of said extereme positions to throw off the holding-pawl and in the other to throw it into engagement with the ratchet, said holding-pawl being so arranged as not to engage the ratchet until so acted upon by the balance-bar; together with means selectively arranged for preventing the balance-bar from throwing off the ratchet.

37. The combination of a switch-shifting ratchet, a propelling-lever and a detent therefor, a slowly-moving throw-off controlled by the propelling-lever, said propelling-lever being arranged to propel the ratchet at all times independently of the throw-off.

38. The combination of a switch-shifting ratchet, a propelling-lever and a detent therefor, a balance-bar acting by its own force to throw off the detent, said propelling-lever being adapted to propel the ratchet at all times independently of the balance-bar, to restore the balance-bar upon its back stroke and to release the balance-bar on its forward stroke.

39. The combination of a switch-shifting ratchet, a propelling-lever and a detent therefor, a balance-bar acting by the force of gravity to throw off the detent; said propelling-lever being adapted to propel the ratchet at all times independently of the balance-bar, to restore the balance-bar on its return stroke and to release the balance-bar on its forward stroke so that the said balance-bar may then start upon its travel toward the detent.

40. The combination of a switch-shifting ratchet, a propelling device and a holding-pawl therefor, a throw-off, means coöperating with the ratchet and selectively arranged and acting directly upon the holding-pawl for preventing the throw-off from acting upon the said holding-pawl.

850,838. THRESHER-FEEDER. TORIS N. JOHNSEN, Clark, Wash. Filed July 3, 1906. Serial No. 324,574.

Claim.—1. A thresher-feeder, comprising a frame composed of longitudinal bars and connecting cross-bars, an endless carrier arranged longitudinally of the frame, a derrick supported on the frame, a hopper having an open bottom arranged upon the frame below the derrick, said hopper having wings extending laterally from the frame, endless carriers supported on the wings and delivering to the carrier of the frame, a plurality of toothed rollers journaled in the hopper above the opening in the bottom thereof and longitudinally of the frame, said rollers being arranged in pairs, one pair above the other, and the members of each carrier rotating outwardly from each other, a swinging frame supported above the delivery end of the carrier on the frame, an endless carrier supported on the swinging frame, the adjacent runs of said last-named carriers moving in opposite directions, means for adjusting the position of the swinging frame, and a draper con-

nected to the front of the frame to which the carrier of the frame delivers.

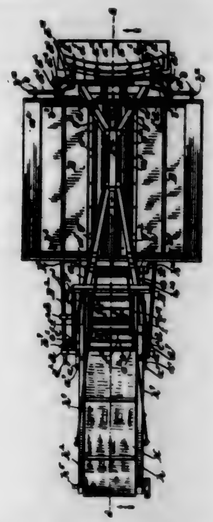

2. A thresher-feeder, comprising a frame, a hopper having an open bottom supported by the frame, a derrick above the hopper, a plurality of pairs of toothed rollers journaled in the hopper above the opening, said pairs being arranged one above the other, and the members of the pairs rotating outwardly from each other, an endless carrier in the bottom of the frame, endless carriers on the side of the carrier and delivering to the first-named carrier, a draper to which the first-named carrier delivers, a swinging frame mounted above the main frame, an endless carrier provided with teeth supported by the swinging frame and arranged above the first-named carrier, the adjacent runs of the carriers moving in opposite directions.

3. A thresher-feeder, comprising a frame, a hopper having an open bottom supported by the frame, a derrick above the hopper, a plurality of pairs of toothed rollers journaled in the hopper above the opening, said pairs being arranged one above the other, and the rollers of the pairs rotating outwardly from each other, an endless carrier in the bottom of the frame, endless carriers on each side of the hopper and delivering to the first-named carrier, and a draper to which said first-named carrier delivers.

4. A thresher-feeder, comprising a hopper having an open bottom, a derrick above the hopper, a pair of toothed rollers journaled in the hopper above the opening, the members of said pair rotating outwardly in opposite directions, an endless carrier below the hopper, endless carriers on each side of the hopper and delivering to the first-named carrier, and a draper to which said first-named carrier delivers.

5. A thresher-feeder comprising a hopper provided with means for separating the straw, a frame comprising longitudinal members below the hopper, an endless carrier supported in the frame to which said hopper delivers, brackets on the ends of the longitudinal members of the frame, a draper comprising a frame composed of longitudinal members and an endless carrier supported on the frame, the longitudinal members of said draper-frame being provided with pins engaging said brackets and slidable therein, whereby to permit the adjustment of the draper-frame, and means engaging the pins and the brackets for retaining the draper in its adjusted position.

6. A thresher-feeder comprising a hopper, provided with means for separating the straw, a frame for supporting the hopper and comprising longitudinal members arranged therebelow and spaced apart from each other, an endless carrier supported by the frame, a swinging frame supported above the endless carrier near the delivery end thereof, shafts journaled in the end of the swinging frame, sprocket-wheels near the end of the shafts, sprocket-chains supported on the wheels, slats provided with teeth connecting the chains at intervals, and means for driving said chains in a direction opposite to the movement of the carrier.

7. A thresher-feeder comprising a hopper having an open bottom, a derrick above the hopper, means supported above the open bottom of the hopper for separating the straw, an endless carrier below the hopper, endless carriers on each side of the hopper and delivering to the first-named carrier, and a draper to which said first-named carrier delivers.

850,839. TYPE-WRITING MACHINE. EDWARD F. KUNATH, Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed June 22, 1905. Serial No. 266,447.

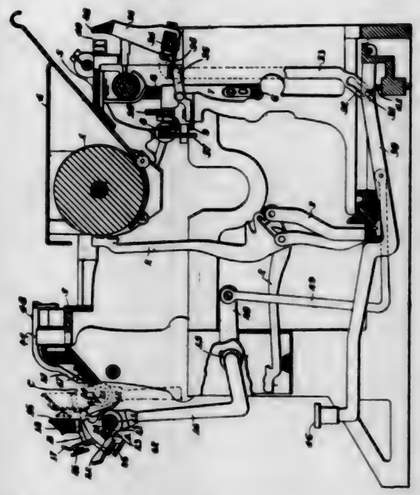

Claim.—1. In a tabulating mechanism, the combination with a carriage, of a letter-feeding mechanism, a stop, a rack, a series of column-stops adjustable along the rack and constructed to be held by the rack against displacement, yielding means for holding each column-stop out of effective position while held by said rack, each column-stop movable into effective position by means of finger-pressure applied thereto while other column-stops remain out of effective positions, and means rendered effective by such pressure upon any column-stop for releasing the carriage from the control of the letter-feeding mechanism.

2. In a tabulating mechanism, the combination with a carriage, of a letter-feeding mechanism, a stop, a bar, a series of column-stops adjustable along the bar, means for securing the column-stops against accidental displacement along said bar, means holding each column-stop out of effective position while so secured, each column-stop provided with an individual finger-piece and movable thereby upon said bar into effective position independently of the other column-stops, said bar being movable by pressure upon any of said finger-pieces, and a carriage-releasing mechanism controlled by said bar.

3. In a tabulating mechanism, the combination with a carriage and a letter-feeding mechanism, of a stop, a rack, a bar extending along said rack, a series of column-stops pivoted independently of one another upon said bar and adjustable therealong and having teeth and rotatable about said pivots to engage and disengage their teeth with said rack, springs holding said column-stops normally out of effective positions while engaged by said rack, said bar being movable by pressure applied to any of said column-stops for moving the same to effective position, and a carriage-releasing device operable by said bar.

4. In a tabulating mechanism, the combination with a carriage and a letter-feeding mechanism, of a stop, a rocking frame including a bar extending parallel with the carriage, a carriage-releasing mechanism operable by said rocking frame, column-stops upon and adjustable along said bar, individual springs normally holding said column-stops in ineffective positions, means preventing displacement of the column-stops along the bar while they are so held by said springs, and a finger-piece for each stop, the stops being movable by said finger-pieces to effective positions, and said frame being movable by pressure upon any of said finger-pieces.

5. In a tabulating mechanism, the combination with a carriage, of a letter-feeding mechanism, a stop, a series of column-stops, means for securing the column-stops against displacement in the direction of the run of the carriage, individual springs for holding the column-stops out of effective positions, each column-stop being movable by finger-pressure into effective position while other column-stops remain out of effective position, and carriage-releasing devices operable by finger-pressure simultaneously with any operated stop; said springs being constructed to return their stops to normal ineffective positions after release from finger-pressure.

6. In a tabulating mechanism, the combination with a carriage, of a letter-feeding mechanism, a stop, a series of column-stops, means for securing the column-stops against displacement in the direction of the run of the carriage, a bar whereon said stops are mounted, means to enable said bar to be moved to a position to bring said column-stops into the path of the first-mentioned stop, a carriage-feeding mechanism operable by said bar during such movement; means for also enabling said bar to be shifted together with the column-stops to such a position as to render the latter ineffective at the carriage-releasing movement of said bar; each column-stop being however mounted for movement independently of the others from such shifted position to a position to engage the first-mentioned stop, and having means to effect a simultaneous carriage-releasing movement of said bar; and individual means for returning the column-stops to their normal positions with relation to said bar.

7. In a tabulating mechanism, the combination with a carriage, of a letter-feeding mechanism, a stop, a series of column-stops, a rack along which said column-stops are adjustable, mechanism for effecting relative movement between the first-mentioned stop and the column-stops to effect coöperation of the former with any of the latter, and for simultaneously releasing the carriage, and means for shifting the column-stops to ineffective position at the carriage-releasing movement of said mechanism, each column-stop being however mounted for movement independently of the others from such shifted position to a position for engagement with the first-mentioned stop, and having means to effect a simultaneous carriage-releasing movement of said mechanism; and individual means being provided for returning the column-stops after the last-mentioned operation.

8. In a tabulating mechanism, the combination with a carriage, of a letter-feeding mechanism, a stop, a series of column-stops, a cylindrical bar whereon the column-stops are pivoted, a rack along which the column-stops are adjustable, means being provided for effecting relative movement between the first-mentioned stop and said bar for effecting coöperation between the first-mentioned stop and the column-stops, and means for effecting a simultaneous release of the carriage; means being provided for turning said column-stops upon said bar out of position for cooperation with the first-mentioned stop while they are still in engagement with said rack; each column-stop being however mounted for movement upon said bar independently of the others to a position to engage the first-mentioned stop and having provision for operating the carriage-releasing means; and individual springs for returning the column-stops after the last-mentioned operation.

9. In a tabulating mechanism, the combination with a carriage and a stop, of a series of column-stops, a bar, means for holding each column-stop in either of two normal positions relatively to the first-mentioned stop; and means for enabling said bar to move all of the column-stops from one normal position into position for coöperation with the first-mentioned stop; each column-stop being mounted for movement independently of the others from the other normal position into position for coöperation with the first-mentioned stop.

10. In a tabulating mechanism, the combination with a carriage and a stop, of a series of column-stops, means for either detaining all of the column-stops in one normal position or moving them all together from such position into position for engagement with the first-mentioned stop, and means for detaining all of the column-stops in a second normal position, each stop being mounted for movement independently of the others from said second normal position to engage said first-mentioned stop; the recited structure including springs for returning the column-stops after the last-mentioned operation.

11. In a tabulating mechanism, the combination with a carriage and a stop, of a series of normally ineffective column-stops, means for moving the column-stops all together from normal positions to positions for engagement with the first-mentioned stop, and means for detaining one or more of said column-stops in normal ineffective positions while another is moved into position for engagement with the first-mentioned stop; springs being provided for returning the column-stops to normal positions.

12. In a tabulating mechanism, the combination with a carriage and a letter-feeding mechanism, of a stop, a bar, a series of column-stops independently revoluble upon said bar, the latter provided with a longitudinal groove, and all the stops having yielding means engaging said groove to prevent the stops from turning upon the bar, means for effecting relative movement between said bar and the first-mentioned stop to enable the latter to coöperate with the column-stops, and means for shifting said bar together with said column-stops to carry the latter beyond the range of the first-mentioned stop; said column-stops being individually movable from the last-mentioned positions into position to coöperate with the first-mentioned stop.

13. In a tabulating mechanism, the combination with a carriage and a letter-feeding mechanism, of a stop, a bar, a series of column-stops independently revoluble upon said bar, yielding means for retaining said stops in normal positions relatively to said bar, movable bar-supporting means for enabling the first-mentioned stop to coöperate with the column-stops, said bar having journals at its ends and provided with means for shifting it upon its journals together with said stops to carry the latter out of range of the first-mentioned stop; the column-stops being independently revoluble upon said bar into engagement with the first-mentioned stop, and said yielding means being constructed to return the column-stops to normal positions upon said bar after their last-mentioned operation; and means for detaining said bar in either normal or shifted position.

14. In a type-writing and tabulating mechanism, the combination with a carriage and a letter-feeding mechanism of a stop, a rocking frame mounted at the front of the machine, a carriage-releasing device operable by said rocking frame, column-stops mounted upon said rocking frame and movable thereby all together to positions for coaction with the first-mentioned stop, and means for shifting said column-stops all together relatively to said rocking frame to bring them out of range of the first-mentioned stop; the column-stops being movable each independently of the others from their last-mentioned positions into positions for coaction with the first-mentioned stop, and each having provision for simultaneously operating said rocking frame to release the carriage; springs being provided for returning the column-stops to their shifted positions.

15. In a tabulating mechanism, the combination with a carriage and a letter-feeding mechanism, of a stop, a cylin-

drical bar, a series of column-stops independently revoluble upon said bar, the latter provided with a longitudinal groove and all the column-stops having yielding means fitting in said groove to prevent accidental turning of the stops upon the bar, keys upon the stops, for turning the same relatively to the bar, said bar being movable bodily by any of said keys, a movable support for said bar, a carriage-releasing mechanism connected to said support, means for rotating said bar upon its own axis upon said support so as to shift all of said stops into or out of range of the first-mentioned stop, and means for detaining said bar in either position to which it is rotated upon said support.

16. In a tabulating mechanism, the combination with a carriage and a letter-feeding mechanism, of a stop, a series of column-stops adjustable independently of one another in the direction of the carriage travel, and means for enabling said stop to coöperate with any selected column-stop to effect the setting of the carriage to the same point in both advance and return movements of the carriage, regardless of the remaining column-stops.

17. In a tabulating mechanism, the combination with a carriage and a letter-feeding mechanism, of a stop mounted to yield during the return movement of the carriage, a series of column-stops independently movable into coöperation therewith during both advance and return movements of the carriage, a rack for holding the column-stops when both in and out of coöperative relation with the first-mentioned stop, and means limiting the yielding movement of the first-mentioned stop to such an extent that the carriage may be set thereby to the same point whether advancing or returning.

18. In a tabulating mechanism, the combination with a carriage and a letter-feeding mechanism, of a stop mounted to yield during the return movement of the carriage, and a series of column-stops to coöperate with said stop when the carriage is moving in either direction, to arrest the carriage; said column-stops being movable independently of one another into position to engage said stop, a rack for holding the column-stop when both in and out of coöperative relation with the first-mentioned stop, and means limiting the yielding movement of said stop to such an extent that the carriage is set thereby to the same position whether advancing or returning.

19. In a tabulating mechanism, the combination with a carriage and a letter-feeding mechanism, of a yielding stop upon the carriage, a bar extending along the carriage, and a series of column-stops upon said bar; said column-stops being movable independently one of another into effective position; a rack for holding the column-stops when both in and out of coöperative relation with the first-mentioned stop, and coöperating with said yielding stop to arrest the carriage at the same point in both advance and return movements of the carriage, yielding means being provided for enabling the returning carriage, after engagement of said carriage-stop with one of said column-stops, to continue its return movement to an extent sufficient to compensate for the thickness of the stop.

850,840. SAFETY-LOCK. JOHN E. LEDFORD, Butte, Mont., assignor of fifty one-hundredths to himself, twenty-five one-hundredths to George Omer, twelve and one-half one-hundredths to Samuel Wallen, and twelve and one-half one-hundredths to Thomas R. Carson, Butte, Mont. Filed June 22, 1906. Serial No. 322,855.

Claim.—1. A safety-lock, comprising a lock-casing adapted for attachment to the door, a latch-socket adapted for attachment to the face of the jamb, said socket having an inner facing and a superimposed outer facing registering with the face of the edge of the jamb, said outer facing having a longitudinal rib for the purpose set forth, said facings being slotted, a safety-bar connected with the lock-casing and projecting slightly into the slots of the facings, and having a portion projecting into the space between the door and the jamb, a bolt slidably mounted in the lock-casing and provided with a beveled end, said bevel facing the safety-bar and being corrugated for the purposes set forth.

2. A safety-lock comprising a lock-casing for attachment to the door, a latch-socket for attachment to the face of the jamb, said socket having a slotted facing adapted to register with the face of the edge of the jamb, said facing having a longitudinal rib on the outer surface thereof, a safety-bar connected with the lock-casing and projecting slightly into the slot of the facing, and a bolt slidably mounted in the lock and having a beveled end, said beveled portion facing the safety-bar.

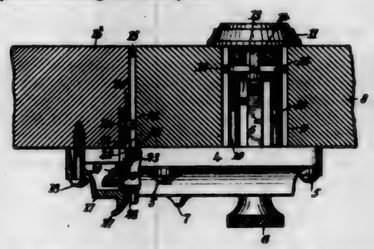

3. A safety-lock comprising a lock-casing for attachment to the door, a latch-socket for attachment to the face of the jamb, said socket having a slotted facing adapted to register with the face of the edge of the jamb, a safety-bar connected with the lock-casing and projecting slightly into the slot of the facing, and having a portion adapted to project between the door and the jamb, and a bolt slidably mounted in the lock-casing.

850,841. PICKER-STICK ATTACHMENT FOR LOOMS. DAVID LEMOINE, Fisherville, Mass. Filed Mar. 11, 1904. Serial No. 197,647.

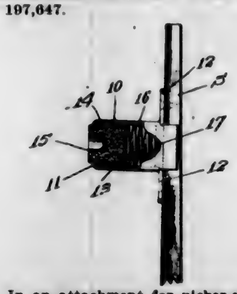

Claim.—1. In an attachment for picker-sticks the combination of a sheet-metal casing notched at one end to receive the picker-stick whereby said casing will engage the face and the opposite sides of the picker-stick and having the metal from the said notches bent out to form attaching-ears, the other end of the casing being provided with an inwardly-extending flange with the spring-pressed plunger mounted in the casing and having a striking-face of resilient material.

2. In a picker-stick attachment the combination of a sheet-metal casing notched at one end to receive the picker-stick so that the casing engages the front and opposite sides of the picker-stick, with the metal from the notches bent out to form attaching-ears, the opposite end of the casing having an inwardly-extending flange and a plunger consisting of a sheet-metal body inclosing a striking-face of resilient material, a spring and a wearing-piece interposed between the spring and the picker-stick.

850,842. CASH-RECEIVING AND CHANGE-MAKING MACHINE. KNUT MALMSTROM, West Kensington, London, England, assignor to The F. S. M. Syndicate, Limited, London, England. Filed Dec. 24, 1906. Serial No. 349,204.

Claim.—1. The combination of a frame, key-levers fulcrumed upon the frame, a rocking frame actuated by the key-levers, a money-handling mechanism operated by the key-levers and rocking frame, a loosely-mounted plate carried by the rocking frame and adapted to engage the depressed key-levers to cause the same to operate in unison, a plate loosely connected to the frame and adapted to engage the undepressed key-levers to lock the same in a normal position, a tailpiece carried by one plate and engaging the opposite plate to cause the two plates to operate in unison, and a cam for operating one of the plates.

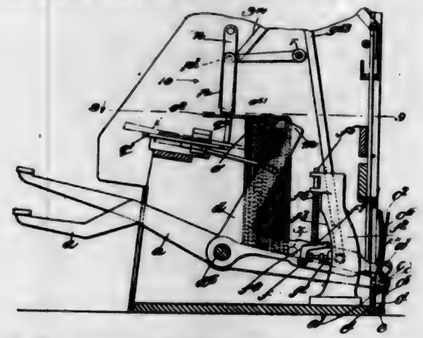

2. The combination of a frame, key-levers fulcrumed upon the frame, a rocking frame actuated by the key-levers, a money-handling mechanism operated by the key-levers and rocking frame, a pivoted plate carried by the rocking frame and adapted to engage the depressed key-levers to cause the same to operate in unison, guide-pins projecting from the plate, a guide mounted upon the frame and enguging the guide-pins to operate the plate, a second plate loosely connected to the frame and adapted to engage the undepressed key-levers to lock the same in position, and a tailpiece carried by the second-mentioned plate and engaging the first-mentioned plate to cause the two plates to operate in unison.

3. The combination of a frame, key-levers fulcrumed upon the frame, a rocking frame actuated by the key-levers, a money-handling mechanism operated by the key-levers and rocking frame, a locking-lever pivoted to the main frame and adapted to engage the rocking frame to prevent operation of the same, and a spring-controlled pawl carried by the main frame and engaging the locking-lever to hold the same against displacement.

4. The combination of a main frame, key-levers fulcrumed upon the frame, a rocking frame actuated by the key-levers, a money-handling mechanism operated by the key-levers and rocking frame, a standard carried by the main frame, and a spring-controlled pusher carried by the rocking frame and frictionally engaging the standard.

5. The combination of a main frame, key-levers fulcrumed upon the frame, a rocking frame actuated by the key-levers, a money-handling mechanism operated by the key-levers and rocking frame, a standard carried by the main frame, an L-shaped piece pivotally mounted upon the rocking frame, a pusher carried by the rocking frame and engaging the said L-shaped piece whereby it is brought into frictional engagement with the standard, and means whereby the L-shaped piece forces the pusher into a yielding engagement with the standard.

6. The combination of a main frame, key-levers fulcrumed upon the frame, a rocking frame actuated by the key-levers, a money-handling mechanism operated by the key-levers and the rocking frame, a standard carried by the main frame, an L-shaped piece pivoted upon the rocking frame, a pusher carried by the rocking frame and engaging the L-shaped piece whereby it is forced into a frictional engagement with the standard, and a spring-actuated rod carried by the standard and engaging the L-shaped piece.

7. The combination of a main frame, key-levers fulcrumed upon the main frame, a rocking frame actuated by the key-levers, a coin-ejecting mechanism operated by the rocking frame, slidably-mounted bars mounted upon the frame and provided with means whereby they can be actuated by the key-levers, means carried by the slidably-mounted bars for controlling the ejection of coins, an L-shaped lever pivoted to the frame, means carried by the L-shaped lever for engaging the key-levers, and a rocking piece operated by the L-shaped lever and adapted to actuate the slidably-mounted bar.

8. The combination of a main frame, key-levers fulcrumed upon the frame, a rocking frame actuated by the key-levers, coin-ejecting mechanism operated by the rocking frame, comb-like bars slidably mounted upon the main frame and designed to be actuated by the key-levers, means carried by the comb-like bars for controlling the ejection of coins, an L-shaped lever pivoted to the frame, a comb carried by the L-shaped lever for engaging the key-levers, and a rocking piece operated by the L-shaped lever and designed to actuate the before-mentioned comb-like bars.

9. The combination of a main frame, key-levers fulcrumed upon the main frame, a rocking frame actuated by the key-levers, coin-ejecting mechanism operated by the rocking frame, sliding bars mounted upon the main frame and provided with means whereby they are actuated by the key-levers, means carried by the sliding bars for controlling the ejection of coins, L-shaped levers pivoted to the frame, means carried by the L-shaped levers for engaging the key-levers, a rocking piece operated by each of the L-shaped levers, each of said rocking pieces being designed to operate a portion of the sliding bars, and means carried by one of the rocking pieces for simultaneously actuating the opposite rocking piece.

10. The combination of a frame, key-levers fulcrumed upon the frame, a rocking frame actuated by the key-levers, a coin-ejecting mechanism operated by the rocking frame, a series of comb-like bars slidably mounted upon the main frame and designed to be actuated by the key-levers, means carried by the comb-like bars for controlling the ejection of coins, L-shaped levers pivoted to the main frame, combs carried by the L-shaped levers for engaging the key-levers, a rocking piece for each of the L-shaped levers, the said rocking pieces being operated by the L-shaped levers and each being designed to actuate a portion of the comb-like bars, and means carried by one of the rocking pieces for engaging the opposite rocking piece whereby the two are caused to operate in unison.

850,843. SHOCK-BINDER. ANDREW MELIN, Oxlip, Minn. Filed Apr. 13, 1906. Serial No. 311,566.

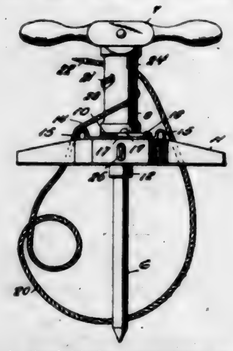

Claim.—1. A shock-binder comprising in combination a thrust-pin provided with a bearing-sleeve; a cross-piece provided at its ends with longitudinally-extending guide-slots, and having an opening formed therethrough intermediate its ends; a bearing-plate secured to the upper face of said cross-piece and provided with a depending sleeve adapted to fit in said opening and receive said first-mentioned sleeve; U-shaped guide-shoulders formed on the opposite ends of said plate adjacent said guide-slots; a binding-rope passing through said guide-slots and over said shoulders, and having its ends attached to said

thrust-pin; means for rotating said thrust-pin to wind said rope; and coöperating means disposed upon said bearing-plate and thrust-pin, to prevent backward rotation of the latter.

2. A shock-binder comprising, in combination, a thrust-pin; a ratchet attached to the upper portion of said thrust-pin and provided with an integral depending bearing-sleeve; a cross-piece carried by said thrust-pin, and provided at its ends with longitudinally-extending guide-slots; a bearing-plate attached to the upper face of said cross-piece and having an integral downwardly-extending bearing-sleeve adapted to receive said thrust-pin bearing-sleeve; a binding-rope passing through said guide-slots and having its ends attached to the upper portion of said thrust-pin; means to rotate said thrust-pin to wind said binding-rope; and a pawl attached to the upper face of said bearing-plate and movable into and out of contact with said ratchet, to prevent backward rotation of said ratchet.

850,844. BOTTLE-STOPPER. HENRY MORGAN, Cripple Creek, Colo. Filed July 19, 1906. Serial No. 326,847.

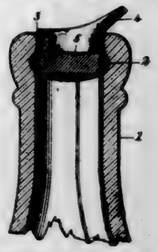

Claim.—1. A bottle having a groove within the mouth thereof, a cup of elastic material fitting within the bottle and having a tab projecting therefrom, and a disk or plate of non-resilient material fitting within the cup and holding the walls thereof in contact with the groove of the body.

2. A bottle formed with an internal circumferential groove adjacent the mouth thereof, a cup of soft rubber fitting within the mouth of the bottle and having a triangular lip projecting therefrom by which the cup may be removed, and a flat circular disk of non-resilient material fitting within the cup and adapted to spread the side of the cup into the groove.

3. A closure for bottles, comprising a cylindrical cup of soft rubber and having a tab or projection extending from the edge thereof, and a circular non-resilient disk or plate fitting within the lower end of the cup and adapted to slightly distend the same.

4. A closure for bottles, comprising a cylindrical cup of soft elastic material, the edge of said cup being provided with a tab or projection integral therewith, and a circular disk of non-resilient material fitting within the cup.

850,845. CHILD'S BED. WILLIAM H. MUIR, Detroit, Mich., assignor to Jenks and Muir Manufacturing Company, Detroit, Mich., a Corporation. Filed Oct. 4, 1906. Serial No. 337,356.

Claim.—1. A holder for the sliding panel of a crib-bedstead, having, in combination with a corner-post, laterally-projecting brackets at the top and bottom thereof, one of said brackets being provided with a closed socket for the reception of the end of a rod and the other of said brackets having a horizontally-extending notch terminating in a complementary socket, a rod engaging between said sockets, and a fillet adapted to slide on the rod and engage in one of said sockets and lock the rod in place with respect thereto, substantially as described.

2. In combination with a pair of corner-posts, laterally-projecting brackets at the top and bottom of each, one of the brackets on each post having a closed socket near its outer end and each of the others being provided with a socket having a passage leading thereto, a rod supported by each pair of sockets in a position of substantial parallelism with respect to its supporting-post, fillets engaging about each of said rods and serving by engagement with said last-mentioned sockets to lock the rods in

position, a side panel of a bed having its end portions slidably attached to said rods, and hooks supported by the upper one of each of said pairs of brackets whereby the panel may be held at the desired height, substantially as described.

850,846. TYPE-WRITING MACHINE. JOHN C. MCLAUGHLIN, New York, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Jan. 19, 1906. Serial No. 296,817.

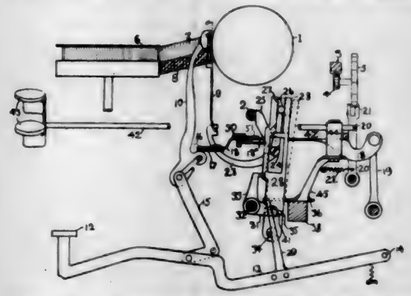

Claim.—1. In a type-writing machine, the combination with a platen shiftable up and down, a carriage, types and keys, of a universal bar operable by the keys, a carriage-feeding mechanism operable by the universal bar, a lever also operable by the universal bar, an accent-type key having means for operating said lever but incapable of operating the universal bar, and a ribbon-vibrating lever shiftable up and down with the platen and having a pin-and-slot connection with the first-mentioned lever.

2. In a type-writing machine, the combination with a platen, a carriage, a carriage-feeding mechanism, types and keys, of a universal bar operable by the keys and controlling said carriage-feeding mechanism, a lever operable by said universal bar, an accent-type carrier, a key-lever connected to the latter, a rock-shaft operable by said key-lever, an arm upon said rock-shaft for operating the first-mentioned lever, said accent type-key lever being incapable of operating said universal bar, and a ribbon-vibrator controlled by the first-mentioned lever.

3. In a type-writing machine, the combination with a platen, a carriage, a carriage-feeding mechanism, types and keys, of a universal bar operable by the keys, a ribbon-vibrator, adjustable means for enabling the universal bar to move the ribbon-vibrator through variable distances, an accent-type key incapable of operating the universal bar, and means for enabling the accent-type key to vibrate the ribbon through variable distances.

4. In a type-writing machine, the combination with a platen, a carriage, a carriage-feeding mechanism, keys and types, of a universal bar operable by the keys and controlling the carriage-feeding mechanism, an accent-type key incapable of operating the universal bar, ribbon mechanism operable by the universal bar, a shiftable device for causing the universal bar to impart different throws to the ribbon at the type-strokes, and means for enabling the accent-type key to operate said ribbon mechanism; said shiftable means including means to vary the throw of the ribbon effected by said accent-key.

5. In a type-writing machine, the combination with a platen, a carriage, a carriage-feeding mechanism, keys and types, of a universal bar operable by the keys and controlling the carriage-feeding mechanism, an accent-type key incapable of operating the universal bar, a variable-throw ribbon mechanism operable by the universal bar, and means for enabling the accent-type key to operate said ribbon mechanism; the latter including means for causing the ribbon either to be idle during the type-strokes or to be moved during the type-strokes, so as to bring either its upper or lower edge over the printing point.

6. In a type-writing machine, the combination with a platen, a carriage, a carriage-feeding mechanism, types and keys, of a universal bar operable by the keys and controlling said carriage-feeding mechanism, an accent-type key, a rock-arm controlled by the latter and having stepped portions, a part connected to said universal bar and having similar stepped portions, a lever, means for adjusting said lever in axial direction, so that it may be engaged by either of said stepped members, and a ribbon-vibrating device controlled by said lever.

7. In a type-writing machine, the combination with a platen, a carriage, a carriage-feeding mechanism, types and keys, of a universal bar operable by the keys and controlling said carriage-feeding mechanism, an accent-type key, a member in the form of a rock-arm controlled by the latter and having steps, a member in the form of a part connected to said universal bar and also having steps corresponding to the first-mentioned steps, a lever, means for adjusting said lever in axial direction, to enable it to engage different steps, and a ribbon-vibrating device controlled by said lever; said stepped members having notches; and said lever being adjustable to a position opposite said notches, so as not to be operated by either of said stepped members.

8. In a type-writing machine, the combination with a platen, a carriage, types, keys therefor, and a universal bar operable by the keys, of a ribbon-throwing mechanism operable by said universal bar, a finger-piece, shiftable means controlled by said finger-piece for causing the universal bar to impart different throws to the ribbon at the type-strokes, an accent type and key, and means for enabling said accent-key to operate said ribbon-throwing mechanism independently of said universal bar, said shiftable means including means to vary the throw of the ribbon effected by said accent-key.

9. In a type-writing machine, the combination with a platen, a carriage, and type-operating keys to feed the carriage, of an adjustable member operable by the keys for throwing the ribbon variable distances, and an accent-type key also provided with means for moving said adjustable member variable distances, but incapable of feeding the carriage.

10. In a type-writing machine, the combination with a universal bar operable by the keys, of a lever shiftable in axial direction, a stepped member fixed to said universal bar for engaging said lever, and a ribbon-vibrating lever operated by said lever.

11. The combination with a lever and means for shifting the same in axial direction, of a ribbon-carrier operated by said lever, and a key-operated device having a stepped member for imparting variable movements to said lever according to the adjustment of the latter; said lever having a slot to accommodate the shifting movements of the platen.

850,847. LIFE-RAFT. PETER C. PETRIE, New York, N. Y. Filed June 2, 1905. Serial No. 263,370.

Claim.—1. A life-raft, consisting of side and end floats formed of solid logs of buoyant wood, the end floats having saddle-shaped ends fitting upon the side floats a short distance from their ends, longitudinally-extending cleats on the upper and lower sides of the side floats, bands on the side floats, the intermediate bands embracing the cleats, bolts passing through the said bands, cleats and floats, tie-rods provided with turnbuckles and secured to the bands on the projecting ends of the side floats, a slatted deck movable freely between the floats, and chains secured to the deck and to the intermediate bands of the said side floats.

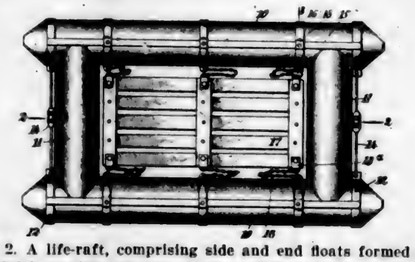

2. A life-raft, comprising side and end floats formed of solid logs of buoyant wood, the end floats having saddle-shaped ends fitting upon the side floats a short distance from their ends, longitudinal cleats on the upper lower sides of the said floats, bands on the side floats, the intermediate bands embracing the cleats, tie-rods secured to the bands on the ends of the side floats projecting beyond the end floats, a slatted deck movable freely between the floats, and chains secured to the deck and to the intermediate bands of the said side floats.

3. A life-raft, comprising side members formed of solid logs of buoyant wood, transverse or thwart members having saddle-shaped ends fitting upon the side members, the side members having their ends projecting beyond the transverse or thwart members, longitudinal cleats on the upper and lower sides of the side members, bands on the projecting ends of the side members, tie-rods provided with turnbuckles and secured to the bands on the ends of the side members projecting beyond the transverse or thwart members, and a slatted deck carried by the said members.

850,848. TIMBER-CUTTING DEVICE. ENOS C. POLLARD, Seattle, Wash. Filed July 26, 1906. Serial No. 327,853.

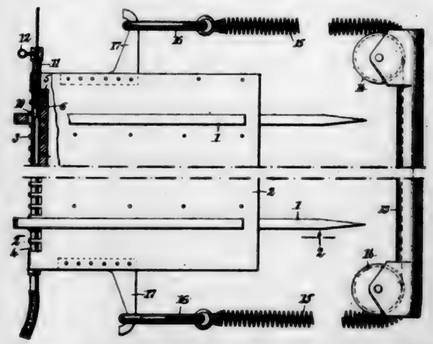

Claim.—1. A device for burning kerfs or grooves into logs, comprising a hollow plate having a plurality of passages therethrough, means for delivering air to one of said passages, and permitting the escape of the products of combustion through another of said passages.

2. A device for burning kerfs or grooves into logs, comprising a hollow plate having a plurality of passages therethrough, a pipe for delivering air to one of said passages, said pipe being provided with a plurality of aper-

tures, and means for shutting off the supply of air to certain of said apertures.

3. A device for burning kerfs or grooves into logs, comprising a hollow plate, open along one edge and having a plurality of apertures along its opposite edge, a pipe within said plate, adjacent its apertured edge, and provided with discharge-passages, and means for conducting compressed air to said pipe.

4. A device for burning kerfs or grooves into logs, comprising a hollow flat plate, means for supplying compressed air to said plate, guides for said plate, adapted to be secured to the log, and a coiled spring extending around the log and having its ends secured to said plate.

5. A device for cutting a kerf into timber by burning, comprising a hollow flat plate, and means for delivering compressed air to the interior of said plate and permitting the escape thereof from said plate against the material to be burned.

6. A device for cutting a kerf into timber by burning, comprising a hollow plate having an elongated delivery-outlet, means for conducting compressed air to the interior of the plate and permitting the escape thereof through said elongated outlet against the material to be burned, and means for automatically feeding the plate into the timber as the latter is burned away.

7. A device for cutting a kerf into timber by burning, consisting of means for delivering a blast of air against the portion to be burned, projections on the sides of said air-delivering means, a tube adapted to be supported parallel to the air-delivering means and upon the opposite side of the timber, friction-rollers adjacent the ends of said tube, and a spiral spring extending through said tube and having the ends thereof secured to said projections, said spring serving to automatically and continuously keep the air-delivering means in contact with the wood as the latter is burned away.

8. A device for cutting a kerf into timber by burning, comprising two parallel plates, means for delivering air between said plates along one edge, means for supporting said plates with the opposite edge in contact with the timber to be burned, and resilient means adapted to encircle the timber and automatically keep the plates in contact with the timber and deliver the blast of air against the portion to be burned.

850,849. DISINFECTING-TABLET. WILLOUGHBY H. POWER, London, England. Filed Mar. 22, 1906. Serial No. 307,419.

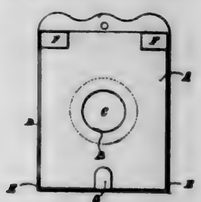

Claim.—A disinfectant comprising a block of naphthalene having an opening therein, in combination with an interchangeable perfuming-piece adapted to fit into said opening, said perfuming-piece being composed of naphthalene, a balsam, a phenol, and a perfume substantially as described.

850,850. TRACTION-ENGINE STEERING-GEAR. ROBERT RICHARDSON, Yates Center, Kans., assignor of one-half to Arthur B. Estep, Yates Center, Kans. Filed Sept. 7, 1905. Serial No. 277,326.

Claim.—1. In a motor-driven vehicle, the combination with the steering-gear, of a continuously-rotating shaft on the vehicle, a shaft driven thereby, a friction-wheel attached to the second shaft, a second friction-wheel movable across the face of the first friction-gear, a shaft on which the second friction-gear is splined, and means for connecting the last-named shaft with the steering-gear.

2. In a motor-driven vehicle, the combination with a steering-gear and with a continuously-moving shaft on the vehicle, of a second shaft, releasable means for driving the second shaft from the said prime-mover shaft, a friction-gear attached to the second shaft, a second friction-gear movable across the face of the first friction-gear, a shaft on which the second gear is splined, and means for driving the steering mechanism from the third shaft.

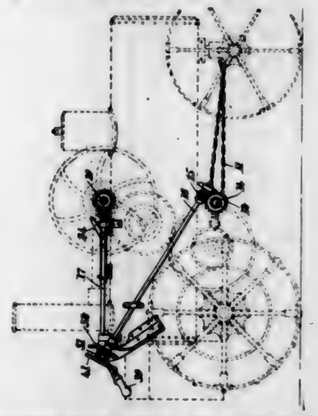

3. In a motor-driven vehicle, the combination with a steering-gear and with a continuously-moving shaft thereof, of a gear fastened to said shaft, a second shaft, a gear splined on the second shaft and adapted to mesh with the gear on the continuously-moving shaft, means for operating the gear on the second shaft, a friction-gear attached to the second shaft, a second friction-gear movable across the face of the first friction-gear, for the purpose specified, a counter-shaft on which the second friction-gear is splined, and means for driving the steering-gear from said counter-shaft.

4. The combination with a motor-vehicle having a steering-gear and a continuously-moving shaft, of a second shaft driven from the continuously-moving shaft, a friction-gear on the second shaft, a counter-shaft, a friction-gear on the counter-shaft and adapted to engage with the friction-gear on the second shaft, means for mounting the counter-shaft to move laterally toward and from the first-named friction-gear, for the purpose specified, means for so moving the counter-shaft, and means connecting the counter-shaft with the steering mechanism.

5. In a motor-driven vehicle, the combination with the steering-gear, of a continuously-rotating shaft on the vehicle, a shaft driven thereby, a friction-gear on said last-named shaft, a second friction-gear adapted to mesh with the first friction-gear, a counter-shaft carrying the second friction-gear, a connection between the counter-shaft and the steering-gear, a box on which the counter-shaft is mounted, a guide in which the box is movable, and a device connected with said box to move the same whereby to engage the friction-gears together.

6. In a motor-driven vehicle the combination with the steering-gear, of a continuously-rotating shaft on the vehicle, a shaft driven thereby, a friction-gear on said last-named shaft, a second friction-gear adapted to mesh with the first friction-gear, a counter-shaft on which the second friction-gear is splined, a connection between the counter-shaft and the steering-gear, a box in which the counter-shaft is movable, a guide in which said box is slidable, and a swinging member adapted to engage the box to move the same whereby to engage the two friction-gears together.

7. In a motor-driven vehicle the combination with the steering-gear, of a continuously-rotating shaft on the vehicle, a shaft driven thereby a friction-gear on said last-named shaft, a second friction-gear adapted to mesh with the first friction-gear a counter-shaft on which the second friction-gear is splined, a connection between the counter-shaft and the steering-gear, a box in which the counter-shaft is mounted, a guide slidably carried in said box, a swinging member adapted to engage the box whereby to engage the two friction-gears together, and means for adjusting the second gear on the counter-shaft, the said means engaging said swinging member to operate the same.

8. In a motor-driven vehicle the combination with a steering-gear, of a continuously-driven shaft on the vehicle, a shaft driven thereby a gear on said last-mentioned shaft, a counter-shaft, a connection between the counter-shaft and the steering means, a gear on the counter-shaft, means for adjustably mounting the counter-shaft to permit of engaging and disengaging the gears, and means for automatically locking the counter-shaft upon disengaging the gears.

9. In a motor-driven vehicle, the combination with the steering-gear, of a continuously-driven shaft on the vehicle, a shaft driven thereby a gear on said last-mentioned shaft, a counter-shaft, a connection between the counter-shaft and the steering-gear, a gear on the counter-shaft, means for adjustably mounting the counter-shaft to admit of engaging and disengaging a notched member secured to the counter-shaft, and a relatively stationary member adapted to engage the stationary member upon disengaging the gears for the purpose specified.

10. In a motor-driven vehicle, the combination with the steering-gear, of a continuously-driven shaft on the vehicle, a shaft driven thereby a gear on said last-mentioned shaft, a counter-shaft, a connection between the counter-shaft and the steering-gear, a gear on the counter-shaft, means for adjustably mounting the counter-shaft to admit of engaging and disengaging the gears, a notched member secured to the counter-shaft, a relatively stationary member adapted to engage the notched member upon disengagement of the gears for the purpose specified, means for yieldingly pressing the counter-shaft to disengage the gears and means for manually moving the counter-shaft to engage the gears.

11. In a motor-driven vehicle the combination with the steering-gear, of a continuously-driven shaft on the vehicle, a shaft driven thereby a gear on said last-mentioned shaft, a counter-shaft, a connection between the counter-shaft and the steering-gear, a gear on the counter-shaft, means for adjustably mounting the counter-shaft to adapt it to engage and disengage the members, means for automatically locking the counter-shaft upon disengagement of the gears, means for yieldingly pressing the counter-shaft to disengage the gears, and means for manually moving the counter-shaft to engage the gears.

850,851. BLINDSTITCHING, OVERSEAMING, AND SERGING ATTACHMENT FOR SEWING-MACHINES. EDWARD RICHTER, New York, N. Y., assignor of one-third to Garritt H. Oliver, New York, N. Y., one-third to Mattie E. Bull, Garwood, N. J., and one-third to Charles S. Amerman, Washington, N. J. Filed Oct. 31, 1906. Serial No. 341,414.

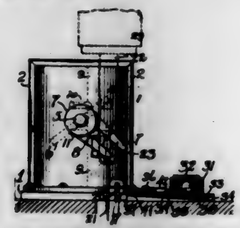

Claim.—1. In a machine of the character described, the combination with a spring-actuated work-shifting device, an oscillating shaft provided with means to oscillate said shaft, cross-arm mounted on one end of said shaft, a rotating member provided with means to reciprocate the work-shifting device, cross-arms mounted at or near the top of said rotating member adapted to be engaged by the cross-arm of the oscillating member, whereby the oscillating member rotates the rotating member intermittently and in one direction.

2. In a sewing-machine attachment such as is used for blindstitching, serging, or overseaming, the improved means for imparting the required motion to the work-shifting device comprising a rotary member provided with two cross-arms, one of said arms passing through the rotary member a short distance below the other, an oscillating shaft provided at one end with a cross-arm adapted to engage the cross-arms of the aforesaid rotary member, a work-shifting device adapted to be reciprocated by the aforesaid rotary member.

3. In a sewing-machine attachment such as used for fancy stitching, blindstitching, serging and overseaming, the improved means for imparting the required intermittent motion to the reciprocating work-shifting device, comprising a spring-returned work-shifting device, a rotary member provided with two through cross-arms, an oscillating member receiving its rocking motion from a reciprocating member of a sewing-machine, provided with a cross-arm adapted to engage the aforesaid cross-arms of the rotary member whereby intermittent, unidirectional rotary motion is transmitted to the rotating member, a cam on said rotary member for periodically actuating the said work-shifting device, a cloth-guiding device provided with cloth-guiding surfaces and indicating means which, when brought into contact with a part of the sewing-machine shows the relative adjustment of the cloth-guiding surfaces to the extreme advance position of the end of the reciprocating work-shifting device.

850,852. GAS-RANGE LIGHTER. JESSE H. ROBUCK, Anadarko, Okla. Filed Sept. 17, 1906. Serial No. 334,896.

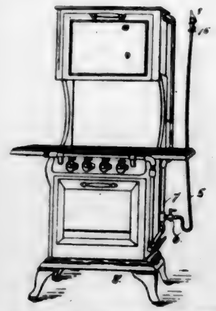

Claim.—1. A gas-range lighter comprising a flexible tube, one extremity of which is adapted to be connected with a source of gas-supply, the opposite extremity of the tube being provided with a nozzle having a passage for the issuance of gas, the said nozzle being bored transversely to intersect the gas-passage, and a valve located in said bore and of counterpart shape, the said valve being fashioned on one side to allow the gas to escape when the valve is properly adjusted, the valve when in all other positions closing the passage for the gas, the nozzle being slotted on one side, and the valve being provided with a manipulating device passing through the said slot and adapted to be moved back and forth in the nozzle for the purpose of regulating the valve.

2. A gas-range lighter comprising a flexible tube, one extremity of which is adapted to be connected with a source of gas-supply adjacent the range, the opposite extremity of the tube being provided with a nozzle having a passage for the issuance of gas, the said nozzle having a cylindrical bore intersecting its passage, and a valve located in said bore and of counterpart shape, the said valve being cut away on one side to allow the gas to es-

cape when the valve is properly adjusted, the nozzle being slotted on one side, and the valve being provided with a pin adapted to be moved back and forth in the nozzle for the purpose of manipulating the valve, substantially as described.

850,853. FIRE-ALARM APPARATUS. GEORGE W. SMITH, Baltimore, Md., assignor of one-half to August Emrich, Baltimore, Md. Filed Dec. 8, 1906. Serial No. 346,854.

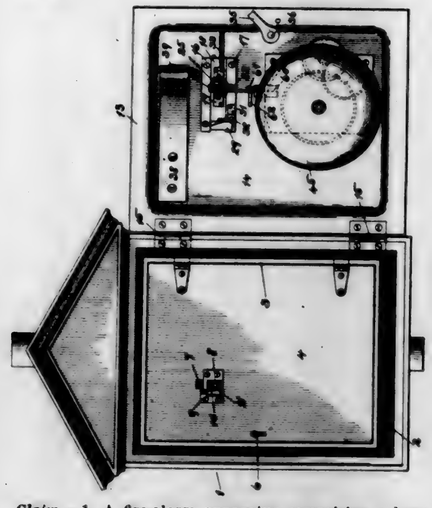

Claim.—1. A fire-alarm apparatus comprising a box; a door for said box; a fire-alarm mechanism in said box; a local alarm mechanism carried by the door; an alarm-operating means also carried by the door, said means serving to operate both alarms, and means for shifting the alarm-operating means to prevent its operating the alarms.

2. A fire-alarm apparatus comprising a box; a door for said box; a fire-alarm mechanism in said box; a local alarm mechanism also in said box; an arm pivotally sustained on the inside of said door; means coacting between the pivoted arm and the fire-alarm mechanism; means coacting between said arm and the local alarm mechanism both of said coacting means being operated by the movement of the door, and a catch for holding the door closed.

3. A fire-alarm apparatus comprising a box; a door for said box; a fire-alarm mechanism in said box; a local alarm mechanism also in said box; an arm pivotally sustained on the inside of the door; means carried by the arm for operating the fire-alarm mechanism; means also carried by the arm for operating the local alarm mechanism, and means for moving the alarm-operating devices away from the alarm mechanisms.

4. A fire-alarm apparatus comprising a box; a door for said box; a fire-alarm mechanism in said box; a local alarm mechanism also in said box; an arm mounted on the inside of the door and capable of vertical movement; means carried by said arm to operate the fire-alarm mechanism; means also carried by said arm to operate the local alarm mechanism and means for causing the actuation of both of said operating means by the movement of the door.

5. A fire-alarm apparatus comprising a box; a door for said box; a fire-alarm mechanism in said box; an arm mounted on the inside of the door and having an upward vertical movement; a depressible arm carried by said upwardly-movable arm; means for causing the depression of said arm during the opening of the door to actuate the fire-alarm mechanism, and means for moving the other arm upwardly to reset the said arms during the closing of the door.

6. A fire-alarm apparatus comprising a box; a door for said box; a fire-alarm mechanism in said box; a local alarm mechanism also in said box; an arm mounted on the inside of the door and having an upward movement; a depressible arm carried by said upwardly-movable arm; means for causing the depression of said arm to actuate both alarms when the door is being opened, and means for moving the arms upwardly during the closing of the door to reset said arms.

7. A fire-alarm apparatus comprising a box; a door for said box; a fire-alarm mechanism in said box; a local alarm mechanism also in said box; a stationary bracket in said box; an arm mounted on the inside of the door and operated by the bracket when the door is opening to engage the fire-alarm mechanism, and means carried by the arm to actuate the local alarm mechanism when said arm is operated.

8. A fire-alarm apparatus comprising a box; a door for said box; a fire-alarm mechanism in said box and having a trip-arm; a local alarm mechanism in said box and also having a trip-arm; a stationary bracket adjacent the trip-arm of the fire-alarm mechanism; an arm pivotally sustained from the inner side of the door and engaging said bracket, and a lever connected with the trip of the local alarm mechanism and operated by the pivoted arm and bracket.

9. A fire-alarm apparatus comprising a box; a door; a fire-alarm mechanism having a trip; a local alarm mechanism also having a trip; a stationary bracket adjacent the trip of one of said alarms; an arm sustained from the inner side of the door and engaging said stationary bracket; means for connecting said arm with one of said trip devices, and means whereby the arm may be moved out of engagement with said bracket.

10. A fire-alarm apparatus comprising a box; a door; a fire-alarm mechanism having a trip; a local alarm mechanism also having a trip; a stationary bracket adjacent the trip of the fire-alarm mechanism, an arm pivotally and slidably sustained from the inside of the door and engaging said bracket; a lever pivotally mounted on said arm, said lever engaging the trip of the local alarm mechanism, and a catch independent of said devices for holding the door closed.

11. A fire-alarm apparatus comprising a box; a door; a fire-alarm mechanism having a trip; a local alarm mechanism also having a trip; a stationary bracket adjacent the trip of the fire-alarm mechanism, said bracket having an upper and a lower inclined guide-surface; an arm pivotally sustained from the inside of the door; means coacting between said arm and the trip of the local alarm whereby the opening of the door will operate both alarms and the closing of the door will reset the operating devices.

12. A fire-alarm apparatus comprising a box; a door; a fire-alarm mechanism; a local alarm mechanism; an arm pivoted to the inside of the door; an arm pivoted to said door-arm and movable independently of the latter to operate the fire-alarm mechanism, and a lever operated by the arm that actuates the fire-alarm mechanism to operate the local alarm mechanism.

13. A fire-alarm apparatus comprising a box; a door; a fire-alarm mechanism; a local alarm mechanism having a vertically-movable trip; an arm slidably and pivotally sustained from the inside of the door; means coacting between said arm and the fire-alarm mechanism; a bell-crank lever pivoted to said arm and engaging said vertically-movable trip of the local alarm, and a catch for holding the door closed.

14. A fire-alarm apparatus comprising a box; a door; a fire-alarm mechanism; a local alarm mechanism; a trip device for said latter mechanism; means on the inside of the door for operating said trip device when the door is opened; means coacting with said local alarm mechanism to cause the latter to operate for a given period, and means whereby said alarm mechanisms are reset and ready for another operation upon the closing of the door.

15. A fire-alarm apparatus comprising a box; a door; a fire-alarm mechanism in said box; a local alarm mechanism in said box; means for holding the local alarm mechanism against operation; a trip device for operating said holding means; means on the inside of the door for operating the trip as the door is opened; means for stopping the operation of the local alarm after a given period, and means whereby the mechanisms are reset and made ready for another operation by the closing of the door.

850,854. CLUTCH. CHRISTOPHER M. SPENCER, Windsor, Conn., assignor to The Universal Machine Screw Company, Hartford, Conn., a Corporation of Connecticut. Filed Mar. 8, 1906. Serial No. 304,838.

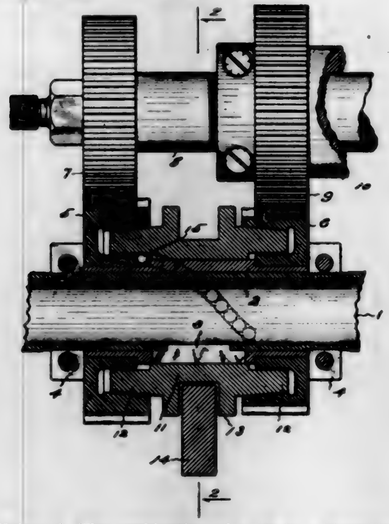

Claim.—1. The combination of a shaft, a sleeve keyed to the shaft, a gear loosely mounted on each end of the sleeve, collars holding the sleeve in position on the shaft and the gears on the sleeve, a clutch-collar mounted on the sleeve between the gears and adapted to be moved longitudinally for connecting either of the gears with the sleeve, and balls arranged spirally between and keying together the sleeve and the clutch-collar, substantially as specified.

2. The combination of a shaft, a sleeve keyed to the shaft, a gear loosely mounted on the sleeve, a collar holding the sleeve in position on the shaft and the gear on the sleeve, a clutch-collar mounted on the sleeve adjacent to the gear and adapted to be moved longitudinally for connecting the gear with the sleeve and balls arranged spirally between and keying together the sleeve and the clutch-collar, substantially as specified.

3. The combination of a shaft, a sleeve keyed to the shaft, a gear loosely mounted on each end of the sleeve, collars holding the sleeve in position on the shaft and the gears on the sleeve, a clutch-collar mounted on the sleeve between the gears and adapted to be moved longitudinally for connecting either of the gears with the sleeve, a spiral key arranged between and keying together the sleeve and the clutch-collar, substantially as specified.

4. The combination of a shaft, a sleeve keyed to the shaft, a gear loosely mounted on the sleeve, a collar holding the sleeve in position on the shaft and the gear on the sleeve, a clutch-collar mounted on the sleeve adjacent to the gear and adapted to be moved longitudinally for connecting the gear with the sleeve, and a spiral key arranged between and keying together the sleeve and the clutch-collar, substantially as specified.

5. The combination of a shaft, two gears loosely mounted on the shaft, a clutch-collar mounted on the shaft between the gears and adapted to be moved longitudinally for connecting either of the gears with the shaft, and balls arranged spirally between and keying together the shaft and the clutch-collar, substantially as specified.

6. The combination of a driving-body, a driven body, a clutch-collar mounted on one body and adapted to be engaged with and disengaged from the other body, and balls occupying coinciding spiral grooves in and keying together the collar and the body upon which it is mounted, substantially as specified.

7. The combination of a shaft, a sleeve keyed to the shaft, a rotatable body loosely mounted on the sleeve, a collar movable longitudinally on the sleeve and adapted to be engaged with and disengaged from the rotatable body, and a loose spiral key occupying coinciding spiral grooves in and keying together the sleeve and the collar, substantially as specified.

850,855. FABRIC-TAKE-UP MECHANISM FOR KNITTING-MACHINES. BERNARD T. STEBER, Utica, N. Y., assignor to Steber Machine Company, Utica, N. Y., a Corporation. Filed Oct. 2, 1906. Serial No. 337,044.

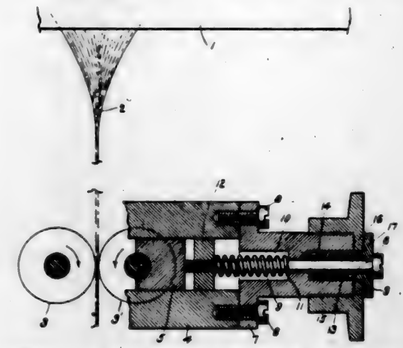

Claim.—1. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting devices to receive the fabric from the knitting or other mechanism, pressure means operatively related to said contacting devices, pressure-adjusting means coöperating with said pressure means to regulate the degree of pressure exerted thereby upon the fabric and pressure-withdrawing means operatively connected with said pressure means to withdraw the same from operative relation to said fabric-contacting devices, said pressure-withdrawing means and pressure means being maintained in fixed relation whether the take-up mechanism be operative or inoperative.

2. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting take-up rolls to receive the fabric from the knitting or other mechanism, pressure means operatively related to said take-up rolls, pressure-adjusting means coöperating with said pressure means to regulate the degree of pressure exerted thereby upon the fabric and pressure-withdrawing means operatively connected with said pressure means to withdraw the same from operative relation to said take-up rolls, said pressure-withdrawing means and pressure means being maintained in fixed relation whether the take-up mechanism be operative or inoperative.

3. A fabric-take-up mechanism for knitting or other machines comprising a pair of fabric-take-up rolls to receive the fabric from the knitting or other mechanism, pressure means engaging the journals of one of said rolls, pressure-adjusting means coöperating with said pressure means to regulate the degree of pressure exerted thereby upon the fabric and pressure-withdrawing means operatively connected with said pressure means to withdraw the same from operative relation to said take-up roll, said pressure-withdrawing means and pressure means being maintained in fixed relation whether the take-up mechanism be operative or inoperative.

4. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting devices

to receive the fabric from the knitting or other mechanism, pressure means operatively related to said contacting devices, pressure-adjusting means coöperative with said pressure means to regulate the degree of pressure exerted thereby upon the fabric and pressure-withdrawing means operatively connected with said pressure means to withdraw the same from operative relation to said fabric-contacting devices without altering the adjustment of said pressure means, said pressure-withdrawing means and pressure means being maintained in fixed relation whether the take-up mechanism be operative or inoperative.

5. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting devices to receive the fabric from the knitting or other mechanism, pressure means operatively engaging one of said fabric-contacting devices, means for adjusting the degree of pressure engagement of said pressure means, and pressure-withdrawing means operatively connected to said pressure means to withdraw the same from engagement with said fabric-contacting devices without altering the adjustment thereof, said pressure-withdrawing means and pressure means being maintained in fixed relation whether the take-up mechanism be operative or inoperative.

6. A fabric-take-up mechanism for knitting or other machines comprising a pair of relatively movable fabric-contacting devices to receive the fabric from the knitting or other mechanism, pressure means operatively engaging one of said fabric-contacting devices, means for adjusting the degree of pressure engagement of said pressure means, and pressure-withdrawing means operatively connected to said pressure means to withdraw the same from engagement with said movable fabric-contacting device without altering the adjustment thereof, said pressure-withdrawing means and pressure means being maintained in fixed relation whether the take-up mechanism be operative or inoperative.

7. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting take-up rolls, a movable bearing-box for one of said rolls, a pressure device bearing upon said bearing-box, means for adjusting the degree of pressure of said pressure device upon said bearing-box, and pressure-device-withdrawing means to withdraw said pressure device from engagement with said box without altering the adjustment thereof.

8. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting take-up rolls, a movable bearing-box for one of said rolls, a pressure-screw bearing upon said bearing-box, a spring operatively connected to said screw to force the same into contact with said bearing-box, tension-adjusting means to adjust the tension of said spring and withdrawing means to withdraw said screw from said bearing-box without altering the tension adjustment of said spring.

9. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting take-up rolls, a movable bearing-box for one of said rolls a rotatable pressure-screw bearing upon said box, a spring operatively connected to said screw to force the same into contact with said bearing-box, tension-adjusting means relatively rotatable with respect to said screw to adjust the tension of said spring, and pressure-screw-withdrawing means to withdraw said screw from said bearing-box without rotation of said screw.

10. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting take-up rolls, a movable bearing-box for one of said rolls, a rotatable pressure-screw bearing upon said box, a spring operatively connected to said screw to force the same into contact with said bearing-box, tension-adjusting means relatively rotatable with respect to said screw to adjust the tension of said spring, and pressure-screw-withdrawing means to withdraw said screw from said bearing-box without relative movement of said screw and said tension-adjusting means.

11. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting rolls to receive the knitted fabric from the knitting or other mechanism, a movable bearing-box to hold one of said rolls in engagement with said fabric, pressure means impinging upon said bearing-box, pressure-adjusting means relatively rotatable with respect to said pressure means to adjust the degree of pressure of said pressure means, and means for withdrawing said pressure means from said bearing-box without relative movement between said pressure means and pressure-adjusting means.

12. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting rolls to receive the knitted fabric from the knitting or other mechanism, a movable bearing-box to hold one of said rolls in engagement with said fabric, pressure means impinging upon said bearing-box, pressure-adjusting means relatively rotatable with respect to said pressure means to adjust the degree of pressure of said pressure means, and means for withdrawing said pressure means from said bearing-box without relative rotative movement between said pressure means and said pressure-adjusting means.

13. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting rolls to receive the knitted fabric from the knitting or other mechanism, a movable bearing-box to hold one of said rolls in engagement with said fabric, a rotatable screw impinging upon said bearing-box, a spring in operative engagement with said screw to force the same into yielding engagement with said box, a nut wherein said screw is rotatable to adjust the tension of said spring and means to withdraw said screw from engagement with said bearing-box without rotary movement thereof.

14. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting rolls to receive the knitted fabric from the knitting or other mechanism, a movable bearing-box to hold one of said rolls in engagement with said fabric, a rotatable screw impinging upon said bearing-box, a spring in operative engagement with said screw to force the same into yielding engagement with said box, a nut wherein said screw is rotatable to adjust the tension of said spring, means to restrain said nut from rotation and means to withdraw said screw from engagement with said bearing-box without rotary movement thereof.

15. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting rolls to receive the knitted fabric from the knitting or other mechanism, a movable bearing-box to hold one of said rolls in engagement with said fabric, a rotatable screw impinging upon said bearing-box, a spring in operative engagement with said screw to force the same into yielding engagement with said box, adjusting means to adjust the tension of said spring and axial screw-withdrawing means to withdraw said screw from said bearing-box by axial non-rotary movement thereof.

16. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting rolls to receive the knitted fabric from the knitting or other mechanism, a movable bearing-box to hold one of said rolls in engagement with said fabric, a pressure-screw in engagement with said bearing-box, a nut upon said screw and confined from rotation thereon, a spring engaging said nut thereby to force said screw into operative engagement with said bearing-box, the tension of said spring being adjusted by the rotation of said screw, and screw-moving means to impart axial movement to said screw without rotation in said nut.

17. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting rolls to receive the knitted fabric from the knitting or other mechanism, a movable bearing-box to hold one of said rolls in engagement with said fabric, a screw in engagement with said bearing-box, a nut upon said screw, a spring in operative engagement with said nut to force said screw into engagement with said bearing-box, relative rotation of said screw and nut tending to adjust the tension of said spring, and screw-withdrawing means to withdraw said screw axially from said bearing-box without rotation thereof relative to said nut.

18. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting rolls to receive the knitted fabric from the knitting or other mechanism, a movable bearing-box to hold one of said rolls in engagement with said fabric, pressure means impinging upon said bearing-box, pressure-adjusting means relatively rotatable with respect to said pressure means to adjust the degree of pressure of said pressure means, and rotary withdrawing means axially to withdraw said pressure means from said bearing-box without relative movement between said pressure means and said pressure-adjusting means.

19. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting rolls to receive the knitted fabric from the knitting or other mechanism, a movable bearing-box to hold one of said rolls in engagement with said fabric, a pressure-screw adapted to bear upon said bearing-box, a casing wherein said screw is mounted, a nut upon said screw and confined from rotary movement, a coil-spring upon said screw interposed between said nut and said casing and rotary withdrawing means to withdraw said screw from said bearing-box without relative rotation of said screw and said nut.

20. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting rolls to receive the knitted fabric from the knitting or other mechanism, a movable bearing-box to hold one of said rolls in engagement with said fabric, a pressure-screw adapted to bear upon said bearing-box, a casing wherein said screw is mounted, a nut upon said screw and confined from rotary movement, a coil-spring upon said screw interposed between said nut and said casing, and a thimble in engagement with said screw and adapted for axial movement, thereby to move said screw in said casing without rotary movement thereof.

21. A fabric-take-up mechanism for knitting or other machines comprising a plurality of fabric-contacting rolls to receive the knitted fabric from the knitting or other mechanism, a movable bearing-box to hold one of said rolls in engagement with said fabric, a pressure-screw impinging upon said bearing-box, a casing wherein said screw is mounted for rotary and axial movement, a nut upon said screw and restrained from rotation, a coil-spring interposed between said nut and said casing, a thimble mounted for axial movement in said casing but restrained from rotation therein, said thimble engaging said screw to impart axial movement to the latter, and a nut mounted upon said casing and engaging said thimble, whereby rotation of said nut imparts axial movement to said thimble.

22. A fabric-take-up mechanism for knitting or other machines comprising a pair of relatively movable fabric-contacting devices to receive the fabric from the knitting or other mechanism, pressure means operatively engaging one of said fabric-contacting devices, means for withdrawing said pressure means from operative relation with said fabric-contacting device, and means for adjusting the degree of pressure engagement of said pressure means without alteration of position of said withdrawing means.

23. A fabric-take-up mechanism for knitting or other machines comprising a pair of relatively movable fabric-contacting devices, pressure means operatively engaging one of said devices, adjusting means to adjust the degree of pressure engagement of said pressure means, and pressure-withdrawing means operatively connected to said pressure means and having a predetermined position when the mechanism is in operation.

24. A fabric-take-up mechanism for knitting or other machines comprising a pair of relatively movable fabric-contacting devices, pressure means operatively engaging one of said devices, means to adjust the degree of pressure engagement of said pressure means, and pressure-withdrawing means operatively connected with said pressure means to withdraw and maintain withdrawn the pressure means without differential movement of said pressure means and pressure-withdrawing means.

25. A fabric-take-up mechanism for knitting or other machines comprising a pair of relatively movable fabric-contacting devices to receive the fabric from knitting or other mechanism, pressure means operatively engaging one of said fabric-contacting devices, means for adjusting the degree of pressure engagement of said pressure means, and pressure-withdrawing means operatively connected to said pressure means, said pressure means and pressure-withdrawing means having longitudinal movement from said take-up devices and said pressure-withdrawing means for withdrawing and maintaining withdrawn said pressure means by longitudinal movement of said members.

850,856. AUTOMATIC SLACK-ADJUSTER FOR BRAKES. EDWIN M. SWIFT, Ballard, Wash. Filed Nov. 9, 1906. Serial No. 342,740.

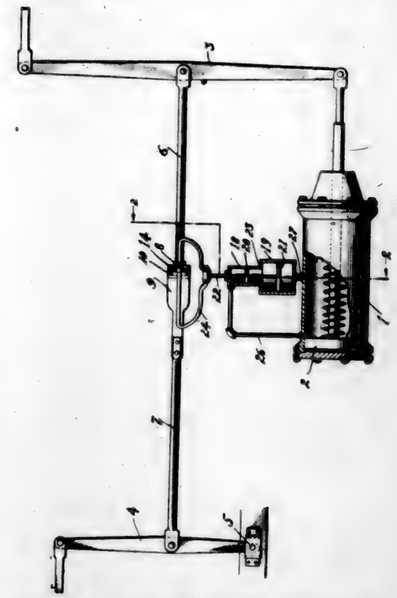

Claim.—1. In a slack-adjuster, the combination of the rods adjustably connected, mechanism for effecting adjustment of said rods, and means operative in reverse directions by fluid to set the said mechanism for operation in opposite directions.

2. In a slack-adjuster, a pair of rods, a head on one rod, a nut on the other rod rotatably seated in said head, a ratchet in said head rotatable with said nut, mechanism for effecting movement of said ratchet, and means operative in reverse directions to set the said mechanism for operation in either direction.

3. In a device of the character described, a nut, a ratchet rotatable with said nut, adjusting mechanism for said ratchet, and means operative in reverse directions by fluid to set the adjusting mechanism for operation in either direction.

4. In a slack-adjuster mechanism, a ratchet supported for rotation in opposite directions, and mechanism for operating said ratchet including two fluid-motors of relatively small and large cross-sectional area.

5. In a slack-adjuster mechanism, a ratchet supported for rotation in opposite directions, adjusting mechanism therefor, two fluid-motors connected with the adjusting mechanism to operate the same in relatively opposite directions, and means for admitting fluid to said motors one after the other.

6. In a slack-adjuster mechanism, a ratchet, adjusting mechanism therefor, the brake-cylinder and piston therein, and fluid-operative means for operating said adjusting mechanism connected with said cylinder to receive therefrom at different points in the travel of the piston.

7. In a slack-adjuster mechanism therefor, a brake-cylinder and the piston therein, and means for operating the adjusting mechanism automatically in relatively opposite di-

rections at different points in the travel of the brake-piston.

8. In a slack-adjuster mechanism, an adjusting-nut, and means for operating the same in reverse directions, said means being normally in a released position relating to the nut so that the latter is free for operation normally.

9. In a slack-adjuster mechanism, an adjusting-nut, a ratchet movable with said nut, a carrier, opposite pawls for engagement with said ratchet, and means connected with the carrier and related to said pawls to normally hold them inactive.

10. In a slack-adjuster mechanism, an adjusting-nut, a ratchet movable with said nut, a carrier, opposite pawls on said carrier, a stem pivoted to said carrier and related to said pawls to release them from engagement with the ratchet, and stops on the carrier on opposite sides of said stem.

11. In a slack-adjusting mechanism, an adjusting-nut, a ratchet movable with said nut, a carrier, pawls on said carrier adapted for alternate engagement with said ratchet, means for setting said pawls, means for operating said carrier, and springs on opposite sides of said carrier for returning the carrier to its normal position.

12. In a slack-adjusting mechanism, an adjusting-nut, a ratchet movable with said nut, a carrier supported for rotation and provided with a pawl for engagement with said ratchet, a stem on the carrier, means for operating said carrier, and a link connection between said means and carrier having an elongated side bar slidably engaged in an aperture in said stem.

13. In a slack-adjusting mechanism, in combination with the brake-cylinder, the piston therein, and the lever-connecting rods, a plurality of cylinders receiving fluid successively from the brake-cylinder, pistons operating in said last cylinders and mechanism for adjusting said rods to lengthen or shorten the same operated by said last-named pistons.

850,857. CHANGE-SPEED GEAR. HORACE T. THOMAS, Lansing, Mich., assignor to Reo Motor Car Company, of Lansing, Mich., a Corporation. Filed Oct. 4, 1906. Serial No. 337,349.

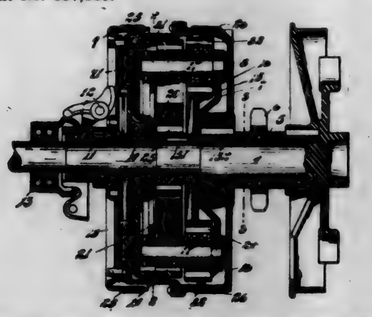

Claim.—1. The combination of a driving and a driven member, a train of direct gears including a fulcrum member between said driving and driven members, a train of reverse-gears including a fulcrum member between said driving and driven members, means for preventing and permitting rotation of one or the other of said fulcrum members, and means for connecting and disconnecting said fulcrum members.

2. The combination of a driving and a driven member, a train of direct gears including a fulcrum member between said driving and driven members, a train of reverse-gears including a fulcrum member between said driving and driven members, means for preventing and permitting rotation of one or the other of said fulcrum members, and means for connecting and disconnecting said fulcrum members, one of said fulcrum members being shaped to form a casing inclosing said gearing and the other fulcrum member.

3. The combination of the shaft 4, disk 7, arbors on said disk, a gear-wheel 24 on said shaft, a gear-wheel 16 on one of said arbors, a gear-wheel 23 on said shaft, a gear-wheel 21 on one of said arbors, a gear-wheel 20 on one of said arbors and engaging the gear-wheels 23 and 21, a fulcrum member 8, 82, engaging the wheel 16, a fulcrum member 10 engaging the wheel 21, means for preventing and permitting the rotation of one or the other of said fulcrum members, and means for connecting and disconnecting said fulcrum members.

4. The combination of the shaft 4, disk 7, having a hub sleeved on said shaft, gear-wheels on said shaft and disk engaging with each other, a wheel 10 having a hub sleeved on said shaft, gear-wheels upon said shaft and disk engaging with each other, a casing pivoted upon said hubs and inclosing said gearing, said casing being provided with gear-teeth to engage with one of said intermeshing gearings, gear-teeth on the wheel 10 adapted to engage the other of said intermeshing gearings, and means for acting upon the hub of the wheel 10 for restraining said wheel from rotation and releasing the same, and means for connecting the wheel 10 with said casing and releasing the same, substantially as and for the purpose described.

5. The combination of the shaft 4, disk 7, having a hub sleeved on said shaft, gear-wheels on said shaft and disk engaging with each other, a wheel 10 having a hub sleeved on said shaft, gear-wheels upon said shaft and disk engaging with each other, a casing pivoted upon said hubs and inclosing said gearing, said casing being provided with gear-teeth to engage with one of said intermeshing gearings, a part slidingly keyed upon the hub of the wheel 10 outside of said casing, a clutch between said part and said casing adapted to be operated by the movement of said part to engage said casing therewith, means for actuating said part, and means for holding said part from rotation, substantially as and for the purpose described.

6. The combination of a driving and a driven member, a train of gears including a fulcrum member between said driving and driven members, a second train of gears including a fulcrum member between said driving and driven members, means for preventing and permitting rotation of one or the other of said fulcrum members, and means for connecting and disconnecting said fulcrum members, substantially as and for the purpose described.

850,858. EMERGENCY-TELEGRAPH. MURRAY C. TUNISON, Los Angeles, Cal., assignor of one-half to Charles W. Harrison, Los Angeles, Cal. Filed July 27, 1905. Serial No. 271,401.

Claim.—1. A case provided at either side with receptacles for coils of wire, a character-plate adapted to fit between and be retained by said receptacles, a stylus connected with one coil of wire, said coil being removable from its receptacle for the purpose of grounding, and a contact carrying a second coil of wire for making connections between said case and telegraph-line.

2. A conductor consisting of a sheet-metal case turned at the sides and bottom to form grooves, tubes at either side of said case, an insulating-tube inside of one of said tubes, a metallic tube inside of said insulating-tube, spring-contacts within said metallic tube, a wire coil connected with said contacts, a character-plate, and a stylus with a wire for grounding and a needle adapted to operatively engage said character plate.

3. A case, a sounder secured to and inclosed by said case, a character-plate extending across one side of said case, a conductor beneath said character-plate, receptacles for coils of wire within said case, and a stylus adapted to operatively engage said character-plate, said stylus and conductor being suitably wired to form a circuit.

4. A case forming one terminal of a telegraph-line, a telegraph-sounder mounted on and connected in series with said case, an insulating character-plate, and a stylus forming the second terminal and adapted to contact with the case through the character-plate.

5. A case with receptacles for coils of wire and provided with grooves for the reception of a character-plate, a character-plate, a stylus carrying and connected with one coil of wire, the other end of which is grounded, and a contact carrying a second coil of wire connected to said case and a telegraph-line.

850,859. SEPARABLE JAW FOR BRAKE AND OTHER RODS. JOHN VAN DYKE, Chicago, Ill., assignor of one-half to Myers A. Garrett, Chicago, Ill. Filed Oct. 25, 1906. Serial No. 340,501.

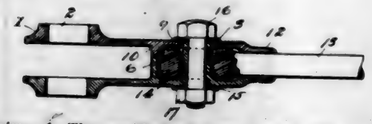

Claim.—1. The combination with a rod having an eye, of a pair of separable jaws; a bolt; and means for holding the bolt in position.

2. The combination with a rod having an eye, of a pair of interlocking separable jaws; a bolt; and a nut.

3. The combination with a rod having an eye, of a pair of separable jaws; a perforated boss which passes through the eye; and means for holding the jaws together.

4. A pair of separable metallic jaws, each provided at the ends with a hole, and having at one end when the same are united an opening for the passage of a rod, a seat bounded by the curved ribs 10 and segment 6, and means for holding the parts together.

5. A pair of separable interlocking jaws, each provided at the ends with a hole, having at one end when the same are united an opening for a rod, a seat for an eye of the rod, and a perforated boss which passes through the eye of the rod when the latter is united with the jaws.

6. A pair of separable jaws having at one of their ends when united a recess or seat for the eye or bent end of a rod, and holes in line with the recess or seat for the reception of a bolt which is adapted to pass through the eye of the rod and the holes and unite the several parts.

850,860. SELF-LUMINOUS BODY. LUDWIG VANINO, Munich, Germany. Filed Sept. 6, 1906. Serial No. 333,481. (Specimens.)

Claim.—1. A luminous body comprising a self-luminous substance and a thorium salt.

2. A luminous body comprising a self-luminous substance and a lithium salt and thorium salt.

3. A luminous body comprising a self-luminous substance incorporated with potassium nitrate.

4. A luminous body comprising a self-luminous substance and a thorium salt, incorporated with potassium nitrate.

5. A luminous body comprising a self-luminous substance and a lithium salt and thorium salt, incorporated with potassium nitrate.

850,861. CULTIVATOR. LEWIS E. WATERMAN, Rockford, Ill., assignor to Emerson Manufacturing Company, Rockford, Ill., a Corporation of Illinois. Filed Feb. 19, 1907. Serial No. 358,208.

Claim.—1. In a cultivator the combination of a main frame, two wheels independently connected with the main frame in a manner to move bodily in the direction of the line of draft, two beams independently connected with the main frame, an oscillating arm, a connection between the arm and a beam, and a connection between the arm and a wheel-support.

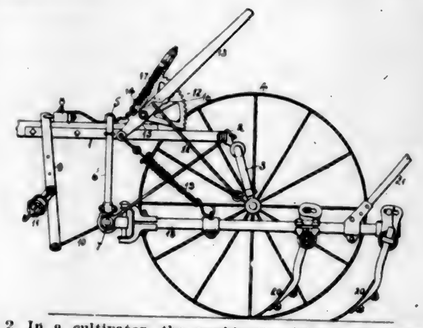

2. In a cultivator, the combination of a main frame, two wheels independently connected with the main frame in a manner to move bodily in the direction of the length of draft, two beams independently connected with the main frame, an oscillating arm, a connection between the arm and a beam, a connection between the arm and a wheel-support, and a spring exerting its force on the arm.

3. In a cultivator, the combination of a main frame, two wheels independently connected with the main frame in a manner to move bodily in the direction of the line of draft, two beams independently connected with the main frame, an oscillating arm, a connection between the arm and a beam, a connection between the arm and a wheel-support, a toothed segment, a hand-lever having a dog engagement with the segment, the lever adapted to move the arm.

4. In a cultivator, the combination of a main frame, two wheels independently connected with the main frame in a manner to move bodily in the direction of the line of draft, two beams independently connected with the main frame, an oscillating arm, a flexible connection between the arm and beam and a rod connection between the arm and wheel-support.

850,862. ARCH-SUPPORTING SHOE. HEZEKIAH C. WELCH, Haverhill, Mass. Filed Apr. 11, 1906. Serial No. 311,090.

Claim.—1. An arch-supporting shoe having a counter, a spring-metal strip having a heel portion, corresponding in shape to the counter and firmly secured thereto, and having an arch-supporting portion extending forwardly adjacent the shank on the inner side of the shoe adapted to be held in yielding engagement with the arch of the foot by said heel portion, substantially as described.

2. An arch-supporting shoe having a spring-metal strip therein extending about the heel and forwardly on the inner side of the shoe in position to support the arch of the foot, the heel portion of said strip being secured to the adjacent portion of the shoe to hold the arch-supporting portion thereof in yielding engagement with the arch of the foot, substantially as described.

3. An arch-supporting shoe having a counter the inner side section of which extends forwardly over the shank, said extended portion extending outwardly and upwardly from the sole in position to provide a vertical and horizontal support for the arch of the foot, and a correspond-

ingly-shaped reinforcing-spring connected to said counter for yieldingly holding said support in position, substantially as described.

4. An arch-supporting shoe having a counter, the inner side section of which extends forwardly over the shank, said extended portion extending outwardly and upwardly from the sole to provide a vertical and horizontal arch-supporting portion, a spring extending longitudinally of the shoe and rigidly held at its rear end by the heel portion of the counter, said spring having a relatively broad reinforcing-plate at its front end shaped to correspond to the supporting portion of the counter and connected thereto to maintain the transverse shape thereof and hold the same in yielding engagement with the arch of the foot, substantially as described.

5. An arch-supporting shoe having a counter and a spring-metal strip firmly secured thereto and extending about the heel and forwardly adjacent the shank portion of the shoe on its inner side with its lower edge closely adjacent the sole, the heel portion of the strip being relatively narrow and so disposed that the main portion of the heel portion of the counter extends thereabove, and the shank portion of the strip extending outwardly and upwardly from the sole to support the arch of the foot, substantially as described.

6. An arch-supporting shoe having a counter and a spring-metal strip firmly secured thereto and extending about the heel forwardly adjacent the shank portion of the shoe on its inner side with its lower edge closely adjacent the sole, the heel portion of the strip being relatively narrow so that the main portion of the heel portion of the counter extends thereabove, and the shank portion of the strip extending outwardly and upwardly from the sole to support the arch of the foot and being of materially greater width than the heel portion, substantially as described.

7. An arch-supporting shoe provided with a counter having the inner side section thereof extending over the shank portion of the sole and outwardly and upwardly from said shank portion, in position to provide a vertical and horizontal arch-supporting portion, a relatively narrow strip of spring metal of corresponding shape embedded in said counter and having a portion extending about the heel and forwardly to a point adjacent the front inner end of the counter, said heel portion of said strip being rigidly held and adapted to act as a support to hold the forwardly-extended portion thereof and of the counter in yielding engagement with the arch of the foot, said forwardly-extended portion of said strip being extended transversely to maintain the transverse shape of the corresponding counter portion, substantially as described.

8. A shoe-counter having its inner side section extended beyond its outer side section to provide an arch-engaging portion, a sheet-metal spring extending longitudinally of the counter about the heel portion and forwardly along the arch-engaging portion thereof, said spring being secured to the counter throughout its length, and the forwardly-extending portion thereof being obliquely disposed to its heel portion to permit said heel portion yieldingly to resist downward and outward force on its forwardly-extending portion and on the arch-engaging portion of the counter, substantially as described.

9. A shoe-counter having its inner side section extended to provide an arch-supporting portion, said extended portion being shaped and disposed to fit against the arch of the foot, and a sheet-metal spring extending approximately the entire length of the counter, firmly secured thereto, and shaped to correspond to the shape of the corresponding portions of the counter which it engages, the heel portion of said spring being relatively narrow with relation to the counter, and located adjacent the lower edge thereof, substantially as described.

10. A shoe-counter having its inner side section extended to provide an arch-supporting portion, said extended portion being shaped and disposed to fit against the arch of the foot, and a sheet-metal spring extending approximately the entire length of the counter, firmly secured thereto, and shaped to correspond to the shape of the corresponding portions of the counter which it engages, the heel portion of said spring being relatively narrow with relation to the counter, and the forwardly-extended portion of said spring being extended transversely to greater width than its heel portion to maintain the transverse configuration of the corresponding portion of the counter, substantially as described.

11. A shoe-counter having its inner side section extended beyond its outer side section to provide an arch-engaging portion, a sheet-metal spring extending longitudinally of the counter from the heel portion forwardly along the arch-engaging portion thereof, said spring being secured to the counter throughout its length, and the forwardly-extending portion thereof being disposed to permit its heel portion yieldingly to resist downward and outward force on its forwardly-extending portion and the arch-engaging portion of the counter, substantially as described.

850,863. TRANSFORMER. WILLIAM J. WOOLDRIDGE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 8, 1906. Serial No. 320,751.

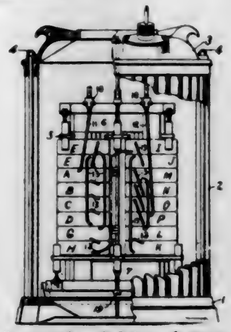

Claim.—1. In an oil-cooled transformer, a vertical core portion, a winding surrounding said core portion comprising turns of conducting material connected in series, the cross-sectional area of the conducting material forming the turns at the lower end of the core being less than the cross-sectional area of the conducting material forming the turns at the upper end of the core portion.

2. In a core-type transformer, a core comprising wound portions, and unwound portions connecting the wound portions, and a winding on each wound portion comprising turns of conducting material connected in series, the turns adjacent the unwound portions of the core being connected in series with and between other turns more remote from said unwound portion.

3. In a core-type transformer, a core-leg, a plurality of series-connected coils surrounding said core-leg, the coils adjacent the ends of the core-leg being connected in series with and between others of said coils.

4. In a core-type transformer, a core-leg, a transverse core portion engaging the ends of said leg, a winding surrounding said core-leg comprising a plurality of conductor turns connected in series the terminal turns of said winding being more remote from the ends of said core-leg than other turns of said winding.

5. In an oil-cooled transformer, a winding comprising turns in series, the cross-sectional area of each of the turns in contact with the hottest oil being greater than that of other turns in contact with cooler oil.

6. In an electrical device, a winding comprising parts through which current passes in series, the parts of said winding from which heat is more readily dissipated having a cross-sectional area less than parts from which heat is less readily dissipated.

850,864. CLASP. CHARLES C. WRIGHT, Indianapolis, Ind. Filed Sept. 7, 1906. Serial No. 333,618.

Claim.—1. In a clasp, the combination with a barrel with a ring rigid therewith at one end and an opening at the other end, of a catch member adapted to enter said opening and comprising a bar with ring at one end and a spring-arm, and means within the barrel against the end thereof with a portion of its face coincident with the opening in such end, the free end of said spring-arm constructed to engage the inner wall of said end of the barrel, said means within the barrel having a cam-surface extending upon both sides of the transverse and vertical diameters of said opening for engagement with the free end of said spring-arm for compressing the same.

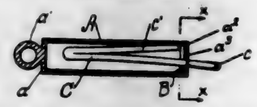

2. In a clasp, the combination with the barrel provided with an opening to receive a catch member, of a crescent cam-plate extending upon both sides of the transverse and vertical diameters of said opening and fixed within the barrel against the end thereof adjacent the opening and having a portion of its concave margin flush with the adjacent periphery of the opening, of a catch member adapted to enter the barrel through the opening, and a compressible arm upon the catch member adapted, when the catch member is rotated to engage the curved face of the cam-plate.

850,865. HYDRAULIC VISE. HOLSTEIN DE H. BRIGHT, Philadelphia, Pa. Filed May 24, 1906. Serial No. 318,600.

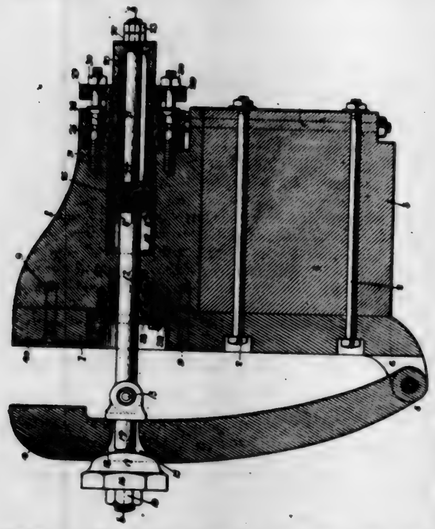

Claim.—1. The combination, in a hydraulic vise, of a support, a member carried thereby and forming a fixed jaw, a backing structure mounted on the support immediately behind the member forming the fixed jaw and to which the latter is secured, said backing structure being recessed to form a chamber, a fluid-controlled piston within said chamber, a movable member forming another jaw and hinged to the member forming the fixed jaw, and a connection between said movable member and the piston whereby the vise may be opened and closed by the movement of said piston.

2. The combination, in a hydraulic vise, of a support, a member carried thereby and forming a fixed jaw, a backing structure mounted on the support immediately behind the member forming the fixed jaw and to which the latter is secured, said backing structure being recessed to form a chamber, a fluid-controlled piston within said chamber, a movable member forming another jaw and hinged to the member forming the fixed jaw, a connection between said movable member and the piston whereby the vise may be opened and closed by the movement of said piston, and a guiding-stem at the rear end of said piston.

3. The combination, in a hydraulic vise, of a support, a member carried thereby and forming a fixed jaw, a backing structure mounted on the support immediately behind the member forming the fixed jaw and to which the latter is secured, said backing structure being recessed to form a chamber, a fluid-controlled piston within said chamber, a movable member forming another jaw and hinged to the member forming the fixed jaw, a stem having a freely-adjustable connection with the member forming the movable jaw, and a piston-rod pivotally connected to said stem whereby the vise may be opened and closed by the movement of said piston.

4. The combination, in a hydraulic vise, of a support, a member carried thereby and forming a fixed jaw, a backing structure mounted on the support immediately behind the member forming the fixed jaw and to which the latter is secured, said backing structure being recessed to form a chamber, a fluid-controlled piston within said chamber, a movable member forming another jaw and hinged to the member forming the fixed jaw, a stem having a freely-adjustable connection with the member forming the movable jaw, a piston-rod pivotally connected to said stem whereby the vise may be opened and closed by the movement of said piston, and a guiding-stem at the rear end of said piston.

5. The combination of the fixed jaw of a vise, a block carrying the same, a support for said jaw and its carrying structure, a movable jaw pivotally hung to the fixed jaw and having an adjustable stem, said carrying structure being bored to form a chamber, a piston mounted in said chamber and having a rod connected to the stem of the movable jaw to operate the same, means for applying pressure to move the piston in opposite directions, the pressure on one side of said piston being constant and serving to maintain the vise normally in the open position, and means for controlling and directing said pressure.

6. The combination of the fixed jaw of a vise, a block carrying the same, a support for said jaw and its carrying structure, a movable jaw pivoted to the fixed jaw and having a stem, said carrying structure being bored to form a chamber, a piston mounted in said chamber and having a rod connected to the stem of the movable jaw to operate the same, a guide for the rear end of said piston, stuffing-boxes for the piston-rod and said guide, means for applying pressure to said piston to move the same in opposite directions, the pressure on one side of said piston being constant and serving to maintain the valve normally in the open position, and a valve for controlling and directing said pressure.

7. The combination, in a hydraulic vise, of a member forming a fixed jaw, a movable member forming another jaw pivotally hinged to the fixed jaw and coacting with the latter, and fluid-operated means for opening and closing the vise, said means including a rod connected with the member forming the movable jaw and freely reciprocable through the member forming the fixed jaw, a piston to which said rod is attached, and a guiding-stem at the rear end of said piston.

8. The combination, in a hydraulic vise, of a member suitably supported and forming a fixed jaw, a member pivotally hung from said fixed jaw and forming a movable jaw coacting therewith, fluid-operated means for opening and closing the vise, said means including a rod connected to the movable jaw and freely reciprocable through the fixed jaw, a piston to which said rod is attached, and a guiding-stem at the rear end of said piston, and a stuffing-box carried by the fixed jaw through which said piston-rod passes.

9. The combination, in a hydraulic vise, of a fixed member suitably supported and forming a jaw, a movable mem-

ber pivotally hung from said fixed jaw and forming another jaw, fluid-operated means for opening and closing the vise, said means including a rod connected to the movable jaw and freely reciprocable through the fixed jaw, a piston to which said rod is attached, and a guiding-stem carried by said piston, said rod connection being close to the engaging faces of said jaws, a backing structure for the fixed jaw having a chamber in which the piston is movable, and a stuffing-box closing the end of said chamber through which the guiding-stem of the piston is reciprocable.

10. The combination, in a hydraulic vise, of a support, a member forming a fixed jaw secured to said support, a movable member pivotally hung to the said fixed member and forming a jaw coacting therewith, fluid-operated means for opening and closing the vise, said means including a rod flexibly connected to the movable jaw and freely reciprocable through the fixed jaw, a piston to which said rod is attached, a guiding-stem for the rear end of said piston, and a backing member disposed back of the fixed jaw and to which the latter is secured, said backing member having a chamber in which the piston is movable.

11. The combination, in a hydraulic vise, of a fixed jaw, a backing structure to which the same is secured, a jaw hinged to the fixed jaw and coacting therewith, a piston movable within the chamber formed in the backing structure whereby the vise may be opened and closed, a rod leading from said piston to the movable jaw and connected therewith close to the engaging faces of said jaws, the fixed jaw being recessed for the free passage of said rod, means for controlling fluid-pressure to operate said piston, and a guiding-stem for the rear end of the same.

12. The combination, in a hydraulic vise, of a fixed jaw, a support, a backing structure carried by said support, said structure being secured directly to said fixed jaw and bored to form a chamber, a piston within said chamber, a member hinged to the fixed jaw and forming a movable jaw coacting therewith, a connection between said piston and the movable jaw whereby the vise may be opened and closed by the movement of said piston, means for moving said piston, and a guiding-stem at the rear end of the same, said guiding-stem being reciprocable through and closing the rear end of the chamber in which the piston is movable.

13. The combination, in a hydraulic vise, of a fixed jaw, a backing structure secured directly to said jaw and bored to form a chamber, a piston movable within said chamber, a jaw hinged to the fixed jaw and coacting therewith, a stem having a freely-adjustable connection with said hinged jaw, a piston-rod pivotally connected to said stem whereby the movable jaw may be opened and closed by the movement of said piston, means for moving said piston, and a guiding-stem for the same.

14. The combination, in a hydraulic vise, of a support, a fixed jaw carried by said support, a backing structure secured directly to said jaw, said backing structure being also carried by said support and bored to form a chamber, a piston within said chamber, a jaw hinged to the fixed jaw and coacting therewith, a stem adjustably connected to said hinged jaw, a rod attached to the piston and pivotally connected with said stem whereby the movable jaw may be opened and closed by the movement of said piston, means for moving said piston, and a guiding-stem for the same.

850,866. CURBING. CLINTON E. DE CLEMENTS, Detroit, Mich. Filed Feb. 9, 1907. Serial No. 356,533.

Claim.—1. A curb formed of plastic material, burnt, and its outer surfaces vitrified, said curb provided with a gutter on one side and formed with longitudinal grooves on the other side of its upwardly-projecting wall, substantially as described.

2. A curb formed of plastic material, burnt, and its surface vitrified, having a gutter on one side of its upwardly-projecting wall, said wall being extended below the gutter a sufficient distance to form a heel or ledge A^2, substantially as described.

850,866.

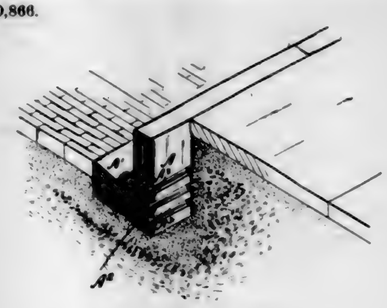

850,867. BATTERY OF ELECTROLYTIC CELLS. ROBERT H. F. FINLAY, Belfast, Ireland. Filed Feb. 12, 1907. Serial No. 357,036.

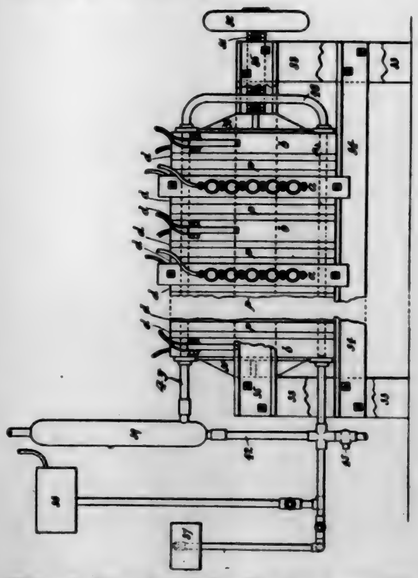

Claim.—1. In an electrolytic cell, an anode comprising a frame, two series of carbons, one supported in each side of said frame, and copper bands connecting the outer ends of said carbons, substantially as set forth.

2. In an electrolytic cell, a cathode having projections on the opposite faces thereof, a laterally-extending rim around said cathode, the outer surfaces of said projections being arranged within the planes of the lateral faces of said rim, and diaphragms arranged against the lateral faces of said rim, the intermediate spaces between the diaphragms and the faces of the cathode constituting cathode-chambers.

3. In an electrolytic cell, a cathode having projections on the opposite faces thereof, the projections on one face being staggered with relation to those on the opposite face, a laterally-extending rim around said cathode, the outer surfaces of said projections being arranged within the planes of the lateral faces of said rim, and diaphragms arranged against the lateral faces of said rims, the intermediate spaces between the diaphragms and the faces of the cathode constituting cathode-chambers.

4. In an electrolytic cell, electrodes having rims with series of apertures in the upper and lower portions thereof and extending from one lateral face thereof to the other, the apertures in each electrode registering with the corresponding apertures in the other electrodes and constituting elements of circuits for the passage of the electrolyte and products of decomposition, and anode and cathode chambers formed between the planes of the opposite faces of the rims of each of said electrodes, said electrodes also having passages communicating with said electrode-chambers and with the circuits for the products of decomposition.

5. In an electrolytic cell, electrodes having rims with series of apertures in the upper and lower portions thereof and extending from one lateral face thereof to the other, said electrodes having passages communicating with said apertures, anode and cathode chambers formed between the planes of the opposite faces of the rims of each of said electrodes, said apertures constituting elements of an electrolyte-circuit and of circuits to and from said electrode-chambers, a separator arranged in each of said circuits, an outflow-cistern connecting with each of the circuits to and from the electrode-chambers, and a pressure-supply source connecting with said electrolyte-circuit.

850,868. POCKET-SAFE. CHARLES FISHER, Oak Park, Ill., assignor of one-half to Herman Segnitz, Milwaukee, Wis. Filed Nov. 13, 1905. Serial No. 287,007.

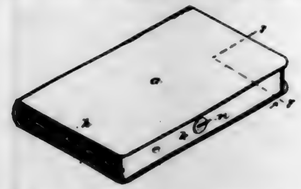

Claim.—1. In a pocket-safe the combination of a sheet-metal case having two parallel sides and a third and narrower side connecting them, a transverse support connecting the broader parallel sides, a covering attached to the sheet-metal sides and turned inwardly over their edges, and a closure fitted between the parallel sides of the case and protecting the inturned edges of the covering, substantially as described.

2. In a pocket-safe the combination of a sheet-metal case having two parallel sides corresponding with the covers of a book and a third and narrower side corresponding with the back of the book, transverse supports connecting the broader parallel sides at intervals, a covering attached to the sheet-metal sides and turned inwardly over their edges, and a closure representing the exposed edges of book-leaves, fitted between the parallel sides of the case and protecting the inturned edges of the covering, substantially as described.

3. In a pocket-safe a sheet-metal case made in the form of a book and having three of its narrower sides open, its opposite closed sides corresponding with the covers of a book, being connected by spacing and supporting posts, a U-shaped drawer-closure fitted into and adapted to close the open sides of the case and representing the leaves of the book, and a lock for securing said closure in said case, one of the parts having a slot for inserting coins in the case when it is otherwise closed, substantially as described.

4. In a pocket-safe the combination of a case having three of its narrower sides open and its opposite closed sides connected by spacing and supporting posts, a U-shaped channeled drawer-closure fitted into the open sides of said case and notched in the ends to engage with two of said posts, and a lock for securing said closure in said case, substantially as described.

5. In a pocket-safe the combination of a case having three of its narrower sides open and its opposite closed sides connected by spacing and supporting posts, a U-shaped closure notched at the ends and at an intermediate point to engage with certain of said posts when the closure is inserted in the case, a slide mounted in said closure and adapted to be moved into and out of engagement with the post engaged by the intermediate notch of said closure, and a key for operating said slide, substantially as described.

6. In a pocket-safe the combination of a case having three adjoining open sides and its opposite closed sides connected by posts, a U-shaped closure fitted into and adapted to close the open sides of said case, a slide mounted in said closure and adapted to be moved into and out of engagement with one or more of said posts when the closure is inserted in said case, and a key for operating said slide, substantially as described.

7. In a pocket-safe the combination of a case having three of its narrower adjoining sides open, and its opposite closed sides connected by posts, a U-shaped channeled closure fitted into the open sides of said case, a slide fitted in the channel of said closure between its ends and inwardly offset at the middle and at the ends which are adapted to be thrust behind certain of said posts to lock the closure in said case, the middle offset of said slide being longitudinally slotted and provided on the back with lugs, a slotted barrel fitted between the web of said closure and the middle offset of the slide and exposed at its outer reduced end through an opening in said web, and a key fitted to turn said barrel and by engagement with said lugs to operate said slide, substantially as described.

8. A pocket-safe having two opposite parallel sides and four narrower sides between them, a coin-slot in one of the narrower sides arranged obliquely to the broader parallel sides, and leaf-springs attached to the inside of the safe at opposite ends and on opposite sides of said slot and converging at their free ends crosswise of the springs away from the slot toward their inner edges, substantially as described.

9. In a pocket-safe the combination of a case having three adjoining open sides and opposite closed sides connected by posts, a U-shaped closure fitted to the open sides of the case and provided with a slide movable into and out of engagement with one or more of said posts when the closure is inserted in the case, a spring tending to hold said slide in locking position and a key adapted to withdraw the slide from locking position, substantially as described.

850,869. WRENCH. ELIJAH HUNTLEY, Seattle, Wash. Filed Dec. 11, 1905. Serial No. 291,332.

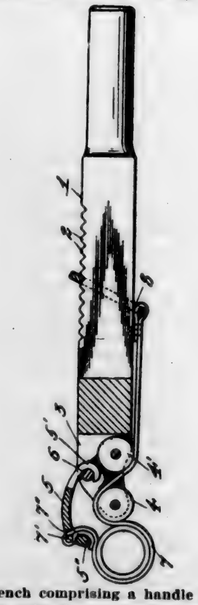

Claim.—A wrench comprising a handle provided at one end with opposite extensions, a bearing member consisting

of roller journaled between said extensions, a rigid support pivoted between said extensions above said bearing member and projecting forwardly thereof, said support having on its free end portion a downwardly-projected bearing member opposed to said first bearing member, and a flexible gripping member passing between said bearing member in engagement therewith and being formed into a loop beyond the same.

850,870. ELECTRICAL SWITCH. RAY H. MANSON, Elyria, Ohio, assignor to The Dean Electric Company, Elyria, Ohio, a Corporation of Ohio. Filed May 9, 1904. Serial No. 207,004.

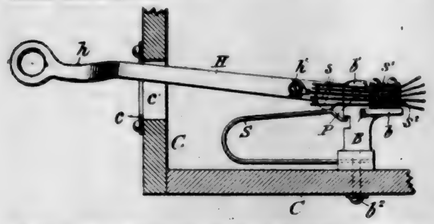

Claim.—1. An electrical switch comprising a base, contact members thereon, a pivot or fulcrum, an operating member detachably secured to said pivot or fulcrum, a yielding pressure device normally maintaining said member in operative relation with the fulcrum, and a shoulder on the base for limiting the movement of said pressure device when the operating member has been removed.

2. In an electrical switch, the combination with a base, a rearward extension thereon, of a pivot or fulcrum on said base, an operating member pivoted thereto, movable contact members actuated by said operating member, a limited pressure device normally maintaining said operating member in operative position, and an extension carried by the operating member and coöperating with the base extension for limiting its movement.

3. In an electrical switch, the combination with a base, a rearward extension thereon, of a pivot or fulcrum on said base, an operating member pivoted thereto, movable contact members actuated by said operating member, a limited pressure device normally maintaining said operating member in operative position, and a linear arm integral with said operating member adapted to limit the movement thereof by engagement with the base extension.

4. In an electrical switch, the combination with a base, of a shelf integral therewith, circuit-changing springs mounted on said shelf, an operating member, a stationary pivot on the base therefor, a pressure device normally maintaining said operating member in engagement with the pivot and an arm integral with said operating member adapted to engage the shelf to limit the movement thereof.

5. In an electrical switch, the combination with a closed casing, of a base or support therein, a shelf carried thereby, circuit-changing springs removably secured on said shelf, a stationary pivot on said base, an operating member removably engaging said pivot, a pressure device normally tending to keep said operating member in engagement with the pivot, and a rearwardly-extending linear arm adapted to limit the upward movement of said operating member, said operating member adapted to be removed from its pivot without entering the casing.

6. In an electrical switch comprising a frame having a longitudinal member and a transverse flange formed thereon, an operating-lever independent of the circuit and notched near one end, a pivot-post on the longitudinal member having its pivot lying in said notch, and a spring secured upon the longitudinal member and extending so as to exert pressure on the lever on the side opposite the notch whereby the lever is held normally raised in operative engagement with the pivot-post.

7. An electrical switch comprising a longitudinal member and a transverse flange formed thereon, an operating-lever independent of the circuit and notched near one end on its upper side, a pivot-post on the longitudinal member having its pivot lying in the notch of said lever, and a spring secured to said longitudinal member and extending up and engaging the lever on its under side and exerting pressure thereon forward of the pivot-post whereby the lever is held with its forward end raised and the notch in operative engagement with the pivot-post.

8. An electrical switch comprising a casing and an escutcheon-plate secured thereto and forming upper and lower stops, a base having a transverse flange integral therewith, an operating-lever extending through said escutcheon-plate and having a notch on its outside near one end, a pivot-post on said base engaging the notch of said operating-lever, a spring secured to the base and extending up to the under side of said lever between the pivot-post and the escutcheon-plate whereby the lever is normally held in engagement with the pivot-post and the upper stop of the escutcheon-plate, contact-springs mounted on said transverse flange, means forming an operative connection between the lever and said springs, and means independent of the escutcheon-plate for limiting upward movement of said lever.

850,871. VEGETABLE PEELER AND SCRAPER. SOSAKU NAGASSE, Los Angeles, Cal. Filed June 12, 1906. Serial No. 321,410.

Claim.—As an article of manufacture, a vegetable parer and scraper comprising a handle, one end of which has its opposite sides concaved, and an approximately straight knife secured at its ends to the opposite edges of the handle so that some space intervenes between it and the end of the handle, one edge of the knife beveled or sharpened and the other edge serrated, and the width of the knife greater than the thickness of the concaved portion of the handle.

850,872. MOTOR-CONTROLLER. ADOLPH PEDERSEN, Cleveland, Ohio, assignor to The Van Dorn-Elliott Electric Company, Cleveland, Ohio, a Corporation of Ohio. Original application filed Sept. 19, 1904, Serial No. 224,953. Divided and this application filed Aug. 16, 1905. Serial No. 274,396.

Claim.—1. The combination with an electric circuit and a motor therein; of a cut-out switch comprising a movable contact member controlled by the magnetic flux of such motor, and adapted to open the circuit when such flux reaches a predetermined maximum.

2. The combination with an electric circuit and a motor therein; of a motor-controller comprising a movable contact member, and manually-operable means adapted to move said member and controlled by the magnetic flux of such motor.

3. The combination with an electric circuit and a motor therein; of a cut-out switch comprising a movable contact member; means adapted to retain the same normally in a predetermined position; and means adapted to move said member to and retain the same in any other desired position, said latter means being controlled by the magnetic flux of such motor and adapted to have its operative and inoperative conditions changed from one to the other only when such flux reaches a predetermined maximum.

4. The combination of an electric circuit and a motor therein; a cut-out switch comprising a movable contact member; means adapted to retain the latter normally in its "off" position; and means adapted to move said member to and retain the same in any other position, said latter means being controlled by the magnetic flux of such motor, and adapted to be changed from an operative to an inoperative condition only when such flux reaches a predetermined maximum.

5. The combination with an electric circuit and a motor therein; of a motor-controller comprising a movable contact member, means adapted to retain the same normally in a predetermined position, and manually-operable means adapted to move said member to and retain the same in any other desired position, said latter means being controlled by the magnetic flux of such motor.

6. The combination with an electric circuit and a motor therein; of a motor-controller comprising a movable contact member, means adapted to retain the same normally in a predetermined position, and manually-operable means adapted to move said member to other positions, said latter means being rendered inoperative when the magnetic flux of such motor reaches a predetermined quantity.

7. The combination with an electric circuit and a motor therein; of a motor-controller comprising a movable contact member adapted to normally occupy its "off" position, a manually-operable member adapted to move said contact member to its "on" position, and retain said member in said position, said manually-operable member being rendered inoperative to retain said contact member in said "on" position when the magnetic flux of such motor reaches a predetermined quantity.

8. The combination with an electric circuit and a motor therein; of a motor-controller comprising a manually-operable member, a movable contact member, and means adapted to operatively connect said two members and controlled by the magnetic flux of such motor.

9. The combination with an electric circuit and a motor therein; of a motor-controller comprising a manually-operable member, a movable contact member, means for holding the latter normally in its "off" position, and means adapted to operatively connect said two members and actuated to disengage when the magnetic flux of such motor reaches a predetermined quantity.

10. The combination with an electric circuit and a motor therein, of a motor-controller comprising a movable handle, a member fixed thereto, a movable contact member adapted to normally occupy its "off" position, and means adapted to connect said two members and controlled by the magnetic flux of such motor.

11. The combination with an electric circuit, and a motor therein; of a motor-controller comprising a manually-operable member, a movable contact member adapted to normally occupy its "off" position, and means adapted to connect said two members whereby said contact member may be moved to other positions, said means being controlled by the magnetic flux of such motor.

12. The combination with an electric circuit and a motor therein; of a motor-controller comprising a movable handle, a member fixed to said handle, a contact member movable on said handle, means tending to retain said contact member in its "off" position, and means automatically operated to connect said contact member with said first-named member, whereby said contact member may be moved to its "on" position, said latter means being electrically controlled.

13. The combination of an electric circuit and a motor therein; a motor-controller comprising a movable contact member; means adapted to retain the same normally in its "off" position; and other means automatically operated to engage with said member, said latter means being manually operable to move said member to any other desired position and retain the same therein, said former means being rendered operative and said latter means inoperative only under the condition of an overload in the circuit.

14. The combination with an electric circuit and a motor therein; of a motor-controller comprising a manually-operable member, a movable contact member, and means carried by and movable with said manually-operable member, and adapted to be automatically operated to connect the latter with said contact member, said means being operatively controlled independently of said manually-operable member.

15. The combination with an electric circuit and a motor therein; of a motor-controller comprising a manually-operable member, a movable contact member, means adapted to normally retain the latter in a predetermined position, and means carried by and movable with said manually-operable member, and adapted to be automatically operated to connect the latter with said contact member, both of said means being operatively controlled independently of said manually-operable member.

16. The combination with an electric circuit and a motor therein; of a motor-controller comprising a manually-operable member, a movable contact member, and means carried by and movable with said manually-operable member, and adapted to be automatically operated to connect the latter with said contact member, said means being electrically controlled.

17. The combination with an electric circuit and a motor therein; of a motor-controller comprising a manually-operable member, a movable contact member, means adapted to normally retain the latter in a predetermined position, and means carried by and movable with said manually-operable member, and adapted to be automatically operated to connect the latter with said contact member, said latter means being electrically controlled.

18. The combination with an electric circuit and a motor therein; of a motor-controller comprising a manually-operable member, a movable contact member, means adapted to normally retain said contact member in a predetermined position, and means carried by and movable with said manually-operable member, and adapted to be automatically operated to connect the latter with said contact member whereby the latter may be moved to other positions, said operative connection being broken to allow said first-mentioned means to become operative when a predetermined electrical condition is attained.

19. The combination with an electric circuit and a motor therein; of a motor-controller comprising a manually-operable member, a movable contact member, and movable means adapted to be automatically operated, under the condition of no load in the circuit, to connect said two members, and adapted to retain said connection except under the condition of an overload in the circuit, whereby said contact member may be moved in either direction, and retained in any desired position, said means being adapted to be electrically operated to break the connection between said two members.

20. The combination with an electric circuit and a motor therein; of a motor-controller comprising a manually-operable member, a movable contact member adapted to normally occupy its "off" position, and movable means adapted to be automatically operated, when said contact member is in its "off" position, to connect said two members, whereby said contact member may be moved to and retained in its "on" position, said means being adapted to be electrically operated to break such connection between said two members.

21. The combination with an electric circuit and a motor therein; of a motor-controller comprising a manually-operable member, a movable contact member adapted to normally occupy its "off" position, and mechanically-operated means adapted to be automatically operated, when said contact member is in its "off" position, to connect said two members, whereby said contact member may be moved to and retained in its "on" position, said means being adapted, under the condition of an overload in the circuit, to be electrically operated to break such connection between said two members.

22. The combination with an electric circuit and a motor therein, of a motor-controller comprising a movable handle, a member fixed to said handle, a contact member movable on said handle, means adapted to be mechanically

operated to connect said two members and to be electrically operated to break such connection.

23. The combination with an electric circuit and a motor therein, of a motor-controller comprising a movable handle, a member fixed to said handle, a contact member movable on said handle, means tending to hold said contact member in its "off" position and means adapted to be mechanically operated to connect said two members whereby said contact member may be moved to its "on" position, and to be electrically operated to break such connection.

24. The combination with an electric circuit and a motor therein, of a motor-controller comprising a manually-operable member, a movable contact member adapted to open and close said circuit and to cut out a resistance therein, means adapted to normally retain said contact member in a predetermined position, and means, controlled by the magnetic flux of said motor, mounted upon said first member and adapted to operatively connect said contact member with said first member.

25. The combination with an electric circuit and a motor therein, of a motor-controller comprising a manually-operable member, a movable contact member adapted to open and close said circuit and to cut out a resistance therein, means adapted to normally retain said contact member in a predetermined position, and means, mounted on said first member, adapted normally to engage said contact member, whereby said contact member is operatively connected with said first member, and to be actuated to disengage said contact member when the magnetic flux of said motor reaches a predetermined quantity.

26. The combination with an electric circuit and a motor therein, of a motor-controller comprising a movable handle, a member fixed to such handle, a contact member movable on said handle, a spring adapted to normally retain said contact member in its "off" position, and a catch on said first-named member adapted normally to engage said contact member and to be disengaged therefrom when the magnetic flux of such motor reaches a predetermined quantity.

27. The combination with an electric circuit and a motor therein, of a motor-controller comprising a movable handle, a member fixed to such handle, a contact member movable on said handle, a spring adapted to normally retain said contact member in its "off" position, a catch on said first-named member adapted normally to engage said contact member, and a magnetizable member connected with a pole-piece of such motor and adapted when the magnetic flux in such pole-piece reaches a predetermined quantity to disengage said catch from said contact member.

28. The combination with an electric circuit and a motor therein; of a motor-controller comprising a manually-operable member, a movable contact member adapted to open and close said circuit and to cut out resistance therein, means adapted to normally retain said contact member in a predetermined position, and means automatically operated to connect said two members, said latter means being electrically controlled to be rendered inoperative only under the condition of an overload in the circuit.

29. The combination with an electric circuit and a motor therein; of a motor-controller comprising a manually-operable member, a movable contact member adapted to open and close said circuit and to cut out resistance therein, means adapted to normally retain said contact member in a predetermined position, and means mounted on said first member and adapted to be automatically operated to connect the latter with said contact member, said latter means being electrically controlled to be rendered inoperative only under the condition of an overload in the circuit.

30. The combination with an electric circuit and a motor therein; of a motor-controller comprising a movable handle, a member fixed to said handle, a contact member movable on said handle, means tending to retain said contact member in its "off" position, means automatically operated to connect said contact member with said first-named member, said latter means being electrically controlled to be rendered inoperative only under the condition of an overload in the circuit, and a reversing-switch interlocked with said handle so as to be operable only when the latter is in its "off" position.

31. The combination with an electric circuit and a motor therein; of a controller member therefor, a retractile spring adapted to throw said member into its "off" position, a handle, and means for connecting the latter and said member, said connecting means rendering said spring inoperative, a predetermined quantity of flux in such motor rendering said connecting means inoperative and said spring operative.

32. The combination with an electric circuit and a motor therein; of a controller member therefor, a movable handle, a member fixed to the latter, a spring-actuated locking-piece secured to said fixed member and adapted to engage said controller member, and a retractile spring connected to the latter and adapted to actuate the same to assume its "off" position when said locking-piece is disengaged therefrom, the actuation of said locking-piece being controlled by the magnetic flux of the motor.

33. The combination with an electric circuit and a motor therein; of a movable controller member therefor, a handle, a spring-actuated catch carried by the latter and adapted to engage and disengage said controller member, a retractile spring arranged to throw the latter into its "off" position when said catch is disengaged, and a magnetizable member connected with a pole-piece of the motor-field, said catch being located in the magnetic field of said magnetizable member and forming an armature for the latter.

34. In devices of the general character described, the combination of a motor provided with a suitable casing; a controller comprising a movable contact member, manually-operable means adapted to move the latter "off" and "on" as desired, said latter means being inoperative only under the condition of an overload in the circuit, and means adapted to throw said contact member automatically to its "off" position under such overload; and a casing for said controller mounted upon said motor-casing.

35. In devices of the general character described, the combination of a motor provided with a suitable casing; a controller-casing mounted upon said motor-casing; a movable handle for holding and guiding the tool; a contact member within the latter normally operatively connected to said handle; and connecting means within said controller-casing for said handle and contact member adapted to be actuated to release independently of the handle operation; and automatic means for throwing said contact member, when so released, to its "off" position, said contact member, when so released, being incapable of any manual operation or of any interference with its movement to its "off" position.

36. In devices of the general character described, the combination of a motor provided with a suitable casing; a controller-casing mounted upon said motor-casing; a movable handle for holding and guiding the tool extending exteriorly from within said controller-casing; a contact member within the latter normally operatively connected to said handle; and connecting means within said controller-casing for said handle and contact member adapted to be electrically actuated to release; and automatic means for throwing said contact member, when so released, to its "off" position, said contact member, when so released, being incapable of any manual operation or of any interference with its movement to its "off" position.

37. In devices of the general character described, the combination of a motor provided with a suitable casing; a controller-frame mounted upon said motor-casing substantially directly over a pole-piece of the motor-field; and a movable contact member mounted upon said controller-frame and controlled by the magnetic flux of the motor-field.

38. In devices of the general character described, the combination of a motor provided with a suitable casing; a controller-casing mounted upon said motor-casing substantially directly over a pole-piece of the motor-field; a movable handle for holding and guiding the tool extending exteriorly from within said controller casing; a contact member within the latter; means tending to hold said contact member in its "off" position; and means normally operatively connecting said handle and said contact member, a predetermined quantity of magnetic flux in the motor-field actuating said latter means to disengage said contact member.

39. The combination with an electric circuit and a motor therein; of means for automatically breaking said circuit when the magnetic flux of the motor reaches a predetermined quantity.

40. The combination of an electric circuit and a motor therein; means for automatically breaking said circuit when the magnetic flux of the motor reaches a predetermined quantity; and manually-operable means for closing the break in said circuit made by said automatically-operating means.

850,873. MITER-BOX. JOHN L. PRINGLE, New Britain, Conn. Filed Oct. 17, 1905. Serial No. 283,096.

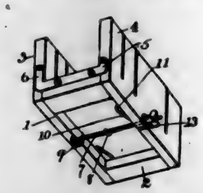

Claim.—1. A miter-box including a bottom and a side projecting beyond the under surface of the bottom, a hinge including a strap angularly formed and pivoted to both the bottom and the side, and means located on the bottom to engage the projecting part of the side to hold it in an upright position.

2. A miter-box including a bottom and a side projecting beyond the under surface of the bottom, and having a slot in said projecting part, a hinge including a strap angularly formed and pivoted to both the bottom and the side at the ends thereof, and a lock located on said bottom to engage said slot to hold the side in an upright position.

3. A miter-box including a bottom and a side projecting beyond the under surface of the bottom, a stop located on the under surface of the bottom to engage said projecting part, a hinge including a stop angularly formed and pivoted to both the bottom and the side at the ends thereof, and means located on the bottom for engaging said projecting part and holding it against said stop.

4. A miter-box including a bottom and a side pivoted thereto and projecting beyond the under surface thereof, a stop to engage said projecting edge to limit the swinging movement of the side, and means located on the bottom to engage said projecting part of the side and hold it in an upright position.

5. A miter-box including a bottom and a side projecting beyond the under surface of the bottom, a hinge including a strap angularly formed and pivoted to both the bottom and the side, a stop to preventing swinging movement of the side beyond a line with its inner surface at right angles to the inner surface of the bottom, and means engaging said projecting part for holding the side against said stop.

6. A miter-box including a bottom and sides pivoted at opposite side edges thereof, stops to limit the swinging movement of each side beyond a line with the inner surface of the sides at right angles with the inner surface of the bottom, and a clamp extending across the bottom and engaging the lower edges of the sides to hold them against said stop.

7. A miter-box including a bottom and two sides with projecting edges each having slots, the sides being secured by joints, and a lock for said sides including a bolt pivotally secured to the bottom with a head and clamp to engage the sides to hold them in position, and a spring-catch for said bolt.

8. A miter-box including a bottom and a side pivoted thereto and projecting beyond the under surface of the bottom, said side being pivotally secured to the bottom, and means located on the bottom to engage said projecting part of the side to hold it in an upright position.

9. A miter-box including a bottom and a side pivoted thereto and projecting beyond the under surface of the bottom and having a slot in said projecting part, and a lock located on said bottom to engage said slot to hold the side in an upright position.

10. In a miter-box, a bottom and a side pivoted thereto and having its edge projecting beyond the under surface of the bottom, stops to engage said projecting edge to limit the swinging movement of the side, and a lock located on the bottom of the box to engage said projecting edge and hold it against said stops.

850,874. TURNER'S TOOL. JAMES H. TRIPP, Vanceboro, N. C., assignor of one-fourth to William Morris, one-fourth to Webster Morris, and one-fourth to James H. Morris, Vanceboro, N. C. Filed Oct. 12, 1906. Serial No. 338,673.

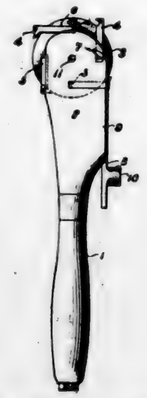

Claim.—1. A tool comprising a handle-stock having a bifurcated head, a disk journaled between the bifurcations of the head, said disk having in its side a tangentially-disposed groove, a cutting-blade fitting in said groove and securing means passing transversely through the stock-head and engaging said blade.

2. A tool comprising a handle-stock having a bifurcated head, a shaft journaled in said bifurcations and having a thumb-button located at the end thereof, a disk mounted upon the shaft and located between the bifurcations of the head, said disk having in its side a tangentially-disposed groove, a cutting-blade fitting in said groove and securing means passing transversely through the stock-head and engaging said blade.

850,875. BUCKLE. ISAAC BLUM, Baltimore, Md., assignor to Alma Manufacturing Company of Baltimore City, Baltimore, Md., a Corporation of Maryland. Filed Jan. 21, 1907. Serial No. 353,286.

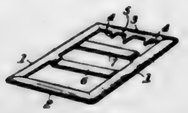

Claim.—A buckle, consisting of a frame composed of side bars and end bars of concavo-convex shape in cross-section, one of the end bars having strap-engaging teeth projecting from its inner edge backwardly with their points within the space bounded by the planes in which

are the upper and lower edges of the frame, and intermediate flat cross-bars, one of which is depressed below the level of the frame and the other elevated above the level of the frame.

850,876. METALLIC TIE. JOHN D. BOWNE, New York, N. Y., assignor of one-half to Samuel L. Bevan, New York, N. Y. Filed Feb. 27, 1907. Serial No. 359,620.

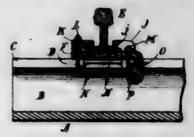

Claim.—1. In a metallic tie, the combination with the tie having a trough-like form and upwardly-convergent sides, the said tie having narrow horizontal flanges at the tops of the said sides, the said flanges being provided with recesses near the ends of the tie, of a bridge-piece having downwardly-inclined ends fitting exteriorly upon the tie, the said bridge-piece having the extra flanges arranged to engage the said recesses of the flanges of the tie, the said bridge-piece having the recessed retaining-lugs adapted to engage the flange of a rail, a clamping-plate arranged inside the tie below its said horizontal flanges, and a rail-clamping block arranged upon the bridge-piece, and bolts passing through the said clamping-plate, block and bridge-piece whereby the rail and bridge-piece are secured to the tie, substantially as described.

2. In a metallic tie, the combination with the tie having a trough-like form and upwardly-convergent sides, the said tie having narrow horizontal flanges at the tops of the said sides, the said flanges being provided with recesses near the ends of the tie, of a bridge-piece having downwardly-inclined ends fitting exteriorly upon the tie, the said bridge-piece having the extra flanges arranged to engage the said recesses of the flanges of the tie, the said bridge-piece having the recessed retaining-lugs adapted to engage the flange of a rail, a clamping-plate arranged inside the tie below its said horizontal flanges, the said bridge-piece having a downwardly-projecting plate at one side provided with a ledge adapted to engage the said clamping-plate, and a rail-clamping block arranged upon the bridge-piece, and bolts passing through the said clamping-plate, block and bridge-piece whereby the rail and bridge-piece are secured to the tie, substantially as described.

3. In a metallic tie, the combination with the tie having a trough-like form and upwardly-projecting sides, the said tie having narrow horizontal flanges at the tops of the said sides, the said flanges being provided with recesses near the ends of the tie, of a bridge-piece having downwardly-inclined ends fitting exteriorly upon the tie, the said bridge-piece having the extra flanges arranged to engage the said recesses of the flanges of the tie, the said bridge-piece having the recessed retaining-lugs adapted to engage the flange of a rail, a clamping-plate arranged inside the tie below its said horizontal flanges, and a rail-clamping block arranged upon the bridge-piece, and bolts passing through the said clamping-plate, block and bridge-piece whereby the rail and bridge-piece are secured to the tie, substantially as described.

4. In a metallic tie, the combination with the tie having a trough-like form and upwardly-projecting sides, the said tie having narrow horizontal flanges at the tops of the said sides, the said flanges being provided with recesses near the ends of the tie, of a bridge-piece having downwardly-inclined ends fitting exteriorly upon the tie, the said bridge-piece having the extra flanges arranged to engage the said recesses of the flanges of the tie, the said bridge-piece having the recessed retaining-lugs adapted to engage the flange of a rail, a clamping-plate arranged inside the tie below its said horizontal flanges, the said bridge-piece having a downwardly-projecting plate at one side provided with a ledge adapted to engage the said clamping-plate, and a rail-clamping block arranged upon the bridge-piece, and bolts passing through the said clamping-plate, block and bridge-piece whereby the rail and bridge-piece are secured to the tie, substantially as described.

850,877. LOCK. JAMES C. DAWSON, St. Louis, Mo., assignor to Sieber & Trussell Manufacturing Company, a Corporation of Illinois. Original application filed Apr. 30, 1906, Serial No. 314,435. Divided and this application filed Nov. 15, 1906. Serial No. 343,609.

Claim.—1. In a lock, in combination, a pressure-advanced bolt having a lug, a spring-advanced tumbler movable across the path of the lug on the bolt, the rear face of the tumbler being inclined and the forward face of the tumbler being abrupt, and a key for withdrawing the tumbler and partially withdrawing the bolt.

2. In a lock, in combination, a pressure-advanced bolt having a lug, a spring-advanced tumbler movable across the path of the lug on the bolt, the rear face of the tumbler and the forward face of the bolt-lug being inclined and the forward face of the tumbler and the rear face of the bolt-lug being abrupt, and a key for withdrawing the tumbler and partially withdrawing the bolt.

3. In a lock, in combination, a pressure-advanced bolt having a lateral wing, one face of the wing being inclined and the opposite face of the wing being abrupt, a spring-advanced tumbler engaging the wing, and a key engaging the tumbler to move it away from the bolt and engaging the bolt to withdraw it.

4. In a lock, in combination, a casing, a reciprocable bolt extending through the casing and having lateral wings with abrupt and oblique shoulders, a pair of spring-advanced tumblers engaging such shoulders, and a key for withdrawing the tumblers and partially withdrawing the bolt.

5. In a lock, in combination, a chambered casing, a reciprocable bolt extending through the casing and having lateral wings each having one abrupt shoulder and one inclined face, a pair of reciprocative tumblers, one engaging each wing, a retractile spring reacting between the tumblers to hold them in engagement with the bolt, and a two-ward key engaging the tumblers to move them away from the bolt and engaging a wing of the bolt to raise it.

850,878. BOILER-TRAP. CAREY DENNIS, Carthage, Mo., assignor of one-fourth to Asa Hurst, Carthage, Mo. Filed Aug. 23, 1906. Serial No. 331,770.

Claim.—1. A boiler-trap, comprising a hollow body adapted to rest on the bottom of a boiler or the like, a nipple communicating with the body and adapted to fit within the end of a feed-pipe connected with the boiler, and rockers carried by the body for raising and lowering the trap to facilitate its connection with the feed-pipe.

2. A boiler-trap comprising a body part, a sediment-pipe connected therewith and provided with perforations, a check-valve for discharging the water from the trap, an additional check-valve for admitting sediment to the trap, a feed-pipe, rockers movably connected with the trap, and means for moving the rockers so as to raise and lower the trap when in position in a boiler.

3. A boiler-trap comprising a body part, a sediment-pipe connected therewith and provided with perforations, a check-valve for discharging the water from the trap, an additional check-valve for admitting sediment to the trap, a feed-pipe, a shaft below the trap, a rocker on each end of the shaft, an operating-rod provided with an eye, a link connecting the rod and the rockers, and a hook on the sediment-pipe to engage the eye.

4. The combination of a shell, a feed-pipe, a cleaning-trap within the shell, a movable connection between the trap and the feed-pipe, and means for raising and lowering the trap.

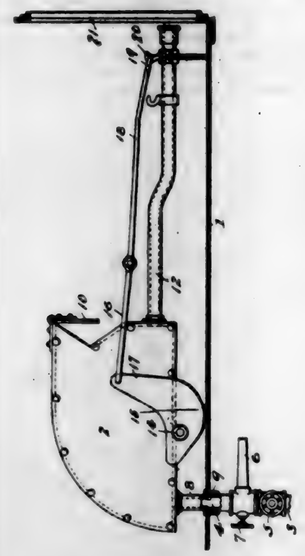

850,879. ENVELOP-MACHINE. CHARLES E. DULIN, Sandy Hill, N. Y., assignor to Union Paper Bag Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Nov. 5, 1901. Serial No. 81,166.

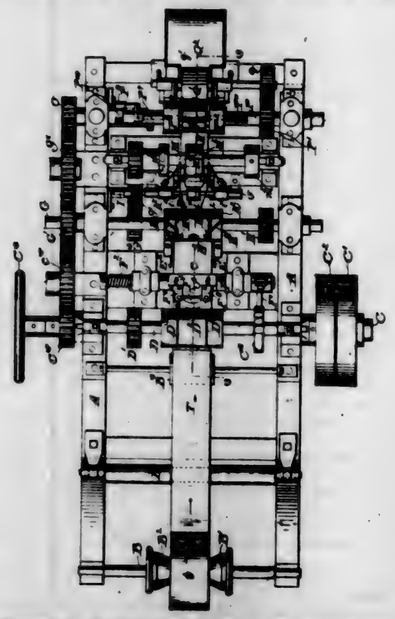

Claim.—1. In an envelop-machine, the combination with mechanisms for severing lengths from a paper strip and trimming such lengths into the form of blanks having their front ends narrower than their rear ends, of flap-turning mechanism acting to fold the edges T^9 of the blank over on the part T^{10} as the blanks are fed through the machine, said mechanism consisting of a former having plowshare-like sides and a central thin plate lying between said sides and over which they turn the edges T^9 and fold pressing-fingers K^3 K^3, situated in the rear of the former and thin plate and acting to further define the folds of the edges.

2. In an envelop-machine, the combination with mechanisms for severing lengths from a paper strip and trimming such lengths into the form of blanks having their front ends narrower than their rear ends, of flap-turning mechanism acting to fold the edges T^9 of the blank over on the part T^{10} as the blanks are fed through the machine, paster mechanism for applying lines of paste to the folded edges, a pair of creasing-rolls, acting after the edges are folded and pasted, said creasing-rolls being adapted to form the crease-line T^8 across the blank and feed-rollers subsequently acting to engage the blank at the crease-line T^8 and press the end T^{11} down on the folded and pasted edges T^9.

3. In an envelop-machine the combination with mechanisms for severing lengths from a paper strip and trimming such lengths into the form of blanks having their front ends narrower than their rear ends, of flap-turning mechanism acting to fold the edges T^9 of the blank over on the part T^{10} as the blanks are fed through the machine, paster and creasing rolls P^4 O^4 acting to apply lines of paste to the folded edges T^9 and to crease the blanks transversely on the line T^8 and a feed-roller acting on the roll O^4 to engage the blanks at the crease and press the end T^{11} down on the folded and parted edges.

850,880. ENVELOP-MACHINE. CHARLES E. DULIN, North Tonawanda, N. Y., assignor to Union Paper Bag Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Original application filed Nov. 5, 1901, Serial No. 81,116. Divided and this application filed Aug. 1, 1906. Serial No. 328,648.

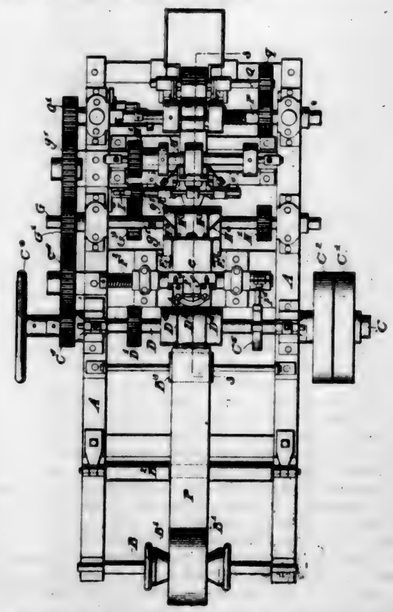

Claim.—1. In an envelop-machine, the combination with constantly-acting feed mechanism, of a table over which

the paper strip is fed, said table having a transverse elevated knife-edge, an oscillating cutter having cutting edges acting with said knife-edge to sever the paper into lengths, and a stripper supported by said cutter and connected to the cutter by resilient means acting to grasp and arrest the motion of the paper above the knife, and hold it until the knife is retracted.

2. In an envelop-machine, the combination with constantly-acting feed mechanism, of a table over which the paper strip is fed, said table having a transverse elevated knife-edge, an oscillating cutter acting with said knife-edge to sever the paper into lengths and the rotating trimming mechanism acting to cut off lateral strips of the front end of the blanks, as they pass forward in the machine after being severed by the oscillating cutter.

3. In an envelop-machine, the combination with feed mechanism of a table over which the paper strip is fed, said table having an elevated knife-edge, an oscillating cutter acting with said knife-edge to sever the paper into lengths, trimming mechanism including the rolls H^2 G^4 which make the final cuts, after the blanks have been severed by the oscillating cutter and while they are fed forward therefrom, said mechanism acting to cut off lateral strips of the front end of the blanks, and one of said rolls having pins G^6 G^6 which hold the ends of the severed strips to it and stripping-fingers G^7 G^7 acting to disengage the strips from the pins and roll.

4. In an envelop-machine, an oscillating cutter for severing lengths from a paper strip having in combination a circular knife-blade F^3 adjustable in angular position and lateral fixed blades F^4 F^4.

5. In an envelop-machine, an oscillating cutter for severing lengths from a paper strip having in combination a circular knife-blade F^3 adjustable in angular position and lateral fixed blades F^4 F^4 in combination with a stripper F^5 secured to the oscillating cutter by springs.

850,881. COMPOSITE METAL. THOMAS A. EDISON, Llewellyn Park, Orange, N. J. Original application filed Mar. 30, 1905, Serial No. 252,933. Divided and this application filed Jan. 20, 1906. Serial No. 296,955.

Claim.—1. A composite composed of two or more metals, each in the form of a substantially integral sponge-like structure and said structures being engaged intimately together to constitute a solid mass, substantially as and for the purposes set forth.

2. A composite composed of cobalt and nickel, each in the form of a substantially integral sponge-like structure intimately engaging together to form a continuous solid mass, substantially as and for the purposes set forth.

850,882. BASE FOR DISPLAY-FIXTURES. HARRY FRANKEL, New York, N. Y. Original application filed Apr. 13, 1906, Serial No. 311,418. Divided and this application filed Jan. 12, 1907. Serial No. 351,910.

Claim.—1. A base for a display-fixture and similar devices having a body portion, a recess at the bottom of said body portion, a soft flat pad applied to the bottom of said body portion, a sheet-metal shell or lining applied to the external portion of said body at its upper side and extending around its edges, the lower edge of said shell being turned inwardly to form an integral flange clamping the pad portion securely to the base.

2. A base for a display-fixture and similar devices, having a body portion provided with a recess in the bottom thereof, a soft flat pad applied to the bottom of said body portion, and means to clamp said pad to the edges of said body portion.

3. A base for a display-fixture and similar devices, having a body portion provided with a recess in the bottom thereof, a filling-disk and soft pad, each extending to the edges of said bottom portion, and clamping means securing said pad and disk to the body portion.

4. A base for a display-fixture and similar devices, comprising a solid body portion, provided with a recess in the bottom thereof, a filling-disk extending to the edges of said body portion, a smaller filling-disk thereon, a soft pad extending over both of said disks, and means to clamp said first-named disk and pad to the edges of said body portion.

850,883. SOUND-BOX. EDWARD D. GLEASON, Philadelphia, Pa., assignor to Victor Talking Machine Company, a Corporation of New Jersey. Original application filed July 26, 1902, Serial No. 117,134. Divided and this application filed Feb. 8, 1907. Serial No. 356,319.

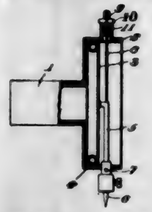

Claim.—1. In a reproducer, a fulcrumed stylus-bar, a spring engaging said bar for exerting pressure to tension the bearing of said bar, said spring also engaging stationary means on the reproducer to one and the same side of the bearing as the engagement between said spring and bar, the points of engagement between the spring and said bar, between said spring and said stationary means, and the fulcrum-point, being substantially in longitudinal alinement.

2. In a reproducer, a stylus-bar fulcrumed on an anti-friction-bearing, and a spring engaging said bar for exerting pressure to tension said bearing in a plane of the axis of oscillation thereof, said spring also engaging stationary means on another part of reproducer to one and the same side of said bearing as the engagement between said spring and bar.

3. In a sound recording and reproducing machine, the combination with a sound-box casing of a diaphragm, a stylus-bar having a transverse bearing, and an elastic and adjustable suspension engaging said stylus-bar in the rear only of said bearing, to hold said bearing in position.

4. In a sound recording and reproducing machine, the combination with a sound-box casing of a stylus-bar having a transverse bearing, a suspension engaging said stylus-bar in the rear only of said bearing, to hold the latter in position, and means adjustably securing said suspension.

5. In a sound recording and reproducing machine, the combination with a sound-box casing of a diaphragm, a stylus-bar mounted on an axial bearing in such a manner as to hold the said bar in contact with the sound-box and against longitudinal movement in one direction, a suspension attached to said stylus-bar and passing diametrically through the sound-box to the opposite side thereof, the said suspension exerting a pressure to hold said bearing under tension against the sound-box casing, and means for adjustably securing said suspension in position.

6. In a sound recording and reproducing machine, the combination with a sound-box casing of a diaphragm, a stylus-bar having an axial bearing on the sound-box casing, to hold the stylus-bar against longitudinal movement in one direction, a suspension-wire attached to said bar, the said wire exerting a pressure to hold said bearing under tension against the sound-box casing, and an adjusting-nut for securing the wire at the opposite side of said sound-box.

7. In a sound recording and reproducing machine, the combination with a sound-box casing of a diaphragm, a stylus-bar having an antifriction-bearing against said casing to hold the stylus-bar against longitudinal movement in one direction, a suspension-wire attached to the said stylus-bar, said wire tensioning said bearing against said casing, and means at the opposite side of the casing for adjustably supporting said wire.

850,884. HOLDING DEVICE FOR SHOE-UPPERS. JOHN B. HANSEN, Brockton, Mass., assignor to O. A. Miller Treeing Machine Company, Portland, Me., a Corporation of Maine. Original application filed Feb. 1, 1905, Serial No. 243,690. Divided and this application filed Apr. 9, 1906. Serial No. 310,759.

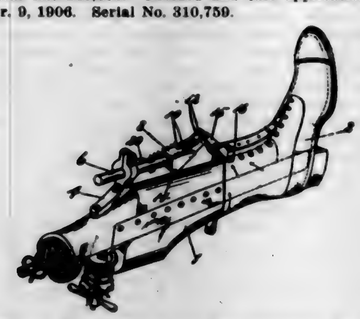

Claim.—1. In a device of the class described, the combination with a supporting member, of a lever fulcrumed on said supporting member, a hook flexibly connected with the lever and adapted to engage a shoe-upper, and a spring arranged to rock the lever in the direction to pull the shoe-upper forward and upward.

2. In a device of the class described, the combination with a supporting member, of a pair of levers fulcrumed on said member and carrying hooks adapted to engage a shoe-upper, and tension-springs extending obliquely with relation to said levers to rock said levers in a direction for pulling the shoe-upper.

3. In a device of the class described, the combination with a supporting member, of a pair of independently-movable levers fulcrumed on said supporting member and provided with hooks to engage a shoe-upper, yielding means for rocking said levers away from the shoe, and stops for limiting said rocking movement and holding said levers in predetermined position adjacent to one another.

4. In a device of the class described, the combination with a supporting member, of a pair of independently-movable levers fulcrumed on said supporting member, and hooks carried by the levers and adapted to engage opposite quarters of a shoe, said device having provision for causing the levers and hooks to pull the quarters of the shoe always in substantially the same planes.

5. In a holder of the class described, the combination with a supporting member, of levers fulcrumed on said supporting member, hooks carried by the levers, springs arranged to hold the levers normally in a position inclined to the supporting member and adapted to permit said levers to occupy positions of different inclination to the supporting member whereby the holder may be extended for engaging shoes of different sizes.

6. In a device of the class described, the combination with a supporting member, of a lever fulcrumed on said supporting member, a hook pivotally connected with the lever and adapted to engage a shoe-upper, a spring arranged to rock the lever in the direction to pull the shoe-upper forward and upward, and a stop arranged to cooperate with the spring for positioning the lever approximately vertically when the hook is disengaged from the shoe-upper.

7. The combination with a tree adapted to support a shoe, of means for holding the shoe in position thereon, said means comprising a supporting member, levers fulcrumed upon said member, hooks carried by the outer ends of the levers and adapted to engage lacing hooks or eyelets in the upper, and means acting on said levers for normally exerting tension upwardly and forwardly on the hooks.

8. The combination with a tree adapted to support a shoe, of means for holding the shoe in position thereon, said means comprising a supporting member, levers pivotally jointed to said supporting member, hooks connected to the outer ends of said levers and adapted to engage the shoe-upper, said levers normally standing at an angle to the supporting member, and springs connecting the supporting member and levers and tending further to flex the joint between the levers and supporting member for causing the levers to exert tension forwardly and upwardly on the shoe-upper.

850,885. MEANS FOR MOUNTING ROCK-DRILLING MACHINES OR ENGINES. HENRY HELLMAN and LEWIS C. BAYLES, Johannesburg, Transvaal. Original application filed Jan. 11, 1905, Serial No. 240,661. Divided and this application filed June 12, 1906. Serial No. 321,327.

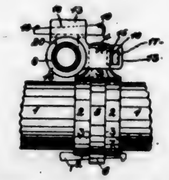

Claim.—1. In means for mounting a rock-drilling machine or engine, in combination, an engine-clamping means comprising a pair of sleeves surrounding the machine or engine, a third sleeve disposed between those already named and also surrounding the machine or engine, a key engaging all three sleeves and adapted to pull the last-named sleeve in a direction opposite to the pull upon those first named, and a column-engaging projection secured to said engine-clamping means.

2. In means for mounting a rock-drilling machine or engine, in combination, an engine-clamping means comprising a pair of rings surrounding the machine or engine, a third ring independent of and disposed between those already named and also surrounding the machine or engine, a key engaging all three rings and adapted to pull the middle ring in a direction opposite to the pull upon those first named, and a column-engaging projection securing the first-named rings together.

3. In means for mounting a rock-drilling machine or engine, in combination, an engine-clamping means comprising a pair of rings surrounding a machine or engine, and each provided with a groove in its outer rim, a third ring independent of and disposed between those already named and also surrounding the machine or engine, a key slidably engaging the grooves in the rings first named and engaging the inner wall of the intermediate ring, and a column-engaging projection secured to said engine-clamping means.

4. In means for mounting a rock-drilling machine or engine, in combination a column, a column-clamp, means for adjustably supporting the machine or engine, said means comprising a sleeve surrounding the drill-case and formed with a slot and a ring located in said slot and surrounding the drill-case, the ring being constructed with an internal recess a key located in said recess operating between the ring and sleeve for adjustably clamping the sleeve to the drill-case, said sleeve being constructed with a cylindrical projection and the column-clamp with a hole to receive said projection, the column-clamp being constructed with a key and gib way and a key and gib arranged therein, the latter engaging the projection on the sleeve and the key serving to force the gib into engagement therewith for securing the supporting-sleeve to the column-clamp.

5. In means for mounting a rock-drilling machine or engine, in combination, a sleeve surrounding the machine or engine, a ring and key securing said sleeve to the drill-case, the sleeve being formed with a projection, a column, a column-clamp, the latter constructed with a hole to receive the projection on the sleeve and with a key and gib way, a key and gib arranged therein, the column-clamp being constructed with another key and gib way and a key

and gib arranged therein for adjustably securing the clamp to the column.

850,886. TELEPHONE ATTACHMENT. DELSON G. HOBBY, Albion, N. Y., assignor of one-half to Fred L. Ferris, Albion, N. Y. Filed May 14, 1906. Serial No. 316,782.

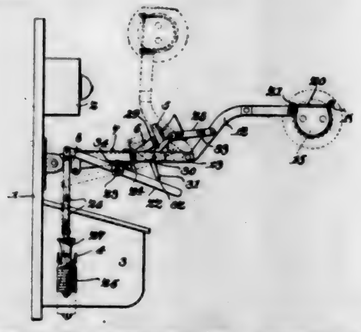

Claim.—1. The combination with a telephone comprising a transmitter-arm, a receiver, and a receiver-fork adapted to control the circuit of the telephone, of a receiver-supporting mechanism, said mechanism comprising a structure detachably secured to the transmitter-arm, two members independently fulcrumed on the structure, a holder on the front end of one of the members for removably supporting the receiver, a device on the other member arranged to actuate the receiver-fork, and a means on the structure for transmitting movement from the receiver-holding member to the said device-carrying member.

2. The combination with a telephone and a transmitter-arm, of a receiver-supporting mechanism detachably mounted on said arm, said mechanism comprising a frame or bracket, a forwardly-extending receiver-carrying arm, a lever for controlling the circuit of the telephone, and a means for actuating the lever by the arm and for supporting the latter in its operative position.

3. The combination with a telephone, and a receiver-hook for controlling the circuit of the telephone, of a receiver-supporting mechanism mounted on the telephone, said mechanism comprising a bracket, an arm pivoted thereto which supports the receiver, a lever pivoted on the bracket which controls the said receiver-hook, a toggle-link connection between the arm and lever, and means for supporting the receiver on the arm.

4. The combination with a telephone, and a receiver-hook for controlling the circuit of the telephone, of a receiver-supporting mechanism comprising a bracket, an arm pivoted thereon, a frame carried by the arm, means on the frame for detachably holding the receiver of the telephone, a weight for actuating the receiver-hook, a lever on the bracket separate from the arm for supporting the weight and a means between the lever and arm for lifting the weight from the said hook.

5. The combination with a telephone comprising a receiver, and a receiver-hook for controlling the circuit of the telephone, of a bracket, a forwardly-extending arm pivoted thereon, a toggle-link connection between the bracket and the arm for supporting the latter in its operative and inoperative positions, and means operated by the arm for actuating the receiver-hook.

6. The combination with a telephone comprising a receiver, and a receiver-hook for controlling the circuit of the telephone, of a receiver-carrying arm pivotally mounted on the telephone, a lever mounted on the arm, a bell-crank lever connected with the first-mentioned lever and pivoted on the bracket, a bracket on which the arm is mounted, means on the bracket for actuating the receiver-hook, and a connection between the bell-crank lever and the said means.

7. The combination with a telephone comprising a receiver and a receiver-hook for controlling the circuit of the telephone, of a receiver-supporting mechanism comprising a bracket having a forward and a lateral extension, a walking-beam pivoted on the lateral extension, a weight for controlling the receiver-hook, links for attaching the weight on the beam, an arm for holding the receiver which is pivoted on the forward extension, and means for transmitting motion from the arm to the walking-beam.

8. The combination with a telephone comprising a receiver and a receiver-hook for controlling the circuit of the telephone, of a receiver-supporting mechanism comprising a bracket having a forward and a lateral extension, a device for attaching the mechanism on the telephone, a walking-beam pivoted to the lateral extension, a weight for controlling the receiver-hook, links for attaching the weight on the beam, an arm for holding the receiver which is pivoted to the forward extension, and means for transmitting motion from the arm to the walking-beam.

9. The combination with a telephone comprising a receiver and a receiver-hook for controlling the circuit of the telephone, of a receiver-supporting mechanism comprising a bracket having a forward and a lateral extension, a device for attaching the mechanism on the telephone, a walking-beam pivoted to the lateral extension, a weight for controlling the receiver-hook, links for attaching the weight on the beam, an arm pivotally mounted on the bracket, a laterally-extending frame carried by the arm, means on the frame for detachably holding the receiver, and means between the arm and walking-beam for transmitting motion from the former to the latter.

10. The combination with a telephone comprising a receiver, and a receiver-hook for controlling the circuit of the telephone, a receiver-supporting mechanism comprising a bracket, a walking-beam and a receiver-carrying arm pivotally mounted on the bracket to move in two different vertical planes, toggle-links between the bracket and the arm one of which comprises a bell-crank lever, a finger extending from the bell-crank lever to engage the walking-beam whereby movement is transmitted from the arm to the latter.

850,887. ADJUSTING CLOCKS AND WATCHES TO CHANGES IN TEMPERATURE. SAMUEL KAHAN, New York, N. Y. Filed July 31, 1906. Serial No. 328,536.

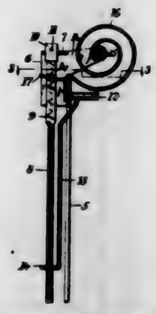

Claim.—1. A device of the class described, comprising an oscillating member, means for rigidly supporting one end thereof, a thermostatic coil in engagement with said oscillating member adjacent its point of support and adapted to maintain constant its operating length to compensate for variations in temperature, and means adjacent said coil for preventing movement thereof other than that caused by changes in temperature.

2. A device of the class described, comprising a pendulum, means for supporting the same, a thermostatic coil having one end thereof rigidly supported and the opposite end thereof in engagement with said pendulum adjacent its point of support and adapted to vary its point of oscillation, and means in engagement with said coil adjacent the last-mentioned end thereof and adapted to prevent

movement thereof in the plane of movement of the pendulum.

3. A device of the class described, comprising a pendulum having a supporting-feather, means for rigidly supporting one end of said feather, a thermostatic coil having one end rigidly supported and the opposite free end in engagement with the feather of said pendulum below the point of support, and plates in engagement with the opposite sides of the free end of the coil and adapted to prevent longitudinal movement thereof.

4. A device of the class described, comprising a pendulum having a supporting-feather, means for rigidly supporting one end of the feather, a thermostatic coil having one end rigidly supported and the other end in engagement with the feather of the pendulum below said point of support and movable in a plane at right angles to the plane of movement of the pendulum, and means for preventing lateral movement of the last-mentioned end of said coil.

5. A device of the class described, comprising a plurality of substantially parallel supporting members, a pendulum having a feather supported adjacent the upper ends of said members and extending therebetween, and a thermostatic coil having one end rigidly supported and the free end of a width substantially equal to the distance between said supporting members and having a slot through which the feather of said pendulum extends, whereby the point of oscillation of the pendulum may be varied to compensate for variations in the length of said pendulum.

850,888. DOVETAILING AND TENONING MACHINE. WILLIAM D. KELLY, Chicago, Ill. Filed Aug. 27, 1906. Serial No. 332,186.

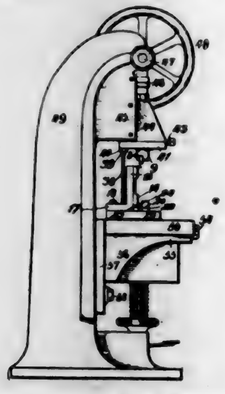

Claim.—1. In a dovetailing and tenoning machine, the combination of a movable tenon and mortise forming die, a fixed tenon and mortise forming die, and a backing support between the two dies, for the dies to act and simultaneously form the tenon and mortise at and in both ends of the material operated upon, the mortise being formed by endwise in-driving the section therefor into the body of the material below the plane of the base of the tenon and mortise, substantially as described.

2. In a dovetailing and tenoning machine, the combination of a movable tenon and mortise forming die, having punches and openings thereon, a jaw overhanging the punches and carried by the die, a fixed tenon and mortise forming die having punches and openings thereon, a jaw overhanging the punches and carried by the die, and a backing-support between the two dies, for the dies to act and simultaneously form the tenon and mortise at and in both ends of the material operated upon, the mortise being formed by endwise in-driving the section therefor into the body of the material below the plane of the base of the tenon and mortise, substantially as described.

3. In a dovetailing and tenon forming machine, the combination of a movable tenon and mortise forming die, a fixed tenon and mortise forming die, a backing-plate between the two dies, a stripping-plate fixed on the backing-plate to coact with the movable die, and a movable stripping-plate to coact with the fixed die, for the dies to act and simultaneously form the tenons and mortises, the mortise being formed by endwise in-driving the section therefor into the body below the plane of the base of the tenon and mortise, substantially as described.

4. In a dovetailing and tenoning machine, the combination of a movable tenon and mortise forming die having punches and openings thereon, a jaw overhanging the punches and carried by the die, a fixed tenon and mortise forming die having punches and openings thereon, a jaw overhanging the punches and carried by the die, a backing-support between the two dies, a stripping-plate fixed on the backing-plate to coact with the movable die, and a movable stripping-plate to coact with the fixed die, for the dies to act and simultaneously form the tenons and mortises, the mortise being formed by endwise in-driving the section therefor into the body below the plane of the base of the tenon and mortise, substantially as described.

5. In a dovetailing and tenoning machine, the combination of a movable upper tenon and mortise forming die, a fixed lower tenon and mortise forming die, a vertical backing-support between the two dies, for the dies to act and simultaneously form the tenon and mortise at and in both ends of the material operated upon, the mortise being formed by endwise driving the section therefor into the body of the material below the plane of the tenon and mortise, substantially as described.

6. In a dovetailing tenoning machine, the combination of a movable upper tenon and mortise forming die, a fixed lower tenon and mortise forming die, a vertical backing-support between the two dies, an upper stripping-plate coacting with the upper die, and a lower stripping-plate coacting with the lower die, for the dies to act and simultaneously form the tenon and mortise at and in both ends of the material operated upon, the mortise being formed by endwise driving the section therefor into the body of the material below the plane of the tenon and mortise, substantially as described.

7. In a dovetailing and tenoning machine, the combination of a movable upper tenon and mortise forming die, a fixed lower tenon and mortise forming die, a vertical backing-support between the two dies, a fixed upper stripping-plate coacting with the movable upper die, and a movable lower stripping-plate coacting with the lower fixed die, for the dies to act and simultaneously form the tenon and mortise at and in both ends of the material operated upon, the mortise being formed by endwise in-driving the section therefor into the body of the material below the plane of the tenon and mortise, substantially as described.

8. In a dovetailing and tenoning machine, the combination of a movable tenon and mortise forming die, a fixed tenon and mortise forming die, a fixed backing-support between the two dies, a stripping-plate for the upper die on the backing-support, a movable stripping-plate for the lower fixed die, and means for raising the plate coincident with the raising of the movable upper die, substantially as described.

9. In a dovetailing and tenoning machine, the combination of a movable tenon and mortise forming die, a fixed tenon and mortise forming die, a fixed backing-support between the two dies, a stripping-plate for the upper die on the backing-support, a movable stripping-plate for the lower fixed die, rods depending from the lower stripping-plate, a cross-rod, a swinging bar for engaging the cross-rod, and a connection between the swinging bar and the support for the movable die, substantially as described.

10. In a dovetailing and tenoning machine, the combination of a movable tenon and mortise forming die having punches and openings for making the mortises and tenons, a fixed tenon and mortise forming die having punches and openings for making the mortises and tenons, means for giving the movable die a powerful thrust, a backing-plate between the two dies supporting the piece to be operated upon, and an overhanging jaw for each die to coact with the backing-plate, substantially as described.

11. In a dovetailing and tenoning machine, the combination of a movable tenon and mortise forming die having punches and openings for making the mortises and tenons, a fixed tenon and mortise forming die having punches and openings for making the mortises and tenons, means for giving the movable die a powerful thrust, a backing-plate between the two dies supporting the piece to be operated upon, an overhanging jaw for each die to coact with the backing-plate, a stripping-plate for the movable die, and a stripping-plate for the fixed die, substantially as described.

12. In a dovetailing and tenoning machine, the combination of a movable die and a fixed die of corresponding shape, a backing-plate between the two dies, and means for giving the movable die a powerful thrust for simultaneously forming the tenons and mortises by both dies, substantially as described.

13. In a dovetailing and tenoning machine, the combination of a movable die and a fixed die of corresponding shape, a backing-plate between the two dies, means for giving the movable die a powerful thrust for simultaneously forming the tenons and mortises by both dies, a stripping-plate for the movable die, and a stripping-plate for the fixed die, substantially as described.

14. In a dovetailing and tenoning machine, the combination of a movable die and a fixed die of corresponding shape, a backing-plate between the two dies, means for giving the movable die a powerful thrust for simultaneously forming the tenons and mortises by both dies, a fixed stripping-plate on the backing-support to coact with the movable die, and a movable stripping-plate to coact with the fixed die and operated coincidentally with the movements of the movable die, substantially as described.

15. In a dovetailing and tenoning machine, the combination of a movable die and a fixed die of corresponding shape, a backing-plate between the two dies, means for giving the movable die a powerful thrust for simultaneously forming the tenons and mortises by both dies, a fixed stripping-plate carried by the backing-plate and coacting with the movable die, a movable stripping-plate coacting with the fixed die, and a connection between the movable stripping-plate and the movable die, substantially as described.

16. In a dovetailing tenoning-machine, the combination of a movable tenon and mortise forming die having punches and openings for making the mortises and tenons, means for supporting and maintaining the material in the plane of the movement of the die, and means for giving the die a powerful thrust, substantially as described.

17. In a dovetailing tenoning-machine, the combination of a movable tenon and mortise forming die having punches and openings for making the mortises and tenons, means for giving the die a powerful thrust, and a backing-plate supporting and maintaining the material in the plane of the movement of the movable die and in position to be operated upon by the punches of the die, substantially as described.

18. In a dovetailing tenoning-machine, the combination of a movable tenon and mortise forming die having punches and openings for making the mortises and tenons, means for giving the die a powerful thrust, a backing-plate supporting and maintaining the material in the plane of the movement of the movable die and in position to be operated upon by the punches of the die, and a jaw on the die at the rear of and projecting beyond the end of the punches and coacting with the backing-plate for preventing out-bulging of the material from the action of the die, substantially as described.

19. In a dovetailing tenoning-machine, the combination of a movable tenon and mortise forming die having punches and openings for making the mortises and tenons, means for giving the die a powerful thrust, a backing-plate supporting and maintaining the material in the plane of the movement of the movable die and in position to be operated upon by the punches of the die, a jaw on the die at the rear of and projecting beyond the end of the punches and coacting with the backing-plate for preventing out-bulging of the material from the action of the die, and a stripping-plate on the end of the backing-plate for holding the material against end movement on the return of the die, substantially as described.

20. In a dovetailing tenoning-machine, the combination of a movable tenon and mortise forming die, means for giving the movable die a powerful thrust, a backing-plate for supporting and maintaining the material in the plane of the movement of the die, and a jaw on the die at the rear of and projecting beyond the end of the punches of and coacting with the backing-plate for preventing out-bulging of the material from the action of the die, substantially as described.

21. In a dovetailing tenoning-machine, the combination of a movable tenon and mortise forming die, means for giving the movable die a powerful thrust, a backing-plate for supporting and maintaining the material in the plane of the movement of the die, a jaw on the die at the rear of and projecting beyond the end of the punches and coacting with the backing-plate for preventing out-bulging of the material from the action of the die, and a fixed stripping-plate on the end of the backing-plate for preventing end movement of the material with the return of the movable die, substantially as described.

22. In a dovetailing and tenoning machine, the combination of a tenon and mortise forming die, a backing-support coacting with the die and maintaining and holding the material in position in the plane of the movement of the die for the die to act and form the tenon and mortise at and in the end of the material operated upon, the mortise being formed by endwise in-driving the section therefor into the body of the material below the plane of the base of the tenon and mortise, substantially as described.

23. In a dovetailing and tenoning machine, the combination of a tenon and mortise forming die having punches and openings, a jaw on the die at the rear of and projecting beyond the end of the punches and a backing-support coacting with the die and maintaining and holding the material in position in the plane of the movement of the die for the die to act and form the tenon and mortise at and in the end of the material operated upon, the mortise being formed by endwise in-driving the section therefor into the body of the material below the plane of the base of the tenon and mortise, substantially as described.

24. In a dovetailing and tenoning machine, the combination of a pair of tenon and mortise forming dies, and a backing-support between the two dies for the dies to act and simultaneously form the tenon and mortise at and in both ends of the material operated upon, the mortise being formed by endwise in-driving the section therefor into the body of the material below the plane of the base of the tenon and mortise, substantially as described.

25. In a dovetailing and tenoning machine, the combination of a pair of tenon and mortise forming dies having punches and openings thereon, a jaw for each die overhanging the punches, and a backing-support between the two dies for the dies to act and simultaneously form the tenon and mortise at and in both ends of the material operated upon, the mortise being formed by endwise in-driving the section therefor into the body of the material below the plane of the base of the tenon and mortise, substantially as described.

26. In a dovetailing and tenoning machine, the combination of a pair of tenon and mortise forming dies, a backing-plate between the two dies, and a stripping-plate for each die, for the dies to act and simultaneously form the tenon and mortise, the mortise being formed by endwise in-driving the section therefor into the body below the plane of the base of the tenon and mortise, substantially as described.

27. In a dovetailing and tenoning machine, the combination of a pair of tenon and mortise forming dies having punches and openings thereon, a jaw for each die overhanging the punches, a backing-support between the two dies, and a stripping-plate for each die, for the dies to act and simultaneously form the tenon and mortise, the mortise being formed by endwise in-driving the section therefor into the body below the plane of the base of the tenon and mortise, substantially as described.

850,889. DOVETAIL, TENON, AND MORTISE. WILLIAM D. KELLY, Chicago, Ill. Original application filed Aug. 27, 1906, Serial No. 332,186. Divided and this application filed Nov. 6, 1906. Serial No. 342,249.

Claim.—1. A tenon having straight side walls and a straight base-wall for the mortise comprising the material originally occupying the mortise-space but which is compressed bodily into the fibers of the wood below the base-line of the tenon, substantially as described.

2. A blind tenon having straight side walls and a straight base-wall for the mortise comprising the material originally occupying the mortise-space but which is compressed bodily into the fibers of the wood below the base-line of the tenon and having the in-driven portion thrust into the fibers of the body of the wood, substantially as described.

3. A blind tenon having the mortise one wall of which comprises the material originally occupying the mortise-space but which is compressed bodily into the fiber of the wood, the tenon and mortise having straight side walls and a straight-faced ledge at the base on each side for the base-wall of the mortise, substantially as described.

4. A tenon having the mortise one wall of which comprises the material originally occupying the mortise-space but which is compressed bodily into the fiber of the wood, the tenon and mortise having straight side walls and a straight-faced ledge at the base on each side for the base-wall of the mortise, substantially as described.

5. A dovetail having the mortise one wall of which comprises the material originally occupying the mortise-space but which is compressed bodily into the fiber of the wood, the dovetail tenon and mortise having straight side walls and a straight-faced base-wall.

6. A blind dovetail and mortise one wall of which comprises the material originally occupying the mortise-space but which is compressed bodily into the fiber of the wood, the tenon and mortise having straight side walls and a straight flush base-wall, substantially as described.

7. A tenon and mortise on each side thereof, each mortise having straight side walls and a straight base-wall the base-wall comprising the material originally occupying the mortise-space but which is compressed bodily into the fibers of the wood below the base-line of the tenon, substantially as described.

850,890. TYPE-WRITING MACHINE. HARRY S. MCCORMACK, New York, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Jan. 24, 1906. Serial No. 297,577.

Claim.—1. In a type-writing machine having a platen and paper-feeding devices, the combination with a main paper-shelf in rear of the platen, of an auxiliary paper-shelf in the form of a flap between the paper-shelf and platen and extending upwardly and rearwardly over the rear of the main paper-shelf, and movable forwardly and downwardly to hold long record-sheets down out of the way, while another sheet is introduced in rear of the platen; said flap constructed to constitute at all points an uninterrupted support for the sheets.

2. In a type-writing machine having a platen and means for feeding sheets around the same, the combination of a main paper-shelf in rear of the platen, and an auxiliary paper-shelf in the form of a flap hinged just forward of the main paper-shelf to swing down over the platen; said flap normally extending upwardly and rearwardly from the top of said main paper-shelf, and constructed to constitute at all points an uninterrupted support for the sheets.

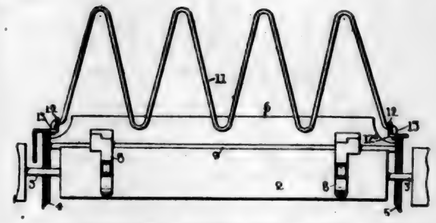

3. In a type-writing machine having a platen, the combination with a main paper-shelf in rear of the platen, of an auxiliary paper-shelf in the form of a gravity-flap hinged in rear of the platen and inclining upwardly and rearwardly from its hinge in rear of said main paper-shelf, and a stop for preventing the flap from falling back; said flap being movable upon its hinge forwardly and down over the platen, and constructed to constitute at all points an uninterrupted support for the sheets.

4. In a type-writing machine having a platen and paper supporting and guiding means, the combination with a main paper-shelf, and an auxiliary paper-shelf in the form of a flap hinged in rear of the platen and movable forward and down over the platen; said flap being in the form of a zigzag wire frame, the ends of the wire forming hinges for the frame.

5. In a type-writing machine having a platen and paper-feeding devices, the combination with a main paper-shelf in rear of the platen, of an auxiliary paper-shelf in the form of a flap between the paper-shelf and platen and extending upwardly and rearwardly over the rear of the main paper-shelf, and movable forwardly and downwardly to hold long record-sheets down out of the way, while another sheet is introduced in rear of the platen; said flap constructed to constitute at all points an uninterrupted support for the sheets, and normally standing in the path of sheets introduced into the machine, so that the sheets may be readily inserted either forward of said flap or between the flap and the main paper-shelf.

6. In a type-writing machine having a platen and paper-feeding devices, the combination with a main paper-shelf in rear of the platen, of an auxiliary paper-shelf in the form of a flap between the paper-shelf and platen and extending upwardly and rearwardly over the rear of the main paper-shelf, and movable forwardly and downwardly to hold long record-sheets down out of the way, while another sheet is introduced in rear of the platen; said flap constructed to constitute at all points an uninterrupted support for the sheets, and normally standing in the path of sheets introduced into the machine, so that the sheets may be readily inserted either forward of said flap or between the flap and the main paper-shelf, the bottom of said flap being close to the top of said paper-shelf.

REISSUES.

12,633. TONGUE-REGULATOR. JAMES A. KEARNEY, Imogene, Iowa. Filed Sept. 12, 1906. Serial No. 334,541. Original No. 825,602, dated July 10, 1906.

Claim.—1. In combination with a stub-tongue, a tongue pivoted to the upper face of said stub-tongue, a rock-bar pivoted to the under face of said stub-tongue and carrying furrow-wheels, a lever pivotally supported from said stub-tongue between the pivotal points of said rock-bar and said tongue, and horisontal connections on opposite sides

of the pivotal point of said lever connected to said lever and to said tongue and rock-bar.

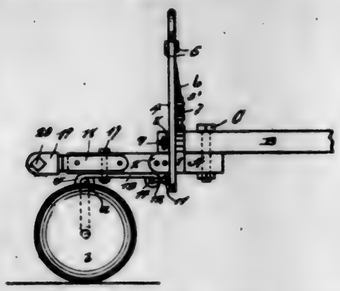

2. In combination with the stub-tongue, a tongue pivoted thereto, a crank-axle pivoted to the under face of said stub-tongue adjacent the rear end of the latter, and a lever pivotally supported at an intermediate point from said stub-tongue and having its portion below the fulcrum thereof pivoted to said crank-axle, and having pivotal connection with the rear end of said tongue at a point above its fulcrum.

3. In combination with a stub-tongue, a tongue pivoted to the upper face of said stub-tongue, a crank-axle, means for pivotally supporting said crank-axle from said stub-tongue, said means extending forwardly, and operating means for said tongue and said first-named means, said operating means being supported from the stub-tongue and having connections with said first-named means and said tongue respectively below and above its point of support.

4. In combination with a stub-tongue, a tongue pivoted thereto, a crank-axle also pivoted to said stub-tongue, and means supported from said stub-tongue for operating said axle and pivoted tongue, said means being located to the front of the pivoted point of said axle and to the rear of said pivotal point of the tongue and being connected to said axle and said tongue.

5. In combination with a stub-tongue, a crank-axle, a support for said crank-axle pivoted near one end to said stub-tongue and having its opposite end extending forwardly, a tongue pivoted to the forward end of said stub-tongue and having its rear end extending to a point in proximity to said forward end of the crank-axle support, and means for operating said support and tongue in unison.

6. In combination with a stub-tongue, a tongue pivoted thereto, a bar pivoted to said stub-tongue and carrying furrow-wheels, said bar and tongue having their inner ends adjacent one another, and means connected to each of said inner ends of the bar and tongue for operating the same in unison.

7. In combination with a stub-tongue, a tongue pivoted thereto, a bar pivoted to the under side of said stub-tongue and carrying a crank-axle, a lever pivotally supported intermediate its ends from said stub-tongue and connections below and above the pivotal point of said lever between said lever and said bar and between said lever and tongue.

8. In combination with a stub-tongue, a tongue pivoted thereto, a crank-axle, a support for said crank-axle pivoted to said stub-tongue and having its front end extending to a point adjacent the rear end of the pivoted tongue, and a pivoted lever connected to said pivoted tongue and to said front end of said axle-support, said lever being disposed at a point between said pivotal points of the pivoted tongue and the crank-axle support.

9. In combination with a stub-tongue, a horizontally-movable tongue and a horizontally-movable furrow-wheel support pivoted to said stub-tongue, said tongue and support having their inner ends adjacent, and means connected to and for moving said inner ends in opposite directions in unison.

10. In combination with a stub-tongue, a tongue pivoted thereto, a crank-axle, a support for said crank pivoted to said stub-tongue and extending forwardly thereof, and means pivoted to said stub-tongue and movable in a plane transverse of the length thereof for operating said tongue and crank-axle, said means having connection with said crank-axle support and with said tongue.

11. In combination with a stub-tongue, a crank-axle and a tongue movably connected thereto, and means for operating said axle and tongue, said means being disposed at an intermediate point between said connections of the tongue and axle with said stub-tongue and operating in a plane transverse of the the length of the latter.

12. In combination with a stub-tongue, a crank-axle and a tongue each movably connected to said stub-tongue, and means between said points of connection of the axle and tongue with the stub-tongue for operating the axle and tongue in unison.

13. In combination with a stub-tongue, a furrow-wheel support and a tongue each movable in a horizontal rotary plane and pivoted to said stub-tongue, and means connected to said support and tongue for operating the same simultaneously in opposite directions and sustaining the same against movement in any position to which they may have been moved by said means.

14. In combination with a stub-tongue, a bar pivoted to the under side of said stub-tongue, a crank-axle secured to the rear end of said bar, a tongue pivoted to the upper side of said stub-tongue, an adjustable lever pivotally supported from one side face of said stub-tongue and located between said pivotal points of said tongue and said bar and operable in a plane transverse of the length of said tongue, and connecting parts leading from said lever to the front end of said bar and to the rear end of said pivoted tongue.

12,634. SHUTTLE. FREDERICK OTT, Woonsocket, R. I., assignor to Isaac A. Hall, Paterson, N. J. Filed July 5, 1906. Serial No. 324,886. Original No. 808,474, dated Dec. 26, 1905.

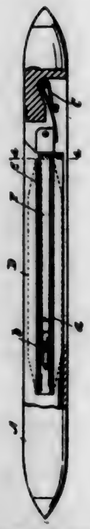

Claim.—1. In a shuttle, the combination of a body, a longitudinally-slotted spindle pivoted therein, a resilient strip having a plain longitudinal edge and an opposite longitudinal edge provided with teeth; said strip being secured at its outer end in the outer end of the slot of the spindle and in such position with respect thereto as to hold the inner portion of its plain edge yieldingly projected from the slot when the spindle has been raised or partly raised, and a stop arranged in the shuttle to engage the plain edge of the strip when the spindle has been swung downwardly and hold the toothed edge projected from the slot under tension.

2. In a shuttle, the combination of the body, a longitudinally-slotted spindle pivoted therein, a toothed strip arranged in the slot and secured fast at but one end therein whereby to be movable down into and also out of the same to sheathe and unsheathe its teeth and normally standing in one of the positions named, and means for causing the movement of the strip upon movement of the spindle in one direction, substantially as described.

3. In a shuttle, the combination of the body, a longitudinally-slotted spindle pivoted therein, a toothed strip arranged in the slot and movable down into and also out of the same to sheathe and unsheathe its teeth and normally standing in the sheathed position, and means for causing the movement of the strip into the unsheathed position upon the spindle being moved into its depressed position, substantially as described.

12,635. OIL-ENGINE. HENRY SOELDNER, East Williamsburg, N. Y., assignor to The De La Vergne Machine Company, New York, N. Y., a Corporation of New York. Filed July 6, 1905. Serial No. 268,560. Original No. 740,195, dated Sept. 29, 1903.

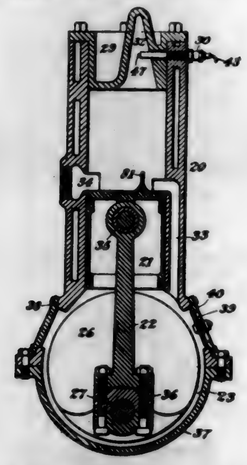

Claim.—1. In an engine of the character described, the piston, the cylinder having the explosion-chamber at its outer end, the inlet-nozzle for the vapor to said chamber, means for admitting air to the outer portion of the cylinder after the piston recedes therefrom to be compressed into said chamber on the succeeding outstroke of the piston, and an exhaust from said cylinder, said nozzle having in its discharge end the plug 47 provided at one side with the outlet 49 and the deflecting-lip 48, combined with means for feeding the oil, and a driving-shaft operatively connected with said piston, substantially as set forth.

2. In an engine of the character described, the piston, the cylinder having the explosion-chamber at its outer end, the inlet-nozzle for the vapor to said chamber, means for supplying the air, and an exhaust, said nozzle comprising the sections 45, 46, having the passages 51, 52, the valve 53 intermediate said passages and the plug 47 within the discharge end of said section 46 and having the several channels 50 and longitudinal channel 49, combined with means for feeding the oil, and a driving-shaft, operatively connected with said piston, substantially as set forth.

3. In a two-cycle oil-engine, the combination of a cylinder and piston, the cylinder having a vaporizer at one end thereof, the vaporizer having a substantially unrestricted opening into the cylinder and having such opening disposed eccentrically with one side in proximity to a portion of the wall of the cylinder and the other side at a considerable distance from the opposite portion of the wall of the cylinder, a feed-nozzle discharging into the vaporizer, the cylinder having an air-inlet port located in substantial alinement with the portion of the wall of the cylinder to which the opening of the vaporizer is in closest proximity and so as to be open at a position of the piston remote from the vaporizer, and the cylinder also having an exhaust-port, and an air-deflector on the piston located in proximity to the inlet-port so as to deflect air entering at the inlet-port and deflect the same along the wall of the cylinder and into the vaporizer at the side thereof in proximity to such wall.

4. In a two-cycle oil-engine, the combination of a cylinder and piston, the cylinder having a vaporizer at one end thereof, the vaporizer having a substantially unrestricted opening into the cylinder and having such opening disposed eccentrically with one side in proximity to a portion of the wall of the cylinder and the other side at a considerable distance from the opposite portion of the wall of the cylinder, a feed-nozzle discharging into the vaporizer, the cylinder having an air-inlet port located in substantial alinement with the portion of the wall of the cylinder to which the opening of the vaporizer is in closest proximity and so as to be open at a position of the piston remote from the vaporizer, and the cylinder also having an exhaust-port, and an air-deflector on the piston located in proximity to the inlet-port so as to deflect air entering at the inlet-port and deflect the same along the wall of the cylinder and into the vaporizer at the side thereof in proximity to such wall, and means for discharging oil from the feed-nozzle substantially at the position of the piston in closest proximity to the vaporizer.

5. In a two-cycle oil-engine, the combination of a cylinder and piston, the cylinder having a vaporizer at one end thereof, the vaporizer having a substantially unrestricted opening into the cylinder and having such opening disposed eccentrically with one side in proximity to a portion of the wall of the cylinder and the other side at a considerable distance from the opposite portion of the wall of the cylinder, a feed-nozzle having its discharge end within the vaporizer, the cylinder having an air-inlet port located in substantial alinement with the portion of the wall of the cylinder to which the opening of the vaporizer is in closest proximity and so as to be open at a position of the piston remote from the vaporizer, and the cylinder also having an exhaust-port, an air-deflector on the piston located in proximity to the inlet-port so as to deflect air entering at the inlet-port and deflect the same along the wall of the cylinder and into the vaporizer at the side thereof in proximity to such wall, and means for discharging oil from the feed-nozzle substantially at the position of the piston in closest proximity to the vaporizer.

6. In a two-cycle oil-engine, the combination of a cylinder and piston, the cylinder having a vaporizer at one end thereof, the vaporizer having a substantially unrestricted opening into the cylinder and being elongated in substantial parallelism to the wall of the cylinder and having its opening into the cylinder disposed eccentrically with one side in proximity to a portion of the wall of the cylinder and the other side at a considerable distance from the opposite portion of the wall of the cylinder, a feed-nozzle discharging into the vaporizer, the cylinder having an air-inlet port located in substantial alinement with the portion of the wall of the cylinder to which the opening of the vaporizer is in closest proximity and so as to be open at a position of the piston remote from the vaporizer, and the cylinder having an exhaust-port, and an air-deflector on the piston located in proximity to the inlet-port so as to deflect air entering at the inlet-port and deflect the same along the wall of the cylinder and into the vaporizer at the side thereof in proximity to such wall.

7. In a two-cycle oil-engine, the combination of a cylinder and piston, the cylinder having a vaporizer at one end thereof, the vaporizer having a substantially unrestricted opening into the cylinder and being elongated in substantial parallelism with the wall of the cylinder and having its opening into the cylinder disposed eccentrically with one side in proximity to a portion of the wall of the cylinder and the other side at a considerable distance from the opposite portion of the wall of the cylinder, a feed-nozzle having its discharge end within the vaporizer, the cylinder having an air-inlet port located in substantial alinement with the portion of the wall of the cylinder to which the opening of the vaporizer is in closest proximity and so as to be open at a position of the piston remote from the vaporizer, and the cylinder also having an exhaust-port, an air-deflector

on the piston located in proximity to the inlet-port so as to deflect air entering at the inlet-port and deflect the same along the wall of the cylinder and into the vaporiser at the side thereof in proximity to such wall, and means for discharging oil from the feed-nozzle substantially at the position of the piston in closest proximity to the vaporiser.

8. In an oil-engine, the combination of a cylinder and piston, the cylinder having a vaporiser at one end thereof, the vaporiser opening into the cylinder, a feed-nozzle discharging into the vaporiser and having a discharge-channel and a plurality of feed-channels therefor, means for charging the cylinder with air, and means for discharging oil from the feed-nozzle.

9. In an oil-engine, the combination of a cylinder and piston, the cylinder having a vaporiser at one end thereof, the vaporiser opening into the cylinder, a feed-nozzle discharging into the vaporiser and having a discharge-channel and a plurality of feed-channels therefor and having deflecting means for directing its discharge from such discharge-channel, means for charging the cylinder with air, and means for discharging oil from the feed-nozzle.

10. In a two-cycle oil-engine, the combination of a cylinder and piston, the cylinder having a vaporiser at one end thereof and opening into the cylinder and having such opening disposed eccentrically with one side in proximity to a portion of the wall of the cylinder and the other side at a considerable distance from the opposite portion of the wall of the cylinder, a feed-nozzle discharging into the vaporiser and having a discharge-channel and a plurality of feed-channels therefor, the cylinder having an air-inlet port located in substantial alinement with the portion of the wall of the cylinder to which the opening of the vaporiser is in closest proximity and so as to be open at a position of the piston remote from the vaporizer, and the cylinder also having an exhaust-port, and an air-deflector on the piston located in proximity to the inlet-port so as to deflect air entering at the inlet-port and deflect the same along the wall of the cylinder and into the vaporizer at the side thereof in proximity to such wall, and means for discharging oil from the feed-nozzle.

11. In a two-cycle oil-engine, the combination of a cylinder and piston, the cylinder having a vaporizer at one end thereof, the vaporizer having a substantially unrestricted opening into the cylinder and being elongated in substantial parallelism to the wall of the cylinder and having its opening into the cylinder disposed eccentrically with one side in proximity to a portion of the wall of the cylinder and the other side at a considerable distance from the opposite portion of the wall of the cylinder, a feed-nozzle discharging into the vaporiser and having a discharge-channel and a plurality of feed-channels therefor and having deflecting means for directing its discharge from such discharge-channel, the cylinder having an air-inlet port located in substantial alinement with the portion of the wall of the cylinder to which the opening of the vaporiser is in closest proximity and so as to be open at a position of the piston remote from the vaporiser, and the cylinder also having an exhaust-port, an air-deflector on the piston located in proximity to the inlet-port so as to deflect air entering at the inlet-port and deflect the same along the wall of the cylinder and into the vaporiser at the side thereof in proximity to such wall, and means for discharging oil from the feed-nozzle, substantially as set forth.

12. In an oil-engine, the combination of a piston, cylinder and cylinder-head, the cylinder-head entering the cylinder a substantial distance and having a vaporizing-dome formed thereon, the vaporizing-dome opening into the cylinder and being of increasing dimensions toward such opening and being located eccentrically on the cylinder-head with one side in proximity to a portion of the wall of the cylinder and the other side at a considerable distance from the opposite portion of the wall of the cylinder and so as to provide exteriorly to said dome a recess in the cylinder-head for access to the exterior of the dome, a feed-nozzle having its discharge end within the vaporiser, means actuated by the engine for discharging oil through such feed-nozzle, and means for charging the cylinder with air.

DESIGNS.

38,524. SPOON OR FORK. CHARLES A. BENNETT, Taunton, Mass., assignor to Reed & Barton Corporation, a Corporation of Massachusetts. Filed Feb. 20, 1907. Serial No. 358,505. Term of patent 14 years.

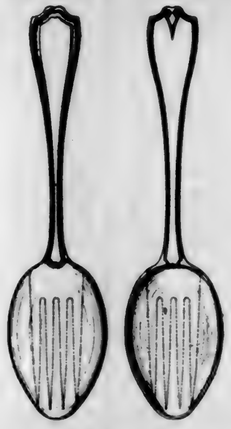

Claim.—The ornamental design for spoon or fork as shown.

38,525. HAND-BAG. HENRY GROSSMAN, New York, N. Y. Filed Mar. 20, 1907. Serial No. 363,523. Term of patent 7 years.

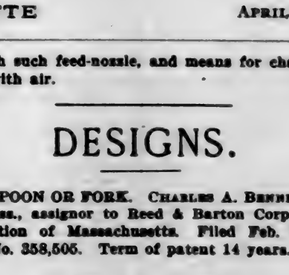

Claim.—The ornamental design for a hand-bag as shown.

38,526. HAND-BAG. HENRY GROSSMAN, New York, N. Y. Filed Mar. 20, 1907. Serial No. 363,524. Term of patent 7 years.

Claim.—The ornamental design for a hand-bag as shown.

38,527. MOLDING FOR PICTURE-FRAMES. HENRY A. ARONSON, Chicago, Ill. Filed Mar. 11, 1907. Serial No. 361,870. Term of patent 3½ years.

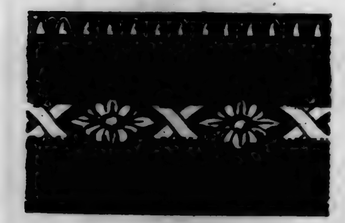

Claim.—The ornamental design for a molding for picture-frames as shown.

38,528. RADIATOR. ERIC SJODEN, Buffalo, N. Y., assignor to American Radiator Company, a Corporation of New Jersey. Filed Mar. 9, 1907. Serial No. 361,629. Term of patent 14 years.

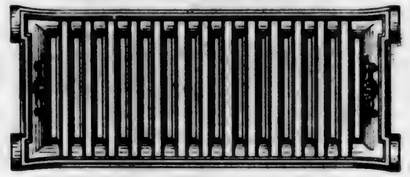

Claim.—The ornamental design for a radiator, as shown.

38,529. STOVE. BARTOW BEE COHEN, Sheffield, Ala., assignor of one-half to Sheffield Stove & Foundry Co. and one-half to King Stove & Range Co., Sheffield, Ala. Filed Mar. 15, 1907. Serial No. 362,578. Term of patent 14 years.

Claim.—The ornamental design for a stove as shown.

38,530. COOKING-STOVE. JAPEW S. VAN BUREN, Albany, N. Y., assignor to Rathbone, Sard & Company, Albany, N. Y., a Corporation of New York. Filed Mar. 21, 1907. Serial No. 363,768. Term of patent 3½ years.

Claim.—The ornamental design for a cooking-stove, as shown.

38,531. COOKING-STOVE. JAPEW S. VAN BUREN, Albany, N. Y., assignor to Rathbone, Sard & Company, Albany, N. Y., a Corporation of New York. Filed Mar. 21, 1907. Serial No. 363,769. Term of patent 3½ years.

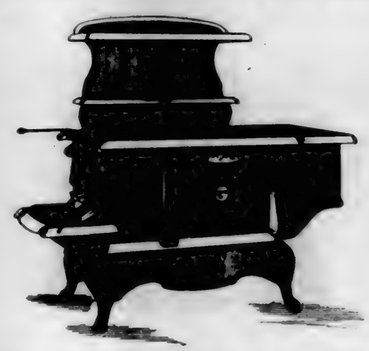

Claim.—The ornamental design for a cooking-stove, as shown.

TRADE-MARKS

PUBLISHED APRIL 16, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 2,052. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) BOWMAN, ELDRIDGE & COMPANY, Portland, Oreg. Filed Apr. 17, 1905.

Particular description of goods.—Socks.

Ser. No. 4,160. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) WILLIAM M. CRANE CO., New York, N. Y. Filed May 3, 1905.

VULCAN

Particular description of goods.—Gas Stoves and Ranges and Fittings and Parts Therefor.

Ser. No. 4,424. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) CLEMENT W. HOOVEN, New Paris, Ohio. Filed May 5, 1905.

Particular description of goods.—Spring-Water and Carbonated Water.

Ser. No. 5,413. (CLASS 8. DETERGENTS.) SIEGEL COOPER & Co., Chicago, Ill. Filed May 13, 1905.

Hazel

Particular description of goods.—Soap and Washing Powder.

Ser. No. 5,431. (CLASS 48. DAIRY PRODUCTS.) SIEGEL COOPER & Co., Chicago, Ill. Filed May 13, 1905.

Hazel

Particular description of goods.—Butter and Cheese.

Ser. No. 5,435. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) SIEGEL COOPER & Co., Chicago, Ill. Filed May 13, 1905. Used ten years.

MILFORD

Particular description of goods.—Canned Fruits.

Ser. No. 5,836. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) M. E. SMITH & Co., INC., Omaha, Nebr. Filed May 16, 1905.

Ideal

Particular description of goods.—Dress and Negligée Shirts and Textile Collars and Cuffs Therefor.

Ser. No. 6,048. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 4, 16, AND 50.) ATLANTIC REFINING COMPANY, Franklin and Philadelphia, Pa. Filed May 18, 1905. Used ten years.

MATCHLESS

Particular description of goods.—Lubricating-Oils.

Ser. No. 6,376. (CLASS 52. PACKING-HOUSE PRODUCTS.) TENNESSEE PACKING & PROVISION COMPANY, Nashville, Tenn. Filed May 23, 1905.

OLD HICKORY BRAND

Particular description of goods.—Sugar-Cured Meats.

Ser. No. 7,874. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) SPRAGUE ELECTRIC COMPANY, New York, N. Y. Filed June 10, 1905.

S E

Particular description of goods.—Conduits for Electrical Conductors, Junction-Boxes Therefor, Flexible Conduits and Couplings Therefor, Iron-Armored Conduits, and Brass-Armored Conduits.

Ser. No. 8,238. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) B. HELLER & Co., Chicago, Ill. Filed June 15, 1905.

Particular description of goods.—Meat-Preservative.

Ser. No. 9,024. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) CARLETON DRY GOODS COMPANY, St. Louis, Mo. Filed June 26, 1905.

Dixie

Particular description of goods.—Knitted Underwear for Men, Women, Misses, and Children.

Ser. No. 9,896. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) DR. WARNER REMEDY COMPANY, Chicago, Ill. Filed July 7, 1905.

Radiozone

Particular description of goods.—Medicated Plasters and Pills.

Ser. No. 11,959. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) RHEGULUS COMPANY, La Grange, Ill. Filed Aug. 24, 1905.

RHEGULUS

Particular description of goods.—Stomach-Regulators.

Ser. No. 12,078. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) "LE RIPOLIN" (SOCIÉTÉ ANONYME FRANÇAISE DE PEINTURES LAQUÉES ET D'ENDUITS SOUSMARINS, PROCÉDÉS LEFRANC & BRIDGLES RÉUNIS), Paris, France. Filed Aug. 29, 1905.

RIPOLIN

Particular description of goods.—Mixed Paints and Varnishes.

Ser. No. 13,424. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) WILEY & RUSSELL MFG. CO., Greenfield, Mass. Filed Oct. 9, 1905.

LIGHTNING

Particular description of goods.—Reamers, Drills, and Countersinks.

Ser. No. 13,526. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) SHERMAN & SONS COMPANY, New York, N. Y. Filed Oct. 12, 1905. Used ten years.

Particular description of goods.—White Goods, Comprising India Linen, Hemstitched Lawns, French and English Nainsooks, Tuckings, Cotton Mulls, Swiss Mulls, French Reveres, Silk and Cotton Mulls, Dotted Swiss, Batistes, Indian Dimities, Persian Lawns, Cambrics, Linen Lawns, Tarlatans, Percales, Masalias, Welts, and Organdies.

Ser. No. 14,172. (CLASS 12. MASONRY MATERIALS.) EMIL SÉQUIN, EUBÖOLITH-WERKE VORMALS C. SÉQUIN-BRONNER, Zurich, Switzerland. Filed Nov. 1, 1905.

EUBÖOLITH

Particular description of goods.—Jointless Floors, Wainscoting-Panels, Ceilings, and Roofing-Covers Made of Sawdust, Magnesite, and Chlorid of Magnesium.

Ser. No. 14,907. (CLASS 54. SEA FOODS.) PORTLAND PACKING COMPANY, Portland, Me. Filed Nov. 22, 1905.

Particular description of goods.—Canned Lobsters and Canned Salmon.

Ser. No. 15,787. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ITHAMAR T. DUNCAN, Decatur, Tex. Filed Dec. 30, 1905.

Particular description of goods.—A Remedy for Venereal Diseases.

Ser. No. 16,259. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GEORGE HANSELL, Philadelphia, Pa. Filed Jan. 17, 1906.

Particular description of goods.—Liquid Medical Compounds for Stomach and Bowel Disorders.

Ser. No. 16,813. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) NATIONAL BISCUIT COMPANY, New York, N. Y. Filed Feb. 7, 1906. Used ten years.

PREMIUM

Particular description of goods.—Biscuits.

Ser. No. 16,981. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) D. MACN. MACKAY, Goldsboro, N. C. Filed Feb. 13, 1906.

MAC-U-DINE

Particular description of goods.—A Cure for Headache.

Ser. No. 17,293. (CLASS 9. EXPLOSIVES.) UNION MATCH CO., Duluth, Minn. Filed Feb. 23, 1906.

TIP-TOE

Particular description of goods.—Friction-Matches.

Ser. No. 18,655. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) VALENTINE SCHMIDT, San Francisco, Cal. Filed Apr. 10, 1906.

CHARCOLETS

Particular description of goods.—A Remedy for Constipation, Torpid Liver, Sick Headache, and Dyspepsia.

Ser. No. 18,672. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) BADISCHE ANILIN & SODA FABRIK, Ludwigshafen-on-the-Rhine, Germany. Filed Apr. 10, 1906.

Particular description of goods.—Dyestuffs of All Kinds, Mineral Acids, Alcohols Excluding Ethyl Alcohol, Phenols, Naphthols, Amins, Aldehydes, Chlorin, Alkalies, and Alkali Salts, Ethers, Chromic Acid, Chromates and Chromium Salts, Mordants, Hydroxylamin, Organic Acids, Sulfates, Sulfites, Hydrosulfites, and Sulfoxylates, Nitrites, and Nitrates.

Ser. No. 18,757. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) DANFORTH L. JONES & COMPANY, New York, N. Y. Filed Apr. 13, 1906.

CRESCENT ©

Particular description of goods.—Ledger Index Bristol Paper.

Ser. No. 18,758. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) DANFORTH L. JONES & COMPANY, New York, N. Y. Filed Apr. 13, 1906.

CROWN

Particular description of goods.—Ledger Index Bristol Paper.

Ser. No. 19,171. (CLASS 51. MALT LIQUORS.) THE J. & P. BALTZ BREWING CO., Philadelphia, Pa. Filed Apr. 30, 1906.

Particular description of goods.—Beer.

Ser. No. 19,173. (CLASS 51. MALT LIQUORS.) THE J. & P. BALTZ BREWING CO., Philadelphia, Pa. Filed Apr. 30, 1906.

Particular description of goods.—Beer.

Ser. No. 19,596. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) THE HENRIETTA MILLS, Henrietta and Caroleen, N. C. Filed May 16, 1906. Used ten years.

Particular description of goods.—Cotton Sheetings, Shirtings, and Drills.

Ser. No. 20,091. (CLASS 71. TOBACCO PRODUCTS.) MAISON PIERRE BARDOU-JOB, Perpignan, France. Filed June 6, 1906.

JOB

Particular description of goods.—Tobacco, Cigars, and Cigarettes.

Ser. No. 20,493. (CLASS 72. MERCHANDISE NOT OTHERWISE CLASSIFIED.) THE MORGAN CRUCIBLE COMPANY, LIMITED, Battersea, London, England. Filed June 22, 1906.

Particular description of goods.—Crucibles, Muffles, Furnaces, Scorifiers, Retorts, and the Like Used in All Processes of Smelting, Assaying, Minting, and the Like, and for Metallurgical and Chemical Work Generally, Made of Plumbago or Graphite.

Ser. No. 20,526. (CLASS 51. MALT LIQUORS.) G. HEILEMAN BREWING CO., La Crosse, Wis. Filed June 23, 1906.

Particular description of goods.—Beer.

Ser. No. 20,666. (CLASS 47. CONFECTIONERY.) STOLLWERCK BROS., New York, N. Y. Filed June 30, 1906.

Particular description of goods.—Cocoa, Chocolate, and Candy.

Ser. No. 21,087. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) CONTINENTAL - CAOUTCHOUC - UND GUTTA - PERCHA - COMPAGNIE, Hanover, Germany. Filed July 23, 1906. Used ten years.

Continental Caoutchouc und Guttapercha-Compagnie.

Particular description of goods.—India-Rubber Tires, Solid and Pneumatic, and India-Rubber Cover-Bandages, Plasters, Patches, and Repair-Sheets for Such Tires.

Ser. No. 21,535. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) BOORD & SON, (INCORPORATED,) London, England. Filed Aug. 14, 1906.

Particular description of goods.—Gin, Whisky, Rum, Brandy, and Liqueurs.

Ser. No. 21,776. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) RIEGER & LINDLEY, Salt Lake City, Utah. Filed Aug. 28, 1906.

John C. Fremont

Particular description of goods.—Whisky.

Ser. No. 22,178. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) STANDARD VARNISH WORKS, New York, N. Y. Filed Sept. 18, 1906.

W. P.

Particular description of goods.—Varnishes, Japans, and Enamels.

Ser. No. 22,200. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FRANÇOIS HABY, Berlin, Germany. Filed Sept. 20, 1906.

Wach auf

Particular description of goods.—Cream for Shaving.

Ser. No. 22,204. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) SOCIÉTÉ ANONYME PERIPHOTE ET PHOTORAMA, Paris, France. Filed Sept. 20, 1906.

CYCLOSCOPE

Particular description of goods.—Apparatus for the Vision of Panoramic Views of Small Dimensions.

Ser. No. 22,250. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JAMES THOMAS MORGAN, Springfield, Mo. Filed Sept. 22, 1906.

Particular description of goods.—A Remedy for Grippe.

Ser. No. 22,574. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) REISS & BRADY, New York, N. Y. Filed Oct. 6, 1906.

CRESCA

Particular description of goods.—Canned Peas, Mushrooms, Cherries, Figs, Melange, Plums, Calf's Foot Jelly, Pears, Peaches, Strawberries, Beans, Mixed Vegetables, Spinach, Asparagus, Artichokes, Capas, Brussel Sprouts, Carrots, Oeceille, Spanish Red Peppers, Truffles, Turnips, Cabbage-Sprouts, Onions, Mustard, and Capers, Dried Green Peas, Mushrooms, Herbs, Figs, Dates, Lima Beans, and Italian Garlic, Olives, Stuffed Olives, Olive-Oil, Wine-Vinegar, Pepper-Sauce, Sweet Ground Pepper, Curry-Powder, Walnuts, Madras Chutney, Bengal Chutney, and Onion Extract, Preserved Cherries, Pineapples, Rosebuds, Rose-Leaves, Orange-Blossoms, Pistachio, and Cherries, Fruit-Syrups, Fruit Jam, Jellies, and Marmalades, Ginger, Citron, Orange-Peel, and Lemon-Peel, Nuts, Nut-Meat, Vanilla-Beans, Gelatin, Pickles, Sauer-Kraut, and Potatoes, Dried Currants, Prunellas, and Raisins, Canned Raspberries, Apricots, and Prunes.

Ser. No. 22,802. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) MACKENZIE BROS., Ross-Shire, Scotland. Filed Oct. 20, 1906.

Particular description of goods.—Malt Whisky.

Ser. No. 22,830. (CLASS 52. PACKING-HOUSE PRODUCTS.) E. D. COOK & Co., Binghamton, N. Y. Filed Oct. 22, 1906.

CREAM DOVE

Particular description of goods.—A Cooking Compound Made from Vegetable Oils and Beef Fats.

Ser. No. 23,001. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) LEFRANC & Co., Paris, France. Filed Oct. 30, 1906.

Particular description of goods.—Driers for Paints and Varnishes.

Ser. No. 23,138. (CLASS 54. SEA FOODS.) KELLEY-CLARKE CO., Seattle, Wash. Filed Nov. 6, 1906.

Particular description of goods.—Canned Salmon.

Ser. No. 23,213. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) S. M. BIXBY & Co., New York, N. Y. Filed Nov. 10, 1906. Used ten years.

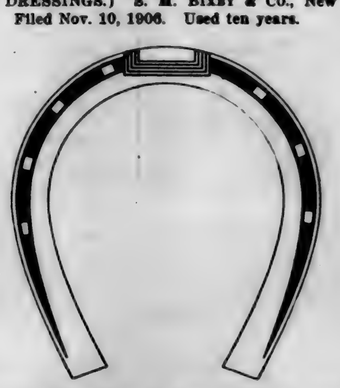

Particular description of goods.—Leather and Shoe Blackings, Paste, Polish, and Leather and Shoe Varnish.

Ser. No. 23,245. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) STEARNS ELECTRIC PASTE CO., Buffalo, N. Y. Filed Nov. 10, 1906.

Particular description of goods.—Rat and Roach Exterminator.

Ser. No. 23,587. (CLASS 27. RAILWAY EQUIPMENT NOT OTHERWISE CLASSIFIED, AND RAILWAY ROLLING-STOCK.) THE CLEVELAND FROG AND CROSSING COMPANY, Cleveland, Ohio. Filed Nov. 26, 1906.

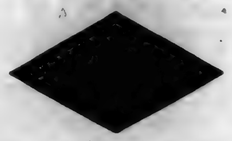

Particular description of goods.—Frogs, Crossings, Switches, and Switch-Stands.

Ser. No. 23,588. (CLASS 27. RAILWAY EQUIPMENT NOT OTHERWISE CLASSIFIED, AND RAILWAY ROLLING-STOCK.) THE CLEVELAND FROG AND CROSSING COMPANY, Cleveland, Ohio. Filed Nov. 26, 1906.

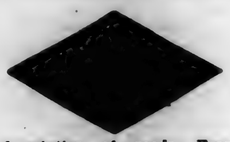

Particular description of goods.—Frogs, Crossings, Switches, and Switch-Stands.

Ser. No. 23,619. (CLASS 48. DAIRY PRODUCTS.) THOMPSON AND OTT, New York, N. Y. Filed Nov. 26, 1906.

Woodycrest Farm

Particular description of goods.—Milk, Cream, and Butter.

Ser. No. 23,637. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) WAYNE COUNTY PRESERVING COMPANY, Newark, N. Y. Filed Nov. 27, 1906.

WINSOM

Particular description of goods.—Canned Fruits and Vegetables.

Ser. No. 23,751. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) AMERICAN OLIVE COMPANY, Los Angeles, Cal. Filed Dec. 4, 1906.

WHITE CROSS

Particular description of goods.—Olives and Olive-Oil.

Ser. No. 23,780. (CLASS 68. PUBLICATIONS.) THE JEWELERS CIRCULAR PUBLISHING CO., New York, N. Y. Filed Dec. 5, 1906. Used ten years.

THE JEWELERS CIRCULAR WEEKLY

Particular description of goods.—Periodicals.

Ser. No. 23,833. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio. Filed Dec. 6, 1906.

OK

Particular description of goods.—Paper Bags.

Ser. No. 23,835. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio. Filed Dec. 6, 1906.

SUNSHINE

Particular description of goods.—Paper Bags.

Ser. No. 23,843. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio. Filed Dec. 6, 1906.

ROYAL

Particular description of goods.—Paper Bags.

Ser. No. 23,844. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio. Filed Dec. 6, 1906.

BULL DOG

Particular description of goods.—Paper Bags.

Ser. No. 23,845. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio. Filed Dec. 6, 1906.

ECONOMY

Particular description of goods.—Paper Bags.

Ser. No. 23,900. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FORD REMEDY CO., Wichita, Kans. Filed Dec. 10, 1906.

KNOX ALL

Particular description of goods.—A Remedy for Rheumatism, Scrofula, and All Blood Diseases, Kidney, and Liver Troubles.

Ser. No. 24,009. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) AMERICAN-LA FRANCE FIRE ENGINE CO., Elmira, N. Y. Filed Dec. 14, 1906.

COSMOPOLITAN

Particular description of goods.—Steam Fire-Engines.

Ser. No. 24,067. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) ALVINE W. LYON, Baltimore, Md. Filed Dec. 15, 1906.

LION

Particular description of goods.—A Cleansing Preparation for Felt, Beaver, Velvet, and Similar Fabrics.

Ser. No. 24,227. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) THOS. KELLY & CO., Boston, Mass. Filed Dec. 22, 1906.

Particular description of goods.—Bed and Wrapper Blankets.

Ser. No. 24,249. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) JOHN ASTROM, Milwaukee, Wis. Filed Dec. 24, 1906.

Particular description of goods.—Signaling Apparatus.

Ser. No. 24,315. (CLASS 12. MASONRY MATERIALS.) THE BARBER ASPHALT PAVING COMPANY, Philadelphia, Pa. Filed Dec. 28, 1906.

Particular description of goods.—Bituminous Concrete Pavements.

Ser. No. 24,332. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) THE BRASS FOUNDRY AND HEATING CO., Peoria, Ill. Filed Dec. 29, 1906.

Particular description of goods.—Unfinished Solid and Tubular Cast Bars, Largely Used for Bushings and Nuts.

Ser. No. 24,349. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) TOMPKINS C. DELAVAN, New York, N. Y. Filed Dec. 29, 1906.

OXYGENTA

Particular description of goods.—Tablets for Purifying the Breath.

Ser. No. 24,363. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) CELLULAR CLOTHING COMPANY, LIMITED, London, England. Filed Dec. 31, 1906.

AERTEX

Particular description of goods.—Men's, Women's, and Children's Undershirts, Drawers, and Combination Suits, Men's and Boys' Shirts, Night-Shirts, and Pajamas, Socks, Waistcoats, Body-Bands, and Women's, Misses', and Children's Bodices, Camisoles, Chemises, Night-Dresses, Corsets, and Sleeping-Suits Made from Knitted or Netted Material.

Ser. No. 24,402. (CLASS 54. SEA FOODS.) DOWNING TAYLOR CO., Springfield, Mass. Filed Jan. 3, 1907. Used ten years.

Particular description of goods.—Canned Salmon and Canned Clams.

Ser. No. 24,404. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) DOWNING TAYLOR CO., Springfield, Mass. Filed Jan. 3, 1907. Used ten years.

Particular description of goods.—Canned Vegetables and Fruit.

Ser. No. 24,469. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) THE BUFFALO SPRINGS DISTILLERY COMPANY, Stamping Ground, Ky. Filed Jan. 5, 1907. Used ten years.

Particular description of goods.—Whisky.

Ser. No. 24,543. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) VICTOR TALKING MACHINE COMPANY, Camden, N. J. Filed Jan. 9, 1907.

The Voice of the Victor

Particular description of goods.—Talking-Machines and Records Therefor.

Ser. No. 24,561. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) SCHLESS, BROD & CO., New York, N. Y. Filed Jan. 10, 1907.

Particular description of goods.—Rings, Lockets, Scarf-Pins, Cuff-Buttons, Gold Fobs, Brooches, Pendants, Gold Match-Boxes, Knives with Gold Handles, Bracelets, Bangles, Festoons, Tie-Clasps, Tortoise-Shell Combs with Gold Decorations, Lorgnette-Chains, Studs, Ear-Rings, Charms, Gold Cigarette-Cases.

Ser. No. 24,619. (CLASS 18. AGRICULTURAL AND DAIRY MACHINERY AND PARTS OF SUCH MACHINERY.) CHARLIE W. GENUNG, Madison, Ohio. Filed Jan. 14, 1907.

Particular description of goods.—Cultivators, Weeders, Plows, Drills, Fertilizer-Distributers, and Onion-Toppers.

Ser. No. 24,655. (CLASS 8. DETERGENTS.) COLGATE & CO., New York, N. Y. Filed Jan. 15, 1907.

CONIC

Particular description of goods.—Soaps for Toilet, Laundry, and Household Use and Shaving-Soap.

Ser. No. 24,700. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) C. H. & F. L. OSGOOD, Norwich, Conn. Filed Jan. 16, 1907. Used ten years.

OSGOOD'S
INDIA
CHOLAGOGUE

Particular description of goods.—Fever and Ague Remedies.

Ser. No. 24,801. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) COLUMBIA STEEL COMPANY, Hartford, Conn. Filed Jan. 21, 1907.

Particular description of goods.—Steel.

Ser. No. 24,876. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) GEORGE LA MONTE & SON, Nutley, N. J., and New York, N. Y. Filed Jan. 24, 1907.

Particular description of goods.—Writing and Printing Paper.

Ser. No. 24,898. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) LUTHER FORD & CO., Minneapolis, Minn. Filed Jan. 25, 1907.

Particular description of goods.—Bluing.

Ser. No. 24,947. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) MARVEL BUCKLE COMPANY, Baltimore, Md. Filed Jan. 28, 1907.

Marvel

Particular description of goods.—Buckles.

Ser. No. 24,988. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) THE HOOKER, CORSER & MITCHELL COMPANY, Brattleboro, Vt. Filed Jan. 29, 1907. Used ten years.

Cantribum

Particular description of goods.—Overalls and Jumpers.

Ser. No. 24,995. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) MICHAEL O'BRIEN, Detroit, Mich. Filed Jan. 29, 1907.

Particular description of goods.—Whisky.

Ser. No. 25,014. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) THE CLIO WAIST CO., New York, N. Y. Filed Jan. 30, 1907.

Particular description of goods.—Fancy Dress-Waists, Shirt-Waist Suits, Costumes, and Gowns in Silk, Voiles, and Linen.

Ser. No. 25,041. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) COLGATE & CO., New York, N. Y. Filed Feb. 1, 1907.

CAPRICE

Particular description of goods.—Liquid and Powder Perfumes and Toilet Waters.

Ser. No. 25,042. (CLASS 8. DETERGENTS.) COLGATE & CO., New York, N. Y. Filed Feb. 1, 1907.

Caprice

Particular description of goods.—Soaps.

Ser. No. 25,059. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) THE EDEN MANUFACTURING CO., Langhorne and Philadelphia, Pa. Filed Feb. 2, 1907.

OLD HOMESTEAD

Particular description of goods.—Rugs and Carpets.

Ser. No. 25,060. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) THE EDEN MANUFACTURING CO., Langhorne and Philadelphia, Pa. Filed Feb. 2, 1907.

SHAH

Particular description of goods.—Rugs and Carpets.

Ser. No. 25,061. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) THE EDEN MANUFACTURING CO., Langhorne and Philadelphia, Pa. Filed Feb. 2, 1907.

PILGRIM

Particular description of goods.—Rugs and Carpets.

Ser. No. 25,064. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) NOTRE-NORMAN SHOE CO., St. Joseph, Mo. Filed Feb. 2, 1907.

Particular description of goods.—Leather Shoes.

Ser. No. 25,073. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FRIEDRICH FEUSTELL NFL., Altona, Germany. Filed Feb. 2, 1907.

Particular description of goods.—Hematin Albumin, (a Blood Preparation.)

Ser. No. 25,078. (CLASS 48. DAIRY PRODUCTS.) MOHAWK CONDENSED MILK CO., St. Johnsville, N. Y. Filed Feb. 2, 1907. Used ten years.

The background being in blue and the central figure in gold.

Particular description of goods.—Condensed Milk.

Ser. No. 25,084. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE J. L. N. SMYTHE COMPANY, Philadelphia, Pa. Filed Feb. 2, 1907.

Particular description of goods.—Wrapping, Tissue, News, Book, and Press Papers.

Ser. No. 25,164. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) SIMONS BRO. & CO., Philadelphia, Pa. Filed Feb. 6, 1907. Used ten years.

Particular description of goods.—Solid Silverware of All Kinds, Including Toilet Articles, Flat Ware, Hollow Ware, Tableware, Novelties, and Specially-Designed Articles, Jewelry, Chains, Thimbles, and Cane and Umbrella Heads, Both of Solid Silver and of Gold, and Upon Plated Gold Cane and Umbrella Heads.

Ser. No. 25,177. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) BADISCHE ANILIN & SODA FABRIK, Ludwigshafen-on-the-Rhine, Germany. Filed Feb. 7, 1907.

Viridanthrene

Particular description of goods.—Dyestuff.

Ser. No. 25,178. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) BADISCHE ANILIN & SODA FABRIK, Ludwigshafen-on-the-Rhine, Germany. Filed Feb. 7, 1907.

Euchrysine

Particular description of goods.—Dyestuff.

Ser. No. 25,179. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) BADISCHE ANILIN & SODA FABRIK, Ludwigshafen-on-the-Rhine, Germany. Filed Feb. 7, 1907.

Blankit

Particular description of goods.—Chemicals Used in Reducing, Discharging, and Bleaching.

Ser. No. 25,180. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) BADISCHE ANILIN & SODA FABRIK, Ludwigshafen-on-the-Rhine, Germany. Filed Feb. 7, 1907.

Olivanthrene

Particular description of goods.—Dyestuff.

Ser. No. 25,181. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) BADISCHE ANILIN & SODA FABRIK, Ludwigshafen-on-the-Rhine, Germany. Filed Feb. 7, 1907.

Deoroline

Particular description of goods.—Dyestuff and Chemicals Used in Reducing, Discharging, and Bleaching.

Ser. No. 25,254. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Feb. 12, 1907.

Particular description of goods.—Spool-Cotton, Sewing-Cotton, and Thread.

Ser. No. 25,268. (CLASS 9. EXPLOSIVES.) ILLINOIS MATCH COMPANY, Joliet, Ill. Filed Feb. 12, 1907.

Velvet Tip

Particular description of goods.—Matches.

Ser. No. 25,280. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) ALBERT W. YOUNG, Philadelphia, Pa. Filed Feb. 12, 1907.

Young's

Particular description of goods.—Polishing-Paper for Metal and Glass Articles.

Ser. No. 25,290. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) LEONARD, SHAW & DEAN, Boston, Mass. Filed Feb. 13, 1907.

Particular description of goods.—Leather Boots and High and Low Cut Leather Shoes.

Ser. No. 25,308. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) ANDREW LOHR BOTTLING CO., Cairo, Ill. Filed Feb. 14, 1907.

Particular description of goods.—Soda-Water and Mineral Water.

Ser. No. 25,354. (CLASS 71. TOBACCO PRODUCTS.) ABRAHAM DAVIS, Flint, Mich. Filed Feb. 16, 1907. All of the same being printed in blue.

Particular description of goods.—Cigars.

Ser. No. 25,373. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) THE K. W. IGNITION COMPANY, Cleveland, Ohio. Filed Feb. 18, 1907.

VIM

Particular description of goods.—Spark-Plugs for Explosive-Engines.

Ser. No. 25,382. (CLASS 47. CONFECTIONERY.) ROSSETER AND BURKHARDT, Los Angeles, Cal. Filed Feb. 18, 1907.

Said mark being printed in gold.

Particular description of goods.—Candy.

Ser. No. 25,389. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MOUND CITY PAINT & COLOR COMPANY, St. Louis, Mo. Filed Feb. 18, 1907.

Particular description of goods.—Castor-Oil.

Ser. No. 25,392. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) LEO H. BAEKELAND, Yonkers, N. Y. Filed Feb. 15, 1907.

NOVOLAK

Particular description of goods.—Paints and Varnishes, Shellacs, Painters' Waxes, Painters' Gums, and Plastic Compounds Used in the Manufacture of Paints and Varnishes.

Ser. No. 25,401. (CLASS 32. FURNITURE AND UPHOLSTERY NOT OTHERWISE CLASSIFIED.) THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio. Filed Feb. 19, 1907.

ELASTIC

Particular description of goods.—Bookcases, Filing-Cabinets, Document-Boxes, Cupboards, and Wardrobes.

Ser. No. 25,407. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio. Filed Feb. 19, 1907.

LEADER

Particular description of goods.—Document-Files.

Ser. No. 25,428. (CLASS 18. AGRICULTURAL AND DAIRY MACHINERY AND PARTS OF SUCH MACHINERY.) WIARD PLOW COMPANY, Batavia, N. Y. Filed Feb. 19, 1907. Used ten years

WIARD

Particular description of goods.—Plows.

Ser. No. 25,438. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MICROLINE MEDICINE COMPANY, Dallas, Tex. Filed Feb. 20, 1907.

Particular description of goods.—Remedies for the Cure of Diseases of the Blood, Liver, Bladder, and Kidneys, Catarrhal Diseases, Diseases of the Mucous Membrane, Sores, and Diseases of the Eyes.

Ser. No. 25,444. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,446. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,447. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,449. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,452. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,455. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,457. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,471. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,496. (CLASS 71. TOBACCO PRODUCTS.) HOWARD HAZLETT, Wheeling, W. Va., administrator of the estate of Augustus Pollack, deceased. Filed Feb. 21, 1907. Used ten years.

Particular description of goods.—Stogies.

Ser. No. 25,498. (CLASS 71. TOBACCO PRODUCTS.) HOWARD HAZLETT, Wheeling, W. Va., administrator of the estate of Augustus Pollack, deceased. Filed Feb. 21, 1907. Used ten years.

Particular description of goods.—Stogies.

Ser. No. 25,499. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) FRED. BUTTERFIELD & CO., New York, N. Y. Filed Feb. 21, 1907.

Amisilk.

Particular description of goods.—Cotton Piece Goods.

Ser. No. 25,511. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) FISHEL, NESSLER & COMPANY, New York, N. Y. Filed Feb. 21, 1907.

F. N.&CO.

Particular description of goods.—Hair-Pins, Combs, and Hair Ornaments.

Ser. No. 25,523. (CLASS 12. MASONRY MATERIALS.) ARMSTRONG CORK CO., Pittsburg, Pa. Filed Feb. 23, 1907.

Acme

Particular description of goods.—Insulating Material Containing Cork.

Ser. No. 25,535. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) KENTON BAKING POWDER COMPANY, Cincinnati, Ohio. Filed Feb. 23, 1907. Used ten years.

Particular description of goods.—Baking-Powder.

Ser. No. 25,559. (CLASS 48. DAIRY PRODUCTS.) PACIFIC COAST CONDENSED MILK CO., Seattle, Wash. Filed Feb. 23, 1907.

SANIPURE

Particular description of goods.—Condensed Milk.

Ser. No. 25,594. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JAMES B. HIXON, New York, N. Y. Filed Feb. 25, 1907.

CLYOSUL

Particular description of goods.—Soluble Sulfur Compound Used as a Remedy for Rheumatism, Skin and Blood Diseases, Ulcers, Catarrhal Affections, Typhoid and Malarial Fevers, Sore Throat, Indigestion, Gastritis, and Uric Acid in the System.

Ser. No. 25,598. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) ROTH & ENGELHARDT, New York, N. Y. Filed Feb. 25, 1907.

Particular description of goods.—Pianos and Piano-Players.

Ser. No. 25,599. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) STEINHARDT BROS. & CO., New York, N. Y. Filed Feb. 25, 1907.

OUR BALLYMORE

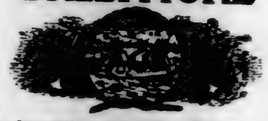

Particular description of goods.—Whisky.

Ser. No. 25,607. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) CHICAGO BAILEY COMPANY, Chicago, Ill. Filed Feb. 25, 1907.

The circle and the letter "B" being printed in red.

Particular description of goods.—Packing Materials for Preventing Leakage of Fluids.

Ser. No. 25,627. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) PRICE & LUCAS CIDER AND VINEGAR COMPANY, Louisville, Ky. Filed Feb. 26, 1907.

Particular description of goods.—Vinegar.

Ser. No. 25,635. (CLASS 2. MINERAL.) HOWE & DAVID, Findlay, Ohio. Filed Feb. 27, 1907.

Particular description of goods.—Coal.

Ser. No. 25,640. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) LOUIS STERN & CO., Providence, R. I. Filed Feb. 27, 1907.

L.S.&Co.

Particular description of goods.—Jewelry for Personal Wear.

Ser. No. 25,682. (CLASS 68. PUBLICATIONS.) G. P. PUTNAM'S SONS, New York, N. Y. Filed Mar. 1, 1907.

ARIEL

Particular description of goods.—Books Containing Works of Literature in Poetry and Prose.

Ser. No. 25,690. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE GREAT ATLANTIC & PACIFIC TEA COMPANY, New York, N. Y. Filed Mar. 2, 1907. Used ten years.

A&P

Particular description of goods.—Fruits and Vegetables, Canned, Dried, and Prepared; Catsups, Flavoring Extracts, Spices, Ground and Whole; Jams, Preserves, Dates, Vinegar, Baked Beans, Pie Preparations, Mushrooms, Bird Food, Olives, Olive-Oil, Celery Salt, Curry-Powder, and Tapioca.

Ser. No. 25,715. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 4, 1907.

Particular description of goods.—Spool-Cotton, Thread, and Sewing-Cotton.

Ser. No. 25,717. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 4, 1907.

Particular description of goods.—Spool-Cotton, Thread, and Sewing-Cotton.

Ser. No. 25,718. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 4, 1907. Used ten years.

Particular description of goods.—Spool-Cotton, Thread, and Sewing-Cotton.

Ser. No. 25,719. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 4, 1907. Used ten years.

Particular description of goods.—Spool-Cotton, Sewing-Cotton, and Thread.

Ser. No. 25,737. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) HEWITT RUBBER COMPANY, Buffalo, N. Y. Filed Mar. 4, 1907.

Particular description of goods.—Air-Brake Hose.

Ser. No. 25,738. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE KELLAM-GOLLER-LAND-CO., Lynn, Mass. Filed Mar. 4, 1907.

Particular description of goods.—Women's Leather Shoes and Oxfords.

Ser. No. 25,739. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) R. H. LANE & COMPANY, Toledo, Ohio. Filed Mar. 4, 1907.

IRONWOOD

Particular description of goods.—Boys', Youths', and Men's Leather Shoes.

Ser. No. 25,750. (CLASS 12. MASONRY MATERIALS.) PRATT PAPER COMPANY, Minneapolis, Minn. Filed Mar. 4, 1907.

BLACK DEFIANCE

Particular description of goods.—Roofing-Paper.

Ser. No. 25,754. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) SARCO FUEL SAVING & ENGINEERING CO., New York, N. Y. Filed Mar. 4, 1907.

Particular description of goods.—Depression-Recorders, Steam-Load Meters, Draft-Gages, Feed-Water Meters, CO_2-Combustion Recorders, and Reversion and Pressure Recorders.

Ser. No. 25,783. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 6, 1907.

Particular description of goods.—Spool-Cotton, Sewing-Cotton, and Thread.

Ser. No. 25,787. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed Mar. 6, 1907.

Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 25,798. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) F. W. DIEMER, Springfield, Mo. Filed Mar. 6, 1907.

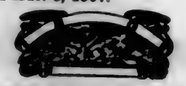

Particular description of goods.—A Remedy for Dyspepsia.

Ser. No. 25,799. (CLASS 33. GLASSWARE NOT OTHERWISE CLASSIFIED.) GILL BROTHERS COMPANY, Steubenville, Ohio. Filed Mar. 6, 1907.

ACME

Particular description of goods.—Electric-Arc-Light Globes, Globes for Incandescent Electric Lamps, Glass Bulbs for Incandescent Electric Lamps, and Glass Reflectors.

Ser. No. 25,806. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) FIGGE-DOYLE CO., Milwaukee, Wis. Filed Mar. 6, 1907.

HOME AID

Particular description of goods.—Whisky, Gin, and Brandy.

Ser. No. 25,808. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE COLLINS COMPANY, Collinsville, Conn. Filed Mar. 7, 1907. Used ten years.

11

Particular description of goods.—Axes.

Ser. No. 25,809. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE COLLINS COMPANY, Collinsville, Conn. Filed Mar. 7, 1907. Used ten years.

12

Particular description of goods.—Axes.

Ser. No. 25,813. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE COLLINS COMPANY, Collinsville, Conn. Filed Mar. 7, 1907. Used ten years.

120

Particular description of goods.—Axes.

Ser. No. 25,814. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE COLLINS COMPANY, Collinsville, Conn. Filed Mar. 7, 1907. Used ten years.

219

Particular description of goods.—Axes.

Ser. No. 25,815. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE COLLINS COMPANY, Collinsville, Conn. Filed Mar. 7, 1907. Used ten years.

37

Particular description of goods.—Axes.

Ser. No. 25,823. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) BRAWLEY CANTALOUPE GROWERS ASSOCIATION, Brawley, Cal. Filed Mar. 7, 1907.

Particular description of goods.—Melons.

Ser. No. 25,833. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WILLIAM J. SIBLEY, Rochester, N. Y. Filed Mar. 7, 1907.

Particular description of goods.—Remedies for Lung and Throat Diseases.

Ser. No. 25,913. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) WARE SHOALS MFG. CO., Ware Shoals, S. C. Filed Mar. 11, 1907.

Particular description of goods.—Cotton Piece Goods.

Ser. No. 25,925. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) THE CHENEY CHEMICAL COMPANY, South Manchester, Conn. Filed Mar. 12, 1907.

Particular description of goods.—Cleaning and Polishing Powder.

Ser. No. 25,928. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) FRANK BROS. & CO., New York, N. Y. Filed Mar. 12, 1907.

Kakeen

Particular description of goods.—Knit Underwear.

Ser. No. 25,929. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) J. GROSSMAN'S SONS, New Orleans, La. Filed Mar. 12, 1907.

Royal Buck

Particular description of goods.—Gin.

Ser. No. 25,938. (CLASS 53. SACCHARINE FOODS NOT INCLUDED IN CLASS 47.) CORN PRODUCTS REFINING COMPANY, Jersey City, N. J. Filed Mar. 13, 1907.

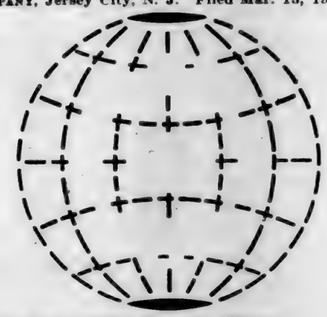

Particular description of goods.—Glucose.

Ser. No. 25,939. (CLASS 53. SACCHARINE FOODS NOT INCLUDED IN CLASS 47.) CORN PRODUCTS REFINING COMPANY, Jersey City, N. J. Filed Mar. 13, 1907.

GLOBE

Particular description of goods.—Glucose.

Ser. No. 25,940. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) LOUIS J. COTE, Berlin, N. H. Filed Mar. 13, 1907. Used ten years.

DR. LAFAYETTE'S

Particular description of goods.—Remedies for Headache, Neuralgia, Fever Colds, and Sleeplessness.

Ser. No. 25,941. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) LOUIS J. COTE, Berlin, N. H. Filed Mar. 13, 1907.

Particular description of goods.—Remedies for Headache, Neuralgia, Fever Colds, and Sleeplessness.

Ser. No. 25,950. (CLASS 68. PUBLICATIONS.) JOSEPH H. FRANCIS, Chicago, Ill. Filed Mar. 13, 1907.

THE NATIONAL BANKER

Particular description of goods.—Periodical Journals.

Ser. No. 25,951. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE HORSE WHIP CO., Westfield, Mass. Filed Mar. 13, 1907.

ZEBUCO

Particular description of goods.—Whips.

Ser. No. 25,956. (CLASS 71. TOBACCO PRODUCTS.) J. N. WYLLIE & Co., Danville, Va. Filed Mar. 13, 1907.

Particular description of goods.—Smoking-Tobacco.

Ser. No. 25,968. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) ENDICOTT-JOHNSON COMPANY, Endicott, N. Y. Filed Mar. 14, 1907.

"FROM HIDE TO RETAILER"

Particular description of goods.—Boots and Shoes of Leather.

Ser. No. 25,983. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) BARBER MILLING COMPANY, Minneapolis, Minn. Filed Mar. 15, 1907.

Particular description of goods.—Wheat-Flour.

Ser. No. 25,991. (CLASS 6. DETERGENTS.) THE MORGAN DRUG CO., INC., Brooklyn, N. Y. Filed Mar. 15, 1907.

[redacted]

Particular description of goods.—Medicinal and Toilet Soap.

Ser. No. 25,992. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE NEW CENTURY MILLING COMPANY, Dallas, Tex. Filed Mar. 15, 1907.

HOLLY

Particular description of goods.—Wheat-Flour.

Ser. No. 25,993. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) PAUL BROTHERS, Philadelphia, Pa. Filed Mar. 15, 1907.

Iron Hammel

Particular description of goods.—Leather Boots, Shoes, and Slippers.

Ser. No. 25,996. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) A. J. SHELDON Co., New York, N. Y. Filed Mar. 15, 1907.

JASCO

Particular description of goods.—Coffee and Tea.

Ser. No. 26,007. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) GOODYEAR RUBBER COMPANY, New York, N. Y. Filed Mar. 16, 1907.

BADGER

Particular description of goods.—Rubber Boots and Shoes.

Ser. No. 26,008. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) THE CHASE & BAKER COMPANY, Buffalo, N. Y. Filed Mar. 16, 1907.

Particular description of goods.—Perforated Music Sheets or Rolls.

Ser. No. 26,009. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GEO. B. CURTIS, Chicago, Ill. Filed Mar. 16, 1907.

TRY-KO-ZONE

Particular description of goods.—Hair-Tonic and Scalp Preparations, Shampoo and Shampooing Preparations, Salve, Ointment, and Cream for the Toilet, Toilet Water and Extracts, Cologne, Lotions, and Bay-Rum.

Ser. No. 26,010. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DAVIS CHEMICAL COMPANY, Denver, Colo. Filed Mar. 16, 1907.

BECOL
COMPOUND

Particular description of goods.—A Reconstructive Tonic.

Ser. No. 26,015. (CLASS 2. MINERAL.) JAMES C. McGREW, Lexington, Mo. Filed Mar. 16, 1907.

ELECTRIC
LUMP

Particular description of goods.—Coal.

Ser. No. 26,021. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) LEWIS GEORGE OLMSTED, Peru, Ill. Filed Mar. 16, 1907.

TOOTH PORIS
A TOOTH CLEANER

Particular description of goods.—A Dentifrice Used in Taking Care of the Teeth, Gums, and Mouth.

Ser. No. 26,041. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) LEVISON & BLYTHE MANUFACTURING COMPANY, St. Louis, Mo. Filed Mar. 18, 1907.

R

Particular description of goods.—Steel Pens.

Ser. No. 26,048. (CLASS 47. CONFECTIONERY.) TRIGG CANDY COMPANY, Chattanooga, Tenn. Filed Mar. 18, 1907.

YEW-KISS-ER

Particular description of goods.—Candy.

Ser. No. 26,049. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE UNION BAG & PAPER COMPANY, New York, N. Y. Filed Mar. 18, 1907.

AIR SHIP

Particular description of goods.—Paper Bags.

Ser. No. 26,053. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La. Filed Mar. 18, 1907.

GG
WESSON

Particular description of goods.—Cotton-Seed Oils.

Ser. No. 26,058. (CLASS 56. CANES, PARASOLS, AND UMBRELLAS.) ISRAEL EISENSTEIN, New York, N. Y. Filed Mar. 18, 1907.

MARBLE
GRANITE

Particular description of goods.—Wooden or Bamboo Canes.

Ser. No. 26,073. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) FRENCH & WARD, New York, N. Y., and West Stoughton, Mass. Filed Mar. 19, 1907.

Grizzlydown

Particular description of goods.—Knit Goods in the Piece.

Ser. No. 26,074. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) PETTIT MEDICINE COMPANY, Minneapolis, Minn. Filed Mar. 19, 1907.

Medello

Particular description of goods.—A Remedy for Affections and Diseases of the Kidneys.

Ser. No. 26,081. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) STEARNS & CURTIUS, New York, N. Y. Filed Mar. 19, 1907.

CHOCOLAX

Particular description of goods.—Laxatives.

Ser. No. 26,088. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) JOHN BLAUL'S SONS COMPANY, Burlington, Iowa. Filed Mar. 20, 1907.

Particular description of goods.—Coffee.

Ser. No. 26,089. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) JOHN BLAUL'S SONS COMPANY, Burlington, Iowa. Filed Mar. 20, 1907.

KITCHEN QUEEN

Particular description of goods.—Coffee.

Ser. No. 26,093. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) P. HOPPE, Schiedam, Holland. Filed Mar. 20, 1907. Used ten years.

Particular description of goods.—Gin.

Ser. No. 26,094. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) P. HOPPE, Schiedam, Holland. Filed Mar. 20, 1907. Used ten years.

Particular description of goods.—Gin.

Ser. No. 26,102. (CLASS 60. INKS AND INKING MATERIALS.) THE CARTER'S INK COMPANY, Boston, Mass., and New York, N. Y. Filed Mar. 20, 1907.

Particular description of goods.—Type-Writer Ribbons and Carbon-Paper.

Ser. No. 26,113. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) UNION CARD & PAPER CO., New York, N. Y. Filed Mar. 20, 1907.

Civic

Particular description of goods.—Bond, Ledger, Linen, and Writing Papers.

Ser. No. 26,117. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) HOWARD C. WOODBURY, Boston, Mass. Filed Mar. 20, 1907.

Particular description of goods.—Whisky.

Ser. No. 26,132. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) TROY COLD WATER KALSOMINE COMPANY, Green Island, N. Y. Filed Mar. 21, 1907. Used ten years.

CLARK'S
COLD WATER
KALSOMINE

Particular description of goods.—Calcimine.

Ser. No. 26,166. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 23, 1907.

Particular description of goods.—Spool-Cotton, Thread, and Sewing-Cotton.

Ser. No. 26,167. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 23, 1907.

Particular description of goods.—Spool-Cotton, Thread, and Sewing-Cotton.

Ser. No. 26,169. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 23, 1907.

NON X. L.

Particular description of goods.—Spool-Cotton, Thread, and Sewing-Cotton.

TRADE-MARKS

REGISTERED APRIL 16, 1907.

61,970. LEATHER SHOES, BOOTS, AND SLIPPERS. The A. De Pinna Company, New York, N. Y.
Filed January 18, 1907. Serial No. 24,749. PUBLISHED FEBRUARY 19 1907.

61,971. GARDEN-SEEDS. David Hardie Seed Co., Dallas, Tex.
Filed December 5, 1906. Serial No. 23,772. PUBLISHED FEBRUARY 19, 1907.

61,972. MEN'S LEATHER BOOTS AND SHOES. Huckins, Temple & Wood, Milford, Mass.
Filed September 8, 1906. Serial No. 21,991. PUBLISHED FEBRUARY 19, 1907.

61,973. LEATHER AND CANVAS BOOTS AND SHOES. Peoples Shoe Co., Mobile, Ala.
Filed January 23, 1907. Serial No. 24,856. PUBLISHED FEBRUARY 19, 1907.

61,974. ALL KINDS OF LEATHER. Pfister & Vogel Leather Company, Milwaukee, Wis.
Filed January 16, 1907. Serial No. 24,701. PUBLISHED FEBRUARY 19, 1907.

61,975. CERTAIN LEATHER MANUFACTURES. John J. Pigott, Childress, Tex.
Filed December 15, 1906. Serial No. 24,070. PUBLISHED FEBRUARY 19, 1907.

61,976. LEATHER BOOTS AND SHOES. Vinsonhaler Shoe Co., St. Louis, Mo.
Filed March 16, 1906. Serial No. 17,963. PUBLISHED AUGUST 21, 1906.

61,977. FELT BOOTS. The W. B. Cosgrave Shoe Co., Zanesville, Ohio.
Filed December 17, 1906. Serial No. 24,103. PUBLISHED FEBRUARY 19, 1907.

61,978. HIGH EXPLOSIVES. The Eastern Dynamite Company, Kenvil, N. J.
Filed August 9, 1906. Serial No. 21,396. PUBLISHED FEBRUARY 19, 1907.

61,979. HIGH EXPLOSIVES. Judson Dynamite & Powder Company, San Francisco, Cal.
Filed August 20, 1906. Serial No. 21,801. PUBLISHED FEBRUARY 19, 1907.

61,980. POWDER. Laflin & Rand Powder Company, New York, N. Y.
Filed August 9, 1906. Serial No. 21,404. PUBLISHED FEBRUARY 19, 1907.

61,981. POWDER. Laflin & Rand Powder Company, New York, N. Y.
Filed August 9, 1906. Serial No. 21,405. PUBLISHED FEBRUARY 19, 1907.

61,982. POWDER. Laflin & Rand Powder Company, New York, N. Y.
Filed August 18, 1906. Serial No. 21,640. PUBLISHED FEBRUARY 19, 1907.

61,983. POWDER. Laflin & Rand Powder Company, New York, N. Y.
Filed August 18, 1906. Serial No. 21,650. PUBLISHED FEBRUARY 19, 1907.

61,984. POWDER. Laflin & Rand Powder Company, New York, N. Y.
Filed August 18, 1906. Serial No. 21,653. PUBLISHED FEBRUARY 19, 1907.

61,985. MATCHES. The Ohio Match Company, Wadsworth, Ohio.
Filed January 19, 1907 Serial No. 24,767. PUBLISHED FEBRUARY 19, 1907.

61,986. MATCHES. The Ohio Match Company, Wadsworth, Ohio.
Filed January 19, 1907. Serial No. 24,768. PUBLISHED FEBRUARY 19, 1907.

61,987. MATCHES. The Ohio Match Company, Wadsworth, Ohio.
Filed January 19, 1907. Serial No. 24,769. PUBLISHED FEBRUARY 19, 1907.

61,988. POWDER. Laflin & Rand Powder Company, New York, N. Y.
Filed August 18, 1906. Serial No. 21,651. PUBLISHED FEBRUARY 19, 1907.

61,989. CANNED LOBSTER. H. C. Baxter & Bro., Brunswick, Me.
Filed June 16, 1905. Serial No. 8,341. PUBLISHED FEBRUARY 19, 1907.

61,990. WHEAT-FLOUR. The C. H. Bishop Flour Co., Cincinnati, Ohio.
Filed August 12, 1905. Serial No. 11,609. PUBLISHED OCTOBER 23, 1906.

61,991. CONCENTRATED AND UNCONCENTRATED IRON AND LITHIA WATER. Dawson Salts & Water Co., Dawsonsprings, Ky.
Filed June 15, 1906. Serial No. 20,311. PUBLISHED FEBRUARY 19, 1907.

61,992. PORCELAIN INSULATORS. George Cutter Co., South Bend, Ind.
Filed September 4, 1906. Serial No. 21,877. PUBLISHED FEBRUARY 19, 1907.

61,993. BRANDY, CORDIAL, WHISKY, AND GIN. Liebenthal Bros. & Co, Cleveland, Ohio.
Filed June 25, 1906. Serial No. 20,562. PUBLISHED FEBRUARY 19, 1907.

61,994. PURE HIGHLAND MALT POT-STILL SCOTCH WHISKY. Mackenzie Bros., Ross-Shire, Scotland.
Filed October 20, 1906. Serial No. 22,801. PUBLISHED FEBRUARY 19, 1907.

61,995. MALT EXTRACT. Malt-Diastase Company, Brooklyn, N. Y.
Filed May 18, 1906. Serial No. 19,653. PUBLISHED FEBRUARY 19, 1907.

61,996. CHOCOLATE AND COCOA. Pennsylvania Chocolate Company, Pittsburg, Pa.
Filed January 21, 1907. Serial No. 24,806. PUBLISHED FEBRUARY 19, 1907.

61,997. TABLE-WATERS. Jacob Ries, Shakopee, Minn.
Filed March 19, 1906. Serial No. 17,997. PUBLISHED AUGUST 28, 1906.

61,998. CERTAIN MACHINERY. Societe Anonyme de Fondations par Compression Mecanique du Sol, Paris, France.
Filed June 17, 1905. Serial No. 8,704. PUBLISHED FEBRUARY 19, 1907.

61,999. WHISKY. Breen & Kennedy, Chicago, Ill.
Filed May 12, 1905. Serial No. 5,361. PUBLISHED JULY 15, 1905.

62,000. SNAP-HOOKS. COVERT MFG. CO., Watervliet, N. Y.
Filed January 2, 1907. Serial No. 24,380. PUBLISHED FEBRUARY 19 1907.

62,001. CERTAIN SADDLERY-HARDWARE. THE EBERHARD MANUFACTURING COMPANY, Cleveland, Ohio.
Filed April 6, 1905. Serial No. 544. PUBLISHED FEBRUARY 19, 1907.

62,002. CERTAIN JEWELRY AND PRECIOUS-METAL WARE. ALBERT EDHOLM, Omaha, Nebr.
Filed January 7, 1907. Serial No. 24,487. PUBLISHED FEBRUARY 19, 1907.

62,003. BRANDY. GIRARD & Co., Tonnay-Charente, France.
Filed January 12, 1906. Serial No. 16,144. PUBLISHED FEBRUARY 19, 1907.

62,004. WELSH-RAREBIT-SEASONING COMPOUND. DAVID R. GREENE, Chicago, Ill.
Filed April 9, 1906. Serial No. 18,648. PUBLISHED FEBRUARY 19, 1907.

62,005. CIGARS. JOHN H. JOHNSON, Boston, Mass.
Filed November 21, 1906. Serial No. 23,515. PUBLISHED FEBRUARY 19, 1907.

62,006. CERTAIN LINEN GOODS. LEVI FRANKLIN KELLER, Delaware, Ohio.
Filed December 10, 1906. Serial No. 23,905. PUBLISHED FEBRUARY 19, 1907.

62,007. CHEESE. CHARLES C. MARTIN, Denver, Colo.
Filed March 13, 1906. Serial No. 17,781. PUBLISHED FEBRUARY 19, 1907.

62,008. SEED-DISTRIBUTING MACHINES. EMIL F. MOLCK, Sibley, Ill., assignor to Meadows Manufacturing Company, Meadows, Ill., a Corporation of Illinois.
Filed May 24, 1906. Serial No. 19,835. PUBLISHED FEBRUARY 19, 1907.

62,009. DRESS AND NEGLIGÉE SHIRTS. DAVID MOSES, Baltimore, Md.
Filed December 22, 1906. Serial No. 24,231. PUBLISHED FEBRUARY 19, 1907.

62,010. CERTAIN CUTLERY. PAXTON & GALLAGHER CO., Omaha, Nebr.
Filed December 7, 1906. Serial No. 23,860. PUBLISHED FEBRUARY 19, 1907.

62,011. WHEAT BREAKFAST FOOD. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, LTD., Minneapolis, Minn.
Filed September 14, 1906. Serial No. 22,104. PUBLISHED FEBRUARY 19, 1907.

62,012. WHEAT BREAKFAST FOOD. PILLSBURY-WASHBURN FLOUR MILLS CO., LTD., Minneapolis, Minn.
Filed November 13, 1906. Serial No. 23,208. PUBLISHED FEBRUARY 19, 1907.

62,013. CERTAIN CLOTHING. WILLIAM READ & SONS, Boston, Mass.
Filed December 4, 1906. Serial No. 23,749. PUBLISHED FEBRUARY 19, 1907.

62,014. SMOKING-TOBACCO. JOHN G. SAFFA, St. Louis, Mo.
Filed November 13, 1906. Serial No. 23,221. PUBLISHED FEBRUARY 19, 1907.

62,016. INCANDESCENT ELECTRIC LAMPS. THE SUNBEAM INCANDESCENT LAMP COMPANY, New York, N. Y.
Filed July 5, 1906. Serial No. 20,732. PUBLISHED FEBRUARY 19, 1907.

62,016. SALAD-OIL. VACUUM OIL COMPANY, Rochester, N. Y.
Filed January 21, 1907. Serial No. 24,813. PUBLISHED FEBRUARY 19, 1907.

62,017. POULTRY FOOD. THE ALBERT DICKINSON COMPANY, Chicago, Ill.
Filed December 28, 1905. Serial No. 15,716. PUBLISHED FEBRUARY 19, 1907.

62,018. ROOFING-PAINTS. BLACK DIAMOND MANUFACTURING CO., Cincinnati, Ohio.
Filed January 12, 1906. Serial No. 16,137. PUBLISHED SEPTEMBER 11. 1906.

62,019. RAZORS. CHARLES FOSBERY BUTCHER, Sheffield, England.
Filed December 14, 1905. Serial No. 15,419. PUBLISHED FEBRUARY 19, 1907

62,020. STEEL AND IRON IN BARS, SHEETS, RODS, RAILS, PLATES, AND WIRE. CAMMELL LAIRD & Co. LIMITED, Sheffield, England.
Filed September 14, 1905. Serial No. 12,593. PUBLISHED FEBRUARY 19, 1907.

62,021. STEEL AND IRON IN BARS, SHEETS, RODS, RAILS, PLATES, AND WIRE. CAMMELL LAIRD & Co. LIMITED, Sheffield, England.
Filed September 14, 1905. Serial No. 12,594. PUBLISHED FEBRUARY 19 1907.

62,022. ALL KINDS OF COTTON THREAD. THE CLARK THREAD Co. Newark, N. J.
Filed October 17, 1905. Serial No. 13,673. PUBLISHED FEBRUARY 19, 1907.

62,023. CROCHET-COTTON OR COTTON THREAD. THE CLARK THREAD Co., Newark, N. J.
Filed November 4, 1905. Serial No. 14,318. PUBLISHED FEBRUARY 19, 1907.

62,024. FLOOR-SCRAPING MACHINES. HURLEY MACHINE COMPANY, Chicago, Ill.
Filed December 7, 1906. Serial No. 23,855. PUBLISHED FEBRUARY 19, 1907.

62,025. WIRE-FENCE. KEYSTONE FENCE COMPANY, Peoria, Ill.
Filed June 12, 1905. Serial No. 7,919 PUBLISHED FEBRUARY 19, 1907.

62,026. PORT-WINE. OFFLEY, FORRESTER & Co., London, England.
Filed December 21, 1905. Serial No. 15,556. PUBLISHED FEBRUARY 19, 1907.

62,027. TABLE-WATERS. JACOB RIES, Shakopee, Minn.
Filed July 18, 1905. Serial No. 10,511. PUBLISHED AUGUST 26, 1906.

62,028. WHISKY. FRED. S. SCHERER, Utica, N. Y.
Filed October 23, 1905. Serial No. 13,872. PUBLISHED MARCH 20, 1906.

62,029. STOCKINGS. TEFFT, WELLER COMPANY, New York, N. Y.
Filed January 4, 1906. Serial No. 15,883. PUBLISHED APRIL 10, 1906.

62,030. WHISKY. WICHMAN, LUTGE N & Co., San Francisco, Cal.
Filed May 8, 1905. Serial No. 4,718. PUBLISHED FEBRUARY 13, 1906.

62,031. CONDENSED MILK. WISCONSIN CONDENSED MILK Co, Burlington, Wis., and New York, N. Y.
Filed August 26, 1905. Serial No. 12,033. PUBLISHED FEBRUARY 19, 1907.

62,032. CONDENSED MILK. WISCONSIN CONDENSED MILK Co., Burlington, Wis., and New York, N. Y.
Filed August 26, 1905. Serial No. 12,034. PUBLISHED FEBRUARY 19, 1907.

62,033. EXTERNAL MEDICINAL PREPARATIONS FOR THE SKIN. ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany.
Filed September 7, 1905. Serial No. 12,342. PUBLISHED FEBRUARY 19, 1907.

62,034. CERTAIN MEDICINAL PREPARATIONS. ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany.
Filed March 19, 1906. Serial No. 17,998. PUBLISHED FEBRUARY 19, 1907.

62,035. REMEDY FOR CERTAIN DISEASES. BOOTH'S HYOMEI COMPANY, Buffalo, N. Y.
Filed December 26, 1906. Serial No. 24,267. PUBLISHED FEBRUARY 19, 1907.

62,036. REMEDY FOR THE CURE OF RHEUMATISM AND GOUT. BUTLER & FIELD, Washington, D. C.
Filed January 28, 1907. Serial No. 24,852. PUBLISHED FEBRUARY 19, 1907.

62,037. PERFUME. W. W. GAVITT CHEMICAL CO., Topeka, Kans.
Filed January 19, 1907. Serial No. 24,772. PUBLISHED FEBRUARY 19, 1907.

62,038. FRESH PEACHES. JAMES M. HAMPTON, Charlotte, N. C.
Filed December 24, 1906. Serial No. 24,263. PUBLISHED FEBRUARY 19 1907.

62,039. WHISKY. JOHN HAIG & Co. LTD., Markinch, Scotland.
Filed June 27, 1906. Serial No. 20,610. PUBLISHED DECEMBER 4, 1906.

62,040. CERTAIN PROPRIETARY MEDICINE. ULYSSES G. HOSHAW, Chanute, Kans.
Filed January 22, 1907. Serial No. 24,832. PUBLISHED FEBRUARY 19, 1907.

62,041. REMEDY FOR CERTAIN DISEASES. SOPHIA M. MARSH, Locust Valley and Glen Cove, N. Y.
Filed January 22, 1907. Serial No. 24,836. PUBLISHED FEBRUARY 19, 1907.

62,042. SUBSTITUTE FOR LARD. MINER, READ & GARRETTE, New Haven, Conn.
Filed January 14, 1907. Serial No. 24,622. PUBLISHED FEBRUARY 19, 1907.

62,043. EVAPORATED AND CONDENSED MILK AND EVAPORATED AND CONDENSED CREAM. MOHAWK CONDENSED MILK Co., Rochester, N. Y.
Filed December 20, 1906. Serial No. 24,164. PUBLISHED FEBRUARY 19, 1907.

62,044. EVAPORATED AND CONDENSED MILK AND EVAPORATED AND CONDENSED CREAM. MOHAWK CONDENSED MILK Co., Rochester N. Y.
Filed December 20, 1906. Serial No. 24,166. PUBLISHED FEBRUARY 19, 1907.

62,045. WINE. JAMES F. O'TOOLE, Baltimore, Md.
Filed January 27, 1906. Serial No. 16,571. PUBLISHED MAY 8, 1906.

62,046. FLUID BEEF. PATTERSON-CABELL Co., New York, N. Y.
Filed January 16, 1907. Serial No. 24,672. PUBLISHED FEBRUARY 19, 1907.

62,047. DYSPEPSIA REMEDY. PITTSBURG PHARMACAL COMPANY, Pittsburg, Pa.
Filed December 15, 1905. Serial No. 15,444. PUBLISHED FEBRUARY 19, 1907.

62,048. CERTAIN MEDICINES. ERNST BISCHOFF, New York, N. Y.
Filed January 16, 1907. Serial No. 24,675. PUBLISHED FEBRUARY 19, 1907.

62,049. PREPARATION FOR TREATING VENEREAL DISEASES. BONKOCINE CHEMICAL Co., Kenton, Ohio.
Filed January 3, 1907. Serial No. 24,418. PUBLISHED FEBRUARY 19, 1907.

62,050. PERFUMERY, TALC POWDER, AND TOILET WATER. COLGATE & Co., New York, N. Y.
Filed January 18, 1907. Serial No. 24,736. PUBLISHED FEBRUARY 19, 1907.

62,051. REMEDIES FOR SKIN DISEASES. KENTON DRINKARD, Beaumont, Tex.
Filed January 12, 1907. Serial No. 24,599. PUBLISHED FEBRUARY 19, 1907.

62,052. WATCHCASES. ELGIN NATIONAL WATCH COMPANY, Elgin and Chicago, Ill.
Filed January 8, 1907. Serial No. 24,518. PUBLISHED FEBRUARY 19, 1907.

62,053. HAIR-PINS. SOLOMON H. GOLDBERG, Waukegan, Ill.
Filed December 14, 1906. Serial No. 24,021. PUBLISHED FEBRUARY 19 1907.

62,054. WHISKY. IMPERIAL DISTILLING & CORDIAL Co., Chicago, Ill.
Filed January 22, 1907. Serial No. 24,813. PUBLISHED FEBRUARY 19, 1907.

62,055. CERTAIN MEDICINAL PREPARATIONS. THE J. W. JAMES Co., Wheeling, W. Va.
Filed January 16, 1907. Serial No. 24,680. PUBLISHED FEBRUARY 19 1907.

62,056. BUTTER. DAVID W. LEWIS & COMPANY, New York, N. Y.
Filed November 16, 1906. Serial No. 23,400. PUBLISHED FEBRUARY 19, 1907.

62,057. HAIR-RESTORATIVES. FRANK M. QUINN, Tekoa, Wash.
Filed December 13, 1906. Serial No. 24,001. PUBLISHED FEBRUARY 19, 1907.

62,058. ANTITOXIC SERUMS. SCHIMMEL & Co., Miltitz, near Leipzig, Germany.
Filed December 20. 1906. Serial No 24,342. PUBLISHED FEBRUARY 19, 1907.

62,059. REMEDIES FOR DISORDERS OF THE BLOOD. WILLIAM H. SERVER, Carbon Hill, Ill.
Filed January 7, 1907. Serial No. 24,505. PUBLISHED FEBRUARY 19, 1907.

62,060. VARNISH. BERRY BROTHERS, LIMITED, Detroit, Mich.
Filed January 14, 1907 Serial No. 24,615. PUBLISHED FEBRUARY 19, 1907.

62,061. LAUNDRY SOAP. HARRY BICK, New York, N. Y.
Filed January 19, 1907. Serial No. 24,771. PUBLISHED FEBRUARY 19, 1907.

62,062. CONDENSED MILK, EVAPORATED MILK, AND EVAPORATED CREAM. BORDEN'S CONDENSED MILK COMPANY, Jersey City, N. J., and New York, N. Y.
Filed January 9, 1907. Serial No. 24,538. PUBLISHED FEBRUARY 19, 1907.

62,063. CANNED SALMON, SHRIMP, LOBSTERS, AND CLAM-CHOWDER. DOWNING TAYLOR Co., Springfield, Mass.
Filed January 3. 1907. Serial No. 24,401. PUBLISHED FEBRUARY 19, 1907.

62,064. KNITTED HOSIERY, GLOVES, AND UNDERWEAR. MORITZ SML. ESCHE, Chemnitz, Germany.
Filed July 7, 1905. Serial No. 9,875. PUBLISHED FEBRUARY 19, 1907.

62,065. PREPARATION FOR THE MODIFICATION OF COW'S MILK. FAIRCHILD BROS. & FOSTER, New York, N. Y.
Filed January 22, 1907. Serial No. 24,829. PUBLISHED FEBRUARY 19, 1907.

62,066. DRIED AND EVAPORATED PRUNES. H. S. GILE & COMPANY, Salem, Oreg.
Filed January 3, 1907. Serial No. 24,421. PUBLISHED FEBRUARY 19, 1907.

62,067. FINGER-NAIL CLIPPERS. THE H. C. COOK COMPANY, Ansonia, Conn.
Filed January 4, 1907. Serial No. 24,443. PUBLISHED FEBRUARY 19, 1907.

62,068. STIFF FELT HATS. NATHANIEL P. HILL, Pittsburg Pa.
Filed January 7, 1907. Serial No. 24,494. PUBLISHED FEBRUARY 19, 1907.

62,069. WASHING-POWDER. THE HOLLYWOOD SOAP COMPANY, Cincinnati, Ohio.
Filed January 21, 1907. Serial No. 24,803. PUBLISHED FEBRUARY 19, 1907.

62,070. WINES. I. L. LAMM Co., Superior, Wis.
Filed January 18, 1907. Serial No. 24,734. PUBLISHED FEBRUARY 19, 1907.

62,071. PERFUMED AND MEDICATED SOAP. HORATIO S. KELLEY, West Dennis, Mass.
Filed June 16, 1906. Serial No. 20,359. PUBLISHED FEBRUARY 19, 1907.

62,072. HEADACHE REMEDY. DR. KILMER & Co., South Bend, Ind.
Filed December 19, 1906. Serial No. 24,145. PUBLISHED FEBRUARY 19, 1907.

62,073. PADS FOR FLAT-IRONS. THE LAUNDRY NOVELTY COMPANY, Detroit, Mich.
Filed January 12, 1907. Serial No. 24,600. PUBLISHED FEBRUARY 19, 1907.

62,074. MEDICATED SOAP. LLOYD BROTHERS, Cincinnati, Ohio.
Filed July 8, 1905. Serial No. 9,925. PUBLISHED JUNE 5, 1906.

62,075. CERTAIN MEDICINAL PREPARATION. MEDICAL FOOD COMPANY, New York, N. Y.
Filed December 21, 1906. Serial No. 24,196. PUBLISHED FEBRUARY 19, 1907.

62,076. VALVES AND COCKS AND THEIPARTS THEREOF. H. MUELLER MANUFACTURING COMPANY, Decatur, Ill.
Filed July 16, 1906. Serial No. 20,962. PUBLISHED FEBRUARY 19, 1907.

62,077. WHEAT BREAKFAST FOOD. PILLSBURY-WASHBURN FLOUR MILLS CO., LTD., Minneapolis, Minn.
Filed November 13, 1906. Serial No. 23,204. PUBLISHED FEBRUARY 19, 1907.

62,078. CIGARS. LOUIS G. SMITH & Co., New York, N. Y.
Filed January 14, 1907. Serial No. 24,627. PUBLISHED FEBRUARY 19, 1907.

62,079. MEDICINAL OIL. STALLMAN & FULTON COMPANY, New York, N. Y.
Filed January 3, 1907. Serial No. 24,417. PUBLISHED FEBRUARY 19, 1907.

62,080. JELLIES. SARAH BLAKE STONE, New Haven, Conn.
Filed January 3, 1907. Serial No. 24,391. PUBLISHED FEBRUARY 19, 1907.

62,081. CERTAIN MEDICAL PREPARATION. HARRY G. THOMPSON, Covington, Ky.
Filed June 23, 1906. Serial No. 20,522. PUBLISHED FEBRUARY 19, 1907.

62,082. GRASS-HOOKS. WIEBUSCH & HILGER, LIMITED, New York, N. Y.
Filed January 22, 1907. Serial No. 24,836. PUBLISHED FEBRUARY 19, 1907.

62,083. COFFEE. WOOLSON SPICE COMPANY, Toledo, Ohio.
Filed January 16, 1907. Serial No. 24,697. PUBLISHED FEBRUARY 19, 1907.

62,084. COFFEE. YERXA BROS. & Co., Minneapolis, Minn.
Filed December 22, 1906. Serial No. 24,237. PUBLISHED FEBRUARY 19, 1907.

62,085. GOLF-BALLS. A. G. SPALDING & BROS., New York, N. Y.
Filed October 13, 1905. Serial No. 13,562. PUBLISHED FEBRUARY 19, 1907.

62,086. COAL-TAR DYESTUFFS. ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany.
Filed September 7, 1905. Serial No. 12,322. PUBLISHED FEBRUARY 19, 1907.

62,087. PHOTOGRAPHIC DEVELOPERS. ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany.
Filed September 7, 1905. Serial No. 12,345. PUBLISHED FEBRUARY 19, 1907.

62,088. WHEAT-STARCH FOR LAUNDRY USE. ATLANTIC STARCH WORKS, Westport, Conn.
Filed January 7, 1907. Serial No. 24,483. PUBLISHED FEBRUARY 19, 1907.

62,089. WALL-BOARD AND BUILDING-PAPER. THE BEAVER MANUFACTURING COMPANY, Buffalo, N. Y.
Filed December 24, 1906. Serial No. 24,260. PUBLISHED FEBRUARY 19, 1907.

62,090. CHEMICAL COMPOUND. J. A. & W. BIRD & Co., Boston, Mass.
Filed January 9, 1907. Serial No. 24,537. PUBLISHED FEBRUARY 19, 1907.

62,091. ANTISEPTICS, DISINFECTANTS, AND GERMICIDES. ERNST BISCHOFF, New York, N. Y.
Filed January 16, 1907. Serial No. 24,676. PUBLISHED FEBRUARY 19, 1907.

62,092. MOUTH-HARMONICAS. F. A. BÖHM, Untersachsenberg, Germany.
Filed May 8, 1906. Serial No. 4,770. PUBLISHED FEBRUARY 19, 1907.

62,093. ASSORTED FISHING-TACKLE. FRANK E. CHESTER, Providence, R. I.
Filed October 19, 1906. Serial No. 22,782. PUBLISHED FEBRUARY 19, 1907.

62,094. KNITTED HOSIERY, GLOVES, AND UNDERWEAR. MORITZ SMIL. ESCHE, Chemnitz, Germany.
Filed July 7, 1905. Serial No. 9,874. PUBLISHED FEBRUARY 19, 1907.

62,095. LAUNDRY BLUE. HARGREAVES BROS. & Co. LIMITED, Kingston-upon-Hull, England.
Filed December 26, 1906. Serial No. 24,275. PUBLISHED FEBRUARY 19 1907.

62,096. LUBRICATING OILS AND GREASES. KATHAIBO CHEMICAL Co., New York, N. Y.
Filed April 4, 1906. Serial No. 18,422. PUBLISHED FEBRUARY 19, 1907.

62,097. CERTAIN DETERGENTS. THE PORCELA COMPANY, Pittsburg, Pa.
Filed January 9, 1907. Serial No. 24,533. PUBLISHED FEBRUARY 19, 1907.

62,098. FLOOR-TILES. WILLIAM H. WATTS & COMPANY, Philadelphia, Pa.
Filed January 16, 1907. Serial No. 24,695. PUBLISHED FEBRUARY 19, 1907.

62,099. WEEKLY PERIODICAL. THE WILSON COMPANY, Chicago, Ill.
Filed January 23, 1907. Serial No. 24,860. PUBLISHED FEBRUARY 19, 1907.

62,100. BOWS, ARROWS, AND TARGETS. HAROLD N. ANDERSON, Dayton, Ohio.
Filed September 17, 1906. Serial No. 22,133. PUBLISHED FEBRUARY 19, 1907.

62,101. TALCUM TOILET POWDER AND MASSAGE-CREAM. ELI ATWELL, Mountain Dale, N. Y.
Filed July 31, 1906. Serial No. 21,267. PUBLISHED FEBRUARY 19, 1907.

62,102. SOLIDIFIED CEMENTITIOUS BURIAL-VAULTS. ELIZA A. BENNER, New Paris, Ohio.
Filed March 8, 1906. Serial No. 17,667. PUBLISHED FEBRUARY 19, 1907.

62,103. BOYS' AND MEN'S COATS, VESTS, AND TROUSERS. BICKLEY, MCCLURE & Co., Knoxville, Tenn.
Filed May 26, 1906. Serial No. 19,885. PUBLISHED FEBRUARY 19, 1907.

62,104. HEADACHE-POWDERS. PAUL BOEHME, Brooklyn, N. Y.
Filed August 21, 1906. Serial No. 21,698. PUBLISHED FEBRUARY 19, 1907.

62,105. CERTAIN LIGHTING-FIXTURES. THE CLEVELAND GAS & ELECTRIC FIXTURE COMPANY, Cleveland, Ohio.
Filed September 26, 1906. Serial No. 22,339. PUBLISHED FEBRUARY 19, 1907.

62,106. KNITTED HOSIERY, GLOVES, AND UNDERWEAR. MORITZ SMIL. ESCHE, Chemnitz, Germany.
Filed July 7, 1905. Serial No. 9,873. PUBLISHED FEBRUARY 19, 1907.

62,107. TOILET SOAP. DANA ESTES, Boston, Mass.
Filed December 10, 1906. Serial No. 23,915. PUBLISHED FEBRUARY 19, 1907.

62,108. DYES. FARBWERKE VORM. MEISTER LUCIUS & BRÜNING, Höchst-on-the-Main, Germany.
Filed June 18, 1906. Serial No. 20,379. PUBLISHED OCTOBER 23, 1906.

62,109. DYESTUFFS APPLICABLE IN COLORING AND PRINTING PROCESSES. FARBWERKE VORM. MEISTER LUCIUS & BRÜNING, Höchst-on-the-Main, Germany.
Filed June 18, 1906. Serial No. 20,381. PUBLISHED OCTOBER 23, 1906.

62,110. PIANOS, MANDOLINS, GUITARS, BANJOS, AND VIOLINS. C. J. HEPPE & SON, Philadelphia, Pa.
Filed October 13, 1906. Serial No. 22,769. PUBLISHED FEBRUARY 19, 1907.

62,111. MINERAL CELL AND TISSUE BUILDING SALTS. JAMES W. HINE, Jamestown, N. Y.
Filed December 13, 1906. Serial No. 23,999. PUBLISHED FEBRUARY 19, 1907.

62,112. NEWSPAPER. IT PUBLISHING COMPANY, Brooklyn, N. Y.
Filed January 2, 1907. Serial No. 24,422. PUBLISHED FEBRUARY 19, 1907.

62,113. PERIODICALS, BULLETINS, AND DIRECTORIES. JOHN R. KENDRICK, Philadelphia, Pa.
Filed March 31, 1906. Serial No. 18,462. PUBLISHED OCTOBER 23, 1906.

62,114. CANDIES. JAMES P. LASKARIS & Co., Wilmington, Del.
Filed January 16, 1907. Serial No. 24,679. PUBLISHED FEBRUARY 19, 1907.

62,115. CANDIES. JAMES P. LASKARIS & Co., Wilmington, Del.
Filed January 16, 1907. Serial No. 24,680. PUBLISHED FEBRUARY 19, 1907.

62,116. BROOMS AND WHISK-BROOMS. LEE BROOM & DUSTER COMPANY, Lincoln, Nebr.
Filed January 26, 1907. Serial No. 24,901. PUBLISHED FEBRUARY 19, 1907.

62,117. TOFFEE. MACKINTOSH'S TOFFEE COMPANY, Bradley Beach, N. J.
Filed January 12, 1907. Serial No. 24,601. PUBLISHED FEBRUARY 19, 1907.

62,118. WRAPPING AND PRINTING PAPER. MCCLELLAN PAPER COMPANY, Minneapolis, Minn.
Filed December 7, 1906. Serial No. 23,858. PUBLISHED FEBRUARY 19, 1907.

62,119. FOUNTAIN-PENS. FRANK H. MOONEY, Chicago, Ill.
Filed January 6, 1906. Serial No. 15,964. PUBLISHED FEBRUARY 19, 1907.

62,120. COTTON THREAD. NEW ENGLAND COTTON YARN Co., Boston, Mass.
Filed October 1, 1906. Serial No. 22,405. PUBLISHED FEBRUARY 19, 1907.

62,121. WRENCHES. ROBBINS, GAMWELL & Co., Pittsfield, Mass.
Filed January 2, 1907. Serial No. 24,386. PUBLISHED FEBRUARY 19, 1907.

62,122. CERTAIN MEDICINES. FRANK E. RUTHERFORD Bonham, Tex.
Filed November 24, 1905. Serial No. 14,967. PUBLISHED FEBRUARY 19, 1907.

62,123. SALT. SCHWABACHER BROS. & Co., INC., Seattle, Wash.
Filed January 21, 1907. Serial No. 24,808. PUBLISHED FEBRUARY 19, 1907.

62,124. OILS, GREASES, AND WAXES FOR THE PRESERVATION OF LEATHER. VACUUM OIL COMPANY, Rochester, N. Y.
Filed January 21, 1907. Serial No. 24,810. PUBLISHED FEBRUARY 19, 1907.

LABELS

REGISTERED APRIL 16, 1907.

13,469.—*Title:* "DAISY BREAD." (For Bread.) CHARLES SEIP BAKING Co., Chicago, Ill. Filed March 23, 1907.

13,470.—*Title:* "GINGER CAKE MOLASSES." (For Molasses.) BERRY, MAYBRUN Co., Chicago, Ill. Filed March 11, 1907.

13,471.—*Title:* "UNCLE BEN MOLASSES." (For Molasses.) BERRY, MAYBRUN Co., Chicago, Ill. Filed March 11, 1907.

13,472.—*Title:* "DEXTROSE." (For a Prepared Food for Infants and Invalids.) THE DEXTROSE FOOD Co., Barton Heights, Va. Filed March 22, 1907.

13,473.—*Title:* "PIONEER." (For Lager-Beer.) JOHN GUND BREWING COMPANY, La Crosse, Wis. Filed March 25, 1907.

13,474.—*Title:* "CANMALT." (For Whisky.) HAZELTINE & PERKINS DRUG COMPANY, Grand Rapids, Mich. Filed March 26, 1907.

13,475.—*Title:* "ARCADIA SANDALWOOD." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 23, 1907.

13,476.—*Title:* "ARCADIA ROSE." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed March 23, 1907.

13,477.—*Title:* "ROOT JUICE." (For a Medical Preparation.) WILLIAM P. CABLER, Fort Wayne, Ind. Filed March 23, 1907.

13,478.—*Title:* "KARLEN'S KEYSTONE SCALP MASSAGE AND SHAMPOO." (For a Scalp Preparation.) KARLEN MFG. Co., Minneapolis, Minn. Filed March 26, 1907.

13,479.—*Title:* "SECURITY GALL SALVE." (For a Gall-Salve.) FRANK B. DENNIE, Minneapolis, Minn. Filed March 23, 1907.

13,480.—*Title:* "ARTGUM THE DRY CLEANER AND MASSAGER." (For a Cleaning Composition.) ADOLPH SOMMER, Cambridge, Mass. Filed March 21, 1907.

13,481.—*Title:* "KLEENEEN." (For a Fluid for the Removal of Grease, Stains, and Spots.) S. S. WALSTRUM, New York, N. Y. Filed March 23, 1907.

13,482.—*Title:* "LOUVRE GLANZ." (For Liquid for Finishing, Restoring, and Preventing the Cracking of Oil Paintings.) LOUIS MENDEL, Philadelphia, Pa. Filed March 25, 1907.

13,483.—*Title:* "BARNE'S CROUP GREASE." (For a Remedy for Croup.) THE NATIONAL CHEMICAL COMPANY, Caney, Kans. Filed December 20, 1906.

13,484.—*Title:* "PHAR-O." (For Embalming Fluid.) SLIFER CHEMICAL COMPANY, Philadelphia, Pa. Filed February 13, 1907.

PRINTS

REGISTERED APRIL 16, 1907.

1,958.—*Title:* "BURTON-PIERCE UNIFORMS." (For Uniforms.) THE BURTON-PIERCE Co., Boston, Mass. Filed March 25, 1907.

1,959.—*Title:* "MEN'S AND BOYS' APPAREL." (For Men's and Boys' Apparel.) H. C. LYTTON, Chicago, Ill. Filed March 21, 1907.

1,960.—*Title:* "NACHTWACHTER." (For Beer.) CHAS. W. SMOWK Co., Maywood, Ill. Filed March 22, 1907.

1,961.—*Title:* "THE FLOUR OF THE HOUR." (For Flour.) LUTHER PRESCOTT HUBBARD, Minneapolis, Minn. Filed March 23, 1907.

1,962.—*Title:* "MAPL-FLAKE HOBBY HORSE." (For a Prepared Cereal Breakfast Food.) HYGIENIC FOOD COMPANY, Battle Creek, Mich. Filed March 22, 1907

1,963.—*Title:* "F. T. DIRKSEN'S INCUBATOR." (For Incubators.) FRANK T. DIRKSEN, Springfield, Ill. Filed March 21, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE HOEY.

Decided March 27, 1906.

PATENTABILITY—NON-INVENTION—CHANGE OF LOCATION.

The change of location of projections on the seat portion of a bed-couch *Held* to relate to mechanical skill.

APPEAL from Examiners-in-Chief.

BED-COUCH.

Mr. Geo. H. Strong and *Mr. T. W. Fowler* for the appellant.

ALLEN, *Commissioner:*

This is an appeal from the decision of the Examiners-in-Chief affirming the action of the Primary Examiner rejecting the following claims:

10. The combination in a bed-couch of a containing box or case, a seat hinged to the top of the box between the front and rear edges thereof, said seat having rearward projections extending from its under side and beyond and below the hinges, and within the box a back pivotally connected with the seat and a foldable leg connected with the back and with said seat projections.

13. In a bed-couch, the combination of a hollow base, a seat hinged to the base and having rearward projections within the base and below and beyond its hinges, a back turnably connected with the seat and braces connecting the back with said seat projections and tiltable in unison with, and normally holding the back at right angles to the seat.

17. The combination in a bed-couch of a containing box or base, a seat hinged to the top of the box, between the front and rear, said seat having side bars extending back of and below the hinges and within the box and a suitable stop between the side bars and the base to keep the seat from tilting farther back than is desirable.

18. In a couch, the combination of a hollow base, a seat hinged thereto between the front and rear thereof and having projections extending behind its hinges, a back hinged to the seat, hinged legs carried by the back, braces hinged to the legs and to said rearward projections on the seat, said legs and braces coöperating with the back to hold the back and seat at right angles to one another, and means to prevent the accidental disarrangement of said braces and legs relative to said back and thereby allow the back and seat to open out, when the seat is opened to give access to the box.

21. In a couch, the combination of a box, a seat hinged thereto forward of the back edge of the box and forming a cover therefor, rearward projections on the back of the seat, a back hinged to the seat, legs hinged to the back, braces hinged to the legs and to said rearward projections, said legs foldable against the back with the pivots of the braces and legs in front of the lines through the pivots of the legs to the back and the braces to the projections to hold the back at right angles to the seat, and said seat and back adapted to be turned in unison on the seat-hinges to give access to the box, means for holding the seat in lifted position, and means to prevent the legs and braces falling down accidentally when the seat is in such lifted position.

The reference relied upon is patent to Bühner, April 9, 1901, No. 671,906.

Claims 10 and 13 distinguish from the device of Bühner only by providing that the projections from the back of the seat shall extend from the lower side thereof below the hinges and within the box or base. These distinctions do not involve invention, but are mere matters of mechanical skill.

Claim 17 contains an additional distinction in the limitation to the stops 11 of the applicant's drawing. Bühner sets forth in his specification the same result that is secured by the use of these stops. This feature of the applicant's device in view of the Bühner disclosure likewise involves mere mechanical skill and not invention.

Claims 18 and 21 have been refused on the ground that they involve an unwarranted departure from the invention claimed in the original patent. These claims include means for preventing accidental disarrangement of the legs relative to the back when the seat is raised. This result is to be secured through engagement of the links 5 with the bottoms of the slots 10 upon motion of the legs 6 tending to displace them from their position against the back C. The Examiners-in-Chief correctly stated that no such construction was shown or described in the original construction. The rejection of claims 18 and 21 was proper.

The decision of the Examiners-in-Chief holding that claims 10, 13, 17, 18, and 21 are not allowable is affirmed.

EX PARTE TREBON.

Decided February 1, 1907.

1. ABANDONMENT—FAILURE OF APPLICANT TO AUTHORIZE ATTORNEY TO TAKE ACTION DOES NOT EXCUSE.

The failure of the attorney to act within the statutory period is not excused by the allegation that he did not act earlier because not authorized by the applicant to do so, where it does not appear that he could not have been earlier authorized to proceed.

2. SAME—UNAVOIDABLE DELAY.

The delay of more than one year in responding to the Office action is not unavoidable in those cases where action might have been taken had reasonable efforts been exercised to that end at any time within the period following the Office action.

3. SAME—SAME—INTENTION OF APPLICANT.

Applications are abandoned without regard to what the intention of the applicant may have been in case of delay for more than one year in responding to the Office action unless the delay was unavoidable.

ON PETITION.

MANURE-DROPPER.

Mr. Joseph L. Atkins for the applicant.

ALLEN, *Commissioner:*

This is a renewal of a petition that an application be held not abandoned by reason of delay for more than a year from the date of the Office action in responding thereto.

It is urged in support of the renewed petition that the

applicant had no intention of abandoning the application, and the affidavit of the attorney is filed alleging that he did not act earlier because not authorized by the applicant to do so.

Reference to section 4894 of the Revised Statutes will show that applications are abandoned without regard to what the intention of the applicant may have been in case of delay for more than one year in responding to the Office action unless the delay was unavoidable. The delay is not unavoidable in those cases where action might have been taken had reasonable efforts been exercised to that end at any time within the period following the Office action. The only showing, therefore, offered in this case why action was not earlier taken is the affidavit of the attorney that he was not earlier authorized to take the same. It does not appear that he could not have been earlier authorized to proceed. Abandonment cannot be avoided merely by an allegation that the applicant was responsible for the attorney's inaction. In such cases it must be shown that the applicant's failure to proceed with the case earlier was unavoidable.

The renewed petition is denied.

BASTIAN v. CHAMP.

Decided February 8, 1907.

1. INTERFERENCE—MOTION TO DISSOLVE—REJECTION OF CLAIMS—REQUEST FOR FURTHER EXPLANATION.

Where in acting upon a motion to dissolve the interference the Primary Examiner held the counts of the issue unpatentable and upon reconsideration finally rejected the claims, *Held* that if petitioner did not understand the position of the Examiner or desired a more specific statement of his position concerning the references he should have made his request before the dates set for reconsideration and closing of the case before the Examiner. While the Examiner should indicate the grounds for his rejection as fully as in the ordinary *ex parte* consideration of a case, the applicant can request as a matter of right a more complete explanation only while the case is still pending before the Examiner.

2. SAME—SAME—SAME—PRACTICE.

Where the Examiner rejected the claims constituting the issue in his decision dissolving the interference and not in the application files, *Held* the proper practice under Rule 124 is for the Examiner to indicate his findings regarding the claims in his decision on the motion in the interference file and at the same time to make the rejection of the claims affected in the application files. In making such rejection, if desired, reference may be made as a basis therefor to the findings in the decision on the motion. The purpose of this practice is to enable applicants to appeal to the full extent provided by statute and, if an appeal is desired, to require the appeal to be taken at once.

ON PETITION.

BOTTLE-FILLING MACHINE.

Mr. William O. Belt and *Messrs. Bacon & Milans* for Bastian.

Mr. Thomas B. Hall for Champ.

ALLEN, *Commissioner:*

This is a petition by Champ that the Examiner be directed—

to prepare a new action in which he shall specifically cite and apply each and all the references upon which he bases his rejection of the several counts of the above interference.

In his decision upon a motion for dissolution the Examiner held the counts of the issue unpatentable and upon reconsideration finally rejected the claims. Upon the last day of the limit of appeal petitioner filed, in addition to this petition, an appeal to the Examiners-in-Chief and a motion for a rehearing before the Primary Examiner. The Examiner dismissed the motion for rehearing, and the appeal is still pending.

If petitioner did not understand the position of the Examiner or desired a more specific statement of his position concerning the references, he should have made his request before the dates set for reconsideration and closing of the case before the Examiner. No such request is of record, and petitioner does not now contend that he does not understand the position taken by the Examiner. The motion to dissolve specifically sets up the grounds upon which it is based, and it appears that the matter has been fully argued *inter partes* before the Examiner.

While the Examiner should indicate the grounds for his rejection as fully as in the ordinary *ex parte* consideration of a case, the applicant can request as a matter of right a more complete explanation only while the case is still pending before the Examiner. It is believed that the case should not be remanded to the Primary Examiner at this stage of the proceeding for a more specific statement of his reasons for rejection, but that petitioner should pursue his appeal to the Examiners-in-Chief.

It is noted that the Examiner has rejected the claims constituting the issue in his decision dissolving the interference, and not in the application files. The proper practice under Rule 124, however, is for the Examiner to indicate his findings regarding the claims in his decision on the motion in the interference file and at the same time to make the rejection of the claims affected in the application files. In making such rejection, if desired, reference may be made as a basis therefor to the findings in the decision on the motion. The purpose of this practice is to enable applicants to appeal to the full extent provided by statute and, if an appeal is desired, to require the appeal to be taken at once.

The petition is denied.

EX PARTE CONTINENTAL CAR AND EQUIPMENT COMPANY.

Decided March 19, 1907.

1. TRADE-MARKS—GEOGRAPHICAL—"CONTINENTAL."

The word "Continental" as applied to dump, flat, logging, and ballast push and mine cars is primarily geographical and not registrable.

2. SAME—REGISTRABILITY DEPENDS UPON PREDOMINANCE OF ARBITRARY FEATURE.

The registrability of a trade-mark depends upon the predominance of the arbitrary features to give character to the mark. It cannot be based upon features incapable of exclusive appropriation merely because they are embellished by arbitrary features which are in themselves insignificant.

3. SAME—SAME—"CONTINENTAL" NOT MADE REGISTRABLE BY SURROUNDING SAME WITH DIAMOND-SHAPED FIGURE.

The geographical word "Continental" being the predominant feature of the mark by which the goods would become known, a diamond-shaped figure surrounding the same instead of being a further distinguishing feature of the mark serves merely as a frame to give prominence to the inclosed symbol of ownership.

ON APPEAL.

TRADE-MARK FOR DUMP, FLAT, LOGGING, AND MINE CARS.

Messrs. Robinson, Martin & Jones for the appellant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register the word "Continental" within a diamond-shaped figure as a trade-mark for dump, flat, logging, cane-ballast, push, and mine cars. This mark is presented for registration as a technical trade-mark.

In the decision in the *Continental Insurance Company* v. *Continental Fire Association* (101 Fed. Rep., 255) the Court said:

We think that the word "Continental," a geographical adjective, meaning pertaining to or relating to a continent, is a word in common use, more or less descriptive of extent, region, and character, and like the words "Columbian," "International," "East Indian," and some other geographical adjectives, it cannot be exclusively appropriated as a trade-mark or trade-name.

It is therefore clear that registration of this word alone as a trade-mark is prohibited by section 5 of the act of 1905, which provides that no mark which consists of—

merely a geographical name or term shall be registered under the terms of this act.

The diamond-shaped figure is not in itself claimed by the appellant to be the arbitrary symbol of ownership. It is, however, urged that this figure which incloses the word "Continental" is a part of the mark and that—

proposed trade-marks are to be considered as a whole and not with reference to what may be regarded as their distinguishing feature.

Section 5 of the act of 1905 provides:

That no mark by which the goods of the owner of the mark may be distinguished from other goods of the same class shall be refused registration as a trade-mark on account of the nature of such mark unless such mark—

comprises certain stated properties. By virtue of this section it is necessary that a technical trade-mark in order to be registrable must consist of an arbitrary symbol which is capable of exclusive ownership, and while registration of such a trade-mark will not be refused because the mark contains other features not in themselves capable of exclusive appropriation its registrability depends upon the predominance of the arbitrary features to give character to the mark. It cannot be based upon features incapable of exclusive appropriation merely because they may be embellished by arbitrary features which are in themselves insignificant.

In the decision in *ex parte Hopkins*, (125 O. G., 670,) which has recently been affirmed by the Court of Appeals of the District of Columbia, it was held that a "fantastic winged figure" which was associated with the words 'Oriental Cream' as a trade-mark for a skin-lotion was "relatively so small as to leave the words 'Oriental Cream' the predominating features of the mark," and the trade-mark refused registration because of its geographical and descriptive character.

In *ex parte Weil* (C. D., 1898, 612; 83 O. G., 1882) Commissioner Duell in considering the registrability of the word "Yucatan" within a square figure, after holding this word to be merely a geographical term, said:

As "Yucatan" taken by itself is not registrable, I do not think it is made so by placing it within a square figure.

The function of a trade-mark is to designate the origin of the merchandise to which it is applied, and the significant features of trade-marks are those which by word or picture symbolize the name by which the manufacturer's goods are known. In this case the word "Continental" is undoubtedly the predominant feature by which the goods would become known, and the diamond-shaped figure surrounding the same, instead of being a further distinguishing feature of the mark, serves merely as a frame to give prominence to the inclosed symbol of ownership.

The decision of the Examiner of Trade-Marks is affirmed.

DAGGETT v. KAUFMANN.

Decided March 21, 1907.

1. INTERFERENCE—MOTION FOR DISSOLUTION—IRREGULARITY—NO SPECIFIC INFORMALITY ALLEGED.

Where in a motion for dissolution upon the ground of irregularity in the declaration of the interference no specific irregularity was alleged, the Primary Examiner did not err in denying the motion as to this ground.

2. SAME—SAME—INTERFERENCE IN FACT.

If there is no interference in fact, it is either because one of the parties has no right to make the claims or because the claims have different meanings in the applications of the different parties. Parties will not be heard to deny their own right to make the claims. (*Miller* v. *Perham*, 121 O. G., 2667.)

APPEAL on motion.

MANTLE.

Mr. A. B. Stoughton for Daggett.

Mr. Joseph L. Levy for Kaufmann.

ALLEN, *Commissioner:*

This is an appeal by Kaufmann from the decision of the Primary Examiner denying his motion for dissolution of the interference.

The appeal alleges error in the Examiner's conclusions that the declaration was regular and that there is interference in fact. Appellant also called attention at the hearing to a prior patent alleging anticipation of the claims in issue thereby.

It was conceded at the hearing that the alleged irregularity raises no other questions than those of patentability and interference in fact. The distinctions between the several grounds of dissolution which are enumerated in Rule 122 have been frequently pointed out and should be observed. No specific informality being alleged, the Primary Examiner did not err in denying the motion so far as the same relates to the regularity of the declaration, and his decision upon this ground of the motion is affirmed.

If there is no interference in fact, it is either because one of the parties has no right to make the claims or because the claims have different meanings in the applications of the different parties. Parties will not be heard to deny their own right to make the claims. (*Miller* v. *Perham*, 121 O. G., 2667.) There is no appeal from the decision of the Primary Examiner affirming opponent's right to make the claims or the identity of meaning of the claims in their respective applications. (Rule 124.) The appeal, so far as it presents the question of interference in fact, is dismissed.

The patent to which attention was called is in a remote art, and the Examiner, it is understood, has held the claims in issue patentable thereover. No such unusual circumstances as will justify the exercise of supervisory authority exist. The request for consideration of the question of patentability is denied.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

IN RE HOEY.

Decided December 4, 1906.

1. PATENTABILITY—NON-INVENTION—CHANGE OF LOCATION.

The change in location of projections on the seat portion of a bed-couch from the upper to the lower side of the seat does not amount to invention. It is possible, but not apparent

that a better balance of the seat and back is secured by changing these projections. It is possible that a more attractive exterior is thereby presented. It is possible that a more salable article is thereby secured; but all this does not prove originality of invention. While courts deal liberally with inventors in sustaining patents having but slight distinctions over prior structures, they do not and ought not to permit the real inventor to be deprived of the fruits of his genius and labor by a mere copyist.

2. REISSUE APPLICATION—NEW MATTER.

Where a patent describes certain parts of a device as having a specified function, a claim in an application for the reissue of such patent which refers to such parts as "means" for performing a different function, requiring a relative location of the parts which was not originally disclosed, relates to new matter. The facts that the reissue application was not filed for about two years after the grant of the patent and that the claim was not made for about nine months after the filing of such application strongly indicate that the claim was not suggested by the original disclosure.

Mr. T. Walter Fowler for the appellant.

Mr. Fairfax Bayard for the Commissioner of Patents.

ROBB, *J.*:

Hearing on appeal from a decision of the Commissioner of Patents refusing the following claims upon an application for the reissue of a patent:

10. The combination in a bed-couch of a containing box or case, a seat hinged to the top of the box between the front and rear edges thereof, said seat having rearward projections extending from its under side and beyond and below the hinges, and within the box, a back pivotally connected with the seat and a folding leg connected with the back and with said seat projections.

13. In a bed-couch, the combination of a hollow base, a seat hinged to the base and having rearward projections within the base and below and beyond its hinges, a back turnably connected with the seat and braces connecting the back with said seat projections and tiltable in unison with, and normally holding the back at right angles to the seat.

17. The combination in a bed-couch of a containing box or base, a seat hinged to the top of the box, between the front and rear, said seat having side bars extending back of and below the hinges and within the box and a suitable stop between the side bars and the base to keep the seat from tilting farther back than is desirable.

18. In a couch, the combination of a hollow base, a seat hinged thereto between the front and rear thereof and having projections extending behind its hinges, a back hinged to the seat, hinged legs carried by the back, braces hinged to the legs and to said rearward projections on the seat, said legs and braces cooperating with the back to hold the back and seat at right angles to one another, and means to prevent the accidental disarrangement of said braces and legs relative to said back and thereby allow the back and seat to open out, when the seat is opened to give access to the box.

21. In a couch, the combination of a box, a seat hinged thereto forward of the back edge of the box and forming a cover therefor, rearward projections on the back of the seat, a back hinged to the seat, legs hinged to the back, braces hinged to the legs and to said rearward projections, said legs foldable against the back with the pivots of the braces and legs in front of the lines through the pivots of the legs to the back and the braces to the projections to hold the back at right angles to the seat, and said seat and back adapted to be turned in unison on the seat-hinges to give access to the box, means for holding the seat in lifted position, and means to prevent the legs and braces falling down accidentally when the seat is in such lifted position.

The references, upon which the Primary Examiner and the Examiners-in-Chief rejected the claims, are: Bühner, April 9, 1901, No. 671,906; Weyer, May 9, 1899, No. 624,691; Beloud, July 27, 1897, No. 586,959. The Commissioner, however, in his decision was satisfied to rely solely upon the Bühner patent.

The above claims, as will be seen, have reference to a so-called bed-couch, which, as the term implies, serves the double purpose of a couch and bed. There are many kinds of bed-couches on the market which closely resemble each other in appearance and structure; hence it was necessary for this applicant in his original and in his reissue application to carefully limit and differentiate his claims. This fact, in view of his present contention, is material.

This bed-couch, briefly described, consists of a box which constitutes the base, and a seat portion about three-fourths as wide and hinged in the rear upon the top of the box. The front of the seat portion, being even with the front of the box, of course, leaves an open space of about one-fourth of the width of the box in the rear of the seat. Suspended nearly over this open space and attached as hereafter described is the back of the couch, the framework of both seat and back being upholstered. Firmly fastened to either end of the bottom of this seat are two side arms, which project almost to the back of and, of course, just inside the box where they are pivoted or hinged to braces connected with the lower part of the folding legs to the adjustable back of the couch, the other ends of the legs being in turn pivoted with the upper rear portion of the back. When the back is in a vertical position, its folded legs and the arm-braces pivoted therewith are also nearly vertical, being inclined just enough forward in the center, that is, at the point where they are pivoted, to lock the legs into position in the channel provided therefor, and at the same time lock and brace the back in its vertical position. This back is directly connected with the seat by two braces pivoted or hinged in the center, one end of each being firmly fastened to the inside top end portions of the seat a little forward of the hinges on the bottom of the seat, the other ends of said braces being firmly fastened to each end of the box. The projections or arms on the under side of the seat being within the box, and being connected with the legs of the back by pivoted braces, it follows that, when the back is lowered, or technically speaking, in a horizontal position and the legs down, either the back of the box must be cut away at each end, or slots cut therein, to permit the passage of said braces, one end of each being pivoted to said seat projections or arms just within the box, and the other end of each then extending downward outside of the box to the lower ends of said legs. When the seat is raised, the stationary arms on the bottom necessarily project downward within the box. Small stops are provided on either end within and near the bottom of the box against which the arms strike when the hinged seat is raised sufficiently high to balance the back.

In the Bühner patent we find exactly the same structure except that the projections to the ends of the seat extend from the *upper* instead of the lower side thereof, and project just beyond the back of instead of to a point just within the box. Projecting just beyond the back of the box, no slots are necessary, as the pivoted braces connecting the projections with the legs of the couch-back do not at any time come in contact with the back of the box. It is claimed that, by changing the seat projections from the *upper* to the *lower* side thereof and within the box, a better balance of the box and seat is secured. Claims 10 and 13 relate to and embody this change. It seems to us clear that these two claims are anticipated by the Bühner construction, and that the change involves nothing more than mere mechanical skill. While it is true that courts deal liberally with inventors, it is equally true that they do not, and ought not, to permit the real inventor to be deprived of the fruits of his genius and labor by a mere copyist. It is possible, but not apparent, that a better balance of the seat and back is secured by changing these projections. It is possible that a more attractive exterior

is thereby presented. It is possible that a more salable article is thereby secured, but all this does not prove originality of conception. We must look to the thing itself, examine its structure, and compare the new with the old. When we do this, we are forced to conclude that had any competent mechanic been directed to change the location of these projections or arms so that they would be within instead of without the box, he would speedily have accomplished the result embodied in these two claims.

Claim 17 involves the little stops on either end of and within the box, and so placed that, when the seat is opened sufficiently to balance the back, the projecting arms strike thereon or come in contact therewith. In the Bühner construction the back of the box itself serves the same purpose, or, to use a more apt expression, performs the same function. The lack of originality in these stops is so apparent that we dismiss the claim without further comment.

We next consider claims 18 and 21, which include "means to prevent the accidental disarrangement" of the legs relative to the back when the seat is raised, the "means" being the slots in the back of the box into which the braces hinged to the legs drop when the back is down. It is now contended that the bottoms of these slots form supports or stops for the leg-braces when the seat is raised, and thereby prevent the braces from unlocking or opening out and releasing the back and seat. It is urged that, while this important function was not included in the original application, it was nevertheless suggested by the original specifications and drawings, and that, therefore, it should not now be considered new matter. These two claims were not only not in the original application but they were not in the original reissue application. The original patent was granted November 25, 1902, and the original application for reissue containing *seventeen claims* was filed September 1, 1904, and it was not until June 16, 1905, that claims 18 and 21 were filed. If these claims were in fact suggested by the original specifications and drawings, it is a little singular, to say the least, that appellant, a man skilled in the art, should have taken so long to discover the fact. In his original specifications he stated that these slots were made—

in order to allow the braces, which are connected with the rear ends of the side bars, to drop into the inclined position which they occupy when the back and the legs have been opened outwardly

and, when the seat is lifted, to allow the braces—

to drop into the slots * * * until the bottom rail of the back contacts with the upper edge of the box.

Neither this language nor the original drawings, in our opinion, justify the present claim. These slots were evidently originally cut in the back of the box to make room for the braces and not the purpose now claimed. Had they been designed to perform the function now claimed, obviously they would have been cut at a different angle, and the drawings and specifications would have shown contact between the braces and the slots when the seat was opened. The law authorizes a reissue of a patent under certain conditions, but the reissue must be one in fact and not an additional patent on something neither shown or described in the original application. Section 4916, Revised Statutes, so far as applicable, reads:

Whenever any patent is inoperative or invalid, by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention or discovery more than he has a right to claim as new, if the error has arisen by inadvertence, accident, or mistake, and without any fraudulent or deceptive intention, the Commissioner shall, on the surrender of such patent and the payment of the duty required by law, cause a new patent for the same invention, and in accordance with the corrected specification, to be issued to the patentee; * * * but no new matter shall be introduced into the specification, nor in case of a machine patent shall the model or drawings be amended, except each by the other; but when there is neither model or drawing, amendments may be made upon proof satisfactory to the Commissioner that such new matter or amendment was a part of the original invention, and was omitted from the specification by inadvertence, accident, or mistake, as aforesaid.

That appellant did not regard the feature embodied in these two claims as part of his original invention, is, to us, clear. The language of the Supreme Court in *Railway Co.* v. *Sayles* (97 U. S., 554) is, therefore, applicable:

The law does not permit such enlargements of an original specification, which would interfere with other inventors who have entered the field in the meantime, any more than it does in the case of reissues of patents previously granted. Courts should regard with jealousy and disfavor any attempts to enlarge the scope of an application once filed, or of a patent once granted, the effect of which would be to enable the patentee to appropriate other inventions made prior to such alteration, or to appropriate that which has, in the meantime, gone into public use.

(See also: *in re Dilg*, 25 App. D. C., 9; *Haskill* v. *Myers*, 81 Fed., 854.)

Finding no error in the record, the decision appealed from will be affirmed, and this opinion and the proceedings in this court will be certified to the Commissioner of Patents as required by law, and it is so ordered. Affirmed.

Notice.

(ORDER NO. 1,711.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 11, 1907.

Acting with the approval of the Secretary of the Interior, Rules 19, 51, 56, and 69 of the Trade-Mark Rules of this Office are amended in the following manner to conform with the act of February 20 1905, as amended by the act of March 2, 1907:

In Rule 19 the words "or which," line 13, have been canceled and the following inserted in lieu thereof:

or which consists of or comprises any design or picture that has been adopted by any fraternal society as its emblem, unless it shall be shown to the satisfaction of the Commissioner of Patents that the mark was adopted and used as a trade-mark by the applicant or applicant's predecessors, from whom title is derived, at a date prior to the date of its adoption by such fraternal society as its emblem or which trade-mark.

The rule so amended reads as follows:

19. No trade-mark will be registered to an owner domiciled within the territory of the United States unless it shall be made to appear that the same is used as such by said owner in commerce among the several States, or between the United States and some foreign nation or Indian tribe: no trade-mark, except as provided by section 3 of the act of May 4, 1906, will be registered to an owner residing in or located in a foreign country unless said country, by treaty, convention, or law, affords similar privileges to the citizens of the United States: no trade-mark will be registered which consists of or comprises immoral or scandalous matter, or which consists of or comprises the flag or coat of arms or other insignia of the United States, or any simulation thereof, or of any State or municipality, or of any foreign nation, or which consists of or comprises any design or picture that has been adopted by any fraternal society as its emblem, unless it shall be shown to the satisfaction of the Commissioner of Patents that the mark was adopted and used as a trade-mark by the applicant or applicant's predecessors, from whom title is derived, at a date prior to the date of its adoption by such fraternal society as its emblem, or which trade-mark is identical with a registered or known trade-mark owned and in use by another, and appropriated to merchandise of the same descriptive properties, or which so nearly resembles a registered or known trade-mark owned and in use by another, and appropriated to merchandise of the same descriptive properties, as to be likely to cause confusion or mistake in the mind of the public, or to deceive purchasers; or which consists merely in the name of an individual, firm, corporation, or association, not written, printed, impressed, or woven in some particular or distinctive manner or in association with a portrait of the individual, or merely in words or devices which are descriptive of the goods with which they are used, or of the character or quality of such goods,

or merely a geographical name or term; no portrait of a living individual will be registered as a trade-mark, except by the consent of such individual, evidenced by an instrument in writing; and no trade-mark will be registered which is used in unlawful business, or upon any article injurious in itself, or which has been used with the design of deceiving the public in the purchase of merchandise, or which has been abandoned.

The following has been added to Rule 51:

An opposition may be filed by a duly-authorized attorney, but said opposition shall be null and void unless copies, in duplicate, be furnished, duly verified by the opposer, within a reasonable time after such filing.

The rule so amended reads as follows:

51. Any person who believes he would be damaged by the registration of a mark may oppose the same by filing, in duplicate, a written notice of opposition, stating the grounds therefor, within thirty days after the publication of the mark sought to be registered, which notice of opposition shall be accompanied by the fee required by law, and shall be verified by the person filing the same, before one of the officers mentioned in section 3 of the act of February 20, 1905. An opposition may be filed by a duly-authorized attorney, but said opposition shall be null and void unless copies, in duplicate, be furnished, duly verified by the opposer, within a reasonable time after such filing.

The following has been added to Rule 56:

Upon receiving a petition stating concisely and clearly any proper question which has been acted upon by the Examiner in charge of trade-marks and which does not involve the merits of the trade-mark claimed, the refusal of registration of the trade-mark, or a requirement for division, and also stating the facts involved and the point or points to be reviewed, an order will be made fixing a time for hearing such petition by the Commissioner, and directing the Examiner to furnish a written statement of the grounds of his decision upon the matters averred in such petition within five days after being notified of the order fixing the day of hearing. The Examiner shall, at the time of making such statement, furnish a copy thereof to the petitioner. No fee is required for such a petition.

The rule so amended reads as follows:

56. From an adverse decision of the Examiner in charge of trade-marks upon an applicant's right to register a trade-mark, or to renew the registration of a trade-mark, or from a decision of the Examiner in charge of interferences, an appeal may be taken to the Commissioner in person, upon payment of the fee required by law.

Upon receiving a petition stating concisely and clearly any proper question which has been acted upon by the Examiner in charge of trade-marks and which does not involve the merits of the trade-mark claimed, the refusal of registration of the trade-mark, or a requirement for division, and also stating the facts involved and the point or points to be reviewed, an order will be made fixing a time for hearing such petition by the Commissioner, and directing the Examiner to furnish a written statement of the grounds of his decision upon the matters averred in such petition within five days after being notified of the order fixing the day of hearing. The Examiner shall, at the time of making such statement, furnish a copy thereof to the petitioner. No fee is required for such a petition.

Rule 69 has been amended by inserting after line 12 the following:

On appeal from the decision of the Examiner in charge of trade-marks, on a motion for the dissolution of an interference on the ground of non-interference in fact or non-registrability of a mark to the Commissioner of Patents..... $15.00

The rule so amended reads as follows:

69. On filing each original application for registration of a trade-mark..... $10.00
On filing each application for renewal of the registration of a trade-mark..... 10.00
On filing notice of opposition to the registration of a trade-mark..... 10.00
On appeal from the Examiner in charge of trade-marks to the Commissioner of Patents..... 15.00
On appeal from the decision of the Examiner in charge of interferences, awarding ownership of a trade-mark or canceling the registration of a trade-mark, to the Commissioner of Patents..... 15.00
On appeal from the decision of the Examiner in charge of trade-marks, on a motion for the dissolution of an interference on the ground of non-interference in fact or non-registrability of a mark, to the Commissioner of Patents... 15.00
For manuscript copies, for every 100 words or fraction thereof..... .10
For recording every assignment, agreement, power of attorney, or other paper, of 300 words or less..... 1.00
For recording every assignment, agreement, power of attorney, or other paper of more than 300 words, and less than 1,000 words..... 2.00
For recording every assignment, agreement, power of attorney, or other paper of more than 1,000 words..... 3.00
For abstracts of title:
For the certificate of search..... 1.00
For each brief from the digest of assignments..... .20
For searching titles or records, one hour or less..... .50
Each additional hour or fraction thereof..... .50
For a single printed copy of statement, declaration, and drawing..... .05
If certified, for the grant, additional..... .20
For the certificate..... .25

F. I. ALLEN,
Commissioner.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 27, 1907.

Jeptha J. Lamb and James H. Patton, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application for patent filed by Winne Gordon, of Sharon Springs, N. Y., and an application for patent filed by Jeptha J. Lamb and James H. Patton, of Bellevue, Idaho. It appears from the record of the interference that the present whereabouts of said Jeptha J. Lamb and James H. Patton is unknown, and all communications directed to their address above given within the past two years have been returned unclaimed by the Post-Office Department.

Notice is therefore hereby given to the said Jeptha J. Lamb and James H. Patton, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 29, 1907.

Fred W. Smith, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of The New Era Milling Company, of Arkansas City, Kans., for registration of a trade-mark and a trade-mark registered to Fred W. Smith, of New York, N. Y. The notice of said declaration mailed by the Patent Office in the usual manner to the said Fred W. Smith at his known address, 4 State street, New York, N. Y., has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said Fred W. Smith, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C. April 1, 1907.

Empire Soap Company, its assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Magnolia Healing Soap Company, of Muscatine, Iowa, for registration of a trade-mark, an application for registration of a trade-mark filed by The Southern Cotton Oil Company, of Jersey City, N. J., and a trade-mark registered to the Empire Soap Company, of St. Louis, Mo. The notice of said declaration mailed by the Patent Office in the usual manner to the said Empire Soap Company at its address as above given has been returned by the Post-Office Department undelivered, and it has been impossible to locate said company.

Notice is therefore hereby given to the Empire Soap Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Assistant Commissioner.*

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 127—No. 8. TUESDAY, APRIL 23, 1907. PRICE—$5 per year.

CONTENTS.

	Page.
ISSUE OF APRIL 23, 1907	2821
CHANGES IN CLASSIFICATION OF TRADE-MARKS	2821
DISCLAIMER	2821
RENEWAL OF FORFEITED CASES	2821
APPLICATIONS UNDER EXAMINATION	2822
INTERFERENCE NOTICE	2822
PATENTS GRANTED	2823
REISSUES	3182
DESIGNS	3188
TRADE-MARKS—REGISTRATION APPLIED FOR	3191
TRADE-MARKS—REGISTERED	3209
TRADE-MARKS CANCELED	3212
LABELS	3213
PRINTS	3213
COMMISSIONER'S DECISIONS—	
The United States Graphite Company v. Bomhard	3215
Beall, Jr., v. Lyon	3215
Ex parte Lincoln	3216
Martin v. Mullin	3216
DECISIONS OF THE U. S. COURTS—	
In re Heroult	3217
INTERFERENCE NOTICES	3220

ISSUE OF APRIL 23, 1907.

Patents	746—	No. 850,891 to No. 851,636, inclusive.
Designs	9—	No. 38,532 to No. 38,540, inclusive.
Trade-Marks	114—	No. 62,125 to No. 62,238, inclusive.
Labels	18—	No. 13,485 to No. 13,502, inclusive.
Prints	10—	No. 1,964 to No. 1,973, inclusive.
Reissues	7—	No. 12,636 to No. 12,642, inclusive.
Total issue	904	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	1	New Hampshire	3	1
Alaska, District of			New Jersey	54	3
Arizona Territory	1	1	New Mexico Ter't'y		
Arkansas	2	1	New York	120	28
California	22	2	North Carolina	3	2
Colorado	8		North Dakota	3	
Connecticut	25	1	Ohio	50	16
Delaware	2	2	Oklahoma Territ'y	2	
District of Columbia	4	1	Oregon	6	
Florida	3	1	Pennsylvania	66	12
Georgia	3	1	Philippine Islands		
Hawaii Territory	1		Porto Rico		
Illinois	57	16	Rhode Island	9	
Indian Territory	1		South Carolina	1	
Indiana	13	4	South Dakota	4	
Iowa	18	1	Tennessee	7	2
Kansas	12		Texas	12	2
Kentucky	3		Utah	1	1
Louisiana	6	3	Vermont		
Maine	4		Virginia	8	4
Maryland	8	3	Washington	9	1
Massachusetts	33	12	West Virginia	6	1
Michigan	20	2	Wisconsin	13	4
Minnesota	14	1	Wyoming		
Mississippi	3		U. S. Army		
Missouri	28	5	U. S. Navy		
Montana	2				
Nebraska	7	1	Total to citizens of the United States	677	136
Nevada					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	1		Natal		
Austria-Hungary			Netherlands		
Belgium	1		Newfoundland		
Brazil			New South Wales		
British West Indies			New Zealand	1	
Canada	10		Norway		
Cape Colony	1		Persia		
Chile			Queensland		
China			Roumania		
Costa Rica			Russia		
Cuba			Scotland	1	
Denmark	1		South Australia		
Ecuador			Spain		
England	20	1	Sweden	3	2
France	8	2	Switzerland	2	
Germany	27	1	Transvaal, South Africa		
Haiti			Victoria		
Ireland	1		Western Australia		
Italy					
Japan					
Java			Total to citizens of foreign countries	78	6
Mexico	1				

Changes in Classification of Trade-Marks.

(ORDER NO. 1,712.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 13, 1907.

It is hereby directed that the title of class 51, Trade-Marks, be changed from "51, Malt Liquors," to "51, Malt Preparations Not Otherwise Classified."

F. I. ALLEN,
Commissioner.

Disclaimer.

756,771.—*Frank C. Anderson*, Cincinnati, Ohio. SWITCH CONNECTION. Patent dated April 5, 1904. Disclaimer filed April 15 1907, by the patentee and assignee.

Enters this disclaimer:

"1. In switch connections, the combination of a switch-stand, an operating-rod controlled by the mechanism of said switch-stand, a connecting-rod between and united to the switch-points, and a frangible connection uniting said operating-rod and connecting-rod, substantially as described."

Renewal of Forfeited Cases.

A petition for the renewal of a forfeited application need not be signed by the inventor or assignee, but may be signed by the attorney.

A power of attorney in the original application authorizing an attorney to transact all business in the Patent Office in connection with the application construed to be of sufficient scope to include the signing of a petition for renewal and the subsequent prosecution of the application. (*Ex parte Agee*, 101 O. G., 1609.)

of meaning, or geographical names or terms; no portrait of a living individual will be registered as a trade-mark, except by the consent of such individual, evidenced by an instrument in writing; and no trade-mark will be registered which is used in unlawful business, or upon any article injurious in itself, or which has been used with the design of deceiving the public in the purchase of merchandise, or which has been abandoned.

The following has been added to Rule 31:

An opposition may be filed by a duly-authorized attorney, but said opposition shall be null and void unless copies, in duplicate, be furnished, duly verified by the opposer, within a reasonable time after such filing.

The rule so amended reads as follows:

31. Any person who believes he would be damaged by the registration of a mark may oppose the same by filing, in duplicate, a written notice of opposition, stating the grounds therefor, within thirty days after the publication of the mark sought to be registered, which notice of opposition shall be accompanied by the fee required by law, and shall be verified by the person filing the same, before one of the officers mentioned in section 2 of the act of February 20, 1905. An opposition may be filed by a duly-authorized attorney, but said opposition shall be null and void unless copies, in duplicate, be furnished, duly verified by the opposer, within a reasonable time after such filing.

The following has been added to Rule 36:

Upon receiving a petition stating concisely and clearly any proper question which has been acted upon by the Examiner in charge of trade-marks and which does not involve the merits of the trade-mark claimed, the refusal of registration of the trade-mark, or a requirement for division, and also stating the facts involved and the point or points to be reviewed, an order will be made fixing a time for hearing such petition by the Commissioner, and directing the Examiner to furnish a written statement of the grounds of his decision upon the matters averred in such petition within five days after being notified of the order fixing the day of hearing. The Examiner shall, at the time of making such statement, furnish a copy thereof to the petitioner. No fee is required for such a petition.

The rule so amended reads as follows:

36. From an adverse decision of the Examiner in charge of trade-marks upon an applicant's right to register a trade-mark, or to renew the registration of a trade-mark, or from a decision of the Examiner in charge of interferences, an appeal may be taken to the Commissioner in person, upon payment of the fee required by law.

Upon receiving a petition stating concisely and clearly any proper question which has been acted upon by the Examiner in charge of trade-marks and which does not involve the merits of the trade-mark claimed, the refusal of registration of the trade-mark, or a requirement for division, and also stating the facts involved and the point or points to be reviewed, an order will be made fixing a time for hearing such petition by the Commissioner, and directing the Examiner to furnish a written statement of the grounds of his decision upon the matters averred in such petition within five days after being notified of the order fixing the day of hearing. The Examiner shall, at the time of making such statement, furnish a copy thereof to the petitioner. No fee is required for such a petition.

Rule 69 has been amended by inserting after line 12 the following:

On appeal from the decision of the Examiner in charge of trade-marks, on a motion for the dissolution of an interference on the ground of non-interference in fact or non-registrability of a mark, to the Commissioner of Patents	$15.00

The rule so amended reads as follows:

69. On filing each original application for registration of a trade-mark $10.00
On filing each application for renewal of the registration of a trade-mark 10.00
On filing notice of opposition to the registration of a trade-mark 10.00
On appeal from the Examiner in charge of trade-marks to the Commissioner of Patents 15.00
On appeal from the decision of the Examiner in charge of interference, awarding ownership of a trade-mark or granting the registration of a trade-mark, to the Commissioner of Patents 15.00
On appeal from the decision of the Examiner in charge of trade-marks, on a motion for the dissolution of an interference on the ground of non-interference in fact or non-registrability of a mark, to the Commissioner of Patents 15.00
For manuscript copies, for every 100 words or fraction thereof ..... .10
For recording every assignment, agreement, power of attorney, or other paper, of 300 words or less 1.00
For recording every assignment, agreement, power of attorney, or other paper of more than 300 words, and less than 1,000 words 2.00
For recording every assignment, agreement, power of attorney, or other paper of more than 1,000 words 3.00
For abstracts of title:
For the certificate of search 1.00
For each brief from the digest of assignments ..... .25
For examining titles or records, one hour or less ..... .25
Each additional hour or fraction thereof ..... .25
For a single printed copy of statement, declaration, and drawing ..... .05
If certified, for the grant, additional ..... .25
For the certificate ..... .25

F. I. ALLEN,
Commissioner.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 27, 1907.

Jeptha J. Lamb and James H. Patton, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application for patent filed by Wilson Gordon, of Sharon Springs, N. Y., and an application for patent filed by Jeptha J. Lamb and James H. Patton, of Bellevue, Idaho. It appears from the record of the latter-named that the present whereabouts of said Jeptha J. Lamb and James H. Patton is unknown, and all communications directed to their address above given within the past two years have been returned unclaimed by the Post-Office Department.

Notice is therefore hereby given to the said Jeptha J. Lamb and James H. Patton, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 26, 1907.

Fred W. Smith, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of The New Era Milling Company, of Arkansas City, Kans., for registration of a trade-mark and a trade-mark registered to Fred W. Smith, of New York, N. Y. The notice of said declaration mailed by the Patent Office in the usual manner to the said Fred W. Smith at his known address, 4 State street, New York, N. Y., has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said Fred W. Smith, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C. April 1, 1907.

Empire Soap Company, its assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Magnolia Healing Soap Company, of Muscatine, Iowa, for registration of a trade-mark, an application for registration of a trade-mark filed by The Southern Cotton Oil Company, of Jersey City, N. J., and a trade-mark registered to the Empire Soap Company, of St. Louis, Mo. The notice of said declaration mailed by the Patent Office in the usual manner to the said Empire Soap Company at its address as above given has been returned by the Post-Office Department undelivered, and it has been impossible to locate said company.

Notice is therefore hereby given to the Empire Soap Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Assistant Commissioner.*

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 127—No. 8. TUESDAY, APRIL 23, 1907. PRICE—$5 per year.

CONTENTS.

	Page.
ISSUE OF APRIL 23, 1907	2821
CHANGES IN CLASSIFICATION OF TRADE-MARKS	2821
DISCLAIMER	2821
RENEWAL OF FORFEITED CASES	2821
APPLICATIONS UNDER EXAMINATION	2823
INTERFERENCE NOTICE	2822
PATENTS GRANTED	2823
REISSUES	3182
DESIGNS	3186
TRADE-MARKS—REGISTRATION APPLIED FOR	3191
TRADE-MARKS—REGISTERED	3200
TRADE-MARKS CANCELED	3212
LABELS	3213
PRINTS	3213
COMMISSIONER'S DECISIONS—	
The United States Graphite Company v. Bombard	3215
Beall, Jr., v. Lyon	3215
Ex parte Lincoln	3216
Martin v. Mullin	3216
DECISIONS OF THE U. S. COURTS—	
In re Heroult	3217
INTERFERENCE NOTICES	3220

ISSUE OF APRIL 23, 1907.

Patents	746—No. 850,891 to No. 851,636,	inclusive.
Designs	9—No. 36,532 to No. 36,540,	inclusive.
Trade-Marks	114—No. 62,125 to No. 62,238,	inclusive.
Labels	18—No. 13,485 to No. 13,502,	inclusive.
Prints	10—No. 1,964 to No. 1,973,	inclusive.
Reissues	7—No. 12,636 to No. 13,642,	inclusive.
Total issue	904	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	1	New Hampshire	3	1
Alaska, District of			New Jersey	54	3
Arizona Territory	1	1	New Mexico Ter't'y		
Arkansas	2	1	New York	120	28
California	22	2	North Carolina	3	2
Colorado	3		North Dakota	3	
Connecticut	26	1	Ohio	80	16
Delaware	2	2	Oklahoma Territ'y	2	
District of Columbia	4	1	Oregon	6	
Florida	2	1	Pennsylvania	66	12
Georgia	3	1	Philippine Islands		
Hawaii Territory	1		Porto Rico		
Illinois	57	16	Rhode Island	9	
Indian Territory	1		South Carolina	1	
Indiana	13	4	South Dakota	4	
Iowa	18	1	Tennessee	7	2
Kansas	13		Texas	12	2
Kentucky	3		Utah	1	1
Louisiana	6	3	Vermont		
Maine	4		Virginia	5	4
Maryland	5	3	Washington	9	1
Massachusetts	33	12	West Virginia	6	1
Michigan	20	3	Wisconsin	13	4
Minnesota	14	1	Wyoming		
Mississippi	3		U. S. Army		
Missouri	28	6	U. S. Navy		
Montana	2				
Nebraska	7	1	Total to citizens of the United States	677	126
Nevada					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	1		Natal		
Austria-Hungary			Netherlands		
Belgium	1		Newfoundland		
Brazil			New South Wales		
British West Indies			New Zealand	1	
Canada	10		Norway		
Cape Colony	1		Persia		
Chile			Queensland		
China			Roumania		
Costa Rica			Russia		
Cuba			Scotland	1	
Denmark	1		South Australia		
Ecuador			Spain		
England	20	1	Sweden	3	2
France	8	2	Switzerland	2	
Germany	27	1	Transvaal, South Africa		
Haiti			Victoria		
Ireland	1		Western Australia		
Italy					
Japan					
Java			Total to citizens of foreign countries	78	6
Mexico	1				

Changes in Classification of Trade-Marks.

(ORDER No. 1,712.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 18, 1907.

It is hereby directed that the title of class 51, Trade-Marks, be changed from "51, Malt Liquors," to "51, Malt Preparations Not Otherwise Classified."

F. I. ALLEN,
Commissioner.

Disclaimer.

736,771.—*Frank C. Anderson*, Cincinnati, Ohio. SWITCH CONNECTION. Patent dated April 5, 1904. Disclaimer filed April 15 1907, by the patentee and assignee.

Enters this disclaimer:

"1. In switch connections, the combination of a switch-stand, an operating-rod controlled by the mechanism of said switch-stand, a connecting-rod between and united to the switch-points, and a frangible connection uniting said operating-rod and connecting-rod, substantially as described."

Renewal of Forfeited Cases.

A petition for the renewal of a forfeited application need not be signed by the inventor or assignee, but may be signed by the attorney.

A power of attorney in the original application authorizing an attorney to transact all business in the Patent Office in connection with the application construed to be of sufficient scope to include the signing of a petition for renewal and the subsequent prosecution of the application. (*Ex parte Agee*, 121 O. G., 1409.)

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business April 16, 1907.

Room No	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
208	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Apr. 11	Apr. 12	95
209	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Apr. 6	Mar. 18	114
126	II. Bee Culture, Dairy, Labeling, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	Apr. 3	Mar. 20	174
138	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Apr. 3	Mar. 18	111
221	I. Tillage, etc., Fences, and Railway Draft Appliances.	Apr. 3	Mar. 18	169
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Apr. 3	Mar. 16	217
109	XVI. Telegraphy and Telephony.	Apr. 3	Mar. 15	173
218	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Apr. 2	Mar. 18	226
213	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	Apr. 2	Mar. 18	244
222	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Apr. 2	Mar. 18	275
223	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Apr. 1	Mar. 16	267
224	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Mar. 28	Mar. 25	285
227	XVIII. Steam-Engineering, etc.	Mar. 28	Mar. 8	196
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Mar. 27	Mar. 18	318
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Mar. 27	Mar. 8	312
204	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Mar. 27	Mar. 5	343
194	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Mar. 26	Mar. 25	191
246	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Mar. 26	Mar. 9	303
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Mar. 26	Mar. 7	264
139	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Mar. 22	Mar. 16	226
276	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Mar. 22	Mar. 16	249
142	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sprinklers.	Mar. 22	Mar. 14	264
215	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Mar. 21	Mar. 7	269
143	XXIII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Mar. 20	Mar. 11	699

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new applications and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
278	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Mar. 20	Mar. 9	301
282	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	Mar. 19	Mar. 20	288
207	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	Mar. 19	Mar. 1	197
175	III. Annealing and Tempering, Coating with Metal, Electro-chemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Mar. 18	Feb. 21	208
167	V. Bookbinding, Harvesters, Jewelry, and Music.	Mar. 16	Mar. 13	306
147	XXIX. Coopering, Fire-Escapes, Ladders, Rods, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Wood-working.	Mar. 16	Feb. 8	224
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Mar. 15	Feb. 25	415
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Mar. 14	Mar. 13	270
279	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	Mar. 11	Feb. 26	221
232	X. Carriages and Wagons.	Mar. 9	Mar. 9	222
122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel Stoves and Furnaces, and Furnaces.	Mar. 7	Mar. 11	347
230	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making, etc.	Mar. 7	Feb. 27	455
243	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Mar. 1	Mar. 2	625
106	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Mar. 1	Feb. 6	406
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Jan. 22	Mar. 6	329

Total number of applications awaiting action 12,067

189	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	Apr. 15	Apr. 11	185
	Designs	Apr. 11	Apr. 2	30
	Labels and Prints			

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 29, 1907.

Fred W. Smith, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of The New Era Milling Company, of Arkansas City, Kans., for registration of a trade-mark and a trade-mark registered to Fred W. Smith, of New York, N. Y. The notice of said declaration mailed by the Patent Office in the usual manner to the said Fred W. Smith at his known address, 4 State street, New York, N. Y., has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said Fred W. Smith, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

PATENTS

GRANTED APRIL 23, 1907.

850,891. LOCK. HERMAN AHRAND, Newark, N. J. Filed June 26, 1906. Serial No. 323,472.

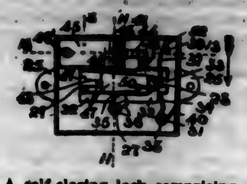

Claim.—1. A self-closing lock comprising a lower face-plate and a box upon said plate, said face-plate being provided with a keyhole and receiving-opening, combined with an upper face-plate and an outwardly-movable spring-hasp connected therewith, said hasp having an engaging or holding portion adapted to enter the receiving-opening in said lower face-plate, combined with a spring-controlled slide-plate and a laterally-extending finger on said plate said finger being arranged directly back of the receiving-opening and being normally in retaining engagement with the engaging or holding portion of the hasp, a tumbler movable upon said slide-plate, a spring connected with said tumbler, and means on said tumbler normally in engagement with the slide-plate for retaining said slide-plate and tumbler normally in immovable relation, until released by a key, and a rearwardly-depressible means in said lock-casing having a portion in holding engagement with the finger of said slide-plate when said tumbler has been actuated, and adapted to be disengaged therefrom by the engaging or holding portion of the hasp when it enters the receiving-opening in the lower face-plate and depresses said means, thereby automatically returning said slide-bolt and tumbler to their normal initial positions with the finger of the slide-bar in locked engagement with the engaging or holding member of the hasp, substantially as and for the purposes set forth.

2. A self-closing lock comprising a lower face-plate and a box upon said plate, said face-plate being provided with a keyhole and receiving-opening, combined with an upper face-plate and an outwardly-movable spring-hasp connected therewith, said hasp having an engaging or holding portion adapted to enter the receiving-opening in said lower face-plate, combined with a spring-controlled slide-plate and a laterally-extending finger on said plate said finger being arranged directly back of the receiving-opening and being normally in retaining engagement with the engaging or holding portion of the hasp, a tumbler movable upon said slide-plate, a spring connected with said tumbler, and means on said tumbler normally in engagement with the slide-plate for retaining said slide-plate and tumbler normally in immovable relation, until released by a key, and a rearwardly-depressible spring-plate in said lock-casing having a portion in holding engagement with the finger of said slide-plate when said tumbler has been actuated, and adapted to be disengaged therefrom by the engaging or holding portion of the hasp when its enters the receiving-opening in the lower face-plate and depresses said spring-plate, thereby automatically returning said slide-bolt and tumbler to their normal initial positions with the finger of the slide in locked engagement with the engaging or holding member of the hasp, substantially as and for the purposes set forth.

3. The combination, with a slide plate or bolt and tumbler of a lock mechanism, and a key for releasing and operating said slide plate or bolt and tumbler, a laterally-extending retaining or holding finger on said slide plate or bolt, of a rearwardly-depressible retaining spring-plate secured at its one end and its other end being movable, said movable end of the spring-plate being adapted to be brought in holding engagement with said finger when said slide-plate and tumbler are moved into their operated positions for retaining said slide-plate or bolt and tumbler in their operated positions until said retaining spring-plate is disengaged from said finger of the slide-plate, substantially as and for the purposes set forth.

4. The combination, with a slide plate or bolt and tumbler of a lock mechanism, and a key for releasing and operating said slide plate or bolt and tumbler, a laterally-extending retaining or holding finger on said slide plate or bolt, of a rearwardly-depressible retaining spring-plate secured at its one end and its other end being movable, a reinforcing portion upon the movable end of said spring-plate, said reinforcing portion being adapted to be brought in holding engagement with said finger when said slide-plate and tumbler are moved into their operated positions, for retaining said slide plate or bolt and tumbler in their operated positions until said retaining reinforcing portion of the spring-plate is disengaged from said finger of the slide-plate, substantially as and for the purposes set forth.

5. The combination, with a lock-casing provided with posts 28, 29, 30 and 31, of a slide plate or bolt having slotted end portions for slidably arranging said plate or bolt upon said posts 28 and 29, and a stop-lug near one end of said slide-plate, a spring upon said post 31 in engagement with said slide-plate, a tumbler pivotally arranged upon said post 28 having a portion normally in engagement with said stop-lug, a spring connected with said tumbler and in engagement with the post 30, a key for releasing and operating said slide plate or bolt and tumbler, a retaining spring-plate secured at its one end to said lock-casing and its other end being movable, said movable end of the spring-plate being adapted to be brought in holding engagement with said slide plate or bolt when said plate and tumbler are moved into their operated positions, for retaining said slide plate or bolt and tumbler in their operated positions until said retaining spring-plate is disengaged from said slide-plate, substantially as and for the purposes set forth.

6. The combination, with a lock-casing provided with posts 28, 29, 30 and 31, of a slide plate or bolt having slotted end portions for slidably arranging said plate or bolt upon said posts 28 and 29, and a stop-lug near one end of said slide-plate, a spring upon said post 31 in engagement with said slide-plate, a tumbler pivotally arranged upon said post 28 having a portion normally in engagement with said stop-lug, a spring connected with said tumbler and in engagement with the post 30, a key for releasing and operating said slide plate or bolt and tumbler, a retaining or holding finger on said slide plate or bolt, a retaining spring-plate secured at its one end and at its other end being movable, said movable end of the spring-plate being adapted to be brought in holding engagement with said finger when said slide-plate and tumbler are moved into their operated positions, for retaining said slide plate or bolt and tumbler in their operated positions until said retaining spring-plate is disengaged from said finger of the side-plate, substantially as and for the purposes set forth.

7. The combination, with a lock-casing provided with posts 28, 29 30 and 31, of a slide plate or bolt having slot-

ted end portions for slidably arranging said plate or bolt upon said posts 28 and 29, and a stop-lug near one end of said slide-plate, a spring upon said post 31 in engagement with said slide-plate, a tumbler pivotally arranged upon said post 28 having a portion normally in engagement with said stop-lug, a spring connected with said tumbler and in engagement with the post 30, a key for releasing and operating said slide plate or bolt and tumbler, a retaining or holding finger on said slide plate or bolt, a retaining spring-plate secured at its one end and at its other end being movable, a reinforcing portion upon the movable end of said spring-plate, said reinforcing portion being adapted to be brought in holding engagement with said finger when said slide-plate and tumbler are moved into their operated positions, for retaining said slide plate or bolt and tumbler in their operated positions until said retaining reinforcing portion of the spring-plate is disengaged from said finger of the slide-plate, substantially as and for the purposes set forth.

850,892. MUSIC-ROLL FOR MECHANICAL MUSICAL INSTRUMENTS. HENRY P. BALL, New York, N. Y., assignor of one-half to Samuel Insull, Chicago, Ill. Filed Sept. 15, 1905. Serial No. 278,622.

Claim.—1. A support for a music-roll comprising a roll-carrying spool, a removable spindle supporting the spool, and self-acting locking means interposed between the spool and spindle.

2. A support for a music-roll comprising a roll-carrying spool, a removable spindle supporting the spool, and a self-acting engaging device for centering the spindle relatively to the spool.

3. A support for a music-roll comprising a roll-carrying spool, a removable spindle supporting the spool, and means for causing the spool and spindle to interlock automatically when operatively adjusted relatively to each other.

4. A support for a music-roll comprising a roll-carrying spool provided with shaped portions at its ends, and a plurality of interchangeable spindles each formed to coincide with certain of such shaped portions of the spool.

5. A support for a music-roll comprising a roll-carrying spool provided interiorly with shaped portions, and a removable spindle extending through the spool and formed to enter the same from one end only.

6. A support for a music-roll comprising a roll-carrying spool, the bore of the spool being differently shaped at its ends, and a removable supporting-spindle extending through the spool and formed to enter the same from one end only.

7. A support for a music-roll comprising a roll-carrying spool, differently-spaced projections at opposite ends within the spool, and a removable supporting-spindle having grooves registering with the projections at one end only of the spool.

8. A support for a music-roll comprising a roll-carrying spool recessed interiorly, and a removable spindle supporting the spool, said spindle being tapered toward opposite ends and provided centrally of its length with a spring-actuated projection entering the recess in the spool.

9. A spool for a music-roll comprising a body provided with flanges at its ends, and having terminal reinforcing means interposed and secured between the flanges and the body.

10. A spool for a music-roll comprising a cylindrical body provided with terminal flanges, and having its ends reinforced with encircling bands of fabric interposed and adhesively secured between the body and the flanges thereof.

11. A spool for a music-roll comprising a tubular body of greater thickness at its ends than at its middle portion, and terminal flanges secured to the ends of said tubular portion.

12. A spool for a music-roll comprising a tubular body, the thickness of which is increased at its ends by encircling bands of fabric, and terminal flanges upon the tubular body adhesively secured to the fabric.

13. A support for a music-roll comprising a spool of uniform internal diameter throughout its length, and a spindle extending through the spool and of varying diameter throughout portions of its length within the spool.

14. The combination of a music-roll, and a supporting-spindle therefor, said spindle being tapered in opposite directions throughout portions of its length.

15. A support for a music-roll comprising a tubular spool, and a spindle having a diameter at its center to conform to the internal diameter of the spool and provided with tapered end portions.

16. A support for a music-roll comprising a spool, and a separable spindle extending through the spool, said spindle being oppositely tapered toward its ends and provided with a clutch member at its center.

17. A support for a music-roll comprising a plurality of spindles of different forms, and a spool adapted to separately receive each spindle.

18. A support for a music-roll comprising a plurality of spindles of different forms, a spool adapted to separately receive the spindles, and means effective when the spool and a spindle are operatively assembled for connecting them in driving relation.

850,893. SLEIGH-KNEE. EDWARD D. BARTON and ALONZO T. HUCKSTEAD, Neillsville, Wis.; said Huckstead assignor to said Barton. Filed Aug. 6, 1906. Serial No. 329,393.

Claim.—1. The combination of an axle-spindle having spaced shoulders, a knee having bearings engaging the spindle on opposite sides of the shoulders, a retaining device fitted between the shoulders, and a bolt passing through the spindle and device for removably holding the latter in place.

2. The combination of an axle spindle having an intermediate portion of reduced and angular cross-section, a knee-standard having spaced bearings engaging the spindle on opposite sides of said angular portion, a device fitted between the bearings and rigidly attached to the angular portion to hold the standard on the spindle, and a fastening extending through the device and spindle for securing the same together.

3. The combination of an axle-spindle having separate portions of cylindrical and angular cross-section, a knee-standard mounted on the portion of circular cross-section to have a turning movement thereon, a member fitted over the angular portion to prevent the spindle from moving out of the standard and forming the sole means for holding the standard and spindle together, and devices extending through the member and angular portion of the spindle for retaining the member in place.

4. The combination of an axle-spindle having separate portions of cylindrical and square cross-section, a knee-standard mounted on the portion of circular cross-section to have a turning movement thereon, a member of U-shaped cross-section fitted over the angular portion from one side thereof, and devices rigidly connecting the U-shaped member to the spindle for preventing relative axial movement of the spindle and standard and holding the latter on the spindle.

5. The combination of a spindle having an intermediate portion of angular cross-section, a bifurcated standard having bored perforations engaging the spindle on opposite sides of the angular portion, a locking member fitted over the angular portion and engaging at its ends the bifurcations, and bolts extending through the locking member and said angular portion of the spindle.

6. The combination of a body-supporting spring, an axle-spindle, a knee-standard mounted on the spindle, a device for forming the sole means for retaining the standard on the spindle, a bolt passing through the device and spindle, and a shackle for supporting the spring on the said device.

7. The combination of a body-supporting spring, an axle-spindle having a reduced portion forming spaced shoulders, a knee-standard mounted on the spindle, a locking member secured to the spindle between its shoulders for holding the standard thereon and provided with a radially-extending arm, and a shackle for attaching the spring to the arm.

850,894. NUMBERING-MACHINE PLUNGER. EDWIN G. BATES, New York, N. Y., assignor to The Bates Machine Company, a Corporation of New Jersey. Filed May 21, 1906. Serial No. 317,899.

Claim.—1. A numbering-machine frame, a pawl-plate provided with a slot, in combination with a plunger, a guide-rod therefor, a spring, said frame having a recess for said rod, and having an opening through the same substantially at right angles to the recess, a pin on said rod engaging said slot in the plate, said opening being closed at the top, and means to rotate said pin in a horizontal plane with said rod as the axis.

2. A numbering-machine frame, a pawl-plate provided with a slot, in combination with a plunger, a guide-rod therefor, a spring, said frame provided with a recess for said rod, and having an opening through the frame substantially at right angles to the recess, a pin on said rod engaging said slot in the plate, said opening being closed at the top, means to rotate said pin, said means comprising a rotatable stud acting on said guide-rod.

3. A numbering-machine frame, a pawl-plate, in combination with a plunger having a guide-rod in the frame, said rod carrying an engaging means for operatively engaging the pawl-plate, said guide-rod being rotatable and adapted upon its rotation to engage or disengage said engaging means from the pawl-plate.

4. A numbering-machine having a frame, a pawl-plate, a plunger and means connecting the pawl-plate and plunger, in combination with a notched guide-rod in said frame, a locking means in the frame and engaging the notch of the rod, said rod being rotatable and adapted upon its rotation to automatically release the locking means.

5. A numbering-machine frame, a pawl-plate, in combination with a plunger having a guide-rod in the frame, said rod carrying an engaging means for operatively engaging the pawl-plate, said guide-rod being rotatable and adapted upon its rotation to engage or disengage said engaging means from the plunger, a locking means in the frame and engaging a notch in the guide-rod, and means for automatically disengaging the locking means upon the rotation of the rod.

6. A numbering-machine frame, a pawl-plate provided with a slot, in combination with a plunger, a spring, said frame having a substantially closed recess for said plunger, and having an opening through the frame substantially at right angles to said recess, a pin on said plunger engaging said slot in the plate, in combination with means for inserting the plunger into the case with the pin below the surface and at least partially within the case and in position where it may be caused to engage the pawl-swing slot, said pin being located normally below said surface of the case.

850,895. NUMBERING-MACHINE. EDWIN G. BATES, New York, N. Y., assignor to The Bates Machine Company, a Corporation of New Jersey. Filed Jan. 26, 1907. Serial No. 354,168.

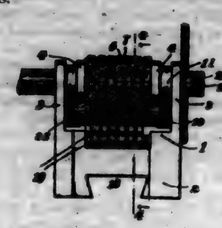

Claim.—1. A numbering-machine comprising a frame, wheels, a pawl-swing, and pawls therefor means for supporting the swing independently of the wheels, an operating-shaft connected with said swing but removable independently of the swing and wheels.

2. A numbering-machine comprising a frame, number-wheels, a pawl-swing having arms and pawls therefor, means for moving the pawl-swing, portions of said frame lying between the arms of the pawl-swing to which portions said wheels are revolubly secured.

3. A numbering-machine comprising a frame, wheels, a pawl-swing, and pawls therefor, means for supporting the swing independently of the wheels, in combination with a hollow shaft on which said wheels are mounted, an operating-shaft connected with said swing but removable independently of the swing and wheels.

4. A numbering-machine comprising a frame, number-wheels, a pawl-swing having arms and pawls therefor, means for moving the pawl-swing, portions of said frame lying between the arms of the pawl-swing to which portions said wheels are revolubly secured, and shaft means supporting the swing independently of the wheels.

5. A numbering-machine comprising a frame, number-wheels, a pawl-swing and pawls therefor, means for moving the pawl-swing, portions of said frame, a hollow shaft on which the wheels are supported, itself supported by said frame portions, and shaft means supporting the swing independently of the wheels and tubular shaft.

6. A numbering-machine comprising a frame, number-wheels, a pawl-swing having arms and pawls therefor, means for moving the pawl-swing, portions of said frame lying between the arms of the pawl-swing to which portions said wheels are revolubly secured, said frame having exterior portion between one of which and one of the wheel-supporting portions an arm of the pawl-swing is pivotally supported.

7. A numbering-machine comprising a frame, number-wheels, a pawl-swing having arms and pawls therefor, means for moving the pawl-swing, portions of said frame lying between the arms of the pawl-swing to which portions said wheels are revolubly secured, said frame having exterior portion between one of which and one of the wheel-supporting portions an arm of the pawl-swing is pivotally supported so as to be independently removable.

8. A numbering-machine comprising a frame, number-wheels, a pawl-swing having arms and pawls therefor, means for moving the pawl-swing, portions of said frame lying between the arms of the pawl-swing to which portions said wheels are revolubly secured, said pawl-swing having an arm, a projection thereon of two diameters and an opening in the frame for said projection having a restricted receiving-mouth for said projection.

9. A numbering-machine comprising a frame, number-wheels, a pawl-swing having arms and pawls therefor, means for moving the pawl-swing, portions of said frame lying between the arms of the pawl-swing to which portions said wheels are revolubly secured, said pawl-swing having an arm, a projection thereon of two diameters and

an opening in the frame for said projection having a restricted receiving-mouth for said projection, an operating means for said swing and an engaging means between the swing and operating means.

10. A numbering-machine comprising a frame, number-wheels, a pawl-swing having arms and pawls therefor, means for moving the pawl-swing, portions of said frame lying between the arms of the pawl-swing to which portions said wheels are revolubly secured, said pawl-swing having an arm, a projection thereon of two diameters and an opening in the frame for said projection having a restricted receiving-mouth for said projection, an operating means for said swing and an engaging means between the swing and operating means, said operating means being removable without dislodging the swing.

11. A numbering-machine comprising a frame, number-wheels, a pawl-swing having arms and pawls therefor, means for moving the pawl-swing, portions of said frame lying between the arms of the pawl-swing to which portions said wheels are revolubly secured, said pawl-swing having an arm, a projection thereon of two diameters and an opening in the frame for said projection having a restricted receiving-mouth for said projection, an operating means for said swing and an engaging means between the swing and operating means, said operating means being removable without dislodging the swing, said operating means comprising a slotted shaft and key therefor located on said arm.

12. A numbering-machine comprising a frame, number-wheels, a pawl-swing having arms and pawls therefor, means for moving the pawl-swing, portions of said frame lying between the arms of the pawl-swing to which portions said wheels are revolubly secured, said pawl-swing having an arm, a projection thereon of two diameters and an opening in the frame for said projection having a restricted receiving-mouth for said projection, an operating means for said swing and an engaging means between the swing and operating means, in combination with a hollow shaft independently supporting the wheels and adapted to maintain its position and the position of the wheels after the removal of the swing and operating means.

13. A numbering-machine comprising a frame, number-wheels, a pawl-swing having arms and pawls therefor, means for moving the pawl-swing, portions of said frame lying between the arms of the pawl-swing to which portions said wheels are revolubly secured, said pawl-swing having an arm, a projection thereon of two diameters and an opening in the frame for said projection having a restricted receiving-mouth for said projection, an operating means for said swing and an engaging means between the swing and operating means, said operating means being removable without dislodging the swing, in combination with a hollow shaft independently supporting the wheels and adapted to maintain its position and the position of the wheels after the removal of the swing and operating means.

14. A numbering-machine comprising a frame, number-wheels, a pawl-swing having arms and pawls therefor, means for moving the pawl-swing, portions of said frame lying between the arms of the pawl-swing to which portions said wheels are revolubly secured, said pawl-swing having an arm, a projection thereon of two diameters and an opening in the frame for said projection having a restricted receiving-mouth for said projection, an operating means for said swing and an engaging means between the swing and operating means, said operating means being removable without dislodging the swing, said operating means comprising a slotted shaft and key therefor located on said arm, in combination with a hollow shaft independently supporting the wheels and adapted to maintain its position and the position of the wheels after the removal of the swing and operating means.

15. A numbering-machine comprising a frame, number-wheels, a pawl-swing having arms and pawls therefor, means for moving the pawl-swing, portions of said frame lying between the arms of the pawl-swing to which portions said wheels are revolubly secured, said frame having two portions U-shaped in plan, of which the inner portions support the wheels and the outer portions the swing.

16. A numbering-machine comprising a frame, number-wheels, a pawl-swing having arms and pawls therefor, means for moving the pawl-swing, portions of said frame lying between the arms of the pawl-swing to which portions said wheels are revolubly secured, said frame having two portions U-shaped in plan, of which the inner portions support the wheels and the outer portions the swing, a hollow shaft extending between the inner portions and supporting the wheels.

17. A numbering-machine comprising a frame, number-wheels, a pawl-swing having arms and pawl therefor, means for moving the pawl-swing, portions of said frame lying between the arms of the pawl-swing to which portions said wheels are revolubly secured, said frame having two portions U-shaped in plan, of which the inner portions support the wheels and the outer portions the swing, the outer portions having openings with restricted mouths.

18. A numbering-machine comprising a frame, number-wheels, a pawl-swing having arms and pawls therefor, means for moving the pawl-swing, portions of said frame lying between the arms of the pawl-swing to which portions said wheels are revolubly secured, said frame having two portions U-shaped in plan, of which the inner portions support the wheels and the outer portions the swing, a hollow shaft extending between the inner portions and supporting the wheels, the outer portions having openings with restricted mouths.

850,896. HEM FOR SEWED ARTICLES. FREDERICK W. BEALS, St. Louis, Mo., assignor to Lewis Blind Stitch Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed July 28, 1906. Serial No. 328,189.

Claim.—1. In a hem, a main layer of textile or similar material, and a superimposed layer formed of a folded portion of said main layer, means for securing the free edge of said folded portion to said main layer, and a row of blind stitches securing said layers together adjacent to the fold.

2. In a hem, a main layer of textile or similar material, and a superimposed layer formed of a folded portion of said main layer, a row of blind stitches securing the free edge of said folded portion to said main layer, and a second row of blind stitches securing said layers together adjacent to the fold.

3. In a hem, a main layer of textile or similar material, and a superimposed layer formed of a folded portion of said main layer, a double row of blind stitches crossing the free edge of said folded portion and securing same to said main layer, and a second row of blind stitches securing said layers together adjacent to the fold.

850,897. SOLDERING-IRON. HENRY BERG, Orange, N. J. Filed Mar. 2, 1906. Serial No. 303,752.

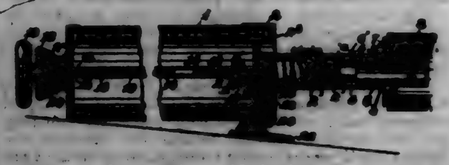

Claim.—1. In a gasolene soldering-iron, the combination of a tubular reservoir, a cap at each end of said reservoir, a gasifying-chamber and a mixing-chamber, a valved passage leading from the reservoir to the gasifying-chamber, an absorbent non-combustible material filling said latter chamber and a gas-passage from the latter chamber to the mixing-chamber, air-passages leading into said mixing-chamber and means to regulate the supply of fuel to said gasifying-chamber and a thimble having triangular apertures therein, said thimble being rotatably mounted upon said mixing-chamber for regulating the air-supply to said mixing-chamber.

2. In a soldering-iron, the combination of a fuel-reservoir, a gasifying-chamber and a mixing-chamber, a valved passage leading from the reservoir to the gasifying-chamber, means for regulating the supply of fuel to the gasifying-chamber, an absorbent non-combustible material filling said latter chamber, a jet or nozzle leading from said gasifying-chamber to the mixing-chamber, apertures in the mixing-chamber adjacent to said jet or nozzle, and a thimble rotatably mounted upon said mixing-chamber, said thimble having triangular apertures therein for regulating the air-supply to said chamber.

3. In a gasolene soldering-iron, the combination of a tubular fuel-reservoir, a gasifying-chamber and a mixing-chamber, a fuel-supply tube secured within said fuel-reservoir and located substantially in the center thereof, a passage connecting the interior of said tube with said gasifying-chamber, check-valves seated in the ends of said tube, a sliding weight within said tube adapted to unseat the valves respectively, and a non-combustible absorbent material filling said gasifying-chamber.

4. In a gasolene soldering-iron, the combination of a fuel-reservoir, a fuel-passage leading from said reservoir, a needle-valve in said passage the stem of said valve being inclined to the axis of said passage, a handle upon the valve-stem, said handle having a broad flat surface adapted to serve as a foot for supporting the soldering-iron with one of its ends elevated.

5. A gasolene soldering-iron having a fuel-reservoir, a gasifying-chamber and a combustion-chamber, fuel-passages connecting said chambers, a mass of absorbent non-combustible material filling the gasifying-chamber, a needle-valve intercepting one of said passages, said valve having a handle with a broad flat surface forming a foot for supporting the soldering-iron with the combustion-chamber elevated.

850,898. PROCESS FOR THE PREPARATION OF WATER-SOLUBLE HYDROCARBON DERIVATIVES. FRIEDRICH BOLEG, Cannstatt, Germany, assignor to Gesellschaft zur Verwertung der Boleg'schen Wasserlöslichen Mineralöle und Kohlenwasserstoffe, Gesellschaft mit Beschränkter Haftung, Berlin, a Corporation of Germany. Filed Mar. 8, 1904. Serial No. 197,170.

Claim.—1. The process of forming water-miscible products from immiscible hydrocarbon derivatives, which consists in incorporating the same with a water-soluble mineral oil.

2. The process of forming water-miscible products from immiscible hydrocarbon derivatives, which consists in air-blowing the same while in a heated state, and then incorporating the same with a water-soluble oil.

3. The process of making water-soluble hydrocarbon derivatives, which consists in oxidising a hydrocarbon derivative by submitting it to the action of oxygen while in a heated state, mixing with a water-soluble oil under the influence of air under pressure, and heating.

4. The process of making water-soluble hydrocarbon derivatives, which consists in oxidising a hydrocarbon derivative by submitting it to the action of oxygen while maintaining the same at a temperature of 40° to 60° Celsius, mixing with a water-soluble oil under the influence of air under pressure, and heating.

5. The process of making water-soluble hydrocarbon derivatives, which consists in adding to a hydrocarbon derivative finely-divided alkaline solution, subjecting to the action of finely-divided gaseous oxygen while maintaining the same at a temperature of 40° to 60° Celsius, and mixing with a water-soluble mineral oil by agitation with air under pressure while heated.

6. The process of making water-soluble hydrocarbon derivatives, which consists in adding to a hydrocarbon derivative two per cent. to five per cent. finely-divided caustic-soda solution, blowing into the same gaseous oxygen while maintaining a temperature of 40° to 60° Celsius, and mixing with seventy per cent. to eighty per cent. of a water-soluble mineral oil by agitation with air under pressure, while maintaining a temperature of approximately 70° Celsius.

7. The process of making water-soluble nitrobenzol which consists in adding to nitrobenzol two per cent. to five per cent. caustic-soda solution, agitating with gaseous oxygen under pressure while maintaining a temperature of about 50° Celsius, adding seventy per cent. to eighty per cent. of water-soluble mineral oil at a temperature of 40° to 50° Celsius, under agitation with air, and heating to a temperature of about 70° Celsius.

8. The process of making water-soluble hydrocarbon derivatives, which consists in oxidising a hydrocarbon derivative by submitting it to the action of oxygen while maintaining the same at a temperature of 40° to 60° Celsius, mixing with a water-soluble oil under the influence of air under pressure, heating, and boiling.

9. The process of making water-soluble hydrocarbon derivatives, which consists in adding to a hydrocarbon derivative finely-divided gaseous oxygen while maintaining the same at a temperature of 40° to 60° Celsius, mixing with a water-soluble mineral oil by agitation with air under pressure while heated, and boiling under pressure.

10. The process of making water-soluble nitrobenzol which consists in adding to nitrobenzol two per cent. to five per cent, caustic-soda solution, agitating with gaseous oxygen under pressure while maintaining a temperature of about 50° Celsius, adding seventy per cent. to eighty per cent. of water-soluble mineral oil at a temperature of 40° to 50° Celsius, under agitation with air, heating to a temperature of about 70° Celsius, and boiling under a pressure of one-half to one atmosphere.

850,899. PAPER-FASTENER. HARRY BORN, Halensee, near Berlin, Germany. Filed Jan. 4, 1906. Serial No. 294,587.

Claim.—1. A fastener comprising a suitably U-shaped bent plate having a longitudinal slit or recess at its back or bent section, fastening jaws or edges projecting inward and formed from the material cut out by the longitudinal slit or recess, said fastening jaws or edges situated near the bent end and removed from the free end of the fastener and adapted to clamp the material inserted between the bent plate when the fastener is compressed.

2. A fastener comprising a suitably U-shaped bent plate having a longitudinal slit or recess at its back or bent section, serrated fastening jaws or edges projecting inward and formed from the material cut out by the longitudinal slit or recess, said fastening jaws or edges situated near the bent end and removed from the free end of the fastener and adapted to clamp the material inserted between the bent plate when the fastener is compressed.

3. A fastener comprising a suitable U-shaped bent plate having a plurality of separated longitudinal slits or recesses at its back or bent section, fastening jaws or edges projecting inward and formed from the material cut out by the longitudinal slits or recesses, said fastening jaws or edges situated near the bent end and removed

from the free end of the fastener and adapted to clamp the material inserted between the bent plate when the fastener is compressed.

850,900. WRENCH. MICHAEL BOTTON, Hoboken, N. J. Filed June 5, 1906. Serial No. 320,819.

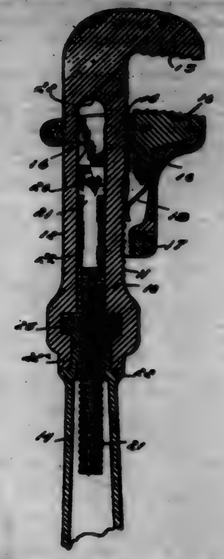

Claim.—1. The combination of the handle-bars consisting of the rack-bar and the guide-bar and a fixed jaw carried thereby, of the slide, its jaw and dog, the latter being adapted to engage the teeth of the rack-bar, the handle and its feed-screw, projections on the sides of the slide, and a pivot connecting the said projections with the handle between said bars.

2. The combination with the slide-bar and the rack-bar, of the fixed jaw carried by said bars, a slide and its bar movable on said bars, a dog on the slide adapted to engage the teeth of the said rack-bar, the handle, and the screw feed-rod extended therethrough and pivotally connected with the said slide.

3. The combination with the slide-bar and the rack-bar, of the fixed jaw carried by said bars, a slide and its bar movable on said bars, a dog on the slide adapted to engage the teeth of the said rack-bar, the handle, and the screw feed-rod extended therethrough and pivotally connected with the said slide, an enlargement on the said bars, a nut on said screw feed-rod above said handle and the handle below it, and a set-screw adapted to fix said nut to said rod.

4. The combination with a fixed jaw and its bar, an adjustable jaw and a slide upon which it is pivotally mounted, a rack-bar for the adjustable jaw, a dog on the slide to engage the rack-teeth of the rack-bar, a handle, a screw feed-rod controlled thereby and connected with the bar of the fixed jaw whereby the latter may be moved or adjusted with respect to the adjustable jaw.

5. A pipe-wrench comprising a rack-bar having a fixed jaw, a slide movable longitudinally of the rack-bar toward and away from the fixed jaw and having a jaw for cooperation with the fixed jaw, said slide having a dog arranged to engage the rack-bar at times, a handle member rotatably connected with the rack-bar, a screw engaged with the handle member and pivotally connected with the slide, said slide being movable upon its pivot into and out of engagement with the rack-bar and the screw being movable into and out of the handle member when the latter is rotated.

850,901. CHANGE-SPEED GEARING. SWINTEN HALSLEY-MOORE, Bloomsbury, London, England. Original application filed Mar. 20, 1906, Serial No. 306,808. Divided and this application filed Dec. 21, 1906. Serial No. 348,972.

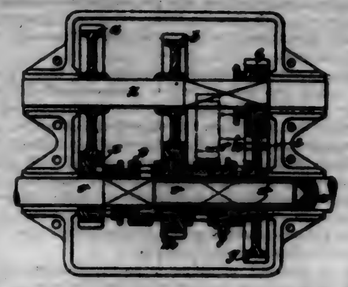

Claim.—1. A change-speed gear comprising a driving and a driven shaft arranged in the same axial line, a counter-shaft parallel with the said driving and driven shafts, a spur-wheel mounted freely at the junction of the driving and driven shafts, a spur-wheel fixed on the counter-shaft with which the aforesaid spur-wheel is in constant mesh, a loosely-mounted spur-wheel on the driving-shaft, a fixed spur-wheel on the counter-shaft with which the spur-wheel on the driving-shaft is constantly in mesh, a loosely-mounted spur-wheel on the driven shaft, a fixed spur-wheel on the counter-shaft with which the spur-wheel on the driven shaft is in constant mesh, means for locking the spur-wheels on the driving and driven shafts respectively to said shafts, and means for locking the spur-wheel mounted at the junction of the driving and driven shafts to either of the said shafts, or to both, as set forth.

2. A change-speed gear comprising a driving and a driven shaft arranged in the same axial line, a counter-shaft parallel with the said driving and driven shafts, a sleeve freely mounted at the junction of the driving and driven shafts, a spur-wheel freely mounted on said sleeve, a spur-wheel fixed on the counter-shaft with which the aforesaid spur-wheel is in constant mesh, a loosely-mounted spur-wheel on the driving-shaft, a fixed spur-wheel on the counter-shaft with which the spur-wheel on the driving-shaft is in constant mesh, a loosely-mounted spur-wheel on the driven shaft, a fixed spur-wheel on the counter-shaft with which the spur-wheel on the driven shaft is in constant mesh, means for locking the spur-wheels on the driving and driven shafts respectively to said shafts, and means for locking the spur-wheel mounted at the junction of the driving and driven shafts to either of the said shafts, or to both, as set forth.

3. A change-speed gear comprising a driving and a driven shaft arranged in the same axial line and having their adjacent ends abutting or interengaging, a spur-wheel mounted freely at the junction of the said shafts, means for positively coupling said spur-wheel to either or both of the said shafts, a spur-wheel loosely mounted on the driving-shaft, a spur-wheel loosely mounted on the driven shaft, means for positively coupling said spur-wheels to their respective shafts, a counter-shaft parallel with the driving and driven shafts, and three spur-wheels fixed on the counter-shaft and in constant mesh with the spur-wheels on the driving and driven shafts, as set forth.

4. A change-speed gear comprising a driving and a driven shaft arranged in the same axial line and having their adjacent ends abutting or interengaging, a sleeve freely mounted at the junction of the said shafts a spur-wheel mounted freely on said sleeve, means for positively connecting said spur-wheel and sleeve to either or both of the said shafts, a spur-wheel loosely mounted on the driving-shaft, a spur-wheel loosely mounted on the driven shaft, means for positively coupling said spur-wheels to their respective shafts, a counter-shaft parallel with the driving and driven shafts, and three spur-wheels fixed on the counter-shaft and in constant mesh with the spur-wheels on the driving and driven shafts, as set forth.

5. A change-speed gear consisting of a driving and a driven shaft in axial alinement, a counter-shaft parallel to said driving and driven shafts, a driving spur-wheel on the driving-shaft, means for coupling said wheel to its shaft, a spur-wheel on the counter-shaft with which the driving spur-wheel on the driving-shaft permanently gears, a spur-wheel on the driven shaft, means for coupling said wheel to its shaft a spur-wheel on the counter-shaft with which the spur-wheel on the driven shaft permanently gears, a second driving spur-wheel freely mounted at the junction of the driving and driven shafts, a spur-wheel on the counter-shaft with which said second driving-wheel permanently gears, and means for locking said wheel to either of the said shafts or to both, whereby said wheel operates to give a second velocity ratio between the driving-shaft and the counter-shaft and enables a direct drive from the driving to the driven shafts to be obtained.

6. In a change-speed gear, the combination with a driving and a driven shaft arranged in axial alinement, of a counter-shaft mounted parallel with the driving and driven shafts, three spur-wheels fixed on said counter-shaft, a free spur-wheel mounted at the junction of the driving and driven shafts and permanently in mesh with one of the wheels on the counter-shaft, two free spur-wheels mounted respectively on the driving and driven shafts, and permanently in mesh with two of the wheels on the counter-shaft, and means for coupling said wheels to their respective shafts so that each can rotate with its shaft, as set forth.

7. In a change-speed gear, the combination with a driving and a driven shaft arranged in axial alinement, of a counter-shaft mounted parallel with the driving and driven shafts, three spur-wheels on said counter-shaft, two of which are fixed and the other free to slide thereon, a free spur-wheel mounted at the junction of the driving and driven shafts and permanently in mesh with one of the fixed wheels on the counter-shaft, a free spur-wheel on the driving-shaft and permanently in mesh with the other fixed wheel on the counter-shaft, a free spur-wheel on the driven shaft which is adapted to gear with the sliding wheel on the counter-shaft, means for coupling the wheels on the driving and driven shafts to their respective shafts so that each can rotate with its shaft, a second counter-shaft, and two spur-pinions fixed thereon one of which is in permanent mesh with the wheel on the driven shaft and the other of which is adapted to gear with the sliding wheel on the counter-shaft, as set forth.

8. In a change-speed gear, the combination of a driving and a driven shaft arranged in axial alinement, a counter-shaft mounted parallel with the driving and driven shafts and three spur-wheels carried thereby, a free spur-wheel mounted at the junction of the driving and driven shafts in permanent mesh with one of the wheels on the counter-shaft, a free spur-wheel on the driving-shaft in permanent mesh with another of the wheels on the counter-shaft, a free spur-wheel on the driven shaft in permanent mesh with the other wheel on the counter-shaft, two sliding clutches mounted respectively on the driving and driven shafts so as to rotate with said shafts and operating to lock either of the free spur-wheels to their respective shafts, or the spur-wheel mounted at the junction of the driving and driven shafts to both said shafts, as set forth.

850,902. CAR-BOLSTER. THOMAS R. BROWN, New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Dec. 1, 1906. Serial No. 345,856.

Claim.—1. A bolster in which one of the members consists of a vertically-disposed metal strip that is bent intermediate its ends and folded back; substantially as described.

2. A bolster in which one of the members consists of a vertically-disposed metal strip bent intermediate its ends and folded back, the ends of said strip being bent laterally to form connecting-flanges; substantially as described.

3. A bolster in which one of the members consists of a commercially-rolled shape that is bent intermediate its ends and doubled back to produce two vertically-disposed pieces that are connected by an integral web; substantially as described.

4. A bolster in which one of the members that projects laterally from the center sills consists of a commercially-rolled shape which is bent midway its ends and doubled back to produce two vertically-disposed pieces arranged side by side; substantially as described.

5. A bolster in which one of the members consists of a commercially-rolled shape that is bent intermediate its ends and doubled back to produce two vertically-disposed pieces that are connected by an integral web, and connecting-flanges at the free end of said pieces; substantially as described.

6. A bolster in which one of the members consists of a vertically-disposed flanged piece that is bent intermediate its ends and doubled back, the flange being disrupted at the point where the piece is bent; substantially as described.

7. A bolster in which one of the members consists of a vertically-disposed flanged piece that is bent intermediate its ends and doubled back, and connecting-flanges at the ends of said piece formed by bending the web thereof laterally, the flange of said piece being cut away at the points where its web is bent; substantially as described.

8. A bolster in which one of the members consists of a commercially-rolled channel that is bent intermediate its ends and folded back, said channel being so arranged that its web extends vertically; substantially as described.

9. A bolster in which one of the members consists of a commercially-rolled channel that is bent intermediate its ends and folded back, said channel being so arranged that its web stands vertically, the flanges of said channel being disrupted at the point where the channel is bent; substantially as described.

10. A bolster in which one of the members consists of a commercially-rolled channel that is bent intermediate its ends and folded back, said channel being vertically disposed, and connecting-flanges at the ends of said channel; substantially as described.

11. A bolster in which one of the members consists of a

commercially-rolled shape that is bent midway its ends and folded back to produce two vertically-disposed pieces, and connecting-flanges at the ends of said pieces formed by bending the web of the channel laterally, the flanges of said channel being disrupted at the points where it is bent; substantially as described.

12. A bolster provided with a horizontally-disposed plate that is bent to form a plurality of side bearings; substantially as described.

13. A bolster provided with a transversely-extending compression-plate that is bent to form a plurality of projections which act as side bearings; substantially as described.

14. A bolster provided with a continuous horizontally-disposed plate, and side bearings formed by bending portions of said plate out of their normal planes; substantially as described.

15. A bolster comprising a continuous transversely-extending plate that is bent out of its normal plane, intermediate its ends, to form a plurality of bearings; substantially as described.

16. A tank-car bolster which is of less width at its outer ends than at its center, and castings secured to the outer ends of said bolster, said castings being provided with bearing-surfaces on its under side; substantially as described.

17. A tank-car bolster whose vertical members converge from its center toward its opposite ends and castings provided with horizontally-disposed bearing-surfaces and being located on the underneath sides of the opposite ends of the bolster; substantially as described.

18. A bolster comprising members which project laterally from the center sills and each of which consists of a continuous strip that is bent midway its ends and folded back, flanges at the ends of said strips to receive fastening devices which connect them to the center sills, and continuous top and bottom plates connected to said members; substantially as described.

19. A bolster comprising members which project laterally from a center sill and each of which consists of a channel that is bent midway its ends and folded back to produce two pieces that diverge from the point where they are joined, flanges at the inner ends of said pieces which are fastened to the center sills, continuous top and bottom plates, and castings at the ends of the bolster and each consisting of a flange that embraces the bent portion of the channel, and a bearing-face which is secured to the lower flange of the channel; substantially as described.

20. A car-bolster comprising vertical web members converging toward the ends of the bolster, top and bottom cover-plates, and a casting at each end of the bolster; substantially as described.

21. A car-bolster comprising vertical web members which converge toward the ends of the bolster, said web members being provided with top and bottom flanges, and a casting at each end of the bolster; substantially as described.

850,903. CLIP FOR HOLDING PAPERS, CLOTHING, &c. FRANK M. BULKLEY, Bridgeport, Conn. Filed Aug. 8, 1906. Serial No. 329,675.

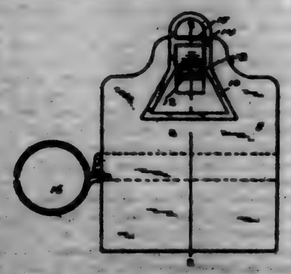

Claim.—A cup comprising two members each provided with a plurality of openings forming a plurality of cross-pieces, and a U-shaped spring of substantially uniform width passing outward and inward through said openings and engaging alternately outer and inner faces of the cross-pieces and yieldingly holding the said two members together, the ends of the spring being bent and engaging the edges of the cross-pieces farthest from the gripping portions of the members.

850,904. ELECTRIC CURLING-IRON. JACOB L. BURGARD, Chicago, Ill., assignor of one-half to Herman Bollin, Chicago, Ill. Filed Apr. 5, 1906. Serial No. 310,135.

Claim.—1. In a curling-iron, the combination of a pair of pivoted jaws each having a handle attached thereto, a resistance-coil inside each working jaw of the iron and insulated therefrom; electrical connection between one terminal of each resistance-coil and wires connecting the opposite terminal of each resistance-coil to a source of electrical energy.

2. In a curling-iron, the combination of a pair of pivoted jaws each having a handle attached thereto, a resistance-coil inside each working jaw of the iron and insulated therefrom; insulated terminal wires leading from the resistance-coil in each jaw through passage-ways in pivoted joint and handle portions attached to each jaw, electrical connections between one wire from each handle and means for connecting the opposite wire from each handle to a source of electrical energy.

3. In a curling-iron a working jaw comprising a hollow tube of insulating material, a resistance-wire extending through said tube, around one end and back to the starting-point, insulating material surrounding the whole and a thin metal covering about the insulation the same forming the exterior surface of one jaw of the iron.

4. In a curling-iron a crescent-shaped jaw comprising two rectangular strips of insulating material placed at an angle to each other, resistance-wire starting at one end of one of said strips, wound around it, to its opposite end thence across to the opposite strip and thence around second strip back to its opposite end, insulating material entirely surrounding said strips and resistance-wire and a crescent-shaped metal covering inclosing the whole forming the exterior surface of a crescent-shaped jaw as described.

850,905. BRIQUET-PRESS. OSCAR BUSSE, Meiderich, Duisburg, Germany. Filed June 15, 1906. Serial No. 321,917.

Claim.—A rotary shaft and a crank-pin carried thereby, in combination with a circular rotatable table, having in its under side a series of slots adapted to successively receive said pin in their open ends at the periphery of the table, the outer part of each slot being curved to coincide with the circle of travel of said pin and the inner part of each slot being straight and in the line of a chord of a peripheral circle of said table, in order that the latter may receive a series of rotary impulses, alternating with periods of rest substantially as set forth.

850,905.

850,906. DRAWER GUIDE AND SUPPORT FOR KNOCKDOWN FURNITURE. ALLEN T. CLAFF and PHILBURT W. BANCROFT, Gouverneur, N. Y. Filed Nov. 10, 1905. Serial No. 286,715.

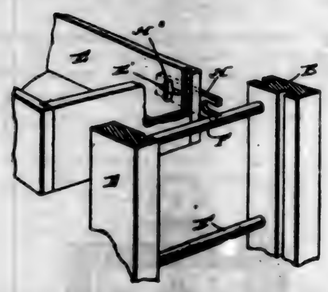

Claim.—The combination with a case having a drawer, of parallel rods arranged in the case at opposite ends of the drawer, supports secured to the rear side of the drawer and parallel thereto, said supports extending beyond the ends of the drawer and notched at their ends to engage the rods, the rear wall of the drawer being longitudinally slotted, a bolt passing through the slot of the drawer and through the support, and a winged nut arranged on the bolt within the drawer.

850,907. BURNER ATTACHMENT. GODFREY DAWE, Eau Claire, Wis. Filed June 9, 1906. Serial No. 321,082.

Claim.—1. A burner attachment consisting of a body portion having suitable perforations, a fibrous material retained within said body portion, a sleeve depending from said body portion and having in its sides elongated vertically-disposed openings, the upper end of said sleeve being of greater diameter than the lower end, the lower end of said sleeve adapted to receive a chimney.

2. A burner attachment consisting of a body portion, a fibrous material retained within said body portion, an annular plate located at the lower side of said body portion and having an under reflecting-surface, an annular sleeve supporting said body portion and plate and having suitable openings and adapted to receive a chimney at its lower end.

850,908. MACHINE FOR BALLING YARN. FREDERICK R. DENISTHORPE and ANDREW CHAMBERS, Leicester, England. Filed May 14, 1906. Serial No. 316,710.

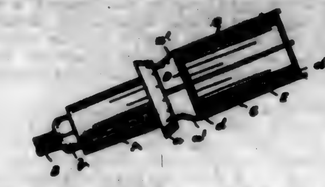

Claim.—1. In a self-acting ball-winding machine a rotating spindle having a double label or ticket ball-winding instrument fitted thereto, consisting of a metal boss and flange, the outer face of the latter carrying four wires bent outward and secured at the bend by a plate or disk, the outer free ends of the wires forming a spring for inclosing the winding tube or cylinder and holding the labels or tickets, substantially as described.

2. An instrument designed to label or ticket each end of a ball of yarn, twine or the like, and facilitate the making of such ball at one operation, composed of a screwed boss with flange, having four wires fitted at equal dictances therein, and bent outward carrying a plate upon which the first label or ticket is placed before the winding-tube, the other label or ticket being then put thereon, substantially as described.

850,909. NOZZLE FOR PNEUMATIC CARPET-CLEANING APPARATUS. RALPH F. DISERENS, Bradford, Pa. Filed July 5, 1906. Serial No. 324,733.

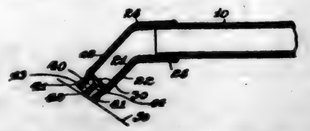

Claim.—1. A nozzle for a pneumatic carpet-cleaner, having within its interior an apertured diaphragm arranged rearward of its mouth, and provided with a tongue which divides the nozzle into a plurality of compartments and extends from said diaphragm to a plane outside said mouth.

2. A nozzle for a pneumatic carpet-cleaner, having within its interior an apertured diaphragm, jaws extending forward of said diaphragm and forming a mouth in front of the latter, and a tongue which divides the mouth into a plurality of compartments and extends from said diaphragm to a plane outside said mouth, said parts relatively arranged so that the edges of the jaws of one compartment will be in a different plane than those of the other.

3. A nozzle for a pneumatic carpet-cleaner, having within its interior an apertured diaphragm, jaws extending forward of said diaphragm and forming a mouth in front of the latter, and a tongue extending across said mouth and forward of the jaws.

850,910. POLICE PATROL-BOX. GEORGE V. DOHERTY, Boston, Mass. Filed Aug. 4, 1906. Serial No. 329,185.

Claim.—1. In combination, a police patrol-box a handcuff, a chain fast at one end thereof to said handcuff, and a locking member movable relatively to said patrol-box attached to the other end of said chain.

2. In combination, a police patrol-box, a handcuff, a chain fast at one end thereof to said handcuff, a weight fast to the other end of said chain, and means to guide said chain.

3. In combination, a police patrol-box, a handcuff, a chain fast at one end thereof to said handcuff, a weight fast to the other end of said chain, and a roll journaled

commercially-rolled shape that is bent midway its ends and folded back to produce two vertically-disposed pieces, and connecting-flanges at the ends of said pieces formed by bending the web of the channel laterally, the flanges of said channel being disrupted at the points where it is bent; substantially as described.

12. A bolster provided with a horizontally-disposed plate that is bent to form a plurality of side bearings; substantially as described.

13. A bolster provided with a transversely-extending compression-plate that is bent to form a plurality of projections which act as side bearings; substantially as described.

14. A bolster provided with a continuous horizontally-disposed plate, and side bearings formed by bending portions of said plate out of their normal planes; substantially as described.

15. A bolster comprising a continuous transversely-extending plate that is bent out of its normal plane, intermediate its ends, to form a plurality of bearings; substantially as described.

16. A tank-car bolster which is of less width at its outer ends than at its center, and castings secured to the outer ends of said bolster, said castings being provided with bearing-surfaces on its under side; substantially as described.

17. A tank-car bolster whose vertical members converge from its center toward its opposite ends and castings provided with horizontally-disposed bearing-surfaces and being located on the underneath sides of the opposite ends of the bolster; substantially as described.

18. A bolster comprising members which project laterally from the center sills and each of which consists of a continuous strip that is bent midway its ends and folded back, flanges at the ends of said strips to receive fastening devices which connect them to the center sills, and continuous top and bottom plates connected to said members; substantially as described.

19. A bolster comprising members which project laterally from a center sill and each of which consists of a channel that is bent midway its ends and folded back to produce two pieces that diverge from the point where they are joined, flanges at the inner ends of said pieces which are fastened to the center sills, continuous top and bottom plates, and castings at the ends of the bolster and each consisting of a flange that embraces the bent portion of the channel, and a bearing-face which is secured to the lower flange of the channel; substantially as described.

20. A car-bolster comprising vertical web members converging toward the ends of the bolster, top and bottom cover-plates, and a casting at each end of the bolster; substantially as described.

21. A car-bolster comprising vertical web members which converge toward the ends of the bolster, said web members being provided with top and bottom flanges, and a casting at each end of the bolster; substantially as described.

850,903. CLIP FOR HOLDING PAPERS, CLOTHING, &c. FRANK M. BULKLEY, Bridgeport, Conn. Filed Aug. 8, 1906. Serial No. 329,675.

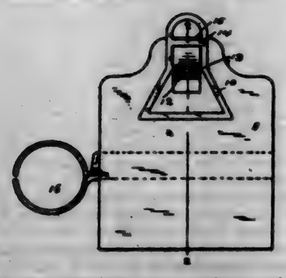

Claim.—A cup comprising two members each provided with a plurality of openings forming a plurality of crosspieces, and a U-shaped spring of substantially uniform width passing outward and inward through said openings and engaging alternately outer and inner faces of the cross-pieces and yieldingly holding the said two members together, the ends of the spring being bent and engaging the edges of the cross-pieces farthest from the gripping portions of the members.

850,904. ELECTRIC CURLING-IRON. JACOB L. BURGARD, Chicago, Ill., assignor of one-half to Herman Bollin, Chicago, Ill. Filed Apr. 5, 1906. Serial No. 310,135.

Claim.—1. In a curling-iron, the combination of a pair of pivoted jaws each having a handle attached thereto, a resistance-coil inside each working jaw of the iron and insulated therefrom; electrical connection between one terminal of each resistance-coil and wires connecting the opposite terminal of each resistance-coil to a source of electrical energy.

2. In a curling-iron, the combination of a pair of pivoted jaws each having a handle attached thereto, a resistance-coil inside each working jaw of the iron and insulated therefrom; insulated terminal wires leading from the resistance-coil in each jaw through passage-ways in pivoted joint and handle portions attached to each jaw, electrical connections between one wire from each handle and means for connecting the opposite wire from each handle to a source of electrical energy.

3. In a curling-iron a working jaw comprising a hollow tube of insulating material, a resistance-wire extending through said tube, around one end and back to the starting-point, insulating material surrounding the whole and a thin metal covering about the insulation the same forming the exterior surface of one jaw of the iron.

4. In a curling-iron a crescent-shaped jaw comprising two rectangular strips of insulating material placed at an angle to each other, resistance-wire starting at one end of one of said strips, wound around it, to its opposite end thence across to the opposite strip and thence around second strip back to its opposite end, insulating material entirely surrounding said strips and resistance-wire and a crescent-shaped metal covering inclosing the whole forming the exterior surface of a crescent-shaped jaw as described.

850,905. BRIQUET-PRESS. OSCAR BUSSE, Meiderich, Duisburg, Germany. Filed June 15, 1906. Serial No. 321,917.

Claim.—A rotary shaft and a crank-pin carried thereby, in combination with a circular rotatable table, having in its under side a series of slots adapted to successively receive said pin in their open ends at the periphery of the table, the outer part of each slot being curved to coincide with the circle of travel of said pin and the inner part of each slot being straight and in the line of a chord of a peripheral circle of said table, in order that the latter may receive a series of rotary impulses, alternating with periods of rest substantially as set forth.

850,905.

850,906. DRAWER GUIDE AND SUPPORT FOR KNOCKDOWN FURNITURE. ALLEN T. CLAPP and PHILBURT W. BANCROFT, Gouverneur, N. Y. Filed Nov. 10, 1905. Serial No. 286,715.

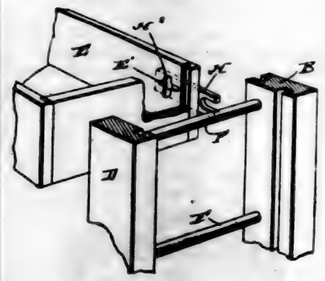

Claim.—The combination with a case having a drawer, of parallel rods arranged in the case at opposite ends of the drawer, supports secured to the rear side of the drawer and parallel thereto, said supports extending beyond the ends of the drawer and notched at their ends to engage the rods, the rear wall of the drawer being longitudinally slotted, a bolt passing through the slot of the drawer and through the support, and a winged nut arranged on the bolt within the drawer.

850,907. BURNER ATTACHMENT. GODFREY DAWE, Eau Claire, Wis. Filed June 9, 1906. Serial No. 321,082.

Claim.—1. A burner attachment consisting of a body portion having suitable perforations, a fibrous material retained within said body portion, a sleeve depending from said body portion and having in its sides elongated vertically-disposed openings, the upper end of said sleeve being of greater diameter than the lower end, the lower end of said sleeve adapted to receive a chimney.

2. A burner attachment consisting of a body portion, a fibrous material retained within said body portion, an annular plate located at the lower side of said body portion and having an under reflecting-surface, an annular sleeve supporting said body portion and plate and having suitable openings and adapted to receive a chimney at its lower end.

850,908. MACHINE FOR BALLING YARN. FREDERICK R. DENISTHORPE and ANDREW CHAMBERS, Leicester, England. Filed May 14, 1906. Serial No. 316,710.

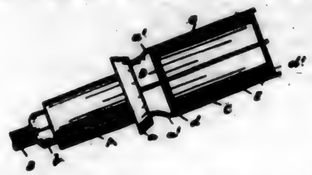

Claim.—1. In a self-acting ball-winding machine a rotating spindle having a double label or ticket ball-winding instrument fitted thereto, consisting of a metal boss and flange, the outer face of the latter carrying four wires bent outward and secured at the bend by a plate or disk, the outer free ends of the wires forming a spring for inclosing the winding tube or cylinder and holding the labels or tickets, substantially as described.

2. An instrument designed to label or ticket each end of a ball of yarn, twine or the like, and facilitate the making of such ball at one operation, composed of a screwed boss with flange, having four wires fitted at equal dictances therein, and bent outward carrying a plate upon which the first label or ticket is placed before the winding-tube, the other label or ticket being then put thereon, substantially as described.

850,909. NOZZLE FOR PNEUMATIC CARPET-CLEANING APPARATUS. RALPH F. DISERENS, Bradford, Pa. Filed July 5, 1906. Serial No. 324,733.

Claim.—1. A nozzle for a pneumatic carpet-cleaner, having within its interior an apertured diaphragm arranged rearward of its mouth, and provided with a tongue which divides the nozzle into a plurality of compartments and extends from said diaphragm to a plane outside said mouth.

2. A nozzle for a pneumatic carpet-cleaner, having within its interior an apertured diaphragm, jaws extending forward of said diaphragm and forming a mouth in front of the latter, and a tongue which divides the mouth into a plurality of compartments and extends from said diaphragm to a plane outside said mouth, said parts relatively arranged so that the edges of the jaws of one compartment will be in a different plane than those of the other.

3. A nozzle for a pneumatic carpet-cleaner, having within its interior an apertured diaphragm, jaws extending forward of said diaphragm and forming a mouth in front of the latter, and a tongue extending across said mouth and forward of the jaws.

850,910. POLICE PATROL-BOX. GEORGE V. DOHERTY, Boston, Mass. Filed Aug. 4, 1906. Serial No. 329,185.

Claim.—1. In combination, a police patrol-box a handcuff, a chain fast at one end thereof to said handcuff, and a locking member movable relatively to said patrol-box attached to the other end of said chain.

2. In combination, a police patrol-box, a handcuff, a chain fast at one end thereof to said handcuff, a weight fast to the other end of said chain, and means to guide said chain.

3. In combination, a police patrol-box, a handcuff, a chain fast at one end thereof to said handcuff, a weight fast to the other end of said chain, and a roll journaled

to rotate upon said patrol-box adapted to guide said chain.

4. In combination, a police patrol-box, a handcuff, a chain fast at one end thereof to said handcuff, a weight fast to the other end of said chain, a roll journaled to rotate upon said patrol-box adapted to guide said chain, and a rod fast to said box adjacent to said roll adapted to prevent the withdrawal of said chain and weight from said box.

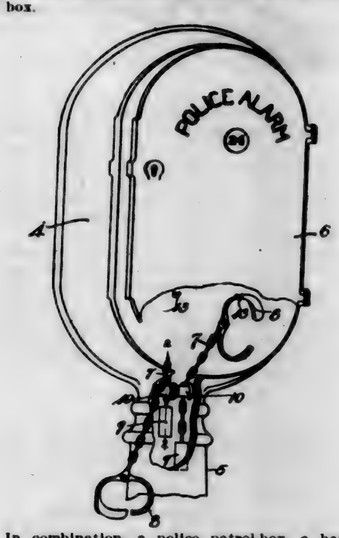

5. In combination, a police patrol-box, a handcuff, a chain fast at one end thereof to said handcuff, a weight fast to the other end of said chain, a roll journaled to rotate upon said patrol-box adapted to guide said chain, a rod fast to said box adjacent to said roll adapted to prevent the withdrawal of said chain and weight from said box and a hook fast to said box upon which said handcuff may be supported.

850,911. CARPET-RENOVATOR. ROBERT H. DUESING, Chicago, Ill. Filed Nov. 6, 1905. Serial No. 286,135.

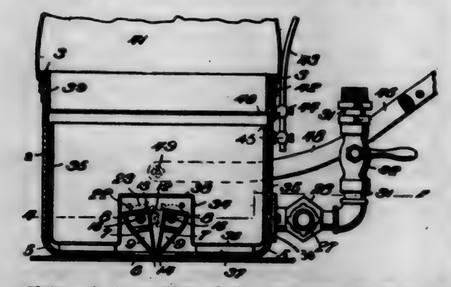

Claim.—1. A machine of the character described and comprising a dust-receiver having an opening in its lower side, pivotally-mounted discharge-nozzles in said receiver above said opening for discharging air under compression through said opening and means to adjust said nozzles angularly with reference to each other.

2. In a machine of the character described, comprising a dust-receiver having an opening in its lower side, a pair of pivotally-mounted discharge-nozzles in said receiver above and discharging into said opening, gears connecting said discharge-nozzles together for simultaneous movement in reverse directions to dispose said nozzles at any desired angular adjustment with reference to each other, and means to secure said nozzles when thus adjusted.

3. A device of the character described comprising a dust-receiver having an opening in its bottom, discharge-nozzles arranged above said opening, tubular trunnions upon said nozzles for pivotally mounting them in said receiver, and having tubular plugs at their outer ends, a supply-pipe having seats to receive said plugs, and means for adjusting said nozzles angularly with respect to each other.

4. A device of the character described comprising a dust-receiver having an opening in its bottom, discharge-nozzles arranged above said opening, tubular trunnions upon said nozzles for pivotally mounting them in said receiver, and having tubular plugs at their outer ends, pipes having seats to receive said plugs, meshing-gears upon said tubular trunnions, a set-screw for holding said nozzles in an adjusted angular position, an air-supply pipe connected to said pipes, and a valve for controlling the supply of air.

850,912. PROCESS OF MAKING ARTICLES BY ELECTROPLATING. THOMAS A. EDISON, Llewellyn Park, Orange, N. J. Filed Oct. 5, 1903. Serial No. 175,818.

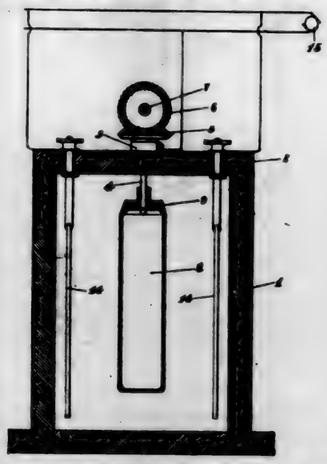

Claim.—1. The process of making a storage-battery can or receptacle, which consists in coating a film of copper on a former of suitable shape, in plating a film of iron on the copper coating, and in removing the copper film, substantially as set forth.

2. The process of making hollow, seamless articles, which consists in coating a former with a wax-like material, in applying a conducting coating thereto, in electroplating a layer of copper on the conducting coating, in applying electrolytically a coating of iron to the copper deposit, in applying heat to melt the wax-like material and permit the deposited coating to be removed, and in finally separating the copper deposit from the iron, substantially as and for the purposes set forth.

3. The process of electrodepositing iron, which consists in placing a cathode in a bath suitable for the deposition of iron and which contains an iron anode and loose particles of foreign material of less specific gravity than said bath, passing a current through said anode, bath and cathode, and simultaneously causing the said cathode to be rubber or scoured by said particles, whereby a continuous and even deposit of iron is obtained on said cathode, substantially as set forth.

4. The process of electrodepositing iron, which consists in placing a cathode in a bath suitable for the deposition of iron and which contains a suitable anode and particles of charcoal, passing a current through said anode, bath and cathode and simultaneously causing the said cathode to be rubbed or scoured by said particles, whereby a continuous and even deposit of iron is obtained on said cathode, substantially as set forth.

5. The process of electrodepositing iron, which consists in placing a cathode in a bath of ferrous ammonium sulfate containing a suitable anode and particles of charcoal, passing a current through said anode, bath and cathode, and simultaneously causing the cathode to be rubbed or scoured by said particles, whereby a continuous and even deposit of iron is obtained on said cathode, substantially as set forth.

6. The process of manufacturing steel, which consists in placing a cathode in a bath suitable for the deposition of iron and which contains an iron anode and particles of charcoal, passing a current through said anode, bath and cathode and simultaneously causing the cathode to be rubbed or scoured by said particles, whereby a continuous and even deposit of iron containing carbon is obtained on said cathode, and then removing the said deposit from the cathode and annealing it, substantially as set forth.

7. The process of manufacturing steel, which consists in electrodepositing iron upon a cathode whose active surface is in contact with particles of carbon, whereby a deposit of iron containing carbon is obtained, and then subjecting the said deposit to heat, substantially as set forth.

850,913. SECONDARY BATTERY. THOMAS A. EDISON, Llewellyn Park, Orange, N. J., assignor to Edison Storage Battery Company, West Orange, N. J., a Corporation of New Jersey. Original application filed Nov. 28, 1902, Serial No. 133,112. Divided and this application filed Dec. 7, 1905. Serial No. 290,713.

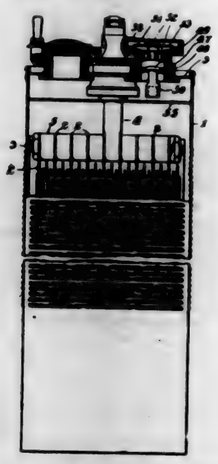

Claim.—1. In a storage battery, the combination with a can and electrodes mounted therein, of an escape-tube in the top of said can, a valve in said tube, a casing carried by the escape-tube, and a dash-plate in said casing, substantially as set forth.

2. In a storage battery, the combination with a can and electrodes mounted therein, of a gas-vent in the can, a dash-plate, and a gauze-like or perforated diaphragm arranged in the escape-vent and through which the escaping gases pass, for the purpose, substantially as set forth.

3. In a storage battery, the combination with a can and electrodes mounted therein, of an escape-tube in the top of said can, a valve in said tube, a casing carried by the escape-tube, and a gauze diaphragm for said casing, substantially as set forth.

850,914. RACE GAME OR TOY. HAROLD EGG, Sydenham, England. Filed Jan. 13, 1906. Serial No. 295,933.

Claim.—1. A game or toy consisting in combination of figures on objects, supporting-surfaces for said objects one of each surfaces supporting the objects at the bottom and the other near the top, and means for moving said surfaces toward or away from each other.

2. A game or toy consisting in combination of two hinged tracks or surfaces in the upper surface of which slots are provided, figures or objects inserted in said slots and supported upon the lower surface and shoulders or projections provided upon said figures and adapted to rest on the upper supporting surface or track, so that by the relative movement of the two supporting-surfaces the figures are alternately supported by their shoulders and their lower extremities upon the upper and lower supporting-surfaces and are thus caused to move along the upper supporting surface or track, substantially as described.

850,915. CONNECTION FOR TAPPING MAINS. PHILIP ELEY, Bayonne, N. J. Filed May 6, 1904. Serial No. 206,617.

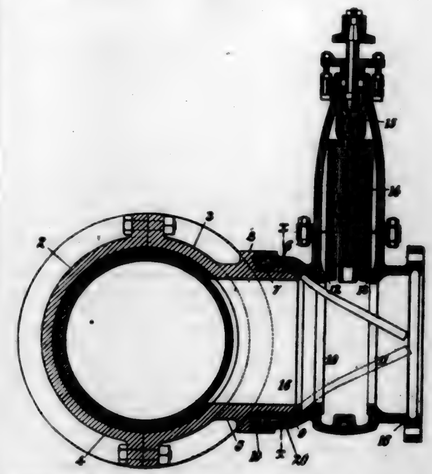

Claim.—1. The combination with a main or pipe, of a sleeve surrounding the same, a spigot member extending from the sleeve and provided with an outside flange or abutment at a point removed from the edge of the spigot member, a valve-casing having a hub member fitting over the spigot, and a packing between the said two members accessible for calking from inside and outside the coupling, as set forth.

2. The combination with a main pipe, of a sleeve surrounding the same, a spigot extension from the sleeve having a circular abutment or flange on the outside thereof and a tapered end beyond the same, a valve-casing having a hub end and an internal surface corresponding to the tapered end of the spigot, and a packing between the tapered surface of the two members, as set forth.

3. The combination with a sectional sleeve adapted to surround a pipe or main and provided with a spigot member having a tapered end, and a flange or abutment on the outside of the spigot member, of a valve-casing with a hub end fitting over the spigot end and having a similarly-in-

cimed surface, lugs on both of said members adapted to engage and lock the same together in assembled position, and a packing between the two members, as set forth.

4. The combination with a sleeve adapted to surround a pipe or main and provided with a spigot member formed with a circular abutment or flange on the outside thereof, a valve-casing having a hub end with a flange thereon and adapted to fit over the spigot member, and a packing between the abutting flanges and the spigot and hub members of the coupling, and adapted to be calked from both the inside and outside of the coupling, as set forth.

850,916. FAUCET. JOHN J. FITZGIBBON and JOHN M. TRAVIS, St. Louis, Mo. Filed May 21, 1906. Serial No. 318,052.

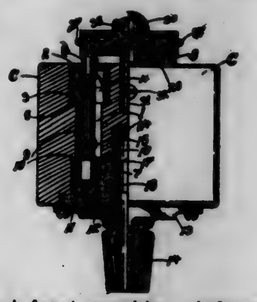

Claim.—1. A faucet comprising a body portion chambered for the passage of syrup and water from suitable sources of supply, a discharge-nozzle, discharge-passages leading from the chambered portions to said discharge-nozzle, feed-passages communicating with the chambered portions and with the discharge-nozzle respectively, valves controlling the liquid discharges, stems formed with the valves and passing through the chambered portions, and yielding diaphragms spanning the chambered portions receiving the syrup and coupled respectively to the chamber-walls and to the valve-stems, substantially as set forth.

2. A faucet comprising a body portion chambered for the passage of syrup and water from suitable sources of supply, a discharge-nozzle, discharge-passages leading from the chambered portions to said discharge-nozzle, feed-passages communicating with the chambered portions and with the discharge-nozzle respectively, valves controlling the liquid discharges, stems formed with the valves and passing through the chambered portions, yielding diaphragms coupled centrally to the valve-stems, seats or shoulders formed on the walls of the syrup-chambers and means for clamping the edges of the diaphragms to the seats, substantially as set forth.

3. In a faucet, a body portion chambered for the passage of syrup, a valve-stem operating therein, a yielding diaphragm secured centrally to the stem, a seat formed in the walls of the chamber, and a screw-cap enveloping the stem and adapted to force the edges of the diaphragm against the seat, substantially as set forth.

850,917. SPACE TELEGRAPHY. LEE DE FOREST, New York, N. Y., assignor to George K. Woodworth, Boston, Mass. Filed Jan. 29, 1907. Serial No. 354,667.

Claim.—1. In a space-telegraph transmitting system, a circuit including a condenser and means for producing an electric arc, in combination with means for maintaining an atmosphere of steam about said arc.

2. In a space-telegraph transmitting system, a circuit including a condenser and means for producing an electric arc, in combination with means for producing and maintaining an atmosphere of steam about said arc.

3. In a space-telegraph transmitting system, a singing-arc circuit and means for maintaining an atmosphere of steam about the electric arc included therein.

4. In a space-telegraph transmitting system, a singing-arc circuit and means for producing and maintaining an atmosphere of steam about the electric arc included therein.

5. In a space-telegraph transmitting system, a singing-arc circuit having its arc-electrodes immersed in an atmosphere of steam.

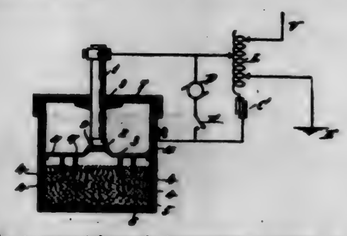

6. In a space-telegraph transmitting system, a circuit including a condenser and arc-electrodes, a casing having said electrodes secured therein, a quantity of water in said casing and means for vaporizing said water.

7. In a space-telegraph transmitting system, a circuit including a condenser and arc-electrodes, a casing having said electrodes secured therein, a quantity of water in said casing, and members of good heat conductivity secured to one of said electrodes and projecting into said water.

850,918. RECLINING-CHAIR. GEORGE FRANCIS, Columbus, Ohio. Filed Apr. 12, 1906. Serial No. 311,236.

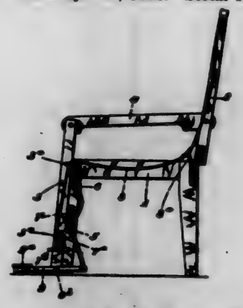

Claim.—1. In a reclining-chair, the combination of the seat-frame, a back hinged thereto, a leg-rest also hinged thereto, means pivoted to the back and leg-rest and operatively connecting them, a foot-rest pivoted to the leg-rest, a bar connecting the foot-rest and seat-frame provided with a series of holes, and a pawl with a foot-piece on the leg-rest to engage one of said holes.

2. In a reclining-chair, the combination of the seat-frame, a back hinged thereto, a leg-rest also hinged thereto, means pivoted to the back and leg-rest and operatively connecting them, a foot-rest pivoted to the leg-rest, a bar connecting the foot-rest and seat-frame having a forwardly-curved portion provided with a series of holes, a pawl with a foot-piece on the leg-rest, said pawl being pivoted on the leg-rest and adapted to engage one of said holes.

3. In a reclining-chair, the combination of the seat-frame, a back hinged thereto, a leg-rest also hinged thereto, means operatively connecting the back and leg-rest, a foot-rest frame hinged to the leg-rest and having a rearward extension, a bar connecting the rearward extension of the foot-rest and the chair-frame, and a pawl provided with a foot-piece and adapted to adjustably engage the said bar.

850,919. MECHANICAL STOKER. LOUIS FRIDEN, Buffalo, N. Y. Filed July 23, 1906. Serial No. 327,317.

Claim.—1. The combination of a grate, front and rear crank-shafts arranged below the same and both capable of complete rotary movement, actuating mechanism for said shafts, and a raking-frame carrying rake-fingers which enter between the grate-bars and having its end portions journaled upon the cranks of said front and rear shafts, whereby all the fingers of said frame move to and fro and up and down in circular paths and displace the fuel only in a rearward direction, substantially as set forth.

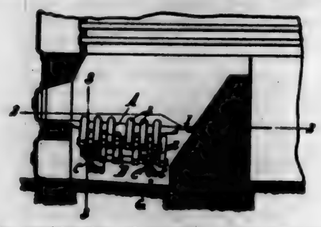

2. The combination of a grate, front and rear crank-shafts arranged below the grate and both capable of complete rotary movement, gearing connecting said shafts to cause the same to rotate in unison, and rake-bars arranged lengthwise of the grate-bars and carrying rake-fingers which enter between the grate-bars, said rake-bars being journaled at opposite ends upon the cranks of said shafts, whereby both ends of the bars and all the rake-fingers move back and forth and up and down in circular paths, substantially as set forth.

3. The combination of a grate, a raking-frame movable lengthwise of the grate-bars and carrying fingers which enter between the same, and means for adjusting one end of the rake-frame vertically relatively to its other end, substantially as set forth.

4. The combination of a grate, a raking-frame movable lengthwise of the grate-bars and carrying fingers which enter between the same, front and rear shafts arranged below the grate and having cranks upon which the front and rear portions of the rake-frame are journaled, the rear shaft being capable of vertical adjustment, and means for adjusting the last-named shaft, substantially as set forth.

5. The combination of a grate, a raking-frame movable lengthwise of the grate-bars and carrying fingers which enter between the same, front and rear shafts arranged below the grate and having cranks upon which the front and rear portions of the rake-frame are journaled, the rear shaft being capable of vertical movement, and cams for adjusting the last-named shaft, substantially as set forth.

6. The combination of a grate, a raking-frame carrying fingers which enter between the grate-bars, front and rear shafts arranged transversely below the grate and having cranks upon which the front and rear portions of the raking-frame are journaled, said rear shaft being capable of vertical adjustment, a transverse rock-shaft arranged below said adjustable shaft and carrying cams which act upon the latter shaft, and means for turning said rock-shaft, substantially as set forth.

850,920. BALANCE-WHEEL FOR CLOCKS. HENRY D. GARDINER, New Haven, Conn. Filed May 4, 1906. Serial No. 315,223.

Claim.—1. A balance-wheel formed of two parts of equal thickness; the spokes and hub being formed of lighter metal than the rim, substantially as described.

2. The combination in a balance-wheel, with the rim; of separate spokes and hub formed of lighter metal than the rim and being of the same thickness therewith, substantially as described.

3. The combination in a balance-wheel, with the rim; of separate spokes and hub of the same thickness with the rim, but formed of lighter metal than the rim; a shaft driven through said hub without previous drilling of a perforation therefor, substantially as described.

4. A balance-wheel of uniform thickness throughout, having its spokes and hub formed separate from the rim, and of lighter metal than the rim, substantially as described.

850,921. CIGARETTE-MACHINE. EMIL GEORGII, Stuttgart, Germany. Filed Feb. 9, 1904. Serial No. 192,834.

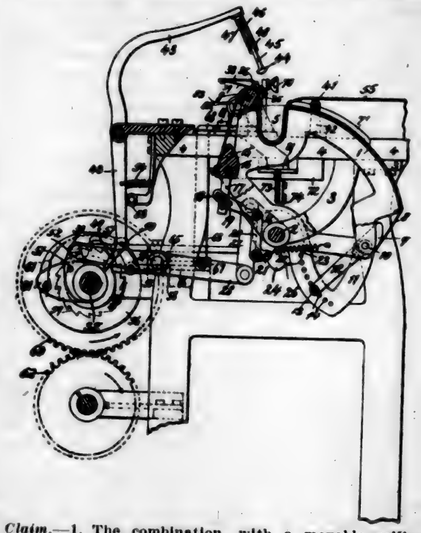

Claim.—1. The combination, with a movable rolling-table, an apron led over the same, and means for causing said apron and rolling-table to roll a filler, of means carried by said apron and rolling-table and arranged to shorten the working length of the apron during the rolling operation, and automatic means for increasing the working length of the apron to partially release its hold on the filler upon the completion of the rolling operation.

2. The combination, with a rolling-table provided with a recess, a rolling-apron arranged to hang in a bight in said recess, and means for moving said rolling-table to carry the bight out of the recess and onto the table, of a yielding roller arranged to coact with the table and apron in rolling a filler, and means for gradually shortening the working length of the apron during the rolling operation.

3. The combination, with a rolling-table provided with a recess, a rolling-apron arranged to hang in a bight in said recess, and means for moving said rolling-table to carry the bight out of the recess and onto the table, of a yielding roller arranged to coact with the table and apron to roll a filler, means for adjusting the working length of the apron prior to the rolling operation, and means for varying the working length of the apron during the rolling operation.

4. The combination, with a rolling-table provided with a recess, a rolling-apron arranged to hang in a bight in said recess, and means for moving said rolling-table to carry the bight out of the recess and onto the table, of a yielding roller arranged to coact with the table and apron to roll a filler, and means carried on the rolling-table and arranged to vary the working length of the apron during the rolling operation.

5. The combination, with a rolling-table provided with a recess, a rolling-apron arranged to hang in a bight in said recess, and means for moving said rolling-table to carry the bight out of the recess and onto the table, of a roller arranged to coact with the table and apron to roll

a filler, a cam connected to the apron, and means actuated during the rolling operation and arranged to move the cam, whereby the working length of the apron is varied during said rolling operation.

6. The combination, with a rolling-table having a recess, a rolling-apron arranged to hang in a bight in said recess to receive a tobacco charge, and means for carrying the bight with said charge from the recess and onto the table and rolling the filler, of a wrapper-holding device and means for ejecting the rolled filler from said bight into a wrapper held by the wrapper-holding device.

7. The combination, with a movable table having a recess, a rolling-apron arranged to hang in a bight in said recess, a roller arranged to coact with the table and apron to roll a cigarette, and means for moving the table to carry the bight from the recess onto the table behind the roller, and thereby to roll a filler, of an ejecting device arranged to enter the bight while still behind the roller and thereby eject the filler, and means for holding a wrapper to receive said ejected filler.

8. The combination, with a rolling-table having a recess, of a pair of stop devices located on said table, and a pair of stop devices located in said recess, one stop device of each pair being adjustable toward and from the stop device of its pair.

9. The combination, with a wrapper-holding device, a drum provided with grooves arranged to supply wrappers in front of the holding device, and a wrapper-pushing rod provided with a yielding head, of means for rotating the drum, and means for reciprocating the wrapper-pushing rod.

10. The combination, with a movable rolling-table, and means for oscillating the same, of two cams carried by said rolling-table, an apron connected to both cams, means for adjustably fixing one cam, and means operating during the oscillation of the table and arranged to move the other cam, whereby the working length of the apron is varied.

11. The combination, with a rolling-table, a cam mounted therein and a rolling-apron passing over said table and connected to the cam, of a fixed cam, means for moving the table and means intermediate the first cam and the fixed cam whereby the former is actuated by the latter during the movement of the rolling-table.

12. The combination, with a rolling-table, a cam mounted therein, and a rolling-apron passing over said table and connected to the cam, of a fixed cam having a nose and a recess, means for moving the rolling-table, and means connected to the first-mentioned cam and traveling over the fixed cam.

13. The combination, with a rolling-table having a recess, an apron passing over said rolling-table, and means for moving said rolling-table, of a lever provided with a yielding head, and means for moving said lever while the table is moving whereby the yielding head is first resisted by the table and thereby compressed and then springs into the recess in the table.

850,922. LAWN-MOWER SHARPENER. MARSHALL T. GOFORTH and NIAL R. SHEETS, Wichita, Kans. Filed Aug. 16, 1906. Serial No. 330,922.

Claim.—1. A machine of the character described comprising standards, mower-frame-supporting devices connected to the standards, a grinding element rotatably supported by the standards, and means movable with said element for contacting with and rotating a wheel of a mower.

2. A machine of the character described comprising standards, mower-frame-supporting devices connected thereto, a grinding element rotatably supported by the standards, feed means rotatable with said element, and a pulley rotatable with said element and having a soft working face for engaging and rotating the wheel of a mower.

3. A machine of the character described comprising mower-frame-supporting means, a laterally-movable rotatable element supported adjacent said means, a non-rotatable screw-shaft, a device upon said shaft movable with the grinding element, and means upon said device for detachably engaging the thread of the screw-shaft.

4. In a machine of the character described the combination with means for supporting a mower-frame; of a longitudinally-grooved shaft adjacent said means, a grinding element feathered upon said shaft, means for rotating the shaft and grinding element, a non-rotatable screw-shaft, and means upon the screw-shaft and rotatable with the grinding element for moving said element laterally.

5. In a machine of the character described the combination with mower-supporting means; of a shaft rotatably mounted adjacent said means, a grinding element feathered upon the shaft, a non-rotatable screw, means detachably engaging the screw and rotatable with said element for moving the element laterally, and a handle embracing and loosely connected to the rotatable element.

6. A machine of the character described comprising standards, mower-frame-supporting devices interposed between the standards, a laterally-movable rotatable grinding element, a non-rotatable screw-shaft supported by the standards, a device upon said shaft movable with the grinding device, and means upon the first-mentioned device for detachably engaging the thread of the screw-shaft.

7. A machine of the character described comprising standards, mower-frame-supporting devices interposed between the standards, a laterally-movable rotatable grinding element, a non-rotatable screw-shaft supported by the standards, a device upon said shaft movable with the grinding device, means upon the first-mentioned device for detachably engaging the thread of the screw-shaft, and means for adjusting the grinding device vertically.

8. In a machine of the character described the combination with standards, and means for holding a mower therebetween; of a laterally-movable rotatable grinding device supported by the standards, means for adjusting said device vertically, means for rotating the grinding device, and means operated by the rotation of said device for imparting lateral movement thereto.

9. In a machine of the character described the combination with standards, and means for holding a mower therebetween; of a laterally-movable rotatable grinding device supported by the standards, means for adjusting said device vertically, means for rotating the grinding device, means operated by the rotation of said device for imparting lateral movement thereto, and means rotatable with the grinding device for rotating the wheel of a mower supported between the standards.

10. In a machine of the character described the combination with standards adjustable in relation to each other, and mower-frame-supporting devices interposed between the standards; of pivotally-connected arms adjustably mounted upon the standards, a rotatable grinding device supported by said arms, a non-rotatable screw-shaft carried by the arms, means upon and detachably engaging the thread of the screw-shaft for imparting lateral movement to the grinding element during the rotation thereof, and means for rotating the grinding element.

11. In a machine of the character described the combination with standards adjustable in relation to each other, and mower-frame-supporting devices interposed between the standards; of pivotally-connected arms adjustably mounted upon the standards, a rotatable grinding device supported by said arms, a non-rotatable screw-shaft carried by the arms, means upon and detachably engaging the thread of the screw-shaft for imparting lateral movement to the grinding element during the rotation thereof, means for rotating the grinding element, and means rotatable with the grinding element for rotating the wheel of a mower upon the supporting devices.

12. In a machine of the character described the combination with standards adjustably connected, and mower-supporting devices interposed between the standards; of pivotally-connected arms adjustably mounted upon the standards, a grooved shaft journaled within the arms, a sleeve feathered upon said shaft, a grinding element upon the sleeve, a flanged gear upon said sleeve, a non-rotatable screw-shaft supported by the arms, a gear thereon meshing with the first-mentioned gear, means upon the gear on the screw-shaft for detachably engaging the thread of said shaft, and means for rotating the grooved shaft.

13. In a machine of the character described the combination with standards adjustably connected, and mower-supporting devices interposed between the standards; of pivotally-connected arms adjustably mounted upon the standards, a grooved shaft journaled within the arms, a sleeve feathered upon said shaft, a grinding element upon the sleeve, a flanged gear upon said sleeve, a non-rotatable screw-shaft supported by the arms, a gear thereon meshing with the first-mentioned gear, means upon the gear on the screw-shaft for detachably engaging the thread of said shaft, means for rotating the grooved shaft, a mower-wheel-rotating device upon one of the standards, and means for transmitting rotary motion thereto from the grooved shaft.

850,923. STEAM-HEATING SYSTEM FOR RAILWAY-CARS. EDWARD E. GOLD, New York, N. Y. Filed June 20, 1904. Serial No. 213,428.

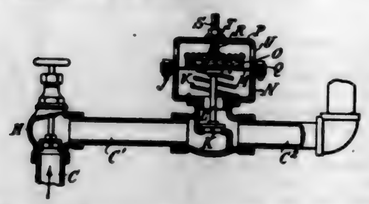

Claim.—1. A steam-heating system for a railway-car comprising a train-pipe, a heater within the car, a valve controlling the supply of steam to said heater and a thermostat controlling said valve and exposed to the live steam immediately beyond the valve, and exposed also to the atmosphere.

2. In a steam-heating system for a railway-car, a thermostatically-controlled admission-valve comprising a valve proper opening with the pressure, and an expansive device exposed to the live steam immediately at the discharge side of the valve and exposed also to the atmosphere, said expansive device arranged to close said valve by its expansion.

3. In a steam-heating system for a railway-car, a thermostatically-controlled admission-valve comprising a valve proper opening with the pressure, an expansive device exposed to the live steam immediately at the discharge side of the valve and exposed also to the atmosphere, said expansive device arranged to close said valve by its expansion, and a spring tending to open said valve.

4. In a steam-heating system for a railway-car, a thermostatically-controlled admission-valve comprising a valve proper, a diaphragm M, and an expansive device O carried upon and attached to the outer side of said diaphragm and exposed on its outer side to the atmosphere, the inner side of said diaphragm being exposed to the steam.

5. In a steam-heating system for a railway-car, a train-pipe, a heater within the car, a thermostatically-controlled admission-valve comprising a valve proper between said train-pipe and said heater, and an expansive device arranged to close said valve by its expansion and exposed to the heat of the live steam immediately upon the discharge side of the valve, a spring bearing upon said expansive device and through it upon said valve in a direction to close the same, and an adjustable device bearing upon said spring to compress the same and adapted to compress the spring to its limit and to move further to positively close the valve.

6. In a steam-heating system for a railway-car, a train-pipe A, a heater B within the car, a thermostatically-controlled admission-valve J between said train-pipe and said heater and comprising a valve proper K opening in the direction of the pressure, and a thermostat connected to the stem of said valve to close the same by its expansion and exposed to the heat of the live steam immediately upon the discharge side of said valve, a spring R bearing upon said thermostat and through it upon said valve in a direction to close the same, and an adjusting-screw S bearing upon said spring to compress the same and adapt it to press the spring to its limit and to move further to positively close the valve.

7. A steam-heating system for a railway-car including a train-pipe A, radiating-pipes B within the car, a trap at the exhaust end of said pipes normally closing them so as to maintain pressure therein, a valve proper K arranged in a branch between said train-pipe and said radiating-pipes, a flexible diaphragm M connected to said valve proper and exposed on one face to the steam-pressure beyond the valve and in a direction to open the valve, and on the other face to the pressure of the atmosphere, and a heat-expansible member O exposed on one side to the heat of the steam and on the other side to the atmosphere and adapted when expanded to exert a pressure upon said diaphragm in a direction to close the valve.

850,924. ELECTRIC HEATER. EDWARD E. GOLD, New York, N. Y. Filed May 4, 1906. Serial No. 315,146.

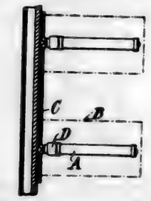

Claim.—1. An electric car-heater having a resistance medium interposed between a pair of opposite heads through at least one of which a conducting-wire passes and between which said medium is exposed to the air to heat it, and having a chamber outside of the head through which such wire passes, said chamber constituting a junction-box for inclosing the connection of such wire with the line-wire leading to the heater.

2. An electric car-heater having a resistance medium interposed between a pair of opposite heads through at least one of which a conducting-wire passes and between which said medium is exposed to the air to heat it, in combination with a separate casing forming a chamber outside of the head through which such wire passes, said chamber constituting a junction-box for inclosing the connection of such wire with the line-wire leading to the heater.

3. An electric car-heater having a chamber constituting a junction-box for inclosing the ends of the line-wires leading into the heater, said junction-box having a socket for receiving the end of a conduit inclosing the line-wire outside of the heater.

4. The combination with an electric car-heater, of a line-wire and a conduit inclosing the same, and a junction-box receiving the end of said conduit and providing a space between said conduit and the heater and inclosing the junction between the line-wire and the end of the heater-wire.

5. A detachable junction-box for an electric heater and having an opening for the passage of a wire and having a hand-hole, and a movable plate covering said hole.

6. A detachable junction-box D for an electric heater

and having an opening in its end for the passage of a wire and having at its side a hand-hole, and a removable plate E covering said hole.

7. The combination with an electric heater of a junction-box therefor having a pair of openings for receiving a pair of parallel wires, and having also a single opening for receiving a wire entering or departing in a transverse direction to the direction of said parallel wires.

8. The combination with an electric heater, of a junction-box D having a bridge H adjacent to the end of the heater, said heater and box being provided reciprocally with means for preventing relative rotative displacement, and means for fastening said bridge to said heater.

9. The combination with an electric heater, of a junction-box having a bridge H adjacent to the end of the heater, and fastening means for uniting said bridge to said heater.

10. The combination with an electric heater and conduits for the line-wires, of a junction-box inclosing the joint between the wires of the conduits and heater respectively, attached to the heater, and detachably engaging the conduits whereby it may be disconnected from the conduits without displacing them and without disconnecting it from the heater.

850,925. HORSESHOE-HEEL CUTTER. HENRY C. GOLDSMITH, French Camp, Cal. Filed Oct. 15, 1906. Serial No. 338,909.

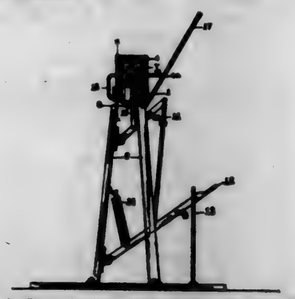

Claim.—1. In a device of the character described a diaphragm held upward by a frame, and provided with a slot in the top thereof, a plate upward therefrom provided with guide-slots coinciding with said first-named slots, said plate being also provided with an opening in the front thereof, a die member secured to said plate in the rear of said opening, a cutting-die arranged in said guide-slots adapted to coact with said die member, a hanger secured to said die and extending through said first-named slot, and means connected to said hanger for operating said die, as set forth.

2. In a device of the character set forth a cutting-die arranged in a frame, a means for operating said die consisting of a lower lever pivotally mounted on said frame, a foot-piece to said lever working in a guide member, an upper lever pivotally secured to said lower lever, a link connecting said levers, a link connecting said upper lever to said die, and a spring connected to said lower lever and to said frame, as and for the purpose specified.

3. In a device of the character described a diaphragm held upward by suitable means, a die mechanism arranged on said diaphragm, means for operating said die mechanism, and a gage member pivotally mounted on said diaphragm and extending to the rear of said die mechanism, as set forth.

850,926. ELECTRIC MOTOR. JOHN B. GUBY, St. Louis, Mo. Filed July 16, 1906. Serial No. 326,388.

Claim.—1. A motor comprising a rotatable armature, a shaft for said armature, a pinion on said armature-shaft having a ratchet connection therewith, a manually-operable slide-bar having a toothed ratchet adapted to engage said pinion, whereby said armature is adapted to be rotated when said slide-bar is actuated in one direction, said slide-bar having a circuit-closer mounted thereon, terminal contacts located in the path of said circuit-closer and normally disconnected from each other in a normally open motor-circuit, said circuit-closer being adapted to engage and connect each of said terminal contacts to close the motor-circuit after said armature has started to rotate, means for engaging and locking said slide-bar in its forward position, a manually-operable device for releasing said locking means, and a spring for retracting said slide-bar.

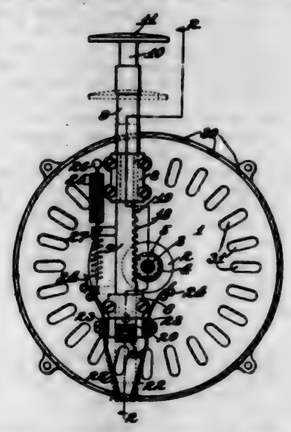

2. A motor comprising a casing, a shaft rotatably mounted in said casing, an armature on said shaft, a pinion having a ratchet connection with said shaft, a manually-operable slide-bar mounted in bearing-brackets on said casing, and a spring arranged to restore said slide-bar to normal position, and means for locking said slide-bar in its actuated position, said slide-bar having a toothed rack portion adapted to engage and rotate said pinion when said slide-bar is moved, a circuit-closer mounted on the end of said slide-bar, and terminal contacts located in the path of said circuit-closer and normally disconnected from each other in a normally open motor-circuit, said circuit-closer being adapted to engage and connect each of said terminal contacts to close the motor-circuit after the armature has started to rotate, the toothed portion of said slide-bar being so arranged as to be disengaged from said pinion before the locking means becomes operative.

3. A motor comprising a casing, a shaft rotatably mounted in said casing, an armature on said shaft, a pinion having a ratchet connection with said shaft, a slide-bar mounted in bearing-brackets on said casing, a toothed rack on said slide-bar adapted to engage and rotate said pinion when said slide-bar is actuated, a circuit-closer comprising a contact-plate secured to an insulation-block mounted on the end of said slide-bar, a pair of spring-contacts located in the path of said circuit-closer, said contacts being normally disconnected from each other and constituting terminals in a normally broken motor-circuit, said circuit-closer being adapted to engage and connect said spring-contacts to close the motor-circuit after the armature has started to rotate, a handle for actuating said slide-bar, a projection on said slide-bar, a catch mounted on said motor-casing and adapted to engage said projection to hold said slide-bar in its actuated position, and a spring for yieldingly holding said slide-bar in normal position, and for returning said slide-bar to normal position when released after actuation.

850,927. CLOTH-CUTTING MACHINE. JOHN B. GUBY, St. Louis, Mo. Filed July 16, 1906. Serial No. 326,389.

Claim.—1. A reciprocating cutting-machine comprising a base, a standard having a knife-slot therein and a knife in said slot, a horizontal rock-shaft, a motor mounted above said standard and in alinement therewith, a link eccentrically connected to the end portions of the motor-shaft and pivotally connected to an arm on said rock-shaft, a second arm on said rock-shaft to which said knife is pivotally connected and a spring tending to hold said knife in said slot.

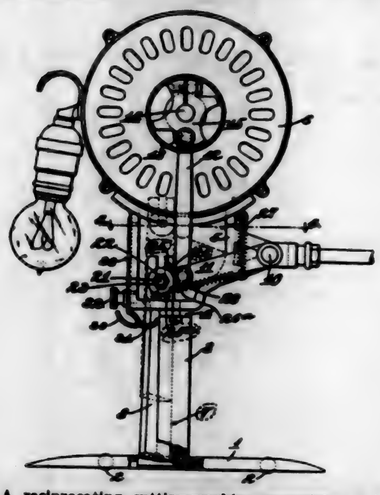

2. A reciprocating cutting-machine comprising a base, a standard having a knife-slot therein and a knife in said slot, a horizontal rock-shaft, a motor mounted above said standard and in alinement therewith, a link eccentrically connected to the end portions of the motor-shaft and pivotally connected to an arm on said rock-shaft, a second arm on said rock-shaft to which said knife is pivotally connected, a spring tending to hold said knife in said slot, and a second spring acting upwardly on an arm of the rock-shaft to partially counterbalance the weight of the vertically-moving parts.

3. A reciprocating cutting-machine comprising a standard having a knife-slot therein and a knife in said slot, a rock-arm, a motor for actuating said rock-arm and means for pivotally connecting said knife to said rock-arm, said means comprising a knife-clamping device one member of which is rotatably mounted on said rock-arm.

4. A reciprocating cutting-machine comprising a standard having a knife-slot therein and a knife in said slot, a rock-arm, a motor for actuating said rock-arm and means for pivotally connecting said knife to said rock-arm, said means comprising a disk rotatably mounted on said rock-arm, and having a screw-threaded pintle and a clamping-nut, the end of the knife being bifurcated to straddle said pintle.

5. A reciprocating cutting-machine comprising a standard having a knife-slot therein and a knife in said slot, a rock-arm, a motor for actuating said rock-arm and means for pivotally connecting said knife to said rock-arm, said means comprising a disk rotatably mounted on said rock-arm and having a screw-threaded pintle and a clamping-nut, the end of the knife being bifurcated to straddle said pintle, and said disk having a lug arranged to coöperate with a shoulder on the arm to limit the oscillatory movement of the knife.

6. A reciprocating cutting-machine comprising a standard having a knife-slot therein and a knife in said slot, a rock-arm, a motor for actuating said rock-arm and means for pivotally connecting said knife to said rock-arm, said means comprising a disk rotatably mounted on said rock-arm and having a screw-threaded pintle and a clamping-nut, the end of the knife being bifurcated to straddle said pintle, and said disk having a lug arranged to coöperate with a shoulder on the arm to limit the oscillatory movement of the knife, and said disk having a second lug in position to be straddled by the forked end portions of said knife.

7. A reciprocating cloth-cutting machine comprising a standard having a knife-slot therein and a knife in said slot, a frame and actuating mechanism on said standard, and a presser-foot on said frame, said presser-foot comprising an elongated vertically-bifurcated body portion and horizontal end portions turned in opposite directions, said horizontal portions being arranged to straddle said standard and the vertical opening being opposite the knife so as to permit the insertion and removal of the knife without shifting said presser-foot.

850,928. CLOTH-CUTTING MACHINE. JOHN B. GUBY, St. Louis, Mo. Filed Dec. 21, 1906. Serial No. 348,891.

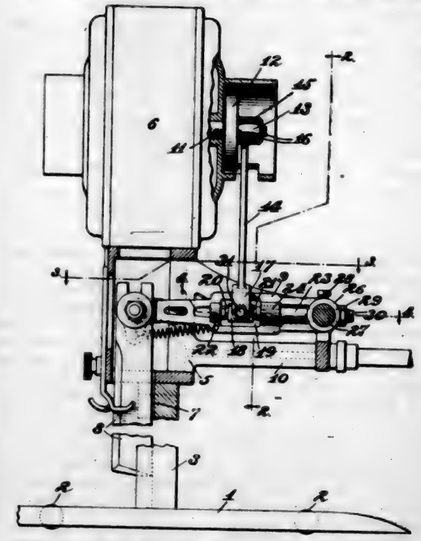

Claim.—1. A cloth-cutting machine comprising a base, a standard thereon, a motor mounted on said standard, a rock-lever mounted in the plane of the motor-shaft, a link eccentrically connected to said motor-shaft, and also connected to said rock-lever by a universal coupling comprising a swivel-block mounted on said rock-lever and having a pivotal connection with said link, and a knife operatively connected to said rock-lever.

2. A cloth-cutting machine comprising a base, a standard thereon, a motor mounted on said standard, a rock-lever mounted in the plane of the motor-shaft, a link eccentrically connected to said motor-shaft, and also connected to said rock-lever by a universal coupling comprising a swivel-block having a pivotal connection with said link, and conical trunnions on said rock-lever for said swivel-block, and a knife operatively connected to said rock-lever.

3. A cloth-cutting machine comprising a base, a standard thereon, a motor mounted on said standard, a rock-lever mounted in the plane of the motor-shaft, a link eccentrically connected to said motor-shaft, and also connected to said rock-lever by a universal coupling comprising a swivel-block having a pivotal connection with said link, and adjustable trunnions on said rock-lever for said swivel-block, and a knife operatively connected to said rock-lever.

4. A cloth-cutting machine comprising a base, a standard thereon, a motor mounted on said standard, a rock-lever mounted in the plane of the motor-shaft, a link eccentrically connected to said motor-shaft, and also connected to said rock-lever by a universal coupling compris-

ing a swivel-block having a pivotal connection with said link, and trunnions on said rock-lever for said swivel-block, one of said trunnions comprising an elongated member having a threaded engagement with said rock-lever and being also provided with an additional threaded portion, and lock-nuts on said threaded portion adapted to secure said trunnion in position, and a knife operatively connected to said rock-lever.

5. A cloth-cutting machine comprising a base, a standard thereon, a motor mounted on said standard, a rock-lever mounted in the plane of the motor-shaft, a link eccentrically connected to said motor-shaft, and also connected to said rock-lever by a universal coupling comprising a swivel-block having a pivotal connection with said link, and trunnions on said rock-lever for said swivel-block, one of said trunnions being adjustable, and means for securing said adjustable trunnion in position, and a knife operatively connected to said rock-lever.

6. A cloth-cutting machine comprising a base, a standard thereon, a motor mounted on said standard, a rock-lever mounted in the plane of the motor-shaft, a link eccentrically connected to said motor-shaft, and also connected to said rock-lever by a universal coupling comprising a swivel-block having a pivotal connection with said link, and trunnions on said rock-lever for said swivel-block, one of said trunnions comprising a tubular member adapted to contain and feed a lubricant for the respective bearings in said swivel-block.

7. A cloth-cutting machine comprising a base, a standard on said base, a motor mounted on said standard, a rock-lever mounted in the plane of the motor-shaft, a link eccentrically connected to said motor-shaft, and also pivotally connected to a swivel-block, trunnions on said rock-lever for said swivel-block, said swivel-block having seats for said trunnions and a duct communicating with said seats, and also having an opening for the pivot-pin for said link connection, said last-named opening intersecting said duct, one of said trunnions comprising a tubular member adapted to contain and feed a lubricant to said duct.

8. A cloth-cutting machine comprising a base, a standard thereon, a motor mounted on said standard, a rock-lever mounted in the plane of said motor-shaft, a globular wrist-pin eccentrically mounted on said shaft, a swivel-block mounted on said rock-lever, a link pivotally secured on said globular wrist-pin, and pivotally connected to said swivel-block, and a knife operatively connected to said rock-lever.

850,929. SAFETY-RAZOR. FRANZ J. HALBEKANN, Solingen, Germany, assignor to The Firm of Wolferts & Co., Landwehr, near Solingen, Germany. Filed Dec. 4, 1906. Serial No. 346,244.

Claim.—1. A razor comprising in combination a handle, a plate 2 mounted at the end of the same and provided with teeth at its front edge, a snap-piece 7 revolubly mounted in proximity to the back edge 12 of said plate and provided with a bent resilient portion 11 bounded by incisions 10 and adapted when the snap-piece is closed to engage the back edge of the plate, and a blade adapted to lie on said plate under said snap-piece when closed with its cutting edge adjacent to the teeth on the plate.

2. A razor comprising in combination a handle, a plate 2 mounted at the end of the same and provided with teeth at its front edge, and with pivots 9 at the back portion of its ends, a snap-piece 7 having turned-down perforated lugs 8 engaging with said pivots 9 and being provided with a bent resilient portion 11 bounded by incisions 10 and adapted when the snap-piece is closed to engage the back edge of the plate, and a blade adapted to lie on said plate under said snap-piece when closed with its cutting edge adjacent to the teeth on the plate.

850,930. MECHANICAL MOVEMENT. EDGAR J. HANNAH, Green Castle, Mo. Filed Nov. 22, 1905. Serial No. 288,555.

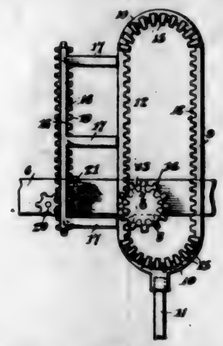

Claim.—1. In a mechanical movement of the character described, the combination with a supporting member, of a yoke member having teeth on its inner side, a pinion coacting with the teeth, a guide carried by one member and having teeth on its opposite sides, and a pinion carried by the other member and meshing with the teeth of the guide, said guide and pinion being movable one around the other.

2. In a mechanical movement of the character described, the combination with a yoke having teeth on its inner side, of a gear-wheel located in the yoke, and coöperating with the teeth thereof, a guide connected to the yoke and having teeth on its outer side, and a toothed roller coöperating with the guide, said guide passing around the roller.

3. In a mechanical movement of the character described, the combination with a yoke having teeth on its inner side, of a gear-wheel located in the yoke and coöperating with the teeth thereof, a guide-bar located alongside the yoke and connected thereto, said bar having teeth around its outer sides, and a toothed roller coöperating with the guide, said guide passing around the roller.

4. In a mechanical movement of the character described, the combination with a yoke having teeth on its inner side, of a gear-wheel coöperating with the teeth, spaced rollers located alongside of the yoke and out of alinement with the gear-wheel, a guide located longitudinally along one side of and in spaced relation to the yoke, said guide having connections with the yoke and having a path of movement between the rollers and completely around one of the same.

5. In a mechanical movement of the character described, the combination with a yoke having teeth, of a gear-wheel operating on the teeth and having a flange portion overlying the yoke, said flange portion having teeth, and teeth located at the ends of the yoke and coöperating with the flange-teeth.

6. In a mechanical movement of the character described, the combination with a yoke having teeth on its inner side, of a guide-bar located longitudinally along one side of the yoke and having connections therewith, said guide-bar having teeth, toothed rollers coöperating with the guide-bar, said bar moving between the rollers and completely around the same, a flange carried by the gear-wheel and overlying portions of the yoke, said flange having teeth, and teeth located at the ends of the yoke and coöperating with the flange-teeth.

850,931. STRAINER AND SIFTER. MARIE P. HOFFMAN, Canajoharie, N. Y. Filed Dec. 19, 1906. Serial No. 348,587.

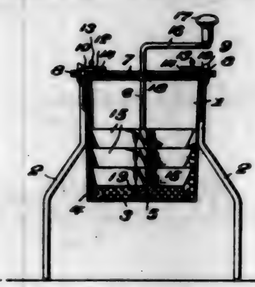

Claim.—In a device of the class described the combination with a body having its bottom and a portion of the wall thereof provided with a plurality of perforations and supporting means for said body, of a shaft vertically disposed in said body, a socket secured to the bottom of said body and adapted to receive the lower end of said shaft, a plurality of blades arranged in series and one above the other, the upper edges of said blades being curved and directed forwardly while the lower edges thereof are curved and directed rearwardly, each of said blades having tapered outer ends, a crank at the end of said shaft and means to hold said shaft within said body and prevent longitudinal and lateral movement thereof.

850,932. CLAMP FOR TENTERING-MACHINES. HENRY W. HONEYMAN, Pawtucket, R. I., assignor to The Textile-Finishing Machinery Company, Providence, R. I., a Corporation. Filed Jan. 26, 1903. Serial No. 140,483.

Claim.—1. A tentering-machine clamp composed of a plate or lower jaw, an upper or gripping jaw, and an arm constructed of resilient metal and supporting the gripping-jaw.

2. A cloth-clamp composed of a plate or lower jaw, an arm constructed of resilient metal, and a gripping-jaw pivoted to said arm.

3. A cloth-clamp composed of a plate or lower jaw, an arm over the lower jaw constructed of resilient sheet metal, a gripping-jaw pivoted to the end of the arm, and means for controlling the action of the gripping-jaw to cause it to grip the cloth upon or near its selvage.

4. A cloth-clamp composed of a plate or lower jaw, an arm over the lower jaw constructed of resilient sheet metal, a gripping-jaw pivoted to the end of the arm, means for controlling the action of the gripping-jaw to cause it to grip the cloth upon or near its selvage, and means for preventing the gripping-jaw from being pulled too far forward by the strain of the cloth.

5. A cloth-clamp composed of a plate or lower jaw, an arm over the lower jaw constructed of resilient sheet metal, a gripping-jaw pivoted to the end of the arm, means for controlling the action of the gripping-jaw to cause it to grip the cloth upon or near its selvage, and a rounded edge or bead upon the lower jaw to prevent the gripping-jaw from being pulled too far forward by the strain of the cloth.

6. A cloth-clamp composed of a plate or lower jaw, an arm extending over the lower jaw, a gripping-jaw pivoted to the end of the arm, means for controlling the action of the gripping-jaw to cause it to grip the cloth upon or near its selvage, and an edge or bead upon the lower jaw to assist the gripping-jaw in holding the cloth.

850,933. NUT-LOCK. THOMAS R. HORN, Marquette, Mich. Filed July 7, 1906. Serial No. 325,164.

Claim.—A nut-lock for the series of nuts at a railway-rail joint consisting of the combination with the said nuts, the rails, ties, and fish-plate, of the nut-locking plate having a flange on its upper side fitted against a flat side of the nuts underneath the same, and extending over the base-flanges of the rails, fish-plate, and heads of the rail-securing spiks, the nut-locking plate being provided with a right angular rib along the line of the spike-heads, said rib being undergrooved for the reception of the spike-heads and having a horizontal ledge on its outer edge whereby it is independently spiked to the ties.

850,934. MECHANICAL MOVEMENT. HARRY A. HOUSEMAN, Philadelphia, Pa., assignor to Standard Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed May 28, 1903. Serial No. 159,056.

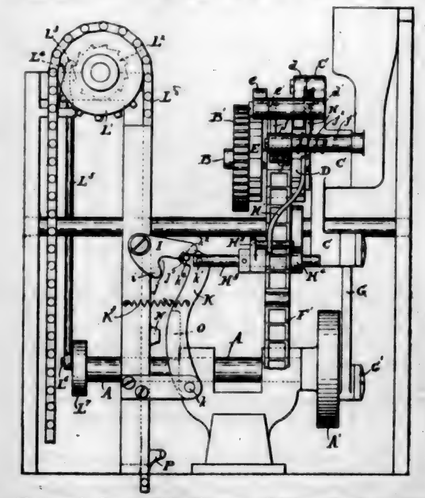

Claim.—1. In combination, a driving-wheel, a pawl driven from said driving-wheel, a ratchet which said pawl operates, a wheel operated by said ratchet, a second pawl also driven from said driving-wheel, a ratchet which said pawl operates, pattern mechanism operated by said last-mentioned ratchet, said pattern mechanism adapted to control the operative connection between the first-mentioned pawl and its ratchet, pawl-controlling mechanism for said second pawl, said pattern mechanism being adapted to operate said pawl-controlling mechanism and release the second pawl from connection with its ratchet, and means to move said pawl-controlling mechanism into and out of line of the pattern mechanism.

2. In combination, a driving-wheel, a pivoted pawl driven from said driving-wheel, a ratchet which said pawl

operates, a wheel driven by said ratchet-wheel, a lever normally holding said pawl out of action, a second pawl driven from said driving-wheel, a ratchet which said second pawl drives, a cam normally out of contact with said second pawl, a pattern-chain driven by said last-mentioned ratchet, said pattern-chain having a lug adapted to release the first-mentioned lever from its pawl and a lug adapted to move the cam into engagement with its pawl and move said pawl out of action, a laterally-movable spring-actuated shaft, said cam being secured to said shaft, a locking device normally holding said second-mentioned lever in alinement with its corresponding lug on the pattern-chain, a second pattern mechanism adapted in its movement to release said locking device.

3. In combination, a driving-wheel, a pivoted pawl driven from said driving-wheel, a ratchet which said pawl operates, a wheel driven by said ratchet-wheel, a lever normally holding said pawl out of action, a second pawl driven from said driving-wheel, a ratchet which said second pawl drives, a cam normally out of contact with said second pawl, a pattern-chain driven by said last-mentioned ratchet, said pattern-chain having a lug adapted to release the first-mentioned lever from its pawl and a lug adapted to move the cam into engagement with its pawl and move said pawl out of action, a laterally-movable spring-actuated shaft, said second-mentioned lever being secured to said shaft, a locking device normally holding said second-mentioned lever in alinement with its corresponding lug on the pattern-chain, a second pattern mechanism adapted in its movement to release said locking device, a lever to which the laterally-moving shaft is connected, said shaft-lever being in line of movement of said pattern mechanism and adapted when struck thereby to move said shaft to return the cam into alinement with its lug on the first-mentioned pattern-chain.

850,935. SCREEN-CATCH. FREDERICK K. HUBER, Celina, Tex. Filed Aug. 27, 1906. Serial No. 332,238.

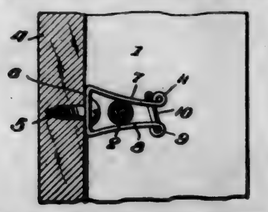

Claim.—The combination with a screen frame and jamb therefor secured to said screen-frame; of a plate, spring-arms secured to said plate and converging at right angles thereto, a link pivoted to one of the spring-arms and adapted to take over and be secured to the end of the opposite arm, a bead on the opposite arm, means to dispose said link into engagement with said bead, and a pin in said jamb adapted to enter between said arms.

850,936. TENNIS-COURT MARKER. WILLIAM A. JOHNSON, Yonkers, N. Y. Filed Aug. 9, 1906. Serial No. 329,820.

Claim.—1. A wheeled receptacle adapted to contain marking fluid, and a flexible outlet-pipe connected to said receptacle.

2. A receptacle, a running-gear therefor, a brush and a flexible connection between the receptacle and the brush.

3. A receptacle, a running-gear therefor, a flexible outlet-pipe, a brush associated with said pipe, and means for yieldably adjusting the position of the outlet-pipe and the brush.

4. A wheeled receptacle adapted to be moved across a surface, an outlet-pipe, a brush associated with said pipe, the brush being arranged to bear upon said surface, and means for producing a constant pressure of said brush upon the surface.

5. A receptacle, a running-gear therefor, an outlet-valve connected with said receptacle, a brush and a hollow flexible connection between the valve and the brush.

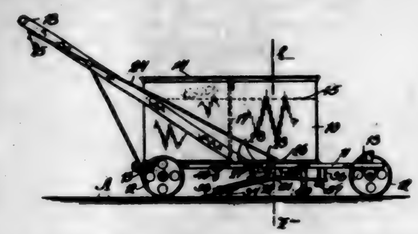

6. A wheeled receptacle, a handle therefor, an outlet-valve connected with said receptacle, a brush, a hollow flexible connection between the valve and the brush, and means for operating said valve from the handle.

7. A wheeled receptacle, a handle therefor, an outlet-valve connected with said receptacle, a brush, a hollow flexible connection between the valve and the brush, an operating-rod arranged for operating the valve from the handle, a stop for the valve in its closed position, and an adjustable stop for limiting the amount of opening of the valve.

8. A receptacle, a running-gear therefor, a pivoted supporting-arm and a brush detachably affixed to said arm.

9. A receptacle, a running-gear therefor, a pivoted supporting-arm, a brush detachably affixed to said arm, and a flexible connection between the receptacle and the brush.

10. A receptacle adapted to be moved across a surface, a running-gear therefor, a pivoted supporting-arm, a flat brush detachably affixed to said arm, a flexible connection between the receptacle and the brush, a spring arranged to act upon said supporting-arm to cause the brush to bear upon said surface with a constant pressure, and an adjusting-screw for limiting the action of the spring.

11. A receptacle adapted to contain a marking fluid, a frame, wheels therefor, scrapers for the wheels, a handle, an outlet-valve connected with the receptacle, a pivoted supporting-arm, a brush, means for attaching the brush to the supporting-arm, a hollow flexible connection between the outlet-valve and the brush, a spring arranged to act upon the supporting-arm, an adjusting-screw for limiting the action of the spring, an operating-rod arranged for operating the outlet-valve from the handle, a stop for the valve in its closed position, and an adjustable stop for limiting the amount of opening of the outlet-valve.

850,937. AUTOMATIC CONTROL SYSTEM FOR ELEVATORS, &c. BENJAMIN N. JONES, East Orange, N. J., assignor to Marine Engine & Machine Company, Harrison, N. J., a Corporation of New Jersey. Filed Apr. 29, 1903. Serial No. 154,747.

Claim.—1. In a system of electric control, the combination of a motor-circuit, a resistance in the motor-circuit, a plurality of magnets controlling separate portions of the resistance in the motor-circuit and arranged *seriatim*, the coil of each magnet except the first having a terminal at one end with which a conducting-plate carried by the armature of the magnet next preceding is adapted to contact to complete the circuit through said coil, a circuit through said magnets, a time-interval magnet, the core of said time-interval magnet being adapted to open the circuit through its own coil and to close the circuit through the first-named magnets at one end of its stroke and at the other end of its stroke to open the last-named circuit and close the circuit through its own coil.

2. In a system of electric control, the combination of a motor-circuit, a resistance in the motor-circuit, a plurality of magnets controlling separate portions of the resistance in the motor-circuit and arranged *seriatim*, the coil of each magnet except the first having a terminal at one end with which a conducting-plate carried by the armature of the magnet next preceding is adapted to contact to complete the circuit through said coil, a circuit through said magnets, a time-interval magnet, the core of said time-interval magnet being adapted to open the circuit through its own coil and to close the circuit through the first-named magnets at one end of its stroke and at the other end of its stroke to open the last-named circuit and close the circuit through its own coil, and means to maintain in a state of energisation those of the first-named magnets which have been operated.

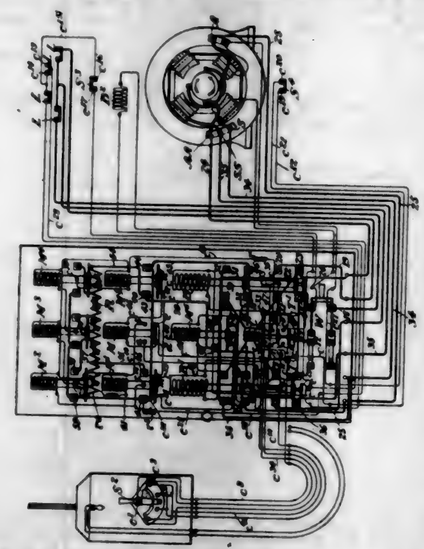

3. In a system of electric control, the combination of a motor-circuit, a resistance of the motor-circuit, a plurality of magnets controlling separate portions of the resistance in the motor-circuit and arranged *seriatim*, the coil of each magnet except the first having a terminal at one end with which a conducting-plate carried by the armature of the magnet next preceding is adapted to contact to complete the circuit through said coil, a circuit through said magnets, a time-interval magnet, the core of said time-interval magnet being adapted to open the circuit through its own coil and to close the circuit through the first-named magnets at one end of its stroke and at the other end of its stroke to open the last-named circuit and close the circuit through its own coil and an auxiliary circuit to maintain in a state of energisation those of the first-named magnets which have been operated.

4. In a system of electric control, the combination of a motor-circuit, a resistance in the motor-circuit, a plurality of magnets controlling separate portions of the resistance in the motor-circuit and arranged *seriatim*, the coil of each magnet except the first having a terminal at one end with which a conducting-plate carried by the armature of the magnet next preceding is adapted to contact to complete the circuit through said coil, a circuit through said magnets, a pair of terminals in said circuit, a time-interval magnet, a circuit through said magnet, a pair of terminals in said circuit, said time-interval magnet having a core adapted to move forward when the magnet loses its energy, a conducting-plate loose upon said core, means to hold the plate against either pair of contacts, and a shoulder upon said core to move the plate from one pair of contacts to the other.

5. In a system of electric control, the combination with a motor-circuit and means for varying the resistance in the motor-circuit, of a time-interval magnet comprising a coil, a core, a conducting-plate loose upon said core, a pair of terminals or contacts in the circuit through said coil, a second pair of terminals or contacts, connected with said means, said plate being adapted to be moved from one pair of terminals to the other pair of terminals.

6. In a system of electric control, the combination with a motor-circuit and means for varying the resistance in the motor-circuit, of a time-interval magnet comprising a coil, a core, a conducting-plate loose upon said core, a pair of terminals or contacts in the circuit through said coil, a second pair of terminals or contacts connected with said means, said plate being adapted to be moved from one pair of terminals to the other pair of terminals, and means to hold said plate against either pair of terminals.

7. In a system of electric control, the combination with a motor-circuit and means for varying the resistance in the motor-circuit, of a time-interval magnet comprising a coil, a core, a conducting-plate loose upon said core, shoulders upon said core, a pair of terminals or contacts in the circuit through said coil, a second pair of terminals or contacts connected with said means, said shoulders moving the plate from one pair of terminals to the other as the core is reciprocated into and out of the magnet, and means to hold said plate against either pair of terminals.

8. In a system of electric control, a motor-circuit, a control-circuit, a magnet in the control-circuit and adapted to close the motor-circuit, a resistance-regulating device, terminals in the control-circuit controlled by the resistance-regulating device, a retaining-line in the control-circuit around said terminals, and a resistance in the retaining-line to cut down the potential of the control-current therein to prevent the operation of the magnet in the control-circuit for the purpose specified.

9. In a system of electric control, the combination of a motor having a series field-coil, a motor-circuit normally including said coil, a resistance in the motor-circuit, a control-circuit in operative relation with the motor-circuit, a magnet bridged across the armature-terminals of the motor and arranged to short-circuit the series field-coil of the motor, and terminals in the control-circuit controlled by said magnet.

10. In a system of electric control, the combination of a motor having a series field-coil, a motor-circuit normally including said coil, a resistance in the motor-circuit, a control-circuit in operative relation with the motor-circuit, a magnet bridged across the armature-terminals of the motor, contacts connected with the terminals of the series field-coil and adapted to be connected by the contact device carried by the armature of the magnet to short-circuit the series field-coil, and terminals in the control-circuit controlled by said magnet.

850,938. EXERCISING APPARATUS. JOHN H. KELLOGG, Battle Creek, Mich. Filed Nov. 16, 1905. Serial No. 287,667.

Claim.—1. A dumb-bell comprising an electric motor inclosed in a casing forming one of the dumb-bell balls; a hollow handle or grip secured to said motor-casing; a ball consisting of a chambered core of metal threaded upon said handle, a plate having an annular threaded flange threaded into the outer end of said core, a ring of wood arranged on said core and secured thereto by screws arranged through said plate, and a padded covering; a shaft for said motor made up of sections connected by a slip-joint; a bearing for one section of said shaft arranged in said core; and a weight inclosed by said core arranged on said shaft, to throw the same out of balance, for the purpose specified.

2. A dumb-bell comprising an electric motor inclosed in a casing forming one of the dumb-bell balls; a hollow handle or grip secured to said motor-casing; a ball consisting of a chambered core of metal threaded upon said handle, and a covering for said core; a shaft for said motor made up of sections connected by a slip-joint; a bearing for one section of said shaft arranged in said core; and a weight inclosed by said core arranged on said shaft to throw the same out of balance, for the purpose specified.

3. A dumb-bell comprising an electric motor inclosed in a casing forming one of the dumb-bell balls; a hollow handle or grip secured to said motor-casing; a chambered ball

threaded upon said handle; a shaft for said motor made up of sections connected by a slip-joint; a bearing for one section of said shaft arranged in said chambered ball; and a weight inclosed by said chambered ball arranged on said shaft to throw the same out of balance, for the purpose specified.

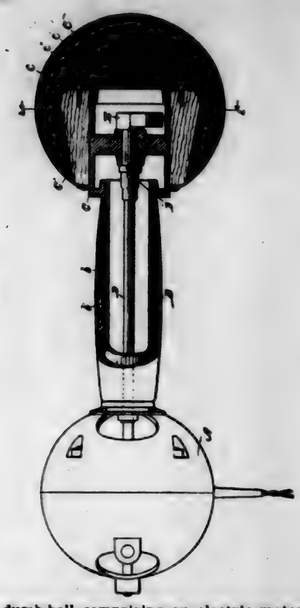

4. A dumb-bell comprising an electric motor inclosed in a casing forming one of the dumb-bell balls; a padded ball having a chamber therein; a hollow handle or grip connecting said motor-casing to said chambered ball; a shaft for said motor arranged through said handle; a bearing for said shaft arranged in said chambered ball; and a weight inclosed by said chambered ball arranged on said shaft to throw the same out of balance, for the purpose specified.

5. A dumb-bell comprising an electric motor inclosed in a casing forming one of the dumb-bell balls; a ball having a chamber therein; a hollow handle or grip connecting said motor-casing to said chambered ball; a shaft for said motor arranged through said handle; a bearing for said shaft arranged in said chambered ball; and a weight inclosed by said chambered ball arranged on said shaft to throw the same out of balance, for the purpose specified.

6. A dumb-bell comprising an electric motor inclosed in a casing forming one of the dumb-bell balls; a padded ball; a handle or grip connecting said motor-casing thereto; a shaft for said motor; and a weight arranged on said shaft to throw the same out of balance, for the purpose specified.

7. A dumb-bell comprising an electric motor inclosed in a casing, forming one of the dumb-bell balls; a companion ball therefor; a handle or grip connecting said motor-casing to said companion ball; a shaft for said motor; and a weight arranged on said shaft to throw the same out of balance, for the purpose specified.

850,939. COKE-OVEN. ANDREW KERSCHGENS, Charleroi, Pa., administrator of Joseph Kerschgens, deceased. Filed Sept. 8, 1906. Serial No. 333,852.

Claim.—1. The combination with a plurality of ovens, each oven having a flue in the bottom thereof and independent flues in its walls opening into the bottom flue; of a collecting-conduit disposed below the ovens, a stack communicating with said conduit, a discharge-conduit extending from the bottom flue of each oven and into the collecting-conduit, a vertically-movable valve for closing communication between each discharge-conduit and the collecting-conduit, a track disposed in front of the ovens and above the collecting-conduit, and means movable upon the track for actuating the valves.

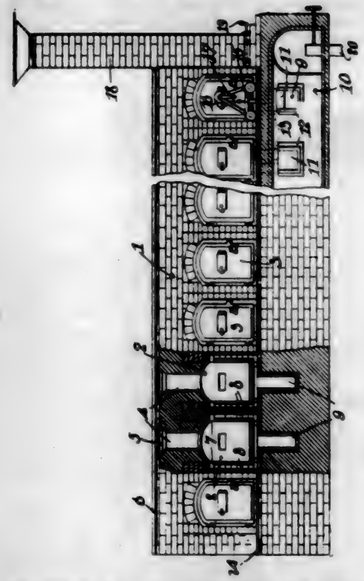

2. The combination with a plurality of ovens, each oven having a flue in the bottom thereof and independent flues in its walls opening into the bottom flue; of a collecting-conduit disposed below the ovens, a stack at one end of the collecting-conduit, means for closing communication between the stack and conduit, a valved gas-outlet within the collecting-conduit, a discharge-conduit extending from the bottom flue of each oven to the collecting-conduit, a vertically-movable valve for closing communication between each discharge and the collecting conduits, a track in front of the ovens and above the collecting-conduit, and means upon the track for actuating any one of the valves.

850,940. MANUFACTURE OF SEAMLESS HOSIERY. EDWARD E. KILBOURN, New Brunswick, N. J., assignor to The Kilbourn Knitting Machine Company. Filed Jan. 30, 1903. Serial No. 141,129.

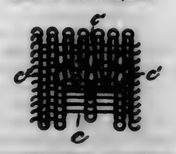

Claim.—1. A machine-knit seamless stocking having drop-stitch open-work upon the leg of the stocking, solid plain knitting preceding such drop-stitch open-work and tuck-stitches at the beginning of the open-work, substantially as described.

2. A machine-knit seamless stocking having drop-stitch open-work around the leg of the stocking with solid plain knitting above the drop-stitch work and tuck-stitches securing the drop-stitch work, substantially as described.

3. A machine-knit seamless stocking having drop-stitch open-work around the leg of the stocking, at the back as well as the front of the leg of the stocking, with solid plain knitting above the drop-stitch work, and tuck-stitches securing the drop-stitch work, the thread forming the leg being continuous with the thread forming the main portion of the foot of the stocking, substantially as described.

4. A machine-knit seamless stocking, having drop-stitch open-work upon the leg of the stocking, with solid plain knitting above said open-work, the dropped stitches preceding the open-work being secured, substantially as described.

5. A machine-knit seamless stocking, having drop-stitch open-work around the leg of the stocking at the back as well as the front of the stocking, with solid plain knitting preceding the drop-stitch work, the dropped stitches preceding the open-work being secured, substantially as described.

850,941. CARVING-MACHINE. EMIL R. LOCHMAN, St. Louis, Mo. Filed Jan. 2, 1903. Serial No. 137,529.

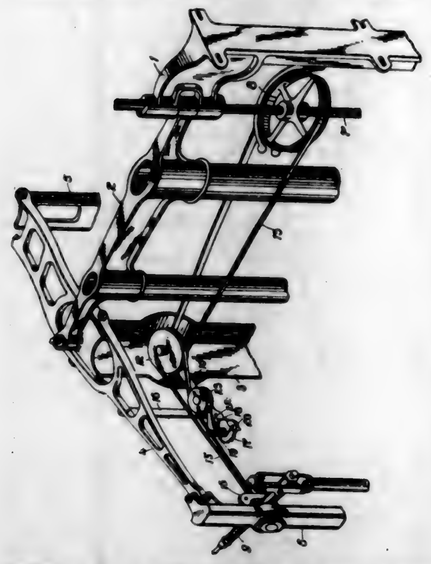

Claim.—1. In a carving-machine, a frame swinging about an axis, a tool at the free end of said frame mounted to oscillate in a plane parallel to said axis, a pulley mounted substantially in the line of the axis of the frame, the axis of the pulley being capable of oscillation in a plane parallel to the plane of oscillation of the tool aforesaid, a belt-tightener coupled in position near the axis of said pulley and oscillating in unison therewith, and a belt-section leading from the pulley to its corresponding tool-spindle, substantially as set forth.

2. In a carving-machine, a frame swinging about an axis, and adapted to sweep in planes parallel to said axis, a tool at the free end of said frame, a pully mounted substantially in the line of the axis of the frame, the axis of the pulley being capable of oscillation in a plane parallel to the planes of the sweep of the frame, a belt-tightener cooperatively connected with the pulley and oscillating in unison therewith, a link connecting said tightener with the frame, and a belt-section leading from the pulley to its corresponding tool-spindle, substantially as set forth.

3. In a carving-machine, a suitable frame swinging about an axis, a second frame swinging on said frame about a second axis, a tool at the free end of the second frame adapted to sweep in a plane parallel to said second axis, a drive-shaft located in the line of the axis of suspension of the first frame, a step-pulley for the tool located at the axis of suspension of the second frame, said pulley being adapted to oscillate about its axis of rotation in planes parallel to the sweep of the tool aforesaid, an inner belt-section leading from the drive-shaft to the smaller periphery of the step-pulley, and an outer belt-section leading from the larger periphery of the step-pulley to the tool-spindle, substantially as set forth.

4. In a carving-machine, a suitable frame swinging about an axis, a second frame swinging on said frame about a second axis, a tool at the free end of the second frame adapted to sweep in a plane parallel to the second axis, a drive-shaft located in the line of the axis of suspension of the first frame, a step-pulley for the tool located at the axis of suspension of the second frame, said pulley being adapted to oscillate with its axis of rotation in planes parallel to the sweep of the tool aforesaid, an inner belt-section leading from the drive-shaft to the smaller periphery of the step-pulley, an outer belt-section leading from the larger periphery of the step-pulley to the tool-spindle, and a belt-tightener for the outer belt-section coupled to the step-pulley and oscillating in unison therewith, substantially as set forth.

5. In a carving-machine, a suitable frame swinging about an axis, a second frame swinging on said frame about a second axis, a tool at the free end of the second frame adapted to sweep in planes parallel to said second axis, a drive-shaft located in the line of the axis of suspension of the first frame, a step-pulley for the tool located at the axis of suspension of the second frame, the axis of the pulley being free to oscillate in planes parallel to the sweep of the tool, an inner belt-section leading from the drive-shaft to the smaller periphery of the step-pulley, an outer belt-section leading from the larger periphery of the step-pulley to the tool-spindle, a swinging bar coupled in position about the axis of the pulley and adapted to oscillate in unison, and in a corresponding plane, therewith, a link connecting said bar to the second frame, and a belt-tightener for the outer belt-section carried by said bar, substantially as set forth.

6. In a carving-machine, a suitable frame swinging about an axis, a second frame swinging on said frame about a second axis, the tool at the free end of the second frame adapted to oscillate in planes parallel to said second axis, a drive-shaft located in the line of the axis of suspension of the first frame, a bar opposite the tool, pivotally connected about the axis of suspension of the second frame, a bracket carried by said bar, a step-pulley mounted on said bracket and having its axis disposed substantially in the line of the axis of suspension of said second frame, a ratchet at the outer end of the bar, a stud on said ratchet, a spring coiled about the stud, an arm swinging about the stud, a tightening-pulley on the free end of said arm, one end of the spring engaging the ratchet and the other end being secured to the swinging arm, a link coupling the bar pivotally to the outer or second frame, an inner belt-section leading from the drive-shaft to the smaller periphery of the step-pulley, and an outer belt-section leading from the larger periphery of the step-pulley to its corresponding tool-spindle, the tightening-pulley engaging one lap of the outer belt-section, substantially as set forth.

850,942. COMBINATION-LOCK. HARVEY C. LOWRIE, Denver, Colo. Filed Mar. 29, 1904. Serial No. 200,506.

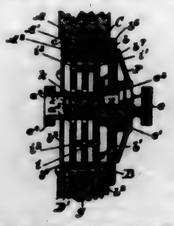

Claim.—In a lock of the character described, the combination of a plurality of circular disks having a segment removed therefrom, a suitable casing provided with grooves in which said disks are peripherally supported,

said disks being adapted by rotation to be projected from or retracted within said casing, pins or projections on said disks for imparting motion from one disk to another, and means for rotating one of said disks.

850,943. VALVE-GEAR FOR STEAM-ENGINES. GEORGE MARSHALL, Fremont, Nebr. Filed Nov. 22, 1906. Serial No. 344,614.

Claim.—The combination of a slotted link, a block mounted therein having recesses at its upper and lower ends and enlargements on opposite sides of the recesses provided with bearings and lubricating-apertures, rollers arranged in said recesses and having their journals in said bearings, a bifurcated radius-rod, a pin pivotally connecting the rod with the block and means for conveying oil through the block to the pin.

850,944. ELECTROPLATING SOLUTION. RICHARD H. MARSHALL, Scottdale, Pa., assignor of one-half to Albert H. Kelley, Scottdale, Pa. Filed Oct. 18, 1906. Serial No. 339,504.

Claim.—1. A solution for electroplating containing silver and a metal of the nickel group, each of said metals being present in the solution in a quantity in excess of any other metal than the metals mentioned.

2. A solution for electroplating containing double cyanid of a metal of the nickel group and a silver salt, each of said metals being present in the solution in a quantity in excess of any other metal than the metals mentioned.

3. A solution for electroplating containing double cyanid of a metal of the nickel group and double cyanid of silver, each of said metals being present in the solution in a quantity in excess of any other metal than the metals mentioned.

4. A solution for electroplating containing substantially equal amounts of double cyanid of a metal of the nickel group and double cyanid of silver.

850,945. PLASTERER'S TROWEL. ROBERT E. MARTIN, Newark, N. J. Filed Dec. 19, 1906. Serial No. 348,554.

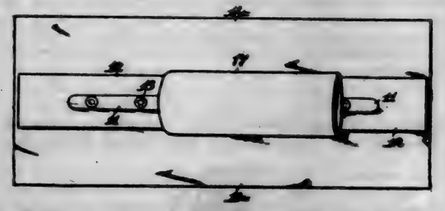

Claim.—A plasterer's trowel comprising a handle portion, a support for the handle portion having projecting arms, a flat flexible strip riveted to the arms of the support, the strip being thin and projecting beyond the arms to a considerable extent, and a plate brazed to the strip, the portions of the strip beyond the arms being adapted to bend with the plate to prevent the tearing of the plate from the strip.

850,946. DISK PLOW. JOHN J. MATHEY, Robey, S. D. Filed June 9, 1906. Serial No. 320,929.

Claim.—1. A plow comprising a frame provided with bearings, front and rear shafts having vertical portions journaled in said bearings, steering-wheels rotatably mounted upon the lower ends of said shafts, crank-arms detachably secured upon the upper ends of said shafts, a steering-tongue, a hinge-plate formed with transverse slots and with a socket to receive the horizontal portion of the crank-arm on said front shaft, means for retaining said crank-arm in said socket, fastenings passed through the slots in said hinge-plate and into said tongue for adjusting said hinge-plate transversely upon said tongue and securing the same thereto, a laterally-projecting arm formed upon said hinge-plate, and a connecting-rod having its front end loosely engaged with said laterally-projecting arm and its rear end connected to the crank-arm upon said rear shaft, substantially as shown and described.

2. A plow having a frame provided with bearings, front and rear shafts having vertical portions journaled in said bearings, steering-wheels rotatably mounted upon the lower ends of said shafts, crank-arms detachably secured upon the upper ends of said shafts, a steering-tongue, a hinge-plate adjustable transversely upon said tongue and formed with spaced sockets to receive the horizontal portion of the crank-arm on the front shaft, a pin for retaining said crank-arm in said sockets, an apertured arm projecting laterally from said hinge-plate, a connecting-rod having a hook at its forward end to engage the aperture in said apertured arm, and an adjustable pivotal connection between the rear end of said rod and the horizontal portion of the crank-arm on said rear shaft, substantially as shown and described.

3. A plow having a frame provided with bearings, front and rear shafts having vertical portions mounted to turn in said bearings, front and rear steering-wheels rotatably mounted upon said lower ends of said shafts, said front shaft having a polygonal-shaped upper end, a crank-arm formed at one end with a socket to engage said polygonal-shaped upper end of the front shaft, a pin for retaining said socket upon said shaft, a steering-tongue, a hinge-plate secured upon said tongue and formed with spaced sockets to receive the horizontal portion of said crank-arm, a pin in said crank-arm between said spaced sockets for retaining the hinge-plate upon said crank-arm, an apertured arm projecting from said hinge-plate, a second crank-arm having a vertical socket to fit upon the upper end of said rear shaft, means for securing the last-mentioned socket upon said rear shaft, an apertured block swiveled in the upper horizontal portion of said second crank-arm, a connecting-rod having a hook at its front end to engage the aperture in said apertured arm upon the hinge-plate, the rear end of said rod being screw-threaded and projecting through said swiveled block, and nuts upon the threaded end of said rod on opposite sides of said swiveled block, substantially as shown and described.

850,947. CONTROLLING DEVICE FOR ELECTRIC MOTORS FOR DRIVING SEWING-MACHINES, SMALL LATHES, &c. ALBERT H. MIDGLEY and BENJAMIN REED, London, England. Filed Jan. 31, 1906. Serial No. 298,827.

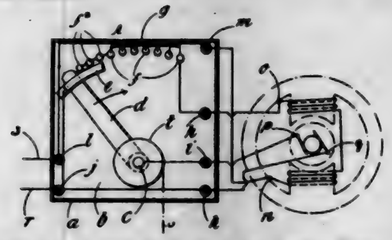

Claim.—In a controlling device for electric motors, the combination with the motor, of a switchboard having a plurality of resistance-contacts arranged on the arc of a circle, a resistance having connections with the individual resistance-contacts, a group of auxiliary contacts arranged on the arc of a circle beyond and connected with one of the terminals of said resistance-contacts, a field-wire connection from the motor-field to the resistance-contacts, a sector-contact included in the supply-circuit and having a connection with the motor-armature, said sector-contact being arranged concentric to but spaced from said auxiliary contacts, and a suitably-operated contact-lever arranged to engage the sector-contact, and also said other contacts, the said contact-lever being adapted to simultaneously engage the sector-contact and an auxiliary contact.

850,948. BUILDING CONSTRUCTION. AUGUST MOHR, Stuttgart, Germany. Filed Dec. 19, 1904. Serial No. 237,554.

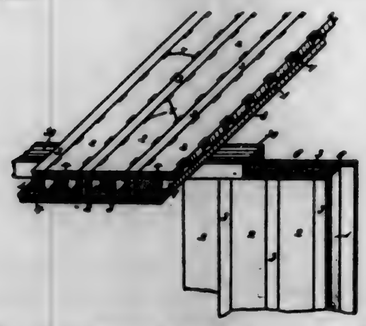

Claim.—1. A structural element for building construction, having a continuous plate and web, the edges of the plate being beveled in opposite directions and provided with cement-receiving recesses, and the extremity of the web being of dovetail shape.

2. In building construction, a plurality of structural elements each of angular cross-section and having a continuous web and plate, the edges of the one extremity beveled and the other extremity incut at each side to form one-half of a dovetail recess, the several elements arranged side by side and alternately in inverted position with the beveled edges of one extremity in dovetail engagement with the recesses formed in the adjoining sides of the other extremity to present two plane surfaces with intermediate longitudinally-extending cavities and connecting-webs, in combination with beams provided with spaced projections having lateral dimensions corresponding to the cross-section of the longitudinal cavities, said beams arranged at right angles to the first-named elements with the projections in engagement with the said cavities.

3. In building construction, a plurality of concrete structural elements each of T-shaped cross-section and having a continuous plate and web, the edges of the plate beveled and the extremity of the web incut at each side to form one-half of a dovetail recess, the several elements arranged side by side and alternately in inverted position with the beveled edges of one plate in dovetail engagement with the recesses formed in the sides of the adjoining web extremities to present two plane surfaces with intermediate longitudinally-extending cavities and connecting-webs, in combination with beams provided with spaced projections having lateral dimensions corresponding to the cross-section of the longitudinal cavities, said beams arranged at right angles to the first-named elements with the projections in engagement with said cavities.

4. In building construction, a plurality of concrete structural elements each of T-shaped cross-section and having a continuous plate and web, the edges of the plate beveled and the extremity of the web incut at each side to form one-half of a dovetail recess, the several elements arranged vertically side by side and alternately in inverted position with the beveled edges of one plate in dovetail engagement with the recesses formed in the sides of the adjoining web extremities to present two vertical plane surfaces with intermediate longitudinally-extending cavities and connecting-webs, a foundation-beam provided with spaced projections having lateral dimensions corresponding to the cross-section of the longitudinal cavities, said beam arranged beneath the assembled structural elements and at right angles thereto with its projections in engagement with the said cavities, and a similar beam arranged on top of the assembled structural elements with its projections extending downwardly in engagement with said cavities, in combination with similarly-assembled structural elements resting upon the second beam in a horizontal position and forming a ceiling.

850,949. PLANTER. FRITS MUHL, Denison, Iowa. Filed Oct. 10, 1906. Serial No. 338,295.

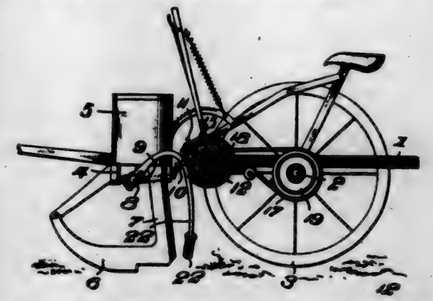

Claim.—1. The combination with a planter-frame having an operating-bar; of a lever adjustably secured to said operating-bar, a lip at the free end of said lever, a drum rotatably mounted on said frame, a trip-arm adjustably secured to said drum and extended beyond the edge thereof, means to rotate said drum whereby said trip-arm will engage said lip and operate the operating-bar, shanks mounted upon said operating-bar and fingers at the lower end of said shanks adapted to be disposed into engagement with the soil simultaneously with the operation of said operating-bar.

2. The combination with a planter-frame having an operating-bar; of a lever adjustably secured to said operating-bar, a lip at the free end of said lever, a drum rotatably mounted on said frame, a trip-arm adjustably se-

cured to said arm and extending beyond the edge thereof, a tongue upon said trip-arm adapted to be seated in a notch in the edge of said drum when the arm is in the path of said lever, and a similar notch in the body of the drum when the arm is removed from the path of said lever, means to hold said arm in position upon the drum and means to rotate said drum, whereby said trip-arm will engage said lip and operate the operating-bar.

850,950. MEANS FOR CHECKING THE SALE OF RAILWAY AND OTHER TICKETS. HEINRICH J. MÜLLER, Schaffhausen, Switzerland. Filed Oct. 30, 1906. Serial No. 341,228.

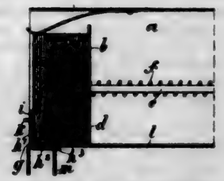

Claim.—1. Apparatus for checking the withdrawal of tickets from the pigeonholes in railway and other ticket cases for tickets placed vertically and pushed forward by springs, comprising a slide having sidewise-projecting portions, fitted in the front part of the bottom of the pigeonhole and movable vertically, the said sidewise projections of the slide limiting its downward motion and when it is at the bottom providing a stop for the tickets in the pigeonhole, the slide being capable of being maintained in the elevated position by means of the pressure of the spring which pushes the tickets forward, substantially as described.

2. Apparatus for checking the withdrawal of tickets from the pigeonholes in railway and other ticket cases for tickets placed vertically and pushed forward by springs, comprising a slide having sidewise-projecting portions, fitted in the front part of the bottom of the pigeonhole, movable vertically and having a vertical and a horizontal shank, a guide for the horizontal shank of the slide, the said sidewise projections of the slide limiting its downward motion and when it is at the bottom providing a stop for the tickets in the pigeonhole, the slide being capable of being maintained in the elevated position by means of the pressure of the spring which pushes the tickets forward, substantially as described.

3. Apparatus for checking the withdrawal of tickets from the pigeonholes in railway and other ticket-cases for tickets placed vertically and pushed forward by springs comprising a slide having sidewise-projecting portions, fitted in the front part of the bottom of the pigeonhole, movable vertically and having a vertical and a horizontal shank, and a flap turned down from the bottom of the pigeonhole and serving as guide for the horizontal shank of the slide, the sidewise projections of the slide limiting its downward motion and when it is at the bottom providing a stop for the tickets in the pigeonhole, the slide being capable of being maintained in the elevated position by means of the pressure of the spring which pushes the tickets forward, substantially as described.

850,951. RAIL-TIE. HENRY K. MYERS, Swissvale, Pa. Filed Feb. 13, 1907. Serial No. 357,114.

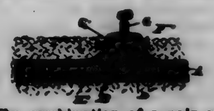

Claim.—1. The combination of a pair of cross-ties connected together by a pair of spreaders extending on a plane below and paralleling the rails, said ties having upwardly-extended rail-supporting portions on a plane above the tie-body proper, and members carried by said supporting portions to secure the rails thereto.

2. The combination of a pair of cross-ties connected together by a pair of spreaders extending on a plane below and paralleling the rails, said ties having upwardly-extended rail-supporting portions on a plane above the tie-body proper, members carried by said supporting portions to clamp the rails, and means engaging said clamps and supporting portions to maintain the same in position.

3. The combination of a pair of cross-ties, a pair of spreader-plates connecting said ties on a plane below and paralleling the rails the ends thereof being disposed upwardly to form supports for the rails, rail-clamping plates carried by said supports, and members securing said plates to said supports.

4. The combination of a pair of cross-ties, a pair of spreader-plates connecting said ties below and paralleling the rails the ends thereof over the ties proper being disposed upwardly to form supports for the rails, rail-clamping plates carried by said supports, and members securing said plates to said supports.

5. The combination of a pair of cross-ties, a pair of spreader-plates connecting said ties below and paralleling the rails the ends thereof over the ties proper being disposed upwardly to form supports for the rails and provided with a downwardly-disposed slot, rail-clamping plates having downwardly-disposed portions engaging in said slots, and members securing said plates to said supports.

6. The combination of a pair of cross-ties, a pair of spreader-plates connecting said ties below and paralleling the rails, the ends thereof over the ties proper being disposed upwardly to form supports for the rails and provided with a downwardly-disposed slot, rail-clamping plates having downwardly-disposed portions engaging in said slots, and members securing said plates to said supports, said spreader-plates being further provided with projections on their under sides to prevent displacement.

850,952. ORE PULVERIZER AND CONCENTRATOR. OBADIAH K. MCCUTCHEON, Pittsburg, Pa. Filed Apr. 27, 1906. Serial No. 313,926.

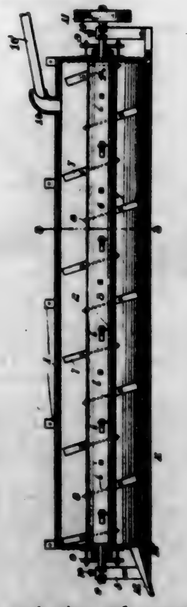

Claim.—1. In a pulverizer and concentrator, a suitable receptacle designed to receive water and ore, a cylinder journaled longitudinally of the receptacle, means for rotating the cylinder; the said cylinder having a series of diagonally-disposed openings therethrough, bolts in said openings having flattened heads extending longitudinally thereof and provided with apertures, means for securing the bolts in place, beaters applied to the bolt-heads, said beaters consisting of blades having bifurcated inner ends to receive the heads of the bolts, and having transversely-disposed apertures adapted to register with the apertures of the bolts, and securing means engaging the bolts and beaters.

2. In a pulverizer and concentrator, a suitable receptacle designed to receive water and ore, a cylinder journaled longitudinally of the receptacle, means for rotating the cylinder; the said cylinder having a series of diagonally-disposed openings therethrough, bolts in said openings having flattened heads extending longitudinally thereof and provided with apertures, means for securing the bolts in place, beaters secured to the heads of the bolts, the inner ends of said beaters being transversely recessed to conform to the contour of the cylinder, and being beveled in directions at right angles to the recessed portion to lie longitudinally of the cylinder, the bevel of the ends being at right angles to the pitch of the apertures in the cylinder.

3. In a pulverizer and concentrator, a suitable receptacle, a cylinder journaled therein, means for rotating the cylinder, said cylinder having diagonally-disposed apertures, bolts having shoulders in stepped relation to engage the periphery of the cylinder, the said bolts having flattened heads extending beyond the periphery of the cylinder, beaters having bifurcated ends to receive the heads of the bolts, said inner ends being transversely recessed and beveled in directions at right angles to the recesses, means for securing the beaters to the bolts, and a suitable supply-hopper and discharge-spout for the receptacle.

850,953. ENGINE. GEORGE MCDOWELL, New York, N. Y., assignor of one-half to J. Allen Latimer, Brooklyn, N. Y. Filed Oct. 4, 1905. Serial No. 281,231.

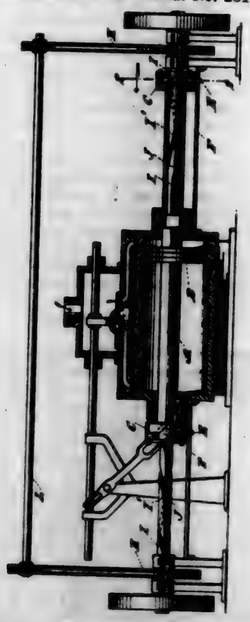

Claim.—1. An engine comprising two axially-alining spaced rotary driven members, a reciprocating driving member arranged between said driven members and constructed to operate them alternately, and a connection between the driven members, situated exteriorly of the driving member.

2. An engine comprising a cylinder, a piston arranged to reciprocate therein, driven shafts arranged in line with the cylinder's axis, and driving members connected with the piston but located exteriorly of the cylinder and adapted to operate the said driven shafts alternately.

3. An engine comprising two axially-alining spaced rotary driven members, provided with spiral grooves, a reciprocating driving member arranged between said driven members and adapted to engage said grooves and operate said driven members alternately, the pitch of each of the grooves being at most equal to the stroke of the driving member, and a connection between the driven members, situated exteriorly of the driving member.

4. In an engine, the combination with the cylinder and the reciprocating piston, of spirally-grooved shafts at each end of the cylinder, wheels surrounding said shafts and having projections engaging the grooves thereof, connections whereby said wheels are caused to reciprocate with the piston, and means for causing the said wheels alternately to run idle.

850,954. CREAM-SEPARATOR. LAUCHLAN A. MCLEAN, Toronto, Ontario, Canada. Filed Dec. 5, 1905. Serial No. 290,459.

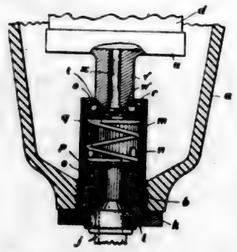

Claim.—1. In a cream-separator, the combination with the bowl and feed-tank, of a step-box having a central vertical orifice therethrough and a cup-shaped recess extending downwardly from its upper end, said step-box being connected with said feed-tank and forming the passage for the fluid into said machine, a cushion-spring in said cup-shaped recess, a ring forming a ball-race supported on said spring, balls in said race, and a tube having its lower edge beveled and journaled on said balls and supporting said bowl, as and for the purpose specified.

2. In a cream-separator, the combination with the bowl and feed-tank, of a step-box having a central vertical orifice therethrough and a cup-shaped recess extending downwardly from its upper end and a plurality of vent-holes in the wall thereof at the bottom of said recess, said step-box being connected with said feed-tank and forming the passage for the fluid into said machine, a cushion-spring in said cup-shaped recess, a ring forming a ball-race supported on said spring, balls in said race, and a tube having its lower edge beveled and journaled on said balls and supporting said bowl, as and for the purpose specified.

850,955. HEIGHT-MEASURING MACHINE. JAMES MCNISH and LEONARD W. GRAY, Newark, N. J., assignors of four-tenths to said McNish and six-tenths to George Pritchard, Newark, N. J. Filed Jan. 11, 1906. Serial No. 295,560.

Claim.—1. In a height-measuring machine the combination with the box having a measuring-arm projecting horizontally therefrom and having an index-finger in connection therewith, scale-plate straps connecting the top and bottom ends of the scale-plate with a pulley, said pulley and means for turning said pulley and drawing the said

ends of the scale-plate simultaneously, substantially as set forth.

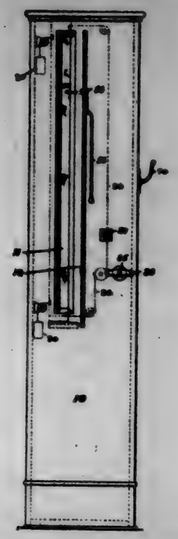

2. An improved height-measuring machine, comprising a box having a pair of slots in one face, an arm working in one slot and projecting therefrom, an index-finger on the arm, inside the box and projecting into view in the second slot, a scale-plate secured at its top and bottom in sliding relation to the inside of the face of the box, and arranged to be slid to and from view in the second slot, and means for manually operating the scale-plate.

850,956. PNEUMATIC TIRE. GEORGE L. MCQUIGG, Flint, Mich. Filed Oct. 11, 1906. Serial No. 338,436.

Claim.—1. As a new article of manufacture, a tire-casing including an inner and an outer layer, said layers being doubled over at their side margins to provide clencher-beads and rivets for securing said beads, substantially as described.

2. As a new article of manufacture, a tire-casing including an inner and an outer layer, the marginal portions of both layers extending outwardly and the marginal portion of said inner layer extending around the edges of the marginal portion of the outer layer and being tucked in between the latter marginal portion and periphery of the casing and rivets extending through the several thicknesses for securing the parts, substantially as described.

3. As a new article of manufacture, a tire-casing including two strips or layers of stretched rawhide, an insert of rawhide between said layers and an armor for the tread of the casing comprising a plurality of rivets having heads projecting from the periphery of the casing and two washers associated with each rivet, one of said washers resting upon the insert and fitting the shank of the rivet tightly, the end of the shank being headed up thereupon and the other washer fitting the shank of the rivet loosely and being interposed between the head of the rivet and the periphery of the outer layer, substantially as described.

850,957. PRODUCTION OF PHONOGRAPHIC SOUND-RECORDS. WILLIAM F. NEBE, West Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Original application filed Sept. 9, 1905, Serial No. 277,800. Divided and this application filed July 3, 1906. Serial No. 324,552.

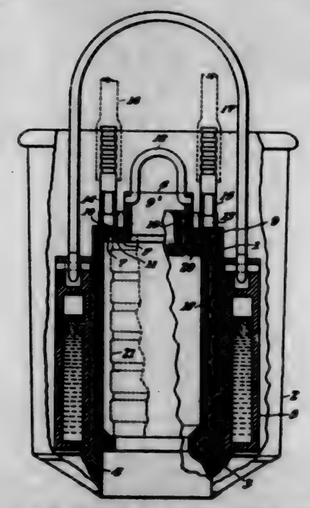

Claim.—1. The process of molding which consists in causing the molten material to rise and congeal in a layer upon the interior of a hollow coreless mold, entrapping the air nearest the wall of the mold and allowing it to escape through an air-passage, removing the mold with its congealed layer from the molten material and then reaming out the bore of said layer while soft, on a line falling without the position of the air-passage, substantially as set forth.

2. The process of molding which consists in causing the molten material to rise and congeal upon the interior of a tubular coreless mold, having an overhanging concave surface forming a continuation of the bore of the mold, removing the mold with its congealed layer from the molten material and then reaming out the bore of the layer while soft on a line which intersects the position of said concave surface at a point situated within the body of the mold, substantially as set forth.

850,958. CARRIAGE-WINDOW. CHARLES NICHOLSON, Hatfield, near Doncaster, England. Filed Jan. 23, 1906. Serial No. 297,516.

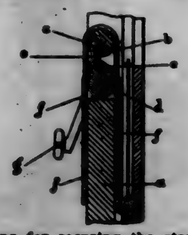

Claim.—In means for securing the straps of railway-carriage and other windows, a fixed upper roller and a rotating lower roller, serrated ribs on both rollers between which the strap is gripped and a finger-piece on the lower roller turning it to release the strap, substantially as herein described.

850,959. MIDDLINGS-PURIFIER. RICHARD OCH, Marissa, Ill. Filed Oct. 8, 1906. Serial No. 337,922.

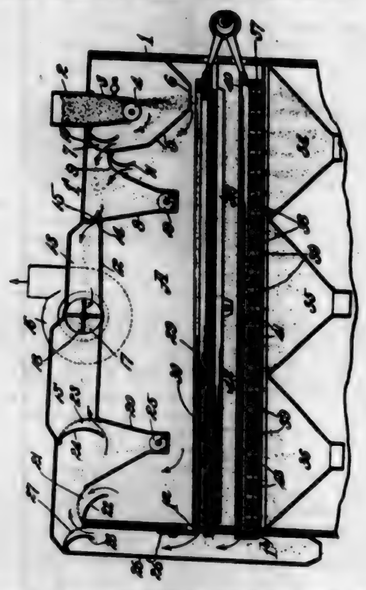

Claim.—1. A middlings-purifier comprising a casing providing a purifying-chamber extending from end to end of the machine, an inlet-spout, a housing partly inclosing the discharge end of the inlet-spout and having an outlet-opening at its lower end, into the purifying-chamber, and its rear wall separated from the top of the purifying-chamber to provide a passage-way, a front well closed at bottom and spaced from the top of the purifying-chamber and from the rear wall of the housing and providing front and rear passage-ways, the rear well closed at bottom and spaced from the top and the rear wall of the purifying-chamber and providing front and rear passage-ways, conveyers located in the wells, a horizontal partition extending from the rear wall of the front well to the front wall of the rear well and providing a rearwardly-extending dust-conduit from the front well and a forwardly-extending dust-conduit from the rear well, and a suction-fan located at the juncture of the conduits above the horizontal partition.

2. A middlings-purifier comprising a casing having a tailings-orifice in its rear wall and providing a purifying-chamber extending from end to end of the machine, an inlet-spout, a housing partly inclosing the discharge end of the inlet-spout and having an outlet-opening at its lower end into the purifying-chamber, and its rear wall separated from the top of the purifying-chamber to provide a passage-way, a front well closed at bottom and spaced from the top of the purifying-chamber and from the rear wall of the housing and providing front and rear passage-ways, the rear well closed at bottom and spaced from the top and the rear wall of the purifying-chamber and providing front and rear passage-ways, conveyers located in the wells, a horizontal partition extending from the rear wall of the front well to the front wall of the rear well and providing a rearwardly-extending dust-conduit from the front well and a forwardly-extending dust-conduit from the rear well, a tailings-spout located at the rear end of the casing and with which the purifying-chamber communicates through the tailings-orifice in the rear wall, and having a passage-way at the top over the rear well, and a suction-fan located at the juncture of the conduits above the horizontal partition.

3. A middlings-purifier comprising a casing having a tailings-orifice and an aperture beneath the tailings-orifice in its rear wall, and providing a purifying-chamber extending from end to end of the machine, an inlet-spout, a housing partly inclosing the discharge end of the inlet-spout and having an outlet-opening at its lower end into the purifying-chamber, and its rear wall separated from the top of the purifying-chamber to provide a passage-way, a front well spaced from the top of the purifying-chamber and from the rear wall of the housing and providing front and rear passage-ways, the rear well spaced from the top and the rear wall of the purifying-chamber and providing front and rear passage-ways, a horizontal partition extending from the rear wall of the front well to the front wall of the rear well and providing rearwardly and forwardly extending dust-conduits, a tailings-spout located at the rear end of the casing and with which the purifying-chamber communicates through the tailings-orifice and the aperture in the rear wall, and having a passage-way at the top over the rear well and a suction-fan located at the juncture of the conduits.

850,960. APRON-FASTENING DEVICE. MICHAEL J. O'CONNOR, Denver, Colo. Filed May 15, 1906. Serial No. 317,012.

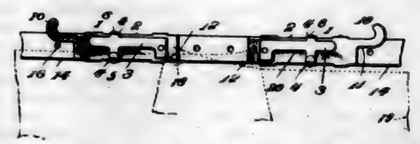

Claim.—1. A device of the character described, comprising a waist-belt, and clips mounted to slide thereon and provided with means for automatically limiting the sliding movement to one direction, said clips being provided with fingers designed to take into the gromets of an apron.

2. A device of the character described, comprising a waist-belt, and clips mounted to slide on said belt, said clips being provided with spring latch-plates designed to permit the free movement of said clips in one direction only, and said clips being also provided with fingers designed to take into the gromets of an apron.

3. A device of the character described, comprising a waist-belt provided with a series of holes or eyes, and clips mounted to slide on said waist-belt and each provided with a finger designed to take into the gromet of an apron, said clips comprising base-plates each formed with an aperture and pivoted latch-plates each having a beveled lug designed to extend through the apertures and into the holes in the waist-belt as and for the purpose set forth.

4. A device of the character described, comprising a waist-belt provided with apertures, and clips mounted to slide on said belt and provided with lugs adapted to enter said apertures to hold the clips at different adjusted positions on the belt, each clip being provided with means for holding an apron.

5. A device of the character described, comprising a waist-belt provided with two series of apertures and a slot interposed between said series, and clips provided with retaining-lugs engaging the two longitudinal portions of the belt produced by said slot and provided with means for engaging in said apertures, substantially as set forth.

850,961. MOCCASIN. ANDRZEJ ORZECHOWSKI, Kane, Pa. Filed June 20, 1906. Serial No. 322,578.

Claim.—1. A moccasin comprising a single piece of material having a row of slits extending longitudinally

thereof on each side near the edge, said piece being cut to form V-shaped recesses at the front and rear edges, said recesses being divided by a lateral point or tongue, the rear corners brought together and the edges united with the tongue and with each other, and the front corners being also brought together and the edges united with the tongue and with each other, and straps or laces formed integral with the piece of material and laced or interwoven in the slits.

2. A moccasin comprising a single piece of material having a row of slits extending longitudinally thereof on each side near the edge, said piece being cut to form V-shaped recesses at the front and rear edges, said recesses being divided by a lateral point or tongue, the rear corners brought together and the edges united with the tongue and with each other, and the front corners being also brought together and the edges united with the tongue and with each other, and straps or laces formed integral with the material and passed through the slits on either side, thence brought back and united in advance of the instep.

3. A moccasin comprising a single piece of material having a row of slits extending longitudinally thereof on each side near the edge, said piece being cut to form V-shaped recesses at the front and rear edges, said recesses being divided by a lateral point or tongue, the rear corners brought together and the edges united with the tongue and with each other, and the front corners being also brought together and the edges united with the tongue and with each other, straps or laces formed integral with the material and passed through the slits on either side, thence brought back and united in advance of the instep, and a combined hook and eyelet secured to each upper edge of the moccasin and adapted to be engaged by the straps or laces.

4. A moccasin comprising a single piece of material cut to form V-shaped recesses at the front and rear ends, the outer walls of the rear recesses being rounded and said recesses being separted by a projecting point or tongue, the rear corners united and the edges united with the tongue and with each other, the front corners being also united and the edges united with the tongue and with each other, a hook mounted on each side of the upper formed by the edges of the material, and straps or laces formed integral with the material and adapted to be interwoven or interlaced through slits cut in the edges of the material and also engaging the hook whereby they are held in position.

850,962. MOLDBOARD. JOHN F. PARKER, Portland, Me. Filed June 20, 1906. Serial No. 322,596.

Claim.—1. A moldboard having a longitudinal groove therein, adjustable pattern-holding clamps provided with sockets adapted to move in said longitudinal groove, means for holding said clamps in any desired position, holding-clamps to receive the flask-pins and means for limiting the movement of said flask-pin-receiving clamps.

2. A moldboard having a longitudinal groove extending therethrough, cleats on the bottom thereof, holding-clamps provided with sockets adapted to move in said longitudinal slots and adapted to be adjusted to any required size of pattern, movable clamps for receiving the flask-pin and means for holding said clamps in position.

850,962.

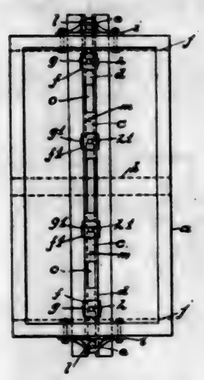

850,963. LOOP OPENER AND SPREADER FOR SEWING-MACHINES. CHRISTIAN PEDERSEN, St. Louis, Mo., assignor to Landis Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed May 24, 1906. Serial No. 318,494.

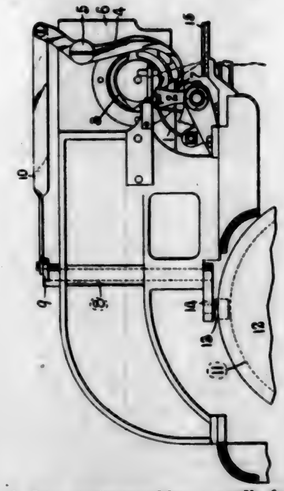

Claim.—1. In a sewing-machine, a needle for forming a loop in the thread, a circularly-moving shuttle, a pivotally-mounted member having a curved portion extending below the shuttle, said member having an inclined surface that extends into the vertical plane in which the shuttle moves, a shoulder at the end of said inclined surface to prevent the thread slipping therefrom, a vertically-disposed rock-shaft provided with an arm, a link connecting said arm to the upper end of said pivotally-mounted member, and a cam for actuating said rock-shaft to cause said member to oscillate in a vertical plane; substantially as described.

2. In a sewing-machine, a curved needle mounted in an oscillating carrier, a circularly-moving shuttle arranged in a vertical plane at one side of said needle-carrier, a vertically-disposed member pivotally connected to the head of the machine and adapted to move in the same vertical plane that the needle travels in, said member having a curved portion which extends beneath the shuttle, a substantially wedge-shaped end formed on said member, the point of which is located in alinement with the needle, a shoulder formed on the edge face of said head adjacent the shuttle to prevent the thread from slipping therefrom, and means for moving said member wholly within a vertical plane to cause its wedge-shaped head to enter the loop and spread it to permit the shuttle to pass therethrough; substantially as described.

850,964. DUMB-BELL. JOSEPH E. L. PELLETIER and GASTON F. MONIER, Paris, France. Filed Sept. 22, 1906. Serial No. 335,760.

Claim.—1. In a dumb-bell of the type set forth, hollow chambers having insertion-orifices, projections on the rims of said orifices removable weights adapted to fit within said chambers, recesses on said weights adapted to permit the weight to pass the said projections, and a spring in the handle adapted to press the weight next to the orifice and prevent its turning into the releasing position.

2. In a dumb-bell of the type set forth, hollow weight-chambers, the weights L L' in said chambers, a spring in contact with said weights, the recesses F F' on said weights, the stopping-pin M M' in said dumb-bell, and the guiding-bar N N' connected to said pin adapted to coöperate with the spring and prevent the escape of the weights.

850,965. APPARATUS FOR PRODUCING ALKALI HYDRATES AND ZINC SULFID. CHARLES RANSON, Brussels, Belgium, assignor to Henry William De Stuckle, Dieuze, Germany. Original application filed Oct. 3, 1904, Serial No. 227,075. Patented Apr. 17, 1906, No. 818,192. Divided and this application filed Sept. 6, 1905. Serial No. 277,211.

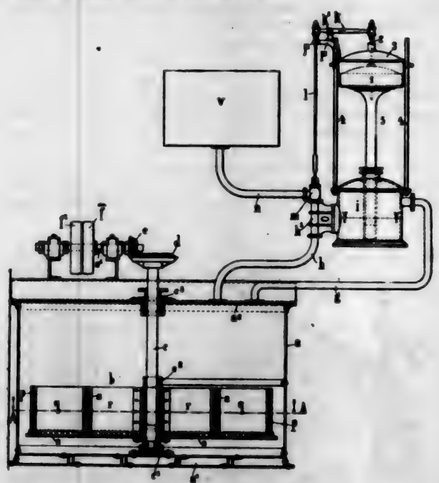

Claim.—1. An alkali apparatus comprising a closed receptacle adapted to contain alkali-forming reagents, heating means and agitating means for facilitating reaction therein, and means for feeding liquid reagent thereto controlled by the pressure of evolving gas in said receptacle.

2. An alkali-making apparatus comprising a closed receptacle, heating means and agitating means therefor, liquid-feeding means and pressure-regulated means controlling said liquid-feeding means and in gaseous communication with said receptacle.

3. An alkali-making apparatus comprising a closed receptacle, a rotatable perforated drum in the base thereof and means for feeding a liquid reagent to said receptacle controlled by the pressure prevailing therein.

4. An alkali-making apparatus comprising a closed receptacle, a rotatable perforated metallic drum in the base thereof and means for feeding a liquid reagent to said receptacle controlled by the pressure prevailing therein.

5. An alkali-making apparatus comprising a closed receptacle, a rotatable perforated drum therein divided into compartments by perforated partitions, and means for feeding a liquid reagent to said receptacle controlled by the pressure prevailing therein.

6. An alkali-making apparatus comprising a closed receptacle, a rotatable perforated iron drum therein divided into compartments by perforated iron partitions, and means for feeding a liquid reagent to said receptacle controlled by the pressure prevailing therein.

7. An alkali-making apparatus comprising a closed receptacle, rotating agitating means therein, a heating-jacket on said receptacle, and means for feeding a liquid reagent to said receptacle controlled by the pressure of evolving gas therein.

850,966. IRONING-TABLE. JAMES E. RATCLIFF, Dawson, Ill. Filed Apr. 2, 1906. Serial No. 309,557.

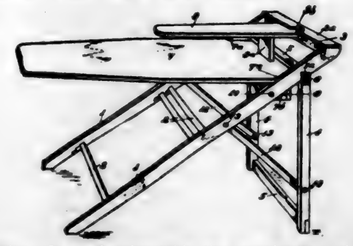

Claim.—In an ironing-table the combination of a main frame having side pieces and contiguous parallel intermediate cross-pieces, an ironing-board pivotally connected with and adapted to lie upon the side pieces of the main frame and a sleeve-board connectible to the main frame and having a leg adapted to support the sleeve-board horizontally upon the ironing-board when the ironing-table is extended, also adapted to fit between the intermediate cross-pieces of the main frame and support the sleeve-board between the ironing-board and the main frame when the ironing-table is folded.

850,967. CONTROLLING MECHANISM FOR SUBMARINE MINES. JEAN A. REY, Paris, France. Filed Oct. 10, 1905. Serial No. 282,112.

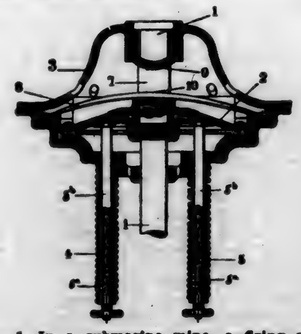

Claim.—1. In a submarine mine, a firing mechanism operative only within predetermined pressures.

2. In a submarine mine, a hydrostatically-controlled fir-

ing mechanism operative only within predetermined pressures.

3. The combination with a submarine mine and firing mechanism therefor, of a hydrostatically-actuated member operative beyond extreme pressures for controlling the firing mechanism.

4. The combination with a submarine mine and firing mechanism therefor, of a hydrostatically-actuated member, inert except at a predetermined depth, for controlling the firing mechanism.

5. The combination with a submarine mine and firing mechanism therefor, of a hydrostatically-actuated member for controlling the firing mechanism, and to lock the same at predetermined extreme positions.

6. The combination with a submarine mine and firing mechanism therefor, of a hydrostatically-actuated member for controlling the firing mechanism, said member operating only at a predetermined pressure to release the said mechanism.

7. The combination with a submarine mine and firing mechanism therefor, of a movable member for controlling the firing mechanism, and means actuated by hydrostatic pressure to cause the movable member to render the firing mechanism operative under a mean pressure but inoperative under extreme pressures.

8. The combination with a submarine mine and firing mechanism therefor, of a hydrostatically-actuated member for controlling the firing mechanism and operating only within predetermined pressures to release the said mechanism, and means for varying the resistance of the member to movement.

9. The combination with a submarine mine and firing mechanism therefor, of a hydrostatically-actuated member for controlling the firing mechanism, and pressure-opposing means for varying the resistance of the member to movement.

10. The combination with a submarine mine and firing mechanism therefor, of a hydrostatically-actuated member for controlling the firing mechanism, and adjustable pressure-opposing means for varying the resistance of the member to movement.

11. The combination with a submarine mine and firing mechanism therefor, of a hydrostatically-actuated member for controlling the firing mechanism and operating at within predetermined pressures to release the said mechanism, and resilient means for varying the resistance of the member to movement.

12. The combination with a submarine mine and firing mechanism therefor, of a hydrostatically-actuated member for controlling the firing mechanism and operating at within predetermined pressures to release the said mechanism, and adjustable springs disposed in the path of movement of the member for varying its resistance of movement.

13. The combination with a submarine mine, of a casing provided with water-inlets, a flexible diaphragm arranged within the casing, a rod connected with the diaphragm and operating to control the firing mechanism, and springs coacting with the diaphragm, one of which operates to counterbalance the thrust of the diaphragm between two given limits of pressure, and the other to balance a greater thrust caused by an increased hydrostatic pressure.

14. The combination with a submarine mine, of a casing provided with water-inlets, a flexible diaphragm arranged within the casing, a rod connected with the diaphragm and operating to control the firing mechanism, and springs coacting with the diaphragm, one of which operates to counterbalance the thrust of the diaphragm between two given limits of pressure, and the other to balance a greater thrust caused by an increased hydrostatic pressure, one of the springs being adjustable to fix the lower limits of the hydrostatic pressure under which the mine can be exploded.

15. The combination with a submarine mine, of a casing provided with water-inlets, a flexible diaphragm arranged within the casing, a member actuated by the diaphragm for controlling the firing mechanism, and pressure-opposing means coacting with the diaphragm, one of which operates to counterbalance the thrust of the diaphragm between two given limits of pressure, and the other to balance a greater thrust caused by an increased hydrostatic pressure.

16. The combination with a submarine mine, of a casing provided with water-inlets, a flexible diaphragm arranged within the casing, a member actuated by the diaphragm to control the firing mechanism, and pressure-opposing means coacting with the diaphragm, one of which is adjustable and operates to counterbalance the thrust of the diaphragm between two given limits of pressure, and the other to balance a greater thrust caused by an increased hydrostatic pressure.

17. The combination with a submarine mine, of a casing provided with water-inlets, and a flexible diaphragm arranged within the casing, and operatively connected with the firing mechanism of the mine, the amount of movement of the diaphragm corresponding to the limit values of the hydrostatic pressure at which the mine can explode.

18. The combination with a submarine mine, of a casing provided with water-inlets, a flexible diaphragm arranged within the casing, a rod connected with the diaphragm and operating to control the firing mechanism, and springs coacting with the diaphragm, one of which operates to counterbalance the thrust of the diaphragm up to a given lower limit of pressure, and the other to balance a greater thrust caused by an increased hydrostatic pressure from a given upper limit of pressure upward.

19. The combination with a submarine mine of a casing provided with water-inlets, a flexible diaphragm arranged within the casing, a rod connected with the diaphragm and operating to control the firing mechanism, and springs coacting with the diaphragm, one of which operates to counterbalance the thrust of the diaphragm up to a given lower limit of pressure and the other to balance a greater thrust caused by an increased hydrostatic pressure from a given limit of pressure upward, the said springs being adjustable to fix the maximal limit of the hydrostatic pressure under which the mine can be exploded, so that the firing mechanism can be operated when between given limits of pressure and is locked if said pressure is not comprised between said limits.

850,968. COMBINED BOX-OPENER, NAIL-PULLER, AND HAMMER. JAMES L. RILEY, Xenia, Ill. Filed Mar. 12, 1906. Serial No. 305,700.

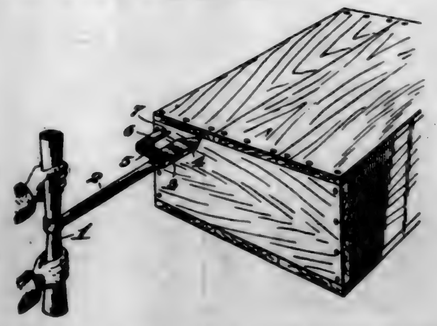

Claim.—The herein-described combination-tool, comprising the handle 1, shank 2 integral with and projecting at right angles from the center of said handle, the plate 3 integral with the opposite end of the shank, which plate occupies a plane at right angles to the plane occupied by the handle, and the forward end of which plate is pointed, the arm 5 integral with and projecting laterally from the rear end of one side of the plate, and a plate 6 integral with and projecting forwardly from the end of the arm and occupying the same horizontal plane with the first-mentioned plate; substantially as specified.

850,969. COLLAPSIBLE AND EXTENSIBLE SAFETY-GATE FOR STREET AND OTHER CARS. MILTON I. ROHRER, Seattle, Wash. Filed Apr. 25, 1906. Serial No. 313,626.

Claim.—1. A safety collapsible and extensible gate for closing the sides of the end platforms of street or other cars, said gate having upper and lower bars having their rear ends hinged to the outer surface of the end walls of said car, with a drop-hinge provided for lowering the rear end of the upper bar when said gate is folded upward, substantially as described and for the purpose hereinbefore set forth.

2. A safety collapsible and extensible gate for closing the sides of the end platforms of street or other cars, said gate having upper and lower bars; pairs of lugs projecting from the adjacent surfaces of said bars; and vertical slats having their ends pivoted between said pairs of lugs and oppositely-disposed edge projections at their pivoted ends, substantially as described and for the purpose hereinbefore set forth.

3. A safety collapsible and extensible gate for closing the sides of the end platforms of street or other cars, said gate having upper and lower bars with vertical slats pivoted at their ends to the opposed surfaces of said bars; a drop-hinge provided to lower the rear end of said upper bar, said drop-hinge comprising a revoluble shaft to which the rear end of said upper bar is secured; bearing-blocks journaling the ends of said revoluble shaft, said bearing-blocks pivoted to the forward ends of lugs projecting from base-plates rigidly secured to the outer surface of the end walls of said car, and means provided for holding the folded gate in open position, all substantially as described and for the purpose hereinbefore set forth.

850,970. SIDEWALK-LIGHT. CHRISTIAN H. ROSS, Chicago, Ill., assignor of one-half to Dauchy Iron Works, a Corporation of Illinois. Filed Mar. 29, 1906. Serial No. 308,747.

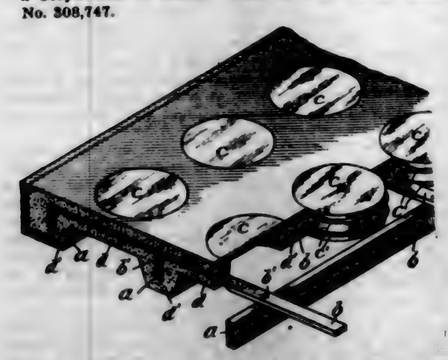

Claim.—A sidewalk-light comprising a metallic supporting-frame consisting of a series of main supported bars having oblong cross-section placed with their longer diameters vertically to secure vertical rigidity, a series of auxiliary bars resting on the top of the main supporting-bars and extending across the main supporting-bars at substantially right angles thereto having oblong cross-section and placed with their longer diameters horisontally to secure lateral rigidity, said main and auxiliary bars being rigidly secured together at their points of contact, a series of lenses arranged in the spaces formed by the supporting-bars, and a bed of plastic material extending between the lenses in which material the supporting-frame is entirely embedded, said plastic material being formed into ribs between the rows of lenses and the main supporting-bars, being longitudinally embedded within such ribs, substantially as described.

850,971. SPEED-WAGON. PHILIP W. C. SCHILDWACHTER, New York, N. Y. Filed May 10, 1905. Serial No. 259,676.

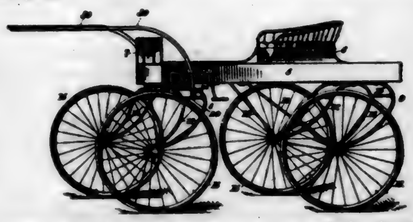

Claim.—1. A speed-wagon comprising a body, trusses secured thereto having their ends extending downward and forward, and wheels mounted upon said ends at points in advance of the point of support of said body upon said trusses, substantially as specified.

2. A speed-wagon comprising a body, trusses secured thereto having their ends extending downward and forward, axles secured to said ends at points in advance of the point of support of said body upon said trusses, and wheels mounted upon said axles, substantially as specified.

3. A speed-wagon comprising a body portion, trusses secured thereto having their ends extending downward and forward, and terminating at a point beyond the place of support of said body upon said trusses, and wheels secured to the ends of said truss members, substantially as specified.

4. A speed-wagon comprising a body portion, trusses secured to said body portion having their ends extending forward beyond the place of support of said body upon said trusses, and wheels secured to the ends of said trusses, substantially as specified.

5. A speed-wagon comprising a body portion, trusses secured thereto having their ends curved downward and forward and terminating in a plane in advance of the point of support of said body upon said trusses, and wheels secured to the ends of said trusses, substantially as specified.

6. A speed-wagon comprising a body, trusses secured thereto having horizontal portions and ends extending downward and forward and united at their extremities, in a plane in advance of said horizontal portions axles extending outward from said united ends, and wheels secured upon said axles, substantially as specified.

7. A speed-wagon comprising a body, trusses secured thereto, each composed of a plurality of members having their ends bent downward and forward and joined together at their extremities, axles secured to said extremities, and wheels mounted upon said axles, substantially as specified.

8. A speed-wagon comprising a body, trusses secured thereto, each composed of a plurality of tubular members having their ends bent downward and forward and joined together at their extremities, axles secured to said joined extremities, and wheels mounted upon said axles, substantially as specified.

9. A speed-wagon comprising a body, forward and rear trusses secured thereto, each composed of a plurality of

members having their ends bent outward and downward and curved forward and their extremities united, axles secured to said extremities, wheels mounted upon said axles, and stays extending forwardly from the extremities of the rear truss and secured to the body, substantially as specified.

10. In a speed-wagon, a truss comprising a plurality of members having parallel intermediate portions, and ends extending outward and downward therefrom and curved forward, and transverse braces interposed between said truss members and secured thereto near the junction of the intermediate portions with the ends, substantially as specified.

11. In a speed-wagon, a truss comprising a plurality of tubular members, having straight parallel intermediate portions, and ends extending outward and downward therefrom and thence curved forward and united at their extremities, and transverse braces interposed between said truss members and secured thereto near the junction of the parallel portions with the ends, substantially as specified.

850,972. WIRELESS RECEIVING APPARATUS FOR EXPLODING MINES. FERDINAND SCHNEIDER, Langenfeld, Germany. Filed Jan. 3, 1906. Serial No. 294,490.

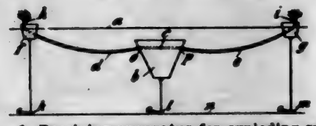

Claim.—1. Receiving apparatus for exploding submarine and land mines adapted to be exploded by the aid of electric waves, comprising a mine-chamber, an exploding device arranged in said chamber and sensitive to electric waves, and long horizontal receiving-wires connected with said exploding apparatus.

2. Receiving apparatus for explosive submarine and land mines adapted to be exploded with the aid of electric waves, comprising a mine-chamber, an exploding device arranged in said chamber and sensitive to electric waves, and long receiving-wires connected with said exploding apparatus the said receiving-wires being insulated with the exception of their ends.

3. Receiving apparatus for explosive submarine and land mines adapted to be exploded with the aid of electric waves, comprising a mine-chamber, an exploding device arranged in said chamber and sensitive to electric waves, and long insulated receiving-wires connected with said exploding apparatus and arranged in such a manner that only the free ends thereof extend into the atmosphere, the other portions of said cables being situated below the surface of the water or earth.

4. Receiving apparatus for explosive submarine and land mines adapted to be exploded with the aid of electric waves, comprising a mine-chamber, an exploding device arranged in said chamber and sensitive to electric waves and long insulated receiving-wires connected with said exploding apparatus said wires being situated below the surface of the water or earth with the exception of the free tuft-like ends which extend into the atmosphere.

5. Receiving apparatus for explosive submarine mines adapted to be exploded with the aid of electric waves, comprising a mine-chamber, an exploding device arranged in said chamber and sensitive to electric waves, and long insulated receiving-wires connected with said exploding apparatus and arranged in such a manner that only the free ends thereof extend into the atmosphere, said ends being supported by floats, the other portions of said cables being situated below the surface of the water.

6. Receiving apparatus for explosive submarine mines adapted to be exploded with the aid of electric waves, comprising a mine-chamber, an exploding device arranged in said chamber and sensitive to electric waves, and long insulated receiving-wires connected with said exploding apparatus and arranged in such a manner that only the free ends thereof extend into the atmosphere, said ends being supported by anchored floats, the other portions of said cables being situated below the surface of the water.

850,973. QUADRUPLEX CYCLE. STOUGHTON P. SHAFER, Kansas City, Mo. Filed Jan. 12, 1907. Serial No. 351,923.

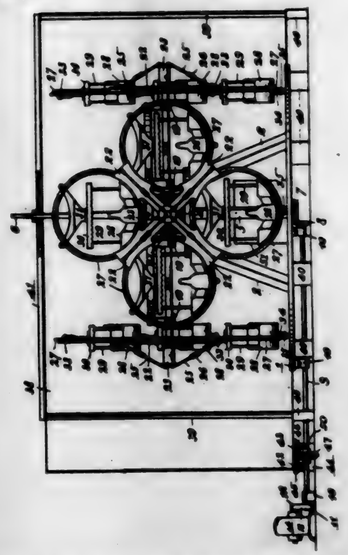

Claim.—1. In an apparatus of the character described, a rotary frame carrying a plurality of driven shafts, a plurality of annular tracks which simultaneously travel with the frame and revolve around the shafts, and cars carried by said tracks which latter rotate around the former.

2. In an apparatus of the character described, a horizontal rotary frame carrying a plurality of driven shafts, a plurality of annular tracks which simultaneously travel with the frame and revolve around the shafts, and cars carried by said tracks each of which latter rotates around its respective car.

3. In an apparatus of the character described, a rotary frame carrying a plurality of radial driven shafts, a plurality of annular tracks which simultaneously travel with the frame and revolve around the shafts, and cars carried by said tracks, substantially as described.

4. In an apparatus of the character described, a skeleton rotary frame carrying a plurality of driven shafts, a plurality of annular tracks which simultaneously travel with the frame and revolve around the shafts, and cars carried by said tracks, substantially as described.

5. In an apparatus of the character described, a rotary frame carrying a plurality of driven shafts, cross-arms fixed to said shafts, annular tracks fixed to said cross-arms, and cars suspended within said tracks.

6. In an apparatus of the character described, a stationary frame, a stationary bevel gear-wheel in the upper portion thereof, a main vertical shaft journaled in said frame and gear-wheel, a horizontal frame fixed to the main shaft, radial shafts journaled in said horizontal frame, bevel gear-wheels fixed to the inner ends of said radial shafts and intermeshing with the stationary gear-wheel, annular tracks which simultaneously travel with the horizontal frame and revolve around the radial shafts, and cars suspended within said tracks.

7. In an apparatus of the character described, a main vertical shaft, a radial shaft arranged to simultaneously rotate upon its own axis and revolve around the main shaft, a plurality of annular tracks radially arranged around said radial shaft with which they travel, and cars suspended within said tracks.

8. In an apparatus of the character described, a stationary frame consisting of a platform, standards, and a top plate supported by said standards, a bevel gear-wheel fixed to said top plate, a main shaft journaled in the platform and the fixed gear-wheel, a rotary frame fixed to the main shaft, radial shafts journaled therein, bevel gear-wheels fixed to said radial shafts which intermesh with and revolve around the fixed gear-wheel, a plurality of annular tracks which simultaneously travel with the rotary frame and revolve around the radial shafts, and cars suspended within said tracks.

9. In an apparatus of the character described, a plurality of rotary shafts which revolve around a common axis, a plurality of annular tracks carried by said shafts, a car suspended within each track, a hanger supporting each car having diverging arms provided with rollers engaging its respective track, and an arm projecting from the bottom of the car also provided with a roller engaging the track, substantially as described.

10. In an apparatus of the character described, the combination with a panorama, of a rotary frame carrying a plurality of driven shafts, a plurality of annular tracks which simultaneously travel with the frame and revolve around the shafts, and cars carried by said tracks which latter rotate around the former.

11. In an apparatus of the character described, the combination with a panorama, of a main vertical shaft, a radial shaft arranged to simultaneously rotate upon its own axis and revolve around the shaft, a plurality of annular tracks carried by said shafts, cars suspended within said tracks, and means for simultaneously operating the panorama and the main shaft, substantially as described.

12. In an apparatus of the character described, the combination with a panorama, of a main vertical shaft, a radial shaft arranged to simultaneously rotate upon its own axis and revolve around the shaft, a plurality of annular tracks carried by said shafts, cars suspended within said tracks, and means for driving the panorama and the main shaft in reverse directions.

850,974. STROPPING-MACHINE. ELMER C. SHAVER, New York, N. Y. Filed Jan. 5, 1906. Renewed Feb. 28, 1907. Serial No. 359,743.

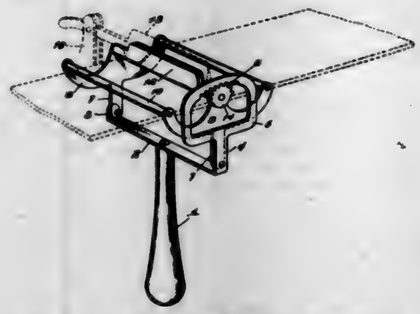

Claim.—In a stropping-machine, the combination with a pair of plates and a depending arm rigid with each plate; of a pair of rollers between said plates one at each end thereof, a blade-holder rotatably mounted between said plates, a gear at one end of said holder and integral therewith, a cross-strip below said blade-holder, an ear at one end of said strip, an arm at the opposite end of said strip, means to pivotally secure said strip to the depending arms, a frame integral with the upper end of said arm, said frame having an opening therein, a rack at the upper edge of said opening adapted to engage said gear and a depending handle secured to said strip.

850,975. NUT-LOCK. LEANDER P. SHAW, Bradford, Pa. Filed Nov. 24, 1906. Serial No. 344,822.

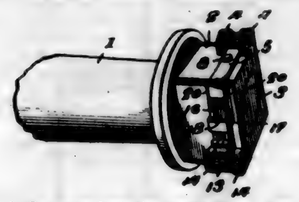

Claim.—1. In a nut-lock the combination with a spindle and a nut therefor; of a plate pivotally secured to said nut, a locking-pin carried by said plate, a locking-bar pivotally secured to the nut, means on said locking-bar to engage the plate and hold the locking-pin in position and means on said plate adapted to engage said locking-bar and hold the same in juxtaposition to said plate.

2. In a nut-lock the combination with a spindle having a socket therein and a nut for said spindle; of a plate pivotally secured to said nut, a locking-pin carried by said plate and adapted to engage said socket, a locking-bar pivotally secured to the nut, a finger on said locking-bar adapted to enter a slot in said plate whereby the locking-pin will be held in engagement with the socket and means to engage said locking-bar and plate to hold said finger in the slot.

3. The combination with a nut; of a plate pivotally secured thereto, a locking-pin fixedly secured to said plate adapted to enter a slot in a spindle, a locking-bar pivotally secured to said nut, a finger on said locking-bar adapted to engage a slot in the plate, a keeper slidably mounted on said plate, a latch pivotally secured to said locking-bar and having a notch therein adapted to engage said keeper.

4. The combination with a nut; of a plate pivotally secured thereto, said plate having a horizontal and vertical portion, a locking-pin carried by said horizontal portion adapted to enter a slot in a spindle, a locking-bar pivotally secured to said nut, a finger on said locking-bar adapted to engage a slot in the vertical portion of said plate, a latch carried by said locking-bar, and means on said vertical portion of the plate adapted to engage said locking-bar and latch whereby the finger will be held into engagement with said slot.

850,976. PUMP. WINFIELD S. SHELTON, Jennings, La. Filed July 10, 1906. Serial No. 325,519.

Claim.—1. In a pump of the character described, the combination with a casing, of a partition movably mounted in and extending across the casing, and a rotary piston detachably journaled in the casing below the partition and movable upwardly past the same, said partition being movable out of the way of the piston during the detachment of the latter.

2. In a pump of the character described, the combination with a casing, of a partition hingedly mounted in and extending across the casing, and a rotary piston detachably mounted in the casing below the partition and movable upwardly past the same, said partition being capable of a swinging movement out of the path of movement of the piston when the latter is raised.

3. In a pump of the character described, the combination with a casing, of a partition hingedly mounted in the casing and disposed at an inclination therein, a rotary piston detachably journaled in the casing below the partition and movable upwardly past the same, said partition swinging upwardly out of the way of the piston, and a driving-shaft connected to the piston and passing through the partition.

4. In a pump of the character described, the combination with a casing, of a partition comprising separable sections movably mounted in the casing and extending across the same, and a rotary piston detachably mounted in the casing below the partition, the sections of said par-

tition being movable out of the way of the piston when the same is detached.

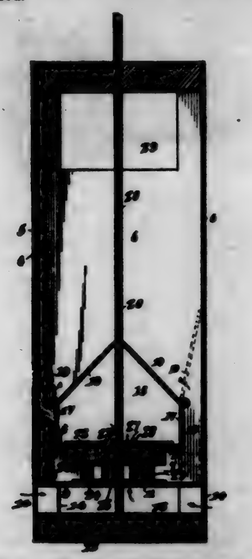

5. In a pump of the character described, the combination with a casing, of a rotary piston detachably journaled in the lower portion thereof, a driving-shaft extending longitudinally of the casing and connected to the piston, and a partition extending across the casing above the piston and comprising separable sections hinged on opposite sides of the casing and swinging upwardly and outwardly out of the path of movement of the piston when the same is detached, said driving-shaft extending downwardly between the sections.

6. In a pump of the character described, the combination with a casing, of a piston-chamber located therein, upwardly-extending discharge-channels communicating with the chamber, a rotary piston detachably journaled in the chamber, a driving-shaft extending longitudinally in the casing and connected to the piston, and a partition arranged over the chamber and piston, said partition comprising separable sections hinged at their outer edges to the inner walls of the discharge-channels, said sections being disposed in angular relation and having their inner edges abutted, said inner edges being provided with an opening through which the driving-shaft passes.

7. In a pump of the character described, the combination with a casing having a piston-chamber and an inlet located over the same, of a partition hinged in the casing and constituting the top of the inlet, and a piston operating in the chamber, said piston being removable through the top of the chamber, through the inlet and past the partition, said partition swinging out of the way of the piston during the removal of the latter.

8. In a pump of the character described, the combination with a casing having a piston-chamber and an inlet located over the same, of a partition comprising angularly-disposed sections hinged at their outer sides within the casing, and constituting the top of the inlet, the inner portions of said sections being detachably abutted, a piston operating in the chamber, said piston being removable through the top of said chamber, through the inlet and past the partition, the sections of said partitions swinging outwardly to permit its passage, and a driving-shaft extending longitudinally in the casing and connected to the piston, said driving-shaft being disposed between the inner portions of the partition-sections.

9. In a pump of the character described, the combination with a casing having a piston-chamber, and inlets communicating with the top and bottom of said chamber, of a partition constituting the top of the upper inlet, said partition comprising angularly-disposed sections hinged at their outer sides within the casing and having their inner portions abutted, discharge-channels communicating with the piston-chamber and discharging into the casing outside the partition-sections, a rotary piston mounted in the piston-chamber and having upper and lower inlets, said piston being movable upwardly through the upper inlet and past the sections of the partition, and a driving-shaft for rotating the piston.

10. In a pump of the character described, the combination with a casing, of a piston-chamber located therein between its top and bottom and comprising a top wall and a bottom wall, said walls having openings, the upper of which is larger than the lower, a driving-shaft, and a piston mounted on the shaft within the piston-chamber, said piston comprising upper and lower disks having inlet-openings, the upper disk operating over the opening in the upper chamber wall, the lower disk operating over the opening in the lower chamber-wall and being of less diameter than the upper disk, an intermediate disk interposed between the upper and lower disks and of less diameter than the upper disks, blades interposed between the disks, means for rotating the piston, and means for carrying the discharge away from the piston-chamber.

850,977. BOOK-SUPPORT. WILLARD SMITH, Los Molinos, Cal. Filed Apr. 18, 1906. Serial No. 312,467.

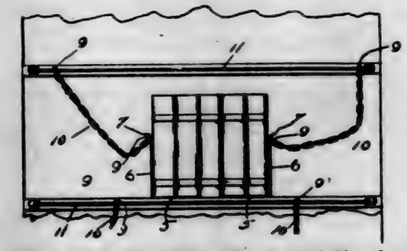

Claim.—The combination with a book-shelf and a rod secured to the front edge of the shelf, of a book supporting and spacing means comprising a horisontal foot part and a vertical supporting and spacing part, and a chain provided at one end with a ring engaging the said rod, the other end of the chain being connected with the book supporting and spacing device.

850,978. NOSE-SHAPER. IGNATIUS N. SOARES, Framingham, Mass. Filed Oct. 12, 1905. Serial No. 282,370.

Claim.—1. A nose-shaper comprising a body portion consisting of a central section adapted to overlie the bridge of the nose and two integrally-formed wing portions adapted to be bent into position to press upon the two sides of the nose, an integrally-formed depending tongue portion adapted to act upon the end of the nose and a soft chamois or fabric covering for the entire shaper, the entire shaper being constructed of metal of such character as may be readily molded into any desired shape by hand and will retain such shape against all normal strains exerted during its application and suitable means for fastening the shaper in place.

2. A nose-shaper comprising a body portion and an integrally-formed depending tongue portion, said tongue portion being adapted to act upon the lower end of the nose, both said portions being formed of flexible metal of such character as may be readily molded by hand and thus given any desired shape, which shape said portions will retain against normal strains exerted in the application of said shaper, a soft lining secured to the surface of said shaper to prevent contact between the metal portions of the shaper and the parts being treated, and means for securing said shaper in place.

850,978.

850,979. COMPOUND RAILWAY-RAIL. GEORGE B. STEPHENS, Sherman, Tex. Filed Feb. 12, 1907. Serial No. 357,096.

Claim.—1. A compound railway-rail comprising a base and web portion, the web extending centrally from the base portion upwardly, terminating in a V-shaped notch, a pair of head portions, each provided with a flange that extends downwardly from the head, both of said flanges constructed and arranged to bear against the opposite sides and V at the top of the web, and connecting devices for the flanges and web portion extending therethrough, substantially as and for the purpose described.

2. A compound railway-rail including a pair of head portions provided with depending flanges, the upper inner faces of which terminate in a V shape, each of the head portions proper having a tongue and groove for locking the two portions of the head together with the web portion, and connecting devices extending through the flange sides and web central portion in a plane above the base, substantially as herein shown and described.

3. In a railway-rail, the combination of the pair of head portions each provided with an interlocking tongue and groove, and a depending flange, the base portion having a central web portion extending upwardly from said base, and terminating in a V-shaped notch, the head attached to the sides of said central web and bearing upon the top of the same, and the retaining-rivets extending through said flange portions and central web, substantially as and for the purposes shown and described.

850,980. BOLT-ANCHOR. EDWARD A. STULZ, Avenel, N. J. Filed Jan. 16, 1906. Serial No. 296,268.

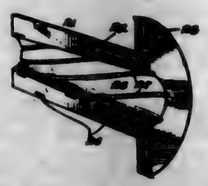

Claim.—1. An expansible bolt-anchor having its bore traversed by a plurality of grooves pitched angularly from front to rear in a direction more nearly longitudinal than circumferential, for substantially the purposes set forth.

2. In combination with a threaded bolt an expansible bolt-anchor having a conical bore traversed by a plurality of grooves pitched angularly from front to rear in a direction opposite to that to the thread of the bolt.

3. An expansible bolt-anchor having its bore traversed by a plurality of angularly-disposed grooves, and a bolt engageable in said anchor, the grooves on the anchor and the threads of the bolt being greatly inclined to each other.

4. An expansible bolt-anchor composed of a plurality of separate sections together forming a body having a conical bore traversed by a plurality of angularly-disposed grooves, certain of the grooves in each of said sections forming continuations of the grooves in an adjacent section.

5. An expansible bolt-anchor composed of a plurality of separate and similar sections together forming a body having a conical bore traversed by a plurality of angularly-disposed grooves, all of the grooves in each of said sections forming continuations of the grooves in an adjacent section.

850,981. POWER-TRANSMISSION CLUTCH. CHARLES C. TILLOTSON, Olathe, Kans. Filed Oct. 3, 1906. Serial No. 337,241.

Claim.—1. A clutch comprising rotary members and a voluted spring member embracing the aforesaid members and engaging the same frictionally only.

2. A clutch comprising a trinity of alined rotary members and a voluted spring member embracing the aforesaid members and engaging the same frictionally only.

3. A clutch comprising a trinity of alined rotary members and a voluted spring member embracing the aforesaid members and engaging the same frictionally only, said spring member extending along the entire length of the mean rotary member and having its end portions located upon the extreme rotary members.

850,982. RAIL-JOINT. SAMUEL TOMAN, Dayton, Ohio. Filed May 10, 1906. Serial No. 316,181.

Claim.—In a rail-joint the binding-plates with suitable registering slots, the inner surfaces conforming to the webs of rails, the outer plane surfaces inclined throughout their lengths and arranged reversely, and the flat-headed bolts to hold said plates as they are wedged against abutting rails, substantially as described.

850,983. PLATE AND PAN LIFTER. WILLIAM F. VALIQUETTE, La Crosse, Wis., assignor of one-half to Allen M. Short, Medford, Oreg. Filed June 23, 1906. Serial No. 323,064.

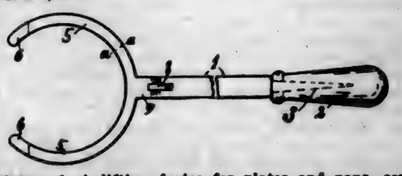

Claim.—1. A lifting device for plates and pans, comprising a handle-bar with a handle at one end and at the

other end a pair of horizontally-curved arms adapted to support or embrace and support the vessel lifted; said arms having their ends reduced to wedges with horizontal edges.

2. A lifting device for plates and pans, comprising a handle-bar with handle at one end and at the other end a pair of horizontally-curved arms adapted to pick up and support plates or other vessels, said arms having their upper sides beveled down and inward toward the center of the space between the arms.

3. A lifting device for plates and pans, comprising a handle-bar or handle, a pair of horizontally-curved flat arms at the front end of the handle, and near the junction of the handle and the arms a hook-shaped guard adapted to assist in holding the vessel supported on the arms.

4. A lifting device for plates and other vessels, comprising a handle-bar, a handle at one end thereof and a pair of horizontally-curved arms at the other end; said arms being flattened down at their points to wedges having their under side in plane with the under side of the arm; and means for preventing the vessel from moving too far in upon the arms.

850,984. MEANS FOR MOVING THE BARRELS OF GUNS HAVING RECOIL ACTION ON THE CARRIAGE FROM THE FIRING POSITION TO THE TRAVELING POSITION AND THE CONVERSE. KARL VÖLLER, Düsseldorf, Germany, assignor to Rheinische Metallwaren- und Maschinenfabrik, Düsseldorf-Derendorf, Germany. Filed May 15, 1906. Serial No. 316,984.

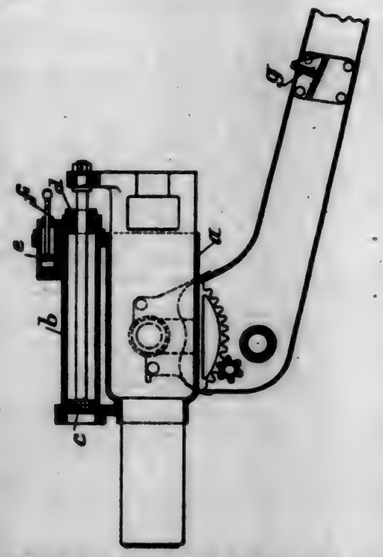

Claim.—1. In a device for moving the barrel of a gun having recoil action on the carriage from the firing position into the traveling position and the converse, the combination with the gun-barrel of means for holding the gun-barrel in the one position by a confined body of pressure fluid, means for discharging the fluid body so as to allow the gun-barrel to move into the other position and means for readmitting pressure fluid for bringing the gun-barrel back to its first position, substantially as described and for the purpose set forth.

2. In a device for moving the barrel of a gun having recoil action on the carriage from the firing position into the traveling position and the converse the combination with the gun-barrel of a chamber containing a confined body of pressure fluid, a valve arranged at the said chamber for discharging the fluid body, a force-pump for introducing the fluid into the chamber and an automatically-discharging valve in the pump, substantially as described and for the purpose set forth.

3. In a device for moving the barrel of a gun having recoil action on the carriage from the firing position into the traveling position and the converse the combination with the gun-barrel of a chamber containing a confined body of pressure fluid, a second chamber communicating therewith, a piston in the second chamber arranged so as to be shifted by the passage of the fluid into the second chamber from the first-named one by the motion of the gun-barrel from the one position to the other, and means for moving the piston back again, substantially as described and for the purpose set forth.

850,985. AIR COOLER AND PURIFIER. CARL W. VOLLMANN, Montreal, Quebec, Canada. Filed July 17, 1902. Serial No. 115,967.

Claim.—1. In an air cooling and purifying apparatus, a series of brine-conductors located one above the other and each comprising a series of inclined members arranged with the upper edge of each above and overlapping the lower edge of the member next it, means for supporting the members with spaces between them, and means for supplying a cooling and purifying fluid to the uppermost of such conductors substantially as described and for the purpose set forth.

2. In an air cooling and purifying apparatus, a series of horizontal brine-conductors located one above the other and each comprising a series of inclined members arranged with the upper edge of each above and overlapping the lower edge of the member next it, means for supporting the members with spaces between them, and means for supplying a cooling and purifying fluid to the uppermost of such conductors substantially as described and for the purpose set forth.

3. In an air cooling and purifying apparatus, the combination with an inclosing casing, of a series of brine-conductors within said casing and located one above the other and each comprising a series of inclined plate members extending from side to side of the casing and arranged with the upper edge of each overlapping the lower edge of the plate member next to it, means for supporting said members with spaces between them, and means for supplying a cooling and purifying fluid to the uppermost of such conductors substantially as described and for the purpose set forth.

4. In an air cooling and purifying apparatus, the combination with an inclosing casing, of a series of horizontal brine-conductors within said casing and located one above the other and each comprising a series of inclined plate members extending from side to side of the casing and arranged with the upper edge of each overlapping the lower edge of the plate member next to it, means for supporting said members with spaces between them, and means for supplying a cooling and purifying fluid to the uppermost of such conductors substantially as described and for the purpose set forth.

850,986. SUSPENSION DEVICE FOR LAMPS. ERICH WEBER, Leipzig, Germany. Filed Jan. 25, 1907. Serial No. 354,111.

Claim.—1. A suspension device for lamps, comprising a frame; a spring-controlled winding-reel mounted therein and adapted to receive the flexible member to which the lamp is attached, the frame projecting above and below the reel; and a cam-acting brake-lever pivoted intermediate its ends in the frame below the reel, the lower end of the lever acting as a guide for said flexible member while the upper end beyond the pivot, bears on the reel; substantially as described.

2. A suspension device for lamps, comprising a frame, a spring-controlled winding-reel mounted therein and adapted to receive the flexible member to which the lamp is attached; the frame projecting above and below the reel; a cam-acting brake-lever mounted in the frame below the reel, one end of which lever acts as a guide for said flexible member; and a brake-strap secured to the lever and passing around the reel; substantially as described.

3. A suspension device for lamps, comprising a frame, the top of which acts as guide for a flexible lamp-suspending member; a spring-controlled winding-reel mounted therein around and through which the flexible lamp-supporting member passes, the frame projecting above and below the reel; and a cam-acting brake-lever mounted in the frame below the reel, one end of which lever acts as guide for said flexible member; substantially as described.

850,987. WELL-BAILING-OPERATING MECHANISM. DAVID B. WHITEHILL, North Clarendon, Pa. Filed May 24, 1906. Serial No. 318,500.

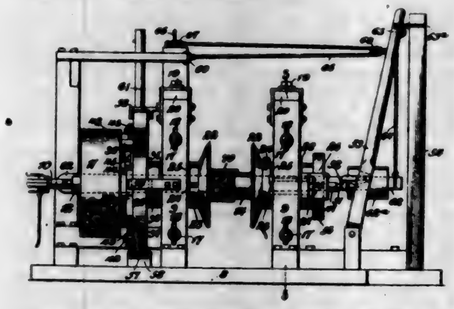

Claim.—1. In mechanism of the class described, the combination with a winding-drum, of driving means, a clutch for connecting the drum and the driving means, a lever for actuating the clutch, a brake for the drum, a lever for actuating the brake, connections between the levers for effecting the movement of one on the movement of the other, said connection being movably engaged with one lever, and actuating means movably engaged with the other lever.

2. In mechanism of the class described, the combination with a winding drum, of driving means therefor, clutch mechanism for connecting the drum to the driving means, a lever for actuating the clutch mechanism, a brake for the drum, and a lever for actuating the brake, one of said levers having a cable connected thereto, the other having a slidable engagement with the cable.

3. In mechanism of the class described, the combination with a winding-drum, of driving means therefor, clutch mechanism for connecting the drum to the driving means, a lever for actuating the clutch mechanism, a brake for the drum, a lever for actuating the brake, a cable connected at one end to the free end of one lever and having a fixed connection at the other end, the other lever having a slidable engagement with said cable, and another cable connected to said other lever for actuating the same.

4. In mechanism of the class described, the combination with a driving-shaft having a driving-wheel, of a drum having a brake-wheel disposed adjacent to the driving-wheel, clutch mechanism carried by the brake-wheel and coacting with the driving-wheel, a stem operating in the drum for moving the clutch mechanism, a lever connected to the stem, a brake-band operating on the brake-wheel, a reciprocatory shank connected to the band, a lever connected to the shank, a cable connected to said lever, the stem-actuating lever having a movable engagement with said cable, and a cable connected to the stem-actuating lever for operating the same.

5. In mechanism of the class described, the combination with a hollow winding-drum, of a brake-wheel carried thereby, a brake-band coacting with the brake-wheel, a lever for operating the brake-band, clutch mechanism mounted on the brake-wheel, an actuating-stem for the clutch mechanism operating in the winding-drum, and means for simultaneously operating the brake-lever and stem.

6. In mechanism of the class described, the combination with a hollow winding-drum, of a brake-wheel carried thereby, a brake-band coacting with the wheel, a lever for operating the brake-band, clutch mechanism mounted on the wheel, an actuating-stem operating in the winding-drum for moving the clutch mechanism, a lever engaging the stem, and means associated with the stem-actuating lever and the brake-band lever and operating upon movement in one direction to effect the release of the brake-band and to apply the clutch mechanism, and upon the reverse movement to release the clutch mechanism and apply the brake-band.

7. In mechanism of the class described, the combination with a driving-shaft having a driving-wheel, of a drum comprising a hollow shaft independent of the driving-shaft and having a brake-wheel located adjacent to the driving-wheel, clutch mechanism mounted on the brake-wheel and coacting with the driving-wheel, an actuating-stem for the clutch mechanism mounted in the drum-shaft and longitudinally movable therein, and a brake-band coacting with the periphery of the brake-wheel.

8. In mechanism of the class described, the combination with a driving-shaft, of a driving-wheel mounted thereon and having a hub projecting beyond the shaft, forming a socket, a drum including a hollow shaft journaled in line with the driving-shaft, a wheel carried by the hollow shaft and located adjacent to the driving-wheel, jaws pivoted upon the drum-wheel and swinging into and out of coaction with the driving-wheel, thrust-bars bearing against the hub of the driving-wheel and operating against the jaws for moving the same, an actuating-stem longitudinally movable in the driving-shaft and having a tapered end that moves between the thrust-bars, and means for longitudinally moving the stem.

9. In mechanism of the class described, the combination with a drum comprising a shaft, of a journal-boxing for the shaft, rollers located in the boxing, a drum-head member fixed to the shaft on one side of the boxing and having a hub provided with a beveled end that engages the inner portion of the adjacent ends of the rollers, and another member fixed to the shaft on the opposite side of the boxing and having a hub provided with a beveled end that engages the inner portions of the opposite ends of the rollers, driving means, and clutch mechanism for connecting the driving means to the drum.

10. In mechanism of the class described, the combination with a drum including a shaft, spaced boxings surrounding the shaft, rollers located in the boxings, drum-heads secured to the shaft between the boxings and having hubs provided with beveled ends that engage the inner portions of the inner ends of the rollers, a brake-wheel secured to the shaft on the outer side of one of the boxings and having a hub provided with a beveled inner end engaging the outer ends of the rollers, of clutch and brake mechanisms coacting with the brake-wheel, and an end thrust member secured to the shaft on the outer side of the other boxing, said end thrust member having a hub provided with a beveled end that engages the outer ends of the adjacent rollers.

11. In mechanism of the class described, the combina-

tion with a driving-shaft, and a driving-wheel carried thereby, of a hollow drum-shaft, roller-bearings for the drum-shaft, a brake-wheel mounted on the drum-shaft at one side of the bearings, clutch mechanism mounted on the brake-wheel and coacting with the driving-wheel an actuating-stem extending through the hollow drum-shaft and operating on the clutch mechanism, a lever connected to the stem, a brake-band surrounding the brake-wheel and coöperating therewith, means for operating the brake-band including a lever, cable connections between the levers for simultaneously operating them, an actuating-cable connected to one of the levers, drum-heads secured to the hollow shaft between the bearings, and a thrust-bearing member connected to the opposite end of the shaft to that carrying the brake-wheel.

850,988. COAL-CRUSHER. MILTON F. WILLIAMS, St. Louis, Mo., assignor to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo., a Corporation of Missouri. Filed Nov. 24, 1905. Serial No. 288,947.

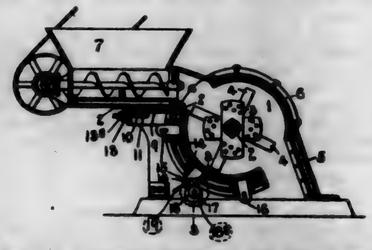

Claim.—1. A crusher comprising side frames, revolving beaters, a grinding-surface arranged between the side frames and provided at its upper end with a shelf-like projection having depending flanges provided with elongated slots, a bolt carried by the side frames and extending through said slots, threaded bolts fastened to the side frames, a bar connected to the shelf-like projection on the grinding-surface and provided with holes through which said bolts extend, and adjusting-nuts on said bolts; substantially as described.

2. A crusher comprising side frames, revolving beaters, a grinding-surface arranged therebetween, a through-bolt connecting the side frames and passing through elongated slots in a shelf-like projection on the forward upper edge of said grinding-surface, means mounted on the side frames and coöperating with said grinding-surface for adjusting the same horizontally relatively to said through-bolt comprising threaded members connected to said through-bolt, a device connected to said projection and provided with openings through which said threaded members extend and adjusting-nuts on said members, cams mounted in the side frames coöperating with the lower rear edge of the grinding-surface for adjusting the rear end of said grinding-surface vertically, and means for locking said cams in adjusted positions; substantially as described.

850,989. FLUSHING-TANK. CHARLES WILLMS, Baltimore, Md. Filed Dec. 19, 1906. Serial No. 348,578.

Claim.—1. The combination of a water-tank, a jacket surrounding it but leaving an air-space between it and the tank both at the bottom and around the sides, a bracket secured to the rear wall of the tank, a flush-valve, a valve-operating lever connected therewith and pivoted to the bracket and having an arm extending downwardly to a position between the tank and the jacket and a push-button operating through the front wall of the jacket and engaging said downwardly-projecting arm on the valve-operating lever.

2. The combination of a water-containing tank having an opening or fenestrum in its front wall, a hood or casing surrounding this opening but open at the top, a bracket secured to the rear wall of the tank, a valve-operating lever having an arm extending into the hood, a flush-valve connected with said lever and a push-button operating through the front wall of the tank and engaging the arm of the lever in the hood.

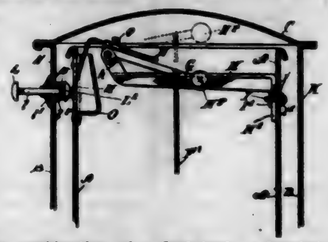

3. The combination of a flush-tank, a bracket secured thereto and adjustable vertically thereon, a valve-operating lever pivoted to the bracket, a flush-valve connected therewith, an adjustable arm carried by said valve-operating lever and a push-button operating through the front wall of the tank engaging said adjustable arm.

4. The combination of a flush-tank having an opening or fenestrum in its front wall, a hood inclosing said opening but open at the top, a bracket attached to the rear wall of the tank opposite the fenestrum therein, a valve-operating lever pivotally connected with the bracket, a flush-valve connected therewith and a lever-arm adjustable both longitudinally and about its axis on the valve-operating lever and which extends down into the hood and a push-button operating through the front wall of the tank engaging said lever-arm.

5. The combination of a water-containing tank having an opening or fenestrum in its front wall a jacket surrounding the tank and having a fenestrum in its rear wall, a hood or casing inclosing the fenestrum in the front wall of the tank, a bracket secured to the rear wall of the tank opposite the opening in the rear wall of the jacket, a flush-valve, a valve-operating lever connected therewith and pivoted to the bracket, and a push-button operating through the front wall of the jacket and engaging the valve-operating lever.

6. The combination of a water-tank, a flush-valve, a jacket surrounding the tank and having an opening in its rear wall, a bracket secured to the tank opposite the opening in the rear wall of the jacket, a valve-operating lever connected with the flush-valve and a push-button operating through the front wall of the tank engaging said lever.

7. The combination of a water-tank having an opening or fenestrum in the upper portion of its front wall, a hood or casing surrounding this opening, a jacket surrounding the tank, a push-button operating through the front wall of the jacket, a bracket secured to the tank, a flush-valve, and a valve-operating lever pivoted to the bracket and having an arm extending into the fenestrum in the front wall of the tank and engaged by the push-button.

850,990. LOCK FOR CARD-INDEX RODS. PHILIP H. YAWMAN, Rochester, N. Y., assignor to Yawman & Erbe Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed June 29, 1906. Serial No. 324,006

Claim.—1. In a locking device for file-rods, the combination with a receptacle and a longitudinally-movable rod provided with an abutment mounted therein, of a resilient locking member carried by the receptacle and normally engaging the abutment to prevent longitudinal movement of the rod, a separate rotatable member mounted in the receptacle and provided with a key-slot and a removable key operating in the slot to engage the locking member when rotated and move it laterally from locking engagement with the rod.

2. In a locking device for file-rods, the combination with a receptacle, a longitudinally-movable rod carried thereby and a locking member normally engaging said rod to prevent longitudinal movement thereof, of a rotatable cylinder mounted in the receptacle having a circumferential groove and provided with a key-slot, a removable key adapted to engage the locking member when rotated and move it from engagement with the rod and a pin located in the casing and extending transversely within said groove to prevent longitudinal movement of the cylinder.

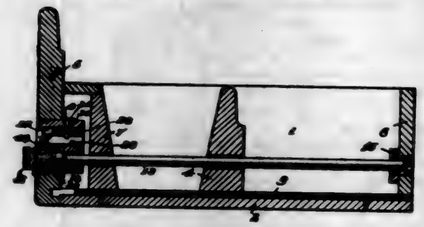

3. In a locking device for file-rods, the combination with a receptacle having a lock-casing mounted therein and a longitudinally-movable rod extending through said casing, of a locking member within the casing and normally engaging said rod to lock it against longitudinal movement, a separate rotatable member mounted in the casing and provided with a key-slot, and a removable key adapted to enter said key-slot and disengage the locking member from the rod when rotated.

4. In a locking device for file-rods, the combination with a receptacle, a longitudinally-movable rod carried thereby and a locking member normally engaging said rod to prevent longitudinal movement thereof, of a separate rotatable member mounted in the receptacle and provided with a key-slot, a removable key adapted to enter said key-slot and disengage the locking member from the rod when rotated and means released by said key for locking the rotatable member against rotation.

5. In a locking device for file-rods, the combination with a receptacle, a longitudinally-movable rod therefor and a lock-casing having a groove and recessed to accommodate a portion of the rod, of a locking-spring secured in the groove in said casing, and extending transversely into normal engagement with the rod to prevent longitudinal movement thereof and means for operating said locking-spring out of engagement with the rod.

6. In a locking device for file-rods, the combination with a receptacle, a lock-casing mounted therein and provided with a recess, a rod extending through said recess, and a locking member carried by the casing and normally engaging the rod to prevent its longitudinal movement, of a rotatable cylinder having a key-slot therein, mounted in the casing, and a removable key adapted to enter the slot in the cylinder and operating to disengage the locking member from the rod when the key and cylinder are rotated.

7. In a locking device for file-rods, the combination with a receptacle, a lock-casing mounted therein and provided with a recess having a reduced portion forming a shoulder and a rod extending within said recess and through the casing, of a spring located in the reduced portion of said recess and normally tending to force the rod outwardly and a flange at the end of the reduced portion of the recess inside the shoulder, to prevent the spring from escaping therefrom.

8. In a locking device for file-rods, the combination with a receptacle having a lock-casing provided with apertures mounted therein, a rod extending through an aperture in said casing, a locking member carried by the casing and normally engaging said rod to prevent longitudinal movement thereof, a rotatable cylinder having a key-slot mounted in the casing and provided with an aperture normally registering with an aperture in the casing and a removable key inserted in said key-slot and adapted to engage the locking member to move it from engagement with the rod when the key and cylinder are rotated, of a locking-pin extending through the casing, a leaf-spring located exteriorly of the casing and engaging the locking-pin to normally force it into the aperture in the cylinder to lock the latter against rotation and a pin located in said aperture and operated by the key to force the locking-pin out of the aperture and allow the cylinder to rotate.

9. In a locking device for file-rods, the combination with the casing having two adjacent recesses and a spring-actuated locking member extending transversely of said recesses, of a rod adapted to extend through one of the recesses and having an inclined portion and a locking-shoulder in rear thereof for engagement with the locking member, a rotatable cylinder arranged in the other recess in the casing and having the key-slot, a dog for engaging and locking the cylinder from rotation, and a removable key adapted when moved longitudinally in the slot in the cylinder to dislodge the dog and when rotated to disengage the locking member from the rod.

10. In a locking device for file-rods, the combination with the casing having the two longitudinal recesses, the transverse slot intersecting the recesses and the locking-dog aperture extending into one of the first-mentioned recesses, the spring locking member located in the transverse slot and the spring-operated cylinder-locking dog, of the cylinder located in one of the first-mentioned recesses having the key-slot and the laterally-movable pin, the locking-rod in the other recess having the locking-shoulder, the spring in the casing engaging the rod and a removable key adapted when inserted in the cylinder to dislodge the cylinder-locking dog and when rotated to disengage the locking member from the shoulder on the rod.

850,991. DOUGH MIXING AND KNEADING MACHINE. FRANK E. ABBOTT, Buffalo, Minn., assignor to The Buffalo Manufacturing Company, Buffalo, Minn., a Corporation of Minnesota. Filed May 12, 1906. Serial No. 316,425.

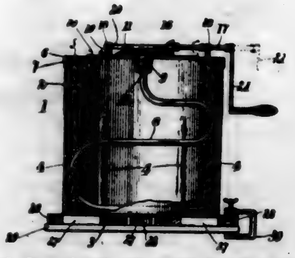

Claim.—1. In a dough mixer and kneader, in combination, a receptacle; a removable cover therefor having a downwardly-extending bearing-sleeve formed upon its under side; a kneading member; a gear-wheel rotatably supported upon the upper side of said cover in a horizontal position, and provided with a tubular hub adapted to lie in said bearing-sleeve and to receive one end of said kneading member; the lower end of said hub having a notch therein; a pin fixed in said kneading member adapted to enter said notch for releasably connecting said gear-wheel and said kneading member; and means for rotating said gear-wheel.

2. In a dough mixer and kneader, in combination, a receptacle; a removable cover therefor; a kneading member; a gear-wheel rotatably supported by said cover, said gear-wheel being provided with a tubular hub having a slot in its lower end, the upper portion of said kneading member being adapted to enter said tubular hub and having a projection thereon adapted to lie in said slot, the upper end of said kneading member projecting above said gear-wheel and having a groove therein; a latch pivoted on said gear-wheel and adapted to engage the grooved upper end of said kneading member; and means for rotating said gear-wheel.

3. In a dough mixer and kneader, in combination, a receptacle; a cover therefor; bearings on said cover; a crank-shaft supported in said bearings; a latch adapted

to engage said crank-shaft for preventing endwise movement thereof; and a mixing and kneading device actuated by said crank-shaft.

4. In a dough mixer and kneader, in combination, a receptacle; a cover for said receptacle; bearing-lugs upon the upper side of said cover; a horizontal crank-shaft rotatably and slidably supported in said bearing-lugs, said shaft having a peripheral groove therein; a latch pivoted to one of said bearing-lugs and adapted to engage said groove; a gear fixed to said shaft; a gear supported on said cover and meshing with said first-mentioned gear; and a kneading member fixed to said last-mentioned gear.

5. In a dough mixer and kneader, in combination, a receptacle; a removable cover therefor, having a downwardly-extending bearing-sleeve; a kneading member; a gear-wheel rotatably supported upon the upper side of said cover in a horizontal position and provided with a tubular hub adapted to lie in said bearing-sleeve and to receive one end of said kneading member, said upper end of said kneading member having a peripheral groove therein; a latch pivoted on said gear-wheel adapted to enter said groove; and means supported by said cover for rotating said gear-wheel.

850,992. EXPLOSIVE POWER-GENERATOR. HUTCHINSON BEVIER and JULES J. DURAGE, Duluth, Minn. Filed July 6, 1905. Serial No. 268,475.

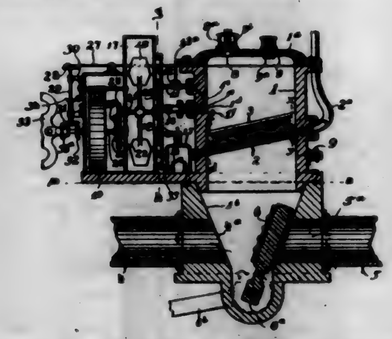

Claim.—1. In an explosive power-generator, the combination with a vessel or floating support, of a gas-generating and combustion chamber adapted to communicate at all times directly with the water surrounding said vessel, means including a clockwork mechanism, and blower, adapted to introduce a charge of air into said generating chamber, means for separately introducing a charge of hydrocarbon into said chamber, and means adapted to ignite said charges in mingled condition in said chamber.

2. The combination of a combustion-chamber provided with an admission-port adapted to admit hydrocarbon to said chamber, and with an admission-port adapted to admit air to said chamber, and with a lip formed upon the inner face of said chamber below both of said ports and adapted to catch the drip of the first said port and expose it to the draft of incoming air through the second said port, means adapted to force air into said chamber through the second said port, communicating means open at all times between said chamber and a surrounding liquid, means adapted to introduce hydrocarbon to said chamber, and means adapted to explode the mixture of air and hydrocarbon in said chamber.

3. The combination of a combustion-chamber having a constant communication with free water, means adapted to introduce air under pressure into said chamber, means for introducing air under natural atmospheric pressure into said chamber, a lip formed on the wall of said chamber to catch the hydrocarbon charge and expose it to the forced draft of air, means adapted to introduce hydrocarbon into said chamber, a flue extending through said chamber, means adapted to heat said flue to gas-igniting heat, and means for regulating the volume of forced air and hydrocarbon introduced into said chamber.

850,993. WIRE-WINDING APPARATUS. JOHN H. BROWN, Jersey City, N. J. Filed July 2, 1906. Serial No. 324,359.

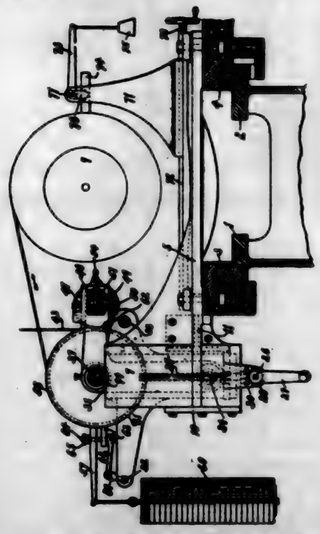

Claim.—1. In wire-winding apparatus, a rotary wire-gripping device subject to be rotated in one direction by the wire being wound and movable longitudinally along the body being wound, a weight connected with the gripping device, and means for holding the gripping device in equilibrium between the weight and body being wound.

2. In wire-winding apparatus, a rotary wire-gripping device from which the wire passes to the body being wound and movable longitudinally along the body being wound, a weight connected with the wire-gripping device, and friction-regulating mechanism under the control of the movable gripping device for maintaining the gripping device in equilibrium.

3. In wire-winding apparatus, a wire-gripping device movable toward and away from the body being wound and movable longitudinally along the body being wound, and from which the wire passes to the body being wound, a weight connected with the gripping device, and means for holding the gripping device in equilibrium between the weight and body being wound.

4. In wire-winding apparatus, a wire-gripping device movable bodily along lengthwise of the body being wound, means for transmitting the wire under tension from the gripping device to the body being wound, and a feed device connected with the bodily-movable gripping device and subject to the pressure of wire being wound to force the gripping device longitudinally along the body being wound.

5. In wire-winding apparatus, a wire-gripping device movable bodily along lengthwise of the body being wound, means for transmitting the wire under tension from the gripping device to the body being wound, a yielding feed device under the control of the wire being wound, and means for holding the yielding feed device pressed against the body being wound.

6. In wire-winding apparatus, a wire-gripping device, a rocking support therefor, a vertically-adjustable frame for the rocking support, a weight, and means for holding the wire-gripping device in equilibrium between the weight and the body being wound.

7. In wire-winding apparatus, a wire-gripping device consisting of rotary disks between which the wire is passed, and means controlled by said rotary disks for automatically applying friction to regulate the rotation of the disks.

8. In wire-winding apparatus, a wire-gripping device consisting of rotary disks between which the wire passes, one of said disks having a yielding movement toward and away from the other, and means controlled by said rotary disks for automatically applying friction to regulate the rotation of the disks.

9. In wire-winding apparatus, a wire-gripping device consisting of a disk having a rabbet in its periphery and a disk having an annular lip fitted to overlap the shoulder of said rabbet, and means for automatically applying friction to regulate the rotation of the disks.

10. In wire-winding apparatus, a wire-gripping device consisting of disks between which the wire passes, a brake wheel or drum fixed to rotate with the disks, a brake-band engaged with the wheel or drum, and means for automatically loosening and tightening the brake-band to regulate the rotation of the disks.

11. In wire-winding apparatus, the combination with gripping-disks between which the wire passes, of a guide for forcing the wire between the disks, and means under the control of the disks for regulating the rotation of the disks.

12. In wire-winding apparatus, the combination with gripping-disks between which the wire passes, of a guide-wheel held in yielding adjustment for forcing the wire between the disks, and means for regulating the rotation of the disks.

13. In wire-winding apparatus, the combination with a rotary wire-gripping device, of a brake wheel or drum fixed to rotate with the gripping device, a brake-band and a weight connected directly with the brake-band for applying tension to the wire, and means for holding the gripping device in equilibrium.

14. In wire-winding apparatus, a movable gripping device, a friction wheel or drum, a brake-band resting thereon, a weight suspended from one end of the band, and means for increasing or diminishing the friction on the wheel or drum as the gripping device moves.

15. In wire-winding apparatus, a rotary wire-gripping device, a brake-drum mounted to rotate together with the gripping device, a brake-band resting on the drum, a weight suspended from the brake-band for applying a constant frictional resistance, means for applying additional friction to the drum, and means for automatically varying the amount of said additional friction.

850,994. ARTIFICIAL LEG. FERDINAND BUCHSTEIN, Minneapolis, Minn. Filed May 16, 1906. Serial No. 317,057.

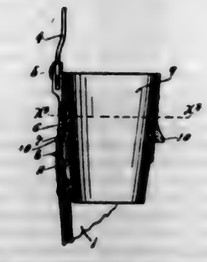

Claim.—1. In an artificial leg, the combination with a lower leg-section and metal straps secured thereto, said straps having vertical slots and vertical guide-pins within said slots, of cushioning-springs placed on said guide-pins, and a slip-socket having bearing-feet adapted to rest upon the upper ends of said cushioning-springs, substantially as described.

2. In an artificial leg, the combination with a lower leg-section and a thigh-socket, of hinged thigh-straps connecting said leg-section and thigh-socket, the lower sections of said straps having vertical slots and guide-pins within said slots, springs placed on said cushioning-springs, a slip-socket having at its sides laterally-yielding bearing-feet 10 that are channel-shaped in cross-section and are beveled on their outer surfaces, and which bearing-feet normally rest upon the upper ends of said cushioning-springs and work within the slots of said straps and prevent accidental displacement of said slip-socket, substantially as described.

3. In an artificial leg, the combination with a lower leg-section and a thigh-socket, of hinged thigh-straps connecting the two, the lower sections of said straps having vertical slots or grooves, a slip-socket having at its sides laterally-yielding bearing-feet adapted to be sprung into the slots or grooves of said thigh-straps, and springs yieldingly supporting said socket from the lower leg-section, substantially as described.

850,995. REVERSING MECHANISM FOR POWER-SHAFTS. JOHN W. BURKETT, Kansas City, Kans., assignor to Kansas City Hay Press Company, a Corporation of Missouri. Filed Aug. 15, 1906. Serial No. 330,721.

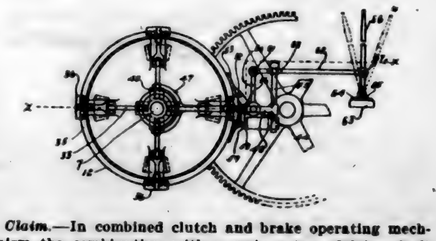

Claim.—In combined clutch and brake operating mechanism the combination with a main rotary driving-shaft and a sleeve loosely mounted on said shaft and clutch-operating arms on said sleeve of a suitable support, a brake-operating horizontal rock-shaft on said support and crank-arms on said rock-shaft a pivoted operating-lever and a suitable support therefor and a connecting-bar pivotally connected with said lever and one of said arms on the said rock-shaft a vertical rock-shaft on the support for said horizontal rock-shaft an arm connected with the lower portion of the said vertical rock-shaft at one end and engaging with the sleeve on said main driving-shaft at its other end and a connecting crank-arm on said vertical rock-shaft connected at its outer end pivotally with the said connecting-bar to the pivoted operating-lever.

850,996. GAS AND AIR BURNER. DELBERT COOLEY, Galena, Kans. Filed Nov. 2, 1905. Serial No. 285,545.

Claim.—1. A gas and air burner, comprising a mixing-tube open at one end for the admission of air and open at the other end for the discharge of the combustible mixture of gas and air, a gas-supply pipe connected with a gas-supply and extending into the said mixing-tube, a tubular valve adjustable lengthwise in the inner end of the said gas-supply pipe, the said valve having gas-inlet openings within the gas-supply pipe and slots opening into the said mixing-tube, and a mixing-disk within the mixing-tube having angularly-disposed vanes for the passage of the gas and air to insure a complete mixture thereof.

2. A gas and air burner, comprising a mixing-tube open at one end for the admission of air and open at the other end for the discharge of the combustible mixture of gas and air, a gas-supply pipe connected with a gas-supply and extending into the said mixing-tube, a tubular valve adjustable lengthwise in the inner end of the said gas-supply pipe, the said valve having gas-inlet openings within the gas-supply pipe and slots opening into the said mixing-tube, a mixing-disk within the mixing-tube having angularly-disposed vanes for the passage of the gas and air to insure a complete mixture thereof, and a flanged adjustable

disk opposite the flanged air-entrance end of the said mixing-tube.

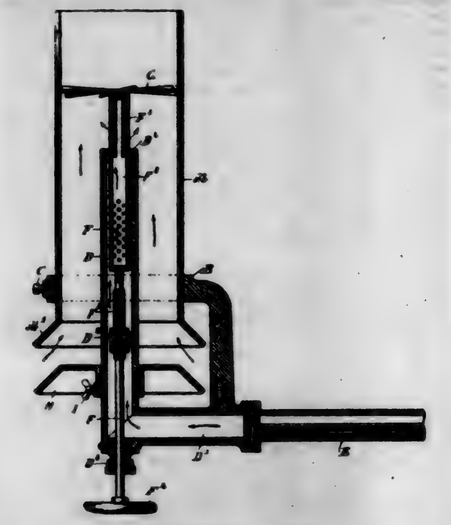

850,997. EYE-GUARD. HARVEY S. COVER, South Bend, Ind. Filed Dec. 4, 1906. Serial No. 346,258.

Claim.—1. An eye-guard comprising a cushion member including integral, outwardly-extending annular walls forming a pair of lens-holding portions, and integral reinforcing-ribs joining the walls of the lens-holding portions and the cushion member.

2. An eye-guard composed of a single piece of material and comprising a pair of lens-holding members whose walls taper gradually and flare outwardly to form a cushion and a nose-piece for the eye-guard, and ribs formed integrally with the walls of the lens-holding members.

3. An eye-guard comprising a cushion member having integral lens-holding portions extending outwardly therefrom and reinforcing-ribs on the lens portions.

4. An eye-guard comprising an elastic cushion member having integral lens portions extending from one side thereof, integral ribs on the walls of said lens portions to reinforce the same, substantially as described.

850,998. MUSIC-STAND. CHARLES F. DALY, Newark, and HARRY C. MORRISON, Zanesville, Ohio. Filed Nov. 28, 1906. Serial No. 345,522.

Claim.—1. In a music-holder, the combination of a central upright bar, a base-bar hinged at one end to the lower end of the central bar, a top bar hinged at one end to the upper end of the central bar, and a side or end bar hinged to the free ends of the aforesaid base and top bars, said side bar hinged to swing to either side of a plane including flatwise the lower flange of said base-bar, the hinging connection of the top bar with the upright central bar and the hinging connection of the side bar with the base-bar being equally distant, when the parts are folded, from the hinging connection of the base-bar with the upright central bar.

2. A music-holder including a central upright bar and a folding frame at each side thereof comprising, in combination, a base-bar hinged at one end to the lower end of the central bar, a top bar hinged at one end to the upper end of the central bar, and a side or end bar hinged to the free ends of the aforesaid base and top bars, said side bars hinged to swing to either side of a plane including flatwise the lower flange of said base-bar, the hinging connection of the top bar with the upright central bar and the hinging connection of the side bar with the base-bar being equally distant, when the parts are folded, from the hinging connection of the base-bar with the upright central bar.

3. In a music-holder, the combination of a central upright bar, a base-bar hinged at one end to the lower end of the central bar, a top bar hinged at one end to the upper end of the central bar, an intermediate bar between said base-bar and top bar and hinged at one end to said central bar, said intermediate bar comprising hinged sections, a side or end bar hinged to the free ends of said top, intermediate and base bars, said side bar hinged to swing to either side of a plane including flatwise the lower flange of said base-bar, the hinging connection of the top bar with the central bar, the hinging connection of the sections of the intermediate bar, and the hinging connection of the side or end bar with the base-bar, all being equally distant, when the parts are folded, from the hinging-point of the base-bar with the upright central bar.

4. In a music-holder, the combination of a central upright bar, a base-bar hinged at one end to the lower end of the central bar, a supplemental bar hinged at one end to said base-bar intermediate the ends thereof, a top bar hinged at one end to the upper end of the central bar, and a side or end bar hinged to the free ends of the aforesaid supplemental base-bar and top bar, said side bar hinged to swing to either side of a plane including flatwise the lower flange of said base-bar, the hinging connection of the top bar with the upright central bar and the hinging connection of the side bar with said supplemental base-bar being equally distant, when the parts are folded, from the hinging connection of the base-bar with the upright central bar.

5. In a music-holder, the combination of a central upright bar, a base-bar hinged at one end to the lower end of the central bar, a supplemental bar hinged at one end to the end of said base-bar intermediate the ends thereof, a top bar hinged at one end to the upper end of the central bar, an intermediate bar between said base-bar and top bar and hinged at one end to said central bar, said intermediate bar comprising hinged sections, a side or end bar hinged to the free ends of said top, intermediate, and supplemental base-bars, said side bar hinged to swing to either side of a plane including flatwise the lower flange of said base-bar, the hinging connection of the top bar with the central bar, the hinging connection of the sections of the intermediate bar, and the hinging connection of the side or end bar with the supplemental base-bar all being equally distant, when the parts are folded, from the hinging-point of the base-bar with the upright central bar.

6. In a music-holder, the combination of a central upright bar, a base-bar hinged at one end to the lower end of the central bar, a top bar hinged at one end to the upper end of the central bar, said top bar provided with a hinged extension-bar, and a side or end bar hinged to the free ends of the aforesaid base and top bars, said side bar hinged to swing to either side of a plane including flatwise the lower flange of said base-bar, the hinging connection of the top bar with the upright central bar and the hinging connection of the side bar with the base-bar being equally distant, when the parts are folded, from the hinging connection of the base-bar with the upright central bar.

7. In a music-stand, the combination with a collapsible music-sheet holder, a supporting spindle or rod attached at one end thereto, said rod provided with a slot having an enlarged portion, a pin on said sheet-holder passing into said slot and adapted to engage the spindle at the narrow portion of the slot to maintain the holder in angular relation to said spindle, and said spindle being foldable upon the holder when the spindle is moved on the pin to bring the latter into the enlarged portion of the slot.

8. In a music-stand, the combination of a collapsible music-sheet holder comprising a central supporting-bar and base-bars pivoted thereto, a supporting spindle or rod attached to said central bar, means for adjusting said spindle in pivotal and fixed relations to the music-holder, said spindle in the position of fixed relation to the music-holder forming an abutment for the ends of said base-bars in the unfolded position of the music-holder.

850,999. DISK DRILL. SPENCER E. DAVIS, Minneapolis, and THOMAS BRENNAN, Jr., St. Louis Park, Minn. Filed July 23, 1906. Serial No. 327,261.

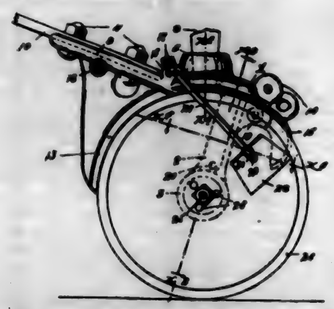

Claim.—1. In a disk attachment for drills, the combination with a sectional boot and a pair of disks, of bearing members secured to the inner faces of said disks and journaled in the sections of said boot, the sections of said boot holding said bearing members against displacement, substantially as described.

2. In a disk attachment for drills, the combination with a two-part boot having an oil-passage and a grain-spout passage, each formed in part in each of the boot-sections, and disks journaled to said boot, substantially as described.

3. In a disk attachment for drills, the combination with a boot formed in sections, of a perforated ball mounted in a seat formed in part in each of the two boot-sections, a feed-spout seated in said ball, and disks journaled to said boot, substantially as described.

4. In a disk attachment for drills, the combination with a boot formed in sections and having a feed-spout passage, an oil-duct and a bearing-hub, all of which are formed in part in each of the two boot-sections, of stub-trunnions seated one in each section of said bearing-hub and held against displacement when the sections of the boot are secured together, and disks secured one to each of said stub-trunnions, substantially as described.

5. In a disk attachment for drills, the combination with a boot having a divided or two-part hub, of a stub-trunnion journaled in said hub and normally held against displacement, and a disk secured to said stub-trunnion for rotation therewith, substantially as described.

6. A scraper comprising a spring-rod 27 having a laterally-bent free end 31, and a scraper-blade 28 having a perforation 29 and a projecting staple 30, the free end of said rod 27 being passed through said staple 30, and the end 31 thereof being inserted into the perforation 29 of said blade, substantially as described.

851,000. CORN-HORSE. EDWARD H. DEVILBISS, Westminster, Md. Filed Oct. 1, 1906. Serial No. 337,010.

Claim.—1. A corn-shock frame comprising a beam, legs for supporting the latter in an inclined position, an attaching-plate upon said beam, supporting-arms pivoted at their inner ends in transverse alinement upon said plate, a stud projecting from said attaching-plate to limit the inward swinging movement of said arms, guide-staples arranged upon said beam in longitudinal alinement, an operating-rod slidable in said guide-staples and bent to form a notch or recess, a keeper-plate upon said beam for engagement by said notch or recess, curved links having their ends pivotally connected to said rod and to said arms, a stop-collar upon said rod and a coil-spring upon said rod confined between said stop-collar and one of said guide-staples, substantially as shown and for the purpose set forth.

2. A corn-shock frame comprising a beam adapted to have one of its ends rest upon the ground and serve as a leg, diverging legs fixed upon said beam adjacent to its other end for supporting it in an inclined position, an attaching-plate upon said beam, supporting-arms pivoted at their inner ends in transverse alinement upon said plate, a pin projecting from said plate adjacent to said arms and adapted to be engaged by the inner edges of said arms to limit their inward swinging movement, guide-staples arranged upon said beam in longitudinal alinement, an operating-rod slidable in said staples and bent intermediate its ends to form a notch or recess, and at its rear end to form a hand-loop, a keeper-plate secured upon said beam and having a laterally-projecting portion to enter the notch or recess in said rod, a plate secured upon the front end of said rod, longitudinally-curved links pivoted upon the last-mentioned plate and to said supporting-arms, a collar fixed upon said rod, and a coil-spring surrounding said rod and confined between said collar and one of said guide-staples, substantially as shown and for the purposes set forth.

3. A corn-shock frame comprising a beam, means for supporting the same, supporting-arms pivoted at their inner ends in transverse alinement upon said beam, an operating-rod, links longitudinally curved in opposite directions and having their opposite ends pivotally connected to said rod and to said arms at points adjacent to the inner ends of said arms, and a pin arranged upon said beam adjacent to the pivots of said arms and adapted to be engaged by the inner edges of the latter to prevent the pivotal connections between said arms and links from pass-

ing the centers of the pivots of the arms when the latter are in their closed position, substantially as shown and described.

851,001. PIANOFORTE-ACTION. JOSEPH DOYLE, West Indianapolis, Ind. Filed Jan. 11, 1906. Serial No. 295,609.

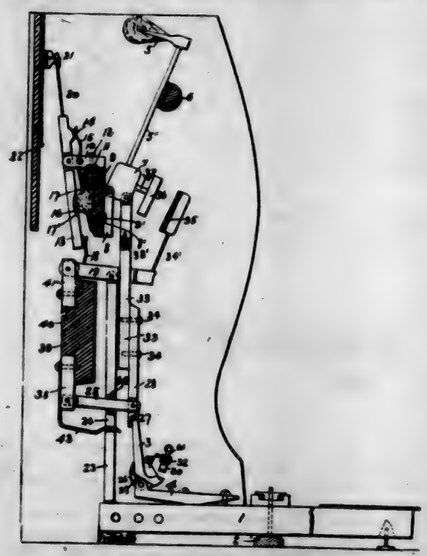

Claim.—1. The combination, with the hammer-butt, the jack and key, of a vertical bar pivoted at its upper end to the hammer-butt and operated from the jack, the pivoted check-lever, a second vertical bar pivoted at its upper end to said check-lever and resting at its lower end on the key, the check-wire and its back-stop said check-wire being connected with the outer end of the check-lever, the damper and damper-lever, and a spoon connected with the check-lever and bearing at its free end against the lower end of the damper-lever, the flange-rail, a flange thereon, a link pivoted at one end to the flange and at the other to the first-noted vertical bar pivoted to the hammer-butt.

2. The combination, with the hammer-butt, the jack and key, of a vertical bar pivoted at its upper end to the hammer-butt and operated from the jack, the check-lever, a second vertical bar pivoted at its upper end to said check-lever, and resting at its lower end on the key and having a broad notch in its side, the check-wire and its back-stop said check-wire being connected with the outer end of said check-lever, and a spoon connected with the check-lever and bearing at its free end against the lower end of the damper-lever, the flange-rail, a flange thereon, and a link pivoted at one end to the flange, extending through the broad notch of said second vertical bar and pivoted to the first-noted vertical bar.

3. The combination, with a key and hammer-butt, of a vertical bar having a broad lateral notch and resting at its lower end upon said key, a second vertical bar, means effecting connection between said hammer-butt and said second vertical bar, a flange-rail, a flange thereon, a link pivoted to said flange and extending through said notch, and connected to said second bar and a spring connected at one end to said flange, extending down behind the latter and under said link, its opposite or free end engaging the lower end wall of said notch.

4. The combination, with a key, of the hammer and hammer-butt, the flange-rail, flanges upon said rail, the back-check lever pivoted upon one of said flanges, the link pivoted upon the other of said flanges, the connected-together bars one having its upper end connected to the hammer-butt, and the other of said bars being connected to the latter link, a bar having its lower end resting upon the inner end of said key and its upper end pivoted to the back-check lever.

851,002. HEATER. HENRY S. DURAND, Rochester, N. Y. Filed Apr. 8, 1903. Serial No. 151,611.

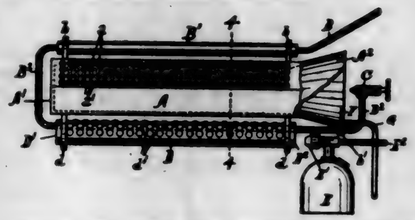

Claim.—1. The combination of a horizontal burner-tube closed at one end and perforated throughout its upper part, an oil-supply pipe extending along the upper perforated portion of the burner-tube and having a lower portion, a valved discharge-jet for the supply-pipe at the open end of the burner-tube, and a foraminated heater-tube extending along the under side of the non-perforated portion of the burner-tube and also along said lower portion of the oil-supply pipe to heat the pipe and tube simultaneously, and separate means for discharging oil into said heater.

2. The combination of a burner-tube, having one end closed, and perforated throughout its upper part; a valve adapted to control the discharge of vapor into the open end of said burner-tube; an oil-supply for said valve, a part of said pipe being located above the perforations in said burner-tube, and a part thereof beneath said tube; means for supporting said supply-pipe above and beneath said burner-tube; and a heater adapted to vaporize oil contained in said supply-pipe and at the same time to heat said burner-tube; substantially as shown and described.

3. The combination of the burner-tube A, having one end closed, the flared end A^2 and perforations *a* throughout its upper part; the valve C adapted to discharge vapor into said burner-tube; the pipe B' connected to an oil-supply, and the pipe B^2 connecting said pipe B' with said valve C, said pipe B' being supported above said burner-tube, and the pipe B^3 beneath it; the tube D attached to said burner-tube having the perforations *d'*, one end closed, and the other open and inclosing the pipe B^3; and the atomizer E arranged to spray vapor into the perforated tube D; substantially as shown and described.

4. The combination with a burner-tube perforated along its upper portion and closed at one end and a supply-pipe extending along the burner-tube and provided with a valved discharge at the open end of the tube, of a heater-tube surrounding the supply-tube and perforated along its upper side to heat the burner-tube and an atomiser discharging into the heater-tube.

5. The combination with a burner-tube closed at one end and having perforations along its upper portion, plugs within said perforations; the plugs and apertures being shaped to form slits between them, wire-gauze along the inner side of the perforated portion of the tube, an oil-supply having a valved discharge at the open end of the tube, a tubular heater perforated along one side to heat both the burner-tube and oil-supply pipe and an atomiser discharging into the open end of the said heater.

6. A burner comprising a burner-tube closed at one end and perforated along its upper portion, an oil-supply pipe having an enlarged member extending along the upper perforated portion of the tube and a lower smaller member extending along the lower side of the tube and provided at the front open end thereof with a valved jet to discharge into the tube, a heater-tube inclosing said lower pipe member and perforated along its upper portion and an atomiser discharging into the heater-tube.

851,003. ELECTRIC-ARC LAMP. OTTO GROSS, Longsight, Manchester, England. Filed Dec. 20, 1904. Serial No. 237,689.

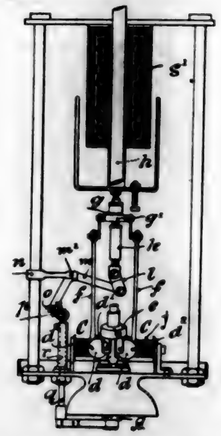

Claim.—In combination with arc-lamps having converging carbon-tubes, a moving arcing plate upon which the carbons fall, a connection from the cross-head, a turn-buckle, a link, a bell-crank lever, a swivel connection and an arm, and a bearing for the arcing-plate support, said arcing plate being constantly and correspondingly influenced by a movement of the core.

851,004. MEANS FOR PROTECTING DRIVING-PULLEYS. BENGT M. W. HANSON, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn, a Corporation of New Jersey. Filed Sept. 8, 1905. Serial No. 277,551.

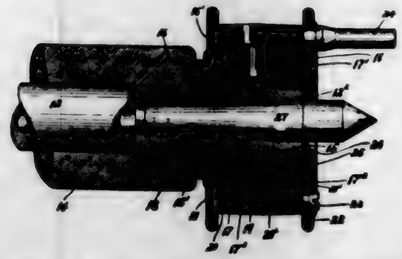

Claim.—1. The combination, with a flanged stationary support, of a flanged bushing in removable connection with said support; a member rotatable on said bushing; a disk located between the end of the bushing and the flange of the support, said disk protecting one side of the rotatable member; and a disk secured to the other side of said rotatable member, and serving to protect the support and bushing.

2. The combination, with a flanged stationary support, of an inwardly-flanged disk loosely mounted on said support; a rotatable member having circular grooves in its sides; packing in said grooves; a flanged bushing secured to the support, and upon which the rotatable member is mounted; and a disk secured to said rotatable member and protecting the joint between the bushing and the support.

3. The combination, with a support having a circumferential flange, of a flanged disk mounted on said support and the back of which bears against said flange; a rotatable member having circumferential grooves in its sides; packing in each of said grooves; a bushing threaded upon the support, and having an inward flange at its outer end; a disk having a portion protecting the joint between the bushing and support; and means for securing said disk to the rotatable member.

4. The combination, with a support having a circumferential flange, of an inwardly-flanged disk sleeved upon said support; a bushing threaded upon the support, and bearing against the disk, said bushing being flanged at its outer ends; a rotatable member sleeved upon the bushing between the flange thereof and the disk, and having grooves or chambers in its sides; packing-washers in said grooves or chambers; and means secured to said rotatable member, and serving to protect the joints between the bushing and the rotatable member and between the bushing and the support.

5. The combination, with a tubular support having a circumferential flange, of a flanged disk sleeved upon said support, and bearing against said circumferential flange; a bushing in threaded engagement with the support; a pulley mounted on said bushing and having chambers in its sides; packing-washers in said chambers and in engagement with the flanges of the disk; a disk secured to the pulley, and constituting one flange thereof, said disk serving to close the joints between the bushing and said pulley.

6. The combination, with a stock having a bearing, of a flanged sleeve mounted in said bearing; a flanged disk carried by the sleeve; a rotatable member having a chamber in its side for the reception of the flange of the disk; a bushing rigid with the sleeve, and upon which the rotatable member is mounted; and means for protecting the side of the rotatable member and bushing at the side opposite that where the flanged disk is located.

7. The combination, with a stock having an overhang provided with a bearing rabbeted at its forward end, of a tubular sleeve provided with a flange which is inserted in the rabbet of the bearing; a flanged disk mounted on the sleeve, and bearing against the flange thereof; a bushing secured to the sleeve, and the end of which is in contact with said disk, said bushing having a flange at its opposite extremity; a rotatable member sleeved upon the bushing, and having chambers in its side for the reception of flanges of the disk and bushing; packing-washers located in said chambers; and a disk secured to the front of the rotatable member, and serving to protect the joints between said member and the flange-bushing, and between the flange-bushing and the sleeve.

851,005. COMPENSATING BEARING FOR MACHINE SPINDLES. BENGT M. W. HANSON, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Filed Oct. 2, 1905. Serial No. 280,007.

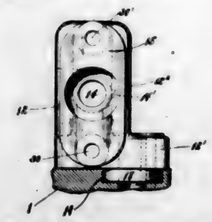

Claim.—1. The combination, with blocks having chambered standards, of bearings having ends fitted within the chambers of the standards; swivel-bolts passing through perforations of the standards, and into the bearings; a spindle; boxes carried by the bearings; and in which boxes the spindle is journaled; and means for taking up wear of the boxes.

2. The combination, with blocks having standards provided with longitudinal perforations; of swivel-bolts passing through said perforations; bearings connected to said swivel-bolts; boxes mounted in the bearings; and a spindle journaled in the boxes.

3. The combination, with a support, of blocks having

standards the latter provided with chambers in their ends; swivel-bolts secured to the support, and passing through the bases of the blocks; bearings having journals mounted for swiveling action on the standards; boxes mounted in the bearings; and a shaft journaled in said boxes.

4. The combination, with a slide, of blocks each having a vertical standard provided with a series of perforations; bearings mounted on the standards, and movable with relation thereto; bolts of less diameter than said perforations inserted into the bearings; a swivel-bolt located in an intermediate perforation, and also connected to each bearing; means whereby the blocks may have a limited movement in a horizontal plane; and a shaft supported by the bearings.

5. The combination, with a slide, of blocks each having a vertical standard, and swiveled upon said slide; swivel-bolts mounted in perforations of the standards; bearing-boxes connected to said swivel-bolts; means for permitting limited rotary movement of the standards; sleeves inserted in said bearings, and having tapered bores; split, externally-tapered boxes flanged at their inner ends, and fitted in the sleeves; means for taking up wear of said split boxes; and a shaft journaled in the split boxes.

6. The combination, with a slide, of blocks swiveled upon said slide, and each having a series of bores; means for locking said blocks against swiveling action on the slides; bearings having tubular bosses fitted in chambers of the standards; bolts of less diameter than the perforations through which they are passed for securing the bearings to the standard; swivel-bolts passed through the intermediate perforations of the standards, and threaded into the tubular bosses of the bearings; sleeves carried by the bearings, and each having an internally-tapered wall; split boxes with externally-tapered peripheries fitted in said sleeves; a shaft journaled in said boxes; and means for adjusting the boxes to take up wear.

7. The combination, with a bearing, and with means whereby it may be universally adjusted, of a sleeve inserted in said bearing, and having an internally-tapered wall, said sleeve being provided with a rabbet at one end, and with an external thread at its opposite extremity; a nut in engagement with the threaded end of the sleeve, and having an external thread; a cap threaded upon said nut; a split box having a flange at one end, said flange being located between the end of the nut, and the inner wall of the cap threaded upon said nut; and a shaft passing through the split box.

8. The combination, with a slide, of blocks provided with perforated standards, and with flat bases secured to said slide, each of said bases having perforations; bolts of less diameter than said perforations, said bolts being connected to the slide; a swivel-bolt passing through each base, and entering the slide; bearings; swivel-bolts connecting the bearings and standards; bolts of less diameter than the perforations in the standards; means for locking the bearings to said standards; and a spindle journaled in the bearings.

851,006. NON-REFILLABLE BOTTLE OR PACKAGE. WILLIAM J. HIGMAN, Denver, Colo. Filed Sept. 17, 1906. Serial No. 334,024.

Claim.—1. In a non-refillable bottle, the combination with a bottle-neck, having a circumferential keyway, of a cap fitting over said neck and provided with a keyway registering with said neck's keyway, a pair of spring-bands arranged to fit in the keyway of said neck and having integral fingers which extend into the keyway of the cap, said keyways being filled with a hardening cement, after said cap and bands are in position.

2. In a non-refillable bottle, the combination with the bottle-neck, having a circumferential keyway adjacent to its end, and a collar surrounding said neck below said keyway, of a stopper-cap fitting over the end of said neck against said collar, having a keyway registering with the keyway in said neck, a pair of circumferential spring-bands having a plurality of integral finger portions on one edge thereof, which are bent down to lie at an angle to the band, said bands being arranged to bear in the keyway of said neck, while the fingers are arranged to bear with resilient tension in the keyway of said stopper-cap, said cap having apertures opening into said keyways, through which a cement filling is conveyed to said keyways.

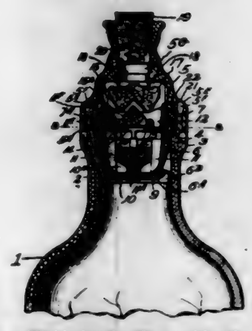

3. In a non-refillable bottle, the combination with a bottle-neck, of a stopper-cap arranged to be secured and sealed to said neck, a valve-seat in said neck, having an inlet and outlet aperture, a conical valve having an extended disk-shaped base extending beyond the base of its conical portion, a rubber washer extending over said disk portion of said valve, a valve-cap positioned above said valve and provided with a conical recess in its bottom of larger diameter than the apex of said conical valve and arranged to fit loosely over the apex of said conical valve, fluid-passages being formed around said valve-cap, and a stopper in said stopper-cap above said valve-cap.

4. In a non-refillable bottle, the combination with the bottle having a neck, of a stopper-cap secured and sealed to the outer side of said neck, a sleeve in said neck containing a float-chamber, a plurality of vertical flukes around the sides of said chamber, forming channels which terminate in a tapering inlet and outlet aperture in the bottom of said sleeve, a goblet-shaped float in the chamber of said sleeve, having a disk-shaped base portion fitting the tapering aperture in said sleeve and arranged to close the same against inward-flowing fluids, said goblet-shaped float being provided with an aperture in its upper portion, a cork float in said aperture, a valve-seat resting on said sleeve, having an axial aperture and flukes depending from it and adapted to be engaged by the top of said sleeve's float, a valve slidably mounted on said valve-seat, having an upward conical central portion and a disk-shaped base portion of larger diameter than said conical portion, a rubber covering on said disk portion, a valve-cap over said valve arranged to define said valve's opening and closing movements, fluid-passages being formed around said valve-cap, a stopper-aperture being formed in said stopper-cap having an introverted lip, and a stopper fitting in said stopper-aperture over said lip.

5. In a non-refillable bottle, the combination of a bottle, and its neck, and a stopper-cap provided with a stopper keyed and sealed to said bottle's neck, with a sleeve in said neck, a goblet-shaped float in said sleeve, a valve-seat in the upper end of the sleeve, a conical valve slidably seated on said valve-seat, and a valve-cap arranged to control the opening and closing movements of said valve.

6. In a non-refillable bottle, the combination of a bottle, having a circumferential keyway in its neck, and a collar below said keyway, with a stopper-cap arranged to fit over said neck containing a stopper-inlet, an introverted lip in said stopper-inlet, and a keyway registering with said neck's keyway, and ribbon-keys in said neck-keyway provided with projecting spring-fingers arranged to extend into the keyway of said cap.

7. In a non-refillable bottle, the combination with a bottle, having an open-neck portion, of a cap arranged to be secured and cemented to said neck, a sleeve resting on the top of said neck and depending within said neck, and provided with an axial float-chamber, having ribs forming fluid-passages around the side of said chamber, a valve-seat resting on top of said float-chamber, a float in said float-chamber below said valve-seat, a valve slidably and tiltingly mounted on said seat, and a valve-cap resting on said valve-seat and arranged to define the operative movements of said valve, and provided with fluid-passages in its peripheral surface, and washers between said cap and neck and sleeve and valve-seat and valve-cap.

8. In a non-refillable bottle, the combination with a bottle, of a sleeve in the neck of said bottle, a float in said sleeve, a valve-seat in said sleeve, having a liquid-outlet, and a conical valve provided with an enlarged disk-base, mounted on said seat, to control said liquid-outlet, a spider-cap in said sleeve over said valve, having a hub portion containing a conical recess arranged to fit over said valve and to control said valve's operative movement, and means for confining said spider in said sleeve, as set forth.

851,007. BRIQUET-PRESS. ELY C. HUTCHINSON, San Francisco, Cal., assignor to Charles R. Allen, San Francisco, Cal. Filed Oct. 18, 1905. Serial No. 283,292.

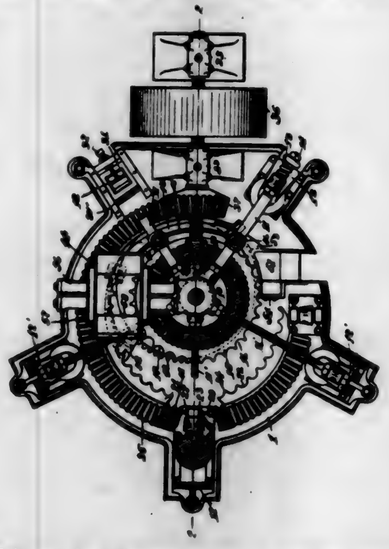

Claim.—1. In a briquet-press, two opposing recessed members, means for moving said members into contact with the opposing recesses registering with each other, a plate above said members at the point of contact and a movable member below them.

2. In a briquet-press, two opposing, rotary, recessed members, means for causing said members to contact at one point with the opposing recesses registering with each other, a stationary plate above said member at the point of contact, and a plate, movable member below the same.

3. In a briquet-press, two opposing, rotary peripherally-recessed members, one within the other in the same plane, means for causing said members to contact at one point with the opposing recesses registering with each other, a stationary plate above the same, a disk below said members, and means for moving the disk and the members substantially in unison at said point of contact.

4. In a briquet-press, two rotary, recessed members, one within the other in the same plane and adapted to contact at one point, a plate above said members, a feed-hopper at one point and a discharge-chute at another, a rotary disk below said members with its center at one side of the centers of said members whereby its periphery extends from the discharge-chute to and partly under the feed-hopper, and means for closing the remainder of the hopper.

5. In a briquet-press, two rotary, recessed members, movable one within the other in the same plane and adapted to contact at one point, a plate above said members, a feed-hopper at one point and a discharge-chute at another, a rotary disk under the members, with its periphery extending from the discharge-chute to and partly under the feed-hopper, two semicrescent-shaped plates extending from the feed-hopper and the discharge-chute, respectively, substantially to the point of contact of the recessed member each crescent corresponding with and substantially engaging the periphery of said disk.

6. In a briquet-press, two rotary members of different diameters, one within the other in the same plane and adapted to contact at one point, the peripheries of said members being provided with transverse recesses which extend from face to face thereof, a flat plate above said members at the point of contact, a feed-hopper at one point and a discharge-chute at another, a flat feed-ring under said members and extending from the hopper to the point of contact, and two plates in the same plane with said ring for forming a continuation of the ring under the hopper and to the discharge-chute.

7. In a briquet-press, two rotary mold members, upper and lower walls for completing the molds at the point of compression feeding mechanism and a discharge-chute, a table from said point to the chute, and a stop on the far wall of the chute.

8. In a briquet-press, a recessed base, two rotary mold members, upper and lower walls for completing the molds at the point of greatest compression, feeding mechanism, a table and an inclined-bottomed discharge-chute at the recessed portion of the base, and a stop projecting upwardly from the far side of the chute.

9. In a briquet-press, two rotary mold members, upper and lower walls for completing the molds, and a feed-hopper provided with an adjustable throat and having its lower end even with the tops of said members.

10. In a briquet-press, two rotary mold members, upper and lower walls for completing the molds, a feed-hopper having its walls on one side perforated and its lower end even with the tops of said members, a plate pivotally secured at the top of the hopper with the lower end in the throat, and a rod removably secured in said perforations for holding the lower end of said plate in its adjusted position.

11. In a briquet-press, two rotary mold members, one within the other, the outer one being provided with a flange on its under side, rollers for engaging with said flange, means for adjusting the bearings for said rollers, and means for rotating said members.

12. In a briquet-press, two rotary mold members, one within the other, a support for each of said members, means for adjusting each of said supports, a rotary feed-ring for engaging with said members, means for adjusting said ring, and an upper plate for the members.

13. In a briquet-press, two rotary mold members, one within the other, an adjustable support for each of said members, a flanged rotary feed-ring for engaging with said members, an adjustable wearing-plate in said flange, and an upper plate for the members.

14. In a briquet-press, a base provided with a cavity and a flange, rollers on the base, an adjustable support projecting upwardly from the cavity, an outer mold-ring on said rollers, a mold-ring on said support, a flanged feed-ring on said flange, an adjustable bearing-ring, in the flange of said ring, and an upper plate for said members.

15. In a briquet-press, a base provided with a perforated walled cavity and a flange surrounding the same, eccentrically, a slotted cup in the cavity, a spindle seated in said cup, a pin through the spindle, and through the slots and the perforations in the wall of the cavity, a screw through the base and in engagement with the cup, adjustable rollers on the base, an outer mold-ring on said rollers, a mold-wheel on the spindle with its hub on the cup, a cap on top of the spindle, a feed-ring adjustably mounted on the flange and in engagement with said mold members, and an upper plate on said members.

16. In a briquet-press, two recessed mold members, one within the other and adapted to contact at the point of

greatest compression, and each provided with gear-teeth on its upper surface and one of them with internal gear, a shaft above said members provided with pinions for engaging with said gear-teeth, a feed-ring below said members provided with peripheral teeth in engagement with said internal gear, and a plate above said point of contact.

17. In a briquet-press, a base, a spindle and brackets mounted thereon, a cap on the spindle, a bolt through the cap and engaging with the spindle, braces from the cap to the brackets, rollers in the brackets, an outer mold member in engagement with said rollers, a mold-wheel on the spindle having its periphery adapted to contact with the outer member at one point, a plate above and a plate below the mold members at the point of contact.

18. In a briquet-press, a base, a spindle and brackets mounted thereon two of the brackets being adjustable, a cap secured to the upper end of the spindle, adjustable braces from the cap to the brackets, two of which are in yielding engagement with the adjustable brackets, rollers in said brackets, an outer mold member in engagement with said rollers, a mold-wheel on the spindle with its periphery in contact with said outer member at a point between the adjustable brackets, a plate above and a plate below the mold members at the point of contact.

19. In a briquet-press, a base, a spindle and brackets mounted therein, movable blocks for two of the brackets, screws for adjustably holding said blocks, a cap secured to the upper end of the spindle, braces from the cap to the brackets, those for the adjustable brackets having their ends passed therethrough and provided with nuts, springs between said nuts and their outer mold member engaging with said rollers, a mold-wheel on the spindle and engaging with the outer member between the adjustable brackets, a plate above and a plate below the mold members at the point of contact.

20. In a briquet-press, a base, a spindle and brackets thereon, a cap on the spindle, braces from the cap to the bracket-rollers in the brackets, an outer mold member in engagement with said rollers, an inner mold member on the spindle and engaging with the outer member at one point, a plate on each side of said members at the point of contact, and means for yieldingly holding the upper plate in position.

21. In a briquet-press, a base, a spindle and brackets thereon, a cap on the spindle, braces from the cap to the brackets, rollers in the brackets, an outer mold member in engagement with said rollers, an inner mold member on the spindle and engaging with the outer member at one point, a plate above and a plate below said members at the point of contact, a vertical movable block on each brace at each side of said point and connected with the upper plate, a bolt through each block into said brace with a nut on its upper end, and a spring between said nut and the top of the block.

22. In a briquet-press, a base, a spindle projecting upwardly therefrom, a cap on top of the spindle, recessed mold members, one within the other, an angular bracket secured at its ends to the cap and to the base, the intermediate portion of which is provided with an open frame, and a hopper in said frame with is lower end substantially in engagement with said members.

23. In a briquet-press, two circular, recessed mold members of different diameters, one within the other in the same plane, adjustable means for yieldingly holding said members in contact at one point and a plate above and a plate below said members at the point of contact.

24. In a briquet-press, a base, an inner mold member journaled thereon, an outer mold-ring around said member and in contact therewith at one point, means for adjusting the ring in its own plane relative to the inner member.

25. In a briquet-press, a base, two mold members rotatably mounted thereon, one within the other and in the same plane and in contact at one point, and means for adjusting said members relative to each other in said plane.

26. In a briquet-press, a base, two circular mold members rotatably mounted thereon one within the other and in the same plane and in contact at one point, means for yieldingly holding said members in position, and means for adjusting the outer member transversely of its plane.

27. In a briquet-press, a base, a spindle thereon, a cap on the upper end of the spindle one side of which is provided with a socket, bearings in alinement with said socket, a shaft in the bearings and in the socket, a pulley and gear-pinions on the shaft, and rotary mold members in the same plane and in engagement with each other at one point and each provided with gear-teeth for engaging with said pinions.

28. In a briquet-press, horizontally-arranged mold members, one within the other, and centrally-located means for adjusting the inner member vertically for compensating for wear.

29. In a briquet-press, horizontally-arranged mold members, one within the other, rollers for engaging with the periphery of the outer member, and means for adjusting said rollers so as to maintain their peripheries parallel with the periphery of said outer member.

30. In a briquet-press, horizontally-arranged mold members one within the other, and means for guiding supporting and adjusting the outer member, independently of the inner member.

31. In a briquet-press, horizontally-arranged mold members, one within the other and in engagement at one point, and an adjustable and compensating top pressure-plate.

32. In a briquet-press, horizontally-arranged mold members, one within the other, an eccentrically-located feed-ring below the same positive self-contained gear-drive for the same, and screws for adjusting the ring relative to said members.

33. In a briquet-press, a base, a spindle projecting therefrom, a cap on top of the spindle radially-arranged braces for supporting the same, and mold members rotatably mounted on the base.

34. In a briquet-press, movable mold members, a hopper for feeding material thereto, and means for regulating the mouth of the hopper, said means consisting of a gate having one end pivoted to the hopper and means for holding its other end in any desired position.

851,008. SAFETY-LOCK. ALFRED JACOBSON and EMANUEL A. SVENSSON, Stockholm, Sweden. Filed May 11, 1906. Serial No 316,382.

Claim.—1. In safety-locks, the combination with a central sleeve adapted to receive a key, of longitudinal bars on the outer periphery of the sleeve and engaging in radial notches formed in the annular walls of a concentric groove in the fixed lock-casing, and means coöperating with the key for disengaging the bars from said notches.

2. In safety-locks, the combination with a central sleeve adapted to receive a key, of longitudinal bars on the outer periphery of the sleeve and engaging at their ends in radial notches formed in the annular walls of a concentric groove in the fixed end portion of the lock-casing, and means coöperating with the key for disengaging the bars from said notches.

3. In safety-locks, a casing, a central sleeve in said casing, adapted to receive a key, bars on the outer periphery of the sleeve, an end portion of said casing provided with a concentric groove and radial notches in the walls of said groove, adapted to engage with the juxtaposed ends of the bars, and means coöperating with the key for disengaging the bars or levers from said notches.

4. In safety-locks a casing, a central sleeve in said casing, connected with the lock-bolt, and adapted to receive a key, bars on the sleeve, an end portion of said casing, provided with a concentric groove and radial notches in the walls of said groove adapted to engage with the ends of the bars and balls, loosely inserted in holes in the wall of the sleeve and adapted to coöperate with the key for disengaging the bars from the notches.

5. In safety-locks a fixed casing, a central sleeve in said casing, connected with the lock-bolt, locking-bars, resting in radial notches formed in an exterior flange of said sleeve and pressed against the sleeve by springs, an end portion of said casing, provided with a concentric groove and radial notches adapted to engage with the juxtaposed ends of the bars, balls, inserted in holes in the wall of the sleeve and coöperating with notches in the key for disengaging said bars.

851,009. ARC-LAMP HANGER OR SUPPORT. JAMES E. JOYCE, Hoboken, N. J. Filed Nov. 25, 1905. Serial No. 289,075.

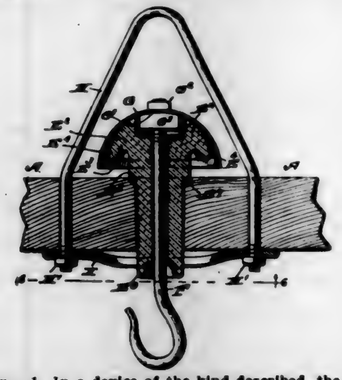

Claim.—1. In a device of the kind described, the combination with an arm, of a sleeve supported by the arm, a hood arranged upon the sleeve, a hook connected to the hood, means arranged upon the hook and engaging the sleeve to prevent accidental rotation of the hood and hook, and means carried by the arm for preventing accidental displacement of the sleeve and the parts carried thereby.

2. In a device of the kind described, the combination with an arm, of a sleeve of insulating material carried by the arm, a hood held upon the sleeve, a hook connected to the hood, and a bail-handle or hanger-bolt connected to the arm and straddling the hood for the purpose set forth.

3. In a device of the kind described, the combination with an arm having a bore, of a sleeve of insulating material held within the bore, said sleeve having a head portion upon the lower edge of which is formed a flange or petticoat and in the upper portion is arranged a non-circular recess, the lower end of the sleeve being provided with a flange or petticoat, and a bore extending throughout its length, a hood resting upon and engaging the said head of the sleeve, a hook connected to the hood and extending through the bore of the sleeve, and means surrounding the bolt and fitting within the non-circular recess of the head, substantially as and for the purpose specified.

4. In a device of the kind described, the combination with an arm, of a sleeve of insulating material carried thereby, said sleeve having a body portion which terminates at one end in a head, the lower surface of which is recessed to provide a flange or petticoat, the opposite end of the sleeve having a flange or petticoat, the body portion of said sleeve being provided with a central bore, and the head with a non-circular recess, a hood fitting upon the head, a hook connected to the hood and having its shank extending through the bore of the sleeve, nuts threaded upon the bolt and engaging the opposite surfaces of the hood, one of said nuts fitting within the recess in the head, a bail-handle connected to the arm and straddling the said hood, and a plate connected to the ends of the said handle, said plate having a central opening through which the lower end of the sleeve projects, all for the purpose specified.

5. In a device of the kind described, the combination with an arm having a central bore and recesses communicating with the bore, of a sleeve of insulating material adapted to fit within the bore, said sleeve having a head formed upon one end and a shoulder formed upon the body adjacent the head, lugs projecting from the shoulder and adapted to fit the said recesses in the arm, a hood resting upon the head, a hook carried by the hood and a bail-handle connected to the arm, all substantially as specified.

6. In a device of the kind described, the combination with an arm having a bore produced therein, of a sleeve of insulating material, adapted to fit within the bore, said sleeve comprising a cylindrical body portion which terminates at one end in a semispherical-shaped head, the upper surface of which is provided with a non-circular recess which communicates with a bore that extends through the body portion of the sleeve, the lower edge of the said head having a flange, a shoulder formed upon the body portion adjacent the head, and a flange formed upon the opposite end of the sleeve, a semispherical-shaped hood resting upon the head, a hook-bolt connected to the hood and extending through the sleeve, nuts threaded upon the bolt and engaging the opposite surfaces of the hood, one of said nuts being adapted to fit within the recesses in the head, a bail-handle connected to the arm and having its ends extending therethrough, and a plate connected to the said ends and having a central opening through which the lower flanged end of the sleeve projects.

7. In a device of the kind described, the combination with an arm having a bore produced therein, of a sleeve of insulating material held within the bore, a semispherical-shaped head formed upon the sleeve and having a non-circular recess which communicates with a bore that extends through the sleeve, a flange formed upon the lower edge of the head, a shoulder formed upon the sleeve and adapted to rest upon the upper surface of the arm, a flange formed upon the lower end of the sleeve, a semispherical-shaped hood resting upon and encircling the head, a hook-bolt extending through the sleeve and connected to the hood, a non-circular nut threaded upon the bolt and adapted to fit within the recess of the head substantially as specified.

8. In a device of the kind described, the combination with an arm, of a sleeve of insulating material carried thereby, said sleeve having a semispherical-shaped head at one end which projects above the arm, a semispherical-shaped hood resting upon the head of the sleeve, and a hook connected to the hood.

9. In a device of the kind described, the combination with an arm having a bore, of a sleeve of insulating material arranged within the bore, said sleeve having a shoulder to engage the upper surface of the arm and by which the said sleeve is supported, a semispherical-shaped head formed at one end of the arm and having a flange or petticoat depending therefrom, the opposite end of the sleeve also having a flange or petticoat, a semispherical-shaped hood designed to fit upon the head of the sleeve, and a hook-bolt carried by the hood, the shank of which extends through a bore formed in the sleeve substantially as specified.

10. In a device of the kind described, the combination with an arm, of a sleeve of insulating material held therein, and having a central bore, a hood arranged upon the sleeve, a hook-bolt having its shank projected through the bore of the sleeve and its upper end connected to the hood, a bail-handle having its ends projected through the arm upon opposite sides of the sleeve, and a plate connected to the ends of the bail-handle, said plate having a central opening through which the lower end of the said sleeve projects.

11. In a device of the kind described, the combination with an arm having a central bore, of a sleeve of insulating material held within the bore, said sleeve having a flange or petticoat at one end and a semispherical-shaped head at its upper end, the lower edge of the said head having a flange or petticoat, a semispherical-shaped hood resting upon the head and having a hook-bolt projecting therefrom, the shank of which extends through a bore formed in the sleeve, a bail-handle connected to the arm, the ends of which project through the arm upon opposite sides of

the said bore, and a plate connected to the lower ends of the bail-handle, said plate having a central opening through which the lower end of the sleeve projects.

12. In a device of the kind described, the combination with an arm having a central bore, of a sleeve of insulating material held within the bore, the body of the said sleeve being cylindrical in cross-section and having a shoulder that is designed to engage the upper surface of the arm, lugs formed upon the sleeve adjacent the shoulder which fit recesses formed in the arm, a flange or petticoat formed upon the lower end of the sleeve, a semispherical-shaped head formed upon the opposite end of the sleeve, said head having a flange or petticoat at its lower edge and a recess in its upper surface which communicates with a bore that extends through the sleeve, a semispherical-shaped hood adapted to fit upon the head, the lower edge of the hood projecting below the flange or petticoat of the head, a hook-bolt having its shank portion extended through the bore of the sleeve and its upper end connected to the hood by means of nuts, one of which rests within the said non-circular recess, a bail-handle connected to the arm and having its ends extending through the arm upon opposite sides of the bore, and a plate connected to the ends of the bail-handle, said plate having a central opening through which the lower end of the sleeve projects.

13. In a device of the kind described, the combination with an arm having a bore, of a sleeve of insulating material held within the bore and having its upper and lower edges provided with flanges or petticoats, a hood arranged upon the upper end of the sleeve, and a hook-bolt carried by the hood.

14. An insulating-sleeve of the kind and for the purpose specified, comprising a cylindrical body portion having a central bore, a flange or petticoat formed upon one end of the sleeve, a semispherical-shaped head formed upon the opposite end of the sleeve and having a non-circular recess in its upper surface and a flange or petticoat formed at its lower edge said sleeve being enlarged adjacent the head to provide a shoulder from which project lugs, substantially as specified.

851,010. FLOOR-SCRAPER. JOHN KELLING, Milwaukee, Wis., assignor of one-half to Royal M. A. Herzer, Milwaukee, Wis. Filed Feb. 2, 1907. Serial No. 355,430.

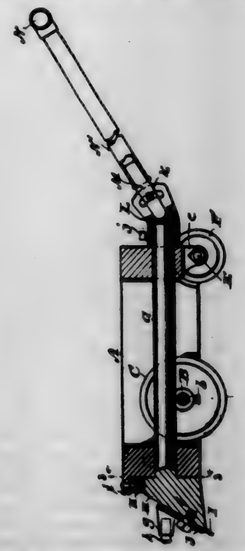

Claim.—1. A floor-scraper comprising a truck, a blade-head having a pivot-shank for which the truck is provided with bearings, and a handle in connection with said shank by which to rock said blade-head in either direction at will.

2. A floor-scraper comprising a truck, a blade-head having a pivot-shank mounted in the truck, a clevis having a socket end in which said shank is detachably secured, and a handle attached to the clevis.

3. A floor-scraper comprising a truck, a blade-head having a pivot-shank mounted in the truck, a clevis having a socket end in which said shank is detachably secured, a tang fulcrumed in the clevis-fork, means for securing the tang in adjusted position, and a handle having a shank fitted on said tang.

4. A floor-scraper comprising a truck, a blade-head in rotary adjustable connection with the truck, and a spring arranged to resist canting of the head in either direction from normal position.

851,011. DEVICE FOR BURNING VEGETATION AND MELTING SNOW AND ICE. WILBERT W. LAMB, Chicago, Ill. Filed Dec. 15, 1905. Serial No. 291,942.

Claim.—1. In a vegetation-burner, a Bunsen feeder carrying a multiplicity of Bunsen burners, in combination with generating devices comprising coiled portions of pipe and straight portions positioned below and parallel with the coils and connected with opposite ends of the Bunsen feeder, and a fuel-regulating valve at each end of the Bunsen feeder.

2. In a vegetation-burner, a Bunsen feeder carrying a multiplicity of Bunsen burners, in combination with a generator composed of a coiled portion and a straight portion positioned below and parallel with the coiled part and connected with the opposite end of the Bunsen feeder, and a fuel-regulating valve between the generator and the Bunsen feeder.

3. In a vegetation-burner, a plurality of horizontally-disposed coils of pipe each coil having a straight extension thereof positioned below and parallel with the coils and constituting a generator, and means for regulating the flow of fuel from the generator, in combination with a Bunsen feeder carrying a multiplicity of Bunsen burners, and means for distributing liquid fuel to the generator.

851,012. RAILWAY SIGNAL-FLAG. JOHN LANIUS, Galion, Ohio. Filed Dec. 20, 1905. Serial No. 292,622.

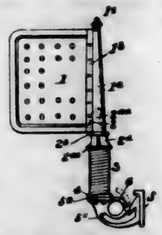

Claim.—1. A device of the character described, comprising a signaling-flag having a tubular formation adapted to constitute the flagstaff in part, a base member having its upper end insertible in the lower end of said tubular formation and having a wing or plate formation interposed between a lapping edge portion of said tubular formation and said flag and secured in place in common therewith.

2. A signaling-flag having its staff constituted in part of a compactly-coiled tubular spring and a staff-adjusting contrivance comprising a tubular post formation having notched ribs adapted for insertion into the lower end of said spring and effective engagement with the coils or spirals of said spring, and means insertible in said tubular formation for retention in place.

3. A signaling device comprising a flag, its staff constituted in part of a compactly-coiled tubular spring, a bracket having a notched plate or disk terminal, a tubular post formation inserted into the lower end of said spring having its carrying disk or plate portion provided with a number of notches or recesses and resting upon a pivot or axis formation of the notched plate of said disk, and a dog or detent carried by the arm of said bracket and adapted to engage the notches of said plates or disks.

851,013. BALL-MILL. HERMANN LÖHNERT, Bromberg, Germany. Filed Mar. 6, 1906. Serial No. 304,571.

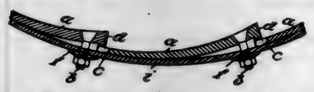

Claim.—1. In ball-mills, in combination, a drum-shell and a sectional lining therefor, one of which members has longitudinal slots; bolts holding the sides of the lining-sections to the shell, those at the one side of the sections passing through the said slots; and resilient washers for the bolts; substantially as and for the purposes described.

2. In ball-mills, in combination, a drum-shell having longitudinal slots; lining-plates; bolts holding both sides of the same to the shell, those at one side of the plates passing through said slots; and elastic washers located between the nuts and the shell; substantially as and for the purposes described.

851,014. CAR-DUMPING APPARATUS. FREDERICK W. LOVELL, Cleveland, Ohio, assignor to The McMyler Manufacturing Company, Cleveland, Ohio, a Corporation of Ohio. Filed Aug. 31, 1906. Serial No. 332,731.

Claim.—1. In combination a tower and a dumping-apron pivotally supported at one side of the tower and having hoisting-ropes, a forward transverse girder carrying supports for sheaves for the hoisting-ropes of the apron, said girder being set back of the vertical plane of the points of pivotal support of the apron so as to afford a clear space above said points of support into which clear space a portion of the apron may be drawn.

2. In combination a tower and a dumping-apron pivotally supported at the front of the tower, a forward transverse girder at the top of the tower set back from the front of the tower so as to afford a clear space into which the outer end of the apron may be drawn.

3. In combination a tower and a dumping-apron pivotally supported near the front side of the tower, said apron having near its outer upper end a bearing-surface, a hoisting-rope attached to the outer lower end of said apron and passing over said bearing-surface and reeved over sheaves at the upper part of the tower and attached to a hoisting-drum.

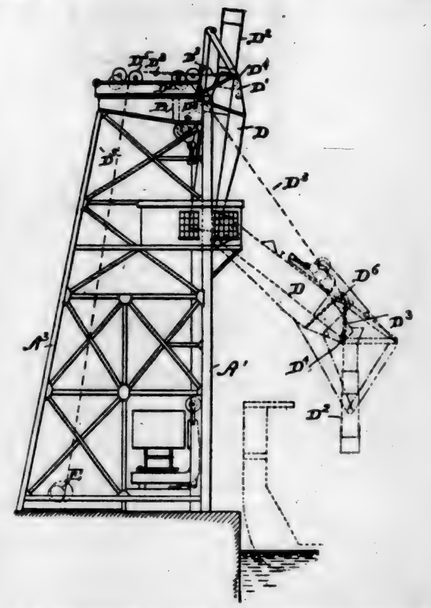

4. In combination a tower and a dumping-apron, said apron pivotally supported near one side of the tower and adapted to swing upward, a girder near the top of the tower extending parallel with said side and set back beyond the vertical plane of the pivotal supports of the apron so as to provide a clear space in the upper part of the tower into which the outer end of the apron may be drawn.

851,015. PAPER SLITTING AND REWINDING MACHINE. FRANCIS MEISEL, Dorchester, Mass. Filed July 1, 1903. Serial No. 163,048.

Claim.—1. In a machine of the class described, the combination of a framework, winding-drums journaled in the framework, slitting-cutters, and gearing for turning the slitting-cutters comprising a shaft forming an intermediate connection between the winding-drums and the slitting-cutters, said shaft having a gear on the outside of the framework of small diameter meshing with the gears of one of the winding-drums, and a gear of larger diameter on the inside of the framework meshing with one of the gears of the slitting-cutters, whereby the slitting-cutters will be driven at higher peripheral speed than the speed of travel of the web.

2. In a machine of the class described, the combination of two sets of slitting-cutters, means for moving the shaft of one of the slitting-cutters endwise to secure a separation of the cutters longitudinally with respect to the shaft, and a rock-shaft having arms engaging the boxes of one of the slitting-cutter shafts to secure a transverse separation of the cutters.

3. In a machine of the class described, the combination of a winding device having gears, slitting-cutters having gears, and gearing for turning the slitting-cutters, com-

prising a shaft forming an intermediate connection between the winding device and the slitting-cutters, a gear on said shaft meshing with a gear connected with the winding device, and a gear of larger diameter also on said shaft meshing with a gear connected with the slitting-cutters, whereby the slitting-cutters will be driven at a higher peripheral speed than the speed of travel of the web.

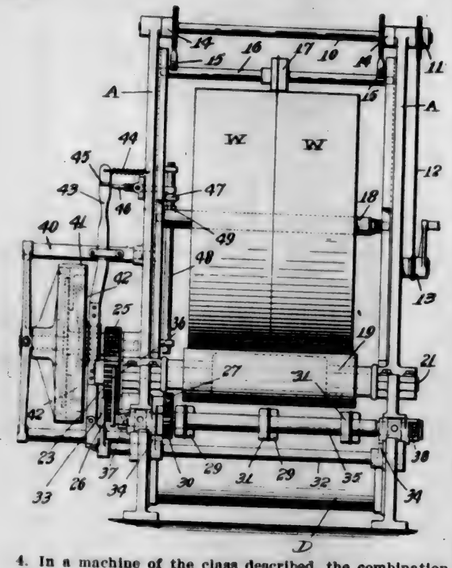

4. In a machine of the class described, the combination of two sets of slitting-cutters, a pair of shafts on which said slitting-cutters are mounted, movable boxes in which one of said shafts is journaled, said boxes having notches, a rock-shaft having an operating-handle, and arms extending therefrom for entering the notches to move the box and laterally separate the cutters, one the said shafts also being movable longitudinally in its bearings.

5. In a machine of the class described, the combination of two sets of slitting-cutters, one of said slitting-cutters having its shaft journaled in movable boxes, a rock-shaft having an operating-handle and arms engaging the boxes to laterally separate the cutters, the shaft of the movable set of cutters being movable endwise in its bearings, a spring engaging one end of the shaft, and a threaded stud engaging the other end of the shaft to adjust the cutters laterally into engagement.

6. In a slitting and rewinding machine, the combination of means for supporting a roll, a winding-shaft for the roll movably mounted above said supporting means, whereby it may rise as the roll increases in size, means for operating the supporting means to turn a roll supported thereby, means normally tending to disconnect said operating means from a source of power, a lever for holding the operating means connected with the source of power, a vertical guide-rod, and an arm movable along said rod and connected with said lever, the arm being in the path of the winding-shaft, whereby when the shaft rises to a certain point the lever will be tripped and the disconnecting means will operate.

851,016. INKING APPARATUS FOR PRINTING-PRESSES. FRANCIS MEISEL, Dorchester, Mass. Filed July 18, 1904. Serial No. 216,344.

Claim.—1. In an inking apparatus for printing-presses, the combination of inking-rolls, a laterally-movable distributer-roll, operating connections for the distributer-roll comprising a bell-crank lever having one arm connected to the distributer-roll, a pivoted yoke and pitman connecting to the other arm of the bell-crank lever, and a crank-pin operating the pitman and carried by a driving-shaft having its axis parallel with the axis of the distributer-roll.

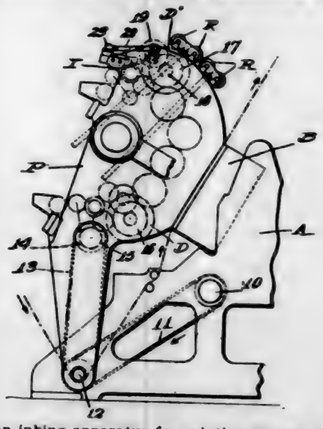

2. In an inking apparatus for printing-presses, the combination of inking-rolls, a laterally-movable distributer-roll coöperating therewith, a driving-shaft parallel with the axis of the distributer-roll, and adjustable connections for vibrating the distributer-roll from the driving-shaft comprising an adjustable crank-pin, a pitman, a swinging yoke, and a bell-crank lever, one arm of which is connected by the swinging yoke and pitman to the shaft, and the other arm of which is connected to the distributer-roll.

851,017. SLITTING AND REWINDING MECHANISM. FRANCIS MEISEL and CHARLES A. MEISEL, Boston, Mass., assignors to Meisel Press & Manufacturing Company, Boston, Mass., a Corporation of Massachusetts. Filed June 23, 1906. Serial No. 323,041.

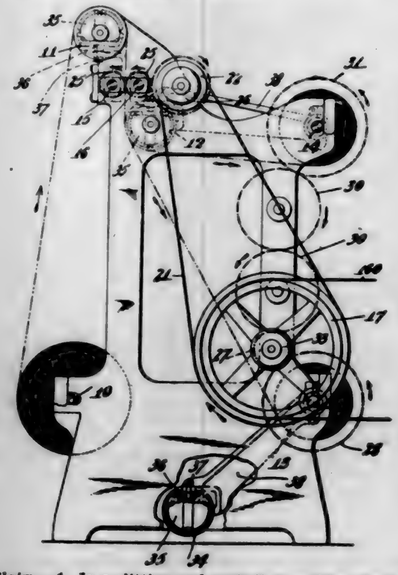

Claim.—1. In a slitting and rewinding machine, the combination of a pair of guides, the delivery side of one and the receiving side of the other being in the same vertical plane, whereby the material to be slit will pass downward from one to the other, a slitting device located between said guides, and means for withdrawing the slit sheets in a path at an angle to the plane of the material passing from one guide to the other, whereby the trimmings will fall substantially in the plane of the material between said guides and out of the path of the slit sheets.

2. In a slitting and rewinding machine, the combination of slitting-cutters, a rewinding-shaft, means for driving said shaft and said slitting-cutters, means for throwing the slitting-cutters out of operative connection with the driving means, and independent means for throwing the rewinding-shaft out of operative connection with the driving means, whereby the slitting-cutters and rewinding-shaft may be operated independently of each other from the same source of power.

3. In a slitting and rewinding machine, the combination of a slitting device, a plurality of rewinding-shafts, a pinion, means connected with said pinion for driving said rewinding-shaft, a driving-pulley loosely connected with said pinion, means for connecting the driving-pulley with the pinion, an additional pulley in operative connection with the driving-pulley, and detachable means connected with said additional pulley for driving the slitting device.

4. In a slitting and rewinding machine, the combination of a slitting device, a rewinding-shaft, a rotary power-transmitting member, a shaft on which said member is loosely mounted, a driving-pulley loosely mounted on the last-named shaft, means for connecting the driving-pulley with said member, an additional rotary member in operative connection with the driving-pulley, and detachable means connected with the additional rotary member for driving the slitting device.

5. The combination of a pair of shafts having circular slitting-knives thereon, gearing for driving said shafts, a plurality of rewinding-shafts, a pinion, means connected with said pinion for driving said rewinding-shafts, a shaft on which said pinion is loosely mounted, a driving-pulley loosely mounted on said last-named shaft, means for connecting said driving-pulley with the pinion, an additional pulley in operative connection with the driving-pulley, and detachable means connected with said additional pulley for driving the train of gearing connected with the slitting-cutters.

6. In a slitting and rewinding machine, the combination of a pair of guides, a slitting device located between the guides, means for withdrawing the slit sheets in a path at an angle to that in which the trimmings fall from the slitting device, said means comprising a rewinding-shaft and mechanism for driving said shaft, said driving mechanism being connected with the slitting device for operating it, and an adjustable center bearing for said rewinding-shaft.

7. In a slitting and rewinding machine, the combination of a slitting device, a rewinding-shaft and longitudinally-adjustable center bearings for the rewinding-shaft and slitting device.

8. In a slitting and rewinding machine, the combination of a slitting device, a rewinding-shaft and longitudinally-adjustable center bearings for the rewinding-shaft and slitting device, said bearings comprising a guide having a longitudinal slot, a frame supporting the bearing proper, and a nut for securing the frame at any desired point along said slot.

9. A slitting and rewinding machine comprising a shaft, and a longitudinally-adjustable bearing for said shaft comprising a guide having a longitudinal slot, a frame supporting the bearing proper, and means for securing the frame at any desired point along said shaft.

851,018. COOKING APPARATUS. WILLIAM F. MILLS, South Bend, Ind. Filed Sept. 30, 1905. Serial No. 280,812.

Claim.—A cooker of the class described embodying top and bottom disk members and an intermediate, hollow member engaging the disks near the edges thereof and forming therewith a cylindrical receptacle, said disks and said hollow member having alining openings, tie-rods disposed in the said openings and having heads countersunk in the bottom disk, thumb-nuts on the ends of the rods and engaging the top disk, packing between the contiguous faces of the disks and hollow member, and a bowed spring

on the bottom of the top disk adapted to engage the cover of a cooking vessel within the cooker, substantially as specified.

851,019. CAGE-RING FOR BALL-BEARINGS. JOHANN M. MODEL, Schweinfurt, Germany. Filed July 17, 1906. Serial No. 326,631.

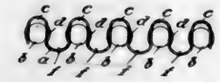

Claim.—1. A cage-ring, comprising a sinuous metallic strip, the walls of the undulations of which are indented so as to form on one side of the strip recesses to receive the balls and on the other side swells; and fillers of soft material inserted in the undulations between the swells; substantially as described.

2. A ball-bearing, comprising in combination two concentric collars grooved to present a race; a sinuous cage-ring located in the race and having substantially parallel portions, the alternate undulations of which ring have indented walls; balls located in these undulations; and soft fillers located in the other undulations; substantially as described.

851,020. GATE-OPENER. EDGAR T. MORRIS, Elburn, Ill. Filed Aug. 20, 1906. Serial No. 331,309.

Claim.—1. An opener for sliding doors or gates, comprising a pivoted rocker having depressions in its lower edge on opposite sides of the pivot, and a projecting arm connected to the door or gate, a lever, and a swinging bar connected at its upper end to the lever and having a projection at its lower end extending under the rocker, in position to engage in the depressions.

2. An opener for sliding doors or gates, comprising a pivoted rocker having a projecting arm connected to the door or gate, a lever, a bar connected at its upper end to the lever and having means at the lower end to engage and turn the rocker when lifted, and a roller carried by the bar and resting on the rocker and arranged to roll from the high end of the rocker to the low end and swing the bar accordingly.

3. An opener for sliding doors or gates, comprising a pivoted T-lever the main arm of which is connected to the door, a spaced rocking bar having bolts connecting its ends to the two side arms of the lever, the lower edge of the bar having depressions at opposite ends, an operating-lever, a lifting-bar connected at its upper end to the operating-lever and looped at its lower end over the said rocking bar, one of the branches of the loop being confined in the space between the said bolts, and a roller carried in slotted bearings in said branches and resting upon the upper edge of the said rocking bar.

4. The combination with a sliding door or gate, of a rock-shaft extending crosswise above the door and having at opposite ends laterally-extending arms provided with depending handles, and also having an oppositely-project-

ing arm, a bar connected to the latter arm and depending therefrom beside the door, a rocker connected to the bar and adapted to be turned when said bar is lifted, and an

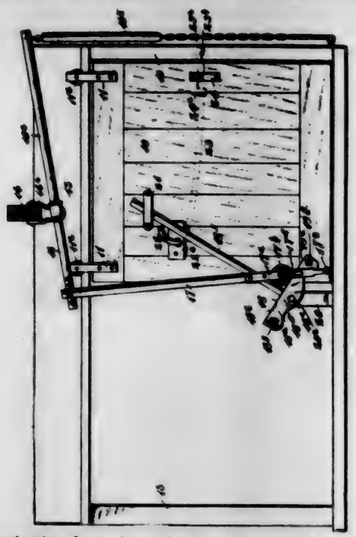

arm projecting from the rocker and connected to the door, to slide the same.

851,021. BOOK-STOCK CARRIER. JOHN S. MURRAY, Chicago, Ill. Filed Apr. 26, 1906. Serial No. 313,731.

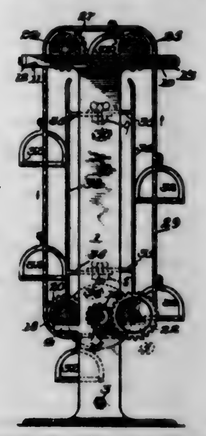

Claim.—1. In a carrier of the class described, a suitable support comprising two vertical frames, a set of four bearings mounted on each of said frames, a stud-shaft rotatably arranged in each of said bearings, a sprocket-wheel secured on the inner end of each one of said stud-shafts, a sprocket-chain mounted on each set of sprocket-wheels, rods connecting said chains, cages having hooks removably connected with said rods, gear-wheels mounted on two of the stud-shafts on each frame, a main shaft rotatably mounted in said frames, two gear-wheels secured on said main shaft and respectively engaging said first-named gears, and means for rotating the main shaft.

2. In a carrier of the class described, a suitable support comprising twin frames connected by two girders each having therein a longitudinal slot, a set of four pulleys mounted on each of said frames, a belt arranged on each set of pulleys, rods connecting the belts, carriages having bails provided with hooks for removably connecting the carriages with said rods, vertical guide-rails arranged on each side of the girders and each provided with slotted arms slidably secured on the girders by bolts arranged in the slots in the arms and girders, and means for causing the belts to move in the same direction with equal velocity.

3. In a carrier of the class described, a suitable support comprising twin frames, a set of four pulleys mounted on each of said frames, means for rotating one of the pulleys in each set, a belt arranged on each set of pulleys, rods connecting the belts, carriages removably connected with and carried by said rods and each provided in its bottom with a longitudinal slot, and two adjustable guards mounted on each carriage and secured thereto by bolts slidably arranged in said slot.

851,022. CAR. JAMES J. MCCARTHY, Chicago, Ill. Filed Dec. 29, 1905. Serial No. 293,780.

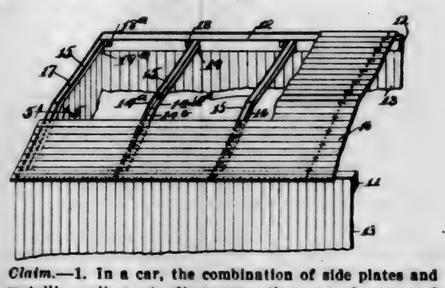

Claim.—1. In a car, the combination of side plates and a metallic carline extending across the car and connected with said side plates, said carline consisting of an angle-iron, the flanges whereof extend vertically and laterally respectively, the internal angle being on the upper side, the ends of said vertical flange being bent laterally so as to abut against said side plates and being secured thereto, and a wooden filler-strip fitted in the angle of the carline, the ends of said strip abutting against said side plates.

2. In a car, the combination of side plates, a metallic carline extending across the car and connected with said side plates, a filler-strip resting upon said carline and arranged parallel therewith, the ends of said filler-strip abutting against said side plates; wooden purlins extending longitudinally of the car and secured to said filler-strips, and a roof secured to said purlins.

3. In a car, the combination of side plates, and metallic carlines extending across the car, the ends of said carlines being bent downward and extended under the side plates to form supports therefor.

4. In a car, the combination of side plates, a metallic carline extending across the car, said carline consisting of an angle-iron, the flanges whereof extend vertically and laterally respectively, the internal angle being on the upper side, the ends of said vertical flange being bent laterally to engage said side plates and being secured thereto, and a filler-strip carried by said carline and arranged parallel therewith, the ends of said filler-strip abutting against said side plates.

5. In a car, the combination of side plates, a metallic carline extending across the car, said carline consisting of an angle-iron, the flanges whereof extend vertically and laterally respectively, the end portions of said vertical flange being bent laterally and secured to said side plates, and the end portions of said lateral flange being bent downward and extended under the side plates.

6. In a car, the combination of side plates, and a metallic carline extending across the car, said carline consisting of an angle-iron the flanges whereof extend vertically and laterally, respectively, the internal angle being on the upper side, the lateral flange of said carline being bent downward and extended under the side plates.

7. In a car, the combination of side plates, and a metallic carline extending across the car, said carline consisting of an angle-iron the flanges whereof extend vertically and laterally, respectively, the internal angle being on the upper side, the end portions of the vertical flange being bent laterally and secured to the side plates, the lateral flange of said carline being bent downward and extended under the side plates.

8. In a car, the combination of side plates, a metallic carline extending across the car, said carline consisting of an angle-iron the flanges whereof extend vertically and laterally, respectively, the internal angle being on the upper side, the end portions of the vertical flange being bent laterally and secured to the side plates, the lateral flange of said carline being bent downward and extended under the side plates, and a filler-strip carried by the carline.

9. In a car, the combination of side plates, metallic carlines extending across the car at the ends thereof and connected with said side plates, said carlines being composed of angle-iron, the internal angle of each of said carlines being on the outside, filler-strips carried by said carlines, and end boards secured to said filler-strips.

10. In a car, the combination of side and end sills composed of angle-iron, the flanges of said angle-irons being arranged vertically and horizontally respectively, the internal angle thereof being on the outside, the end portions of the vertical flanges of certain of said sills being bent at right angles so as to abut against the vertical flanges of the adjoining sill and being secured thereto, filler-blocks fitted in said sills, and siding secured to said filler-blocks.

11. In a car, the combination of side and end sills composed of angle-iron, the flanges of said sills being arranged vertically and horizontally respectively, the end portions of certain of said sills being bent at right angles and secured to the vertical flanges of the adjoining sill, the end portions of the horizontal flanges of certain of said sills being extended under and secured to the horizontal flanges of the adjoining sills, and filler-blocks fitted in said sills.

12. In a car, the combination of side and end sills composed of angle-iron, the flanges of said angle-irons being arranged vertically and horizontally respectively, the internal angle thereof being on the outside, the end portions of the horizontal flanges of certain of said sills being extended under and secured to the horizontal flanges of the adjoining sills, and filler-blocks fitted in said sills.

13. In a car, the combination of side and end sills composed of angle-iron, the flanges of said angle-irons being arranged vertically and horizontally respectively, the internal angle thereof being on the outside, the end portions of the horizontal flanges of certain of said sills being extended under and secured to the horizontal flanges of the adjoining sills, filler-blocks fitted in said sills, and siding secured to said filler-blocks.

851,023. MITER-BOX. ROBERT L. MCCARTNEY, Ottumwa, Iowa. Filed Mar. 15, 1906. Serial No. 306,250.

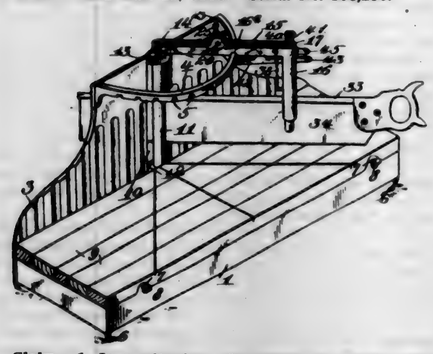

Claim.—1. In a miter-box, the combination with a base and back, of a quadrant projecting outwardly from the upper portion of the back a swinging saw-supporting arm coöperating with the quadrant, and devices connected to the arm for engaging and simultaneously and vertically adjusting different parts of the saw, a part of the said devices being vertically adjustable independent of the remaining part.

2. In a miter-box, the combination with a base and back, of a swinging saw-supporting arm held by the back and movable over the base, means for locking the arm against movement, and devices carried by the arm for engaging and simultaneously and vertically moving different parts of a saw, one of said devices being adjustable vertically independent of the other.

3. In a miter-box, the combination with a base, of a swinging saw-carrying arm movable over the base and provided with devices for vertically adjusting a saw and permitting the latter to freely move therethrough, a rotatable adjusting-head, and flexible means connected to the head and said devices.

4. In a miter-box, the combination of a bed, a swinging arm disposed thereover and provided with posts through which a saw is freely movable, vertically-adjustable holding devices in the post for a saw, and a rotatable member carried by the arm and having flexible elements connected to the said holding devices for simultaneously moving the latter.

5. In a miter-box, the combination with a base, of a holding device projected over the base, a swinging saw-supporting arm engaging the holding device and provided with vertically-movable devices for supporting a saw in operative relation to the base, means for simultaneously moving said devices in a vertical direction, an adjusting-screw coöperating with the upper extremity of one of said devices to adjust the same independent of the other of said devices, and a locking device to secure the arm in adjusted position.

6. In a miter-box, the combination with a base, of a quadrant rigidly held over a portion of the base, a swinging saw-supporting arm engaging the quadrant and having depending tubular posts, devices vertically movable in the posts and having slots to receive a saw, and mechanism carried by the arm for simultaneously and vertically moving the said devices and the saw engaging the same and including a rotatable head and flexible elements connected to the head and the said devices, the elements being secured to opposite portions of the head.

7. In a miter-box, the combination of a base, a back rising therefrom, a swinging arm movable over the base and foldable in close relation to the back, vertically-movable devices at opposite extremities of the arm for supporting a saw and through which the latter is freely slidable, flexible means attached to the said devices below the arm, and a member carried by the latter for simultaneously adjusting the flexible means.

8. In a miter-box, the combination of a base, a back rising from the base, a swinging arm movable over the base and having terminal hollow posts with slots therein for the reception and free movement of a saw therethrough, saw-holding members vertically adjustable in the said posts, a rotatable adjusting-head carried by the arm, flexible means attached to diametrically opposite portions of the head and also to the saw-holding members in the post, and means in one of the posts for adjusting the saw to compensate for variations in the horizontal positions thereof.

9. In a miter-box, the combination of a base, a swinging arm held above and movable over the base and provided with depending posts having slots therein for the reception and free movement of a saw therethrough, saw holding and adjusting members vertically movable in the posts, a rotatable adjusting-head carried by the arm, and having flexible means attached thereto and to the said members, and devices for locking the said head against movement.

10. In a miter-box, the combination of a base, an arm having swinging movement over the base and disposed in horizontal position, the said arm having terminal posts with slots therein for the reception and free movement therethrough of a saw, slotted holding members for the saw in the said posts, means for simultaneously adjusting

the said members, and an adjusting-screw in one of the posts coöperating with the saw-holding member in the latter to compensate for horizontal variations of the saw.

851,024. FIXTURE FOR ELECTRIC LAMPS. JAMES B. MCGINLEY, Allegheny, Pa., assignor to National Metal Molding Company, a Corporation of Pennsylvania. Filed Feb. 19, 1906. Serial No. 301,067.

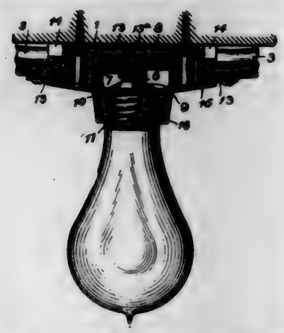

Claim.—1. A fixture for electric lamps having a base formed of insulating material and provided at its ends with recesses for the reception of the ends of conduits and with grooves in its upper face connecting the recesses, in combination with contact-plates projecting into said grooves and provided with means for connecting the conductors to said plates.

2. A fixture for electric lamps having a base formed of insulating material and provided at its ends with recesses for the reception of the ends of conduits and with grooves or channels in its upper face connecting said recesses and having a groove or channel in its under face, in combination with contact-plates projecting into the upper grooves or channels and provided with means for connecting the conductors thereto, and a conducting-strip arranged in the under groove and adapted to be connected to the conduits.

3. A fixture for electric lamps having a base formed of insulating material and provided with grooves or channels in its upper face for the reception of conductors, contact-plates secured to the base and projecting into the grooves, one of said plates provided with an outwardly-projecting finger, in combination with a cap or cover of insulating material and provided with a socket having lamp-engaging means formed integral therewith.

4. A fixture for electric lamps having a base formed of insulating material and provided with grooves or channels in its upper face for the reception of conductors, contact-plates secured to the base and projecting into the grooves, one of said plates provided with an outwardly-projecting finger, in combination with a cap or cover of insulating material and provided with a socket having spiral ribs or threads formed on its inner wall.

851,025. PENCIL-SHARPENER. DONALD MCKENZIE, South Dunedin, New Zealand. Filed Aug. 29, 1905. Serial No. 276,259.

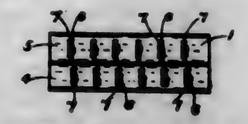

Claim.—A pencil-sharpener V-shaped in cross-section having integral therewith gripping-legs depending therefrom, and a series of parallel transverse cutters formed in the sides thereof, leaving corresponding slits therein, said cutters being bent up from said slits at an acute angle with the plane of said sides said cutters and slits extending nearly the width of said sides and the cutters and slits in one side being slightly in advance of those in the other, substantially as described.

851,026. AUTOMOBILE. FRANK A. NELSON, Duluth, Minn. Original application filed Oct. 12, 1905, Serial No. 282,384. Divided and this application filed Jan. 22, 1906. Serial No. 297,213.

Claim.—1. In an automobile, the combination of a frame or body portion mounted on wheels, one of said wheels being a steering-wheel, means including a motor mounted on said frame and adapted to drive some of said wheels independently of the steering-wheel, a second frame adjustably secured at one end to the first said frame, a caster for supporting the opposite end of the second frame, means including said motor for changing the adjustment of said second frame, and means for changing the direction of said steering-wheel.

2. In an automobile, the combination of a frame mounted upon wheels, one of which is a steering-wheel, means including a motor mounted on said frame and adapted to drive said steering-wheel in any direction, means including part of the first said means adapted to drive another of said wheels independently of said steering-wheel, and means for turning said steering-wheel on a vertical axis.

3. In an automobile, the combination of a frame or body portion, a depending fork journaled on said frame, a steering-wheel rotatably mounted in said fork, a gear mounted on the axle of said steering-wheel, a bracket on said fork, a pinion carried by said bracket and engaging said gear, a second pinion carried by said bracket, a gear mounted on the shaft of said fork and adapted to rotate therewith and engaging said second pinion, means carried by said frame for actuating the last said gear, and means for turning said fork on a vertical axis.

4. In an automobile, the combination of a frame mounted on wheels, and provided at one end with a transversely-directed rotatable shaft, pinions and a worm-gear carried by said shaft, a worm, adapted to engage said worm-gear, means carried by said frame for actuating said worm, a second frame provided at one end with slotted bearings adapted to receive said shaft, and with racks adapted to engage said pinions, and a wheel adapted to support the opposite end of said second frame.

851,027. SPARK-COIL. CHARLES P. L. NOXON, Syracuse, N. Y. Filed Feb. 5, 1906. Serial No. 299,441.

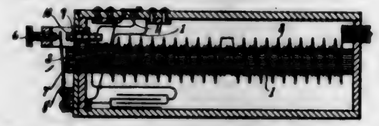

Claim.—1. The combination of a primary circuit, a secondary circuit, mechanical means for making and breaking the primary circuit, and means for interrupting the current in the primary circuit, the primary circuit including a plurality of electromagnetic means, each having a core, the cores thereof being independent of each other, said electromagnetic means operating the second-mentioned means to interrupt the current in the primary circuit, and to hold said second-mentioned means in its position assumed when interrupting the current while the first-mentioned means is making the circuit, substantially as and for the purpose specified.

2. The combination of a primary circuit, a secondary circuit, mechanical means for making and breaking the primary circuit, and means for interrupting the current in the primary circuit comprising an armature, the primary circuit including a plurality of electromagnetic means, each having a core, the cores thereof being independent of each other, said electromagnetic means operating to attract the armature to interrupt the current in the primary circuit and to hold said armature in its position assumed when interrupting the current while the first-mentioned means is making the circuit, substantially as and for the purpose described.

3. The combination of a primary circuit, a secondary circuit, mechanical means for making and breaking the primary circuit, and means for interrupting the current in the primary circuit comprising a terminal in the primary circuit, and an armature movable relatively to the terminal for making and breaking the primary circuit, the primary circuit including a plurality of electromagnetic means, each having a core, the cores thereof being arranged substantially parallel to each other, said electromagnetic means operating to attract the armature and move the same out of engagement with the terminal to interrupt the current in the primary circuit, and to hold said armature in its position assumed when interrupting the current while the first-mentioned means is making the circuit, substantially as and for the purpose set forth.

4. The combination of a primary circuit, a secondary circuit, mechanical means for making and breaking the primary circuit, and means for interrupting the current in the primary circuit comprising a terminal in the primary circuit, and an armature movable relatively to the terminal for making and breaking the primary circuit, the primary circuit including a plurality of electromagnetic means, each having a core, the cores thereof being arranged substantially parallel to each other, said electromagnetic means operating to attract the armature and move the same out of engagement with the terminal to interrupt the current in the primary circuit, and to hold said armature in its position assumed when interrupting the current while the first-mentioned means is making the circuit, one of the electromagnetic means being connected in the primary circuit to bridge the gap formed in the primary circuit at said terminal when the armature is attracted by the other electromagnetic means, substantially as and for the purpose specified.

5. The combination of a primary circuit, a secondary circuit, mechanical means for making and breaking the primary circuit, and means for interrupting the current in the primary circuit comprising a terminal in the primary circuit, and an armature movable relatively to the terminal for making and breaking the primary circuit, the primary circuit including a plurality of electromagnetic means, each having a core, the cores thereof being arranged substantially parallel to each other, said electromagnetic means operating to attract the armature and move the same out of engagement with the terminal to interrupt the current in the primary circuit, and to hold said armature in its position assumed when interrupting the current while the first-mentioned means is making the circuit, one of the electromagnetic means being connected in the primary circuit to bridge the gap formed in the primary circuit at said terminal when the armature is attracted by the other electromagnetic means, and being of greater resistance than the part of the primary circuit through which no current passes when the current is interrupted by the armature, substantially as and for the purpose described.

6. The combination of a primary circuit, a secondary circuit, mechanical means for making and breaking the primary circuit, means for interrupting the current in the primary circuit, the primary circuit including a plurality of electromagnetic means, each having a core, said electromagnetic means operating the second-mentioned means to interrupt the current in the primary circuit, and to hold said second-mentioned means in its position assumed when interrupting the current while the first-mentioned means is making the circuit, and means for rendering inoperative the electromagnetic means for holding the second-mentioned means in its position assumed when interrupting the current, substantially as and for the purpose set forth.

7. The combination of a primary circuit, a secondary circuit, mechanical means for making and breaking the primary circuit, means for interrupting the current in the primary circuit comprising a terminal in the primary circuit, and an armature movable relatively to the terminal for making and breaking the primary circuit, the primary circuit including a plurality of electromagnetic means, each having a core, the cores thereof being arranged substantially parallel to each other, said electromagnetic means operating to attract the armature and move the same out of engagement with the terminal to interrupt the current in the primary circuit, and to hold said armature in its position assumed when interrupting the current while the first-mentioned means is making the circuit, one of the electromagnetic means being connected in the primary circuit to bridge the gap formed in the primary circuit at said terminal when the armature is attracted by the other electromagnetic means, and a switch for connecting and disconnecting said one of the electromagnetic means from the primary circuit, substantially as and for the purpose specified.

851,028. SANITARY TOILET-CABINET. JACOB PFEFFER, Waterloo, Iowa. Filed Feb. 28, 1906. Serial No. 303,549.

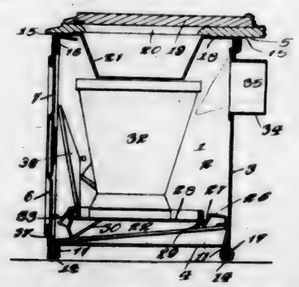

Claim.—1. A device of the character described, comprising a cabinet provided with an inclined trackway, an opening leading thereto, the trackway leading upwardly from said opening, and the cabinet also provided with a top or seat provided with an opening therethrough, and means for sliding a pail into and out of said cabinet on said trackway, whereby the pail will be raised toward the opening in the seat as it is moved inwardly on the trackway.

2. A device of the character described, comprising a cabinet provided with a front opening and a rearwardly-inclined trackway in the cabinet leading from said opening, the cabinet being also provided with a top or seat

having an opening therein, and a pail-supporting tray designed to slide on said trackway, as and for the purpose specified.

3. A device of the character described, comprising a cabinet provided with a front opening and with a top or seat having an opening extending therethrough, with a depending guard surrounding the opening in the seat, a frame supported in the bottom of the cabinet and provided with inwardly-inclined track members, and a tray designed to support a pail or the like and mounted to move on said track members.

4. A device of the character described, comprising a cabinet, a rearwardly-inclined trackway in said cabinet, a tray mounted to slide on said trackway, and means for maintaining said tray in a horizontal position while sliding on said trackway.

5. A device of the character described, comprising a cabinet, a frame detachably supported in the bottom of the cabinet and embodying side-supporting ledges, inclined track members and front and rear cross-bars connecting the two, of which the rear cross-bar forms a forwardly-facing shoulder, and a tray designed to support a pail or the like and adapted to slide on said track members and abut against the said shoulder, as and for the purpose set forth.

6. A device of the character described, comprising a cabinet, an inclined trackway in the bottom of the cabinet, and a tray designed to support the pail or the like and mounted to slide on said trackway, said tray being provided at its front edge with a cross-bar adapted to support said edge on a level with the other edge, substantially as specified.

7. A device of the character described, comprising a cabinet, a frame detachably supported in the bottom of the cabinet and embodying U-shaped side-supporting ledges, inclined track members having side edges turned upon themselves and crimped over the upper edges of the inner members of the U-shaped side-supporting ledges, and front and rear cross-bars connecting the two inclined track members, and a tray designed to support a pair and adapted to slide on the said track members, said tray being provided at its front edge with a cross-bar adapted to support said edge on a level with the other edge, as and for the purpose set forth.

8. A device of the character described, comprising a cabinet, a frame supported in the bottom of the cabinet and forming an inclined trackway, and a pail-supporting tray mounted to slide on said trackway, said tray being provided with a downwardly-extending rear cross-bar 29 and a front cross-bar 30, the latter cross-bar being higher than the former and adapted to support the tray on a level, and the tray also being provided with an annular flange 31, as and for the purpose set forth.

851,029. TROLLEY-RETRIEVER. SIMEON F. PIERCE, St. Paul, Minn. Filed Oct. 30, 1905. Serial No. 284,028.

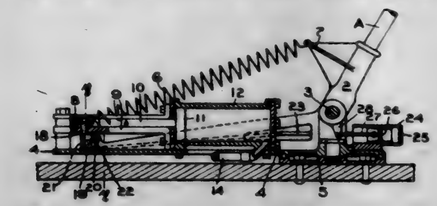

Claim.—1. The combination, with a trolley-pole, of a cylinder, a piston and piston-rod working therein, spring connection between the trolley-pole and piston-rod, means normally locking the piston-rod in position to hold the trolley-pole raised, and means actuated by an upward movement of the trolley-pole to release said locking means.

2. The combination, with a trolley-pole, of a cylinder, a piston and piston-rod working therein, spring connection between the trolley-pole and piston-rod, means normally locking the piston in position to hold the trolley-pole raised, means actuated by an upward movement of the trolley-pole to release said locking means, a source of fluid-pressure, a conduit leading from said source of pressure to the cylinder, and a three-way valve arranged in the conduit.

3. The combination, with a trolley-pole, of a cylinder adjacently arranged, a piston and piston-rod working within the cylinder, a source of fluid-pressure, manually-operated means for connecting the source of pressure with the cylinder, a spring-controlled dog normally holding the piston-rod in withdrawn position, and a longitudinally-movable dash-pot comprising a cylinder member and a piston member, one of said members being connected with the dog and the other member with the trolley-pole.

4. In combination, a trolley-pole, a cylinder, a piston and piston-rod working therein, spring connection between the piston-rod and pole, a spring-controlled dog normally holding the piston-rod in withdrawn position, a rock-shaft, a dog-supporting arm carried by the rock-shaft, a rocker-arm also carried by the rock-shaft but at an angle with the dog-supporting arm, a dash-pot comprising a cylinder member and a piston member, a rod connected at one end with the rocker-arm and at the other end with one of the dash-pot members, the other dash-pot member being connected with the trolley-pole.

5. The combination, with a trolley-pole, of a cylinder, a piston and piston-rod working therein, a source of fluid-pressure communicating with the cylinder, spring connection between the trolley-pole and piston-rod, means normally locking the piston-rod in position to hold the trolley-pole raised, and means actuated by an upward movement of the trolley-pole to release said locking means.

6. The combination, with a trolley-pole, of spring means connected therewith, a locking device for holding the spring in pole-raising position, a longitudinally-movable dash-pot comprising a cylinder member and a piston member, one of said members being connected with the locking device and the other member with the trolley-pole.

851,030. MAGAZINE-BOILER. ANDERS B. RECK, Hellerup, Denmark. Filed July 26, 1906. Serial No. 327,839.

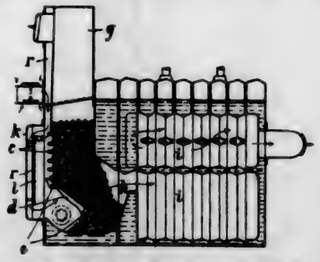

Claim.—1. In a boiler for steam or water the combination of a fuel-magazine, a grate divided into an upper vertical part and a lower sloping part situated below the fuel-magazine and a combustion-chamber with water-cooled walls open as well against the fuel-magazine as against the ash-pit behind the sloping part of the grate.

2. In a boiler for steam or water the combination of a fuel-magazine, a grate divided into an upper vertical part and a lower sloping part situated below the fuel-magazine, a combustion-chamber with water-cooled walls open as well against the fuel-magazine as against the ash-pit behind the sloping part of the grate and an air-channel with access for the outside air, said channel covering the front of the boiler and opening into the ash-pit.

3. In a boiler for steam or water the combination of a fuel-magazine, a grate divided into an upper vertical part and a lower sloping part situated below the fuel-magazine, a combustion-chamber with water-cooled walls open as well against the fuel-magazine as against the ash-pit behind the sloping part of the grate, and an air-channel opening into the said combustion-chamber through a fire-brick lining over said chamber.

4. In a boiler for steam or water the combination of a fuel-magazine, a grate divided into an upper vertical part and a lower sloping part situated below the fuel-magazine, a combustion-chamber with water-cooled walls open as well against the fuel-magazine as against the ash-pit behind the sloping part of the grate, and horizontal pipes between said water-cooled chambers, said pipes forming the vertical part of the grate and the supports of the sloping part of the grate, and said water-cooled chamber being connected to the boiler one at its bottom and the other at its top.

5. In a boiler for steam or water the combination of a fuel-magazine, a grate divided into an upper vertical part and a lower sloping part situated below the fuel-magazine and sloping down against a horizontal pipe supporting the back end of the grate and having its ends inserted into the inner walls of the boiler or the inner walls of water-cooled chambers connected to the boiler, and a combustion-chamber open as well against the fuel-magazine as against the ash-pit behind the said pipe supporting the grate.

851,031. ELECTRICAL-IMPULSE-COUNTING SWITCH. HOMER J. ROBERTS, Evanston, Ill. Filed Nov. 4, 1905. Serial No. 285,829.

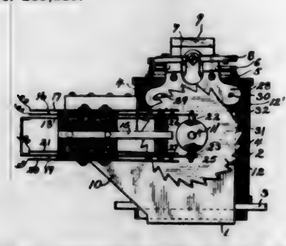

Claim.—1. An electrical-impulse-counting device, comprising a ratchet member, an electrically-actuated escapement mechanism controlling the movement of said ratchet member, means for sending electrical pulsations through said counting device, and means actuated by the controlling device for closing a working circuit after the initial actuation of the instrument whereby the sending of fragmentary impulses over said working circuit is avoided.

2. An automatic impulse-counter, comprising a ratchet member having teeth corresponding to a progressively-regular series of numerals means for setting said ratchet-wheel initially in position corresponding to any desired one of said numerals, electromagnet mechanism for controlling said ratchet member, circuit connections for said electromagnet mechanism, a working circuit, contact devices controlling said working circuit and actuated by said electromagnet mechanism, and means for sending current pulsations over each of said circuits.

3. An automatic impulse-counter, comprising an automatically-returned ratchet member, electromagnet mechanism for controlling said ratchet member, circuit connections for said electromagnet mechanism, a working circuit, contact devices controlling said working circuit and actuated by said electromagnet mechanism, means for manually setting said ratchet member at any predetermined number of steps from sero, and means for sending current pulsations over each of said circuits.

4. An automatic impulse-counter, comprising a spring-returned ratchet-wheel, an escapement controlling said ratchet-wheel, a magnet for actuating said escapement, circuit connections for said magnet, a working circuit, and means for sending pulsations of opposite polarity alternately through said magnet and over said working circuit.

5. An automatic impulse-counter, comprising a spring-returned ratchet-wheel, an escapement controlling said ratchet-wheel, a magnet for actuating said escapment, circuit connections for said magnet, a working circuit, contact devices controlling said working circuit and controlled by said magnet, and means for sending current impulses alternately through said magnet and over said working circuit, those pulsations which were sent through the magnet being of opposite polarity from those which were sent over the working circuit.

6. In combination with an independently-running source of recurrent electrical pulsations, a counting mechanism controlled by and operating in synchronism with said pulsations, and itself controlling pulsations sent to a line-circuit, and means operating automatically to arrest the sending of impulses of like character to line at the end of a preset count.

7. In combination with an independently-running source of recurrent electrical pulsations, a counting mechanism controlled by and operating in synchronism with said pulsations, and itself controlling pulsations sent over a line-circuit, means operating automatically to arrest the sending of impulses of like character to line at the end of a preset count, and means operating automatically to place the line-circuit initially in effective condition during an interval between these pulsations which are sent to line, whereby fragmentary portions of full pulsations are prevented from being sent over the line-circuit.

8. In combination with an independently-running source of alternating electrical pulsations, a counting mechanism controlled by and operating in synchronism with the pulsations of one polarity, means controlled by said counting mechanism and operating to send over a line-circuit pulsations of opposite polarity, and means operating automatically to arrest the sending of impulses of like character to line at the end of a preset count.

9. In combination with an independently-running source of recurrent electrical pulsations, a counting mechanism controlled by and operating in synchronism with said pulsations, means controlled by said counting mechanism for sending pulsations to a line-circuit, and means operating automatically to reverse the pole connections of said line-circuit at the end of a preset count.

10. In combination with a source of current generation, pole-changing mechanism, connected circuits comprising positive and negative contact devices and a conductor connected with each, a common-return conductor constantly connected with the source of generation and also connected with said positive and negative conductors, a counting mechanism controlled by and operating in synchronism with the pulsations sent over one of said circuits, and means controlled by said counting mechanism operating automatically to arrest the sending of impulses of opposite polarity over the other circuit at the end of a preset count.

11. In combination with a source of current generation, pole-changing mechanism, connected circuits comprising positive and negative contact devices and a conductor connected with each, a common-return conductor constantly connected with the source of generation and also connected with said positive and negative conductors, a counting mechanism controlled by and operating in synchronism with the pulsations sent over one of said circuits, and means controlled by said counting mechanism operating automatically to arrest the sending of impulses of opposite polarity over the other circuit at the end of a preset count and to effect the sending of a series of impulses of opposite polarity over said latter circuit.

12. In combination with an independently-running source of recurrent electrical pulsations, a counting mechanism controlled by and operating in synchronism with said pulsations, means for manually setting the counter member of said counting mechanism and means for closing a circuit subsequent to the initial movement of said counter member comprising a contact device mounted to move with said counter and frictionally driven by the latter, a coöperating contact device, and a stop arranged to limit the movement of the frictionally-driven contact device away from its coöperating contact.

13. In combination with an independently-running source of recurrent electrical pulsations, a counting mech-

anism comprising a ratchet-wheel, means for setting said ratchet-wheel manually, electrically-actuated means for effecting a step-by-step movement of the ratchet-wheel, and means for closing a circuit by, and subsequent to, the initial counting movement of the ratchet-wheel comprising a contact device frictionally mounted upon a part rotating with the ratchet-wheel, a relatively stationary coöperating contact device, and a stop for limiting the arc of movement of the frictionally-driven contact device.

14. A counting mechanism comprising a main shaft, a ratchet-wheel mounted thereon, a spring tending to normally return said ratchet-wheel to a definite position, an electrically-actuated escapement mechanism controlling the return of the ratchet under the action of said spring, and means for manually advancing the ratchet-wheel in a predetermined number of steps.

15. A counting mechanism comprising a main shaft, a ratchet-wheel mounted thereon, a spring tending to normally return said ratchet-wheel to a definite position, an electrically-actuated escapement mechanism controlling the return of the ratchet under the action of said spring, and means for manually advancing the ratchet-wheel in a predetermined number of steps comprising a dial rigid upon the main shaft, an arm adapted to be engaged with said dial at points corresponding to the angular positions of the several ratchet-teeth, and a stop arranged to arrest the movement of the interengaged arm and dial at a definite angular position.

16. An electrical impulse-counting mechanism comprising a spring-actuated main shaft, a ratchet-wheel mounted thereon, an escapement mounted to coöperate with said ratchet-wheel, a magnet arranged to operate said escapement, a dial mounted upon said main shaft and provided with recesses or apertures corresponding to the several angular positions of the ratchet-teeth, a setting-arm loosely journaled concentric with the dial and provided with a finger adapted to engage the recesses or apertures of the dial, and a stop mounted in position to engage and arrest the oscillatory movement of the arm when the latter is interengaged with the dial.

17. An electrical impulse-counting mechanism comprising a spring-actuated main shaft, a ratchet-wheel mounted thereon, an escapement mounted to coöperate with said ratchet-wheel, a magnet arranged to operate said escapement, a dial mounted upon said main shaft and provided with recesses or apertures corresponding to the several angular positions of the ratchet-teeth, a setting-arm loosely journaled concentric with the dial and provided with a finger adapted to engage the recesses or apertures of the dial, a spring arranged to normally hold the arm retracted from the dial, and a stop mounted in position to engage and arrest the oscillatory movement of the arm when the latter is interengaged with the dial.

18. An electrical impulse-counting mechanism comprising a main shaft, a ratchet-wheel mounted thereon, an escapement mechanism controlling the ratchet-wheel, a magnet arranged to operate said escapement mechanism, a cam rotating with the ratchet-wheel, a wiper arranged to coöperate with said cam and contact devices controlled by said wiper.

19. An electrical impulse-counting mechanism comprising a main shaft, a ratchet-wheel mounted thereon, an escapement mechanism controlling the ratchet-wheel, a magnet arranged to operate said escapement mechanism, a circular cam mounted to rotate with said ratchet-wheel and provided with a peripheral recess, a switch-spring wiper coöperating with said cam, and front and back contacts with which said switch-spring coöperates.

20. An electrical impulse-counting mechanism comprising a main shaft, a ratchet-wheel mounted thereon, an escapement mechanism controlling the ratchet-wheel, a magnet arranged to operate said escapement mechanism, a circular cam mounted concentrically with said ratchet-wheel and moving with the latter, said cam being provided with diametrically opposite recesses, a pair of switch-springs, each carrying a wiper, arranged to coöperate with said cam, and back and front contact devices coöperating with said switch-springs.

851,032. ELECTRIC FUSE. ULYSSES G. ROGERS, Columbus, Ohio, assignor to Jacob Bernhard, Columbus, Ohio. Filed May 17, 1906. Serial No. 317,414.

Claim.—1. In an electric fuse, the combination with an inclosing shell for the reception of the fuse-wire, of an arc-preventing device within said shell consisting of strips of non-conductor of electricity interfolded and forming pockets closed at two edges, said pockets standing transversely of the shell.

2. In an electric fuse, the combination with an inclosing shell for the reception of the fuse-wire, of an arc-preventing device within said shell consisting of two strips of non-conductor of electricity bent back and forth transversely on each other to form pockets, said pockets dividing the interior of the shell transversely.

3. In an electric fusing device, the combination of a shell or holder, a fusing-wire, and a filler for said shell consisting of strips or ribbons of a non-conductor of electricity interfolded to form pockets which stand transversely of the fusing-wire.

851,033. TRUNK. HENRY W. ROUNTREE, Richmond, Va., assignor of one-half to Henry W. Cottrell, Richmond, Va. Filed May 18, 1906. Serial No. 317,574.

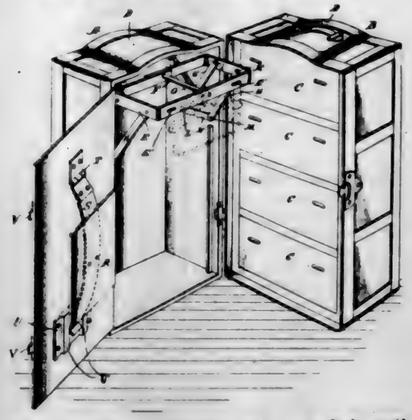

Claim.—1. The combination with a wardrobe-section; of a frame in the upper part of said section and means to support the frame in the section and permit it to be extended therefrom, a hinged closure for the section and a yielding compressor on the closure below the frame.

2. The combination with a wardrobe-section; of a closure for the section, and a yielding compressor hinged to the closure, substantially as described.

3. In a trunk, the combination with a wardrobe-section, and a second section hinged to one side of said wardrobe-section; of a door hinged to the other side of said section and a compressing member on the door, substantially as and for the purpose set forth.

4. In a trunk, the combination with a wardrobe-section; of a clothes-supporting frame therein, means to movably support the frame in the section and permit it to be drawn forward from the section when the trunk is open, a door hinged to one side of said section, a yielding compressor on the door to engage the clothes below the frame when the door is closed and a second trunk-section hinged to the other side of the wardrobe-section, substantially as described.

5. The combination with a wardrobe-section; of a closure therefor, a bow-spring hinged at one end to the closure, a wear-plate on the closure on which the other free end of said spring slides, means to prevent the lateral displacement of said free end of the spring and a compressor mounted on the spring, substantially as and for the purposes set forth.

6. In a trunk, the combination with a wardrobe-section; of a flat metal rectangular frame having hand-holes in its front wall, a clothes-hanger-supporting rod extending across the frame, a pair of flat metal links at each side of the frame pivotally connected at their upper ends to the frame and at their lower ends pivotally connected to the side walls of the wardrobe-section near their top and limiting means secured to the side walls of the section against which the rear link of each pair abuts when the frame is extended from the section.

7. In a trunk, the combination with a wardrobe-section, and a closure therefor; of a spring member hinged to the closure and a compressing member mounted on the spring member, said spring member permitting the compressing member to have universal movement.

851,034. CLOCK-ESCAPEMENT. MAX SCHUCHT, Milwaukee, Wis. Filed Feb. 16, 1906. Serial No. 301,344.

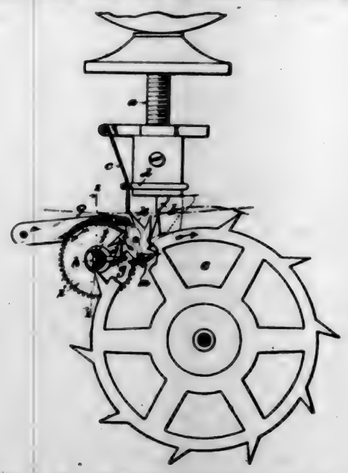

Claim.—1. In a clock the combination with the pendulum, of a scape-wheel having teeth constructed and arranged to engage one after another with the pendulum and to impart impulses thereto when said wheel is released, a stop adapted to normally hold said wheel against turning, and stop-actuating mechanism operated by the pendulum and adapted to intermittently release said wheel at intervals, each including several oscillations of the pendulum in each direction, substantially as described.

2. In a clock-escapement the combination with the pendulum, of a scape-wheel the teeth of which are constructed and arranged to engage with and impart impulses to the pendulum; a rotary detent normally engaging a tooth of the scape-wheel and holding said wheel in such position that its teeth will be cleared by the pendulum, a wheel provided with a projection arranged to engage with said detent and to turn it to releasing position, and mechanism operated by the pendulum to turn said detent-actuating wheel, substantially as described.

3. In a clock-escapement the combination with the pendulum, of a scape-wheel having teeth constructed and arranged to engage one after another with the pendulum and to impart impulses thereto at intervals, a rotary cylindrical detent arranged to normally engage with a tooth of the scape-wheel and hold it clear of the pendulum, and recessed on one side to receive and permit the passage of such tooth, and a wheel actuated by the pendulum and adapted to turn said detent, substantially as described.

4. In a clock-escapement the combination with the pendulum provided with a pawl, of a scape-wheel adapted when released to engage with and impart impulses to the pendulum, a rotary detent adapted to normally engage with a tooth of said wheel and provided with an arm, a wheel having a projection arranged to engage with the arm of said detent and turn it to releasing position, and a toothed wheel actuated by the pawl on the pendulum, geared with said detent-turning wheel and provided with an arm arranged to quickly turn the detent forward into releasing position when its arm is engaged by the other arm, substantially as described.

5. In a clock-escapement the combination with the pendulum provided with a pawl, of a scape-wheel having teeth normally clearing the pendulum and adapted when released to engage therewith one after another and to impart impulses thereto, a rotary detent normally engaging with a tooth of said wheel and provided with an arm and with a recess for clearing and releasing such tooth, a gear-wheel having a projection arranged to engage with the arm of said detent and to turn the detent to releasing position at each revolution of the gear-wheel, a toothed wheel actuated by the pawl on the pendulum and provided with an arm arranged to quickly turn the detent forward into releasing position when its arm is engaged by the other arm which is extended at the end and serves as a stop to prevent overthrow of the detent after each release of the scape-wheel, and a pinion mounted on the toothed wheel-arbor and meshing with said gear-wheel, substantially as described.

851,035. TOOL FOR MOLDING CORNICES. HARRY E. SHARP, Rockville, Conn., and LOUIS KENTANA, Brooklyn, N. Y., assignors of one-third to George Ulrich, Hartford, Conn. Filed Feb. 5, 1906. Serial No. 299,535.

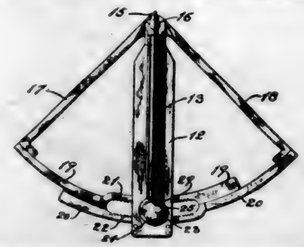

Claim.—1. A cornice-molding tool, comprising a support, side bars pivoted to said support, overlapping arms projecting from said bars and each having a rack; a pinion journaled in the support; and a molding-die projecting from said support.

2. A cornice-molding tool comprising a support; a molding-die projecting from said support; side bars pivoted to the support; racks rigid with the side bars and projecting laterally from said side bars; a pinion engaging said racks; and means for locking said pinion.

3. The combination, with a pair of pivoted side bars, of a support connected to said side bars; a molding-die carried by said support; arms projecting from the outer ends of the side bars and each having a rack; a shaft journaled in the support; a pinion carried by said shaft and in engagement with the racks; means whereby the shaft may be rotated; a collar on the shaft; and a chambered jam-nut threaded upon the shaft adjacent to said collar.

851,036. DEVICE FOR MOLDING CORNICES. HARRY E. SHARP, Rockville, Conn., assignor of one-third to George Ulrich, Hartford, Conn. Filed July 24, 1906. Serial No. 327,506.

Claim.—1. The combination, with devices mounted for swinging movement, of a mold or pattern carrier; and

toggle mechanism connected with said carrier, and serving to adjust said devices.

2. The combination, with devices connected for swinging movement at their ends, and comprising a pair of elements pivoted to each other to constitute a frame, of a mold or pattern carrier; and toggle mechanism for adjusting said carrier.

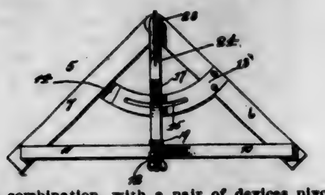

3. The combination, with a pair of devices pivoted together, of a mold-carrier connected to said devices, and toggle-levers pivoted to said devices, and adjustable upon said carrier.

4. The combination, with a mold-carrier and mold, of bars pivoted thereto, and toggle-levers connected to the bars, and united for sliding movement upon the mold-carrier.

5. The combination, with pivoted side bars, of toggles united for swinging movement to said side bars; a carrier having a groove at one end; a former-plate secured to the other end of the carrier; and a securing device passing through the toggles, and having a head working in the groove of said carrier.

851,037. NUT-LOCK. WILLIAM T. SOLOMON, Pittsburg, Pa., assignor of one-half to Robert C. Hall, Pittsburg, Pa. Filed Sept. 27, 1906. Serial No. 336,436.

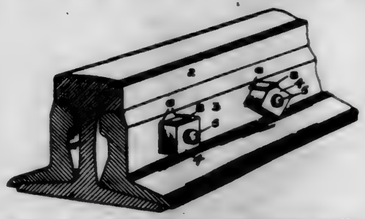

Claim.—1. A nut-lock staple having substantially parallel spring-arms, each arm being provided with a bend or hump at or adjacent to its end.

2. In a nut-lock, the combination of a fish-plate having apertures located in the path of rotation of the nut, in combination with a nut-lock staple having substantially parallel spring-arms provided with bends or humps adapted to be held in engagement with the fish-plate at the inner ends of the apertures.

3. In a nut-lock, the combination of a fish-plate having apertures, said apertures being enlarged or reamed out at the inner end where they emerge through the fish-plate and located in the path of rotation of the nut, in combination with a nut-lock staple having substantially parallel spring-arms provided with bends or humps adapted to engage with the walls of said enlarged ends of the apertures.

851,038. MULTICOLOR-PRINTING MACHINE. LOUIS W. SOUTHGATE, Worcester, Mass., assignor to The Campbell Printing Press & Manufacturing Co., New York, N. Y., a Corporation of New York. Filed Jan. 19, 1900. Renewed July 28, 1906. Serial No. 328,246.

Claim.—1. The combination in a multicolor-printing machine, of an impression-cylinder, a reciprocating bed cooperating therewith and carrying a printing plate or form, a color-design cylinder capacitated to receive a plurality of color-design plates circumferentially, a separate inking apparatus for each color-design plate, means for taking the ink from each inking apparatus to the color-design-plate cylinder so that the ink from each apparatus will be applied to one color-design plate only, and a rotary transfer-cylinder on which the colors are registered circumferentially and axially to make a positive of the multicolor imprint and from which the positive is applied to the printing plate or form.

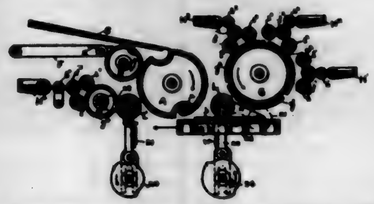

2. The combination in a multicolor-printing machine, of an impression-cylinder, a reciprocating bed cooperating therewith and carrying a printing plate or form, a color-design cylinder capacitated to receive a plurality of color-design plates circumferentially, an inking apparatus for each color-design plate cooperating with said color-design-plate cylinder, a transfer-cylinder on which the colors are registered circumferentially and axially to make up a positive of the multicolor imprint, and means for moving the transfer-cylinder to contact with the form on the bed as the bed moves in one direction, and to clear the form as the bed moves in the opposite direction to apply the positive to the printing plate or form.

3. The combination in a multicolor-printing machine, of an impression-cylinder, a reciprocating bed cooperating therewith and carrying a printing plate or form, a color-design cylinder continuously revolving in one direction and capacitated to receive a plurality of color-design plates circumferentially, an inking apparatus for each color-design plate, a transfer-cylinder on which the colors are registered circumferentially and axially geared to the color-design-plate cylinder, arranged to take the ink from all the color-design plates to make a positive of the multicolor imprint, and means for moving the transfer-cylinder to contact with the form on the bed as the bed moves in one direction, and to clear the form as the bed moves in the opposite direction to apply the positive to the printing plate or form.

4. The combination in a multicolor-printing machine, of an impression-cylinder, a reciprocating bed cooperating therewith, a color-design-plate cylinder capacitated to receive three color-design plates and a plate for black ink circumferentially, four inking apparatuses cooperating with said color-design-plate cylinder, and a transfer-cylinder on which the colors are registered circumferentially and axially arranged to take ink from the plates, and apply the same to the printing-form carried by the bed.

5. The combination in a multicolor-printing machine, of an impression-cylinder, a reciprocating bed cooperating therewith, a back delivery for the sheets, a color-design-plate cylinder arranged front of the impression-cylinder and adapted to receive a plurality of color-design plates circumferentially, an inking apparatus for each color-design plate cooperating with the color-design-plate cylinder, and a rotary transfer-cylinder arranged to take ink from the color-design plates, and apply the same to the printing-form carried by the bed.

6. The combination in a multicolor-printing machine, of an impression-cylinder, a reciprocating bed cooperating therewith, a color-design-plate cylinder adapted to receive a plurality of color-design plates circumferentially, a plurality of inking apparatuses cooperating with the color-design-plate cylinder, a transfer-cylinder mounted in pivoted arms, and geared to the color-design-plate cylinder, and means for moving the transfer-cylinder so that the same will take ink from the color-design plates and apply the same to the form carried by the bed.

7. The combination in a multicolor-printing machine, of an impression-cylinder, a reciprocating bed cooperating

therewith, a color-design-plate cylinder capacitated to receive a plurality of color-design plates circumferentially, an inking apparatus for each color-design plate, a rotary transfer-cylinder, and means for moving the transfer-cylinder so that it will alternately and separately contact with the color-design-plate cylinder and the printing-form carried by the bed.

851,039. MULTICOLOR-PRINTING MECHANISM. LOUIS W. SOUTHGATE, Worcester, Mass., assignor to The Campbell Printing Press & Manufacturing Co., New York, N. Y., a Corporation of New York. Filed Nov. 27, 1899. Renewed Aug. 2, 1906. Serial No. 328,952.

Claim.—1. In a multicolor-printing press, the combination of a printing plate or form carrier, an impression member cooperating therewith, a separate color-design-plate carrier adapted to carry a plurality of color-design plates circumferentially, an inking apparatus for each color-design plate, means for taking ink from each apparatus and applying the same to one color-design plate only, and a transfer device arranged between the printing plate or form carrier and the color-design-plate carrier on which the various colors are registered together circumferentially and axially to make a positive of the multicolor impression and from which the positive is applied to the printing plate or form.

2. In a multicolor-printing press, the combination of a printing plate or form carrier, an impression member cooperating therewith, a separate color-design-plate carrier adapted to carry a plurality of color-design plates circumferentially, an inking apparatus for each color-design plate, means for taking the ink from each apparatus and applying the same to one color-design plate only, and a transfer-cylinder having a surface area equal to the printing-plate, arranged between the printing plate or form carrier and the color-design-plate carrier on which the various colors are registered together circumferentially and axially to make a positive of the multicolor impression, and from which the positive is applied to the printing plate or form.

3. In a multicolor-printing press, the combination of a rotary printing-plate carrier, a rotary impression member cooperating therewith, a separate rotary color-design-plate carrier adapted to carry a plurality of color-design plates circumferentially, an inking apparatus for each color-design plate, means for taking ink from each apparatus and applying the same to one color-design plate only, and a rotary transfer-cylinder having a surface area equal to the printing-plate, arranged between the rotary printing-plate carrier and the rotary color-design-plate carrier on which the various colors are registered together circumferentially and axially to make a positive of the multicolor impression and from which the positive is applied to the printing-plate.

4. In a multicolor-printing press, the combination of a rotary printing-plate carrier, a rotary impression member cooperating therewith, a separate color-design-plate carrier rotating in the same direction as the rotary printing-plate carrier, and adapted to carry a plurality of color-design plates circumferentially, an inking apparatus for each color-design plate, means for taking the ink from each apparatus and applying the same to one color-design plate only, and a rotary transfer-cylinder having a surface area equal to the printing-plate, arranged between the rotary printing-plate carrier and the rotary color-design-plate carrier on which the various colors are registered together circumferentially and axially to make a positive of the multicolor impression and from which the positive is applied to the printing-plate.

5. In a multicolor-printing press, the combination of a rotary printing-plate carrier, a rotary impression member cooperating therewith, a separate rotary color-design-plate carrier adapted to carry a plurality of plates circumferentially, an inking apparatus for each plate, means for taking the ink from each apparatus and applying the same to one color-design plate only, and a rotary transfer-cylinder arranged between the rotary printing-plate carrier and the rotary color-design-plate carrier, and making as many revolutions relatively to the rotary color-design-plate carrier as the number of color-design plates said color-design-plate carrier is adapted to receive circumferentially, on which the various colors are registered together circumferentially and axially to make a positive of the multicolor design, and from which the positive is applied to the printing-plate.

6. In a multicolor-printing press, the combination of a printing-plate carrier, an impression member cooperating therewith, a separate color-design-plate carrier adapted to carry a plurality of color-design plates, an inking apparatus for each color-design plate, a transfer member on which the various colors are registered together circumferentially and axially, arranged between the color-design-plate carrier and the printing-plate carrier, a plate for applying black ink, an inking apparatus for inking this plate, and a transfer member arranged to take ink from this plate and apply it to the printing-plate.

7. In a multicolor-printing press, the combination of a printing-plate carrier, an impression member cooperating therewith, a separate color-design-plate carrier adapted to carry a plurality of color-design plates, an inking apparatus for each color-design plate, a transfer member on which the various colors are registered together circumferentially and axially, arranged between the color-design-plate carrier and the printing-plate carrier, a plate for applying black ink, and an inking apparatus therefor, and a transfer member for taking the ink from this plate and applying the same to the printing-plate after the latter has received the colored inks.

8. In a multicolor-printing press, the combination of a printing plate or form carrier, an impression member cooperating therewith, a separate rotating color-design-plate carrier adapted to receive three color-design plates circumferentially, three inking apparatuses cooperating therewith, means for applying the ink from each apparatus to one of the said color-design plates only, and a transfer member making three turns to each turn of the color-design-plate carrier arranged between the color-design-plate carrier and printing plate or form carrier, on which the various colors are registered together circumferentially and axially, and from which the same are applied to the printing plate or form.

9. In a multicolor-printing press, the combination of a printing-plate carrier, an impression member cooperating therewith, a separate color-design-plate carrier adapted to carry three color-design plates, three inking apparatuses cooperating therewith, a transfer member on which the various colors are registered together circumferentially and axially, arranged between the color-design-plate carrier and printing-plate carrier, and making three revolutions to each revolution of the color-design-plate carrier, a separate plate for applying black ink, an inking apparatus

for this plate, and a transfer member for supplying the black ink to the printing-plate.

10. In a multicolor-printing press, the combination of a printing-plate carrier, an impression member coöperating therewith, a separate color-design-plate carrier, adapted to carry three color-design plates, three inking apparatuses coöperating therewith, a transfer member on which the various colors are registered together circumferentially and axially, arranged between the color-design-plate carrier and printing-plate carrier, and making three revolutions to each revolution of the color-design-plate carrier, a separate plate for applying black ink, an inking apparatus for this plate, and a transfer-cylinder making three revolutions to each revolution of the color-design-plate carrier, and adapted to supply black ink to the printing-plate after the latter has received the application of the colored inks.

11. In a multicolor-printing press, the combination of a printing-plate carrier, an impression member coöperating therewith, a separate color-design-plate carrier adapted to carry a plurality of color-design plates, an inking apparatus for each color-design plate, a transfer member on which the various colors are registered together circumferentially and axially, arranged between the color-design-plate carrier and printing-plate carrier, a third carrier carrying a plate for the application of black ink, and a transfer member arranged between this third carrier and the printing-plate carrier.

12. In a multicolor-printing press, the combination of a printing-plate carrier, an impression member coöperating therewith, a separate color-design-plate carrier adapted to carry a plurality of color-design plates, an inking apparatus for each color-design plate, a transfer member on which the various colors are registered together circumferentially and axially, arranged between the color-design-plate carrier and printing-plate carrier, a third carrier carrying a plate for the application of black ink, an inking apparatus for this plate, and a transfer member arranged between this third carrier and the printing-plate carrier in position to apply black ink to the printing-plate after the latter has received the application of colored inks.

13. In a multicolor-printing press, the combination of a printing plate or form carrier, an impression member coöperating therewith, a separate rotary carrier adapted to carry a plurality of color-design plates circumferentially, an inking apparatus for each color-design plate, a transfer member arranged between the printing plate or form carrier and the color-design-plate carrier on which the colors are registered together to make up a positive of the multicolor design and from which the positive is applied to the printing plate or form, and a cleaning device for cleaning the printing plate or form after each impression.

14. In a multicolor-printing press, the combination of a rotary printing-plate carrier, an impression member coöperating therewith, a separate rotary color-design-plate carrier adapted to carry a plurality of color-design plates circumferentially, an inking apparatus for each color-design plate, a transfer member arranged between the printing plate or form carrier and the design-plate carrier on which the colors are registered together to make up a positive of the multicolor imprint and from which the positive is applied to the printing plate or form, and a cleaning device for the printing plate or form arranged between the impression member and the transfer-cylinder.

15. In a multicolor-printing press, the combination of a printing-plate carrier, an impression member coöperating therewith, a separate color-design-plate carrier adapted to carry a plurality of color-design plates, an inking apparatus for each color-design plate, a transfer member on which the various colors are registered together circumferentially and axially arranged between the color-design-plate carrier and printing-plate carrier, a plate for supplying black ink arranged on the printing-plate carrier, an inking apparatus therefor, and a transfer member for taking the ink from said last-named plate and applying the same to the printing-plate.

16. In a multicolor-printing press, the combination of a printing-plate carrier, an impression member coöperating therewith, a separate color-design-plate carrier adapted to carry a plurality of color-design plates, an inking apparatus for each color-design plate, a transfer member on which the various colors are registered together circumferentially and axially arranged between the color-design-plate carrier and printing-plate carrier, a plate for supplying black ink arranged on the printing-plate carrier, an inking apparatus for this plate, and a transfer member for taking the black ink from this last-named plate and applying the same to the printing-plate after the latter has received its application of colored inks.

17. In a multicolor-printing press, the combination of a printing-plate carrier, an impression member coöperating therewith, a color-design-plate carrier adapted to carry a plurality of color-design plates, an inking apparatus for each color-design plate, a transfer member on which the various colors are registered together circumferentially and axially arranged between the color-design-plate carrier and printing-plate carrier, one or more printing-plates for printing in black arranged on the printing-plate carrier, and an inking apparatus therefor.

18. In a multicolor-printing press, the combination of a printing-plate carrier, an impression member coöperating therewith, a color-design-plate carrier adapted to carry a plurality of color-design plates, and a plate for applying black ink, an inking apparatus for each of said plates, a transfer member on which the various colors are registered together circumferentially and axially arranged between the color-design-plate carrier and printing-plate carrier, one or more plates for printing in black arranged on the printing-plate carrier, and an inking apparatus therefor.

19. In a multicolor-printing press, the combination of a printing-plate carrier, an impression member coöperating therewith, a separate color-design-plate carrier, an inking apparatus for each plate thereon, a transfer member on which the various colors are registered together circumferentially and axially arranged between the color-design-plate carrier and printing-plate carrier, one or more plates for printing in black ink carried by the printing-plate carrier, an inking apparatus for such plates, and means controlling said transfer member so that the same will only apply ink to the color-printing plate on the printing-plate carrier.

20. In a multicolor-printing press, the combination of a printing-plate carrier, an impression member coöperating therewith, a color-design-plate carrier adapted to carry a plurality of plates, an inking apparatus for each of said plates, a transfer member on which the various colors are registered together circumferentially and axially arranged between the color-design-plate carrier and printing-plate carrier to contact only with one plate carried by the printing-plate carrier, one or more plates for printing in black carried by the printing-plate carrier, and an inking apparatus therefor arranged to supply ink to said plates, but to clear the plate which is to print in colors.

21. In a multicolor-printing press, the combination of a printing-plate carrier, arranged to carry a plate which is to print in colors, and one or more plates which are to print in black or one color, an impression member coöperating therewith and presenting a continuous web to the printing-plate carrier, a color-design-plate carrier adapted to carry a plurality of plates, an inking apparatus for each plate thereon, a transfer member on which the various colors are registered together circumferentially and axially arranged between the color-design-plate carrier and printing-plate carrier, and controlled to supply ink to the printing-plate which is to print in colors, and an inking apparatus arranged to coöperate with the plate or plates which are to print in black, but to clear the plate which is to print in colors.

22. In a multicolor-printing press, the combination of a printing-plate-carrier cylinder, an impression-cylinder of half the diameter thereof coöperating therewith, and geared to make two turns for every turn of the printing-plate-carrier cylinder, a color-design-plate-carrier cylinder of the same diameter as the printing-plate-carrier cylinder capacitated to receive three color-design plates circumferentially, an inking apparatus for each of said color-design plates, and a transfer-cylinder arranged between the printing-plate-carrier cylinder and the color-design-plate-carrier cylinder of one-third the diameter of the printing-plate-carrier cylinder.

23. In a multicolor-printing press, the combination of a printing-plate-carrier cylinder, an impression-cylinder of half the diameter thereof coöperating therewith, a color-design-plate-carrier cylinder of the same diameter as the printing-plate-carrier cylinder, capacitated to receive three color-design plates circumferentially, an inking apparatus for each color-design plate, a transfer-cylinder arranged between the printing-plate-carrier cylinder and the color-design-plate-carrier cylinder of one-third the diameter of the printing-plate-carrier cylinder, a plate for applying black ink, and a transfer-cylinder of the same size as the previously-named transfer-cylinder for taking the ink therefrom and applying it to the printing-plate.

24. In a multicolor-printing press, the combination of the three cylinders E, C and K of the same size, and geared to turn in the same direction, the cylinder E serving as a color-design-plate-carrier cylinder and capacitated to receive three color-design plates circumferentially, an inking apparatus for each of said color-design plates, the cylinder C serving as a printing-plate-carrier cylinder, a transfer-cylinder D between the cylinders E and C of one-third the diameter thereof, the cylinder K serving as a carrier for carrying a plate for applying black ink, an inking apparatus for said plate, a transfer-cylinder L arranged between the cylinders C and K and of one-third the diameter of the cylinders E, C and K, and an impression-cylinder A of one-half the size of the cylinder C geared thereto and making two turns for every turn of the cylinder C.

851,040. WARP STOP-MOTION FOR LOOMS. WILLIAM R. STITT, Belfast, and ARTHUR J. DAVIDSON, Crossgar, Ireland. Filed May 10, 1904. Serial No. 207,328.

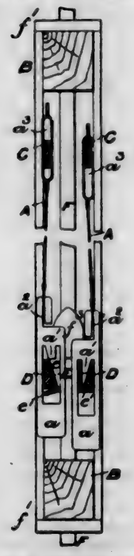

Claim.—1. In a loom for weaving, the combination with each heddle of a stiff metallic loop suspended therefrom and means to engage the stop mechanism and stop mechanism placed within it to engage therewith when the loop drops consequent upon the breakage of a warp-yarn for the purpose of stopping the loom substantially as described.

2. In a loom for weaving, the combination with the heddle-frame and heddles carried thereby of a stiff metallic loop suspended from each heddle provided with means to engage a bar placed within to engage with any one of the loops when allowed to drop consequent upon the breakage of a warp-yarn for the purpose of stopping the loom substantially as described.

3. In a loom for weaving, the combination with the heddle-frame and heddles carried thereby of a stiff metallic loop attached to each heddle provided with means to engage a bar placed within it and a rocking bar mounted in the heddle-frame placed inside the loop with which the loops engage when allowed to drop consequent upon the breaking of a warp-yarn substantially as described.

4. In a loom for weaving the combination with the heddle-frame and heddles carried thereby of a stiff loop provided with means to engage a bar attached to each heddle, means to engage any one of the loops when allowed to drop consequent upon the breakage of a warp-yarn and means connected thereto to stop the loom substantially as described.

5. In a loom for weaving the combination with the heddle-frame and heddles A carried thereby of a stiff loop provided with means to engage a rocking bar suspended from each heddle, a rocking bar placed inside the loops to engage any one of the loops when allowed to drop consequent upon the breakage of a warp-yarn and means connected thereto to stop the loom substantially as described.

6. In a loom for weaving the combination with the heddle-frame and heddles A carried thereby of a stiff loop suspended from each heddle, and provided with a central aperture, a rocking bar passing through the loops and mounted in the heddle-frame to engage any one of the loops when allowed to drop consequent upon the breakage of a warp-yarn and means connected thereto to stop the loom substantially as described.

7. In a loom for weaving the combination with the heddle-frame and heddles A of a stiff loop suspended from each heddle, a rocking bar mounted in the heddle-frame and passing through the loops to engage any one of the loops when allowed to drop consequent upon the breakage of a warp-yarn, a rod F provided with a cam therein which is raised by the heddle-frame when the rocking bar engages it, the knocking-off lever G′ and the connecting levers and rods G g g' g^3 by which connection is made with the knocking-off lever G′.

8. In a loom for weaving the combination with the heddles A heddle-frame B upper shafts C and lower shafts D of stiff loops a suspended from the heddles, rocking bar E passing through the loops provided with a lower member e' threaded through the bar, a rod F at the end of the heddle-loops, an eccentric projection e^2 on the end of frame a cam thereon affixed to the rod F with which the projecting end of the rocking bar engages a lever G resting against the rod F connecting-rods g and g' g^2 and a knocking-off lever G′ substantially as described.

851,041. INJECTOR. WILLIAM T. STRAIN, Marion, Ind., assignor of three-fourths to William H. Locke, Joseph Locke, and Henry W. Locke, Marion, Ind. Filed June 15, 1906. Serial No. 321,844.

Claim.—1. In an injector for steam-boilers, the combination with a steam-nozzle, end stops on said nozzle, a feed-water inlet, and a lifting and mixing nozzle, having a longitudinal movement toward said steam-nozzle, of an overflow situated adjacent the discharging end of said mixing-nozzle and a combining and discharging nozzle.

2. In an injector for steam-boilers, the combination with a steam-nozzle, end stops on said nozzle, a feed-water inlet, and a lifting and mixing nozzle having a longitudinal movement toward said steam-nozzle and an overflow situated adjacent to the discharging end of said lifting and mixing nozzle, of a combining and discharging nozzle situated on line with and having a longitudinal motion toward and to said lifting and mixing nozzle, said combining and discharging nozzle having a series of peripheral overflow-holes situated adjacent to the receiving end of said nozzle and means for limiting the longitudinal movement of said combining and discharging nozzle.

3. In an injector for steam-boilers, the combination with a steam-nozzle, and stops on said nozzle, a feed-water inlet and a lifting and mixing nozzle having a longitudinal movement toward said steam-nozzle, of an overflow situ-

ated adjacent to the discharging end of said lifting and mixing nozzle, a combining and discharging nozzle situated on line with and having a longitudinal motion toward and to said lifting and mixing nozzle, said combining and discharging nozzle having a series of peripheral overflow-

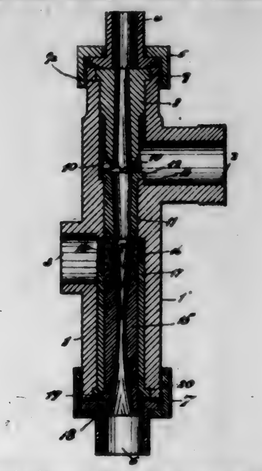

holes situated adjacent to the receiving end of said nozzle, means for limiting the motion of said combining and discharging nozzle, and a closing-collar adjustably mounted on the discharging end of said combining and discharging nozzle.

851,042. STRIPING DEVICE FOR KNITTING-MACHINES. DANIEL F. SULLIVAN, Lowell, Mass. Filed Nov. 20, 1906. Serial No. 344,324.

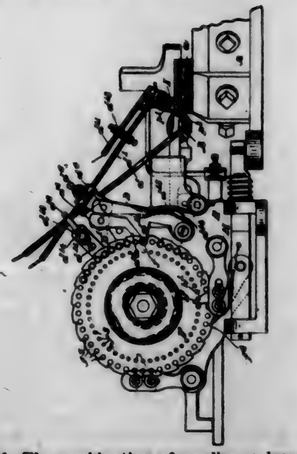

Claim.—1. The combination of needles, a loop-wheel, a cutter and a holder consisting of a closed helical spring, and means for opening said cutter and for stretching said spring-holder simultaneously with the engagement of the yarn by the loop-wheel.

2. The combination of a pattern-wheel having pins, cam-levers, brackets pivoted to said levers, yarn-guides secured to said brackets, loops loosely surrounding said yarn-guide above said brackets, and means for adjusting said loops independently of each other.

3. The combination of a needle-cylinder and needles, a loop-wheel, a movable double yarn-guide, means for throwing the same into and out of operative position, a stationary yarn-guide adapted to direct the yarns into said loop-wheel and a separator to keep the two yarns delivered by said double yarn-guide apart from each other and one above the other on said loop-wheel.

4. The combination of a needle-cylinder and needles, a loop-wheel, a movable double yarn-guide, means for throwing the same into and out of operative position, a stationary yarn-guide adapted to direct the yarns into said loop-wheel a separator to keep the two yarns delivered by said double yarn-guide apart from each other and one above the other on said loop-wheel, said separator consisting of a wire supported by said stationary guide and extending from said stationary guide nearly to said double guide and having a free end portion which extends over the tops of the needles and to the inside of the circle of needles and between the yarns delivered by said double guide.

5. In a striping attachment for circular-knitting machines the combination of a block having a face adapted to support a yarn, a pivoted cutter having an edge parallel with said block when resting thereon, a spring to force said edge against said face of said block, a spiral wire spring yarn-holder, movable yarn-guides to place yarns upon said face and means to raise said cutter away from said block, and to stretch said spring and separate said coils to receive one or more yarns and to release a yarn or yarns previously held by said holder.

851,043. ROTATABLE GRATE. OTTO TROSSIN, Hamburg, Germany, assignor to Ernest Matthias Adalbert Feuerheerd, Hamburg, Germany. Filed Feb. 2, 1907. Serial No. 355,443.

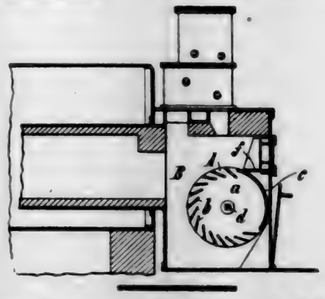

Claim.—1. A grate comprising a plurality of fire-plates mounted to move in a circle and having supporting-faces at an angle to the radii of the circle and a curved plate movable with the bars concentric to the center of the circle.

2. A grate comprising supporting-disks, a plurality of flat fire-bars mounted therein having their faces at an angle to the radii of the disks, and a plate mounted in the disks concentric to the axis thereof.

3. A grate comprising a rotatable shaft, parallel disks mounted thereon, a plurality of flat fire-bars mounted in the disks having their faces at an angle to the radii of the disks, and a curved plate secured to the disks concentric to the axis thereof.

4. In a furnace, the combination of a plate extending from the base of the door thereof into the fire-box, a rotatable shaft mounted in the latter, parallel disks mounted on the shaft, a curved plate mounted on the disks adapted to intersect the plane of the aforesaid plate, and a plurality of flat bars mounted in the disks having their faces at an angle to the radii thereof.

851,044. HEATING-STOVE. JOHN A. TYNAN, Indianapolis, Ind. Filed Mar. 6, 1905. Serial No. 248,577.

Claim.—1. In a heating-stove, the combination with a fire-pot having the form of an inverted truncated cone and provided with a series of air-inlet openings situated at or near its upper edge, a fire-pot-inclosing casing surrounding said fire-pot to form a hot-air chamber between them, said casing provided with air-inlet openings situated at or near and extending around its bottom edge, and a supporting-base, of an annular air-circulating tube situated between the lower reduced portion of said fire-pot and said base and provided with a forward cold-air inlet and a hot-air outlet, said hot-air outlet situated diametrically opposite said cold-air inlet, said tube composed of upper and lower sections or halves, an annular air-circulating tube situated above said fire-pot to extend around the top edge thereof, said tube provided with air inlet and outlet openings, a vertically-extending deflecting or dividing wall situated at the inlet of said upper annular tube whereby the incoming air is directed to flow in one direction around the tube to the outlet thereof, an uptake situated exteriorly of said stove connecting said lower annular air-circulating tube to said upper annular air-circulating tube, a combustion-chamber situated above said upper air-conducting tube, an upper inclosing cover, and an uptake connected to the outlet of said upper annular air-circulating tube extending upwardly within the combustion-chamber of the stove and having its outlet end arranged to discharge the heated air above said combustion-chamber cover.

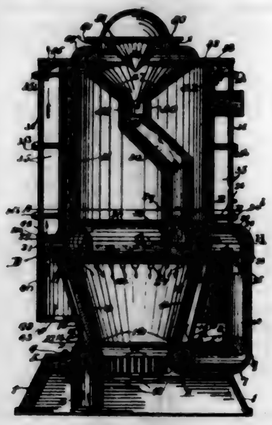

2. In a heating-stove, the combination with a fire-pot having the form of an inverted truncated cone and provided with a series of air-let openings situated at or near its upper edge, a fire-pot-inclosing casing surrounding said fire-pot to form a hot-air chamber between them, said casing provided with air-inlet openings situated at or near and extending around its bottom edge, an outer casing situated to surround the upper enlarged portion of said fire-pot-inclosing casing to form an outer air-chamber, said chamber provided with air-inlet openings situated at and extending around its bottom, and a supporting-base, of an annular air-circulating tube situated between the lower reduced portion of said fire-pot and said base and provided with a forward cold-air inlet and a hot-air outlet, said hot-air outlet situated diametrically opposite said cold-air inlet and said tube composed of upper and lower sections or halves, an annular air-circulating tube situated above said fire-pot to extend around the top edge thereof, said tube provided with air inlet and outlet openings, a vertically-extending deflecting or dividing wall situated at the inlet of said upper annular tube whereby the incoming air is directed to flow in one direction around the tube to the outlet thereof and said tube also composed of upper and lower sections or halves, an uptake situated exteriorly of said stove connecting said lower annular air-circulating tube to said upper annular air-circulating tube, a combustion-chamber situated above said upper annular air-circulating tube, an upper combustion-chamber cover provided with an air-chamber of an inverted-cone form, said chamber provided with a lower reduced air-inlet end and upper air-outlet openings, an uptake connected to the outlet of said upper annular air-circulating tube and extending vertically within said combustion-chamber to be connected to the reduced end of said cover-chamber, and a casing surrounding said combustion-chamber to form an air-chamber the air spaces or chambers formed by said combustion-chamber and said fire-pot casings being connected by air ducts or passages, and each of said chambers provided with lower air-inlet and upper air-outlet openings.

851,045. STILL. JACOB H. ULLRICK, Nashville, Tenn. Filed Dec. 30, 1905. Serial No. 293,954.

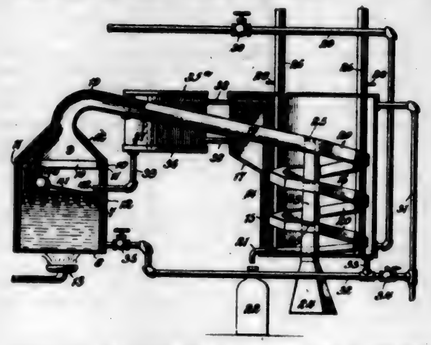

Claim.—1. In a still, the combination with a condenser including a coil, of an outlet-conduit having inlets thereto in communication with different whirls of the coil and having an open discharge end separate from the coil.

2. In a still, the combination with a condenser including a tank and a coil therein, of a substantially upright outlet-conduit extending across the whirls of the coil and communicating therewith, said conduit having an open upper end.

3. In a still, the combination with a condenser including a tank and a coil therein, of an outlet-conduit extending within the tank and located within the coil, said conduit having communication with the inner sides of whirls thereof, and having an open upper end.

4. In a still, the combination with a condenser including a coil, of common means for conducting gases from different whirls of the coil, said means extending across the whirls and having separate communication with each whirl.

5. In a still, the combination with a condenser including a coil, of an outlet-conduit for permitting the escape of gases and the like from the coil, said conduit having a plurality of openings in communication with different whirls of the coil.

6. In a still, the combination with a condenser, comprising a tank, and a coil located therein, of an upright conduit extending through the tank and opening above the same, said conduit extending transversely of the coil and having communication with the different whirls thereof.

7. In a still, the combination with a condenser including a coil, of an air-inlet communicating with different whirls of the coil, and a gas-outlet communicating with different whirls of the coil at different points from the air-inlet.

8. In a still, the combination with a condenser comprising a water-tank and a coil located in the tank, of an air-inlet pipe extending from the exterior of the tank into the same and communicating with one side of the coil between the ends thereof, and a gas-outlet pipe communicating with the opposite side of the coil between the ends of said coil, said outlet-pipe having its discharge end projecting from the tank.

9. In a still, the combination with a condenser including a coil, of an upright air-conduit extending across the coil and having communication with different whirls thereof, and a gas-outlet conduit extending across the coil

and having communication with different whirls thereof, and at different points from the inlet communication.

10. In a still, the combination with a condenser-tank, of a coil located therein, and comprising angularly-disposed straight sections, upright inlet and outlet conduits having communication with different whirls of the coil, and extending transversely of certain of the flat sides thereof, means for supplying water to the tank, a generator, a connection between the generator and condenser-coil, and supply means for the generator connected to the condenser-tank.

11. In a still, the combination with a steam-generator, of a condenser comprising a tank and a coil located in the tank, a steam-conduit connecting the generator and coil of the condenser, an intermediate tank, a detachable filter-partition vertically slidable in an intermediate portion of the intermediate tank, a liquid-conducting pipe connecting the upper portions of the condenser-tank and intermediate tank and connected to the latter on one side of the filter-partition, another liquid-conducting pipe connected to the intermediate tank on the opposite side of the partition and connected to the steam-generator, and means for controlling the passage of liquid from the condenser-tank through the intermediate tank and partition to the generator.

12. In a still, the combination with a tank, of a condensing-coil therein, an air-inlet conduit having an inlet end outside the tank, said air-inlet conduit communicating with different whirls of the coil within the tank, and an outlet-conduit having a discharge end outside the tank, said outlet communicating with different whirls of the coil within the tank.

851,046. MAGNETIC ORE-SEPARATOR. HENRY H. WAIT, Chicago, Ill., assignor to International Separator Company, Chicago, Ill., a Corporation of New Jersey. Filed Mar. 20, 1905. Serial No. 251,070.

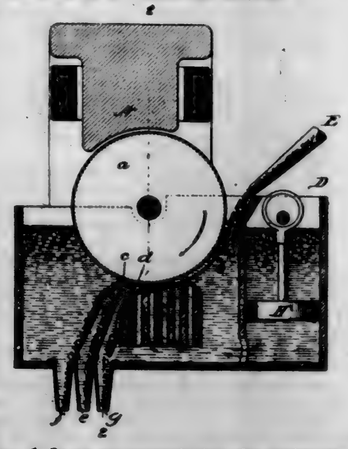

Claim.—1. In an ore-concentrator, the combination with a revolving magnetic cylinder having means for causing flux dispersions at its periphery, of a magnet-pole below said cylinder, a support forming a passage-way between said cylinder and magnet-pole for the materials to be separated, a divider for separating the attracted from the non-attracted materials, a vessel adapted to contain a fluid medium surrounding the operating portion of the cylinder, and means for imparting a vibratory motion to said fluid medium.

2. In an ore-concentrator, the combination with a revolving magnetic cylinder having means for causing flux dispersions at its periphery, of a magnet-pole below said cylinder, an inclined screen, extending between said cylinder and magnet-pole and forming a passage-way for material to be separated, a vessel adapted to contain a fluid medium surrounding the operating portion of the cylinder, and means for imparting a vibratory motion to said fluid medium.

3. In an ore-concentrator, the combination with a revolving magnetic cylinder having means for causing flux dispersions at its periphery, of a magnet-pole below said cylinder, said magnet-pole being provided with perforations opening along the surface thereof, an inclined screen, extending between said cylinder and magnet-pole and forming a passage-way for material to be separated, a vessel adapted to contain a fluid medium surrounding the operating portion of the cylinder, and means for imparting a vibratory motion to said fluid medium.

4. In an ore-concentrator, the combination with a revolving magnetic cylinder having means for causing flux dispersions at its periphery, of an inclined support adapted to pass materials to be separated along the under side of said cylinder, a magnet-pole below said cylinder, a magnet-pole of opposite polarity above the cylinder, a divider near the under side of the periphery of said cylinder, a vessel adapted to contain a fluid medium, surrounding the operating portion of said cylinder, and means for imparting a vibratory motion to said fluid medium.

851,047. CONNECTING-ROD. JOHN F. WILLEKE, Kenton, Ohio. Filed Apr. 16, 1906. Serial No. 311,864.

Claim.—In a device of the character described, a frame composed of a pair of tubular members which lie side by side, heads at each end of said tubular members formed integral therewith and connecting said members, a pair of brasses located at each end of said frame, a U-shaped member the legs of which pass through all of said brasses and through the tubular members, and nuts threaded upon the ends of said legs, the head of said U-shaped member lying upon the exterior of the outer brass at the opposite end of the connecting-rod from said nuts.

851,048. NOSTRIL-EXPANDER. HENRY R. WOODWARD, New York, N. Y. Filed Aug. 1, 1906. Serial No. 328,788.

Claim.—A device of the kind described comprising a pair of elongated open loop-like members of spring material having their terminal ends bent, and constructed to extend backward into the nasal cavity of the head, the said members being connected at the forward ends by a

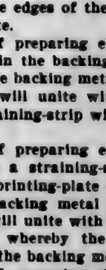

bridge, which is bent at an angle to the said members so as to straddle the nose-cartilage.

851,049. METHOD OF AND MEANS FOR PREPARING AND HOLDING ELECTROTYPE-PLATES. HENRY A. W. WOOD, New York, N. Y., assignor to The Campbell Printing Press & Manufacturing Company, New York, N. Y., a Corporation of New York. Filed Jan. 7, 1893. Renewed Aug. 14, 1905. Serial No. 274,241.

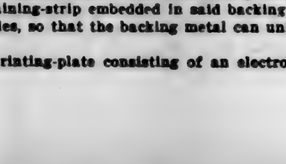

Claim.—1. The method of preparing composite electrotype printing-plates, which consists in embodying a straining-strip therein during the process of casting the back on the plates.

2. The method of preparing composite electrotype printing-plates, which consists in making a straining-strip integral with the plate.

3. The method of preparing composite electrotype printing-plates, which consists in casting a separate straining-strip in the backing.

4. The method of preparing composite electrotype printing-plates, which consists in casting a straining-strip in the backing with the edges of the strip projecting beyond the edges of the plate.

5. The method of preparing electrotype-plates which consists in placing in the backing-mold, a straining-strip, and then pouring the backing metal into the mold, so that the backing metal will unite with the electrotype-plate, and so that the straining-strip will be firmly embedded in the complete plate.

6. The method of preparing electrotype-plates which consists in holding a straining-strip slightly above the back of the copper printing-plate in the backing-mold, and then pouring the backing metal into the mold, whereby the backing metal will unite with the entire surface of the printing-plate, and whereby the straining-strip will be firmly embedded in the backing metal.

7. The method of preparing electrotype-plates, which consists in casting a backing metal upon the electrotype shell, and in the casting operation embedding a straining-strip in the backing metal, and then flexing or bending the plate by the straining-strip to fit a curved surface.

8. A printing-plate consisting of an electrotype printing-surface, a backing metal cast upon the same, and a straining or clamping strip embedded in said backing metal.

9. A printing-plate consisting of an electrotype printing-surface, a backing metal cast upon said printing-surface, and a straining-strip embedded in said backing metal, and having holes, so that the backing metal can unite through said strip.

10. A printing-plate consisting of an electrotype printing-surface, a backing metal cast upon the same, and a straining or clamping strip of substantially the same width as the printing-plate embedded therein, and having holes so that the backing metal can unite through the same.

851,050. DUMPING APPARATUS FOR VEHICLES. ABRAHAM L. YOUNG, Paris, Ill. Filed Sept. 6, 1906. Serial No. 333,547.

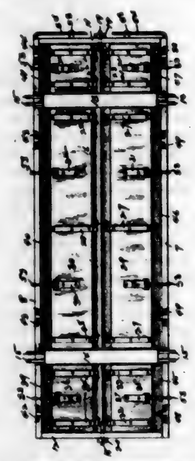

Claim.—1. In a dumping apparatus for vehicles, a box having fixed sides and ends, bolsters secured to the bottom of the sides of the box, an angle-iron mounted on the bolsters and having its ends connected with the ends of the box, dumping-shutters hinged to opposite sides of the angle-iron and forming a bottom for said box, and means for operating said shutters.

2. In a dumping apparatus for vehicles, a box having fixed sides and ends, bolsters secured to the bottom of the sides of the box, an angle-iron mounted on the bolsters and having its ends connected with the ends of the box, dumping-shutters hinged to opposite sides of the angle-iron, means for operating said shutters, and shutters hinged to the lower edge of each side of the wagon-box, said shutters forming a bottom for said box.

3. In a dumping apparatus for vehicles, a box having fixed sides and ends, two bolsters having their ends secured to opposite sides of the box, an angle-iron supported on and extending crosswise of the middle of the bolsters, dumping-shutters hinged to each side of said angle-iron, means for operating said shutters, and an angle-iron covering each end of each of said bolsters.

4. In dumping apparatus for vehicles, a box or receptacle having fixed sides and ends, two bolsters extending crosswise of and secured to the bottom of the box, an angle-iron mounted on the bolsters and having its ends secured to the opposite ends of the box, dumping-shutters hinged to opposite sides of the angle-iron, a revoluble rod mounted on each side of the said box and provided with loops and having at one end a lever for partially revolving it, means connecting the loops with the outer edge of the shutters, spring-stops secured to the end of the box for engagement with said levers, and shutters hinged to the lower edge of each side of said box for contact with said first-named shutters.

851,051. HEAT-COIL. ARTHUR H. ADAMS, New York, N. Y., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 9, 1905. Serial No. 281,032.

Claim.—1. In a protector for electrical circuits, a heat-coil having a slidable pin adapted to project from either

end thereof, of a cap slidably engaging said heat-coil to bear against said pin, said heat-coil being reversible in said cap.

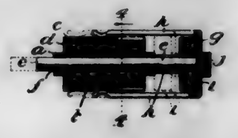

2. In a protector for electrical circuits, a heat-coil cartridge comprising a spool, a heating-conductor for said spool, a slidable member passing through the spool and adapted to project at either end thereof, means for normally fastening said member to the spool, and a cap slidably engaging said spool and bearing against said slidable member to actuate the same under abnormal conditions.

3. In a protector for electrical circuits, the combination with a heat-coil having a pin projecting from the end thereof, of a cap comprising a disk having spring-arms adapted to slidably engage said heat-coil, and a disk of insulating material secured within the cap and having an opening for receiving the projecting end of the pin.

4. In a protector for electrical circuits, a heat-coil cartridge comprising a spool, a heating-conductor for said spool, a pin passing through the spool and adapted to project at either end thereof, fusible material fastening said pin to the spool, and a cap adapted to slide over either end of the spool and bear against the projecting end of the pin to actuate the same under abnormal conditions, whereby one operation places said cartridge in condition to be reversed in said cap.

5. In a heat-coil, the combination with a hollow spool, of a heat-producing coil wound thereon, one end of which is secured to said spool, a drum inclosing the heat-producing coil and to which the other end of the heat-producing coil is secured, a pin extending through the spool with its ends projecting unequal distances, fusible material securing the pin to the spool, a cap slidably mounted on the drum and receiving in an insulated bearing the longer projecting end of the pin, and means for sliding the cap over the heat-coil, under abnormal conditions, to reverse the distances which the pin projects from the ends of the spool, and thereby controlling a circuit.

6. In a protector for electrical currents, the combination with a protector-strip, of a heat-cartridge and a support for one end of said cartridge, said support being constructed to engage said strip and being reversible with relation to said cartridge.

7. The combination with a protector-strip and a reversible heat-cartridge therefor, of separate means forming a support for one end of said cartridge, said means having a portion constructed to engage with said protector-strip, and said heat-cartridge being reversible with relation to said supporting means.

8. The combination with a protector-strip, of an attachment for heat-cartridges comprising a portion constructed to engage a heat-cartridge and a portion for engagement with said protector-strip, the ends of said heat-cartridge being reversible with relation to said attachment after each operation of the cartridge.

9. In a protector for electrical currents, the combination with a heat-cartridge, of a reversible mounting-cap having spring-arms adapted to slidably engage said heat-cartridge.

851,052. BOX-COVERING MACHINE. JOSEPH ALGER, Brockton, Mass., assignor to himself and Arthur H. Alger, jointly, Brockton, Mass. Filed May 10, 1904. Serial No. 207,284.

Claim.—1. In a machine for covering paper boxes, folding means, means for drawing the covering-paper about the box in advance of said folding means, said means being flexible throughout.

2. A machine for covering paper boxes, having swinging folding means and flexible means for drawing up the paper in place in advance of said folding means.

3. In a machine for covering paper boxes, the combination of swinging folding members, and flexible means mounted in advance of the same to locate the covering-paper in place.

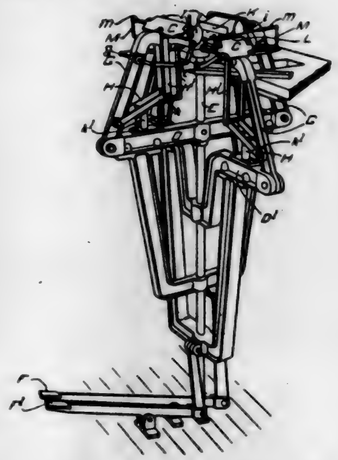

4. In a machine for covering paper boxes, the combination of swinging folding members, a flexible web carried by said members and mounted in advance of the same to locate the covering-sheet in place.

5. In a machine for covering paper boxes, side-folding members and end-folding members, said end-folding members carrying in advance thereof a flexible web to locate the paper in place.

6. In a machine for covering paper boxes, the combination of means for supporting a box and covering-paper, a folder for folding the paper about the box, a flexible sheet for drawing up the covering-paper, and means for holding said flexible sheet yieldingly stretched between the box and folder.

7. In a machine for covering paper boxes, a rigid holder having bottom and side members but open at each end, folders mounted to swing relatively thereto, and edge-turning members on said folders to turn the covering-paper on the inside of the box.

8. In a machine for covering paper boxes, a support for the bottom of the box, side-folding members hinged thereto, a vertically-movable frame, links connecting said frame to said side-folders, edge-turners pivoted to said side-folders, double links connecting said edge-turners and said first-mentioned links and a cam for straightening said double links to tip the edge-turners.

9. In a machine for covering paper boxes, the combination of a holder, folding members hinged to swing relatively thereto and flexible means for drawing up the covering-paper in advance of said folding members.

10. In a machine for covering paper boxes, a holder having bottom and side portions but open at each end, folders mounted to swing relatively thereto, edge-turning members on said folders to turn the covering-paper on the inside of the box, and flexible means for drawing up the covering-paper in advance of said folding members.

11. In a machine for covering paper boxes, a support for the bottom of the box side-folding members hinged thereto, a vertically-movable frame, links connecting said frame and said side-folders, edge-turners pivoted to said side-folders, bent links connecting said edge-turners and said first-mentioned links, a stud on the frame for straightening said bent links to tip the edge-turners, and flexible means to locate the covering-paper carried by the folding members in advance thereof.

851,053. SHARPENING-TOOL FOR LAWN-MOWERS. WILLIAM H. ASTON, Windsor, Ontario, Canada, and WILLIAM W. MORRISON, Detroit, Mich. Filed May 4, 1906. Serial No. 315,154.

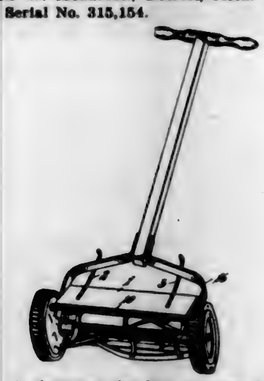

Claim.—A sharpener for lawn-mowers, having in combination a plate, an abrading substance cemented thereon, means for securing said plate to the frame of a lawn-mower, consisting of a spring member passing through the plate and provided at one side thereof with a loop, and at the other side thereof with an extended resilient member, substantially as described.

851,054. PNEUMATIC CONVEYER. EDWIN M. BASSLER, Chicago, Ill., assignor to The Economic Engineering & Construction Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 4, 1905. Renewed Sept. 28, 1906. Serial No. 336,597.

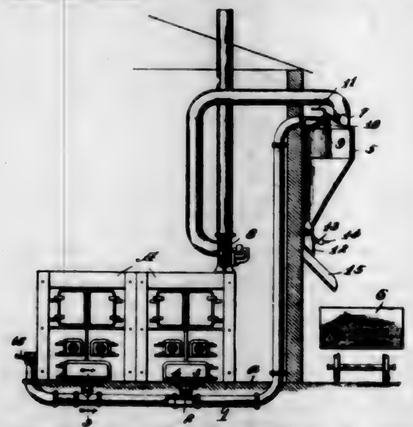

Claim.—1. In a conveyer, the combination of a conduit provided with an admission opening or openings, a receptacle into which said conduit discharges, said receptacle being provided with an air-discharge opening, means to create a current of air through said conduit and means to wet the material delivered into said receptacle from said conduit.

2. In a conveyer, the combination of a conduit provided with an admission opening or openings, a receptacle into which said conduit discharges, said receptacle being provided with an air-discharge opening, means to create a current of air through said conduit and means for applying jets or streams of water to the material delivered into said receptacle from said conduit.

3. In a conveyer, the combination of a conduit provided with an admission opening or openings, a receptacle into which said conduit discharges, provided with an air-discharge opening, means to create a current of air through said conduit and means for introducing water into the blast from said conduit.

4. In a conveyer, the combination of a conduit provided with an admission opening or openings, a receptacle into which said conduit discharges, said receptacle comprising an expansion-chamber and being provided with an air-discharge opening, means to create a current of air through said conduit, means in said expansion-chamber to interrupt the blast from said conduit, and means to discharge water across said blast substantially at the point at which it is interrupted.

5. In a conveyer, the combination of a conduit provided with an admission opening or openings, a receptacle into which said conduit discharges, said receptacle comprising an expansion-chamber and being provided with an air-discharge opening, means to create a current of air through said conduit, a baffle in said expansion-chamber against which the blast from said conduit is directed and means to discharge water along the face of said baffle and across the blast from said conduit.

6. In a conveyer, the combination of a conduit provided with an admission opening or openings, a receptacle into which said conduit discharges, said receptacle comprising an expansion-chamber and being provided with an air-discharge opening, means to create a current of air through said conduit, a baffle in said expansion-chamber between said conduit and said air-discharge opening against which the blast from said conduit is directed and means to discharge water along the face of said baffle and across the blast from said conduit.

7. In a conveyer, the combination of a conduit provided with an admission opening or openings, a receptacle into which said conduit discharges, said receptacle comprising an expansion-chamber and being provided with an air-discharge opening, means to create a current of air through said conduit, means within said expansion-chamber to interrupt the blast from said conduit, said conduit being provided with a vent-opening and a gate which controls said vent-opening for regulating the current of air through said conduit.

8. In a conveyer, the combination of a conduit provided with an admission opening or openings, a receptacle into which said conduit discharges, said receptacle comprising an expansion-chamber and being provided with an air-discharge opening, a fan or blower applied to said discharge-opening, a baffle within said expansion-chamber located between said conduit and air-discharge opening against which the blast from said conduit is directed and means to discharge water along the face of said baffle and across the blast from said conduit.

9. In a conveyer, the combination of a conduit provided with an admission opening or openings, a receptacle into which said conduit discharges, said receptacle comprising an expansion-chamber and being provided with an air-discharge opening, a fan or blower applied to said discharge-opening, a baffle in said expansion-chamber located between said conduit and said discharge-opening, said conduit being provided with a vent-opening and a gate for controlling said vent-opening whereby the current of air through said conduit may be regulated.

851,055. TRACTOR. BERNHARD BESKOW, San Francisco, Cal. Filed Oct. 3, 1905. Renewed Sept. 24, 1906. Serial No. 335,963.

Claim.—1. In a tractor, a main frame having vertically-arranged portions, wheel-frames journaled in the vertical portions on opposite sides of the center of the main frame, and wheels journaled in said wheel-frames.

2. In a tractor, a main frame comprising a horizontal front portion and vertical rear portions, wheel-frames journaled within the vertical rear portions and upon opposite sides of the center of the frame, and wheels mounted in said wheel-frames.

3. In a tractor, a main frame comprising a horizontal front portion and vertical rear portions, one of said vertical portions being diamond-shaped and arranged par-

allel with a rectangular portion at the rear end of the front portion, two wheel-frames pivotally mounted in said diamond and rectangular portions respectively upon opposite sides of the central rear portion, and a wheel journaled in each wheel-frame.

4. In a tractor, a main frame having vertically-arranged portions, wheel-frames journaled therein upon opposite sides of the center of the main frame, each side of each wheel-frame being provided with a depending support, the support at the front and rear being provided with trunnions and the side supports forming guideways, a box in each way, and a wheel in each wheel-frame with its axles journaled in said boxes.

5. In a tractor, a main frame, flexible driving mechanism thereon, wheel-frames pivotally mounted in the main frame upon opposite sides of the center thereof, a wheel in each wheel-frame, and means for connecting said wheels with the driving mechanism.

6. In a tractor, a main frame, a jointed driving-shaft thereon, wheel-frames pivotally mounted in the main frame with their pivots in line with the joints of said shaft, a bifurcated projection on each wheel-frame provided with bearings for the outer ends of one of said shafts, a sprocket-wheel in each bifurcation, a wheel in each wheel-frame, the axle of which is provided with a sprocket-wheel, sprocket-chains for connecting the sprocket-wheels on the axles with the sprocket-wheels on the driving-shaft, and means for limiting the tilting movement of the wheel-frames.

7. In a tractor, a main frame provided with a vertical rear portion, wheel-frames pivotally mounted in the main frame upon opposite sides of said vertical portion, chains from the top of each wheel-frame to the top and bottom respectively of said vertical portion for limiting the movements of the wheel-frames, and a wheel in each wheel-frame.

8. In a tractor, a main frame comprising a horizontal front portion and vertical rear portions, one of said vertical portions forming the rear end of the front portion, and inclined braces from the top and bottom of the sides of the horizontal portion to the top and bottom respectively of said vertical portion at the rear end of the front portion.

9. In a tractor, a frame provided with rear traction-wheels, each wheel comprising a plurality of curved disks and having a duplex laterally-sinuous tread in which the oppositely-located sinuosities coincide reversely, means for connecting a trailer with said frame, and means for shifting a portion of the weight of the trailer to said rear wheels.

10. In a tractor, a frame provided with traction-wheels, each wheel comprising a plurality of curved disks and having a duplex laterally-sinuous tread in which the oppositely-located sinuosities coincide reversely, and a clearer arranged between the sinuous portions of said disks.

11. In a tractor, a frame provided with traction-wheels, each wheel comprising an axle and two oppositely-curved disks thereon, a curved spring extending from the axle to the peripheries of said disks at the top, and scrapers for engaging with said disks.

12. In a tractor, a main frame, two wheel-frames pivotally mounted in the main frame, a wheel in each wheel-frame comprising an axle and two curved disks rigidly secured thereon with their similarly-curved portions opposite each other, a bar over said wheel with its ends secured to the wheel-frame, a curved spring secured to said bar and terminating in ends below the axle, a band secured to said ends and encircling the axle, and two pairs of spring-scrapers secured to the band upon opposite sides of the axle and extending to the peripheries of said disks.

851,056. BOX. ERNST A. G. BIERWIRTH, Kansas City, Mo. Filed Apr. 17, 1906. Serial No. 312,086.

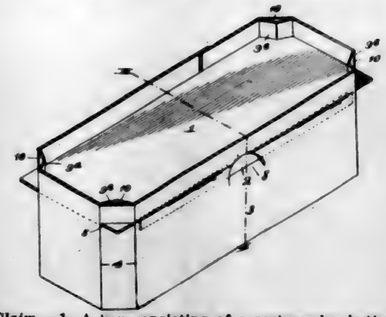

Claim.—1. A box consisting of a rectangular bottom, a surrounding wall having slots near its lower edge through which the corners of said bottom project, means for connecting said wall with the longer edges of said bottom, and an upturned flange integral with the lower edge of the wall and abutting at its upper edge against said bottom, said flange being severed from the wall at the corners of the box and bent inward beneath said bottom.

2. A box consisting of a rectangular bottom, a surrounding octagonal wall having four pairs of spaced upright creases and four horizontal slots near its lower edge each connecting the creases of one pair, the corners of the bottom projecting through said slots, and an upturned flange integral with the lower edge of the wall but severed therefrom on lines parallel with said slots, the upper edge of said flange abutting against said bottom and its oblique corners being bent inward beneath said bottom.

851,057. RAZOR-BLADE-GRINDING MACHINE. FRIEDRICH W. BLASBERG, Haan, Germany. Filed Apr. 2, 1904. Serial No. 201,291.

Claim.—1. A razor-blade grinding-machine comprising a driving-shaft, an eccentric, means for operating said eccentric from said driving-shaft, a bell-crank lever having its fulcrum on said eccentric, a razor-blade carrier on one arm of said lever, means intermediate the other end of said lever and the driving-shaft for imparting a rocking motion to the razor-blade carrier and means for raising or lowering the position of said eccentric substantially as set forth.

2. In a razor-blade-grinding machine of the kind described a pair of grinding-rolls, shafts carrying said rolls, tubular guides for said shafts and pivoted levers connected to said shafts and to a treadle device, substantially as set forth.

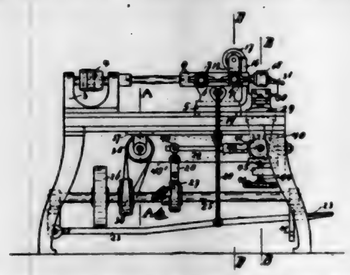

3. A razor-blade-grinding machine of the kind described comprising a driving-shaft, an eccentric, means for driving said eccentric from said driving-shaft, a razor-carrier, a bell-crank lever supporting said carrier and fulcrumed in said eccentric, means for raising or lowering the pivot of said bell-crank lever, an eccentric on said driving-shaft operating the free end of the bell-crank lever, and a pivoted lever carrying the supporting-shaft of the grinding-roller and means for adjusting the grinding-rollers toward or from each other substantially as set forth,

4. In a razor-blade grinding-machine of the kind described, grinding-rolls mounted on shafts 9, tubular bearings for said shafts and springs and adjustable screws for regulating the position of the grinding-rolls, substantially as described.

851,058. COUPLING FOR CONNECTING PLOWS TANDEM. JOHN L. M. BROOKS, Birdville, Tex. Filed Dec. 18, 1905. Serial No. 292,322.

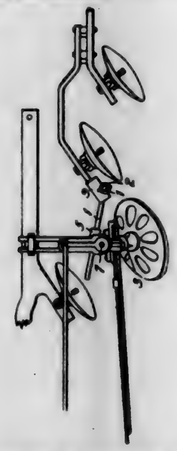

Claim.—1. A coupling for connecting plows tandem comprising a connecting-rod pivotally connected to the plow in front and a bearing for said rod having a horizontally and a vertically pivotal connection with and supported by the plow in the rear.

2. A coupling for connecting plows tandem comprising a connecting-rod pivotally connected to the plow in front and a bearing engaging said rod loosely and having a horizontally-pivoted connection and a vertically-pivoted connection with the plow in the rear.

3. A coupling for connecting wheeled plows tandem comprising a connecting-rod, an elbow-shaft, a cuff mounted on the axle of the rear plow and provided with a bearing for the horizontal part of said elbow-shaft, and a sleeve engaging said connecting-rod loosely and provided with a bearing for the vertical part of said elbow-shaft, said connecting-rod being pivotally connected to the rear of the plow in front.

4. A coupling for connecting wheeled plows tandem comprising a connecting-rod pivotally connected to the rear of a plow in front, a cuff mounted on the axle of a plow in the rear, a sleeve loosely mounted on said connecting-rod, and a flexible connection for said cuff and said sleeve.

5. In wheeled plows connected tandem, the rear of the plow in front being adjacent to the axle of the plow in the rear; a rod pivotally connected to the rear of the plow in front and a bearing for said rod carried by said axle and consisting of a vertically and laterally pivoted connection for supporting the rear of the plow in front on the axle of the plow in the rear.

851,059. CORN-HARVESTER. HENRY BROOME, Springfield, Ohio, assignor of one-third to William Dennick, Dayton, Ohio, and one-third to Claude W. Flick, Springfield, Ohio. Original application filed May 14, 1906. Serial No. 316,644. Divided and this application filed July 27, 1906. Serial No. 327,087.

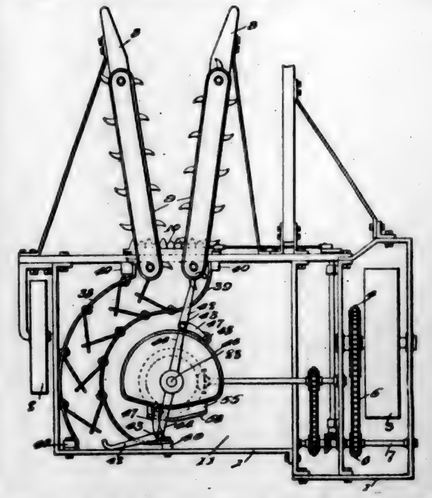

Claim.—1. In a device of the character described, the combination, with a main frame having cutting mechanism and upright guides forming a guideway thereon, of a conveyer provided with pivoted arms adapted to extend across said guideway, and a fixed cam acting to change the angular position of the arms as they approach the rear of the main frame to maintain said arms in substantial parallelism with the transverse axis of the main frame, whereby said arms clear the frame and are withdrawn lengthwise from contact with the stalks to prevent moving the same laterally, substantially as described.

2. In a corn-harvester of the character described, the combination, with guides forming a guideway for the stalks, of a reel comprising a vertically-revolving conveyer-shaft having arms secured thereon, rock-shafts mounted in said arms, conveyer-arms on said rock-shafts, a fixed cam, and traveling arms secured to the rock-shafts and bearing on said cam, said rock-shafts being provided with springs to hold the traveling arms against the cam and with stop-arms to limit the spring-actuated movement of the rock-shafts, substantially as described.

3. In a device of the character described, the combination, with the guides forming a guideway, of a conveyer comprising a vertically-revolving shaft, a hub carried thereby, radial arms secured to said hub, conveyer-arms pivoted

to the outer end of said radial arms and adapted to extend across said guideway, and means for controlling the position of said conveyer-arms with relation to said guideway to maintain said arms at substantially right angles thereto and to withdraw the same lengthwise from the stalks to prevent moving the same laterally, substantially as described.

4. In a corn-harvester of the character described, the combination, with guides forming a guideway for the stalks, of a conveyer comprising a vertically-revolving shaft, a series of hubs on said shaft, radial arms carried by said hubs, conveyer-arms pivotally secured to the outer end of said radial arms and adapted to extend across said guideway, means for controlling the position of said conveyer-arms relatively to said guideway to maintain said arms at substantially right angles thereto and to withdraw the same lengthwise from the stalks to prevent moving the same laterally, substantially as described.

5. In a corn-harvester of the character described, the combination, with guides forming a guideway for the stalks, of a conveyer comprising a vertically-revolving shaft, a series of hubs carried thereby, radial arms secured to said hubs, rock-shafts mounted in said radial arms, conveyer-arms carried by said rock-shafts, collars secured to said rock-shafts, arms mounted on the lower end of said rock-shafts, rollers carried by said arms and engaging a cam to control the movement of said conveyer-arms, and springs surrounding said shafts and having one end engaging said collar and the opposite end bearing against the conveyer-arm, substantially as described.

851,060. CORN-HARVESTER. HENRY BROOME, Springfield, Ohio, assignor of one-third to William Dennick, Dayton, Ohio, and one-third to Claude W. Flick, Springfield, Ohio. Original application filed May 14, 1906, Serial No. 316,644. Divided and this application filed July 27, 1906. Serial No. 327,988.

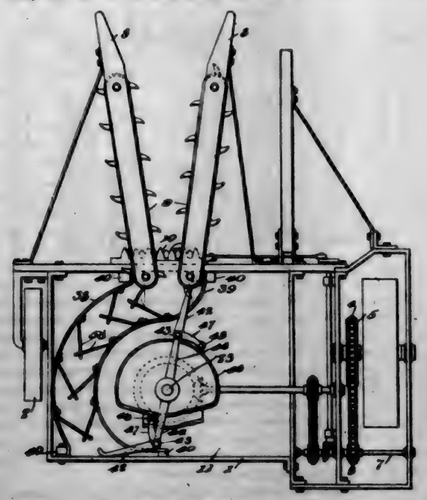

Claim.—1. In a corn-harvester of the character described, the combination, with a main frame provided with cutting and gathering mechanism, of upright guides to receive the severed stalks, said guides being provided with rearwardly-converging resilient fingers to receive and straighten up the stalks, said fingers overlapping at a point substantially midway between said guides, substantially as described.

2. In a corn-harvester of the character described, the combination, with a main frame provided with cutting mechanism, of upright guides to receive the severed stalks, said guides being provided with rearwardly-converging resilient fingers to receive and straighten up the stalks, said fingers being arranged in pairs, the inner ends of the fingers of the several pairs overlapping at a point substantially midway between said guides, substantially as described.

3. In a corn-harvester of the character described, upright guides forming a guideway along which the stalks are carried in upright position, said guides being provided with a series of resilient rearwardly-converging fingers arranged in substantially parallel vertical planes on the opposite sides of said guideway, substantially as described.

4. In a corn-harvester of the character described, upright guides forming a guideway along which the stalks are carried in upright position, one of said guides having longitudinal slots formed therein dividing the same into sections, a series of rearwardly-converging resilient fingers on each of said sections and corresponding fingers on the opposite guide having their ends extending beyond the ends of the first-mentioned fingers, substantially as described.

851,061. CORN-HARVESTER. HENRY BROOME, Springfield, Ohio, assignor, of one-third to William Dennick, Dayton, Ohio, and one-third to Claude W. Flick, Springfield, Ohio. Filed May 14, 1906. Serial No. 316,644.

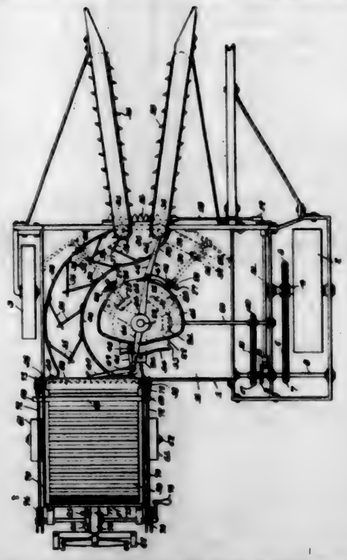

Claim.—1. An attachment for corn-harvesters consisting of a wheel-supported tender, means for separably connecting the same to a harvester at the rear of said harvester, said tender comprising a shocking-receptacle open at one end to receive the stalks and having a draft-hitch at its other end, substantially as described.

2. An attachment for corn-harvesters consisting of a wheel-supported tender, means for separably connecting the same to a harvester at the rear of said harvester, said tender comprising a shocking-receptacle open at one end to receive the stalks, a draft-hitch at the other end thereof, and means for discharging the shock from said receptacle when disconnected from the harvester, substantially as described.

3. An attachment for corn-harvesters consisting of a wheel-supported tender, means for separably connecting the same to a harvester at the rear of said harvester, said tender comprising a shocking-receptacle open at one end to receive the stalks, a draft-hitch at the other end thereof, and means for tilting said receptacle to discharge the shock when disconnected from the harvester, substantially as described.

4. An attachment for corn-harvesters consisting of a wheel-supported tender, means for separably connecting the same to a harvester at the rear of said harvester, said tender comprising a shocking-receptacle open at one end to receive the stalks, a draft-hitch at the other end thereof, and a cross-bar mounted to slide on said receptacle, substantially as described.

5. An attachment for corn-harvesters consisting of a wheel-supported tender, means for separably connecting the same to a harvester at the rear of said harvester, said tender comprising a shocking-receptacle open at one end to receive the stalks, a draft-hitch at the other end thereof, a cross-bar mounted to slide in said receptacle, means for positively moving said cross-bar toward the open end of said receptacle, substantially as described.

6. An attachment for corn-harvesters consisting of a wheel-supported tender, means for separably connecting the same to a harvester at the rear of said harvester, said tender comprising a shocking-receptacle open at one end to receive the stalks, a draft-hitch at the other end thereof, a cross-bar mounted to slide on said receptacle, means for positively moving said cross-bar toward the open end of said receptacle, and a brake for causing said cross-bar to offer resistance to the pressure of the incoming stalks, substantially as described.

7. An attachment for corn-harvesters consisting of a wheel-supported tender, means for separably connecting the same to a harvester at the rear of said harvester, said tender comprising a shocking-receptacle open at one end to receive the stalks, a draft-hitch at the other end thereof, a cross-bar mounted to slide on said receptacle, and a brake for causing said cross-bar to offer resistance to the pressure of the incoming stalks, substantially as described.

8. An attachment for corn-harvesters consisting of a wheel-supported tender, means for separably connecting the same to a harvester at the rear of said harvester, said tender comprising a shocking-receptacle open at one end to receive the stalks, a draft-hitch at the other end thereof, a cross-bar mounted to slide on said receptacle, a brake for causing said cross-bar to offer resistance to the pressure of the incoming stalks, and means for causing said receptacle to tilt to discharge the shock when disconnected from the harvester, substantially as described.

9. An attachment for corn-harvesters consisting of a wheel-supported tender, means for separably connecting the same to a harvester at the rear of said harvester, said tender comprising a shocking-receptacle open at one end to receive the stalks, a draft-hitch at the other end thereof, a cross-bar mounted to slide in said receptacle, means for positively moving said cross-bar toward the open end of said receptacle, a brake for causing said cross-bar to offer resistance to the pressure of the incoming stalks, and means for discharging the shock from said receptacle, substantially as described.

10. An attachment for corn-harvesters consisting of a tender, means for separably coupling the same to a harvester at the rear of said harvester, said tender comprising a shocking-receptacle mounted on two wheels and open at one end to receive the stalks, a draft-hitch at the other end thereof, said draft-hitch comprising a pivotal connection, and means for locking the same to render it rigid, whereby said receptacle may be tilted to discharge the shock when the pivotal connection is unlocked, substantially as described.

11. An attachment for corn-harvesters consisting of a wheel-supported tender, means for detachably coupling the same to a harvester at the rear of said harvester, said tender being open at one end to receive the stalks, a draft-hitch at the other end thereof, and a movable bottom therefor, substantially as described.

12. An attachment for corn-harvesters consisting of a wheel-supported tender, means for detachable coupling the same to a harvester at the rear of said harvester, said tender having one end open to receive the stalks, a draft-hitch at the other end of said tender, and a movable bottom therefor formed by an endless belt or carrier and supporting rollers, substantially as described.

13. An attachment for corn-harvesters consisting of a wheel-supported tender, means for detachably coupling the same to a harvester at the rear of said harvester, said tender being open at one end to receive the stalks, a draft-hitch at the other end of said tender, a movable bottom therefor formed by an endless belt or carrier and supporting rollers, and means for tilting said tender to discharge the shock therefrom, substantially as described.

14. An attachment for corn-harvesters consisting of a tender, means for separately coupling the same to the harvester and comprising a receptacle open at one end, a crank-shaft mounted on the other end of said receptacle, a winding-drum on said crank-shaft, a friction-brake for said drum, a cross-bar mounted to slide on the receptacle, idle pulleys at one end of the receptacle, and flexible connections secured to the edge of the cross-bar and passing around the idle pulleys and winding upon the drum, substantially as described.

851,062. CHECK-PROTECTOR STAMP. TAYLOR S. BUCK, New York, N. Y. Filed Jan. 31, 1906. Serial No. 298,762.

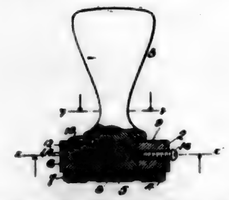

Claim.—1. The main body having an aperture therein and formed with a hole intersecting the said aperture, said body being formed with another hole intersecting said first mentioned hole, a screw inserted in said last mentioned hole, a journal having a circumferential groove formed therein, and a rod inserted in said first mentioned hole and lying in said groove, substantially as described.

2. A main body having an aperture therein, a handle formed with a groove and journaled in said body, a friction piece held by said body and groove and a lateral adjusting screw for said friction piece, substantially as described.

851,063. JOURNAL BOX AND LID. ALBERT O. BUCKIUS, Jr., Chicago, Ill., assignor to The Malleable Castings Company, Cleveland, Ohio, a Corporation of Ohio. Filed Aug. 31, 1905. Renewed Sept. 17, 1906. Serial No. 334,980.

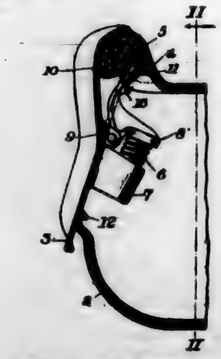

Claim.—1. A journal box having a hinged or pivoted lid, a lever pivoted to the inner side of said lid, and a spring seated between a bearing on the lid and one arm of the lever, the box having an internal cam-bearing with which the other arm of said lever contacts to hold the lid in both open and closed position; substantially as described.

2. A journal box having a hinged or pivoted lid, a bell-crank lever pivoted to the inner side of the lid, a spring bearing on the lid extending inwardly below one arm of the lever, a spring seated between said arm and bearing, there being a cam surface on the box engaged by the other arm of the lever; substantially as described.

3. A journal box having a hinged or pivoted cover provided with an inwardly projecting rib or flange which is arranged to fit against the upper edge of the box opening, a lever pivoted to the inner side of the lid, there being a cam bearing on the box for one arm of the lever, and a spring seated between the other arm of the lever and a bearing on the lid with its axis substantially parallel with the lower portion of the lid; substantially as described.

4. A journal box having a pivoted lid, a lever fulcrumed to the inner side of said lid, and a spring seated between one arm of the lever and a bearing on the lid, the box having within the lid a bearing for the other arm of said lever formed by two oppositely beveled cam surfaces which act upon the lever and spring to hold the lid in both open and closed position; substantially as described.

851,064. DOOR-HANGER. JOHN H. BURKHOLDER, Ashland, Ohio, assignor, by direct and mesne assignments, to William V. B. Topping, Ashland, Ohio. Filed Nov. 20, 1905. Serial No. 288,309.

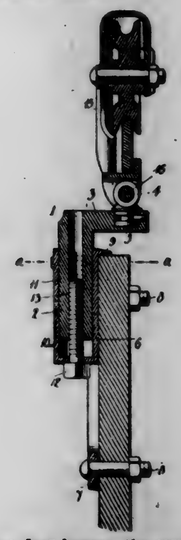

Claim.—1. In a door hanger, the combination of a plate for attachment to a door and having a vertical bore, a hanger member having a vertical arm and a horizontal arm, the former fitted in said bore for vertical and axial adjustment, means coacting with said plate and hanger member to adjust the latter, and a wheel housing pivotally connected to said horizontal arm, substantially as described.

2. In a door hanger, the combination of a plate for attachment to a door and having a vertical bore, a hanger member having a vertical arm and a horizontal arm, the former fitted in said bore for vertical and axial adjustment and having a threaded bore, an adjusting screw connected to the plate and engaging the threaded bore of the vertical arm of the hanger member, and a wheel housing pivotally connected to the said horizontal arm of the hanger member, substantially as described.

3. The combination with a door plate provided with a vertical bore, a hanger member having an arm mounted to rotate and be moved vertically in said bore and provided at its upper end with a right-angularly disposed arm, whereby it may be axially adjusted, means connected with said plate and vertical arm to vertically adjust the hanger member and hold the same in adjusted position, and means for holding said hanger member in its axially adjusted position; of a wheel carrying housing, a wheel mounted therein, and means for pivotally connecting said housing to the right-angularly disposed arm of said hanger member.

851,065. FASTENER FOR TOOL-HANDLES. THOMAS J. CHENEY, Lodi, Ohio. Filed July 18, 1906. Serial No. 326,674.

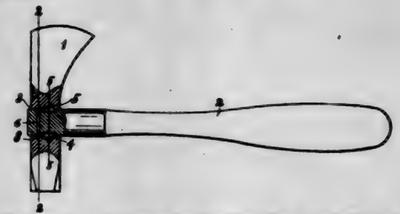

Claim.—1. A fastener for tool-handles, consisting of an eye formed in the body of the tool and provided with diametrically-opposite sockets, a handle taking into said eye and provided with a transverse opening and grooves extending from said opening, and a spring-fastening mounted in said transverse opening and provided with spring-arms taking into said sockets of the eye.

2. A fastener for tool-handles, consisting of an eye formed in the tool body, recesses or sockets formed within said eye, a handle mounted therein and provided with a transverse opening and grooves within said eye, and a spring-fastening mounted in said transverse opening and provided with spring-arms normally taking into said sockets and adapted to be bent within said grooves when the handle is inserted in said eye.

3. In a fastener for tool-handles, a spring-fastener having the main body portion thereof passing through the end of the handle mounted within the eye of the tool, and provided with rearwardly-extending spring-arms surrounded by and engaging the tool within said eye.

4. In a fastener for tool handles, the combination with a tool-eye provided with sockets, and a handle mounted therein and provided with a transverse opening and grooves extending rearwardly from said opening; of a spring-wire mounted in said transverse opening and provided with rearwardly-extending spring-arms normally resting within said sockets and adapted to be bent within said grooves.

851,066. RAZOR. HENRIK CLAUSS, Fremont, Ohio. Filed June 25, 1905. Serial No. 266,064.

Claim.—The combination with a blade holder having a blade supporting surface, and a guard at its forward end, of a blade consisting of a thin, flat piece of steel of uniform thickness ground at its cutting edge on opposite sides, and a strengthening back of greater transverse diameter than the blade in which the rear edge of the blade is seated, the back of the blade adapted to rest upon the supporting plate and raise the front thereof sufficiently to cause the cutting edge of the blade to lie closely upon the guard and a spring mounted on the holder and engaging the reinforced back of the blade for holding the blade in position.

851,067. CHAIR CONSTRUCTION. JAMES H. COFFMAN, Columbus, Ohio, assignor of one-half to Grant Shaw, Columbus, Ohio. Filed Nov. 16, 1906. Serial No. 343,668.

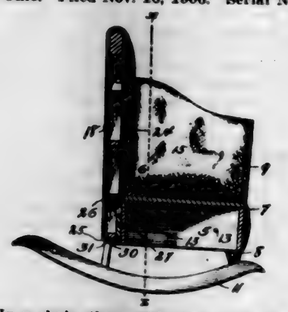

Claim.—In a chair, the combination with a hollow box-like seat portion of considerable depth, of a covering of upholstering material secured to said seat portion about its upper edges, side members, supporting members carried by said side members, means for securing the side members to the seat member, a covering of upholstering material secured to said side members at their juncture with the seat portion and at their outer lower edges, a back portion having overhanging members, the outer edges of which lie flush with the outer faces of the side members, said side members having sockets formed in their upper rear edges, tenons carried by the overhanging members of the back adapted to enter said sockets, a transverse strip which extends between and is carried by the side members, said strip lying close to the lower rear edge of the seat member, a tenon carried by the lower edge of the back portion which enters a socket formed in said strip, and a covering of upholstering material which is secured to said back portion at its juncture with the seat member and at its lower rear edge, the upholstering covering of the side members extending over the upper edges of said side members and the upholstering covering of the back extending over the upper edge of the back, substantially as described.

851,068. SOCKET-PIECE FOR WRENCHES. WILLIAM H. COWELL, Cleveland, Ohio. Filed Feb. 14, 1907. Serial No. 357,376.

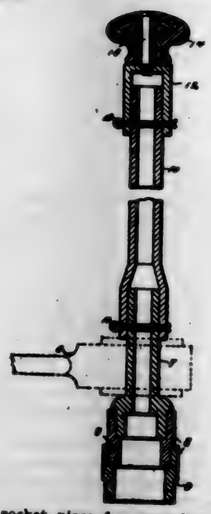

Claim.—1. A socket piece for wrenches, comprising a shank, and a series of sockets mounted thereon, of progressively larger sizes, said sockets being respectively of a size at the rear end to fit upon the next smaller socket, and of a size at the front end to be received by the rear end of the next larger socket.

2. A socket piece for wrenches, having a shank, a detachable extension having a socket in one end fitting the end of the shank, and a detachable handle piece having a turning knob and a socket, said sockets being of the same size as the shank and the extension so as to fit either.

851,069. SHIP'S PLATE. JOHN CRAIG, San Francisco, Cal. Filed June 22, 1905. Serial No. 266,401.

Claim.—A ship's plate consisting on one side of a steel plate and on the other side of a dense and homogeneous plate of cast copper, the surface of demarcation between said plates being sharply defined, but the respective metals interpenetrating to such extent as to secure perfect union of the plates, substantially as described.

851,070. SHOULDER-BRACES. GEORGE R. CRAW and OTTO MILLER, Chicago, Ill. Filed July 12, 1906. Serial No. 325,829.

Claim.—1. A shoulder brace comprising substantially continuous shoulder loops, suspender ends depending from said loops mediate their ends, a pendent back strap and equalizing means to which said back strap is directly connected and to which the ends of said loops have a sliding connection independently of each other.

2. A shoulder brace comprising substantially continuous shoulder loops, suspender ends depending from said loops mediate their ends, a pendent back strap, means to which said back strap is directly connected and an endless equalizing cord surrounding but connected at points throughout its length to said means, and to which the ends of said shoulder loops are connected.

3. A shoulder brace comprising substantially continuous shoulder loops, suspender ends depending from said loops mediate their ends, a pendent back-strap, a cross-shaped plate to which said back-strap is directly connected, an endless equalizing cord surrounding said plate, and slidingly engaging the ends of the three uppermost arms of said plate, and to which cord the ends of said shoulder loops are suitably connected.

4. A shoulder brace comprising substantially continuous shoulder loops, suspender ends depending from said loops mediate their ends, stirrups pivotally connected to the ends of said loops, a pendent back-strap, a cross-shaped plate to which said back-strap is directly connected and having stirrups connected to its three upper ends, and endless equalizing cord surrounding said plate and slidingly engaging the stirrups mounted on the ends of said plate and the ends of said shoulder loops.

851,071. AUTOMATIC TELEGRAPHY. ALBERT C. CREHORE, Tarrytown, N. Y., and GEORGE O. SQUIER, Washington, D. C. Filed July 12, 1902. Serial No. 115,272.

Claim.—1. A perforated tape for telegraph transmission, having spacing and character perforations distinguished from one another by being located on different longitudinal lines combined with a generator and trans-

mitter adapted to transmit currents over the line by the said spacing perforations.

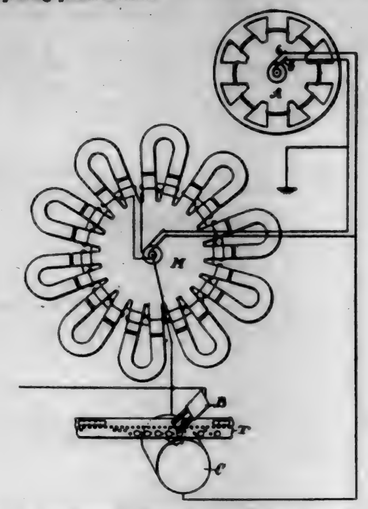

2. In a telegraph apparatus, the combination with a generator of alternating current, of a transmitting apparatus synchronously driven and adapted as described to send dashes or prolonged signals by permitting first a semicycle of one polarity of current to go to line, then omitting a semicycle of the opposite polarity, then sending a semicycle of the same polarity as that first transmitted and terminating the signal by a semicycle of the opposite polarity.

3. In a telegraph apparatus, the combination substantially as described, of an alternating current generator and a synchronously operating transmitter having a transmitting tape perforated in the manner described to transmit and terminate a dash by sending first a positive semicycle of the generated alternating current, omitting the next or negative semicycle, then transmitting the next positive semicycle and finally a negative semicycle, as and for the purpose described.

4. In a telegraphic apparatus, the combination substantially as described with a continuously operating alternating current generator, of a transmitting apparatus synchronously operated and organized to transmit and terminate dashes or prolonged signals in the time of four complete semicycles by sending first a semicycle of one polarity and finally a semicycle of the opposite polarity, one or both of the two intermediate semicycles being omitted, as and for the purpose described.

5. The improvement in methods of telegraphing by an alternating current generator, consisting in producing prolonged spacing by sending a succession of semicycles of one polarity and omitting intermediate semicycles of the opposite polarity, as and for the purpose described.

6. In a telegraph apparatus, the combination with a generating apparatus adapted to produce pulses of current of opposite polarity, of a synchronously operating transmitter adapted to send dots or short signals by transmitting to the line a semicycle of one polarity followed immediately by a semicycle of the opposite polarity and to transmit dashes or prolonged signals by sending to the line first a semicycle of one polarity, then suppressing the current for the time of the next succeeding pulse of current produced by the generator, and finally in the time of the fourth pulse transmitting a pulse of the opposite polarity to that first sent.

7. In a telegraph apparatus, the combination with an alternating current generator, of a transmitting tape organized to send dots by permitting a complete wave of the alternating current to go to line, and to transmit dashes or prolonged signals in the time of two complete waves by sending the first semicycle of the first wave and the last semicycle of the second wave, the corresponding semicycle of the first wave being omitted.

8. In a telegraph apparatus, the combination with means for generating a regularly recurring series of current pulses positive and negative, of a synchronously operating transmitter controlling the flow of said pulses to line and operating in the manner described to transmit dots by sending a pulse of one polarity followed immediately by a pulse of the opposite polarity, and to send dashes or prolonged signals in double the time of the short signals or dots by transmitting a pulse of one polarity and in the time of the fourth pulse transmitting a pulse of the opposite polarity, the current being removed from the line in the time of one or both of the two intermediate pulses.

9. The herein described method of telegraphing by an alternating current generator, consisting in sending a prolonged signal by first permitting a pulse of said generator of one polarity to flow to line, then suppressing pulses to cause the signal to be lengthened by the charge produced by the initial pulse, and finally permitting a pulse of said generator of the opposite polarity to the initial pulse to flow in order to terminate the signal.

10. The herein described method of transmitting lengthened signals from an alternating current generator, consisting in permitting a pulse of one polarity to flow to line from said generator, winding up the signal by permitting a pulse of the opposite polarity to flow to line from said generator and omitting one or more of the intermediate pulses between the initial pulse and final pulse and of the same character as the initial pulse for the purpose of prolonging the action on the receiver by the action of the charge on the line produced by the initial pulse flowing from said generator.

851,072. SHIP-CLEANING DEVICE. ROBERT B. CRUMP, Brooklyn, N. Y. Filed July 9, 1906. Serial No. 325,239.

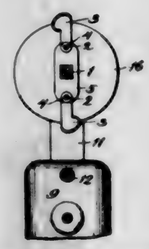

Claim.—1. In a machine of the class described, a frame, a motor fixed to the frame, a shaft carrying hammers, bearing wheels on the shaft, and means for revolving the shaft. Substantially as shown.

2. In a machine of the class described, a frame, a handle attached to the frame, a revolvable shaft supported in the frame, bearing wheels on the shaft, hammers attached to the shaft, and means for revolving the shaft. Substantially as shown.

3. In a machine of the class described, a revolvable member, hammers attached to the revolvable member, bearing wheels on the shaft of the revolvable member, means for connecting the several parts. Substantially as shown.

4. In a machine of the class described, a rotating member, hammers attached to the rotating member, means for driving the rotating member, bearing wheels for supporting the rotating member, combined substantially as shown and described.

5. In a machine of the class described, a rotating member, hammers attached to the rotating member, bearings to support the rotating member on the surface to be acted on, means for connecting the several parts, substantially as shown and described.

6. In an apparatus for cleaning ships' hulls, the combination of a frame for lowering over the side of a ship, a revolvable shaft mounted in said frame, arms supported on said shaft, heads on the outer ends of said arms, and means for turning said shaft.

7. In an apparatus for cleaning ships' hulls, the combination of a frame for carrying the cleaning devices, a shaft mounted in said frame, radial arms supported by said shaft, striking heads on the outer ends of said arms, and a motor for turning said shaft.

851,073. LACING. HENRY H. CUMMINGS, Newton, Mass. Filed Jan. 19, 1906. Serial No. 296,812.

Claim.—1. A lacing having an interior stiffening member, and a separate exterior metal tip.

2. A lacing having an interior stiffening member, and a separate exterior non-corrosive tip.

3. A lacing having a stiffened end provided with a contracted neck portion near its extremity and having a protecting tip upon the said extremity and retained by said contracted neck portion.

4. A lacing having a stiffened end tapered for substantially its entire length and provided with an exterior textile facing and a relatively hard tip.

5. A lacing having an interior stiffening member for its end, and a separate hollow tip within which the extremity of said end is extended and covered and protected thereby.

6. A lacing having an interior stiffening member for its end and a separate exterior tip presenting an unbroken end surface covering and protecting the end of the tip.

851,074. ADVERTISING-SIGN. JAMES M. DENNIS and HARRY R. DENNIS, Richmond, Ind., assignors to New Castle Electric Sign Company, Newcastle, Ind. Filed July 13, 1906. Serial No. 326,049.

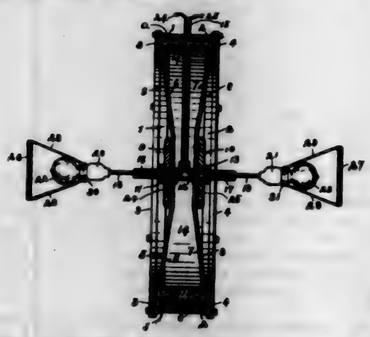

Claim.—1. A sign comprising two double and circular rims spaced apart, a double screen secured between the said rims and converging inward to near their centers, a band dividing the pairs of rims, bolts connecting the two outer rims in order to adjust the pairs of rims in their relations to each other, a pair of oppositely disposed disks contacting each with the face of its screen and disposed over the center thereof, a T-fitting connecting the centers of the disks and extending therethrough, nuts threaded on the outer extensions of said fitting to retain the disks in position, a tube extending out from each horizontal portion of said fitting, an arm telescopically mounted in each of said tubes, an electric lamp carried on the outer end of each of said arms, a pipe extending from said fitting through the edge of the sign, a wire circuit extending from each lamp through said arms and tubes, respectively, and through said fitting and pipe, and means for directing the light from said lamps onto the face of the sign, all substantially as shown and described.

2. A sign comprising two double and circular rims spaced apart, a double screen secured between said rims and converging inward to near their centers, a band dividing the pairs of rims, bolts connecting the two outer rims in order to adjust the pairs of rims in their relation to each other, a pair of oppositely disposed disks contacting each with the face of its screen and disposed over the center thereof, a T-fitting connecting the centers of the disks and extending therethrough, nuts threaded on the outer extensions of said fittings to retain the disks in position, a tube extending out from each horisontal porton of said fitting, an arm telescopically mounted in each of said tubes, an electric lamp carried on the outer end of each of said arms, a pipe extending from said fitting through the edge of the sign, a wire circuit extending from each lamp through said arms and tubes, respectively, and through said fitting and pipe, letters attached to said wire screens, and a mirror carried in front of each of said lamps and being so positioned as to direct the light from the lamps upon the letters of the respective screens, all substantially as shown and described.

3. A sign comprising two double and circular rims spaced apart, a double screen secured between said rims and converging inward to near their centers, a band dividing the pairs of rims, bolts connecting the two outer rims in order to adjust the pairs of rims in their relations to each other, a pair of oppositely disposed disks contacting each with the face of its screen and disposed over the center thereof, a T-fitting connecting the centers of the disks and extending therethrough, nuts threaded on the outer extensions of said fitting to retain the disks in position, a tube extending out from each horizontal portion of said fitting, an arm telescopically mounted in each of said tubes, an electric lamp carried on the outer end of each of said arms, a pipe extending from said fitting through the edge of the sign, a wire circuit extending from each lamp through said arms and tubes, respectively, and through said fitting and pipe, mirrors carried in front of said lamps for directing the light from the lamps onto the faces of said wire-screens, and letters attached to faces of said wire-screens by tongues formed in the edges of the letters, the said tongues being formed by cutting two incisions inward divergently from a common point on the periphery of the letters, said tongues being bent back at right angles to the letters and inserted through the meshes of the screen and then bent back to near their original positions, all substantially as shown and described and for the purposes set forth.

4. An advertising sign comprising double circular rims spaced apart, a wire-screen secured between each of said double rims and converging inwardly, a band dividing the pairs of rims and their screens, means for connecting the rims to said band, a disk contacting with the center of the face of each screen, a T-fitting connecting said disks and extending therethrough, nuts threaded on the protruding ends of said fitting and contacting with the faces of the respective disks, a tube extending out from each horizontal portion of said fitting, an arm telescopically mounted in each of said tubes, a lamp carried on the outer end of each of said arms, a pipe extending from said fitting through the edge of the sign at right angles to said tubes, feed wires extending to said lamps, a mirror disposed in front of each of said lamps to direct the light therefrom onto the respective faces of the screens, metal letters attached to the faces of each of said screens by tongues cut in the peripheries of the letters and adapted to be inserted through the meshes of the screens and then bent parallel with the letters and the screens, all substantially as shown and described.

5. An advertising sign comprising in combination two

circular rims spaced apart, a screen carried by each of said rims and formed concave, a disk contacting with the center portion of the face of each screen, a T-fitting connecting said disks, a nut threaded on each of the outer extensions of said fitting and contacting with the outer faces of said disks, a lamp carried some distance out from the face of each of said disks, means whereby said lamps may be adjusted to and from said disks, feed wires extending through the sign to said lamps, a mirror carried with each of said lamps and adapted to direct the light from the lamps onto the faces of said screens, metal letters secured to each of said screens, said letters being of a color distinctively different from the color of the screens, means for securing said letters to the screens which means consists in forming tongues at various points in the peripheries of the letter, each of said tongues being formed by cutting two incisions inward divergently from a common point in the periphery of the letters, said tongues being adapted to be bent back and inserted through meshes of the screen and then bent parallel with the screen and the letter, all substantially as shown and described.

6. A sign comprising double rims spaced apart, screens secured at their edges by the respective double rims and converging inward toward each other, means for dividing said rims and screens, means for retaining said rims and screens in proper relations to each other, oppositely disposed disks contacting with the center portion of their respective screens, a T-fitting connecting said disks and opening outwardly at the center of each screen with its center portion opening in the space between the screens, means for retaining said disks in contact with the screens, tubes extending outwardly from each end of said T-fitting, a lamp carried on the outer end of each of said arms, a reflector carried in front of each of said lamps and directed toward its respective screen, and letters attached to the face of each screen by tongues cut in the letters.

851,075. LAWN-MOWER. SHADRACH M. DOBSON, Portland, Me. Filed May 18, 1905. Serial No. 260,982.

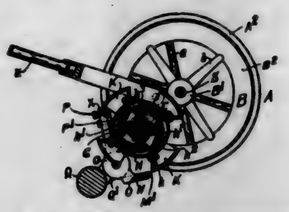

Claim.—1. In a lawn mower, the combination with a pair of driving wheels of a counter-shaft having two parts independently driven thereby, a cutter carriage mounted on said two part shaft and ratchet connections between each of said parts of said shaft and said cutter carriage, substantially as and for the purpose specified.

2. In a lawn mower, the combination with a pair of driving wheels of a counter-shaft having two parts independently driven thereby, said parts having on their adjacent ends ratchet mechanisms, a casing having bearings for said adjacent ends and provided with independent ratchet mechanisms coacting with said first named mechanisms and cutter blades operatively connected with said casing.

3. In a lawn mower, a counter-shaft having two independently driven portions with ratchets on their adjacent ends, a casing for said ratchets provided with bearings for said portions, said casing being provided with pawls adapted to co-act with said ratchets and cutter blades operatively connected with said casing.

4. In a lawn mower, a positively driven shaft having a ratchet, a cutter carriage mounted thereon and having a pivoted pawl adapted to be thrown outward by the rotation of said carriage when said ratchet is stopped.

5. In a lawn mower, a counter-shaft having two independently driven portions with ratchets on their adjacent ends, a casing for said ratchets provided with bearings for the portions, said casing being provided with pivoted pawls adapted to be engaged by said ratchets in their forward motion and to be thrown outward by the motion of the casing when said ratchets are retarded, and cutters operatively connected with said casing.

6. In a lawn mower, a counter-shaft having two independently driven portions with ratchets on their adjacent ends, a cutter head loosely mounted on said shaft and comprising a casing for said ratchets having bearings for said portions and said casing being provided with pivoted pawls adapted to be engaged by said ratchets in their forward motion and to be thrown outward as the ratchets are retarded, and cutters operatively attached to said head substantially as and for the purpose specified.

7. In a lawn mower, a positively driven shaft having a ratchet, a cutter carriage mounted thereon and having a pivoted pawl, said pawl being weighted at its free end whereby it will be moved centrifugally by the rotation of said carriage when said ratchet is stopped.

8. In a lawn mower, a pair of positively driven shafts having ratchets, a cutter carriage mounted thereon and having pivoted pawls, said pawls being weighted at their free ends whereby they will be moved centrifugally by the rotation of said carriage when said ratchets are stopped.

851,076. NECKBAND-RING. BERTRAM C. DONNELLY and CHARLES K. MCKNIGHT, St. Joseph, Mo. Filed Dec. 12, 1905. Serial No. 291,484.

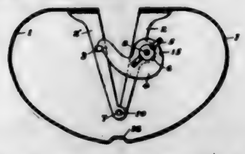

Claim.—1. The combination in a neck band ring, of a spring metal band provided with a recess for engaging a neck band button; a frame attached to the band at its point of division, the extension of said frame forming legs pivotally connected at their lower ends, a female screw on one of said legs, a cam, having a cam lug, notches and thumb ears, and a male screw operating in said female screw said female screw serving as a pivot for said cam, and a lug upon the opposite leg with which the cam lug engages, substantially as shown and set forth.

2. In a neck band ring legs hinged together at one end and constituting the frame, a band having its ends rigidly fastened to the upper ends of said legs, and provided with a recess for a shirt band button, a cylinder shape female screw on one of said legs, a lug opposite thereto on the other leg, a cam revoluble on said screw and provided with notches in its edge to serve as stops and a lug to limit its movement, and a male screw engaging the female screw to fasten the cam to the frame, substantially as shown and described.

3. In a neck band ring a divided spring metal band, provided with a recess for a shirt band button, a divided frame attached to said band the parts of the frame being hinged at one end, a cam on one part of the frame adapted to be revolved thereon and having a lug and stops thereon, and a lug on the frame with which said cam lug and stops are adapted to engage, substantially as set forth and shown.

4. The combination of a spring neck band, legs attached thereto pivotally connected at their inner ends, a lug on one of said legs, and a thumb cam on the other leg provided with notches adapted to engage with said lug to regulate the size of a band, substantially as described and shown.

851,077. CAR-AXLE-BOX LID. WILLIAM G. DUNHAM, Chicago, Ill. Filed Nov. 1, 1905. Serial No. 285,425.

Claim.—1. The combination with an axle box and a lid hinged thereto, of a spring thrust device reacting directly against a part rigid with the lid and against a seat in a fixed base of resistance inward of the axis of the lid hinge, said spring thrust device having an angular oscillatory movement both in respect to the lid and the box, and so disposed that its line of force intersects the mouth of the box when the lid is closed, and the spring of which thrusts outward on the lid; to open the same, substantially as described.

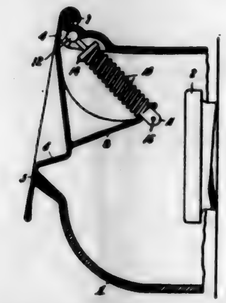

2. The combination with an axle box and a lid hinged thereto, of a spring thrust device reacting directly against a part rigid with the lid and against a seat in a fixed base of resistance inward of the mouth opening of the lid, said spring thrust device having an angular oscillatory movement both in respect to the lid and the box, and so disposed that its line of force obliquely intersects the mouth of the box when the lid is closed, the spring of which thrusts outward on the lid to open the same, and said lid and its support being provided with means whereby movement of the lid carries said thrust device from one side to the other of a dead center, substantially as described.

851,078. COIN-HOLDER. PATRICK T. DUNN, New York, N. Y. Filed Oct. 25, 1906. Serial No. 340,487.

Claim.—As an improved article of manufacture, a coin-holder composed of a plurality of independent rings of different sizes arranged with their peripheries permanently secured together to hold said rings in successive order, each ring being of resilient material and having inturned flanges, and each ring having an opening in its side parallel with its longitudinal axis, each ring being independently capable of being opened to receive or discharge a coin and to hold the latter by the resiliency of the material of the ring.

851,079. DEVICE FOR SAVING AND ASSORTING TACKS. GARABED H. ELMASIAN, Lynn, Mass. Filed May 3, 1906. Serial No. 315,075.

Claim.—1. In a device of the character described, a hopper, a guide-plate located beneath said hopper, said guide-plate provided with two pyramidal recesses and two apertures leading from the apexes of said recesses, a receptacle located beneath each of said apertures, respectively, a deflector pivoted to said guide-plate with its axis located substantially midway between two said apertures, a receptacle located beneath each of said apertures, respectively, and mechanism for rocking said deflector upon its pivot.

2. In a device of the character described, a hopper, a guide-plate located beneath said hopper, said guide-plate provided with two apertures extending therethrough, a receptacle located beneath each of said apertures, respectively, a deflector pivoted to said guide-plate and having an arm extending therethrough, a lever, and a link connecting said lever and arm.

3. In a device of the character described, a hopper, two receptacles located beneath said hopper and communicating therewith, a pivoted deflector adapted to guide tacks or the like toward one or the other of said receptacles, mechanism for rocking said deflector upon its pivot, and a perforated plate located in said hopper above said deflector.

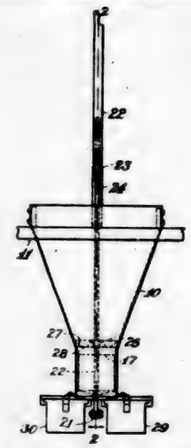

4. In a device of the character described, a hopper, two receptacles located beneath said hopper and communicating therewith, a pivoted deflector adapted to guide tacks or the like toward one or the other of said receptacles, mechanism for rocking said deflector upon its pivot, and a plate located in said hopper above said deflector, said plate provided with a plurality of pyramidal depressions and a plurality of perforations leading from said depressions.

851,080. VESSEL-POSITIONING DEVICE. CHARLES B. ERHART, Cincinnati, Ohio, and EDWARD GALATTI, Covington, Ky. Filed Sept. 6, 1906. Serial No. 333,525.

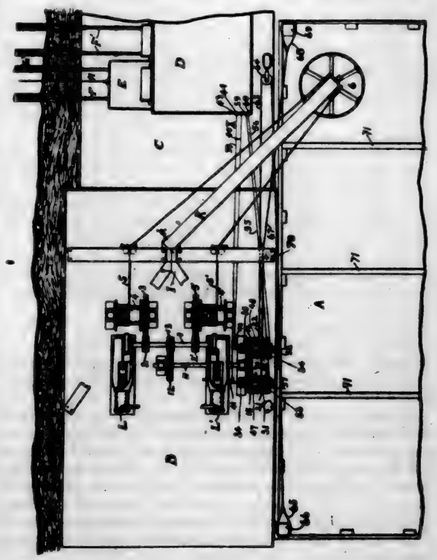

Claim.—1. In a vessel positioning device for use with a loading hopper, the combination, with a barge and a hop-

per, of a pair of winding drums, flexible connections connecting said winding drums and barge, a pair of gears, means for driving the latter, said respective winding drums and gears having friction-faces therebetween, and means operable from the hopper attendant's position for manipulating the engagement of said friction-faces, substantially as described.

2. In a vessel-positioning device for use with a loading hopper, the combination, with a barge and a hopper, of a pair of winding drums, flexible connections connecting said drums with said barge, a pair of gears, means for driving the latter, said respective winding drums and gears having friction-faces therebetween, means operable from the hopper attendant's position for manipulating the engagement of said friction-faces, a brake for each of said drums, and means operable from the hopper attendant's position for manipulating said brakes, substantially as described.

3. In a vessel positioning device for use with a loading hopper, the combination with an excavator-barge and excavator therefor, a vessel positioning device on said barge comprising a pair of drums, a cable on each of said drums adapted to respectively engage with the respective ends of a vessel to be unloaded, a motor for driving said excavator, releasable driving connection between said motor and drums, and means for operating said releasing mechanism from the hopper-attendant's position, substantially as described.

4. In a vessel-positioning device, the combination, with a power-float, a vessel to be positioned, and a hopper, of a pair of drums, a cable for each releasably secured to the respective ends of a vessel to be positioned, a gear for each of said drums, each of said drums and its gear having releasable friction-faces therebetween, a pinion meshing with each of said gears, a lever overhanging each of said drums and having moving connection with its drum for causing engagement of said friction-faces between said drum and its gear, and flexible connections secured to said respective levers and leading to the operator's position at said hopper for controlling the operation of said drums from said operator's position, substantially as described.

5. In a vessel-positioning device, the combination, with a power-float, a vessel to be positioned, and a hopper, of a pair of drums, on said power-float a cable for each releasably secured to the respective ends of said vessel to be positioned, a gear for each of said drums, each of said drums and its gear having releasable friction-faces therebetween, a brake for each of said drums, levers for operating said brakes, a pinion meshing with each of said gears, a lever overhanging each of said drums and having moving connection with its drum for causing engagement of said friction-faces between said drum and its gear, flexible connections connected with said brake-levers for operating said brakes, and flexible connections connected to said overhanging levers, all of said flexible connections leading to the operator's position at said hopper, substantially as described.

6. In a vessel positioning device for use with a loading hopper, the combination, with a barge and a hopper, of a pair of winding drums, flexible connections connecting said winding drums and barge, releasable driving means for said drums, and means operable from the hopper attendant's position for manipulating said releasable driving means, substantially as described.

851,081. SELF-FILLING FOUNTAIN-PEN. CHARLES A. FABER, Toledo, Ohio. Filed Aug. 3, 1905. Serial No. 272,486.

Claim.—1. In a self-filling fountain pen, the combination with an elastic ink-reservoir of a principal section of the penholder, a compression lever pivoted at both ends within the principal section of the holder, an operating-lever external to the principal section of the holder integral with the compression-lever and engaging the swivel-cap, and a swivel-cap adapted to cover and protect the operation lever and to furnish means by which the same is operated.

2. In a self-filling fountain pen containing an elastic ink-reservoir and a compression lever parallel with the reservoir and pivoted at each end of the principal section of the holder, an operating-lever integral with the compression-lever and external to the principal-section of the holder; a rotatable extension of the penholder, engaging the operating-lever, adapted to protect said lever and furnish means by which it is operated; and a compression-plate hinged upon the compression-lever, parallel with the same and adapted to more completely collapse the ink-reservoir.

3. In a self-filling fountain pen, the combination of a pen-section, an elastic ink-reservoir attached thereto and a pen therein with an ink-channel and feed-bar leading from the reservoir to the pen, a hollow principal-section of the penholder adapted to contain the reservoir, a compression-lever extending longitudinally between the reservoir and the principal-section of the holder and pivoted at each end thereof, an operating-lever integral with the compression-lever and external to the principal-section of the holder, and a rotatable extension of the holder adapted to cover the operating-lever and to furnish means by which it is operated, having an aperture in the side thereof adapted to engage the operating-lever.

4. In a self-filling fountain pen of the character described, a hollow principal-section of the pen-holder, an elastic ink-reservoir therein, a compression-lever therein pivoted at each end thereof, and a presser-plate hinged upon the compression-lever and adapted to more completely collapse the elastic ink-reservoir.

5. In a self-filling fountain pen of the character described, a hollow principal-section of the pen-holder, an elastic ink-reservoir therein, journals at either end thereof adapted to engage the pivots of a compression-lever, and a compression-lever therein made of a continuous piece of wire, bent at the proper places and angles, comprising a presser-bar, an offset at each end thereof, a pivot extending from each offset in a line parallel with the presser-bar, and an operating lever at substantially a right angle to one of the pivots and external to the principal-section of the holder.

851,082. SEWING-MACHINE. GUILLAUME FISCHER, Geneva, Switzerland. Filed Sept. 28, 1904. Serial No. 226,354.

Claim.—1. In a sewing machine, work-holding means for supporting two spaced layers of material; means for directing a thread between said layers; means for penetrating the upper layer, pulling a loop of thread through said layer, conveying said loop sidewise and passing the same back through said layer; means for penetrating the lower layer, pulling a loop of thread through said lower layer, conveying said last-named loop sidewise and passing

the same back through said lower layer; and means for drawing one of said loops through the other of said loops.

2. In a sewing machine, the combination of work-holding means for supporting two spaced layers of material; means for directing a thread between said layers; a pair of loop-pulling needles, one of which draws a loop of the thread through the upper layer and the other of which draws a loop of the thread through the lower layer; loop-passing hooks for passing the loops so formed into the path of loop-forcing needles; a pair of loop-forcing needles, one of which forces one of said loops back through the upper layer and the other of which forces the other loop back through the lower layer; and means for pulling one of the loops through the other of the loops.

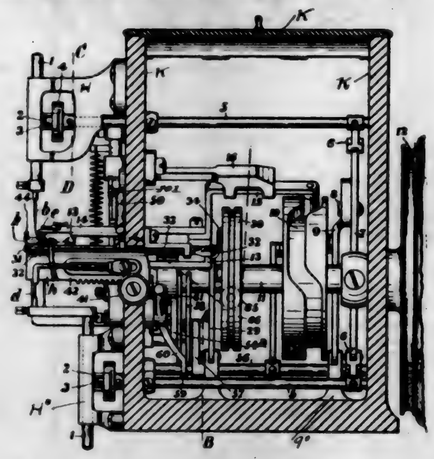

3. In a sewing machine, the combination of work-holding means for supporting two spaced layers of material; means for directing a thread between said layers; means for pulling a loop of the thread through the upper layer; devices for transferring said loop sidewise into the path of loop-forcing means; said loop-forcing means for forcing said loop back again through said upper layer; means for pulling a loop of the thread through the lower layer; devices for transferring said last-named loop sidewise into the path of loop-forcing means; said loop-forcing means for forcing said last-named loop back again through said lower layer; and means for pulling one of the loops through the other of the loops.

4. In a sewing machine, the combination of work-holding means for supporting two spaced layers of material; means for directing a thread between said layers; means for feeding said material; means for forming a loop in the thread and drawing the same to the outside of one of said layers; means for forming a loop upon the outside of the other of said layers; means for transferring the loop from the outside of the first-named layer to between the layers; means for transferring the loop from the outside of the other layer to between the layers; and means for pulling one loop through the other.

851,083. DEVICE FOR SAWING QUARTERED TIMBER. ANTON S. FROSLID, Seaside, Oreg., assignor to Seaside Electric Company, Seaside, Oreg., a Corporation of Oregon. Filed Apr. 30, 1906. Serial No. 314,605.

Claim.—In a machine for sawing quartered logs, the combination between a right angled stay-log or logholder adapted to hold one quarter of the log, mounted upon a traveling log carriage and turning upon an axis fastened to said carriage; and circular saws in any desired number mounted at suitable heights in vertical planes above said carriage, a portion of the number of the saws being directly over the stay-log when one arm or side of the stay-log is in a horizontal position and the remaining portion of the number of the saws being directly over the stay-log when, after a turn of a quarter circle of the stay-log around the axis, this same arm is in a vertical position, and at least in one of these portions of the number of the saws the saws being so mounted that the arbor carrying

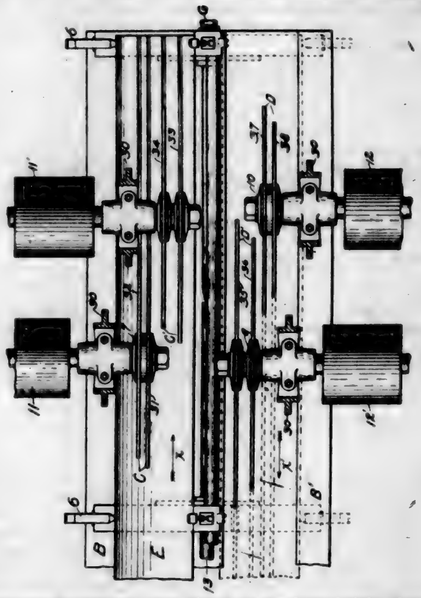

the saw or group of saws placed at the least height above the carriage shall be nearest the point where the carriage stops after finished trip and the arbor carrying the saw or group of saws placed at the greatest height above the carriage shall be farthest away from this point; substantially as specified.

851,084. PRINTING OR REPRODUCING APPARATUS. WILLIAM G. FUERTH, Newark, N. J., assignor to Equilibrator Company, a Corporation of New Jersey. Filed Jan. 5, 1906. Serial No. 294,696.

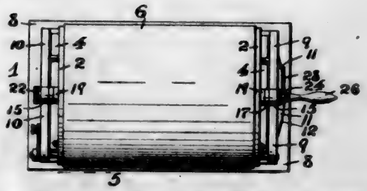

Claim.—1. In a stenciling machine having a stencil cylinder and a pressure roll, the combination with a stop adjustable circumferentially of the cylinder, of a stop co-operating with said stop both to enable the cylinder and roll to co-operate to form a gage for the leading edges of the sheets and to lock the cylinder positively against backward rotation from the position in which it stands when the sheet is introduced; one of said stops having a spring to permit it to yield to permit forward movement of the cylinder, and also having a finger-piece whereby it may be released from the other stop.

2. In a stenciling machine having a stencil cylinder and a pressure roll, the combination of an arm connected to the cylinder to permit rotative adjustment between the cylinder and the arm, a stop upon said arm, a stop upon the framework co-operating with said arm stop both to enable

the cylinder and roll to co-operate to form a gage for the leading edges of the sheets and also to lock the cylinder positively against backward rotation from the position in which it stands when the sheet is introduced; said arm stop yieldingly supported upon said arm; and a finger-piece connected to said arm stop both to release the same from the framework stop and also to rotate said cylinder.

3. In a stenciling machine having a stencil cylinder and a pressure roll, the combination with a spring-stop fixed to the cylinder to rotate therewith and mounted to yield in a direction longitudinal of the cylinder, of a fixed device in the path of said top to spring the latter out of its normal position, and having a notch into which said stop springs to locate the cylinder in position to receive a fresh sheet; said stop provided with a handle whereby the cylinder may be rotated and whereby the stop may be sprung away from said fixed device during the rotation of the cylinder.

4. In a stenciling machine having a stencil cylinder and a pressure roll, the combination with an arm provided with a handle to rotate the cylinder, and also having a stop yieldable in a direction longitudinal of the cylinder, of a fixed inclined device in the path of the stop to spring the latter out of its normal position, and having a notch into which said stop springs and whereby the arm is held against rotation in either direction, and means rigidly securing said arm to said cylinder, said securing means being releasable sufficiently to permit the cylinder to be rotatively adjusted while said arm is held stationary by reason of the engagement of said stop with said notch.

5. In a stenciling machine having a stencil cylinder and a pressure roll, the combination with an arm in the form of a spring and provided with a handle and a stop, of a fixed device in the path of the stop to spring the latter out of its normal position, and having a notch into which said stop springs to locate the cylinder for the insertion of a fresh sheet into the machine.

6. In a stenciling machine having a stencil cylinder and a pressure roll, the combination with a stop adjustable circumferentially of the cylinder, of a stop co-operating with said stop both to enable the cylinder and roll to co-operate to form a gage for the leading edges of the sheets and to lock the cylinder positively against backward rotation from the position in which it stands when the sheet is introduced; one of said stops having a spring to permit it to yield to permit forward movement of the cylinder, and also having a finger-piece whereby it may be released from the other stop, and means rigidly securing said arm to said cylinder, but releasable to permit rotative adjustment of the cylinder while the arm is detained by reason of the engagement of the stop with the notch.

7. In a stenciling machine having a stencil cylinder and a pressure roll, the combination with a spring-stop fixed to the cylinder to rotate therewith and mounted to yield in a direction longitudinal of the cylinder, of a fixed device in the path of said stop to spring the latter out of its normal position, and having a notch into which said stop springs, said notch having an abrupt face to hold the cylinder from turning back and enable it to co-operate with the roll to form a gage for the leading edge of the sheets; said stop provided with a handle whereby the cylinder may be rotated and whereby the stop may be sprung away from said fixed device.

851,085. HARROW. STEPHEN H. GARST, Detroit, Mich. Filed May 4, 1906. Serial No. 315,208.

Claim.—1. In a harrow, a series of harrow teeth supported upon parallel bars, in combination with gangs of individual revolving crushers moving in the paths of the harrow teeth, adjustable brackets upon which said gangs of revolving crushers are mounted, said brackets being adjustably mounted in the harrow frame in the rear of the harrow teeth, and a common operating lever with connections which enable a simultaneous manipulation of the harrow teeth and the revolving crushers, whereby when the harrow teeth are moved to substantially vertical position to cause said teeth to penetrate the soil deeper, the said revolving crushers are raised from the surface of the soil, and as said harrow teeth are moved to a substantially slanting position, the said revolving crushers are moved downward and forward, substantially as specified.

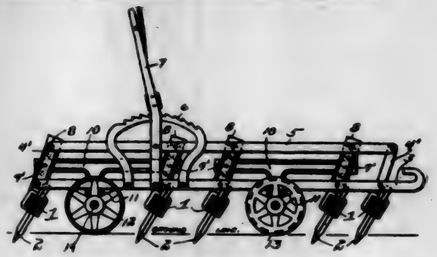

2. In a harrow, the combination with gangs of harrow teeth, of gangs of revolving crushers moving in the paths of said harrow teeth, said gangs of revolving crushers having adjustable connections in the harrow frame by means of brackets with depending standards, and a common operating lever with connections with the harrow frame and whereby the harrow teeth and the revolving crushers are simultaneously manipulated to cause said harrow teeth and revolving crushers to move in substantially opposite directions, as herein described.

851,086. DOOR-CONTROLLED ELECTRIC-ELEVATOR SYSTEM. RICHARD H. GAY, Conesville, Iowa. Filed June 29, 1906. Serial No. 324,062.

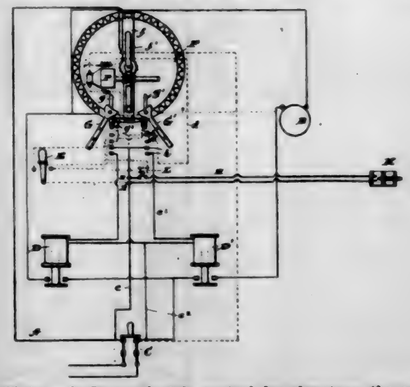

Claim.—1. In an electric control for elevators, the combination with a motor and its circuits, of solenoid controlled switches for the motor circuits, a rheostat, a hand controlled master switch for directly controlling the rheostat, shunt circuits in which the solenoids for controlling the motor circuits are located and a door controlled switch operatively associated with and positioned in the said shunt circuits.

2. In a door controlled system for electric elevators, a switching device for the door consisting of a box having a plurality of insulated partitions secured therein and extending thereacross, spring contacts carried by one of said partitions, a plunger carried by two oppositely disposed partitions and passing through the same, a spring on the plunger, and means for securing the partitions in position.

851,087. HAY, WOOD, AND STOCK RACK. FRANK GOODSELL, Fairfield, Mich., assignor to Lewis A. White and Orlando H. White, Fairfield, Mich. Filed Oct. 19, 1906. Serial No. 339,621.

Claim.—1. A device of the class described, comprising brackets adapted to be detachably secured to a wagon box, said brackets each being provided with a vertically disposed elongated slot having its upper end formed in hook-shape to provide seats at both terminals thereof, arms pivoted to said brackets, slats secured to the arms, and bars pivoted at one end to said arms and provided at their other end with means for operating in said slots and seating in one or the other terminal thereof.

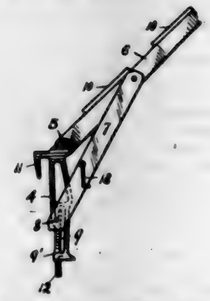

2. A device of the kind described, comprising brackets provided with hooked portions adapted to engage the edge of the side of a wagon body and projections adapted to fit in sockets in extensions secured to the wagon body, said brackets also being provided with vertically disposed slots having their upper ends angled to form seats at such ends corresponding to the seats at the lower ends of the slots, arms pivoted to said brackets, slats secured to said arms, and bracing bars pivoted at one end to said arms and provided at their other end with devices for seating in one or the other of the slot terminals, substantially as described.

3. A device of the class described, comprising brackets adapted to be detachably secured to the sides of a wagon body, said brackets being provided with hook-shaped slots forming terminals seats in different horizontal planes, arms pivoted to said brackets, slats secured to said arms, bracing bars pivoted at one end to said arms and provided at their other end with devices for engaging said seats in said brackets, and devices on said bracing bars for engaging the sides of the wagon body to retain said arms in an upright position, substantially as described.

4. A device of the class described, comprising brackets fashioned to be detachably secured to a wagon box and provided with hook-shaped slots the ends of which terminate to form seats in different horizontal planes, arms pivoted to the brackets, slats carried by the arms, and means cooperating with the arms and slotted portions of the brackets to maintain the arms and slats in different positions of adjustment relative to the bracket said means exerting a downward thrust upon the slot seats.

851,088. BOILER-FURNACE. ALONZO L. HASTINGS, Allegheny, Pa. Filed June 28, 1906. Serial No. 323,917.

Claim.—1. A boiler furnace having its flue chamber partially separated from the furnace by a water space, a series of water tubes communicating with said space at one end and with a rear water leg at the opposite end and forming a grate, and a second series of tubes communicating with such space and into the front water leg and extending across the path of the gases where they enter the flue chamber; substantially as described.

2. A boiler furnace having the upper portion of its flue chamber separated from the furnace by a water space, and a series of water tubes communicating at one end with the said space and extending across the lower portion of the flue chamber into the front water leg; substantially as described.

3. A boiler furnace having the upper portion of its flue chamber separated from the furnace by a water space, and a series of water tubes communicating at one end with the said space and extending obliquely across the lower portion of the flue chamber into the front water leg; substantially as described.

4. A boiler furnace surrounded on all sides except at the bottom by water spaces of a boiler, and having a series of water tubes communicating at their ends with such spaces and forming an auxiliary grate above the main grate, and a second series of water tubes also communicating with a water space within the shell of the boiler at one end, and with the front water leg of the boiler at the other end and extending across the path of the gases, where they pass from the furnace to the flue chamber; substantially as described.

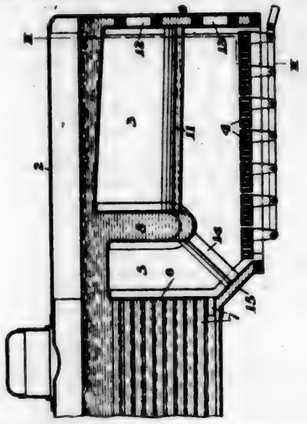

5. A boiler furnace having a lower grate, a rear water leg, a transverse water space partially separating the fire-box from the flue-chamber, and having its walls carried by the side walls of the fire-box and its rear wall supporting the crown-sheet of the fire box, a series of water tubes connecting the rear water leg with the transverse water space and forming an auxiliary grate above the lower grate, and a second series of water tubes communicating at one end with the said transverse water space, and at the opposite end with a front water leg; substantially as described.

851,089. ADDING-MACHINE. GEORGE N. HINCHMAN, Webster Groves, Mo., assignor to Standard Adding Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed July 25, 1906. Serial No. 327,705.

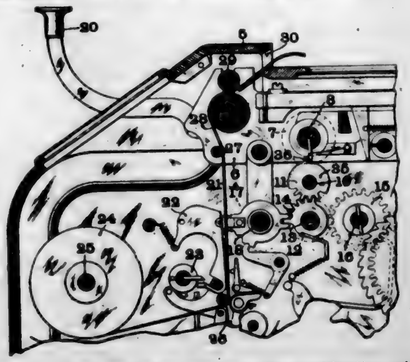

Claim.—1. In an adding machine, the combination with adding mechanism, of means for automatically printing an item symbol in conjunction with each individual item, said means being inoperative when printing a total.

2. In an adding machine, the combination with adding mechanism, of printing devices for printing individual items and totals, an auxiliary printing device for printing a symbol adjacent to each item, and means for prevent-

ing said auxiliary device from printing when taking the total.

3. In an adding machine, the combination with adding mechanism, of printing devices including an item symbol, means for transferring the total from said adding mechanism to said printing device, and connections operated by the transfer of the total for preventing said item symbol from printing.

4. In an adding machine, the combination with adding wheels, of printing wheels including an item symbol, means for transferring the total from said adding wheels to said printing wheels, and connections operated by the transfer of the totals for preventing said item symbol from printing.

5. In an adding machine, the combination with adding mechanism, of printing devices including an item symbol normally in printing position, means for transferring the total to said printing devices, connections operated by the transfer of the total for moving said item symbol out of printing position, and means for returning said item symbol to printing position.

6. In an adding machine, the combination with adding mechanism, of printing devices for printing individual items and totals, an auxiliary printing device for printing a polygonal symbol adjacent to each item, and means for preventing said auxiliary device from printing when taking the total.

851,090. TELEPHONE-METER. NEWMAN H. HOLLAND, Brookline, Mass., assignor, by mesne assignments, to Charles Bate, Boston, Mass. Filed June 8, 1903. Serial No. 160,608.

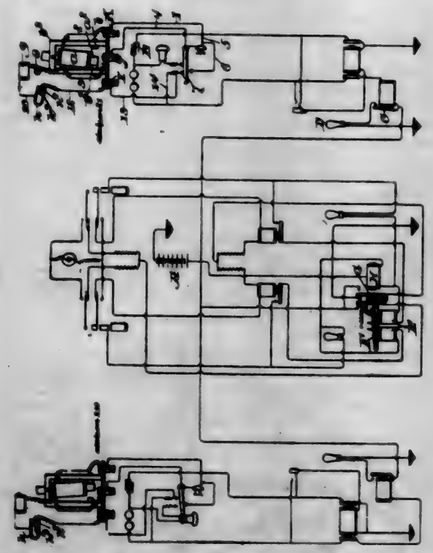

Claim.—1. In a telephone meter, an actuating wheel for the registering train; an actuating device co-operating with said wheel; an operating member movable in response to changes in the character of the current on the line to operate said actuating device; and a secondary controlling member for said actuating device to control the engagement thereof with the actuating wheel, substantially as described.

2. In a telephone meter, the combination with the actuating wheel; of a pawl to cooperate with said wheel; an electro-magnet; an armature movable in response to changes in character of current flowing through said electro-magnet to actuate said pawl; and a secondary controlling armature, provided with retarding means, to control the engagement of the pawl with the wheel, said armature being non-polarized and attracted regardless of changes in the character of current on the line, as set forth.

3. The combination with the actuating wheel; of a pawl to cooperate with said wheel; a controlling member normally holding the said pawl out of engagement with said wheel; an operating member for said pawl adapted to move quickly in one direction or the other in accordance with the character of the current flowing through the instrument; an electro-magnet to receive such current; a non-polarized armature for said controlling member; and means for causing said armature to move more slowly than the said operating member, as set forth.

4. The combination with the actuating wheel; of a pawl cooperating therewith; a quick moving polarized armature to operate said pawl; a controlling member provided with a relatively slow moving armature to control the engagement of said pawl with the actuating wheel; an electro-magnet to operate said armatures; and a locking device for said wheel operated by said slow moving armature, as set forth.

5. The combination with the actuating pawl and its operating member; of a controlling device for said pawl; a locking member for said controlling device; an electro-magnet cooperating with said locking member; a circuit for said electro-magnet; and an automatic switch in said circuit operated by said controlling device, as set forth.

6. In a telephone metering system, a meter or recording device at each station; means for operating said meter in response to the consecutive action of currents differing in character; means for causing a current of one character to flow through a station in response to the closure of the telephone circuit at said station prior to the insertion of a plug in the jack belonging to said station; means for thus closing the telephone circuit at said station; a device for changing the character of the current operating in response to the closure of the telephone circuits at two stations connected together at the central office; and means located at the station for restoring said meter in response to the re-changing of the character of the current which takes place when the plug is removed from the jack while the telephone circuit is closed.

851,091. SILO. FREDERICK E. HUDSON, Ellisburg, N. Y. Filed Jan. 30, 1907. Serial No. 354,801.

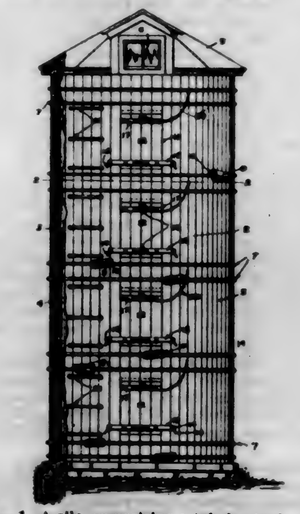

Claim.—1. A silo, comprising a tubular tank, a discharge opening formed through the wall of said tank, the ends and sides thereof being beveled in different directions, a beveled edge door adapted to fit and tightly close said opening, a chain to support said door when open, means for securing the lower end of said door to the wall of said tank, and a pair of looped handles attached to the outer face of said door, substantially as described.

2. A silo, comprising a stave-tank having an unobstructed interior, a series of discharge openings formed in one side of said tank arranged one above the other, a movable door adapted to close each of said openings from the outside, a chain to support and carry each door when in open position, a hasp secured to the lower part of each door, a pair of studs to engage the ends of said hasp, and a pair of handle-nuts to hold each door in closed position, substantially as described.

3. A silo, comprising a stave-tank having an unobstructed interor, a series of discharge openings formed in the side of said tank disposed one above the other, a movable door adapted to close each opening from the outside, a hasp secured to the lower part of each door, a pair of studs adapted to engage the ends of said hasp, and a pair of nuts to hold each door in closed position, substantially as described.

4. A silo, comprising a circular tank having an unobstructed interior throughout its full length, a series of detachable doors formed by cutting out a portion of the wall of said tank, the said doors being arranged one above the other at equal distance apart and adapted to be inserted in the discharge openings only from the outside of the tank, a chain attached to each door and to said tank by means of which the doors, when open, are suspended on one side and clear of the discharge openings, a double hasp carried by each door, a pair of studs projecting from said tank near the lower end of each door, and a pair of handle-nuts adapted to co-operate with said hasp and said studs for locking and holding said door in closed position, substantially as described.

851,092. HARNESS-HOOK. LEVI JAMES, Columbus Junction, Iowa. Filed May 1, 1906. Serial No. 314,666.

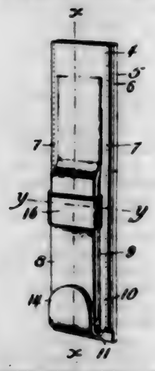

Claim.—The combination with a double strap stitched together at each edge by a row of stitching, the upper strap cut on the inner side of each row of stitching and forming a tongue, a hooked member secured within the channel formed by the removal of the tongue, the said tongue being adapted to pass within said hooked member, and a loop secured to the lower strap adjacent the hook and through which the tongue passes.

851,093. DREDGING AND EXCAVATING MACHINE. JOHN KENNEDY, Montreal, Quebec, Canada. Filed Oct. 18, 1906. Serial No. 339,527.

Claim.—1. A tooth for dredging and excavating machines and the like comprising a carrying member and a changeable point, one of such parts having a pair of plate-like flanges of less width than and overlapping the other part, the said other part having recesses into which the said flanges fit.

2. In a tooth for dredging and excavating machines, the combination with a carrier presenting a pair of separated wedge shaped members, of a changeable point presenting a pair of wedge shaped recesses divided by a web, means securing the point upon the carrier with the members wedged in the recesses and the web between the said members and means distinct from the web for preventing displacement of the point in a direction transversely to the tooth.

3. A tooth for dredging and excavating machines, and the like, comprising a part consisting of a carrying member and a second part consisting of a changeable point, one of the said parts having tapered plate-like flanges fitting into corresponding recesses in the other part.

4. A tooth for dredging and excavating machines, and the like, comprising a part consisting of a carrying member and a second part consisting of a changeable point, one of the said parts having plate-like flanges fitting into recesses in the other part; the plate-like devices being tied together by a web and the said other part having a slot for accommodating the web.

5. A tooth for dredging and excavating machines, and the like, comprising a part consisting of a carrying member and a second part consisting of a changeable point, one of the said parts having plate-like flanges fitting into recesses in the other part; and means whereby the slack between the said parts is taken up.

6. In a tooth for dredging and excavating machines, the combination with a wedge shaped carrying member with recesses in their converging faces, such recesses being tapered in their longitudinal direction, of a changeable point presenting a wedge shaped recess adapted to receive the carrying member, and tapered flanges adapted to fit into the tapered recesses of such member, and means securing the point in wedging relation with the carrying member.

7. In a tooth for dredging and excavating machines, the combination with a wedge shaped carrying member, of a changeable point presenting a wedge shaped recess adapted to receive the carrying member, a tapered key or cotter securing the point in wedging relation with the carrying member and adapted to take up the slack between the said parts, and means preventing lateral displacement of the said point.

8. A tooth for dredging and excavating machines, and the like, comprising a transversely perforated tapered carrying member and a changeable point recessed to fit upon the said tapered carrying member and presenting a part with a perforation adapted when the parts are in operative position to register with the perforation in the carrying member, and a tapered pin engaging in the registering perforations for securing the point in place and whereby the slack between the said parts is taken up.

9. In a tooth for dredging and excavating machines, the combination with a carrier presenting a pair of separated wedge shaped members with recesses in their converging faces such recesses being tapered in their longitudinal direction, of a changeable point presenting a pair of wedge shaped recesses divided by a web and having tapered flanges adapted to fit into the tapered recesses of such member, and a tapered key or cotter securing the point upon the carrier with the members wedged in the wedge shaped recesses the tapered flanges in the tapered recesses and the web between the said members, such key or cotter being adapted to take up the slack between the said parts.

10. In a tooth for dredging and excavating machines, the combination with a carrying member, of a reversible changeable point.

11. In a tooth for dredging and excavating machines, the combination with a carrying member, of a reversible changeable converging point with one side flat and its other side inclined to its apex in two angular planes.

12. A tooth for the purpose set forth, comprising a carrier presenting wedge shaped members *g g*, space *h*, recesses *i* tapered in their longitudinal direction, and holes *k*; and a changeable point presenting a pair of wedge shaped recesses *c*, web *d* having hole *m*, and tapered flanges *e*, reduced abruptly in width as at *r*; and a tapered key or cotter *n*.

851,094. ROLLING-PRESS. HANNIBAL I. KIMBALL, New York, N. Y., assignor to The Neucraft Company, New York, N. Y., a Corporation of New York. Filed Feb. 12, 1906. Serial No. 300,580.

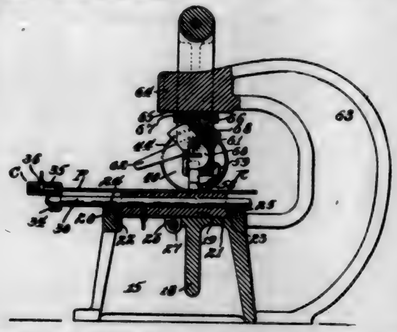

Claim.—1. In a roller press, the combination of a table arranged to support a plate, a working member having means for carrying a die, means connecting the working member and the table and organized to cause the die to have a rolling movement over a plate on the table when the working member is rocked, a movable pressing member in engagement with the working member on its side opposite to the table, and means for causing the pressing member to have a rectilinear movement upon the rocking of the working member.

2. In a roller press, the combination of a table arranged to support a plate, a working member having means for carrying a die, means connecting the working member and the table and organized to cause the die to have a rolling movement over a plate on the table when the working member is rocked, a movable pressing member in engagement with the working member on its side opposite to the table, means for causing the pressing member to have a rectilinear movement upon the rocking of the working member, and means for adjusting a die in the die holder toward and from the table.

3. In a roller press, the combination of a table arranged to support a plate, a working member having means for carrying a die, means connecting the working member and the table and organized to cause the die to have a rolling movement over a plate on the table when the working member is rocked, a movable pressing member in engagement with the working member on its side opposite to the table, means for causing the pressing member to have a rectilinear movement upon the rocking of the working member, and a cam lever for adjusting a die in the die holder toward and from the table.

4. In a roller press, the combination of a table arranged to support a plate, a working member having means for carrying a die, guiding means connecting the working member and the table and organized to cause the die to have a rolling movement over a plate on the table when the working member is rocked, a movable pressing member in engagement with the working member on its side opposite to the table, means for causing the pressing member to have a rectilinear movement upon the rocking of the working member, and means for preventing slip between the working member and the table during said rolling movement.

5. In a roller press, the combination of a table arranged to support a plate, a working member having means for carrying a die, guiding means connecting the working member and the table and organized to cause the die to have a rolling movement over a plate on the table when the working member is rocked, a movable pressing member in engagement with the working member on its side opposite to the table, means for causing the pressing member to have a rectilinear movement upon the rocking of the working member, means for preventing slip between the working member and the table during said rolling movement, comprising a rack secured to the table and a gear toothed segment secured to the working member and engaging such rack.

6. In a roller press, the combination of a table arranged to support a plate, a working member having means for carrying a die, means connecting the working member and the table and organized to cause the die to have a rolling movement over the table when the working member is rocked, a movable pressing member in engagement with the working member on its side opposite to the table, means for causing the pressing member to have a rectilinear movement upon the rocking of the working member, and means for preventing slip between the pressing member and the working member during the rolling movement of the latter.

7. In a rolling press, the combination of a table arranged to support a plate, a working member arranged to carry a die, means connecting the table and working member and organized to cause the die to have a rolling movement over a plate on the table when the working member is rocked, a guide member located at the opposite side of the working member from the table and having a plane surface parallel with the table, and a pressing member operable between the working member and said face of the guide member.

8. In a rolling press, the combination of a table arranged to support a plate, a working member arranged to carry a die, means connecting the table and working member and organized to cause the die to have a rolling movement over a plate on the table when the working member is rocked, a guide member located at the opposite side of the working member from the table and provided with a plane surface parallel with the table, a pressing member operable between the working member and said face of the guide member, the pressing member being provided with anti-friction bearings engaging the guide member.

9. In a roller press, the combination of a table arranged to support a plate, a working member having means for carrying a die, means connecting the working member and the table organized to cause the die to have a rolling movement over the table when the working member is rocked, a pressing member having a rolling engagement with the working member, and means organized to cause the pressing member to have a rectilinear movement upon the rocking of the working member.

10. In a roller press, the combination of a table arranged to support a plate, a working member having means for carrying a die, means connecting the working member and the table and organized to cause the die to have a rolling movement over the table when the working member is rocked, a pressing member having a rolling engagement with the working member on its side opposite to the table, and means organized to cause the pressing member to have a rectilinear movement upon the rocking of the working member, and means for preventing slip between the working member and the pressing member during said rolling movement.

11. In a roller press, the combination of a table arranged to support a plate, a working member having means for carrying a die, means connecting the working member and the table and organized to cause the die to have a rolling movement over the table when the working member is rocked, a pressing member having a rolling engagement with the working member on its side opposite to the table, and means organized to cause the pressing member to have a rectilinear movement upon the rocking of the working member, means for preventing slip between the working member and the pressing member during said rolling movement, comprising detents secured to the working member and a gear tooth secured to the working member and engaging said detents.

12. In a rolling press, the combination of a table arranged to support a plate, a working member arranged to carry a die, means connecting the table and working member and organized to cause the die to have a rolling movement over a plate on the table when the working member is rocked, a guide member located at the opposite side of the working member from the table and provided with a plane surface parallel with a plate on the table, a pressing member operable between the working member and said face of the guide member, the working member having a curved face, and the pressing member having a plane face engaging the curved face of the working member to cause a rolling movement between such members.

13. In a rolling press, the combination of a table arranged to support a plate, a working member arranged to carry a die, means connecting the table and working member and organized to cause the die to have a rolling movement over a plate on the table when the working member is rocked, a guide member located at the opposite side of the working member from the table and provided with a plane surface parallel with a plate on the table, a pressing member operable between the working member and said face of the guide member, the working member having a curved face, the pressing member having a plane face having a rolling engagement with the curved face of the working member, and means for preventing slip between the pressing member and the working member.

14. In a rolling press, the combination of a table arranged to support a plate, a working member arranged to carry a die, guiding means connecting the table and working member and organized to cause the die to have a rolling movement over a plate on the table when the working member is rocked, a guide member located at the opposite side of the working member from the table and provided with a plane surface parallel with a plate on the table, a pressing member operable between the working member and said face of the guide member, the working member having a curved face, and the pressing member having a plane face having a rolling engagement with the curved face of the working member, and means for preventing slip between the pressing member and the working member comprising detents secured to the working member and a gear tooth on the pressing member and engaging said detents.

15. In a roller press, the combination of a table arranged to support a plate, the table having a plane bearing surface at each end, a working member having means for carrying a die, the working member having a curved surface at each end engaging said plane surfaces of the table respectively to cause the die to have a rolling movement over a plate on the table when the working member is rocked, a movable pressing member in engagement with the working member on its side opposite to the table, and means for causing the pressing member to have a rectilinear movement upon the rocking of the working member.

16. In a roller press, the combination of a table arranged to support a plate, the table having a plane bearing surface at each end, a working member having means for carrying a die, the working member having a curved surface at each end engaging said plane surfaces of the table respectively to cause the die to have a rolling movement over a plate on the table when the working member is rocked, a movable pressing member in engagement with the working member on its side opposite to the table, and means for causing the pressing member to have a rectilinear movement upon the rocking of the working member, means for preventing slip between the table and the working member.

17. In a roller press, the combination of a table arranged to support a plate, the table having a plane bearing surface at each end a working member having means for carrying a die, the working member having a curved surface at each end engaging said plane surface of the table respectively to cause the die to have a rolling movement over a plate on the table when the working member is rocked, a movable pressing member in engagement with the working member on its side opposite to the table, and means for causing the pressing member to have a rectilinear movement upon the rocking of the working member, means for preventing slip between the table and the working member comprising a rack on the table at each end, and a gear segment on the working member at each end engaging said rack.

18. In a roller press, the combination of a table arranged to support a plate, the table having a plane bearing surface at each end, a working member having means for carrying a die, a working member having a curved surface at each end engaging said plane surfaces of the table respectively to cause the die to have a rolling movement over a plate on the table when the working member is rocked, and means for preventing slip between the working member and the pressing member during the rolling movement of such members.

19. In a roller press, the combination of a table arranged to support a plate, the table having a plane bearing surface at each end, a working member having means for carrying a die, the working member having a curved surface at each end engaging said plane surfaces of the table respectively to cause the die to have a rolling movement over a plate on the table when the working member is rocked, means for preventing slip between the working member and the pressing member during the rolling movement of such members, comprising a gear tooth secured to the pressing member, and a pair of detents secured to the working member in engagement with the opposite sides respectively of said tooth.

20. In a roller press, the combination of a table arranged to support a plate thereon, the table having a plane bearing surface at each end, a working member having means for carrying a die, the working member having a curved surface at each end engaging said plane surfaces of the table, a pressing member having a rolling engagement with the working member on its side opposite the table, and means organized to cause the pressing member to have a rectilinear movement upon the rocking of the working member.

21. In a roller press, the combination of a table arranged to support a plate thereon, a working member provided with means for carrying a series of dies, the working member having a rolling engagement with the table, means for advancing the dies to bring any one of them into a certain position in the working member, and means for bringing such selected die into position for engaging the plate upon the working member being rocked.

22. In a rolling press, the combination of a table arranged to support a plate thereon, a working member having a rolling engagement with the table, the working member being provided with a guideway in which a series of dies are movable, the working member having a slotted portion along the guideway into which the dies may enter when brought to register therewith, means for yieldingly retaining the dies from entering said slot, and a cam lever arranged to engage the rear end of the positioned die to move the die into said slot to engage the plate on the table.

23. In a roller press, the combination of a table arranged to support a plate thereon, a working member having a rolling engagement with the table at each end thereof, the working member having a channeled portion, a series of dies slidable in said channeled portion and retained therein, the working member having a slotted portion with which any of the dies may be brought to register, a cam lever arranged to engage a die registering with said slot to move the same into the slot to engage with the plate on the table upon the working member being rocked.

24. In a roller press, the combination of a table arranged to support a plate thereon, a working member having a rolling engagement with the table at each end thereof, the working member having a channeled portion, a series of dies slidable in said channeled portion and retained therein, the working member having a slotted portion with which any of the dies may be brought to register, a cam lever arranged to engage a die registering with said slot to move the same into the slot to engage with the plate on the table upon the working member being rocked, and a pressing member having a rolling engagement with the working member at its side opposite the table, and a guide member engaging the opposite face of the pressing member.

25. In a roller press, the combination of a table ar-

ranged to support a plate thereon, a working member having a rolling engagement with the table at each end thereof, the working member having a channeled portion, a series of dies slidable in said chaneled portion and retained therein, the working member having a slotted portion with which any of the dies may be brought to register, a cam lever arranged to engage a die registering with said slot to move the same into the slot to engage with the plate on the table upon the working member being rocked, a guide member connected with the table and overhanging the working member, the guide member being provided with a plane face parallel with the table, and a pressing member operable between the working member and said face of the guide member, the pressing member having a rolling engagement with the working member and movable in a rectilinear path.

26. In a roller press, the combination with the table and the working member carrying a series of dies, of a carriage shiftable on the table and provided with means for supporting a printing plate thereon, an operating-lever, and a pawl and ratchet mechanism located between the lever and the carriage, such mechanism being organized whereby the movement of the ratchet wheel from the lever for the distance of each tooth, will advance the carriage for a distance corresponding to the width of the narrowest dies.

27. In a roller press, the combination with the table and the working member carrying one or more dies, of a carriage shiftable on the table and provided with means for carrying a plate thereon, a ratchet wheel, a lever carrying a pawl arranged to engage the ratchet wheel, means for advancing the carriage from the rotation of the ratchet wheel, a stop arranged to limit the movement of the lever in one direction, the ratchet teeth being spaced whereby the movement of the ratchet wheel for a distance of one tooth by the operation of the lever and pawl, will advance the carriage for a distance corresponding to the distance apart of the smallest die.

28. In a roller press, the combination with the table and the working member carrying one or more dies, of a carriage shiftable on the table and provided with means for carrying a plate thereon, a ratchet wheel, a lever carrying a pawl arranged to engage the ratchet wheel, means for advancing the carriage from the rotation of the ratchet wheel, a stop arranged to limit the movement of the lever in one direction, the ratchet teeth being spaced whereby the movement of the ratchet wheel for a distance of one tooth by the operation of the lever and pawl, will advance the carriage for a distance corresponding to the distance apart of the smallest die, an indicator plate adjacent the lever on which said stop is mounted, and indications on the plate for showing the required reverse movement of the lever to engage one, two or a number of teeth and thereby advance the carriage for a unit distance or a certain multiple of the unit, to provide for dies of varying widths.

851,095. COP-TUBE. WILLIAM KOEHLER, Fulton, N. Y. assignor to American Textile Specialty Machinery Company, New York, N. Y., a Corporation of New York. Filed Aug. 25, 1905. Serial No. 275,717.

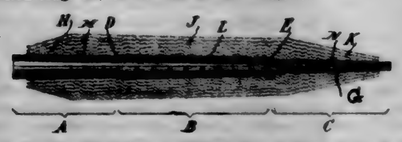

Claim.—A cop tube substantially as herein shown and described, having an enlarged intermediate portion B of considerable length tapering toward the point of the tube and terminating in abrupt rectangular shoulders D and E, a butt A of smaller diameter at the point where it joins the intermediate portion B and tapering toward said portion, and a point C of smaller diameter at the point where it joins the intermediate portion B and tapering away from said portion, whereby the yarn is provided with a greater bearing surface at the intermediate portion and is wound firmly on the intermediate portion without tendency to endwise slip, the enlargement of the intermediate portion of the tube being formed by a separate sleeve L fitting over the tube proper M.

851,096. LOOSE-LEAF BINDER. WILBUR H. KREHBIEL, Cincinnati, Ohio. Filed Aug. 2, 1905. Serial No. 272,376.

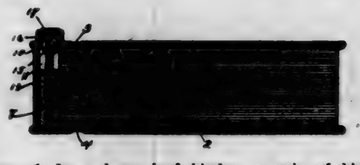

Claim.—1. In a loose leaf binder, a pair of binding strips, binding posts secured to one of the strips, extension posts to slide upon the binding posts, with screws threaded into the binding posts, and a pair of nuts mounted on said screws with means for locking the nuts to the screws whereby the screws may be rotated, substantially as described.

2. In a loose leaf binder, a pair of binding strips, binding posts secured to one of the strips, said binding posts having longitudinal grooves, extension posts provided with tongues to fit within said grooves, with screws threaded into the binding posts, and a pair of nuts mounted on each screw, whereby when the nuts are locked together, the screw may be rotated, substantially as described.

3. In a loose leaf binder, screw threaded retaining heads and screws upon which they are mounted for binding together the covers, said heads comprising a pair of nuts, one flanged to embrace the periphery of the other, with means for securing the two nuts loosely together, substantially as described.

851,097. SHEET-METAL PACKING-CASE. ALFRED T. KRUSE, Defiance, Ohio, assignor to The American Steel Package Company, Defiance, Ohio, a Corporation of Ohio. Filed Sept. 20, 1905. Serial No. 279,262.

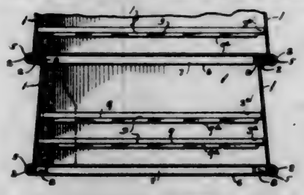

Claim.—1. In a sheet-metal packing-case, the combination with inclined sides and ends secured at the corners of the case and provided with a beading enclosing a wire at the upper and lower edges thereof; of a bottom secured thereto and provided with a downwardly-extending supporting-panel extending lengthwise thereof, sides formed with said panel and having the ends thereof cut away tongues formed at the ends of said supporting-panel, said tongues being bent across the ends of the panel and beads formed on the outer ends of said tongues in alinement with the beading around the lower edges of the case so as to form a groove between the ends of the panel and the beading around the lower edge of the case.

2. A bottom for sheet-metal packing-cases, consisting of a sheet of metal provided with a beading about its marginal edges, a downwardly-extending supporting-panel formed therein and having the ends of its sides cut away, and tongues or extensions formed at the ends of the bottom of said supporting-panel said tongues or extensions being bent across the ends of the panel and a bead formed on the outer ends of said tongues thus forming a groove between the ends of said panel and the beads.

3. A bottom for sheet-metal packing-cases, consisting of a sheet of metal provided with a marginal beading, a supporting-panel formed therein with tongues bent across the ends of the panel, and a bead formed on the outer ends of said tongues thus forming a groove between the ends of said panel and the beads.

4. A bottom for sheet-metal packing-cases, consisting of a blank of sheet metal bent to form a supporting-panel provided with side walls having the ends thereof cut away and tongues at the ends of the bottom of said panel said tongues being bent across the ends of the panel and a bead formed on the outer ends of said tongues thus forming a groove between the ends of said panel and the beads.

5. A bottom for sheet-metal packing-cases, consisting of a blank of sheet metal provided with a beading about its edges, and a downwardly-extending supporting-panel formed therein and having the ends of its sides cut away and tongues on the ends of the panel which are bent to close the ends of the panel and beadings on the ends of said tongues in alinement with the beadings about the edges of the bottom thus forming a groove between the end of the panel and said beadings.

6. A bottom for sheet-metal packing-cases, consisting of a sheet of metal provided with a supporting-panel having tongues or extensions bent over and about forming a beading and providing a recess adjacent to and within said beading.

851,098. LICE-KILLING MACHINE. CYRUS H. LEE, Silver Creek, Nebr. Filed Dec. 21, 1906. Serial No. 348,843.

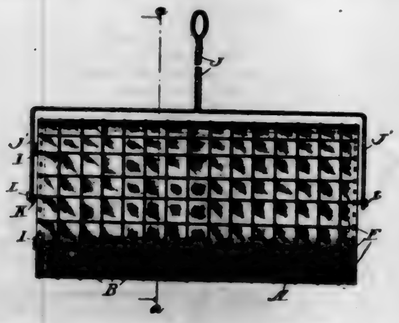

Claim.—1. A lice killing machine comprising a cylindrical receptacle having a fabric lining and a foraminated covering, a suitable floor in one end of the receptacle, and a handle attached to said receptacle.

2. A lice killing machine comprising a cylindrical receptacle having heads, a cloth lining and an interstitial protecting covering, said heads being provided with gudgeons a suitable door in one of said heads, and a ball for rolling the receptacle upon a supporting surface.

3. A lice killing machine comprising a cylindrical receptacle having heads, one of which is provided with a door, a gudgeon upon said door, concentric with the head, a gudgeon upon the opposite head, and a detachable ball for rolling the receptacle upon a supporting surface.

4. A lice killing machine comprising a cylindrical receptacle composed of two heads, a woven wire cylinder and a cloth lining, a door in one of said heads, gudgeons on the ends of said receptacle, and a handled ball for rolling the receptacle upon a supporting surface.

5. A lice killing machine comprising a tumbling-cylinder provided with a closable end opening and a cover, in combination with headed gudgeons on the ends of said cylinder and a ball for rolling the cylinder upon a supporting surface, the ends of the ball being provided with open slots engaging said gudgeons.

851,099. FEED-WATER HEATER. SAMUEL J. LOGAN, Grand Rapids, Mich., and DONALD V. RICHARDSON, Bucksport, S. C. Filed Jan. 17, 1906. Serial No. 296,517.

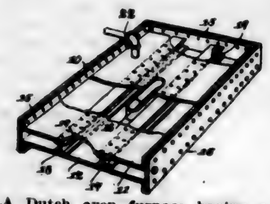

Claim.—A Dutch oven furnace having a combustion chamber, and a top or cover therefor, comprising spaced upper and lower plates having flanged edges, vertical plates forming the side walls and riveted to said flanges, bars arranged between the plates, and each provided at one end with a water passage, and water pipe connections, whereby the top may be coupled to a source of water supply and to the boiler, substantially as described.

851,100. WATER-SUPPLY AND DRAINAGE APPARATUS. PETER M. NEVIUS and WILLIAM E. BARTON, Seattle, Wash. Filed Feb. 7, 1906. Serial No. 299,022.

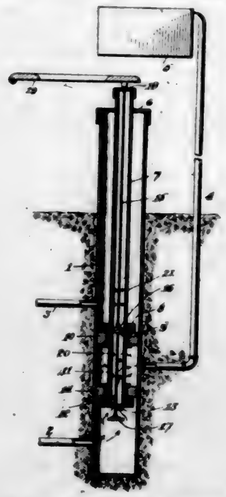

Claim.—1. In a water supply and drainage apparatus, a chamber having free communication, respectively, with water supply, discharge, and drainage pipes, a tube located in said chamber and apertured coincident with the discharge and drainage pipes, means intermediate said tube and chamber for dividing the latter into sections corresponding with the supply, discharge, and drainage pipes, conjointly operating valves in said tube normally operated by the water pressure from the supply to close communication between the supply and discharge pipes and to open communication between the discharge and drainage pipes, and means for reversing the position of said valve.

2. In a water supply and drainage apparatus, a chamber of even diameter having free communication, respectively, with water supply, discharge, and drainage pipes, a tube removably located in said chamber and apertured coincident with the discharge and drainage pipes, means carried by said tube for dividing said chamber into sections corresponding with the supply, discharge and drainage pipes, a valve stem carried by and movable in said tube and projecting therefrom in position to be operated, and valves

carried by said stem and normally operated by the water pressure from the supply to close communication between the supply and discharge pipes and to open communication between the discharge and drainage pipes, said valve stem affording means for reversing the position of said valves.

3. A water supply and drainage apparatus, embodying a chamber, a water supply pipe leading into said chamber, a drainage pipe leading from said chamber, a discharge pipe connected with said chamber intermediate said supply and drainage pipes, a tube located in said chamber, means carried by said tube for separating said chamber into sections corresponding with the supply, discharge, and drainage pipes, said tube communicating with said sections coincident with the discharge and drainage pipes, a valve stem movable in said tube, and valves carried by said stem for simultaneously opening communication between the water supply and discharge pipes and closing communication between the drainage and discharge pipes, and vice versa.

4. A water supply and drainage apparatus, embodying a chamber of even diameter, a water supply pipe leading into said chamber, a drainage pipe leading from said chamber, a discharge pipe connected with said chamber intermediate said supply and drainage pipes, a tube removably located in said chamber, packings or washers carried by said tube for separating said chamber into sections corresponding with the supply, discharge, and drainage pipes, said tube being perforated to communicate with said sections coincident with the discharge and drainage pipes, a valve stem carried by and movable in said tube, and valves carried by said stem for simultaneously opening communication between the water supply and discharge pipes and closing communication between the drainage and discharge pipes, and vice versa.

851,101. TICKET OR TAG. THOMAS H. O'BRIEN, Fond du Lac, Wis. Filed July 24, 1905. Serial No. 271,075.

Claim.—1. A device of the character described, having a ticket or tag, a wire or metallic pin-loop for suspending said tag or ticket in position, and a clasp applied to said tag or ticket and effective to guard the point of said pin-loop, the forming-wire of the latter being looped upward for insertion through the article to be labeled and having its free end or point depending to a point below the upper end of said ticket.

2. A device of the character described, having a ticket or tag a pin-loop for suspending said ticket or tag in position upon the article for labeling, and a clasp applied to said tag or ticket and effective to conceal or isolate the point of said pin-loop, said clasp having said pin-loop passing therethrough.

3. A device of the character described, having a ticket or tag, a pin-loop for suspending said ticket or tag in position upon the article for labeling and a clasp passed through said ticket and having its thus formed respective end-portions provided with lug-extensions bent upon an edge of the ticket and clasping the front surface of the latter, said clasp having said pin-loop passing therethrough.

4. A device of the character described, having a pin-loop effective for suspending a ticket or tag from an article for labeling or tagging, and a clasp having passing therethrough said pin-loop, and provided with lug-extensions for securing it upon said ticket or tag.

5. A tag or ticket adapted to be suspended from the article to which it may be applied, whose suspending means comprises an upward looped wire terminating practically in a pin, and means effective of attachment to said ticket or tag, for guarding the pin-point.

6. A tag or ticket adapted to be suspended from the article to which it may be applied, whose suspending means comprises an upward looped wire terminating practically in a pin, and a clasp effective of attachment to said ticket or tag, for guarding the pin-point.

851,102. SWAY-BAR FASTENER. WILLIAM L. OWENS, Salt, La. Filed Sept. 8, 1906. Serial No. 333,820.

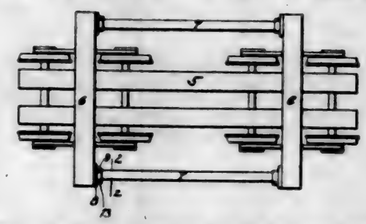

Claim.—1. The combination with the bunk and sway bar of a logging car, of a socket piece on the bunk to receive the end of the sway bar, said socket piece having an opening to permit entry of the sway bar, and locking means extending across the opening in front of the sway bar.

2. The combination with the bunk and sway bar of a logging car, of a plate secured to the bunk, and having vertically spaced projecting flanges connected at one end to form a socket which receives the end of the sway bar, and having at the opposite end registering openings, and a locking pin extensible through the said openings in front of the sway bar.

851,103. PENCIL-PRINTING MACHINE. CLARENCE B. PORTER, Portland, Oreg, assignor to J. C. Allen & Co., Portland, Oreg., a Corporation of Oregon. Filed Dec. 22, 1905. Serial No. 292,959.

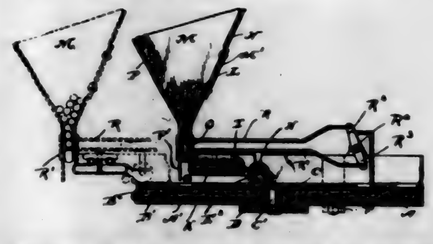

Claim.—1. In a pencil printing machine, the combination with a bed-plate provided with a chase and an inking disk, of a frame movable upon the bed-plate and carrying a hopper, a platen also carried by the frame having its under side covered with fabric, and means for feeding the pencils from the hopper, one at a time, and causing them to travel over the chase and under said platen, as set forth.

2. In a pencil printing machine, the combination with the bed-plate carrying the chase and ink-disk, a reciprocating frame carrying a platen, inking roller, pencil hopper, cut-off rods, and means for operating the cut-off rods as specified.

3. In a pencil printing machine, the combination with the bed-plate carrying a chase, of a reciprocating frame, a platen carried by the frame winding shafts mounted on said platen carrying a strip of fabric extending over the under side of said platen, the forward ends of the frame being undercut as specified.

4. In a pencil printing machine, the combination with the bed-plate, having the chase, inking disk, and stop, of the reciprocating frame, the inking roll, the platen, the hopper, comprising the converging guide-bars and adjustable end plates, the upper and lower cut-off rods, the rock shaft to which the rods are connected, the spring connected

to said shaft, the tripping arm connected also to the shaft, the operating handles connected to the frame, and means for rotating the ink disk, substantially as described.

5. In a pencil printing machine, the combination with the bed plate carrying a chase and ink-disk, of a reciprocating frame mounted on said bed plate carrying a platen, inking roller and pencil hopper, cut off rods carried by said frame adapted to extend under the mouth of the hopper, and means for operating said rods and ink-disk for the purpose described.

851,104. MEANS FOR OPERATING ROD-LINES FOR OIL-WELLS. JOSEPH REID, Oil City, Pa. Filed Feb. 8, 1906. Serial No. 300,169.

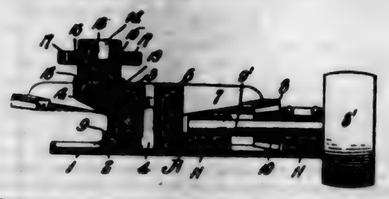

Claim.—1. In an oil pumping power, the combination with a main driving shaft, of a bed plate comprising a bottom plate with upwardly turned edges, a raised boss portion on said plate and provided with an annular flange from within which projects a vertical arbor, and a pair of driving-shaft blocks for said driving shaft; a main drive wheel mounted on said arbor and seated between it and the said annular flange and comprising a central hub portion, an outer toothed rim portion, a plurality of arms connecting the said hub portion to the said rim portion, a boss between two adjacent arms, a hollowed crank pin protruding from said boss, an annular flanged seat flush with the upper edges of said arms, and surrounding said crank pin, and rod driving-disk carried by the hollowed crank pin; the several parts of the mechanism being provided with a series of channels or passages whereby the lubricant is fed successively through the bearings of the rod driving disk and main driving wheel.

2. In an oil pumping power, the combination with a bed plate in which is supported an upright arbor; of a main driving wheel constructed with hub, rim and arms journaled upon the arbor and comprising between two adjacent arms thereof, a crank pin, the said crank pin being provided in the upper part thereof with an open cup, an outlet therefrom for leading the lubricant from said cup to the bearing surface of the crank pin, and a lubricant retaining cup surrounding it from which by means of a second outlet, the lubricant is conveyed to the main driving wheel bearing where it is used a second time.

3. In an oil pumping power, the combination of a base plate provided with an upright hollowed arbor extending therefrom, an annular seat portion surrounding said arbor, a main driving wheel rotating on the arbor and supported on the said annular seat, a vertically projecting crank pin carried by the main driving wheel within which is comprised a reservoir for lubricant and a channel for conveying the lubricant from the reservoir to the outside surface of the crank pin from which it feeds into a second reservoir, the said second reservoir being provided with an outlet by means of which the lubricant is fed from this second reservoir to the said upright arbor.

4. In an oil well pumping power, the combination of a base plate having an integral arbor projecting vertically therefrom, and bearings for a horizontal drive shaft, a drive shaft journaled in said bearings and carrying a bevel gear, a main drive wheel journaled upon said arbor and constructed with an integral toothed rim meshing with the bevel gear, and integral spoke and hub portions, and an integral boss on the hub portion between two of the spokes formed with an integral vertically projecting crank pin and a rod wheel journaled on said crank pin and constructed for the attachment of a plurality of pumping rods.

851,105. CUSHIONED WHEEL. ROBERT P. REID, Watervliet, N. Y. Filed Dec. 22, 1905. Serial No. 293,002.

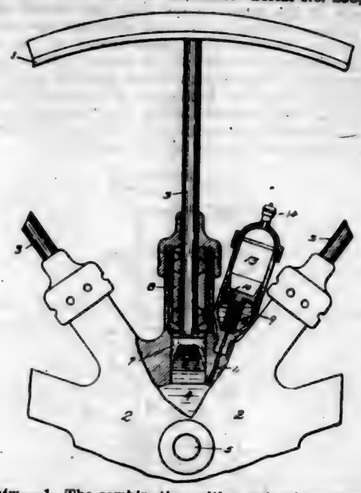

Claim.—1. The combination with a pair of members, one capable of movement toward and from the other; of a plurality of pistons mounted upon one of said members; a plurality of cylinders for the respective pistons mounted upon the other of said members; and a cushion to which each cylinder is open, comprising confined bodies of gas and liquid respectively, separated from each other by a movable diaphragm.

2. The combination with a wheel-hub provided with a fluid-chamber and a plurality of piston-chambers open to said fluid-chamber; of a wheel-rim; pistons in the respective piston-chambers; spokes interposed between the respective pistons and rim; and a cushioning body comprising two fluids of different degrees of compressibility confined in said hub-chamber.

3. The combination with a wheel-hub provided with a fluid-chamber subdivided by a movable diaphragm, and with a plurality of piston-chambers open to one of the fluid-chamber-compartments; of a wheel-rim; pistons in the respective piston-chambers; spokes interposed between the respective pistons and rim; a body of liquid confined within the fluid-chamber-compartment open to said piston-chambers; and a body of gas confined within the other fluid-chamber-compartment.

851,106. COMBINED PIPE AND MONKEY WRENCH. GEORGE O. RICE, San Francisco, Cal. Filed Jan. 16, 1907. Serial No. 352,507.

Claim.—1. In a combined pipe and monkey wrench, the combination of a shank having a fixed and a movable jaw, a fixed extension on the shank on the same side thereof as the jaws, a screw bearing on the fixed extension and adapted to move the movable jaw, an extension of the screw through the shank extension and a pair of threaded nuts carried by the screw, and a lever boaring on the nuts and adapted to give an additional thrust to the movable jaw, substantially as described.

2. In a combined pipe and monkey wrench, the combination of a shank having a fixed and a sliding jaw, a fixed extension on the shank on the same side thereof as the jaws, a screw bearing in the fixed extension on the shank and adapted to move the slidable jaw, an extension of the screw through the extension of the shank, a lever pivoted to the shank extension and adapted to bear on the screw to give an additional movement thereto, and means carried by the screw to maintain it and the slidable jaw in a retracted position when the lever is not under pressure, substantially as described.

3. In a combined pipe and monkey wrench, the combination of a shank having a fixed and a movable jaw, a fixed extension on the shank on the same side thereof as the jaws, a screw bearing in the fixed extension and adapted to move the movable jaw, an extension of the screw through the fixed extension of the shank, a spiral spring surrounding the screw extension and adapted to move the movable jaw toward the handle end of the shank, threaded nuts on the screw extension, and a lever bearing on one of said nuts whereby an additional thrust may be imparted to the movable jaw, substantially as described.

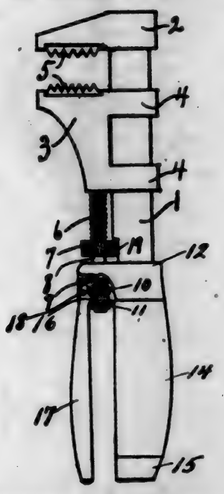

4. The combination of a shank having a handle, a fixed and a slidable jaw, a fixed extension on the shank on the same side thereof as the jaws, a screw adapted to move the slidable jaw and extending through the fixed extension of the shank, a spiral spring surrounding the screw extension and adapted to draw the slidable jaw toward the handle end of the shank, a pair of threaded nuts carried by the screw, a lever having an extension between the threaded nuts and pivoted in the shank extension, substantially as described.

851,107. NAPKIN SUPPORTER AND HOLDER. ELLSWORTH C. RINK, Philadelphia, Pa. Filed Feb. 19, 1906. Serial No. 301,853.

Claim.—1. A napkin supporter and holder comprising parallel bars curved at their upper ends forming supporting members and bent back upon themselves at their lower ends to form hooks, a bar connecting said bars arranged between said hooks and the remaining parts of said first mentioned bars and spring-clips formed on the parallel bars adjacent their curved portions, for the purpose described.

2. A device of the kind described comprising parallel upright bars curved at their upper ends and provided with upwardly projecting hooks at their lower ends and spring clips adjacent their upper ends, the lower ends of the said bars being connected by a cross bar, for the purpose specified.

3. A napkin supporter and holder comprising parallel upright bars curved at their upper ends and bent back upon themselves at their lower ends said bars being split and bent back upon themselves to form spring clips and a bar connecting said first named bars secured under the bent back portion at their lower ends, for the purpose set forth.

851,108. METAL SASH-BAR. CHARLES H. SHULTZ, St. Joseph, Mo. Filed Mar. 9, 1906. Serial No. 305,187.

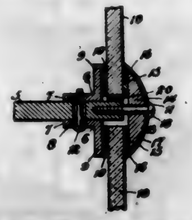

Claim.—1. In a sash of the character described, the combination with a frame bar, of a glass clamping element adjustably mounted thereon, means for securing the clamping element in different positions upon the bar, an opposing glass clamping element detachably associated with the adjustable element, and means for securing said opposing element to the bar.

2. In a sash of the character described, the combination with a frame bar having a side and an edge, of a glass clamping element adjustably mounted on the side of the frame bar, means for securing the clamping element against movement to the frame bar at different distances from said edge of the bar, an opposing glass clamping element detachably associated with the adjustable element, and means for detachably securing said opposing element to the said edge of the bar.

3. In a sash of the character described, the combination with a frame bar, of a glass clamping element comprising an angle bar, one flange of which is disposed against the frame bar and has a transverse opening therethrough, the other flange projecting from the frame bar and constituting a glass holding flange, a holding device passing through the opening and engaging the bar, and another glass clamping element opposed to said glass holding flange and secured to the frame bar.

4. In a sash of the character described, the combination with a frame bar, of glass clamping elements secured to and independently adjustable upon the frame bar, means for securing the elements against movement on the bar, and an opposing clamping element coacting with said adjustable elements.

5. In a sash of the character described, the combination with a frame bar, of glass clamping elements secured to opposite sides of the bar and independently adjustable thereupon, means for securing the glass clamping elements against movement on the bar, an opposing clamping element coacting with said adjustable elements, and means separate from the first mentioned means for securing the opposing clamping element to the bar.

6. In a sash of the character described, the combination with a frame bar, of glass clamping elements located on opposite sides of the bar, a fastening device connecting the elements and passing through the bar, said device permitting the adjustment of the elements on the bar, and an opposing clamping element coacting with said adjustable elements and secured to the bar.

7. In a sash of the character described, the combination with a frame bar, of glass clamping elements located on opposite sides of the frame bar, said elements being adjustable with respect to the bar and with respect to each other, and a fastening device for the elements connecting the same and passing through the bar.

8. In a sash of the character described, the combination with a frame bar, of clamping elements arranged on opposite sides of the frame bar and comprising angle bars having flanges located against opposite sides of said bar the other flanges projecting outwardly in opposite directions from the frame bar, holding means passing through the frame bar and adjustably engaging the flanges located thereagainst, an opposing clamping element disposed over one edge of the frame bar and having its outer margins arranged in opposing relation to the outstanding flanges of the clamping elements, and fastening means for said opposing element passing therethrough and engaging the edge of the frame bar.

9. In a sash of the character described, the combination with a frame bar, of glass clamping means connected thereto and including a glass clamping element secured thereto and comprising a body, a cushion secured to the outer margin of the body, and a cap covering the body, said cap extending over the outer edge of the cushion and terminating at the juncture of the inner face and outer edge of the cushion.

10. In a sash of the character described, the combination with a frame bar, of glass clamping means associated therewith and including a glass clamping element secured thereto and comprising a body, cushions located on the margins of the body, and a cap covering the outer face of the body, said cap extending over the outer edges of the cushions and body and terminating at the juncture of the inner face and outer edge of the cushion.

11. In a sash of the character described, the combination with a frame bar, of angle bars having certain of their flanges secured to the opposite sides thereof, the other flanges constituting glass clamps cushions located on the outer faces of the angle bars, and a cap bar secured to the edge of the frame bar and having cushions on its margins, which cushions are disposed in opposing relation to the cushions of the angle bars.

12. In a sash of the character described, the combination with a frame bar, of separate clamping elements secured to the opposite sides thereof, cushions of cork located on the outer faces of the elements, a cap bar secured between its margins to the edge of the frame bar between the clamping elements, and cushions of cork located on the inner marginal faces of the cap bar.

851,109. LOCK-STRIKE. ROBERT B. SWIFT, Portland, Me. Filed Feb. 16, 1906. Serial No. 301,390.

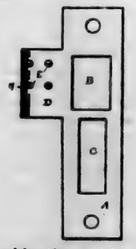

Claim.—1. The combination with a striker of a plurality of anti-friction balls mounted therein and projecting above the surface thereof, one positioned near the front edge and the other spaced apart rearwardly therefrom.

2. The combination with a striker having a steel back plate of an anti-friction ball projecting above the surface of the striker and held in place by said steel plate.

851,110. WASHBOARD. ANDREW WEISS, Cleveland, Ohio. Filed Dec. 13, 1906. Serial No. 347,624.

Claim.—1. A washboard having a head board, a top bar below the same, with a narrow opening therebetween, a face plate the top edge of which rests upon the bar, and a guard plate which laps the said edge of the face plate and extends through said opening between the lower edge of the head board and top bar and up behind said board, and in contact with the said edge and the back of the board.

2. A washboard having a head board, a face plate supported below the same, and a guard plate which laps the top of the face plate and extends behind the head board

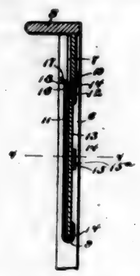

and has a perforated flange under the said board, forming a soap holder.

851,111. APPARATUS FOR CLEANING SHIPS. CHARLES E. ARNOLD, Brunswick, Ga. Filed Nov. 17, 1905. Serial No. 287,811.

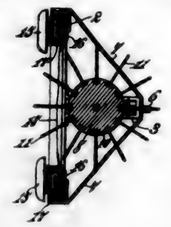

Claim.—1. In a hull-cleaning device for ships and in combination, a rectangular frame, magnetic supporting runners at the corners of said frame, spring-held bearing blocks mounted in suitable standards on said frame, means for adjusting said bearing blocks, a rotary cleaning tool mounted in said bearing-blocks, and means for driving said tool.

2. In a hull cleaning device for ships and in combination, a rectangular frame, magnetic supporting runners at the corners of said frame, standards extending from each end of the frame, struts for bracing the standards, spring held bearing blocks therein, adjustable means for the blocks, a rotary cleaning tool having its shaft journaled in said blocks, leading in wires for said magnetic runners, and means for driving said tool.

3. In a hull cleaning device for ships and in combination, a rectangular frame, magnetic supporting runners at the corners of said frame, standards extending from each end of the frame, struts for bracing the standards, spring held bearing blocks therein, adjustable means for the blocks, a rotary cleaning tool having its shaft journaled in said blocks, leading in wires for said magnetic runners, and a flexible shafting connected to the shaft of the tool for driving it.

4. In a hull cleaning device for ships, a tool carrying frame, a rotary cleaning tool mounted within the frame, means for driving said tool, an electro magnet secured to each corner of the frame and having one end of the pole piece thereof projecting therefrom and enlarged and rounded, said enlarged and rounded projecting ends of the pole pieces constituting supporting runners for the device, and leading-in-wires for said magnets.

5. In a hull cleaning device for ships, a rectangular tool carrying frame, a rotary cleaning tool mounted therein, means for driving said tool, an electro-magnetic element secured to each corner of the frame and having the pole pieces provided with enlarged rounded ends constituting runners for the device, and leading-in-wires for said magnetic elements.

851,112. FENCE-BENCH. SAMUEL L. BAILEY, Brooklyn, N. Y. Filed Mar. 25, 1905. Serial No. 252,101.

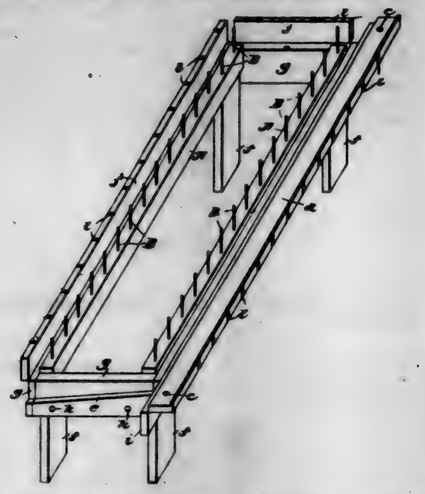

Claim.—1. In combination a frame, rails within the frame and hinged thereto, sections removably held by the ends of the frame, sections hinged to the sides of the frame, parallel with the rails the upper edges of all the sections being grooved and fingers carried by the rails.

2. In combination a frame, shoulders formed on the ends of the frame, rails within the frame and hinged to the sides thereof, fingers carried by said rails, removable sections on the frame, hinged sections on the frame, the free edges of all the sections being grooved and a flange along the edge of one of the hinged sections.

851,113. MOLDING-TRUCK. JOHN H. BICKLEY and JAMES MCANALLY, Reading, Pa. Filed Jan. 5, 1907. Serial No. 350,886.

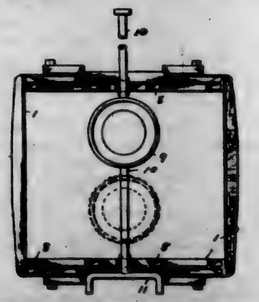

Claim.—1. In a molding truck, a rectangular frame suitably mounted on wheels, a pair of centrally disposed uprights at either side of said frame, said frame having pockets along both sides and adjustable pulleys removably mounted in said uprights, in combination with a pouring ladle centrally mounted on an operating rod, said rod adapted to rest on said pulleys and being capable of lateral adjustment.

2. In a molding truck, a rectangular frame suitably mounted on wheels, a pair of centrally disposed uprights at either side of said frame, pockets along both sides of said frame adapted to hold a sectional platform, and adjustable pulleys removably mounted in said uprights.

851,114. BRIDGE. MARTIN R. BIRON, Chicago, Ill. Filed July 10, 1906. Serial No. 325,433.

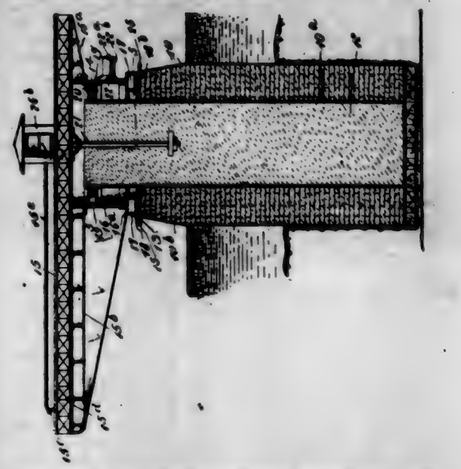

Claim.—1. A draw-bridge comprising horizontally swinging sections having vertically swinging meeting ends.

2. A horizontally swinging bridge and an abutment, said bridge having a curved end and sides at the tail or shore end, and a side railing, and the abutment having a curved end coinciding with the curve of the bridge, the side of the bridge fitting in the curved end of the abutment, and the railing extending across the same to form a guard when the bridge is open.

3. The combination with a pier having a cylindrical casing extending above the top thereof, of a horizontally swinging bridge pivoted to the pier, rollers on top of the pier, and a housing depending from the bridge and extending around the casing, and supported at its lower end on the rollers.

4. The combination with a pier having a cylindrical casing extending above the top thereof, of a horizontally swinging bridge pivoted to the pier, rollers on top of the pier, a housing depending from the bridge and extending around the casing, and supported at its lower end on the rollers, and rollers between the casing and housing.

5. The combination with a pier having a cylindrical casing extending above the top thereof, of a horizontally swinging bridge pivoted to the pier, rollers on top of the pier, a housing depending from the bridge and extending around the casing, and supported at its lower end on the rollers, a track extending around the casing, and rollers carried by the inside of the housing and arranged circumferentially around the track.

851,115. ENVELOP-MOISTENER AND THE LIKE. BYRON D. BURDICK, Westerly, R. I. Filed Dec. 8, 1905. Serial No. 291,000.

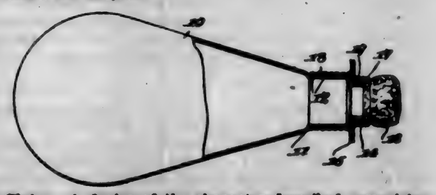

Claim.—A device of the character described comprising a bulb having an externally screw threaded neck and an inwardly extending circular flange at the outer end of the neck, an imperforate elastic gasket seated upon the flange and supported thereby throughout its width, a threaded sleeve detachably engaging the threaded portion of the neck, an angular polygonal flange integral with the sleeve and constituting a support to prevent rotation of the bulb, a cylindrical extension projecting beyond the flange and adapted to fit snugly around the gasket, inwardly extending teeth upon the outer end of said extension and disposed in a plane parallel with the gasket, and a pad engaged by the teeth and held thereby upon the gasket.

851,116. COLLAR-BUTTON. NUMAN CASEY, New York, N. Y. Filed Oct. 24, 1905. Serial No. 284,225.

Claim.—The herein described collar button, comprising the circular base 1, provided with the beaded edge 2, the shank 3 integral with and projecting upwardly from the center of the base, there being an upwardly extending inclined notch formed in said shank slightly above the plane occupied by the top edge of the bead on the base, the head 4 integral with the upper end of the shank, the resilient pin 6 substantially equal in length to the width of the base and hinged at one end to the beaded edge of said base, and the pointed end of said pin adapted to bear upon the fabric between said end of the pin and the beaded edge at a point opposite the point where the pin is hinged to lock the fabric to the base of the button and prevent the rotation of the button in the button hole in said fabric; substantially as specified.

851,117. SAFETY-ENVELOP. GIOVANNI CATALDI, Washington, D. C. Filed July 9, 1906. Serial No. 325,328.

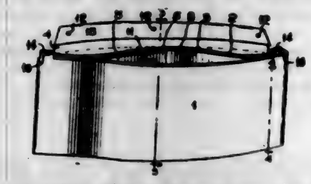

Claim.—A safety envelope formed from a single blank and comprising a front, a back, end flaps adapted to be sealed together to form a central partition, a sealed flap upon said partition, a sealing flap on said front, a reenforcing band on said front connected thereto by necks and separated by a slot, said band being adapted to be sealed to said partition, a flap on said back having a reenforcing band and coacting fastening members carried by said back flap and said partition.

851,118. SUCKER-ROD. ROY CHADWICK, Tidioute, Pa. Filed June 28, 1906. Serial No. 323,835.

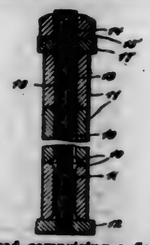

Claim.—A sucker-rod comprising a flexible cable, a collar made fast to one end thereof, a threaded stem made fast to the other end of the cable, a nut screwed on the stem, and a series of sleeves on the cable between the collar and nut and adapted to be jammed together by the nut to make the cable rigid.

851,119. CHAIN-TENSION AND BRAKE DEVICE. CAMILLE CONTAL, Levallois-Perret, France. Filed Mar. 27, 1906. Serial No. 308,294.

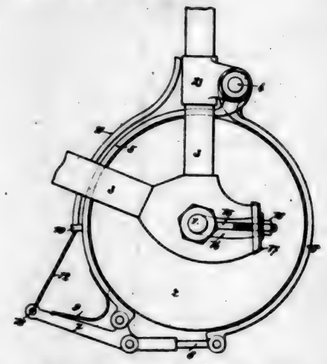

Claim.—1. The chain tension and breaking device for cycles and motor-cars, comprising a brake drum, a jaw brake engaging the said drum, a stud on which the said jaws are enabled to swing and which is adapted to be permanently secured to the frame of the cycle or to the chassis of the motor-car, and a plate adapted to be secured to the said frame and having a curved slide-way the curve of which is concentric with the said stud on which the jaws swing, the slide-way being designed to receive the spindle of the said drum.

2. A chain tension and braking device for cycles and motor-cars, comprising a brake drum, a brake having jaws engaging the said drum, and a system of levers adapted to move the said jaws towards or away from each other, a stud on which the jaws are enabled to swing and which is adapted to be fixedly secured to the frame of the cycle or to the chassis of the motor-car, a plate adapted to be fixedly secured to the said frame or chassis and having a curved slide-way the curve of which is concentric with the said stud on which the jaws are enabled to swing and which is adapted to receive the spindle of the said drum, a flexible tube the length of which remains invariable and of which one end bears against one of the brake jaws, and an operating flexible cable passing freely through the said tube and which is connected with the said system of brake levers.

851,120. RATCHET-TOOL. WILLIAM H. COWELL, Cleveland, Ohio. Filed Jan. 10, 1907. Serial No. 351,658.

Claim.—1. In a ratchet tool, the combination with a head and handle, of a cogged socket wheel rotatable in the head, and a ratchet wheel pivoted in the head and having teeth which mesh with the cogs when turned one way and which lock therewith when turned the other.

2. In a ratchet tool, the combination with a head and handle, of a cogged socket wheel rotatable in the head, and a ratchet wheel rotatable in the head and having curved teeth of greater pitch than the pitch of the cogs, and which mesh with the cogs when turned one way and lock therewith when turned the other.

3. In a ratchet tool, the combination with a head and handle, of a cogged socket wheel rotatable in the head, and a ratchet wheel rotatable in the head and having teeth engaging the cogs, said teeth being straight on one face and convex on the other, substantially as and for the purpose described.

851,120.

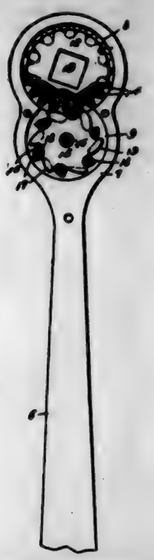

851,121. MEANS FOR MAINTAINING THE STRENGTH OF REFRIGERATING LIQUIDS. ALEXANDER P. CRISWELL, Aurora, Ind., and ALBERT C. BISHOP, Cleveland, Ohio. Filed Jan. 26, 1905. Serial No. 242,738.

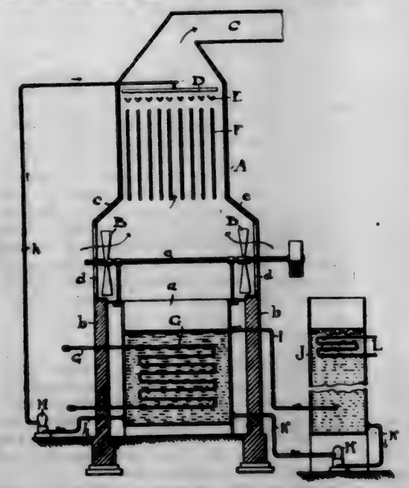

Claim.—1. In an apparatus for maintaining brine or an equivalent solution at an even strength and temperature a brine tank, combined with heating coils located within the upper portion of said tank and said tank having inlet and outlet connections at its bottom distantly located from said heating coils relatively as shown with the body of the solution between said coils and said tank connections, whereby a continuous flow of cold solution is provided within the bottom of said tank and a high evaporating temperature of the solution is maintained in the top of the tank.

2. In an apparatus for maintaining brine or an equivalent solution at an even strength and temperature, a cooling tower and a solution tank therein, in combination with a secondary tank adapted to hold a deep body of solution and having supply and return pipe connections at its bottom with said first tank and provided with evaporating means in its top portion remotely located from said pipe connections and relatively as shown with the greatest body of the solution between the said evaporating means and said supply and return pipe connections, whereby the excess solution is heated and evaporated at the top of said secondary tank during a continuous flow of cold solution in the bottom of the same tank, and means to circulate the cold solution through said tanks.

851,122. CONVEYER-CHAIN FOR POTATO-PLANTERS. A'QUILLA DUENSING, Altoona, Iowa, assignor of one-half to C. C. Lang, Altoona, Iowa. Filed June 16, 1906. Serial No. 322,324.

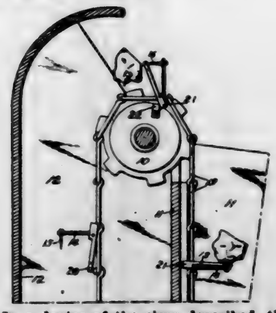

Claim.—In a device of the class described, the combination of a sprocket chain, a plate fixed thereto and extended at right angles, two tines connected with the plate, a scraper pivoted to the chain in advance of the plate, the outer end of the scraper normally resting on top of the plate as the chain is moving upwardly and extended between said tines, an extension on the scraper projecting beyond the chain in a direction opposite from the plate and a stationary arm arranged in the path of travel of said extension.

851,123. MORTISE AND TENON SAWING MACHINE. JOHN E. ERICKSON, St. Paul, Minn. Filed Jan. 4, 1907. Serial No. 350,806.

Claim.—1. In a machine for sawing mortises and tenons, the combination with means for holding a board stationary, of a saw-sash, a carrier therefor, a gang of saws held by the sash, means for offsetting the sash with respect to its carrier to determine the depth of the saw-kerfs, and means for reciprocating the carrier, substantially as set forth.

2. In a machine for sawing mortises and tenons, the combination with means for holding a board stationary, of a saw-sash, a carrier therefor, a gang of saws held by the sash, means for offsetting the sash with respect to its carrier to determine the depth of the saw-kerfs, means for reciprocating the carrier, and means for causing the carrier to recede laterally on the up-stroke to free the saws from the kerfs, substantially as set forth.

3. In a machine for sawing mortises and tenons, the combination with means for holding a board stationary, of a saw-sash, a carrier therefor, a gang of saws held by the sash, means for offsetting the sash with respect to its carrier to determine the depth of the saw-kerfs, laterally adjustable guides for the carrier, means for reciprocating the carrier in its guides, and means for causing the carrier to recede laterally on the up-stroke to free the saws from the kerfs, substantially as set forth.

4. In a machine for sawing mortises and tenons, a work-holder for holding a board stationary, a sash carrier, a gang of saws and a sash therefor offset with respect to the carrier, means for moving the carrier downward in a vertical plane, means for causing it to recede horizontally for the upward movement, and means for feeding a board to and removing it from the work-holder, substantially as set forth.

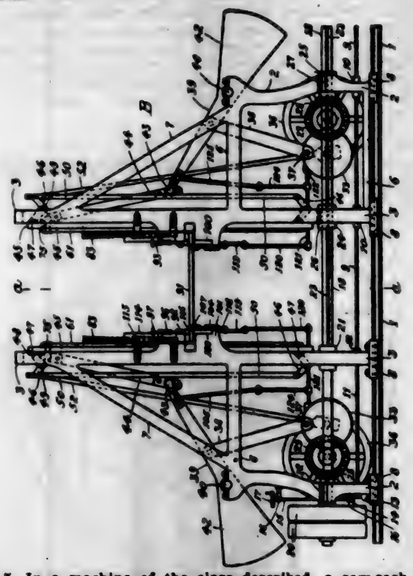

5. In a machine of the class described, a saw-sash, a gang of saws set therein with the sides of the blades inclined toward one side of the sash, and means for reciprocating the sash downward in a vertical plane, substantially as set forth.

6. In a machine of the class described, upper and lower saw-sashes, gangs of saws set therein with the sides of the blades of the two gangs inclined toward opposite sides of their respective sashes, and means for reciprocating the sashes downward in a vertical plane, substantially as set forth.

7. In a machine of the class described, upper and lower saw-sashes, gangs of saws set therein with the sides of the blades of the two gangs inclined toward opposite sides of their respective sashes, and means for reciprocating the sashes downward in oppositely inclined directions on a vertical plane, substantially as set forth.

8. In a machine of the class described, the combination with means for holding a board stationary, of opposite pairs of gangs of saws, means for reciprocating and guiding them to simultaneously cut the opposite ends of the board, and means for causing the saws to recede from the kerfs, substantially as set forth.

9. The combination with a saw-sash, of a gang of saws, a series of intermediate spacing strips, bolts for clamping them together, and means for detachably connecting the assembled saws and strips to the sash, substantially as set forth.

10. The combination with a saw-sash, of a gang of saws, a series of intermediate spacing strips, bolts for clamping them together, means for detachably connecting the assembled saws and strips to the sash, a sash-carrier, and means for adjustably attaching the sash to the carrier to regulate the depth of the kerfs to be cut, substantially as set forth.

851,124. AUTOMATIC HUGGER. PAUL H. FLATEAU, Paris, France, assignor to Societe Universelle de l'Asservisseur Automatique Titan, Paris, France. Filed Aug. 4, 1906. Serial No. 329,227.

Claim.—1. The combination of a fixed drum, a movable drum, a helix wound partly on one drum and partly on the other, and spring means for connecting the ends of said helix.

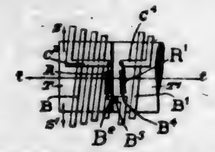

2. The combination of a fixed drum, a movable drum, a helix formed of a plurality of members connected together, and spring means connecting its opposite ends.

3. The combination of a fixed drum, a movable drum, a helix composed of two coiled members, one wound on one drum and one on the other, the weak end of one coil being connected with the strong end of the other and spring means connecting the free ends of said coils.

4. The combination of a fixed drum, a movable drum, a helix composed of two coiled members, one wound in one direction on one drum and the other wound in the other direction on the other drum, the weak end of one coil being connected with the strong end of the other, and spring means connecting the free ends of said coils.

5. The combination of a fixed drum, a movable drum, a helix adapted to be wound partly on one drum and partly on the other and composed of connected members and spring means for connecting the ends of said helix.

851,125. SAND-MOLDING MACHINE. JOHN J. FLEMING, PHILIP J. TRUB, and WILLIAM H. BLACKTON, Philadelphia, Pa. Filed July 19, 1906. Serial No. 326,938.

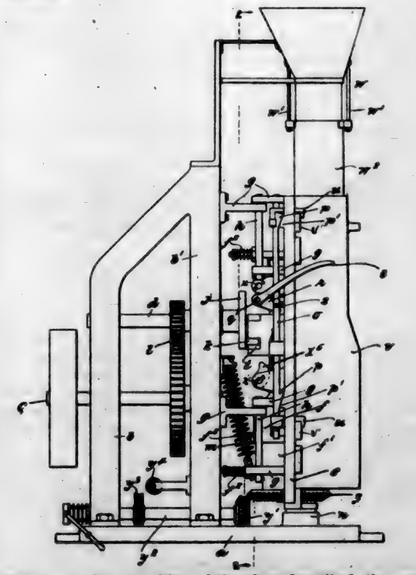

Claim.—1. In a machine of the class described, the combination of a vertically reciprocating pattern table, a pattern carried thereby and movable laterally thereof, a flask adapted to be carried by said table, means of imparting said lateral movement to the pattern, and means for reciprocating the said pattern table.

2. In a machine of the class described, the combination of a vertically reciprocating pattern table, a pattern supported thereby and movable laterally thereof, a flask adapted to be carried by said table, cam devices for imparting said lateral movement to the pattern and means for reciprocating the said pattern table.

3. In a machine of the class described, the combination of a vertically reciprocating pattern table, a pattern supported thereby and movable laterally thereof, a flask adapted to be carried by said table, a hopper mounted above the flask, an anvil, a cam device for imparting said lateral movement to the pattern and means for reciprocating the said pattern.

4. In a machine of the class described, the combination of a vertically reciprocating pattern table, a pattern supported thereby and movable laterally thereof, a flask adapted to be carried by said table, a hopper mounted above the flask, a movable section between the hopper and flask, an anvil, a cam device for imparting said lateral movement to the pattern and means for reciprocating the said pattern.

5. In a machine of the class described, the combination of a vertically reciprocating pattern table, a pattern supported thereby and movable laterally thereof, a flask carried by the table, clamping means for the flask, a hopper, cam devices for imparting said lateral movement to the pattern, and means for reciprocating the said pattern.

6. A machine of the class described, comprising a vertically reciprocating pattern table, a pattern journaled therein and movable laterally thereof, a flask carried by the table means for imparting a rotatable and lateral motion to said pattern and means for reciprocating the pattern.

7. A machine of the class described comprising standards carrying a hopper, a vertically reciprocating pattern table supported by said standards, a pattern capable of rotary and lateral motion in relation to the table and carried thereby, a flask, an anvil, clamps for the flask, spring controlled means for shifting the pattern, means for revolving the pattern, a coil spring between the standards and pattern table and means for reciprocating the said pattern.

851,126. HARROW. CLIFFORD H. FORSHEY, Peerless, Ohio. Filed Feb. 12, 1907. Serial No. 357,023.

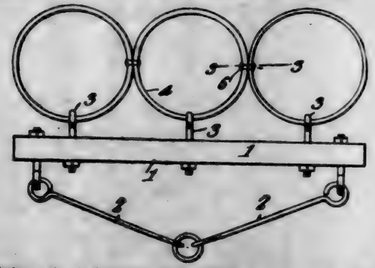

Claim.—1. A harrow comprising a bar, eyes attached to the bar, bands attached to the eyes and bolts pivotally connecting the sides of the bands directly together.

2. A harrow comprising a bar, eyes attached to the bar, bands having perforations which receive said eyes and bolts pivotally connecting the sides of the bands directly together.

851,127. AUGER-HANDLE. GEORGE P. FRANK, Elizabeth, N. J. Filed May 19, 1906. Serial No. 317,755.

Claim.—A device of the class described comprising a casing provided with a socket, a stationary handle secured to one end of the casing, a movable handle carried by the opposite end of the casing, a rotary member interposed between the casing and the movable handle and provided with a threaded bore the walls of which are inclined or beveled at a point adjacent the socket, said rotary member being provided with an annular groove and having a squared extension adapted to engage a correspondingly shaped opening formed in the movable handle, a clutch provided with a rectangular opening adapted to register with the socket and having a threaded shank adapted to engage the threads on the rotating member, one end of the clutch being inclined or beveled for engagement with the inclined walls of the threaded bore, and a clamping screw extending through the casing and seated within the groove of the rotary member for locking the latter against accidental displacement.

851,128. BLAST-FURNACE TOP. JOHN W. GOCHER, Johnstown, Pa. Filed May 29, 1905. Serial No. 262,769.

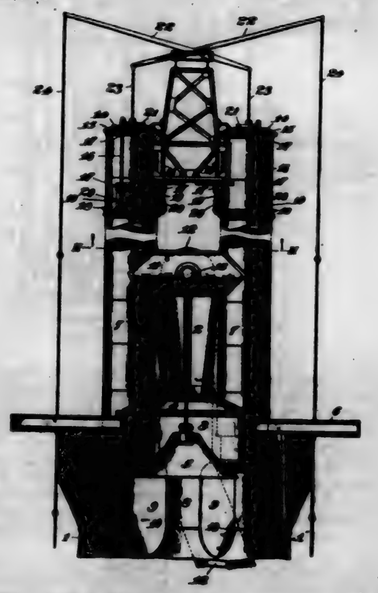

Claim.—1. In a blast-furnace the combination with the stack, of an explosion-chamber of large diameter to thereby maintain low gas-velocity therein; located substantially in line with the wall at one side thereof and extending vertically far above the same, a charging-hopper, a port below said hopper having a steeply inclined bottom connecting said chamber with the interior of said stack and a down-comer connected with said chamber intermediate of its ends and at a point a considerable distance above the top of said stack.

2. A blast-furnace having a furnace-chamber, a plurality of expansion-chambers connected therewith and extending above the same, said expansion-chambers being arranged in pairs; a cross-pipe connecting each pair of adjoining expansion-chambers, and a down-comer connected with said cross-pipe at its side opposite the center of the furnace.

3. A blast-furnace having a furnace-chamber, a plurality of expansion-chambers connected therewith and extending vertically far above the same, said expansion-chambers being arranged in pairs; an explosion-valve located at the upper end of said expansion-chambers, a cross-pipe connecting each pair of adjoining expansion-chambers intermediate of the ends thereof and a down-comer connected with said cross-pipe at its side opposite the center of the furnace.

4. An explosion-valve for blast-furnaces adapted to operate vertically, and having guide-rods at the sides thereof, guides for said rods, buffer springs on said rods, a bleeder-valve forming a part of said valve, and means for operating said bleeder-valve.

5. A blast-furnace having a furnace-chamber, and expansion-chamber of large diameter to thereby maintain low gas-velocity therein, said expansion chamber extending vertically far above the furnace top; and an explosion-valve at the top of said expansion-chamber adapted to operate vertically and having a bleeder-valve forming a part thereof and means for operating said bleeder valve.

851,129. VARIABLE-SPEED MECHANISM. JAMES A. GOODNER and ALBERT P. KENDIG, Rocky Ford, Colo. Filed Mar. 12, 1906. Serial No. 305,675.

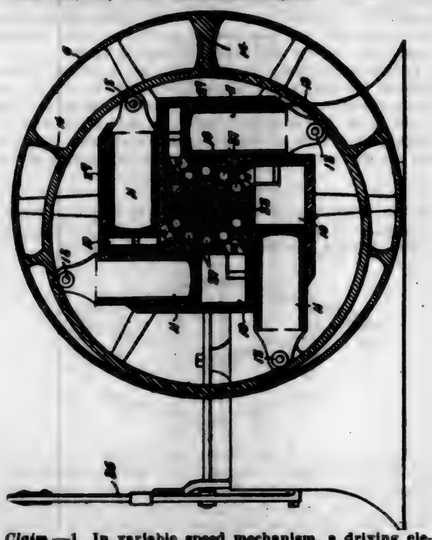

Claim.—1. In variable speed mechanism, a driving element, a driven element, an actuating member carried by one of said elements, a plurality of pistons carried by the other element and adapted to engage the actuating member, a body of fluid circulating between the pistons, a valve for controlling the circulation of fluid and having a recess formed therein to permit the passage of said fluid, means for operating the valve, and means communicating with the recess at one end of the valve for supplying fluid through the valve to the pistons.

2. In variable speed mechanism, a driving element, a driven element, an actuating member carried by one of said elements, a plurality of pistons carried by the other element and adapted to engage the actuating member, a body of fluid circulating between the pistons, a valve chamber, a flange extended laterally from one of said elements and forming a continuation of the walls of the valve chamber, a valve seated in the chamber for controlling of the circulation of fluid and having longitudinal recesses formed therein to permit the passage of fluid, means for operating the valve, and means extending through the walls of the flange for supplying fluid through the valve to the pistons.

3. In variable speed mechanism, a driving element, a driven element, an actuating member carried by one of said elements, a plurality of pistons carried by the other element and adapted to engage the actuating member, a body of fluid circulating between the pistons, a hollow valve for controlling the circulation of fluid and having smooth unobstructed side walls and provided with longitudinal recesses to permit the passage of the fluid, a bushing engaging the interior walls of the valve, means for operating the valve, and means for supplying fluid through the valve to the pistons.

4. In variable speed mechanism, a driving element and a driven element, one of which is provided with a valve chamber, a flange extending laterally from one element and forming a continuation of the walls of the valve chamber, a plurality of cylinders having ports communicating with the valve-chamber, an eccentric carried by the other element, pistons operating within the cylinders and adapted to engage the eccentric, a body of fluid circulating in the cylinders, a valve seated in the chamber for controlling the flow of fluid and having longitudinal fluid passages formed therein, a cap engaging the free end of the flange and provided with perforations, means extending through the perforations and connected to the valve for operating the latter, and an oil cup extending through the walls of the flange for supplying fluid through the valve to the pistons.

5. In variable speed mechanism, a driving element and a driven element one of which is provided with a valve chamber, a bushing forming one wall of the valve chamber, a plurality of cylinders having ports communicating with the valve chamber, an eccentric carried by the other element, pistons operating within the cylinders and adapted to engage the eccentric, a body of fluid circulating within the cylinders, a valve seated in the chamber for controlling the flow of liquid and provided with longitudinal fluid passages, a cap threaded on the bushing and constituting a closure for one end of the valve-chamber, a valve-operating member, rods extending through the cap and connecting the valve and valve operating member, respectively, and means for supplying fluid through the valve to the pistons.

6. In variable speed mechanism, the combination of a shaft, of a driving element keyed to the shaft and provided with lateral flanges, a pulley journaled on the flanges and constituting the driven element, an eccentric carried by the pulley, a valve chamber formed in the driving element, a plurality of cylinders communicating with the valve chamber, pistons operated within the cylinders and provided with rollers adapted to engage the eccentric, a valve seated in the chamber for controlling the flow of fluid, said valve being provided with a series of spaced longitudinal recesses to permit the passage of the fluid, means for operating the valve, and an oil-cup communicating with the valve chamber for supplying fluid through the valve to the cylinders.

851,130. RAILWAY-RAIL TIE AND FASTENER. GEORGE H. GROVE, Harrisburg, Pa. Filed Jan. 29, 1907. Serial No. 354,725.

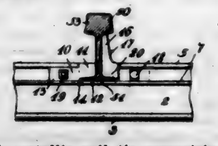

Claim.—1. A metallic rail tie comprising a supporting base, a head having a lateral flange and spaced recesses to receive the rails, a longitudinally-extending lateral flange disposed below said headed flange and spaced therefrom and fastening members for securing a rail to said tie having means for engaging said spaced flanges said members being arranged on opposite sides of the tie and extending longitudinally thereof.

2. A metallic rail tie comprising a supporting base, a head having lateral flanges on opposite sides thereof and spaced rail receiving recesses, longitudinally-extending lateral flanges disposed below and spaced from the flanges of said head, fastening members adapted to fit in said recesses between the side walls thereof and the rail web and having laterally-extending arms adapted to fit between said spaced flanges.

3. The combination of a metal railway tie comprising a supporting base and a head having spaced rail receiving recesses, of members for securing a rail to said tie, one of which consists of a block shaped to fit in the space between one side of the rail web and the side wall of the recess in said tie and having a laterally-extending apertured arm

for attachment to one side of the tie and the other member consisting of a block having a vertical extension to fit the rail web under the tread thereof and having a lateral arm for attachment to the other side of the tie.

851,131. BALING-PRESS. STEVEN E. GUTRIDGE, Newark, Ohio. Filed Aug. 8, 1906. Serial No. 329,794.

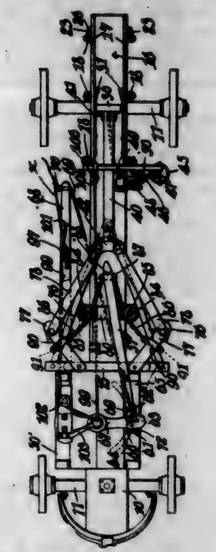

Claim.—1. In a baling press, a baling chamber, a compression plunger, a plunger rod, a toggle mechanism connected to the plunger rod, a slidably mounted yoke embracing one of the toggle levers, and movable automatically along the length of the lever, a thrust bar, a power head for actuating the same, and a flexible connection between the thrust bar and the yoke.

2. In a baling press, a baling chamber, a compression plunger, a plunger rod, a toggle mechanism through which movement is imparted to the plunger rod, a thrust bar, a power head for actuating the same, a yoke slidably mounted on one of the toggle levers, a flexible connection between the thrust bar and the yoke, and a guiding means for said flexible connection.

3. The combination with a baling chamber, of a compression plunger, a plunger rod connected thereto, a pair of oppositely disposed toggles, each connected at one end to a fixed point, and at the opposite end to the plunger rod, a slidable yoke on one lever of each toggle, a thrust bar, a power head for actuating the same, an equalising bar pivoted to the thrust bar, flexible connections extending between the equalising bar and the yokes, and guiding means for said flexible connections.

4. In a baling press, the combination with a baling chamber, of a compression plunger, a plunger rod, a pair of toggles, each having one end connected to a fixed point and the opposite end to the plunger rod, slidable yokes mounted one on each toggle, a thrust bar, a power head for moving the same, an equalising bar pivoted to the thrust bar, chains extending from the equalising bar to the yokes, a guiding frame for the outer portion of the thrust bar, and chain guiding sheaves carried by said frame.

5. In a baling press, a baling chamber, a compression plunger, a plunger rod a toggle mechanism connected to the plunger rod, a thrust bar, means for connecting the thrust bar to the toggle mechanism, a revoluble power head including a pair of arms arranged to successively engage the heel of the thrust bar, a frame member having an arcuate slot struck from the center of rotation of the power head, and a guiding pin carried by the heel portion of the thrust bar and extending into said slot.

6. In a baling press, a longitudinal sill, truss rods for strengthening the sill, a baling chamber arranged at one end of the sill and of which the sill forms the body, a power head supported at the opposite end of the sill, transversely disposed sills carried by the main sill, an upper bar carried by the transverse sills and forming an upper bearing for the power head, a transversely disposed bar secured to the main sill, toggle levers pivoted to said bar and to the plunger rod, a thrust bar receiving motion from the power head, a thrust bar actuating frame secured to the main sill, and equalising bar pivoted to the thrust bar, slidable yokes embracing portions of the toggles, flexible connections between the yokes and the equalising bar, and guiding sheaves for said flexible connection, said sheaves being supported by the thrust bar guiding frame.

7. In a baling press, a baling chamber, a hopper, a compression plunger, a curved plate forming the top of the baling chamber, a pair of spring strips secured at one end to the plate, a folding bar carried by said strips and arranged slightly in advance of the compression chamber, and an operator's footboard resting on said spring strips.

851,132. FRUIT-BOX. PETER HENRICH, Hoquiam, Wash., assignor of one-half to Garry H. Linder, Haquiam, Wash. Filed Dec. 29, 1905. Serial No. 293,728.

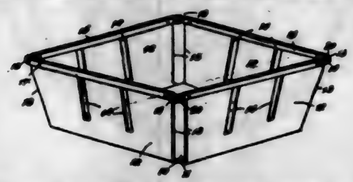

Claim.—A box of the class described having a double bottom portion and two oppositely disposed walls to each bottom portion, strengthening strips for the upper edges of said walls, each of said strengthening strips formed from a sheet of metal bent upon itself centrally throughout its length and placed on the upper edge of the box wall so as to span the same, and fastening devices separate from the strengthening strip for securing the walls together, said fastening devices being secured to the walls and to the strips by the rivets which fasten said strips to said walls said fastening device being secured between the side wall and the strengthening material.

851,133. BALL-BEARING BOXING FOR VEHICLE-AXLES. WILLIAM E. HIXON, St. Louis, Mo., assignor of one-fourth to John Reece, one-fourth to Charles Hecht, and one-fourth to A. J. Tilden, St. Louis, Mo. Filed Feb. 19, 1906. Serial No. 301,890.

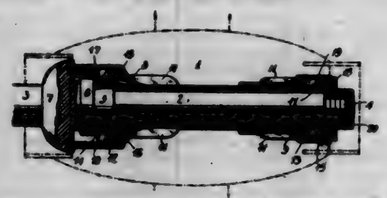

Claim.—The combination of an axle spindle having a cylindrical enlarged portion and an annular shoulder at its inner end, said shoulder being at the outer side of said enlarged portion, and said spindle being provided at its outer end with a shoulder and a reduced, screw-threaded portion, an axle box having annular shoulders at its inner and outer ends, its inner shoulder bearing against the enlarged portion of the spindle, an annular ball cage on said enlarged portion between the inner shoulders of the spindle and the box and removable from the spindle and the box, a similar ball cage on the spindle and bearing against the outer shoulder of the box and also removable from the spindle, a cap screwed directly on the reduced, outer end of the spindle to retain the box thereon, bearing against the outer side of the outer ball cage and also bearing against and closing the outer end of the box, each of said ball cages having annular, peripheral grooves forming ball races, and bearing balls in said grooves retained therein by the sides of the grooves, said balls bearing directly against the bore of the box.

851,134. FLUE-CLEANER. LEO C. KLEIDON, Philadelphia, Pa. Filed Oct. 15, 1906. Serial No. 339,068.

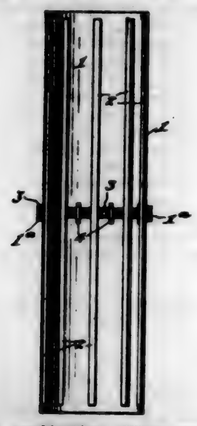

Claim.—1. The combination with a stove-pipe section, of a cleaning device comprising an endless flexible band, a guide in said section to permit said band to oscillate therein, longitudinally-disposed scraper rods carried by said band, and means for oscillating said band.

2. The combination with a stove-pipe section, of a cleaning device permanently mounted therein and comprising a flexible band, a guide in said section to engage said band and permit the latter to oscillate, longitudinally-disposed scrapers carried by said band, a hand-piece projecting through a slot in said section, and a plate connecting said hand-piece and said band and adapted to close said slot.

3. The combination with a smoke pipe section having an annular groove therein and a transversely disposed slot in said groove, of a cleaning device permanently mounted in said section and comprising an endless chain guided in said groove, means for retaining said chain in said groove, scraper rods secured to said chain and engaged with the inner face of said pipe section, a plate secured to said chain and adapted to cover said slot, and a hand-piece projecting through said slot and carried by said plate and chain, substantially as described.

851,135. CANDY-MACHINE. YAN LISKA, Galeton, Pa. Filed Oct. 19, 1906. Serial No. 339,678.

Claim.—1. A machine of the class described including a stationary matrix, movable dies coacting with the matrix and provided with projecting faces, and a vertically movable scraper carried by one of the dies and having openings formed therein for the reception of the projecting faces of said dies.

2. A machine of the class described including a stationary matrix, upper and lower dies co-operating with the matrix, a detachable scraper mounted for vertical movement on the upper die and extending laterally beyond the opposite ends of said die to form operating handles, guiding means depending from the upper die and piercing the matrix, means for locking the lower die in operative position, said lower die serving to eject the molded product from the matrix when the locking means is released.

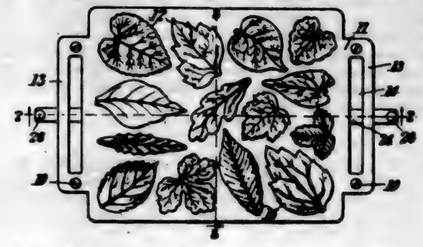

3. A machine of the class described including a base, a plate secured to the base and having a plurality of matrices formed therein, upper and lower dies co-operating with the matrices and movable with the latter, springs interposed between the base and the lower die for yieldably supporting the latter in engagement with the plate, locking members pivotally mounted on the base and adapted to engage and lock the lower die in operative position, a scraper carried by the upper die, said lower die serving to eject the molded products from the matrices when the locking means is released.

4. A machine of the class described including a base, recessed standards secured to the base, a plate mounted on the standards and provided with matrices, a removable upper die having depending guides mounted for vertical movement in the recesses in the standards, a lower die movable within the matrices, means for locking the lower die in operative position, said lower die serving to eject the molded products from the matrices when the locking means is released.

5. A machine of the class described including a base, standards secured to the base, a plate mounted on the standards and provided with spaced matrices, co-acting dies operating within the matrices, one of said dies being provided with depending guides mounted for vertical movement in the standards, springs interposed between the base and the lower die, locking members carried by the standard and adapted to engage the adjacent edge of the lower die for locking the same in operative position, said lower die serving to eject the molded products when the locking means is released, and a scraper carried by the upper die.

6. A machine of the class described including a base, standards carried by the base, a plate mounted on the standards and provided with spaced matrices, an upper die, a lower die slidably mounted on the standards and provided with oppositely disposed keepers, springs interposed between the lower die and the base, locking means carried by the standards and adapted to engage the keepers for supporting the adjacent die in lowered position, and a scraper carried by the upper die.

7. A machine of the class described including a base, standards secured to the base, a plate supported by the standards and provided with spaced matrices, upper and lower dies co-acting with the matrices and movable within the latter, and a removable scraper interposed between the plate and the upper die and mounted for vertical movement on said upper die.

8. A machine of the class described including a base plate, standards secured to the base plate and having vertical openings formed therein, a plate mounted on the standards and provided with spaced matrices, an upper die having depending guides slidably mounted in the openings in the standards, a lower die disposed beneath the plate and provided with oppositely disposed keepers, springs interposed between the lower dies and the base, locking members pivotally mounted in the standards and provided with terminal catches adapted to engage the keepers for locking the lower dies in operative position, said locking members being provided with terminal finger-pieces for releasing the locking members.

3. A machine of the class described including a base provided with spaced recesses, standards secured to the base, a plate mounted on the standard and provided with spaced matrices, upper and lower dies movable within the matrices, pins depending from the lower die, springs engaging the pins and seated in the recesses in the base for yieldably supporting the lower die in elevated position, means for locking the lower die in operative position, said lower die serving to eject the molded products when the locking means is released.

851,136. OPERATING DEVICE FOR MILKING-MACHINES. BIRGER LJUNGSTRÖM and FREDRIK LJUNGSTRÖM, Stockholm, Sweden, assignors to Aktiebolaget Separator, Stockholm, Sweden. Filed Jan. 24, 1907. Serial No. 353,931.

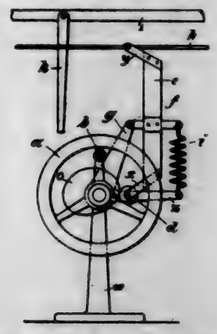

Claim.—1. In operating devices for milking machines, in combination, a rod or wire adapted to have a reciprocating motion, an arm to which said wire is connected, a rotatable cam having the desired cam face against which said arm rests.

2. In operating devices for milking machines, in combination, a rod or wire adapted to have a reciprocating motion, an arm to which said wire is connected, a roller connected to said arm, a rotatable cam having the desired cam face against which said roller rests.

3. In operating devices for milking machines, in combination, a rod or wire adapted to have a reciprocating motion, a lever connected to said wire, an arm connected to said lever, a rotatable cam against which said arm rests.

4. In operating devices for milking machines, in combination, a rod or wire adapted to have a reciprocating motion, an arm to which said wire is connected, a rotatable cam having the desired cam face against which said arm rests, and means tending to hold said arm in contact with said cam face.

5. In operating devices for milking machines, in combination, a rod or wire adapted to have a reciprocating motion, an arm to which said wire is connected, a roller connected to said arm, a rotatable cam having the desired cam face against which said roller rests, and means tending to hold said arm in contact with said cam face.

6. In operating devices for milking machines, in combination, a rod or wire adapted to have a reciprocating motion, a lever connected to said wire, an arm connected to said lever, a rotatable cam against which said arm rests, and means tending to hold said arm in contact with said cam face.

7. In operating devices for milking machines, in combination, a rod or wire adapted to have a reciprocating motion, an arm to which said wire is connected, a rotatable cam having the desired cam face against which said arm rests, and handles connected to said wire whereby the cam may be driven by the movement of the wire.

8. In operating devices for milking machines, in combination, a rod or wire adapted to have a reciprocating motion, an arm to which said wire is connected, a roller connected to said arm, a rotatable cam having the desired cam face against which said roller rests, and handles connected to said wire whereby the cam may be driven by the movement of the wire.

9. In operating devices for milking machines, in combination, a rod or wire adapted to have a reciprocating motion, a lever connected to said wire, an arm connected to said lever, a rotatable cam against which said arm rests, and handles connected to said wire whereby the cam may be driven by the movement of the wire.

10. In operating devices for milking machines, in combination, a rod or wire adapted to have a reciprocating motion, an arm to which said wire is connectel, a rotatable cam having the desired cam face against which said arm rests, means tending to hold said arm in contact with said cam face, and handles connected to said wire whereby the cam may be driven by the movement of the wire.

11. In operating devices for milking machines, in combination, a rod or wire adapted to have a reciprocating motion, an arm to which said wire is connected, a roller connected to said arm, a rotatable cam having the desired cam face against which said roller rests, means tending to hold said arm in contact with said cam face, and handles connected to said wire whereby the cam may be driven by the movement of the wire.

12. In operating devices for milking machines, in combination, a rod or wire adapted to have a reciprocating motion, a lever connected to said wire, an arm connected to said lever, a rotatable cam against which said arm rests, means tending to hold said arm in contact with said cam face, and handles connected to said wire whereby the cam may be driven by the movement of the wire.

851,137. PIPE-NIPPLE HOLDER. ROBERT E. MANLEY, Hanover, Pa. Filed Jan. 19, 1906. Serial No. 296,860.

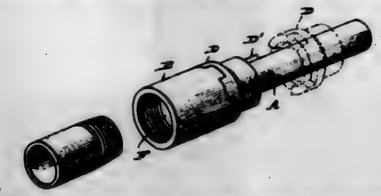

Claim.—1. In a nipple holding device, the combination with the sleeve internally threaded from end to end and adapted for the reception of the previously threaded section of pipe from which the nipple is to be formed, of the stock having the externally threaded head adjustable in the sleeve and forming an abutment for the inner end of the nipple, and a locking sleeve cooperating with the rear end of the nipple holding sleeve to prevent rotation of the latter on the stock, said locking sleeve being movable longitudinally but held against rotation on the stock.

2. In a nipple holding device, such as described, the combination with the stock, the externally threaded head on said stock, the rotary washer on the end of said head, there being a reduced bearing surface between the washer and head and the internally threaded nipple holding sleeve into which the head screws, said sleeve being formed with threads in its outer end and with holding teeth on its inner end, of a locking sleeve having holding teeth adapted to cooperate with those on the nipple holding sleeve and mounted to slide on the stock in rear of the head, and means for preventing the rotation of the locking sleeve with relation to the stock; substantially as described.

851,138. TICKET OR TAG. THOMAS H. O'BRIEN, Fond du Lac, Wis. Filed July 24, 1905. Serial No. 271,074.

Claim.—1. A ticket or tag of the character described, having a foldable flap or guard and an attaching pin or fastening for said ticket, bent upon itself, with its shank embedded in the ticket and its point-equipped portion interposed between the body and flap portions of the ticket for the purpose stated, the "head" or upper end of said pin being bent upon said flap and securing it in position.

2. A ticket of the character described, having a foldable flap portion and an attaching pin of general staple-like outline, with its duplicate shank portions embedded in said ticket and its duplicate point-equipped portions standing out therefrom and effective for connection with a

goods-sample interposed between the body-portion of said ticket and the flap or guard, said pin having its bowed portion bent over the upper edge of the ticket and down upon said flap-portion to secure said flap-portion in its folded position.

851,139. TICKET OR TAG. THOMAS H. O'BRIEN, Fond du Lac, Wis. Filed Feb. 17, 1906. Serial No. 301,652.

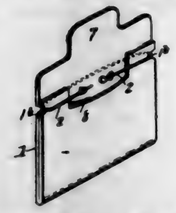

Claim.—1. A ticket or tag of the character described, having a flap and adapted to be folded or doubled upon itself, an attaching pin or fastening encompassing transversely said ticket or tag and means for the retention of said flap in effective position over the pointed end of said pin.

2. A ticket or tag of the character described, adapted to be folded upon itself and having a flap, an attaching pin or fastening encompassing transversely said ticket, and said ticket adapted to permit said flap to be tucked thereinto.

3. A ticket or tag of the character described, having a flap and a pocket and adapted to be folded upon itself, an attaching pin encompassing transversely said ticket, said flap adapted to be tucked into said pocket for its retention over the pointed end of said pin.

4. A ticket or tag of the character described, having a flap and adapted to be folded upon itself and an attaching pin encompassing transversely said tag or ticket, said ticket adapted to permit said flap to be tucked thereinto and the pin-terminals to be guarded by said flap, as set forth.

851,140. APPARATUS FOR HOISTING AND HANDLING VOTING-MACHINES. EPHRAIM E. E. RIDGEWAY, South Omaha, Nebr. Filed Oct. 1, 1906. Serial No. 336,953.

Claim.—1. In a device for handling voting machines, the combination of a base to support the voting machine, a tripod over one end thereof, and a block and tackle supported by the tripod to engage the end of the voting machine.

2. In a device for handling voting machines, the combination of a base to support the voting machine, a tripod over one end thereof, a block and tackle supported by the tripod, a hook supported by the tackle to engage one end of the voting machine and a shield to be attached to said end of the voting machine to protect the latter from the tackle block.

3. In a device for handling voting machines, a base comprising two parallel longitudinal members, standards near each end of each member, transverse connections between each pair of standards, and transverse supporting plates supported on top of each pair of standards.

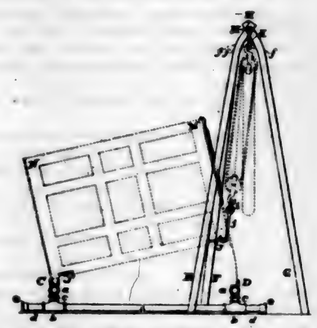

4. In a device for handling voting machines, a base comprising two parallel longitudinal pipes, tees near each end of each pipe, nipples screwed into each tee, other tees supported by the nipples, transverse pipes connecting each pair of said latter tees, and transverse angle plates pivoted upon each of said pairs of tees.

5. A shield for protecting the end of a voting machine comprising a plate hooked at its upper end to engage the top of the voting machine and having its side edges bent outwardly to form a channel.

6. In a device for handling voting machines and the like, the combination of a base upon which the voting machine rests, a tripod, and hoisting means carried by the tripod and engaging the voting machine.

7. In a device for handling voting machines and the like, the combination of a base, means for applying a hoisting mechanism to the voting machine, and a shield for protecting the voting machine.

851,141. SLEEPING-BOOTH. EDWARD STEMPEL, Los Angeles, Cal. Filed June 22, 1906. Serial No. 322,804.

Claim.—1. In a sleeping booth, a top; a bottom; supporting posts for said top; side and end walls attached to

said top and bottom and horizontally divided into two parts; means to hold the parts of said side and end walls apart.

2. In a sleeping booth, a top; a bottom; supports for said top; side and end walls secured to said top and extending downwardly toward said bottom; side and end walls secured to said bottom and extending upwardly to meet said top side and end walls; and means on said top to hold the bottom edge of said top side and end walls at any desired height.

3. In a sleeping booth, a rectangular top; a rectangular bottom; supporting posts for said top; side walls secured to said top and bottom on all four sides thereof and being slit horizontally on three sides midway between said top and bottom; and securing means adapted to hold the slits in said side walls as wide open as desired.

4. In a sleeping booth, a rectangular top; a rectangular bottom; supporting posts for said top; side walls secured to said top and bottom on all four sides thereof and being slit horizontally on three sides midway between said top and bottom; securing means adapted to hold the slit in said side walls as wide open as desired; and securing means on said side walls adapted to secure the portions of said side walls together.

5. In a sleeping booth, a rectangular top; a rectangular bottom; supporting posts for said top; guys secured to the tops and bottom of said supporting posts; side walls secured to said top and bottom on all four sides thereof and being slit horizontally on three sides midway between said top and bottom; securing means adapted to hold the slit in said side walls as wide open as desired; and securing means on said side walls adapted to secure the portions of said side walls together.

6. In a sleeping booth, a rectangular top sloping towards the rear; supporting posts for said top; guys secured to the tops and bottoms of said posts; a rectangular bottom; a solid rear wall attached to both said top and bottom; horizontally divided front and side walls attached to both top and bottom; means to hold the upper and lower sections of said side and front walls apart; and means to secure the upper and lower sections of said side and front walls together.

851,142. TYPE-WRITING MACHINE. BURNHAM C. STICKNEY, Elizabeth, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Oct. 31, 1906. Serial No. 341,476.

Claim.—1. In a typewriting machine having types and keys, the combination with a plurality of ribbon vibrators, of a plurality of universal bars operated by the keys and connected respectively to said vibrators.

2. In a typewriting machine having types and keys, the combination with a plurality of ribbon vibrators, of a plurality of universal bars operated by the keys and connected respectively to said vibrators, and means for silencing one of said universal bars while another is in operation.

3. In a typewriting machine having types and keys, the combination with two ribbon vibrators, of two universal bars, one for each of said vibrators, and means for silencing either universal bar and concomitantly rendering the other effective.

4. In a typewriting machine having types and keys, the combination with two ribbon vibrators, of two universal bars, one for each of said vibrators, and means for silencing either universal bar and concomitantly rendering the other effective.

5. In a typewriting machine having types and keys, the combination with two ribbon vibrators, of two universal bars, one for each of said vibrators, and means for silencing one universal bar and concomitantly rendering the other effective and for enabling the effective universal bar to impart different throws to its vibrator, to cause different widthwise portions of the ribbon to cover the printing point at the type strokes.

6. In a typewriting machine having types and keys, the combination with two ribbon vibrators, of two universal bars, one for each of said vibrators, and means for silencing either universal bar and concomitantly rendering the other effective and for enabling the effective universal bar to impart different throws of its vibrator, to cause different widthwise portions of the ribbon to cover the printing point at the type strokes.

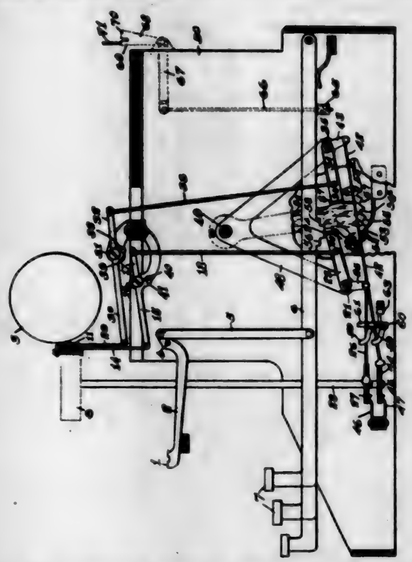

7. In a typewriting machine having types and keys, the combination with two ribbon vibrators, of means for enabling keys to operate either vibrator and for enabling the throw of one of said vibrators to be varied, to bring different portions of the ribbon over the printing point at the type strokes.

8. In a typewriting machine having types and keys, the combination with two ribbon vibrators, of means for enabling keys to operate either vibrator and for enabling the throw of either of said vibrators to be varied, to bring different portions of the ribbon over the printing point at the type strokes.

9. In a typewriting machine having types and keys, the combination with two pairs of ribbon spools and two ribbon vibrators, of two universal bars operated by the keys, one for each of said vibrators, spool-winding means controlled by the keys, and means for silencing either of said universal bars and concomitantly rendering the other effective and silencing the winding means associateed with the silenced vibrator.

10. In a typewriting machine having types and keys, the combination with two pairs of ribbon spools and two ribbon vibrators, of two universal bars operated by the keys, one for each of said vibrators, two sets of spool-winding means respectively actuated by said universal bars, and means for silencing either of said universal bars and concomitantly rendering the other effective.

11. In a typewriting machine having types and keys, the combination with two pairs of ribbon spools and two ribbon vibrators, of two universal bars operated by the keys, one for each of said vibrators, two sets of spool-winding means respectively actuated by said universal bars, means for silencing either of said universal bars and concomitantly rendering the other effective, and a shifting device associated with said winding means, to cause either spool in either pair to wind.

12. In a typewriting machine having types and keys, the combination with two pairs of ribbon spools and two ribbon vibrators, of two universal bars operated by the keys, one for each of said vibrators, two sets of spool-winding means respectively actuated by said universal bars, means for silencing either of said universal bars and concomitantly rendering the other effective, and a shifting device associated with said winding means, to cause either spool in either pair to wind, said shifting device controlled by a single finger-piece.

13. In a typewriting machine having types and keys, the combination with two ribbon vibrators, of two universal bars, one for each of said vibrators, a single finger-piece, and means controlled by said finger-piece for concomitantly silencing either universal bar and rendering the other effective.

14. In a typewriting machine having types and keys, the combination with two ribbon vibrators, of two universal bars, one for each of said vibrators, a single finger-piece connected to means for concomitantly silencing one universal bar and rendering the other effective and for enabling the effective universal bar to impart different throws of its vibrator, to cause different widthwise portions of the ribbon to cover the printing point at the type strokes, and means for securing said finger-piece at different positions to which it is adjusted.

15. In a typewriting machine having types and keys, the combination of a shiftable frame, two universal bars mounted upon said frame and shiftable thereby into and out of position for operation, and ribbon vibrators connected to said universal bars.

16. In a typewriting machine having types and keys, the combination of a shiftable frame, two universal bars mounted upon said frame and shiftable thereby into and out of position for operation, and ribbon vibrators connected to said universal bars, said keys operating stepped-members which actuate said universal bars, and the latter being each shiftable to position for engaging with different stepped-members to vary the throw of its associated ribbon vibrator.

17. In a typewriting machine having a series of type bars, a series of key-operated levers connected to the type bars, the combination of a swinging frame, two universal bars hung upon said frame and movable thereby into and out of position to be engaged by stepped-projections upon said levers, a finger-piece for swinging said frame, means for detaining said frame in different positions, and ribbon vibrators respectively connected to said universal bars.

18. In a typewriting machine having types and keys, the combination with a plurality of ribbon vibrators, of means for enabling the keys to throw either of said vibrators different distances to bring different widthwise portions of the ribbon over the printing point at the type strokes.

19. In a typewriting machine having types and keys, the combination with a plurality of ribbon vibrators, of a plurality of universal bars operable by the keys and respectively connected to said vibrators, and means for either silencing one of said vibrators and concomitantly rendering the other effective, or silencing both of said vibrators, at will.

20. In a typewriting machine having types and keys, the combination with a plurality of ribbon vibrators, of a plurality of universal bars operated by the keys and respectively connected to said vibrators, and means for either silencing both of said universal bars or for silencing one of said universal bars and for concomitantly rendering the other effective.

21. In a typewriting machine having types and keys, the combination with two ribbon vibrators, of two universal bars, one for each of said vibrators, and a single device common to said universal bars and comprising means for either silencing either universal bar and concomitantly rendering the other effective, or silencing both universal bars concomitantly.

22. In a typewriting machine having types and keys, the combination with two ribbon vibrators, of two universal bars, one for each of said vibrators, an adjustable finger piece having means for concomitantly silencing either universal bar and rendering the other effective, and also for silencing both universal bars concomitantly, and means for detaining said finger piece in different positions to which it is adjusted.

23. In a typewriting machine having types and keys, the combination with two ribbon vibrators, of two universal bars, one for each of said vibrators, and means adjustable to different positions for either concomitantly silencing both universal bars or for silencing one universal bar and concomitantly rendering the other effective and for enabling the effective universal bar to impart different throws to its vibrator, to cause different widthwise portions of the ribbon to cover the printing point at the type strokes.

24. In a typewriting machine having types and keys, the combination with two ribbon vibrators, of means for enabling keys to operate either vibrator and for enabling the throw of one of said vibrators to be varied, to bring different portions of the ribbon over the printing point at the type strokes, and for silencing both vibrators at will.

25. In a typewriting machine having types and keys, the combination with two ribbon vibrators, of means for enabling keys to operate either vibrator and for enabling the throw of either of said vibrators to be varied, to bring different portions of the ribbon over the printing point at the type strokes, and for silencing both vibrators at will.

26. In a typewriting machine having types and keys, the combination with two pairs of ribbon spools and two ribbon vibrators, of two universal bars operated by the keys, one for each of said vibrators, spool-winding means controlled by the keys, and means for concomitantly silencing either of said universal bars and rendering the other effective, and for silencing the winding means associated with the silenced vibrator, and for concomitantly silencing both the winding means and the vibrators.

27. In a typewriting machine having types and keys, the combination with two pairs of ribbon spools and two ribbon vibrators, of two universal bars operated by the keys, one for each of said vibrators, spool-winding means directly actuated by said universal bars, and means for concomitantly silencing either of said universal bars and rendering the other effective, and for concomitantly silencing both universal bars, at will.

28. In a typewriting machine having types and keys, the combination with two ribbon vibrators, of two universal bars, one for each of said vibrators, a single adjustable finger-piece, means controlled by said finger-piece for either concomitantly silencing either universal bar and rendering the other effective, or concomitantly silencing both universal bars, and means for detaining said finger-piece in different positions to which it is adjusted.

29. In a typewriting machine having types and keys, the combination of a shiftable frame, two universal bars mounted upon said frame and each shiftable thereby into and out of position for operation, and ribbon vibrators respectively connected to said universal bars; said frame movable to different positions for silencing both universal bars and for bringing either into use while the other is silenced.

30. In a typewriting machine having types and keys, the combination of a shiftable frame, two universal bars mounted upon said frame and shiftable thereby into and out of position for operation, and ribbon vibrators respectively connected to said universal bars, said keys operating stepped members which actuate said universal bars, and the latter being each shiftable to position for engaging with different stepped members to vary the throw of its associated ribbon vibrator, and said universal bars being also shiftable to positions where both clear said stepped members at the same time.

31. In a typewriting machine having a series of type bars, a series of key-operated levers connected to the type bars, the combination of a swinging frame, two universal bars hung upon said frame and movable thereby into and out of position to be engaged neither or either by stepped-projections upon said levers, a finger-piece for swinging said frame, means for detaining said frame in different positions, and ribbon vibrators connected to said universal bar.

32. In a typewriting machine having types and keys, the combination with a plurality of ribbon vibrators, of means for enabling the keys to throw either of said vibrators different distances to bring different widthwise portions of the ribbon over the printing point at the type strokes, and for silencing both vibrators.

33. In a typewriting machine having types and key,

means for enabling the keys to vibrate any one of four bands of ribbon over the printing point at the type strokes, or for silencing the ribbon-vibrating mechanism.

34. In a typewriting machine, the combination with key levers having steps, of a universal bar, means for shifting said universal bar to positions to engage different sets of steps to be vibrated different distances at the type strokes, and a vibrator connected to the said universal bar.

35. In a typewriting machine comprising a type-operating mechanism, the combination with means for enabling the type-operating mechanism to vibrate a plurality of ribbons to cover the printing point, of means for enabling the operator to silence one ribbon and cause the type-operating mechanism to vibrate the other ribbon to bring different widthwise portions thereof over the printing point.

36. In a typewriting machine comprising a type-operating mechanism, the combination with means for enabling the type-operating mechanism to vibrate a plurality of ribbons to cover the printing point, of means for enabling the operator to silence either ribbon and cause the type-operating mechanism to vibrate the other ribbon to bring different widthwise portions thereof over the printing point.

37. In a typewriting machine having a platen and a type-operating mechanism, the combination of two pairs of ribbon spools, means between the spools for guiding the ribbons in superposed relation, means for winding either spool of either pair, and means for enabling the type-operating mechanism to cause the ribbon on either pair of spools to vibrate variably at the type strokes, to cause different widthwise portions of the ribbon to cover the printing point.

38. In a typewriting machine having a type-operating mechanism, the combination of two pairs of spools, of means for winding either spool of either pair, while the spools in the other pair remain stationary, and means for enabling the type-operating mechanism to cause the ribbon upon either pair of spools to vibrate during the type strokes, to cover and uncover the printing point; said vibrating means including a part adjustable to enable one ribbon to be vibrated variably by the type-operating mechanism, to cause different widthwise portions of the ribbon to cover the printing point.

39. In a typewriting machine provided with types and a platen, the combination of two pairs of spools, means for winding the ribbon back and forth upon either pair of spools, while the spools in the other pair remain stationary, and means for causing the ribbon upon the active spools to vibrate different distances at the type strokes, at the will of the operator, to cause different widthwise portions of the ribbon to cover the printing point.

40. In a typewriting machine, the combination with two pairs of spools, of a spool winding mechanism, a shifting device for connecting either pair of spools to said winding mechanism, and means connected to said shifting device for causing to cover the printing point different widthwise portions of that ribbon which is carried by the spools which are connected to the winding mechanism.

41. In a typewriting machine, the combination with two pairs of spools, of a spool winding mechanism, a shifting device for connecting either pair of spools to said winding mechanism, and means operable simultaneously with said shifting device, for causing to cover and uncover the printing point at the type strokes different widthwise portions of that ribbon which is carried by the spools which are connected to the winding mechanism.

42. In a typewriting machine, the combination with a platen and types mounted to strike upon the front side thereof, of two pairs of spools mounted edge to edge in front of the platen, two spools at each side of the printing point, one pair of spools between the spools of the other pair, two vibrators for causing the ribbons to cover and uncover the printing point, a spool winder at each side of the printing point, means for effecting co-operation between said winders and either pair of spools, adjustable means for variably actuating the vibrator which is associated with the spools with which the winders co-operate, and means for reversing the direction of rotation of said winders.

43. In a typewriting machine, the combination with two pairs of ribbon spools, of actuating means for winding said spools, means movable independently of said spools for operatively connecting said pairs of spools alternately to the actuating means, and means for causing either ribbon to vibrate variably at the type strokes to cause different widthwise portions thereof to cover the printing point.

44. In a front strike writing machine, the combination with two pairs of ribbon spools placed edge to edge, of means for winding either spool of either pair, and means for causing the ribbon upon either pair of spools to move different distances to cause different widthwise portions thereof to cover the printing point.

45. In a front strike writing machine, the combination with a platen, of two pairs of ribbon spools mounted in front of the platen, one pair between the spools of the other pair, means for winding either spool of either pair, and means for causing different widthwise portions of the ribbon upon either pair of spools to cover and uncover the printing point.

46. In a typewriting machine, the combination with two pairs of spools, of means for winding either spool of either pair while the spools in the other pair remain stationary, and means for causing different widthwise portions of the ribbon upon one pair of spools to cover the printing point, and for rendering said ribbon ineffective and causing the other ribbon to cover the printing point.

47. In a typewriting machine, the combination with two pairs of spools, of means for winding either spool of either pair while the spools in the other pair remain stationary, and means for causing different widthwise portions of the ribbon upon either pair of spools to cover the printing point during the type strokes, at will.

48. In a typewriting machine, the combination with a platen and types mounted to strike upon the front side thereof, of two pairs of spools mounted edge to edge in front of the platen, one pair between the spools of the other pair, means for causing the ribbon upon either pair to vibrate variably to cause different widthwise portions thereof to cover and uncover the printing point during the type strokes, and means for winding the ribbon back and forth upon either pair of spools while the spools in the other pair remain stationary.

49. In a typewriting machine, the combination with two pairs of spools, of a spool-winding mechanism, means for causing either pair of spools to be operated by said winding mechanism while the other pair remains stationary; and means for causing the ribbon upon either pair of spools to move different distances to cause different widthwise portions thereof to cover the printing point.

50. In a typewriting machine, the combination with two pairs of spools, of a spool-winding mechanism, a shifting device for connecting either pair of spools to said winding mechanism, and means connected to said shifting device for causing to cover the printing point different widthwise portions of that ribbon which is carried by the spools which are connected to the winding mechanism.

51. In a typewriting machine, the combination with two pairs of spools, of a spool winding mechanism, a shifting device for connecting either pair of spools to said winding mechanism, and means operable simultaneously with said shifting device, for causing to cover the printing point at the type strokes different widthwise portions of that ribbon which is carried by the spools which are connected to the winding mechanism.

52. In a typewriting machine, the combination with two ribbon vibrators and two pairs of ribbon spools for carrying the ribbons threaded through said vibrators, of a finger-piece, and means operable by the latter for both rendering either vibrator effective and the other vibrator ineffective and for causing different widthwise portions of the active ribbon to cover the printing point, at the will of the operator, and also for causing the winding of the ribbon which is threaded through the effective vibrator.

53. In a typewriter machine, the combination with means for supporting two ribbons and means for causing either ribbon to wind while the other remains stationary, of means for causing the winding ribbon to be vibrated variably to cover the printing point at the type strokes.

54. In a typewriting machine, the combination with means for supporting two ribbons of reversible winding means, a finger-piece, means controlled by said finger-piece for causing either ribbon to be wound by said winding means while the other ribbon remains stationary, two vibrators for causing the ribbon to cover and uncover the printing point at the type strokes, and means also controlled by said finger-piece for calling into action the vibrator which carries the winding ribbon and rendering the other vibrator ineffective, and for causing different widthwise portions of the active ribbon to cover the printing point, at the will of the operator.

55. In a typewriting machine comprising a type-operating mechanism, the combination with means for enabling the type-operating mechanism to vibrate a plurality of ribbons to cover the printing point, of means for enabling the operator either to silence both ribbons simultaneously, or to silence one ribbon and cause the type-operating mechanism to vibrate the other ribbon to bring different widthwise portions thereof over the printing point.

56. In a typewriting machine comprising a type-operating mechanism, the combination with means for enabling the type-operating mechanism to vibrate a plurality of ribbons to cover the printing point, of means for enabling the operator either to silence both ribbons simultaneously or to silence either ribbon and cause the type-operating mechanism to vibrate the other ribbon to bring different widthwise portions thereof over the printing point.

57. In a typewriting machine provided with types and a platen, the combination of two pairs of spools, means for winding the ribbon back and forth upon either pair of spools while the spools in the other pair remain stationary, and means for causing the ribbon upon the active spools to vibrate different distances at the type strokes, at the will of the operator, to cause different widthwise portions of the ribbon to cover the printing point; means being provided for silencing simultaneously the winding means and vibrating means of both ribbons.

58. In a typewriting machine, the combination with two pairs of spools, of a spool winding mechanism, a shifting device for disconnecting both pairs simultaneously or connecting either pair of spools to said winding mechanism, and means connected to said shifting device for causing to cover the printing point different widthwise portions of that ribbon which carried by the spools which are connected to the winding mechanism, or for silencing the widthwise movements of both ribbons simultaneously with the disconnection of the winding mechanism from both pairs of spools.

59. In a typewriting machine, the combination with two pairs of ribbon spools, of shiftable means for either silencing both ribbons simultaneously or causing the ribbon on either pair to vibrate to cover and uncover the printing point at the type strokes at will, said shiftable means being also shiftable to cause different widthwise portions of the active ribbon to cover the printing point at the type strokes.

60. In a typewriting machine, the combination with two pairs of spools, of means for winding either spool of either pair while the spools in the other pair remain stationary, and means for causing different widthwise portions of the ribbon upon one pair of spools to cover the printing point, and for rendering said ribbon ineffective and causing the other ribbon to cover the printing point, and for silencing all the ribbon-winding and moving means.

61. In a typewriting machine, the combination with means for supporting two ribbons of reversible winding means, a finger-piece, shiftable means controlled by said finger-piece for causing either ribbon to be wound by said winding means while the other ribbon remains stationary, and two vibrators for causing the ribbon to cover and uncover the printing point at the types strokes, said shiftable means being provided with means to call into action the vibrator which carries the winding ribbon and rendering the other vibrator ineffective, and to cause either vibrator to move variably at the type strokes, and to silence all the ribbon winding and vibrating mechanism.

851,143. TYPE-WRITING MACHINE. BURNHAM C. STICKNEY, Elizabeth, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 13, 1906. Serial No. 347,724.

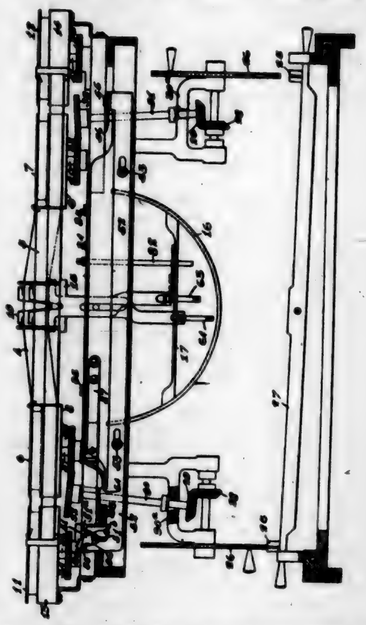

Claim.—1. In a typewriting machine comprising a type-operating mechanism, the combination with a universal bar and means for enabling it to vibrate a plurality of ribbons to cover the printing point, of means for enabling the operator to silence either ribbon and cause the universal bar to vibrate the other ribbon to bring different widthwise portions thereof over the printing point.

2. In a typewriting machine comprising type-operating keys, and a universal bar operated by said keys, the combination with means for enabling said universal bar to vibrate a plurality of ribbons to cover the printing point, of means for enabling the operator to silence one ribbon and cause the universal bar to vibrate the other ribbon, so as to bring different widthwise portions thereof into use at the will of the operator.

3. In a typewriting machine comprising type-operating keys and a universal bar operated by said keys, the combination with means for winding a plurality of separate ink ribbons, of means for enabling said universal bar to move either of said ribbons to cause different widthwise portions thereof to cover the printing point independently of the other ribbon.

4. In a typewriting machine having type-operating keys, and a universal bar controlled by said keys, the combination of a pair of ribbon-carriers, and means for causing one carrier to be operated variably by said universal bar, so as to bring different widthwise portions thereof over the printing point while the other carrier remains idle.

5. In a typewriting machine comprising type-operating keys, and a universal bar controlled by said keys, the combination of a pair of ribbon-carriers, and an adjustable finger-piece, and means controlled by said finger-piece for causing said universal bar to move said carriers variably

to bring different widthwise portions of the ribbon over the printing point.

6. In a typewriting machine comprising a set of types and a universal bar which reciprocates at all the strokes of the types, the combination of a plurality of ribbon-carriers, and adjustable means for connecting either ribbon carrier to said universal bar in a manner to cause the latter to impart different strokes to the ribbon carrier, at the will of the operator.

7. In a typewriting machine comprising a set of types and a universal bar which reciprocates at all the strokes of the types, the combination of a plurality of ribbon-carriers, and means for operatively connecting either of said ribbon-carriers to said universal bar, at will, and simultaneously disconnecting the other of said ribbon-carriers from said universal bar; said connecting means being further adjustable to vary the connection of either ribbon-carrier with the universal bar, to cause different widthwise portions of the ribbon to cover the printing point, at will.

8. In a typewriting machine comprising a set of types, and a member reciprocating at the strokes of all the types, the combination of means for supporting a plurality of ribbons, a plurality of ribbon-carriers, a plurality of levers for operating said carriers, and means for connecting said reciprocating member to either of said levers, and simultaneously disconnecting it from the other of said levers, at will, and said connecting means being further adjustable to vary the connection of either lever with a universal bar to effect different strokes of the ribbon-carrier, to cause different widthwise portions of the ribbon to cover the printing point.

9. In a typewriting machine comprising a platen, a set of types mounted to strike against the front thereof, and a member reciprocating at the strokes of all the types, the combination of means for supporting in front of the platen, a plurality of ribbon-carriers one in front of the other and both in front of the platen, a pair of independently operable levers mounted side by side and connected to said carriers, and means for causing said reciprocating member to operate either of said levers variably, at will.

10. In a typewriting machine having a platen and a type-operating mechanism, the combination of two pairs of ribbon spools, means between the spools for guiding the ribbons in superposed relation, means for winding either spools of either pair, a universal bar, and means for enabling the universal bar to cause the ribbon on either pair of spools to vibrate variably at the type strokes, to cause different widthwise portions of the ribbon to cover the printing point.

11. In a typewriting machine having a type-operating mechanism, and a universal bar, the combination with two pairs of spools, of means for winding either spool of either pair, while the spools in the other pair remain stationary, and means for enabling the type-operating mechanism to cause the ribbon upon either pair of spools to vibrate during the type strokes, to cover and uncover the printing point; said vibrating means including a part adjustable to enabel one ribbon to be vibrated variably by the universal bar, to cause different widthwise portions of the ribbon to cover the printing point.

12. In a typewriting machine having a universal bar operated by the keys, the combination with two pairs of spools, of a spool winding mechanism, a shifting device for connecting either pair of spools to said winding mechanism, and means connected to said shifting device for enabling said universal bar to cause to cover the printing point different widthwise portions of that ribbon which is carried by the spools which are connected to the winding mechanism.

13. In a typewriting machine, the combination with a platen, types mounted to strike upon the front side thereof, and a universal bar, of two pairs of spools mounted edge to edge in front of the platen, two spools at each side of the printing point, one pair of spools between the spools of the other pair, two vibrators for causing the ribbons to cover and uncover the printing point, a single winder at each side of the printing point, means for effecting co-operation between said winders and either pair of spools, adjustable means for enabling the universal bar to actuate variably the vibrator which is associated with the spools with which the winders co-operate, and means for reversing the direction of rotation of said winders.

14. In a typewriting machine, the combination with a platen and types mounted to strike thereon, of two pairs of spools mounted edge to edge, one pair of spools between the spools of the other pair, so that two spools are at each side of the printing point, gears upon all of said spools, a reversible winding gear at each side of the printing point, each winding gear being mounted between two adjacent spool gears, means for effecting shifting movements between the spool gears and the winding gears, a pair of ribbon vibrators, one for each ribbon, and means connected to said shifting means for rendering either vibrator ineffective, and causing the other vibrator to move variably at the type strokes, at the will of the operator, to cause different widthwise portions thereof to cover the printing point.

15. In a typewriting machine having a type-operating mechanism and a universal bar, the combination with two ribbon vibrators and two pairs of ribbon spools for carrying the ribbons threaded through said vibrators, of means controlled by the universal bar for vibrating the ribbons to cover and uncover the printing point, a finger-piece, and means controlled by the latter for both rendering either vibrator ineffective and the other vibrator effective to move the ribbon variably, to bring different widthwise portions thereof over the printing point, at the will of the operator, and also causing the winding of the ribbon which is threaded through the effective vibrator.

16. In a typewriting machine having types and a universal bar, the combination with means for supporting two ribbons, and means for causing either ribbon to wind while the other remains stationary, of means operated by the universal bar for causing the winding ribbon to be vibrated variably, to cause different widthwise portions thereof to cover the printing point at the type strokes.

17. In a typewriting machine, the combination with a universal bar frame, of a plurality of levers operable by said frame, a plurality of ribbon vibrators operable by said levers, and adjustable means for enabling said frame to impart variable strokes to each of said levers.

18. In a typewriting machine, the combination with a universal bar frame, of a plurality of levers, means shiftable to disconnect said frame from either of said levers, and to connect said frame with the other lever to effect variable movements thereof, and ribbon vibrating means operable by said levers.

19. In a typewriting machine, the combination with a winding-mechanism and two pairs of spools, of a shifting member for causing co-operation of said winding mechanism with either pair of spools at will, a pair of ribbon vibrators for the ribbons upon said spools, a universal bar frame, levers connected to said vibrators and operable by said frame, and means connected to said shifting device for causing either of said levers to be operated variably by said universal bar, so that the latter will be caused to vibrate variably that ribbon which is carried by the spools that co-operate said winding mechanism.

20. In a typewriting mechanism, the combination with winding mechanism and two pairs of spools, one pair mounted between the spools of the other pair so that two spools are at each side of the printing point, a bar extending transversely of the machine and having at its ends means for connecting said winding mechanism with either pair of spools, a finger-piece for said bar, means for detaining said bar in different positions, two ribbons vibrators, levers for operating said vibrators, a universal bar, and shiftable means mounted upon said universal bar and loosely connected to said transverse bar, for operating said levers, said shiftable means being adjustable to enable the universal bar to impart variable movements to each of said levers.

21. In an ink-ribbon mechanism, the combination of spools for two ink-ribbons; independent vibrators for said ribbons; means for operating either of said vibrators singly; ribbon driving mechanism connectible with a spool of either ribbon; a finger-lever, and connections from said lever for shifting the vibrator operating means from one to the other vibrator and for shifting the driving mechanism from one to the other set of ribbon spools; said vibrator-operating means including a part adjustable for causing the ribbon to be vibrated different distances over the printing point.

22. In an ink-ribbon mechanism, the combination of sets of spools for two ribbons; independent vibrators for said ribbons; vibrator operating mechanism provided with a member shiftable to connect said mechanism with either vibrator singly and also shiftable to cause said mechanism to impart variable strokes to each vibrator, and ribbon driving mechanism provided with members shiftable to connect said mechanism with either set of spools singly.

23. In an ink-ribbon mechanism, the combination of sets of spools for two ribbons; independent vibrators for said ribbons; vibrator operating mechanism provided with a member shiftable to connect said mechanism with either vibrator singly; ribbon driving mechanism provided with members shiftable to connect said mechanism with either set of spools singly; and hand operated means for simultaneously moving the shiftable members of said vibrator operating and ribbon driving mechanisms, and for varying the throw of the ribbons over the printing point effected by the vibrators.

24. In an ink-ribbon mechanism, the combination of separate sets of spools for different ribbons; independent vibrators for said ribbons; a to and fro moving member for actuating said vibrators; means for connecting said member with and disconnecting it from said vibrators to operate them singly; a ribbon driving mechanism provided with members shiftable to connect the same with said sets of spools singly; and a key for operating said shiftable members, and said connecting and disconnecting means, and for causing the vibrators to be moved different distances over the printing point.

25. In a typewriting machine having a universal bar, the combination with two pairs of ribbon spools, of means for enabling the universal bar to cause the ribbon on either pair to vibrate variably to cause different widthwise portions thereof to cover and uncover the printing point at the type strokes.

26. In a typewriting machine having a universal bar, the combination with two pairs of spools, of a spool-winding either spool of either pair while the spools in the other pair remain stationary, and means for concomitantly enabling the universal bar to cause different widthwise portions of the ribbon upon either pair of spools to cover the printing point during the type strokes, at will.

27. In a typewriting machine having a universal bar, the combination with two pairs of spools, of a spool winding mechanism, a shifting device for connecting either pair of spools to said winding mechanism, and means connected to said shifting device for enabling said universal bar to cause to cover the printing point different widthwise portions of that ribbon which is carried by the spools which are connected to the winding mechanism.

28. In a typewriting machine, the combination with a platen and types mounted to strike upon the front side thereof, of two pairs of spools mounted edge to edge in front of the platen, two spools at each side of the printing point, one pair of spools between the spools of the other pair, two vibrators for causing the ribbons to cover and uncover the printing point, a spool winder at each side of the printing point, means for effecting co-operation between said winders and either pair of said spools, adjustable means for bringing into action the vibrator which is associated with the spools with which the winders co-operate and for causing different widthwise portions of the active ribbon to cover the printing point, at the will of the operator, and means for reversing the direction of rotation of said winders.

29. In a typewriting machine having a universal bar, the combination with means for supporting two ribbons and means for causing either ribbon to wind while the other remains stationary, of shiftable means for enabling the universal bar to cause the winding ribbon to be vibrated variably to cover the printing point at the type strokes.

30. In a typewriting machine having a universal bar, the combination with means for supporting two ribbons, of rotary reversible winding devices, a finger-piece, means controlled by said finger-piece for causing either ribbon to be wound by said rotary winding devices while the other ribbon remains stationary, two vibrators connected to said universal bar for causing the ribbon to cover and uncover the printing point at the type strokes, and means also controlled by said finger-piece for calling into action the vibrator which carries the winding ribbon and rendering the other vibrator ineffective, and for causing different widthwise portions of the active ribbon to cover the printing point, at the will of the operator.

31. In a typewriting machine, the combination with a universal bar frame, of a plurality of levers, shiftable means for enabling said frame to operate either of said levers and to impart variable strokes to each lever at the type strokes, and ribbon vibrating levers operable by said levers.

32. In a typewriting machine, the combination with a winding-mechanism and two pairs of spools, of a shifting member for causing co-operation of said winding mechanism with either pair of spools at will, a pair of ribbon vibrators for the ribbons upon said spools, a universal bar, levers connected to said vibrators and operable by said frame, and means connected to said shifting device for causing either of said levers to be operated by said universal bar, said shifting device being also shiftable to cause the universal bar to vibrate variably that ribbon which is carried by the spools that co-operate said winding mechanism.

33. In a typewriting machine, the combination with winding mechanism and two pairs of spools, one pair mounted between the spools of the other pair so that two spools are at each side of the printing point, a bar extending transversely of the machine and having at its ends means for connecting said winding mechanism with either pair of spools, a finger-piece for said bar, means for detaining said bar in different positions, two ribbon vibrators, levers for operating said vibrators, a universal bar, and shiftable means mounted upon said universal bar and loosely connected to said transverse bar, for operating either of said levers, said shiftable means being also shiftable to cause the universal bar to impart variable strokes to either of said levers.

34. In a typewriting machine, the combination with two pairs of spools, of gears for said spools, two winding gears, a shifting device for moving said winding gears into mesh with either pair of said spool-gears, and adjustable means connected to said shifting device for causing to cover the printing point at the type strokes different widthwise portions of that ribbon which is carried by the spools which are connected to the winding mechanism.

35. In a typewriting machine having types and a universal bar frame operable by the types, the combination with a winding mechanism, of two pairs of ribbon spools, two ribbon vibrators, levers connected to said vibrators, an interponent upon said universal bar frame having stepped portions for engaging said levers to effect variable vibrations of each thereof according to the adjustment of said interponent, a bar mounted upon the frame-work of the machine, and loosely connected to said interponent to effect adjustment thereof in respect to said levers, a detent for holding said bar in different positions, a rack upon said bar, a rock-shaft having a pinion meshing with said rack, an index arm upon said rock-shaft, a second bar having means to connect either pair of spools with said winding mechanism, and a crank upon said rock-shaft having a pin and slot connection with said second bar to throw into engagement with the winding means those spools which carry the ribbon associated with the active vibrator; said pin and slot connection being constructed to permit the final portion of the turning movement of said rock-shaft in each direction to be made while the second bar remains motionless.

36. In a typewriting machine comprising a type-operating mechanism, and having a universal bar, the combination with means for enabling the universal bar to vibrate a plurality of ribbons to cover the printing point, of means for enabling the operator either to silence both ribbons

simultaneously, or to silence one ribbon and cause the universal bar to vibrate the other ribbon to bring different widthwise portions thereof over the printing point.

37. In a typewriting machine comprising a type-operating mechanism, and having a universal bar, the combination with means for enabling the universal bar to vibrate a plurality of ribbons to cover the printing point, of means for enabling the operator either to silence both ribbons simultaneously or to silence either ribbon and cause the universal bar to vibrate the other ribbon to bring different widthwise portions thereof over the printing point.

38. In a typewriting machine comprising type-operating keys, and a universal bar operated by said keys, the combination with means for enabling said universal bar to vibrate a plurality of ribbons to cover the printing point, of means for enabling the operator either to silence both ribbons simultaneously or to silence one ribbon and cause the universal bar to vibrate the other ribbon, so as to bring different widthwise portions thereof into use at the will of the operator.

39. In a typewriting machine comprising type-operating keys and a universal bar operated by said keys, the combination with means for winding a plurality of separate ink-ribbons, of means for either silencing both ribbons simultaneously or enabling said universal bar to move either of said ribbons to cause different widthwise portions thereof to cover the printing point.

40. In a typewriting machine comprising type-operating keys, and a universal bar controlled by said keys, the combination of a pair of ribbon-carriers, and an adjustable finger-piece, and means controlled by said finger-piece for either silencing both ribbons simultaneously or causing said universal bar to move said carriers variably to bring different widthwise portions of the ribbon over the printing point.

41. In a typewriting machine comprising a set of types and a universal bar which reciprocates at all the strokes of the types, the combination of a plurality of ribbon-carriers, and adjustable means for either connecting either ribbon-carrier to said universal bar in a manner to cause the latter to impart different strokes to the ribbon-carrier, or simultaneously disconnecting both carriers, at the will of the operator.

42. In a typewriting machine comprising a set of types and a universal bar which reciprocates at all the strokes of the types, the combination of a plurality of ribbon-carriers, and means for either disconnecting both or operatively connecting either of said ribbon-carriers to said universal bar, at will, and simultaneously disconnecting the other of said ribbon-carriers from said universal bar; said connecting means being further adjustable to vary the connection of either ribbon-carrier with the universal bar, to cause different widthwise portions of the ribbon to cover the printing point, at will.

43. In a typewriting machine comprising a set of types, and a member reciprocating at the strokes of all the types, the combination of means for supporting a plurality of ribbons, a plurality of ribbon-carriers, a plurality of levers for operating said carriers, and means for either disconnecting the levers simultaneously or connecting said reciprocating member to either of said levers, and simultaneously disconnecting it from the other of said levers, at will, and said connecting means being further adjustable to vary the connection of either lever with a universal bar to effect different strokes of the ribbon-carrier, to cause different widthwise portions of the ribbon to cover the printing point.

44. In a typewriting machine comprising a platen, a set of types mounted to strike against the front thereof, and a member reciprocating at the strokes of all the types, the combination of means for supporting in front of the platen a plurality of ribbon-carriers in front of the platen and one in front of the other, a pair of independently operable levers mounted side by side and connected to said carriers, and shiftable means for either silencing the levers simultaneously or causing said reciprocating member to operate either of said levers at will, said shiftable means being also shiftable to cause said reciprocating member to impart variable strokes to either of said levers during the type strokes.

45. In a typewriting machine having a type-operating mechanism, the combination of two pairs of spools, of means for winding either spool of either pair, while the spools in the other pair remain stationary, and means for silencing both ribbons simultaneously as to their winding and vibrating movements, or enabling the type-operating mechanism to cause the ribbon upon either pair of spools to vibrate during the type strokes, to cover and uncover the printing point; said vibrating means including a part adjustable to enable one ribbon to be vibrated variably by the type-operating mechanism, to cause different widthwise portions of the ribbon to cover the printing point.

46. In a typewriting machine provided with types, a platen and a universal bar, the combination of two pairs of spools, means for winding the ribbon back and forth upon either pair of spools while the spools in the other pair remain stationary, and means for enabling the universal bar to cause the ribbon upon the active spools to vibrate different distances at the type strokes, at the will of the operator, to cause different widthwise portions of the ribbon to cover the printing point; means being provided for silencing simultaneously the winding means and vibrating means of both ribbons.

47. In a typewriting machine having a universal bar, the combination with two pairs of spools, of a spool winding mechanism, a single shifting device for disconnecting both pairs simultaneously or connecting either pair of spools to said winding mechanism, and means connected to said shifting device for enabling the universal bar to cause to cover the printing point different widthwise portions of that ribbon which is carried by the spools which are connected to the winding mechanism, or for silencing the widthwise movements of both ribbons simultaneously with the disconnection of the winding mechanism from both pairs of spools.

48. In a typewriting machine, the combination with a platen and types mounted to strike thereon, of two pairs of spools mounted edge to edge, one pair of spools between the spools of the other pair, so that two spools are at each side of the printing point, gears upon all of said spools, a reversible winding gear at each side of the printing point, each winding gear being mounted between two adjacent spool gears, means for effecting shifting movements between the spool gears and the winding gears, a pair of ribbon vibrators, one for each ribbon, and means connected to said shifting means for rendering either vibrator ineffective, and causing the other vibrator to move variably at the type strokes, at the will of the operator, to cause different widthwise portions thereof to cover the printing point, and for silencing simultaneously all the spools and vibrators.

49. In a typewriting machine having a type-operating mechanism and a universal bar, the combination with two ribbon vibrators and two pairs of ribbon spools for carrying the ribbons threaded through said vibrators, of means controlled by the universal bar for vibrating the ribbons to cover and uncover the printing point, a finger-piece, and means controlled by the latter for both rendering either vibrator ineffective and the other vibrator effective to move the ribbon variably, to bring different widthwise portions thereof over the printing point, at the will of the operator, and also causing the winding of the ribbon which is threaded through the effective vibrator; the means controlled by said finger-piece being also movable to position to silence both vibrators and winding means simultaneously.

50. In a type writing machine, the combination with a universal bar frame, of a plurality of levers, means shiftable either to disconnect said frame from both of said levers, or to disconnect the frame from one of said levers, and to connect the other lever to effect variable movements thereof, and ribbon vibrating means operable by said levers.

51. In a typewriting machine, the combination with winding mechanism and two pairs of spools, one pair mounted between the spools of the other pair so that two spools are at each side of the printing point, a bar extending transversely of the machine and having at its ends means for connecting said winding mechanism with either pair of spools, a finger-piece for said bar, means for detaining said bar in different positions, two ribbon vibrators, levers for operating said vibrators, a universal bar, and shiftable means mounted upon said universal bar and loosely connected to said transverse bar, for operating said levers, said shiftable means being adjustable to either disconnect the universal bar from both of said levers or to cause the universal bar to impart variable movements to either of said levers at the type strokes.

52. In an ink-ribbon mechanism, the combination of spools for two ink-ribbons; independent vibrators for said ribbons; means for operating either of said vibrators singly; ribbon driving mechanism connectible with a spool of either ribbon; a finger-lever, and connections from said lever for shifting the vibrator operating means from one to the other vibrator and for shifting the driving mechanism from one to the other set of ribbon spools; said vibrator-operating means including a part adjustable for either silencing both vibrators simultaneously or causing the ribbon to be vibrated different distances over the printing point.

53. In a typewriting machine having a universal bar, the combination with two pairs of ribbon spools, of shiftable means for either silencing both ribbons simultaneously or for enabling said universal bar to cause the ribbon on either pair to vibrate to cover and uncover the printing point at the type strokes, at will, said shiftable means being also shiftable to cause different widthwise portions of the active ribbon to cover the printing point at the type strokes.

54. In a typewriting machine having a universal bar, the combination with means for supporting two ribbons, of reversible winding means, a finger-piece, shiftable means controlled by said finger-piece for causing either ribbon to be wound by said winding means while the other ribbon remains stationary, and two vibrators connected to said universal bar for causing the ribbon to cover and uncover the printing point at the type strokes, said shiftable means being provided with means to call into action the vibrator which carries the winding ribbon and rendering the other vibrator ineffective and to cause either vibrator to move variably at the type strokes, and to silence all the ribbon winding and vibrating mechanisms.

55. In a typewriting machine, the combination with a winding-mechanism and two pairs of spools, of a shifting member for causing co-operation of said winding mechanism with either pair of spools at will, a pair of ribbon vibrators for the ribbons upon said spools, a universal bar, levers connected to said vibrators and operable by said frame, and means connected to said shifting device for disconnecting both levers from the universal bar, or causing either of said levers to be operated variably by said universal bar, so that the latter will be caused to vibrate variably that ribbon which is carried by the spools that co-operate said winding mechanism.

56. In a typewriting mechanism, the combination with winding mechanism and two pairs of spools, one pair mounted between the spools of the other pair so that two spools are at each side of the printing point, a bar extending transversely of the machine and having at its ends means for connecting said winding mechanism with either pair of spools, a finger-piece for said bar, means for detaining said bar in different positions, two ribbon vibrators, levers for operating said vibrators, a universal bar, and means mounted upon said universal bar and loosely connected to said transverse bar, and shiftable either for operating either of said levers or for silencing both of said levers simultaneously, and also having means to cause either lever to be vibrated variably at the type strokes.

57. In a typewriting machine having types and a universal bar frame operable by the types, the combination with a winding mechanism, of two pairs of ribbon spools, two ribbon vibrators, levers connected to said vibrators, an interponent upon said universal bar frame having stepped portions for engaging said levers to effect variable vibrations of each thereof according to the adjustment of said interponent, a bar mounted upon the framework of the machine, and loosely connected to said interponent to effect adjustment thereof in respect to said levers, a detent for holding said bar in five different positions in one of which said levers are silenced, a rack upon said bar, a rock-shaft having a pinion meshing with said rack, an index arm upon said rock-shaft, a second bar having means to connect either pair of spools with said winding mechanism or for silencing both pairs, and a crank upon said rock-shaft having a pin-and-slot connection with said second bar to throw into engagement with the winding means those spools which carry the ribbon associated with the active vibrator; said pin-and-slot connection being constructed to permit the final portion of the turning movement of said rock-shaft in each direction to be made while the second bar remains motionless.

851,144. WINDING-FRAME. GEORGE P. J. STIVERS, Philadelphia, Pa. Filed Sept. 12, 1906. Serial No. 334,228.

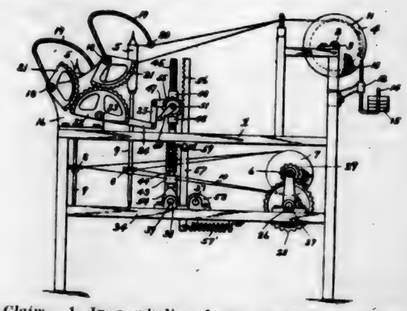

Claim.—1. In a winding frame, spools, a plurality of rows of spindles containing bobbins fed from said spools, a rock shaft adjacent to each row of spindles and connections between the shafts so that they move in unison, feed rods carried by each rock shaft, a feeding mechanism for rocking the shafts and imparting a uniform degree of angular movement to the feed rods during one portion of each operation of the feeding mechanism, and for revolving the shafts so as to advance the movement heretofore mentioned during the remaining portion of the operation of the feeding mechanism, whereby the spindles are fed and the feed is advanced during each complete operation of the feeding mechanism.

2. In a winding frame, a feeding mechanism, a segment operated thereby, similar segments meshing therewith, rock shafts upon which said latter segments are secured, and guide rods carried by the rock shafts.

3. In a winding frame, a reciprocating screw, a bearing carried thereby through the medium of a revoluble part, means for revolving the said part upon one reciprocation of the screw and in advancing the bearing, in combination with rock shafts carrying guide rods, an arm for rocking the shafts, and connections between the bearing and the arm.

4. In a winding frame, rock shafts carrying guide rods and means for rocking said shafts comprising segments and an arm for moving the segments a reciprocating screw and means for reciprocating the same a bearing carried by the screw and a link connecting the bearing and the aforesaid arm.

5. In a winding frame, rock shafts carrying guide rods and means for rocking said shafts comprising segments and an arm for moving the segment, a reciprocating screw and means for reciprocating the same, a bearing carried by the screw connected to the aforesaid arm, and means for advancing the bearing upon the screw during alternate reciprocations thereof.

851,145. MAIL AND ORDER FILING SYSTEM. NORMAN M. SWEET and GEORGE K. SAWAYA, Nashville, Tenn. Filed Nov. 26, 1906. Serial No. 345,266.

Claim.—1. A filing cabinet comprising a box-like body having notches along the top edges of the sides thereof,

and movable partitions embodying supporting rods adapted to rest in said notches.

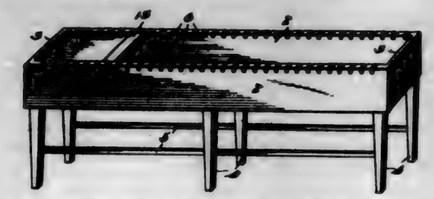

2. A filing cabinet comprising a box-like body having notches in opposite relation along the top edges of opposite sides thereof, and movable partitions supported by rods extending along the top edges thereof and projecting at their extremities beyond the partitions and engaging said notches.

3. A filing cabinet comprising a box-like body having notches along the top edges of opposite sides thereof, and movable partitions with supporting rods extending along the top edges thereof and with tabs projecting above said supporting rods for the purpose specified.

4. A filing cabinet comprising a box-like body having notches along the top edges of the opposite sides thereof, movable partitions having supporting rods adapted to fit removably into said notches, and a movable back stop or abutment block adapted to be shifted along the body.

5. A filing cabinet comprising a box-like body having notches along the top edges of opposite sides thereof, movable partitions having means to engage said notches, a stationary stop or abutment at one end of the body, and a movable stop or abutment within the body, said stops or abutments having beveled or inclined faces.

6. A filing cabinet comprising a box-like body, movable partitions adapted to be shifted along the body, means in line with the tops of the partitions for retaining them in the places to which they are shifted, and intervening divisions cards interposed between the partitions.

851,146. CHANGE-MAKING MACHINE. CHARLES ULMER, Lisbon, N. D. Filed Nov. 4, 1905. Serial No. 285,879.

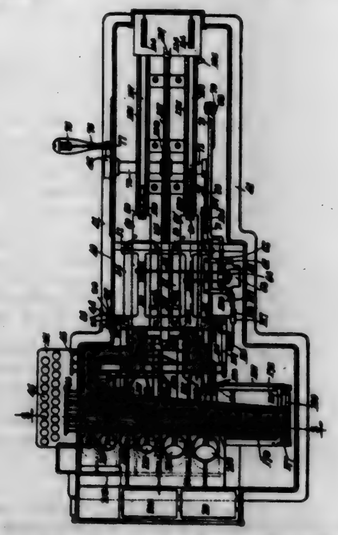

Claim.—1. In a change making machine, a plurality of selectors, a deposit key controlled means for determining the selector to be operated, and a purchase key controlled means for determining the extent of movement of the selector.

2. In a change making machine, the combination with a plurality of selectors, each representing different money values, of means for determining the selector to be operated, and a purchase key controlled means for determining the extent of movement of the selector.

3. In a change making machine, the combination with a plurality of selectors, of a selector operating means, a deposit key controlled means for determining the selector to be adjusted into alinement with the operating means, and means for controlling the movement of the selector.

4. In a change making machine, a plurality of selectors, a selector-operating means, a deposit key controlled means for determining the selector to be adjusted into alinement with the operating means, and a purchase key controlled means for determining the extent of movement of the selector.

5. In a change making machine, the combination with a plurality of selectors, each representing different money values, of means for determining the selector to be operated, means for operating such selector, and a purchase key controlled means for determining the extent of movement of the selector.

6. In a change making machine, selectors representing amounts deposited, and fractional parts thereof, key actuated means for moving the selectors and purchase key means for determining the extent of movement of the selectors.

7. In a change making machine, a plurality of selectors arranged to represent either singly or in combination the amount deposited and fractional parts thereof, key actuated means for moving the selectors and means for limiting the movement of such selectors in accordance with the amount of the purchase.

8. In a change making machine, a plurality of selectors, means for moving to operative position a selector representing the amount deposited, and means for moving the selector a distance determined by the amount of purchase.

9. In a change making machine, a plurality of selectors, a selector carrier, means for controlling the extent of movement of the carrier, means for moving the selector from the carrier, a key controlled means for determining the extent of movement of the selector, and change delivery mechanism under the control of said selector.

10. In a change making machine, a plurality of selectors, each provided with openings representing values, the selectors as a whole representing different values, respectively, a deposit key controlled means for determining the selector to be operated, means for operating said selector, a purchase key controlled means for determining the extent of movement of the selector, and means under the control of the selector for effecting the discharge of money from the machine.

11. In a change making machine, a selector having openings representing values in arithmetical progression, means for moving said selector, and key actuated means for adjusting the extent of movement of the selector.

12. In a change making machine, a key actuated selector having openings representing values in arithmetical progression, key actuated means for adjusting the extent of movement of the selector, and delivery slides having members movable into said openings to effect their adjustment to operative position.

13. In a change making machine, a selector having openings representing values in arithmetical progression, a key board, the members of which represent values bearing a fixed relation to the values represented by the openings in the selector and controlling the movement of said selectors to operative position, and a second key board representing amounts of purchase and determining the extent of movement of the selector.

14. In a change-making machine, a selector having openings representing values in arithmetical progression, a key board representing values bearing a fixed relation to the values represented by the openings of the selector and determining the selector to be moved to operative position, and a second key board representing amounts of purchase and controlling the extent of movement of the selector.

15. In a change making machine, a plurality of independently movable selectors, each arranged to control the delivery of change in different amounts from a fixed unit up to the highest value of the selector, said selectors representing, respectively, highest values of different amount, and means for limiting movement of the selectors in accordance with the amount of purchase.

16. In a change making machine, a plurality of selectors, each representing, respectively, different amounts of purchase in arithmetical progression, means for adjusting to operative position a selector representing the amount deposited, and a purchase key controlled means for limiting movement of the selector in accordance with the amount of the purchase.

17. In a change making machine, a plurality of selectors having openings representing values in arithmetical progression, the highest values differing in the several selectors, a key board, the members of which represent deposit values bearing a fixed relation to the highest values of the several selectors, and a purchase key controlled means for determining the extent of movement of the selectors.

18. In a change making machine, a slidable selector having openings representing values, and change delivery devices having members movable into such openings, to effect their adjustment to operative position.

19. In a change making machine, a selector having openings representing values in arithmetical progression, means for moving the selector, keys for determining the extent of such movement, and change discharging devices having members movable into said openings to effect their adjustment to operative position.

20. In a change making machine, the combination with a plurality of selectors representing different monetary values, respectively, one of said selectors being movable at each operation of the machine, means for determining the selector to be operated, means for operating said selector, a key board for controlling the extent of movment of the selector, and a delivery means controlled by the selector.

21. In a change making machine, a plurality of selectors, representing different monetary values, respectively, and each provided with openings representing values in arithmetical progression, a deposit key controlled means for determining the selector to be operated, means for operating said selector, purchase key controlled means for determining the extent of movement of the selector, and delivery means controllable by the openings of said selector.

22. In a change making machine, a plurality of selectors, a carrier therefor, and deposit and purchase key boards, one controlling the movement of the carrier, and the other the movement of the selectors.

23. In a change making machine, independently movable change delivery members normally held in inoperative position, pins connected thereto, a plurality of selectors having openings to permit the entrance of any one or all of the pins and adjustment of the delivery members to operative position, a key board mechanism for determining the selector to be operated, and a key board mechanism for controlling the extent of movement of said selector.

24. In a change making machine, delivery members including independently yieldable pins, and a key board controlled means for determining the extent of movement of the pins and the adjustment of the delivery members to operative or inoperative position.

25. In a change making machine, change delivery members including independently yieldable pins, and a perforated selector, the selector and pins having relative movement to determine the delivery members to be operated.

26. In a change making machine, a perforated selector, and change delivery members including independently yieldable pins, which, by engagement with said selector, are permitted to move varying distances to determine the delivery members to be operated.

27. In a change making machine, change delivery members including pins, a plurality of selectors, a bank of keys for determining the selector to be operated, means for moving said selector, and purchase key controlled means determining the extent of movement of the selector in accordance with the amount of a purchase, each selector having openings that are adjustable into alinement with the pins, and means for effecting relative movement of the pins and selector to determine the delivery members to be operated.

28. In a change making machine, a plurality of change delivery members, each including a movable pin, a plurality of selectors, each having perforations that may be adjusted into alinement with the pins, means for determining the selector to be operated, and means for determining the opening or openings of said selector to be moved into alinement with said pins.

29. In a change making machine, a plurality of selectors, each provided with openings representing values in arithmetical progression, a selector operating means, means for determining the selector to be operated, means controlling the extent of movement of the selector, change delivery members having pins movable through said openings, and an operating means for engaging selected delivery members.

30. In a change making machine, a selector, independent means for moving the selector in two planes at an angle to each other, and a change delivery mechanism under the control of the selector.

31. In a change making machine, a plurality of selectors, means for moving the whole of said selectors bodily in one plane to any predetermined position, means for moving any one of the selectors in a plane at an angle to the direction of the first movement, and means under the control of the selector for determining the amount of change to be delivered.

32. In a change making machine, a separate selector for each amount deposited, a selector operating means, and a bank of purchase keys for determining the extent of movement of said selectors.

33. In a change making machine, a separate selector for each amount deposited, a selector operating means, a deposit key board for determining the selector moved to operative position, and a purchase key board for determining the extent of movement of said selector.

34. In a change making machine, a plurality of selectors, a deposit key board for determining the movement of said selectors to operative position, each selector controlling the discharge of an amount less than the amount represented by the deposit which determines its movement.

35. In a change making machine, a plurality of selectors, each controlling the delivery of change up to a predetermined amount, a deposit key board for determining the selector to be operated, the selector controlled by each key controlling the delivery of a maximum amount less than the amount represented by said key.

36. In a change making machine, a plurality of selectors, a deposit key board controlling the movement of said selector to operative position, the selector under the control of each key having a maximum delivery capacity that is less than the amount represented by said key.

37. In a change making machine, a deposit key board, and a plurality of selectors, each deposit key having a separate selector under its control, the maximum change delivery capacity of said selector being les than the amount represented by the key, each selector having openings representing a fixed maximum and fractions thereof.

38. In a change making machine, a plurality of selectors, a carrier therefor, a deposit key board for controlling the extent of movement of the carrier, a selector operating means, and a purchase key board for controlling the extent of movement of the selector.

39. In a change making machine, a plurality of selectors, a movable carrier for said selectors, a selector operating means, a deposit key board for controlling the extent of movement of the carrier, and a purchase key board for controlling the extent of movement of the selector.

40. In a change making machine, a plurality of selectors, a carrier for said selectors a single selector operating means, a deposit key board controlling the extent of movement of the carrier to present any selector in alinement with the operating means, and a purchase key board for determining the extent of movement of said selector.

41. In a change making machine, a plurality of selectors, a carrier therefor, a plurality of stops for limiting the extent of movement of the carrier, a key board for adjust-

ing the stops, a single operating means with which the selectors may be moved into alinement by the carrier, a plurality of stops for limiting the extent of movement of the selectors, and a purchase key board for adjusting said stops.

42. In a change making machine, a plurality of selectors, a carrier therefor, stops movable into the path of the carrier, a key board for adjusting said stops, a selector operating means, and purchase key controlled stops movable into the path of the selectors.

43. In a change making machine, a selector operating means, a plurality of selectors, a carrier for said selectors, means for moving the carrier, key board controlled stops adjustable into the path of movement of the carrier for determining the selector to be operated, and purchase key controlled stops for determining the extent of movement of the carrier.

44. In a change making machine, a carrier, a plurality of selectors supported thereby, means for moving the carrier, means for limiting such movement in accordance with the selector to be operated, and key controlled stops adjustable into the path of movement of the selector for determining the amount of change to be delivered.

45. In a change making machine, a carrier, means for moving the same, a plurality of stops adjustable into the path of movement of the carrier, finger keys for controlling the movement of the stops, a plurality of selecting slides supported by the carrier, a selector operating means, a selector guide along which a selector is moved by the operating means, and a plurality of key controlled stops movable across the guide for limiting the extent of movement of the selector.

46. In a change making machine, the combination with a carrier, of a plurality of selectors supported thereby, means for moving the carrier, a selector operating means arranged to engage any selector moved into alinement therewith, means for imparting uniform movement to the operating means, and means for limiting the movement of the selector in accordance with the amount of change to be delivered.

47. In a change making machine, a selector for determining the amount of change to be delivered, a selector operating means having uniform stroke, and a key controlled means for limiting movement of the selector.

48. In a change making machine, a selector having a variable stroke for determining the amount of change to be delivered, and a selector operating means having a uniform stroke.

49. In a change making machine, a selector having a variable stroke for determining the amount of change to be delivered, a key controlled means for adjusting such stroke, and a selector operating means having a uniform stroke, and detachably connected to the selector.

50. In a change making machine, a selector for determining the amount of change to be delivered, a key board controlled means for adjusting the extent of movement of the selector, and a selector operating device having a give-way connection to permit continued movement of the operating device after the stopping of the selector.

51. In a change making machine, a selector for determining the amount of change to be delivered, a key board controlled means for adjusting the extent of movement of the selector, a selector operating device having a uniform stroke, and a give-way connection between the operating means and the selector for permitting continued movement of the operating means after the stopping of the selector.

52. In a change making machine, a plurality of delivery members, pins connected to said members, a delivery bar for engaging and moving said members, and independently actuable selectors having openings or recesses adjustable into alinement with the pins to permit movement of one or more of said delivery members into the path of movement of the delivery bar.

53. In a change making machine, a plurality of delivery members normally occupying an inoperative position, pins carrying said members, a support for the pins, a selector having perforations for the passage of the pins, means for adjusting the position of the selector, means for moving the pins through the perforations to permit the adjustment of certain of the delivery members to operative position, and means for engaging those members which have been moved to operative position.

54. The combination with a plurality of slidable delivery members, of pins connected to said delivery members, a support on which the pins are yieldably mounted, a plurality of selectors having perforations for the passage of the pins, means for moving said selectors to present one or more of the perforations into a position in alinement with the pins, means for moving the support in the direction of the selector, and permitting the pins of selected delivery members to enter the perforations, and means for engaging and operating said selected members.

55. In a change making machine, the combination with a plurality of slidable delivery members, of pins connected to said members, a support on which the pins are yieldably mounted, selectors movable across the path of the pins, means for stopping the selectors in any predetermined position with respect to the pins, means for moving the support in the direction of the selectors, the pins of selected delivery members passing through openings in the selector and permitting movement of said members to operative position, and means for engaging and moving the delivery members which have been adjusted to operative position.

56. The combination with a plurality of slidable delivery members normally held in inoperative position, of pins connected to said members, a support on which said pins are yieldably mounted, a plurality of selectors having openings representing different amounts to be discharged, means for moving said selectors, a key board controlled means for adjusting such movement, means for moving the support to permit the pins of selected members to pass through said openings, and move the members to operative position, and means for engaging and moving the delivery members which have been adjusted to operative position.

57. In a change making machine, the combination with a plurality of slidable delivery members normally held in inoperative position, pins connected to said delivery members, selectors having openings movable to positions below said pins, means for controlling the movement of the selectors, means for lowering the pins to permit those pins in alinement with openings to pass through said openings, and thus adjust the delivery members to operative position, and means for moving said delivery members.

58. In a change making machine, the combination with delivery slides, of bars connected thereto, spring supported pins carrying the rear ends of said bars, a vertically movable spring elevated support for the pins and their springs, an operating member for depressing the support and pins, a delivery bar actuated by said member and serving to engage the bars which have been adjusted into alinement therewith, selectors having openings for the passage of the pins, and means for determining the extent of movement of the selectors.

59. In a change making machine, a plurality of delivery slides, bars pivotally connected thereto and having notched or recessed rear ends, pins through which the free ends of the bars extend, springs tending to depress the pins, a vertically movable bar forming a support for the springs and pins, an operating member movable over said bar and serving to depress the same, a delivery bar for engaging the notched rear ends of the pivotally connected bars which have been adjusted to the lowest positions, a selector having pin receiving openings arranged in groups representing different monetary values, and means for controlling the extent of movement of the selector in accordance with the amount of change to be delivered.

60. In a change making machine, a pair of sets of selectors, one for controlling the delivery of monetary units, and the other for the delivery of fractional currency, key board controlled stops for limiting movement of the selectors, and means operable on movement of the fractional currency selector stop for readjusting the position of the unit selector stops.

61. In a change making machine, a pair of sets of selectors controlling, respectively, the discharge of monetary units and fractional currency, adjustable stops movable into the path of the selectors, key boards from which said stops are actuated, and means under the control of the fractional currency key board for readjusting the position of the unit selector stops.

62. In a change making machine, a pair of sets of selectors, one controlling the discharge of dollars and the other fractional currency, key board controlled stops for limiting the movement of the selectors, and means operable from the fractional currency key board for readjusting the positions of the stops of the dollar selector.

63. In a change making machine, the combination with a pair of sets of selectors controlling, respectively, the discharge of dollars and fractional currency, a pair of key boards, levers operated from the key boards, stops carried by the levers and movable into the path of the selectors, and means operable by the fractional currency key board for effecting movement of the dollar selector stop in advance of the dollar selector stop previously actuated from the dollar key board.

64. In a change making machine, a pair of sets of selectors controlling, respectively, the discharge of dollars and fractional currency, stops for limiting the movement of the selector, key boards controlling the movements of the stops, levers extending between the key boards and stops, each lever having a recess in one face and provided at its oposite face with a projecting pin or lug entering the recess of an adjacent lever, and a slide movable from the fractional currency key board for engaging a previously adjusted lever of the dollar key board and moving the same to transmit movement to an adjacent lever of the dollar selector stop.

65. In a change making machine, a pair of sets of selectors, controlling, respectively, the discharge of dollars and fractional currency, key controlled levers, stops actuated by said levers and movable into the path of the selectors, and means operable from the levers of the fractional currency stop for readjusting the position of a previously adjusted dollor selector stop.

66. In a change making machine, a plurality of sets of selectors for controlling the discharge of dollars and fractions thereof, deposit keys for controlling the movement of the selectors, stops movable into the path of the selectors, purchase keys for moving said stops and automatic means for locking said stops in adjusted position.

67. In a change making machine, the combination with a pair of sets of selectors for controlling the discharge of dollars and fractional currency, key board actuated levers, stops operable by the levers and movable into the path of the selectors, locking members arranged to engage with the levers and hold the same in adjusted position, and means for releasing said locking members after the discharge of the change from the machine.

68. In a change making machine, magazines arranged to contain different classes of money, a key board mechanism for controlling the discharge of money of all classes, and a means under the control of the operator for determining the class of money to be discharged.

69. In a change making machine, a plurality of magazines arranged, one to contain silver dollars, and the other paper dollars, key controlled discharging mechanisms, and means under the control of the operator for adjusting either discharging mechanism to operative position.

70. In a change making machine, a magazine having vertically slotted walls, money carrying trays arranged within the magazine and having projections entering said slots, auxiliary discharging slots formed in the walls of the magazine, the sets of slots being connected by transversely arranged recesses to permit the passage of the lugs of the trays from the vertical slots to the discharging slots.

71. In a change making machine, a plurality of magazines arranged for the reception of money discharging slides, bars extending therefrom, a delivery bar, and means for controlling the positions of the slide bars with relation to the delivery bar.

72. In a change making machine, the combination with the selector carrying boxes, of a key board, the keys of which are provided with notched shanks, a casing having guiding openings for the shanks, a locking strip having a pivoted edge arranged to engage with the notches and hold the shanks in adjusted position, and means for automatically moving said locking strip to release position.

73. In a change making machine, the combination with a pair of selector carrying boxes, of a weight for elevating the boxes, flexible connections extending between the boxes and the weight, guiding sheaves for said flexible connections, a lever for holding the weight in elevated position, and means for turning said lever to permit lowering of the weight and the raising of the boxes.

74. In a change making machine, the combination with a plurality of selector slides, of a carrier for raising and lowering said slides, a key board controlled means for adjusting the point of stop of the carrier, a slide, means for automatically connecting and disconnecting the same from the selecting slides, and an operating member having a give-way connection with said slide.

851,147. STUFFING-BOX. JOSEPH B. WILLINGS, Vanburen, Ind. Filed Aug. 2, 1906. Serial No. 328,909.

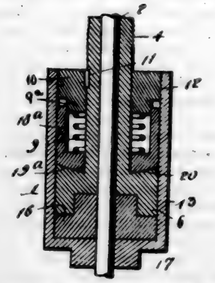

Claim.—1. A stuffing box comprising a tubular body, a spring shield or protector thereon, a spring arranged in said shield or protector, a follower for said spring slidably mounted upon said body, a pressure cap or casing adjustably connected to said follower, and a packing interposed between said cap or casing and said spring shield.

2. A stuffing box comprising a tubular body, a spring shield at one end thereof, a coil spring within said shield, a follower nut or sleeve for said spring slidably but nonrotatably mounted upon said body, a pressure cap or casing surrounding said spring shield and screwed upon said follower nut or sleeve, and a packing interposed between said cap or casing and said spring shield.

851,148. CANDY-COOLING TABLE. JAMES R. WINDSOR, Des Moines, Iowa. Filed Dec. 20, 1906. Serial No. 348,776.

Claim.—1. In a candy cooling table, the combination of a table top, a water receptacle beneath the table top, water supply pipes introduced into said receptacle and provided with openings to discharge upwardly against the table top and means for drawing off heated water from the receptacle without lowering the water level.

2. A candy cooling table, comprising a table top, a water receptacle beneath the table top, a water supply pipe within the receptacle having openings therein to discharge upwardly and laterally in a direction toward the table top and means for drawing off the heated water from the water receptacle without lowering the water level therein.

3. A candy cooling table, comprising a table top, a water receptacle beneath the table top, a water supply pipe leading to the interior of the water receptacle, a pipe communicating with the supply pipe and extended backwardly and forwardly across the receptacle, said pipe provided with openings to discharge water upwardly and laterally toward the table top at such angles that the streams from

two adjacent portions of the pipe will cross each other near the table top.

851,149. LEAKAGE-INDICATOR FOR HIGH-TENSION LINES. JONATHAN E. WOODBRIDGE, Rugby, England, and JOHN B. TAYLOR, Schenectady, N. Y., assignors to General Electric Company, a Corporation of New York. Filed Nov. 21, 1904. Serial No. 233,569.

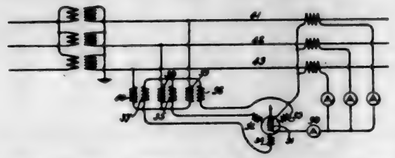

Claim.—1. The combination of a normally grounded transmission system, and means inductively related to the system for indicating leakage from said system to ground.

2. In a leakage-indicating means for a normally grounded transmission system, means inductively related to the system for indicating the particular line in which leakage occurs.

3. The combination of the current-carrying conductors of an electric power or other transmission system, and an indicator actuated by a magnetomotive force varying as the resultant of the currents in the conductors.

4. The combination of the mains or conductors of an electric system, and indicating means responsive to a magnetomotive force varying as the algebraic sum of the out-going and return currents in said conductors.

5. In a leakage indicating means for transmission lines, the combination of a suitable current indicator, and means for producing a deflection of said indicator whenever the algebraic sum of the out-going and returning currents of the transmission line has at any instant a value other than zero.

6. The combination with the mains or leads of an electric current transmission system, of a ground connection to a neutral or other point on said system, and means inductively related to the system for indicating leakage from mains of said system to ground.

851,150. DOOR-CHECK. THOMAS J. YOUNGLOVE, Richmond, Va., assignor of one-half to Thomas B. Hicks, Richmond, Va. Filed Mar. 29, 1906. Serial No. 308,802.

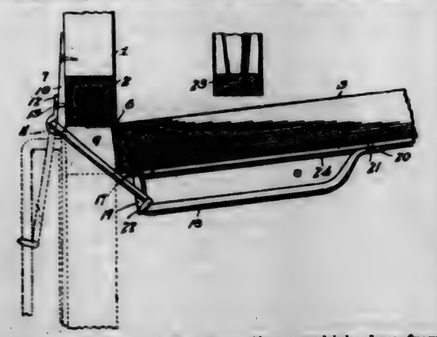

Claim.—1. A check for preventing a vehicle door from opening far enough to strike against the adjacent vehicle wheel, comprising a hinge-piece, a horizontally disposed guide member having a stop shoulder, and a horizontally disposed link connected with the hinge-piece and guide member and free at all times to cooperate with the guide member to arrest the outward movement of the door.

2. The combination with a vehicle door, of a door check embodying a hinge piece comprising separable sections, a horizontally disposed rail member or guide, a horizontally disposed link member connecting the hinge piece and rail member, and a stop shoulder for the link member.

3. The combination with a vehicle door, of a door check embodying a hinge piece, a horizontal tie-bar connecting the side uprights of the door, a rail member or guide extending lengthwise of the tie-bar, a horizontally disposed link member connecting the hinge piece and rail member, and a stop shoulder for the link member.

851,151. TOY. MARK ALLEN, Redfield, Iowa. Filed July 26, 1906. Serial No. 327,057.

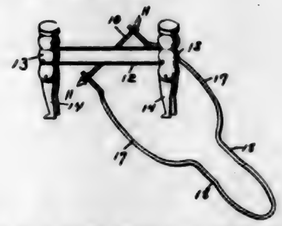

Claim.—1. In a device of the class described, the combination of a handle portion having two sides capable of movement to and from each other, a screw having its ends seated in the sides of the handle, said screw so arranged that when the handle members are moved toward each other it will be rotated in one direction and when they separate it will be rotated in the opposite direction.

2. In a device of the class described, the combination of a handle portion having sides capable of movement toward and from each other and a rotatable portion having on its opposite ends screws extended in opposite directions, said screws seated in the handle sides.

3. In a device of the class described, the combination of a handle portion with one side capable of movement toward and from the other and a rotatable portion having a screw at one end seated inside of the handle and an extension on the other end rotatably supported in the other side of the handle.

4. In a device of the class described, the combination of a handle having two sides normally separated by their own resiliency and capable of being brought together by pressure of an operator's hand, a rotatable object having on one end a screw seated in one of the sides of the handle member and on its other end an extension rotatably mounted in the other handle member.

5. In a device of the class described, the combination of a handle member formed of a single piece of spring wire with its ends normally separated and formed with elongated openings and a rotatable object comprising two wires with its ends twisted together in opposite directions forming screws seated in said elongated openings.

6. In a device of the class described, the combination of a handle member formed of a single piece of spring wire with its ends normally separated and formed with elongated openings, a rotatable object comprising two wires with its ends twisted together in opposite directions forming screws seated in said elongated openings, arms formed on the central portion of said twisted wires and objects connected with said arms.

7. In a device of the class described, the combination of a handle member formed of a single piece of spring wire with its ends normally separated and formed with elongated openings, and a rotatable object comprising two wires with its ends twisted together in opposite directions forming screws seated in said elongated openings, the ends of said wires separated far enough to prevent their removal from the handle portion.

851,152. COILING-MACHINE. STEPHEN W. BALDWIN, New York, N. Y. Filed Mar. 14, 1904. Renewed Sept. 29, 1906. Serial No. 336,804.

Claim.—1. Means for producing spirals and embodying a mandrel, an endless chain continuously moving about said mandrel and working faces upon said chain to engage the stock and press the same against the mandrel and into substantial conformity with the surface thereof.

2. Means for bending a blank into spirals and comprising a cylindrical body, an endless chain wrapped around the same and continuously rotating, and working faces upon said chain presenting a continuously changing but constantly uniform substantially annular working face about such body, and adapted to receive a blank and shape the same into substantial conformity to the said working face and said body.

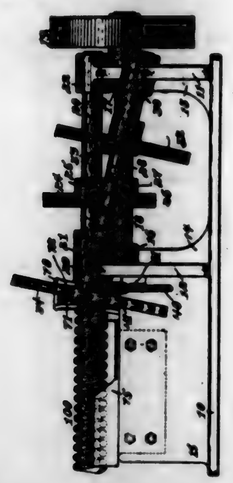

3. The combination with a mandrel having a cylindrical conformation, of an endless chain co-operative therewith in the bending of a stock rod, and each link of the chain having a working face, and a bearing face to run upon said mandrel, the various working faces upon the links constituting segments of an annular working face when the links are in working position about the mandrel, and a chain driver of larger diameter than the mandrel and having faces or abutments to engage the end faces of the portions of the links carrying said working faces and which said faces upon contiguous links come into contact during the time such links are in their active position and wrapped about the arbor.

4. In a machine for bending a blank into spirals, the combination with a mandrel having a cylindrical conformation, a chain driver of larger diameter than the mandrel, an endless chain wrapped about the mandrel and running upon the driver, each link of the chain having a portion carrying a working face to co-operate with the mandrel in engaging and forming the blank, such portions of the links having engaging faces, abutments upon the chain driver to engage therewith in the propulsion of the chain, and such faces abutting each other when in the working position about the mandrel, and a face upon each link to engage a co-operative face upon the working portion of the link when the chain is in its working position, to the end that the links which are in the working position at any time will present substantially a rigid organization.

5. The combination with a member having a cylindrical surface, of a device co-operative therewith in bending a blank and comprising a number of articulated units each having a bearing face to run upon said member, and a working face constituting the segment of an annulus when its bearing face is upon said member, a driver for said device having engaging faces adapted to engage the radial faces of said segments, faces on said units so organized that when the bearing faces are upon said member each segment will be closed against the adjacent unit and when they are passing over a driver of larger diameter than the said member each segment will hang away from the adjacent unit, and a receiving and forming member adjacent to the said member.

6. The combination with a member having a cylindrical surface, of a device co-operative therewith in bending a blank and comprising a number of articulated units each having a working face constituting the segment of an annulus when in working position, a driver for said device having engaging faces adapted to engage the radial faces of said segments, faces on said units so organized that each segment upon said member will be closed against the adjacent unit and when they are passing over a driver of larger diameter than the said member each segment will hang away from the adjacent unit, and a receiving and forming member adjacent to the said member.

7. The combination of a series of units pivotally connected into an endless chain-like body, a constituent portion of which units comprises when confined in a curved line a formative member; a former about which the said portion is wrapped and movable; means to shift said body; and upon the shifting of said body said formative member considered as a parcel of indefinite units shifts and its component units change; and means to feed a rod to said formative member.

8. The combination with a forming mandrel, of a chain driver; a plurality of working members pivoted one to the other and organized into a structure resembling an endless chain, said members passing about said mandrel and over said driver and presenting to said mandrel a working face and between which a bar may be fed; means to rotate said mandrel and driver to produce constant movement of the working portions of the mandrel and chain one relative to the other; and means to feed a bar between the mandrel and the chain.

9. The combination with a mandrel, of a body comprising an articulated series of units, a portion of which is wrapped and movable about the mandrel and presenting thereto a spiral working face constant as to its shape but continuously shifting as to its component units, and each unit, as it is about to enter said spiral, engaging a length of the stock and remaining in engagement therewith until the same passes from the spiral as finished product.

10. In a spiral coiling device, the combination of a former for the interior of the coil; a number of units pivotally connected together into a body resembling an endless chain and having a portion of said units convolving about said former to constitute a former for the exterior of the coil; and means to move the units and thereby change the individuals constituting said exterior former and to continuously move the latter about said interior former.

11. In a machine for bending a blank into spirals, the combination with a mandrel having a cylindrical conformation, of a chain driver of larger diameter than the mandrel, an endless chain wrapped about the mandrel and running upon the driver, each link of the chain having a portion carrying a working face to co-operate with the mandrel in engaging and forming the blank, each of such portions having a face on a plane embracing the axis of the mandrel, and such faces abutting each other when in the portion wrapped about the mandrel, and a face upon each link to overlap a face upon the adjacent link when in such portion, to the end that the body of links which are in such portion will present substantially a rigid organization.

12. In a machine for bending a blank into spirals, the combination with a mandrel having a cylindrical conformation, of a chain driver, an endless chain wrapped about the mandrel and running upon the driver, each link of the chain having a portion carrying a working face to co-operate with the mandrel in engaging and forming the blank, each of such portions having a face upon the front of each link to overlap a face upon the rear of the preceding link when in such portion, to the end that the body of links which are in such portion will present substantially a rigid organization and each be locked or clamped in position by the link following it.

13. In a machine for bending a blank into spirals, the

combination with a mandrel having a cylindrical conformation, of an endless chain wrapped and movable about the mandrel, means to spread the sides of the chain a distance greater than the diameter of the mandrel, each link of the chain having a portion carrying a working face to co-operate with the mandrel in engaging and forming the blank, each of such link portions having a face at each end which will coincide with a plane embracing the axis of the wrapped portion of the chain when the link is in such wrapped portion, and such faces abutting each other when the said portions are in the working position about the mandrel, to the end that the links which are in the working position at any time will present a substantially continuous working face.

14. In a machine for bending a blank into spirals, the combination with a mandrel having a cylindrical conformation, of an endless chain wrapped and movable about the mandrel, means to spread the sides of the chain, each link of the chain having a portion carrying a working face to co-operate with the mandrel in engaging and forming the blank, each of such link portions having a face at each end which will coincide with a plane embracing the axis of the wrapped portion of the chain when the link is in such wrapped portion and such faces abutting each other when the said portions are in the working position about the mandrel, to the end that the links which are in the working position at any time will present a substantially continuous working face, and each of said links having a face to lock in working position the link preceding it in such wrapped portion.

15. The combination with an inner forming member, of a series of members articulated together and each member having a working face, a substantially constant portion of said series being wrapped about said inner forming member and constituting an outer forming member, the portion of units comprising said outer forming member having between it and the said inner forming member an annular working space, and means to shift said series of members to continuously change the units entering into the said portion constituting such outer forming member by adding members to one end and taking members away from the other end of said portion.

16. The combination with a series of units connected together into an endless chain, a constituent portion of which units comprises when describing a curved line a formative member, a former about which said portion is wrapped and movable, means for shifting said complement of units constituting the formative member and changing its component units, and means for feeding a rod to said formative member.

851,153. APPARATUS FOR MECHANICALLY MIXING OR COMBINING LIQUIDS, &c. FRANZ J. H. M. BERBERICH, Kiel, Germany. Filed Feb. 10, 1905. Serial No. 245,022.

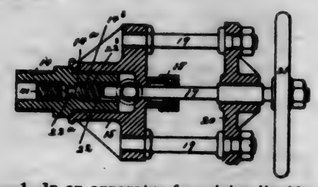

Claim.—1. In an apparatus for mixing liquids, the combination of a pipe having a coniform seat, with an enclosed rotatable plug having a cylindrical threaded section engaging the pipe, and a coniform section engaging the seat, substantially as specified.

2. In an apparatus for mixing liquids, a pipe and means for forcing a liquid through said pipe combined with an enclosed body provided with intersecting right and left hand threads, substantially as specified.

3. In a machine for mixing liquids, the combination of a pipe with an enclosed rotatable grooved plug having a coned end, an independent body having projections and arranged in front of the plug, and means for conveying liquids under pressure to the pipe, substantially as specified.

851,154. ATTACHMENT FOR VEHICLES. PAUL A. BLAIR, Waterbury, Conn. Filed Sept. 14, 1906. Serial No. 334,697.

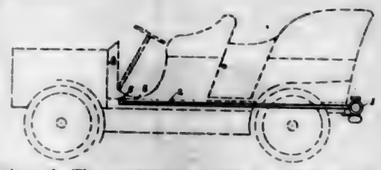

Claim.—1. The combination with a vehicle, of a rear light thereon, a visual signal located at the front of the vehicle, and means adapted to transmit light from said rear light to said front visual signal, whereby the driver of the vehicle is advised of the burning or extinguishment of said rear light and without leaving his seat.

2. The combination with a vehicle, a rear light thereon a visual signal located at the front thereof and in full view of the driver, and means adapted to transmit the light from said rear light to said front visual signal comprising a light-conducting conduit having at each of its bent portions means to cause the light rays to be transmitted through said conduit, whereby the driver of the vehicle is advised whether the rear light is burning and without leaving his seat.

3. In combination, a vehicle provided with a lamp out of view from the driver's seat, visual signaling means mounted in view of the driver, and a light transmitting conduit mounted upon the body of said vehicle and adapted to transmit light from said lamp to said visual signaling means whereby the extinguishment of the lamp is evidenced at said signaling means.

4. The combination with a vehicle, of a rear lamp thereon, a signal plate located near the front of the vehicle, and means adapted to transmit light from said rear lamp to said front signal plate, whereby the driver of the vehicle is advised of the burning or extinguishment of said rear lamp without leaving his seat.

5. The combination with a vehicle, of a rear lamp thereon, a translucent signal plate located near the front of the vehicle in view of the driver, and means terminating at one end adjacent to the lamp adapted to transmit light from said lamp to said signal plate, whereby the driver of the vehicle is advised of the burning or extinguishment of said rear lamp without leaving his seat.

6. In automobile construction, in combination, a rear lamp out of view from the driver's seat, visual signaling means mounted upon the hood of the vehicle in view of the driver, and a light transmitting conduit leading from said lamp to said visual signaling means whereby the extinguishment of the lamp is evidenced at said signaling means.

851,155. LOADING, UNLOADING, AND TRANSPORTING APPARATUS. EDWIN S. ROYD, Norris City, Ill. Filed July 14, 1905. Serial No. 269,683.

Claim.—1. In a dumping car, movable sides, means for locking the sides, means fixed to the road-bed for unlocking the sides, and means fixed at each side of the road-bed for returning the sides.

2. In a dumping car, movable sides, means for locking the sides, means fixed to the road-bed for unlocking the sides, means fixed at each side of the road-bed for returning the sides, and means for returning the side locking means to position.

3. In an apparatus for hoisting material from a mine and conveying the same to a delivery point, the combination of a hoisting conveyor provided with a bucket, a surface conveyor for transporting the material from the mine shaft to a delivery point, means for operating said conveyors, and a crane adjacent the mouth of the shaft for removing the bucket from the hoisting conveyor and swinging it to position to discharge into the surface conveyor.

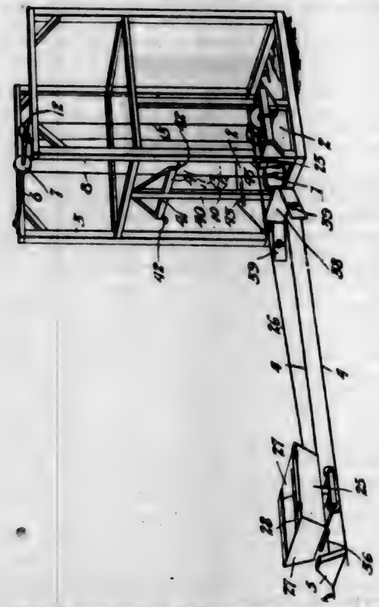

4. In an apparatus for hoisting material from a mine and conveying the same to a delivery point, the combination of a hoisting conveyor provided with a bucket and operating in the mine shaft, said conveyor adapted to be operated to transport the bucket to the surface and to return under the weight of the bucket to loading position, an inclined trackway leading from the mouth of the mine to the delivery point, a surface conveyor adapted to be drawn to a point adjacent the mine shaft and to travel by gravity therefrom down said trackway to the delivery point, said conveyor being provided with dumping doors and latch mechanism for locking and releasing the same, a driving shaft, means for operating the two said conveyors from said shaft to bring a bucket to the surface and move the surface conveyor to receiving position, means for operating said latch mechanism to dump the load carried by the surface conveyor and close the doors thereof, and means for removing the bucket from the hoisting conveyor and swinging the same to position to discharge into the surface conveyor.

5. In an apparatus for hoistng materials and conveying the same to a delivery point, the combination of a hoisting conveyor provided with a receptacle, a self-dumping conveyor for transporting the material from the point of delivery of the hoisting conveyor to a dumping or final delivery point, means for operating said conveyors, a crane adjacent the delivery point of the hoisting conveyor and receiving point of the surface conveyor for removing the receptacle from the former and swinging it to position to discharge into the latter, and means located at the receiving and delivery points of the surface conveyor for dumping the load and resetting the conveyor for the reception of a new load.

6. In an apparatus for hoisting materials and conveying the same to a delivery point, the combination of a hoisting conveyor carrying a receptacle, said conveyor adapted to be operated to transport the receptacle and its load to the surface and to return under the weight of the receptacle to loading position, an inclined trackway leading from the delivery point of the hoisting conveyor to a final delivery point, a surface conveyor adapted to be drawn to a point adjacent to the delivery point of the hoisting conveyor and to travel by gravity therefrom down said trackway to the final delivery point, said conveyor being provided with dumping doors and latch mechanism for locking and releasing the same, means for operating said conveyors to bring the receptacle to its delivery point and move the surface conveyor to receiving position, and means located respectively at the dumping and receiving points of the surface conveyor to operate said latch mechanism to release the dumping doors and to automatically return the doors to closed position and latch the same.

851,156. GALVANOMETER. JOSEPH BROTCH, Brooklyn, N. Y. Filed June 27, 1906. Serial No. 323,577.

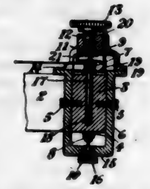

Claim.—1. In a galvanometer, the combination with a movable coil having pivots at its opposite ends, of end bearings for said pivots one of which is movable relatively to the other and the other of which is fixed in all positions of the pivots, and means for holding the pivots of said movable coil out of contact with said end bearings.

2. In a galvanometer, the combination with a movable coil having pivots secured to its opposite ends in the line of its axis, end bearings for said pivots one of which bearings is movable relatively to the other and embodies stops for locating it in two extreme positions, and means for holding said movable coil in fixed position with its pivots out of contact with said end bearings.

3. In a galvanometer, the combination with a field magnet and a core in fixed relation with each other, of a movable coil having pivots at its opposite ends, end bearings for said pivots one of which is adjustable relatively to the other, and means carried by the core for holding said movable coil in a fixed position in contact with one end of the core and with its pivots out of contact with said end bearings.

4. In a galvanometer, the combination with a movable coil having pivots at its opposite ends, of end bearings for said pivots one of which is embodied in a screw-threaded member adjustable relatively to the other bearing in the direction of the axis of the bearing, and means controlled by said screw-threaded member for holding the pivots of said movable coil out of contact with said end bearings when the end bearings are adjusted farther apart than the distance between said pivots.

5. In a galvanometer, the combination with a field magnet and a core in fixed relation with each other, of a movable coil having pivots at its opposite ends, end bearings for said pivots one of which is embodied in a screw-threaded member adjustable relatively to the other bearing in the direction of the axis of the bearing, and a spring-pressed arresting device carried by said core for holding said movable coil in a fixed position in the direction of the axis of the core, and normally held out of action by said screw-threaded member when the end bearings are adjusted farther apart than the distance between the pivots.

6. In a galvanometer, the combination with a field magnet and a core in fixed relation with each other, of a movable coil, means for supporting said movable coil, and means carried by said core for preventing movement of said movable coil in the direction of the axis of said core.

7. In a galvanometer, the combination with a field magnet and a core in fixed relation with each other, of a movable coil, means for supporting said movable coil, and means carried by said coil for holding said movable coil in a fixed position in contact with one end of the core.

8. In a galvanometer, the combination with a field magnet and a core in fixed relation with each other, of a movable coil, means for supporting said movable coil, and

spring-actuated means carried by said core for holding said movable coil in a fixed position in contact with one end of the core.

9. In a galvanometer, the combination with a field magnet and a core in fixed relation with each other, of a movable coil surrounding and normally clear of said core and shiftable into contact with one end of the core, means for supporting said movable coil, and means carried by said core and in engagement with one end of the movable coil for holding said movable coil in contact with one end of the core.

10. In a galvanometer, the combination with a field magnet and a core in fixed relation with each other, of a movable coil surrounding and normally clear of said core, means for supporting said movable coil, and a spring-pressed pin working in said core and in engagement with one end of the movable coil for holding said movable coil in contact with the opposite end of the core.

11. In a galvanometer, the combination with a field magnet and with an axially bored core in fixed relation with each other, of a movable coil surrounding and normally clear of said core, means for supporting said movable coil, and a spring-pressed pin working in said bore in the core and having a disc head in engagement with one end of the movable coil for holding said movable coil in contact with the opposite end of the core in any angular position of said coil.

12. In a galvanometer, the combination with a field magnet and a core in fixed relation with each other, of a movable coil, means for supporting said movable coil, an arresting device carried by said core for preventing movement of said movable coil in the direction of the axis of said core, and means for holding said arresting device out of action.

13. In a galvanometer, the combination with a field magnet and a core in fixed relation with each other, of a movable coil shiftable into contact with one end of the core, means for supporting said movable coil, an arresting device carried by said core for holding said movable coil in a fixed position in contact with one end of the core, and means for holding said arresting device out of action.

14. In a galvanometer, the combination with a field magnet and a core in fixed relation with each other, of a movable coil, means for supporting said movable coil, a spring-actuated arresting device carried by said core for holding said movable coil in a fixed position in the direction of the axis of said core, and means for holding said arresting device out of action.

15. In a galvanometer, the combination with a field magnet and a core in fixed relation with each other, of a movable coil surrounding and normally clear of said core, means for supporting said movable coil, an arresting device carried by said core and in engagement with one end of the movable coil for holding said movable coil in contact with one end of the core, and means for holding said arresting device out of action.

16. In a galvanometer, the combination with a field magnet and a core in fixed relation with each other, of a movable coil, means for supporting said movable coil, an arresting device carried by said core for preventing movement of said movable coil in the direction of the axis of said core, and means including a screw-threaded adjusting device for holding said arresting device out of action.

17. In a galvanometer, the combination with a field magnet and a core in fixed relation with each other, of a movable coil surrounding and normally clear of said core, means for supporting said movable coil, a spring-pressed pin working in said core and in engagement with one end of the movable coil for holding said movable coil in a fixed position in the direction of the axis of said core, and means including a screw-threaded adjusting device for holding said arresting device out of action.

851,157. ELECTRIC FUSE OR CUT-OUT. LEONARD B. BUCHANAN, Woburn, Mass. Filed May 28, 1906. Serial No. 319,077.

Claim.—1. In an electric fuse or cut-out, a shell or case containing a fuse-wire, a fuse-indicator, and an actuating spring for said indicator which is located beneath but disconnected from the indicator, and which is connected with and held compressed by said fuse wire, substantially as described.

2. In an electric fuse or cut-out, a shell or case containing a fuse-wire, a fuse-indicator, means for holding it confined, and an actuating-spring for said indicator which is located beneath it, and which is formed with an eye through which the fuse-wire passes, whereby said spring is connected with and held compressed by the fuse-wire, substantially as described.

3. In an electric fuse or cut-out, a shell or case containing a fuse-wire and having an aperture, a removable disk contained in said aperture, and a spring located beneath said disk but disconnected therefrom which is normally held compressed by the fuse-wire and which, when released by the fuse-wire rupturing, operates to eject the disk, substantially as described.

4. In an electric fuse or cut-out, a shell or case containing a fuse-wire, a fuse-indicator, an actuating-spring for said indicator which is located beneath it and which is connected with and held compressed by said fuse wire, and a cap containing said spring through which the fuse-wire passes, substantially as described.

5. In an electric fuse or cut-out, a shell or case having an aperture, a fuse-wire contained in said shell or case, a cap placed in said aperture, an indicating-disk placed in said cap, a spring for ejecting said disk also placed in said cap beneath the disk, which is connected with and held compressed by the fuse-wire, substantially as described.

6. In an electric fuse or cut-out, a shell or case containing a fuse-wire, a helical spring connected with said fuse-wire and normally held compressed by it, and a fuse-indicator located adjacent said spring, which is engaged and operated by said spring when the latter is released, and means, independent of the spring for holding the indicator confined, substantially as described.

7. In an electric fuse or cut-out, a shell or case containing a fuse-wire, a helical spring having an eye at one end through which said fuse-wire passes, and a support for said spring upon which it is held compressed by said fuse-wire, substantially as described.

8. In an electric fuse or cut-out, a shell or case containing a fuse-wire, a helical spring connected with said fuse-wire, and a support for said spring upon which it is normally held compressed by said fuse-wire, a fuse-indicator adapted to be operated by said spring when released, and means for holding said indicator confined while the spring is compressed, substantially as described.

9. In an electric fuse or cut-out, a shell or case having an aperture and containing a fuse-wire, a helical spring contained in said aperture which is connected with said fuse-wire, and a support for said spring upon which it is normally held compressed by said fuse-wire, a fuse-indicator adapted to be operated by said spring when released, and means for holding said indicator confined while the spring is compressed, substantially as described.

10. In an electric fuse or cut-out, a shell or case containing a fuse-wire, a helical spring having an eye at one end through which said fuse wire passes, and a support for said spring upon which it is held compressed by said fuse-wire, and a fuse indicator adapted to be operated by said spring when released, substantially as described.

11. In an electric fuse or cut out, a shell or case having an aperture, a fuse-wire contained in said shell or case, a cap placed in said aperture through which the fuse-wire passes, an indicating disk placed in said cap, a spring for ejecting said disk also placed in said cap beneath the disk, which is connected with and held compressed by the fuse-wire, substantially as described.

12. In an electric fuse or cut-out, a shell or case having an aperture, a fuse-wire contained in said shell or case, a flanged cap placed in said aperture through which the fuse-wire passes, an indicating-disk placed in said cap, a helical spring for ejecting said disk also placed in said cap beneath the disk, which is connected with and held compressed by the fuse wire, substantially as described.

13. In an electric fuse or cut-out, a shell or case containing a main fuse wire and an auxiliary fuse wire, a fuse indicator and an actuating spring for said indicator which is located beneath but disconnected from the indicator and which is held compressed by said auxiliary fuse wire, substantially as described.

14. In an electric fuse or cut-out, a shell or case containing a main fuse wire and an auxiliary fuse wire, a fuse indicator, an actuating spring for said indicator which is held confined by said auxiliary fuse wire, and independent means for holding the indicator confined while its actuating spring is held confined, substantially as described.

15. In an electric fuse or cut-out, a shell or case containing a main fuse wire, and an auxiliary fuse wire, a fuse indicator and helical spring connected with the auxiliary fuse wire and normally held compressed by it, a fuse indicator located adjacent said spring which is engaged and operated by said spring when the latter is released, and independent means for holding said indicator confined while said actuating spring is held compressed, substantially as described.

16. In an electric fuse or cut-out, a shell or case having an aperture and containing a main fuse wire and an auxiliary fuse wire, a fuse indicator, an actuating spring for said indicator normally held compressed by said auxiliary fuse wire, and independent means for holding said indicator confined in said aperture while its actuating spring is held compressed, substantially as described.

17. In an electric fuse or cut-out, a shell or case having an aperture and containing a main fuse wire and an auxiliary fuse wire, an indicating disk adapted to be ejected from said aperture, an actuating spring for said disk normally held compressed by said auxiliary fuse wire, and independent means for holding said disk confined in the aperture while its actuating spring is held compressed, substantially as described.

851,158. DOOR-LATCH. GEORGE E. CADWELL, Broken Bow, Nebr. Filed June 5, 1906. Serial No. 320,907.

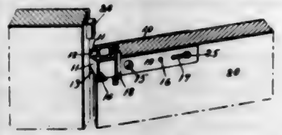

Claim.—1. An improved latch, comprising parallel side pieces, a latch-head formed with a notch in its face, inclined sides extending from said notch outwardly in both directions to the sides of the latch, bevelled lower edges on the latch head, notches adjacent to said bevelled lower edges, and means for pivotally or slidingly supporting the latch.

2. An improved latch, comprising a body portion with a head on its forward end, said head having its forward face inclined from the side of the latch forwardly and inwardly, said face formed with a notch adjacent to said inclined portion, the lower edge of the face formed with an inclined portion extending downwardly and rearwardly, the body portion of the latch formed with a notch in the rear of said latter inclined portion.

3. An improved latch, comprising a body portion with a head on its forward end, said head having its forward face inclined from the side of the latch forwardly and inwardly, said face formed with a notch adjacent to said inclined portion, the lower edge of the face formed with an inclined portion extending downwardly and rearwardly, the body portion of the latch formed with a notch in the rear of said latter inclined portion, said body portion also formed with a pivot pin opening and a slot.

4. An improved latch, formed of a single piece of metal and comprising straight parallel sides, the rear ends of said sides each formed with a slot and with a pivot pin opening, the central portion of the face of the latch formed with a vertical notch, the sides of the face from the notch extending outwardly and toward the body portion of the latch, the bottom of the face of the latch inclined downwardly and toward the body of the latch, the sides of the latch adjacent to said latter inclined portions formed with notches, and loops to support the forward ends of the sides.

5. An improved latch, formed of a single piece of metal and comprising straight parallel sides, the rear ends of said sides each formed with a slot and with a pivot pin opening, the central portion of the face of the latch formed with a vertical notch, the sides of the face from the notch extending outwardly and toward the body portion of the latch, the bottom of the face of the latch inclined downwardly and toward the body of the latch, the sides of the latch adjacent to said latter inclined portions formed with notches, and loops to support the forward ends of the sides, and an extensible spring for engaging the inner face of the latch head.

851,159. COMPOUND FOR THE REMOVAL OF BOILER-SCALES. GEORGE W. CASE, Lestershire, N. Y. Filed Jan. 24, 1907. Serial No. 353,898.

Claim.—1st: The herein described composition of matter, consisting of antimony, aluminum, bismuth, copper, lead, mercury, tin, zinc substantially as described and for the purpose specified.

2. The herein described composition of matter consisting of 8 parts antimony, 4 parts aluminum, 2 parts bismuth, 1 part copper, 10 parts lead, 3 parts mercury, .25 parts tin, 45 parts zinc; and for the purpose of removal and prevention of scales in steam boilers, and other receptacles in which steam is used.

851,160. WATER-PURIFYING APPARATUS. JOHN F. CHASE, St. Petersburg, Fla. Filed Oct. 10, 1906. Serial No. 338,287.

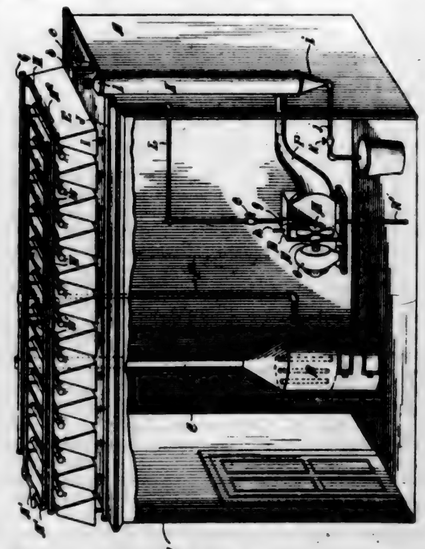

Claim.—1. An aerating drum for water-purifying apparatus, comprising a cylinder having a series of funnels, and a series of perforated disks arranged alternately therein, said disks having a central opening surrounded by a collar, and a conical shaped cover or top.

2. An aerating drum for water-purifying apparatus, comprising a drum having a series of funnels, and a series of perforated disks arranged alternately therein, said funnels having openings protected by aprons, and said disks having aprons to direct the water therefrom toward the center of the drum.

851,161. VALVE. CHARLES O. CHURCHILL, Springfield, Mass., assignor to The Fairbanks Company, New York, N. Y., a Corporation. Filed Nov. 14, 1905. Serial No. 287,251.

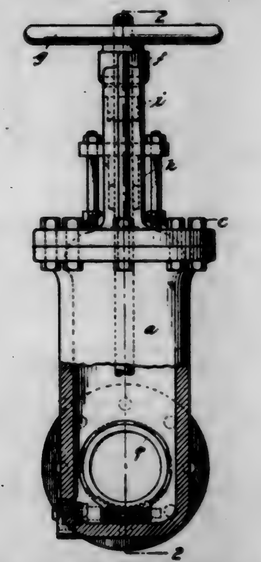

Claim.—1. In a valve, the combination of a removable seat, a mutilated thread on part of the periphery of said seat, a worm gear on the remaining part, a rotatable threaded bolt in the lower part of the casing, the threads engaging said worm-gear, a collar on said bolt, a reduced part on said bolt adjacent the collar, a thrust-gland for engaging said collar and a removable plug in the casing for protecting the end of said bolt.

2. In a valve, the combination with the casing, a yoke secured thereto, a valve-stem in said yoke, a stuffing-box integral with said yoke, a follower-gland on said valve-stem, means on said yoke adjacent the upper end thereof for supporting said follower-gland in an elevated position, said means consisting of lugs integral with the yoke and at the upper inner side of the same and extending toward each other whereby the follower gland may be supported in elevated position thereon, as described.

3. In a valve, the combination with the casing, a yoke secured thereto, a valve-stem in said yoke, a stuffing-box integral with said yoke, a follower-gland on said valve-stem, lugs on said yoke adjacent the upper end thereof for supporting said follower-gland in an elevated position.

851,162. MEANS FOR FEEDING METALLIC LEAF TO A STAMPING-PRESS. WALTER H. COE, Providence, R. I. Filed June 29, 1906. Renewed Mar. 11, 1907. Serial No. 361,782.

Claim.—1. In an apparatus for feeding metallic leaf to a stamping press from a package roll, the combination of the die-holding plunger, and the platen, with the parallel endless bands for supporting the edges of the sheets of metallic leaf, means for depositing the sheets of metallic leaf thereon from the package roll, and means for imparting movement to the said bands to carry the metallic leaf between the die-holding plunger and the platen.

2. The combination of the die-holding plunger, and the platen, with the bands for supporting the edges of the sheets of metallic leaf deposited thereon, means for imparting movement to the said bands, and means for applying an adhesive material to the bands.

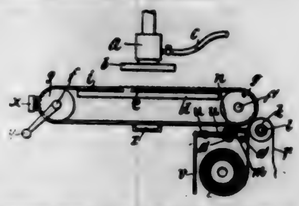

3. The combination of the die-holding plunger, and the platen, with the bands for supporting the edges of the parting movement to the said bands, and means for applying adhesive material to the said bands, and means for removing the adhering metallic leaf from the bands.

4. In an apparatus of the character described, the combination of the die-holding plunger, the platen, the parallel endless bands for supporting the edges of the metallic leaf at opposite sides of the die, and means for imparting movement to the said bands, with the heating roll adapted to hold the metallic leaf against the said bands for attachment thereto.

5. In an apparatus of the character described, the combination of the die-holding plunger, the platen, the parallel endless bands for supporting the edges of the metallic leaf at opposite sides of the die, and means for imparting movement to the said bands, with the heating roll adapted to hold the metallic leaf against the said bands for attachment thereto, and a cutter for dividing the fillet of metallic leaf into suitable lengths preparatory to its attachment to the supporting bands.

6. In an apparatus of the character described, the combination of the die-holding plunger, the platen, the parallel endless bands for supporting the edges of the metallic leaf at opposite sides of the die, and means for imparting movement to the said bands, with a roll adapted to hold the metallic leaf against the said bands for attachment thereto, and a cutter bearing against the periphery of the said roll for dividing the fillet of metallic leaf into suitable lengths, preparatory to its attachment to the supporting bands, and means for reciprocating the said cutter.

851,163. PROCESS FOR THE MANUFACTURE OF HOLLOW GLASSWARE. CHARLES F. COX, Bridgeton, N. J. Filed Nov. 18, 1905. Serial No. 287,917.

Claim.—1. A process for manufacturing hollow glassware, which consists in shaping a glass blank by suction exerted in one direction and at the same time piercing said blank a part of its length and then applying suction in the opposite direction to expand and finish said blank.

2. A process for manufacturing hollow glassware, which consists in gathering a glass blank by suction and at the same time shaping and piercing said blank, and then applying suction to the exterior of said blank to expand it.

3. A process for manufacturing hollow glassware, which consists in shaping a glass blank by suction exerted toward one end of the blank, and then exerting external suction toward the other end of the blank to expand the blank.

4. A process for manufacturing hollow glassware, which consists in shaping a glass blank by suction exerted toward the narrow end or neck of the blank so as to compress the material at said neck, and then exerting external suction toward the other end or bottom end of the blank.

5. A process for manufacturing hollow glassware, which consists in shaping a hollow glass blank by suction exerted toward one end of the blank and at the same time piercing the said end of the blank, and then exerting external suction toward the other unpierced end of the blank so as to expand the blank.

6. A process for manufacturing hollow glassware, which consists in shaping a glass blank by suction exerted toward one end of the blank and at the same time piercing said end of the blank, then blowing a fluid under pressure into the pierced end of the blank so as to enlarge its cavity, and thereupon applying external suction to expand the blank.

7. A process for manufacturing hollow glassware, which consists in shaping a glass blank by suction exerted toward the narrow end or neck of the blank, introducing a fluid under pressure into said end of the blank, and thereupon expanding the blank by external suction exerted toward the other end of the blank.

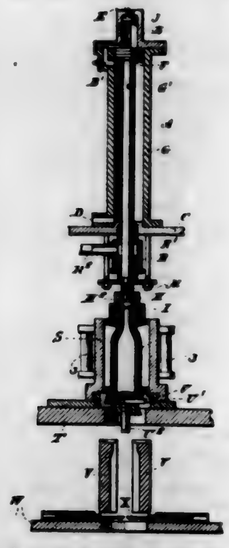

8. A process for manufacturing hollow glassware, which consists in forcing a body of plastic glass by suction toward one of its ends, so as to compress and shape said end into blank form and then introducing a fluid under pressure into said end of the blank and expanding the blank by external suction exerted toward the other end of the blank.

9. A process for manufacturing hollow glassware, which consists in forcing a body of plastic glass by suction toward one of its ends so as to compress and shape said end into blank form and at the same time piercing it, and then blowing a fluid under pressure into the pierced end of the blank and applying external suction toward the other other end of the blank to expand it.

10. A process for manufacturing hollow glassware, which consists in subjecting a body of plastic glass to suction exerted successively toward opposite ends, first in one direction to shape one end of the blank, and then in the opposite direction to expand the blank toward its other end.

11. A process for manufacturing hollow glassware, which consists in shaping a glass blank by suction exerted upward toward the neck of the blank, and then exerting a downward external suction toward the other end or bottom end of the blank.

12. A process for manufacturing hollow glassware, which consists in subjecting a body of plastic glass to suction exerted successively toward opposite ends, one of the suction operations being directed upward, and the other downward, and the same end of the glass body being at the top during both operations.

13. A process for manufacturing hollow glassware, which consists in subjecting a body of plastic glass to suction exerted successively toward opposite ends, to first shape one end of the blank and then expand the blank toward its other end, the same end of the blank pointing in the same direction during both operations.

14. A process for manufacturing hollow glassware, which consists in subjecting a body of plastic glass to suction exerted upward to shape the neck of the blank, and then exerting a downward external suction toward the other end or bottom end of the blank, the neck end of the blank being directed upward during the entire process of manufacture.

15. A process for manufacturing hollow glassware, which consists in shaping a glass blank by upward suction toward the neck end of the blank and then introducing a fluid under pressure downward into said end of the blank and expanding the blank by external suction exerted downward toward the other end of the blank.

16. A process for manufacturing hollow glassware, which consists in shaping a glass blank by upward suction toward the neck end of the blank and at the same time piercing said end, and then injecting a fluid under pressure downward into the pierced end of the blank and expanding the blank toward its other end by downwardly directed external suction.

17. A process for manufacturing hollow glassware, which consists in drawing and forming a blank by suction upward from a mass of molten glass, and then exerting a downward suction externally on said blank to expand and finish it.

18. A process for manufacturing hollow glassware, which consists in withdrawing a body of glass by suction from a mass of molten glass and simultaneously shaping one end of said body by exerting the suction toward the neck of the blank, and then exerting an external suction toward the other end or bottom of the blank to expand and finish it.

851,164. HAND-TRUCK. ISAAC L. DAVENPORT, Camden, N. J., assignor to Hercules Truck Company, Wilmington, Del., a Corporation of Delaware. Filed Feb. 27, 1906. Serial No. 303,226.

Claim.—1. A hand-truck provided with a double spur device connected with the side frames thereof the spurs whereof are at different angular positions with respect to each other, in combination with a sleeve, a sectional hook comprising two members, whereof one is pivotally connected with the truck and passes through said sleeve and whereof the other is removably connected with said sleeve and terminates therein, and a pawl carried by said sleeve and locking the pivotal member to said sleeve to prevent back and forth movement of the sleeve and member connected therewith on the pivotal member.

2. In a hand truck, a sleeve, a sectional hook, consisting of two members, whereof one having notches is pivotally connected with the truck and slides in said sleeve, and whereof the other is removably connected with said sleeve, a pawl pivotally connected with said sleeve, a spring carried by said sleeve for holding the pawl in engagement with one of the notches of said pivotal member, said pawl and the notches of said pivotal member arranged so as to prevent back and forth movement of the sleeve and member connected therewith on the pivotal member.

3. In a hand truck provided with a double spur device connected with the side frames of the truck, a sleeve, a sectional hook, consisting of two members, whereof one is pivotally connected with the truck and is adapted to slide in the sleeve, and whereof the other is connected with

the sleeve and terminates in a downwardly curved end having a flat gripping surface and projecting gripping edges, said spurs arranged to permit of the engagement of packages either at their lowermost portion or at a point above the same and the gripping surface of said sleeve member arranged to hold the package in position on one of the spurs to prevent ripping of the cover thereof, by limiting penetration of the gripping edges of the same.

4. In a hand truck, spur devices connected with the upper portions of the truck, a sleeve, a sectional hook, consisting of two members, whereof one is provided with notches pivotally connected with the truck and passing through the sleeve, and whereof the other is removably connected with the sleeve and terminates in a downwardly curved end having a gripping surface and gripping edges, a pawl pivotally connected with the sleeve, a spring carried by said sleeve for holding said pawl in engagement with one of the notches of said pivotal member to prevent back and forth movement of said sleeve, said spurs adapted to permit of the engagement of an article either at the lowermost portion or at a point above the same and said gripping member adapted to hold the article in required position on either of said spurs and so as to prevent the entering of the edges of said gripping member thereinto.

851,165. VALVE. CHARLES F. FERNALD, Boston, Mass., assignor to Star Brass Manufacturing Company, Boston, Mass., a Corporation of Massachusetts. Filed June 22, 1905. Serial No. 266,391.

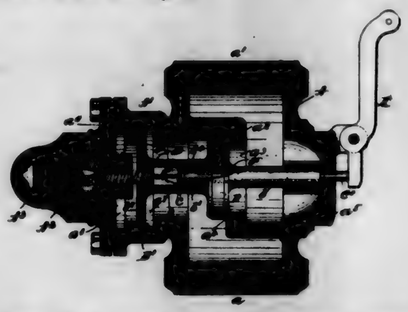

Claim.—1. A valve of the character specified having a valve casing with inlet and outlet passages inside the same in line with one another, a partition separating said passages having therein a port or opening connecting the passages, a valve controlling said port or opening, a piston larger than said valve, a piston-rod connecting said valve with the piston, a cylinder casing making separable connection with said valve casing for containing said piston, means for closing the end of said cylinder casing, means whereby pressure from the inlet passage may be obtained on both sides of said piston, a passage through said piston providing outlet from the chamber in the rear thereof into the outlet passage, a valve for controlling said passage, and means for controlling said valve from a point outside the valve casing.

2. A valve of the character specified having pressure inlet and outlet passages, a main valve controlling said passages, a piston, a piston rod connecting the same with the main valve, a chamber on either side of said piston in communication with the pressure inlet passage, a vent passage for the chamber in the rear of the piston and leading through the same and also through the piston rod and main valve into the pressure outlet passage, an auxiliary valve normally seated inside said vent passage for controlling the same, and means for operating said valve.

3. A valve of the character specified having pressure inlet and outlet passages, a main valve controlling said passages, a piston, a piston rod connecting the same with the main valve, a chamber on either side of said piston in communication with the pressure inlet passage, a vent passage for the chamber in the rear of the piston leading through the same and also through the piston rod and main valve into the pressure outlet passage, an auxiliary valve normally seated inside said vent passage for controlling the same, and a rod connecting with said valve and extending forward to a point outside the valve casing, whereby said auxiliary valve may be operated.

into the pressure outlet passage, an auxiliary outlet passage, an auxiliary valve normally seated inside said vent passage for controlling the same, and a rod connecting with said valve and extending forward to a point outside the valve casing, whereby said auxiliary valve may be operated.

4. A valve of the character specified having pressure inlet and outlet passages, a main valve controlling said passages, a valve stem extending forward from said main valve having bearing in the side of the valve casing, a piston larger than said valve, a piston rod connecting said piston and valve, a casing containing said piston forming a chamber on either side thereof in communication with the pressure inlet passage, means for exhausting the chamber in the rear of said piston, whereby the piston may become overbalanced to operate the main valve, the same comprising a vent passage leading out of said chamber through the piston, thence through the piston rod and main valve into the pressure outlet passage, an auxiliary valve contained within the piston rod for controlling said vent passage, and a rod connecting with said valve and extending through the valve stem to project through the wall of the casing.

5. A valve of the character specified having pressure inlet and outlet passages, a main valve controlling said passages, a piston connecting with said main valve, a chamber formed on either side thereof in communication with the pressure inlet passage, a vent passage for the chamber in the rear of the piston leading out of said chamber through the piston and comprising a passage b^3 continued by a contracted passage b^4 and by-passages b^5, and ending in the pressure outlet passage, an auxiliary valve contained in said passage b^3 adapted to become seated at the entrance to the contracted passage b^4, means for holding said valve normally seated, and means for moving the valve from its valve seat.

6. A valve of the character specified having pressure inlet and outlet passages, a main valve between said passages, a piston connecting with said main valve, a chamber formed on either side thereof in communication with the pressure inlet passage, a vent passage leading out of one chamber through the piston and communicating with the pressure outlet passage, a stop for said piston, an auxiliary valve in said vent passage for controlling the same, a socket or cavity formed in the end of said stop and a compression spring contained partly in said socket or cavity and partly in said vent passage for holding said auxiliary valve closed.

851,166. MOLDING-MACHINE. CHARLES HERMAN, Allegheny, Pa., assignor to Herman Pneumatic Machine Company, Zelienople, Pa., a Corporation of Pennsylvania. Filed June 22, 1905. Serial No. 266,480.

Claim.—1. In a molding-machine, the combination of a base, a casing mounted thereon, a pattern-plate supported by the casing, a stripping-plate supported by and above said pattern-plate and carrying a flask, power cylinders mounted on opposite sides of said casing, lifting shafts operated by said cylinders for raising and lowering the stripping-plate, a rock-shaft mounted on said base and extending across the same and at some distance from the exterior of the casing, and connections between said rock-shaft and said lifting shafts whereby the said lifting shafts are caused to move in unison; substantially as described.

2. In a molding-machine, the combination of a base, a casing mounted thereon, a pattern-plate supported by the casing, a stripping-plate supported by and above said pattern-plate and carrying a flask, power cylinders mounted on opposite sides of said casing, lifting shafts operated by said cylinders for raising and lowering the stripping-plate, a rock-shaft mounted on said base and exterior to said casing and extending across the base, and toggle-levers connected to said rock-shaft and lifting shafts whereby the said lifting shafts are caused to move in unison, substantially as described.

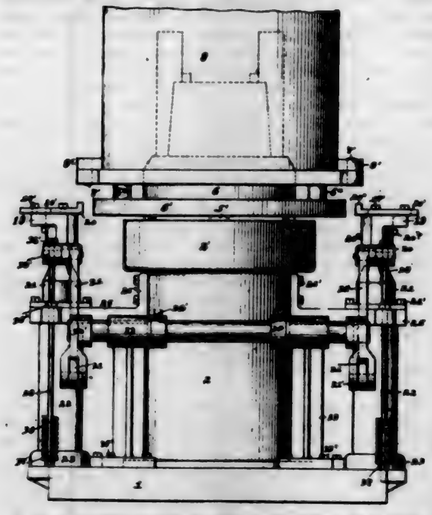

3. In a molding-machine, the combination of a base, a casing mounted thereon, a pattern-plate supported by the casing, a stripping-plate supported by and above said pattern-plate and carrying a flask, power cylinders mounted on opposite sides of said casing, lifting shafts operated by said cylinders for raising and lowering the stripping-plate, brackets secured to said base, a rock-shaft mounted in said brackets exterior to said casing and extending across the base, and toggle-levers connected to said rock-shaft and lifting shafts whereby the lifting shafts are caused to move in unison, substantially as described.

851,167. PROCESS OF PURIFYING METALS. PAUL L. T. HÉROULT, La Praz, France, assignor to Société Electro-Metallurgique Francaise, Froges, Isère, France. Filed Apr. 28, 1906. Serial No. 314,256.

Claim.—1. The process of making iron or steel of high purity, which consists in forming a bath of steel and superoxidizing it by addition of ore and by exposure to oxidizing flame and thus transferring the impurities to the slag, feeding scrap or pig iron to the bath so slowly as not to deoxidize the bath, until substantially the desired total charge is reached, adding pig iron at such a rate as to raise the melting point above the heat of the furnace and to solidify the metal, removing the slag with the impurities from the solid metal so that only the substantially pure solid metal remains, and adding a carburizing material of high purity and introducing a neutral slag to protect the surface of the metal from the oxidizing influence of the flame, until the melting point is lowered to a point below the heat of the furnace.

2. The process of making iron or steel of high purity, which consists in forming a bath of steel and superoxidizing it to transfer the impurities to the slag, adding deoxidizing materials to raise the melting point above the heat of the furnace and to solidify the metal, removing the slag with the impurities from the solid metal, and adding a neutral slag and carbon to lower the melting point and form a molten bath of iron substantially free from impurities.

3. The process of separating impurities from a bath of steel, which consists in oxidising it sufficiently to transfer the impurities to the slag while maintaining its melting point below the temperature of the furnace, solidifying the steel while maintaining the slag molten, and removing the slag with the impurities.

4. The process of separating impurities from a bath of steel, which consists in oxidising it sufficiently to transfer the impurities to the slag while maintaining its melting point below the temperature of the furnace, deoxidising the steel to raise its melting point above the temperature of the furnace and to solidify it while maintaining the slag molten, and removing the slag with the impurities.

5. The process of separating the slag completely from a bath of steel, which consists in solidifying the steel while maintaining the slag molten, and removing the molten slag from the solid steel.

851,168. STOCK-FOUNTAIN. WILLIAM M. HOTZE, Carson, Iowa. Filed Jan. 20, 1905. Serial No. 241,943.

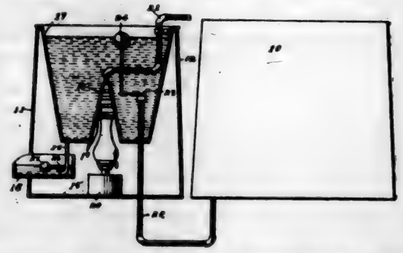

Claim.—In a stock fountain, the combination of a casing having an opening in the lower portion of its front wall, a lamp arranged in the casing and resting on the bottom thereof, a trough arranged in and closing the top of the casing and having its bottom wall and side walls so arranged relative to the bottom and side walls of the casing that spaces are formed between said walls of the trough and casing, and also having an upwardly extending central portion receiving the chimney of the lamp, a second trough extending forward through the opening in the front wall of the casing and having its rear portion arranged in the casing between the lamp and the front wall of the casing and also between the bottom walls of the casing and the first mentioned trough, a conduit connecting the first and second mentioned troughs, and a float-valve arranged in the second mentioned trough and controlling the passage of water through said conduit.

851,169. CONCRETE REINFORCEMENT. GEORGE IBACK, Detroit, Mich. Filed Apr. 20, 1906. Serial No. 312,868.

Claim.—1. A reinforcement for concrete structure, comprising a metal bar with holes therein, and a series of separate overlapping loops arranged along and located alternately on opposite sides of the bar, the respective ends of each loop extending through the holes at different points along the bar.

2. A reinforcement for concrete structures, comprising a metal bar, a series of overlapping loops along the same, on opposite sides thereof, and extending outwardly and laterally at the top, and a rod extending lengthwise through the loops on the respective sides of the bar.

851,170. SEED-PLANTER. GEORGE W. ISRAEL, Chicago, Ill. Filed Feb. 14, 1906. Renewed Sept. 17, 1906. Serial No. 334,983.

Claim.—1. In a seed planter, the combination of a furrow opening blade provided with a guide throat at its

rear end, a furrow closing runner provided with a central longitudinal opening for the passage of the furrow opening blade, and a seeded strip carrying spool carried in adjacent relation to the guide throat aforesaid and adapted to supply the seeded strip thereto.

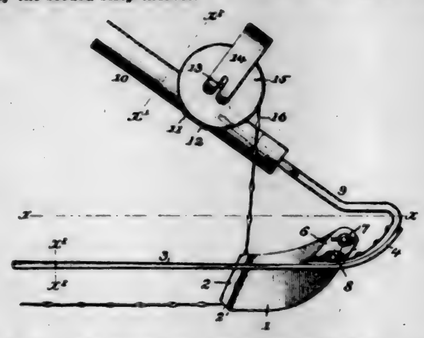

2. In a seed planter, the combination of a furrow opening blade provided with a guide throat at its rear end, a furrow closing runner provided with a central longitudinal opening for the passage of the furrow opening blade, means for effecting a vertical adjustment between the parts, and a seeded strip carrying spool carried in adjacent relation to the guide throat aforesaid and adapted to supply the seeded strip thereto.

3. In a seed planter, the combination of a furrow opening blade provided with a guide throat at its rear end, a furrow closing runner provided with a central longitudinal opening for the passage of the furrow opening blade, an operating handle attached to the furrow closing runner, and a seeded strip carrying spool mounted on said handle in adjacent relation to the guide throat aforesaid and adapted to supply the seeded strip thereto.

4. In a seed planter, the combination of a furrow opening blade provided with a guide throat at its rear end, a furrow closing runner provided with a central longitudinal opening for the passage of the furrow opening blade, means for effecting a vertical adjustment between the parts, an operating handle attached to the furrow closing runner, and a seeded strip carrying spool mounted on said handle in adjacent relation to the guide throat aforesaid and adapted to supply the seeded strip thereto.

5. In a seed planter, the combination of a furrow opening blade provided with a guide throat at its rear end, a furrow closing runner provided with a central longitudinal opening for the passage of the furrow opening blade, an operating handle attached to the furrow closing runner, a spool holder secured to said handle and having a carrying arbor and a resilient curved finger, and a seeded strip carrying spool arranged on said arbor in adjacent relation to the guide throat aforesaid and adapted to supply the seeded strip thereto.

6. In a seed planter, the combination of a furrow opening blade provided with a guide throat at its rear end, a furrow closing runner provided with a central longitudinal opening for the passage of the furrow opening blade, means for effecting a vertical adjustment between the parts, an operating handle attached to the furrow closing runner, a spool holder secured to said handle and having a carrying arbor and a resilient curved finger, and a seeded strip carrying spool arranged on said arbor in adjacent relation to the guide throat aforesaid and adapted to supply the seeded strip thereto.

7. In a seed planter, the combination of a furrow opening blade provided with a guide throat at its rear end, a furrow closing runner provided with a central longitudinal opening for the passage of the furrow opening blade, means for effecting a vertical adjustment between the parts, the same comprising a vertical flange on the furrow closing runner, an elongated slot in the furrow opening blade and a clamping bolt connecting the parts, and a seeded strip carrying spool carried in adjacent relation to the guide throat aforesaid and adapted to supply the seeded strip thereto.

8. In a seed planter, the combination of a furrow opening blade provided with a guide throat at its rear end, a furrow closing runner provided with a central longitudinal opening for the passage of the furrow opening blade, means for effecting a vertical adjustment between the parts, the same comprising a vertical flange on the furrow closing runner, an elongated slot in the furrow opening blade and a clamping bolt connecting the parts, an operating handle attached to the furrow closing runner, and a seeded strip carrying spool mounted on said handle in adjacent relation to the guide throat aforesaid and adapted to supply the seeded strip thereto.

9. In a seed planter, the combination of a furrow opening blade provided with a guide throat at its rear end, a furrow closing runner provided with a central longitudinal opening for the passage of the furrow opening blade, means for effecting a vertical adjustment between the parts, the same comprising a vertical flange on the furrow closing runner, an elongated slot in the furrow opening blade and a clamping bolt connecting the parts, an operating handle attached to the furrow closing runner, a spool holder secured to said handle and having a carrying arbor and a resilient curved finger, and a seeder strip carrying spool arranged on said arbor to supply the seeded strip thereto.

10. In a seed planter, the combination of a furrow opening blade provided with a guide throat at its rear end and having a beveled rear and lower corner, a furrow closing runner provided with a central longitudinal opening for the passage of the furrow opening blade, and a seeded strip spool carried in adjacent relation to the guide throat aforesaid and adapted to supply the seeded strip thereto.

11. In a seed planter, the combination of a furrow opening blade provided with a guide throat at its rear end and having a beveled rear and lower corner, a furrow closing runner provided with a central longitudinal opening for the passage of the furrow opening blade, means for effecting a vertical adjustment between the parts, and a seeded strip carrying spool carried in adjacent relation to the guide throat aforesaid and adapted to supply the seeded strip thereto.

12. In a seed planter, the combination of a furrow opening blade provided with a guide throat at its rear end, a furrow closing runner having an upturned forward end and provided with a central longitudinal opening for the passage of the furrow opening blade, and a seeded strip carrying spool carried in adjacent relation to the guide throat aforesaid and adapted to supply the seeded strip thereto.

13. In a seed planter, the combination of a furrow opening blade provided with a guide throat at its rear end, a furrow closing runner having an upturned forward end and provided with a central longitudinal opening for the passage of the furrow opening blade, means for effecting a vertical adjustment between the parts, and a seeded strip carrying spool carried in adjacent relation to the guide throat aforesaid and adapted to supply the seeded strip thereto.

14. In a seed planter, the combination of a furrow opening blade provided with a guide throat at its rear end, a furrow closing runner having an upturned forward end and provided with a central longitudinal opening for the passage of the furrow opening blade, an operating handle attached to the furrow closing runner, and a seeded strip carrying spool mounted on said handle in adjacent relation to the guide throat aforesaid and adapted to supply the seeded strip thereto.

851,171. SEED-PLANTING MEANS. REUBEN C. ISRAEL, Wichita, Kans. Filed Mar. 1, 1906. Renewed Sept. 17, 1906. Serial No. 334,982.

Claim.—1. A seed planting means consisting of an elongated strip of pliable material, seeds in spaced relation enclosed therein, and a fertilizing material placed in adjacent relation to the seeds and carried by said strip.

2. A seed planting means consisting of an elongated strip of pliable material, seeds in spaced relation enclosed therein, and individual layers of fertilizing material placed in contact with said seeds and carried by said strip.

851,172. SWIVEL SNAP-HOOK. GEORGE KARRMANN, Unionville, Conn., assignor to Corbin Screw Corporation, New Britain, Conn., a Corporation of Connecticut. Filed Dec. 11, 1906. Serial No. 347,251.

Claim.—1. A snap hook comprising, a hook portion, the body or shank thereof being flattened, a head portion at the end of said shank, a spring arranged to cooperate with the bill of the hook and supported upon the shank thereof, a swivel ring, and a single device arranged to secure the spring and the hook rigidly together and to hold the swivel ring in place adjacent the head of the hook.

2. In a snap hook, a shank, a bulbous head thereon, a cap piece embracing said head and secured to said shank below the same, said cap projecting above said head to form a swivel ring receiving space, a swivel ring, a portion thereof projecting into said swivel ring receiving space and being retained therein by the overlying walls of the cap.

3. A snap hook comprising a hook portion having a flattened shank, a head, a spring a cap enclosing said head and snugly embracing said spring and shank, a swivel ring passing into the upper end of said cap, and means for retaining the same therein.

4. In a device of the character described, a hook having a shank, an enlarged head at the end of said shank, a spring bearing on said shank, the free end of the same cooperating with the bill of the hook, a tubular cap overstanding the headed end of the shank and the adjacent end of the spring and securing the latter in place, and a ring loosely connected with said cap piece to permit of a swiveling movement between said ring and hook.

851,173. FASTENING DEVICE. FRANK H. KEYS, Council Bluffs, Iowa. Filed Apr. 21, 1903. Serial No. 153,685.

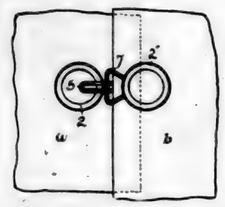

Claim.—1. A fastening of the character described including two members, one member being annular and provided with a peripheral wall cut away at one point and also having attaching prongs, a wire member bent upon itself intermediate its ends and having a portion lying adjacent one face of said annular member and within said peripheral wall and also having a portion projecting through said cut away portion of the wall and directed downwardly and upwardly to form a seat and then bent inwardly and outwardly over said annular member to form a fastening hook, the portion of the hook immediately adjacent said seat lying close to the annular member to form a yieldable passage to said seat and the other of said two members having an eye adapted to be sprung between the first annular member and said hook into detachable engagement with said seat.

2. A fastening of the character described including two members, one member being annular and provided with a peripheral wall cut away at one point and also having attaching prongs, a wire member bent upon itself intermediate its ends and having a portion lying within said peripheral wall and another portion projecting through said cut away portion of the wall, the projecting portion immediately adjacent said annular member being formed into a seat and terminating in a hook member at its free end, and the other of said two members having an eye for detachable engagement in said seat, the first mentioned annular member forming the back of the seat for cooperation with said hook to prevent accidental disconnection of the two members.

3. A fastening of the character described including two members, a wire member engaged with one of the said two members, said wire member being bent intermediate its ends to form a seat and a hook portion, and the other of said two members having an eye for detachable engagement with said seat, the edge of the first mentioned one of the two members adjacent said seat cooperating with the hook portion of said wire member to prevent accidental displacement of the eye with respect to its seat.

851,174. TELAUTOGRAPH. ARTHUR KORN, Munich, Germany. Filed Jan. 25, 1907. Serial No. 354,082.

Claim.—1. In a telautographic system, the combination with a transmitting tracer and its platen-roll, of a receiving platen-roll, a device for projecting a ray of light on said receiving platen-roll, a galvanometer comprising a horseshoe magnet, a frame between the poles of said horseshoe magnet, a conductor stretched therein and an intercepter on the middle of the conductor, said intercepter being adapted to render said device operative and inoperative, and electrical connections between said transmitting tracer and its platen-roll on the one hand and the conductor of said galvanometer on the other hand, said transmitting tracer being adapted to open and to close the circuit.

2. In a telautographic system, the combination with a transmitting tracer and its platen-roll, of a receiving platen-roll, a device for projecting a ray of light on said receiving platen-roll, a galvanometer comprising a horseshoe magnet, a frame between the poles of said horseshoe magnet, a conductor stretched therein and an intercepter on the middle of the conductor, said intercepter

being adapted to render said device operative and inoperative, and electrical connections between said transmitting tracer and its platen-roll on the one hand and the receiving station on the other hand and forming a Wheatstone bridge, in the bridge of which the conductor of said galvanometer is inserted, said transmitting tracer being adapted to open and to close the circuit.

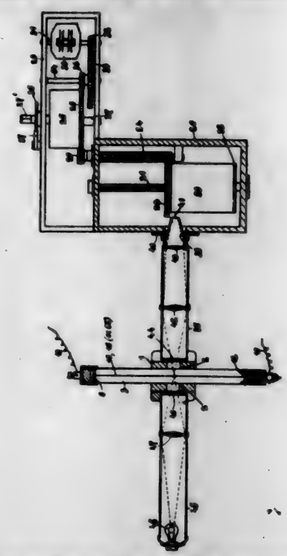

3. In a telautographic system, the combination with a transmitting tracer and its platen-roll, of a receiving platen-roll, a device for projecting a ray of light on said receiving platen-roll, a galvanometer comprising a horseshoe magnet, a frame between the poles of said horseshoe magnet, a conductor stretched therein and an intercepter on the middle of the conductor, said intercepter being adapted to render said device operative and inoperative, a circuit including the conductor of said galvanometer, and electrical connections between said transmitting tracer and its platen-roll on the one hand and said circuit on the other hand, whereby a Wheatstone bridge is formed, in the bridge of which the conductor of said galvanometer is inserted, said transmitting tracer being adapted to open and to close the circuit.

4. In a telautographic system, the combination with a transmitting tracer and its platen-roll, of a receiving platen-roll, a horseshoe magnet having two cross holes in its two poles, a frame between the poles of said horseshoe magnet at right angles to its cross holes, a conductor stretched in said frame and provided in its middle with an intercepter, means for regulating the tension of said conductor, means for projecting rays of light through the cross holes of said horseshoe magnet toward said receiving platen-roll, said intercepter being adapted to intercept in its one extreme position and to permit in its other extreme position the rays of light to pass, means for permitting of the rays of light only a single one to strike said receiving platen-roll, a circuit including said conductor, and electrical connections between said transmitting tracer and its platen-roll on the one hand and said circuit on the other hand, whereby a Wheatstone bridge is formed, in the bridge of which said conductor is located, said transmitting tracer being adapted to open and to close the general circuit.

851,175. DUMB-WAITER AND ELEVATOR. LOUIS E. LAURENT, Trenton, N. J. Filed May 18, 1905. Serial No. 260,962.

Claim.—1. An elevator mechanism, comprising a driving apparatus, a controller, comprising a contact carrying member, a circuit completing member mounted adjacent thereto and provided with contact plugs, means for moving the said plugs in a radial direction for making or breaking circuits through the driving mechanism, and means causing one member of the controller to be moved equally with the other member for determining the extent of movement of the elevator.

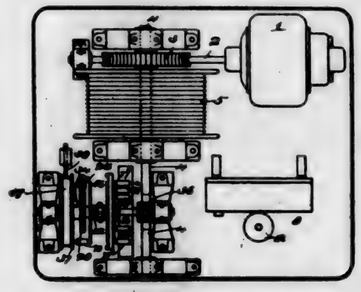

2. An elevator mechanism, comprising a driving apparatus, a controller therefor having a movable plug carrying member, and a movable circuit maintaining member and radially operable slides for carrying the plugs of the plug carrying member.

3. An elevator mechanism, comprising a driving apparatus, a controller therefor, having a movable member, contact plugs carried by said movable member, a circuit maintaining member also forming a part of said controller and spring actuated slides mounted on the plug carrying member and carrying said plugs into and out of contact with the circuit maintaining member.

4. An elevator mechanism, comprising an electrical driving apparatus, a controller therefor made up of a circuit maintaining member operable in connection with the driving apparatus, a swinging member mounted adjacent to the circuit maintaining member, slides movably mounted in said swinging member, circuit completing contacts carried by said slides, and means for locking the slides in contacting position.

5. An elevator mechanism, comprising a driving apparatus, a controller made up of a contact maintaining disc operable by the driving mechanism, a movable circuit completing member, slides carried thereby, contacts projecting from the slides, and an annular cam surface controlling the position of the said slides.

6. An elevator mechanism, comprising a driving apparatus, a controller having a circuit maintaining member geared with the driving apparatus, contact segments carried thereon and separated by circuit breaking spaces, a rotatable contact making member operable in connection with said circuit maintaining segments, the movement of the circuit making member in one direction or the other causing the driving mechanism to move the elevator in one direction or the other, as the case may be, and means to move the contact making member radially to break the circuit.

7. An elevator mechanism, comprising a driving apparatus, a controller made up of a circuit maintaining disc having segmental plates mounted thereon and separated by flaring spaces, a second movable member mounted adjacent to the disc and carrying V-shaped plugs, means for moving the said plugs against the contact segments and means for drawing the said plugs in a radial direction when the plugs are opposite the said flaring spaces to quickly break the electrical circuits passing through the apparatus.

8. An elevator mechanism, comprising a driving apparatus, a controller made up of a rotating member having oppositely arranged sets of circuit maintaining segments, means for connecting the two sets of segments so that one will accomplish a reversal of the circuit through the driving mechanism from the direction in which the circuit is established by the other set, and a movable circuit completing member forming a part of said controller and rotatably movable adjacent said segment and movable radially to break the circuit.

9. An elevator mechanism, comprising a driving apparatus, a circuit controller operating in conjunction therewith and made up of a movable circuit maintaining contact member, a movable circuit establishing member, circuit establishing plugs carried by said latter member, and a circuit receiving ring electrically connected with said plugs, the said rings receiving the energizing current from a line wire.

10. An elevating mechanism, comprising a driving apparatus, a controller therefor made up of a segment carrying disc, opposite sets of segments arranged upon said disc, a movable plug carrying member, plugs carried thereby and arranged in alignment with each other and capable of being brought into alignment with the spaces between the opposite sets of segments for breaking the circuits which may be established through the driving apparatus, and a plug controlling cam carried by the said disc having depressions opposite the said spaces, the said depressions permitting the plugs to move away from the segments when opposite said spaces.

11. In an elevator, an electrically operated winding drum, a shaft rotated by said drum, a contact disk rigidly mounted upon said shaft, a controller member rotatably mounted upon and rotatable independently of the shaft, contact blocks carried by the rotatable member and in contact with the disk, independently located means for moving the rotatable member in either direction, means completing a circuit for rotating the shaft in the same direction traversed by the rotatable member, and means for breaking the circuit when the shaft has rotated through an arc equal to the arc of movement of the rotatable member.

851,176. GAS-ENGINE. JOHN W. LIPPINCOTT, Little Rock, Ark. Filed June 5, 1906. Serial No. 320,243.

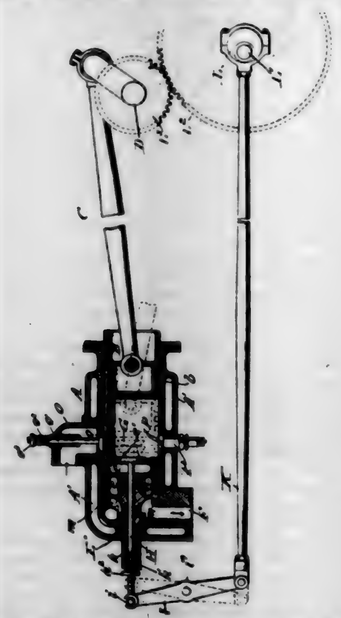

Claim.—1. In a gas engine, the combination of a cylinder having an inlet and an end exhaust or outlet, a main piston within said cylinder, a valved piston disposed in the cylinder opposite the main piston and having passageways therethrough communicating with the end exhaust or outlet, a valve connected to the valved piston, and means for first opening the valve and then moving it and the valved piston inward of the cylinder to exhaust the burnt gases or fuel.

2. In a gas engine, the combination of a cylinder, having an inlet and an end exhaust or outlet, a main piston within said cylinder, a valved piston disposed in the cylinder opposite the main piston and having passageways therethrough communicating with the end exhaust or outlet, said cylinder having shoulders or stops for taking up the thrust of the valved piston, a valve connected to the valved piston, and means for first opening the valve and then moving it and the valved piston inward of the cylinder to exhaust the burnt gases or fuel.

3. In a gas engine, the combination of a cylinder having an inlet and an end exhaust or outlet, a main piston within said cylinder, a valved piston disposed in the cylinder opposite the main piston and having passageways therethrough communicating with the end exhaust or outlet, said valved piston having a sleeve extended through the end of the cylinder, a valve seated in said valved piston and having a stem extended through said sleeve, and means acting on the valve stem to open the valve and thereafter move the valve and valved piston inward of the cylinder to exhaust the spent gases.

4. In a gas engine, the combination of a cylinder having an inlet and an end exhaust or outlet, a main piston within said cylinder, a valved piston disposed in the cylinder opposite the main piston and having passageways therethrough communicating with the end exhaust or outlet, said valved piston having a sleeve extended through the end of the cylinder, a valve seated in said valved piston and having a stem extended through said sleeve, a pin or stop on said valve stem, a spring disposed between the pin or stop and the sleeve of the valved piston to maintain the valve seated, and means acting on the valve stem to open the valve and thereafter move the valve and valved piston inward of the cylinder to exhaust the spent gases.

5. In a gas engine, the combination of a cylinder having an inlet and an outlet, a main piston within said cylinder, a valved piston disposed in the cylinder opposite the main piston and having passageways therethrough communicating with the said outlet, said valved piston having a sleeve extended through the end of the cylinder, a valve seated in said piston and having a stem extended through said sleeve, a seat formed in the end of said sleeve, a spring in said seat, a pin or stop on the valve stem and means for positively moving the valve inward of the cylinder and causing the pin or stop to contact with the sleeve to thereafter move the valve and piston together.

851,177. ATTACHMENT TO GRAIN-BINDERS. WILLIAM N. LUX and JOHN C. SCHWENK, St. Louis, Mo. Filed May 1, 1906. Serial No. 314,619.

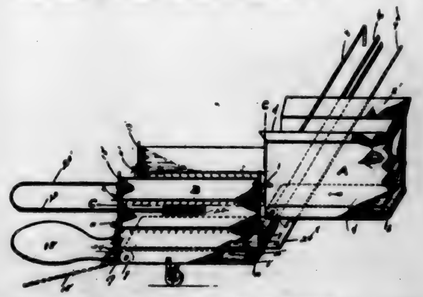

Claim.—1. An attachment to a grain binder, comprising a section A. fixed to the side of the binder and having an opening through one end, a section B. having an opening through one end registering with that of the section A and having an opposite opening through its other end, an endless conveyor-belt arranged horizontally within each

of the said sections, the said belts being at different levels and movable longitudinally in the same direction between the ends of the said sections respectively, means for moving the said belts and for guiding the grain sheaves from the binder on to the conveyor belt within the section A., means for engaging the said sheaves in their passage from the section A through the said registering openings, and along the conveyor belt within the section B., and means for delivering the said sheaves in an upright position from the section B through its said opposite opening, substantially as described.

2. An attachment to a grain-binder, comprising a section A fixed to the side of the binder and having an opening through one end, a section B having an opening through one end registering with that of the section A and having an opposite opening through its other end, a suitable platform movably fixed to the outside of the section B at the base of its said opposite opening, an endless conveyor-belt arranged horizontally within each of the said sections, the said belts being at different levels and movable longitudinally in the same direction between the ends of the said sections respectively, means for moving the said belts and for guiding the grain sheaves from the binder on to the conveyor-belt within the section A, means for engaging the said sheaves in their passage from the section A through the said registering openings and along the conveyor-belt within the section B, and for delivering them in an upright position from the section B through its said opposite opening on to the said platform, means for holding the said sheaves in the upright position on the said platform, and means for lowering the said platform for releasing the sheaves therefrom to the ground, substantially as described.

851,178. WIRE-STRETCHER. PEARL L. MARTIN, St. Marys, Iowa. Filed June 18, 1906. Serial No. 322,634.

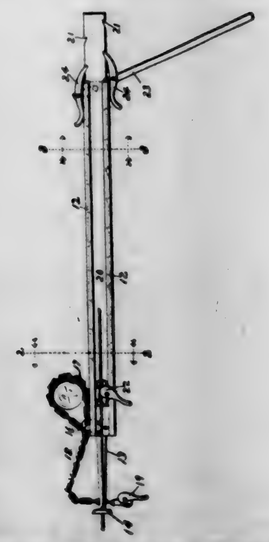

Claim.—1. In a wire stretcher, the combination of a main supporting bar with upturned side margins, means connected with one edge of the main supporting bar for attaching it to a post, a lever fulcrumed to the other end of the main supporting bar and having two pawls pivoted thereto on opposite sides of the main supporting bar, a bar having ratchet teeth on its edges slidingly mounted within the margins of the main supporting bar and substantially the same length as the main supporting bar, said ratchet teeth designed to be engaged by said pawls and a wire gripping device on the end of the ratchet bar nearest the post attaching means of the main supporting bar.

2. A wire stretcher, comprising a main supporting bar having its edges extended at right angles and then inwardly toward each other, an arm fixed to one end of said bar and having at its outer end a hook formed with an opening in one side, a lateral extension on said arm adjacent to the main supporting bar, a hook on said lateral extension, a chain fixed to one end of said lateral extension and designed to be engaged by said hook, a wire gripper on the end of said chain, a ratchet bar slidingly mounted between the edges of the main supporting bar and of approximately the same length as the main supporting bar, a grip device on one end thereof, a lever fulcrumed to the end of the main supporting bar opposite from said arm and two pawls pivoted to the opposite sides of the fulcrum of said lever and each having a curved extension to engage the sides of the main supporting bar and to force the pawls toward the ratchet bar, as the lever approaches one end of its movement.

851,179. MACHINE FOR BUNDLING SCRAP. DAVID B. MARWICK, New Britain, Conn., assignor of one-half to Ethelbert A. Moore, New Britain, Conn. Filed Dec. 12, 1905. Serial No. 291,408.

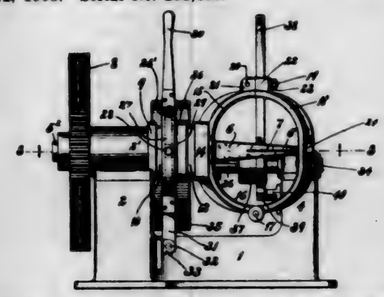

Claim.—1. A machine for bundling scrap, comprising a rotary mandrel, and a yoke into which the mandrel passes, said yoke serving to control the formation of the bundle, and to compact the same upon the mandrel.

2. A machine for bundling scrap, comprising a mandrel for winding the scrap into a bundle, a sectional yoke into which the mandrel passes, and means for securing the sections of said yoke.

3. A machine for bundling scrap, comprising a rotary mandrel upon which the scrap is wound, a yoke for defining and limiting the formation of the bundle, and means for locking said yoke against movement until the bundle is completed.

4. A machine for bundling scrap, comprising a rotary mandrel for winding the scrap, a normally stationary device into which said mandrel is inserted, said device controlling and defining the formation of the bundle, and means for shifting said device to eject the bundle from said mandrel.

5. The combination, with a rotary mandrel, of a bearing in which said mandrel is mounted; a sectional yoke mounted on said bearing; and means for locking the yoke to, and releasing it from, said bearing.

6. The combination, with a rotary mandrel, of a bearing in which the mandrel-shaft is journaled; a sectional yoke, the hub of which is mounted upon the bearing; and means for preventing movement of said yoke while the bundle is being formed.

7. In a machine for bundling scrap, the combination, with a rotary mandrel tapered longitudinally, of a bearing in which the mandrel is journaled; a yoke into which the mandrel is inserted; and means for holding said yoke stationary during the bundling operation, and for releasing it after the bundle has been formed.

8. In a scrap-bundling machine, the combination, with a tapering mandrel, of a sectional yoke into which the mandrel passes; a bearing upon which the yoke is threaded; means for locking the yoke to, and releasing it from, said bearing; and means, including clutch-mechanism, for rotating said mandrel.

9. In a scrap-bundling machine, the combination, with a rotary mandrel provided with means for engaging a strand or strands of scrap, of a device surrounding said mandrel, and cooperating therewith in the formation of the bundle; and means whereby said bundle may be released from the mandrel.

10. In a scrap-bundling machine, the combination, with a rotary mandrel upon which the scrap is wound, of a device for confining and compacting the bundle; means for normally locking said device against movement; and means whereby said device may, when released, be shifted longitudinally of the mandrel, to discharge the bundle from said mandrel.

11. In a scrap-bundling machine, the combination, with a sectional yoke having a hub; of a rotary mandrel; a support for the hub of said yoke; means for detachably uniting the yoke-sections; and means for shifting the yoke upon its support, to discharge the bundle from the mandrel.

12. The combination, with an externally-threaded bearing, of a shaft mounted in said bearing; a mandrel carried by said shaft; a yoke in which the mandrel is supported, said yoke having an internally-threaded hub; and means for locking and releasing said hub.

13. In a scrap-bundling machine, the combination, with a rotary mandrel, of a sectional yoke into which the mandrel passes; means for securing the sections of the yoke; a hub projecting from one section of the yoke; a support for said hub; means for locking the hub to, and releasing it from, its support; and means whereby the hub and yoke may be shifted longitudinally of the mandrel, to discharge a bundle therefrom.

14. The combination, with a bearing having an externally-threaded periphery, and adjacent to said periphery an angular surface, of a sleeve conforming on its inner wall to said angular surface; a mandrel mounted in said bearing; a sectional yoke, one part of which has an internally-threaded hub provided with an angular external surface; a bearing in the other section of the yoke, to receive the end of the mandrel; and means for clamping and releasing the yoke-sections.

15. The combination, with a rotary mandrel having means for the attachment of scrap to be wound, of a yoke into which the mandrel passes, and by which one end of said mandrel is supported, the inner wall of said yoke serving to compact the bundle of scrap upon the mandrel.

16. The combination, with a longitudinally-tapered mandrel, having a slot for the reception of the end of a strand of scrap, of a sectional yoke for supporting one end of said mandrel; means for clamping the sections of the yoke together; means for normally locking the yoke against movement, and for releasing the same; and means whereby said yoke may be shifted to eject the bundle from the mandrel.

17. The combination, with a yoke composed of sections, one of which is movable with relation to the other, of means for locking and releasing the movable section; means for normally supporting the yoke against rotation, and for releasing the same; a mandrel; and means whereby the friction of the bundle against the inner wall of the yoke will cause said yoke to move longitudinally and discharge said bundle.

18. The combination, with a mandrel, and with means for rotating said mandrel, of a yoke into which the mandrel passes; and means for permitting movement of one of said elements with relation to the other, to discharge the bundle from said mandrel.

19. In a scrap-bundling machine, the combination, with a rotary mandrel, of a yoke through which said mandrel passes, said yoke serving to limit the size of the bundle, and to compact the constituents of the same; and means actuated by the friction of the bundle against the inner wall of the yoke for shifting said yoke longitudinally of the mandrel.

20. In a scrap-bundling machine, the combination, with a rotary mandrel of angular shape in cross-section, said mandrel having a slot, of a yoke surrounding the mandrel; and means for shifting said yoke longitudinally of the mandrel.

21. The combination, with a longitudinally tapered mandrel having a slot, said mandrel being of angular shape in cross-section, of a yoke surrounding the mandrel; means for normally holding the yoke stationary, and for releasing the same; and means whereby said yoke may be shifted longitudinally of the mandrel.

22. In a scrap-bundling machine, the combination, with a rotary mandrel, of a bearing in which said mandrel is journaled; gearing including starting and stopping mechanism for actuating the mandrel; a yoke mounted upon the bearing; and means for locking and releasing said yoke.

23. The combination, with a longitudinally-tapering mandrel of angular shape in cross-section, said mandrel having a slot, of a sectional yoke provided with a bearing for the reception of one end of the mandrel; means for locking and releasing the sections of the yoke; a surface upon which the yoke is threaded; and means whereby the yoke may be shifted longitudinally of the mandrel when the bundle is completed.

24. In a scrap-bundling machine, the combination, with a bearing having threaded and angular external surfaces, of a mandrel, the shaft of which is mounted in said bearing; a yoke having a hub threaded upon the bearing, said hub having an angular external-surface; a sleeve mounted for sliding movement upon the angular surfaces of the bearing and yoke; means for shifting said sleeve; a gear secured to the mandrel-shaft; a driving-shaft; a gear on said driving-shaft, and in mesh with the gear on the mandrel-shaft; a belt-pulley; and means for clutching said belt-pulley to the driving-shaft.

25. A machine for bundling scrap, comprising a rotary mandrel for winding the scrap, and a normally-stationary device cooperating with the mandrel, said device controlling and defining the formation of the bundle.

851,180. ADJUSTABLE GEAR. ERNEST T. MATHEWSON, Providence, R. I., assignor to Standard Machinery Company, Providence, R. I., a Corporation of Rhode Island. Filed Oct. 30, 1906. Serial No. 341,365.

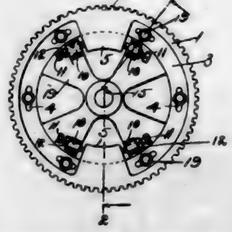

Claim.—An adjustable gear comprising a hub having an annular rim, a ring provided with an annular shoulder fitting on the periphery of said rim, said ring also having an annular flange extending over one face of said rim and provided with integral ears extended toward the center of said hub, there being bosses formed on the contiguous face of said hub adjacent said ears, adjusting screws working in said bosses and engaging said ears, and means for normally holding said ring from relative movement upon said rim.

851,181. MAGAZINE-SOCKET NUT-WRENCH. ALDEN L. MCMURTRY, New York, N. Y. Filed Dec. 11, 1906. Serial No. 347,388.

Claim.—1. A magazine socket nut wrench comprising a straight hollow nut magazine adapted to receive a plurality of nuts and to retain them against rotation with their axes co-incident, a centrally disposed nut retaining means comprising nut clips adapted to expand radially to retain the nuts in the magazine and to be contracted to permit

entrance of nuts to and their withdrawal from the magazine.

2. A magazine socket nut wrench comprising a straight hollow body constituting a nut magazine, a coiled spring therein whose reaction tends to eject nuts from the magazine, a centrally disposed tube, an elastically supported inwardly movable stem carrying nut retaining clips formed with outwardly extending nut clasping jaws.

3. A magazine socket nut wrench comprising a straight hollow body constituting a nut magazine, a coiled spring seated therein whose reaction tends to eject nuts from the magazine, a centrally disposed tube and elastically supported yielding stem mounted in the tube and carrying at its outer end an outwardly extending nut retaining jaw the end face of said jaw being curved or inclined for the purpose set forth.

851,182. VALVE CONSTRUCTION FOR PUMPS. JOHN ROWBOTHAM, Philadelphia, Pa., assignor to James Boyd, Haverford, Pa. Filed Jan. 12, 1906. Serial No. 295,758.

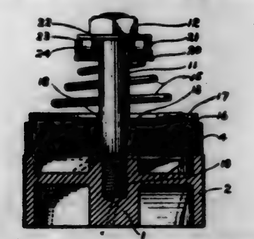

Claim.—1. In a valve construction, the combination of a valve and a seat, the said seat comprising deflecting plates or ribs which are curvilinear in transverse section, whereby the inclination of the deflecting plates toward a horizontal plane may be increased at and near the point of discharge from the said valve construction.

2. In a valve construction, the combination of a valve and a seat, the said seat comprising deflecting plates or ribs which are concavo-convex in transverse section.

3. In a valve construction, the combination of a valve and a valve seat, the said seat comprising a hub, a ring, and deflecting ribs connecting the said hub and ring, the said ribs being inclined to the plane of the said seat and being curvilinear in transverse section.

4. As an article of manufacture, a valve seat which comprises deflecting plates or ribs which are concavo-convex in transverse section.

5. As an article of manufacture, a valve seat which comprises deflecting plates or ribs which are concavo-convex in transverse section, and the upper edge of each of the said deflecting plates or ribs overlapping the lower edge of an adjacent deflecting plate or rib.

6. In a valve construction, the combination of a valve and a seat, the said seat comprising deflecting plates or ribs which are curvilinear in transverse section, and one of the edges of each of which plates or ribs overlies one of the edges of an adjacent plate or rib.

7. In a valve construction, the combination of a rotatable valve and a valve seat, the said seat comprising deflecting ribs which are concavo-convex in cross-section, means for pressing the said valve against the valve seat, and means for facilitating the rotation of the said valve.

8. In a valve construction, in combination, a rotatable valve, a valve seat provided with deflecting ribs or plates which are concavo-convex in cross-section, whereby the water or other fluid passing through the said valve seat between the said plates or ribs strikes the said valve at an acute angle, a projecting bolt secured to the said valve seat and upon which the said valve is rotatable supported, a roller bearing mechanism secured at the outer end of the said projecting bolt, and a coiled spring surrounding the said bolt and located intermediate the said valve and the said roller bearing mechanism and pressing against the roller bearing mechanism and against the said valve.

851,183. WATER-HEATER. THOMAS A. SHOEMAKER, Danville, Ill. Filed Nov. 19, 1906. Serial No. 344,048.

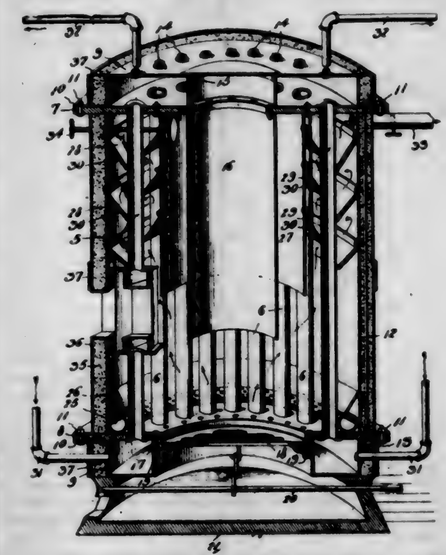

Claim.—1. In a heater, the combination of a casing, top and bottom drums, a magazine extending through the top drum into the casing, a cylinder depending from the top drum and surrounding the magazine, and tubes extending between the casing and the cylinder, and connecting the top and bottom drums.

2. In a heater, the combination of a casing, top and bottom drums, a cylinder depending from the top drum, tubes connecting the top and bottom drums and extending between the casing and the cylinder, and baffle-plates extending from the cylinder and the casing to the tubes.

3. In a heater, the combination of a casing, top and bottom drums, a cylinder depending from the top drum, tubes connecting the top and bottom drums and extending between the casing and the cylinder, and staggered and downwardly inclined baffle-plates extending from the cylinder and the casing to the tubes.

851,184. DELIVERY MECHANISM. WILLIAM SPALCKHAVER, New York, N. Y., assignor to Robert Hoe, New York, N. Y. Filed Jan. 27, 1905. Serial No. 242,924.

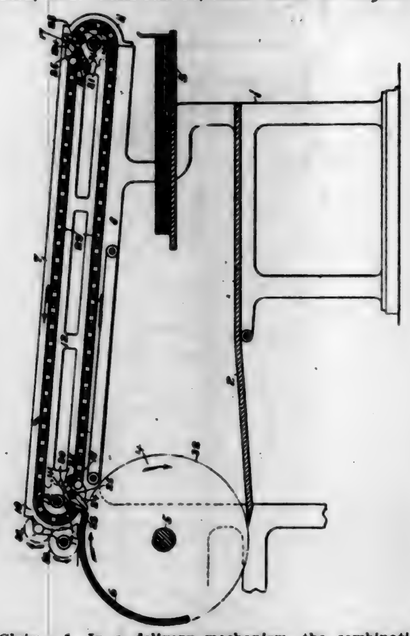

Claim.—1. In a delivery mechanism, the combination with a carriage, of a guide comprising two parallel members constructed to impart a revolving movement to the carriage, means for supporting said carriage at at least two points on each guide member, and a flexible driver for propelling the carriage around the guide.

2. In a delivery mechanism, the combination with a carriage, of a curved guide consisting of two parallel members constructed to impart a revolving movement to the guide, rollers for supporting the carriage on the guide members, there being at least two rollers for each guide member, a gripper mechanism mounted on the carriage, and a flexible driver for propelling the carriage around the guide.

3. In a delivery mechanism, the combination with a carriage comprising cross bars and end bars, of a curved guide comprising two parallel members constructed to impart a revolving movement to the carriage, a pair of rollers running on each guide member, connections between each pair of rollers and the end bar, a gripper mechanism supported on the carriage, and a flexible driver for propelling the carriage around the guide.

4. In a delivery mechanism, the combination with a carriage comprising a pair of cross bars and end bars, gripper members mounted on the carriage, a rock shaft mounted on the end bars and carrying cooperating gripper members, means for operating the shaft, a curved guide comprising a pair of parallel members constructed to impart a revolving movement to the carriage, means for supporting the carriage on the guide, and a flexible driver for propelling the carriage around the guide.

5. In a delivery mechanism, the combination with a carriage comprising a pair of cross bars and end bars, gripper members mounted on the carriage, a rock shaft mounted on the end bars and carrying cooperating gripper members, means for operating the shaft, a curved guide comprising a pair of parallel members constructed to impart a revolving movement to the carriage, two pairs of rollers for supporting the carriage on the guide, and a flexible driver for propelling the carriage around the guide.

851,185. MECHANICALLY-OPERATED MUSICAL INSTRUMENT. JOHN W. STEVENSON, New York, N. Y., and SAMUEL L. DICKINSON, Cranford, N. J. Filed Nov. 22, 1906. Serial No. 344,595.

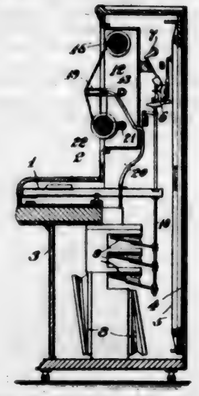

Claim.—1. The combination with an upright piano having a keyboard and a front-board above the same, of mechanical operating devices therefor including two rolls for the music-sheet and a tracker mounted above the keyboard and behind the plane of said front-board, said tracker being pivotally mounted and adapted to be turned on its pivots to an operative position in which it extends beyond said plane, substantially as described.

2. The combination with an upright piano having a keyboard and a front-board above the same provided with a removable panel, of mechanical operating devices therefor including two rolls for the music-sheet and a tracker mounted behind said removable panel, said tracker being pivotally mounted and adapted to be turned on its pivots to an operative position in which it extends through the opening formed by the removal of said panel, substantially as described.

3. The combination with an upright piano having a keyboard and a front-board above the same, of mechanical operating devices therefor including a roll for the music-sheet and a tracker mounted for movement from a position behind the plane of said front-board to an operative position in which they extend beyond said plane, substantially as set forth.

4. The combination with an upright piano having a keyboard and a front-board above the same provided with a removable panel, of mechanical operating devices therefor including a roll for a music-sheet and a tracker mounted behind said removable panel and adapted for movement to operative position through the opening formed by the removal of said panel, substantially as set forth.

5. The combination with a piano, of mechanical operating devices therefor including supports for a music-roll and a tracker pivotally mounted one independently of the other and adapted to be moved on their pivots from an inoperative to an operative position, substantially as set forth.

6. The combination with a piano, of mechanical operating devices therefor including supports for a music-roll and a tracker pivotally mounted one independently of the other and interconnected so as to move simultaneously from an inoperative to an operative position, substantially as set forth.

7. The combination with a piano having an opening in the casing thereof, of mechanical operating devices

therefor including a tracker and a roll for a music-sheet mounted within said casing and movable to operative position through said opening, substantially as set forth.

8. The combination with a piano having an opening in the casing thereof, of mechanical operating devices therefor including a tracker and a roll for a music-sheet mounted within said casing and movable to operative position through said opening, and means for driving said roll when in the forward position, substantially as set forth.

9. The combination with an upright piano having a keyboard and a front-board above the same provided with a removable panel, of mechanical operating devices therefor including two rolls for a music-sheet and a tracker mounted in the upper part of the piano behind said removable panel, one of said rolls and said tracker being movable to operative position through the opening formed by the removal of said panel, and means for driving one of said rolls, substantially as set forth.

851,186. SEWING-MACHINE ATTACHMENT. JOHN E. STRONG, Grand Rapids, Mich. Filed Sept. 5, 1905. Serial No. 277,122.

Claim.—A sewing machine attachment made of sheet metal cut and folded to form wings B and C with a loop E forming a channel for the fabric e' to the point c, and a wing A and loop E forming a channel for the fabric e to the point b an auxiliary feed acting upon both sides of the loop E feeding the fabric e' independent of the fabric e, a slow regular feed for carrying both the fabrics, and means for stitching both fabrics and enclosing both edges thereof, substantially as stated.

851,187. PROCESS OF TREATING ZINC AND LEAD ORES. JOHN THELBERG, New York, N. Y. Filed July 16, 1902. Renewed Aug. 23, 1906. Serial No. 331,801.

Claim.—1. The process of producing oxide and sulphate of zinc and sulphate of lead which consists in forcing a superheated mixture of steam and air into a body of virgin ore containing zinc sulphide or lead sulphide or both, in a furnace, for the purpose and substantially as specified.

2. The process of producing a pigment from virgin ores containing zinc sulphide or lead sulphide or both, which consists in placing a layer of refractory material on the bottom of a furnace, charging the furnace with said ores, then forcing the superheated mixture of steam and air through the refractory material from beneath into the charge in said furnace, which ignites and oxidises the sulphur, zinc and lead, then conveying the formed volatilized oxide and sulphates, together with the gases, out of the furnace, cooling the gases, the volatilised oxide and sulphates to a suitable temperature, and separating the condensed oxide and sulphates from the gases, substantially as specified.

3. The herein described process of treating virgin ores containing zinc sulphide or lead sulphide or both for the purpose of producing oxide of zinc, sulphates of zinc and lead and sulphuric acid, which consists in forcing a superheated mixture of steam and air into a body of such ore in a furnace, which ignites and oxidises the sulphur, zinc and lead, then conveying the volatilised sulphates and oxide, together with the gases out of the furnace, cooling the gases, the volatilised oxide and sulphates to a suitable temperature, separating the condensed zinc oxide and zinc and lead sulphates from the gases, and finally conveying the separated gases, consisting of sulphur dioxide and nitrogen, into any suitable apparatus for the conversion of the sulphur dioxide into sulphuric acid, substantially as shown and specified.

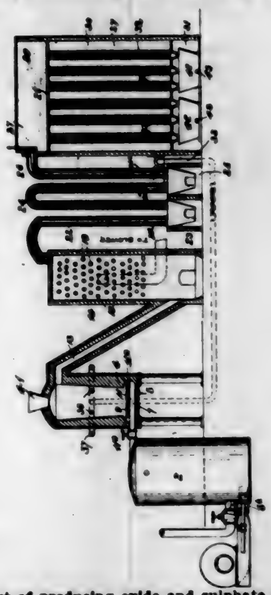

4. The art of producing oxide and sulphate of zinc and sulphate of lead which consists in the one act or step of forcing a superheated mixture of steam and air into a body of virgin ore containing zinc sulphide or lead sulphide or both.

5. The art of treating virgin ores containing zinc sulphide or lead sulphide or both, and a quantity of quick lime, which consists in forcing a superheated mixture of steam and air therein.

6. The art of producing white pigments from virgin ores containing zinc sulphide or lead sulphide or both, which consists in charging a furnace with said ores, adding a quantity of quick lime to the charge of ores, and then forcing a superheated mixture of steam and air into the furnace.

851,188. VENDING-MACHINE. JOHN W. VAUGHN, Noroton Heights, Conn. Filed Oct. 30, 1906. Serial No. 341,275.

Claim.—1. In a vending machine, the combination with a heating device, of a pan pivoted above the heating means to swing alternately in opposite directions, means for delivering material upon said pan and means for discharging the material from said pan, substantially as set forth.

2. In a vending machine, the combination with a heating device, of a pan above the heating means and mounted to swing alternately in opposite directions and means for agitating said pan, substantially as set forth.

3. In a vending machine, the combination with a pivoted pan, of means for automatically bringing the pan into horizontal position, means for feeding material upon the pan, means for heating the pan and means for automatically tilting the pan, substantially as set forth.

4. In a vending machine, the combination with a hopper, of means for discharging a quantity of material from the hopper, means for heating this material, which latter means are mounted to swing alternately in opposite directions and means for delivering the material after it has been heated, substantially as set forth.

5. In a vending machine, the combination with a pivoted pan, of means for bringing the pan into horizontal position, means for holding it in horizontal position for a predetermined time, means for heating the pan while in horizontal position and means for automatically tilting the pan after a predetermined time, substantially as set forth.

6. In a vending machine, the combination with a pivoted pan, of means for bringing the pan into horizontal position, means for holding it in horizontal position for a predetermined time, means for heating the pan while in horizontal position and means for automatically tilting the pan after a predetermined time, and means for agitating the pan while in a horizontal position, substantially as set forth.

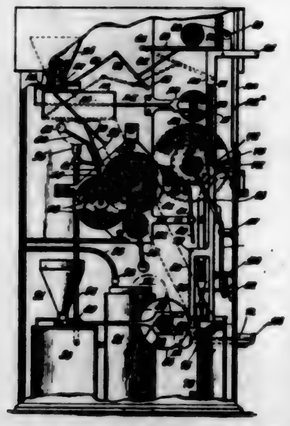

7. In a vending machine, the combination with a hopper, and a pivoted pan, of means for first bringing the pan into horizontal position and then delivering material from the hopper upon the horizontal pan, and then after a predetermined time tilting the pan, substantially as set forth.

8. In a vending machine, the combination with a hopper, a pan, and means for heating the latter, of means for delivering material from the hopper upon the pan then turning on the heat and after a predetermined time turning off the heat and discharging the pan, substantially as set forth.

9. In a vending machine, the combination with a hopper, a pan, means for heating the pan and means for agitating the pan, of means for feeding material upon the pan, means for turning on the heat, means for striking the pan for a predetermined time and means for turning off the heat, and means for automatically discharging the pan, substantially as set forth.

10. In a vending machine, the combination with a pan, and a hopper, of a striker for the pan, a motor for operating the striker and means for delivering material upon the pan and winding the motor, substantially as set forth.

11. In a vending machine, the combination with a hopper and pan, of a heater for the pan, a gas generator and means, by the operation of which material is fed upon the pan, the heat turned on the pan and the gas generator is started, substantially as set forth.

12. In a vending machine, the combination with a hopper and pan, a motor and a gas generator, of means for feeding material from the hopper upon the pan, winding the motor, starting the gas generator and then after a predetermined time discharging the pan, substantially as set forth.

13. In a vending machine, the combination with a hopper and a heating device, means for delivering material from the hopper upon the heating device, a gas burner for heating the heating device, a gas generator and means by the operation of which material is fed upon the heating device, the heat turned on in the gas burner and the gas generator started, substantially as set forth.

14. In a vending machine, the combination with two hoppers, two pans, means for heating the pans, means for discharging the pans after they have been heated for a predetermined time and means for throwing into operation either one of the two hoppers and the corresponding pan, substantially as set forth.

15. In a vending machine, the combination with a hopper and pan, means for heating the pan, of means for delivering material from the hopper to the pan, means for discharging the pan and means for feeding a piece of paper, substantially as set forth.

16. In a vending machine, the combination with a hopper and pan, means for heating the pan, of means for delivering material from the hopper to the pan, means for discharging the hopper, means for feeding a piece of paper, and means for cutting off the paper, substantially as set forth.

851,189. POWER-TRANSMISSION PULLEY. WILLIAM WAGNER, Forestville, Mich. Filed June 8, 1906. Serial No. 320,838.

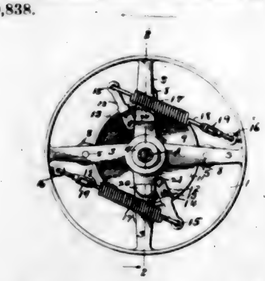

Claim.—1. The combination with a shaft, of a pulley rigidly mounted thereupon, a pulley loosely mounted thereupon and in a plane parallel to said first named pulley, resilient yieldable connections between said pulleys and flanged anti-friction rollers carried by and extending horizontally from the one pulley and overlying and positively engaging the tread of the opposing pulley.

2. The combination with a shaft, of a pulley rigidly mounted thereupon, a pulley loosely mounted thereupon and in a plane parallel to said first named pulley, keepers carried by the one pulley and overlying the tread of the opposing pulley, resilient yieldable connections between said pulleys, and means for varying the tension of said connections.

3. The combination with a shaft, of a pulley rigidly mounted thereupon, a pulley loosely mounted thereupon and in a plane parallel to said first named pulley, retractile coil springs forming a yieldable connection between said pulleys and having connection therewith at points adjacent to the periphery thereof, and means carried by said springs for adjusting the tension thereof.

851,190. BURGLAR-ALARM. CHARLES L. WILKINS, Columbus, Ohio. Filed Mar. 15, 1906. Serial No. 306,293.

Claim.—1. A burglar alarm and indicator comprising a shaft, means mounted on said shaft adapted to rotate thereon, an arm secured radially to said means, means for supporting said arm against rotation, electrical means for withdrawing said support, a dial, a pointer, and means adapted to obstruct the path of said arm, whereby said pointer is made to designate the region of the building molested, said means being actuated by the molestation of the connected regions of the building.

2. In a burglar alarm and indicator, a perforated plate, fingers adapted to be projected therethrough, a shaft passing through said plate, a pointer mounted at the outer end of said shaft, an arm arranged to move radially over said plate, electrical means for setting said arm free, whereupon said pointer is free to rotate, and for projecting one of said fingers into the path of said arm, whereby said pointer is arrested at the word on the dial designating the

region of the building molested, said means being actuated by the molestation of connected regions of the building.

3. A burglar alarm and indicator comprising a rotatable drum, a bell, an arm mounted on said drum, a pointer mounted to turn with said drum, means to prevent the rotation of said pointer, means to cause the rotation of said pointer, and means to arrest the rotation of said pointer at the word on the dial designating the region molested, means under the control of said arm to cause the continuous sounding of said bell, all said means being actuated by the molestation of connected regions of the building.

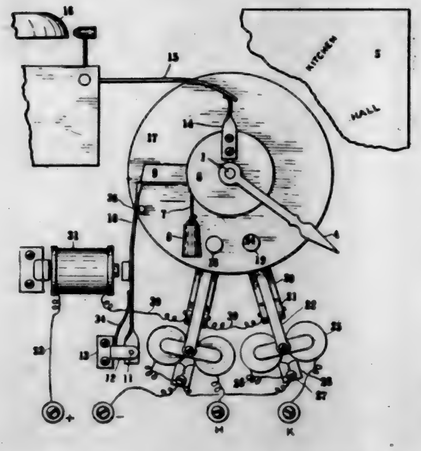

4. A burglar alarm and indicator comprising a bell, a rotatable drum, means mounted on said drum to move therewith and adapted to control said bell, a pointer, means adapted to cause said drum to rotate whereby said bell is rung and said pointer is made to move radially, a perforated disk, fingers adapted to be protruded through said perforations to arrest said arm and said pointer at a predetermined point indicating the region of the building molested, all said parts being actuated electrically by the molestation of connected regions of the building.

5. A burglar alarm and indicator comprising a bell, a shaft, rotatable means mounted thereon, a pointer adapted to turn with said means, an arm adapted to turn with said means, a perforated plate on said shaft, fingers secured upon said plate and adapted to protrude through said perforations and obstruct the path of said arm, means to cause said bell to ring, means to cause said pointer and arm to rotate, and means to cause said fingers to arrest the progress of said arm whereby said pointer is made to designate the region of the building molested, all said means being actuated by the molestation of connected regions of the building.

6. A burglar alarm and indicator comprising a shaft, a sleeve at the outer end thereof adapted to turn thereon, a drum on said sleeve, a weight attached to said drum to cause the same to rotate, an arm rigidly secured on said drum, a pivoted rod adapted to support said arm against rotation, a second arm rigidly mounted on said drum, a bell, connections between said second arm and bell rendered active by the withdrawal of said arm, a pointer on said sleeve, a plate, perforations therethrough, fingers adapted to protrude through said perforations into the path of said first-mentioned arm, and means adapted to permit the rotation of said pointer and to actuate said fingers to arrest said pointer at a predetermined point designating the region of the building molested, said means being electrically actuated by the molestation of connected regions of the building.

851,191. BURNER ATTACHMENT. MELISSA J. WOLFE, Los Angeles, Cal. Filed Apr. 3, 1906. Serial No. 309,591.

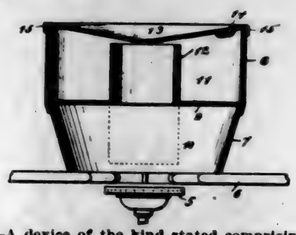

Claim.—A device of the kind stated comprising a cylinder, a horizontal partition therein forming upper and lower chambers in the cylinder, and having an opening, and a flue on one side of the partition and communicating with the opening therein, said partition being reversible to permit the flue to be extended into either of the aforesaid chambers.

851,192. DOOR-CHECK. THOMAS J. YOUNGLOVE, Richmond, Va., assignor of one-half to Thomas B. Hicks, Richmond, Va. Filed Apr. 14, 1906. Serial No. 311,763.

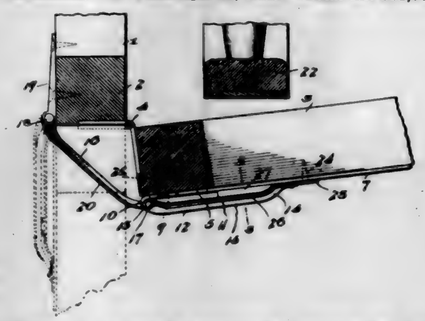

Claim.—1. A check for preventing a vehicle door from striking against the adjacent wheel, embodying a hinge piece, a guide having parallel inner and outer portions, and a link pivotally connected with the hinge piece and provided with a cross-head the projecting parts of which are movable lengthwise between the inner and outer portions of the guide.

2. A check for preventing a vehicle door from striking against the adjacent wheel, embodying a hinge piece, a guide comprising a base, parallel flanges connected with the base, and a link pivotally connected with the hinge piece and provided with a cross-head the projecting parts of which are movable lengthwise of the guide within the flanges.

3. A check for preventing a vehicle door from striking against the adjacent wheel, embodying a hinge piece, a guide, a link pivotally connected with the hinge piece and having a runner movable lengthwise of the guide, and a face plate carried by the link and adapted to cover the guide.

4. The combination with a hinged door, of a door check embodying a hinge piece, a guide comprising a base, and a slotted parallel portion running parallel with the base, a link pivotally connected with the hinge piece and provided with a runner movable lengthwise of the guide between the parallel portions thereof, and a face plate carried by the link and adapted to cover the slotted portion of the guide.

5. A check for preventing a vehicle door from striking against the adjacent wheel, embodying a tie-bar connecting the outer and inner uprights or side bars of the door and having one or more hooks at the inner end thereof, a guide secured to the tie-bar adjacent to the hinged edge of the door with one end seated against the hook, a hinge piece, and a link pivotally connected with the hinge piece and provided with a runner movable lengthwise of the guide, the latter being provided with a stop shoulder for the link, substantially as described.

851,193. DOOR-CHECK. THOMAS J. YOUNGLOVE, Richmond, Va., assignor of one-half to Thomas B. Hicks, Richmond, Va. Filed May 23, 1906. Serial No. 318,333.

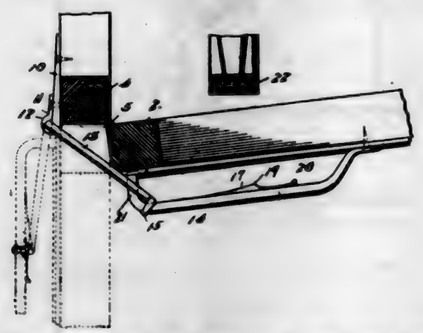

Claim.—1. A check for preventing a vehicle door from striking against the adjacent wheel, the same being located adjacent to the hinged edge of the door and embodying a hinge piece, a guide, a link pivotally connected to the hinge piece and having a sliding engagement with the guide, and a spring which acts at a certain point in the movement of the door to resist and retard the movement of the link and also yields under excess pressure to allow further movement of the link.

2. A check for a vehicle door embodying a link connecting the vehicle door and body to limit the opening movement of the door, and means acting on the link at a certain point in the movement of the door to hold the door closed or approximately so with a frictional resistance which may be overcome by pressure against the door.

851,194. FILTER. WILLIAM J. ARCHER, Brighton township, Beaver county, Pa. Filed Mar. 3, 1906. Serial No. 304,105.

Claim.—1. In a filter, the combination of a middle stone bearing portion provided with a filtering medium, upper and lower cylinders seating against said portion with intervening packing devices, a surrounding clamping yoke bearing against the outer end of the lower cylinder, a threaded tube engaging the upper end of the yoke and bearing against the end of the upper cylinder, a water supply device communicating with said tube, and means for withdrawing water from the interior of said cylinders, substantially as set forth.

2. The combination of a transverse diaphragm of filtering material, an enclosing housing therefor, cylinders arranged to bear against opposite sides of said housing with intervening packing gaskets, water supply mechanism connected to one of said cylinders, a withdrawal faucet connected with the other of said cylinders, and a separable embracing yoke arranged to exert pressure against the outer end of each cylinder, substantially as set forth.

3. The combination of a transverse diaphragm of filtering material, an enclosing housing therefor, cylinders arranged to bear against opposite sides of said housing with intervening packing gaskets, water supply mechanism connected to one of said cylinders, a withdrawal faucet connectetd with the other of said cylinders, a rotatable cleaning device provided with a rod extending through said water supply mechanism, packing devices therefor, and a separable embracing yoke arranged to exert pressure against the outer end of each cylinder, substantially as set forth.

4. The combination of a transverse diaphragm of filtering material, an enclosing housing therefor, cylinders arranged to bear against opposite sides of said housing with intervening packing gaskets, water supply mechanism connected to one of said cylinders, a withdrawal faucet connected with the other of said cylinders, a withdrawal faucet connected with the filtering material housing, and a separable embracing yoke arranged to clamp the cylinders against the housing, substantially as set forth.

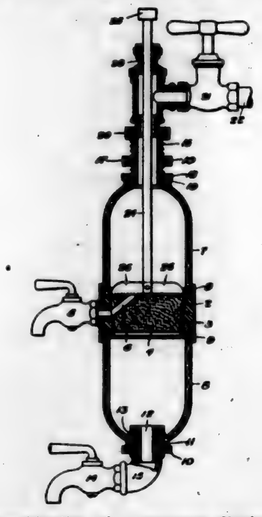

5. The combination of a transverse diaphragm of filtering material, an enclosing housing therefor, cylinders arranged to bear against opposite sides of said housing with intervening packing gaskets, water supply mechanism connected to one of said cylinders, a withdrawal faucet connected with the other of said cylinders, a withdrawal faucet connected with the filtering material housing, and a separable embracing yoke arranged to clamp the cylinders against the housing, with intervening packing devices, substantially as set forth.

6. The combination of a transverse diaphragm of filtering material, an enclosing housing therefor, cylinders arranged to bear against opposite sides of said housing with intervening packing gaskets, water supply mechanism connected to one of said cylinders, a withdrawal faucet connected with the other of said cylinders, a withdrawal faucet connected with the filtering material housing, and a separable embracing yoke arranged to clamp the cylinders against the housing, with a rotatable cleaning rod provided with a scraping extremity, said rod extending through the water supply mechanism, and a stuffing box for said rod, substantially as set forth.

851,195. ENGINE. ALBERT L. BAUER and RAYMUND BAUER, Wheeling, W. Va. Filed Mar. 16, 1906. Serial No. 306,466.

Claim.—1. In a rotary engine, the combination with a cylinder, of a pair of chambers communicating therewith, the cylinder and chambers being arranged to contain a liquid, a revoluble piston drum, a piston wing carried thereby, an abutment movable into and out of the path of the piston wing to place the chambers in communication with each other, and means for admitting a fluid under pressure to one of the chambers at a point above the liquid level, whereby the liquid in said chamber is displaced and the movement transmitted to the piston wing.

2. In a rotary engine, the combination with a cylinder, of a pair of liquid containing chambers in communication therewith, a revoluble piston drum, a piston wing extending therefrom, an abutment movable into and out of the path of the piston wing to permit communication between

said chambers, means for controlling the admission and exhaust of an operating fluid to one or other of the chambers at a point above the liquid level, whereby the liquid may be displaced from one chamber and rise in the other, and transmit movement to the piston wing.

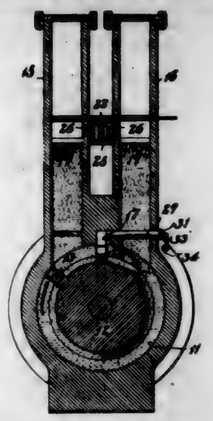

3. The combination in a rotary engine, of a cylinder, a pair of vertically disposed liquid containing chambers in communication therewith, a movable valve or abutment adjustable across either of the chambers and forming the fixed wall of a pressure space, a valve controlling the admission and exhaust of fluid under pressure to this pressure space, a piston drum, a wing projecting therefrom, an abutment, and means for moving the abutment into and out of engagement with said piston drum.

4. The combination in a rotary engine, of a cylinder, a pair of vertically disposed liquid containing chambers in communication therewith, float pistons arranged within the chambers, a slidable valve or abutment movable across either of the chambers to form one wall of a pressure space, a valve for controlling the admission and exhaust of a working fluid to the pressure space, a piston drum in the cylinder, a piston wing carried by the drum, an abutment, and means for actuating the abutment.

5. In a rotary engine, the combination with a shaft, of a pair of cylinders surrounding the same, a pair of piston drums secured to the shaft and having piston wings, the wing of one drum being diametrically opposite the wing of the other drum, a pair of liquid containing chambers connected to each cylinder, means for introducing a fluid under pressure to one chamber of each pair to displace the liquid therein, the operations alternating in the respective chambers, and abutments movable into and from the cylinders to permit communication between the liquid containing chambers of each pair.

851,196. AUTOMATIC GUN. WILLIAM H. BEVANS, Bridgeport, Conn., and CHARLES W. BARTHOLMES, Ilion, N. Y., assignors to American and British Manufacturing Company, and American Machine & Ordnance Company, New York, N. Y., Corporations of New York. Filed Nov. 18, 1902. Serial No. 131,798.

Claim.—1. In an automatic gun, a hopper for the loaded rounds having an egress opening, a feeding member in said hopper adapted when moved in one direction to swing from beneath the lowermost round and into position closing said egress opening and when moved in a reverse direction to pass between the lowermost round and the supply and separate said lowermost round therefrom, a delivery-member adapted to reciprocate on said hopper for delivering the rounds to the gun and provided with an ingress-opening adapted to be brought into coincidence with the egress opening of the hopper to receive the round therefrom, and means for effecting the movement of the feeding and delivering members.

2. In an automatic gun, a hopper for the loaded rounds, a delivery member adapted to reciprocate on said hopper for delivering the rounds to the gun, and a feeding-member adapted when actuated to separate a round from the main supply and provided with members projecting in the path of the delivery member, whereby the movement of the latter effects the movement of said feeding member.

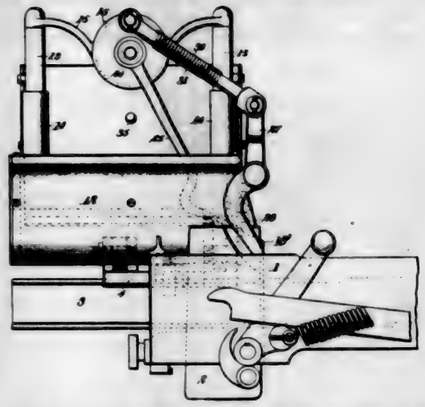

3. In an automatic gun, a hopper for the loaded rounds, a feeding member adapted when actuated to separate a round from the main supply, a delivery-member mounted independently of the feeding-member and adapted to receive the round and convey the same to the gun, and means for retaining the round in the hopper until the delivery-member has begun its travel to the gun, said feeding and delivery-members being constructed and arranged to movably engage each other, whereby the movement of one effects the movement of the other.

4. In an automatic gun, a rammer for moving the loaded round into firing position, an actuating lever for said rammer actuated by the movement of the gun after firing for moving the rammer to operative position, and means energized by the movement of said rammer to operative position for actuating the rammer to move the round into firing position.

5. In an automatic gun, a hopper for the loaded rounds having an egress-opening, a delivery-member adapted to reciprocate on said hopper for delivering the rounds from the hopper to the gun and provided with an ingress-opening adapted to be brought into co-incidence with the egress-opening of the hopper to receive the rounds therefrom, a feeding-member for feeding the rounds to the delivery-member, and means for actuating the feeding and delivery members.

6. In an automatic gun, a swinging rammer for moving the loaded round into firing position, an intermediately pivoted lever actuated by the movement of the gun on recoil, an operative connection between said lever and rammer, and actuating means energized by the movement of the rammer to operative position adapted to actuate said rammer to move the round to firing position.

7. In an automatic gun, a rammer pivotally mounted for moving the loaded round to firing position, an intermediately pivoted lever actuated by the movement of the gun on recoil for moving said rammer to operative position, a link pivotally connected to said lever and having a pivotal connection with the rammer eccentrically of the pivotal point thereof, and means energized by the movement of the rammer to operative position for moving said rammer in a reverse direction.

8. In an automatic gun, a rammer pivotally mounted for moving the loaded round to firing position, an intermediately-pivoted lever actuated by the movement of the gun on recoil for moving said rammer to operative position, a flexible link pivotally connected to said lever and having a pivotal connection with the rammer eccentrically of the pivotal point thereof, and means energized by the movement of the rammer to operative position for moving said rammer in a reverse direction.

9. In an automatic gun, a pivotally mounted rammer for moving the loaded round to firing position, an intermediately pivoted lever actuated by the movement of the gun on recoil for moving the rammer to operative position and constructed to have a slight play in a direction reverse to that of the movement of the gun on recoil an operative connection between the lever and the rammer, and means energized by the movement of the rammer to operative position for moving said rammer in a reverse direction.

10. In an automatic gun, a hopper for the loaded rounds, a delivery-member for delivering the rounds from the hopper to the breech of the gun, a rammer pivotally mounted on the delivery-member, an actuating lever mounted on the delivery-member and adapted to be actuated by the movement of the gun for moving the rammer to operative position, an operative connection between the lever and the rammer, a spring energized by the movement of the rammer to operative position adapted to actuate said rammer in a reverse direction, locking means for holding said spring under tension, a tripping member independent of the delivery-member adapted to release said spring when the delivery-member has moved a sufficient distance to bring said locking means into contact therewith, and means for actuating said delivery-member.

11. In an automatic gun, a hopper for the loaded rounds, a delivery-member for delivering the rounds from the hopper to the breech of the gun, a rammer carried by the delivery-member and constructed and arranged to be moved to operative position by the recoil-movement of the gun, a spring energized by the movement of the rammer to operative position adapted to actuate said rammer in a reverse direction, locking means for holding said spring under tension, tripping means independent of the delivery-member for releasing said spring when the delivery-member has moved a sufficient distance to bring said locking-means into contact with the tripping-means and means for actuating the delivery-member.

851,197. POWER TRANSMISSION. WALLACE E. BELT, Dodge Centef, Minn. Filed July 23, 1906. Serial No. 327,285.

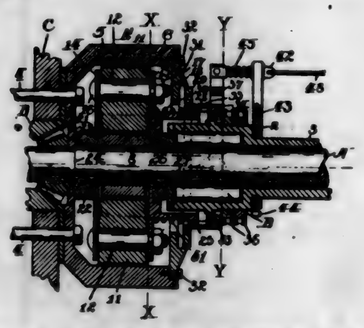

Claim.—1. In combination with the hub of a wheel to be driven provided with a friction surface, a drive shaft, and a system of friction clutch levers each provided with double cam surfaces and means for causing them to automatically impinge against said friction surface and transmit motion from said shaft and for holding the clutch levers inoperative when the driven element rotates at a greater speed than the driving element.

2. A power transmission, comprising in combination with the hub of a wheel to be driven, a friction drum on said hub, a drive shaft, a suitable cage, a pinion on said shaft, a plurality of clutch levers fulcrumed on said cage and in mesh with said pinion, each of said levers provided with double cams adapted to impinge against the friction surface of said drum when said shaft revolves in either direction, and means for retarding the movement of said cage.

3. A power transmission, comprising in combination with the hub of a wheel to be driven, a friction drum on said hub, a drive shaft, on which said hub is freely journaled, a suitable cage, a pinion on said shaft, a plurality of double cams adjoining the friction surface of said drum, means in mesh with said pinion for automatically holding said cams inoperative when the driven element rotates faster than the driving element, a thrust bearing between said cage and hub, means for retarding the movement of said cage and means for adjusting said retarding means for the purposes specified.

4. A power transmission, comprising a drive shaft, a pinion secured on the said shaft, a cage, a plurality of friction clutch levers fulcrumed on the said cage and in mesh with the said pinion, a drum connected with the part to be driven and adapted to be frictionally engaged in the inner surface of its rim by the said clutch levers, a thrust bearing for the said cage, and a spring retarding the movement of said cage.

5. A power transmission, comprising a drive shaft, a pinion secured on the said shaft, a cage, a plurality of friction clutch levers fulcrumed on the said cage and in mesh with the said pinion, a drum connected with the part to be driven and adapted to be frictionally engaged in the inner surface of its rim by the said clutch levers, and a thrust bearing for the said cage.

6. A power transmission, comprising a drive shaft, a pinion secured on said shaft, a cage, a plurality of friction clutch levers fulcrumed on said cage and in mesh with said pinion, a drum connected with the part to be driven and adapted to be frictionally engaged in the inner surface of its rim by the said clutch levers, and a spring tending to prevent said cage from rotating with the shaft on starting the latter.

7. A power transmission, comprising a pinion on the driving part, a drum connected with the part to be driven and a plurality of friction clutch levers in mesh with said pinion each being provided with a double impinging surface for engagement with said drum in either direction.

8. A power transmission, comprising a driven shaft, a pinion secured on said shaft, a cage, a plurality of friction clutch levers fulcrumed on said cage, in mesh with said pinion each being provided with a double impinging surface, and a drum connected with the part to be driven and adapted to be frictionally engaged at the inner surface of its rim by impinging surfaces in either direction.

9. A power transmission, comprising a drive shaft, a member secured thereon, a cage around said shaft, a plurality of friction clutch levers each provided with a double impinging surface, fulcrumed on said cage and connected with the said member for the latter to impart a swinging motion to said levers, and a drum on the part to be driven and adapted to be engaged in either direction at the inner surface of its rim by said impinging surface on said levers.

10. A power transmission, comprising a drive shaft, a member secured thereon, a cage around said shaft, a plurality of friction clutch levers fulcrumed on said cage, and connected with said member for the latter to impart a swinging motion to the said levers, each of said friction clutch levers having double cam surface extending in opposite directions, and a drum on the part to be driven and adapted to be engaged at the inner surface of its rim by said cam surfaces in either direction of rotation.

11. In combination with a hub D of a wheel to be driven, a friction drum E carried by said hub, a drive shaft A on which said hub is freely journaled, a casing 3 containing said shaft, a cage 13 within said drum, a pinion 8 on said shaft, a plurality of clutch levers 11 fulcrumed on said cage, in mesh with said pinion and provided with double cam surfaces 19 and 20, thrust bearings 22 and 26 between the hub and casing and said cage, a thrust spring 30, and means for adjusting the tension of said spring.

12. A power transmission, comprising in combination with the part to be driven, a driving part, clutching means

between said parts provided with means for causing the same to automatically transmit motion between said parts in either direction and to become inoperative when the driven element rotates at a greater speed than the driving element, a brake element carried by said driving element and means for setting said brake.

13. A power transmission, comprising in combination with the part to be driven provided with friction surface, a driving part, a system of friction clutch levers, carried by said driving part, and provided with means for causing them to automatically impinge against said friction surface and transmit motion to said part to be driven in either direction, and for holding them inoperative when the driven element rotates at a greater speed than the driving element, a brake element also adapted to impinge against said friction surface, and means for setting said brake element.

14. A power transmission, comprising in combination with the part to be driven, a driving part, clutching means provided with a double cam to engage the part to be driven in either direction, means rotating with said driving part and connected with said clutching means for differentiating motion between said driving and driven parts, a brake carried by said driving part, and means for setting said brake.

15. In combination with a hub D of a wheel to be driven, a friction drum E carried by said hub, a drive shaft A on which said hub is freely journaled, a casing containing said shaft, a cage 13 within said drum, a pinion 8 on said shaft, a plurality of clutch levers 11 fulcrumed on said cage, in mesh with said pinion and provided with double cam surfaces 19 and 20, thrust bearings 22 and 26 between the hub and casing and said cage, a thrust spring 30, a brake 29 coacting with said drum and feathered on said cage, a support 34 feathered on said casing, a lever 37 fulcrumed on said support, its work end being adapted to impinge against said brake, and means for throwing said lever to set said brake.

851,198. ATTACHMENT FOR HOT-AIR REGISTERS. JOHN M. DIETZ, CARL W. ANDERSEN, and JOHN W. FARRELL, Salt Lake City, Utah. Filed Feb. 12, 1901. Serial No. 47,045.

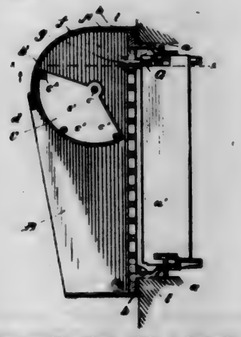

Claim.—The combination with a hot-air wall register of an attachment comprising a casing having its inner edges bent inwardly to engage behind the flanges of the face-plate of the register and the body of the casing standing out from the wall and curved downwardly at its upper portion to form a deflector the upper portion of the casing being bulged as compared with the lower portion thereof and the free edge of the deflector being reinforced to strengthen the said edge of the deflector, a rod pivotally mounted across the upper portion of the casing and one end thereof extending therefrom to form a handle, segmental plates rigidly mounted on the rod at the inner sides of the casing and their curved edges coincident with the curved contour of the deflector, and a metal screen having its ends secured to the curved edges of the segments, said screen standing normally across the casing under the deflector, substantially as shown.

851,199. RUTTER FOR LOGGING-SLEDS. EDWARD DOYLE, Boyd, Wis. Filed June 27, 1906. Serial No. 323,653.

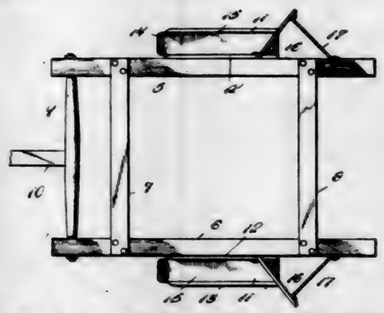

Claim.—1. A device of the class described, comprising a sled; and a rutter secured to the outer face of each sled runner, each rutter comprising separate inner and outer vertically arranged cutters, a bottom cutter, and an inclined transverse cutter mounted between said vertical cutters, directly above said bottom cutter, the several cutters having their forward edges beveled to form cutting edges.

2. A device of the kind described, comprising in combination with a sled, a rutter secured to the outer face of each sled runner, each rutter comprising independent inner and outer parallel cutters arranged in spaced relation to each other, a bottom cutter, an inclined transverse cutter secured between said inner and outer cutters, and directly above said bottom cutter, and a mold plate secured to the rear edges of said inner and inclined cutters and projecting beyond said outer cutter, at an angle to the plane thereof, the several cutters having their forward edges beveled to form cutting edges.

3. A rutter for logging sleds comprising, in combination, an inner and an outer vertical cutter arranged in spaced relation to and independent of each other, the inner cutter being of greater height than the outer cutter; a bottom cutter secured between said vertical cutters; an inclined cutter mounted between said vertical cutters directly above said bottom cutter; and a separate, laterally disposed mold plate secured to the rear edges of the inner and inclined cutters and projecting beyond said outer cutter, the several cutters having their forward edges beveled to form cutting edges.

851,200. CARRIER. RAY W. FRANKLIN, Fairfield, Iowa. Filed Nov. 8, 1906. Serial No. 342,556.

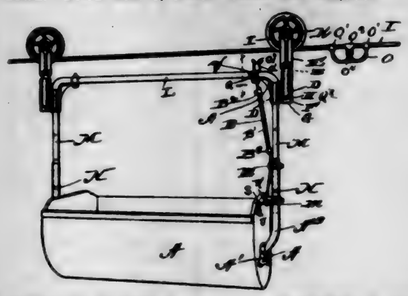

Claim.—1. A carrier apparatus comprising a track, hangers thereon, a receptacle, a bail apparatus fixed to said hangers and pivotally connected to said receptacle, a stop fixed to said track, an adjustable trip mechanism comprising two rods, one of which is bent to form loops and adapted to contact with said stop, the other rod designed to engage a notch in the end of the receptacle, said trip being actuated longitudinally as it contacts with the stop, whereby said rod may be released from the receptacle, as set forth.

2. A carrier apparatus comprising a track, a stop thereon, a hanger on the track, a receptacle, a bail fixed to the hanger and pivotally connected to said receptacle, trip mechanism comprising two rods, one of which is bent to form resilient loops designed to engage the bail, guides for said loops, and connections between the trip mechanism and receptacle for normally holding the latter from being inverted, as set forth.

3. A carrier apparatus comprising a track, a stop thereon, a hanger on the track, a receptacle, a bail fixed to the hanger and pivotally connected to said receptacle, trip mechanism comprising two rods, one of which is bent to form resilient loops designed to engage the bail, guides for said loops, curved plates secured to the ends of the receptacle, the lower end of one of said rods being bent to engage a notch intermediate said plates, the lower end of said rod adapted to be held by the edges of the curved plates out of the path of the receptacle as it is inverted, as set forth.

4. A carrier apparatus comprising a track, a stop thereon, hangers upon the track, a receptacle, curved plates fixed to one end of said receptacle, a portion of each turned into a roll forming a guide groove, a notched strip connecting said plates, a bail secured to said hangers and pivotally connected to the receptacle, a trip mechanism consisting of a rod bent to form loops designed to engage said bail, an extensible portion of said trip mechanism being bent to form a resilient hook engaging said notch and designed to be guided in the grooves of said plates, as set forth.

5. In combination, in a carrier apparatus, a track, hangers mounted thereon, a receptacle, a bail fixed to the hangers and pivotally connected to the receptacle, clip sections having corresponding ends interlocked and a bolt passing through the other ends, whereby said sections may be clamped to the bail, guide pins projecting from said sections, trip mechanism consisting of two rods adjustably held together, one of said rods being bent to form loops adapted to engage said bail intermediate the guide pins, and means for normally holding the receptacle from being inverted, a stop fixed to the track and against which the upper loop portion of one of said rods is adapted to contact as set forth.

851,201. LUBRICATING MEANS FOR AXLES OR THE LIKE. WILLIAM J. GREENING, Middletown, N. Y. Filed Sept. 4, 1906. Serial No. 333,206.

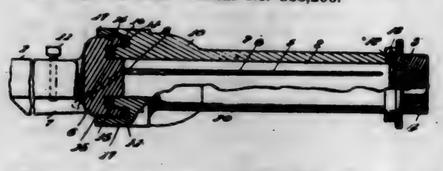

Claim.—1. In lubricating means of the class described, the combination of an axle having the usual spindle, a reservoir carried by the axle, the aforesaid spindle being formed with a longitudinal lubricant receiving groove and a passage establishing communication between the reservoir and the lubricant receiving groove, a wicking strip, or strip of absorbent material in the groove aforesaid, and a similar strip of absorbent material in the passage establishing communication between the groove and the reservoir, the two strips of absorbent material being relatively movable to regulate the quantity of oil or lubricant supplied between the spindle and the boxing mounted thereon.

2. In combination, an axle having a spindle provided with a longitudinal lubricant receiving groove, a reservoir for said lubricant, there being an opening in the body of the axle extending from the reservoir to the groove of the spindle and inclined upwardly in its length, a strip of absorbent material arranged in the opening last mentioned, and a similar strip of absorbent material arranged in the groove of the spindle, the latter being movable relatively to the first mentioned strip of absorbent material to regulate the quantity of lubricant supplied to the spindle.

3. In means of the class described, the combination of an axle having the usual spindle, an oil supply reservoir comprising an opening or bore longitudinally of the spindle, the spindle being formed with a longitudinal lubricant receiving groove there being an opening establishing communication between the groove and the reservoir opening intermediate of the ends thereof, a threaded tube mounted in the said opening, a strip of wicking in said tube, and other strips of wicking or absorbent material in the groove and having ends thereof adjacent to the wicking in the threaded tube and relatively movable with reference to the wicking in said threaded tube.

851,202. MACHINE FOR COMBING BROOM-CORN. CHARLES K. MILLER, Alva, Okla. Filed Apr. 10, 1906. Serial No. 311,013.

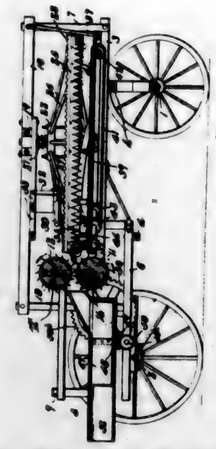

Claim.—1. In a machine of the character described the combination with combing cylinders; of a wheel rotatably mounted adjacent the cylinders, a series of teeth depending from the rim of the wheel for conveying material to the cylinders, and a rigid supporting rail overlapped by the teeth for holding the material in engagement with the teeth during the combing operation, said rail having deflected ends.

2. In a machine of the character described the combination with combing cylinders; of a wheel rotatably mounted adjacent said cylinders, a series of teeth depending from one side of the rim of the wheel for conveying material to the cylinders said teeth being disposed at an angle to the plane occupied by the wheel, and a rigid supporting device adjacent to and overlapped by said teeth, the material being adapted to be wedged between the teeth and supporting device during the combing operation, said device having deflected ends.

3. In a machine of the character described the combination with combing means; of a rotatable wheel adjacent thereto, a series of teeth extending from one side of the periphery of the wheel for engaging the material and feeding it to the combing means said teeth being disposed at an angle to the plane of the wheel, and a rigid supporting

rail adjacent to and overlapped by the teeth and diverging therefrom and extending downward at its ends.

4. In a machine of the character described the combination with combing means, and a conveyor for conducting material in the direction of said means; of a wheel rotatably mounted between the conveyor and combing means, a series of teeth depending from one side of the rim of the wheel and movable in a plane substantially parallel with the conveyor, and the ends of the teeth being disposed in parallel planes, and means overlapped by the teeth for directing material from the conveyor into the path of the teeth and for holding said material in engagement with the teeth.

5. In a machine of the character described the combination with combing means, and a conveyor for conducting material in the direction of said means; of a wheel rotatably mounted between the conveyor and combing means, a series of teeth depending from one side of the rim of the wheel and movable in a plane substantially parallel with the conveyor, the ends of the teeth being disposed in a plane parallel with the plane of the wheel and means interposed between and overlapped by the teeth for directing material from the conveyor into the path of the teeth and for holding said material in engagement with the teeth.

6. In a machine of the character described the combination with combing means, and a conveyor for conducting material in the direction of said means; of a wheel rotatably mounted between the conveyor and combing means, a series of teeth depending from one side of the rim of the wheel and above, and movable in a plane substantially parallel with the conveyor the ends of the teeth being disposed in a plane removed from and parallel with the plane of the wheel, and means overlapped by the teeth for directing material from the conveyor into the path of the teeth and for holding said material in engagement with the teeth throughout a portion of their movement.

7. In a machine of the character described the combination with combing means, and a conveyor for conducting the material in the direction of said means; of a wheel rotatably mounted between the conveyor and combing means, a series of teeth depending from one side of the rim of the wheel and above, and movable in a plane substantially parallel with the conveyor the ends of the teeth being disposed in a plane removed from and parallel with the plane of the wheel, means overlapped by the teeth for conveying material from the conveyor into the path of the teeth and for holding said material in engagement with the teeth throughout a portion of their movement, and means for deflecting the material to disengage it from the teeth.

8. In a machine of the character described the combination with combing means, and a conveyor for conducting material in the direction of said means; of a rotatable wheel, concentric series of teeth depending from one side of the rim of the wheel and above and movable in a plane substantially parallel with the conveyor the ends of the teeth being disposed in a plane removed from and parallel with the plane of the wheel, means interposed between and overlapped by said series of teeth for directing material from the conveyor into the path of the teeth and for holding said material in engagement with the teeth, and means for deflecting material from engagement with the teeth.

9. In a machine of the character described the combination with combing means, and a conveyor; of a rotatable wheel, concentric series of teeth depending from one side of the rim of the wheel and extending over the conveyor and substantially parallel therewith the ends of the teeth being disposed in a plane removed from and parallel with the plane of the wheel, and a supporting rail for directing material from the conveyor into the path of the teeth and to retain it in engagement with said teeth throughout a portion of their movement.

10. In a machine of the character described the combination with combing means, and a conveyor; of a rotatable wheel, teeth depending from one side of the rim of the wheel and adapted to travel over the conveyor in a plane substantially parallel therewith the ends of the teeth being disposed in a plane removed from and parallel with the plane of the wheel, and a rail overlapped by the teeth for directing material from the conveyor into engagement with the teeth and for holding said material in engagement with the teeth while acted upon by the combing means.

11. In a machine of the character described the combination with combing means, and a conveyor; of a rotatable wheel, teeth depending from the rim of the wheel and adapted to travel over the conveyor in a plane substantially parallel therewith, a rail having inclined ends and adapted to direct material from the conveyor into engagement with the teeth and to support material in engagement with said teeth during the combing operation, said rail being overlapped by the teeth.

12. In a machine of the character described, the combination with combing means and a conveyer, of a wheel rotatably mounted above and overlapping the conveyer, concentric series of teeth depending from the wheel, and a supporting rail interposed between a portion of said series and having depending ends, one of said ends adapted to receive material from the conveyer.

13. In a machine of the character described, the combination with combing means and a conveyer, of a wheel rotatable above and overlapping the conveyer, concentric series of alternately disposed teeth depending from the wheel, a supporting rail extending between said series and partly around the wheel the ends of said rail extending downward, one of said ends being adapted to receive material from the conveyer, and a deflector for disengaging material from the teeth during the rotation of the wheel.

14. In a machine of the character described, the combination with combing means and a conveyer, of a spring-pressed wheel rotatably mounted above and overlapping the conveyer, concentric series of teeth depending from the rim of the wheel, the teeth of the two series being alternately disposed, a supporting rail extending partly around the wheel and between the teeth of the two series, the ends of said rail extending downwardly and one end adapted to receive material from the conveyer.

15. In a machine of the character described, the combination with combing means, of a rotatable wheel, concentric series of teeth depending from the rim of the wheel, a supporting rail partly surrounding the wheel and disposed between the series of teeth the ends of the rail extending downward and one end adapted to receive material and direct it into the path of the teeth.

16. In a machine of the class described, the combination with combing means, of a vertical shaft, collars mounted on the shaft and adjustably connected, a rim surrounding the shaft, spokes connecting said rim and the adjustable collars, and concentric series of teeth depending from the rim and adapted to convey material to the combing means.

17. In a machine of the character described, the combination with combing means, and a gear operated by said means, of a rotatable wheel having a toothed rim engaging said gear, teeth depending from the wheel for conducting material to the combing means, and a supporting rail extending beyond the teeth and adapted to direct material into the path thereof and hold it in engagement therewith.

18. In a machine of the character described, the combination with combing means, and a gear operated by said means, of a rotatable wheel having a toothed rim engaging said gear, teeth depending from the wheel for conducting material to the combing means, a conveyer, and a supporting rail overlapped by and extending beyond the teeth and adapted to receive material from the conveyer and direct it into the path of the teeth.

19. In a machine of the character described, the combination with combing cylinders, and gears rotatable therewith, of a rotatable feed wheel having a toothed rim, a drive gear meshing with said teeth, means operated by one of the gears on one of the combing cylinders for rotating the drive gear, and teeth depending from the teeth for conveying material to the combing cylinders.

20. In a machine of the character described, the combination with combing cylinders, meshing gears rotatable therewith, and shafts rotatable with said gears; of a conveyer operated by one of the shafts, a wheel operated by the other shaft, and teeth depending from said wheel and adapted to convey material to the pass between the cylinders.

21. In a machine of the class described, the combination with combing means; of a feed wheel comprising a shaft, collars adjustably mounted thereon, a rim connected to the collars, and concentric series of teeth disposed upon the rim.

22. In a machine of the character described, the combination of combing means; of a feed wheel comprising a shaft, adjustably connected spring-pressed collars mounted upon the shaft, a rim surrounding and connected to the collars, and concentric series of teeth detachably connected to the rim.

851,203. SHOCK-LOADER. JOHN H. M. NIEMANN, Chamois, Mo. Filed May 5, 1906. Serial No. 315,407.

Claim.—In a shock loader, the combination of a main frame comprising longitudinal bars and connecting cross pieces, the rear cross piece being arranged forward of the rear ends of the longitudinal bars to come in front of the rear bolster of running gear and to permit the rear ends of the longitudinal bars resting upon the rear bolster, a shock holder pivotally connected to the running gear and comprising an impaling and a supporting bar, sheave pulleys applied to the supporting bar, an operating rope or cable having portions passed through the sheave pulleys, and a windlass mounted upon the main frame and adapted to wind up the said cord or cable.

851,204. BRAIDING-MACHINE. EDWARD F. PARKS and SIMON W. WARDWELL, Providence, R. I. Filed Aug. 14, 1905. Serial No. 274,136.

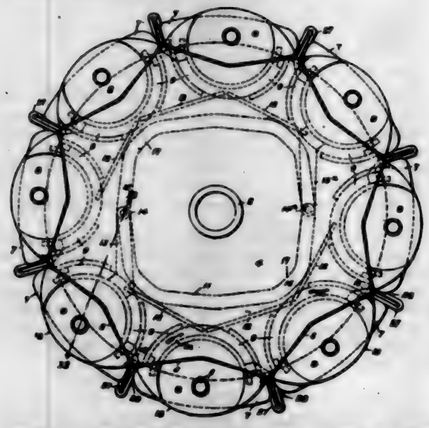

Claim.—1. In a braiding machine, the combination with a carrier, and means for moving same, comprising an oscillating driver having its center of oscillation within said carrier.

2. In a braiding machine, the combination with a revolving carrier and means for moving same, comprising a one-piece driver having its center of oscillation on the line drawn tangent to the path of revolution of the point of engagement of driver with carrier, and passing through said point of engagement.

3. In a braiding machine, the combination with revolving carriers, of drivers therefor, means to actuate one of the drivers, and means to couple a plurality of the drivers so that the actuation of the one affects all.

4. In a braiding machine, the combination with a rotating plate and supplies, of carriers to carry said supplies, pocketed within the outer edge of the plate and drivers to connect the plate and carriers.

5. In a braiding machine, the combination with a rotating plate and carriers mounted adjacent thereto, and arranged with slits between the plate and carriers, of switches to close said slits and means to operate the switches.

6. In a braiding machine, the combination with a rotating plate and carriers mounted adjacent to the plate and arranged with slits between plate and carriers, of switches to close said slits and means to operate a switch and means to couple a plurality of switches so that action of the one switch causes action of all.

7. In a braiding machine, the combination with a rotating plate and carriers mounted adjacent said plate and arranged with slits between the carriers and the plate, of drivers to connect the carriers with the plate, switches to open and close entrance to said slits, and means to operate both switches and drivers.

8. In a braiding machine, the combination with a plate and carriers mounted adjacent thereto and arranged to leave slits between the carriages and the plate, the radially outer edge of each carrier constituting one path of travel for a traveling yarn, and the slit between the plate and carrier constituting another path, of switches to determine which path the traveling thread shall traverse, and means to operate the switches.

9. In a braiding machine, the combination with a rotating plate and carriers mounted adjacent thereto, of means for traveling a thread either between the carriers and the plate or outside of the carriers, drivers mounted in the plate, each adapted to engage, first by one of its ends and then the other, a carrier, switches to control access to the slits between the plate and carriers, and means to engage the drivers with the carriers, first by one end and then by the other, and in this shifting of the drivers to shift the said switches.

10. In a braiding machine, the combination with a rotating plate having a plurality of circular grooves whose centers are outside the edge of the plate, circular drivers in said grooves, and carriers moving with the plate, engaged by said drivers, a cam to operate the drivers, and means to couple a plurality of drivers so that the action of the cam on one affects all of the plurality.

11. In a braiding machine, the combination with two members rotating in opposite directions and two sets of revolving yarn supplies, one set revolving with each member, of means to pass the threads from one set of supplies by the other set of supplies, and auxiliary means to pass the same threads over or by the threads from the other set, after they have left their supplies, without interference.

12. In a braiding machine, the combination with two members rotating in opposite directions, one formed or furnished with a rail, made sectional by radial slots in said member, one set of thread supplies mounted to travel on said rail, another set of yarn supplies fixedly mounted on said member to rotate with it, the other member formed with circular ways, oscillating drivers in said ways, and means to oscillate the drivers, carriers engaged by said drivers, carrying the first named set of supplies and mounted on the aforesaid rail, and switches mounted on the drivers to move with them and control entrance to the slits between the carriers and the member that revolves them.

13. In a braiding machine, the combination with a recessed plate, a rail adjacent the plate, carriers slidably mounted on the rail and means to connect the carriers with said plate.

14. In a braiding machine, the combination with a recessed plate, a rail adjacent the plate, carriers slidably mounted on the rail and extending within the recesses of the plate and means to connect the carriers with the plate.

15. In a braiding machine, the combination with a plate

having a recessed edge and carriers within said recesses, of means to constantly connect the carriers with the plate, and means cooperating with said connecting means to permit or prevent passage of the yarn between carriers and plate.

16. In a braiding machine, the combination with a carrier frame A having a sleeve portion 3, a head 4 and a shoulder 48, and a sleeve 45 mounted on the sleeve portion 3 and having a flange 47, of a second carrier frame B, mounted rotatively on the sleeve 3 between the shoulder 48 and the flange 47, having a rail 7 and carriers slidable thereon, and arranged with slits *s* between the carriers and head portion 4, driving means to connect the carrier driving means with the plate 4, switches to control access to the slits *s* and means to operate the switches with the carrier driving means.

17. The combination with a set of revolving yarn supplies and a ring above rotating therewith, to receive the yarn from said supplies, of a second set of yarn supplies revolving in a direction opposite to that of the first and loops to receive the yarns from the second set of supplies, and means to pass the yarns from the two sets of supplies by each other with an interlacing action.

18. The combination with a set of revolving yarn supplies and a ring above rotating therewith to receive the yarns from said supplies, of a second set of yarn supplies revolving in a direction opposite to that of the first set, loops revolving with the second set, having eyes to receive the yarns from the second set, and means to pass the yarns from the two sets of supplies by each other with an interlacing action.

19. The combination with a set of revolving yarn supplies and loops revolving therewith having eyes to receive the yarn from the supplies, of a ring rotating coaxially with, but in a direction opposite to that of the said supplies, and a second set of supplies rotating with the ring, means to drive the yarn supplies, and means to pass the yarns from the second set of supplies to either side of the supplies of the first set for the purpose specified.

20. In a braiding machine, the combination with two sets of yarn supplies, carriers to carry one set of supplies and means to drive the carriers, of means to guide the yarns of the second set of supplies to either side of the supplies of the first set, abutments to control the yarns, and means to pass the yarns of one set of supplies by the yarns of the other set of supplies without interference.

21. In a braiding machine, the combination with a frame and its vertical post 2, of a rotating carrier frame A, having a head portion 4 and a sleeve portion 3 mounted on the post, a flanged sleeve 45 mounted on the sleeve portion 3, a second carrier frame B vertically supported on the flange of the sleeve 45 and rotatable on the sleeve portion 3, and having a rail 7, carriers mounted on the rail, means to drive the carriers, means to control the driving means, and means to oppositely rotate the carrier frames.

22. In a braiding machine, the combination with a set of yarn supplies and a second set of yarn supplies whose yarns move with an interlacing action among the supplies of the first set, of a rotating ring to receive the yarns from the second set of supplies and carry them in their revolution.

23. The combination with a set of revolving yarn supplies and a ring above rotating with them to receive the yarn from said supplies, of a second set of yarn supplies revolving in a direction opposite to that of the first, and means to travel the yarns from the first set of supplies in and out among the supplies of the second set.

851,205. MANEUVERING AND SIMILAR VALVES. CHARLES A. PARSONS, Newcastle-upon-Tyne, and JOHN TURNBULL, Wallsend, England; said Turnbull assignor to said Parsons. Filed June 9, 1905. Serial No. 264,482.

Claim.—1. A valve comprising a casing having a plurality of outlet branches, a cylindrical valve slidable in said casing and acting to close one or more of said outlets while the remainder is open, a fluid supply branch in said casing and communicating with the interior of said cylindrical valve, faces in said casing and abutting faces on said cylindrical valve acting to simultaneously stop the end movement of the valve.

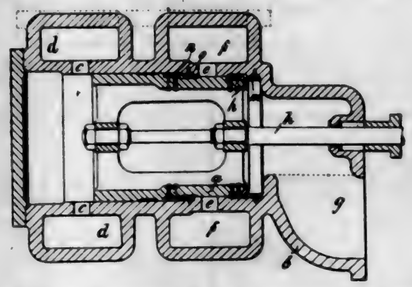

2. A valve comprising a casing having two outlet branches and a supply branch, a cylindrical valve of two diameters slidable in said casing, valve faces, *n* and *k*, fixed to said cylindrical valve, valve seats, *g* and *m*, fixed to said casing, one on each side of an outlet branch, said valve seats and faces coacting to close the intervening outlet branch while the other is being supplied with steam from the supply branch through the cylindrical valve.

851,206. TONGUE-SUPPORT. CHAUNCEY O. POWELL, Hanford, Wash. Filed Oct. 15, 1906. Serial No. 339,130.

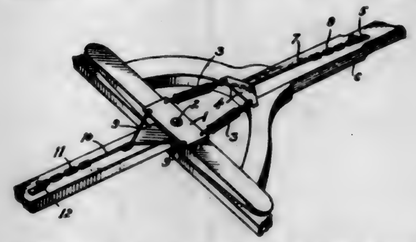

Claim.—1. In a tongue support, a plate having an opening receiving the king bolt of the vehicle, another plate disposed in front of said first plate and having a yielding connection therewith, an approximately V-shaped link connected to said first plate and extending rearwardly thereof, a connection between said link and the reach of the vehicle, and means connected to said last plate and to the tongue of the vehicle.

2. In a tongue support, a plate formed with an opening through which the king bolt passes, an appproximately V-shaped link having its free ends secured to the rear portion of said plate, the closed end of said link being formed into an elongated narrow seat, a connection engaged in the seat of said link and connected to the reach of the vehicle, and a connecting means between said plate and the tongue of the vehicle.

851,207. DRAINER. CELIA SIM, Nebraska City, Nebr. Filed Apr. 8, 1905. Serial No. 254,569.

Claim.—A wash drainer adapted to be placed upon a receptacle and comprising a wash-receiving body portion having an open bottom, a spout depending from the bottom of the body portion, a band secured within the spout, arms supported upon the band and lying radially of the spout and connected at their inner ends, and a supporting plate disposed upon the inner end portions of the arms, said arms and plate having their upper faces convexed, to permit the water to drain from the wash into the receptacle.

851,207.

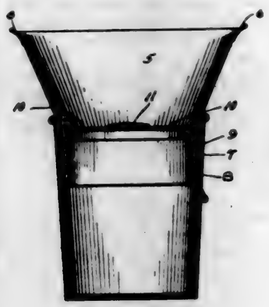

851,208. WHEEL-RIM. OLOF SVANSTRÖM, Stockholm, Sweden. Filed Nov. 1, 1906. Serial No. 341,621.

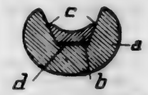

Claim.—1. A wheel-rim comprising a ring having a channel formed in its outer periphery provided with diverging side walls, a tire seated in the channel, and a strip having sides parallel to the sides of the channel terminating below the outer edges of the latter for the purpose specified.

2. A wheel-rim comprising a ring provided with a channel formed in its outer periphery having its bottom straight in cross section and diverging side walls, a metal tire covering said bottom, and a ring having its inner periphery conforming to the tire and its sides parallel to the sides of the channel and terminating below the outer edges of the latter, for the purpose specified.

3. A wheel-rim comprising a ring provided with a channel formed in its outer periphery having its bottom straight in cross section and diverging side walls, a metal tire covering said bottom, having interlocking ends and a ring having a concave outer periphery and an inner periphery conforming to the tire and its sides parallel to the sides of the channel and terminating below the outer edges of the latter, for the purpose specified.

851,209. DOUBLETREE-HITCH. GEORGE J. WRICKERT, La Cygne, Kans. Filed Oct. 2, 1906. Serial No. 337,145.

Claim.—1. A doubletree hitch, comprising a clevis embodying spaced apart upper and lower members of which the latter is arranged for attachment to a tongue or pole, both of said members being provided near their front ends with longitudinal slots, another clevis designed to be received within the first named clevis and embodying upper and lower spaced apart members provided near their front ends with bolt apertures designed to receive a bolt for the purpose of pivotally securing the doubletree thereto, a bolt passed through said apertures and received in the slots of the first named clevis whereby to permit the limited movement of one clevis with respect to the other, and a yielding connection between the two clevises.

2. A doubletree hitch, comprising a clevis embodying upper and lower spaced apart members connected together at their inner ends by a cross bar and provided near their front ends with longitudinal slots, said clevis being designed for attachment to a pole or tongue, another clevis adapted to be received within the first named clevis and embodying spaced apart upper and lower members provided with bolt apertures near their front ends, and a connecting cross bar, a bolt adapted to pass through said apertures and be received in said slots and designed to couple the doubletree to the second named clevis, a hook projecting rearwardly from the cross bar of the latter, a spring arranged for connection to said hook, and means for adjustably connecting said spring to the cross bar of the first named clevis, as and for the purpose set forth.

851,210. NUTCRACKER. MILTON A. WHEATON, San Francisco, Cal. Filed Nov. 26, 1904. Serial No. 234,347.

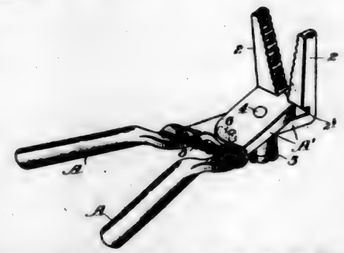

Claim.—1. A nutcracker adapted to be held in the hand of the user, embodying two handles pivotally connected together near one end, each handle having, at a point in proximity to the pivot, a rigid jaw protecting transversely of the length of the handle, said jaws being disposed in opposition to each other and having their proximate faces divergent, whereby they are adapted to receive and crack nuts of different size with a uniform movement of the handles; substantially as described.

2. In a nutcracker two movable handles pivoted to each other, and each of said handles carrying on its inner end an upturned jaw, said jaws being equidistant from the pivot and diverging from each other as they project upwards from the inner ends of the said handles to which they are fixed, and by which they are carried, and said jaws being pivoted together by an elongated pivot which is firmly fixed to the upper one of said jaws and passes down through the lower jaw and a sleeve extension which is firmly fixed thereto and projects downwardly therefrom; substantially as described.

3. In a nutcracker two movable handles pivoted together, each handle having a jaw upturned on its inner end and projecting in the direction of the length of the axis and the adjacent sides of said jaws being inclined so as to diverge from each other as they project upwards from the inner ends of said handles, to which they are attached and by which they are carried to move directly toward and from each other, and each of said handles having in it a double bend by means of which the plane of the movement of said handles is elevated so as to be approximately in line with the points in said jaws at which the nuts are received and cracked.

4. In a nutcracker the combination of two handles pivoted together and having widened meeting-surfaces about the pivot, and upturned diverging jaws at their inner ends; one handle having its jaw undercut, and being slotted through its widened part on the side of the pivot away from the jaw; and the other handle projecting at its inner end into said undercut and provided with a headed pin engaging the handle first mentioned through said slot.

5. A nutcracker comprising two handles pivoted together each of said handles having an upturned jaw on its inner end the adjacent sides of which are inclined and

diverge from each other as they project upwards from said inner ends of said handles, and each of said handles having in it a double bend by means of which the plane in which the grip or long part of the handle moves will intersect the said diverging jaws at points that are approximately in line with the points in said jaws at which the nuts are received and cracked, substantially as herein described.

6. A nutcracker adapted to be held in the hand of the user, embodying two handles pivotally connected together near one end, each handle having, at a point in proximity to the pivot, a rigid jaw extending substantially parallel with the axis of the pivot, said jaws being disposed in opposition to each other and having their proximate faces divergent, whereby they are adapted to receive and crack nuts of different size with a uniform movement of the handles; substantially as described.

7. In a nutcracker, the combination of the two handles having at their inner ends upturned diverging jaws, the lower handle having a depending sleeve bearing, and the upper a pivot pin passing therethrough; both handles having a double bend, to approximately aline the pivot, the point of work, and the point of application of power; whereby also torsion is resisted, and constancy of relation maintained between the jaws.

851,211. BOBBIN. EUGENE ATWOOD, Stonington, Conn., assignor to The Atwood-Morrison Company, Stonington, Conn., a Corporation of New Jersey. Filed Sept. 27, 1906. Serial No. 336,402.

Claim.—A bobbin used for winding and spinning, having driving heads formed integral therewith for engagement with the driving drums of a winding machine and a spinning spindle receiving tube projecting beyond the driving heads to form gudgeons for the bobbin when it is used for winding; one of the heads being provided with a flaring recess for receiving and frictionally engaging the tapered whirl of the spinning spindle.

851,212. INDIA-RUBBER STOPPER FOR BOTTLES. CHARLES J. BAILEY, Newton, Mass. Filed Jan. 10, 1907. Serial No. 351,593.

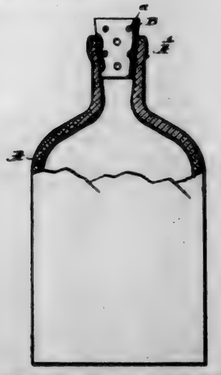

Claim.—An india rubber stopper, conical in shape, having its conical exterior provided with a series of pockets in staggered relation thereto, substantially as described.

851,213. GEARING. MILTON H. BALLARD, Lynn, Mass., assignor to Tripp Fruit Wrapping Machine Co., San Francisco., Cal., a Corporation of Maine. Filed Dec. 26, 1905. Serial No. 293,221.

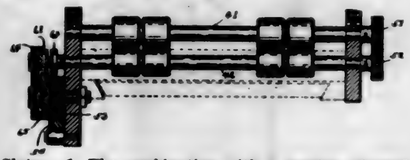

Claim.—1. The combination with a member adapted to be rotated intermittingly and provided with a clutch-member, of a pair of spiral gears in engagement with each other and revoluble on parallel axes, one of which is movable longitudinally on its support and provided with a clutch-member, and the other is restrained from longitudinal movement, means for revolving said restrained gear first in one and then in the other direction to thereby revolve the other gear and also move it longitudinally on its support and move the clutch member which is connected with it and the clutch-member on the member to be rotated into and out of engagement, substantially as described.

2. The combination with a member adapted to be rotated intermittingly and provided with a clutch-member, of a pair of spiral gears in engagement with each other and revoluble on parallel axes, one of which is movable longitudinally on its support and provided with a clutch-member, and the other is restrained from longitudinal movement, a pinion connected with the restrained gear, a longitudinally reciprocating bar engaging it for revolving said restrained gear first in one and then in the other direction, to thereby revolve the gear which it engages and also move said gear longitudinally on its support and move the clutch-member connected with it and the clutch-member on the member to be rotated into and out of engagement, substantially as described.

851,214. WRAPPING-MACHINE. MILTON H. BALLARD, Lynn, Mass., assignor to Tripp Fruit Wrapping Machine Company, San Francisco, Cal., a Corporation of Maine. Filed Apr. 20, 1906. Serial No. 312,740.

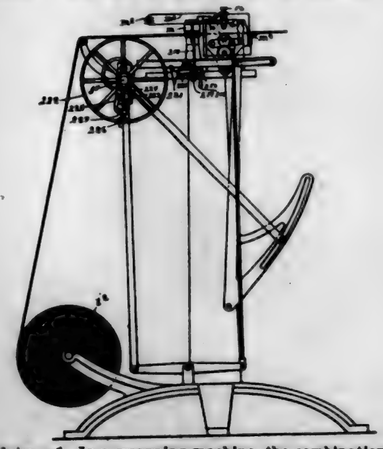

Claim.—1. In a wrapping machine, the combination of a paper-feeding-device, a paper-cutting-device to which the paper is fed by the feeding-device, a stop-motion for the machine, an electro-magnet for operating it, a circuit for said electro-magnet, a circuit operating lever therefor, located between the feeding-device and cutting-device, and adapted to be operated by the paper wrinkling between said devices, substantially as described.

2. In a wrapping machine, the combination of a paper-feeding-device, a paper-cutting-device to which the paper is fed by the feeding-device, a stop-motion for the machine, an electro-magnet for operating it, a circuit for said electro-magnet, a circuit operating-lever therefor which overlies the paper between the feeding-device and cutting-device and is adapted to be engaged and lifted by the paper wrinkling between said devices, substantially as described.

3. In a wrapping machine, the combination of a paper-feeding-device, a paper-cutting-device to which the paper is fed by the feeding-device, a stop-motion for the machine, an electro-magnet for operating it, a circuit for said electro-magnet, an operating-device for said circuit comprising a stationarily supported member and a movable member, the latter being constructed and arranged to overlie the paper between the feeding-device and the cutting-device, and adapted to be engaged and lifted by the paper wrinkling between said devices, substantially as described.

4. In a wrapping machine, the combination of a paper-feeding-device, a paper-cutting-device to which the paper is fed by the feeding-device, a stop-motion for the machine, an electro-magnet for operating it, a circuit for said electro-magnet, an operating-device for said circuit comprising a stationarily supported member, and a pivoted arm bearing a contact which serves as the movable member, said arm occupying a position between the feeding-device and cutting-device and terminating close to the paper which is fed forward by the feeding-device to the cutting-device, to be engaged and lifted by said paper wrinkling between said devices, substantially as described.

5. In a wrapping machine, the combination of a paper-feeding-device, a paper-cutting-device to which the paper is fed by the feeding-device, a stop-motion for the machine, an electro-magnet for operating it, a circuit for said electro-magnet, a circuit-operating-device comprising a stationary member and a movable member, the latter overlying the paper between the feeding-device and the cutting-device and adapted to be engaged and lifted by the paper wrinkling between said devices, a movable frame bearing the stationary member and a locking-device for holding said frame in a position for the two members of the circuit-operating-device to coöperate, substantially as described.

6. In a wrapping machine, the combination of a paper-feeding-device, a paper-cutting-device to which the paper is fed by the feeding-device, a stop-motion for the machine, an electro-magnet for operating it, a circuit for said electromagnet, a circuit-operating-device comprising a stationary member and a movable member, the latter overlying the paper between the feeding-device and the cutting-device, and adapted to be engaged and lifted by the paper wrinkling between said devices, a movable frame bearing the stationary member, and a locking-device, engaging the upper feed-roll, for holding said frame in proper position for the two members of the circuit-operating-device to cooperate, substantially as described.

7. In a wrapping machine, the combination of a stop-motion for the machine, a starting lever for operating said stop motion to start the machine, an electro-magnet for operating said stop motion to stop the machine and to bring one of the cooperating members thereof into frictional engagement with the starting lever, by which it is held and an operating device for the circuit of said electro-magnet which is controlled by the paper, substantially as described.

8. In a wrapping machine, the combination of a stop-motion for the machine, a starting lever for operating said stop motion to start the machine, an electro-magnet for operating said stop motion to stop the machine and to bring one of the cooperating members thereof into position to be engaged by said starting lever and an operating device for the circuit of said electro-magnet which is controlled by the paper, substantially as described.

9. In a wrapping machine, the combination of a stop-motion for the machine having a controlling-device, a starting lever for operating said controlling-device to start the machine, an electro-magnet for operating said controlling-device to stop the machine and to move it into position to be engaged by the starting lever and an operating-device for the circuit of said electro-magnet which is controlled by the paper, substantially as described.

10. In a wrapping machine, the combination of a stop-motion for the machine having a controlling-device, a starting lever for operating said controlling-device to start the machine, an electro-magnet for operating said controlling-device to stop the machine and to move it into position to be engaged by the starting lever, a circuit operating-device for the circuit of said electro-magnet, and an operating-device for said circuit operating-device adapted to be lifted by the paper wrinkling, substantially as described.

11. In a wrapping machine, the combination of a stop-motion for the machine having a controlling-device, a starting lever for operating said controlling-device to start the machine, an electro-magnet for operating said controlling-device to stop the machine and to move it into position to be engaged by the starting lever, a circuit operating-device for the circuit of said electro-magnet and an operating device for said circuit operating-device which rests upon the web of paper and is adapted to fall by gravity when the web of paper breaks, substantially as described.

12. In a wrapping machine, the combination of a stop-motion for the machine having a controlling-device, a starting lever for operating said controlling-device to start the machine, an electro-magnet for operating said controlling-device to stop the machine and to move it into position to be engaged by the starting lever, a circuit operating-device for the circuit of said electro-magnet, an operating-device for said circuit operating-device adapted to be lifted by the paper wrinkling and another operating-device for said circuit operating device which rests upon the web of paper and is adapted to fall by gravity when the web of paper breaks, substantially as described.

13. In a wrapping machine, the combination of a paper-carrying-roll, a paper-feeding-device, a paper-cutting-device, a stop-motion for the machine, an electro-magnet for operating said stop-motion to stop the machine, a circuit-operating-device for the circuit to said electro-magnet, which overlies the paper between the feeding-device and cutting-device and is adapted to be engaged and lifted by the paper wrinkling between said devices, and an operating-lever for circuit-operating device, which rests by gravity upon the web of paper between the paper-carrying-roll and the feeding-device and is adapted to fall by gravity when the web of paper breaks to thereby operate said circuit operating-device, substantially as described.

14. In a wrapping machine, the combination of a paper-carrying-roll, a paper-feeding-device, a paper-cutting-device, a stop-motion for the machine, a starting-lever for operating said stop-motion to start the machine, an electro-magnet for operating said stop-motion to stop the machine, a circuit-operating-device for the circuit of said electro-magnet, which overlies the paper between the feeding-device and cutting-device and is adapted to be engaged and lifted by the paper wrinkling between said device, and an operating-lever for lifting the aforesaid circuit-operating device which rests by gravity upon the web of paper between the paper-carrying roll and the feeding-device and is adapted to fall by gravity when the web of paper breaks to thereby operate said circuit operating-device, substantially as described.

851,215. STREET OR STATION INDICATOR. HARRY E. BEACH and CHARLES E. GIERDING, Newark, N. J.; said Gierding assignor to said Beach; Benjamin B. Beach administrator of said Harry E. Beach, deceased. Filed July 29, 1903. Renewed Mar. 2, 1906. Serial No. 303,796.

Claim.—1. In a street or station indicator, a pair of main shafts, a feeding cylinder on one of said shafts, gear wheels on said shafts and in operative engagement with each other, an indicating tape arranged over the said feeding cylinder, and an actuating mechanism connected with each shaft acting separately and independently from each other to rotate the feeding cylinder in opposite directions, and a momentum stop-mechanism adapted to be ac-

tuated from each main shaft, substantially as and for the purposes set forth.

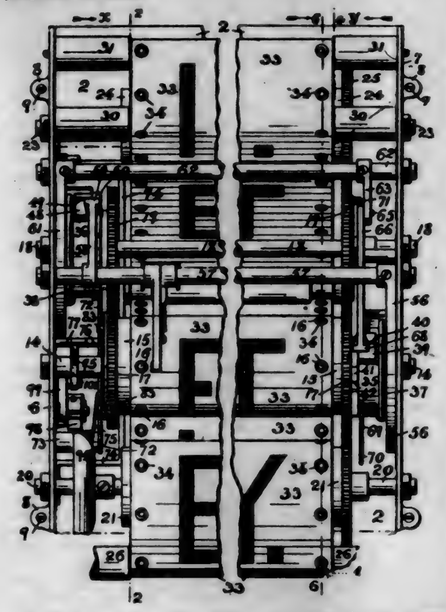

2. In a street or station indicator, a pair of main shafts, a feeding cylinder on one of said shafts, gear wheels on said shafts and in operative engagement with each other, sprockets on said cylinder, an indicating tape arranged over the said feeding cylinder, eyelets in said tape registering with the sprockets of said cylinder, and an actuating mechanism connected with each shaft acting separately and independently from each other to rotate the feeding cylinder in opposite directions, and a momentum stop-mechanism adapted to be actuated from each main shaft, substantially as and for the purposes set forth.

3. In a street or station indicator, the combination, of a pair of main shafts 14 and 18 a feeding cylinder on said shaft 14, an indicating tape arranged over the said feeding cylinder, gear wheels on said shafts in operative engagement with each other, an actuating device on the shaft 18, stops on one of the gears on the other shaft, and a momentum stop-mechanism adapted to be actuated from said actuating mechanism on the shaft 18 for engagement with one of the stops on said gear, substantially as and for the purposes set forth.

4. In a street or station indicator, the combination of a pair of main shafts 14 and 18, a feeding cylinder on said shaft 14, an indicating tape arranged over said feeding cylinder, gear wheels on said shafts in operative engagement with each other, an actuating device on the shaft 18, stops on one of the gears on the other shaft, and a momentum stop-mechanism adapted to be actuated from said actuating mechanism on the shaft 18 for engagement with one of the stops on said gear, consisting, of a pivoted and spring-controlled arm 72, a projection 78 on said arm for engagement with one of the stops on said gear, and an end-portion 79 connected with said arm 72, an extension 81 connected with the actuating device on the shaft carrying the feed cylinder, and a pin 82 connected with said extension 81 normally in engagement with the edge of the end-portion 79 of said arm 72, substantially as and for the purposes set forth.

5. In a street or station indicator, the combination, with the tape-feeding mechanism, and an actuating device, comprising a spring-cylinder having an extension 81 and a pin 82 on said extension, of a momentum stop-mechanism actuated from said extension and its pin, substantially as and for the purposes set forth.

6. In a street or station indicator, the combination, with the tape-feeding mechanism, and an actuating device, comprising a spring-cylinder having an extension 81 and a pin 82 on said extension, of a momentum stop-mechanism actuated from said extension and its pin, consisting, of a pivoted and spring-controlled arm 72, a projection 78 on said arm, and an end-portion 79 connected with said arm 72 and with the edge of which the pin on said extension is in sliding engagement, substantially as and for the purposes set forth.

7. In a street or station indicator, the combination, of a pair of main shafts 14 and 18, a feeding cylinder on said shaft 14, an indicating tape arranged over the said feeding cylinder, gear wheels on said shafts in operative engagement with each other, an actuating device on said shaft 14, stops on one of the gears on said shaft 18, and a momentum stop-mechanism connected with said actuating device on said shaft 14 for engagement with one of the stops on said gear, substantially as and for the purposes set forth.

8. In a street or station indicator, the combination, of a pair of main shafts 14 and 18, a feeding cylinder on said shaft 14, an indicating tape arranged over the said feeding cylinder, gear wheels on said shafts in operative engagement with each other, an actuating device on said shaft 14, stops on one of the gears on said shaft 18, and a momentum stop-mechanism connected with said actuating device on said shaft 14, consisting, of an extension 69 provided with a marginal edge 70 for engagement with one of said stops on said gear, substantially as and for the purposes set forth.

9. In a street or station indicator, the combination, with the tape-feeding mechanism, of an actuating device comprising a spring-cylinder having an extension 69 provided with a marginal edge 70, and means with which said edge 70 is brought in stopping engagement, substantially as and for the purposes set forth.

10. In a street or station indicator, the combination, with the tape-feeding mechanism, of an actuating device comprising a spring-cylinder having an extension 69 provided with a marginal edge 70, and means with which said edge 70 is brought in stopping engagement, consisting of a shaft and a gear on said shaft, and one or more laterally extending stops on said gear, substantially as and for the purposes set forth.

11. The combination, in a street or station indicator, with the tape-feeding mechanism, and an actuating device comprising a spring-cylinder having serrations, of a pivoted holding device normally in slidable non-operative engagement with said serrations, and means for bringing said holding device in holding engagement with said serrations when the actuating device is improperly actuated, substantially as and for the purposes set forth.

12. The combination, in a street or station indicator, with the tape-feeding mechanism, and an actuating device comprising a spring-cylinder having serrations, of a pivoted holding device normally in slidable non-operative engagement with said serrations, and means for bringing said holding device in holding engagement with said serrations when the actuating device is improperly actuated, consisting, of a spring fixed at one end, and a link-connection between the free end-portion of said spring and the pivoted holding device, substantially as and for the purposes set forth.

13. In a street or station indicator, the combination, with the tape-feeding mechanism, comprising, a shaft 14, and a gong, of a trip-device 95 on said shaft, and a striking-mechanism actuated from said trip-device, comprising, a pivoted arm 96 bearing a striker, and a trip 99 having a pair of extensions 100 and 101, said extension 101 being normally in contact with a portion of said arm 96, and said extension 100 being adapted to be engaged by said trip device, substantially as and for the purposes set forth.

14. In a street or station indicator, the combination, with the tape-feeding mechanism, comprising, a shaft 14, and a gong, of a trip-device 95 on said shaft, and a striking-mechanism actuated from said trip-device, comprising, a pivoted arm 96 bearing a striker, and a trip 99 having a pair of extensions 100 and 101, said extension 101 being normally in contact with a portion of said arm 96, and said extension 100 being adapted to be engaged by said trip device, and a pivoted arm 103 having a member 105 and a projection 106 with which the arm 96 is in engagement, and a shoulder 104 on said arm 103 arranged for engagement with a portion of said trip 99, substantially as and for the purposes set forth.

15. In a street or station indicator, a pair of main shafts, a feeding cylinder on one of said shafts, an indicating tape arranged above the said feeding cylinder, an actuating mechanism on the one shaft for rotating both shafts in opposite directions, an actuating mechanism on the other shaft for rotating said shafts in the reverse directions, intermediately placed mechanism for rendering the one actuating mechanism inoperative while the other actuating mechanism is in operative use, and vice versa, and a momentum stop-mechanism connected with and actuated from each actuating mechanism, substantially as and for the purposes set forth.

16. In a street or station indicator, a pair of main shafts, a feeding cylinder on one of said shafts, intermeshing gears on said shafts, an indicating tape arranged above the said feeding cylinder, an actuating cylinder loosely arranged upon each shaft, a holding means connected with each actuating cylinder for engagement with a gear on each shaft, and a momentum stop-mechanism connected with and actuated from each actuating cylinder, substantially as and for the purposes set forth.

17. In a street or station indicator, a pair of main shafts, a feeding cylinder on one of said shafts, intermeshing gears also on said shafts, an indicating tape arranged above said feeding cylinder, an actuating cylinder loosely arranged upon each shaft, a holding means connected with each actuating cylinder in engagement with a gear on each shaft, intermediately placed mechanism for forcing the holding means on the one actuating cylinder out of its holding engagement with the gear on the one shaft, and a momentum stop-mechanism connected with and actuated from each actuating cylinder, substantially as and for the purposes set forth.

18. In the herein described street or station indicator, the combination, with a momentum-stop-mechanism, of a pair of main shafts 14 and 18, a single feeding cylinder on but said shaft 14, said cylinder being provided with feeding sprockets, an indicating tape arranged above said feeding cylinder, eyelets connected with said indicating tape, said eyelets registering with the sprockets on said feeding cylinder, and gears connected with the said shafts 14 and 18 for rotating said feeding cylinder in either direction, geared-take-up and delivery spring-rollers in mesh with the gears of said main shafts, substantially as and for the purposes set forth.

19. In the herein described street or station indicator, the combination, with a momentum-stop-mechanism, of a pair of geared main shafts 14 and 18, a feeding cylinder on said shaft 14, said cylinder being provided with feeding sprockets, an indicating tape arranged above said feeding cylinder, eyelets connected with said indicating tape, said eyelets registering with the sprockets on said feeding cylinder, a system of guide-rolls 26, 27, 28, 29, 30, 31 and 32, over which the tape is arranged, and a pair of spring-rollers 21 and 24 with which the ends of said tape are connected and a gear connected with each spring-roller in mesh with the gears of said main shafts, substantially as and for the purposes set forth.

20. In the herein described street or station indicator, the combination, with a momentum-stop-mechanism, of a pair of main shafts 14 and 18, a feeding cylinder on said shaft 14, said cylinder being provided with feeding sprockets, an indicating tape arranged above said feeding cylinder, eyelets connected with said tape, said eyelets registering with the sprockets on said feeding cylinder, a system of guide rolls over which the tape is arranged, a pair of spring-rollers with which the respective ends of said tape are connected, a gear connected with each of said shafts 14 and 18, and gears connected with the said spring-rollers geared with the gears of said main shafts, respectively, substantially as and for the purposes set forth.

21. In a street or station indicator, a pair of main shafts, a feeding cylinder on one of said shafts, gear-wheels on said shafts in operative engagement with each other, an indicating tape arranged over the said feeding cylinder, an actuating mechanism connected with each shaft acting separately and independently from each other to rotate the feeding cylinder in opposite directions, a momentum-stop-mechanism adapted to be actuated from each shaft, spring-delivery and take-up rolls, and a gear connected with each roll, the respective gears of said rolls being in gear with a gear on said main shafts, substantially as and for the purposes set forth.

22. In a street or station indicator, a pair of main shafts, a feeding cylinder on one of said shafts, gear-wheels on said shafts in operative engagement with each other, sprockets on said cylinder, an indicating tape arranged over the said feeding cylinder, eyelets in said tape registering with the sprockets of said cylinder, an actuating mechanism connected with each shaft acting separately and independently from each other to rotate the feeding cylinder in opposite directions, a momentum-stop-mechanism adapted to be actuated from each shaft, spring-delivery and take-up rolls, and a gear connected with each roll, the respective gears of said rolls being in gear with a gear on said main shafts, substantially as and for the purposes set forth.

851,216. STREET OR STATION INDICATOR. BENJAMIN B. BEACH, Newark, N. J., administrator of Harry E. Beach, deceased. Filed Mar. 2, 1906. Serial No. 303,780.

Claim.—1. In a street or station indicator, the combination with a pair of main shafts, and a tape-feeding cylinder, of intermeshing gears on said shafts, a spring-controlled actuating cylinder loosely arranged on each shaft, laterally extending stops on each actuating cylinder, an actuating lever on each shaft movably arranged between each pair of stops on each actuating cylinder, and a holding means connected with each actuating cylinder in engagement with a gear on one of the shafts, substantially as and for the purposes set forth.

2. In a street or station indicator, the combination, with a pair of main shafts, and a tape-feeding cylinder, of inter-

meshing gears on said shafts, an actuating cylinder on each shaft, a pair of stops on each actuating cylinder, an actuating lever on each shaft movably arranged between each pair of stops on each actuating cylinder, a pair of oscillating spindles, a segmental arm on each spindle, one of said arms being in engagement with one of the actuating levers and the other of said arms with the other of said actuating levers, and means connected with said oscillating spindles for rendering the said actuating cylinders inactive, substantially as and for the purposes set forth.

3. In a street or station indicator, the combination, with a pair of main shafts, and a tape-feeding cylinder, of intermeshing gears on said shafts, an actuating cylinder on each shaft, a pair of stops on each actuating cylinder, an actuating lever on each shaft movably arranged between each pair of stops on each actuating cylinder, a pair of oscillating spindles, a segmental arm on each spindle, one of said arms being in engagement with one of the actuating levers and the other of said arms with the other of said actuating levers, means connected with said oscillating spindles for rendering the said actuating cylinders inactive, and a holding means on each actuating cylinder in engagement with a gear on one of the shafts, substantially as and for the purposes set forth.

4. In a street or station indicator, the combination, with a pair of main shafts, a feeding cylinder on each shaft, intermeshing gears also on said shafts, an indicating tape between said cylinders, an actuating cylinder loosely arranged on each shaft, laterally extending stops on each actuating cylinder, an actuating lever on each shaft movably arranged between each pair of stops on each actuating cylinder, and a holding means connected with each actuating cylinder in engagement with a gear on one of the shafts, substantially as and for the purposes set forth.

5. In a street or station indicator, a pair of main shafts, a feeding cylinder on each shaft, intermeshing gears also on said shafts, an indicating tape between said cylinders, an actuating cylinder loosely arranged on each shaft, laterally extending stops on each actuating cylinder, an actuating lever on each shaft movably arranged between each pair of stops on each actuating cylinder, a holding means connected with each actuating cylinder in engagement with a gear on each shaft, and an intermediately placed mechanism for forcing the holding means on the one actuating cylinder out of its holding engagement with the gear on the one shaft, while the holding means on the other actuating cylinder is in its holding engagement with the gear on the other shaft, substantially as and for the purposes set forth.

6. In a street or station indicator, a pair of main shafts, a feeding cylinder on each shaft, intermeshing gears also on said shafts, an indicating tape between said cylinders, an actuating cylinder on each shaft, laterally extending stops on each actuating cylinder, an actuating lever on each shaft movably arranged between each pair of stops on each actuating cylinder, means connected with each actuating cylinder for moving it in one direction, a spring connected with each actuating cylinder for returning the actuated cylinder to its normal initial position, and a holding means on each actuating cylinder in engagement with a gear on one of the shafts, substantially as and for the purposes set forth.

7. In a street or station indicator, a pair of main shafts, a feeding cylinder on each shaft, intermeshing gears also on said shafts, an indicating tape between said cylinders, an actuating cylinder on each shaft, an extension on each actuating cylinder provided with a pull-cord, a pair of stops on each actuating cylinder, an actuating lever on each shaft movably arranged between each pair of stops of each actuating cylinder, and a spring connected with each actuating cylinder for returning the actuated cylinder to its normal initial position, substantially as and for the purposes set forth.

8. In a street or station indicator, a pair of main shafts, a feeding cylinder on each shaft, intermeshing gears also on said shafts, an indicating tape between said cylinders, an actuating cylinder on each shaft, an extension on each actuating cylinder, a pair of stops on each actuating cylinder, an actuating lever on each shaft movably arranged between each pair of stops on each actuating cylinder, a spring connected with each actuating cylinder for returning the actuated cylinder to its normal initial position, and a holding means on each actuating cylinder in engagement with a gear on one of the shafts, substantially as and for the purposes set forth.

9. In a street or station indicator, a pair of main shafts, a feeding cylinder on each shaft, intermeshing gears also on said shafts, an indicating tape between said cylinders, an actuating cylinder on each shaft, an extension on each actuating cylinder, a pair of stops on each actuating cylinder, an actuating lever on each shaft movably arranged between each pair of stops on each actuating cylinder, a spring connected with each actuating cylinder for returning the actuated cylinder to its normal initial position, a holding means on each actuating cylinder in engagement with a gear on one of the shafts, and an intermediately placed mechanism for forcing the holding means on the one actuating cylinder out of its holding engagement with the gear on the one shaft, while the holding means on the other actuating cylinder is in its holding engagement with the gear on the other shaft, substantially as and for the purposes set forth.

10. In a street or station indicator, a casing, comprising side frames, a pair of main shafts in said casing, a feeding cylinder on each shaft, intermeshing gears also on said shafts, an indicating tape between said cylinders, a pair of stops on each side frame, an actuating cylinder on each shaft, an extension on each actuating cylinder, a pair of stops on each actuating cylinder, an actuating lever on each shaft movably arranged between each pair of stops on each actuating cylinder, and a spring connected with each actuating cylinder for returning the actuated cylinder to its normal initial position, substantially as and for the purposes set forth.

11. In a street or station indicator, a casing, comprising side frames, a pair of main shafts in said casing, a feeding cylinder on each shaft, intermeshing gears also on said shafts, an indicating tape between said cylinders, a pair of stops on each side frame, an actuating cylinder on each shaft, an extension on each actuating cylinder, a pair of stops on each actuating cylinder, an actuating lever on each shaft movably arranged between each pair of stops on each actuating cylinder, a spring connected with each actuating cylinder for returning the actuated cylinder to its normal initial position, and a holding means on each actuating cylinder in engagement with a gear on one of the shafts, substantially as and for the purposes set forth.

12. In a street or station indicator, a casing, comprising side frames, a pair of main shafts in said casing, a feeding cylinder on each shaft, intermeshing gears also on said shafts, an indicating tape between said cylinders, a pair of stops on each side frame, an actuating cylinder on each shaft, an extension on each actuating cylinder, a pair of stops on each actuating cylinder, an actuating lever on each shaft movably arranged between each pair of stops on each actuating cylinder, a spring connected with each actuating cylinder for returning the actuated cylinder to its normal initial position, a holding means on each actuating cylinder in engagement with a gear on one of the shafts, and an intermediately placed mechanism for forcing the holding means on the one actuating cylinder out of its holding engagement with the gear on the one shaft, while the holding means on the other actuating cylinder is in its holding engagement with the gear on the other shaft, substantially as and for the purposes set forth.

13. In a street or station indicator, a pair of main shafts, a feeding cylinder on each shaft, intermeshing gears also on said shafts, an actuating cylinder on each shaft, a pair of stops on each actuating cylinder, an actuating lever on each shaft movably arranged between each pair of stops on each actuating cylinder, a pair of oscillating spindles 58 and 71, a segmental arm on each spindle, one of said arms being in engagement with one of the actuating levers and the other of said arms with the other of said actuating levers, and means connected with said spindles 58 and 71 for rendering the said actuating cylinders inactive, substantially as and for the purposes set forth.

14. In a street or station indicator, a pair of main shafts, a feeding cylinder on each shaft, intermeshing gears also on said shafts, an actuating cylinder on each shaft, a pair of stops on each actuating cylinder, an actuating lever on each shaft movably arranged between each pair of stops on each actuating cylinder, a pair of oscillating spindles 58 and 71, a segmental arm on each spindle, one of said arms being in engagement with one of the actuating levers and the other of said arms with the other of said actuating levers, means connected with said spindles 58 and 71 for rendering the said actuating cylinders inactive, and a holding means on each actuating cylinder in engagement with a gear on one of the shafts, substantially as and for the purposes set forth.

15. In a street or station indicator, a pair of main shafts, a feeding cylinder on each shaft, intermeshing gears also on said shafts, an actuating cylinder on each shaft, a pair of stops on each actuating cylinder, an actuating lever on each shaft movably arranged between each pair of stops on each actuating cylinder, a pair of oscillating spindles 58 and 71, a segmental arm on each spindle, one of said arms being in engagement with one of the actuating levers and the other of said arms with the other of said actuating levers, means connected with said spindles 58 and 71 for rendering the said actuating cylinders inactive, a holding means on each actuating cylinder in engagement with a gear on one of the shafts, and an intermediately placed mechanism for forcing the holding means on the one actuating cylinder out of its holding engagement with the gear on the one shaft, while the holding means on the other actuating cylinder is in its holding engagement with the gear on the other shaft, substantially as and for the purposes set forth.

16. In a street or station indicator, a pair of main shafts, a feeding cylinder on each shaft, intermeshing gears also on said shafts, an indicating tape between said cylinders, a hollow actuating cylinder on each shaft, an extension on each hollow cylinder provided with a cord-receiving duct, a pair of stops on each hollow cylinder, an actuating lever on each shaft movably arranged between each pair of stops of each hollow cylinder, a spring in each hollow cylinder for returning the actuated cylinder to its normal initial position, a pair of oscillating spindles 58 and 71, a segmental arm on each spindle, one of said arms being in engagement with one of the actuating levers and the other of said arms with the other of said actuating levers, and means connected with said spindles 58 and 71 for rendering said hollow cylinders inactive, substantially as and for the purposes set forth.

17. In a street or station indicator, a pair of main shafts, a feeding cylinder on each shaft, intermeshing gears also on said shafts, an indicating tape between said cylinders, a hollow actuating cylinder provided with a cord-receiving duct, a pair of stops on each hollow cylinder, an actuating lever on each shaft movably arranged between each pair of stops of each hollow cylinder, a spring in each hollow cylinder for returning the actuated cylinder to its normal initial position, a pair of oscillating spindles 58 and 71, a segmental arm on each spindle, one of said arms being in engagement with one of the actuating levers and the other of said arms with the other of said actuating levers, means connected with said spindles 58 and 71 for rendering the hollow cylinders inactive, and a holding means on each hollow cylinder in engagement with a gear on one of the shafts, substantially as and for the purposes set forth.

18. In a street or station indicator, a pair of main shafts, a feeding cylinder on each shaft, intermeshing gears also on said shafts, an indicating tape between said cylinders, a hollow actuating cylinder on each shaft, an extension on each hollow cylinder provided with a cord-receiving duct, a pair of stops on each hollow cylinder, an actuating lever on each shaft movably arranged between each pair of stops of each hollow cylinder, a spring in each hollow cylinder for returning the actuated cylinder to its normal initial position, a pair of oscillating spindles 58 and 71, a segmental arm on each spindle, one of said arms being in engagement with one of the actuating levers and the other of said arms with the other of said actuating levers, means connected with said spindles 58 and 71 for rendering said hollow cylinders inactive, a holding means on each hollow cylinder in engagement with a gear on one of the shafts, and an intermediately placed mechanism for forcing the holding means on the one actuating cylinder out of its holding engagement with the gear on the one shaft, while the holding means on the other hollow actuating cylinder is in its holding engagement with the gear on the other shaft, substantially as and for the purposes set forth.

851,217. LATHE-TURRET. CHARLES E. BENSON, Buffalo, N. Y., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Filed July 16, 1906. Serial No. 326,390.

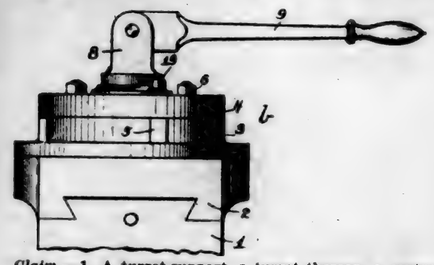

Claim.—1. A turret-support, a turret thereon, a central bolt uniting the turret and support, a nut on the bolt, a lever horizontally pivoted to the nut, and means for supporting the lever in idle vertical position, combined substantially as set forth.

2. A turret-support, a turret thereon, a central bolt uniting the turret and support, a nut on the bolt, a lever horizontally pivoted to the nut, and a spring plunger cooperating with the lever and nut to hold the lever in idle vertical position, combined substantially as set forth.

3. A turret support provided with notches on its upper surface, a turret mounted on said support and provided with sockets for the reception of cutting tools to project outwardly from the turret, a pivotal union between the turret and support to permit the turret to be adjusted angularly, a screw clamping device to bind the turret to the support after adjustment, and a spring pawl pivoted in the base of the turret and co-operating with the notches in the support and adapted to automatically engage one of the notches and resist the angular thrusts of the tool when cutting and to resist angular thrusts of the clamping device when being tightened, combined substantially as set forth.

851,218. CIGAR-LIGHTER. CHARLES E. BESSEL, Jersey City, N. J. Filed Mar. 16, 1906. Serial No. 306,348.

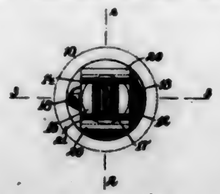

Claim.—1. A cigar lighter comprising a supporting plate and a wire of high electrical resistance arranged in the shape of a coil laid in grooves slightly below the surface of the supporting plate.

2. A cigar lighter comprising a supporting plate and a wire arranged in a coil and secured in the supporting plate slightly below the surface.

3. A cigar lighter comprising a supporting plate, vertical plates under the supporting plate forming a chamber a wire of high electrical resistance coiled and arranged slightly below the surface of the supporting plate and means within the chamber aforesaid for connecting the ends of the wire to an electric circuit.

4. A cigar lighter comprising a supporting plate, a wire of high electrical resistance arranged in a coiled shape on the supporting plate and means for holding said coiled wire flat on the plate.

5. A cigar lighter comprising a supporting plate, a wire of high electrical resistance coiled and then laid in grooves in the face of the supporting plate and means for holding said wire flat on the supporting plate.

6. A cigar lighter comprising a hollow structure made of heat resisting material, this material also being a nonconductor of electricity, a supporting plate secured on the top of the structure, a wire of high electrical resistance arranged in a coiled shape in grooves on the surface of the supporting plate and means within the structure for connecting the ends of the wire to an electric circuit.

7. A cigar lighter comprising a hollow structure made of heat resisting material, this material also being a nonconductor of electricity, a supporting plate secured on the top of the structure, a wire of high electrical resistance arranged in a coiled shape in grooves on the surface of the supporting plate and means to engage the wire coils to hold the wire flat on the supporting plate.

851,219. GARTER-BAND. CASPER BLOOMBERG, New York, N. Y. Filed Mar. 15, 1907. Serial No. 362,503.

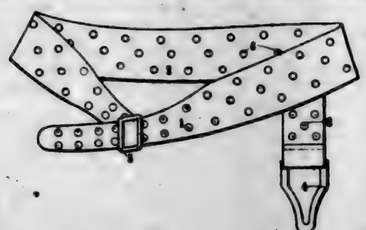

Claim.—1. A garter band composed of an outer facing of leather and an inner facing of moisture proof material secured thereto, the composite band being perforated for the purposes set forth.

2. A ventilated garter comprising a strip of leather adapted to encircle the limb provided with perforations for the purpose set forth, in combination with means for engaging the hose and means for securing the ends of the band together.

851,220. VALVE. JAMES BOWERS, Caldwell, N. J. Filed Apr. 28, 1906. Serial No. 314,185.

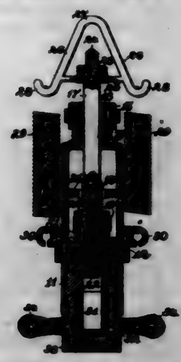

Claim.—1. A valve comprising a casing formed of two members, a partition in the upper member, the partition having a central perforation, a valve stem reciprocating in the members and having a valve between the lower member and said partition in the upper member, a saddle on the top of the stem having a central loop for operation, and hooks on opposed sides, lugs on opposed sides of the upper member of the casing, and springs stretched between the hooks and the lugs, the upper member of the casing having an inlet opening above the partition, and an outlet opening between the partition and the lower member.

2. A valve comprising a valve casing consisting of two members, a partition in the upper member, the lower member having a longitudinal inlet opening, and the upper member having an inlet opening above the partition, and an outlet opening below the partition, a valve stem reciprocating in the members and being separable between the partition and the lower member, a valve on the separable portion of the stem, a saddle on the top of the valve stem having a loop on the top for operation and having hooks on opposed sides, and springs on the outside of the casing attached to the saddle and the casing.

3. In a valve of the kind described, a valve stem having a valve separably attached to its lower portion, a washer arranged on either side of the valve, wings extending below the valve, and a saddle arranged on the top of the valve having means for attachment to a valve casing, and a loop in the top of the saddle for operation.

4. In a valve of the kind described, a saddle having a horizontal portion attached to the stem, inclined members having a loop at the top and terminating below the horizontal portion in hooks.

851,221. SWEETENED FOOD COMPOUND AND METHOD OF PREPARING SAME. EDWIN D. CHAPLIN, Boston, Mass., assignor, by mesne assignments, to Crystal Sweet Company, Boston, Mass., a Corporation of Massachusetts. Filed June 28, 1905. Serial No. 267,342.

Claim.—1. A sweetening compound comprising sugar, the particles of which are coated with an adhesive carrier of a substance other than that to be coated and impregnated with a sweetening ingredient of relatively great sweetening capacity.

2. A sweetening compound comprising sugar, the particles of which are coated with a fatty carrier impregnated with a sweetening ingredient of relatively great sweetening capacity.

3. A food product comprising a comminuted body material, the individual particles of which are coated with a mixture of saccharin and a permanent carrier of a substance differing from that to be coated.

4. A sweetening compound comprising a body of comminuted sugar, the individual particles of which are coated with a mixture of saccharin and a permanent carrier of a substance differing from that to be coated.

5. A sweetening compound comprising a body or bulk of comminuted sugar, with the particles of which there is individually associated uniformly throughout the sugar bulk saccharin and a permanent carrier of a substance differing from that to which it is applied, providing thereby a uniform and certain distribution of the saccharin throughout the sugar body.

6. A sweetening compound comprising a body of comminuted sugar, with the individual particles of which is associated a permanent carrier of a substance differing from that to which it is applied and saccharin, said carrying substance being uniformly distributed to the sugar particles throughout the bulk thereof to increase uniformly the sweetening properties thereof, while leaving the individual particles of sweetened sugar substantially free from adherence to each other.

7. The method of preparing a sweetened compound which consists in mixing saccharin with a permanent carrier of a substance differing from that to which it is to be applied and thereafter mixing the resultant compound with sugar and causing the same to adhere to the individual sugar particles.

8. The method of preparing a sweetened food which consists in uniformly and mechanically mixing saccharin and a permanent carrier of a substance differing from that to which it is to be applied with comminuted sugar.

9. A sweetening compound comprising sugar, the particles of which are coated with an adhesive carrier of a substance other than that to be coated and impregnated with saccharin.

10. A sweetening compound comprising sugar the particles of which are coated with a fatty carrier impregnated with saccharin.

851,222. INSULATOR-CLAMP. WALTER G. CLARK, Seattle, Wash., assignor to The Clark Electric and Manufacturing Company, a Corporation of New York. Filed Sept. 2, 1905. Serial No. 276,886.

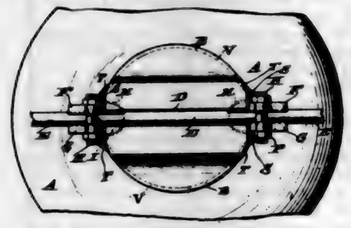

Claim.—1. The combination with an insulator and conducting wire, of detachable clamps for said wire adapted to hold the wire in position, said clamps comprising cooperating grooved members provided with bearing portions adapted to co-operate with sockets on the outside of the insulator.

2. The combination with an insulator, of detachable insulator clamps each comprising a plurality of grooved members adapted to be clamped to the wire and having bearing portions movably supported in sockets on the outside of the insulator.

3. The combination with an insulator, of insulator clamps each comprising a plurality of grooved members adapted to be clamped to the wire conductor and having bearing portions movably supported in sockets on the outside of the insulator and arranged for the attachment of holding bands to surround at least a portion of the insulator, whereby the clamps may be connected together.

4. The combination with a grooved insulator and conductor, of detachable means movably secured to the insulator for clamping the conductor, said means consisting of two co-operating clamping members encircling the insulator, and means for securing said members to each other and to the conductor.

5. The combination with a grooved insulator and conductor, of detachable means movably secured to the insulator for clamping the conductor, said means consisting of bands at each side of the insulator provided with co-operating clamps at each end adapted to embrace the conductor, and means for securing said clamps to each other.

6. The combination with a conducting wire and an insulator provided with a groove, sockets at each end of said groove, and clamps secured to said wire and adapted to engage said sockets.

7. The combination with a conducting wire and an insulator provided with a groove, sockets at each end of said groove, clamps secured to said wire and adapted to engage said sockets, and bands secured to said clamps, whereby the clamps are prevented from tipping sideways under strains.

8. The combination with a conducting wire and an insulator provided with a transverse groove, hollowed sockets at each end of said groove, and clamps secured to said wire and adapted to engage said hollowed sockets.

9. The combination with a conducting wire and an insulator provided with a transverse groove, hollowed sockets at each end of said groove, clamps secured to said wire and adapted to engage said hollowed sockets, and clamps provided with bearing portions secured to said wire and adapted to co-operate with said sockets for securing the wire to the insulator.

851,223. AUTOMATIC WEIGHING MECHANISM. ALLEN S. CROCKER, Rochester, N. Y., assignor to Laurence Elkus, Indianapolis, Ind. Filed July 13, 1906. Serial No. 326,044.

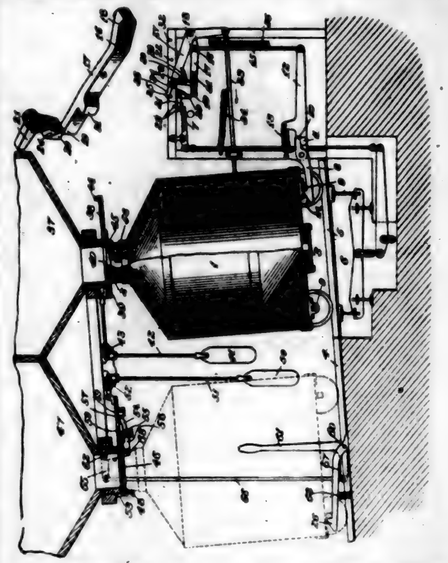

Claim.—1. The combination of sand bins, an inclined trackway, a movable car mounted upon said inclined trackway, a weighing platform upon which a portion of said trackway rests means for discharging a predetermined amount of sand to said car from each of said bins, means for automatically holding said car until the requisite amount of sand has been emptied into said car from each of said bins, and means for automatically releasing said car from the throat of one of said bins, substantially as described.

2. The combination of a sand bin or bins, an inclined trackway, movable car mounted upon said inclined trackway, a weighing platform upon which a portion of said trackway rests, a latch adapted and constructed to restrain said car from moving until released by an automatic trip and an automatic trip adapted and constructed to release said car, substantially as described.

3. The combination of a sand bin or bins, a car, a trackway upon which said car may be mounted, a weighing platform upon which a portion of said track rests, a latch for restraining said car from moving until released by an automatic trip, an automatic trip adapted and constructed to release said car, automatic closing gates on said bins, substantially as described.

4. The combination of sand bins, a car, a trackway upon which said car may be mounted, a weighing platform upon which a portion of said track rests, a latch adapted and constructed for restraining said car from moving until released by an automatic trip, an automatic trip adapted and constructed to release said car, automatically closing gates on said bins, a lever adapted and constructed to release said car from one sand bin and means for simultaneously closing the gate of said bin, substantially as described.

851,224. WINDOW-HINGE. ROBERT S. DANA, Hampton Falls, N. H., assignor of one-half to Edwin L. Sprague, Newton, Mass. Filed July 10, 1906. Serial No. 325,475.

Claim.—1. The combination with a window frame and sash, of engageable means carried by the frame and sash for supporting and steadying the sash at spaced points during a swinging movement of the sash, the means at one

of the points being disengageable regardless of the swung position of the sash and independent of the disengagement at the remaining point, the means at the latter point being disengageable only after disengagement at the other point has taken place.

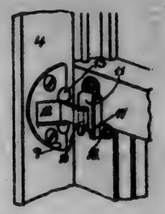

2. The combination with a window frame and sash, of an engageable carrying device and an engageable steadying device carried by the frame and sash for supporting and steadying the sash during a swinging movement, said devices being spaced apart, said steadying device being disengageable regardless of the swung position of the sash and independent of the disengagement of the carrying device, the carrying device being disengageable only after the disengagement of the steadying device has taken place.

3. The combination with a window frame and sash, of an upper carrying device comprising engageable members, and a lower steadying device comprising interlocking members, said members being carried by the sash and frame, and adapted to support and steady the sash during a swinging movement, said steadying device being disengageable regardless of the swung position of the sash and without affecting the engagement of the carrying device, the carrying device being disengageable only after the disengagement of the steadying device has taken place.

4. The combination with a window frame and sash, of an engageable carrying device and an engageable steadying device carried by the frame and sash for supporting and steadying the sash during a swinging movement, said devices being spaced apart, said carrying device being engageable and disengageable by a vertical movement of the sash, the steadying device being engageable and disengageable while the carrying device is in engagement.

5. In combination with a window frame and sash, cooperating hinge and socket members on the frame and sash adapted to be detachably engaged and whereon the sash may swing inwardly; and interlocking members on the frame and sash arranged to engage when the sash is swung in, to assist in supporting and steadying the same, said interlocking members being disengageable regardless of the swung position of the sash.

6. In combination with a window frame and sash, cooperating hinge and socket members on the frame and sash adapted to be detachably engaged and whereon the sash may swing inwardly; plates on the frame and sash respectively, one having a recess and the other a tongue adapted to project into the recess and engage the plate containing the same when the sash is connected with said hinge and swung inwardly, said plate and tongue being disengageable regardless of the swung position of the sash.

7. In combination with a window frame and sash, cooperating hinge and socket members on the frame and sash adapted to be detachably engaged and whereon the sash may swing inwardly; a member having a lateral shoulder and an upward bar, and a curved co-operating tongue member, one of said last-named members being secured to the frame and the other to the sash and arranged for interengagement when the sash has been swung in, said last-named members being disengageable regardless of the swung position of the sash.

8. In combination with a window frame and sash, cooperating hinge and socket members on the frame and sash adapted to be detachably engaged and whereon the sash may swing inwardly; a plate having an inturned edge and a recess within such edge and above the bottom end thereof, and a plate having a curved tongue adapted to enter such recess and partially embrace said edge, one of the plates being on the sash and the other on the frame in position to engage when the sash is swung inward about the hinge, the co-operating plate and tongue being disengageable regardless of the swung position of the sash.

9. In combination with a window frame and sash, dissimilar engaging couples at the upper and lower portions of the sash, one of said couples constituting a hinge adapted for detachable connection and on which the sash may swing after such connection, said coupling being engageable and disengageable only by a vertical movement of the sash, and the other couple being normally unconnected and adapted to engage after the sash has been swung laterally, to assist in supporting and steadying the same, the latter couple being disengageable regardless of the swung position of the sash.

10. In combination with a window frame and sash, a detachable hinge consisting of a ductile metal plate having a central recess and wings on either side of such recess, in the adjacent edges of which wings are narrow offsets forming open-sided sockets, a plate having a notch in an edge thereof; one of said plates being fastened to the sash and the other to the frame, and a swinging connecting piece having two lateral projections forming pintles on one end contained within the sockets of the first plate the other end being in the form of a return bend, the connecting piece when swung back lying between the wings of the first plate, and its bent end adapted when swung forward and the sash is moved down from a raised position, to enter the notch of the second plate and support the sash, whereby the latter may be swung laterally inward from the frame.

11. In combination with a window frame and sash, a detachable hinge consisting of a ductile metal plate having a central recess and wings on either side of such recess, in the adjacent edges of which wings are narrow offsets forming open-sided sockets, a plate of sheet metal having its sides and edges bent over to form an enclosure and offset the central portion, said portion having a notch in an edge thereof; one of said plates being fastened to the sash and the other to the frame, and a swinging connecting piece having two lateral projections forming pintles on one end contained within the sockets of the first plate the other end being in the form of a return bend; the connecting piece when swung back lying between the wings of the first plate, and its bent end adapted when swung forward and the sash is moved down from a raised position, to enter the notch of the second plate and support the sash, whereby the latter may be swung laterally inward from the frame.

12. In combination with a window frame and sash, a detachable hinge consisting of a ductile metal plate having a central recess and wings on either side of such recess in the adjacent edges of which wings are narrow offsets forming open-sided sockets, a face plate lying against said plate and extending over the sockets, a plate having a notch in an edge thereof; one of said plates being fastened to the sash and the other to the frame, and a swinging connecting piece having two lateral projections forming pintles on one end contained within the sockets of the first plate the other end being in the form of a return bend, the connecting piece when swung back lying between the wings of the first plate, and its bent end adapted when swung forward and the sash is moved down from a raised position, to enter the notch of the second plate and support the sash, whereby the latter may be swung laterally inward from the frame.

13. In connection with a window having sashes adapted to slide in parallel paths, a hinge detachably engaging the inner sash with the frame, whereby said sash may be swung and displaced inwardly, a removable parting bead between the sashes, a plate having an upturned flange on the top of the inner sash, and a hook on the outer sash adapted to engage said flange when the upper sash is moved downwardly into proper position after said bead is removed, the bead normally retaining the hook and flange out of an alining path of movement.

14. The combination with a window having upper and lower sashes adapted to slide in parallel paths, and means for engageably connecting the lower sash and the window

to permit the sash being swung inward pivotally, of a plate secured to the top of the lower sash and having an upturned flange the outer face of which is substantially flush with the outer face of the lower sash, and a hook mounted on the upper sash and held against movement thereon, said hook being normally out of the plane of said flange, whereby either sash may normally have a free movement in a direction to reverse the position of the sash, the removal of the parting bead between the sash permitting the upper sash to move to a position where engagement of the flange and hook may take place whereby the upper sash may be swung inward with the lower sash, the length of the flange being greater than the width of the hook to prevent disengagement of the sash during such inward movement.

15. In combination, the hinge member and socketed plate, and the resilient wear plate interposed between the socketed plate and the casing, said wear plate opposing and forming a bearing for the end of the hinge member and adapted to retain said member in any one of a plurality of positions.

16. In combination, a socketed plate having a recess, a hinged member movable into and out of said recess, said member having pintles adapted to enter bearings formed on the socketed plate, said pintles being substantially square in cross-section, and a resilient wear plate interposed between the socketed plate and the casing, said wear plate opposing the pintle-end of said member and normally retaining it in position with either one of its squared sides in contact with the wear plate.

851,225. PICKING-CAM FOR LOOMS. JOHN F. DONOHUE, Pawtucket, R. I., assignor of one-half to James Eastham, Cumberland, R. I. Filed Sept. 25, 1905. Serial No. 280,103.

Claim.—1. In a loom, a cam comprising a cam body with portion removed, a toe having a portion to fill the space left by the removed portion of said body and a cam shaped beak and a web, said beak resting upon and overlapping the portion of the cam body at its periphery adjacent the toe, and means securing the toe to said body.

2. In a loom, the combination with the pick stick, pick ball and their connections, of a cam shaft, a pick cam upon the shaft, a toe upon the cam having a web overlapping the side of the cam and a cam beak upon the toe and extended for more than 90 degrees beyond and around the cam periphery and adapted to coact with the pick ball to retain the pick stick at the extreme of its throw.

3. In a loom, a cam disk, and a detachable toe secured thereto and having a cam shaped beak extending for more than ninety degrees around said cam disk and merging into the periphery of said disk for intermittent contact with picker-stick operating means to present an impediment to the insertion of a shuttle in the shuttle box and a web intermediate the toe and beak and overlying the cam upon one side thereof.

851,226. FASTENING DEVICE. FREDERICK DUBY, West Point, N. Y. Filed Mar. 10, 1906. Serial No. 305,227.

Claim.—A fastening device composed of two yoke-shaped members integrally connected at their closed end and at right angles to each other, one of said yoke-shaped members being composed of two closely adjacent parallel plates provided in their adjacent surfaces one with a longitudinal groove and the other with a corresponding rib which extends into said groove, the other yoke-shaped member being provided with a pivoted transverse jaw member by which the device is secured to a shoe or other article.

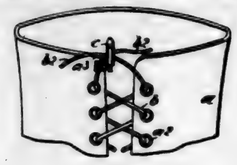

851,227. FOURDRINIER MACHINE. WILLIAM EIBEL, Rhinelander, Wis., assignor to Eibel Process Company, Boston, Mass., a Corporation of Maine. Filed Feb. 28, 1907. Serial No. 359,709.

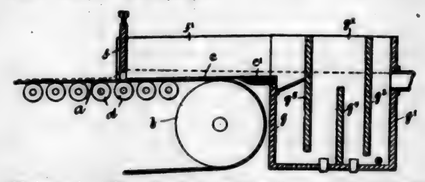

Claim.—1. A Fourdrinier machine having a downwardly moving paper-making wire and a stock-reservoir with its slicer disposed with its lower edge just below the top level of the stock flowing through said reservoir, substantially as described.

2. A Fourdrinier machine having a flow-box in open communication with the stock-reservoir and a perforated plate obliquely arranged in one of its compartments, substantially as described.

3. A Fourdrinier machine having a flow-box in open communication with the stock-reservoir comprising a plurality of compartments, alternately arranged in open communication with each other at the top and bottom, a perforated plate obliquely arranged in one of said compartments and a downwardly moving paper-making wire and a slicer disposed with its lower edge just below the top level of the stock flowing through the reservoir, substantially as described.

851,228. CAR-FRAME. WILLIAM H. EMERICK, Osawatomie, Kans., and PETER ALQUIST, Memphis, Tenn. Filed Nov. 12, 1906. Serial No. 343,028.

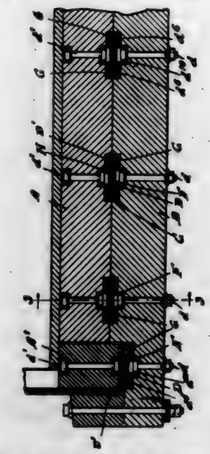

Claim.—1. In a car frame, the combination with the center sill, end sill and draft timbers, of dovetail connect-

ing plates secured to said sills and draft timbers respectively, said connecting plates being provided on their meeting faces with dovetail channels, a removable double dovetail key fitting in the dovetail channels of the connecting plates, said connecting plates also having on their meeting faces interfitting lugs, and connecting bolts extending through said interfitting lugs for additionally connecting said plates together, substantially as specified.

2. The combination with two members to be removably connected, of a pair of connecting plates secured to said members respectively and provided on their meeting faces with registering dovetail channels and interfitting lugs, a removable dovetail key fitting in the dovetail channels of said plates, and connecting bolts extending through said interfitting lugs, substantially as specified.

3. The combination with two members to be removably connected, of a pair of connecting plates secured to said members respectively, and provided on their meeting faces with two sets of interfitting lugs, and connecting bolts extending through said lugs for removably connecting said plates together, substantially as specified.

4. The combination with two members to be removably connected, of a pair of connecting plates secured to said members respectively, and provided on their meeting faces with two sets of interfitting lugs, and connecting bolts extending through said lugs for removably connecting said plates together, said connecting plates having also on their meeting faces tapering or wedging dovetail channels and a removable tapering or wedging dovetail key, substantially as specified.

5. The combination with two members to be connected, of connecting plates secured thereto respectively, and provided on their meeting faces with interfitting lugs and mortices or recesses, and a connecting bolt extending through said lugs, substantially as specified.

6. The combination with two members to be removably connected, of a pair of connecting plates secured to said members respectively, and both provided with dovetail channels on their meeting faces, having curved or quadrant-shaped dovetail lips, and a dovetail key having semi-circular grooves in its edges, substantially as specified.

7. The combination with two members to be removably connected, of a pair of connecting plates secured to said members respectively, and furnished on their meeting faces with tapering or wedging dovetail channels, of a removably tapering or wedging double dovetail key, substantially as specified.

8. The combination with two members to be removably connected, of a pair of connecting plates secured to said members respectively, and both provided with dovetail channels on their meeting faces, having curved or quadrant-shaped dovetail lips, and a double dovetail key having semi-circular grooves in its edges, said connecting plates having on their meeting faces interfitting lugs and mortices or recesses, and a connecting bolt extending through said lugs, substantially as specified.

9. The combination with two members to be removably connected, of a pair of connecting plates secured to said members respectively, and furnished on their meeting faces with tapering or wedging dovetail channels, of a removable tapering or wedging double dovetail key, said connecting plates having on their meeting faces interfitting lugs and mortices or recesses, and a connecting bolt extending through said lugs, substantially as specified.

10. The combination with two members to be removably connected, of a pair of connecting plates secured to said members respectively, and provided with tapering or wedging dovetail channels on their meeting faces, having curved or quadrant-shaped dovetail lips, and a tapering or wedging dovetail key having semi-circular grooves in its edges, substantially as specified.

851,229. CAR-FRAME. WILLIAM H. EMERICK, Osawatomie, Kans., and PETER ALQUIST, Memphis, Tenn. Filed Jan. 5, 1907. Serial No. 350,868.

Claim.—1. In a car frame, the combination with the center sills and draft timbers, of connecting plates secured to the sills and draft timbers respectively, the connecting plates secured to the center sills having each bolt head recesses at each end and short bolts connecting the same to the center sills, the connecting plates secured to the draft timbers having each a bolt head recess at its middle and a short bolt connecting the same with the draft timbers, said connecting plates having on their meeting faces interfitting lugs and mortices and connecting bolts extending through the intermeshing lugs on the two plates, substantially as specified.

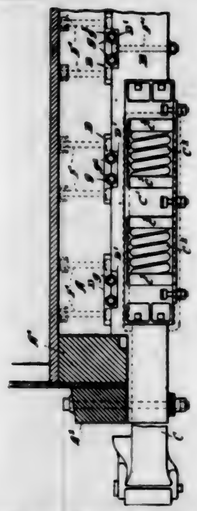

2. In a car frame, the combination with the center sills and draft timbers, of connecting plates secured to the sills and draft timbers, respectively, the connecting plates secured to the center sills having each bolt head recesses at each end and short bolts connecting the same to the center sills, the connecting plates secured to the draft timbers having each a bolt head recess at its middle and a short bolt connecting the same with the draft timbers, said connecting plates having on their meeting faces interfitting lugs and mortices and connecting bolts extending through the intermeshing lugs on the two plates, said interfitting lugs and mortices on the two plates having tapering or wedging transverse faces, substantially as specified.

3. In a car frame, the combination with the center sills and draft timbers, of connecting plates secured to the sills and draft timbers respectively, the connecting plates secured to the center sills having each bolt head recesses at each end and short bolts connecting the same to the center sills, the connecting plates secured to the draft timbers having each a bolt head recess at its middle and a short bolt connecting the same with the draft timbers, said connecting plates having on their meeting faces interfitting lugs and mortices and connecting bolts extending through the intermeshing lugs on the two plates, said interfitting lugs and mortices on the two plates having tapering or wedging transverse faces and tapering or wedging longitudinal faces, substantially as specified.

4. In a car frame, the combination with the center sills and draft timbers, of connecting plates secured to the sills and draft timbers respectively, the connecting plates secured to the center sills having each bolt head recesses at each end and short bolts connecting the same to the center sills, the connecting plates secured to the draft timbers having each a bolt head recess at its middle and a short bolt connecting the same with the draft timbers, said connecting plates having on their meeting faces interfitting lugs and mortices and connecting bolts extending through the intermeshing lugs on the two plates, said intermeshing lugs on the two connecting plates having tapering or wedging longitudinal faces, substantially as specified.

5. The combination with two frame members to be removably connected together, of a pair of connecting plates secured to said members respectively, and provided on their meeting faces with two sets of interfitting lugs, and connecting bolts extending through said lugs for removably connecting said plates together, said interfitting lugs having tapering or wedging faces, substantially as specified.

6. The combination with two members to be removably connected together, of a pair of connecting plates secured to said members respectively, and provided on their meeting faces with interfitting tapering lugs and mortices or recesses and a connecting bolt extending through said lugs, substantially as specified.

7. In a car frame, the combination with the center sills and draft timbers, of connecting plates secured to the center sills and draft timbers respectively, the connecting plates secured to the center sills having each bolt head recesses at each end and short bolts connecting the same to the center sills, the connecting plates secured to the draft timbers having each a bolt head recess at its middle and a short bolt connecting the same with the draft timbers, said connecting plates having on their meeting faces tapering or wedging interfitting lugs and mortices and connecting bolts extending through, and intermeshing lugs on the two plates, substantially as specified.

8. The combination with two members to be removably connected, of a pair of connecting plates, one having bolt head recesses at each end and secured to one of said members, and the other having a bolt head recess at its middle and secured to the other of said members, said connecting plates having on their meeting faces interfitting lugs and mortices or recesses, and a connecting bolt extending through said lugs, substantially as specified.

851,230. CAR-FRAME. WILLIAM H. EMERICK, Osawatomie, Kans., and PETER ALQUIST, Memphis, Tenn. Filed Jan. 5, 1907. Serial No. 350,869.

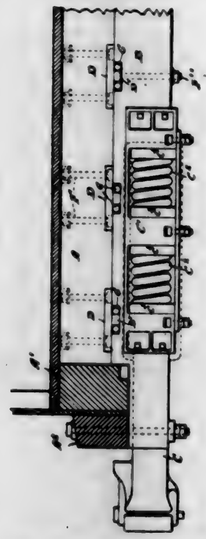

Claim.—1. In a car frame, the combination with the center sills and draft timbers, of connecting plates secured to said sills and draft timbers respectively, said connecting plates secured to the sills having each at its ends bolt head recesses and short bolts connecting the same to the sills, and said connecting plates secured to the draft timbers having each at its middle a bolt head recess and a short bolt connecting the same with the draft timber, one of said connecting plates having on its meeting face longitudinally extending side flanges or ribs embracing the other plate, and said other connecting plate having on its meeting face a plurality of lugs entering holes or recesses in said first mentioned plate, and transverse connecting bolts extending through the body of one of said plates and the side flanges on the other, substantially as specified.

2. In a car frame, the combination with the center sills and draft timbers, of connecting plates secured to the said sills and draft timbers respectively, said connecting plates secured to the sills having each at its ends bolt head recesses and short bolts connecting the same to the sills, and said connecting plates secured to the draft timbers having each at its middle a bolt head recess and a short bolt connecting the same with the draft timber, one of said connecting plates having on its meeting face longitudinally extending side flanges or ribs embracing the other plate and said other connecting plate having on its meeting face a plurality of lugs entering holes or recesses in said first mentioned plate, and transverse connecting bolts extending through the body of one of said plates and the side flanges on the other, the interfitting lugs and holes on said plates being slightly tapering, substantially as specified.

3. The combination with two members to be removably connected together, of a pair of connecting plates secured to said members respectively, one of said plates having side flanges embracing the other plate, and connecting bolts extending through said side flanges and the connecting plate embraced thereby, substantially as specified.

4. The combination with two members to be removably connected together, of a pair of connecting plates secured to said members respectively, one of said plates having side flanges embracing the other plate, and connecting bolts extending through said side flanges and the connecting plate embraced thereby, said plates having interfitting lugs and recesses, substantially as specified.

5. The combination with two members to be removably connected together, of a pair of connecting plates secured to said members respectively, one of said plates having side flanges embracing the other plate, and connecting bolts extending through said side flanges and the connecting plate embraced thereby, said plates having tapering interfitting lugs and recesses, substantially as specified.

6. In a car frame, the combination with a center sill and a draft timber, of a pair of connecting plates secured to said sill and draft timber respectively, short bolts connecting said plates to said draft timber and sill respectively, one of said plates having side flanges embracing the other plate and a bolt extending through said side flanges and the plate embraced thereby, substantially as specified.

7. In a car frame, the combination with a center sill and a draft timber, of a pair of connecting plates secured to said sill and draft timber respectively, short bolts connecting said plates to said draft timber and sill respectively, one of said plates having side flanges embracing the other plate and a bolt extending through said side flanges and the plate embraced thereby, said plates having interfitting lugs and recesses respectively, substantially as specified.

8. In a car frame, the combination with a center sill and a draft timber, of a pair of connecting plates secured to said sill and draft timber respectively, short bolts connecting said plates to said draft timber and sill respectively, one of said plates having side flanges embracing the other plate and a bolt extending through said side flanges and the plate embraced thereby, said flange on the inner side of said connecting plate being inwardly offset, substantially as specified.

9. The combination with two members to be removably connected together, of a pair of connecting plates secured to said members respectively, one of said plates having side flanges embgacing the other plate, and connecting bolts extending through said side flanges and the connecting plate embraced thereby, one of said connecting plates having a recess on its lower face within which the other connecting plate fits, substantially as specified.

10. In a car frame, the combination with the center sills

and draft timbers, of connecting plates secured to said sills and draft timbers respectively, said connecting plates secured to the sills having each at its ends bolt head recesses and short bolts connecting the same to the sills, and said connecting plates secured to the draft timbers having each at its middle a bolt head recess and a short bolt connecting the same with the draft timber, one of said connecting plates having on its meeting face longitudinally extending side flanges or ribs embracing the other plate, and said other connecting plate having on its meeting face a plurality of lugs entering holes or recesses in said first mentioned plate, and transverse connecting bolts extending through the body of one of said plates and the side flanges on the other, the upper connecting plate having a recess within which the lower connecting plate fits, substantially as specified.

851,231. WITHDRAWN.

851,232. SEWING-MACHINE RUFFLER. HUBERT M. GREIST, New Haven, Conn., assignor to The Greist Manufacturing Company, a Corporation of Connecticut. Filed Mar. 5, 1907. Serial No. 360,679.

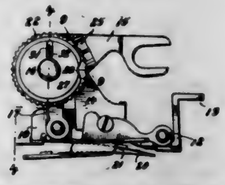

Claim.—1. In a sewing machine ruffling attachment, the combination with a ruffling blade, of an operating lever provided with a radial slot, a swinging arm or pendulum lever having an opening, a regulating disk provided with an eccentric slot, an indicator disk also provided with a radial slot, a pin seated in said radial slot of the said operating lever and extending rearward into the opening in said swinging arm or lever, and also forward through said eccentric slot in said regulating disk and into the said radial slot of said indicator disk, and means for holding the said regulating disk in operative connection with the said oprating lever, so that in the operation of the ruffler the said parts can be moved together, said means permitting the said regulating disk to be adjusted relative to said lever.

2. In a sewing machine ruffling attachment, the combination with a ruffling blade, of an operating lever provided with a radial slot, a swinging arm or pendulum lever having an opening, a regulating disk provided with an eccentric slot, an indicator disk also provided with a radial slot, a pin seated in said radial slot of the said operating lever and extending rearward into the opening in said swinging arm or lever, and also forward through said eccentric slot in said regulating disk and into the said radial slot of said indicator disk, and means for holding the said regulating disk in operative connection with the said operating lever, so that in the operation of the ruffler the said parts can be moved together, said means permitting the said regulating disk to be adjusted relative to said lever and comprising a spring carried by said operating lever and engaging teeth or serrations on said regulating disk.

851,233. MANUFACTURE OF STEEL. ROBERT A. HADFIELD, Sheffield, England. Filed June 18, 1904. Serial No. 213,131.

Claim.—1. The herein described process of producing steel of great strength, which consists in first making steel containing manganese, nickel, and chromium, (the percentage of manganese being low) heating the steel to a temperature between about 750° to 850° centigrade, quenching in oil, reheating to a temperature between about 620° and 630°, and quenching in water.

2. The herein described process of producing steel of great strength, which consists in first making steel containing manganese, nickel, and chromium, (the percentage of manganese being low) heating the steel to a relatively high temperature below its melting point, quenching in oil, reheating to a temperature below that first employed, and quenching in water.

3. The herein described process of producing steel of great strength, which consists in first making steel containing manganese, nickel, and chromium, (the percentage of manganese being low) heating the steel to a relatively high temperature below its melting point, cooling it quickly, reheating to a temperature below that first employed, and again cooling quickly.

4. The herein described process of increasing the strength of steel, containing manganese, nickel, and chromium, the percentage of manganese being low which consists in heating it to a temperature between about 750° to 850° centigrade, quenching in oil, reheating to a temperature between about 620° and 630°, and quenching the entire body of the steel in water.

5. The herein described process of increasing the strength of steel, containing manganese, nickel, and chromium, the percentage of manganese being low which consists in heating it to a relatively high temperature below its melting point, quenching in oil, reheating to a temperature below that first employed, and quenching the entire body of the steel in water.

6. The herein described process of increasing the strength of steel, containing manganese, nickel, and chromium, the percentage of manganese being low which consists in heating it to a relatively high temperature below its melting point, cooling it quickly, reheating to a temperature below that first employed, and again cooling the entire body of the steel quickly.

851,234. WHEEL. HANS T. HANSEN, Milwaukee, Wis. Filed Aug. 2, 1905. Serial No. 272,302.

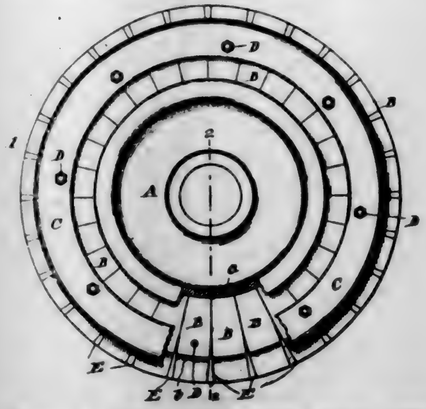

Claim.—1. A tire comprising wooden wedges having their small ends toward the center of the wheel and the grain of which runs radially in combination with a series of radial metal wedges the outer edges of which extend transversely of the tread of the wheel, said wedges being driven between the wooden wedges to form therewith a solid structure.

2. A tire comprising wooden wedges having their small ends toward the center of the wheel and the grain of which runs radially in combination with a series of radial metal wedges the outer edges of which extend transversely of the tread of the wheel, said wedges being driven between the wooden wedges to form therewith a solid structure, said metal wedges being adapted to move inward as the surface of the tire is worn down.

851,235. GAGE-COCK. CHARLES J. HARKINS, Buffalo, N. Y. Filed Dec. 26, 1906. Serial No. 349,368.

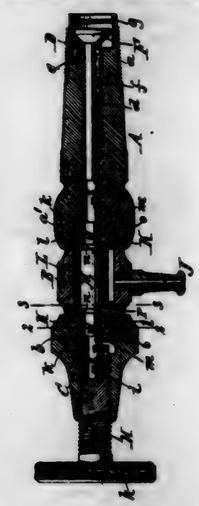

Claim.—1. A gage cock comprising a casing having a front section provided with a valve seat and a reversible rear section provided centrally with an outlet and at opposite ends with valve seats and adapted to be detachably connected at either of its ends with the rear end of said front section, a check valve arranged in said front section and adapted to close against the seat thereof, a pair of connected main valves arranged in said rear section and co-operating respectively with the seats thereof and also with said check valve, and means for operating said valves, substantially as set forth.

2. A gage cock comprising a casing having a front section provided with a valve seat and a reversible rear section having an outlet and adapted to be detachably connected at either end with the rear end of said front section, heads arranged at opposite ends of said rear section and each provided with a port and a valve seat around the port, a check valve arranged in the front section and adapted to engage with the seat thereof, a valve stem extending through said front section and into engagement at its front end with the check valve and having a pair of valves which are adapted to engage the seats of said rear section, and means for operating said valves, substantially as set forth.

3. A gage cock comprising a casing having a front section provided with a valve seat and a reversible rear section having an outlet and adapted to be detachably connected at either end with the rear end of said front section, heads arranged at opposite ends of said rear section and each provided with a port and a valve seat around the port, a check valve arranged in the front section and adapted to engage with the seat thereof, a valve stem extending through said front section and into engagement at its front end with the check valve and having a pair of valves which are adapted to engage the seats of said rear section, a bonnet adapted to be detachably connected with the rear end of said rear section, and a screw threaded shifting spindle working in said bonnet and operatively engaging the rear end of said reversible valve stem, substantially as set forth.

4. A gage cock comprising a casing having a front section provided with a valve seat and a reversible rear section provided with an outlet and adapted to be connected at either end with the rear end of said front section, heads arranged at opposite ends of said front section each provided with a port and a seat, one of said heads being formed integrally with said rear section while the other is separable therefrom, a check valve arranged in said front section and adapted to engage the seat thereof, and a reversible valve stem extending through said rear section with its front end in engagement with said check valve and having a pair of main valves adapted to co-operate respectively with the seat of said rear section, a bonnet detachably connected with the rear end of said front section, and a screw threaded shifting spindle working in said bonnet and engaging with the rear end of said reversible valve stem, substantially as set forth.

5. A gage cock comprising a casing having a front section provided with a valve seat and a reversible front section provided with an outlet and adapted to be connected at either end with the rear end of said front section, heads arranged at opposite ends of said front section each provided with a port and a seat, one of said heads being formed integrally with said rear section while the other is separable therefrom, a check-valve arranged in said front section and adapted to engage the seat thereof, and a reversible valve stem extending through said rear section with its front end in engagement with said check valve and having a pair of main valves adapted to co-operate respectively with the seat of said rear section, a bonnet detachably connected with the rear end of said front section, and a screw threaded shifting spindle working in said bonnet and engaging with the rear end of said reversible valve stem, substantially as set forth.

6. A gage cock comprising a casing having a front section provided with a valve seat and a reversible rear section having an outlet and adapted to be detachably connected at either end with the rear end of said front section, heads arranged at opposite ends of said rear section and each provided with a port and a valve seat around the port, a check valve arranged in the front section and adapted to engage with the seat thereof, a valve stem extending through said front section and into engagement at its front end with the check valve and having a pair of valves which are adapted to engage the seats of said rear section, a bonnet adapted to be detachably connected with the rear end of said rear section, a screw threaded shifting spindle working in said bonnet and operatively engaging the rear end of said reversible valve stem, and a packing arranged between the rear parts of the rear section and the reversible valve stem therein, substantially as set forth.

851,236. MACHINE FOR IMMERSING CORES OR CENTERS OF CONFECTIONS. LOUIS N. HARTOG, New York, N. Y. Filed Feb. 20, 1907. Serial No. 358,374.

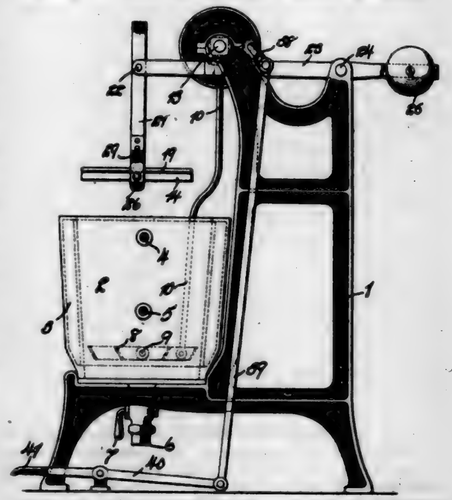

Claim.—1. In a machine for immersing cores or centers and giving them a cream finish, the combination of a receptacle for holding the plastic mass, a tray carrying and immersing frame having means for removably retaining

the tray, and means both above and below the tray securing means for removably securing the cover, with said tray and cover.

2. In a machine for immersing cores or centers and giving them a cream finish, the combination of a receptacle for holding the plastic mass, a yoke having means for supporting and operating same and provided near its lower end with cheeks or plates on the opposed faces of the yoke, means centrally located in said cheeks or plates for receiving a tray or basket, and two pairs of sockets 35 located in said cheeks, as shown, for the alternate reception of the cover, with said tray and cover.

851,237. PNEUMATIC STACKER. OLE HOLEN, Britton, S. D. Filed May 31, 1905. Serial No. 263,173.

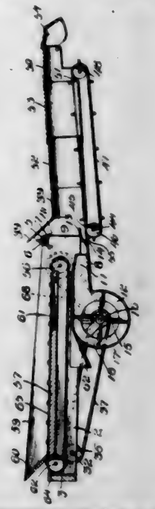

Claim.—1. In a pneumatic stacker, a frame, a fan wheel casing associated with the frame, a fan wheel mounted within said casing, an endless conveyor apron associated with the frame, a stacker tube pivotally connected to one end of the frame, a toothed belt arranged to travel within the stacker tube, a beater arranged between the base of the tube and the corresponding end of the frame, a drive shaft, and connections between the drive shaft, the fan wheel, the beater, the conveyor apron, and the stacker tube belt to operate them simultaneously.

2. In a pneumatic stacker, a frame, a fan wheel associated with the frame, a casing enclosing the fan wheel and having a reduced end portion, a stacker tube pivoted to one end of the frame and adapted to overlap the reduced portion of the casing, an endless conveyor apron arranged within the frame and terminating short of the base of the stacker tube, a beater arranged between the said end of the apron and the base of the stacker tube, a sieve arranged within the frame, a spout communicating with said sieve, an endless toothed belt arranged to travel within the stacker tube, a drive shaft, and means in communication with the drive shaft for operating the said apron, the fan wheel, the beater and said endless apron simultaneously.

851,238. LINOTYPE-MACHINE. THOMAS S. HOMANS, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Nov. 6, 1906. Serial No. 342,248.

Claim.—1. In a linotype machine, a mold in combination with an independent cooling body arranged to contact therewith.

2. In a linotype machine, a slotted mold, an independent cooling body, and means for carrying the mold into and out of contact with said body.

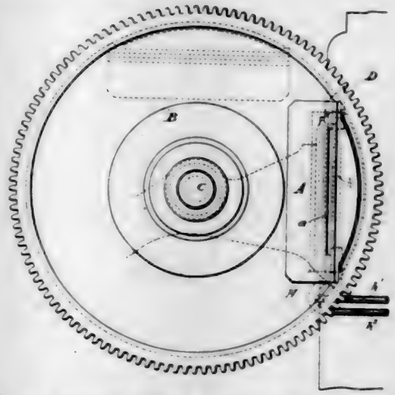

3. In a linotype machine, a slotted mold in combination with an independent cooling body arranged to contact therewith, and means for artificially cooling said body.

4. In a linotype machine, the combination of a slotted mold, its revoluble supporting disc, and a fixed cooling plate or body H independent of the mold proper and arranged to contact with the rear face of the mold.

5. In a linotype machine, a slotted mold, its rotary supporting disc, a slide supporting the disc, and a mold-cooling body distinct from the mold carried with said slide.

6. In a linotype machine, the combination of a slotted mold and an independent external cooling body arranged to contact with the rear face of the mold, said body being slotted for the passage of the ejector therethrough.

7. The combination of the mold A, the rotary disc B supporting the same, and the non-rotating cooling body H distinct from the mold arranged to contact with the rear face of the disc.

851,239. CONTROLLING DEVICE FOR ELECTRIC MOTORS. JOHN D. IHLDER, Yonkers, N. Y., assignor to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed Sept 27, 1904. Serial No. 226,116.

Claim.—1. The combination with a compound-wound motor, of means entirely electrical for reducing the speed of the motor, and means made operative by undue or excessive speed of the motor and when said motor becomes a generator for bringing into action said speed reducing means.

2. The combination with a motor, of an auxiliary field circuit, resistance in said auxiliary field circuit, and means made operative by an undue speed of the motor for closing said circuit.

3. The combination with a compound wound motor, of an additional field circuit, and means made operative by an undue or excessive speed of the motor for inserting said additional field circuit.

4. The combination with a compound wound motor, of an additional field circuit, resistance in said circuit, and means made operative by an undue or excessive speed of the motor for inserting said additional field circuit.

5. The combination with a motor, of an auxiliary shunt field circuit for said motor, and means made operative by an undue speed of the motor for closing said circuit.

6. The combination with a compound-wound motor, of an additional shunt field circuit for said motor, and means made operative by an undue speed of the motor for connecting said additional circuit in parallel with the shunt winding of the motor.

7. The combination with a compound-wound motor, of an additional shunt field circuit for said motor, resistance in said additional circuit, and means made operative by an undue speed of the motor for connecting said additional circuit in parallel with the shunt winding of the motor.

8. The combination with a motor, of a dynamic brake and an auxiliary field circuit therefor, and means made operative by an undue or excessive speed of the motor for effecting the operation of said dynamic brake and the closure of said auxiliary field circuit.

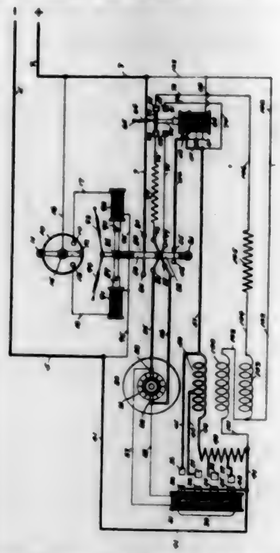

9. The combination with a motor, of an auxiliary field circuit for said motor, a normally open circuit in shunt to the motor-armature, and means made operative by excessive speed of the motor for completing said field circuit and for completing said shunt circuit.

10. The combination with a compound-wound motor, of devices wholly electrical for reducing the speed of the motor, and means made operative by undue or excessive speed of the motor and when said motor becomes a generator for bringing into action said electrical devices.

11. The combination with a compound-wound motor, of means entirely electrical for reducing the speed of the motor, and electrical devices made operative by the undue or excessive speed of the motor and when the motor becomes a generator for bringing into action said speed reducing means.

12. The combination with a compound-wound motor, of electrical devices for reducing the speed of the motor, and electrical devices made operative by undue or excessive speed of the motor and when said motor acts as a generator for bringing into action said speed reducing devices.

13. The combination with a motor, of an electro-dynamic brake circuit, and means operated by undue or excessive speed of the motor and upon conversion of the same into a generator for varying said circuit to effect a reduction of speed of said motor.

14. The combination with a motor, of means for strengthening the magnetic field of the motor, by adding extra coils and means dependent upon the armature potential and made operative by the undue or excessive speed of the motor for making effective said field strengthening means.

15. The combination with a motor, of means dependent upon the armature current and made operative by the undue or excessive speed of the motor for strengthening the magnetic field of the motor.

16. The combination with a motor, of an auxiliary field circuit for said motor, and means made operative by an undue speed of the motor for closing said circuit.

17. The combination with a motor, of a circuit breaker arranged in the motor circuit, and means dependent upon the armature potential and made operative by an excessive speed of the motor for operating said circuit breaker.

18. The combination with a motor, of a dynamic brake and an auxiliary field therefor, shunt circuits for said brake and auxiliary fields, and means made operative by an undue or excessive speed of the motor for completing said shunt circuits.

19. The combination with a motor, of a resistance, a circuit therefor, said circuit being in shunt to the motor, an auxiliary field circuit, and means made operative by the excessive speeds of the motor for completing said circuits.

20. The combination with a motor, of a circuit therefor, a circuit breaker arranged therein, an electro-dynamic brake, a circuit therefor in shunt to the motor, and means made operative by excessive speed of the motor for completing said brake circuit and operating said circuit breaker in succession.

21. The combination with a motor, a circuit therefor, a circuit-breaker arranged therein, an electro-dynamic brake, a shunt circuit therefor, an auxiliary shunt field circuit, and means made operative by excessive speed of the motor for completing said auxiliary field and brake circuits and operating said circuit breaker in succession.

22. The combination with a motor, an electro-dynamic brake comprising a circuit independent of the field circuit of said motor, and a magnet to effect the application of such brake to the motor, and means for strongly energizing such magnet when the armature of the motor is rotated at excessive speed.

23. The combination with a motor, of an electric retarding device comprising an extra field winding for such motor, a magnet for effecting the application of such retarding device, but of insufficient strength when energized by the normal current passing through the motor, and means actuated by excessive speed of the motor and upon conversion of the same into a generator for strongly energizing said magnet to perform its function.

24. The combination with a motor, a source of electrical supply, a retarding device for the motor, a magnet for applying the retarding device having two windings, one of which is directly connected across the armature of the motor and neutralizes the effect of the other when the motor is receiving current from the source of supply, and which assists the other when the motor is generating current.

25. The combination with a motor, a resistance, circuits and contacts arranged to connect said resistance across the armature of the motor, and a magnet for controlling said contacts, said magnet only having sufficient strength to attract its armature and move its contacts when the motor armature has excessive speed.

26. The combination with a motor having an armature and a shunt field, a resistance, an extra shunt field, circuits and contacts arranged when closed to connect said resistance across the armature of the motor, and to energize the extra shunt field, and a magnet which closes said contacts whenever the speed of the motor gets excessive.

27. The combination with a motor, of a resistance, circuits and contacts arranged to connect said resistance across the armature of the motor, and a magnet having its terminals connected directly across the armature and arranged to control said contacts to effect a reduction of speed of the motor when said speed becomes excessive or to effect a reduction of the speed of the motor upon conversion of the same into a generator.

28. The combination with a motor, controlling apparatus therefor, a doubly wound magnet having one winding in circuit with the motor-armature and the other winding connected across the motor-armature, and electric means controlled by said magnet for regulating the speed of the motor.

29. The combination with a motor, of controlling apparatus therefor, a differentially wound magnet having one winding connected across the motor-armature and another winding in circuit with the motor-armature; and electric means controlled by said magnet for slowing down said

motor when excessive speed is attained, or upon conversion of the same into a generator.

30. The combination with a motor, of starting means therefor, a differentially wound relay having one winding connected across the motor-armature and the other winding in series with the motor-armature, an electro-dynamic brake circuit, and means controlled by said relay for closing said circuit when the motor acts as a generator.

31. The combination with a motor, of reversing switches therefor, a differential relay having one winding connected across the motor-armature and the other winding in a normally open circuit with the motor-armature, means controlled by said relay for regulating the speed of said motor, and means for operating said reversing switches to close said normally open circuit and effect a starting of the motor in the desired direction.

32. The combination with a motor, of controlling means therefor, a doubly wound electro-magnet, a plurality of resistances, and means controlled by said electro-magnet for inserting one of said resistances in the local circuit in series with the motor-armature, and another of said resistances in shunt to the motor.

33. The combination with an electric motor, of controlling apparatus therefor, a doubly wound magnet, two resistances, an extra field coil for the motor, and means controlled by said magnet for inserting one of said resistances in a local circuit in series with the motor-armature and the other with said extra field coil in shunt to the motor when the motor acts as a generator.

34. The combination with a motor, of controlling apparatus therefor, a differential relay, and means comprising a circuit independent of the field circuit, and controlled by said relay for effecting a stopping of said motor when the same acts as a generator.

35. The combination with a motor, of means entirely electrical and comprising a circuit independent of the field circuit for reducing the speed of the motor, and means made operative by undue or excessive speed of the motor for bringing into action said speed-reducing means.

36. The combination with an electric motor, of controlling apparatus therefor, a doubly wound magnet having one winding connected directly across the motor armature and the other winding arranged to be connected in series with the motor armature, and electric means controlled by said magnet for regulating the speed of the motor.

37. The combination with an electric motor, of controlling apparatus therefor, a differentially wound magnet having one winding connected directly across the motor armature and another winding in circuit with the motor armature; and electric means controlled by said magnet for slowing down said motor when excessive speed is attained, or upon conversion of the same into a generator.

38. The combination with an electric motor, of reversing switch apparatus therefor, a differential relay having one winding connected directly across the motor armature and the other winding in a normally open circuit with the motor armature, and means controlled by said relay for limiting the speed of said motor.

39. The combination with an electric motor, of controlling apparatus therefor comprising reversing switch mechanism and accelerating mechanism, an electro-dynamic brake circuit normally open, and two differential relays one for controlling the motor circuit and the other for controlling both the electro-dynamic brake circuit and said extra field circuit, one of the windings of each of said relays being arranged to be connected in circuit with the motor armature, and the other winding of each of said relays being connected across the motor armature.

851,240. HYDRAULIC HEEL-CREEPER. OWEN F. LEINERT, Bethlehem, Pa. Filed Apr. 21, 1906. Serial No. 313,027.

Claim.—1. A creeper provided with adjustable pikes and hydraulic devices for operating the pikes.

2. In a creeper, a body provided with adjustable pikes, a pressure cylinder, and connections between the pressure cylinder and pikes for operating the latter.

3. A creeper provided with a pressure cylinder, lifting cylinders, connections between the latter and the pressure cylinder, and pikes connected to be operated by the lifting cylinders.

4. A creeper provided with pikes, lifting cylinders having detachable heads, plungers extending through the heads and connected to the pikes, and hydraulic devices for operating the plungers.

5. A creeper provided with pikes, lifting cylinders, detachable heads for the lifting cylinders, plungers in the cylinders extending through the heads and connected to the pikes, and packings between the heads and plungers.

6. A creeper provided with pikes, lifting cylinders, detachable heads, plungers the heads of which are grooved, and cup-shaped packings between the heads of the plungers and heads of the cylinders.

7. In a creeper, a body comprising two sections, one of which is provided with a pressure cylinder, lifting cylinders and connections between the two and the other of which is adapted to support the wearing plate, and pikes mounted in the wearing plate and adapted to be operated by the pressure cylinder and connections.

851,241. SIPHONIC MEASURING APPARATUS. ERNEST O. LINTON, Denver, Colo., assignor of one-half to Henry V. Johnson and one-half to The E. O. Linton Manufacturing Company, Denver, Colo. Filed June 8, 1906. Serial No. 320,919.

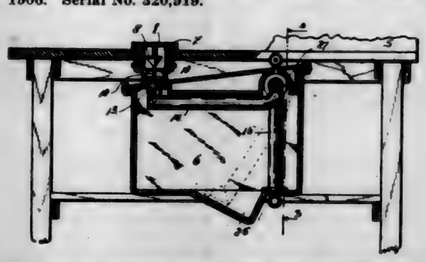

Claim.—1. In syphonic liquid measuring apparatus, the combination with a supply tank, and a measuring tank, of a normally closed valve for cutting off communication between the supply tank and the measuring tank, and an intake syphon leg movably mounted in the measuring tank and so arranged that when its intake extremity is at its upward limit of movement in the tank, said extremity will act to unseat the said valve and open communication between the two tanks.

2. In apparatus of the class described, the combination with a measuring tank, of a normally closed valve for controlling the supply to the measuring tank, an auxiliary valve member connected with the valve, and an intake syphon leg movably mounted in the measuring tank and so arranged that when its intake extremity is raised to its limit of upward movement in the measuring tank, its intake-extremity will be closed by the auxiliary valve member and the main valve simultaneously unseated whereby the passage for the supply of liquid to the measuring tank is opened.

3. In a syphonic liquid measuring apparatus, the combination with a supply tank, a measuring tank and a valve normally cutting off communication between the tanks, the intake leg being so arranged that when its intake extremity is raised to its upward limit of movement in the tank, it will unseat the said valve, of a stationary syphon discharge leg, and a movable intake-leg, the two legs being provided with cooperating parts to form a tight joint where the intake leg joins the discharge leg, a spindle connected with the intake-leg and in alignment with its axis of rotation, the said spindle having one extremity exposed outside of the measuring tank, a manipulating arm connected with the exposed extremity of the spindle, and a graduated dial mounted exteriorly and over which the manipulating arm is arranged to travel.

4. The combination with a supply tank, a measuring tank and a valve for cutting off communication between the two tanks, of a stationary discharge syphon leg, a movable intake syphon leg located in the measuring tank and movably connected with the discharge leg, means exteriorly located for operating the intake leg, an auxiliary valve connected with the main valve and adapted to close the inlet extremity of the intake syphon leg when the latter is raised to a predetermined height within the measuring tank.

5. The combination of a measuring tank, a supply tank, a normally closed valve for cutting off the flow of liquid from the supply tank to the measuring tank, the said valve being provided with an auxiliary valve member and a movable intake syphon leg adapted to be controlled from the outside of the tank and arranged when raised to its limit of movement within the measuring tank to act on the auxiliary valve member, to unseat the said valve, the auxiliary valve member acting simultaneously to close the inlet extremity of the said intake-leg.

6. The combination with a supply tank, a measuring tank and a valve normally closing communication between the two tanks, of a movable intake leg so arranged that when raised to a predetermined limit within the tank, its intake extremity will serve to unseat the said valve, a manipulating arm connected with the syphon leg and located outside of the tank, a dial located in proximity to the said arm, and pointers adjustably mounted on said dial for the purpose set forth.

851,242. RAILWAY APPLIANCE. LUDWIG LIPTAI, New York, N. Y. Filed Feb. 4, 1907. Serial No. 355,626.

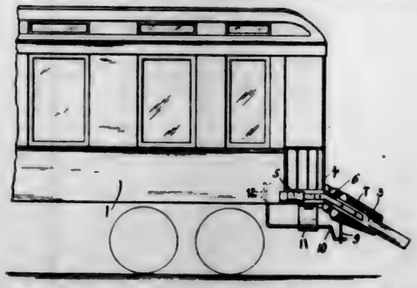

Claim.—1. In a railway appliance, the combination with a car having power- and brake-controlling devices and its ends formed at angles different from right angles to the axis of the car, of a frame at each end of the car, a plurality of rollers in said frame, and means controlled by said rollers and adapted to operate said power- and brake-controlling devices.

2. In a railway appliance, the combination with a car having its ends formed at an angle different from right angles to the axis of the car, a frame at each end of the car, a plurality of rollers in said frame and adapted to coact with the corresponding rollers of an adjoining car.

851,243. HORSESHOE. CHARLES MANLEY, New York, N. Y. Filed Mar. 29, 1905. Renewed Mar. 16, 1907. Serial No. 362,730.

Claim.—1. In combination, a horse shoe, a pad provided with lugs and capable of being removably attached to said shoe, a flexible clamp engaging said lugs to attach the pad to the shoe, and means on said shoe for engaging and retaining the clamp in position.

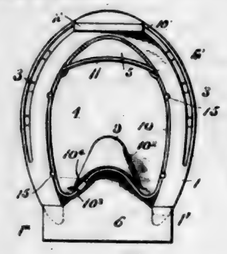

2. In combination, a horse shoe, a pad provided with lugs and capable of being removably attached to said shoe, an endless wire engaging the lugs on the shoe to expand said clamp when a longitudinal thrust is given the pad by reason of striking the pavement.

3. In combination, a horse shoe pad provided with lugs and capable of being removably attached to said shoe, an endless wire passing between the pads and means on said shoe for holding the clamp against longitudinal thrust, the lugs on the pads and the means on the shoe cooperating to more firmly lock said clamp when longitudinal thrust is given said pad.

4. In combination with a horse shoe, a pad capable of being removably attached to said shoe and having a heel calk therein extending below the plane of the shoe face, and a lug adjacent to the heel calk, and a flexible clamp adapted to attach the pad to the shoe by engaging the heel calk and lug on the pad and the inner wall of the shoe.

5. In combination, a horse shoe, a pad shaped to the contour of the inner surface of the shoe and capable of being removably attached to said shoe, a clamp adapted to attach the pad to the shoe, a heel calk and a lug in said pad adapted to engage the clamp and cooperating with the shoe to hold the pad in the desired position.

851,244. MACHINE FOR MORTISING WINDOW-FRAMES FOR SASH-PULLEYS. TURNER A. MOSS, Baltimore, Md. Filed May 8, 1906. Serial No. 315,744.

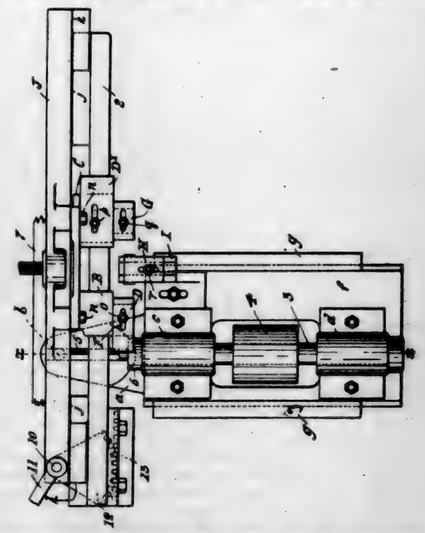

Claim.—In a mortising machine, a laterally moving clamp to hold in position the article to be mortised, and a

longitudinally moving boring bit with means to move it toward and from the said clamp, combined with a gauge which consists of a member comprising a vertical plate attached to the clamp, having a lug at each end thereof which extends in a horizontal direction, each lug being provided with a plate adjustably connected thereto the said plates being in alignment; and a longitudinally moving member having a motion in common with the boring bit and situated on the same horizontal plane as the two plates, aforesaid, and adapted to come in contact in the operation of the machine, with the inner end of either of the said plates, substantially as specified.

851,245. TWINE AND THREAD CUTTER. HARRY MYER and MARTIN KOENIGES, New York, N. Y. Filed Sept. 6, 1906. Serial No. 333,531.

Claim.—1. A cutting implement comprising a support provided with a cutter, a movable member pivotally carried by the support opposite and facing the edge of the cutter, providing a space therebetween, a spring connected with the movable member and with the support, acting to move the member away from the cutter, and a stop to engage said member, whereby the member will be held in a retracted position by the spring, and will press a cord or the like against a cutter during operation.

2. A cutting implement comprising a support provided with a cutter, a movable member pivotally carried by the support opposite and facing the cutter providing a space between the cutter and member and having two side plates secured together with a space between them to receive the edge of the cutter, and means to hold said plates at a distance apart.

3. A cutting implement comprising a support provided with a cutter, a movable member pivotally carried by the support opposite and facing the cutter providing a space between the cutter and member and having two side plates secured together with a space between them to receive the edge of the cutter, and means to hold said plates at a distance apart, said plates of said member being provided with teeth on their working edges.

4. A cutting implement comprising a support provided with a cutter, a movable member pivotally carried by the support said member having a curved surface opposite and facing the cutter, the edge of said cutter lying substantially at a tangent with respect to the curved surface of said member, said member having two side plates secured together providing a space between them, a spring connecting said member with the support, and a stop for the member whereby the member will be held normally retracted with respect to the cutter and may swing toward the cutter during use.

5. A cutting implement comprising a support provided with a cutter, a movable member pivotally carried by the support opposite and facing the cutter providing a space between the cutter and member and having two side plates secured together with a space between them to receive the edge of the cutter, means to hold said plates at a distance apart, a spring connecting said member and said support, and a stop to engage said member and hold it retracted with respect to the cutter.

6. A cutting implement comprising a support provided with a cutter, a movable member pivotally carried by the support opposite and facing the cutter providing a space between the cutter and member and having two side plates with a spacing piece secured between them providing a space between the plates receiving the edge of the cutter, a spring connecting the movable member with the support, and a stop engaging the member to hold the same retracted with respect to the cutter.

7. A cutting implement comprising a support and a hand part, the latter having two side members providing a space between them to receive the support, a spring located in said space connecting the support with the hand part, and coacting projecting and recessed members carried by the support and hand part to retain them folded against the tension of the spring, said support being provided with a cutter.

851,246. DRAFT-RIGGING. JOHN O. NEIKIRK, Chicago, Ill. Filed July 16, 1906. Serial No. 326,419.

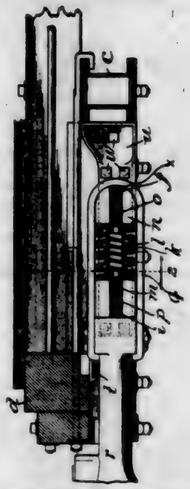

Claim.—1. In a draft-rigging for railway cars, the combination with an end sill and bolster, slotted draft-beams, braces secured to such beams and abutting the end sill and bolster and having slots therein registering with the slots in the draft-beams, keys mounted between the draft-beams and extending into the slots therein, a spring between said keys, a coupler, and means for connecting the keys to the coupler.

2. In a draft-rigging for railway cars, the combination of slotted draft-beams, keys movably supported in such slots, metallic brace plates secured to the draft-beams and abutting the end sill and bolster, portions thereon extending into such slots and forming shoulders therein against which said keys normally abut, a coupler, and means for transmitting the thrust upon such coupler to such shoulders.

3. In a draft-rigging for railway cars, the combination of slotted draft-beams, keys movably supported within said slots, metallic brace plates secured to the draft-beams and abutting the end sill and bolster, portions thereof extending into such slots and forming shoulders and wear plates for such keys, means for normally forcing the keys against such shoulders, and means for normally connecting the keys to a coupler.

4. In a draft rigging for railway cars the combination with an end sill and bolster of, slotted draft beams, keys supported by the draft beams having sliding movement in the slots, a coupler, a yoke secured to the coupler and embracing the keys, a spring between the keys and within the yoke and slotted brace plates secured to the draft beams, said brace plates having at their forward ends portions abutting adjacent sides of the end sill and at their rearward ends portions abutting the bolster.

5. In a draft rigging for railway cars, the combination with end sill and bolster, of slotted draft beams secured thereto, slotted metallic brace plates secured to the draft beams and formed with portions extending into the slots in the draft beams and upwardly extending end portions abutting the end sill and bolster, keys carried by the brace plates and having sliding movement in the slots therein, a coupler, a yoke secured to the coupler and embracing the keys, spring seats secured to the keys within the yoke, and a spring between such spring seats.

851,247. WATERPROOF PORTLAND CEMENT AND PROCESS OF MAKING SAME. SPENCER B. NEWBERRY, Sandusky, Ohio. Filed Mar. 13, 1905. Serial No. 249,786.

Claim.—1. The process of rendering cement water proof, which consists in mixing therewith a small percentage of the insoluble lime salt of a fatty acid, substantially free from glycerine or other soluble substance.

2. The process of rendering cement water proof, which consists in mixing therewith a small percentage of insoluble stearate of lime, substantially free from glycerine or other soluble substance.

3. A composition of matter resulting from the described process, which consists of cement mixed with a small percentage of the insoluble lime salt of a fatty acid, substantially free from glycerine or other soluble substance.

4. A composition of matter which consists of cement mixed with a small percentage of insoluble stearate of lime substantially free from glycerine or other soluble substance.

851,248. COMPRESSION-PUMP. FREDERICK W. NIEBLING, Cincinnati, Ohio, assignor to F. W. Niebling Company, Norwood, Ohio, a Corporation of Ohio. Filed Dec. 10, 1906. Serial No. 346,998.

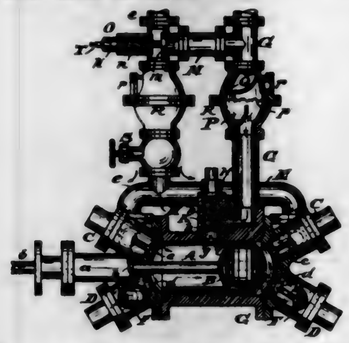

Claim.—1. In a compression pump, the combination of the cylinder thereof having valve-chambers at opposite ends and one between them, which chambers all communicate with the cylinder, an inlet valve in each of these chambers controlling this communication automatically, a low-pressure pipe communicating with the valve-chambers at the ends, a high-pressure pipe communicating with the other valve-chamber, a pipe connecting high and low-pressure pipes, and a valve controlling automatically passage through this pipe.

2. In a compression pump, the combination of the cylinder thereof having the usual inlet and discharge-valves, valve-chambers for them, a low-pressure pipe communicating with the valve-chambers of the inlet-valves and a high-pressure pipe communicating with the cylinder independently of these valve-chambers.

3. The combination with a compression-pump and the usual return pipes connected therewith, of a trap provided for these pipes and consisting of a housing open at opposite ends and alined with a pipe, a pocket contained in this housing, a screen above this pocket and a deflector above the screen.

851,249. COMBINED BABY-WALKER AND SWING. WILLIAM H. NIEMEYER, Baltimore, Md. Filed Mar. 21, 1906. Serial No. 307,217.

Claim.—1. A combined baby-walker and swing, comprising a supporting frame having uprights or standards, a ring-like top, means for detachably securing said ring-like top to the standards, a seat or support carried by said ring-like top, and means carried by said ring-like top for the attachment of the suspending ropes thereto.

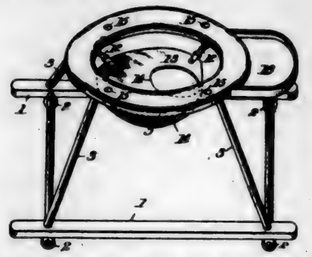

2. A combined baby-walker and swing comprising a supporting frame having standards or uprights, a ring-like top, means for detachably securing said top to the standards, a support or seat of flexible material having openings therein to receive the limbs of the child suspended from said ring-like top, and means carried by the ring-like top for the attachment of suspending-ropes thereto.

3. A combined baby-walker and swing comprising a supporting-frame having standards or uprights, spring-detents carried by the upper ends of said standards, a ring-like top having openings to receive the upper ends of said standards and formed with means coacting with said spring-detents to secure said top to the standards, a seat or support carried by the ring-like top, and means carried by the carried by the ring-like top, and means carried by the ring-like top for the attachment of suspending ropes thereto.

4. A combined baby-walker and swing comprising a supporting-frame having uprights or standards formed in their upper ends with recesses, spring-members secured in said recesses formed with detents, a ring-like top formed with openings to receive the upper ends of the standards, bushings fitted in said openings forming shoulders, interiorly of the openings to be engaged by the detents and carrying flanges on their outer edges disposed a short distance below the under side of the top, coiled springs having one end coiled about said bushings between the flanges and the under-side of the ring-like top, a support or seat of flexible material having openings for the limbs of the child, adjustable straps connecting said support or seat with the free ends of the springs, and means carried by the ring-like top for attaching suspending-ropes thereto.

5. A combined baby-walker and swing comprising a base-portion having uprights or standards raised therefrom, a ring-like top, means for detachably connecting said ring-like top to the standards, a support or seat of flexible material having openings for the limbs of the child, means for yieldingly connecting said flexible support to the under side of the ring-like top, and means carried by said ring-like top for the attachment of swinging-ropes thereto.

851,250. LOOM-PICKER. LUTHER PILLING, Danielson, Conn. Filed May 24, 1906. Serial No. 318,450.

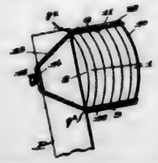

Claim.—1. A loom-picker consisting of a plurality of superposed layers of non-metallic, resilient material cemented together and shaped to present a broad impact portion concaved at its back to form a cushion, a flexible loop-like holder made in a single piece embracing the sides of the picker, connected therewith adjacent the top and bottom only and extended rearwardly therefrom opposite

the concaved back to connect the picker with the picker-stick.

2. A loom-picker consisting of compressed non-metallic, resilient material shaped to present a broad impact portion concaved at its back to form a cushion and flattened at the upper and lower ends of the back in substantially the same plane, to seat firmly and directly upon the picker-stick, and a one-piece loop-like, flexible holder embracing the sides of the picker and connected therewith at top and bottom, to receive the picker-stick and connect the picker thereto, the entire impact portion of the picker being exposed from top to bottom.

3. A loom-picker consisting of a plurality of superposed layers of non-metallic, resilient material cemented together and shaped to present a broad impact portion concaved at its back to form a cushion, a wire holder bent to embrace the sides of the picker and cross the front of the same at its upper and lower ends, said holder extending rearwardly to receive the picker-stick, a connector for the rearwardly extended extremities of the holder, adapted to rest upon the back of the picker-stick, and a clamp-screw carried by said connector.

4. A loom-picker consisting of a plurality of superposed layers of non-metallic, resilient material cemented together and shaped to present a broad impact portion concaved at its back to form a cushion, upper and lower short prolongations extended oppositely from said impact portion and having their back faces flat and substantially in the same plane, to seat firmly and directly upon the picker-stick, and loop-like holding means made in a single piece embracing said prolongations at the sides and front thereof and adapted to co-operate with the picker-stick opposite the concave back of and to retain the picker in place thereon.

851,251. COIN-REGISTERING MECHANISM. FRANK D. POWELL and CHARLES S. ELLIS, Chicago, Ill., assignors to American Coin Register Company, Chicago, Ill., a Corporation of Illinois. Filed June 22, 1904. Serial No. 213,670.

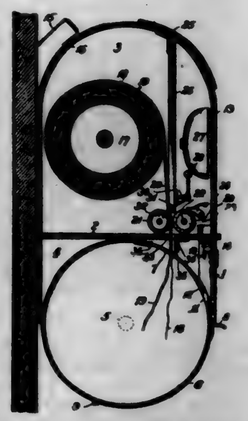

Claim.—1. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape arranged to pass between adjacent faces of said rollers into a coin receiving receptacle separated therefrom, said tape and rollers being protected against unauthorized manipulation, means for passing a coin between said rollers into said coin receptacle, one face of the coin being thereby brought into contact with said tape, said rollers being arranged to cause a pressure of the coin against the tape, when passing, whereby an impression of the coin may be made upon the tape and a section of the latter advanced with the coin into the coin receptacle.

2. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape arranged to pass between adjacent faces of said rollers into a coin-receiving receptacle separated therefrom, said tape and rollers being protected against unauthorized manipulation, means for passing a coin between said rollers into said coin receptacle, one face of the coin being thereby brought into contact with said tape, and means for causing an imprint of the coin to be made upon the tape.

3. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape arranged to pass between adjacent faces of said rollers into a coin receptacle separated therefrom, said tape and rollers being protected against unauthorized manipulation, one of said rollers being actuated from without while the other is adapted to be actuated by the interposition of a passing coin, and means for passing a coin between said rollers into said coin receptacle, one face of said coin being caused to act upon said tape to produce an impression of said face thereon.

4. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape arranged to pass between opposing faces of said rollers into a coin receiving receptacle, separated therefrom, said tape and rollers being protected against unauthorized manipulation, means for passing a coin between said rollers into said coin receptacle, said rollers being adjusted to cause a pressure of said coin upon said tape while passing, and means for severing the section of tape which is passed into said coin receptacle.

5. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape arranged to pass between opposite faces of said rollers into a coin receptacle separated therefrom, said tape and rollers being protected against unauthorized manipulation, means for passing a coin between said rollers into said coin receptacle, said rollers being adjusted to cause a pressure of said coin upon said tape while passing, and means for automatically severing the section of tape which is passed into said receptacle by the opening of the latter.

6. The combination with a coin receptacle and juxtaposed rollers of coin registering mechanism comprising a sealed or locked enclosure, a coin-chute leading therein, juxtaposed rollers mounted therein with their meeting faces in the plane of said coin chute, a registering tape arranged to pass between said rollers, a separate coin receptacle having a receiving opening registering with the pass between said rollers for the passage of said coin and tape, and means for actuating one of said rollers from without.

7. A device of the class described in which is combined a sealed or locked enclosure, a coin chute leading therein, juxtaposed rollers mounted therein with their meeting faces in the plane of said coin chute, a registering tape arranged to pass loosely between said rollers, a separate coin receptacle having a receiving opening registering with the pass between said rollers for the passage of said coin and tape and means for actuating one of said rollers from without, whereby the interposition of a coin may serve to press the loosely suspended tape against one of said rollers, thus causing the tape to move with the coin to pass a section of the tape into the coin receptacle with the passage of each coin.

8. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape and impression strip arranged together to pass between opposing faces of juxtaposed rollers into a coin receptacle separated therefrom, said tape and rollers being protected against unauthorized manipulation, and means for passing a coin between said rollers into said coin receptacle to press said tape against said impression strip during said passage.

9. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape arranged to pass between adjacent faces of said rollers into a coin receptacle separated therefrom, said tape and rollers being protected against unauthorized manipulation, means for passing a coin between said rollers into said coin receptacle, said rollers being adjusted to cause a pressure of said coin upon said tape, and means for preventing a backward movement of said rollers.

10. A device of the class described in which is combined a case having primary and secondary sealed or locked enclosures separated from each other, a registering tape and juxtaposed rollers enclosed within said primary enclosure, said tape being passed loosely between said rollers and thence through an opening into said secondary enclosure, means for passing a coin into said primary enclosure between said rollers into said secondary enclosure, means for pressing said coin against said tape during its passage, and means for actuating said rollers in one direction only.

11. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape arranged to pass between the opposing faces of said rollers into a coin receptacle separated therefrom, said tape and rollers being protected against unauthorized manipulation, means for passing a coin between said rollers into said coin receptacle to press against said tape during its passage, means for actuating said rollers from without, and means for indicating the full pre-determined movement of said rollers.

12. The combination with a coin receptacle and means for taking the impression of a coin upon a registering tape, of a registering tape protected against unauthorized manipulation, said tape being provided with a series of ordinate characters extending throughout its length to enable the same to be identified in its entirety when separated into fragments or sections.

851,252. COOKING APPARATUS. GEORGE R. PROWSE, Montreal, Quebec, Canada. Filed Nov. 17, 1905. Serial No. 287,878.

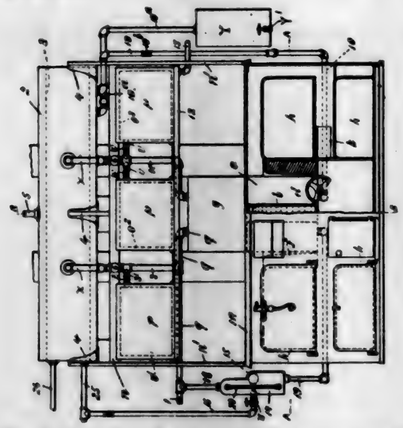

Claim.—1. In a cooking apparatus the combination with a steam generator of angular horizontal section and constituting two walls of the combustion chamber, of a pair of receptacles, a main pipe leading from the steam generator to the interior of one of the receptacles, a branch pipe leading from the main pipe to the other receptacle, and a means maintaining a limited pressure in the first receptacle and allowing an excessive pressure in the said first receptacle to flow to the second receptacle, the portions of the said generator contiguous to the different walls being in direct communication with one another, and means whereby the steam is distributed for domestic purposes.

2. In a cooking apparatus the combination with a steam generator of angular horizontal section and constituting two walls of the combustion chamber, and a receptacle formed by an upward extension of the generator for accumulating the steam generated, of a pair of receptacles, a main pipe leading from the steam generator to the interior of one of the receptacles, a branch pipe leading from the main pipe to the other receptacle, and a means maintaining a limited pressure in the first receptacle and allowing an excessive pressure in the said first receptacle to flow to the second receptacle.

3. In a cooking apparatus having a pair of combustion chambers, the combination with a steam generator presenting a portion forming the back of both combustion chambers and a leg communicating directly with and extending forwardly from the said back and dividing the said combustion chambers from one another, and a receptacle formed by an upward extension of the back portion of the generator and constituting a dome for accumulating the steam generated, of a pair of receptacles, a main pipe leading from the steam dome to the interior of one of the receptacles and, a branch pipe leading from the main pipe to the other receptacle, and a means maintaining a limited pressure in the first receptacle and allowing an excessive pressure to flow to its second receptacle.

4. In a cooking apparatus the combination with a steam generator, of a pair of receptacles, a main pipe leading from the steam generator to the interior of one of the receptacles, a branch pipe leading from the main pipe to the other receptacle, and a means maintaining a limited pressure in the first receptacle and allowing an excessive pressure in the said first receptacle to flow to the second receptacle.

5. In a cooking apparatus the combination with a steam generator, of a pair of receptacles, a main pipe leading from the steam generator to the interior of one of the receptacles and, a branch pipe leading from the main pipe to the other receptacle, and a check valve controlling the said branch.

6. In a cooking apparatus the combination with a steam generator, of a steam cooking chamber, a liquid containing device, a pipe leading from the steam generator to the interior of the steam cooking chamber, a branch pipe leading from the first mentioned pipe to the liquid containing device, and a check valve controlling the said branch and located at a point between the junction of the branch with the main pipe and the liquid containing device.

7. In a cooking apparatus the combination with a steam generator, of a pair of receptacles, a main pipe leading from the steam generator to the interior of one of the receptacles and, a branch pipe leading from the main pipe to the other receptacle, a check valve controlling the said branch, and an automatically controlled water supply to the generator.

8. A cooking apparatus comprising a pair of combustion chambers, a steam generator of T horizontal section and constituting the rear walls and the walls adjacent to one another of the combustion chambers, the opposite walls of such chambers being formed of fire brick, and the fronts being closed by doors, a steam dome formed by a vertical extension of the rear portion of the generator, a horizontal series of steam cooking chambers supported above the top of the cooking apparatus, steam supply pipes leading from the dome to the interior of such series of chambers, means for conducting the water of condensation from the said series of chambers, a water tank, a steam jacket enclosing such tank, branch pipes leading from the supply pipes to the jacket, check valves controlling such branch pipes, and pipes for conducting the water of condensation from the jacket back to the steam generator.

9. A range comprising a pair of combustion chambers, a steam generator of T horizontal section and constituting the rear walls and the walls adjacent to one another of the combustion chambers, the opposite walls of such chambers being formed of fire brick, and the fronts being closed by doors, a steam dome formed by a vertical extension of the rear portion of the generator, a horizontal series of steam cooking chambers supported above the top of the range, steam supply pipes leading from the dome to the interior of such series of chambers, means for conducting the water of condensation from the said series of chambers, a water tank, a steam jacket enclosing such tank, branch pipes leading from the supply pipes to the jacket check valves controlling such branch pipes and pipes for conducting the water of condensation from the jacket back to the steam generator, a closed chamber, a pipe leading from a source of water to such closed chamber, a ball-cock within the closed chamber and controlling the last men-

tioned pipe, and a pair of pipes connecting the upper and lower portions respectively of the steam generator to the top and bottom, respectively of the closed chamber.

10. A cooking apparatus comprising a pair of combustion chambers, a steam generator of T horizontal section and constituting the rear walls and the walls adjacent to one another of the combustion chambers, the opposite walls of such chambers being formed of fire brick, and the fronts being closed by doors, a steam dome formed by a vertical extension of the rear portion of generator, a horizontal series of steam cooking chambers supported above the top of the range, steam supply pipes leading from the dome to the interior of such series of chambers, means for conducting the water of condensation from the said series of chambers, a water tank, a steam jacket enclosing such tank, branch pipes leading from the supply pipes to the jacket, check valves controlling such branch pipes, pipes for conducting the water of condensation from the jacket back to the steam generator, a closed chamber, a pipe leading from the said water tank to the closed chamber, a ball-cock within the closed chamber and controlling the last mentioned pipe, a pair of pipes connecting the upper and lower portions respectively of the steam generator to the top and bottom, respectively, of the closed chamber.

11. In a cooking apparatus a steam generator, a receptacle in communication with such steam generator in which the steam is collected, a receptacle adapted to contain water to be heated, a hollow jacket within which the last mentioned receptacle is located, a steam conductor leading from the receptacle in which the steam is collected to the interior of the said jacket, a check valve controlling the last mentioned conductor, a valve controlled return conductor leading from the jacket to the generator, a tank having a faucet, and a pipe leading from the said jacket to the tank.

851,253. FUEL-FEEDING DEVICE FOR BOILER-FURNACES. JAMES REAGAN and WILLIAM REAGAN, Philadelphia, Pa. Filed July 6, 1906. Serial No. 324,989.

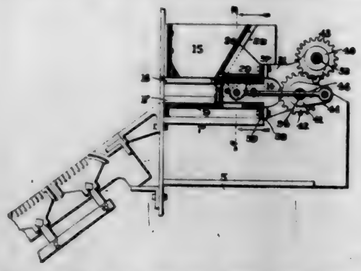

Claim.—1. In a fuel feeding device for furnaces, the combination of a driving shaft having a direct intermittent rotary movement, gear wheels mounted thereon, a series of secondary spindles located beneath the same, gear wheels with crank arms formed on the sides thereof; mounted upon the ends of said spindles to mesh with the teeth on the driving shaft, a bracket having duplex bearings for the shaft and spindles, a hopper and bed plate, pushers arranged beneath the said hopper, connecting rods pivoted to the crank arms and to the underside of the pushers to transmit a reciprocating motion to the same, substantially as set forth.

2. In a fuel feeding device for furnaces, the combination of end supporting plates provided on their inner surface with elongated lugs, a bed plate resting upon said lugs; and with spaced lugs located above the bed plate, intermediate brackets provided with spaced lugs extending on both sides, thereof, pushers having end projections and antifriction wheels arranged to work between the aforesaid spaced lugs, and a hopper furnished with flanged ends; secured to the end plates and to the intermediate brackets, substantially as set forth.

851,254. STEAM-SEPARATOR. GEORGE ROTHENBÜCHER, New York, N. Y. Filed June 28, 1906. Serial No. 323,876.

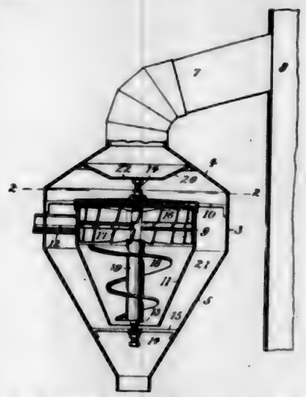

Claim.—1. A steam separator composed of an inner chamber, an outer chamber communicating therewith at its lower end, a rotatable turbine and worm within the inner chamber, and an annular conical deflector at the top of the outer chamber, substantially as specified.

2. A steam separator composed of an inner chamber, an outer chamber communicating therewith at its lower end, a turbine within the inner chamber having outwardly opening grooves, and a worm operatively connected to the turbine, substantially as specified.

851,255. HYDRAULIC MOTOR. JACOB SCHAEFFER, Dayton, Ohio. Filed May 29, 1905. Serial No. 262,766.

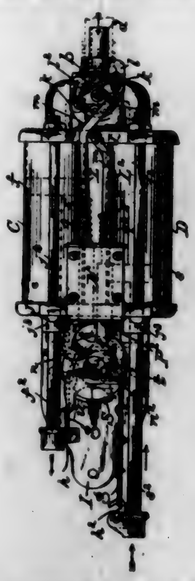

Claim.—1. In a water-motor, and in combination with the valve provided with a cross head; of the cylinders; the piston-heads and piston-rods, which have a reciprocal movement in said cylinders; the sprocket-chain and wheel actuated by the piston-rods; the movable valve rods connected to the cross-head of said valve; the hooked ends of each provided with the spring-catch, the spring, and

the disk for actuating said valve-rods; all substantially as described.

2. The combination in a water-motor, of the two-way valve having the inlet and exhaust sides; the inlet-pipe; the exhaust-port; the cylinders and the piston-heads and piston-rods, which have a reciprocal movement in said cylinders; means connected at ends of said piston-rods for transmitting power; the cross-head at top of said valve; the rods connected to said cross-head for actuating said valve; and springs for impelling said rods, and devices for controlling and releasing same; all substantially as set forth and described.

3. In the herein referred to hydraulic motor, the combination of the two-way valve; the cylinders adapted to receive water through the inlet pipe from the source of supply and exhaust said water; the piston-heads and piston-rods adapted to play in said cylinders; the rods for operating said valve; the springs and catches for operating said rods; the vertical shaft; the means mounted upon said shaft for setting and releasing said valve-rods, and for connecting said piston-rods; an inlet and exhaust port; the whole adapted to move the piston-rods so as to have a reciprocal movement, thus filling one cylinder whilst the other cylinder is exhausting; all substantially as and in the manner and for the purposes described.

4. The combination in an hydraulic motor of the following elements, to wit:—a valve having an inlet and exhaust side; the plunger-heads, and the rods, each of which moves or plays in each of said cylinders; the spring actuated movable-rods for actuating said valve, each having a hooked-end, and provided with a catch; the vertical shaft; the sprocket-wheel and chain for said plunger-heads and plunger-rods; the disk provided with the finger and lug for actuating the movable valve-rods; and the inlet pipe, exhaust port, and waste pipe; all substantially as described.

851,256. ERASER-SHIELD. HARRY I. SEDDON, Syracuse, N. Y. Filed Nov. 9, 1906. Serial No. 342,763.

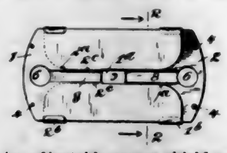

Claim.—1. An adjustable eraser shield comprising a plurality of members fitted one upon the other, said members being provided with slots at opposite ends adapted to register with each other to provide an opening adapted to be lengthened and shortened according to the position of adjustment of said members, and means for adjustably connecting said members together.

2. An adjustable eraser shield comprising a pair of members fitted one upon the other and provided with registering slots leading through the ends of said members, means to movably connect said members together, and means to limit relative movement of said members with respect to each other.

3. An adjustable eraser shield comprising a pair of relatively thin members fitted one upon the other, said members having clips that are bent over the edges of the adjacent member providing guides for each other, said members being provided with an opening between them adapted to be increased or decreased in length according to the position of said members together.

4. An adjustable eraser shield comprising a pair of relatively thin members fitted one upon the other, said members having clips that are bent over the edges of the adjacent member providing guides for each other, said members each having a slot arranged to register with each other to provide an opening adapted to be increased or decreased in length according to the position of adjustment of said members with respect to each other.

5. An adjustable eraser shield comprising a pair of members fitted one upon the other and provided with slots at opposite ends adapted to register with each other, said members having clips near their ends folded over the opposite member providing guides to hold the members slidably together.

6. An adjustable eraser shield comprising a pair of members fitted one upon the other and provided with slots at opposite ends adapted to register with each other, said members having clips near their ends folded over the opposite member providing guides to hold the members slidably together, and means to limit relative movement of said members with respect to each other.

7. An adjustable eraser shield comprising a pair of members provided with slots registering with each other, one of said members having a depression in line with its slot located between the edges of the slot of the opposite member, and means to slidably connect said members together.

851,257. WATER-TUBE BOILER. JOHN F. SENTER, Birmingham, Ala., assignor of one-half to The Walsh and Weidner Boiler Company, Chattanooga, Tenn., a Corporation of Tennessee. Filed Sept. 18, 1905. Serial No. 279,006.

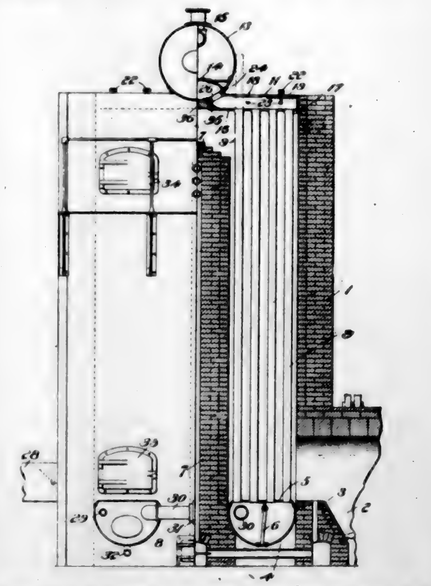

Claim.—1. A water tube boiler comprising a pair of lower drums, rows of tubes leading upwardly from said drums, a manifold header connected to each row of tubes and disposed substantially horizontally and in line with the direction of flow of the gases, said headers being juxtaposed and arranged in two banks, one above each lower drum, a deflector wall between the banks of tubes leading to said banks of headers, and a steam drum connected to the inner ends of the headers of both banks, said steam drum and headers being freely supported by said tubes.

2. In a water tube boiler, a lower drum, rows of straight vertical tubes, equal in length, connected to said drum, a row of juxtaposed manifold headers disposed transversely to said drum and each connected to a row of tubes, a steam drum to which said headers are independently connected at one end, and a casing surrounding said headers but leaving them and said steam drum freely supported from said lower drum by said tubes.

3. In a water tube boiler, a steam drum, a set of abutting manifold headers disposed below and to each side of said drum, said headers being connected at their inner ends to said drum and serving as a deflecting top wall to prevent the products of combustion acting directly on said drum, and two lower drums connected by straight tubes

of substantially equal length to said headers, said tubes supporting said steam drum and headers free of fixed parts.

4. In combination with a water tube boiler, comprising lower drums, vertical tubes connected thereto, two banks of manifold headers connected to said tubes and abutting to form tight longitudinal joints, means to close the interstice between the opposite banks of headers, and a steam drum connected to and supported by said headers, of a casing open at the top and closed by said headers.

5. A water tube boiler comprising two drums, means to circulate water between said drums comprising a plurality of vertically disposed water tubes, and juxtaposed manifold headers connected each to a row of said tubes and to the upper drum, said headers being free at one end to move independently responsive to the expansion or contraction of their respective rows of tubes and constituting the top wall of the boiler casing.

6. A water tube boiler comprising an upper drum, substantially horizontally disposed, substantially horizontal headers connected at or near one end to said drum and disposed transversely to and on opposite sides thereof, one or more lower drums, vertically disposed tubes connecting said lower drum or drums and said headers, and a boiler casing, said upper drum and headers being supported by said tubes free of fixed connection to said casing, and said headers being freely and independently adjustable at their outer ends.

7. In a water tube boiler, a casing, a steam drum freely supported at or near the top thereof, a plurality of oppositely disposed headers connected at their inner ends to said drum, water drums near the lower part of the casing, tubes connecting the headers and water drums and removable through said headers without disturbing said casing.

8. A vertical water tube boiler comprising a casing, upper and lower drums therein, manifold headers independently connected at one end to said upper drum, banks of vertical water tubes depending from said headers and direct connected to said lower drum, said tubes being equal in dimension and disposed in line with the flow of the products of combustion, a vertical deflector wall between said banks of tubes, and means to cause the products of combustion in flowing through said casing to act directly upon said tubes and headers without coming into contact with said upper drum.

9. In a water tube boiler, in combination, an upper drum, independently adjustable manifold tube headers connected thereto and disposed in banks below and on each side thereof, a body of fire proof material disposed between the inner ends of the oppositely disposed banks of headers and beneath said drum, lower drums, a row of vertical tubes connecting a lower drum with each header, a casing whose upper end is closed by said headers and fire proof material, which closure is freely movable responsive to the expansion and contraction of said tubes, and a vertical deflector wall between the tubes connected to each bank of headers.

10. The combination, in a water tube boiler, of a casing a bridge wall over which the products of combustion flow in entering said casing, a water drum seated behind and below said bridge wall and having its upper portion formed of a tube plate, straight interchangeable tubes of equal length connected to said plate and leading upwardly through said casing, a steam drum, a plurality of manifold juxaposed headers connected to said tubes and said drum and disposed below the latter, said tubes and headers serving to support said steam drum free of said casing, and means co-operating with said headers to prevent the products of combustion coming into direct contact with said steam drum.

11. The combination, in a water tube boiler, of a casing divided into two vertical compartments which communicate at their upper ends, drums mounted in the lower ends of each compartment, tubes connected to said drums and leading to the upper end of said compartments, two banks of independently adjustable headers, connected to said tubes, which serve to direct the products from one compartment to the other, a steam drum communicating with and supported by said headers and disposed above them, and means to pass products of combustion through said compartments without bringing them into contact with said steam drum.

12. In a water tube boiler, a steam drum, a tube header of equal width throughout adapted to be connected thereto and having an internally shouldered curved neck portion, integral flanges disposed above and below the opening in said neck and provided with bolt or rivet holes, and a nipple adapted to have its inner end inserted in said opening and expanded into engagement with the shouldered portion of said neck, the middle portion of the nipple being disposed between the edge of the opening in the drum and said shouldered portion so that it is free to expand laterally during the expanding operation.

13. In a water tube boiler, a steam drum, a header connected thereto having an opening at one end adapted to receive a nipple, an internal annular flange in said header spaced a short distance inwardly from the end of the opening, a nipple adapted to be inserted and have its end expanded against said flange, flanges integral with said header and of equal width therewith by which it is connected to said drum, and an opening in said drum in which the other end of said nipple is expanded, a free expanding space being provided between the said shoulder and drum for the intermediate portion of the nipple.

14. In a water tube boiler, a horizontal drum, a plurality of horizontal tube headers disposed below and to one side of said drum and having curved neck portions at one end which abut at their side edges and are provided with flanges disposed above and below the openings in said neck, and bolt or rivet openings therein by means of which they are adapted to be connected to said drum.

15. In a water tube boiler, a drum, and a plurality of tube headers connected with said drum and arranged side by side with straight abutting side edges which make a close joint throughout their entire length, said headers being provided with abutting flanged extensions having apertures which receive the rivets or bolts for fastening them to said drum and with shoulders to receive a body which protects said drum from exposure to the products of combustion.

851,258. BABY-WAIST. HANNAH J. SHARP, Billings, Mont. Filed Sept. 4, 1906. Serial No. 333,163.

Claim.—A garment of the character described comprising a body portion provided with armholes and with a vertical slit beneath one of said arm holes, said body portion being provided on each side thereof with laterally extending straps united thereto by strips of elastic fabric.

851,259. SAFETY-POCKET. EDGAR SHAW, Swampscott, Mass. Filed Feb. 13, 1907. Serial No. 357,168.

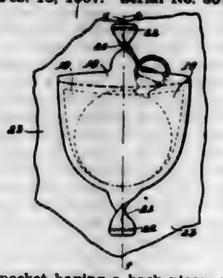

Claim.—1. A pocket having a back piece, a front piece, an open mouth, a flexible tab projecting upwardly from the upper edge of the back piece, and adapted for attachment to a garment, the pocket being reversible to convert the back piece into a front piece, and cause the tab to obstruct the mouth.

2. A pocket having an open mouth, a flexible tab projecting from the upper edge of the back piece of the pocket, and a flexible tab projecting downwardly from the lower end of the pocket, said tabs being adapted to flexibly connect the pocket with a garment, the pocket being reversible to cause the upper tab to obstruct its mouth.

851,260. PLOW. GEORGE A. STAFFORD and EDWARD HENRY, Belcherville, Tex. Filed Nov. 27, 1906. Serial No. 345,805.

Claim.—A pivoted landside having a bolt which is adjustably located in the slot *g'* of the furrow-bar, the rear end of the landside being doubled upon itself in order to reinforce the point of greatest wear of said landside substantially as herein shown and described.

851,261. ALARM DEVICE. JOHN K. STEWART, Chicago, Ill. Filed Mar. 28, 1906. Serial No. 308,300.

Claim.—1. An alarm device comprising a siren wheel and a case; a speed train mounted on the exterior of the siren-wheel case and a supplemental case also mounted on the siren-wheel case enclosing said speed train, the two cases together affording bearings for the train; a wheel of the train having a ratchet rim; an operating lever mounted on the train case exteriorly thereof and a dog carried thereby engaging the ratchet rim, the case being apertured to admit the dog to the rim.

2. An alarm device comprising a fixed case and a rotatable vaned wheel therein, the case having a multiplicity of apertures corresponding to the chambers between the vanes and the case and wheel being adapted to admit the air to said inter-vane chambers about the center; means for mounting and rotating the wheel comprising a post rigid with the case having a tubular hollow portion protruding thereinto, the wheel having a hollow hub which receives said protruding portion of the post, and a spindle located axially within said hollow hub which protrudes into the hollow portion of the post; a gear pinion rigid with said spindle, the hollow post being apertured in the zone of said gear pinion, and a speed-multiplying train of gears mounted on the case having a gear which protrudes through said aperture for engagement with said pinion within the hollow post.

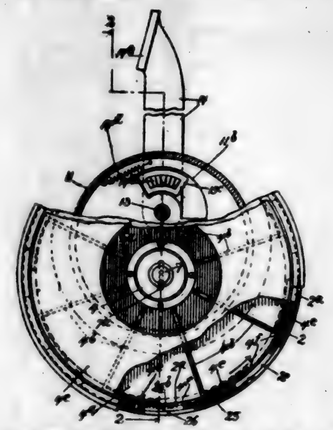

3. An alarm device comprising a fixed case having a multiplicity of apertures and a siren wheel therein, the wheel and casing being apertured at one side about the center for air induction; a gear case mounted on the opposite side of the siren wheel case; a speed-multiplying gear train in said gear case for rotating the siren wheel; an operating lever outside the gear case mounted for rocking about the axis of the first wheel of the train, the side of the gear case having a segmental slot, the first wheel of the train having a ratchet flange and the operating lever having a pawl which protrudes from the slot for engaging the ratchet.

4. An alarm device comprising a case having a multiplicity of peripheral apertures; a rotary vaned wheel within the case having corresponding apertures leading from between its vanes, the case and wall being constructed to close such spaces between the vanes except at the center and at said apertures; a speed gear train mounted on the case for rotating the wheel; a case inclosing the gear train and mounted rigidly on the alarm case; a shutter mounted loosely on the alarm case encompassing the latter, having apertures corresponding with the peripheral apertures of the latter and rotatable thereabout at will to cover said apertures more or less.

5. An alarm device comprising a siren wheel and its case; a gear train mounted on the case for rotating the siren wheel, and a clutching device interposed in the train for communicating driving movement to the siren wheel in one direction only, adapted to permit the wheel to run faster than the train in said direction.

6. An alarm device comprising a siren wheel and a case for the same; a speed-multiplying train mounted on the case operatively connected with the siren wheel for rotating it; an oscillating lever and a pawl-and-ratchet connection between the same, and a wheel on the train for driving the train in one direction, and a clutch device interposed between the train and the siren wheel for driving the latter in one direction and permitting it to run faster than the train in that direction.

851,262. GLASS-BLOWING MACHINE. CHARLES A. TATUM, New York, N. Y. Filed Apr. 12, 1905. Serial No. 255,105.

Claim.—1. In a blowing device, the combination of a cylinder, a piston movable therein, means for adjusting the

stroke of the piston so as to vary the amount of air displaced, and a head forming a working chamber with the piston and cylinder, said head being adjustable toward and from the piston so as to avoid the formation of a dead space as the stroke of the piston is varied.

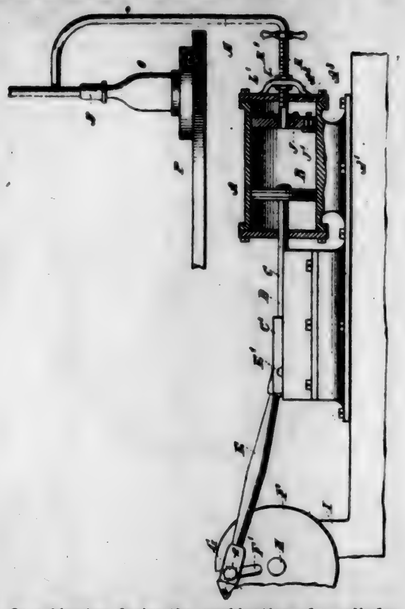

2. In a blowing device the combination of a cylinder, a piston movable therein, means for adjusting the stroke of the piston, and a head adjustable toward and from the piston and forming a compression chamber therewith, said head having a delivery conduit connected therewith.

3. In a blowing device the combination of a cylinder, a piston movable therein, means for adjusting the stroke of the piston, and a head adjustable toward and from the piston and forming a compression chamber therewith, said head having suction and delivery channels.

4. In a blowing device the combination of a cylinder, a piston movable therein, a head adjustable toward and from the piston and forming a compression chamber therewith, and a delivery conduit a portion of which is carried by said head and movable therewith.

5. In a blowing device the combination of a cylinder, a piston movable therein, a head adjustable toward and from the piston and forming a compression chamber therewith, and provided with suction and delivery channels.

6. The combination of a cylinder, a piston movable therein, means for adjusting the stroke of the piston, a head adjustable toward and from said piston, a blow head, and a delivery conduit extending from the adjustable head of the cylinder to the blow head, a portion of said delivery conduit being attached to and movable with the adjustable cylinder head.

7. In a blowing device, the combination of a cylinder, a piston movable therein, means for adjusting the relative distance between the piston and the cylinder head while the piston is out of operation, and means for adjusting the stroke of the piston so that said piston will come close to the cylinder head whatever adjustment may have been made of the relative distance between piston and cylinder head.

8. In a blowing device, the combination of a cylinder, a piston movable therein, a head adjustable toward and from the piston and forming a working chamber therewith, and a conduit a portion of which is carried by said head and movable therewith.

9. In a blowing device, the combination of a cylinder, a piston movable therein, means for adjusting the stroke of the piston, and a head adjustable toward and from the piston and forming a working chamber therewith, said head having a conduit connected therewith.

10. In a blowing device, the combination of a cylinder, a piston movable therein, means for adjusting the stroke of the piston, and a head adjustable toward and from the piston and forming a working chamber therewith, said head having inlet and outlet channels.

11. In a blowing device, the combination of a cylinder, a piston movable therein, a head adjustable toward and from the piston and forming a working chamber therewith, and provided with inlet and outlet channels.

12. In a blowing device, the combination of a cylinder, a piston movable therein, means for adjusting the stroke of the piston, a head adjustable toward and from the piston, a blow head, and a conduit extending from the adjustable head of the cylinder to the blow head, a portion of said conduit being attached to, and movable with, the adjustable cylinder head.

851,263. BOXING-MACHINE. BENJAMIN W. TUCKER, Newark, N. J., assignor to The American Tobacco Company, New York, N. Y., a Corporation of New Jersey. Filed Feb. 8, 1904. Serial No. 192,629.

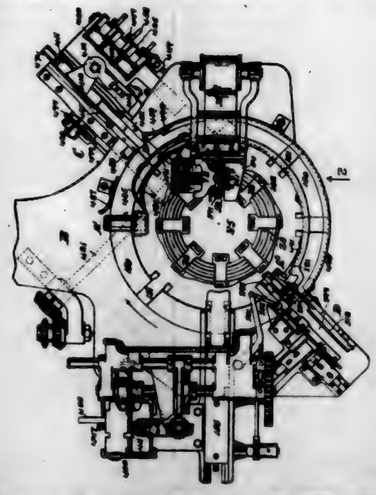

Claim.—1. The combination with a depositing plunger, of a receiving device to which cigarettes or similar articles are delivered by the plunger, supports located on either side of the path of movement of the plunger for supporting a wrapper sheet between the plunger and the receiving device and adapted to turn the sides of the wrapper sheet upward about the articles as the plunger makes its delivery movement, and means operative for supporting the upstanding sides of the wrapper sheet below said supports during the latter part of the depositing movement and the first part of the return movement of the plunger to prevent their being injured or displaced by the movement of the plunger, substantially as described.

2. The combination with a depositing plunger, of a receiving device to which cigarettes or similar articles are delivered by the plunger, supports located on either side of the path of movement of the plunger for supporting a wrapper sheet between the plunger and the receiving device and adapted to turn the sides of the wrapper sheet upward about the articles as the plunger makes its delivery movement, and means for supporting the upstanding sides of the wrapper sheet by engagement with the inner surfaces of said upstanding sides below said supports during the latter part of the depositing movement and the first part of the return movement of the plunger to prevent their being injured or displaced by the movement of the plunger, substantially as described.

3. The combination with a depositing plunger, of a receiving device to which cigarettes or similar articles are delivered by the plunger, supports located on either side of the path of movement of the plunger for supporting a wrapper sheet between the plunger and the receiving device and adapted to turn the sides of the wrapper sheet upward about the articles as the plunger makes its delivery movement, and supporting means for engaging the inner surfaces of the upstanding sides of the wrapper sheet below said supports while the plunger is moving between the upstanding sides of the wrapper sheet, substantially as described.

4. The combination with a depositing plunger, of a receiving device to which cigarettes or similar articles are delivered by the plunger, supports located on either side of the path of movement of the plunger for supporting a wrapper sheet between the plunger and the receiving device and adapted to turn the sides of the wrapper sheet upward about the articles as the plunger makes its delivery movement, and supporting means for engaging the inner surfaces of the upstanding sides of the wrapper sheet beyond the ends of the plunger and below said supports while the plunger is moving between the upstanding sides of the wrapper sheet, substantially as described.

5. The combination with a depositing plunger, of a carrier having pockets to which cigarettes or similar articles are delivered by the plunger, feeding devices for feeding wrapper sheets between the plunger and pocket in position to be carried into the pockets and partially folded about the articles, supports located on either side of the path of movement of the plunger for supporting the wrapper sheet and adapted to turn the sides of the wrapper sheet upward about the articles as the plunger makes its delivery movement, and supporting means for engaging the inner surfaces of the upstanding sides of the wrapper sheet below said supports while the plunger is moving between the upstanding sides of the wrapper sheet, substantially as described.

6. The combination with a depositing plunger, of a receiving device to which cigarettes or similar articles are delivered by the plunger, means for feeding wrapper sheets between the plunger and the receiving device in position to be carried to the receiving device and partially folded about the articles, wrapper engaging members for engaging the inner surfaces of the upturned sides of the wrapper, and means for moving said members with the plunger during the first part of the depositing movement and the latter part of the return movement of the plunger and for maintaining said members stationary during the latter part of the depositing movement and the first part of the return movement of the plunger, substantially as described.

7. The combination with a depositing plunger, of a receiving device to which cigarettes or similar articles are delivered by the plunger, means for feeding wrapper sheets between the plunger and the receiving device in position to be carried to the receiving device and partially folded about the articles, a pair of wrapper engaging fingers for engaging the inner surfaces of the up-turned sides of the wrapper beyond the end of the plunger, means for moving said fingers into engaging position when the plunger has made a part of its delivery movement and for retracting said fingers when the plunger has made a part of its return movement, substantially as described.

8. The combination with a depositing plunger, of a receiving device to which cigarettes or similar articles are delivered by the plunger, means for feeding wrapper sheets between the plunger and the receiving device in position to be carried to the receiving device and partially folded about the articles, a pair of pivoted fingers mounted beyond the end of the plunger, means for holding said fingers normally retracted laterally toward each other, means for moving said fingers with the plunger during the first part of the depositing movement and the latter part of the return movement, and means for moving said fingers laterally outward to engage the inner surfaces of the up-

turned sides of the wrapper during the latter part of the depositing movement and the first part of the return movement of the plunger, substantially as described.

9. The combination with a depositing plunger, of a receiving device to which cigarettes or similar articles are delivered by the plunger, means for feeding wrapper sheets between the plunger and the receiving device in position to be carried to the receiving device and partially folded about the articles, a member mounted to slide on the plunger longitudinally of the direction of movement of the plunger, a pair of wrapper engaging fingers pivoted to said slide, means for holding said fingers normally retracted laterally toward each other, means for controlling the movement of said slide whereby it is caused to move with the plunger only during the first part of the depositing movement and the latter part of the return movement of the plunger, and means for moving said fingers laterally outward to engage the inner surfaces of the up-turned sides of the wrapper during the latter part of the depositing movement and the first part of the return movement of the plunger, substantially as described.

10. The combination with a depositing plunger, of a receiving device to which cigarettes or similar articles are delivered by the plunger, means for feeding wrapper sheets between the plunger and the receiving device in position to be carried to the receiving device and partially folded about the articles, a slide 364 mounted on each end of the plunger, a pair of wrapper engaging fingers 360 and 361 mounted on each of said slides, means for controlling the movement of the slides whereby the slides are caused to move with the plunger only during the first part of the depositing movement and the latter part of the return movement of the plunger, means for holding said fingers normally retracted laterally toward each other, and means for moving said fingers laterally outward to engage the inner surfaces of the up-turned sides of the wrapper during the latter part of the depositing movement and the first part of the return movement of the plunger, substantially as described.

11. The combination with the depositing plunger 50 of the slides 364 mounted on said plunger springs 370 for holding said slides in normal position on the plunger, stops for holding said slides against movement with the plunger after the plunger has made a part of its delivery movement, a pair of wrapper engaging fingers mounted on each of the slides 364, cams 368 for holding said fingers normally retracted laterally, and means for moving said fingers laterally outward when released from said cams, substantially as described.

12. The combination of a holder for filled boxes, means for partially closing one of the sides of the boxes, means for feeding a sheet into the partially closed side of each box, and means for completing the closing of the boxes, substantially as described.

13. The combination of a holder for filled boxes, means for partially closing one of the sides of the boxes, means for feeding a sheet into the partially closed side of each box, means for completing the closing of the boxes, and means for inserting the boxes into tubular covers, substantially as described.

14. The combination of a holder for filled boxes, means for partially closing one of the sides of the boxes, means for feeding a plurality of sheets in the partially closed side of each box, and means for completing the closing of the boxes, substantially as described.

15. The combination of a box carrier for advancing filled boxes, means for partially closing one of the sides of the boxes, means for inserting a sheet into the partially closed side of each box, means for completing the closing of the boxes, and means for delivering the boxes from the carrier, substantially as described.

16. The combination of an intermittently moving carrier provided with a plurality of box holders, mechanism cooperating with said holders to fold and deliver boxes thereto, sheet feeding mechanism for feeding sheets into the filled boxes and to which the filled boxes are successively presented by the carrier, and a covering and delivering mechanism to which the boxes are advanced from the sheet feeding mechanism and by which they are delivered

from the carrier and inserted into tubular covers, substantially as described.

17. The combination of an intermittently rotating carrier provided with a plurality of article receiving pockets, wrapping mechanism for folding wrapper sheets about the articles in the pockets, a second intermittently rotating carrier provided with a plurality of holders for boxes for receiving the packages from the first said carrier, sheet feeding mechanism for feeding sheets into the filled boxes, and means for closing the boxes after the sheets have been fed therein, substantially as described.

18. The combination of an intermittently moving carrier provided with a plurality of box holders, wrapping mechanism for folding wrapper sheets about predetermined quantities of articles, a depositing mechanism to which the boxes are advanced by the carrier and by which the packages are deposited in the boxes, sheet feeding mechanism to which the boxes are advanced by the carrier and by which sheets are inserted in the boxes, and means for closing the boxes after the sheets are inserted therein, substantially as described.

19. The combination of an intermittently moving carrier provided with a plurality of box holders, wrapping mechanism for folding wrapper sheets about predetermined quantities of articles, a depositing mechanism to which the boxes are advanced by the carrier and by which the packages are deposited in the boxes, means for partially closing the boxes after the packages are deposited therein, sheet feeding mechanism to which the partially closed boxes are advanced by the carrier and by which sheets are inserted in the boxes, and means for closing the boxes after the sheets are inserted therein, substantially as described.

20. The combination of a carrier for advancing boxes with articles therein, means for partially closing the boxes, sheet feeding mechanism to which the boxes are advanced by the carrier and by which sheets are inserted in the boxes, and means for closing the boxes after the sheets have been fed therein, substantially as described.

21. The combination of a carrier for advancing boxes with articles therein and with the sides of the boxes bent up into position and the ends and cover flaps of the boxes extended, sheet feeding mechanism to which the boxes are advanced by the carrier and by which sheets are inserted in the boxes, means for folding one end of each box and for partially closing the cover flap, means for folding the opposite end of the box to prevent displacement of the contents of the box while the first mentioned end is being folded, said means being formed to release said end of the box before the box is advanced to the sheet inserting mechanism, and means for again folding said end of the box when the box has been advanced beyond the sheet feeding mechanism; substantially as described.

22. The combination of a rotating carrier having a plurality of radially arranged box holders, sheet feeding mechanism to which the boxes are advanced by the carrier and by which sheets are fed into the boxes, said mechanism being arranged to feed the sheets edgewise radially of the carrier; substantially as described.

23. The combination of a carrier, a pusher by which boxes are advanced from the carrier and inserted into tubular covers, a member for bearing on the top of the box as the box is advanced by the pusher, and means for moving said member out of operative position before the box is inserted in the cover; substantially as described.

24. In a box covering mechanism, the combination of a pusher for advancing the boxes and inserting them in tubular covers, a member for bearing on the top of the box as the box is advanced by the pusher, and means for moving said member out of operative position before the box is inserted in the cover; substantially as described.

25. In a box covering mechanism, the combination of a reciprocating pusher for advancing the boxes to be covered, means for presenting tubular covers in the path of the boxes, a presser foot for bearing on the top of the box as the box is advanced by the pusher, said presser foot being mounted to move with the pusher and having a lost motion connection therewith, and means for raising said presser foot out of operative position as the pusher approaches the end of its movement in each direction; substantially as described.

26. The combination of the reciprocating pusher 298, means for moving boxes transversely of the direction of the movement of the pusher into position to be engaged by the pusher, means for presenting tubular covers in the path of the boxes as the latter are advanced by the pusher, presser foot 503 for bearing on the top of the boxes as the latter are advanced by the pusher, means for raising said presser foot from the boxes before the latter are inserted in the covers; substantially as described.

27. The combination of a reciprocating member, a pusher moving with said member to advance the boxes and insert them in tubular covers, a sliding presser foot having lost motion connection with said member, and cam 507 moving with said member and a stationary cam 512, for controlling the movements of said presser foot vertically into and out of operative position; substantially as described.

28. The combination of a carrier for advancing boxes sidewise, guides for holding the cover flaps of the boxes in folded position as the boxes are advanced by the carrier, means for delivering the boxes from the carrier, and means for correcting lateral displacement of the cover flaps of the boxes; substantially as described.

29. The combination of a carrier for advancing boxes sidewise, means for holding the cover flaps of the boxes in folded position as the boxes are advanced by the carrier, means for delivering the boxes endwise from the carrier, and means for correcting lateral displacement of the cover flaps of the boxes by engagement with one edge thereof; substantially as described.

30. The combination of a carrier for advancing boxes sidewise, means for holding the cover flaps of the boxes in folded position as the boxes are advanced by the carrier, means for delivering the boxes endwise from the carrier, and a tapping device for correcting lateral displacement of the cover flaps of the boxes before the boxes are fed from the carrier; substantially as described.

31. The combination of a carrier for advancing boxes sidewise, means for holding the cover flaps of the boxes in folded position as they are advanced by the carrier, means for delivering the boxes endwise from the carrier, a member for engaging the cover flaps to hold them in position during such delivery movement of the boxes, and means for correcting lateral displacement of the cover flaps of the boxes before said member is moved into operative position; substantially as described.

32. The combination with a carrier for advancing boxes sidewise, a guide for holding the cover flaps of the boxes in their folded position as the boxes are advanced by the carrier, pusher 298 for advancing the boxes from the carrier, and hammer 520 for tapping the edge of the cover flaps to correct lateral displacement thereof; substantially as described.

851,264. TYPE-WRITING MACHINE. FRANZ X. WAGNER, New York, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed May 7, 1906. Serial No. 315,609.

Claim.—1. In a typewriting and tabulating mechanism, the combination with a power-driven carriage and letter feeding mechanism, of a set of independently operable denomination keys mounted upon the carriage, a carriage releasing mechanism operable by said keys, a column stop upon the framework of the machine, a denomination stop upon the carriage normally incapable of engaging the column stop, means for enabling said keys to set said denomination stop to engage said column stop, means for permitting the denomination stop when arrested by the column stop to yield while the carriage continues to run, and means for enabling the keys to arrest such yielding action variably so that the carriage is arrested at a point corresponding to the denomination of the depressed key.

2. In a typewriting and tabulating mechanism, the combination with a power-driven carriage and letter feeding mechanism, of a set of independently operable levers mounted upon the carriage and provided with denomination keys, a universal bar operable by said levers, a carriage releasing mechanism controlled by said universal bar, a column stop upon the framework of the machine, a denomination stop mounted upon said universal bar and movable by the latter to position for engaging with said column stop, said denomination stop being mounted for a sliding movement upon said universal bar in a direction of the run of the carriage, graded stops connected to said denomination stops for engaging with said levers to limit the continued carriage movement after the arrest of the denominational stop, and a spring for returning the denomination stop to normal position along the universal bar.

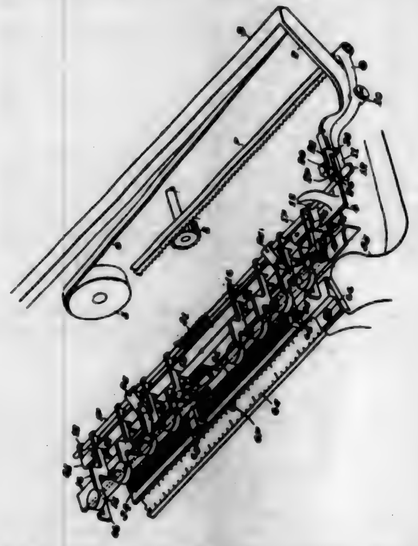

3. In a typewriting and tabulating mechanism, the combination with a power-driven carriage and letter feeding mechanism, of a rock shaft mounted upon the carriage and extending longitudinally thereof, rock arms upon said shaft, a slide carried by said arms and having a set of stops rigid therewith, a denomination stop mounted upon said slide, a set of independently operable key levers pivoted upon said rock shaft and having means to depress said slide, and also adapted to co-operate with said set of stops for variably arresting the carriage, a carriage releasing mechanism operable by said rock shaft, and a column stop upon the framework to co-operate with said denomination stop.

4. In a typewriting and tabulating mechanism, the combination with a power-driven carriage and letter feeding mechanism, of a rock shaft mounted upon the carriage and extending longitudinally thereof, rock arms upon said shaft, a slide carried by said arms and having a set of stops rigid therewith, a denomination stop mounted upon said slide, a set of independently operable key levers pivoted upon said rock shaft and having means to depress said slide, and also adapted to co-operate with said stops for variably arresting the carriage, a carriage releasing mechanism operable by said rock shaft, a column stop upon the framework to co-operate with said denomination stop, and a spring for returning said slide to normal longitudinal position after release of the depressed key.

5. In a typewriting and tabulating mechanism, the combination with a power driven carriage and letter feeding mechanism, of a slide mounted upon the carriage to slide longitudinally thereof, said slide provided with a series of stops, a series of denomination key levers mounted upon the carriage and adapted to variably arrest said carriage, a denomination stop mounted upon said slide, a column stop mounted upon the framework of the machine, and means operable by any of said levers for both releasing the carriage and effecting relative transverse movement between the denomination stop and column stop.

6. In a typewriting and tabulating mechanism, the combination with a power driven carriage and letter feeding mechanism, of a rock shaft mounted upon the carriage and extending longitudinally thereof, rock arms mounted upon said shaft, a sliding plate having longitudinal slots engaged by screws which are threaded into said rock arms, a set of stops bent up from the front edge of said sliding plate, a set of independent levers fulcrumed at their rear ends upon said rock shaft and depressible into position to be engaged by said stops, said levers having keys on their forward ends, a denomination stop mounted upon said slide so as to be depressible by any of said levers together with said slide and rock arms, a column stop mounted upon the carriage, and a carriage releasing mechanism controlled by said rock shaft.

7. In a typewriting and tabulating mechanism, the combination with a carriage and letter feeding mechanism, of a denomination stop, a slidable bar carrying said stop, a series of finger keys mounted adjacent to said bar at intervals greatly in excess of the letter feeding movements of the carriage, stops operated by said keys, stops upon said bar to co-operate with said key stops for arresting the bar and the denomination stop at letter spacing intervals, and a stop to co-operate with said denomination stop to arrest the carriage.

8. In a typewriting and tabulating mechanism, the combination with a power driven carriage and letter feeding mechanism, of a set of independently movable keys mounted upon the carriage along the front thereof, at intervals much in excess of the letter spacing movements of the carriage, a denomination stop mounted upon the carriage, and movable thereon in the direction of the run of the carriage, means controlled by said keys for releasing the carriage, and depressing said denomination stop into the path of a stop upon the framework of the machine, and a set of movable stops ranging along the carriage one at each key for enabling the keys to variably limit the run of the carriage after engagement of said denomination stop with said framework stop.

9. In a typewriting and tabulating mechanism, the combination with a power driven carriage and letter feeding mechanism, of a rock shaft mounted upon the carriage and extending longitudinally thereof, rock arms upon said shaft, a slide carried by said arms and having a set of stops rigid therewith, a denomination stop mounted upon said slide, a set of independently operable key levers pivoted upon said rock shaft and having means to depress said slide, and also adapted to co-operate with said set of stops for variably arresting the carriage, a guide comb for said key levers close to said stops, individual springs for returning said key levers, a carriage releasing mechanism operable by said rock shaft, and a column stop upon the framework to co-operate with said denomination stop.

10. In a typewriting and tabulating mechanism, the combination with a power driven carriage and letter feeding mechanism, of a set of independently operable keys mounted upon the carriage and controlling the carriage releasing mechanism, a stop on the carriage and movable thereon in the direction of the run and permitting movement of the carriage to different denominational positions, the denominational movements of said carriage being controlled by said keys, and a stop upon the framework of the machine to arrest said denomination stop and carriage; means being controlled by said keys for projecting one stop into the path of the other, and one of said stops having a yielding construction to permit it to pass the other when the carriage is run backward during the depression of one of said keys.

11. In a typewriting and tabulating mechanism, the combination with a power driven carriage and letter feeding mechanism, of a stop upon the carriage, a bar mounted upon the framework and having column stops adjustable thereon, a front carriage scale upon the framework forward of said bar, an index mounted upon the carriage

and extending forwardly beneath said bar to said scale, and indexes upon said column stops to co-operate with said scale, but normally in inoperative positions; the column stops being adjustable to move the indexes into position to co-operate with the scale when the stops are to be adjusted along the bar.

12. In a typewriting and tabulating mechanism, the combination with a power driven carriage and letter feeding mechanism, of a denomination stop mechanism mounted upon the carriage, a bar mounted upon the framework and having column stops adjustable thereon, a front carriage scale upon the framework forward of said bar, an index mounted upon the carriage and extending forwardly beneath said bar to said scale, each of said column stops having normally inoperative individual index, and a rack for said column stops; the latter being releasable from said rack, and their indexes being movable into co-operation with said scale at the releasing operation.

13. In a typewriting and tabulating mechanism, the combination with a power driven carriage and letter feeding mechanism, of a stop upon the carriage, a shaft mounted upon the framework, a set of column stops pivoted upon said shaft and each having an index, a scale upon the framework of the machine, an index upon said carriage to co-operate with said scale, said stop indexes being normally out of co-operation with said scale, a rack extending along said shaft, and teeth upon said column stops to engage said rack; the index on the column stop being so mounted that when the column stop is released from the rack by turning it upon said shaft, the index is brought into juxtaposition with said scale to co-operate therewith for adjusting the column stop.

14. In a typewriting and tabulating mechanism, the combination with a power driven carriage and letter feeding mechanism, of a denomination stop mechanism mounted upon the front of the carriage, a shaft mounted upon the framework, a set of column stops upon said shaft and each having an index, a letter scale upon the framework to co-operate with said index, said scale constructed to co-operate with the indexes upon the column stops for setting the latter, and an index upon the carriage extending forwardly beneath the rack and shaft to co-operate with said scale to indicate the progress of the carriage.

851,265. ATOMIZER. JACOB WALDMAN, New York, N. Y. Filed July 1, 1905. Serial No. 267,887.

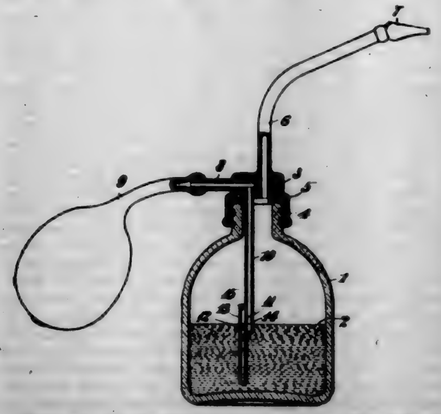

Claim.—1. An atomizer provided with a combined liquid and air tube comprising a tubular member projecting into the liquid chamber and having an orifice for directing the air forced through said member in a substantially horizontal direction, and a second tubular member located partially side by side with said first member and adapted to extend partly within the liquid in the chamber and having an orifice in its side opening to the exterior thereof above the liquid level substantially opposite the orifice in said first mentioned member, substantially as and for the purpose set forth.

2. An atomizer provided with a combined liquid and air tube comprising a tubular member projecting into the liquid chamber and having an orifice for directing the air forced through said member in a substantially horizontal direction, and a second tubular member secured to one side of said first member and overlapping the same and adapted to extend partly within the liquid in the chamber and having an orifice in its side opening to the exterior thereof above the liquid level substantially opposite the orifice in said first mentioned member, substantially as and for the purpose set forth.

3. An atomizer having a liquid tube closed at its upper end and provided near its upper end with a lateral orifice opening to the exterior of the tube, an air tube closed at its bottom and provided with a lateral orifice opening into the side of said liquid tube at a point substantially opposite the first mentioned orifice in said liquid tube and being smaller than said first mentioned orifice.

4. An atomizer having a liquid-tube closed at its upper end and provided near its upper end with a lateral orifice opening to the exterior of the tube, an air-tube closed at its bottom and provided with a lateral orifice opening into the side of said liquid-tube at a point substantially opposite the first mentioned orifice in said liquid-tube, substantially as and for the purpose set forth.

851,266. LINE-SELECTOR OF INTERCOMMUNICATION TELEPHONE APPARATUS. FRANZ WALLOCH, Berlin, Germany. Filed Nov. 22, 1904. Serial No. 233,866.

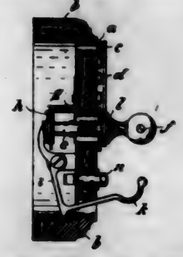

Claim.—1. In a line selector, the combination of a casing, fixed contacts on the casing for connection with the line wires, a selector lever, a spindle on which said lever is secured, said spindle being rotatably mounted in the casing and slidably guided therein to permit the selector lever to pass over the contacts without touching the same, and means tending to bring the selector lever in engagement with the fixed contacts.

2. In a line selector, the combination of a casing, fixed contacts on the casing for connection with the line wires, a selector lever, a spindle on which said lever is secured, said spindle being rotatably mounted in the casing and slidably guided therein to permit the selector lever to pass over the contacts without touching the same, means tending to bring the selector lever in engagement with the fixed contacts, locking means on each contact to hold the selector lever in engagement with the contacts, and means for returning the selector lever automatically to the normal position.

3. In a line selector the combination of a support or casing, contacts fixed on this support or casing, a spindle loosely mounted and slidably guided in this support or casing, a selector lever fixed on this spindle, a plug arranged on the free end of the lever, means for automatically returning the lever to the "home" position; with means for alternately bringing the spindle of the selector lever in and out of contact with contact springs adapted to be connected to the bell-circuit, as described.

4. In a line selector the combination of a support or casing, contacts fixed on this support or casing, a spindle loosely mounted and slidably guided in this support or casing, a selector lever fixed on this spindle, a plug or pin arranged on the free end of the lever, means for automatically returning the lever to the "home" position; with a contact plate fixed on the spindle of the lever, contact springs cooperating with the contact plate, one of the contact springs being adapted to be connected with the positive pole and the other with the negative pole of the bell-circuit and means for bringing the selector lever in conductive connection with the positive pole, when in "home" position and with the negative pole when in circuit closing position as described.

5. In a line selector the combination of a support or casing, contacts fixed on this support or casing, a spindle loosely mounted and slidably guided in this support or casing, a selector lever fixed on this spindle, the free end of which passes over the contacts and can be put in conductive contact therewith; with a standard slidably guided in the support or casing and serving as a rest for the telephone transmitter, means for automatically returning the selector lever to the normal position, when the telephone transmitter is laid on the standard and an inclined plane or surface on which the free end of the selector lever ascends when reaching the normal position as described.

851,267. PROTECTIVE ATTACHMENT FOR TRAVELING-BAGS, &c. JOSEPH A. WALSH, Syracuse, N. Y. Filed Feb. 6, 1907. Serial No. 356,035.

Claim.—1. A protective attachment for traveling-bags and analogous articles, which attachment consists of a sonorous flexible plate pressed out of its normal shape by pressure on the exterior of the aforesaid article and resilient to its normal shape when relieved from said pressure and in its resilience producing a sound.

2. The combination with a traveling-bag or analogous article, of a sonorous plate attached in a bulged condition to the bottom of said article and yieldable toward a flat condition by pressure of the weight of said article upon its place of rest, and resilient to its bulged condition when relieved from said pressure and by its resilience producing a sound.

3. The combination with a traveling-bag, of a sonorous flexible sheet metal plate attached at its margins to the bottom of the bag and bulged at its central portion, said bulge being depressed by the weight of the bag upon its plate of rest, and resilient when relieved from depression and thereby producing a sound.

851,268. COLLAR-PROTECTOR. JOHN H. WAY, Philadelphia, Pa. Filed Mar. 3, 1905. Serial No. 248,204.

Claim.—A collar protector in the shape of a partial annulus of soft but self-sustaining material provided with means for detachably securing the same to the inner side of a coat collar, the upper corners of the partial annulus being curved, its length being such as to surround the collar of the wearer without passing across the neck-tie and its height such as to interpose its upper edge between the coat collar and the shirt collar of the wearer, with provision between its curved ends of a space substantially equal to that between the opposed edges of an ordinary collar.

851,269. VESSEL CONSTRUCTION. WILLIAM W. WOTHERSPOON, New York, and ROBERT O. KING, North Tonawanda, N. Y. Filed Nov. 30, 1906. Serial No. 345,820.

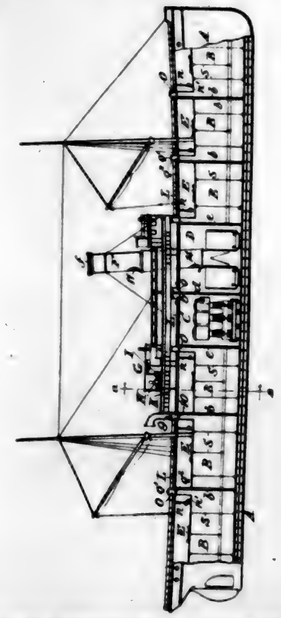

Claim.—1. In combination with a vessel's hull provided with a plurality of compartments, means for sealing at will, air-tight or substantially so, the usual communications of said compartments with the outside, air-locks associated with the several compartments, a source of air pressure common to all of said compartments, and connections between said air-pressure source and said compartments for introducing air into the compartments; whereby in the event of leakage of water into a number of said compartments air may be forced therein to expel the same.

2. In combination with a vessel's hull formed with holds, means for sealing air-tight or substantially so, the usual communications with the outside, means for forcing air under pressure into said holds, means for independently controlling the entrance of air into the individual holds, and an air-lock communicating with each hold.

3. In combination with a vessel's hull formed with compartments, means for rendering said compartments air-tight or substantially so, air-locks associated with said compartments, an air-compressor at or about the upper deck level, and means for introducing air under pressure into the compartments.

4. In combination with a vessel's hull provided with holds or compartments, means for sealing said compartments air-tight or substantially so, air-locks associated with the compartments, an air-compressor situated above the compartments, a main distributing pipe for the compressed air communicating with the air-compressor, and

branch pipes leading from the main distributing pipe to the respective compartments.

5. In combination with a vessel's hull provided with an engine room and boiler room separated by a partition, means for rendering the engine room air-tight or substantially so, an air-lock communicating with the engine room, and means for forcing air under pressure into the engine room; whereby in the event of leakage into the engine room only, the operation of the engines may be continued after the water is expelled.

6. In combination with a vessel's hull provided with a plurality of compartments, means for rendering said compartments air-tight or substantially so, means for introducing air under pressure into said compartments, and means for adjusting the air pressure admitted to the several compartments according to the different hydrostatic pressures encountered therein.

7. In combination with a vessel's hull provided with a plurality of compartments, means for rendering said compartments air-tight or substantially so, a source of air pressure common to said compartments, individual connections between the source of air pressure and the compartments, and reducing valves in said connections.

8. In combination with a vessel's hull provided with two adjacent compartments, an air-lock comprising a chamber communicating with the outside, a door closing said chamber, two chambers branching from the first and communicating respectively with the two compartments, and doors controlling the communication of said branching chambers with the compartments.

9. In combination with adjacent compartments, an air-lock having an upper door communicating with the outside and two lower doors communicating respectively with the two compartments.

10. In combination with a vessel's hull provided with a boiler room, a smokestack extending therefrom to the outside, two air-lock doors in said stack, one above the other, a removal section in the stack above the upper air-lock door, and a second removal section in the stack communicating with the boiler room.

11. In a vessel and in combination with a ventilating funnel and its shaft, upper and lower air-lock doors situated in said shaft.

851,270. METHOD OF FLOATING SUNKEN OR STRANDED VESSELS. WILLIAM W. WOTHERSPOON, New York, and ROBERT O. KING, North Tonawanda, N. Y. Filed Jan. 7, 1907. Serial No. 351,175.

Claim.—1. The method of treating leaking stranded vessels, which consists in sealing air-tight or substantially so the usual communication of the leaking compartment with the outside, providing said compartment with means for the entrance of workmen therein under air pressure in excess of that of the atmospheric air, and finally introducing air under pressure into said compartment to expel the leaking water; whereby workmen may enter while the pressure is maintained, and make an examination of the interior of the compartment.

2. The method of treating leaking stranded vessels, which consists in rendering the leaking compartment air-tight or substantially so, introducing air under pressure therein to expel the water, providing means for the access of workmen into said compartment while the air pressure is maintained, and finally repairing the leak.

3. The method of treating leaking stranded vessels, which consists in closing air-tight the ordinary communications of the leaking compartment with the outside, introducing air under pressure into said compartment, providing for the access of workmen therein while the air pressure is maintained, closing the leak, and finally removing any water remaining after the leak is closed.

4. The method of treating leaking stranded vessels, in which the leak or hole is in the side of the compartment, which method consists in closing said compartment air-tight or substantially so, introducing air under pressure therein to expel the water to the top of the hole, providing for the entrance of workmen into said compartment while the air pressure is maintained, and applying a covering progressively to the hole from the top downward.

851,271. WINDOW-FRAME. ERNEST BAUER, Milledgeville, Ill. Filed Mar. 31, 1906. Serial No. 309,178.

Claim.—1. A device of the character described, comprising an upper and a lower guide frame in which the window sash are slidingly supported, the upper frame being pivoted near its upper end in the upper half of the window jamb, means permitting a slight swinging of the said frame on its pivot, the lower guide frame being pivoted at its upper end to the upper guide frame at a point in line with the inner edges of said guide frames.

2. A device of the character described, comprising an upper guide frame pivoted adjacent its upper end in the window jamb and capable of limited inward movement, a lower guide frame hinged at its upper end to the lower end of the upper guide frame to swing inwardly, and means for locking said frames in vertical alignment.

3. A device of the character described, comprising a guide frame comprising upper and lower sections hinged together at their adjacent edges, said guide frame being pivoted adjacent its upper end in the window jamb, the lower section being capable of a greater inward movement than the upper section, a sash arranged in each section, the upper sash being removable from the guide frame when the lower section is swung inwardly.

4. In combination with a window jamb provided with a bead strip adjacent its outer edge, a guide frame comprising upper and lower sections arranged in said jamb in close proximity to said bead strip, the lower of said sections being pivoted at its upper edge to the lower edge of the upper section and capable of inward movement, and means permitting limited movement of the lower end of the upper section permitting the upper edge of the lower section to clear the bead strip when said lower section is swung inwardly.

851,272. DOOR-CONTROLLER. WILLIAM G. BELL, Newton, Mass. Filed July 9, 1906. Serial No. 325,253.

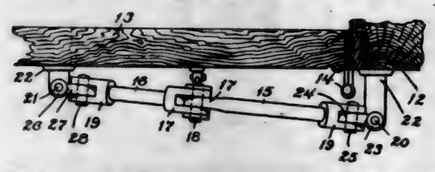

Claim.—1. A door controller comprising a toggle joint, means for connecting the outer end of one of the toggle links with a door casing and the outer end of the other link with a door, said connecting means having provisions for permitting both a vertical and a horizontal oscillation of one toggle link upon the casing and of the other link upon the door, a yoke pivoted to the meeting ends of the toggle links, and a spring adapted for engagement with the yoke and with the door.

2. A door controller comprising a pair of toggle links, two hinges composed of vertical socket members connected by horizontal pivots with the outer ends of said links, and vertical pintle members having supporting brackets adapted for attachment to a door and its casing, the pintle supporting arm or shank of one of said brackets being longer than the arm or shank of the other bracket, whereby the axis of one of the hinges is projected outwardly farther than the axis of the other hinge, and a spring adapted for engagement with the meeting ends of the said toggle links.

3. A door controller comprising a toggle joint, means for connecting the outer end of one of the toggle links with a door casing and the outer end of the other link with a door, said connecting means having provisions for permitting both a vertical and a horizontal oscillation of one toggle link upon the casing and of the other link upon the door, a spring engaged at one end with the toggle joint, a holder adapted for attachment to a door and provided with a plurality of ears, and a spring engaging hook having a shank adapted to be pivotally connected with either of said ears.

851,273. TRIPLE VALVE. ROBERT H. BLACKALL, Edgewood Park, Pa., assignor to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed June 13, 1903. Serial No. 161,295.

Claim.—1. The combination with a quick-action triple valve having means for increasing the brake cylinder pressure above that of the train pipe in emergency applications, of means for gradually equalizing the fluid pressure upon opposite sides of the triple valve piston when the same is in normal emergency position.

2. The combination with a quick-action triple valve having means for increasing the brake cylinder pressure above that of the train pipe in emergency applications, of means for gradually equalizing the fluid pressure upon opposite sides of the triple valve piston when the same is in normal emergency position, and a device for preventing such equalization upon an excessive or complete venting of the train pipe.

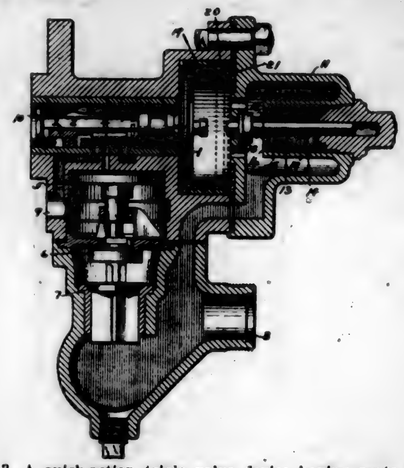

3. A quick-action triple valve device having ports for supplying air from the train pipe and from the auxiliary reservior to the brake cylinder for increasing the brake cylinder pressure above that of the train pipe in emergency applications, and a restricted passage for permitting a slow equalization of the fluid pressure upon opposite sides of the triple valve piston after an ordinary emergency application of the brakes.

4. A quick action triple valve device having a small passage for equalizing the auxiliary reservoir and train pipe pressures, said passage being opened by the movement of the triple valve piston to its normal emergency position.

5. A quick action release valve device having a small equalizing passage for establishing communication from the auxiliary reservoir to the train pipe, said passage being opened by the movement of the triple valve piston to its normal emergency position and closed by a further movement of said piston.

6. A quick action triple valve device having a small leak passage for equalizing the auxiliary reservoir and train pipe pressures, means operated by the movement of the triple piston to normal emergency position for opening said passage, and means actuated by an excessive or complete venting of train pipe pressure for closing said passage.

7. A quick-action triple valve having a restricted passage around the triple piston, said passage being open only in normal emergency position.

8. A quick action triple valve device having a small leakage groove in the wall of the triple piston chamber at the normal emergency position of the said piston, and means for limiting the movement of the piston to this position in ordinary emergency applications.

9. In a quick action triple valve device, the combination with the triple piston and graduating stem of a bushing having a leakage groove located therein at the normal emergency position of the piston, and an emergency spring for resisting further movement of said piston beyond said position.

851,274. METHOD OF EXTINGUISHING FIRE. CHARLES BRENT, Brandon, Manitoba, Canada. Filed Dec. 26, 1906. Serial No. 349,412.

Claim.—1. A method of extinguishing fire, which consists in projecting upon the burning materials a saturated solution of carbonic acid gas and water.

2. A method of extinguishing fire, which consists in projecting water which has been subjected to carbonic acid gas a sufficient length of time to form a saturated solution of carbonic acid gas and water upon the burning materials.

3. A method of extinguishing fire, which consists in subjecting water in an enclosed receptacle to the action of carbonic acid gas to form a saturated solution of carbonic acid gas and water under pressure, and projecting such solution upon the burning materials.

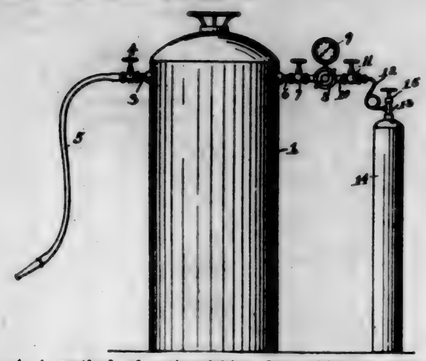

4. A method of extinguishing fire, which consists in treating water with a constant supply of carbonic acid gas under pressure to form a saturated solution of carbonic acid gas and water and projecting such solution upon the burning materials.

5. The herein described method of extinguishing fire which consists in projecting a liquid thoroughly saturated with a fire extinguishing gas upon the burning materials whereby the liquid may act as a conveyor for carrying the gas to the fire.

851,275. LOOSE-LEAF LEDGER. HARRY F. BUSHONG, Portland, Oreg., assignor, by mesne assignments, to Kalamazoo Loose Leaf Binder Company, a Corporation. Filed July 15, 1904. Serial No. 216,664.

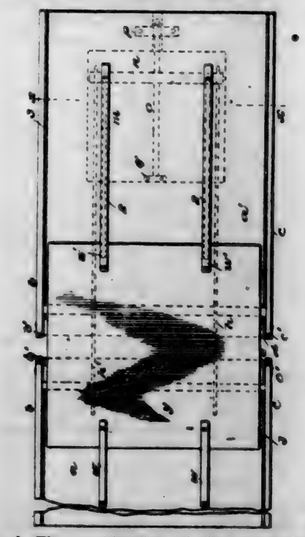

Claim.—1. The combination of the covers having leaf clamping means thereon, and pockets opening at their inner end; binding cords connecting said covers; means for adjusting said binding cords carried by one of said covers; a back-strip arranged to telescope in said pockets; connections for said back-strip to said binding cord adjusting means and to the opposite cover, for the purpose specified.

2. The combination of the covers; binding cords connecting the same; an adjustable bar to the ends of which said binding cords are secured; means for adjusting said bar; pockets in the covers, a back-strip arranged to telescope within said pockets; and a connection for said back strip to said adjustable bar, for the purpose specified.

3. The combination of the covers; binding cords therefor; an adjustable bar carried by one of said covers, for tightening said binding cords; means for adjusting said bar; pockets in the exterior of the said covers; a back-strip arranged to telescope within said pockets; and connections for said back-strip to said adjustable bar, for the purpose specified.

851,276. TEMPORARY BINDER OR LOOSE-SHEET HOLDER. HARRY F. BUSHONG, Kalamazoo, Mich., assignor, by mesne assignments, to Kalamazoo Loose Leaf Binder Company, a Corporation. Filed Aug. 5, 1904. Serial No. 219,624.

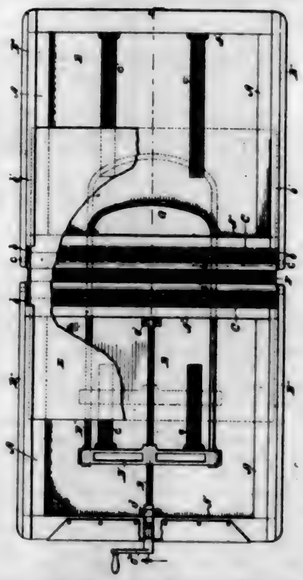

Claim.—1. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges, thereby forming chambers in the said covers; clamping bars having holes therethrough terminating in slot-like cavities at the rear, pivoted on said hinge projections; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars, and projecting into the chamber in the opposite cover; a cross-bar to which the ends of said binding cord are secured; a threaded shaft supported in suitable bearings for adjusting said bar; a back-strip adapted to telescope into the chambers in said covers; and elastic tapes for connecting one end of said back-strip to said cross-bar and the other end to the opposite cover, all coacting for the purpose specified.

2. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges, thereby forming chambers in the said covers; clamping bars having holes therethrough terminating in slot-like cavities at the rear, pivoted on said hinge projections; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars, and projecting into the chamber in the opposite cover; a cross-bar to which the ends of said binding cord are secured; a threaded shaft supported in suitable bearings for adjusting said bar; a back strip adapted to telescope into the chambers in said covers, one end of which is secured to said cross-bar and the other to the opposite cover, all coacting for the purpose specified.

3. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges, thereby forming chambers in the said covers; clamping bars having holes therethrough, pivoted on said hinge projections; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars, and projecting into the chamber in the opposite cover; a cross-bar to which the ends of said binding cord are secured; a threaded shaft supported in suitable bearings for adjusting said bar; a back strip adapted to telescope into the chambers in said covers; and elastic tapes for connecting one end of said back strip to said cross-bar and the other end to the opposite cover, all coacting for the purpose specified.

4. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges thereby forming chambers in the said covers; clamping bars having holes therethrough, pivoted on said hinge projections; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars, and projecting into the chamber in the opposite cover; a cross-bar to which the ends of said binding cord are secured; a threaded shaft supported in suitable bearings for adjusting said bar; a back strip adapted to telescope into the chambers in said covers, one end of which is secured to said cross-bar and the other to the opposite cover, all coacting for the purpose specified.

5. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frame; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges, thereby forming chambers in the said covers; clamping bars having holes therethrough, pivoted on said hinge projections; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars, and projecting into the chamber in the opposite cover; a cross-bar to which the ends of said binding cord are secured; means for adjusting said cross-bar; a back strip adapted to telescope into the chambers in said covers; and elastic tapes for connecting one end of said back strip to said cross bar and the other end to the opposite cover, all coacting for the purpose specified.

6. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges, thereby forming chambers in the said covers; clamping bars having holes therethrough terminating in slot-like cavities at the rear, pivoted on said hinge projections; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars, and projecting into the chamber in the opposite cover; a cross-bar to which the ends of said binding cord are secured; means for adjusting said cross-bar; a back strip adapted to telescope into the chambers in said covers; one end of which is secured to said cross-bar and the other end to the opposite cover, all coacting for the purpose specified.

7. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges, thereby forming chambers in the said covers; clamping bars having holes therethrough, pivoted on said hinge projections; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars, and projecting into the chamber in the opposite cover; a cross-bar to which the ends of said binding cord are secured; means for adjusting said cross-bar; a back strip adapted to telescope into the chambers in said covers; and elastic tapes for connecting one end of said back strip to said cross-bar and the other end to the opposite cover, all coacting for the purpose specified.

8. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges thereby forming chambers in the said covers; clamping bars having holes therethrough, pivoted on said hinge projections; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars, and projecting into the chamber in the opposite cover; a cross-bar to which the ends of said binding cord are secured; means for adjusting said cross-bar; a back strip adapted to telescope into the chambers in said covers, one end of which is secured to said cross-bar and the other to the opposite cover, all coacting for the purpose specified.

9. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges, thereby forming chambers in the said covers; clamping bars having holes therethrough terminating in slot-like cavities at the rear, pivoted on said hinge projections; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars, and projecting into the chamber in the opposite cover; a cross-bar to which the ends of said binding cord are secured; and a threaded shaft supported in suitable bearings for adjusting said bar, all coacting for the purpose specified.

10. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges, thereby forming chambers in said covers; clamping bars having holes therethrough, pivoted on said hinge projections; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars, and projecting into the chamber in the opposite cover; a cross-bar to which the ends of said binding cord are secured; and a threaded shaft supported in suitable bearings for adjusting said bar, all coacting for the purpose specified.

11. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frame; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges, thereby forming chambers in said covers; clamping bars having holes therethrough, pivoted on said hinge projections; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars, and projecting into the chamber in the opposite cover; a cross-bar to which the ends of said binding cord are secured; and means for adjusting said cross-bar, all coacting for the purpose specified.

12. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the

sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges, thereby forming chambers in the said covers; clamping bars having holes therethrough, pivoted on said hinge projections; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars, and projecting into the chamber in the opposite cover; a cross-bar to which the ends of said binding cord are secured; and means for adjusting said cross-bar, all coacting for the purpose specified.

13. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges, thereby forming chambers in said covers; clamping bars pivoted on said hinge projections; binding cords secured to one of said covers and projecting into the opposite cover; a cross-bar to which the ends of said binding cord are secured; a threaded shaft supported in suitable bearings for adjusting said bar; a back strip adaptetd to telescope into the chambers in said covers; and elastic connections for one end of said back strip to said cross-bar and the other end to the opposite cover, for the purpose specified.

14. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges, thereby forming chambers in said covers; clamping bars pivoted on said hinge projections; binding cords secured to one of said covers and projecting into the opposite cover; a cross-bar to which the ends of said binding cord are secured; a threaded shaft supported in suitable bearings for adjusting said bar; a back strip adapted to telescope into the chambers in said covers; connected to said cross-bar, for the purpose specified.

15. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges, thereby forming chambers in said covers; clamping bars pivoted on said hinge projections; binding cords secured to one of said covers and projecting into the opposite cover; a cross-bar to which the ends of said binding cords are secured; and a threaded shaft supported in suitable bearings for adjusting said bar, for the purpose specified.

16. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges, thereby forming chambers in said covers; clamping bars pivoted on said hinge projections; binding cords secured to one of said covers and projecting into tre opposite cover; adjusting means for said binding cords; a back strip adapted to telescope into the chambers in said covers; and elastic connections for one end of said back strip to said cross-bar and the other end to the opposite cover, for the purpose specified.

17. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges, thereby forming chambers in said covers; clamping bars pivoted on said hinge projections; binding cords secured to one of said covers and projecting into the opposite cover; adjusting means for said binding cords; a back strip adapted to telescope into the chambers in said covers, connected to said cross-bar, for the purpose specified.

18. The combination of the covers consisting of rectangular frames; inner walls of sheet metal having rearwardly and inwardly turned flanges thereon embracing the sides of said frames; hinge projections on said flanges at their inner ends; rear walls for said covers secured to said flanges; thereby forming chambers in said covers; clamping bars pivoted on said hinge projections; binding cords secured to one of said covers and projecting into the opposite cover; and adjusting means for said binding cords, for the purpose specified.

19. The combination of covers having chambers or cavities therein; clamping bars having holes therethrough terminating in slot-like cavities at the rear, pivotally secured to said covers; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars; a cross-bar arranged in the opposite cover to which the ends of said binding cord are secured; a screw-threaded shaft supported in suitable bearings for adjusting said bar; a back strip adapted to telescope into the chambers in said covers; and yielding connections for said back strip to said cross-bar, for the purpose specified.

20. The combination of covers having chambers or cavities therein; clamping bars having holes therethrough terminating in slot-like cavities at the rear, pivotally secured to said covers; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars; a cross-bar arranged in the opposite cover to which the ends of said binding cord are secured; a screwthreaded shaft supported in suitable bearings for adjusting said bar; a back strip adapted to telescope into the chambers in said covers; and connections for said back strip to said cross-bar, for the purpose specified.

21. The combination of covers having chambers or cavities therein; clamping bars pivotally secured to said covers; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars; a cross-bar arranged in the opposite cover to which the ends of said binding cord are secured; a screwthreaded shaft supported in suitable bearings for adjusting said bar; a back strip adapted to telescope into the chambers in said covers; and yielding connections for said back strip to said cross-bar, for the purpose specified.

22. The combination of covers having chambers or cavities therein; clamping bars pivotally secured to said covers; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars; a cross-bar arranged in the opposite cover to which the ends of said binding cords are secured; a screwthreaded shaft supported in suitable bearings for adjusting said bar; a back strip adapted to telescope into the chambers in said covers; and connections for said back strip to said cross-bar, for the purpose specified.

23. The combination of covers having chambers or cavities therein; clamping bars having holes therethrough terminating in slot-like cavities at the rear, pivotally secured to said covers; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars; a cross-bar arranged in the opposite cover to which the ends of said binding cord are secured; and a screwthreaded shaft supported in suitable bearings for adjusting said bar, for the purpose specified.

24. The combination of covers having chambers or cavities therein; clamping bars pivotally secured to said covers; a curved block arranged in the chamber in one of said covers; a binding cord looped about said block and arranged through said clamping bars; a cross-bar arranged in the opposite cover to which the ends of said binding cord are secured; and a screwthreaded shaft supported in suitable bearings for adjusting said bar, for the purpose specified.

25. The combination of covers having chambers or cavities therein; clamping bars having holes therethrough, terminating in slot-like cavities at the rear, pivotally secured to said covers; a curved block arranged in the chamber in one of said covers; a binding cord wrapped about said block arranged through said clamping bars and secured to the other one of said covers; means for adjusting said binding cord; a back strip adapted to telescope into the chambers in said cover; and yielding connections between said back strip and said cross bar, for the purpose specified.

26. The combination of covers having chambers or cavities therein; clamping bars having holes therethrough terminating in slot-like cavities at the rear, pivotally secured to said covers; a curved block arranged in the chamber in one of said covers; a binding cord wrapped about said block arranged through said clamping bars and secured to the other one of said covers; means for adjusting said binding cord; a back strip adapted to telescope into the chambers in said cover; and connections between said back strip and said cross bar, for the purpose specified.

27. The combination of covers having chambers or cavities therein; clamping bars pivotally secured to said covers; a curved block arranged in the chamber in one of said covers; a binding cord wrapped about said block arranged through said clamping bars and secured to the other one of said covers; means for adjusting said binding cord; a back strip adapted to telescope into the chambers in said cover; and yielding connections between said back strip and said cross bar, for the purpose specified.

28. The combination of covers having chambers or cavities therein; clamping bars pivotally secured to said covers; a curved block arranged in the chamber in one of said covers; a binding cord wrapped about said block arranged through said clamping bars and secured to the other one of said covers; means for adjusting said binding cord; a back strip adapted to telescope into the chambers in said cover; and connections between said back strip and said cross bar, for the purpose specified.

29. The combination of covers having chambers or cavities therein; clamping bars having holes therethrough terminating in slot-like cavities at the rear, pivotally secured to said covers; a curved block arranged in the chamber in one of said covers; a binding cord wrapped about said block arranged through said clamping bars and secured to the other one of said covers; and means for adjusting said binding cord; for the purpose specified.

30. The combination of covers having chambers or cavities therein; clamping bars pivotally secured to said covers; a curved block arranged in the chamber in one of said covers; a binding cord wrapped about said block arranged through said clamping bars and secured to one of said covers; and means for adjusting said binding cord, for the purpose specified.

31. The combination of the covers having chambers or cavities therein; clamping bars having holes therethrough terminating in slot-like cavities at the rear, pivotally connected to said covers; binding cords arranged through said clamping bars and secured to one of said covers; means for adjusting said binding cords; a back strip adapted to telescope into the chambers in said covers; and yielding connections between said back strip and said adjusting means for said binding cords, for the purpose specified.

32. The combination of the covers having chambers or cavities therein; clamping bars having holes therethrough terminating in slot-like cavities at the rear, pivotally connected to said covers; binding cords arranged through said clamping bars and secured to one of said covers; means for adjusting said binding cords; a back strip adapted to telescope into the chambers in said covers; and connections between said back strip and said adjusting means for said binding cords, for the purpose specified.

33. The combination of the covers having chambers or cavities therein; clamping bars pivotally connected to said covers; binding cords arranged through said clamping bars and secured to one of said covers; means for adjusting said binding cords; a back strip adapted to telescope into the chambers in said covers; and yielding connections between said back strip and said adjusting means for said binding cords, for the purpose specified.

34. The combination of the covers having chambers or cavities therein; clamping bars pivotally connected to said covers; binding cords arranged through said clamping bars and secured to one of said covers; means for adjusting said binding cords; a back strip adapted to telescope into the chambers in said covers; and connections between said back strip and said adjusting means for said binding cords, for the purpose specified.

35. The combination of the covers; clamping bars having holes therethrough terminating in slot-like cavities at the rear, pivotally connected to said covers; binding cords arranged through said clamping bars and secured to one of said covers; means for adjusting said binding cords; a back strip and yielding connections between said back strip and said adjusting means for said binding cords, for the purpose specified.

36. The combination with the covers; clamping bars pivotally connected to said covers; binding cords arranged through said clamping bars secured to one of said covers, the openings in said clamping bars for said binding cords being of such size as to allow the clamping bars to rock thereon independently of the covers whereby the covers and the clamping bars may move independently in opening or closing the covers or the sheets clamped by said bars; and means for adjusting said binding cords carried by the opposite cover.

37. The combination of the covers having chambers or cavities therein; clamping bars pivotally connected to said covers; binding cords secured to one of said covers; means carried by the opposite cover for adjusting said binding cords; a back strip adapted to telescope into the chambers in said covers; and yielding connections between said back strip and said adjusting means for said binding cords, for the pupose specified.

38. The combination of the covers having chambers or cavities therein; clamping bars pivotally connected to said covers; binding cords secured to one of said covers; means carried by the opposite cover for adjusting said binding cords; a back strip adapted to telescope into the chambers in said covers; and connections between said back strip and said adjusting means for said binding cords, for the purpose specified.

39. The combination with the covers; clamping bars; binding cords secured to one of said covers, arranged through said clamping bars, the openings in said clamping bars for said binding cord being of such size as to permit the rocking of the clamping bars thereon independently of the covers whereby the covers and the clamping bars may move independently in opening or closing the covers or the sheets clamped by said bars; and means for adjusting said binding cords carried by the opposite cover.

40. The combination of the covers having chambers or cavities therein; clamping bars; binding cords secured to one of said covers arranged through said clamping bars; means carried by the opposite cover for adjusting said binding cords; a back strip adapted to telescope into the chambers in said covers; and yielding connections between said back strip and said adjusting means for said binding cords, for the purpose specified.

41. The combination of the covers having chambers or cavities therein; clamping bars; binding cords secured to one of said covers, arranged through said clamping bars; means carried by the opposite cover for adjusting said binding cords; a back strip adapted to telescope into the chambers in said covers; and connections between said back strip and said adjusting means for said binding cords, for the purpose specified.

42. The combination of the covers having chambers or cavities therein; clamping bars; binding cords arranged through said clamping bars; means for adjusting said binding cords; a back strip adapted to telescope into the chambers in said covers; and yielding connections between said back strip and said adjusting means for said binding cords, for the purpose specified.

43. The combination of the covers having chambers or cavities therein; clamping bars; binding cords arranged through said clamping bar; means for adjusting said binding cords; a back strip adapted to telescope into the chambers in said covers; and connections between said back strip and said adjusting means for said binding cords, for the purpose specified.

44. The combination of the covers having chambers or cavities therein; clamping bars, pivotally connected to said covers; binding cords; means for adjusting said binding cords; a back strip adapted to telescope into the chambers

in said covers; and yielding connections between said back strip and said adjusting means for said binding cords, for the purpose specified.

45. The combination of the covers, having chambers or cavities therein; clamping bars, pivotally connected to said covers; binding cords; means for adjusting said binding cords; a back strip adapted to telescope into the chambers in said covers; and connections between said back strip and said adjusting means for said binding cords, for the purpose specified.

46. The combination with the covers; clamping bars pivotally connected to said covers; binding cords arranged through said clamping bars, the openings in said clamping bars for said binding cords being of such size as to permit the rocking of the clamping bars thereon independently of the covers whereby the covers and the clamping bars may move independently in opening or closing the covers or the sheets clamped by said bars; and means for adjusting said binding cords carried by the opposite cover.

47. The combination of the covers; clamping bars pivotally connected to said covers; binding cords arranged through said clamping bars and secured to one of said covers; the openings in said clamping bars for said binding cords being of such size as to permit the rocking of the clamping bars thereon and a screw for adjusting said binding cords carried by the opposite cover said binding cords being connected to said cover independently of said clamping bars; for the purpose specified.

48. The combination with the covers; clamping bars pivotally connected to said covers; binding cords secured to one of said covers; and a screw carried by the other cover for adjusting said binding cords, said binding cords being connected to said cover and adjusting screw independently of said clamping bars.

49. The combination of the covers; clamping bars; binding cords secured to one of said covers arranged through said clamping bars, the openings in said clamping bars for said binding cords being of such size as to permit the rocking of the clamping bars thereon; and a screw carried by the opposite cover for adjusting said binding cords said binding cords being connected to said cover independently of said clamping bars; as specified.

50. The combination of the covers; clamping bars; binding cords arranged through said clamping bars, the openings in said clamping bars for said binding cords being of such size as to permit the rocking of the clamping bars thereon; and a screw arranged within one of said covers for adjusting said binding cords said binding cords being connected to said cover independently of said clamping bars; as specified.

51. The combination with the covers; clamping bars pivotally connected to said covers; binding cords secured to one of said covers; means carried by the other cover for adjusting the said binding cords, said binding cords being connected to said cover and to said adjusting means independently of said clamping bars.

52. The combination of the clamping bars; binding cords arranged through said clamping bars, the openings in said clamping bars for said binding cords being of such size as to permit the rocking of the clamping bars thereon; a screw for adjusting said binding cords; and covers pivotally connected to clamping bars, one of said covers having a chamber therein in which said screw is arranged, said binding cords being connected to said cover independently of said clamping bars; for the purpose specified.

53. The combination of the covers; clamping bars; binding cords arranged through said clamping bars, the openings in said clamping bars for said binding cords being of such size as to permit the rocking of the clamping bars thereon; and a screw carried by one of said covers for adjusting said binding cords, said binding cords being connected to said cover independently of said clamping bars, for the purpose specified.

54. The combination with the covers; clamping bars; a binding cord looped over a suitable bearing in one of said covers; a bar to which the ends of said binding cord are secured, arranged transversely in the chamber of the other cover; and means for adjusting said bar.

55. The combination with the covers; a binding cord looped over a suitable bearing on one of said covers; a bar to which the ends of said binding cord are secured, arranged transversely of the other cover; and means for adjusting said bar.

851,277. FLUID-PRESSURE BRAKE. FRANCIS L. CLARK, Pittsburg, Pa., assignor to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed July 14, 1904. Serial No. 216,628.

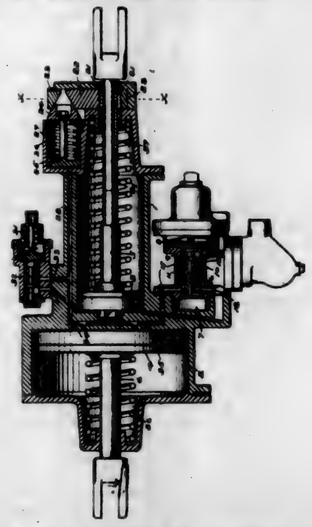

Claim.—1. In an air brake, the combination with a primary brake cylinder and piston, and a secondary brake cylinder and piston independent of the first brake piston, of a fluid pressure operated clutch or locking mechanism for one of the brake pistons.

2. In an air brake, the combination with a primary brake cylinder and piston for operating a brake lever, of a secondary brake cylinder and piston for operating another brake lever, and a fluid pressure operated clutch or locking mechanism for the primary brake piston.

3. In an air brake, the combination of a primary brake cylinder and a secondary brake cylinder in alinement with each other and having pistons operating in opposite directions, and a fluid pressure operated locking mechanism for one of the brake pistons.

4. In an air brake, the combination with a primary brake cylinder and piston, of a secondary brake cylinder and piston, means for supplying air from the primary brake cylinder to the second brake cylinder after the first piston has completed its stroke and a fluid pressure operated locking mechanism for the first brake piston.

5. In an air brake, the combination with a primary brake cylinder and piston, of a secondary brake cylinder and piston, and means operated by brake cylinder pressure for locking the first brake piston after it has completed its stroke.

6. In an air brake, the combination with a primary brake cylinder and a second brake cylinder of means operated by variations in train pipe pressure for controlling the admission of air from the primary brake cylinder to the second brake cylinder.

7. In an air brake, the combination with a primary brake cylinder and a second brake cylinder of a valve device operated by train pipe pressure for controlling the admission of air from the primary brake cylinder to the second brake cylinder.

8. In an air brake, the combination with a primary brake cylinder, a secondary brake cylinder, and triple valve device, of means operated by the triple valve device for controlling the admission of air from the first brake cylinder to the second brake cylinder.

9. In an air brake, the combination with a primary brake cylinder and a secondary brake cylinder of a triple valve device having ports for first admitting air to the primary brake cylinder in service position and ports for establishing communication from the primary brake cylinder to the second brake cylinder in lap position.

10. In an air brake, the combination with a primary brake cylinder, a secondary brake cylinder, and a pressure operated locking mechanism for the first brake cylinder, of a valve device operated by train pipe pressure for controlling the admission of air from the first brake cylinder to the second brake cylinder and to the locking mechanism.

11. In an air brake, the combination with a primary brake cylinder, a secondary brake cylinder, and a fluid pressure operated locking mechanism, of means for supplying air from the first brake cylinder to the second brake cylinder and to the locking mechanism after the first brake piston has completed its stroke.

12. In an air brake, the combination with a primary brake cylinder, a secondary brake cylinder, and a pressure operated locking mechanism, of means for supplying air from the first brake cylinder to the second brake cylinder and to the locking mechanism after the first brake piston has completed its stroke, and means for restricting the area of the second brake piston exposed to air pressure before its outward movement.

13. In an air brake, the combination with a primary brake cylinder and piston, of a secondary brake cylinder and piston and a locking mechanism comprising two oppositely movable clamps or jaws for engaging one of the piston rods, and means subject to air pressure for operating said clamps.

14. In an air brake, the combination with a primary brake piston having oppositely located teeth, of a secondary brake cylinder and piston, and a locking mechanism comprising two movable clamps or jaws for engaging the teeth of the first piston rod, a wedge for actuating said jaws, and a piston subject to brake cylinder pressure for operating the wedge.

851,278. DETACHABLE COLLAR-SUPPORTER. ROBERT M. DEAN, Wakefield, Mass. Filed Aug. 30, 1906. Serial No. 332,616.

Claim.—1. In a device of the class described, an elongated, thin and flat resilient body, a pointed spring prong mounted on each end thereof and adapted to be detachably inserted in and passed through the fabric to be supported, the point of each prong being always located on the same side of the body, and extending outwardly nearly to the adjacent extremity thereof, and a locking projection to normally engage each prong near its free end or point, after its passage through the fabric, to prevent accidental withdrawal of the prong from the fabric, the resiliency of the body causing it to hold separated the engaged portions of the fabric after bending of the body to insert the prongs into the fabric.

2. In a device of the class described, an elongated, thin and flat flexible, resilient body, a double-pointed spring metal prong mounted on each end of the body, having its points outturned, and adapted to be detachably inserted in the fabric to be supported, and a retaining or locking projection to normally engage each prong near the free ends or points thereof and prevent accidental withdrawal of a prong from the fabric.

3. In a device of the class described, an elongated, thin and flat, flexible, resilient body, a spring-metal, pointed prong mounted on each end of the body, and adapted to be detachably inserted in and passed through the fabric to be supported, and retaining or locking means integral with each prong and normally engaging the same near the free end or point thereof to prevent accidental withdrawal of the prong from the fabric, the prongs being oppositely turned on their points near the adjacent extremity of the body, said points always lying on the same side of the body.

851,279. DRESS-CHART. EDWIN E. DODDS, Minneapolis, Minn. Filed July 16, 1906. Serial No. 326,323.

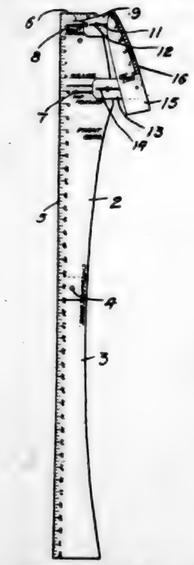

Claim.—1. A skirt chart having a front gore plate 2 and a plate 3 pivotally connected therewith at one end and adapted to be folded to coincide with one another, said plates having a scale on one longitudinal edge which when the plates are extended, forms the measure for the length of the skirt, the opposite longitudinal edges of the plates being curved and the plate 2 having near its upper end transverse scales representing respectively the waist and hip measures and a gore plate also having a scale and slidably attached to said plate 2 and adjustable thereon, with respect to said waist and hip measures, substantially as described.

2. In a skirt chart, a plate representing a gore having a longitudinal scale and transverse scales representing the waist and hip measure and a gore plate having a longitudinal scale on its outer edge and plates having sliding connections with said first gore plate over said waist and hip measures and on which sliding plates, said gore plate is pivotally mounted, substantially as described.

851,280. STOVE. BENJAMIN W. DODSON, Geneva, Ill. Filed July 3, 1906. Serial No. 324,572.

Claim.—1. In a stove, the combination with a casing, a fire pot mounted in the casing and composed of a series of lining sections spaced from the casing to provide an air heating chamber around said fire pot, one of said lining sections having an extension adjacent a feed chute formed in the casing, a feed chute in the casing, the

rear lining section being formed with a series of tapered openings to afford communication between the air heating chamber and the interior of the fire pot, means for introducing air to said chamber, and an air heating chamber depending toward the fire pot and formed with a series of openings located to deflect the air introduced through the openings in the rear lining section, said latter air heating chamber forming one wall of the feed chute.

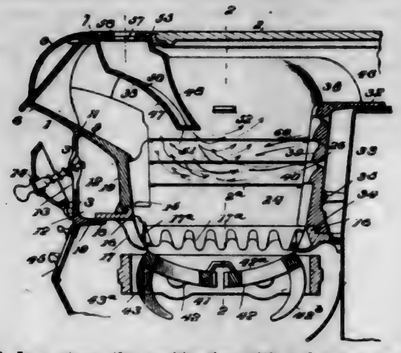

2. In a stove, the combination with a fire pot, an air heating chamber surrounding the fire pot, and formed in the rear with a series of tapered air inlets, means for introducing air from the atmosphere to the air heating chamber, the streams of air introduced through the tapered openings in the rear of the fire pot being directed across said fire pot, an exit flue above the openings in the fire pot lining, an air heating chamber depending from the top of the stove and formed with openings below the exit flue to deflect the streams of air coming through the fire pot openings, and means for introducing fuel to the fire pot in front of the depending air heating chamber.

3. In a stove, the combination with a casing, a fire pot within the casing, means for introducing a series of streams of air across the fire pot, a depending tapered air heating chamber having exit openings at or near the bottom thereof, said depending air heating chamber being formed in sections, means for securing the sections together, previous to placing the air heating chamber in position in the casing, detachable means for securing the depending air heating chamber to the casing, a feed chute in front of the depending air heating chamber, and a door covering the chute.

4. In a stove, the combination with a casing, a fire pot within and spaced from the casing, said fire pot having a series of horizontal overhanging flanges and formed with openings below the flanges to introduce air from the air heating chamber across the fire pot, a depending air heating chamber formed with openings to introduce air downwardly in the path of the streams of air introduced across the fire pot, and a feed chute for introducing fuel in advance of the depending air heating chamber.

5. In a stove, the combination with a casing, a fire pot within the casing, means for introducing streams of air across the fire pot, an exit flue located at the upper end of and at the rear of the fire pot, a feed chute located in front of the fire pot, the bottom of said feed chute being below the bottom of the exit flue, and a depending air heating chamber formed with openings for introducing air downwardly in the path of the streams of air introduced across the fire pot, the openings of the depending air heating chamber being located on a line between the bottom of the feed chute and the bottom of the exit flue, said air heating chamber being formed in sections, means for securing the sections together previous to positioning said air heating chamber in place in the casing, and means for attaching and detaching the air heating chamber.

6. In a stove, the combination with a casing formed with an opening, a fire pot within and spaced from the casing to form an air heating chamber entirely around said fire pot, a damper co-operating with the opening in the casing to regulate the air introduced in the air heating chamber, over hanging flanges on the inner side of the fire pot, said fire pot having tapered openings under the flanges to inject streams of air across the fire pot, means for introducing individual streams of air downwardly across the path of the streams of air coming from the tapered openings, means for introducing air to the bottom of the fire pot, and an exit flue located above the tapered openings.

7. In a stove, the combination with a casing, a fire pot formed with tapering openings to inject streams of heated air across the interior of the fire pot, a feed chute, a depending air heating chamber formed with openings to introduce streams of air downwardly in the path of the streams of air coming from the tapered openings, the bottom of the air heating chamber being above the bottom edge of the chute to provide ample space to cause the streams of air which cross the fire pot to be mixed with the downward currents of air, and an exit flue located above the plane of the tapered openings.

851,281. PLATE-HOLDER. JAMES C. DRAKE, Rochester, Minn. Filed Apr. 30, 1906. Serial No. 314,551.

Claim.—1. In a plate holder a light excluding device for the slide, consisting of a continuous elongated flexible strip of hard material, a plurality of resilient supports therefor, and a soft flexible light excluding strip carried by the spring supported strip.

2. In a plate holder, a light excluding device for the slide comprising a soft flexible strip secured at one edge to the holder, supporting springs seated within the holder, and a continuous elongated flexible strip of hard material loosely interposed between the supports and the first mentioned strip and extending substantially the width of the holder.

3. In a plate holder, a light excluding device for the slide comprising a soft flexible strip permanently connected at one edge to the holder, a plurality of resilient supporting devices seated in alinement within the holder and a detached, flexible strip interposed between said resilient supports and the first mentioned strip and formed of a continuous imperforate hard material.

4. In a plate holder a light excluding device for the slide comprising soft flexible strips disposed upon opposite portions of the holder and secured thereto along one edge, detached flexible strips overlapping said first mentioned strips and formed of continuous imperforate hard material, and a plurality of resilient devices loosely mounted within the holder and bearing at their ends upon the detached strips.

5. In a plate holder the combination with a longitudinally grooved front strip having a plurality of openings therein; of a soft flexible strip secured along one edge and adapted to be entirely seated within the groove, resilient supporting devices seated within the openings, and continuous imperforate flexible means for distributing pressure from said devices to the strip.

6. The combination with a plate holder frame having a longitudinally grooved front strip, and recesses in the frame at the ends of said groove; of a soft, flexible strip secured, and adapted to be seated entirely within, the groove, the ends of said strip projecting into the recesses, resilient supporting devices seated within the front strip, and continuous imperforate flexible means for distributing pressure from said devices to the strip.

7. The combination with a plate holder having a longitudinally grooved front strip, and recesses in the sides of the holder at the ends of the groove; of a soft flexible strip secured along one edge, and adapted to be entirely seated, within the groove, said groove having a series of openings in the bottom thereof, resilient supporting devices seated within the openings, and a detached, and a continuous imperforate strip of hard flexible material interposed between said devices and the soft flexible strip, one of said strips projecting into the recesses.

851,282. MEANS FOR CONTROLLING THE ADMISSION OF COINS TO COIN-RECEPTACLES. CHARLES S. ELLIS and FRANK D. POWELL, Chicago, Ill., assignors to The American Coin Register Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 25, 1904. Serial No. 223,301.

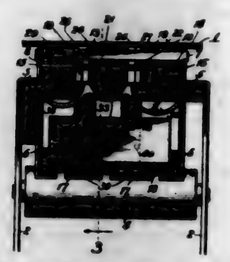

Claim.—1. The combination with a receptacle having coin slots for coins of different values, of an inclined plate in operative proximity thereto and a laterally movable element arranged to slide thereon to open any predetermined coin-slot and obstruct the others.

2. The combination with a receptacle having coin slots of varying size for the reception of coins of different values, of a laterally movable coin controlled element having coin guides for directing the different coins from the slots to the receptacle, said guides being so arranged with respect to said slots that but one can register with a given slot during the introduction and passage of a coin.

3. The combination with a receptacle having coin-slots of varying size for the reception of coins of different values, of a laterally movable element having coin guides, one of which is adapted to register with one of said slots while the others are out of registration therewith, and means for limiting the lateral movement of said element.

4. The combination with the receiving slots of a coin-receptacle, of a coin way common to all of said slots, said way leading therefrom to said receptacle and a laterally movable coin guide located within said way, said guide being arranged to register with any predetermined one of said slots while blocking the others, and means for locking said guide in a predetermined position by the action of a coin from the time of its introduction until it is discharged.

5. The combination with the receiving slots and ways of a coin receptacle having a plurality of coin slots, of a movable element adapted to register with any predetermined one of said coin-slots while blocking the others, and means for locking said element in position by means of an inserted coin until the discharge of said coin into the receptacle.

6. The combination with the receiving slots and ways of a coin receptacle for coins of different values, of a movable element arranged to register with any predetermined one of said slots while blocking the others, means for arbitrarily discharging said coin from the way into said receptacle, and means for withholding a second coin until the discharge of the first.

7. The combination with the receiving slots and ways of a coin receptacle for coins of different denominations, of a laterally movable coin controller interposed in the paths of the coins, said controller being movable into registration with a given slot by the action of a coin introduced therein, while the remaining portions are moved out of registration with the other slots, means for positively discharging coins from the ways into the receptacle and means controlled by said discharging means, for withholding all but the foremost coin in a given way until the discharge of said foremost coin.

8. The combination with a receiving slot and way of a coin receptacle, of means for positively discharging a coin from said way into the receptacle, and means, actuated by said controlling means for automatically withholding a subsequently deposited coin in said way until the discharge of a preceding coin therefrom.

9. The combination with a receiving slot and ways of a coin receptacle, of rollers for positively engaging and discharging a coin from said way into said receptacle and a pivoted guard having a projection adapted to extend into said way to engage a coin, but normally out of the path of said coin, and means upon one of said rollers for actuating said guard to withhold a subsequent coin during the discharge of a preceding one.

851,283. HAIR-DRIER. CHARLES O. FALKENSTROM and UNO L. SUNDBLAD, Branford, Conn. Filed Dec. 20, 1906. Serial No. 348,698.

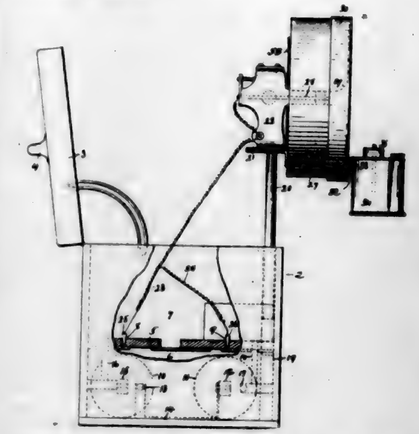

Claim.—1. A hair drier comprising a box having a transverse partition, batteries below the partition, plugs passing through the partition and into electric connection with the said batteries, a motor adapted to be supported by said box and electrically connected with said plugs, a box secured to the motor case, the shaft of the motor extending into said box, blades secured to said shaft, a cap closing the outside of said box and formed with a slot, a discharge opening at the top of the box, and a lamp adapted to be secured to the cap below said slot, substantially as described.

2. The herein described hair drier comprising a box having a transverse partition, electric batteries below said partition, a tubular socket supported by said box, a motor mounted upon a platform and having a depending plug adapted to enter said tubular socket, electrical connection between said motor and batteries, a box connected with said motor, the shaft of the motor extending into the center of said box, fan blades secured to said shaft, a cap closing said box and having a centrally arranged slot, a loop or socket below said slot, and a lamp having a finger to enter said loop whereby the lamp is suspended below the slot in the cap, and a discharge opening at the top of the box, substantially as described.

851,284. MEASURING AND FORMING DEVICE. MICHAEL A. FLINN, Portland, Oreg. Filed Jan. 23, 1907. Serial No. 353,687.

Claim.—1. An apparatus of the class described, comprising an elongated tubular member, a cap closing one end thereof, the other end being open, a stem passing through said cap into said elongated tubular member, a piston carried by said stem, a coil spring carried by the stem within the tubular member, said piston having a finger engaging portion, means cooperating with said spring for retaining the piston at a normal distance from the open end of the longitudinal member, and a sleeve telescopically held on the outside of said elongated tubular member, substantially as shown and described.

2. An apparatus of the class described, comprising an elongated tubular member, a cap closing one end thereof, the other end being open, a stem passing through said cap into said elongated tubular member, a piston carried by said stem, a coil spring carried by the stem within the tubular member, said piston having a finger engaging portion, means cooperating with said spring for retaining the piston at a normal distance from the open end of the longitudinal member, said last named means comprising a stop pin on the stem and a bridge member within the tubular member through which the stem passes, and a sleeve telescopically held on the outside of said elongated tubular member, substantially as shown and described.

3. An apparatus of the class described, comprising an elongated tubular member, a cap closing one end thereof, the other end being open, a stem passing through said cap into said elongated tubular member, a piston carried by said stem, a coil spring carried by the stem within the tubular member, said piston having a finger engaging portion, means cooperating with said spring for retaining the piston at a normal distance from the open end of the longitudinal member, said last named means comprising a stop pin on the stem and a bridge member within the tubular member through which the stem passes, a sleeve telescopically held on the outside of said elongated tubular member, said stem having graduations for cooperating with said cap, substantially as shown and described.

4. An apparatus of the class described, comprising an elongated tubular member, a cap closing one end thereof, the other end being open, a stem passing through said cap into said elongated tubular member, a piston carried by said stem, a coil spring carried by the stem within the tubular member, said piston having a finger engaging portion, means cooperating with said spring for retaining the piston at a normal distance from the open end of the longitudinal member, said last named means comprising a stop pin on the stem and a bridge member within the tubular member through which the stem passes, a sleeve telescopically held on the outside of said elongated tubular member, said stem having graduations for cooperating with said cap, and said tubular member having graduations for cooperating with the sleeve, substantially as shown and described.

851,285. CARBURETER FOR AN EXPLOSIVE-ENGINE. LOWELL C. FREEMAN, Kalamazoo, Mich. Filed Dec. 19, 1906. Serial No. 348,576.

Claim.—1. In a structure of the class described, the combination with a carbureter, of a cylinder pipe; a throttle valve therefor; an auxiliary air inlet located between said carbureter and throttle valve, comprising a tubular casing, an outer tubular valve adjustably arranged in said casing, an inner tubular valve adjustably arranged within said outer valve, said inner valve having longitudinal inwardly expanding ports therein and being arranged to be actuated by an engine governor; and connections for said outer valve to said throttle valve comprising an arm on said throttle valve, a rock shaft, an arm thereon, a connecting link on said arms, means for adjusting said link, projecting pins on said outer valve, and forked arms on said rock shaft arranged to engage said pins, for the purpose specified.

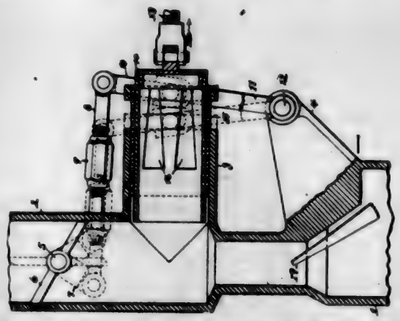

2. In a structure of the class described, the combination with a carbureter, of a cylinder pipe; a throttle valve therefor; an auxiliary inlet located between said carbureter and throttle valve, comprising a tubular casing, an outer tubular valve adjustably arranged in said casing, an inner tubular valve adjustably arranged within said outer valve, said inner valve having longitudinal inwardly expanding ports therein and being arranged to be actuated by an engine governor; and connections for said outer valve to said throttle valve comprising an arm on said throttle valve, a rock shaft, an arm thereon, a connecting link on said arms, means for adjusting said link, and an arm on said rock shaft connected to said outer valve for the purpose specified.

3. In a structure of the class described, the combination with a carbureter, of a cylinder pipe; a throttle valve therefor; an auxiliary air inlet located between said carbureter and throttle valve, comprising a tubular casing, an outer tubular valve adjustably arranged in said casing, an inner tubular valve adjustably arranged within said outer valve, said inner valve having longitudinal inwardly expanding ports therein and being arranged to be actuated by an engine governor; and connections for said outer valve to said throttle valve comprising an arm on said throttle valve, a rock shaft, an arm thereon, a connecting link on said arms, and an arm on said rock shaft connected to said outer valve, for the purpose specified.

4. In a structure of the class described, the combination with a carbureter, of a cylinder pipe; a throttle valve therefor; an auxiliary air inlet located between said carbureter and throttle valve, comprising a tubular casing, an outer tubular valve adjustably arranged in said casing, an inner tubular valve adjustably arranged within said outer valve, said inner valve having longitudinal inwardly expanding ports therein and being arranged to be actuated by an engine governor; and connections for said outer valve to said throttle valve, for the purpose specified.

5. In a structure of the class described, the combination with a carbureter, of a cylinder pipe; a throttle valve therefor; an auxiliary air inlet located between said carbureter and throttle valve, comprising a tubular casing, an outer tubular valve adjustably arranged in said casing, an inner tubular valve adjustably arranged within said outer valve, said inner valve having ports therein and being arranged to be actuated by an engine governor; and connections for said outer valve to said throttle valve comprising an arm on said throttle valve, a rock shaft, an arm thereon, a connecting link on said arms, means for adjusting said link, projecting pins on said outer valve, and forked arms on said rock shaft arranged to engage said pins, for the purpose specified.

6. In a structure of the class described, the combination with a carbureter, of a cylinder pipe; a throttle valve therefor; an auxiliary air inlet located between said carbureter and throttle valve, comprising a tubular casing, an outer tubular valve adjustably arranged within said casing, an inner valve adjustably arranged within said outer valve, said inner valve having ports therein and being arranged to be actuated by an engine governor; and connections for said outer valve to said throttle valve, comprising an arm on said throttle valve, a rock shaft, an arm thereon, a connecting link on said arms, means for adjusting said link, and an arm on said rock shaft connected to said outer valve, for the purpose specified.

7. In a structure of the class described, the combination with a carbureter, of a cylinder pipe; a throttle valve therefor; an auxiliary air inlet located between said carbureter and throttle valve, comprising a tubular casing, an outer tubular valve adjustably arranged within said casing, an inner tubular valve adjustably arranged in said outer valve said inner valve having ports therein and being arranged to be actuated by an engine governor; and connections for said outer valve to said throttle valve, comprising an arm on said throttle valve, a rock shaft, an arm thereon, a connecting link on said arms, and an arm on said rock shaft connected to said outer valve, for the purpose specified.

8. In a structure of the class described, the combination with a carbureter, of a cylinder pipe; a throttle valve therefor; an auxiliary air inlet located between said carbureter and throttle valve, comprising a tubular casing, an outer tubular valve adjustably arranged within said casing, an inner tubular valve adjustably arranged within said outer valve, said inner valve having ports therein and being arranged to be actuated by an engine governor; and connections for said outer valve to said throttle valve, for the purpose specified.

9. In a structure of the class described, the combination with a carbureter, of a cylinder pipe; a throttle valve therefor; an auxiliary air inlet located between said carbureter and throttle valve; valves therefor; a connection for one of said valves to the said throttle valve; adjusting means for said connection, the other of said valves being arranged to be controlled by a governor mechanism, for the purpose specified.

10. In a structure of the class described, the combination with a carbureter, of a cylinder pipe; a throttle valve therefor; an auxiliary air inlet located between said carbureter and throttle; a pair of valves for controlling said air inlet; and connections for one of said valves to said throttle valve, the other valve being arranged to be controlled by a governor mechanism.

851,286. PROCESS FOR THE EXHAUSTION OF HEAD PRODUCTS IN DISTILLING. EMILE GUILLAUME, Paris, France. Filed Jan. 21, 1899. Serial No. 702,965.

Claim.—1. The process of preparing alcohol which consists in forming concentrated alcohol vapors, condensing the alcohol by passing such vapors into a column still, in said column still boiling out the vapors of low-boiling head products for condensation elsewhere, and removing the purified alcohol from the base of the still.

2. The process of preparing alcohol which consists in fractionating alcoholic liquids to produce concentrated alcoholic vapors, condensing the alcohol by passing the vapors into a column still, in said column still boiling out the vapors of low boiling head products for condensation elsewhere, using a small and regulated admission of steam for such boiling, and removing the purified alcohol from the base of the still.

3. The process of preparing alcohol which consists in fractionating alcoholic liquids to concentrated alcoholic vapors in a column still, condensing the alcohol by passing said vapors into a second column still, in said second column still boiling out the vapors of low-boiling head products for condensation elsewhere, and removing the purified alcohol from the base of said second column still.

4. The process of preparing alcohol which consists in fractionating alcoholic liquids to concentrated alcoholic vapors in a column still, introducing said vapors into a second column still at a point about midway its height and therein condensing the alcohol and boiling out vapors of low-boiling head products for condensation elsewhere, and removing the purified alcohol from the base of said second still.

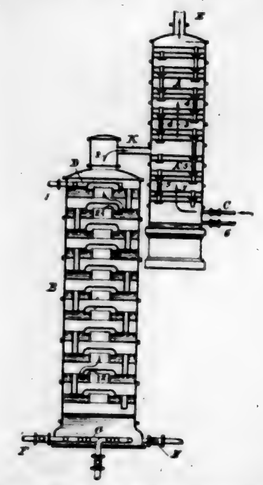

5. The process of treating concentrated alcoholic vapors which consists in introducing them into a column still at a point about midway its height, introducing a small but regulated amount of heating vapor into the base of the still in quantity sufficient to boil out vapors of low-boiling head products from the condensing alcohol, and removing the purified, condensed alcohol from the base of the still.

6. The process of treating concentrated alcoholic vapors which consists in introducing them into a column still at a point about midway its height, introducing a small but regulated amount of steam into the base of the still in quantity sufficient to boil out vapors of low-boiling head products from the condensing alcohol, removing such vapors from the head of the still and removing condensed, purified alcohol from the base of the still.

851,287. TYPE-WRITING MACHINE. FRANKLIN E. HAUN, Syracuse, N. Y. Filed Dec. 24, 1906. Serial No. 349,219.

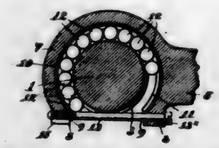

Claim.—1. The combination, with the supporting-bar, of the type-bar provided with a yoke straddling said supporting-bar and formed with an opening at its ends, balls in the yoke arranged in a group occupying more than one half of the circumference of the supporting-bar, and means for arresting the balls at the ends of the aforesaid opening.

2. The combination, with the supporting-bar, of the type-bar provided with a yoke surrounding the greater portion of the circumference of the supporting-bar, and formed with ears on its ends, balls in the yoke arranged in a group occupying more than one half of the circumference of the supporting-bar, and means removably attached to the aforesaid ears and terminating the ball-bearings at the ends of the yoke.

3. In combination with the supporting-bar provided with circumferential ball-bearings, the type-bar formed with a segmental yoke straddling the supporting-bar and terminating in outwardly projecting ears disposed with their opposed faces in lines extending tangentially from opposite sides of the supporting-bar, balls arranged in a group occupying more than one half of the circumference of the supporting-bar and leaving a blank path from the end of the group to the adjacent ear, and means attached to the aforesaid ears and terminating the passage of the balls thereat.

4. In combination with the supporting-bar provided with circumferential grooves, the type-bar formed with a segmental yoke straddling the supporting-bar and terminating in ears disposed with their opposite sides in lines extending tangentially from opposite sides of the supporting-bar, a transverse rod extending through the groove of the supporting-bar and secured to the aforesaid ears, and balls interposed between the yoke and supporting-bar and grouped to leave a blank path between one end of the group and transverse rod.

5. In combination with the supporting-bar provided with circumferential grooves, the type-bar formed with a segmental yoke straddling the supporting-bar and terminating in outwardly projecting ears disposed with their opposed sides in lines extending tangentially from opposite sides of the supporting-bar, said ears being provided with eyes disposed in line with each other and one of said eyes screw-threaded and the said ear split lengthwise of the eye, and a bolt inserted in said eyes and having one end provided with a head and the opposite end screw-threaded and passing through the eye of the split ear and clamped therein by compression of the said ear, and balls interposed between the yoke and supporting-bar and grouped to leave a blank path between one end of the group and the aforesaid rod as set forth.

6. In combination with the supporting-bar, a type-bar equipped with a coupling consisting of a yoke of segmental shape surrounding the greater portion of the circumference of said supporting-bar and having between its ends an opening of a width approximately equal to the diameter of the supporting-bar, balls interposed between the yoke and supporting-bar and grouped to leave a blank path between the front of the group and the aforesaid opening, and a rod extending across the opening and adjustably connected to the ends of the yoke to contract the same and compensate for the wear of the ball-bearings.

851,288. ORNAMENTAL CHAIN. JAMES C. HODGES, Attleboro, Mass., assignor to Cyril A. Smith, Attleboro, Mass. Filed Dec. 29, 1904. Serial No. 238,798.

Claim.—1. An ornamental chain composed of a series of connected spirals, the convolutions of said spirals having flat exposed surfaces arranged at an angle to the axis of the spiral, substantially as described.

2. A spiral for ornamental chains formed from flattened wire and having the exposed surfaces of its convolutions at an angle to the axis of said spiral, substantially as described.

3. An ornamental chain composed of a series of connected spirals, said spirals being formed from flattened wire with the exposed surfaces of the convolutions at an angle to the axis of the spiral, substantially as described.

851,289. DRAFT-PRODUCING DEVICE. GEORGE HORVATH, Brooklyn, N. Y. Filed Feb. 9, 1906. Serial No. 300,253.

Claim.—1. A draft producing device comprising a mouth piece, a rod or axle rigidly fixed therein to extend centrally and longitudinally outwards, deflecting blades having the shape of blunt cones and arranged parallel to and slightly apart from each other, said blades being revolubly mounted on the said axle and each cut away at one side, and means permitting the wind to rotate the said wings around the axle, substantially and for the purpose as specified.

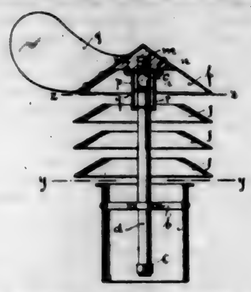

2. A draft producing device comprising a mouth piece, a rod or axle rigidly fixed therein to extend centrally and longitudinally outwards, a conical head revolubly mounted thereon, a wing attached to the latter, bars bent in zig-zag and attached to the conical head, deflecting blades having the shape of blunt cones and arranged parallel and slightly apart from each other and secured to said zig-zag bars, each of the deflecting blades being cut away at one side and the edges of said blades at the cut away portions being bent outwards to form auxiliary wings, substantially and for the purpose as specified.

3. A draft producing device comprising a mouth piece, a rod rigidly fixed therein to extend centrally and longitudinally outwards, a conical head, a ball bearing by means of which the said conical head is revolubly mounted on the said rod, bars bent in zig-zag and attached to said conical head and extending outwards therefrom towards the mouth piece, deflecting blades having the shape of blunt cones and attached to said zig-zag bars slightly apart from each other, each of said deflecting blades being cut away at one side and the edges thereof being bent outwards to form auxiliary wings, substantially and for the purpose as specified.

851,290. NAIL-EXTRACTOR. STEPHEN D. HYDE, Lincoln, Nebr. Filed Apr. 30, 1904. Serial No. 205,798.

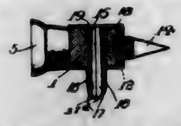

Claim.—1. In a nail extractor, in combination, a body portion having a handle fixed rigidly thereto; a handle pivotally connected with said body portion, registering grooves being formed in said body portion and said pivoted handle; and cooperating pincher jaws projecting from said body portion and said pivoted handle in alinement with said grooves, the inner faces of said jaws being longitudinally concave, the concavities of said jaws communicating with said grooves, whereby the head of a nail may be received between said jaws and in said grooves, and a shoulder formed at the inner lower end of each of said jaws.

2. In a nail extractor, in combination, a body portion having a handle fixed rigidly thereto; a handle pivotally connected with said body portion, registering grooves being formed in said body portion and said pivoted handle; and cooperating pincher jaws on said body portion and said pivoted handle in alinement with said grooves, said grooves being adapted to receive the head and body of a nail.

3. In a nail extractor, in combination, a body portion having a handle fixed rigidly thereto; a handle pivotally connected with said body portion, registering grooves being formed in said body portion and said pivoted handle; and cooperating pincher jaws on the under side of said body portion and said pivoted handle rearward of the pivot therefor in alinement with said grooves, said grooves being adapted to receive the head and body of a nail, the forward end of said body portion serving as a fulcrum.

4. In a nail extractor, in combination, a body portion having a handle fixed rigidly thereto, a handle pivotally connected with said body portion, registering grooves being formed in said body portion and said pivoted handle, and cooperating pincher jaws on said body portion and said pivoted handle, integral therewith respectively, said jaws having concave inner faces constituting extensions of the walls of said registering grooves.

5. In a nail extractor, in combination, a body portion having a handle fixed rigidly thereto; a handle pivotally connected with said body portion, said body portion and pivoted handle being provided with registering grooves; pincher jaws projecting from said body portion and said pivoted handle in alinement with said grooves, the inner faces of said jaws being provided with continuations of said grooves whereby the head of a nail may be received between said jaws and in said grooves.

851,291. STARTING DEVICE FOR HOISTING-MACHINES. JOHN D. IHLDER, Yonkers, N. Y., assignor to Otis Elevator Company, East Orange, N. J., a Corporation of New Jersey. Filed July 23, 1904. Serial No. 217,758.

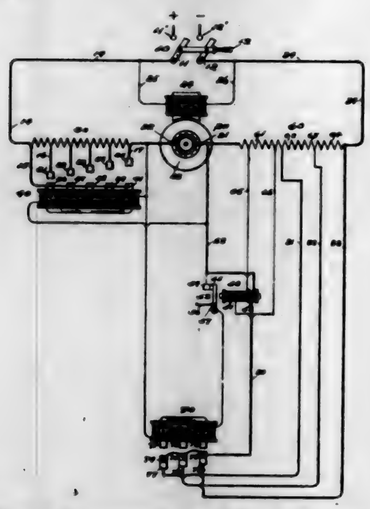

Claim.—1. In a controller for electric motors, the combination of two starting resistances and means for cutting one of the resistances out of circuit when a load comes upon the motor and for holding the latter resistance out of circuit.

2. In a controller for electric motors, the combination of two starting resistances each directly connected to the motor armature, and means for cutting one of the resistances out of circuit when a load comes upon the motor.

3. In a controller for electric motors, the combination of two starting resistances one normally in circuit and the other normally out of circuit with the motor armature, and means for inserting said other resistance upon starting the motor and cutting out said resistance when a load comes upon the motor.

4. In a controller for electric motors, the combination of two starting resistances, and means for automatically inserting one of said resistances upon starting the motor and for automatically short-circuiting said resistance when a load comes upon the motor.

5. In a controller for electric motors, the combination of a starting resistance in circuit with the motor, an additional resistance in circuit with the motor, and means for controlling said additional resistance to prevent acceleration of the motor until a load comes upon the said motor.

6. In a controller for electric motors, the combination of two starting resistances, means for inserting one of said resistances upon starting the motor and for gradually cutting said resistance out of circuit when a load comes upon the motor, and means for cutting out the other resistance to accelerate the motor.

7. In a controller for electric motors, the combination of a starting resistance in series with the motor-armature, means for varying said resistance to change the speed of the motor, an additional resistance in series with the motor-armature, and means for controlling said additional resistance to prevent acceleration of the motor until a predetermined load is connected to the motor.

8. In a controller for electric motors, the combination of a sectional starting resistance in circuit with the motor-armature, an auxiliary sectional starting resistance in circuit with the motor-armature, means for automatically controlling said auxiliary resistance to gradually insert the same upon starting the motor, means for short-circuiting the said auxiliary resistance, and means for automatically controlling said sectional starting resistance.

9. In a controller for electric motors, the combination of two resistances, the first of which is in circuit upon starting the motor, automatic means for putting the second resistance into the circuit to prevent the acceleration of the motor and for removing said second resistance from the circuit when the motor armature current increases.

10. In a controller for electric motors, the combination of two resistances, the first of which is in circuit upon starting the motor, automatic means for putting the second resistance into the circuit to prevent the acceleration of the motor and for removing said second resistance from the circuit when the motor armature current increases.

11. In a controller for electric motors, the combination of two adjustable resistances, the first of which is in circuit upon starting the motor, automatic means for putting the second resistance into the circuit to prevent the acceleration of the motor and for removing said second resistance from the circuit when the motor armature current increases, and automatic means for gradually removing said first resistance from the circuit as the motor accelerates.

12. In a controller for electric motors, the combination of a starting resistance, an auxiliary resistance, a magnetic switch for putting the auxiliary resistance into circuit, and a governing magnet controlling said magnetic switch.

13. In a controller for electric motors, the combination of a plurality of resistances, a magnetic switch for inserting one of said resistances in the motor circuit, means for controlling said magnetic switch, and means for operating the other resistances to vary the speed of the motor.

14. In a controller for electric motors, the combination of a starting resistance, an auxiliary resistance, a magnetic switch for gradually inserting said resistance into circuit with the motor-armature, and a governing magnet for controlling said magnetic switch.

15. In a controller for electric motors, the combination of starting resistance, an auxiliary resistance, a magnetic switch for controlling said auxiliary resistance, and a governing magnet for said magnetic switch, said governing magnet having two coils, one coil being connected to the auxiliary resistance and the other coil being in series with the motor armature.

16. In a controller for electric motors, the combination of a starting resistance, an auxiliary resistance, a magnetic switch for controlling said auxiliary resistance, an additional switch for controlling said magnetic switch, and an electromagnet for operating said additional switch, said electromagnet having two windings, one being connected to said auxiliary resistance and serving to effect an opening of said additional switch, and the other being in circuit with the motor-armature and serving to hold said additional switch in open position.

17. In a controller for electric motors, the combination of a starting resistance, an auxiliary resistance, a magnetic switch for controlling said auxiliary resistance, an additional switch for controlling said magnetic switch,

and an electromagnet for operating said additional switch, said electromagnet having two windings, one winding being connected in shunt to a portion of said auxiliary resistance and the other winding being connected in series with the motor-armature.

18. In a controller for electric motors, the combination of a starting resistance, an auxiliary resistance, a magnetic switch for automatically controlling the auxiliary resistance, and a magnet controlling the magnetic switch having a winding connected to said auxiliary resistance and a winding in series with the motor armature.

19. In a controller for electric motors, the combination of a starting resistance, means for automatically controlling the starting resistance, an auxiliary resistance, a magnetic switch for automatically controlling the auxiliary resistance, and a magnet controlling the magnetic switch having a winding connected to said auxiliary resistance and a winding in series with the motor armature.

851,292. BENCH-PIN. JOSEPH V. KAPP, Newark, N. J. Filed Apr. 27, 1906. Serial No. 313,910.

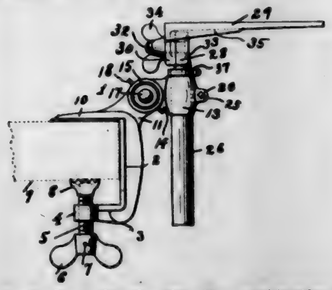

Claim.—1. In a bench-pin, the combination with a clamping means, consisting essentially of a clamp-bracket, a right-angled extension on the lower end of said clamp-bracket, a screw-threaded nut on said right-angled extension, a clamp-screw adapted to turn in the said screw-threaded nut, a ratchet-toothed head swivelly connected to the end of said clamp-screw and adapted to engage with the under side of a work bench or table, a winged nut secured upon the end of said clamp-screw to turn the same, a right-angled extension or clamp-jaw upon the upper end of said clamp bracket, adapted to engage with the upper side of a work-bench or table, a receiving socket pivotally connected with said clamping-means, means for setting and locking said receiving socket at any angle in a vertical plane, a shaft or rod slidably arranged within said receiving socket, means connected with said receiving-socket for locking the said shaft or rod at any desired elevation, a table pivotally connected with the upper end of the said shaft or rod, a wedge-shaped opening at the free end of said table, and means for securing the table with its plane at any angle of rotation about a horizontal axis, substantially as and for the purposes set forth.

2. In a bench-pin, the combination with a clamping means, consisting essentially of a clamp-bracket, a right-angled extension on the lower end of said clamp-bracket, a screw-threaded nut on said right-angled extension, a clamp-screw adapted to turn in the said screw-threaded nut, a ratchet-toothed head swivelly connected to the end of said clamp-screw and adapted to engage with the under side of a work-bench or table, a winged nut secured upon the end of said clamp-screw, to turn the same, a right-angled extension or clamp-jaw upon the upper end of said clamp-bracket, adapted to engage with the upper side of a work-bench or table, a receiving-socket pivotally connected with said clamping means, means for setting and locking said receiving-socket at any angle in a vertical plane, comprising an upwardly extending lug or ear upon said clamping means provided at its outer end with a perforated disc, a lug or ear extending from said receiving-socket, and a perforated disc upon the outer end of said lug or ear of the said receiving-socket, a screw-threaded bolt provided with a head at one end and a winged nut at the other, to pivotally connect the perforated disc on the end of the lug or ear of the receiving-socket, a shaft or rod slidably arranged within the said receiving-socket, a pair of lugs on said receiving-socket having a space between them, a bolt provided with a screw-threaded shank and a head, said bolt being adapted to operatively engage with the said pair of lugs to draw the same together to lock the said shaft or rod at any desired elevation, a table pivotally connected with the upper end of said shaft or rod, said table having a wedge-shaped opening at the free end thereof, and means for securing the table with its plane at any angle of rotation about a horizontal axis, comprising a perforated disc on the upper end of said shaft or rod, a downwardly extending lug or flange provided with a hole or opening, on the rear end of said table, a screw-threaded bolt provided with a head at one end and a winged nut at the other end to pivotally connect the perforated disc on the end of the said shaft or rod with the downwardly extending lug upon the rear of the said table, a split collar arranged upon said shaft or rod to mark the elevation at which the said shaft or rod is to be set, and means to tighten said split-collar upon the said shaft or rod, substantially as and for the purposes set forth.

4. In a bench-pin, the combination with a clamping means, adapted to secure the said bench-pin to a work-bench or table, a receiving socket pivotally connected with the said clamping means, and means for setting or locking the said receiving socket at any desired angle in a vertical plane, a shaft or rod slidably arranged within said receiving-socket, and means connected with the said receiving socket for locking the said shaft or rod at any desired elevation, a table pivotally connected with the upper end of said shaft or rod, said table being provided with a wedge-shaped opening at its free end, means for securing the table with its plane at any angle of rotation about a horizontal axis, and means for securing upon the upper face of said table a facing, substantially as and for the purposes set forth.

5. In a bench-pin, the combination with a clamping means, adapted to secure the said bench-pin to a work-bench or table, a receiving socket pivotally connected with the said clamping means, and means for setting the said receiving socket at any desired angle in a vertical plane, a shaft or rod slidably arranged within said receiving socket, and means connected with the said receiving socket for locking the said shaft or rod at any desired elevation, a table pivotally connected with the upper end of said shaft or rod, said table being provided with a wedge-shaped opening at its free end, means for securing the table with its plane at any angle of rotation about a horizontal axis, comprising essentially of a pair of wedge-shaped ribs extending longitudinally across the face of the said table, suitably disposed screw-holes in the face of said table and screws for securing the facing or sheathing of wood or similar material thereto, substantially as and for the purposes set forth.

6. In a bench-pin, the combination with a clamping means, adapted to secure the said bench-pin to a work-bench or table, a receiving socket pivotally connected with the said clamping means, and means for setting the said receiving socket at any desired angle in a vertical plane, a shaft or rod slidably arranged within said receiving socket, and means connected with the said receiving socket for locking the said shaft or rod at any desired elevation, a table pivotally connected with the upper end of said shaft or rod, means for securing the table with its plane at any angle of rotation about a horizontal axis, said table comprising a table-block, provided with a rearwardly extending tongue, a yoke adapted to receive the rearwardly extending tongue of the said table-block, and means for securing the said rearwardly extending tongue of the said table-block within the said yoke, substantially as and for the purposes set forth.

7. In a bench-pin, the combination with a clamping means, adapted to secure the said bench-pin to a work-bench or table, a receiving socket pivotally connected with the said clamping means, and means for setting and locking the said receiving socket at any desired angle in a vertical plane, a shaft or rod slidably arranged within said receiving socket, and means connected with the said receiving socket for locking the said shaft or rod at any desired elevation, a table pivotally connected with the upper end of said shaft or rod, means for securing the table with its plane at any angle of rotation about a horizontal axis, said table comprising a table-block, provided with a rearwardly extending tongue, a yoke adapted to receive the rearwardly extending tongue of the said table block, and means for securing the said rearwardly extending tongue of the said table block within the said yoke, consisting, of a split portion on the upper side of the said yoke, a pair of ears or lugs, one on each side of the said split portion, and a bolt comprising a screw-threaded shank and a head, said screw-threaded shank being adapted to pass through one lug or ear and screw into the other lug or ear to draw together the said lugs or ears, and thus bind the said rearwardly extending tongue within the said yoke, substantially as and for the purposes set forth.

8. In a bench-pin, the combination with a clamping means, adapted to secure the said bench-pin to a work-bench or table, of a receiving socket, a hinged connection, adapted to pivotally connect the said receiving socket with the said clamping means, and means for locking the said hinged connection, after adjusting the said receiving socket at any desired angle in a vertical plane, a shaft or rod slidably arranged within said receiving socket, means for tightening said receiving socket around the said shaft or rod to hold the said rod at any desired elevation, a table provided with a wedge-shaped opening at the free end thereof, a hinged connection between said table and the upper end of the said shaft or rod, and means for locking the said hinged connection, after securing the table with its plane at any desired angle of rotation about a horizontal axis, substantially as and for the purposes set forth.

9. In a bench-pin, the combination with a clamping means adapted to secure the said bench-pin to a work-bench or table, of a receiving socket, a hinged connection adapted to pivotally connect the said receiving socket with the said clamping means, and means for locking the said hinged connection, after adjusting the said receiving socket at any desired angle in a vertical plane, a shaft or rod slidably arranged within said receiving socket, means for tightening said receiving socket around the said shaft or rod to hold the said shaft or rod at any desired elevation, a table pivotally connected with the upper end of said shaft or rod, said table being provided with a wedge-shaped opening at its free end, a hinged connection between said table and the upper end of the said shaft or rod, and means for locking the said hinged connection, after securing the table with its plane at any desired angle of rotation about a horizontal axis, a pair of wedge-shaped ribs extending longitudinally across the upper face of said table, screw-holes formed in said table, and a facing secured to the face of said table, substantially as and for the purposes set forth.

10. In a bench-pin, the combination with a clamping means, adapted to secure the said bench-pin to a work-bench or table, of a receiving socket, a hinged connection, adapted to pivotally connect the said receiving socket with the said clamping-means, and means for locking the said hinged connection, after adjusting the said receiving socket at any desired angle in a vertical plane, a shaft or rod slidably arranged within said receiving socket, means for tightening said receiving-socket around the said shaft or rod to hold the said shaft or rod at any desired elevation, a table provided with a wedge-shaped opening at the free end thereof, a hinged connection between said table and the upper end of the said shaft or rod, and means for locking the said hinged connection, after adjusting the said table at any desired angle in a horizontal plane, a pair of wedge-shaped ribs extending longitudinally across the upper face of said table, screw-holes formed in said table, and a facing secured to the face of said table, and a split collar slidably arranged on said shaft or rod, adapted to be tightened on the said shaft or rod to mark the position or elevation to which the said shaft or rod is to be adjusted, substantially as and for the purposes set forth.

11. In a bench-pin, the combination with a clamping means, adapted to secure the said bench pin to a work-bench or table, of a receiving socket, a hinged connection adapted to pivotally connect the said receiving socket with the said clamping means, and means for locking the said hinged connection, after adjusting the said receiving socket at any desired angle in a vertical plane, a shaft or rod slidably arranged within said receiving socket, means for tightening said receiving socket around the said shaft or rod, to hold the said shaft or rod at any desired elevation, a yoke, a hinged connection between said yoke and the upper end of said shaft or rod, and means for locking said hinged connection, a table-block provided with a rearwardly extending tongue adapted to be received and held by the yoke, and means connected with the said yoke for binding the said rearwardly extending tongue of the table-block therein, substantially as and for the purposes set forth.

12. In a bench-pin, the combination with a clamping means, adapted to secure the said bench-pin to a work-bench or table, of a receiving socket, a hinged connection, adapted to pivotally connect the said receiving socket with the said clamping-means, and means for locking the said hinged connection, after adjusting the said receiving socket at any desired angle in a vertical plane, a shaft or rod slidably arranged within said receiving socket, means for tightening said receiving socket around the said chaft or rod to hold the said shaft or rod in any desired elevation, a yoke, a hinged connection between said yoke and the upper end of said shaft or rod, and means for locking said hinged connection, a table-block provided with a rearwardly extending tongue adapted to be received and held by the yoke, and means connected with said yoke for binding or locking the said rearwardly extending tongue of the table-block therein, and a split collar slidably arranged on said shaft or rod, adapted to be tightened on the said shaft or rod to mark the position or elevation to which the said shaft or rod is to be adjusted, substantially as and for the purposes set forth.

851,293. ENGINE OR MOTOR. GEORGE LEHBERGER, Newark, N. J. Filed June 7, 1905. Serial No. 264,044.

Claim.—An engine or motor comprising a casing forming a crank casing, a series of cylinders projecting from

one end of the casing, a piston and a piston rod in each cylinder, a shaft journaled in the casing projecting from the casing between the cylinders, a grooved drum on the shaft in the crank casing, a roller near the end of each piston rod in the groove of the drum, a dash-pot in the

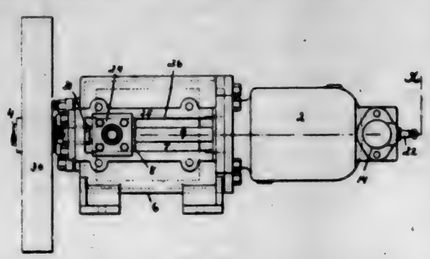

end of the casing for the reception of the end of each piston rod, a valve on the projecting end of each cylinder, and means on the end of the shaft adjacent to the valve for operating the valve.

851,294. AUTOMATIC LATCH-STAND. MALCOLM W. LONG, Harrisburg, Pa., assignor to The Pennsylvania Steel Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Aug. 27, 1906. Serial No. 332,278.

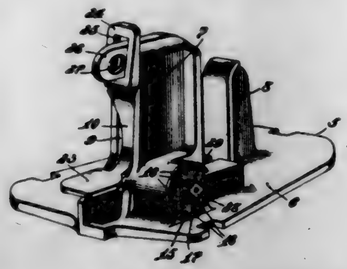

Claim.—1. In an automatic latch-stand, a base provided with a recess to receive a switch-stand lever-bar, a latch-plate, pivoted to said base, and provided with a latch-lug overlying said recess; a spring acting upon said latch-plate to retain the same in said position, together with means for adjusting the tension of said spring, substantially as set forth.

2. In an automatic latch-stand, a base provided with a recess to receive a switch-stand lever bar, a latch-plate provided with a latch-lug overlying said recess, a horizontal shaft secured to said base, and upon which said latch-plate is pivotally mounted; a spring inserted in said shaft, one end of which is secured to said latch-plate, and the other end to said shaft; together with means for rotatively adjusting said shaft, thereby adjusting the tension of said spring, and means for locking said shaft in various positions of adjustment, substantially as set forth.

3. In an automatic latch-stand, a base provided with a recess to receive a switch-stand lever-bar, a latch-plate provided with a latch-lug overlying said recess, a horizontal shaft upon which said latch-plate is pivotally mounted, said shaft being mounted in said base; a circular flange on one end of said shaft, having the slots in its periphery, the pin projecting from said base, and adapted to engage any one of said slots; a stud extending inwardly from said flange, into a recess in said base, through which said shaft passes, together with a spring encircling said shaft, one end of which engages said latch-plate and the other end engages said stud, substantially as set forth.

851,295. ROTARY ENGINE. CHRISTOPHER MACARTHUR and FRANK SMITH, London England, assignors to Edward Churton Powell, London, England. Filed July 3, 1906. Serial No. 324,680.

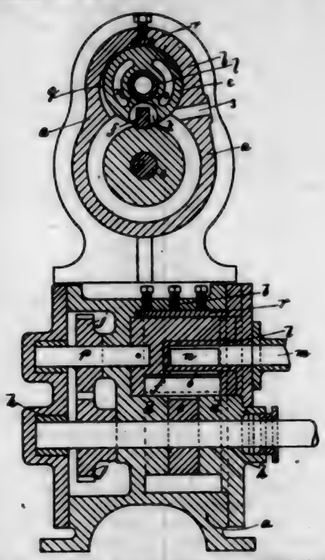

Claim.—1. A rotary engine having two cylindrical chambers intersecting one another, one being the working chamber and the other the abutment chamber, a cylindrical extension on each side wall of the working chamber projecting inwards, a cylindrical support disposed between the said cylindrical extensions and rigidly connected with the driving shaft, a vane or vanes carried upon said cylindrical support adapted to bear against and slide relatively to the walls of the working chamber on three sides and the periphery of the said cylindrical extensions on the fourth side, a cylindrical abutment of the same diameter as the vane support having a recess or recesses to allow the vane or vanes to pass the said abutment, a port in the cylindrical abutment opening into the recess, a hollow trunnion for carrying the cylindrical abutment, means for the admission of steam through the hollow trunnion to the working chamber and for the exhaust of the same therefrom, substantially as described.

2. A rotary engine having two cylindrical chambers intersecting one another, one being the working chamber and the other the abutment chamber, a cylindrical extension on each side wall of the working chamber projecting inwards, a cylindrical support carrying a vane disposed between the cylindrical extensions within the working chamber, a cylindrical abutment of the same diameter as the vane support having a recess to allow the vane to pass the said abutment said cylindrical abutment having a port therein opening into the recess, a ported trunnion for carrying the abutment, an internal sleeve provided with ports carried by said trunnion and a cutting off device projecting into and coacting with the port in the cylindrical abutment so as to vary the point of cut off of the steam.

851,296. PHOTOGRAPHIC-PRINTING BATH. THOMAS MANLY, London, England. Filed Mar. 20, 1906. Serial No. 307,137.

Claim.—1. A bath for carrying out the herein described process, said bath, consisting of (1) a bi-chromate of an alkali, (2) a ferricyanide of an alkali (3) a soluble haloid salt of an alkali, (4) water.

2. A bath for carrying out the herein described process, said bath consisting of (1) a bi-chromate of an alkali, (2) a ferricyanide of an alkali (3) a soluble haloid salt of an alkali (4) alum, (5) citric acid (6) water.

851,297. ADVERTISING NOVELTY. AUGUSTE MARIOLLE, New York, N. Y. Filed Apr. 6, 1906. Serial No. 310,293.

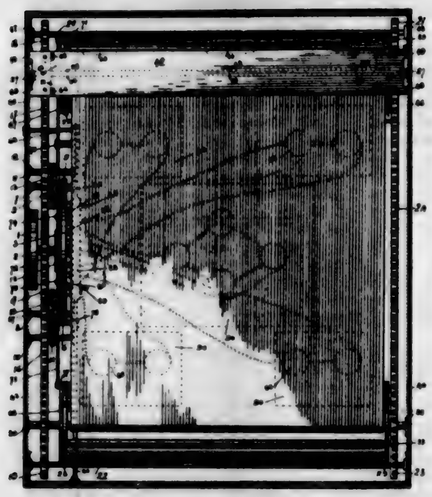

Claim.—1. A displaying machine comprising a general supporting frame and a movable partition therein; special wheels mounted two by two on shafts at upper and lower parts of said framing; a number of specially shafted spring rollers carrying curtains, and placed in succession between the said wheels, the shafts of said rollers inserted into holes formed in the wheels and the ends of the curtains resting upon the periphery of said wheels; ratchet wheels mounted on the same shafts as the wheels for the intermittent operation thereof, combined with a driving shaft and means by which the said shaft may be driven; a cam mounted on the said driving shaft; a pair of levers operated at one end by the said cam and working intermittently with their other end the ratchet wheels at upper and lower parts of the casing for the change of the spring rollers after each display of their curtains; a hook-shaped device adapted to be moved from the lower wheels to the upper and vice-versa; means or tracks on the side walls of the framing to direct the said device in its travels; means on the said device to run upon the said tracks of the side walls; means at one end of the curtains to be caught by the hook shaped device; means on the said hook-shaped device to catch automatically the end of a curtain from the lower and upper wheels and to release it at the end of each travel, substantially as set forth.

2. A displaying machine comprising a general supporting frame and a movable partition therein; special wheels mounted two by two on shafts at upper and lower parts of said framing; a number of specially shafted spring rollers carrying curtains, and placed in succession between the said wheels, the shafts of said rollers inserted into holes formed in the wheels and the ends of the curtains resting upon the periphery of said wheels; ratchet wheels mounted on the same shafts as the wheels for the intermittent operation thereof; a driving shaft and means by which the said shaft may be driven; a cam mounted on the said driving shaft; a pair of levers operated at one end by the said cam and working intermittently with their other end the ratchet wheels at upper and lower parts of the casing for the change of the spring rollers after each display of their curtains; a hook-shaped device adapted to be moved from the lower wheels to the upper and vice-versa; means or tracks on the side walls of the framing to direct the said device in its travels; means on the said device to run upon the said tracks of the side walls; means at one end of the curtains to be caught by the hook-shaped device; means on the said hook-shaped device to catch automatically the end of a curtain from the lower and upper wheels and to release it at the end of each travel; an intermittent gear mounted on the said driving shaft; an operating mechanism composed of two groups of gears and sprockets mounted on shafts located over and under the intermittent gear and receiving intermittent motion from the said gear; endless chains controlling the said hook shaped device, one of the said chains operated intermittently by the operating mechanism in a way to give a reciprocating motion to the hook shaped device fastened to the said chains; sprockets on which run the said endless chains; said sprockets mounted on shafts at upper and lower parts of the casing, crossing the entire machine, both chains being thus connected and running in unison when one is actuated, substantially as set forth.

3. A displaying machine comprising a general supporting frame and a movable partition therein; special wheels mounted two by two on shafts at upper and lower parts of said framing; a number of specially shafted spring rollers carrying curtains, and placed in succession between the said wheels, the shafts of said rollers inserted into holes formed in the wheels and the ends of the curtains resting upon the periphery of said wheels; ratchet wheels mounted on the same shafts as the wheels for the intermittent operation thereof; a driving shaft and means by which the said shaft may be driven; a cam mounted on the said driving shaft; a pair of levers operated at one end by the said cam and working intermittently with their other end the ratchet wheels at upper and lower parts of the casing for the change of the spring rollers after each display of their curtains; a hook-shaped device adapted to be moved from the lower wheels to the upper and vice-versa; means or tracks on the side walls of the framing to direct the said device in its travels; means on the said device to run upon the said tracks of the side walls; means at one end of the curtains to be caught by the hook-shaped device; means on the said hook-shaped device to catch automatically the end of a curtain from the lower and upper wheels and to release it at the end of each travel; an intermittent gear mounted on the said driving shaft; an operating mechanism composed of two groups of gears and sprockets mounted on shafts located over and under the intermittent gear and receiving intermittent motion from the said gear; endless chains controlling the said hook shaped device, one of the said chains operated intermittently by the operating mechanism in a way to give a reciprocating motion to the hook shaped device fastened to the said chains; sprockets on which run the said endless chains; said sprockets mounted on shafts at upper and lower parts of the casing, crossing the entire machine, both chains being thus connected and running in unison when one is actuated, combined with a special disk located on the movable partition, opposite to the intermittent gear and supporting electrical devices connecting bulbs placed in front of the casing, to light the curtains at night, and bulbs placed inside the said casing, with suitable reflectors, to permit the showing, through their lighting, of pictures specially painted, as described, at the back of the curtains; means on the said intermittent gear to intermittently work the said electrical devices and to light up and extinguish alternately the lights outside and inside the casing, the said means and the said devices placed on the gear and on the disk in a way to light up the front bulbs when the hook shaped device begins to move, showing the picture at the front of the curtain during its unrolling and for a while at its resting position and to have the front bulbs extinguished when the inside lights are lighted the said inside lights being extinguished when the hook shaped device moves again the same length of time being thus given to the outside and inside lights during the display of each curtain, substantially as set forth.

851,298. STOVEPIPE-JOINT. SAMUEL T. MICKEY, Winston Salem, N. C. Filed May 8, 1906. Serial No. 315,800.

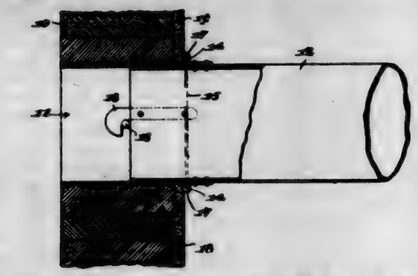

Claim.—In a device of the class described, a tubular receiving member having a stop pin and a flange provided with one or more openings, and a tubular entering member having radial hooks and a projecting hook, the parts being so arranged that when said entering member is inserted into the receiving member and rotated, the radial hooks will pass through the flange openings and engage the flange and the projecting hook will engage the stop pin.

851,299. SASH-LOCK. DON D. MILES, Aurora, Ill. Filed Feb. 13, 1905. Serial No. 245,455.

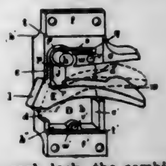

Claim.—1. In a sash lock, the combination with a case having the open spaces in the front and rear edge walls thereof, of a supplemental chamber formed on the inside of the case, a post located in the center of said chamber and an operating-lever comprising a horizontally-disposed arm movable in said open spaces and a branch arm extending upwardly from said horizontally-disposed arm and being pivotally mounted on said post within the said chamber whereby an outer bearing is also provided for the lever arm which insures a steadier movement of the same and contributes strength to the pivotal connection of the lever arm with the case, substantially as set forth.

2. In a sash lock, the combination with a case having the open spaces in the front and edge walls thereof and a supplemental chamber formed on the inside of the case, of a post located on the inside of the case in the center of said chamber, an operating lever comprising a horizontally disposed arm movable in said open spaces and a branch arm extending upwardly from said horizontally disposed arm and being pivotally mounted on said post within said chamber, and spring mechanism adapted to retain said lever arm in its normal position, substantially as and for the purpose set forth.

851,300. ADJUSTABLE DOOR-FRAME. MARCUS M. MOSH, La Crosse, Wis. Filed Oct. 6, 1905. Serial No. 281,687.

Claim.—1. The combination in an adjustable door frame of jambs made in two parts, one part L stationary, and the other part N movable and adjustable, the said adjustable part or jamb being not only movably and adjustably arranged to slide on the edge of the said stationary part or jamb across said edge and at right angles to the face of the said stationary jamb, but also movably and adjustably arranged to slide on the said edge of the said stationary jamb longitudinally and parallel to the face of the said stationary jamb, all arranged in a manner to permit the door to be raised and lowered in the frame, and to permit of changing the size and outline of the opening for the door in the frame, not only in width, but also in height, all substantially as and for the purposes set forth.

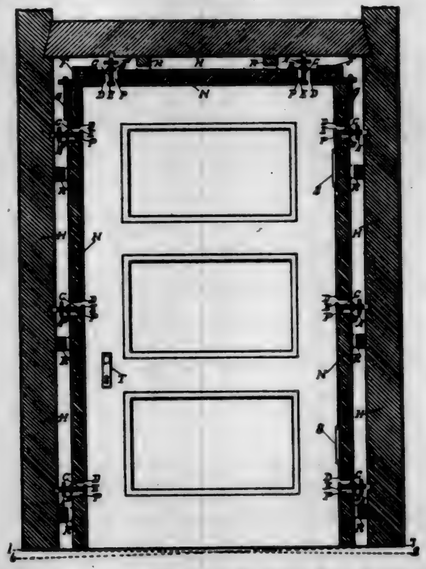

2. The combination in an adjustable door frame of jambs made in two parts, one part L stationary, and the other part N movable and adjustable, the said adjustable part or jamb being not only movably and adjustably arranged to slide on the edge of the said stationary part or jamb across said edge and right angles to the face of the said stationary jamb, but also movably and adjustably arranged to slide on the said edge of the said stationary jamb longitudinally and parallel to the face of the said stationary jamb, all arranged in a manner to permit the door to be raised and lowered in the frame, and to permit of changing the size and outline of the opening for the door in the frame, not only in width, but also in height, and an operative mechanism of adjusting means for so moving and adjusting and otherwise manipulating the said adjustable jambs in the frame as described, all substantially as and for the purposes set forth.

3. The combination in an adjustable door frame of jambs made in two parts, one part L stationary, and the other part N movable and adjustable, the said adjustable part or jamb being not only movably and adjustably arranged to slide on the edge of the said stationary part or jamb across said edge and at right angles to the face of the said stationary jamb, but also movably and adjustably arranged to slide on the said edge of the said stationary jamb longitudinally and parallel to the face of the said stationary jamb, all arranged in a manner to permit the door to be raised and lowered in the frame, and to permit of changing the size and outline of the opening for the door in the frame, not only in width, but also in height, and an operative mechanism of adjusting means for so moving and adjusting and otherwise manipulating the said adjustable jambs in the frame as described, the said operative mechanism having a bracket A (secured to the said stationary jamb) whose parallel arms A—3 and A—6 form a guiding means to the said adjustable jamb, and whose arm A—6 also forms a supporting and retaining means for the edge of a casing I adjoining the said adjustable jamb in the frame, all substantially as and for the purposes set forth.

4. The combination in an adjustable door frame of jambs made in two parts, one part L stationary, and the other part N movable and adjustable, the said movable and adjustable part or jamb being not only movably and adjustably arranged to slide on the edge of the said stationary part or jamb across said edge and at right angles to the face of the said stationary jamb, but also movably and adjustably arranged to slide on the said edge of the said stationary jamb longitudinally and parallel to the face of the said stationary jamb, all arranged in a manner to permit the door to be raised and lowered in the frame, and to permit of changing the size and outline of the opening for the door in the frame, not only in width, but also in height, and an operative mechanism of adjusting means for so moving and adjusting and otherwise manipulating the said adjustable jambs in the frame as described, in which operative mechanism the said adjusting means consists essentially of an actuating screw C whose threaded end C—3 is engaged in a threaded hole A—5 of a bracket A, and whose slotted and threaded end C—2 passes through an elongated opening P in the adjustable jamb, said adjustable jamb being held on the said actuating screw between a washer B (resting against a collar C—1 on the said actuating screw) and a removable head E (said removable head turning in a rimmed washer D, in the face of the said adjustable jamb) engaged on the said end C—2 of the actuating screw, all substantially as and for the purposes set forth.

5. The combination in an adjustable door frame of jambs made in two parts, one part L stationary, and the other part N movable and adjustable, the said adjustable part or jamb being not only movably and adjustably arranged to slide on the edge of the said stationary jamb across said edge and at right angles to the face of the said stationary jamb, but also movably and adjustably arranged to slide on the said edge of the said stationary jamb longitudinally and parallel to the face of the said stationary jamb, all arranged in a manner to permit the door to be raised and lowered in the frame, and to permit of changing the size and outline of the opening for the door in the frame, not only in width, but also in height, and an operative mechanism of adjusting means for so moving and adjusting and otherwise manipulating the said adjustable jambs in the frame as described, and an appliance consisting of a plate G and supporting bracket F, in the upper corners of the frame, that in addition to being so arranged that the adjustable jambs in the sides and head are operatively joined, the adjustable jamb in the head carries and supports the adjustable jamb in the sides, all of which is arranged so that the adjustable jambs may at any time be removed from the frame, substantially as and for the purposes set forth.

851,301. SEPARABLE LOOSE-LEAF BOOK OR LEDGER AND BINDER THEREFOR. CYRUS E. MOREHOUSE, Newark, N. J. Filed June 22, 1904. Serial No. 213,704.

Claim.—1. In a separable leaf ledger, the combination of covers A A; leaves B having perforated hinge extensions at the rear; a plate F secured to one of said covers; flexible fasteners C carried by said plate, said fasteners being passed through the perforations in said leaves and through suitable perforations in the opposite cover; clamping levers D D' adapted to engage said fasteners and fold the same downwardly; and means for detachably securing said levers in position, all coacting for the purpose specified.

2. In a separable leaf ledger, the combination of suitable covers; leaves B having perforated hinge extensions at the rear thereof; flexible fasteners carried by one of said covers, said fasteners being passed through the perforations in said leaves and through suitable perforations in the opposite cover; clamping levers D D' engaging said fasteners; and means for detachably securing said clamping levers in position, all co-acting for the purpose specified.

3. In a temporary binder, the combination of suitable binding pieces; flexible fasteners carried by one of said binding pieces, said fasteners being arranged through suitable perforations in the other binder piece; levers arranged to engage said fasteners for applying tension thereto and retaining them in position; and means for retaining said levers in position; as specified.

4. In a separable leaf book or ledger, the combination of leaves partially cut away at the point of flexure forming strap-like hinge portions; and a binder adapted to clamp said leaves back of said cut-away portion, for the purpose specified.

851,302. TENONING-MACHINE. CASSIUS M. MCCLUNE, Olean, N. Y., assignor of one-half to Henry J. Williams, Olean, N. Y. Filed Apr. 25, 1906. Serial No. 313,698.

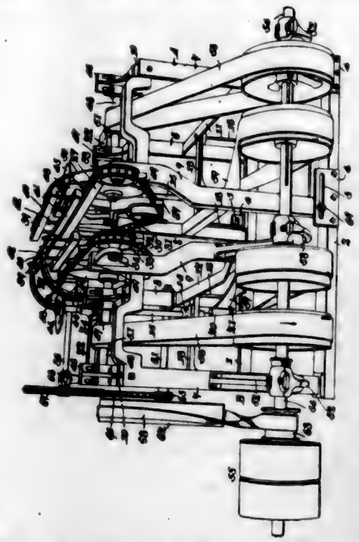

Claim.—1. A machine of the character described comprising adjustably connected frames spaced apart, longitudinally channeled bars upon the adjoining portions of the frames, an endless chain mounted to travel within each bar, outstanding lugs thereon, spring pressed presser feet supported above the space between the frames, aligning horizontal shafts upon the frames, circular saws of different diameters upon each shaft and in planes parallel with the chains, a vertical shaft within each frame, a circular saw rotatable therewith, and in a horizontal plane, a drive shaft journaled upon the two frames, means for transmitting rotary motion therefrom to the horizontal shafts and vertical shafts respectively, and mechanism actuated by the shaft for simultaneously operating the chains to convey material against the saws and presser feet.

2. In a machine of the character described the combination with oppositely disposed frames adjustably connected; of longitudinally channeled parallel bars carried by the frames, endless chains movably mounted within the channeled bars, mechanism for actuating the chains, stock engaging devices upon the chains, arms upstanding from the frames and extending over the chains, channeled strips connecting the arms on each frame, spring pressed rods slidably mounted within the strips, elongated presser feet connected to the rods and above and parallel with the channeled bars, and means carried by the frames for shaping the stock contacted by the presser feet.

851,303. CHANGE-GIVING FARE-BOX. DONALD G. McKENZIE, Vancouver, British Columbia, Canada. Filed Jan. 9, 1907. Serial No. 351,464.

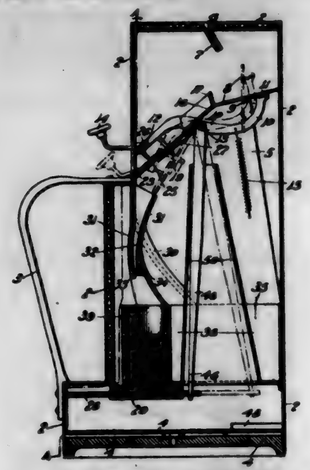

Claim.—1. A change giving fare-box comprising a casing having a coin receiving aperture and a coin delivery aperture, cylindrical coin magazines in the lower part of the casing above the bottom thereof, a coin withdrawing slide for each magazine, coin selecting plates toward the upper part of the box arranged according to their width from the wider on one side to the narrower on the other side, means for pivotally mounting said plates toward one end, said pivotally mounting means including a common axis or shaft susceptible of a limited pivoted depression, means for depressing the plate on which a coin rests to deliver the coin into its respective magazine, said depressing means including means for temporarily retaining the coin on the depressed plate, and means cooperating with said depressing means of certain of the selecting plates for withdrawing a coin or coins from certain of the magazines.

2. A change giving fare-box comprising a casing, a receiving plate within the casing, means for tilting the same, a series of coin selecting plates hinged adjacent thereto, the width of said plates being adapted respectively to the several sizes of coins the casing is designed to accommodate and arranged according to the size of the coin from the larger on the one side to the smaller on the other, coin magazines cooperating with said selecting plates, a check on each plate that will stop a coin on the plate for which it is designed while allowing a coin of smaller size to pass, means for depressing the plate on which a coin rests, means for delivering the coin into its magazine, means cooperating with certain of the coin selecting plates for withdrawing a coin or coins from certain of the magazines, to make up the required change from the coin selecting plate.

3. A change giving fare-box comprising an outer locked casing having a coin receiving aperture in the upper part of the casing and a coin delivery aperture from the bottom, a series of cylindrical coin magazines within the casing and clear of the bottom of the casing, a coin withdrawing slide in the bottom of each magazine, a cash or ticket receiving box situated above the coin slides of the magazines, a receiving plate toward the upper part of the casing, means for tilting such plate to deliver a coin or coins direct into the general cash or ticket box, a series of independently pivotally mounted coin selecting plates extending across the casing and sloping downward from about the level of the back edge of the receiving plate toward the back of the casing, a check pin on each plate that will stop a coin on the plate for which it is designed, a bar across the plates depressible toward them, means for depressing said bar said bar having a downwardly projecting pin over each plate that will when the bar is depressed pass through an aperture in the plate beneath but that will if a coin occupies the plate press the plate down, means for withdrawing certain of the magazine coin slides when certain of the selecting plates are depressed and means for restoring the mechanism to its normal position.

4. A change giving fare-box, comprising a locked casing having a coin receiving aperture toward the upper part and a change delivering aperture toward the bottom, a series of cylindrical coin magazines situated toward the lower part of the casing but clear of the bottom an apertured coin withdrawing slide for each magazine normally in alignment with the bore of the magazine, a coin receiving plate toward the upper part of the casing, a series of coin selecting plates adjacent but partitioned from the receiving plate except at one side said selecting plates adapted in width to the diameter of the several coins the box is designed to accommodate and independently hinged toward one edge, a bar pivotally mounted toward the axis on which the said plates move said bar having a series of pins downwardly projecting toward the plates, means for holding said pins normally clear of a coin on the plates, said plates having apertures corresponding to the position of the pins, a rod secured to the frame of the pivotally mounted bar and extending beneath the coin selecting plates upon which rod the selecting plates normally rest, means for depressing the pivotally mounted bar, a key external to the box forming a part of said depressing means, levers secured to certain of the coin selecting plates the free ends of which levers are in engagement with the magazine coin slides to withdraw such slides when the external key is depressed, and a coin occupies certain of the selecting plates, means for delivering coins from certain of the selecting plates to a cash box situated alongside of the magazines, and means for delivering coins from certain other of the selecting plates to the coin magazines.

5. A change giving fare-box comprising a locked casing having a coin receiving aperture toward the upper part and a change delivery aperture toward the bottom, a receiving plate and means for tilting the same, coin selecting plates consisting of a series of pivotally mounted plates stepped one below the other from the wider on one side to the narrower on the other, means for depressing one of said plates on which a coin may rest, a series of coin magazines beneath, means for delivering a coin from any one of said plates into a corresponding coin magazine beneath, and means for delivering a coin from the plates into a general cash receptacle when the magazine to which it should otherwise deliver is full, and means for withdrawing a coin or coins from the magazines as the plates are depressed.

6. A change giving fare-box comprising a casing having coin receiving and change delivery apertures, a receiving plate, means for tilting the receiving plate, coin selecting plates within the casing, means for depressing one of said plates on which a coin may rest, a series of coin magazines beneath said plates, means for delivering a coin from any one of said plates to a corresponding coin magazine beneath, means for delivering a coin from the plates into a general cash receptacle at times, means for withdrawing a coin or coins from the magazines, said means being cooperative with the plates as they are being depressed, substantially as shown and described.

851,304. LATTICE-TRUSS. JOHN C. McKNOWN, Chicago, Ill. Filed Feb. 25, 1907. Serial No. 359,295.

Claim.—1. A truss comprising a curved upper chord, a lower chord and lattice members which connect said chords, said lattice members being disposed at substantially uniform angles to the upper chord at their respective points of attachment thereto.

2. A truss comprising a curved upper chord, a lower chord and lattice members which connect said chords, said lattice members being disposed at angles of substantially forty-five degrees to the upper chord at their respective points of attachment thereto.

3. A truss comprising a curved upper chord comprising a plurality of elements provided with longitudinal interlocking tongues and grooves, a lower chord and lattice members which connect said chords, said lattice members being disposed at substantially uniform angles to the upper chord at their respective points of attachment thereto.

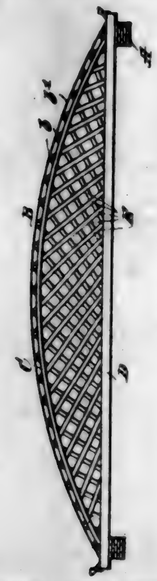

4. A truss comprising a curved upper chord comprising a plurality of elements provided with longitudinal interlocking tongues and grooves, a lower chord and lattice members which connect said chords.

851,305. HEADLIGHT. EDWARD H. McLAUGHLIN and EDWARD S. SITTEL, Parsons, Kans. Filed Jan. 4, 1906. Serial No. 294,611.

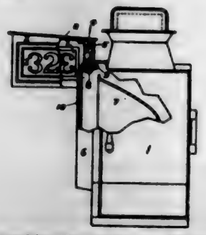

Claim.—1. In combination with an illuminating device having a lens; of a signal display device fixed with respect to the illuminating device and comprising a box-like body arranged at one side of and extending forward of and at a right angle to the lens; the said body being open at its longitudinal side nearest the lens throughout its area in front of the lens, whereby the light which has passed through the lens is enabled to illuminate the interior of the body, and having an upright wall provided with an illuminated signal, as and for the purpose set forth.

2. In combination with a headlight case having a reflector and a lens therein, an attachment therefor comprising an independent signal-chamber having one or more of its vertical side walls provided with signal-characters, the said chamber being secured to and projecting forward of the case and having an open bottom in front of the lens, whereby the said signal-characters are illuminated by light reflected directly into the chamber by the reflector within the case.

3. In combination with a headlight case having a reflector and a lens therein, an attachment therefor comprising an independent signal-chamber having one or more of its vertical side walls provided with signal-characters, the said chamber being secured to and projecting forward of the case and having an open bottom in front of the lens, whereby the said signal-characters are illuminated by light reflected directly into the chamber by the reflector within the case, and a reflector located on the underside of the top of the chamber whereby the light therein is reflected upon the track immediately in front of the locomotive.

4. In combination with a headlight case having a reflector and a lens therein, a signal-chamber open at its bottom side in front of the lens and mounted upon the front projecting rim of the case and extending forward thereof, and signal-characters located in one or more of the vertical side walls of the chamber and illuminated by light reflected directly into the chamber through the open bottom thereof by the reflector within the case.

5. In combination with a headlight case having a reflector and a lens therein, a signal-chamber open at its bottom side in front of the lens and mounted upon the front-projecting rim of the case and extending forward thereof, signal-characters located in one or more of the vertical side walls of the chamber and illuminated by light reflected directly into the chamber through the open bottom thereof by the reflector within the case, and a reflector located on the underside of the top of the chamber whereby the light therein is reflected upon the track immediately in front of the locomotive.

6. In combination with a headlight case having a reflector and a lens therein, an attachment therefor comprising an independent signal-chamber having an open bottom in front of said lens mounted upon the front projecting rim of the case and extending forward thereof, and signal-characters located in one or more of the vertical side walls of said chamber illuminated by light reflected directly into the chamber by the reflector within the case.

7. In combination with a headlight case having a reflector and a lens therein, an attachment therefor comprising an independent signal-chamber having an open bottom in front of said lens mounted upon the front projecting rim of the case and extending forward thereof, signal-characters located in one or more of the vertical side walls of said chamber illuminated by light reflected directly into the chamber by the reflector within the case, and a reflector located on the underside of the top of the chamber whereby the light therein is reflected upon the track immediately in front of the locomotive.

8. A new article of manufacture for attachment to locomotive headlights comprising a signal-chamber having a closed top and an open bottom and some of whose vertical side walls carry signal-characters adapted to be illuminated by light reflected into the chamber direct from the reflector within the headlight case when said chamber is mounted thereon.

9. A new article of manufacture for attachment to locomotive headlights comprising a signal-chamber having a closed top and an open bottom and some of whose vertical side walls carry signal-characters adapted to be illuminated by light reflected into the chamber direct from the reflector within the headlight case when said chamber is mounted thereon, and a reflector located on the underside of the top of the chamber whereby the light therein is reflected upon the track immediately in front of the locomotive.

851,306. OINTMENT. JEANNETTE W. NESMITH, Gilpin county, Colo. Filed Jan. 13, 1906. Serial No. 295,850.

Claim.—1. A topical remedy comprising powdered pitchblende and an ointment vehicle, substantially as described.

2. A topical remedy comprising powdered pitchblende and lanolin, substantially as described.

3. A topical remedy comprising a powdered mineral con-

taining radium compounds in small quantity and an ointment vehicle adapted to form a salve therewith.

851,307. PEDESTAL EXTENSION-TABLE. HERMAN NONNAST and WILHELM TESAR, Chicago, Ill. Filed Apr. 9, 1903. Serial No. 151,727.

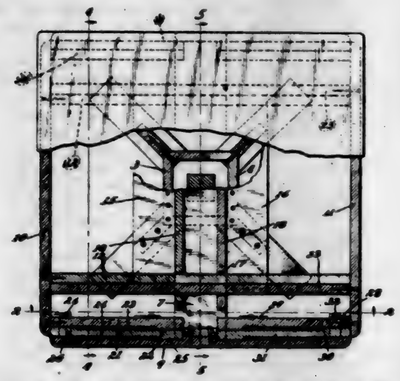

Claim.—In an extension table, a center leg, a top, side pieces attached to and supporting the top, said side pieces being supported at the centers on the ends of a transversely extending bar mounted at its center on the top of the center-leg, end portions extensibly mounted beneath the top and adapted when drawn out to support additional table leaves, legs attached to said end portions, said end portions each comprising an end piece, guides secured to each end of said end piece and mounted to slide on intermediate guide bars which are mounted to slide each on the inside of one of the side pieces at one side of the transverse bar, additional guide bars attached to said end pieces extending across the top of the transverse bar on opposite sides of the center leg and abutting when in closed position the other end piece, and a bar mounted on said transverse bar and provided with openings through each of which two opposite additional guide bars extend, and which serve to guide and support the same as the end portions are drawn to extended position.

851,308. VALVE MECHANISM FOR ENGINES AND THE LIKE. CHARLES NORDSTROM, Milwaukee, Wis., assignor of one-half to Peter Valentine Seitz, Milwaukee, Wis. Filed Feb. 18, 1907. Serial No. 357,843.

Claim.—1. A valve mechanism for engines and the like, comprising pairs of valve casings communicating with the interior of the cylinder of the engine at opposite ends thereof, valves located in said valve casings, valve tubes connecting the valves on each pair of valve casings and constituting a communication therebetween, and means operated by the movements of the piston of the engine for moving the valve tubes to respectively open and close the valves thereof.

2. A valve mechanism for engines and the like, comprising pairs of valve casings having communication with opposite ends of the engine cylinder, tubular valves mounted in the valve casings, valve tubes connecting the valves of each pair of valve casings and constituting a communication therebetween, a supply pipe connected with one pair of valve casings, an exhaust pipe connected with another pair of valve casings, and means operated by the movements of the piston of the engine for turning the valve stems and opening and closing respectively the valves thereof.

3. A valve mechanism for engines and the like, comprising pairs of valve casings having communication with opposite ends of the engine cylinder, tubular valves in the valve casings, valve tubes connecting the valves of each pair of valve casings and constituting a communication therebetween, a rock-shaft journaled across the cylinder of the engine, crank and link connections between the rock-shaft and the valve tubes for causing the turning of the valve tubes by the movements of the rock-shaft, an arm on the rock-shaft, and means movable with the piston of the engine for engaging and moving the arm of the rock-shaft for changing the position of the valves.

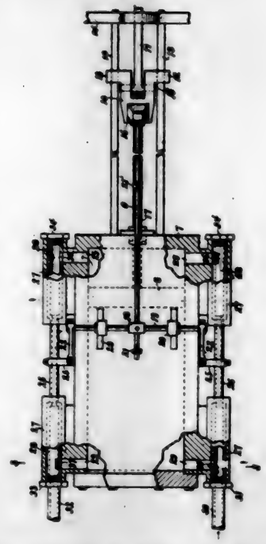

4. A valve mechanism for engines and the like, comprising a cylinder, a piston operating therein, pairs of valve casings having communication with opposite ends of the cylinder, tubular valves located in the valve casings, valve tubes connecting the valves of each pair of valve casings and constituting a communication therebetween, a rock-shaft journaled across the cylinder, crank and link connections between the rock-shaft and the valve tubes, an arm carried by the rock-shaft, a piston rod carried by the piston, a cross-head mounted on the piston rod, guides for the cross-head, a trip-rod carried by the cross-head and passing through the arm, and stops on the trip-rod for engaging the arm and swinging the rock-shaft near the ends of the stroke of the piston to change the position of the valves.

5. A valve mechanism for engines and the like, comprising a cylinder, a piston operating therein, pairs of valve casings having communication with the interior of the cylinder at opposite ends thereof, tubular valves located in the valve casings, valve tubes connecting the valves of each pair of valve casings and constituting a communication therebetween, a supply pipe connecting with a valve casing of one pair, an exhaust pipe connecting with a valve casing of the other pair, screw plugs closing the ends of the other valve casings, cranks on the valve tubes, links connected to the cranks, connecting blocks on the links, a rock-shaft journaled across the cylinder, cranks thereon connected with the connecting blocks, an arm on the rock-shaft, a piston rod carried by the piston, a cross-head on the piston rod, guides for the cross-head, an arm on the cross-head, a trip-rod carried by said arm and passing through the arm of the rock-shaft, and adjustable stops on the trip-rod for engaging the arm of the rock-shaft near the ends of the stroke of the piston for swinging the rock-shaft and causing it to turn the valves from one position to another, whereby the direction of movement of the piston is changed.

851,309. GIN. WILLIAM F. OVERMYER, Beechwood, Miss. Filed June 19, 1906. Serial No. 322,365.

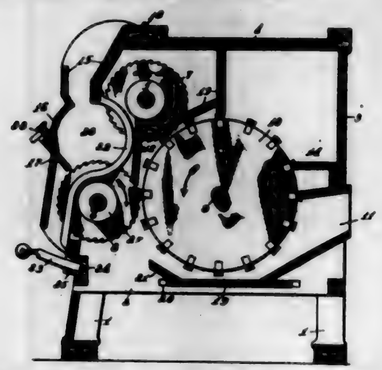

Claim.—1. In an apparatus of the character described, the combination of two independent sets of rotatable gin-saws, a grating extending between the several saws of said two sets, an adjustable feeding means for supplying material to said saws, and means for simultaneously adjusting the position of said grating relative to the said two sets of saws and for varying the capacity of the feeding means.

2. In an apparatus of the character described, the combination of two independent sets of rotatable gin-saws, a grating extending between the several saws of said two sets, an adjustable feeding means for supplying material to said saws, means for simultaneously adjusting the position of said grating relative to the said two sets of saws and for varying the capacity of the feeding means, a seed board, and means for independently adjusting said seed board relative to the saws.

3. In an apparatus of the character described, the combination of two independent sets of rotatable gin saws, a grating extending between the several saws of said two sets, an adjustable feeding means for supplying material to said saws, said grating being secured to the movable part of said adjustable feeding means and adapted to move simultaneously therewith, means for simultaneously adjusting the position of said grating with respect to said two sets of saws, and for varying the capacity of the feeding means, a seed board, and means for adjusting said seed board relative to the saws.

851,310. GIN. WILLIAM F. OVERMYER, Beechwood, Miss. Filed June 19, 1906. Serial No. 322,366.

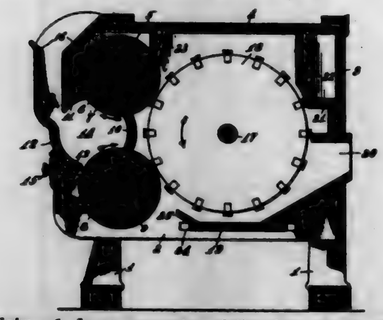

Claim.—1. In an apparatus of the character described, the combination of a roll chamber, a pair of gin rolls extending within said roll chamber at one side thereof, means for rotating one of said rolls to produce a backward and upward movement of the portion extending within the roll chamber, means for rotating the other of said rolls to produce a forward and upward movement of the portion extending within the roll chamber and feeding means for delivering seed cotton downwardly in the side of the roll chamber opposite the said gin rolls, substantially as described.

2. In an apparatus of the character described, the combination of a roll chamber, a pair of gin rolls extending within said roll chamber at one side thereof, means for rotating one of said rolls to produce a backward and upward movement of the portion extending within the roll chamber, means for rotating the other of said rolls to produce a forward and upward movement of the portion extending within the roll chamber, feeding means for delivering seed cotton downwardly in the side of the roll chamber opposite said gin rolls, a seed board in the bottom of said chamber, and means for adjusting said seed board relatively to one of said gin rolls.

3. In an apparatus of the character described, the combination of two gin rolls, an adjustable scraper extending between said two gin rolls, and means for adjusting said scraper relative to said rolls, substantially as described.

4. In an apparatus of the character described, the combination of two gin rolls, a rotatably-mounted scraper extending between said two gin rolls, and means for swinging said rotatably-mounted scraper for adjusting it relative to said two rolls, substantially as described.

851,311. TALKING-MACHINE. EDWARD T. PALMER, Philadelphia, Pa., assignor of one-half to Louis I. Matthews, Philadelphia, Pa. Filed Aug. 31, 1906. Serial No. 332,729.

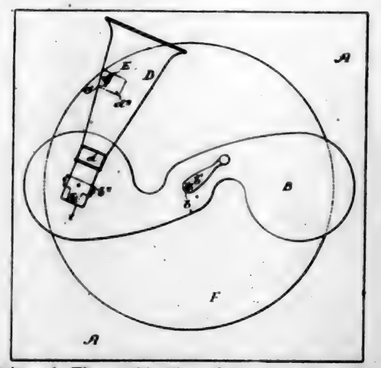

Claim.—1. The combination of a support, a stationary disk thereon, a revoluble member having turning means, a sound reproducer carried by said revoluble means, with a stylus mounted on said sound reproducer, substantially as described.

2. The combination of a support, a stationary record disk thereon, a revoluble member having a supporting spindle concentric with said disk, a sound reproducer on said member movable on a vertical pivot, and a stylus carried by said sound reproducer placed to engage the disk, substantially as described.

3. The combination of a support, a stationary disk thereon, a revoluble member having turning means, and a horn carried by said member, with a stylus on the horn, substantially as described.

4. The combination of a support, a stationary disk thereon, a revoluble member, a horn pivoted to said revoluble member, a stylus carried by the outer end of the horn and bearing directly on the disk, a spring tending to force the horn and its stylus towards the disk, substantially as described.

5. The combination of a support, a stationary disk thereon, a revoluble member having a supporting spindle concentric with the disk, a forked piece pivoted to the said member, a horn pivoted to the forked piece, a stylus car-

ried by the horn, and a spring tending to force the stylus onto the record disk, substantially as described.

6. The combination of a support, a stationary disk thereon, a revoluble member having a supporting spindle concentric with the disk, a pivoted piece mounted on the revoluble member, a block pivoted to said piece, a horn secured to the block, and a stylus carried by the horn, substantially as described.

7. The combination of a support, a stationary disk thereon, a revoluble member having a supporting spindle concentric with said disk, a piece pivoted to said member, a block pivoted to the said piece, a horn detachably secured to the block, and a stylus secured to the horn and bearing upon the record disk, substantially as described.

8. The combination of a support, a stationary disk thereon, a weighted revoluble member, a forked piece pivoted to said member, a block pivoted to the forks of said piece, a spring mounted between an extension of said piece and the rear portion of the block, a horn secured to the opposite end of the block, a stylus secured to a projection on the horn and bearing upon the record, substantially as described.

9. The combination of a support, a stationary disk thereon, a revoluble member, means for turning said member, a horn carried by said member, a stylus holder perforated for the passage of the stylus and having a screw threaded arm arranged to enter an opening in the projection on the horn, substantially as described.

10. The combination of a supporting structure having on it a relatively stationary record disk, with a reproducer removably mounted above said disk, and means for revolving said reproducer in a substantially horizontal plane, substantially as described.

11. The combination of a stationary record, a reproducer removably supported adjacent to said record, and means for revolving said reproducer, at any desired speed, with its stylus in engagement with the record, substantially as described.

12. A talking machine comprising a relatively fixed disc record, a reproducer movable to follow the record grooves in said disc, and a pivotal support for said reproducer in axial alignment with the axis of said disc.

13. A talking machine comprising a relatively fixed record disc, a support pivoted in axial alignment with the axis of said disc, and a reproducer supported by said support and movable around the axis of said record disc and toward and from the axis of said record disc to follow the record groove thereon.

851,312. HARNESS. WILLIAM J. PARVIN, Brunswick, Mo. Filed Oct. 18, 1906. Serial No. 339,554.

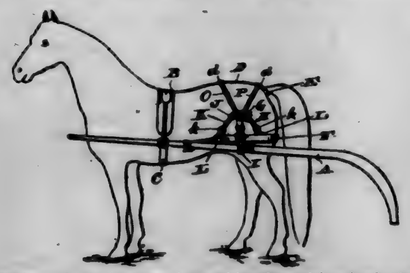

Claim.—1. In harness, in combination with a back strap having loops, and a breeching, a connecting piece at each side of the harness consisting of a straight bar, strap loops at each end thereof, and a bar connecting said strap loops and divided into two strap holds by a downwardly projecting teat, straps secured to said strap holds and passing through the loops in the back strap, adjustable straps connecting the strap loops and breeching, and straps secured to said straight bar and adapted to pass around the thills, substantially as shown and described.

2. In harness, in combination with a back strap having loops therein, one of said loops being adjacent to the crupper, the other loop being intermediate of the ends of the back strap, and the breeching, a connecting piece at each side of the harness comprising a straight bar, strap loops at each end of said straight bar, and a curved bar connecting said strap loops and divided into two strap-holds by a downwardly projecting teat, straps secured to said strap-holds and passing through the loops in the back strap, adjustable straps connecting the strap loops in the ring and the breeching, and straps secured to the straight bar and adapted to pass around the thills, substantially as shown and described.

3. In harness, in combination with a back strap, hip straps secured to the back strap, breeching, and breeching support straps secured to the breeching, a connecting piece having a straight bar, strap loops at each end of said straight bar, and a bar connecting said strap loops and divided into two strap holds by a downwardly projecting teat, the hip straps secured to said strap holds, the breeching support straps secured to the strap loops, and a strap secured to the straight bar and adapted to be secured to one of the thills, substantially as shown and described.

851,313. JACK. JAMES H. PEARSON, Bloomfield, Ind., assignor to William S. Bogy, Bloomfield, Ind. Filed July 9, 1906. Serial No. 325,351.

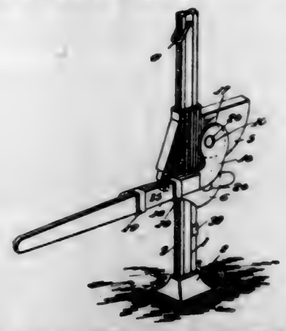

Claim.—1. A device of the character described, comprising a standard, upper and lower runners mounted upon said standard, means for effecting a climbing action of the runners on the standard, and a lifting bar carried by the upper runner and having a sliding engagement with the standard below the lower runner.

2. A device of the character described, comprising a standard, upper and lower runners mounted upon said standard, means for effecting a climbing action of the runners on the standard, and a lifting bar carried by the upper runner and having a detachable sliding engagement with the standard.

3. A device of the character described, comprising a standard, upper and lower runners mounted upon said standard, means for effecting a climbing action of the runners upon the standard, and a lifting bar carried by one of said runners and provided at its lower end with a laterally extending hook finger adapted to spring around the edge of the standard below the lower runner.

4. A device of the character described, comprising a standard, upper and lower runners mounted upon said standard, means for effecting a climbing action of the runners on the standard, and a lifting bar carried by the upper runner and having a sliding engagement with the standard below the lower runner, said lifting bar being provided with a bracket, as and for the purpose specified.

5. A device of the character described, comprising a standard, upper and lower runners mounted upon said standard, means for effecting a climbing action of the runners on the standard, and a lifting bar pivotally mounted upon the upper runner and arranged for detachable sliding engagement with the standard, said lifting bar being provided at its pivoted end with a serrated cam surface, the upper runner being provided with a lug adapted to coact with said cam surface.

6. A device of the character described, comprising a standard, upper and lower runners mounted upon said standard, means for effecting a climbing action of the runners on the standard, and a lifting bar pivotally mounted at one end upon the upper runner and adapted for sliding engagement with the standard at its other end, the upper runner being provided with a laterally projecting ear adapted to engage the lifting bar intermediate its ends, for the purpose specified.

7. A device of the character described, comprising a standard, upper and lower runners adapted to climb said standard, the upper runner being provided with a bearing opening, and a side slot opening thereinto, a disc mounted in said bearing opening and provided with an eccentric opening, a pitman journaled at one end in the opening in the disc and also journaled in the lower runner, and an operating lever operatively connected to said disc, the said disc being provided with a retaining member having a flange designed to engage the boundary wall of the bearing opening whereby to retain the disc therein.

8. A device of the character described, comprising a standard, upper and lower runners mounted to climb the standard, the upper runner being provided with a bearing opening, a disc mounted in said opening, means for turning said disc, the disc being provided with an eccentric opening, a pitman journaled in said eccentric opening and in the lower runner, and a retaining member on said disc, said retaining member being formed with a rib adapted to extend over the pitman to hold the same in place.

9. A device of the character described, comprising a standard, upper and lower runners mounted to climb the standard, the upper runner being provided with a bearing opening, a disc in said opening, means for turning said disc, a pitman journaled in the lower runner and journaled eccentrically in the disc, and a retaining member on the disc, said retaining member being formed with a slot adapted to receive the upper end of the pitman, and a rib designed to extend over the pitman to hold the same in place.

10. A device of the character described, comprising a standard, upper and lower runners mounted to slide on said standard, the lower runner being adapted to tilt on said standard into clutching engagement therewith, a pitman operatively connecting the two runners, an operating disc mounted in the upper runner and in which the upper end of the pitman is journaled eccentrically, and means for turning said disc, the disc being provided with a notch adapted to be brought into engagement with the upper end of the pitman and arranged to throw the lower end of the pitman inwardly, whereby to swing the lower runner out of locking engagement with the standard.

11. A device of the character described, comprising a standard, upper and lower runners mounted to slide on said standard, the lower runner being arranged to tilt on said standard into clutching engagement therewith, a pitman operatively connecting the runners, a cam disc mounted in the upper runner and in which the upper end of the pitman is eccentrically journaled, the said disc being provided with a notch adapted to engage the upper end of the pitman for the purpose specified, means for turning said disc, and a spring mounted in the lower runner and bearing against said pitman.

12. A device of the character described, comprising a standard, upper and lower runners mounted to slide on said standard, the lower runner being arranged to tilt on said standard into clutching engagement therewith and provided with a side opening slot and with a bore and a socket communicating with said slot, a pitman operatively connecting said runners, one end of said pitman being seated in said slot of the lower runner and provided with a wrist pin journaled in the bore of said runner, means for actuating said pitman to alternately move the two runners, and a spring in the socket of the lower runner, said spring engaging said pitman for the purpose specified.

13. A device of the character described, comprising a standard, upper and lower runners mounted to climb the standard, a disc mounted in the upper runner and provided with an eccentric opening, means for turning said disc, and a pitman provided at each end with an integral wrist pin, one of said wrist pins being journaled in the eccentric opening in the disk and the other journaled in the lower runner.

14. A device of the character described, comprising a standard, upper and lower runners mounted to slide on said standard, the lower runner being adapted to tilt on the standard into clutching engagement therewith, a pitman operatively connecting said two runners, means for locking said pitman, the upper runner being provided at its rear side with a chamber having an inclined wall and a lower opening and the upper runner being provided with a heel at one side of said opening, and a wedge block mounted in said chamber and spring pressed toward the standard, said wedge block having one end extending out through the opening and being provided with a lug arranged for engagement with the said heel, as and for the purpose set forth.

15. A device of the character described, comprising a standard, upper and lower runners mounted upon said standard, means for effecting a climbing action of the runners on the standard, and a lift bar pivotally mounted on one of said runners and arranged for detachable sliding engagement with the standard, the said runner and lift bar being arranged to constitute a wire clamp, as and for the purpose set forth.

16. A device of the character described, comprising a standard, upper and lower runners mounted upon said standard, the lower runner being provided with a side opening slot and a bore communicating with said slot, a pitman having its lower end detachably seated in said slot and provided with a wrist pin mounted in said bore, and a detachable operative connection between the upper end of said pitman and the upper runner.

17. A device of the character described, comprising a standard, upper and lower runners mounted upon said standard, the lower runner being provided with a side opening slot and a bore and a socket both communicating with said slot, a pitman having its lower end seated in said slot and provided with a wrist pin mounted in said bore, a spring in said socket adapted to bear against said pitman, and a detachable operative connection between the upper end of said pitman and the upper runner.

851,314. VENTILATOR FOR WATER-CLOSETS. LEO H. PLEINS, Chicago, Ill. Filed June 24, 1905. Serial No. 266,890.

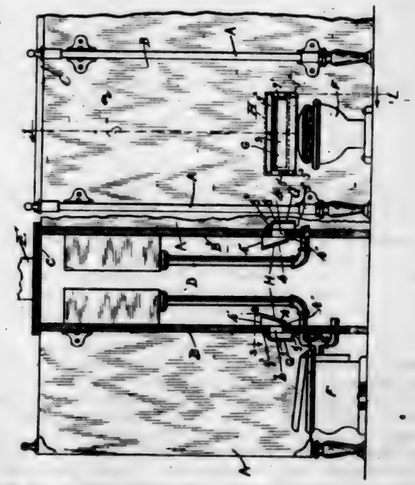

Claim.—1. The combination with a stall and a ventilating flue having a common wall, said wall having an open-

ing through it, of a hood located in the stall and secured to the wall, said hood proceeding from a point above the opening first outward and thence downward, concealing the opening, substantially as described.

2. The combination with a stall and a ventilating flue having a common wall, said wall having an opening through it, of a hood located in the stall and secured to the wall, said hood proceeding outward from a point above the opening and thence downward to a point below the opening, substantially as described.

3. The combination with a stall and a ventilating flue having a common wall, said wall having an opening through it, of a hood located in the stall and secured to the wall, said hood proceeding outward from a point above the opening and thence downward to a point below the opening, the lower depending portion of the hood being parallel with the wall, substantially as described.

4. The combination with a stall and a ventilating flue having a common wall, said wall having an opening through it, of a hood located in the stall and secured to the wall, said hood proceeding from a point above the opening first outward and thence downward, concealing the opening, and a deflector in the flue located opposite the opening, substantially as described.

5. The combination with a stall and a ventilating flue having a common wall, said wall having an opening through it, of a hood located in the stall and secured to the wall, said hood proceeding from a point above the opening first outward and thence downward, concealing the opening, and a deflector in the flue located opposite the opening, the lower margin of said deflector being out of contact with the wall so as to leave a space between them, substantially as described.

6. A hood for ventilators, having a front, two ends, and flanges joining the upper edge of the front and the rear edges of the ends, respectively, and lying in a common plane, the front being bounded at its upper edge by a straight line touching said plane, whence it proceeds outward from said plane and downward to the plane of the lower edges of the ends, and the ends being bounded at their front edges by the front and at their rear edges by the plane aforesaid, the hood being open at its bottom and at its back, substantially as described.

7. The combination with a stall and a ventilating flue, having a common wall, said wall having an unobstructed opening through it, of a hood located in the stall and secured to the wall so as to conceal said opening, said hood having a front, two ends and flanges joining the upper edge of the front and the rear edges of the ends, respectively, and lying in a common plane, the front being bounded at its upper edge by a straight line touching said plane, whence it proceeds outward from said plane and downward to the plane of the lower edges of the ends, and the ends being bounded at their front edges by the front and at their rear edges by the plane aforesaid, said hood being open at its bottom and at its back and being secured to the wall in such position that its lower edge terminates some distance below the opening, substantially as described.

851,315. BELTLESS AND CHAINLESS DRIVE GRAIN-ELEVATOR. WILLIAM POLIS, McVille, N. D. Filed Jan. 10, 1907. Serial No. 351,663.

Claim.—1. The combination of a casing provided at its front with a transverse shelf, bearings supported by the shelf, upper and lower transverse shafts, the upper transverse shaft being extended across the casing and the lower one extending from one side and terminating short of the opposite side, sprocket wheels mounted on the transverse shafts, an endless carrier arranged on the sprocket wheels, an intermediate shaft extending across the exterior of the casing and journaled in the bearings of the said shelf, upper and lower bearing brackets mounted on the casing at one side thereof, a longitudinal shaft arranged in the bearings of the said upper and lower brackets, gears connecting the ends of the longitudinal shaft with the upper transverse shaft and the said intermediate shaft and also supporting the longitudinal shaft, and means for communicating motion to the intermediate shaft.

2. The combination of a casing provided at its front with a transverse shelf having bearings, upper and lower transverse shafts provided with sprocket wheels, an endless carrier having a chain and a series of buckets and arranged on the sprocket wheels, the front stretch of the endless carrier being disposed exteriorly of the casing and the shelf being interposed between the front stretch

and the casing, an intermediate transverse shaft journaled in the bearings of the shelf, a longitudinal shaft arranged at one side of the casing, gears connecting the longitudinal shaft with the upper transverse shaft and with one end of the intermediate shaft, and a pulley mounted on the other end of the intermediate shaft.

851,316. AUTOMATIC AIR-SIGNAL, AIR-BRAKE, AND STEAM COUPLING. HERMAN C. PRIEBE, Blue Island, Ill. Filed July 31, 1906. Serial No. 328,552.

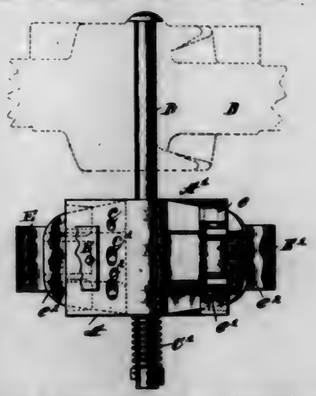

Claim.—1. A coupler of the class described comprising two sections having coincident passage ways extending therethrough, means for providing an air tight connection between the confronting faces of said sections, coupling pins extending through each of said sections and automatic means for detachably securing said sections together.

2. A coupler of the class described, comprising two sections having coincident passage ways extending therethrough, means for providing an air tight connection surrounding said passageways between the confronting faces of said sections, a coupling pin extending through each of said sections, compression springs upon each of said pins, and means for detachably securing each of said sections together.

3. In a device of the class described, the combination of a car coupler and coupling pins with a hose coupler comprising two sections having coincident passageways extending therethrough, each of said sections supported upon the aforesaid coupling pins, and means for automatically and simultaneously coupling and uncoupling said couplers.

4. In a device of the class described, the combination of a car coupler and the coupling pins extending therethrough, of a hose coupler comprising two sections having coincident passageways extending therethrough, means for providing an air tight connection surrounding said passageways between the confronting faces of said sections, each of said sections being supported upon the aforesaid coupling pins, means for detachably securing said sections together, and means for automatically opening and closing said coupler.

5. In a device of the class described, the combination of a car coupler and the coupling pins extending therethrough, with a hose coupler comprising two sections supported on the aforesaid coupling pins, each of said sections having passage ways extending therethrough, means for forming an air tight connection surrounding said passageways between the confronting faces of said sections, compression springs on the coupling pins, and means for detachably locking said sections together.

6. In a device of the class described, the combination of a car coupler and the coupling pins with a hose coupler comprising two sections supported on the aforesaid coupling pins, each of said sections having passage ways extending therethrough, means for forming an air-tight connection surrounding said passageways between the confronting faces of said sections, a spring rigidly secured to each of said sections, said springs adapted to exert a tension upon the opposite end of the opposing section, and means for automatically coupling and uncoupling said device.

7. In a device of the class described, the combination with a car coupler and coupling pins extending therethrough, of a hose coupling comprising two sections supported upon the said coupling pins, each of said sections having passage ways extending therethrough, means for forming an air tight connection between the confronting faces of said sections, means for connecting a hose pipe with each of said passage ways, interlocking corners upon the aforesaid sections, and means for automatically coupling and uncoupling said device.

851,317. OPAQUE GLASS. ALBERT L. REINMANN, Hanover, N. J. Filed June 30, 1906. Serial No. 324,286.

Claim.—1. The composition for artificial alabaster an opaque glass consisting of pure white sand, soda preferably of 90%, finely powdered and sifted asbestos, arsenic, and niter substantially in the proportion specified.

2. The composition for artificial alabaster an opaque glass consisting of pure white sand, soda preferably of 90%, finely powdered and sifted asbestos, arsenic, and niter substantially in the proportion specified, and tinting metallic oxids.

3. The composition for artificial alabaster an opaque glass consisting of about 100 pounds of pure white sand, 42 pounds of soda preferably of 90%, 20 pounds of finely powdered and sifted asbestos, and 4 pounds of niter.

4. The composition for artificial alabaster an opaque glass consisting of 100 pounds of pure white sand, 42 pounds of soda preferably of 90%, 20 pounds of finely powdered and sifted asbestos, and about 20 pounds of finely powdered talcum.

5. As an artificial alabaster, an opaque glass, derived from pure white sand, soda, finely powdered and sifted asbestos, arsenic, and niter and existing as a white delicately tinted fine grained glass which is imperfectly transparent or translucent.

6. As an artificial alabaster, an opaque glass, derived from pure white sand, soda, finely powdered and sifted asbestos, arsenic, and niter and coloring metallic oxids, and existing in the form of an imperfectly transparent or translucent tinted glass.

7. As an artificial alabaster, an opaque glass, derived from about 100 pounds of pure white sand, 42 pounds of soda preferably of 90%, 20 pounds of finely powdered and sifted asbestos, 1 pound of arsenic and 4 pounds of niter.

8. As an artificial alabaster an opaque glass, derived from about 100 pounds of pure white said, 42 pounds of soda preferably of 90%, 20 pounds of finely powdered and sifted asbestos, 1 pound of arsenic, 4 pounds of niter, and about 20 pounds of finely powdered talcum.

851,318. BOILER-FURNACE GRATE. FRED W. RIDLON, Springfield, Mass. Filed Aug. 25, 1905. Serial No. 275,792.

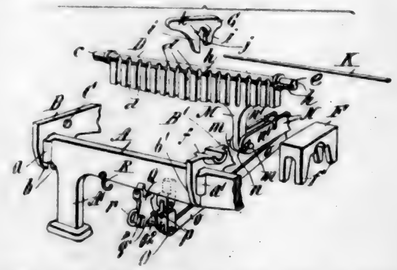

Claim.—1. In combination, a grate frame, a series of toothed grate bars journaled in said frame and having depending arms, M, a bar N engaging the several arms, a rod connecting the said bar N, a link hung to a fixed support therefor, as the grate-frame, a block pivoted to and depending from the grate frame alongside said link, having separated lugs extending across the plane of swinging movement of said link, and adapted to swing at right angles to the plane of movement of the link, and means for temporarily confining said block in a position entirely free from engagement with said link.

2. In combination, a grate frame, a series of toothed grate bars journaled in said frame and having the depending arms M, the bar N in engagement with the several arms, the rod *o* connected to said bar N, the link O pivotally hung to the grate-frame, and with which said rod is also connected, the block Q, pivotally hung to the grate frame and depending normally in a position closely alongside said link, said block adapted to swing angularly to the plane of movement of the link and having the separated stops *q*, *q*, the eye shaped handle *r*, and the catch hook R on the grate frame for engaging the said handle *r*.

3. The combination with a grate frame comprising opposite side bars having horizontally aligned journal-sockets, and an intermediate frame bar having upwardly opening journal sockets *f* of two series of grate-bars having end journals, the oppositely arranged, outer, journals of both series being engaged in the side bar sockets and the adjacent inner ends of the grate-bars being supported in the upwardly open sockets *f* of the intermediate frame-bar, and the caps or saddles F having the depending fork members mounted on and sidewise engaging the intermediate frame bar, and covering the adjoined journal ends of the grate-bars.

4. The combination with a frame, of a plurality of grate bars, each mounted for rocking movements in said frame, and having means for rocking them, and each grate bar provided with removable teeth, the bar constructed with vertical parallel side grooves, and an intersecting longitudinal groove *h*, and the teeth comprising heads or top portions and downwardly extending fork like projections, a fork member of each having a groove or niche *k* to match with the grate bar groove, and the locking rod K, engaging in the longitudinal grate-bar groove, and in the grooves *k*

of the depending forks of the teeth which are removably engaged above and about the grate bar.

5. The combination with a frame, of a plurality of grate bars, each mounted for rocking movements in said frame, and having means for rocking them, and each grate bar provided with removable teeth, the bar constructed with vertical parallel side grooves, and an intersecting longitudinal groove A, and the teeth comprising heads or top portions and downwardly extending fork like projections, a fork member of each having a groove or niche *k* to match with the grate bar groove, and the locking rod K, engaging in the longitudinal grate-bar groove, and in the grooves *k* of the depending forks of the teeth which are removably engaged above and about the grate bar, and each grate bar having a depending arm M and end journals.

6. The combination with a frame, of a plurality of grate bars, each mounted for rocking movements in said frame, and having means for rocking them, and each grate bar provided with removable teeth, the bar constructed with vertical parallel side grooves, and an intersecting longitudinal groove A, and the teeth comprising heads or top portions transversely extending, and projecting farther at one side of the bar than at the other, and downwardly extending fork like projections, a fork member of each having a groove or niche *k* to match with the grate bar groove, and the locking rod K, engaging in the longitudinal grate bar groove, and in the grooves *k* of the depending forks of the teeth which are removably engaged above and about the grate bar.

7. In a fire box rocking grate, a frame comprising opposite end bars having vertical ribs at their ends, and pairs of separated vertical ribs at their intermediate portions, opposite side bars B and an intermediate bar B′ all having downwardly opening recesses at their end portions, which so formed portions are detachably engaged with the rib provided portions of the end frame bars, said side bars having a series of journal holes C, and said intermediate bar having within its upper edge a series of upwardly open journal sockets *f*, two series of grate bars having end journals, engaged in said journal holes and sockets with their inner journal ends adjoined, constructed with the longitudinal grooves A, and the vertical grooves *d d* and having each a depending arm M, a series of grate teeth for the respective bars, each comprising downwardly extending fork like projections, a fork member of each having a transverse groove *k* to match with said grate bar groove A, the locking rods K, the bars N engaging the several arms M of a grate bar series, a connecting rod secured to each bar N, and a link pivotally connected to each connecting rod and pivotally hung to the grate frame, and adapted to receive engagement therewith of means for oscillating such link.

851,319. LAMP OR LANTERN BURNER. GEORGE H. ROLFES, St. Louis, Mo. Filed Nov. 30, 1906. Serial No. 345,657.

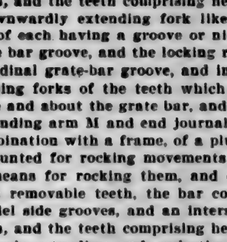

Claim.—1. In a lamp or lantern burner, the combination of a body, a wick tube in said body, and air diffusing means comprising an intermediate jacket fitted to said wick tube, a housing surrounding said intermediate jacket and fitted thereto and a cone surrounding the housing.

2. In a lamp or lantern burner, the combination of a body, a wick tube in said body, and air diffusing means comprising an intermediate jacket fitted to said wick tube and spaced therefrom and a housing surrounding said intermediate jacket, substantially as set forth.

3. In a lamp or lantern burner, the combination of a body having a cap, a wick tube in said body, and air diffusing means comprising an intermediate jacket mounted on said cap fitted to the wick tube and spaced therefrom and having its corner projecting over the crown thereof and provided at its upper end with air feeding openings, and a housing surrounding said intermediate jacket, substantially as set forth.

4. In a lamp or lantern burner, the combination of a body having a cap, a wick tube in said body, and air diffusing means comprising an intermediate jacket fitted to said wick tube and spaced therefrom, and a housing surrounding said intermediate jacket and having its corners projecting over the crown of said cap and provided with air feeding passageways through the corners of said housing, substantially as set forth.

5. In a lamp or lantern burner, the combination of a body, a wick tube in said body, air diffusing means comprising a jacket fitted to said wick tube and spaced therefrom and a housing surrounding said jacket a cone surrounding said wick tube and provided with a slot at its upper end, and a guard surrounding said cone, substantially as set forth.

6. In a lamp or lantern burner, the combination of a body, air diffusing means comprising a jacket fitted to a wick tube and spaced therefrom and a housing surrounding said jacket a cone surrounding said wick tube and provided with a slot at its upper end, and a perforated guard surrounding said cone, substantially as set forth.

7. In a lamp or lantern burner, the combination of a body, air diffusing means comprising a jacket fitted to a wick tube and spaced therefrom and a housing surrounding said jacket a cone surrounding said wick tube and provided with a slot at its upper end, and a flaring guard surrounding said cone, substantially as set forth.

851,320. POULTRY-FEEDER. WOODBURY O. ROGERS, Norwich, Conn. Filed Aug. 3, 1906. Serial No. 328,083.

Claim.—1. In combination, a cylindrical food receptacle, means for suspending said receptacle so that it may swing freely, the circumferential wall of said receptacle having openings at its lower portion in position to be reached by the fowls, reticulated means partially covering said openings, and a trough located below the said openings, and means for separably connecting the said trough with the receptacle.

2. In combination, a cylindrical food receptacle, means for supporting said receptacle so that it may swing freely, said receptacle having openings, reticulated means partially covering the said openings, a trough located below said openings, and means consisting of a bolt and nut for detachably securing said trough to the receptacle.

851,321. FEED-CUTTER. ASHLEY T. SHEWARD, St. Louis, Mo. Filed Sept. 20, 1905. Serial No. 279,210.

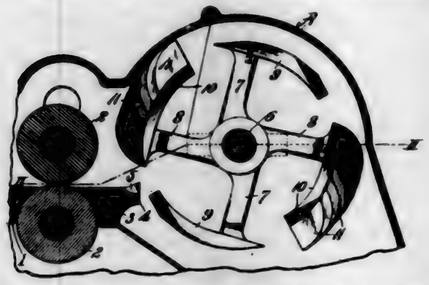

Claim.—1. In a feed cutter, the combination of a slotted cutter bar, a slotted plate surmounting said cutter bar, a blade, means by which said blade is rotatably carried, and a plurality of cutting knives carried by said blade and arranged to operate through the slots in said cutter plate and cutter bar, substantially as set forth.

2. In a feed cutter, the combination of a slotted cutter bar, a rotatable shaft, a cutter blade carried by said shaft and arranged to move in a circular path for cutting action upon the material fed onto said cutter bar, a second non-cutting blade carried by said shaft and located nearer said shaft than said first named blade, whereby it is caused to move in a circular path without action upon the material delivered onto said cutter bar, and a plurality of cutting knives arranged transversely on said last named blade and adapted to operate through the slots in said cutter-bar, substantially as set forth.

3. In a feed cutter, the combination of a slotted cutter bar, a rotatable shaft, a spiral cutter blade carried by said shaft and arranged to move in a circular path for cutting action upon the material fed onto said cutter bar, a second non-cutting spiral blade carried by shaft and located nearer said shaft than said first named blade, whereby it is caused to move in a circular path without action upon the material delivered onto said cutter bar, and a plurality of cutting knives arranged transversely on said last named blade and adapted to operate through the slots in said cutter bar, substantially as set forth.

851,322. HAY-PRESS. THOMAS E. SIKES and SIMEON R. SIKES, Helena, Ga. Filed July 8, 1905. Serial No. 268,846.

Claim.—1. In a hay press, the combination of a plunger-head rod provided at its power end with independently journaled rollers arranged to lie one in advance of the other transversely to the length of said rod with their circumferential faces opposite each other, and a rotatable power-arm provided at its ends with oppositely-disposed shoulders to engage with the rollers of the plunger-head rod in the rotation of the power-arm, substantially as described,

2. In a hay press, the combination with a plunger-head rod having its power end formed with a bearing face comprising two convex surfaces with an intermediate concave surface, and a power-arm provided at its ends with oppositely-disposed shoulders to engage with the power end of the plunger-head rod in the rotation of the power arm, said convex surfaces being so disposed in relation to each other that each of said shoulders in the travel of the power-arm will at a point in its travel contact with both convex surfaces and span the space between the surfaces, substantially as described.

3. In a hay press, the combination with a laterally swinging plunger-head rod, and a power-arm substantially of the form shown, of a vibrating lever comprising a long and a short arm, said lever having its long arm extended across the plunger-head rod and fulcrumed at one side of the plunger-head rod, with the short arm lying in the path of the power-arm to be engaged by the end of said arm upon leaving the plunger-head rod, and a draw-rod connecting the long arm of the lever to the plunger-head rod on the opposite side of the plunger-head rod to where the lever is pivoted, said lever and draw-rod being so proportioned and connected that when the plunger-head rod is at the limit of its compression stroke said lever and said draw-rod will extend in opposite directions toward each other and obliquely to the longitudinal axis of the plunger-head rod, substantially as described.

4. In a hay press, the combination with the plunger-head formed with vertically disposed channels, of a cover plate fitting over the top of the plunger-head and provided with a depending lip fitting over the front of the plunger-head, stems projecting downwardly from said plate and fitting, one in each of said channels to guide and brace the cover plate, and a spring located beneath said plate and back of said guide stems and serving to sustain said plate, substantially as described.

5. In a hay press, the combination with the plunger-head, of the yielding cover plate comprising the plate lying over the top of the plunger-head and downwardly extending lip lying in front of said head, stems or rods attached to said plate and fitting in channels formed in the plunger-head, one stem in each channel, to guide and brace said plate, a shield pivotally connected to said plate, and a spring located beneath said shield back of the plunger-head and connected with said cover plate and serving to sustain both the plate and shield above the plunger-head, substantially as described.

851,323. BEAM-SETTING PRESS. MAX SKLOVSKY, Moline, Ill., assignor to Deere & Company, Moline, Ill., a Corporation of Illinois. Filed May 19, 1905. Serial No. 261,270.

Claim.—1. A beam-setting machine for operating on curved or goose-neck metal plow-beams while in heated condition, the same comprising, in combination, a clamp-mechanism arranged for clamping rigidly the rear curved portion of the beam, and centering-mechanism arranged in relation thereto to operate on the front end portion of the beam and draw or set the same to a predetermined relation to the rear portion of the beam.

2. A beam-setting machine having, in combination, clamp-mechanisms arranged for engaging the rear and front portions respectively of a curved or goose-neck metal plow-beam, the one mechanism comprising clamp-jaws operative to clamp the rear portion of the beam laterally or sidewise, and the other mechanism comprising coacting V-shaped jaws operative to move oppositely together upon opposite sides of the front portion of the beam, whereby the front portion of the beam will be set or drawn to a predetermined relation to the rear portion.

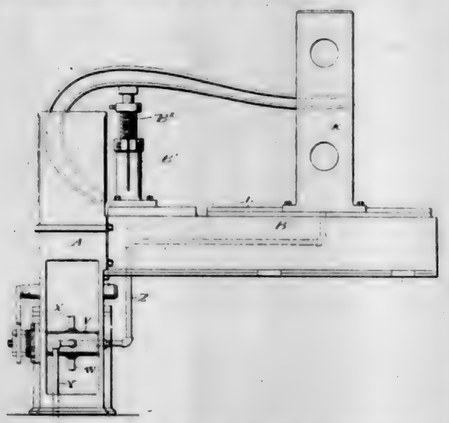

3. A beam-setting machine having, in combination, a support for holding a curved or goose-neck metal plow-beam at an intermediate point, clamp-mechanism located at one side of said support and comprising clamp-jaws operative to clamp the rear portion of the beam laterally or sidewise, and mechanism located at the opposite side of said support operative to engage the front portion of the beam and draw or set the same to a predetermined relation to the rear portion, said mechanisms being operative in succession.

4. A beam-setting machine having, in combination, upright clamp-jaws arranged and operative to clamp the rear portion of a curved or goose-neck plow-beam laterally or sidewise between them, and centering-mechanism relatively arranged to operate on the front portion of the beam and comprising devices arranged to provide a relatively large enclosure around the beam and operative to restrict said enclosure to clamp the beam, thereby setting or drawing the front end of the beam to a predetermined relation to the rear portion.

5. A beam-setting machine for setting the front end of a curved or goose-neck plow-beam relative to the rear end, the same comprising a clamp-mechanism having upright jaws arranged to clamp the rear portion of the beam laterally, a bed or track arranged forwardly thereof and longitudinally of the beam, a carriage movable longitudinally thereon, and centering or setting mechanism carried thereby arranged for engaging the front portion of the beam.

6. A beam-setting or aligning machine having, in combination, mechanisms relatively arranged for engaging different portions of a beam, one mechanism comprising means operative to rigidly clamp the beam, and the other comprising devices operative to engage the beam in various unaligned positions around and substantially displaced or removed from a central position and to draw or set the beam to such central position.

7. A beam-setting machine having, in combination, clamp-mechanisms arranged for engaging different portions of a beam, one mechanism comprising clamp-jaws operative to rigidly clamp the beam, and the other mechanism comprising opposed V-shaped jaws arranged to provide a relatively enlarged enclosure around the beam and operative to restrict said enclosure and clamp the beam between the vertices or vertical parts of the jaws, whereby the one portion of the beam will be set or drawn to a predetermined relation to the portion clamped by the first mechanism.

8. A beam-setting machine having, in combination, a frame or bed, clamping-apparatus mounted thereon arranged for clamping the rear portion of a heated beam, and a second clamping-apparatus mounted on said bed arranged for clamping the front portion of the beam, the latter apparatus comprising co-operating opposed V-shaped jaws adapted to come together upon the beam, cylinders for the respective apparatus, working pistons therein operatively connected with the respective apparatus, and means for admitting and exhausting motive-fluid successively to the respective cylinders.

9. A beam-setting machine having, in combination, a clamping-apparatus comprising clamp-jaws arranged to open and close laterally for clamping the rear portion of a heated beam sidewise between them, and a second clamping-apparatus comprising V-shaped clamp-jaws arranged to open and close vertically for clamping the front portion of the beam between them, the second apparatus being so relatively located as to set the front portion of the beam at a predetermined relation to the rear portion.

10. A beam-setting machine having, in combination, a clamping-apparatus for clamping the rear portion of a heated beam comprising fixed and movable jaws, a toggle having a link connected with the movable jaw, a cylinder and working piston therein operatively connected with the knuckle of the toggle, straightening of the toggle by said piston effecting a closing movement of the jaw; and a clamping-apparatus for engaging the front portion of the beam comprising opposed V-shaped clamp-jaws arranged to pass or overlap on their closing movement, a cylinder and piston therein carrying the lower jaw, intermediately-fulcrumed levers having a toggle connection with the upper jaw and pitman connections with said piston; and means for operating said pistons by motive-fluid.

11. A beam-setting machine having, in combination, a support for a heated plow-beam, a mechanism arranged for clamping the rear portion of the beam in rigid position, and cooperative vertically-movable V-shaped clamp-jaws arranged to engage the front portion of the beam, said jaws adapted to pass or overlap on their closing movement.

12. A beam-setting machine having, in combination, a frame or bed, a stationary clamping-apparatus mounted thereon for rigidly holding the rear portion of a heated beam, a carriage mounted on the bed and movable longitudinally thereof, and clamping-apparatus carried thereby and comprising opposed V-shaped jaws adapted to come together for engaging and setting the front portion of the beam with relation to the rear portion.

13. A beam-setting machine having, in combination, a clamping-mechanism arranged for clamping the rear portion of a heated beam, a cylinder, a piston therein operatively connected with said clamping-mechanism, a second clamping-mechanism comprising coacting V-shaped clamp-jaws arranged to come together upon the front portion of the beam, a cylinder and piston working therein operatively connected with said second mechanism, and a multiple valve and suitable pipe-connections adapted for supplying motive-fluid to the respective cylinders.

14. A beam-setting machine having, in combination, a support for holding a beam in an elevated horizontally-disposed position, a clamping apparatus at one side of said support adapted for clamping one portion of the beam and hold the same rigid, and apparatus at the opposite side of said support adapted to engage a different part of the same and set the same in proper relation to the first-mentioned part.

15. A beam-setting machine having, in combination, a bed, a standard or support thereon for supporting a beam horizontally at an intermediate part, a clamping-apparatus at one side of said support adapted to clamp the beam laterally or sidewise and hold the same rigid, a carriage at the opposite side of said support movable on the bed longitudinal of the beam, and apparatus carried thereby for engaging and setting the beam.

16. A beam-setting apparatus comprising a clamp having opposed V-shaped jaws between which the beam can be arranged, and means for vertically reciprocating the clamp-jaws, whereby the jaws will close oppositely on the beam, said jaws being arranged to pass or overlap on their closing movement, and the vertices thereof being formed to fit the opposite sides of the beam when the jaws are closed.

17. A clamp for a beam-setting apparatus comprising a frame, a cylinder rigid therewith, a piston working therein, a movable head in alignment with the piston, a guide therefor carried by the frame, opposed V-shaped clamp-jaws carried by the piston and head respectively, means for operating the piston, a lever intermediately fulcrumed on the frame, a link connecting one arm of the lever and head, and a pitman connecting the opposite arm of said lever and the piston.

851,324. JOURNAL-BOX. WILLIAM STEVENSON, Chicago, Ill., assignor to Charles Gilbert Hawley. Filed Apr. 4, 1906. Serial No. 309,855.

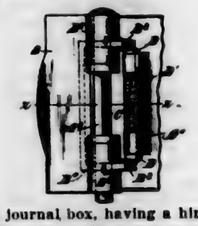

Claim.—1. A journal box, having a hinge lug, in combination with a lid, a hinge-pin, a cam on said lid and a longitudinally acting spring device on said box parallel with the axis of said hinge pin and co-acting with said cam, substantially as described.

2. A journal box, in combination with a lid, hinged at the top thereof and provided with a lug or cam adjacent to the hinge and a spring device on said box, said spring device being parallel with the axis of said hinge and co-acting with said cam, to secure said lid in closed and open positions, substantially as described.

3. A journal box, in combination with a lid, hinged on said box and provided with a locking lug or cam and a spring device constantly engaged with said lug and co-acting therewith upon an axis parallel with the axis of the hinge of said lid, substantially as described.

4. A journal box, in combination with a lid hinged thereon and provided with a pair of lugs or cams and a spring device acting upon an axis parallel with the hinge axis of said lid and abutting said cams substantially as and for the purpose specified.

5. A journal box having a hinge lug and hinge pin, in combination with a lid, provided with a lug or cam, a plunger movable upon an axis parallel with the axis of said hinge pin and constantly engaged with said lug on said lid, and a spring pressing upon said plunger, substantially as described.

6. A journal box, in combination with a lid, hinged thereon and provided with a pair of lugs or cams, a co-acting spring, arranged upon the top of said box parallel with the hinge axis of the lid and between said lugs, substantially as described.

7. A journal box, in combination with a lid hinged thereon, a spring holder on said box, a horizontally acting coiled spring held thereby, said spring being parallel to the hinge axis lugs or cams on said lid and plungers interposed between the same and said spring, substantially as described.

8. A journal box provided with a hinge lug, in combination with a lid having hinge lugs, a hinge pin, there being locking lugs or cams on the hinge lugs of said lid and a locking spring arranged on said box between said locking lugs and co-acting with the latter, substantially as described.

9. A journal box, having a hinge-lug, in combination with a lid also having hinge lugs, a hinge pin, a second lug on said box, parallel with its hinge lug, a coiled spring and plungers arranged in said second lug, said plungers having convex ends and co-acting cams on said lid, substantially as described.

10. A journal box, provided with parallel hinge and spring lugs upon its top, a hinge pin, a lid, pivoted on said pin and provided with a locking cam, a spring-pressed plunger in said spring lug and a hood on said lid partially enclosing said parallel lugs, substantially as described.

11. A journal box having a hinge lug in combination with a hinge pin transverse to the axis of the box, a lid hinged on said pin and provided with two cams, a spring device arranged on the top of said box and movable upon an axis parallel with the axis of said hinge pin, said spring device constantly co-acting with said cams to secure said lid in closed and open positions, substantially as described.

851,325. SHIELD FOR TYPE-WRITERS. LUMAN C. STOUGHTON, Columbus, Ohio. Filed Mar. 7, 1907. Serial No. 361,015.

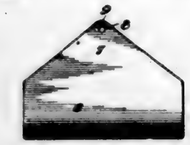

Claim.—1. A typewriter shield comprising a body portion the front edge of which is curved to conform to the platen of a typewriter, said shield having a rearwardly extending portion which forms a grasp for the operator, and which is of such size as to rest upon and be supported by a portion of the typewriter carriage.

2. A typewriter shield comprising a body portion the front edge of which is curved to conform to the curvature of a typewriter platen, said shield terminating in a triangular rearwardly extending portion which forms a grasp for the operator, and which is of such size as to rest upon and be supported by a portion of the typewriter carriage.

3. A typewriter shield comprising a body portion the front edge of which is curved to conform to the curvature of a typewriter platen, said shield terminating in a triangular rearwardly extending portion which forms a grasp for the operator, the apex of said triangular portion being slightly upturned, said rearwardly extending portion being of such size as to rest upon and be supported by a portion of the typewriter carriage.

851,326. WHEEL. JOSEPH STUART, Wilmington, Del. Filed Oct. 5, 1906. Serial No. 337,589.

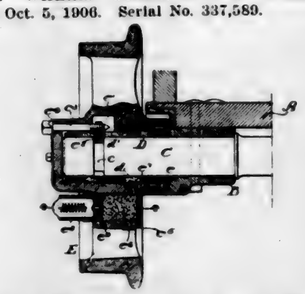

Claim.—1. The combination of an axle, a bushing thereon, and a wheel fitting said bushing, said bushing being loose in the wheel and removable therefrom, with a key placed to retain the wheel and the bushing on said axle, substantially as described.

2. The combination of an axle having an annular groove, a bushing on said axle having a slot, and a wheel on the bushing, said bushing being loose in the wheel and removable therefrom, with a key fitting in a recess in the wheel and passing through the slot in the bushing into the groove of the axle, substantially as described.

3. The combination of an axle having an annular groove,

a bushing on the axle having a slot, a wheel having a recess in its hub, said bushing being loose in the wheel and removable therefrom, with a radially movable key extending into the recess of the wheel and through the slot of the bushing into the groove of the axle, substantially as described.

4. The combination of an axle having an annular groove, a bushing on the axle having a slot, a wheel having a recess in its hub, and a radially movable key extending into the recess of the wheel and through the slot of the bushing into the groove of the axle, the recess in the wheel being of a sufficient depth to permit movement into it of said key, and a bolt for holding the key so that it projects into the groove of the axle, substantially as described.

5. The combination with an axle, of a split bushing thereon, and a wheel on the bushing, with means for maintaining the wheel and the bushing in position on the axle while preventing relative movement of said wheel and bushing, substantially as described.

6. The combination of a wheel, an internally and externally chilled and split bushing fitted to the hub thereof, with means for preventing rotation of the bushing relatively to the wheel, an axle fitted to the bushing, with means for maintaining the wheel and bushing in operative position on the axle, substantially as described.

7. The combination of a wheel having a tapered hollow in its hub, an internally tapered bushing fitted to said hollow, the said bushing being split and chilled both externally and internally, an axle fitted to the bushing, with a key for maintaining the axle, bushing and wheel in the proper relative positions to compel said wheel and bushing to turn as a unit on the axle, substantially as described.

8. The combination of a wheel, an internally and externally chilled bushing fitted to the hub thereof, said bushing being split in a line extending in a direction other than parallel to its axis, an axle fitting said bushing, with means for maintaining the bushing and wheel in proper relative positions, substantially as described.

851,327. EYEGLASS-HOLDER. FRANK J. THOMPSON, Fargo, N. D. Filed Jan. 7, 1905. Serial No. 240,053.

Claim.—An eye-glass holder consisting of flat spring metal having a back-portion, and a tongue extending from said back-portion, from one end thereof, and having a part thereof parallel with the back-portion, the end of said parallel part being bent toward the back-portion and thence downwardly to form an extension with its end turned outwardly beyond the plane of the back-portion, and the back-portion formed with an elongated slot, said slot and tongue-extension being of such length relatively to each other that said extension may have an inward movement through the slot when pressed inwardly, substantially as described.

851,328. REST AND DRESSER FOR GRINDSTONES, EMERY-WHEELS, AND THE LIKE. FRANK TRIER, London, England. Filed Feb. 2, 1906. Serial No. 299,190.

Claim.—1. In an attachment for grinding wheels and the like, the combination of a swivelling rest, a tool slide, and means for fixing said slide removably to said rest.

2. In an attachment for grinding wheels and the like, the combination of a swivelling rest, means for clamping said rest in any desired position, a tool slide, and means for fixing said slide removably to said rest.

3. In an attachment for grinding wheels and the like, the combination of a swivelling rest, means for limiting the forward movement of said rest, means for clamping said rest in any desired position, a tool slide, and means for fixing said slide removably to said rest.

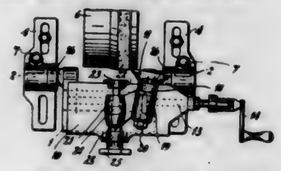

4. In an attachment for grinding wheels and the like, the combination of a swivelling rest, means for limiting the forward movement of said rest, means for clamping said rest in any desired position, a tool slide fitted with a leading screw capable of rotary and also of endwise motion, a nut engaging with said leading screw, and a bolt carrying said nut mounted in said rest approximately in the central vertical plane thereof, whereby when said leading screw is rotated, said slide will be traversed along said rest.

5. In an attachment for grinding wheels and the like, the combination of a swivelling rest, means for limiting the forward movement of said rest, means for clamping said rest in any desired position, a tool slide, means for fixing said slide removably to said rest, and a tool-holder adapted to move transversely of said slide, and adapted also to swivel on a transverse axis on said slide, whereby the tool can be brought approximately into operative position from one side of the grinding wheel to the other as desired.

6. In an attachment for grinding wheels and the like, the combination of a swivelling rest, means for limiting the forward movement of said rest, means for clamping said rest in any desired position, a tool slide, means for fixing said slide removably to said rest, a screw threaded pivot pin mounted transversely in said slide approximately centrally thereof, a tool holder adapted to swivel on said pin, and a nut engaging with said screw-threaded pivot pin and adapted to bear on its faces against abutments on said tool-holder, whereby the said tool holder can be swung on said pivot pin from one side of the grinding wheel over to the other, and also whereby on actuating said nut, said tool holder may be traversed along said pivot pin towards and away from the grinding wheel.

851,329. LOCOMOTIVE-BOILER FURNACE. EVAN H. WADE and JOHN L. NICHOLSON, Chicago, Ill., assignors to American Locomotive Equipment Company. Filed Apr. 19, 1906. Serial No. 312,635.

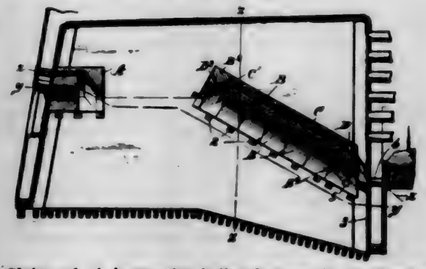

Claim.—1. A locomotive boiler furnace, in combination with a front arch occupying an inclined position in the furnace and having its lower end abutting the flue sheet of said furnace and the upper part of said arch comprising longitudinally channeled refractory bricks, and the upper and lower bricks of said arch containing transverse channels, the latter communicating with the outer air, substantially as described.

2. A locomotive boiler furnace, in combination with a front arch therein, the lower end of said arch abutting the flue sheet of said furnace, said arch being composed of channeled bricks and the lower bricks thereof having transverse or lateral channels or ducts communicating with openings in the forward corners of said furnace, substantially as described.

3. A locomotive boiler furnace, in combination with a hollow refractory arch therein, said arch being composed of a plurality of bricks and the lower bricks thereof each containing two angularly or diagonally positioned ducts communicating with the atmosphere, and the ducts in the upper part of the arch, substantially as described.

4. A locomotive boiler furnace containing laterally and longitudinally positioned air-admission tubes near its forward corners, in combination with a front arch comprising a plurality of longitudinally channeled refractory bricks, and two lower end bricks containing lateral or transverse channels or ducts communicating with respective tubes, substantially as described.

5. A hollow front arch for locomotive furnaces comprising lower end bricks in endwise abutment and containing lateral ducts opening through their ends and lower sides, and a plurality of channeled bricks superimposed upon said lower end bricks, substantially as described.

6. A hollow front arch for locomotive furnaces comprising lower end bricks in endwise abutment and containing lateral ducts opening through their ends and lower sides, a plurality of bricks in sidewise abutment superimposed upon said end bricks, said superimposed bricks containing a plurality of longitudinal ducts, certain pairs of which communicate with single ducts in said lower end bricks, substantially as described.

7. A hollow front arch for locomotive furnaces adapted to be supported on arch tubes, and comprising three rows or series of channeled refractory bricks in respective endwise abutment, in combination with two lower end bricks in endwise abutment, and containing lateral ducts or channels communicating with the channels of the other bricks, substantially as described.

851,330. ART OF CONSUMING FUEL. EVAN H. WADE and JOHN L. NICHOLSON, Chicago, Ill., assignors to American Locomotive Equipment Company. Filed Apr. 19, 1906. Serial No. 312,636.

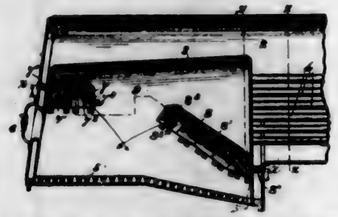

Claim.—The improvement in the art of consuming fuel in furnaces that consists in burning fuel in the lower part of a furnace, maintaining a partial supply of air through the bottom of said furnace, constricting the evolved gaseous body at a point between the burning fuel and the furnace outlet, and projecting into the constricted portion of said body and toward the burning fuel a plurality of converging streams of hot air, thereby establishing a barrier that is coextensive with the constricted portion of the gaseous body, substantially as described.

851,331. COMPOUND ROOFING-SHEET. HENRY R. WARDELL, Philadelphia, Pa., assignor to The Barber Asphalt Paving Company, Philadelphia, Pa., a Corporation of West Virginia. Filed Jan. 23, 1906. Serial No. 297,418.

Claim.—1. A composite roofing sheet provided with layers of bituminous composition of differing physical characteristics, including an external layer having high protective characteristics, and an internal layer having high strengthening characteristics, substantially as set forth.

2. A composite roofing sheet formed upon a basis of two or more organic fabrics saturated with a bituminous compound, and having interposed between them a layer of bituminous composition, having high strengthening characteristics, and having applied to the external surfaces of the composite sheet layers of bituminous composition having high protective characteristics, substantially as set forth.

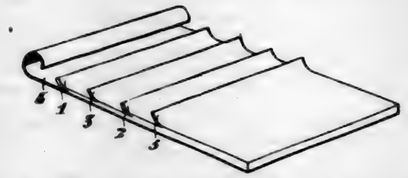

3. A composite roofing sheet formed upon a basis of organic fabrics saturated with an asphaltic composition; having interposed between them an asphaltic layer of about the consistency described for strengthening purposes; and having applied to the external surface of the sheet an asphaltic layer of about the consistency described for protective purposes, substantially as set forth.

4. A composite roofing sheet formed upon a basis of two organic fabrics; a layer of bituminous composition, having high strengthening characteristics, interposed between said fabrics; and a layer of bituminous composition, having high protective characteristics, upon each of the outer faces of said fabrics, substantially as set forth.

851,332. APPARATUS ADAPTED FOR COLLECTING AND CULTIVATING SHELL-FISH. ADDISON G. WATERHOUSE, Good Ground, N. Y. Filed Sept. 17, 1906. Serial No. 335,031.

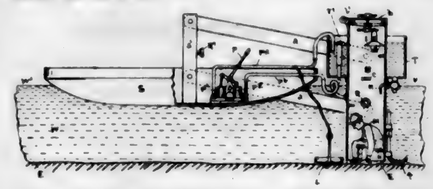

Claim.—1. In an apparatus adapted for collecting and cultivating shell fish; a floating vessel with a pneumatic caisson flexibly connected thereto, whereby a free vertical movement of the caisson is permitted; with a variable counterpoise connected to said caisson adapted for dirigibly balancing the same against the buoyancy of the water irrespective of its degree of submersion; substantially as and for the purposes set forth.

2. In an apparatus adapted for gathering and cultivating shell fish; a floating vessel with a pneumatic caisson vertically connected thereto, means for supplying the caisson with compressed air, and means within the caisson by which an operator therein can move the same laterally as well as up and down, substantially as described.

3. In an apparatus for gathering and cultivating shell fish; a pneumatic caisson flexibly connected to a floating vessel and provided with means for supplying the same with light and air; with means within the caisson for controlling its counterpoise against the buoyancy of the surrounding water, whereby its depth of submersion can be controlled by an operator therein; with a man hole above the submerged part of the caisson adapted for being opened or closed air tight from either the interior or exterior of the same; substantially as described.

4. In an apparatus adapted for gathering or cultivating shell fish; a pneumatic caisson having means for supplying the same with light and compressed air, means for making the same dirigible by being counterbalanced against the buoyancy of the water; in combination with a shoe adapt-

ed for preventing the lower end of the bell from contact with the solid substance under its surrounding water; substantially as described.

5. In an apparatus adapted for gathering and cultivating shell fish under visual inspection; a pneumatic caisson provided with a man hole and door above the level of the water into which the caisson is submerged, with means by which said door can be opened or closed from either the interior or exterior of the caisson, with a flexible longitudinal extension to the lower and open end of said caisson made in a form to resist the pressure of the air used for displacing the water from the same and to avoid the upward pressure of the air so that the flexible extension will hang by gravitation; substantially as and for the purposes set forth.

6. The method of gathering and cultivating shell fish; by effecting the aerial displacement of water over the shell fish beds; maintaining dirigibly the displacing element in position against the buoyancy of the surrounding water; and visually and manually working the shell fish over which the water is displaced; for the purposes set forth.

7. The method of gathering and cultivating shell fish; by aerostatically displacing the water from over their beds; and by dirigibly maintaining the displacing element against the surrounding water, and visually and manually working the shell fish; for the purposes set forth.

851,333. SMOKE ARRESTING AND CONSUMING APPARATUS. WARREN M. ABBOTT, Philadelphia, Pa. Filed Sept. 5, 1905. Renewed Mar. 14, 1907. Serial No. 362,412.

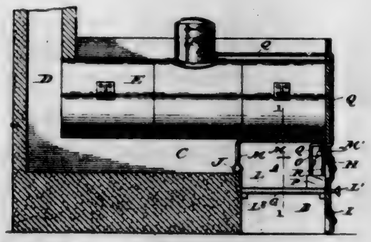

Claim.—1. In a furnace the combination of an open top conical conduit arranged transversely of the bridgewall, an air supply pipe proceeding from the outside front of the furnace rearwardly and connecting from below with said conduit, a smoke conveyer connected with the conduit opposite the air supply pipe and rising vertically from the conduit for a space and proceeding thence to and transversely across the front of the furnace, and provided in its transverse section with discharge openings, a superheater, a steam pipe connected with the superheater and which extends therefrom parallel with the transverse section of the smoke conveyer and which is provided with openings connecting it with the smoke conveyer opposite the discharge openings in the latter.

2. In a furnace the combination of an open top conical conduit arranged transversely of the bridgewall, the smaller end of which conduit is tubular, an air supply pipe proceeding from the outside front of the furnace rearwardly and connecting from below with the tubular part of the conduit, a smoke conveyer connected with the tubular part of the conduit opposite the air supply pipe and rising vertically from the conduit for a space and proceeding thence to and transversely across the front of the furnace above the firing door, the transverse section whereof is provided with discharge openings having nozzles, a steam pipe connected with the steam dome, and which passes thence into the furnace parallel with and above the transverse section of the smoke conveyer and which is provided with openings connecting it with the smoke conveyer opposite the discharge nozzles thereof and a superheater in said steam pipe located between the steam dome and said openings therein.

851,334. DIAPHRAGM-PUMP. GEORGE J. ALTHAM, Swansea, Mass., assignor to Aero and Marine Motor Company, Boston, Mass., a Corporation of Massachusetts. Filed July 17, 1905. Serial No. 269,014.

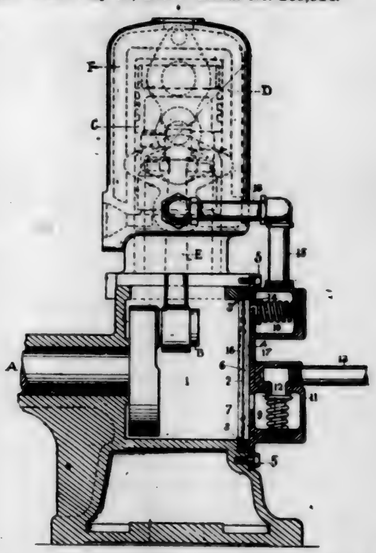

Claim.—In an internal combustion motor, a casing having a crank chamber; a metallic diaphragm forming one side of said crank chamber, and closing and rendering said chamber air tight; a pump casing formed in one piece of metal, and, when combined with the diaphragm, forming an air tight pump chamber; means for securing said diaphragm and said pump casing to said crank chamber casing and forming thereby said air tight crank chamber and said air tight pump chamber; said pump casing having formed therein, an inlet valve chamber; an outlet valve chamber; openings leading from said valve chambers into said pump chamber; an inlet to said inlet valve chamber; and an outlet from said outlet valve chamber; an inlet valve to control said inlet to said inlet valve chamber; and an outlet valve to control the opening leading from the pump chamber to the outlet valve chamber.

851,335. ANIMAL-TRAP. THEODORE ANGERER, Erie Pa. Filed Aug. 16, 1906. Serial No. 330,845.

Claim.—1. In a device of the kind described the combination with an arm provided with a cartridge chamber, of a hammer and trigger pivoted to said arm and wings extending out from said arm for the purpose described.

2. In a device of the kind described the combination with a spike provided with an arm having a cartridge chamber formed in its end, of a hammer pivoted to said arm below said chamber, and a trigger pivoted to said arm adapted to engage said hammer for the purpose described.

3. In a device of the kind described the combination with an arm provided with a cartridge chamber at its end, of a hammer pivoted to said arm, a shield secured to said arm and a bowed trigger pivoted to said arm adapted to engage said hammer for the purpose described.

4. In a device of the kind described the combination with a spike provided with an upwardly projecting arm having a cartridge chamber formed therein, a spring actuated hammer mounted on said arm, and a bowed trigger pivoted to the under side of said arm adapted to engage said hammer for the purpose described.

5. In a device of the kind described the combination with a spike having an arm projecting upwardly from its head provided with a cartridge chamber, a notched spring actuated hammer mounted on said arm, a bowed trigger pivoted to the under side of the said arm, and wings extending out from said arm to each side of said trigger for the purpose described.

6. In a device of the kind described the combination with a spike provided with an upwardly projecting arm having a slot formed therein, and provided with a cartridge chamber, arms projecting outwardly from said arm provided with angled ends, a bolt received in said arm, a spring actuated hammer mounted on said bolt working in said slot and a trigger pivoted to said arm adapted to engage said hammer for the purpose described.

7. In a device of the kind described the combination with a spike provided with an upwardly projecting arm having a slot formed therein, and provided with a cartridge chamber, arms projecting from said arms provided with angled ends, a bolt secured in said ends, a hammer mounted on said bolt provided with an enlarged notched end working in said slot, and a bowed trigger pivoted to the under side of the said arm adapted to engage said notch for the purpose described.

8. In a device of the kind described the combination with a spike having an arm projecting upwardly therefrom provided with a slot, and provided with a cartridge chamber, arms projecting out from the sides of the said arms provided with angled ends, a bolt secured in said ends, a hammer mounted on said bolt provided with an enlarged notched portion, working in said slot, a bowed trigger pivoted between lugs on the under side of the said arm, and wings extending out from said arm to each side of the trigger.

851,336. TRANSMITTER FOR WIRELESS TELEGRAPHY. GEORG VON ARCO, Berlin, Germany. Filed June 27, 1905. Serial No. 268,009.

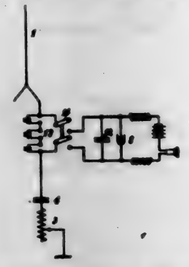

Claim.—1. In wireless telegraph apparatus, means for tuning a transmitter to a distant sending station, said means comprising the combination of an open oscillation circuit having an aerial with an earth or equivalent connection, means in said circuit for varying its inherent period, a detector responding to current intensities, means for connecting and disconnecting said detector in said circuit, and means whereby electrical oscillations may be produced in said circuit.

2. In wireless telegraph apparatus, means for tuning a transmitter to a distant sending station, said means comprising the combination of the transmitter, means for varying the inherent periods of the transmitter, a detector responsive to current intensities, means for connecting and disconnecting said detector with the transmitter and its period-varying means, and means whereby electrical oscillations may be produced in the transmitter.

3. In wireless telegraph apparatus, means for tuning a transmitter to a distant sending station, said means comprising the combination of the transmitter, means for tuning the transmitter, a detector responsive to current intensities, means for connecting and disconnecting the detector with the transmitter and its tuning means, and a sparking device for the transmitter.

4. In wireless telegraph apparatus, means for tuning a transmitter to a distant sending station, said means comprising the combination of the transmitter, means for tuning the same, a detector responsive to current intensities, a capacity, means for connecting the capacity in parallel with the detector, means for connecting and disconnecting the detector with the transmitter and its tuning means, and means whereby electrical oscillation may be produced in said transmitter.

5. In wireless telegraph apparatus, means for tuning a transmitter to a distant sending station, said means comprising the combination of the transmitter, means for tuning the same, a sparking device for the transmitter, a detector responsive to current intensities, means for connecting and disconnecting the detector with the transmitter and its tuning means, and in parallel with the sparking device.

6. In wireless telegraph apparatus, means for tuning a transmitter to a distant sending station, said means comprising the combination of the transmitter, tuning devices for the transmitter, a detector responsive to current intensities, means for co-operatively connecting the detector and said tuning means with the transmitter for tuning the same and for disconnecting the detector after the transmitter is tuned.

7. In wireless telegraph apparatus, means for tuning a transmitter to a distant sending station, said means comprising the transmitter, a spark device and tuning means for the transmitter, a detector responsive to current intensities, means for connecting and disconnecting the detector with the transmitter and tuning means, and in parallel to the spark gap.

8. In wireless telegraph apparatus, means for tuning a transmitter to a distant sending station, said means comprising the combination of a transmitter, a spark device in series therein, tuning means in the transmitter, a detector responsive to current intensities, means for connecting and disconnecting the detector with the transmitter and tuning means, and means for shunting the spark device when the detector is connected.

851,337. WARP STOP-MOTION FOR LOOMS. EDWIN BARNES, Boston, Mass., assignor to William Firth, Brookline, Mass. Filed Nov. 14, 1906. Serial No. 343,371.

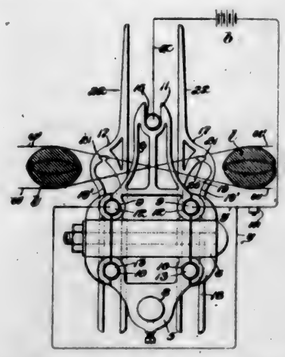

Claim.—1. A gravity drop for warp stop motions, formed of sheet metal and having a longitudinal slot curved at

its upper end, and having a thread eye communicating with the upper curved end of said slot, said thread eye being located at one side of the median line of the straight portion of said slot.

2. A gravity drop for warp stop motions, formed of sheet metal and having a longitudinal slot furnished at its upper end with a lateral clearance extension, and a thread eye located at one side of the median line of the straight portion of said slot.

3. A gravity drop for warp stop motions formed of sheet metal, and having a longitudinal slot furnished with a clearance extension, extending laterally beyond the median line of the straight portion of said slot, a thread eye above said clearance extension and a counter weight located at the other side of said median line.

4. A gravity drop for warp stop motions, formed of sheet metal and having a longitudinal slot, a thread eye above said slot, and a counter weight arm located laterally out of line with said thread eye and approximately parallel with said slot.

5. A gravity drop for warp stop motions, formed of sheet metal and having a longitudinal slot, a thread eye located above said slot at one side of the median line thereof, and an arm extending upward at the other side of said median line of the slot.

6. A gravity drop for warp stop motions, formed of sheet metal and having a longitudinal slot furnished at its upper end with a curved clearance extension, a thread eye above the end of said slot extension, and a detector arm off set from the line of said slot.

7. In a warp stop motion the combination with a pair of guide arms, in approximate vertical alignment, one of which is the terminal of an electric circuit, and a second terminal above said guides and off set laterally therefrom, of a gravity drop having a longitudinal slot slidably engaged by said guide rods, a clearance opening extending laterally from said slot at one side, and a contact arm extending above said slot.

8. In a warp stop motion, the combination with an electric terminal and a guide below the path of the warp, and a second terminal above said path, of a counter weighted gravity drop slidably engaged with said first terminal and guide, and constructed to move inward under abnormal downward movement towards the second terminal.

9. In a warp stop motion the combination with an electric terminal and a guide, means for supporting the same below the path of the warp and a second electric terminal removably secured above said path, of a gravity drop having a longitudinal slot, slidably engaged by said first mentioned terminal and guide, and having a laterally-extending clearance for said guide terminal, and a contact arm extending above said slot.

10. In a warp stop motion, the combination with an electric terminal and a guide, means for supporting the same in approximate vertical alignment, and a second electric terminal mounted above said first mentioned terminal and off set therefrom, of a gravity drop having a longitudinal slot, slidable on the first terminal and guide, and furnished with a laterally curved clearance extension, and a thread eye above said extension, and a detector contact arm, extending upward from the body of said drop at one side of the longitudinal slot, as and for the purpose described.

11. In a warp stop motion the combination with a pair of guide rods, means for supporting the same below the path of the warp, and an electric terminal removably supported at a distance above the path of the warp and out of contact with the warp, and circuit closers movably mounted on said guide rods.

12. In a warp stop motion, the combination with means for crossing the warp threads, of an electric terminal, means for supporting said terminal above the crossed warp threads, guiding means including an electrical terminal located below the warp threads, and a series of gravity drops slidably engaged with said guiding means, and having means cooperating with said guiding means to direct the upper portion of said drop laterally towards the upper electric terminal as the drop moves downward.

13. In a warp stop motion, the combination with means for crossing the warp threads, an electric terminal, and means for supporting the same above the intersection of the warp threads, of gravity drops adapted to be normally supported by unbroken warp threads at a distance from their point of intersection, and means cooperating with said drops to direct the drops towards said electric terminal when said drops move downward.

14. In a warp stop motion, the combination with the terminals of an electric circuit, separated laterally, of a gravity drop having means for engaging a warp thread and slidable with respect to one of said terminals with the normal rise and fall of the warp, and having means cooperating with said terminal to effect the lateral movement of a portion of said drop towards the other of said terminals.

15. In a warp stop motion, the combination with an electric terminal, of a circuit closing gravity drop, having thread engaging means located at one side the longitudinal median line thereof, whereby said drop is overbalanced towards said terminal when the drop is supported on an unbroken warp thread, and means cooperating with said drop to limit the movement of the drop towards said terminal while the drop is supported by a warp thread and to permit said movement when the warp thread breaks or becomes unduly slack.

16. In a warp stop motion, the combination with a guide, of a vertically slidable gravity drop furnished with a longitudinal slot having a curved extension adapted to receive said guide.

17. In a warp stop motion, the combination with a guide, of a gravity drop slidably engaged with said guide, and having an opening extending laterally with respect to said guide whereby when the drop slides downward sufficiently, the guide may be received in said opening to permit the swinging of the drop.

851,338. SAFETY-CLUTCH FOR AIR-BRAKE ANGLE-COCKS. SIDNEY J. BARNHOUSE, Alexandria, Va., assignor of one-third to John G. Bayne, Alexandria, Va. Filed Feb. 8, 1905. Serial No. 244,817.

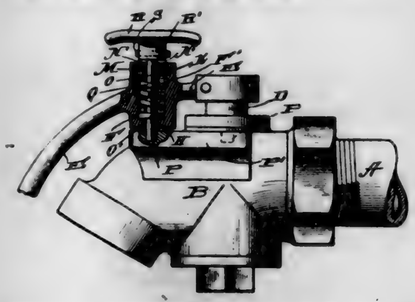

Claim.—A safety locking device for angle cocks upon train pipes comprising a valve casing provided with a horizontally disposed shelving table, the upper edge of which is flat and on a line with the upper edge of the casing, the inner portion of the table gradually widening to reinforce the same, and provided with recesses in its upper surface, one end of the casing being downwardly curved, a valve and valve stem, a handle having an integral ring at one end for engagement with the stem of the valve, said handle provided with an enlarged cylindrical outlined chamber, a threaded plug mounted in the top thereof, a spring-pressed shouldered pin passing through registering apertures in said plug and the bottom of the chambered portion and designed to engage one or the other of the recesses in said table, said handle beyond the chambered portion thereof being curved to conform to the downward curve of the outer portion of the casing, as set forth.

851,339. ROTARY ENGINE. RAYMUND BAUER and ALBERT L. BAUER, Wheeling, W. Va. Filed Mar. 23, 1906. Serial No. 307,576.

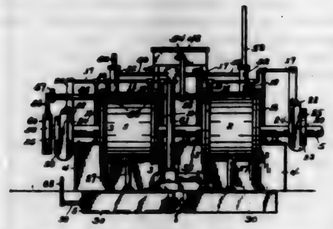

Claim.—1. In a rotary engine, the combination of two longitudinally-alined cylinders, a centrally-disposed horizontal drive-shaft in said cylinders carrying rotating shaft-heads, one in each cylinder, and provided with peripheral piston-flanges, vertically-reciprocating gates mounted below each cylinder to alternately engage the peripheries of the shaft-heads, each of said gates consisting of two companion sections mounted fast upon rock-shafts at their outer ends and adapted when upraised to coincide to form a fluid-tight joint, means for operating said rock-shafts, a feed pipe for each cylinder, a piston in each feed pipe, and means whereby steam is alternately admitted to and exhausted from said feed-pipes, said cylinders and the feed pipes in front of said pistons being filled with an operating liquid.

2. In a rotary engine, two longitudinally-alined cylinders, a horizontal drive-shaft extended centrally through said cylinders, a rotating head provided with a peripheral piston-flange carried by said shaft in each cylinder, a reciprocating gate mounted to be forced into and out of engagement with said shaft-head, said gate comprising two companion sections mounted to coincide to form a fluid-tight joint when in close contact with the shaft-head, rock-shafts on which said gate-sections are rigidly mounted, crank-arms carried by said rock-shafts, a reciprocating adjusting-bar arranged on the drive-shaft, means intermediate said adjusting-bar and said crank-arms whereby the former actuates the latter at predetermined points in the rotation of the shaft to reciprocate said gate, separate supply and exhaust ports for each cylinder, a liquid-feed pipe for each cylinder, a piston in each feed pipe, a steam chest having alternate communication with said feed pipes for operating said pistons, reverse-valve chambers, and stroke-reversing means in said chambers.

3. In a rotary engine, two longitudinally-alined cylinders, a horizontal shaft extended through both cylinders, said shaft carrying a rotating head within each cylinder, said head having a peripheral piston-flange, a gate mounted to contact with said shaft-head, said gate being composed of two companion sections which coincide to form a fluid-tight joint when in contact with the shaft-head, means connected with said gate-sections for working the latter against and away from said shaft-head, separate supply and exhaust ports for each cylinder, a liquid-feed pipe for each cylinder, a piston working in said pipe against said liquid, a steam-chest having alternate communication with said feed-pipes behind the pistons, a valve in said steam-chest carrying a stem which projects out of the steam-chest, a rock-shaft having an eccentric connection with the drive-shaft, members connecting said valve-stem and said rock-shaft whereby a rocking motion imparted to said rock-shaft by the eccentric connections oscillates said members, reverse-valve chambers through which the operating liquid passes in feeding to and exhausting from the cylinders, and means within said chambers whereby said liquid may be controlled to reverse the direction of the stroke.

4. In an engine, the combination of two longitudinally-alined cylinders, separate sets of supply and exhaust ports for each cylinder, a steam-chest, a valve working in said steam-chest and having a stem projecting out of said chest, a suitably-supported rock-shaft having an eccentric connection with the drive-shaft of the engine, members connecting said rock-shaft with said valve-stem, a rotating head provided with a peripheral piston-flange working within each cylinder, a reciprocating gate mounted to move to and away from the shaft-head, the opposite gates having an alternate reciprocation for clearing the rotating piston-flanges, said piston-flanges being disposed opposite to each other whereby one at a time receives the impact of the operating fluid and thereby exerts an independent action to rotate the drive-shaft, a feed-pipe for each cylinder, a piston in each feed-pipe, connections between the steam-chest and feed-pipes for the alternate admission and exhaust of steam to and from said feed-pipes, said cylinders and the feed-pipes in front of said pistons being filled with operating liquid, and reverse-valve chambers having a plurality of compartments therein through which said liquid passes in feeding to and exhausting from said cylinders, and valves for controlling the passage of the liquid through said chambers.

5. In a rotary engine, the combination of longitudinally-alined cylinders having suitably-arranged ports, a drive-shaft carrying a rotating head within each cylinder, each head provided with a peripheral piston-flange, a reciprocating gate mounted to work against and away from said shaft-head, a rock-shaft on which said gate is mounted, a crank-arm carried by said shaft, an adjusting-bar carried by the drive-shaft at the outer end of each cylinder, a pair of cams mounted on said shaft and engaging said adjusting bar to reciprocate the same, means intermediate said adjusting-bars and the crank-arms whereby the reciprocation of the former provides for the reciprocation of the gates, a liquid-feed pipe for each cylinder, a piston working in said feed-pipe, said feed-pipe being filled with the operating liquid in front of said piston to a point above the level of the cylinder, steam or gas connections for alternately operating the pistons against the liquid, connecting means for the cylinders whereby the operating liquid alternately exhausts from one side to the other, a stand pipe, and reverse mechanism, substantially as described.

851,340. MEANS FOR BONDING ELECTRIC CONDUCTORS. HAROLD P. BROWN, Montclair, N. J. Filed Feb. 9, 1905. Serial No. 244,836.

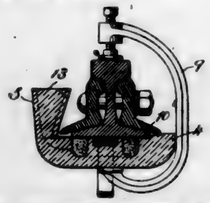

Claim.—1. In a bonding apparatus, a bonding crucible provided with a recess for the reception of the brazing material and that portion of the bond which is to be brazed or soldered and a chamber near the said recess for the reception of a body of chemically reacting, non-gaseous heat producing material.

2. In a bonding apparatus, a bonding crucible provided with a recess for the reception of the brazing material and that portion of the bond which is to be brazed or soldered, and a chamber near the said recess for the reception of a body of chemically reacting, non-gaseous heat producing material, and means for holding the conductors to which the bond is to be attached in contact with the said parts, as set forth.

3. In a bonding apparatus, a bonding crucible provided with a recess for the reception of the brazing material and that portion of the bond which is to be brazed or soldered, a chamber near the said recess for the reception of a body of chemically reacting, non-gaseous heat producing material and a feeder or charging hopper in communication with the said chamber.

4. In a bonding-apparatus, a bonding crucible provided with a recess for the reception of the brazing material

and that portion of the bond which is to be brazed or soldered, a chamber near the said recess for the reception of a body of chemically reacting, non-gaseous heat producing material and a vent leading from said chamber.

5. In a bonding apparatus, a bonding crucible provided with a plurality of recesses for the reception of the brazing material and portions of the bond which are to be brazed or soldered and a chamber near the said recesses for the reception of a body of chemically reacting, non-gaseous heat producing material.

851,341. SAFETY-RAZOR. HERBERT A. BULLARD, San Francisco, Cal. Filed Sept. 18, 1905. Serial No. 278,916.

Claim.—1. A holder for safety razor blade, comprising a sheet of spring metal shaped to form two outwardly-pressing flat spring members joined at one end to form a finger and thumb hold, said members intermediate their ends bent to form an angular ridge constituting a blade support, guards formed along the apex of each angular ridge, the upper extremities of said spring members curved outwardly and downwardly in opposite directions to each other and constituting blade-securing means.

2. A blade for safety razors comprising a rectangular body having opposite side cutting edges and provided with an oblong aperture, the center of which is nearer one cutting edge than the other and one of which cutting edges is of greater width than the other cutting edge.

3. A safety razor blade comprising a body having opposite cutting edges and provided with an oblong aperture, the center of which is nearer one cutting edge than the other and nearer to one end of the body than to the other.

4. In a safety razor a blade having opposite cutting edges and an oblong aperture the center of which is nearer one cutting edge than the other.

5. A safety razor comprising a holder shaped out of a sheet of spring metal into two outwardly pressing flat springs joined at one end to form a finger and thumb hold, and provided with guards, blade supports and blade-securing means at the other end, in combination with a blade having opposite cutting edges and an oblong aperture the center of which is nearer one edge than the other, and the longer sides whereof are adapted to snugly engage said springs.

851,342. TEMPORARY BINDER OR LOOSE-SHEET HOLDER. HARRY F. BUSHONG, Kalamazoo, Mich., assignor, by mesne assignments, to Kalamazoo Loose Leaf Binder Company, a Corporation. Filed Aug. 5, 1904. Serial No. 219,625.

Claim.—1. The combination of a pair of clamping bars having longitudinal chambers therein and holes in their inner or clamping faces opening into said chambers; covers, one of which is provided with a pocket opening at its inner end, secured to said clamping bars; a back strip adapted to telescope into said pocket in said cover, connected to the clamping bar of the other cover; a binding cord arranged through the holes in said clamping bars; threaded blocks to which the ends of said binding cords are secured; an adjusting shaft for said blocks having its ends oppositely threaded, arranged in suitable bearings in the chamber of one of said clamping bars; lids or closures adapted to seal said chambers; and locking dogs adapted to engage said lids or closures to lock them in their closed position, for the purpose specified.

2. The combination of a pair of clamping bars having longitudinal chambers therein and holes in their inner or clamping faces opening into said chambers; covers secured to said clamping bars; a binding cord arranged through the holes in said clamping bars; threaded blocks to which the ends of said binding cords are secured; an adjusting shaft for said blocks having its ends oppositely threaded, arranged in suitable bearings in the chamber of one of said clamping bars; lids or closures adapted to seal said chambers; and locking dogs adapted to engage said lids or closures to lock them in their closed position, for the purpose specified.

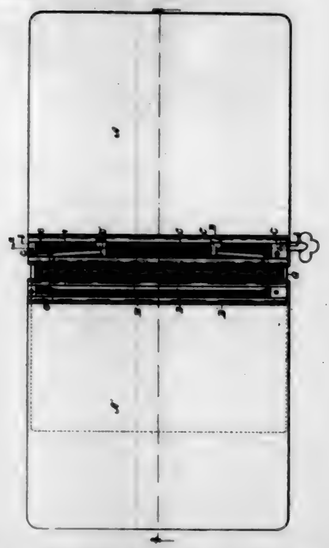

3. The combination of a pair of clamping bars having longitudinal chambers therein and holes in their inner or clamping faces opening into said chambers; a binding cord arranged through the holes in said clamping bars; threaded blocks to which the ends of said binding cords are secured; an adjusting shaft for said blocks having its ends oppositely threaded, arranged in suitable bearings in the chamber of one of said clamping bars; lids or closures adapted to seal said chambers; and locking dogs adapted to engage said lids or closures to lock them in their closed position, for the purpose specified.

4. The combination of a pair of clamping bars having chambers therein and holes in their inner or clamping faces opening into said chambers; covers, one of which is provided with a pocket opening at its inner end, secured to said clamping bars; a back strip adapted to telescope into said pocket in said cover, connected to the clamping bar of the other cover; binding cords arranged through the holes in said clamping bars; adjusting means for said binding cords, arranged in the chambers of said clamping bars; lids or closures adapted to seal said chambers; and locking dogs adapted to engage said lids or closures to lock them in their closed position, for the purpose specified.

5. The combination of a pair of clamping bars having chambers therein and holes in their inner or clamping faces opening into said chambers; covers secured to said clamping bars; binding cords arranged through the holes in said clamping bars; adjusting means for said binding cords, arranged in the chambers of said clamping bars; lids or closures adapted to seal said chambers; and locking dogs adapted to engage said lids or closures to lock them in their closed position, for the purpose specified.

6. The combination of a pair of clamping bars, one of said bars having a longitudinal chamber therein with holes in its inner or clamping face opening into said chamber; binding cords arranged through the said holes in the face of said clamping bar, connected to the other clamping bar; threaded blocks to which the ends of said binding cords are secured; an adjusting shaft for said blocks having its ends oppositely threaded, arranged in suitable bearings in said chamber; a lid or closure adapted to seal said chamber and enclose said adjusting shaft; and means for automatically locking said lid in its closed position.

7. The combination of a pair of clamping bars, one of said bars having a longitudinal chamber therein with holes in its inner or clamping face opening into said chamber; binding cords arranged through the said holes in the face of said clamping bar, connected to the other clamping bar; threaded blocks to which the ends of said binding cords are secured; an adjusting shaft for said blocks having its ends oppositely threaded, arranged in suitable bearings in said chambers; and a lid or closure adapted to seal said chamber and enclose said adjusting shaft.

8. The combination of a pair of clamping bars having chambers therein and holes in their inner or clamping faces opening into said chambers; binding cords arranged through the holes in said clamping bars; adjusting means for said binding cords, arranged in the chambers of said clamping bars; lids or closures adapted to seal said chambers; and locking dogs adapted to engage said lids or closures to lock them in their closed position, for the purpose specified.

851,343. BUILDING-SHEET. WILLIAM L. CALDWELL, Canton, Ohio, assignor to The Berger Manufacturing Company, Canton, Ohio, a Corporation of Ohio. Filed Nov. 10, 1906. Serial No. 342,765.

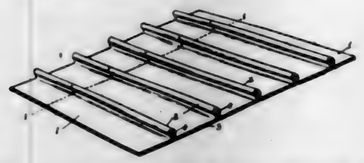

Claim.—1. An improved building sheet consisting of metallic and non-metallic members, the metallic member provided with folds or ridges bent from the body of the metallic member and the non-metallic member located upon one face of the metallic member, the folds of the non-metallic member bound in the folds of the metallic member, substantially as and for the purpose specified.

2. An improved building sheet consisting of metallic and non-metallic members, the non-metallic and metallic members provided with folds or ridges, the folds of the non-metallic member locked in the folds of the metallic member, substantially as and for the purpose specified.

3. A building sheet consisting of metallic and non-metallic members, said non-metallic and metallic members provided with ridges or folds, the non-metallic and metallic folds located around binding wires, substantially as and for the purpose specified.

4. A building sheet consisting of metallic and non-metallic members, said non-metallic and metallic members provided with ridges or folds, the non-metallic and metallic folds located around binding wires, and the non-metallic folded or ridged portions located upon the wires, substantially as and for the purpose specified.

851,344. CASH-CARRIER APPARATUS. DAVID E. CHISM, Stafford Springs, Conn. Filed May 23, 1906. Serial No. 319,111.

Claim.—1. In a cash carrier apparatus the combination with a post, a plurality of bracket-frames supported one above another by said post, track terminals, supported by said bracket frames, and cable-guiding-wheels supported by said frames, and located adjacent to intermediate portions of said track terminals.

2. In a cash carrier apparatus the combination with a cylindrical post, a plurality of bracket-frames, each having an apertured hub, such hubs of the several bracket frames embracing the post, one above another, and set screws engaged through said hubs and binding them to the post, track-terminals supported by said bracket frames, and cable-guiding-wheels supported by said frames, and located adjacent to intermediate portions of said track terminals.

3. In a cash carrier apparatus the combination with a post, a plurality of bracket-frames each comprising integrally formed upper and lower, and oppositely located, yokes, and having at their inner edges the vertically axially aligned apertured hubs, and the binding screws therefor, said frames, by means of their said hubs embracing, and being secured, one above another on said post, track terminals, supported by said bracket frames, and cable-guiding-wheels supported by said frames, and located adjacent to intermediate portions of said track terminals.

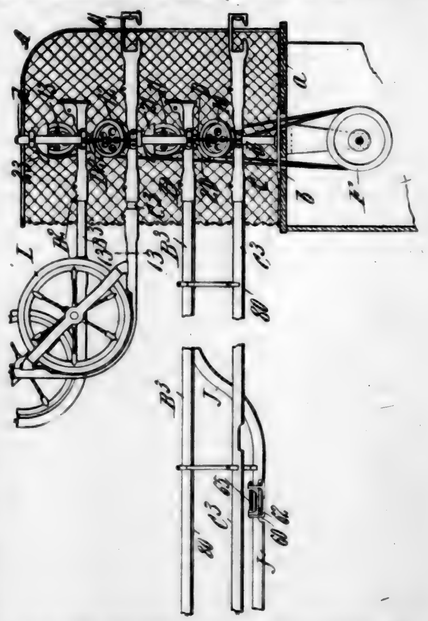

4. In a cash carrier apparatus the combination with a post, a plurality of bracket-frames each for a pair of trackway terminals supported one above another by said post, track terminals, supported in pairs respectively by said bracket frames, and cable-guiding-wheels supported by said frames, and located adjacent to intermediate portions of said track terminals.

5. In a cash carrier apparatus the combination with a post, a plurality of bracket-frames each for a pair of trackway terminals supported one above another by said post, and each comprising upper and lower yokes one edgewise offset from the other, the bottom member of one yoke being at the same level with the top of the other yoke, and having between them the apertured hub 16 and the upper and lower yokes being provided with the apertured hubs 17 and 15 which with the one 16 are vertically axially aligned, and set screws for binding said hubs to the post, track terminals, supported in pairs respectively by said bracket frames, and cable-guiding-wheels supported by said frames, and located adjacent to intermediate portions of said track terminals.

6. In a cash carrier apparatus a tubular terminal portion of a receiving or return trackway having an underneath longitudinal slotway, a rear end stop, a side opening, and a bottom recess merging in the side opening and with the forward end of which the slot connects.

7. In a cash carrier apparatus a tubular terminal portion of a receiving or return trackway having an underneath longitudinal slotway, a rear end stop, opposite side openings, and a recess merging in the side opening and with the forward end of which the slot connects.

8. In a cash carrier apparatus a tubular terminal portion of a trackway having an underneath longitudinal slotway, a rear end stop consisting of a yielding buffer and having a side opening and a widened bottom recess merging in the side opening and with the forward end of which the slotway connects.

9. In a cash carrier apparatus a tubular terminal portion of a trackway having an under longitudinal slotway, a rear end stop, a side opening, and a widened bottom recess merging in the side opening and, the boundaries of the slotway being divergent at the junction of such slotway with the said bottom recess.

10. In a cash carrier apparatus a tubular terminal portion of a trackway having an under longitudinal slotway, opposite side openings, and a widened bottom recess merging in the side opening and, the boundaries of the slotway being divergent at the junction of such slotway with the said bottom recess, and said trackway having a bottom portion to the rear of said bottom recess which is of a forwardly directed V shape.

11. In a cash carrier apparatus, the combination with a tubular terminal portion of a trackway having an underneath longitudinal slotway, a rear end stop, a side opening, and a widened bottom recess merging in the side opening and with the forward end of which the slotway connects, of a cash box comprising a body, a horizontal longitudinally ranging substantially cylindrical head, and a flat longitudinally ranging neck connecting the body and head.

12. In a cash carrier apparatus, the combination with a tubular portion of a trackway having an under longitudinal slotway, a rear end stop including a buffer, and having opposite side openings, and a widened bottom recess, the boundaries of the slotway being divergent at the junction of such slotway with the said bottom recess, and said trackway terminal having a bottom portion to the rear of said bottom recess which is of a forwardly directed V shape, of a cash box comprising a body, a horizontal longitudinally ranging substantially cylindrical head, and a flat longitudinally ranging neck connecting the body and head.

13. In a cash carrier apparatus, the combination with a tubular metallic trackway having an underside continuous longitudinal slotway and having the metal at the opposite sides of the slotway down turned, imparting increased height of wall surface for the slot, of a propulsion cable running within the tubular trackway, and a cash box comprising an approximately cylindrical longitudinally grooved head,—for disposition in the trackway and to be engaged by the cable,—a body below the head, and a thin vertical longitudinally ranging neck connecting the body with the head and adapted for guidance between the widened walls of the slotway.

14. In a cash carrier apparatus, the combination with a clerk station branch trackway of undersiotted, tubular, form, and having a widened aperture at its bottom intersected by the slot,—of oppositely located devices for contracting the width of said aperture, normally having their edges approached but separated from each other at opposite sides of the line of slotway, and adapted to yield oppositely and outwardly.

15. In a cash carrier apparatus, the combination with a clerk station branch trackway of undersiotted, tubular, form, and having in an intermediate portion thereof a widened aperture at its bottom intersected by the slot,—of oppositely located frames pivotally mounted on the trackway and comprising members extending partially across, and for contracting the said aperture, and a spring for yieldingly maintaining said frames in their approached relations.

16. In a cash carrier apparatus, the combination with a clerk station trackway of tubular, undersiotted, form, and having in an intermediate portion thereof a widened aperture at its bottom intersected by said slot, and having at its upper portion at the location of said aperture upstanding ear lugs,—of oppositely located curved frames pivotally connected to said ear lugs and comprising lower bar-like members having their positions normally across and for contracting, the said aperture, and a spring for imparting a yielding closing pressure to said frames.

17. In a guide-wheel corner-construction for a cash carrier apparatus, separable complemental sections comprising opposite quadrantal portions, and endwise continued partially tubular portions into which the curved sections are merged, having their lengths angular to each other, and axle supporting braces obliquely arranged relatively to said angularly disposed end portions, and joined thereto, and means for detachably connecting the complemental sections.

851,345. TRUCK FOR HARVESTING-MACHINES. WILLIAM H. CRANE, Poughkeepsie, N. Y., assignor to Adriance, Platt & Company, Poughkeepsie, N. Y. Filed June 30, 1905. Serial No. 267,735.

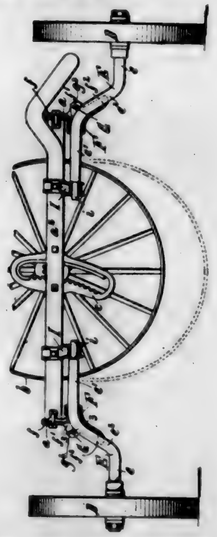

Claim.—1. The combination of a cranked stub axle comprising an inner attaching arm, an outer journal arm and a connecting crank portion, a frame, and a holding bracket secured to the frame and comprising a socket arranged in line with the attaching arm of the axle and receiving the same and an outwardly facing recessed seat which receives the crank portion of the axle and prevents the axle from turning in said socket, substantially as set forth.

2. The combination of a cranked stub axle comprising an inner attaching arm, an outer journal arm and a connecting crank portion, a frame, a holding bracket secured to the frame and having an outwardly facing recessed seat which receives the crank portion of the axle and prevents the same from turning, and a socket which is secured to the frame and receives the inner end of the attaching arm, substantially as set forth.

3. The combination of a cranked axle, a holding bracket adapted to be secured to a harvesting or other machine to detachably receive said axle, said bracket having a depending seat to receive and hold the crank portion of the axle, and means for releasably retaining said axle in said bracket, substantially as set forth.

4. The combination of a cranked axle, a holding bracket adapted to be secured to a harvesting or other machine and having a socket for the reception of the attaching arm of the axle and an upright seat to detachably receive the crank portion of the axle, and a socket for the inner end of said attaching arm, substantially as set forth.

5. The combination of a cranked axle, a holding bracket adapted to be secured to a harvesting or other machine to detachably receive the axle, said bracket having an upright seat to receive and hold the crank portion of the axle in an upright position, and a movable retaining device which engages against the outer side of the crank portion of the axle and releasably holds the axle in the bracket, substantially as set forth.

6. The combination of a cranked axle, a holding bracket adapted to be secured to a harvesting or other machine to detachably receive the axle, said bracket having an upright seat to receive and hold the crank portion of the axle in an upright position, and a removable bolt secured to said bracket and extending across the crank portion of the axle, substantially as set forth.

851,346. GAS-BURNER. HARVEY A. DARLING, Coshocton, Ohio. Filed Jan. 25, 1907. Serial No. 354,143.

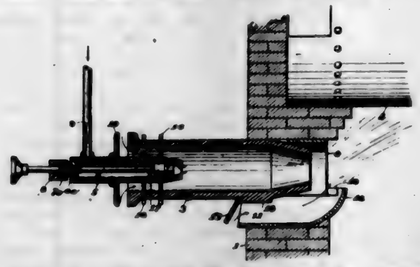

Claim.—In a gas burner, the combination of a cylinder provided with a tapered burner end, and supporting flanges, a supply pipe partially located within the cylinder, said supply pipe provided with a tapered tip, a valve-head adapted to close the tip, a housing located at the burner end of the cylinder, said housing provided with a curved plate located below and forward of the tapered end of the cylinder, a damper blade located forward of the delivery end of the supply pipe and adapted to control the supply of air to said housing, an air regulating disk located back of the delivery end of the supply pipe, said disk regulating the supply of air to the cylinder proper, and means for holding the supply pipe in fixed adjustment with reference to the cylinder, substantially as and for the purpose specified.

851,347. MOISTURE-SUPPLYING DEVICE FOR INCUBATOR-HEATERS. CLARENCE Z. DAVIS, Buffalo, N. Y., assignor to Cyphers Incubator Company, Buffalo, N. Y., a Corporation of New York. Filed Aug. 31, 1905. Serial No. 276,540.

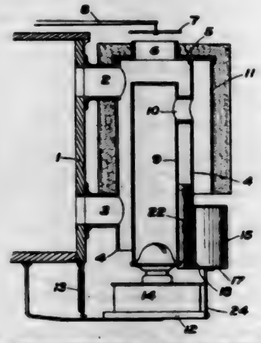

Claim.—1. The combination of an incubator heater having walls enclosing a hot air space for heating the air to be delivered to an incubator, a water tank having a feed opening from its lower part, a sheet of absorbent material for absorbing the water fed from said opening, and guides upon the side of said water tank for holding the side edges of said sheet.

2. The combination of an incubator heater having walls enclosing a hot air space for heating the air to be delivered to an incubator, a part of the outer wall of which space is a vertical partition, a water tank adapted to fit against the outer side of said partition, and having a lateral opening near its bottom, a trough adjacent to said opening and extending under said partition, a vertical plate extending from said trough inside said partition, and a sheet of absorbent material having one end in said trough and supported by said plate.

851,348. VAPOR-LAMP. CLARENCE T. EWARD, Greensburg, Ind. Filed Feb. 10, 1906. Serial No. 300,476.

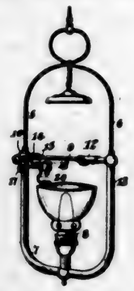

Claim.—1. In a vapor lamp, the combination with a main burner, of a fuel supply conduit, a main vaporizer heated by the main burner and connected thereto and to the supply conduit, a stationary diminutive vaporizer, a connection between the same and the supply conduit, a torch burner supplied by the diminutive vaporizer and associated with the main vaporizer and the main burner, constituting heating means for the former and an igniter for the latter, said torch burner also constituting a heater for the diminutive vaporizer and being arranged so that it may burn continuously to constitute a pilot light for the main burner and a continuous heater for the main vaporizer, and a valve for controlling the passage of fuel into the main vaporizer, said valve being located in the conduit between the main vaporizer and the connection of the diminutive vaporizer with said conduit.

2. In a vapor lamp, the combination with a main burner, of a fuel supply conduit, a main vaporizer connected to the fuel supply conduit and extending above the main burner and heated thereby, a stationary diminutive vaporizer, a branch tube connecting the supply conduit and the diminutive vaporizer, a controlling valve located in the branch tube, a torch burner supplied by the diminutive vaporizer and located below the main vaporizer and above the main burner, constituting heating means for the former and an igniter for the latter, said torch burner also constituting a heater for the diminutive vaporizer and being disposed to constitute a pilot light for the main burner, and a controlling valve located in the fuel supply conduit between the branch tube and the main vaporizer.

851,349. EXTRACTION OF AMMONIA FROM GASES. WALTHER FELD, Hönningen-on-the-Rhine, Germany. Filed Jan. 18, 1907. Serial No. 352,878.

Claim.—1. The process of extracting ammonia from gases, which consists in first subjecting such gases to treatment by which tar and water are removed therefrom, and then effecting the extraction of the ammonia from the said gases by treating the said gases with a liquor containing a calcium salt.

2. The process of extracting ammonia from gases, which consists in first subjecting such gases to treatment by which tar and water are removed therefrom and then effecting the extraction of the ammonia from the said gases by treating the said gases with sulfate of lime held partly in solution and partly in suspension.

3. The process of extracting ammonia from gases, which consists in first subjecting such gases to treatment by which tar and water are removed therefrom, and then

effecting the extraction of ammonia from the said gases by treating the said gases with gypsum, held partly in solution and partly in suspension.

4. The process of extracting ammonia from gases produced from materials which are such that the gases contain less than one molecular proportion of carbon dioxid to two molecular proportions of ammonia, the said process consisting in introducing air into the distilling retorts and then first treating such gases so as to remove the tar and water and then effecting the extraction of ammonia from the said gases by treating the said gases with a liquor containing a calcium salt.

5. The process of extracting ammonia from gases, produced from materials which are such that the gases contain less than one molecular proportion of carbon dioxid to two molecular proportions of ammonia, the said process consisting in introducing air into the distilling retorts and then first treating such gases so as to remove the tar and water and then effecting the extraction of ammonia from the said gases by treating the said gases with sulfate of lime, held partly in solution and partly in suspension.

6. The process of extracting ammonia from gases produced from materials which are such that the gases contain less than one molecular proportion of carbon dioxid to two molecular proportions of ammonia, the said process consisting in introducing air into the distilling retorts and then first treating such gases so as to remove the tar and water and then effecting the extraction of ammonia from the said gases by treating the said gases with gypsum, held partly in solution and partly in suspension.

7. The process of extracting ammonia from gases, produced from materials which are such that the gases contain less than one molecular proportion of carbon dioxid to two molecular proportions of ammonia, the said process consisting in first subjecting such gases to treatment by which tar and water are removed, and then effecting the extraction of ammonia from the produced gases by subjecting such gases to treatment with a liquor containing a calcium salt, together with gases containing carbon dioxid.

8. The process of extracting ammonia from gases, produced from materials which are such that the gases contain less than one molecular proportion of carbon dioxid to two molecular proportions of ammonia, the said process consisting in first subjecting such gases to treatment by which tar and water are removed, and then effecting the extraction of ammonia from the produced gases by subjecting the said gases to treatment with sulfate of lime, held partly in solution and partly in suspension, together with gases containing carbon dioxid.

9. The process of extracting ammonia from gases, produced from materials which are such that the gases contain less than one molecular proportion of carbon dioxid to two molecular proportions of ammonia, the said process consisting in first subjecting such gases to treatment by which tar and water are removed, and then effecting the extraction of ammonia from the produced gases by subjecting the said gases to treatment with gypsum, held partly in solution and partly in suspension, together with gases containing carbon dioxid.

851,350. DIE-SECURING MEANS. CLARENCE N. FREY, Cincinnati, Ohio, assignor to The J. M. Robinson Manufacturing Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Jan. 14, 1907. Serial No. 352,194.

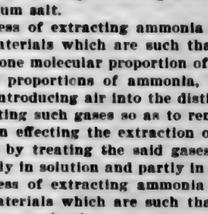

Claim.—1. In securing means for dies of metal bending presses, the combination with the plunger and die, of a pair of clamping plates pivoted to said plunger, said die and clamping plates having inclined clamping faces between them, a pivoted socket-member secured to one of said clamping plates, and a bolt threaded to said socket-member and engaging the other of said clamping plates for clamping said die between said plates, substantially as described.

2. In securing means for the dies of metal bending presses, the combination with the plunger and die, of clamping plates pivoted to said plunger, said clamping plates and die having inclined clamping faces therebetween, a pair of interthreaded connecting members between and exerting clamping pressure upon said clamping plates for clamping said plates together, and a spring between said plates for normally causing their separation, substantially as described.

3. In securing means for the dies of metal bending presses, the combination with the plunger and die, of clamping plates pivoted to said plunger, said clamping plates and die having inclined clamping faces therebetween, a pair of interthreaded connecting members between and exerting clamping pressure upon said clamping plates for clamping said plates together, and springs secured to said plunger and bearing upon said plates adjacent to their pivotal points, substantially as described.

4. In securing means for dies of sheet metal bending presses, the combination of the plunger and die, said plunger having a series of mating recesses at its respective sides, said mating recesses having tapered faces converging toward each other, a pair of clamping plates pivoted in said respective mating recesses, the said die having a plurality of mating recesses registering with the recesses on said plunger, the mating recesses of said die having tapering faces converging downwardly, the inclines of said last-named tapers being farther distant from the longitudinal vertical axes of said plunger and die than said first-named tapers, and connecting clamping members between said respective clamping plates.

5. In securing means for dies of sheet metal bending presses, the combination with the plunger and die, said plunger having a series of mating recesses at its respective sides, said mating recesses having tapered faces converging toward each other, a pair of clamping plates in said respective mating recesses, the said die having a plurality of mating recesses registering with the recesses on said plunger, the mating recesses of said die having tapering faces converging downwardly, the inclines of said last-named tapers being farther distant from the longitudinal vertical axes of said plunger and die than said first-named tapers, connecting clamping members between said respective clamping plates, and a spring for normally separating said clamping plates.

6. In securing means for dies of sheet metal bending presses, the combination with the plunger and die at its bottom, said plunger having a tapered lower end and said die having a flaring upper end, the flaring upper end of said die being of greater cross-section than the tapered lower end of said plunger at their adjacent faces, a pair of clamping plates pivoted to said plunger for clamping said flaring end of said die, a socket member pivoted to one of said clamping plates, and a bolt headed against and passing through the other of said clamping plates and threaded in said socket-member, substantially as described.

7. In securing means for dies of sheet metal bending presses, the combination with the plunger and die at its bottom, said plunger having a tapered lower end and said die having a flaring upper end, the flaring upper end of said die being of greater cross-section than the tapered lower end of said plunger at their adjacent faces, a pair of clamping plates pivoted to said plunger for clamping said flaring end of said die, a socket-member pivoted to one of said clamping plates, a bolt headed against and passing through the other of said clamping plates and threaded in said socket-member, and a spiral spring between said socket-member and last-named clamping-plate, substantially as described.

8. In securing means for dies of sheet metal bending presses, the combination with the plunger and die, at its bottom, said plunger having a tapered lower end and said die having a flaring upper end, the flaring upper end of said die being of greater cross-section than the tapered lower end of said plunger at their adjacent faces, a pair of clamping plates pivoted to said plunger for clamping the flaring end of said die, the lower end of said plunger and the upper end of said die having a tongue and groove therebetween for laterally positioning said die, substantially as described.

851,351. COMBINATION-TOOL. ALFRED HANLEY, New York, N. Y. Filed June 22, 1906. Serial No. 322,825.

Claim.—1. The combination tool comprising a body portion having a number of nail-set hammer heads and nail-set points disposed about its edge, and a number of openings through said body portion, for reducing the weight of the tool and constituting wrenches so disposed throughout said body portion that a continuous body of metal will extend in a straight line from the head to the point of each of said nail-sets.

2. The combination tool comprising a body portion having a pair of nail-set hammer heads and a pair of nail-set nail points disposed about its edge, and a number of transverse openings so disposed throughout said body portion that a continuous body of metal will extend in a straight line from the head to the point of each nail-set, and screw drivers laterally extending from said continuous bodies and reinforcing the same.

3. The combination tool comprising a body portion of substantial thickness, a series of angularly shaped tapering holes extending through said body, the taper of said holes being so proportioned that successive steps of graduation in size of opening, of a progressive series of openings, will occur upon alternate sides of said body, and a number of outwardly extending nail sets carried by said body and constituting finger grips when the tool is used as a wrench.

4. The combination tool comprising a body portion carrying a pair of transversely disposed nail-sets, said body portion having four wrench openings traversing the same, and having a pair of transversely disposed partitions or walls each of which is disposed in a line between the head and point of one of the nail-sets, and laterally-extending screw drivers carried by and reinforcing said partitions at and adjacent to their intersection.

5. The combination tool comprising a body portion of substantial thickness having a pair of nail-set hammer heads and a pair of nail set points disposed about its edge, said heads and points of the sets being disposed in the same plane, and said sets having their axes disposed transversely one to the other, said body portion having four tapering wrench openings traversing the same, the tapering of said openings being so proportioned that successive steps of graduation in size of the openings will occur upon alternate sides of said body, and said body having a pair of transversely disposed partitions or walls each of which is disposed in a line between the head and point of one of the nail-sets, and a pair of screw drivers carried by said partitions and extending laterally therefrom in planes perpendicularly disposed to the plane of said nail sets.

851,352. PIPE-CRADLE. JOHN A. HIBBINS, Watsessing, N. J. Filed Aug. 17, 1905. Serial No. 274,631.

Claim.—1. A pipe cradle comprising a U-shaped body portion providing at its concave edge an upwardly open seat to receive the pipe and having a longitudinal recess in said concave edge, anti-friction members mounted in said recess to project therefrom, and opposite alined end extensions closing the ends of said longitudinal recess and projecting outward from the body portion, the said projecting ends providing independent handle sockets and means for attaching a chain or the like.

2. A U-shaped pipe cradle, comprising opposite outwardly projecting end extensions, side pieces extending at their ends directly downward from the opposite sides of the inner ends of said extensions and forming between themselves a slot extending through the cradle in the plane of its curvature, the said extensions closing the ends of said slot and providing at their outer ends independent handle sockets and means for attaching a chain or the like, and anti-friction members mounted in said slot.

3. A U-shaped pipe cradle comprising opposite outwardly projecting end extensions, side pieces extending at their ends directly downwardly from the opposite sides of the inner ends of said extensions and forming between themselves a slot extending through the cradle in the plane of its curvature, said extensions at their inner ends closing the said slot, and at their outer extremities providing interior handle sockets and being exteriorly reduced back from said extremities to receive a chain or the like, and rollers of a thickness less than the width of said slot mounted in said slot upon transverse pins.

4. A U-shaped pipe cradle provided at its ends with independent handle sockets and means for attaching a chain or the like, and between said ends forming a pipe seat, anti-friction members mounted in said seat, and handles adapted to be removably inserted in said sockets.

5. A pipe cradle having a body portion with opposite alined end extensions which provide interior handle sockets and are exteriorly reduced back from their extremities to receive a chain or the like, said body portion providing between said end extensions a pipe seat, anti-friction members mounted in said seat, and handles adapted to be removably inserted in said sockets.

851,353. PRIMARY BATTERY. CHARLES E. HITE, Burlington, N. J., assignor of one-fourth to Thomas J. Byrne, Philadelphia, Pa. Filed May 17, 1906. Serial No. 317,300.

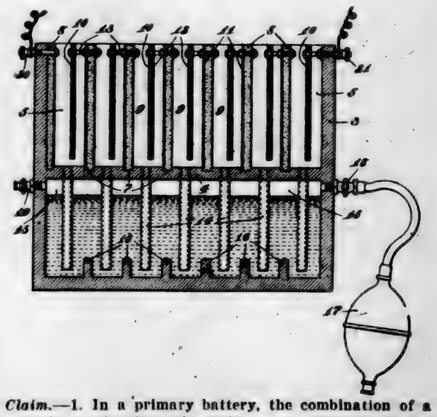

Claim.—1. In a primary battery, the combination of a receptacle, a plurality of partition-supporting electrodes dividing the receptacle into a plurality of compartments or cells, one of said electrodes only being placed between each pair of cells divided thereby.

2. In a primary battery, the combination of a receptacle, a plurality of partition-supporting electrodes dividing the receptacle into a plurality of compartments of cells,

said partitions consisting of a coating of insoluble non-conducting material upon one side of each electrode, one of said electrodes only being placed between each pair of cells divided thereby.

3. In a primary battery, the combination of a receptacle, a plurality of electrode plates secured in said receptacle and dividing the receptacle into compartments, a coating of insoluble non-conducting material upon one side of each of said electrodes extending to the sides and bottom of the receptacle adjacent the edges of the electrodes forming said compartments into liquid tight cells.

4. In a primary battery, the combination of a receptacle, a single film of insoluble non-conducting material forming a partition dividing the receptacle into cells and an electrode supporting said partition.

5. In a primary battery, the combination of a receptacle, a plurality of partition-supporting electrodes dividing the receptacle into a plurality of compartments or cells, and electrodes of opposite polarity projecting into said cells and connected with said partition-supporting electrodes, one of said partition-supporting electrodes only being placed between each pair of cells divided thereby.

6. In a primary battery, the combination of a receptacle, a plurality of partition supporting electrodes dividing the receptacle into a plurality of compartments or cells, and electrodes of opposite polarity connected with and supported by said partition supporting electrodes.

7. In a primary battery, the combination of a receptacle, a plurality of electrodes seated therein by means of grooves, a coating of insoluble non-conducting material covering one side of each of said electrodes and extending to the sides and bottom of the receptacle adjacent the edges of the electrodes to form liquid tight partitions between a plurality of cells.

8. In a primary battery, the combination of a receptacle, a plurality of partition supporting electrodes dividing the receptacle into a plurality of compartments or cells, and electrodes of opposite polarity projecting into said cells and connected with said partition-supporting electrodes, said electrodes coated on all sides except their active sides with insoluble non-conducting material.

9. A primary battery, comprising a plurality of cells, a reservoir containing common electrolyte, means for transferring the major portion of the electrolyte from the reservoir to the cells and means for causing the separation of the residue of electrolyte contained in the reservoir into a number of separate bodies corresponding to the number of cells to prevent electrical communication, through the electrolyte, between said cells.

10. A primary battery, comprising a plurality of cells, a reservoir containing common electrolyte, air pressure controlled means for transferring the major portion of the electrolyte from the reservoir to the cells and means for causing the separation of the residue of electrolyte contained in the reservoir into a number of separate bodies corresponding to the number of cells to prevent electrical communication, through the electrolyte, between said cells.

11. In a primary battery, the combination of a plurality of cells, a common reservoir for containing electrolyte having communication with said cells, means for causing the electrolyte to rise in the cells from the common reservoir, a plurality of partitions in said reservoir for separating the residue of electrolyte contained therein, into a number of separate bodies when the greater part of electrolyte has risen in the cells.

12. In a primary battery, the combination of a plurality of cells, a reservoir for electrolyte common to all the cells, channels leading from the cells to near the bottom of the reservoir, said channels adapted to be trapped by the residue of the electrolyte in the reservoir when the cells are in action, and means for separating said residue of electrolyte into a number of bodies corresponding to the number of channels trapped thereby.

13. In a primary battery, the combination of a plurality of cells, a reservoir for electrolyte common to all the cells, channels leading from the cells to near the bottom of the reservoir, said channels adapted to be trapped by the residue of the electrolyte in the reservoir when the cells are in action, means for compressing the air in the reservoir chamber to cause the electrolyte to rise through the channels into the cells, and means for separating said residue of electrolyte into a number of bodies corresponding to the number of channels trapped thereby.

14. In a primary battery, the combination of a receptacle, a plurality of partition supporting electrodes dividing the receptacle into a plurality of compartments or cells, a reservoir containing a common electrolyte, means for conveying the major portion of the electrolyte from the reservoir to the cells and means for causing the separation of the residue of the electrolyte contained in the reservoir into a number of separate bodies corresponding to the number of cells to prevent electrical communication through the electrolyte between said cells.

15. In a primary battery, the combination of a receptacle, a galvanic couple, one element of which supports a coating of insoluble non-conducting material which forms a partition between two cells in said receptacle, an electro-positive electrode and an electro-negative electrode forming the terminals of the battery, the said galvanic couple being interposed between said terminal electrodes.

851,354. SELF-OILING WHEEL. FRANKLIN C. HOCKENSMITH, Pittsburg, Pa. Filed July 3, 1906. Serial No. 324,651.

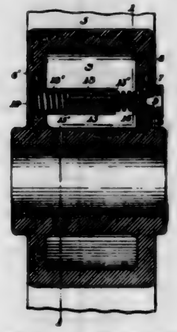

Claim.—1. The combination of an oil chamber having a filling opening in one wall thereof, the wall opposite the filling opening being closed, a holder secured to said opposite closed wall and projecting toward the filling opening, the secured end of the holder being closed and its opposite end open, a coiled spring within the holder and projecting therefrom toward the filling opening, and a headed valve having its stem projecting part way through the spring and holder, the valve stem being smaller than and loosely fitting the interior of the spring with the latter bearing against the back of the valve head and holding the latter normally seated and closing the filling opening.

2. The combination of a wheel, an oil chamber communicating with the interior of the wheel hub, the chamber having a filling opening in one side wall thereof with the wall opposite the filling opening closed, a tubular holder within the chamber and extending toward the filling opening, the end of the holder facing the filling opening being open, a coiled spring seated in the holder and extending through the open end thereof toward the filling opening, a headed valve having its stem smaller than and loosely fitting within the spring, the spring bearing against the back of the valve head and holding it normally seated and closing the filling opening.

3. The combination of an oil chamber having a filling opening, a coiled spring in line with and expansible toward the filling opening, spring holding means, a headed valve normally closing the filling opening by the action of the spring, the valve stem extending part-way through the coiled spring and having its inner end coned in order to freely pass the inner surface of the spring when the valve is pushed inward.

4. The combination of an oil chamber having a filling opening, the outer portion of the opening being coned inwardly and the inner portion coned outwardly, a tubular open-end holder within the chamber and extending toward the filling opening, a coiled spring seated in the holder and normally projecting therefrom, and a valve having a flat head closing against the inner coned face of the opening and a shank projecting loosely into the spring from the head and partially through the holder, the valve being capable of limited lateral movement when unseated.

851,355. TELEPHONE-TRANSMITTER. STEPHEN C. HOUGHTON, Rome, N. Y., assignor to The Wire & Telephone Company of America, Rome, N. Y., a Corporation of New York. Filed Mar. 7, 1907. Serial No. 361,070.

Claim.—1. A telephone transmitter having a face-plate having an inwardly extending groove provided with perforations, substantially as described.

2. A telephone transmitter having a face-plate formed with an inwardly extending circular groove provided with perforations at the bottom, substantially as described.

3. A telephone transmitter provided with a face-plate having a groove provided with two series of perforations, arranged in the opposite walls thereof, at the bottom, substantially as described.

4. A telephone transmitter provided with a face-plate having a hole through it, a disk covering said hole having a marginal groove provided with perforations at the bottom, substantially as described.

5. A telephone transmitter provided with a face-plate having a hole through it, a disk having a circular groove provided with perforations at the bottom, the rib produced by forming said groove projecting through the hole in said face-plate and fitting it snugly, to thereby hold the disk in place, substantially as described.

6. A telephone transmitter provided with a face-plate having a hole through it, a disk having a marginal groove provided with two series of perforations arranged in the opposite walls thereof, at the bottom, and an imperforate central portion, the rib produced by forming said groove projecting through the hole in said face-plate and fitting it snugly to thereby hold the disk in place, substantially as described.

7. A telephone transmitter provided with a face-plate having a hole through it, a disk having a circular groove provided with two series of perforations arranged in the opposite walls thereof, at the bottom, the rib produced by forming said groove extending through the hole in said face-plate, substantially as described.

851,356. COLLAR SHAPER AND DRIER. EDWARD J. HUGHES, Weston, W. Va. Filed July 11, 1906. Serial No. 325,740.

Claim.—1. In a collar shaper and drier, a hollow cylindrical shell, a box-like heating-furnace mounted on said shell and communicating at its inner end with the interior of said shell, a drying-tube extending through the interior of said shell from end to end thereof, a hollow cylindrical shaping-horn carried by said shell and communicating with the interior thereof, and means for creating and for regulating a circulation of air through said horn.

2. In a collar shaper and drier, a hollow metallic cylinder, a box carried by said cylinder, said box being adapted for having a heating device mounted therein, said box communicating at its inner end with the interior of said cylinder, a drying-tube extending through said cylinder, a shield mounted between said tube and the mouth of said box, a hollow shaping horn carried by said cylinder and communicating with the interior thereof, means for regulating the temperature of said horn, and means for creating a circulation of air throughout said cylinder.

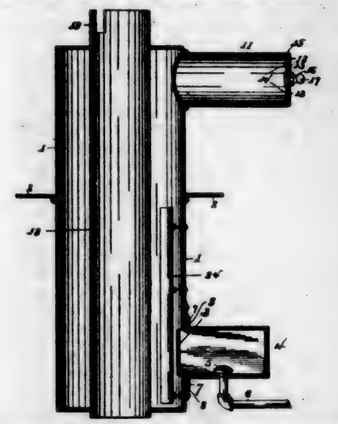

3. In a collar shaper and drier, a suitably-mounted hollow cylinder, a furnace detachably mounted upon said cylinder and communicating with the interior thereof through a suitable opening therein, a heat-deflecting shield in said cylinder in front of said opening, a drying-tube extending through said cylinder, a hollow shaping-horn carried by said cylinder and communicating therewith, means for heating said horn by creating a circulation of air therethrough, and a draft-tube in said cylinder for creating a circulation of air therein.

851,357. BOX. CLARENCE M. KEEFE, Cincinnati, Ohio. Filed May 11, 1905. Serial No. 260,036.

Claim.—A box composed of a body and a cover, said body having one of its walls formed with an overturned upper portion, and a pivot pin enclosed by said overturned portion, said cover having one end turned over to lie flat on the inner face thereof and having spaced inwardly extending slits formed in said turned-over end, the material between some of said slits being extended to embrace said pivot pin, the material between the other of said slits extending rearwardly in approximately the same plane as the cover to engage the rear wall of the box when the cover is in open position.

851,358. VALVE. CLEMENS KIESSELBACH, Rath, near Düsseldorf, Germany. Filed Dec. 8, 1905. Serial No. 290,890.

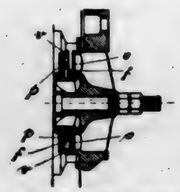

Claim.—1. In an automatic valve of the kind used in pumps and blasts the combination of the valve-mechanism as ordinarily used with a spiral spring the axis of which

is inclined to the line in which the valve-body moves, substantially as described.

2. In an automatic valve of the kind used in pumps and blasts the combination of the ordinary valve-mechanism with a spiral spring suitable to support the weight of the valve-body, the axis of the said spiral spring being excentric to the line of movement of the valve, substantially as described.

3. In an automatic valve of the kind used in pumps and blasts the combination of the ordinary valve-mechanism with a spiral spring suitable to support the weight of the valve body, the axis of the said spring being inclined to the line in which the valve-body moves, and an elastic support for the said spiral spring, substantially as described.

851,359. LUBRICATOR. WILLIAM LEYLAND and JOHN W. LEYLAND, New York, N. Y. Filed Mar. 10, 1906. Serial No. 305,204.

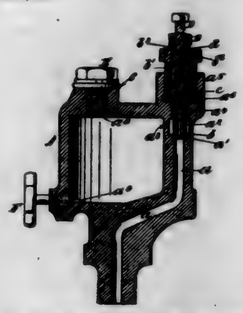

Claim.—1. In a lubricator of the character designated, a reservoir formed with a vertical conduit for the inlet of steam and the gravitating outlet of oil there being a port between the lubricant chamber and said conduit, and a valve seat interposed between said conduit and said port, a valve adjustably supported with relation to said seat the stem of which valve is formed with a longitudinal passage opening through the valve into said conduit in alignment with the inlet of the steam, and a valve by which the other extremity of said longitudinal passage may be closed or opened for the purpose described.

2. In a lubricator of the character designated, a reservoir formed with a vertical conduit for the inlet of steam and the gravitating outlet of oil, there being a port between the lubricant chamber and said conduit, and a valve seat interposed between said conduit and said port, a valve adjustably supported with relation to said seat the stem of which valve is formed with a longitudinal passage opening through the valve into said conduit in alignment with the inlet of the steam, and a screw valve by which the other extremity of said longitudinal passage may be closed or opened, for the purpose described.

3. In a lubricator of the character designated, a reservoir formed with a vertical conduit for the inlet of steam and the gravitating outlet of oil, there being a port between the lubricant chamber and said conduit, and a valve seat interposed between said conduit and said port, a valve adjustably supported with relation to said seat the stem of which valve is formed with an axial passage opening through the said valve into the said conduit in alignment with the inlet of the steam, and a screw valve on the outer extremity of the said valve stem, arranged to close or open the outer extremity of said axial passage in the valve stem for the purpose described.

4. In a lubricator of the character designated, a reservoir formed with a vertical conduit for the inlet of steam and gravitating outlet of oil, there being a port between the lubricant chamber and said conduit, and a valve seat interposed between said conduit and said port, a valve adjustably supported with relation to said seat the stem of which is formed with an axial passage opening at one extremity through the said valve into said conduit in alignment with the inlet of the steam and at the other extremity opening into a valve chamber formed with an opening communicating with the atmosphere, and a screw valve on the outer extremity of said valve stem and screw threaded thereinto and adjustable longitudinally therein, arranged to close or open the outer end of said axial passage, for the purpose described.

5. In a lubricator of the character designated, a reservoir formed with a vertical conduit for the inlet of steam and gravitating outlet of oil, there being a port between the lubricant chamber and said conduit, and a valve seat interposed between said conduit and said port, a valve adjustably supported with relation to said seat the stem of which is formed with an axial passage opening at one extremity through the said valve into said conduit in alignment with the inlet of the steam and terminating at the other extremity in a valve seat, said valve stem being also formed above said last named valve seat with a lateral passage communicating with the atmosphere and a screw valve adjustable longitudinally within the outer extremity of said valve stem, arranged to close or open the outer extremity of said axial passage in the valve stem, for the purpose described.

6. In a lubricator of the class described, a reservoir formed with a vertical conduit outside the same, and having a laterally inclined portion communicating with the central steam inlet, said conduit having at its upper end an enlargement forming a valve chamber and valve seat with a lateral port above said valve seat communicating with the reservoir near the upper end of the latter, said conduit serving for the simultaneous downflow of the oil and the upward passage of steam through said oil, a tubular valve fitted to said seat and having an axial passage opening into said conduit, and an annular enlargement near its upper end and a valve fitted into the upper end of the tubular valve and fitted to a seat in the enlargement of the latter.

851,360. GAS-GENERATING APPARATUS. WILLIAM E. LEONARD, Silver Creek, Wash., assignor of one-half to Bailey Waddingham, Glendive, Mont. Filed May 16, 1906. Serial No. 317,060.

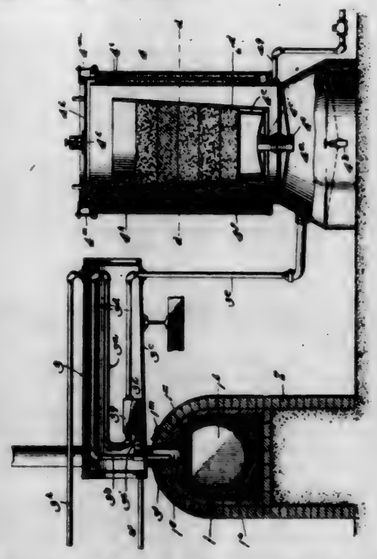

Claim.—In a gas generator, the combination of a retort formed at its front with a main retorting chamber and at its rear with a sub-retorting chamber, which chambers communicate at the top, the main retorting chamber extending for nearly the entire length of the retort proper, and each of said chambers being unobstructed throughout, a condenser communicating with the sub-retorting chamber, and means whereby the accumulated condensate may be discharged at will into the sub-retort.

851,361. FREIGHT-CAR TRUCK. ARTHUR LIPSCHUTZ, Chicago, Ill. Filed Feb. 16, 1907. Serial No. 357,674.

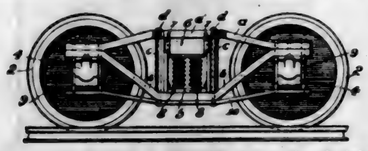

Claim.—1. A rigid arch bar side frame for freight car trucks, comprising a lower arch bar in combination with an upper arch bar and bolster-guiding columns, suitably united, the middle portion of said upper arch bar being bowed or bent outwardly, to avoid the end of a truck bolster slidably engaged with said columns, substantially as described.

2. In a rigid arch bar side frame for freight car trucks, a lower arch bar in combination with bolster-guiding columns and an upper arch bar having its middle portion bowed or bent outwardly from points adjacent to the upper ends of said columns to permit a bolster to be slidably engaged with or disengaged from said columns, substantially as described.

3. A truck frame comprising a lower arch bar in combination with an upper arch bar, bolster-guiding columns extending between said arch bars, rivets fastening such parts together, and said upper arch bar being bowed or bent outwardly from points adjacent to the upper ends of said columns to avoid contact with the end of a bolster when being engaged with or disengaged from said columns, substantially as described.

851,362. SIGNAL APPARATUS. ERNEST DE MÉRINDOL MALAN, London, England. Filed Dec. 5, 1906. Serial No. 346,433.

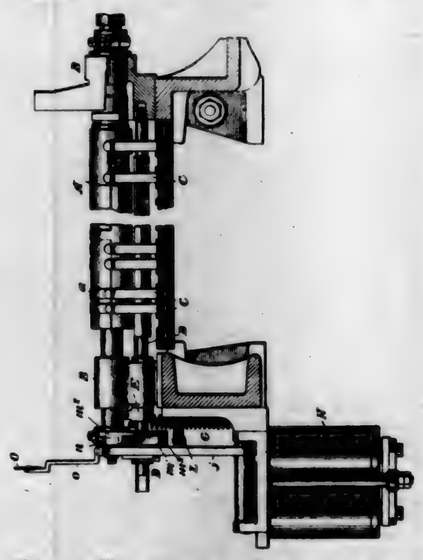

Claim.—1. The combination with a roller having contacts thereon and relatively fixed contacts supported in position to be engaged by the contacts on the roller, of a shaft journaled parallel to the roller and having lateral projections, means normally tending to rock said shaft to cause the projections to engage said fixed contacts and force them away from the roller, and electrically controlled means for opposing the action of said rocking means.

2. The combination with a roller having contacts thereon, and relatively fixed contacts supported in position to be engaged by the contacts on the roller, of a shaft journalled parallel to the roller and having lateral projections, a spring connected to said shaft and normally tending to rock it to cause the projections to engage said fixed contacts and force them away from the roller, and electrically controlled means for opposing the action of said spring.

3. The combination with a roller having contacts thereon, and relatively fixed contacts supported in position to be engaged by the contacts on the roller, of a shaft journalled parallel to the roller and having lateral projections, oppositely extending arms on one end of said shaft, a spring connected to one of said arms and to a fixed point and normally tending to rock said shaft and cause the projections to engage said fixed contacts and force them away from the roller, and an electrically controlled locking lever engaging the other of said arms to oppose the action of the spring.

4. The combination with a roller having contacts thereon, and relatively fixed contacts supported in position to be engaged by the contacts on the roller, of a shaft journalled parallel to the roller and having lateral projections, means normally tending to rock said shaft to cause the projections to engage said fixed contacts and force them away from the roller, a pivoted bell-crank-lever one arm of which is provided with a locking shoulder to engage a shoulder on said shaft and hold it against movement by said spring, an electro-magnet, an armature for said magnet carried by the other arm of said bell-crank-lever, and a spring connected to said bell-crank-lever and to a fixed point and normally tending to oppose the attractive force of said magnet.

5. The combination with a roller turnable about its axis and having contacts thereon, and relatively fixed contacts supported in position to be engaged by the contacts on the roller, of a shaft journalled parallel to the roller and having lateral projections, oppositely extending arms on one end of the shaft, a spring connected to one of said arms and tending normally to move it to rock said shaft and move the fixed contacts away from the roller, a locking lever engaging the other of said arms to oppose the action of said spring, an electro magnet for holding the lever in locking position and means carried by the contact lever to prevent said lever from releasing said arm when the magnet is de-energized normally.

6. The combination with a roller having contacts thereon, and relatively fixed contacts supported in position to be engaged by the contacts on the roller, of a shaft journalled parallel to the roller and having lateral projections, a spring connected to said shaft and normally tending to rock it to cause the projections to engage said fixed contacts and force them away from the roller, electrically controlled means for opposing the action of said spring, a signal and means for moving said signal into indicating position when said fixed contacts are forced away from the roller.

851,363. HEATING SYSTEM. HARRY C. MALLORY, New York, N. Y. Filed Nov. 24, 1906. Serial No. 344,821.

Claim.—1. In a heating system, a radiator, a heating fluid supply conduit and a low pressure return conduit connected to said radiator, a valve controlling the flow of the heating fluid through the radiator and thermostatic actuating mechanism for the valve having a chamber or passage in communication with a source of air and including a member having a relatively high coefficient of expansion in proximity to said chamber or passage and a conduit leading from said chamber to said low pressure return conduit.

2. In combination, a radiator for heating an apartment, a throttling valve controlling the flow of a heating fluid therethrough, thermostatic actuating mechanism for the valve, means for subjecting said mechanism to the action

of a thermal agent varying in temperature with the external atmosphere and means for varying the influence of said thermal agent on said mechanism in response to variations in the temperature of the apartment to be heated.

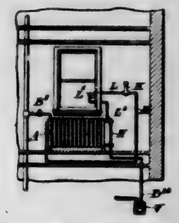

3. In a heating system, a radiator for heating an apartment, a heating fluid supply conduit and a low pressure return conduit connected to said radiator, a valve controlling the flow of heating fluid through the radiator, thermostatic actuating mechanism for the valve having a chamber or passage and including a member having a relatively high coefficient of expansion in proximity to said chamber or passage, means responsive to the temperature of the apartment heated for opening and closing said chamber to a source of air and a conduit leading from said chamber or passage to said low pressure return conduit.

4. In combination, a radiator for heating an apartment, a throttling valve controlling the flow of the heating fluid through said radiator, thermostatic actuating mechanism for the valve, means for causing a stream of a fluid thermal agent to flow past, against and by said mechanism to change the temperature of the latter in passing, and means for varying the flow of said stream without changing its direction in response to variations in the temperature of the apartment to be heated.

5. In combination, a radiator, a throttling valve controlling the flow of heating fluid through said radiator, thermostatic actuating mechanism for the valve, means for causing a stream of air varying in temperature with the external atmosphere to flow against and by said actuating mechanism and means responsive to the temperature of the apartment to be heated for controlling said stream.

6. In combination, a radiator, a source of heating fluid, a conduit leading from said source to said radiator, a low pressure return conduit leading away from the radiator, a valve controlling the flow of the heating fluid through the radiator, thermostatic actuating mechanism for said valve, including a chamber or passage, a conduit leading from said chamber to said return conduit and a conduit leading to said chamber from a source of supply of a fluid thermal agent for acting on said thermostatic actuating mechanism.

7. In combination, a radiator for heating an apartment, a source of heating fluid, a conduit leading from said source to said radiator, a low pressure return conduit leading away from the radiator, a valve controlling the flow of the heating fluid through the radiator, thermostatic actuating mechanism for said valve including a chamber or passage, a conduit leading from said chamber to said return conduit, a conduit leading to said chamber from a source of supply of a fluid agent for acting thermally on said thermostatic actuating mechanism, and means responsive to the temperature of the apartment to be heated for varying the flow of fluid through said chamber.

8. In combination, a radiator for heating an apartment, a source of heating fluid, a conduit leading from said source to said radiator, a low pressure return conduit leading away from the radiator, a valve controlling the flow of the heating fluid through the radiator, thermostatic actuating mechanism for said valve including a chamber or passage, a conduit leading from said chamber to said return conduit, a conduit leading to said chamber from a source of supply of a fluid agent for acting thermally on said thermostatic actuating mechanism, and a thermostatic pilot valve responsive to the temperature of the apartment to be heated for controlling the flow through said chamber.

9. In combination, a radiator, a source of heating fluid, a conduit leading from the source to the radiator, a low pressure return conduit leading away from the radiator, a valve controlling the flow of the heating fluid through said radiator, thermostatic actuating mechanism for said valve, including a chamber or passage, a conduit leading to said chamber from a source of air varying in temperature with the external atmosphere for acting thermally on said thermostatic actuating mechanism, and a conduit leading from said chamber to said return conduit.

10. In combination, a radiator for heating an apartment, a source of heating fluid, a conduit leading from the source to the radiator, a low pressure return conduit leading away from the radiator, a valve controlling the flow of the heating fluid through said radiator, thermostatic actuating mechanism for said valve, including a chamber or passage, a conduit leading to said chamber from a source of air varying in temperature with the external atmosphere for acting thermally on said thermostatic actuating mechanism, a conduit leading from said chamber to said return conduit, and means for varying the flow of air through said chamber in response to variations in temperature of the apartment to be heated.

11. In combination, a radiator for heating an apartment, a source of heating fluid, a conduit leading from the source to the radiator, a low pressure return conduit leading away from the radiator, a valve controlling the flow of the heating fluid through said radiator, thermostatic actuating mechanism for said valve, including a chamber or passage, a conduit leading to said chamber from a source of air varying in temperature with the external atmosphere for acting thermally on said thermostatic actuating mechanism, a conduit leading from said chamber to said return conduit and a thermostatic pilot valve responsive to the temperature of the apartment to be heated for varying the flow to said chamber from said source.

12. In combination, a steam heating device and means for supplying steam thereto, a low pressure return pipe, a valve connecting said pipe to said radiator and controlling the escape from the radiator to the pipe of steam and water of condensation, thermostatic actuating mechanism for the valve, a thermostatic pilot valve responsive to the temperature of the apartment heated, and means governed by it for causing air drawn from the external atmosphere in an amount varying in a predetermined manner in accordance with variations in the temperature of the apartment heated to flow through or by said actuating mechanism to act thermally thereon.

13. In combination, a radiator, means for supplying steam thereto, a low pressure return pipe connected to said radiator, a valve in said pipe controlling the passage of steam and water of condensation from the radiator through the return pipe, thermostatic actuating mechanism for the valve including a chamber, a passage leading from said chamber to the return pipe, a conduit for supplying air varying in temperature with the external atmosphere to said chamber to act thermally on said mechanism and thermostatically controlled means for varying the flow of said air through said conduit in response to variations in the temperature of the apartment to be heated.

14. In combination, a radiator, means for supplying steam thereto, a low pressure return pipe, a throttling valve for opening and closing connection between the radiator and the return pipe, thermostatic actuating mechanism for the valve, including a chamber in communication with the return pipe, a conduit leading to said chamber from the external atmosphere, a valve controlling the flow of air through said conduit to said chamber to act thermally on said mechanism, and means actuating said valve to vary the flow of air from the external atmosphere through the conduit as the temperature of the apartment to be heated falls and rises.

851,364. CENTRIFUGAL PUMP. ELOF MEDEN, Trenton, N. J., assignor to The Jeanesville Iron Works Company, Hazleton, Pa., a Corporation of Pennsylvania. Filed Apr. 5, 1905. Serial No. 253,979.

Claim.—1. In a multistage centrifugal pump, the combination of a casing, a shaft, a series of impellers on the shaft and a chamber at the delivery end of the casing, open to a part of the rear face of the last impeller with a sleeve secured on the shaft extending to the outside of the casing and on the inside providing a plug to open or close said chamber by longitudinal movement of the shaft.

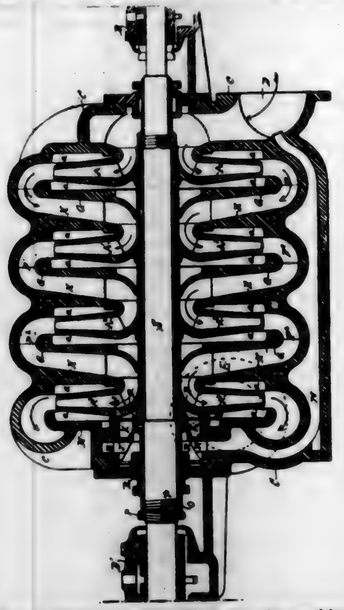

2. In a multistage centrifugal pump, the combination of a casing, a shaft, a series of impellers on the shaft and a chamber at the delivery end of the casing open to a part of the rear face of the last impeller with a sleeve secured to and adjustable on the shaft and extending to the outside of the casing and on the inside providing a plug to open or close said chamber by longitudinal movement of the shaft.

851,365. VALVE. MOSES M. MOORE, Chicago, Ill., assignor to T. W. Snow, Chicago, Ill. Filed July 27, 1904. Serial No. 218,345.

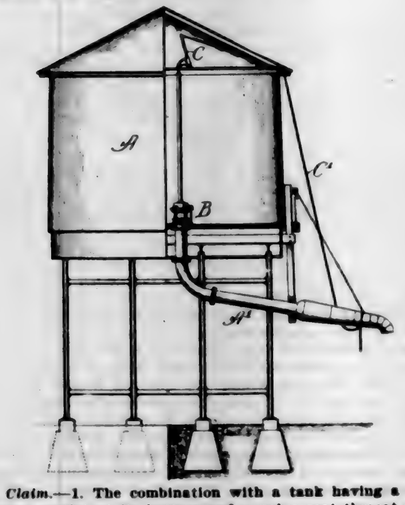

Claim.—1. The combination with a tank having a discharge outlet at its bottom and a valve seat thereat provided with an upwardly presented seating surface and provided also with arms equipped with a central guide, of a laterally adjustable chamber supported at a distance above said valve-seat and having a closed top and an open bottom, an annular valve telescopically connected with said chamber and having a stem moving in said guide and having also an external flange subjected to unbalanced water pressure, a discharge pipe beneath the valve-seat, a pipe joined to the top of said chamber and extending to the upper portion of the tank, and an actuating rod extending through said second-named pipe and having articulated connection with the valve, for the purpose set forth.

2. The combination with a tank having a discharge outlet at its bottom and a valve-seat on the upper surface of said bottom, of a laterally adjustable chamber supported at a distance above said valve-seat, and a valve telescopically connected with said chamber, for the purpose set forth.

851,366. REEL. FRANK MOSSBERG, Attleboro, Mass. Filed Nov. 1, 1906. Serial No. 341,578.

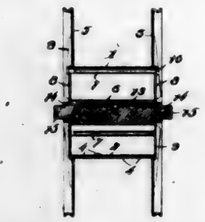

Claim.—1. A reel of the class described, the same comprising a hollow, cylindrical hub, circular sheet-metal heads, each provided with a concentric offset of such a diameter as to engage and support the ends of said hub, a shaft passing axially through said hub and heads and carrying means bearing against the inside of the said offsets of said heads, and means to secure said parts together.

2. A reel of the class described, the same consisting of a hollow cylindrical hub, sheet-metal heads having central circular recesses pressed therein to receive the ends of said hub, a shaft passing axially through said heads and having means bearing against the inside faces of said heads, and bolts passed through said heads and within said hub to secure the same together and to said shaft.

3. A reel of the class described, the same consisting of a hollow cylindrical sheet-metal hub, sheet-metal heads having central circular recesses pressed therein to fit over the ends of said hub and having radial ribs pressed therein, a shaft of uniform diameter passing axially through said heads and provided with projections punched up therefrom to engage and support said heads internally and bolts passed through said heads within said hub to secure the same together and to said shaft.

4. A reel of the class described, the same consisting of a hollow cylindrical sheet-metal hub, sheet-metal heads having central circular recesses pressed therein to fit over the ends of said hub, said recesses having central outwardly flanged apertures, a shaft of uniform diameter passing through said apertures, projections punched up from the surface of said shaft to form a bearing for the inside surfaces of said heads, and bolts passing through said heads within said hub to secure said parts together.

5. A reel of the class described, the same consisting of a cylindrical hub, pressed-steel heads shaped to engage the ends of said hub and having their peripheries bent to form a belt-race and means to secure said heads and hub together.

6. A reel of the class described, the same consisting of a cylindrical hub, pressed-steel heads shaped to engage the ends of said hub, said heads having their peripheries flanged over and means whereby the reel may be rotatably mounted.

851,367. REEL. FRANK MOSSBERG, Attleboro, Mass. Filed Nov. 1, 1906. Serial No. 341,579.

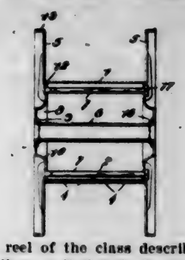

Claim.—1. A reel of the class described, the same consisting of a hollow, cylindrical sheet-metal hub, pressed steel heads each having a series of circularly arranged integral shoulders or projections fitting within the ends of said hub to support the same concentrically, said heads also having central circular apertures, a tubular journal passed through said apertures and secured to the edges thereof at its ends and a circular series of bolts joining said heads together within said hub.

2. A reel of the class described, the same consisting of a hollow, cylindrical sheet-metal hub, heads for said reel, each comprising a metal disk pressed in dies to form therein a central circular boss provided with a central aperture, the edges of which are offset, and a circular shoulder on the opposite side from said boss and of larger diameter than the latter, the ends of said hub fitting onto said circular shoulders, and a journal or sleeve having its ends flanged over said offset edges of the aperture in said heads.

3. A reel of the class described, the same consisting of a hollow, cylindrical sheet-metal hub, pressed steel heads secured to the ends of said hub and each having an integral internal shoulder or projections fitting within said hub, a central journal or sleeve passing through said heads and provided with shoulders to bear against the inside faces of said heads, the ends of said sleeve being flanged or riveted over externally of said heads to secure the same thereto.

851,368. REEL. FRANK MOSSBERG, Attleboro, Mass. Filed Nov. 1, 1906. Serial No. 341,580.

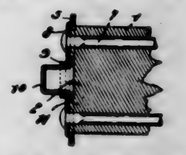

Claim.—1. A reel of the class described, the same consisting of a solid cylindrical wooden hub, pressed steel heads having central circular recesses fitting over the ends of said hub, trunnions secured to said heads between the same and the ends of said hub and bolts passed through said heads and hub to secure the structure together.

2. A reel of the class described, consisting of a solid cylindrical wooden hub, pressed steel heads having circular recesses fitting over the ends of said hub and each having a central flanged aperture, a closed end tubular trunnion passed through each of said flanged apertures and having a flange on its inner end fitting in a recess formed in each end of the hub and bolts passed through said heads and hubs to secure said parts together.

3. A reel of the class described, the same consisting of a cylindrical hub, pressed-steel heads having circular recesses fitting over the ends of said hub, each of said recesses having a central aperture, trunnions fitting in said apertures and having enlarged heads lying between the ends of the hub and the adjacent faces of the heads, and bolts passing through said hub and heads to secure the parts together.

4. A reel of the class described, comprising a cylindrical hub, sheet-metal heads of larger diameter than said hub, each having a circular depression pressed therein to fit over the end of the hub, the center of said depression being pressed outwardly to form a trunnion, and bolts passing longitudinally through said hub and heads to secure them together.

851,369. SNAP-HOOK. TIDEMAND NELSON, Starbuck, Minn. Filed June 13, 1906. Serial No. 321,472.

Claim.—The combination with a yoke 4 and a bolt 3 connecting the lugs thereof, of a pair of spring arms 1 provided at one end with overlapping hooked portions 5 and provided at their other ends with hubs 2 applied on said bolt 3, the said arms being rigidly connected at or in the vicinity of the said hubs, substantially as described.

851,370. VALVE. JOHNSTON NOLAN, Philadelphia, Pa. Filed Jan. 10, 1906. Serial No. 295,352.

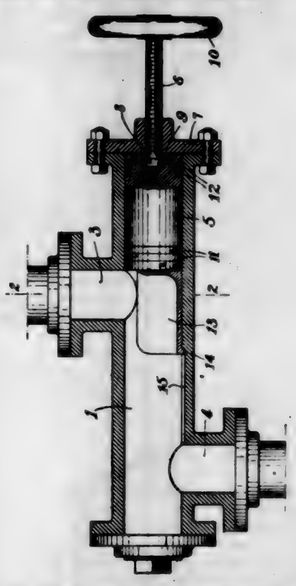

Claim.—1. In a valve, the combination of the cylindrical casing having an inlet opening in one side thereof and an outlet opening, the interior of the casing forming a valve seat, a piston within the casing and movable to open or close the inlet opening, packing rings surrounding the piston and engaging said seat, a guard slidingly fitted to the valve seat and carried by the piston, said guard occupying a position adjacent to the inlet opening when the valve is open, and means for moving the piston.

2. In a valve, the combination of the cylindrical casing having an inlet opening in one side thereof and an outlet opening, the interior of the casing forming a valve seat, a piston within the casing and movable to open or close the inlet opening, packing rings surrounding the piston and engaging said seat, a guard slidingly fitted to the valve seat and carried by the piston, said guard occupying a position adjacent to the inlet opening when the valve is open, a screw to move the piston, and means to prevent the rotation of the piston.

851,371. EQUALIZING DEVICE FOR CAR-TRUCKS. ALLEN E. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Feb. 13, 1907. Serial No. 357,162.

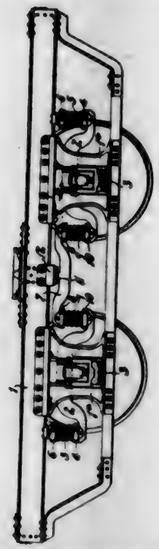

Claim.—1. A car truck comprising side frames having pedestals for receiving journal boxes, equalizer bars, adapted to rest on said journal boxes, coiled springs interposed between the outer ends of said bars and the side frames of the truck, a lever arranged at each side of the truck and adapted to oscillate in a vertical plane, and coiled springs interposed between the opposite ends of said lever and the inner ends of said equalizer bars; substantially as described.

2. A car truck comprising side frames having pedestals for receiving journal boxes, equalizer bars adapted to rest on said journal boxes, coiled springs interposed between the outer ends of said bars and the side frames of the truck, a lever arranged at each side of the truck and provided on its upper side with a lug, a bearing secured to the side frame and engaging said lug, and yielding members interposed between the opposite ends of said lever and the inner ends of the equalizer bars; substantially as described.

3. A car truck comprising a frame provided with pedestals for receiving journal boxes, equalizer bars fulcrumed on said journal boxes and having their ends extending downwardly, yielding devices interposed between the outer ends of said bars and the truck frame, levers arranged at each side of the truck frame and fulcrumed midway their ends, and springs interposed between the opposite ends of said levers and the inner ends of the equalizer bars adjacent thereto; substantially as described.

851,372. DUMP-CAR. SPENCER OTIS, Chicago, Ill. Filed Aug. 13, 1904. Serial No. 220,673.

Claim.—1. In a dump car of the class described, the combination of a car frame, a crank-wheel mounted in the framework of the car, a dumping door movable to closed position above the level of the top of the crank wheel, and means for connecting such crank-wheel with the dumping door, substantially as described.

2. In a dumping car, the combination of a frame having transverse beams and means for supporting the beams, of swinging dumping doors, crank mechanism mounted on the transverse beams below the level of the doors when the doors are in closed position, the crank mechanism having a fixed pivotal connection with the dumping doors, and means of operating the crank mechanism.

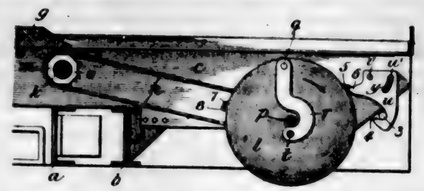

3. In a dump car of the class described, the combination of a car frame provided with longitudinal sills and transverse beams, crank mechanism mounted adjacent to such transverse beams, swinging dumping doors, means for connecting such crank mechanism with the dumping doors, a main operating shaft, and means for connecting such main operating shaft with the crank mechanism, substantially as described.

4. In a dump car of the class described, the combination of a car frame provided with longitudinal sills, hollow transverse beams mounted upon such sills, crank-wheels mounted in such hollow transverse beams, swinging dumping doors, means for connecting such crank-wheels with the dumping doors, a main operating shaft, means for connecting such main operating shaft with the crank-wheels, and means for operating the main shaft, substantially as described.

5. In a car of the class described, the combination of a supporting framework, dumping doors, mechanism mounted between the ends of the dumping doors entirely below the level of the upper surface of the doors when they are in closed position and provided with connecting door-supporting mechanism in engagement with such doors intermediate the outer lateral edges and longitudinal centers thereof, and means for operating such mechanism and thereby the dumping doors, substantially as described.

6. In a car of the class described, the combination of longitudinal sills, a plurality of transverse beams mounted upon and extending over the longitudinal sills from one side to the other of the car each having side portions provided with a space therebetween and an upper portion connecting such side portions, all forming a framework, and dumping doors movably mounted in the framework formed by such longitudinal sills and transverse beams, substantially as described.

7. In a car of the class described, the combination of longitudinal sill mechanism, transverse beams mounted upon and extending over such longitudinal sill mechanism from one side to the other of the car, dumping doors, and mechanism mounted upon such transverse beams and connected with the dumping doors for operating such doors, substantially as described.

8. In a car of the class described, the combination of a supporting framework provided with transverse beams having side portions provided with a space therebetween, means for supporting such transverse beams, dumping doors, and mechanism mounted in the space between the side portions of such transverse beams below the closed position of and connected with the dumping doors for operating them, substantially as described.

9. In a car of the class described, the combination of longitudinal sill mechanism, transverse beams, each having side portions provided with a space therebetween and an upper portion connecting such side portions, dumping doors, and mechanism mounted in the space between the side portions of such transverse beams below the closed position of and connected with the dumping doors for operating them, substantially as described.

10. In a car of the class described, the combination of longitudinal sill mechanism, a plurality of transverse beams mounted upon and extending over such longitudinal sill mechanism from one side to the other of the car each consisting of a pair of side members provided with a space therebetween, and an upper member connected to and connecting such side members, substantially as described.

11. In a dump car of the class described, the combination of a car frame provided with longitudinal sills, hollow transverse beams mounted upon such sills, crank-wheels mounted in such hollow transverse beams, swinging dumping doors, links pivotally mounted upon such crank-wheels and connected with such dumping doors, main operating shaft mechanism, means for connecting such main operating shaft mechanism with the crank-wheels, and means for operating such main operating shaft mechanism, substantially as described.

12. In a dump car of the class described, the combination of a car frame, a dumping door, a keeper mounted upon the framework of the car movable into and out of operative engagement with the dumping door for supporting and releasing such door, mechanism connected with the door for operating it, and means connected with and operated by the door-operating mechanism for operating the keeper, substantially as described.

13. In a dump car of the class described, the combination of a car frame, a dumping door provided with a supporting arm, a keeper mounted upon the framework of the car movable into and out of engagement with such supporting arm for supporting and releasing the door, means for operating such dumping door, and means connected with and operated by the door-operating mechanism for operating the keeper, substantially as described.

14. In a dump car of the class described, the combination of a car frame, a plurality of dumping doors, keeper mechanism mounted upon the framework of the car movable automatically into operative engagement with such dumping doors for supporting them, mechanism connected with the dumping doors for operating them, and means connected with and operated by the door-operating mechanism for releasing such keeper mechanism, substantially as described.

15. In a dump car of the class described, the combination of a car frame, a dumping door provided with a supporting arm, a keeper pivotally mounted in the framework of the car adapted to engage such supporting arm, a crank-wheel mounted in the framework of the car, means for connecting such crank-wheel with the dumping door, means for operating such keeper to release the dumping door, and means for operating the crank-wheel, substantially as described.

16. In a dump car of the class described, the combination of a car frame, a dumping door provided with a supporting arm, a keeper pivotally mounted in the framework of the car adapted to engage such supporting arm, a crank-wheel mounted in the framework of the car provided with means for operating such keeper to release the dumping door, means for connecting such crank-wheel with the dumping door, and means for operating such crank-wheel and thereby the keeper and dumping door, substantially as described.

17. In a dump car of the class described, the combination of a car frame provided with hollow transverse beams, a crank-wheel mounted upon each of a plurality of such transverse beams entirely below the level of the upper surface of the dumping doors when in their closed position, dumping doors mounted intermediate the transverse beams, means for connecting such dumping doors with the crank wheels, a main operating shaft, sprocket wheels mounted on such main shaft inside the hollow transverse beams, and chain and sprocket mechanism for connecting such main operating shaft with the crank-wheels, substantially as described.

18. In a car of the class described, the combination of a dumping door, a shaft upon which such dumping door is pivotally mounted, and mechanism operated by such shaft and connected with the dumping door for operating such door, substantially as deescribed.

19. In a car of the class described, the combination of dumping doors, a shaft upon which such doors are pivotally mounted, mechanism connected with such shaft and dumping doors for operating the doors, and means for operating such shaft and thereby the dumping doors, substantially as described.

20. In a dump car of the class described, the combination of a car frame provided with transverse beams, crank mechanism mounted upon each of a plurality of such transverse beams, sprocket-wheel mechanism connected with such crank mechanism, a main operating shaft provided with sprocket-wheels mounted thereon, chains mounted upon and connecting such sprocket-wheels and thereby the main operating shaft with the crank mechanism, dumping doors pivotally mounted upon the main shaft, and means for connecting such dumping doors with the crank mechanism, substantially as described.

21. In a dump car of the class described, the combination of a car frame, crank mechanism mounted upon such frame, a main operating shaft, chain and sprocket mechanism connecting such main operating shaft with the crank mechanism, dumping doors pivotally mounted and provided with depending brackets, and a link pivotally connected with each of such depending brackets and with such crank mechanism, substantially as described.

22. In a dump car of the class described, the combination of a car frame, crank-wheels rotatably mounted in such frame, a main operating shaft provided with sprocket wheels mounted thereon, chain mechanism mounted upon and connecting such sprocket-wheels and thereby the main operating shaft with the crank-wheels, dumping doors pivotally mounted upon the main shaft and provided with depending brackets, links pivotally mounted upon such crank-wheels and pivotally connected to such depending brackets, depending supporting studs upon such doors, and a keeper mounted in the framework of the car movable into and out of engagement with such depending supporting studs, substantially as described.

23. In a dump car of the class described, the combination of a car frame provided with transverse beams, a crank-wheel mounted upon each of a plurality of such transverse beams, a main operating shaft, means for connecting such main operating shaft with the crank-wheels, a plurality of dumping doors each provided with a depending supporting bracket, and links pivotally mounted upon such crank-wheels and pivotally connected with each of such depending supporting brackets, substantially as described.

24. In a dump car of the class described, the combination of a car frame, a grooved crank-wheel mounted thereon and provided with sprocket teeth inside the grooved portion thereof, a dumping door, and means for connecting such grooved crank-wheel with the dumping door, substantially as described.

25. In a dump car of the class described, the combination of a car frame, swinging dumping doors, mechanism mounted in the car frame intermediate the ends of the dumping doors entirely below the upper level of the upper surface of the doors when they are in closed position and connected with the doors between their outer lateral edges and longitudinal centers for operating the doors, and means for operating such mechanism and thereby the doors, substantially as described.

26. A car having a series of doors in its floor arranged to swing in parallel planes, a series of separate stub-shafts having connections arranged to actuate each door, an operating shaft, and independent connections from each stub-shaft to the operating shaft, substantially as described.

851,373. BRACELET. ALDRIDGE G. PEARCE, Providence, R. I. Filed Feb. 26, 1907. Serial No. 359,433.

Claim.—1. A bracelet constructed of tubing and having a joint formed of two separate hinge members, said members being inserted into the adjacent ends of said tubing one of said members being provided with a forked end, the opposite hinge member being provided with an upper bearing plate, a guide web supported from the under side of said plate, a guide flange on the lower edge of said web, said web being adapted to enter the space between the fork fingers the upper bearing plate sliding on the surface of said fingers and the guide flange engaging the under side thereof, and means for limiting the motion of the members.

2. A bracelet constructed of tubing and having a joint formed of two separate hinge members, said members being inserted into the adjacent ends of said tubing one of said members being provided with a forked end, the upper face of the fork fingers being formed longitudinally on the arc of a circle, the opposite hinge member being provided with an overhanging bearing plate adapted to slide on the upper circular face of said fork fingers, a web supported from said plate and adapted to enter the space between said fingers, means for holding the working faces of both members together, and means for limiting the opening stroke of said members.

3. A bracelet constructed of tubing and having a joint formed of two separate hinge members, said members being inserted into the adjacent ends of said tubing one of said members being provided with a forked end, the upper surface of which is formed longitudinally on the arc of a circle, the opposite hinge member being provided with an upper bearing plate made on the arc of a circle on its bearing surfaces, a guide web supported from said plate, a guide flange on the lower edge of said web, said web being adapted to enter the space between the fork fingers, the upper bearing plate sliding on the circular surface of said fingers and the guide flange engaging the under side thereof, and means for limiting the motion of the members.

4. In a bracelet, a joint formed of two separate members hinged together, one of said members being provided with a forked end, the upper face of the fork fingers being formed longitudinally on the arc of a circle, the opposite hinge member being provided with an overhanging bearing plate adapted to slide on the upper circular face of said fork fingers, a web supported from said plate and adapted to enter the space between said fingers, means for holding the working faces of both members together, and means for limiting the opening stroke of said members.

5. A bracelet constructed of tubing and having a joint formed of two separate hinge members, said members being inserted into the adjacent ends of said tubing, one of said members being provided with a forked end, the upper face of the fork fingers being formed longitudinally on the arc of a circle and the lower edge of the inner faces of said fingers being provided with recesses also cut on the arc of a circle, the opposite hinge member being provided with an overhanging bearing plate adapted to slide on the upper faces of said fork fingers, and a guide web supported from said plate adapted to enter the space between said fingers, projecting guide flanges on said web adapted to engage and follow said recessed portions to guide the movement of the members, and a stop pin in one member to engage a portion of the opposite member and limit the opening motion of the bracelet.

851,374. ADJUSTABLE CHART. ERICK H. PETERSON, Philadelphia, Pa. Filed Oct. 8, 1906. Serial No. 338,017.

Claim.—1. A garment pattern consisting of a piece of sheet material conforming in general outline to a definite pattern, with a sectional edge strip or strips mounted on said piece and adjustable thereon to vary the overall proportions thereof, said strip or strips being composed of a series of sections pivotally connected, there being a series of continuous lines of predetermined form and distance from each other extending along and substantially parallel with the edge of the said piece, the inner edge of said adjustable strip or strips being formed to be brought into substantial coincidence with any of said lines, substantially as described.

2. A pattern having a body consisting of a piece of sheet material provided with a series of continuous lines along and substantially parallel with certain of its edges and conforming in general outline to the outline of the pattern, said lines being of a predetermined distance apart, adjustable strips for said edges consisting of sections flexibly pivoted together, said strips being provided with inwardly extending slotted lugs, holding means passing through the slots of said lugs and fixed to the body for holding the strips thereto, while permitting of their adjustment, the outside edge of each strip being cut to conform to the desired line of a certain portion of the garment, and the inside edges of said strips being cut so as to be capable of being brought into coincidence with any of said lines, substantially as described.

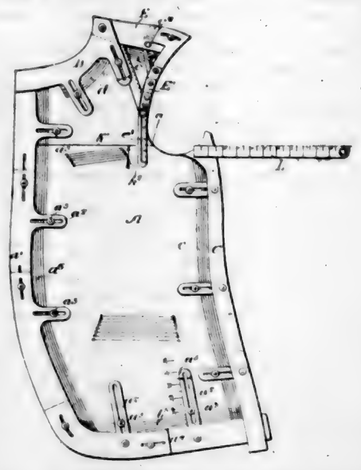

3. A pattern consisting of a body of sheet material having lines extending continuously along and substantially parallel with certain of its edges, said lines being spaced at predetermined distances apart and graduated to correspond with possible variations in one measurement of a person for whom the garment is intended, sectional edge strips for said piece of sheet material adjustable in a plane parallel thereto and toward and from the same, certain sections of said strip being pivoted together so as to be independently movable to permit of the inside edge of the different parts of the strip being brought into coincidence with said lines on the body, substantially as described.

4. A pattern consisting of a body of substantially flat sheet material, edge strips consisting of pivotally connected sections provided with slotted lugs extending inwardly toward the body and having holding means passing through them whereby the strips are held in position, continuous guide lines around and substantially parallel to the edges of the body portion placed so that the inner edges of the respective edge strips may be brought into coincidence with them, there being a scale or scales adjacent to certain of the lugs, and an index mark placed on said lug or lugs to co-operate with said scale or scales, substantially as described.

5. The combination of two patterns, each consisting of a body of sheet material and each provided with adjustable edge strips movable to alter the overall proportions of the pattern, there being guide lines on the bodies adjacent to the edges thereof, and so placed as to permit of the inner edges of the strips being brought into coincidence with them, a line on each of the body portions, and a strip pivoted to one of said bodies adjacent to the said line thereon, said strip having scale divisions and being placed to co-operate with an index mark on the line formed on the other body, substantially as described.

6. The combination in a pattern of a body of sheet material having a series of continuous guide lines extending adjacent to and parallel with the different portions of its edges, edge strips fixed to said body adjacent to said edges, one of the strips being movable toward and from the body in substantially straight lines and another of the strips

being pivoted to said first strip, the inner edges of all of the strips being formed to be capable of being brought into coincidence with the guide lines, substantially as described.

7. The combination in a pattern of a body of sheet material, adjustable edge strips therefor, slotted lugs pivoted to said strips and extending over the body, and holding devices mounted on the body and respectively extending through the slots of the lugs, certain of the edge strips being made in a plurality of sections pivotally connected together, with a series of continuous guide lines placed on the body to co-operate with the inner edges of the edge strips, the lines of the series being of different forms though approximately parallel, substantially as described.

8. The combination in a pattern of a body of sheet material, and adjustable edge strips mounted on the body, certain of said strips being made in a plurality of sections adjustably connected together so as to be longitudinally movable relatively to each other, with a series of guide lines extending continuously adjacent to and substantially parallel with the edges of the body so as to co-operate with the inner edges of the adjustable strips, said lines being of different configurations and certain strips being jointed so as to be capable of adjustment to said configurations, substantially as described.

9. A garment pattern consisting of a body of sheet material conforming in general outline to a definite pattern, an edge strip consisting of a number of pivotally connected sections and having a projecting lug or lugs pivotally connected to it, and holding means on the pattern body engaging said lugs, there being a series of substantially parallel and continuous guide lines upon said pattern body placed so that the inner edges of the edge strips may be brought into coincidence with them, substantially as described.

851,375. SUPPORT FOR ELECTRIC CABLES. GEORGE G. RAYMOND, New Rochelle, N. Y. Filed Dec. 22, 1904. Serial No. 237,929.

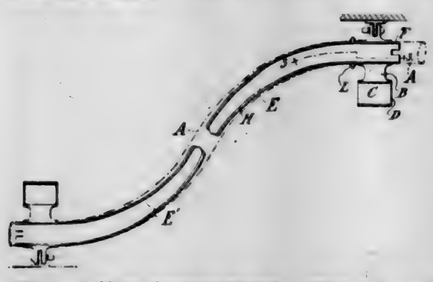

Claim.—1. Means for supporting the weight of a curved portion of a cable in a manhole, tunnel, etc., comprising an open-topped arm attached to the permanent structure and having a face bent longitudinally of the cable and adapted to engage under said curved portion of the cable intermediate of its ends.

2. Means for supporting the weight of a curved portion of a cable in a manhole, tunnel, etc., comprising an open-topped arm attached to the permanent structure and having a face bent in a convex curve longitudinally of the cable and adapted to engage under said curved portion of the cable intermediate of its ends.

3. Means for supporting the weight of a curved portion of a cable in a manhole, tunnel, etc., comprising open-topped arms attached to the permanent structure, the respective arms having supporting faces which are bent in respectively a convex and a concave curve longitudinally of the cable and adapted to engage under said curved portion of the cable intermediate of its ends.

4. Means for supporting the weight of a curved portion of a cable in a manhole, tunnel, etc., comprising an open-topped arm attached at one end to the permanent structure and bent in a vertical direction at its opposite ends and adapted to engage under said curved portion of the cable intermediate of its ends.

5. The combination with a transverse arm for supporting a straight portion of a cable, of means attached directly thereto for supporting the weight of a curved portion of the cable, and comprising an open-topped device adapted to engage under said curved portion of the cable intermediate of its ends.

6. A cable support comprising, in combination, a transverse arm B having a groove C and a flange D, and a longitudinal arm adapted to rest in said groove and to be attached to said flange.

7. A cable support comprising in combination a T-shaped upright having holes R in its web N spaced according to the vertical separation of the cables, and transverse supporting arms B formed with a deep vertical web W with grooves or sockets C at its upper edge, and with flanges D surrounding said grooves, and flanges Y between said grooves, said transverse arms B having forked inner ends arranged to straddle the web of the upright, having each a shoulder engaging the upright and holding the arm horizontal, and having each a bolt hole permitting its attachment to and detachment from said web without movement of the arm, and by means of a separate bolt S.

8. A cable support comprising in combination a T-shaped upright having holes R in its web N spaced according to the vertical separation of the cables, and transverse supporting arms B having forked inner ends arranged to straddle the web of the upright, having each a shoulder engaging the upright and holding the arm horizontal, and having each a bolt hole permitting its attachment to and detachment from said web without movement of the arm, and a longitudinal arm attachable to any one of said transverse arms and extending at an angle thereto.

9. A cable support comprising in combination a T-shaped upright having holes R in its web N spaced according to the vertical separation of the cables, and transverse supporting arms B formed with a deep vertical web W with grooves or sockets C at its upper edge, and with flanges D surrounding said grooves, and flanges Y between said grooves, said transverse arms B having forked inner ends arranged to straddle the web of the upright, having each a shoulder engaging the upright and holding the arm horizontal, and having each a bolt hole permitting its attachment to and detachment from said web without movement of the arm, and a longitudinal arm having one end shaped to rest in one of said sockets and to be attached to a flange of such socket.

10. A cable support comprising in combination a transverse arm having a socket C surrounded by a flange D, and a longitudinal arm having at one end a flange F arranged to hook over said flange D to hold the longitudinal arm in place.

851,376. APPARATUS FOR DESTROYING PLANT LIFE. EDWARD RENAULT, Waldo, Fla. Filed Dec. 15, 1906. Serial No. 347,954.

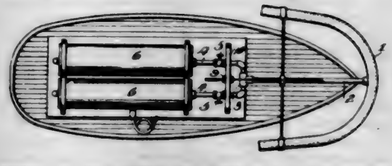

Claim.—1. In combination with a portable member, a reservoir carried thereby, a sprinkler, a discharging means for the reservoir, a pipe pivotally held by the discharge means at one end, the opposite end of the pipe comunicating with the sprinkler, braces between the sprinkler and pipe, said pipe and braces supporting the sprinkler and means for moving the pipe on its pivot.

2. In combination with a portable member, a reservoir carried thereby, a sprinkler, a discharging means for the reservoir, a pipe pivotedly held by the discharge means at one end, the opposite end of the pipe communicating with the sprinkler, braces between the sprinkler and pipe, said pipe and braces supporting the sprinkler, a frame and a flexible connection secured to the pipe and engaging the frame for moving said pipe on its pivot.

851,377. ROLLING-PRESS. FRANCIS H. RICHARDS, Hartford, Conn. Filed Jan. 5, 1906. Serial No. 294,687.

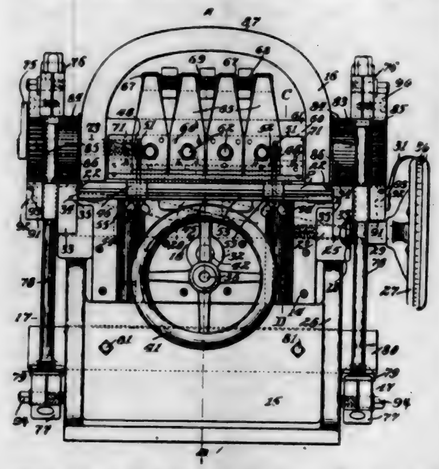

Claim.—1. In a rolling press, the combination of a table arranged to support a blank, a member arranged to carry a die, and a member supported to oscillate and having a rolling engagement with the die member and arranged to cause the die to have a rolling movement over the blank when the die member is swung relative to the table.

2. In a rolling press, the combination of a table arranged to support a blank, a member arranged to carry a die and having a curved bearing surface, and a member provided with a curved bearing surface having a rolling engagement with the curved surface of the die member to thereby cause the die to have a rolling movement over the blank when the die member is swung relative to the table, and to press the die against the blank during such movement.

3. In a rolling press, the combination of a table arranged to support a blank, a member arranged to carry a die, an operating member arranged to cause the die to have a rolling movement over the blank when the die member is swung relative to the table, a rack carried by the operating member, and a toothed element fast on the die member and engaging the rack to prevent slip between the die member and operating member during the rolling movement.

4. In a rolling press, the combination of a table arranged to support a blank, a member arranged to carry a die, an operating member arranged to cause the die to have a rolling movement over the blank when the die member is swung relative to the table, said operating member being also arranged to press the die against the blank during such movement, a rack carried by the operating member and a toothed element fast on the die member and engaging the rack to prevent slip between the die member and operating member during the rolling movement.

5. In a rolling press, the combination of a table arranged to support a blank, a member arranged to carry a die, and a member supported to oscillate and having a rolling engagement with the die member and arranged to cause the die to have a rolling movement over the blank when the die member is swung relative to the table, said member being also arranged to press the die against the blank during such movement.

6. In a rolling press, the combination of a table arranged to support a blank, a member arranged to carry a die, a member supported to oscillate and having a rolling engagement with the die member and arranged to cause the die to have a rolling movement over the blank when the die member is swung relative to the table, said member being also arranged to press the die against the blank during such movement, and means for preventing slip between the table and die member during said movement.

7. In a rolling press, the combination of a table arranged to support a blank, a member arranged to carry a die, a member having a rolling engagement with the die member and arranged to cause the die to have a rolling movement over the blank when the die member is swung relative to the table, the rolling member being also arranged to press the die against the blank during such movement, a rack on the pressing member, a toothed element on the working member engaging the rack to prevent slip between the pressing means and the die member.

8. In a rolling press, the combination of a table arranged to support a blank, a member arranged to carry a die, a member having a rolling engagement with the die member and arranged to cause the die to have a rolling movement over the blank when the die member is swung relative to the table, said rolling member being also arranged to press the die against the blank during such movement, means for preventing slip between the pressing means and the die member, and means for preventing slip between the die member and the blank.

9. In a rolling press, the combination of a table arranged to support a blank, a member arranged to carry a die, a member having a rolling engagement with the die member and arranged to cause the die to have a rolling movement over the blank when the die member is swung relative to the table, the rolling member being also arranged to press the die against the blank during such movement, a rack on the pressing member, a gear on the die member engaging the rack to prevent slip between the pressing means and the die member, and a rack on the table engaging said gear to prevent slip between the die and the blank.

10. In a rolling press, the combination of a table arranged to support a blank and provided with a plane bearing surface, a member arranged to carry a die and provided with curved bearing surfaces on opposite sides, one being arranged to engage said plane surface of the table to cause the die to have a rolling engagement with the blank when the die member is swung relative to the table, and a member provided with a curved bearing surface arranged to engage the other curved surface of the die member to have a rolling engagement therewith and thereby roll the die member over the blank, and also to press the die against the blank during said movement.

11. In a rolling press, the combination of a table arranged to support a blank and provided with a plane bearing surface, a member arranged to carry a die and provided with a cylindrical bearing surface arranged to engage said plane surface of the table to cause the die to have a rolling engagement with the blank when the die member is swung relative to the table, and a member provided with a curved bearing surface arranged to have a rolling engagement with the cylindrical surface of the die member at a portion located diametrically opposite the die to thereby roll the die member over the blank, and also to press the die against the blank during said movement.

12. In a rolling press, the combination of a table arranged to support a blank and provided with a plane bearing surface, a member arranged to carry a die and provided with a cylindrical bearing surface engaging the plane surface of the table to cause the die to roll over the blank, and a member provided with a curved bearing surface in rolling engagement with the cylindrical surface of the die member and contacting therewith at the extremities of consecutive vertical diameters of the cylindrical portion during a part of the rolling movement of the die member.

13. In a rolling press, the combination of a table arranged to support a blank thereon, a member arranged to carry a die, a swinging frame having a rolling engagement with the die member to cause the die to have a rolling

movement over the blank when the frame is swung, said frame being also arranged to press the die against the blank during such movement.

14. In a rolling press, the combination of a table arranged to support a blank thereon, a member arranged to carry a die, a frame pivoted below the table and having a rolling engagement with the die member above the table to cause the ide to have a rolling movement over the blank when the frame is rocked, the frame being also arranged to press the die against the blank during such movement.

15. In a rolling press, the combination of a table arranged to support a blank, a member arranged to carry a die and having a curved bearing surface, a frame pivoted below the table and provided with a curved bearing surface above the table having a rolling engagement with the curved surface of the die member to thereby cause the die to have a rolling movement over the blank when the frame is rocked, and also to press the die against the blank during such movement.

16. In a rolling press the combination of a table arranged to support a blank thereon, a member arranged to carry a die, a frame pivoted below the table and having a face arranged to engage a face of the working member on the opposite side from the die face to cause the die to have a rolling movement over the blank when the frame is swung, and also arranged to press the die in the die member against the blank, a rack carried by the frame, and a gear portion on the die member engaging said rack to prevent slip between the frame and die member.

17. In a rolling press the combination of a table arranged to support a blank thereon, a member arranged to carry a die, a frame pivoted above the table and having a face arranged to engage a face of the working member on the opposite side from the die face, to cause the die to have a rolling movement over the blank when the frame is swung, and also arranged to press the die in the die member against the blank, a rack carried by the frame, a gear carried by the die member in engagement with said rack, and a rack carried by the table engaging said gear.

18. In a rolling press, the combination of a table arranged to support a blank and provided with a plane bearing surface, a member arranged to carry a die and provided with a cylindrical bearing surface engaging the plane surface of the table to cause the die to roll over the blank, and a frame pivoted below the table and provided with a curved bearing surface in engagement with the cylindrical surface of the die member and contacting therewith at the extremities of vertical diameters of the cylindrical portion during a portion of the rolling movement of the die member.

19. In a rolling press, the combination of a table arranged to support a blank, and provided with a plane bearing surface, a member arranged to carry a die and provided with curved bearing surfaces, one engaging the plane surface of the table to cause the die to roll over the blank, and a frame pivoted below the table and provided with a curved bearing surface in engagement with the other curved surface of the die member to cause the die to have a rolling movement over the blank when the frame is swung, the frame being arranged to press the die against the blank during such movement.

20. In a rolling press, the combination of a table arranged to support a blank and provided with a plane bearing surface, a member arranged to carry a die and provided with a cylindrical bearing surface engaging the plane surface of the table to cause the die to roll over the blank, and a frame pivoted below the table and provided with a curved bearing surface in engagement with the cylindrical surface of the die member to cause the die to have a rolling movement over the blank when the frame is rocked, the frame being arranged to press the die against the blank during such movement.

21. In a rolling press, the combination of a table arranged to support a blank, a member arranged to carry one or more dies, and a pair of swinging frames having a rolling engagement with the die member on opposite sides of the die engaging portion to cause the die to have a rolling movement over the blank when the frames are swung, the frames being also arranged to press the die against the blank during such movement.

22. In a rolling press, the combination of a table arranged to support a blank thereon, a member arranged to carry one or more dies, a pair of frames having a rolling engagement with the die member on opposite sides of its die engaging portion and pivoted below the table, to thereby cause the die to have a rolling movement over the blank when the die member is rocked, the frame being also arranged to press the die against the blank during such movement.

23. In a rolling press, the combination of a table arranged to support a blank, a member arranged to carry one or more dies and provided with two curved bearing surfaces, a pair of frames pivoted below the table and each provided with a curved bearing surface having a rolling engagement with the said curved surfaces respectively of the die member to thereby cause the die to have a rolling movement over the blank when the die member is rocked, and also to press the die against the blank during such movement.

24. In a rolling press, the combination of a table arranged to support a blank, a member arranged to carry one or more dies, and a pair of swinging frames having a rolling engagement with the die member on opposite sides of the die engaging portion to cause the die to have a rolling movement over the blank when the frames are swung, the frames being also arranged to press the die against the blank during such movement, and means for preventing slip between the frames and the die member during the rolling movement.

25. In a rolling press, the combination of a table arranged to support a blank, a member arranged to carry one or more dies, and a pair of swinging frames having a rolling engagement with the die member on opposite sides of the die engaging portion to cause the die to have a rolling movement over the blank when the frames are swung, the frames being also arranged to press the die against the blank during such movement, a rack carried by each frame adjacent the portion engaging the die holder, and a gear element on the die holder arranged to engage each said rack and prevent slip between the frames and the die holder during the rolling movement.

26. In a rolling press, the combination of a table arranged to support a blank and provided with two plane bearing surfaces, a member arranged to carry a die and provided with a cylindrical bearing surface at two portions on opposite sides of the die, the latter surfaces engaging the plane surfaces of the table respectively to cause the die to roll over the blank, and a pair of frames pivoted below the table and each provided with a curved bearing surface in engagement with one of the cylindrical surfaces of the die member to thereby cause the die to have a rolling movement over the blank when the die member is rocked, the frames being arranged to press the die against the blank during such movement.

27. In a rolling press, the combination of a table arranged to support a blank and provided with two plane bearing surfaces, a member arranged to carry a die and provided with a cylindrical bearing surface at two portions on opposite sides of the die, the latter surfaces engaging the plane surfaces of the table respectively to cause the die to roll over the blank, a pair of frames pivoted below the table and each provided with a curved bearing surface in engagement with one of the cylindrical surfaces of the die member to thereby cause the die to have a rolling movement over the blank when the die member is rocked, the frames being arranged to press the die against the blank during such movement, a gear wheel secured to each said cylindrical member of the die member, a rack on the table on each side in engagement with the gear wheels respectively, and a rack secured to each frame in engagement with the adjacent gear wheel.

28. The combination with the frame of means for adjustably supporting the engraving plate, comprising a block having a series of inclined faces on its upper edge, the block resting on an upper face of the frame and slidable thereon, a screw rod engaging a threaded bore in the block, means for preventing end wise movement of the rod in the frame whereby its rotation will reciprocate the block, a second block having a pair of similar inclined faces engaging the inclined faces of said block, the second block being prevented from end wise movement whereby the shifting of the said block by the screw rod will elevate and depress the second block, a wheel fast on the screw rod and provided with graduations on its periphery, and a pointer on the frame arranged to register with the graduations to indicate the adjustment of the second block.

29. The combination with the frame of means for adjustably supporting the engraving plate, comprising a block having a series of inclined faces on its upper edge, the block resting on an upper face of the frame and slidable thereon, a screw rod engaging a threaded bore in the block, means for preventing end wise movement of the rod in the frame whereby its rotation will reciprocate the block, a second block having a pair of similar inclined faces engaging the inclined faces of said block, the second block being prevented from end wise movement whereby the shifting of the said block by the screw rod will elevate and depress the second block, and a spring member arranged to press said two blocks together.

30. The combination with a frame and a supporting surface for a plate to be engraved, of a block slidable horizontally in guide ways in the frame, clamping means carried by the block for engaging the plate along one of its edges, means for sliding the block in said guide ways, and means for indicating the amount of such movement.

31. The combination with a frame and a supporting surface for the plate to be engraved, of a block slidable horizontally in guide ways in the frame, a plurality of clamping means carried by the block for engaging the plate along one of its edges, means for securing the clamping means in adjusted positions along the block, and means for adjusting the block in said guide ways.

32. In a rolling press, the combination with a frame, and means for supporting the engraving plate on the frame, of arms having guide ways, a block slidable horizontally in the guide ways, clamping means on said block, a screw rod rotatable in the block, and engaging a threaded bore in the frame to move said block back and forth, a wheel secured on the screw rod and provided with graduations on its periphery, and an indicator on the block arranged to register with such graduations to indicate the movement of the wheel and block.

33. In a rolling press, the combination with a frame, and means for supporting the engraving plate on the frame, of a block slidable horizontally in guide ways in the frame, a plurality of clamping means adjustable on said block, a screw rod rotatable in the block and engaging a threaded bore in the block to reciprocate the block, a guide rod fast on the block and slidable in a bore in the frame, a wheel secured on the screw rod and provided with graduations on its periphery, and an indicator on the block arranged to register with such graduations to indicate the movement of the plate.

34. In a rolling press, the combination with the frame and means for supporting an engraving plate, of a block slidable horizontally in guide ways in the frame, clamping means on said block comprising a fixed upper jaw arranged to engage the top surface of the plate along one edge, a movable jaw member pivoted on the other jaw member to engage the opposite side of the plate, means for holding the jaws in position to grip the plate, and a screw member arranged to reciprocate said block.

35. In a rolling press, the combination with a frame and means for supporting an engraving plate, of a block slidable horizontally in guide ways in the frame, clamping means on said block comprising a fixed upper jaw arranged to engage the top surface of the plate along one edge, and a movable jaw member pivoted on the other member to engage the opposite side of the plate, means for holding the jaws in position to grip the plate, a screw member arranged to move said block back and forth, a wheel secured on the screw rod and provided with graduations on its periphery, and an indicator arranged to register with such graduations to indicate the movement of the wheel and plate.

36. In a rolling press, the combination with a frame arranged to support an engraving plate, of a die holder having a rolling movement over the plate, and means for securing a series of dies in the die holder, comprising a plate movable to and from a recessed portion of the holder, arms fast on said plate, and eccentrics arranged between the said arms and the holder to rock the arms and move the plate to clamp the dies in the holder.

37. In a rolling press, the combination with a frame for supporting a plate, and a die holder movable over the plate, of means for holding a series of dies in the die holder, the holder body having a rabbeted portion, a clamping plate arranged to swing adjacent said rabbeted portion to clamp a series of dies there between, arms secured to the clamping plate, a shaft having eccentrics thereon arranged to swing between the holder body and end portions of said arms, whereby to clamp the dies, and an operating arm of the eccentric shaft.

38. In a rolling press, the combination with a frame arranged to support a plate, of a die holder having a rolling movement over the plate, a clamping plate movable on the die holder, means for swinging the plate to clamp a series of dies in the die holder, an abutment on said plate arranged to engage an end die of the series, an abutment on the die holder arranged to engage the die at the other end of the series, and means for moving the clamping plate endwise to clamp the dies between said two abutments.

851,378. COMPOSITION OF MATTER AND PROCESS OF MAKING SAME. JACOB S. ROBESON, Camden, N. J., assignor to Robeson Process Company, Camden, N. J., a Corporation of New Jersey. Filed Apr. 4, 1906. Serial No. 309,913.

Claim.—1. An adhesive, containing chemically unaltered sulfite liquor, and farinaceous vegetable material.

2. An adhesive, comprising a neutral, undecomposed and concentrated mass of sulfite liquor, and farinaceous vegetable material.

3. An adhesive, containing chemically unaltered sulfite liquor, and a vegetable proteid.

4. An adhesive, comprising a neutral, undecomposed and concentrated mass of sulfite liquor, and a vegetable proteid.

5. An adhesive, containing chemically unaltered sulfite liquor and wheat flour.

6. An adhesive, comprising a neutral, undecomposed and concentrated mass of sulfite liquor, and wheat flour.

7. An adhesive, comprising chemically unaltered sulfite liquor, and a flour rich in protein.

8. An adhesive, comprising a neutral, undecomposed and concentrated mass of sulfite liquor, and a flour rich in protein.

9. An adhesive, comprising seventy-five (75) parts by volume of a neutral, undecomposed and concentrated mass of waste sulfite liquor, and twenty-five (25) parts by volume of a farinaceous vegetable material in a fluent form.

10. An adhesive, comprising seventy-five (75) parts by volume of a neutral, undecomposed and concentrated mass of waste sulfite liquor, and twenty-five (25) parts by volume of wheat flour in a fluent form.

11. The process herein described of making an adhesive, said process consisting in evaporating sulfite liquor, and then adding thereto a quantity of farinaceous vegetable material.

12. The process herein described of making an adhesive, said process consisting in evaporating sulfite liquor, and then adding thereto a quantity of wheat flour in a fluent form.

13. The process herein described of making an adhesive, said process consisting in evaporating sulfite liquor, adding a quantity of farinaceous vegetable material thereto, and then cooking said mixture to a homogeneous condition.

14. The process herein described of making an adhesive, said process consisting in evaporating sulfite liquor, adding a quantity of wheat flour thereto, and then cooking said mixture to a homogeneous condition.

15. The process herein described of making an adhesive, said process consisting in evaporating sulfite liquor, cooking a quantity of farinaceous vegetable material, adding it to the concentrated sulfite liquor, and then heating the mixture to form a homogeneous mass.

16. The process herein described of making an adhesive,

said process consisting in evaporating sulfite liquor, cooking a quantity of wheat flour, adding it to the concentrated sulfite liquor, and then heating the mixture to form a homogeneous mass.

17. The process of making an adhesive, which consists in heating a mixture of waste sulfite liquor and farinaceous material to cook and concentrate the same.

18. The process of making an adhesive, which consists in heating a mixture of waste sulfite liquor and wheat flour to cook and concentrate the same.

19. The process herein described of making an adhesive, said process consisting in evaporating sulfite liquor, adding thereto a fluent body of farinaceous vegetable material, and then heating the combined mass to such a point as will cause an intimate and complete admixture of such constituents.

20. The process herein described of making an adhesive, said process consisting in evaporating sulfite liquor, adding thereto a fluent body of wheat flour, and then heating the combined mass to such a point as will cause an intimate and complete admixture of such constituents.

851,379. COMPOSITION OF MATTER AND PROCESS OF MAKING SAME. JACOB S. ROBESON, Camden, N. J., assignor to Robeson Process Company, Camden, N. J., a Corporation of New Jersey. Filed May 10, 1906. Serial No. 316,129.

Claim.—1. A soluble composition of matter forming an adhesive, containing chemically unchanged sulfite liquor, and a soluble albuminoid.

2. A soluble composition of matter forming an adhesive, comprising a mass of concentrated and chemically unchanged sulfite liquor, and a soluble albuminoid.

3. A soluble composition of matter forming an adhesive, comprising a substantially neutral, undecomposed and concentrated mass of sulfite liquor, and a soluble albuminoid.

4. A soluble composition of matter forming an adhesive, containing chemically unchanged sulfite liquor, and animal glue.

5. A soluble composition of matter forming an adhesive, comprising a concentrated and chemically unchanged mass of sulfite liquor, and animal glue.

6. A soluble composition of matter forming an adhesive, comprising a substantially neutral, undecomposed and concentrated mass of sulfite liquor, and animal glue.

7. A soluble composition of matter forming an adhesive, comprising five parts by volume of concentrated and chemically unchanged sulfite liquor, and one part by volume of a solution of a soluble albuminoid.

8. A soluble composition of matter forming an adhesive, comprising five parts by volume of a substantially neutral, undecomposed and concentrated mass of sulfite liquor, and one part by volume of a solution of animal glue.

851,380. COMPOSITION OF MATTER AND PROCESS OF MAKING SAME. JACOB S. ROBESON, Camden, N. J., assignor to Robeson Process Company, Camden, N. J., a Corporation of New Jersey. Filed May 24, 1906. Serial No. 318,562.

Claim.—1. An adhesive comprising sulfite liquor, molasses, and a starchy material.

2. An adhesive, comprising concentrated sulfite liquor, molasses, and a starchy material in a fluent form.

3. An adhesive comprising sulfite liquor, molasses, and dextrine.

4. An adhesive, comprising concentrated sulfite liquor, molasses, and dextrine in a fluent form.

5. A composition of matter comprising sulfite liquor, molasses, and a starchy material, in equal proportions.

6. A composition of matter, comprising a neutral, concentrated and undecomposed mass of sulfite liquor, molasses, and a starchy material in a fluent form, in equal proportions.

7. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, and then adding thereto certain quantities of molasses and a starchy material.

8. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, preparing a paste of a starchy material, and then mixing said ingredients in certain proportions with molasses.

9. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, preparing a paste of dextrine, and then mixing said ingredients in certain proportions with molasses.

10. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, and then adding to a quantity thereof, equal quantities of molasses and a starchy material.

11. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, and then adding to a quantity thereof, equal quantities of molasses and dextrine.

12. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, adding thereto certain quantities of molasses and a starchy material, and then incorporating said mixture by the agency of heat.

13. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, preparing a paste of a starchy material, mixing said ingredients in certain proportions with molasses, and then incorporating said mixture by the agency of heat.

14. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, preparing a paste of dextrine, mixing said ingredients in the proper proportions with molasses, and then incorporating said mixture by the agency of heat.

15. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, adding to a quantity thereof, equal quantities of molasses and a starchy material, and then incorporating said mixture by the agency of heat.

16. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, adding to a quantity thereof, equal quantities of molasses and dextrine, and then incorporating said mixture by the agency of heat.

851,381. COMPOSITION OF MATTER AND PROCESS OF MAKING THE SAME. JACOB S. ROBESON, Camden, N. J., assignor to Robeson Process Company, Camden, N. J., a Corporation of New Jersey. Filed June 8, 1906. Serial No. 320,883.

Claim.—1. An adhesive comprising the non-cellulose element of wood in solution, and the liquid by-product from the destructive distillation of woody tissue.

2. An adhesive comprising a sulfite solution of the non-cellulose elements of woody tissue, and the condensed liquid from the destructive distillation of woody tissue.

3. An adhesive comprising sulfite liquor and the liquid by-product from the destructive distillation of woody tissue.

4. An adhesive comprising concentrated sulfite liquor and the condensed liquid from the destructive distillation of woody tissue.

5. An adhesive comprising a neutral, undecomposed and concentrated mass of sulfite liquor, and the liquid by-product resulting from the destructive distillation of woody tissue.

6. A liquid adhesive comprising a mass of chemically unaltered sulfite liquor, and wood tar.

7. An adhesive comprising concentrated sulfite liquor and wood tar, in equal proportions.

8. An adhesive comprising a neutral, undecomposed and concentrated mass of sulfite liquor, and wood tar.

9. An adhesive comprising a neutral, undecomposed and concentrated mass of sulfite liquor, the liquid by-product resulting from the destructive distillation of woody tissue, and an aqueous thinning agent.

10. A liquid adhesive comprising a mass of neutral, undecomposed and concentrated sulfite liquor, and wood tar.

11. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, and then adding thereto a quantity of the liquid by-product from the destructive distillation of woody tissue.

12. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, and adding to a certain quantity of the same an equal quantity of the liquid by-product from the destructive distillation of woody tissue.

13. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, adding to a quantity of the same a certain quantity of wood tar, and then incorporating said materials by the agency of heat.

14. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, and adding to a certain quantity of the same an equal quantity of wood tar.

15. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, adding thereto a quantity of the liquid by-product from the destructive distillation of woody tissue, and incorporating said products in a homogeneous body by the agency of heat.

16. The process herein described of making an adhesive, said process consisting in concentrating sulfite liquor, adding thereto a quantity of wood tar, and incorporating said products in a homogeneous body by the agency of heat.

851,382. SAFETY DEVICE FOR ELEVATORS. MARTIN H. ROSS, Buffalo, N. Y., assignor of one-half to Robert J. Kiendl, Buffalo, N. Y. Filed Sept. 20, 1906. Serial No. 335,467.

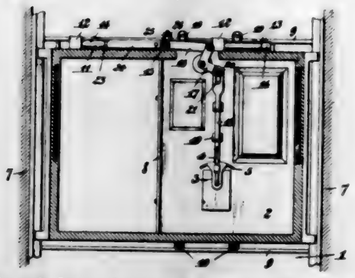

Claim.—1. In an elevator, the combination with the elevator-shaft having a door, and an elevator equipped with controlling-mechanism to control the operation thereof, of a lock-rod vertically movable, a shifting-bar horizontally movable, mechanism between said lock-rod and said shifting-bar and in operative connection therewith, and means on said door to shift the shifting-bar in opposite directions when opening and closing said door.

2. In an elevator, the combination with the elevator-shaft having a door, and an elevator-car equipped with controlling-mechanism to control the operation thereof, of a lock-rod vertically movable, a shifting-bar horizontally movable, a bell-crank lever pivotally secured to said car and having one arm thereof connected with said lock-rod, a rod connected at one end to the other arm of said bell-crank lever and at its other end to said shifting-bar, and means on said door for actuating the shifting-bar in opposite directions.

3. In an elevator, the combination with the elevator-shaft having a door, and an elevator-car equipped with controlling-mechanism to control the operation thereof, of a lock-rod vertically movable, a shifting-bar horizontally movable and having a spring-pressed stop pivotally secured thereto, mechanism between said lock-rod and said shifting-bar and in operative connection therewith, means on said door to engage said stop to shift said shifting-bar in one direction, a trip on the elevator-car to cause said stop to be depressed during the movement of said shifting-bar, and a lug on the door engaging said shifting-bar to shift the same in the opposite direction.

4. In an elevator, the combination with the elevator-shaft having a door, and an elevator-car equipped with controlling-mechanism to control the operation thereof, of a lock-rod vertically movable, a shifting-bar horizontally movable and having a stop pivotally secured thereto and projecting with one end beyond the outer face of said bar, a spring secured to said bar and holding said stop in projected condition, mechanism between said lock-rod and said shifting-bar and in operative connection therewith, a roller on said door to engage said stop and cause the shifting-bar to be shifted in one direction, a trip on the elevator-car to cause said stop to be depressed during the movement of said shifting-bar to permit said roller to become disengaged from said bar, and means on the door engaging said shifting-bar to shift the same in the opposite direction.

5. In an elevator, the combination with the elevator-shaft having a door, and an elevator-car movable in said shaft, of controlling-mechanism including an operating-lever and a segmental lock-member movable with said lever and having a series of apertures, a lock-rod vertically movable and adapted to engage one of said apertures in said lock-member, a shifting-bar horizontally movable, mechanism between said lock-rod and said shifting-bar and in operative connection therewith, and means on said door to shift said shifting-bar in opposite directions when opening or closing said door.

851,383. SKIRT-TRIMMER. HOMER R. SHAFER, Detroit, Mich. Filed Oct. 15, 1906. Serial No. 338,949.

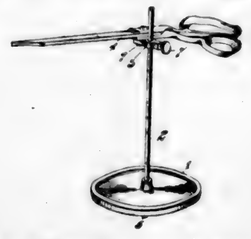

Claim.—1. An implement for trimming skirts, having, in combination, a portable base mounted on casters, a standard rising therefrom, an arm through which said standard engages, a set screw engaging therethrough against said standard whereby it may be locked in position at any desired point along said standard, and a pair of shears pivotally supported by said arm with its cutting members held in a horizontal plane, substantially as described.

2. An implement for trimming skirts, having, in combination with a vertical standard, a supporting base therefor, an arm slidable with respect to said standard and adapted to be locked in position at any point thereon, and a pair of shears pivotally supported by said arm with its cutting blades in permanent horizontal position, substantially as described.

851,384. SECURING WIGS IN PLACE. WILLIAM SLEICHER, Troy, N. Y. Filed Dec. 18, 1906. Serial No. 348,422.

Claim.—1. Means for securing wigs or toupees in place, comprising a thin, narrow strip of flexible material adapted to serve as an intermediate flexible connection and adhesive carrier between the wig or toupee and the scalp, said strip being provided on both sides with an adhesive coating, the area of the adhesive coating on one side being greater than on the other, as and for the purpose described.

2. Means for securing wigs or toupees in place, comprising a thin, narrow strip of flexible material adapted to serve as an intermediate flexible connection and adhesive carrier between the wig or toupee and the scalp, said strip being entirely covered on one side with an adhesive coating, and being provided on the other side with an adhesive coating which covers only the middle portion of the strip leaving an uncovered portion at each end, substantially as described.

851,384.

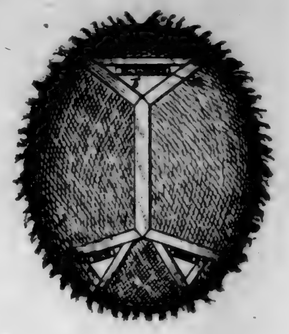

851,385. REGULATOR. DONALD STUART, Rochester, N. Y., assignor to H. & M. Automatic Regulator Company, Rochester, N. Y., a Corporation of New York. Filed Nov. 2, 1906. Serial No. 341,670.

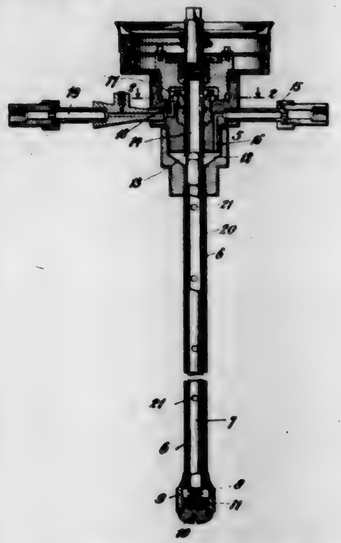

Claim.—1. A regulator including a thermostat comprising an outer tube closed to admission of the fluid in which it is immersed and the temperature of which is to be regulated, said tube composed of a material having a relatively high co-efficient of expansion, and an inner tube composed of a material having a relatively low co-efficient of expansion, enclosed within said outer tube, the walls of said inner tube perforated at various points throughout the length thereof, the two said tubes normally connected unyieldingly at one end, and provided at the other end the one with a valve and the other with a valve seat.

2. A regulator including a thermostat having an outer tube closed to admission of the fluid in which it is immersed and the temperature of which is to be regulated, said tube composed of a material having a relatively high co-efficient of expansion, and an inner tube enclosed within the said outer tube and composed of a material having a relatively low co-efficient of expansion, the space within the said inner tube being in free communication with the annular space between said tubes, the two said tubes normally connected together unyieldingly at one end, and provided at the other end the one with a valve and the other with a valve seat.

3. A regulator comprising a casing 5, an outer tube 6, projecting therefrom and composed of a material having a relatively high co-efficient of expansion, said tube closed to admission of the fluid in which it is immersed and the temperature of which is to be regulated, an inner tube 7 composed of a material having a relatively low co-efficient of expansion, connected normally unyieldingly to the outer tube at the end opposite the said casing, the walls of said inner tube perforated at various points throughout the length thereof, a valve 12 carried by said inner tube, and an adjustable valve seat 13 carried by said casing, said casing having means for admitting motive fluid thereto to be controlled by the valve and its seat, said motive fluid having free access to the annular space between the two said tubes and also to the space within the inner tube.

851,386. CABINET. OSCAR M. TATE, Knoxville, Tenn. Filed Feb. 15, 1905. Serial No. 245,735.

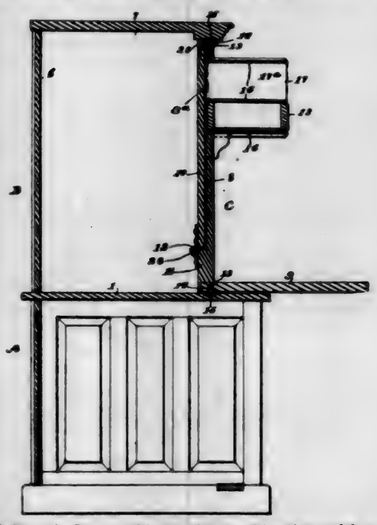

Claim.—1. In a cabinet, the combination with a stationary body, of an upright, rotary section comprising an upright wall and a shelf hinged on a horizontal line to the lower portion of said upright wall and extending, when in the open position, beyond a circle drawn on a radius extending from the axis of the rotary section to one of the end walls, 5, said rotary section being secured to said stationary body by an upright hinge intermediate the lateral edges of said rotary section, substantially as described.

2. In a cabinet, the combination with a stationary body, of an upright, rotary section comprising an upright wall and two shelves one of which is hinged on a horizontal line to the lower portion of said upright wall and extending, when in the open position, beyond a circle drawn on a radius extending from the axis of the rotary section to one of the end walls, 5, said rotary section being secured to said stationary body by an upright hinge intermediate the lateral edges of said rotary section, substantially as described.

3. In a cabinet, the combination with a stationary body, the upper portion of which has end, back, and top walls, of an upright, rotary section comprising an upright wall and a shelf hinged on a horizontal line to the lower portion of said upright wall and extending, when in the open position, beyond a circle drawn on a radius extending from the axis of the rotary section to one of the end walls, 5, said rotary section being secured to said stationary body by an upright hinge intermediate the lateral edges of said rotary section, substantially as described.

4. In a cabinet, the combination with a stationary body, of an upright, rotary wall having an opening extending through said wall, a receptacle adjacent said opening, and a shelf at each side of said wall, substantially as described.

5. In a cabinet, the combination with a stationary body, of an upright, rotary wall having an opening extending through said wall, a receptacle adjacent said opening, and a shelf at each side of said wall, one of said shelves being adapted to fold over said opening, substantially as described.

6. In a cabinet, the combination with a stationary body, of an upright, rotary section comprising an upright wall and a hinged shelf, said rotary section being secured to said stationary body by an upright hinge intermediate the lateral edges of said rotary section, and locking mechanism for engaging said folding shelf when said rotary section is so turned as to place said shelf at the front, substantially as described.

7. In a cabinet, the combination with a stationary body, of an upright, rotary section comprising an upright wall and a shelf hinged to said wall, said rotary section being secured to said stationary body by an upright hinge intermediate the lateral edges of said rotary section, and latch mechanism for securing said shelf to said rotary wall, substantially as described.

8. In a cabinet, the combination with a stationary body, of an upright, rotary section comprising an upright wall and a shelf hinged to said wall, said rotary section being secured to said stationary body by an upright hinge intermediate the lateral edges of said rotary section, and latch mechanism for securing said shelf to said rotary wall and latch mechanism for securing said rotary wall to said body, substantially as described.

9. In a cabinet, the combination with a stationary body, of an upright, rotary section comprising an upright wall having near its base an aperture extending from side to side, and an ink well below said aperture, substantially as described.

10. In a cabinet, the combination with a stationary body, of an upright, rotary section comprising an upright wall having near its base an aperture extending from side to side, an ink well below said aperture, and a hinged shelf extending over said aperture when the shelf is folded, substantially as described.

11. In a cabinet, the combination with a stationary body, of an upright, rotary section comprising an upright wall having at its base a forward extension, an ink well in a socket in said base, an aperture extending through said wall above said ink well, and a shelf hinged to said forward extension, substantially as described.

12. In a cabinet, the combination with a stationary body, of an upright rotary section comprising an upright wall, the base portion of said wall being extended laterally and said extension having in its upper face a cavity, and a shelf hinged to the upper portion of said extension, substantially as described.

13. In a cabinet, the combination with a stationary body, of an upright, rotary section comprising an upright wall, a receptacle applied to one side of said wall, a folding shelf applied to the opposite side of said wall, and locking mechanism for making engagement between said shelf and said body when said wall is turned so that said shelf stands at the front, substantially as described.

851,387. MOVING-PICTURE-EXHIBITING APPARATUS. CHARLES UEBELMESSER, New York, N. Y., assignor to American Moving Picture Machine Company, New York, N. Y., a Corporation of New York. Filed Nov. 5, 1906. Serial No. 342,001.

Claim.—1. In a device of the character designated, the combination with means for feeding the film continuously, of a reciprocating yoke plate, film forwarding sprocket wheels mounted thereon, means for continuously rotating said sprocket wheels, and cams arranged to positively reciprocate said yoke frame alternately in opposite directions, for the purpose described.

2. In a device of the character designated, the combination with means for feeding the film continuously, of a reciprocating yoke plate, film forwarding sprocket wheels and a driving pinion upon a shaft mounted upon said reciprocating yoke plate, cams arranged to positively reciprocate said yoke, and a cam worm on the cam shaft engaging with the pinion on the sprocket wheel shaft, for the purpose described.

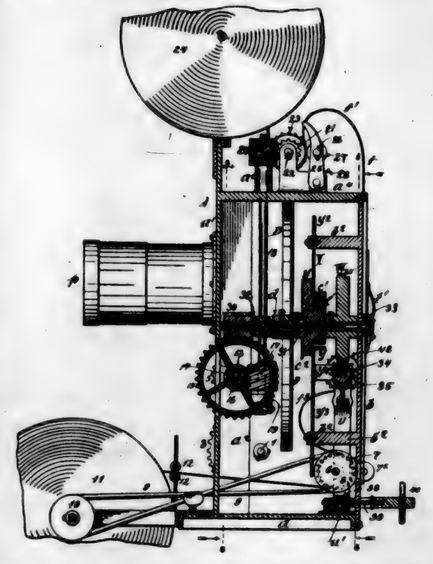

3. In a device of the character designated, the combination with means for feeding the film continuously, of a reciprocating yoke plate, film-forwarding sprocket wheels and a driving pinion upon a shaft mounted upon said reciprocating yoke plate, a duplex cam engaging with and arranged to positively reciprocate said yoke, a cam worm mounted on the cam shaft and having a thrust equal to that of the cams and a shutter on the cam shaft timed with relation to said cams and cam worm for the purpose described.

4. In a device of the character designated, the combination with means for feeding the film continuously, of a reciprocating yoke plate, film forwarding sprocket wheels and a driving pinion upon a shaft mounted upon said reciprocating yoke plate, cams engaging with and arranged to positively reciprocate said yoke plate, a cam worm on the cam shaft engaging with the pinion on the sprocket wheel shaft, and means for adjusting said pinion axially upon its shaft and with relation to the sprocket wheels, for the purpose described.

5. In a device of the character designated, the combination with means for feeding the film continuously, of a reciprocating yoke plate, film forwarding sprocket wheels splined to a shaft mounted upon said reciprocating yoke plate in such manner as to be longitudinally movable upon its bearings, a pinion on said shaft engaging therewith by means of a spiral spline, means for adjusting said shaft longitudinally, cams engaging with and arranged to positively reciprocate said yoke plate, and a cam worm on the cam shaft engaging the pinion on the shaft on the reciprocating yoke plate, for the purpose described.

6. In a device of the character designated, the combination with means for feeding the film continuously, of a reciprocating yoke plate, film forwarding sprocket wheels splined to a shaft mounted upon said reciprocating yoke plate in such manner as to be longitudinally movable upon

its bearings, a pinion on said shaft engaging therewith by means of a spiral spline, a rack having arms engaging the opposite ends of said shaft, a pinion engaging said rack, means for operating said rack namely, cams engaging with and arranged to positively reciprocate said yoke plate, and a cam worm on the cam shaft engaging the pinion on the shaft on the reciprocating yoke plate, for the purpose described.

7. In a device of the character designated, the combination of means for feeding the film continuously, and intermittently to the light aperture, and a rotating shutter plate interposed between the projecting lenses and the light aperture, said rotating shutter plate being formed with radial arms opposed to the shutter section, for the purpose described.

851,388. SELF-CLEANING STRAINER FOR SPRAYING-MACHINES. JOSEPH D. WALLACE, Champaign, Ill. Filed Apr. 18, 1906. Serial No. 312,330.

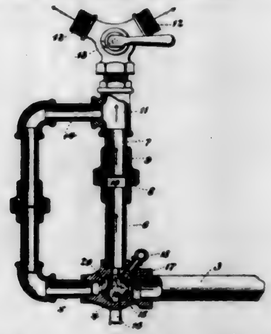

Claim.—1. A self-cleaning straining device for spraying machines comprising a pipe having two reunited branches, one thereof being normally closed and the other provided with a strainer and a normally closed vent on the pressure side of said strainer, and means for simultaneously closing said last-mentioned branch and opening said first-mentioned branch and said vent.

2. In a self-cleaning straining device for spraying machines, the combination, with a pipe having two reunited branches, one thereof being provided with means for straining a liquid passing therethrough and a normally closed vent on the pressure side of said straining means, of a valve normally directing the entire flow through said straining branch and operable to direct the entire flow through the other branch and open said vent.

3. A self-cleaning straining device for spraying machines comprising a main conduit provided with a strainer and a normally closed discharge vent on the pressure side of said strainer, a normally closed shunt conduit around said strainer, and means for directing the entire flow through said shunt conduit and opening said vent at one operation.

4. In a self-cleaning straining device for spraying machines, the combination, with a normally open main conduit provided with means for straining a liquid passing therethrough and a normally closed vent on the pressure side of said straining means, of a normally closed shunt conduit around said straining means and communicating at each end with said main conduit, and a valve at the branch of said main and shunt conduits adapted at one operation to close said main conduit and open said shunt conduit and said vent.

851,389. BOAT-PROPELLING DEVICE. CAMERON B. WATERMAN, Detroit, Mich., assignor to The Waterman Marine Motor Company, Detroit, Mich., a Corporation of Michigan. Filed Dec. 6, 1905. Serial No. 290,624.

Claim.—1. In a boat propelling device, the combination with a frame arranged to be secured on the outside of a boat, of an explosive motor, means for securing the crank case of said motor to said frame, a shaft on said motor, a propeller shaft supported below and parallel with said motor shaft, and a drive connection therebetween.

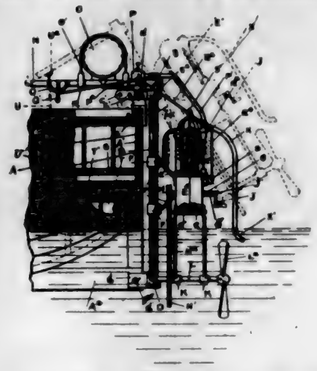

2. In a boat propelling device, the combination with a motor, of a motor-supporting frame therefor arranged to be attached to the outside of a boat, a propeller shaft, a support having bearings therefor carried by and depending from said motor, and a drive connection from the motor to said shaft.

3. In a boat propelling device, the combination with a frame adapted to be secured on the outside of a boat, a motor mounted thereon, a propeller shaft driven and supported by said motor, and a thrust bearing for said shaft on said frame.

4. In a boat propelling device, the combination with clamps adapted to be attached to a boat, of a frame pivoted in said clamps, a motor supported on said frame, a shaft in said motor, and a propeller shaft supported by said motor and having a drive connection with said motor shaft.

5. In a boat propelling device, the combination of an internal combustion engine, means for securing it outside of a boat, a shaft support depending from the engine, a propeller shaft journaled therein parallel with the engine shaft, and a drive connection between said shafts.

6. In a boat propelling device, the combination of a frame adapted to be secured on the outside of a boat, a motor thereon, a shaft support depending from the motor, a propeller shaft therein, a thrust bearing for the shaft in the frame, and a drive gear from the motor to said shaft.

7. The combination with an air cooled internal combustion motor adapted to be secured on the outside of a boat, a propeller shaft driven by the motor shaft, and means associated with said propeller shaft for raising water and directing it upon the cylinder to supplement the air cooling.

8. The combination with a boat, of an externally supported air cooled internal combustion engine therefor a propeller shaft below the same, a drive connection from the engine to the shaft, adapted to raise water in the operation of the engine, and means for directing said water upon the engine cylinder.

9. The combination with a boat, of an externally supported air cooled internal combustion engine, a propeller driven thereby, and means operable when the propeller is in motion for delivering water upon the engine cylinder to supplement the air cooling.

10. The combination with a normally air cooled internal combustion marine motor and a shaft therefor, of a propeller shaft journaled below said motor, sprockets on said shafts, a chain engaging said sprockets to drive said propeller shaft and to raise water and a deflector for directing said water upon said motor, for the purpose described.

11. The combination with a small boat, such as a row boat, of a substantially vertical post swivelled to the stern thereof, a motor mounted on the post, a shaft bearing supported by and below the motor, a propeller shaft journalled

therein and having a drive connection with said motor, and a thrust bearing for the shaft in the post.

12. The combination with a swivelled post, of brackets projecting outward therefrom, a motor supported on the brackets, a depending shaft support carried by the motor, a propeller shaft therein operatively connected to the motor, and a thrust bearing for the shaft in the post.

13. The combination with a swivelled post, brackets projecting outward therefrom, a motor supported on the brackets, a depending shaft support carried by the motor, a propeller shaft therein, a thrust bearing for the shaft in the post and a drive connection on the shaft between said thrust bearing and said shaft support.

14. The combination with a boat, a post hinged to the stern thereof for adjustment about horizontal and vertical axes, a step bearing for the lower end of the post and a motor, propeller shaft, and drive connection supported on the post.

15. In a boat propelling device, the combination with a frame, an explosive motor supported thereon, and a propeller wheel having a drive connection with said motor, of means adapted to be clamped to a boat, and means connecting said clamping means to said frame and permitting said frame to be raised vertically and tilted in a vertical plane in relation to said clamping means.

16. In a boat propelling device, the combination with a frame, an explosive motor supported thereon, and a propeller wheel having a drive connection with said motor, of means adapted to be clamped to the outside of the boat, and a link having a horizontal pivotal connection with said means and sleeved on said frame for the purpose described.

17. In a boat propelling device, the combination with a frame, an explosive motor supported thereon, and a propeller wheel having a drive connection with said motor, of means adapted to be clamped to a boat, a link slidably attached to said frame, and a horizontal pivot adjustably connecting said link to said clamping means, for the purpose described.

18. In a boat propelling device, the combination with a frame arranged for horizontal and vertical pivotal attachment to a boat of an explosive motor mounted on said frame, a propeller mounted below said motor and having a drive connection therewith, a tiller attached to said frame, and motor-controlling means carried by said tiller.

19. In a boat-propelling device, the combination with a boat, of a frame adapted to be removably pivoted thereon, a motor, propeller, and drive connections carried by said frame, a tiller rigidly secured to said frame, and motor-controlling means and fuel-supply receptacle carried by said tiller.

20. In a boat propelling device, the combination with a clamping member arranged to detachably engage the stern of a boat, of a post, brackets projecting laterally from said post, a motor supported by said brackets, a propeller shaft projecting laterally from said post below said motor, a driving connection between said motor and shaft, and adjustable connecting means between said post and said clamping member for regulating the pitch of said propeller shaft.

21. In a boat propelling device, the combination with a post and a motor carried thereby, of a member sleeved on said post and longitudinally adjustable in relation thereto, means for limiting said longitudinal adjustment, and a clamp arranged to be attached to the stern of a boat and adjustably connected to said member for varying the angle of said post to the stern of the boat, for the purpose described.

22. In a boat propelling device, the combination with a post arranged to be secured to the outside of a boat, of a motor and propeller carried thereby, a drive connection between said motor and propeller and means for adjusting said motor in relation to said post to adjust said drive connection.

23. The combination with a lower supporting stepped bracket and an upper bracket having a tubular bearing, said brackets being adapted to be detachably clamped to the stern of a boat, of a vertical motor-supporting frame engaging said stepped bracket and having a sliding pivotal engagement with the bearing in said upper bracket, and means for rigidly securing said tubular bearing to said frame, for the purpose described.

24. In a boat propelling device, the combination with an internal combustion engine and means for pivotally supporting said engine on the outside of a boat, of a horizontal shaft in said engine, a shaft support depending from and swinging with the engine, a propeller shaft journaled in said support, and a drive connection from the engine shaft to the propeller shaft.

851,390. CRUSHER. MILTON F. WILLIAMS, St. Louis, Mo., assignor to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo., a Corporation of Missouri. Filed May 15, 1905. Serial No. 260,499.

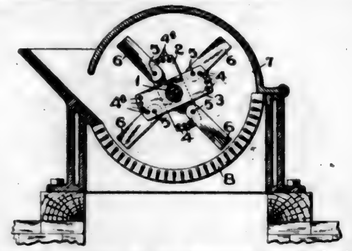

Claim.—In a device of the character described, the combination of hammer supports comprising oppositely disposed connected arms secured to said shaft, an auxiliary pair of hammer supports comprising oppositely disposed connected arms also secured to said shaft and extending at substantially right angles to the first mentioned arms, and hammers on each of said arms, the hammers on the arms of one pair being arranged upon the same side and the hammers on the arm of the auxiliary pair being arranged upon the same side but the side opposite to that on which the first mentioned arms are mounted, whereby the hammers are in the same plane with the arms of the adjacent pair.

851,391. METHOD OF DUPLICATING FORMS. GOLDIE L. ANDERMAN, Chicago, Ill. Filed Mar. 30, 1906. Serial No. 308,846.

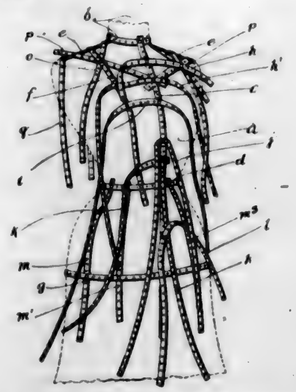

Claim.—1. The method of form duplication which consists in laying smoothly upon the figure a series of flexible but inelastic straps, fastening these straps together at their points of intersection, certain of said straps being arranged to form triangles, removing the harness thus formed from the figure, drawing the harness tightly over a roughly molded mass of plastic material, removing the excess of plastic material wherever it may be forced

through between the network of straps, and removing the harness from the model.

2. The method of form duplication which consists in laying smoothly upon the figure a series of flexible but inelastic straps, fastening these straps together at their points of intersection, certain of said straps being arranged to form triangles, opening the harness thus formed sufficiently for removal from the figure, removing the harness from the figure, drawing the harness tightly over a roughly molded mass of plastic material, removing the excess of plastic material wherever it may be forced through between the network of straps, removing the harness from the model, and forming with said model a registering shell of papier mache.

851,392. LIGHTNING-ARRESTER. ALTON W. BALL and MARK T. SEYMOUR, Stow, N. Y. Filed Oct. 24, 1904. Serial No. 229,679.

Claim.—1. A lightning arrester composed of a suitable support, a ground wire plate on said support, a line wire plate on said support separated a short distance from said ground wire plate, and means of resilience to permit greater separation of said plates and the return to normal position.

2. A lightning arrester composed of a suitable support, a ground wire plate on said support, line wire plates on said support separated short distances from said ground wire plate, said line wire plates having resilience to permit increased separation from said ground wire plate and to return the line wire plates to normal position.

3. A lightning arrester composed of a suitable support, a ground wire plate on said support having an upturned end, a line wire plate on said support and extending over said upturned end and separated therefrom, a spring portion in said line wire plate to allow increased separation and compel its return to normal position.

4. In a lightning arrester, the combination of a suitable support, a ground-wire plate having up-turned ends and means for securing to said support, line-wire plates secured to said support and extending over said up-turned ends at a short distance therefrom, a spring portion in said line-wire plates, and set screws in said line-wire plates to regulate the distance between the adjacent ends of the ground-wire and line-wire plates.

5. In a lightning arrester, the combination of the support 1, the central ground-wire plate 13 secured on said support and having up-turned serrated ends, line-wire plates 8 secured on said supports and extending a serrated end 12 over said up-turned ends, a spring portion 11 in said extended portion of plates 8, and set screws 19 in the ends 12 of plates 8 having bearing against said support, substantially as and for the purpose specified.

851,393. PNEUMATIC WHEEL-SUPPORT. GEORGE W. BELL, Liverpool, England. Filed Jan. 31, 1906. Serial No. 298,759.

Claim.—1. The combination with the vehicle body, of an axle upon which said body is mounted upon springs intermediate between the ends of the axle, and pneumatic cushioning wheel supports on the opposite ends of the axle, each comprising a hollow piston rigidly mounted upon the end of the axle and extending vertically above and below the same, a cylinder inclosing the piston and forming air chambers above and below the piston, a stub-axle rigidly connected to the cylinder and forming an independent extension of the axle, a supporting wheel journaled upon the stub-axle and means for supplying the air chamber in the lower end of the cylinder with compressed air, said cylinder being horizontally divided in halves bolted together and provided with flanged openings adapted to vertically guide the cylinder upon the axle.

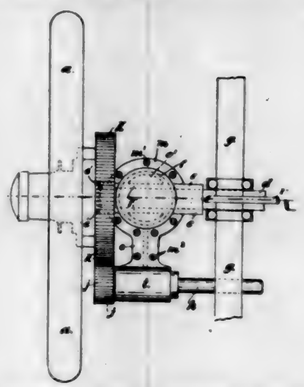

2. The combination with a vehicle body, of an axle upon which said body is yieldingly supported intermediate between its ends, pistons carried at opposite ends of the axle and extending vertically above and below the same, a cylinder inclosing each piston and forming air chambers above and below said pistons, means for supplying the air chambers below the pistons with compressed air, a stub-axle rigidly carried by each cylinder and forming an independent extension of the axle, a supporting wheel journaled upon each stub axle and actuating drive connection comprising a transmitting gear centrally suspended from the vehicle body, flexible spindles extending laterally therefrom and provided with drive pinions at their outer ends and a gear wheel carried by each supporting wheel engaging with said drive pinions, the outer ends of the flexible spindles being supported in bearings carried by the cylinders.

3. The combination with a vehicle body, of an axle upon which said body is yieldingly supported intermediate between its ends, stub-axles adjacent to the outer ends of this axle and forming complementary extensions thereof, supporting wheels journaled upon said stub-axles and a piston and cylinder connected respectively to the adjacent ends of the axle and stub-axles and carried by the same in vertically sliding engagement with each other, the cylinders inclosing the pistons and forming air chambers above and below the pistons and means for supplying the air chambers which support the axle with compressed air.

851,394. STEERING MECHANISM. CHARLES BERG, New York, N. Y. Filed Sept. 10, 1906. Serial No. 333,894.

Claim.—1. In a device of the class described, a steering wheel having a chambered rim, a division wall in said rim, means for supplying a heating medium to the rim at one side of the division wall, there being an eduction passage leading from the rim.

2. In a device of the class described, a hollow post, a wheel having a chambered rim and also provided with a hollow spoke, the latter connecting the post and the rim, and means for dividing the chambers of the rim and the post.

3. In a device of the class described, a hollow post, a chambered wheel having a hollow spoke, and a division wall extending across the post, the spoke and the wheel.

4. In a device of the class described, a hollow post, a steering wheel provided with a hollow rim, said wheel being carried on said post for the chamber of the hollow rim to communicate with a passage of said hollow post, and a division wall across the chamber of said hollow rim, whereby a heating medium is supplied to the rim, caused to circulate around and within the steering wheel, and exhausted through the hollow post.

5. In a device of the class described, a steering wheel provided with a hollow rim, a division wall in a chamber formed by said rim, means for supplying a heating medium to said chamber on one side of the division wall therein, and means at the other side of the division wall for conducting a heating medium from said rim.

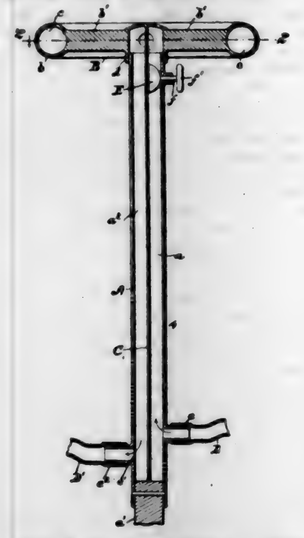

6. In a device of the class described, a steering wheel provided with a chambered interiorly divided rim, means for conveying a heating medium to said rim, and means for carrying off a heating medium to the rim, whereby a heating medium is caused to circulate through and around said rim.

7. In a device of the class described, a steering wheel provided with a chambered interiorly divided rim and with a plurality of spokes, one of said spokes being hollow, a post on which the wheel is mounted, means for supplying a heating medium to said rim, and means for carrying off a heating medium from said rim.

851,395. MOLD AND CENTERING DEVICE FOR SEWERS, CONDUITS, &c. JACOB B. BLAW, Pittsburg, Pa., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Jan. 20, 1906. Serial No. 296,930.

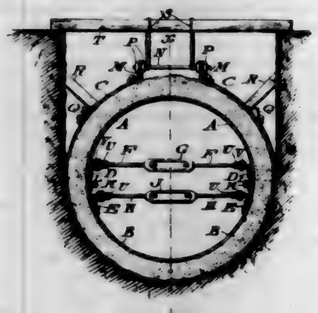

Claim.—1. In combination, a tubular mold comprising parti-tubular sections of flexible material, angle irons secured to the opposing edges of one section with one leg of each overlapping edge of the other section, rigid adjusting means extending transversely of the mold and secured to the free legs of the opposing angles whereby the edges may be sprung in and out, and means whereby the edges of the other section may be sprung in and out.

2. In combination, a tubular mold comprising parti-tubular sections of flexible material, flanged stiffening sections secured to the opposing edges of one section with one leg of each overlapping the edge of the other section, rigid adjusting means extending transversely of the mold and secured to the free flanges of the opposing sections whereby the edges may be sprung in and out, and means whereby the edges of the other section may be sprung in and out.

3. In combination, a tubular mold comprising parti-tubular sections of flexible material, angle irons secured to the opposing edges of one section with one leg of each overlapping the edges of the other section, and rigid adjusting means extending transversely of the mold and secured to the free legs of the opposing angles whereby the edges may be sprung in and out.

4. In combination, an exterior mold member comprising opposing parti-tubular sections spaced apart at the top, and bolts connecting the two parts whereby they are held securely in their relative positions and a space for the introduction of material is provided.

5. In combination, an exterior semi-cylindrical mold member comprising opposing parti-tubular sections spaced apart at the top, and adjustable means connecting the two parts whereby they are held in their relative positions and a space for the introduction of material is provided.

6. In combination, an exterior mold section comprising a parti-tubular member, projecting blocks Q for steadying the ends of side braces, and means whereby the mold section may be supported.

7. In combination, parti-tubular sections, acute securing angles at the opposing edges thereof, a stiffening wedge fitting therebetween and means for securing the wedge rigidly to the angles.

8. In combination, opposing parti-tubular members of flexible material, stiffening flanged members extending circumferentially of the sections, and transverse adjustable means for engaging the flanged members adjacent the edges of the parti-tubular member.

9. In combination, opposing parti-tubular members of flexible material, stiffening sections having projecting legs extending circumferentially of the sections and provided with a plurality of engaging holes spaced therealong, and transverse securing struts adapted to engage removably the holes in opposing sections.

851,396. CASTER. EMIL A. BODE, Philadelphia, Pa. Filed Sept. 24, 1906. Serial No. 335,901.

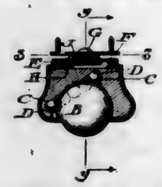

Claim.—1. In a caster, a casing, a ball roller and ball bearings for the latter mounted in said casing, said bearings being oblique to and continuous upon both sides of the perpendicular axis of said ball roller, an attaching plate, and a pivot located in the casing eccentrically to the vertical axis of said ball roller and connecting said attaching plate and said casing.

2. A caster composed of a casing, a ball roller mounted in said casing and ball bearings for the latter, said casing having therein a run-way which is continuous and extends upon both sides of the perpendicular axis of the ball roller and which contains said balls obliquely to the perpendicular axis of said ball roller.

3. A caster composed of a casing, a ball roller mounted in said casing and ball bearings for the latter, said casing

having therein a run-way which is continuous and extends upon both sides of the perpendicular axis of the ball roller and which contains said balls obliquely to the perpendicular axis of said ball roller, an attaching plate and a pivot connecting the said plate and casing and disposed in the latter eccentrically to the vertical axis of said roller.

4. A caster composed of a casing, a ball roller mounted in said casing and ball bearings for the latter, said casing having therein a run-way which is continuous and extends upon both sides of the perpendicular axis of the ball roller and which contains said balls obliquely to the perpendicular axis of said ball roller, a pivot in said casing mounted eccentrically to the vertical axis of said ball roller, an attaching plate connected to the casing by said pivot, and ball bearings between said plate and the casing.

5. A caster composed of a casing, a ball roller mounted in said casing and ball bearings for the latter, said casing having therein a run-way which is continuous and extends upon both sides of the perpendicular axis of the ball roller and which contains said balls obliquely to the perpendicular axis of said ball roller, an attaching plate connected to the casing by a pivot, and ball bearings between the same and the casing.

851,397. QUICK-SLIDING BENCH-VISE. PETER BROADBOOKS, Batavia, N. Y. Filed Nov. 13, 1905. Serial No. 287,011.

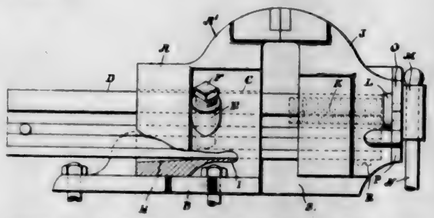

Claim.—1. In a vise of the character described, a body, said body having an opening therethrough, a portion of the bottom wall of said opening being cut away or inclined, a tail block adapted to slide through said opening and be tipped therein, said tail block having a groove formed upon its side, a bolt threaded into the body so that its lower end will bear upon the lower wall of said groove whereby the tail block will be locked in any adjustment when in its normally horizontal position and a sliding jaw fitted upon one end of the tail block, as and for the purpose set forth.

2. In a vise of the character described, a body, a tail block adapted to slide therethrough, an angle attached or formed upon the bottom wall of the opening through which the tail block slides, a bolt threaded through this body, the lower end of which is adapted to bear against an inclined surface formed upon the tail block, a movable jaw fitted to slide upon the forward end of the tail block, a screw for operating said jaw whereby pressure may be brought to bear upon the work placed between the jaws of the vises, and thus firmly locking the tail block in its adjustment, as specified.

3. The herein described combination of a body, a stationary jaw formed therewith, a tail block adapted to slide through the body and having bevelled surfaces formed thereon, an angle formed upon the bottom wall of the opening in the body through which the tail block slides, bolts threaded through the body and adapted to bear against said bevelled surfaces, a movable jaw fitted to slide upon the forward end of the tail block, a screw journalled in the movable jaw and threaded into the tail block and means for revolving said screw, as and for the purpose set forth.

4. In a vise of the character described, a body having an opening formed therethrough for the passage of the tail block, an angle attached or formed upon the lower wall of said opening by said wall being made in two planes, and a bolt threaded through the body, its lower end adapted to bear upon the tail block when the latter is in its locked position whereby said tail block will act as a lever, the fulcrum of which will be the angle I so that when work is clamped in the vise this tail block will be forced upward against the bolt, as specified.

5. In a vise of the character described, a body, a stationary jaw formed therewith, a tail block adapted to slide through the body, bolts threaded through said body and adapted to bear upon the tail block when the latter is in a locked position, a movable jaw adapted to slide upon the forward end of the tail block, a block S attached to the movable jaw, a screw K threaded into the tail block, a collar L formed upon the screw and head M also formed upon the screw, plates O and P secured to the movable jaw between the collar and the head M so as to hold the screw in place, and a stop screw R for limiting the movement of the movable jaw relative to the tail block, as and for the purpose set forth.

6. In a vise of the character described, the combination of a body having an opening therethrough for the tail-stock and an angle in the bottom of the opening adapted to serve as a fulcrum and biting point for the tail-stock and upon which the tail-stock may be locked, a smooth-surfaced tail-stock slidably fitted in said opening and resting upon said angle, an adjustable locking device set in the body above and in rear of the angle and adapted to engage the tail-stock when the latter is brought to its normal, substantially horizontal, position and to act in conjunction with the angle to automatically lock the tail-stock, and a jaw on the forward end of the tail-stock adapted to keep it in normally locked position, substantially as described.

7. In a vise, the combination of a body having an opening therethrough for the passage of the tail-stock, the bottom wall of said opening having an angle constituting a biting fulcrum for the tail-stock,—a smooth surfaced tail-stock adapted to slide through said opening and be tipped therein when being adjusted, an adjustable device set in the body above the angle and adapted to bear upon the tail-stock in rear of the angle; whereby the stock will be automatically locked in any adjustment when its outer end is lowered to substantially horizontal position, and a jaw on the outer end of the tail-stock.

8. In a vise, the combination of a body having an opening therethrough for the passage of the tail-stock, the bottom wall of said opening having an angle constituting a biting fulcrum for the smooth surfaced tail-stock, a tail-stock adapted to slide through said opening, a bolt adjustably set in the body above and in rear of the angle and adapted to have its inner end bear upon the tail-stock in rear of the angle whereby the stock will be automatically locked when its outer end is lowered to substantially horizontal position, and a jaw attached to the outer end of the tail-stock.

9. In a vise of the character described, the combination of a body having an opening therethrough for the tail-stock and an angle adapted to serve as a fulcrum or biting point upon which the tail-stock may be locked, a smooth surfaced tail-stock slidably fitted in said opening, an adjustable bolt set in the body above and in rear of the angle and adapted to engage the tail-stock and act, in conjunction with the angle to automatically lock the tail-stock in any adjusted position when the latter is brought to its normal, substantially horizontal, position, a movable jaw mounted to slide upon the forward end of the tail-stock, and means for operating said movable jaw, for the purpose set forth.

10. In a vise of the character described, the combination of a body having an opening therethrough for the tail-stock and an angle in the bottom of the opening adapted to serve as a fulcrum or biting point upon which the tail-stock may be locked, a tail-stock slidably fitted in said opening and having an inclined bearing surface on its side; an adjustable locking device set in the body above and in rear of the angle therein and adapted to engage the inclined bearing surface of the tail-stock to act in conjunction with the angle in the bottom to lock the tail-stock, and a jaw on the forward end of the tail-stock, for the purpose set forth.

11. In a vise, the combination of a body having an opening therethrough for the passage of the tail-stock, the bottom wall of said opening having an angle constituting a biting fulcrum for the tail-stock,—a tail-stock adapted to slide through said opening and be tipped therein when being adjusted and having oppositely inclined bearing surfaces in its sides; bolts adjustably set at an angle in the body and adapted to have their inner ends bear upon the inclined bearing surfaces of the tail-stock in rear of the angle; and a jaw on the outer end of the tail-stock.

12. In a vise, the combination of a body having an opening therethrough for the passage of the tail-stock, the bottom wall of said opening being provided with a biting fulcrum for the tail-stock, and a tail-stock adapted to slide through said opening and having an inclined bearing surface on its side; a bolt adjustably set at an angle in the body above and in rear of the fulcrum and adapted to have its inner end bear perpendicularly upon the inclined bearing surfaces of the tail-stock in rear of the fulcrum whereby the stock will be locked when its outer end is lowered to substantially horizontal position, and a jaw attached to the outer end of the tail-stock.

13. In a vise of the character described, the combination of a body having an opening therethrough for the tail-stock and a fulcrum or biting point upon which the tail-stock may be locked, a tail-stock slidably fitted in said opening having oppositely inclined bearing surfaces on its opposite sides, oppositely inclined bolts set in the body above and in rear of the fulcrum and adapted to engage the opposite bearing surfaces of the tail-stock and act, in conjunction with the fulcrum to lock the tail-stock in any adjusted position, and a jaw mounted upon the forward end of the tail-stock, for the purpose set forth.

851,398. VISE-CLAMP. PETER BROADBOOKS, Batavia, N. Y. Filed Dec. 12, 1906. Serial No. 347,468.

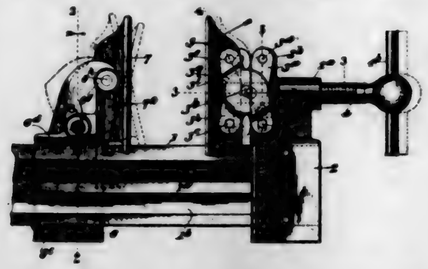

Claim.—1. In a clamp-vise, the combination of a clamping-bar, a jaw slidably mounted thereon, a head on one end of the bar, a movable jaw adjustably mounted on said head, means for moving said jaw relatively to the head, and X-links connecting the jaw and head for causing the jaw to move parallel with the bar.

2. In a clamp-vise, the combination of a clamping-bar, a slide thereon, a tilting or swinging-jaw pivotally mounted on the slide, a head on one end of the bar, a movable jaw adjustably mounted on said head, means for moving said jaw relatively to the head, and X-links pivotally connected to the jaw and head and adapted to cause the jaw to move parallel with the bar and maintain a position perpendicular thereto.

3. In a clamp-vise, the combination of a clamping-bar, a slide thereon, a tilting jaw pivoted on the slide, means for locking the tilting jaw in adjusted position on the slide; with a movable jaw, a support for said jaw fixed to the bar, means for moving said movable jaw longitudinally of the bar and X-links pivotally connected to the jaw and support at opposite sides of the jaw for keeping it perpendicular to the bar.

4. In a clamp-vise, the combination of a clamping-bar, a head on one end thereof, a movable jaw supported on said head, and means for adjusting the movable jaw; with a slide adjustable on the bar and provided with upstanding ears, a tilting jaw having a projecting web pivoted between the ears, and a setting-bolt tapped through the slide and adapted to engage the web to lock the tilting jaw in adjusted position on the slide.

5. In a clamp-vise, the combination of a clamping-bar having longitudinal grooves in its sides, a head on one end of the bar, a movable jaw, devices on said head for adjusting the movable jaw, means connected to the head and movable jaw for causing it to maintain a position perpendicular to the bar; with a slide mounted on the bar having an opening for the passage of the bar and provided with lugs shaped to correspond with and engage the grooves in the bar, a spring in the upper side of the slot for holding the sleeve in locked position on the clamping-bar, a tilting jaw pivotally mounted on said slide opposite the movable jaw, and means for locking the tilting jaw on the slide.

6. In a clamp-vise, the combination of a clamping-bar having approximately V-shaped longitudinal grooves in its sides, a head on one end of the bar, a movable jaw, adjusting devices on said head for adjusting the movable jaw, and X-links connected to the head and movable jaw for holding the latter parallel with the head; with a slide mounted on the bar having an opening for the passage of the bar and provided with lugs approximately V-shaped to correspond with and engage the grooves in the bar, a spring in the upper side of the slot for holding the sleeve in locked position on the clamping-bar, a tilting jaw pivotally mounted on said slide opposite the movable jaw, and means—a screw—for locking the tilting jaw on the slide.

7. In a clamp-vise, the combination of a clamping-bar, a slide adjustably mounted thereon, a tilting jaw swingable in a vertical plane and pivoted on the slide and adjustable therewith, means for locking the tilting jaws in adjusted position on the slide, and means for locking the slide in adjusted position on the bar; with a movable jaw, a support for said jaw fixed to the bar, means for moving said movable jaw relatively to the support and longitudinally of the bar, and means for keeping said movable jaw perpendicular to the bar.

851,399. ANNULAR BORING AND REAMING TOOL. BENJAMIN BROWNSTEIN, Philadelphia, Pa., assignor of one-half to Harry L. Zookovitz, Trenton, N. J. Filed May 22, 1905. Serial No. 261,536.

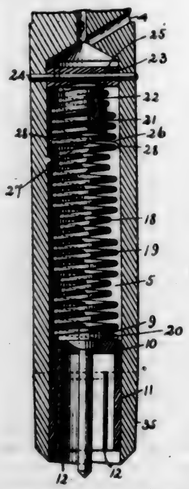

Claim.—1. A boring and reaming tool having an end with cutting edges for boring, a longitudinal chamber, reaming flutes upon the exterior surface, a spring secured within the chamber, a socket within the chamber

and secured to the spring and a centering device carried by the socket.

2. An annular boring and reaming tool, a cutting end therefor having a chamber therein, a spring suspended in the chamber, and a movable center attached to the spring and comprising a spindle secured to a socket which socket in part clears the chamber and in part consists of a shell of annular shape which fits the chamber, said shell being provided with slots to allow for expansion and contraction.

3. In an annular boring and reaming tool, a cutting end therefor, having a chamber therein provided with bearing surfaces and intermediate oil grooves, a spring suspended in the chamber and a movable center secured to the spring, said center comprising a spindle secured to a body which in part clears the chamber and in part is a slotted shell fitting the chamber.

4. An annular boring and reaming tool having a straight body part, a chamber therein, the exterior of the body part terminating in a tapered reaming part provided with flutes, the exterior surface between the cutting edge of each flute and an adjoining flute being eccentric, cutting edges at the end of the tool, and a receding center for the tool.

5. An annular boring and reaming tool comprising a body portion having a shank at one end and a cylindrical portion with a chamber at the other end, said latter end being provided with cutting edges and the extreme surface of the annular portion being tapered, and a spring secured in the chamber and carrying a centering device adapted to recede into the chamber.

851,400. HEATING APPARATUS. DANIEL J. F. BUCK, Chicago, Ill. Filed Aug. 16, 1905. Serial No. 274,416.

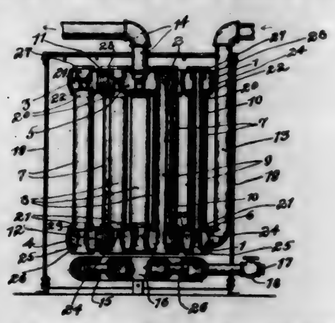

Claim.—1. In a fluid heater, the combination with upper and lower heater sections, of pipes through which said sections communicate, said pipes having tapered ends adapted to fit in the tapered openings through the walls of said sections, the ends of said pipes projecting within said sections being upset to form a locking means for locking the pipes in position.

2. In a fluid heater, the combination with upper and lower heater sections, of pipes through which said sections communicate, said pipes having tapered ends adapted to fit in the tapered openings through the walls of said sections, the ends of said pipes being riveted after insertion in said openings whereby said pipes are locked in position.

3. In a fluid heater, the combination with upper and lower heater sections, of pipes through which said sections communicate, said pipes having tapered ends fitting in the tapered openings through the walls of said sections, the ends of said pipes being riveted after insertion in said openings whereby said pipes are locked in position, flues passing through said sections and through said pipes, one end of said flues being tapered to fit the corresponding tapered opening through a wall of the sections, and clamping means engaging the other ends of said flues to lock said flues in position, said flues and clamping mechanism forming auxiliary locking means to clamp the tapered pipes in position.

4. In a heater, the combination with upper and lower heater sections, of pipes connecting said sections and communicating therewith, said pipes having tapered ends fitting in corresponding tapered openings in the walls of said sections, said pipes being riveted after insertion in said openings whereby said pipes are locked in position, flues passing through said sections and through said pipes, and means for causing said flues to act as tie-rods between the sections to form auxiliary clamping means for clamping the tapered pipes in position.

5. In a heater, the combination with heater sections, of pipes connecting said sections and communicating therewith, said pipes having tapered ends to fit corresponding tapered openings in the walls of said sections, the ends of said pipes projecting within said sections, being upset to form a locking means for locking the pipes in position, flues passing through said sections and having one end engaging a wall of one section, and threaded bushings for engaging the other end of said flue with a wall of the other section, actuation of said bushings causing said sections to be drawn together, thereby forming auxiliary clamping means for holding the pipes in position.

6. In a heater, the combination with two heater sections, of pipes connecting said sections, said pipes having tapered ends to fit in tapered openings through walls of said sections, the ends of said pipes projecting in said sections, being upset to form locking means for locking the pipes in position by means of a tool introduced through adjacent openings in the opposite walls of the respective sections, flues extending through said pipes in said sections, one end of each flue being tapered and engaging said opening in said opposite wall of one section, the other end of said flue having threaded engagement with a bushing mounted in said opposite wall of the other section, actuation of said bushings causing the sections to be drawn together whereby auxiliary clamping means for securely locking the pipes in position is formed.

7. In a heater, the combination with upper and lower compartments, each compartment being comprised of annular sections arranged concentrically and communicating with each other, pipes connecting the sections of the upper and lower compartments, said pipes having tapered ends to fit within the tapered openings through the inner walls of the sections, flues passing through said sections and pipes, said flues being tapered at one end to fit in tapered openings in the outer wall of one set of sections, bushings for securing the other end of the flues with the outer wall of the other set of sections, means for securing the tapered ends of the pipes tightly within the tapered openings, the ends of said tapered pipes being riveted after assembly to lock the tapered ends in tight engagement within the tapered openings.

8. In a fluid heater, the combination with an upper and a lower compartment, each compartment being comprised of flat annular heater sections arranged concentrically and communicating with each other, pipes connecting the corresponding sections of the upper and lower compartments, said pipes having tapered ends to fit within tapered openings through the inner walls of the sections, flues passing through said sections and pipes, the lower end of each flue being flared outwardly to engage in a tapered opening through the lower wall of the corresponding lower section, the other end of each flue being threaded, a flanged bushing for each flue for passing through an opening in the upper wall of the corresponding upper section and into engagement with a threaded end of the flue, actuation of said bushings causing the flues to be clamped securely to the sections and causing said sections to be drawn together, whereby said tapered ends are wedged tightly within the tapered openings, and a heater below the lower sections for directing heat into the flared openings of said flues and about said sections and pipes.

851,401. WAGON-JACK. HENRY G. CADY, Pine Bluff, Ark. Filed Sept. 17, 1906. Serial No. 334,866.

Claim.—1. In a wagon jack, the combination with a fulcrum post, operating lever and supporting bar, of a block having a longitudinal slot therein to receive the supporting bar, said block having locking engagement upon the supporting bar by reason of its fulcrumed arrangement thereupon.

2. In a wagon jack, the combination with a fulcrum post, operating lever and supporting bar, of a step block having a diagonally arranged slot therein so as to be slidably fulcrumed upon the supporting bar.

3. The combination with a fulcrum post and supporting bar connected by toggle joint, an operating lever, of a block slidable upon the supporting bar and adapted to be frictionally locked thereon, and a flexible connection for drawing the block upward on the supporting bar.

4. A wagon jack comprising a fulcrum post and supporting bar connected by toggle joint, an operating lever secured to said toggle joint, a block having a longitudinally arranged slot therein provided with a beveled end to engage the supporting bar so as to be slidably fulcrumed upon the supporting bar, and connections for drawing the block upward on the supporting bar.

851,402. DRY BATTERY. SAMUEL COCHRANE, Jersey City, N. J., assignor to Lincoln Electric Company, Jersey City, N. J., a Corporation of New Jersey. Filed Jan. 19, 1906. Serial No. 296,753.

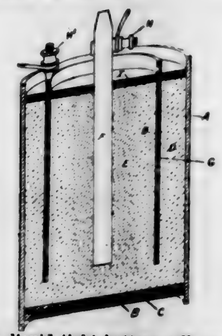

Claim.—1. A liquid tight battery cell or cup made of a fibrous material, saturated on its outer side only and to an appreciable depth with a non-absorbent insulating compound, the inner side being left absorbent.

2. A liquid tight battery cell or cup made of a fibrous material, saturated on its outer side and to an appreciable depth with a non-absorbent insulating compound and on its inner side with an electrolyte.

3. A dry battery consisting of an outer cell of a fibrous material saturated on its outer side with an insulating compound, the inner side being left absorbent an electro-positive element within the cell and surrounded with an electrolyte, an electro-negative element enclosed by the electro-positive element and covered by a depolarizing agent which is surrounded by the electrolyte.

4. A dry battery composed of an outer cell of a fibrous material, saturated on its outer side with an insulating compound and on its inner side with an electrolyte; an electro-positive element enclosed by the cell and in contact with the electrolyte saturated inner side of the cell; an electro-negative element enclosed by the positive element and separated therefrom by a depolarizing agent.

5. A dry battery composed of an outer cell of a fibrous material, saturated on the outer side with an insulating compound and on the inner side with an electrolyte; an electro-positive element within the cell and in contact with electrolyte saturated inner side thereof; an electrolyte within and in contact with said electro-positive element; a depolarizing agent within said electrolyte and an electro-negative element within and covered by said depolarizing agent.

851,403. ELECTRIC-LIGHTING DEVICE. ANTONE M. CORNELIUS, Chicago, Ill., and WILLOUGHBY V. CHAMPLIN, Rochester, N. Y., assignors to Abet Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 12, 1907. Serial No. 352,008.

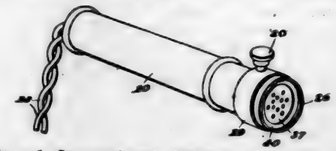

Claim.—1. In an electric lighting device, the combination with a hollow hand-piece, of a metallic socket and a terminal located in one end thereof, conductors extending into the hand-piece and electrically connected at one of their ends to said terminal and socket and in communication with an electric supply, a removable cup having a stem consisting of a socketed central rod or piece adapted to contact with said terminal, insulating material surrounding said rod and a screw-threaded tubular metallic portion surrounding said insulating material and adapted to engage said first-named socket, a contact spring located in said cup, a push-button extended through the wall of the cup to co-act with said spring, an igniter-carrying-cup removably located in the first-named cup and having means centrally located therein to engage the socket of the stem of the first-named cup, a post located in the igniter-cup near the aforesaid contact spring, and an igniting wire secured at one of its ends to said post and electrically connected at its other end to said centrally located means.

2. In an electric lighting device, the combination with a hollow hand-piece, of a metallic socket and a terminal located in one end thereof, conductors extending into the hand-piece and electrically connected at one of their ends to said terminal and socket and in communication with an electric supply, a removable cup having a stem consisting of a socketed central rod or piece adapted to contact with said terminal, insulating material surrounding said rod and a screw-threaded tubular metallic portion surrounding said insulating material and adapted to engage said first-named socket, a contact spring located in said cup, a push-button extended through the wall of the cup to co-act with said spring, an igniter-carrying-cup removably located in the first-named cup and having means centrally located therein to engage the socket of the stem of the first-named cup, a post located in the igniter-cup near the aforesaid contact spring, an igniting wire secured at one of its ends to said post and electrically connected at its other end to said centrally located means, and a perforated disk of mica located and supported externally of said wire.

3. In an electric lighting device, the combination with a hollow hand-piece, of a metallic socket and a terminal located in one end thereof, conductors extending into the hand-piece and electrically connected at one of their ends to said terminal and socket and in communication with an electric supply, a removable cup having a stem consisting of a socketed central rod or piece adapted to contact with said terminal, insulating material surrounding said rod and a screw-threaded tubular metallic portion surrounding said insulating material and adapted to engage said first-named socket, a contact spring located in said cup, a push-button extended through the wall of the cup to co-act with said spring, an igniter-carrying-cup removably located in the first-named cup and having means centrally located therein to engage the socket of the stem of the first-named cup, a post located in the igniter-cup near the aforesaid contact spring, an igniting wire secured at one of its ends

to said post and electrically connected at its other end to said centrally located means, a perforated disk of mica located and supported externally of said wire, and a perforated disk of steel located externally of the mica disk and having its perforations in register with those of the mica disk.

4. In an electric lighting device, the combination with a hollow hand-piece, of a metallic socket and a terminal located in one end thereof, conductors extending into the hand piece and electrically connected at one of their ends to said terminal and socket and in communication with an electric supply, a removable cup having a stem consisting of a socketed central rod or piece adapted to contact with said terminal, insulating material surrounding said rod and a screw-threaded tubular metallic portion surrounding said insulating material and adapted to engage said first-named socket, a contact spring located in said cup, a push-button extended through the wall of the cup to co-act with said spring, an igniter-carrying-cup having a bottom and wall of lavite located in the first-named cup and provided with means centrally located therein to engage the socket in the stem of the first-named cup, radially disposed ribs in said lavite portion, a post located in the bottom of the igniter-cup near the aforesaid contact spring, and a wire secured at one of its ends to said post and electrically connected at its other end to said centrally located means.

851,404. LACE. FRANK CREASSEY, Nottingham, England. Filed Apr. 18, 1906. Serial No. 312,504.

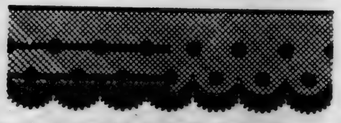

Claim.—1. A lace fabric made from the warp having therein bobbin fining patterning effects made from all the warp and bobbin threads embraced by the width of the fining effects, and having a net between such fining effects made from a less number of warp and bobbin threads than is used for the fining effects substantially as herein described.

2. A lace fabric made from the warp having therein bobbin fining patterning effects made from all the warp and bobbin threads embraced by the width of the fining effects, and in which, between the fining effects some of the warp and bobbin threads used for the fining effects twist together to form the net, while the other warp and bobbin threads twist together to form clips which are afterwards cut away from the lace substantially as herein described.

851,405. RAIL-FASTENING DEVICE. JAMES P. CREBAR, Denison, Tex. Filed Jan. 9, 1907. Serial No. 351,512.

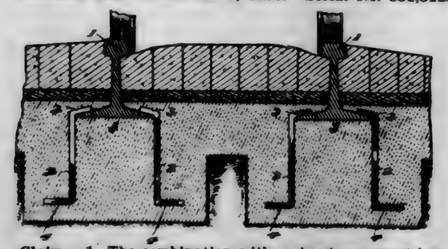

Claim.—1. The combination with a street pavement having a cement or concrete foundation, of a fastening device for a railway rail adapted to be embedded in the pavement, said fastening device comprising an end portion adapted to engage the flange of the rail and a body portion extending down into the pavement below the rail to form an anchor.

2. The combination with a street pavement having a cement or concrete foundation, of a fastening device for a railway rail adapted to be embedded in the pavement and comprising a straight body portion, and having its ends extending at an angle thereto, whereby its upper end is adapted to overlap the flange of the rail and its lower end to anchor the structure in position as set forth.

851,406. MANUFACTURE OF SAND LIME OR COMPOSITE BRICK OR STONE. ALLEN S. CROCKER, Rochester, N. Y., assignor to Laurence Elkus, Indianapolis, Ind. Filed Nov. 21, 1906. Serial No. 344,392.

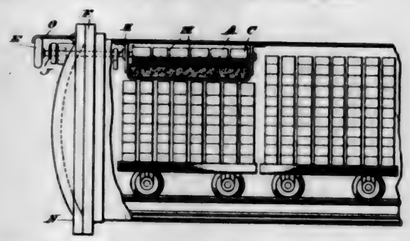

Claim.—1. In a hardening cylinder, a pan adapted and constructed to contain calcium carbonate, means for suspending said pan from the top of said cylinder, a vessel or vessels adapted and constructed to contain hydrochloric acid, means for supporting said vessel or vessels above said pan, a shaft in said cylinder, means for supporting said vessel or vessels on said shaft above said pan, and means for revolving said shaft and said vessel or vessels, substantially as described.

2. In a hardening cylinder, the combination of a pan, means for suspending the said pan from the top of said cylinder, vessels in said cylinder, a shaft in said cylinder, means for supporting said vessels on said shaft above said pan, and means for revolving said shaft and vessels, substantially as described.

3. In a hardening cylinder, the combination of a pan (A), means for suspending said pan from the top of said cylinder, vessels (B), (C) and (D), a shaft (F), means for supporting vessels (B), (C) and (D) on said shaft above said pan and means for revolving said shaft and said vessels (B), (C) and (D).

851,407. COMPOSITION OF MATTER TO BE USED AS FUEL AND PROCESS OF MAKING SAME. EDGAR L. CULVER, South Omaha, Nebr. Filed Aug. 6, 1906. Serial No. 329,314.

Claim.—1. The process as described of making fuel from manure, which consists in drying and disintegrating the manure, unitedly combining the disintegrated parts of manure with coal tar, and thereafter adding pulverized coal, chlorate of potash, saltpetre, water and clay.

2. The process as described of making fuel from manure, which consists in drying and disintegrating the manure, adding a disinfecting agent, and thereafter adding pulverized coal, chlorate of potash, saltpetre, water and clay.

3. The process as described of making fuel from manure, which consists in drying and disintegrating the manure, unitedly combining the disintegrated parts of manure with coal tar, and thereafter adding pulverized coal and a binding agent, and finally forming the mass into briquets.

4. The process as described of making fuel from manure, which consists of disintegrating the manure, adding a disinfecting agent and thereafter adding pulverized coal, chlorate of potash, saltpetre, water and clay.

5. The process as described of making fuel from manure, which consists of disintegrating the manure and using thereof approximately 85 per cent; unitedly combining said manure with approximately 5 per cent of coal tar, and thereafter adding approximately 10 per cent of pulverized coal and a binding agent.

6. The process as described of making fuel from manure, which consists of disintegrating the manure and using thereof approximately 85 per cent; unitedly combining said manure with approximately 5 per cent of coal tar, and thereafter adding approximately 10 per cent of pulverized coal, a binding agent, and forming the ingredients into briquets.

7. The process as described of making fuel from manure, which consists of disintegrating the manure and using thereof approximately 30 per cent; unitedly combining said manure with approximately 30 per cent of coal tar, and thereafter adding approximately 40 per cent of coal, adding a binding agent, and forming the ingredients into briquets.

8. The process as described of making fuel from manure, which consists in unitedly combining approximately 85 per cent of disintegrated manure and approximately 5 per cent of coal tar, and thereafter adding approximately 10 per cent of pulverized coal, and to each ton of said ingredients adding 4 pounds, approximately, of chlorate of potash and 2 pounds, approximately, of saltpetre; adding a binding agent, and forming the ingredients into briquets.

9. The herein described artificial fuel, which consists of manure, coal tar, pulverized coal, chlorate of potash, saltpetre and a binding agent.

10. The herein described artificial fuel, which consists of manure, a disinfecting agent, pulverized coal, chlorate of potash, saltpetre, and a binding agent.

11. The herein described artificial fuel which consists of the following ingredients in substantially the proportions named: dried and disintegrated manure 85 per cent; coal tar 5 per cent, pulverized coal 10 per cent, and a binding agent.

12. The herein described artificial fuel which consists of the following ingredients in substantially the proportions named; dried and disintegrated manure 85 per cent; coal tar 5 per cent, pulverized coal 10 per cent, and to each ton adding 4 pounds of chlorate of potash, 2 pounds of saltpetre, and a binding agent.

851,408. BRIDGE-ABUTMENT. ANDREW O. CUNNINGHAM, St. Louis, Mo., assignor to Daniel E. Garrison and Albert L. Johnson, St. Louis, Mo. Filed July 5, 1904. Serial No. 215,215.

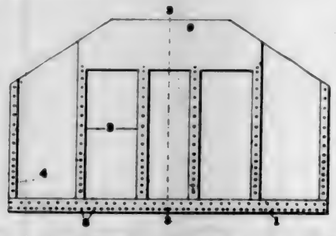

Claim.—1. An abutment consisting of a footing, a face wall and transverse strengthening walls on said footing, a slab of concrete resting on said face wall and extending back of the same onto and over said transverse walls, a parapet wall on said slab, the remaining portion of said slab forming a bridge seat extending onto the transverse walls well beyond the face wall, metal re-inforcing bars embedded in said slab and extending longitudinally thereof over the spaces between said transverse walls, and other such bars extending longitudinally thereof under the whole extent of the bridge seat.

2. An abutment of metal re-inforced concrete consisting of a footing, a face wall thereon, walls arranged on said footing transversely to said face wall and a deck wall upon the face wall extending rearwardly thereof over the transverse walls and having a parapet wall on its rear edge, the portion of the deck wall in front of the parapet wall constituting a bridge seat.

3. An abutment of metal-reinforced concrete comprising a footing, a face wall thereon, walls arranged on said footing transversely to said face wall and a deck wall overhanging the face wall and extending rearwardly thereof over the transverse walls and having a parapet wall on its rear edge, the portion of the deck wall in front of the parapet wall constituting a bridge seat.

4. A concrete abutment comprising a footing, a face wall thereon, walls arranged on said footing transversely to said face wall, a deck wall extending over the upper ends of said face and transverse walls, a parapet wall extending upwardly at the rear edge of the deck wall, reinforcing, embedded bars extending longitudinally of the deck wall and vertically inclined reinforcing bars embedded in the rear edges of the transverse walls and extending up through the parapet wall.

5. An abutment consisting of a footing, a face wall thereon, walls arranged on said footing transversely to said face wall, a deck wall on the top of and integral with said face wall and having a portion thereof formed into a bridge seat, which extends beyond the face wall well out onto said transverse face walls for the purpose set forth, and a parapet wall along the rear edge of the deck wall.

6. An abutment consisting of a footing, a face wall and transverse strengthening walls on said footing, a slab of concrete resting on said face wall and having a portion thereof formed into a bridge seat which extends back of the face wall out onto said transverse wall for the purpose specified, and a parapet wall along the rear edge of the bridge seat, said concrete slab being formed integral with its supporting walls and having metal re-inforcing bars embedded longitudinally therein above the spaces between said transverse walls.

851,409. RETORT. CHARLES H. DUISDIEKER, Pekin, Ill. Filed Sept. 25, 1905. Serial No. 279,016.

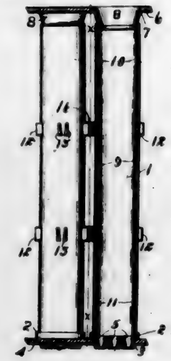

Claim.—1. The combination with a plurality of retorts suitably spaced to provide circulating space therebetween, of key seats on the walls of the retorts intermediate of the ends and keys supported by and adapted to engage the key seats on the facing walls of adjacent retorts for interlocking said walls.

2. In a kiln, the combination with a plurality of retorts, key seats on the outer walls of the retorts comprising pairs of lugs having their inner opposite faces converging downwardly and outwardly from the retorts, keys having their lateral faces converging from the top downward and from the ends inwardly, the said keys having their ends seated within key seats on adjacent retorts for uniting the walls thereof.

851,410. ELECTROTHERMAL SWITCH. JOHN ERICKSON, Chicago, Ill., assignor to Automatic Electric Company, Chicago, Ill. Filed Oct. 21, 1904. Serial No. 229,389.

Claim.—1. An electro-thermal switch comprising a body composed of a sheet-metal stamping, a group of switch-springs and interposed strips of insulation suitably secured to a portion of said body, a block of insulation pivotally mounted at the other end of said body, a metal post

mounted in the free or swinging end portion of said block of insulation, a toothed ring encircling said post and normally soldered thereto, a resistance coil mounted on said post and associated with said solder, said post having a shoulder to which the said toothed ring is soldered, suitable means for connecting the said resistance, toothed ring and one of said springs in series, said spring normally engaging a tooth on said ring, and spring means for keeping the said toothed ring pressed tightly against said shoulder when the solder melts as a result of the heat generated by said resistance, and whereby the toothed ring and spring are separated by the melting of the solder and the toothed ring and metal post then automatically re-soldered together upon the cessation of current through the resistance and the consequent cooling or hardening of the solder.

2. An electro-thermal switch comprising means for preserving the normal condition of a conducting path, said means including a metal post provided with a shoulder, a toothed ring encircling said post and adapted to rotate thereon, the ring and shoulder, however, being normally soldered together, a suitable heat-generating resistance associated with said solder, a spring tending at all times to force the said ring against the said shoulder, and a switch-spring normally engaging a tooth of said ring.

3. An electro-thermal switch comprising a self-soldering heat-coil device, together with suitable switch-contacts operated by said heat-coil device, said heat-coil being adapted to be operated by abnormal current conditions, and to automatically resume an operative condition upon the cessation of abnormal current conditions therein, the said switch having a plurality of axes of movement, one axis adapted to swing about the other to facilitate resetting of the structure as a whole, substantially as described.

4. An electro-thermal switch comprising a body composed of a sheet-metal stamping, a group of switch-springs and interposed strips of insulation suitably secured to a portion of said body, a block of insulation pivotally mounted at the other end of said body, a metal post mounted in the free or swinging end portion of said block of insulation, a toothed ring encircling said post and normally soldered thereto, a resistance coil mounted on said post and associated with said solder, said post having a shoulder to which the said toothed ring is soldered, suitable means for connecting the said resistance, toothed ring and one of said springs in series, said spring normally engaging a tooth on said ring, and spring means for keeping the said toothed ring pressed tightly against said shoulder when the solder melts as a result of the heat generated by said resistance, and whereby the toothed ring and spring are separated by the melting of the solder and the toothed ring and metal post then automatically re-soldered together upon the cessation of current through the resistance and the consequent cooling or hardening of the solder, together with means for connecting the said switch with or in one or more circuits or circuit connections.

5. An electro-thermal switch comprising means for preserving the normal condition of a conducting path, said means including a metal post provided with a shoulder, a toothed ring encircling said post and adapted to rotate thereon, the ring and shoulder, however, being normally soldered together, a suitable heat-generating resistance associated with said solder, a spring tending at all times to force the said ring against the said shoulder, and a switch-spring normally engaging a tooth of said ring, together with means for connecting the said switch with or in one or more circuits or circuit connections.

6. An electro-thermal switch comprising a self-soldering heat-coil device, said heat-coil device being adapted to be operated by abnormal current conditions, but adapted also to automatically resume an operative condition upon the cessation of abnormal current conditions therein, together with means for connecting the said switch in one or more circuits or circuit connections, the said switch having a plurality of axes of movement, one axis adapted to swing about the other, which is stationary to facilitate resetting of the structure as a whole, substantially as described.

7. In an electrical controller comprising thermally operable securing means releasable on a change in electrical circuit conditions, and having provisions whereby it is automatically resecured in operable condition preparatory for another operation, a spring g^6 held under permanent tension to ensure self return of the parts to operative condition preparatory to manual restoration to normal condition of the structure as a whole.

8. In apparatus of the class specified, the combination of a heat producing means, a rotary detent normally held against rotation by a heat susceptible material, circuit controlling means adapted to produce a relative turning between the heat producing means and the rotary detent, when the heat susceptible material is softened, a spring g^6 held under permanent tension to ensure self return of the parts to operative condition preparatory to manual restoration to normal condition of the structure as a whole, said rotary detent engaged by the spring g^6, for the purpose set forth.

9. In an electrical circuit protector, the combination of a heat concentrating device, a wheel having a plurality of teeth, a solder joint normally holding said wheel against movement, a strip spring adapted to engage the teeth of said wheel, whereby upon the passage of an unduly strong current in the device, the heat concentrating device softens the solder and permits the wheel to be turned to release the spring and resets the wheel in position to re-engage the spring, the wheel being automatically resoldered after operation in such reset position, a spring g^6 held under permanent tension to ensure self return of the parts to operative condition preparatory to manual restoration to normal condition of the structure as a whole, said wheel engaged on its under side by said spring g^6, for the purpose set forth.

10. In an electrical controller comprising thermally operable securing means releasable on a change in electrical circuit conditions, having provisions whereby it is automatically resecured in operable condition preparatory to another operation, a pivoted arm G upon the distal end of which are mounted the parts capable of self return to operative condition preparatory to manual restoration to normal condition of the structure as a whole.

11. In apparatus of the class specified, the combination of a heat producing means, a rotary detent normally held against rotation by a heat susceptible material, circuit controlling means adapted to produce a relative turning between the heat producing means and the rotary detent, when the heat susceptible material is softened, a pivoted arm G upon the distal end of which are mounted the parts capable of self return to operative condition preparatory to manual restoration to normal condition of the structure as a whole, and means for limiting the swing of said arm.

12. In an electrical circuit protector, the combination of a heat concentrating device, a wheel having a plurality of teeth, a solder joint normally holding said wheel against movement, a strip spring adapted to engage the teeth of said wheel, whereby upon the passage of an unduly strong current in the device, the heat concentrating device softens the solder and permits the wheel to be turned to release the spring and resets the wheel in position to re-engage the spring, the wheel being automatically resoldered after operation in such reset position, a pivoted arm G upon the distal end of which are mounted the parts capable of self return to operative condition preparatory to manual restoration to normal condition of the structure as a whole, and a plate A upon which all said parts are mounted.

13. In an electrical controller comprising thermally operable securing means releasable on a change in electrical circuit conditions, having provisions whereby it is automatically resecured in operable condition preparatory for another operation, the pivot F, the arm G mounted on said pivot, and the spring g^6 carried by the distal end of said arm, adapted to ensure self return of the parts to operative condition preparatory to manual restoration to normal condition of the structure as a whole.

14. In apparatus of the class specified, the combination of a heat producing means, a rotary detent normally held against rotation by a heat susceptible material, circuit controlling means adapted to produce a relative turning between the heat producing means and the rotary detent, when the heat susceptible material is softened, the pivot F, the arm G mounted on said pivot, the spring g^6 carried by the distal end of said arm, adapted to ensure self return of the parts to operative condition preparatory to manual restoration to normal condition of the structure as a whole, said rotary detent engaged by said spring g^6, for the purpose set forth.

15. In an electrical circuit protector, the combination of a heat concentrating device, a wheel having a plurality of teeth, a solder joint normally holding said wheel against movement, a strip spring adapted to engage the teeth of said wheel, whereby upon the passage of an unduly strong current in the device, the heat concentrating device softens the solder and permits the wheel to be turned to release the spring and resets the wheel in position to re-engage the spring, the wheel being automatically resoldered after operation in such reset position, the pivot F, the arm G mounted on said pivot, the spring g^6 carried by the distal end of said arm, adapted to ensure self return of the parts to operative condition preparatory to manual restoration to normal condition of the structure as a whole, said wheel engaged on its under side by said spring g^6, for the purpose set forth.

16. In a device of the class specified, the combination of a toothed metal wheel, a metal support for said wheel, solder between said support and wheel, a heat generating resistance associated with said solder, spring means for keeping the wheel and support pressed tightly together to exclude the air from said solder, and means for engaging the teeth of said wheel to exert spring pressure thereon and close circuit through said resistance.

17. A device of the class specified, comprising self-soldering means provided with a plurality of axes of movement, one axis adapted to swing about the other to facilitate resetting of said device, and suitable parts movable about said axes.

18. A self-soldering electro-thermal switch comprising a bodily movable toothed wheel, solder for normally holding the wheel against rotation, a spring engaging a tooth of said wheel, adapted to engage any other tooth should the wheel be rotated, a suitable resistance associated with said solder, a circuit for passing electric current through said resistance, and means for effecting the bodily movement of the toothed wheel, said solder adapted to be fused by heat generated by said resistance.

851,411. TUNNEL CONSTRUCTION AND VENTILATION. FRANK J. FERRELL, New York, N. Y., assignor of one-fifth to MAX GOEBEL, New York, N. Y. Filed Jan. 26, 1906. Serial No. 298,018.

Claim.—1. A tunnel comprising a plurality of segments, a number of which located in the upper portion of the same, are formed hollow, said segments being placed end to end to form an air conduit, and opening laterally thereto to the interior of the tunnel at one point and to the exterior thereof at another.

2. A tunnel comprising a plurality of segments a number of which are formed hollow, said segments being placed end to end to form an air conduit, a segment provided with an opening on its inner side, said segment being located at the end of the air conduit within the tunnel for the purpose set forth.

3. A tunnel having a conduit for air formed in its wall and extending longitudinally thereof, and means for drawing the air from the tunnel therethrough.

4. A tunnel having a number of air conduits formed in its wall and extending longitudinally thereof, and means for withdrawing air from the tunnel through all or either of said conduits by a single fan.

5. A tunnel having a number of air conduits formed in its wall and extending longitudinally thereof, each of which open into the tunnel at predetermined distances from each other, and means for forcing air through said conduits for the purpose set forth.

6. A tunnel having an air conduit formed in its wall, and extending from the entrance of the tunnel towards the middle thereof, and a similar air conduit extending from the opposite entrance of the tunnel, each of said conduits being provided with openings communicating with the interior of the tunnel at a distance from each other, and independent means for forcing air through said conduits.

7. A tunnel constructed of similar formed segments adapted to fit together, a number of which are hollow and are laid end to end to form an air conduit in the wall of the tunnel and opening into the tunnel at a predetermined point, and means for forcing air through said conduit located exterior thereto.

8. A tunnel formed of separate segments each of which is curved at its surface to form an arc of a circle, a number of which are hollow, an air conduit formed in the wall of the tunnel by laying the hollow segments end to end, one end of said conduit opening into the tunnel and the opposite end into the atmosphere.

851,412. STAVE-CUTTING MACHINE. LUTHER L. FRIERSON, St. Louis, Mo. Filed May 26, 1905. Serial No. 262,525.

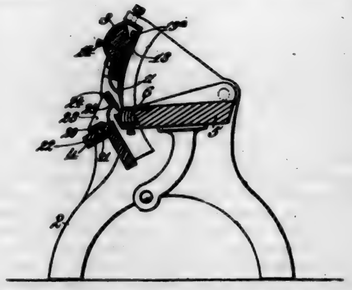

Claim.—1. A stave cutting machine having a main cutter for cutting, crozing and chamfering a stave, and an auxiliary cutter for cutting the stub from the bolt at the end of said stave, the cutting portion of said auxiliary cut-

ter being in substantially the same plane as the cutting portion of the main cutter.

2. A stave cutting machine having a main cutter for cutting, crozing and chamfering a stave, and an auxiliary cutter at one end of said main cutter for cutting the stub from the bolt at the end of said stave, the cutting portion of said auxiliary cutter being in substantially the same plane as the cutting portion of the main cutter.

3. A stave cutting machine having a main cutter for cutting, crozing and chamfering a stave, and an auxiliary cutter at one end of said main cutter for cutting the stub from the bolt at the end of said stave, the cutting portion of said auxiliary cutter being in substantially the same plane as the cutting portion of the main cutter, combined with a third cutter to cut through the bolt beyond the stave and to also trim off said stave.

4. A stave cutting machine having a main cutter for cutting, crozing and chamfering a stave, a bolt cutter to operate upon the bolt beyond one end of the main cutter, a bolt and stave trimming cutter to cut the bolt after the operation of said bolt cutter and to also trim off the stave, said bolt cutter and said bolt and stave trimming cutter being adapted to cut the stock in two separate pieces, and a standard for carrying said bolt and stave trimming cutter, having a beveled edge located in cooperative relation with the cutters to permit the two pieces to pass out of the machine at opposite sides thereof.

5. A stave cutting machine having a main cutter for cutting, crozing and chamfering a stave, bolt cutters situated at opposite ends of the main cutter, bolt and stave trimming cutters operative after the bolt cutter, the bolt cutter and the bolt and stave trimming cutter being adapted to cut the stock beyond the opposite ends of the stave and the bolt and stave trimming cutters serving to trim the stave, and standards carrying the bolt and stave trimming cutters, each standard having two upright portions, the inner edges of which are beveled, and said upright portions being located for the passage therebetween of one piece of stock, the other piece of stock being adapted to pass to the outer side of each outer projecting portion, when said pieces are separated by the bolt cutters and by the bolt and stave trimming cutters.

6. A stave cutting machine having a main cutter for cutting, crozing and chamfering a stave, a bolt cutter to operate at one end of the main cutter having a portion extending longitudinally of the main cutter and an outwardly extending portion, and a bolt and stave trimming cutter having a V-lip and two angular portions at opposite sides of the lip, one angular portion serving with the bolt cutter to cut through the stock beyond one end of the stave, and the other angular portion serving to trim the stave.

7. In a stave cutting machine, a knife bar having apertures near its opposite ends, a main cutter supported by the knife bar and composed of a main portion and crozing and chamfering knives, the crozing and chamfering knives being located in said apertures and having vertical slots, the knife bar having horizontal slots opening into said apertures, bolts extending through the several slots to connect the crozing and chamfering knives with the knife bar for adjustment longitudinally thereof, bolt-stub cutters having vertical slots, also located in said apertures, and bolts extending through the last-mentioned vertical slots and also through said horizontal slots to permit of adjustment of the bolt cutters longitudinally of said knife bar.

8. In a stave cutting machine, a knife bar having apertures near its opposite ends, a main cutter supported by the knife bar and composed of a main portion and crozing and chamfering knives, the crozing and chamfering knives being located in said apertures and having vertical slots, the knife bar having horizontal slots opening into said apertures, bolts extending through the several slots to connect the crozing and chamfering knives with the knife bar for adjustment longitudinally thereof, bolt cutters having vertical slots, also located in said apertures, and bolts extending through the last-mentioned vertical slots and also through said horizontal slots to permit of adjustment of the bolt cutters longitudinally of said knife bar, and bolt and stave trimming cutters supported independent of said knife bar and for longitudinal adjustment relatively to said knife bar.

9. In a stave cutting machine, a knife bar having apertures to adjustably receive chamfering and crozing and bolt-stub cutting knives and also having longitudinal slots opening into the respective apertures.

851,413. PAPER-CUTTER. WILLIAM H. GOLDING, Frankling, Mass. Filed June 11, 1906. Serial No. 321,104.

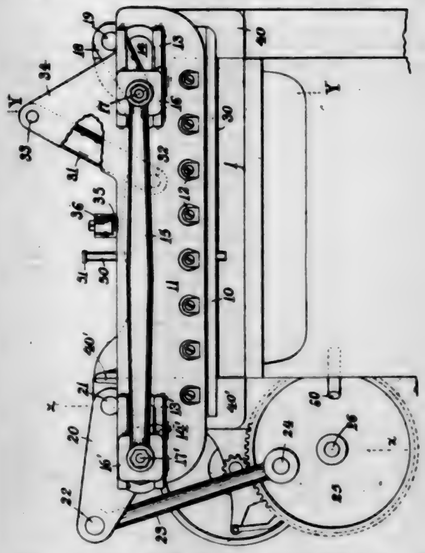

Claim.—1. The combination in a paper cutter, of a vertically slidable clamping member, a vertically and longitudinally slidable blade and carrier therefor, means for vertically moving the clamping member and carrier simultaneously, means acting by an obstruction to the further descent of the clamping member to add a longitudinal movement to the carrier during the latter's further descent, and a locking device holding the carrier and clamping member from relative motion until after the clamping member reaches such obstruction.

2. The combination in a paper cutter, of fixed ways, a blade-carrier, means for its operation, a clamping member, and a rod pivoted to both the carrier and clamping member and disposed to give the carrier a longitudinal motion during the portion of the latter's descent following a cessation of descent on the part of the clamping member.

3. The combination in a paper cutter, of fixed ways, swinging arms pivoted thereto, means for giving equal motion to both said arms, a blade-carrier slidable both vertically and longitudinally, connections between said arms and carrier slidable in the latter, a clamping member vertically slidable in said ways, and means connecting said carrier and clamping member and disposed to give the carrier a longitudinal movement upon a cessation of the descent of the clamping member.

4. The combination in a paper cutter, of fixed ways, swinging arms pivoted thereto, means for giving equal motion to both said arms, a blade and carrier slidable on said ways, connections between said arms and carrier, a clamping member vertically slidable in said ways, a projection rising from said carrier, a link or rod pivoted to said projection and to said clamping member, at an oblique angle, and a lock normally retaining said carrier and clamping member against relative motion.

5. The combination in a paper cutter, of a blade-carrier, fixed ways contacting with the rear face of said carrier, swinging arms pivoted to said ways, a connecting rod terminally pivoted to said arms,—said rod being provided with terminal blocks slidable along ways formed on the front face of the carrier, and the pivotal connections between said rod and arms being extended through slots formed in said carrier between the last-named ways,—and means for swinging one of said arms and thereby operating said carrier and blade.

6. The combination in a paper cutter, of a blade carrier, fixed ways contacting with the rear face of said carrier, swinging arms pivoted to said ways, pivot bolts held by said arms and extending forward through said carrier, nuts on said bolts for applying a pressure to the carrier and retaining it in contact with said ways, and means for simultaneously swinging said arms whereby front ways for said carrier are rendered unnecessary.

851,414. COMBINED CUFF-HOLDER AND GARMENT-SUPPORTER. JOHN GOODNOUGH, Indianapolis, Ind. Filed July 3, 1906. Serial No. 324,568.

Claim.—1. A fastener for garments made out of a single piece of spring wire bent and curved to form an open eye or loop from which two arms extend, one of said arms having its outer end bent into two coils of a spring to form the two jaws of a laterally expanding elastic clamp and the other arm being adapted to be inserted between the jaws of said clamp to retain a garment placed therein, said arm having an outward elbow extension between the open eye and said clamp.

2. A fastener for garments made out of a single piece of wire bent to form an open eye or loop from which the two ends of the wire extend to form diverging arms, one of said arms terminating in two coils of a spring which form the two jaws of a laterally expanding elastic clamp, the other of said arms having an inward bend at a distance from the said eye or loop less than the distance of the clamp therefrom and an outward bend between said last bend and the end of the arm, said arm terminating beyond the clamp in a circular bend or eye.

851,415. TROLLEY. CHARLES Y. HAILE, Uniontown, Pa. Filed June 26, 1906. Serial No. 323,436.

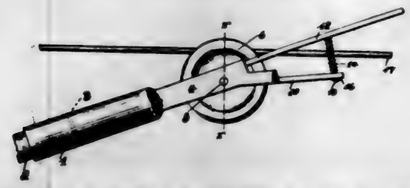

Claim.—1. A trolley harp comprising a sleeve supported upon a trolley pole and with spaced arms extending from the forward end and provided with longitudinal sockets intermediate the ends of the arms, a trolley wheel mounted for rotation between said arms and between said sockets and the sleeve, spaced rods each seated at one end in one of said sockets and extending at their free ends above the line of the trolley wheel, and yieldable devices between said rods and the free ends of said arms.

2. In a device of the class described, a member having means for connection to a trolley pole and spaced longitudinal arms having sockets intermediate their ends and with apertures at their free ends, a trolley wheel journalled between said arms, rods bearing at one end loosely in said sockets and extending at their free ends above the line of the trolley wheel, pins depending from said rods and extending through the apertures in said spaced arms, and springs operating between said rods and arms and maintaining said rods yieldably in their upward position.

851,416. MONKEY-WRENCH. HARRY B. HARDY, Akron, Ohio. Filed Jan. 21, 1907. Serial No. 353,258.

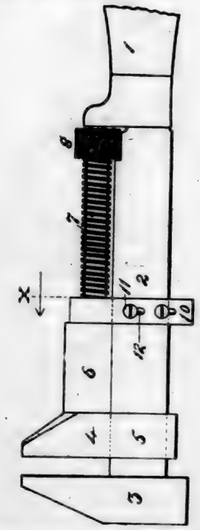

Claim.—1. The combination in a monkey-wrench having a fixed jaw and shank, of a loose jaw enclosing said shank and slidable thereon, a screw mounted for revolution projecting into said loose jaw, a frame enclosing a portion of said loose jaw provided with slots on the sides thereof, screws meshing into suitable openings in said loose jaw and passing through said slots whereby said frame may be moved with respect to said jaw, said frame being further provided on its inner, upper face with a threaded portion arranged to mesh with the threads on said screw, a spring interposed between said loose member and the lower portion of said frame for normally maintaining engagement between said frame and said screw.

2. A loose jaw for a monkey-wrench comprising a body portion arranged to enclose the shank of the wrench and slidable thereon, a frame arranged to enclose said body portion having its upper portion formed with a semi-cylindrical opening therein with threads in the inner surface thereof, screws secured to body portion and passing through slots in said frame to permit movement of said frame, a screw to normally actuate said loose jaw and be engaged by said frame, a spring interposed between the lower face of said body and the bottom portion of said frame for normally maintaining engagement between said semi-cylindrical portion and the upper surfaces of the threads of said screw, all constructed substantially as shown and described and for the purposes set forth.

851,417. COFFEE-URN. JOSEPH HEINRICHS, New York, N. Y. Filed Jan. 15, 1904. Serial No. 189,137.

Claim.—1. In a device of the class described, a reservoir, a shallow chamber at the bottom of said reservoir, said chamber having an annular circumscribing wall, a material chamber above the reservoir, a hollow non-perforated steam dome F fitted into steam tight engagement with said annular wall of the shallow-chamber and said dome extending downwardly into said shallow chamber so as to reduce the vertical dimensions of the chamber between the bottom thereof and the bottom of the dome, the bottom of said dome having a dished steam cavity extending toward

the top of said dome, a feed pipe extending from the dished cavity of the steam dome upwardly into the material chamber, and a return tube from the reservoir to the shallow chamber.

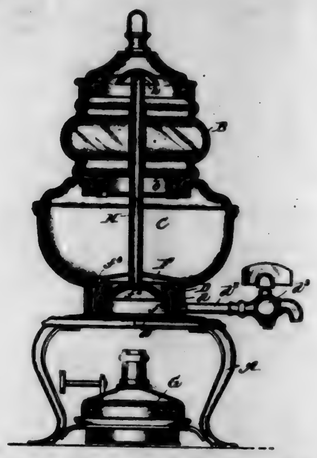

2. In a device of the class described, a reservoir, a shallow chamber having an annular wall, a material chamber above the reservoir, a non-perforated steam dome having steam-tight engagement with said annular wall and extending downwardly into the shallow chamber for reducing the vertical dimensions of the free space between the bottom of the dome and the bottom of the chamber, said steam dome comprising top and bottom plates connected by an intermediate conical wall, and said bottom plate provided with a steam cavity f^6, a feed tube extending upwardly from the steam cavity of said dome, and a return tube extending from the reservoir to the shallow chamber.

851,418. MOTOR-VEHICLE. REINHOLD HERMAN, Crafton, Pa. Filed June 6, 1906. Serial No. 320,430.

Claim.—1. A frame structure for motor vehicles, comprising an inner suspended frame, an outer suspended frame, and a supplemental upper suspended frame each of said frames having an independent connection with the vehicle and an independent yielding support.

2. The combination with the axles and bolsters of a motor vehicle, of an outer frame secured to the forward axle, and the rear bolster, an inner frame secured to the rear axle, and the front bolster, and a supplemental upper frame suspended above said outer frame, and adapted to support the vehicle body.

3. In a motor vehicle, a frame structure comprising an inner frame and an outer frame, each of said frames having an independent connection with the vehicle, and a supplemental frame yieldingly supported above said outer frame.

4. In a motor vehicle, the combination with an inner and an outer suspended frame, of means for securing said frames to the axles of the vehicle, means for connecting said frames to the vehicle bolsters, a supplemental frame supported above said outer frame, and spring supports for each of said frames.

5. In a motor vehicle, the combination with an outer frame connected to the front axle, and having a universal connection with the rear bolster, of an inner frame connected to the rear axle, and having a universal connection with the front bolster, and a supplemental upper frame yieldingly connected at its rear end, and yieldingly supported at its forward end upon said outer frame.

6. In a motor vehicle, a frame structure comprising two suspended frames, each having an independent fixed support, and a yielding support, and a supplemental suspended frame having a pivotal support at its rear end, and a yielding support at its forward end.

7. In a motor vehicle, the combination with the axles and bolsters, of an inner and an outer frame, each comprising parallel side bars, connected together by a cross bar, the disconnected ends of the side bars of one of said frames being secured to one of said axles, and the disconnected ends of the side bars of the other of said frames being connected to the other axle, means for yieldingly connecting the cross bars of said frames to said bolsters, and a supplemental upper frame yieldingly supported upon one of said first named frames.

851,419. BALL-BEARING. HENRY HESS, Philadelphia, Pa. Filed June 15, 1905. Serial No. 265,386.

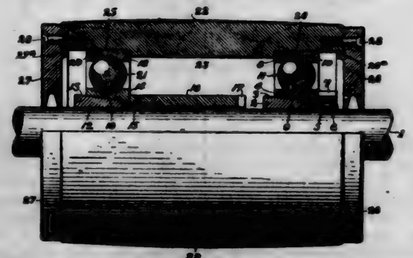

Claim.—1. The combination of a shaft, an annular casing revoluble relative to said shaft, a plurality of unit-assembled bearings in said casing, and means for securing said bearings in position from the same end of said casing.

2. The combination of a shaft, an annular casing, a plurality of complete ball bearings in said casing, an adapter for securing a member of each bearing to said shaft, and an elongated nut engaging one of said adapters and extending towards one end of said casing.

3. The combination of a shaft, a revoluble member, two independent bearings intermediate said shaft and said revoluble member, and means for securing a member of each bearing to said shaft from the same end of said revoluble member.

4. The combination of a shaft, a casing of hollow, generally-cylindrical form, having a shoulder near each end forming a seat for a bearing member which may be slipped into position from the adjacent end of the casing; a closure for each end of the casing, one of which is removably secured thereto; a complete assembled ball bearing near one end of said casing, having one of its bearing rings seated against one of said shoulders, and having an internal conical bore in its inner bearing ring; a conical adapter on the shaft engaging the said conical bore and having a screw-threaded extension; a long nut surrounding the shaft, having an internal thread engaging the thread on the adapter, and acting when screwed up, by contact with the inner bearing ring to draw the two conical members together, thereby securing the inner bearing ring to the shaft, the said nut extending toward the opposite end of the casing and being there provided with means for turning it by a suitable tool; and another similar complete ball bearing similarly secured to the other end of the casing by means of an adapter and a short nut; the whole construction being such that the bearing first mentioned may first be secured in position in its proper end of the casing from the further end of the casing, and the other bearing then placed from the same end and secured in position as above described.

5. The combination of a shaft, a hollow casing having a shoulder near each end, a closure for each end of the casing, one of which is removable, a complete assembled ball-bearing having one of its bearing rings seated against one of said shoulders in one end of the casing, a conical adapter on the shaft engaging the bore of the other ring of said bearing and having a threaded extension, a nut engaging the thread on the adapter and extending toward the other end of the casing and serving when set up to secure said bearing ring to the shaft, and another complete ball-bearing similarly secured on the other end of the casing by means of an adapter and a short nut; the construction specified serving to permit the two bearings to be secured in position in the casing from the same end thereof.

851,420. ELECTROTHERMAL SWITCH. RICHARD B. HEWITT and JAMES G. NOLEN, Chicago, Ill.; said Nolen assignor to Frank B. Cook, Chicago, Ill. Filed June 5, 1903. Serial No. 160,182.

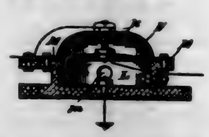

Claim.—1. An electric switch comprising a sealed chamber; a negative pole and a positive pole normally in contact and enclosed within said chamber; and electro-thermal means within said chamber, the increased temperature of which separate said poles, and exterior electrical connections for maintaining the continuity of the actuating electric circuit.

2. An electric switch comprising a sealed chamber; one side of which is flexible; a negative pole and a positive pole; which are normally in contact and one of which is secured in said flexible side and the other in the rigid wall thereof; and electro-thermal means within said chamber the increased temperature of which separate said poles, and exterior electrical connections for maintaining the continuity of the actuating electric circuit.

3. An electric switch comprising a sealed chamber; a negative pole and a positive pole, one of which is movable and which are normally in contact and are enclosed within said chamber, and electro-thermal means within said chamber the increase in temperature of which separate said poles, and exterior electrical connections for maintaining the continuity of the actuating electric circuit.

4. An electric switch comprising a sealed chamber; an automatically returnable flexible side therefor; a negative pole and a positive pole, which are normally in contact and one of which is secured in said flexible side and the other in the rigid wall thereof; and electro-thermal means within said chamber the increased temperature of which separate said poles, and exterior electrical connections for maintaining the continuity of the actuating electric circuit.

5. An electric switch comprising a sealed chamber; a vibratory switch member, one end of which is enclosed and terminates within said chamber, and the other extends and terminates outside of said chamber; opposite electrical contacts, one within and the other outside of said chamber, and electro-thermal devices within said chamber the increase in temperature of which moves said switch out of its normal contact with the contact within said chamber to that outside the same.

6. An electric switch comprising a suitable closed box; a flexible diaphragm dividing the same into two compartments one of which is hermetically sealed; a metallic spindle carried by said diaphragm, one end of which terminates in said sealed chamber and the other end in the other chamber; and electro-thermal devices in said sealed chamber through which a continuous electric current passes and which is electrically connected to said spindle; and antipodal electrical contacts with one or the other of which said spindle is alternately in contact.

7. An electric switch comprising a suitable closed box; a flexible diaphragm dividing the same into two compartments one of which is hermetically sealed; a metallic spindle carried by said diaphragm, one end of which terminates in said sealed chamber and the other end in the other chamber; and a wire coil terminal extending into said sealed chamber through which a continuous electric current passes and which is electrically connected to said spindle; and antipodal electrical contacts with one or the other of which said spindle is alternately in contact.

8. An electric switch comprising a suitable box; a cover therefor; a flexible diaphragm the edges of which are secured between the edges of said box and cover, and make a sealed chamber in said cover; a metallic spindle one end of which extends centrally into said sealed chamber and has the portion therein insulated, and the other end of which extends into the chamber enclosed by the box; an electrical connection in the top of said box in alignment with said spindle with which said spindle is normally in contact; an electrical connection in the bottom of said box in alignment with the said spindle; and a coiled wire electric circuit terminal extending into said sealed chamber coiled around the insulated portion of the spindle, and having its pole electrically connected with the same.

9. An electric switch comprising a suitably constructed sealed chamber, one side of which is flexible; electro-thermal means connected in series with said chamber, the increased temperature of which moves the flexible side of said chamber and automatically switches and maintains the continuity of the actuating electric circuit.

10. An electro-thermal switch comprising a flexible metallic diaphragm, a casing enclosing said diaphragm, there being a confined body of air at one side of said diaphragm, a high resistance associated with said confined body of air, and circuit-controlling contacts mounted at opposite sides of and opened and closed by said diaphragm.

11. An electric switch comprising a suitably constructed sealed chamber, one side of which is flexible; electro-thermal means connected in series with said chamber, the increased temperature of which moves the flexible side of said chamber and automatically switches and maintains the continuity of the actuating electric circuit.

12. An electro-thermal switch comprising a flexible metallic diaphragm, a confined body of air at one side of said diaphragm, a high resistance associated with said confined body of air, and circuit-controlling contacts mounted at opposite sides of and opened and closed by said diaphragm.

851,421. BAG-FRAME. CHRISTIAN HIBBING and ALBERT FULLER, Newark, N. J., assignors to The J. E. Mergott Company, Newark, N. J., a Corporation of New Jersey. Filed Apr. 6, 1906. Serial No. 310,205.

Claim.—1. A hand bag comprising hinged members provided with hollow channels, a bag body, and clips secured to the margin of said bag body, said margin and clips being inserted within the channels of the hinged members and secured therein by closing the channeled openings of said members.

2. A hand bag comprising hinged members provided with hollow channeled openings a bag body having metal clips secured to its margins, said bag body being secured within said channeled openings by closing the same over said clips.

3. A hand bag comprising a bag body having a series of metallic clips secured to its margins to form marginal beads, hinged frame members having hollow channels therein comprising a plane portion and a concave portion, the margins of the body being inserted within said channels which are closed over said clips and gripped to the said margins of the bag body.

4. A hand bag comprising a bag body and a pair of channeled hinged frame members, a series of metal clips secured to the margins of the body opening, said margins being secured within the channels of said frame members by compressing the edges of said channels together over the marginal clips of the bag body.

5. A bag frame member comprising a metallic strip bent to form an open or channeled groove, substantially semi-cylindrical in cross-section with the edge of the plane side extending below the edge of the curved side.

6. A bag frame member composed of a channeled metal strip semi-cylindrical in cross-section, the plane side of said strip extending below the curved side, the edge of said curved side being directed towards said plane side to form a gripping means for securing the edge of the bag body in position.

7. A bag frame member having a plane portion and a concave portion forming a hollow open channel throughout the length of the member, said open channel being adapted to close upon and grip the margin of a bag body and a beaded indentation running the entire length of the plane portion adjacent to the open edge of the concave portion.

8. A bag frame member having a plane portion and a concave portion united to form an open channel, said concave portion being united to said plane portion by a flat face portion lying at right angles to said first named plane portion.

851,422. DROP-HEAD SEWING-MACHINE. FRANCIS P. HUYCK, Swanton, Ohio. Filed Mar. 19, 1906. Serial No. 306,752.

Claim.—1. In a drop-head sewing machine, the combination with a casing, of a movable platform adapted to be raised and lowered in said casing and upon which the sewing machine head is supported, of a lifting rod attached at one end to the platform and extending downward therefrom, a segmental member pivotally supported adjacent to said lifting rod, a cable attached at one end to the upper end of said segmental member and at its opposite end to the lower end of the lifting rod, a second cable attached at one end to the lower end of the segmental member and at its opposite end to the upper end of the rod, and means for turning said segmental member.

2. In a drop-head sewing machine, the combination with a movable platform adapted to be raised and lowered and upon which the sewing machine head is supported, of a lifting rod loosely secured at one end to the platform to have a slight lateral movement at its opposite end, inclined guide rods for the platform, a segmental member pivotally supported adjacent to said lifting rod, cables adjustably attached at one end to the ends of the segmental member and at their opposite ends to the opposite ends of the lifting rod, and means for turning said segmental member.

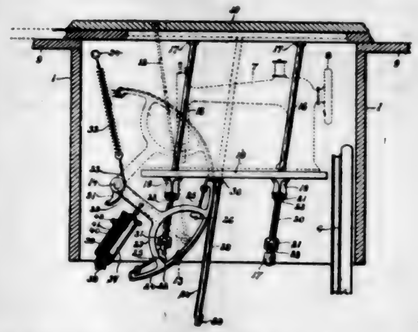

3. In a drop-head sewing machine, the combination with a casing, of a movable platform within the casing upon which the machine head is supported, an arm pivoted to the casing at one end and connected to the platform at its opposite end to raise and lower the same, a member extending laterally from and secured to the pivot of the arm to turn therewith and arranged to extend downward from said pivot when the arm is in its lowered position, means for turning said arm, and a spring attached at one end to the free projecting end of said member and secured at its opposite end to a support on the casing above the pivot, whereby as the strength of the spring decreases, the leverage of the member increases.

4. In a drop-head sewing machine, the combination with a casing, of a movable platform within the casing upon which the machine head is supported, an arm pivoted to the casing at one end and connected to the platform at its opposite end to raise and lower the same, an involute cam secured to the pivot of the arm to turn therewith and arranged to extend downward from said pivot when the arm is in its lowered position, a spring secured at one end to a support on the casing above said pivot and attached at its opposite end to the projecting end of the cam by a cable which engages the face of the cam when the arm is lowered and means for turning the arm and cam.

5. In a drop-head sewing machine, the combination with a casing, a platform for a sewing machine head, and guides in the casing for said platform, of a shaft extending through the wall of the casing, an arm secured to said shaft at one end and attached to the platform at its opposite end to raise and lower the same, means on the outer end of the shaft for turning the same, an involute cam secured to the shaft to turn with the arm and arranged to extend downwardly from said shaft when the arm is in its lowered position, a bushing in an opening in the wall of the casing above the shaft, a plug frictionally secured within the bushing and arranged to be turned therein, and a spring having a cable secured to each of its ends one of said cables being attached to the free projecting end of the cam to engage the cam face throughout the length of the face when the arm is in its lowered position and the other cable being attached to and wound upon said plug.

6. In a drop-head sewing machine, the combination with a casing, a platform for a sewing machine head, and guide rods in the casing for said platform to guide the same when raised or lowered, of a lifting rod secured to the platform, an arm pivoted on the wall of the casing at one end and provided with a segmental face at its opposite end having parallel grooves, cables attached at one end to the upper and lower ends of the lifting rod, eye-bolts secured to the opposite ends of the cables and extending through openings in the arm and engaged by thumb nuts to adjustably secure the cables within the grooves of the segmental face, and means for turning the arm to raise and lower the platform.

7. In a drop-head sewing machine, the combination of a casing provided with a back wall formed with inwardly extending brackets, rods secured to and held by said brackets at an inclination to the perpendicular and at a distance from the wall of the casing, a platform for supporting a sewing machine head, brackets secured to said platform having depending portions provided with rearwardly extending bifurcated arms to embrace the rods, rolls journaled between said arms having grooved faces formed with inclined sides to engage the rods at each side, and means for raising and lowering said platform.

851,423. ANTHRACHINONE DISULFONIC ACID. MICHAEL JEJINSKY, Crefeld, Germany. Filed Nov. 18, 1904. Serial No. 233,355.

Claim.—The new and useful anthrachinone-disulfonic acid characterized by having the sulfo-groups in the position 1.7, and giving a sodium salt crystallizing in fine needles on cooling from hot solution and yielding in melting with lime metabens-dioxyanthrachinone.

851,424. BOTTLE-CAP. ADOLPH G. KAUFMAN, New York, N. Y., assignor of one-half to Benjamin L. Weil and Berthold L. Weil, New York, N. Y. Filed May 25, 1906. Serial No. 318,607.

Claim.—1. A bottle or other receptacle having an external enlargement at the mouth, in combination with a cap having a marginal portion adapted to fit said enlargement, and a raised central releasing portion movable toward the receptacle to unlock the cap therefrom, the line of connection of the releasing portion with the marginal portion being within the continuation of the mouth's inner surface.

2. As a means for sealing bottles and other receptacles, a cap provided with a marginal portion adapted to engage an enlargement of the receptacle and having alternate teeth and notches, and also provided with a central releasing portion movable toward the mouth of the receptacle to unlock the cap therefrom.

3. As a means for sealing bottles and other receptacles, a cap provided with a marginal portion having teeth strengthened by ribs and relatively weak portions between said teeth, and also provided with a central releasing portion movable toward the mouth of the receptacle to unlock the cap therefrom.

4. As a means for closing bottles and other receptacles, a cap provided with a marginal portion having teeth alternating with notches, and also provided with a raised releasing portion movable toward the mouth of the receptacle to unlock the cap therefrom.

5. As a means for closing bottles and other receptacles, a cap provided with a marginal portion adapted to fit an enlargement at the mouth of the bottle and having strengthening ribs and outward projections at the lower ends of said ribs, and also provided with a raised releasing portion movable toward the mouth of the receptacle to unlock the cap therefrom.

851,425. BOTTLE-HANDLING APPARATUS. THOMAS D. KYLE, Chicago, and EDWARD H. WAUGH, Evanston, Ill.; said Waugh assignor to said Kyle. Filed June 19, 1905. Serial No. 265,967.

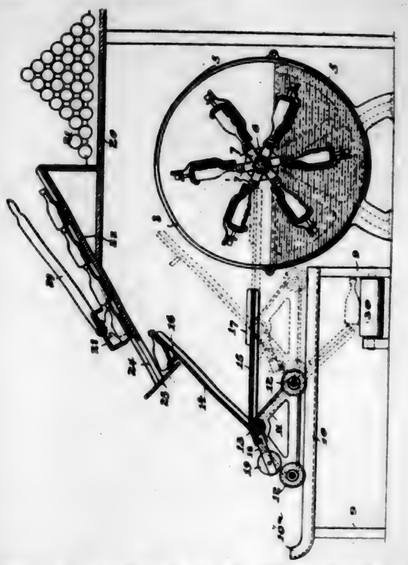

Claim.—1. In a machine for the purpose described, the combination with a carriage, of a bottle carrier mounted thereon adapted to receive soiled bottles and deliver them to the bottle holders of a bottle-washing machine, and another bottle carrier mounted on said carriage adapted to receive cleansed bottles from said bottle holders and deliver them at a suitable point of discharge, substantially as described.

2. In a machine for the purpose described, the combination with a delivery chute, of a carriage, and a bottle carrier mounted on said carriage movable relatively thereto and adapted to receive soiled bottles from said chute and deliver them to the bottle holders of a bottle-washing machine, substantially as described.

3. In a machine for the purpose described, the combination with a discharge conveyor, of a carriage, and a bottle carrier mounted thereon movable relatively thereto and adapted to receive cleansed bottles from a bottle-washing machine and deliver them to said conveyor, substantially as described.

4. In a machine for the purpose described, the combination with a delivery chute, of a carriage, and a counterweighted bottle carrier pivotally mounted on said carriage adapted to receive soiled bottles from said chute and deliver them to the bottle holders of a bottle-washing machine, substantially as described.

5. In a machine for the purpose described, the combination with a discharge conveyor, of a carriage, and a counter-weighted bottle carrier pivotally mounted on said carriage adapted to receive cleansed bottles from a bottle-washing machine and deliver them to said conveyor, substantially as described.

6. In a machine for the purpose described, the combination with a delivery chute and a discharge conveyor, of a carriage, and a pair of counter-weighted bottle carriers pivotally mounted on said carriage and disposed at an angle to each other, one of said carriers being adapted to transfer soiled bottles from said chute to a bottle-washing machine, and the other to transfer the cleansed bottles from said washing machine to said conveyor, substantially as described.

7. In a machine for the purpose described, the combina-

tion with a carriage, and a bottle carrier mounted thereon having seats for a row of bottles, of a chute adapted to feed bottles in successive rows to said carrier, and an escapement device on said chute controlling the delivery of said rows of bottles, substantially as described.

8. In a machine for the purpose described, the combination with a track and a carriage reciprocable thereon, of a counter-weighted bottle carrier pivotally mounted thereon, a chute adapted to feed the bottles in successive rows to said carrier, and an escapement device on said chute controlling the delivery of said rows of bottles, substantially as described.

851,426. CONCENTRATOR. HENRY L. LIGHTNER, San Francisco, Cal., assignor of one-third to William Priest and one-third to Henry Feige, San Francisco, Cal. Filed Mar. 6, 1906. Serial No. 304,440.

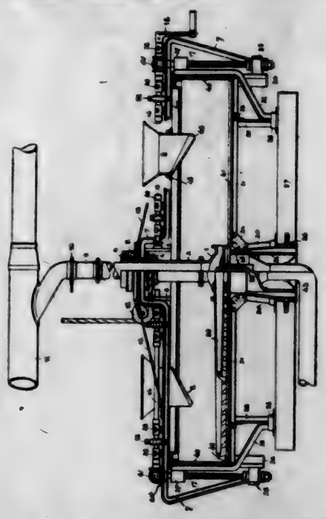

Claim.—1. In an apparatus of the character described, the combination of a vat having a central hole in the bottom thereof, means for feeding at the periphery of the vat the material to be treated, revoluble hollow arms, and nozzles connected therewith, discharging over the surface of the material in the vat inwardly or away from said periphery, means for supplying compressed air to said arms, means for revolving said arms, and means for raising said arms relatively to the vat, substantially as described.

2. In an apparatus of the character described, the combination of a vat having a central hole in the bottom thereof, means for feeding at the periphery of the vat the material to be treated, revoluble hollow arms, and nozzles connected therewith, discharging over the surface of the material in the vat inwardly or away from said periphery, means for supplying compressed air to said arms, means for revolving said arms, and means automatically operated with the revolving means for raising said arms relatively to the vat, substantially as described.

3. In an apparatus of the character described, the combination of a vat having a central hole in the bottom thereof, means for feeding at the periphery of the vat the material to be treated, revoluble hollow arms, and nozzles connected therewith, discharging over the surface of the material in the vat inwardly or away from said periphery, means for supplying compressed air to said arms, means for revolving said arms, and means for automatically separating the nozzles from the bottom of the vat, as the nozzles revolve, substantially as described.

4. In an apparatus of the character described, the combination of a vat having a central hole in the bottom thereof, means for feeding at the periphery of the vat the material to be treated, revoluble hollow arms, and nozzles connected therewith, discharging over the surface of the material in the vat inwardly or away from said periphery, means for supplying compressed air to said arms, means for revolving said arms, and means for automatically moving the nozzles to or from the bottom of the vat as the nozzles revolve, substantially as described.

5. In an apparatus of the character described, the combination of a vat having a central hole in the bottom thereof, a suction pipe for drawing the gangue from said central hole, means for feeding at the periphery of the vat the material to be treated, revoluble hollow arms, and nozzles connected therewith, discharging over the surface of the material in the vat inwardly or away from said periphery, means for supplying compressed air to said arms, means for revolving said arms, and means for raising said arms relatively to the vat, substantially as described.

6. In an apparatus of the character described, the combination of a vat having a central hole in the bottom thereof, means for feeding at the periphery of the vat the material to be treated, revoluble hollow arms, and nozzles connected therewith, discharging over the surface of the material in the vat inwardly or away from said periphery, means for supplying compressed air to said arms, means for revolving said arms, and means for raising or lowering the arms and nozzles independently of their revoluble movement, substantially as described.

7. In an apparatus of the character described, the combination of a vat having a central hole in the bottom thereof, means for feeding at the periphery of the vat the material to be treated, revoluble hollow arms, and nozzles connected therewith, discharging over the surface of the material in the vat inwardly or away from said periphery, means for supplying compressed air to said arms, means for revolving said arms, means for raising or lowering said arms and nozzles automatically with the revoluble movement, and means for raising or lowering them independently of said movement, substantially as described.

8. In an apparatus of the character described, the combination of a vat having a central hole in the bottom thereof, means for feeding at the periphery of the vat the material to be treated, revoluble hollow arms, and nozzles connected therewith, discharging over the surface of the material in the vat inwardly or away from said periphery, means for supplying compressed air to said arms, means for revolving said arms, a closed cover for the vat, and hoppers extending through the closed covers and discharging at the periphery of the vat, substantially as described.

851,427. PRESSER-FOOT-LIFTING MECHANISM FOR SEWING-MACHINES. JOSEPH M. MERROW, Hartford, Conn., assignor to The Merrow Machine Company, Hartford, Conn., a Corporation of Connecticut. Filed Jan. 13, 1905. Serial No. 240,929.

Claim.—1. In combination with a sewing machine presser-foot, a combined hand and foot operated mechanism for lifting the presser-foot comprising a pivotally secured hand lever for engaging and raising the presser-foot, an angle lever also pivotally supported for engaging the hand lever and adapted for connection with means whereby it may be rocked the said means comprising a spring and a plunger acting normally to hold the angle lever in inoperative position, a foot treadle and a connection between the foot treadle and the angle lever whereby the depression of the foot treadle actuates the hand lever to effect the raising of the presser-foot, substantially as described.

2. In combination with a sewing machine presser-foot, a combined hand and foot operated mechanism for lifting the presser foot comprising a pivotally secured hand lever for engaging and raising the presser foot, an angle lever engaging the hand lever and adapted for connection with means whereby it may be rocked, a pivotal support common to both the hand lever and the angle lever, the said means for rocking the angle lever comprising a spring and a plunger acting normally to hold the angle lever in inoperative position, a foot treadle and a connection between the foot treadle and the angle lever whereby the depression of the foot treadle actuates the hand lever to effect the raising of the presser-foot; substantially as described.

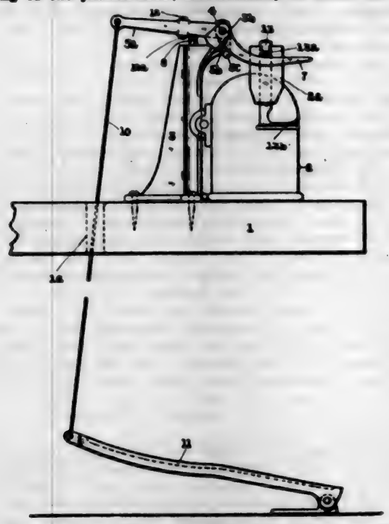

3. A presser foot lifting attachment for sewing machines comprising a detachable stand, a hand lever for raising the presser foot and a second lever for actuating the said hand lever, said levers being both pivoted upon the said stand; substantially as described.

4. A presser foot lifting attachment for sewing machines, consisting in a detachable stand a lever for lifting the presser foot by hand, a secondary lever for actuating the said hand lever independently of the hand, both pivoted on the stand, a spring to actuate the secondary lever in one direction and a treadle and a connection between the said treadle and the secondary lever to actuate the latter in opposition to its spring; substantially as described.

5. In a presser-foot lifter, a support, a hand lever pivotally mounted on the support for engaging and raising the presser-foot, an angle lever engaging the hand lever and adapted for connection with means whereby it may be rocked, a pivotal pin located in the support and common to both the hand lever and the angle lever, the means for rocking the angle lever comprising a spring and a plunger in the support, the plunger engaging the angle lever and acting normally to so hold the same that the presser foot may be lowered, a foot treadle and a connection between the foot treadle and the angle lever whereby the depression of the treadle actuates the hand lifting lever to effect the raising of the presser foot, substantially as described.

851,428. WRENCH. HORACE E. MORRILL, Dayton, Ohio, assignor to The Dayton Malleable Iron Company, Dayton, Ohio, a Corporation of Ohio. Filed Apr. 20, 1906. Serial No. 312,769.

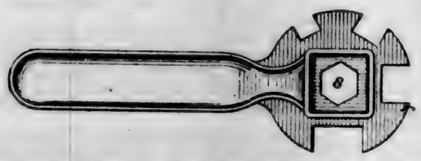

Claim.—1. In combination in a wrench, a flat broad base, having a central nut socket and a plurality of open sided nut sockets surrounding the central socket, a handle lying substantially in the same plane as the base, and an upstanding nut socket having its walls located inside the open sided nut sockets and supported directly on such base, whereby the projecting walls of such upstanding socket and the base mutually support and brace each other.

2. In combination in a wrench, a flat broad base portion having a plurality of open sided nut sockets arranged around the edge thereof, a handle lying in substantially the same plane as the base, and an upstanding nut socket having its walls supported directly on the said base inside the opensided nut sockets, whereby the projecting walls of such upstanding socket and the base mutually support and brace each other.

851,429. MOSQUITO NETTING AND BAR. JOSEPH B. R. NOBLE, Washington, Pa. Filed Oct. 19, 1906. Serial No. 339,634.

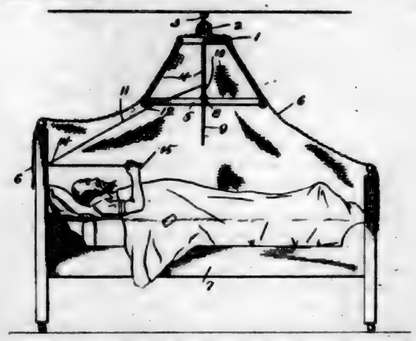

Claim.—In a device for suspending mosquito netting or canopies, the combination of a suspending plate having an eyelet, hangers secured at their upper ends to the edges of said plate and having their lower ends substantially hook-shape in form, a frame in the form of an endless band received in said hook-shaped ends of the hangers, a rod for bracing said frame centrally having its ends received in two of said hangers, and a netting enclosing the plate, the hangers, and the frame.

851,430. NECKTIE FORMER AND HOLDER. THOMAS H. NOONEN, New Rochelle, N. Y. Filed June 22, 1906. Serial No. 322,831.

Claim.—1. A necktie former and holder, comprising an oblong spring frame the top part of which is provided centrally with a forwardly set and downwardly directed arm, and the bottom part of which is provided centrally with a downwardly directed bend having an upwardly directed loop which opens downwardly, said arm extending below said bend, and the top part of said arm being provided with a triangular shield.

2. A necktie former and holder, composed of spring wire and comprising an oblong spring frame the top part of which is provided centrally with a forwardly set and downwardly directed arm, and the bottom part of which is provided centrally with an upwardly directed loop which opens downwardly, said arm extending below said loop and being provided at its lower end with a ring.

3. A necktie former and holder comprising an oblong spring frame the top part of which is provided centrally with a forwardly set and downwardly directed arm, and the bottom part of which is provided centrally with a downwardly directed bend having an upwardly directed loop which opens downwardly, the space between the top

and bottom part of said frame being free and unobstructed, and the lower end of said arm being provided with a ring.

851,431. CATTLE-GUARD. KIRTLEY B. NORMAN, Knoxville, Tenn. Filed July 30, 1906. Serial No. 328,393.

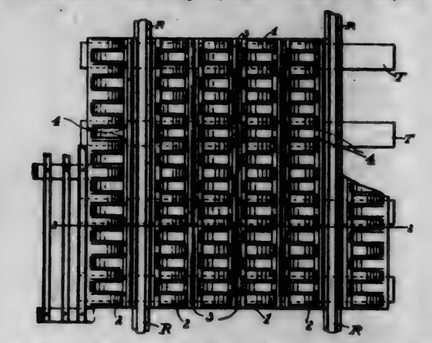

Claim.—1. In a cattle-guard, a metallic tongue plate comprising raised tongues, and rib pieces extending across said tongue plate between said tongues, substantially as described.

2. In a cattle-guard, a metallic tongue plate comprising raised tongues standing in parallel rows, the tongues in each row alternating in direction, and rib pieces resting upon said plate between said rows of tongues, substantially as described.

3. In a cattle-guard, a metallic tongue plate comprising raised tongues integral with said plate and standing in parallel rows, the tongues in each row alternating in direction, and rib pieces resting upon said plate between said tongues, substantially as described.

4. In a cattle-guard, a metallic tongue plate comprising raised tongues, and sheet metal rib pieces extending across said tongue plate between said tongues, substantially as described.

5. In a cattle-guard, a metallic tongue plate comprising raised tongues standing in parallel rows, the tongues in each row alternating in direction, and sheet metal pieces resting between said rows of tongues, substantially as described.

6. In a cattle-guard, a metallic tongue plate comprising raised tongues integral with said plate and standing in parallel rows, the tongues in each row alternating in direction, and sheet metal rib pieces resting upon said plate between said tongues, substantially as described.

7. In a cattle-guard, the combination with the ties and rails of a railway track, of metallic tongue plates comprising raised tongues and rib pieces extending across said plates between said tongues and between said tongues and the said rails, substantially as described.

851,432. BRAKE-SHOE ATTACHMENT FOR AUTOMOBILES, &c. JOHN O'LEARY, Cohoes, N. Y. Filed Feb. 27, 1906. Serial No. 303,266.

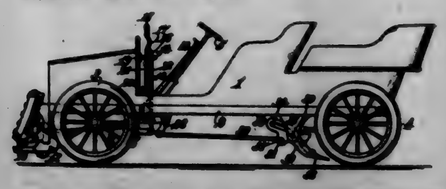

Claim.—1. The combination with an automobile or motor car, of a fender, sliding brake shoes for engagement with a portion of the wheels and the ground surface under the wheels, the shoes being connected to the fender, and means for automatically lowering the fender and brake shoes and including a weighted controller.

2. The combination with an automobile or motor car, of a fender, brake shoes to engage a portion of the wheels and the ground surface, a connecting device for the motor mechanism of the car, and means automatically operating when the fender is struck to depress the brake shoes and shut off the motor mechanism.

3. An automobile or motor car having an automatically operating fender, brake shoes to engage a portion of the wheels of the car and the ground surface, and connections between the fender and brake shoes for automatically disposing the latter in braking position when the fender is lowered and including a weighted controller at a distance from the fender and shoes.

4. An automobile or motor car having an automatically operating fender, brake shoes to engage a portion of the wheels of the car and the ground surface, connecting devices between the fender and brake shoes to dispose the latter in braking position simultaneously with the depression of the fender, and means for stopping the motor and connected to a part of said devices.

5. An automobile or motor car having an automatically operating fender, brake shoes cooperating with a portion of the wheels of the car and the ground surface, and connections between the fender and brake shoes and including a weighted controller at a distance from both the fender and shoes to dispose the said brake shoes in braking position with respect to the wheels simultaneously with the depression of the fender.

6. An automobile or motor car having an automatically operating fender, brake shoes disposed in cooperative relation to the rear wheels of the car, a release lever operated by the movement of the fender, a brake shoe lever connected to and actuated by the release lever, a weighted controller to which the lower end of the brake shoe lever is movably attached, and a connection between the said controller and the brake shoes.

7. An automobile or motor car having a fender, brake shoes disposed in cooperative relation to the rear wheels of the car and adapted to engage the ground surface and slidably disposed on a fixed support, and connecting devices between the fender and brake shoes for simultaneously lowering the said shoes when the fender is lowered, said connecting devices having a weight device at an intermediate point.

8. An automobile or motor car having a fender, slidable brake shoes cooperating with the rear wheels of the car and adapted to contact with the ground surface, means attached to the motor controlling mechanism to shut off the latter, and connecting devices between the fender, brake shoes and said means for causing the latter and the brake shoes to operate simultaneously with the movement of the fender.

9. An automobile or motor car having a movable fender, weight means cooperating with said fender to cause it to automatically gravitate, a connection with the motive mechanism of the car for shutting off the latter, and devices interposed between the fender and the connection for causing the latter to be operated simultaneously with the movement of the fender.

10. An automobile or motor car having slidable brake shoes disposed to cooperate with the rear wheels thereof and adapted to bear on the ground surface, a connection with the motive mechanism of the car for shutting off the latter, and devices cooperating with and connecting the brake shoes and said motive mechanism connection for simultaneously throwing the shoes into braking position with the shutting off of the motor.

11. The combination with an automobile or motor car, of longitudinally slidable slotted brake shoes disposed in cooperative relation to the rear wheels thereof, a fixed support on which said shoes are movably held, and means for releasing and causing an automatic application of said brake shoes.

12. The combination with an automobile or motor car, of longitudinally slidable brake shoes in cooperative position with relation to the rear wheels of the car, an intermediate weighted controller connected to said brake shoes, and lever devices cooperating with said controller, one of the lever devices by its movement operating the remaining lever device.

13. The combination with an automobile or motor car, of slidable brake shoes arranged in cooperative relation with respect to the rear wheels thereof and adapted to contact with the ground surface, an intermediate weighted controller connected to the brake shoes, a lever attached to said controller, and a lever for actuating said controller lever.

14. The combination with an automobile or motor car, of brake shoes disposed in cooperative relation to the rear wheels thereof, an intermediate weighted controller having a slot therein and connected to the said shoes, a lever having its lower extremity engaging said slot of the controller, and means for actuating the said lever.

15. The combination with an automobile or motor car, of brake shoes having slotted shanks and operatively suspended adjacent to the rear wheels of the car, a fixed support on which said brake shoes are mounted the said shoes being longitudinally slidable, and means connected to the shoes for operating the same.

16. The combination with an automobile or motor car, of brake shoes disposed in operative relation to the rear wheels thereof, and provided with slots, fixed means engaging the said slots and suspending the shoes, and means connected to the shoes for operating the same.

851,433. CALCULATING-MACHINE. ARTHUR J. POSTANS, Putney, England. Filed Mar. 12, 1906. Serial No. 305,651.

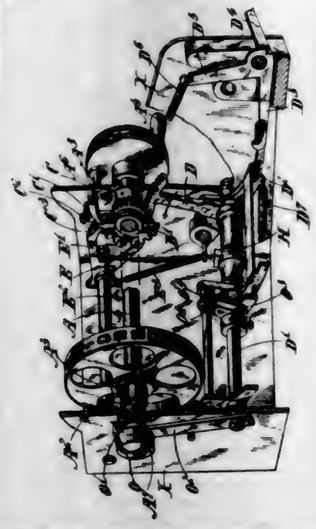

Claim.—1. In a calculating machine the combination of a registering drum, keys operatively connected therewith for advancing the same, a second registering drum, a second set of keys operatively connected therewith for advancing the second drum independently of the first, a supporting member reciprocated by mechanism operatively connected with the first registering drum, a "carrying-on" finger disposed in proximity to the operating mechanism of the second drum, means operatively connected with the first drum for alternately advancing and withdrawing the "carrying-on" finger in a path in proximity to the operating mechanism of the second drum, and a member operatively connected with the first drum and adapted at the moment of "carrying-on" to be moved by the drum into co-operative position relatively to the "carrying-on" finger so that the finger as it advances drum so that it is advanced by that drum against the catch imparts movement to the operating mechanism of the second drum, substantially as set forth.

2. In a calculating machine the combination of a registering drum, keys operatively connected therewith for advancing the same, a second registering drum, a second set of keys operatively connected therewith for advancing the second drum independently of the first, a supporting member reciprocated by mechanism operatively connected with the first recording drum, a "carrying-on" finger yieldingly mounted on the supporting member and moving with the same in proximity to the operating mechanism of the second drum but being inoperative upon the said mechanism by reason of its yielding connection with the supporting member, and a member operatively connected with the first drum and adapted at the moment of "carrying-on" to be moved by the drum into co-operative position relatively to the "carrying-on" finger so that the yielding connection is overcome and the finger as it advances imparts movement to the operating mechanism of the second drum, substantially as set forth.

3. In a calculating machine the combination of a registering drum, keys operatively connected therewith for advancing the same, a second registering drum, a second set of keys operatively connected therewith for advancing the second drum independently of the first, a supporting member, a "carrying-on" finger pivoted thereto, operative connection between the supporting member and the first registering drum, whereby movement of that drum reciprocates the member and thus moves the finger backwards and forwards in a path in proximity to the mechanism of the second drum, means for limiting the movement of the finger about its pivot in a direction away from the operating mechanism of the second registering drum, a spring to retain the finger at the limit of its pivotal movement so that it is normally held clear of the said operating mechanism, and a member operatively connected with the first drum and adapted at the moment of "carrying-on" to be advanced by the drum against the finger so that the finger is carried forward against the action of its spring and brought into engagement with the operating mechanism of the second drum, substantially as set forth.

4. In a calculating machine the combination of a registering drum, keys operatively connected therewith for advancing the same, a second registering drum, a second set of keys operatively connected therewith for advancing the second drum independently of the first, "carrying-on" mechanism operative between the first and second drums for the purpose of passing on the total from the first drum to the second drum and means for momentarily automatically locking the first drum at the moment of "carrying-on", substantially as set forth.

5. In a calculating machine the combination of a registering drum, keys operatively connected therewith for advancing the same, a second registering drum, a second set of keys operatively connected therewith for advancing the second drum independently of the first, "carrying-on" mechanism operative between the two drums for the purpose of passing the total of the first drum on to the second, a stop operatively connected with the first drum and advanced as that drum advances, a catch operatively connected with the "carrying-on" mechanism and brought by the latter into the path of the stop at the moment of "carrying-on" so that further advance of the first drum is prevented until the completion of the "carrying-on", substantially as set forth.

6. In a calculating machine the combination of a registering drum, keys operatively connected therewith for advancing the same, a second registering drum, a second set of keys operatively connected therewith for advancing the second drum independently of the first, a supporting member reciprocated by mechanism operatively connected with the first registering drum, a "carrying-on" finger pivoted to the supporting member but normally lying clear of the operating mechanism of the second drum, means operatively connected with the first drum for moving the finger into engagement with the mechanism of the second drum at the moment of "carrying-on" a catch on the supporting member, a stop operatively connected with the first

at the moment of "carrying-on" but afterwards released by the advance movement of the "carrying-on" mechanism, substantially as set forth.

7. In a calculating machine the combination of a registering drum, spring-controlled mechanism for advancing the same, keys operatively connected with such mechanism for the purpose of displacing it in a direction opposed to the action of the spring preparatory to operating the drum, a second registering drum, spring-controlled mechanism for operating this drum, a second set of keys operatively connected with such mechanism for the purpose of displacing the same in a direction opposed to the action of the spring preparatory to operating the drum, a "carrying-on" finger disposed in proximity to the operating mechanism of the second drum, means operatively connected with the first drum for alternately advancing and withdrawing the "carrying-on" finger in a path in proximity to the operating mechanism of the second drum, and a member operatively connected with the first drum and adapted at the moment of "carrying-on" to be moved by the drum into co-operative position relatively to the "carrying-on" finger so that the finger as it advances momentarily displaces the operating mechanism of the second drum against the action of the controlling spring, substantially as set forth.

8. In a calculating machine the combination of a shaft free to move endwise, a spring to normally maintain the shaft at one end of its travel, means for locking the shaft against rotation except when displaced endwise, a plurality of registering drums mounted free upon the shaft, a ratchet on each drum, a pawl engaging each ratchet to prevent rotation of the drums in one direction, a pivoted arm operatively connected with the pawl mechanism to simultaneously bring them out of engagement with their respective ratchets when moved in one direction, a frusta or cone-shaped head on the shaft, the axis of the frusta coinciding with that of the shaft, a spring-control for the pivoted arm so that the free end of the arm bears against the conical portion of the head, and means for automatically engaging all of the drums with the shaft when the latter is moved endwise, such movement also oscillating the arm referred to by causing the larger part of the frusta to bear against the arm, substantially as set forth.

9. In a calculating machine the combination of a shaft free to move endwise, a spring to normally maintain the shaft at one end of its travel, means for locking the shaft against rotation except when displaced endwise, means to automatically prevent the return of the shaft after endwise displacement and partial rotation except it be rotated through a given angle, a plurality of recording drums mounted free upon the shaft, a ratchet on each drum, a pawl engaging each ratchet to prevent rotation of the drums in one direction, a pivoted arm operatively connected with the pawl mechanism to simultaneously bring them out of engagement with their respective ratchets when moved in one direction, a frusta or cone-shaped head on the shaft, the axis of the frusta coinciding with that of the shaft, a spring-control for the pivoted arm so that the free end of the arm bears against the conical portion of the head, and means for automatically engaging all of the drums with the shaft when the latter is moved endwise, such movement also oscillating the arm referred to by causing the larger part of the frusta to bear against the arm, substantially as set forth.

851,434. BUTTER-PRESS AND STAMPING-MACHINE. ADOLPH PRINCE, Chicago, Ill. Filed Aug. 6, 1906. Serial No. 329,479.

Claim.—A device of the kind described comprising parallel guide bars, a frame carried thereby, a presser board movable vertically in the frame, a post carried by the presser board, a lever pivoted at one end to the frame and bearing upon said post, a mould base slidable between the guide bars, a mould carried by said base, and a scraper arranged at the front end of the frame as and for the purpose set forth.

851,434.

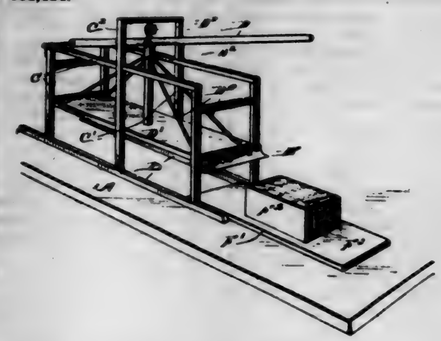

851,435. TUBE-ROLLING MILL. JOHN C. PEY, Shelby, Ohio. Filed Oct. 2, 1903. Serial No. 175,502.

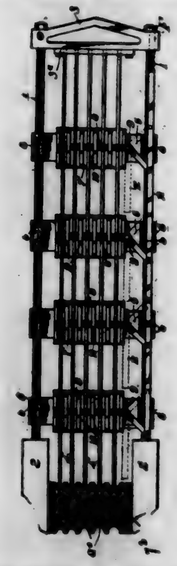

Claim.—1. A mandrel guide or support for tube rolling mills, composed of a series of mandrel guides or supports mounted on a suitable frame-work and having notches provided in the upper portion thereof, brackets secured to said frame-work, a series of levers pivotally attached to said brackets and adapted to mesh with said notches provided in the upper portion of the mandrel guide.

2. A mandrel guide or support for tube rolling mills, having a series of brackets attached to the frame-work, a plurality of mandrel guides securely attached to said brackets, bars pivotally secured to said brackets, whereby the body portion is made to register with a series of notches provided in the upper portion of the mandrel support, a draw-bar having a series of apertures provided therein, whereby the levers are connected together, providing a means of releasing the levers from contact with the notches whereby the tubes can be removed from the mandrel, substantially as and for the purpose set forth.

3. The combination with a suitable support, of a grooved guide mounted thereon, the walls of the grooves being laterally recessed and means receivable in the recesses for closing the upper open ends of the grooves.

4. The combination with a suitable support, of a grooved guide block mounted thereon, the walls of the grooves being apertured and a bar removably received in the apertures and extending across the upper ends of the grooves to close the latter.

5. The combination with a suitable support, of a grooved guide block mounted thereon, the walls of the grooves being apertured, a bar pivotally supported intermediate its ends on the block and receivable in the apertures and means connected to one end of the bar for moving it into or out of the apertures.

6. The combination with a frame, rolls having passes therein, and mandrel rods supported in an abutment on the frame, of a plurality of open guides in alinement with the passes adapted to support the entire piece being operated upon, and adapted to permit the said piece being removed laterally from the guides.

7. The combination with a frame, rolls having passes therein and mandrel rods supported in an abutment at one end of the frame, of a plurality of open guides adapted to support the mandrels at intervals throughout their length and which admit of the tubes formed being removed laterally from the guides.

8. The combination with a frame, rolls and mandrel rods, of guides in alinement with the passes of the rolls, the height of each guide being greater than the distance from the bottom of its pass to the horizontal plane of the widest portion of the pass, the guide being constructed and arranged to admit of transverse movement of the piece being operated upon from its position in the guides.

851,436. PILE STRUCTURE. JESSE T. PYLE, Amarillo, Tex. Filed Aug. 16, 1906. Serial No. 330,823.

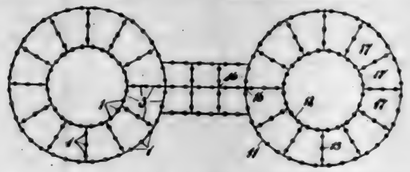

Claim.—1. A device of the class described, comprising an outer wall of separable sections, an inner wall of separable sections, and a plurality of partitions composed of similar sections and connected to both of said walls to strengthen and reinforce the same.

2. A device of the class described, comprising an outer ring of separable sections, an inner ring of separable sections, and a plurality of radial partitions composed of similar sections and connected to both of said rings to strengthen and reinforce the same.

3. A device of the class described, comprising an outer ring of separable sections, an inner ring of separable sections, and a plurality of radial partitions composed of similar sections connected to the outer and inner rings and serving to brace and reinforce the same, and space between said rings adapted to be filled with concrete.

4. A device of the class described, comprising an outer ring of separable sections, an inner ring of separable sections, and a plurality of radial partitions, composed of similar sections connected to the outer and inner rings and serving to brace and reinforce the same, each of said sections comprising a tube having a slot extending the entire length thereof, a web on the opposite side of said tube from said slot, and a head on the end of the web adapted to fit within the tube of the next adjacent section.

5. A device of the class described, comprising an outer ring of separable sections, each of said sections comprising a tube having a slot extending the entire length thereof, a web on the opposite side of said tube from the slot, and a head on the end of the web adapted to fit within the tube of the next adjacent section, an inner ring of separable sections similar to the sections of the outer ring, the webs of certain of the sections of the outer and inner rings being provided with branch webs, and sections similar to those above described for connecting the branch webs of the inner ring with the branch webs of the outer ring.

851,437. COMBINED HOTEL-REGISTER AND ACCOUNT-CHECKING SYSTEM. THOMAS J. RAFFICAN, Youngstown, Ohio. Filed Aug. 14, 1906. Serial No. 330,597.

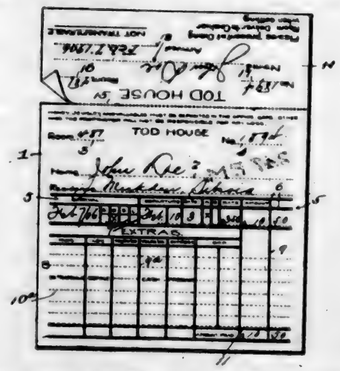

Claim.—1. In a hotel register and checking system, a register card provided with a plurality of rulings having appropriate designations providing spaces for the registry of a guest and for the keeping and checking of his individual account, said card being further provided at one edge with a coupon having rulings and designations similar to certain of those on the card proper, and with an indicated tear-line between the coupon and the card proper.

2. In a hotel register and checking system, a register card provided with a plurality of rulings having appropriate designations providing spaces for the registering of a hotel guest and the keeping and checking of his individual account, said card being further provided with a coupon having rulings and designations similar to certain of those on the card proper but arranged in inverted relation thereto, the card being also provided with an indicated tear-line between the coupon and the card proper.

3. In a hotel register and checking system, a single register card provided with a group of horizontal rulings near the top thereof, a narrow block of rulings forming a plurality of entry spaces respectively having headings consisting of the words and abbreviations "Arrival," "B," "D," "S," "L," "Departure," "Days," "A," "E," and "Rate;" a separate larger block of rulings spaced from said narrow blocks and forming a series of vertical columns, each having headings; and a double column for dollars and cents ruled across one end of and directly adjoining both the said narrow and separate blocks of rulings.

851,438. FURNACE. ARTHUR RHONEMUS, Belle Vernon, Pa. Filed Aug. 8, 1906. Serial No. 329,793.

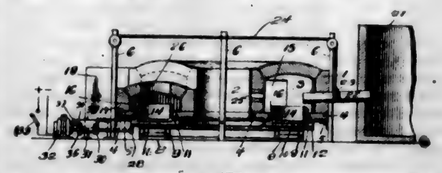

Claim.—1. A furnace of the type described consisting of two circular walls forming a circular compartment, one part of said compartment being smaller than the remainder of the compartment, a circular track arranged beneath

said compartment, a revolving platform adapted to travel upon said track and having gutters at its edges, pots mounted upon said platform, tangentially disposed flues communicating with said compartment and adapted to establish a heating zone therein, and means to revolve said platform, substantially as described.

2. In a furnace, the combination with a suitable heating medium, of circular walls forming a circular compartment adapted to be heated by said medium, one part of said compartment being smaller than the remainder of the compartment, a circular platform revolubly mounted in said compartment and having gutters at its edges, pots arranged upon said platform and adapted to receive molten glass, means to revolve said platform, and means to intermittently stop said platform, substantially as described.

3. In a furnace, the combination with a suitable heating medium, of circular walls forming a compartment adapted to be heated by said medium, one part of said compartment being smaller than the remainder of the compartment, a roof for said compartment having an opening formed therein, a revoluble platform mounted in said compartment, pots supported by said platform and adapted to receive molten glass, means to revolve said platform, and means engaging said platform opposite each pot to stop said platform, substantially as described.

4. A furnace embodying two circular walls, one arranged within the other to form a circular compartment, tangentially disposed flues communicating with said compartment and adapted to establish a heating zone therein, a revoluble platform mounted in said compartment, pots mounted upon said platform, and means to revolve said platform, substantially as described.

5. A furnace formed of an inner and an outer circular wall forming a circular compartment, the walls at one point being of materially less height than at the remainder thereof, forming a circular compartment of different areas in cross section, a roof for said compartment having an opening located over that part of the compartment which is of the less area in cross section, and flues communicating with that part of the compartment which is of the greater area in cross section.

6. A furnace constructed of circular walls one within the other forming a circular heat zone or compartment, the walls at one point in the furnace being of materially less height than the remainder of the walls, and flues communicating with the heat zone or compartment at the ends of the larger part of said compartment.

7. In a furnace of the type described, a furnace chamber of endless form and of less area in cross section at one point than throughout the remainder of the chamber, the roof of said chamber having an opening located above that portion of the chamber which is of the less area in cross section.

8. In a furnace of the type described, a furnace chamber of endless form and of less area in cross section at one point than throughout the remainder of the chamber, the roof of said furnace chamber having an opening located above that portion of the chamber which is of less area in cross section, and the side wall of said furnace having an opening communicating with that portion of the furnace which is of the greater area in cross section.

851,439. RECORD-CALENDAR. FRANK H. RICE, Oakland, Cal. Filed Sept. 5, 1906. Serial No. 333,294.

Claim.—1. A record or reminder calendar, comprising a series of leaves in book form, the right hand pages being each provided with a column designated by the word memoranda, and being also provided with tabs indicating the days of the month, the left hand pages being provided with vertical columns headed by the names of the months and transverse columns that extend to the memoranda column on the right hand pages.

2. A record or reminder calendar, consisting of a series of leaves bound in book form, the right-hand leaves being provided with tabs at their right-hand edges indicating the days of the month and with a series of lines forming transverse columns, the left-hand leaves being provided with an upper panel sub-divided by series of longitudinal lines extending from top to bottom of the leaves, each of said sub-panels containing the name of a month, the right-hand leaves being also provided with a series of transverse lines, the lines of the two pages registering.

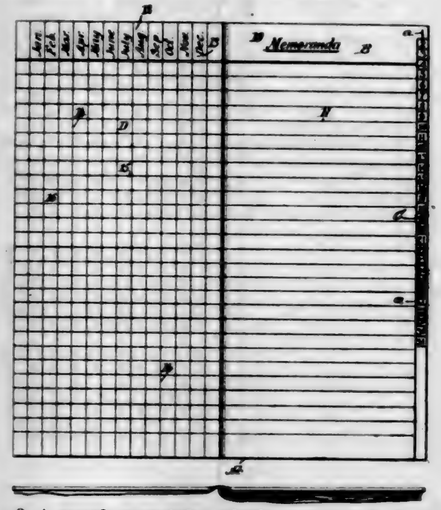

3. A record or reminder calendar constructed of a series of leaves bound in book form, the right-hand leaves being transversely ruled to receive entries and provided at their right-hand edges each with a tab bearing a figure representing a day of a month, which figures collectively constitute an index of said days, the left-hand leaves being provided with longitudinal columns, each headed by the name of a month, said names being consecutively arranged and with transverse rulings crossing said columns, which latter rulings are substantially continuations of the rulings on the right-hand leaves, whereby squares are formed in each month column adapted to have inscribed therein a designation.

851,440. ELECTRICAL HEATING ELEMENT OR RESISTANCE. EDWARD G. RIVERS, Richmond, England. Filed June 11, 1906. Serial No. 321,218.

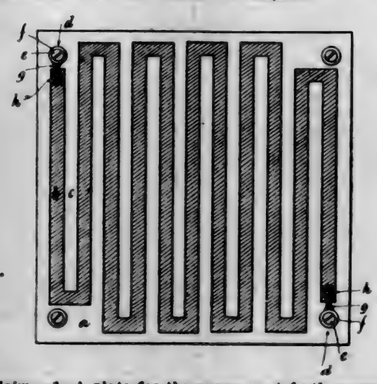

Claim.—1. A plate for the purpose set forth comprising a body portion of clay having one face provided with a groove extending from a corner at one end of the body portion to a corner at the opposite end thereof and having parts of its length arranged in parallelism with respect to each other, thereby providing said face of the body portion with ridges alternately disposed with respect to each other and of a width substantially equal to the width of the groove, and a resistance material formed from a paste of silicated carbon within said groove and capable of attaching itself when heated to the base by its own adhesion.

2. A plate for the purpose set forth comprising a body portion of clay having one face provided with a groove extending from a corner at one end of the body portion to a corner at the opposite end thereof and having parts of its length arranged in parallelism with respect to each other, thereby providing said face of the body portion with ridges alternately disposed with respect to each other and of a width substantially equal to the width of the groove, a resistance material formed from a paste of silicated carbon within said groove capable of attaching itself when heated directly to the clay base by its own adhesion, and contacts imbedded in said body portion.

3. A plate for the purpose set forth consisting of a body portion of clay having one face thereof provided with a resistance material formed from a silicated carbon insert extending from one corner of the body portion to the opposite corner thereof and having parts thereof arranged in parallelism with respect to each other thereby providing the said face of the body portion with alternately disposed ridges of a width equal to the width of the carbon insert, said insert capable of attaching itself when heated directly to the clay base by its own adhesion.

4. A plate for the purpose set forth consisting of a body portion formed from baked clay and provided with a resistance material formed from a silicated carbon insert in one face thereof, said insert extending from one corner of the body portion to a corner arranged diagonally with respect to the other corner, said insert so disposed throughout the face of the plate as to provide said face with a plurality of ridges of a width substantially equal to the width of the body portion, said ridges extending in parallelism with respect to each other, and said insert capable of attaching itself when heated directly to the clay base by its own adhesion.

5. A plate for the purpose set forth consisting of a body portion formed from baked clay and provided with a resistance material formed from a silicated carbon insert in one face thereof, said insert extending from one corner of the body portion to a corner arranged diagonally with respect to the other corner, said insert so disposed throughout the face of the plate as to provide said face with a plurality of ridges of a width substantially equal to the width of the body portion, said ridges extending in parallelism with respect to each other, said insert capable of attaching itself when heated directly to the clay base by its own adhesion and contacts connected to the body portion and embodying conducting wires having the ends thereof embedded in a silicated carbon.

851,441. DUST-PAN. CHARLES W. ROBINSON, San Diego, Cal. Filed Dec. 7, 1906. Serial No. 346,705.

Claim.—1. A dust pan comprising a dished body having a longitudinal flange formed on its forward portion, a frame secured to the under side and back of said pan, and a stirrup constructed of resilient material extending transversely of said pan and connected with said supporting frame, substantially as shown and described.

2. A dust pan having a dished body provided with a longitudinal flange formed on the forward portion of said body, a frame secured to the lower portion and back of said body adapted to support said body in an inclined position, and a stirrup connected with said frame and provided with a free upper end, substantially as shown and described.

851,442. RAIL-FASTENER. FRANK SCHLICKER, Willock, Pa. Filed Feb. 18, 1907. Serial No. 358,110.

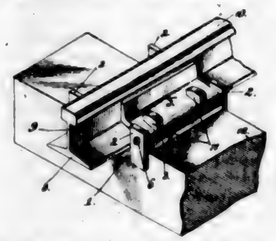

Claim.—1. The combination with a tie and a rail mounted thereon, of end plates having upwardly extending pierced lugs, notched straps connecting said end plates, fish bars or plates trunnioned in said pierced lugs, and adapted to embrace the base flanges and web portion of said rail, said fish bars or plates having notches formed therein adapted to register with the notches of said straps, and spikes extending through said notches into said tie and overlying said fish bars or plates.

2. In a rail fastener, the combination with a tie and a rail mounted thereon, of connected end plates adapted to embrace the sides of said tie, fish bars or plates trunnioned between said end plates and engaging the base flanges and web portion of said rail, and spikes mounted in said tie and engaging said fish bars or plates.

3. In a rail fastener, the combination with a tie and a rail mounted thereon, of connected end plates adapted to embrace the sides of said tie, fish bars or plates trunnioned between said end plates and engaging the base flanges and web portion of said rail, and means carried by said tie for holding said fish bars or plates in engagement with said rail.

851,443. SHAVING-BRUSH CONTAINER. GEORGE A. SCHMIDT, Chicago, Ill. Filed Dec. 29, 1906. Serial No. 349,089.

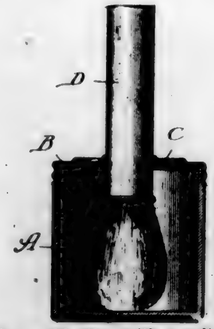

Claim.—1. The combination with a suitable body portion adapted to serve as a shaving mug, of a cap therefor having a central perforation, and a centrally perforated gasket mounted within the perforation of said cap and adapted to surround the handle of a shaving brush, whereby air is excluded from the operative portion of the brush, when the cover is in place.

2. The combination with a body portion adapted to serve as a shaving cup, of a screw cap adapted to be secured to the upper edge of said body portion, and a centrally perforated rubber gasket fixed in a central perforation in said

cap, the perforation in said rubber gasket being adapted to slip over and fit tightly the handle of a shaving brush, whereby air, dirt and germs are excluded from the body portion, which contains the operative portion of the brush.

851,444. AMIDO-OXY-SULFONIC ACID OF PHENYL-NAPHTHIMIDAZOL AND PROCESS OF MAKING SAME. OSCAR SCHULTHESS, Berlin, and LEO KERKOVIUS, Friedenau, near Berlin, Germany, assignors to Actien Gesellschaft für Anilin Fabrikation, Berlin, Germany. Filed Nov. 13, 1905. Serial No. 287,204.

Claim.—1. A process for the manufacture of amido-oxy-sulfonic acids of phenyl-1.2-naphthimidasol which process consists in heating with a caustic alkali an amidodisulfonic acid of phenyl-1.2-naphthimidasol of the character defined in the above specification.

2. A process for the manufacture of meta-amidophenyl-1.2-naphthimidasol-5-oxy-7-sulfonic acid which process consits in heating the sodium salt of the meta-amidophenyl-1.2-naphthimidasol-5.7-disulfonic acid with caustic potash up to 170° C.

3. As new articles of manufacture the amidooxysulfonic acids of phenyl-1.2-naphthimidasol:

$$HO_3S.OH.C_{10}H_4\langle \overset{N}{NH} \rangle C.C_6H_4.NH_2$$

as defined in the above specification which acids are slightly yellowish colored powders, difficultly soluble in water, but easily soluble in alkaline solutions and which acids are precipitated from such a solution by slightly acidulating by means of a mineral acid or of acetic acid, but which precipitate by the addition of an excess of hydrochloric acid is dissolved, and which amidooxysulfonic acids yield when combined in an alkaline solution with diazo-compounds, dyestuffs dyeing cotton without a mordant.

4. As a new article of manufacture the meta-amidophenyl-1.2-naphthimidasol-5-oxy-7-sulfonic acid is defined in the above specification, which acid is a slightly yellowish colored powder, difficultly soluble in water, but easily soluble in alkaline solution and which acid is precipitated from such a solution by slightly acidulating by means of a mineral acid or of acetic acid, but which precipitate by the addition of an excess of hydrochloric acid is dissolved, and which amidooxysulfonic acid when combined in an alkaline solution with the diazo-compound of aniliin, yields a dyestuff dyeing cotton without a mordant a scarlet shade.

851,445. FENCE-POST. GARRET G. SEYMOUR, Asheville, Kans. Filed Mar. 2, 1907. Serial No. 360,159.

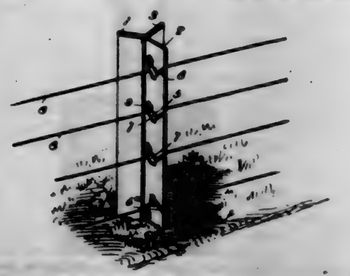

Claim.—1. In a device of the character described, the combination of a post comprising an outstanding flange having a wire receiving opening formed therein and provided with a guide slot leading from an edge of the flange and intersecting the wire receiving opening, and a flexible spring arm secured to the post and projecting across the guide slot, the said spring arm yielding to admit of a fence wire being positioned within the wire receiving opening and operating to prevent accidental displacement of the wire.

2. In a device of the character described, the combination of a post comprising an outstanding flange having an elongated and vertically disposed wire receiving opening formed therein and also provided with an inclined guide slot leading from an edge of the flange and intersecting the wire receiving opening at an intermediate point, and a flexible spring arm secured to the post and projecting across the guide slot, the said spring arm yielding to admit of a fence wire being positioned within the wire receiving opening and operating to prevent accidental displacement of the said wire.

851,446. INSULATED COUPLING. SAMUEL N. SHIELDS, Greensburg, Pa. Filed July 30, 1906. Serial No. 328,385.

Claim.—The combination with the insulating body substantially as described, of a pair of coupling links receiving said block, and each embodying parallel arms connected together at one end and having eyes at their other ends, the said arms being off-set intermediate their ends for a distance substantially equal to the length of the block, substantially as described.

851,447. VALVE. ALEXANDER SIMPSON, New York, N. Y. Filed Feb. 5, 1906. Serial No. 299,477.

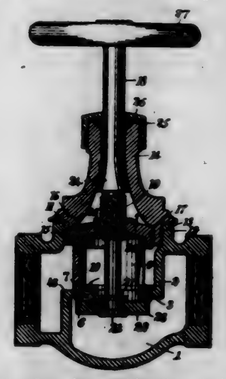

Claim.—In a valve, in combination, a body having a transverse web with a threaded opening therein, a plug mounted in said threaded opening and adapted to pass water through said web, said plug having a head at the upper portion thereof, said head having a threaded opening therethrough, a stem having a threaded engagement with said head and extending below said plug, a swivel disk carried by said stem below said plug, and a bonnet mounted on said body and having an internal annular shoulder seating upon the head of said plug, said bonnet further having a tapered bore above said shoulder, said stem having an enlarged tapered upper portion above said thread and seating in said tapered bore.

851,448. REVERSING-GEAR FOR TRACTION-ENGINES. DAVID S. SMITH, Mercersburg, Pa. Filed Oct. 3, 1906. Serial No. 337,251.

Claim.—1. In gearing of the character specified, the combination of a countershaft, gear elements 6 and 25 loose thereon, the one the recipient of power, the other disposing of the power imparted thereto, a clutch between the gear wheel 6 and the countershaft, gear elements 19 and 20 loose upon the countershaft, the gear element 19 having connection with the gear element 25 an idler adapted to transmit motion from one gear element 20 to the other gear element 19, a clutch splined to the countershaft and adapted to make positive engagement with either of the gear elements 19 or 20, and means for operating the two clutches to connect the gear element 6 and either of the gear elements 19 or 20 with the countershaft according as the machine is to be employed in a forward or a backward direction.

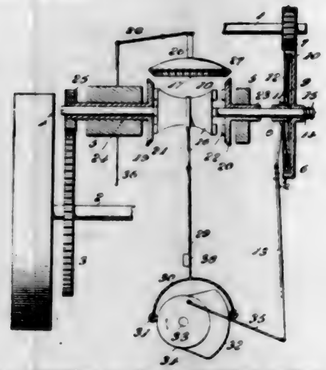

2. In a reversing gearing for traction engines and the like, the combination of a countershaft, gear elements 6 and 25 loose thereon, the one having power applied thereto, the other expending said power, a clutch between the gear element 6 and the countershaft gear elements 19 and 20 loose on the countershaft, the gear element 19 having connection with the gear element 25 intermediate connecting means between the gear elements 19 and 20 for transmitting motion from one to the other, a clutch 16 splined to the countershaft and adapted to make positive engagement with either of the loose gear elements 19 or 20, frictional engaging means between the gear element 6 and the countershaft to cause rotation of the latter when the aforesaid clutches are thrown out of operation, and operating means for the aforementioned clutches.

3. In gearing of the character specified, the combination of a countershaft, gear elements 6 and 25 loose thereon, the one receiving power, the other expending the power applied thereto, a clutch between the gear element 6 and the countershaft, gear elements 19 and 20 loose on the countershaft, means for transmitting motion from one of said gear elements to the other, a clutch 16 splined to the countershaft and adapted to make positive engagement with either of the gear elements 19 or 20, levers 29 and 13 for the aforesaid clutches, a yoke cooperating with the lever 29, a shaft, a cam fast to said shaft and cooperating with the yoke, and a pitman having crank connection with the shaft provided with the cam and connected to the lever 13.

4. In gearing of the character specified, the combination of a shaft, gear elements loose thereon, a clutch splined to said shaft and adapted to cooperate with each of said gear elements to secure one or the other to the said shaft, an idler adapted to be thrown into and out of engagement with the said gear elements, a clutch operating lever, a lever for moving said idler, and an intermediate cooperating lock mechanism between the two members to secure the idler in either one of its two extreme positions to prevent injury to the cooperating cog teeth.

851,449. MACHINE-GEAR. SAMUEL W. SMITH and ANDREW HOLLINGER, Canton, Ohio. Filed June 25, 1906. Serial No. 323,294.

Claim.—1. In a machine gear, the combination of a web, segmental sections located upon said web, means for connecting the ends of the segmental sections together and dowel blocks located in notches in the periphery of the web and in the inner wall of the segmental sections, said dowel blocks tapered in opposite directions and located at an angle to a radial line, substantially as and for the purpose specified.

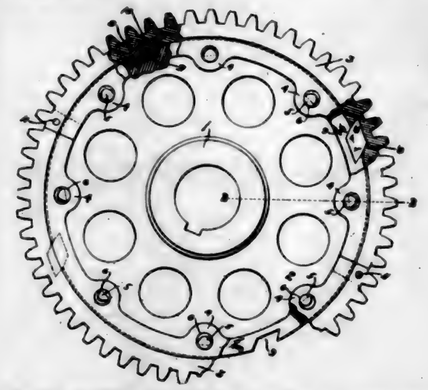

2. In a machine gear, the combination of a hub and a web, a divided rim, the ends of said divided rim being lapped, and said lapped ends being secured together, the rim and web provided with notches, dowel blocks located in the notches, said blocks tapered in opposite directions, and means for securing the divided rim to the web, substantially as and for the purpose specified.

3. In a machine gear, the combination of a center web, a divided rim provided with attaching flanges, there being apertures formed in the flanges, and apertures formed in the center web, bolts divided longitudinally and tapered, said bolts adapted to be inserted in the apertures of the rim-flanges and web and said divided bolt sections secured in position, and dowel blocks located in notches in the periphery of the web and in the inner wall of the divided rim, said notches and dowel blocks located at an angle to a radial line, substantially as and for the purpose specified.

851,450. PUNCHING IMPLEMENT. JOHN W. SPENA, Wakeeney, Kans. Filed Jan. 23, 1907. Serial No. 353,603.

Claim.—1. An implement of the character described, comprising two hand-levers each having a flattened outer end, the flattened outer end of one of said levers being thickened and provided with a slot centrally entering the end thereof and forming two opposed plates, links pivotally connecting one of said plates with the other lever, a punching tool pivotally mounted in a recess in said other lever adapted to pass through an opening in the adjacent plate, and an apertured die-block coacting with said punching tool removably attached to the opposite plate.

2. An implement of the character described, comprising two levers having outer flattened ends, means movably connecting said outer ends of the levers together, the outer end of one of said levers being provided with a slot entering the end thereof and forming two opposed plates, a punch carried by the other lever passing through an opening in one of said plates, a die-block coacting with said punch having ears extending at the opposite sides thereof, a cross piece, and means connecting the ears of said die-block to the cross piece, acting to clamp them to the opposite plate.

3. An implement of the character described, comprising two hand levers one of which is provided with a slot entering the end thereof and forming two opposed plates, a link pivotally connecting one of said plates with the other lever, a punching tool pivotally mounted on said other lever adapted to pass through an opening in the adjacent plate, and a die block co-acting with said punching tool carried by and laterally adjustable on the opposite plate.

851,451. MACHINE-ROLLS. CHARLES F. STEIBER, New York, N. Y. Filed Jan. 29, 1907. Serial No. 354,705.

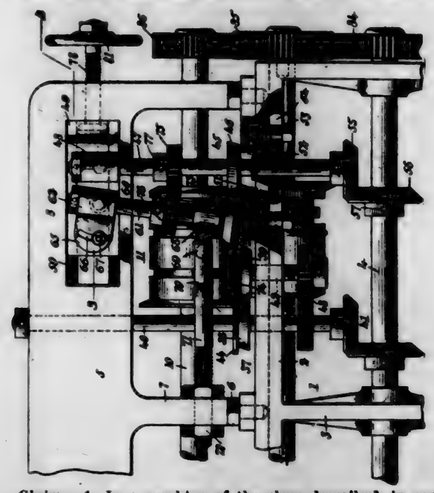

Claim.—1. In a machine of the class described, in combination, a frame, a vertical spindle adjustably mounted therein, a roll carried by said spindle, a second spindle disposed in an inclined relation with respect to said first spindle, a roll carried thereby co-operating with said first roll, an adjustable bracket supporting the upper end of said inclined spindle and affording means for adjusting the inclined position thereof, an adjusting bar disposed near the lower end of said inclined spindle, a bearing for the lower end of said inclined spindle, and a universal connection between said bearing and said adjusting bar, said adjusting bar being mounted in said frame.

2. In a machine of the class described, in combination, a frame having a guideway formed in the upper portion thereof, a block slidably mounted in said guideway, a spindle, a bearing for the upper end of said spindle and carried by said block, means for adjustably supporting the lower portion of said spindle, a roll carried by said spindle, a second inclined spindle, a bearing bracket supporting the upper extremity thereof and attached to said block, means for adjusting said bearing bracket to change the angular position of said inclined spindle, a roll carried by the lower end of said inclined spindle and co-operating with said first roll, an adjusting bar mounted in said frame, a bearing having a universal connection with said bar and rotatably receiving said inclined spindle, and means for driving said spindles.

3. In a machine of the class described, a roll consisting of a body and an adjustable head, said body and said head having internal threads of an opposite character, and an adjusting sleeve connecting said body and said head and engaging said threads, the body of said sleeve between said body and said head being depressed below the surfaces thereof.

851,452. GRASS-BEATER. ARTHUR G. STIMPER, Genesee township, Roberts county, S. D. Filed Dec. 4, 1905. Serial No. 290,220.

Claim.—A device of the class described comprising in combination a frame including a main beam having a pair of eyes secured to its front face; a rearwardly extending arm secured to each end of said main beam; an axle carried by said main beam and provided with traction wheels; a shaft journaled in the outer end of said arms; a reel mounted upon said shaft between said arms and provided with transversely disposed blades; a driving connection between said axle and shaft to rotate the latter and the reel carried thereby; a forwardly-projecting yoke pivoted at its free ends directly to the eyes on said main beam; a cross-piece connecting the arms of said yoke; a draft tongue

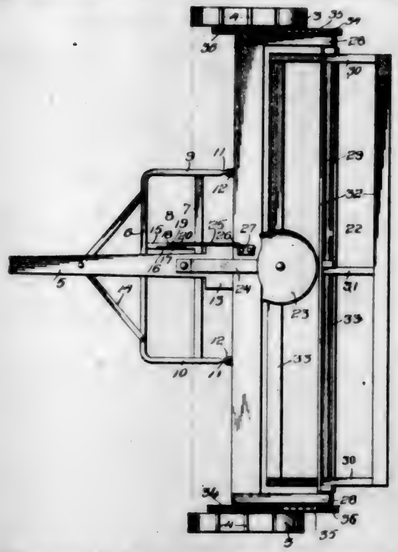

rigidly secured to the bight portion and cross-piece of said yoke; a supplemental beam connecting the bight portion and cross piece of said yoke; a segmental rack mounted upon said supplemental beam; a lever pivoted to said supplemental beam and provided with a spring actuated pawl for engagement with said rack; and a link connection between said lever and main beam, to adjust the frame and the reel carried thereby to different heights upon movement of the lever.

851,453. WASHING-MACHINE. CHARLES STONER, Syracuse, Kans. Filed Apr. 6, 1906. Serial No. 310,362.

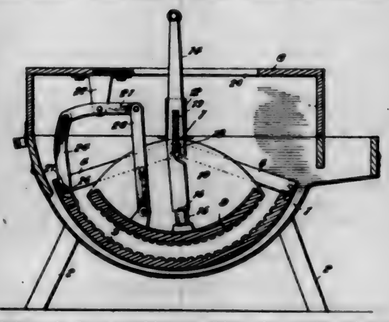

Claim.—1. In a washing machine, the combination of a receptacle, a lower rubber, journals for said lower rubber projecting laterally therefrom and supported in bearings at opposite sides of the receptacle, a cover for the receptacle, an upper rubber, journals for said upper rubber mounted in bearings at opposite sides of the cover, said journals of the upper rubber being received in the bearings

of the lower rubber when the cover of the receptacle is closed, thereby preventing play of the journals of the lower rubber, and means for operating the rubbers.

2. In a washing machine, the combination of a receptacle, a lower rubber movably journaled in the receptacle, bearings at opposite sides of the receptacle for the journals of the lower rubber, a cover for the receptacle, an upper rubber journaled on said cover, bearings for the journals of the upper rubber arranged so that the journals of the upper rubber will be received in the bearings of the lower rubber, means for operating the rubbers, and yielding means coacting with the journals of the upper rubber to hold the same in proper relative position to the lower rubber.

3. In a washing machine, the combination of a receptacle, a lower rubber movably mounted within the receptacle, bearings at opposite sides of the receptacle for the journals of the lower rubber, a cover for the receptacle, an upper rubber journaled in said cover, bearings for the journals of the upper rubber arranged so that the journals of the upper rubber will be received in the bearings of the lower rubber, and means for operating the rubbers.

851,454. TILTING-CHAIR. CHARLES J. TRAVERS, Chicago, Ill. Original application filed Feb. 18, 1905, Serial No. 246,253. Divided and this application filed Mar. 23, 1906. Serial No. 307,566.

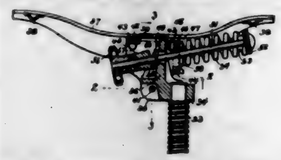

Claim.—1. In a revolving chair, a spider, comprising side members of sheet metal construction angular in cross section with their ends bent upwardly and outwardly and their side flanges tapering from their middle portions toward each end, transverse members connecting the ends of the side members, a sheet metal spreader extending between and connected to the side members at their intermediate portions and having downwardly bent ends, said spreader having a pair of slits in its top portion with the strip between them bent upwardly and the strips on each side of them bent downwardly, a pivotal pin connecting the downwardly bent ends of the spreader, a head through which the pivotal pin passes, and a projection on the head adapted to extend beneath the upwardly bent strip of the spreader and engage the downwardly bent strips thereof to limit the pivotal movements of the spider.

2. In a revolving chair, a spider, comprising a pair of side members, a spreader connecting the two side members and having downwardly extending ends, a pivotal pin connecting said downwardly extending ends of the spreader, a head in which the pivotal pin is also mounted, a projection on the head, said spreader having a pair of slits with the strip of metal therebetween bent upwardly and the strips of metal on either side thereof bent downwardly to form a pair of stops between which the projection of the head may pass and which will engage said projection to limit the movements of the spider, a bearing plate having a flange bearing beneath one of the said downwardly bent strips of metal and connected thereto, a lug on the bearing plate bearing against the edge of said downwardly bent strip of metal, said bearing plate and projection having registering elongated slots, an adjusting rod passing through said slots, a bearing plate carried by the adjusting rod, lugs formed on the bearing plates, a coil spring mounted on the lugs between the bearing plates, a collar mounted on the adjusting rod and having a pivotal bearing on the projection, and a hand nut threaded on the adjusting rod and adapted to adjust the compression of the coil spring.

3. In a revolving chair, a spider, comprising a spreader with downwardly extending ends, a head to which the said downwardly extending ends are pivotally connected, a projection on the head, a bearing plate carried by the spreader, said bearing plate and projection having registering openings, an adjusting rod passing through the said openings, a bearing plate on the adjusting rod, a coil spring mounted between the bearing plates, a collar mounted on the adjusting rod, a pair of conical lugs on the collar bearing in corresponding conical recesses in the projection to form a pivotal connection for the adjusting rod, a pair of guard flanges formed on opposite sides of the conical recesses to prevent the disengagement of the conical lugs therewith, and a hand nut threaded on the adjusting rod by which the compression of the coil spring may be adjusted.

4. In a revolving chair, a spider frame having a spreader with downwardly extending ends, a pivotal pin connecting the said downwardly extending ends of the spreader and prevented from turning therein, a head loosely mounted on the pivotal pin between said downwardly extending ends of the spreader and having a pair of pivot ears forming the bearings for said pivotal pin, bosses on the pivot ears having cavities leading to the pivotal pin and adapted to contain a supply of lubricant for the pivotal pin, and caps secured to the bosses to cover the cavities thereof.

5. In a revolving chair, a spider, comprising a pair of side members, a spreader connecting the two side members and having downwardly extending ends, a head to which the spreader is pivoted, and a projection on the head, said spreader having a pair of slits with the strip of metal therebetween bent upwardly to receive the projection and the strips of metal on either side thereof bent downwardly to form a pair of stops for engaging the projection and limiting the movements of the spider.

851,455. BROOM. WILLIAM J. TWEEDY, Colville, Wash. Filed Jan. 14, 1907. Serial No. 352,252.

Claim.—1. A broom comprising a head including a stub having an internally threaded socket formed therein; a hollow handle having a threaded end adapted for engagement in said socket; a laterally projecting hollow stem formed on said handle adjacent said threaded end and communicating with the interior of said handle, said stem having an open ended sleeve formed at right angles thereto; a sprinkling device attached at one end to said sleeve and provided at its opposite end with a discharge nozzle; means carried by said broom stub for holding said sprinkler thereagainst; and means for regulating the flow of liquid from said stem through said sprinkler.

2. A broom comprising a head and a hollow handle detachably connected thereto; a laterally projecting hollow stem formed in said handle and communicating with the

interior thereof, said stem having a depending open-ended sleeve formed therein; a sprinkling device attached at one end to said sleeve and provided at its opposite end with a discharge nozzle; means disposed within said stem for regulating the flow of liquid from said stem through said sprinkler; and a strap carried by said broom-head and adapted to extend across said sprinkler, for retaining the same in place against said broom head.

851,456. BLOCK-SIGNAL SYSTEM. JULIAN VAN ZANDWEGHE and LUIS VISERTI, Rosario de Santa Fé, Argentina. Filed May 24, 1906. Serial No. 318,490.

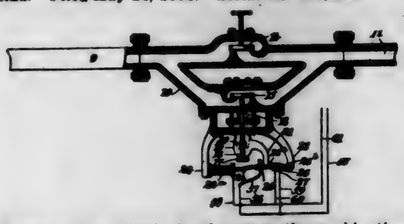

Claim.—1. In a block signal system, the combination of a valve for controlling mechanism for stopping a train, means for holding said valve in a predetermined normal position, spring mechanism connected with said valve for releasing the same, a movable member connected with said spring mechanism, means for connecting to said spring mechanism a link of gun cotton for the purpose of temporarily holding said spring mechanism in a predetermined position, an electrically-operated detonator connected with said link of gun cotton for the purpose of exploding the latter, and electric mechanism controllable by movements of rolling stock for firing said detonator.

2. In a block signal system, the combination of a valve for controlling brake mechanism, a cam for holding said valve in a predetermined position, a spring for turning said cam, means for mounting a member of explosive material so as to hold said cam in another predetermined position, and electrically-operated mechanism controllable by movements of rolling stock for firing said member of explosive material.

851,457. CENTRIFUGAL FAN. JOHN VERNER, Charlton, Iowa. Filed Aug. 2, 1906. Serial No. 328,922.

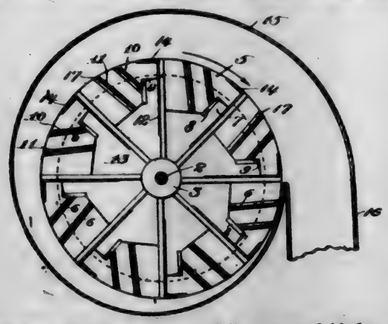

Claim.—1. A fan having radially arranged blades, side plates extending to the periphery of the fan and having main intake openings at the center of the fan and also provided with auxiliary intake openings adjacent to and in rear of the side edges of the blades, the inner extremities of the auxiliary intake openings communicating with the central main intake openings.

2. A fan having radially arranged blades, side plates extending to the periphery of the fan, the side plates having main intake openings formed between the terminals of the same and the center of the fan, and also provided with auxiliary intake openings adjacent to and in rear of the side edges of the blades and communicating at their inner portions with the main intake openings at the fan center, and deflecting devices at the rear and over the outer portions of the auxiliary intake openings.

3. A fan having radially arranged blades, side plates extending to the periphery of the fan, the side plates having main intake openings formed therein at the center of the fan, and auxiliary intake openings adjacent to and in rear of the side edges of the radial blades and communicating at their inner portions with the said central main intake openings, deflecting devices at the rear and over the outer portions of the auxiliary intake openings, and angularly disposed plates cooperating with the rear sides of the outer ends of the blades.

4. A fan involving a plurality of blades arranged in series and differing in length, the longer blades being radial with respect to the fan and the shorter blades tangential to the center of the fan, side plates connected to the blades and extending to the periphery of the fan, the side plates having main intake openings formed therein at the center of the fan and also provided with auxiliary intake openings communicating at their inner portions with the central main intake openings and located adjacent to the longest blade of each series, deflecting devices at the rear and over the outer portions of the auxiliary intake openings, and angular plates cooperating with the outer ends of the blades.

5. A fan involving a plurality of blades arranged in series of different lengths, a portion of the blades being tangential of the center of the fan, side plates connected to the ends of the blades and extending to the periphery of the fan and provided with main intake openings at the center of the fan and also with auxiliary intake openings in rotary relation to the fan center and communicating at their inner portions with the central main intake openings, and deflecting means located in rear of each of the auxiliary intake openings.

6. A fan of the class set forth, involving a plurality of blades arranged in series differing in length, side plates secured to the ends of the blades and extending to the periphery of the fan and forming rings around the periphery of the fan, main intake openings being formed at the center of the fan through the plates, the plates also having auxiliary intake openings radially arranged with relation to the center of the fan and located immediately in rear of the side edges of the longest blade of each series of blades, the longest blade of each series of blades extending inwardly into the main intake openings and the remaining shorter blades terminating at the outer wall of the central main intake openings, and deflectors at the rear portions of the auxiliary intake openings.

7. A fan of the class set forth, involving a plurality of blades arranged in series differing in length, side plates connected to the ends of the blades and having main intake openings formed at the center of the fan, the side plates being also provided with auxiliary intake openings radially arranged with respect to the center of the fan and communicating at their inner portions with the central main intake openings, the auxiliary intake openings being located immediately in rear of the side edges of the longest blades of each series, the longest blades of each series having portions thereof also radially disposed with relation to the center of the fan.

851,458. PARTY-LINE TELEPHONE SYSTEM. FELTON VOLLMER, Winsted, Minn. Filed Nov. 22, 1906. Serial No. 344,589.

Claim.—1. In a party-line telephone system, the combination of a revoluble shaft, contact mechanism to be opened and closed thereby, a talking circuit to be completed and broken by movements of said contact mechanism, a train of clock-work, mechanism controllable by said train of clock-work for releasing said revoluble shaft, and means for turning said revoluble shaft.

2. In a party-line telephone system, the combination of a talking circuit, contact mechanism for controlling the same, clock-work for actuating said contact mechanism, a time wheel for meshing with said clock-work, means for throwing said time wheel into and out of mesh with said clock-work, and mechanism for restoring said time wheel to its normal condition when out of mesh with said clock-work.

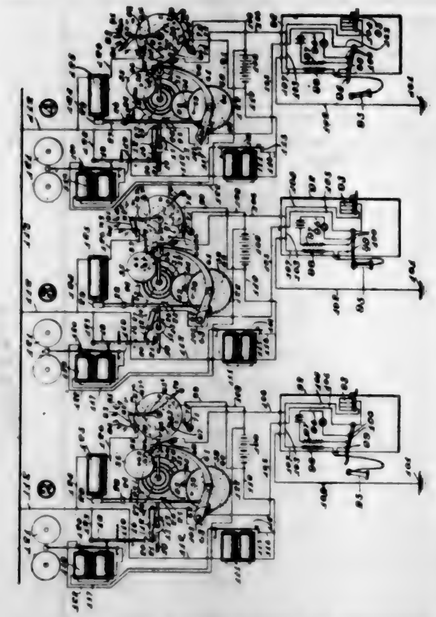

3. In a party-line telephone system, the combination of a talking circuit, contact mechanism for controlling the same, a revoluble shaft for actuating said contact mechanism, means for holding said revoluble shaft in a predetermined position for the purpose of allowing conversation to proceed over said talking circuit, and time controlled mechanism for releasing said revoluble shaft.

851,459. SIPHON-HEAD. CHARLES WALTER, New York, N. Y. Filed Dec. 20, 1906. Serial No. 348,730.

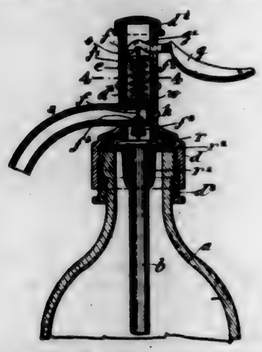

Claim.—1. A siphon-head comprising an exterior shell and cap, said shell being formed of an internally threaded neck and a tubular upper portion, a hard-metal sleeve in said tubular portion, a tin valve-supporting body within said shell at its lower portion, and a spout formed integral with said body and extending without said shell.

2. In a siphon-head, the combination of an exterior shell formed of an internally threaded neck and a tubular portion above the same, a hard-metal sleeve in said tubular portion, a tin body provided with a valve-seat and located at the lower part of said tubular portion, a valve to coact with the valve-seat in said body, a spring-actuated stem for said valve extending upwardly into said sleeve, and a valve-operating lever supported within said sleeve.

3. In a siphon-head, the combination of a shell comprising an enlarged neck and a tubular portion extending upwardly therefrom, a tin body located within said shell at the lower part of said tubular portion and provided with a valve-seat and a spout, a sleeve within said tubular portion above said body, a valve to coact with said valve-seat, a stem for said valve extending upwardly into said sleeve, a head carried by said stem, a spring interposed between said head and said body, and a valve-operating lever extending into and supported within said sleeve and abutting against the upper end of said stem.

4. In a siphon-head, the combination, with a siphon-bottle and a siphon-head, of a glass siphon-tube provided with a rim at its upper end, and an elastic sleeve located at the upper end of the siphon-tube and provided with a circumferential flange or packing interposed between the neck of the bottle and the neck of the siphon-head.

851,460. ELEVATOR-STOP. THEODORE WAUGHTAL, Dos Cabezos, Ariz. Filed May 18, 1906. Serial No. 317,542.

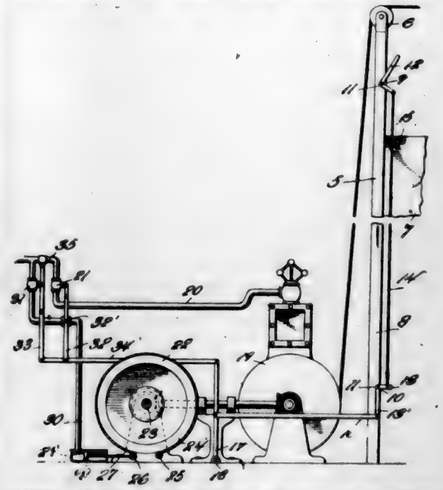

Claim.—In a stop mechanism for elevators, the combination with fluid operable lifting mechanism, of a brake for said mechanism, fluid operable mechanism connected with the brake for operation thereof, fluid conducting pipes communicating with said brake operating mechanism and with the lifting mechanism respectively, valves for the pipes, a primary lever connected with one of the valves for operation thereof, a secondary lever connected with the other valve for operation thereof, connections between the levers for simultaneous movement thereof, and car operable means operatively connected with the valve-moving means.

851,461. VOLTAGE-REGULATOR FOR SERIES-WOUND ELECTRIC GENERATORS. JAMES W. WELSH, Edgewood Park, Pa. Filed Oct. 1, 1906. Serial No. 336,902.

Claim.—1. In combination with a series-wound electric generator, a voltage regulator which consists of a shunt circuit around the field of said generator, a make-and-break device in said shunt circuit, an electro-magnet connected across the generator brushes and controlling said make-and-break device, substantially as described.

2. In combination with a series-wound electric generator, a path for the flow of current in shunt around the field of said generator, a make-and-break device in said shunt path, an electro-magnet whose coil is connected across the generator brushes and whose armature in movement operates said make-and-break device, substantially as described.

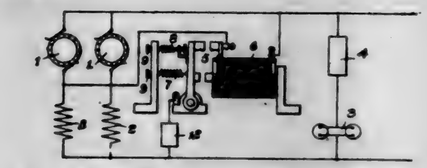

3. A voltage regulator for a series-wound electric generator which consists of a contact-maker, closing to offer a path for the flow of electric current around or in shunt with the field of the generator, an electro-magnet having its coil connected across the generator brushes and its armature attracted to close said contact-maker against a predetermined opposing force, substantially as described.

4. A voltage regulator for a series-wound electric generator consisting of a conductor, offering a path for the flow of electric current around or in shunt with the field of the generator, in which is a circuit opening and closing device, an electro-magnet whose terminals are connected across the generator brushes and whose armature is attracted to close the circuit opening and closing device, and means for offering an increasing opposing force to the armature of the magnet as it moves in response to the pull of said magnet, substantially as described.

5. A voltage regulator for a series-wound electric generator which consists of a circuit opening and closing device to open and close a path for the flow of electric current around or in shunt with the field of the generator, an electro-magnet whose armature in its movement operates the said opening and closing device, the terminals of said electro-magnet connected across the generator brushes, means for holding the armature of said electro-magnet against response to its attractive force until such attractive force shall exceed a predetermined amount, and further means which come into operation as the said armature of the electro-magnet responds to the attractive force of the magnet for resisting the pull which the electro-magnet exerts on its armature, substantially as described.

6. A voltage regulator for a series-wound electric generator which includes an electro-magnet whose terminals are connected across the generator brushes, a movable contact which in its movement makes and breaks a path for the flow of electric current around or in shunt with the field of the generator and whose movement is effected by the movement of the armature of the said electro-magnet, a plurality of restraining means coming successively into play as the armature approaches the electro-magnet and tending to hold the armature against response to the attractive force of the electro-magnet, substantially as described.

7. In combination with a series-wound direct-current motor adapted to act as a generator, an excess-voltage regulator which consists of a contact-maker, closing to offer a path of low resistance in shunt with the field of the generator, and means for closing the contact-maker, said means including an electro-magnet connected across the generator brushes, and means for holding the contact-maker against closure until the pull of the electro-magnet exceeds a certain predetermined strength, substantially as described.

851,462. CLOTHES-DRIER. ROBERT N. WEST, Brooklyn, N. Y., assignor to Adams Laundry Machinery Company, Troy, N. Y., a Corporation of New York. Filed Apr. 11, 1906. Renewed Feb. 25, 1907. Serial No. 359,125.

Claim.—1. The combination with a conveyor of a drying room having depending stems, of cross heads carried by said stems, plungers slidably mounted in said cross heads, yokes secured to said plungers and having pierced arms, rods carried by said cross head and adapted to extend through said arms, weighted stripping levers supported by the frame-work of said conveyor and adapted to engage said yokes, to strip articles from said rods, substantially as described.

2. In a dry room conveyor, the combination with suitable belt having depending stems, of cross heads carried by said stems, yokes slidably carried by said cross heads and having pierced side arms, pins carried by said cross rods and protruding through said arms, stripping levers mounted adjacent to said belt and adapted to engage said yokes and move them out of engagement with said rods, substantially as described.

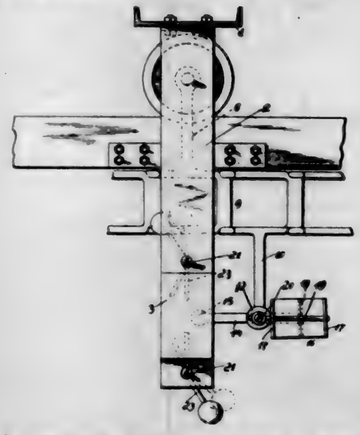

3. In combination with the conveyor, a plurality of cross heads supported from said conveyor, two yokes slidably carried by each cross head, and having pierced arms, means carried by said cross head to hold an article between said arms, and means mounted adjacent to said conveyor to move said yokes to release an article, substantially as described.

4. In combination with a conveyor, yokes, rods supported from said conveyor and adapted to pass through said yokes to support articles therein, and means mounted adjacent to said conveyor to move said yokes out of engagement with said rods, substantially as described.

5. In a conveyor, movable yokes supported by said conveyor, means to support articles in said yokes, means to move said yokes relative to said conveyor, to release said articles, substantially as described.

6. A carrier of the type described consisting of two pierced arms, a rod protruding through said arms and adapted to support an article, and means to move said arms to strip said article from said rod, substantially as described.

7. A carrier of the type described consisting of pierced arms, and a rod protruding through said arms to support an article, substantially as described.

851,463. BRIDLE. ROBERT H. WILLIAMS, Maise, Kans. Filed June 2, 1906. Serial No. 319,868.

Claim.—1. In a bridle, reins, a curved aluminum bit, a chin strap connected at each end thereof, flanged elbows, a brow strap and a head strap connected to the elbows, a throat latch connected to the elbows intermediate the brow and head straps, check reins directly connected to the reins and freely slidable through the elbows and bit, and means for adjusting all of said straps.

2. In a bridle, a bit, a chin strap connected at each end thereof, flanged elbows, a brow strap and a head strap connected to the elbows, a throat latch intermediate the brow and head straps, and check reins directly connected to the reins and freely slidable through the elbows and bit, for the purpose described.

851,464. CAR-WHEEL. ROBERT P. WILLIAMS, Santa Barbara, Cal. Filed Dec. 11, 1906. Serial No. 347,261.

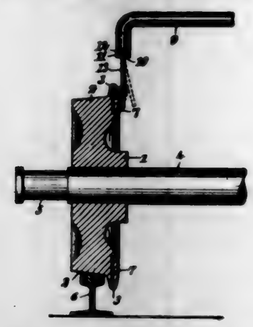

Claim.—1. A car wheel formed of cast metal and having a plurality of independent radial tie bars cast therein.

2. A car wheel formed of cast metal and having a plurality of independent radial tie bars of malleable metal cast therein.

3. A car wheel formed of cast metal and having a flange and a plurality of independent tie bars extending into said flange.

4. A car wheel formed of cast metal and having a flange and a plurality of independent radial tie bars extending into said flange.

5. A car wheel formed of cast metal and having a flange and a plurality of independent tie-bars of tough metal extending into the flange thereof.

6. A car wheel formed of cast metal and having a flange and a plurality of independent radial tie-bars of tough metal extending into said flange, whereby upon the breaking of the flange the broken portions are prevented from becoming dissevered.

851,465. AIR-BRAKE ATTACHMENT. ROBERT P. WILLIAMS, Santa Barbara, Cal. Filed Dec. 11, 1906. Serial No. 347,262.

Claim.—1. In a device of the class described, an air pipe system having an outlet valve, said valve comprising a valve plate and a valve stem secured thereto, a car truck, and means carried by the car truck and supported adjacent said valve stem whereby any abnormal movement of the truck in respect to the valve, opens said valve.

2. In combination, an air brake system having an air escape valve, said valve comprising a spring-pressed valve plate, a valve stem secured thereto, a car truck and means carried by the truck and surrounding said valve stem, whereby said valve may be opened by the raising or lowering of the valve stem.

3. In combination, an air brake system having an air escape valve, said valve comprising a vertical valve seat, a valve plate in engagement therewith, means for resiliently holding said valve plate in engagement with said seat, and a valve stem secured to said valve plate and extending in a horizontal direction, whereby the valve may be opened by a movement of said valve stem in any direction.

4. In combination, an air brake system, an outlet valve, said valve comprising a valve casing having an annular valve seat therein, a valve plate supported upon said seat, a valve stem of smaller diameter than the opening in the valve seat, a spring for normally holding said valve plate in engagement with the seat, a car truck, and means whereby the derailment of the truck will cause the raising or lowering of the valve stem upon the valve.

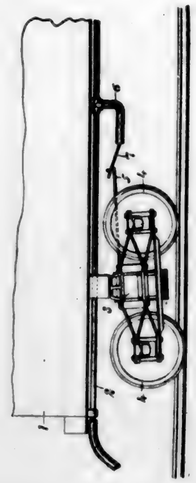

5. In combination, an air brake system, an air escape valve located therein, said valve having an annular valve seat, a valve plate supported thereon, a spring for normally holding said valve plate in engagement with said seat, a valve stem of smaller diameter than the opening in the valve seat, whereby the valve stem may be moved sideways in any direction to incline the valve plate, a car truck, and means adjacent said valve stem and carried by said truck whereby the valve is normally held in its closed position by the air pressure and spring but may be opened by any abnormal movement of truck in respect thereto.

6. In combination, an air brake system having an air escape valve, said valve comprising an annular valve seat, a valve plate in engagement therewith, means for resiliently holding said valve plate in engagement with said seat, a valve stem secured to said valve plate and of a smaller diameter than the opening in the valve seat, a car truck, and a yoke carried by said truck and having an aperture through which the valve stem extends whereby the derailment of the car truck causes the opening of the air brake valve and the setting of the air brakes.

851,466. POTATO CLEANING AND SIZING MACHINE. DAVID WILSON, Riccarton, Linlithgow, Scotland. Filed Jan. 8, 1904. Serial No. 188,197.

Claim.—In a potato cleaning and sizing machine, the combination of a supporting framework, a separating screen consisting of a series of graduated screens mounted on a shaft therein said shaft being directly connected to a driving wheel, a riddle mounted beneath one portion of said separating screen, a divided conveying table mounted beneath the other portion of said separating screen said table receiving motion through the medium of a chain and sprocket connection from a suitable driving wheel, an

elevated chute having a discharge opening at its highest part, and doors adapted to close said chute.

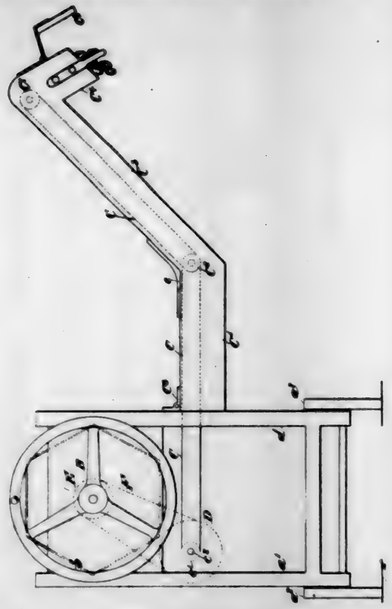

851,467. MEANS FOR PREVENTING SPARKING. FRANK W. WOOD, Newport News, Va. Filed Jan. 2, 1907. Serial No. 350,300.

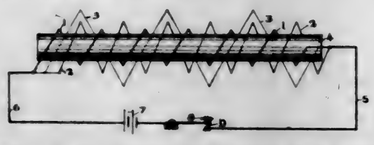

Claim.—1. An electromagnet provided with a plurality of windings of different ohmic resistance, permanently connected in multiple, and wound in the same direction.

2. An electromagnet provided with a plurality of coils permanently connected in multiple, said coils containing different numbers of turns, and the magnetic effect of each being added to that of the others.

3. An electromagnet provided with a plurality of coils, permanently connected in multiple, both the ohmic resistance and number of turns of each coil being different from every other coil, said coils being so arranged that current flows through them in the same direction.

4. An electromagnet provided with a plurality of coils connected in multiple, the ohmic resistance of each coil varying from that of the next, and the number of turns in each coil, also varying, but in inverse order.

5. An electromagnet provided with a plurality of superposed windings, wound in the same sense and connected in multiple the resistance of each winding varying progressively, the convolutions of each winding also varying progressively, but in inverse order.

6. An electromagnet provided with inner, intermediate, and outer windings, the inner winding having the greatest number of turns, but the smallest ohmic resistance.

7. An electromagnet provided with inner, intermediate, and outer windings, connected in multiple, the inner winding comprising the greatest number of turns.

8. An electromagnet provided with inner, intermediate and outer windings, the resistance of each winding varying progressively, the convolutions of each winding also varying progressively, but in inverse order.

851,468. PUMP-BAILER. ROY L. WOODARD, Richburg, N. Y. Filed Sept. 14, 1906. Serial No. 334,630.

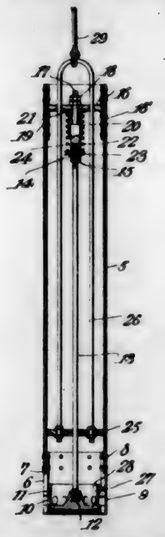

Claim.—1. A sand-pump comprising a casing having its lower end provided with a port, a valve provided with a corresponding port adapted to register with the port in the casing when the valve is in open position, a spring for yieldably supporting the valve in open position, and a plunger for moving the valve in open position when the pump is withdrawn from the casing.

2. A sand-pump comprising a casing having a port formed in the lower end thereof, a valve provided with a corresponding port adapted to register with the port in the casing, a valve-stem, a spring carried by the valve-stem for yieldably supporting the valve in open position, and a plunger slidably mounted within the casing and adapted to engage the valve-stem for automatically closing the valve when the pump is withdrawn from the well.

3. A sand-pump comprising a casing having its lower end provided with ports, a valve arranged within the cylinder and provided with corresponding ports adapted to register with the ports in the casing, a valve-stem having its upper end provided with a shoulder, a spring carried by the valve-stem for yieldably supporting the valve in open position, a plunger arranged within the casing and provided with an operating bail, said plunger being adapted to engage the shoulder on the valve-stem for moving the latter to closed position when the pump is withdrawn from the well.

4. A sand-pump having its lower end provided with a port, a valve provided with a corresponding port adapted to register with the port in the casing, means for preventing rotation of the valve, and a plunger adapted to engage the stem of the valve for moving the latter to closed position when the pump is withdrawn from the well.

5. A sand-pump comprising a casing having its lower end provided with ports, a valve arranged within the casing and provided with corresponding ports adapted to register with the ports in the casing, a valve-stem having its upper end provided with an enlargement defining a shoulder, there being a plurality of transverse perforations formed in the enlargement of the valve-stem, a sleeve surrounding the enlargement and having its upper

end provided with a laterally extending flange, a pin engaging one of the openings in the enlargement, a spring interposed between the flange and said pin for yieldably supporting the valve in open position, and a plunger slidably mounted on the valve-stem and adapted to engage the shoulder for moving the valve to closed position when the pump is withdrawn from the well.

6. A sand-pump comprising a casing having ports formed in the lower end thereof, a valve provided with a vertically disposed flange having ports therein adapted to register with the ports in the casing, a brace extending across the casing at the upper end thereof, a valve-stem passing through the brace and having its free end threaded, said stem being provided with an enlargement defining a shoulder and having a plurality of spaced transverse openings formed therein, a pin engaging one of the openings, a sleeve surrounding the enlargement, a spring bearing against the sleeve and interposed between the brace and the pin, clamping nuts engaging the threaded end of the valve-stem, and a plunger slidably mounted on the valve-stem and adapted to engage the shoulder for moving the valve to closed position when the pump is withdrawn from the well.

7. A sand-pump comprising a casing, a ring secured to the lower end of the casing and having ports formed in the side walls thereof, a valve provided with a vertical flange having corresponding ports formed therein and adapted to register with the ports in the casing, said flange being provided with a vertically disposed groove, a screw threaded in the ring and engaging the groove for preventing rotary movement of the valve, a valve-stem, means for yieldably supporting the valve in open position, and a plunger adapted to engage the valve-stem for moving the valve to open position when the pump is withdrawn from the well.

8. A sand-pump comprising a casing, a ring provided with an annular recess for the reception of the lower end of the casing and having a plurality of ports formed in the side walls thereof, a valve provided with a vertically disposed flange having corresponding ports formed therein adapted to register with the ports in the casing, means for preventing rotary movement of the valve, a brace extending transversely across the top of the casing, a valve-stem passing through an opening in the brace and provided with an enlargement defining an annular shoulder, there being spaced openings formed in the enlargement, a pin engaging one of said openings, a sleeve embracing the enlargement, a spring interposed between the brace and the pin and bearing against said sleeve, a plunger slidably mounted on the valve-stem and adapted to engage the shoulder for automatically opening the valve when the pump is withdrawn from the well, and an operating bail secured to the plunger and projecting beyond the free end of the casing.

851,469. PLIERS. GEORGE G. WORSTALL, Toms River, N. J. Filed Nov. 9, 1906. Serial No. 342,652.

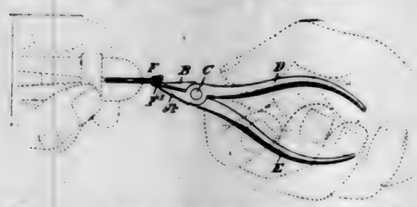

Claim.—1. A pair of pliers for forming claws in settings provided with jaws, of which one is provided with a seat for the claw to rest in, and the other jaw is provided with a drawing and fashioning member raised on the working face of the jaw opposite the said seat and extending transversely across such seat.

2. A pair of pliers for forming claws in settings provided with jaws, of which one is provided with a seat for the claw to rest in, and the other jaw is provided with a drawing and fashioning member consisting of a bead raised on the working face of the jaw opposite the said seat and extending transversely thereof at the outer end of the jaw.

3. A pair of pliers comprising a pair of handled, pivoted jaws, of which one is provided with a longitudinally extending groove for a claw to rest in said groove tapering inwardly from the outer end of the jaw, and the other jaw being provided on its inner face with an integral drawing and forming member operating in conjunction with the said groove.

4. A pair of pliers having jaws, of which one is provided on its inner face with a tapering groove extending from the terminal of the jaw inward in the direction of the length of the jaw, the other jaw having a transversely extending ridge at its inner face opposite the said seat and near the outer end of the jaw, the said ridge forming a drawing and forming member for the claw seated in the said groove.

851,470. AUTOMATIC PLAYING MECHANISM FOR MUSICAL INSTRUMENTS. PHILIP WUEST, Jr., Cheltenham, Pa., assignor to The Auto-Manual Piano Action Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Mar. 18, 1905. Serial No. 250,703.

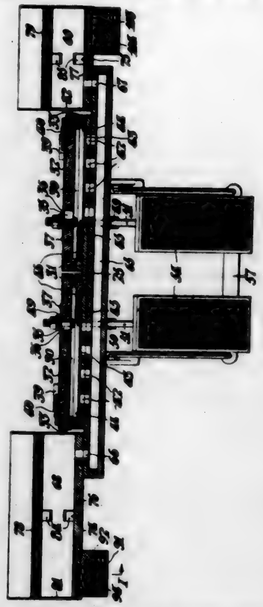

Claim.—1. The combination with a plurality of pumping bellows; of a plurality of reservoir bellows operatively related to but separate and distinct from said pumping bellows; and means pneumatically connecting said bellows, all of said bellows being on the same side of said connecting means, substantially as set forth.

2. The combination with a plurality of pumping bellows; of a plurality of reservoir bellows operatively related to but separate and distinct from said pumping bellows; and a wind trunk connecting said bellows, all of said bellows being on the same side of said wind trunk, substantially as set forth.

3. The combination with two pumping bellows; of pump pedals respectively connected in operative relation with said bellows; two reservoir bellows respectively at opposite sides of said pump bellows; and, a wind trunk connecting said pump bellows and reservoir bellows, all of said bellows being on the same side of said wind trunk, substantially as set forth.

4. In blowing mechanism of the class described, the combination with a plurality of pump bellows; of a plurality of pressure regulating bellows; and a wind trunk common to said regulating bellows directly connecting said pump bellows with said regulating bellows, all of said bellows being on the same side of said wind trunk, substantially as set forth.

5. In blowing mechanism of the class described, the combination with a panel; of two pump bellows hinged to said panel; pump pedals hinged to said panel; means operatively connecting said pedals with said pump bellows; a wind trunk secured to said panel and having ports leading to the respective pump bellows; two pressure regulating bellows respectively secured to said trunk, all of said bellows being on the same side of said wind trunk; springs normally tending to distend said regulating bellows; a motor; means connecting one of said regulating bellows with said motor; a series of strike pneumatic valves; and means connecting the other of said regulating bellows with said series of strike pneumatic valves, substantially as set forth.

6. In blowing mechanism of the class described, the combination with a plurality of pump bellows; of means arranged to independently operate said bellows; a wind trunk connecting said bellows; independent pressure regulating bellows operatively related to but separate and distinct from said pumping bellows, respectively connected to the opposite ends of said trunk, all of said bellows being on the same side of said wind trunk; means tending to normally open said pressure regulating bellows; a motor; strike pneumatic valve mechanism; conduits leading from the respective bellows to said motor and to said strike pneumatic valve mechanism; valves arranged to automatically control the ports leading from said bellows; pneumatic means for operating said valves, comprising conduits extending to said trunk; and manually operated valves controlling said conduits, substantially as set forth.

7. In a blowing mechanism of the class described, the combination with a wind trunk; of reservoir bellows at each end of said wind trunk; and a plurality of pump bellows upon said wind trunk between said reservoir bellows, all of said bellows being on the same side of said wind trunk, substantially as set forth.

851,471. MECHANICAL MUSICAL INSTRUMENT. PHILIP WURST, Jr., Philadelphia, Pa., assignor to The Auto-Manual Piano Action Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Sept. 19, 1906. Serial No. 335,166.

Claim.—1. In a mechanical musical instrument having an exhaust system, the combination with an exhauster; of a cut-off valve comprising a casing in said system; adjacent ports in said casing; an enclosed recess adjoining said ports; a closed diaphragm in said recess arranged to alternately and simultaneously open and close both of said ports; a slide valve seat; adjacent ports in said seat respectively connected to said recess and to said exhauster; a slide valve arranged to alternately connect said ports, and to open the port connected to said recess to the atmosphere, substantially as set forth.

2. In a mechanical musical instrument, the combination with pneumatic playing mechanism; of an exhauster for said mechanism; a cut-off valve comprising a casing; an exhaust port in said casing leading to said exhauster; an inlet port adjacent to said exhaust port leading to said playing mechanism; a recess local to said ports; a closed diaphragm in said recess; a slide valve seat; a port in said seat connected to said recess; a port in said seat connected to said exhauster; and a slide valve arranged to alternately connect the ports in said valve seat, and to open the port connected with said recess to the atmosphere, substantially as set forth.

3. In a mechanical musical instrument, the combination with pneumatic playing mechanism; of an exhauster for said mechanism; a cut-off valve comprising a casing; an exhaust port in said casing leading to said exhauster; an inlet port adjacent said exhaust port leading to said playing mechanism; an enclosed recess adjoining said ports; a closed diaphragm in said recess arranged to alternately and simultaneously open and close both of said ports; a valve seat having two ports, one connected to said recess and the other connected to said exhauster; and a slide valve having a recess to connect the ports in its seat,

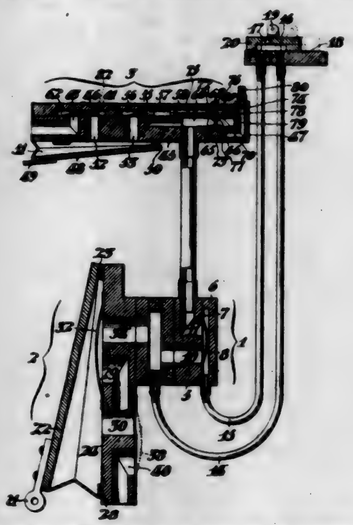

whereby in one position of said valve said diaphragm containing recess may be placed in communication with said exhauster, and in another position of said valve said diaphragm recess may be placed in communication with the atmosphere, substantially as set forth.

851,472. PNEUMATIC MOTOR. PHILIP WURST, Jr., Philadelphia, Pa., assignor to The Auto-Manual Piano Action Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Sept. 19, 1906. Serial No. 335,167.

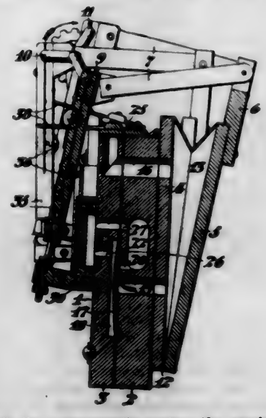

Claim.—1. In a pneumatic motor, the combination with a bellows having an exhaust port and an inlet port; of a member provided with an exhaust duct and with a port leading to said duct, said bellows exhaust port and said port leading to said exhaust duct being located adjacent one another; a diaphragm common to said adjacent ports arranged to alternately open and close them; a valve arranged to control the pressure of said diaphragm; and means arranged to control said inlet port.

2. In a pneumatic motor, the combination with a bellows having an exhaust port and an inlet port; of a member provided with an exhaust duct and with a port leading to said duct, said bellows exhaust port and said port leading to said exhaust duct being located adjacent one another; a diaphragm common to said two adjacent ports, arranged to alternately open and close them; a valve arranged to pneumatically control said diaphragm; and a valve arranged to control said inlet port, substantially as set forth.

3. In a pneumatic motor, the combination with a bellows having an exhaust port and an inlet port; of a member provided with an exhaust duct and with a port leading to said duct, said bellows exhaust port and said port leading to said exhaust duct being located adjacent one another; a diaphragm common to said two adjacent ports, arranged to alternately open and close them; a valve arranged to pneumatically control said diaphragm to alternately open and close said two adjacent ports and alternately collapse and inflate said bellows; and a valve arranged to control said inlet port, substantially as set forth.

4. In a pneumatic motor, the combination of a bellows provided with an exhaust port and an inlet port, both leading to the interior thereof; a valve arranged to control said inlet port; a member provided with an exhaust duct and with a port leading to said duct, said bellows exhaust port and said port leading to said exhaust duct being located adjacent one another; a diaphragm common to said two adjacent ports; a member having a recess for said diaphragm and having a port communicating with said recess, said member being also provided with a port communicating with said exhaust duct; and a valve arranged to alternately connect and disconnect said ports in said member communicating with said exhaust duct and with said recess, substantially as set forth.

5. In a pneumatic motor, the combination with a bellows comprising a stationary leaf and a movable leaf and provided with an exhaust port and an air inlet port both communicating with the interior of said bellows; a valve arranged to control said inlet port; a frame having a port adjacent to said exhaust port in communication with an exhaust duct; a diaphragm common to said two adjacent ports and contained in a recess in said frame; and means for putting said recess in communication with said exhaust duct and with the atmosphere for controlling said diaphragm, substantially as set forth.

6. In a pneumatic motor, the combination with a bellows comprising a stationary leaf and a movable leaf, and provided with an exhaust port and an air inlet port, both communicating with the interior of said bellows; of a crank shaft having a crank; a rod connecting said movable leaf with said crank; a member provided with an exhaust duct and with a port leading to said duct, said exhaust port and said port leading to said exhaust duct being located adjacent one another; a second member having a recess and a port communicating therewith, said member also having a second port adjacent this port and communicating with said exhaust duct; a diaphragm common to the adjacent ports of said first mentioned member and contained within said recess; a slide valve connected by the rod to said crank arranged to alternately connect and disconnect said adjacent ports in said second member; and a flap valve for said inlet port arranged to be alternately opened and closed by said valve rod, substantially as set forth.

7. In a pneumatic motor, the combination with a bellows having an exhaust port and an inlet port; of a member provided with an exhaust duct and with a port leading to said duct, said bellows exhaust port and said port leading to said exhaust duct being located adjacent one another; a diaphragm common to said adjacent ports arranged to alternately open and close them, said diaphragm being held closed by air pressure; a regulator comprising bellows in communication with said exhaust duct; a spring arranged to normally distend said bellows; a valve in said exhaust duct arranged to be controlled by said regulator bellows; means to adjust said valve with respect to said bellows; and means for relieving the pressure of said diaphragm, substantially as set forth.

851,473. DASHBOARD-HOLDER. JOHN W. YOCHEM, Tiffin, Ohio. Filed Aug. 31, 1906. Serial No. 332,830.

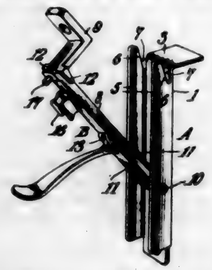

Claim.—1. A dashboard holder comprising a pair of pivotally connected members, a locking device for forcing said members away from each other to prevent rattling, and spring clips for holding said locking device in locked position.

2. A dashboard holder comprising a pair of members having a sliding pivotal connection with each other, wedge-shaped lugs connected with one of said members, and cam shoulders carried by the other of said members and adapted to be engaged by said wedge-shaped lugs.

3. A dashboard holder comprising a pair of members having a sliding pivotal connection, wedge-shaped lugs connected with one of said members, cam shoulders carried by the other of said members and adapted to be engaged by said wedge-shaped lugs, and a locking device for holding said wedge-shaped lugs in engagement with said cam shoulders.

4. A dashboard holder comprising a member consisting of a plate having side flanges formed with cam shoulders, one end of said plate being extended adjacent said cam shoulders to form a wedge-shaped slot, and a second member consisting of a bar mounted between said side flanges and having a sliding pivotal connection therewith, said bar having wedge-shaped lugs to engage said wedge-shaped slot, a locking device mounted on said bar and having a cam member adapted to engage said plate, spring clips carried by said bar for holding said locking device in locked position, and a resilient buffer mounted between said locking device and said bar.

851,474. RECEPTACLE FOR POWDER. FRED H. ABBOTT, Crystal Falls, Mich. Filed Feb. 10, 1906. Serial No. 300,459.

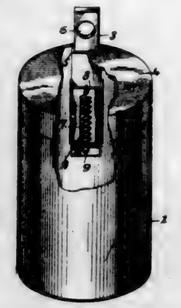

Claim.—1. A receptacle having an opening, a bar constituting a plunger, within said receptacle, and having a constricted end forming a shoulder adapted to limit the projection of said plunger through said opening, means within said receptacle for guiding said plunger, and a spring

adapted normally to project said plunger through said opening, said plunger having a recess at said constricted end for carrying a quantity of powder or the like.

2. A receptacle having a sleeve on an inner wall thereof, a bar constituting a plunger slidably mounted in said sleeve and having a constricted end forming a shoulder adapted to limit the projection of said plunger from the receptacle, said end having a recess for carrying a quantity of powder or the like, and a spring secured to said plunger and to said sleeve whereby said plunger is projected from said receptacle.

3. A receptacle having a sleeve on an inner wall thereof, a plunger slidably mounted in said sleeve and adapted to project from said receptacle, said plunger having a recess for carrying a quantity of powder or the like and a pin adapted to engage an edge of said sleeve to constitute a stop limiting the projection of said plunger from said receptacle, and a spring secured to said pin and to said sleeve adapted normally to project said plunger from said receptacle.

851,475. COTTON-PICKING APPARATUS. ALBERT P. ALBERT, New Orleans, La. Filed Aug. 4, 1905. Serial No. 272,707.

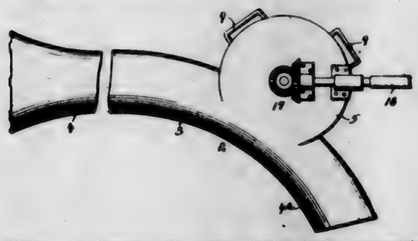

Claim.—1. A pneumatic cotton-picking device comprising a conduit, and a plurality of fixed projections or fingers forming a grid at the inlet end of said conduit and adapted to engage the cotton.

2. A pneumatic cotton-picking device comprising a conduit, and a plurality of inturned projections or fingers rigidly secured at the inlet end of said conduit to form a grid and adapted to engage the cotton.

3. A pneumatic cotton-picking device comprising a conduit having a flaring inlet end, and a plurality of sharpened projections or fingers rigidly secured at and projecting into said inlet end and forming a grid.

4. A pneumatic cotton picking device comprising a manually supported conduit having its ends opening in opposite directions, means intermediate the ends of and supported by said conduit for creating an air suction therethrough, said means comprising a fan the blades of which dip or project into and extend partly across the conduit, whereby a space is provided for the uninterrupted passage of the cotton through the conduit.

5. A pneumatic cotton picking device comprising a cotton receiving conduit, means for supporting said conduit from the person with its receiving end toward the front and its discharge end toward the rear of the operator, a fan the blades of which dip into and extend partly across said conduit operating to produce a current of air therethrough, a motor, and means for operating the fan from the motor.

6. A pneumatic cotton picking device comprising a conduit, a suction fan supported by and having its blades extending into and partly across said conduit, means for supporting the conduit from the person, a motor supported independently of the conduit, and connecting means for operating the fan from the motor.

851,476. STANDARD FOR LOGGING-CARS. CHARLES H. ALLEN, Aycock, Fla. Filed Jan. 7, 1907. Serial No. 351,223.

Claim.—1. A logging standard fulcrumed on a horizontal axis and combined with the bolster, a horizontal rock-shaft arranged transversely to the bolster and having a locking projection adapted to engage the standard and means for turning the rock-shaft.

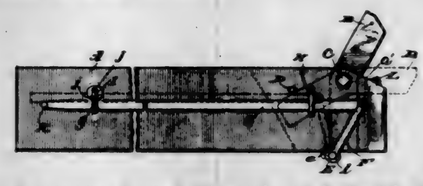

2. A logging standard fulcrumed on a horizontal axis and combined with the bolster, a horizontal rock-shaft arranged transversely to the bolster and having a locking projection adapted to engage the standard, a rigid crank at the end of the rock-shaft and a pull rod connected to said crank and arranged in guides in parallel position to the bolster and provided with locking devices.

3. The combination with a bolster slotted vertically at its end, a standard fulcrumed on a horizontal axis and having its end below its fulcrum extended down into the slot of the bolster, a rock-shaft at the bottom of the bolster arranged transversely thereto and having a locking portion adapted to engage the lower end of the standard and means for operating the rock-shaft.

4. The bolster slotted vertically at its end and having a beveled face at the upper part of its end, two eye-bolts extending from said bevel face obliquely to the bottom of the bolster, a transverse rock-shaft journaled on the eyes of said bolts transversely to the bolster and having a locking projection in the middle, and a standard fulcrumed on a horizontal axis in the slotted bolster and having its lower end extended to locking engagement with the rock-shaft.

5. The bolster slotted vertically at its end, a standard bent at an obtuse angle near the middle and fulcrumed at the bend near the top of the bolster on a horizontal axis within the slot, means for locking the standard in erect position and a stop arranged in the upper part of the slot of the bolster to be engaged by the lower bent extension of the standard to hold the latter in its depressed position.

6. A logging standard fulcrumed on a horizontal axis and combined with a bolster, a horizontal rock-shaft arranged transversely to the bolster and having a locking projection adapted to engage the standard, a crank at the end of the rock-shaft, a pull bar attached to the crank and having a locking notch, a staple enclosing the pull bar and a locking cam arranged on one of the legs of the staple to hold the notch of the pull bar to engagement with the leg of the staple.

851,477. CORN-PLANTER. CARL A. ANDERSON, Orion, Ill. Filed Apr. 9, 1906. Serial No. 310,749.

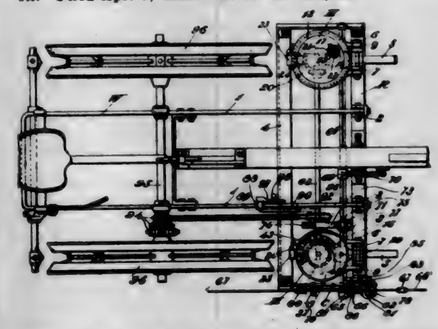

Claim.—1. A seed plate supported for rotation and having an annular series of apertures, a cut-off member having trunnions pivotally and detachably supported adjacent to the seed plate and having a slot, an ejector pivotally engaging the cut-off member said ejector having a bevelled engaging member projecting through the slot of the cut-off member, an actuating spring engaging the ejector and operating to force the engaging ends of the latter and of the cut-off member in the direction of the seed plate, and means for limiting the movement of the ejector independently of the cut-off.

2. A seed plate supported for rotation and having apertures forming seed cups, a base plate adjacent thereto and having an arcuate slot in registry with the seed cups, a housing supported upon the base plate and having a spring receiving cavity and a transverse rib, a cut-off member pivoted between the base plate and the housing and having a slot, an ejector having trunnions pivotally and detachably engaging the cut-off member and having a bevelled engaging portion engaging the seed cups through the slot in the cut-off member said ejector being provided with upward extending lugs one of which is adapted to engage the transverse rib of the housing to arrest the movement of the ejector in one direction, and a spring seated in the cavity of the housing and engaging the other lug of the ejector; said spring operating to force the engaging ends of the ejector and the cut-off member in the direction of the seed plate.

3. In a planter, a shaft supported for rotation and having a ratchet wheel, a rock shaft supported upon the planter frame and having an arm carrying a ratchet wheel adapted for operative engagement with the ratchet wheel upon the shaft, means for transmitting motion from a source of power to the ratchet wheel upon the arm of the rock shaft, an arm extending from said rock shaft in the path of the runner frame of the planter, and means independent of the runner frame for engaging said arm to support the rock shaft in adjusted position.

4. In a planter, seed dropping mechanism, a seed chute, a recessed runner shank having a seed supporting shelf, and a tubular valve member pivotally supported in the recess of the shank and having a pivoted and adjustable deflector whereby the upper end of said tubular valve member may be expanded and contracted.

5. In a planter, seed dropping mechanism, a seed chute, a recessed runner shank having a seed supporting shelf, a tubular valve member pivoted in the recess of the shank, and a deflector pivotally connected with the tubular valve member and having an arcuate flange adapted to obstruct the seed chute.

6. In a planter, a seed chute, a recessed runner shank having a seed supporting shelf, a tubular valve member supported for oscillation in the recess of the shank a deflecting member pivotally connected thereto and provided with a seed chute obstructing arcuate flange, means for locking said member in adjusted position a slotted arm extending from the tubular valve member, a rock-shaft, and a crank extending from the latter and having a pin engaging the slotted arm of the tubular valve member.

7. A seed box including a base plate provided with a housing, a pin supported in opposite walls of the housing, a catch immovably disposed below the base plate, a latch member pivotally mounted upon the pin and adapted to engage said catch, a spring for automatically moving said latch into engagement with the catch, and a loop integral with the latch and constituting a thumb piece.

851,478. FLY-CATCHER. CURT A. ARENTS, Copperopolis, Cal. Filed Aug. 15, 1906. Serial No. 330,754.

Claim.—1. A fly catcher comprising a support, a receptacle eccentrically journaled upon the support and provided with an opening located therein above the journal of the receptacle, and a tape or cord contained within the receptacle and adapted to be withdrawn therefrom through said opening.

2. A fly catcher comprising a support, a receptacle eccentrically journaled upon the support and provided with an opening located therein at a point above the journal of the receptacle, means eccentrically journaled within the receptacle, and a tape or cord carried by said means and adapted to be withdrawn from the receptacle through said opening.

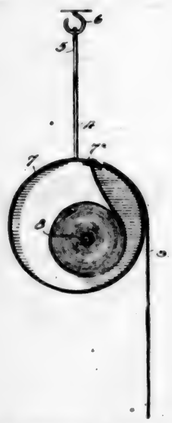

3. A fly catcher comprising a support, a receptacle eccentrically journaled upon the support and provided with an opening located therein above the journal of the receptacle, a tape or cord contained within the receptacle and adapted to be withdrawn therefrom, and a scraper secured within the receptacle about the opening, said scraper being provided with an opening alining with the opening in the receptacle and through which the tape or cord is adapted to be withdrawn.

851,479. SAD-IRON. JAMES E. AUSTIN, Binghamton, N. Y. Filed Sept. 7, 1905. Serial No. 277,394.

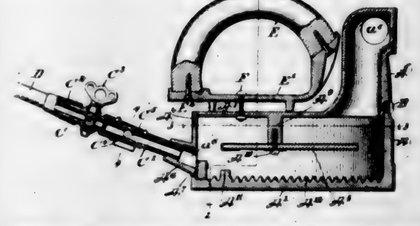

Claim.—1. A sad-iron comprising a hollow body provided with an interior boss extending upwardly and outwardly from the lower portion thereof, and a gas mixer connected with said boss, said boss being provided with an enlarged opening or bore at its inner end forming a chamber outside of the body in which the gases are ignited and the combustion process is commenced, the burning of the gases in such enlargement before escaping therefrom creating a partial vacuum at such point, which in turn assists in drawing air through the mixer, said mixer being provided with openings to the outer air.

2. A sad iron, comprising a hollow body open at the top and at the rear end, the bottom being corrugated and provided, a short distance from its rear end, with a transversely extending lug terminating short of the sides of the body, a top having a downwardly extending member forming the rear end of the body and provided at its front end with an air flue closed at the front and having a lateral outlet, and with a depending lug on its inner face at about its center, the downwardly extending member of the top terminating short of the bottom of the body to form an air inlet and having a downwardly inclined tubular boss, a deflecting plate secured to the lug of the top and terminating short of the ends and sides of the body, a handle hav-

ing a bottom plate provided with lugs resting upon the top, and means for securing the said plate to the top.

3. A sad iron comprising a hollow body open at the top and rear end, the bottom being corrugated and provided a short distance from its rear end with a transversely extending lug terminating short of the sides of the body, a top having a right angular member forming the rear end of the body and provided with a depending lug on its inner face and at its front end with an upwardly projecting draft flue closed at its front end and having a lateral opening, the angular member of the top terminating short of the bottom of the body to form an air inlet and having a downwardly inclined tubular boss, a deflecting plate secured to the lug of the top and terminating short of the ends and sides of the body, and a handle secured to the top.

4. A sad iron comprising a hollow body open at the top and at the rear end, the bottom being provided near its rear end with a transversely extending lug terminating short of the sides of the body, a top having at its rear end a right angular member forming the rear end of the body and provided with a lug on its inner face and with an upwardly projecting draft flue at its front end, the angular member of the top having a downwardly inclined tubular boss, a deflecting plate secured to the lug of the top and terminating short of the ends and sides of the body, and a handle secured to the top.

5. A sad iron, comprising a hollow body open at the top and at one end, a top having a right angular member forming the end of the body, and terminating short of the bottom thereof, said top being provided at its front end with an air flue, a depending lug on its inner face and an external tubular boss projecting from its angular member, a deflecting plate secured to the lug of the top and spaced from the ends and sides of the body, and a handle secured to the top.

6. A sad iron, comprising a tubular body open at the top and rear end, a top having a right angular member, forming the rear end of the body, said top being provided at its front end with a draft flue, a depending lug on its inner face and an external tubular boss projecting from its angular member, the bore of the boss being in two diameters, the inner one being the larger, a deflecting plate secured to the lug of the top, and a handle secured to the top.

7. A sad iron, comprising a hollow body having a draft flue projecting from the top at its front end, an external inclined tubular boss at its rear end, and a transversely extending lug on its bottom a short distance from its rear end, said lug terminating short of the sides of the body, and a deflecting plate suspended within the body and spaced from the ends and sides of said body.

8. A sad iron, comprising a hollow body open at the top and rear end, and a top having a right angled member at its rear end forming the rear end of the body and provided with a draft flue at its front end, said angular member being of a width equal to the distance between the sides of the body and extending to within a short distance of the bottom of the body to form an air inlet and provided with an exterior tubular boss.

851,480. AUTOMATIC STEAM-TRAP. WILLIAM AUSTIN, Scranton, Pa. Filed June 27, 1906. Serial No. 323,590.

Claim.—1. In a steam trap, in combination, a case, a water valve in communication with the interior thereof, a steam cylinder having a hub adapted to screw into said case, the inner end of said hub constituting a valve seat, said hub having inlet ports passing from said valve seat and communicating with the interior of said cylinder, said seat having a bore therein, a spindle rotatably mounted in said bore, a rotary valve mounted on said spindle and lying against said seat, said hub having an exhaust port opening upon said seat, said valve affording means for controlling the opening of said ports, an arm attached to said spindle carrying a float adapted to rise and fall with the water level in said case, and a connection from said cylinder to said water valve for operating the latter.

2. In a steam trap, in combination, a case, a water valve adapted to drain the same, a steam cylinder connected with said valve for operating the same, said cylinder presenting a valve seat disposed within said case and having inlet ports and an exhaust port opening upon said seat, a spindle rotatably mounted in said case, a steam valve adapted to be rotated by said spindle and lying against

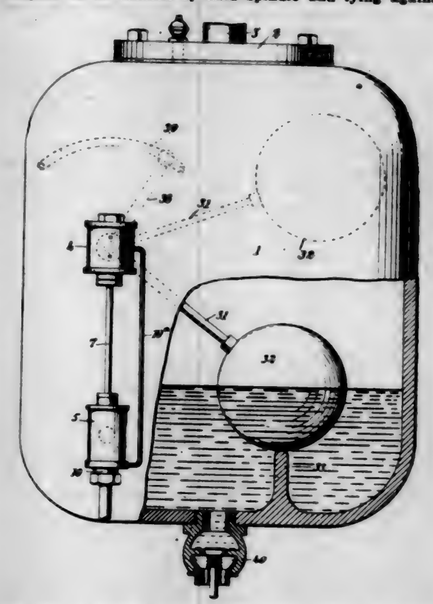

said seat, a spring pressing said steam valve upon said seat, and an arm carrying a float mounted on said spindle and adapted to rise and fall with the water level within said case.

851,481. AIR-SHIP. THOMAS S. BALDWIN, San Francisco, Cal. Filed Nov. 21, 1904. Renewed Mar. 23, 1907. Serial No. 364,064.

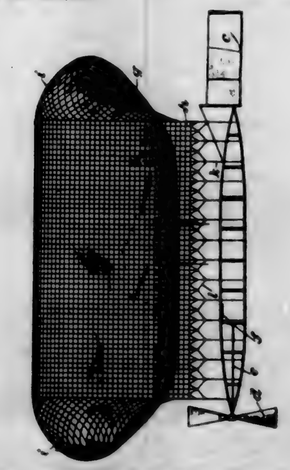

Claim.—1. An air ship comprising a gas bag, having tapering ends, a netting enclosing the body of the bag and having parallel supporting lines of equal length extending vertically over the gas bag, and down each side below the bottom of the bag, netting caps secured to the main netting and enclosing the ends of the bag, a triangular car having two angles at the bottom and one at the top, hanger lines extending from the lower depending edges of the main netting and connected with the bottom angles of the car, and guy lines also extending from the lower edges of the main netting and connected with the top angle of the car.

2. An air ship, comprising a gas bag, a netting enclosing the bag, the portion of the netting enclosing the body of the bag extending down the sides below the bottom of the bag, a triangular car, hanger lines extending from the lower depending edges of the netting and connected with the bottom angles of the car, and guy lines also extending from the lower edgeš of the netting and connected with the top angle of the car.

3. An air ship comprising a gas bag, a frame or car of triangular cross sectional form having two angles at the bottom and one angle at the top in the longitudinal center of the frame, a netting enclosing the gas bag, hanger lines extending from the netting to the bottom angles of the frame, and guy lines extending from the netting to the top angle of the frame.

851,482. BELT-TOOL. EDGAR E. BARNETT, Kremlin, Okla. Filed Dec. 14, 1906. Serial No. 347,851.

Claim.—1. A belt tool comprising a hollow handle having a longitudinal slot therein with notches formed in one edge of the slot, a punch slidably fitting the handle having means for engaging said slot and notches, a plug threaded in the end of the handle opposite the punch, and a spring connecting the plug and punch together.

2. A belt tool comprising a hollow handle, a punch slidably fitting the handle, means for adjustably locking the punch within the handle comprising a plurality of L-shaped notches, and a projection carried by the punch, and a spring normally tending to draw the punch within the handle.

3. A belt tool comprising a hollow handle, a tapered punch having a shank slidably fitting the handle, means for locking the punch within the handle to project varying distances beyond the end thereof whereby the end of the handle will form a stop adapting the punch to cut uniform openings of various sizes and a spring normally tending to draw the punch within the handle.

851,483. MOISTENING ATTACHMENT FOR DENTAL ENGINES. GEORGE BARTLETT, Lenapah, Ind. Ter. Filed Feb. 12, 1907. Serial No. 356,964.

Claim.—1. The combination with a dental engine having a suitable standard, a hand piece, and means for operating the same, of a detachable bracket secured to said standard adjacent the upper end thereof, a reservoir pivotally mounted upon said bracket, and means for delivering a fluid from said reservoir to a point adjacent said hand piece.

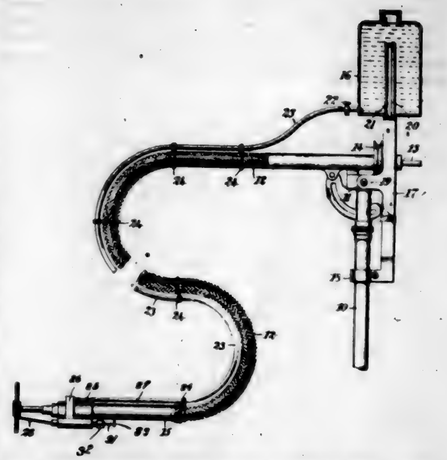

2. The combination with a dental engine having a suitable standard, a hand piece, and means for operating the same, of a bracket detachably secured to the upper end of said standard and having a pivot rod, a reservoir rotatably mounted upon said pivot rod, and means for delivering a fluid from said reservoir to a point adjacent said hand piece.

3. The combination with a dental engine having a suitable standard, a hand piece, and means for operating the same, of a bracket adapted to be detachably secured to the upper end of the standard and having a vertical pivot rod, a receptacle having a recess formed in the bottom thereof and adapted to receive said pivot rod, and means for delivering a fluid from said receptacle to a point adjacent said hand piece.

4. The combination with a dental engine having a suitable standard, a hand piece, and means for operating the latter, of a valve casing having a split ring adapted to encircle said hand piece, a valve within said valve casing, means for delivering a fluid to said valve casing, and a discharge nozzle leading therefrom.

5. The combination with a dental engine having a suitable standard, a hand piece, and means for operating the latter, of a valve casing adapted to be detachably secured to said hand piece, a spring pressed valve located therein, a valve rod operatively connected to said valve and lying adjacent and substantially parallel to said hand piece, means for delivering a fluid to said valve casing, and a discharge nozzle leading therefrom.

851,484. EXTENSION-BRACKET. JOHN T. BATTS, Grand Rapids, Mich. Filed Mar. 16, 1906. Serial No. 306,465.

Claim.—1. An extension bracket, comprising essentially a run-rail, a telescopic supporting member, a hanger rising from the supporting member into engagement with the run-rail at its rear end, and an open-sided hanger secured to and depending from the run-rail at the outer or front end and sustaining the supporting member at that end and permitting a free movement of garments along the supporting member without obstruction from the open-sided hanger.

2. An extension bracket, having a run-rail notched at its inner or rear end, and an open-sided hanger at its outer or front end, and a garment-supporting member composed of a series of telescoping sections, the inner section having a roller-hanger fitted to the run-rail and normally held in

the notched end of the run-rail, the second section having a stop-joint connection with the inner section and including a coupling engaging the run-rail so as to prevent rotation of said second section, and an outer section normally locked to the second section and provided with an operating handle whereby the second section may be extended with relation to the first section and these two sections moved along the run-rail by dislocating the first section from the notch of the run-rail.

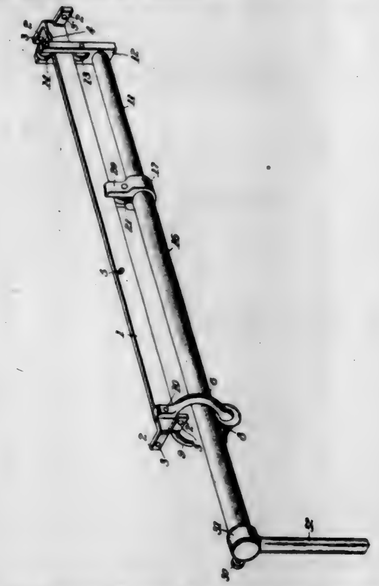

3. An extension bracket, having a run-rail notched at its inner end, and an open-sided hanger at its front end, and a garment-supporting member composed of a series of telescoping sections, the inner section having a roller-hanger fitted to the run-rail and normally held in the notched end of the run-rail, the second section having a stop-joint connection with the inner section and including a coupling engaging the run-rail so as to prevent rotation of said second section, and an outer section normally locked to the second section and provided with an operating handle whereby the second section may be extended with relation to the first section and these two sections moved along the run-rail by dislocating the first section from the notch of the run-rail, and a stop on the run-rail for arresting the outward movement of the first section.

4. An extension bracket, having a run-rail notched at its inner end, and an open-sided hanger at its front end, and a garment-supporting member composed of a series of telescoping sections, the inner section having a roller-hanger fitted to the run-rail and normally held in the notched end of the run-rail, the second section having a stop-joint connection with the inner section and including a coupling engaging the run-rail so as to prevent rotation of said second section, and an outer section normally locked to the second section and provided with an operating handle whereby the second section may be extended with relation to the first section and these two sections moved along the run-rail by dislocating the first section from the notch of the run-rail, said outer section capable of being unlocked from the second section and extended therefrom a limited distance.

5. An extension bracket, comprising a run-rail having a notch at its inner end, a garment-supporting member having a solid inner section, a roller-hanger fixed to said section and engaging the notch in the run-rail and adapted to run upon said run-rail, a second section, a coupling for slidably coupling it to the inner section, said coupling engaging the run-rail to hold said section upright and having a roller bearing interposed between the run-rail and the inner section, an open-sided hanger on the outer end of the run-rail and in which hanger the garment-supporting member is arranged, and an operating handle applied to the second section.

6. In an extension bracket, a run-rail and a garment-supporting member suspended from said run-rail and capable of longitudinal movement thereon, said garment-supporting member having telescopic sections and a coupling having complemental members for connecting said sections and extending one of said members upwardly into sliding engagement with the run-rail so as to prevent the turning of said supporting member.

7. In an extension bracket, a run-rail and a garment-supporting member suspended from said run-rail and capable of longitudinal movement thereon, said garment-supporting member having telescopic sections and a coupling connecting said sections and having a portion extending upwardly into sliding engagement with the run-rail so as to prevent the turning of said supporting member, and an antifriction-roller borne by the coupling and interposed between the bottom of the run-rail and the top of the garment-supporting member.

8. In an extension bracket, a run-rail and a telescopic garment-supporting member suspended therefrom, one of the suspending devices comprising a hanger mounted upon the run-rail at its outer end and having a roller arranged beneath the garment-supporting member and open at one side of the garment-supporting member.

9. An extension bracket for garments, comprising a run-rail, a support for said rail, telescoping sections, a movable hanger for suspending said sections from the run-rail at the inner end, and an open-sided hanger for suspending said sections from the run-rail at their outer end and permitting free movement of the garment hangers upon said telescoping sections past the open-sided hanger, and stops to limit the movement of said sections upon one another in extending the bracket.

10. In an extension bracket, the combination with suitable supports, of a run-rail, telescoping sections suspended from the run-rail at one end by a movable hanger, and at the other end by a hanger fixed to the run-rail above it and having a depending open side which receives and supports the telescopic sections and permits their longitudinal movement thereon and also permits free movement of the garment hangers upon said sections past said open-sided hanger.

11. In an extension bracket, the combination with suitable supports, of a run-rail, telescopic sections suspended from said rail at one end by a movable hanger, a rigid open-sided roller-hanger for supporting said sections at the other end and permitting free movement of the garment hangers upon said sections past said roller-hanger, and stops to limit the movement of said sections relative to one another in extending the bracket.

12. In an extension bracket, a run-rail, a garment-supporting member suspended from said run-rail and extensible upon it, the suspension means including a hanger and a device for temporarily holding the hanger in a given position on the run-rail.

13. In an extension bracket, a run-rail, a garment-supporting member suspended from said run-rail, said suspension means including an open-sided front hanger having a guard at its open side to prevent the garment-supporting member from jumping off the hanger.

14. An extension bracket, comprising a run-rail, a garment-supporting member suspended from said run-rail by means of a hanger at its inner end and an open-sided hanger at its front end, said garment-supporting member comprising a series of telescopic sections and the inner section having the inner hanger fixed to it and fitted to the run-rail and normally engaged therewith, said inner hanger engaging the run-rail so as to prevent wobbling of the garment-supporting member.

15. In an extension bracket, a run-rail, telescopic members suspended therefrom, and including an inner section provided with a handle and suitable catches whereby it

may be extended and collapsed and the garments or fabrics arranged upon the support may be respectively separated and compacted.

851,485. GUN-MOUNT. LAURENCE V. BENÉT and HENRI A. MERCIÉ, Paris, France. Filed Dec. 22, 1906. Serial No. 349,174.

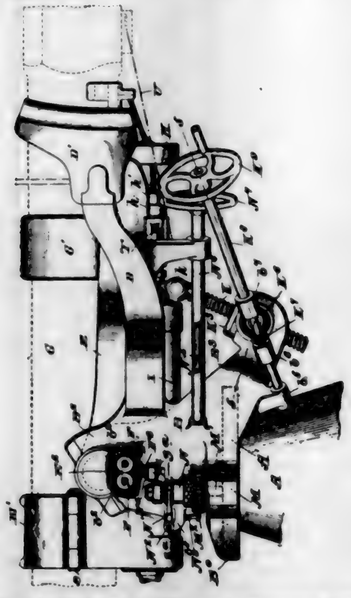

Claim.—1. In a gun mount, the combination with the cradle and the gun body mounted to recoil therein, of a recoil cylinder carried by the cradle, a piston mounted in said cylinder, a piston rod connecting said piston and the gun body, and means for permitting the passage of the liquid in said cylinder through the piston on counter recoil, comprising a plurality of perforations in the piston head, a longitudinally movable annular valve adapted to close said perforations during the recoil of the gun and to uncover said perforations on counter recoil and a spider secured on said piston in rear of said annular valve, said spider being slotted to allow the annular valve a limited longitudinal play therein substantially as described.

2. In a gun mount, the combination with a cradle having rearwardly projecting guides, of a gun body mounted to recoil in said cradle and provided with a band having a longitudinally perforated lug projecting therefrom, a recoil cylinder secured to said cradle and provided with a piston and a return spring, and a piston rod of less diameter than the perforation in said lug and projecting therethrough, with spherical washers and cup-shaped nuts mounted on said piston rod on each side of said lug, substantially as described.

3. In a gun mount, the combination with a cradle having rearwardly projecting guides, of a gun body mounted to recoil in said cradle and provided with a band having a longitudinally perforated lug projecting therefrom, a recoil cylinder secured to said cradle and provided with a piston and a return spring, the said piston being provided with passages therethrough, with means for closing said passages on recoil and for opening same on counter recoil, and a piston rod of less diameter than the perforation in said lug and projecting therethrough, with spherical washers and cup-shaped nuts mounted on said piston rod on each side of said lug, substantially as described.

4. In a gun mount, the combination with the pedestal or lower carriage, of an upper carriage mounted to rotate laterally thereon, a cradle provided with trunnions journalled in said upper carriage, a plate, anti-friction rollers journalled in said plate and mounted beneath each of said trunnions, a screw journalled to the upper carriage and engaging threads in said plate, and adapted to press the plate upwards, a collar on said screw, and annular cup springs mounted beneath the collar on said screw forming an adjustable spring support for said anti-friction rollers, substantially as described.

5. In a gun mount, the combination of the pedestal or lower carriage, of an upper carriage mounted to swing laterally on said lower carriage, a shoulder bar secured to said upper carriage, hand operating training gear adapted to turn said upper carriage on said lower carriage, comprising a circular rack fast to the lower carriage, a pinion journaled in the upper carriage and meshing with said rack, a worm wheel loose on the shaft of said pinion, a clutch member adapted to lock said worm wheel on said shaft, a hand rod for throwing said clutch member out of engagement when desired, and a hand operated worm meshing in said worm wheel, substantially as described.

6. In a gun mount, the combination of the pedestal or lower carriage, of an upper carriage mounted to swing laterally on said lower carriage, a shoulder bar secured to said upper carriage, hand operated training gear adapted to turn said upper carriage on said lower carriage, comprising a circular rack fast to the lower carriage, a pinion journaled in the upper carriage and meshing with said rack, a worm wheel loose on the shaft of said pinion, a spring impressed clutch member adapted to normally lock said worm wheel on said shaft, a hand rod for throwing said clutch member out of engagement when desired, and a hand operated worm meshing in said worm wheel, substantially as described.

7. In a recoil mount for guns, the combination with a carriage, of a cradle trunnioned in said carriage, a gun mounted to recoil in said cradle, firing mechanism carried by the gun, and actuating mechanism for said firing mechanism, comprising a laniard carried by the gun body, a sliding carrier connected to the cradle and provided with a trigger, and means operated by said trigger for pulling on said laniard when desired, substantially as described.

8. In a recoil gun mount, the combination with the trunnioned cradle, of the gun mounted to recoil therein, firing mechanism carried by the gun, a lever connected to the gun, a laniard connecting said lever and said firing mechanism, a sliding carrier mounted on the cradle and provided with a trigger, and a second laniard connecting said trigger and said lever, substantially as described.

9. In a recoil mount for guns, the combination with the trunnioned cradle, of a gun body mounted to recoil in said cradle, firing mechanism carried by said gun body, a lever carried by said gun body in front of said firing mechanism, a laniard connecting said lever and said firing mechanism, a carrier mounted to slide in said cradle, and located in rear of said lever, and a trigger lever mounted in said sliding carrier with a laniard connecting said trigger lever with the lever carried by the gun body, substantially as described.

851,486. GAS-BURNER FOR STOVES. JOHN BENNETT, Huntington, W. Va. Filed May 22, 1906. Serial No. 318,251.

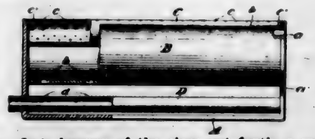

Claim.—In a burner of the class set forth, a main mixing tube provided with openings in its bottom and a slot along its top, a gas supply pipe supported thereunder and provided with jet openings coincident with the openings therein, and a final mixer consisting of a numerously perforated tube enclosed within the main mixer except along

its upper surface where it is exposed through the slot in the main mixing tube, substantially as and for the purpose set forth.

851,487. SELF-CLOSING FAUCET. CHARLES BERGMANN, Pittsburg, Pa., assignor of one-fourth to Edward Barry, Johnstown, Pa., and one-fourth to Michael H. Dennehy and one-fourth to Michael Dwyer, Pittsburg, Pa. Filed Mar. 31, 1906. Serial No. 309,094.

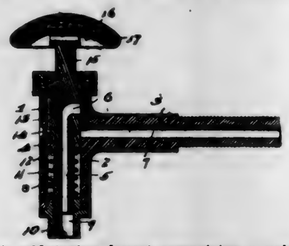

Claim.—A self-closing faucet comprising a valve casing having an interior slide-bore and provided at one end with an open guide, said casing being also provided with a side port, a reciprocating valve plug slidably registering with the bore of the casing and provided with a reduced guiding stem sliding in the guide in one end of the casing, said plug being further provided with a longitudinal fluid passage and side port, and in its external surface with a longitudinal combined key-way and air circulating groove, a fixed retaining key engaging said key-way, and a closing spring housed within the casing and engaging the valve plug.

851,488. GARMENT. AARON BERMAN, New York, N. Y., assignor to Samuel Elgart and Dina Berman, New York, N. Y. Filed Nov. 30, 1906. Serial No. 345,668.

Claim.—1. A garment having a pleat formed in the neck thereof, loops attached to the garment at opposite sides of the neck, and tie-ends attached to the pleat adapted to pass through said loops, for closing said pleat.

2. A garment having a box-pleat formed in the neck thereof, loops attached to the neck of the garment at opposite sides, and tie-ends attached to the corners of said pleat adapted to pass through said loops acting when drawn together to close said pleat.

3. A garment having a box-pleat formed in the center of the front thereof, loops attached at opposite sides of the neck of said garment, and tie-ends attached to the upper corners of said pleat adapted to be passed through said loops for closing the pleat, for the purpose described.

4. A garment having a box-pleat in the front thereof, said pleat having its corners adjacent to the neck of the garment elongated, loops attached at opposite sides of the neck of the garment, and tie-ends attached to said elongated corners adapted to be passed through said loops for holding the pleat closed to contract the neck of the garment, as described.

5. A garment having a box-pleat formed at the outside and in the neck thereof, tie-ends secured to the pleat for holding it closed whereby the neck opening of the garment is contracted, said pleat being adapted to be opened out when released by said tie-ends, whereby the neck opening is expanded, for the purpose described.

851,489. FRICTION OR MASSAGE APPLIANCE. WILLIAM BLEAKLEY, Leeds, England. Filed Feb. 6, 1906. Serial No. 299,681.

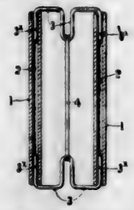

Claim.—1. A friction or massage appliance comprising in combination, two polygonal rollers having tubular ends, two end frames with their free ends made parallel to pass into the ends of the rollers and form pivots therefor and a device extending between and parallel with the rollers and connecting said frames.

2. A friction or massage appliance comprising in combination, two parallel polygonal rollers having tubular ends, two end frames of wire bent for their free ends to pass into the ends of the rollers and form pivots therefor and a device extending between and parallel with the rollers in connecting said frames.

3. A friction or massage appliance comprising in combination, two parallel polygonal rollers having tubular ends, two end frames of wire bent so as to cause their free ends to be parallel, said ends being adapted to pass into the ends of the rollers and form pivots therefor and an elastic band extending between and parallel with the rollers and connecting said frames.

851,490. MUFFLER FOR EXPLOSIVE-ENGINES. WILLIAM M. BRISBEN, Hackensack, N. J. Filed Jan. 8, 1907. Serial No. 351,352.

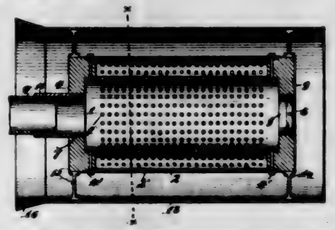

Claim.—1. In a muffler, the combination of two concentric cylindrical sections each perforated throughout its entire length and circumference, the outer section being exposed to the outer air heads to which such sections are secured and an inlet connection entering the center of one of said heads.

2. In a muffler, the combination of two concentric cylindrical sections each perforated throughout its entire length and circumference, the outer section being exposed to the outer air heads to which said sections are secured, an inlet connection entering one of said heads and a hood open at both ends surrounding the outer section and spaced apart from the same.

3. In a muffler the combination of two concentric perforated cylindrical sections, heads to which said sections are secured and an inlet connection entering one of said heads, said connection being of gradually increasing size from its engine end to its muffler end.

4. In a muffler, the combination with a plurality of concentric perforated cylindrical sections, heads on which said sections are mounted, one of said heads being provided with a central opening, of a connection adapted to be coupled to the exhaust pipe of an engine, said connection consisting of a plurality of coupled sections of pipe of different size.

5. In a muffler, the combination with a plurality of concentric perforated cylindrical sections, heads on which said sections are mounted, of a connection leading to the interior of the inner section, brackets carried by said heads and a cylindrical bell mouthed hood attached to said brackets and surrounding the outer section.

851,491. VISE. PETER BROADBOOKS, Batavia, N. Y. Filed Nov. 30, 1906. Serial No. 345,588.

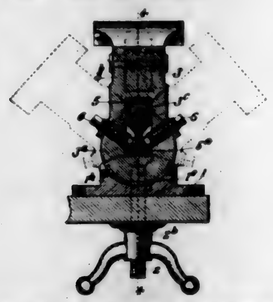

Claim.—1. The combination of a rocker-plate rotatably mounted upon a support, a pivotal locking bolt for said plate, a rocking jaw supported upon the plate and having a cylindric base portion fitted to a corresponding groove in the rocker-plate, said base portion having a transverse slot angular in cross section, and said bolt having an angular head engaging said transverse slot; with a tiltable sliding bar extending through the rocking jaw and tiltable therein, and adapted to be locked in position by gravity, a movable jaw on the outer end of said bar, and means for adjusting said movable jaw on said bar.

2. The combination of a rocker-plate rotatably mounted upon a support, a pivoting and locking bolt for said plate, a rocking jaw supported upon the plate and having a cylindric base portion fitted to a corresponding groove on the rocker-plate, said base portion having a transverse slot angular in cross section and said bolt having an angular head engaging said transverse slot, said rocking jaw also having a longitudinal slot in it above the transverse slot, and said slot having an angle; with a tiltable sliding bar extending through the longitudinal slot in the rocking jaw and fulcrumed on the said angle, and a movable jaw on the outer end of said bar.

3. In a vise, the combination of a rotatable rocker-plate having a concave bearing on its upper side, a rocking jaw having a cylindric base portion fitted to the concave bearing in the rocker-plate, and provided with a longitudinal slot for a sliding bar, an angle in said slot and a transverse slot below the longitudinal slot, said transverse slot having its side walls beveled, and a bolt having a beveled head engaging the beveled side walls of the transverse slot and passing through the rocker-plate and rocker-plate support, and a locking nut on the lower end of said bolt; with a tiltable sliding bar fitted in the longitudinal slot in the rocking jaw and fulcrumed on said angle, and a movable jaw on the outer end of said sliding bar.

4. The combination of a rocker-plate adapted to be rotated horizontally and provided with a concave groove on its upper surface, a rocking jaw having a cylindric base portion fitted to the groove of the rocker-plate and having a transverse slot V-shaped in cross section, and a longitudinal slot above the transverse slot; a pivot and locking bolt having a V-shaped head engaging the V-shaped walls of the transverse slot, said bolt extending through the rocker-plate and its support, and a locking nut on the lower end of the bolt below the support; with a tiltable sliding bar fitted in said longitudinal slot, adjustable bolts tapped through the rocking jaw and engaging said bar, and a movable jaw mounted upon the outer end of said sliding bar.

5. In a vise, the combination of a rotatable base plate having a diametrical concave bearing on its upper side, a rocking jaw having a cylindric base portion fitted to the rocker-plate bearing and provided with a longitudinal slot for a sliding bar, said slot having an angle in its bottom, said base portion also having a transverse slot below the longitudinal slot, said transverse slot being V-shaped in cross section; with a bolt having a V-shaped head engaging the beveled walls of the transverse slot and passing through the rocker-plate and rocker-plate support, a locking nut on the lower end of said bolt, a sliding bar fitted in the longitudinal slot in the rocking jaw and resting upon the angle therein, and a movable jaw attached on the outer end of said sliding bar.

6. The combination of a rocker-plate adapted to be turned horizontally and provided with a diametrical groove in its upper surface, a rocking jaw having a cylindric base portion fitted in the groove of the rocker-plate and also having a transverse slot V-shaped in cross section, and a longitudinal slot above the transverse slot provided with an angular projection on its bottom, a pivot and locking bolt having a V-shaped head engaging V-shaped walls of the transverse slot, said bolt extending through the rocker-plate and its support, and a locking nut on the lower end of the bolt below the support; with a tiltable sliding bar mounted in said longitudinal slot and resting upon the angular projection therein, adjustable bolts tapped through the rocking jaw and engaging said bar above the fulcrum, a movable jaw adjustably mounted upon the outer end of said sliding bar, and a bolt for adjusting said movable jaw on the bar.

851,492. COMBINED LIGHTNING-ARRESTER, FUSE-BOX, AND INSULATOR. RUSSEL R. BURRIN and THEODORE F. GAEBLER, Rockville, Ind. Filed Jan. 26, 1906. Serial No. 297,976.

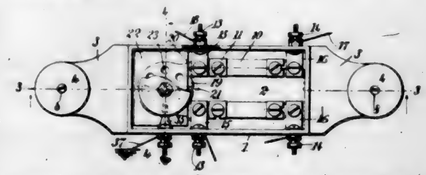

Claim.—1. A device of the class described, consisting of a fuse box having a chamber formed therein adapted to receive fuses and having projecting arms at the extremities thereof having insulators for attaching electric conductors, means for attaching said device to a support, and binding posts for connecting wires, and fuses in said chamber.

2. A device of the class described, consisting of a fuse box having an elongated body with projecting arms at the extremities thereof with insulators formed thereupon for electric conductors, fastening devices passing through said insulators for attaching said device to a support, fuses within said box, and binding posts connected with said fuses.

3. A device of the class described, consisting of an elongated box having arms extending therefrom with insulators formed thereupon, said insulators having openings for fastening devices, a lightning arrester within said box, comprising a bolt passing upwardly through the interior of said box, a cover for said box having an opening through which said bolt passes, and a nut on said bolt retaining said cover.

4. A device of the class described, comprising a fuse box having arms extending in opposite directions therefrom with insulator knobs formed thereupon, fuses mounted within said box, a lightning arrester mounted within said box and comprising a bolt passing upwardly through the interior of said box, a cover for said box having an opening through which said bolt passes and having a groove in the under side thereof receiving the edge of the

wall of said box, a nut on said bolt retaining said cover, and means for attaching said device to a support.

851,493. GAME APPARATUS. LEGER J. CASTONGUAY, Thompsonville, Conn., assignor of one-third to Henry Staples, Stamford, Conn. Filed Nov. 2, 1906. Serial No. 341,734.

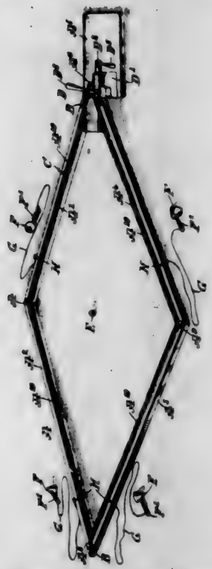

Claim.—1. A game apparatus comprising a diamond-shaped frame having bases at the corners, a batting device at the home base, and manually actuated catching devices having flexible connections with the frame to limit their sweep.

2. A game apparatus comprising a frame having bases, a batting device at the frame for sending a ball across the frame, manually actuated catching devices having a limited movement for catching the base ball, and manually projected runners adapted to travel along the frame from one base to another.

3. A game apparatus comprising a diamond-shaped frame having bases at the corners, a batting device at the home base, manually actuated catching devices having flexible connections with the frame to limit their sweep, and runways on the sides of the frame from one base to another to allow a manually propelled runner ball to travel from one base to the other.

4. A game apparatus comprising a diamond-shaped frame having its corners provided with bases and its sides with runways for a runner ball to travel from one base to another, a batting device at the home base, and base ball catching devices attached to the frame to limit their sweep.

5. A game apparatus comprising a diamond-shaped frame provided at each corner with a recess and along each side with a groove from one recess to the other, a batting device at the home base of the frame, handled cups for catching the base ball, and flexible connections between the said handled cups and the said frame.

6. A game apparatus comprising a diamond-shaped frame provided at each corner with a recess and along each side with a groove from one recess to the other, a batting device at the home base of the frame, handled cups for catching the base ball, and strings connecting the handles of the said cups with the sides of the said frame.

7. A game apparatus comprising a diamond-shaped frame provided at each corner with a recess and along each side with a groove from one recess to the other, a batting device at the home base of the frame and provided with a base ball bat, a shaft mounted to turn and on which the said bat is fulcrumed, a handle fulcrumed on the said shaft for turning the latter, and a link connecting the said handle with the said bat for imparting a swinging motion thereto, handled cups for catching the base ball, and flexible connections between the said handled cups and the said frame.

8. A baseball game apparatus provided with a batting device comprising a bat, a shaft mounted to turn and on which the bat is fulcrumed, a handle fulcrumed on the said shaft, and a link connecting the said handle with the said bat.

851,494. SPARK-ARRESTER. COTTER S. CHALFANT, El Paso, Tex. Filed Apr. 3, 1906. Serial No. 309,698.

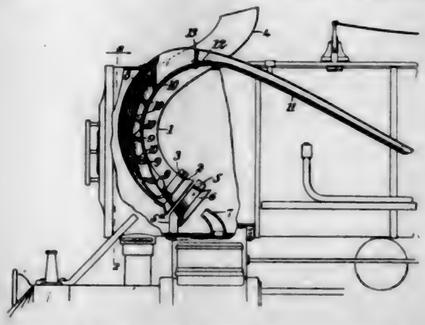

Claim.—1. In a spark arrester, the combination of a reversely curved smoke stack having a flaring lower end, a conical pipe having a flaring end adjacent thereto and in alinement therewith, traps for the sparks formed by inclined slots and deflector plates at the outer side of the stack, a casing eccentrically surrounding the traps, and a spark pipe connected to the upper end of the casing for the purpose described.

2. In a spark arrester, the combination of a curved smoke stack, a spark chamber eccentrically connected to the outward curved portion thereof, means carried by the stack adjacent to the chamber for separating the sparks or cinders and discharging them therein, and means connected to the chamber for conducting the sparks to the fire box.

3. In a spark arrester, the combination of a curved smoke stack having a flared lower end, a conical pipe adjacent thereto and in alinement therewith having a flared end, a spark chamber eccentrically surrounding the outward curved portion of the stack, means carried by the stack adjacent to the chamber for separating the sparks and discharging them therein, and a pipe connected to the upper end of the chamber, having an adjustable constricted pass for the purpose described.

4. In a spark arrester, the combination of a reversely curved smoke stack extending into a smoke box, a spark chamber eccentrically carried at the outward curved portion thereof, means carried by the stack for separating the sparks and discharging them into the chamber, and a pipe connecting the upper end of the chamber, having a constricted pass and conducting the sparks to the fire box.

5. In a spark arrester, in combination, a curved smoke-stack having a series of openings and passing therethrough at the outer curved side thereof whereby as cinders and other solid particles are forced up the stack they will hug said outer curved side and pass through said openings on their upward movement.

6. In a spark arrester, in combination, a curved smoke-stack having openings therein at the outer curved side thereof, and a casing connected to the stack surrounding said openings and forming a spark chamber whereby as cinders and other solid particles are forced up the stack they will hug said outer curved side and pass through said openings on their upward movement to said spark chamber.

7. In a spark arrester, in combination, a curved smoke-stack having openings therein at the outer curved side thereof, deflector plates over the openings, and a casing connected to the stack surrounding said openings and forming a spark chamber whereby as cinders and other solid particles are forced up the stack they will hug said outer curved side and be deflected by said plates on their upward movement through the openings into said spark chamber.

8. In an engine, a smoke-box, an exhaust nozzle therein, and a curved smoke-stack passing into the smoke-box in close proximity to the nozzle, said stack having openings therein at the outer curved side thereof whereby as cinders and other solid particles are forced by the nozzle through the stack, they will hug said outer curved side and pass through said openings.

9. In an engine, a smoke-box, an exhaust nozzle therein, a curved smoke-stack passing into the smoke-box in close proximity to the nozzle, said stack having openings therein at the outer curved side thereof, and deflector plates over the openings whereby as cinders and other solid particles are forced through the stack by the nozzle, they will hug said outer curved side and will be deflected by said plates through said openings.

851,495. ART OF SIGNALING BY LIGHT-RAYS. WILLIAM CHURCHILL, New Britain, Conn., assignor to Corning Glass Works, Corning, N. Y. Filed Nov. 5, 1904. Serial No. 231,506.

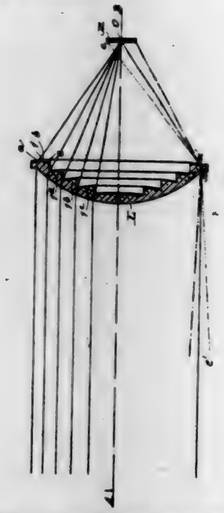

Claim.—An improvement in the art of signaling by light rays which consists in providing a definite and extended area of flame for effective illumination and changing the direction of light rays by focusing upon different parts of said flame area removed from the axis thereof, substantially as set forth.

851,496. LAMP. WILLIAM CHURCHILL, Corning N. Y., assignor to Corning Glass Works, Corning, N. Y. Filed Aug. 6, 1906. Serial No. 329,898.

Claim.—1. Combined with a lamp or lantern a lens in which are embodied a concavo-convex refracting portion and an integral plain and straight flange or window exterior thereto, said flange or window being wholly forward of the rear line or plane of said refracting portion, substantially as set forth.

2. Combined with a lamp or lantern a lens in which are embodied a concavo convex refracting portion and an integral plain and straight flange or window exterior thereto, said flange or window being wholly forward of the rear line or plane of said refracting portion and parallel thereto, substantially as set forth.

851,497. WASHBOARD. SAMUEL B. COOK, Laurel, Miss., assignor of one-third to Edward D. Peirce, Laurel, Miss. Filed Oct. 14, 1905. Serial No. 282,748.

Claim.—In a washboard of the class indicated, the combination, with side bars having internal longitudinal grooves extending to their lower ends, of a part intervening such side bars and constituting the scrubbing surface of the board, such part having tenons adapted to fit and slide in the grooves of the side bars, clamping devices comprising rightangular plates attached to the lower edge of the scrubbing part, and clips pivoted to the side bars and adapted, when in normal position, to overlap the lower portions of said plates and thus lock the scrubbing part in place, as shown and described.

851,498. SAFETY WINDOW-SCREEN. MATTHEW G. CROSBY, Palestine, Tex. Filed Sept. 17, 1906. Serial No. 334,827.

Claim.—1. An adjustable window screen comprising slidably connected sections, a rack upon the top rail of one

section and bottom rail of the other section, a pawl upon the bottom rail of the first named section and top rail of the other section to engage the racks, casings upon the pawl supporting portions of the sections inclosing the pawls and adapted to slidably receive the racks, and means supported by the casings for retracting the pawls, said means being accessible from the inner side of said casings.

2. An adjustable window screen comprising slidably connected sections, one of said sections having a rack and the other a pawl thereon to engage the rack, a casing enclosing the pawl and rack, and means for locking and retracting the pawl, said means being accessible only from the inner side of the screen.

3. An adjustable window screen comprising slidably connected sections, a rack upon one of the sections, an enclosed pawl upon the other section to engage said rack and lock the screen sections in adjusted position, and means located on the inner side of the screen for controlling the pawl.

851,499. HAY RAKE AND LOADER. GEORGE A. CULVER, Shenandoah, Iowa. Filed Jan. 9, 1904. Serial No. 188,418.

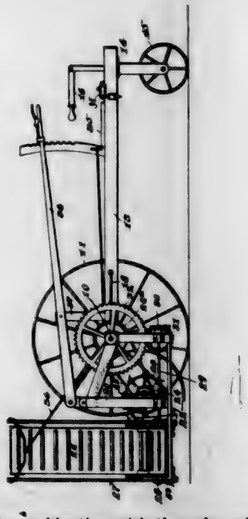

Claim.—1. The combination with the axle and the rake arranged in front of the axle, of a platform arranged in front of the rake, a cylinder arranged above the points of the rake teeth and in the rear of the platform, and means for swinging the rake and the platform about the axle to simultaneously raise or lower the rake and the platform.

2. The combination with the axle, of a frame in which the axle turns, extending forwardly from the axle, a rake carried by the frame, a platform carried by the frame in front of the rake, a spiked cylinder arranged on the frame above the points of the rake teeth and in the rear of the platform, a pole, means connecting the pole and the frame and constructed to permit the frame to be turned on the axle to elevate the rake, the platform and the cylinder, but to prevent the pole swinging sidewise relatively to the axle, draft means for the horses carried by the pole, a truck at the rear end of the pole, means for controlling the truck, and means for elevating or lowering the rake, the platform and the cylinder.

3. The combination with the hay rake, of a platform arranged in front of the rake, a slotted or recessed plate on the platform, and a cylinder arranged between the rake and the slotted plate and having spikes extending obliquely in the direction opposite to the direction of rotation of the cylinder.

851,500. TELEPHONE TRUNKING SYSTEM. WILLIAM W. DEAN, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed July 12, 1902. Serial No. 115,262.

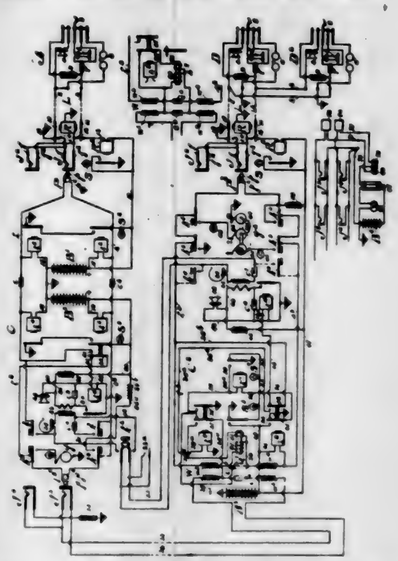

Claim.—1. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with its outgoing end placed in condition to operate by current flowing over a portion of the talking circuit when connection is established at said end, a trunk relay at the incoming end actuated when connection is established at the outgoing end of the trunk by current flowing over the metallic circuit of said end, a signal at said incoming end whose actuation depends upon said trunk relay, means for removing the resistance of said relay from the trunk to permit a sufficient flow of current therein to render said supervisory signal inoperative, and further means for maintaining said relay energized during conversation by current flowing over the metallic circuit of said outgoing end, substantially as described.

2. The combination with a trunk line adapted to connect with a calling telephone line at the outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with the outgoing end placed in condition to operate by current flowing over a portion of the talking circuit when a connection is established at said end, a trunk relay at the incoming end having a high resistance winding and a low resistance winding, the high resistance winding being connected in the metallic circuit of the outgoing end of the trunk to limit the flow of current therein when connection is established with said end, a signal at said incoming end whose actuation depends upon said trunk relay, and means for connecting the low resistance winding in the metallic circuit of the outgoing end of the trunk when the called subscriber responds, whereby a sufficient flow of current is provided thereover to render the supervisory signal inoperative and the said relay is maintained actuated during conversation, substantially as described.

3. The combination with a trunk line adapted to connect with a calling telephone line at the outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with the outgoing end placed in condition to operate by current flowing over a portion of the talking circuit when conection is established at said end, a trunk relay at the incoming end having a high resistance winding and a low resistance winding, the high resistance winding being normally connected in the metallic circuit of the outgoing end of the trunk to limit the flow of current therein, a signal at said incoming end whose actuation depends upon said trunk relay, and means for removing said high resistance winding and substituting the low resistance winding in the metallic circuit when the called subscriber responds, whereby a sufficient flow of current over the trunk is permitted to render said supervisory signal inoperative and at the same time the relay is maintained operated, substantially as described.

4. The combination with a trunk line adapted to connect with a calling telephone line at the outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with the outgoing end placed in condition to operate by current flowing over a portion of the talking circuit when a connection is established at said end, a trunk relay at the incoming end having a high resistance winding and a low resistance winding, the high resistance winding being normally connected in the metallic circuit of the outgoing end of the trunk to limit the flow of current therein, a signal at said incoming end whose actuation depends upon said trunk relay, and means for cutting out said high resistance winding and cutting in the low resistance winding when the called subscriber responds, whereby a sufficient flow of current over the trunk is permitted to render said supervisory signal inoperative, substantially as described.

5. The combination with a trunk line adapted to connect with a calling telephone line at the outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with the outgoing end placed in condition to operate by current flowing over a portion of the talking circuit when a connection is established at said end, a trunk relay at the incoming end having a high resistance winding and a low resistance winding, the high resistance winding being normally connected in the metallic circuit of the outgoing end of the trunk to limit the flow of current therein, a signal at said incoming end whose actuation depends upon said trunk relay, and means for opening the circuit of said high resistance winding and completing the circuit through the low resistance winding, whereby a sufficient flow of current in the trunk is permitted to render said supervisory signal inoperative and the relay is maintained actuated, substantially as described.

6. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with the outgoing end placed in condition to operate by current flowing over a portion of the talking circuit, a trunk relay at the incoming end having a high resistance winding and a low resistance winding connected permanently with one side of the outgoing end of the trunk, a signal at said incoming end whose actuation depends upon said trunk relay, and means for alternately connecting the other terminals of said windings with the other side of the outgoing end of the trunk, the high resistance winding being normally connected in the circuit to limit the flow of current therein when connection exists at the outgoing end of the trunk, the alternate connection being made when the called subscriber responds, whereby an increased flow of current is permitted in the trunk and the relay is maintained actuated, substantially as described.

7. The combination with a trunk line adapted to connect with a calling telephone line at the outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with the outgoing end placed in condition to operate by current flowing over a portion of the talking circuit when a connection is established at said end, a trunk relay at the incoming end having a high resistance winding and a low resistance winding, the high resistance winding being connected in the metallic circuit of the outgoing end of the trunk to limit the flow of current therein, a signal at said incoming end whose actuation depends upon said trunk relay, and a relay actuated when the subscriber responds for depriving the said high resistance winding of operating current and for cutting the low resistance winding in the circuit of the outgoing end of the trunk, whereby a sufficient flow of current in the trunk is permitted to render the supervisory signal inoperative and the said relay is maintained operated, substantially as described.

8. The combination with a trunk line adapted to connect with a calling telephone line at the outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with the outgoing end placed in condition to operate by current flowing over a portion of the talking circuit when a connection is established at said end, a trunk relay at the incoming end having a high resistance winding and a low resistance winding, the high resistance winding being connected in the metallic circuit of the outgoing end of the trunk to limit the flow of current therein, a signal at said incoming end whose actuation depends upon said trunk relay, a relay responsive to current in the called line when the subscriber answers for opening the circuit of the high resistance winding and rendering active the low resistance winding, whereby a sufficient flow of current over the outgoing end of the trunk is permitted to render the supervisory signal inoperative, and the relay is maintained actuated, substantially as described.

9. The combination with a trunk line adapted to connect with a calling telephone line at the outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with the outgoing end placed in condition to operate by current flowing over a portion of the talking circuit when a connection is established at said end, a trunk relay at the incoming end having a high resistance winding and a low resistance winding, the high resistance winding being connected in the metallic circuit of the outgoing end of the trunk to limit the flow of current therein, a signal at said incoming end whose actuation depends upon said trunk relay, a relay responsive to current in the line when the subscriber answers for substituting the low resistance winding for the high resistance winding, whereby the supervisory relay is rendered inoperative and the relay is maintained actuate during conversation, substantially as described.

10. The combination with a trunk line adapted to connect with a calling telephone line at the outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with the outgoing end placed in condition to operate by current flowing over a portion of the talkink circuit when a connection is established at said end, a trunk relay at the incoming end having a high resistance winding and a low resistance winding, the high resistance winding being connected in the metallic circuit of the outgoing end of the trunk to limit the flow of current therein, a signal at said incoming end whose actuation depends upon said trunk relay, a central source of current adapted to be included in the metallic circuit of the incoming end of the trunk and the called line when the subscriber responds, said source furnishing current to charge the substation transmitters for talking purposes, a relay connected at the incoming end in the path of current from said source flowing in the line during conversation, the armature of said relay being connected with one side of the outgoing end of the trunk, its forward contact being connected with one terminal of the low resistance winding and its back contact connected with the corresponding terminal of the high resistance winding, and the opposite terminals of said windings being permanently connected with the other side of the outgoing end of the trunk, whereby when a called subscriber responds a low resistance winding is connected in the trunk in place of the high resistance winding and current is permitted to flow over the trunk in sufficient quantity to render the supervisory signal inoperative while the trunk relay is maintained operative, substantially as described.

11. The combination with a trunk line, of a cord circuit adapted to be connected with said trunk line at its outgoing end, and a called subscriber's line with which its incoming end is connected, of a relay at said incoming end actuated by current flowing over a portion of the talking circuit upon the insertion of the trunk plug in the jack of the called line, a trunk relay actuated by current over the outgoing end of the trunk when connection is established at said end, and by current over the same path but

through an auxiliary winding of the relay when the called subscriber responds, the path of the current through said auxiliary winding being of lower resistance than the former path, a signal at the incoming end whose actuation depends upon said two relays, a supervisory relay associated with the outgoing end of the trunk when said cord circuit is connected therewith, said relay being in series with the trunk relay and capable of being actuated by current through the low resistance winding of said trunk relay but not by current through the high resistance winding thereof, substantially as described.

12. The combination with a trunk line, of a cord circuit adapted to be connected with said trunk line at its outgoing end, and a called subscriber's line with which its incoming end is connected, of a disconnect signal for said incoming end, a relay actuated by current over a portion of the talking circuit when connection is established with the called line to place said signal in condition to operate, and a second relay operated by current over the trunk when connection is established at the outgoing end through a high resistance path, and by current thereover through an auxiliary winding of said relay and low resistance path when the called subscriber responds, said latter relay serving when actuated to render said signal inoperative, a supervisory relay associated with the outgoing end of the trunk when said cord circuit is connected therewith, said relay being in series with the trunk relay and capable of being actuated by current through the low resistance winding of said trunk relay but not by current through the high resistance winding thereof, substantially as described.

13. The combination with a trunk line, of a cord circuit adapted to be connected with said trunk line at its outgoing end, and a called subscriber's line with which its incoming end is connected of a disconnect signal for the incoming end of the trunk, a relay actuated over a portion of the talking circuit when connection is established with the called line to place said signal in condition to operate, and a trunk relay having a high resistance winding and a low resistance winding actuated by current over the trunk and through the high resistance winding when a connection is established at its outgoing end means for substituting the low resistance winding for the other winding when the called subscriber responds, said trunk relay serving when actuated to render the disconnect signal inoperative, a supervisory relay associated with the outgoing end of the trunk when said cord circuit is connected therewith, said relay being in series with the trunk relay and capable of being actuated by current through the low resistance winding of said trunk relay but not by current through the high resistance winding thereof, substantially as described.

14. The combination with a trunk line, of a cord circuit adapted to be connected with said trunk line at its outgoing end, and a called subscriber's line with which its incoming end is connected, of a disconnect signal for the incoming end of the trunk, a relay actuated over a portion of the talking circuit when the trunk is connected with the called line to place said signal in condition to operate, a trunk relay having a high resistance winding and a low resistance winding and serving when actuated to prevent the operation of said signal, and a third relay connected with the incoming end of the trunk and actuated when the called subscriber responds, for substituting the low resistance winding for the high resistance winding upon said second relay whereby the latter is maintained operated during conversation, a supervisory relay associated with the outgoing end of the trunk when said cord circuit is connected therewith, said relay being in series with the trunk relay and capable of being actuated by current through the low resistance winding of said trunk relay but not by current through the high resistance winding thereof, substantially as described.

15. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a subscriber's line with which its incoming end is adapted to connect, a supervisory signal associated with the cord circuit and placed in condition to operate by current flowing over a portion of the talking circuit when the cord is connected with the trunk, a relay associated with the incoming end of the trunk and adapted to be operated over a portion of the talking circuit when the trunk is connected with the called line, a testing circuit for said incoming end of the trunk normally completed over one strand thereof and through normal contacts of said relay, said testing circuit being severed and the trunk circuit being placed in condition for talking by the actuation of said relay, a ringing signal for the incoming end of the trunk placed in condition to operate by the actuation of said relay, a second relay responsive to current in the line when the subscriber answers his call for rendering said ringing signal inert, said ringing signal being thereafter controlled through the contacts of said first named relay, a trunk relay at the incoming end of the trunk actuated by current over the outgoing end and from the cord circuit when the cord circuit is connected with said outgoing end, the resistance of said relay being high to prevent a sufficient flow of current over the metallic circuit of the outgoing end of the trunk to render the said supervisory signal inoperative, and means operated by said second relay to remove the resistance of said relay and to permit a flow of current over the metallic trunk line to render said supervisory signal inert when the called subscriber responds, said relay serving at the same time to substitute a low resistance winding in said metallic circuit of the trunk in place of the high resistance winding, a second signal at said incoming end of the trunk placed in condition to operate by the actuation of said first named relay, means for actuating said signal when the trunk relay is de-energized and the first named relay is energized to give a disconnect indication and further means for actuating said signal to give a guard indication when the trunk relay is energized and the first named relay is de-energized, and a source of current at the incoming end of the trunk to furnish current for the operation of said relays and signals and for the operation of the transmitters for talking purposes, substantially as described.

16. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to connect, a supervisory signal associated with the cord circuit, a relay at the incoming end of the trunk actuated over a part of the talking circuit when connection is made with the line, a testing circuit completed through the normal contacts of said relay, a second relay normally disconnected from the trunk and therefore not in condition to operate by current flowing over the line when the called subscriber responds, said first named relay serving when actuated to sever the test circuit and to connect said second relay with the trunk, and means for controlling the supervisory signal associated with the other end of the trunk by said second relay, substantially as described.

17. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to connect, a supervisory signal associated with the cord circuit, a relay at the incoming end of the trunk actuated over a part of one side of the talking circuit, a testing circuit from the tip of the trunk plug completed through the normal contacts of said relay, a second relay associated with the talking circuit and normally disconnected from the strand of the trunk cord, and means for severing the testing circuit and connecting the second relay with the trunk cord, when the first named relay is actuated, whereby said second relay is placed in condition to operate by current in the line when the subscriber responds, and means actuated by said latter relay for controlling the supervisory signal, substantially as described.

18. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is to connect, a signalling apparatus associated with the incoming end of the trunk, including a relay normally disconnected from one side and a second relay actuated over the sleeve strand of the trunk cord when connection is made with the line, a testing circuit normally completed through the contacts of said latter relay, and means for connecting the first named relay with one side of the trunk cord and for disconnecting said testing circuit when the connection is established with the called line, substantially as described.

19. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called line with which its incoming end is adapted to be connected, a testing circuit comprising a portion of the tip cord, said circuit being of high resistance and retardation, a relay adapted to be actuated over the sleeve strand of the truck cord when connection is made with the line, the normal contacts of said relay being included in the testing circuit, a second relay adapted to be energized by current over the tip strand of the trunk cord when a called subscriber responds, said relay being normally disconnected from said strand but adapted to be connected therewith upon the operation of said first named relay, whereby when connection is established with the line circuit the testing circuit is severed and the second relay is connected with the tip strand, substantially as described.

851,501. TOOTH-BRUSH. ERNEST L. DETRICK, Cleveland, Ohio. Filed June 18, 1906. Serial No. 322,237.

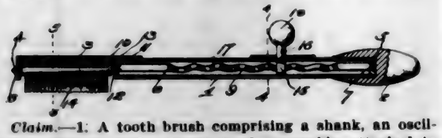

Claim.—1. A tooth brush comprising a shank, an oscillating element, and a brush head removably attached to said element.

2. A tooth brush comprising a tubular shank formed with a longitudinal slot with an aperture at one end and a bearing recess in its other end, a handle at the latter end of said body, a twisted shaft in said shank having one end engaged with said bearing recess and its opposite end projecting through said aperture, a brush holder upon said last-mentioned end of said shaft, a brush head in said holder, a pivot upon said holder, an extension upon said shank having a bearing recess to receive the pivot upon said holder, a finger-piece projecting through and slidable in the slot in said shank and having a notched or slotted inner end to engage said twisted shaft, substantially as described.

3. A tooth brush comprising a shank, a shaft mounted therein and consisting of a flat bar twisted alternately in opposite directions, a brush head carried by said shaft, and a slidably-operated element upon said shank and engaged with said shaft.

851,502. AUTOMOBILE-SHIELD. DANIEL J. DEYO, Vineland, N. J. Filed Jan. 7, 1907. Serial No. 351,174.

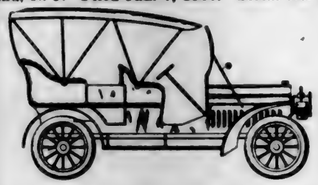

Claim.—An automobile shield comprising a main frame adapted to be secured to the automobile structure, a section of glass curved throughout its longitudinal plane and straight throughout its transverse plane, and clips carried by the main frame and adapted to be turned to overlie the edge of the glass section when the latter is in place in the frame.

851,503. MOLD FOR CONCRETE POSTS. JAMES P. DONOVAN, Georgetown, Ky. Filed Apr. 9, 1906. Serial No. 310,671.

Claim.—1. A mold for making concrete posts, comprising sides, end blocks for spacing the sides, transverse bolts for connecting the end blocks with the said sides, cores set in the space between the sides, core-holding bolts engaging the said sides and cores, to hold the latter in position, and removable transverse core rods arranged at opposite sides of the core-holding bolts and extending through the sides and cores, to form apertures in the post for the attachment of the fence wires.

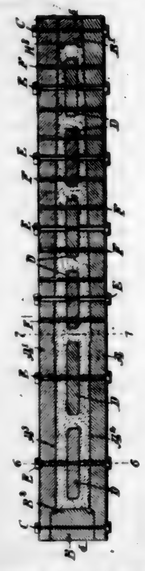

2. A mold for making concrete posts, comprising sides, end blocks for spacing the sides, one of the end blocks having its inner face recessed and the other having its inner face provided with an offset, transverse bolts for connecting the end blocks with the said sides, cores set in the space between the sides, and core-holding bolts extending transversely through the sides and cores and provided with means for engaging the sides of the cores to hold the cores in position.

3. A mold for making concrete posts, comprising sides, end blocks for spacing the sides, the inner faces of the sides being provided with longitudinally extending rectangular offsets having beveled edges, one of the said end blocks having its inner face provided with a rectangular recess or panel having beveled edges, and the other end block having its inner face provided with a rectangular offset having beveled edges, means for connecting the end blocks with the sides, cores set in the space between the sides, and core-holding bolts extending transversely through the sides and cores and provided with means for engaging the sides of the cores to hold the latter in position.

4. A mold for making concrete posts, comprising sides, end blocks for spacing the sides, transverse bolts for connecting the end blocks with the said sides, cores set in the space between the sides, and core-holding bolts engaging the said sides and cores, to hold the latter in position, the said core-holding bolts being made in sections and having a reduced portion extending through the cores and shoulders abutting against the sides of the cores.

5. In a mold, sides, end blocks, a core set in the space between the sides, and a core-holding bolt engaging the sides, the said bolt comprising a rod extending through the core, and spaced sleeves on the rod having their inner ends abutting against opposite faces of the core.

6. A mold for making concrete posts, comprising sides, end blocks for spacing the sides, means for connecting the end blocks with the said sides, cores set in the space between the sides, core rods extending through the sides and

cores to form apertures in the post, core-holding bolts engaging the said sides and cores, to hold the latter in position, the said core-holding bolts being made in sections and having a reduced portion extending through the cores and shoulders abutting against the sides of the cores, and a tamping board fitting between the sides and having openings for the removal of said cores.

7. A mold comprising sides, end blocks for spacing the sides, means for connecting the end blocks with the sides, cores set in the space between the sides, core-holding bolts engaging the said sides and cores, the said core-holding bolts each consisting of a rod extending through a core, and spaced sleeves on the rod having their inner ends abutting against opposite faces of the core, and a tamping board fitted between the sides and having openings for the removal of the said cores.

8. In a mold, sides, end blocks, a core set in the space between the sides, and a core-holding bolt for holding the core in position, the said bolt comprising a rod extending through the core, spaced sleeves on the rod, the said sleeves extending through the sides and having their inner ends abutting against opposite faces of the core, one of said sleeves being secured to the rod, and a nut in which the outer end of the other sleeve screws, the said nut screwing on the end of the rod.

851,504. MECHANISM FOR PERFORATING THE OPERATING-BANDS OF AUTOMATIC TYPE SETTING MACHINES. HEINRICH DREWELL, Hanover, Germany. Filed Aug. 25, 1906. Serial No. 332,068.

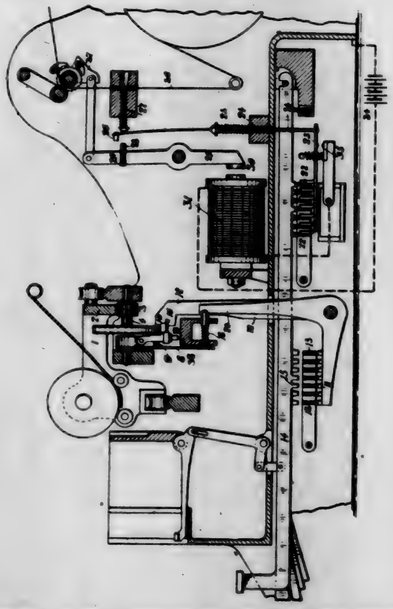

Claim.—1. In mechanism for perforating the operating bands of automatic type-setting machines, the combination of a perforating device, a typewriting machine constructed to print characters of different widths, and operative connecting means between the perforating device and the keys of the typewriting machine.

2. In mechanism for perforating the operating bands of automatic type-setting machines, the combination of a perforating device, a typewriting machine having a plurality of type of different widths, mechanism for imparting step by step motion to the carriage of the typewriting machine, this motion corresponding to the width of any letter the key of which is struck, means for imparting corresponding intermittent motion to the band, and operative connecting means between the perforating device and the keys of the typewriting machine.

851,505. PIPE-HANGER. GEORGE F. ERNST, St. Louis, Mo. Filed Mar. 8, 1906. Serial No. 304,875.

Claim.—1. A pipe hanger comprising a wire hanger rod having an upper straight portion and a lower curved portion extending from said straight portion and terminating in an eye, and a wire yoke having an eye at one end passing transversely through the eye of the hanger rod and having a hook on its other end adapted to fit over the hanger rod at the junction of the straight and curved portions of the rod.

2. A pipe hanger comprising a wire hanger rod having an upper straight portion and a lower curved portion extending from said straight portion and terminating in an eye, and a U-shaped wire yoke having an eye at one end passing transversely through the eye of the hanger rod and having a hook on its other end integral with the yoke and adapted to fit over the hanger rod at the junction of the straight and curved portions of the rod; said hook having a free end adapted to be bent inwardly to close the hook around the hanger rod, substantially as set forth.

851,506. ELECTRIC FIRE-ALARM. WILLIAM H. H. EVERETT, Newton Falls, Ohio. Filed Sept. 22, 1904. Serial No. 225,544.

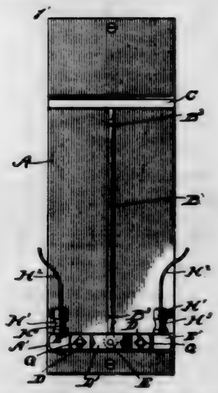

Claim.—A device of the kind described comprising contact points spaced apart, parallel bars, a bracket adjustable on and connecting said bars, a rod having an end portion loosely supported by said bracket, a segmental plate slidably mounted on the bars, said plate being carried by the rod, a spring bearing at one end on the bracket and at the other end on the plate, a glass bulb resting against the inner end of the rod, and an expansible fluid in the glass bulb.

851,507. LIMIT-GAGE. CHARLES E. FETHEROLF, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed July 30, 1904. Serial No. 218,912.

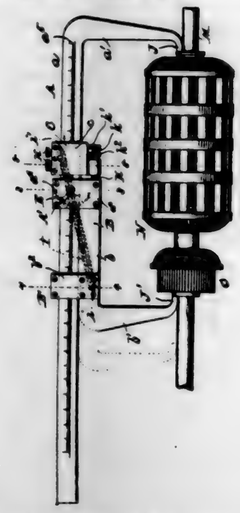

Claim.—1. In a calipering or gaging device of the character described, the combination of two opposed mutually approaching caliper points, the bars carrying said points respectively, a spring normally drawing said points together, a dial carried by one of said bars, a rotary index on said dial, an adjustable pressure point carried by the other bar, and motion-multiplying devices interposed between said pressure point and the rotary index, substantially as set forth.

2. In a calipering or gaging device of the character described, the combination of two opposite mutually approaching caliper points, two bars carrying the said points, a spring normally causing the said points to approach each other, means carried by said bars for multiplying the motion of the said points and adjustable along one of said bars to vary its operative position thereon, said means comprising two contacting portions adapted to engage prior to the engagement of the said caliper points, one of said contacting points being mounted upon one of said bars and the other contact point being mounted upon the other of said bars, and an indicator for visibly indicating the increments of multiplied motion, substantially as set forth.

3. In a calipering or gaging device of the class described, the combination of two calipering points, the bars or carriers therefor adapted to carry the points rectilinearly toward and from each other, a spring normally tending to draw said points toward each other, the means for securing the said spring to one of the said carrying bars, and the adjustable stop device secured to the other bar and having secured to it the opposite end of the spring, substantially as set forth.

4. In a calipering or gaging instrument of the class described, the combination with the two calipering points, of the bars slidably connected together and each carrying one of the said points, the spring normally tending to slide the said bars and draw said points together, the adjustable stopping device C secured to one of the said bars, the motion-multiplying device carried by one of said bars, and means carried by the other for transferring to the motion-multiplying devices the longitudinal motion of the bars, substantially as set forth.

5. In a calipering or gaging instrument of the class described, the combination with the calipering points, of the bars respectively carrying the said points and slidable, one upon the other, the rectilineal series of graduations upon one of the said bars, the rotary motion-multiplying devices bar, and means interposed between the bars and adjustable along one of them for transferring the relative rectilineal motion of the bars to the rotary motion-multiplying devices, substantially as set forth.

6. In a calipering or gaging device of the class described, the combination of two calipering points, the bars or carriers therefor adapted to carry the points rectilinearly toward and from each other, a spring connected to each of said bars and normally tending to draw said points toward each other, and a stop device, adjustable independently of said calipering points, secured to one of said bars and adapted to be engaged by the other.

7. In a calipering or gaging instrument of the class described, the combination with the two calipering points, of two bars slidably connected together and each carrying one of said points, a spring connected to said bars and normally tending to draw the said points together, an adjustable stopping device C secured to one of said bars, and a motion multiplying device comprising mechanism carried by one of said bars, and an adjustable pressure point carried by the other bar for transferring to the said mechanism the relative longitudinal motion of the bars.

851,508. SWITCH-THROWING DEVICE. JAMES FISHER, East Liverpool, Ohio, and JOHN F. EVARTS, Chester, W. Va. Filed Sept. 17, 1906. Serial No. 334,847.

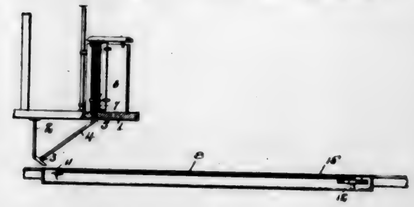

Claim.—1. The combination with a switch, of a casing arranged adjacent thereto, a tappet wheel provided with projecting arms, a disk mounted within the casing and provided with a crank-pin, a rod connecting said crank-pin with one of the arms of the tappet wheel, a rod connecting said crank-pin with the switch-point, a bracket depending from a car platform, a shoe pivotally secured to said bracket, a vertically disposed treadle extending through an opening in the car platform, a coil-spring encircling said treadle, and a link connecting the treadle and said shoe.

2. The combination with a switch, of a casing arranged adjacent thereto, a tappet wheel provided with projecting arms, a disk mounted within the casing and provided with a crank pin, a rod connecting said crank pin with one of the arms of the tappet wheel, a rod connecting said crank pin with the switch point, and means carried upon a car adapted to strike the arms of the tappet wheel, comprising a bracket depending from a car platform, a shoe pivotally secured thereto, a treadle on the platform, and a link connecting said treadle and shoe.

851,509. HOOK. WILLIAM C. FISHER, Middletown, Conn. Filed Jan. 2, 1906. Serial No. 294,159.

Claim.—1. The combination of a sheet metal keeper having an opening at one end, and a hook passing through said opening and having lateral arms disposed within the keeper, the keeper having a projection engaging said arms.

2. The combination of a keeper having an opening at one end, a hook passing through said opening and having laterally projecting arms at one end disposed within the keeper, and lugs at the ends of said arms disposed at right angles to said arms and lying against the side edges of the keeper.

3. The combination with a hook having laterally projecting arms at one end and a sheet metal keeper embracing said arms and having an opening for the passage of the wire of the hook, and means carried by the keeper and positively securing the arms of the hook within the keeper.

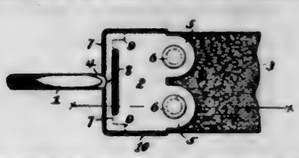

4. The combination with a hook having laterally projecting arms at one end of its shank and a keeper embracing said arms and having an opening for the passage of the shank of the hook, said keeper provided with a rib engaging said arms.

5. The combination with a sheet metal keeper bent upon itself and having a hole in its folded portion and having cooperating side flanges, of a hook having laterally projecting arms disposed in the folded end of the keeper, the shank of said hook projecting through the opening in the folded portion of the keeper, lugs at the ends of said arms disposed against the side flanges of the keeper, and a belt or strap having its end secured in the keeper and having its free extremity terminating between the lugs on the laterally projecting arms of the hook.

851,510. MASSAGE APPARATUS. GEORGE W. FITZ, Boston, Mass., and FREDERIC W. HITCHINGS, Cleveland, Ohio. Filed Mar. 3, 1906. Serial No. 304,126.

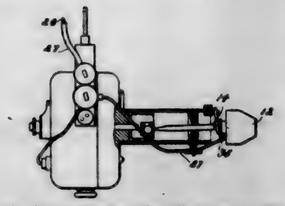

Claim.—1. An apparatus for the treatment of disease, comprising an applicator, means for positively vibrating it and means for applying heat to its acting surface.

2. An applicator having means for holding a heating medium in operative relation to its acting surface, and means for engagement with a device or mechanism for positively vibrating the applicator.

3. An applicator having an electrical heater operatively related to its acting surface, means for positively vibrating the applicator and flexible conducting wires electrically connected with the heater and extending therefrom.

4. An applicator having a cavity or chamber, means for vibrating the applicator, an electrical resistance coil located in said chamber, and flexible conducting wires electrically connected with said coil.

5. An applicator having a resistance coil operatively related to its acting surface, means for vibrating the applicator, means including flexible conducting wires for closing a circuit through said coil and means for regulating the heat developed in said coil.

6. An applicator comprising a hollow casing, means for vibrating it, an electrical heater comprising a resistance coil adapted to enter said casing, and means for detachably securing the coil to the casing.

7. An applicator comprising a hollow casing, means for vibrating it, an electrical heater comprising a resistance coil adapted to enter said casing, a spool or holder supporting said coil and having a core or stem detachably engaged with the casing.

8. An applicator comprising a hollow casing means for vibrating it, said casing having a detachable end piece or head adapted for detachable connection with the vibrating means, and a holder detachably secured to said head and supporting a resistance coil.

9. An applicator, comprising a hollow casing, having a detachable end piece or head, provided with an internally threaded socket, a holder adapted to detachably engage the said socket, and a resistance coil supported by the holder, and means engaging said socket to vibrate the applicator.

10. An applicator having an internal electrical heater, flexible conducting wires electrically connected with the heater and extending from the applicator, and a flexible cable enclosing the said wires and provided with a wire wrapping at and adjacent to its junction with the applicator, and means for vibrating the applicator.

11. In combination, an applicator, an electrical heater operatively related to the acting surface of the applicator, and means for positively vibrating the applicator.

12. In combination, an applicator, an electric heater operatively related to its acting surface, means for positively vibrating the applicator and heater, and flexible conducting wires connected with the heater and extending therefrom.

851,511. APPARATUS FOR PROCESSING SUGAR-CORN. LEONARD S. FLECKENSTEIN, Easton, Md. Filed Jan. 12, 1907. Serial No. 351,976.

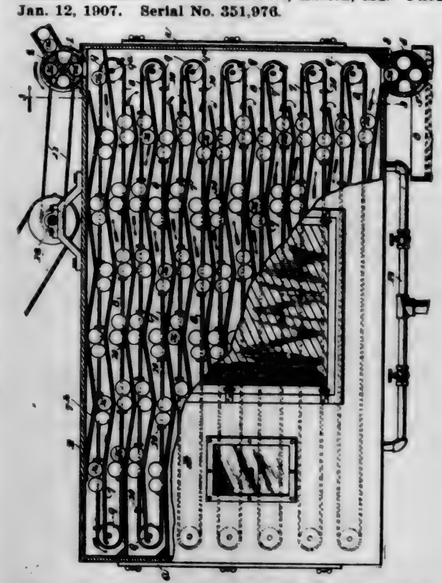

Claim.—1. The improved apparatus for the purpose specified comprising a steam-tight box, a can track having a succession of elevations, or portions projecting above its general plane, said elevations being separated by a space exceeding the diameter of the cans to be treated, and means for propelling the cans along the track and over the elevations from each of which they fall into a succeeding depression, whereby they are simultaneously rotated and jarred, as described.

2. In an apparatus for the purpose specified, the combination with a steam tight box, of a series of can tracks arranged therein, in general horizontal planes and parallel to each other, each being composed of a series of adjacent inclines arranged at an obtuse angle, each alternate track terminating short of the ends of the box, and means for pushing the cans over the tracks, whereby they pass off the end of one track on to the one below and then travel in the opposite direction, and so on throughout the series, substantially as described.

3. In an apparatus for the purpose specified, the combination with a steam tight box, of a can track arranged therein in a general horizontal plane and comprising alternately depressed and elevated portions over which the cans pass in part by gravity, and means for pushing the cans over the upwardly inclined portions, substantially as described.

4. In an apparatus for the purpose specified, the combination, with a steam-tight box, of a series of can tracks arranged one above another and spaced from each other, and comprising alternately depressed and elevated portions, the depressed portion of one track being directly over the corresponding portion of another, and a series of endless conveyers comprising endless chains, sprocket wheels and cross bars connecting the chains, the cross bars extending transversely in the passageways formed between adjacent tracks, and sliding in contact with the elevated portions of the latter, as shown and described.

851,512. SAW-OPERATING MECHANISM. WILLIAM K. GORDON, Thurber, Tex. Filed Jan. 4, 1907. Serial No. 350,759.

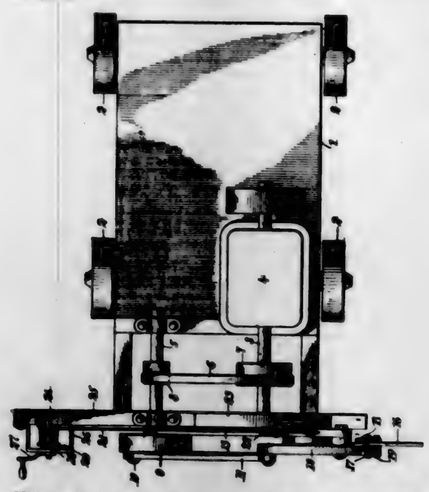

Claim.—1. A saw operating mechanism, comprising a platform, a driving shaft, a crank shaft having connection with the driving shaft, a crank on said crank shaft, an arm mounted to swing on the crank shaft, a segment bar having swinging connection with the outer end of said arm, a pitman connecting the crank to said bar, and a cross cut saw having pivotal connection with the lower end of said bar.

2. In a saw operating mechanism, a platform, a driving shaft supported on the platform, a crank shaft having operative connection with the driving shaft, an arm mounted to swing on the crank shaft, a curved bar having swinging connection with the outer end of said arm, a pitman extended from the crank to the upper end of said curved bar, a cross cut saw having swinging connection with the lower end of said curved bar, and means for swinging said curved bar upward to remove the saw from a cut.

3. A saw operating mechanism, comprising a wheel-mounted platform, a motor thereon, a driving shaft operated from the motor, a crank shaft, a driving connection between the two shafts, a crank on the outer end of the crank shaft, an arm having swinging connection with the crank shaft, a curved bar mounted to swing on the outer end of said arm, a pitman connection between the crank and the upper end of said bar, a saw having swinging connection with the lower end of the bar, a winding drum, a ratchet and pawl mechanism on said winding drum, a rope or cable extended from said winding drum, means for raising the arm carrying the curved bar, and means for preventing the saw from moving downward relatively to the bar when the parts are swung upward.

4. In a saw mechanism, a swinging bar, means for causing the swinging movement thereof, a saw pivoted to the lower end of said bar, a pin extended through the bar below the pivotal connection and adapted to engage with the butt portion of the saw, and a shoe carried on the outer end of the saw and extending below the cutting edge thereof.

5. In a cross cut saw mechanism, a swinging bar, means for causing the swinging movement thereof, a cross cut saw in pivotal connection with said bar, and a curved shoe pivoted to the outer end of the saw.

6. In a saw mechanism, a wheel-mounted platform, a driving shaft carried on the platform, a crank shaft carried on the platform and having driving connection with the driving shaft, an arm mounted to swing on the crank shaft, a bar having swinging connection with said arm, a crank on the crank shaft, a pitman connection between the upper end of said bar and the crank, an upright on the platform, a pulley carried by the upright, a cable extended from said swinging arm over said pulley, a winding drum with which said cable engages, a plate attached to the upright for engaging the outer side of the arm, said plate being of segmental form, and a saw having swinging connection with the bar.

851,513. WASTE FOR BATH-TUBS, BASINS, AND LIKE FIXTURES. PATRICK F. GUTHRIE and THOMAS HAYES, Nutley, N. J. Filed Jan. 13, 1906. Serial No. 295,874.

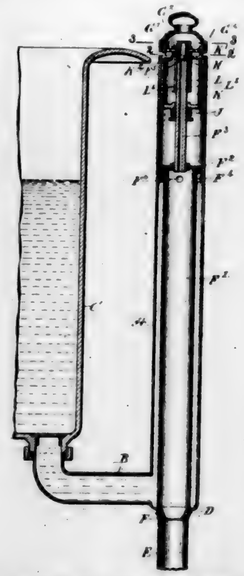

Claim.—1. A waste for bath tubs, basins and like fixtures, comprising a stand-pipe having a connection with the fixture and a valve-seat, a valve adapted to be seated on the said valve-seat and having a hollow stem provided near its upper end with an overflow opening and with a reduced hollow extension, a closure for the said stand-pipe and provided with a stuffing-box for the said valve-stem extension to slide in, and a valve in the said valve-stem extension adapted to open outwardly on pressure coming up the said valve-stem and its extension.

2. A waste for bath tubs, basins and like fixtures, comprising a stand-pipe having a connection with the fixture and a valve-seat, a valve adapted to be seated on the said

valve-seat and having a hollow stem provided near its upper end with an overflow opening and with a reduced hollow extension, a closure for the said stand-pipe and provided with a stuffing-box for the said valve-stem extension to slide in, a valve in the said valve-stem extension adapted to open outwardly on pressure coming up the said valve-stem and its extension, and a hollow knob for the upper end of the said valve-stem extension, the knob having escape openings.

3. A waste for bath tubs, basins and like fixtures, comprising a stand-pipe having a connection with the fixture and a valve-seat, a valve adapted to be seated on the said valve-seat and having a hollow stem provided near its upper end with an overflow opening and with a reduced hollow extension, a closure for the said stand-pipe and provided with a stuffing-box for the said valve-stem extension to slide in, a valve in the said valve-stem extension adapted to open outwardly on pressure coming up the said valve-stem and its extension, a hollow knob for the upper end of the said valve-stem extension, the knob having escape openings at its under-side, and means for supporting the knob spaced from the said closure.

4. A waste for bath tubs, basins and like fixtures, comprising a stand-pipe having a connection with the fixture and a valve-seat, a valve adapted to be seated on the said valve-seat and having a hollow stem provided near its upper end with an overflow opening and with a reduced hollow extension, a closure for the said stand-pipe and provided with a stuffing-box for the said valve-stem extension to slide in, a valve in the said valve-stem extension adapted to open outwardly on pressure coming up the said valve-stem and its extension, and a guide on the said valve-stem extension having wings extending through grooves, the said guide and its wings having a sliding engagement with the said closure.

5. A waste for bath tubs, basins and like fixtures, comprising a stand-pipe having a connection with the fixture and a valve-seat, a valve adapted to be seated on the said valve-seat and having a hollow stem provided near its upper end with an overflow opening and with a reduced hollow extension, a closure for the said stand-pipe and provided with a stuffing-box for the said valve-stem extension to slide in, a valve in the said valve-stem extension adapted to open outwardly on pressure coming up the said valve-stem and its extension, and a guide on the said valve-stem extension having wings extending through grooves, the said guide and its wings having a sliding engagement with the top of the said closure, the lower ends of the said wings being adapted to rest on the top of the closure to hold the valve off its seat.

6. A waste for bath tubs, basins and like fixtures comprising a stand pipe having a connection with the fixture and a valve seat, a hollow waste valve adapted to be seated on the said valve seat and controlling the outflow of the water from the fixtures and also forming an overflow for the water rising in the fixture and stand pipe, the said hollow waste valve being extended through the closed upper end of the stand pipe to allow opening and closing of the hollow waste valve from the outside of the stand pipe, and an automatic device for venting the upper closed end of the stand pipe of compressed air and for normally closing the said waste valve extension to prevent the passage of foul air into the room in which the fixture is located.

7. A waste for bath tubs, basins and like fixtures comprising a stand pipe having a connection with the fixture and a valve-seat, a hollow waste valve adapted to be seated on the said valve seat and controlling the outflow of the water from the fixture and also forming an overflow for the water rising on the fixture and stand pipe, the said hollow waste valve being extended through the closed upper end of the stand pipe to allow opening and closing of the hollow waste valve from the outside of the stand pipe, and a self-closing valve in the extended portion of the said hollow waste valve and arranged to relieve the stand pipe of compressed air in filling the fixture with water, to prevent forcing of the trap in the waste pipe and allowing the overflow to function properly; the said self-closing valve being normally in a closed position to prevent the escape of foul air rising in the said waste valve, and stand pipe.

851,514. TOY-RAILWAY CROSSOVER. WILLIAM R. HABERLIN, Bridgeport, Conn. Filed Feb. 5, 1907. Serial No. 355,812.

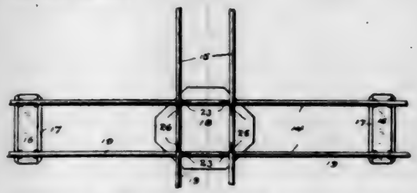

Claim.—1. A toy railway crossing comprising two pairs of rails formed from sheet metal and crossing each other at an angle, the blanks to form the rails of one pair being provided with central openings which when the rails are shaped form grooves therein to receive the treads and webs of the second pair of rails and also the flanges of wheels, and the blanks to form the second pair of rails being provided with central openings, which when the rails are shaped form grooves to receive the flanges of wheels, and with openings in their edges which form grooves to receive the flanges of the first pair of rails.

2. A toy railway crossing comprising two pairs of continuous rails formed from strips of sheet metal, the strips from which said rails are formed having openings punched therein which when the rails are bent to shape form grooves to receive the treads of wheels.

3. A toy railway crossing comprising two pairs of continuous rails formed from sheet metal, the strips from which said rails are formed having openings punched therein which when the rails are shaped and assembled form grooves which permit the rails to interlock at the crossings and also to receive the flanges of wheels.

4. A toy railway crossing comprising two pairs of continuous rails formed from strips of sheet metal, the strips from which one pair of rails are formed having central openings punched therein which when the rails are shaped and assembled receive the flanges and webs of the second pair of rails and also the grooves of wheels, and the strips from which the second pair of rails are formed having openings punched in their centers and sides, the openings at the center forming grooves which are adapted, when the rails are assembled, to receive the flanges of wheels and the openings at the sides forming grooves which receive the flanges of the second pair of rails.

5. A toy railway crossing comprising two pairs of continuous rails formed from blanks of sheet metal, said rails being provided at their points of intersection with grooves which permit the rails to interlock and are adapted to receive the flanges of wheels.

6. A toy railway crossing comprising two pairs of continuous rails formed from blanks of sheet metal, the rails of one pair being provided with grooves which receive the treads and webs of the second pair of rails and also the flanges of wheels and the rails of the second pair being provided with grooves which receive the flanges of wheels and with other grooves which receive the flanges of the first pair of rails.

7. A toy railway crossing rail formed from a blank of sheet metal having openings punched therein which when the blank is bent to shape form grooves in the completed rail which receive an intersecting rail and also the flanges of wheels.

851,515. CASH-REGISTER. THOMAS H. HARRIS, Fredericksburg, Va., assignor of one-half to Thomas C. Coleman, Washington, D. C. Filed Mar. 28, 1906. Serial No. 308,456.

Claim.—1. The register for the purpose specified, comprising a box having a hinged lid provided with a pendent arm within the box, a slidable pawl which engages such arm, and a ratchet wherewith the pawl engages, a device for locking the said ratchet, rotatable shafts for unwinding and winding on an inscribing strip, the winding-on shaft being automatically advanced by the sliding movement of the pawl due to closing the lid, substantially as described.

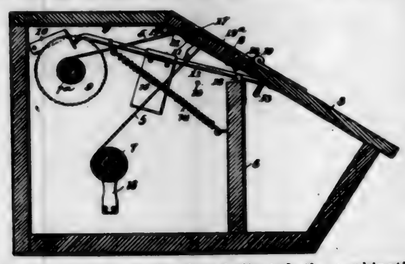

2. In a register of the class indicated, the combination, with the box having a hinged lid, of strip unwinding and winding-on shafts, the latter provided with a ratchet, and a feed pawl applied to said ratchet and projecting into contact with the lid so that it is advanced when the lid closes, a spring for normally retracting the said pawl when the lid is opened, and a stop comprising an arm or projection of the pawl and a pin fixed in the side of the box, whereby the retraction of the pawl is arrested at the proper point, substantially as described.

3. The improved register comprising a box having a hinged lid and a portion of its fixed top provided with a removable inserted piece for supporting an inscribing strip, a recording mechanism enclosed in the box and comprising shafts for unwinding and winding-on said inscribing strip, and a ratchet-and-pawl mechanism operated by the door in closing, a spring fastening for the said inserted piece, and comprising a wire spring which is hinged to the fixed portion of the top and having arms attached to the said piece, catches fixed in the top and engaging the spring arms in such manner that when the latter are sprung apart they are freed from the catches, thus permitting the said piece to be removed for removal or application of the inscribing strip, substantially as described.

851,516. MEANS FOR REMOVING MOISTURE FROM CLOSED CASES. ARTHUR S. HICKLEY, Manasquan, N. J. Filed Oct. 23, 1906. Serial No. 340,183.

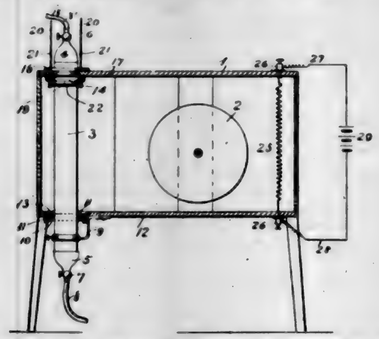

Claim.—1. A closed case, means for collecting the moisture from the air and gases in said case, comprising a receptacle for containing a refrigerant and extending through the bottom of the case, and means for forcibly removing the condensation from the receptacle.

2. A closed case, a receptacle extending through the wall of the case for collecting moisture from the contents thereof, means for removing the condensation derived from the moisture, and means around the receptacle for preventing the escape of air or gases from the case, and atmospheric air entering the case.

3. A closed case, a receptacle for containing a refrigerant and extending through the wall of the case, means for removing condensation from the exterior of said receptacle, and means for preventing the escape of air or gases from the case and atmospheric air entering the case.

4. A closed case, an electrical apparatus within the case, a receptacle for containing a refrigerant and extending through the wall of the case, means for removing condensation from the exterior of said receptacle, and means around said receptacle for preventing the escape of air or gases from the case and atmospheric air entering the case.

5. A closed case, a receptacle extending through the wall of the case and provided with means for supplying a refrigerant in transit through said receptacle, means for removing condensation from the exterior of said receptacle, and means for preventing the escape of air or gases from the case and atmospheric air entering the case.

6. A closed case, a receptacle for containing a refrigerant, a wiper engaging the exterior of said receptacle, means extending through the case for operating the wiper, and means around said receptacle for permitting the removal of the wiper from the case.

851,517. MECHANISM FOR PROPELLING VEHICLES OVER LAND OR WATER. JAMES A. HILDEBRAND, Olympia, Wash. Filed Sept. 27, 1906. Serial No. 336,419.

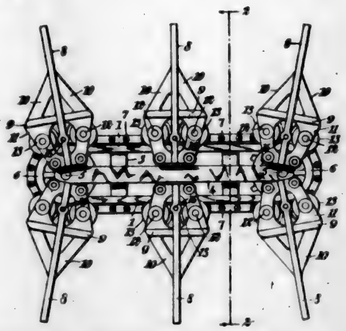

Claim.—1. In combination, a vehicle body, an endless track supported in substantially a vertical plane, adjacent the side thereof, vertical members connecting the opposite sides of said track, longitudinal members extending substantially parallel to the upper and lower portions of the track, sprocket wheels journaled in the ends of said longitudinal members and having their outer edges lying substantially parallel to the curved portions of the track, an endless conveyor mounted upon said sprocket wheels, propelling means mounted upon said track, means for connecting said propelling means to said conveyor, arms carried by said conveying means and extending on opposite sides of the said track, and a plurality of anti-friction rollers carried by said arms, adapted to engage the outer and inner surfaces of said track.

2. In combination, a vehicle body, means for propelling said body, said means comprising a plurality of vertical members, an endless track secured to each side of the vertical members adjacent their ends, longitudinal members secured to said vertical members on each side thereof, sprocket wheels journaled in the ends of said longitudinal members, a chain surrounding said sprocket wheels and lying substantially parallel to said endless tracks, a plurality of blades secured to said chain, a plurality of anti-friction rollers carried by said blades and in engagement with the outer and inner sides of each of said tracks, and means for rotating one of said sprocket wheels.

3. In combination, a land or water vehicle body, a track formed of two members spaced apart and extending paral-

lel, a longitudinal member surrounded by said track and rigidly secured thereto, sprocket wheels pivoted in the ends of said longitudinal member and having a portion of their circumferences parallel to said track, an endless chain surrounding said sprocket wheels and lying substantially parallel to the track throughout its length, a plurality of blades secured to said chain and having brackets extending on opposite sides of said track, each of said brackets carrying a friction roller in engagement with the outer surface of the track, a friction roller in engagement with the inner surface of the track, and means for rotating one of said sprocket wheels.

4. In combination, a vehicle body, an endless track supported in substantially a vertical plane adjacent one side thereof, said track composed of two substantially parallel members, vertical members intermediate the members of the track and rigidly secured to both of said track members, a longitudinal member extending substantially parallel to the upper and lower portions of the track members and secured to said vertical members, wheels journaled in the ends of said longitudinal members, an endless conveyer mounted upon said wheels, blades secured to said chain and mounted upon said track, two oppositely-disposed arms carried by each blade and lying upon opposite sides of the track, a plurality of anti-friction rollers carried by each of said arms and adapted to engage with the inner surface of the track, and a plurality of anti-friction rollers carried by each arm and adapted to engage with the outer surface of the track.

851,518. SURFACING-TOOL. ELMER HODGSON, Bonesteel, S. D. Filed May 2, 1906. Serial No. 314,875.

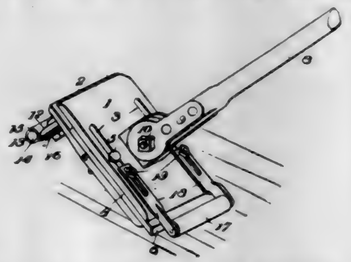

Claim.—1. In a surfacing tool, the combination of a pair of plates, a scraping blade mounted between the plates, a roller mounted upon one of the plates and engaging with the surface to hold the scraping blade at the desired angle, and a support secured to the opposite plate and serving to prevent any injury to the surface being operated upon.

2. In a surfacing tool, the combination of a pair of plates, a scraping blade mounted between the plates, a pair of arms adjustably connected to one of the plates, a guide roller mounted between the two arms and serving to regulate the inclination of the scraping blade to the surface, and a support secured to the opposite plate and serving to prevent injury to the surface being operated upon.

3. In a surfacing tool, the combination of a pair of plates, a scraping blade mounted between the plates, a pair of arms projecting beyond the edge of one of the plates and formed with slots, fastening members passing through the slots and serving to secure the arms to the plate, the slots permitting the arms to be moved back and forth, a guide roller journaled between the arms and serving to regulate the inclination of the scraping blade to the surface, and a support secured to the opposite plate.

4. In a surfacing tool, the combination of a base comprising a pair of plates, a scraping blade adjustably mounted between the plates, a pair of arms projecting laterally beyond one edge of one of the plates, the said arms being formed with longitudinal slots and being secured to the plate by fastening members passing through the slots so as to be readily moved back and forth, a guide roller journaled between the two arms and serving to regulate the inclination of the scraping blade to the surface, and a handle adjustably connected to the plate.

5. In a surfacing tool, the combination of a pair of plates, a scraping blade mounted between the plates, a guide roller mounted upon one of the plates and serving to hold the scraping blade at the desired angle to the surface, a transverse rib upon the opposite plate, and a support secured to the transverse rib and tending to prevent any injury to the surface.

6. In a surfacing tool, the combination of a base comprising two plates, a scraping blade adjustably mounted between the plates, a pair of arms projecting laterally from one of the edges of the plate and adjustably connected to the plate so as to be movable back and forth, a guide roller journaled between the two arms and serving to regulate the inclination of the blade to the surface, a transverse rib located upon the opposite plate, and a support secured to the transverse rib and tending to prevent any injury to the surface.

851,519. FENCE OR DIKE. JULIUS W. HUMPHREY, St. Johns, Oreg. Filed Aug. 21, 1906. Serial No. 331,459.

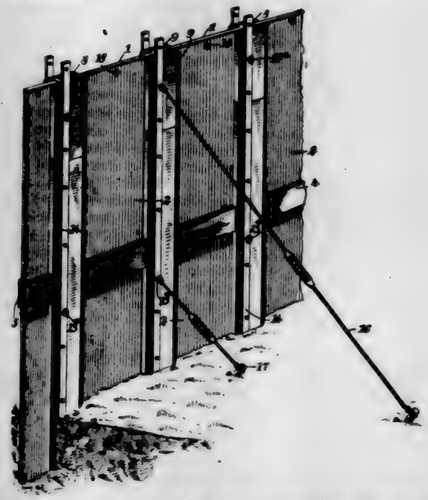

Claim.—A structure of the class described, composed of interlocking panels, said panels consisting of plates placed longitudinally one above the other, battens disposed in the space between the adjacent longitudinal edges of said plates, said battens having facing strips projecting over the adjacent edges of said plates, cleats attached to the vertical edges of said panels on one side, and posts attached to the edges of said panels opposite said cleats, each of said posts having a channel receiving the extremity of the adjacent panel and cleats carried thereby, said battens having tongues at the ends thereof projecting into the said channels of said posts and supporting the panels thereabove when said panels and posts are driven downwardly.

851,520. METALLURGICAL CONDENSER. WOOLSEY M. JOHNSON, Iola, Kans. Filed July 14, 1904. Serial No. 216,569.

Claim.—1. A metallurgical condenser having an interior non-metallic surface, a base plate of metal, and means for cooling said base plate, substantially as described.

2. A metallurgical condenser having an interior non-metallic surface, a base plate of metal, means for cooling said base plate, and means for directing the vapors in a tortuous path through said condenser, substantially as described.

3. A metallurgical condenser having an interior non-metallic surface, a base plate of metal, means for cooling said base plate, baffle walls arranged to direct the vapors in a tortuous path through said condenser, and means for cooling some or all of said baffle walls, substantially as described.

851,521. STUMP-PULLER. JOSIAH L. JONES, New Castle, N. H. Filed Nov. 9, 1906. Serial No. 342,640.

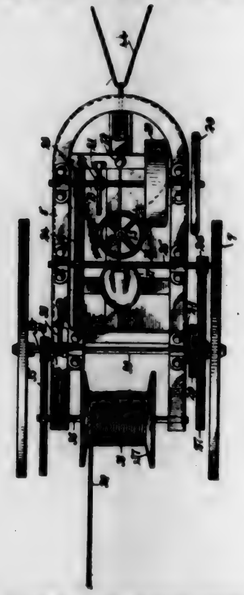

Claim.—1. A stump pulling machine comprising a frame, supporting wheels therefor, a driving shaft on the frame, a countershaft on the frame, a connection between the driving shaft and the countershaft, a gear wheel loosely mounted on the axle of the rear wheels, means for locking said gear wheel to one of said wheels, a connection between the countershaft and the gear wheel, a transverse shaft on the frame, means for connecting the gear wheel with the transverse shaft, a winding drum carried by the frame, and a releasable connection between the winding drum and the transverse shaft.

2. A stump pulling machine, comprising a frame, rear supporting wheels therefor, a front supporting and steering wheel, a driving shaft on the frame, a pinion on said driving shaft, a counter shaft, a gear wheel on the counter shaft meshing with said pinion, a pinion on the counter shaft, a gear wheel loosely mounted on the axle of the rear wheels, means for locking said last-named gear wheel in connection with one of the said wheels, a pinion carried by said gear wheel, a transverse shaft on the frame, a gear wheel on said transverse shaft meshing with said pinion, a pinion movable lengthwise on the transverse shaft but adapted to rotate therewith, a winding drum carried by the frame, and a gear wheel on the shaft of the driving drum adapted to be engaged by said last-named pinion.

851,522. CHECK-HANDLING DEVICE. MAX JOSEPH, Athens, Ga. Filed Sept. 22, 1906. Serial No. 335,804.

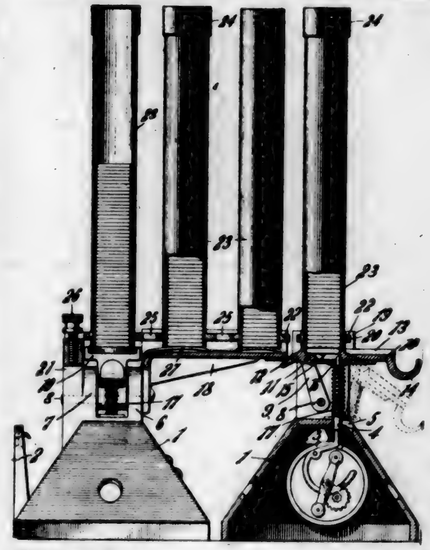

Claim.—1. In an apparatus of the character described the combination with a tubular receptacle and a support therefor; of a tiltable member disposed below and adapted to receive an article from the receptacle, and means for automatically disengaging an article from said member when tilted.

2. In an apparatus of the character described the combination with a tubular receptacle having an open end; of a tiltable member disposed below said receptacle, said member having a recess adapted to receive articles from the receptacle, and means for automatically ejecting articles from the recess when said member is tilted.

3. In an apparatus of the character described the combination with a tubular receptacle having an open end; of a tiltable member having a recess adapted to receive articles from said receptacle, an alarm, and an alarm actuating device for automatically ejecting articles from the recess when said member is depressed.

4. In an apparatus of the character described the combination with a tubular receptacle open at one end; of a tiltable member disposed therebeneath and having a recess to receive articles from the receptacle, means integral with said member for preventing the displacement of the contents of the receptacle when said member is tilted, a spring support for the member, and means for automatically ejecting an article from the recess when the member is tilted.

5. In an apparatus of the character described the combination with a tubular receptacle open at one end; of a tiltable member disposed below, and having a recess adapted to receive articles from the receptacle, an alarm, an alarm actuating arm extending into the bottom of the recess, and means for returning the tiltable member to its initial position after it has been tilted.

6. In an apparatus of the character described the combination with a receptacle open at its lower end and a support for said receptacle; of a tiltable member mounted

upon the support and below the receptacle, said member adapted to receive the contents of the receptacle, means for automatically returning the tiltable member to its initial position after it has been tilted, and means for automatically disengaging articles from said member when tilted.

7. In an apparatus of the character described the combination with a receptacle open at its lower end, and a support therefor; of a tiltable member mounted upon the support and having a recess adapted to receive articles from the receptacle and having a channel extending longitudinally of the member, means for automatically returning said member to its initial position after tilting, means for automatically ejecting articles from the recess and into the channel when said member is tilted, and an alarm actuated by said means during the tilting of the member.

8. In an apparatus of the character described the combination with a support; of a tubular receptacle detachably mounted thereon and open at its lower end, a tiltable member upon the support and below the receptacle, said member having a recess to receive articles from the receptacle and a longitudinally extending channel, means integral with said member for supporting the contents of the receptacle when the member is tilted, means for automatically returning the member to its initial position after it has been tilted, and means for automatically ejecting an article from the recess when said member is tilted.

9. In an apparatus of the character described the combination with a support; of a tubular receptacle detachably mounted thereon and open at its lower end, a tiltable member upon the support and below the receptacle, said member having a recess to receive articles from the receptacle and a longitudinally extending channel, means integral with said member for supporting the contents of the receptacle when the member is tilted, means for automatically returning the member to its initial position after it has been tilted, and means for automatically ejecting an article from the recess when said member is tilted, and an alarm operated by said ejecting means during the movement of the tilting member.

10. In an apparatus of the character described the combination with a support; of a plurality of interchangeable receptacles carried by the support and open at their lower ends, a tiltable member disposed beneath one of said receptacles and having a recess adapted to receive articles therefrom, means integral with said member for supporting the contents of said receptacle when the member is tilted, resilient means for supporting the contents of the other receptacles, and means projecting into the recess in the tiltable member for automatically ejecting an article from said member when the member is tilted.

11. In an apparatus of the character described the combination with a support; of a plurality of interchangeable receptacles carried by the support and open at their lower ends, a tiltable member disposed beneath one of said receptacles and having a recess adapted to receive articles therefrom, means integral with said member for supporting the contents of said receptacle when the member is tilted, resilient means for supporting the contents of the other receptacles, means projecting into the recess in the tiltable member for automatically ejecting an article from said member when the member is tilted, and means for automatically returning the tiltable member to its initial position after it has been tilted.

12. In an apparatus of the character described the combination with a support; of a plurality of interchangeable receptacles carried by the support and open at their lower ends, a tiltable member disposed beneath one of said receptacles and having a recess adapted to receive articles therefrom, means integral with said member for supporting the contents of said receptacle when the member is tilted, resilient means for supporting the contents of the other receptacles, means projecting into the recess in the tiltable member for automatically ejecting an article from said member when the member is tilted, and an alarm actuated by the ejecting means.

13. The combination with a support having a guide bracket; of a plurality of tubular receptacles slidably mounted upon said bracket, a tiltable member carried by the support adjacent one end of the bracket, said receptacles being adapted to successively assume positions above said member, means for securing a receptacle above said member, said member being provided with a recess adapted to receive articles from the receptacle thereabove, and means for automatically ejecting an article from the recess when said member is tilted.

14. The combination with a support having a guide bracket; of a plurality of tubular receptacles slidably mounted upon said bracket, a tiltable member carried by the support adjacent one end of the bracket, said receptacles being adapted to successively assume positions above said member, means for securing a receptacle above said member, said member being provided with a recess adapted to receive articles from the receptacle thereabove, means for automatically ejecting an article from the recess when said member is tilted, an alarm operated by said means when the member is tilted, and means for preventing displacement of the contents of the receptacle when in position above the bracket and during the actuation of the tiltable member.

15. A tube having a bottom pivoted to move in an arc extending transversely to the length of said tube to eject an article from the tube, said bottom having a handle for manipulating the same, said bottom being further movable in the same direction to cause said article to fall from said bottom into the hand of the operator manipulating the bottom.

16. A tube having a bottom pivoted to move in an arc extending transversely to the length of said tube to eject an article from the tube, said bottom having a handle for manipulating the same, said bottom being further movable in the same direction to cause said article to fall from said bottom into the hand of the operator manipulating the bottom, an alarm, and means for actuating the alarm during the movement of the bottom.

17. In an apparatus of the character described the combination with a support, and a guide thereon; of a delivery member at one end of the guide, and interchangeable receptacles mounted upon the guide, one of said receptacles being disposed above and opening onto the delivery member.

18. The combination with a support and a guide thereon; of a tiltable delivery member at one end of the guide, interchangeable receptacles disposed above the guide, one of said receptacles being located above the delivery member and opening thereonto, and means beneath the other receptacles and upon the guide for holding the contents of the receptacles within said receptacles.

851,523. AUTOMATIC BLOCK-SIGNAL. NEWTON C. KEELING, Bridgeport, Conn. Filed Oct. 31, 1906. Serial No. 341,407.

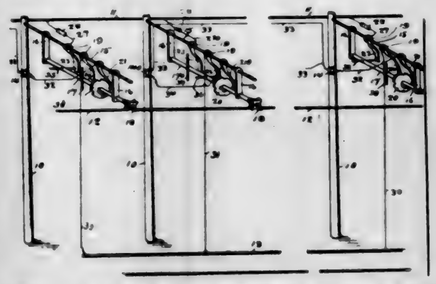

Claim.—1. A block signal system comprising a switch mechanism and a signal at each end of a block, each switch mechanism comprising rotary, angularly-mounted contacts, having means in the path of a trolley for rotating the same, co-operating contacts adapted to be alternately engaged by the rotary contacts, and circuit connections with said contacts for making and breaking the circuit through both of said signals.

2. A block signal system, comprising a switch mechanism and a signal at each end of a block, each switch mechanism comprising a shaft having a plurality of contacts at an angle to each other, and having also an operating wheel in the path of the trolley, co-operating contacts adapted to be alternately engaged by the shaft contacts, and circuit connections with said contacts for making and breaking a circuit through both of said signals.

3. A block signal system, comprising a switch mechanism and a signal at each end of a block, each switch mechanism comprising a shaft having a plurality of contacts at an angle to each other, and having also an operating wheel in the path of the trolley, and provided also with brake devices to prevent overthrow of said shaft, co-operating contacts adapted to be alternately engaged by the shaft contacts, and circuit connections with said contacts for making and breaking the circuits through both of said signals.

4. A block signal system comprising a switch mechanism and a signal at each end of a block, each switch mechanism comprising a shaft having a plurality of contacts at an angle to each other, and having means whereby it may be rotated by a passing trolley, means for holding the shaft in either of its rotatively adjusted positions, co-operating contacts adapted to be alternately engaged by the shaft contacts, and circuit connections with said contacts for making and breaking a circuit through both of said signals.

5. A block signal system, comprising a switch mechanism and a signal at each end of a block, each switch mechanism comprising a shaft having a plurality of contacts at an angle to each other, and having also means whereby it will be rotated by a passing trolley, co-operating contacts adapted to be alternately engaged by the shaft contacts, and circuit connections with said contacts for making and breaking a circuit through both of said signals, said connections including connections with the feed wire and car rail.

6. A block signal system comprising a switch mechanism and a signal at each end of a block, each switch mechanism comprising a shaft having a plurality of contacts at an angle to each other, and having also means whereby it may be rotated by a passing trolley, said shaft having also a notched disk, a detent co-operating with said notched disk, co-operating contacts adapted to be alternately engaged by the shaft contacts, and circuit connections with said contacts for making and breaking the circuit through both of said signals.

7. A block signal system comprising a switch mechanism at each end of a block, adapted to be opened and closed alternately by a passing trolley, a signal at each end of the block, and circuit connections co-operating with the switches, each switch mechanism including a shaft having an angular end and a wheel formed to fit an end of the shaft, and located in the path of a passing trolley, said wheel being insulated from said shaft.

8. A block signal system comprising a switch mechanism at each end of a block, adapted to be opened and closed alternately by a passing trolley, a signal at each end of the block, and circuit connections co-operating with the switches, each switch including in its construction a shaft having a two-flanged wheel rigidly secured to its end in position for the trolley wire to extend between said flanges, whereby said wheel will be directly actuated by the passing trolley wheel.

9. A block signal system, comprising a lamp at each end of a block, a shaft at each end of the block, said shaft having a wheel adapted to be operated directly by a passing trolley wheel to give it a partial rotation, switch members carried by said shafts, contacts to co-operate with said switches, brake or detent mechanism for stopping the rotation of the shaft at a predetermined point on each partial rotation, and circuit connections whereby both lamps will be cut into or out of the circuit by a partial rotation of either shaft.

851,524. BALE-TIE. ALBERT K. KLINGENDER and DE WITT M. COINER, Statesville, N. C. Filed Aug. 11, 1905. Serial No. 273,740.

Claim.—1. The improvement in bale ties herein described comprising a tie buckle having at one end a cross bar to which one end of a bale strap may be secured, a transverse bar at its opposite or front end and an intermediate cross bar, the transverse bar having one extremity free and having an inclined surface on its under side sloping up toward the free extremity and the rear edge of such transverse bar being inclined rearwardly toward its free extremity from its opposite end and the intermediate cross bar being unobstructed on its rear side at the edge of the buckle opposite the free extremity of the transverse keeper bar, and the bale strap secured at one end to the rear cross bar of the tie buckle and having its other end engaged with the rear edge of the intermediate cross bar and returned and adjusted beneath the transverse bar whereby the latter will operate as a keeper for the returned end of the bale strap, all substantially as and for the purpose set forth.

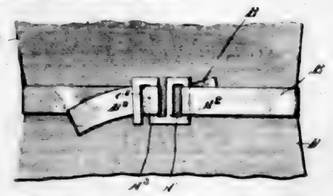

2. In a bale tie, a tie buckle having a cross bar at one end, and a transverse keeper bar at its other or front end, such keeper bar being free at one end, being inclined on its rear edge rearwardly toward its free extremity from its opposite end and the free end of the transverse bar being beveled upwardly toward the free extremity of said bar, the tie buckle being provided with an intermediate cross bar which is unobstructed at the side of the buckle opposite the free extremity of the transverse bar.

3. A bale tie comprising a buckle provided at one end with means for attachment of a bale strap and having at its opposite end a transverse keeper bar free at one extremity beveled on its under side at such extremity and having the rear edge of the transverse bar inclining rearwardly toward its free extremity and an intermediate cross bar in rear of the transverse bar and unobstructed at the side of the buckle opposite the free extremity of the transverse bar, and a bale strap secured at one end to the end of the buckle opposite the transverse keeper bar and having its opposite end returned and engaged with the intermediate cross bar and beneath the transverse keeper bar.

4. In a bale tie, a tie buckle provided at one end with means for attachment of a bale strap, and at its opposite or front end with a transverse keeper bar free at one extremity and inclined on its rear edge rearwardly toward its said free extremity, and an intermediate cross bar in rear of the said keeper bar and standing at an angle to the inclined inner edge thereof, substantially as and for the purpose set forth.

5. A tie buckle provided at one end with a loop to receive one end of a strap, and having at its opposite or front end a transverse keeper bar having one extremity free and inclined rearwardly on its rear edge toward its said free extremity, to assist in preventing the accidental disengagement of the returned portion of a bale strap, and having in rear of said keeper bar an intermediate cross bar A^3 whose rear edge is unobstructed at the side of the buckle opposite that toward which the free end of the keeper bar projects, whereby the strap held by the keeper bar may be slipped into the buckle from one side in rear of the intermediate cross bar and may then be returned into the buckle from its opposite side in rear of the keeper bar, substantially as and for the purposes set forth.

851,525. APPAREL-CORSET. DANIEL KOPS, New York, N. Y. Filed Jan. 8, 1907. Serial No. 351,291.

Claim.—1. The combination with the halves of a corset, of devices secured to the under surfaces of the corset at the back at the waist and at places appreciably distant from the lacing eyelets and which devices directly overlie

the figure of the wearer between the back hip curves and are adapted to create a supporting tension or pull independent of that of the corset lacing.

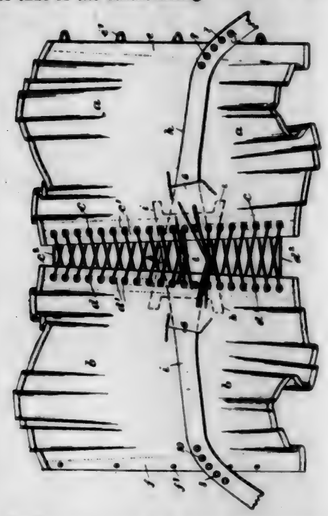

2. The combination with the halves of a corset, of devices secured to the under surfaces of the corset at the back at the waist at places appreciably distant from the lacing eyelets and which devices directly overlie the figure of the wearer between the back hip curves and are adapted to create a supporting tension or pull independent of that of the corset lacing, and prolongations of said devices extending to the front portions of the corset and means for securing the same in place.

3. The combination with the halves of a corset, of tapering straps secured at their broad and wider ends to the under surfaces of the halves of a corset at places appreciably distant from the lacing eyelets, said straps crossing approximately at the waist line and the small of the back and means for connecting or anchoring the free smaller ends of the said tapering straps to the corset.

4. The combination with the halves of a corset, of tapering straps secured at their broad and wider ends to the under surfaces of the halves of a corset at places appreciably distant from the lacing eyelets, said straps crossing approximately at the waist line and the small of the back, and slits in the halves of the corset at places still further distant from the lacing eyelets through which the narrower free ends of said straps pass and extend over the outer surface of the corset, and means for connecting or anchoring said free ends of said straps to the halves of a corset.

5. The combination with the halves of a corset, of tapering straps secured at their broad and wider ends to the under surfaces of the halves of a corset at places appreciably distant from the lacing eyelets, said straps crossing approximately at the waist line and the small of the back, a slit in one of said tapering straps through which the other strap passes so that the tapering straps may cross and draw in line, and slits in the fabric body of the corset at places still further distant from the lacing eyelets through which the narrower free ends of the straps pass to the outer surfaces of said corset halves and means for connecting or anchoring the free ends of said straps to the corset body.

6. The combination with the halves of a corset, of tapering straps secured at their broad and wider ends to the under surfaces of the halves of a corset at places appreciably distant from the lacing eyelets, said straps crossing approximately at the waist line and the small of the back, a slit in one of said tapering straps through which the other strap passes so that the tapering straps may cross and draw in line, and slits in the fabric body of the corset at places still farther distant from the lacing eyelets through which the narrower free ends of the straps pass to the outer surfaces of said corset halves and series of eyelets in the free ends of said tapering straps and posts connected to the front steels toward their lower ends and by which means the free ends of said straps are connected or anchored to a corset.

851,526. WRINGING DEVICE FOR MOPS. CHARLES L. KRABER, Quincy, Ill. Filed Apr. 28, 1906. Serial No. 314,247.

Claim.—1. The combination of a mop, a head therefor, and a handle, with a wringer for the mop, said wringer comprising a holder movable along the handle of the mop, a guide member for the said holder secured to the handle, its ends serving as stops for limiting the movement of the holder, a shaft journaled on the holder which moves therewith between the guide member and handle, means for rotating the shaft, and means for connecting the mop with the shaft for wringing the former.

2. The combination of a mop, a head therefor, and a handle, with a wringer for the mop, said wringer comprising a frame extending around the handle and movable thereon, means for guiding the movement of the frame, a resilient member hingedly connected with the frame and arranged to grip the handle at any point within the range of movement of the frame, and a crank-shaft journaled on the frame with its axis inclined at an angle to that of the handle and provided with an eye disposed at one side of the handle for connection with the free end of the mop and with a crank disposed at the opposite side of the handle.

3. The combination of a mop, a head therefor, and a handle, with a wringer for the mop, said wringer comprising a frame movable along the handle of the mop, means for guiding the movement of the frame, a looped resilient member arranged to grip the handle for locking the frame in adjusted position on the latter, and a crank shaft carried by the frame and connected with the free end of the mop for wringing the same.

4. The combination of a mop, a head therefor, and a handle, with a wringer for the mop, said wringer comprising a frame, a member on the handle for guiding the frame, its ends adapted to serve as stops for holding the frame on the handle, a spring clamp pivoted on the frame for locking said frame to the handle, a crank shaft journaled on the frame, a crank on one end of the shaft, and an eye on the opposite end of the crank.

5. The combination of a mop, a head therefor, and a handle, with a wringer for the mop comprising a band mounted for movement longitudinally of the handle, a guide means composed of a double wire for guiding the movement of the band on the handle and for preventing the band from turning, said means having a looped portion extending around the handle and adapted to grip the same, the ends of the wire being fastened to the handle, a shaft journaled on the band with its axis inclined to the line of movement of the latter, means for rotating the shaft, and a loop attached to the shaft for engagement with the free end of the mop.

851,527. FOLDING BRUSH. JOSEPH KRONACHER, Bamberg, Germany. Filed July 26, 1905. Serial No. 271,347.

Claim.—1. A combined brush and coat hanger comprising two hinged members each having brushes on their outer ends and upwardly bent portions on their inner ends, said bent portions serving as a handle when the parts are folded to be used as a brush and serving as a support to the neck of the garment when the parts are open.

2. A combined brush and coat hanger comprising two hinged members each having brushes on their outer ends and upwardly bent portions on their inner ends, said bent portions serving as a handle when the parts are folded to be used as brush and serving as a support to the neck of the garment when the parts are open, and means for locking and supporting said members in an open or unfolded position.

3. A combined brush and coat hanger comprising two hinged members each having brushes on their outer ends and upwardly bent portions on their inner ends, said bent portions serving as a handle when the parts are folded to be used as a brush and serving as a support to the neck of the garment when the parts are open, and means for locking and supporting said members in an open or unfolded position, said means serving to lock said members in a folded position.

4. A combined brush and coat hanger comprising two hinged members each having brushes on their outer ends adapted to be brought into close proximity and alined relation when the members are folded, the inner ends forming a handle when the members are folded to be used as a brush and serving as a support for the members when the same are opened, and means associated with said inner ends whereby the hanger may be suspended.

5. A combined brush and coat hanger comprising two members each having brushes on their outer ends adapted to be brought into close proximity when the members are folded, the inner ends forming a handle when the members are folded to be used as a brush and serving as a support for the members when the same are opened, and means associated with said inner ends for locking the same in an opened position, said means also serving to suspend the hanger.

6. A combined brush and coat hanger comprising two hinged members each having brushes on their outer ends adapted to be brought into close proximity and aligned relation when the members are folded, the inner ends of said members forming a handle when the parts are folded to be used as a brush and serving as a support for the members when the same are open, and a supporting hook locking said members in an open position, said hook also serving to lock said members in a folded position.

7. A combined brush and coat hanger comprising two hinged members each having brushes on their outer ends adapted to be brought into close proximity when the members are folded, said members having interfitting projections at their hinged connection provided with apertures adapted to be brought into register when the members are open, the inner ends of said members forming a handle when the parts are folded to be used as a brush and serving as a support for the members when the same are open, and a hook adapted to be inserted through said apertures to lock said members in an open position.

8. A combined brush and coat hanger comprising two hinged members each having brushes on their outer ends adapted to be brought into close proximity when the members are folded, said members having interfitting projections at their hinged connection provided with apertures adapted to be brought into register when the parts are open, the inner ends of said members forming a handle when the parts are folded to be used as a brush and serving as a support for the members when the same are open, a hook adapted to be inserted through said apertures to lock said members in an open position, and means whereby the hook may be engaged with said members to lock the same in a folded position.

9. A combined brush and coat hanger comprising two members each having brushes on their outer ends adapted to be brought into close proximity when the members are folded, the inner ends of said members serving as a handle when the parts are folded to be used as a brush and serving as a support for the members when the same are open, a hook for locking said members in a folded position, one of said members having an aperture formed in its outer end to receive one part of the hook, the other of said members having a recess and a spring catch adapted to be engaged by said hook.

10. A combined brush and coat hanger, comprising cooperating members one of which is provided with a brush, and means for suspending said members whereby the same may perform their function as a coat-hanger.

11. A combined brush and coat hanger comprising cooperating members one of which is provided with a brush, and means locking said members in an open position, said means serving to suspend said members whereby the same may perform their function as a coat hanger.

12. A combined brush and coat hanger comprising cooperating members, one of which is provided with a brush, and means locking said members in an open position, said means serving to suspend said members and also to lock the same in a closed position.

13. A combined brush and coat hanger comprising cooperating members one of which is provided with a brush, and means serving to suspend said members, said means also serving to lock said members in a closed position.

14. A combined brush and coat hanger comprising coat supporting portions provided with brushes and upwardly curved central neck supporting portions.

15. A combined brush and coat hanger comprising coat supporting portions provided with brushes and upwardly curved central neck supporting portions, and means for suspending said hanger.

851,528. RAILWAY-SWITCH MECHANISM. OSCAR A. KRUG, Cincinnati, Ohio, assignor of two-thirds to himself and one-third to William H. Newman, Cincinnati, Ohio. Filed Jan. 15, 1907. Serial No. 352,335.

Claim.—1. In a railway switch mechanism, switch tongues, a bar connection between the free ends of the tongues, a locking disk having link connection with said bar and provided at its periphery with two notches, a sliding locking rod for engaging in either one of said notches, a tappet finger mounted to swing from horizontal to vertical position and having a crank connection with the end of said locking rod, another tappet finger mounted to swing inward of the first-named tappet finger and having a crank portion, and a draw rod extended from said crank portion to connection with the locking disk.

2. In a railway switch mechanism switch tongues, a connection between the free ends of the tongues, a locking disk connected with said connection and provided at its periphery with two notches, a sliding locking rod for engaging in either of said notches, a tappet finger mounted to swing from horizontal to vertical position and having a crank connection with the end of said locking rod, another tappet finger mounted to swing inward of the first named tappet finger and having a crank portion and a draw rod extending from said crank portion to connection with the locking disk.

3. A railway switch mechanism, comprising switch tongues, a bar connecting the free ends of the tongues a weighted shifting lever for moving the tongues in one direction, a locking disk having link connection with said bar, the said locking disk having two notches in its periphery, a locking rod for engaging in either one of said notches, a vertically swinging tappet finger actuated by said locking rod at one side of the switch, a swinging lever pivoted to said rod, another tappet finger mounted to swing at the

opposite side of the switch and actuated from said lever, a treadle for automatically moving the first-named lever in one direction, fingers mounted to swing at opposite sides of the switch inward of the first-named fingers, a rod connection between one of said inner fingers and the locking disk, a swinging lever pivoted to the last-named

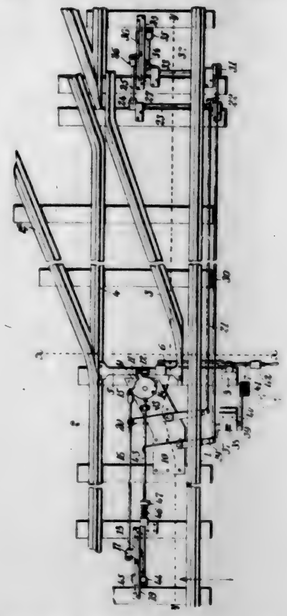

rod, and operating connection between said last-named lever and the inner finger at the opposite side of the switch.

851,529. WIRE-STRETCHER. FRANK H. LAMB, Hoquiam, Wash. Filed Dec. 18, 1906. Serial No. 348,466.

Claim.—1. In a wire stretcher, a bar, an operating lever pivotally mounted thereon, a gripping device slidably mounted on said bar, a gripping lever carried by said device, and a connecting link between the operating and gripping lever to oscillate the latter in the reciprocation of said device.

2. In a wire stretcher, a bar, an operating lever pivotally mounted thereon, a gripping device slidably mounted on said bar, a gripping lever carred by said device, a connecting link between the gripping and operating levers, and a tension spring connecting the gripping lever and link.

3. In a wire stretcher, a bar, an operating lever pivotally mounted thereon, gripping blocks slidably mounted on said bar, a gripping lever carreid by each of said blocks, a connecting link between each of the gripping levers and the operating lever, and an upper gripping jaw carried by the free end of each gripping lever.

4. In a wire stretcher, a supporting bar, an operating lever pivotally mounted thereon, a gripping block slidably mounted upon said bar and having a recessed face to receive the same, a gripping lever pivotally mounted upon the recessed face of said block to retain the bar therein, and a connecing link from said gripping lever to the operating lever.

5. In a wire stretcher, a supporting bar provided with a depending bracket, an operating lever pivotally mounted upon said bracket, gripping devices slidingly mounted upon the bar at opposite sides of said lever, and connections from the lever to the gripping devices for moving the same toward and from the lever.

6. In a wire stretcher, a supporting bar provided with a depending bracket, an operating lever pivotally mounted upon said bracket, gripping devices slidingly mounted upon the bar at opposite sides of the lever, connections from the lever to the gripping devices for moving the same toward and from the lever, a guide at one end of said bar, and an attaching device carried by the opposite end thereof.

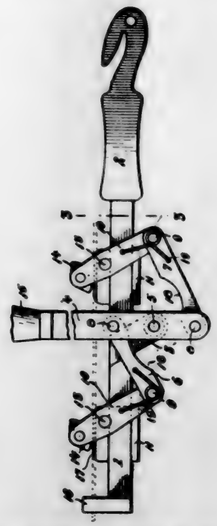

7. In a wire stretcher, a supporting bar, an operating lever pivotally mounted thereon, gripping devices slidingly mounted upon said bar and provided with levers, and links extending from one end of said levers and pivoted to the operating lever at the opposite side of the fulcrum thereof, said links being provided with recessed faces to seat at opposite sides of the fulcrum of the lever.

851,530. VAGINAL DOUCHE. EDWARD J. LAMPORT, Cape Town, Cape Colony. Filed Mar. 28, 1906. Serial No. 308,545.

Claim.—1. In a vaginal douche, a liquid-conducting tube having a collar adjacent to its inner end, a head removably secured to the outer end of said conducting tube, having a bore in registry with that in the conducting tube, and radial channels in its outer end portion connecting with said bore, a jacket capable of contraction and expansion secured to the conducting tube when the head connects therewith and to said collar, forming a chamber around the conducting tube, and means for supplying air to said chamber and relieving the chamber from air, as required.

2. In a vaginal douche, the combination with an inflatable body, of a tubular body passing through said conductor, and a head provided with a central sleeve secured to said conductor, an annular flange adapted to clamp one end of said body to the conductor, and with radial apertures extending into the opening of the tubular conductor.

3. In a vaginal douche, the combination with an inflatable body, of a tubular conductor passing through said body, a head having a threaded engagement with said conductor and provided with a conical cavity, and a conical section engaging said cavity and provided with radial apertures continuous with the bore of the tubular conductor.

851,530.

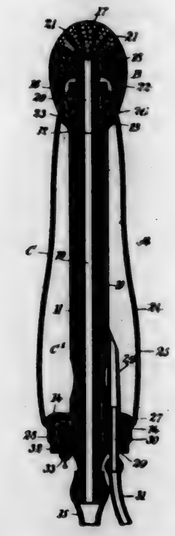

851,531. STAIR. JOSEPH LEA, Toronto, Ontario, Canada. Filed June 19, 1906. Serial No. 322,477.

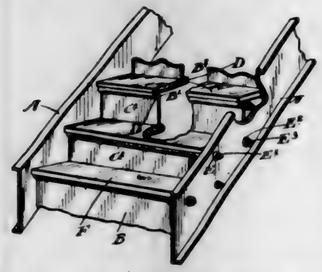

Claim.—1. In a stair, the combination with the stringers of treads having a hollow beaded nosing, and means extending into the hollow nosing for maintaining the treads in position and securing the stringers together and to the treads as and for the purpose specified.

2. In a stair, the combination with a stringer, of treads having a hollow beaded nosing, and means extending into the hollow nosing for maintaining the treads in position and securing the stringers together, consisting of a bolt extending through the stringers and nosing as and for the purpose specified.

3. In a stair, the combination with the stringers, of treads extending between the same and having hollow curled or beaded nosings and backs, and means extending from the stringers into the nosing and backs for supporting them upon the stringers and connecting the stringers together as and for the purpose specified.

4. In a stair, the combination with the stringers, of treads extending between the same and having hollow curled or beaded nosings and backs, and bolts extending through the hollow nosings and backs and connecting the stringers and treads together as and for the purpose specified.

5. In a stair, the combination with the stringers, of the treads having a hollow nosing and a curled or upwardly extending back edge and the risers having a hollow forwardly turned bead fitting within the nosing and a hollow rearwardly turned bead fitting within the curled back, and means extending into the hollow beads at the top and bottom for connecting the stringers and risers and treads together as and for the purpose specified.

6. In a stair, the combination with the stringers, of the treads having a hollow nosing and a curled or upwardly extending back edge, and the risers having a hollow forwardly turned bead fitting within the nosing and a hollow rearwardly turned bead fitting within the curled back, and bolts extending through the hollow top and bottom beads of the riser, and fastening nuts or devices located in the outer ends of the bolts as and for the purpose specified.

7. In a stair, the combination with the stringers, of the treads having a hollow nosing and a curled or upwardly extending back edge and the risers having a hollow forwardly turned bead fitting within the nosing and a hollow rearwardly turned bead fitting within the curled back, and a supplemental tread suitably fastened to the tread as and for the purpose specified.

8. In a stair, the combination with the stringers, of the treads, and bolts connected to the treads and extending longitudinally in alinement therewith through the stringers as and for the purpose specified.

851,532. COFFER-DAM AND CAISSON CONSTRUCTION. GEORGE A. LE FEVRE, Piermont, N. Y. Filed Apr. 11, 1906. Serial No. 311,190.

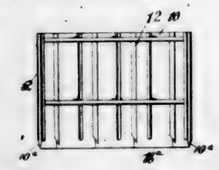

Claim.—1. A structure such as described, comprising a series of plates, joint strips fixed to opposite faces of the plates at one edge thereof and adapted to overlap the meeting edge of the last driven plate, and an inclined share-like structure fastened to each plate at a distance from its point and adapted to edgewise force the plate being driven against the plate last driven.

2. A structure such as described, comprising a series of plates, joint strips having laterally inclined forward ends and fixed to opposite faces of the plates at one edge thereof and adapted to overlap the meeting edge of the plate last driven, and an inclined share fastened to each plate at a distance from its point and co-operating with the inclined ends of the joint strips to edgewise force the plate being driven against the plate last driven.

3. In a structure such as described, the combination with a plate adapted to be sunk into the earth, of an inclined angle-iron share fixed to the plate at a distance from its point.

4. A structure such as described for caissons or cofferdams, comprising a series of flat plates and angle plates forming the sides and corners of the structure, overlapping joint strips fixed to the faces of the plates to cover the joints, and cross-braces inside the structure.

5. A structure such as described for caissons or cofferdams, comprising a series of flat plates and angle plates forming the sides and corners of the structure, overlapping joint strips fixed to the faces of the plates to cover the joints, angle-iron supports fastened vertically to the inner sides of the plates, and cross-braces fixed to said angle-iron supports.

6. A caisson wall plate having joint-lapping strips fixed to its opposite faces at one edge and having vertical bolt receiving slots at its opposite edge.

7. A caisson wall plate having joint-lapping strips 12 made with inclined ends 12^a and fixed to its opposite faces at one edge, an adjacent inclined share 17 fixed to the plate at some distance from its point, and a vertical

brace-supporting angle-iron 18 fixed to the inner face of the plate.

8. A caisson wall plate having joint-lapping strips 12 fixed to its opposite faces at one edge, an adjacent inclined share 17 fixed to the plate at some distance from its point, and attached fluid supply pipes.

9. A caisson wall plate having joint-lapping strips 12 provided with inclined ends 12ª, and fixed to its opposite faces at one edge, an adjacent inclined share 17 fixed to the plate at some distance from its point, and attached fluid supply pipes.

10. In a structure such as described, the combination with a wall plate, of a guide in the form of an open loop having one end reduced for attachment to a driven plate and having a groove at its other end to receive and guide the outer edge of an adjacent plate to be driven.

11. In a structure such as described, the combination with a driven caisson wall plate and an adjacent undriven plate having fixed joint strips projecting at its inner edge to overlap the driven plate, of a guide in the form of an open loop having one end reduced for attachment to the driven plate and having a groove at its other end receiving the outer edge of the plate being driven while the inner edge of said plate is guided on the prior driven plate by the joint strips.

851,533. SASH-LOCK. SAMUEL W. LETSON, Shreveport, La. Filed May 23, 1906. Serial No. 318,377.

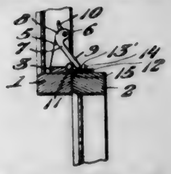

Claim.—The herein-described sash lock comprising a bracket adapted for application to the meeting rail of the upper sash, and comprising a base plate provided in its forward edge with a recess and having upwardly extending standards carrying a pivot pin, a gravity-projected pawl pivotally supported by said pin, said pawl being provided with a locking arm adapted to swing within the recess and normally arranged to project beyond the base plate and having a finger piece projecting upwardly from the pivoted end of the pawl in line with the pin, and a keeper member comprising a flat horizontal plate adapted to be secured to the meeting rails of the lower sash, said plate being provided with a vertical longitudinal opening to receive the free end of the pawl, a beveled surface leading from its outer edge to the outer side of said opening, a stop for the pawl projecting vertically at the inner edge of the opening, and a depending spur leading from the lower edge of the beveled face and adapted to be embedded in the sash.

851,534. STEERING APPLIANCE. DEAN C. LEWIS, Philadelphia, Pa. Filed Sept. 1, 1905. Serial No. 276,684.

Claim.—1. A steering gear comprising a screw having right and left hand threads, a pair of independent slides arranged on opposite sides of the screw, one having a right hand and the other a left-hand internal screw thread engaging the corresponding threads of the screw, adjustable guideways arranged at the opposite sides of said slides from the screw to retain the slides in engagement therewith, a shaft, and connections for communicating motion from the slides to the shaft.

2. A steering gear comprising a screw having a plurality of threads, blocks engaged therewith and adapted to be reciprocated by rotation thereof, a casing enclosing the screw and blocks, and guides or gibs on which the blocks slide adjustably mounted between the blocks and the adjacent sides of the casing.

3. A steering gear comprising a screw having a plurality of threads, blocks engaged therewith and adapted to be reciprocated by rotation thereof, a casing enclosing the screw and blocks, guides or gibs on which the blocks slide adjustably mounted between the blocks and the adjacent sides of the casing, and adjusting screws threaded into the casing and bearing against said guides.

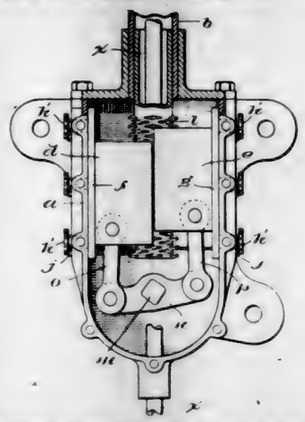

4. A steering gear comprising a screw having a plurality of threads, blocks engaged therewith and adapted to be reciprocated by rotation thereof, a casing enclosing the screw and blocks, guides or gibs on which the blocks slide adjustably mounted between the blocks and the adjacent sides of the casing, adjusting screws having notched heads threaded through the sides of the casing and bearing against said guides, and locking pins mounted adjacent said screws and arranged to project into the notches in the heads thereof.

5. In combination with a steering gear comprising a casing having bearings in line, a hollow screw shaft in one of said bearings, blocks slidingly mounted in the casing in engagement with said screw, and a steering shaft linked to said blocks for oscillation thereby, an engine-controlling rod passing through the hollow screw shaft and casing, and extending through the alined bearing in the latter.

851,535. GARMENT-SUPPORT FOR TRUNKS. WILLIAM C. LIKLY and JOHN J. CANNAN, Rochester, N. Y., assignors to Henry Likly & Company, Rochester, N. Y., a Corporation of New York. Filed May 14, 1906. Serial No. 316,626.

Claim.—1. The combination with a trunk body having an open side and a supporting frame movable outwardly therefrom, of a strut, connections between the latter and the frame permitting said strut to be moved lengthwise in a direction transversely of the frame to project its lower end into engagement with the floor in front of the trunk to support the frame when the latter is adjusted outwardly therefrom.

2. The combination with a trunk body having an open side and a supporting frame movably mounted therein, of a strut fitting within the body, means loosely connecting the strut to the frame which causes the former to be carried on the latter and permits the strut to be adjusted laterally on the frame and projected bodily in a lengthwise direction relatively thereto into engagement with the floor when the frame is moved outwardly.

3. The combination with a trunk comprising a body having an open side and a supporting frame movably mounted therein, of a guide on the frame having its inner end elevated above its outer end and a strut traveling on said guide and adapted to engage the floor when at the lower end thereof.

4. The combination with a trunk comprising a body having an open side and a supporting frame movably mounted therein, of a guide having its forward end extending beneath the frame and its other end projecting rearwardly and upwardly above the bottom of the frame and a strut traveling on said guide.

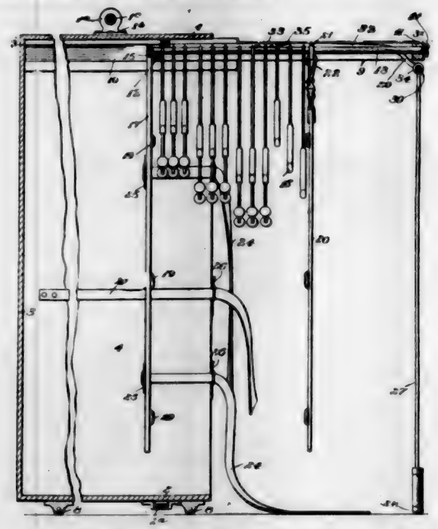

5. The combination with a trunk comprising a body having an open side and a supporting frame movably mounted therein, of a guide attached to the frame having its outer end arranged below the frame and its inner end elevated above the bottom thereof and a strut depending from said guide and of a length to engage the floor when the strut is moved onto the outer end of the guide.

6. The combination with a trunk comprising a body having an open side and a supporting frame movably mounted therein, of a strut adapted to project from a point beneath the frame into engagement with the floor and a guide supporting its upper end and connecting it to the frame, said guide having an upwardly extending portion which is adapted, when the strut is moved thereon, to elevate its lower end above the bottom of the trunk.

7. The combination with a trunk comprising a body having an open side and a supporting frame movably mounted therein comprising side pieces and a connecting cross piece, of a guide having one end extending beneath the cross piece and attached thereto and its other end extending upwardly and rearwardly and connected to one of the side pieces and a strut supported on the guide.

8. The combination with a trunk comprising a body having an open side and a supporting frame movably mounted therein comprising side pieces and a connecting cross piece, of a guide having one end secured to the cross piece and extending laterally beneath it and having its other end projecting rearwardly and upwardly and attached to one of the side pieces and a strut having an eye surrounding the guide and movable thereon.

9. In a trunk, the combination with a body adapted to rest upon one of its ends and having an open side and a frame movably supported therein, of a strut extending upwardly from the floor and a guide connecting it to the frame, on which the strut is movable, having a portion adapted to elevate the strut above the bottom of the body and a part which will move it into engagement with said bottom.

10. In a trunk, the combination with a body adapted to rest upon one of its ends and having an open side and a frame movably supported therein, of a strut extending upwardly from the floor and a guide connecting it to the frame having a rearwardly extending end located at one side of the frame adapted to elevate the strut above the bottom of the body and provided with a laterally and downwardly extending part for subsequently moving it into engagement with said bottom.

11. The combination with a trunk body and a garment supporting frame movable inwardly and outwardly therefrom, of a supporting strut fitting within the body at one side of the frame when the latter is in its inward position, means connecting the strut to the frame which permits it to be moved to a central point at the front of the frame when the latter is moved outwardly.

851,536. BOOK FOR STAMPS AND THE LIKE. HARRY M. LINDSAY, Baltimore, Md. Filed Feb. 4, 1907. Serial No. 355,664.

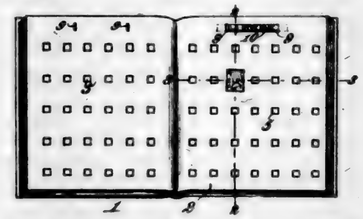

Claim.—1. A book having double pages with openings therein, the openings of one page being opposite the uncut portions of the adjacent page, and holders to removably engage said openings and adapted to have their central portions secured to the backs of devices to be held on the pages.

2. A book having double pages with openings therein, the openings of one page being opposite the uncut portions of the adjacent page, and holders to engage said openings adapted to be removably applied to the backs of devices disposed on the pages.

3. A book comprising a plurality of pages, each made up of two different sheets secured at the edges and having openings therein, the openings in one sheet being opposite the imperforate portions of the adjacent sheet, and devices adapted to be held on the said sheets and having holders centrally secured to the back portions thereof, the upper and lower extremities of the holders being free for removable insertion in the openings.

4. A book comprising a plurality of pages having square openings therein, the openings of one page being opposite imperforate portions of the adjacent page, and devices adapted to be applied to the pages having holders secured to the backs of said devices, the upper and lower extremities of the holders being free for removable insertion in the openings and confined between the two pages when applied.

5. A book comprising a plurality of pages having openings therein, the openings of one page being opposite the uncut portions of the remaining page, and devices adapted to be applied to said pages and provided with fabric holders secured to the centers of the backs thereof, each holder having adhesive material solely on one side at the center.

6. A book comprising a plurality of pages having square openings therein, the openings of one page being opposite the uncut portions of the remaining page, and devices adapted to be applied to said pages and provided with holders formed of fabric and secured to the centers of the backs of said devices, each holder having adhesive material solely on one side at the center and the lower extremity creased adjacent to the lower termination of the adhesive material.

7. A book comprising a plurality of pages, each of which is composed of two sheets secured at the edges, the two sheets having square openings cut therein and the openings of one sheet opposite the uncut portions of the adjacent sheet, and devices adapted to be removably applied to said pages and having holders secured at the center to the backs of said devices, the holders having their upper and lower extremities free and held between the sheets.

851,537. CULTIVATOR. HORACE LINDSAY, Brenham, Tex. Filed Nov. 17, 1906. Serial No. 343,940.

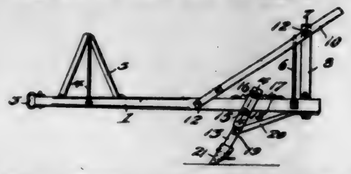

Claim.—1. A straddle-row cultivator embodying oppositely arranged beams, and standards and shovels carried thereby, in combination with braces connecting said beams, one of said braces being in the form of an arch extending obliquely across the space between the beams, and another brace in the form of an arch extending across the space between the beams and at right angles to the beams, said braces crossing each other at the crown of the arch where they rest one against the other, substantially as described.

2. A straddle row cultivator comprising parallel beams, standards secured to said beams, and shovels secured to said standards, a handle connected to one of said beams and extending backward in alinement therewith, and a handle connected to the opposite beam and curved toward the first mentioned handle to permit the plowman to walk upon one side of the row of plants being cultivated, and an arched brace having its ends connected rigidly to the beams, and the upper portion of said brace being connected to the handles and extending across between the same.

851,538. RECOIL-OPERATED FIREARM. GEORG LUGER, Charlottenburg, Germany. Filed Dec. 31, 1903. Serial No. 187,325.

Claim.—1. In a recoil-operated fire-arm, the combination with a rearward moving barrel and its extension, of a non-recoiling frame, a breech block, linked levers pivoted to the breech-block and to said extension, the forward one of said linked levers being provided with cam projections in front of the central pin, and cam projections on said frame with which the former cam projections are designed to engage on the rearward sliding movement of the barrel.

2. In a recoil-operated fire-arm, the combination with a rearward moving barrel and its extension, of a non-recoiling frame, a breech block, linked levers pivoted to the breech-block and to said extension, the forward one of said linked levers being provided at points forward of the central pin with downwardly and forwardly inclined shoulders or projections, and cam projections on said frame, likewise downwardly and forwardly inclined, with which said shoulders or projections are designed to engage on the rearward sliding movement of the barrel.

851,539. DESUINTING APPARATUS. GEORGES MALARD, Tourcoing, France. Filed Apr. 2, 1906. Serial No. 309,465.

Claim.—1. In a desuinting apparatus, the combination with an inclined way over which the wool travels, of a number of independent chambers to contain liquid of different degrees of saturation, means to pump the liquid from said chambers onto the wool on said way at different levels and means to return the liquid to the chambers.

2. In a desuinting apparatus, the combination with an inclined way over which the wool travels, of a tank having a number of independent chambers to contain liquid of different degrees of saturation, means to pump the successive liquids to successive elevations onto the wool, means to return liquid from the several elevations to the chamber containing the liquid next higher in saturation and means to collect the first washing of the wool and automatically discharge it.

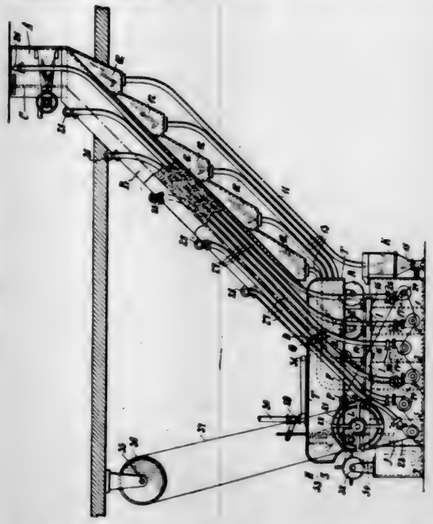

3. In a desuinting apparatus, the combination with an inclined way, of a tank divided into independent chambers, trays straddling the chambers, pumps to pump the liquid onto the way at different elevations, means to collect the liquid passing through the wool on the way at different levels and return it to the trays, and valves in the trays controlled by the liquid level in the chambers.

4. In a desuinting apparatus, the combination with an inclined perforated way having a feed hopper at its top, of a tank divided into independent chambers, inclined trays straddling adjacent compartments, float controlled valves controlling the discharge from the trays into the compartments containing the more saturated liquid of the two straddled, thereby maintaining a constant liquid level in the tank, means to return all of the liquid from the several levels but the highest to the trays, means controlled by the liquid level in the tank to regulate the supply of liquid.

5. In a desuinting apparatus, the combination with an inclined way for the wool, of a tank divided into independent chambers, means to pump the liquid of said chambers to different levels on the tray, means to return the liquids to the chambers containing the liquid of the required concentration, means to squeese the wool as it leaves the way, means to give it a final washing with water free from suint and means to squeeze it after this washing.

6. In a desuinting apparatus, the combination with an inclined perforated way for the wool having a feed hopper at the top, means to vary the size of the hopper to control the thickness of the sheet of wool moving over the way, collectors below the hopper, a tank divided into separate chambers, inclined trays at the sides of the tank straddling adjacent chambers and on which collectors discharge and having an upper and a lower delivery orifice, floats to control the delivery from the lower orifice and thereby maintaining a uniform liquid level in the chambers, rotating pumps for each chamber, the speeds of which increase in accordance with the lift and said pumps delivering liquid from the respective chambers onto the wool

at different levels, squeezing rolls at the end of the way, an endless carrier onto which the wool is delivered by the rolls a liquid supply delivering liquid onto the table and controlled by a float in the tank, a second pair of squeezing rolls at the end of the table.

851,540. DRIVING MECHANISM FOR SELF-PROPELLED VEHICLES OR VESSELS. PERCY MARTIN, London, England, assignor of one-half to Dick Kerr & Company, Limited, London, England. Filed June 1, 1905. Serial No. 263,345.

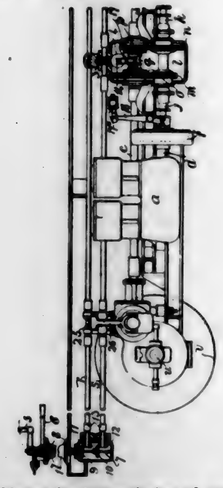

Claim.—1. Means for transmission of power in self propelled vehicles, comprising in combination engine shafts, driven shafts, a longitudinal shaft transmitting power to the driven shafts, reducing gearing in close proximity to said driven shafts, intermediate driving shafts adapted to be clutched to the engine shafts and variable speed gears between said intermediate shafts and said longitudinal shaft, substantially as described.

2. Means for transmission of power in self propelled vehicles, comprising in combination engine shafts, driven shafts, a longitudinal shaft for transmitting power to the driven shafts, reducing gearing in close proximity to said driven shafts, intermediate driving shafts, clutches between said intermediate shafts and the engine shafts, variable speed gears between said intermediate shafts and said longitudinal shaft, and means ensuring that the engines are disconnected before a change of speed is made, substantially as described.

3. Means for transmission of power in self-propelled vehicles comprising in combination, engine shafts, driven shafts, a longitudinal shaft driving said driven shafts, variable speed gearing between said engine shafts and said longitudinal shaft and reversing gearing in close proximity to said driven shafts, substantially as described.

4. Controlling mechanism for self-propelled vehicles comprising in combination engine shafts, a longitudinal controlling shaft, driven shafts, an high speed longitudinal shaft, gearing connecting said high speed shaft with said driven shafts, a countershaft, means connecting said countershaft with the controlling shaft, intermediate shafts *f*, *k*, large and small gears on said intetrmediate shafts, large and small gears loosely mounted on the high speed longitudinal shaft, a double clutch for locking either one of the latter gears to the longitudinal shaft, clutches between the engine shafts and the intermediate shafts, a wheel on said countershaft, cranks on said wheel, a projection eccentrically mounted on said wheel and at an angle to said cranks, link means connected with said cranks, lever means connecting said clutches with said link means, and a lever connecting said double clutch to the eccentric projection; substantially as described.

5. Controlling mechanism for self-propelled vehicles comprising in combination engine shafts, an high speed longitudinal shaft, a longitudinal controlling shaft, driven shafts, change speed clutches on the high speed shaft, connections between said engine shafts and the clutches, including friction clutches connections between the high speed shaft and the driven shafts, a wheel on the controlling shaft, a countershaft, a wheel on the countershaft, a projection eccentrically mounted on said latter wheel, and two cranks on the counter shaft making an angle with the eccentric projection, and controlling the friction clutches substantially as described.

6. Reversing mechanism for self propelled vehicles, comprising in combination a longitudinal reversing shaft, a longitudinal driving shaft, a bevel wheel at the end of said driving shaft a counter shaft transverse to said driving shaft a driven shaft to which said driving shaft is geared, bevel wheels loose on said counter shaft and geared with said bevel wheel on the longitudinal driving shaft and a clutch adapted to clutch one or other of said loose bevel wheels to the counter shaft when said longitudinal reversing shaft is operated substantially as described.

7. A self propelled vehicle, comprising in combination, a longitudinal driving shaft, engine shafts situated one on each side of said shaft, intermediate shafts adapted to be clutched to said engine shafts change speed gears between said intermediate shafts and said longitudinal driving shaft driven shafts and reducing gears between the ends of said longitudinal shaft and the driven shafts, substantially as described.

851,541. SEAM-DAMPENING MACHINE. CHARLES H. MATTICE, Green Island, N. Y., assignor to Adams Laundry Machinery Company, Troy, N. Y., a Corporation of New York. Filed Oct. 10, 1904. Serial No. 227,906.

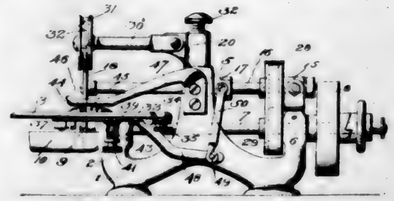

Claim.—1. In a dampening machine of the character described, the combination with a suitable supporting frame, of upper and lower dampening rolls, revolvably mounted in said frame, a water tank secured to said frame in which said lower roll is adapted to turn, a grooved reservoir wheel revolvably mounted on said frame to engage said upper dampening roll, absorbent material arranged on said grooved wheel whereby water is absorbed from said tank through the medium of said dampening rolls and by which said water is stored and applied to said upper dampening roll when the same is needed, substantially as described.

2. In a dampening machine of the character described, the combination with a suitable supporting frame, of upper and lower dampening rolls, revolvably mounted in said frame, a water tank secured to said frame in which said lower roll is adapted to turn, a reservoir moistening wheel having a grooved periphery, and an absorbent tape wound on said grooved periphery, said wheel being revolvably mounted on said frame to yieldingly engage said upper dampening roll, substantially as described.

3. In a dampening machine of the character described, the combination with a suitable supporting frame, of upper and lower shafts journaled in said frame, upper and lower dampening rolls mounted on the ends of said shafts, a water tank in which said lower roll is adapted to turn, a reservoir moistening wheel adapted to moisten said upper roll, means whereby said upper roll is held in yielding engagement with said lower roll, a manually operated lever

pivoted in said frame whereby said upper roll shaft is raised to disengage and separate said upper roll from said lower roll, an upper fixedly mounted guiding and holding plate, a lower adjustable yieldingly mounted guiding and holding plate having formed thereon guide lugs which are adapted to engage said fixed holding and guiding plate, an arm arranged on said adjustably mounted guide plate and a link pivotally connecting said arm with the shaft of said upper dampening roll whereby when the former is raised to separate said rolls said adjustable guiding plate will be lowered, thereby simultaneously separating said guiding and holding plates, substantially as and for the purposes described.

4. In a dampening machine of the character described, the combination with a base, of a table supporting standard arranged thereon, an apertured table mounted on said standard, an outer bifurcated bearing standard and an intermediate bearing standard arranged on said base, a drive shaft mounted in the table supporting standard and the outer standard, a bearing block pivotally mounted in said outer bifurcated standard, a block slidably mounted in said intermediate standard, a counter-shaft journaled in said bearing blocks, upper and lower dampening rolls fixed on the ends of said shafts, means whereby said upper roll is held in yielding engagement with said lower roll, means whereby said lower dampening roll is wet, a pivotally mounted arm, a reservoir moistening wheel journaled on the end of said arm, and absorbent material arranged on said wheel whereby when said reservoir moistening wheel is engaged with the said upper dampening roll the same will be moistened, substantially as described.

851,542. EYEGLASSES. CAROLINE E. MEAD, Louisville, Ky. Filed Nov. 7, 1905. Serial No. 286,248.

Claim.—The combination with a lens post for eyeglasses arranged to receive and support the nose bow and nose guard, of a screw to secure said parts to the post, the head of the screw comprising a rectangular plate having oppositely extending diagonally arranged arms projecting therefrom, said arms being of a length to wholly encircle the head of the post.

851,543. CLOTHES-LINE. ENOCH MERRIFIELD, Marysville, Mont. Filed Nov. 13, 1906. Serial No. 343,226.

Claim.—1. A clothes line composed of a series of sections, and a shiftable combined clamp and tightening member interposed between and connected to a pair of said sections, said member when shifted in one direction adapted to release an object from the line and cause a slack in the line and when shifted in the opposite direction adapted to straddle one of the sections of the pair to clamp the object to the line and to tighten the line.

2. In a clothes line, the combination with a plurality of sections, of a shiftable combined clamp and line tightening member interposed between and connected to each pair of sections, said member comprising a handle portion and a straddling portion for one of the sections of the line to clamp an object thereto and adapted when shifted in one direction to cause a slack in the line and release an object therefrom, and, when shifted in the other direction, to draw the line taut and have the straddling portion clamping an object to the line.

3. A clothes line comprising a series of sections having bifurcated ends, a combined clothes clamp and tightening member interposed between each pair of sections and extending in the bifurcations of the opposing ends of said pair of sections, said member intermediate its ends provided with a pair of slots opposing each other and means extending through the bifurcated ends of the opposing sections and through the inclined slots in the said member for connecting the sections to the member.

4. A clothes line comprising a pair of bars having the opposing ends thereof bifurcated, a combined clamping and tightening member interposed between the pair of bars and extending in the bifurcations thereof, said member comprising an angularly-extending portion adapted to straddle one

of the said bars, a handle portion and an intermediate portion connecting the handle to the straddling portion, said intermediate portion provided with a pair of inclined slots, and rivets extending through the bifurcated ends of the bars and the slots of said intermediate portion.

851,544. PEA-SHELLING DEVICE. CASPAR METTLER, New Haven, Conn., assignor of one-half to Luman S. Brown, Springfield, Mass. Filed Sept. 24, 1906. Serial No. 335,857.

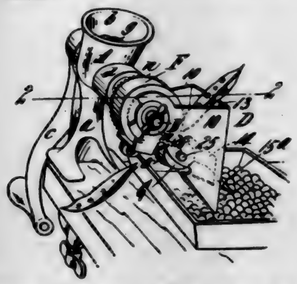

Claim.—1. In a pea shelling device, the combination with an upright standard having a basal screw clamp for securing it to the edge of a table, and a horizontal shaft journaled in said standard and projecting to one side thereof and provided with suitable operating means at the other side, of a roller mounted on the projecting portion of said shaft so as to be slidably removable therefrom, a removable casing having vertical opposed side walls including said roller between them and both walls being distinct from said standard, a second roller disposed to co-operate with the other and rotatably supported by and between said side walls, and means mounted on the end of the shaft for locking said casing and rollers against removal from the standard and shaft except when desired.

2. In a pea shelling device, the combination with an upright standard having means for securing it to the edge of a table, and a horizontal shaft journaled in said standard and projecting to one side thereof and provided with suitable operating means, of a roller removably mounted on the projecting portion of said shaft and provided with circular end bosses of less diameter than the roller, a casing having opposed vertical side walls embracing said roller and provided with registering apertures encircling said bosses, whereby the casing and roller are rendered removable as one member from said shaft, and a second roller disposed to co-operate with the other and rotatably supported by and between said side walls for removal with the casing.

3. In a pea shelling device, the combination with a standard having means for securing it in an upright position to the edge of a table, and a horizontal shaft journaled in said standard and projecting to one side thereof, of a roller removably mounted on the projecting portion of said shaft, a casing provided with opposed side walls embracing said roller and mounted thereon, and a second roller disposed to co-operate with the first and rotatably supported by and between said side walls, said casing having also an end wall parallel to said rollers and depending therebeneath to a point adjacent the base of the standard to serve as an abutment to prevent rotation of the casing.

4. A pea-shelling attachment for meat choppers consisting of a metal casing having two opposed side walls and an end wall, said side walls being provided with registering journal apertures, a roller having circular end bosses of reduced diameter journaled in said apertures and having further an axial opening passing through said bosses and the body of the roller and means for coupling said roller removably with an enclosed shaft, and a second roller disposed to co-operate with the first and rotatably supported by and between said side walls, whereby the casing and rollers form one unitary member.

5. A pea-shelling attachment for meat choppers consisting of an integral casing formed of a sheet of metal bent to present two opposed side walls and an end wall, said side walls in their portions remote from said end wall being provided with registering journal apertures and beneath said apertures with inward directed uniting webs having registering apertures for a clamping bolt, a roller disposed above said uniting webs and having circular end bosses of reduced diameter journaled in said apertures and having further an axial opening passing through said bosses and the body of the roller and means for coupling said roller removably with an enclosed shaft, and a second roller disposed to co-operate with the first and rotatably supported by and between said side walls, whereby the casing and rollers form one unitary member.

851,545. SHUTTLE-BINDER FOR LOOMS. NAPOLEON BLANCHETTE, Biddeford, Me. Filed Feb. 5, 1906. Serial No. 299,609.

Claim.—1. In a loom the combination with a shuttle box and a picker stick, of a lever mounted upon said shuttle box, a swinging presser-plate upon said lever, a cam pivoted upon said lever, a flexible connection attached to said plate and said cam, a lever to operate said cam, and a connection between the last-mentioned lever and the picker stick, to cause the latter, when struck by the shuttle, to operate the cam lever and hence also operate the presser plate, for the purpose set forth.

2. In a loom the combination with a shuttle box and a picker stick, of a lever mounted upon said shuttle box and formed with transverse slots and a connecting groove, a presser-plate seated in said groove and pivoted in one of said slots, an arm upon said plate projecting through the other of said slots, a cam pivoted in the last mentioned slot and formed with a projecting arm, a strap or the like upon said presser-plate and having one end secured thereto and its other end passed around the arm on said plate and secured to said cam, a slide in said shuttle box carried by said picker stick and an adjustable connection between said slide and the arm of said cam, substantially as described and for the purpose set forth.

851,545.

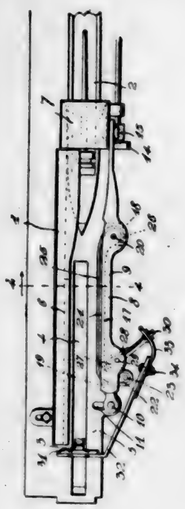

851,546. SECTIONAL ALBUM. JOHN A. MUDD, U. S. Navy. Filed June 30, 1906. Serial No. 324,223.

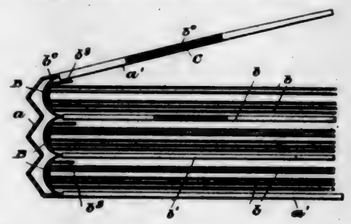

Claim.—1. A sectional album comprising a plurality of album sections, each having a plurality of leaves, in combination with means securing together the adjacent outer leaves of said sections, comprising a member longitudinally circumscribing said adjacent outer leaves, substantially as described.

2. A sectional album comprising a plurality of associated album sections, each having a plurality of leaves in combination with means securing together the adjacent outer leaves of said sections, comprising a pocket member enveloping said adjacent outer leaves, and said pocket member forming with the leaves of the sections a leaf of the album, substantially as described.

3. The combination with a cover having a folding back, of a plurality of independent album sections contained within said cover, means for securing the adjacent leaves of each pair of sections together, and means for securing the outer leaves of the end sections respectively to the front and back of said cover, the whole constructed and operating to form a complete album of varying capacity built up of detachably connected independent album sections, substantially as described.

4. In a sectional album, the combination with a cover provided with pockets extending along the inside face of the back and front thereof, of a plurality of album sections disposed within said cover, and means securing the adjacent leaves of each pair of said sections together, the outer leaf of the end sections being inserted within its respective pocket, substantially as described.

5. In a sectional albumn, the combination with a cover

having its back and front foldably connected together and said back and front being each provided with a pocket extending along the inner face thereof, of a plurality of album sections contained within said cover, the outer leaf of each end section being inserted within its respective pocket, and means detachably securing the adjacent leaves of each pair of said sections together, comprising a sliding pocket member enveloping said adjacent leaves, substantially as described.

851,547. MACHINE FOR PRODUCING FINISHED SHAFTING. WALTER J. MUNCASTER, Cumberland, Md., assignor to The Cumberland Steel Company of Allegany County, Cumberland, Md., a Corporation of Maryland. Filed Apr. 20, 1905. Serial No. 256,612.

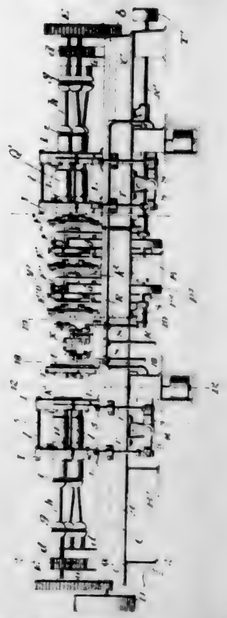

Claim.—1. In an organized machine for finishing shafting, the combination of a suitable frame; a stand of infeeding rolls arranged in spiral order or relation; a steady rest in close proximity to the infeeding rolls, arranged to receive the shafting directly therefrom; cutting tools located in close proximity to the steady rest and serving to roughly gauge the shafting; a bushing to receive the shafting as it passes from the cutting tools; other cutting tools arranged to act upon and further reduce or gauge the shafting as it emerges from the bushing; grinding and polishing wheels arranged to act upon the shafting after it passes the cutting tools; steady rests to center, guide and steady the shafting in passing the respective grinding wheels; and spirally arranged delivery rolls located in position to receive the shafting as it passes from the grinding and polishing wheels, and serving both to feed the shafting forward and to impart a rolled finish thereto, all the operating parts being grouped about a fixed common axis.

2. In a machine for finishing shafting, the combination of infeeding rolls having their axes symmetrically arranged about and oblique to a common axis; a steady rest opposite the delivery end of said rolls and having steady rolls with their axes arranged in like oblique relation to said common axis; and a cutting tool arranged on the side of the steady rest furthest from the infeeding rolls and in close proximity to the rest, in position to act upon the shafting immediately after it emerges from the rest.

3. In a machine of the character described, the combination of infeeding rolls having their axes obliquely arranged relatively to one another and to the common axis about which they are set; a steady rest to receive the shafting as it is advanced by the rolls; a preliminary cutting tool or tools to act upon and gauge the shafting as it emerges from the steady rest; a bushing to receive, center and support the shafting as it passes from the preliminary cutting or gauging tools; and a cutting tool at the delivery end of the bushing to further cut or dress the shafting as it emerges from the bushing, the several devices being symmetrically grouped about a fixed axis common to all.

4. In combination with in-feeding rolls, a steady rest; a post or standard; a preliminary cutting tool mounted in a tool head or carriage carried by said post or standard; a bushing also carried by the post or standard and adapted to receive the shafting as it passes said cutting tool; and a swinging arm pivotally mounted upon the post or standard and provided with a tool carriage and cutting tool, and with a roller opposite said cutting tool to bear upon the shafting as it emerges from the bushing and to maintain the cutting tool in proper relation to the shafting.

5. In a machine for automatically advancing, rotating and finishing shafting, a fixed post or standard; a cutting tool at the receiving side thereof; a cutting tool at the delivery side thereof; and a contractible bushing mounted in said post between the first and second cutting tools, and provided with external ribs, substantially as and for the purpose set forth.

6. In a machine of the character described, the combination of swinging frame F'; grinding roll m^2 carried thereby; roll-supporting frame H'; links or connections K', L', extending from frame F' to frame H'; an oscillating plate or head t^2, provided with journal-boxes or bearings and with arm u^2, and adapted to be oscillated in a vertical plane; screws v^2 arranged to bear upon the arm u^2; and roller J', having its shaft or axle carried in the journal-bearings of plate t^2, substantially as set forth.

7. In a machine for producing polished cylindrical shafting, the combination of infeeding rollers arranged with their axes oblique to one another, and to a common axis about which they are set; cutting tools to remove the scale and roughness from the surface of the bar or rough shafting; grinding wheels arranged to act successively upon the shafting after it is subjected to the cutting tools; and delivery rolls arranged to act upon the shafting after it has been prepared by the grinding-wheels, and to produce a cold-rolled finish thereon.

851,548. WRENCH. JAMES C. MCQUILKIN, Industry, Pa. Filed Sept. 17, 1906. Serial No. 334,956.

Claim.—1. A wrench comprising a fixed jaw shank, a handle member having a groove to receive the fixed jaw shank, shoulders on the fixed jaw shank and on the handle member for interlocking with each other, means for securing the handle member and the shank together, a sliding jaw held on the shank, a double threaded screw connecting the handle member and the sliding jaw, a collar loosely held on said screw to turn therewith, said shank member having means for retaining the collar in position adjacent the handle, substantially as shown and described.

2. The combination with a fixed jaw and shank, said shank having a cut away portion to form shoulders, of a sliding jaw held on the shank, a handle member removably secured to the shank and having a portion projected into the cut away portion of the shank and interlocked therewith, and a double threaded screw connecting the handle member and the sliding jaw, a collar loosely held on the screw, means connecting the screw and collar to rotate together, and means for holding the collar always adjacent the handle, substantially as shown and described.

3. A wrench comprising in combination a fixed jaw and shank, a sliding jaw mounted on the shank, a handle member removably mounted on the shank and having a screw receiving portion, a screw connecting the handle member and the sliding jaw, means for manipulating said screw to move the sliding jaw, said handle member comprising a pair of side plates straddling the fixed shank, securing means passing through the side plates and the fixed shank, and means carried by the handle member and by the fixed shank for interlocking the same, substantially as shown and described.

4. A wrench comprising in combination a fixed jaw and shank, a sliding jaw mounted on the shank, a handle member removably mounted on the shank and having a screw receiving portion, a screw connecting the handle member and the sliding jaw, means for manipulating said screw to move the sliding jaw, said handle member comprising a pair of side plates straddling the fixed shank, securing means passing through the side plates and the fixed shank, means carried by the handle member and by the fixed shank for interlocking the same, said last named means comprising a hook-like shoulder on the shank, and a similar shoulder on the handle to interlock with the shank shoulder, substantially as shown and described.

5. A wrench of the class described, comprising a fixed jaw and shank, said shank having a cut away portion provided with a rectangular shoulder at one end and a hook-like shoulder at the other end, a handle member secured to said shank and having a portion for entering the cut away portion of the shank, and provided with a hook-like shoulder to cooperate with the similar shoulder of the shank, and said handle member including side plates for straddling the fixed shank and a front connecting plate, and having a screw receiving portion, substantially as shown and described.

851,549. WAVE-MOTOR. JOHN W. NEAL, Kealia, Hawaii. Filed June 5, 1906. Serial No. 320,270.

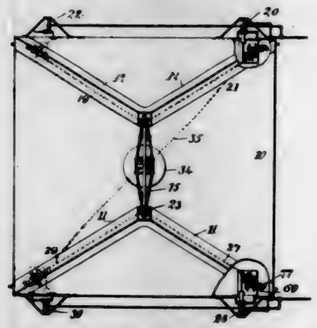

Claim.—1. A motor of the class described, comprising a float, uprights on the float, a frame supported by the float, with which the float has oscillating relation, a compressor mechanism operated by rocking movements of the float relatively to the frame, a counter-shaft supported in the frame, a pendulum arranged to swing lengthwise of the frame, said pendulum being supported from said shaft, and a compressor mechanism operated from said shaft.

2. A motor of the character described, comprising a float, uprights on said float, the said uprights being hollow, a frame having swinging connection with the uprights, shafts extended through the uprights at one side of the float, and having gear connection with said frame, compressor mechanism operated by said shafts, a main shaft carried by the frame, a counter-shaft having gear connection with the main shaft, a pendulum suspended from said counter-shaft, and compressor mechanism actuated from said main shaft.

3. A wave motor comprising a float, uprights on the float, a trussed frame having swinging connection with said uprights, a compressor operating mechanism operated by relative movement between said frame and float, a pendulum having a swinging movement lengthwise of the frame, and a compressor mechanism operated by movements of said pendulum.

4. A wave motor comprising a float, tubular divergent uprights at the opposite side of the float, a frame supported by the uprights, there being swinging relation between the said frame and float, a shaft rigidly connected to one end of said frame, two compressors at one side of the float, operating connections between said compressors and said shaft, a shaft arranged transversely in the frame, shafts extended through the supports at the said opposite sides of the float, compressors operated from said last named shaft, a pendulum suspended from the transverse shaft, and driving connections between said transverse shaft and the shafts extended through the last named uprights.

851,550. TOOTH-BRUSH GUARD. JOHN C. NEVIUS, Trenton, N. J., assignor of one-half to Standard Rubber Co., Trenton, N. J., a Corporation of New Jersey. Filed Aug. 31, 1906. Serial No. 332,796.

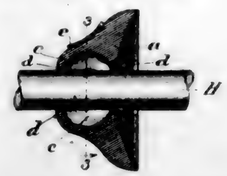

Claim.—1. A shield for brushes, provided with a bore having an internal annular pocket or recess, substantially as described.

2. A rubber shield for brushes, having one end concave, and provided with a central bore having an internal annular pocket or recess, substantially as described.

3. A conical or bell-shaped rubber shield or guard, having its larger end concave, and provided with a central bore, the end walls of the bore being of less diameter than the interior portion of the bore, so that said end walls can flex or expand without affecting the main body of the shield.

4. A shield for brushes, comprising a rubber body having one end concaved, and provided with a bore having an internal concealed annular pocket or recess, leaving the end walls of the bore flexible and self-adjusting whereby material distortion of the body of the guard is prevented when the guard is applied to a handle, substantially as and for the purpose described.

5. The herein described shield for brushes, comprising a conical or bell-shaped soft rubber body, having its larger end concaved, and provided with a bore of comparatively small diameter at its ends, and with an internal annular pocket or recess, leaving the end walls of the bore flexible whereby material distortion of the body of the guard is prevented when applied to a handle, substantially as and for the purpose described.

851,551. RAILWAY-TIE AND RAIL-FASTENING. ALLEN NEWELL, Guadalajara, Mexico. Filed Dec. 13, 1906. Serial No. 347,627.

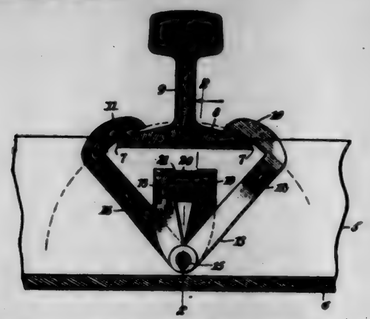

Claim.—1. A metal railway tie having upwardly extended side walls for supporting the flange of a rail, and hook members having swinging connection with the tie for engaging with the base flange of a rail and means for forcing the hook members toward the rail.

2. A metal railway tie having a base wall and vertical side walls, a bolt extended through the side walls near the base wall, and rail fastening devices mounted to swing on said bolt and having hook portions for engaging with the rail flanges and means for forcing the hook members toward the rail.

3. A metal railway tie having upwardly extended side walls, a bolt extended through the side walls near the bottom, a rail fastener comprising a hook member having a bifurcated shank mounted to swing on said bolt and another hook member having a shank extended between the parts of the first-named shank and arranged to swing on said bolt, arms extended upward from the shanks and at an acute angle thereto, and a wedge for engaging between said arms.

4. A metal railway tie having upwardly extended side walls, a bolt extended between the side walls at the lower portion, a rail fastening comprising a hook having a bifurcated shank portion mounted to swing on said bolt and having upwardly extended arms, another hook portion having a shank mounted to swing on the bolt between the parts of the first-named shank, the flange-engaging hook members being of varying thickness from the inner to the outer sides, an arm extended upward from said last-named shank, a wedge for engaging between the arms, and a key for engaging with the wedge.

5. A metal railway tie having upwardly extended side walls, a bolt extended between the side walls at the lower portion, the said side walls having openings above the bolt, a rail fastener having a hook member for engaging with the flange of a rail, the said hook member having a bifurcated shank having swinging connection with the bolt, arms extended upward from the shank members, another hook for engaging with the rail flange and having a shank portion mounted to swing on the bolt between the members of the first-named shank, an arm extended upward from the last-named shank, a wedge for engaging between the arms of the opposite shanks, and a key adapted to pass through the openings of the tie side walls above the wedge, the said key being longitudinally tapered and having its smaller end turned downward against the outer side of one of the walls of the tie.

6. A metal railway tie for supporting the flange of a rail, hook members having swinging connection with the tie for engaging with the base flange of a rail, and means for forcing the hook members toward the rail.

851,552. KICK-BOARD. WILLIAM H. NICOLAY, New York, N. Y. Filed Oct. 26, 1906. Serial No. 340,666.

Claim.—1. A kick board having inclined end walls, provided with upwardly inclined lower ends, and an inclined front wall provided with means for centering said kick board relatively to a molding, substantially as shown and described.

2. The combination with a molding adapted to receive electric wires, of insulating tubes connected therewith, and a kick board adapted to enclose the lower end of said molding and said tubes, and provided with inclined side walls spaced from said molding, and an inclined front wall provided on its upper edge with a transverse recess adapted to engage the front of said molding, substantially as shown and described.

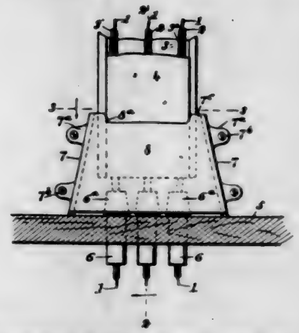

3. A kick board provided with end walls having free upper edges, and an inclined front wall provided on its upper edge with a recess terminating at its ends short of the end walls, and adapted to center the kick board on a molding and space the upper edges of the end plates from said molding, substantially as shown and described.

4. A kick board having end walls, provided with free upper edges, and an inclined front wall having an upper edge provided with a recess, and its lower edge arranged above the lower terminal of the end walls, substantially as shown and described.

851,553. CONCRETE-MIXING MACHINE. ALVIN F. NIMS, Philadelphia, N. Y. Filed Mar. 27, 1906. Serial No. 308,236.

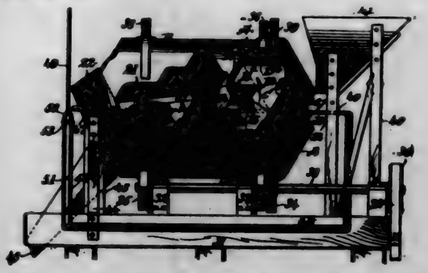

Claim.—1. In a concrete mixing machine, connected hollow cube sections one mounted upon the other at an end portion but both being mounted to revolve in unison and having registering openings in their opposing surfaces, the first cube section being provided with an inlet opening and the last with an outlet opening, a chute extending from the receiving end of the first cube section leading to the said registering openings, and a second chute extending from the inner end wall of the last cube section to the outlet thereof.

2. In a concrete mixing machine, connected hollow cube sections mounted to revolve, having registering openings in their opposing surfaces, the first cube section being provided with an inlet opening and the last with an outlet opening, a partition located within the first cube section, having an opening therein and having one member separated from the inner wall of the said first cube section, which member is provided with a tongue at right angles thereto, extending to an engagement with a wall of the said first cube section, another member of the partition being inclined, leading to the said registering openings, and an inclined chute located within the last cube section, in alignment with the inclined member of the said partition in the first cube section, the chute in the last cube section extending from its inner wall to the outlet opening.

3. In a concrete mixing machine, connected hollow cube sections mounted to revolve, having registering openings in their opposing surfaces, the first cube section being provided with an inlet opening and the last with an outlet opening, a partition located within the first cube section, having an opening therein and having one member separated from the inner wall of the said first cube section, which member is provided with a tongue at right angles thereto, extending to an engagement with a wall of the said first cube section, another member of the partition being inclined, leading to the said registering openings, and an inclined chute located within the last cube section, in alignment with the inclined member of the said partition in the first cube section, the chute in the last cube section extending from its inner wall to the outlet opening, the said chute and the said partition being located above the center of their respective cube sections, and the communicating openings in the said cube sections being rectangular, and the cube sections having interlocking connection at the points where the openings occur.

4. In a concrete mixing machine, hollow cube sections located one upon the other at their end portions and having interlocking connection and registering openings at their point of connection, the receiving cube section being provided with an inlet opening and the dispensing cube section with an outlet opening, and a partition located in the receiving cube section, extending from its outer wall to the said opening connecting the two sections, the dispensing cube section being provided with a chute correspondingly located to the said partition in the receiving cube section, and leading from the inner end wall of the said dispensing cube section to the outlet opening therefor and means for revolving the connected cubes.

5. In a concrete mixing machine, hollow cube sections mounted to revolve and having interlocking connection and registering openings at their point of connection, the receiving cube section being provided with an inlet opening and the dispensing cube section with an outlet opening, a partition located in the receiving cube section, extending from its outer wall to the said openings connecting the two sections, the dispensing cube section being provided with a chute correspondingly located to the said partition in the receiving cube section and leading from the inner end wall of said dispensing section to the outlet opening therefor, means for rotating the said cube sections, a door for the outlet opening of the dispensing cube section, adapted to open and close by gravity, latches for the said door in its upper and in its closed positions, and trips for the said latches independent of the said cube sections and the said door.

6. In a concrete mixing machine, hollow cube sections mounted to revolve, having interlocking connection and registering openings at their point of connection, the receiving cube section being provided with an inlet opening and the dispensing cube section with an outlet opening, a partition located in the receiving cube section, extending from its outer wall to the said openings connecting the two sections, the dispensing cube section being provided with a chute correspondingly located to the said partition in the receiving cube section and leading from the inner end wall of said dispensing section to the outlet opening therefor, means for rotating the said cube sections, a door for the outlet opening of the said dispensing section, adapted to open and close by gravity, latches for the said door in its upper and in its closed positions, trips for the said latches, independent of the said cube sections and the said door, said door being of less depth than the depth of the outlet opening, and means for independently and collectively supplying liquid to the interior of the said cube sections.

851,554. CONCRETE-MEASURING MACHINE. ALVIN F. NIMS, Philadelphia, N. Y. Filed May 26, 1906. Serial No. 318,845.

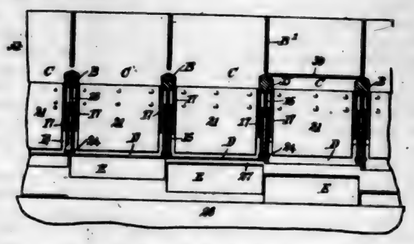

Claim.—1. In concrete measuring machines, a hopper having an outlet, a dumping chute pivoted beneath the outlet, an agitating device operated by the chute, and a measuring wheel provided with a series of buckets mounted to revolve beneath the chute and to control its cut-off and dumping position relatively to the hopper.

2. In concrete measuring machines, a hopper provided with an outlet, means for regulating the extent of said outlet, a dumping chute pivoted below the outlet, an agitating plate secured to the said hopper opposite the said regulating means, which agitating plate is of spring material and extends down into the chute adjacent to the rear of its pivot, a measuring wheel mounted to revolve below the said chute, which measuring wheel is provided with a series of buckets and marginal flanges at the buckets, partially closing their mouths, which flanges are adapted for engagement with the chute to hold the same in normal position, the chute dropping into the open portions of the buckets when relieved from engagement with the flanges of the wheel, and a retarding mechanism for the said measuring wheel.

3. In concrete measuring machines, a hopper provided with an outlet, means for regulating the extent of said outlet, a dumping chute pivoted below the outlet, an agitating plate secured to the said hopper opposite the said regulating means, which agitating plate is of spring material and extends down into the chute adjacent to the rear of its pivot, a measuring wheel mounted to revolve below the said chute, which measuring wheel is provided with a series of buckets and marginal flanges at the buckets partially closing their mouths, which flanges are adapted for engagement with the chutes to hold the same in normal position, the chute dropping into the open portions of the buckets when relieved from engagement with the flanges of the wheel, a retarding mechanism for the said measuring wheel, shields located at opposite sides of the said wheel, and a conveyer located below the shields and the wheel.

4. In a concrete measuring machine, a hopper, fixed partitions dividing said hopper into a series of compartments, each compartment comprising an upper solid section, a central hanger and a slab at each side of the hanger, removable partitions fitted in the hopper above the fixed partitions, chutes pivotally connected with the hangers of the fixed partitions, the pivots for the said chutes being between their centers and their rear portions, a plate adjustably mounted in each compartment at the forward wall of the hopper, whereby to increase or decrease the size of the outlet openings for the compartments, a spring agitating plate located in each compartment at the inner side of the hopper opposite the said adjustable plate, which spring plates extend down into the chutes to a position at the rear of their pivots, measuring wheels mounted to revolve, one below each of the said chutes, each measuring wheel being provided with a series of buckets and each bucket with a marginal flange which is adapted to engage with the lower forward portion of the chute above it, whereby to raise the said chute to a normal position or permit it to drop into dumping position into one of the buckets, the buckets in the series of wheels being so arranged that the buckets of one wheel

will be stopped relatively to the buckets of the next wheel, shields at the front and the rear portions of the said measuring wheels, spaced therefrom, a conveyer belt mounted to revolve beneath the series of measuring wheels, a driving shaft, a driving connection between the said shaft and the said belt, and a retarding mechanism for the measuring wheels operated from the said shaft.

5. In a concrete measuring machine, a hopper, a revoluble measuring wheel provided with pockets, a chute pivoted intermediate of the ends thereof below the hopper, and an agitating plate secured to the hopper and extending into the chute to be engaged thereby when in dumping position.

6. In a concrete measuring machine, a hopper, a dumping chute beneath the hopper, a revoluble measuring wheel having pockets into which the chute discharges, a driven shaft and a retarding device for the measuring wheel, operated by said shaft.

7. In a concrete measuring machine, a hopper, a dumping chute beneath the hopper, a measuring wheel provided with pockets into which the chute discharges, and a retarding device for the measuring wheel, comprising a worm on a driven shaft and a worm wheel on the shaft of the measuring wheel.

8. In a concrete measuring machine, a hopper, a dumping chute below the hopper, a measuring wheel provided with pockets into which the chute discharges, a conveyer beneath the measuring wheel, a driven shaft provided with a worm, a worm wheel on the shaft of the measuring wheel and with which the worm meshes, and means for operating the conveyer from said driven shaft.

9. In a concrete measuring machine, a plurality of hoppers, a dumping chute beneath each hopper, and a measuring wheel beneath each chute and provided with pockets into which the chutes discharge, the pockets of the wheels being so arranged that the pockets of one wheel will be stepped relatively to the pockets of the next wheel.

10. In a concrete measuring machine, a hopper having each of its end walls provided with parallel and spaced members, one of which projects below the other, and a dumping chute pivoted to the projecting members of the hopper with its sides extending between the said members.

851,555. THROTTLE-VALVE. FRED E. NORTON, Youngstown, Ohio. Filed Dec. 14, 1906. Serial No. 347,891.

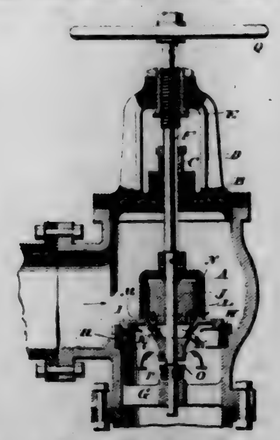

Claim.—1. In combination with a main valve, a pilot valve for controlling the passage of fluid under pressure from one side to the other of the main valve; means securing a positive engagement between said pilot valve and the main valve at all times and permitting the pilot valve to be moved from its seat independently of any movement of the main valve without becoming disengaged from the main valve; and means for raising the main valve from its seat upon a continued movement of the pilot valve.

2. In combination with a main throttle valve and valve seat, a pilot valve and valve seat; a threaded connection between said pilot valve and the main valve; means for rotating the pilot valve and lifting the same from its seat; and means acting upon a continued rotation of the pilot valve to lift the main valve from its seat.

3. In a throttle valve, the combination of a main valve provided with a threaded projection; a threaded pilot valve engaging said threaded projection and controlling ports or passages formed in the main valve; a stem connected to said pilot valve and rotatable therewith; and means for arresting the initial independent movement of the pilot valve after the same is moved off of its seat, whereby upon a continued rotation of the stem the main valve will be withdrawn from its seat.

4. In a throttle valve, the combination of a main valve provided with ports or passages extending therethrough; a threaded projection extending upwardly from said main valve; a threaded pilot valve engaging said threaded projection and adapted to close the ports or openings through the main valve; a rotatable valve stem connected to said pilot valve so as to impart rotary motion to the pilot valve; and means serving to arrest the rotary motion of the pilot valve when it has been lifed from its seat and to lock the main valve to the stem, whereby upon a continued rotation of the stem the main valve will be lifted from its seat.

5. In a throttle valve, the combination of a main valve provided with ports or passages extending through the same; a threaded projection extending upwardly from said valve; a threaded pilot valve engaging said threaded projection and serving to close the ports or passages through the main valve; a rotary valve stem; a connection between said stem and pilot valve to cause the same to turn in unison; and a lost motion connection between the stem and the main valve whereby when the pilot valve is fully opened the connection between the stem and the main valve will be established and the main valve opened upon a continued rotation of the stem.

6. In a throttle valve, the combination of a main valve; a pilot valve engaging the main valve by a threaded connection; a threaded stem rigidly affixed to the pilot valve, the pitch of the threads being similar; and means carried by the stem for engaging the main valve.

851,556. DRIVING MECHANISM FOR AIR-COMPRESSORS. BRYAN OBEAR, St. Louis, Mo., assignor to Montague Compressed Air Company, St. Louis, Mo., a Corporation of Missouri. Filed Feb. 1, 1905. Serial No. 243,711.

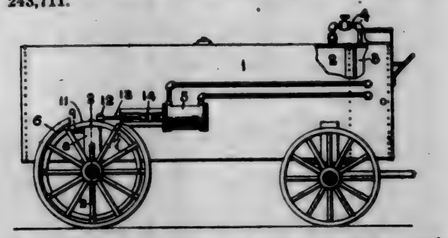

Claim.—A street sprinkling apparatus comprising a tank mounted on supports which are secured to the axles of a running gear, said tank being provided with a reservoir for receiving compressed air and a compartment for receiving water, a connection between said reservoir and compartment, an air compressor fastened to said tank, a connection between said compressor and the air reservoir of the tank, a bevel gear secured to the inside of one of the rear wheels of the running gear, a co-operating bevel pinion adapted to mesh with said gear, a crank pin on said pinion, a pitman connected to said crank pin and to the cross head of the air compressor, a movable block mounted in a slot in the tank support which is connected to the axles of the rear wheels, a manually operated lever pivoted to the underneath side of said support and connected to said block for moving the pinion into and out of engagement with the bevel gear, a spring actuated lug mounted in said support and adapted to engage said lever for holding it in either of its adjusted positions, and a handle at the upper end of said lug for moving it into an inoperative position; substantially as described.

851,557. END-GATE FASTENER. DECATUR C. PASLEY, Dolliver, Iowa. Filed Dec. 1, 1906. Serial No. 345,951.

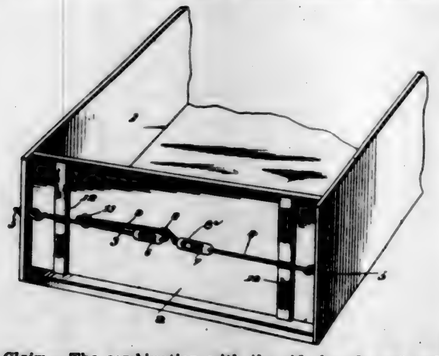

Claim.—The combination with the side boards and end gate of a wagon body, of stay rods secured at their outer ends to the rear ends of the side boards and adapted to extend inwardly towards each other, yokes mounted to screw upon the inner ends of said stay rods, swivel bolts mounted in the ends of said yokes, a hook pivotally connected to the outer end of one of said swivel bolts, and a lever fulcrumed on the outer end of the other swivel bolt and provided with a socket adapted to receive the free end of said hook.

851,558. MACHINE FOR FORMING PLASTIC ARTICLES. WILLIAM POLK, East Liverpool, Ohio. Filed Mar. 24, 1906. Serial No. 307,884.

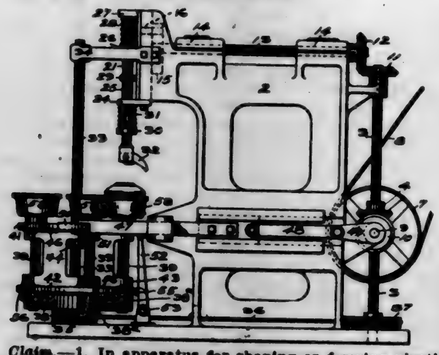

Claim.—1. In apparatus for shaping or forming plastic articles, the combination of a suitable frame, a support for the article, mechanism for rotating said support, a shaft, an eccentric on said shaft, a rod, a shaper on said rod, connections between said eccentric and said rod, means for checking the downward movement of said rod before said eccentric completes its stroke, and means for taking up the movement of the eccentric during this period.

2. In apparatus for shaping or forming plastic articles, the combination of a suitable frame, a support for the article, mechanism for rotating said support, a shaft, an eccentric on said shaft, a cross-head connected to said eccentric, a slidable rod carried by said cross-head, a shaper on said rod, an abutment in the path of said rod, and a spring interposer between said cross-head and said rod.

3. In apparatus for shaping or forming plastic articles, the combination of a suitable frame, a support for the article, mechanism for rotating said support, a shaft, an eccentric on said shaft, a cross-head connected to said eccentric having projections, a slidable rod supported on the lower end of said projections, a shaper on said rod, an abutment in the path of said rod, and a spring interposed between the upper projection on said cross-head and said rod.

4. In apparatus for shaping or forming plastic articles, the combination of a suitable frame, a support for the article, mechanism for rotating said support, a reciprocating member, mechanism for reciprocating same, a rod carried by said reciprocating member slidable therein, a shaper on said rod, an abutment in the path of said rod, and a spring interposed between said reciprocating member and said rod.

5. In apparatus for shaping or forming plastic articles, the combination of a suitable frame, a support for the article, mechanism for rotating said support, a reciprocating member, mechanism for reciprocating same, a rod carried by said reciprocating member slidable therein, a shaper on said rod, an abutment in the path of said rod, a spring interposed between said reciprocating member and said rod, and a second spring interposed between an enlargement on said rod and said abutment.

6. In apparatus for shaping or forming plastic articles, the combination of a suitable frame, a vertical shaft, means for driving said shaft, a table loosely mounted on said shaft, a series of spindles on said table, a friction wheel on said shaft, friction wheels on said spindles engaged by said first wheel, supports for the articles carried by said spindles, a reciprocating shaper above said table, and means for imparting an intermittent movement to said table.

851,559. BALL-RETURNING MECHANISM FOR BOWLING-ALLEYS. EDWARD POWERS, Shelbyville, Ill. Filed Aug. 11, 1906. Serial No. 330,249.

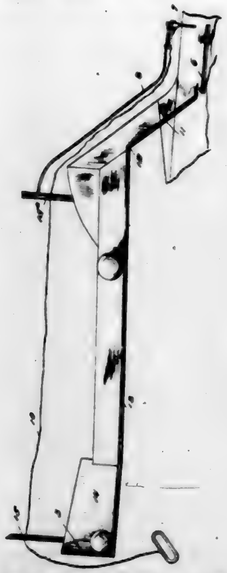

Claim.—1. In combination with a bowling alley, of an incline chute leading from the pin setting end thereof to carry the balls to one side of the alley, a return runway for the balls leading from such point to the forward end

of the alley, a pair of tracks located at the rear end of the alley above the rear end of the runway, a frame slidable upon said tracks, a hinged elevator carried by the frame and depending therefrom adapted to pass over and above the balls during its rearward movement and to engage the balls during its forward movement, and means connected to the frame and operable from the forward end of the alley for operating the elevator.

2. In combination with a bowling alley having an inclined chute leading to one side and at the rear end of the alley, of a ball returning device, consisting of a runway extending from the rear end of the alley to the forward end and having a short incline leading from near the inclined chute to the proper elevation to cause the ball when freed to roll to the forward end of the runway, tracks mounted above the said short incline, a frame slidable thereon, an elevator hingedly connected to and depending from the frame whereby the same passes over and above the balls during its rearward travel and drops in the rear thereof to engage the same during its forward travel, and means operable from the forward end of the alley connected to the frame, whereby the balls are elevated up the short incline and released to roll by gravity to the forward end of the runway.

3. In combination with a bowling alley having an inclined chute leading from the pin setting end to one side, of a ball returning mechanism, consisting of a return runway for the balls having a short inclined portion leading from said chute to receive the ball and a long slightly inclined portion extending toward the front end of the alley, and a frame slidably mounted above the short inclined portion of the runway and operable from the front of the alley to engage a ball and push the same up the short incline to its junction with the long incline, said frame having a hinged member that slides over the ball upon its return and engages it only when pulled forward.

851,560. FUSE-BOX. CHARLES REMELIUS, Newark, N. J., assignor to Columbia Machine Works and Malleable Iron Company, Brooklyn, N. Y., a Corporation of New York. Filed Feb. 6, 1907. Serial No. 356,002.

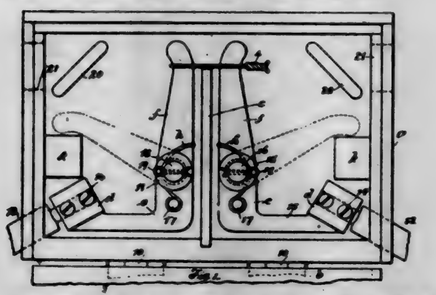

Claim.—1. A fuse box comprising a casing having an opening in the end thereof, a terminal connection within the said casing, a swing arm pivotally mounted within the said casing, electrical connection between the said swing arm and said terminal connection, a fuse device by which the said swing arm is normally maintained in an operative position, means operative upon the passage of an excess current for throwing the said swing arm into an inoperative position, a deflector of insulating material set at an angle and extending interiorly across the said box adjacent to said opening in the end thereof.

2. A fuse box comprising a casing having an opening in each end thereof, a partition dividing the said casing interiorly into two compartments, a terminal connection in each of the said compartments, a swing arm electrically connected to each of the said terminal connections, a fuse device for normally maintaining the said swing arms in operative positions, means operative upon the passage of an excess current for throwing said swing arms into inoperative positions, deflectors, one of which is placed at an angle in each of the said compartments within the box and adjacent to said opening in the adjacent end thereof.

851,561. CURTAIN-FIXTURE. LEANDER B. REYNOLDS and LEANDER E. REYNOLDS, Grand Rapids, Mich. Filed Mar. 7, 1906. Serial No. 304,727.

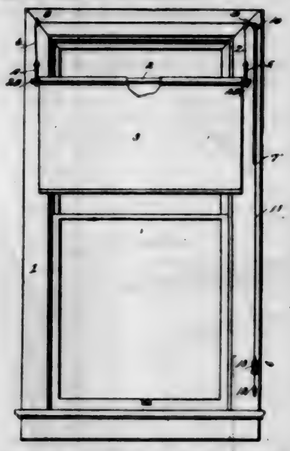

Claim.—1. In a window shade support, a bracket comprising a chambered body portion and a head socket formed from a folded piece of sheet metal, said body portion being composed of relatively movable members forming an openable casing and being cut away to provide openings between the same and socket, the latter being provided in its crown portion with a cord passage.

2. In a window shade support, a shade supporting bracket comprising a chambered body portion and a head socket formed from a folded piece of sheet metal, the body portion being composed of channeled members having a sliding engagement for a relative adjustment, and means for retaining said members in adjusted position, said members being cut away to provide openings communicating with the socket, and the latter being provided in its crown portion with a cord passage.

3. In a window shade support, a shade supporting bracket comprising an openable chambered body portion and a conical head socket formed from a folded piece of sheet metal, the said body portion being composed of a pair of relatively movable members and being provided with portions cut away to provide openings communicating with the head socket, the latter being formed in its crown portion with a cord passage, and a member slidably adjustable on the body portion to adjust the members thereof.

4. In a window shade support, a shade supporting bracket comprising a chambered body portion and a head socket formed from a folded piece of sheet metal, said body portion being composed of channeled members slidable with relation to each other and having a longitudinal taper, the members being cut away to provide openings communicating with the head socket, the latter being provided with a cord passage, and a ring slidably engaging the tapered body portion to adjust the members thereof.

5. In an adjustable support for window shades, the combination of a window frame provided with guides, a shade supporting roll, brackets carrying said roll, each of said brackets comprising a chambered body portion and a head socket, said socket being provided with a cord passage and a body portion being cut away to provide openings communicating with said cord passage, suspending cords fitted at one end in the head portions of the brackets and extending through the guides, said cords being connected for simultaneous adjustment, and one of the cords being extended to form an operating portion, and means on the window frame for guiding and clamping said operating portion.

6. In a window shade support, a shade roller bracket comprising a chambered body formed with a frusto-conical socket to receive the notched end of a suspending cord, said body portion being cut away at opposite sides to provide openings communicating with said socket.

851,562. SPRAYING-NOZZLE. JOSEPH H. RUFF, Hollywood, Cal. Filed Nov. 19, 1906. Serial No. 344,146.

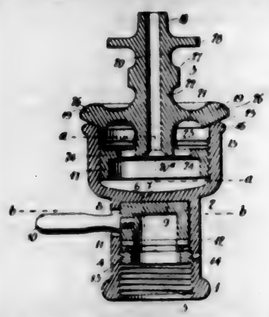

Claim.—1. A spraying nozzle comprising a body or casing having an open-top chamber in its upper side, openings in the bottom of said chamber, and a valve coacting with said openings to cut off or permit the passage of water therethrough, in combination with a nozzle having a jet bore and further provided with an inverted, enlarged, cup-shaped bottom portion screwed into the chamber and having openings in its upper side, said nozzle being further provided with a spraying disk hollow on the side presented to said chamber and beveled to coact with and project beyond the upper edge of the chamber or top to permit or cut off the passage of water between them.

2. The herein-described spraying nozzle comprising a body or casing having a chamber in its upper portion, provided with a concave bottom and openings therein, the upper edge of said chamber being beveled outwardly, said body being further provided with a reduced cylindrical portion below the said chamber, a cut-off valve revoluble in said reduced lower portion and having openings to coact with those in the bottom of said chamber, and a nozzle portion having a jet bore and further provided with an enlarged, inverted cup-shaped lower portion screwed into the chamber of the body and having openings in its upper side, said nozzle portion being further provided with a spraying disk above the inverted cup-shaped portion, said spraying disk being hollowed on its under side to form a chamber above the inverted cup-shaped portion and having its outer side beveled upwardly and outwardly to coact with the beveled upper edge of the chamber of the body or casing, for the purpose set forth.

851,563. CORNER-CAP FOR WIRE-MATTRESS FRAMES. ERNEST A. SAMMONS, Chicago, Ill., assignor to Haggard & Marcusson Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 18, 1905. Serial No. 250,716.

Claim.—1. A one-piece corner cap for wire mattress frames, consisting of a plate or web portion disposed vertically in use, a vertical flange extended inward therefrom and provided with means whereby it may be secured to one of the end irons of a mattress frame, a horizontal inward-directed top flange provided with means for attachment for one of the border wires of the mattress, and an inward-directed flange continuous with said top flange and extended obliquely downward therefrom and terminating closely adjacent said vertical flange.

2. In a mattress frame, the combination of a one-piece corner cap consisting of a vertical plate or web, a vertical flange extended inward therefrom, an inward-directed horizontal top flange, and an inward-directed flange extended downward and backward from said top flange toward said vertical flange, an angle end iron consisting of a vertical portion rigidly secured at its end to the inner face of said vertical flange and a horizontal top portion having its end spaced considerably below said top flange, and a keeper plate overlying the top portion of said iron and retained within said top and downward-and-backward-extended flanges.

851,564. GAS-BURNER ATTACHMENT. JOSEPH D. SHEEHAN, Brooklyn, N. Y. Filed Aug. 21, 1905. Serial No. 275,190.

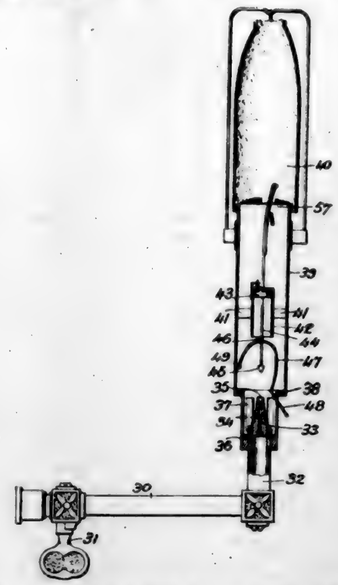

Claim.—1. The combination of a gas supply pipe, a plug section therein having a valve seat, a small burner section surrounding the plug section and having air inlets disposed below the valve seat, a large burner section connected with the small burner section and having braces therein, an air cylinder supported by the braces and having the lower end thereof open, a one-way valve in the upper end of the cylinder, having a small passage therethrough, a piston located in the cylinder, a piston rod extending through the piston and cylinder, a valve on the lower end of the piston rod, a thermostat on the upper end of the piston rod, and a brace extending across the large burner section and being adapted to be engaged by the thermostat, substantially as described.

2. The combination with a gas supply pipe formed with a valve seat, a burner section arranged above the valve, a thermostat movable within the section and carrying a valve to coöperate with said seat, means for manually operating the thermostat to unseat the valve, and means to retard the gravitation of said valve to closed position when released from the manual operating means, said retarding means including an air cylinder having a valved inlet at the upper end, and a piston disposed within said cylinder and connected to the thermostat.

3. The combination with a gas supply pipe having a valve seat, a burner section above the valve seat, a thermostat movably supported within the burner section and carrying a valve to engage said seat, means for manually operating the thermostat to unseat the valve, means for automatically retarding movement of the thermostat when released from the manual operating means, a stop supported within the burner above the upper end of the thermostat in normal position, and a projection carried by the thermostat to engage said stop in the movement of the thermostat under the influence of heat.

851,565. COMBINED SETTEE AND BERTH. GEORGE S. SHERMAN, Nyack, N. Y. Filed June 1, 1906. Serial No. 319,735.

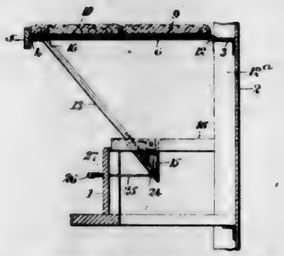

Claim.—1. A combined settee and berth or bed, comprising a back frame having hinged connection at the upper portion with a fixed support, a seat frame having hinged connection with the back frame, a flexible material extending under the frames and fixed at one edge to a part adjacent to the top of the back frame, and at its front edge to a part attached to the seat frame, notched bars attached to the seat frame, and means engaging said bars for supporting the frames in an elevated position to form a bed.

2. A combined settee and bed, comprising a back frame having hinge connection with a fixed support, a settee frame hinged to the back frame, canvas secured at one edge to a fixed part adjacent to the upper edge of the back frame, an opposite edge of said canvas being secured to the front portion of the seat frame, supporting bars extended from the front portion of said seat frame at a downward and rearward angle, and having teeth, fixed boxings through which said bars are slidable, dogs mounted to swing in the boxings for engagement with teeth of said bars, and means for operating said dogs.

3. A combined settee and bed, comprising a back frame having hinge connection to a fixed support, the said frame having hinge connection with the back frame, a locker underneath the seat frame, cross pieces in the upper portion of the locker, bars connected to the front portion of said frame and extended at a downward and rearward angle, and having teeth at its lower end, boxings secured to said cross pieces and having their bottom walls inclined to correspond to the incline of the bars, dogs mounted to swing in the boxings, and having downwardly extended spaced fingers, rock shafts, and eccentrics carried by the rock shafts between the fingers, levers extended downward from the rock shafts, and spring pressed rods extended from said levers through the front wall of the locker.

4. A device for the purpose specified, comprising a back frame having hinge connection with a fixed support, a seat frame having hinge connection with a back frame, T-shaped bars secured to the front portion of the seat frame and extended at a downward and rearward angle therefrom, said bars having teeth at the lower end, fixed boxings corresponding in shape to the bars, dogs mounted to swing in said boxings, and means for swinging said dogs.

851,566. DRAFT-EQUALIZER. SOLOMON SHUMWAY, Le Roy, N. Y. Filed Nov. 28, 1906. Serial No. 345,478.

Claim.—1. In a device of the character described, the combination with a draft tongue, of a reversible evener member having pivot openings adjacent to its ends, a pivot engaged with one of said openings for connecting said member to said tongue, connecting elements at the center and at the ends of said member, a doubletree carrying swingletrees and having at its center a connecting element to engage the central connecting element on said member, an evener bar having a connecting element intermediate its ends to engage either of the connecting elements at the ends of said member, a swingletree upon the long arm of said evener bar, and a rod or link connecting the short arm of said evener bar to said tongue.

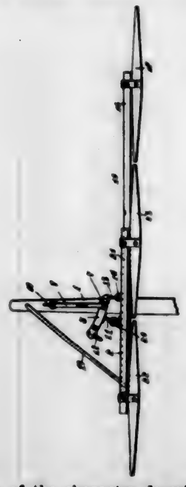

2. In a device of the character described, the combination with a draft tongue, of a reversible evener member having pivot openings adjacent to its ends, a pivot to engage either of said openings and connect said member to said tongue, a strap upon said tongue for bracing the outer end of said pivot, hooks arranged at the center and ends of said member, a doubletree carrying singletrees and having an eye at its center to engage the central hook on said member, an equalising bar having an eye intermediate its ends to engage either of the end hooks on said member, a singletree upon the long arm of said equalising bar and a link or rod connecting the short arm of said equalising bar to said tongue, substantially as shown and for the purpose set forth.

851,567. DRYING-COMB. EMIL SUTHERLAND, Hollywood, Cal., assignor of one-half to William E. Pile, Los Angeles, Cal. Filed Dec. 10, 1906. Serial No. 347,189.

Claim.—1. A comb provided with a metallic back composed of side and top bars; metallic teeth pivotally secured to said top and side bars; and a handle secured to said top and side bars at different points at the rear end thereof.

2. A comb provided with a metallic back, composed of side and top bars; metallic teeth pivotally secured at the top to the top bar and below the top bar to the side bars; a handle secured to the top and side bars at different points; and means to hold the handle in a plane parallel with the plane of the top bar when desired.

3. A device of the class described, comprising a metallic channeled back; a plurality of metallic teeth pivotally secured to the flanges of said channeled back; metallic sides pivotally secured to said metallic teeth; a handle pivotally secured at different points to the channeled back and sides; and means to hold the handle in a plane parallel with the channeled back when desired.

4. A device of the class described, comprising a metallic channeled back; a plurality of metallic teeth pivotally secured to the flanges of said channeled back; metallic sides pivotally secured to said metallic teeth; and means pivotally secured to said back and sides, whereby the teeth may be forced into an open or collapsed position.

5. A comb provided with a top bar and two side bars; a plurality of teeth pivotally secured to the top and side bars; and means to prevent the collapse of said teeth when in their operative position.

6. A comb provided with a back composed of a plurality of members; a plurality of teeth pivotally secured to said members; means pivotally secured to said members, whereby the teeth may be forced into an operative or collapsed position; and means to prevent the collapse of said teeth when in their operative position.

7. A comb provided with a back composed of a plurality of members; a plurality of teeth pivotally secured to said members; means pivotally secured to said members, whereby the members may be moved in an opposite direction simultaneously; and means to hold said members rigidly when the teeth are in an operative position.

851,568. APPARATUS FOR DISTRIBUTING OR DIVIDING LIQUIDS. HARRY H. SUTRO, New York, N. Y., and LEVIS M. BOOTH, Plainfield, N. J. Filed June 28, 1905. Serial No. 267,384.

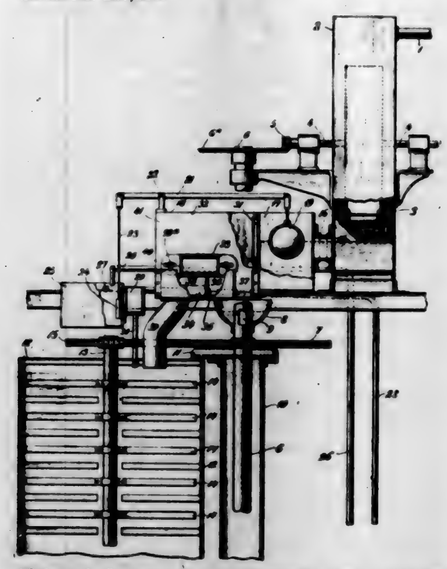

Claim.—1. In apparatus for purifying water a laterally adjustable chute adapted to discharge water in the form of an apron into a distributing box provided with a partition adapted to divide the apron of water into two parts and means for conducting each of such parts to different parts of the apparatus, substantially as and for the purposes described.

2. In a water purifying apparatus, the combination with a distributing box, provided with a partition adapted to divide the liquid into parts, of a chute, and means for adjusting said chute with relation to said distributing box.

851,569. EXTENSIBLE GAS-PIPE. GEORGE W. THORN, Chicago, Ill. Filed July 19, 1906. Serial No. 326,943.

Claim.—1. An extensible gas pipe or fixture comprising a stationary section and an extensible section slidably mounted in said stationary section, a stuffing box or packing gland arranged on the lower end of said stationary section, and a transversely-disposed element loosely mounted in the upper end of the extensible section to limit the outward movement of the same, substantially as described.

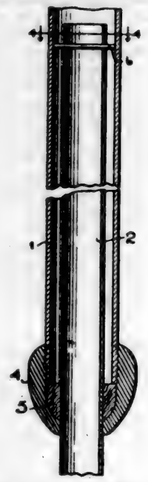

2. An extensible gas pipe or fixture comprising a stationary section, an extensible section slidably mounted therein, a stuffing box or packing gland arranged at the lower end of the stationary section, and a transversely-disposed element loosely mounted in the upper end of the extensible section and adapted to bear at its terminals against the inner wall of the stationary section, whereby to permit the extensible section to be operated even when bent or otherwise distorted.

851,570. CUTTING ATTACHMENT FOR LOOMS. ALBERT TILT, Montclair, N. J. Filed Sept. 22, 1906. Serial No. 335,674.

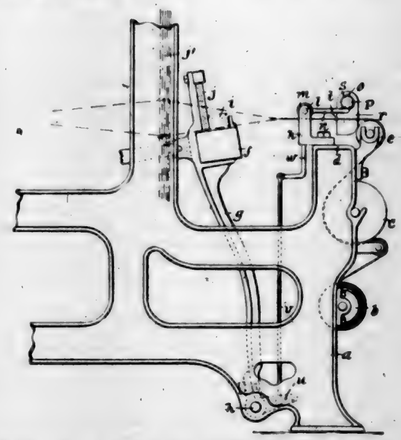

Claim.—1. In a loom, the combination, with the frame, of means for controlling the warp and weft in the weaving operation, a cutter having its cutting edge disposed at an angle to the cloth plane, and means for moving the cutter in substantially the direction in which its cutting edge extends, substantially as described.

2. In a loom, the combination, with the frame, of means

for controlling the warp and weft in the weaving operation, a cutter having its cutting edge substantially straight and disposed at an angle to the cloth plane, and means for moving the cutter in substantially the direction in which its cutting edge extends, substantially as described.

3. In a loom, the combination, with the frame, of means for controlling the warp and weft in the weaving operation, a cutter having its cutting edge disposed at an angle to the cloth plane, and means for moving the cutter, substantially rectilineally, in substantially the direction in which its cutting edge extends, substantially as described.

4. In a loom, the combination, with the frame, of means for controlling the warp and weft in the weaving operation, a cutter, a going part, a rocking structure carrying said cutter, and means for operatively connecting said structure with the going part, substantially as described.

5. In a loom, the combination, with the frame, of means for controlling the warp and weft in the weaving operation, a rocking structure comprising a substantial horizontal rod, a cutter pivoted on said rod and depending therefrom through the cloth plane, means for holding the cutter against pivotal movement on said rod under the pull of the cloth, and means for rocking said structure, substantially as described.

851,571. DISPLAY-EASEL. JOHN B. TIMBERLAKE, Jackson, Mich. Filed Feb. 28, 1905. Serial No. 247,711.

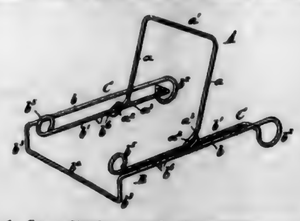

Claim.—1. In a display easel, the combination of an upright supporting element bodily adjustable forward and back and also arranged to be slightly tilted forward and back, and provided at its lower portions with eyes or loops, and a base element having side bars extending through the said eyes or loops of the upright element, the said bars being smaller than the eyes, whereby when the upright element is tilted forward it is loose upon the base and free to be moved forward and back relative thereto, the side bars of the base element being provided with stops with which the loops of the upright element are adapted to engage when the latter is tilted backward but over which they freely slide when it is tilted forward, whereby the upright element may be locked when in position for use, substantially as set forth.

2. In a display easel, the combination of elements A and B, the base element B having parallel side parts C, C, connected by a depressed cross bar b^4 at the front ends, providing an elongated support, and the upright element A being formed with terminal loops at the bottom which have sliding engagement with the parallel side parts of the base, and the base having at the front stops or holders for the lower edges of the dishes or articles, substantially as set forth.

3. In a display easel, in combination a base element having parallel side parts as C, C, provided with table rests or feet at one end and with a depressed cross connecting table engaging bar b^4 at the other end, and with upwardly extending stops or supports for the lower edges of the dishes, and an upright element having legs or approximately vertical bars at the sides, a connecting bar at the top, and sliding connections at the bottom fitted to the base part, substantially as set forth.

4. In a display easel, the combination of a base element and an upright element adjustable forward and back on the base element, the base element having on each side two longitudinally arranged bars or sections as at b, b', one relatively nearer the central longitudinal plane of the easel than the other, substantially as set forth.

5. In a display easel, the combination of a base element and upright element, adjustable bodily longitudinally of the base element, the base element being formed with the two longitudinal sections or bars b, b' on each side of the base, the side parts of the base having feet or table rests at the front and rear, and the upright element being fitted to and sliding upon the bars b' of the side parts, substantially as set forth.

851,572. SPRING-WHEEL. WILLIAM O. TUBBS, Lubbock, Tex. Filed Dec. 20, 1906. Serial No. 348,679.

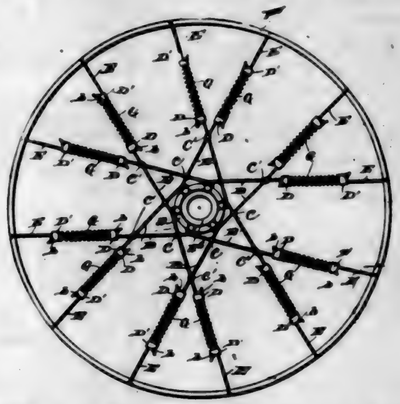

Claim.—1. A wheel consisting of a hub and a flexible rim, spoke sections secured respectively in said hub and rim and overlapping each other and coiled springs surrounding the overlapped portions of the spoke sections.

2. A wheel consisting of a hub and a flexible rim, spoke sections secured respectively in said hub and rim and overlapping each other at their free ends, collars on the overlapped ends of said spoke sections, and coiled springs surrounding said overlapped portions and abutting against the said collars.

3. A wheel consisting of a hub and a flexible rim, spoke sections secured respectively in said hub and rim, and overlapping each other at their free ends, a collar mounted on each spoke section through which the end of the other spoke section passes, a coiled spring surrounding the overlapped ends of the spoke sections between the collars, and adjustable means on the end of each spoke section for regulating the tension of the coiled springs.

4. A wheel consisting of a hub and a flexible rim, spoke sections secured respectively in said hub and rim, the spoke sections secured to the hub being bent to cross each other, clamps securing the spoke sections together at their crossing points, each spoke section secured to the rim extending inwardly and overlapping the outer end of one of the hub spoke sections, collars on each spoke section through which the end of the overlapping spoke section passes, coiled spring surrounding the overlapped ends of the adjacent spoke sections between the aforesaid collars, and adjusting nuts on the ends of the spoke sections outside of the collars, for regulating the tension of the coiled springs.

851,573. PLASTIC STRUCTURE. LUDWIG A. TYC, GUILLAUME BOIVIN, and LOUIS N. BENJAMIN, Montreal, Quebec, Canada, assignors to Ideal Concrete, Limited, Montreal, Canada, a Corporation of Canada. Filed Nov. 15, 1906. Serial No. 343,603.

Claim.—1. In a plastic structure, the combination with the surface to be covered, of a pattern piece formed of a plastic material in its consistent state and a base of precisely similar pattern to the shape indicated by said plastic material and adhering thereto and of material adaptable for securing the pattern piece to the surface, and a plastic filling around one or more of said pattern pieces and therewith forming the covering to said surface, substantially as described.

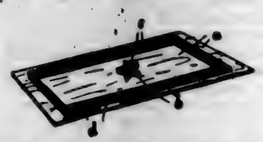

2. In a plastic structure, the combination with the surface to be covered, of a pattern piece formed of a plastic material in its consistent state and a wooden base, having its outline formation precisely similar to the shape of the pattern made by said plastic material nails or brads securing said base to said surface, and a plastic filling around one or more pattern pieces and forming therewith the covering to said surface, substantially as described.

3. In a plastic structure, the combination with the surface to be covered, of a plurality of pattern pieces formed of a plastic compound in its consistent state covering and adhering to a board base and separated with said base in its consistent state into said pattern pieces, said bases in outline formation being of precisely similar shape to the pattern formed by said plastic compound means for securing the bases adhering to the various pattern pieces to the surface to be covered, and a plastic compound filling around said pattern pieces, substantially as described.

4. In a device of the class described, in combination, a flooring, a pattern piece formed of a plastic compound in its consistent state and a base, having its outline formation precisely similar to the shape indicated by the pattern and adapted to receive nails or brads, adhering to said compound, and a plastic compound forming the background for the said patterns, substantially as described.

851,574. LOCK. FRED J. VIEWEG, Plainfield, N. J. Filed May 26, 1905. Serial No. 262,337.

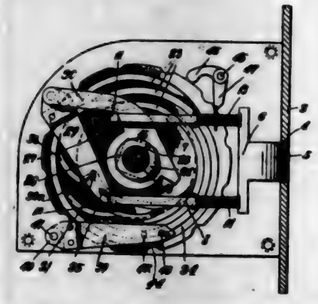

Claim.—1. In a lock in combination: latch mechanism, a movable member, a knob and connections adapted to move the member, mechanism pivoted on the latch mechanism and connecting the member therewith, the member being adapted to guide the connecting mechanism to a point where the movable member is capable of acting upon it to actuate the latch mechanism.

2. In a lock in combination: latch mechanism, a movable member, a knob and connections adapted to move the member, mechanism pivoted on the latch mechanism and connecting the member therewith, the member being adapted when turned a variable predetermined number of times and a variable predetermined distance in opposite directions to guide the connecting mechanism to a point where the movable member is capable of acting upon it to actuate the latch mechanism.

3. In a lock in combination: latch mechanism, a movable member, a knob and connections adapted to move the member, a link pivoted on the latch mechanism and connecting the latch mechanism and member, the latter being adapted to guide the link to a point where the movable member is capable of acting upon it to actuate the latch mechanism.

4. In a lock in combination: latch mechanism, a movable member, a knob and connections adapted to move the member, a link pivoted on the latch mechanism and connecting the latch mechanism and member, the latter being adapted when turned a variable predetermined number of times and a variable predetermined distance in opposite directions to guide the link to a point where the movable member is capable of acting upon it to actuate the latch mechanism.

5. In a lock in combination: latch mechanism, a movable member, a knob and connections adapted to move a member, a link pivoted on the latch mechanism and connecting the latch mechanism, and member and in engagement with the movable member, and means carried by the latter adapted to act on the link to actuate the latch mechanism at a predetermined point in the movement of a movable member.

6. In a lock in combination: latch mechanism, a movable member, a knob and connections adapted to move the member, a link pivoted on the latch mechanism and connecting the latch mechanism and member and in engagement with the movable member, and means carried by the latter adapted when the movable member is turned a variable predetermined number of times and a variable predetermined distance in opposite directions to act on the link to actuate the latch mechanism at a predetermined point in the movement of a movable member.

7. In a lock in combination: latch mechanism, a movable member, a knob and connections adapted to move the member, a link pivoted on the latch mechanism, and connecting the latch mechanism and member, a pin on the link in engagement with the movable member, and a shoulder formed in the latter adapted to act on the pin to actuate the latch mechanism at a predetermined point in the movement of the movable member.

8. In a lock in combination: latch mechanism, a movable member, a knob and connections adapted to move the member, a link pivoted on the latch mechanism and connecting the latch mechanism and member, a pin on the link in engagement with the movable member, and a shoulder formed in the latter adapted when the movable member is turned a variable predetermined number of times and a variable predetermined distance in opposite directions to act on the pin to actuate the latch mechanism at a predetermined point in the movement of the movable member.

9. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link pivoted on the latch mechanism and connecting the latch mechanism and member, a pin on the link engaging with said grooves, means carried by the movable member adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said means.

10. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link pivoted on the latch mechanism and connecting the latch mechanism and member, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder.

11. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, means carried by the movable member adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to

said means, and means adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated.

12. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, and means adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated.

13. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, means carried by the movable member adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said means, and inclines formed in said grooves adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated.

14. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, and inclines formed in said grooves adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated.

15. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link pivoted on the latch mechanism and connecting the latch mechanism and member, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, and means adapted to hold the pin against the shoulder when the latter is acting upon it.

16. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, means carried by the movable member adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said means, means adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated, and means adapted to keep the pin in the grooves.

17. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, means carried by the movable member adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said means, inclines formed in said grooves adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated, and means adapted to keep the pin in the grooves.

18. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, inclines formed in said grooves adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated, means adapted to hold the pin against the shoulder when the latter is acting upon it, and means adapted to hold the pin in the grooves.

19. In a lock in combination: latch mechanism, a rotatable disk provided with a labyrinth of grooves, a knob and connections adapted to move the disk, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the disk is rotated a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, a lug formed on the casing adapted to hold the pin against the shoulder when the latter is acting upon it, and a projection on the opposite side of the link adapted to contact with the casing and to keep the pin in the grooves.

20. In a lock in combination: latch mechanism, a rotatable disk provided with a labyrinth of grooves, a knob and connections adapted to move the disk, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the disk is rotated a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, and a projection on the opposite side of the link adapted to contact with the casing and to keep the pin in the grooves.

21. In a lock in combination: latch mechanism, a movable member, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link in engagement with the movable member, a shoulder formed in the latter adapted to act on the pin to actuate the latch mechanism at a predetermined point in the movement of the movable member, and means adapted to throw the pin out of active engagement with the shoulder.

22. In a lock in combination: latch mechanism, a movable member, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link in engagement with the movable member, a shoulder formed in the latter adapted when the movable member is turned a variable predetermined number of times and a variable predetermined distance in opposite directions to act on the pin to actuate the latch mechanism at a predetermined point in the movement of the movable member, and means adapted to throw the pin out of active engagement with the shoulder.

23. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, and a cam formed on the casing adapted to throw the pin out of active engagement with the shoulder on further movement of the member.

24. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, means adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated, and a cam formed on the casing adapted to throw the pin out of active engagement with the shoulder on further movement of the member.

25. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, means adapted to hold the pin against the shoulder when the latter is acting upon it, and a cam formed on the casing adapted to throw the pin out of active engagement with the shoulder on further movement of the member.

26. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, inclines formed in said grooves adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated, means adapted to hold the pin against the shoulder when the latter is acting upon it, means adapted to hold the pin in the grooves, and a cam formed on the casing adapted to throw the pin out of active engagement with the shoulder on further movement of the member.

27. In a lock in combination: latch mechanism, a rotatable disk provided with a labyrinth of grooves, a knob and connections adapted to move the disk, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the disk is rotated a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, a lug formed on the casing adapted to hold the pin against the shoulder when the latter acts upon it, a projection on the opposite side of the link adapted to keep the pin in the grooves, a cam formed on the casing and adapted to act on the projection to throw the pin out of active engagement with the shoulder on further rotation of the disk.

28. In a lock in combination, latch mechanism, a rotatable disk provided with a labyrinth of grooves, a knob and connections adapted to move the disk, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the disk is rotated a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, a projection on the opposite side of the link adapted to keep the pin in the grooves, a cam formed on the casing and adapted to act on the projection to throw the pin out of active engagement with the shoulder on further rotation of the disk.

29. In a lock in combination, latch mechanism operative at all times from the inside of the door, a rotatable knob and connections, means operative from the inside of the door adapted to render the latch mechanism operative and inoperative from the outside of the door, and means operative by the knob from the outside of the door adapted to render it operative or inoperative from that side of the door.

30. In a lock in combination: latch mechanism, operative at all times from one side of the door, a spindle, two movable members movable thereby and adapted to coact to bring the spindle into and out of operative engagement with the latch mechanism.

31. In a lock in combination, latch mechanism operative at all times from one side of the door, a knob and connections, means adapted to operate the latch mechanism from both sides of the door, means operative from the inside of the door adapted to render the latch mechanism operative and inoperative from the outside of the door, and means operative by the knob on the outside of the door adapted to render the latter operative and inoperative from that side of the door.

32. In a lock in combination, latch mechanism, a knob on one side of the door adapted to operate the latch mechanism at all times from its side of the door, and means operated from said side of the door adapted to render the latch mechanism operative and inoperative from the other side of the door, and means controlled by the rotation of the knob on the other side of the door adapted to render the latch mechanism operative and inoperative at will from its side of the door.

33. In a lock in combination: latch mechanism, a two part rotatable spindle, one member of which is adapted at all times to operate the latch mechanism, means actuated by the opposite spindle member adapted to bring said opposite spindle member into or out of operative relation to the latch mechanism, and means on the other side of the lock adapted to bring into or out of operative relation with said latch mechanism the said opposite spindle member.

34. In a lock in combination: latch mechanism, a two part rotatable spindle, one part of which is, the other of which is not normally adapted to operate the latch mechanism, two movable members actuated by the latter part and adapted to coact to bring said part into operative relation to said latch mechanism.

35. In a lock in combination, latch mechanism operative at all times from the inside of the door, a knob and connections, means operative from the inside of the door adapted to render the latch mechanism operative or inoperative from the outside of the door, and means operative by the outer knob adapted to render the latch mechanism operative or inoperative from the outside of the door.

36. In a lock in combination: latch mechanism, a two part rotatable spindle, one part of which is, the other of which is not normally adapted to operate said mechanism, a member carried by the latter, and means whereby the member actuates the latch mechanism at a predetermined point in its movement.

37. In a lock in combination: latch mechanism, a two part rotatable spindle, one part of which is, the other of which is not normally adapted to operate said mechanism, a member carried by the latter, mechanism connecting the member with the latch mechanism, the member being adapted to guide the connecting mechanism to a point where the member is capable of acting upon it to actuate the latch mechanism.

38. In a lock in combination: latch mechanism, a two part rotatable spindle, one part of which is, the other of which is not normally adapted to operate said mechanism, a member carried by the latter, and means whereby the member when turned a variable predetermined number of times and a variable predetermined distance in opposite directions actuates the latch mechanism at a predetermined point in its movement.

39. In a lock in combination: latch mechanism, a two part rotatable spindle, one part of which is, the other of which is not normally adapted to operate said mechanism, a member carried by the latter, mechanism connecting the member with the latch mechanism, the member being adapted when turned a variable predetermined number of times and a variable predetermined distance in opposite directions to guide the connecting mechanism to a point where the member is capable of acting upon it to actuate the latch mechanism.

40. In a lock in combination: latch mechanism, a two part rotatable spindle, one part of which is, the other of which is not normally adapted to operate said mechanism, a member carried by the latter, a link connected to the latch mechanism and in engagement with the member, and means carried by the member adapted to act on the link to actuate the latch mechanism at a predetermined point in the rotation of the member.

41. In a lock in combination: latch mechanism, a pin carried thereby, a two part rotatable spindle, one part of

which is, the other of which is not normally adapted to operate said mechanism, a member carried by the latter, and provided with a labyrinth of grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder.

42. In a lock in combination: latch mechanism, a pin carried thereby, a two part rotatable spindle, one part of which is, the other of which is not normally adapted to operate said mechanism, a member carried by the latter and provided with a labyrinth of grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a varied predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, and means adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated.

43. In a lock in combination: latch mechanism, a pin carried thereby, a two part rotatable spindle, one part of which is, the other of which is not normally adapted to operate said mechanism, a member carried by the latter and provided with a labyrinth of grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, and means adapted to hold the pin against the shoulder when the latter is acting upon it.

44. In a lock in combination: latch mechanism, a pin carried thereby, a two part rotatable spindle, one part of which is, the other of which is not normally adapted to operate said mechanism, a member carried by the latter and provided with a labyrinth of grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, inclines formed in said grooves adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated, means adapted to hold the pin against the shoulder when the latter is acting upon it, and means adapted to hold the pin in the grooves.

45. In a lock in combination: latch mechanism, a two part rotatable spindle, one part of which is, the other of which is not normally adapted to operate said mechanism, a disk carried by the latter and provided with a labyrinth of grooves, a link connected to the latch mechanism, a pin on the link engaging with the grooves, a shoulder formed in the grooves adapted to act on the pin to actuate the latch mechanism when the disk is rotated a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, a lug formed on the casing adapted to hold the pin against the shoulder when the latter is acting upon it.

46. In a lock in combination: latch mechanism, a two part rotatable spindle, one part of which is, the other of which is not normally adapted to operate said mechanism, a disk carried by the latter and provided with a labyrinth of grooves, a link connected to the latch mechanism, a pin on the link engaging with the grooves, a shoulder formed in the grooves adapted to act on the pin to actuate the latch mechanism when the disk is rotated a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, a lug formed on the casing adapted to hold the pin against the shoulder when the latter is acting upon it, and a projection on the opposite side of the link adapted to contact with the casing to hold the pin in the grooves.

47. In a lock in combination: latch mechanism, a two part rotatable spindle, one part of which is, the other of which is not normally adapted to operate said mechanism, a member carried by the latter provided with a labyrinth of grooves, a link connected to the latch mechanism, a pin on the link in engagement with the grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, and means adapted to throw the pin out of active engagement with the shoulder.

48. In a lock in combination: latch mechanism, a two part rotatable spindle, one part of which is, the other of which is not normally adapted to operate said mechanism, a member carried by the latter provided with a labyrinth of grooves, a link connected to the latch mechanism, a pin on the link in engagement with the grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is rotated a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, and a cam formed on the casing adapted to throw the pin out of active engagement with the shoulder on further rotation of the member.

49. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, means carried by the movable member adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable pretermined distance in opposite directions to lead the pin through the grooves to said means, means adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated, and a cam formed on the casing adapted to throw the pin out of active engagement with the shoulder on further rotation of the member.

50. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, means adapted to hold the pin against the shoulder when the latter is acting upon it, and a cam formed on the casing adapted to throw the pin out of active engagement with the shoulder on further rotation of the member.

51. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, inclines formed in said grooves adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated, means adapted to hold the pin against the shoulder when the latter is acting upon it, means adapted to hold the pin in the grooves, and a cam formed on the casing adapted to throw the pin out of active engagement with the shoulder on further rotation of the member.

52. In a lock in combination: a casing, latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with the grooves, and means for misleading an uninitiated person as the pin moves through the grooves, comprising in part: a post erected on the casing, a link pivoted on the post, a pin on said link adapted to engage with said grooves.

53. In a lock in combination: a casing, latch mechanism, a movable member provided with a labyrinth of tapered grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with the grooves, and means for misleading an uninitiated person as the pin moves through the grooves, comprising in part: a post erected on the casing, a link of resilient material pivoted on the post, a pin on said link adapted to engage with said grooves, a projection on the other side of said link adapted to keep the strip and link pin in said grooves, said link being adapted to click its pin as it passes over the high points in the tapers of the grooves.

54. In a lock of the character described: means for determining the operation of the combination comprising a spindle, a disk rotated thereby having a labyrinth of grooves on its face and a series of indents in its edge corresponding to divisions of the labyrinth of grooves, latch mechanism, a pin carried thereby and engaging with the grooves, a post formed on the casing, a pawl pivoted thereon, a lever adapted to operate said pawl, and a spring adapted to actuate the lever to force the end of the pawl into the indents as they present themselves.

55. In a lock of the character described: means for determining the operation of the combination comprising a spindle, a disk rotated thereby having a labyrinth of grooves on its face and a series of indents on its edge corresponding to divisions of the labyrinth, a latch bolt, a spring tending to thrust the bolt to its locked position, latch arms yoked to said bolt, a roll back operating therewith, a link connected to the roll back, a pin on said link engaging with the grooves of the disk, a post formed on the casing, a pawl pivoted on the post, a lever actuated by the spring and adapted to force the end of the pawl into the indents on the disk as they present themselves.

56. In a lock in combination, latch mechanism, a two part rotatable spindle having the ends of the two parts adapted to engage with each other, means adapted to hold the parts of the spindle normally out of engagement, and automatic means adapted to hold them united when the ends are brought into engagement.

57. In a lock in combination, latch mechanism, a two part rotatable spindle having its ends adapted to engage with each other, a spring adapted to hold the parts normally out of engagement, and automatic means adapted to hold them united when the ends are brought into engagement.

58. In a lock in combination, latch mechanism, a two part rotatable spindle, one part having an angular recess formed in its inner end, the other part having an angular spring seated member adapted to engage with the recess in the opposite part, a spring adapted to keep the parts normally out of engagement, and automatic means adapted to hold them united when the member is brought into engagement with the recess on the opposite part.

59. In a lock in combination, latch mechanism, a two part rotatable spindle, the outer part of which is provided with an angular recess formed in its inner end, the inner part having an angular spring seated member adapted to engage with the recess on the opposite part, a spring adapted to hold the parts normally out of engagement, a pin carried by the inner part adapted to hold that part united to the outer part when the member is brought into engagement with the recess.

60. In a lock in combination, latch mechanism, a two part rotatable spindle, one part having a recess formed in its inner end, the other part having a member adapted to engage with the recess in the opposite member, a spring adapted to keep the parts normally out of engagement, and automatic means adapted to hold them united when the member is brought into engagement with the recess on the opposite part.

61. In a lock in combination: latch mechanism, a two part rotatable spindle, the outer part of which is provided with a recess formed in its inner end, the inner part of the spindle having a member adapted to engage with the recess on the opposite part, a spring adapted to hold the parts normally out of engagement, a pin carried by the inner part adapted to hold that part united to the outer part when the member is brought into engagement with the recess.

62. In a lock in combination: latch mechanism, a two part rotatable spindle, the outer part thereof having an angular recess formed in its inner end, the inner part having an angular spring-seated member adapted to engage with the recess in the opposite part, a spring adapted to hold the parts normally out of engagement, a pin carried by the inner part, and a grooved knurl piece adapted when the pin is moved from the groove and the knurl piece turned to hold the member in engagement with the recess.

63. In a lock in combination: latch mechanism, a two part rotatable spindle, the outer part thereof having a recess formed in its inner end, the inner part having a member adapted to engage with the recess in the opposite part, a spring adapted to hold the parts normally out of engagement, a pin carried by the inner part, and a grooved knurl piece adapted when the pin is moved from the groove and the knurl piece turned to hold the member in engagement with the recess.

64. In a lock in combination: latch mechanism, comprised in part of a roll back, a collar extension thereof provided with a keyway, a two part rotatable spindle, the outer part of which has an angular recess formed in its inner end, the inner part having a key in permanent engagement with the keyway, an angular spring seated member adapted to engage with the recess in the opposite spindle part, a pin carried by the inner part, a knurl piece, a spring adapted to hold the spindle parts normally out of engagement, a groove formed in the inner end of the knurl piece adapted to receive the pin when the spindle parts are out of engagement, the knurl piece being adapted, when the pin is pushed from the groove and when the knurl is turned, to keep the pin from reëntering the groove and the member in engagement with the recess.

65. In a lock in combination: latch mechanism, comprised in part of a roll back, a collar extension thereof provided with a keyway, a two part rotatable spindle, the outer part of which has a recess formed in its inner end, the inner part having a key in permanent engagement with the keyway, a member adapted to engage with the recess in the opposite spindle part, a pin carried by the inner part, a knurl piece, a spring adapted to hold the spindle parts normally out of engagement, a groove formed in the inner end of the knurl piece adapted to receive the pin when the spindle parts are out of engagement, the knurl piece being adapted, when the pin is pushed from the groove and when the knurl is turned, to keep the pin from reëntering the groove and the member in engagement with the recess.

66. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, means adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated, and means adapted to keep the pin in the grooves.

67. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, inclines formed in said grooves adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated, and means adapted to keep the pin in the grooves.

68. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link pivoted on the latch mechanism and connecting the latch mechanism and member, a pin on the link engaging with

said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, and means adapted to keep the pin in the grooves.

69. In a lock in combination: latch mechanism, a rotatable disk provided with a labyrinth of grooves, a knob and connections adapted to move the disk, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the disk is rotated a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, and a lug formed on the casing adapted to hold the pin against the shoulder when the latter is acting upon it.

70. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, means adapted to keep the pin in the grooves, and a cam formed on the casing adapted to throw the pin out of active engagement with the shoulder on the further movement of the member.

71. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, means adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated, means adapted to keep the pin in the grooves, and a cam formed on the casing adapted to throw the pin out of active engagement with the shoulder on further movement of the member.

72. In a lock in combination: latch mechanism, a movable member provided with a labyrinth of grooves, a knob and connections adapted to move the member, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the member is moved a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, inclines formed in said grooves adapted to prevent the pin from taking the right course in the grooves when the combination is not properly operated, means adapted to keep the pin in the grooves, and a cam formed on the casing adapted to throw the pin out of active engagement with the shoulder on the further movement of the member.

73. In a lock in combination: latch mechanism, a rotatable disk provided with a labyrinth of grooves, a knob and connections adapted to move the disk, a link connected to the latch mechanism, a pin on the link engaging with said grooves, a shoulder formed in said grooves adapted to act on the pin to actuate the latch mechanism when the disk is rotated a variable predetermined number of times and a variable predetermined distance in opposite directions to lead the pin through the grooves to said shoulder, a lug formed on the casing adapted to hold the pin against the shoulder when the latter acts upon it, a cam formed on the casing and adapted to throw the pin out of active engagement with the shoulder on further rotation of the disk.

74. In a lock, a disk provided with a labyrinth of grooves, a link movable thereby, a pin on the link moving in said grooves, and a safety device comprised of a post, a link mounted thereon, and a pin on the link adapted to move in said grooves.

75. In a lock: a disk provided with a labyrinth of grooves, a pin moving in said grooves, a starting point for the pin at one end of said labyrinth, and a shoulder at the other end of the labyrinth adapted to act on the pin to actuate the latch mechanism, the labyrinth being arranged in such a manner that by rotating the disk a predetermined distance in one direction the pin will be brought from any position in the labyrinth to the starting point, and by rotating the disk a predetermined number of times and a predetermined distance in opposite directions the pin will be brought to the shoulder for operating the latch mechanism.

76. In a combination lock, the combination of a latch mechanism, and a member connected thereto, of a cam having a labyrinth of grooves in which the member travels from a starting point to a shoulder when operated by a certain combination constructed and arranged so that when the cam disk is turned improperly in either direction, the member will be caused to travel from any position which it may occupy in the grooves to the starting point thereof, in less than one revolution of the disk without reversing the motion.

77. In a combination lock, the combination of a latch mechanism, a member connected thereto, a cam disk having a labyrinth of grooves through which the said member is adapted to travel from a starting point to a shoulder when operated by a certain combination, each of the said grooves being connected to the groove in which the starting point is located, and means whereby the member will be forced to take the proper path to bring it to the starting point in less than one revolution of the disk when the latter is turned improperly in either direction without reversing the motion.

78. In a combination lock, a latch mechanism, means for withdrawing the latch, a movable member, having an angular hole, which when turned a predetermined distance in opposite directions a predetermined number of times acts to find the combination and operatively connect itself to the means for withdrawing the latch, an angular spindle, having a knob, removably connected to the lock and adapted to fit in the angular hole of the movable member, for operating the said movable member, whereby the first number of the combination can be changed by removing the spindle from engagement with the angular hole, turning it around, and replacing it again.

851,575. LOCK. FRED J. VIEWEG, Plainfield, N. J. Filed Nov. 7, 1905. Serial No. 286,195.

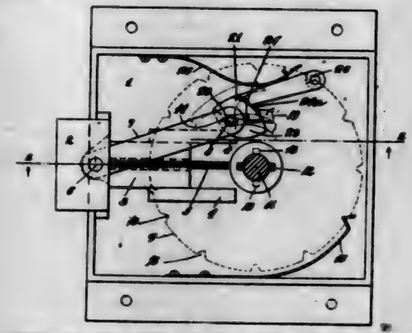

Claim.—1. In a lock, a knob, a bolt, a lever whose pivot is on the bolt, a movable member having a labyrinth of grooves, in which the free end of the lever travels, adapted to be moved by the knob in opposite directions, and means on the said movable member adapted to engage with the said lever when the combination is struck to retract the bolt.

2. In a lock, a bolt, a knob, a lever whose pivot is on the bolt, a cam disk having a labyrinth of grooves, in which the free end of the lever travels, adapted to be moved by the knob in opposite directions, and means on the said cam disk adapted to engage with the said lever when the combination is struck, to retract the bolt.

3. In a lock, a bolt, a knob, a movable member adapted to be operated by turning the knob, a connection carried by the bolt, in constant engagement with the movable member, and responding to the movements thereof without moving the bolt until the combination is struck, and means on the movable member, whereby the movable member and the connection are locked together when the knob is turned in opposite directions a predetermined number of times and a predetermined distance.

4. In a lock, a bolt, a knob, a combination device composed of two members, one of which is carried by the bolt, is in constant engagement with the other member, and responds to the movements thereof, without moving the bolt until the combinaion is struck, and the other member of which is operable by turning the knob to strike the combination, and means on the said other member adapted to engage with the first member to lock the two members together to retract the bolt.

5. In a lock, a knob, a movable member adapted to be operated by turning the knob, a connection carried by the bolt adapted to play in the movable member when the latter is operated by the knob without moving the bolt until the combination is struck, and means on the said movable member for locking the latter to the connection to retract the bolt when the combination is struck.

6. In a lock, a bolt, a knob, a cam disk adapted to be operated by turning the knob, a connection carried by the bolt, in constant engagement with the said cam disk, and responding to the movements thereof without moving the bolt until the combination is struck, and means on the said cam disk, whereby the latter is locked to the connection aforesaid to retract the bolt when the knob is turned in opposite direction a predetermined number of times and a predetermined distance.

7. In a lock, a bolt, a knob, a combination device composed of two members, one of which is a lever and the other of which is a cam disk, the said lever being carried by the bolt, in constant engagement with the cam disk, and responding to the movements thereof without moving the bolt until the combination is struck, and the said cam disk being operable by turning the knob to strike the combination, and means on the said cam disk whereby the lever and cam disk are locked together to retract the bolt when the combination is struck.

8. In a lock, a bolt, a knob, a cam disk adapted to be operated by turning the knob, a connection carried by the bolt adapted to play in the cam disk, when the latter is operated by the knob without moving the bolt until the combination is struck, and means on the said cam disk whereby the latter and the connection are locked together to retract the said bolt when the combination is struck.

9. In a lock, the combination with a bolt, a combination device, and means for automatically locking the bolt made operative by retracting the bolt, of a knob and operating means controlling the said bolt, combination device and locking means.

10. In a lock, a bolt, a combination device, means for automatically locking the bolt made operative by retracting the bolt, and a knob, and operating means which, when turned to strike the combination, acts, after striking the combination, progressively to retract and lock the bolt.

11. In a lock, a bolt, a combination device, means for automatically locking the bolt made operative by retracting the bolt, and a knob and operating means, which, when turned in opposite directions a predetermined number of times and a predetermined distance, acts progressively to strike the combination, to retract the bolt, and to lock the bolt.

12. In a lock, a bolt, a combination device, means for automatically locking the bolt made operative by retracting the bolt, and a knob, and operating means which, when turned to strike the combination, acts after striking the combination, to retract the bolt, and when released to lock the bolt.

13. In a lock, a bolt, a combination device, means for automatically locking the bolt made operative by retracting the bolt, and a knob and operating means, which, when turned in opposite directions a predetermined number of times and a predetermined distance, acts progressively to strike the combination and to retract the bolt, and when released, to lock the bolt.

14. In a lock, a bolt, a knob, a movable member adapted to be operated by turning the knob, connecting means adapted to be moved in a certain path into operative engagement with the movable member to effect the retraction of the bolt when the knob is turned in opposite directions a predetermined number of times and a predetermined distance, a switch for automatically preventing the aforesaid connecting means from returning to its original path, and means for automatically moving the connecting means out of operative engagement with the movable member when the knob is released.

15. In a lock, a bolt, a movable member, a connection adapted to travel in engagement with the said movable member, in a certain path, and to lock itself to the same, when moved into operative position, to retract the bolt, a switch adapted to prevent the said connection from returning to its original path after the said connection has been moved into operative position, means for throwing it out of its operative position, and a knob for moving the movable member.

16. In a lock, a bolt, a movable member, a connection mounted on the bolt adapted to travel in engagement with the said movable member in a certain path and to lock itself to the same, when moved into operative position, to retract the bolt, a switch adapted to prevent the said connection from returning to its original path after the said connection has been moved into operative position, means for throwing it out of its operative position, and a knob for moving the said movable member.

17. In a lock, a bolt, a movable member having a labyrinth of grooves, a connection adapted to travel through the said grooves in the movable member in a certain path, and to lock itself to the same, when moved into operative position, to retract the bolt, a switch adapted to prevent the said connection from returning to its original path through the labyrinth of grooves after the said connection has been moved into operative position, means for throwing it out of its operative position, and a knob for moving the movable member.

18. In a lock, a bolt, a movable member having a labyrinth of grooves, a connection mounted on the bolt adapted to travel through the said grooves in the movable member in a certain path, and to lock itself to the same, when moved into operative position, to retract the bolt, a switch adapted to prevent the said connection from returning to its original path through the labyrinth of grooves after the said connection has been moved into operative position, means for throwing it out of its operative position, and a knob for moving the movable member.

19. In a lock, a bolt, a cam disk having a labyrinth of grooves, a connection adapted to travel through said grooves in a certain path, and to lock itself to the same, when moved into operative position, to retract the bolt, a switch adapted to prevent the said connection from returning to its original path through the labyrinth of grooves when the said connection has been moved into operative position, means for throwing it out of its operative position, and a knob for moving the cam disk.

20. In a lock, a bolt, a cam disk having a labyrinth of grooves, a connection mounted on the bolt adapted to travel through said grooves in a certain path, and to lock itself to the same, when moved into operative position, to retract the bolt, a switch adapted to prevent the said connection from returning to its original path through the labyrinth of grooves after the said connection has been moved into operative position, means for throwing it out of its operative position, and a knob for moving the cam disk.

21. In a lock, a bolt, a spring normally holding said bolt in its locked position, a movable member, a connection adapted to travel in engagement with the said movable member in a certain path and to lock itself to the

same, when moved into operative position, to retract the bolt against the pressure of the spring, a switch adapted to prevent the said connection from returning to its original path after the said connection has been moved into operative position, and a knob for moving the said movable member, and which, when released, after the bolt is retracted, allows the recoil of the spring of the bolt to lock the latter.

22. In a lock, a bolt, a spring normally holding said bolt in its locked position, a movable member mounted on said bolt, a connection adapted to travel in engagement with the said movable member in a certain path and to lock itself to the same, when moved into operative position, to retract the bolt against the pressure of the spring, a switch adapted to prevent the said connection from returning to its original path after the said connection has been moved into operative position, and a knob for moving the said movable member, and which, when released, after the bolt is retracted, allows the recoil of the spring of the bolt to lock the latter.

23. In a lock, a bolt, a spring normally holding said bolt in its locked position, a movable member having a labyrinth of grooves, a connection adapted to travel through the said grooves in the movable member in a certain path, and to lock itself to the same, when moved into operative position, to retract the bolt against the pressure of the spring, a switch adapted to prevent the said connection from returning to its original path through the labyrinth of grooves after the said connection has been moved into operative position, and a knob for moving the said movable member, and which, when released, after the bolt is retracted, allows the recoil of the spring of the bolt to lock the latter.

24. In a lock, a bolt, a spring normally holding said bolt in its locked position, a movable member having a labyrinth of grooves, a connection mounted on the bolt adapted to travel through the said grooves in the movable member in a certain path, and to lock itself to the same, when moved into operative position, to retract the bolt against the pressure of the spring, a switch adapted to prevent the said connection from returning to its original path through the labyrinth of grooves after the said connection has been moved into operative position, and a knob for moving the said movable member, and which, when released, after the bolt is retracted, allows the recoil of the spring of the bolt to lock the latter.

25. In a lock, a bolt, a spring normally holding said bolt in its locked position, a cam disk having a labyrinth of grooves, a connection adapted to travel through the said grooves in a certain path, and to lock itself to the same, when moved into operative position, to retract the bolt against the pressure of the spring, a switch adapted to prevent the said connection from returning to its original path through the labyrinth of grooves after the said connection has been moved into operative position, and a knob for moving the said cam disk which, when released, after the bolt is retracted, allows the recoil of the spring of the bolt to lock the latter.

26. In a lock, a bolt, a spring normally holding said bolt in its locked position, a cam disk having a labyrinth of grooves, a connection mounted on the bolt adapted to travel through the said grooves in a certain path, and to lock itself to the same, when moved into operative position, to retract the bolt against the pressure of the spring, a switch adapted to prevent the said connection from returning to its original path through the labyrinth of grooves after the said connection has been moved into operative position, and a knob for moving the said cam disk which, when released, after the bolt is retracted, allows the recoil of the spring of the bolt to lock the latter.

27. In a lock, a bolt, a movable member having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said grooves in a certain path, and to lock itself to the said movable member, when moved into operative position, to retract the bolt, a spring seated switch having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position with relation to the movable member, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the said second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the movable member, means for throwing the said connection out of its operative position with the movable member, and a knob for moving the said movable member.

28. In a lock, a bolt, a spring normally holding said bolt in its locked position, a movable member having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said grooves in a certain path, and to lock itself to the said movable member, when moved into operative position, to retract the bolt against the pressure of the spring, a spring seated switch having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position with relation to the movable member, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the said second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the movable member, and a knob for moving the said movable member, and which, when released, after the bolt is retracted, allows the recoil of the spring of the bolt to lock the latter.

29. In a lock, a bolt, a movable member having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said grooves in a certain path, and to lock itself to the said movable member, when moved into operative position, to retract the bolt, a spring seated switch having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position with relation to the movable member, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the said second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the movable member, fixed means for supporting the said second pin after it has passed beyond the cam on the switch so as to properly hold the first pin in its operative position in the movable member, means for throwing the said connection out of its operative position with the movable member, and a knob for moving the said movable member.

30. In a lock, a bolt, a spring normally holding said bolt in its locked position, a movable member having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said grooves in a certain path, and to lock itself to the said movable member, when moved into operative position, to retract the bolt against the pressure of the spring, a spring-seated switch having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position with relation to the movable member, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the said second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the movable member, fixed means for supporting the said second pin after it has passed beyond the cam on the switch so as to properly hold the first pin in its operative position in the movable member, and a knob for moving the said movable member, and which, when released, after the bolt is retracted, allows the recoil of the spring of the bolt to lock the latter.

31. In a lock, a bolt, a movable member having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said grooves in a certain path, and to lock itself to the said movable member, when moved into operative position, to retract the bolt, a spring seated switch mounted on the casing having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position with relation to the movable member, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the said second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the movable member, means for throwing the said connection out of its operative position with the movable member, and a knob for moving the said movable member.

32. In a lock, a bolt, a spring normally holding said bolt in its locked position, a movable member having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said grooves in a certain path, and to lock itself to the said movable member, when moved into operative position, to retract the bolt against the pressure of the spring, a spring-seated switch mounted on the casing having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position with relation to the movable member, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the said second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the movable member, and a knob for moving the said movable member, and which, when released, after the bolt is retracted, allows the recoil of the spring of the bolt to lock the latter.

33. In a lock, a bolt, a movable member having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said grooves in a certain path, and to lock itself to the said movable member, when moved into operative position, to retract the bolt, a spring seated switch having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position with relation to the movable member, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the said second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the movable member, means for throwing the said connection out of its operative position with the movable member, a knob for moving the said movable member, and fixed means mounted on the casing for supporting the said second pin after it has passed beyond the cam on the switch so as to properly hold the first pin in its operative position in the movable member.

34. In a lock, a bolt, a spring normally holding said bolt in its locked position, a movable member having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said grooves in a certain path, and to lock itself to the said movable member, when moved into operative position, to retract the bolt against the pressure of the spring, a spring-seated switch having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position with relation to the movable member, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the said second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the movable member, fixed means mounted on the casing for supporting the said second pin after it has passed beyond the cam on the switch so as to properly hold the first pin in its operative position in the movable member, and a knob for moving the said movable member, and which, when released, after the bolt is retracted, allows the recoil of the spring of the bolt to lock the latter.

35. In a lock, a bolt, a cam disk having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said grooves in a certain path, and to lock itself to the said cam disk, when moved into operative position, to retract the bolt, a spring seated switch having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position with relation to the cam disk, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the said second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the cam disk, means for throwing the said connection out of its operative position with the cam disk, and a knob for moving the said cam disk.

36. In a lock, a bolt, a spring normally holding said bolt in its locked position, a cam disk having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said grooves in a certain path, and to lock itself to the said cam disk, when moved into operative position, to retract the bolt, against the pressure of the spring, a spring seated switch having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position with relation to the cam disk, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the said second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the cam disk, fixed means for supporting the said second pin after it has passed beyond the cam on the switch so as to properly hold the first pin in its operative position in the cam disk, means for throwing the said connection out of its operative position with the cam disk, and a knob for moving the said cam disk.

37. In a lock, a bolt, a cam disk having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said groove in a certain path, and to lock itself to the said cam disk, when moved into operative position, to retract the bolt, a spring seated switch having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position with relation to the cam disk, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the said second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the cam disk, fixed means for supporting the said second pin after it has passed beyond the cam on the switch so as to properly hold the first pin in its operative position in the cam disk, means for throwing the said connection out of its operative position with the cam disk, and a knob for moving the said cam disk.

38. In a lock, a bolt, a spring normally holding said bolt in its locked position, a cam disk having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said grooves in a certain path, and to lock itself to the said cam disk, when moved into operative position, to retract the bolt, against the pressure of the spring, a spring seated switch having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position

with relation to the cam disk, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the cam disk, fixed means for supporting the said second pin after it has passed beyond the cam on the switch so as to properly hold the first pin in its operative position in the cam disk, and a knob for moving the said movable member, and which, when released, after the bolt is retracted, allows the recoil of the spring of the bolt to lock the latter.

39. In a lock, a bolt, a cam disk having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said grooves in a certain path, and to lock itself to the said cam disk, when moved into operative position, to retract the bolt, a spring seated switch mounted on the casing having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position with relation to the cam disk, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the said second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the cam disk, means for throwing the said connection out of its operative position with the cam disk, and a knob for moving the said cam disk.

40. In a lock, a bolt, a spring normally holding said bolt in its locked position, a cam disk having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said grooves in a certain path, and to lock itself to the said cam disk, when moved into operative position, to retract the bolt, against the pressure of the spring, a spring seated switch mounted on the casing having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position with relation to the cam disk, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the said second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the cam disk, fixed means for supporting the said second pin after it has passed beyond the cam on the switch so as to properly hold the first pin in its operative position in the cam disk, and a knob for moving the said movable member, and which, when released, after the bolt is retracted, allows the recoil of the spring of the bolt to lock the latter.

41. In a lock, a bolt, a cam disk having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said grooves in a certain path, and to lock itself to the said cam disk, when moved into operative position, to retract the bolt, a spring seated switch having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position with relation to the cam disk, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the said second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the cam disk, means for throwing the said connection out of its operative position with the cam disk, a knob for moving the said cam disk, and fixed means mounted on the casing, for supporting the said second pin after it has passed beyond the cam on the switch, so as to properly hold the first pin in its operative position in the cam disk.

42. In a lock, a bolt, a spring normally holding said bolt in its locked position, a cam disk having a labyrinth of grooves, a connection having two pins disposed upon its opposite sides, one of which is adapted to travel through the said grooves in a certain path, and to lock itself to the said cam disk, when moved into operative position, to retract the bolt, against the pressure of the spring, a spring seated switch having means adapted to engage with the other of the said pins carried by the connection to properly hold the first mentioned pin in its operative position with relation to the cam disk, a cam surface on said switch against which the said other pin acts during the retraction of the bolt to move the said switch out of its path, so positioned that when the bolt is retracted the said second pin will have passed beyond the said cam surface, thereby allowing the switch to close behind it so as to prevent the return of the first pin through its original path in the cam disk, fixed means mounted on the casing, for supporting the said second pin after it has passed beyond the cam on the switch so as to properly hold the first pin in its operative position in the cam disk, and a knob for moving the said movable member, and which, when released, after the bolt is retracted, allows the recoil of the spring of the bolt to lock the latter.

43. In a lock, a bolt, and a combination means adapted to be positioned to retract the bolt by either of two different combinations.

44. In a lock, the combination of a bolt, and a combination means adapted to be positioned to retract the bolt by either of two different combinations from the same side of the door.

45. In a lock, a bolt, a combination device, a master combination device, and a knob adapted to retract the bolt when turned to find either the combination device or the master combination device.

46. In a lock, a bolt, a knob, means adapted to be operated by said knob, having two labyrinths of grooves different from each other in their combination, connections controlling the bolt adapted to travel in engagement with said labyrinths of grooves, whereby when the knob is turned on either combination, the bolt can be retracted.

47. In a lock, a bolt, a knob, a movable member adapted to be operated by said knob having two labyrinths of grooves, different from each other, connections controlling the bolt adapted to travel in said labyrinths of grooves whereby when the knob is operated on either combination, the bolt may be retracted.

48. In a lock, a bolt, a knob, a cam disk adapted to be operated by turning the knob and provided with two labyrinths of grooves, different from each other, one on each side, and connections controlling the bolt adapted to travel in said labyrinths of grooves, whereby when the knob is turned on either combination, the bolt can be retracted.

49. In a combination lock, whose combination is found by turning the knob in opposite directions a predetermined number of times and a predetermined distance, a bolt, a knob, and combination means adapted to be operated by either of two combinations of turns of the knob.

50. In a combination lock, whose combination is found by turning the knob in opposite directions a predetermined number of times and a predetermined distance, a bolt, a knob, and combination means adapted to be operated by either of two combinations of turns of the knob from the same side of the door.

51. In a lock, a cam disk, having a labyrinth of grooves composed of portions of constant configuration connected by intermediate passages.

52. In a lock, a cam disk having a labyrinth of grooves composed of portions of constant configuration connected by intermediate passages, and passages for misleading purposes, also connecting said portions of constant configuration.

53. In a lock, a cam disk having a labyrinth of grooves composed of portions of a spiral connected by intermediate passages.

54. In a lock, a cam disk having a labyrinth of grooves, composed of portions of a spiral connected by intermediate passages, and passages for misleading purposes also connecting the said spiral portions.

55. In a lock, a bolt, a knob, a cam disk adapted to be operated by the rotation of the knob, having a labyrinth of grooves having depression below the normal level of the grooves at certain intervals, a connection controlling the bolt having a pin adapted to travel in said grooves, tapered surfaces in said grooves whose summits are adjacent to the depressions below the normal level of the grooves, whereby when the pin travels beyond the summit of the tapered surfaces it will fall into the depression below the normal level of the grooves.

56. In a lock of the character described, the combination of a casing, a movable member rotatably supported in said casing, a knob having a spindle extending from one side of the casing through the same and through the said movable member in locked engagement therewith, and means on the opposite side of the casing adapted to follow the movement of the spindle for preventing the outward withdrawal of the said spindle.

57. In a lock of the character described, the combination of a casing, a movable member rotatably supported in said casing, a knob having a spindle extending from one side of the casing through the same and through the said movable member, means for locking the spindle and movable member together in different circumferential positions with relation to each other, and means on the opposite side of the casing adapted to follow the movement of the spindle for preventing the outward withdrawal of the said spindle.

58. In a lock of the character described, the combination of a casing, a cam disk rotatably supported in said casing, a knob having a spindle extending from one side of the said casing through the same and through the cam disk, and means on the other side of the casing adapted to follow the movements of the spindle for preventing the outward withdrawal of the said spindle.

59. In a lock of the character described, the combination of a casing, a cam disk rotatably supported in said casing, a knob having a spindle adapted to be inserted from one side of the casing through the same and through the cam disk, means for locking the spindle and the cam disk together in different circumferential positions with relation to each other, and means on the other side of the casing adapted to follow the turning movement of the spindle for preventing the outward withdrawal of the said spindle.

60. In a lock of the character described, the combination of a casing, a bolt movable in said casing, a movable member rotatably supported in said casing, a connection in engagement with the said movable member controlling the retraction of the bolt, a knob having a spindle extending from one side of the casing through the same and through the said movable member and in locked engagement therewith, and means on the opposite side of the casing adapted to follow the movement of the spindle for preventing the outward withdrawal of the said spindle.

61. In a lock, a bolt, a combination device, a master combination device, a knob and operating means adapted to retract the bolt when turned to find either the combination device or the master combination device, and means for automatically locking the bolt when retracted by either of the two combination devices.

62. In a lock of the character described, the combination of a casing, a bolt movable in said casing, a movable member rotatably supported in said casing, a connection in engagement with the said movable member controlling the retraction of the bolt, a knob having a spindle extending from one side of the casing through the same and through the said movable member, means for locking the spindle and movable member together in different circumferential positions with relation to each other, and means on the opposite side of the casing adapted to follow the movement of the spindle for preventing the outward withdrawal of the said spindle.

63. In a lock of the character described, the combination of a casing, a bolt movable in said casing, a cam disk rotatably supported in said casing, a connection in engagement with the said cam disk controlling the retraction of the bolt, a knob having a spindle extending from one side of the casing through the same and through the said cam disk and in locked engagement therewith, and means on the opposite side of the casing adapted to follow the movement of the spindle for preventing the outward withdrawal of the said spindle.

851,576. CONTROLLING MECHANISM FOR BELT-SHIFTERS. ALFRED B. WALES, East Whitman, Mass., assignor of one-fourth to Edward W. McAllister and one-fourth to Ira W. Holbrook, Brockton, Mass. Filed Feb. 6, 1907. Serial No. 356,001.

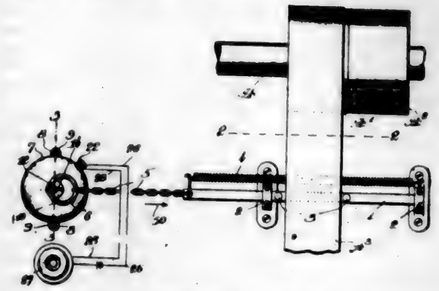

Claim.—1. In apparatus of the class described, a movable member, means to forcibly move it, and mechanism to retain said member retracted, said mechanism comprising an armature adapted to be detachably connected with said member when retracted, a detent to hold the armature in effective position, and an electro-magnetic device to act upon the armature and free it from the detent the freed armature being thereupon moved to release said movable member by the action of the means for forcibly moving the same.

2. In apparatus of the class described, a movable member, means to forcibly move it, and mechanism to retain said member retracted, said mechanism comprising a pivotally mounted armature having a limited lateral movement and adapted to be detachably connected with said member when retracted, a detent to hold the armature in effective position, and an electro-magnet to act upon the armature and effect lateral movement thereof to free it from the detent, the armature when so freed being swung on its pivot, by the action of the means for forcibly moving the said movable member, to thereby release the latter.

3. In apparatus of the class described, a movable member, a spring to move it in one direction, and mechanism to retain said member retracted against the action of the spring, said mechanism comprising a combined latch and armature adapted to be detachably connected with said member when retracted, a detent independent of said member to at such time coöperate with the latch-armature, and an electro-magnet to act upon the latter and free it from the detent, whereby the spring acts to inoperatively position the latch-armature and effect movement of the movable member.

4. In apparatus of the class described, a movable member, a spring to move it in one direction, and mechanism to retain said member retracted against the action of the spring, said mechanism comprising a pivotally mounted latch-armature, a detachable connection between it and the movable member when retracted, the pull on the connection acting close to the fulcrum of the latch-armature when the latter is in effective position, a detent independent of the detachable connection, to retain the latch-armature in such position, and an electro-magnet to free the latch-armature from the detent and permit movement of the former on its pivot to release the movable member.

5. In apparatus of the class described, a spring-actuated movable member, a pivotally mounted armature having a latch portion adjacent its pivot, a detachable connection between the latch portion and said spring-controlled member, to retain the latter retracted, a detent to coöperate directly with and retain the armature in effective position, and an electro-magnet to effect slight lateral movement of the armature and free it from the detent.

6. In apparatus of the class described, a spring-actuated shifter, a latch adapted when operatively positioned to hold the shifter retracted, a detent independent of the shifter to engage and hold the latch in such position, and

an electro-magnetic device to act directly upon the latch and free it from control of the detent, to release the shifter.

7. In apparatus of the class described, a spring-actuated shifter, a pivotally mounted latch extended to form an armature and capable of slight lateral movement, a detent to engage the armature and maintain the latch from pivotal movement, means to detachably connect the retracted shifter with the latch when held by the detent, and an electro-magnet to act upon the armature and free it from control of the detent, to thereby permit pivotal movement of the latch and release of the shifter.

8. In apparatus of the class described, a spring-actuated movable member, a latch having an extension constituting an armature, a casing on which the latch is fulcrumed and through which it extends, a detent within the casing to coöperate with the extension and hold the latch in effective position, a detachable connection between the movable member and the latch when the latter is effectively positioned, to retain said movable member retracted, an electro-magnet to act when energized upon the armature and free the latch from control of the detent, a controlling circuit in which the magnet is included, and a spring to withdraw the armature from the magnet when the latter is deënergized.

9. In apparatus of the class described, a movable member, an actuator therefor, an electro-magnet, a pivotally mounted armature therefor having a latch portion adjacent its pivot, a detent to engage the armature and operatively position the latch portion, a detachable connection between the movable member and the latch portion when so positioned, to maintain said member retracted, the electro-magnet when energized freeing the armature from the detent and permitting pivotal movement of said armature, whereby the latch portion releases the movable member, and means to deënergized the electro-magnet upon disengagement of the armature and detent.

851,577. CROSS-ARM PIN. DAVID WEAVER, Paterson, N. J. Filed July 7, 1906. Serial No. 325,070.

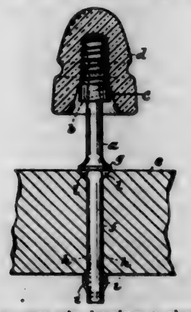

Claim.—A cross arm pin having a shoulder and, below said shoulder and spaced therefrom, curved diametrically opposite longitudinal grooves, yielding clips each having both ends in said grooves and the intermediate portion projecting therefrom coacting with the shoulder to limit the vertical movement of the pin in its cross arm, and a rivet extending through said pin and the clips, substantially as described.

851,578. ARTIFICIAL TEETH. WALTER O. WEST, New Orleans, La. Filed May 8, 1906. Serial No. 315,783.

Claim.—1. A plurality of teeth each having at its inner side a vertical angular channel, the channel of one tooth registering with that of the adjacent tooth, and a body of solder filling the cavity produced by the registering channels.

2. A plurality of teeth, each having at its inner side a vertically disposed angular channel extending from an intermediate point of the tooth to the cervical end thereof, the channel of one tooth registering with that of the next adjacent tooth and combining therewith to form a cavity, a pin extending into the channel, and a deposit of solder filling the cavity and serving to lock the teeth together.

3. A plurality of teeth, each having a transverse pin and a longitudinally disposed channel, the channel of one tooth registering and combining with that of the next adjacent tooth to produce a cavity, a foil extending under the cervical end of the tooth and into the cavity and engaging the ends of the pin, and a body of solder occupying the cavity and serving to secure the foil in position and lock the teeth together.

851,579. FACING FOR WALLS AND OTHER SURFACES. ALBERT O. WHITNEY, Bronxville, and CHARLES L. WEYAND, New York, N. Y. Filed Nov. 19, 1906. Serial No. 343,960.

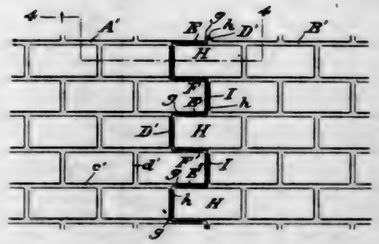

Claim.—1. A facing for walls, ceilings, and the like, comprising enameled material in sheet form, each sheet being provided with notches and tongues, and said sheets being assembled in edgewise abutting relation, with the tongues of each sheet filling the notches of the next sheet.

2. A facing for walls, ceilings, and the like, comprising enameled and channeled meterial in sheet form, one or more edges of the sheet being, substantially, at the bottom of the channel next to said edge, whereby adjacent sheets may be assembled in edgewise abutting relation.

3. A facing for walls, ceilings, and the like, comprising enameled and channeled material in sheet form, an edge portion of the sheet being cut through the bottom portion of one of the channels therein, whereby adjacent sheets are adapted to be assembled for the semi-channeled edges of said sheets to abut one another.

4. A facing for walls, ceilings, and the like, comprising channeled material in sheet form, an edge portion of the sheet being cut or trimmed along the bottom portion of a channel therein, the cut or line of severance being substantially along the central line of the channel.

5. A facing for walls, ceilings, and the like, comprising a plurality of enameled and channeled sheets assembled in abutting relation, the sheets joining one another along semi-channeled edges thereof.

6. A facing for walls, ceilings, and the like, comprising a plurality of enameled and channeled sheets each having notches and tongues, said sheets being assembled in interlocking order and in edgewise abutting relation.

7. A facing for walls, ceilings, and the like, comprising a plurality of enameled and channeled sheets each having notches and tongues, said sheets being assembled in interlocking order and in edgewise abutting relation, and the sheets joining one another along semi-channeled edges thereof.

8. A facing for walls, ceilings, and the like, comprising a plurality of channeled sheets having at their meeting edges interlocking tongues and grooves, said sheets meeting along semi-channeled edges thereof.

9. A facing for walls, ceilings, and the like, comprising a channeled sheet, the edge of which is provided with a semi-channel, whereby a plurality of sheets may be assembled in edgewise abutting relation at the semi-channeled portions thereof.

10. A facing for walls, ceilings, and the like, comprising a channeled sheet, having a tongue and a notch at one or more of the edges thereof, said sheet having a semi-channel at one or more of its edges, whereby a plurality of sheets are adapted to be assembled in interlocking and edgewise abutting relation along the semi-channeled edges thereof.

851,580. ADJUSTABLE FASTENER FOR SECURING HARROW-TEETH TO THEIR SUPPORTING-BARS. GEORGE W. WILLIS, Hoosick Falls, N. Y. Filed Dec. 26, 1906. Serial No. 349,376.

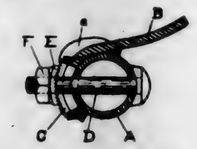

Claim.—1. In a harrow tooth fastener, a tubular frame, a harrow tooth reversely curved over the frame, over and under a tooth holder, said tooth holder being also eccentric to the frame reversely to the tooth, and slots in the tooth and tooth holder, and means for holding the parts in place.

2. A combination of the frame A, slotted tooth B, slotted tooth holder C, and said tooth holder and tooth being eccentric to frame A and reversely to each other, and means for holding the parts in place, consisting of a bolt D and cerrated washer E fitting into serrations in tooth holder C, substantially as and for the purpose described.

851,581. MOTOR-EXTENSION RECEPTACLE. GUSTAV WILLIUS, Jr., St. Paul, Minn. Filed June 23, 1905. Serial No. 266,546.

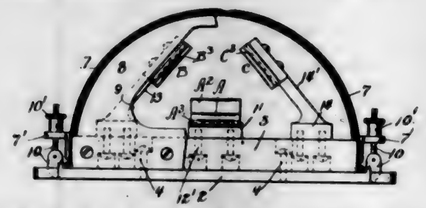

Claim.—1. In a device of the class described, a socket comprising three relatively triangularly positioned spring blades and a suitable insulating support, all of said blades having intermediate crimps and one thereof being provided with an inward bend or stop portion, in combination with a plug comprising suitably connected triangular blocks and contact plates, provided with intermediate crimps, upon the sides or faces of said blocks and suitably insulated, substantially as described.

2. In a device of the class described, a socket or receptacle comprising triangularly disposed spring blades and an insulating support therefor, in combination with a plug comprising an insulating body, three contact plates triangularly disposed thereon and means for adjusting the bow of said plates, substantially as described.

3. In a device of the class described, a suitable frame having an end, 5, in combination with a corresponding insulating end, 8, a casing conforming to said ends, an insulating lining for said casing, means for detachably securing said casing upon said frame, and socket members suitably insulated within the inclosure formed by said frame, said ends and said casing, substantially as described.

4. In a device of the class described, a suitable frame having an end, 5, in combination with a corresponding insulating end, 8, a casing conforming to said ends, an insulating lining for said casing, means for detachably securing said casing upon said frame, and three triangularly disposed spring blades suitably supported and insulated upon said frame with their ends extending through said insulated end, substantially as described.

5. In a device of the class described, a suitable frame, in combination with an insulating block upon said frame, suitable ends for said frame, the latter having a triangular opening, a casing detachably secured to said frame, and triangularly disposed spring blades attached to said insulating block, and having their ends extending through said triangular opening in the end, substantially as described.

6. In a device of the class described, a suitable frame in combination with an insulating block thereon, a closed end member on one end of said frame and an end member of insulating material provided with a suitable opening on the opposite end, socket members provided upon said block, and a casing having an insulating lining conforming to said ends, and means upon said frame for binding said casing upon said ends, substantially as described.

7. In a device of the class described, an insulating block or support, in combination with a spring blade, A, attached thereto, angular blocks attached to said insulating support, a pair of spring blades B and C attached to said angular blocks and angularly disposed with reference to said blade A, substantially as described.

8. In a device of the class described, an insulating block or support, 3, in combination with a blade A, having a crimp or bend, A′, and a stop bend, A^2, blades, B and C, each provided with a crimp or bend, and suitable means for supporting said blades, A, B and C, in triangular relation, upon said block, 3, substantially as described.

9. In a device of the class described, a plug comprising a threaded tube, in combination with triangular blocks of insulating material adjustably secured upon the said tube, suitable crimped contact plates attached to said block, and a suitable handle, substantially as described.

10. In a device of the class described, a threaded tube, 16, provided with openings, 25, in combination with insulating blocks, 17 and 18, adjustably arranged upon said threaded tube, contact plates arranged upon the sides of said blocks and extending therebetween and a suitable handle aranged upon said threaded tube, substantially as and for the purpose specified.

11. In a device of the class described, a metallic frame, in combination with a block of insulating material thereon, a pair of metal blocks attached to said insulating block and provided with angular portions, a third metal block interposed between said metal blocks and attached to said insulating block, and spring blades attached to said angular portions and said interposed block respectively, one of said blades being provided with an inward bend or stop portion, substantially as described.

12. In a device of the class described a triangular member, provided with an insulating handle, and having an adjustable contact plate upon each side of said triangular member, substantially as described.

851,582. VOTING-MACHINE. PHILIP YOE, Dayton, Ohio, assignor to E. W. Hanley, Kerien Fitzpatrick, and Philip Yoe. Filed Nov. 16, 1905. Serial No. 287,570.

Claim.—1. In a voting machine, the combination with a frame-work containing a plurality of card orifices, and card receivers below said orifices, of a series of independent-vote keys movable into orifice-closing positions, said keys when moved to said orifice-closing positions injecting the cards in said orifices into the receivers.

2. In a voting machine, the combination with a frame-work containing a series of card orifices, and a series of card receivers below said orifices, of a movable cross bar controlling the entrances to said card receivers, and a series of independent-vote keys, said keys being adapted to engage the cards in said orifices and to inject said cards into said receivers, said keys and said cross bar being

movable simultaneously to open the entrances to the card receivers and to inject cards into said receivers.

8. In a voting machine, the combination with a frame-work containing a series of card orifices, and a series of card receivers below said orifices, of a series of independent-vote keys, means for moving said keys into said card orifices to thereby inject the cards into the receivers, a movable cross bar interposed between said orifices and said card receivers, and means for simultaneously moving said cross bar away from the entrances to the card receivers and for moving said keys into the card orifices.

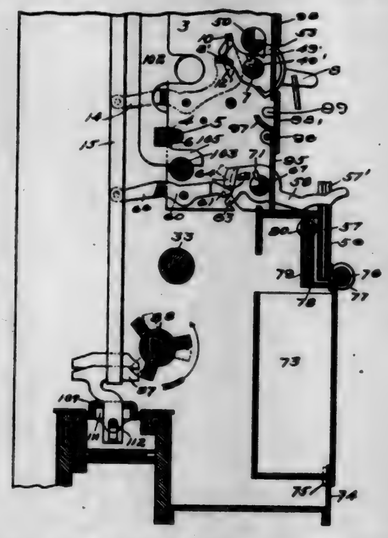

4. In a voting machine, the combination with a suitable supporting frame, of an oscillating operating lever, a series of independent vote keys, a frame-work extending below and across said keys, said frame-work containing a plurality of card orifices, one of said orifices for each key, card receivers, one for each key, and said keys, when moved engage the cards and inject them into the receivers, a movable cross bar adapted to open and close the entrances to said card receivers, means to actuate said cross-bar, means to return the operating keys to their normal positions by the initial stroke of the operating lever, and means to lock the independent vote keys in their normal positions until the operating lever has reached the limit of its movement in the reverse direction.

5. In a voting machine, the combination with a suitable supporting frame, of a cross frame having a series of card orifices, a card receiver for each orifice, a series of independent vote keys adapted to be moved into and out of orifice-closing positions, an oscillating operating lever, connecting mechanism between said keys and said operating lever, and means to lock said keys in their orifice-closing positions during the initial stroke of the operating lever and to unlock them at the limit of the stroke of the operating lever in the reverse direction.

6. In a voting machine, the combination with a suitable supporting frame, of an oscillating shaft having a longitudinal channel therein, a series of independent vote keys having resetting projections thereon and mounted on said shaft, a cross frame containing a series of card orifices, an operating lever, and connecting mechanism between said oscillating shaft and said operating lever.

7. In a voting machine, the combination with a series of independent-vote keys having resetting projections thereon, an oscillating shaft having a longitudinal channel therein and upon which said keys are mounted, a resetting frame, and an operating lever.

8. In a voting machine, the combination with a series of independent-vote keys, of a series of independent-actuating frames, adapted to be actuated by said keys, interlocking mechanism permitting the operation of one key at a time and actuated by said independent actuating frames, a frame-work having a series of card orifices into which said keys are movable, and a series of card receivers below said orifices and to which the cards are injected by the keys from said orifices.

9. In a voting machine, the combination with an oscillating shaft, a series of independent setting keys mounted on said shaft, an actuator slid on said shaft but prevented from rotating, and a door to prevent said shaft from shifting.

10. In a voting machine, the combination with a rotating counter actuator, of a setting key actuated thereby, a counter actuated by said setting key and said counter actuator, a frame having a plurality of ticket orifices, an irregular-vote key mounted above each ticket orifice and adapted to simultaneously close said orifices and eject a ticket therefrom, a movable cross bar at the exit of said orifice and adapted to receive from all of said ticket orifices when the tickets are ejected therefrom, and an operating lever to actuate said rotating counter-actuator, said irregular vote keys, and said cross bar.

11. In a voting machine, the combination with a rotating counter-actuator, of a regular-vote setting key actuated thereby, a counter actuated by said regular vote setting key and said actuator, a reciprocating frame to actuate said rotating counter actuator, an irregular vote setting key, a frame for resetting said regular and irregular-vote setting keys simultaneously, a frame having a card orifice into which the irregular-vote key is movable to eject cards from said orifice, a card receiver below said card orifice, a movable cross bar arranged between said card orifice and receiver, and means for actuating the reciprocating frame, the resetting frame, and the cross bar.

12. In a voting machine, a series of setting keys, an irregular vote key, interlocking mechanism to prevent the operation of more than one of said setting keys or the irregular vote key, a frame-work having card orifices, a series of card receivers below said orifices to receive the cards ejected from said orifices by said irregular vote key, a movable cross bar interposed between the card orifices and the receivers, and means for actuating said cross bar in and out of the paths of the cards.

13. In a voting machine, the combination with the frame-work thereof, of a series of independent vote keys pivoted to said frame-work, a cross frame containing a series of card orifices arranged below said independent vote keys, card receivers, means on said independent vote keys for positively injecting cards into said card receivers, and an operating lever and connecting mechanism adapted to actuate said independent vote keys.

851,583. STAY FOR PAPER BOXES AND RECEPTACLES OF A LIKE NATURE. EDWARD W. ALLEN, Hartford City, Ind. Filed Oct. 31, 1905. Serial No. 285,325.

Claim.—The combination with the sides of a receptacle, of socket members consisting of wings connected by webs shorter than the wings, said members being secured to the ends of the sides to provide pockets, and a coupling member consisting of stems connected by a web located at a point intermediate the ends of the stems, said stems being arranged at right angles with relation to each other and adapted to be positioned in said pockets, those portions of the stems extending above the web being bent downwardly over the edges of the sides, said stems being provided with tangs which project upwardly to permit the application of the coupling member and to engage the sides to prevent its withdrawal.

851,584. DISH-WASHER. WALTER S. BUNLY, St. Louis, Mo. Filed Apr. 18, 1906. Serial No. 312,017.

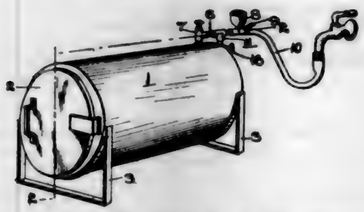

Claim.—1. In a dish washer of the class described, an outer cylinder, an inner perforated cylinder, means whereby dishes are held within the perforated cylinder, means whereby water under pressure is delivered to the annular chamber between the cylinders, and means whereby cleansing compound is discharged into the water in advance of its discharge into the annular chamber; substantially as specified.

2. In a dish washer of the class described, an outer cylinder, an inner perforated cylinder, there being an annular chamber formed between said cylinders, which chamber is closed at the ends of the cylinders, a removable cover closing one end of the outer cylinder, a dish rack removably positioned within the perforated cylinder, a pipe leading to the annular chamber, and a branch pipe leading through the rear end of the outer cylinder to the interior of the inner cylinder; substantially as specified.

3. In a dish washer of the class described, an outer cylinder, an inner perforated cylinder, means whereby dishes are held within the perforated cylinder, means whereby water under pressure is delivered to the annular chamber between the cylinders, means whereby cleansing compound is discharged into the water in advance of its discharge into the annular chamber, and means whereby the discharge of water and cleansing compound to the cylinder is controlled; substantially as specified.

851,585. RESILIENT TIRE FOR MOTOR-CAR AND SIMILAR WHEELS. CUTHBERT BURNETT, Durham, England. Filed Feb. 12, 1906. Serial No. 300,662.

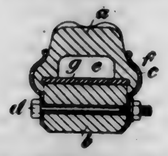

Claim.—1. The combination of a wheel, a metallic rim thereon having rounded edges, a rubber tire chambered on the inner side and provided with lateral flange extensions, which rest on the outer face of the rim and against the rounded edges of the same, annular lash plates on the outer chambered part of the tire and the lateral flange extensions, bolts passing through the wheel and through the lash plates and provided with nuts for making airtight joints between the rim edges and the tire, and means for supplying compressed air to the interior of the tire, substantially as set forth.

2. The combination of a wheel, a metallic rim thereon with rounded edges, a rubber tire with cellular chambers on the inner side and provided with lateral flange extensions, which rest on the outer face of the rim and against the rounded edges of the same, annular lash plates on the outer chambered part of the tire and the lateral flange extensions, bolts passing through the wheel and through the lash plates and provided with nuts for making airtight joints between the rim edges and the tire and means for supplying compressed air to the interior of the tire, substantially as set forth.

851,586. PASTE-TUBE. WALTER L. CLARK, New York, N. Y. Filed Dec. 29, 1905. Serial No. 293,761.

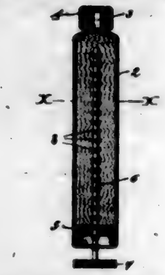

Claim.—1. A receptacle for viscous or powdery materials comprising a rigid tube having an outlet at one end and containing a piston made of yielding material and adapted to be located at the opposite or closed end of the tube, behind the material contained therein, in combination with a longitudinally-movable rod passing through the piston and one end of the tube and provided with slanting teeth which point forward in the direction of the outlet of said tube, substantially as described.

2. A receptacle for viscous or powdery materials comprising a rigid tube having an outlet at one end and containing a piston made of felt and adapted to be located at the opposite or closed end of the tube, behind the material contained therein, and a longitudinally-movable rod passing through the piston and the closed end of the tube and provided with forwardly-pointing teeth, substantially as described.

851,587. FOUNTAIN-BRUSH. WALTER L. CLARK, New York, N. Y. Filed Jan. 29, 1906. Serial No. 298,392.

Claim.—1. In a fountain brush, the combination with the body of the brush of a receptacle adapted to be detachably connected thereto and containing a piston for expelling the contents of the receptacle, a sheath or sleeve secured to the body of the brush and detachable therefrom independently of the receptacle, said sheath or sleeve being adapted to inclose the receptacle and form a handle for the brush, and means passing through said sheath or sleeve for operating the piston in said receptacle.

2. In a fountain brush, the combination with the body of the brush of a receptacle adapted to be detachably connected thereto and containing a piston for expelling the contents of the receptacle, a sleeve detachably secured to the body of the brush, independently of the receptacle, and adapted to contain said receptacle, said sleeve having a longitudinal slot extending through its open end, and piston-operating means extending from the interior of the receptacle through the slot in the sleeve and movable from the exterior of the latter.

3. In a fountain brush, the combination with the body of the brush of a receptacle adapted to be detachably connected thereto and containing a piston for expelling the

contents of the receptacle, a detachable sleeve telescopically fitted to the body of the brush and adapted to contain said receptacle, said sleeve having a longitudinal slot extending through its open end, a split ring secured to the interior of the sleeve and having its gap located in alinement with said slot, and piston-operating means extending from the interior of the receptacle through the slot in the sleeve and movable from the exterior of the latter.

4. In a fountain brush, the combination of a body portion containing an open tubular bushing leading at one end into the mass of bristles and provided at its other end with an internally-threaded portion, a tubular receptacle having a threaded nipple surrounding its outlet and adapted to fit the threaded portion of the bushing, a piston located in said receptacle for expelling the contents of the latter, a short tubular portion carried by said bushing, a sheath or sleeve adapted to inclose said receptacle and form a handle for the brush, said brush or sleeve being fitted at its front or open end to said tubular portion and being detachable therefrom independently of the receptacle, and means passing through the receptacle and through said sheath or sleeve for operating said piston.

5. In a fountain brush, the combination of a body portion containing an open tubular bushing leading at one end into the mass of bristles and provided at its other end with an internally-threaded portion, a longitudinally-slotted receptacle having a threaded nipple surrounding its outlet and adapted to fit the threaded portion of the bushing, a piston located in said receptacle for expelling the contents of the latter, a short tubular portion carried by said bushing, a detachable sleeve or sheath adapted to inclose said receptacle and telescopically fitted at its front or open end to said tubular portion, said sleeve having a longitudinal slot extending through its open end, and a piston-actuating stem extending through the slots in the receptacle and sleeve and provided on the exterior of the latter with operating means.

6. As an article of manufacture, a brush comprising in combination a body portion, means for detachably connecting a receptacle thereto, and a detachable sleeve or sheath adapted to inclose said receptacle and forming the handle of the brush, said sleeve having a longitudinal slot extending through its open end, for the purpose set forth.

7. As an article of manufacture, a brush comprising in combination a body portion, means for detachably connecting a receptacle thereto, a detachable sleeve or sheath adapted to inclose said receptacle and forming the handle of the brush, said sleeve having a longitudinal slot extending through its open end, and a split ring carried by said sleeve at or near said open end, the gap in said ring being located in alinement with the slot in the sleeve.

8. As an article of manufacture, a brush comprising in combination a body portion containing an open tubular bushing leading at one end into the mass of bristles and provided at its other end with an internally-threaded portion, a short tubular portion carried by said bushing, and a detachable sleeve or sheath telescopically fitted at its front or open end to said tubular portion and having a longitudinal slot extending through said open end, for the purpose set forth.

851,588. VEHICLE-SUPPORT. MARK N. DAVIS, Baltimore, Md. Filed June 20, 1906. Serial No. 322,649.

Claim.—1. A vehicle supporting device comprising a platform capable of longitudinal and lateral adjustability, jacks at the corners of the platform, means for simultaneously adjusting said jacks, and common operating means for said adjusting means.

2. A vehicle supporting device comprising a platform composed of sections adjustably connected to allow the platform to be varied in length and width, operating means for adjusting the platform, vertically movable jacks at the corners of the platform, and means for adjusting said jacks in unison, said means being adapted to permit of the adjustment of the platform without interference therewith.

3. A vehicle supporting device comprising a laterally and longitudinally adjustable platform, jacks on the platform, and means for simultaneously adjusting the jacks, said means being adapted to permit of the adjustment of the platform without interference therewith.

4. A vehicle supporting device comprising a longitudinally and laterally adjustable platform, jacks at the corners of the platform, adjusting levers on the sides of the platform for operating the jacks, and operating mechanism at an end of the platform, for actuating said levers, said levers and operating mechanism being adapted for adjustment of the platform both longitudinally and laterally without interference therewith.

5. A vehicle supporting device comprising a longitudinally and laterally adjustable platform, adjusting means therefor, jacks at the corners of the platform, each having a main and an outwardly projecting auxiliary support to receive and hold a vehicle spindle, and means for adjusting the jacks in unison, said means being adapted to permit of the adjustment of the platform.

6. A device of the character described comprising a platform composed of sections adjustably connected to render the platform extensible as to length and width, means for adjusting the platform, vertically movable jacks at the corners of the platform, lever mechanism for simultaneously adjusting the jacks, said mechanism being adapted to permit of the longitudinal and transverse adjustment of the platform without interference, and operating means for actuating the lever mechanism.

7. A vehicle supporting device comprising a platform, vertically movable jacks at the corners of the platform, main operating levers, auxiliary levers for actuating the jacks, said levers being connected in pairs to the main levers, and means for operating the main levers.

8. A vehicle supporting device comprising a platform, vertically movable jacks at the corners of the platform, main operating levers, auxiliary operating levers controlling the jacks and pivoted to the main operating levers, racks operatively connected with the main operating levers for raising and lowering the same, and means for actuating the racks.

9. A vehicle supporting device comprising a longitudinally and laterally adjustable platform, vertically movable jacks at the corners of the platform, main operating levers, auxiliary operating levers for controlling the jacks, said auxiliary levers being pivoted to the platform and pivotally connected with the main levers, racks operatively engaging the main levers for raising and lowering the same, and an operating shaft having pinions engaging the racks, the parts being adjustably connected in a suitable manner to allow a proper shifting movement of the described mechanism for actuating the jacks to compensate for the adjustments of the platform.

851,589. PICTURE-PROJECTING APPARATUS. JOHN M. DUNSMORE, Thayer, Kans. Filed Jan. 22, 1907. Serial No. 353,532.

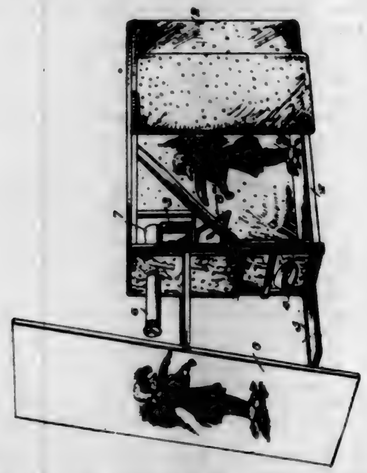

Claim.—1. A picture projecting apparatus comprising a cabinet adapted to receive the person, object or thing whose picture is to be reproduced, an illuminator arranged within the cabinet, a light ray projecting lens fitted to the lower portion of the said cabinet and inclined to the perpendicular, an approximately horizontal mirror arranged below the lens for reflecting the image, and a screen exterior to the lens for receiving the picture.

2. In a picture projecting apparatus comprising a cabinet, an illuminator located in the upper forward portion of the cabinet, an inclined mirror located immediately below the illuminator to cut off direct rays of light and insure a sharp outline of the picture, an inclined lens fitted in the lower portion of the front of the cabinet below the said mirror, an approximately horizontal mirror exterior to the cabinet and below the said lens, and a screen exterior to the cabinet for receiving the reflected image.

3. In apparatus of the character specified, the combination of a cabinet, a lamp arranged within the cabinet for lighting the interior thereof, means for projecting the image of a person or object from the cabinet upon a screen, a tube arranged to carry off the hot air and gases from the said lamp and also serving to project any sound produced within the cabinet, and a screen exterior to the cabinet for receiving the reflected image and the projected sound.

851,590. RAIL SPLICE OR JOINT. JACOB W. FENNEL, Johnstown, N. Y. Filed Jan. 17, 1907. Serial No. 352,756.

Claim.—1. In a rail joint, two rails, the adjacent ends of which are cut away so as to overlap each other, and one of them is provided with perforations, pins in the overlapping portion of the other rail, one of which has its end screw-threaded, a nut on said end, and a seat or plate for said joint, having its sides adapted to engage with the bottom of said rails.

2. In a rail joint, two rails, the adjacent ends of which are cut away so as to overlap each other, and one of them is provided with perforations, pins in the overlapping portion of the other rail, the one at the free end of which is

provided with screw-threads, a nut on said screw-threads, and a shoe or plate for said rails, the sides of which overlap the sides of the bottom of said rails.

851,591. VALVE-HANDLE. PETER FORD, Somerville, Mass. Filed Apr. 16, 1903. Serial No. 152,861.

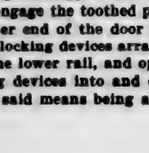

Claim.—The combination with a sheet metal handle provided with a center portion having an offset provided with a hole or opening, arms extended from said center portion, fingers extended from said arms to leave air spaces and curved or bent, a finger on one arm being connected to a finger on an adjacent arm, of a spider secured to said center portion and provided with an opening in line with the opening in said center portion, substantially as described.

851,592. DOOR-OPERATING MEANS. WILLIAM T. GLASS, Napanoch, N. Y., assignor of one-half to Anthony D. Hungerford, Napanoch, N. Y. Filed June 13, 1906. Serial No. 321,473.

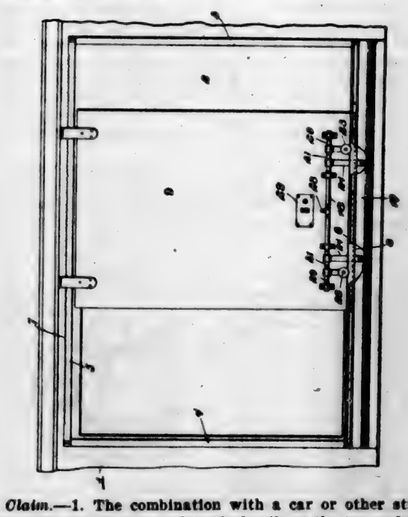

Claim.—1. The combination with a car or other structure having a doorway, of toothed rails at the top and bottom of the doorway, a sliding door, hangers upon the top of the door engaging the upper rail and provided with locking portions to engage the toothed portion of said rail, rollers upon the lower end of the door arranged to travel upon the lower rail, locking devices arranged to engage the toothed surface of the lower rail, and operating means for throwing the locking devices into and out of engagement with the lower rail, said means being adapted to simulta-

necessiy depress the door to throw the upper hangers into locking engagement with the upper rail.

2. The combination with a car or other structure having a doorway, of rails at the top and bottom of the doorway, a sliding door, locking hangers upon the top of the door engaging the upper rail, locking devices upon the bottom of the door to engage the lower rail, rollers upon the bottom of the door to travel upon the lower rail, a crank shaft controlling the action of said locking devices and rollers, whereby the door may be raised and lowered and the upper and lower locking devices simultaneously thrown into and out of action, and means for fastening the crank shaft in locking position.

3. The combination with a car or other structure having a doorway, of rails at the top and bottom of the doorway, the lower rail being provided on its lower edge with rack teeth, a shield guarding the toothed surface of the lower rail, a rock shaft on the door provided with crank portions, rollers and locking devices supported by said shaft, said rollers being arranged to run upon the upper surface of the lower rail and the locking devices to be thrown into and out of action with the toothed surface of said rail when the shaft is moved in one direction or the other, means upon the upper end of the door for supporting the same from the upper rail, and means for locking the rock shaft in adjusted position.

4. The combination with a car or other structure having a doorway and upper and lower toothed rails at the top and bottom of the doorway, of a door provided with rollers to run upon the lower rail, hangers upon the upper end of the door loosely embracing the upper rail and adapted to interlock therewith, said hangers being normally supported by the rollers out of locking engagement with the rail, locking devices at the bottom of the door to engage the lower rail, and means for shifting the rollers and locking devices to simultaneously lower the door and move the hangers and locking devices into respective engagement with the upper and lower rails.

5. The combination with a car or other structure having a doorway, of stationary locking devices at the top and bottom of the doorway, coöperating locking devices at the top and bottom of the door, the upper locking devices being adapted to move the door in and out upon a down movement thereof, said locking devices being thrown into and out of action by such a down movement of the door, and means for simultaneously throwing the lower locking devices on the door into and out of engagement with the lower stationary locking device and simultaneously moving the door up and down to correspondingly adjust the upper locking devices thereon.

851,593. CAMERA. JOSEPH A. H. HATT, Brooklyn, N. Y. Filed Feb. 10, 1906. Serial No. 300,371.

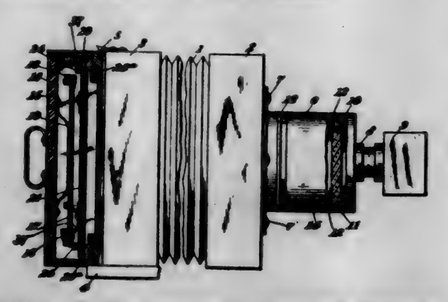

Claim.—1. The combination with a plate holder of a support for a sensitized plate within the holder, a support for a screen holder, and a plurality of adjusting screws mounted upon one of said supports so as to regulate the distance between the screen and the sensitized plate.

2. The combination with a plate holder of a support for a sensitized plate within the holder, a support for a screen holder, a plurality of adjusting screws mounted upon one of said supports, and means upon the other support with which each adjusting screw coacts so as to determine the position of the plate and the screen with reference to each other.

3. The combination with a plate holder of a support for a sensitized plate within the holder, a support for a half-tone screen, an adjusting screw carried upon one of said supports, a bearing plate for the screw upon the other support, and means for holding the screw to its bearing plate.

4. The combination with a plate holder of means for supporting and positioning a sensitized plate within the holder, a movable screen holder, a plurality of adjusting screws arranged substantially symmetrically about the screen in the screen holder, a bearing plate for each screw arranged in a definite relation to the plate, and means for holding each screw to its bearing plate.

5. The combination with a plate holder of means for supporting and positioning a sensitized plate within the holder, a movable screen holder, a plurality of adjusting screws arranged substantially symmetrically about the screen in the screen holder, a bearing plate for each screw arranged in a definite relation to the plate, and yielding means for holding each screw to its bearing plate.

6. The combination with a plate holder of means for supporting and positioning a sensitized plate within the holder, a movable screen holder, and adjusting means comprising a plurality of adjusting screws and a bearing plate for each screw, the said parts being arranged substantially symmetrically with reference to the screen holder, one of said parts being carried by the screen holder and the other being in a definite position with reference to the plate.

7. The combination with a plate holder of a support for the plate in said holder, a support for a screen, an adjusting screw carried by one of the said supports, a bearing plate for the said screw carried by the other of said supports, and means for moving the two supports relatively to each other so as to bring the screw and its bearing plate into contact to regulate the distance between the screen and the plate.

8. The combination with a plate holder of a support for a plate in said holder, a support for a screen, a plurality of adjusting screws carried by one of the said supports, bearing plates for the said adjusting screws carried by the other of said supports, means for moving the two supports relatively to each other so as to bring the screws and their bearing plates into contact to regulate the distance between the screen and the plate, and means for yieldingly pressing each screw to its bearing plate.

9. A camera including in combination a plate holder, means for supporting and positioning a plate within the holder, means for holding the plate holder to the body of the camera, a holder for a half-tone screen located within the body of the camera, adjusting means for said screen holder, actuating means for moving the screen holder toward and from the plate, and a dark slide arranged between the plate in the plate holder and the screen holder when in its retracted position.

10. The combination with a plate holder of a movable screen holder, a plurality of adjusting screws arranged in said holder substantially symmetrically about the screen, bearing plates for the said adjusting screws, means for yieldingly pressing each screw to its bearing plate and means for moving the screen holder toward and away from the plate.

11. A camera including in combination a plate holder, means for supporting and positioning a plate within the holder, means for holding the plate holder to the body of the camera, a holder for a half-tone screen located within the body of the camera, adjusting means for said screen holder, actuating means for moving the screen holder toward and from the plate, a doorway in the camera for giving access to said screen holder, and a dark slide arranged between the plate in the plate holder and the screen holder when in its retracted position.

12. A camera including in combination a plate holder, means for supporting and positioning a plate within the holder, means for holding the plate holder to the body of the camera, a holder for a half-tone screen located within the body of the camera, adjusting means for said screen holder, actuating means for moving the screen holder toward and from the plate, holding means for said screen holder to which the said adjusting means and said actuating means are attached, a doorway in the camera for giving access to said screen holder, and a dark slide arranged between the plate in the plate holder and the screen holder when in its retracted position.

851,594. DRILL OR AUGER. ALLEN C. HIGGINBOTHAM, Decota, W. Va., assignor of one-half to Chas. A. Cabell, Carbon, W. Va. Filed July 3, 1906. Serial No. 324,697.

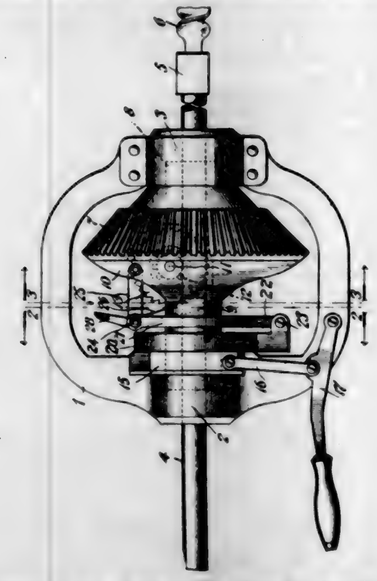

Claim.—1. In a device of the character described, the combination with a frame, and a rotating tool spindle, of a drive gear loosely mounted on the spindle, a feed gear carried by the driving gear and engaging the spindle, feed mechanism for intermittently rotating the feed gear, and means for varying the operation of said feed gearing to impart a greater or less degree of motion to the feed gear.

2. In a device of the character described, the combination of a frame, a rotating tool spindle, a drive gear loose on said spindle, a feed gear carried by the drive gear and having a toothed engagement with the spindle to impart a feed movement thereto, pawl and ratchet mechanism for actuating said feed gear, and operating means for automatically actuating said pawl and ratchet mechanism, said operating means being adjustable to regulate the throw of the pawl.

3. In a device of the character described, the combination of a frame, a rotating tool spindle, a drive gear loose on said spindle, a feed gear carried by the drive gear and having a toothed engagement with the spindle for imparting a forward feed movement thereto, pawl and ratchet mechanism for actuating said feed gear, a reciprocating device for imparting motion to the pawl thereof, and operating means for reciprocating said device, said means being adjustable to regulate the extent of reciprocating action.

4. In a device of the character described, the combination of a frame, a rotating tool spindle, a drive gear loose on said spindle, a feed gear carried by the drive gear and having a toothed engagement with the spindle to couple the drive gear thereto and impart feed motion to the spindle, pawl and ratchet mechanism for actuating said gear, an eccentric for reciprocating the pawl, and means for adjusting the eccentric to vary the throw of the pawl in its reciprocation.

5. In a device of the character described, the combination of a frame, a rotating tool spindle, a drive gear loose on said spindle, a feed gear carried by the drive gear and having a toothed engagement with the spindle to couple the drive gear thereto and impart feed motion to the spindle, a relatively stationary eccentric, means rotative with the drive gear and including a pawl and ratchet to operate the feed gear actuated by the eccentric to feed the spindle, and means for adjusting the eccentric to vary the action of the pawl and ratchet mechanism.

6. In a device of the character described, the combination of a frame, a rotating tool spindle, a drive gear loose on the spindle, a feed wheel carried by the gear and meshing with the spindle, pawl and ratchet mechanism for operating the feed wheel, an eccentric for reciprocating the pawl, and means for varying the throw of the eccentric.

7. In a device of the character described, the combination of a frame, a rotary tool spindle, a drive gear loose thereon, a feed wheel carried by the gear and meshing with the spindle, a ratchet wheel connected with the feed wheel, a reciprocating pawl for operating the ratchet wheel, a relatively fixed eccentric, a member rotatable thereon, a connection between said member and pawl for imparting rotary movement to the latter, and means for shifting the eccentric to vary the action of the pawl through said rotatable member and connection.

8. In a device of the character described, the combination of a frame, a rotary tool spindle, a drive gear loose on said spindle and carrying a feed gear meshing therewith, a pawl connected with the feed wheel, a yoke pivotally connected with the drive gear and carrying a pawl to engage the ratchet wheel, an eccentric on the frame, a strap controlled by said eccentric to reciprocate the yoke, and means for shifting the eccentric to vary the motion of the strap and the degree of reciprocation of the yoke.

851,595. EGG-CASE. WILLIAM H. HOWELL, Harrisburg, Ill. Filed Dec. 11, 1905. Serial No. 291,282.

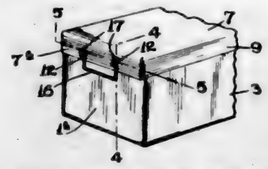

Claim.—In an egg case, the combination with a folding body and folding cover, the ends of which body and cover are provided with coinciding apertures, of fasteners arranged through each corresponding set of apertures, the central portions of the bodies of which fasteners are bent into U-shaped loops having straight parallel sides, the ends of said fasteners being extended outwardly in opposite directions from the ends of the sides of said loops, one of the sides of the U-shaped body portions being shorter than the other to bring the outwardly bent ends out of longitudinal alinement, and one of said outwardly bent ends having its outer ends curved inwardly to form a spur; substantially as specified.

851,596. SKIMMER FOR BLAST-FURNACES. CHARLES D. IRVIN, Pittsburg, Pa. Filed Aug. 16, 1906. Serial No. 330,848.

Claim.—1. A skimmer trough for a blast furnace consisting of a channel-shaped trough, a bridge arranged transversely of said trough and forming a dam, a movable gate mounted between the end of said bridge and one of the side walls of said trough, a stirrup revolubly mounted upon one of the side walls of said trough, a lever pivoted in said stirrup and engaging said gate, the other side wall of said trough having a slot formed therein, a gate detachably mounted in said side wall, a skimmer arranged transversely of said trough in close proximity to said bridge, an auxiliary skimmer movably mounted in said trough, and

means to move said auxiliary skimmer, substantially as described.

2. A skimmer trough for a blast furnace consisting of a channel-shaped trough, a bridge arranged transversely of said trough and forming a dam, a movable gate mounted between the end of said bridge and one of the side walls of said trough, the other side wall of said trough having a slot formed therein, a gate detachably mounted in said side wall, a skimmer arranged transversely of said trough, an auxiliary skimmer suspended in said trough, and means to move the first mentioned gate, substantially as described.

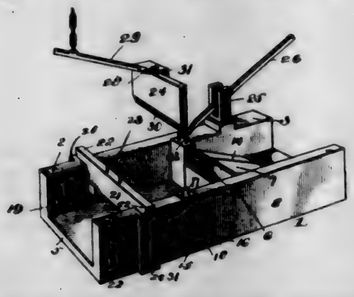

3. A skimmer trough for a blast furnace consisting of a channel-shaped trough, a bridge arranged transversely of said trough, and forming a dam, a movable gate mounted between the end of said bridge and one of the side walls of said trough, the other side wall of said trough having a slot formed therein, a gate detachably mounted in said side wall, a skimmer arranged transversely of said trough in close proximity to said bridge, substantially as described.

4. A skimmer for blast furnaces, embodying a channel-shaped trough, a bridge arranged transversely of said trough and forming a dam adapted to partially close said trough, a gate detachably mounted between the end of said bridge and one of the side walls of said trough, and skimmers detachably supported in said trough, substantially as described.

5. A skimmer for blast furnaces embodying a channel shaped trough, a bridge arranged transversely of said trough and forming a dam adapted to partially close said trough, a gate detachably mounted between the end of said bridge, and one of the side walls of said trough, and a skimmer detachably supported transversely of said trough in close proximity to said bridge, substantially as described.

6. A skimmer for molten metal consisting of a channel-shaped trough, a dam or bridge mounted in the bottom of said trough, a gate adapted to fit between the end of said dam or bridge and the adjacent wall of the trough, and skimmers supported in said trough, substantially as described.

7. A skimmer for molten metal consisting of a channel-shaped trough, a dam or bridge mounted in the bottom of said trough, a gate adapted to fit between the end of said dam or bridge and the adjacent wall of the trough, and a skimmer bar mounted transversely of said trough, substantially as described.

8. A skimmer for molten metal consisting of a trough, a dam extending partly across said trough, a gate fitting between the end of the dam, and the adjacent side of the trough, and an adjustable skimmer bar arranged transversely of the trough.

9. A skimmer for molten metal consisting of a trough, a dam extending partly across said trough, a gate fitting between the end of said dam and the adjacent side of the trough, and a vertically adjustable skimmer bar extending transversely of the trough, and having end lugs to support the bar upon the sides of the trough.

10. A skimmer for molten metal consisting of a trough, a dam extending partly across said trough, a gate fitting between the end of the dam and the adjacent side of the trough, and skimmers arranged transversely of the trough.

851,597. OUTLET-BOX. LOUIS T. LA PAUGH, Utica, N. Y. Filed Feb. 7, 1906. Serial No. 299,957.

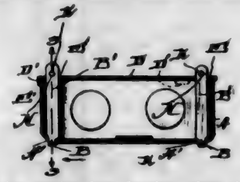

Claim.—1. An outlet box having slots in the bottom thereof, posts passing through said slots and fastened to the bottom of the box, a cover having slots to receive said posts, and means for holding the posts in said slots of the cover, as set forth.

2. An outlet box having slots in the bottom thereof, posts passing through said slots and fastened to the bottom of the box, a cover having slots to receive said posts, the upper ends of said posts being apertured, and keys passing through said apertures and adapted to hold the cover upon the box, as set forth.

3. An outlet box having slots in the bottom thereof, posts having split ends passing through said slots and adapted to be clinched against the bottom of the box, a cover having slots to receive said posts, and means for holding the posts in said slots of the cover, as set forth.

4. An outlet box having slots in the bottom thereof, posts having split ends passing through said slots and clenched against the bottom of the box, a cover, slots therein adapted to receive said posts, and locking pins passing through apertures in said posts and bearing against the outer face of said cover, as set forth.

851,598. OUTLET-BOX. LOUIS T. LA PAUGH, Utica, N. Y. Filed Feb. 7, 1906. Serial No. 299,959.

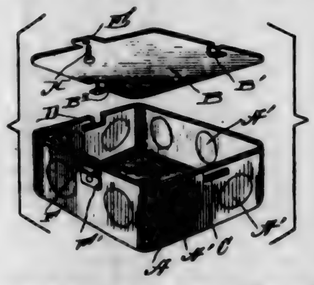

Claim.—1. An outlet box having a slot in one side thereof and a recess in the opposite wall opening through the marginal edge of the box, a cover having angled lips struck up therefrom adapted to engage said slot and recess, respectively, and means for holding said lips in said slot and recess, as set forth.

2. An outlet box having a horisontal slot formed in one side thereof adjacent to its upper marginal edge, the opposite side of the box having an angled recess formed in the edge thereof, a cover having angled lips struck up from the opposite edges, one of said lugs adapted to engage said slot and the other said recess, and held by the overhanging wall of the recess, to the box, and means for holding said lugs in their locked relations to the box, as set forth.

3. An outlet box having a horisontal slot formed in one side thereof adjacent to its upper marginal edge, the opposite side of the box having an angled recess formed in the edge thereof, a cover having angled lips struck up from the opposite edges, one of said lugs adapted to engage said slot and the other said recess, and held by the overhanging wall of the recess, to the box, a lug projecting from the cover, a swinging bail fastened to the box and adapted to engage said lug, and means for holding said bail over said lug, as set forth.

851,599. APPARATUS FOR SEPARATING MINERALS. JAMES F. LATIMER, Toronto, Ontario, Canada. Filed Mar. 27, 1906. Serial No. 308,345.

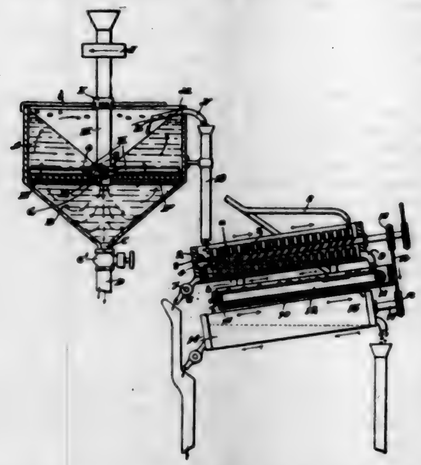

Claim.—1. An apparatus of the class described, comprising a vessel provided with a funnel-shaped bottom and having a controlled discharge-opening at the apex thereof, and provided at its top with a discharge-opening; an upwardly-sloping deflecting plate secured to the inner side of said vessel and leading to said discharge-opening; a screen of suitable mesh supported within said vessel at the top of the funnel-shaped bottom thereof; a rotatable pipe or conduit for introducing water into said vessel and having its discharge-end opening below said screen; horizontally-held paddles supported by said conduit at the required angle and designed to operate above said screen so as to create a centrifugal force so as to divide the graphite from the rocky matter or gangue and at the same time create an additional upward current in the water above said screen to that caused by the flow of the water upward through said screen so as to cause the oil-provided graphite to rise to the top of the water so that it may be caught by said deflecting plate and so conducted out of said vessel through the discharge-opening.

2. An apparatus of the class described, comprising a vessel provided with a funnel-shaped bottom and having a controlled discharge-opening at the apex thereof, and provided at its top with a discharge-opening; an upwardly-sloping deflecting plate secured to the inner side of said vessel and leading to said discharge-opening; a screen of suitable mesh supported within said vessel at the top of the funnel-shaped bottom thereof; a rotatable pipe or conduit for introducing water into said vessel and having its discharge-end opening below said screen; a collar suitably secured to said hollow rotatable conduit; horizontally-held paddles adjustably held by said collar and at the required angle and designed to operate above said screen so as to create a centrifugal force so as to divide the graphite from the rocky matter or gangue and at the same time create an additionel upward current in the water above said screen to that caused by the flow of the water upward through said screen so as to cause the oil-provided graphite to rise to the top of the water so that it may be caught by said deflecting plate and so conducted out of said vessel through the discharge-opening.

3. An apparatus of the class described, comprising a vessel provided with a funnel-shaped bottom having a controlled discharge-opening at the apex thereof; an upwardly-sloping deflecting plate extending into said vessel; a screen of suitable mesh supported within said vessel at the top of the funnel-shaped bottom thereof; a rotatable pipe or conduit for introducing water into said vessel and having its discharge-end opening below said screen; horizontally-held paddles supported by said conduit at the required angle and designed to operate above said screen so as to create a centrifugal force so as to divide the graphite from the rocky matter or gangue and at the same time create an additional upward current in the water above said screen to that caused by the flow of water upward through said screen so as to cause the oil-provided graphite to rise to the top of the water so that it may be caught by said deflecting plate and so conducted out of said vessel.

851,600. PROCESS FOR SEPARATING MINERALS. JAMES F. LATIMER, Toronto, Ontario, Canada. Filed Mar. 27, 1906. Serial No. 308,346.

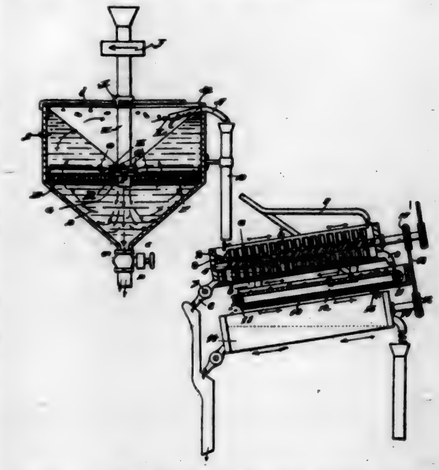

Claim.—1. The process of separating graphite and similar substances from rocky matter and gangue, consisting in mingling the crushed ore with oil; delivering the oil-provided mass to; and maintaining it in, an upflowing current of water; centrifugally agitating the mass to separate the components and so accelerate the current as to carry the oil-provided graphite to the top of the water; flowing the so separated graphite away; settling the gangue through a current of reduced speed below the zone in which the material is fed and agitated, and removing said gangue by a downwardly-flowing current.

2. The process of separating graphite and similar substances from rocky matter and gangue, consisting in mingling the crushed ore with oil; delivering the oil-provided mass to; and maintaining it in, an upflowing current of water; centrifugally agitating the mass to separate the components and so accelerate the current as to carry the oil-provided graphite to the top of the water; flowing the so separated graphite away; settling the gangue through an upflowing current of reduced speed below the zone in which the material is fed and agitated, and removing said gangue by a downwardly-flowing current.

3. The process of separating graphite and similar substances from rocky matter and gangue, consisting in mingling the crushed ore with oil; delivering the oil-provided mass to; and maintaining it in, an upflowing current of water; centrifugally agitating the mass to separate the components and so accelerate the current as to carry the oil-provided graphite to the top of the water; flowing the so separated graphite away; settling the gangue through an upflowing current of reduced speed below the zone in which the material is fed and agitated, and removing said gangue, below the zone in which the material is fed and agitated, by a downwardly-flowing current of greater speed than said upflowing current of reduced speed.

851,601. CEMENT RAILROAD-TIE. ERNEST LEGG and GEORGE H. WRIGHT, Granville, Ohio. Filed Nov. 15, 1906. Serial No. 343,644.

Claim.—1. The combination with a concrete tie, of a reinforcing plate provided with terminal wedge braces, and intermediate oppositely disposed key sockets.

2. The combination with a concrete tie, of a reinforcing plate embedded therein and provided with terminal wedge braces and intermediate oppositely disposed key sockets.

3. The combination with a concrete tie and a reinforcing plate embedded therein and provided with terminal wedge braces and intermediate oppositely disposed sockets, of keys having toes to engage the sockets and heads to engage a rail base, and wedges to engage with the keys and with the wedge braces.

4. The combination with a concrete tie provided in its upper face adjacent to its terminals with transversely-disposed seats having intermediate depressions, of rail cushioning elements engaging the seats and having intermediate projections to engage the depressions.

5. The combination with a concrete tie, of a reinforcing plate provided with terminal wedge braces and intermediate oppositely-disposed sockets, all parts of the plate being wholly inclosed by the tie.

6. As a new article of manufacture, a reinforcing element for concrete railway ties, comprising a plate having terminal upstanding wedge braces and pairs of oppositely-disposed key sockets disposed adjacent thereto.

851,602. GRATER-GUARD. ANNA L. LEWIS, New Orleans, La. Filed June 20, 1906. Serial No. 322,631.

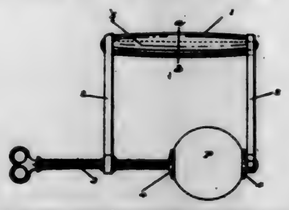

Claim.—A grater guard consisting of side bars, a handle pivoted between said side bars at one end thereof, a screw longitudinally adjustable in one end of one of said side bars and having a holder at its inner end, and a second holder held in the other side bar opposite said first holder, substantially as described.

851,603. HOSE-NOZZLE. JAMES A. LONG, Portland, Oreg. Filed Dec. 3, 1906. Serial No. 346,110.

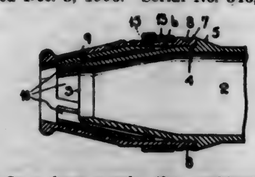

Claim.—1. In a hose nozzle, the combination with an inner hose engaging section having a tapered outer end, and an annular series of screw-threads formed thereon at the inner end of said tapered portion, of an outer section having an interiorly threaded inner end adapted to be screwed onto the threaded portion of said inner section, a reducing cone formed of a plurality of tapering sections or plates arranged between said inner and outer sections of the nozzle, an operative sleeve or collar slidably and revolubly mounted on said outer section, and pins or bolts arranged in said sleeve or collar and adapted to project through slots in said outer section and into engagement with the plates of said cone, whereby the same are projected and retracted by said sleeve or collar, substantially as described.

2. In a hose nozzle, the combination with an inner hose engaging section having an annular shoulder and a tapered outer end, of an outer section adapted to be screwed into engagement with the shoulder on said inner section, said outer section having formed therein an outer series of longitudinally-disposed bayonet slots, a reducing cone arranged in said outer section between the inner wall of the same and the outer wall of the inner section, an operating sleeve or collar slidably and revolubly mounted upon the outer section of the nozzle, and a series of pins arranged in said sleeve or collar and adapted to project through the bayonet slots in said outer section and into engagement with the reducing cone, whereby the latter may be projected or retracted, substantially as described.

851,604. FOLDING DRAWING-KNIFE HANDLE. CHARLES H. MCCARTY and FREDERICK A. WOOSTER, Youngstown, Ohio, assignors to The Reliance Edge Tool Company, Youngstown, Ohio, a Corporation of Ohio. Filed Jan. 7, 1907. Serial No. 351,193.

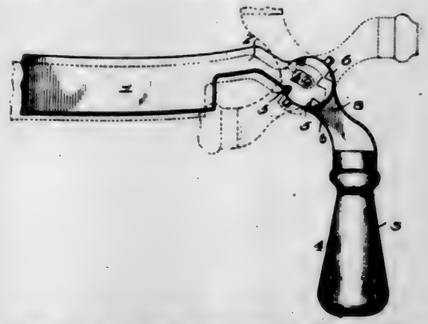

Claim.—1. In a handle attachment for drawing knives, the blade shank having a knuckle ear provided in its edge with a plurality of angular keeper notches, a folding handle shank provided upon one face thereof with a pair of offset angular lock-studs for engagement with said notches, said handle shank being further provided with a transverse slot lying in a plane between the studs, a pivot extending through said slot and permitting the handle shank to have a limited sliding movement on the knuckle ear, and a binding nut arranged to hold the parts interlocked.

2. In a handle attachment for drawing knives, the blade shank having a knuckle ear provided in its edge with a plurality of keeper notches, a folding handle shank provided upon one face thereof with a pair of offset lock-studs for engagement with said notches, said handle shank being further provided with a transverse slot lying in a plane between the studs, a pivot extending through said slot and permitting the handle shank to have a limited sliding movement on the knuckle ear, and locking means.

851,605. DREDGING IMPLEMENT. WILLIAM C. MCKINNEY, New Brighton, Pa., assignor to Standard Sanitary Mfg. Co., Pittsburg, Pa., a Corporation of New Jersey. Filed Mar. 26, 1906. Serial No. 308,148.

Claim.—A dredge for applying pulverized coating, adapted to be inserted into normally inaccessible locations, comprising a relatively-small-necked tube capped by a sieve at one end, and a magazine connected therewith.

851,605.

851,606. NUT-LOCK. MOSES NEIBURGER, La Fayette, Ind. Filed Nov. 24, 1905. Serial No. 288,827.

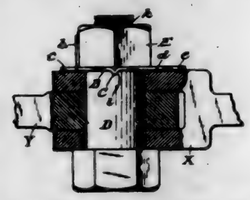

Claim.—1. A nut-lock including a bolt having a shoulder from which extends a screw-threaded end and provided with a pair of recesses in the shoulder adjacent to the screw-threaded end, a notched washer plate having parts thereof insertible in the recesses of the shoulder, and a nut to receive the threaded end and hold the parts of the washer plate in the recesses, said nut adapted to be locked by other parts of the washer plate.

2. A nut-lock comprising an element having a shoulder provided with two separate recesses, a threaded bolt-end having connection with the element and extending beyond the shoulder thereof, a notched washer plate engaging the shoulder and having portions thereof extending into the separate recesses, and a threaded nut on the threaded bolt-end and seated on the washer plate and engaged by a part thereof bent up against a side of the nut, said portions of the washer plate that extend into the recesses being two thicknesses of said plate looped and pressed together unsevered from the body of the plate.

3. A nut-lock including a bolt having a shoulder from which extends a screw-threaded end and provided with a pair of recesses in the shoulder adjacent to the screw-threaded end, in combination with a washer having a pair of projections insertible into the recesses of the shoulder and having also a plurality of fingers on the periphery of the washer.

4. A nut-lock washer formed of a blank comprising an oblong plate having an oblong hole therein and having notches in the periphery thereof, two of the notches being broader than the others, and the body of the washer being of uniform width between the hole and the bottoms or inner ends of the notches.

851,607. MACHINE FOR MIXING AND TREATING PLASTIC SUBSTANCES. FRANCIS I. DU PONT, Wilmington, Del. Filed Mar. 9, 1904. Serial No. 197,226.

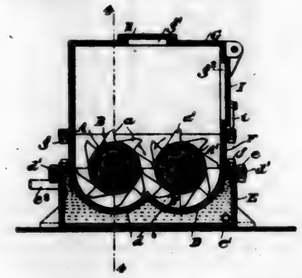

Claim.—1. In a machine of the character described, in combination, an air tight casing adapted to receive the material to be treated, coacting rolls having disintegrating surfaces in said casing, there being curved portions of the casing conforming to a portion of the periphery of the rolls, the rolls having a portion above and a portion adjacent to the curved casing portions, and means to revolve said rolls, whereby the material in the casing is disintegrated by passing between the rolls and carried between the rolls and curved casing surfaces, and means to maintain the material in the casing at a low temperature.

2. In a machine of the character described, in combination, an air tight casing adapted to receive the material to be treated, coacting rolls having disintegrating surfaces in said casing, there being curved portions of the casing conforming to a portion of the periphery of the rolls, the rolls having a portion above and a portion adjacent to the curved casing portions, and means to revolve said rolls, whereby the material in the casing is disintegrated by passing between the rolls and carried between the rolls and curved casing surfaces, the curved casing portion being water jacketed.

851,608. GRATE. HARRY F. RASOR, Barberton, Ohio. Original application filed Feb. 26, 1906, Serial No. 303,046. Divided and this application filed Feb. 4, 1907. Serial No. 355,671.

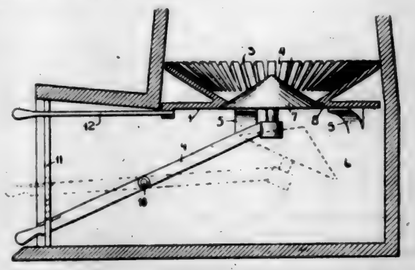

Claim.—In a heater, the combination with a body having a grate support, of a rotary grate comprising a slotted horizontal ring rotatably mounted in said grate support, a slotted ring extending upwardly and outwardly from the inner edge of the horisontal ring, a vertically movable cone-shaped center piece, and means for raising and lowering said center piece.

851,609. SPRING ATTACHMENT FOR VEHICLES. JAMES H. SAGER, Rochester, N. Y., assignor to J. H. Sager Company, Rochester, N. Y. Filed Dec. 29, 1906. Serial No. 350,000.

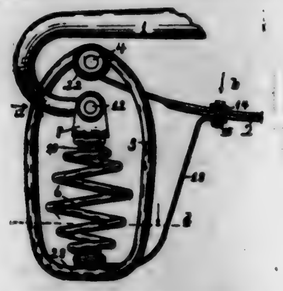

Claim.—1. A spring-attachment for vehicles, comprising a hanger pending from a main spring of the vehicle, a minor spring with vertical action within said pendent hanger, a rest upon the minor spring for the body hanger of the vehicle and means for holding the hanger steadily in vertical position.

2. A spring-attachment for vehicles, consisting of a hanger pending from a main spring, a minor spring carried by the pendent hanger, and a rest held by the minor spring for the body hanger of the vehicle, there being a connector for the body of the pendent hanger and the body portion of the main spring.

3. In a spring-attachment for vehicles, a hanger pending from the end of a main spring, a vertically-acting spiral spring rigidly joined to the pendent hanger and coaxial therewith, a rest on the spiral spring for the body hanger of the vehicle, the pendent hanger being connected with and controlled from two parts of the main spring.

4. In a spring-attachment for vehicles, a pendent hanger with branches connected at the opposite edges of the main supporting spring of the vehicle, a minor spring held between the branches of the pendent hanger, a rest on the minor spring for the body hanger of the vehicle, and means extending from the main spring for controlling the lower end of the pendent hanger.

5. A spring-attachment for vehicles, consisting of a U-shape hanger pending from a main spring of the vehicle, a stud projecting upwardly from the bottom of said hanger midway of its branches, a spiral spring secured upon the stud, a connector for the main spring and the pendent hanger pierced by the stud.

6. A spring-attachment for vehicles, comprising a hanger formed with alternated branches and having opposing eyelets at the sides of the main supporting spring of the vehicle, means for connecting said hanger and said main supporting spring and an additional connection between said hanger and main spring.

7. An attachment for vehicles, comprising a hanger having oppositely curved branches with eyelets at their free ends in a line transverse of the hanger, one branch being forward of the other, and the branches being joined by a diagonal portion, and a spring in the hanger with a rest for the body hanger of the vehicle.

8. A spring-attachment for vehicles, comprising a hanger held by a main carrying spring of the vehicle and having branches in parallel planes joined obliquely at the bottom, the free ends of said branches being bent toward a middle transverse line, with eyelets concentric with said line, and a carrying spring in said hanger for a body hanger of the vehicle.

9. An attachment for vehicles, consisting of a hanger pending from a main spring of the vehicle, and formed with a pair of equal oppositely turned branches in parallel planes joined at their lower ends by a portion disposed obliquely between them, opposing eyelets at the upper ends of the branches, the latter being spaced equal to the width of the said main spring, and a minor spring in the hanger.

851,610. WRENCH. JOHN F. TINER, Uvalde, Tex. Filed Apr. 5, 1906. Serial No. 310,032.

Claim.—1. A wrench consisting of a main jaw having a shanks, an obtuse-angle handle-lever having a pivotal connection from the jaw, a movable jaw having a short shank, a spring between the movable and fixed jaw shanks, an obtuse-angle handle lever having a pivotal connection with the end of the movable jaw shank, a lever dog having a series of teeth adapted to engage the teeth of the main jaw shank, said dog being loosely pivoted to the handle lever at the angle thereof, and having a rounded slide and fulcrum end above its toothed portion and pivot, substantially as specified.

2. A wrench, consisting of a main jaw having a shank provided with a series of teeth on the opposite side thereof from the jaw, a movable jaw having a short shank, and carrying a spring between the movable and fixed jaw shanks, an obtuse-angle handle-lever having a pivotal connection with the end of the movable jaw shank, a lever dog having a series of teeth normally in engagement with the teeth of the fixed jaw shank, said dog having a fulcrum pivot connection with the handle lever at the obtuse angle thereof and upon which fulcrum pivot the lever normally works, and a rounded slide and fulcrum end above its toothed portion and fulcrum pivot, the handle lever being adapted when thrown outward to engage the slide end portion of the dog and rock the same into contact at its rounded end with the fixed jaw shank, whereby a new fulcrum is taken at such point of contact to effect disengagement of the teeth of the dog from the teeth of the fixed jaw shank.

851,611. WALL-TIE. FRANK WEBER, Allegheny, Pa., assignor, by mesne assignments, to Imperial Specialty Manufacturing Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed July 27, 1904. Serial No. 218,359.

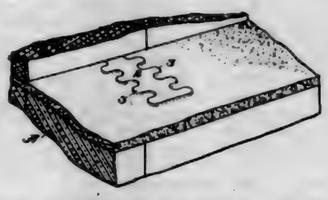

Claim.—1. A wall-tie consisting of a sheet metal body portion having projections or teeth extending laterally from one side thereof, said projections or teeth having rounded extremities with intervening rounded recesses, substantially as described.

2. A wall-tie consisting of a sheet metal body portion having projections or teeth extending laterally from the opposite sides thereof, said projections or teeth having rounded extremities with intervening rounded recesses, substantially as described.

3. A wall-tie consisting of a sheet metal body portion having tapering projections or teeth extending laterally from one side thereof, said projections or teeth having rounded extremities with intervening rounded recesses, substantially as described.

4. The combination of a plurality of wall-ties, one at least of said ties consisting of a sheet metal base having laterally extending holding tongues bent beyond the plane of the base and interlocking with tongues on the other tie, substantially as described.

5. The combination of two wall-ties, each tie consisting of a sheet metal base having a series of laterally-extending holding tongues, said ties being locked together transversely of each other by means of said tongues, substantially as described.

6. A wall-tie consisting of a sheet metal body portion having projections or teeth extending laterally from one side thereof, said projections or teeth having rounded extremities with intervening rounded recesses, the tie being provided along its side with an elongated space between the teeth, substantially as described.

7. A wall-tie consisting of a sheet metal body portion or strip having a series of closely-adjacent projections or teeth extending laterally from the same with intervening recesses between the teeth, substantially as described.

8. A wall-tie consisting of a sheet metal body portion or strip having a series of closely-adjacent projections or teeth extending laterally from the same with intervening recesses between the teeth, in combination with a second tie having a series of teeth and recesses interfitting with the recesses and teeth respectively of the first named tie, substantially as described.

9. The combination of a plurality of wall-ties having laterally extending interlocking teeth with rounded extremities and intervening rounded recesses, substantially as described.

10. The combination of a plurality of connected wall-ties having laterally arranged interlocking teeth having rounded extremities and intervening rounded recesses, said teeth and recesses being counterparts of each other, substantially as described.

11. The combination with a wall-tie having laterally projecting rounded teeth and intervening rounded recesses of the same size and form, of a similar tie in interlocking engagement therewith, substantially as described.

12. A wall-tie consisting of a sheet metal body portion or strip having a series of closely-adjacent projections or teeth extending laterally from the same with intervening recesses between the teeth, some of said projections or teeth being bent beyond the general plane of the base.

13. A wall-tie consisting of a sheet metal base having laterally-extending rounded tongues with intervening rounded recesses, some of said tongues being bent beyond the general plane of the base; substantially as described.

14. A wall-tie consisting of a sheet metal body portion having projections or teeth extending laterally therefrom, said projections or teeth having rounded extremities with intervening rounded recesses, and an attaching portion projecting at an angle from said body portion; substantially as described.

15. A wall-tie consisting of a sheet metal body portion having projections or teeth extending laterally therefrom, with rounded extremities and intervening rounded recesses, said strip being bent so as to form an attaching portion and a holding portion, substantially as described.

851,612. RAILWAY-SWITCH. VICTOR ANGERER, Ridley Park, Pa., assignor to William Wharton, jr., & Co., Incorporated, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Mar. 15, 1907. Serial No. 362,442.

Claim.—1. The combination of a rail, a pivoted switch tongue, a spring tending to hold the switch tongue against the rail, and means for retarding the movement of the switch tongue toward the rail, substantially as described

2. The combination of a rail, a switch tongue bearing against the rail, a spring tending to yieldingly hold the switch tongue against the rail, a dash pot, a plunger in the dash pot connected to the rail so that when the switch tongue is forced away from the rail by the action of a wheel passing through the switch the movement of the tongue toward the rail will be retarded by the air entrapped within the dash pot, substantially as described.

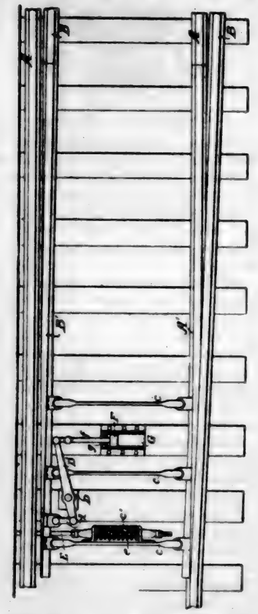

3. The combination of a rail, a movable switch tongue, a spring tending to hold the tongue against the rail, a pivoted lever, one arm of the lever being connected to the tongue, a plunger connected to the other arm, and a dash pot in which the plunger is mounted, substantially as described.

4. The combination in a switch, of a rail, a switch tongue, a spring tending to hold the tongue against the rail, a lever pivoted at a fixed point, a rod connecting the short arm of the lever with the switch point, a plunger, a rod connecting the plunger with the long arm of the lever, a dash pot secured in a fixed position and in which the plunger is mounted, said dash pot having leakage openings so that a given amount of air can escape to retard the closing movement of the switch tongue, substantially as described.

5. The combination of a rail, a pivoted switch tongue, a spring tending to hold the switch tongue against the rail, a dash pot, a plunger in the dash pot connected to the rail, an air inlet passage communicating with one end of the dash pot, and a check valve controlling the flow of air through the opening, substantially as described.

851,613. ACETYLENE-GENERATOR. DAVIS BARNARD, Los Angeles, Cal., assignor to Barnard Light and Heat Company, Los Angeles, Cal., a Corporation of California. Filed May 15, 1905. Serial No. 260,381.

Claim.—1. In an acetylene generator, a feed device comprising a horizontal feed tube, a plunger reciprocating therein, a funnel communicating with the upper side of said tube, and a pivoted arm connected to transmit power through said operating means to said feed device and formed as a closure for the end of the tube, a shaft to which said arm is fixed and means for rocking said shaft.

2. In an acetylene generator, a feed device comprising a funnel, a feed tube, a plunger reciprocating therein, a rock shaft, a closure for the tube fixed on said shaft, a

link connecting said plunger and closure, and a lever fastened to said shaft to rock the same.

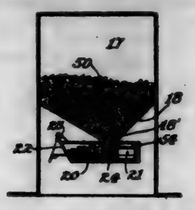

3. In an acetylene generator, a feed device comprising a funnel, a feed tube, a plunger reciprocating therein, a rock shaft, a closure for the tube fixed on said shaft, a link connecting said plunger and closure, means for rocking said shaft, and overbalancing operating means mounted on said shaft and provided with a weight shiftable automatically from one side to the other of the shaft.

4. In an acetylene generator, a feed device comprising a funnel, a feed tube, a plunger reciprocating therein, a rock shaft, a closure for the tube fixed on said shaft, a link connecting said plunger and closure, means for rocking said shaft, and overbalancing operating means mounted on said shaft and provided with a weight-carrier and a weight shiftable automatically from one side to the other of the shaft, there being a lost-motion connection between said shaft and weight-carrier.

5. In an acetylene generator, a feed device comprising a feed tube and a plunger reciprocating therein, a vibrating operating arm, an overbalancing device connected therewith, and a lost motion connection between said operating arm and feed device, said vibrating operating arm being provided with an adjusting device to adjust the extent of the lost motion.

6. In a acetylene generator, a feed device comprising a feed tube, a hopper communicating with one side thereof, a plunger reciprocating therein, a hinged closure for said tube swinging toward and from an end thereof, a link connecting said tube and plunger, a rock shaft forming the hinge for said closure and fixed thereto, and means independently of the closure for rocking said shaft.

851,614. FAT-CUTTING MACHINE. EVERETT H. BUMP, Grinnell, Iowa. Filed Feb. 20, 1906. Serial No. 302,271.

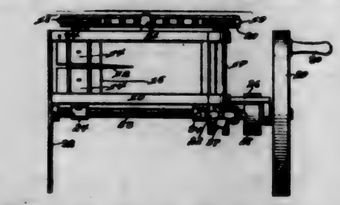

Claim.—A fat-cutting machine, comprising a receptacle open at one end, a driving shaft mounted for rotation on one side of said receptacle, a cutting knife mounted on one end of said shaft and arranged for travel across the open end of the receptacle, a feed shaft mounted transversely of the receptacle, feed rolls mounted on said feed shaft, a splitting knife mounted centrally and longitudinally of said receptacle and rising between said feed rolls, a counter shaft mounted transversely of the closed end portion of said receptacle, sprocket connections between the feed shaft and counter-shaft, a worm gear on the counter shaft and a mutilated worm on the driving shaft engaging said worm gear, whereby the cutting knife is rotated continuously and the feeding devices are operated intermittently.

851,615. GILDING-TOOL. WALTER H. COE, Providence, R. I. Filed Apr. 16, 1906. Serial No. 312,057.

Claim.—1. In a gilding tool of the character described, the combination of the fixed side plate provided with the stud for holding the package-roll, the opposite fixed side plate, the movable plate hinged to the said opposite fixed side plate, and perforated at its outer end to receive the outer end of the said stud for holding the package-roll, the hook adapted for locking engagement with the end of the said stud, and the transverse plates for connecting the said fixed side plates.

2. In a gilding tool of the character described, the combination of the fixed side plate provided with the stud for holding the package-roll, and having an inwardly bent forward lip, with the opposite fixed side plate having an inwardly bent forward lip and the transverse plates for connecting the said fixed side plates.

3. In a gilding tool of the character described, the combination of the fixed side plate provided with the stud for holding the package-roll, with the opposite fixed side plate provided with the integral ears, the transverse plates for connecting the said fixed side plates, and the movable plate pivoted to the said ears of the said opposite fixed plate, and adapted for engagement with the outer end of the stud for holding the package-roll.

4. In a gilding tool of the character described, the combination of the fixed side plate provided with the stud for holding the package-roll, with the opposite fixed plate, the movable plate hinged to the said opposite fixed plate and adapted for engagement with the outer end of the said fixed stud for hpiding the package-roll, the transverse plates for connecting the said fixed plates, and the set screw held in the outer transverse connecting plate.

5. In a gilding tool of the character described, the combination of a brush and its projecting handle, with a removable frame arranged to extend at one side of the said handle, the said frame comprising a fixed plate provided with a stud for holding the package-roll, the opposite fixed plate, the movable plate hinged to the said opposite fixed plate, and means for attaching the said frame to the handle of the brush.

6. In a gilding tool of the character described, the combination of a brush, and its handle, with a removable frame, means for supporting the package roll for revolution, the guide arranged intermediate of the package roll support and the brush, and the ears which extend beyond the outer surface of the said intermediate guide and serve as guides for the edges of the paper strip.

851,616. DEVICE FOR OPENING, CLOSING, AND LOCKING DOORS. JOHN F. CONNELL, Los Angeles, Cal. Original application filed Apr. 2, 1906. Serial No. 309,503. Divided and this application filed July 30, 1906. Serial No. 328,460.

Claim.—1. The device for operating two doors capable of sliding parallel to each other and so as to open, close and lock the same when closed, consisting of an operating lever pivoted to the edge of one of the sliding doors, and connected movably by a pivoted link to the edge of the other sliding door, the end of the lever connected to the two sliding doors having an upwardly projecting stop containing an elastic body which closes down upon the outer edge of the link which connects the operating lever to the outer sliding door, the opposite end of the operating lever being connected to another link whose outer end is attached by pivoted connections to the elevator inclosure, and whose end movably connected to the operating lever is constructed with an upwardly operating stop provided with an elastic body which closes against the under edge of the operating lever simultaneously with the closing of the stop at the other end of the operating lever against the upper end of the link which connects the operating lever with the outer door, substantially as hereinbefore described.

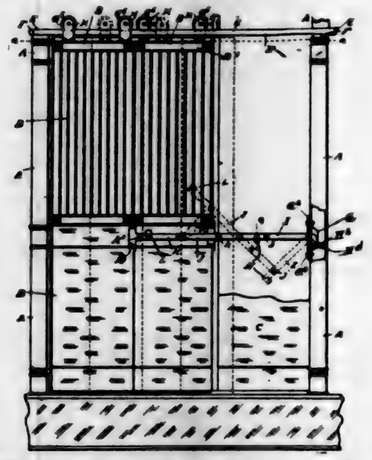

2. The device for operating two doors capable of sliding parallel to each other and so as to open, close and lock the same when closed, consisting of an operating lever pivoted to the edge of one of the sliding doors, and connected movably by a pivoted link to the edge of the other sliding door, the end of the lever connected to the two sliding doors having an upwardly projecting stop containing an elastic body which closes down upon the outer edge of the link which connects the operating lever to the outer sliding door, the opposite end of the operating lever being connected to another link whose outer end is attached by pivoted connections to the elevator inclosure, and whose end movably connected to the operating lever is constructed with an upwardly operating stop provided with an elastic body which closes against the under edge of the operating lever simultaneously with the closing of the stop at the other end of the operating lever against the upper end of the link which connects the operating lever with the outer door, the pivotal connection of the operating lever with one sliding door, and the connection of the link with the other sliding door, the connection of the outer end of the operating lever with the outer link and the pivotal connection of the outer end of the outer link with the elevator inclosure being adjustable, substantially as hereinbefore described.

851,617. BOTTLE. CLAUDE B. DAVIS and ADAM T. FINCH, Chase City, Va. Filed July 30, 1906. Serial No. 328,472.

Claim.—1. The combination with a bottle, of a member engaged in the neck thereof and having spaced portions and a reduced connecting portion, said portions having offset passages formed therethrough, each passage of the lower portion having a valve seat at its upper end, a valve located between the portions for movement into and out of each valve seat, each valve having a concave surface receiving the connecting portion of the member, and a stem carried by each valve and slidably engaged in the corresponding passage of the lower portion.

2. The combination with a bottle, of a member engaged in the neck thereof and having spaced portions and a reduced connecting portion, said portions having offset passages formed therethrough, each passage of the lower portion having a valve seat at its upper end, a valve located between the portions for movement into and out of each valve seat, each valve having a concave surface receiving the connecting portion of the member, and a stem carried by each valve and slidably engaged in the corresponding passage of the lower portion, and means for holding the member in the neck.

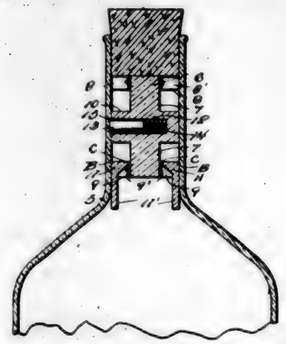

3. A valve mechanism for bottles comprising a cylindrical member having a reduced central portion and resultant spaced heads, each of said heads having oppositely disposed peripheral grooves opening through their ends, the grooves of the two heads being offset from each other, the side walls of the groove of one head being diverged at their inner ends to form a valve seat for each of said grooves, a valve engaged in each valve seat and having a concave inner surface receiving the reduced portion of the member, and a convex outer surface arranged to lie flush and to correspond with the outer surface of the head, and a stem carried by each valve at the inner portion thereof and lying in the corresponding groove, said stems being arranged to permit of movements of the valves into engagement with the other head without disengagement of the stems from their grooves.

4. The combination with a bottle, of a member engaged in the neck thereof and including upper and lower heads, a central portion spaced therefrom and a reduced connecting portion, said central portion and heads having offset passages formed therethrough, and upwardly opening valves for the passages of the lower head.

851,618. COLD-STORAGE APPARATUS. NATHAN H. DEVERS and EDWARD WILLIAMS, Washington, D. C. Filed Sept. 20, 1906. Serial No. 335,462.

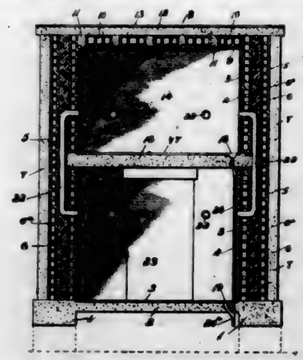

Claim.—1. In a cold storage apparatus, the combination of a casing, the walls of which are made of two layers of

hollow tile separated by a space extending from the bottom to the top of the casing, a filling of heat insulation within said space, a partition dividing the casing into an upper and a lower compartment, and conduits permitting communication between the compartments located in the space between the layers of tile equidistant apart around the wall, and having their ends projecting through the inner layer of tile into the casing above and below the partition, for the purpose set forth.

2. In a built-up cold storage apparatus, the combination of footers adapted to project below the surface, a casing having a concrete floor and a concrete top mounted thereon, and consisting of front, rear and side walls made each of two layers of hollow earthen tile separated by a space extending from the floor to the top, a filling of heat insulation within said space, a concrete partition supported by the walls and separating the casing into an upper and a lower compartment, and conduits permitting communication between the compartments located in the space between the layers of tile in the walls, and each having their two open ends projecting through the inner layer of tile into the casing above and below, respectively, the partition, for the purpose set forth.

851,619. CHAIN-LINK SHACKLE. GUSTAV A. H. DRESSLER, Kiel, Germany. Filed Mar. 14, 1904. Serial No. 198,127.

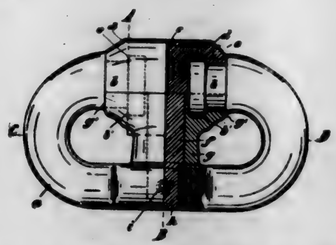

Claim.—1. In a connecting shackle for chain links, the combination with the link having stud ends provided with flange-like counter bearings (b′ b′) extending around the stud ends, of a closing member (c) for holding the stud ends together, the closing member being provided with a shank portion and having cap-like extensions (d d), and a sleeve (g) for supporting the stud ends, the said sleeve surrounding the shank portion of the closing member and having half cylindrical extensions (g′ g′) adapted to bear against the cap-like extensions of the closing member and form sleeves with the latter, the said sleeves wholly surrounding the flange-like counter bearings extending around the stud ends.

2. In a connecting shackle for chain links, the combination with the link a having stud ends provided with flange-like counter bearings (b′ b′) extending around the stud ends, of a closing member (c) provided with a shank portion and having cap-like extensions (d d) for engaging the stud ends, and a sleeve (g) for supporting the stud ends, the said sleeve surrounding the shank portion of the closing member and provided with half-cylindrical extensions (g′ g′) forming, with the cap-like extensions of the closing member, a sleeve which wholly surrounds the flange-like counter bearings at the stud ends, the end parts (g^2) of the sleeve (g) opposite to the extensions (g′ g′) being cylindrically rounded, the chain link having a correspondingly formed cylindrical recess (g^2) into which the said end of the sleeve fits, the said cylindrical supporting surfaces having the same axis (r) as the rounded recesses in the parts (g′ g′) supporting the studs.

3. In a connecting shackle for chain links, the combination with the link open at one side, and having studs on its ends at opposite sides of the opening, the said studs being provided with flanges extending around the stud ends, of a closing member having a recessed portion for connecting the stud ends, the said closing member being provided with a shank portion terminating in a pin for engaging an opening in the opposite side of the link, and a sleeve surrounding the shank portion of the closing member and having one of its end portions recessed to receive and support the studs, the said recessed portion of the closing member wholly surrounding the end part of the said studs, the other end portion of the sleeve engaging the opposite side of the link.

4. In a connecting shackle for chain links, the combination with the link open at one side and having studs on its ends at opposite sides of the opening, the said studs being provided with flanges extending around the stud ends, of a closing member for engaging the stud ends, the said closing member having a shank portion terminating in a pin adapted to be secured in an opening in the opposite side of the link, the said side of the link being formed with a rounded recess, and a sleeve surrounding the shank portion of the closing member and having one of its end portions provided with recesses corresponding with those of the closing member, the closing member and sleeve when in position entirely surrounding and bearing against the studs of the link, the other end portion of said sleeve being rounded and fitted in the correspondingly formed recess in the link.

851,620. NON-REFILLABLE BOTTLE. JAMES E. DUFFY, Philadelphia, Pa. Filed July 12, 1905. Serial No. 269,291.

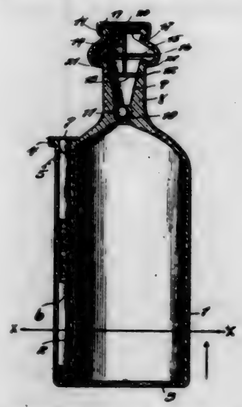

Claim.—1. A bottle formed in its side with a filling tube, substantially as described.

2. A bottle formed in its side with an integral filling tube, adapted to receive a stopper, and projections within the filling tube for engagement with said stopper.

3. A bottle formed in its side with an interior integral filling tube, adapted to receive a cork, projections in the interior of said filling tube for engagement with said cork, a flange on the upper portion of said filling tube, and a seal arranged on said flange and covering the upper portion of said filling tube.

4. A bottle formed in its side with a filling tube and provided in its neck with a valve.

851,621. WIRELESS SIGNALING SYSTEM. SIMON EISENSTEIN, Berlin, Germany. Filed Aug. 25, 1905. Serial No. 275,795. Divided and this application filed July 3, 1906. Serial No. 324,567.

Claim.—In a wireless signaling system, the combination with a sending circuit, of means for supplying a multiphase alternating current to said sending circuit, an aerial conductor, divided into as many branches as there are phases in the multiphase alternating current, and a spark gap in each of said branches.

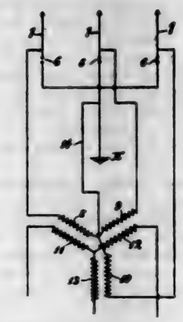

851,622. COTTON CHOPPER AND CULTIVATOR. JAMES B. FARRAR, Wilmington, N. C. Filed Feb. 20, 1907. Serial No. 358,380.

Claim.—1. The improved cotton cultivator comprising an axle and running wheels and clutches for locking them together, a gear fixed on the axle, a frame projecting rearward and hung loosely on the axle so as to oscillate vertically, a shaft journaled in supports forming a part or attachment of said frame, and having a pinion meshing with said gear, and a cutting wheel mounted on said shaft, and provided with cutters extended from its periphery, and shoes forming an attachment of the cutter-carrying frame, substantially as described.

2. The combination with running wheels and an axle having a series of alternating collars and reduced portions, a rearwardly extended frame and bearings to which it is detachably connected, said bearings being composed of separable parts adapted for application to the reduced portions of the axle, shoes or runners applied to the rear lower portion of the said frame, a cutter wheel and its shaft supported and journaled in said frame, and having a front bearing which is also loosely and detachably applied to a reduced portion of the axle, and gearing for driving the cutter, as shown and described.

3. The improved cotton cultivator comprising an axle and running wheels, a revolving cutter and cutter shaft, and means for driving the latter, a rearwardly extended frame in which the cutter shaft is journaled, the lower rear portion of said frame being provided with shoes bearing on the ground, as shown and described.

4. The combination with an axle and wheels mounted thereon, of a frame extended rearwardly and downwardly and provided with runners, a cutter wheel and a shaft carrying the same and gearing connected with the axle for rotating said wheel, the latter having a series of cutters extended peripherally, all secured at fixed points to the rim of the wheel, save one, which is adjustable around the rim, the latter having an arc slot and a screw bolt passing through the same and securing the adjustable cutter as specified.

851,623. DEVICE FOR PLACING AND RETAINING TAPS IN TAPPING-MACHINES. CHARLES W. GIBBS, Bridgeport, Conn. Filed July 7, 1906. Serial No. 325,147.

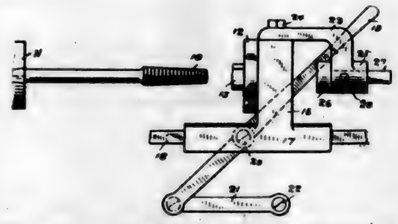

Claim.—1. An attachment for tapping machines comprising a movable work-carrier having a recess to normally hold the work, and an arm or bracket connected with said work-carrier, and having a stop or pusher adapted to engage the end of a tap to cause the tap to release the work from said recess.

2. In a tapping machine, the combination with a movable work-carrier having a recess to normally hold the work, and provided with an aperture for the passage of a tap, of an arm or bracket secured to the carrier and having its end in alinement with the tap aperture in the carrier, the free end of the arm being apertured, and a head having a shank extending through the aperture of the bracket and secured therein, whereby the engagement of the tap and head will release the work.

3. In a tapping machine, the combination with a movable work-holder having a recess for the work and an aperture for the tap, of a stop mounted on said carrier in alinement with the aperture in the work holder and adapted to limit the movement of the work-holder, whereby continued rotation of the tap will withdraw the work from said recess and feed it on to the shank of the tap.

4. In a tapping machine, the combination with the work-holder having a recess for the work and an aperture for the tap, of means for manually reciprocating the holder, a bracket secured to the holder and having its free end in alinement with the tap aperture, and a shank extending through an aperture in the free end of the bracket and having a head facing toward the tap aperture of the work-holder, means being provided to adjust the position of the shank in the bracket aperture to vary the distance of the shank head from the work-holder.

851,624. PNEUMATIC TOOL. CHARLES H. HAEBELER, New York, N. Y., assignor to Ingersoll-Rand Company, a Corporation of New Jersey. Filed Feb. 21, 1907. Serial No. 358,605.

Claim.—1. In a pneumatic tool, the combination of a cylinder, a piston therein, a valve and valve-bore for controlling the supply and exhaust of air from said cylinder, said valve consisting of a solid cylindrical plug having peripheral grooves in its surface and having a single cylindrical wearing surface, and means for applying a reduced but constant pressure to one end of the valve, and an intermittent higher pressure to the other end thereof, for actuating the valve.

2. In a pneumatic tool, the combination of a cylinder

and piston, a removable valve box, a valve contained in said box, a part removable with said box and which part must be moved relative to said box in order to obtain access to said valve, and means for sealing said part in position.

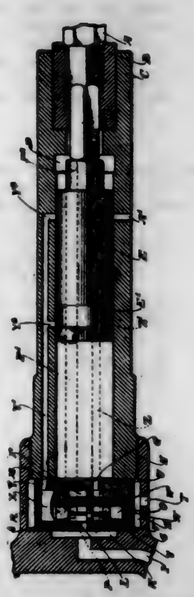

3. In a pneumatic tool, the combination of a cylinder and piston, a valve for controlling ports of said cylinder, a part which must be removed to obtain access to said valve, and a seal for said part, said seal being so constructed as to be substantially confined within the normal outlines of the parts.

4. In a pneumatic tool, the combination of a cylinder and piston, a valve for controlling ports of said cylinder, a part which must be removed to obtain access to said valve, and a seal for said part, said seal being composed of special material, whereby the seal cannot be easily replaced and simplicity of construction is rendered practicable.

5. In a pneumatic tool, the combination of a cylinder, a piston, a valve, and a part which must be removed to obtain access to said valve, a portion of said part being cut-away to register with a cut-away portion in the piece against which said part is seated, and a sealing piece occupying said cut-away portions and so constructed that it cannot be removed without mutilation.

6. In a pneumatic tool, the combination of a cylinder, a piston, a valve-box containing a valve-bore and a valve therein, a part which must be removed to obtain access to said valve, there being alining holes through said part and into said box, and a plug of special, soft material inserted in said holes.

7. In a pneumatic tool, the combination of a cylinder, a piston, a valve-box containing a valve-bore and a valve therein, a part which must be removed to obtain access to said valve, there being alining holes through said part and into said box, and a plug of special, soft material inserted in said holes, the exposed end of said plug having a design thereon to prevent mutilation.

8. In a pneumatic hammer, the combination of a cylinder, a piston-hammer therein, a cylindrical valve-box seated on the upper end of said cylinder, said valve-box having a bore formed therein, a valve mounted in said bore, a ring surrounding said valve-box, alining holes formed through said ring and valve-box, and a plug of special, soft material inserted in said holes.

9. In a pneumatic hammer, the combination of a cylinder, a piston-hammer therein, a cylindrical valve-box seated on the upper end of said cylinder, said valve-box having a bore formed therein, a valve mounted in said bore, a ring surrounding said valve-box, alining holes formed through said ring and said valve-box, and a plug of special, soft material inserted in said holes, an exhaust space being formed around said ring, a hole being formed in the upper surface of said valve-box and intersecting said first mentioned hole, a second plug of soft material inserted in said last mentioned hole, and a handle secured on the upper end of the tool and covering the exposed end of said second plug.

10. In a pneumatic hammer, the combination of a cylinder, a piston-hammer therein, a cylindrical valve-box seated on the upper end of said cylinder, said valve-box having a bore formed therein, a valve mounted in said bore, a ring surrounding said valve-box, alining holes formed through said ring and said valve-box, and a plug of special, soft material inserted in said holes, the exposed end of said plug having a design thereon to prevent mutilation, an exhaust space being formed around said ring, a hole being formed in the upper surface of said valve-box and intersecting said first mentioned hole, a second plug of soft material inserted in said last mentioned hole, and a handle secured on the upper end of the tool and covering the exposed end of said second plug.

11. In a pneumatic hammer, the combination of a cylinder, a piston-hammer mounted therein, a valve-box at one end of the cylinder, a cylindrical valve mounted in a bore formed in said box transverse to the axis of the cylinder, said valve consisting of a relatively long, solid cylindrical body having two annular grooves formed therein, a supply port in the upper part of said valve-box, ports opening from the valve-bore respectively into the upper and lower ends of the cylinder, a live air and an exhaust port communicating with one end of the valve-bore, the exhaust port being larger than the supply port, whereby a constant but reduced pressure is maintained at such end of the valve-bore, and supply and exhaust ports communicating with the opposite end of the valve-bore, said last mentioned ports being governed by the position of the piston-hammer, so that live air is alternately admitted and exhausted from said end of the valve-bore, and said grooves in said valve-body are alternately placed in position to connect said port in the top of said valve-box alternately with the ports communicating with the opposite ends of the cylinder.

851,625. PROCESS FOR LAYING PAVEMENT. WALTER E. HASSAM, Worcester, Mass., assignor to The Hassam Paving Company, Worcester, Mass., a Corporation of Massachusetts. Filed Nov. 14, 1906. Serial No. 343,459.

Claim.—1. The process of constructing a road or pavement which consists in laying a layer of uncoated stone, compressing said stone layer until the voids therein are small, grouting with a mixture of cement, sand and water, agitating the mass to expel the air and fill the voids between the stone with said grout and repeating said process of laying layers of stone and grout and agitating the same until the desired thickness is reached.

2. The process of constructing a road or pavement which consists in laying a layer of uncoated stone, compressing said stone layer until the voids are small, grouting with a mixture of cement, sand and water, agitating the mass to expel the air and fill the voids between the stone with said grout, and placing a surface on the mass thus formed.

3. The process of constructing a road or pavement which consists in laying a layer of uncoated stone, compressing said stone layer until the voids are small, grouting with a mixture of cement, sand and water, agitating the mass to expel the air and fill the voids between the stone with said grout, adding another layer of grout and fine stone and smoothing the surface to the desired contour before it is set.

4. The process of constructing a road or pavement which consists in laying a layer of uncoated stone, compressing said stone layer until the voids are small, grouting with a mixture of cement, sand and water, agitating the mass to expel the air and fill the voids between said stone with the grout, adding another layer of grout, spreading fine stone upon said grout and smoothing to the desired contour before it has set.

5. The process of constructing a road or pavement which consists in laying a layer of uncoated stone, compressing said stone layer until the voids therein are small, grouting with a mixture of cement, sand and water, agitating the mass to expel the air and fill the voids between said stone with the grout, repeating said process of laying layers of stone and grout and agitating the same until the desired thickness is reached, adding another layer of grout, spreading fine stone upon said grout and smoothing to the desired contour before it has set.

851,626. AUXILIARY TRIGGER FOR GUNS. JESSE H. KEYSER, Denver, Colo. Filed Jan. 8, 1907. Serial No. 351,342.

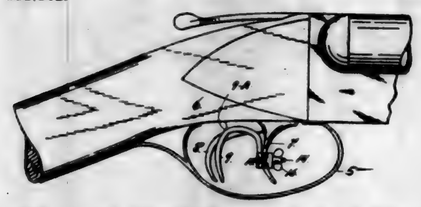

Claim.—1. The combination with the rear trigger of a double barrel gun, of a forward trigger whose finger piece is provided with a rearwardly extending auxiliary finger piece.

2. The combination with the forward and rear triggers of a double barrel gun, of an auxiliary finger piece detachably connected with the finger piece of the forward trigger, and extending rearwardly from the latter, substantially as described.

3. The combination with the forward and rear triggers of a double barrel gun, of an auxiliary trigger or finger piece attached to the finger piece of the forward trigger, extending rearwardly from the latter and terminating at a point slightly in advance of the finger piece of the rear trigger.

851,627. SHADE AND REFLECTOR FOR ELECTRIC LIGHTS. BENJAMIN F. NORTON, Eagle Grove, Iowa. Filed July 2, 1906. Serial No. 324,495.

Claim.—A conical shade and reflector for electric lights consisting of two uniform mating parts hinged together at their tops and bottoms to swing apart horizontally, means for detachably fastening their free straight edges together so that the top of the cone will engage a lamp, a chain fixed to the outside and lower end portion of one of the mating parts of the cone and a hook at its top portion to support the chain and a clamp on the free end of the chain to be adjustably connected with a conductor as set forth.

851,628. DREDGER AND EXCAVATOR. MARX P. SCHETZEL, Oakland, Cal. Filed June 14, 1906. Serial No. 321,743.

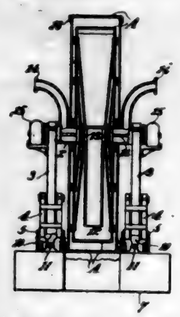

Claim.—1. In a digging and dredging apparatus, circularly disposed digging buckets having a common center of revolution and means for revolving said buckets, and a tilting frame upon which the buckets are carried and by which they may be raised and depressed, said frame having a counterbalance at its inner end.

2. In a dredging and digging apparatus, a wheel composed of a series of buckets, a central support about which the wheel is revoluble, a fulcrumed truss frame, upon the outer ends of which the wheel shaft is supported, a counterbalance upon the inner end of the frame, and means for tilting the frame upon its support.

3. In a dredging and digging apparatus, a wheel composed of buckets having the outer ends and sides diverging, a central axial support upon which said wheel is turnable, fulcrumed truss frames upon the outer ends of which the wheel shaft is supported, a counterbalance upon the inner end of the truss frame, a motor and driving sprocket carried upon the truss frame, a driving chain or belt passing around the sprocket and rollers projecting from the sides of the periphery of the wheel through which motion is transmitted to rotate the wheel.

4. In a dredging and digging apparatus, a digging wheel composed of buckets disposed around a common center having cutting sides and edges, a shaft upon which the wheel is turnable, a tiltable counterbalance truss frame upon the outer end of which the wheel is carried and by which it may be raised or depressed, tracks upon which the fulcrumed standards of the truss frame are movable to advance, and means for advancing or retracting the standards and the wheel.

5. In an apparatus for dredging and digging, a float having centrally disposed channels at the ends, tracks upon each side of the channels, wheeled standards mounted upon the tracks, means for advancing said standards forwardly or backward, counterbalanced truss frames fulcrumed and tiltable upon the standards, a wheel composed of open mouth and sides, digging buckets, a shaft upon which said wheel is mounted, said shaft being carried upon the outer end of the truss frame.

6. In an apparatus for dredging and digging, a float having a centrally disposed channel, wheel supports located upon each side of said channel, a wheel composed of open mouth and side buckets disposed around a common center, a hollow shaft upon which the wheel is turnable whereby the dredged material is lifted within the wheel and dropped to the bottom by gravitation, a vertically disposed tube connecting the shaft with the lower interior of the wheel, and pumping mechanism by which the material is constantly abstracted through the tube and shaft.

7. In a dredging and digging apparatus, a wheel composed of a series of open mouth and side buckets, means by which the wheel is raised, depressed or advanced, and mechanism by which it is rotated, a hollow shaft upon which the wheel is turnable, a tubular connection with the lower part of the shaft extending into the lower interior of the wheel, revoluble suction pumps located in the shaft adapted to withdraw the material, and pipes connecting

with the outer end of the shaft through which the material is discharged.

851,629. ARTIFICIAL TIMBERING FOR MINE-TUNNELS. DARWIN W. SHEPARD, Denver, Colo. Filed May 25, 1906. Serial No. 318,732.

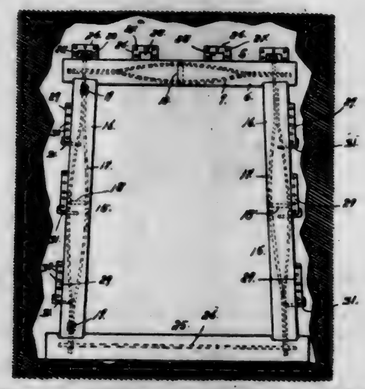

Claim.—1. A timbering structure for mines including a frame work composed of top beams and uprights at the extremities of the top beams, the body portion of each beam of the structure being composed of artificial stone in which are embedded metal members bowed outwardly between their extremities in the direction of the strain to which they are to be subjected.

2. A timbering structure for mines including a frame work composed of top beams and uprights at the extremities of the top beams, the body portion of each beam of the structure being composed of artificial stone in which are embedded metal members bowed outwardly between their extremities in the direction of the strain to which they are to be subjected, and suitable means for connecting the uprights with the top beam, substantially as described.

3. A tunnel timbering structure composed of top and bottom beams and uprights at the extremities of the top and bottom beams, the top and upright beams each being composed of cement substance in which are embedded metal members bowed outwardly between their extremities in the direction of the strain to which they are to be subjected, the upright beams being provided with outwardly protruding angle irons, side lagging beams supported by these angle irons, and top lagging beams which engage the top member of the structure.

851,630. MACHINE FOR DRAWING SHEET-METAL VESSELS. EUGENE H. SLOMAN, Detroit, Mich. Filed July 22, 1905. Serial No. 270,801.

Claim.—1. In a machine for shaping tapering vessels, a female die, means for changing the size of the drawing point of said die during the drawing operation; and a draw plate for holding the metal being drawn.

2. In a machine for shaping tapering vessels, a female die, and means for moving said die so that the drawing edge thereof will at all times shape the article to its final form.

3. In a machine for shaping vessels of variable form at different points in depth, a punch member, a draw plate, a female member, and means for positively varying the size of the drawing point of the female member to correspond to the size and shape of the finished article, whereby at all times the metal drawn inward by the punch member may be given its final shape in passing over the drawing edge of the female member.

4. In a machine for shaping vessels having variable size at different points in depth, the combination of a punch member, a female member, a draw plate adapted to clamp the metal on the edge of the female member, and a movable section of the female member adapted to vary the drawing edge thereof during the drawing operation.

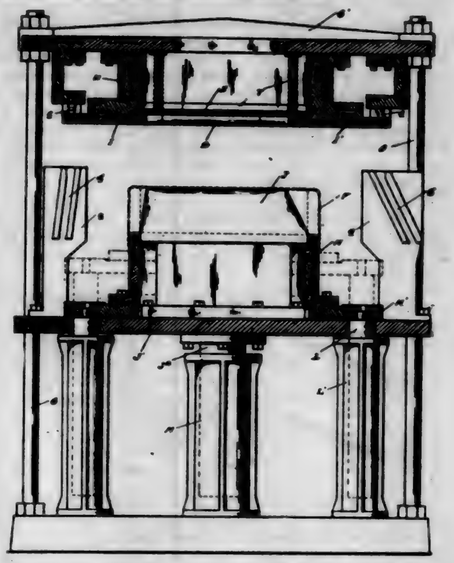

5. In a machine for shaping vessels having variable size at different points in depth, the combination of a punch member, a female member, a draw plate adapted to clamp the metal between it and the female member, two movable sections at the opposite ends of the female member, and means for moving them to vary the size of the drawing edge of the female member during the movement of the punch member.

6. In a machine for shaping vessels having variable size at different points in depth, the combination of a punch member, a female member, a draw plate, a multiple of movable sections of the female member, and means for differentially moving those sections to variably change the size of the female member during the movement of the punch member.

7. In a machine for shaping sheet metal articles having varying diameter, the combination of a punch member of the size of the bottom of the article to be produced, a female die, and positive means for varying the size of the latter during the drawing operation.

8. In a machine for shaping sheet metal vessels having variable size, the combination of a female die, movable sections of the female member adapted to vary the size thereof during the drawing operation, a male die, and a draw plate having a constant bearing during the drawing operation.

9. In a machine for shaping sheet metal, the combination of a female member having a movable drawing edge, a movable male member, a draw plate surrounding the male member and within which it has travel, the draw plate being shaped to receive a disk-shaped blank from which the article is to be drawn.

851,631. EGG-LIFTER. CARL F. SWANSON, Eagle Bend, Minn., assignor of fifty one-hundredths to himself and fifty one-hundredths to Joseph M. Anderson, Eagle Bend, Minn. Filed May 18, 1906. Serial No. 317,538.

Claim.—1. An egg lifter, comprising a plate having openings and also having perforations, a plurality of pairs of rock shafts mounted on the plate, loops attached to the rock shafts and having their members extended through said perforations, and means for causing movements of the rock shafts.

2. An egg lifter, comprising a plate having openings and perforations, a plurality of pairs of rock shafts provided with crank ends, having swinging connection with said plate, wire loops attached to the rock shafts and having their members extended through the perforations in the plate, operating bars at opposite sides of the plate, link connections between said bars and the rock shafts, whereby the rock shafts of the bar may be moved in opposite directions, and means for operating said bars.

3. An egg lifter, comprising a plate having openings and perforations, a plurality of pairs of rock shafts provided with crank ends having swinging connection with the plate, spring-yielding loops extended from the rock shafts through the perforations in the plate, operating bars at opposite sides of the plate, link connections between said bars and the rock shafts, whereby the rock shafts of a pair are swung in opposite directions when the said bars are moved upward or downward, guides on the bars and swinging levers having bars engaging in said guides.

851,632. MOTOR. PAUL SYNNESTVEDT, Pittsburg, Pa., assignor to Synnestvedt Machine Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed May 7, 1904. Serial No. 206,857.

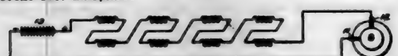

Claim.—1. An improvement in motors comprising a coil composed of sets of parallel strands for each field pole, means for commutating the sets of coils whereby they are placed in series and then in parallel, and means for further commutating the windings of each coil whereby they are first in series and later in multiple in the set, substantially as described.

2. An improvement in motors comprising in combination a motor having windings on the field thereof adapted to be commutated in series and multiple, a battery, a controller for said battery and motor, said controller having its extreme outer fixed contacts connected with the battery leads, having the brush leads connected adjacent to one of said battery contacts and having several connections to each of the field terminals between said brush leads and said other battery leads, substantially as described.

3. In combination, a four pole motor having eight field windings and a controlling device therefor adapted to commutate said windings in series and series multiple, whereby to secure four speed variations there being equal windings on opposite poles, substantially as described.

4. In combination, a four pole motor having two separate windings to each pole, and a controlling device therefor adapted to commutate said windings in series and series multiple, whereby to secure four speed variations, substantially as described.

5. In combination, a four pole motor having eight field windings, and means for commutating the strands of each coil, whereby the current is caused to traverse the windings first in series and then through the wires of each coil in parallel, substantially as described.

851,633. ELECTRIC CONTROL MECHANISM. PAUL SYNNESTVEDT, Pittsburg, Pa., assignor to Synnestvedt Machine Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Aug. 30, 1904. Serial No. 222,711.

Claim.—1. An improvement in electric controlling mechanism comprising in combination, a magnetic field provided with a plurality of separate windings, such windings being oppositely disposed on said field, and means for connecting said windings in series and for changing said connections to multiple so that the circuit in series multiple position will flow through oppositely disposed windings in series individually, whereby to produce a balance of said fields, substantially as described.

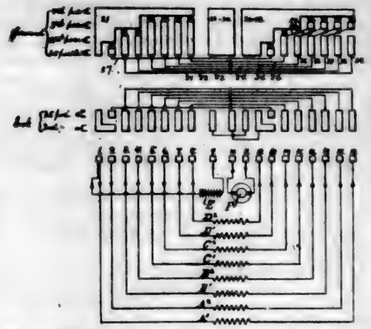

2. An improvement in electric controlling mechanism comprising in combination a plurality of magnetic poles, a plurality of windings on each pole and means for commutating said windings whereby adjacent windings on one pole may be put in multiple circuit and each said winding in separate series connection with an opposite winding, substantially as described.

3. In combination with a motor having opposing poles and multiple parallel windings for each pole, of circuit controlling devices adapted to vary the number of windings through which the current passes successively and at the same time maintain the windings of opposing poles in series, substantially as described.

851,634. MUSICAL INSTRUMENT. THOMAS A. CONNOLLY and JOSEPH B. CONNOLLY, Washington, D. C. Filed Jan. 28, 1907. Serial No. 354,485.

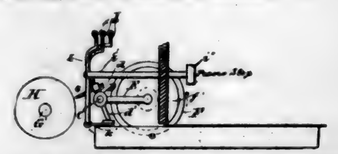

Claim.—1. A sound reproducing instrument, comprising tone records of different instruments, contituting a plurality of scales of coincident register and means for reproducing from said records their respective tones, separately or in any musical relation.

2. A sound reproducing instrument comprising a series of tone records arranged in the order of the musical scale, and comprising a plurality of scales of coincident register and means for performing on said instrument and reproducing said tones according to the usual musical sequence and relation.

3. A sound reproducing instrument comprising records of the tones of a plurality of musical scales of coincident register and means for selecting and reproducing any individual tone or tone sequence or combination.

4. A sound reproducing instrument comprising records of separate musical tones grouped to form a plurality of scales of coincident register, a key board and means for reproducing tones by operating the keys on the instrument.

5. A sound reproducing instrument, comprising records of separate musical tones grouped in coincident scales, means for reproducing said tones, a key board through which said reproduction is controlled and means for coupling the reproducing means of each scale to a common key board.

6. A sound reproducing instrument, comprising records of the tones of a plurality of musical instruments of different quality or timbre, disposed respectively in the order or sequence of the musical scale, the tones of one scale coinciding in pitch or register with tones of another scale and means for reproducing any of the recorded tones.

7. A sound reproducing instrument, comprising records of the tones of different instruments, a key board through the medium of which the tones are reproduced at will, reproducing means controlled by said key board, and stops for bringing the different series of records and their reproducing devices into responsive relation to the key board, and removing them therefrom.

8. A sound reproducing instrument, comprising sound records, a plurality of reproducing needles or styluses, a sound reproducing diaphragm, means for communicating the vibrations of the needles to the diaphragm, and means for bringing any needle in contact with its appropriate record line or groove.

9. In a musical instrument means comprising phonographic records and reproducing devices for simultaneously reproducing tones of a plurality of different musical instruments in unison.

10. A musical instrument comprising several scales of phonographic, single tone, records of different instruments, tones of one scale being reproducible in unison with tones of another scale.

11. A musical instrument comprising several scales of phonographic, single tone, records of different instruments, tones of one scale being reproducible in unison with tones of another scale and means for bringing the different series of records into operation simultaneously or individually.

851,635. MANUFACTURE OF MAGNETIC MATERIALS. ROBERT A. HADFIELD, Sheffield, England. Filed June 8, 1905. Serial No. 264,227.

Claim.—A low hysteresis magnetic material containing iron with an addition of silicon and aluminium, said addition amounting together to from one-fourth to eight per cent. of the iron, and the proportion of aluminium amounting to from twenty-five to seventy-five per cent. of the silicon contents.

Iron with an addition of silicon and aluminium, said addi-

851,636. HAY-STACKER. LEROY J. LINDSAY, Seymour, Iowa, assignor to C. P. Barrickman, Seymour, Iowa. Filed May 10, 1906. Serial No. 316,162.

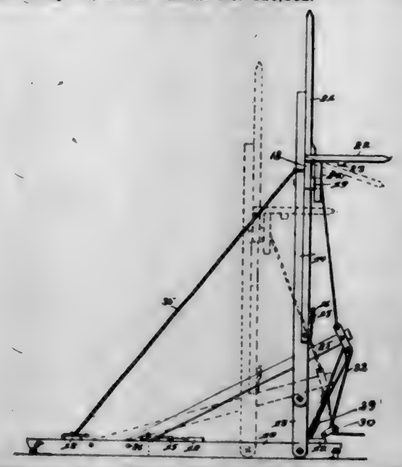

Claim.—1. In a hay stacker, a base having parallel sides, jointed uprights of a fork carrier pivotally connected with the sides of the base for carrying a fork to different points of elevation at different times.

2. In a hay stacker, a base having parallel sides, jointed uprights of a fork carrier pivotally connected with the sides of the base and means for fastening the lower portions of the jointed uprights to the sides of the base.

3. In a hay stacker, a base having parallel sides, a jointed fork carrier composed of two uprights and each upright consisting of a short lower part pivoted to the side of base and a long upper part pivotally connected with the upper end of the short lower part to operate as set forth.

4. In a hay stacker, a base having parallel sides, a jointed fork carrier composed of two uprights and each upright consisting of a short lower part and a long upper part pivotally connected and the lower end of the short lower part pivoted to the base and means to rigidly connect the short lower part with the long upper part in overlying position with each other and the sides of the base.

5. In a hay stacker, a base having parallel sides, a jointed fork carrier composed of two uprights and each upright consisting of a short lower part and a long upper part pivotally connected and the lower end of the short lower part pivoted to the base, a catch fixed to the long upper part and a latch pivoted to the short lower part to rigidly connect the short lower part with the long upper part in overlying position with each other.

6. In a hay stacker, a base, a jointed fork carrier composed of two uprights and each upright consisting of a short lower part and a long upper part pivotally connected and the lower end of the short lower part pivoted to the base and means to rigidly connect the short lower parts of the uprights with the base, to operate as set forth.

7. In a hay stacker, a base, a fork carrier composed of two uprights and each upright consisting of a short lower part and a long upper part pivotally connected at the lower end of the long upper part and the lower end of the short lower part pivoted to the base, a catch fixed to the base and a latch pivoted to the short lower part to rigidly connect the short lower parts of the uprights with the base as set forth.

REISSUES.

12,636. WHEEL. JOHN W. MEIXELL, Lewisburg, Pa. Filed Feb. 15, 1907. Serial No. 357,597. Original No. 826,865, dated July 24, 1906.

Claim.—1. The combination, of a felly, laterally-adjustable tire-clamping means carried thereby and comprising a fixed wall, a removable outer ring, an internal ring, and bolts passing through said wall and rings, and a tire having its edges clamped between said wall and internal ring and between said internal ring and removable ring.

2. The combination, of a felly, laterally-adjustable tire-clamping means carried thereby and comprising a fixed wall, a removable outer ring, an internal ring, and bolts passing through said wall and rings, and a tire having its edges clamped between the fixed wall and internal ring and between the internal ring and the removable ring and provided with opposite transverse notches engaged by said bolts.

3. The combination, of a felly, adjustable tire-clamping means carried thereby and comprising a fixed wall, an opposite removable ring, and bolts engaging the two, a tire having its edges engaged by said means, and an annular internal ring mounted upon and supported by the felly and substantially wedge shape in cross-section and having its outer wall or base beyond the annular plane of the tire-clamping means, whereby it is adapted to support the tire, when deflated, beyond said clamping means, said bolts engaging said wedge-shaped ring.

4. The combination, of a felly, a rim mounted thereon and provided with laterally-adjustable tire clamping means

comprising a fixed wall, a removable ring and transverse bolts connecting the two, a tire mounted on the rim and having its edges engaged by said means, an internal removable annular ring provided with transverse recesses, and transversely-disposed devices carried by the rim and engaging the said recesses.

5. The combination, of a felly, a rim mounted thereon and provided with laterally-adjustable tire-clamping means comprising a fixed wall, a removable ring and transverse bolts connecting the two, a tire mounted on the rim and having its edges engaged by said means, an internal annular ring disposed between the edges of the tire and mounted upon and supported by the rim and provided along its inner circumference with transverse recesses, and transverse projections carried by the rim and engaging said recesses.

6. The combination, of a felly, a flat rim mounted thereon and extending beyond the edges thereof and upturned at one edge to produce a clamping member, a removable notched ring at the opposite side of the rim, said upturned edge and ring being adapted to fit over the edges of a tire, clamping-bolts extending through the upturned edge and ring and terminating in heads adapted to engage the latter, a tire mounted on the rim, and an internal annular ring of substantially wedge shape in cross-section mounted on the rim and conforming at its sides to the tire and provided with bolt-receiving openings alining with those in the upturned edge of the rim and the ring.

7. The combination, of a felly, a flat metallic rim mounted thereon and extending beyond the sides thereof, said rim having one edge flanged to form a clamp member, a removable ring corresponding and shaped similar to the flange located at the opposite side of the rim, said flange and ring having transverse bolt-receiving openings, bolts mounted in the openings and provided at their ends with nuts and heads, the latter engaging the ring, a tire mounted on the rim and grooved to receive the bolts and having its edges engaged by the ring and flange, and an internal ring wedge-shaped in cross-section and mounted upon and supported by the rim and provided with openings to receive the bolts, said internal ring comprising opposite inclined walls against which the opposite sides of the tire are forced and clamped by means of the flange and ring.

8. The combination, of a felly, a rim mounted thereon and having one of its edges bent to form a flange and provided with bolt-holes, a similarly-shaped ring at the opposite side of the rim and provided with corresponding bolt-openings, headed bolts arranged in said bolt-openings of the ring and flange and engaging the former, a tire resting on the rim and having its edges engaged by the ring and flange, and an internal removable ring resting upon and supported by the rim and substantially wedge-shaped in cross-section, said ring being provided with recesses or channels to receive the bolts and having its sides of a contour agreeing with the sides of the tire.

9. The combination, of a felly, a rim thereon, a tire arranged on the latter and having opposite beads, means embodying transverse bolts carried by the rim for engaging the beads and clamping the tire, an internal hollow ring wedge-shaped in cross-section and interposed between the inner edges of the tire and conforming thereto and resting upon and supported by the rim and engaged by said bolts, and an inner tube resting upon and supported by said internal ring.

10. The combination, of a felly, a rim, a tire thereon, and clamping means carried by the rim and embodying transverse connecting-bolts, and an internal tube-like ring wedge shape in cross-section and arranged upon and supported by the rim and having its outer wall or base beyond the said clamping means, said ring being engaged by said bolts.

11. The combination, of a felly, a rim, a clamping means carried thereby, a tire having its edges engaged by the clamping means, a wedge-shaped tube-like ring mounted upon and supported by the rim and provided at intervals along its inner circumference with channels, and clamping-bolts mounted in the channels and engaging the clamping means.

12. The combination, of a pneumatic tire, a felly provided with a valve-stem opening terminating in an enlarged chamber, an internal annular ring having an opening agreeing with the valve-stem opening in the felly, a double-tube tire, the inner tube of which rests upon and is supported by said internal ring, clamping means for securing the edges of the outer casing of the tire, and a valve-stem carried by the inner tube and extending through the openings in the internal ring and the felly.

13. The combination, of a pneumatic tire, a felly provided with a valve-stem opening terminating in an enlarged chamber, an internal annular ring having an opening agreeing with the valve stem opening in the felly, a tire mounted on the felly, tire-securing means, and a valve-stem extending through the openings in the internal ring and felly.

14. The combination, of a pneumatic tire comprising a valve-stem, a felly having an opening for the stem which opening terminates in an enlarged cavity, a bushing located within the cavity and extending beyond the felly, and a cap threaded on the bushing.

15. The combination, of a felly, a flat rim, a tire thereon, a tire-clamping means arranged outside of and free to slide over the rim to exert a lateral compression upon the tire, and an internal ring removably mounted upon the flat rim and free to move laterally thereover, the opposite sides of said ring constituting the inner members of said tire clamping means.

16. The combination, of a felly, a flat rim, a tire thereon, a tire clamping means arranged outside of and free to slide over the rim to exert a lateral compression upon the tire, and an internal ring removably mounted upon the flat rim and free to move laterally thereover, the opposite sides of said ring constituting the inner members of said tire clamping means and of a shape or contour agreeing with the inner surfaces of the clamped edges of the tire.

17. The combination, of a felly, a flat rim, a tire thereon, a tire clamping means arranged outside of and free to slide over the rim to exert a lateral compression upon the tire, and an internal tubular or hollow ring removably mounted upon the flat rim and free to move laterally thereover, the opposite sides of said ring constituting the inner members of said tire-clamping means.

18. The combination, of a felly, a flat rim having one edge outwardly bent to form one member of a tire clamping means, a tire arranged against such member, a ring removably mounted within the tire and upon the rim and free to slide laterally thereon, a tire-clamping ring of greater diameter than and mounted on the rim at that edge opposite the outwardly-bent edge thereof and free to slide laterally over the rim toward said edge, and means carried by the rim for laterally drawing the tire-clamping ring toward the outwardly-bent edge of the rim.

19. The combination, of a pneumatic tire having a short valve-stem, and a felly provided with an opening for the valve stem and with an enlarged chamber or cavity at the outer end of said opening and in which chamber or cavity the outer end of the valve-stem lies.

20. The combination, of a pneumatic tire having a short valve-stem, a felly provided with an opening for the valve-stem and with an enlarged chamber or cavity at the outer end of said opening, and a closure for said chamber or cavity.

21. The combination, of a pneumatic tire having a short valve-stem, a felly provided with an opening for the valve-stem and with an enlarged chamber or cavity at the outer end of said opening, a bushing within said cavity, and a closure at the outer end of the cavity.

22. The combination, of a pneumatic tire having a short valve-stem, a felly provided with an opening for the valve-stem and with a chamber or cavity at the outer end of said opening in which the outer end of the valve-stem lies, a bushing within the cavity, and a closure for the cavity engaging the outer end of the bushing.

12,637. CELLULOSE DERIVATIVE AND PROCESS OF MAKING THE SAME. GEORGE W. MILES, Belmont, Mass. Filed Mar. 21, 1907. Serial No. 363,790. Original No. 838,350, dated Dec. 11, 1906.

Claim.—1. The method of producing cellulose derivatives which consists in first producing a substantially an-

hydrous acetyl cellulose and thereafter incompletely hydrating the acetyl cellulose.

2. The method of producing cellulose derivatives which consists in first forming a substantially anhydrous cellulose ester with the anhydrid of a monobasic fatty acid and subsequently in completely hydrating the said cellulose ester.

3. The method of producing cellulose derivatives which consists in treating fibrous cellulose with glacial acetic acid and a condensing agent and acetic anhydrid, allowing acetylation to become well advanced and then adding water sufficient to cause the acetylated cellulose to become incompletely hydrated, and then precipitating the product.

4. A cellulose ester of a monobasic fatty acid, partially hydrated, soluble in both pure acetone and chloroform in degrees varying with the degree of hydration.

5. Cellulose acetate, partially hydrated, soluble in both pure acetone and chloroform in degrees varying with the degree of hydration.

6. A celloluse ester of a monobasic fatty acid, partially hydrated, waterproof, insoluble in alcohol, soluble in acetylene tetrachloride, and soluble in both pure acetone and chloroform in degrees varying with the degree of hydration.

7. Cellulose acetate, partially hydrated, waterproof, insoluble in alcohol, soluble in acetylene tetrachloride, and soluble in both pure acetone and chloroform in degrees varying with the degree of hydration.

12,638. MACHINE FOR AUTOMATICALLY LACING SHOE-UPPERS. WILLARD A. SMITH, Melrose, Mass., assignor, by mesne assignments, to United Shoe Machinery Company, Paterson, N. J., a Corporation of New Jersey. Filed May 10, 1905. Serial No. 259,839. Original No. 779,008, dated Jan. 3, 1905.

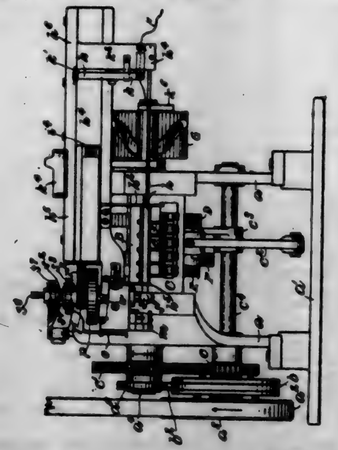

Claim.—1. In a machine for lacing and tying together the eyeleted parts or quarters of shoe-uppers preparatory to lasting and bottoming them, a plurality of movably-mounted looper-needles and looper-fingers, means for feeding the lacing-cord and engaging the same by said needles and fingers to form a series of connected loops, mechanism for introducing a portion of the cord through said loops after the shoe-upper has been mounted on said cord-supporting needles, means for severing the cord from the source of supply, means for stripping the thus-laced upper from the needles, and mechanism for tying the ends of the cord together before the work is released from the machine.

2. In a machine of the character described, a series of movable looper-needles, a series of movable looper-fingers alternating with said needles, a reciprocating needle for feeding a lacing-cord in position with respect to said looper needles and fingers, means for severing the cord, and mechanism for tying together the ends of the severed piece of cord.

3. In a machine of the character described, a series of movable looper-needles, a corresponding series of movable looper-fingers alternating with said needles adapted to receive and support a lacing-cord, means for actuating said needles and fingers endwise in opposite directions to transform the cord into a series of connected zigzag loops, and means for inserting a portion of the cord through the said loops while the latter are supported by the needles and fingers.

4. In a machine of the character described, a movable carrier, a series of movable looper-needles mounted in the carrier capable of supporting the lacing-cord, a series of movable looper-fingers alternating with said needles, means for turning the said cord-supporting or looper-needles a partial revolution, whereby the looped portions of the cord are correspondingly turned or twisted thus placing the loops in alinement, and means for inserting another portion of the cord through the thus-formed loops.

5. In a machine of the character described, a series of movably-mounted looper-needles, a corresponding series of looper-fingers alternating with said needles, means for inserting a lacing-cord in position to be engaged by said looper-needles and looper-fingers, mechanism for actuating said needle and finger members endwise in opposite directions to engage the lacing-cord, thereby producing in it a series of connected zigzag bends or loops, and means for feeding the cord through said loops formed by the looper fingers and needles.

6. In a machine of the character described, the combination with movable looper-needles, movable looper-fingers and a longitudinally-reciprocating cord-carrying main needle A arranged to place the cord in position to be engaged by said looper needles and fingers, of an initial gripping device for holding an end of the cord, a second gripping device for holding another portion of the cord after the latter has been passed through the looped cord mounted on said looper needles and fingers, means for severing the cord before it is released from said gripping devices, and means for tying the ends of the cord together.

7. In a machine of the character described, the combination of a gripping device, means for introducing the free end of a lacing-cord therein, a plurality of looper-needles and looper-fingers arranged with respect to one another, means for actuating said needles and fingers for engaging the cord and forming in it a series of connected loops, a second holding or gripping device, means for feeding another part of the cord through said loops into the last-named holding device, and means for severing the cord from the source of supply.

8. In a machine of the character described, the combination of a plurality of pairs of looper-needles and looper-fingers, means for feeding a lacing-cord and placing it in position with respect to said needles and fingers, means for actuating the needle and finger members to engage the cord and form in it a series of connected loops, means for feeding another portion of the cord through said loops after the eyeleted holes of a shoe-upper have been pierced by said needles, means for severing the cord from the source of supply, means for tying together the ends of the cord and means for releasing the latter from the machine.

9. In a machine of the character described, provided with means for feeding the lacing-cord and means for forming therein a series of connected loops, the combination therewith of two independent gripping devices, each having a fixed jaw and a movable jaw member, for holding the cord in position between them while it is being converted into loops, means for actuating said movable jaw members, an automatically-actuated lever or member arranged to deflect the cord into the jaws of one of said gripping devices in advance of the latter's action, means for severing the cord from the source of supply, and means for tying together the ends of the cord.

10. In a machine of the character described, provided with a series of automatically-actuated looper-needles and looper-fingers constructed and arranged to produce in a lacing-cord a series of connected loops, the combination therewith of cord-gripping devices, a movable needle-carrying holder for feeding the lacing-cord to said gripping means, a normally open tension device for the cord movable with said holder, means for bringing the tension device into action at a predetermined point in the holder's movement, whereby the pressure or tension upon the cord is temporarily increased, means for severing the cord, and means for tying the ends of the latter together.

11. In a machine of the character described, the combination of a series of movable looper-needles and looper-fingers, a pair of laterally-separated fixed eyes or guides, A^2 A^3, having said looper members located between them, a reciprocating cord-feeding needle in alinement with and adapted to carry the cord through said guides, means for holding the ends of the cord, means for severing the cord, and means for releasing the cord from said holding means after it has been looped into the shoe-upper.

12. In a machine of the character described, provided with a series of movable looper-needles and looper-fingers, means for feeding a lacing-cord to said needles and fingers, means for severing the cord, and automatically-actuated gripping-jaws for holding the ends of the cord in position while the said needle and finger members are converting it into a series of connected loops, in combination with a revoluble knot-tying device provided with a pair of vertically-movable coöperating jaws adapted to hold the two end portions of the cord and tie them together after the formation of said loops, and means for releasing the cord from the knot-tying device.

13. In a machine of the character described, means for forming in a cord a series of zigzag loops and for maintaining said loops in position to be passed through the eyelet holes of a shoe upper, means for passing a portion of said cord through said loops after the loops have been passed through the eyelet holes to form a locking cord, and means for securing the ends of said cord to prevent withdrawal.

14. In a machine of the character described, a series of looper needles arranged to pass a series of loops formed from a continuous cord through the eyelet holes of a shoe upper to partially form a lacing, means for passing a locking cord through said loops to complete the lacing, and means whereby the lacing is secured at the points required to leave in the lacing a sufficient amount of slack to permit the upper to be properly fitted to the last.

15. In a machine of the character described, a series of looper needles arranged to pass a series of loops formed from a continuous cord through the eyelet holes of a shoe upper to partially form a lacing, means for passing a locking cord through said loops to complete the lacing, means for providing slack in the lacing, and means for securing the lacing while sufficient slack remains therein to permit the laced portion of the upper to be properly fitted to the last.

16. In a machine of the character described, means for passing a cord in the form of a series of connected loops through the eyelet holes of a shoe upper, means for passing a portion of said cord through said loops to form a locking cord and means whereby said cord is secured at the points required to leave a sufficient amount of slack therein to permit the upper laced thereby to be properly fitted to the last.

17. In a machine of the character described, means for passing a cord in the form of a series of connected loops through the eyelet holes of a shoe upper, means for passing a portion of said cord through said loops to form a locking cord, means for providing slack in said cord, and means for securing said cord while sufficient slack remains therein to permit the upper laced thereby to be properly fitted to the last.

18. In a machine of the character described, means for engaging and locating a plurality of pairs of the eyelet holes of a shoe upper and for passing through the same a series of loops to partially form a lacing, means for passing a locking cord through said loops to complete the lacing, and means whereby the lacing is secured while sufficient slack remains therein to permit the upper laced thereby to be properly fitted to the last.

19. In a machine of the character described, means for passing a series of loops through the eyelet holes of a shoe upper to partially form a lacing and for maintaining said loops at a predetermined length to provide sufficient slack in the lacing to permit the upper to be properly fitted to the last, means for passing a locking cord through said loops to complete the lacing, and means for securing the lacing while preserving substantially the same amount of slack therein.

20. In a machine of the character described, means for passing a cord in the form of a series of connected loops through the eyelet holes of a shoe upper, means for passing a portion of said cord through said loops to form a locking cord, and means for securing the free ends of said cord outside of and across the edges of the upper.

21. In a machine of the character described, means for passing a cord in the form of a series of connected loops through the eyelet holes of a shoe upper, means for passing a portion of said cord outside of and across the edges of the upper and through said loops to form a locking cord, and means for securing the free ends of said cord.

22. In a machine of the character described, means for passing a cord in the form of a series of connected loops through the eyelet holes of a shoe upper, means for passing a portion of said cord outside of and across the edges of the upper and through said loops to form a locking cord, and means for securing the free ends of said cord outside of and across the edges of the upper.

23. In a machine of the character described, a plurality of looper needles constructed and arranged to simultaneously engage and locate a plurality of pairs of eyelet holes of a shoe upper, and to pass through the same a series of loops to partially form a lacing, means for passing a locking cord through said loops to complete the lacing, and means for securing the ends of the lacing to prevent withdrawal.

24. In a machine of the character described, having provision for engaging and locating a plurality of pairs of the eyelet holes of a shoe upper, means including a plurality of needles for forming a lacing comprising a series of connected loops passing through said eyelets means for locking said loops, and suitable actuating mechanism.

25. In a machine of the character described, means comprising a plurality of needles for engaging and locating a plurality of pairs of eyelets of a shoe upper and forming therein a series of connected loops, and means for completing the lacing and for securing the ends of the lacing to prevent withdrawal.

12,639. CONTRACTIBLE MOLD. GEORGE GEORGENSON and JOSEPH E. HENNEN, Fond du Lac, Wis. Filed Mar. 21, 1907. Serial No. 363,783. Original No. 841,504, dated Jan. 15, 1907.

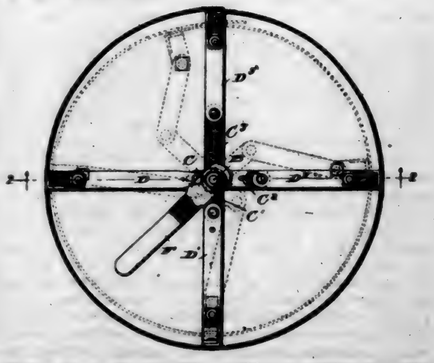

Claim.—1. A contractible mold comprising a shell formed of sheet metal, a central shaft having a series of radial arms differing progressively in length, and a like series of links or bars connecting said arms with the shell and varying in length inversely as to the arms, substantially as described.

2. The improved contractible mold comprising a flexible

shell, a central shaft having a lever adapted for rotating it, and a series of rigid arms which are fast on said shaft and differ progressively in length, a series of links or bars pivoted to the arms and at their outer ends to the shell and varying progressively in length but inversely as to the said arms, substantially as described.

12,640. BRANCH BOX FOR INSULATED ELECTRIC WIRES. MORTON HAVENS, Jr., Albany, N. Y. Filed Nov. 16, 1905. Serial No. 287,746. Original No. 775,037, dated Nov. 15, 1904.

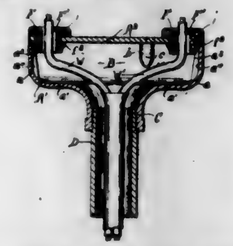

Claim.—1. A branch box for wires comprising a hollow body open on one side and provided with an opening for the introduction of a wire, seats formed in the hollow body, a cover adapted to fit over the open face, openings formed in the cover, insulators having stops and fitting in the cover-openings and held located in said openings by the stops, said stops engaging the seats of the hollow body, and means for fastening the cover to the hollow body.

2. A branch box for wires comprising a hollow open body formed with one or more perforations for the passage of wires, a detachable cover formed with openings, detachable insulators in said openings, means carried by the hollow body which coact with the insulators to lock the latter to the box and means for fastening the cover to the box.

3. A branch box for wires comprising a hollow open body formed with one or more perforations for the passage of wires, a detachable cover formed with openings, the edges of the latter being notched, insulators having lugs, the shape of the insulators and their lugs corresponding to the shape of the openings and notches, means on the box which coact with the lugs to lock the insulators against displacement, and means for fastening the cover to the hollow body.

4. The combination with an exposed conduit for electric wires; of a branch box comprising a hollow body having an internal oblong chamber for branching of the wires, and having suitable means for connection with the conduit, and for permitting the passage of the wires into such chamber, said chamber being provided with an elongated opening in the inclosing wall thereof, and a removable piece for closing the elongated opening, such removable piece having means for permitting the passage of the wires from said chamber and for insulating and spacing said wires, and clamping means for detachably securing said removable piece to the hollow body.

5. The combination with an exposed conduit for electric wires; of a branch box comprising a metallic hollow body having an internal oblong chamber for branching of the wires, and having a perforation for coupling said body to the conduit, and for passage of the wires into such chamber, said body having a part thereof open, an elongated piece for closing the open part of the body, said piece being removable from the body, and being provided with means for permitting the passage of said wires singly from the body through said piece and for insulating said wires and holding the same apart for preventing accidental burning of combustible substances in near proximity to the same, and clamping means for detachably securing said removable piece to the hollow body.

6. The combination with an exposed conduit for electric wires; of a branch box comprising a metallic hollow body having an internal oblong chamber for branching of the wires, and having its bottom formed intermediate of the ends thereof with a threaded perforation for coupling said body to the conduit, and for passage of the wires to such chamber, said body having its top open, an elongated piece for closing the top of the body, said elongated piece having openings in its ends through which the wires pass singly from the body, the portion of said elongated piece between said openings serving to space the wires apart for preventing accidental burning of combustible substances in near proximity to the same, and means for fastening the elongated piece to the body.

7. The combination with an exposed conduit for electric wires; of a branch box comprising a hollow body having an internal oblong chamber for branching of the wires, and having suitable means for connection with the conduit, and for permitting the passage of the wires into such chamber, said chamber being provided with an elongated opening in the inclosing wall thereof, a removable piece for closing the elongated opening, and insulators removably mounted in said removable piece for permitting the passage of the wires from said chamber and for insulating and spacing said wires.

8. The combination with an exposed conduit for electric wires; of a branch box comprising a metallic hollow body having an internal oblong chamber for branching of the wires, and having its bottom formed intermediate of the ends thereof with a threaded perforation for coupling said body to the conduit, and for passage of the wires to such chamber, said body having its top open, an elongated metallic piece for closing the top of the body, said elongated piece having openings in its ends and insulators removably mounted in the openings of the elongated piece for permitting the passage of the wires from said chamber and for insulating and spacing said wires.

9. The combination with an exposed conduit for electric wires; of a branch box comprising a hollow body having an internal oblong chamber for branching of the wires, and having suitable means for connection with the conduit, and for permitting the passage of the wires into such chamber, said chamber being provided with an elongated opening in the inclosing wall thereof and being provided with internal projections, a removable piece for closing the elongated opening, such removable piece having means for permitting the passage of the wires from said chamber and for insulating and spacing said wires, and screws passing through said removable piece and screwing into the internal projections.

10. The combination with an exposed conduit for electric wires; of a branch box comprising a metallic hollow body having an internal oblong chamber for branching of the wires, and having a perforation for coupling said body to the conduit, and for passage of the wires to such chamber, said body having a side thereof open and having portions of the lengthwise sides of its oblong chamber intermediate of the ends thereof formed with internal projections, an elongated piece for closing the open side of the body, said elongated piece having openings arranged between said internal projections and the ends of the body, through which openings the wires pass from the chamber, the portions of said elongated piece between said openings serving to space the wires apart for preventing accidental burning of combustible substances in near proximity to the same, and screws passing through said closing piece and screwing into the internal projections.

12,641. COMBINED CULTIVATOR AND PLANTER. HENRY T. MONSON, Mayville, N. D. Filed Feb. 14, 1907. Serial No. 357,416. Original No. 803,503, dated Oct. 31, 1905.

Claim.—1. The combination, with a frame, including traction wheels, of a transverse shaft provided at opposite ends with balance wheels of less diameter than the traction wheels to prevent the frame from upsetting.

2. In an implement of the class described, the combination with a frame, of a transverse shaft carried by said frame, and means mounted on each end of said shaft for balancing the implement and preventing the same from upsetting.

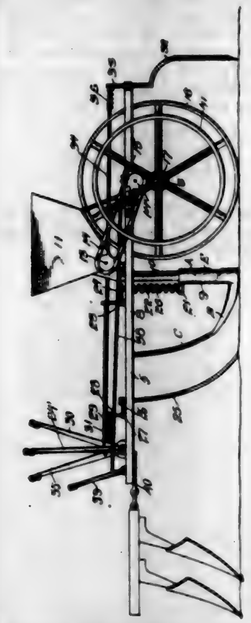

3. In an implement of the class described, the combination with a frame, of a transverse shaft carried by said frame, and means mounted on each end of said shaft for balancing the implement, said means being adapted to engage with the ground only when the implement is tilted to one side or the other, to prevent the implement from upsetting.

4. In an implement of the class described, the combination, with a frame, of an axle carried thereby, and a balance wheel mounted on each end of said axle to steady the implement and prevent the same from upsetting.

5. In an implement of the class described, the combination, with a frame including an axle, of presser wheels mounted upon said axle intermediate the ends thereof, and a balance wheel mounted on each end of said axle to steady the implement and prevent the same from upsetting.

6. In an implement of the class described, the combination, with a frame including an axle, the opposite ends of said axle extending beyond the corresponding side edges of the frame, of presser wheels mounted on said axle intermediate the ends thereof, and balancing means mounted on each end of said axle and adapted to engage with the ground only when the implement is tilted to one side or the other to prevent the same from upsetting.

7. In an implement of the class described, the combination with a frame including an axle, of presser wheels mounted upon said axle intermediate the ends thereof, and a balance wheel mounted upon each end of said axle, to steady the implement and prevent the same from upsetting, the diameter of the balance wheels being less than that of the presser wheels.

8. In an implement of the class described, the combination, with a frame, of a feed-box mounted upon the frame, shoes including an upwardly-extending hollow stock and a forwardly-extending foot, said shoes lying beneath the frame and in position for engagement with the ground, a chute communicating with the feed-box and with the upper ends of the stock, said stock having an opening therein at its rearward portion above the foot, and having a second opening adjacent to its lower end, and removable closures for the openings.

9. An implement of the class described comprising a frame, a shaft mounted in the frame transversely thereof, ground-treating devices carried by the frame, presser-wheels revolubly mounted upon the shaft, said shaft extending outwardly beyond the outermost presser-wheels and balancing-wheels revolubly mounted upon the outer ends of the shaft, said balancing-wheels being of lesser diameter than the presser-wheels.

10. In an implement of the class described the combination with a frame, of a feed-box mounted upon the frame, shoes including an upwardly-extending hollow stock and a forwardly-extending foot, a plate secured at one end to the toe of the foot and at its other end to the frame, and shoes lying beneath the frame and in position for engagement with the ground, a chute communicating with the feed-box and with the upper ends of the stock, said stock having an opening therein at its rearward portion above the foot, and having a second opening adjacent to its lower end, and removable closures for the openings.

11. An implement of the class described comprising a frame, a hopper, a shaft mounted in the frame, presser-wheels revolubly mounted upon the shaft, discharge mechanism for the hopper, connections between one of the presser-wheels and the discharge mechanism for operation of the latter when said presser-wheels are revolved, said connections being movable into and out of operative position, means for moving the connections, said means including a hand lever located at the forward end of the frame, drill-shoes connected with the frame forwardly of the presser-wheels and in the longitudinal planes thereof, said shoes being movable into and out of operative position, a second hand-lever located adjacent to the forward end of the frame, connections between the second hand-lever and the shoes for movement of the latter when the hand-lever is moved, means for holding the shoes yieldably in operative position, chutes connected with the hopper and with the shoes, ground-treating teeth carried by the frame forwardly of the shoes and movable into and out of operative position, means for moving the said teeth, said means including a hand-lever located adjacent to the forward end of the frame, ground-treating teeth pivoted in the frame rearwardly of the presser-wheels for movement into and out of operative position, a fourth hand-lever located adjacent to the forward end of the frame, connections between the fourth hand-lever and the second-named ground-treating teeth for movement thereof when the hand-lever is moved, separate means for holding the first and second named ground-treating teeth yieldably in operative position and steadying-wheels carried by the shaft outwardly of the first-named wheels, said implement being adapted at its forward end for connection to another implement.

12,642. SPRING TERMINAL-CLIP. JOHN SCHADE, Jr., Brooklyn, N. Y., assignor to Fahnestock Electric Company, a Corporation of West Virginia. Filed Mar. 11, 1907. Serial No. 361,890. Original No. 845,268, dated Feb. 26, 1907.

Claim.—1. A fastening device for electrical conductors, comprising a flat body member of metallic ribbon having substantially greater width than thickness and adapted to lie upon a base and be fastened thereto, an opposing spring member of flat metallic ribbon situated opposite and normally separated from said body member, and a resistant member adapted to lie between said members and bent intermediate its length to form an angular wire-engaging portion, the apex of which projects toward one member and is adapted to coact with said member to clamp a conductor in defined position therein.

2. A fastening device for electrical conductors formed

from a single piece of flat resilient metallic ribbon having substantially greater width than thickness and comprising a flat body member, adapted to lie upon a base and be fastened thereto, an opposing spring member situated opposite and normally separated from said body member, one of said members being provided with a resistant member bent intermediate its length to form an angular wire-engaging portion, the apex of which projects toward the opposite member to clamp a conductor in defined position therein, when said members are forced into operative relationship.

3. A fastening device for electrical conductors, comprising a piece of resilient metal looped on itself to form a spring and having one end bent in a reverse direction to the loop to form with the bend of the loop an angular wire-engaging portion, and a stationary free-ended resistant portion located at the opposite end of the loop and projecting toward the angular engaging portion, whereby when the spring is forced toward the resistant portion a conductor may be inserted between the resistant and engaging portions and be firmly gripped in defined position by the retractive force of the spring.

4. A fastening device for electrical conductors, comprising a body member and a spring member, one of said members being slotted centrally to form a projecting hook-tongue adapted to coact with the opposite member to clamp a conductor.

5. A fastening device for electrical conductors, comprising a body member and a spring member, one of said members being slotted centrally to form a projecting resistant member adapted to coact with the opposite member to clamp a conductor.

6. A fastening device for electrical conductors, comprising a body member and a spring member, one of said members being provided with a hook-tongue cut out of the body of the metal and adapted to coact with the opposite member to clamp a conductor.

7. A fastening device for electrical conductors, comprising a body member and a spring member, one of said members being provided with a resistant member cut out of the body of the metal, and adapted to coact with the opposite member to clamp a conductor.

8. A fastening device for electrical conductors, comprising a body member of flat metallic ribbon having substantially greater width than thickness and adapted to be secured to a support, a stationary resistant member bent intermediate its length to form an angular wire-engaging portion, the apex of which projects upwardly from the body member, and is adapted to engage a conductor, and an opposing spring member situated over and adapted to inclose the apex of the resistant member.

9. A fastening device for electrical conductors formed from a single piece of flat resilient metallic ribbon having substantially greater width than thickness and comprising two opposing normally separated members, one of said members being provided with a V-shaped wire-engaging portion projecting toward the opposite member and adapted to coact with said opposite member to firmly clamp a conductor when said members are forced into operative relationship.

10. A fastening device for electrical conductors formed from a single piece of resilient metal and comprising two opposing normally separated members provided with acute-angled wire-engaging portions projecting toward each other, with the angles in proximity so that when the members are forced together a conductor may be inserted in the angles of the angular portions and firmly gripped in defined position therein by the retractive force of at least one member.

11. A fastening device for electrical conductors comprising a single piece of resilient metal having normally separated opposing members, one being provided with an inwardly-projecting acute-angled wire-engaging portion and the other with a hook-shaped wire-engaging portion projecting toward the first member and adapted to coact therewith, whereby when the members are forced together a conductor may be inserted in said hook-shaped engaging portion, and firmly gripped in defined position therein by the retractive force of at least one of the members.

12. A fastening device for electrical conductors formed of a single piece of resilient metal, comprising a body member, a stationary hook-shaped resistant member projecting upward from the body member and having its outer end free, thereby forming an open hook, and an opposing spring member projecting upwardly from the body member at the forward end of the body member, then downwardly toward the resistant member and in proximity thereto, then upwardly away from the body member.

DESIGNS.

38,532. BADGE OR BUTTON. CYRUS A. WHITTAKER, Freeburg, Ill. Filed Feb. 19, 1907. Serial No. 358,298. Term of patent 7 years.

Claim.—The ornamental design for a badge or button, as shown.

38,533. HANDLE FOR SPOONS, FORKS, OR SIMILAR ARTICLES. GEORGE M. HALLENBECK, Wallingford, Conn., assignor to The Simeon L. & George H. Rogers Company, Wallingford, Conn., a Corporation. Filed Mar. 25, 1907. Serial No. 364,550. Term of patent 7 years.

Claim.—The ornamental design for a handle for a spoon, fork or similar article, as shown.

38,534. HANDLE FOR SPOONS, FORKS, OR SIMILAR ARTICLES. WILLIAM C. BOWLEN, Providence, R. I., assignor to Rockford Silver Plate Company, Rockford, Ill., a Corporation of Illinois. Filed Mar. 28, 1907. Serial No. 365,208. Term of patent 14 years.

Claim.—The ornamental design for a handle for a spoon, fork, or similar article, as shown.

38,535. PHOTOGRAPH-EASEL. HERBERT C. ITTER, Bay City, Mich. Filed Mar. 22, 1907. Serial No. 363,994. Term of patent 14 years.

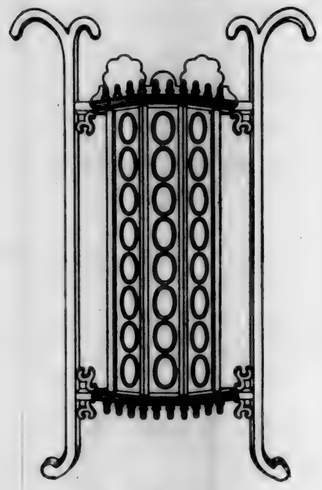

Claim.—The ornamental design for a photograph easel, as shown.

38,536. CABINET FOR TALKING-MACHINES. OSCAR E. MERTZ, Rosemont, Pa., assignor to Victor Talking Machine Company, a Corporation of New Jersey. Filed Mar. 20, 1907. Serial No. 363,522. Term of patent 14 years.

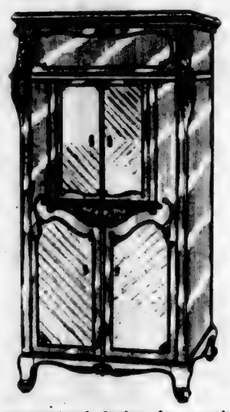

Claim.—The ornamental design for a cabinet for talking machines as shown.

38,537. CABINET FOR TALKING-MACHINES. JOHN C. ENGLISH, Camden, N. J., assignor to Victor Talking Machine Company, a Corporation of New Jersey. Filed Mar. 22, 1907. Serial No. 363,993. Term of patent 14 years.

Claim.—The ornamental design for a cabinet for talking machines as shown.

38,538. DISPLAY-BOOTH. MAX A. SINGER, New York, N. Y. Filed Feb. 18, 1907. Serial No. 358,143. Term of patent 7 years.

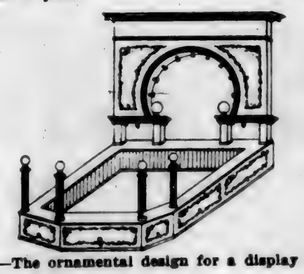

Claim.—The ornamental design for a display booth, as shown.

38,539. RADIATOR. ERIC SJODEN, Buffalo, N. Y., assignor to American Radiator Company, a Corporation of New Jersey. Filed Mar. 9, 1907. Serial No. 361,626. Term of patent 14 years.

Claim.—The ornamental design for a radiator, as shown.

38,540. RADIATOR. ERIC SJODEN, Buffalo, N. Y., assignor to American Radiator Company, a Corporation of New Jersey. Filed Mar. 9, 1907. Serial No. 361,627. Term of patent 14 years.

Claim.—The ornamental design for a radiator, as shown.

TRADE-MARKS

PUBLISHED APRIL 23, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 3,778. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) SIG & SOL H. FREIBERG, Cincinnati, Ohio. Filed May 1, 1905.

Particular description of goods.—Whisky.

Ser. No. 4,227. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) F. A. HARDY & Co., Chicago, Ill. Filed May 3, 1905.

C.I.

Particular description of goods.—Ophthalmometers.

Ser. No. 5,153. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) AMERICAN HARD RUBBER CO., New York, N. Y. Filed May 11, 1905.

SAMSOHM

Particular description of goods.—Electrical Insulating Material.

Ser. No. 5,946. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FOSTER, MILBURN CO., Buffalo, N. Y. Filed May 18, 1905. Used ten years.

Burdock BLOOD Bitters.

The body portions of the letters of the word "Burdock," other than the initial letter of the word, the ends of the scroll, the shaded portions of the letters of the word "Bitters," other than the initial letter, the shaded portion of the period following the latter word, and a portion of each of the shields are printed in red.

Particular description of goods.—Bitters.

Ser. No. 2,052. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) FISCHER BROTHERS, Seattle, Wash. Filed July 10, 1905.

The background of the mark is yellow, the words "San-Two" are red, the words "Roasted Coffee" are yellow on a red panel, and the building with yellow windows appears on a red semicircular panel.

Particular description of goods.—Coffee.

Ser. No. 11,106. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn. Filed Aug. 2, 1905.

PLANTATION

Particular description of goods.—Condition-Powders for the Cure and Alleviation of All Diseases of Horses, Cattle, Hogs, Poultry, &c.

Ser. No. 11,094. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) JAMES R. CROMPTON & BROTHERS LIMITED, Elton Paper Mills, near Bury, Lancashire, England. Filed Aug. 23, 1905.

Particular description of goods.—Wall-Papers.

Ser. No. 12,551. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) BROOKES & CROOKES, Sheffield, England. Filed Sept. 14, 1905. Used ten years.

Particular description of goods.—Cutlery in General.

Ser. No. 12,620. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) JONAS & COLVER, LIMITED, Sheffield, England. Filed Sept. 14, 1905.

Particular description of goods.—Cutlery in General and other Hand-Tools Having a Cutting Edge.

Ser. No. 13,780. (CLASS 54. SEA FOODS.) ANGUS WATSON & Co., Newcastle-on-Tyne, England. Filed Oct. 20, 1905.

Particular description of goods.—Sardines.

Ser. No. 14,190. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) R. E. DIETZ COMPANY, New York, N. Y. Filed Nov. 1, 1905.

KING

Particular description of goods.—Oil-Burning Tubular Hand-Lanterns.

Ser. No. 14,644. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) JOHN H. PARKER, Malden, Mass. Filed Nov. 15, 1905. Used ten years.

ARCTIC

Particular description of goods.—Knitted Socks, Knitted Coats, and Knitted Vests.

Ser. No. 15,105. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOHN W. STOVER, Grand Rapids, Mich. Filed Dec. 4, 1905.

EYERINE

Particular description of goods.—A Remedy in Liquid Form for the Cure of Inflammation and Granulation of the Eyes.

Ser. No. 15,039. (CLASS 40. DISTILLED ALCOHOLIC LIQUORS.) HENRY CAMPE & Co., San Francisco, Cal. Filed Jan. 5, 1906.

Particular description of goods.—Whisky.

Ser. No. 16,286. (CLASS 30. CROCKERY, EARTHENWARE, AND PORCELAIN.) VILLEROY & BOCH, Mettlach, Germany. Filed Jan. 18, 1906. Used ten years.

Particular description of goods.—China, Stoneware, Earthenware, Porcelain, and Terra-Cotta Wares other Than Embraced in Masonry Materials.

Ser. No. 16,938. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) JOSEPH RODGERS & SONS, LIMITED, Sheffield, England. Filed Feb. 12, 1906. Used ten years.

RODGERS

Particular description of goods.—Cutlery in General and other Hand-Tools Having a Cutting Edge.

Ser. No. 16,939. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) JOSEPH RODGERS & SONS, LIMITED, Sheffield, England. Filed Feb. 12, 1906. Used ten years.

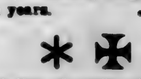

Particular description of goods.—Cutlery in General.

Ser. No. 16,941. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) JOSEPH ALLEN & SONS LIMITED, Sheffield, England. Filed Feb. 12, 1906. Used ten years.

Particular description of goods.—Table-Knives, Spring-Knives, Pocket-Knives, Razors, and Scissors.

Ser. No. 16,942. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) JOSEPH ALLEN & SONS LIMITED, Sheffield, England. Filed Feb. 12, 1906. Used ten years.

NON-XLL

Particular description of goods.—Cutlery in General and other Hand-Tools Having a Cutting Edge.

Ser. No. 16,944. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) JOSEPH ALLEN & SONS LIMITED, Sheffield, England. Filed Feb. 12, 1906. Used ten years.

Particular description of goods.—Cutlery of All Descriptions.

Ser. No. 16,946. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) W. K. & C. PEACE LD., Sheffield, England. Filed Feb. 12, 1906. Used ten years.

IMPERIAL

Particular description of goods.—Files, Saws, Hay and Straw Knives, Scythes, and other Hand-Tools Having a Cutting Edge.

Ser. No. 17,025. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) WM. H. WALKER & COMPANY, Buffalo, N. Y. Filed Feb. 14, 1906.

Particular description of goods.—Rubber Boots and Shoes.

Ser. No. 17,220. (CLASS 8. DETERGENTS.) THE LOPAS COMPANY, Boston, Mass. Filed Feb. 21, 1906.

Particular description of goods.—Saponaceous and Alkaline Compounds for Cleaning and Polishing Metals, Glass, Wood, and Cleaning Clothing and Flesh.

Ser. No. 18,112. (CLASS 10. FERTILIZERS.) VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 22, 1906. Used ten years.

STANDARD WHEAT GROWER

Particular description of goods.—Fertilizers.

Ser. No. 18,706. (CLASS 33. GLASSWARE NOT OTHERWISE CLASSIFIED.) R. E. DIETZ COMPANY, New York, N. Y. Filed Apr. 14, 1906.

Particular description of goods.—Globes for Lamps and Lanterns.

Ser. No. 18,964. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE WILKINSON SWORD COMPANY, LIMITED, London and Sheffield, England. Filed Apr. 21, 1906.

Particular description of goods.—Cutlery in General.

Ser. No. 19,180. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) ACME BALL-BEARING COMPANY, Chappaqua, N. Y. Filed Apr. 30, 1906.

ACME

Particular description of goods.—Ball-Bearing Casters.

Ser. No. 20,204. (CLASS 68. PUBLICATIONS.) JOHN WILLY, Chicago, Ill. Filed June 11, 1906.

Particular description of goods.—Magazines.

Ser. No. 20,210. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) WILLIAM A. BROOKS, Crab Orchard, Ky. Filed June 11, 1906.

Particular description of goods.—Felt Hats.

Ser. No. 20,361. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) P. BAILLY & CIE., Paris, France. Filed June 16, 1906. Used ten years.

Particular description of goods.—Shoulder-Braces and Suspenders.

Ser. No. 20,362. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) P. BAILLY & CIE., Paris, France. Filed June 16, 1906. Used ten years.

Particular description of goods.—Shoulder-Braces and Suspenders.

Ser. No. 21,071. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) STIX, BAER & FULLER D GOODS CO., St. Louis, Mo. Filed July 21, 1906.

Gisa

Particular description of goods.—Corsets.

Ser. No. 21,263. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) LYCURGUS SMITH, Mineral Wells, Tex. Filed July 30, 1906.

PAL-PINTO

Particular description of goods.—Natural Mineral Water and Crystals Resulting Therefrom.

Ser. No. 22,008. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) PLUVIUS-FEUERLÖSCHER-GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG, Hamburg, Germany. Filed Sept. 10, 1906.

Pluvius

Particular description of goods.—Hand Fire-Extinguishers.

Ser. No. 22,042. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) GORDON MANUFACTURING COMPANY, New Rochelle, N. Y. Filed Sept. 12, 1906.

Gordon

Particular description of goods.—Hose-Supporters.

Ser. No. 22,679. (CLASS 9. EXPLOSIVES.) BLAISE CAMET, Lyons, France. Filed Oct. 13, 1906.

MÉKHANÉ

Particular description of goods.—Loaded Cartridges.

Ser. No. 23,048. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) ALFRED B. JENKINS, New York, N. Y.; Boston, Mass., and Elizabeth, N. J. Filed Nov. 2, 1906.

JENKINS

Particular description of goods.—A Rubber Packing.

Ser. No. 23,461. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) GLENN ROCK MINERAL SPRING COMPANY, Waukesha, Wis. Filed Nov. 10, 1906.

Particular description of goods.—Still and Carbonated Waters.

Ser. No. 23,711. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) CANTON PHARMACY COMPANY, Canton, Ohio. Filed Dec. 1, 1906.

Particular description of goods.—Remedy for Urinary Diseases.

Ser. No. 23,836. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio. Filed Dec. 6, 1906.

Competitor

Particular description of goods.—Paper Bags.

Ser. No. 23,838. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio. Filed Dec. 6, 1906.

WHITE EAGLE

Particular description of goods.—Paper Bags.

Ser. No. 23,839. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio. Filed Dec. 6, 1906.

MAGNOLIA

Particular description of goods.—Paper Bags.

Ser. No. 23,840. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio. Filed Dec. 6, 1906.

CLIMAX

Particular description of goods.—Paper Bags.

Ser. No. 23,842. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio. Filed Dec. 6, 1906.

LEADER

Particular description of goods.—Paper Bags.

Ser. No. 23,846. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio. Filed Dec. 6, 1906.

QUAKER

Particular description of goods.—Paper Bags.

Ser. No. 23,847. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio. Filed Dec. 6, 1906.

TELEPHONE

Particular description of goods.—Paper Bags.

Ser. No. 24,282. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) RICHARD MCLLER, Winnipauk, Conn. Filed Dec. 20, 1906.

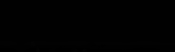

Particular description of goods.—Silk and Cotton Warp Umbrella-Cover Fabrics.

Ser. No. 24,285. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) ENTERPRISE NOVELTY & M. F. G. CO., Knoxville, Ill. Filed Dec. 20, 1906.

Particular description of goods.—Mouse and Rat Traps.

Ser. No. 24,664. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) PEROXIDENT MANUFACTURING COMPANY, St. Louis, Mo. Filed Jan. 16, 1907.

Peroxident

Particular description of goods.—Antiseptic Germicide and Deodorant Preparations.

Ser. No. 24,761. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich. Filed Jan. 10, 1907.

U.S.G.Co's.

Particular description of goods.—Graphite Paint in Paste Form or Ready for Use and Graphite Pipe "Cement," (a Preparation for Painting Pipe-Joints, Gaskets, Stay-Bolts, and Similar Articles.)

Ser. No. 24,763. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich. Filed Jan. 19, 1907. Used ten years.

The United States Graphite Co.,

Particular description of goods.—Graphite Paint in Paste Form or Ready for Use and Graphite Pipe "Cement," (a Preparation for Painting Pipe-Joints, Gaskets, Stay-Bolts, and Similar Articles.)

Ser. No. 25,147. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) TAYLOR BROS., Camden, N. J. Filed Feb. 5, 1907.

KEYSTONE

Particular description of goods.—Nutritive and Tonic Foods for Poultry and Pigeons.

Ser. No. 25,212. (CLASS 47. CONFECTIONERY.) ASA M. FITCH, Indianapolis, Ind. Filed Feb. 8, 1907.

Particular description of goods.—Chewing-Gum.

Ser. No. 25,225. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) FAYETTE R. PLUMB, INCORPORATED, Philadelphia, Pa. Filed Feb. 9, 1907. Used ten years.

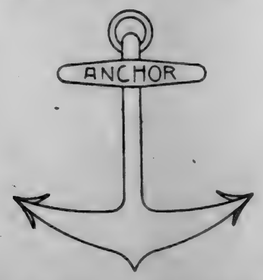

Particular description of goods.—Slate-Cutters' Trimmers, Hatchets, Axes, Adzes, Wedge-Knives, Bush-Hooks, Cleavers, Knives, Tin-Roof Cutters, Hardies, Countersinks, Punches Having a Cutting Edge, Chisels, Drill-Tools Having a Cutting Edge, and Coopers' Frocs.

Ser. No. 25,276. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) BATTLE & CO., CHEMISTS' CORPORATION, St. Louis, Mo. Filed Feb. 12, 1907.

PAPINE

Particular description of goods.—A Liquid Chemical or Medical Preparation Used as an Anodyne.

Ser. No. 25,277. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) BATTLE & CO., CHEMISTS' CORPORATION, St. Louis, Mo. Filed Feb. 12, 1907.

IODIA

Particular description of goods.—A Chemical or Medical Preparation Used as an Alterative.

Ser. No. 25,278. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) BATTLE & CO., CHEMISTS' CORPORATION, St. Louis, Mo. Filed Feb. 12, 1907.

BROMIDIA

Particular description of goods.—A Chemical or Medical Preparation Used as a Hypnotic.

Ser. No. 25,279. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) BATTLE & CO., CHEMISTS' CORPORATION, St. Louis, Mo. Filed Feb. 12, 1907.

ECTHOL

Particular description of goods.—An Antipurulent, Especially Adapted as a Specific for Correcting the Depraved Condition of the Fluids and Tissues.

Ser. No. 25,289. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) KUNSTADTER BROS., Chicago, Ill. Filed Feb. 13, 1907.

Teddy Bear

Particular description of goods.—Waist-Belts.

Ser. No. 25,313. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) H. E. BUCKLEN & COMPANY, Chicago, Ill. Filed Feb. 15, 1907. Used ten years.

Particular description of goods.—Medicinal Preparations for the Relief of Coughs, Colds, and All Affections of the Throat, Chest, and Lungs.

Ser. No. 25,381. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE RIMAK CHEMICAL COMPANY, New York, N. Y. Filed Feb. 18, 1907.

RIMAK

Particular description of goods.—Toilet Creams and Shampoos.

Ser. No. 25,385. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) SMITHMADE SUSPENDER CO., Boston, Mass. Filed Feb. 18, 1907.

23

Particular description of goods.—Suspenders.

Ser. No. 25,390. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) THE CASEY-SWASEY CO., Fort Worth, Tex. Filed Feb. 18, 1907.

Particular description of goods.—Brandy, Gin, and Whisky.

Ser. No. 25,402. (CLASS 32. FURNITURE AND UPHOLSTERY NOT OTHERWISE CLASSIFIED.) THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio. Filed Feb. 19, 1907.

Globe

Particular description of goods.—Bookcases, Legal-Blank Cases, Pigeonhole-Cases, Bankers' Note-Cases, Office-Trays, Desk-Trays, Card-Index Trays, Office-Tickiers, Document-Boxes, Stationary-Racks, Distributers, Filing-Cabinets, Card-Index Cabinets, Copying-Press Stands, Chairs, Desks, Tables, Wardrobes, and Cupboards, All Made Wholly or Principally of Wood.

Ser. No. 25,405. (CLASS 32. FURNITURE AND UPHOLSTERY NOT OTHERWISE CLASSIFIED.) THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio. Filed Feb. 19, 1907.

Globe-Wernicke

Particular description of goods.—Bookcases, Legal-Blank Cases, Pigeonhole-Cases, Bankers' Note-Cases, Office-Trays, Desk-Trays, Card-Index Trays, Office-Tickiers, Document-Boxes, Stationary-Racks, Distributers, Filing-Cabinets, Card-Index Cabinets, Copying-Press Stands, Chairs, Desks, Tables, Wardrobes, and Cupboards, All Made Wholly or Principally of Wood.

Ser. No. 25,406. (CLASS 32. FURNITURE AND UPHOLSTERY NOT OTHERWISE CLASSIFIED.) THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio. Filed Feb. 19, 1907. Used ten years.

Wernicke

Particular description of goods.—Bookcases, Legal-Blank Cases, Pigeonhole-Cases, Bankers' Note-Cases, Office-Trays, Desk-Trays, Card-Index Trays, Office-Tickiers, Filing-Cabinets, Card-Index Cabinets, Copying-Press Stands, Chairs, Desks, Tables, Wardrobes, and Cupboards, All Made Wholly or Principally of Wood.

Ser. No. 25,411. (CLASS 32. FURNITURE AND UPHOLSTERY NOT OTHERWISE CLASSIFIED.) THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio. Filed Feb. 19, 1907.

G/W

Particular description of goods.—Bookcases, Legal-Blank Cases, Pigeonhole-Cases, Bankers' Note-Cases, Office-Trays, Desk-Trays, Card-Index Trays, Office-Tickiers, Document-Boxes, Stationary-Racks, Distributers, Filing-Cabinets, Card-Index Cabinets, Copying-Press Stands, Chairs, Desks, Tables, Wardrobes, and Cupboards, All Made Wholly or Principally of Wood.

Ser. No. 25,420. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) ARNE GUNDERSON, Green Bay, Wis. Filed Feb. 19, 1907.

"VIKING"

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 25,450. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,472. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

HONOR

Particular description of goods.—Canned Fish.

Ser. No. 25,508. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) WILLISTON W. BISSELL, Rochester, N. Y. Filed Feb. 21, 1907.

KROMOID

Particular description of goods.—Lenses for Auto-Goggles, Spectacles, and Eyeglasses.

Ser. No. 25,512. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio. Filed Feb. 21, 1907.

Excelsior

Particular description of goods.—Document-Files and Desk-Pads.

Ser. No. 25,550. (CLASS 66. OBJECTS OF ART AND ORNAMENT.) A. MAYET, New York, N. Y. Filed Feb. 23, 1907.

Particular description of goods.—Wreaths, Crosses, Artificial Flowers, Garlands, and Funeral Decorations Formed of Beads.

Ser. No. 25,560. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE PANDROCOL MFG. CO., New York, N. Y. Filed Feb. 23, 1907.

Pandrocol

Particular description of goods.—A Preparation for Preventing Gray Hair, Dandruff, and Loss of Hair.

Ser. No. 25,568. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) GEORGE E. WYE COMPANY, Needham, Mass. Filed Feb. 23, 1907.

Particular description of goods.—Sweaters.

Ser. No. 25,593. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) THE HERSHEY RICE MANUFACTURING COMPANY, Columbus, Ohio. Filed Feb. 25, 1907.

Particular description of goods.—Coats, Trousers, and Dress and Negligée Shirts, Except Such Shirts as are Knitted.

Ser. No. 25,617. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) SMITH, KLINE AND FRENCH COMPANY, Philadelphia, Pa. Filed Feb. 26, 1907. Used ten years.

FRENCH'S

Particular description of goods.—Perfumeries, Toilet Waters, Florida Waters, Essences for Making Toilet Waters and Extracts of Perfumes, Sachets, Bay-Rum, Smelling Salts, Toilet Powder, Talcum Powder, Face-Powder, Tooth-Wash, Tooth-Powder, Pomades, Preparations for the Treatment of the Hair and Scalp, Skin Foods, Tonics, a Cream for Irritations or Chapping of the Skin, Bitters, Emulsion of Cod-Liver Oil, Extract of Sarsaparilla, a Preparation of Beef, Wine, and Iron, a Tonic, Being a Compound Syrup of Hypophosphites, a Tonic of Coca-Wine, Remedy for Dyspepsia, Pepsin Compounds for Aiding Digestion, Granular Effervescing Salts for Headache, Constipation, Sleeplessness, and Nervous Exhaustion, a Remedy for Coughs and Colds, a Gargle for the Throat.

Ser. No. 25,642. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) THE H. L. WELCH HOSIERY CO., Waterville, Conn. Filed Feb. 27, 1907.

Particular description of goods.—Knitted Underwear.

Ser. No. 25,653. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) EAGLE PAINT & VARNISH COMPANY, Allegheny City, Pa. Filed Feb. 28, 1907.

M.B.C.

Particular description of goods.—Paints, Varnishes, Stains, Enamels, Driers, Fillers, Paint-Colors, Floor-Waxes, Leads, and Putty.

Ser. No. 25,692. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) CREAM OF WHEAT CO., Minneapolis, Minn. Filed Mar. 2, 1907.

WHEAT

Particular description of goods.—Wheat Breakfast Food.

Ser. No. 25,693. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) CREAM OF WHEAT CO., Minneapolis, Minn. Filed Mar. 2, 1907.

Particular description of goods.—Wheat Breakfast Food.

Ser. No. 25,694. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) CREAM OF WHEAT CO., Minneapolis, Minn. Filed Mar. 2, 1907.

WHEAT

Particular description of goods.—Wheat Breakfast Food.

Ser. No. 25,727. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) HENRY B. CABOT and HELEN N. CABOT, Boston, Mass., executors u/w of Samuel Cabot. Filed Mar. 4, 1907.

CABOT'S

Particular description of goods.—Wood and Shingle Stains, a Paint or Stain for Preserving Wood, a Paint or Stain for Fireproofing Wood, and upon Lamp-Black.

Ser. No. 25,733. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) APPLETON ELECTRIC COMPANY, Chicago, Ill. Filed Mar. 4, 1907.

WIRELETS

Particular description of goods.—Outlet-Bushings for Electric Wiring Purposes.

Ser. No. 25,736. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) 4-IN-1, New York, N. Y. Filed Mar. 4, 1907.

4

The figure "4" being printed in red.

Particular description of goods.—Wood Finishes, Stains, and Varnishes.

Ser. No. 25,772. (CLASS 12. MASONRY MATERIALS.) HALBERSTADT B. LONDE, New York, N. Y. Filed Mar. 5, 1907.

SOLOMENT

Particular description of goods.—Artificial Stone for Interior Decoration.

Ser. No. 25,779. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) THE CABLE COMPANY, Chicago, Ill. Filed Mar. 5, 1907.

EUTERPE

Particular description of goods.—Automatic Piano-Players and Self-Playing Pianos.

Ser. No. 25,791. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) FRIED, MENDELSON & CO., New York, N. Y. Filed Mar. 6, 1907.

AUTO

Particular description of goods.—Silk Dress Goods.

Ser. No. 25,796. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) THE BRISTOL MANUFACTURING COMPANY, Bristol, Conn. Filed Mar. 6, 1907.

Particular description of goods.—Knitted Underwear.

Ser. No. 25,832. (CLASS 19. BOATS AND ROAD-VEHICLES.) WILLIAM F. REMPPIS, Reading, Pa. Filed Mar. 7, 1907.

R-S

Particular description of goods.—Motor-Cycles.

Ser. No. 25,853. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) MENNILLO BROS., New York, N. Y. Filed Mar. 8, 1907.

Particular description of goods.—Canned Fruits and Vegetables.

Ser. No. 25,857. (CLASS 53. SACCHARINE FOODS NOT INCLUDED IN CLASS 47.) ST. PAUL SYRUP REFINING COMPANY, St. Paul, Minn. Filed Mar. 8, 1907.

Particular description of goods.—Syrup.

Ser. No. 25,867. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) CATTARAUGUS CUTLERY COMPANY, Little Valley, N. Y. Filed Mar. 8, 1907.

Particular description of goods.—Pocket-Knives, Table Knives and Forks, Shears, Scissors, Razors, Butcher-Knives, Carving-Knives, and Pruning-Knives.

Ser. No. 25,874. (CLASS 71. TOBACCO PRODUCTS.) JABEZ FEABEY & COMPANY, Newark, N. J. Filed Mar. 9, 1907.

Particular description of goods.—Cigars.

Ser. No. 25,900. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) CORN PRODUCTS REFINING COMPANY, Jersey City, N. J. Filed Mar. 11, 1907.

EL MONTE BLANCO

Particular description of goods.—Corn-Starch.

Ser. No. 25,901. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) FRANK D. COUNCILMAN, Harrison Valley, Pa. Filed Mar. 11, 1907.

White Ribbon

Particular description of goods.—Mineral and Table Waters and All Non-Alcoholic Carbonated Beverages.

Ser. No. 25,904. (CLASS 54. SEA FOODS.) F. H. FROMM & Co., Philadelphia, Pa. Filed Mar. 11, 1907.

Particular description of goods.—Canned Sardines.

Ser. No. 25,909. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) F. E. ROYSTON & Co., Aurora, Ill. Filed Mar. 11, 1907.

FERCO

Particular description of goods.—Coffee and Tea.

Ser. No. 25,918. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) AKIN-ERSKINE MILLING Co., Evansville, Ind. Filed Mar. 12, 1907.

ROXANE

Particular description of goods.—Wheat-Flour.

Ser. No. 25,945. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) TOCH BROTHERS, New York, N. Y. Filed Mar. 13, 1907.

Particular description of goods.—Dry Colors Used in Making Paints and Varnishes Used to Aid Paint in Drying or Making Enamel or Floor Paints.

Ser. No. 25,952. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HENRY L. LAUTERMANN, Newark, N. J. Filed Mar. 13, 1907.

ANTI-EPILEPSICIN.

Particular description of goods.—Proprietary Medicine for the Cure of Epilepsy, St. Vitus' Dance, and Diseases Resembling Epilepsy.

Ser. No. 25,957. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) THE NATIONAL REFINING COMPANY, Cleveland, Ohio. Filed Mar. 13, 1907.

WHITE ROSE GASOLINE

Particular description of goods.—Gasolene.

Ser. No. 25,960. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOHN P. W. S. AYMOND, Bunkie, La. Filed Mar. 14, 1907.

Particular description of goods.—A Remedy for Affections and Diseases of the Eye.

Ser. No. 25,986. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) AUSTIN BISCUIT COMPANY, Chelsea, Mass. Filed Mar. 15, 1907.

Sodaette

Particular description of goods.—Biscuit.

Ser. No. 25,994. (CLASS 47. CONFECTIONERY.) HENRY ROLLER, Muncie, Ind. Filed Mar. 15, 1907.

Bark Scrolls

Particular description of goods.—Chocolates and Bonbons.

Ser. No. 26,013. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) IVAN FRANK & COMPANY, New York, N. Y. Filed Mar. 16, 1907.

"TEDDY BEAR"

Particular description of goods.—Reefers and Overcoats for Boys, Girls, and Children.

Ser. No. 26,018. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) TRIMONT MANUFACTURING CO., Boston, Mass. Filed Mar. 16, 1907.

TRIMO

Particular description of goods.—Monkey-Wrenches and Pipe-Wrenches.

Ser. No. 26,023. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) WALL RICE MILLING CO. LIMITED, Lake Charles, La. Filed Mar. 16, 1907.

PRINCESS

Particular description of goods.—Rice.

Ser. No. 26,028. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) MANHATTAN BRASS CO., New York, N. Y. Filed Mar. 18, 1907. Used ten years.

"PERFECTION"

Particular description of goods.—Kerosene-Oil Lamps.

Ser. No. 26,030. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE WEST HAVEN MFG. CO., West Haven, Conn. Filed Mar. 18, 1907.

Particular description of goods.—Hacksaw-Blades.

Ser. No. 26,047. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) SIMMONS HARDWARE COMPANY, St. Louis, Mo. Filed Mar. 18, 1907.

CHIPAWAY

Particular description of goods.—Axes, Adzes, Hatchets, Crosscut-Saws, Handsaws, Rip-Saws, Panel-Saws, Butcher-Saws, Hacksaws, Hacksaw-Blades, Wood-Saws, Scythes, Grass-Hooks, Corn-Knives, Cane-Knives, Hedge-Knives, Bush-Hooks, Hay-Knives, Sheep-Shears, Choppers, Cleavers, Awls, Pocket-Knives, Augers, Auger-Bits, Expansive Bits, Chisels, Files, Rasps, Gouges, Plane-Irons, Drawing-Knives, Jack-Planes, Cutting-Pliers, Cutting-Pincers, Belt-Punches, Tinners' Snips, Butcher-Knives, Hunting-Knives, Table-Knives, Table-Forks, Shears, Scissors, Razors.

Ser. No. 26,054. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) BATES STREET SHIRT CO., Lewiston, Me. Filed Mar. 18, 1907.

BATES STREET $ 70 $ SHIRT CO.

Particular description of goods.—Men's Cotton, Linen, and Silk Fabric Overshirts.

Ser. No. 26,077. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE PREST-O-LITE COMPANY, Indianapolis, Ind. Filed Mar. 19, 1907.

PREST-O-TIRE

Particular description of goods.—Liquid Gas in Portable Tanks for Inflating Tires.

Ser. No. 26,078. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) FREDERICK L. STALLMAN, New York, N. Y. Filed Mar. 19, 1907.

MASSALITE

Particular description of goods.—Paper or other Materials Combined or Impregnated with Certain Substances Designed to Protect Against Insects.

Ser. No. 26,104. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) CEREAL PRODUCTS COMPANY, Baltimore, Md. Filed Mar. 20, 1907.

CEPCO
A NOURISHING SUBSTITUTE FOR COFFEE

Particular description of goods.—A Substitute for Coffee.

Ser. No. 26,130. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE H-O (HORNBY'S OATMEAL) COMPANY, New York, N. Y. Filed Mar. 21, 1907.

Particular description of goods.—Corn-Flakes.

Ser. No. 26,131. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE H-O (HORNBY'S OATMEAL) COMPANY, New York, N. Y. Filed Mar. 21, 1907.

KORN-

KINKS

Particular description of goods.—Corn-Flakes.

Ser. No. 26,139. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) ISIDOR WEITMAN, New York, N. Y. Filed Mar. 21, 1907.

FROU FROU

Particular description of goods.—Tarts.

Ser. No. 26,145. (CLASS 54. SEA FOODS.) A/s. THE BERGEN CANNING CO., Bergen, Norway. Filed Mar. 21, 1907.

OLE BULL

Particular description of goods.—Canned, Smoked, Pickled, and Preserved Fish.

Ser. No. 26,156. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) MAX STRAUSS, New York, N. Y. Filed Mar. 22, 1907.

BEAUTY AND STRENGTH
TRADE MARK
AMAZON SILK

Particular description of goods.—Silk Piece Goods and Silk and Cotton Mixed Piece Goods.

Ser. No. 26,168. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 23, 1907.

ALPHA

Particular description of goods.—Spool-Cotton, Thread, and Sewing-Cotton.

Ser. No. 26,170. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) BEHRINGWERK, Marburg, Germany. Filed Mar. 23, 1907.

Tulase

Particular description of goods.—A Remedy for Tuberculosis in Human Beings and Cattle.

Ser. No. 26,175. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) CRADDOCK-TERRY COMPANY, Lynchburg, Va. Filed Mar. 23, 1907.

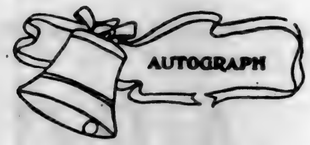

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 26,178. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE CHARLES MEIS SHOE CO., Cincinnati, Ohio. Filed Mar. 23, 1907.

Particular description of goods.—Men's and Boys' Leather Boots and High and Low Cut Leather Shoes.

Ser. No. 26,183. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) SCHONEBERGER & NOBLE, New York, N. Y. Filed Mar. 23, 1907. Used ten years.

"ONE AND ONLY ONE"
DR. BROWNS
SARSAPARILLA

Particular description of goods.—Sarsaparilla.

Ser. No. 26,194. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) T. C. BRUNNER & SON, Omaha, Nebr. Filed Mar. 25, 1907.

BLUE BELL
A MARK OF EXCELLENCE

Particular description of goods.—Coffee.

Ser. No. 26,197. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) FRANK T. MORRISSEY, Lowell, Mass. Filed Mar. 25, 1907.

Tried & True

Particular description of goods.—Whisky.

Ser. No. 26,199. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) PETERS SHOE CO., St. Louis, Mo. Filed Mar. 25, 1907.

Weather Bird

Particular description of goods.—Shoes Made Wholly or in Part of Leather.

Ser. No. 26,201. (CLASS 71. TOBACCO PRODUCTS.) ALLEN BROTHERS COMPANY, Omaha, Nebr. Filed Mar. 25, 1907.

A B C

Particular description of goods.—Cigars.

Ser. No. 26,202. (CLASS 71. TOBACCO PRODUCTS.) ALLEN BROTHERS COMPANY, Omaha, Nebr. Filed Mar. 25, 1907.

GAIETY

BRAND

Particular description of goods.—Cigars.

Ser. No. 26,205. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) ALLEN BROTHERS COMPANY, Omaha, Nebr. Filed Mar. 25, 1907.

Gaiety

Particular description of goods.—Wheat-Flour.

Ser. No. 26,207. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) ALLEN BROTHERS COMPANY, Omaha, Nebr. Filed Mar. 25, 1907.

·A·B·C·

Particular description of goods.—Spices, Preserves, Olives, Celery Salt, Jellies, Jams, Olive-Oil, Chili-Sauce, Catsup, Bottled Fruits, Pickles in Glass, Pickles in Wood, Vinegar.

Ser. No. 26,211. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) ALLEN BROTHERS COMPANY, Omaha, Nebr. Filed Mar. 25, 1907.

SAILOR BOY

Particular description of goods.—Dried Fruits, Canned Fruits, and Canned Vegetables.

Ser. No. 26,213. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) ALLEN BROTHERS COMPANY, Omaha, Nebr. Filed Mar. 25, 1907.

Particular description of goods.—Canned Fruits and Canned Vegetables.

Ser. No. 26,214. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) ALLEN BROTHERS COMPANY, Omaha, Nebr. Filed Mar. 25, 1907.

A·B·C

Particular description of goods.—Canned Fruits and Canned Vegetables.

Ser. No. 26,215. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) ALLEN BROTHERS COMPANY, Omaha, Nebr. Filed Mar. 25, 1907.

Particular description of goods.—Teas.

Ser. No. 26,216. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) ALLEN BROTHERS COMPANY, Omaha, Nebr. Filed Mar. 25, 1907.

GAIETY

Particular description of goods.—Teas.

Ser. No. 26,232. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) KELLEY-HOW-THOMSON CO., Duluth, Minn. Filed Mar. 25, 1907.

Particular description of goods.—Pocket-Knives, Razors, Scissors, Shears, Hatchets, Axes, Handsaws, Chisels, Files, and Rasps.

Ser. No. 26,233. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) KELLEY-HOW-THOMSON CO., Duluth, Minn. Filed Mar. 25, 1907.

Particular description of goods.—Hammers, Screw-Drivers, and Shovels.

Ser. No. 26,234. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) KELLEY-HOW-THOMSON CO., Duluth, Minn. Filed Mar. 25, 1907.

Particular description of goods.—Washing-Machines, Washtubs, Washboilers, and Clothes-Wringers.

Ser. No. 26,236. (CLASS 28. SEWING-MACHINES AND ATTACHMENTS.) KELLEY-HOW-THOMSON CO., Duluth, Minn. Filed Mar. 25, 1907.

Particular description of goods.—Sewing-Machines.

Ser. No. 26,237. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) KELLEY-HOW-THOMSON CO., Duluth, Minn. Filed Mar. 25, 1907.

Particular description of goods.—Stoves and Ranges.

Ser. No. 26,238. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) PICHER LEAD COMPANY, Joplin, Mo. Filed Mar. 25, 1907. Used ten years.

PICHER

Particular description of goods.—Lead Pigments.

Ser. No. 26,239. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) PICHER LEAD COMPANY, Joplin, Mo. Filed Mar. 25, 1907. Used ten years.

SUBLIMED

Particular description of goods.—Lead Pigments.

Ser. No. 26,251. (CLASS 54. SEA FOODS.) BERGENS VARMBOGERI MOLT & CO., Bergen, Norway. Filed Mar. 26, 1907.

Particular description of goods.—Canned, Smoked, Pickled, and Preserved Fish.

Ser. No. 26,257. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) BERRY BROTHERS, LIMITED, Detroit, Mich. Filed Mar. 26, 1907.

APEX

Particular description of goods.—Paint and Varnish Remover.

Ser. No. 26,258. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) EMPIRE SILK CO., Paterson, N. J. Filed Mar. 26, 1907.

EMPIRE

Particular description of goods.—Silk Piece Goods.

Ser. No. 26,268. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) STANDARD VARNISH WORKS, New York, N. Y. Filed Mar. 26, 1907.

S. P.

Particular description of goods.—Floor-Finish, Cabinet-Finish, Hard-Oil Finish, Seat-Finish, Light Finishing-Varnish, Black Finishing-Varnish, Coil-Sticking Varnish, Flexible Mica-Sticking Varnish, Insulating-Varnish, Quick-Drying Insulating-Varnish, Outside Spar-Varnish, Inside Spar-Varnish, Exterior Coach-Varnish, Interior Coach-Varnish, Core-Plate Varnish, and Cloth-Varnish.

Ser. No. 26,281. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE MILLER MANUFACTURING COMPANY, New York, N. Y. Filed Mar. 27, 1907.

Cabinet

Particular description of goods.—Flavoring Extracts.

Ser. No. 26,289. (CLASS 8. DETERGENTS.) ROBINSON BROS & COMPANY INCORPORATED, Portland, Me., and Malden, Mass. Filed Mar. 28, 1907. Used ten years.

Particular description of goods.—Soap.

Ser. No. 26,290. (CLASS 8. DETERGENTS.) ROBINSON BROS & COMPANY INCORPORATED, Portland, Me., and Malden, Mass. Filed Mar. 28, 1907. Used ten years.

Particular description of goods.—Soap.

Ser. No. 26,291. (CLASS 8. DETERGENTS.) ROBINSON BROS & COMPANY INCORPORATED, Portland, Me., and Malden, Mass. Filed Mar. 28, 1907. Used ten years.

Particular description of goods.—Soap.

Ser. No. 26,293. (CLASS 8. DETERGENTS.) ROBINSON BROS & COMPANY INCORPORATED, Portland, Me., and Malden, Mass. Filed Mar. 28, 1907. Used ten years.

Particular description of goods.—Soap.

Ser. No. 26,295. (CLASS 8. DETERGENTS.) ROBINSON BROS & COMPANY INCORPORATED, Portland, Me., and Malden, Mass. Filed Mar. 28, 1907. Used ten years.

Particular description of goods.—Soap.

Ser. No. 26,297. (CLASS 8. DETERGENTS.) ROBINSON BROS & COMPANY INCORPORATED, Portland, Me., and Malden, Mass. Filed Mar. 28, 1907. Used ten years.

LAURENA

Particular description of goods.—Soap.

Ser. No. 26,298. (CLASS 8. DETERGENTS.) ROBINSON BROS & COMPANY INCORPORATED, Portland, Me., and Malden, Mass. Filed Mar. 28, 1907. Used ten years.

INDEXICAL
SILVER

Particular description of goods.—Soap.

Ser. No. 26,304. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) ELIJAH J. BOND, Charlestown, W. Va. Filed Mar. 28, 1907.

Particular description of goods.—Game-Boards.

Ser. No. 26,325. (CLASS 71. TOBACCO PRODUCTS.) CAYEY-CAGUAS TOBACCO COMPANY, New York, N. Y., and Caguas, Porto Rico. Filed Mar. 29, 1907.

Particular description of goods.—Cigars, Cheroots, and Cigarettes Made of Cigar-Tobacco.

Ser. No. 26,327. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE GLOBE MILLING COMPANY, Watertown, Wis. Filed Mar. 29, 1907.

UTRYME

Particular description of goods.—Wheat-Flour.

Ser. No. 26,337. (CLASS 71. TOBACCO PRODUCTS.) J. FRED WILCOX & COMPANY, Chicago, Ill. Filed Mar. 29, 1907.

LA PREFIERO

Particular description of goods.—Cigars.

TRADE-MARKS

REGISTERED APRIL 23, 1907.

62,125. LEATHER BOOTS AND SHOES. BAY STATE SHOE & LEATHER CO., Worcester, Mass.
Filed May 2, 1906. Serial No. 3,907. PUBLISHED OCTOBER 9, 1906.

62,126. CLEANER AND POLISHER FOR METAL AND GLASS. PETER J. BERTUCCI, New Orleans, La.
Filed December 31, 1906. Serial No. 24,362. PUBLISHED FEBRUARY 26, 1907.

62,127. ABRASIVE CLEANSING, POLISHING, AND SCOURING PREPARATION. THE CUDAHY PACKING COMPANY, Chicago, Ill., and South Omaha, Nebr.
Filed January 10, 1907. Serial No. 24,564. PUBLISHED FEBRUARY 26, 1907.

62,128. MONTHLY PERIODICAL. DAVID C. COOK PUBLISHING COMPANY, Elgin, Ill.
Filed December 1, 1905. Serial No. 15,131. PUBLISHED JUNE 26, 1906.

62,129. PORTRAITS AND PHOTOGRAPHS. DIXIE PORTRAIT & FRAME CO., Tampa, Fla.
Filed November 11, 1905. Serial No. 14,514. PUBLISHED FEBRUARY 26, 1907.

62,130. LADIES' AND MISSES' LEATHER SHOES AND SLIPPERS. DIXON BARTLETT CO., Baltimore, Md.
Filed January 29, 1907. Serial No. 24,976. PUBLISHED FEBRUARY 26, 1907.

62,131. LEATHER BOOTS AND SHOES. DIXON BARTLETT CO., Baltimore, Md.
Filed January 29, 1907. Serial No. 24,977. PUBLISHED FEBRUARY 26, 1907.

62,132. SADDLES, HARNESS, BRIDLES, AND HORSE-COLLARS. THE GRAF-MORSBACH COMPANY, Cincinnati, Ohio.
Filed October 29, 1906. Serial No. 23,984. PUBLISHED FEBRUARY 26, 1907.

62,133. SHOE-LEATHER. CHRISTIAN EUGENE LAFFE, Allegheny, Pa.
Filed February 1, 1907. Serial No. 25,048. PUBLISHED FEBRUARY 26, 1907.

62,134. LEATHER BOOTS AND SHOES. LOCKE SHOE COMPANY, Wheeling, W. Va.
Filed January 23, 1907. Serial No. 24,835. PUBLISHED FEBRUARY 26, 1907.

62,135. CERTAIN VEGETABLE MATERIALS. MARDEN, ORTH & HASTINGS, Boston, Mass.
Filed December 21, 1906. Serial No. 24,206. PUBLISHED FEBRUARY 26, 1907.

62,136. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.
Filed January 11, 1907. Serial No. 24,574. PUBLISHED FEBRUARY 26, 1907.

62,137. LEATHER BOOTS AND SHOES. WILLIAM READ & SONS, Boston, Mass.
Filed January 23, 1907. Serial No. 24,839. PUBLISHED FEBRUARY 26, 1907.

62,138. PIPES. REISS BROS. & CO., Chicago, Ill.
Filed November 19, 1906. Serial No. 23,447. PUBLISHED FEBRUARY 26, 1907.

62,139. PIPES. REISS BROS. & CO., Chicago, Ill.
Filed November 19, 1906. Serial No. 23,448. PUBLISHED FEBRUARY 26, 1907.

62,140. WOMEN'S, MISSES', AND CHILDREN'S LEATHER HIGH AND LOW SHOES. THE SACHS SHOE MFG. CO., Cincinnati, Ohio.
Filed January 25, 1907. Serial No. 24,904. PUBLISHED FEBRUARY 26, 1907.

62,141. PAPER BAGS, WRAPPING-PAPER, AND PAPER-BOARDS. THE UNION BAG AND PAPER COMPANY, New York, N. Y., assignor to Sprague, Warner & Company, Chicago, Ill., a Corporation of Illinois.
Filed January 17, 1907. Serial No. 24,720. PUBLISHED FEBRUARY 26, 1907.

62,142. RUBBER CEMENT. ALFRED HALE RUBBER COMPANY, Boston, Mass.
Filed January 21, 1907. Serial No. 24,802. PUBLISHED FEBRUARY 26, 1907.

62,143. CERTAIN CLOTHING. G. BAMBERGER & COMPANY, New York, N. Y.
Filed December 15, 1906. Serial No. 24,062. PUBLISHED FEBRUARY 26, 1907.

62,144. DRILLING-MACHINES AND BORING APPARATUS AND DRILLS AND PARTS THEREOF. THE BUDA FOUNDRY & MANUFACTURING COMPANY, Chicago, Ill.
Filed January 25, 1907. Serial No. 24,895. PUBLISHED FEBRUARY 26, 1907.

62,145. LUBRICATING OILS AND GREASES. THE CITIZENS' WHOLESALE SUPPLY CO., Columbus, Ohio.
Filed December 11, 1906. Serial No. 23,931. PUBLISHED FEBRUARY 26, 1907.

62,146. COTTON CLOTHES-LINES. CLEVELAND MILL AND POWER COMPANY, Lawndale, N. C.
Filed January 22, 1907. Serial No. 24,823. PUBLISHED FEBRUARY 26, 1907.

62,147. COTTON CLOTHES-LINES. CLEVELAND MILL AND POWER COMPANY, Lawndale, N. C.
Filed January 22, 1907. Serial No. 24,824. PUBLISHED FEBRUARY 26, 1907.

62,148. FELT ROOFING. COLLINS HARDWARE COMPANY, Lynn, Mass.
Filed December 21, 1906. Serial No. 24,180. PUBLISHED FEBRUARY 26, 1907.

62,149. GIN. CORNING AND COMPANY, Peoria, Ill.
Filed January 15, 1907. Serial No. 24,748. PUBLISHED FEBRUARY 26, 1907.

62,150. ENAMELED STEELWARE. GEO. BORGFELDT & CO., New York, N. Y.
Filed January 17, 1907. Serial No. 24,716. PUBLISHED FEBRUARY 26, 1907.

62,151. DOLLS. GEO. BORGFELDT & CO., New York, N. Y.
Filed January 19, 1907. Serial No. 24,772. PUBLISHED FEBRUARY 26, 1907.

62,152. BICYCLE CRANK-HANGERS. GREAT WESTERN MANUFACTURING COMPANY, Laporte, Ind.
Filed January 29, 1907. Serial No. 24,988. PUBLISHED FEBRUARY 26, 1907.

62,153. PLOWS, HARROWS, AND CULTIVATORS. HARTIG BECKER PLOW CO., Evansville, Ind.
Filed January 7, 1907. Serial No. 24,492. PUBLISHED FEBRUARY 26, 1907.

62,154. CERTAIN METAL MANUFACTURES. IMPERIAL BIT & SNAP CO., Racine, Wis.
Filed January 16, 1907. Serial No. 24,689. PUBLISHED FEBRUARY 26, 1907.

62,155. MATCHES. JÖNKÖPINGS OCH VULCANS TÄNDSTICKS-FABRIKSAKTIEBOLAG, Jönköping, Sweden.
Filed January 12, 1907. Serial No. 24,893. PUBLISHED FEBRUARY 26, 1907.

62,156. WHISKY. CHARLES KRAMMER, Washington, D. C.
Filed January 29, 1907. Serial No. 24,989. PUBLISHED FEBRUARY 26, 1907.

62,157. WITHDRAWN.

62,158. COTTON PIECE GOODS AND COTTON BLANKETS. NASHUA MANUFACTURING COMPANY, Nashua, N. H.
Filed January 24, 1907. Serial No. 24,863. PUBLISHED FEBRUARY 26, 1907.

62,159. READY-PREPARED FELT ROOFING. ROOFBESTOS MANUFACTURING CO., St. Louis, Mo.
Filed December 11, 1906. Serial No. 23,944. PUBLISHED FEBRUARY 26, 1907.

62,160. MERCERIZED WOVEN COTTON FABRICS. SHIELDS, STONE & CO., New York, N. Y.
Filed January 11, 1907. Serial No. 24,577. PUBLISHED FEBRUARY 26, 1907.

62,161. AUTOMOBILE, CARRIAGE, AND WAGON SPRINGS. SUPPLEMENTARY SPIRAL SPRING COMPANY, St. Louis, Mo.
Filed January 9, 1907. Serial No. 24,542. PUBLISHED FEBRUARY 26, 1907.

62,162. RIVETS. TAUNTON RIVET COMPANY, Taunton, Mass.
Filed January 26, 1907. Serial No. 24,931. PUBLISHED FEBRUARY 26, 1907.

62,163. CERTAIN CORK-PULLERS. ANDREW P. WATT, Baltimore, Md.
Filed January 24, 1907. Serial No. 24,850. PUBLISHED FEBRUARY 26, 1907.

62,164. CERTAIN KNIT GARMENTS. WRIGHT & DITSON, Jersey City, N. J., and Boston, Mass.
Filed January 23, 1907. Serial No. 24,850. PUBLISHED FEBRUARY 26, 1907.

62,165. BEER. A. J. HOUGHTON CO., Roxbury, Mass.
Filed June 5, 1905. Serial No. 7,411. PUBLISHED AUGUST 26, 1906.

62,166. BAGGING. THE AMERICAN MANUFACTURING COMPANY, New York, N. Y.
Filed December 1, 1905. Serial No. 15,098. PUBLISHED MAY 15, 1906.

62,167. STOCKINGS. AUGUSTUS L. BROWN, Boston, Mass.
Filed October 31, 1905. Serial No. 14,136. PUBLISHED FEBRUARY 26, 1907.

62,168. EXPLOSIVE POWDER. E. I. DU PONT COMPANY, Wilmington, Del.
Filed August 9, 1906. Serial No. 21,413. PUBLISHED FEBRUARY 26, 1907.

62,169. GUNPOWDER. E. I. DU PONT COMPANY, Wilmington, Del.
Filed August 9, 1906. Serial No. 21,414. PUBLISHED FEBRUARY 26, 1907.

62,170. PICKLES, MUSTARD, CATSUP, CHOW-CHOW, AND PEPPER. ANGELO FASSIO, New Orleans, La.
Filed August 10, 1906. Serial No. 21,466. PUBLISHED FEBRUARY 26, 1907.

62,171. COFFEE. B. FISCHER & CO., New York, N. Y.
Filed January 31, 1907. Serial No. 25,020. PUBLISHED FEBRUARY 26, 1907.

62,172. ROASTED COFFEE. FORT SMITH COMMISSION COMPANY, Fort Smith, Ark.
Filed January 14, 1907. Serial No. 24,628. PUBLISHED FEBRUARY 26, 1907.

62,173. WHISKY. ALBERT H. GELLENBECK, Cincinnati, Ohio.
Filed May 12, 1906. Serial No. 5,541. PUBLISHED APRIL 3, 1906.

62,174. WHISKY. GUNT & SENAC, New Orleans, La.
Filed April 26, 1906. Serial No. 3,125. PUBLISHED FEBRUARY 26, 1907.

62,175. CERTAIN JEWELRY. RAYMOND M. HORTON, Attleboro, Mass.
Filed April 21, 1906. Serial No. 18,994. PUBLISHED FEBRUARY 26, 1907.

62,176. WINDOW-SHADE CLOTHS. JAY C. WEMPLE CO., New York, N. Y.
Filed November 6, 1905. Serial No. 14,356. PUBLISHED FEBRUARY 26, 1907.

62,177. HAMS AND BACON. MOSBY & CARDOSO, Richmond, Va.
Filed January 30, 1907. Serial No. 25,019. PUBLISHED FEBRUARY 26, 1907.

62,178. DRY BATTERIES. NATIONAL CARBON COMPANY, Cleveland, Ohio.
Filed July 5, 1906. Serial No. 20,742. PUBLISHED FEBRUARY 26, 1907.

62,179. PULLING-CANDIES. THE STERN & SAALBERG COMPANY, New York, N. Y.
Filed December 18, 1906. Serial No. 24,122. PUBLISHED FEBRUARY 26, 1907.

62,180. PREPARED STOCK FOODS. A. BURT & CO., Des Moines, Iowa.
Filed September 17, 1906. Serial No. 22,162. PUBLISHED FEBRUARY 26, 1907.

62,181. CERTAIN FOOD PREPARATION. CALLARD STEWART AND WATT LIMITED, London, England.
Filed March 23, 1906. Serial No. 18,176. PUBLISHED FEBRUARY 26, 1907.

62,182. CERTAIN FOOD PRODUCTS. H. J. HEINZ COMPANY, Allegheny, Pa.
Filed July 6, 1906. Serial No. 20,753. PUBLISHED FEBRUARY 26, 1907.

62,183. WHEAT-FLOUR. HUEGELY MILLING COMPANY, Nashville, Ill.
Filed January 31, 1907. Serial No. 25,031. PUBLISHED FEBRUARY 26, 1907.

62,184. CHOCOLATES. J. G. MCDONALD CANDY COMPANY, Salt Lake City, Utah.
Filed January 29, 1907. Serial No. 24,903. PUBLISHED FEBRUARY 26, 1907.

62,185. LARD. THE JOHN C. ROTH PACKING CO., Cincinnati, Ohio.
Filed January 30, 1907. Serial No. 24,997. PUBLISHED FEBRUARY 26, 1907.

62,186. CERTAIN BAKERY PRODUCTS AND CEREAL FOODS. JOHNSON EDUCATOR FOOD CO., Boston, Mass.
Filed December 31, 1906. Serial No. 24,357. PUBLISHED FEBRUARY 26, 1907.

62,187. CANDY AND CHEWING-GUM. MANUFACTURING CO. OF AMERICA, Philadelphia, Pa.
Filed January 28, 1907. Serial No. 24,942. PUBLISHED FEBRUARY 26, 1907.

62,188. CANDY AND CHEWING-GUM. MANUFACTURING CO. OF AMERICA, Philadelphia, Pa.
Filed January 28, 1907. Serial No. 24,944. PUBLISHED FEBRUARY 26, 1907.

62,189. WHEAT-FLOUR. BERNARD J. ROTHWELL, Boston, Mass.
Filed January 2, 1907. Serial No. 24,396. PUBLISHED FEBRUARY 26, 1907.

62,190. JELLIES. SARAH BLAKE STONE, New Haven, Conn.
Filed January 16, 1907. Serial No. 24,694. PUBLISHED FEBRUARY 26, 1907.

62,191. DEVILED HAM. WILLIAM UNDERWOOD COMPANY, Boston, Mass.
Filed January 18, 1907. Serial No. 24,756. PUBLISHED FEBRUARY 26, 1907.

62,192. WIRE FENCE. ADVANCE FENCE CO., Peoria, Ill.
Filed June 12, 1905. Serial No. 7,961. PUBLISHED FEBRUARY 26, 1907.

62,193. COMPOSITION PAVING AND ROOFING MATERIAL. APPEL & EARNEST, Seattle, Wash.
Filed November 6, 1906. Serial No. 23,129. PUBLISHED FEBRUARY 26, 1907.

62,194. ARRAC PUNCH. AXEL BAGGE & CO., Gothenburg, Sweden.
Filed September 4, 1906. Serial No. 21,893. PUBLISHED FEBRUARY 26, 1907.

62,195. FUSES. COAST MANUFACTURING & SUPPLY CO., Berkeley, Cal.
Filed February 4, 1907. Serial No. 25,112. PUBLISHED FEBRUARY 26, 1907.

62,196. MALT EXTRACT. FORTUNE BROS. BREWING COMPANY, Chicago, Ill.
Filed October 23, 1906. Serial No. 22,827. PUBLISHED FEBRUARY 26, 1907.

62,197. CERTAIN PARTS OF AGRICULTURAL MACHINERY. HENRY & ALLEN, Auburn, N. Y.
Filed December 10, 1906. Serial No. 23,902. PUBLISHED FEBRUARY 26, 1907.

62,198. COTTON PIECE GOODS AND COTTON BLANKETS. INDIAN HEAD MILLS OF ALABAMA, Walker county, Ala.
Filed September 21, 1906. Serial No. 22,313. PUBLISHED FEBRUARY 26, 1907.

62,199. CERTAIN NON-ALCOHOLIC BEVERAGES. P. SETZLER & SONS, Kansas City, Mo.
Filed January 29, 1907. Serial No. 24,999. PUBLISHED FEBRUARY 26, 1907.

62,200. CORDIAL. SOCIETE ANONYME DE LA GRANDE DISTILLERIE E. CUSENIER FILS AINE ET COMPAGNIE, Paris, France.
Filed November 10, 1906. Serial No. 23,355. PUBLISHED FEBRUARY 26, 1907.

62,201. INCANDESCENT ELECTRIC LAMPS. SWEETEN-CROSSAN ELECTRIC COMPANY, Philadelphia, Pa.
Filed January 30, 1907. Serial No. 25,021. PUBLISHED FEBRUARY 26, 1907.

62,202. COMBINATION HOSE-SUPPORTERS AND SUSPENDERS. THE WOLVERINE SUSPENDER CO., Kalamazoo, Mich.
Filed October 15, 1906. Serial No. 23,711. PUBLISHED FEBRUARY 26, 1907.

62,203. PREPARATION FOR POLISHING FINGER-NAILS. ANDRÉ, SCHAUB & PIOBO, Paris, France.
Filed December 4, 1906. Serial No. 23,752. PUBLISHED FEBRUARY 26, 1907.

62,204. BEER. DICK AND BROTHERS QUINCY BREWERY CO., Quincy, Ill.
Filed September 4, 1906. Serial No. 21,906. PUBLISHED FEBRUARY 26, 1907.

62,205. CERTAIN TOILET PREPARATIONS. FRITZ HARNISCH, Berlin, Germany.
Filed February 23, 1906. Serial No. 17,292. PUBLISHED FEBRUARY 26, 1907.

62,206. MEDICATED STOCK FOODS. DR. HESS & CLARK, Ashland, Ohio.
Filed June 15, 1905. Serial No. 8,183. PUBLISHED FEBRUARY 26, 1907.

62,207. MEDICATED STOCK FOODS. DR. HESS & CLARK, Ashland, Ohio.
Filed July 17, 1905. Serial No. 10,462. PUBLISHED FEBRUARY 26, 1907.

62,208. BEER. MUNCIE BREWING CO., Muncie, Ind.
Filed September 27, 1906. Serial No. 22,355. PUBLISHED FEBRUARY 26, 1907.

62,209. TOOTH-POWDER AND TOOTH-PASTE. PEROXIDENT MANUFACTURING COMPANY, St. Louis, Mo.
Filed January 16, 1907. Serial No. 24,666. PUBLISHED FEBRUARY 26, 1907.

62,210. SHAMPOO COMPOUNDS AND HAIR-TONICS. THE PORCELA COMPANY, Pittsburg, Pa.
Filed January 9, 1907. Serial No. 24,534. PUBLISHED FEBRUARY 26, 1907.

62,211. COLD CURE. FLORA ELY SCHMAUSER, Chillicothe, Ohio.
Filed January 25, 1907. Serial No. 24,906. PUBLISHED FEBRUARY 26, 1907.

62,212. ALKALINE DEODORIZING AND NON-IRRITATING GERMICIDAL AGENT. THE UNITED STATES DENTAL CHEMICAL CO., Rockymount, Va.
Filed February 28, 1906. Serial No. 17,411. PUBLISHED FEBRUARY 26, 1907.

62,213. PILLS AND HEADACHE-TABLETS. J. L. WARD MEDICINE COMPANY, Big Spring, Tex.
Filed January 26, 1907. Serial No. 24,982. PUBLISHED FEBRUARY 26, 1907.

62,214. CERTAIN MEDICINES. WILLIAM R. WARNER & CO., Philadelphia, Pa.
Filed January 29, 1907. Serial No. 25,002. PUBLISHED FEBRUARY 26, 1907.

62,215. GAS, OIL, AND VAPOR STOVES, BURNERS, AND OVENS. AMERICAN STOVE COMPANY, Jersey City, N. J., and St. Louis, Mo.
Filed May 29, 1905. Serial No. 6,897. PUBLISHED AUGUST 26, 1906.

62,216. BITTERS. THE BAY VIEW WINE CO., Sandusky, Ohio.
Filed January 18, 1907. Serial No. 24,745. PUBLISHED FEBRUARY 26, 1907.

62,217. COFFEE. THE DAYTON SPICE MILLS CO., Dayton, Ohio.
Filed January 7, 1907. Serial No. 24,484. PUBLISHED FEBRUARY 26, 1907.

62,218. FACIAL OR COMPLEXION PASTES OR LOTIONS. DE JEAN PERFUMERY COMPANY, Chicago, Ill.
Filed July 2, 1906. Serial No. 20,708. PUBLISHED FEBRUARY 26, 1907.

62,219. TOOTH AND TALCUM POWDER. R. E. DESMOND, St. Louis, Mo.
Filed December 21, 1906. Serial No. 24,190. PUBLISHED FEBRUARY 26, 1907.

62,220. BAKING-POWDER. GRAND UNION TEA CO., Brooklyn, N. Y.
Filed May 1, 1905. Serial No. 3,825. PUBLISHED FEBRUARY 26, 1907.

62,221. A REGULATING-TEA. DAVID KANTOR, New York, N. Y.
Filed December 24, 1906. Serial No. 24,264. PUBLISHED FEBRUARY 26, 1907.

62,222. EGG-SHAMPOO, COLD-CREAM, AND FACE-MASSAGE CREAMS. NICHOLAS LOPARD, New York, N. Y.
Filed January 29, 1907. Serial No. 24,992. PUBLISHED FEBRUARY 26, 1907.

62,223. ICE-CREAM. MAZETTA MFG. CO., Chicago, Ill.
Filed January 4, 1907. Serial No. 24,447. PUBLISHED FEBRUARY 26, 1907.

62,224. REMEDY FOR CERTAIN DISEASES. PEPSOL CHEMICAL COMPANY, Nashville, Tenn.
Filed January 25, 1907. Serial No. 24,893. PUBLISHED FEBRUARY 26, 1907.

62,225. HAIR-TONICS AND SCALP APPLICATIONS. FRANK RIZZA, Homestead, Pa.
Filed December 22, 1906. Serial No. 24,240. PUBLISHED FEBRUARY 26, 1907.

62,226. GERMICIDE, DISINFECTANT, AND ANTISEPTIC PREPARATIONS. STAR TRADING COMPANY, Rochester, N. Y.
Filed December 20, 1906. Serial No. 24,175. PUBLISHED FEBRUARY 26, 1907.

62,227. WHISKY. STRAUS, GUNST & CO., Richmond, Va.
Filed May 12, 1905. Serial No. 5,299. PUBLISHED FEBRUARY 26, 1907.

62,228. REMEDY FOR LUNG AND THROAT DISEASES. VAROMA MEDICAL COMPANY, Chatham, N. J., and New York, N. Y.
Filed December 6, 1906. Serial No. 23,831. PUBLISHED FEBRUARY 26, 1907.

62,229. PILLS FOR DISEASES OF THE BLOOD AND NERVES. W. T. HANSON CO., Schenectady, N. Y.
Filed October 4, 1905. Serial No. 13,257. PUBLISHED FEBRUARY 26, 1907.

62,230. PILLS FOR DISEASES OF THE BLOOD AND NERVES. W. T. HANSON CO., Schenectady, N. Y.
Filed October 4, 1905. Serial No. 13,253. PUBLISHED FEBRUARY 26, 1907.

62,231. PILLS FOR DISEASES OF THE BLOOD AND NERVES. W. T. HANSON CO., Schenectady, N. Y.
Filed October 4, 1906. Serial No. 13,355. PUBLISHED FEBRUARY 26, 1907.

62,232. PERFUMES. WM. B. RIKER & SON COMPANY, New York, N. Y.
Filed January 29, 1907. Serial No. 34,996. PUBLISHED FEBRUARY 26, 1907.

62,233. CERTAIN LEATHER MANUFACTURES. MARK CROSS COMPANY, New York, N. Y.
Filed July 27, 1905. Serial No. 10,917. PUBLISHED FEBRUARY 26, 1907.

62,234. MAT-KID. PETERSBURG LEATHER COMPANY, Petersburg, Va.
Filed December 18, 1906. Serial No. 34,120. PUBLISHED FEBRUARY 26, 1907.

62,235. BITTERS. A. BRESLAUER COMPANY, Milwaukee, Wis.
Filed June 24, 1905. Serial No. 8,887. PUBLISHED FEBRUARY 26, 1907.

62,236. REMEDY FOR ASTHMA. DUFF & SHADE, Poland, Ohio.
Filed January 10, 1907. Serial No. 34,555. PUBLISHED FEBRUARY 26, 1907.

62,237. SEMIMONTHLY PERIODICAL. REVIEW PUBLISHING COMPANY, New York, N. Y.
Filed June 15, 1906. Serial No. 20,279. PUBLISHED FEBRUARY 26, 1907.

62,238. SEMIMONTHLY PERIODICAL. REVIEW PUBLISHING COMPANY, New York, N. Y.
Filed June 15, 1906. Serial No. 20,280. PUBLISHED FEBRUARY 26, 1907.

TRADE-MARKS CANCELED.

60,296. LEAD PIGMENTS. PICHER LEAD COMPANY, Joplin, Mo.
Registered February 5, 1907. Canceled April 13, 1907.

60,297. LEAD PIGMENTS. PICHER LEAD COMPANY, Joplin, Mo.
Registered February 5, 1907. Canceled April 13, 1907.

LABELS

REGISTERED APRIL 23, 1907.

13,485.—*Title:* "KING OF BITTER SWEETS." (For Candy.) AMERICAN CANDY COMPANY, Milwaukee, Wis. Filed March 20, 1907.

13,486.—*Title:* "LAS DOS NACIONES." (For Cigars.) LAS DOS NACIONES CIGAR CO., Nogales, Ariz. Ter. Filed March 20, 1907.

13,487.—*Title:* "MI NOVIA." (For Cigars.) PARK & TILFORD, New York, N. Y. Filed March 27, 1907.

13,488.—*Title:* "MI NOVIA." (For Cigars.) PARK & TILFORD, New York, N. Y. Filed March 27, 1907.

13,489.—*Title:* "PEOPLE'S." (For Cigarettes.) PH. KASSEL CO., New York, N. Y. Filed March 29, 1907.

13,490.—*Title:* "SCHILLING'S BEST." (For Coffee.) A. SCHILLING AND COMPANY, San Francisco, Cal. Filed March 28, 1907.

13,491.—*Title:* "ALTBRÄU." (For Beer.) WM. BENDER, JR., Waukegan, Ill. Filed March 30, 1907.

13,492.—*Title:* "SCHEMM'S STANDARD DARK LAGER-BEER." (For Beer.) PETER A. SCHEMM, Philadelphia, Pa. Filed April 2, 1907.

13,493.—*Title:* "SCHEMM'S STANDARD LIGHT LAGER BEER." (For Beer.) PETER A. SCHEMM, Philadelphia, Pa. Filed April 2, 1907.

13,494.—*Title:* "QUEEN ALEXANDRIAS OF JUDEA." (For Cold-Cream.) JUANO L. DE ZEABAULT AND CO., Cleveland, Ohio. Filed March 26, 1907.

13,495.—*Title:* "AIROPINE." (For a Medicinal Paste.) STUTLEY I. HENDERSON, West Allis, Wis. Filed April 1, 1907.

13,496.—*Title:* "PHILLIPS' GREAT WAHOO." (For Medicine.) L. Z. PHILLIPS, Memphis, Tenn. Filed December 13, 1906.

13,497.—*Title:* "HYBROSLÓNA." (For a Medicine.) RICHARD W. CULVER, Detroit, Mich. Filed February 11, 1907.

13,498.—*Title:* "DAVIS' OLD INDIAN CURE." (For a Medicine.) WILLIAM H. DAVIS, Cincinnati, Ohio. Filed March 6, 1907.

13,499.—*Title:* "UP TO DATE." (For Soap.) MARY S. VANDERBECK, New York, N. Y. Filed March 12, 1907.

13,500.—*Title:* "WEILERS GENUINE MICHIGAN SHOES." (For Shoes.) WEILER BROS., Portland, Ind. Filed March 18, 1907.

13,501.—*Title:* "RESININE." (For a Fire-Kindler.) AUGUSTA DACUS, San Antonio, TEX. Filed April 1, 1907.

13,502.—*Title:* "DUSTDOWN." (For Powder to Clean Carpets, Rugs, and Floors.) JAMES BAXTER FITCH, Cincinnati, Ohio. Filed December 17, 1906.

PRINTS

REGISTERED APRIL 23, 1907.

1,964.—*Title:* "MOZLEY LEMON ELIXIR." (For Lemon Elixir.) MOZLEY LEMON ELIXIR CO., Atlanta, Ga. Filed April 3, 1907.

1,965.—*Title:* "USE THE LEE THE BROOM WITH THE GUARANTEE." (For Brooms.) LEE BROOM & DUSTER COMPANY, Lincoln, Nebr. Filed March 20, 1907.

1,966.—*Title:* "MECCA." (For Cigarettes.) S. ANARGYROS, New York, N. Y. Filed April 1, 1907.

1,967.—*Title:* "IT'S A BISCUIT FLOUR." (For Flour.) WASHBURN, CROSBY COMPANY, Minneapolis, Minn. Filed April 1, 1907.

1,968.—*Title:* "PERRY'S FASHIONS FOR SPRING, (SHEET NO. 3.)" (For Men's Sack-Suits.) PERRY & COMPANY, Philadelphia, Pa. Filed March 30, 1907.

1,969.—*Title:* "MEN'S AND BOYS' APPAREL." (For Men's and Boys' Apparel.) H. C. LYTTON, Chicago, Ill. Filed March 20, 1907.

1,970.—*Title:* "'JUST OUT' OF A MANDY LEE." (For Incubators.) A. G. WADE, Chicago, Ill. Filed March 22, 1907.

1,971.—*Title:* "LEES POULTRY SUPPLIES." (For Lice-Killer, Egg-Maker, Germozone, Sprayers.) A. G. WADE, Chicago, Ill. Filed March 22, 1907.

1,972.—*Title:* "VICTOR CHECKER BOARD." (For Talking-Machines.) P. F. COLLIER & SON, New York, N. Y. Filed April 1, 1907.

1,973.—*Title:* "ERIN AND EXPECTATION BACKS, CONGRESS PLAYING CARDS." (For Playing-Cards.) THE UNITED STATES PLAYING CARD COMPANY, Norwood, Ohio. Filed April 2, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

THE UNITED STATES GRAPHITE COMPANY *v.* BOMHARD.

Decided January 10, 1907.

TRADE-MARK INTERFERENCE—MOTION TO DISSOLVE—INTERFERENCE IN FACT.

The marks of the parties consist, respectively, of the words "Raven" and "Crow" accompanied in each case by a representation of a black bird perched on a branch of a tree. *Held* there is no interference between the words "Raven" and "Crow," and although there is a certain similarity in the representations of the birds, taking the marks as a whole, there is no such resemblance as would be likely to cause confusion or mistake in the mind of the public or deceive purchasers.

ON APPEAL.

TRADE-MARK FOR STOVE-POLISH.

Mr. George B. Willcox for The United States Graphite Company.

Mr. George W. Colles for Bomhard.

ALLEN, *Commissioner:*

This is an appeal by the United States Graphite Company from the decision of the Examiner of Trade-Marks refusing to dissolve the interference on the ground of non-interference in fact.

The mark of the United States Graphite Company consists of the word "Raven" and a representation of a bird purporting to be a raven perched on a branch of a tree.

Bomhard's mark comprises the word "Crow" and a representation of a bird purporting to be a crow perched upon a branch.

Both parties use the mark in connection with the same class of goods—namely, stove-polish.

This case is quite similar to that of *Gaines & Company* v. *Knecht & Son*, (123 O. G., 657,) in which the Court of Appeals of the District of Columbia held that there is no such similarity as would lead to confusion between a mark consisting of the words "Old Crow" and the picture of a crow and a mark composed of the words "Raven Valley" accompanied by a pictorial representation of three ravens in the bare limbs of a tree; also to the case of *W. A. Gaines & Company* v. *Carlton Importation Company*, (123 O. G., 1994,) where in holding that a mark consisting of the words "Old J" and "Old Jay Rye," together with the representation of a jay-bird perched on the branch of a tree, is not anticipated by a mark composed of the words "Old Crow" and a picture of a crow the Court of Appeals of the District of Columbia stated:

We entirely agree with the Commissioner, and adopt the reasons therefor given in his decision as follows:

"Both marks include the word 'old,' and both include the representation of a bird, but there the similarity ends. The jay as disclosed in the application and in the specimens accompanying it is entirely different in appearance from a crow and could by no possibility be mistaken therefor. The name 'Jay' is entirely different in sound from 'crow,' and suggests a different idea. If there is to be any confusion between the marks, it must be because of the association of the word 'old' with the name of bird. I am satisfied, however, that this one point of similarity is not sufficient to confuse the public nor to mislead purchasers exercising ordinary care."

In the present case there is clearly no interference between the words "Raven" and "Crow." As to the representations of the birds there is a certain similarity, in that both represent black birds. The positions of the birds, however, are different, and it cannot be said that the pictures are any more prominent in the trade-marks than the words. Taking the marks as a whole, there is not believed to be such resemblance as would be likely to cause confusion or mistake in the mind of the public or deceive purchasers.

The decision of the Examiner of Trade-Marks is reversed.

— ——

BEALL, JR., *v.* LYON.

Decided February 26, 1907.

INTERFERENCE—TESTIMONY—USE IN SUBSEQUENT INTERFERENCE.

Where the real parties in interest in a pending interference are the same as in a prior interference and the inventions involved are substantially the same, permission may be obtained, under the provisions of Rule 157, to use in the pending interference the testimony taken in the former interference.

APPEAL on motion.

APPARATUS FOR USE IN MAKING CONCRETE PILES.

Messrs. John B. Thomas & Co. and *Mr. W. S. Duvall* for Beall, Jr.

Mr. Franklin H. Hough and *Messrs. Smith & Frazier* for Lyon.

ALLEN, *Commissioner:*

This is an appeal by Lyon from the decision of the Examiner of Interferences granting the motion of Beall, Jr., for permission, under the provisions of Rule 157, to use in this interference the depositions of certain named witnesses taken in the interferences of *Beall, Jr.*, v. *Shuman*, Nos. 23,932 and 23,933.

Lyon contends that Rule 157, under the authority of

which the Examiner of Interferences granted the motion—

is invalid if it be construed as justifying the use in this interference of depositions of witnesses taken in another interference, unless those witnesses are either dead, insane, or otherwise incapable of appearing as witnesses in the case.

For reasons stated in my decision in *Kenney and Thordarson* v. *O'Connell* v. *Baird* v. *Schmidt* (117 O. G., 1163) this contention is believed to be in error. The records of this Office show, and it is admitted by Lyon, (p. 5 of brief,) that prior to the *Beall, Jr.*, v. *Shuman* interference, noted above, Shuman had acquired a right to the Lyon inventions and later conveyed them to the Simplex Concrete Piling Company. The records of this Office also show that the Shuman patents involved in said *Beall, Jr.*, v. *Shuman* interferences are assigned to the Simplex Concrete Piling Company and were assigned to said company prior to the declaration of those interferences, also that the Lyon patents involved in this interference are now likewise assigned to the said Simplex Concrete Piling Company.

The Simplex Concrete Piling Company therefore appears as the real party in interference in both sets of interferences. The invention involved in the two series of interferences are substantially the same. These reasons are believed to warrant the introduction of the evidence in question.

The decision of the Examiner of Interferences is affirmed.

EX PARTE LINCOLN.

Decided February 13, 1907.

1. EXAMINATION OF APPLICATION—CITATION OF REFERENCES.

Where several claims are rejected, it should appear in the Examiner's letter whether all the references are cited against each claim or whether they are cited distributively against the various claims. In the latter event it should be made clear in connection with each claim which references are relied upon in the rejection thereof.

2. SAME—COMBINATION OF REFERENCES.

Where references cited are to be taken jointly, the theory upon which they are combined must be pointed out. The Examiner need not, however, ordinarily apply the references to the claim element for element, the specification and drawings of the references being ordinarily sufficient to indicate their application to the claims.

3. SAME—EXPLANATION OF REFERENCES.

If any doubt exists as to the interpretation placed by the Examiner upon a feature of the drawing or portion of the specification, he will furnish an explanation in response to a specific request making clear the uncertainty existing in the mind of the applicant.

ON PETITION.

ARC-LAMP.

Mr. Albert Lynn Lawrence for the applicant.

ALLEN, *Commissioner:*

This is a petition that the final rejection entered in this case be withdrawn and that the Examiner be instructed to specifically apply the references which have been cited.

The first and second actions on this case do not make clear upon what theory the claims are rejected. It is simply stated that the claims are rejected on the many references cited. Where several claims are rejected, it should appear in the Examiner's letter whether all the references are cited against each claim or whether they are cited distributively against the various claims. In the latter event it should be made clear in connection with each claim which references are relied upon in the rejection thereof. Furthermore, where several references are cited against a claim it should be made clear whether each reference is regarded as sufficient in itself to defeat the claim or whether the references are to be taken jointly. If to be taken jointly, the theory upon which they are combined must be pointed out. The applicant and others who may have to interpret the Examiner's action should not be left to surmise to determine what was in the Examiner's mind in the respects hereinabove referred to. The common impression, however, that the Examiner should ordinarily apply the references to the claims element for element is unwarranted. The specifications and drawings of the references are ordinarily to be had by the applicant or his attorney, who must determine for themselves what the references disclose and whether they justify the action based by the Examiner upon them. Of course where there is any doubt as to the interpretation placed by the Examiner upon a feature of a drawing or portion of a specification the Examiner will furnish an explanation in response to a specific request making clear the uncertainty existing in the mind of the applicant.

The first and second actions of the Examiner were not clear; but in the subsequent action, dated November 25, 1905, the Examiner applied one of the references to the applicant's device, stating that the explanation furnished might be taken as a sample of the applicability of the remaining references. This letter may be fairly taken to mean that each claim is met in each of the references and to be a sufficient statement of the Examiner's position in view of the general character of the applicant's requests for explanation thereof. That the present attorney did not get a copy of this action until after the final rejection of October 9, 1906, appears to have been due to no fault of the Office, the Examiner having mailed a second copy thereof to the applicant at the address given by him upon July 2, 1906. Upon August 29, 1906, the applicant filed an action calling attention to his previous arguments traversing the sufficiency of the references and stating—

specific application of the particular references to the claims or reconsideration for the reasons previously set forth at length are now requested.

The Examiner complied with the latter of these alternative requests and finally rejected the claims. The final rejection seems to have been in order, and no good reason is seen why it should be set aside.

Petition denied.

MARTIN v. MULLIN.

Decided April 8, 1907.

1. INTERFERENCE—MOTION FOR DISSOLUTION—DENIAL BY A PARTY OF HIS OWN RIGHT TO MAKE CLAIM—TRANSMISSION.

A motion for dissolution based upon the ground that the moving party has no right to make the claim to the subject-matter in issue should not be transmitted to the Primary Examiner.

2. SAME—CONCESSION OF PRIORITY NOT NECESSARILY ACQUIESCENCE IN IDENTITY OF CLAIMS.

An award of priority may mean either that one of two inventors of the same thing is subsequent in date to another or that one party is the only inventor of the issue, because the other never invented the same at all, and there seems to be no reason

why this should not be as true where the award is based upon concession as where it is based upon testimony.

APPEAL on motion.

CABLE-GRIP.

Mr. Vernon M. Dorsey for Martin.

Messrs. Griffin & Bernhard for Mullin.

ALLEN, *Commissioner:*

This is an appeal by Martin from the decision of the Examiner of Interferences refusing to transmit his motion for dissolution, so far as the same relates to his own right to lay claim to the subject-matter in issue.

The Examiner of Interferences refused to transmit the motion on the authority of my decision in the case of *Miller* v. *Perham*, (121 O. G., 2667,) holding that a party will not be permitted to urge his own lack of right to make claims upon motion for dissolution of interference and pointing out that a contest as to priority upon claims adopted by a party under misapprehension as to his right to make them may be avoided by concession of priority with respect thereto. The appellant seeks to have the practice set forth in that decision modified. His reason is that the award of priority by the Patent Office, based upon a concession, may be given effect by the courts as a determination by the Patent Office of identity of the appellant's device with that of his opponent. He also fears that a concession of priority will be interpreted by the courts as an acquiescence upon his part in such determination.

Nothing is found in the above reasons justifying modification of the practice followed in *Miller* v. *Perham*, *supra*.

That concession of priority is not necessarily acquiescence in the finding of identity which is involved in the declaration of interference is believed to be readily capable of demonstration. An award of priority is the usual form of judgment in the Patent Office and upon appeal therefrom to the court of appeals of this district in those cases where it is found that one party was not an inventor of the subject-matter in issue, whether the finding be based upon the proved derivation of the invention from his opponent or upon the failure of his exhibits to disclose the invention in issue. An award of priority is also proper, under Rule 130 of the Rules of Practice of the Office, where it is shown at the final hearing of an interference that the application of a party relied upon as evidence of invention at the date thereof does not warrant the claim in issue. An award of priority, therefore, may mean either that one of two inventors of the same thing is subsequent in date to another or that one party is the only inventor of the issue, because the other party has never invented the same at all, and there seems to be no reason why this should not be as true where the award is based upon concession as where it is based upon testimony. It does not seem that there should be any difficulty in presenting these facts to the courts or in showing that in view thereof the mere fact of concession of priority does not necessarily involve acquiescence in the finding of the Patent Office upon identity.

That the courts may, nevertheless, give weight to the finding of the Office that the parties disclosed the same invention is no reason why the Office should reconsider the conclusion. If the courts give no more weight to the Office decision than the circumstances under which it is rendered justify, there would seem to be no just cause of complaint. The appellant seems to fear, however, that the courts may give the Office finding upon identity more weight than should be given to an *ex parte* conclusion unattended either by an opportunity for argument, a demand for reconsideration, or an appeal. The facts attending the adoption of claims by parties upon suggestion under Rule 96 and the practice in the Patent Office subsequent to the adoption of the suggested claims in the matter of the adopter's right to make the same being presented to the court, it is not to be presumed that the court will render an improper decision because of a concession of priority. Moreover, the place to guard against decisions by the courts which are not warranted by the facts and circumstances would seem to be in the courts. The possibility that such a decision might by inadvertence be rendered affords no reason for conducting proceedings in the Patent Office merely to determine the right of a party to assert claims to a patent when no one but him denies that he has that right.

The decision of the Examiner of Interferences is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

IN RE HEROULT.

Decided February 5, 1907.

1. REISSUE—SAME INVENTION—PROCESS AND APPARATUS.

Where an application clearly discloses a process and an apparatus and through inadvertence, accident, or mistake the applicant accepts a patent with a limited claim to the apparatus, although the process is the dominant part of his invention, *Held* that the patent may be reissued to include the process in the absence of intervening rights.

2. SAME—SAME—INADVERTENCE, ACCIDENT, OR MISTAKE.

Where a patentee clearly discloses a process and an apparatus for carrying out the process and claims only the apparatus, the failure to claim the process was either intentional or the result of inadvertence, accident, or mistake, for which section 4916, Revised Statutes, furnishes a remedy.

3. SAME—INADVERTENCE, ACCIDENT, OR MISTAKE—ACTS OF ATTORNEYS.

Applicants usually act through solicitors or attorneys, and their inadvertence, accidents, and mistakes, if such in fact, are remediable under the statute permitting reissue when it is clear that there is no fraudulent or deceptive intent or attempt to destroy an intervening right. (*In re Briede*, 27 App. D. C., 298, 301; 123 O. G., 322.)

Mr. Charles H. Duell, *Mr. D. A. Usina*, *Mr. L. S. Bacon*, and *Mr. J. H. Milans* for the appellant.

Mr. Fairfax Bayard for the Commissioner of Patents.

SHEPARD, *J.:*

This is an appeal from the decision of the Commissioner of Patents rejecting an application for the reissue of a patent.

The applicant is a citizen of the Republic of France, and a skilled metallurgist. Having invented a new electrical process for obtaining soft metals, consisting of substances which tend to combine with carbon, through the avoidance of the introduction of carbon from the electrode used therein, and a furnace to carry out said process, the applicant obtained a patent therefor in France. Being then in one of the provincial

towns, the inventor instructed an attorney in Paris to secure patents for his invention in other countries. Pursuant thereto an application containing the description of the French patent was filed in the United States Patent Office. The patent issued in due course with the following single claim:

5. In an electric furnace, the combination of a crucible adapted to carry a bath of molten material, two electrodes supported above it and connected in series, a conductor in position to effect contact with material contained in the crucible, and a voltmeter in shunt between one of said electrodes and said conductor, said conductor consisting of a rod passing through the refractory material of the crucible and projecting outside and inside of the same whereby the portion of the rod which is melted is replaced by molten material which fills up the space and thus insures good conductivity.

Having discovered that his process was not protected by the patent so obtained, the inventor, something more than two years after his patent issued, filed the present application for reissue, presenting five claims, the fifth one of which is the claim above set out as contained in the patent. The other four claims are the following:

1. In the manufacture of soft metals such as chromium, manganese or iron by means of an electric furnace, the method which consists in playing two separate arcs in series through an insulating layer of slag between the metal on the one hand, and the two carbon electrodes on the other hand.

2. In the manufacture of metals having a strong affinity for carbon, such as chromium, manganese, iron or the like, by means of an electric furnace with carbon electrodes, the method which consists in submitting the charge to the heat of electric arcs between the electrodes and the metal itself, and regulating the arcs so as to avoid contact of the electrodes with the metal.

3. In the manufacture of metals having a strong affinity for carbon, such as chromium, manganese, iron or the like, by means of an electric furnace with carbon electrodes, the method which consists in passing the current from one electrode into and through the metal, thence through another electrode, and regulating the position of each electrode separately, so as to avoid contact therewith the metal.

4. In the manufacture of metals having a strong affinity for carbon, such as chromium, manganese, iron, or the like, by means of an electric furnace with carbon electrodes, the method which consists in maintaining a layer of non-conducting slag between the end of an electrode and the molten metal, so as to avoid the combining of the carbon of the electrode with the metal.

In the affidavit accompanying the application the applicant said,

that the Letters Patent are inoperative for the reason that the specification thereof is defective and insufficient, and that such defect or insufficiency consists particularly in the failure of the claim to describe applicant's real invention; and deponent further says that the error which renders such patent so inoperative arose from inadvertence, accident or mistake, and not in fraudulent or deceptive intention on the part of the deponent.

Under the French system a patent is construed to cover whatever of novelty is described in the specification. The affidavit recites that the applicant was ignorant of the difference between the French patent law and that of the United States, and believed that being the first to disclose the real invention his patent would secure to him whatever was new in the same as described. That visiting the United States and discussing his patent with his present New York attorneys, he learned for the first time of the practical inoperativeness of his patent, and was advised that he might apply for reissue to correct the insufficiency. That he was familiar with the state of the industry in the United States; and that to the best of his knowledge and belief his real invention as now claimed has not been in use therein up to the present time. This statement in respect of his previous knowledge and belief as to the protection of his patent, and of the advice given him by his American counsel, was supported by the affidavit of one of them.

It is apparent that the patent as issued is of little or no practical value; and there is no question but that the process is both novel and valuable. This is shown in recent publications, by writers of established standing in Europe and America, to which our attention has been called. These show also that the process has been largely applied by the inventor and his licensees, or assignees. The statement of the invention in the specifications of the French and American patents contains a particular description of the process from which any one skilled in the art could utilize the invention. They also describe the apparatus of the claim of the latter patent, as used in the process. The process is first described, and then it is said: "Such is the principle of the invention which is carried out," in the apparatus immediately after described.

So thoroughly was the process described that the description was copied *verbatim* in the reissue application. In view of the established skill and learning of the applicant, in the art, and from all the facts and circumstances disclosed, we think it apparent that he considered the process as the real or main invention, and that his failure to make specific claims therefor was due to inadvertence, accident, or mistake. It is unnecessary to discuss the facts as to diligence in applying for the reissue, as that has been conceded by the tribunals of the Office. It is sufficient to say that the applicant acted without unnecessary delay; and there was no intervening claim.

The grounds of the Primary Examiner's decision are stated, as follows:

Claims 1 to 4 inclusive are for a process of making metals in an electric furnace, in which the apparatus may differ widely from the specific structure covered by claim 5. The process of these claims was fully disclosed in the original specifications. No anticipatory references are known for these method claims, and it is generally conceded, in the art to which this application relates, that the present applicant is the inventor of the process claimed. The sole ground for rejection from which the appeal is taken is that the method of making metals is a different invention from the furnace which forms the subject-matter of the original claim, and that neither the patent nor the correspondence in the case contains a suggestion that the process of claims 1 to 4 was a part of applicant's invention.

As indicated above, we cannot agree that the description of the patent contains no suggestion that the process of claims 1 to 4 was a part of applicant's invention. If, as declared, "the process of these claims was fully disclosed in the original specification," and was novel, they would either have been allowed if set out along with the claim made, or a divisional application required under Rule 41, as then in force. Having disclosed the process, the failure to claim was either intentional, or the result of inadvertence, accident or mistake for which section 4916 Revised Statutes furnishes a remedy.

The Examiners-in-Chief in affirming that decision on appeal, did so on the ground that a reissue can only be granted for the same issue as the original patent, and say:

The only thing claimed in the original patent was the furnace itself. While the applicant, being a foreigner, may have been mistaken as to the scope of his patent when granted, he was not acting without the advice of competent counsel. It is hardly to be believed that they applied for and took out a patent for the furnace when they intended to apply for a patent for the process.

The question is, however, was this omission to make claims covering the novel process disclosed in the application, the result of inadvertence, mistake or accident. Applicants usually act through solicitors or attorneys, and their inadvertence, accidents and mistakes, if such in fact, are remediable under the statute permitting the reissue, when it is clear that there is no

fraudulent or deceptive intent, or attempt to destroy an intervening right. (*In re Briede*, 123 O. G., 822; 27 App. D. C., 298, 301.)

The Commissioner, who in turn affirmed the decision of the Examiners-in-Chief, stated the grounds of his decision as follows:

These claims have been refused on the ground that they cover a different invention from that of the patent.

It is contended by appellant that a reissue may be granted for subject-matter which was intended to be claimed in the original patent. The intention to claim the process is alleged to be shown in the present case by the fact that the process covered by claims 1, 2, 3 and 4 is described in the patent. It is stated that the applicant, being a foreigner, was of the impression that the description in a patent determined its scope, and that, therefore, the patent as granted covered the process described. Having discovered that the patent did not cover the process described, patentee now comes asking for a reissued patent with claims to the process.

The question of whether there was an intention to claim the process in the original patent does not appear to have any material bearing on the present case. It is clear that the claim of the patent was for a machine, and it is well established that a patent for a machine will not sustain a reissue for a process.

Assuming, then, that the invention of the process was fully described in the original application; that it was the original intention of the applicant to secure protection for his entire invention through a patent; and that the failure to do so through specific claims was the result of inadvertence, accident, or mistake; is it true that the patent limited in claim to a machine will not sustain a reissue for the process? The Commissioner's conclusion that it will not is rested upon the cases of *James* v. *Campbell*, (104 U. S., 356; Vol. 21 O. G., 67;) *Heald* v. *Rice*, (104 U. S., 737; Vol. 21 O. G., 215;) and several others referring to them. We do not understand those decisions as establishing such an invariable rule. In *James* v. *Campbell* the patent, held void on all points involved, was a second reissue in 1870 of a patent granted in 1863. The invention was declared to be a very narrow one, and the two claims of the original patent were for specific machines. The application for the last reissue made many changes in the specifications, materially enlarging them and the apparatus claims, and adding a new claim for the process. The Court expressly declared that an inspection of former patents showed that the process could not be lawfully patented because anticipated. In regard to this process it was also said:

'Leaving out of view the history of the art prior to the invention claimed by the patentee, what possible pretense can there be for contending that the general process was part of the invention which formed the subject of the original patent? Suppose it to be true that Norton was the first inventor of this process, was that process the invention which he sought to secure in the original patent? A patent for a process and a patent for an implement or a machine are very different things. (*Powder Co.* v. *Powder Works*, Vol. 15 O. G., 280; 98 U. S., 126.) Where a new process produces a new substance, the invention of the process is the same as the invention of the substance, and a patent for the one may be reissued so as to include both, as was done in the case of Goodyear's vulcanized-rubber patent. But a process, and a machine for applying the process are not necessarily one and the same invention. They are generally distinct and different. The process or act of making a postmark and canceling a postage-stamp by a single blow or operation, as a subject of invention, is a totally different thing in the patent law from a stamp for performing the process. The claim of the process in the present case, however, is not so broad as this. It is for the process or act of stamping letters with a postmark and canceling the postage-stamp at one and the same blow or operation of the instrument, *in the manner and by the means described and set forth*. Perhaps this claim amounts to no more than a claim to the exclusive use of the patented instrument or device. If it is anything more, it is for a different instrument from that described in the original patent. If it is not for anything more, the question is brought back to the instrument or device itself which forms the subject of the patent, and which has been already considered.

In *Heald* v. *Rice*, the application for the reissued patent contained material changes in the description. These having been stated, the Court said:

It appears, then, from the reading of the two specifications, that the invention described in the first is for the return-flue boiler; while that described in the second, abandoning the claim for the boiler itself, is for a particular mode of using it, with straw as a fuel, by means of an attachment to the furnace-door for that purpose. It might well be that Rice was entitled to patents for both, separately, or to one for both inventions. But it is too plain for argument that they are perfectly distinct. A patent, consequently, for one cannot lawfully be surrendered as the basis for a reissue for the other. They are as essentially diverse as a patent for a process and a compound, as in the case of *Powder Co.* v. *Powder Works* (Vol. 15, 280; 98 U. S., 126) where the reissue patent was avoided, although the original application claimed the invention both of the process and the compound. The case comes directly within the principle held in *James* v. *Campbell*, that a patent for a machine cannot be reissued for the purpose of operating that class of machines; because if the claim for the process is anything more than for the use of the particular machine patented, it is for a different invention.

It is to be observed that in *James* v. *Campbell* the Court did not say that a process, and a machine for applying the process, are always distinct and different, but "generally distinct and different."

A rule of the Patent Office has long provided that two or more independent inventions cannot be claimed in one application; and in conformity with the doctrine thought to have been established in the foregoing cases, a specific provision was added thereto, that:

Claims for a machine and the process in the performance of which the machine is used must be presented in separate applications.

Rule 41 (recently amended by striking out the above quoted). The question has recently been reëxamined by the Supreme Court of the United States, and the power to make a hard and fast rule of the kind denied. (*Steinmetz* v. *Allen*, 192 U. S., 543.) It was said that inventions may be so connected or related, as to constitute substantially one invention.

They may be completely independent. (*Cochrum* v. *Deener*, Vol. 11, 687 94; U. S., 780.) But they may be related. They may approach each other so nearly that it will be difficult to distinguish the process from the function of the apparatus. In such case the apparatus would be the dominant thing. But the dominance may be reversed and the process carry an exclusive right, no matter what apparatus may be devised to perform it. There is an illustration in the *Telephone Cases*, (42 O. G., 377; 126 U. S., 1.)

Stating the claim in that case as referring to the art described, as well as the means of making it useful, the opinion was quoted from as follows:

Other inventors may compete with him for the ways of giving effect to the discovery, but the new art he has found will belong to him during the life of his patent. * * * The patent for the art does not necessarily involve a patent for the particular means employed for using it. Indeed, the mention of any means, in the specification or descriptive portion of the patent, is only necessary to show that the art can be used; for it is only the useful arts—arts which may be used to an advantage—that can be made the subject of a patent.

Of *James* v. *Campbell* the Court said that—

was a case of reissued patent, and by express provision of the statute as to reissued patents no new matter can be introduced in them. In other words, the reissue is to perfect, not to enlarge the invention. Whether the principle of the case applies to related as well as independent inventions is not clear from its language.

After quoting several passages from the opinion in that case, the following language was used:

The case, however, indicates what embarrassment and peril of rights may be caused by a hard and fixed rule regarding the separation of related inventions.

Whatever the doctrine of those earlier cases, a more liberal rule has since prevailed in respect of the right of reissue. (*Eames* v. *Andrews*, 39 O. G., 1319; 122 U. S., 40, 59; *Topliff* v. *Topliff*, 59 O. G., 1257; 145 U. S., 156, 171; *Hobbs* v. *Beach*, 94 O. G., 2357; 180 U. S., 383, 394.)

In *Eames* v. *Andrews* the Court said:

If the amended specification does not enlarge the scope of the patent by extending the claim so as to cover more than was embraced in the original, and thus cause the patent to include an invention not within the original, the rights of the public are not thereby narrowed, and the case is within the remedy intended by the statute.

Topliff v. *Topliff*, *supra*, is a leading and most instructive case on this point. After reviewing ve

many of the former decisions, beginning with *Powder Co.* v. *Powder Works*, (15 O. G., 289; 98 U. S., 126,) it was said by Mr. Justice Brown, who delivered the opinion:

From this summary of the authorities it may be regarded as the settled rule of this Court that the power to reissue may be exercised when the patent is inoperative by reason of the fact that the specification as originally drawn was defective or insufficient, or the claims were narrower than the actual invention of the patentee, provided the error has arisen from inadvertence or mistake, and the patentee is guilty of no fraud or deception; but that such reissues are subject to the following qualifications.

After stating these to be, first, that it shall be for the same invention as the original patent, and that diligence must be exercised, and is ordinarily determined by the lapse of two years, he proceeded to say:

To hold that a patent can never be reissued for an enlarged claim would be not only to override the obvious intent of the statute, but would operate in many cases with great hardship upon the patentee. The specification and claims of a patent, particularly if the invention be at all complicated, constitute one of the most difficult legal instruments to draw with accuracy, and in view of the fact that valuable inventions are often placed in the hands of inexperienced persons to prepare such specifications and claims, it is no matter of surprise that the latter frequently fail to describe with requisite certainty the exact invention of the patentee, and err either in claiming that which the patentee had not in fact invented, or in omitting some element which was a valuable or essential part of his actual invention. Under such circumstances, it would be manifestly unjust to deny him the benefit of a reissue to secure to him his actual invention, provided it is evident that there has been a mistake and he has been guilty of no want of reasonable diligence in discovering it, and no third persons have in the meantime acquired the right to manufacture or sell what he had failed to claim. The object of the patent law is to secure to inventors a monopoly of what they have actually invented or discovered, and it ought not to be defeated by a too strict and technical adherence to the letter of the statute, or by the application of artificial rules of interpretation.

The doctrine of that case was applied by this court in the recent case of *in re Briede*, (123 O. G., 322; 27 App. D. C., 298, 302, 306.) In this case, as in that, no new matter was contained in the specification, and the applicant applied promptly for reissue. The statement of the invention in the original application, followed without change in the reissue application, shows that the process and the apparatus are connected in their design and operation, and are so related as to entitle the applicant to claims for both within the rule declared in *Steinmetz* v. *Allen*, *supra*. In the language of that case, the process is "the dominant thing." Consequently, as was said in the case of *in re Briede*, *supra*:

Had the claim in controversy been submitted while the application for the original patent was pending, we cannot believe that it would have been refused as not being for the same invention as that described and shown. Rather, we think, the Office approached its consideration with the idea that it was an unwarranted attempt to obtain a broadened claim by means of a reissue, and with the mistaken idea that such a reissue was not permissible. The construction placed upon the patent statutes by the courts is favorable toward inventors having meritorious inventions, and they do not put upon them harsh or technical interpretations. They do not look with favor upon the refinements of division which lead to many patents being issued for various improvements incorporated in a single device. They are inclined to resolve all doubts to as whether more than one invention is embraced in one patent in favor of the patentee.

Whatever of doubt there may be whether the reissue in this case is for the same invention described in the original patent, and under all the circumstances allowable, should, we think, following the ordinary practice of the Patent Office, be resolved in favor of the inventor of a meritorious invention, especially when it is now too late to file an independent application for a patent for the same. No absolute right of property is conferred by the grant of the patent. The patentee is merely put in position to assert his *prima facie* right in case of infringement, and have the same adjudicated in a court where extrinsic evidence, if important, may be heard; and not confined, as is this court, to a review of the decisions of the Patent Office upon the record as made up therein. (*In re Thompson*, 28 App. D. C., 426, 429; *Seymour* v. *Osborne*, 11 Wall., 516, 544; *Parker & Whipple Co.* v. *Yale Clock Co.*, 41 O. G., 811; 123 U. S., 87, 98.)

Our conclusion is that there was error in refusing the reissue application, and the decision must be reversed. It is so ordered, and that this decision be certified to the Commissioner of Patents. Reversed.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 1, 1907.

Empire Soap Company, its assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Magnolia Healing Soap Company, of Muscatine, Iowa, for registration of a trade-mark, an application for registration of a trade-mark filed by The Southern Cotton Oil Company, of Jersey City, N. J., and a trade-mark registered to the Empire Soap Company, of St. Louis, Mo. The notice of said declaration mailed by the Patent Office in the usual manner to the said Empire Soap Company at its address as above given has been returned by the Post-Office Department undelivered, and it has been impossible to locate said company.

Notice is therefore hereby given to the Empire Soap Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Assistant Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 27, 1907.

Jeptha J. Lamb and James H. Patton, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application for patent filed by Winne Gordon, of Sharon Springs, N. Y., and an application for patent filed by Jeptha J. Lamb and James H. Patton, of Bellevue, Idaho. It appears from the record of the interference that the present whereabouts of said Jeptha J. Lamb and James H. Patton is unknown, and all communications directed to their address above given within the past two years have been returned unclaimed by the Post-Office Department.

Notice is therefore hereby given to the said Jeptha J. Lamb and James H. Patton, their assigns or legal representatives that if they or any of them desire to contest the said interference, they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 16, 1907.

James H. Brookmire & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between the application of The Morgan Oyster Company, of San Francisco, Cal., for registration of a trade-mark and a trade-mark registered to James H. Brookmire & Company, of St. Louis, Mo., and a statement has been filed in the case to the effect that the said James H. Brookmire & Company are no longer in business.

Notice is therefore hereby given to James H. Brookmire & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 16, 1907.

James H. Brookmire & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Nininger & Frantz, of Daleville, Va., for registration of a trade-mark and a trade-mark registered to James H. Brookmire & Company, of St. Louis, Mo., and a statement has been filed in the case to the effect that the said James H. Brookmire & Company are no longer in business.

Notice is therefore hereby given to James H. Brookmire & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 127—No. 9. TUESDAY, APRIL 30, 1907. PRICE—$5 per year.

CONTENTS.

	Page.
ISSUE OF APRIL 30, 1907	3221
INTERFERENCE NOTICES	3221
APPLICATIONS UNDER EXAMINATION	3222
INTERFERENCE NOTICE	3222
PATENTS GRANTED	3223
REISSUES	3616
DESIGNS	3616
TRADE-MARKS—REGISTRATION APPLIED FOR	3619
TRADE-MARKS—REGISTERED	3635
LABELS	3639
PRINTS	3639
COMMISSIONER'S DECISIONS—	
Daggett v. Kaufmann	3641
Ex parte The Yale & Towne Manufacturing Company	3641
OPINION OF THE ATTORNEY-GENERAL—	
Notaries Public—Amended Law	3642
DECISIONS OF THE U. S. COURTS—	
Gibbons v. Peller	3643
In re Ams	3644
INTERFERENCE NOTICES	3646

ISSUE OF APRIL 30, 1907.

Patents	772	No. 851,637 to No. 852,408, inclusive.
Designs	9	No. 38,541 to No. 38,549, inclusive.
Trade-Marks	145	No. 62,239 to No. 62,383, inclusive.
Labels	18	No. 13,503 to No. 13,520, inclusive.
Prints	1	No. 1,974.
Reissues	2	No. 12,643 to No. 12,644, inclusive.
Total issue	947	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	4	1	New Hampshire	1	1
Arizona Territory	1	.....	New Jersey	28	4
Arkansas	2	.....	New Mexico Ter'y	1	.....
California	26	6	New York	118	33
Colorado	9	.....	North Carolina	4	.....
Connecticut	26	5	North Dakota	2	.....
Delaware	3	.....	Ohio	56	11
District of Columbia	5	.....	Oklahoma Territ'y	.....	.....
Florida	1	.....	Oregon	8	1
Georgia	3	1	Pennsylvania	85	17
Hawaii Territory	1	.....	Philippine Islands	.....	.....
Idaho	2	.....	Porto Rico	.....	.....
Illinois	72	24	Rhode Island	7	1
Indian Territory	3	.....	South Carolina	1	.....
Indiana	14	5	South Dakota	2	.....
Iowa	19	.....	Tennessee	1	.....
Kansas	14	.....	Texas	14	2
Kentucky	4	1	Utah	2	.....
Louisiana	6	.....	Vermont	3	1
Maine	3	.....	Virginia	9	1
Maryland	5	7	Washington	5	.....
Massachusetts	37	9	West Virginia	3	1
Michigan	27	1	Wisconsin	15	3
Minnesota	11	.....	Wyoming	.....	.....
Mississippi	4	.....	U. S. Army	.....	.....
Missouri	27	5	U. S. Navy	1	.....
Montana	3	.....	Total to citizens of the United States	710	145
Nebraska	2	1			
Nevada	1	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	1	Natal	.....	.....
Austria-Hungary	5	.....	Netherlands	.....	.....
Belgium	2	.....	Newfoundland	.....	.....
Brazil	.....	.....	New South Wales	.....	.....
British West Indies	.....	.....	New Zealand	.....	.....
Canada	13	.....	Norway	.....	.....
Cape Colony	.....	.....	Persia	.....	.....
Chile	.....	.....	Queensland	.....	.....
China	.....	.....	Roumania	.....	.....
Costa Rica	.....	.....	Russia	.....	.....
Cuba	.....	.....	Scotland	.....	.....
Denmark	1	.....	South Australia	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	12	4	Sweden	2	1
France	6	5	Switzerland	5	3
Germany	18	4	Transvaal, South Africa	2	.....
Haiti	.....	.....	Victoria	2	.....
Ireland	.....	.....	Western Australia	.....	.....
Italy	.....	.....			
Japan	.....	1			
Luxemburg	3	.....	Total to citizens of foreign countries	71	19
Mexico	.....	.....			

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 16, 1907.

James H. Brookmire & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between the application of The Morgan Oyster Company, of San Francisco, Cal., for registration of a trade-mark and a trade-mark registered to James H. Brookmire & Company, of St. Louis, Mo., and a statement has been filed in the case to the effect that the said James H Brookmire & Company are no longer in business.

Notice is therefore hereby given to James H. Brookmire & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 16, 1907.

James H. Brookmire & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Nininger & Frantz, of Daleville, Va., for registration of a trade-mark and a trade-mark registered to James H. Brookmire & Company, of St. Louis, Mo., and a statement has been filed in the case to the effect that the said James H. Brookmire & Company are no longer in business.

Notice is therefore hereby given to James H. Brookmire & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business April 26, 1907.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
309	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Apr. 19	Apr. 18	61
303	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Apr. 12	Mar. 25	126
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Apr. 10	Mar. 27	278
109	XVI. Telegraphy and Telephony..	Apr. 9	Mar. 25	172
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Apr. 9	Mar. 25	213
327	XVIII. Steam-Engineering, etc ...	Apr. 9	Mar. 18	182
324	XII. Elevators. Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Apr. 8	Mar. 26	275
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Apr. 8	Mar. 21	215
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Apr. 8	Mar. 20	318
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	Apr. 6	Mar. 25	234
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	Apr. 5	Mar. 25	188
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Apr. 4	Mar. 21	266
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Apr. 4	Mar. 12	545
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Apr. 3	Mar. 22	108
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Apr. 3	Mar. 7	226
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Apr. 2	Apr. 4	241
307	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	Apr. 2	Mar. 4	190
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Mar. 30	Mar. 26	312
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Mar. 30	Mar. 25	204
167	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Mar. 30	Mar. 15	346
362	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	Mar. 29	Mar. 25	309
376	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Mar. 28	Mar. 22	111
127	V. Bookbinding, Harvesters, Jewelry, and Music.	Mar. 28	Mar. 15	309
149	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sewerage.	Mar. 27	Mar. 19	402
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Mar. 27	Mar. 13	284

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Mar. 25	Mar. 13	591
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Mar. 25	Mar. 9	261
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Mar. 23	Mar. 13	396
153	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Mar. 22	Mar. 18	213
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Mar. 21	Mar. 18	424
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Mar. 19	Mar. 4	343
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	Mar. 18	Mar. 8	304
147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Woodworking.	Mar. 16	Feb. 13	327
332	X. Carriages and Wagons.....	Mar. 14	Mar. 12	533
122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Mar. 12	Mar. 12	344
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Marking, etc.	Mar. 12	Mar. 7	458
343	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Mar. 8	Mar. 7	625
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Mar. 4	Feb. 6	437
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Mar. 1	Mar. 6	348

Total number of applications awaiting action 12,171

Room No.		Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
195	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	Apr. 20	Apr. 17	114
	Designs	Apr. 18	Apr. 16	37
	Labels and Prints			

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 23, 1907.

Hardgrove & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Robert Harris & Brother, of Reidsville, N. C., for registration of a trade-mark and a trade-mark registered to Hardgrove & Company, of Richmond, Va. It appears from the record of the case that the firm of Hardgrove & Company is no longer in existence, and the attorneys for said firm can also not be found.

Notice is therefore given to the said Hardgrove & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

PATENTS

GRANTED APRIL 30, 1907.

851,637. LINING FOR PEBBLE-MILLS. MAX F. ABBE, New York, N. Y. Filed Jan. 9, 1907. Serial No. 351,432.

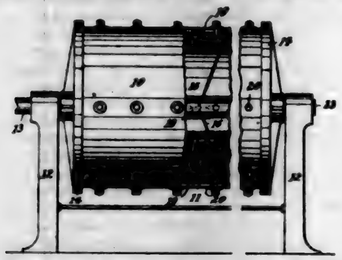

Claim.—1. A pebble mill provided with liners having ends that extend parallel to the axis of the mill, and sides that are inclined to such ends, substantially as specified.

2. A pebble mill provided with liners having reduced and notched ends, a bar extending over the reduced ends of adjoining liners, and bolts that secure the bar to the mill and pass through the openings formed by the notches of adjoining liners parallel to the axis of the mill, substantially as specified.

3. A pebble mill provided with liners having reduced ends, bulges flanking the same, a bar extending over the reduced ends of adjoining liners, and bolts that secure said bar to the mill, substantially as specified.

851,638. CARRIER. LEONARD M. ADDINGTON, Danvers, Ill. Filed Apr. 7, 1906. Serial No. 310,526.

Claim.—1. A carrier, comprising a single traction wheel, a spindle forming a driving axle for said wheel, a gear wheel mounted fast on said spindle, an elongated frame supported by and arranged to depend from said traction wheel, an auxiliary frame pivoted on said elongated frame, reversing gears carried by said auxiliary frame for connection one at a time with the gear wheel on the driving axle of the traction wheel, a gear wheel mounted on said frame below said auxiliary frame and traction wheel, sprocket gearing between said gear wheel and said reversing gears, a spring motor mounted on said frame below all of the aforementioned gears, gearing connecting said motor with said gears, and a parcel receptacle mounted on said elongated frame beneath said motor.

2. A carrier, comprising a single traction wheel, a main frame comprising an elongated bar, means at one end of said frame to suspend the same from the axis of said wheel, a gear wheel operatively connected to said supporting wheel to drive the same, an open auxiliary frame pivoted on said main frame and extending around said gear wheel, a pair of reversing gear wheels carried by said auxiliary frame, located respectively on opposite sides of the axis of rotation of the first mentioned gear wheel, and adapted to be brought by the movement of said frame into and out of engagement with the gear wheel connected to said supporting wheel, sprocket wheels carried by said auxiliary frame and operatively connected respectively to each of said gear wheels on said frame, a sprocket wheel carried by the main frame, a sprocket chain gearing said sprocket wheel to those on the auxiliary frame, a spring motor mounted on said main frame, gearing connecting said motor with the sprocket wheel on said main frame, a reversing lever for shifting said auxiliary frame, retaining means coöperating

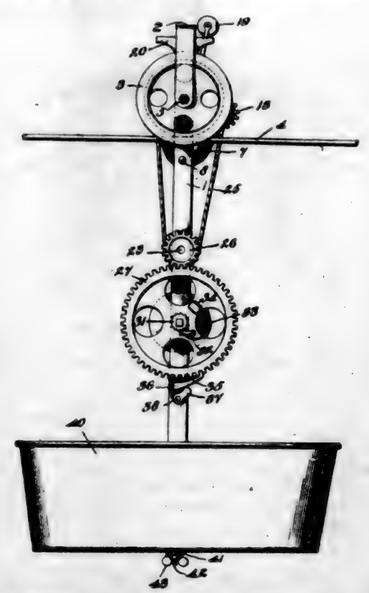

with said lever to hold said frame in position, and a receptacle mounted on the lower end of said main frame.

851,639. PROCESS OF PRODUCING ZINC SULFATE DIRECTLY FROM THE ORE. GEORGE O. ANGELL, Philadelphia, Pa. Filed Nov. 12, 1904. Renewed June 7, 1906. Serial No. 320,572.

Claim.—1. The process described of treating zinciferous ores containing sulfids of those metals, to convert and recover their constituent zinc and copper sulfids as soluble sulfates, direct from the ore, which consists in subjecting the ore, in a substantially closed chamber, to the action of burning sulfur oxids liberated, under the action of a preliminary roasting heat in the same chamber, from the constituent ore sulfids present, in the presence of free oxygen derived from air admitted to said chamber.

2. The process described, of producing and recovering zinc sulfate direct from zinciferous ore sulfids, which consists in subjecting the ore blendes to a preliminary roasting heat in a suitably-chambered furnace to form oxids of the metals present and to liberate their sulfurous constituent, then conserving the latter gaseous product in a substantially closed chamber of the furnace and burning it therein, by its own flame, in the presence of oxygen liberated from air admitted to the chamber, and finally dissolving the resulting soluble sulfates and recovering the crystallized zinc sulfate from the aqueous solution.

8. The process described of producing soluble sulfates of

zinc and copper direct from zinciferous ores containing sulfids of those metals, which consists in roasting the ore in a suitably-chambered furnace to liberate its sulfurous constituent as gaseous sulfur oxids, shutting off applied heat and substantially closing the chamber at this stage, conserving and burning said gases therein in steam-saturated suspension and in the presence of oxygen derived from air admitted to such chamber, to form sulfuric anhydrid to act upon the zinc and copper oxids present in the charge; and finally separating out the resultant soluble sulfates from the charge, in an aqueous solution.

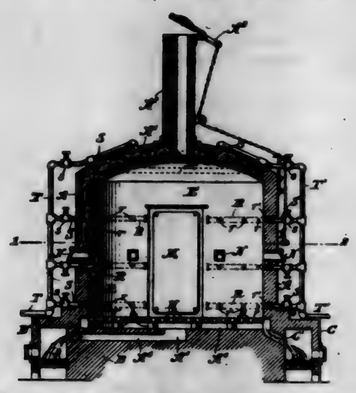

4. The process described of producing and recovering pure sulfates of zinc and copper direct from zinciferous ores containing sulfids of those metals, which comprises crushing the ore together with iron pyrites added to the mass, roasting the charge in a suitably-chambered furnace to liberate its sulfurous constituent as gaseous sulfur oxids, conserving and burning these gases in the same chamber in the presence of oxygen derived from air admitted to the chamber, and finally depositing the charge in a water bath, dissolving the soluble sulfates of zinc and copper therein, and recovering the pure sulfates from the aqueous solution.

851,640. DOOR CHECK AND CLOSER. JOSEPH BARDSLEY, Montclair, and ALBERT J. ROSENTRETER, Boonton, N. J.; said Rosentreter assignor to said Bardsley. Filed Feb. 16, 1906. Serial No. 301,357.

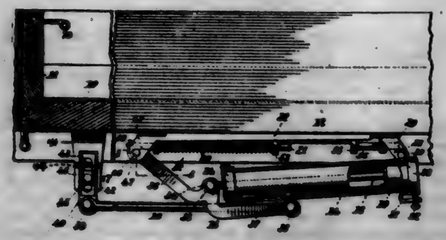

Claim.—1. The checking cylinder, the piston therein, the piston-rod connected therewith, the double ended lever pivoted at one end at a fixed point and at an intermediate point to said rod and having a projection (49) extending beyond said fixed point, the connecting rod pivoted at one end to the outer end of said lever and at its other end to a fixed point, a closing spring exterior to said cylinder and confined at one end, and means operatively connecting the other end of said spring to said projection of said lever, whereby said projection while said lever is turning on its pivot operates on and is operated by said spring; substantially as set forth.

2. The checking cylinder, the piston therein, the piston-rod connected therewith, the double ended lever pivoted at one end at a fixed point and at an intermediate point to said rod, the connecting rod pivoted at one end to the outer end of said lever and at its other end to a fixed point, a closing spring exterior to said cylinder and confined at one end, and a rod in engagement with and acted on and acting against the other end of said spring, and provided with means to engage with the inner end of said lever adjacent to its pivot point, whereby said end of said lever while turning on its pivot operates on and is operated by said rod and spring; substantially as set forth.

3. The checking cylinder, the piston therein, the piston-rod connected therewith, the double ended lever pivoted at one end at a fixed point and at an intermediate point to said rod and having a projection (49) extending beyond said fixed point, the connecting rod pivoted at one end to the outer end of said lever and at its other end to a fixed point, a closing spring exterior to said cylinder and confined at one end, and a rod in engagement with and acted on and acting against the other end of said spring and provided with means to engage with said projection of said lever inwardly beyond the pivot point thereof, whereby said projection while turning on its pivot operates against said rod and spring; substantially as set forth.

4. The checking cylinder, the piston therein, the piston-rod connected therewith, the double-ended lever pivoted at one end at a fixed point and at an intermediate point to said rod, the securing bracket to which said cylinder and lever are connected, the connecting rod pivoted at one end to the outer end of said lever and at its other end to a fixed point, a rod slidably supported at one end from said bracket and at its other end being supported by its engagement with the inner end of said lever, a closing spring supported by said rod and at one end acting against the same, and means mounted in said bracket for the adjustment of said spring; substantially as set forth.

5. The checking cylinder, the piston therein, the piston-rod connected therewith, the double-ended lever pivoted at one end at a fixed point and at an intermediate point to said rod, the securing bracket to which said cylinder and lever are connected, the connecting rod pivoted at one end to the outer end of said lever and at its other end to a fixed point, a closing spring, a slide mounted in said bracket and having a plate 53 to act as a stop for one end of said spring, a screw 56 mounted in said bracket for adjusting said slide to regulate the tension of said spring, and a rod extending through said spring and guided in said plate and provided with means to engage the inner end of said lever adjacent to its pivot point, whereby said end of said lever while turning on its pivot operates on and is operated by said rod and spring; substantially as set forth.

6. The checking cylinder, the piston therein, the piston-rod connected therewith, the double-ended lever pivoted at one end at a fixed point and at an intermediate point to said rod, the securing bracket to which said cylinder and lever are connected, the connecting rod pivoted at one end to the outer end of said lever and at its other end to a fixed point, a closing spring, a slide mounted in said bracket and having a plate 53 to act as a stop for one end of said spring, means for adjusting said slide along said bracket to regulate the tension of said spring, and a rod extending through said spring and guided in said plate and provided with means to engage the inner end of said lever adjacent to its pivot point, said bracket having the notches 64 and undercut recesses and said slide having the flanges 61 to pass through said notches and seat and move in said recesses, and said spring pressing at one end against said rod; substantially as set forth.

7. The checking cylinder, the piston therein, the piston-rod connected therewith, the double-ended lever pivoted at one end at a fixed point and at an intermediate point to said rod and provided adjacent to said fixed point with a projection 49 having a bearing 50, the securing bracket to which said cylinder and lever are connected, the connecting rod pivoted at one end to the outer end of said lever and at its other end to a fixed point, a closing spring, and a rod slidably supported from said bracket and extending through said spring and engaged by one end of the same and provided with bearing 51 to engage said bearing 50; substantially as set forth.

8. The checking cylinder, a piston therein, a piston-rod connected therewith, the double-ended lever pivoted at one end at a fixed point and at an intermediate point to said rod and thence extending along the front of said cylinder toward its outer end and about on a horizontal plane with the piston rod, a connecting rod pivoted to the outer end of said lever and thence returning along the same to a fixed point where it is pivoted, a securing bracket to which said cylinder and lever are secured, a closing spring confined at one end, and a plunger rod supported from said bracket and extending through said spring and provided with means to engage the end of said lever inwardly beyond the pivot point of same; substantially as set forth.

9. The hinged checking cylinder, the piston therein, the piston-rod connected therewith, the double-ended lever pivoted at one end at a fixed point and thence extending on a diagonal line to said rod to which it is pivoted and thence extending toward the outer end of said cylinder, and the connecting rod pivoted to the outer end of said lever and thence returning to a fixed point where it is pivoted, said connecting rod being at all times on the same horizontal plane with said piston-rod, and the outer portion of said lever being bifurcated to receive said connecting rod between its upper and lower members; substantially as set forth.

10. A door check comprising the cylinder, the piston therein, the piston rod connected therewith, the operating lever, and connecting rod, said lever being pivoted to said piston rod, and said cylinder having on its end a cap 24 and provided with a wire furnishing pins at its ends passing through apertures in the sides of the cap and cylinder, for detachably locking said cap in position; substantially as set forth.

11. A door check comprising the cylinder, operating lever, connecting rod, piston and piston-rod, said cylinder having a threaded escape aperture for air, a controlling screw therefor, and a spring arm containing a threaded aperture for said screw and adapted to exert a binding tension on said screw when the latter is engaged by the wall of said escape aperture; substantially as set forth.

12. In a door check, the checking cylinder, an operating lever therefor and a connecting rod at one end fastened to said lever, combined with the securing bracket to receive the other end of said rod, said bracket comprising a supporting member 41, an adjustable member 40 seated thereon and means for binding said members together, one of said members having side flanges to preserve the alinement of the adjustable member with its support; substantially as set forth.

13. In a door-check, the checking cylinder, an operating lever therefor and a connecting rod at one end fastened to said lever, combined with the securing bracket to receive the other end of said rod, said bracket comprising a supporting member 41 having a head 42, an adjustable member 40 seated on said head and having a recess 43 and slot 44, and a screw and nut for binding said members together, said nut being disposed in said recess, and said screw extending through said head and slot and engaging said nut; substantially as set forth.

851,641. CHECK-CONTROLLED APPARATUS. EDWARD A. BEAUMONT, JR., and GEORGE W. GARMON, Philadelphia, Pa. Filed June 14, 1905. Renewed Aug. 15, 1906. Serial No. 330,645.

Claim.—1. In a check controlled apparatus, in combination, a shaft, a series of sets of coin carriers carried by said shaft, means for intermittently rotating said shaft and carriers in one direction, a second shaft, separate arms, one for each set of coin carriers, carried by said second shaft, said arms extending toward said first shaft and adapted each to be engaged and rocked by a coin carried in any one of the carriers of its corresponding set of coin carriers, said arms being so arranged in relation to said second shaft that a movement of any arm by a coin results in a greater or less rotation of said shaft than the movement of any other arm by a coin, and an alarm adapted to be operated by said shaft and to be sounded differently by differences in its rotation.

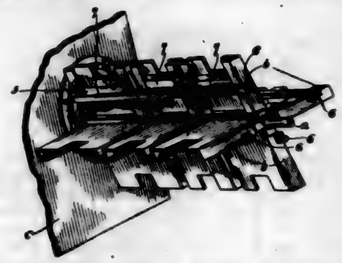

2. In a check controlled apparatus, in combination, a shaft, a series of sets of coin carriers carried by said shaft, means for intermittently rotating said shaft and carriers in one direction, a series of arms, one for each corresponding one of each set of coin carriers, carried upon a second shaft, said arms extending toward said first shaft and adapted each to be engaged and rocked by a coin carried in any one of the carriers of its corresponding set of coin carriers, said arms being so arranged in relation to said second shaft that a movement of any one of them by a coin in its carrier will cause a greater or less rotation of said second shaft than will be caused by the movement of any other of the arms by its corresponding coin and carrier, said second shaft, means for returning said second shaft and the arms carried thereby to their first position after having been operated by a coin and its carrier, and an alarm adapted to be sounded one or more times as may be dictated by the degree that said second shaft has been turned.

3. The combination in a check controlled apparatus of a set of grooved coin carriers carried by a central shaft, said shaft, means for intermittently rotating said shaft and carriers, cleaners carried by the coin grooves in said carriers, and means for reciprocating said cleaners from end to end of said coin grooves during each revolution of said shaft and carriers.

4. The combination in a check-controlled apparatus, of a multiplicity of sets of coin carriers carried by a shaft, means for intermittently rotating said shaft and carriers, stationary grooved cams at opposite ends of said shaft, rods passing across the faces of each set of carriers the ends of said rods passing into the grooves in said cams, and cleaners carried by said rods and entering said carriers.

851,642. SKIRT AND GARMENT MARKING DEVICE. JOHN M. BERRE, St. Paul, Minn. Filed Nov. 2, 1905. Serial No. 285,512.

Claim.—1. A garment marking device comprising a foot piece with a standard thereon and a scale secured on the base and adapted to be pressed toward the standard, said base having a finger catch by which to hold it against the pressure exerted upon the scale, substantially as and for the purpose set forth.

2. A garment marking device comprising a foot or base, a standard projecting upwardly therefrom, and a scale secured to the base near the standard and adapted to swing to and from the same, said base and standard being formed integral of a single piece of sheet metal.

3. A garment marking device comprising a base or foot piece, a standard extending upward from the same, a graduated scale mounted on the base and adapted to swing to and from the standard, and be pressed against the latter, and a finger catch on said base; said base, standard and catch being made integral from a single piece of sheet metal.

4. A garment marking device comprising a base adapted to rest upon the floor, a standard fixed thereto, a vertically disposed graduated scale secured to the base near the standard and adapted to be forced against a garment

placed between it and the standard, said scale being springy near its lower end, for the purposes set forth.

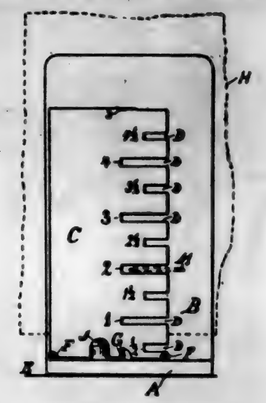

851,643. CARTRIDGE-DEFLECTOR FOR TOP-EJECTION GUNS. WINCHESTER BENNETT, New Haven, Conn., assignor to Winchester Repeating Arms Company, New Haven, Conn., a Corporation. Filed Mar. 4, 1907. Serial No. 360,489.

Claim.—1. A gun having a top ejection-opening, in combination with a cartridge deflector applied to the gun and extending partially over the said opening in position to laterally deflect the spent shells as they issue from the said opening.

2. The combination with a gun having a top ejection-opening, of a cartridge deflector applied to the gun and extending partially over the said opening, and a centrally arranged telescope, the rear end of which extends over the said opening.

3. The combination wtih a gun having a top ejection-opening, of a cartridge deflector applied to the left hand side of the gun and extending from left to right partially over the said opening, and a centrally arranged telescope the rear end of which extends over the said opening.

4. In a gun, the combination with a receiver having a top ejection-opening, of a telescope centrally arranged so as to extend over the said ejection-opening at its rear end, and a cartridge deflector attached to the left hand side of the said receiver and extending over the said opening to laterally deflect the spent shells issuing therefrom and so act as a fender for the telescope.

851,644. SEAL-LOCK. AYERS BOAL, Chicago, Ill. Filed Aug. 27, 1906. Serial No. 332,183.

Claim.—1. In a seal-lock, the combination with a casing, of a wheel rotatively mounted therein and provided on its periphery with a fixed tooth, means for preventing the rotation of the wheel in one direction, said casing having an opening through its opposite edge walls, and an apertured strip adapted to be inserted through one of said openings to cause the wheel when rotated to have its said tooth projected through the apertured strip, said strip being also adapted to be withdrawn from the casing through the opposite casing opening, substantially as described.

2. In a seal-lock, the combination with a casing, of a wheel rotatably mounted therein and provided on its periphery with a fixed tooth, means for preventing the rotation of the wheel in one direction, said casing having an opening through its opposite edge walls, and an apertured strip adapted to be inserted through one of said openings to cause the wheel when rotated to have its said tooth projected through the apertured strip, said strip being also adapted to be withdrawn from the casing through the opposite casing opening, said casing also having a guide to direct said strip through the casing, substantially as described.

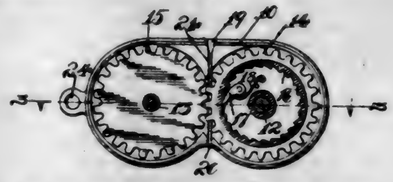

3. In a seal-lock, the combination with a casing, of a wheel rotatably mounted therein and having a series of peripheral teeth, means for preventing rotation of the wheel in one direction, said casing having an opening through its opposite edge walls, and an apertured strip adapted to be inserted through one of said openings to abut against one of the teeth and turn the wheel so as to cause another of said teeth to enter one of the apertures of the strip, and to be withdrawn from the casing through the opposite casing opening.

4. In a seal-lock, the combination with a casing, of a toothed wheel rotatably mounted therein, means for preventing rotation of the wheel in one direction, a second rotatable wheel mounted in the casing and meshing with the first-named wheel, said casing having openings in its opposite edge walls, and an apertured strip adapted to be inserted into the casing through one of said openings to pass between said toothed wheels and be thereby locked against withdrawal and thereafter be withdrawn from the casing through the opposite one of said openings, substantially as specified.

5. In a seal-lock, the combination with a casing, of a toothed wheel rotatably mounted therein, means for preventing rotation of the wheel in one direction, a second rotatable wheel mounted in the casing and meshing with the first-named wheel, said casing having openings in its opposite edge walls, and an apertured strap adapted to be inserted into the casing through one of said openings to pass between said toothed wheels and be thereby locked against withdrawal and thereafter be withdrawn from the casing through the opposite one of said openings, said casing also having a guide to direct said strip between said toothed wheels, substantially as specified.

6. In a seal-lock, the combination with a casing, of a toothed wheel rotatably mounted therein, an annular recess in one face of said wheel the edge of which recess has a series of teeth, a spring-actuated dog in said recess adapted to engage said teeth, an apertured strip adapted to be engaged by the teeth of said wheel, said casing being provided with openings in its opposite edge walls to permit said strip to be passed entirely through the casing, substantially as specified.

851,645. RAIL-JOINT. LEANDER BOUDREAUX, Thibodaux, La., assignor of one-half to Joseph A. Naquin, Thibodaux, La. Filed Nov. 26, 1906. Serial No. 345,161.

Claim.—1. A rail joint comprising a pair of rails having openings in their webs, a flat plate extending under both rails and provided with openings arranged along and spaced slightly inward from the longitudinal edges thereof, a pair of fish plates having portions engaging over the top surfaces of the rail bases and extending downwardly over the edges of the bases and laterally therefrom on the said plate, said portions being provided with notches adapted to register with the openings of the said flat plate, spikes passing through the notches of the fish plates and openings in the flat plate, pins carried by one of the fish plates and extending through the openings of the rails, and a set of individual wedge portions on the other fish plate for interlocking with the corresponding pins and held in interlocking position by the spikes engaging the notches of the plate.

2. A rail joint comprising a pair of rails having apertured webs, a fish plate provided with integral pins each having an elongated slot, a fish plate having elongated slots to receive the pins, a tongue projecting from one end of each of the slots of the fish plate and extending laterally from the slot, and a wedge on the outer end of the laterally extending portion of the tongue which engages the outer end of the slot of the adjacent pin.

851,646. PIANO-ACTION. ROBERT S. BOWEN, Newton Center, and FRED H. WHITE, South Easton, Mass., assignors to Chickering & Sons, Boston, Mass., a Corporation of Massachusetts. Filed Dec. 28, 1904. Serial No. 238,587.

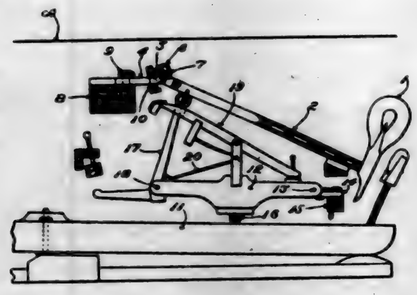

Claim.—1. The combination with the hammer, its supporting-flange, the repetition-lever, and the regulating screw for the said lever, of the cap-plate retaining the hammer in its pivotal connection with said supporting-flange and in addition engaging with the threaded stem of the said screw to lock the latter against accidental turning.

2. The combination with the hammer the strings and the regulating-screw, of the hammer-flange having its extremity inclined toward the plane of the strings, the cap-plate applied to the said extremity, and the securing-screw engaging with the cap-plate between the pivotal pin of the hammer and the regulating-screw.

3. The combination with the strings and the hammer, of the hammer-flange having its extremity inclined toward the plane of the strings, the cap-plate applied to the said extremity and retaining the hammer in pivotal connection with its bearing on the said inclined extremity of the hammer-flange, and the securing-screw engaging with the said cap-plate, the said bearing being located between the securing-screw and the free end of the cap-plate, the inclination of the flange rendering the head of the securing-screw accessible between the hammer-stem and the strings in the retracted position of the hammer.

4. The combination with the hammer, the hammer-flange, the repetition-lever, and the regulating-screw for the said lever, of the cap-plate retaining the hammer in pivotal connection with the hammer-flange and in addition engaging with the said screw to hold the latter from accidental turning, and the securing-screw for said cap-plate operating to press the latter against the said regulating screw.

851,647. LOOM-SHUTTLE. HOWARD W. BRACKEN, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Nov. 24, 1906. Serial No. 344,815.

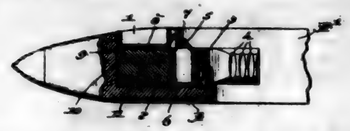

Claim.—1. A loom-shuttle having an opening therein, a holder fixedly mounted in the shuttle-body at one end of the opening and provided with jaws to engage the head of a filling-carrier, an inclined guide between the jaws and having a rearward extension projecting above the holder, and a positive lock between the latter and the extension and independent of the shuttle-body to prevent movement of the guide backward or forward relatively to the holder.

2. A holder having a pair of spring-jaws to engage the end of a filling-carrier, said holder having on its top a transverse slot, a coöperating guide inclined between the jaws and having its ends bent back to receive between them the holder, the upper one of said ends having a downturned lip to enter the slot in the holder and thereby positively lock the guide thereto.

851,648. ATTACHMENT FOR DOUBLETREES. JAMES F. BUTTERFIELD, Stuart, Nebr. Filed Apr. 26, 1906. Serial No. 313,824.

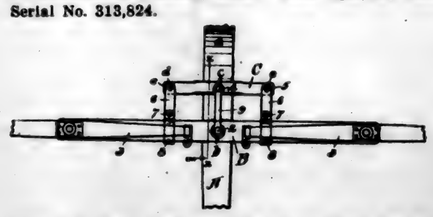

Claim.—1. In an attachment for double trees, the combination of a double tree, a strengthening bar or strap lying parallel with said double tree and in the rear thereof, and adapted to be pivoted at its center to the tongue or pole, clevises pivoted near each end of said bar, spring clamps pivoted to said clevises and encircling the double tree which is pivoted in advance to the strengthening bar to the tongue or pole, substantially as set forth.

2. In an attachment for double trees, the combination of a tongue or pole, a double tree pivoted at its center thereto, a transverse strengthening bar laying parallel with said double tree and pivoted at its center to the tongue or pole, clevises connected at each end thereof at one end and at their opposite ends to spring clamps firmly held around the double tree, and a connecting link for connecting the double tree and bar or strap, substantially as set forth.

851,649. AUTOMATIC TRANSPORTING DEVICE. WILLIAM C. CARR, Buffalo, N. Y. Filed Sept. 17, 1906. Serial No. 334,884.

Claim.—1. In a transportation system, rails, a plurality of stations and a car supported from the rails having independent mechanisms for delivering and collecting mail and delivering and collecting packages.

2. In a transportation system, rails, a plurality of stations and a car supported from the rails having a mail delivering and collecting mechanism and a package delivering and collecting mechanism; said mechanisms being independently and automatically operated.

3. In a transportation system, rails, a plurality of stations and a car supported from the rails having two independent and automatically operable collecting and delivering mechanisms, one for packages and another for mail.

4. In a transportation system, rails, a plurality of sta-

tions and a car supported from the rails having an automatic mail collecting and delivering mechanism and an independent automatic package collecting and delivering mechanism.

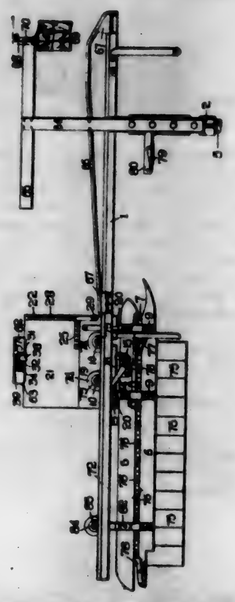

5. In a transportation system, rails, a plurality of stations, a car supported from the rails and having a mail collecting and delivering mechanism, a package receptacle separate from the mail collecting and delivering mechanism, and automatic mechanism for delivering a package from the package receptacle at any predetermined station.

6. In a transportation system, rails, a plurality of stations, a car supported from the rails and having a mail collecting and delivering mechanism, a package receptacle separate from the mail carrying mechanism provided with a front swing door and a package support located at one of the stations and adapted to support a package in position to be collected through said swing door as the car passes said station.

7. In a transportation system, rails, a station, a car supported from the rails, a package receptacle carried by said car, a separate independent mail collecting and delivering mechanism and automatic delivering and collecting means for the package receptacle.

8. In a transportation system, rails, a station, a car supported from the rails, a package receptacle carried by said car having a front collecting opening and a side delivering opening, a separate independent mail collecting and delivering mechanism and automatic delivering and collecting mechanism for the package receptacle.

9. In a transportation system, rails, a station, a car supported from the rails, a package receptacle carried by said car, a package support located over the rails and a package receiving tray located at one side of the rails, a separate independent mail collecting and delivering mechanism and automatic delivering and collecting mechanisms for the package receptacle.

10. In a transportation system, rails, a package support above the rails, a package receiver at one side of the rails, and a car supported from the rails and having a package receptacle mounted thereon and provided with a front opening for collecting from the package support and a side opening for discharging into the package receiver.

11. In a transportation system, rails, a package support, above the rails, a package received at one side of the rails, and a car supported from the rails and having a package receptacle mounted thereon and provided with a front swing door adapted to open to collect from the package support and a side swing door adapted to open to permit discharging into the receiver.

12. In a transportation system, rails, a station, a package support adjacent to the station located over the rails, a car supported from the rails and having a package receptacle mounted thereon and provided with a front swing door and means for opening the door, whereby a package on the support is automatically picked up.

13. In a transportation system, rails, a station, a package support adjacent to the station, a car supported from the rails and having a swing door provided with an arm having a roller, and an inclined rail at the station upon which the roller is adapted to travel.

14. In a transportation system, rails, a station having a package receiver, a car supported from the rails and having a mail collecting and delivering mechanism and a separate package receptacle provided with a discharge opening and a swing door closing said opening and mechanism for opening said door and also discharging a package.

15. In a transportation system, rails, and a car having support from the rails and carrying an upper package receptacle and a plurality of lower mail receptacles which are independent of the package receptacle.

16. In a transportation system, rails, and a car having support from the rails and carrying an upper package receptacle and a plurality of lower separate independent individual mail receptacles.

17. In a transportation system, rails, a car having support from the rails and provided with an upper package receptacle and a plurality of detachable mail receptacles hung from the car beneath the package receptacle.

18. In a transportation system, rails, a car having support from the rails and provided with an upper comparatively large package receptacle and a series of small mail receptacles suspended beneath the package receptacle, a station, mechanism at the station for detaching a mail receptacle from the car and independent mechanism for collecting and discharging packages at the station.

19. A car having a skeleton body, a plurality of detachable individual mail receptacles depending from said body and an upper package receptacle mounted upon said body, mechanism for detaching and attaching mail receptacles to and from the car and independent mechanism for discharging and collecting packages.

20. A car having a skeleton body, a plurality of detachable individual mail receptacles depending from said body and an upper package receptacle undetachably mounted upon said body, mechanism for detaching mail receptacles from the car and mechanism within the package receptacle for discharging packages therefrom.

21. A car having a skeleton body, a plurality of detachable individual mail receptacles depending from said body, an upper package receptacle undetachably mounted upon said body, automatic means for detaching mail receptacles from the car and automatic means for ejecting packages from the package receptacle.

22. A skeleton car composed of two separated side members, a plurality of mail receptacles detachably supported between the side members and an upper package receptacle permanently mounted on the car which is entirely independent of the mail receptacles.

23. A mail collecting and distributing car having a plurality of detachable individual mail receptacles depending therefrom and a separate package receptacle permanently mounted thereon.

24. A combined mail and package collecting and distributing car comprising a skeleton frame between the members of which mail boxes are removably supported, and a separate package receptacle mounted on the skeleton frame.

25. A collecting and distributing car having a receptacle provided with a side ejecting opening and a front collecting opening.

26. In a transportation system, rails, a car supported by the rails and having a receptacle for packages provided with a front collecting opening and a support for packages located in proximity to the rails and adapted to support a package in the path of the car whereby a package on the support will be automatically picked up as the car passes.

27. A car of the class described, comprising a skeleton body composed of two parallel side members, a plurality of comparatively small receptacles depending between the members of the body and a separate comparatively large receptacle mounted permanently on said body.

851,650. SAFETY POLE-SEAT. CHARLES H. COAR, Minneapolis, Minn., assignor of one-sixth to John M. Petersen, one-sixth to Walter G. Middleton, and one-sixth to Webster J. Coullard, all of Minneapolis, Minn. Filed Oct. 3, 1906. Serial No. 337,215.

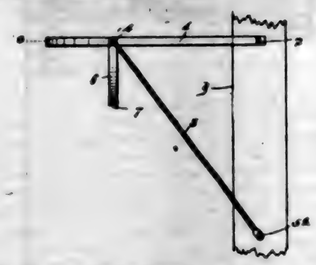

Claim.—1. In a seat of the kind described, the combination with a metallic yoke and means for supporting the same, of a metallic seat strap pivotally connected at its ends to the sides of said yoke, and movable to and from an operative position in close engagement with said yoke, substantially as described.

2. In a seat of the kind described, comprising a metallic yoke 1 securable at its ends to a pole, truss rods 3 secured to the sides of said yoke and securable at its lower ends to the pole, and a metallic seat strap 6 pivotally connected at its ends to the sides of said yoke and movable to and from an operative position in close engagement with said yoke, substantially as described.

3. In a seat of the kind described, the combination with a pole, of a yoke attached thereto at its ends, truss rods attached at their upper ends to the sides of said yoke, the lower ends of which being secured to said pole, and provided with projecting foot rests, and a seat strap secured at its ends to the sides of said yoke and depending therefrom, substantially as described.

4. In a seat of the kind described, the combination with a yoke and means for securing the same to a pole, of a seat strap pivotally attached at its ends to the sides of said yoke, and means for latching said seat strap to the projecting bowed portion of said yoke, substantially as described.

851,651. FAN ATTACHMENT FOR SEWING-MACHINES AND THE LIKE. JOHN P. COLEMAN, Oglesby, Ill. Filed Nov. 20, 1906. Serial No. 344,281.

Claim.—1. In a fan attachment for sewing machines and the like, the combination, with a pedestal on the table of the machine, of a standard mounted on said pedestal and provided with a horizontally disposed hollow bearing at its upper end; a sleeve rotatably mounted within said bearing and provided with means for preventing its endwise movement with respect thereto; a clutch member formed on one end of said sleeve; a fan-spindle rotatably mounted within said sleeve; a fan secured to one end of said spindle; a longitudinally movable clutch member carried upon the opposite end of said spindle, and adapted to be moved into and out of engagement with said sleeve clutch member; and means for driving said sleeve from the machine wheel.

2. In a fan attachment for sewing machines and the like, the combination, with a pedestal on the table of the machine, of a tubular casing mounted upon said pedestal; a tubular member slidably mounted within said casing and provided with a bore at its upper end; means for securing said tubular member in adjusted position within said casing; a horizontally disposed hollow bearing member having a depending portion fitting rotatably in said bore; means for securing said bearing member in adjusted position with respect to said tubular member; a sleeve rotatably mounted within said bearing and provided with means for preventing its endwise movement therein; a clutch member formed on one end of said sleeve; a pulley secured to the

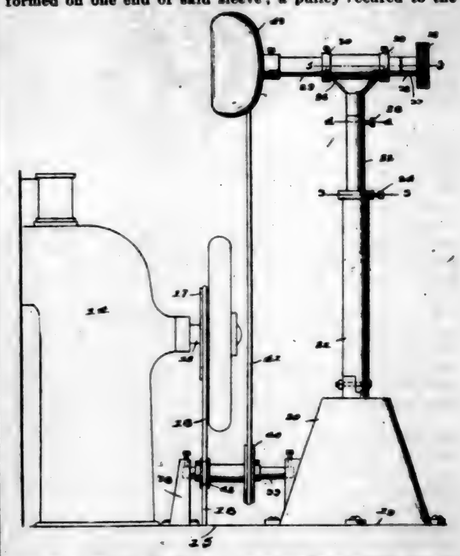

opposite end of said sleeve; a fan-spindle rotatably mounted within said sleeve, and having its end adjacent said clutch member screw-threaded; a fan carried by said spindle at one end; a longitudinally movable clutch member carried upon the threaded end of said spindle and adapted to be moved into and out of engagement with said first-mentioned clutch member; and a belt connection between said pulley and the drive wheel of the machines for rotating said sleeve.

851,652. BELT THROWER AND GUIDE. JOHN L. COUTTS, Colton, S. D. Filed Jan. 2, 1907. Serial No. 350,457.

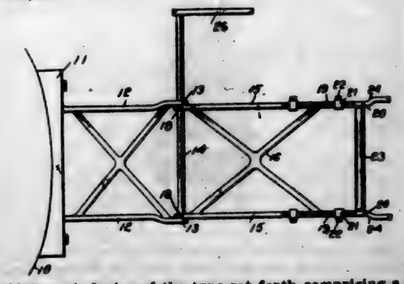

Claim.—A device of the type set forth comprising a stationary frame including spaced parallel horizontal arms, a shaft journaled in the ends of said arms, a second frame comprising parallel horizontal arms having apertured ends surrounding said shaft, set screws threaded through said ends for frictional engagement with said shaft, arms mounted upon the ends of the arms of said second frame for slidable adjustment, means for clamping said last

named arms at selected positions upon the arms of said second frame, and a vertical roller having its ends journaled in said last named arms.

851,653. HOSE-CLAMP. HOMER E. CRANDALL, Salamanca, N. Y. Filed Feb. 28, 1906. Serial No. 302,565.

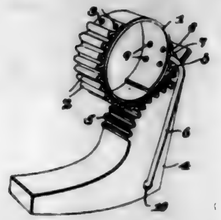

Claim.—1. A hose clamp comprising a resilient band provided upon one end portion with teeth, a toothed cam associated with the toothed portion of the band, and a link connection between the cam and the other end of the band.

2. A hose clamp comprising a resilient band having one end portion externally toothed, a handled cam having teeth associated with the teeth of the band, and a link connection between the cam and the other end of the band, the handle of the cam constituting a stop for engagement with the band to limit the swinging movement of the cam.

3. A hose clamp comprising a resilient band which is externally toothed at one end, a toothed cam associated with the toothed portion of the band, and a bail-shaped link pivoted to the other end of the band and pivotally embracing the cam.

4. A hose clamp comprising a resilient band, a resilient corrugated strip secured to the exterior of the band at one end thereof and constituting teeth, a cam having integral teeth for engaging the teeth on the band, and a pivotal connection between the cam and the other end of the band.

5. A hose clamp comprising a resilient band, a corrugated resilient strip secured to the exterior of the other end of the band, a toothed cam associated with the teeth of the band, and a bail-shaped link straddling the cam with one end pivotally engaging the bearing and its other end pivotally engaging the cam.

851,654. FOUR-WAY SNAP-SWITCH. NATHAN W. CRANDALL, Hartford, Conn., assignor to The Perkins Corporation, Hartford, Conn., a Corporation of Connecticut. Filed July 27, 1906. Serial No. 328,118.

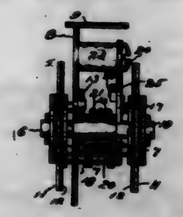

Claim.—An electrical snap switch having four pairs of stationary spring contacts, said contacts being arranged to engage with one another in pairs, a pair of oscillating poles that are insulated from each other, each pole being formed of conducting material and insulating material and arranged to be thrown between pairs of stationary contacts and when in such position to insulate the contacts that were in engagement and electrically join the contacts that were separated, mechanism for throwing the poles, and push buttons for actuating said mechanism, substantially as specified.

851,655. ELECTRIC HORN. HENRY CRANTI, Orange, N. J. Filed June 28, 1906. Serial No. 323,961.

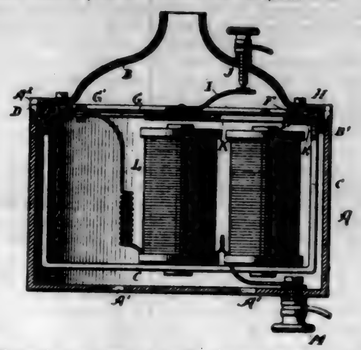

Claim.—1. An electric horn comprising a casing with apertures in its rear end, a tapering mouth-piece at the front end of said casing, a U-shaped carrier located within the casing, an electro-magnet supported by said carrier, a diaphragm located between said electro-magnet and the outlet of the mouth-piece, a spring carried by the diaphragm on the outlet side thereof, an armature carried by the opposite side of the diaphragm, a contact screw adapted to engage said spring, and electrical connections for causing the circuit of the electro-magnet to be closed and broken as the diaphragm vibrates under the influence of the electro-magnet.

2. An electric horn comprising a casing provided with an outlet for the escape of sound, an electro-magnet within said casing, a diaphragm located between the outlet and the electro-magnet, a spring carried by the diaphragm, a contact member engaging the spring, and electrical connections to close and break the circuit of the electro-magnet as the diaphragm vibrates.

3. An electric horn comprising a casing having an outlet for the escape of sound, an electro-magnet within said casing, a diaphragm between the outlet and the electro-magnet, an armature and a spring carried by said diaphragm, a contact member engaging the spring, and electrical connections for causing the circuit of the electro-magnet to be closed and broken as the diaphragm vibrates.

4. An electric horn comprising a casing provided with an outlet for the escape of sound, an electro-magnet in said casing, a diaphragm located between the said outlet and the electro-magnet, an armature secured to the diaphragm on the side facing the electro-magnet, a spring secured to the diaphragm on the opposite side, a contact member engaging said spring, a connection from one end of the armature coils to the diaphragm, and a binding screw connected with the other end of the electro-magnet coils.

851,656. GAGE FOR PERFORATORS. JOHN DAHLY, Chicago, Ill., assignor to Latham Machinery Company, Chicago, Ill., a Corporation of Illinois. Filed May 19, 1905. Serial No. 261,160.

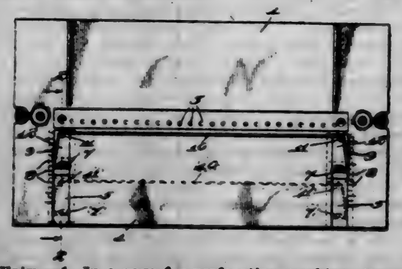

Claim.—1. In a gage for perforating machines the combination of a table, the perforating dies, slides mounted upon the table and movable with relation to the dies, a gage string having its ends secured to each of the slides at one point and means at another point on each of the slides for engaging and holding the gage string.

2. In a gage for perforating machines the combination of a table, the perforating dies, slides mounted upon the table and having extensions toward the perforating dies above the table, and a gage string secured to the slides and held by said extensions.

851,657. HARROW. JACOB C. FERGUSON, Wilber, Nebr. Filed Feb. 1, 1905. Serial No. 243,687.

Claim.—A harrow comprising a frame, the teeth 9 pivoted in the frame at each side thereof, the shift rods 10 engaged with the teeth and provided with openings for the reception of the portions of the teeth above their pivot points, the rods having portions turned inwardly toward each other at their rear ends, the link 12 pivoted between the meeting ends of the portions, the rod shaft journaled in the frame, the lever 14 for rocking the shaft, the link 12 being connected with the lever, and the segmental rack 13 for holding the lever at various points.

851,658. REACTANCE-COIL. CHARLES LE G. FORTESCUE, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Mar. 23, 1906. Serial No. 307,732.

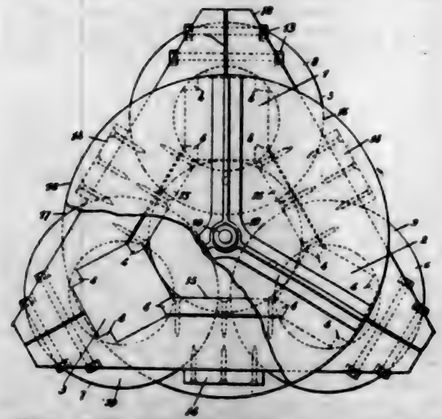

Claim.—1. The combination with core members, of coils wound on said members, magnetizable end rings which interconnect said core members, and a supporting frame of non-magnetizable material.

2. The combination with cylindrical coils, a core member for each coil, and magnetizable end rings, of a laminated structure for interconnecting said core members.

3. The combination with cylindrical coils, magnetizable cores therefor having longitudinal grooves and a non-magnetizable supporting frame for said members which is adapted to engage said grooves, of magnetizable end rings of laminated structure that are adapted to magnetically interconnect said core members.

4. The combination with three coils which are symmetrically disposed at the corners of a triangular non-magnetizable support, and interconnecting rings therefor, which are wound with magnetizable strap and which are adapted to engage the ends of said core members, of means for binding the several parts together.

5. The combination with end ring members of magnetizable material, prismatic core members of equal length that are located between the ring members, coils that are wound upon said core members and a frame of non-magnetizable material for maintaining a relative lateral position of the several parts, of means for holding the rings in position against the ends of the core members.

6. The combination with end ring members of magnetizable material, prismatic core members of equal length that are located between the ring members, coils that are wound upon said core members and a frame of non-magnetizable material for maintaining a relative lateral position of the several parts, of means for holding the rings in position against the ends of the core members, that comprises an upper and a lower bracket and a bolt which passes through the center of the end rings and binds the two brackets together.

7. The combination with end ring members of magnetizable material, prismatic core members of equal length that are symmetrically disposed between the ring members, coils that are wound upon said core members and a frame of non-magnetizable material for maintaining a relative lateral position of the several parts, of means for holding the rings in position against the ends of the core members, that comprises an upper and a lower bracket and a bolt which passes through the center of the end rings and binds the two brackets together.

8. The combination with end ring members that are constructed of magnetizable strap and laminated prismatic core members of equal length that are symmetrically disposed between the ring members, of coils that are wound upon said core members and a frame of non-magnetizable material for maintaining a relative lateral position of the several parts.

9. The combination with end ring members that are constructed of magnetizable strap, laminated prismatic core members of equal length that are symmetrically disposed between the ring members, coils that are wound upon said core members and a frame of non-magnetizable material for maintaining a relative lateral position of the several parts, of means for holding the rings in position against the ends of the core members, that comprises an upper and a lower bracket and a bolt which passes through the center of the end rings and binds the two brackets together.

851,659. DESK. WILLIAM GAAIKEMA, Muskegon, Mich., assignor to Moon Desk Co., Muskegon, Mich. Filed Feb. 28, 1906. Serial No. 303,481.

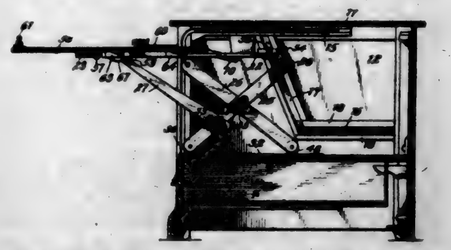

Claim.—1. In a desk or like structure, interpivoted sets of spring-actuated levers carried by the desk, a frame carried by the interpivoted sets of levers with one set thereof engaging notches in the frame and thereby locking the latter in elevated position, a sliding table carried by said frame, and cams carried by said sliding table and positioned forward of said set of levers which engage the notches when the table is pulled forward and in elevated position, and adapted to disengage the levers from the notches on the initial rearward sliding movement of said table, to allow the lowering of the frame and table.

2. In a cabinet structure, a frame, spring-actuated supporting mechanism for elevating said frame and moving it out of the cabinet, a table slidingly mounted on the frame, a lever pivoted on the frame and having one end

arranged to engage over an element in the cabinet structure to hold the frame depressed, a cam head on the other end of the lever, and a cam mounted on the slidable table and positioned to engage and depress said cam head, and thus disengage the other end of the lever, near the end of the forward sliding movement of said table to allow the said frame and table to rise.

851,660. ROTARY FAN. JOSEPH W. HARDING, Brooklyn, N. Y., assignor, by mesne assignments, to Metropolitan Sewing Machine Company, a Corporation of New York. Filed Apr. 23, 1903. Serial No. 153,895.

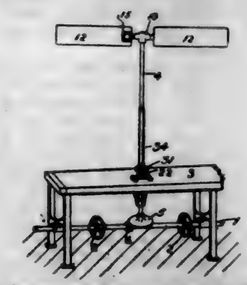

Claim.—1. In combination, a horizontal driving-shaft; a vertical fan-shaft located above the driving-shaft; a two-part driving connection between the two shafts which is secured by gravity of the fan-shaft; a stationary bearing through which the fan-shaft extends, in which it rotates, and by which it is sustained; and means carried by said bearing and coöperating with said fan-shaft for throwing the driving connections into and out of contact.

2. In combination, a shaft carrying fan-blades, a table through which the shaft extends, independent tubular brackets secured on opposite sides of the table and surrounding and supporting the shaft, and one of said brackets having bushings affording supports and wearing bearings for the shaft, and means for driving the shaft.

3. In combination, a shaft carrying fan-blades; a table through which the shaft freely passes; independent tubular brackets surrounding the shaft on opposite sides of the table, and one of said brackets having an elongated extension surrounding and bracing the shaft; and means for driving the shaft.

4. In combination, a driving-shaft, a driven shaft carrying fan-blades, means between the two shafts whereby the driven shaft may be actuated, and means for throwing the driven shaft out of action including a fixed bracket, a sleeve having a cam-face, a bearing on the bracket coöperating with the cam-face, and means between the driven shaft and the sleeve, whereby when the latter is actuated said shaft will be raised thereby and thrown out of action.

5. In combination, a shaft carrying fan-blades, a table, a bearing on said table including telescopic sleeves surrounding the shaft and rigidly connected to the table, said sleeves being provided with bushings affording running bearings for the shaft.

6. In combination, a supporting table, a rotary shaft carrying fan-blades, telescopic sleeves surrounding said shaft and extending through said table, means for fixing the sleeves to the latter at opposite sides thereof, the telescopic connection permitting the sleeves to be connected to tables of varying thickness, substantially as described.

851,661. CLAMP. ALFRED M. HEWLETT and GEORGE F. VAN BRUNT, Kewanee, Ill.; said Van Brunt assignor to said Hewlett. Filed Nov. 13, 1903. Serial No. 181,103.

Claim.—1. A clamp, comprising a frame open at one end to receive the object to be clamped and having clamping members disposed approximately in parallelism, one of said members being movable toward the other for clamping purposes, and means for limiting the extent to which said movable member may approach the other clamping member.

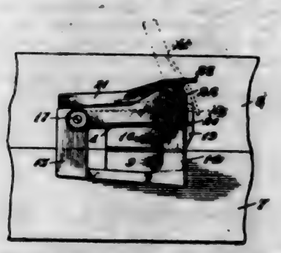

2. A clamp, comprising a frame open at one end to receive the object to be clamped and having clamping members disposed approximately in parallelism, one of said members being pivotally supported near one end and movable toward the other for clamping purposes, and means for limiting the extent to which said pivoted member may approach the other clamping member.

3. A clamp, comprising a frame open at one end to receive the object to be clamped and having clamping members disposed approximately in parallelism, one of said members being movable toward the other for clamping purposes, means for limiting the extent to which said movable member may approach the other clamping member, and means carried by said frame for forcing the movable member toward the other clamping member.

4. A clamp, comprising a frame open at one end to receive the object to be clamped and having clamping members disposed approximately in parallelism, one of said members being pivotally supported near one end and movable toward the other for clamping purposes, means for limiting the extent to which said pivoted member may approach the other clamping member, and means carried by said frame for forcing the pivoted member toward the other clamping member.

5. A clamp, comprising a suitable frame having clamping members set a distance apart and adapted to receive between them the object to be clamped, one of said members being pivotally mounted and having one end movable toward the other clamping member for clamping purposes, and means for limiting the extent to which said pivoted member may approach the other clamping member.

6. A clamp, comprising a suitable frame having clamping members set a distance apart and adapted to receive between them the object to be clamped, one of said members being pivotally mounted near one end, its free end portion being movable toward the other clamping member for clamping purposes, and means for holding the free end of said pivoted member at all times further from the other clamping member than the other end thereof.

7. A clamp, comprising a U-shaped frame adapted to receive the object to be clamped, one side of said frame forming a clamping member, clamping means carried at the opposite side of said frame for coöperating with said clamping member, and means for limiting the extent to which the latter clamping means may approach the other clamping member.

851,662. CONTROLLING APPARATUS FOR ELECTRIC MOTORS. RAY P. JACKSON, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Mar. 17, 1905. Serial No. 250,646.

Claim.—1. The combination with an induction motor having two main windings and an auxiliary winding, of a controller comprising means for connecting the main windings in series for starting and in parallel for running and automatic means for opening the circuits of the main windings when the working current is cut off and for maintaining such open circuit condition until the main windings are again connected in series.

2. The combination with an induction motor having one or more main windings and an auxiliary winding, of a controller operating to connect the main and the auxiliary windings in circuit with a source of energy for starting purposes and to cut the auxiliary winding out of circuit for normal operation, and embodying automatic means for opening the main winding circuit when the working current is cut off and for maintaining such open-circuit condition until the controller is returned to the initial or starting position.

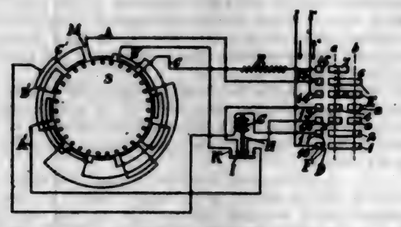

3. The combination with an induction motor having two main windings and an auxiliary winding, of a controller comprising means for connecting the main winding in series for starting and in parallel for normal operation and for cutting the auxiliary winding out of circuit when in normal-operating position, a switch in the main winding circuits and an operating magnet therefor that can be initially energized only when the controller is in the initial or starting position.

4. The combination with an induction motor having two main windings and an auxiliary winding, of a controller having means for connecting the main windings in series with each other and in parallel with the auxiliary winding for starting and in parallel with each other for normal operation, and automatic means for opening the circuits of the main windings when the working current fails and for maintaining such open-circuit condition until the controller is returned to its initial or starting position.

5. The combination with an induction motor having two main windings and an auxiliary winding, of a controller comprising means for connecting the main windings in series with each other and in parallel with the auxiliary winding when in its initial or starting position and for cutting the auxiliary winding out of circuit and connecting the main windings in parallel when in its normal operating position, and automatic means for opening the circuits of the main windings if the working current is interrupted when the controller is in its normal operating position and for maintaining such open-circuit condition until it is again returned to its initial or starting position.

6. The combination with an induction motor having main and auxiliary windings, of a controller comprising means for connecting both windings in circuit for starting and for cutting the auxiliary winding out of circuit for running, a switch in the main winding circuit and an operating magnet that can be initially energized only when the auxiliary circuit is closed.

7. The combination with an induction motor having two main windings and an auxiliary winding, of a controller comprising means for connecting the main windings in series with each other and in parallel with the auxiliary winding for starting and in parallel without the auxiliary winding for normal operation, a switch for opening and closing the main windings and an operating magnet that can be initially energized only when the auxiliary winding is in circuit.

8. The combination with an induction motor having two main windings and an auxiliary winding, of a controller comprising means for connecting the main windings in series with each other and in parallel with the auxiliary winding when in its first position and for connecting the main windings in parallel without the auxiliary winding when in its second position, a switch for opening and closing the main winding circuits and an operating magnet that can be initially energized only when the controller is in its first position.

9. The combination, in an electric motor, of a primary member having one or more main windings and an auxiliary winding, a controller operating to connect the main and the auxiliary windings in circuit with a source of energy for starting purposes and to cut the auxiliary winding out of circuit for normal operation, and embodying means for opening the main winding circuit when the working current is cut off and for maintaining such open-circuit condition until the starting relations of the windings are reëstablished.

10. In an alternating current electric motor, the combination with a primary member having a plurality of windings, and a controller for connecting said windings to the supply circuit in one way for starting and in another way for normal operation and a governing switch having an actuating winding the circuit of which cannot be closed unless the controller is in starting position.

11. In an alternating current electric motor, the combination with a primary member having windings and a controller for connecting said windings to a supply circuit and for changing their connections to adapt them to starting conditions and to running conditions, and a governing switch that opens the motor circuit when the power current fails, said switch having an actuating coil the circuit of which can be closed only when the controller is in its starting position.

12. The combination, in an electric motor, of a primary member having a plurality of main windings, a controller comprising means for connecting the said main windings in series for starting and in parallel for running and an automatic switch for opening the circuits of the main windings when the working current is cut off, said switch having an actuating coil the circuit of which closes only when the main windings are connected in series.

13. The combination, in an electric motor, of a primary member having one or more main windings and an auxiliary winding, a controller operating to connect the main and the auxiliary windings in circuit with a source of energy for starting purposes and to cut the auxiliary winding out of the circuit for normal operation, and embodying means for opening the main winding circuit when the working current is cut off and for maintaining such open-circuit condition until the controller is returned to the initial or starting position.

14. The combination, in an electric motor, of a primary member having a plurality of main windings, a controller having means for connecting the main windings in series with each other for starting and in parallel with each other for normal operation, and an automatic switch for opening the circuits of the main windings when the working current fails, said switch having an actuating winding the circuit of which is opened when the current fails and can be again closed only by moving the controller to its initial or starting position.

15. The combination, in an electric motor, of a primary member having two main windings and an auxiliary winding, a controller comprising means for connecting the main windings in series with each other and in parallel with the auxiliary winding when in its initial or starting position and for cutting the auxiliary winding out of circuit and connecting the main windings in parallel when in its normal operating position, and means for opening the circuits of the main windings if the working current is interrupted when the controller is in its normal operating position and for maintaining such open-circuit condition until it is again returned to its initial or starting position.

16. The combination, in an electric motor, of a primary member having main and auxiliary windings, a controller comprising means for connecting both windings in circuit for starting and for cutting the auxiliary winding out of circuit for running, a switch in the main winding circuit and an operating magnet that can be initially energized only when the auxiliary circuit is closed.

17. The combination, in an electric motor, of a primary member having two main windings and an auxiliary winding, a controller comprising means for connecting the main windings in series with each other and in parallel with the auxiliary winding for starting and in parallel without the auxiliary winding for normal operation, a switch for opening and closing the main windings and an operating mag-

not that can be initially energized only when the auxiliary winding is in circuit.

18. The combination with an electric motor having a plurality of magnetizing windings, of a controller for connecting the said windings to the supply circuit in one way for starting and in another for normal operation, and a governing switch that opens the motor circuit if the operating current fails and is provided with an actuating coil the circuit of which closes only when the controller is in starting position.

19. The combination with an electric motor having a plurality of magnetizing windings, of a controller for connecting said windings to a supply circuit and for changing their relations to adapt them to starting conditions and to running conditions, and a governing switch that cuts off said windings from the supply circuit when the current fails and is provided with an actuating coil the circuit of which remains open until the controller is moved to starting position.

20. The combination with an electric motor having one magnetizing circuit condition for starting and a different magnetizing circuit condition for normal operation, of a controller having means for establishing a proper connection to a supply circuit and the desired motor circuit condition, and an automatic switch for breaking connection to the supply circuit when the working current fails, said switch having an actuating winding the circuit of which remains open until the controller is returned to its initial or starting position.

851,663. ELECTROMAGNET. RAY P. JACKSON, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Apr. 3, 1905. Serial No. 253,638.

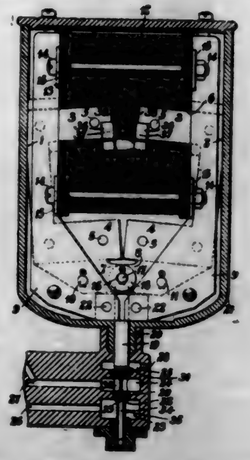

Claim.—1. A core structure for electro-magnets comprising two U-shaped parts, a pivotal connection between the parts, and pivotal supports for the parts located between and below the centers of gravity thereof.

2. A core structure for electro-magnets comprising two U-shaped parts and independent pivotal supports for the parts located between and below the centers of gravity thereof.

3. A core structure for electro-magnets comprising two U-shaped parts, a pivotal connection between the parts, and pivotal supports for the parts located below the centers of gravity thereof.

4. A core structure for electro-magnets comprising two U-shaped parts, a pivotal connection between the parts, and pivotal supports for the parts.

5. A core structure for electro-magnets comprising two U-shaped parts, a pivotal connection between the parts, pivotal supports for the parts, and a member operated by the pivotal connection between the parts.

6. A core structure for electro-magnets comprising two U-shaped magnetizable parts both of which are freely movable by magnetism and gravity and a pivotal connection between the parts.

7. A core structure for electro-magnets comprising two U-shaped magnetizable parts at least one of which is pivotally supported to be freely movable in one direction by magnetism and in the other direction by gravity.

8. A core structure for electro-magnets comprising two U-shaped magnetizable parts one leg of each U-shaped part being of greater mass than the other leg and a pivotal support for one of the parts.

9. A core structure for electro-magnets comprising two U-shaped magnetizable parts, one leg of each U-shaped part being of greater mass than the other leg and a pivotal support for one of the parts located below the center of gravity thereof.

10. An electro-magnet comprising two U-shaped magnetizable core parts two of the legs of which are pivoted together and a winding surrounding the two legs that are remote from the pivot.

11. An electro-magnet comprising two U-shaped magnetizable core parts, a pivotal support for one of said parts and a stationary winding surrounding two of the legs of said parts.

12. An electro-magnet comprising two U-shaped core parts one leg of each of which is of greater mass than the other, a pivotal support for one of said parts and a winding surrounding the legs of greater mass.

13. An electro-magnet comprising two U-shaped, magnetizable cores, a pivotal connection between the cores, and a stationary winding surrounding two of the legs of the cores.

14. An electro-magnet comprising two U-shaped, magnetizable cores, a pivotal connection between two of the legs of the cores, and a winding surrounding the other two legs only of the cores.

15. A core structure for electro-magnets comprising two U-shaped parts the legs of which have opposing faces and a pivotal support for one of the parts located below the center of gravity thereof, the most widely separable legs of the core being of greater mass than the other legs.

16. A core structure for electro-magnets comprising two U-shaped parts the legs of which have opposing faces and a pivotal support for one of the parts, the most widely separable legs of the core being of greater mass than the other legs.

17. A core structure for electro-magnets comprising two U-shaped parts the legs of which have opposing faces, a pivotal support for one of the parts, the most widely separable legs of the core being of greater mass than the other legs and a winding surrounding the legs of greater mass.

18. An electro-magnet comprising two U-shaped, magnetizable core sections having approximately horizontal legs the upper ones of which are of greater mass than the lower ones, and a pivotal support for one of the core sections located below the center of gravity thereof.

19. An electro-magnet comprising two U-shaped, magnetizable core sections having approximately horizontal legs, a pivotal support for one of the core sections located below the center of gravity thereof, and a winding surrounding the upper legs of the core sections.

20. An electro-magnet comprising two U-shaped, magnetizable core sections having approximately horizontal legs the upper ones of which are of greater mass than the lower ones, a pivotal support for one of the core sections located below the center of gravity thereof, and a winding surrounding the upper legs of the core sections.

21. An electro-magnet comprising two U-shaped, magnetizable core sections having approximately horizontal legs, a pivotal connection between two of the legs of the core sections, and a stationary coil surrounding the other two legs of the core sections.

22. An electro-magnet comprising two U-shaped, magnetizable core sections having approximately horizontal legs, a pivotal connection between two of the legs of the core sections, and a winding surrounding the other legs only of the core sections.

23. An electro-magnet comprising two U-shaped, magnetizable core sections having approximately horizontal legs two of which are of greater mass than the others and a pivotal connection between the legs of lesser mass.

24. An electro-magnet comprising two U-shaped, magnetizable core sections having approximately horizontal legs two of which are of greater mass than the others, a pivotal connection between the legs of lesser mass and a winding surrounding the other legs of the core sections.

25. An electro-magnet having a single coil and two movable core sections therefor that are pivotally supported to move apart when demagnetized and be drawn and held together by a slight magnetic pull.

26. An electro-magnet having a single coil and two core sections that are movably supported below their centers of gravity and are maintained in unstable equilibrium when magnetized.

27. In an electro-magnet, a coil and a core therefor comprising two movable parts that are maintained in normally unstable equilibrium when magnetized.

28. In an electro-magnet, a coil and a core therefor comprising two movable parts that are pivotally mounted in the same plane and are maintained in normally unstable equilibrium when magnetized.

851,664. SYSTEM OF CONTROL. RAY P. JACKSON, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Apr. 13, 1905. Serial No. 255,440.

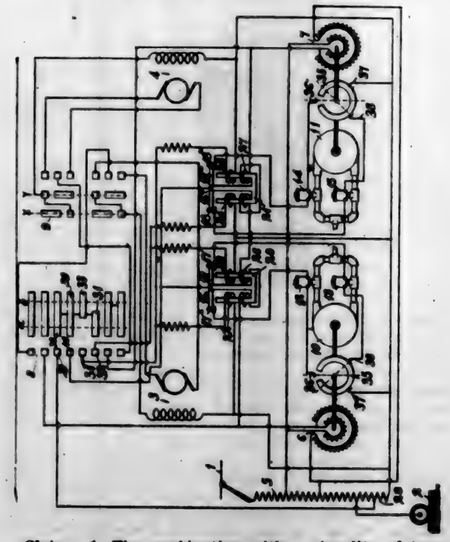

Claim.—1. The combination with a plurality of translating devices, a plurality of voltage regulators, and means for operating the same, of relay devices for governing said operating means having windings that are connected between corresponding points in the circuits of the translating devices, and windings that normally govern the operation of the relay devices.

2. The combination with a plurality of translating devices, a plurality of voltage regulators, and means for operating the same, of means for governing said operating means having windings that are connected between corresponding points in the circuits of the translating devices, and windings that normally control the operation of the governing means.

3. The combination with a plurality of translating devices, a plurality of voltage regulators, and means for operating the same, of relay devices comprising switches, magnetizable cores, windings that normally control the operation of the relay devices, and windings that are connected between corresponding points in the circuits of the translating devices.

4. The combination with a plurality of electrical translating devices and a plurality of voltage regulators, of means for operating the voltage regulators to supply the same voltage to all of the translating devices.

5. The combination with a plurality of electrical translating devices and a plurality of voltage regulators, of means for operating the voltage regulators, and means for automatically causing the regulators to supply the same voltage to all of the translating devices.

6. The combination with a plurality of electrical translating devices and a plurality of voltage regulators, of means for operating the voltage regulators and means for automatically governing the operating means whereby the regulators are caused to supply the same voltage to all of the translating devices.

7. The combination with a plurality of translating devices, a plurality of voltage regulators, and means for operating the same, of means for governing said operating means having windings that normally control the operation thereof and windings that are connected between corresponding points in the circuits of the translating devices and the magnetizing effects of which oppose and supplement, respectively, those of the other windings.

851,665. VOLTAGE-ADJUSTMENT MEANS. RAY P. JACKSON, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed July 9, 1906. Serial No. 325,345.

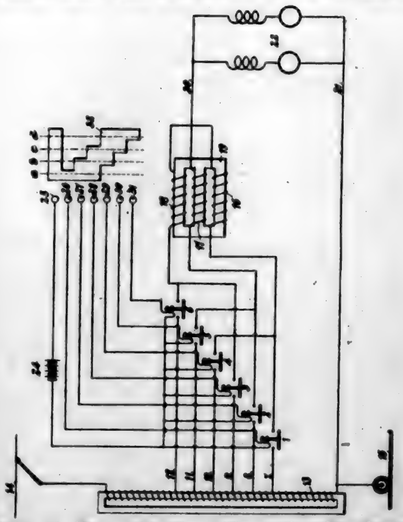

Claim.—1. The combination with a series of conductors supplied with progressively differing voltages, of a plurality of inductive windings, one terminal of each of which is connected to a distributing circuit, and means for connecting the remaining terminals respectively to the said supply conductors.

2. The combination with a series of conductors supplied with progressively differing voltages, of a plurality of inductive windings having a common magnetizable core, one terminal of each of which is connected to a distributing circuit, and means for connecting the remaining terminals respectively to the said supply conductors.

3. The combination with a series of conductors supplied with progressively differing voltages, of a plurality of in-

ductive windings having a common magnetizable core, one terminal of each of which is connected to a distributing circuit, means for connecting the remaining terminals respectively to said supply conductors, and means for disconnecting the same, one at a time, from the corresponding supply conductors and reconnecting them to others.

4. The combination with a series of conductors supplied with progressively differing voltages, of a plurality of inductive windings, one terminal of each of which is connected to a distributing circuit, means for connecting the remaining terminals respectively to said supply conductors, and means for disconnecting the same, one at a time, from the corresponding supply conductors re-connecting them to others.

851,666. VOLTAGE-REGULATOR. RAY P. JACKSON, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed July 9, 1906. Serial No. 325,346.

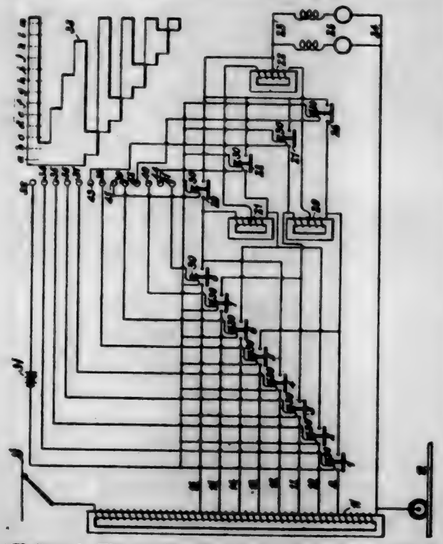

Claim.—1. The combination with a distributing circuit, and a transformer winding having leads extending from several points thereof, of two inductive windings, means for connecting said windings between different transformer leads, a third inductive winding having its terminals connected to points intermediate the terminals of the other two windings and having a point intermediate its terminals connected to the distributing circuit, and means for connecting an intermediate point thereof to the terminals of the aforesaid windings.

2. The combination with a distributing circuit, and a transformer winding having leads extending from several points thereof, of two inductive windings, means for connecting said windings between different transformer leads, a third inductive winding having its terminals connected to points intermediate the terminals of the other two windings and having a point intermediate its terminals connected to the distributing circuit, and means for connecting the terminals of the aforesaid windings to the distributing circuit.

3. The combination with a distributing circuit, and a transformer winding having leads extending from several points thereof, of two inductive windings, means for connecting said windings between different transformer leads, a third inductive winding having its terminals connected to points intermediate the terminals of the other two windings and having a point intermediate its terminals connected to the distributing circuit, and means for connecting one terminal of each of the aforesaid windings to the distributing circuit before disconnecting the other terminal thereof from the transformer lead.

4. The combination with a distributing circuit, and a transformer winding having leads extending from several points thereof, of two inductive windings, means for connecting said windings between different transformer leads, a third inductive winding having its terminals connected to points intermediate the terminals of the other two windings and having a point intermediate its terminals connected to the distributing circuit, and means for connecting one terminal of each of the aforesaid windings to an intermediate point of the third winding before disconnecting the other terminal from the transformer lead.

5. The combination with a series of supply conductors from which different potentials may be secured, of a plurality of inductive windings, means for connecting terminals of said windings to different supply conductors, another inductive winding having an intermediate point connected to a distributing circuit and its terminals connected to intermediate points in the first named inductive windings, and means for connecting one terminal of one of the first named inductive windings to the distributing circuit before disconnecting the other terminals thereof from the supply conductors.

851,667. RESISTANCE-TERMINAL. HENRY D. JAMES, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed May 16, 1906. Serial No. 317,230.

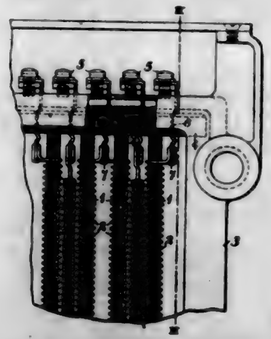

Claim.—1. The combination with a frame and a plurality of resistance elements each comprising a rod or bar, a sheet or covering of insulating material and a resistance coil surrounding said sheet or covering, of independent insulating blocks having recesses in which the ends of said bars are seated and notches in their adjacent walls, and terminal members which project through and are supported in the passages formed by said notches.

2. The combination with resistance units and a frame in which the units are assembled, of insulating supporting blocks having complementary notches in their adjacent sides, and terminal members that project through and are supported in the passages which are formed between the insulating blocks by the complementary notches.

3. A terminal member for electrical apparatus that comprises a body portion, an end projection in the same plane, a bent portion at the opposite end and a binding screw in the bent portion.

4. A resistance group comprising a supporting frame having opposite channels, resistance units and insulating end supporting blocks therefor that are assembled in the channels, and terminal members which project through passages formed in and between the insulating blocks.

5. The combination with a frame and a plurality of resistance elements each comprising a rod or bar, a sheet or covering of insulating material, a resistance coil surrounding said sheet or covering, independent insulating blocks having recesses in which the ends of said bars are seated, and terminal pieces each of which comprise a body portion, an end projection in the same plane, a bent portion at the opposite end and a binding screw in the bent portion.

6. The combination with resistance units, a frame in which the units are assembled, and insulating end-supporting blocks having complementary notches in their adjacent sides, of terminal members each of which comprises a body portion, an end projection in the same plane, a bent portion at the opposite end and a binding screw in the bent portion.

7. In a resistance group, a set of resistance elements, a set of supporting blocks having narrow passages formed in and between them and terminal strips projecting through said passages and having offset bends at the ends of the passages and laterally projecting end portions in different planes.

8. A strap terminal member having a lateral projection at one end in the plane of its body portion, a lateral projection at its other end at right angles to the plane of the body portion and intermediate offset bends.

851,668. PROCESS OF FILLING ZINC-RETORTS. JOHN D. JAMES, Pulaski, Va. Original application filed Jan. 3, 1906, Serial No. 294,408. Divided and this application filed Nov. 12, 1906. Serial No. 343,085.

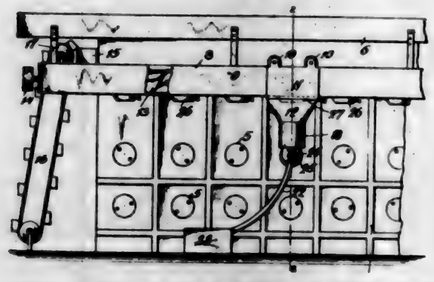

Claim.—1. The process of packing or filling retorts, which comprises, causing a jet of fluid to be directed into the retort longitudinally thereof, introducing into the said jet a constant supply of the material to be treated, said jet being of such force as to pack said material firmly and evenly within the whole cross section of said retort.

2. The process of filling or packing retorts, which comprises causing a jet of fluid to be directed axially into the retort, introducing into said jet a constant supply of the material to be treated, said jet being of such force as to pack said material firmly and evenly within the whole cross section of said retort.

3. The process of packing or filling laterally positioned retorts, which comprises, causing a jet of fluid to be directed substantially horizontally into the retort, introducing into said jet a constant supply of the material to be treated, said jet being of such force as to pack said material firmly and evenly within the whole cross section of said retort.

4. The process of packing or filling retorts for treating zinc ores, while said retorts are in their normal positions within the furnace, which comprises causing a jet of fluid, carrying the ore to be treated, to be directed longitudinally into the retort with sufficient force to pack said ore firmly and evenly within the whole cross section of said retort.

851,669. CARTRIDGE-DEFLECTOR FOR TOP-EJECTION GUNS. THOMAS C. JOHNSON, New Haven, Conn., assignor to Winchester Repeating Arms Company, New Haven, Conn., a Corporation. Filed Mar. 4, 1907. Serial No. 360,475.

Claim.—1. The combination with a gun having a top ejection-opening, of a cartridge-deflector extending partly over the said opening in position to laterally deflect the spent shells ejected therethrough.

2. A telescope provided upon its lower face with a cartridge-deflector.

3. In a gun, the combination with a receiver having a top ejection-opening, of a telescope extending at its rear end centrally over the said opening, and a cartridge-deflector carried by the telescope and located in position to laterally deflect the shells ejected through the said opening.

851,670. HAY-LOADER. EDWARD A. JOHNSTON, Sterling, Ill., assignor to International Harvester Company, a Corporation of New Jersey. Filed Dec. 20, 1905. Serial No. 292,533.

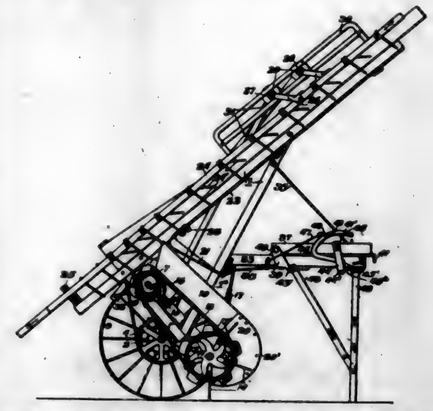

Claim.—1. In a hay loader, in combination, an axle, supporting wheels mounted thereon, an elevating-carrier including two series of reciprocating rake bars, a gathering-carrier comprising a carrier-driving shaft located above the axle and provided with double cranked ends, a drum secured to said shaft, an elastically suspended frame pivotally mounted upon said shaft and extending downward and forwardly therefrom, a gathering-cylinder mounted on the lower end of said frame and rotating forwardly at the ground line, and an endless conveyer engaging said drum and cylinder, and a direct pitman connection between the cranked ends of said driving shaft and the rake bars of said elevating-carrier.

2. In a hay loader, in combination, an axle, supporting wheels mounted thereon, an elevating carrier, an elastically suspended gathering-carrier free at its lower end and pivotally mounted at its upper end above the axle and extending downward and forwardly therefrom, and a series of elastic compressor bars fixed at their lower ends and arranged above said gathering-carrier, the fixed and free ends of said compressor bars overlying, respectively, the free and pivotally supported ends of the gathering-carrier, thereby forming a yielding throat through which the material is conveyed.

3. In a hay loader, in combination, an axle, supporting wheels mounted thereon, an elevating-carrier, an elastically suspended gathering-carrier pivotally mounted above the axle and extending downward and forwardly therefrom, and a series of elastic compressor bars arranged above said gathering-carrier and upwardly convergent with re-

spect thereto, the said compressor bars being secured at their lower ends to the frame of the loader and having their upper ends curved to form a sliding connection with the bottom of said elevating-carrier.

4. In a hay loader, in combination, an axle, supporting wheels mounted thereon, an elevating-carrier, an elastically suspended frame pivotally mounted above the supporting axle and extending downward and forwardly therefrom, a gathering cylinder mounted in said frame and rotating forwardly at the ground line, a drum mounted at the fixed end of said frame, an endless conveyer engaging said drum and cylinder, side-boards secured to the frame and movable therewith, and a series of elastic compressor strips curved at their upper ends and slidably engaging at their upper ends with the bottom of the elevating-carrier.

851,671. SUPPORTING DEVICE FOR ELECTRIC CONDUCTORS. BUDD J. JONES, Chicago, Ill., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Mar. 14, 1904. Renewed Nov. 12, 1904. Serial No. 232,526.

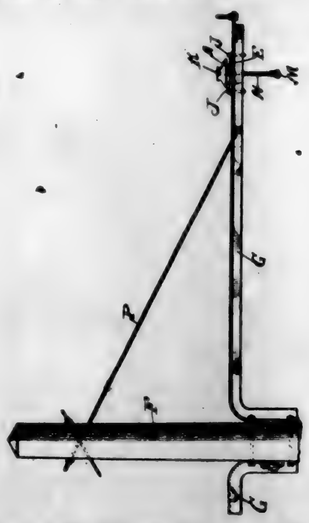

Claim.—1. A line structure for electrical distribution comprising a rigidly mounted supporting arm or bracket, an insulator located above and adjustably supported upon said arm or bracket, and a conductor suspended from said insulator, as and for the purpose set forth.

2. In a catenary suspension for trolley wires, an arm, a casting adjustably mounted thereon, means for clamping said casting in adjusted position, an insulator carried by said casting at a point above said arm, a messenger wire supported by said insulator, a trolley wire, and means for suspending said trolley wire from said messenger wire.

3. In a catenary suspension for trolley wires, an arm, a support carried thereby, a messenger wire carried by said support, means for retaining the messenger wire upon said arm in case said messenger wire is displaced from its support, a trolley wire, and means for suspending said trolley wire from said messenger wire.

4. In a catenary suspension for trolley wires, an arm, a messenger wire supported thereon at a point above the same, and a retaining device connected to said arm and operating to retain the messenger wire upon said arm in case said wire is displaced from its support, a trolley wire, and means for suspending said trolley wire from said messenger wire.

5. A line structure for electrical distribution comprising a supporting arm or bracket, an insulator adjustably supported upon and above said arm or bracket, and a conductor suspended from said insulator, as and for the purpose set forth.

6. A line structure for electrical distribution comprising a supporting arm or bracket having an elongated opening, an insulator adjustably supported upon the upper surface of said arm or bracket, and an electric conductor suspended from said insulator, as and for the purpose set forth.

7. A line structure for electrical distribution comprising a supporting arm or bracket having the end thereof doubled or bent upon itself to form a support, an insulator resting upon the upper surface of such support, and an electric conductor suspended from said insulator, as and for the purpose set forth.

8. A line structure for electrical distribution comprising a rigidly mounted supporting arm or bracket, an insulator located above and adjustably supported upon the upper surface of said arm or bracket, an electric conductor, and flexible suspending devices supported from said insulator and attached to said conductor, as and for the purpose set forth.

9. A line structure for electrical distribution comprising a flanged arm or bracket, an insulator having a base-plate, said base-plate having a lateral flange arranged to be received upon, and to be supported by, the flange of said bracket, a conductor, and suspending devices for said conductor, said suspending devices being supported from said insulator, as and for the purpose set forth.

10. A line structure for electrical distribution comprising a supporting arm or bracket, an insulator, a base-plate in which said insulator is supported, said base-plate having a lateral flange that rests upon said arm or bracket, a messenger wire supported by said insulator, a conductor, and suspending devices interposed between said conductor and said messenger wire, as and for the purpose set forth.

11. A line structure for electrical distribution comprising a supporting arm or bracket, an insulator having a base-plate that rests upon said arm or bracket, hook-bolts between said base-plate and the edges of said arm or bracket, an electric conductor and suspending devices connected thereto and supported from said insulator, as and for the purpose set forth.

12. A line structure for electrical distribution comprising an angle-bar arranged to form a supporting bracket, the end of said bar being bent or doubled upon itself, an insulator, a base-plate upon which said insulator is supported, said base-plate having a lateral flange that rests upon the upper surface of the flange of said angle-bar at the looped end thereof, hook-bolts connecting said flange and the edge of the web of said angle-bar, an electric conductor, suspending devices therefor, said suspending devices being supported from said insulator, as and for the purpose set forth.

851,672. CONSTRUCTION OF CARRIER-BAR MECHANISMS FOR TWISTING AND SPINNING MACHINES. FRANK R. JONES, Worcester, Mass. Filed Feb. 10, 1906. Serial No. 300,362.

Claim.—1. A carrier-bar finger having its head provided with guide members formed from oppositely folded portions of sheet metal disposed parallel with the plane of the head, and bent or offset rearward near the median line, in two parallel projecting lips, as set forth.

2. A carrier-bar finger formed of sheet metal integrally comprising the transverse lipped attaching portion, an outwardly curved body having a stiffening rib pressed therein, and a head portion provided with rectangular oppositely folded journal-guide lips bent and upset from the opposite edges of the head, as set forth.

3. A carrier-bar finger composed of a T-shaped blank of steel, having oppositely disposed wing portions inwardly folded at the edges of the main portion, and each bent rearward and outward on lines of fold approximately parallel with the central plane of the finger, the surfaces of said wing portions disposed as end-guiding and side-guiding surfaces for receiving tumbler-roll journals, the main body portion longitudinally curved along its central part and having at the opposite end of said curve a flat attaching portion in a plane approximately coinciding in alinement with the plane of the head portion.

4. The sheet metal carrier-bar finger comprising a flat seating portion, a semi-cylindrically curved portion and a flat head portion with lateral inwardly folded members returned adjacent to the plane of the head, bent or offset parallel with the median line of the head, and projected rearward with a right angular offset, the respective end portions the two members being disposed in opposite relations in a manner to include spaces and surfaces for guiding or carrying tumbler-roll journals.

5. A carrier-bar for the purpose specified, comprising a bar of mill rolled metal of channeled or flanged cross-section, having suitable attaching seats at its ends; and a plurality of sheet metal carrier-fingers rigidly secured in flatwise relation upon said bar, each of said fingers consisting integrally of an attaching-seat portion, an outwardly curved central portion, and a head portion having journal-guiding lips thereon disposed in relation to the plane of the head, substantially as set forth.

6. A carrier-bar for spinning machines, consisting of a longitudinally flanged wrought bar having its end portions flat and perforated, and a plurality of individually attached outwardly curved sheet-metal fingers, each finger including in its form an attaching seat and engaging-lip fitting the angle and face of the bar, an arched central portion and a head portion comprising laterally opposite, inwardly folded members bent rearward at either side of the median line of the finger and forming two parallel end-bearing flanges, and means rigidly securing said fingers to the bar, substantially as set forth.

851,673. PROCESS OF MAKING LACTOSE FROM GLUCOSE. JOHN A. JUST, Syracuse, N. Y. Filed Nov. 21, 1906. Serial No. 344,355.

Claim.—1. The process substantially as herein described of making lactose from glucose, which consists in treating a solution of glucose with the active principle of mammary gland, which converts the glucose into lactose.

2. The process substantially as herein described of making lactose from glucose, which consists in treating a solution of glucose with an extract of mammary gland.

3. The process substantially as herein described of making lactose from glucose, which consists in treating a solution of glucose with the juice of mammary gland at a suitable temperature.

4. The process substantially as herein described of making lactose from glucose, which consists in treating a solution of glucose with the juice of mammary gland at a suitable temperature and then separating the lactose from the solution.

5. The process substantially as herein described of making lactose from glucose, which consists in treating a solution of glucose with the juice of mammary gland at a temperature of about 80 to about 105 degrees F.

851,674. WASHING-MACHINE. WILLIS M. KINCAID, Hiawatha, Kans. Filed Nov. 28, 1905. Serial No. 289,528.

Claim.—1. In a washing machine, the combination with the box having a top with openings beveled in opposite directions on their under sides, of a rubber formed of a single piece of non-corrosive material having substantially parallel upright portions passed through said openings, the upper ends of said parallel portions extended above said top and formed with horizontal portions extended toward each other, a wire operating handle having eyes receiving said horizontal portions, bearings on said top upon opposite sides of said openings, and horizontal rods twisted around the vertical portions of the rubber above the top of the box and secured thereto, the ends of said horizontal rods being held in said bearings.

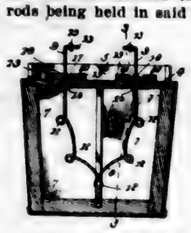

2. In a washing machine, a body, a top, a rubber having parallel vertical portions extended through said top, horizontal rods having twists between their ends receiving and engaging said vertical portions, means on the outer face of said top receiving the ends of said arms and holding them at a distance from said top, and cooperating members secured thereto and extended over the ends of said arms, as and for the purpose specified.

851,675. ROTARY EXPLOSIVE-ENGINE. RICHARD E. KRAUSE, Brooklyn, N. Y., assignor of one-half to ERNEST J. KALTENBACH, Brooklyn, N. Y. Filed Dec. 3, 1904. Serial No. 235,314.

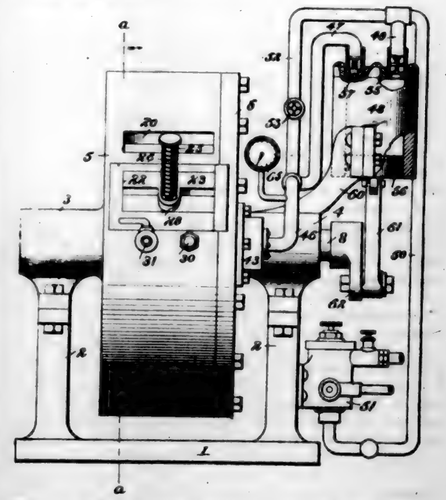

Claim.—1. In a rotary explosive engine, the combination of a stationary cylinder provided with admission ports, a piston rotatably mounted within said cylinder, abutments coöperating with said piston to form combustion chambers, a plate carried by the piston and provided with openings adapted to register with the admission ports in the cylinder after the abutments have been operated to form the combustion chambers, a pressure pump controlled by the engine, pipes connecting said pump with the combustion chambers, a shunt pipe connecting the pump with the pipes leading to the combustion chambers, and a valve in said shunt pipe for controlling the pressure of the gases delivered to the combustion chambers.

2. In a rotary explosive engine, the combination of a stationary cylinder provided with admission ports, a piston rotatably mounted within said cylinder, abutments cooperating with said piston to form combustion chambers,

a plate carried by the piston and provided with openings adapted to register with the admission ports in the cylinder after the abutments have been operated to form the combustion chambers, a carbureter for generating the gases, a pump controlled by the engine, pipes connecting the pump with the carbureter, and combustion chambers, valves within said pipes permitting the gases to be taken from the carbureter and delivered under pressure to the combustion chambers, and means for varying the degree of pressure of said gases.

3. In a rotary explosive engine, the combination of a stationary cylinder provided with admission ports, a piston rotatably mounted within said cylinder, abutments cooperating with said piston to form the combustion chambers, a plate carried by the piston and provided with openings adapted to register with the admission ports in the cylinder after the abutments have been operated to form the combustion chambers, a carbureter for generating the gases, and a pump controlled by the engine for receiving the gases from the carbureter, and delivering them to the combustion chambers under pressure.

4. In a rotary explosive engine, the combination of a stationary cylinder having admission ports on one side thereof, a piston rotatably mounted within said cylinder, and provided with a plate having openings adapted to periodically register with the openings in the cylinder, abutments operatively controlled by the piston and forming one of the walls of the combustion chambers, means for delivering the charges to the admission ports under pressure, and means for exploding said charges within the combustion chambers after the admission ports are closed.

5. In a rotary explosive engine, the combination of a cylinder provided with admission ports, a piston mounted within said cylinder, abutments operatively controlled by the piston to form one of the walls of the combustion chambers, a plate carried by the piston and provided with openings adapted to register with the admission ports in the cylinder and intermittently admit charges to the combustion chambers, means for placing the charges under pressure, pipes for delivering charges to said combustion chambers under pressure, and a valve controlled shunt pipe for varying the pressure of said charges.

6. In a rotary explosive engine, the combination of a stationary cylinder, a piston rotatably mounted within said cylinder, abutments coöperating with said piston to form combustion chambers, a cylinder head provided with admission ports, a plate carried by the piston and provided with openings adapted to register with the admission ports, after the abutments have been operated to form the combustion chambers, and a sparking device projecting into each of said combustion chambers and timed to become operative immediately after the admission ports are closed.

7. In a rotary explosive engine, the combination of a stationary cylinder provided with admission ports, a piston rotatably mounted within said cylinder, a plate carried by the piston and provided with openings adapted to register with the admission ports in the cylinder, abutments coöperating with the piston to form combustion chambers, means for delivering the gases to said combustion chambers under pressure, means for regulating the pressure of said gases, and a sparking device projecting into each of said combustion chambers and timed to become operative immediately after the admission ports are closed.

851,676. DRAFT-EQUALIZER. ALBERT KUDELE, Sibley, Iowa. Filed June 11, 1906. Serial No. 321,223.

Claim.—1. A draft equalizer comprising an evener, a pivotal equaliser having one of its ends connected with the evener, and a draft actuated push bar connected with the other end of the equalizer.

2. In a draft equalizer, the combination with a draft lever, of a doubletree evener bar connected thereto, an auxiliary bar forming a carrier for an additional swingletree and detachably secured to the draft means, and a pivotal equaliser having its arms connected respectively with said evener bar and the auxiliary bar.

3. A draft equalizer comprising a draft lever, an evener yieldingly connected with said draft lever and having swingletrees, an equalizer mounted upon said draft lever and connected at one end with said evener, a push bar engaging the opposite end of the equalizer, and a swingletree connected with said push bar.

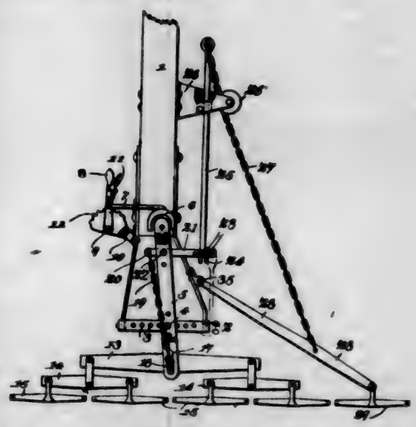

4. The combination with a plow beam, of a draft lever mounted thereon, an evener yieldingly connected to said draft lever and having swingletrees secured thereto, an equalizer pivoted on said draft lever, means connecting said evener with one end of said equalizer, a push bar connected with the other end of said equalizer, and a swingletree connected with said push bar.

5. The combination with a plow beam having a clevis, a draft lever pivotally mounted on said clevis, a controlling lever mounted on said plow beam and having a bracket loosely engaging the rear end of the draft lever, an evener yieldingly connected with the forward end of the draft lever and having swingletrees connected therewith, an equalizer pivotally mounted on the rear end of the draft lever, a flexible connection between one end of the equalizer and the evener, a push bar connected with the opposite end of the equalizer, and a swingletree connected with the push bar.

6. An equalizer comprising a draft lever, means for adjusting the position of the draft lever, an equaliser mounted on the draft lever, a push bar, means for adjustably connecting the push bar with the equaliser, a pivotal member connected with the push bar, and draft attaching means adapted to act on opposite ends of the equalizer.

851,677. DROP-HAMMER. GEORGE B. LAMB and DAVID C. GRIGGS, Waterbury, Conn., assignors to The Waterbury Farrell Foundry and Machine Company, Waterbury, Conn., a Corporation of Connecticut. Filed Aug. 21, 1905. Serial No. 274,972.

Claim.—1. In a drop hammer, the combination with a frame, of a pair of friction rolls, a movable shaft and a normally fixed shaft for said rolls, eccentric sleeve journals for the shafts of both of said rolls rotatably mounted in said frame, means for rotating the eccentric sleeve journals of the movable shaft to intermittently move its roll toward and away from the normally fixed shaft and its roll at predetermined intervals, geared sectors carried by the eccentric sleeve journals of the normally fixed shaft, an auxiliary shaft arranged parallel with said normally fixed shaft and having a tapering or conical end fitted in a complemental bearing in one side of the frame and its other end rotatably mounted in the opposite side of the frame, gear-wheels secured to said auxiliary shaft and meshing with the geared sectors carried by the eccentric sleeve journals of the normally fixed shaft, means for tightening and loosening the conical end of the auxiliary shaft in its bearing, and means for turning said auxiliary shaft when loosened to rotate the eccentric sleeve journals of the normally fixed shaft and thereby adjust and set the normally fixed shaft and its roll with relation to the movable shaft and its roll.

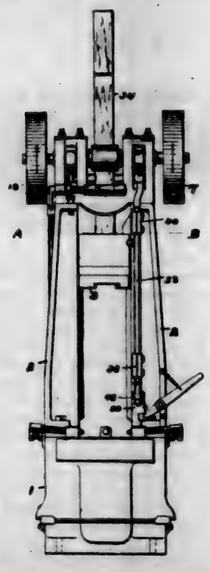

2. In a drop hammer, the combination with a frame, of a pair of friction rolls, a hammer, a lifter-board for said hammer adapted to be intermittently engaged by said friction rolls for raising and releasing said lifter-board, a pair of grip-dogs adapted to engage said lifter-board to support it in its elevated position, a normally stationary eccentric shaft for one of said grip-dogs having a conical or tapering end fitted in a complemental bearing in one side of the frame and having its other end rotatably mounted in the other side of the frame, and means for tightening and loosening the conical end of said eccentric shaft in its bearing, and means for turning said shaft when loosened, to thereby adjust and set the normally fixed eccentric shaft and its grip-dog with relation to the other grip-dog, and a loosely mounted eccentric shaft for said other grip-dog and means for rotating said shaft to move its grip-dog toward and away from the normally fixed grip-dog.

3. In a drop hammer, the combination with a frame, of a pair of friction rolls, rotatable eccentric sleeve bearings for the shaft of one of said rolls whereby it may be moved toward and away from the other roll, a rock-shaft mounted in bearings upon one side of the frame, arms carried by said rock-shaft and extending toward the opposite side of the frame below said rolls, links connecting said arms with the eccentric sleeve bearings of said roll, one of said arms extending beyond the side of the frame and connected with a lifter-rod, and means for operating said lifter-rod.

4. In a drop hammer, the combination with a frame, of a pair of friction rolls, rotatable eccentric sleeve bearings for the shaft of one of said rolls whereby it may be moved toward and away from the other roll, a rock-shaft mounted in bearings upon one side of the frame, arms carried by said rock-shaft and extending toward the opposite side of the frame below said rolls, links connecting said arms with the eccentric sleeve bearings of said roll, one of said arms extending beyond the side of the frame and connected with a lifter-rod, means for operating said lifter-rod, and cushion-blocks arranged in said frame beneath and adapted to be engaged by said arms to take the shock caused by the drop of the lifter-rod.

851,678. DRAPERY-SUPPORTING DEVICE. CHARLES LEVY, New York, N. Y. Filed July 9, 1906. Serial No. 325,267.

Claim.—1. A draping device or hook composed of wire bent into the form of a conical spiral and provided at its apex with a central projecting prong.

2. A device of the class described, composed of wire and comprising an open wound spirally formed cone provided at its apex with a central pointed projection whereby it may be secured to a support and adapted to serve for the formation of a rosette in the process of draping.

3. A draping device composed of wire bent to form an open spiral cone and the apex of which is provided with a projecting prong which extends therefrom in line with the axis of the cone.

851,679. CLOSET-BOWL. WILLIAM H. LLOYD, Evanston, Ill., assignor to Crane Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 29, 1904. Serial No. 230,563.

Claim.—1. The combination with a closet bowl provided with a seat supporting shoulder and with a flushing rim rising from the inner side of said shoulder, of a seat adapted to be supported by said shoulder and to extend substantially flush with the top of said rim.

2. The combination with a closet bowl provided with a seat supporting shoulder and with a flushing rim rising from the inner side of said shoulder, of a seat arranged to be supported by said shoulder and constructed so as to conform to said rim.

3. The combination with a closet bowl provided with a seat supporting shoulder and with a flushing rim rising from the inner side of said shoulder, of a seat constructed and arranged to be supported by said shoulder and to receive said flushing rim.

4. The combination with a closet bowl provided with a seat supporting shoulder and with an upwardly extending flushing rim, of a seat adapted to be supported by said shoulder and arranged to extend around the outer face of said flushing rim.

5. The combination with a closet bowl, provided with a flushing rim of a seat constructed and arranged to extend around the outer face of said flushing rim and means for supporting the under face of said seat in a plane below the top of said flushing rim.

6. The combination with a closet bowl provided with a flushing rim of a seat arranged to extend around the outer face of said flushing rim, said seat being recessed to receive said rim and means for supporting the under face of said seat in a plane below the top of said flushing rim.

7. The combination with a closet bowl provided with a rim and having a regular, unbroken form in its horizontal dimensions, one portion of which is elevated above the

rest and has an elevated flushing outlet on its interior surface, of a seat formed to accommodate such elevated portion, and means constructed and arranged to support said seat with its upper surface substantially flush with the upper surface of the elevated portion of the rim.

8. The combination with a closet bowl provided with a flushing rim having a regular, unbroken form in its horizontal dimensions, one portion of which is elevated above the rest and has an elevated outlet on its interior surface, of a seat adapted to rest on said rim with its upper surface substantially flush with the upper surface of the elevated portion of the rim, and being cut away to accommodate such elevated portion.

851,680. STEERING-GEAR. HENRY M. LOVE, Utica, N. Y. Filed July 29, 1905. Serial No. 271,743.

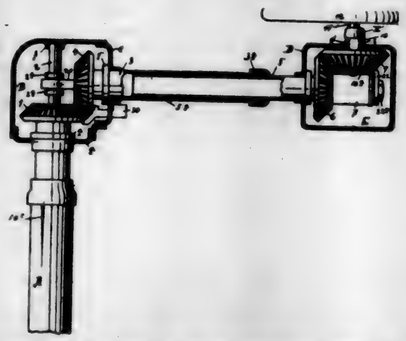

Claim.—1. A steering device comprising a shaft, a handle, an arm supporting the handle eccentric to the shaft and having operative means whereby the arm may be freely swung about the shaft without releasing hold of the handle and without turning the shaft, substantially as described.

2. In a device of the character described, a steering shaft, an arm pivotally mounted to swing about the shaft, a steering handle revolubly mounted on the arm, and operative connections between the steering handle and the shaft by which to turn the shaft by the turning of the steering handle upon its mounting, substantially as described.

3. In a vehicle, in combination with means for changing the direction of the vehicle, an arm pivotally mounted to swing about the said means and a hand-steering means mounted on the arm, the said arm being adapted to swing and maintain the same position of the hand-steering means to the operator, substantially as described.

4. In a steering device, an extensible shaft, an arm swingably mounted thereon and a handle mounted on the arm by members adjustable to regulate the position of the handle, substantially as described.

5. In a device of the character described, mechanism to change the direction of the vehicle, means connected therewith and provided with a hand-steering member and being mounted to permit swinging of the same without turning the hand-steering member and adapted to operate the steering mechanism upon the turning of said member, and said hand-steering member, substantially as described.

6. In a device of the character described comprising a shaft, an extensible arm pivotally mounted thereon, hand-steering means mounted on the arm by extensible connections whereby to adjust the length of the arm and the height of the hand-steering means, substantially as shown.

7. In a device of the character described, an extensible steering shaft, an extensible arm pivoted thereon and an extensible hand-steering means the said members coöperating whereby the position of the hand-steering means relative to the steering shaft may be adjusted, substantially as shown.

8. In a device of the character described, provided with an extensible steering shaft, an extensible arm and steering handle-means having an extensible mounting on the arm, said mounting being axially adjustable relative to the arm, substantially as shown.

9. In a device of the character described, mechanism for changing the direction of the vehicle, means for operating said mechanism by hand, the said means being normally before the operator but adapted to swing from said position, and said several members being constructed to permit universal adjustment of the said hand means, substantially as shown.

10. A steering device comprising a steering shaft, an arm and a handle, gears connecting the shaft and the arm and gears connecting the arm and the handle whereby the arm and handle may be swung freely around the shaft without turning the shaft, the handle maintaining an unchanged position in the hand of the operator, and whereby the shaft may be turned from the handle at any position thereof in its swing around the shaft, substantially as described.

11. A steering device comprising a steering shaft, an arm and a handle, gears connecting the shaft and the arm and gears connecting the arm and the handle whereby the arm and handle may be swung freely around the shaft without turning the shaft, the handle maintaining an unchanged position in the hand of the operator, and whereby the shaft may be turned from the handle at any position thereof in its swing around the shaft, and extension and adjusting means whereby to locate the handle and fix its plane of operation, substantially as described.

12. A steering device comprising a steering shaft, an arm and a handle, gears connecting the shaft and the arm and gears connecting the arm and the handle whereby the arm and handle may be swung freely around the shaft without turning the shaft, the handle maintaining an unchanged position in the hand of the operator, and whereby the shaft may be turned from the handle at any position thereof in its swing around the shaft, and means for locking the arm and the shaft together, substantially as described.

13. In a vehicle, a shaft, a steering handle mounted laterally thereto and means connecting the two to permit adjustment of the handle relative to the shaft and the operation of the handle in different planes and at different angles, substantially as described.

14. In a vehicle, steering mechanism and means for operating the same, the said means being adapted to swing freely on its bearing on the steering mechanism without affecting the steering mechanism and constructed to operate the same by the turning of the said steering means on its mounting, substantially as described.

15. In a vehicle, a steering mechanism, means to operate the same from any point in a circle, the said means being adapted to swing freely in the said circle, substantially as described.

16. In a vehicle, a steering mechanism, means to operate the same from any point in a circle, the said means being adapted to swing freely in the said circle without affecting said mechanism or disarranging the grasp of said means.

17. In a steering device, a shaft, a handle eccentric thereto, and means supporting the handle on the shaft and operatively connecting the two whereby the handle may be swung around the shaft without turning it and whereby the turning of the handle on its mounting is operative to turn the shaft.

18. In a vehicle, a steering mechanism, means to operate the same from any point in a circle, the said means being adapted to swing freely in said circle, and means normally to maintain the latter in a given position in the said circle.

19. In a vehicle, a steering mechanism, means to operate the same from any point in a circle, the said means being adapted to swing freely in said circle, and means normally to maintain the latter in a given position in the said circle, and means normally to maintain the handle in a given position.

20. In a device of the character described, mechanism for changing the direction of a vehicle, means for operating said mechanism by hand, the said means being normally before the operator but adapted to swing from said position without affecting the first said mechanism.

851,681. CIGAR-MACHINE. WILLIAM S. LUCKETT, East Orange, N. J., assignor to International Cigar Machinery Company, New York N. Y., a Corporation of New Jersey. Filed June 26, 1906. Serial No. 323,416.

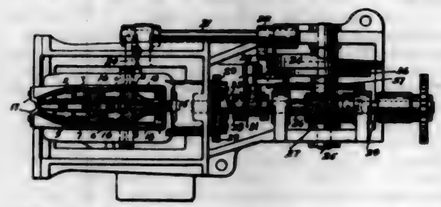

Claim.—1. The combination with a bunch forming mechanism, of a wrapping mechanism, and a rotary shaping mechanism located therebetween, said mechanism comprising one or more rolls made up of positively driven shaped sections whereby each part of the bunch moves at the same surface speed as that of its driving sections.

2. The combination with a bunch forming mechanism, of a wrapping mechanism, and a rotating shaping mechanism located therebetween, said mechanism comprising one or more rolls made up of intergeared shaped sections, a bent support on which the sections of each roll are mounted, and means for driving the sections.

3. The combination with a bunch forming mechanism, of a wrapping mechanism, a rotating shaping mechanism located between said mechanisms comprising a series of rolls, each roll being made up of a bent roll support and intergeared shaped sections, and gearing for positively driving the sections of each roll.

4. The combination with a bunch forming mechanism, of a rotating shaping mechanism, said mechanism comprising a series of rolls, each roll being made up of intergeared shaped sections and a bent support, means for positively driving the roll sections, and means for opening and closing the rolls.

5. The combination with a bunch forming mechanism, of a rotating shaping mechanism, said mechanism comprising a series of rolls, each roll being made up of intergeared shaped sections and a bent shaft, means for positively driving the roll sections, means for opening and closing the rolls, a wrapping mechanism, and means for transferring the shaped bunches thereto.

6. A shaping roll comprising a central driver, a plurality of intergeared end sections, and a bent roll support.

7. A shaping roll comprising a central driver comprising two independently driven sections, a plurality of intergeared end sections, and a bent roll support.

851,682. ELECTRICALLY-CONTROLLED ELEVATOR. WILLIAM D. LUTS, Allendale, N. J. Filed June 22, 1905. Serial No. 266,397.

Claim.—1. The combination with an electrically controlled elevator, a door lock, and means for starting the elevator upon a movement of a portion of said lock.

2. The combination of an electrically controlled elevator, a controlling circuit therefor, and a door lock having contacts in the controlling circuit to arrange to cause the elevator to be started when said contacts are closed.

3. The combination of an electrically controlled elevator, a controlling circuit therefor, and a door lock having contacts in the controlling circuit so arranged that they will start the car upon movement of a portion of the lock.

4. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a door in the hatchway, a lock on said door, and contacts in the lock connected to the controlling circuits and arranged to cause the elevator to be started when said contacts are closed.

5. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a door in the hatchway, a lock on said door, and contacts in the lock connected to the controlling circuits and arranged to cause the car to move to said door upon a movement of a portion of said lock.

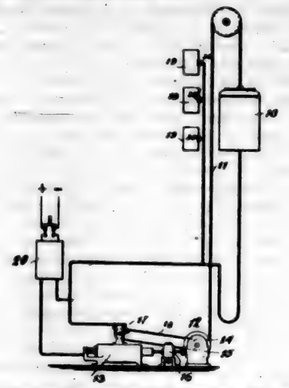

6. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a door in the hatchway, a lock on said door, and contacts in the lock connected to the controlling circuits, some of which are arranged to cause the car to move to said door and others of which are arranged to render the controlling circuits inoperative.

7. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a door in the hatchway, a lock on said door, contacts in the lock connected in the controlling circuits some of which are arranged to cause the car to move to the door when a portion of the lock is moved, and others of which are arranged to render the controlling circuits inoperative when the door is opened.

8. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock on each door, contacts in the locks connected in the controlling circuits which are arranged to cause the car to move to any given door when a portion of its lock is moved.

9. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock on each door, contacts in the locks connected in the controlling circuits some of which are arranged to cause the car to move to any given door when a portion of its lock is moved and others of which are arranged to render the controlling circuits inoperative when any door is opened.

10. The combination of an electrically controlled elevator, a car, a door lock, means for starting the elevator upon a movement of a portion of the lock, and means dependent upon the position of the car for releasing the lock.

11. The combination of an electrically controlled elevator, a controlling circuit therefor, a car, a door lock having contacts in the controlling circuit for controlling the elevator, and electrical means dependent upon the position of the car for releasing the door lock.

12. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a door in the hatchway, a lock on said door, contacts in said lock connected to the controlling circuits arranged to cause the car to move to said door upon a movement of a portion of the lock, and electrical means for releasing the lock when the car has reached the door.

13. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a door in the hatchway, a lock on said door, contacts in the lock some of which are arranged to cause the car to move to the door and others of which are arranged to render the controlling circuits inoperative, and electrical

means for releasing the lock when the car has stopped opposite the door.

14. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock on each door, contacts in the locks connected in the controlling circuits which are arranged to cause the car to move to any given door when a portion of its lock is moved, and electrical means for releasing the lock when the car has stopped opposite the given door.

15. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock on each door, contacts in the locks connected in the controlling circuits which are arranged to cause the car to move to any given door when a portion of its lock is moved, and electrical means dependent upon the position of the car and the position of the lock for releasing the lock.

16. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock on each door, a magnet in each lock, contacts in the locks some of which are in the controlling circuits and are arranged to cause the car to move to any given door when a portion of its lock is moved, others of which are in circuit with the magnet, and means for energizing said magnet and thereby releasing the lock when the latter contacts are closed.

17. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock on each door, a magnet in each lock, contacts in the locks some of which are in the controlling circuits and are arranged to cause the car to move to any given door when a portion of its lock is moved, others of which are in circuit with the magnet, means for energizing said magnet and thereby releasing the lock when the latter contacts are closed when the lock is moved, and means for preventing such energizing of said magnet except when the car has stopped at such given floor.

18. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock on each door, a magnet in each lock, contacts in the lock some of which are in the controlling circuits and are arranged to cause the car to move to any given door when a portion of its lock is moved, others of which are in circuit with the magnet, means for energizing said magnet and thereby releasing the lock when the latter contacts are closed, when the lock is moved, means for preventing such energizing of said magnet except when the car has stopped at such given floor, and means for rendering the controlling circuits and the door lock magnets inoperative when any one of the doors is opened.

19. In combination with an electrically controlled elevator, a floor controller having a double set of contacts, and means actuated by the movement of the elevator for opening one set of contacts and at the same time closing the other set of contacts.

20. In an electrically controlled elevator the combination of a car, a hatchway in which the car is adapted to run, an opening in the hatchway at a landing, and a floor controller having a double set of contacts and means actuated by the movement of the elevator for opening one set of contacts and closing the other set of contacts, as the car approaches the opening.

21. In combination with an electrically controlled elevator, a car, a floor controller having two sets of contacts, a contact arm for engaging with one or the other of said sets of contacts, an actuating lever arranged to have a movement proportional to that of the car and to move the contact arm from one set of contacts to the other set of contacts when the car reaches a predetermined point in its travel.

22. In combination with an electrically controlled elevator, a car, a floor controller having two sets of contacts, a contact arm for engaging with one or the other of said sets of contacts, an actuating lever arranged to have a movement proportional to that of the car and to move the contact arm from one set of contacts to the other set of contacts when the car reaches a predetermined point in its travel, and means for locking the contact arm in its moved position.

23. In combination with an elevator, a car, a hoisting machine, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock for each door, and a single floor controller directly connected with and actuated by the hoisting machine and arranged to control all of said locks.

24. In combination with an elevator, a car, a hoisting machine, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock for each door, and a single floor controller directly connected with and actuated by the hoisting machine and arranged to control all of said locks and the movement of the car.

25. In combination with an elevator, a car, a hoisting machine, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock for each door, a single floor controller directly connected with and actuated by the hoisting machine and arranged to control all of said locks, and means for preventing the releasing of the locks when the car is passing a door.

26. In combination with an electrically controlled elevator, a hoisting mechanism, a car, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock on each door, contacts in the locks, a floor controller connected to the hoisting mechanism, contacts on the floor controller, circuits between the floor controller and the door lock contacts, and electrical means for releasing the door locks when the door lock contacts are closed and the floor controller contacts are closed.

27. In combination with an electrically controlled elevator, a hoisting mechanism, a car, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock on each door, contacts in the locks, a floor controller connected to the hoisting mechanism, contacts on the floor controller, circuits between the floor controller and the door lock contacts, and electrical means for releasing the door locks when the door lock contacts are closed and the floor controller contacts are closed and the car is at rest.

28. In combination with an electrically controlled elevator, a car, a hatchway door, a lock for the door, a floor controller having two sets of contacts one of which sets is arranged to automatically stop the car at the door and the other of which sets is arranged to release the door lock.

29. In an electrically controlled elevator, the combination of controlling circuits, a car, a floor controller arranged to have a movement proportional to that of the car, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock on each door, contacts in the locks connected in the controlling circuits which are arranged to cause the car to move to any given door when a portion of its lock is moved.

30. In an electrically controlled elevator, the combination of controlling circuits, a car, a floor controller arranged to have a movement proportional to that of the car, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock on each door, contacts in the lock connected in the controlling circuits some of which are arranged to cause the car to move to any given door when a portion of its lock is moved and others of which are arranged to render the controlling circuits inoperative when any door is opened.

31. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock on each door, contacts in the lock connected to the controlling circuits and arranged to cause the car to move to a given door upon a movement of a portion of its lock, a floor controller arranged to have a movement proportional to that of the car and to automatically stop the car when it has reached the given door and to automatically release the lock when the car has stopped at the door.

32. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock on each door, contacts in the lock connected to the controlling circuits and arranged to cause the car to move to a given door upon a movement of a portion of its lock, a floor controller arranged to have a movement proportional to that of the car and to automatically stop the car when it has reached the given door and to automatically release the lock when the car has stopped at the door, and means situated in the car for controlling its movement.

33. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock on each door, contacts in the lock connected to the controlling circuits and arranged to cause the car to move to a given door upon a movement of a portion of its lock, a floor controller arranged to have a movement proportional to that of the car and to automatically stop the car when it has reached the given door and to automatically release the lock when the car has stopped at the door, and other contacts in the door-locks arranged to render the controlling circuits and the door lock releasing device inoperative when one of the doors is open.

34. In an electrically controlled elevator, the combination of controlling circuits, a car, a hatchway in which the car runs, a plurality of doors in the hatchway, a lock on each door, a magnet in each lock, contacts in the locks some of which are in the controlling circuits and are arranged to cause the car to move to any given door when a portion of its lock is moved, others of which are in circuit with the magnet, means for energizing said magnet and thereby releasing the lock when the latter contacts are closed, and a floor controller arranged to have a movement proportional to that of the car and to automatically govern the controlling circuits and the door lock magnets.

851,683. NAVIGABLE AEROPLANE. BENJAMIN F. MICKLEY, Seneca Falls, N. Y. Filed May 13, 1905. Serial No. 260,252.

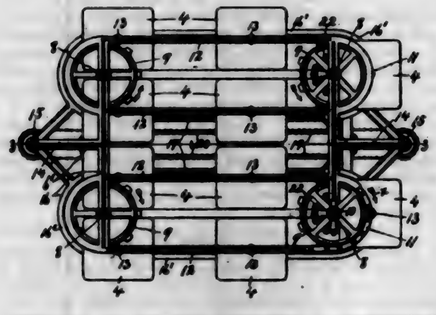

Claim.—1. An aeroplane comprising a comparatively light supporting frame, two sets of planes each set mounted on an endless carrier, the planes on one side of each carrier traveling in opposite directions and inclined in opposite directions, to the planes on the opposite side whereby the longitudinal thrust of those traveling in one direction is counterbalanced by that of those traveling in the reverse direction, thereby lifting the machine bodily by their impact with the air, and means to actuate said planes.

2. An aeroplane comprising a supporting frame, two sets of planes each set mounted on an endless carrier and the planes at one side of each carrier inclined and traveling in reverse directions and actuating means therefor, each set comprising two series of planes, those of one series being tiltable to different angles toward and from a horizontal position, and means to vary the angle of inclination of the tiltable blades whereby the machine may be first lifted in the air and then propelled.

3. An aeroplane comprising two independent carriers, the carriers having on their opposite sides reversely inclined and oppositely traveling planes, a supporting frame therefor, and means to move said carriers in reverse directions, each carrier being provided with two series of planes one above the other, and traveling in the same direction said planes having their advance ends elevated above their trailing ends.

4. An aeroplane comprising a main supporting frame, a plurality of endless carriers mounted on vertical axes and having planes on one side traveling in one direction, other planes carried by the opposite sides of the carriers and traveling in a reverse direction, said planes being adjustable to and from a horizontal position, separate driving means for said carriers, and additional means to adjust the planes to and from a horizontal position.

5. An aeroplane comprising two endless carriers mounted on vertical axes and a supporting frame therefor, each carrier having a plurality of planes tilted at an angle from a horizontal, and means to actuate the carriers.

6. An aeroplane comprising a supporting frame, two endless carriers mounted in and upon said frame, a series of planes rigidly attached to each of said carriers to move therewith, a second series of planes movably mounted on each carrier, and means for tilting the movable planes to and from a horizontal position.

7. An aeroplane comprising a supporting frame and two endless carriers revolubly mounted thereon side by side on vertical shafts, means to actuate the carriers whereby adjacent sides are caused to move in the same direction, and a series of planes mounted on each carrier to travel therewith, said planes having their advancing ends tilted upwardly whereby those traveling in opposite directions exert an equal upward lift upon the machine by impact with the air.

8. An aeroplane comprising a supporting frame and two endless carriers revolubly mounted thereon side by side, a series of planes fixedly attached to each carrier and having their advancing ends inclined upwardly, a second series of planes mounted on each carrier and having their advancing ends tiltable upwardly to and from a horizontal position, means to revolve the carriers, and separate means to adjust the advancing ends of the planes of the second series.

9. An aeroplane comprising a comparatively light supporting frame, opposite pairs of vertically disposed drums revolubly mounted on the frame, an endless traveling carrier, mounted upon and actuated by each pair of drums, two series of planes mounted on each carrier one above the other, means to rotate the drums to cause the adjacent sides of said carriers and the planes thereon to move in the same direction, the planes of one series being adjustable toward and from a horizontal position, and means to adjust said adjustable planes to different angles during the revolution of the carriers.

10. An aeroplane comprising a frame, a pair of endless tracks adjustable vertically on the frame, means to adjust said tracks, endless carriers revolubly mounted on the frame, one for each track, and a series of inclined planes attached to and actuated by each of the carriers and trailing upon said tracks, whereby the adjustment of the tracks varies the inclination of the planes.

11. An aeroplane comprising a frame and revoluble endless carriers mounted side by side on the frame, means to actuate the carriers whereby their adjacent sides are caused to travel in the same direction, a series of inclined planes on each carrier and traveling therewith, an adjustable track operable to vary the inclination of the planes while traveling, and means to adjust said track.

851,684. PROCESS OF MAKING COMPOUND METAL BODIES. JOHN F. MONNOT, New York, N. Y. Filed June 16, 1905. Renewed Aug. 21, 1906. Serial No. 331,522.

Claim.—1. The process of producing compound metal bodies of unlike metals autogenously welded together which consists in contacting with a base of one such metal a highly heated molten mass of another and unlike metal, segregating from such molten mass the layer thereof of molten metal in immediate proximity to and in contact with said base and allowing it to set thereagainst.

2. The process of producing compound metal bodies comprising steel and an unlike metal autogenously welded together which consists in contacting with a steel base a

highly heated molten mass of an unlike metal, segregating from such molten mass the layer of molten metal in immediate proximity to and in contact with said steel base, and allowing it to set thereagainst.

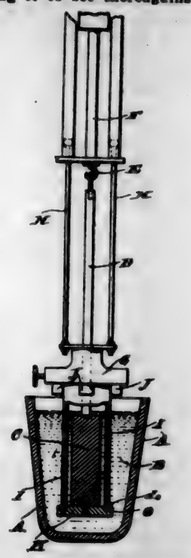

3. The process of producing compound metal bodies comprising steel and copper autogenously welded together which consists in contacting with a steel base a highly heated molten mass of copper, segregating from such molten mass of copper the layer of molten metal in immediate proximity to and, in contact with said steel base and allowing it to set thereagainst.

4. The process of producing coextended compound metal ware composed of unlike metals autogenously welded together which consists in contacting with a base of one such metal a highly heated molten mass of another and unlike metal, segregating from such molten mass the layer of molten metal in immediate proximity to and contact with said base, allowing it to set thereagainst, and extending the compound ingot so formed while in a heated condition.

5. The process of producing compound metal bodies of unlike metals autogenously welded together, which consists in immersing a base of one such metal in a highly heated molten bath of another and unlike metal, segregating from said bath the layer of said molten metal surrounding said base and allowing it to set thereagainst.

6. The process of producing compound metal bodies comprising steel and an unlike metal autogenously welded together, which consists in immersing a base of steel in a highly heated molten bath of such unlike metal, segregating from said bath the layer of said molten metal surrounding the base, and allowing it to set thereagainst.

7. The process of producing compound metal bodies comprising steel and copper autogenously welded together which consists in immersing a base of steel in a highly heated molten bath of copper, segregating from said bath the layer of molten copper surrounding the base, and allowing it to set thereagainst.

8. The process of producing compound metal bodies of unlike metals autogenously welded together which consists in immersing a hot clean base of one such metal in a highly heated molten mass of another and unlike metal, segregating the layer of said molten metal in contact with said base, withdrawing base and contacting layer and allowing said layer to set against said base.

9. The process of producing compound metal bodies comprising steel and an unlike metal autogenously welded together which consists in immersing a hot clean steel base in a highly heated molten mass of another and unlike metal, segregating the layer of said molten metal in contact with said base, withdrawing base and contacting layer, and allowing said layer to set against said base.

10. The process of producing compound metal bodies comprising steel and copper autogenously welded together which consists in immersing a hot clean steel base in a highly heated molten mass of copper, segregating the layer of said molten copper in contact with said base, withdrawing base and contacting layer, and allowing said layer to set against said base.

11. The process of producing coextended compound metal ware composed of unlike metals autogenously welded together which consists in immersing a hot clean base of one such metal in a highly heated molten bath of another and unlike metal, segregating the layer of said molten metal in contact with said base, withdrawing base and contacting layer, allowing the layer to set against the base, and coextending the compound ingot formed while still hot.

12. The process substantially as hereinafter described of making bi-metallic products, such as ingots, sheets, tubes, wires and the like, of different metals welded together which consists in heating a core of the desired metal to a welding temperature in a bath of molten metal for the coating of a different kind from the core, to produce a superficial alloy of the core metal and coating metal out of the action of the air, thereby insuring a perfect weld, segregating a layer of molten metal from said bath in contact with said core, removing the core and its coating from the bath, and then working the sufficiently cooled bi-metallic ingot in a rolling mill or other suitable mill to produce bi-metallic plates, sheets, tubes, wires and like products.

13. The process substantially as hereinafter described of making bi-metallic products, such as ingots, sheets, tubes, wires and the like, of different metals welded together which consists in first cleaning the surface of a core of the desired metal, heating said core preliminarily to a suitable temperature in such manner as to prevent oxidation, immersing the core in a bath of molten metal for the coating of a different kind from the core thereby completing the heating of the core and bringing it to a welding temperature, separating a layer of the molten metal from the bath of the desired thickness for the coating, removing the core and its coating from the bath and working the bi-metallic ingot in a rolling mill or other suitable mill to produce bi-metallic plates, sheets, tubes, wires and like products.

14. The process substantially as hereinafter described, of making compound metal products of different metals welded together which consists in immersing a core of the desired metal in a bath of molten metal for the coating of a different kind from the core, thereby heating the core to a welding temperature separating a layer of the molten metal from the bath of the desired thickness for the coating, removing the core and its coating from the bath, and permitting the coating to solidify upon said core.

15. The process substantially as hereinafter described of making bi-metallic products, such as ingots, sheets, tubes, wires and the like, of different metals welded together which consists in heating a core of the desired metal to a temperature near the melting point of the coating metal in such manner as to prevent oxidation, immersing the core in a bath of molten metal for the coating of a different kind from the core thereby completing the heating of the core and bringing it to a welding temperature, segregating a layer of molten metal from said bath in contact with said core and then working the sufficiently cooled bi-metallic ingot in a rolling mill or other suitable mill, to produce bi-metallic sheets, tubes, wires, and like products.

16. The process substantially as hereinafter described of making compound metal products of different metals welded together which consists in surrounding a core of the desired metal with a bath of molten metal for the coating of a different kind from the core thereby heating the core to a welding temperature, separating a layer of the molten metal around the core from the remainder of the bath of the desired thickness for the coating, removing the core and its coating from the bath and permitting the coating to solidify upon said core.

17. The process substantially as hereinafter described of making bi-metallic products, such as ingots, sheets, tubes, wires and the like of different metals welded together which consists in heating the core to a high temperature in a bath of molten metal for the coating of a different kind from the core, to produce a superficial alloy of the core metal and coating metal, thereby insuring a perfect weld, then separating a layer of the molten metal from the bath of the desired thickness for the coating and removing the core and its coating from the bath.

18. The process substantially as hereinafter described of making bi-metallic products, such as ingots, sheets, tubes, wires and the like of different metals welded together which consists in heating the core to a high temperature in a bath of molten metal for the coating of a different kind from the core, to produce a superficial alloy of the core metal and coating metal, thereby insuring a perfect weld, then separating a layer of the molten metal from the bath of the desired thickness for the coating and removing the core and its coating from the bath, then forcing the core and the coating metal together by pressure applied to the entire surface of contact of the metals while at a suitable temperature to perfect the weld and suppress any flaws in the coating metal, and finally working the bi-metallic ingot in a rolling mill or other suitable mill to produce bi-metallic plates, sheets, tubes, wires, and like products.

19. The process substantially as hereinafter described of making bi-metallic products, such as ingots, sheets, tubes, wires and the like, of different metals welded together which consists in first heating the core in a bath of a molten metal, having a lower melting point than the coating metal, then immersing the core thus heated in a bath of molten coating metal of a different kind from the core to finish heating the core and bring it to welding temperature, separating a layer of the molten metal around the core from the remainder of the bath of the desired thickness for the coating, and finally removing the core and its coating from the bath.

851,685. VACUUM-TUBE LIGHTING. DANIEL M. MOORE, Newark, N. J., assignor to Moore Electrical Company, New York, N. Y., a Corporation of New York. Filed Nov. 16, 1905. Serial No. 287,565.

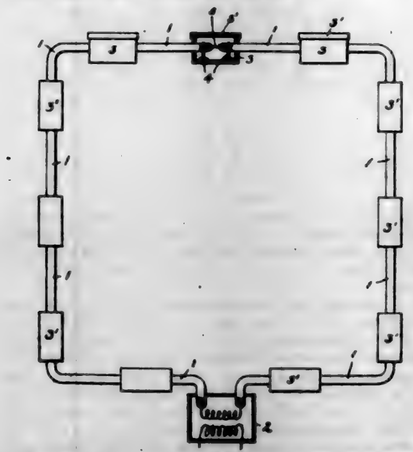

Claim.—1. In a system of lighting by vacuum lamps, a series of unit tubes, assembled end to end with their contiguous ends inclosed in danger proof boxes or casings, and having the electrodes of such contiguous ends electrically united to form a practically continuous tubing of light.

2. The combination substantially as described of a multiplicity of unit vacuum tube lamps, each consisting of a tube provided with internal electrodes, said unit tubes being arranged end to end with their electrodes electrically connected in a danger-proof box or casing and having the terminal tubes of the system of unit tubes connected respectively to opposite terminals of a source of energy, as and for the purpose described.

3. In a system of electric lighting, the combination substantially as described, of a series of vacuum tube lamps, provided with internal electrodes, said tubes being arranged in series end to end with their leading-in wires connected together, an insulated protective inclosure for the contiguous ends of a unit tube of a system and from which the glass portion of the tubing alone projects and means external to said casing for supporting the tube.

4. In a system of vacuum tube lighting, a connected series of unit tubes having the electrodes of contiguous ends joined in a protective inclosure so as to form said unit tubes into one effective lighting tube, the exposed part of which is of glass only.

851,686. CONCRETE-MIXER. JOHN MUIR and CHARLES H. HEROD, Brantford, Ontario, Canada, assignors to Goold, Shapley & Muir Company Limited, Brantford, Canada. Filed May 22, 1905. Serial No. 261,584.

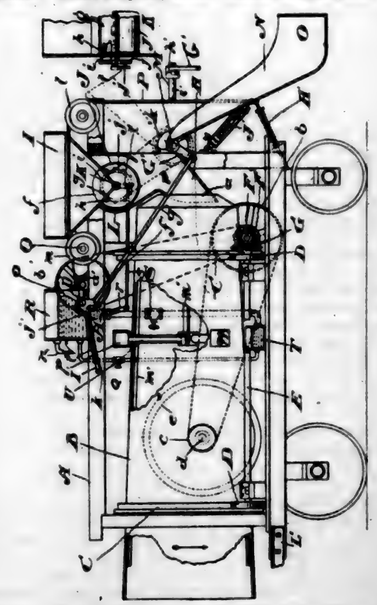

Claim.—1. A concrete mixer in combination with overhead means for introducing a measured quantity of cement in a batch into the mixer; an elevating receptacle for gravel; means for causing the gravel receptacle to elevate and dump its contents into the mixer; and means connected with the cement and gravel introducing means for causing the intermittent and simultaneous operation of the said cement and gravel introducing means, substantially as described.

2. A concrete mixer in combination with overhead means for introducing a measured quantity of cement in a batch into the mixer; an elevating receptacle for gravel; means for causing the gravel receptacle to elevate and dump its contents into the mixer; means connected with the cement and gravel introducing means for causing the intermittent and simultaneous operation of the said cement and gravel introducing means; and means for elevating and discharg-

ing into the mixer a measured quantity of water, substantially as described.

3. A concrete mixer in combination with overhead means for introducing a measured quantity of cement in a batch into the mixer; an elevating receptacle for gravel; means for causing the gravel receptacle to elevate and dump its contents into the mixer; means connected with the cement and gravel introducing means for causing the intermittent and simultaneous operation of the said cement and gravel introducing means; and means for elevating and discharging into the mixer a measured quantity of water in small regularly repeated portions, substantially as described.

4. A cylindrical continuous rotary concrete mixer having an inlet opening at one end and a discharge opening at the other in combination with a chute leading into the inlet; means for dumping a measured quantity of cement into the chute; means for dumping a measured quantity of gravel onto the chute; and mechanism connected with and forming part of the apparatus for causing the intermittent and simultaneous operation of the cement and gravel dumping means, substantially as described.

5. A continuously running concrete mixer in combination with means for intermittently and simultaneously introducing into the mixer separately measured quantities of cement and gravel; means for subsequently adding water; a pipe adapted to supply the water; a valve in the pipe; mechanism connected with and forming part of the apparatus operating with the gravel and cement introducing means to operate the valve to permit of water flowing only when gravel and cement are being introduced into the mixer, substantially as described.

6. A continuously running concrete mixer in combination with means for intermittently and simultaneously introducing into the mixer in batches separately measured quantities of cement and gravel; means for subsequently adding water; a pipe adapted to supply the water; a valve in the pipe; mechanism connected with and forming part of the apparatus operating with the gravel and cement introducing means to operate the valve to permit of water flowing only when gravel and cement are being introduced into the mixer; and means for varying the flow of the pipe, substantially as described.

7. A cylindrical rotary concrete mixer having an inlet opening at one end and a discharge opening at the other in combination with a chute leading into the inlet; means for dumping a measured quantity of cement into the chute; a gravel receptacle; a normally upwardly inclined gravel chute connected therewith; hinged above the inlet chute; mechanism connected with and forming part of the apparatus for swinging up the receptacle to dump its contents onto the inlet chute; and means for causing the simultaneous operation of the cement and gravel dumping means, substantially as described.

851,687. METHOD OF EXTRACTING TURPENTINE AND OTHER PRODUCTS FROM WOOD. MALCOLM MCKENZIE, Plainfield, N. J. Filed Apr. 21, 1906. Serial No. 313,083.

Claim.—1. The method of treating wood which consists in subjecting the wood to the action of a bath in a suitable closed vessel, removing the bath and the extracted products to a separate vessel and agitating and reducing the temperature of the same to remove the extracted products by injecting a gaseous fluid, then reheating the bath to its former temperature and returning the same to the vessel containing the wood.

2. The herein described method of treating wood which consists in subjecting the wood to the action of a suitable bath, removing portions of the bath and the extracted products, reducing the temperature of such removed portions to extract the desired products unchanged and then returning the same to the bath.

3. The method of treating wood which consists in subjecting the wood to the action of a bath, continuously removing a portion of the bath and the products contained therein, agitating and cooling such removed portions so as to extract the desired products unchanged and then returning said portion to the original bath.

4. The method of treating wood which consists in subjecting the wood to the action of the bath, continuously removing a portion of the bath and the contained products, agitating and cooling such removed portion by steam to

extract the desired products, then reheating such removed portion of the bath to its original temperature and returning the same to the bath.

851,688. SIPHONING DEVICE. JAMES T. MCKINNON, Detroit, Mich. Filed Sept. 17, 1906. Serial No. 334,886.

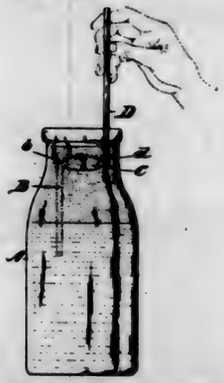

Claim.—1. A siphoning device composed of a short, rigid nipple, and rigid short and long tubes detachably and rotatably connected with opposite ends of the nipple, the body portion of each tube lying at a right angle to the nipple.

2. A siphoning device consisting of a long and a short tube having ends bent at right angles, a sleeve providing a swivel connection between the tubes, whereby to start the siphon the short leg of the siphon together with its swivel connection with the long leg can be immersed in the fluid to be decanted and while the shorter leg only is immersed the long leg may be turned downwardly with respect to the short leg, substantially as described.

3. The combination with a milk jar; of a siphoning device consisting of a long and a short tube having ends bent at right angles, a sleeve providing a swivel connection between the two, whereby to start the siphon the shorter leg of the siphon and the swivel connection together with a portion of the longer tube may be immersed in the milk to be decanted, and while the shorter leg only is immersed, the longer leg may be turned downwardly with respect to the jar.

851,689. MOTOR-VEHICLE. ALDEN L. MCMURTRY, New York, N. Y. Filed Jan. 28, 1907. Serial No. 354,393.

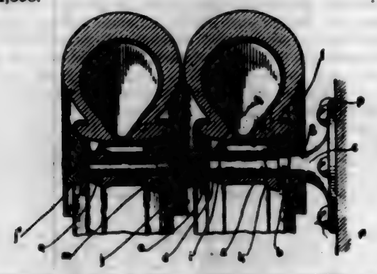

Claim.—1. A motor driven vehicle comprising reserve rim supporting devices consisting of oppositely disposed bolts projecting laterally from the body of the vehicle, a suitable rim seat carried by each bolt and adapted to receive a wheel rim, and rim retaining nuts screwing upon threads of the bolt and acting to clamp the rim on said seat to hold said rim in position.

2. A motor driven vehicle comprising reserve rim supporting devices consisting of oppositely disposed bolts projecting laterally from the body of the vehicle, each bolt being threaded at its end and intermediate its ends a rim seat between the intermediate thread and the body of the carriage adapted to receive and hold a wheel rim, a clamp nut on this threaded portion of each bolt, a second rim seat carried by each bolt and located between its end and the intermediate thread thereof and a rim retaining clamp nut on the end thread of each bolt.

3. A motor driven vehicle comprising reserve rim supporting devices consisting of oppositely disposed bolts projecting laterally from the body of the vehicle, a rim seat carried by each bolt consisting of a circular sleeve surrounding the bolt, formed with inclined rim seats of unequal height and adapted to receive a wheel rim having corresponding surfaces adapted to fit upon the rim seats and rim retaining nuts applied to threaded portions of the bolt.

4. A motor driven vehicle comprising reserve rim supporting devices consisting of oppositely disposed bolts projecting laterally from the body of the vehicle, a suitable rim seat carried by each bolt and adapted to receive a wheel rim, and means acting upon the wheel rim to retain it in position on the rim seat.

851,690. ELECTRIC SWITCH MECHANISM. FRANK C. NEWELL, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Aug. 11, 1902. Serial No. 119,290.

Claim.—1. An electric switch mechanism comprising two main terminals relatively movable toward and from each other, an electromagnetic coil for energizing each of said terminals, two sets of connections to these coils and a switch interposed between the sets, so arranged that in one position of the switch the coils are energized oppositely to produce a closure of the tetrminals and in another position are energised similarly to open the terminals.

2. The combination in an electric switch mechanism of two main conductor terminals relatively movable toward and from each other, said terminals being provided with coils to magnettise them whereby they will close the circuit passing through the main terminals by magnetic attraction, and open the said circuit by magnetic repulsion, and means for energising the coils comprising connections with a source of electricity governed by a switch whereby the direction of current in one coil may be reversed.

3. An electric switch mechanism comprising two main terminals relatively movable toward and from each other, an electro-magnetic coil for energising said terminals, and a pilot switch with connections whereby to energise said coils in a manner to produce unlike polarity of the terminals, to close the circuit, and to energise said coils in a manner to produce like polarity of the terminals, to open the circuit, substantially as described.

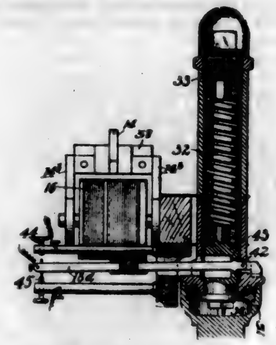

4. The combination in an electric switch mechanism comprising two main terminals relatively movable toward and from each other, an energizing winding for said terminals, and a pilot switch with connections whereby the winding is energized to secure the attraction of the terminals and their closures when the pilot switch is in one position, and to secure the repulsion of the terminals and their opening when the pilot switch is in its other position.

5. The combination in an electric switch mechanism, of two main conductor terminals having magnetizable parts and movable toward and from each other, coils for energizing such terminals, and means whereby the direction of the current through the coils may be governed so that the terminals will either repel each other to break the main circuit or attract each other to close such circuit.

6. The combination with a pair of separable contact terminals having magnetizable parts, of coils for energizing such terminals, and connections and a switch whereby the direction of the current through one of the coils may be reversed so that the terminals will either repel each other or attract each other.

851,691. ELECTRIC SWITCH MECHANISM. FRANK C. NEWELL, Wilkinsburg, Pa., assignor to Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Aug. 2, 1905. Serial No. 272,373.

Claim.—1. The combination in switch mechanism of a pair of separable contact terminals having magnetizable parts, an energizing winding, means including a switch whereby the current through the winding may be governed so that the terminals will either repel each other to break the circuit or attract each other to close such circuit and fluid operated means adapted to operate the said switch.

2. The combination in switch mechanism of a pair of separable contact terminals having magnetizable parts, an energizing winding, means including a switch whereby the current through the winding may be governed so that the terminals will either repel each other to break the circuit or attract each other to close such circuit and spring means for accelerating the opening of the terminals.

3. The combination in switch mechanism of a pair of separable contact terminals having magnetizable parts, an energizing winding, means including a switch whereby the current through the winding may be governed so that the terminals will either repel each other to break the circuit or attract each other to close such circuit, a spring for accelerating the opening of the terminals and means adapted to place the spring under tension during the closing of the switch.

4. The combination in switch mechanism of a pair of separable contact terminals having magnetizable parts, an energizing winding, means including a switch whereby the current through the winding may be governed so that the terminals will either repel each other to break the circuit or attract each other to close such circuit, an operating member having a spring connection with the terminals and a second connection with the switch so arranged that yielding pressure may be applied to the terminal members tending to separate them before the switch is closed.

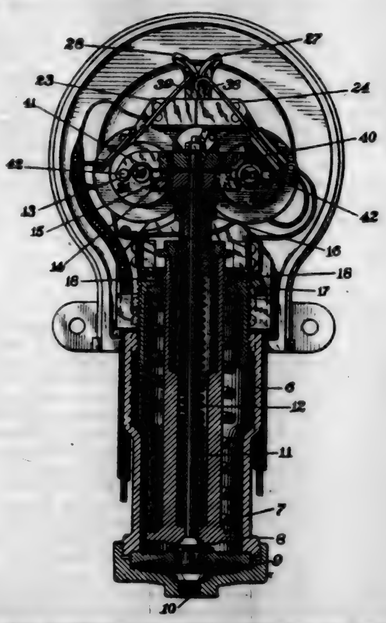

5. The combination in switch mechanism of a pair of separable contact terminals having magnetizable parts, an energizing winding, means including a switch whereby the current through the winding may be governed so that the terminals will either repel each other to break the circuit or attract each other to close such circuit, and means for operating the switch and for applying pressure to the terminals tending to move them.

6. The combination in switch mechanism of a pair of separable contact terminals having magnetizable parts, an energizing winding, means including a switch whereby the current through the winding may be governed so that the terminals will either repel each other to break the circuit or attract each other to close such circuit and means for operating the switch and for applying yielding pressure tending to separate the contact terminals preliminary to the closing of the switch.

7. In combination, separable contact terminals, energizing windings for the terminals, means for operating the terminals, yielding means between the operating means and the terminals, a pair of contact members for controlling the energizing of the coils, a connection whereby the coils are energized to attract when the contact members are separated and means whereby the contact members are made to engage after the yielding means have been actuated.

8. In combination, a pair of oscillatory terminals having magnetizable parts, an energizing winding and a pair of oscillatory switch members so arranged that when the switch members are separated the terminals are energized for attraction and when in contact for repulsion, a reciprocatory spring supported means for oscillating the terminals out of engagement, means for swinging the switch members into contact and an operating means for moving such last means and the spring supported means together.

9. In combination, a pair of oscillatory terminals having magnetizable parts, an energizing winding and a pair of oscillatory switch members so arranged that when the switch members are separated the terminals are energized for attraction and when in contact for repulsion, a spring supported yoke having engagement with the terminals, a second yoke having engagement with the switch members, and a reciprocatory member having engagement with both yokes and adapted on a forward movement to first place the terminal members under a resilient opening pressure and on a further movement cause the engagement of the switch members.

851,692. AUTOMATIC BLOCK-SIGNAL SYSTEM. FRANK P. J. PATENALL and GEORGE H. DRYDEN, Baltimore, Md. Filed Dec. 4, 1906. Serial No. 346,238.

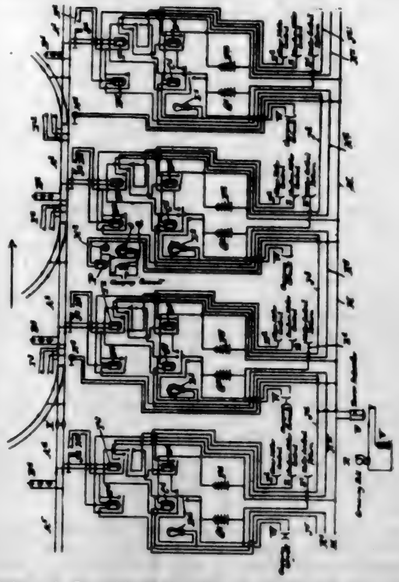

Claim.—1. In a block signaling apparatus the combination with a series of normally closed rail circuits and circuit closers controlled by said circuits, of signaling circuits normally shunted by said circuit closers and adapted to be established to render the signals operative by the presence of a train on the track sections.

2. In a block signaling apparatus, the combination with a series of normally closed rail circuits and circuit closers controlled by said circuits, of a series of signal circuits normally shunted by said circuit closers but established by said circuit closers when the rail circuits are shunted to render the signals operative.

3. In a block signaling apparatus, the combination with a series of normally closed rail circuits and circuit closers controlled thereby, of indicator and clearing circuits normally established by said circuit closers and a series of signal circuits normally shunted by said circuit closers but established by said circuit closers when the rail circuits are shunted to render the signals operative.

4. In a block signaling apparatus, the combination with a series of normally closed rail circuits and track relays controlled thereby, a circuit controlled by two successive track relays and including a distant and a preliminary relay in series, normally closed contacts controlled by the preliminary relay, a combined clearing and indicating circuit including the preliminary relay contacts and contacts controlled by a track relay, said two last mentioned circuits being interrupted when the rail circuits are shunted thereby preventing signals in rear of trains and indicators ahead of trains from clearing and also causing signals ahead of trains to clear when the track circuits ahead of trains are not shunted.

5. In a block signaling apparatus, the combination with a series of normally closed rail circuits and circuit closers controlled thereby, of indicator and clearing and distant circuits normally established by said circuit closers and interrupted thereby when the rail circuits are shunted to move the indicators to danger and prevent the clearing of the block signals.

6. In a block signaling system the combination of a series of normally closed and energized track circuit sections, circuit closers controlled thereby, distant relay circuits normally closed by said circuit closers and each including a distant relay and a preliminary relay embodying shunt coils normally in series and of such resistance as to prevent the operation of the distant relay, automatic signals having a preliminary or caution position controlled by the track section circuit closers, circuit closers controlled by the signals to shunt the preliminary relay coils, reduce the circuit resistance and render the distant relay operative to clear a signal previously moved to the caution position.

7. In a block signaling system the combination of a series of normally closed and energized track circuit sections, circuit closers controlled thereby, distant relay circuits normally closed by said circuit closers and each including a distant relay at the home station and a preliminary relay at a succeeding station embodying shunt coils normally in series and of such resistance as to prevent the operation of the distant relay, automatic signals having a preliminary or caution position controlled by the track section circuit closers, circuit closers closed by the signals when in caution and clear positions to shunt the coils of the preliminary relay, reduce the circuit resistance and render the distant relay at the home station operative and a clear signal operating circuit established by said distant relay to clear the signal when the said succeeding signal is in caution position.

8. In an automatic block signaling system, the combination of normally closed track circuit sections and independent normally open signal lighting circuits controlled by the track circuits, associated with mechanical signals rendered visible by the closing of the lighting circuits.

9. In an automatic railway block signaling system, the combination of a plurality of normally closed track circuit sections and a plurality of independent normally open signal lighting circuits each controlled by the immediate and next preceding track circuit sections whereby the signals are lighted a section in advance of that in which a train may be located and extinguished only after the train has passed out of the immediate section.

10. In an automatic railway block signaling system, the combination of a plurality of normally closed track circuit sections and a plurality of independent normally open signal lighting circuits each controlled by two sections of track circuit to light the signals during the presence of a train in either section.

11. In an automatic railway block signaling system the combination of a plurality of normally closed track circuit sections, circuit closers controlled thereby, normally energized relays corresponding in number to the track circuit sections and each controlled by two sections of track circuit and independent signal lighting circuits one for each relay and including a circuit closer normally held open through the action of said relay but released to close the lighting circuit when a train is in either of the controlling track sections.

12. In an automatic block signaling system, the combination of a plurality of normally closed track circuit sections, normally closed circuit closers controlled thereby, normally energized relays one for each section and included in a circuit controlled by two track section circuit closers, normally open independent local signal lighting circuits a circuit closer for each lighting circuit controlled by one of said relays and released to light the signal lights by opening of the relay circuit through the presence of a train in either of the controlling track sections or through failure of the line wires.

13. In an automatic block signaling system, the combination of normally closed track circuit sections, normally open lighting circuits, normally shunted signaling circuits and circuit closers controlled by the track circuits to close the lighting circuits and open the signal circuit shunts when the track circuits are shunted.

14. In an automatic block signaling system, the combination of normally closed track circuit sections, normally open lighting circuits, normally shunted signaling circuits, normally closed indicator and clearing relay circuits, and circuit closers controlled by the track circuits to close the lighting circuits, open the shunts of the signal circuits and open the indicator and clearing relay circuits when the track circuits are shunted.

15. In an automatic block signaling system the combination of normally closed track circuit sections, normally inoperative local signal circuits, normally closed distant and preliminary relay circuits, distant and preliminary relays in said last mentioned circuits and circuit closers controlled by the track circuit sections and distant relays for establishing the signal circuits to operate the signals.

16. In an automatic block signaling system the combination of normally closed track circuit sections, normally inoperative local caution and clear signal circuits, normally closed distant and preliminary relay circuits, distant and preliminary relays in said last mentioned circuits, circuit closers operated by the track circuits for establishing the relay circuits, circuit closers operated by the distant relay and by the track circuits for establishing the clear signal circuit, the circuit closers controlled by the track circuits also operating to establish the caution signal circuits independently of the distant relays.

17. In an automatic block signaling system the combination of a plurality of automatic signals normally indicating danger but adapted to indicate caution or clear and located respectively at the entrance to the blocks, local signal circuits for moving said signals to caution and clear positions, normally closed line circuits between stations including circuit controllers for the signal circuits whereby the movement of the signal at one station is dependent upon conditions existing at another station and circuit controllers at each station operated by the track section circuit for that block also controlling a signal circuit, and when the line circuits are broken or inoperative, operating to establish said signal circuit to hold the signal out of the danger position, but permitting it to move to danger when the track section is occupied.

18. An automatic block signaling system wherein the signals normally stand at stop or danger, track and line circuits operating to control the movement of said signals from danger to caution or clear positions in advance of an approaching train and also embodying signaling circuits controlled from the track circuits alone when the line circuits are broken or inoperative for holding said signals normally out of the danger position but permitting any signal to go to danger when the track section controlled by that signal is occupied by a train, the breaking of the line circuits thus transposing the system from a normal danger into a normal caution or clear system.

19. In an automatic signaling system, the combination of a plurality of automatically controlled signals, normally indicating stop, normally closed track circuits shunted by a train in the immediate block section, normally closed distant control and preliminary relay circuits operated by two sections of track circuit, normally closed indicator and clearing relay circuits operated by a preliminary, and a track relay switch, normally shunted signaling circuits controlled by a clearing relay switch to remove the shunt and give power to the signal motor through an immediate track relay switch, to give a caution indication and also to give power through an additional relay switch controlled by a second section of track circuit and a circuit closer on the signal in advance to give a clear indication.

20. In an automatic block signaling system, the combination of the track circuit sections including track relays

a signal normally indicating stop located at the entrance to each block section and adapted to give a plurality of indications, signal motor control circuits for controlling the movement of the signal away from stop position and normally shunted, a clearing relay for removing the shunt from the signal circuit and giving power through the track relay switch to give a caution indication, a preliminary relay having two windings and a distant relay in series therewith but at the opposite end of the distant wire, the preliminary relay being of high resistance and having its armature normally attracted, the distant relay being of low resistance and having its armature normally at rest against a back stop, a circuit closer on the caution indicating mechanism for shunting part of the coils of the preliminary relay to increase the current in the distant wire to render the distant relay operative and a circuit closer controlled by the armature of the distant relay and included in the clear signal motor control circuit.

21. In an automatic block signaling system the combination with normally closed track circuits including track relays, and signal circuits controlled by said relays, of a distant line wire having two relays of different resistance in series but at opposite ends of a block section for controlling the clear signal circuit and both controlled by an immediate and an advance track circuit relay.

22. In an automatic block signaling system, normally closed track circuits including track relays, normally closed indicator and clearing relay circuits in multiple and each controlled by two preceding track relays, and signals controlled by said circuits.

23. In an automatic block signaling system the combination of track circuit sections, normally open lighting circuits, and normally closed clearing circuits between block stations including relays for holding the lighting circuits open, whereby upon breaking or failure of any clearing circuit the signal in advance of the break will be lighted.

24. In a block signal system the combination of a signal giving home and distant indications for each block section a distant control and a preliminary relay of different resistances in series with a battery in the same line but at opposite ends of a circuit, a circuit controller operated by a second home signal for shunting out a part of the resistance included in one relay when said home signal is clear, the operation being that when all the resistance in both relays is in the line circuit the preliminary relay only will respond to the circuit of the battery, but when a part of the resistance of one relay is shunted out of the circuit both relays will respond to the current of the battery.

25. In an automatic signaling system, the combination of normally closed track circuits and normally open circuits for lighting switch lamps, associated with mechanical switch signals lighted by said lamps.

26. In an automatic signaling system, the combination with normally closed track circuits, normally open switch lighting circuits, normally closed clearing circuits, all so arranged that the breakage of any or all the controlling line wires, de-energizes the clearing relays causing switch lamps to burn continuously.

27. In an automatic block signaling system, the combination with normally closed track circuit sections including track relays, and contact fingers controlled by said relays, of signal motor circuits normally established through said contact fingers and broken when the relays are de-energized and a shunt for the signal circuits closed by the back movement of said fingers, whereby the possibility of the signals remaining at clear when danger conditions exist is eliminated.

851,693. LOOSE-LEAF BINDER. WILLETT M. RAYNOR, New York, N. Y. Filed July 19, 1906. Serial No. 326,929.

Claim.—1. A structure such as described comprising opposed cover clips, split posts carried by one of the clips sectional posts connecting the clips, certain of said posts engaging the split posts and resilient means for forcing the split posts in engagement with the second named posts.

2. A structure such as described comprising opposed cover clips, split posts carried by one of the clips, sectional posts connecting the clips, certain of said posts engaging the split posts and a spring for forcing the split posts in engagement with the second named posts.

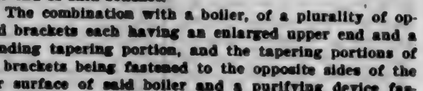

3. A structure such as described comprising opposed cover clips, split posts carried by one of the clips sectional posts connecting the clips, certain of said posts engaging the split posts, a spring for forcing the split posts in engagement with the second named posts, and means for adjusting the tension of the spring.

851,694. CLEANER FOR STEAM-BOILERS. FREDRICK G. ROGERS, Buffalo, N. Y. Filed Mar. 13, 1906. Serial No. 305,784.

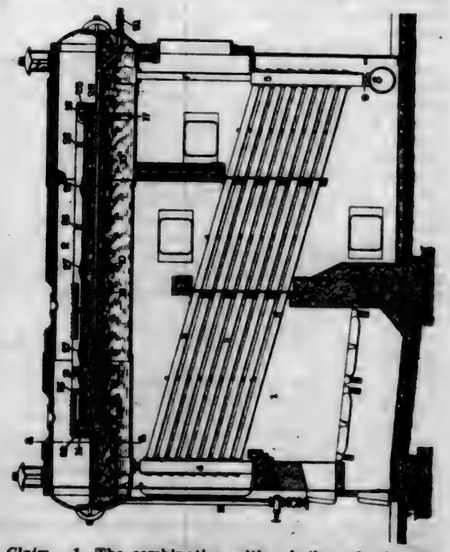

Claim.—1. The combination with a boiler, of a bracket having an enlarged upper end provided with a flat side and a depending tapering portion which is attached to the inner surface of said boiler and a purifying trough fastened to the flat side of the enlarged upper end of said bracket.

2. The combination with a boiler, of a bracket having a depending portion attached to the inner surface of the side of said boiler and a purifying trough bolted to the upper end of said bracket.

3. The combination with a boiler, of a plurality of opposed brackets each having an enlarged upper end and a depending tapering portion, and the tapering portions of said brackets being fastened to the opposite sides of the inner surface of said boiler and a purifying device fastened to the enlarged upper ends and supported from and between said brackets.

4. A purifying device for boilers consisting of a curved bottom plate, two side plates, two end plates, a series of transverse partitions having curved bottom edges to correspond to the curve of the bottom plate and openings near the bottom thereof, and a longitudinal blow out pipe arranged and supported in the space formed by the curve of the bottom plate, and passing through the openings in the transverse partitions, substantially as set forth.

5. A purifying trough for boilers consisting of a curved or rounded bottom plate, two side plates lapped on and bolted to the bottom plate, two end plates each bolted to and forming the respective ends of the trough, a series of upper and lower transverse partitions arranged alternately at suitable intervals, said lower partitions having curved lower edges to correspond to the curve of the bottom plate and openings near the bottom thereof, and a longitudinal blow out pipe located near the bottom and passing through the openings in and supported by some of the transverse partitions; one end of said blow out pipe being terminated near one end of the trough and being closed by a cap and the opposite end being extended through the opposite end of the trough and through the boiler end, and said blow out pipe being also provided on its under surface with a series of openings, substantially as set forth.

6. The combination with a boiler, of opposed curved brackets fastened to opposite sides of said boiler and a plurality of connected purifying troughs arranged side by side in said boiler and secured to the upper ends of said brackets.

7. The combination with a boiler of opposed curved tapering brackets fastened to opposite side of said boiler and a plurality of purifying troughs located in said boiler in parallel longitudinal arrangement and secured to the upper ends of said brackets.

8. The combination with a boiler, of a plurality of purifying troughs arranged side by side in said boiler, transverse pipes connecting said troughs at or near each end, an inlet connected to one of said transverse pipes, and an outlet pipe extending from the other transverse pipe.

9. The combination with a boiler, of a plurality of purifying troughs arranged side by side in said boiler, transverse pipes connecting said troughs at or near each end, an inlet connected to one of said transverse pipes, an outlet pipe extending from the other transverse pipe, and an independent blow out pipe in each of the troughs.

10. The combination with a boiler, of a plurality of purifying troughs connected together to have a common inlet and outlet and an independent blow out pipe in each of the purifying troughs.

851,695. ROTARY CONVERTER SYSTEM. WALTER S. RUGG, New York, N. Y., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Jan. 30, 1906. Serial No. 243,290.

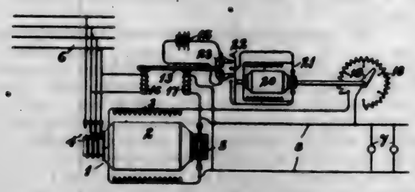

Claim.—1. The combination with a rotary converter and a rheostat for varying its field magnetization, of two opposing electro-magnetic devices connected to the movable member of the rheostat one of which is energized from the alternating current circuit and the other of which is energized from the direct current circuit to which the rotary converter is connected.

2. The combination with a rotary converter and a speed regulating device therefor, of two opposing controlling devices for said speed regulating device that are respectively energized from the alternating current circuit and from the direct current circuit to which the rotary converter is connected.

3. The combination with a rotary converter and speed regulating means therefor, of two opposing magneto-electric adjusting devices for said speed regulating means, one of which is energized from the alternating current circuit, and the other of which is energized from the direct current circuit to which the rotary converter is connected.

4. The combination with a rotary converter and a speed regulating means therefor, of two opposing electro-magnetic devices for adjusting said speed regulating means and electrical connections between said opposing devices and the respective circuits to which the rotary converter is connected.

5. The combination with a rotary converter and means for adjusting the field magnet excitation thereof, of a motor for actuating said adjusting means and an electromagnetic device having opposing windings that are respectively connected to the alternating current circuit and to the direct current circuit to which the rotary converter is connected, for controlling the direction of rotation of said motor in accordance with the rate of alternations in said alternating current circuit.

6. The combination with a rotary converter and a rheostat, of an electro-magnetic means for connecting more or less of the resistance of said rheostat in circuit with the field magnet winding of the rotary converter, said electromagnetic means having two windings that are respectively connected to the alternating current circuit and to the direct current circuit of the rotary converter so that each shall oppose the other.

851,696. FOLDING LADDER. NICKOLAUS SCHAEFER, St. Francis, Wis. Filed Aug. 27, 1906. Serial No. 332,097.

Claim.—1. The combination of a set of ladder members, one having rails connected to its side bars and the other having connecting members at its upper end loosely engaging said rails, together with a locking device carried by a connecting member and adapted to engage in suitable apertures in the corresponding rail.

2. The combination of a set of ladder members, one having rails connected to its side bars and the other having connecting members at its upper end loosely engaging said rails, a brace member pivotally secured to last mentioned ladder member, and connecting members thereon loosely engaging said rails.

3. The combination of a set of ladder members, one having rails connected to its side bars and the other having connecting members at its upper end loosely engaging said rails, a brace member pivotally secured to last mentioned ladder member, and connecting members thereon loosely engaging said rails, together with means for locking the brace members to the rails.

4. The combination with a ladder member provided with a connecting member and a brace member each connected with the ladder member; and a second ladder member having sliding engagement with the connecting and brace members.

5. The combination of a set of ladder members, one having a connecting member at its upper end and a brace member in a lower position, each slidingly engaging the other ladder member; and means for locking the ladder members in any desired position of relative adjustment.

851,697. BALL-HOLDING RING FOR BALL-BEARINGS. STEFAN SCHNEIDER, Charlottenburg, Germany. Filed July 7, 1906. Serial No. 325,100.

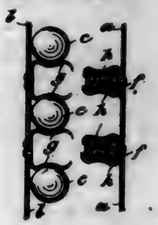

Claim.—A ball-holding ring for ball bearings comprising two oppositely disposed annuli or cage-rings having U-shaped distance pieces secured to one annulus and U-shaped holders filled with resilient material secured to the other annulus and adapted to fit into said distance pieces, substantially as described.

851,698. DEVICE FOR LOCATING AND RAISING SUNKEN BOATS. CHARLES L. SLATTERY and SIMION SAMBUR, Chicago, Ill. Filed Mar. 12, 1906. Serial No. 305,488.

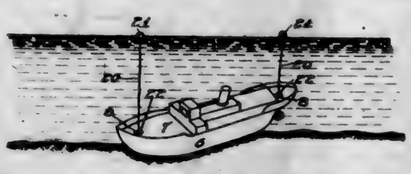

Claim.—In a device for the purpose described, a grappling hook means for securely hinging said hook to the deck of a boat, a float, a rope connecting said float and hook and gripping jaws and a ring from which said jaws are loosely suspended, a cable secured to said ring and suspending said jaws, and bolts passing through said jaws and limiting their movement away from each other, substantially as described.

851,699. CORN-SHOCKING MACHINE. DANIEL W. SMITH, Chicago, Ill., assignor to International Harvester Company, a Corporation of New Jersey. Filed July 7, 1906. Serial No. 325,071.

Claim.—1. A corn shocking machine comprising, in combination, a swinging boom, a shock-former, hoisting means connecting the shock-former with said boom, a series of radially projecting arms pivotally connected with said shock-former, releasable mechanism adapted to lock said arms in a radial position, means for releasing said locking mechanism, said means comprising a vertically arranged tripping-bar connected with said locking mechanism, and a lever mechanism mounted upon said boom under control of the operator and adapted to move said tripping-bar independently of said shock-former.

2. A corn shocking machine comprising, in combination, a swinging boom, a shock-former, hoisting means connecting said shock-former with said boom, a series of radially projecting arms pivotally connected with said shock-former, releasable mechanism adapted to lock said arms in radial position, means for releasing said locking mechanism, said means comprising a vertically arranged tripping-bar connected with said locking mechanism, and a lever mechanism mounted on said boom under control of the operator and adapted to clutch said tripping-bar when said lever is moved in one direction in a manner to move said bar vertically independent of the shock-former.

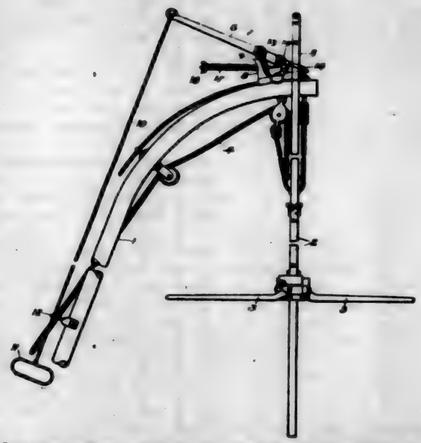

3. A corn shocking machine comprising, in combination, a swinging boom, a shock-former, hoisting means connecting said shock-former with said boom, a series of radially projecting arms pivotally connected with said shock-former, releasable mechanism adapted to lock said arms in radial position, means for releasing said locking mechanism, said means comprising a vertically arranged tripping-bar connected with said locking mechanism, a two-part lever pivotally mounted upon said boom having a hand operative rod connected with one end thereof and its opposite end adapted to engage with said tripping-bar and move it vertically when said two-part lever is moved in one direction.

4. A corn shocking machine comprising, in combination, a swinging boom, a shock-former, hoisting means connecting said shock-former with said boom, a series of radially projecting arms pivotally connected with said shock-former, releasable mechanism adapted to lock said arms in radial position, means for releasing said locking mechanism, said means comprising a vertically arranged tripping-bar connected with said locking mechanism, a two-part lever pivotally mounted on said boom having a hand operative rod connected with one part thereof and the other part provided with a loop embracing said tripping-bar and adapted to clutch therewith when said lever is moved in one direction.

5. A corn shocking machine comprising, in combination, a swinging boom, a shock-former, hoisting mechanism connecting said shock-former with said boom, a series of radially projecting arms pivotally connected with said shock-former, releasable mechanism adapted to lock said arms in radial position, means for releasing said locking mechanism, said means comprising a vertically arranged tripping-bar connected with said locking mechanism, a two-part lever pivotally mounted on said boom having a hand operative rod connected with one part thereof, and the other part provided with a loop loosely embracing said tripping-bar when said two-part lever is in a normal position, and adapted to clutch said bar when the lever is moved away from said position, a spring operative to yieldingly hold said lever in normal position, and stop shoulders on one part of said lever contacting with the other part when the lever is in normal position.

851,700. CORN-SHOCKING MACHINE. DANIEL W. SMITH, Chicago, Ill., assignor to International Harvester Company, a Corporation of New Jersey. Filed July 26, 1906. Serial No. 327,824.

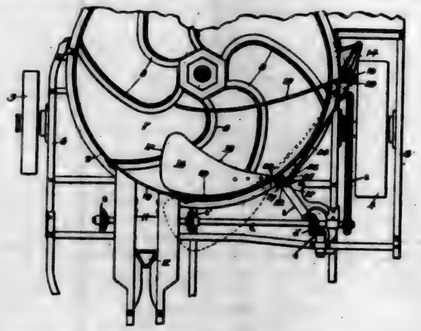

Claim.—1. A corn shocking machine comprising, in combination, a cutting mechanism, a passageway in rear of said cutting mechanism, a rotatable platform at the delivery end of said passageway, a vertically arranged standard pivotally mounted upon a fixed part of the machine, a yielding stalk-guide adapted to overhang said platform and pivotally mounted on a fixed part of the machine, and a link having eccentric connections with said standard and said guide.

2. A corn shocking machine comprising, in combination, a cutting mechanism, a passageway in rear of said cutting mechanism, a rotatable platform at the delivery end of said passageway, a stationary wall surrounding said platform and having an opening therein coinciding with the delivery end of said passageway, a yielding stalk-guide having at one end a vertically arranged shaft secured thereto, said shaft being journaled in bearings secured to said stationary wall, said guide overhanging said platform and having a portion thereof substantially in line with that side of said passageway opposite the direction of rotation of said platform, a vertically arranged standard pivotally mounted on a fixed part of the machine, an arm secured to said vertically arranged shaft, and a yielding link connected eccentrically with said standard and with said arm secured to said vertically arranged shaft.

851,701. CONVEYER. ELMER H. SPEAR, Akron, Ohio. Filed Feb. 8, 1907. Serial No. 356,320.

Claim.—1. A conveyer, comprising a chain-guide-box provided with a longitudinal flanged slot-opening, and a conveyer-chain comprising vertically and horizontally-pivoted links mounted therein and provided with pivotally-mounted bucket-carrier-arms depending through said slot-opening.

2. A conveyer, comprising a chain-guide-box provided with a longitudinal flanged slot-opening, a conveyer-chain mounted therein and comprising vertically and horizontally-pivoted carrying-links and intermediate connecting-links, bucket-carrier-arms pivotally-secured to some of said carrying-links and depending through said slot-opening, and driving-mechanism for imparting motion to said conveyer-chain.

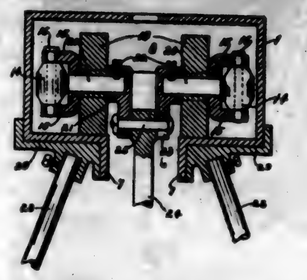

3. A conveyer, comprising a chain-guide-box provided with a longitudinal slot-opening and depending-flanges at the sides of said slot-opening, a conveyer-chain mounted therein and comprising friction-wheel carrying-links and intermediate connecting-links provided with vertical and horizontal pivotal-connections, bucket-carrier-arms pivotally-secured to some of said carrying-links and depending through said slot-opening, and driving-mechanism for imparting motion to said conveyer-chain.

4. A conveyer, comprising a guide-box provided with a slot-opening and depending-flanges, a conveyer-chain comprising friction-wheel carrying-links and connecting-links provided with vertical and horizontal pivotal-connections, bucket-carrier-arms pivotally-secured and depending through said slot-opening, sprocket-drive-wheels engaging said conveyer-chain, and gearing for driving said sprocket-drive-wheels.

5. A conveyer-chain, comprising friction-wheel carrying-links provided with laterally-extending anti-friction rollers, and connecting-links with vertical and horizontal pivotal-connections.

6. In a conveyer-chain, a carrying-link comprising laterally-extending lugs, anti-friction rollers mounted in said lugs, bearings at the rear of said lugs, axle-pins mounted therein and carrying friction-wheels, hanger-lugs formed intermediate said friction-wheels and depending from the central portion of said carrying-link, and a bucket-carrier-arm pivotally-secured to said hanger-lugs.

7. In a conveyer-chain, a carrying-link provided with anti-friction rollers at its sides, sprocket-teeth-openings extending along its length, a friction-wheel on each side of said sprocket-teeth-openings, and a vertical pivot-lug at one end and a horizontal pivot-lug at the other.

8. In a conveyer-chain, a connecting-link provided with sprocket-teeth-openings arranged throughout its length, a pair of vertical pivot-lugs at one end, and a pair of horizontal pivot-lugs at the other.

851,702. ROTARY DRESSING DEVICE. VINZENZ SPIETSCHKA, Cleveland, Ohio. Filed Aug. 13, 1906. Serial No. 330,321.

Claim.—1. A rotary dressing device comprising a motor armature and shaft and a divided handle in the arms of which said shaft is fixed, in combination with a revolving field carrying cylinder mounted at its ends on said shaft, dressing instruments fixed thereon and means to regulate the cut of said instruments.

2. In a rotary dressing device, a motor armature and a double armed handle in which said armature is mounted, in combination with motor fields and a rotatable casing therefor mounted at its ends on the axis of the armature and a dressing member removably supported upon said cas-

ing, said member having a dressing portion running parallel with the surface of said casing lengthwise.

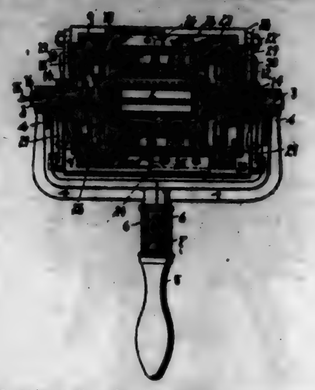

3. In a rotary dressing device, a motor driven casing and a supporting handle in which said casing is mounted, a dressing instrument removably secured upon the outside of said casing, and an adjustable guide-frame adapted for variable setting of said dressing instrument to the work provided with two arms at each end and adapted to rest upon the work both in front and behind the said dressing instrument at the ends thereof.

4. In a rotary dressing device, a double armed handle support and a motor driven casing rotatably mounted therein, a dressing tool removably secured upon the periphery of said casing and a swinging guide frame comprising rollers and adjusting parts adapted to set said dressing tool to the work, said frame having two diverging arms at each end of said cylinder provided with said rollers in their ends and mounted about the axis of said cylinder.

5. In a rotary dressing device, a motor armature and a double armed handle affixed thereto, a rotatable casing having motor fields and contact members mounted in said casing, a dressing tool carrier removably secured upon said casing, and a swinging guide frame for said device having its bearings at each end thereof and outside the path of said casing.

6. In a rotary dressing device, the motor comprising the fixed armature, the revolving fields and current conveying parts and a rotatable support for said fields and double armed handle in which said parts are supported, in combination with a dressing tool removably mounted upon said rotatable support, and a roller guide frame comprising diverging arms at each end and adjustable connections adapted to set said dressing tool to the work.

7. In a rotary dressing device, a motor comprising a stationary armature and rotatable fields and a two armed handle in which said armature is mounted, in combination with a cylindrical casing for said fields, a removable ring about said casing and cutters removably secured to said ring, and a guide-frame comprising diverging arms and rollers thereon with an adjustable connection therefor adapted to set said dressing tools to the work.

851,703. FASTENER FOR LACING-TERMINALS. FANNY H. STRINIOUS, New York, N. Y. Filed Feb. 17, 1906. Serial No. 301,592.

Claim.—1. In combination with the terminals of a lacing, a fastening consisting of a main plate and a loop-plate attached together at one edge at a slight angle to each other to form jam openings therebetween, said lacing terminals passing through the aperture in said loop-plate.

2. The combination with the terminals of a lacing, a fastening consisting of a main plate, and a loop-plate attached thereto on one side and at one edge, the two forming jam-openings therebetween, said terminals being slidably but permanently engaged with said loop-plate and adapted to be forced into said jam-openings to maintain a fixed relation between said terminals and said fastening.

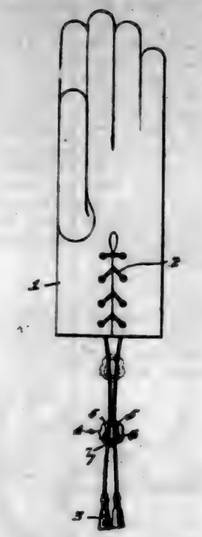

851,704. METHOD OF SPEED REGULATION. NORMAN W. STORER, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed July 24, 1905. Serial No. 271,056.

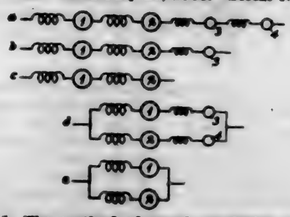

Claim.—1. The method of speed regulation which consists in connecting a large capacity motor in series with a small capacity motor, removing the small capacity motor from the circuit and so reconnecting said small capacity motor in circuit that it will operate as a booster.

2. The method of speed regulation which consists in connecting a plurality of large capacity motors in series with a plurality of small capacity motors, removing the small capacity motors from the circuit, connecting the large capacity motors in series with certain of the small capacity motors and in parallel relation to each other, and again removing the small capacity motors from the circuit.

3. The method of speed regulation which consists in connecting a plurality of large capacity, high voltage motors in series with a corresponding number of relatively small capacity, low voltage motors, removing the small capacity, low voltage motors from the circuit, connecting the large capacity motors in series with the corresponding small capacity motors and in parallel relation to each other, and again removing the small capacity motors from the circuit.

4. The method of speed regulation which consists in connecting a plurality of large capacity, high voltage motors in series with a plurality of small capacity, low voltage motors, removing the small capacity motors from the circuit, connecting the large capacity motors in series with corresponding small capacity motors and in parallel relation to each other, and again removing the small capacity motors from the circuit.

5. The method of speed regulation which consists in connecting a plurality of large capacity motors in series with a plurality of small capacity motors, removing the small capacity motors from the circuit, connecting the large capacity motors in series with certain of the small capacity motors and changing the circuit relations of the large capacity motors, and again removing the small capacity motors from the circuit.

6. The method of speed regulation which consists in connecting a plurality of large capacity, high voltage motors in series with a corresponding number of relatively small capacity, low voltage motors, removing the small capacity, low voltage motors from the circuit, changing the relations of the large capacity motors with respect to each other and connecting them in series with corresponding small capacity motors, and again removing the small capacity motors from the circuit.

7. The method of speed regulation which consists in connecting a plurality of high voltage motors in series with a plurality of low voltage motors, removing the low voltage motors from the circuit, changing the circuit relations of the high voltage motors with respect to each other, connecting them in series with certain of the low voltage motors, and again removing the low voltage motors from the circuit.

8. The method of speed regulation which consists in connecting a plurality of high voltage motors in series with a plurality of low voltage motors, removing the low voltage motors from the circuit, so re-connecting the low voltage in circuit that they will operate as boosters, again removing the low voltage motors from the circuit, changing the circuit relations of the high voltage motors with respect to each other and connecting them in circuit with the low voltage motors, again removing the low voltage motors from the circuit, and again so re-connecting the low voltage motors in circuit that they will operate as boosters.

9. The method of speed regulation which consists in connecting a plurality of large capacity motors in suitable circuit relations with a plurality of small capacity motors, then altering the circuit relations of the motors and finally removing one or more of the small capacity motors from the circuit in accordance with the desired conditions of speed regulation.

851,705. INSULATOR. HUGO STOTS, Mannheim, Germany. Filed Dec. 10, 1906. Serial No. 347,077.

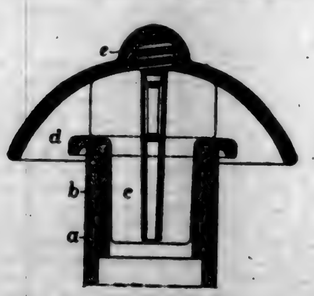

Claim.—1. As an insulator on a tubular support for introducing electric wires into buildings the combination of a socket fitting into the said tubular support, a shouldered piece of star-shaped section fitting into the said socket, and a drip-bell mounted on the said star, the socket, star and bell being made of porcelain, substantially as described.

2. As an insulator on a tubular support for introducing electric wires into a building the combination of a porcelain socket fitting into the said tubular support, a piece of star-shaped section of the same material, a central pin therein with a male screw on top, and a drip-bell with a central female threaded recess adapted to receive the said male screw, substantially as described.

851,706. DEPRESSION RANGE-FINDER. AMBROSE SWASEY, Cleveland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a Corporation of Ohio. Filed Apr. 26, 1906. Serial No. 313,558.

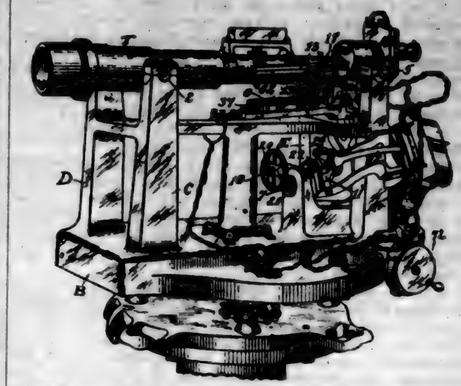

Claim.—1. In a range finder, the combination of a telescope supported to be fitted on an axis, a range indicating mechanism, mechanism operably connecting the indicating mechanism and telescope whereby the indicating mechanism will give the range according to the tilt of the telescope on an axis, said connecting mechanism being adjustable for indicating the range at different altitudes of the range finder, and a corrective mechanism operably connected with said connecting mechanism and organized to further tilt the telescope on said axis to automatically correct for earth's curvature throughout the limits of the range indicator irrespective of the said altitude adjustment of connecting mechanism.

2. In a range finder, the combination of a telescope supported to swing on an axis, a lever pivoted on a different axis, a range indicating mechanism operably connected with said lever, mechanism operably connecting the lever and telescope whereby the indicating mechanism will give the range according to the swing of the telescope on said axis, said connecting mechanism being adjustable for indicating the range at different altitudes of the range finder, and a corrective mechanism operably connected with the mechanism connecting the lever and telescope and organized to further tilt the telescope on said axis to automatically correct for earth's curvature throughout the limits of the range indicator irrespective of the said altitude adjustment of connecting mechanism.

3. In a range finder, the combination of a telescope supported to swing on an axis, a lever pivoted on an axis parallel with said axis, a range indicating mechanism operably connected with said lever, mechanism operably connecting the lever and telescope whereby the indicating mechanism will give the range according to the swing of the telescope on said axis, said connecting mechanism being adjustable for indicating the range at different altitudes of the range finder, and a corrective mechanism operably connected with the mechanism connecting the lever and telescope and organized to further swing the telescope on said axis to automatically correct for earth's curvature throughout the limits of the range indicator irrespective of the said altitude adjustment of connecting mechanism.

4. In a range finder, the combination of a telescope mounted to tilt, a pivoted lever, a range indicating mechanism operably connected with the lever, a carriage movable on said lever and having an operable connection with the telescope whereby the tilting of the telescope will be indicated by the range indicating mechanism, said carriage being movable on the lever for varying the range indication of the telescope movement to correspond with different altitudes of the range finder, and a corrective mechanism having a member operating between the carriage and telescope, such mechanism being organized to

further tilt the telescope to automatically correct for earth's curvature throughout the range indications of the indicating mechanism, irrespective of the altitude adjustment of the carriage on the said lever.

5. In a range finder, the combination of a telescope mounted to swing on an axis transverse thereto, a lever pivoted on a different axis, a range indicating mechanism operably connected with the lever, a carriage movable on said lever and having an operable connection with the telescope whereby the swinging of the telescope will be indicated by the range indicating mechanism, said carriage being movable on the lever for varying the range indication of the telescope movement to correspond with different altitudes of the range finder, and a corrective mechanism having a member operating between the carriage and telescope, such mechanism being organized to further tilt the telescope to automatically correct for earth's curvature throughout the range indications of the indicating mechanism, irrespective of the altitude adjustment of the carriage on the said lever.

6. In a range finder, the combination of a telescope mounted to tilt, a pivoted lever, an indicator mechanism operably connected with such lever, a carriage movable on said lever, a cam member movable on the carriage and engaging the telescope member by its cam surface to tilt the telescope upon the cam being swung on the carriage, the carriage being adjustable on the lever to vary the relative movement of the telescope and range indicator to provide for the range indication for different altitudes of the range finder, and mechanism operably connected with the range indicating mechanism and organized to swing said cam on the carriage by a certain movement relative to the range indicating movement that is constant for all positions of the carriage on its supporting lever throughout the limits of its adjustment for altitude.

7. In a range finder, the combination of a telescope mounted to swing on a transverse axis, a lever mounted to swing on an axis parallel with said axis, an indicator mechanism operably connected with such lever, a carriage movable on said lever, a cam member movable on the carriage and engaging the telescope member by its cam surface to tilt the telescope upon the cam being swung on the carriage, the carriage being adjustable on the lever to vary the relative movement of the telescope and range indicator to provide for the range indication for different altitudes of the range finder, and mechanism operably connected with the range indicating mechanism and organized to swing said cam on the carriage by a certain movement relative to the range indicating movement that is constant for all positions of the carriage on its supporting lever throughout the limits of its adjustment for altitude.

8. In a range finder, the combination of a telescope mounted to tilt, a bent lever, an indicating drum, one arm of said lever having a toothed segment, a rotatable shaft carrying the drum and provided with a worm engaging said segment whereby the rotation of the drum will swing the lever, a pointer adjacent the drum, a carriage movable on the other arm of the lever, means operably connecting the carriage and telescope whereby the tilting of the telescope by the movement of the drum will cause the range to be indicated on the drum, the carriage being movable on its supporting lever for adjustment to vary the range indications according to different altitudes of the range finder, and corrective mechanism having a member operable in the connection between the carriage and telescope, such corrective mechanism being operably connected with the drum shaft and organized to tilt the telescope to correct for earth's curvature accurately for all the said range indications and which correction is constant throughout the adjustment of the carriage for different altitudes.

9. In a range finder, the combination of a telescope mounted to swing on a transverse axis, a bent lever mounted to swing on an axis parallel with said axis, an indicating drum, one arm of said lever having a toothed segment, a rotatable shaft carrying said drum and provided with a worm engaging said segment whereby the rotation of the drum will swing the lever, a pointer adjacent the drum, a carriage movable on the other arm of the bent lever, means operably connecting the carriage and telescope whereby the tilting of the telescope by the movement of the drum will cause the range to be indicated on the drum, the carriage being movable on its supporting lever for adjustment to vary the range indications for different altitudes of the range finder, and corrective mechanism having a member operable in the connection between the carriage and telescope, such corrective mechanism being operably connected with the indicating drum shaft and organized to tilt the telescope to correct for earth's curvature accurately for all the range indications, and which correction is constant throughout the adjustment of the carriage for different altitudes.

10. In a range finder, the combination of a telescope mounted to tilt, a bent lever, one arm of the lever having a toothed segment, a shaft supported to rotate, a worm on said shaft engaging said segment, an indicating drum fast on said shaft, a pointer adjacent the drum, a carriage movably carried by the other arm of the bent lever, a cam member movable on the carriage and engaging the telescope member by its cam surface to tilt the telescope upon the cam being swung, the carriage being adjustable on the lever to vary the relative movement of the telescope and range indicator caused by the swing of the bent lever to provide for the range indication for different altitudes of the range finder, and mechanism connected with the cam member on the carriage and operable from said drum shaft to swing the cam by a certain movement relative to the movement of the drum and which movement is constant for all positions of the carriage on its supporting lever throughout the range of the carriage adjustment for altitude.

11. In a range finder, the combination of a telescope mounted to swing on an axis transverse thereto, a bent lever, pivoted on an axis parallel with the said axis, one arm of the lever having a toothed segment, a shaft supported to rotate, a worm on said shaft engaging said segment, an indicating drum fast on said shaft, a pointer adjacent the drum, a carriage movably carried by the other arm of the bent lever, a cam member movable on the carriage and engaging the telescope member by its cam surface to tilt the telescope upon the cam being swung, the carriage being adjustable on the lever to vary the relative movement of the telescope and range indicator caused by the swing of the bent lever, to provide for the range indication for different altitudes of the range finder, and mechanism connected with the cam member on the carriage and operable from said drum shaft to swing the cam by a certain movement relative to the movement of the drum and which movement is constant for all positions of the carriage on its supporting lever throughout the range of the carriage adjustment for altitude.

12. In a range finder, the combination of a telescope mounted to tilt, a bent lever, one arm of the lever having a toothed segment, a shaft supported to rotate, a worm on said shaft engaging said segment, an indicating drum fast on said shaft, a pointer adjacent the drum, a carriage movably carried by the other arm of the bent lever, a cam member movable on the carriage and engaging the telescope member by its cam surface to tilt the telescope upon the cam being swung, the carriage being adjustable on the lever to vary the relative movement of the telescope and range indicator caused by the swing of the bent lever, to provide for the range indication for different altitudes of the range finder, an arm secured to the cam, a rock bar pivoted on the carriage supporting arm, a slide supported on the carriage to move endwise and engaging the cam arm and the rock bar by its respective ends to cause the swinging of the rock bar to tilt the cam arm, the rock bar and slide on the carriage being relatively arranged whereby the movement of the carriage away from or toward the axis of the telescope will cause the slide to engage the rock bar at a greater or less distance from its axis, and mechanism operably connecting the drum shaft with the rock bar on the lever to swing the rock bar by the rotation of the drum shaft.

13. In a range finder, the combination of a telescope mounted to tilt, a bent lever, one arm of the lever having a toothed segment, a shaft supported to rotate, a worm on said shaft engaging said segment, an indicating drum fast on said shaft, a pointer adjacent the drum, a carriage movable on the other arm of the bent lever, a cam member movably carried by the carriage and engaging the telescope member by its cam surface to tilt the telescope upon the cam being swung, the carriage being adjustable on the lever to vary the relative movement of the telescope and range indicator caused by the swing of the bent lever, to provide for the range indication for different altitudes of the range finder, a spiral cam mounted to rotate on a fixed axis, means for rotating the spiral cam from the drum shaft, an angle lever pivoted on said bent lever with its axis substantially parallel with the axis of the spiral cam, and having one arm engaging the spiral cam, the angle lever and spiral cam being relatively arranged whereby the swinging of the bent lever will rock the angle lever to cause its arm to travel along the rotating cam and be swung thereby, a rock-bar pivoted on the carriage-supporting arm, a lug on the rock-bar engaged by the other arm of the angle lever to swing the rock-bar, an arm secured to the cam on the carriage, a slide movable in the carriage with its respective ends engaging the cam arm and the rock-bar, whereby the rock-bar will swing the cam arm, the rock-bar having its axis inclined relative to the path of travel of the slide thereon whereby movement of the slide along the rock-bar as the carriage is adjusted along its supporting arm will change the distance of the slide from the axis of the rock-bar to vary the swing of the cam by the rock-bar.

14. In a range finder, the combination of a telescope mounted to tilt, a bent lever, one arm of the lever having a toothed segment, a shaft supported to rotate, a worm on said shaft engaging said segment, an indicating drum fast on said shaft, a pointer adjacent the drum, a carriage movably carried by the other arm of the bent lever, a member movable on the carriage engaging the telescope member to tilt the telescope upon such member being moved, the carriage being adjustable on the lever to vary the relative movement of the telescope and range indicator caused by the swing of the bent lever, to provide for the range indication for different altitudes of the range finder, a spiral cam mounted to rotate on a fixed axis, means for rotating the spiral cam from the drum shaft, an angle lever pivoted on said bent lever with its axis substantially parallel with the axis of the spiral cam and having one arm engaging the spiral cam, the angle lever and spiral cam being relatively arranged whereby the swinging of the bent lever will rock the angle lever to cause its arm to travel along the rotating cam and be swung thereby, a rock-bar pivoted on the carriage supporting arm, a lug on the rock-bar engaged by the other arm of the angle lever to swing the rock-bar, mechanism on the carriage connecting the telescope tilting member in the carriage with the rock-bar whereby the rock-bar movement will tilt the telescope, the rock-bar having its axis inclined relative to the path of travel of the carriage on the arm whereby movement of the slide along the rock-bar as the carriage is adjusted along its supporting arm will vary the movement of the said telescope tilting member on the carriage.

15. In a range finder, the combination of a telescope supported to be tilted, a range indicating mechanism, a controlling member arranged to engage the telescope, mechanism operably connecting the indicating mechanism with said controlling member and organized to move said member in one direction to tilt the telescope according to the range indications, said controlling member being movable in another direction to vary the indications corresponding to the tilt of the telescope for different altitudes of the range finder, and mechanism organized to further move said controlling member to vary the amount of tilt of the telescope to correct for earth's curvature according to the range, the latter movement of said member for the same range being varied according to the adjustment of the member for altitudes.

16. In a range finder, the combination of a telescope supported to be tilted, a range indicating mechanism, a controlling member arranged to engage the telescope, mechanism operably connecting the indicating mechanism with the controlling member and organized to move the controlling member bodily in a direction transverse to the telescope to tilt the telescope according to the range indications, the controlling member being bodily movable on the connecting mechanism to be adjusted in a path approximately parallel with the telescope axis to vary the indications corresponding to the tilt of the telescope for different altitudes of the range finder, and mechanism organized to swing the controlling member on an axis to vary the amount of tilt of the telescope to correct for earth's curvature according to the range, the swinging movement of the controlling member for the various ranges being increased or decreased according to the respective movement bodily of such member away from or toward the tilting axis of the telescope.

17. In a range finder, the combination of a telescope supported to be tilted, a range indicating mechanism, a cam member arranged to engage the telescope, mechanism operably connecting the indicating mechanism with the cam and organized to move the cam bodily in a direction transverse to the telescope to tile the telescope according to the range indications, the cam being bodily movable on the connecting mechanism to be adjusted in a path approximately parallel with the telescope axis to vary the indications corresponding to the tilt of the telescope for different altitudes of the range finder, and mechanism organized to swing the cam member on an axis to vary the amount of tilt of the telescope to correct for earth's curvature according to the range, the swinging movement of the cam for the various ranges being increased or decreased according to the respective movement bodily of the cam away from or toward the tilting axis of the telescope.

18. In a range finder, the combination of a telescope supported to be tilted, a range indicating mechanism, a cam member arranged to engage the telescope, mechanism operably connecting the indicating mechanism with the cam and organized to move the cam bodily in a direction transverse to the telescope to tilt the telescope according to the range indications, the cam being bodily movable on the connecting mechanism to be adjusted in a path approximately parallel with the telescope axis to vary the indications corresponding to the tilt of the telescope for different altitudes of the range finder, and mechanism organized to swing the cam member on an axis to vary the amount of tilt of the telescope to correct for earth's curvature according to the range, the rocking movement of the cam being varied according to the said altitude adjustment of the cam to give a constant corrective tilt of the telescope for each range indication.

19. In a range finder, the combination of a telescope mounted to tilt, a pivoted lever, a shaft, an indicating drum fast on said shaft connected with the lever, a carriage movably carried by the lever, a cam member pivoted on the carriage and engaging the telescope member by its cam surface to tilt the telescope upon the cam being swung, the carriage being adjustable on the lever to vary the relative movement of the telescope and range indicator caused by the swing of the said lever, to provide for the range indication for different altitudes of the range finder, an arm secured to the cam, a rock bar pivoted on the carriage supporting arm, a slide movably supported on the carriage and engaging the cam arm and the rock bar by its respective ends to cause the rock bar to tilt the cam arm, the rock bar and slide on the carriage being relatively arranged whereby the movement of the carriage away from or toward the axis of the telescope will cause the slide to engage the rock bar at a greater or less distance from its axis, and mechanism operably connecting the drum shaft with the rock bar on the lever to swing the rock bar by the rotation of the drum shaft.

851,707. HANDLE FOR HAMMERS OR THE LIKE. LEONARD F. TARBELL, Dayton, N. Y. Filed June 16, 1905. Serial No. 265,556.

Claim.—1. A handle of one integral piece of wood or the like having a solid head at one end upon which a hammer head or the like is fitted and a hand grasp part of substantially oval cross section provided with a slot which extends only longitudinally therethrough and is

closed at both ends thereby providing two separated spring members which are adapted to be grasped by the hand of the operator and each of which is shaped in cross section to substantially half of an ellipse and is integral with and solidly united to the head, the members gradually tapering in size from the hand grasp part toward the head and the slot correspondingly narrowing and having its widest portion near the outer end of the hand grasp part, substantially as set forth.

2. A handle of wood or the like having a solid head at one end upon which a hammer head or the like is fitted and a hand grasp part provided with a longitudinal slot, thereby providing two separate spring members adapted to be grasped by the hand of the operator and an opening between said members for air circulation to the inner surface of the hand and a ferrule fitted upon the opposite end of said handle and having a transverse cross bar or wedge interposed between the spring members to maintain them in separated position.

3. A handle constructed of one integral piece of wood or the like having a solid head at one end upon which a hammer head or the like is fitted and a hand grasping part provided with a slot which extends longitudinally only therethrough and is closed at both ends thereby providing two separate spring members intermediate the head and outer end of the handle, both of which are solidly united at their opposite ends to the head and outer end of the handle and are adapted to be grasped by the hand of the operator, substantially as set forth.

851,708. SHEARS. GEORGE P. TAYLOR, Clinton, Mass. Filed Sept. 25, 1905. Serial No. 280,097.

Claim.—1. As an article of manufacture, a pair of shears comprising an angle-piece having a horizontal part with fixed cutting blade, a rearwardly inclining part with fixed handle, a movable cutting jaw pivoted on the horizontal part of the angle piece, a movable handle pivoted on the inclined part of the angle-piece and means connected with the handle for operating said movable jaw.

2. As an article of manufacture, a pair of shears comprising an angle-piece having a horizontal part with fixed horizontal cutting blade, a rearwardly inclined part with fixed handle, a movable horizontal cutting jaw pivoted on the horizontal part of the angle-piece, and a movable handle pivoted on the inclined part of the angle-piece, said movable cutting jaw and movable handle having a reverse motion connection causing the cutting jaws to open when the handles are separated.

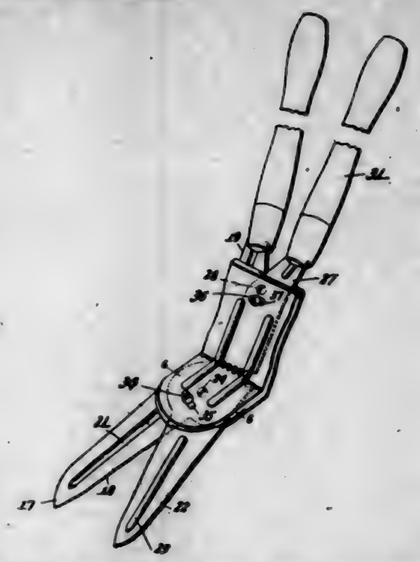

3. As an article of manufacture, a pair of shears comprising an angle-piece having a horizontal part with fixed horizontal cutting blade, a rearwardly inclining part with fixed handle, a movable shear-blade pivoted to the horizontal part of the angle-piece on a vertical axis and having gear-teeth, and a movable handle pivoted on the inclined part of the angle-piece with gear-teeth meshing with the gear-teeth of the movable shear-blade.

4. As an article of manufacture, a pair of shears comprising an angle-piece having a horizontal part with fixed shear-blade, a rearwardly inclining part with fixed handle, a movable shear-blade, a vertical pivot-bolt with spring-washer thereon for mounting the movable shear-blade on the horizontal part of the angle-piece, and a movable handle pivoted on the inclined part of the angle-piece and connected to operate the movable shear-blade.

5. As an article of manufacture, a pair of shears comprising an angle-piece having a horizontal part with fixed shear-blade, a rearwardly inclining part with fixed handle, a movable shear-blade pivoted on the horizontal part of the angle-piece, and an angular cover-plate fastened on the angle-piece and protecting the working parts.

6. As an article of manufacture, a pair of shears comprising an angle-piece having a horizontal part with fixed shear-blade, a rearwardly inclining part with fixed handle, a movable shear-blade pivoted on the horizontal part of the angle-piece with gear-teeth, a movable handle pivoted on the rearwardly inclined part of the angle-piece with gear-teeth meshing with the gear-teeth of the movable blade, and a cover-plate fastened to the angle-piece and inclosing the working parts.

7. As an article of manufacture, a pair of shears comprising a fixed handle and fixed shear-blade, a movable shear-blade pivotally connected with the fixed shear-blade, a spring normally closing the movable shear-blade, a catch for holding the movable shear-blade open, and a movable handle having means for releasing the catch to permit the movable shear-blade to close.

8. As an article of manufacture, a pair of shears comprising an angle-piece having a horizontal part with fixed shear-blade, a rearwardly inclining part with fixed handle, a movable shear-blade pivoted on the horizontal part of the angle-piece and having gear-teeth, a gear-piece pivoted on the inclined part of the angle-piece and meshing with the gear-teeth of the movable shear-blade, a spring-plate having a catch holding the movable blade open, a spring for normally closing the movable shear-blade, a movable handle turning with the gear-piece to open the shears and bending the spring to release the movable shear-blade as the handles are closed.

9. As an article of manufacture, a pair of shears comprising a fixed shear blade, a fixed handle connected therewith, a movable shear blade having gear teeth, a gear piece pivotally mounted with respect to the fixed shear blade and having teeth meshing with the gear teeth of the movable shear blade, a spring plate having a catch for holding the movable blade open, a spring for normally closing the movable shear blade, and a movable handle for turning with the gear piece to open the shears and bend the spring to release the movable shear blade as the handles are closed.

10. As an article of manufacture, a pair of shears comprising two shear blades pivotally connected together, a handle for each shear blade, an intermediate piece located between one shear blade and its handle and pivotally connected with said handle, said intermediate piece having means for operating the shear blade, a spring plate having a catch for holding the intermediate piece in such position as to hold the blades open, and means on the movable handle for disengaging the catch from the intermediate piece to allow the blades to close.

11. As an article of manufacture, a pair of shears comprising two shear blades movably connected together, a spring plate having a catch for holding the blades open, and a handle for operating one of the blades having means for disengaging the catch to allow the blades to close.

12. As an article of manufacture, a pair of shears comprising an angle piece having a fixed shear blade, a fixed handle connected with the angle piece, a movable shear blade pivoted on the angle piece, and a cover plate fastened on the angle piece to protect the working parts.

13. As an article of manufacture, a pair of shears comprising pivoted cutting blades, pivoted handles, and multiplying connection between one of the handles and a cutting blade, comprising a gear segment connected with the handle, and a gear segment with shorter radius meshing therewith and connected with the blade for securing a different angular movement of the cutting blade from the angular movement of the handle which operates the same.

851,709. POTENTIAL-REGULATOR. WILBUR H. THOMPSON, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 25, 1906. Serial No. 323,305.

Claim.—1. In a transformer regulator, the combination with relatively movable coils and a fluid-pressure actuating device therefor, of means for regulating the fluid-pressure supplied to the actuating device that is dependent upon the amount of variation in the element corrected by the regulator.

2. In a transformer regulator, the combination with relatively movable coils and actuating means for varying the relative positions of the coils, of means for varying the speed at which the change in position takes place that is dependent upon the amount of correction required.

3. In a transformer regulator, the combination with stationary coils, movable coils and a fluid-pressure cylinder, of means for varying the fluid-pressure admitted to the cylinder that is dependent upon the amount of variation in the element corrected by the regulator.

4. In a transformer regulator, the combination with stationary coils and movable coils, of means for slowly actuating the movable coils when a predetermined correction is required and for rapidly actuating the movable coils when the correction required exceeds a predetermined amount.

5. In a transformer regulator, the combination with stationary coils, movable coils and a fluid-pressure cylinder, of means for slowly actuating the movable coils when a predetermined correction is required and for rapidly actuating the movable coils when the correction required exceeds a predetermined amount.

6. In a transformer regulator, the combination with stationary coils, movable coils and a fluid-pressure cylinder which changes the relative positions of the stationary and movable coils, of means for automatically regulating the rapidity of the action that is dependent upon the amount of regulation required.

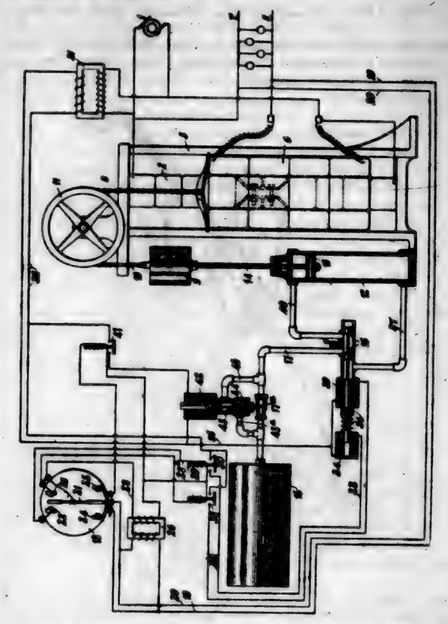

7. In a transformer regulator, the combination with stationary coils, movable coils and a fluid-pressure cylinder for varying the relative positions of the coils, valve magnets which determine the end of the cylinder to which the fluid-pressure is admitted, of means for automatically regulating the rapidity of the action that is dependent upon the amount of regulation required.

8. In a transformer regulator, the combination with stationary coils, movable coils, a fluid-pressure actuating cylinder therefor, a reducing valve and means for admitting air through the valve to either end of the cylinder, of means for shunting the reducing valve to admit full pressure to the cylinder.

9. In a transformer regulator, the combination with stationary coils, movable coils, a fluid-pressure actuating cylinder therefor, a reducing valve and means for admitting air to either end of the cylinder, of automatic means for shunting the reducing valve that is dependent upon a predetermined variation in the element to be corrected by the regulator.

10. In a constant potential regulator, the combination with stationary coils, movable coils, a meter relay device and a movable contact arm therefor, two pairs of stationary coöperating contact members, one pair of which is adapted to be engaged when slight variations in the potential occur and the other pair of which is adapted to be engaged when a considerable variation occurs, of a fluid-pressure cylinder which determines the relative positions of the movable and stationary coils, a selective admission valve therefor, electromagnets which control the action of the valve, and means for admitting an increased pressure to the cylinder that is dependent upon a considerable potential variation.

11. In a transformer regulator, the combination with an electric circuit, relatively movable coils, and means for automatically adjusting their positions to obtain a substantially constant potential in the circuit, of means for producing a relatively rapid change in the position of the coils when a predetermined variation occurs in the potential to be governed.

12. A potential regulator comprising relatively movable coils, an actuating device, a retarder for the actuating device and means for shunting the retarder when large variations in potential occur.

851,710. HOPPLE OR REGULATOR FOR PLOWS. WILLIAM N. THORNTON, Cedar Hill, Tex. Filed Dec. 15, 1906. Serial No. 348,048.

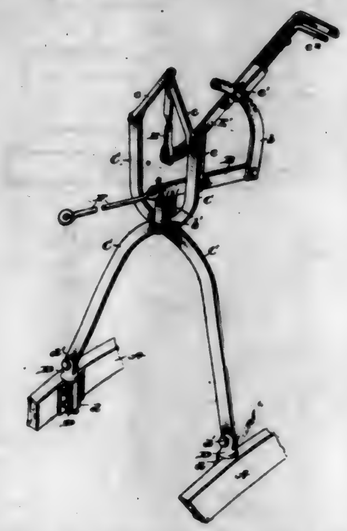

Claim.—1. An attachment for cultivators comprising a bar adapted to extend longitudinally of the cultivator, a pair of crossed arms pivotally secured to said bar and adapted to be connected at their lower ends to the beams of the cultivator a lever pivotally secured to said bar, and means connecting the lever and the upper ends of said arms for spreading and contracting the arms upon actuation of the lever.

2. An attachment for cultivators comprising a bar adapted to extend longitudinally of the cultivator, a pair of crossed arms pivotally secured to said bar and adapted to be connected at their lower ends to the beams of the cultivator, links connecting the upper ends of said arms, an actuating lever supported by said bar, and a connection between the actuating lever and the links connecting the upper ends of said bars.

3. An attachment of the character described comprising a bar adapted to extend longitudinally of the cultivator, a pair of crossed arms pivotally secured to said bar and adapted to be connected at their lower ends to the beams of the cultivator, a pair of links connecting the upper ends of said arms, a rearwardly extending actuating lever fulcrumed on said bar, and a link connection between the forward end of said actuating lever and the links connecting the upper ends of the crossed arms.

4. An attachment for cultivators comprising a bar adapted to extend longitudinally of the cultivator, a pair of crossed arms pivotally secured to said bar and adapted to be connected at their lower ends to the beams of the cultivator, a pair of links connecting the upper ends of said arms, a rearwardly extending actuating lever fulcrumed on said bar, a link depending from the pivotal connection of the two links connecting the upper ends of the crossed arms, and pivotally connected at its lower end to the forward end of the actuating lever, and means for holding said lever in various positions of adjustment.

5. An attachment for cultivators comprising a bar adapted to extend longitudinally of the cultivator and provided at its rear end with an upwardly extending rack and at its forward end with a depending lug, a pair of crossed arms pivotally connected to the lug depending from said bar, and adapted to be connected at their lower ends to the beams of the cultivator, an actuating lever fulcrumed on said bar and provided with a dog engaging the rack extending upwardly therefrom, and connections between the forward end of said actuating lever and the upper ends of the crossed bars for spreading and contracting the bars.

6. An attachment for cultivators comprising a bar adapted to extend longitudinally of the cultivator and provided at its rear end with an upwardly extending rack and at its forward end with a depending lug, a pair of crossed arms pivotally connected to the lug depending from said bar and adapted to be connected at their lower ends to the beams of the cultivator, a pair of links connecting the upper ends of said arms, a rearwardly extending actuating lever fulcrumed on said bar and provided with a dog engaging the rack extending upwardly therefrom, and a connection between the actuating lever and the links connecting the upper ends of said bars.

7. An attachment for cultivators comprising a bar adapted to extend longitudinally of the cultivator, a pair of arms pivotally connected to said bar and adapted to be connected at their lower ends to the beams of the cultivator, a lever pivotally secured to said bar, and means connecting the lever and said arms for spreading and contracting the arms upon actuation of the lever.

851,711. OVEN. SHINZO TORY, Pittsburg, Pa., assignor of one-fifth to S. Horner Wood and one-fifth to John E. Banks, Pittsburg, Pa. Filed Nov. 17, 1906. Serial No. 343,858.

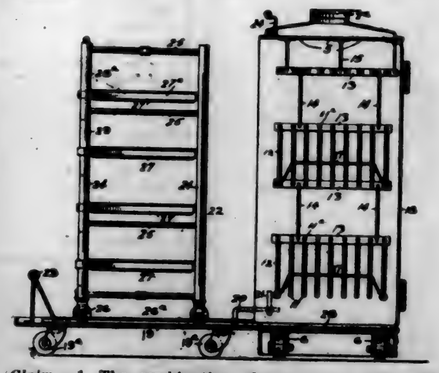

Claim.—1. The combination of an oven, a removable rack therein, horizontally swinging pans carried by said rack, and means for heating said oven.

2. The combination of an oven, a removable rack therein, horizontally swinging pans carried by said rack, stops for said pans, and means for heating said oven.

3. The combination of an oven, a portable rack therein, horizontally swinging pans carried by said rack, the said pans being alternately supported at opposite sides of said rack, and a series of burners, and means for supplying gas to said burners.

4. The combination of an oven, a portable rack therein, horizontally swinging pans carried by said rack, the said pans being alternately supported at opposite sides of said rack, and a series of pipes forming burners above and below said pans, said pipes having apertures above and below, and means for supplying gas to said pipes.

5. The combination of an oven, a portable rack therein, horizontally swinging pans carried by said rack, the said pans being alternately supported at opposite sides of said rack, and a series of pipes forming burners above and below said pipes, shelves carried by said pipes to support the free ends of said shelves, and means for heating said oven.

6. The combination of an oven, a portable rack therein, pans carried by said rack, and a downwardly swinging door having wheels, said door being freely releasable from said oven.

7. The combination of an oven, a portable rack therein, pans carried by said rack, a downwardly swinging door having wheels and freely releasably connected to said oven, tracks on said door upon which the wheels of said rack rest when withdrawn from said oven, and tracks in said oven coinciding with said tracks when the door is lowered.

8. The combination of an oven, a portable rack therein, pans carried by said rack, a downwardly swinging door having a freely releasable hinged connection with said oven and adapted to support said rack when withdrawn from said oven.

851,712. GRAVEL-SPREADER AND ROAD-LEVELER. DAVID M. TRABUE, Mays, Ind. Filed Aug. 14, 1906. Serial No. 330,605.

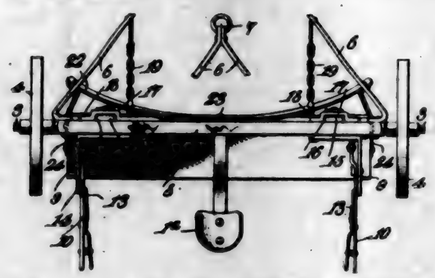

Claim.—1. In a road working machine, the combination of a supporting structure, with the blade extending transversely to the road and having a curved lower edge.

2. In a road working machine, the combination of a supporting structure, with a blade extending across the road and having an end curved in a forward direction and its lower edge arched, and means for mounting the blade on the supporting structure.

3. In a road working machine, the combination of a supporting structure, with a blade having a concaved lower edge and its ends curved forwardly, and means for adjustably mounting the blade on the said structure.

4. In a road working machine, the combination of a supporting structure, with a blade which is arched approximately the full length of its lower edge and curved forwardly at its ends to form scoops, and means for adjusting the height of the blade on the said structure.

5. In a road working machine, the combination with a supporting structure, of a leveler mounted thereon with its length extending transversely to the road and arched on its under surface.

6. In a road working machine, the combination of a supporting structure, with a leveler of suitable weight mounted thereon, the under surface of the leveler being inclined downwardly in a rearward direction.

7. In a road working machine, the combination of a supporting structure, with a leveler of suitable weight mounted thereon which is arched and inclined rearwardly on its under surface.

8. The combination of a supporting structure, road wheels, a leveler disposed with its length transversely of the road, a spreader blade correspondingly disposed, and means for adjusting the leveler and blade on the supporting structure.

9. The combination of a supporting structure, road wheels mounted thereon, a leveler supported on the structure, and a spreader blade removably attached to the leveler.

10. The combination of a supporting structure, road wheels mounted thereon, a leveler which is arched on its under surface between its ends, a spreader blade which is arched along its lower edge, and means for supporting the leveler and blade on the structure.

11. The combination of a supporting structure, road wheels mounted thereon, a leveler which is arched on its under surface between its ends, a spreader blade which is arched along its lower edge, devices for removably attaching the spreader blade to the leveler with their arched portions coinciding, and means for adjustably mounting the spreader blade and leveler on the structure.

12. The combination of a supporting structure, road wheels, a leveler, a spreader blade mounted on the leveler, and means for raising and lowering the leveler with the blade thereon, said means comprising a lever mounted on the structure, a link connecting the lever with the leveler, and a device for locking the lever in different positions.

13. The combination of a supporting structure, road wheels, a leveler, a spreader blade mounted on the leveler, and separate means for raising and lowering the leveler with the blade thereon, each of said means comprising a lever mounted on the structure, a flexible connection between the lever and the adjacent end of the leveler, and a latch mechanism for holding the lever in different positions.

14. The combination of a supporting structure, road wheels, a leveler, a spreader blade mounted on the leveler, means for guiding the leveler with the blade thereon in a vertical plane, and adjustable devices for supporting the leveler on the said structure.

15. The combination of a supporting structure, road wheels mounted thereon, a leveler disposed below the structure, posts attaching the leveler on the structure, a draft frame connected with the structure, and means for bracing the leveler from the draft device.

16. The combination of a supporting structure, road wheels mounted thereon, a leveler, posts for guiding the movement of the leveler with respect to the structure, means for raising and lowering the leveler, a draft device connected with the structure, and means extending between the ends of the leveler and the draft device for bracing the leveler therefrom.

17. The combination of a supporting structure, road wheels mounted thereon, a leveler disposed below the structure, upright posts for guiding the movement of the leveler with respect to the structure, a draft device extending forwardly from and connected with the structure, and independent adjusting mechanisms arranged between the ends of the leveler and structure and extending rearwardly from the latter.

18. The combination of an axle bar, wheels on the ends thereof, a leveler located directly below the axle, vertically extending members movable along the axle for guiding the movement of the leveler, and means between the axle and leveler for adjusting the height of the leveler.

19. The combination of an axle bar, wheels on the ends thereof, a leveler located directly below the axle, vertically extending members attached to the leveler, devices secured to the axle to form guides for the said members, and separately actuated mechanisms between the ends of the leveler and axle for adjusting the former.

20. The combination of an axle, wheels mounted on the same, a leveler, standards on the same, offset plates on the axle coöperating with the latter to form guides in which the standards move vertically, and means for adjusting the leveler.

21. The combination of an axle, wheels mounted on the same, a leveler, standards on the same, offset plates on one side of the axle which coöperate with the latter to form guides in which the standards move vertically, brackets on the opposite side of the axle from the plates, and mechanisms supported on the brackets and attached to the leveler for adjusting the latter.

22. The combination of an axle, wheels mounted on the same, a leveler, standards on the same, offset plates on one side of the axle which coöperate with the latter to form guides in which the standards move vertically, brackets on the opposite side of the axle from the plates, bolts serving as common means for securing the plates and the brackets to the axle, and mechanisms on the brackets and attached to the leveler for adjusting the latter.

23. In a road working machine, a leveler, a spreader blade arranged on one side thereof with its ends project-

ing therefrom, and devices between the ends of the leveler and blade for bracing the latter.

851,713. ROAD-WORKING MACHINE. DAVID M. TRABUE, Mays, Ind. Filed Dec. 24, 1906. Serial No. 349,320.

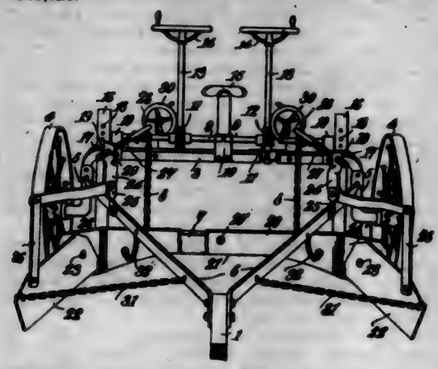

Claim.—1. In a road working machine, the combination with a supporting structure, of a vertically adjustable device hung from the frame of such structure and extending transversely to the direction of travel of the machine, and forwardly diverging blades arranged at the ends of such device and adjustable independently thereof.

2. In a road working machine, the combination of a supporting structure, a device mounted thereon for operating on the surface of the road, forwardly diverging blades arranged at the ends of the device and coöperating therewith to finish the surface of the road, and means for independently adjusting the said blades.

3. In a road working machine, the combination of a supporting structure, a device adjustably mounted thereon for operating on the surface of the road, forwardly diverging blades arranged at the ends of the device and pivoted on horisontal axes, and means for adjusting the blades about their pivots.

4. In a road working machine, the combination of a supporting structure, a device extending transversely to the direction of travel of the machine and shaped at its bottom to correspond to the finished contour of the road, and forwardly extending blades adjustably mounted at the ends of the said device.

5. In a road working machine, the combination of a supporting structure, a device mounted thereon to operate on the surface of the road, a blade pivoted to the said device, means on the supporting structure for adjusting the blade, and means connected with the free end of the blade for bracing the same.

6. In a road working machine, the combination of a supporting structure, a draft arrangement including a tongue, a device mounted on the structure for operating on the surface of the road, adjustable blades on the extremities of the device, means on the supporting structure for adjusting the blades, and flexible elements between the draft arrangement and blades for bracing the latter.

7. In a road working machine, the combination of a supporting structure, a device mounted thereon, a two-part shaft on the supporting structure, and a flexible element between the said device and each part of the shaft and arranged to wind and unwind around the latter to adjust the position of the device.

8. In a road working machine, the combination of a supporting structure, a device extending transversely to the direction of travel of the machine, a two-part shaft on the structure, flexible elements between the device and each part of the shaft for winding and unwinding around the latter, and means for rotating the parts of the shaft, said means including a worm gear.

9. In a road working machine, the combination of an axle, wheels thereon, a device for operating on the surface of the road, a shaft mounted on the axle, a flexible element adapted to wind around the shaft and connected with the device, an operating shaft mounted on the axle, means for turning the latter shaft, and a worm gear between the shafts for transmitting motion from the operating shaft to the other and for preventing the said element from unwinding under the weight of the device.

10. In a road working machine, the combination of a supporting structure, a device for operating on the surface of the road, uprights on the device and guided by the structure, means for raising and lowering the device with respect to the structure, and stops on the uprights for limiting the downward movement of the device.

11. In a road working machine, the combination of a supporting structure, a device for operating on the surface of the road, means for adjustably supporting the device on the structure, a blade mounted on each end of the device, and a mechanism for adjusting each blade, said mechanism including an operating screw.

12. In a road working machine, the combination of a supporting structure, a device for operating on the surface of the road, means for adjustably supporting the device on the structure, blades mounted at the ends of the device, and separate actuating mechanisms for the blades, each mechanism comprising a bell crank lever linked to the adjacent blade and fulcrumed on the supporting structure, and means for actuating the levers.

13. In a road working machine, the combination of an axle, wheels thereon, a draft arrangement connected with the axle, a device arranged below the axle and extending transversely to the direction of travel of the machine for operating on the surface of the road, blades on the ends of the device cooperating therewith for producing a finished surface of the road by movement of the machine in one direction, bell crank levers fulcrumed on the draft arrangement, links between the levers and adjacent blades, flexible elements connecting the blades to the draft arrangement, and independent operating screws for actuating the levers.

14. In a road working machine, the combination of an axle, wheels thereon, a draft arrangement connected with the axle, a device arranged below the axle and extending transversely to the direction of travel for operating on the surface of the road, a two-part shaft mounted on the axle, flexible elements adapted to wind around the parts of the shaft and connected with the said device, a pair of operating shafts, gears between the operating shafts and parts of the first mentioned shaft, means mounted on the said device and cooperating therewith for operating on the surface of the road, separate mechanisms for adjusting the said means, and an operator's seat arranged on the axle in a position to permit the operator to actuate the operating shafts and said mechanisms.

15. In a road working machine, the combination of a supporting structure, a leveler mounted thereon, and a scraping and grading device associated with the leveler and composed of adjustable parts.

16. In a road working machine, the combination of a supporting structure, a device arranged thereon and having forwardly diverging portions constructed to slope both sides of the road in one operation, and a separate device mounted on the structure for compressing and leveling the material of the road subsequently to the operation of the first device.

17. In a road working machine, the combination of a supporting structure, a scraping and grading device arranged to operate on both sides of the road at once, means for mounting the device on the structure, a second device arranged at the rear of the first for smoothing the surface and compressing the material of the road, and means for supporting the second device on the structure.

851,714. BALING-PRESS. WILHELM F. TRUELSEN, Milwaukee, Wis., assignor to Logemann Brothers Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed Nov. 1, 1906. Serial No. 341,516.

Claim.—1. In a press of the described class, the combination with a platen, an operating screw centrally located in suitable stationary bearings underneath the platen with its respective end portions screw threaded right and left, traveling nuts mounted on the respective end portions of said screw, a pair of levers for each of the nuts, pivotally secured to opposite sides thereof,—the levers of each pair being crossed with those of the other pair, and pivoted thereto, said platen being mounted loosely upon the ends of said levers be on the crossing point, and supported therefrom.

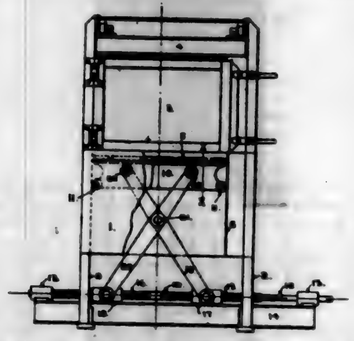

2. In a press of the described class, the combination of two pairs of levers, those of each pair being connected by traveling members at their lower ends, and by cross rods at their upper ends, rollers mounted on the cross rods, a platen loosely mounted on the rollers, an actuating screw mounted in stationary bearings and extending through the traveling members between the levers, said screw having right hand threaded engagement with one of the traveling members and left hand threaded engagement with the other.

3. In a press of the described class, the combination of two pairs of levers, those of each pair being connected by traveling members at their lower ends, and by cross rods at their upper ends rollers mounted on the cross rods, a platen loosely mounted on the rollers, an actuating screw mounted in stationary bearings and extending through the traveling members between the levers, said screw having right hand threaded engagement with one of the traveling members and left hand threaded engagement with the other,—the levers of each pair being crossed with those of the other, and pivoted thereto at an intermediate point.

4. In a press of the described class, the combination of two pairs of levers, those of each pair being connected by traveling members at their lower ends, and by cross rods at their upper ends, rollers mounted on the cross rods, a platen loosely mounted on the rollerk, an actuating screw mounted in stationary bearings and extending through the traveling members between the levers, said screw having right hand threaded engagement with one of the traveling members and left hand threaded engagement with the other,—the levers of each pair being crossed with those of the other, and pivoted thereto at an intermediate point by a common pivot bolt connecting the four levers.

5. In a press of the described class, the combination of two pairs of levers, those of each pair being connected by traveling members at their lower ends, and by cross rods at their upper ends, rollers mounted on the cross rods, a platen loosely mounted on the rollers, an actuating screw mounted in stationary bearings and extending through the traveling members between the levers, said screw having right hand threaded engagement with one of the traveling members and left hand threaded engagement with the other,—the levers of each pair being crossed with those of the other, and pivoted thereto at an intermediate point, and said levers and platen supporting rollers being symmetrically arranged to balance the pressure upon the platen and the adjusting screw.

6. In a press of the described class, the combination of two pairs of levers, those of each pair being connected by traveling members at their lower ends, and by cross rods at their upper ends, rollers mounted on the cross rods, a platen loosely mounted on the rollers, an actuating screw mounted in stationary bearings and extending through the traveling members between the levers, said screw having right hand threaded engagement with one of the traveling members and left hand threaded engagement with the other, the levers of each pair being crossed with those of the other, and pivoted thereto at an intermediate point, and said levers being offset at the intermediate pivot point and arranged with their outer end portions equidistant from the vertical plane of the screw, and that of the intermediate pivot bolt.

7. In a press of the described class, the combination of two pairs of levers, those of each pair being connected by traveling members at their lower ends, and by cross rods at their upper ends, rollers mounted on the cross rods, a platen loosely mounted on the rollers, an actuating screw mounted in stationary bearings and extending through the traveling members between the levers, said screw having right hand threaded engagement with one of the traveling members and left hand threaded engagement with the other, the levers of each pair being crossed with those of the other, and pivoted thereto at an intermediate point and said rollers being located on the outer ends of their corresponding connecting rods and equidistant from the vertical planes of the screw, and intermediate pivot bolt respectively.

851,715. RAZOR-STROP. GEORGE TRYON, Chicago, Ill. Filed Jan. 12, 1907. Serial No. 351,907.

Claim.—1. A razor strop comprising a main band formed of relatively elastic material and having secured thereto at each end a band of greater normal length and less elasticity adapted to hang loosely between its ends when said main band is in its normal condition and adapted to be drawn taut between its ends when said main band is stretched.

2. A razor strop comprising a main band formed of relatively elastic material and having secured thereto at each end, a band of less elasticity and adapted to hang loosely between its ends when said main band is in its normal condition, and adapted to be drawn taut between its ends when said main band is stretched.

3. A razor strop comprising a rubber band, having secured thereto at each end a band of woven material, of less elasticity than said rubber band, and adapted to be drawn taut when said rubber band is stretched.

4. A razor strop comprising an inner band of relatively soft texture, a band secured thereto throughout its length and being relatively harder and elastic, and having secured thereto at each end a woven band of less elasticity adapted to hang loosely between its ends when said main band is in its normal condition and adapted to be drawn taut between its ends when said main band is stretched.

5. A razor strop comprising a band of relatively soft resilient material having secured thereto a rubber face, and a woven band secured at each end upon said rubber face being of less elasticity and adapted to hang loosely between its ends when said main band is in its normal condition and adapted to be drawn taut between its ends when said main band is stretched.

6. A razor strop comprising a band formed of felt having secured thereto throughout its length a band formed of rubber and having secured thereto at each end a woven band of less elasticity adapted to hang loosely between its ends when said main band is in its normal condition and adapted to be drawn taut between its ends when said main band is stretched.

7. A razor strop comprising a main band formed of relatively elastic material and having secured thereto at each end a woven band of less elasticity adapted to hang loosely between its ends when said main band is in its normal condition and adapted to be drawn taut between its ends when said main band is stretched, and removable clamping members having teeth adapted to pass through said woven band and to become embedded in the body of said main band and means for drawing said members together.

8. A razor strop comprising a main band formed of elastic material and having secured thereto a silk band of relatively less elasticity adapted to hang loosely between its ends when said main band is in its normal condition and adapted to be drawn taut between its ends when said main band is stretched.

9. A razor strop comprising a band formed of felt having secured thereto at each end a band formed of rubber and having secured thereto at each end a silk band of less elasticity adapted to hang loosely between its ends when said felt and rubber bands are in their normal condition and adapted to be drawn taut between its ends when said felt and rubber bands are stretched.

851,716. ANIMAL-TRAP. OTTO H. VOELKERDING and FREDERICK H. VOELKERDING, Dutzow, Mo. Filed May 14, 1906. Serial No. 316,757.

Claim.—1. An animal trap having a partition plate dividing the same into a catching chamber and a collecting chamber; said partition plate being provided with an opening forming a means of communication between said chambers; an entrance door to said catching chamber; a rock shaft journaled in said catching chamber and to which said entrance door is pivoted at its upper end; a latch on said shaft adjacent the partition plate; a rod mounted on said partition plate above the opening therein; and provided at one end with a depending hook in the path of the latch on said shaft; a treadle pivoted to the floor of said catching chamber and having connections with the other end of said rod to rock said shaft when said treadle is depressed; a door pivotally mounted in said collecting chamber above the point of communication between said chambers; and means connected to said collecting chamber door adapted to rock said shaft and raise said entrance door when said collecting chamber door is raised.

2. An animal trap comprising bottom and end plates and an inclosing casing; a partition plate connected to said bottom plate and casing and dividing the trap into a catching chamber and a collecting chamber the front end plate and partition plate each being provided with an opening forming a means for entrance to the respective chambers; a rock shaft journaled in said collecting chamber and having its rear end extending into said collecting chamber and provided with an inward bend; a door pivoted at its upper end to said rock shaft to close the entrance opening to said catching chamber; a rod mounted on the rear face of said partition plate and having an inclined door rigidly connected thereto at the point of communication between said chambers; said rod having an outwardly bent end extending directly beneath the bent end of said shaft to rock said shaft when the collecting chamber door is raised and simultaneously raise the catching chamber door; means for retaining said catching chamber door in its rearward position; and means for releasing the same from such position.

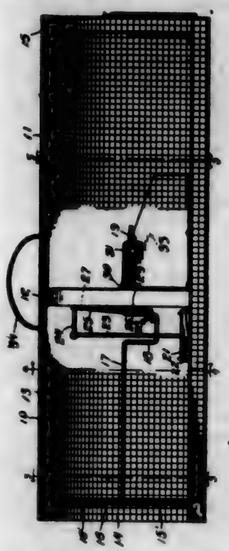

3. An animal trap having a partition plate dividing the same into a catching chamber and a collecting chamber, said partition plate being provided with an opening forming a means of communication between said chambers; an entrance door to said catching chamber; a rock shaft journaled in said catching chamber and to which entrance door is secured, said rock shaft having one end extending through said partition plate into the collecting chamber and formed with a lateral inwardly directed bend therein; a treadle pivoted in said catching chamber; connections between said treadle and rock shaft for releasing the latter when said treadle is depressed; an inclined door pivotally secured at its upper end to the rear face of said partition plate above the opening formed therein; a vertical guide mounted in said collecting chamber adjacent each side edge of said last mentioned door, and coöperating therewith to normally close communication between said chambers; and means connected with said collecting chamber door adapted, when said door is raised, to contact with the laterally bent end of said rock shaft, to actuate the latter to elevate the catching chamber door.

851,717. GRAVITY PLUMB-LEVEL AND INCLINOMETER. CHESTER B. WATTS, Winchester, Ind., assignor of one-half to Joseph Watts, Winchester, Ind. Filed Dec. 3, 1906. Serial No. 346,059.

Claim.—1. In a gravity plumb-level and inclinometer, a body having a transverse recess formed entirely therethrough, a boxing having side and end walls seated within said recess, said side walls being provided with apertures and being set in from the sides of the body, an apertured top plate overlying said boxing and having its ends extended beyond the end walls thereof, securing means passing through such extended ends into said body, apertured face plates flush with the sides of the body and having their upper portions bearing laterally against the side edges of the top plate and their lower portions extended below the boxing and bearing laterally against the body, means for securing said face plates in place, and glasses mounted in conjunction with the several apertures; in combination with a pair of dials mounted in conjunction with the apertures of the side walls of the boxing, a peripherally-graduated weighted disk suspended rotatively between said dials, and indicating arms carried by the axis of said disk without the dials.

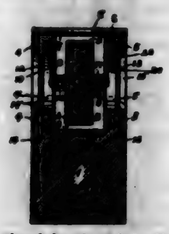

2. In a gravity plumb-level and inclinometer, the combination with an inclosing support, of a disk member supported rotatively therein on a horizontal axis and comprising a pair of laterally contacting disks each provided with an eccentric recess, a single weight received within both said recesses and locked between the disks against removal in any direction, and indicating means associated with said disk member.

3. In a gravity plumb-level and inclinometer, the combination with an inclosing support having observation openings in its side and top, of a disk member supported rotatively therein on a horizontal axis and comprising a pair of laterally contacting disks, a weight having laterally projecting lugs, said disks being provided eccentrically with communicating recesses conforming to and receiving said weight, a graduated band mounted peripherally on both disks, and an indicating arm carried by the axis of the disk member.

851,718. PROCESS OF DISTILLATION. JOHN N. WATT, Stockton, Cal. Filed Mar. 18, 1905. Serial No. 250,858.

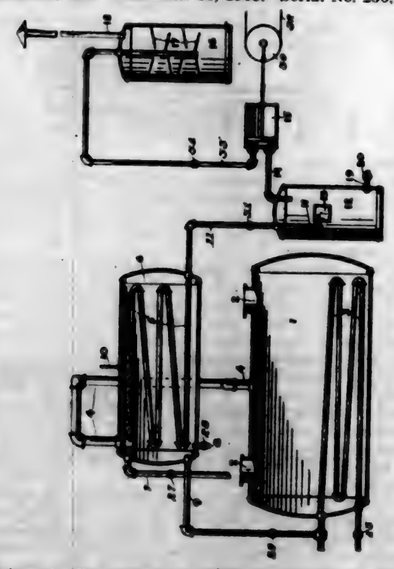

Claim.—1. The process of distilling fermented liquors which consists in vaporising the same under reduced pressure, and subjecting the vapors while under the reduced pressure to fractional condensation at a temperature between the condensing points of alcohol and the head products at such reduced pressure, whereby the alcohol is condensed and collected and the head products are separated therefrom, substantially as described.

2. The process of distilling fermented liquors which consists in vaporising the same under reduced pressure, subjecting the vapors while under reduced pressure to fractional condensation at a temperature between the condensing points of alcohol and the head products at such reduced pressure, and then reducing the temperature of the vapors, whereby the alcohol is condensed and collected and the head products are separated therefrom, substantially as described.

851,719. CONDENSER-PUMP REGULATOR. RAGNAR WIKANDER, Edgewood Park, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed July 24, 1905. Serial No. 271,096.

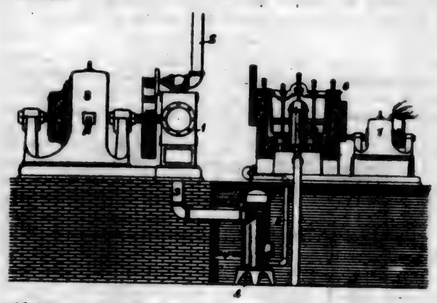

Claim.—1. The combination with a steam driving engine and a condenser therefor, of a pump for supplying water to said condenser, an electric motor for driving said pump and a speed-governing means for said motor that is directly dependent upon the load carried by the engine.

2. The combination with a dynamo-electric generator, a steam driving engine therefor, a condenser and a supply pump for said engine, and an electric driving motor for said pump, of means dependent upon the current from said generator for regulating the speed of the driving motor.

3. The combination with an electric generator, a steam driving engine therefor and an electric motor-driven condenser pump for said engine, of means for varying the amount of water supplied to a condenser by said pump as the load delivered by said generator is varied.

4. The combination with an electric generator, a steam driving engine therefor, a condenser and supply pump for said engine, and an electric driving motor for said pump that is supplied with energy from said generator, of means for varying the speed of the driving motor as the energy delivered from said generator varies.

5. The combination with a dynamo-electric machine, a steam driving engine therefor, a condenser and supply pump for said engine, and an electric driving motor for said pump, of means for varying the amount of water supplied to said condenser as the energy delivered from said dynamo-electric machine is varied.

6. The combination with a steam engine, a condenser therefor and an electric generator driven thereby, of means for varying the amount of water supplied to said condenser as the current delivered by said generator is varied.

7. The combination with a direct current electric generator, a steam driving engine therefor, a condenser, and a supply pump therefor, of a direct current, compound wound, electric driving motor for said pump having means for varying its speed as the generator load varies.

8. The combination with a direct current electric generator, a steam driving engine therefor, a condenser and supply pump for said engine and a direct current, compound wound, electric driving motor for said pump, of means for varying the speed of the motor substantially in proportion to the steam consumption of the engine that comprises a shunt field magnet winding connected in opposition to a field magnet winding that is in series with the external circuit of the direct current generator.

9. The combination with a steam engine, an electric generator driven thereby and a condenser therefor, of means for varying the amount of water supplied through

an electric motor-driven pump to said condenser as the load delivered by said generator is varied that comprises a field winding for said motor that is series-connected with the external circuit of said generator.

10. The combination with a steam engine, an electric generator driven thereby, and a condenser therefor supplied with water by an electric motor-driven condenser pump, of means varying the amount of water supplied to said condenser as the amount of current delivered by said generator varies, that comprises a field winding for said motor connected in series with the external circuit of said generator.

11. The combination with a steam engine and a condenser therefor, of a pump for supplying water to the condenser, an electric motor for driving the pump and means for varying the energy supplied to a winding of the motor in accordance with variations of load on the engine.

851,720. FLUE-SUPPORT. WILLIAM L. WILLIAMSON, Collins, Miss. Filed Oct. 2, 1905. Serial No. 281,057.

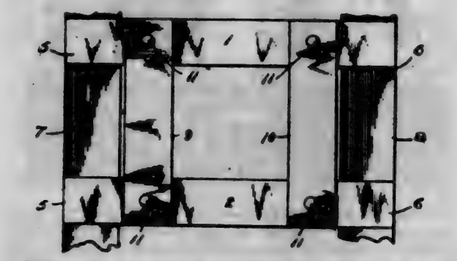

Claim.—As an article of manufacture, a flue support consisting of two parallel spaced U-shaped metal straps having their extremities turned outwardly at right angles in a common plane, and a pair of independently formed parallel spaced cross-straps, disposed upon the web portions of the U-shaped straps and having their ends turned downwardly against the outer edges of the webs of the U-shaped straps, whereby longitudinal displacement of said cross-straps from said U-shaped straps is prevented.

851,721. SHEARS. OTTO WITT, Macon, Mo. Filed Apr. 16, 1906. Serial No. 312,008.

Claim.—In a pair of scissors or shears a tensioning device, comprising a resilient plate provided at its end with an enlarged annular head formed with a central opening and loosely surrounding the constricted threaded end of the pivot pin, the plate being held upon said pivot pin by a nut mounted upon said threaded end, said plate extending in a plane at an angle to the adjacent blade of the scissors or shears, and an adjusting set screw carried at the outer end of said plate and being threaded therethrough, the adjacent blade of said scissors or shears being formed with a depression to receive said set screw.

851,722. VALVE FOR COMPRESSORS AND THE LIKE. WILHELM WOLF, Reisholz, near Düsseldorf, Germany. Filed Dec. 4, 1906. Serial No. 346,310.

Claim.—1. A valve comprising a sheet-metal tubular valve-stem having a flared lower end, a concave sheet-metal valve-plate secured to and covering said flared end of the stem, and means to seat the valve.

2. A valve comprising a sheet-metal tubular valve stem having a slotted, flared lower end to increase its resiliency, a concave sheet-metal valve-plate secured to and covering said flared end, and means to seat the valve.

3. A valve comprising a sheet-metal tubular valve-stem having a slotted, flared lower end, a concave sheet-metal valve-plate secured to and covering said flared end and having an annular portion turned above the flared end of the stem.

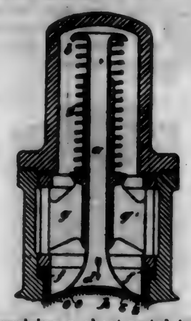

4. A valve comprising a sheet-metal tubular valve stem having a flared lower end, a concave sheet-metal valve plate secured to and covering said flared end and having an annular portion turned above the flared end of the stem forming an abutment, a guide surrounding the valve stem having a flange formed thereon, and a spring surrounding the guide bearing against the abutment and flange.

851,723. DISTRIBUTER FOR REFRIGERATORS. WILHELM WOLF, Reisholz, near Düsseldorf, Germany. Filed Dec. 4, 1906. Serial No. 346,311.

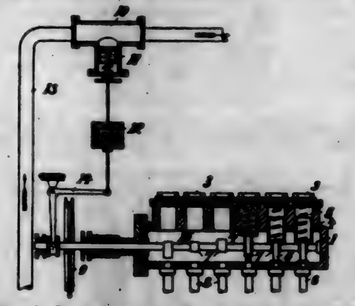

Claim.—1. In a device of the character described, the combination with a plurality of distributing pipes, means to close the latter, means to operate the closing means independently of each other, and means to change the normal relation between the closing means and the means to operate the latter.

2. In a device of the character described, the combination with a plurality of distributing pipes, means to normally close the latter, means to operate the closing means independently of each other and means to automatically change the normal relation between the closing means and the means to operate the latter.

3. In a device of the character described, the combination with a plurality of distributing pipes, valves normally closing the latter, means to open said valves independently of each other, a suction main, and mechanism operated by the variation of pressure therein to change the normal relation between the valves and their opening means.

4. In a device of the character described, the combination of a plurality of distributing pipes, valves normally closing the latter, a plurality of operating members for said valves, in different positions relative to the latter and means to change the normal relation between the valves and the operating members.

5. In a device of the character described, the combination of a plurality of distributing pipes, valves normally closing the latter, an operating member for each valve, means to control the operating members, and means to shift the controlling means.

6. In a device of the character described, the combination of a plurality of distributing pipes, valves normally closing the latter, an operating member for each valve, means to control the operating members, and means to automatically shift the controlling means.

7. In a device of the character described, the combination of a plurality of distributing pipes, valves normally closing the latter, an operating member for each valve, means to control the operating members, and pressure operated mechanism adapted to change the normal relation between the valves and the operating members.

8. In a device of the character described, the combination of a plurality of distributing pipes, valves normally closing the latter, a spindle proximate to the valves, cams on the spindle in different relative positions and means to move the spindle longitudinally for the purpose specified.

9. In a device of the character described, the combination of a plurality of distributing pipes, valves normally closing the latter, a spindle proximate to the valves, cams on the spindle in different relative positions and pressure operated mechanism to move the spindle longitudinally for the purpose specified.

10. In a device of the character described, the combination of a plurality of distributing pipes, valves normally closing the latter, a spindle proximate to the valves, means to rotate the spindle, cams on the spindle adapted to open the valves in sequence, pressure operated mechanism to move the spindle longitudinally, and means to adjust the pressure operated mechanism.

11. In a device of the character described, the combination of a plurality of distributing pipes, valves to normally close the latter, a spindle proximate the valves, cams on the spindle in different relative positions, a suction main, a cylinder in the latter, a piston in the cylinder, and means connecting the piston and spindle.

12. In a device of the character described, the combination with a casing, a plurality of distributing pipes communicating therewith, and independent valves adapted to close the pipes, guides on the valves, springs in the guides to normally seat the valves, a spindle rotatably mounted in the casing, cams on the spindle adapted to engage the guides, a suction main, a cylinder in the latter, a piston in the cylinder and mechanism operated by the cylinder to longitudinally move the spindle.

851,724. FOLDING BEDSTEAD. FREDERICK WOOD, Liverpool, England. Filed Feb. 20, 1905. Serial No. 246,451.

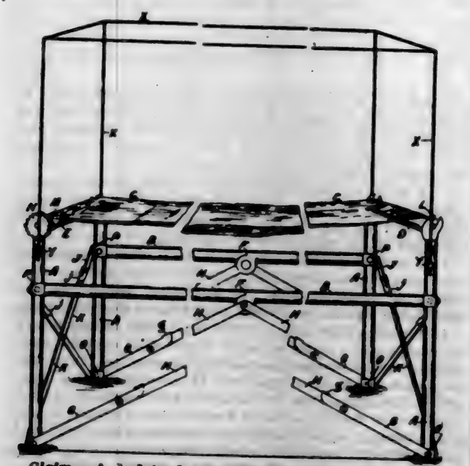

Claim.—A bedstead comprising uprights A, and side members B jointed at F, stays H, G, flexing in one direction and connecting the joint F with the feet of the members A, and stays J, K flexing in one direction and connecting the feet O of the members A with the collars P on the opposite members.

851,725. CASEMENT-WINDOW. IGNACY WROBLEWSKI, Krakow, Austria-Hungary. Filed Sept. 6, 1906. Serial No. 333,504.

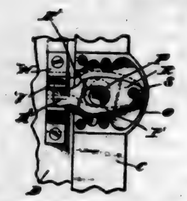

Claim.—1. In a casement window the combination of a window frame, a vertically movable window sash hinged to swing on said frame, and means for lifting and lowering said sash for unlocking and locking it, comprising a bracket attached to a side rail of said sash and provided with elongated lugs projecting from the face thereof, a box secured to a side rail of said window frame adjacent to said bracket, a slotted lever pivoted at one end within said box and provided at its other end with a projecting rounded tongue which extends between the outer ends of the elongated lugs of said sash bracket leaving a clearance which permits the bracket to swing freely around the end of said tongue, a shaft pivoted within said box at right angles to the plane of said window frame and provided with a cam engaging the slot of said lever, and means for turning said shaft to unlock or lock said sash.

2. In a casement window the combination of a window frame, a vertically movable window sash hinged to swing on said frame, and means for lifting and lowering said sash for unlocking and locking it, comprising a bracket attached to a side rail of said sash and provided with elongated lugs projecting from the face thereof, a box secured to a side rail of said window frame adjacent to said bracket, a slotted lever pivoted at one end within said box and provided at its other end with a projecting rounded tongue which extends between the outer ends of the elongated lugs of said sash bracket to swing freely around the end of said tongue, a shaft pivoted within said box at right angles to the plane of said window frame and provided with a cam engaging the slot of said lever, and detachable means for turning said shaft to unlock or lock said sash.

851,726. SERVICE ENTRANCE-BOX. FREDERICK B. ADAM, St. Louis, Mo., assignor to Frank Adam Electric Company, St. Louis, Mo., a Corporation of Missouri. Filed June 25, 1906. Serial No. 323,277.

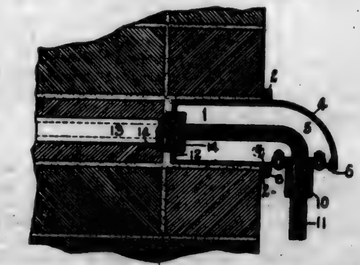

Claim.—1. A service entrance box consisting of a hollow rectangular member which is adapted to be inserted in the wall of a building and which has its inner end closed, a hollow projecting portion which extends beyond the wall of the building, and insulators carried by said projecting portion and by the wall which forms the inner end of said member; substantially as described.

2. A service entrance box consisting of a hollow member having its inner end closed and being adapted to be inserted in the wall of a building, an overhanging portion formed integral with said member, a removable insulator carrying plate forming the bottom of said overhanging portion and a removable fastening device for retaining said plate in position; substantially as described.

3. A service entrance box consisting of a hollow rectangular member adapted to be inserted in a wall and provided with a laterally extending flange which engages the outer face of the wall, a downwardly curved overhanging portion formed integral with said member, and a removable insulator carrying plate forming the bottom of said overhanging portion; substantially as described.

4. A service entrance box consisting of a hollow rectangular shape casting provided with a flange which is tangular member adapted to be inserted in a wall and proadapted to engage the outer face of the wall of a building, a hollow projecting portion formed integral with said member and having its top wall curved downwardly, an inwardly extending flange at the lower edge of said wall, an insulator carrying plate resting on said flange and provided with a flange which is secured to the flange on said hollow casting, and an insulator projecting through the rear wall of said hollow casting; substantially as described.

851,727. CULTIVATOR. WILLIAM M. ASHMORE, near Rara Avis, Miss. Filed July 12, 1906. Serial No. 325,951.

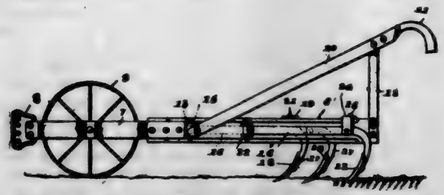

Claim.—1. An implement of the class described comprising a beam, forwardly extending plates secured at opposite sides of the beam, a wheel located and mounted for rotation between the plates forwardly of the beam, a clevis secured between the plates forwardly of the wheel, and ground-treating devices connected with the beam.

2. In an implement of the class described, the combination with a beam, of laterally extending longitudinally spaced brackets secured to the beam at opposite sides thereof, rearwardly extending arms pivoted in the brackets for horisontal movement, ground-treating devices carried by the arms, plates secured to the arms and extending inwardly therefrom, upwardly extending pins carried by the beam in longitudinal spaced relation, said pins being adapted for interchangeable engagement in the openings of the adjacent plates, forwardly extending plates secured against the opposite sides of the beam, a vertical wheel mounted for rotation between the forwardly extending plates, a clevis secured between the forward ends of the plates, and rearwardly extending handles connected with the beam.

851,728. SPINDLE-DRIVE. WILLIAM J. BAYNES, Hartford, Conn., assignor to The Henry & Wright Manufacturing Company, Hartford, Conn., a Corporation of Connecticut. Filed Sept. 29, 1906. Serial No. 336,787.

Claim.—1. The combination of a rotatory and reciprocatory spindle having grooves extending in straight lines parallel with its axis, means for rotating and reciprocating the spindle, a bushing in the hub of the rotating means and having endless channels, and balls occupying the channels in the bushing and projecting into the grooves in the spindle, substantially as specified.

2. The combination of a rotatory and reciprocatory spindle having grooves extending in straight lines parallel with its axis, means for rotating and reciprocating the spindle, a bushing in the hub of the rotating means and having endless channels, balls occupying the channels in

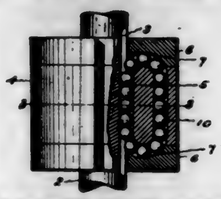

the bushing and projecting into the grooves in the spindle and caps fastened to the ends of the bushing and closing the channels, substantially as specified.

851,729. PLOW. SPENCER B. CARTER, Elizabeth City, N. C. Filed June 19, 1906. Serial No. 322,486.

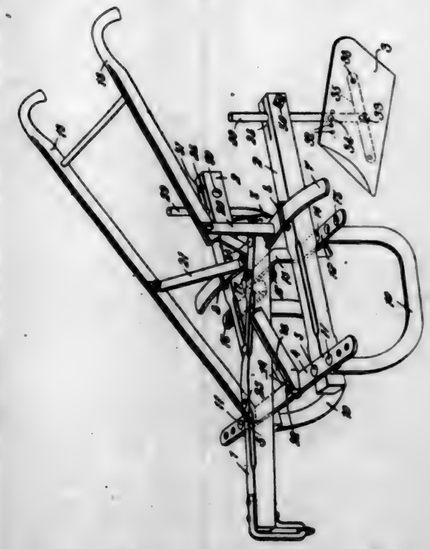

Claim.—1. A plow comprising a frame, a plurality of runners, pivots connecting the front ends of the runners with the frame, and means independent of the frame and connected with the rear ends of the runners for holding the latter a fixed distance apart.

2. A plow comprising a frame, a plurality of runners connected at their front ends with the frame, a slidable bar guided on the frame, and means for connecting the rear ends of the runners to the said bar.

3. A plow consisting of a draft beam, a blade carrying beam pivotally mounted with respect thereto, and a runner adjustable laterally and pivotally with respect to the draft beam and independently of the blade carrying beam.

4. A plow comprising a draft beam, two independently adjustable blade carrying beams disposed on opposite sides thereof, a transversely extending member to which the beams are attached, a plurality of runners having laterally extending apertured ends, bolts for adjustably connecting the front apertured ends of the runners to the said member, a second transverse member having apertured ends, and bolts adjustably connecting the rear ends of the runners to the apertured ends of the second member.

5. A plow comprising a frame, pivotally mounted blade carrying beams, runners disposed in front of the latter and adjustably connected at their front ends on the frame,

a transverse bar movably mounted on the frame, a resilient member on the frame arranged in frictional engagement with the bar, and means for adjustably connecting the rear ends of the runner to the bar.

6. A plow comprising a frame composed of two transverse bars and a draft beam rigidly connected thereto, plow carrying beams pivoted at their front ends on the frame, runners pivoted at their front ends on the frame and adjustably connected therewith, and a member which is transversely movable with respect to the frame for supporting the rear ends of the runners.

7. A plow comprising a frame, a plurality of parallel runners, pivots on the front end of the frame for connecting the front ends of the runners to the latter and adjustable toward or away from each other to vary the distance between the runners, a bar rigidly and adjustably connected with the rear ends of the runners to hold the latter a fixed distance apart and to permit the runners to swing simultaneously on their pivots, and means for supporting the bar on the frame for movement thereon.

8. A plow comprising a frame composed of two spaced transverse bars and a draft beam rigidly connected thereto, blade carrying beams pivoted at their front ends to one of the bars, means for independently adjusting the latter beams to move the rear ends thereof toward or away from each other, a plurality of runners which are adjustable toward or from each other, and a member guided by the frame for permitting the runners to be moved simultaneously.

9. A plow comprising a front cross bar, a cross bar located at the rear thereof and having arc-shaped portions, blade carrying beams pivoted to the front cross bar at the centers of the arc-shaped portion of the rear bar, eye bolts on the beams which adjustably engage the said arc-shaped portions, a plurality of runners pivotally mounted on the front bar, and a member connected with the ends of the runners opposite from the pivots thereof for connecting the runners together and holding them a fixed distance apart.

10. A plow comprising a front cross bar having a plurality of perforations at its ends, a cross bar located at the rear thereof having arc-shaped portions, blade carrying beams pivoted to the front cross bar at the centers of the said arc-shaped portions, means for adjustably connecting the beams to said portions, a third cross bar having perforations in its ends, runners, and devices engaging in the said perforations for adjustably connecting the runners to the last mentioned bar and front bar.

11. A plow comprising a draft beam, a plurality of blade carrying beams, a plurality of runners pivoted at their front ends in fixed relation to the draft beam, a cross bar to which the rear ends of the runners are attached, and means for movably supporting the bar on the draft beam.

12. A plow comprising two spaced transverse bars, a draft beam, means for adjusting the beam on the bars blade carrying beams connected with the bars, handles connected with one of the transverse bars, and braces between the other transverse bar and the handles.

13. A plow comprising two spaced transverse bars, a draft beam rigidly and adjustably connected thereto, a plurality of blade carrying beams adjustably connected to the bars, runners adjustable with respect to the bars, and handles connected with the bars independently of the beams.

851,730. MAIL-BOX ATTACHMENT. HERBERT M. COLE, Williamston, Mich. Filed Feb. 28, 1906. Serial No. 303,437.

Claim.—A supply indicating attachment for rural route boxes comprising a block having a plurality of notches formed therein an resultant spaced tongues, wings pivoted between the tongues for movement to lie at times therebetween and at times in laterally extending position, said wings having supply-indicating attachments marked thereon, and a coin holder carried by the block, said coin holder comprising a helical spring having its ends engaged in the block and arranged for the reception of money between its convolutions.

851,730.

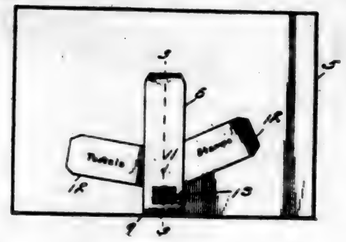

851,731. HANGER OF THE PENDULUM NATURE FOR STONE-SAWS. FRED A. DALEY, San Francisco, Cal. Filed Apr. 20, 1905. Serial No. 256,680.

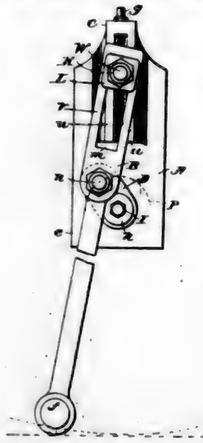

Claim.—The herein described hanger of the pendulum nature, for supporting a stone saw frame or other reciprocating member, comprising a main slide provided with an auxiliary slide, an adjustable fulcrum sustained by a fulcrum pin slidably engaging said auxiliary slide, adjusting means engaging one end of said fulcrum pin, a lock nut on the other end, providing means by which the said adjustable fulcrum is rigidly secured to said auxiliary slide at any point of its range; a hanger arm slidably engaging at its upper end with said adjustable fulcrum and said auxiliary slide, provided with a connection at its lower end for attaching to said reciprocating member; an oscillating link one end being pivoted to said hanger arm (intermediate of its ends) and oscillating in an arc while its other end is pivoted to said main slide; providing means by which the said reciprocating member will reciprocate in a straight line, in the line of an arc, or in one of a series of lines, regular or irregular, such as may be produced between the said straight line and said arc line.

851,732. STONE-PULLER. ALFRED DESCHAMBAULT, Whitewood, Saskatchewan, Canada. Filed Oct. 24, 1906. Serial No. 340,320.

Claim.—A stone puller comprising the combination of a central bar, side bars bolted to the central bar, said side bars being bent outward and backward in diverging lines, and all of said bars being bent downward and forward to form tines, a draft attaching member secured on the central bar, a handle secured to the central bar, said central bar, handle and draft attaching member being disposed in the same vertical plane, and a brace disposed through the tines below the handle.

851,732.

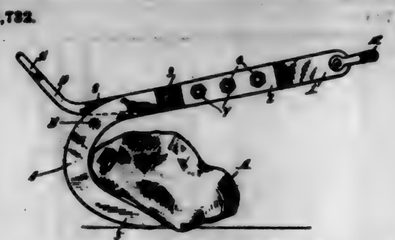

851,733. SCRAPER FOR ORANGE-PEEL BUCKETS. LOUIS A. DÉRY, Montreal, Quebec, Canada, assignor to Joseph William Harris, Montreal, Canada. Filed Feb. 6, 1907. Serial No. 356,116.

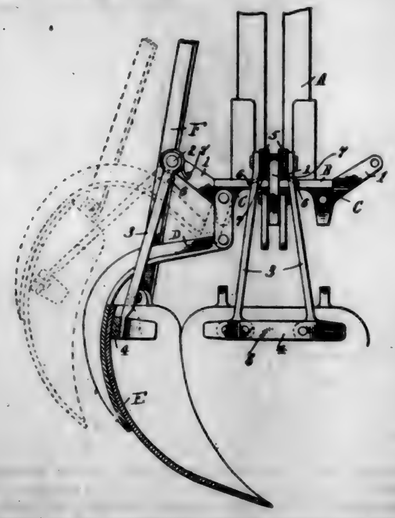

Claim.—1. In combination with an orange peel bucket, scrapers mounted adjacent the inner faces of the leaves of the bucket, and means for maintaining the scrapers against the leaves.

2. In combination with an orange peel bucket, a plurality of scrapers, means for pivotally supporting the scrapers, and means for maintaining the scrapers against the inner faces of the leaves of the bucket.

3. In combination with an orange peel bucket, a plurality of scrapers, means for pivotally supporting the scrapers, and resilient means for maintaining the scrapers against the inner faces of the leaves of the bucket.

4. In combination with an orange peel bucket, a plurality of scrapers, means for pivotally supporting the scrapers, and springs coöperating with the supporting means and adapted to maintain the scrapers against the inner faces of the leaves of the bucket.

5. In combination with a beam having a shoe thereon and the leaves of an orange peel excavator bucket pivoted to the shoe, a plurality of scrapers pivotally supported by the shoe, and means for maintaining the scrapers against the faces of the leaves of the bucket.

6. In combination with a fixed shoe having supporting arms, pins disposed through the supporting arms, links pivotally supported by the pins, coiled springs wound around the pins and having one of their ends connected to the arms and their opposite ends connected to the links, and scrapers carried by the links.

7. In combination with a fixed shoe having supporting arms, links pivotally supported by the arms, coiled springs having their ends connected to the arms and the links, and scrapers having rounded edges carried by the links.

8. In combination with an orange peel bucket and means for actuating the leaves of the bucket, a plurality of scrapers having rounded edges conforming in contour to the inner faces of the leaves of the bucket, and means for maintaining the scrapers against the inner faces of the leaves of the bucket.

851,734. TAKE-UP FOR SEWING-MACHINES. JACOB DIEHL, Cleveland, Ohio, assignor to The Standard Sewing Machine Company, Cleveland, Ohio, a Corporation of Ohio. Filed May 8, 1897. Serial No. 635,639.

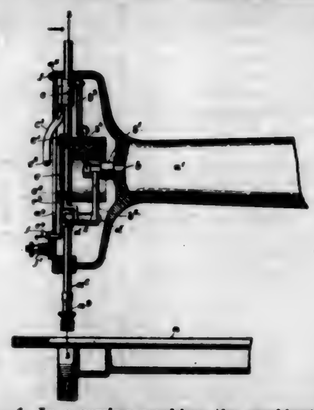

Claim.—1. In a sewing machine, the combination, with the needle-bar, of a reciprocating take-up having a movement independent of that of the needle-bar, means guiding said take-up in a path substantially parallel with the path of the needle-bar, a vibrating thread-controller movable in a direction substantially at right angles to the movement of the take-up and to and from a position in the line of draft of the thread between the take-up and needle, and means independent of the needle-bar for operating said controller positively.

2. In a sewing machine, the combination, with the needle-bar, of a vertically reciprocating take-up having a movement independent of that of the needle-bar and being supported and guided thereon, a pivoted vibrating thread-controller movable in a direction substantially at right angles to the movement of the take-up, and means independent of the needle-bar for operating the said take-up and controller.

3. In a sewing machine, the combination, with the needle-bar, of a rotating shaft having a crank, and a take-up and a thread-controller each having an operative connection with said crank and being actuated thereby independent of the needle-bar.

4. In a sewing machine, the combination, with the needle-bar, of a rotating shaft having a crank, and a take-up and a thread-controller each having an operative connection with said crank through the medium of a pitman and being positively actuated thereby independent of the needle-bar.

5. In a sewing machine, the combination, with the needle-bar, and a reciprocating take-up mounted to slide and operate thereon, of a rotating shaft having a crank, the latter being provided with a fixed angular arm or extension having an operative connection with the take-up, for the purpose set forth.

851,735. DENTAL APPLIANCE. CHESTER M. DOWELL, Elkhart, Ind. Filed July 21, 1906. Serial No. 327,189.

Claim.—1. A dental appliance comprising a pair of plates arranged one upon the other, a connection for said plates yieldingly connecting the latter at one end and holding their opposite ends normally spaced apart, a registering device for permanently retaining the occlusion of the jaws, and a clamping member constructed and arranged to hold the said spaced ends of the plates together against the action of the aforesaid connection.

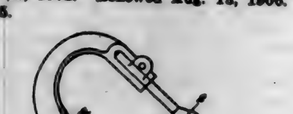

2. The combination of a pair of plates hinged together, of a retaining device carried by the plates and consisting of a pair of adjustable arms on one of said plates and a pair of fixed arms on the other plates adapted to coöperate with the adjustable arms on the first mentioned plate to retain the bite of the patient.

3. The combination of a pair of plates hinged together, of a retaining device carried by the plates and consisting of a pair of arms adjustably mounted on one of said plates and having apertures, and a pair of arms fixed to the other plate adapted to engage the apertures in the first mentioned arms, substantially as specified.

851,736. CLEANSING-MACHINE. WILLIAM H. DUNN, Chicago, Ill. Filed Mar. 16, 1906. Serial No. 306,476.

Claim.—In a cleansing machine, the combination of a containing tank, a circulator rotatably located therein having radial and vertical members provided with plates set at an angle to the walls of the containing tank adjacent thereto, means for oscillating said circulator extending from the top rim thereof outwardly through an aperture in the upper part of said containing tank, and a containing basket adapted to be placed within said circulator and to be supported and rotated thereby.

851,737. SHOE-TURNING MACHINE. ANDREW EPPLER, Jr., Boston, Mass., assignor to United Shoe Machinery Company, Paterson, N. J., a Corporation of New Jersey. Filed Apr. 16, 1902. Renewed Aug. 18, 1906. Serial No. 330,415.

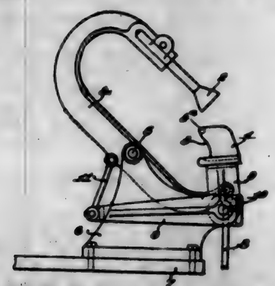

Claim.—1. A machine for turning the rear or counter portion of a turn shoe having, in combination, a form over which the shoe is turned, having a recess in its rear wall to prevent the upper binding on the form, and a plunger movable into and out of the form, substantially as described.

2. A machine for turning the rear or counter portion of a turn shoe, having, in combination, a form over which the shoe is turned, a plunger movable into and out of the form, and means for moving the form laterally toward the plunger during the turning operation to relieve the strain on the upper, substantially as described.

3. A machine for turning the rear or counter portion of a turn shoe, having, in combination, a pivotally mounted support, a form mounted thereon over which the shoe is turned, a plunger movable into and out of the form, a lever upon which the plunger is mounted, and a link connecting the lever and the pivotally mounted support, substantially as described.

4. A machine for turning the rear or counter portion of a turn shoe, having, in combination, a form, a plunger coöperating therewith, the form and plunger being relatively movable to cause the plunger to turn the shoe over the form, and means for imparting a relative lateral movement to the form and plunger during the turning operation to relieve the strain on the upper, substantially as described.

5. In a machine for turning the rear or counter portion of a turn shoe, a form over which the shoe is turned provided with a recess in its rear wall to prevent the upper binding on the form, substantially as described.

6. A machine for turning the rear or counter portion of a turned shoe, having, in combination, a form and a plunger co-operating therewith, said form and plunger being movable laterally with relation to each other during the turning operation to relieve the strain on the upper, substantially as described.

7. A machine for turning the rear of counter portion of a turned shoe, having, in combination, a form over which the shoe is turned, and a plunger movable into and out of the form, said form being movable laterally with relation to the plunger during the turning operation to relieve the strain on the upper, substantially as described.

851,738. METHOD OF AND APPARATUS FOR TRANSFORMING SINGLE OR POLYPHASE INTO CONTINUOUS CURRENT. GEORGES FAGET, Paris, France. Filed Oct. 22, 1904. Serial No. 229,629.

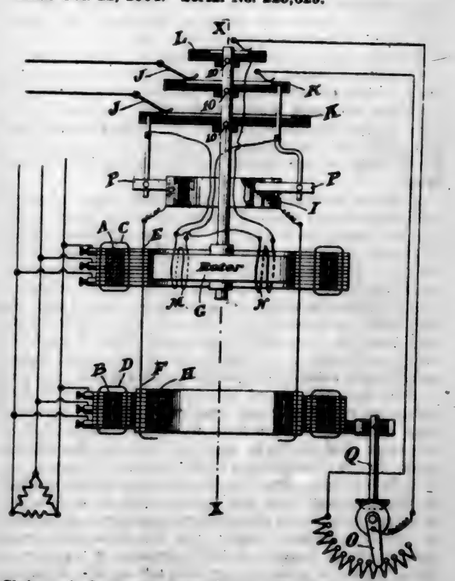

Claim.—1. In an apparatus for transforming either single or polyphase current into continuous current of variable

voltage, the combination with distinct primaries adapted to receive polyphase current from the same main to produce distinct rotary fields rotating at the same angular speed; of means for varying the angular relation of said primaries to adjust the angular relation of said rotary fields; a secondary extending into said distinct rotary fields to compound the separate effects thereof; and means for rectifying the resultant alternating currents induced in said secondary.

2. In an apparatus for transforming either single or polyphase current into continuous current of variable voltage, the combination with distinct primaries adapted to receive polyphase current from the same main to produce distinct rotary fields rotating at the same angular speed; of means for varying the angular relation of said primaries to adjust the angular relation of said rotary fields; a secondary extending into said distinct rotatory fields to compound the separate effects thereof, said secondary having a commutator in fixed relation thereto and brushes mounted to revolve on said commutator; and means to maintain the bearing points of said brushes substantially in coincidence with the revolving neutral line of commutation.

3. In an apparatus for transforming either single or polyphase current into continuous current of variable voltage, the combination with two separate primaries adapted to receive polyphase current from the same main to produce two distinct rotatory fields rotating at the same angular speed; of means for varying the angular relation of said primaries to adjust the angular relation of said rotatory fields; a secondary extending into said distinct rotatory fields to compound the separate effects thereof, said secondary having a commutator in fixed relation thereto, and brushes mounted to revolve on said commutator, and a rotor mounted in one of said fields, said rotor being bodily connected with said brushes to revolve the same; and means to magnetize said rotor in a direction dependent upon the angular adjustment of the said rotary fields.

4. In an apparatus for transforming either single or polyphase current into continuous current or variable voltage, the combination with two separate primaries adapted to receive polyphase current from the same main to produce two distinct rotatory fields rotating at the same angular speed; of means for varying the angular relation of said primaries to adjust the angular relation of said rotatory fields; a secondary extending into said distinct rotatory fields to compound the separate effects thereof, said secondary having a commutator in fixed relation thereto, and brushes mounted to revolve on said commutator, and a rotor mounted in one of said fields, said rotor being bodily connected with said brushes and having two windings fed from the said brushes to produce differently directed fluxes, and means for adjusting the relative strength of such fluxes to adjust the direction of the resultant flux in said rotor.

5. In an apparatus for transforming either single or polyphase current into continuous current of variable voltage, the combination with two separate primaries adapted to receive polyphase current from the same main to produce two distinct rotatory fields rotating at the same angular speed; of means for varying the angular relation of said primaries to adjust the angular relation of said rotatory fields; a secondary extending into said distinct rotatory fields to compound the separate effects thereof, said secondary having a commutator in fixed relation thereto, and brushes mounted to revolve on said commutator, and a rotor mounted in one of said fields, said rotor being bodily connected with said brushes and having two windings, one being of thin wire and calculated to yield the necessary field with the maximum voltage, the other of thick wire in series with an adjustable resistance.

6. In an apparatus for transforming either single or polyphase current into continuous current of variable voltage, the combination with two separate primaries adapted to receive polyphase current from the same main to produce two distinct rotatory fields rotating at the same angular speed; of means for varying the angular relation of said primaries to adjust the angular relation of said rotatory fields; a secondary extending into said distinct rotatory fields to compound the separate effects thereof, said secondary having a commutator in fixed relation thereto, and brushes mounted to revolve on said commutator, and a rotor mounted in one of said fields, said rotor being bodily connected with said brushes and having two windings, one being of thin wire and calculated to yield the necessary field with the maximum voltage, the other of thick wire in series with an adjustable resistance, and means for varying the value of such resistance.

7. In an apparatus for transforming either single or polyphase current into continuous current of variable voltage, the combination with two separate primaries adapted to receive polyphase current from the same main to produce two distinct rotatory fields rotating at the same angular speed; of means for varying the angular relation of said primaries to adjust the angular relation of said rotatory fields; a secondary extending into said distinct rotatory fields to compound the separate effects thereof, said secondary having a commutator in fixed relation thereto, and brushes mounted to revolve on said commutator, and a rotor mounted in one of said fields, said rotor being bodily connected with said brushes and having two windings, one being of thin wire and calculated to yield the necessary field with the maximum voltage, the other of thick wire in series with an adjustable resistance, and mechanism for connecting the said resistance adjusting means and the said rotatory field adjusting means to cause said two adjusting means to act simultaneously.

8. In an apparatus for transforming either single or polyphase current into continuous current of variable voltage, the combination with two separate primaries adapted to receive polyphase current from the same main to produce two distinct rotatory fields rotating at the same angular speed; of means for varying the angular relation of said primaries to adjust the angular relation of said rotatory fields; a secondary extending into said distinct rotatory fields to compound the separate effects thereof, said secondary having a commutator in fixed relation thereto, and brushes mounted to revolve on said commutator, and a rotor mounted in one of said fields, said rotor being bodily connected with said brushes and having two windings, one being of thin wire and calculated to yield the necessary field with the maximum voltage, the other of thick wire in series with an adjustable resistance, and mechanism for connecting the said resistance adjusting means and the said rotatory field adjusting means to cause said two adjusting means to act simultaneously so that the total resistance of the adjustable rotor circuit shall remain proportional to the cotangent of the angle between the two rotatory fields.

9. In an apparatus for transforming either single or polyphase current into continuous current of voltage variable at will to any desirable value between certain limits, the combination of a stationary primary adapted to receive polyphase current from a main to produce a rotatory field; and an angularly adjustable primary adapted to receive polyphase current from the same main to produce a second rotatory field rotating at the same speed as the first; a secondary extending into said distinct rotary fields and having a commutator in fixed relation therewith; a stationary iron core to close said adjustable rotary field; and a revolving iron core to close said fixed rotary field; brushes carried by said revolving core, and windings on said core, said windings being connected with the said brushes to polarise the core in a direction dependent upon the angular relation of the two rotary fields; and slip rings connected both electrically and mechanically with such brushes.

10. In an apparatus for transforming single phase current into continuous current of variable voltage, the combination with two distinct primaries having polyphase windings, one phase winding of one of said primaries being connected with the corresponding phase winding of the other primary, and means for producing a lag or lead in the current supplied to the circuit so formed in order to produce two separate rotary fields; of means for adjusting the angular relation of said primaries; a secondary extending into said distinct rotary fields to compound the separate effects thereof; and means for rectifying the resultant alternating currents induced in said secondary.

11. The combination with means for creating two distinct rotatory fields; and means for varying their angular relation at will; of a stationary secondary winding extending into both of said fields to compound the separate inductive effects of the said two rotatory fields; and a fixed commutator connected with the said stationary winding and having brushes adapted to revolve substantially in coincidence with the resultant inductive effect of the said two rotatory fields.

12. The method of transforming single or polyphase current into continuous current which consists in distributing the polyphase currents in the primary circuit so as to generate distinct rotatory fields in separate parts of space, to produce separate inductive effects on different parts of the secondary; and rectifying the currents so generated in the secondary.

13. The method of transforming single or polyphase current into continuous current of variable voltage, consisting in:—distributing the polyphase current in the primary circuit so as to generate distinct rotatory fields rotating at the same speed in separate parts of space, to produce separate inductive effects on different parts of the secondary; varying the angular relation of these distinct fields to vary the phase relation of such induced effects; and rectifying the current due to the joint action of these two effects.

851,739. PROTECTION OF SECONDARY CIRCUITS. SAMUEL FERGUSON, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 9, 1904. Serial No. 223,823.

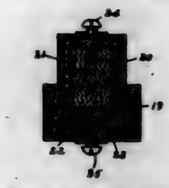

Claim.—1. In an electrical distributing system, the combination of high potential conductors, a permanent ground connection of high impedance for each of said conductors, low potential conductors, and automatic means for permanently connecting said low potential conductors to ground when primary high potential occurs on said low potential conductors.

2. In an electrical distributing system, the combination of high potential mains, transformers having their primaries connected in delta between said mains, a permanent ground connection of high impedance for each corner of said delta, secondaries for said transformers, and means for automatically connecting said secondaries to ground when primary high potential occurs on said secondaries.

3. In an electrical distributing system, the combination of high potential mains, transformers having their primaries connected in delta between said mains, a permanent ground connection of high impedance for each corner of said delta, secondaries for said transformers connected in delta, and means for connecting said secondaries to ground comprising a mercury electrode and a metallic electrode separated by a thin insulating medium.

4. An automatic circuit closing device comprising two mercury conductors separated by a thin insulating member, and means for connecting said conductors to an electrical circuit.

5. An automatic circuit closing device comprising two liquid conductors separated by an insulating film, one of said conductors consisting of mercury, and means for connecting said mercury to an electrical circuit.

6. A circuit closing device comprising a metallic conductor, an insulating cup secured to said conductor, a thin layer of insulating material clamped between said cup and conductor, and a body of mercury normally supported by said thin layer of insulating material and insulated from said metallic conductor.

7. A circuit closing device comprising a metallic block, an inverted cup of insulating material carried thereby and supporting a column of mercury, a metal conductor passing through said cup of insulating material and contacting with said mercury, a thin layer of insulating material between said mercury and said block, and means for connecting said mercury to an electrical circuit.

8. A film cut-out comprising a metallic block having a chamber in its top, an inverted cup of insulating material screwed into said chamber, a body of mercury in said insulating cup, a paper film supporting said mercury and normally separating it from said metallic block, and an electrical connection for said mercury through said insulating cup.

851,740. LIFE-BELT. ANTON GARBIS and EMILY GARBIS, Vienna, Austria-Hungary. Filed Dec. 3, 1904. Serial No. 235,366.

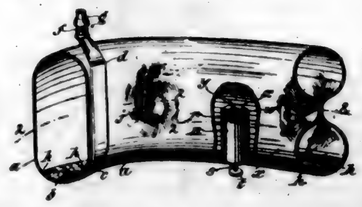

Claim.—1. An inflatable life belt made of fabric which becomes air-proof in wet state, the entering water closing its pores, said life belt comprising in combination with its side wall an air channel, formed by a strip of said fabric sewn to the side wall and ending opposite an opening in the lower side of the belt, and a separate means for developing spontaneously gas, substantially as described and for the purpose set forth.

2. An inflatable life belt made of fabric becoming air proof in wet state, said life belt comprising in combination separate means for inflating air and for developing gas and having its side walls sewn together at several convenient points for the purpose of creating sufficient stability, substantially as described and for the purpose set forth.

851,741. SEED-PLANTER. JAMES S. GARDNER, Java, Ala., assignor of one-half to Jesse W. Dismukes, Java, Ala. Filed Aug. 16, 1906. Serial No. 330,907.

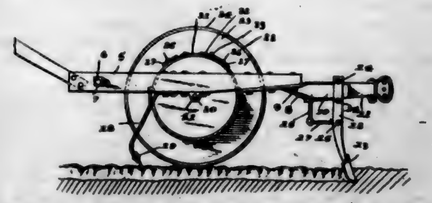

Claim.—A planting wheel for an implement of the class described comprising a hollow body portion, a flange formed continuously about the portion and to one side of the middle of the same, said body portion being provided with openings to one side of the flange, slotted plates disposed upon the body portion, and bolts carried by the body portion and extending through the slots in the plates for holding the plates in place upon the body portion, said plates having their inner edges abutting the flange upon the body portion whereby the plates may be guided while being adjusted.

851,742. SCREW-MACHINE. WILLIAM H. GATES, Norwich, Conn. Filed Apr. 8, 1903. Serial No. 151,614.

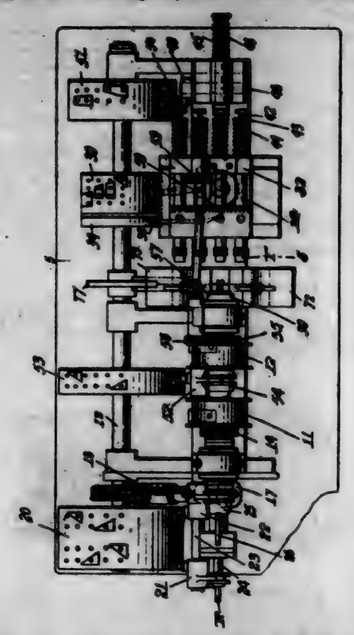

Claim.—1. In a machine of the class described, the combination of a head stock spindle, a transversely movable slide having a number of tools mounted therein, a locking pin, a spring-pressed lever normally raising said locking pin into engagement with any of a number of sockets to hold the slide in adjusted positions, a rack on the slide, a gear meshing therewith, a sector connected to operate the gear, a cam-shaft, and cam-wheels or drums mounted thereon for first releasing the spring-pressed lever to unlock the slide and to then shift the sector to move the slide to different positions to bring successive tools in line with the head stock spindle.

2. In a machine of the class described, the combination of a head stock spindle, a transversely movable slide, a number of tools mounted in said slide, a connecting screw threaded into the spindle of each tool, a check-nut holding each connecting screw in adjusted position, a spring for restoring each tool spindle to normal position, an operating piece having a groove for receiving the head of the connecting screw of each spindle that is moved into position, a spring normally retracting the operating piece, and means for advancing the operating piece to feed forward the successive tools.

3. In a machine of the class described, the combination of a head stock spindle, a number of tools which are brought into line with the head stock spindle, an operating piece for successively advancing the tools brought into line with the head stock spindle, a rack and segment for the operating piece, a cam shaft, a cam wheel or drum, an arm turning with the segment and having a pin to be engaged by the cams or pieces on the cam-wheel, said pin being adjustable whereby a single adjustment will change the operative effect of all the tools.

4. In a machine of the class described, the combination of a head stock spindle, a slide, tools mounted in said slide, means for moving the slide to bring successive tools into line with the head stock spindle, an operating piece, a rack and sector therefor, a cam-shaft, a cam-wheel or drum on the cam-shaft, a slotted arm turning with the sector, and a pin to be engaged by the cams on the drum, said pin being adjustable in the slotted arm, whereby a single adjustment will change the operative effect of all the tools.

5. In a machine of the class described, the combination of a main spindle, means for automatically presenting a tool and a threading die in position to co-operate therewith, driving connections, means for automatically connecting the main spindle with the driving connections to be turned at a high speed during the operation of the tool and to be turned at a low speed in the same direction during the operation of the threading die, and means for rotating the threading die to withdraw the same from the screw when the spindle is on the low speed.

851,743. VARIABLE-VOLTAGE TRANSFORMER. EDWARD F. GENEKENS, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 9, 1906. Serial No. 325,198.

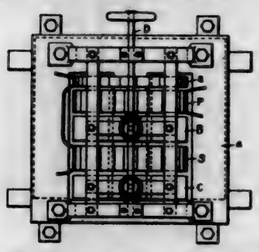

Claim.—1. In a variable-voltage transformer, primary and secondary coils, means for varying the inductive effect of the primary on the secondary coil, and a third coil in inductive relation to the primary and connected in series with the secondary coil.

2. In a variable-voltage transformer, primary and secondary coils, means for varying the inductive effect of the primary on the secondary coil, and a third coil in inductive relation to the primary and connected in series with and opposing the secondary coil, said third coil being proportioned to give an induced voltage approximately equal to the minimum induced voltage in the secondary coil.

3. In a variable-voltage transformer, a magnetic core, primary and secondary coils thereon, means for moving a portion of the core to vary the inductive effect of the primary upon the secondary coil, and a third coil on the core in series with the secondary coil.

4. In a variable-voltage transformer, a magnetic core, primary and secondary coils thereon, means for moving a portion of the core to vary the inductive effect of the primary upon the secondary coil, and a third coil in constant inductive relation to the primary and proportioned to give an induced voltage approximately equal to the minimum induced voltage in the secondary coil.

5. In a variable-voltage transformer, primary and secondary coils, means for varying the proportion of total primary flux threading the secondary coil, and a third coil in inductive relation to the primary and connected in series with the secondary coil.

6. In a variable-voltage transformer, primary and secondary coils, means for varying the proportion of total primary flux threading the secondary coil, and a third coil in inductive relation to the primary and connected in series with and opposing the secondary coil, said third coil being proportioned to give an induced voltage approximately equal to the minimum induced voltage in the secondary coil.

7. In a variable-voltage transformer, primary and secondary coils, means for varying the proportion of total primary flux threading the secondary coil, and a third coil in constant inductive relation to the primary coil, the product of the number of turns of the third coil and the primary flux by which it is threaded being approximately equal to the product of the number of turns of the secondary coil and the minimum primary flux by which it is threaded.

8. In a variable-voltage transformer, primary and secondary coils, a core adapted to afford two magnetic circuits, one passing through both coils and the other shunting the secondary coil, means for varying the relative reluctances of said circuits, and a third coil in constant inductive relation to the primary coil and connected in series with the secondary coil.

9. In a variable-voltage transformer, a core, primary and secondary coils spaced apart on said core, means for shifting the flux from one portion of the core to another, and a third coil in series with and opposing the secondary and arranged on a portion of the core in which the flux is not shifted by said means.

851,744. SAFE. ADOLPH F. GUSTAFSON, Pueblo, Colo. Filed Nov. 9, 1905. Serial No. 286,604.

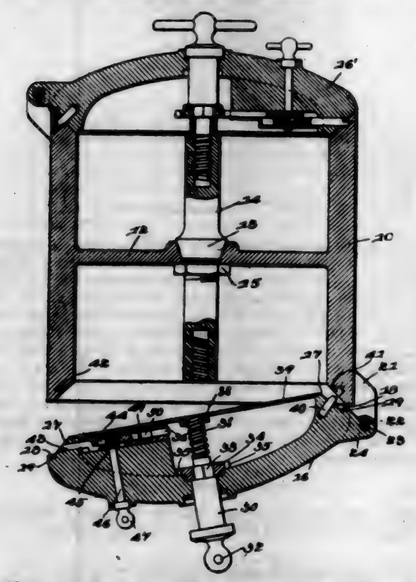

Claim.—1. In a safe, a door, a screw having an unthreaded portion extending through an opening formed in said door, and held from lateral play by the wall of said opening, the screw being free to move in the direction of its length to permit full closing movement of the door without turning or engaging the screw, an approximately central bar arranged in the safe and provided with a female thread, a notched collar carried by the screw and serving as a means for preventing outward movement thereof, and means for engaging said collar and locking the same from rotative movement.

2. In a safe, a body portion having a female screw, a door having an opening formed therein, a door tightening screw having an unthreaded portion passing through said opening and held from lateral play by the wall thereof, the screw being free to move in the direction of its length to permit full closing of the door without engaging the tightening screw with the female screw, and means for preventing rotative movement of said tightening screw.

3. In a safe, a door, a screw for forcing the door to closed position, a pair of slidable bars or bolts having recessed end portions, one being movable into engagement with the screw, and the other arranged to enter a locking recess in the wall of the safe, an operating cam entering the recesses, and a handled stem carrying said cam.

4. In a safe, a cylindrical body portion open at each end, hinged doors arranged at both ends of the safe, an approximately central bar within the safe, and means carried by the doors for engaging with the opposite ends of the bar.

5. In a safe, a body portion having a partition or cross bar, a bar rigidly secured thereto and having female screws at its opposite ends, hinged doors at the opposite ends of the safe, and threaded bolts carried by the doors and arranged to enter said female screws.

851,745. MAIL-RECEIVING BOX. ALBERT HABNTER, Chicago, Ill. Filed Jan. 24, 1907. Serial No. 358,793.

Claim.—1. The combination with a cylinder provided at its lower end with circumferential corrugations and a vertical slot and a hinge opposite said slot, of a gate made of a single piece of wire with ends entering said hinge from its opposite ends and said gate, opposite said hinge, provided with substantially vertical projections *g* to catch and hold on said corrugations and a loop projecting through said slot.

2. The combination with a cylinder provided at its lower end with a vertical slot, a hinge, and means to form a yielding catch at said slot, of a single-piece wire gate entering said hinge from opposite ends, and a handle projecting therefrom through said slot.

851,746. METALLIC PACKING. CHARLES C. HAGEMAN, Leavenworth, Kans. Filed June 4, 1906. Serial No. 320,102.

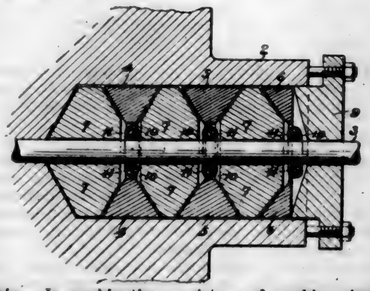

Claim.—In combination, a piston rod, packing rings for embracing same having their upper portions beveled, rings interposed between the packing rings having their sides beveled to coincide with the beveled portions of the packing rings, said second named rings being free on the shaft and fiber rings interposed between the packing rings beneath the second named rings, said fiber rings being free from pressure.

851,747. PROCESS OF DRYING ELECTRIC CABLES. WILLIAM B. HALE, Mexico, Mexico, assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 12, 1906. Serial No. 305,738.

Claim.—1. The process of drying electric cables which consists in maintaining a flow of electric current through the insulating material of the cable, of sufficient strength to electrolyse the moisture therein.

2. The process of drying electric cables, which consists in establishing a difference of potential between different conductors of the cable, and thereby causing a flow of current through the insulation surrounding said conductors sufficient to decompose the moisture therein.

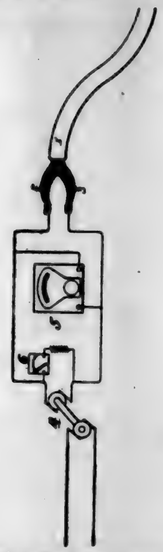

3. The process of drying electric cables which consists in establishing an electromotive force between different conductors of the cable, thereby causing a flow of current through the insulation surrounding said conductors, sufficient to electrolyse the moisture therein, and progressively increasing the impressed electromotive force as the insulation resistance rises, to maintain the current flow above the critical value for electrolysis.

4. The process of drying electric cables, which consists in establishing a flow of current between different conductors of the cable through the moisture remaining in the insulating medium, said current being sufficient to cause electrolytic decomposition of such moisture, and electrically heating said insulating medium to temporarily increase the conductivity of said moisture so as to permit the maintenance of said current above the critical value for electrolysis.

5. The process of drying electric cables which consists in establishing, by an impressed electromotive force, a flow of current through the insulating medium of said cable, such current being sufficient to electrolytically decompose the moisture therein, and heating said medium to temporarily increase its conductivity to a point which will permit the maintenance of said current at the required intensity for such decomposition without increasing the impressed electromotive force to a point beyond the dielectric resisting strength of the cable, said heating being produced by the application of a suitable electromotive force to the conductors of said cable.

6. The process of drying electric cables, which consists in establishing a flow of current between different conductors of the cable through the moisture remaining in the insulating medium, said current being sufficient to cause electrolytic decomposition of such moisture, and heating said insulating medium to temporarily reduce the insulation resistance of the cable so as to increase the current which will flow under a given electromotive force.

851,748. DISPLAY-RACK. ELMON D. HARDING, Montevideo, Minn. Filed Dec. 7, 1906. Serial No. 346,697.

Claim.—1. A device of the class described comprising a bracket comprising a plurality of arms secured at their upper ends to a support, the lower ends of the arms being arranged to overlap and being provided with registering openings, track-supporting arms having portions engaged through the openings, a track supported by the arms, hangers supported for travel upon the track, and article-supporting members carried by the hangers.

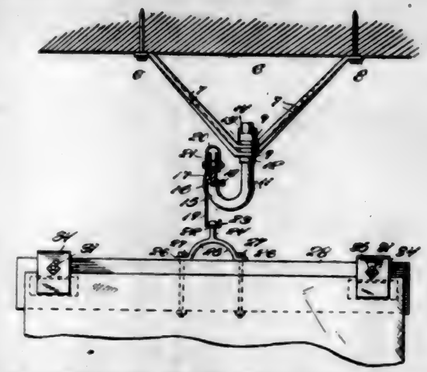

2. A device of the class described comprising a bracket formed of a plurality of arms connected at their upper ends to a support, said arms being extended downwardly and inwardly toward each other, the lower end of the arms being overlapped and being provided with registering openings, track-supporting arms having portions engaged through the openings, a collar formed on each arm beneath the said lower ends of the bracket arms, a pin engaged through each bracket-supporting arm above the said lower ends of the bracket arms, a track supported by the track-supporting arms, a hanger supported by the track for travel thereon, and an article-supporting member carried by the hanger.

851,749. SACK-HOLDER. HENRY F. HENKE, Waconia, Minn. Filed June 14, 1906. Serial No. 321,913.

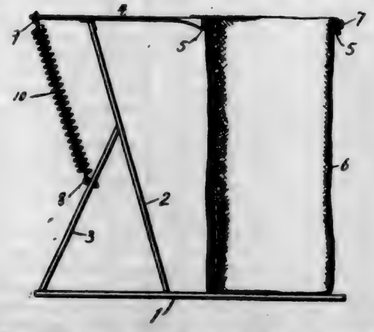

Claim.—The herein described sack or bag holder comprising a suitable platform, an upwardly and rearwardly inclined standard projecting from said platform, a forwardly and upwardly inclined brace connected at its lower end to said platform and at its upper end to the intermediate portion of said standard, a lever hingedly connected intermediate its ends to the upper end of said standard, said lever having at its forward end an integral ring to receive the open upper end of a sack or bag, a second ring or loop to fit over the first-mentioned ring and to clamp the sack or bag between them, the second ring or loop having its ends terminating in straight parallel portions engaged with the opposite sides of said lever and pivoted thereto, an eye-bolt upon the rear end of said lever, an eye-bolt upon said brace, and a coil spring having hooks

at its ends to engage said eye-bolts and yieldably hold the lever in a substantially horizontal position, substantially as shown and described.

851,750. REPLANTING ATTACHMENT FOR CULTIVATORS. MARION F. HODGES, Rushville, Ill. Filed Apr. 18, 1906. Serial No. 312,446.

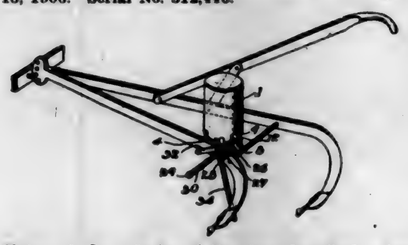

Claim.—1. In a device of the class described, a hopper having a bottom plate and provided with a seed port, a rotary seed plate having seed cups or apertures, a pivot pin piercing the bottom plate and seed plate, respectively, peripheral teeth or ratchets formed in the seed plate and registering with the apertures, a radially movable spring actuated pawl mounted on the pivot pin and having a hooked extremity extending around the edge of the bottom plate and engaging the ratchets of the seed plate through a slot in the wall of the hopper, a spring interposed between the pivot pin and the adjacent end of the pawl, and a spring actuated plunger connected with the pawl and adapted to actuate said pawl and the seed plate.

2. In a device of the class described, a seed plate supported for rotation and having peripheral teeth or ratchets, a pivotal pin for said plate, a pawl member provided with a terminal upwardly and inwardly extending hook for engagement with the ratchet-teeth and having a slot engaging said pin and a recess, a spring in said recess bearing against the axial pin and tending to force the pawl member in a tooth engaging direction, means for oscillating the pawl member and a spring engaging the teeth on said plate for preventing backward rotation of the latter.

3. In a device of the class described, the combination with a bottom plate constituting a supporting member, of a rotary seed plate having peripheral teeth and an overhanging flange, an oscillatory and radially movable pawl having a terminal inwardly projecting hook embracing the edge of the bottom plate and engaging the teeth of the seed plate, a bracket secured to the bottom plate and provided with an eye, and a spring actuating plunger operatively connected with the pawl and passing through said eye.

4. A hopper, a reinforcing ring for said hopper having a housing provided with a hinged spring-actuated cut-off, a bottom plate having a seed port provided with a nipple, a rotary seed plate having seed cups and teeth or ratchets registering therewith, an oscillatory and radially movable pawl member having a hooked extremity engaging the teeth or ratchets of the seed plate, a pivotal pin assembling the pawl member and the seed plate with the bottom plate.

851,751. JUMP-SPARK INDICATOR. OTTO C. HOFFMANN, Buffalo, N. Y., assignor to Chicago Fuse Wire and Manufacturing Company, Chicago, Ill. Filed Mar. 21, 1905. Serial No. 251,833.

Claim.—1. In combination with a non-inductive electric conductor, terminals for such conductor, and a jump spark device located in shunt of such conductor, and means associated with the jump spark device for visually indicating the passage of the spark.

2. A fuse for an electric circuit, and a spark gap indicator connected in shunt to the fuse.

3. An inclosed fuse having terminals and a jump spark device in shunt with said terminals, and means for recording the passage of the spark exterior to the inclosing envelop of the fuse.

4. In an inclosed fuse, terminals for the fuse and a jump spark device exterior to the inclosing envelop in shunt circuit in relation with the terminals and a shield for the device.

5. In an inclosed fuse, a terminal for a fuse, a jump spark device in contact with the terminal, and a part chemically affected by the spark acting at the same time as a shield for the device.

6. In an inclosed fuse a terminal for the fuse, a jump spark device in contact with the terminal and a double shield for the device, one of such shields consisting of a transparent substance.

7. In an inclosed fuse a terminal for the fuse, a casing for the fuse, a depression in the case, a jump spark device in contact with the terminal located in the depression in the casing.

8. In an inclosed fuse a terminal for the fuse; a casing for the fuse, a depression in the case, a jump spark device in contact with the terminal located in the depression in the casing; and a cover for the depression.

9. The combination with a main fusible conductor, of a case inclosing said main conductor, an open auxiliary conductor exterior to said case and connected to said main conductor, and means exterior to said case for indicating the passage of current through said auxiliary conductor.

851,752. PROCESS OF FORMING MONOBASIC ORGANIC PEROXIDS. ALEXIS C. HOUGHTON, Syracuse, N. Y. Filed Apr. 28, 1906. Serial No. 314,240.

Claim.—1. The herein described process of forming monobasic organic peroxids which consists in treating a monobasic aromatic peracid with the anhydrid of a dibasic fatty acid.

2. The herein described process of forming benzoyl succinyl peroxid which consists in agitating an aqueous solution of benzoic peracid with succinic anhydrid until the reaction is complete, and in then removing the precipitate.

851,753. BODY-BOLSTER. CHARLES F. HUNTOON, Chicago, Ill., assignor to Chicago Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 19, 1906. Serial No. 335,265.

Claim.—1. A box-shaped bolster having a member in the form of a rolled member provided with projecting flanges located some distance inwardly from its side edges; substantially as described.

2. A bolster consisting of a plate member, side walls located some distance inwardly from the side edges of said plate member, a rolled member of approximately the same width as the plate member, and projecting flanges on said rolled member which are connected to the side walls of the bolster; substantially as described.

3. A bolster consisting of a plate member, angles connected thereto, a rolled member provided with projecting flanges located some distance inwardly from the side edges thereof, and means for connecting said flanges to the vertical legs of the angles fastened to the plate member; substantially as described.

4. A bolster consisting of a top plate, angles connected to the underneath face of said plate with their horizontal legs projecting in opposite directions, a rolled member having upwardly extending flanges located some distance inwardly from the side edges of said member and embracing the vertical legs of the angles that are secured to the top plate, and fastening devices passing through said flanges and angles; substantially as described.

5. A bolster consisting of a top plate, side walls located some distance inwardly from the side edges of said top

plate, a rolled member of approximately the same width as the top plate and provided with flanges which are connected to the side walls of the bolster, and a center bearing connected to said rolled member by fastening devices which pass through the same outside of the flanges thereon; substantially as described.

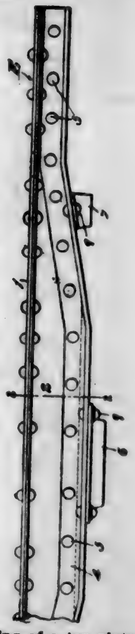

6. A bolster consisting of a top plate, side walls, a bottom plate consisting of a rolled member provided with upwardly projecting flanges which contact with the top plate at the end portions of the bolster, and means for connecting said rolled member and top plate together; substantially as described.

7. A bolster consisting of a top plate, a bottom plate consisting of a rolled member provided with upwardly projecting flanges, said rolled member being spaced away from the top plate at the center of the bolster and bent upwardly to engage the top plate at the end portions of the bolster, and fillers interposed between said top plate and rolled member at the end portions of the bolster; substantially as described.

8. A bolster consisting of a top plate, angles connected to said top plate to form the side walls of the bolster, a rolled member provided with upwardly projecting flanges which are secured to the vertical legs of said angles, said member being bent upwardly so that its flanges will contact with the top plate at the end portions of the bolster, fillers arranged between said top plate and rolled member on each side of the flanges on said member, and fastening devices extending through the top plate, fillers and rolled member to connect said parts together; substantially as described.

9. A car bolster in which one of the members is a special rolled beam having flanges arranged perpendicular to the web portion and located some distance inwardly from the side edges of said web portion; substantially as described.

851,754. CARRIER-SEPARATOR FOR PNEUMATIC-TUBE APPARATUS. CHESTER S. JENNINGS, Brookline, Mass., assignor to Lamson Consolidated Store Service Company, Newark, N. J., a Corporation of New Jersey. Filed June 21, 1906. Serial No. 322,791.

Claim.—1. In a carrier separator for pneumatic despatch tube apparatus, a tube for the transmission of carriers, a lever projecting into said tube and adapted to be operated by a carrier in transit, means actuated by said lever for checking the passage of following carriers, and means for automatically releasing the following carriers after said operating carrier has passed out of contact with said lever.

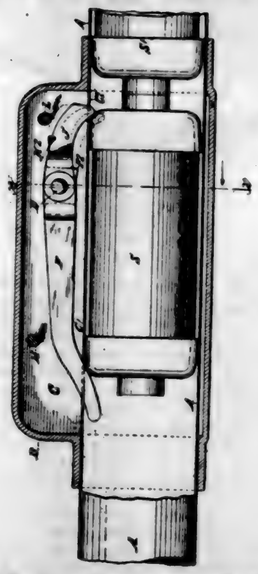

2. In a carrier separator for pneumatic despatch tube apparatus, a tube for the transmission of carriers, a casing surrounding said tube, a lever pivoted to said casing and projecting into said tube and adapted to be operated by a carrier in transit, mechanism actuated by said lever for checking the passage of following carriers, and means for automatically releasing the following carriers after said operating carrier has passed out of contact with said lever.

3. In a carrier separator for pneumatic despatch tube apparatus, a tube for the transmission of carriers, a lever projecting into said tube and adapted to be operated by a carrier in transit, mechanism actuated by said lever and adapted to be depressed into said tube after the passage of the operating carrier thereby checking the passage of the following carrier, yielding means adapted to prevent the binding of said mechanism upon said operating carrier, and means for automatically releasing the following carriers after said operating carrier has passed out of contact with said lever.

4. In a carrier separator for pneumatic despatch tube apparatus, a tube for the transmission of carriers, a casing mounted on said tube, an opening connecting said casing with said transmission tube, a trip lever pivoted in said casing and normally projecting through said opening into said tube and adapted to be lifted by a carrier in transit, a spring adapted to hold said trip lever in normal position, a check lever pivoted in said casing co-incident with said trip lever and adapted to be depressed by said trip lever through said opening into said tube immediately after the passage of the operating carrier whereby following carriers are checked, yielding means connecting said trip lever with said check lever adapted to prevent binding of said levers upon the operating carrier, and means for releasing the following carriers after said operating carrier has passed out of contact with said trip lever.

5. In a carrier separator for pneumatic despatch tube apparatus, a tube for the transmission of carriers, a casing mounted on said tube, an opening connecting said casing with said transmission tube, a trip-lever pivoted in said casing and normally projecting through said opening into said tube and adapted to be lifted by a carrier in transit, a spring adapted to hold said trip-lever in normal position, a check-lever pivoted in said casing co-incident with said trip-lever and adapted to be depressed by said trip lever through said opening into said tube immediately after the passage of the operating carrier whereby following carriers are checked, yielding means connecting said trip-lever with said check-lever adapted to prevent binding of said levers upon the operating carrier, means for releasing the following carriers after said operating carrier has passed out of contact with said trip-lever, and means for limiting the movement of said levers.

851,755. OIL-HEATER. ALBERT K. JOHNS, Cedar Rapids, Iowa. Filed Dec. 27, 1906. Serial No. 349,662.

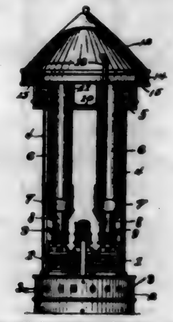

Claim.—1. In an oil heater, a base, a plurality of lamps supported on said base, each having a burner, a plurality of heat radiating tubes, one for each lamp, each radiating tube comprising an upper stationary section a lower movable section telescoping the stationary section, and a sleeve carried by the lower section to fit neatly with the burner of the lamp, a plurality of standards mounted on said base, a drum or water pan supported on the upper end of said standards and into which the upper ends of the stationary sections of the heat radiating tubes are received and neatly fitted, and a top removably-supported from said drum and having its lower edge lying below the upper edge of said drum.

2. In an oil heater, a base, a plurality of lamps mounted on said base, each having a burner, a plurality of heat radiating tubes, one for each lamp, each tube comprising an upper stationary section, a lower section telescoping the upper section, and a sleeve carried by the lower section to fit neatly with the lamp burner, a stationary drum constituting a water pan fitted over the upper ends of the upper sections of the heat radiating tubes and with which said sections are connected, and a top removably-supported from the drum or water pan having its lower edge of greater diameter than the drum whereby to form an air space between the periphery of the drum and said top.

3. In an oil heater, a supporting base, a plurality of lamps mounted thereon, each having a burner, a heat-radiating tube for each lamp, a plurality of standards mounted on said base, a drum constituting a water pan mounted on the upper ends of said standards and into which the upper ends of said heat radiating tubes are received, and a top or cover comprising a ring of larger diameter than the drum and disposed with its lower edge slightly below the upper end of said drum, a cover carried by said ring, and supporting legs attached to the cover proper and resting on the drum.

851,756. GAS-PRODUCING AND HEAT-GENERATING PROCESS. ALFRED E. JOHNSON, Denver, Colo., assignor to The Johnson Furnace and Engineering Company, Colorado Springs, Colo. Filed July 1, 1905. Serial No. 267,987.

Claim.—1. The herein described process consisting first in passing air and steam up through a thick bed of fuel in various stages of combustion whereby gas is generated and caused to rise from the bed; second, maintaining a fuel bed protecting zone of gas immediately above the fuel bed; and third, casing a downwardly directed current of heated air to mingle with the upper stratum of the rising gases without disturbing the gas zone immediately in contact with the fuel bed.

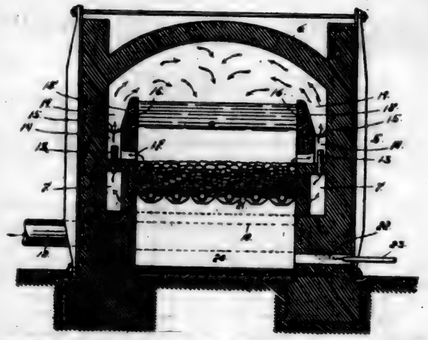

2. The herein described gas generating and heat-producing process consisting in passing a gaseous fluid up through a thick bed of fuel in various stages of combustion resulting in the production of fuel gas and causing the same to pass upwardly above the fuel bed; passing air upwardly under pressure on opposite sides of the fuel bed and causing a portion of the hot gases to mingle therewith in the plane of the top of the fuel bed whereby the air so introduced is considerably heated and caused to enter the furnace considerably above the fuel bed and caused to mingle with the upper stratum of the rising gases; and maintaining a protecting zone of unconsumed fuel elements and incombustible gases immediately above the fuel bed.

3. The herein described process consisting in passing air and steam up through a thick bed of fuel in various stages of combustion whereby gas is generated and caused to rise upwardly from the bed; passing air upwardly under pressure at the side of the fuel bed whereby a partial vacuum is produced, and a portion of the flame and heated gases at the top of the fuel bed caused to mingle with the air, whereby the latter is heated to a considerable degree, and under conditions separating it from the body of the fuel gases rising from the bed, and allowing it to expand in volume as it moves upwardly; causing the air thus prepared to mingle with the gases rising from the fuel bed, and maintaining a protecting zone of gases immediately above the fuel bed.

4. The herein described process consisting in passing air and steam up through a thick bed of fuel in various stages of combustion whereby gas is generated and caused to rise from the fuel bed, introducing heated air to the furnace at a considerable distance above the top of the fuel bed and causing it to mingle with the upper stratum of the rising fuel gases, and maintaining a zone of unconsumed gases containing some incombustible elements immediately above the fuel bed.

5. The herein described process consisting in passing a combustion supporting medium and a combustion retarding medium up through a thick bed of fuel in various stages of combustion, whereby gas is generated and caused to rise from the fuel bed, and causing a downwardly directed current of heated air to mingle with the upper stratum of the said rising gases, and maintaining a lower stratum of gases immediately above the fuel bed in order to shield the latter from the descending air current.

6. The herein described process consisting in maintaining a protecting gas zone immediately above the top of a deep bed of fuel in various stages of combustion, passing a gaseous fluid up through the fuel bed, and introducing opposing currents of air above the produced zone of gases which rise from the top of the bed and protect the latter from direct contact with the air.

7. The herein described process consisting in introduc-

ing air above the top of a deep bed of fuel in various stages of combustion, maintaining a protecting gas zone between the top of the fuel bed and the air so introduced, and passing a gaseous fluid up through the fuel bed, the said fluid being of a nature to generate the gas which rises above the bed.

851,757. ORE-MILL. JULIUS JOHNSON, Mesa, Ariz. Filed Mar. 12, 1906. Serial No. 305,540.

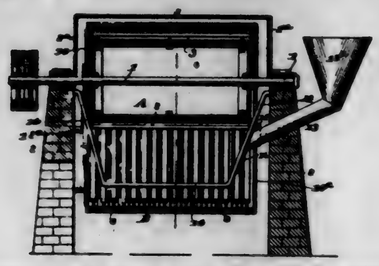

Claim.—1. The improved ore mill formed of a horizontal cylinder having its peripheral grinding portion formed of a series of bars extending transversely and parallel, and an inclosing drum resting, and its weight entirely supported upon, such cylinder, so that it constitutes the ore-crushing medium, said drum having its grinding surface formed of a series of bars extending circumferentially parallel and thus in planes perpendicular to the bars of the cylinder, as described.

2. In a mill for the purpose specified, a rotatable cylinder, a series of rails similar to railroad rails and having flat bases and interposed blocks which are curved on the inner side and flat on the outer side to form a suitable bearing for the flat bases of the rails, and bolts passing through said blocks and the periphery of the cylinder for securing the rails detachably to the periphery of the cylinder, substantially as described.

3. In a mill for the purpose specified, the combination with a horizontal rotatable cylinder, a drum inclosing the same and resting and traveling thereon, and a feed spout fixed to a suitable support and projecting through the open end of the drum below the cylinder, of a feed regulator comprising a bar pivoted at its ends and having a middle portion which is out of alinement with said ends and adapted to come in contact with and sweep over the ore in the cylinder, and having a plate secured to it and arranged in a vertical plane so that it is adapted, when the free end of the bar is raised, to cover the mouth of the feed spout and thus arrest the flow of material into the drum and lateral supports in which said bar is journaled, substantially as set forth.

4. The combination, with the horizontal rotatable cylinder and a drum inclosing and resting upon the same and traveling therewith, of an ore leveler and distributer consisting of an angular bar whose ends are pivoted exterior to the drum, its side arms extended through the openings in the ends of the drum and its central portion being parallel to the periphery of the drum and so located that it may come in contact with accumulations of ore within the drum, substantially as described.

851,758. SPRAYING DEVICE. ELI F. KAUFFMAN, York, Pa. Filed Feb. 24, 1906. Serial No. 302,699.

Claim.—1. In a spraying device, a tank, a dome-shaped agitator mounted for vertical reciprocation therein and having an uprising, tubular throat, a pair of coöperating flap valves arranged for closing said throat during upward movement of the agitator, means for moving the latter, and a spraying tube connected with the tank and having a spraying nozzle.

2. In a spraying device, a tank, a discharge pipe connected therewith and having a spraying nozzle, said discharge pipe including a tubular section provided with an internal abutment, a conical reticulated shield arranged in said section to bear at its enlarged end upon said abutment, a plug removably fitted in the end of the section for permitting removal of the shield, a supporting pin carried

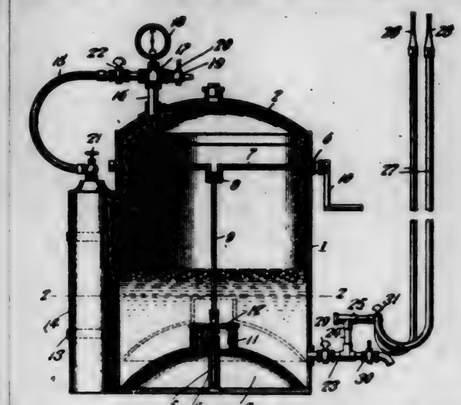

by the plug and engaged with the rear pointed end of the shield, and a spring coiled upon said pin and acting against the pointed end of the shield for maintaining the other end thereof in contact with the abutment.

851,759. CARBURETER. ANTON KUNKEL, Arbon, Switzerland, assignor to The Firm of Adolph Sawrer, Arbon, Switzerland. Filed Aug. 2, 1906. Serial No. 328,914.

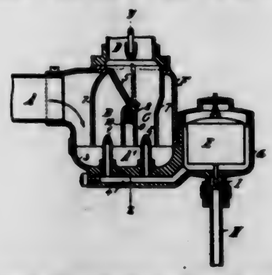

Claim.—1. In a carbureter for a benzin motor with several cylinders, the combination with a casing provided with an air-inlet and with an opening in the cover, of two benzin nozzles disposed vertically on the bottom of said casing, partitions in said casing reaching from the cover opening downward to a point above the bottom and forming two air-passages which surround the mouths of said two benzin nozzles, means for supplying benzin to said two benzin nozzles, and a spring-pressed trap or clack-valve normally closing one of said two air-passages and adapted to be more or less opened by the draft from either cylinder.

2. In a carbureter for a benzin motor with several cylinders, the combination with a casing provided with an air-inlet and with an opening in the cover, of two benzin nozzles disposed vertically on the bottom of said casing, partitions in said casing reaching from the cover opening downward to a point above the bottom and forming two air-passages which surround the mouths of said two benzin nozzles, means for supplying benzin to said two benzin nozzles, a shaft mounted in said casing to turn and extending to without, a trap or clack-valve fastened on said shaft for normally closing one of said two air-passages and adapted to be more or less opened by the draft from either cylinder, an arm fastened on the external end of said shaft, a cylinder mounted to rock on said casing and provided with air-holes in its bottom, a piston reciprocating in said cylinder, a rod connecting said piston with the free end of said arm, and a spring inserted between said piston and the cover of said cylinder and adapted to press said trap or clack-valve on its seat.

851,760. CONVEYER. LORENZ C. KYLLO, Faribault, Minn. Filed Oct. 29, 1906. Serial No. 341,000.

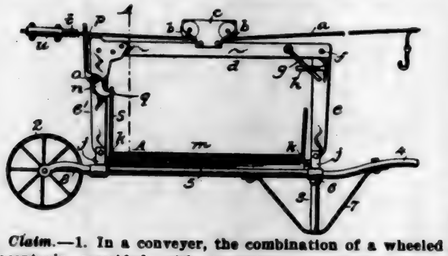

Claim.—1. In a conveyer, the combination of a wheeled receptacle provided with trunnions; a carrier-frame formed with depending arms the lower end of each arm being formed with an eye in which engages one of said trunnions and one of said arms being mounted free to swing, whereby said receptacle is mounted free to rotate in and to be readily removed from said carrier-frame; a cable upon which said carrier-frame rides; locking means for holding said receptacle in an upright position; and means for tripping said locking means to allow said receptacle to dump.

2. In a conveyer, the combination of a wheelbarrow; a carrier-frame in which said wheelbarrow is mounted free to rotate and to be readily removed; a cable upon which said carrier-frame rides; locking means for holding said wheelbarrow in an upright position; and means for tripping said locking means to allow the wheelbarrow to dump; the legs, handles and wheel of the latter serving to aid in righting the same after dumping.

851,761. TELEPHONE SWITCH-HOOK. ALFRED LARSSON, Buffalo, N. Y. Filed May 22, 1906. Serial No. 318,148.

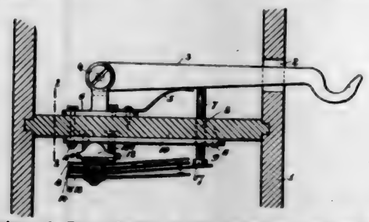

Claim.—1. In a device of the character described, the combination of a tilting bridge carrying a set of contacts, a plunger designed to bear upon one of said contacts, a telephone switch hook associated with and adapted to operate said plunger and means for adjusting said bridge and said contacts in relation to the plunger.

2. In a device of the character described, the combination of a tilting bridge, a set of contacts carried thereby, a telephone switch hook arranged above said bridge, a plunger interposed between and adapted to move freely between said switch hook and contacts and means for adjusting said bridge and contacts relatively to said plunger.

3. In a device of the character described, a bridge carrying a set of contacts, a plunger arranged at an angle to said contacts and being designed to bear upon one of them, a telephone switch hook normally in engagement with said plunger and means upon the bridge for tilting the same and adjusting the contacts in relation to the plunger.

4. In a device of the character described, a bridge carrying a set of contacts, said bridge being provided with upwardly projecting lugs, whereby, said bridge may be tilted.

5. In a device of the character described, a bridge carrying a set of contacts, said bridge having upwardly extending lugs and being provided with apertures at obliquely opposite corners thereof.

6. In a device of the character described, the combination of a switch hook, a series of contact springs arranged therebelow, a plunger adapted to bear upon one of said contact springs at one end, and upon said switch hook at the other end, a bridge carrying the said contact springs, said bridge being provided with upwardly projecting arms having curved faces, whereby, the contact springs may be adjusted at any desired angle in relation to said plunger.

7. In a device of the character described, the combination of a bridge, a set of contact springs carried by said bridge, one of said springs being extended beyond the others and having a washer provided near its end, a plunger adapted to bear upon said washer, a switch hook adapted to bear upon said plunger, and upwardly extending lugs upon said bridge by means of which the latter and the contact springs carried thereby may be adjusted in relation to said plunger.

8. In a device of the character described, the combination of a plate, a bridge removably held thereby, upwardly extending lugs upon said bridge by means of which the latter may be tilted, a set of contact springs carried by said bridge, a plunger arranged at substantial right angles to said contact springs and adapted to bear upon one of said springs, and a telephone switch hook normally bearing upon said plunger.

9. In a device of the character described, the combination of a plate, a bridge removably associated therewith, lateral upwardly extending lugs having curved faces forming a part of said bridge, and by means of which the latter may be tilted, a set of contact springs carried by said bridge, a telephone switch hook arranged above the bridge, and a plunger interposed between said switch hook and one of said contact springs.

10. In a device of the character described, the combination of a plate, a bridge associated therewith having apertures at diagonally opposite corners thereof, fastening means extending through said aperture into said plate, upwardly extending lugs upon said bridge by means of which the latter may be adjusted, a set of contact springs carried by said bridge a telephone switch hook arranged above the bridge, and a plunger freely movable between the switch hook and one of the contact springs.

851,762. CONTROLLING MEANS FOR AUTOMOBILES. HERMANN LEMP, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed June 14, 1905. Serial No. 265,169.

Claim.—1. In a self-propelled vehicle, electric driving motors, a generator supplying current thereto, a prime mover driving said generator, means for controlling the speed of the prime mover, and means for automatically moving said controlling means to its lowest speed position upon an interruption of the generator circuit.

2. In a self-propelled vehicle, electric driving motors, a generator supplying current thereto, a prime mover driving said generator, a lever controlling the speed of said prime mover, and means operative upon a failure of generator current for returning said lever to its lowest speed position.

3. In a self-propelled vehicle, electric driving motors, a generator supplying current thereto, a prime mover driving said generator, a lever controlling the speed of said prime mover, means for returning said lever automatically to its lowest speed position, and means controlled by the generator current for maintaining said lever in other positions.

4. In a self-propelled vehicle, electric driving motors, a generator supplying current thereto, a prime mover driving said generator, a lever controlling the speed of said

prime mover, a spring for returning said lever to its lowest speed position, and a magnetic clutch having its winding connected in the generator circuit adapted to maintain said lever in other positions.

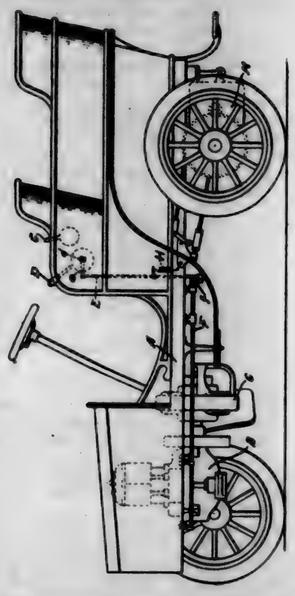

5. In a self-propelled vehicle, electric driving motors, a generator supplying current thereto, a prime mover driving said generator, a lever controlling the speed of said prime mover, a spring for returning said lever to its lowest speed position, a magnet winding in circuit with the generator, and an armature for said winding carried by said lever.

6. In a self-propelled vehicle, electric driving motors, a generator supplying current thereto, a prime mover driving said generator, a lever for controlling the speed of the prime mover, a spring for returning said lever to its lowest speed position, and a magnetic clutch having one member stationary and its other member secured to said lever and having its energizing winding connected in the generator circuit.

851,763. PUMP-ELEVATOR. THOMAS N. LONDON and JAMES A. LONDON, Marquand, Mo., assignors of one-fourth to Robert J. London and one-fourth to Willbern C. Simmons, Twelvemile, Mo. Filed Dec. 28, 1905. Serial No. 293,642.

Claim.—1. A water elevator including a pressure tank for containing a supply of water, a plunger working in the tank and having a plunger rod piercing one side thereof, a spring bearing in opposite directions against the tank and the plunger rod, a support independent of the plunger rod, and a threaded resetting stem carried by the support and capable of being forced against the plunger rod to reset the plunger and the spring.

2. A water elevator including a pressure tank for containing a supply of water, a plunger working therein and provided with a plunger rod piercing one side of the tank, a cross head upon the outer end of the plunger rod, a helical spring bearing in opposite directions against the tank and the cross head, a support carried by the tank and having a portion disposed beyond and in alinement with the outer end of the plunger rod, and a threaded resetting stem carried by the support in alinement with and separate from the plunger rod, said stem capable of being forced against the plunger rod to reset the plunger and the spring.

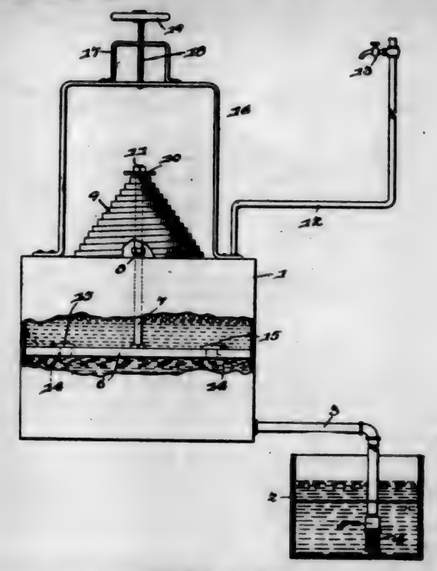

851,764. HAIR-DRIER. CHARLES S. MASON, Toledo, Ohio. Filed July 10, 1906. Serial No. 325,494.

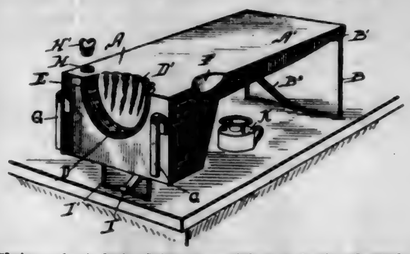

Claim.—1. A hair drier comprising a tank adapted to hold water having an outwardly projecting portion, and a recess formed in said tank adapted to receive the head, for the purpose described.

2. A hair drier comprising a closed tank having a recess formed in one end, and an outwardly projecting portion provided with supporting members, and a lamp adapted to be placed under said portion, for the purpose described.

3. A hair drier comprising a tank adapted to hold water having an outwardly projecting hollow portion, a supporting member secured to said portion, a recess formed in one end of said tank, and a strip of felt secured in said recess, for the purpose set forth.

4. A hair drier comprising a tank having a recess formed in one end having a fluted rear wall, a strip of felt arranged in said recess and hook members secured to the tank on each side of the recess, for the purpose set forth.

5. A hair drier comprising a tank having a recess formed in its end and another in its side, an outwardly projecting portion formed on said tank provided with bearings, a frame pivoted in said bearings provided with a rod, and a socket secured on said portion adapted to receive the end of said rod, for the purpose described.

6. A hair drier comprising a tank having a recessed bottom and an outwardly extending portion, an arm pivoted in said recess carrying a frame sockets secured to the underside of the outwardly extending portion of the tank, and a frame pivoted to the extending portion provided with a rod adapted to fit in either of said sockets, for the purpose set forth.

851,765. CEMENT-KILN. THOMAS M. MORGAN, Longue Pointe, Quebec, Canada. Filed Mar. 1, 1906. Serial No. 303,582.

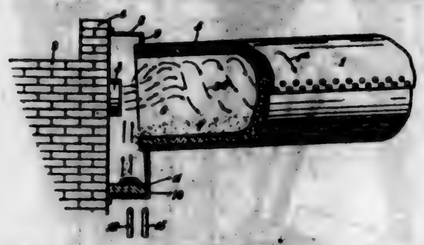

Claim.—1. In a device of the class described, means for discharging a quantity of pre-heated air into the kiln, and means for imparting to said air a swirling or revolving motion.

2. In a device of the class described, means for passing a quantity of air over the cement as it is discharged from the kiln, means for imparting a swirling or revolving motion to said air as it enters the kiln, and means for preventing the access of cold air at the mouth of the kiln.

3. In a device of the class described, means for passing a quantity of air over the cement as it is discharged from the kiln, means for thoroughly mixing said air with the flame of combustion, and means for preventing the access of cold air into the kiln and for imparting to the flame of combustion a circumferentially revolving motion.

4. In a device of the class described, means for passing a quantity of air or steam over the cement as it is discharged from the kiln, and means for deflecting said steam or air into the kiln with a circumferentially revolving motion.

5. In a device of the class described, means for preheating a quantity of air, and means for deflecting said air in a circumferential direction at the mouth of the kiln and discharging it into said kiln with a swirling or revolving motion.

6. In a device of the class described, means for discharging a quantity of inflammable gas into the kiln, a circumferential baffle plate at the mouth of the kiln, an inclined passage adapted to receive the cement as it drops from the kiln, and means for discharging a quantity of steam or air over said cement and against said baffle plate whereby it will be deflected into the kiln with a swirling or revolving motion.

7. In a cement kiln, means for discharging a stream of inflammable material into the kiln, a circumferential baffle plate located at the mouth of the kiln, an inclined passage upon which the cement is discharged from the kiln, a pipe for discharging a quantity of steam or air over said cement and against said baffle plate, and a second pipe adapted to discharge a supplementary quantity of steam or air against said baffle plate whereby the air will enter the kiln with a swirling or revolving motion to be thoroughly mixed with the inflammable material.

8. In a cement kiln, means for discharging a quantity of inflammable material into the kiln, a circumferential deflecting plate located at the mouth of the kiln and inclined downwardly at the bottom of the kiln in a tangential direction to form a passage way upon which the cement is discharged from the kiln, means for discharging a quantity of steam or air under pressure upwardly along said inclined passage whereby it will be heated by the cement and deflected into the kiln with a circumferentially revolving motion.

9. In a cement kiln, means for discharging a stream of inflammable material into the kiln, an inclined passage way upon which the cement is discharged from the kiln, circumferential baffle plates located at the mouth of the kiln, and means for discharging a quantity of air or steam against said baffle plates whereby it will be deflected into the kiln with a revolving or swirling motion.

10. In a cement kiln, means for discharging a stream of inflammable gas into the kiln, means for pre-heating a quantity of air, means for deflecting said air into the kiln with a circumferentially revolving motion, and means for excluding from the kiln all except such pre-heated air.

851,766. AUTOMATIC BRAKE. JOHANN J. MÜLLER, Zurich, Switzerland, assignor to Henry Baer and Company, Zurich, Switzerland. Filed Sept. 22, 1906. Serial No. 335,792.

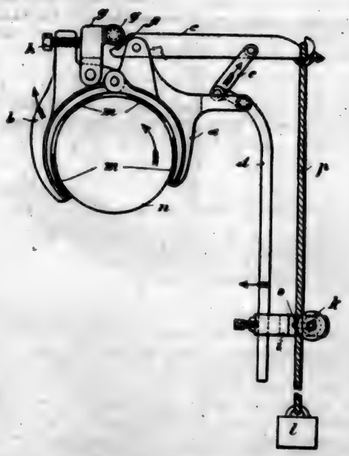

Claim.—1. In an automatic brake, two jaws pivotally connected together to clasp the object to be braked in rider fashion, compound levers carried by the said jaws and a weight suspended from one of the said levers, the said weight together with the said levers causing the said jaws to release their grip when the brake is taken round and to increase it when left behind at a multiplied ratio to retain the brake on the object in its central position, all combined substantially as set forth.

2. In an automatic brake, two jaws pivotally connected together to clasp the object to be braked in rider fashion, two levers carried by one of the said jaws, a link connecting the said levers together, a weight suspended from the outer and an incline at the inner end of the upper of the said levers and an adjustable abutment piece carried by the other of the said jaws to bear against the said incline and permit of removing the brake, all combined substantially as set forth.

851,767. OILING DEVICE FOR FEED-GRINDERS. LARREN B. MCCARGAR, Savannah, Mo. Filed Dec. 31, 1906. Serial No. 350,209.

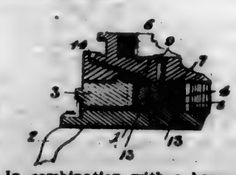

Claim.—1. In combination with a base, studs thereon, pinions on the studs contacting with the base, said pinions having their under faces provided with annular grooves and their upper faces concaved, a trough arranged

above the base and pinions, said trough being provided with ducts leading from the exterior thereof and terminating above the concaved portions of the pinions.

2. In combination with a base, studs thereon, annular flanges on the base surrounding said studs, pinions on the studs contacting with the base, said pinions having their under faces provided with annular grooves into which extend the flanges, the upper faces of said pinions being concaved and a trough arranged above the base, said trough being arranged with ducts leading from the exterior thereof to a point above the concaved portions of the pinions.

3. In combination with a base, studs thereon, annular flanges on the base surrounding said studs, pinions on the studs contacting with the base, said pinions and their opposite faces provided with annular grooves, the grooves on one of the faces being in communication with the bore of the pinions and a trough arranged above the base, said trough being provided with ducts leading from the exterior thereof to above the pinions.

851,768. FLOORING. JAMES MCINTYRE, Boston, Mass., assignor to James Edgar McIntyre, Boston, Mass. Filed May 3, 1906. Serial No. 315,103.

Claim.—1. A board of the character described, provided on one side with a pointed tongue, and having on its other side an inclined recess corresponding in shape to the tongue, and a compressed portion in the edge above said recess, said tongue having its face adjacent to the compressed portion outwardly and upwardly inclined with relation to the plane of the joint formed by the compressed portion, substantially as and for the purpose specified.

2. A board of the character described, provided on one edge with a tongue and on the other edge with a recess corresponding in shape to said tongue, and having a compressed portion in one edge extended longitudinally thereof, said tongue having its face adjacent to the compressed portion outwardly and upwardly inclined with relation to the plane of the joint formed by the compressed portion, substantially as described.

3. The combination of a plurality of matching boards, each provided on one edge with a pointed tongue and on the other edge with a recess to receive the pointed tongue of a contiguous board, and a compressed portion in the edge of one of said boards co-operating with the contiguous edge of a second board said tongue having its face adjacent to the compressed portion outwardly and upwardly inclined with relation to the plane of the joint formed by the compressed portion.

851,769. COMBINED CIGAR-CUTTER AND PIPE-CLEANER. GEORGE NELSON, Milwaukee, Wis. Filed Feb. 4, 1907. Serial No. 355,558.

Claim.—A combined cigar cutter and pipe cleaner, comprising a pair of strips of spring metal forming members pivoted together at one end and provided with a knife edged opening and a knife edged registering notch respectively for cutting the ends from cigars, and scrapers formed on the outer ends of the members by the ends of the spring strips being pointed and arched so as to stand apart with spring action and constituting means for cleaning the bowl of a smoking pipe on being inserted therein and turned, the flexible pointed ends of the scrapers conforming to the curvature of the bowl when placed therein, said scrapers being capable of being spread apart to engage the walls of the pipe bowl by moving the members with relation to each other.

851,770. REEL. WALTER A. NICHOLS, Chicago, Ill. Filed Aug. 31, 1905. Serial No. 276,533.

Claim.—1. A reel comprising a pivot and winding member formed of a single piece of wire bent to provide an inner member and an outer member, the outer member formed in two sections, one of the sections being a continuation of the pivot and the other section terminating in a loop encircling the pivot, and the inner member being provided at its center with a loop encircling the pivot, and the connecting wire between the outer ends of the two members being inwardly bent or curved, forming recesses for holding and retaining the material to be wound upon the wire, and a distending sleeve encircling the pivot intermediate of the two loops, substantially as described.

2. A reel comprising a pivot and winding member of a single piece of wire, the winding member having a continuous inner member and an outer member formed in two sections in alinement with one another, one of the sections being a continuation of the pivot extending at right angles thereto, and the other section terminating in a loop encircling the pivot, the inner member being provided with a corresponding loop at its center, the wire connecting the ends of the inner and outer members being inwardly bent to provide a recess at each end for holding and retaining the material to be wound, an operating handle at one corner of the reel formed by outwardly bending and reversely turning the continuous wire, an eye at another corner of the reel formed by looping the continuous wire, a sleeve encircling the pivot intermediate of the inner and outer loops, and a handle on the projecting end of the pivot within which the pivot is revolubly mounted, substantially as described.

851,771. CORN-HUSKING MACHINE. JAMES W. PAIGE, Chicago, Ill., assignor, by mesne assignments, to Garland-Villa Manufacturing Company, Muskegon, Mich., a Corporation of Maine. Filed Feb. 15, 1906. Serial No. 301,232.

Claim.—1. The combination with the feed rolls of a corn husking machine of a feed hopper and a feed-forcing mechanism consisting of a rock-shaft, having forwardly curved teeth mounted to oscillate thereon in front of said rolls, upwardly and forwardly inclined teeth mounted in guides in the pathway of the stalks behind said first named teeth and means for connecting the two sets of teeth whereby the oscillation of the former may serve to reciprocate the latter.

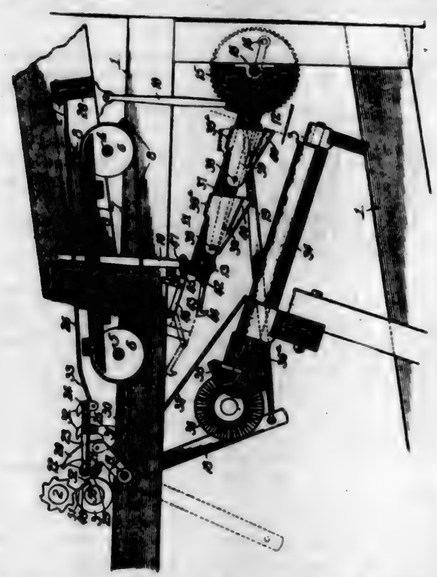

2. The combination with the feed-rolls of a corn-husking machine, of a feed-hopper, guide rods extending longitudinally thereof to a position immediately in front of the feed rolls, upwardly and forwardly inclined teeth mounted upon suitable supports fitted respectively to slide upon said rods, a rock-shaft, means for actuating the same and means for operatively connecting said rock-shaft with said tooth supports.

3. The combination with the feed-rolls of a corn-husking machine, of a feed hopper, guide-rods extending longitudinally thereof to a position in front of the feed-rolls, upwardly and forwardly inclined teeth mounted upon suitable supports fitted respectively to slide upon said rods, a rock-shaft having forwardly curved teeth thereon in operative proximity to said feed-rolls, means for actuating the same and a link for connecting said sliding tooth supports eccentrically to said rock-shaft, whereby the oscillation of the latter may serve to reciprocate the former.

4. In a machine of the class described, a feed roll provided with a longitudinal cut-away portion throughout its length, one face of which is radial while the other is at an obtuse angle thereto, a narrow longitudinal groove being formed at the base of said cut-away portion, and a bar L-shaped in cross-section, detachably fitted to said radial face and having one edge projected into said groove, as and for the purposes specified.

5. In a machine of the class described, the combination with inclined husking rolls, of a frame suspended above said rolls, means for actuating the same, a rearwardly extended gravity rake jointedly supported upon said frame said rake having an arm thereon fitted to engage a guide above it, and a stationary guide for engaging said arm to cause the lifting of the rake during the backward swing of the frame.

6. In a machine of the class described, the combination with inclined husking rolls, of swinging bars suspended above in the plane of the meeting faces of the rolls, means for vibrating said bars longitudinally, and gravity presser members each consisting of a sheet of metal casing arranged to loosely surround the bar upon which it is mounted, said casing being substantially triangular in side elevation and having its upper end jointedly connected to the bar, whereby said device may yield during its upward stroke to ride over the ears of corn upon the rolls.

7. In a machine of the class described, the combination of husking rolls a vibratory bar suspended longitudinally above said husking rolls, means for vibrating said bar, and a hollow sheet metal presser member pivoted at its upper end said member being formed to inclose said bar but made deeper at its lower end whereby it may normally depend therefrom.

851,772. ACETYLENE-GAS GENERATOR. LARS PEDERSON, Leland, Ill. Filed Jan. 29, 1907. Serial No. 354,736.

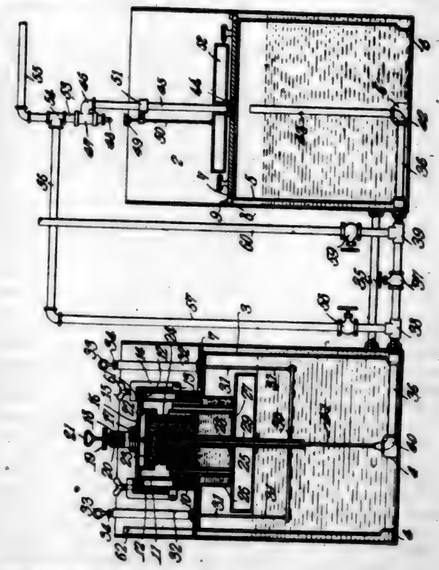

Claim.—1. An acetylene gas generator comprising two interconnected tanks for water, each provided with a bell held against movement therein, a dome on one bell, an adjustable carbid carrier contained therein, a float within the domed bell, a water vessel carried by said float in operative relation to said carbid carrier, and connections between the dome and the interior of the bell contained in the other tank.

2. An acetylene gas generator comprising two interconnected water tanks, a bell fixed against movement in each tank and having free communication therewith at the bottom, means for generating acetylene gas contained in one tank, communications between the gas generator and the interior of the bell in the other tank, a valved escape pipe communicating with the last-named bell, and a float exterior to the last-named bell and in operative relation to the valve in the escape pipe.

3. An acetylene gas generator comprising a tank, a bell fixed against movement therein and communicating with the tank at the bottom, a dome formed on the top of the bell, a gas generating chamber formed in the dome at the top of said bell comprising a carbid carrier, a float, and a water vessel carried by said float in operative relation to said carbid carrier.

4. An acetylene gas generator comprising a water tank, a gas bell normally fixed against movement therein, a dome formed on the top of the bell, a float within the gas bell, a removable water vessel carried by said float, and a carbid carrier within the domed portion of the bell in operative relation to the removable water vessel.

5. An acetylene gas generator comprising a water tank, a bell fixed against movement therein and communicating with the tank at the bottom, a dome formed on the top of the bell, a float within the bell, a water vessel carried by said float and entering the domed portion of the bell, a carbid carrier within said domed portion of the bell in operative relation to the water vessel, and a normally inoperative water seal between the float and the dome of the bell.

6. In an acetylene gas generator, a water tank, a bell fixed against movement therein and communicating therewith at the bottom, a dome formed on the top of the bell, a float in the tank, a water vessel carried by said float, a carbid carrier in the domed portion of the bell in operative relation to the water vessel, a normally inoperative water seal carried by said float in operative relation to the dome, and a lifting means for carrying the float above the water level in the bell and rendering the aforesaid water seal operative.

7. An acetylene gas generator comprising a water tank, a bell normally secured therein, a collar projecting above said bell and having concentric annular walls connected at the top, a float contained within the bell and having an annular trough receiving the annular wall of the collar and adapted to receive water, a removable water vessel carried by said float, a cap for said collar, means for securing the cap in place upon the collar, and a removable carbid carrier supported by said cap.

8. An acetylene gas generator comprising a water tank, a bell normally secured therein, a collar projecting above said bell and having concentric annular walls connected at the top, a float contained within the bell and having an annular trough receiving the annular wall of the collar and adapted to receive water, a removable water vessel carried by said float, a cap for said collar, means for securing the cap in place upon the collar, a removable carbid carrier supported by said cap, and a lifting grid for the float within the bell with means for operating the same exterior to the bell.

9. An acetylene gas generator comprising a water tank, a bell normally fixed therein and communicating therewith at the bottom, a dome formed on said bell, a carbid carrier contained within said dome, a float within said bell, a water vessel on said float, a normally inoperative water seal carried by said float, a gas pipe passing through said float and communicating with the interior of the dome and leading to the exterior of the water tank, a pipe surrounding said gas pipe and fast to the float, extending at one end into the gas generating chamber and at the other end below the water level in the water tank, and means for raising the float above the water level in the bell and rendering the water seal carried by said float active.

10. An acetylene gas generator comprising a gas generating tank and a gas receiving tank, connections between the same, a normally immovable bell in each tank and communicating with the tank at the bottom, a gas generating chamber in one bell, a carbid carrier within the gas chamber, a float within the last-named bell, a water vessel on the float in operative relation to the carbid carrier, a normally inactive water seal on the float, means for lifting the float above the water level in the bell and thereby rendering the water seal active, a float above the bell in the gas receiving tank, a gas escape valve in the path of said float, and connections between the gas receiving tank and the external air including said valve.

11. An acetylene gas generator comprising a gas generating tank, a normally fixed bell therein communicating with the tank at the bottom, a dome on said bell constituting a gas generating chamber, a carbid carrier within the dome, a float in said bell carrying a removable water vessel in operative relation to the carbid carrier, a normally inactive water seal on the float in operative relation to the dome of the bell, means for lifting said float to carry the water seal into the dome and render the water seal active, a gas receiving water tank having a gas receiving bell normally fixed therein and communicating therewith at the bottom, a pipe leading from the gas generating chamber to the gas receiving bell, another pipe connecting the two water tanks, a float upon the gas receiving bell, an escape pipe from said gas receiving bell to the external air, a valve within this pipe in the path of the float, service pipe connections between the gas conveying pipe between the tanks, a valve for closing communication between the tanks, and a normally closed connection between the gas generating tank and the external air.

851,773. SMOKING DEVICE. GUSTAVE A. PFORTNER, New York, N. Y. Filed Feb. 15, 1906. Serial No. 301,216.

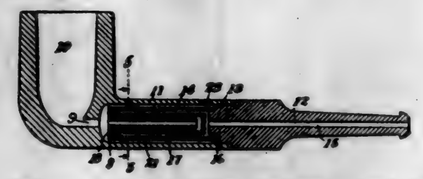

Claim.—1. A smoking device comprising a bowl and stem, the stem having formed therein a chamber communicating at its front end with the bowl, and a smoke-conduit arranged within the chamber and having a smoke-inlet leading from the front end of the chamber into the smoke-conduit at the front end of the smoke-conduit, the chamber having an air-inlet leading into the rear end thereof for cooling the smoke-conduit and for mixing air with the smoke that is entering the smoke-conduit, the stem having a smoke-passage therein in rear of the chamber and the smoke-conduit having a smoke-outlet leading directly into such smoke-passage.

2. A smoking device comprising a bowl and stem, the stem having formed therein a chamber communicating at its front end with the bowl, and a smoke-conduit arranged within the chamber so as to provide a longitudinal space between it and the wall of the chamber and a connected end space between its front end and the front end of the chamber and having a smoke-inlet leading from the front end of the chamber into the smoke-conduit at the front end of the smoke-conduit, the chamber also having an air-inlet leading into the rear end thereof for cooling the smoke-conduit and for mixing air with the smoke that is entering the smoke-conduit, the stem having a smoke passage therein in rear of the chamber and the smoke-conduit having a smoke-outlet leading directly into such smoke-passage.

3. A smoking device comprising a bowl and stem, the stem having formed therein a chamber communicating at its front end with the bowl and also having an air-inlet leading into the rear end of the chamber, and a smoke-conduit arranged in the chamber and having reversely arranged connected smoke-passages with an inlet from the front end of the chamber at the front end of the smoke-conduit, the stem having a smoke-passage therein in rear of the chamber and the smoke outlet from the smoke-conduit leading into such smoke-passage.

4. A smoking device comprising a bowl and stem, the stem having formed therein a chamber communicating at its front end with the bowl and also having an air-inlet leading into the rear end of the chamber, and a smoke-conduit arranged in the chamber so as to provide a longitudinal space between it and the wall of the chamber and a connected end space between its front end and the front end of the chamber and having reversely arranged connected passages with an inlet from the front end of the chamber at the front end of the smoke-conduit, the stem having a smoke-passage therein in rear of the chamber and the smoke outlet from the smoke-conduit leading into such smoke-passage, whereby the smoke-conduit is cooled by the inflowing air, thus cooling the smoke, and the smoke further cooled by having the air well mixed with it in passing through the passages of the smoke-conduit.

5. A smoking device comprising a bowl and stem, the stem having formed therein a chamber communicating with the bowl, and a smoke-conduit arranged in the chamber so as to provide an end space between its front end and the front end of the chamber and comprising an outer tube, an inner tube and an intermediate cup, the outer tube being supported within the chamber, the inner tube being supported by the outer tube and having an inlet opening from the chamber at its front end, the cup being closed at its rear end and located between the outer and inner tubes so as to provide a passage between it and the inner tube connected at its rear end with the passage of the inner tube and a passage between it and the outer tube connected at its front end to the passage between the cup and the inner tube, the stem having a smoke-passage therein in rear of the chamber and the passage between the cup and the outer tube being connected to such smoke-passage.

6. A smoking device comprising a bowl and stem, the stem having formed therein a chamber communicating with the bowl and also having an air-inlet leading into the chamber, and a smoke-conduit arranged in the chamber so as to provide a longitudinal space between it and the wall of the chamber and a connected end space between its front end and the front end of the chamber and comprising an outer tube, an inner tube and an intermediate cup, the outer tube being supported within the chamber, the inner tube being supported by the outer tube and having an inlet opening from the chamber at its front end, the cup being closed at its rear end and located between the outer and inner tubes so as to provide a passage between it and the inner tube connected at its rear end with the passage of the inner tube and a passage between it and the outer tube connected at its front end to the passage between the cup and the inner tube, the stem having a smoke-passage therein in rear of the chamber and the passage between the cup and the outer tube being connected to such smoke-passage, substantially as set forth.

7. In a smoking device, the combination of a bowl, a stem having a chamber therein, the chamber having an opening at one point communicating with the bowl and an opening at a different point communicating with the atmosphere directly, and a tortuous smoke-conduit within the chamber and having its inlet adjacent to the opening from the bowl to the chamber and having its outlet end connected to the stem, the stem having a passage into which the outlet from the smoke-conduit opens.

8. A smoking device comprising a bowl and stem, the stem having a smoke-passage therein, and also having therein a chamber communicating with the bowl, and a smoke-conduit arranged in the chamber and comprising an inner tube, a middle tube and an outer tube, the inner tube being open at both ends and communicating at its front end with the chamber and opening at its rear end into the middle tube, the middle tube being closed at its rear end and opening at its front end into the outside tube, and the outside tube being closed at its front end and opening at its rear end into the smoke-passage of the stem.

851,774. BOBBIN-HOLDER. FRANK POPE, Kankakee, Ill. Filed July 11, 1905. Serial No. 269,180.

Claim.—1. In combination with the usual form of spindle for spinning yarn but having a groove transverse of its longitudinal axis, a spinning bobbin having in the line of its longitudinal bore or passage means for engaging said groove which provides a shoulder with which such means cooperate; substantially as described.

2. In combination with the usual form of spindle for spinning yarn but having a groove transverse of its longitudinal axis, a spinning bobbin, and a resilient device secured within the longitudinal bore or passage thereof and arranged to clamp the bobbin to the spindle, the said groove in the spindle providing a shoulder with which said device cooperates; substantially as described.

3. A bobbin holder comprising in connection with the bobbin and with a spindle having a groove, a resilient sleeve fitted within the longitudinal bore or passage in the bobbin and arranged to engage the groove of the spindle and thereby clamp the bobbin thereto; substantially as described.

4. A bobbin holder comprising in connection with the bobbin and with a spindle having a groove, a resilient sleeve fitted within and located at the base of the longitudinal bore or passage in the bobbin and arranged to cooperate with the groove of the spindle which provides a shoulder engaged by the sleeve; substantially as described.

5. A bobbin holder comprising in connection with the bobbin and with a spindle having a groove, a sleeve secured in the longitudinal bore or passage of the bobbin and having a longitudinal slot for resilient action in the clamping of the spindle, said sleeve being arranged to engage said groove which provides a shoulder for such purpose; substantially as described.

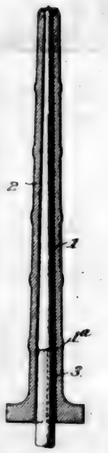

6. A bobbin holder comprising in connection with the bobbin and with a spindle having a circumferential groove a sleeve having external screw threads for securing the same in the longitudinal bore or passage of the bobbin, said sleeve being resilient and arranged to engage the groove of the spindle and thereby clamp the bobbin to the spindle; substantially as described.

7. A bobbin holder comprising in connection with the bobbin and with a spindle having a circumferential groove a sleeve having external screw threads for securing the same in the longitudinal bore or passage of the bobbin, said sleeve having a series of longitudinal slots forming resilient arms or prongs engaging said groove and thereby clamping the bobbin to the spindle; substantially as described.

8. The combination, with a bobbin and its spindle having a notch or groove intermediate its length, and transverse of its axis, of a bobbin holder comprising a resilient sleeve arranged in the longitudinal bore or passage of the bobbin and adapted to engage said notch or groove in the spindle; substantially as described.

9. The combination, with a bobbin and its spindle having a notch or groove intermediate its length, and transverse of its axis, of a bobbin holder comprising a resilient sleeve secured within and at the base of the longitudinal bore or passage in the bobbin and having longitudinal slots to form resilient fingers engaging said notch to clamp the bobbin to the spindle with a yielding pressure; substantially as described.

10. The combination, with a bobbin and its spindle having a notch or groove intermediate its length, and transverse of its axis, of a bobbin holder comprising a resilient sleeve secured within the longitudinal bore or passage in the bobbin and provided with a plurality of longitudinal slots to form resilient fingers, the outer ends of which are thickened and arranged to snap into the notch or groove on the spindle; substantially as described.

851,775. ELECTRIC ATTACHMENT FOR TANKS. HENRY E. REEVE, Brooklyn, N. Y., assignor to Automatic Fire Alarm Company, New York, N. Y., a Corporation of New York. Filed Feb. 3, 1906. Serial No. 299,297.

Claim.—1. An attachment for tanks comprising a receptacle, a switch mounted therein, an actuating float, a pivot

shaft therefor in said receptacle, operative means of connection between said shaft and said switch, a substantial body of oil immersing said pivot shaft, and a sealing bell inclosing the parts of the switch.

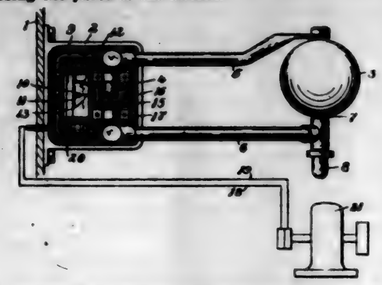

2. A tank attachment comprising a receptacle for containing a substantial body of oil, a float having a pivot shaft mounted in said receptacle and immersed in the oil therein, an electric switch operative means of connection between said switch and said float shaft, and a sealing bell inverted over said switch.

3. An attachment for tanks comprising an oil holding receptacle, a float, a pivot shaft therefor immersed within the oil in said receptacle, a switch in said receptacle, controlled by the movement of said float, and a bell for sealing said switch.

4. A tank attachment comprising an oil holding receptacle, a float, a pivot shaft therefor mounted in said receptacle, a pair of arms connecting said shaft and float, a switch, and a bell inclosing said switch, having its lower edges immersed in the oil in said receptacle.

5. A tank attachment comprising an oil holding receptacle, a pivot shaft therefor, a float connected to said shaft, a rocker arm moving with said shaft, a switch, a spring connecting said switch with said rocker arm, and a bell for sealing said switch.

6. A tank attachment comprising a receptacle for holding a sealing fluid, a switch mounted therein, a bell inclosing said switch, a float and operative means of connection between said float and said switch.

7. A tank attachment comprising a receptacle for holding a sealing fluid, a switch mounted therein, a bell inclosing said switch, a pivot shaft in said receptacle, operative means of connection between said shaft and said switch, a float and a lever arm connection between said float and said shaft.

851,776. AUTOMATIC TRAIN-BLOCKING SYSTEM. CHARLES E. ROEHL, Brooklyn, N. Y. Filed Dec. 16, 1903. Serial No. 185,397.

Claim.—1. In a system for controlling the movements of electrically-operated railway vehicles, the combination with the power circuit, of a track-signal circuit governed by the power circuit, a controlling circuit on the vehicle governed by said track-signal circuit, and automatic means governed by said controlling circuit for breaking the power circuit on the vehicle and applying a brake.

2. In a system for controlling the movements of electrically-operated railway vehicles, the combination with the power circuit, of automatic means for stopping the vehicle energized by current derived from the power-circuit, and block-signal circuits for danger and cautionary signals the circuit of each danger signal controlling the circuit of a succeeding cautionary signal and also controlling the automatic stopping means.

3. In a system for controlling the movements of electrically-operated railway vehicles, the combination with the power circuit, of automatic means for stopping the vehicle energized by current derived from the power-circuit, and block-signal circuits for danger and cautionary signals said circuits forming branches of the power circuit and the circuit of the danger signal controlling the circuit to a succeeding cautionary signal.

4. In a system for controlling the movement of electrically-operated railway vehicles, the combination with the power circuit, of automatic means for stopping the vehicle, and block-signal circuits for danger and cautionary signals said circuits forming branches of the power circuit and the circuit of the danger signal controlling the circuit of a succeeding cautionary signal and also controlling the automatic stopping means.

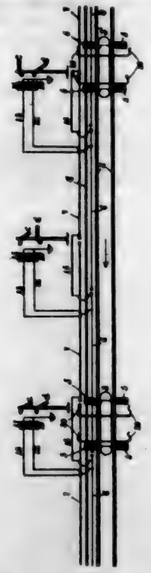

5. In a system for controlling the movements of electrically-operated railway vehicles, the combination with the power circuit, of traveling contact-makers located in different positions crosswise of the vehicle, automatic means for stopping the vehicle, and two sets of track-contacts coöperative respectively with said traveling contact-makers one of the track-contacts controlling a track-signal and the other controlling said automatic stopping means.

6. In a system for controlling the movements of electrically-operated railway vehicles, the combination with the power circuit, of traveling contact-makers located in different positions crosswise of the vehicle, automatic means for stopping the vehicle, and two sets of track-contacts one set for each block coöperative respectively with said traveling contact-makers one of the track-contacts controlling the track-signal and a dissimilar track-contact of a block in the rear being connected with said first track-contact and controlling said automatic stopping means.

7. In a system for controlling the movements of electrically-operated railway vehicles, the combination with the power circuit, of traveling contact-makers located in different positions crosswise of the vehicle, automatic means for stopping the vehicle, and two sets of track-contacts one set for each block coöperative respectively with said traveling contact-makers, one of the track-contacts controlling a danger signal on its own block and a cautionary signal on a block in the rear and a dissimilar track-contact of said block in the rear being connected with said first track-contact and controlling said automatic stopping means.

8. In a system for controlling the movements of electrically-operated railway vehicles, the combination with a third-rail, of a signal-conductor adjacent to said third-rail, automatic stopping means controlled by said signal-conductor, and a traveling contact-maker on the vehicle spanning said third-rail and signal-conductor for supplying current to the motor-circuit and to the signal-conductor.

9. In a system for controlling the movements of electrically-operated railway vehicles, the combination with a third-rail forming a continuous working conductor, of a track-contact adjacent to said third-rail and forming a part of a block-circuit, a block-signal controlled by said block-circuit, and a traveling contact-maker on the vehicle and spanning said third-rail and track-contact for supplying current to the motor circuit and to the block circuit.

10. In a system for controlling the movements of electrically-operated railway vehicles, the combination with a third-rail forming a continuous working conductor, of danger and cautionary signals, a track-contact adjacent to the third-rail and connected in block-circuits controlling danger and cautionary signals of different blocks, and a traveling contact-maker on the vehicle and spanning said third-rail and track-contact for supplying current to the motor circuit and to the block-circuits.

11. In a system for controlling the movements of electrically-operated railway vehicles, the combination with a third-rail, of a pair of track-contacts adjacent to and located in different positions with respect to said third-rail and forming parts of block-circuits, a block-signal controlled by one of said block-circuits, automatic stopping means controlled by the other block-circuit, and a pair of traveling contact-makers on the vehicle one spanning said third-rail and the first track-contact and the other coacting with said second track-contact.

12. In a system for controlling the movements of electrically-operated railway vehicles, the combination with a third-rail, of a pair of track-contacts adjacent to and located in different positions with respect to said third-rail and forming parts of block-circuits in which dissimilar track-contacts of different block-circuits are connected, a block-signal controlled by one of said block-circuits, automatic stopping means controlled by the other block-circuit, and a pair of traveling contact-makers on the vehicle one spanning said third-rail and the first track-contact and the other coacting with said second track-contact.

13. In a system for controlling the movements of electrically-operated railway vehicles, the combination with a third-rail, of danger and cautionary signals, a track-contact adjacent to the third-rail and connected in block-circuits controlling danger and cautionary signals of different blocks, a second track-contact adjacent to said third-rail but occupying a different position and connected in circuit with the cautionary block-circuit of its own block, automatic stopping means controlled by said second track-contact, and a pair of traveling contact-makers on the vehicle one spanning said third-rail and the first track-contact and the other connected with said second track-contact.

14. In a system for controlling the movements of railway vehicles, the combination with a block-signal circuit, of a controlling circuit governed by said block-signal circuit and controlling a block in the rear of that controlled by said block-signal circuit, and automatic stopping means carried by the vehicle and governed by said controlling circuit.

15. In a system for controlling the movements of railway vehicles, the combination with block-signal circuits having danger and cautionary signals in which the circuit of each danger signal controls the circuit of a succeeding cautionary signal, of automatic stopping means located upon the vehicle and governed by the circuit of the cautionary signal.

16. In a system for controlling the movements of electrically-operated railway vehicles, the combination with a power circuit, of a controlling circuit on the vehicle said circuit containing a manual controlling switch and being governed by the power circuit, and an automatic controlling device also on the vehicle and governed by the controlling circuit.

17. In a system for controlling the movements of electrically-operated railway vehicles, the combination with the power circuit, of a controlling circuit on the vehicle said circuit containing a manual controlling switch and an indicator and being governed by the power circuit, and an automatic controlling device also on the vehicle and governed by the controlling circuit.

18. In a system for controlling the movements of electrically-operated railway vehicles, the combination with the power circuit, of a controlling and lighting circuit on the vehicle said circuit containing a manual controlling switch and one or more lamps and receiving current from the power circuit, and an automatic controlling device also on the vehicle and governed by the controlling circuit.

851,777. HAY AND STOCK RACK. DUDLEY L. RYDER, Paw Paw, Mich. Filed Mar. 6, 1905. Serial No. 248,595.

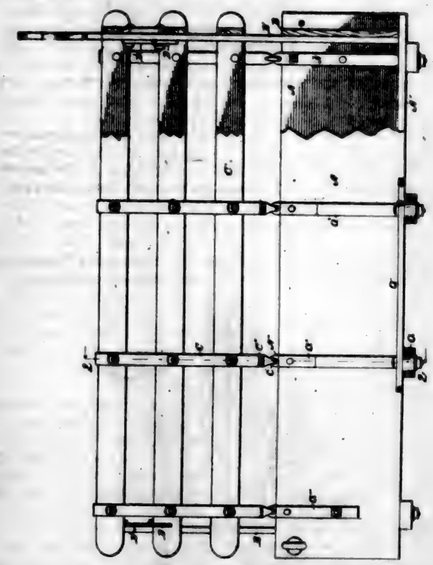

Claim.—1. In a rack, the combination of a body portion; straps having eyes in their upper ends arranged on the sides of said body so that their eyes project above the tops thereof; rack wings on the sides, consisting of cross-arms, adapted to shoulder against the sides of said body when the rack is adjusted as a hay rack; supporting straps for said arms provided with downwardly turned hooks at their outer ends engaging over the outer ends thereof, and with hook extensions at their inner ends adapted to engage the eyes of the straps on said body; longitudinal boards or bars on said arms; end pieces for said racks; hooks pivoted on said end pieces adapted to engage the longitudinal bars of said rack when the sides or wings are adjusted as a stock rack; and a button for locking said hooks in their engaging position, for the purpose specified.

2. In a rack, the combination of a body portion; straps having eyes in their upper ends, arranged on the sides of said body; rack wings on said sides consisting of cross-arms, supporting straps for said arms with hooks at their inner ends adapted to engage the eyes of the straps on said body, and longitudinal boards on said arms; end pieces for said racks; hooks pivoted on said end pieces, adapted to engage the longitudinal bars of said rack when the sides or wings are adjusted as a stock rack; and buttons for locking said hooks in their engaging position, for the purpose specified.

851,778. PURIFYING APPARATUS FOR LIQUIDS. CARL SCHMIDT, Vienna, Austria-Hungary. Filed June 9, 1906. Serial No. 321,074.

Claim.—A feeder of chemicals for water purifying apparatus, comprising a compartment *a* for the dry chemicals with a feed worm at the bottom, extending from the outlet opening *f* to the end wall with thread in one direction and

from said opening to the opposite end with thread in opposite direction, a compartment *e*, below the compartment *c* with feed opening *g* at one end under the opening *f*; a water supply pipe *i* with cock *h* to admit water for wetting and dissolving a dry chemical, falling down from the compartment *e*, a feed screw *d* in the casing *c* driving the

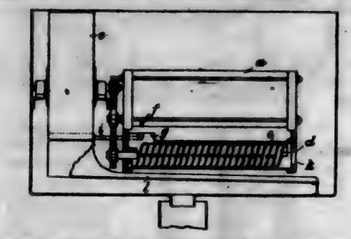

chemicals mixed with the water from the opening *g* at one end toward an opening in the opposite end wall *k*, having its lower edge above the bottom of the casing *a*; and means to impart motion to the feed screws, substantially as described and for the purpose set forth.

851,779. EXPLOSIVE-ENGINE. CHARLES SCHULTE, Chicago, Ill. Filed Jan. 3, 1905. Serial No. 230,442.

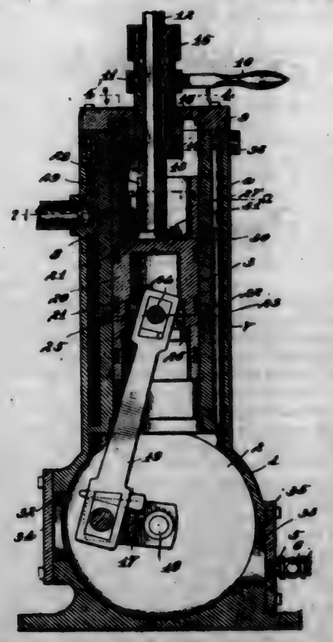

Claim.—1. In an explosive engine, in combination, a cylinder having a port therein; a piston; and means moving with said piston for opening said port at various points in the stroke of said piston.

2. In an explosive engine, in combination, a cylinder having a port therein; a piston for said cylinder; means traveling with said piston for covering and uncovering said port; and means adapted to be actuated by the operator for varying the time of uncovering said port with reference to the position of the piston.

3. In an explosive engine, in combination, a cylinder having a port therein; a piston in said cylinder; a valve member on said piston adapted to open and close said port; and means for adjusting the position of said valve member with relation to said port, independently of the movement of said valve member due to said piston, for opening said port at various points in the stroke of the piston.

4. In an explosive engine, in combination, a cylinder having a port therein; a piston in said cylinder; a valve member on said piston adapted to open and close said port; and a rod connected with said valve member and extending to a point outside the cylinder and arranged to be moved by the operator for moving said valve member.

5. In an explosive engine, in combination, a cylinder having a port therein; a piston in said cylinder, said piston being provided with means for opening and closing said port; and means for adjustably rotating said piston to vary the time of opening said port.

6. In an explosive engine, in combination, a cylinder having a port therein; a piston in said cylinder, said piston being provided with means for opening and closing said port; a crank shaft; a connection between said piston and said crank shaft permitting of a rotation of said piston; and means for rotating said piston through variable distances to open and close said port at various points in the stroke of said piston.

7. In an explosive engine, in combination, a cylinder having a port therein; a piston in said cylinder; a valve member moving with said piston, said valve member being cut away at two different points with reference to the stroke of the piston; and means for adjusting said valve member to bring either of said cut-away points in position to register with said port.

8. In an explosive engine, in combination, a cylinder having an exhaust port therein; a piston in said cylinder; a valve ring fixed with relation to one end of said piston, said ring being notched at two different points with reference to the stroke of the piston; and means for rotating said piston to bring either of said notches in position to register with said exhaust port.

9. In an explosive engine, in combination, a cylinder having a port therein and an opening extending through one of its ends; a piston in said cylinder; a valve member fixed with relation to said piston, said member being cut away at two different points with reference to the stroke of the piston; a rod fixed to said valve member and extending through the opening in the end of said cylinder to a point outside of said cylinder; and means for rotating said rod.

10. In an explosive engine, in combination, a cylinder having a port therein and an opening extending through one of its ends; a piston in said cylinder; a valve member fixed to said piston for opening and closing said port; and means for adjusting the position of said valve member with relation to said port, said means comprising a rod of angular cross-section fixed to said member, a sleeve adapted to receive said rod and to lie in said opening in the end of said cylinder, and means for rotating said sleeve.

11. In an explosive engine, in combination, a cylinder having a port therein; a piston; and means in said piston controllable from without the cylinder, for opening said port at various points in the stroke of said piston.

12. In an explosive engine, in combination, a cylinder having a port therein; a piston for said cylinder; means traveling with said piston for covering and uncovering said port; and means adapted to be actuated by the operator from without said cylinder, for varying the time of uncovering said port with reference to the position of the piston.

13. In an explosive engine, in combination, a cylinder having a port therein; a piston in said cylinder, said piston being provided with means for opening and closing said port; means for adjustably rotating said piston to vary the time of opening said port, said means being operable from without said cylinder.

14. In an explosive engine, in combination, a cylinder having a port therein; a piston in said cylinder, said piston being provided with means for opening and closing said port; a crank shaft; a connection between said piston and said crank shaft permitting of rotation of said piston; and manipulative means for rotating said piston through variable distances to open and close said port at various points in the stroke of said piston, said means being operable from without said cylinder.

851,780. SEMI-METALLIC WALL STRUCTURE FOR SLIDING DOORS. DANIEL SCHUYLER, San Diego, Cal., assignor to The Perfect Sliding Door Company, Los Angeles, Cal., a Corporation of California. Filed Feb. 18, 1905. Serial No. 246,324.

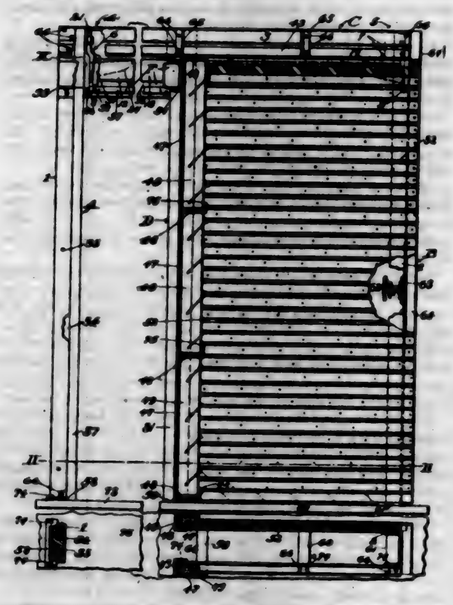

Claim.—1. A semi-metallic structure for sliding doors comprising external frame members of channel-iron to form a portion of the header and the front and back posts of the structure, means at the junctions of said header and said posts for supporting rail brackets, the same being fastened to the header and to their posts respectively and tying said header and posts together, each of said bracket supports being provided at the lower end with a projection for supporting its bracket, a loop at the upper portion of the back bracket support, a bridge on the supporting projection of said bracket support, a cantaliver bracket having a base which extends above and below its bracket arm, the upper extension of said bracket being provided with a perforation and inserted behind the loop, and the lower extension being interlocked with said bridge, a fastener through the loop the upper extension of the base and the bracket support and the back post, a shim above the fastener and between the upper bracket-base extension and the bracket support, a timber fastened in the channel of the front post channel-iron, a block fastened to the upper portion of said timber and supporting the front bracket, a cantaliver bracket for the front post mounted in said bracket-support, the same being provided with a base and having extensions of said base above and below its bracket arm, the lower extension having a vertical screw hole, an adjusting screw engaging the lower projection of the front bracket support and screwed into the lower extension of the bracket base, a loop over the upper extension of said base, a rail cramped in the rear bracket, and extending over the front-bracket, a stirrup over the front end of said rail provided with a set-screw for drawing the rail toward and clamping it to the arm of the front cantaliver bracket and for producing tension in the rail, metal ties on opposite sides of the structure respectively, connecting the posts together below the channel iron member of the header, sheet metal mouth-posts on opposite sides of the structure and respectively fastened to said ties and to the header, ties connecting the mouth posts respectively to the back posts, re-inforcing sheet metal strips fastened to the mouth posts and provided with projections, said mouth posts and strips being perforated, timbers held by said projections, nails or screws extending through said mouth posts into said timbers, channel-iron ties at top and bottom of the mouth posts connecting the same with the back post, the lower channel-iron tie having its channel upper-most and the upper channel-iron tie having its channel downward, longitudinally grooved siding fastened in place in said channels and against said timbers, brackets on the door-way side of the mouth posts, brackets on the outer faces of the front post, head timbers mounted in said brackets on opposite sides of the frame, head jambs in said head timbers respectively, metal slot-screens for said head jambs respectively, each comprising a metal blade fastened to and extending inward from the head-jamb to form a wall of a slot below the rail, and anchor plates extending across the bottom of the structure frame and connecting the mouth post and lower channel tie of one side of the structure with those on the other side of the structure.

2. A semi-metallic structure for sliding doors comprising external frame members of channel-iron to form a portion of the header and the front and back posts of the structure, means at the junctions of said header and said posts for supporting rail brackets, the same being fastened to the header and to their posts respectively and tying said header and posts together, each of said bracket supports being provided at the lower end with a projection for supporting its bracket, a loop at the upper portion of the back bracket support, a bridge on the supporting projection of said bracket support, a cantaliver bracket having a base which extends above and below its bracket arm, the upper extension of said bracket being provided with a perforation and inserted behind the loop, and the lower extension being interlocked with said bridge, a fastener through the loop the upper extension of the base and the bracket support and the back post, a shim above the fastener and between the upper bracket-base extension and the bracket support, a timber fastened in the channel of the front post channel-iron, a block fastened to the upper portion of said timber and supporting the front bracket, a cantaliver bracket for the front post, mounted in said bracket-support, the same being provided with a base and having extensions of said base above and below its bracket arm, the lower extension having a vertical screw hole, an adjusting screw engaging the lower projection of the front bracket support and screwed into the lower extension of the bracket base, a loop over the upper extension of said base, a rail cramped in the rear bracket and extending on the front bracket, a stirrup over the front end of said rail provided with a set-screw for drawing the rail toward and clamping it to the arm of the front cantaliver bracket and for producing tension in the rail, metal ties on opposite sides of the structure, respectively, connecting the posts together below the channel-iron member of the header, sheet metal mouth-posts on opposite sides of the structure and respectively fastened to said ties and to the header, ties connecting the mouth-posts respectively to the back post, re-inforcing sheet-metal strips fastened to the mouth posts and provided with projections, said mouth posts and strips being perforated, timbers held by said projections, nails or screws through said mouth posts into said timbers, channel-iron ties at top and bottom of the mouth posts connecting the same with the back post, the lower channel-iron tie having its channel uppermost and the upper channel-iron tie having its channel downward, longitudinally grooved siding fastened in place in said channels and against said timbers, brackets on the door-way side of the front post, head timbers mounted in said brackets on opposite sides of the frame and anchor plates extending across the bottom of the structure frame and connecting the mouth post and lower channel tie of

one side of the structure with those on the other side of the structure.

3. A semi-metallic structure for sliding doors comprising external frame members of channel iron to form a portion of the header and the front and back posts of the structure, means at the junctions of said header and said posts for supporting rail brackets, the same being fastened to the header and to their post respectively and tying said header and posts together, cantaliver brackets fastened to said supporting means respectively, a rail fastened in tension on said brackets, metal ties connecting the posts together below the channel iron member of the header, sheet metal mouth posts fastened to said ties and to the header, ties connecting the mouth posts respectively to the back post, re-inforcing sheet metal strips fastened to the mouth posts and provided with projections, said mouth posts being perforated, timbers held by said projections, nails or screws through said mouth-posts into said timbers, ties at top and bottom of the mouth-posts connecting the same with the back post, and means connecting the mouth post and lower tie of one side of the structure with those of the other side of the structure.

4. A semi-metallic wall-structure for sliding doors comprising external frame members formed of channel iron to form a portion of the header and the front and back posts of the structure, metal ties connecting the posts together below the channel iron member of the header, sheet metal mouth posts fastened to said ties and to the header, ties connecting the mouth posts respectively to the back post, reinforcing sheet metal strips fastened to the mouth posts and provided with projections, said mouth posts being perforated, timbers held by said projections, nails or screws through said posts into said timbers, channel iron stays at top and bottom of the mouth posts connecting the same with the back posts, the lower channel iron stay having its channel uppermost and the upper channel iron stay having its channel downward, longitudinally fluted siding cut diagonally at its ends and fitted in the channels of said channel-iron stays and fastened in place against said timbers, lath fastened to the siding horizontally and metallic anchor plates fastening together the ties at the bottom of the structure.

5. A semi-metallic wall-structure comprising a header and end posts fastened to the header and mouth posts consisting in upright angle-irons; an anchor plate fastening said angle-irons together at the bottom; reinforcing strips of sheet metal in the angles of said angle-iron posts and provided with projections for receiving timbers, timbers for the angles of said angle-iron posts supported by the projections and means fastening the timbers, the reinforcing stripe and the angle-irons together.

6. A semi-metallic structure for sliding doors comprising external frame members formed of channel-iron and fastened together to form a portion of the header and the front and back posts of the structure, metal ties connecting the posts together below the channel-iron member of the header, sheet metal mouth posts fastened to said ties and to the header, ties connecting the mouth posts respectively to the back-post, re-inforcing sheet metal strips fastened to the mouth posts and provided with projections, said mouth posts being perforated, timbers held by said projections, nails or screws through said posts into said timbers, channel-iron stays at top and bottom of the mouth posts connecting the same with the back post, the lower channel-iron stay having its channel upper-most and the upper channel-iron stay having its channel downward, and siding fastened in place in said channels and against said timbers.

7. In a wall structure for sliding doors, a post comprising an angle iron up-right and sectional re-inforcements therefor composed of sheet metal strips fastened thereto inside the angle and bent transversely and thereby furnished with transverse projecting portions.

8. In a wall structure for sliding doors, a post comprising an angle iron up-right and sectional re-inforcements therefor composed of sheet metal stripe fastened thereto inside the angle and furnished with projections, and sectional timbers carried by said re-inforcing sections.

9. A semi-metallic wall structure for sliding doors comprising a channel-iron header two channel-iron end posts fastened thereto, two angle iron mouth posts fastened to the head between the end posts and with a space between them, a base to which all of the posts are fastened, metallic re-inforcing strips on the angle iron posts; metal bracket supports fastened in the channels of the channel iron posts beneath the head, brackets adjustably mounted in said supports, and a rail carried thereby.

10. In a semi-metallic wall-pocket structure for sliding doors, a mouth-post comprising an angle iron upright reinforced by a sheet metal strip in the angle, and a timber in the angle and against said strip.

11. In a semi-metallic wall-pocket structure for sliding doors, a mouth-post comprising an angle iron upright and strap iron reinforcement both perforated, a stop and screws or nails therethrough substantially as set forth.

12. In a semi-metallic wall-pocket structure for sliding doors, a mouth-post comprising an angle iron upright and strap-iron reinforcement in the angle-iron bent crosswise and thereby provided with transverse projections.

13. In a semi-metallic wall-pocket structure for sliding doors, a mouth post comprising an angle iron upright and strap-iron reinforcement in sections, each section having bent portions and supporting each other substantially as set forth.

14. In a semi-metallic wall-pocket structure for sliding doors, the combination with the frame, of cantaliver rail-brackets fastened to said frame, a rail cramped on one of the brackets and resting on the tip of the other bracket, with an open space between its end and the bracket a stirrup around the rail and said other bracket and means underneath the bracket engaging such bracket and stirrup for drawing the end of the rail down toward such bracket.

15. In a wall-pocket structure for sliding doors the combination with a rail and a cantaliver bracket therefor, the bracket being aslant with an open space between the bracket and the end of the rail, of a stirrup and means underneath the bracket engaging the stirrup and bracket for drawing the rail toward the bracket.

16. In a wall-pocket structure, for sliding doors the combination with a rail and a bracket therefor, the bracket being aslant with an open space above, of means engaging the top of the rail and the under face of the bracket, for forcing the rail toward the bracket.

17. In a wall-pocket structure, the combination with a rail and a support for one end thereof of a bracket mounted for supporting the other end of the rail, means for adjusting said bracket, and means for clamping the end of the rail to such bracket.

18. In a wall-pocket structure for sliding doors, the combination of a cantaliver bracket fastened to the frame of the structure and provided with a rail seat to engage the top of the inner end of the rail at the base of the bracket, a rail resting on the tip of the bracket and having an end engaged in said seat, another bracket fastened to the frame of the structure, and adjustable means for holding the other end of the rail in tension on the other bracket.

19. In a wall-pocket structure for sliding doors, a bracket for the inner end of the rail, a rail engaged at top and bottom by, and thereby cramped in said bracket, a cantaliver bracket for the other end of the rail and means for adjusting the tension on the end of the rail held by said cantaliver bracket.

20. In a wall-pocket structure for sliding doors the combination with a rail held cramped by engagement at top and bottom with a support at the inner end of the pocket, of an adjustable bracket for the other end of the rail and means for detachably fastening the rail to said bracket.

21. A wall pocket structure comprising a metallic frame having channel-iron ties above and below, and siding, the upper and lower edges of which are in the channels of said ties.

22. A wall pocket structure comprising a metallic frame having upper and lower channel-iron ties and fluted siding having its edges in the channels of said ties.

23. A wall structure comprising a metallic frame having channel-iron ties, fluted siding having edges in said ties and lathing on the fluted faces of said siding.

24. A wall structure comprising a metallic frame having channel-iron ties, siding having edges in said channel-iron ties and composed of longitudinally grooved members and lathing on the grooved face of said siding.

25. A wall structure comprising a frame having channel-irons, siding composed of longitudinally fluted boards cut aslant at their ends and arranged aslant in the frame, the upper and lower edges of said siding being in said channel-irons.

26. A wall structure comprising a frame having channel-irons, siding composed of longitudinally fluted boards cut aslant at their ends and arranged aslant in the frame with upper and lower edges of said siding in said channel-irons and wooden lath fastened horizontally on the fluted face of said siding.

27. A wall structure comprising a metallic frame composed of up-right posts and ties between said posts, the upper and lower ties being channel-irons, timbers fastened to said posts, and siding composed of boards cut aslant at their ends and set aslant in the frame and fastened to said timbers and in said channel-irons.

28. A wall pocket structure comprising metallic posts and channel-iron ties, timbers fastened to said posts, and fluted siding fastened to said timbers and in said channel-irons.

29. A wall structure comprising metallic posts and channel-iron ties, siding composed of longitudinally fluted boards cut aslant at their ends and set aslant between the posts and fastened to the timbers and in the channel-irons and lathing on the fluted face of said siding.

30. A wall pocket structure comprising a metallic frame having posts, upper and lower channel-iron ties and one or more intermediate flat ties and siding fastened to the posts and in the channel-irons.

31. A wall structure comprising a metallic frame having posts, upper and lower channel-iron ties, one or more intermediate flat ties, siding composed of longitudinally fluted boards cut aslant at their ends and fastened to the posts and in the channel-irons and resting against the intermediate tie or ties.

32. A wall pocket structure comprising a metallic frame having posts, upper and lower channel-iron ties and one or more intermediate flat ties, and siding fastened to the posts and in the channel-irons and resting against the intermediate tie or ties.

33. A semi-metallic structure for sliding doors comprising external frame members fastened together to form a portion of the header and the front and back posts of the structure, metal ties connecting the posts together, sheet metal mouth posts fastened to said ties and to the header, ties connecting the mouth posts respectively to the back-post, re-inforcing sheet metal strips fastened to the mouth posts and provided with projections, said mouth posts being perforated, timbers held by said projections, nails or screws through said mouth posts into said timbers, ties at top and bottom of the mouth posts connecting the same with the back post, and siding fastened in place against said ties and timbers.

34. A semi-metallic structure for sliding doors comprising external frame members fastened together to form a portion of the header and the front and back posts of the structure, ties connecting the posts together, angle-iron uprights for mouth-posts fastened to said ties and to the header, ties connecting the mouth-post uprights respectively to the back post, timbers fastened in the angles of said mouth-post up-rights and siding fastened in place against said ties and timbers.

35. In a wall structure for sliding doors, a mouth-post comprising an angle iron upright and timber reinforcement therefor fastened thereto inside the angle.

36. In a wall structure for sliding doors, a post comprising an angle iron up-right and sectional re-inforcement therefor fastened thereto inside the angle.

37. A semi-metallic wall structure for sliding doors comprising a channel-iron head, two channel-iron end posts fastened thereto, two angle iron mouth posts fastened to the head between the end posts and with a space between them, a base to which all of the posts are fastened, metal bracket supports fastened in the channels of the channel iron posts beneath the head, brackets mounted in said supports, and a rail held in tension thereon.

38. A semi-metallic wall-structure comprising a header, end posts fastened to the header, mouth posts comprising upright angle-irons, an anchor plate fastening said angle-irons together at the bottom, reinforcing strips of sheet metal in the angles of said angle-iron posts and provided with projections for receiving timbers, timbers for the angles of said angle-iron posts supported by the projections, means fastening the timbers, the reinforcing strips and the angle-irons together, a rail connected with said end posts, and means for holding the rail in tension.

39. A semi-metallic wall-structure comprising a header, end posts, fastened to the header, mouth-posts comprising up-right angle-irons, means fastening said angle-irons together at the bottom, timbers fastened in the angles of the angle-irons, a rail connected with said end posts, and means for holding the rail in tension.

40. In a wall pocket structure for sliding doors, an angle-iron slot-screen having a perforated flange extending upward from the screen and fastened to the inner wall of the structure.

41. In a wall pocket structure for sliding doors oppositely arranged sheet metal slot-screens having a narrow slot between them.

42. In a wall pocket structure for sliding doors, the combination with a trough shaped rail and a bracket therefor chambered therein and resting on the tip of said bracket with an open space between the bracket and the end of the rail, of means engaging the top of the rail and the under-face of the bracket for forcing the end of the rail toward the bracket.

851,781. MANUFACTURE OF DUST-CAPS FOR TIRE-VALVES AND THE LIKE. MAXIMILIAN C. SCHWEINERT, West Hoboken, N. J., and HENRY P. KRAFT, New York, N. Y. Filed Feb. 3, 1905. Serial No. 244,062.

Claim.—The process of forming a cap for tire valves and the like designed to inclose an externally threaded valve casing, and having a tubular body portion, an enlarged knurled ring at the end of said body portion, and a screwthreaded end of smaller diameter than said body portion which consists in drawing a tubular body of metal of a uniform diameter greater than that of the threaded casing, enlarging a portion of said body intermediate its ends by annular rolling and simultaneously knurling the same by the configuration of the outer roll.

851,782. TOY. JOSEPH SOSS, New York, N. Y. Filed Aug. 25, 1906. Serial No. 331,953.

Claim.—1. A device of the class specified, comprising a

compressible bulb provided at one end with an air inlet and at the outer end with an air outlet, and a cup-shaped attachment connected with the outlet end of the bulb.

2. A device of the class specified, comprising a compressi-

ble bulb provided at one end with an air inlet and at the outer end with an air outlet, and a cup-shaped attachment connected with the outlet end of the bulb, the outlet end of the bulb being also provided with a valve which opens outwardly.

851,783. EXPANDING BIT. AXEL E. SWANSON, Chicago, Ill. Filed Mar. 5, 1906. Serial No. 304,383.

Claim.—1. A device for boring tapered holes comprising a bit having a shank bent toward one side at its lower end, and a sleeve slidably mounted on said shank and having thereon a cutting blade, said sleeve being adapted to tilt so as to cause said blade to shift outward when said sleeve is slid downward on said shank.

2. A device of the class described comprising a shank, a sleeve slidably mounted on said shank and having thereon a cutting blade, a guiding surface on said shank adapted to tilt said sleeve for causing said blade to shift outwardly when said sleeve is moved downward along said shank.

3. A device of the class described comprising a shank, a sleeve slidably mounted on said shank and having thereon a cutting blade, said sleeve being secured against rotation relatively of said shank, a guiding surface on said bit adapted to tilt said sleeve for causing said blade to shift outwardly when said sleeve is moved downward along said shank.

4. A device of the class described comprising a bit, a sleeve slidably mounted on said bit and having thereon a cutting blade, a guiding surface on said bit adapted to tilt said sleeve for causing said blade to shift outwardly when the sleeve is moved downward along said bit, means for rotating said bit, and mechanism for urging said bit downwardly and adapted to simultaneously cause said sleeve to shift downwardly along the shank of the bit.

5. In a boring machine, the combination of a frame, a shaft journaled therein, a bit secured at one end of said shaft and having its point in axial alinement therewith, a sleeve slidably mounted on the shank of said bit and having thereon a cutting blade, a guiding surface on said shank adapted to cause said sleeve to tilt when shifted along said shank for moving said blade downwardly, means for rotating said shaft, mechanism for shifting said shaft longitudinally in its bearings, and mechanism adapted to shift said sleeve at a different rate of speed while said shaft is being shifted.

6. In a machine of the class described, the combination of a frame, a shaft journaled in said frame and slidable longitudinally in its bearings, a bit mounted on said shaft, a sleeve slidably mounted on said bit and having thereon a cutting blade, one or more guiding surfaces for causing said blade to shift outwardly when said sleeve is moved toward the point of said bit, means for shifting said shaft longitudinally in its bearings and adapted to cause said sleeve to simultaneously shift along said bit.

7. In a machine of the class described, the combination of a frame, a shaft journaled in said frame and slidable longitudinally in its bearings, a bit mounted on said shaft, a sleeve slidably mounted on said bit and having thereon a cutting blade, one or more guiding surfaces for causing said blade to shift outward from the axis when said sleeve is moved toward the point of said bit, a lever fulcrumed on said frame and connected with said shaft for shifting the same longitudinally in its bearings, a second lever fulcrumed on said frame, a link connecting said lever with said sleeve, and means for simultaneously swinging said levers on their fulcrums, the arms of said levers being respectively of different lengths, whereby said bit and sleeve will be shifted at different speeds.

8. In a machine of the class described, the combination of a frame, a shaft journaled in said frame and slidable longitudinally in its bearings, a bit mounted on said shaft, a sleeve slidably mounted on said bit and having thereon a cutting blade, one or more guiding surfaces for causing said blade to shift outward from the axis when said sleeve is moved toward the point of said bit, a lever fulcrumed on said frame and connected with said shaft for shifting the same longitudinally in its bearings, a second lever fulcrumed on said frame, a link connecting said lever with said sleeve, said link being adjustable for controlling the relative movements of said sleeve and bit, means for simultaneously swinging said levers on their fulcrums, the arms of said levers being respectively of different lengths, whereby said bit and sleeve will be shifted at different speeds.

851,784. CART-SADDLE FOR HARNESS. GEORGE J. THEOBALD, Boston, Mass., assignor, by direct and mesne assignments, of two-thirds to Harry H. Reed, Boston, Mass. Filed Oct. 17, 1906. Serial No. 339,332.

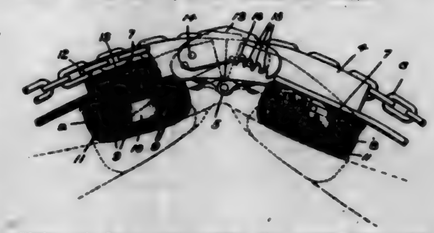

Claim.—1. In a cart saddle, the combination with a grooved bow made in two sections jointed together and means at the joint of the bow to hold the bow sections in adjusted position and to hold the chain in the groove of the bow, of a pad support rigidly secured to each section, a perforated metal member secured to each pad support and spaced therefrom, and a padding covering the face of the perforated metal member.

2. In a cart saddle, the combination with a grooved bow made in two sections jointed together of a pad support rigidly secured to each section, a perforated metal member secured to each pad support and spaced therefrom, a padding covering the face of the perforated metal member, and a pivoted notched locking device carried by one bow section and adapted to embrace the other section and to engage projections thereon thereby to hold the sections in adjusted position.

3. In a cart saddle, the combination with a grooved bow made in two sections jointed together of a pad carried by each section of the bow, and a lock hinged to one bow section, said lock comprising two side flanges which overlie the sides of the bow section, one of which has notches to engage a projection extending from the other bow section.

4. In a cart saddle, the combination with a grooved bow made in two sections jointed together of a pad carried by each section of the bow, and means shaped to embrace the bow sections at the joint of the bow and adapted both to hold the bow in adjusted position and to prevent the sections of the bow from twisting.

5. In a cart saddle, the combination with a grooved bow made in two sections jointed together of a pad carried by each section of the bow, and means at the joint of the bow both to hold the bow sections in adjusted position and to hold the chain in the groove of the bow.

6. In a cart saddle, the combination with a grooved bow made in two sections jointed together of a pad carried by each section of the bow, a chain occupying the groove of the bow, and a lock hinged to one bow section and having two side flanges which overlie the sides of the bow and which are connected by a bridge that extends across the groove, one of said flanges having notches to engage a projection extending from the bow section.

851,785. CUTTING APPARATUS FOR CORN-HARVESTERS. WILLIAM H. TILSON, Plainview, Tex. Filed Dec. 31, 1906. Serial No. 350,179.

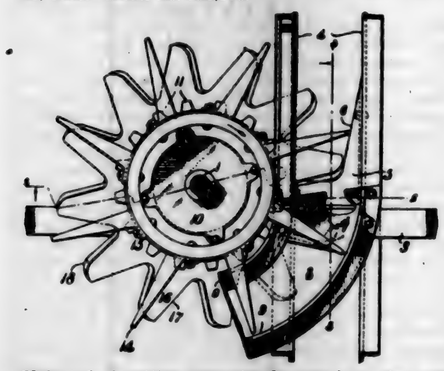

Claim.—1. A cutting apparatus for corn harvesters comprising corn-guides, a blade fixed between said guides, said blade having a cutting edge provided with a portion which extends transversely with relation to the guides and a portion which extends at an acute angle with relation to the longitudinal axes of the guides, a blade co-operating with said fixed blade, said blade having a serrated edge provided with curved sharpened edges and means for rotating said blade.

2. A cutting aparatus for corn harvesters comprising corn-guides, a blade fixed between the said guides, a skid located at the rear of said blade and inclined upward and rearwardly with relation to the same, a circular blade co-operating with the first said blade and having a cutting edge which passes under said skid, and rotating fingers located above the circular blade.

3. A cutting apparatus for corn harvesters comprising corn-guides, a blade fixed between said guides and having a cutting edge, a part of which extends transversely with relation to said guides and a part of which is located at an acute angle with relation to the longitudinal axes of the guides, a curved portion joining said parts together, a circular blade journaled for rotation and having a serrated periphery, the sides of which serrations are curved, and sharpened to co-operate with the cutting edge of the fixed blade.

851,786. CONTROLLING-SWITCH FOR TRANSFORMERS. MATTHEW O. TROY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 22, 1906. Serial No. 322,871.

Claim.—1. In combination, a supply circuit, a transformer, a translating device, a switch adapted to connect the transformer primary to the supply-circuit, a second switch adapted to connect the transformer secondary to the device, and means for operating one of said switches automatically when the other switch is operated.

2. In combination, a supply circuit, a transformer, a translating device, a switch adapted to connect the transformer primary to the supply circuit, a second switch adapted to connect the transformer secondary to the device, and automatic operating means for one switch controlled by the opening and closing of the other switch.

3. In combination, a supply circuit, a transformer, a translating device, a switch adapted to connect the transformer primary to the supply circuit, a second switch adapted to connect the transformer secondary to the device, and electromagnetic operating means for one switch controlled by contacts controlled by the other switch.

4. In combination, a supply circuit, a transformer, a translating device, a switch adapted to connect the transformer primary to the supply circuit, a second switch adapted to connect the transformer secondary to the device, a magnet winding for operating one switch, and contacts in circuit with said magnet winding controlled by the other switch.

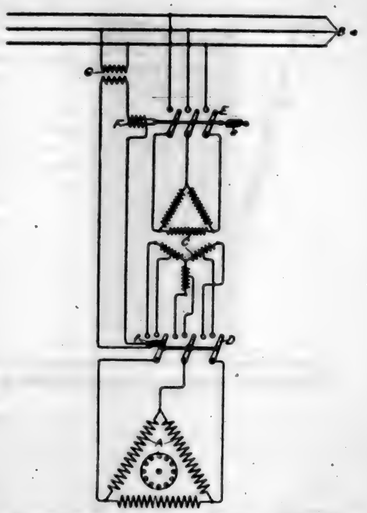

5. In combination, a supply circuit, a transformer, a translating device, a switch adapted to connect the transformer primary to the supply circuit, a second switch adapted to connect the transformer secondary to the device, a magnet winding adapted to close one switch, and means for energizing said magnet upon the closing of the other switch.

6. In combination, an alternating current motor, a supply circuit therefor, a transformer inserted between the motor and supply circuit, a switch for disconnecting the motor from the transformer, and means for automatically disconnecting the transformer from the supply circuit when said switch is opened.

7. In combination, a supply circuit, a transformer, a translating device, a switch adapted to connect the transformer primary to the supply circuit, a second switch adapted to connect the transformer secondary to the device, a magnet winding for operating the first switch, and contacts in circuit with said magnet winding controlled by the second switch, said contacts being arranged to be closed before and opened after the main contacts of the second switch are closed and opened.

8. In combination, a supply circuit, a transformer, a translating device, an automatic switch for opening the circuit between the transformer and the supply circuit, a second switch adapted to connect the transformer secondary to the translating device, an electromagnet for closing said automatic switch, and auxiliary contacts on said second switch for controlling the circuit of said electromagnet, said contacts being arranged to be closed before and opened after the main contacts of the second switch are closed and opened.

851,787. METHOD OF MAKING WIRED GLASS. ROBERT A. B. WALSH, St. Louis, Mo., assignor to Mississippi Glass Company, St. Louis, Mo., a Corporation of Missouri. Filed Feb. 25, 1907. Serial No. 359,154.

Claim.—1. The method of making a plate of glass which consists in forming a single mass of molten glass into sheet form and thereafter folding said sheet longitudinally of its length and pressing the two layers thereof together; substantially as described.

2. The method of making a plate of glass which consists in forming a single mass of molten glass into sheet form, progressively folding or doubling said sheet longitudinally of its length and then pressing the two layers together; substantially as described.

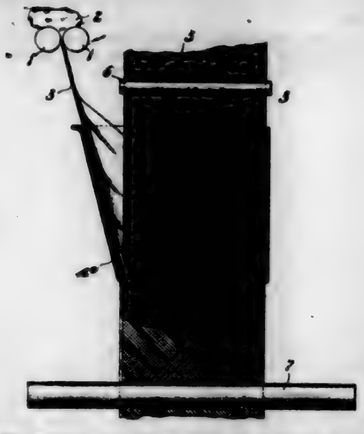

3. The method of making wired glass which consists in forming a single mass of molten glass into a sheet, folding said sheet longitudinally of its length, interposing a piece of wire mesh between the two layers of the sheet and then pressing said layers together; substantially as described.

4. The method of making wired glass which consists in forming a single mass of molten glass into a sheet, progressively folding said sheet longitudinally of its length to produce two independent layers, arranging a piece of wire mesh between said layers and thereafter pressing said layers together; substantially as described.

851,788. FRUIT-JAR. GEORGE F. WELLHOUSE, Akron, Ohio, assignor of one-fourth to Alexander L. Bertele, Akron, Ohio. Filed Dec. 7, 1906. Serial No. 346,816.

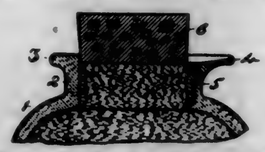

Claim.—The combination in a device of the class described, of a jar having a hollow neck provided at the top thereof with a pouring lip with a depressed cavity therein and further provided with a duct formed in the wall of said neck, extending from a point positioned near the bottom of the neck below which it is desired to keep the fluid in the jar and from thence outwardly and upwardly to the bottom of the cavity in said pouring lip, and a closure device of an appropriate diameter to force out any fluid existing above the lower end of said duct and of sufficient length when seated to seal the same.

851,789. SHINGLE-PACKAGE. JAMES C. ALEXANDER, Aberdeen, Wash. Filed Mar. 29, 1906. Serial No. 308,766.

Claim.—A shingle package comprising a plurality of shingles arranged in spaced superposed pairs and parting strips inserted between the adjacent pairs and affording uninterrupted passages between said pairs throughout the area of the shingles, each of said parting strips comprising a member formed in its direction of greatest length with comparatively deep corrugations having comparatively sharp apices.

851,789.

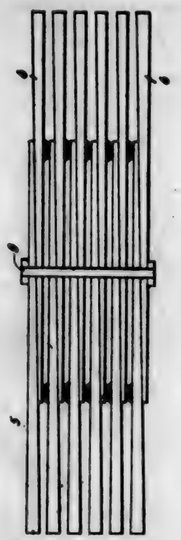

851,790. CONVEYING APPARATUS. GEORGE A. AMSDEN, Lowell, Mass., assignor to Lamson Consolidated Store Service Company, Newark, N. J., a Corporation of New Jersey. Filed Aug. 8, 1905. Serial No. 273,309.

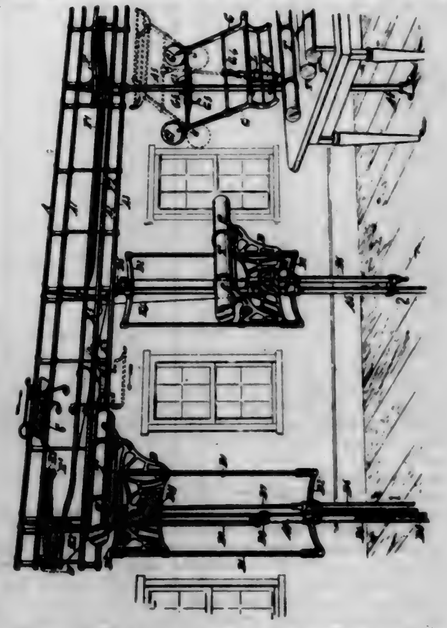

Claim.—1. In a conveying apparatus, a track or way, an endless propelling cable adapted to be moved continuously along the line of said track or way, a carrier connected with said cable and movable along said track or way and having a clamp adapted to engage the receptacle

or article to be conveyed, a movable support for the receptacle or article to be carried located out of the path of the traveling clamp, means for opening said clamp as the carrier approaches said support, mechanism operated by said clamp for releasing said support, means for lifting said support to raise the receptacle or article into the path of the traveling clamp whereby said receptacle or article is engaged by the clamp and conveyed from said support, and means for pneumatically controlling the speed of ascent of said support.

2. In a conveying apparatus, a track or way, an endless propelling cable adapted to be moved continuously along the line of said way and having connected thereto a number of carriers, said carriers having clamps adapted to engage the receptacles or articles to be conveyed, a number of movable supports for said receptacles or articles, clamp-opening devices adjacent to said supports but located at different positions with relation to the track at the different supports, co-operating clamp-opening portions arranged in different positions on the different clamps whereby a given clamp is opened when passing a given support but not when passing others, means for holding each support out of the path of the traveling clamps, mechanism operated automatically by the clamp-opening device of the clamp for releasing said support, automatic means for lifting said support to raise the receptacle or article into the path of the opened clamp whereby said receptacle is seized by said clamp and conveyed from said supports, and means for pneumatically controlling the speed of ascent of said supports.

3. In a conveying apparatus, a track or way, an endless propelling cable adapted to be moved continuously along the line of said track or way, a carrier connected with said cable and movable along said track or way and having a clamp adapted to engage the receptacle or article to be conveyed, a movable support for the receptacle or article to be carried and located out of the path of the traveling clamp, means for opening said clamp as the carrier approaches said support, mechanism operated by said clamp for releasing said support, means for lifting said support to raise the receptacle or article into the path of the traveling clamp whereby said receptacle or article is engaged by the clamp and conveyed from said support, means for pneumatically controlling the speed of ascent of said support, means located along the path of travel of said carrier for opening said clamp and releasing said receptacle or article, and means for automatically receiving and delivering said receptacle or article from said carrier to a platform or support.

4. In a conveying apparatus, a track or way, an endless propelling cable adapted to be moved continuously along the line of said way and having connected thereto a number of carriers, said carriers having clamps adapted to engage the receptacles or articles to be conveyed, a number of movable supports for said receptacles or articles, clamp-opening devices adjacent to said supports but located at different positions with relation to the track at the different supports, co-operating clamp-opening portions arranged in different positions on the different clamps whereby a given clamp is opened when passing a given support but not when passing others, means for holding each support out of the path of the traveling clamps, mechanism operated automatically by the clamp-opening device of the clamp for releasing said support, automatic means for lifting said support to raise the receptacle or article into the path of the opened clamp whereby said receptacle is seized by said clamp and conveyed from said supports, means for pneumatically controlling the speed of ascent of said supports, clamp-opening means located at different positions along the path of travel of said carriers whereby the clamp of a given carrier is opened at one position only releasing the receptacle or article held therein, and means for automatically receiving and delivering said receptacle to a platform or support.

5. In a conveying apparatus, a track or way, an endless propelling cable adapted to be moved continuously along the line of said track or way, a carrier connected with said cable and movable along said track or way and having a clamp adapted to engage the receptacle or article to be conveyed, a movable support for the receptacle or article to be carried and located out of the path of the traveling clamp, means for opening said clamp as the carrier approaches said support, mechanism operated by said clamp for releasing said support, means for lifting said support to raise the receptacle or article into the path of the traveling clamp whereby said receptacle or article is engaged by the clamp and conveyed from said support, means for pneumatically controlling the speed of ascent of said support, means located along the path of travel of said carrier for opening said clamp and releasing said receptacle or article, means for automatically receiving and delivering said receptacle or article from said carrier to a platform or support, and means for pneumatically controlling the speed of delivery of said receptacle or article from said carrier to said platform or support.

6. In a conveying apparatus, track or way, an endless propelling cable adapted to be moved continuously along the line of said way and having connected thereto a number of carriers, said carriers having clamps adapted to engage the receptacles or articles to be conveyed, a number of movable supports for said receptacles or articles, clamp-opening devices adjacent to said supports but located at different positions with relation to the track at the different supports, co-operating clamp-opening portions arranged in different positions on the different clamps whereby a given clamp is opened when passing a given support but not when passing others, means for holding each support out of the path of the traveling clamps, mechanism operated automatically by the clamp-opening device of the clamp for releasing said support, automatic means for lifting said support to raise the receptacle or article into the path of the opened clamp whereby said receptacle is seized by said clamp and conveyed from said supports, means for pneumatically controlling the speed of ascent of said supports, clamp-opening means located at different positions along the path of travel of said carriers whereby the clamp of a given carrier is opened at one position only releasing the receptacle or article held therein, means for automatically receiving and delivering said receptacle to a platform or support, and means for pneumatically controlling the speed of delivery of said receptacles or articles from said carrier to said platform or support.

7. In a conveying apparatus, a track or way, an endless propelling cable adapted to be moved continuously along the line of said track or way, a carrier connected with said cable and movable along said track or way and having a clamp adapted to engage the receptacle or article to be conveyed, a movable support for the receptacle or article to be carried and located out of the path of the traveling clamp, means for opening said clamp as the carrier approaches said support, mechanism operated by said clamp for releasing said support, means for lifting said support to raise the receptacle or article into the path of the traveling clamp whereby said receptacle or article is engaged by the clamp and conveyed from said support, means for automatically locking said clamp in closed position upon said receptacle, means for pneumatically controlling the speed of ascent of said support, means located along the path of travel of said carrier for automatically releasing said locking means, means located along the path of travel of said carrier for opening said clamp and releasing said receptacle or article, means for automatically receiving and delivering said receptacle or article from said carrier to a platform or support, and means for pneumatically controlling the speed of delivery of said receptacle or article from said carrier to said platform or support.

8. In a conveying apparatus, a track or way, an endless propelling cable adapted to be moved continuously along the line of said way and having connected thereto a number of carriers, said carriers having clamps adapted to engage the receptacles or articles to be conveyed, a number of movable supports for said receptacles or articles, clamp-opening devices adjacent to said supports but located at different positions with relation to the track at the differ-

ent supports, co-operating clamp-opening portions arranged in different positions on the different clamps whereby a given clamp is opened when passing a given support but not when passing others, means for holding each support out of the path of the traveling clamps, mechanism operated automatically by the clamp-opening device of the clamp for releasing said support, automatic means for lifting said support to raise the receptacle or article into the path of the opened clamp whereby said receptacle is seised by said clamp and conveyed from said supports, means for automatically locking said clamp in closed position upon said receptacle, means for pneumatically controlling the speed of ascent of said supports, means located at different positions along the path of travel of said carriers for releasing said locking means, clamp-opening means located at different positions along the path of travel of said carriers whereby the clamp of a given carrier is opened at one position only releasing the receptacle or article held therein, means for automatically receiving and delivering said receptacle to a platform or support, and means for pneumatically controlling the speed of delivery of said receptacles or articles from said carrier to said platform or support.

9. In a conveying apparatus, a track or way, an endless propelling cable adapted to be moved continuously along the line of said track or way, a carrier connected with said cable and movable along said track or way and having a clamp adapted to engage the receptacle or article to be conveyed, a movable support for the receptacle or article to be carried and located out of the path of the traveling clamp, means for opening said clamp as the carrier approaches said support, mechanism operated by said clamp for releasing said support, means for lifting said support to raise the receptacle or article into the path of the traveling clamp whereby said receptacle or article is engaged by the clamp and conveyed from said support, means for automatically locking said clamp in closed position upon said receptacle, means for pneumatically controlling the speed of ascent of said support, means located along the path of travel of said carrier for automatically releasing said locking means, means located along the path of travel of said carrier for opening said clamp and releasing said receptacle or article, means for automatically receiving and delivering said receptacle or article from said carrier to a platform or support, and means for automatically controlling the speed of delivery of said receptacle or article from said carrier to said platform or support.

10. In a conveying apparatus, a track or way, an endless propelling cable adapted to be moved continuously along the line of said way and having connected thereto a number of carriers, said carriers having clamps adapted to engage the receptacles or articles to be conveyed, a number of movable supports for said receptacles or articles, clamp-opening devices adjacent to said supports but located at different positions with relation to the track at the different supports, co-operating clamp-opening portions arranged in different positions on the different clamps whereby a given clamp is opened when passing a given support but not when passing others, means for holding each support out of the path of the traveling clamps, mechanism operated automatically by the clamp-opening device of the clamp for releasing said support, automatic means for lifting said support to raise the receptacle or article into the path of the opened clamp whereby said receptacle is seised by said clamp and conveyed from said supports, means for automatically locking said clamp in closed position upon said receptacle, means for pneumatically controlling the speed of ascent of said supports, means located at different positions along the path of travel of said carriers for releasing said locking means, clamp-opening means located at different positions along the path of travel of said carriers whereby the clamp of a given carrier is opened at one position only releasing the receptacle or article held therein, means for automatically receiving and delivering said receptacle to a platform or support, and means for automatically controlling the speed of delivery of said receptacles or articles from said carrier to said platform or support.

851,791. MACHINE FOR PACKING POWDERED OR MASTIC MATERIAL. VINCENT G. APPLE, Dayton, Ohio. Filed Nov. 6, 1905. Serial No. 286,091.

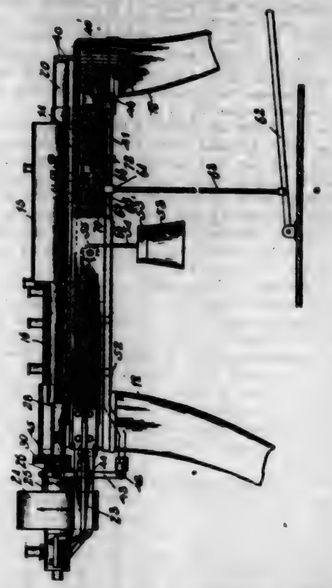

Claim.—1. In a machine of the character described, an axially movable packing auger, means for supplying material to the auger movable therewith, and means for rotating the auger.

2. In a machine of the character described, the combination of an axially-movable packing auger, a hopper wherein part of said auger works, longitudinally movable with the auger, and means for rotating the auger.

3. In a machine of the character described, the combination of a frame, a carriage mounted to slide longitudinally in said frame, a hopper carried by said carriage, an auger extending into said hopper and movable with the carriage, and means for rotating the auger.

4. In a machine of the character described, the combination of a frame, a carriage mounted to slide longitudinally in said frame, a hopper carried by said carriage, an auger associated with said hopper to receive material therefrom, said auger being movable with said carrier, and having one end projecting from said hopper for coaction with a receptacle to be packed, means for holding against longitudinal movement relative to the frame a receptacle to be packed, and means for resisting movement of the auger away from said receptacle.

5. In a machine of the character described, the combination of a frame, a carrier mounted for longitudinal movement in said frame, a rotatable auger associated with said carriage for axial movement with said carriage, and a hollow mandrel carried by said carriage for positioning the receptacle to be packed relative to the auger.

6. In a machine of the character described, the combination of a frame, a carriage mounted for longitudinal movement in said frame, an auger extending through said carriage and arranged to move axially with the carriage, means for supplying material to said auger, a hollow mandrel surrounding the free extremity of the auger for positioning a receptacle relative to said auger, said mandrel being associated with the carriage movement therewith, and means for preventing longitudinal movement of a receptacle associated with said mandrel relative to the frame.

7. In a machine of the character described, the combination of a frame, an axially movable auger in said frame, means for rotating said auger, means tending to return said auger from one limit of its axial movement to the other limit, and releasable means for normally preventing such return of the auger.

8. In a machine of the character described, the combination of a frame, a rotatable, axially movable auger mounted in said frame, means tending to maintain said auger in, or move it to one limit of axial movement, and releasable means for preventing the return of said auger to said limitational position when moved therefrom, said means comprising a rack and a movable pawl, one operatively connected with the auger and the other operatively connected with a relatively stationary part of the machine.

9. In a machine of the character described, the combination of a frame, a rotatable auger axially movable therein, means for driving the auger in rotation, means for controlling the connection of the driving means and auger arranged to automatically break such driving connection, when the auger reaches one limit of movement, and means arranged for control by an operator for returning the auger from said limit of movement to the other.

10. In a machine of the character described, the combination of the frame, a rotatable auger axially movable within predetermined limits, means for driving the auger in rotation, means for controlling the connection of said driving means and auger arranged to automatically break such driving connection when the auger reaches one limit of axial movement, and to restore such connection when the auger reaches its other limit of axial movement, and means, arranged for control by an operator, for returning the auger from one limit of movement to the other.

11. In a machine of the character described, the combination of a frame, a rotatable auger movable axially in said frame, a stop for receptacles to be filled, movable into and out of operative position, means for driving the auger in rotation, and automatic means for moving the stop to and from operative position in proper timed relation to axial movement of the auger.

12. In a machine of the character described, a packing auger, a means for axially positioning a receptacle to be packed relative to the auger, one of said parts being axially movable relative to the other, and the positioning means being movable to and from operative position, and automatic means for moving said positioning means to and from inoperative position when the auger and stop reach axial positions in predetermined relation to each other.

13. In a machine of the character described, a frame, an auger mounted for rotation in the frame, a stop for axially positioning a receptacle relative to the auger, said stop being movable into and out of operative relation to the auger, and said auger and stop being relatively movable axially of the auger, and means controlled by the auger for moving the stop to and from operative position.

14. In a machine of the character described, a bed plate, a carriage movable longitudinally of the bed plate, a rotatable packing auger axially movable with the movements of the carriage, a shaft connected with said auger, extending beyond the carriage, a clutch member loosely rotatable relative to said shaft, a coacting clutch member non-rotatable relative to said shaft, a movable stop for axially positioning the receptacle, a rod operatively connecting the stop and the movable clutch member, and a part operatively associated with the carriage coöperating with the rod to automatically move the same to transmit operating power to the clutch and stop when the carriage reaches a predetermined position.

15. In a machine of the character described, a frame, a carriage movable therein, a rotatable conveyer, means for driving said conveyer in rotation including a clutch, means for operating the clutch, means associated with the carriage for actuating said operating means to open the clutch when the carriage reaches one limit of movement, means tending to return said carriage from said limit of movement in the opposite limit of movement, and means, under the control of an operator, for releasing the last said means, and operating the clutch controlling mechanism to close the clutch.

16. In a machine of the character described, a packing auger, an open hopper into which said auger extends, a source of material supply, a conveyer for transferring the material from the source of supply to the hopper, and a scraper associated with the hopper to scrape material from the conveyer to cause it to fall into the hopper.

17. In a machine of the character described, a packing auger, a hopper for supplying material thereto, a conveyer for conveying material to the hopper, a continually running driving member, a shaft for driving the auger, means for connecting or disconnecting the shaft and the continually running means, and means for driving the conveyer associated with said auger shaft for rotation simultaneously therewith.

18. In a machine of the character described, the combination of a rotatable auger, a stop for receptacles to be filled, one of said elements being movable relative to the other in a direction axial of the auger, and the stop being movable in a direction transverse to the direction of the auger; means for driving the auger in rotation, and automatic means for moving the stop transversely of the axis of the auger in proper timed relation to axial movement of the movable element.

851,792. TELEPHONE-EXCHANGE SYSTEM. JOHAN A. AVÉN, Stockholm, Sweden, assignor, by mesne assignments, to The Firm of Deutsche Telephonwerke Gesellschaft mit Beschränkter Haftung, Berlin, Germany. Filed Nov. 1, 1904. Serial No. 230,944.

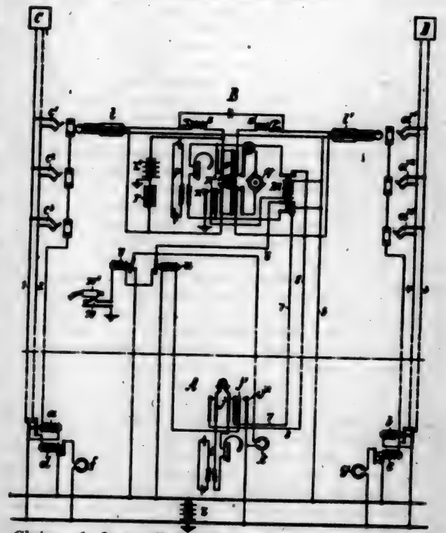

Claim.—1. In a call distributing system comprising telephone lines, each having a signaling instrument in an annunciator board and a terminal socket in each of several sections in a multiple connecting board, means at the connecting board for answering the call, testing the line of the wanted subscriber, ringing the latter up, and connecting the calling subscriber with the wanted subscriber, and means for communicating from the annunciator board to the connecting board the number of the calling subscriber; whereby a connecting operator is notified by an annunciator operator to make a connection, substantially as described.

2. In a call distributing system comprising telephone lines, each having a signaling instrument in an annunciator board and a terminal socket in each of several sections in a multiple connecting board, means at the connecting board for answering the call, testing the line of the wanted subscriber, ringing the latter up, and connecting the call-

ing subscriber with the wanted subscriber, order wires extending from each annunciator operator to a plurality of connecting operators, and signaling circuits extending from the connecting operators to the annunciator operators; whereby a connecting operator is notified by an annunciator operator to make a connection, and the annunciator operators are apprised of the readiness of a connecting operator to make connections, substantially as described.

3. In a call distributing system comprising telephone lines, each having a signaling instrument in an annunciator board and a terminal socket in each of several sections in a multiple connecting board, means at the connecting board for answering the call, testing the line of the wanted subscriber, ringing the latter up, and connecting the calling subscriber with the wanted subscriber, order wires extending from each annunciator operator to a plurality of connecting operators, signaling circuits extending from the connecting operators to the annunciator operators, said signaling circuits containing signals and a relay at the annunciator board controlling said signals; whereby a connecting operator is notified by an annunciator operator to make a connection, and the annunciator operators are apprised of the readiness of a connecting operator to make connections, substantially as described.

4. In a call distributing system comprising telephone lines, each having a signaling instrument in an annunciator board and a terminal socket in each of several sections in a multiple connecting board, means at the connecting board for answering the call, testing the line of the wanted subscriber, ringing the latter up, and connecting the calling subscriber with the wanted subscriber, order wires extending from each annunciator operator to a plurality of connecting operators, signaling circuits extending from the connecting operators to the annunciator operators, said signaling circuits containing signals at the annunciator board and a switch and a relay at the connecting board controlling said signals, whereby a connecting operator is notified by an annunciator operator to make a connection, and the annunciator operators are apprised of the readiness of a connecting operator to make connections, and whereby a position at the connecting board can be notified as engaged at the annunciator board if said position is not attended to by an operator.

5. In a call distributing system, comprising telephone lines, each having a signaling instrument in an annunciator board and a terminal socket in each of several sections in a multiple connecting board, means at the connecting board for answering the call, testing the line of the wanted subscriber, ringing the latter up, and connecting the calling subscriber with the wanted subscriber, order wires extending from each annunciator operator to a plurality of connecting operators, signaling circuits extending from the connecting operators to the annunciator operators, said signaling circuits containing signals and being controlled by a relay, a second relay controlling the said relay and being itself controlled by the key of the annunciator operator, a third relay placed at the connecting board and controlling also the first relay and the order circuit; whereby a connecting operator is notified by an annunciator operator to make a connection, and the annunciator operators are apprised of the readiness of a connecting operator to make connections, substantially as described.

851,793. BRUSH-HOLDER. RALPH E. BARKER, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Nov. 13, 1903. Serial No. 180,986.

Claim.—1. In combination with a dynamo-electric machine provided with a commutator, a casing or supporting member provided with two sockets, bushings removably secured in said sockets, and brushes eccentrically mounted in said bushings.

2. In a dynamo electric machine, a commutator, a cooperating brush, a holder for the brush, a support for the holder, and means for interchangeably securing the brush-holder rigidly to the support in either of two operative positions, to give a brush lead in one direction or the other.

3. In combination, a brush-holder and a support therefor formed with a socket into which the brush-holder may be inserted in different positions, and a brush located eccentrically in said holder whereby by varying the position of the brush-holder in said socket the lead given to the brush can be varied or reversed.

4. In a dynamo-electric machine, a support provided with a socket, a brush, and means for securing said brush in different portions of said socket.

5. In a dynamo-electric machine, a support provided with a socket, a brush and holder therefor, and means for securing said holder in said support in different positions.

851,794. PUNCH, PLIERS, &c. WILLIAM A. BERNARD, New Haven, Conn., assignor to The William Schollhorn Company, New Haven, Conn., a Corporation of Connecticut. Filed Feb. 10, 1906. Serial No. 300,493.

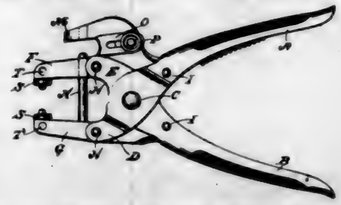

Claim.—In punches, pliers and similar tools, the combination with lever handles fulcrumed together; of jaws operated thereby to move parallel with each other, having longitudinal slots in their forward ends and one of said jaws having an arm; a punch carried by one of said jaws and projecting through the other to coöperate with said arm; and dies having extensions projecting into said slots and pivoted therein to rotate in the plane of the tool substantially as described.

851,795. RELAY. ELMER F. BLISS, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 17, 1906. Serial No. 331,002.

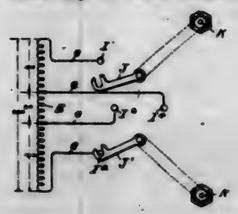

Claim.—1. In a relay, a winding having leads from its terminals and from intermediate points, contacts arranged on two intersecting arcs connected to said leads, and two pivoted contacts adapted to move over the two arcs respectively.

2. In a relay, a winding having leads from its terminals and from intermediate points, the number of turns between each pair of adjacent leads being different from that between any other pair, contacts arranged on two intersecting arcs connected to said leads, and two pivoted contacts adapted to move over the two arcs respectively.

3. In a relay, a casing, a winding therein having leads from its terminals and from intermediate points, contacts within the casing arranged on two intersecting arcs and connected to said leads, two pivoted contacts within the casing adapted to move over the two arcs respectively, and binding-posts outside the casing connected to said pivoted contacts.

4. In a relay, a casing, a winding therein having leads from its terminals and from intermediate points, the number of turns between each pair of adjacent leads being different from that between any other pair, contacts within the casing arranged on two intersecting arcs and connected to said leads, two pivoted contacts within the casing adapted to move over the two arcs respectively, and binding-posts outside the casing connected to said pivoted contacts.

851,796. COMBINATION-UNDERGARMENT. ANNA M. BRABINGTON, Cleveland, Ohio. Filed Jan. 7, 1907. Serial No. 351,261.

Claim.—1. An undergarment comprising a close-fitting bodice and a comparatively-short, skirted extension made of a single thickness of fabric; the lower part of said skirted extension being provided with two rows of buttons, the buttons of one row being substantially opposite the middle of the space between the buttons of the other row, and a flounce-supporting strip having a scalloped upper edge and suitably positioned button-holes, said strip being adapted to carry one or more flounces and to be attached to said single skirted-extension; substantially as described.

2. An undergarment having an upper skirted portion of a single thickness of fabric, and provided at its lower edge with a double or zigzag row of buttons, in combination with an attachable flounce strip having button-holes corresponding to the button-arrangement of the upper skirt portion, and one or more flounces attached to said strip.

3. An undergarment having an upper skirted portion provided at its lower edge with a double or zigzag row of supports, in combination with an attachable strip having a scalloped upper edge and a double or zigzag row of coöperating supports; said strip having secured thereto one or more flounces.

4. An undergarment comprising a close-fitting bodice and a comparatively-short, skirted extension made of a single thickness of fabric; said bodice portion having a rearwardly-attached, skirt-holding tab, and said skirted extension having interior, attached bustle-supporting means and being provided near its lower edge with a zigzag row of buttons and a covering flap therefor, in combination with an attachable flounce or petticoat member comprising a button-hole strip having a scalloped upper edge and a zigzag row of button-holes and having attached to its lower edge one or more flounces; substantially as described.

851,797. CLUTCH MECHANISM. TITO L. CARBONE, Berlin, Germany. Original application filed May 16, 1905, Serial No. 260,658. Divided and this application filed Nov. 25, 1905. Serial No. 289,090.

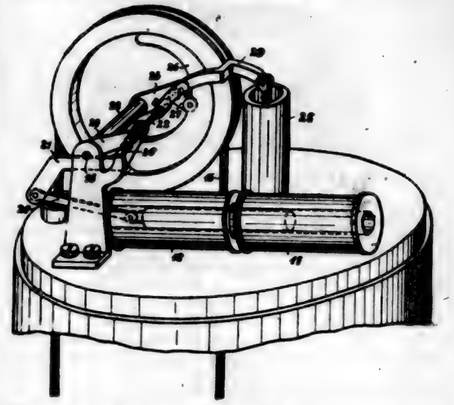

Claim.—1. In an electric arc lamp the combination with a revoluble wheel, a flexible member connected to said wheel an electrode holder suspended by said member, arms rotatably carried by the axle of said wheel, a revoluble axle mounted in said arms, a stationary stop coöperating with said arms, a brake pad connected to said revoluble axle and coöperating with the rim of the wheel, an electromagnetic device having a core, an arm fixed to the revoluble axle and connecting said core with the revoluble axle.

2. In an arc lamp the combination with a revoluble wheel, a flexible member connected to said wheel, an electrode holder suspended by said member, arms rotatably carried by the axle of said wheel, a revoluble axle carried by said arms, three arms fixed on said revoluble axle, a brake pad carried by one of said arms and coöperating with the rim of the wheel, a dash pot having its movable part connected to another of said arms, an electro-magnetic device having its core connected to the third arm and a stationary stop coöperating with one of the arms carrying the revoluble axle.

851,798. MARKER FOR CORN-PLANTERS. NIELS G. CHRISTIANSEN, Ringsted, Iowa. Filed June 5, 1906. Serial No. 320,315.

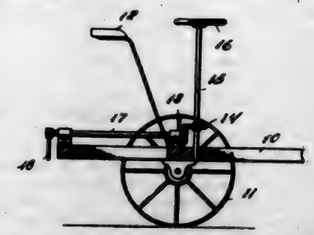

Claim.—In a marker for corn planters, the combination with a seat, of a permanently vertical shaft supported in front of the seat, in ready reach of the occupant thereon and provided on its upper end with a hand operating wheel and a bevel gear below the hand-wheel, a shaft arranged longitudinally of the implement and provided with bevel pinion meshing with the said bevel gear, and the marker-arm rigidly secured at its inner end to said shaft and provided on its outer end with a marker or drag.

851,799. ELECTRIC TRACTION SYSTEM. ALEXANDER CHURCHWARD, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 1, 1906. Serial No. 319,753.

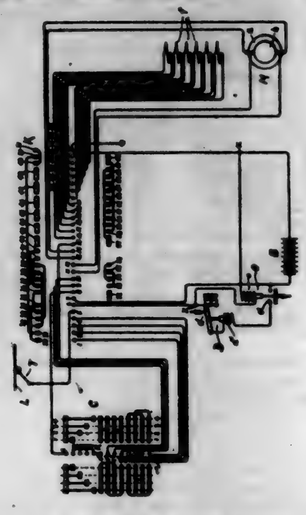

Claim.—1. In an electric traction system, a vehicle, a source of current supply external to the vehicle, a source of current supply on said vehicle, a dynamo-electric machine for propelling said vehicle having two armature windings and a field winding, and means for connecting one of said armature windings and said field winding to to the other source and for disconnecting the first armature winding and said field winding to the other source.

2. In an electric traction system, a vehicle, a source of current supply external to the vehicle, a source of current supply on said vehicle, a dynamo-electric machine for propelling said vehicle having two armature windings and a field winding, and means for connecting one of said armature windings and said field winding to the external source of current supply and the other armature winding to the other source and for disconecting the first armature winding and the field winding from the external source and connecting the other armature winding and the field winding to the other source.

3. In an electric traction system, a vehicle, a source of current supply external to the vehicle, a source of current supply on said vehicle, a propelling dynamo-electric machine for said vehicle having two armature windings and a plurality of field windings, and means for connecting one of said armature windings and the field windings arranged in series to one of said sources and for connecting the other armature winding and the field windings arranged in parallel to the other source.

4. In an electric traction system, a vehicle, a source of current supply external to the vehicle, a storage battery on the vehicle, a propelling dynamo-electric machine on said vehicle having two armature windings and a plurality of field windings, and means for connecting one of said armature windings and the field windings arranged in series to said external source and for connecting the other armature winding and the field windings arranged in parallel to the storage battery.

5. In an electric traction system, a vehicle, a source of current supply external to the vehicle, a storage battery on the vehicle, a propelling dynamo-electric machine on said vehicle having two armature windings and a plurality of field windings, and means for connecting one of said armature windings and the field windings arranged in series to the external source and the other armature winding to the storage battery and for disconnecting the first armature winding and the field windings from the external source and connecting the other armature winding and the field windings arranged in parallel to the battery.

6. In an electric traction system, a vehicle, a source of current supply external to the vehicle, a source of current supply on the vehicle, a propelling dynamo-electric machine on the vehicle having two armature windings and one set of field windings, and means for energizing the field windings and one armature winding from one source or the field windings and the other armature winding from the other source in order to propel the vehicle.

7. In an electric traction system, a vehicle, a source of current supply external to the vehicle, a storage battery on the vehicle, a propelling dynamo-electric machine on the vehicle having two armature windings and a plurality of field windings, and means for arranging the field windings in one relation toward each other and energizing them and one armature winding from the external source or for arranging the field windings in other relations toward each other and energizing them and the other armature winding from the storage battery.

8. In an electric traction system, a vehicle, a source of current supply external to the vehicle, a storage battery on the vehicle, a propelling dynamo-electric machine on said vehicle having two armature windings and one set of field windings, means for energizing said field windings and one of said armature windings from the external source of current supply or for energizing the other armature winding and the field windings from the storage battery in order to propel the vehicle, and means for automatically connecting one armature winding to the storage battery upon predetermined voltage in that winding when the other armature winding and the field windings are energized from the external source.

9. In an electric traction system, a vehicle, a source of current supply external to the vehicle, a storage battery on said vehicle, a propelling dynamo-electric machine on said vehicle having two armature windings and one set of field windings, and means for connecting one of said armature windings to the storage battery in series with the field windings arranged in parallel or for connecting the other armature winding to the external source of supply in series with the field windings arranged in series.

10. In an electric traction system, a vehicle, a source of current supply external to the vehicle, a storage battery on said vehicle, a resistance, a propelling dynamo-electric machine on said vehicle having two armature windings and one set of field windings, and means for connecting one of said armature windings to the storage battery in series with the field windings arranged in parallel or for connecting the other armature winding to the external source of supply in series with the field winding arranged in series, said means including a controller for connecting said resistance in circuit with either armature winding and gradually eliminating the resistance.

11. In an electric traction system, a vehicle, a source of current supply external to the vehicle, a storage battery on said vehicle, a propelling dynamo-electric machine on said vehicle having two armature windings and one set of field windings, means for connecting one of said armature windings to the storage battery in series with the field windings arranged in parallel or for connecting the other armature winding to the external source of supply in series with the field windings arranged in series, and means for automatically connecting one of said armature windings to the battery upon a predetermined voltage in that armature when the other armature is connected to the external source.

12. In combination, a dynamo-electric machine having two armature windings and one set of field windings, two sources of current supply, and means for energizing one of said armature windings and the field windings from one of said sources or for energizing the other armature winding and the field windings from the other source in order to cause said machine to operate.

13. In combination, a dynamo-electric machine having two armature windings and one set of field windings, two sources of current supply one of which is a storage battery, means for energizing one of said armature windings and the field windings from one of said sources or for energizing the other armature winding and the field windings from the other source in order to cause the machine to operate, and means for causing the one armature winding to be automatically connected to said storage battery at a predetermined voltage in that armature winding in order to charge the battery when the other armature winding and the field windings are being energized from the other source.

14. In an electric traction system, a vehicle, a source of current supply external to the vehicle, a storage battery on said vehicle, a resistance, a propelling dynamo-electric machine on said vehicle having two armature windings and one set of field windings, means for connecting one of said armature windings to the storage battery in series with the field windings arranged in parallel or for connecting the other armature winding to the external source of supply in series with the field winding arranged in series, said means including a controller for connecting said resistance in circuit with either armature winding and gradually eliminating the resistance, and means for automatically controlling the value of the current in the battery circuit during the charging of the battery.

15. In combination, a dynamo-electric machine having two armature windings and one set of field windings, a resistance, two sources of current supply, and means for energizing one of said armature windings and the field windings from one of said sources or for energizing the other armature winding and the field windings from the other source to cause said machine to operate, said means including a controller arranged to connect said resistance in circuit with either armature winding and to eliminate the resistance step by step.

16. In combination, a dynamo-electric machine having two armature windings and one set of field windings, two sources of current supply, and means for connecting one armature in series with the field windings to one of said sources and for connecting the other armature winding in series with the field windings to the other of said sources.

17. In combination, a dynamo-electric machine having two armature windings and one set of field windings, two sources of current supply one of which is a storage battery, and means for connecting one of said armature windings to the storage battery in series with the field windings arranged in parallel or for connecting the other armature winding to the other source of current supply in series with the field windings connected in series.

18. In an electric traction system, a vehicle, a source of supply external to the vehicle, a storage battery on the vehicle, a dynamo-electric machine on the vehicle having two armature windings and a single field winding, means for connecting one of said armature windings and the field winding in series with each other to the external source of supply to operate the vehicle, and connections from the other armature winding to the terminals of the storage battery for charging the battery while the vehicle is being propelled from the external source of current.

19. In an electric traction system, a vehicle, a source of current supply external to the vehicle, a storage battery on the vehicle, a dynamo-electric machine on the vehicle having two armature windings and a single field winding, means for connecting one of the armature windings in series with the field winding to the external source of current supply for propelling the vehicle, connections between the other armature winding and the storage battery for charging the storage battery while the vehicle is being propelled from the external source of supply, and a relay for open-circuiting the storage battery when the potential of the second armature winding falls below a predetermined value.

851,800. AUTOMATIC TRAIN-STOP. FRED B. COREY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 19, 1906. Serial No. 335,235.

Claim.—1. An automatic train-controlling device comprising a stop-arm on the roadway, a movable member on a car possessing high inertia and adapted to be engaged by said stop-arm, and a controlling device on the car arranged to be operated by a movement of the movable member beyond predetermined limits.

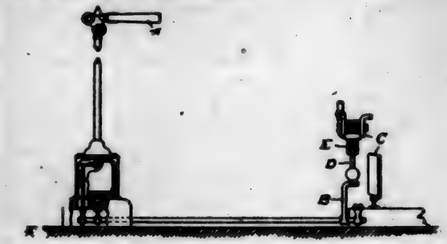

2. An automatic train-controlling device comprising a stop-arm on the roadway, a movable member on a car possessing high inertia and adapted to be engaged by said stop-arm, and a brake-controlling valve on the car arranged to be operated by said member upon its movement beyond predetermined limits.

3. In a block signal system for railways, a signal, a stop-arm controlled thereby, a movable member on a car possessing high inertia and adapted to be engaged by said stop-arm, and a controlling device on the car arranged to be operated by a movement of the movable member beyond predetermined limits.

4. In a block signal system for railways, a signal, a stop-arm controlled thereby, a movable member on a car possessing high inertia and adapted to be engaged by said stop-arm, and a brake-controlling valve on the car arranged to be operated by a movement of said member beyond predetermined limits.

5. In a block signal system for railways, a signal, a stop-arm controlled thereby, a movable member on a car possessing high inertia and adapted to be engaged by said arm, a relay valve arranged to be struck and opened by said member upon a movement thereof beyond predetermined limits, and a brake-controlling valve controlled by said relay valve.

6. In a block signal system for railways, a signal, a stop-arm controlled thereby, a movable member on a car possessing high inertia and adapted to be engaged by said arm, a relay valve arranged to be struck and opened by said member upon a movement thereof beyond predetermined limits, a brake-controlling valve controlled by said relay valve, and a catch adapted to engage said member upon its movement into engagement with the relay valve.

7. In a block signal system for railways, a signal, a stop-arm controlled thereby, a movable member on a car possessing high inertia and adapted to be engaged by said stop-arm, a brake-controlling device on the car arranged to be operated by a movement of said member beyond predetermined limits, and a catch adapted to engage said member upon its movement into engagement with said device.

851,801. COOKING-STOVE. CHARLES W. CURTIS, Rochester, N. Y., assignor to The Sill Stove Works, Rochester, N. Y., a Corporation of New York. Filed Oct. 10, 1903. Serial No. 176,549.

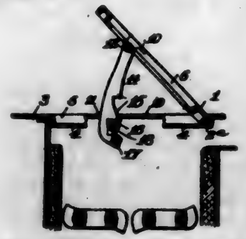

Claim.—1. The combination with a stove top, a cover pivotally mounted thereon, and a cover-supporting projec-

tion on the stove top having a slot or passage at one side thereof, of a latch freely suspended on the cover on a pivot so located as to move over said projection and toward the pivot of the cover during the opening movement of the latter to carry the latch into coöperative relation with the said projection, and means for swinging the latch out of alinement with said projection and into a position to enter said passage at the side thereof to permit closing movement of the cover.

2. The combination with a stove, and a cover mounted in pivotal relation therewith, of a toothed latch pivoted to swing in the plane of movement of the cover, and having a laterally offset portion thereon, of a projection arranged on the stove at a point between the pivot of the cover and the latch, the latter being held in coöperative relation with the projection by gravity as the cover swings in one direction on its pivot, a cam being provided on said projection to coöperate with the offset portion of the latch to automatically disengage the latter from the projection by a continued movement of the cover, and a slot being provided adjacent to the projection to receive and guide the latch after the latter has disengaged from the projection.

3. The combination with a stove top, a cover pivotally mounted thereon, and a cover-supporting projection formed on the stove top and having a slot arranged at one side thereof, and extending toward the pivot of the cover, of a latch on the cover on a pivot so located as to move over the supporting projection and toward the pivot of the cover during opening movement of the latter to carry the latch into coöperative relation with the projection, and a laterally offset portion on the latch serving to move the latter out of alinement with said projection and into a position to enter said slot at one side of the projection to permit closing movement of the cover.

4. The combination with a stove top having an opening therein and a slot leading from said opening, and a cover-supporting projection formed at one side of said opening and adjacent to the said slot, of a cover pivotally mounted on the stove top, a latch freely suspended on the cover by a pivot arranged at a point to freely suspend the latch in said opening opposite to the supporting projection when the cover is closed, and arranged to carry the latch into engagement with said projection when the cover is opened on its pivot, said latch having a cam portion arranged to engage a portion of the stove top to move the latch laterally out of alinement with the projection and into a position to enter said slot, to permit closing movement of the cover.

851,802. PULLEY ATTACHMENT. CLARENCE E. CURTISS, Grand Rapids, Mich. Filed Feb. 19, 1906. Serial No. 301,925.

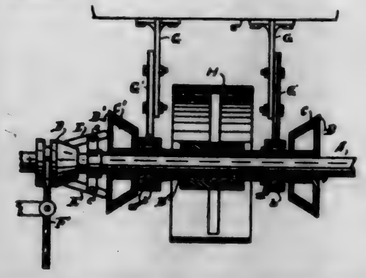

Claim.—1. In combination with a driving shaft and a pulley, a stationary friction cone on the shaft, and a friction cone longitudinally adjustable upon the shaft, a pair of friction cups connected by an annular body and thereby secured to the pulley, adjustable hangers for supporting the body of the friction cups, an inclined bearing between each of the hangers and the body, and a toggle for actuating the friction clutches, substantially as and for the purpose set forth.

2. In combination with a driving shaft and a pulley, a stationary and an adjustable friction cone secured to the shaft and a toggle for actuating the adjustable cone, friction cups connected by an annular body having a central longitudinal aperture of larger diameter than the shaft, adjustable hangers to support the friction cups and body, and a tapering bearing between each hanger and the body, substantially as shown and described.

851,803. TELEPHONE TRUNKING SYSTEM. WILLIAM W. DEAN, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed July 14, 1902. Serial No. 115,405.

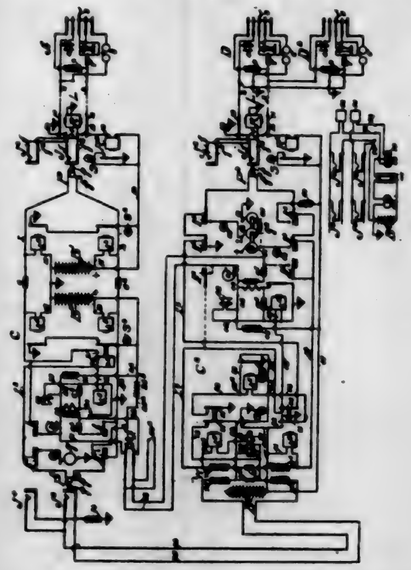

Claim.—1. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and with a called telephone line at its incoming end, of a supervisory signal associated with its outgoing end placed in condition to operate by current flowing over a portion of the talking circuit when connection is established at said end, a trunk relay at the incoming end actuated by current over the metallic circuit of the outgoing end of the trunk when connection is established therewith, said path for current being of high resistance to limit the flow of current in the said trunk line, a signal at said incoming end whose actuation depends upon said trunk relay, and means for removing the resistance of said path from the trunk to permit a sufficient flow of current therein to render inoperative said supervisory signal, and means for maintaining said relay operated during conversation, substantially as described.

2. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with its outgoing end placed in condition to operate by current flowing over a portion of the talking circuit when the connection is established at said end, a trunk relay at the incoming end actuated by current flowing over the metallic circuit of the outgoing end of the trunk when connection is established at said end, a signal at said incoming end whose actuation depends upon said trunk relay, means for removing the resistance of said relay from the trunk to permit a sufficient flow of current therein to render inoperative said supervisory signal, and means for maintaining said relay operated during conversation, substantially as described.

3. The combination with a trunk line adapted to be connected at its outgoing end with a calling telephone line and at its incoming end with a called telephone line, of a supervisory signal associated with the outgoing end placed in condition to operate by current flowing over a portion of the talking circuit, a trunk relay at the incoming end having a high resistance winding and a low resistance winding, said high resistance winding being connected in the metallic circuit of the outgoing end of the trunk to limit the flow of current therein, a signal at said incoming end whose actuation depends upon said trunk relay, means for removing the high resistance of said winding from the circuit when the called subscriber responds to permit a sufficient flow of current over the trunk to render said supervisory signal inoperative, and means to energize said low resistance winding while the high resistance winding is deprived of operating current, substantially as described.

4. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with the outgoing end placed in condition to operate by current flowing over a portion of the talking circuit when connection is established at said end, a trunk relay at the incoming end having a high resistance winding connected in the metallic circuit of the outgoing end of the trunk to limit the flow of current therein, said relay having also a low resistance winding, a signal at said incoming end whose actuation depends upon said trunk relay, and means to shunt said high resistance winding and to render active the low resistance winding when the called subscriber responds, whereby sufficient current is permitted to flow in the trunk line to render said supervisory signal inoperative and the said relay is maintained operated during the time the high resistance winding is shunted, substantially as described.

5. The combination with a trunk line adapted to be connected with a calling telephone line at its outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with the outgoing end and rendered operative by current flowing over a portion of the talking circuit when connection is established at the outgoing end, a trunk relay at the incoming end of the trunk having a high resistance winding connected in the metallic circuit of the trunk to limit the flow of current therein, a signal at said incoming end whose actuation depends upon said relay, a second relay at said incoming end responsive to current in the line when the called subscriber responds, said latter relay serving when actuated to deprive the high resistance winding of said trunk relay of operating current and to permit an increased flow of current in the trunk line to render the supervisory signal inoperative, a low resistance winding for said trunk relay connected in circuit with said second relay during conversation and also responsive to current in the line, whereby said relay is maintained operated while its high resistance winding is inoperative, substantially as described.

6. The combination with a trunk line adapted to be connected with a calling telephone line at its outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with its outgoing end placed in condition to operate by current flowing over a portion of the talking circuit when the connection is established at said end, a trunk relay at the incoming end having a high resistance winding and a low resistance winding, said high resistance winding being connected in the metallic circuit of the trunk to limit the flow of current therein to prevent rendering said supervisory signal inoperative, a signal at said incoming end responsive to the actuation of said trunk relay, a second relay at said incoming end responsive to current in the line when the subscriber responds and serving when actuated to remove said high resistance winding from the trunk line and to thus permit an increased flow of current over the outgoing end of the trunk to render said supervisory signal inoperative, the low resistance winding of said relay being in series with said second relay during conversation and also responsive to current in the line, whereby when the high resistance winding is removed as set forth the said trunk relay is maintained actuated by said low resistance winding, substantially as described.

7. The combination with a trunk line adapted to be connected with the calling telephone line at its outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with said outgoing end and placed in condition to operate by current flowing over a portion of the talking circuit when connection is established at said end, a trunk relay at the incoming end actuated by current thereover, a signal whose actuation depends upon said trunk relay, the circuit of said relay being altered upon the response of the called subscriber to permit a sufficient flow of current over the metallic circuit of the trunk line to render said supervisory signal inoperative and to still maintain the said trunk relay in operated condition, and means under the control of the operator at the outgoing end for rendering said relay inoperative before the called subscriber's telephone is returned to its hook, substantially as described.

8. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and with a called telephone line at its incoming end, of a supervisory signal associated with said outgoing end placed in condition to operate by current over a portion of the talking circuit when connection is established at the outgoing end, a trunk relay at the incoming end having a high resistance winding and a low resistance winding, a signal also at the incoming end whose actuation depends upon said relay, said high resistance winding being connected in the metallic circuit of the outgoing end of the trunk whereby current flowing in the trunk is limited, means for removing said resistance from the trunk upon the response of the called subscriber to permit a sufficient flow of current in the trunk to render said supervisory signal inoperative, means for energizing said low resistance winding while the high resistance winding is removed, and further means controlled by the operator at the outgoing end for rendering said low resistance winding inoperative before the called subscriber's telephone is hung up, substantially as described.

9. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and with a called telephone line at its incoming end, of a supervisory signal associated with said outgoing end placed in condition to operate by current over a portion of the talking circuit when connection is established at the outgoing end, a trunk relay at the incoming end having a high resistance winding and a low resistance winding, a signal also at the incoming end whose actuation depends upon said relay, said high resistance winding being connected in the metallic circuit of the outgoing end of the trunk whereby current flowing in the trunk is limited, means for removing said resistance from the trunk upon the response of the called subscriber to permit a sufficient flow of current in the trunk to render said supervisory signal inoperative, means for energizing said low resistance winding while the high resistance winding is removed, and further means for rendering said low resistance winding inoperative by the hanging up of the called subscriber's telephone, substantially as described.

10. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with said outgoing end placed in condition to operate by current over a portion of the talking circuit when a connection is established at the outgoing end, a trunk relay at the incoming end having a high resistance winding and a low resistance winding, a signal whose actuation depends upon said relay, said high resistance winding being connected in the metallic circuit of the outgoing end of the trunk whereby the current flowing in the trunk is limited, means for removing said resistance from the trunk upon the response of the called subscriber to permit a sufficient flow of current in the trunk to render the said supervisory signal inoperative, means for energizing said low resistance winding while the high resistance winding is removed, and further means for rendering said low resistance winding inoperative upon the hanging up of the called subscriber's telephone or by the severing of the connection at the outgoing end of the trunk, substantially as described.

11. The combination with a trunk line adapted to con-

nect with a calling telephone at its outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with the outgoing end placed in condition to operate by current flowing over a portion of the talking circuit when connection is established at said end, a trunk relay having a high resistance winding connected in the metallic line of the outgoing end of the trunk whereby the flow of current therein is limited, a signal whose actuation depends upon said trunk relay, means for removing the said high resistance when the called subscriber responds to render said supervisory signal inoperative, an auxiliary winding upon said trunk relay placed in condition to respond to current in the line while the called subscriber's telephone is in use, said auxiliary winding serving to maintain the trunk relay actuated while its high resistance winding is removed from the circuit, and an auxiliary relay controlling the circuit of said auxiliary winding and placed under the control of the operator at the outgoing end when the called subscriber responds, whereby whenever the connection is severed at the outgoing end of the trunk, the trunk relay is de-energized, substantially as described.

12. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone with which its incoming end is connected, of a disconnect signal for said incoming end, a relay at said incoming end actuated by current flowing over a portion of the talking circuit when connection is established with the called line to place said signal in condition to operate, and means controlled by the operator at the outgoing end for operating said signal to give a disconnect indication when the called subscriber's line is closed at the sub-station, substantially as described.

13. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone line with which its incoming end is connected, of a disconnect signal for said incoming end, a relay at said incoming end actuated by current flowing over a portion of the talking circuit when connection is established with the called line to place said signal in condition to operate, and means for operating said signal when the connection is severed at the outgoing end and when the called subscriber's line is closed at the sub-station, substantially as described.

14. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone line with which its incoming end is connected, a disconnect signal for said incoming end, a relay at said incoming end actuated by current flowing over a portion of the talking circuit when connection is established with the called line to place said signal in condition to operate, a trunk relay actuated by current over the trunk when connection is established at the outgoing end to render said signal inoperative, means to energize said trunk relay during conversation, and further means to de-energize said relay before the called subscriber's line is open at the sub-station by severing the connection at the outgoing end of the trunk, substantially as described.

15. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone line with which its incoming end is connected, of a disconnect signal at said incoming end, a relay at said incoming end actuated by current flowing over a portion of the talking circuit when connection is established with the called line to place said signal in condition to operate, a trunk relay at said incoming end actuated by current over the trunk when connection is established with its outgoing end, means to actuate said trunk relay by current in the line of the called subscriber during conversation to maintain the same operated, and means to cut-off said energizing current when the connection is severed at the outgoing end, substantially as described.

16. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone line at its incoming end, of a relay at the incoming end actuated over a portion of the talking circuit when connection is established with the called line, a trunk relay at the incoming end actuated by current over the outgoing end of the trunk when the called subscriber's telephone is not in use and actuated by current over the incoming end when the called subscriber's telephone is in use, and a disconnect signal whose actuation depends upon said two relays, substantially as described.

17. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone at its incoming end, of a disconnect signal for the incoming end of the trunk, a relay at said incoming end actuated by current over a portion of the talking circuit when connection is established with the called line to place said signal in condition to operate, a trunk relay adapted when actuated to render said signal inoperative, said relay being first actuated by current over the trunk from the outgoing end and after the called subscriber responds by current flowing over the incoming end of the called line, substantially as described.

18. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone line at its incoming end, of a disconnect signal for the incoming end of the trunk, a relay actuated over a portion of the talking circuit when connection is established with the called line, a trunk relay to render the signal inoperative when actuated and having two windings, one of said windings being energized by current flowing over the trunk when connection is first established with the outgoing end and the other winding being actuated by current over the incoming end of the trunk when the called subscriber responds, substantially as described.

19. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone line at its incoming end, of a disconnect signal for the incoming end of the trunk, a relay actuated by current flowing over a portion of the talking circuit when connection is made with the called line to place said signal in condition to operate, a trunk relay to render said signal inoperative, said relay having two windings, one of said windings being energized by current over the trunk from the outgoing end and the other being placed during conversation in the path of current flowing over the incoming end of the called line and serving to operate said relay, substantially as described.

20. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone line at its incoming end, of a disconnect signal for the incoming end of the trunk, said signal being placed in condition to operate by the connection of the trunk with the called subscriber's line, a trunk relay having an actuating winding connected with the outgoing end of the trunk and energized by current over the trunk from the outgoing end before the called subscriber responds and a second relay at said incoming end actuated when the called subscriber responds and placed under the control of the operator at the outgoing end, an auxiliary winding upon said trunk relay placed in condition to operate by current flowing over the incoming end of the trunk by the actuation of said second relay, whereby said disconnect signal may be operated by the outgoing operator before the called subscriber hangs up his receiver, substantially as described.

21. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone line at its incoming end, of a disconnect signal at the incoming end of the trunk placed in condition to operate when the trunk is connected with the called subscriber's line, a trunk relay to render said signal inoperative when energized, said relay having an actuating winding of high resistance connected with the outgoing end of the trunk and energized by current thereover when connection is established at the outgoing end, a second relay of low resistance connected in the circuit in place of said high resistance winding when the called subscriber responds and actuated by current over the outgoing end of the trunk, an auxiliary winding upon the trunk relay connected in the path of current over the incoming end of the trunk when said second relay is actuated, whereby said auxiliary winding is rendered inoperative when the called subscriber hangs up his telephone or the connection is severed at the outgoing end of the trunk, substantially as described.

22. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a subscriber's line with which its incoming end is adapted to be connected, a supervisory signal associated with the cord circuit and placed in condition to operate by current flowing over a portion of the talking circuit when the cord is connected with the trunk, a relay associated with the incoming end of the trunk and adapted to be operated over a portion of the talking circuit when the trunk is connected with the called line, a testing circuit for said incoming end of the trunk normally completed over one strand thereof through normal contacts of said relay, said testing circuit being severed and the trunk circuit being placed in condition for talking by the actuation of said relay, a ringing signal for the incoming end of the trunk placed in condition to operate by the actuation of said relay, means for rendering inert and for locking out said ringing signal during the remainder of the connection after the called subscriber responds, a trunk relay at the incoming end of the trunk having a winding actuated by current over the trunk and from the cord circuit when the cord circuit is connected with the trunk, means to permit a flow of current over the metallic trunk line to render said supervisory signal inert when the called subscriber responds and an auxiliary winding upon said trunk relay and means for energizing it during conversation to maintain the said relay actuated, a second signal at said incoming end of the trunk placed in condition to operate by the actuation of the first named relay, means for actuating said signal when the cord circuit is disconnected from the trunk and the trunk is connected with the called subscriber's line, whereby a disconnect indication is given, and further means for actuating said signal to give a guard indication when the cord is connected with the trunk and the trunk is disconnected from the called line, and a source of current at the incoming end of the trunk to furnish current for the operation of the relays and signals and for the operation of the transmitters for talking purposes, substantially as described.

23. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to connect, a retardation coil legged to ground from one side of the talking circuit established by the connection of the cord circuit with the trunk, a supervisory signal associated with the cord circuit and placed in condition to operate by current flowing over a portion of the talking circuit and through said retardation coil when the cord is connected with the trunk, a source of current at the incoming end of the trunk, a relay associated with the incoming end of the trunk and adapted to be operated by current from said source over one strand of the trunk when connected with the called line, said relay serving when actuated to place said trunk in condition for conversation, a ringing signal for the incoming end of the trunk placed in condition to operate by the actuation of said relay, a second relay responsive to current in the incoming end of the trunk from said source when a called subscriber answers his call, said relay serving to render said ringing signal inert, means for locking out said ringing signal during the remainder of the connection, a trunk relay at the incoming end of the trunk having a high resistance winding and connected with the outgoing end of the trunk and adapted to be actuated by current thereover when the cord circuit is connected with its outgoing end, means operated by said second relay to remove said high resistance winding from the trunk circuit to permit a flow of current thereover to render the supervisory signal at the A cord circuit inoperative, and an auxiliary winding upon said trunk relay energized at the time that the high resistance winding is shunted whereby said relay is maintained actuated during conversation, a second signal at said incoming end of trunk placed in condition to operate by the actuation of said first named relay and prevented from operation by said trunk relay, said signal being actuated to give a disconnect indication when the cord circuit is disconnected from the trunk and the trunk is connected with the called subscriber's line, and said signal being also actuated but to give a guard indication when the cord circuit is connected with the trunk and the trunk is disconnected from the called line, said current source serving to charge the transmitters for talking and to energise said relays and signals, substantially as described.

24. The combination with a trunk line adapted to connect with a calling telephone line at its outgoing end and a called telephone line at its incoming end, of a supervisory signal associated with its outgoing end placed in condition to operate by current flowing over a portion of the talking circuit when connection is established at said end, a trunk relay at the incoming end actuated when connection is established at the outgoing end of the trunk by current flowing over the metallic circuit of said end, a signal at said incoming end whose actuation depends upon said trunk relay, means for removing the resistance of said relay from the trunk to permit a sufficient flow of current therein to render said supervisory signal inoperative, and further means controlled by current flowing over the incoming end of the trunk for controlling the operation of said relay during conversation, substantially as described.

25. The combination with a trunk line adapted to connect with a cord circuit at its outgoing end, and a called subscriber's line at its incoming end, of a relay associated with the incoming end of said trunk, and a signal having its circuit partially controlled by said relay, the actuation of said relay depending upon either current over the trunk line from the cord circuit or current over the called telephone line, whereby said relay may only be de-energized when the cord is disconnected from the trunk and the called subscriber's receiver is on the hook, substantially as described.

26. The combination with a trunk line, of a cord circuit adapted to connect with its outgoing end, and a called subscriber's line with which its incoming end is adapted to connect, a supervisory signal for said cord circuit adapted to be controlled by the flow of current in the trunk, a signal for said trunk circuit, and a relay to control the circuit of said signal at one point, two coils for said relay, one adapted to be energized by current over the trunk line when the cord is connected with the trunk, and the other adapted to be energized by current over the called subscriber's line when the called subscriber has answered his call, and means to place a shunt about the trunk coil whenever the other of said coils is energized, whereby the current in the trunk line will be increased to control said supervisory signal without the de-energization of the said trunk relay, and whereby said trunk relay remains actuated to control said trunk signal whenever the cord is connected with the trunk or the circuit is closed at the called subscriber's station, substantially as described.

27. The combination with a telephone trunk circuit, of a cord circuit adapted to be connected with said trunk at its outgoing end, and a called subscriber's line with which its incoming end is adapted to connect, of a relay associated with the incoming end of said trunk, and adapted to be actuated by current over the outgoing end of the trunk, a second relay associated with the incoming end of the trunk and adapted to be actuated by current over the called subscriber's line when the circuit is closed at the substation, a coil of said first relay connected in series with the coil of said second relay, whereby said trunk relay will also be actuated by current in the called subscriber's line, contacts of said second relay adapted to shunt the trunk coil of said trunk relay to decrease the resistance between the limbs of the trunk line, a supervisory signal associated with the cord circuit, and controlled during connection with the trunk by the flow of current in the trunk line, and a signal associated with the incoming end of the trunk and having its circuit controlled by the actuation of said trunk relay, substantially as described.

851,804. CONTROLLER FOR ELECTRIC MOTORS. CHARLES A. DENEEN, Chicago, Ill., assignor to G. A. Edward Kohler and Franklin W. Kohler, Chicago, Ill. Filed June 10, 1902. Serial No. 112,334.

Claim.—1. The combination with two or more electric motors of a controlling device therefor, comprising a series of resistance contacts for each motor, controlling resist-

ances associated with said contacts the controlling resistance for the several motors located in different circuits, contact devices adapted to cut in or out said resistances, a support for said contact devices, and means for automatically moving said support so as to successively cut the resistance out of the meter circuits.

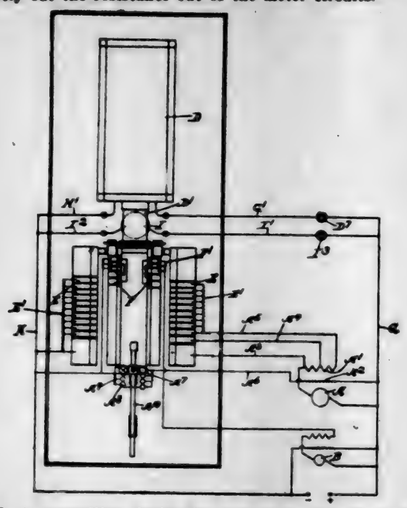

2. A controlling device for two or more motors, comprising two sets of controlling contacts and resistances associated together and located in separate circuits, a separate contact device for each set of contacts, both contact devices connected with the core of a solenoid whereby the motors are automatically controlled by a single solenoid.

3. A controlling device for two or more motors, comprising two sets of controlling contacts and resistances associated together, a separate contact device for each set of contacts, both contact devices connected with the core of a solenoid whereby the motors are automatically controlled by a single solenoid, and means independent of the coil of the solenoid for holding the core of said solenoid in any desired intermediate position.

4. A controlling device for electric motors comprising a series of resistance contacts to which is connected the resistance in circuit with the motor armature, a solenoid carrying a contact device coöperating with said contacts, and adapted when energized to move the contact device to a point where the resistance is in circuit, a device for stopping said contact device in an intermediate position during the process of cutting resistance out of the motor circuit so as to prevent a backward movement of the contact device when so stopped.

5. A controlling device for motors comprising a series of contacts to which are connected the starting resistances for the motor, a contact device coöperating with said contacts, a controlling device for said contact device adapted to be controlled from a distant point, means for stopping said contact device at certain predetermined intermediate positions during the process of cutting out resistance, the parts arranged so as to prevent said contact device from being stopped in such intermediate position during the process of cutting out resistance except when it is in proper position with relation to the opposed contacts.

6. A controlling device for motors, comprising a series of contacts with which are associated the starting resistances for the motor, a contact device adapted to be moved along said contacts, a solenoid having its core connected with said contact device, the parts arranged so that the resistance is cut out of the circuit of the motor by the dropping of the core and contact device under the influence of gravity.

7. A controlling device for an electric motor, comprising a suitable resistance, a series of contacts associated therewith, a contact device therefor adapted to be moved along the contacts to decrease the resistance in the motor circuit, an electrically actuated stop device controlled from a distant point for stopping said contact device at intermediate points, and arranged so as to be affected only when the contact device is in a nonsparking position.

8. A controlling device for electric motors, comprising a solenoid, a contact device carried by the core thereof, a series of contacts along which the contact device passes, a resistance associated with said contacts so that the movement of the contact device varies the resistance in the circuit, said solenoid arranged to move said contact device to insert resistance into the motor circuit said core adapted to be set in motion so as to move the contact device along the contacts to remove resistance from the circuit, a stop device to stop said core at an intermediate position while resistance is being removed, the parts arranged so as to prevent any retrograde movement of said contact device when stopped at an intermediate point during the process of decreasing the resistance in circuit.

9. A controlling device for a plurality of electric motors, comprising a controller proper for each motor, the several controllers separate from each other and adapted to be successively brought into action, and a starting means at a distant point for starting the operation of the controller and a separate controlling means at a distant point for stopping the action of the said controllers.

10. The combination with a driven device of two electric motors, a slow speed connecting mechanism between one of the motors and the driven device and a higher speed connecting mechanism between the other motor and the driven device, a controlling solenoid associated with said motors and means located at a distant point for successively starting said motors and transposing the load from one to the other, whereby a large starting current is prevented.

11. A controlling device for motors, comprising two sets of contacts separated from each other, a series of resistance coils associated therewith, a contact device adapted to be moved back and forth between said contacts, a second movable contact device located between a second series of contacts having resistances associated therewith, the several resistances being in different motor circuits, a support for both of said movable contact devices, and a single solenoid having a core connected with said support.

12. A controlling device for an electric motor comprising a series of resistance contacts to which is connected the resistance in circuit, a solenoid carrying a contact device coöperating with said contacts, a device for stopping said contact devices in an intermediate position and arranged so as to act thereon only when the contact device is in a nonsparking position.

13. A motor controlling device comprising a series of contacts with resistance between them and adapted to be connected in the motor circuit, a contact device adapted to be moved along said contacts, an electro magnetic device connected with said contact device so as when energized to move it to cut resistance into the motor circuit, said contact device when released adapted to be moved by gravity to cut resistance out of the motor circuit.

14. A motor controlling device comprising a series of contacts with resistance between them and adapted to be connected in the motor circuit, a contact device adapted to be moved along said contacts, an electro magnetic device connected with said contact device so as when energized to move it to cut resistance into the motor circuit, said contact device when released adapted to be moved by gravity to cut resistance out of the motor circuit, and a stop device for stopping said contact device in an intermediate position during its movement to cut resistance out of the circuit whereby sparking at the contacts is obviated.

851,805. SKIRT-SUPPORTER AND WAIST-STAY. CLAUDE D. FLETCHER, Indianapolis, Ind. Filed Mar. 5, 1906. Serial No. 304,151.

Claim.—1. A device of the class described consisting of a strip of metal all parts of which are substantially in the same plane and having formed in one edge near each end transversely-entering diverging notches forming a pair of converging hooks one at each end.

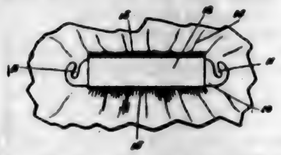

2. A device of the class described consisting of a strip of material provided at each end with a hook, and offsets formed in the body of the strip adjacent the hooks to receive coöperating eyes and compensate for the thickness of the strip, substantially as described.

3. A device of the class described consisting of a strip of metal having formed in one edge transversely entering notches, and offsets formed in the body of the strip adjacent the notches to receive coöperating eyes and compensate for the thickness of the strip.

4. A device of the class described consisting of a strip of metal all parts of which are substantially in the same plane and having formed in one edge near each end transversely entering diverging notches forming a pair of converging hooks one at each end, and offsets formed in the body of the strip adjacent the hooks to receive coöperating eyes and compensate for the thickness of the strip.

851,806. TRAIN-PIPE COUPLING. JOHN A. FRENZEL, Wausau, Wis. Filed Aug. 13, 1906. Serial No. 330,371.

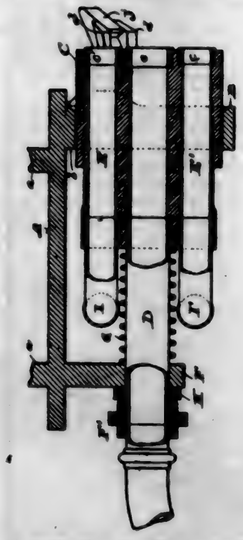

Claim.—1. A train-pipe coupling comprising a hanger provided with a forward ring having a pair of radially flared extensions at an angle intermediate of vertical and horisontal lines intersecting the axis of the ring, a rearward guide depending from the hanger, in combination with a coupling having a head provided with a plurality of openings, the head being guided in said ring, a tubular-extension from the head, supported in the rear hanger-guide, a pair of locking-dogs carried by said head, said dogs being at an angle relatively opposite that of the flared extensions, and a spring interposed between the aforesaid head and rear hanger-guide.

2. A train-pipe coupling comprising a hanger provided with a forward ring having a pair of radially flared extensions at an angle intermediate of vertical and horisontal lines intersecting the axis of the ring, a rearward guide depending from the hanger, in combination with a coupling having a head provided with a plurality of openings, the head being guided in said ring, a tubular-extension from the head, supported in the rear hanger-guide, a pair of locking-dogs carried by said head, said dogs being at an angle relatively opposite that of the flared extensions, front and rear projections from the aforesaid dogs arranged to be engaged by the hanger-ring, and a spring interposed between the aforesaid head and rear hanger-guide.

851,807. TIE FOR WIRE FENCES. CHARLES HENDERSHOTT, Bellefontaine, Ohio. Filed Sept. 21, 1906. Serial No. 335,652.

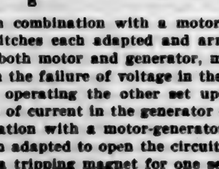

Claim.—1. A wire fence tie having a substantially circular outline, and having its respective ends crossed at opposite sides of one of the fence wires and thence turned inward in opposite directions within the circular portion of the tie and with its ends directed toward opposite sides of the fence.

2. In combination with two crossed wires, a wire tie bent in substantially circular form and having its middle engaging one side of one fence wire and oppositely engaging the other fence wire at equal distance from its middle and thence extending at opposite sides of the first named wire and thence extending toward opposite sides of the fence and with its ends extended in opposite directions within its circular portion.

3. In combination with two crossed wires, a tie comprising a piece of wire bent in substantially circular form and engaging said crossed wires in four places substantially equi-distant from the crossing thereof, the respective ends of said tie being extended at opposite sides of one of said wires and thence bent partially around the same in the same directions and within the circular part thereof and with its ends inserted between the said circular part and the crossed wires and projecting toward opposite sides of the fence.

851,808. AUTOMATIC SWITCH FOR ELECTRIC CIRCUITS. CHARLES H. HILL, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 22, 1904. Serial No. 229,562.

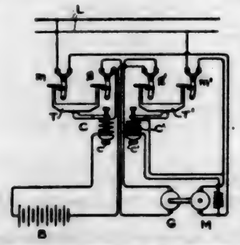

Claim.—1. In combination with a motor-generator set, two sets of switches each adapted and arranged to open the circuits of both motor and generator, means for actuating one set on the failure of voltage in the motor-circuit, and means for operating the other set upon a predetermined variation of current in the generator circuit.

2. In combination with a motor-generator set, two sets of switches each adapted to open the circuit of both motor and generator, a tripping magnet for one set connected in shunt circuit to the motor-armature, and a tripping coil for the other set connected in series with the generator armature.

3. In combination with a motor-generator set, two sets of switches each adapted to open the circuit of both motor and generator, a no-voltage-release magnet controlling one set and connected in the motor-circuit, and an under-load-release magnet controlling the other set.

4. In combination with a motor-generator set, two pairs of switches, each being arranged to open one leg of the circuits of both machines, and independent tripping devices for said pairs.

5. In combination with a motor-generator set, four independently-operable switches controlling the circuits of said machines, two in each circuit, two independent tripping devices each controlling one generator and one motor switch, and means for rendering said tripping devices inoperative until the generator switches are closed.

6. In combination with a motor-generator set, four independently-operable switches controlling the circuits of said machines, two in each circuit, two independent tripping devices each controlling one generator and one motor-switch, means for restraining said tripping devices in an inoperative position at starting, and means for releasing said devices upon the closing of a generator switch.

7. In combination with a motor-generator set, four independently-operable switches controlling the circuits of said machines, two in each circuit, two independent tripping devices each controlling one generator and one motor-switch, a latch for restraining said tripping devices in an inoperative position, and operative connections between said latch and one of the generator switches.

8. In combination, two pairs of independently-operable switches, a shaft, two independent tripping devices for said pairs loosely mounted on said shaft, means on said shaft for engaging said devices when said shaft is rocked, a dog on said shaft, a latch adapted to be engaged thereby when said shaft is rocked, and operative connections between said latch and one of said switches.

9. In combination, two pairs of independently-operable switches, two independent tripping devices for said pairs, means for moving said devices to an inoperative position, a latch for said moving means, and operative connections between said latch and one of said switches whereby said devices are released when said switch is closed.

10. In combination with a motor-generator set, a no-voltage-release magnet in the motor-circuit, an under-load-release magnet in the generator circuit, and independent means controlled by said magnets for opening both circuits.

11. In combination, two magnets, a shaft extending above said magnets, two members loosely mounted on said shaft adapted to be engaged respectively by the cores of said magnets, and four independently-operable switches adapted to be tripped two by one of said members and two by the other.

12. In combination, two magnets, a shaft extending above said magnets, two members loosely journaled on said shaft and adapted to be engaged respectively by the cores of said magnets, independently-operable switches adapted to be tripped by said members, means on the shaft for engaging said members when the shaft is rocked, a latch for engaging said shaft when rocked, and operative connections between said latch and one of said switches.

851,809. HAT-DIPPING APPARATUS. ADIN W. HILSINGER, Orange, N. J. Filed Apr. 20, 1903. Serial No. 153,396.

Claim.—1. The improved hat-dipping machine herein described, comprising a tank, a cone cradle, means for suspending said cone cradle over said tank, a cylinder having a bracket or bearing on the outside for a vertical rod, and a piston within said cylinder in connection with said means for suspending the cradle, means for conducting the motive fluid to the cylinder and an exhaust passage and a vent at the bottom of the cylinder, a vertical rod 27, adjustably connected to said piston and movable therewith in said bracket or bearing, an arm secured to the cylinder and having a crank lever having three arms 301, 302, 32, one of which is forked, a valve stationed on said cylinder and having a cylinder and piston for regulating the supply of motive fluid, the last said piston having collars between which the forked arm extends and controlling the supply passage of motive fluid and the exhaust passage or duct, said crank lever having another, a fourth, arm 35, a spring attached thereto and adapted to hold one or the other of the arms 301, 302 toward the rod 27, and arms 37, 38, on said vertical rod and having inclines to engage the arms of the lever.

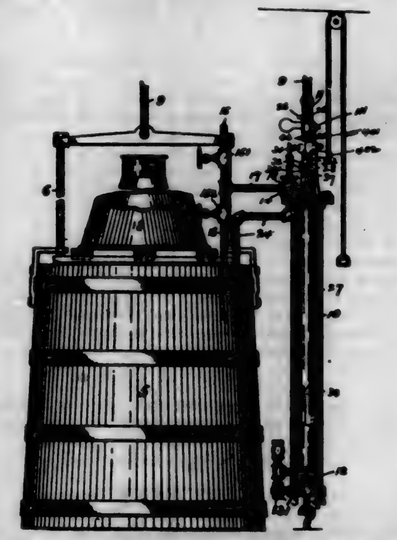

2. In combination, in a dipping tank and its cradle, with the cylinder and piston controlling the dipping operation, a valve controlling the motive fluid and the movement of the piston, a crank lever fulcrumed on suitable bearings, a rod connected to the piston and adapted to engage the crank lever to effect an automatic operation of the valve, and a catch for holding the cradle in its elevated position, substantially as set forth.

851,810. METAL CROSS-TIE. GUY R. JAMES, Rome, Miss. Filed Aug. 31, 1906. Serial No. 332,813.

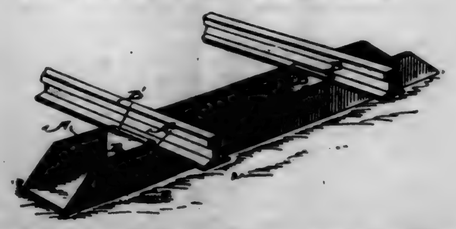

Claim.—1. A tie comprising a trough having transverse partitions, a wear plate secured on each partition to support a rail, and means for locking the rail to each partition.

2. A tie of the kind described comprising an open trough, transverse partitions therein, recesses being formed in the tops of the partitions, wear plates in said recesses adapted to support rails, clamps adapted to engage the rail bases and bearing on the sides of the partitions, and means for adjustably locking the clamps to said partitions.

3. A device of the kind described comprising a trough, wedge-shaped partitions therein, said partitions having top recesses and side slots, plates of comparatively soft metal in the recesses, and clamps adapted to engage the sides of the partitions and the base of a rail, as and for the purpose set forth.

4. A metal tie having the form of a trough, partitions therein terminating short of the tops of the trough sides, said sides being cut out at the ends of the partitions to receive rail bases, metal wear plates carried in the recesses formed in the partitions, and vertically adjustable clamps adapted to bind the rail bases to the partitions.

5. A device of the kind described comprising a trough open at the ends and having a central elevation and having bottom perforations, vertical partitions in said trough, the sides of the trough being cut out adjacent the ends of the partitions, wear plates carried by and projecting above the tops of the partitions, and vertically adjustable clamps connected to the partitions and adapted to engage rail bases.

6. A device of the kind described comprising a trough open at the ends, slightly elevated at its center, and having integral transverse partitions on opposite sides of the central elevation, and having its bottom perforated between the central elevation and the partition, and the sides cut away at the ends of the partitions.

7. A tie having the form of a trough, wedge shaped partitions formed transversely therein, the sides of the tie being cut away at the ends of the partition, the partition having a wedge-shaped recess formed in its top, a piece of comparatively soft metal inserted in said recess and extending above the top of the partition, and means for locking a rail to said tie, the rail base resting on said soft metal.

8. A tie having the form of a trough, transverse wedge-shaped partitions therein, said partitions being transversely slotted, clamps having inclined inner faces to conform to the sides of the partitions and bent over to engage the base of a rail, and bolts passing through said clamps and slots, and having free play in the slots for vertical adjustment of the clamps.

851,811. AUTOMATIC MOTOR-STARTER. CHARLES D. KNIGHT, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed May 25, 1906. Serial No. 318,697.

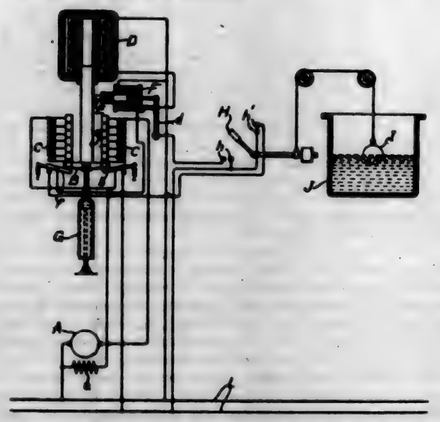

Claim.—1. In combination, a member to be moved, a magnet winding adapted to move said member, a latch adapted automatically to engage and to release said member when moved, means for automatically de-energizing said magnet winding when said member is moved, and a second magnet winding adapted when energized to disengage said latch.

2. In combination, a member to be moved, a magnet winding adapted to move said member, a retarding device operatively connected to said member, a latch adapted automatically to engage and to retain said member when moved, means for automatically de-energizing said magnet winding when said member is moved, and a second magnet winding adapted when energized to disengage said latch.

3. In combination, an electric motor, a starting switch therefor arranged to return automatically to off position, a magnet winding adapted to move said switch to running position, a latch adapted automatically to engage and to retain said switch in running position, means for automatically de-energizing said magnet winding when said switch is in running position, and a magnet winding adapted when energized to disengage said latch.

4. In combination, an electric motor, a starting switch therefor arranged to return automatically to off position, a resistance controlled by said switch, a magnet winding adapted to move said switch to running position, a retarding device operatively connected to said switch, a latch adapted automatically to engage and to retain said switch in running position, means for automatically de-energizing said magnet winding when the switch is in running position, and a magnet winding adapted when energized to disengage said latch.

5. In combination, an electric motor, a starting switch therefor arranged to return automatically to off position, a magnet winding adapted to move said switch to running position, means at a distance for energizing said magnet to start said motor, means for automatically de-energizing said magnet winding when the switch is in running position, a latch adapted automatically to engage and to retain said switch in running position, a second magnet winding adapted when energized to disengage said latch, and means at the distant point for energizing said second magnet winding to stop the motor.

6. In combination, an electric motor, a starting switch therefor arranged to return automatically to off position, a resistance controlled by said switch, a magnet winding adapted to move said switch to running position, a retarding device operatively connected to said switch, means at a distant point for energizing said magnet winding to start the motor, means for automatically de-energizing said magnet winding when the switch is in running position, a latch adapted automatically to engage and to retain the switch in running position, a second magnet winding adapted when energized to disengage said latch, and means at the distant point for energizing said second magnet winding to stop the motor.

851,812. RING SPINNING OR TWISTING APPARATUS. GEORGE W. KNIGHT, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Oct. 3, 1906. Serial No. 337,231.

Claim.—1. A ring-holder having an annular seat, a non-metallic lining for and resting against the bottom and outer wall of the seat, and a ring having a flange supported on the lining and vertically and laterally cushioned thereby.

2. The combination, with a ring-holder having an annular seat and a downhold, a continuous cushion lining the bottom and side wall of the seat, a ring having a flange loosely resting in the cushioned seat, and a cushion overhanging the seat and interposed between the downhold and the top of the ring flange.

851,813. NEUTRAL SOLDERING-FLUX. OSCAR J. LANIGAN, Chicago, Ill., assignor to Garden City Laboratory, Chicago, Ill., a Corporation of Illinois. Filed Aug. 20, 1906. Serial No. 331,387.

Claim.—1. A neutral soldering flux, comprising substantially equal proportions of glycerin and ammonium lactate, substantially as described.

2. A neutral, liquid soldering flux, comprising substantially equal proportions of glycerin and ammonium lactate,

admixed in the manner herein described and adapted for decomposition by heat, substantially as described.

851,814. DRAFT APPLIANCE. ROBERT LEITZ, Chicago, Ill., assignor of one-half to Frank P. Collier, Wilmette, Ill. Filed Mar. 12, 1906. Serial No. 305,589.

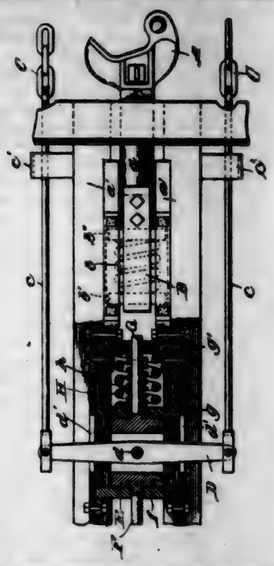

Claim.—1. The combination of a pair of safety chains for a railway car, movable supports for said chains, a movable block independent of the main coupling, and a lever pivotally mounted on said block and pivotally connected at its ends to said supports.

2. The combination of a pair of safety chains for a railway car, movable supports for said chains, a yieldably mounted block independent of the main coupling, and a lever carried by said block and pivotally connected at its ends to said supports.

3. The combination of a pair of safety chains for a railway car, movable supports for said chains, a movable block independent of the main coupling, a lever carried by said block and pivotally connected at its ends to said supports, and a spring buffer for said block.

4. The combination of a pair of safety chains for a railway car, rods supporting said chains at their forward ends, a movable block yieldably mounted between said rods, and a lever carried by said block and pivotally connected to the rear ends of said rods.

5. The combination of a pair of safety chains for a railway car, rods supporting said chains at their forward ends, a movable block yieldably mounted between said rods, and a lever pivotally mounted centrally on said block and pivotally connected at its ends to the rear ends of said rods.

6. The combination of a pair of safety chains for a railway car, movable supports for said chains, a block movably mounted between said supports and independent of the main coupling, a lever carried by the block and pivoted at its ends to said supports, and means for guiding said block.

7. The combination of a pair of safety chains for a railway car, movable supports for said chains, a movable block arranged between the supports, a lever pivotally mounted on said block and pivotally connected at its ends to said supports, and spring buffer located in front of said block.

8. The combination of a pair of safety chains for a railway car, a pair of rods carrying said chains at their forward ends, a block movably mounted between said rods, a lever pivotally mounted on said block and pivotally connected at its ends to the rear ends of said rods, fixed guide plates in front of and behind said block, and guides on the block operating in said guide plates.

9. The combination of a pair of safety chains for a railway car, rods carrying said chains at their forward ends, a block movably mounted between the rods, a lever pivotally mounted on said block and pivotally connected at its ends to the rear ends of said rods, a stationary guide plate in rear of the block, a guide on the block operating in said guide plate, a movable plate, a stationary guide plate in front of the block, a guide on the block operating in said plates, and a spring located between the two plates in front of the block.

851,815. JOINT FOR SHEET-METAL VESSELS. LOUIS LIBBMAN, Everett, Mass. Filed July 12, 1906. Serial No. 325,775.

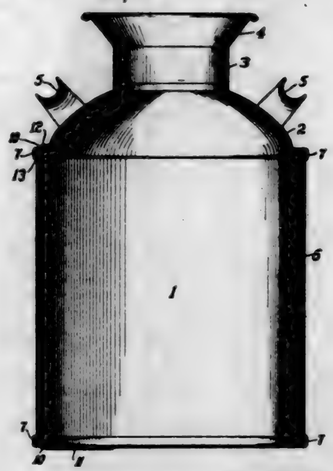

Claim.—1. A sheet-metal vessel, having two of its component sheets united by an external seam, one of said sheets being bent laterally against the other sheet behind said seam and thence outwardly deflected to form a pocket immediately behind said seam, said pocket opening externally, and a rigid supporting back held in said pocket for supporting said seam.

2. In a sheet-metal vessel, the combination with an external seam, of a pocket or groove formed in said vessel behind said seam and opening outwardly, and a metal supporting back held in said pocket and projecting slightly externally of the vessel.

3. In a sheet-metal vessel, the combination with an external seam, of a pocket or groove formed in said vessel behind said seam and opening outwardly, and a metal supporting back held in said pocket and projecting slightly externally of the vessel, said supporting back being relatively deep and narrow in cross-section and interlocking with the adjacent metal on its outer surface.

4. A sheet metal vessel, having its upright side and its bottom united in an external seam, combined with a peripheral supporting back for said seam, said bottom being bent angularly flat against said supporting back and thence extending throughout the entire area of the bottom of the vessel integrally from said back at a point below the top edge of said back.

5. A sheet metal vessel, having its bottom extending integrally flatwise across the entire area of the bottom of the vessel and deflected laterally at the edge of the inclosure in the form of an imperforate pocket, the free edge of said bottom being united with the upright side of the vessel by a seam externally of said pocket, and a stiff peripheral supporting back secured in said pocket and projecting from the open side of the pocket, thereby bringing

the flat portion of the bottom in a plane intermediate the top and bottom edges of said back.

6. A sheet metal vessel, having its bottom and the adjacent side united by an external seam, an outwardly opening pocket or groove being formed in said bottom behind said seam, and a metal supporting back held in said pocket and projecting below the bottom, the lower projecting edge of said back being outwardly bent beneath said seam.

851,816. ART OF CONVERTING METALS. RICHARD L. LLOYD, Cananea, Mexico. Filed Aug. 4, 1906. Serial No. 329,136.

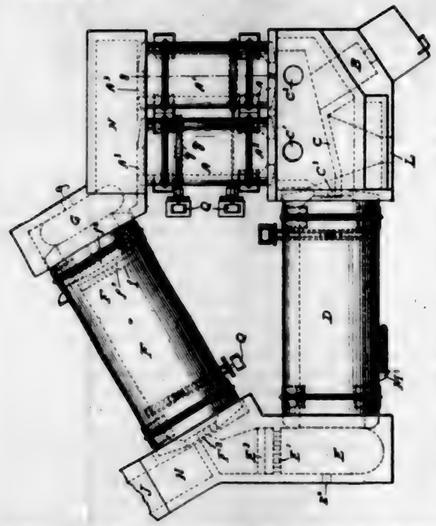

Claim.—1. The improvement in the art of converting copper matte, which consists in blowing the matte with an acid slag until the capacity of the slag for collecting bases is exhausted, or substantially exhausted.

2. The improvement in the art of converting copper matte, which consists in feeding molten matte and flux into a converter, blowing the melt until copper sulfid is formed, removing the copper sulfid and adding matte until the slag becomes substantially neutral, removing the slag and feeding additional flux or slag unsatisfied as to bases, and so on continuously.

3. The improvement in the art of converting copper matte, which consists in blowing molten matte and acid slag in a converter, removing the copper sulfid as desired and removing the slag as it becomes neutral or satisfied.

4. The improvement in the art of converting copper matte, which consists in blowing molten matte and acid slag in a converter, removing the copper sulfid as it forms and replacing it with fresh matte until the slag becomes basic, substituting an acid slag or flux for that which has been neutralized, and so on continuously.

5. The improvement in the art of converting copper matte, which consists in blowing the molten matte with an acid slag, removing the copper sulfid as it forms and replacing it with fresh matte until the slag becomes neutral, then removing the slag and replacing it with an acid carrier, further blowing the charge and finally blowing the removed copper sulfid.

6. In the art of converting copper matte, the process of feeding molten matte and flux into a converter, blowing the charge until the bases of all foreign metals have combined with the flux, removing the copper sulfid, then adding matte to the resulting slag until the latter becomes saturated or substantially neutral, removing the neutral slag and feeding additional unsaturated charges of flux to the matte and so on continuously.

7. In the art of converting copper matte, the process of blowing molten matte and flux to effect combination between the bases of the foreign metals and said flux to the point of saturation, and then removing the copper sulfid.

8. In the art of converting copper matte, the process of blowing molten matte and flux to effect separation of the copper sulfid, removing the copper sulfid, and adding fresh charges of matte until the resulting slag is neutralized or saturated.

9. In the art of converting copper matte, the process of blowing molten matte and slag to effect separation of the copper sulfid, removing the copper sulfid and adding fresh charges of matte until the slag is saturated as to its basic contents.

10. In the art of converting copper matte, the process of blowing molten matte and flux to effect combination between the bases of the foreign metals and said flux to the point of saturation, and removing the copper sulfid until such point of saturation is reached.

11. In the art of converting copper matte, the process of blowing molten matte and slag, removing the separated copper sulfid, and adding fresh charges of matte until the slag becomes saturated or ceases to combine with the bases of the metals foreign to the copper.

12. In the art of converting copper matte, the process of blowing molten matte and slag, removing the separated copper sulfid, adding fresh charges of matte until the slag ceases to combine with the bases of the metals foreign to the copper, then removing the slag thus saturated and replacing it with an acid carrier, further blowing the charge and finally blowing the removed copper sulfid.

13. In the art of converting copper matte, the process of blowing a charge of matte with an admixture of acid flux, removing the copper sulfid thus formed, and adding fresh charges of matte to the resulting slag until its acid constituent has combined with the available bases of such added charge.

14. In the art of converting copper matte, the process of blowing a charge of matte with an admixture of acid slag, removing the copper sulfid thus formed, and continuing the addition of fresh charges of matte to the point of saturation of the slag by the available bases of the added charges.

851,817. APPARATUS FOR CONVERTING METALS. RICHARD L. LLOYD, Cananea, Mexico. Filed Aug. 4, 1906. Serial No. 329,137.

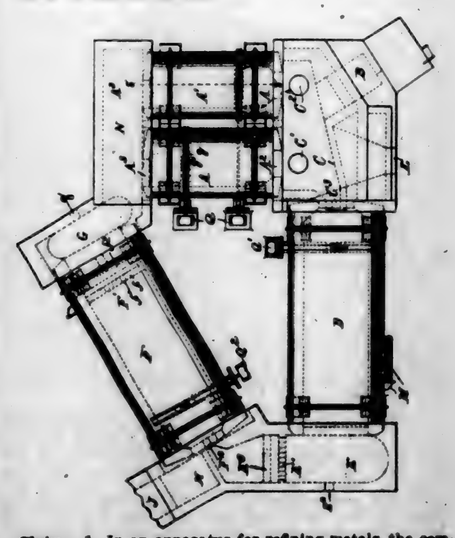

Claim.—1. In an apparatus for refining metals, the combination of a horizontal converter revoluble about a hori-

zontal axis, with separate independently controllable feeding apparatus for the flux and for the metal to be refined located between the converter and the stack, and so arranged that the blast from the converter passes through the feeding apparatus.

2. In an apparatus for the refining of metals, a feeding device consisting of a barrel, having an opening in one end adjacent to the side, with means for revolving the barrel; whereby when the opening is brought to the top of the revolution, material to be treated may be charged thereinto, and by revolving the barrel to bring the opening below, may be discharged therefrom at desired times and in desired amounts.

3. In an apparatus for refining metals, feeding apparatus for the flux and the metal to be refined, consisting of feeding-barrels, each having an opening in one end adjacent to the side thereof, with means for independently revolving them so that the discharge of the flux and of metal may be independently controlled.

4. In an apparatus for refining metals, the combination with primary and secondary horizontal converters revoluble about horizontal axes, of separate feeding-barrels for the flux and the metal to be refined, located between one end of the primary converter and the exit hearth of the secondary converter, and so arranged that the blast from the primary converter passes through both of the feeding barrels and through the secondary converter to the stack; with a connection between the other ends of the two converters, impervious to the blast and to the slag, but permitting the flow of the partially refined matte.

5. In an apparatus for refining metals, a converter series comprising communicating primary and secondary converters, means for feeding the charge into the primary converter and means for conducting the blast from the primary converter to the charge, to control the temperature of the charge.

6. In an apparatus for refining metals, a converter series comprising communicating primary and secondary converters, means for feeding the charge into the primary converter, means for conducting the blast from the primary converter to the charge for controlling the temperature thereof, and means for finally conducting the blast to the secondary converter.

7. An apparatus for converting metals, comprising a plurality of horizontal converters and a feeding apparatus, the first converter being lower than the feeding apparatus, and means for discharging the partially refined matte into a second converter, lower than the first.

8. An apparatus for converting metals, comprising a plurality of horizontal converters and feeding apparatus located between adjacent ends of the converters; the primary converter being lower than the feeding apparatus so that the materials to be treated may flow thereinto by gravity, and the secondary converter being lower than the primary; with a connection between the converters at one end, through which the partially refined material may flow, the said connection being impervious to the blast and to the slag; and a passage for the blast from the first converter through the feeding apparatus and the second converter to the stack.

9. The combination, with a converter, of separate feeding barrels for the metal to be treated and for its flux, means for charging the materials into the feeding barrels in one position, and means for rotating the feeding-barrels and thereby releasing the charge into the converter.

10. An apparatus for the refining of metal, consisting of a plurality of converters and a feeding apparatus so arranged between them that the blast from the first converter passes through the feeding apparatus into the second converter.

11. In an apparatus for refining metals, the combination of a converter, feeding apparatus for the metals to be refined, feeding apparatus for the flux, an opening for the blast from the first converter to the feeding apparatus, means for passing the metal from the first converter into the second, and an opening for the blast from the feeding apparatus into the second converter; whereby the metal passes in one direction from the feeding apparatus through the two converters to an outlet, and the blast passes from the first converter through the feeding apparatus and the second converter to a stack, in the opposite direction to the metal.

12. The combination of a series of converters for the successive refining of metal, with means for passing the metal from one to the other at one end and means for passing the blast from the first converter across the exit hearth of the second converter and through the second converter; whereby the metal flowing from the second converter is heated by the blast from the first and prevented from chilling.

13. The combination of a plurality of converters part of which receives relatively impure metal containing a considerable amount of oxidizable impurities, whereby it is maintained at a relatively high temperature; and the remainder of which receive the metal after it has been partially purified, so that the oxidation of the impurities therein is less than in the first part, whereby the heat therein is relatively less; with means for passing the blast from the first part through the second and across the exit for the metal therefrom; whereby the surplus heat from the first part of the converter is used to prevent the chilling of the metal in the second.

14. The combination, with two converters for the successive refining of metal, of feeding devices for the first converter connected between one end thereof and the exit hearth of the second converter, a dam between the other end of the first converter and the stack, permitting the flow of metal into the second converter and stopping the blast from the first from passing into the stack, and a channel for the blast through the feeding devices and across the exit hearth of the second converter; whereby the metal from the first converter after being partially refined passes into the second converter for further treatment, and the blast from the first converter passes through the feeding devices and the second converter to the stack.

15. A conversion apparatus for metal refining, comprising a pair of substantially horizontal converters revoluble about longitudinal axes, with a horizontal feeding apparatus located between them.

16. In a conversion apparatus for metal refining, a pair of horizontal converters revoluble about longitudinal axes, a connection between the two converters at one end through which metal may pass but sealed against the blast, a horizontal feeding apparatus located between the other ends of the converters, and a passage for the blast from the first converter through the feeding apparatus and the second converter.

17. The combination of a pair of converters for the successive refining of metal, with a passage for the metal from one to the other, said passage being impervious to the blast; with another connection, open to the blast, between the converters.

18. The combination of a pair of approximately horizontal converters for the successive refining of metal, with a passage for the metal from one to the other, said passage being impervious to the blast; with another connection, open to the blast, between the converters.

19. The combination of a pair of approximately horizontal converters revoluble about longitudinal axes, with means for rotating them as desired, a passage for the metal from one converter to the other at adjacent ends, the passage being impervious to the blast; with a connection, open to the blast, between the converters at their other ends.

20. In an apparatus for refining metals, the combination with converters and feeding apparatus therefor so located that the blast from the converter passes therethrough to the stack, of an auxiliary furnace arranged to heat the contents of the feeding apparatus at desired times.

21. In an apparatus for refining metals, a suitable converter, means for feeding thereinto at desired times from independent sources suitable proportions of the crude metal and a flux respectively, and means for directing the blast of the converter upon the materials delivered thereto, during the feeding operation.

22. In an apparatus for refining metals, a suitable converter, means for introducing thereinto from independent sources suitable proportions of the metal to be refined and a flux therefor, and means for heating the charges of metal and flux so introduced by the blast from the converter.

23. In an apparatus for refining metals, a suitable converter, means for introducing thereinto from independent sources an initial charge of crude metal and a flux therefor, means for removing the partially refined metal from the converter, and means for introducing fresh charges of crude metal into the slag remaining in the converter.

24. In combination with a series of converters adapted to discharge into one another, means for feeding into the first converter of the series suitable proportions of the metal to be refined, and a flux, from independent sources of supply, means for conducting the blast from the first converter through such feeding means and in the path of the discharge contents of the last converter of the series.

25. In combination with a series of converters adapted to discharge into one another, means for feeding into the first converter suitable proportions of the crude metal and a flux from independent sources of supply, means for conducting the blast from the first converter through such feeding means and in the path of and in the opposite direction to the flow of the contents of the last converter.

851,818. AIR-BRAKE SYSTEM AND ENGINEER'S VALVE. GEORGE MACLOSKIE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Nov. 9, 1905. Serial No. 286,513.

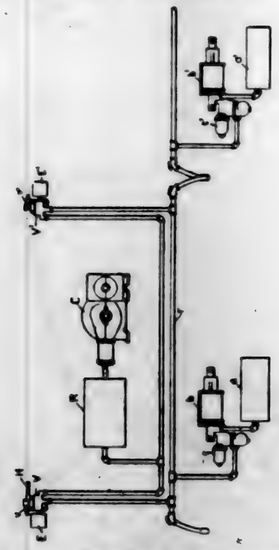

Claim.—1. In an "automatic" air-brake system, in combination with an engineer's valve of the type employing an equalizing discharge valve, means for automatically rendering the equalizing discharge valve inoperative upon a removal of the handle of the engineer's valve.

2. In an "automatic" air-brake system, in combination with an engineer's valve of the type employing an equalizing discharge valve, means for automatically closing the exhaust port from the equalizing discharge valve upon a removal of the handle of the engineer's valve.

3. In an "automatic" air-brake system, in combination with an engineer's valve of the type employing an equalizing discharge valve, a valve adapted to render the equalizing discharge valve inoperative, and an interlocking connection between said valve and the handle of the engineer's valve.

4. In an "automatic" air-brake system, in combination with an engineer's valve of the type employing an equalizing discharge valve, a valve adapted to close the exhaust port from the equalizing discharge valve, and an interlocking connection between said valve and the handle of the engineer's valve.

5. In an "automatic" air-brake system, in combination with an engineer's valve of the type employing an equalizing discharge valve, means for preventing the removal of the handle except when said valve is in lap position, and means for automatically rendering the equalizing discharge valve inoperative upon a removal of said handle.

6. In an "automatic" air-brake system, in combination with an engineer's valve of the type employing an equalizing discharge valve, means for preventing the removal of the handle except when said valve is in lap position, and means for automatically closing the exhaust port from the equalizing discharge valve upon a removal of said handle.

7. In an "automatic" air-brake system, in combination with an engineer's valve of the type employing an equalizing discharge valve, means for preventing the removal of the handle except in lap position, a valve adapted to render the equalizing discharge valve inoperative, and operative connections between said valve and the handle of the engineer's valve.

8. In an "automatic" air-brake system, in combination with an engineer's valve of the type employing an equalizing discharge valve, means for preventing the removal of the handle except when said valve is in lap position, a valve adapted to close the exhaust port of the equalizing discharge valve, and operative connections between said valve and the handle of the engineer's valve.

9. In an "automatic" air-brake system, in combination with an engineer's valve of the type employing an equalizing discharge valve, a spring-actuated valve connected in the exhaust passage from the equalizing discharge valve and arranged to be engaged normally by the handle of the engineer's valve and held open thereby and to be closed automatically by its spring when said handle is removed.

10. In an "automatic" air-brake system, in combination with an engineer's valve of the type employing an equalising discharge valve, a spring-actuated valve controlling the operation of the equalizing discharge valve and arranged to be engaged normally by the handle of the engineer's valve and to be moved by its spring when said handle is removed.

11. In an "automatic" air-brake system, in combination with an engineer's valve of the type employing an equalising discharge valve, a valve controlling the operation of the equalizing discharge valve, and interlocking connections between said valve and the handle of the engineer's valve.

12. In an "automatic" air-brake system, in combination with an engineer's valve of the type employing an equalising discharge valve, a spring-actuated valve controlling the operation of the equalizing discharge valve and arranged to be engaged normally by the handle of the engineer's valve and to be moved by its spring when said handle is removed, and means for preventing the removal of said handle except when the engineer's valve is in lap position.

13. In an "automatic" air-brake system, in combination with an engineer's valve of the type employing an equalising discharge valve, a spring-actuated valve connected in the exhaust passage from the equalizing discharge valve and arranged to be engaged normally by the handle of the engineer's valve and held open thereby and to be closed automatically by its spring when said handle is removed, and means for preventing the removal of said handle except when the engineer's valve is in lap position.

14. In an "automatic" air-brake system, in combination with an engineer's valve of the type employing an equalising discharge valve, a spring-actuated pivoted member adapted to be engaged by the handle of the engineer's valve when said handle is placed in position, and a valve controlled by said member and controlling the operation of the equalizing discharge valve.

15. In an "automatic" air-brake system, a plurality of engineer's valves each comprising an equalising piston and discharge valve, a single removable handle for operating any one of said valves, means for preventing the removal of said handle from a valve except when the valve is in lap position, and means for automatically rendering the equal-

lzing discharge valve of an engineer's valve inoperative when the handle is removed.

16. In an "automatic" air-brake system, a plurality of engineer's valves each comprising an equalizing piston and discharge valve, a single removable handle for operating any one of said valves, means for preventing the removal of said handle from a valve except when the valve is in lap position, and means for automatically closing the exhaust passage of an equalizing discharge valve when the handle is removed from that engineer's valve.

17. In an "automatic" air-brake system, a plurality of engineer's valves each comprising an equalizing piston and discharge valve, a single removable handle for operating any one of said valves, means for preventing the removal of said handle from a valve except when the valve is in lap position, and valves each controlling the operation of an equalizing discharge valve and adapted to be engaged by said handle when placed in position on that engineer's valve.

851,819. SPRING-SLEIGH. DE WITT C. MARKHAM, Port Leyden, N. Y. Filed May 4, 1904. Serial No. 206,264.

Claim.—1. In a spring vehicle, the combination with the running parts and a load support, of a frame comprising lever members pivotally mounted on the running parts and extending front and rear for the even support of the load, and spring means transverse the central part of the load support and supporting it on the running parts by attachment of the spring means to the running parts and to the load support.

2. In a spring sleigh having a load support, running parts and a single transverse spring attached to the latter and supporting the former thereon, the combination of a set of equalizer bars on each side of the running parts, each set comprising bars pivotally mounted on the running parts and slidably and pivotally connected at their inner ends and transverse bars connecting the outer ends of each set to support the load and permit its free up and down motion, substantially as described.

3. In a construction of the character described having a load support, running means and a single transverse spring attached to the load support and the running means, the combination of an equaliser frame having members pivotally mounted on the running means on each side of the structure and connected at their outer ends to form a frame rigid from side to side and having its said ends moving up and down simultaneously, substantially as described.

4. In a spring vehicle, the combination with running and load supporting means, of a spring connection between the two, and an equaliser frame comprising bars pivotally mounted on the running means and supporting the load both front and rear of the said spring means and being connected to the load support at one end with an elongated bearing permitting reciprocal movement of the adjacent end of the frame and the load supporting member.

5. In a spring vehicle, the combination with running means, of a load supporting means, an equaliser frame of parallelogrammic form comprising side bars pivotally mounted on the running means and slidingly pivotally connected each to the other at the inner end and loosely supporting at their outer ends the load supporting means to permit reciprocal play of the load supporting means and one end of said frame thereunder.

6. In a spring vehicle, the combination with running means, of a load supporting means, an equaliser frame of parallelogrammic form comprising side bars pivotally mounted on the running means and slidingly pivotally connected each to the other at the inner end and loosely supporting at their outer ends the load supporting means.

7. In a sleigh, runners and raves connected by means of knees, with equaliser bars hinged between the runners and the raves so as to work freely up and down, a load platform pivotally supported by the bars, and a spring hinged to the raves and secured to the platform in such a manner as will allow of a free up and down motion.

8. In a vehicle provided with a load support and running members and having the spring support of the former on the latter, a frame comprising bars pivoted on the running members with their adjacent ends pivotally connected and their outer ends provided to carry the load support, one of said bearing ends of the frame having a sliding connection with the load supporting member.

9. In a construction of the character described provided with running parts and a load platform, an equalizer frame having a plurality of transverse members for supporting the load platform, and spring means transverse of the platform midway of its length supporting the platform through connection of the spring therewith and by the connection of the spring at its ends to the running parts, substantially as shown.

10. In a construction of the character described comprising a load platform and running parts, spring means mounted to support the former relatively to the latter, and lever members pivotally mounted on the latter and slidingly connected at their adjacent ends and being at their outer ends adapted to support the platform.

11. In a construction such as described, the combination with running means and a load supporting means, of an equalizer frame of parallelogrammic form comprising pivotally mounted side bars slidingly pivotally connected to co-operate and supporting at their outer ends the load platform by means of a sliding connection between the frame and the platform to permit play of the latter.

851,820. BODY FOR GO-CARTS. WILLIAM A. MARQUA, Cincinnati, Ohio. Filed Sept. 6, 1906. Serial No. 333,536.

Claim.—1. A body for go-carts, comprising a top supporting frame a flexible collapsible receptacle supported thereby and depending therefrom, means for pivotally connecting the ends of said top supporting frame to the handle bars of the gearing of a go-cart and supporting said ends by said handle bars, and sliding bearings adapted to slide along said top supporting frame above the flexible collapsible receptacle and connecting said top supporting frame between its ends to said gearing, substantially as set forth.

2. A body for go-carts, comprising a top supporting frame, a flexible collapsible receptacle depending therefrom and supported thereby, a sliding bearing mounted and adapted to move upon said top supporting frame to assist in opening and closing said flexible collapsible receptacle, a pivotal connection between said sliding bearing and the gearing of a go-cart, and pivotal connection between said top supporting frame and the handle of said gearing.

3. A body for go-carts, comprising a top supporting frame, a flexible collapsible receptacle depending therefrom and supported thereby, a sliding bearing mounted and adapted to move upon said top supporting frame when opening or closing said collapsible receptacle, a pivotal connection between said sliding bearing and the gearing of a go-cart, a pivotal connection between said top supporting frame and said gearing, and a stop upon said top supporting frame to engage said sliding bearing and thereby assist in supporting said collapsible receptacle in open position.

4. A body of go-carts, comprising a top frame, a flexible collapsible receptacle depending therefrom and supported thereby and a convertible flexible attachment secured at one of its ends to the front end of the receptacle and adjustably secured at its other end to the rear end thereof to form a substantially flat bottom for the body, or a cover for the child, as desired, substantially as set forth.

5. A body for go-carts, comprising a continuous top supporting frame 1, supporting stops 17 and 18 thereon, a flexible collapsible receptacle 2 depending from and supported by said top supporting frame, fastenings 3 adapted to connect said flexible collapsible receptacle to said frame, sliding bearings 13 and 14 mounted upon the parallel bars 15 and 16 respectively of the top supporting frame 1 and adapted to bear against said supporting stops 17 and 18 respectively, and supports 6 and 7 fixed upon the gearing of a go-cart and pivotally connected to parallel bars 15 and 16, respectively, all combined and arranged substantially as and for the purposes set forth.

851,821. MECHANISM FOR IMPARTING AND REVERSING MOTION. LEWIS E. MEADE and EDWIN F. PRICE, Upper Sandusky, Ohio. Filed Dec. 4, 1906. Serial No. 346,350.

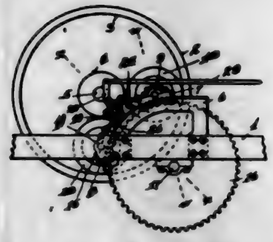

Claim.—1. In a transmission mechanism, a frame, having a segmental track, a main transmitting gear, a fly-wheel having a projecting rim and hub, a pair of boxes slidable upon said segmental track, friction wheels, a transmitting gear mounted upon each of said slidable boxes, compound link and lever attachments, and a shifting rod connected thereto for simultaneously moving said friction wheels into engagement alternately with the rim and hub of said fly-wheel, substantially as described.

2. A frictional driving gear employing a fly-wheel, having a projecting rim and hub on one side, a pair of frictional drive-wheels, a pair of slidable boxes, a segmental track upon which said boxes are mounted, friction drive and primary gear transmitters respectively mounted upon each box, a main transmitting gear receiving motion simultaneously from the primary gears, and shifting rod and link connections with the respective slidable boxes for simultaneously moving them in opposite directions, substantially as described.

3. A power transmitter for a vehicle, employing a fly-wheel having a projecting rim and hub, a segmental track supported on the vehicle frame, a main transmitter journaled upon the vehicle frame, a pair of slidable boxes mounted upon the segmental track, a primary gear and a friction wheel for each box, said primary gears being simultaneously in mesh with the main gear, and means for simultaneously moving said boxes on the arc of a circle described by the radius of the main gear to and from each other, substantially as described.

4. In a machine of the class described, a main driving wheel, a segmental track, a main driving gear, a slidable box mounted upon said inclined track, a friction transmitter and a gear transmitter mounted upon said slidable box, and means for moving the same on said track on the arc of a circle described by the radius of said main gear, substantially as described.

5. In a machine of the class described, a segmental track, a main friction driving wheel, a slidable box mounted upon said inclined track, a primary friction transmitter and a secondary transmitter journaled upon said sliding box, transmission mechanism in driven connection with said secondary transmitter and means for moving said box to engage and disengage the said main friction driving wheel, substantially as described.

6. In a machine of the class described, a main friction driving wheel, and a segmental track, a pair of slidable boxes mounted upon said inclined track, a primary and a secondary transmitter journaled upon each of said slidable boxes, transmission mechanism in driven connection with said secondary transmitter and means for moving the same to and from each other to simultaneously engage and disengage the primary friction transmitters for controlling the work of said main frictional driving wheel, substantially as described.

7. In a power transmitting device, a main driving wheel, provided with transmission surfaces, a driven wheel, intermediate transmission mechanism, adapted to selectively frictionally engage one of said transmission surfaces of the main driving wheel, means for slidably supporting said intermediate transmission mechanism in an arc described by the radius of the driven wheel, whereby the said transmission mechanism is in constant driving relation with the driven wheel, and in a selected position of rest or engagement with the main driving wheel, substantially as described.

8. In a power transmitting device, a main driving wheel provided with transmission surfaces, a driven wheel, two sets of intermediate transmission mechanisms, adapted to selectively frictionally engage one of said transmission surfaces of the main driving wheel, means for slidably supporting said intermediate transmission mechanisms, whereby said transmission mechanisms are in constant driven relation with the driven wheel, and in a selected position of rest or engagement with the main driving wheel, and means for simultaneously shifting said intermediate transmission mechanisms, substantially as described.

851,822. CABLE-CLAMP. ALFRED H. MEECH, Chatham, N. Y. Filed Nov. 24, 1905. Serial No. 288,881.

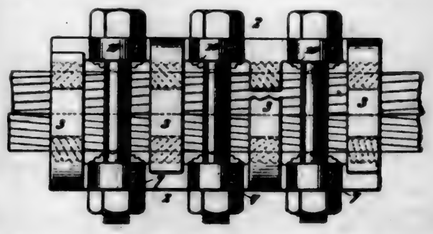

Claim.—1. In a cable clamp, two members each having a pair of projecting legs with inside parallel faces, and each having a pair of inclined gripping surfaces 5 disposed at a definite acute angle with relation to each other and co-operating with each other and with said faces to grip the cable, and means for drawing the two members toward one another.

2. In a cable clamp two members each having a plurality of pairs of projecting legs with inside parallel faces, and each member having a plurality of pairs of inclined gripping surfaces 5, disposed at the bases of said legs and making a definite acute angle with relation to one another

and co-operating with each other and with said faces to grip the cable in a series of spaced transverse planes along the length thereof, and means for drawing the two members toward one another.

3. In a cable clamp, a pair of similar members each having inclined gripping faces and intermediate humps, said faces and humps respectively being arranged to lie opposite one another when the members are assembled together whereby the cable is clamped in a series of spaced transverse planes, and means for drawing the two members toward one another.

4. In a cable clamp, a pair of similar members each having inclined corrugated gripping faces arranged to grip the cable in a series of spaced transverse planes, and bolts for connecting said members and arranged to contact with the cable at intermediate points or planes.

5. In a cable clamp, a pair of similar members each having inclined corrugated gripping faces, rounded humps intermediate said faces, and bolts at the sides of said humps and arranged to draw the members together upon a cable or cables to be clamped, said humps being intermediate said bolts.

6. In a cable clamp, a pair of similar clamping members each having a series of inclined gripping faces, rounded protuberances having corrugations intermediate said faces, and bolts for drawing the members together and separated a distance equal to the diameter of the cable or cables to be clamped.

7. In a cable clamp, a pair of similar clamping members each having a pair of legs separated on their inside faces a distance equal to the diameter of the cable or cables to be clamped, and having divergent gripping faces arranged to lie between the legs of the opposite clamping member, and bolts for connecting said members, said bolts arranged to constitute a containing wall to closely embrace or support the cable or cables to be clamped.

8. A cable clamp comprising a pair of similar members each having a series of inclined gripping faces along its length, whereby the cable is gripped in a series of spaced transverse planes, humps intermediate said faces and arranged to engage the cable in a different direction therefrom, and bolts for drawing the members upon a cable or cables, whereby said faces and humps are brought into engaging relation therewith.

851,823. SYSTEM OF MOTOR CONTROL. WILBUR L. MERRILL, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 21, 1906. Serial No. 327,152.

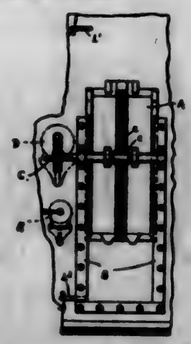

Claim.—1. In a control system, a plurality of motors, means controllable from a distance for connecting said motors in series to a source of current, and means at each motor for connecting that motor to the source independently of the other motors.

2. In a motor-control system, a plurality of motors, electro-magnetically actuated means for connecting said motors in series to a source of current, and manually-operated means at each motor for connecting that motor to the source independently of the other motors.

3. In a motor-control system, a plurality of motors, a magnetically-actuated switch arranged to connect said motors in series to a source of current for one direction of rotation, and a manually-operated switch for each motor adapted to connect that motor to the source for either direction of rotation independently of the other motors.

4. In combination, a plurality of motors, a control system for connecting said motors in series to a source of current, a switch at a distant point controlling said control system, and manually-operated means at each motor for connecting that motor to the source independently of the other motors.

5. In a motor-control system, a plurality of motors, a series circuit including said motors in series with a source of current, means controllable from a distance for closing said series circuit, and means at each motor for connecting that motor to the source independently of the other motors.

6. In a motor-control system, a plurality of motors, a series circuit including said motors in series and a source of current, means controllable from a distance for closing said series circuit, a switch for each motor arranged to connect that motor to the source independently of the other motors, and a resistance arranged to be inserted in the series circuit by said switch.

7. In a motor-control system, a plurality of motors, a series circuit including said motors in series and a source of current, means controllable from a distance for closing said circuit, a manually-operated switch for each motor arranged to cut that motor out of the series circuit and to connect it to the source for either direction of rotation independently of the other motors, and a resistance arranged to be inserted in the series circuit when a motor is cut out.

8. In a motor-control system, a plurality of motors, a manually operated reversing switch for each motor, means for holding each switch normally in its off position, contacts on each switch connected to the motor and arranged to be closed when the switch is in off-position, a circuit extending through the said contacts of the several switches in series, and means controllable from a distance for connecting said circuit to a source of current.

9. In a motor-control system, a plurality of motors, a manually-operated reversing switch for each motor, means for holding each switch normally in its off position, contacts on each switch connected to the motor and arranged to be closed when the switch is in off position, a circuit extending through the said contacts of the several switches in series, means controllable from a distance for connecting said circuit to a source of current, and a resistance arranged to be inserted in said circuit when one of said switches is moved from its off position.

10. In a motor-control system, a plurality of motors, a series circuit including said motors in series, and a source of current, means controllable from a distance for closing said circuit, and means at each motor for cutting the motor out of circuit and substituting a resistance therefor.

11. In a motor-control system, a plurality of motors, a series circuit including said motors in series and a source of current, means controllable from a distance for closing said circuit, and means at each motor for cutting the motor out of circuit and substituting a resistance therefor and for connecting the motor to the source independently of the other motors.

12. In a motor-control system, a plurality of motors, a series circuit including said motors in series and a source of current, a normally-open switch in said circuit, an electromagnet for closing said switch, a control switch at a distant point in circuit with said electromagnet, and means at each motor for cutting the motor out of the series circuit and connecting it to the source independently of the other motors.

13. In a motor-control system, a plurality of motors, a series circuit including said motors in series and a source of current, a normally-open switch in said circuit, an electromagnet for closing said switch, a control switch at a distant point in circuit with said electromagnet, means at each motor for cutting the motor out of the series circuit and connecting it to the source independently of the other motors, and a resistance arranged to be inserted in said series circuit when a motor is cut out.

14. In a motor-control system, a plurality of motors, a manually-operated reversing switch for each motor, means for holding each switch normally in its off position, contacts on each switch connected to the motor and arranged to be closed when the switch is in off position, a circuit extending through the said contacts of the several switches in series, a normally open switch arranged when closed to connect said circuit to a source of current, an electromagnet for closing said normally-open switch, and a control switch at a distant point in circuit with said electromagnet.

15. In a motor-control system, a plurality of motors, a series circuit including said motors in series and a source of current, means controllable from a distance for closing said series circuit, and means at each motor for connecting that motor to the source independently of the other motors without interrupting the series circuit.

16. In a motor-control system, a plurality of motors, a series circuit including said motors in series and a source of current, a normally open switch in said circuit, an electromagnet for closing said switch, a control switch at a distant point in circuit with said electromagnet, and means at each motor for cutting the motor out of the series circuit and connecting it to the source independently of the other motors.

17. In a motor-control system, a plurality of motors, means controllable from a distance for connecting the motors in series to a source of current, and means at each motor for connecting that motor to the source through a resistance, independently of the other motors.

18. In a motor-control system, a plurality of motors, a series circuit including said motors in series and a source of current, means controllable from a distance for closing said series circuit, and means at each motor for connecting that motor to the source through a resistance independently of the other motors.

19. In a motor-control system, a plurality of motors, a series circuit including said motors in series and a source of current, means controllable from a distance for closing said circuit, a manually-operated switch for each motor arranged to cut that motor out of the series circuit and to connect it to the source through a resistance for either direction of rotation independently of the other motors.

20. In a motor-control system, a plurality of motors, a series circuit including said motors in series and a source of current, means controllable from a distance for closing said circuit, and a manually-operated switch for each motor arranged to cut that motor out of the series circuit and to connect it to the source through a resistance for either direction of rotation independently of the other motors and without interrupting the series circuit.

21. In combination, a plurality of motors normally connected in series, means for connecting the series circuit to a source of current, and a switch for each motor adapted to cut said motor out of said circuit and to substitute a resistance therefor and to connect the motor to the source through a second resistance independently of the other motors.

22. In combination, a plurality of motors, means controllable from a distance for connecting said motors in series to a source of current, means for adjusting the relative torques of said motors, and means at each motor for connecting it to the source independently of the other motors.

23. In combination, a plurality of motors, means controllable from a distance for connecting said motors in series to a source of current, the circuits of said motors being adjusted for different torques in the several motors.

24. In combination, a plurality of motors, means controllable from a distance for connecting said motors in series to a source of current, adjustable resistances connected in shunt to the several motors, and means at each motor for connecting it to the source independently of the other motors.

25. In combination, a plurality of motors, means controllable from a distance for connecting the motors in series to a source of current, shunt circuits for the several motors differing in resistance, and means at each motor for connecting it to the source independently of the other motors.

26. In a system of control for bulk-head doors and the like, an emergency station, means controllable from the emergency station for operating the doors, a pair of electro-responsive indicating devices at the emergency station for each door connected in series, means at the emergency station for connecting each pair of devices to a source of current, and means at each door for connecting the point of connection between the two devices of the pair for that door to one or the other terminal of the source according as the door is fully opened or closed.

27. In a system of control for bulk-head doors and the like, an emergency station, means controllable from the emergency station for operating the doors, a pair of electro-responsive indicating devices at the emergency station for each door connected in series, a normally-open switch adapted to connect each pair of devices to a source of current, and switch contacts at each door arranged to connect the point of connection between the two devices of the pair for that door to one or the other terminal of the source according as the door is fully opened or closed.

28. In a system of control for bulk-head doors and the like, an emergency station, means controllable from the emergency station for operating the doors, a pair of electro-responsive indicating devices at the emergency station for each door connected in series, connections from the outer terminals of each pair of devices to the terminals of a source of current, switch contacts at the emergency station in said connections, connections from the point of connection between the two devices of each pair to both terminals of the source, and switch contacts in the last-mentioned connections controlled by the movement of the door corresponding to that pair of devices.

29. In a system of control for bulk-head doors and the like, an emergency station, means controllable from the emergency station for operating the doors, a pair of electro-responsive indicating devices at the emergency station for each door connected in series, connections from the outer terminals of each pair of devices to the terminals of a source of current, connections from the point of connection between the two devices of each pair to both terminals of the source, and switch contacts in the last-mentioned connections controlled by the movement of the door corresponding to that pair of devices.

30. In a system of control for bulk-head doors and the like, a controlling switch, a casing therefor comprising a base and a cover, electro-responsive indicating devices carried by the cover, terminal contacts secured to the base, and contacts carried by the cover and connected to said devices adapted to engage the base contacts when the cover is in position.

31. In a system of control for bulk-head doors and the like, a casing comprising a base and a cover, a controlling switch mounted on said base within the casing, an operating shaft therefor extending through the cover, a removable handle on said shaft, electro-responsive indicating devices carried by the cover, terminal contacts secured to the base, and contacts carried by the cover and connected to said devices adapted to engage the base contacts when the cover is in position.

32. In combination, a casing comprising a base and a cover, a switch mounted on said base within said casing, an operating shaft therefor extending through said cover, a removable handle on said shaft, a spring-actuated reciprocating switch mounted on said base within the casing, and a push-button carried by said cover and adapted when depressed to engage said reciprocating switch when said cover is in place.

33. In combination, a casing comprising a base and a cover, a switch mounted on said base within said casing, an operating shaft therefor extending through said cover, a removable handle on said shaft, a spring-actuated reciprocating member mounted on said base within said casing, a plurality of bridging contacts carried by said member, a plurality of sets of stationary contacts mounted on said base and adapted to be bridged by said bridging contacts,

and a push-button carried by said cover and adapted when depressed to engage said reciprocating member when said cover is in place.

34. In a bulk-head door system, a plurality of doors, an electric motor for operating each door, means controllable from a distance for connecting a plurality of said motors in series to a source of current, and means at each door for connecting the operating motor for that door to the source independently of the other motors.

35. In a bulk-head door system, a plurality of doors, an electric motor for operating each door, a control system for connecting a plurality of said motors in series to a source of current, a switch at a distant point controlling said control system, and a manually-operated switch at each door for connecting the operating motor for that door to the source independently of the other motors.

36. In a bulk-head door system, a plurality of doors, an electric motor for operating each door, a circuit including a plurality of said motors in series, means controllable from a distance for connecting said circuit to a source of current, and means at each door for connecting the operating motor for that door to the source independently of the other motors.

37. In a bulk-head door system, a plurality of doors, an electric motor for operating each door, a circuit including a source of current and a plurality of said motors in series, a normally-open switch in said circuit, an electromagnet controlling said switch, a switch at a distant point controlling said electromagnet, and means at each door for cutting the operating motor for that door out of said circuit and connecting it to the source independently of the other motors.

38. In a bulk-head door system, a plurality of doors, an electric motor for operating each door, a circuit including a plurality of said motors in series, means controllable from a distance for connecting said circuit to a source of current, and means at each door for connecting the operating motor for that door to the source independently of the other motors without interrupting said circuit.

39. In a bulk-head door system, a plurality of doors, an electric motor for operating each door, a circuit including a source of current and a plurality of said motors in series, a normally-open switch in said circuit, an electromagnet controlling said switch, a switch at a distant point controlling said electromagnet, and means at each door for cutting the operating motor for that door out of said circuit and connecting it to the source independently of the other motors without interrupting said circuit.

40. In a bulk-head door system, a plurality of groups of doors, an electric motor for operating each door, the motors for each group of doors being connected in series, and means controllable from a distance for connecting each series circuit to a source of current.

41. In a bulk-head door system, a plurality of groups of doors, an electric motor for operating each door, the motors for each group of doors being connected in series, a normally-open switch in each series circuit, an electromagnet controlling each switch, and means at a distant point controlling said electromagnets.

42. In a bulk-head system, a plurality of groups of doors, an electric motor for operating each door, the motors for each group of doors being connected in series, a normally-open switch in each series circuit, an electromagnet controlling each switch, switch contacts at a distant point controlling said electromagnets, and a manually-operated switch at each door for connecting the operating motor for that door to the source independently of the other motors.

43. In a bulk-head door system, a plurality of groups of doors, an electric motor for operating each door, the motors for each group of doors being connected in series, means controllable from a distance for connecting each series circuit to a source of current, and means for adjusting the relative operation of the doors of a group to determine the order in which they are to close.

44. In a bulk-head door system, a plurality of groups of doors, an electric motor for operating each door, the motors for each group of doors being connected in series, a normally-open switch in each series circuit, an electromagnet controlling each switch, switch contacts at a distant point controlling said electromagnet, and means for adjusting the relative operation of the doors of a group to determine the order in which they are to close.

45. In a bulk-head system, a plurality of groups of doors, an electric motor for operating each door, the motors for each group of doors being connected in series, and means controllable from a distance for connecting each series circuit to a source of current, the doors of each group being adjusted to close in a predetermined order.

46. In a bulk-head door system, a plurality of groups of doors, an electric motor for operating each door, the motors for each group of doors being connected in series, a normally-open switch in each series circuit, an electromagnet controlling said switch, and a switch at a distant point controlling said electromagnet, the doors of each group being adjusted to close in a predetermined order.

47. In a bulk-head door system, a plurality of doors, an electric motor for operating each door, means controllable from a distance for connecting a plurality of said motors in series to a source of current, and means for adjusting the relative operation of the doors to determine their order of closing.

48. In a bulk-head door system, a plurality of doors, an electric motor for operating each door, and means controllable from a distance for connecting a plurality of said motors in series to a source of current, said doors being adjusted to close in a predetermined order.

851,824. MEANS FOR PROJECTING AND ANCHORING LIFE-LINES. ALBERT MEYER and FRANK N. ROGERS, Seattle, Wash., assignors to Meyers-Rogers Projectile Company, Seattle, Wash., a Corporation of Washington. Filed Apr. 4, 1906. Serial No. 309,915.

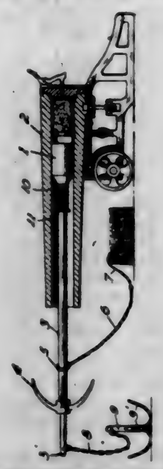

Claim.—1. A device of the type set forth, consisting of a projectile, a life line connected thereto, and resilient means for reducing the jerk on the life line when the projectile is projected.

2. A device of the type set forth consisting of a projectile, a connection mounted thereon for sliding movement, and a life line connected to said connection.

3. A device of the type set forth consisting of a projectile, a connection mounted thereon for sliding movement, a resilient buffer limiting the movement of said connection, and a life line connected to said connection.

4. A device of the type set forth consisting of a projectile, prongs on the forward end portion thereof, a weight connected to the projectile in advance of the prongs thereof, and a life line connected to said projectile to the rear of said prongs.

5. A device of the type set forth consisting of a projectile, a connection mounted thereon for sliding movement, flexible connection between said weight and projectile, and a life line connected to said projectile.

6. A projectile consisting of a body portion having an elongated forwardly extending stem, resilient means arranged on said stem, a sliding means arranged on said stem in advance of said first means and being free to engage the same, and a life line connected to said last means.

851,825. GRAIN-BINDER. MICHAEL MOLITOR, Calvary, Wis. Filed Oct. 22, 1906. Serial No. 339,924.

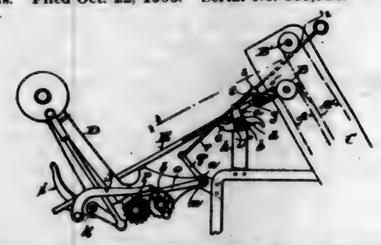

Claim.—1. In a grain-binder a rock-shaft having a trip-arm secured thereto, a locking-lever secured to the rock-shaft, and a clutch controlled by the locking lever, in combination with an attachment comprising a rod, supporting means for the rod, a lever secured to the rod, provided with an engaging-nose projecting under the grain-binder locking-lever, a crank secured to the rod, and an actuating-rod in connection with the crank, whereby the same is manually operated to release said locking-lever.

2. In a grain-binder, a feed-mechanism provided with grain elevator aprons and an inclined grain-delivering table, a grain-dislodging mechanism comprising brackets secured to the lower side of the table adjacent to the receiving-end thereof, a squared shaft revoluble in the brackets, slots in the table, star-wheels mounted on the shaft and projecting through the slots in said table, spacing-thimbles on the aforesaid shaft between the wheels and brackets, a driving-sprocket mounted upon said squared-shaft, and a yoke secured to the binder-frame arranged to engage the sprocket whereby said sprocket is held against lateral motion when the position of table and shaft carried thereby is shifted.

851,826. BAKING-PAN. EMMA MORROW, Somerset, Ky. Filed Aug. 16, 1904. Serial No. 220,950.

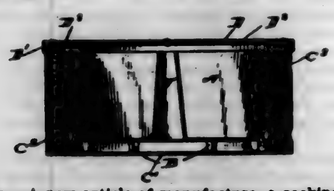

Claim.—A new article of manufacture, a cooking utensil comprising an outer receptacle having perforated bottom and sides, and a central opening, an inner receptacle provided with feet arranged in the outer receptacle, a central flue formed in the inner receptacle over the central opening in the outer receptacle, and a top provided with an asbestos lining arranged on the outer receptacle.

851,827. LAMP-BURNER. JOHN A. MOSHER, Park Ridge, Ill., assignor to The Adams & Westlake Company, a Corporation of Illinois. Filed Aug. 29, 1904. Serial No. 222,570.

Claim.—1. In a lamp burner, in combination, a wick tube; and a cup concentric with and of greater diameter than the tube and rising above the top thereof and having air induction ports, the combined capacity of the ports being insufficient to provide for illuminating combustion.

2. In a lamp burner, in combination, a body; an annular gallery supported above the body; a wick tube rising through and of less diameter than the gallery; and a cup rising above the top of the tube and having perforated walls the combined capacity of the perforations being insufficient to provide for illuminating combustion.

3. In a lamp burner, in combination, a body; a gallery supported thereon; chimney-supporting arms rising from the gallery; a wick-tube rising between the arms so as to enter a chimney supported thereby; and a cup concentric with the tube and rising above the top thereof and being of less diameter than the chimney for which the burner is adapted and of greater diameter than the wick-tube and having perforated walls the combined capacity of the perforations being insufficient to provide for illuminating combustion.

4. In a lamp burner, in combination, a wick tube, and a cup concentric therewith and of greater diameter than the tube and having apertures adjacent to its bottom the top of the tube terminating below the top of the cup and the combined capacity of the apertures being insufficient to provide for illuminating combustion.

5. In a lamp burner, a wick tube having at its upper end a flaring and upstanding annular flange having air ports the combined capacity of the ports being insufficient to provide for illuminating combustion.

851,828. ALTERNATING-CURRENT MACHINERY. ADAMS S. MCALLISTER, New York, N. Y. Filed Apr. 2, 1906. Serial No. 309,481.

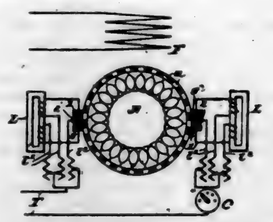

Claim.—1. The combination with an alternating-current machine, having a rotor provided with a commutator, of means for preventing sparking comprising a plurality of separate brushes at each point of commutation, connections between said brushes having means for producing a counter electro-motive force, and a plurality of leads from said brushes non-inductive at all times with respect to the normal circuit of the machine; substantially as described.

2. The combination with an alternating-current machine, having a rotor provided with a commutator, of means for preventing sparking comprising a plurality of separate brushes, connections between the brushes having self-contained means for producing a counter electro-motive force and providing a plurality of inductive local circuits for the current due to the electro-motive force induced in the rotor coil short-circuited by the brushes; substantially as described.

3. The combination with an alternating-current machine, having a rotor provided with a commutator, of means for preventing sparking including a plurality of separate brushes, connections between the brushes providing a plurality of local circuits for the current due to the electro-motive force included in the coil short-circuited by the brushes, means in said connections whereby reactance is opposed to the passage of current in the local circuits

while offering a free passage to the normal current of the machine, said connections affording a plurality of leads from each point of commutation for the normal current of the machine; substantially as described.

4. The combination with an alternating-current machine, having a rotor provided with a commutator, of means for preventing sparking including a plurality of separate brushes, connections between the brushes providing a plurality of local circuits for the current due to the electro-motive force induced in the coil short-circuited by the brushes, an inductive resistance in one of said local circuits, and a combined inductive and non-inductive resistance in another local circuit between said brushes; substantially as described.

5. The combination with an alternating-current machine, having a rotor provided with a commutator, of means for preventing sparking including separate brushes connected through a reactance device and another brush connected to an intermediate point in said reactance device, all of said brushes being arranged to convey the normal current of the machine; substantially as described.

6. The combination with an alternating-current machine, having a rotor provided with a commutator, of means for preventing sparking including separate brushes connected through a reactance device and another brush connected to an intermediate point in said reactance device through a non-inductive resistance; substantially as described.

7. The combination with an alternating-current machine, having a rotor provided with a commutator, of means for preventing sparking including separate brushes connected through a reactance device and another brush connected to an intermediate point in said reactance device through adjustable non-inductive resistances, said connections being so arranged that the non-inductive resistances are in series for the local currents and in parallel for the normal current of the machine; substantially as described.

8. The combination with an alternating-current machine, having a rotor provided with a commutator, of means for preventing sparking including a plurality of sets of separate brushes connected to the leads of the machine, each set having a reactance device connected between two of the brushes, and a non-inductive resistance connected between an intermediate brush and an intermediate point in said reactance device; substantially as described.

9. The combination with an alternating-current machine, having a rotor provided with a commutator, of means for preventing sparking including a plurality of sets of separate brushes connected to the leads of the machine, each set having a reactance device connected between two of the brushes, and non-inductive resistances connected between an intermediate brush and an intermediate point in said reactance device, and a controller connected to said brushes through said non-inductive resistances; substantially as described.

10. The combination with an alternating-current machine, having a rotor provided with a commutator composed of alternate live and dead segments, and sets of brushes therefor arranged to convey the normal working current of the machine, each set including separate brushes locally connected through a reactance device and another brush connected to an intermediate point of the reactance device; substantially as described.

11. The combination with an alternating-current machine, having a rotor provided with a commutator composed of alternate live and dead segments, of three separately insulated brush units at each active point of commutation and a reactive connection between any two of said brush units; substantially as described.

12. The combination with an alternating-current machine, having a rotor provided with a commutator composed of alternate live and dead segments, of three separately insulated brush units at each active point of commutation, each brush having a width less than that of a dead segment and a reactive connection between any two of said brush units; substantially as described.

851,829. ELECTRICALLY-CONTROLLED ELEVATOR. CARL NAUJOKS and FREDERICK C. NAUJOKS, San Francisco, Cal., assignors of one-ninth to George Goeppert, one-ninth to Balio Bruetting, and one-ninth to Victor Mockel. Filed Apr. 16, 1906. Serial No. 311,888.

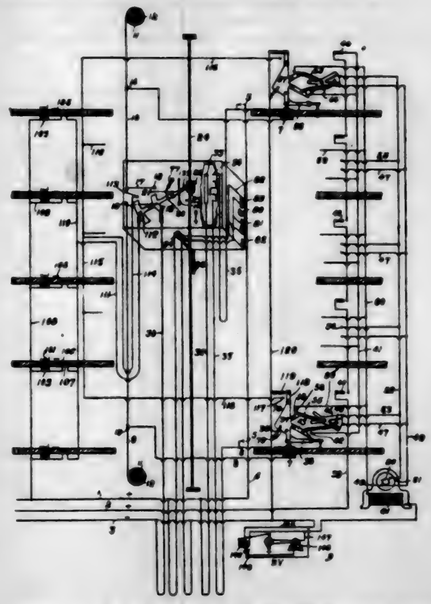

Claim.—1. In an elevator, in combination with means for raising and lowering the elevator, a controller circuit for controlling said means, comprising an electro-magnet, a circuit therethrough, circuit divider strips having adjacent ends connected to the elevator and extending respectively downward and upward therefrom, either of which is adapted to form a part of the circuit, means whereby said strips are electrically separated from each other when the elevator is in motion and are connected electrically only after the elevator has come to rest, and means at each floor on the elevator shaft for closing said circuit, substantially as described.

2. In an elevator, in combination with means for raising and lowering the elevator, a controller circuit for controlling said means, comprising an electro-magnet, a circuit therethrough, circuit divider strips having adjacent ends connected to the elevator and extending respectively downward, and upward therefrom, either of which is adapted to form a part of the circuit, means whereby said strips are electrically separated from each other when the elevator is in motion and are connected electrically only after the elevator has come to rest, and means carried with the elevator for closing said circuit, substantially as described.

3. In an elevator, in combination with means for raising and lowering the elevator, a controller circuit for controlling said means, comprising an electro-magnet, a circuit therethrough, circuit divider strips having adjacent ends connected to the elevator and extending respectively downward and upward therefrom, either of which is adapted to form a part of the circuit, means whereby said strips are electrically separated from each other when the elevator is in motion and are connected electrically only after the elevator has come to rest, means for regulating the time after the elevator comes to rest when said strips are electrically connected, and means at each floor on the elevator shaft for closing said circuit, substantially as described.

4. In an elevator, in combination with means for raising and lowering the elevator, a controller circuit for controlling said means, comprising an electro-magnet, a circuit therethrough, circuit divider strips having adjacent ends connected to the elevator and extending respectively downward and upward therefrom, means for winding up the end of either strip as the elevator moves toward said end, either of which is adapted to form a part of the circuit means whereby said strips are electrically separated from each other when the elevator is in motion and are connected electrically only after the elevator has come to rest and means at each floor on the elevator shaft for closing said circuit, substantially as described.

5. In an elevator, in combination with means for raising and lowering the elevator, a controller circuit for controlling said means, comprising an electro-magnet, a circuit therethrough, circuit divider strips having adjacent ends connected to the elevator and extending respectively downward and upward therefrom, either of which is adapted to form a part of the circuit, means whereby said strips are electrically separated from each other when the elevator is in motion and are connected electrically only after the elevator has come to rest, and means at each floor on the elevator shaft for closing said circuit, one side of said circuit having two branches, a push button at the floor of the elevator shaft corresponding with the magnet in one of said branches, and a push button in the elevator in the other branch substantially as described.

6. In an elevator, in combination with means for raising and lowering the elevator, a controller circuit for controlling said means, comprising an electro-magnet, a circuit therethrough, circuit divider strips having adjacent ends connected to the elevator and extending respectively downward and upward therefrom, means for winding up the end of either strip as the elevator moves toward said end, either of which is adapted to form a part of the circuit means whereby said strips are electrically separated from each other when the elevator is in motion and are connected electrically only after the elevator has come to rest, said means comprising a controlling device permitted to move easily from its central position outward in any direction while variably restrained in its return movement, and means at each floor on the elevator shaft for closing the said circuit, substantially as described.

7. In an elevator, in combination with means for raising and lowering the elevator, a controller circuit for controlling said means, comprising an electro-magnet, a circuit therethrough, circuit divider strips having adjacent ends connected to the elevator and extending respectively downward and upward therefrom, means for winding up the end of either strip as the elevator moves toward said end, either of which is adapted to form a part of the circuit means whereby said strips are electrically separated from each other when the elevator is in motion and are connected electrically only after the elevator has come to rest, said means comprising a controlling device permitted to move easily from its central position outward in any direction while variably restrained in its return movement, and means at each floor on the elevator shaft for closing the said circuit, and consisting of a cylinder, a piston moving therein and an operative connection between said piston and the friction device brought into use only upon the return movement of the latter, substantialy as described.

8. In an elevator, in combination with means for raising and lowering the elevator, a controller circuit for controlling said means, comprising an electro-magnet, a circuit therethrough, circuit divider strips having adjacent ends connected to the elevator and extending respectively downward and upward therefrom, means for winding up the end of either strip as the elevator moves toward said end, either of which is adapted to form a part of the circuit means whereby said strips are electrically separated from each other when the elevator is in motion and are connected electrically only after the elevator has come to rest, said means comprising a controlling device permitted to move easily from its central position outward in any direction while variably restrained in its return movement, and means at each floor on the elevator shaft for closing the said circuit, and consisting of a cylinder, a piston moving therein and an operative connection between said piston and the friction device brought into use only upon the return movement of the latter operative connection in closing, a ratchet wheel, pawls either of which is adapted to engage and advance the ratchet wheel when moving in one of its directions, but passing freely over the same in the other direction, cams for disengaging said pawls when said operative connection is moving from its central to its outer position, a gear wheel moving with the ratchet wheel and a pinion geared thereto, and an operative connection between the piston and pinion, substantially as described.

9. In an elevator, in combination with means for raising and lowering the elevator, a controller circuit for controlling said means, comprising an electro-magnet, a circuit therethrough, circuit divider strips having adjacent ends connected to the elevator and extending respectively downward and upward therefrom, either of which is adapted to form a part of the circuit, means whereby said strips are electrically separated from each other when the elevator is in motion and are connected electrically only after the elevator has come to rest, and means at each floor on the elevator shaft for closing said circuit, one side of said circuit having two branches, a push button at the floor of the elevator shaft corresponding with the magnet in one of said branches, and a push button in the elevator in the other branch substantially as described.

10. In an elevator, the combination of a circuit for controlling the movement of the elevator, said circuit passing in series through a break at each floor of the shaft adapted to be closed by the corresponding door when closed, said circuit having branches, one for each floor of the shaft, each such branch having a break therein means actuated by the elevator moving past any floor for changing the direction of the motive power set in action by the closing of the motor circuit at that floor, and means at each floor for closing the corresponding latter break, substantially as described.

11. In an elevator, the combination of a circuit through the motor, one side of said circuit having branches, one for each floor of the elevator and each such branch having a break therein, said circuit then passing through a series of breaks, each adapted to be closed by the closing of the corresponding door at that floor, and means for closing the first break at any floor, operable from said floor, including a double switch, and a branch through the armature of the motor connected with said double switch, said double switch adapted to be moved by the elevator when passing, substantially as described.

12. In an elevator, the combination of a motor a circuit therethrough, a switch carrier at each floor of the shaft, having a switch, one side of the circuit through the motor being connected in parallel with all of said switches, a wire connected in parallel with the other side of the switch, said wire leading through a series of breaks one at each door of the elevator shaft and adapted to be closed by the closing of said door, a latch for holding said switch open, an electro-magnet for breaking said switch to permit it to close, and means for energizing said magnet at the corresponding floor of the elevator shaft, substantially as described.

13. In an elevator, the combination of a motor, a circuit therethrough, a switch carrier at each floor of the shaft, having a switch, one side of the circuit through the motor being connected in parallel with all of said switches, a wire connected in parallel with the other side of the switch, said wire leading through a series of breaks one at each door of the elevator shaft and adapted to be closed by the closing of said door, a latch for holding said switch open, an electro-magnet for breaking said switch to permit it to close, and means for selectively energizing said magnet from the elevator, substantially as described.

14. In an elevator, the combination of a motor, a circuit therethrough, a switch carrier at each floor of the shaft having a switch, one side of the circuit through the motor being connected in parallel with all of said switches, a wire connected in parallel with the other side of the switch, said wire leading through a series of breaks one at each door of the elevator shaft and adapted to be closed by the closing of said door, a latch for holding said switch open, an electro-magnet for breaking said switch to permit it to close, a push button at the corresponding floor of the shaft in one side of the circuit through the magnet, a

break in the other side and a device for closing said break when the elevator is moving toward said floor, and for opening said break when moving away therefrom, substantially as described.

15. In an elevator, the combination of a motor a circuit therethrough, a switch carrier at each floor of the shaft having a switch, one side of the circuit through the motor being connected in parallel with all of said switches, a wire connected in parallel with the other side of the switch, said wire leading through a series of breaks one at each door of the elevator shaft and adapted to be closed by the closing of said door, a latch for holding said switch open, an electro-magnet for breaking said switch to permit it to close, a latch for holding each door open, an electro-magnet for withdrawing said latch, a circuit through said electro-magnet, and means whereby said circuit is broken and the withdrawal of the latch rendered impossible until after the elevator has been at rest a predetermined period of time, substantially as described.

16. In an electric elevator, a motor check comprising, in combination with the main motor, a rheostat, a small motor, one of the wires leading to the main motor having a break closed by two circuits in parallel, of which one circuit leads to the rheostat and the other leads through the small motor, the latter circuit having a break therein, a switch for closing said break, a lever having an arm passing successively over contacts of the rheostat, said lever being operatively connected with said switch, and a spring resisting said movement, substantially as described.

17. In an electric elevator, a motor check comprising, in combination with the main motor, a rheostat, a small motor, one of the wires leading to the main motor having a break closed by two circuits in parallel, of which one circuit leads to the rheostat and the other leads through the small motor, the latter circuit having a break therein, a switch for closing said break, a lever having an arm passing successively over contacts of the rheostat, said lever being operatively connected with said switch, and a spring resisting said movement, and means for moving said lever from the revolution of the small motor, a magnet on a branch parallel with the circuit through the rheostat, said magnet being adapted to hold said lever when energized, substantially as described.

18. In an electric elevator, in combination with an elevator, a series of elevator doors, an electric circuit, and a motor in said circuit for operating the elevator, a series of resistances arranged to be successively thrown into said circuit by the opening of an elevator door to diminish the current therein and check the speed of the motor, substantially as described.

19. In an electric elevator, in combination with an elevator, a series of elevator doors, an electric circuit, and a motor in said circuit for operating the elevator, a series of resistances arranged to be successively thrown into said circuit by the opening of an elevator door to diminish the current therein and check the speed of the motor, and means whereby, when the door is fully thrown open, said circuit is opened at said break, substantially as described.

851,830. VALVE. WILLIAM R. PARK, Taunton, Mass., assignor to United Injector Company, New York, N. Y., a Corporation of New York. Filed Dec. 14, 1906. Serial No. 347,768.

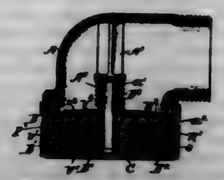

Claim.—The combination of a housing, a stud therein, a cage removably secured to the housing, a guiding stem on the cage joined to the housing stud when the cage is in position on the housing, a valve seat on the housing, a pair of valve members slidingly mounted on the stem and provided with mutually co-operating faces and ports, the primary valve member seating on the housing valve seat, the secondary valve member seating on the primary member, and valve springs controlling the valve members respectively, the spring for the primary member being stronger than that for the secondary member.

851,831. INDEX-HEAD. JOHN PARKER, Providence, R. I., assignor to Brown and Sharpe Manufacturing Company, Providence, R. I., a Corporation of Rhode Island. Filed Feb. 5, 1904. Serial No. 192,231.

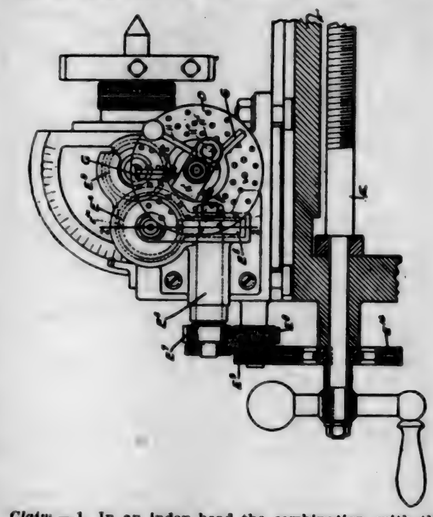

Claim.—1. In an index head the combination, with the index plate and the rotatable index member, of a block angularly adjustable about the member, and an index pin arm radially adjustable in said block, substantially as described.

2. In an index head the combination, with the index plate and the rotatable index member, of an index pin arm, a block carrying the arm, adjusting screws in the block, and a stud projecting from said member between the screws, substantially as described.

851,832. ROLL-PAPER HOLDER AND CUTTER. CHARLES H. PATTERSON, Dawson, N. Mex. Filed Jan. 16, 1907. Serial No. 352,526.

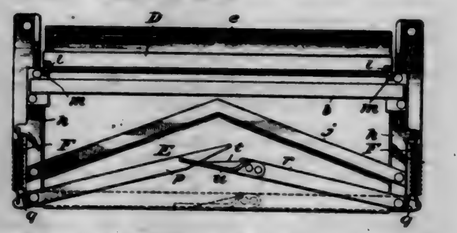

Claim.—1. In a roll-paper holder and cutter, the combination of a main frame arranged to support a roll of paper, a frame carried by the main frame and having forwardly extending side bars, and cutting means comprising horizontally swinging, spring-actuated members pivotally mounted on the side bars of the second mentioned frame.

2. In a roll-paper holder and cutter, the combination of a main frame arranged to support a roll of paper, a frame carried by the main frame and having forwardly extending side bars, and cutting means comprising horizontally swinging, spring-actuated members pivotally mounted on the side bars of the second mentioned frame and having lower and upper bars the meeting ends of which are correspondingly beveled; one of said members also having a thumb-piece arranged flush with the forward edges of its bars.

3. In a roll-paper holder and cutter, the combination of a main frame arranged to support a roll of paper, a frame carried by the main frame and having forwardly extending side bars, and cutting means comprising horizontally swinging members having lower and upper bars pivoted to the side bars of the second mentioned frame; the said lower and upper bars being connected together at their outer ends and correspondingly beveled at their inner ends, and one of said members being provided with one or more thumb-pieces, and tractile springs interposed between and connected to the second mentioned frame and the outer ends of said members of the cutting means.

4. In a roll-paper holder and cutter, the combination of a main frame arranged to support a roll of paper, a frame movable vertically on the main frame and having a rear cross-bar, forwardly-extending side bars and lower and upper forward cross-bars of obtuse angle form in plan arranged with their apices toward the rear, a roller carried by the second mentioned frame and arranged to bear on the roll of paper, a gravitating bar pivoted to said frame and arranged to yieldingly clamp the end portion of the paper against the rear cross-bar thereof, and cutting means comprising horizontally swinging, spring-actuated members pivotally mounted on the side bars of the second mentioned frame and having lower and upper bars the meeting ends of which are correspondingly beveled; one of said members also having a thumb-piece arranged flush with the forward edges of its bars.

5. In a device of the kind described, the combination of a frame having side bars, and cutting means comprising fore and aft swinging, spring-actuated members each of which extends laterally inward from one side bar and has its outer portion pivotally connected with said side bar; the said members being arranged in their normal positions to form a cutting edge intermediate the side bars of the frame, and being also arranged to swing rearward from their normal positions, for the purpose described.

6. In a device of the kind described, the combination of a frame having side bars, and cutting means comprising fore and aft swinging, spring-actuated members each of which extends laterally inward from one side bar and has lower and upper bars and a space between said bars for the passage of a strip of paper and also has its outer portion pivotally connected with said side bar; the said members being arranged in their normal positions to form a cutting edge, intermediate the side bars of the frame, and being also arranged to swing rearward from their normal positions, for the purpose described.

851,833. LOADING DEVICE. JOHN W. PIM, Lucas, Iowa. Filed Oct. 30, 1906. Serial No. 341,234.

Claim.—In a loading device a stationary frame of substantial U shape, parallel arms pivoted forwardly at each side thereof, a platform carried by said arms, means for raising and lowering said platform and guards 24 arranged in spaced parallel relation to the sides of said frame, said arms being received in one position in the spaces between said guards and the sides of said frame.

851,834. BUREAU. PHILLIP RAMMINGER, Plymouth, Wis. Filed Nov. 15, 1905. Serial No. 287,380.

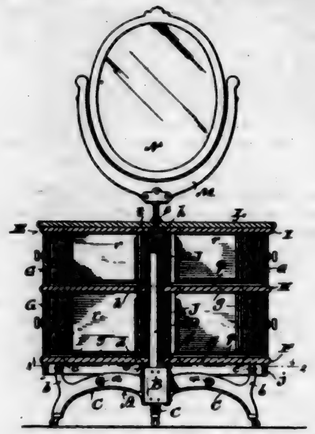

Claim.—In a revoluble bureau, a supporting base having a central spindle, upper, lower and intermediate horizontal partitions comprising circular outer portions and radial arms, central openings in the arms whereby bearings are formed for the spindle, square hollow spacing-posts interposed between the partitions and surrounding said spindle, tie-rods for the partitions adjacent to the post, spacing-blocks interposed between the aforesaid partitions at their peripheral edges, grooves in the blocks, tie-rods fitted in the grooves and engaging the upper and lower partitions, sliding drawers between said blocks, radial guide-cleats for the drawers secured to the lower and intermediate partitions, and a top secured to the upper partition.

851,835. ROLL-PAPER CONTAINER AND CUTTER. STANLEY M. RAMSEY, Cincinnati, Ohio. Filed Dec. 3, 1906. Serial No. 345,996.

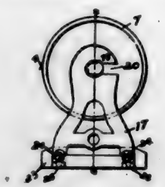

Claim.—1. A roll paper container and cutter adapted to receive and contain a roll of paper, comprising a cylinder having a fixed head, and a removable head, bearings in said heads, standards, a spindle adapted to engage said standards and bearings whereby said roll of paper is supported within said container, a core or sleeve adapted to receive said spindle and engage and support said roll of paper, said cylinder having a slot with a cutter adjacent thereto for the purposes set forth.

2. A roll paper container and cutter adapted to receive and contain a roll of paper, comprising a cylinder, heads for said cylinder, each having a bearing, standards for said cylinder, a spindle adapted to be held by said standards and to engage said bearings, said heads each having a guide adapted to engage the end of the paper roll and core, respectively, and cap-bearings adapted to engage said standards, respectively, substantially as set forth.

3. A roll paper container and cutter comprising a cylindrical case adapted to receive and contain a roll of paper and having a longitudinal slot through which said paper may be dispensed, a cutter adjacent said slot, standards each having a slotted bearing, said cylindrical case having

heads each provided with a bearing, a spindle adapted to engage said slotted bearings and the bearing in each head, substantially as set forth.

4. A roll paper container and cutter comprising a cylindrical case adapted to receive and contain a roll of paper and having a longitudinal slot through which said paper may be dispensed, a cutter adjacent said slot, standards each having a slotted bearing provided with a polygonal surface, a spindle having a polygonal shank whereby it is adapted to be reversed and the longitudinal and vertical positions of said cylinder transposed to throw said cutting edge either above or below the slot, as described, or to adapt said device for use as an upright stand, wall-bracket or dependent hanger, substantially as set forth.

5. A roll paper container and cutter comprising a cylindrical case adapted to receive and contain a roll of paper and having a longitudinal slot through which said paper may be dispensed, a cutter adjacent said slot, heads each provided with a bearing, a spindle adapted to engage said bearings and support said cylinder, a sleeve or core adapted to receive and be supported by said spindle, a guide at each end of the case adapted to engage said paper roll and sleeve and standards adapted to support said spindle.

6. A roll paper container and cutter comprising a cylindrical case adapted to receive and contain a roll of paper and having a longitudinal slot through which said paper may be dispensed, a cutter adjacent said slot, heads on said case one of which is removable, a bearing in each head, a spindle adapted to engage said bearings, a sleeve or core adapted to receive and be supported by said spindle, standards, each having a bearing adapted to engage said spindle, and means for securing said parts together.

7. A roll paper container and cutter comprising a cylindrical case adapted to receive and contain a roll of paper and having a longitudinal slot through which said paper may be dispensed, a cutter adjacent said slot, heads on said case one of which is removable, bearings in said heads, a spindle adapted to engage said bearings, a sleeve or core adapted to receive and be supported by said spindle, standards each having a bearing adapted to engage said spindle, a thumb nut adapted to secure said spindle in fixed position in said bearings and a brace by which said standards are connected.

8. A roll paper container and cutter comprising cylinder 1, adapted to receive and contain a roll of paper, provided with longitudinal slot 3 through which said paper may be dispensed and having finger-opening 5 and thumb-notch 6 for the purposes specified, cutter 4 adjacent said slot, fixed head 7, removable head 8, guides 11, core 12, spindle 14, engaging said core and heads, standards 16 supporting said spindle, and base 23 connecting said standards, all combined and arranged substantially as and for the purposes set forth.

9. As an article of manufacture, a roll paper container and cutter, comprising a metallic cylindrical case adapted to receive and contain a roll of paper and provided with a longitudinal slot through which said paper may be dispensed, as desired and having a finger-opening through which initial movement may be given to the paper, and a thumb-notch through which the paper may be grasped, a spindle adapted to support said case, and standards adapted to support said spindle in any position desired, substantially as set forth.

851,836. SPRING-MOTOR. LEWIS J. RING, Stanton, Iowa. Filed Aug. 18, 1904. Serial No. 221,169.

Claim.—1. The combination with a pair of spring motors mounted in axial alinement one with the other, and having independent driving connections to a common shaft, means for rendering said connections independently operative and inoperative on said shaft, of pawl and ratchet devices for winding said motors, including the pawl equipped levers, a walking beam directly and yieldingly connected at its ends to said pawl equipped levers, and operating the same in alternate order, and means for operating said beam, substantially as described.

2. The combination with actuating means, of a spring motor having a winding shaft, ratchet mechanism connected with the shaft for rotating the same, and yieldable connecting means between the ratchet mechanism and the actuating means for enabling the spring motor to be directly wound up by the said actuating means on the power stroke thereof, said yieldable means being also adapted to permit the actuating means to operate independently of the motor shaft after a predetermined amount of power has accumulated.

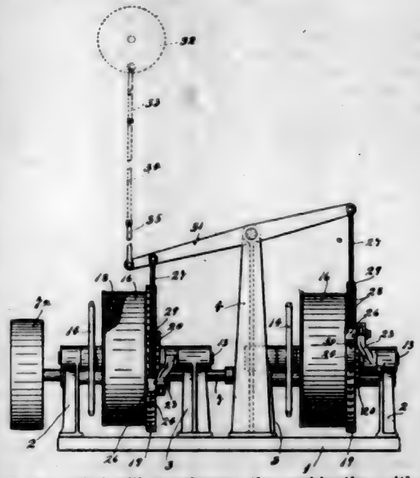

3. In a wind mill attachment, the combination with actuating means, of power storing means adapted to be wound up, ratchet mechanism for winding the power storing means, and yieldable means connected with the ratchet mechanism for winding the power storing means on the power stroke of the actuating means, said yieldable means being adapted, after a predetermined amount of power has accumulated, to permit the actuating means to operate independently of the said attachment.

4. In a wind mill attachment, the combination with actuating means, of power storing means having a winding shaft, ratchet mechanism provided with an oscillatory lever and arranged to wind the said shaft on the power stroke of the actuating means, and a yieldable connection provided with means for connecting the lever with the said actuating means and for permitting the actuating means to operate independently of the winding shaft after a predetermined amount of power has accumulated.

5. In a wind mill attachment, the combination with power storing means having a winding shaft, ratchet mechanism for winding the said shaft, said ratchet mechanism being provided with an oscillatory lever, and a yieldable connection provided with means for connecting the lever with the pump rod of a wind mill, said connection being adapted, after a predetermined amount of power has accumulated, to permit the pump rod to operate independently of the said shaft, and the latter being directly actuated by the pump rod.

6. In a wind mill attachment, the combination with power storing means, ratchet mechanism for winding up the power storing means, said ratchet mechanism being provided with an oscillatory lever, and a reciprocating device connected with the lever of the ratchet mechanism and provided with means for connecting it with the pump rod of a wind mill, and having yieldable means for permitting the pump rod to operate without affecting the power storing means after a predetermined amount of power has accumulated.

7. In a wind mill attachment, the combination with power storing means, ratchet mechanism for winding up the power storing means, and a reciprocating device connected at one end with the ratchet mechanism and provided at the other end with means for connecting it with the pump rod of a wind mill, said device being composed of slidably connected members, and a cushioning spring adapted to yield to permit the pump rod to operate without winding up the power storing means after a predetermined amount of power has accumulated.

8. In a wind mill attachment, the combination of power storing means, ratchet mechanism for winding up the power storing means, and a reciprocating device connected at one end with the ratchet mechanism and provided at the other end with means for connecting it with the pump rod of a wind mill, said device being composed of slidably connected members, a cushioning spring adapted to yield to permit the pump rod to operate without winding up the power storing means after a predetermined amount of power has accumulated, and adjusting means for varying the tension of the spring.

851,837. GATHERING-LOCOMOTIVE. JOHN M. ROAN, Columbus, Ohio. Filed Dec. 4, 1905. Serial No. 290,146.

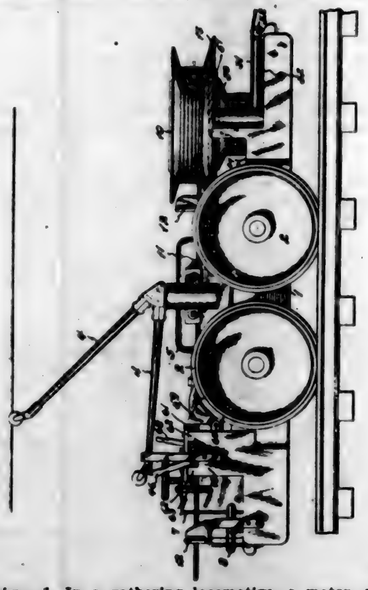

Claim.—1. In a gathering locomotive, a motor, means for transmitting motion from the motor to the locomotive, a drum, a cable carried by the drum adapted to be attached to a car, means for transmitting motion from the motor to the drum, and means for disconnecting the transmitting means from the motor without stopping the motor.

2. In a gathering locomotive, a motor for propelling the locomotive, a drum arranged to be operated by the motor, a cable carried by the drum adapted to be attached to a car, clutch mechanism interposed between the motor and the drum, and means for manipulating the clutch mechanism to connect and disconnect the parts thereof for transmitting motion from the motor to the drum and for permitting the drum to revolve independent of the motor.

3. In a gathering locomotive, a motor for propelling the locomotive, a drum arranged to be operated by the motor, a cable carried by the drum adapted to be attached to a car, clutch mechanism interposed between the motor and the drum, and means for manipulating the clutch mechanism to connect and disconnect the parts thereof for transmitting motion from the motor to the drum, said manipulating means also being arranged to move said drum, and a brake adapted to be engaged by said drum when the latter is moved.

4. In a gathering locomotive, a motor for propelling said locomotive, a drum arranged to be operated by said motor, a cable carried by said drum adapted to be attached to a car, means for interrupting the transmission of motion from the motor to the drum to permit the latter to rotate freely, and means for controlling the rotation of the drum.

5. In a gathering locomotive, a motor for propelling said locomotive, a drum adapted to be revolved by the motor, a cable carried by the drum adapted to be attached to a car, means for transmitting motion from the motor to the locomotive, clutch mechanism associated with said transmission means, clutch mechanism interposed between said motor and the drum, a brake for said drum, and a brake for controlling the locomotive.

851,838. CIRCUIT FOR COIN-COLLECTORS. JOHN G. ROBERTS, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 13, 1906. Serial No. 300,932.

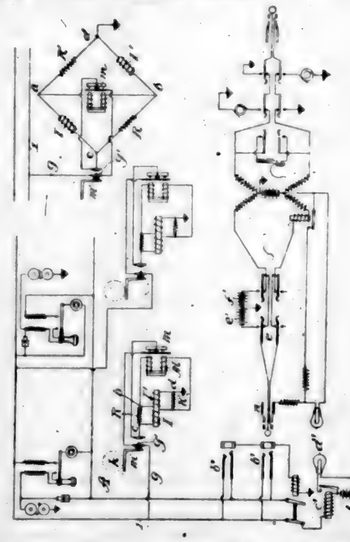

Claim.—1. The combination with a circuit having a portion divided into two parallel branches, of a magnet in a bridge of said branches, mechanism operated by said magnet when energized, a source of direct and a source of alternating current each adapted to be connected with said circuit, and means for preventing alternating current from producing an operative difference of potential at the terminals of said magnet, whereby the magnet responds only to direct current.

2. The combination with a circuit having parallel branches, of a magnet in a bridge of said branches, mechanism operated by said magnet when energized, a source of direct and a source of alternating current each adapted to be connected with said circuit, and non-inductive and inductive resistances in adjacent arms respectively of said parallel branches, said dissimilar resistances having equal impedance and unequal resistance.

3. In a telephone system, the combination with a circuit having parallel branches, of an inductive and a non-inductive resistance in each branch of said circuit arranged so that no two similar resistances are adjacent to each other, a bridge of said branches connected in a point in each branch between said resistances, a magnet in the bridge, mechanism operated by said magnet when energized, and a source of direct and a source of alternating current each adapted to be connected with said circuit.

4. The combination with a signaling circuit having parallel branches, of a source of current and an indicating device included in said circuit, a pair of normally open contacts in said circuit a switch for closing said contacts to actuate the indicating device, of a magnet in a bridge of

said parallel branches, means for impressing a ringing current upon the circuit, means for preventing said ringing current from producing an operative difference of potential at the terminals of said magnet, means at the central office for impressing upon the circuit positive or negative current, whereby the magnet is energized, and means actuated by the energization of said magnet to control the operation of said switch.

5. The combination with a signaling circuit having parallel branches, of a source of current and an indicating device included in said circuit, a pair of normally open contacts in said circuit a switch for closing said contacts to actuate the indicating device, an electromagnet in a bridge of said parallel branches, inductive resistances included in two of the arms of said parallel branches, non-inductive resistances in the remaining arms thereof, no two similar resistances being in adjacent arms, means at the central office for impressing positive or negative current upon the circuit, whereby the electromagnet is energized, and means actuated by the energization of said magnet to control the operation of said switch.

6. In a telephone system, the combination with a signaling circuit including a signal device at the central office and having a portion divided into two parallel branches at the subscriber's station, of a pair of contacts in said circuit, a switch for altering the relations of said contacts and thereby to change the condition of the circuit and thus to actuate the indicating device, a polarized maguet in a bridge of said parallel branches, a source of direct and a source of alternating current each adapted to be connected with the signaling circuit, means for preventing alternating current from producing an operative difference of potential at the terminals of said magnet, whereby the magnet responds only to direct current, and mechanism operated by the armature of said magnet to control the operation of said switch.

7. The combination with a signaling circuit having parallel branches, of a source of current and an indicating device in said circuit, a pair of normally open contacts in said circuit a switch for closing said contacts to actuate the indicating device, an electromagnet in a bridge of said parallel branches, inductive resistance included in two of the arms of said parallel branches, non-inductive resistance in the remaining arms thereof, no two similar resistances being in adjacent arms, the resistances in the arm of one branch and the adjacent arm of the other branch possessing equal impedance but unequal resistance, means at the central office for impressing positive or negative current upon the circuit, whereby the electromagnet is energized, and means actuated by the energization of said magnet to control the operation of said switch.

851,839. SWITCH MECHANISM. THEODORE RUNDORFF, Burlington, Iowa. Filed Aug. 23, 1906. Serial No. 331,810.

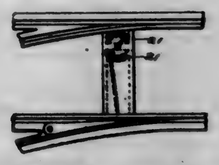

Claim.—1. A device of the character described, comprising a tripping means secured to the truck of a car, a base plate positioned between the tracks of a railway, an inverted substantially U-shaped member pivotally mounted upon said base plate, and a rod loosely connected to the said U-shaped member and serving to operate the tongue of a switch, the tripping means upon the car being adapted to engage with the arms of the before mentioned U-shaped member.

2. A device of the character described, comprising a tripping means secured to the truck of a car, a housing positioned between the tracks of a railway, a base plate secured within said housing, an inverted substantially U-shaped member pivotally mounted on said base plate and a rod pivotally secured to said U-shaped member for operating the tongue of a switch.

3. A device of the character described, comprising a bracket rigidly secured to the truck frame of a car, a tripping member pivotally secured to said frame and normally positioned above the lower edge thereof, a bell-crank lever, and connecting rod pivotally secured to said tripping means and said bracket, and means for operating the same.

4. A device of the character described, comprising a switch throwing means positioned upon the truck of a car and adapted to be operated from the platform thereof, a mechanism for throwing the tongue of a switch comprising a reciprocating rod, a swinging member secured to said rod, a base plate for supporting said pivotally mounted member and a housing for inclosing said members.

5. A device of the character described, comprising a bracket secured to the frame of a car, a tripping member pivotally connected to said frame and normally held in an inoperative position, a bell-crank lever, connecting means between one arm of the bell-crank lever and the tripping member, means for operating the bell-crank lever to throw the tripping member into operative position, and a mechanism for throwing the tongue of a switch comprising a reciprocating rod, a swinging member secured to said rod, and a base plate for supporting said swinging member.

851,840. LAWN-TRIMMER. SUMNER O. SAWYER, Traverse City, Mich. Filed June 29, 1906. Serial No. 324,087.

Claim.—1. A device of the character described comprising wheels, handles for manipulating the same, a cross bar connected to the wheels, and integral cutting devices carried thereby, the lower portions of said devices being disposed one behind the other.

2. In a device of the character described the combination with wheels; of a cross bar carried by the wheels, handles extending therefrom, a knife connected to and depending from the cross bar, and a curved rearwardly inclined knife secured to the cross bar, said knives being integral and the ends of said knives being disposed in longitudinal alinement.

3. In a device of the character described the combination with wheels; of a cross bar supported by the wheels, handles, a straight knife secured to and depending from the cross bar, a rearwardly inclined curved knife secured to the cross bar at one side of the first mentioned knife and integral with said knife, the terminals of said knives being disposed in longitudinal alinement.

4. In a device of the character described the combination with wheels; of a cross bar carried by said arms and bearing within the wheels, handles secured to and extending from the cross bar, a straight knife secured to and depending from the cross bar, and a rearwardly inclined curved knife secured to said cross bar at one side of the first mentioned knife and integral with said knife, the terminals of said knives being disposed in longitudinal alinement.

5. A device of the character described comprising a cross bar, a handle for manipulating the same, a knife connected to and depending from the cross bar, and a curved rearwardly inclined knife secured to the cross bar, the ends of said knives being disposed in longitudinal alinement, both knives being integral.

6. In a device of the character described the combination with a cross bar, and a supporting wheel at one end; of a handle extending from said bar, a knife connected to and depending from the bar, a curved rearwardly inclined knife secured to the cross bar, the ends of said knives being disposed in longitudinal alinement and a supporting device upon one of said knives.

7. An attachment for lawn trimming machines comprising a straight knife, a rearwardly inclined curved knife, all portions of the knives being out of alinement except their free ends and a head interposed between and integral with the knives.

851,841. MITER-BOX SAW-GUIDE. EDMUND A. SCHADE, New Britain, Conn., assignor to Stanley Rule & Level Company, New Britain, Conn., a Corporation of Connecticut. Filed Mar. 9, 1907. Serial No. 361,476.

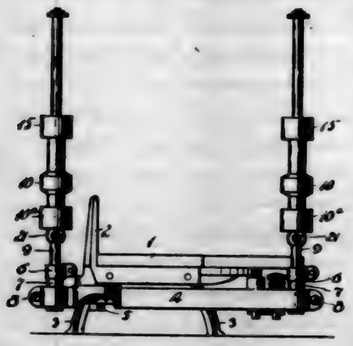

Claim.—1. In a miter box, a frame, a carrier arm pivotally carried thereby, a saw-guide for said arm, said saw-guide including a base, a pair of parallel upright posts carried thereby, a set of companion guide rolls, a passage between said set of rolls, a ball-bearing for each end of each roll, a bushing for each ball-bearing said bushing being slidable directly upon its post, the balls of each bearing directly engaging said bushing and holding the bushing at all times in such a manner as to cause the same to rise and fall with said roll.

2. In a miter box, a frame, a carrier arm pivoted thereto, a saw-guide for said carrier arm, said saw-guide including a base mounted on said arm, a pair of parallel upright posts carried thereby, a set of companion guide rolls mounted on said rolls, a saw passage between said set of rolls, a ball-bearing for the upper and lower end of each roll each bearing including a bushing slidable directly upon its post, the balls of said bearings engaging directly against the external wall of said bushing.

3. In a miter box, a frame, a carrier box pivoted thereto, a saw-guide, said saw-guide including a base mounted on said arm, a pair of parallel upright posts carried thereby, a set of companion guide rolls mounted on said posts, a saw passage between said set of rolls, a ball-bearing for the upper and lower end of each roll, each bearing including a bushing slidable directly upon its post, the balls of said bearing taking directly against the external wall of said bushing and the peripheral groove in said bushing into which said balls project.

4. In a miter box, a frame, a carrier arm pivoted thereto, a saw-guide for said carrier arm, said saw-guide including a base mounted on said arm, a pair of parallel upright posts carried thereby, a set of companion guide rolls mounted on said posts, a saw passage between said set of rolls, a ball-bearing for the upper and lower end of each roll, said bearings including a bushing slidable directly upon its post, the balls of said bearing taking directly against the external wall of said bushing and also including series of balls at the upper and lower ends of said bushing and arranged to take the end thrust of said roll against said bushing in both directions.

851,842. POWER-TRANSMISSION DEVICE. WILLARD T. SEARS, Philadelphia, Pa., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Filed Oct. 6, 1906. Serial No. 337,693.

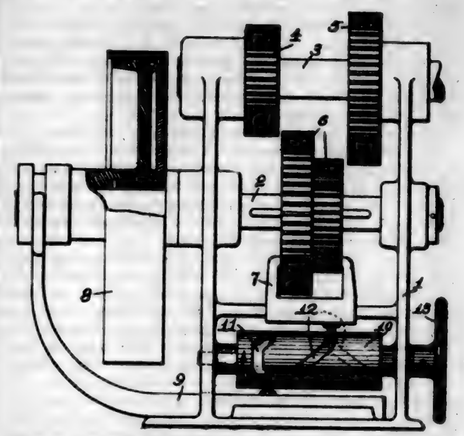

Claim.—Power transmission apparatus comprising a pair of toothed members adapted for engagement and disengagement to and from each other, a clutch for transmitting power to one of said toothed members, a shifter for moving one of the toothed members into and out of engagement with the other, a clutch-operating part for throwing the clutch into and out of engagement, and a cam positively engaging the shifter and the clutch-operating part and arranged to hold the clutch engaged and the tooth members disengaged and by movement to first release the clutch and then to initiate the engagement of the tooth members while one of the tooth members is under the influence of momentum and then to complete the tooth engagement and then engage the clutch, combined substantially as set forth.

851,843. MEANS FOR STOPPING AND RELEASING TOY RAILWAY-VEHICLES. EKKO SOLLMANN, Hoboken, N. J. Filed Dec. 20, 1905. Serial No. 292,596.

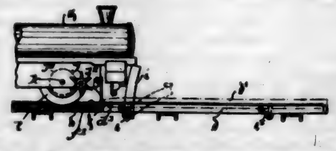

Claim.—1. In a toy railway the combination with a vehicle provided with a braking member, rails for said vehicle, a movable element adapted to coöperate with said member, and means associated with said element and adapted to be engaged by said vehicle to throw said element into engaging proximity to said member.

2. In a toy railway the combination with a vehicle provided with a depending brake member, rails for said vehicle, a movable braking rail, and means associated with said rail and adapted for engagement by said vehicle to throw said braking rail into engagement with said member.

3. In a toy railway the combination with a vehicle provided with a pivotally mounted depending braking member, rails for said vehicle, a braking rail, cranks supporting said rail in operating and non-operating positions, and a lever adapted for engagement with said vehicle and serving to throw said rail into an operating position.

4. In a toy railway the combination with a vehicle provided with a pivotally mounted depending braking member, of two sets of main rails, braking rails disposed between said main rails, rods provided with cranks supporting said brake rails in operating and non-operating positions, said

cranks being so disposed that when one of said brake rails is in an operating position the other rail is in a non-operating position, and a lever connected with said rods adapted for engagement with said vehicle to throw said brake rails into and out of operating positions.

5. In a toy railway the combination with a vehicle provided with a braking member, rails for said vehicle, means operated by said vehicle and adapted to be engaged by said braking member, and an element adapted to be raised into engaging proximity with said braking member to engage the same with said means.

6. In a toy railway the combination of a vehicle provided with a braking member, a supporting wheel and a stop arm, means operated by said supporting wheel and adapted to be engaged by said braking member, a movable brake rail, and a lever associated therewith and adapted to be engaged by said stop arm to throw said brake lever into engagement with said braking member.

7. In a toy railway the combination with railway vehicles, two sets of rails therefor, movable elements for said rails connected to operate in unison and adapted to arrest movement of said railway vehicles, and means associated with said elements and adapted to be engaged by said vehicles whereby said elements are thrown into engaging proximity with said vehicles to arrest movement of the same.

8. In a toy railway the combination with railway vehicles, two sets of rails for said vehicles, a movable element for each of said sets of rails connected to operate in unison, said elements being so connected that when one is in an operative position the other is in a non-operative position, and means associated with said elements and adapted for engagement with said vehicles whereby said elements may be singly thrown into engaging proximity with said vehicles.

9. In a toy railway the combination with railway vehicles provided with braking members, two sets of rails for said vehicles, movable elements adapted to be thrown into engaging proximity with said braking members and connected to operate in unison, and means associated with said elements and adapted for engagement with said braking members whereby said elements are thrown into engaging proximity with said braking members.

10. In a toy railway the combination with railway vehicles provided with braking members, rails for said vehicles, movable elements for said rails adapted to be thrown into engaging proximity with said braking members, said elements being connected to operate in unison and to cause one element to be thrown into an operative position and the other to be thrown into a non-operative position, and means associated with said elements and adapted for engagement with said vehicles for throwing said elements into operative proximity with said braking members.

11. In a toy railway the combination with railway vehicles, two sets of rails therefor, and movable elements for said sets of rails adapted to coöperate with said vehicles to arrest movement of the same, said elements being connected to operate in unison.

12. In a toy railway the combination with railway vehicles, two sets of rails therefor, and movable elements for said rails adapted to coöperate with said vehicles to arrest movement of the same, said elements being connected to operate in unison and disposed with respect to each other in a manner to cause one element to occupy a non-operative position when the other element occupies an operative position.

13. In a toy railway the combination with railway vehicles provided with two sets of traction wheels, rails for said vehicles, movable elements for said rails adapted to be thrown into operative positions, and means associated with said vehicles and the traction wheels thereof and adapted for engagement with said elements.

14. In a toy railway the combination with a railway vehicle provided with a traction wheel, rails therefor, a movable element adapted to be thrown into an operative position, and means associated with said vehicle and the traction wheel thereof and adapted for engagement with said element whereby the movement of said vehicle may be arrested.

15. In a toy railway the combination with a railway vehicle provided with a traction wheel, a braking member and means whereby said member may retard movement of said wheel, rails for said vehicle, and a movable element adapted to engage said braking member and therethrough act upon said traction wheel.

851,844. COOLER. HORACE T. THOMAS, Lansing, Mich., assignor to Reo Car Co., Lansing, Mich., a Corporation of Michigan. Filed Dec. 21, 1905. Serial No. 292,710.

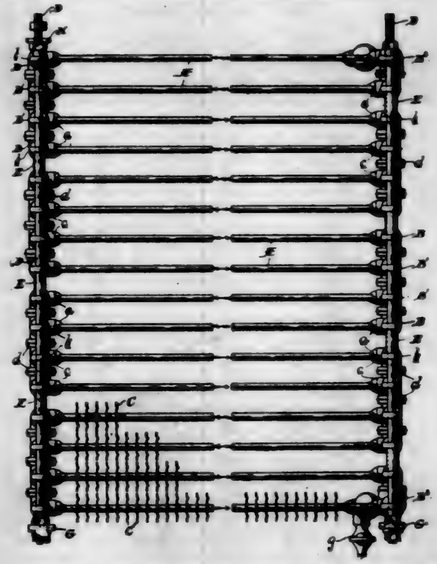

Claim.—1. A sectional cooler composed of a vertical series of horizontally arranged sections each consisting of a plurality of tubes and two tubular headers transversely uniting them at their opposite ends, the tubes being flattened between their ends in the horizontal plane of the section and the ends thereof being expanded and forming nipples of circular cross section and the headers being formed with corresponding lateral openings adapted to receive said nipples and form therewith the connection with the tubes, the sections being connected into a circulatory system by means of vertical connections between the headers.

2. A sectional cooler composed of a vertical series of horizontally arranged sections, each consisting of a plurality of tubes and two tubular headers transversely connecting the tubes at their opposite ends, said headers provided midway their length with apertured bosses adapted to connect the header in vertical alinement with the headers of adjacent sections, the header at one end provided with two such bosses on opposite sides adapting the sections to be united in pairs forming units.

3. A cooler composed of a vertical series of horizontally arranged sections each consisting of a plurality of tubes and cast tubular headers transversely connecting the tubes together at their opposite ends, said headers formed with closed ends provided with flattened ears for the reception of tie rods and with apertured bosses midway of their length adapted to connect the header with the header of an adjacent section or sections in vertical alinement therewith.

4. A cooler composed of a vertical series of units, each composed of a plurality of like superposed sections, each section consisting of a plurality of tubes and two headers transversely uniting the opposite ends of said tubes upon a horizontal plane, the headers of the sections being provided upon the adjacent faces midway of their length with apertured bosses adapted to connect and support the headers in vertical alinement with each other.

5. A cooler composed of a vertical series of units each composed of a plurality of superposed sections each section composed of a plurality of tubes extending in a horizontal plane and two cast headers transversely uniting the same and formed with apertured ears at their opposite ends and with connecting bosses midway of their length whereby the units are alternately united together at opposite ends in series with each other and the tubes of each unit are united together in parallel with each other, tie rods passing through the ears of the headers and spacing thimbles interposed upon the tie rods in the open spaces between the units.

6. A cooler composed of a vertical series of units each composed of a plurality of superposed sections, each section composed of a plurality of flattened tubes extending in a horizontal plane and two tubular headers transversely uniting the same at opposite ends, said headers provided with closed ends terminating in flattened ears and with connecting bosses midway of their length whereby the units are connected in vertical series with each other and with the tubes of each unit in parallel, vertical tie rods passing through the ears of the headers and adapted to clamp the sections together, spacing thimbles upon the tie rods in the open spaces between the units, and fins extending across the tubes of each section and common to all the tubes thereof.

7. A cooler composed of a vertical series of units each composed of two superposed sections each consisting of a series of flattened tubes formed with ends of circular cross-section and two cast headers transversely connecting the opposite ends of the tubes upon a horizontal plane, the headers being formed with ears at the ends and with connecting bosses, the unit being formed by the headers at each end being connected together midway of their length by means of connecting bosses formed upon their adjacent faces and the units being connected together in series with each other by means of like connecting bosses formed on adjacent headers of the units, tie rods passing through the ears of the headers, spacing thimbles upon the tie rods in the open spaces between the units, fins extending in one piece across the tubes of each section and provided with flanged openings for the passage of the tubes therethrough and inlet and outlet arms integrally formed with the terminal headers and extending in horizontal planes.

851,845. UNIVERSAL JOINT. ABRAHAM VANDERBEEK, Hartford, Conn. Filed Aug. 11, 1905. Serial No. 273,723.

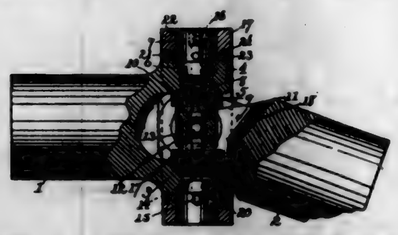

Claim.—1. A pair of bifurcated stems the forks of which have openings with beveled seats, means for pivotally uniting the stems and including pins having beveled surfaces to fit said beveled seats, and means for drawing said pins to said beveled seats and to secure them against turning movement within the stems.

2. A pair of bifurcated stems, pins removably secured to said stems and located in the same plane, and means including a binding member bearing directly upon said pins and surrounding the bifurcated ends of the stems for pivotally uniting them.

3. A pair of bifurcated stems, pins removably secured to said bifurcated ends and located in the same plane, and a solid binding member surrounding the bifurcated ends and pivoted directly on said pins.

4. A pair of bifurcated stems, pins removably secured to each of the branches of said stems, a supporting member borne on the inner ends of said pins, and a solid binding member surrounding said bifurcated ends and pivoted on said pins.

5. In a universal joint, in combination, a pair of shanks each provided with fork members, pins removably secured in the same plane in the branches of said fork members and projecting beyond the outer surfaces thereof, and a ring surrounding said branches and pivoted directly upon said pins.

6. In a universal joint, in combination, a pair of members united to swing in transverse planes, pins removably secured in the same plane to said members and included in the pivotal connecting means, and a ring formed of a single piece extending about the members and bearing directly upon said pins.

7. In a universal joint, in combination, two members united to swing in transverse planes, a block having an oil chamber and forming a portion of the pivotal connecting means, pins projecting from said members into the block and each having an oil passage communicating with the oil chamber and terminating at the bearing surface of the pin.

8. In a universal joint, in combination, a pair of shanks each provided with fork members, pins secured in the fork members and forming a part of the pivot connection and having oil passages extending from the inner ends of the pins to the bearing surfaces at the sides, a block pivotally united to the pins and having an oil chamber communicating with the oil passages therein, and a ring extending about the fork members and pivotally united to said pins.

9. In a universal joint, in combination, a pair of shanks each provided with fork members, a block forming a part of the pivotal connection between said members and having an oil chamber, pins extending from the fork members into said block and having oil passages extending lengthwise along the pins and out to the bearing surface at the side thereof, one of said pins having an oil passage extending from end to end thereof, an oil cap for the mouth of said opening, and a ring extending about the fork members and pivotally united to the pins.

10. In a universal joint, in combination, a pair of shanks each provided with fork members, pins projecting inward from the fork members and having threaded surfaces, nuts located on said threaded surfaces at the inner sides of the fork members, and a block pivoted on the ends of said pins beyond the nuts.

11. In a universal joint, in combination, a pair of shanks each provided with fork members, pins projecting inward from the fork members and having threaded surfaces and oil passages extending from the inner end to the bearing surfaces of the pins, lock nuts located inside of the forks on the threaded surfaces of the pins, and a block forming a part of said pivotal connection and having an oil chamber communicating with the oil passages in the pins.

12. In a universal joint, in combination, a pair of shanks each provided with fork members, pins united to the fork members by interengaging screw threads and having on the projecting ends screw threads of different form, said pins having oil passages extending from the inner ends to the bearing surfaces on the sides, a lock nut secured to each pin inside of the forks, a block pivotally united to the inner ends of the pins and having an oil chamber communicating with the oil passages therein, and a ring surrounding the fork members and pivotally united to said pins.

13. In a universal joint, in combination, a pair of shanks each provided with fork members that have threaded openings with beveled surfaces, pins projecting from the fork members and having threaded and beveled surfaces fitting the threaded and beveled surfaces of said openings and having oil passages from the inner ends to the bearing surfaces, a block pivotally united to said pins and having an oil chamber communicating with the oil passages in the pins, and a ring surrounding the fork members and pivotally mounted on said pins.

14. In a universal joint, in combination, a pair of shanks each provided with fork members, means for pivotally uniting the fork members and including pins projecting from the outer surfaces thereof, and a ring pivotally mounted on said pins and surrounding the fork members, and a dust cap located between the bearing surfaces of the fork members and said ring.

15. In a universal joint, in combination, a pair of members pivotally united to swing in transverse planes, a block having an oil chamber and forming a part of said pivotal connection, a pivot pin projecting into said block and forming part of the pivotal connection, and an oil retaining washer for the chamber in said block, said washer being located to prevent escape of oil from said chamber around said pin.

16. In a universal joint, in combination with two parts to be pivotally united, pins projecting from the parts and forming a part of said pivotal connection and having oil passages extending to the bearing surfaces of the pins, a block having an oil chamber communicating with said passages and pivotally united to said pins, and a packing for the joint between said block and the ends of the pins.

17. In a universal joint, in combination, a pair of shanks each provided with fork members, hardened pins projecting from the fork members and removably secured thereto, and a ring extending about the fork members and pivoted directly upon said pins.

18. A pair of bifurcated stems, pins removably secured to the branches of said stems and projecting on opposite sides thereof, means for securing the pins, a ring surrounding the forks and pivoted on said pins, and a block pivoted on the inner ends of said pins between the forks.

19. In a universal joint, in combination, a pair of shanks each provided with fork members and an opening forming a beveled seat for a pin, pins projecting inward from the fork members and having threaded surfaces, and also beveled surfaces fitting the seats in the fork members, nuts located on said threaded surfaces at the inner sides of the fork members, and a block pivoted on the ends of said pins beyond the nuts.

20. A pair of bifurcated stems including a fork having an opening with a beveled seat, means for pivotally uniting the stems and including a pin having a beveled surface to fit said beveled seat, and means for drawing said pin to said beveled seat and to secure it against turning movement within the stem.

851,846. WINDMILL-REGULATOR. JAMES B. VAIL, Weston, Mich. Filed June 28, 1906. Serial No. 323,800.

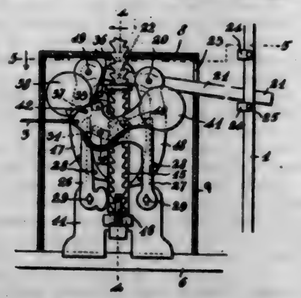

Claim.—1. In a windmill regulator, the combination with a windmill controlling element carrying a double rack bar, and a reciprocating pump-rod having adjustable stops, of a lever actuated by said pump-rod and stops, pawls carried by said lever to coact with said double rack, means for holding said prawls out of engagement with said rack, a cam for operating said holding means, an actuating lever for said cam having a loose connection therewith, and means for operating said actuating lever.

2. In a windmill regulator, the combination with a windmill controlling element carrying a double rack-bar, and a reciprocating pump-rod, of a lever actuated by said pump-rod, pawls carried by said lever to coact with said double rack, means for holding said pawls out of engagement with said rack, a cam for operating said holding means, an actuating lever for said cam having a loose connection therewith, and means for operating said actuating lever.

3. In a windmill regulator, the combination with a windmill controlling element carrying a double rack-bar, and a reciprocating pump-rod, of a lever actuated by said pump-rod, pawls carried by said lever to coact with said double rack, means for holding said pawls out of engagement with said rack, a cam for operating said holding means, an actuating lever for said cam having a loose connection therewith, a controller or trip-lever for operating said cam actuating lever and having a loose connection therewith, and a connection for operating said controller or trip-lever, substantially as described.

4. In a device of the character described, a double rack, a lever, pawls upon said lever for engagement with said rack, levers for holding said pawls out of engagement with said rack, and a cam for controlling said last-mentioned levers.

5. In a device of the character described, a double rack, a lever, pawls upon said lever for engagement with said rack, levers for holding said pawls out of engagement with said rack, a cam for actuating the last-mentioned levers, a cam actuating lever having a loose connection with said cam, and a trip or controlling lever having a loose connection with said cam actuating lever.

851,847. TYPE-WRITING MACHINE. CHARLES W. WALKER, Bridgeport, Conn., assignor to Yost Writing Machine Company, Ilion, N. Y., a Corporation of New York. Filed Oct. 23, 1902. Serial No. 128,470.

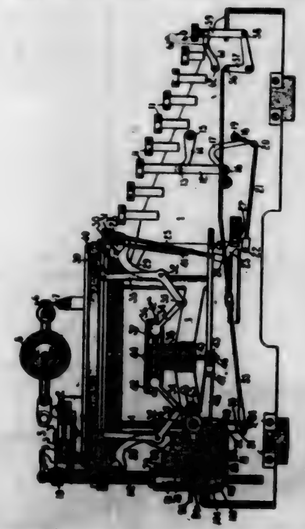

Claim.—1. In escapement mechanism for type-writing machines, the combination of an escapement wheel having a series of escapement holes located inside of the periphery thereof, and an escapement device co-operating therewith.

2. In carriage feed mechanism for type-writing machines, the combination of an escapement wheel having a series of circularly arranged escapement apertures extending therethrough, each aperture having a wall that entirely surrounds it, and an escapement device that co-operates with said wheel.

3. In a typewriting machine, the combination of a carriage, an escapement wheel operatively connected thereto, said escapement wheel having a series of inclosed escapement openings therein that are spaced at equal distances apart, and feed dogs which co-operate with said escapement wheel at the escapement openings therein.

4. In a typewriting machine, the combination of a carriage, an escapement disk operatively connected thereto, said escapement disk having a circular series of escapement apertures located inside of the periphery thereof, and feed dogs which co-operate with said escapement disk at the escapement openings therein.

5. In carriage escapement mechanism for typewriting machines, the combination of an escapement wheel having a series of round escapement openings therein, and feed dogs which co-operate with said escapement wheel at said escapement openings.

6. In a typewriting machine, the combination of a carriage, an escapement disk operatively connected thereto, said disk having a circular series of round openings located within the periphery thereof, and feed dogs which co-operate with said escapement disk and are adapted to extend into the openings therein.

7. In a typewriting machine, the combination of a carriage, a removable escapement disk operatively connected thereto, said disk having a circular series of round openings located within the periphery thereof, and feed dogs which co-operate with said escapement disk and are adapted to extend from opposite directions into the openings therein.

8. In carriage feed mechanism for typewriting machines, the combination of a feed wheel having a series of openings therein located within the periphery of said feed wheel and feed dogs that extend from opposite directions transverse of the plane of the feed wheel and which are adapted to be alternately projected into the openings therein.

9. In a typewriting machine, the combination of a carriage, an escapement wheel operatively connected thereto and having a circular series of openings that are located within the periphery of said wheel, a loose feed dog that is located to one side of the plane of said wheel, a fixed dog that is located on the other side thereof, and means for moving said dogs alternately into and out of the openings in the escapement wheel.

10. In a typewriting machine, the combination of a detachable escapement wheel having a circular series of feeding openings located within the periphery of said wheel, a co-operating fixed dog or detent, a co-operating loose or stepping dog, adjustable means for limiting the throw of the loose dog, and means for affording the substitution of one escapement wheel for another, whereby an escapement wheel with one character of spacing may be replaced by an escapement wheel with a different character of spacing.

11. In carriage escapement mechanism for typewriting machines, the combination of an escapement wheel having a series of openings located within the periphery of said wheel and co-operating feed or escapement dogs, the ends of which are directed toward each other and toward the interposed escapement wheel, means for vibrating said dogs in the directions in which they are directed, and means for affording an independent vibration of one of said dogs.

12. In a carriage escapement mechanism for typewriting machines, the combination of an escapement wheel having a circular series of escapement openings within the periphery thereof, a dog rocker, a fast dog or detent and a loose stepping dog carried thereby, the said dogs projecting toward each other and adapted to pass into the escapement opening from opposite sides of the wheel, the loose stepping dog being mounted to swing independently of its rocker in a plane that is at substantially right angles to the plane of the escapement wheel, the loose dog being moved to normal position in the last mentioned direction by the escapement wheel.

13. In a carriage escapement mechanism for typewriting machines, the combination of an escapement wheel having a series of openings therein, which escapement openings are located within the periphery of said wheel, a dog rocker, a fast dog and a loose dog carried thereby, the loose dog being mounted to swing independently of its rocker in a plane that is substantially at right angles to the plane of the escapement wheel, the loose dog being moved to normal position in the last mentioned direction by the escapement wheel.

14. In a carriage escapement mechanism for typewriting machines, the combination of an escapement wheel having a circular series of escapement openings located within the periphery thereof, a dog rocker, a fast dog and a loose dog carried by said rocker and projecting toward each other and toward the interposed escapement wheel, the said loose dog being mounted to swing independently of its rocker in a plane that is substantially at right angles to the plane of the escapement wheel, the loose dog being moved to normal position in the last mentioned direction by the escapement wheel.

15. In a typewriting machine, the combination of a carriage, a horizontally disposed escapement wheel operatively connected thereto, a dog rocker which has a horizontal pivot and vertically disposed feed dogs that are carried by said dog rocker and co-operate with the escapement wheel, and which are located on opposite sides of the horizontal plane in which the escapement wheel is situated, one of said dogs being a loose stepping dog that moves on a horizontal pivot which extends at right angles to the pivot of the dog rocker and is parallel to the plane of the escapement wheel.

16. In a typewriting machine, the combination of an escapement wheel, a co-operating fixed dog, a co-operating substantially L-shaped loose stepping dog, one arm of which constitutes a pivot for the dog, whereas the other arm constitutes the dog proper, said dogs being oppositely disposed and projecting endwise toward the interposed escapement wheel.

17. In a typewriting machine, the combination of an escapement wheel, a dog carrier, a fixed dog adjustably secured to said dog carrier, and an oppositely disposed loose dog, said dogs being directed toward each other and toward the interposed escapement wheel.

18. In a typewriting machine, the combination of a carriage, a horizontally disposed escapement wheel with escapement openings within the periphery thereof, a dog rocker, and oppositely disposed vertically arranged feed dogs carried by said rocker, and one of which is a pivoted loose dog with the pivot thereof extending fore and aft of the machine.

19. In a typewriting machine, the combination of a carriage, a horizontally disposed escapement wheel having a circular series of openings arranged within the periphery of the wheel, a dog rocker and oppositely disposed vertically arranged feed dogs carried by said rocker and extending on opposite sides of the escapement wheel, and one of which is a pivoted loose dog with the pivot thereof extending fore and aft of the machine.

20. In a typewriting machine, the combination of an escapement wheel, a carrier therefor and to which said wheel is firmly attached and removably secured, roller bearings for said carrier, and feed dogs which co-operate with said escapement wheel.

21. In a typewriting machine, the combination of an escapement wheel having a circular series of openings located within the periphery of said wheel, a carrier to which said escapement wheel is removably secured, and oppositely disposed feed dogs which co-operate with the escapement wheel.

22. In a typewriting machine, the combination of an escapement wheel having a circular series of round openings located within the periphery of said wheel, a carrier to which said escapement wheel is removably secured, roller bearings for said carrier, and oppositely disposed feed dogs which project toward each other and toward the interposed escapement wheel.

23. In a typewriting machine, the combination of an escapement wheel having a circular series of openings therein, and co-operating feed dogs, one of which is a loose dog that is vibrated into and out of said openings and first contacts with a wall of an opening nearest the periphery of the wheel and gradually moves along said wall toward the center of the wheel, as the wheel is brought to rest by said loose dog.

24. In a typewriting machine, the combination of a carriage, an escapement wheel operatively connected thereto

and having a circular series of round openings therein, and co-operating feed dogs located upon opposite sides of said wheel and projecting toward each other and toward the interposed escapement wheel, the end of one dog extending toward the end of the other when the parts are in the normal positions and one being a loose dog that is adapted to vibrate transversely of the plane of the escapement wheel in the movement of the dog from one opening toward the next opening in the wheel.

25. In a typewriting machine, the combination of a carriage, an escapement wheel, operatively connected thereto and having a circular series of round openings therein, a dog carrier, feed dogs carried by said carrier and located upon opposite sides of said wheel and projecting toward each other and toward the interposed escapement wheel, the end of one dog extending toward the end of the other when the parts are in the normal positions, and one being a loose dog that is adapted to vibrate in a direction transverse to the plane of the escapement wheel in the movement of the dog from one opening toward the next opening in the wheel, and means for vibrating said dog carrier so as to move the dogs in the general direction in which they extend when in the normal positions.

26. In a typewriting machine, the combination of a carriage, a horizontally disposed escapement wheel operatively connected thereto and having a circular series of round openings therein, a horizontally pivoted dog carrier, vertically disposed feed dogs carried by said carrier and located upon opposite sides of said wheel and projecting toward each other and toward the interposed escapement wheel, the end of one dog extending toward the end of the other when the parts are in the normal positions and one being a horizontally pivoted loose dog that is adapted to vibrate in a direction transverse to the plane of the escapement wheel in the movement of the dog from one opening toward the next opening in the wheel, and means for vibrating said dog carrier on its horizontal pivot so as to move the dogs in a general vertical direction and in the direction in which they extend when in the normal position.

27. In a typewriting machine, the combination of a carriage, an escapement wheel operatively connected thereto and having a circular series of openings therein, a dog carrier, a fixed dog adjustably secured to said carrier, a loose substantially L-shaped dog, one arm of which constitutes a pivot that the dog swings on, whereas the other arm constitutes the dog proper, said dogs being on opposite sides of the escapement wheel and directed toward each other and toward the interposed escapement wheel, and means for vibrating said carrier so as to move the dogs at substantially right angles to the plane of the escapement wheel.

28. In a typewriting machine, the combination of a carriage, an escapement wheel operatively connected thereto and having a circular series of openings therein, a dog carrier, a fixed dog carried by said carrier, a loose substantially L-shaped dog, one arm of which constitutes a pivot that the dog swings on whereas the other arm constitutes the dog proper, a spring that surrounds the pivot arm of said loose dog and tends to maintain it out of alinement with the fixed dog and to swing it in a direction transverse to the plane of the escapement wheel, said dogs being on opposite sides of the escapement wheel and directed toward each other and toward the interposed escapement wheel, and means for vibrating said carrier so as to move the dogs at substantially right angles to the plane of the escapement wheel.

29. In a carriage escapement mechanism for typewriting machines, the combination of a dog rocker, a fixed dog carried thereby, an L-shaped loose stepping dog, one arm of which constitutes a pivot on which said dog swings whereas the other arm constitutes the loose dog proper, a spring connected to said pivot arm of the loose dog and to dog rocker, means for adjusting the tension of said spring, and a co-operating escapement wheel.

30. The combination with a dog rocker, of a housing secured thereto, a worm mounted in bearings in said housing, a co-operating worm wheel contained within said housing, and a coiled spring which is connected at one end to the worm wheel and at the opposite end to a fixed portion of the machine.

31. The combination with a dog rocker and rock shaft therefor, of a housing secured to said dog rocker, a worm mounted in bearings in said housing, a co-operating worm wheel contained within said housing and loosely mounted on the shaft of the dog rocker, and a coiled spring which surrounds said shaft and is connected at one end to the worm wheel and at the opposite end to a fixed portion of the machine.

32. In escapement mechanism for typewriting machines, the combination of a dog rocker, a bifurcated plate carried by said dog rocker, means for adjusting said plate relatively to the dog rocker, and a loose dog carried by the dog rocker and extending into the bifurcation in said plate.

33. In escapement mechanism for typewriting machines, the combination of a dog rocker, a bifurcated plate seated in a groove in said dog rocker, adjusting screws that co-operate with said plate to maintain it in said groove and to afford an adjustment of said plate relatively to the dog rocker, and a loose dog carried by the dog rocker and extending into the bifurcation in said plate and limited in its vibration by the plate.

34. In escapement mechanism for typewriting machines, the combination of a dog rocker, a bifurcated plate that is seated in a groove in said rocker, adjusting screws that project in opposite directions and bear against said plate to maintain it in its groove and to afford an adjustment thereof along its groove and relatively to the dog rocker, and an L-shaped loose dog that has one arm which extends into the bifurcation in said plate and which is limited in its movement thereby.

851,848. MATCH-MAKING MACHINE. JAMES H. WEAVER and ISAAC R. LAUX, Wadsworth, Ohio, assignors to Ohio Match Company, Wadsworth, Ohio, a Corporation of Ohio. Filed Sept. 12, 1906. Serial No. 334,303.

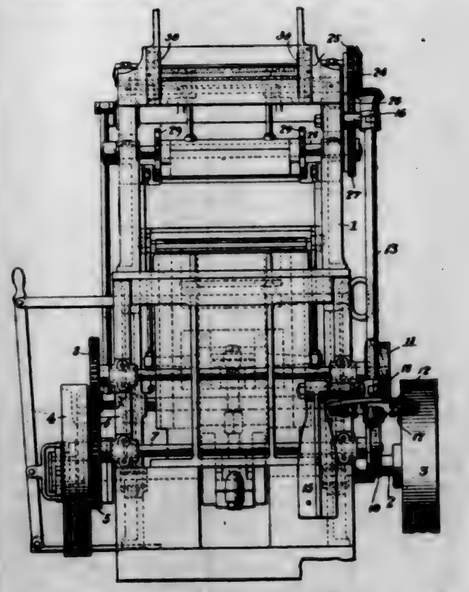

Claim.—1. In a match making machine, an endless chain of jointed plates, a punching-out mechanism, and a splint-cutting and filling-in mechanism, combined with a rotary pin-disk having pins on one face equal in number to the number of rows of holes in a plate, and a pin on the opposite face arranged to come into position upon the approach of a plate-joint, and separate cams of unequal pitch arranged below and above the pin-disk and co-operating with the pins, respectively to move the endless-chain step-by-step for each row of holes in each plate and twice that distance at each joint.

2. In a match making machine, an endless chain of jointed plates, a punching-out mechanism, and a splint-cutting and filling-in mechanism, combined with a rotary pin-disk having pins on one face equal in number to the number of rows of holes in any number of plates and spaced apart in groups numerically coequal with the rows in each plate, pins on the opposite face located with reference to the joints in the plates, and separate cams of unequal pitch coöperating with the pins on the two faces of the disk and respectively controlling the movement of the chain during the passage of the plates and their joints with reference to the punching-out and filling-in mechanisms.

3. In a match making machine, an endless-chain of jointed plates, toothed racks thereon, mutilated gears engaging said racks, a punching-out mechanism and a filling-in mechanism, combined with a double rotary pin-disk, two cams coöperating with the pins on said disk periodically, and successively, and means to transmit the varied motion from the pin-disk to the mutilated gears.

851,849. METHOD OF FORMING MOLDS. JOHN F. WILLEY, Versailles, Ill. Filed Feb. 18, 1907. Serial No. 357,913.

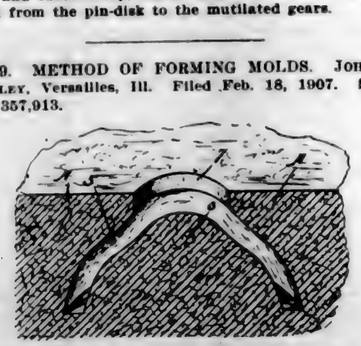

Claim.—The herein described method of forming a mold for tanks consisting of describing a continuous line upon the earth, inclosing an area having the shape desired for the foot piece of the tank to be formed, then excavating the earth from this area to a depth equal to the desired thickness of said foot piece, then digging downwardly and outwardly to form a continuous trench and then rounding and smoothing the earth within the inclosure of the trench.

851,850. JOURNAL-BOX LID. LACEY Y. WILLIAMS and FRANK B. HARRISON, Toledo, Ohio. Filed Sept. 27, 1906. Serial No. 336,467.

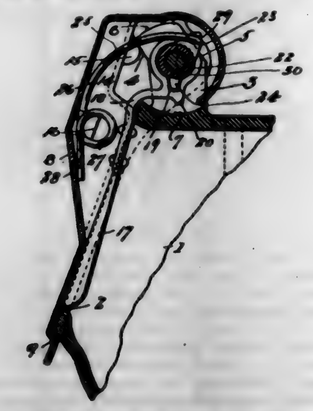

Claim.—1. The combination with a journal box having an opening at the end and cam lugs adjacent the edge of the opening, of an outer lid provided with lugs upon its inner surface to engage the cam lugs of the box; an inner lid provided with a lever mechanism; means for pivoting the two lids; and a spring secured to the outer lid and adapted to operate the lever mechanism of the inner lid and also force both lids to their seats.

2. The combination with a journal box having an opening and perforated lugs at the edge of the opening, of an outer lid having flanges with slots therethrough, and lugs upon its inner surface; a bolt passed through the lugs of the box and the slots of the outer lid; an inner lid; and a spring in connection with both the lids for holding the same to their seats.

3. The combination with a journal box having an opening and perforated cam lugs adjacent the opening, of an outer lid having side flanges with slots, lugs upon its inner surface, and trunnions upon its inner surface; an inner lid with hinges each provided at one end with an opening and a recess therein; a perforated sleeve with three lugs; a bolt; and a spring having coils located upon the aforesaid trunnions and its loop end engaging one of the lugs upon the sleeve.

4. The combination with a journal box having an opening and perforated lugs at the edge of the opening, of an outer lid having flanges with slots therethrough, and a recess within the body thereof; a spring secured within the recess of the lid; a bolt passed through the lugs of the box and the slots in the flanges of the lid; an inner lid; and means in connection with the inner lid adapted to be engaged by the spring.

5. The combination with a journal box having an opening and perforated cam lugs, of an outer lid having flanges with slots, cam lugs, and a recess within the body thereof; a spring secured within the recess of the lid; a bolt passed through the cam lugs of the box and the slots in the flanges of the lid; an inner lid; and means in connection with the inner lid adapted to be engaged by the spring.

6. The combination with a journal box having an opening and perforated cam lugs, of an outer lid with perforated flanges, a recess, and cam lugs; a spring secured within the recess of the lid; a bolt; an inner lid; and means in connection with the bolt adapted to be engaged by the spring.

7. The combination with a journal box having an opening, of two lids; means for pivoting the lids at the edge of the opening; a U-shaped spring secured to the inner surface of the outer lid; and means in connection with the inner lid to engage the spring.

8. The combination with a journal box having an opening, of an outer lid and an inner lid; means for pivoting the lids to the edge of the opening; a U-shaped spring having coils near its ends located upon trunnions which are at the inner surface of the outer lid, and a loop end; and means in connection with the inner lid adapted to be engaged by the said loop end of the spring.

9. The combination with a journal box having an opening, of an outer lid with a curved top edge; an inner lid with hinges having lugs adapted to be engaged by the top edge of the outer lid when opened; and a bolt for pivoting the lids to the box.

10. The combination with a journal box having an opening, of outer and inner lids; and means for hinging the lids to the edge of the opening; the top edge of the outer lid being adapted to engage and open said inner lid when the outer lid is swung upon its hinge.

11. The combination with a journal box having an opening and perforated lugs, of an outer lid with a recess in the body thereof, and fixed cam lugs; a spring within said recess for forcing the outer lid to its seat; an inner lid; and means for pivoting the outer lid to the lugs upon the box.

12. The combination with a journal box having an opening, of an outer lid; an inner lid; means for pivoting the lids to the edge of the opening; and a spring in positive engagement with both lids which forces them to their seats.

13. The combination with a journal box having an opening and perforated lugs, of an outer lid with flanges provided with slots; an inner lid; a bolt for pivoting the

outer lid to the box lugs; and a spring in connection with both lids which forces them to their seats; cam mechanism being provided between the outer lid and the box lugs.

14. The combination with a journal box having an opening, of two lids; means for hinging the lids to the box: and spring mechanism upon the inner surface of the outer lid and positively engaging each lid and forcing both lids to their seats.

15. The combination with a journal box having an opening, of an outer lid provided with a recess in the body thereof; an inner lid; means for hinging the lids to the box; and a spring secured within the recess of the outer lid and positively engaging both lids and forcing the same to their seats.

851,851. HEAD-REST. BENJAMIN K. ACKLEY, Chicago, Ill. Filed July 5, 1906. Serial No. 324,820.

Claim.—The combination with a chair and a head rest designed to be detachably secured thereto, of a U shaped clamping element carried by said chair and having its major portion spaced away therefrom, whereby an inclosed vertical recess is afforded, and a clamping element carried by said head rest, said last named clamping element consisting of a strap having its lower end bent upon itself to afford a resilient member which frictionally engages the inner surface of said first named clamping member when inclosed therein and which in a reversed position engages the major portion of said first named clamping member as a hook.

851,852. GLUING-MACHINE. JOSEPH ALGER, Brockton, Mass., assignor to himself and Arthur H. Alger, jointly, Brockton, Mass. Filed Nov. 19, 1906. Serial No. 343,966.

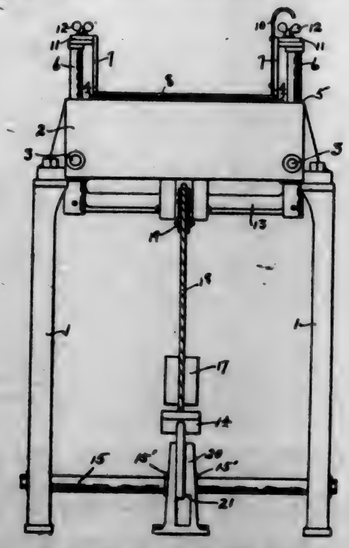

Claim.—1. In a device for presenting glue to a stencil, a receptacle for holding liquid glue, a glue presenting plate having substantial areas of glue presenting surface, drains of minor area therein for withdrawing an excess of deposit on said areas, and means for causing the submersion and emersion of said plate in said receptacle.

2. In a device for presenting glue to a stencil, a reciprocating frame mounted to be moved relative thereto, a glue presenting plate mounted on said frame and having substantial areas of glue presenting surface and drains of minor area therein for withdrawing any excess of deposit on said areas, and a controlling lever operatively connected to said frame for the reciprocation thereof and a receptacle for holding liquid glue supported in the path of reciprocation of said plate.

3. In a device for presenting glue to a stencil, a steam jacket, a reciprocating frame guided therein, a glue presenting plate mounted on said frame and having substantial areas of glue presenting surface and drains of minor area therein, a controlling lever operatively connected to said frame for the reciprocation thereof, and a receptacle for holding liquid glue mounted in said jacket in the path of reciprocation of said plate.

851,853. LOOM-SHUTTLE. CONSTANT AILLERY, New Bedford, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Apr. 27, 1906. Serial No. 313,955.

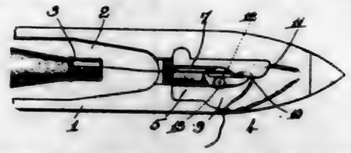

Claim.—1. In a loom-shuttle having a delivery-eye and adapted to contain a supply of filling, means to direct the filling-thread to the eye, a thread-guide around which the thread passes to the delivery-eye, and a covering of friction producing material surrounding and normally immovable on said guide and acting upon the thread.

2. In a loom-shuttle having a side delivery-eye and a longitudinal thread-passage, a fixed thread-guide around which the filling-thread passes as it travels from said passage of the delivery-eye, and a covering of friction producing material mounted on and normally held from movement relative to said guide to engage the thread, said covering being adapted to be turned on the guide to present a fresh engaging surface when desired.

851,854. WATCHMAKER'S TOOL. WILLIAM ARTHUR, Newark, N. J. Filed Nov. 27, 1905. Serial No. 289,153.

Claim.—An improved watchmakers' tool consisting of a flat annulus forming a base and having an annular series of threaded holes, posts or standards having lower ends threaded to engage said holes each of said posts having a shoulder *o* between its ends and having the portion above said shoulders reduced in diameter, the reduced portions of the several posts being of unequal diameter, each of said posts having in its top an opening to accommodate the winding and setting stem of a watch, said openings being of different sizes, and said shoulders serving as seats for the internal shoulders of winding stem spring.

851,855. AUTOMATIC TYPE-CASTING MACHINE. LINN B. BENTON, New Brighton, N. Y. Filed Oct. 5, 1904. Serial No. 227,206.

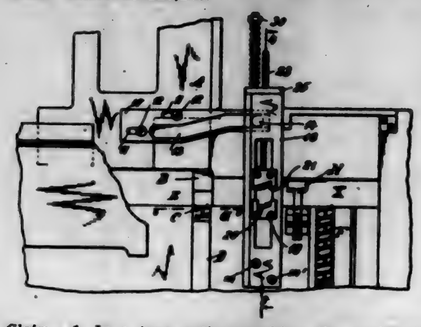

Claim.—1. In a type-casting machine, the combination with a mold and a delivery passage, of means arranged intermediate the same adapted to remove angular "cuttings" from the shoulder of the type.

2. In a type-casting machine, the combination with a mold, a cheek piece and means for delivering type to one end of said cheek piece, carrying it to the other end thereof and discharging it into a delivery passage, of means arranged intermediate the ends of said cheek piece adapted to remove angular "cuttings" from the shoulder of the type.

3. In a type-casting machine, the combination with a mold, a body piece, a type-vise, a cheek piece and a delivery passage, of means arranged intermediate the ends of said cheek piece and controlled and actuated by the movement of the type-vise, and adapted to remove angular "cuttings" from the shoulders of the type as it passes along said cheek piece.

4. In a type-casting machine, the combination with a mold and a delivery passage, of means arranged intermediate the same adapted to remove angular "cuttings" from the shoulders of the type, which "cuttings" will have their "cutting lines" substantially parallel to the "font slant."

5. In a type-casting machine, the combination with a mold, a delivery-passage and means for conveying type from the mold to the delivery passage, of means arranged intermediate the mold and delivery passage and adapted to remove angular "cuttings" from the shoulders of the type—the last mentioned means being actuated and controlled by the same actuating means which produces and controls the aforesaid movement of the type.

6. In a type-casting machine, the combination with knives adapted to remove angular "cuttings" from the shoulder of the type, of means for adjusting one of said knives relatively to the other.

7. In a type-casting machine, knives adapted to remove angular "cuttings" from the shoulder of the type, and adapted to be detached at will.

8. In a machine for manufacturing type, the combination of a support for the type, means for feeding said type along said support, and knives arranged in the path of travel of said type and adapted to remove angular cuttings from the shoulders of the type as they are fed past said knives.

9. In a machine for manufacturing type, the combination of a support for the type, means for feeding said type along said support, and knives arranged in the path of travel of said type and adapted at once to remove angular cuttings from the shoulders and to undercut projecting portions of the type as they are fed past said knives.

10. In a machine for manufacturing type, the combination with a knife, of means for feeding the type past the knives to bring a portion of the shoulder of the type into contact with the cutting edges of the knife.

11. In a machine for manufacturing type, the combination with two oppositely arranged knives having their cutting edges separated by a space, of means for feeding type faces past the knives to bring portions of the shoulder of the type faces arranged on opposite edges of the shoulders into contact with the cutting edges of the knives.

12. In a machine for manufacturing type, the combination of a knife, means for vertically reciprocating said knife and means for feeding a type past said knife to bring a portion of its shoulder into contact with the cutting edge of the knife and during the vertical movement thereof.

13. In a machine for manufacturing type, the combination of two knives oppositely arranged and separated by a space, means for varying said space, means for vertically reciprocating said knives, and means for feeding type past said knives in a substantially horizontal direction to bring portions of the shoulders thereof into contact with the cutting edges of the knives.

14. In a type casting machine, the combination of a table, vertically movable knives, a cam roller rigidly connected and movable with said knives, a cam plate provided with a cam race adapted by its movement to reciprocate said roller and knives, and means for moving said cam plate and simultaneously moving a type over the table past said knives.

851,856. MEANS FOR NULLIFYING INDUCTIVE INTERFERENCE BETWEEN PARALLEL CIRCUITS. EDWARD BLAKENEY, Ossining, N. Y., assignor to American Telephone and Telegraph Company, a Corporation of New York. Filed Jan. 7, 1907. Serial No. 351,245.

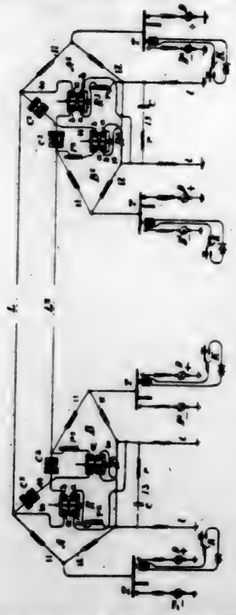

Claim.—1. The method of nullifying inductive disturbance of one telegraph line upon a receiving instrument located in another line at a point distant from the point of transmission of an inducing current in the first-mentioned line, consisting in causing said inducing current in the first line to act upon said receiving instrument in the second line in a different manner from the induced current in said second line.

2. The method of nullifying inductive disturbances between signaling conductors, said disturbances arising from the operation of a transmitting instrument at one station and affecting a receiving instrument at a distant station, which consists in causing the inducing current in one conductor to act upon the distant receiving instrument of an-

other conductor in the opposite direction from the induced current in said distant instrument.

3. The method of neutralizing the effect of mutual induction between two multiplex telegraph lines manifested in their receiving instruments which are distant from the point of transmission of an inducing current, consisting in dividing the inducing current part to said distant receiving instrument of one line and part to said distant receiving instrument of the other line, and causing said current to act differentially upon said instruments.

4. The combination with adjacent signaling lines each having a receiving instrument, of a winding located upon a receiving instrument, and being connected only with a companion line.

5. The combination with adjacent signaling lines each having a receiving instrument, of a winding located upon a receiving instrument and being connected only with a companion line, and means for causing the current flowing through said winding from the companion line to act momentarily upon the receiving instrument.

6. A telegraph system comprising a plurality of adjacent lines each provided with terminal stations, receiving instruments situated at the stations and each having an operating winding included in the line to which it belongs, and a second winding for each receiving instrument independent of its operating winding and being connected with another of the lines.

7. A telegraph system comprising a plurality of adjacent lines each provided with terminal stations, receiving instruments situated at the stations and each having an operating winding included in the line to which it belongs, a second winding for each receiving instrument independent of its operating winding and being connected with another of the lines, and condensers included in the connections of the second windings, substantially as described.

8. A multiplex telegraph system comprising adjacent main lines provided with terminal stations, an artificial line associated with each main line at each terminal station, a receiving instrument bridged between each artificial line and its main line, and means for applying to each receiving instrument a portion of the current flowing from the distant station of a companion line.

9. A multiplex telegraph system comprising adjacent main lines provided with terminal stations, an artificial line associated with each main line at each terminal station, a receiving instrument bridged between each artificial line and its main line, means for applying to each receiving instrument a portion of the current flowing from the distant station of a companion line, and means for controlling the rate of application of said current.

10. A multiplex telegraph system comprising adjacent main lines provided with terminal stations, an artificial line associated with each main line at each terminal station, a receiving instrument bridged between each artificial line and its main line, and a conductor connected in parallel with the bridged receiver and including a coil upon the receiving instrument at the same end of a companion line, as and for the purpose set forth.

11. A multiplex telegraph system comprising adjacent main lines provided with terminal stations, an artificial line associated with each main line at each terminal station, a receiving instrument bridged between each artificial line and its main line, a conductor connected in parallel with the bridged receiver and including a coil upon the receiving instrument at the same end of a companion line, and means for varying the distribution of current between the parallel conductors.

12. In a duplex telegraph system the combination with two main lines so situated that they may act inductively upon one another and being provided with stations arranged in pairs, said pairs including a station of each line in comparative proximity to one another, an artificial line at each station, a bridge conductor connecting each artificial line with its main line, a relay having a coil connected in the bridge, a conductor connected to the main and artificial lines in parallel with the bridge conductor, and a differential coil upon each relay included in the parallel conductor of the companion station.

13. The combination with adjacent signaling lines, one of which is provided with a receiving instrument and another with a distant transmitting instrument, of means associated with said receiving instrument and connected to the second line to receive current transmitted by the said distant transmitting instrument.

851,857. ANTISKIDDING DEVICE. JULIEN M. M. BLANCHARD, New York, N. Y. Filed Apr. 4, 1906. Serial No. 309,732.

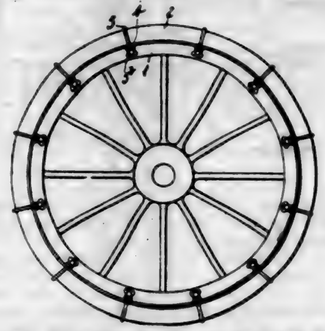

Claim.—1. An anti-skidding device for wheel tires comprising fixed abutments rigidly carried by the wheel, and a plurality of continuous resilient members connected to said abutments and extending transversely across the tread of the tire.

2. An anti-skidding device for wheel tires comprising fixed abutments rigidly carried by the wheel, and a plurality of continuous resilient members connected to said abutments and extending transversely across the tread of the tire and removable therefrom.

3. In an anti-skidding device for wheels, a wheel, a plurality of removable abutments carried thereby, a tire carried thereby, and a plurality of removable resilient devices detachably secured to said abutments and extending transversely across the face or tread of the tire and furnishing an unbroken traction grip.

851,858. WATER-TUBE MARINE BOILER. ERNST BÖTTICHER, Kiel, Germany. Filed June 25, 1906. Serial No. 323,278.

Claim.—1. In a water tube marine boiler the combination with an upper boiler, a fire grate and a plurality of lower boilers, of a plurality of tubes connecting the said lower and upper boilers, the bundles of tubes adjacent to the fire grate being alternately formed by groups of heating tubes and groups of down or water circulating tubes, substantially as and for the purpose set forth.

2. In a water tube marine boiler the combination with an upper boiler, a fire grate and a plurality of lower boilers, of a plurality of bundles of tubes connecting the lower boilers and the upper one, the bundles of tubes adjacent the fire grate being formed by alternate and adjacent bundles of heating tubes and down or water circulating tubes, while the outer bundles are completely formed by heating tubes, substantially as and for the purpose set forth.

3. In a water tube marine boiler the combination with an upper boiler, a plurality of fire-grates and a plurality of lower boilers, of bundles of tubes connecting the lower boilers and the upper one, the bundles of tubes adjacent to the middle fire grate being formed by alternating and adjacent groups of heating tubes and down or water circulating tubes, while the outer bundles are only formed by heating tubes, substantially as and for the purpose set forth.

851,859. EXTENSION-TABLE. MOSES J. BOWMAN, East Cleveland, Ohio. Filed Aug. 22, 1906. Serial No. 331,577.

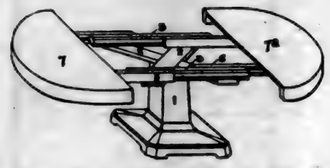

Claim.—1. In an extension table, the combination of a central support or pedestal, a pair of arms supported on top of said support or pedestal and intersecting each other at the center of the support or pedestal, a fixed rail or runner at each side of said pedestal or support and supported adjacent the outer extremities of the arms, a pair of oppositely movable table sections or end leaves, a sliding rail fixed to each section or end leaf at each side of the pedestal or support and slidably engaging the fixed rail or runner, substantially as specified.

2. In an extension table; the combination of a pair of cross arms connected at their intersection, supporting means for said arms, a pair of fixed parallel rails or runners supported by said arms on opposite sides of the table, and a pair of oppositely movable table sections, each having rails slidably engaging the fixed rails or runners, substantially as specified.

3. In an extension table, the combination of a central support or pedestal, of a pair of cross arms secured to the top of said support or pedestal, said arms diverging outwardly on opposite sides of said support or pedestal, a fixed rail or runner on each side of said support or pedestal and carried by the outer portions of the diverging arms, a pair of oppositely-movable table sections, a rail secured to each of said sections on opposite sides of the pedestal or support and slidably engaging the fixed rail or runner, and stops for limiting the movement of said sections, substantially as specified.

4. In an extension table, the combination of a pedestal, a pair of cross arms secured to the top of said pedestal, said arms diverging outwardly on opposite sides of said pedestal, a fixed rail or runner secured to the outer portions of the diverging arms on each side of the pedestal, a pair of opposite-movable table sections or end leaves, a pair of rails fixed to each section at each side thereof and engaging respectively the inner and outer surfaces of the fixed rail or runner and in sliding engagement therewith, the cross arms being extended to form a support for both the inner and outer sliding rails, substantially as specified.

5. In an extension table, the combination of a pedestal, a pair of arms secured to the top of said pedestal, said arms diverging outwardly on opposite sides of said pedestal and having their upper surfaces in the same horizontal plane, a fixed rail or runner secured to the outer portions of the diverging arms on each side of the pedestal, a pair of oppositely movable table sections or end leaves, a pair of rails fixed to each section at each side thereof and engaging respectively the inner and outer surfaces of the fixed rail and in sliding engagement therewith, the cross arms being extended to form a support for both the inner and outer sliding rails, and stops arranged to prevent the inner ends of the sliding rails from being withdrawn from the ends of the cross arms adjacent the movable section to which said rails are secured.

6. In an extension table, the combination of a pedestal, of a pair of arms supported on top of said pedestal and diverging outwardly on opposite sides thereof and having their upper surfaces in the same horizontal plane, a fixed rail or runner secured to the outer portions of the diverging arms on each side of the pedestal, a pair of oppositely-movable table sections, a pair of sliding rails secured to one of said sections and engaging the outer surfaces of the fixed rails, a pair of sliding rails secured to the other section and slidably engaging the inner surfaces of the fixed rails, said fixed and movable sliding rails being of the same vertical thickness, substantially as specified.

7. In an extension table, the combination of a central support or pedestal, of arms supported on top of said support or pedestal and projecting from opposite sides thereof, a fixed rail or runner supported by the arms on opposite sides of said support or pedestal, a pair of oppositely-movable table sections, a pair of sliding rails secured to each of said sections and slidably engaging said fixed rail or runner, a downwardly-projecting stop carried by each of said sliding rails adjacent the free ends thereof, each of said arms having a slot or groove for the passage of the stop projecting from the sliding rail which is secured to the table section more remote from such slotted arm, substantially as specified.

8. In an extension table, the combination of a pair of cross arms having divergent outer ends, means for supporting said arms, a pair of fixed parallel rails or runners supported by said arms on opposite sides of the table, a pair of oppositely movable table sections, a pair of sliding rails secured to each of said sections and slidably engaging said fixed rails or runners, substantially as specified.

851,860. ROTARY ENGINE. JOHN F. BRICE, New York, N. Y. Filed Mar. 3, 1906. Serial No. 303,963.

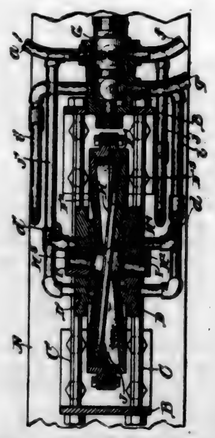

Claim.—1. The combination of a rotary casing having conical ends, a rotary disk extending diagonally across the chamber within the casing, a piston secured to the casing, supply ports communicating with the interior of the casing on opposite sides of the disk, means for controlling the flow of fluid through each port independently of the other, and ports communicating with the interior of the casing on the other side of the piston.

2. The combination of a rotary casing, a rotary disk extending diagonally across the casing and contacting with the opposite sides of the casing along radial lines, a piston extending across the casing and through the disk, two ports communicating with the interior of the casing on opposite sides of the disk and on the same side of the piston, means for controlling the flow of fluid through each port independently of the other, and ports communicating with the interior of the casing on the other side of the piston.

3. A rotary casing having conical inner sides, a disk extending diagonally across the chamber in the casing, a piston secured to the casing, two ports communicating with the interior of the casing on opposite sides of the

disk and on the same side of the piston, stationary members provided with coöperating ports, and ports communicating with the interior of the casing on the other side of the piston.

4. A rotary casing having conical inner sides, a disk extending diagonally across the chamber in the casing, a piston secured to the casing, two ports communicating with the interior of the casing on opposite sides of the disk and on the same side of the piston, two ports communicating with the interior of the casing on the other side of the piston and on opposite sides of the disk, and means for controlling the flow of fluid through each port independently of the others.

5. A rotary casing having conical inner sides, a disk extending diagonally across the chamber in the casing, a piston secured to the casing, two ports communicating with the casing on opposite sides of the disk and on the same side of the piston, two ports communicating with the interior of the casing on the other side of the piston and on opposite sides of the disk, and stationary members provided with ports coöperating with said four ports which communicate with the interior of the casing.

6. The combination of a rotary casing having conical inner sides, a disk extending diagonally across the chamber in the casing, a piston secured to the casing, supply and exhaust ports in the casing, ports with which said casing ports communicate, and means for controlling the supply and exhaust for said latter ports to drive the engine in either direction.

7. The combination of a rotary casing having conical inner sides, a disk extending diagonally across the chamber in the casing, a piston secured to the casing, supply and exhaust ports in the casing, two supply and two exhaust ports with which the casing ports communicate, and means for rendering one of the latter ports a dead port.

8. The combination of a rotary piston, a member rotating therewith and provided with supply and exhaust ports, a stationary member provided with two coöperating supply and two coöperating exhaust ports, and means for controlling said coöperating ports to drive the engine expansively in either direction.

9. The combination of a rotary piston, a member rotating therewith and provided with supply and exhaust ports, a stationary member provided with two coöperating supply ports and two coöperating exhaust ports, and means for connecting either a coöperating supply or coöperating exhaust port with the supply, closing the other of said ports, and opening the two other ports to the exhaust.

10. The combination of a rotary piston, a member rotating therewith and provided with supply and exhaust ports, a stationary member provided with two coöperating supply and two coöperating exhaust ports, means for controlling the communication of the coöperating supply and exhaust ports to drive the engine in either direction or to cause it to resist rotation.

11. The combination of a rotary piston, a member rotating therewith and provided with supply and exhaust ports, a stationary member provided with two coöperating supply and two coöperating exhaust ports, and means for controlling the communication of the coöperating supply and exhaust ports to drive the engine in either direction or to allow it to rotate with comparatively little resistance.

851,861. CASKET-LOWERING DEVICE. ALVAH W. BROWN and HERMAN P. HERST, Grand Rapids, and WILLIS O. CANOUTS, Crystal, Mich., assignors to Durfee Embalming Fluid Company, Grand Rapids, Mich., a Corporation of Michigan. Filed Jan. 2, 1907. Serial No. 350,904.

Claim.—1. In a casket-lowering device, a frame comprising end and side members, the side members being connected to the end members by universal joints.

2. In a casket-lowering device, a frame comprising end members and rotary side members, the said side members being angularly-adjustable with said end members.

3. In a casket-lowering device, a frame comprising end and side members and corner-boxes, each corner-box containing a bearing connected to the side member by a universal joint.

4. In a casket-lowering device, a frame comprising extensible end-members having a bearing in each end, and extensible side-members, the end of each side-member being connected to one of the said bearings by a universal joint.

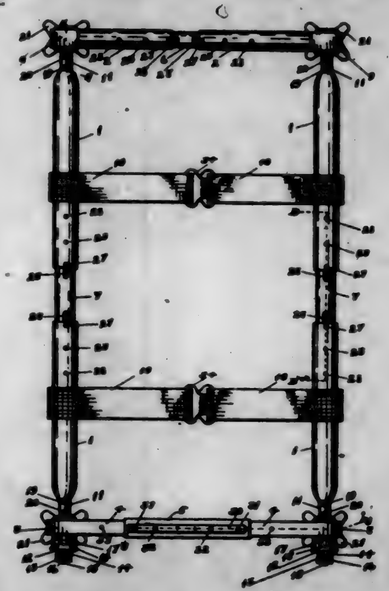

5. In a casket-lowering device, the combination of a frame, comprising extensible end-members having a bearing in each end, and extensible rotary side-members, the end of each side-member being connected to one of the said bearings by a universal joint; and driving-means for operatively connecting the said side-members.

6. In a casket-lowering device, the combination of a frame, comprising extensible end-members having a bearing in each end, and extensible rotary side-members, the end of each side-member being connected to one of the said bearings by a universal joint; driving-means for operatively connecting the bearings at one end of the frame; and a brake-mechanism co-operating with each bearing at said end, each brake-mechanism being operable independently.

7. In a casket-lowering device, the combination of a frame, comprising end-members and side-members angularly-adjustable therewith; bearings in the ends of said end-members and connected to said side-members; driving-means, located in one of the end-members of the frame, and operatively connecting the bearings at that end; and a brake-mechanism co-operating with one of the bearings at said end.

8. In a casket-lowering device, a rectangular end-member, formed in two parts connected by a sleeve and arranged to telescope; corner-boxes rigidly secured to the ends of the said end-members; anti-friction bearings contained in said corner-boxes, each bearing supporting a gear-wheel; an idler-wheel secured to each of the said parts of the end-member; a driving-chain operatively connecting said gear-wheels, said chain passing over the said idler-wheels; and a brake-mechanism in each of the said corner-boxes to control the rotation of the said bearings, each brake-mechanism comprising a disk to interiorly engage said bearing, a cap to exteriorly engage said bearing, and a nut to bring said disk and cap into frictional engagement with said bearing.

9. In a casket-lowering device, an adjustable end-member; corner-boxes at the ends of said end-members; bearings contained in said corner-boxes, each bearing supporting a gear-wheel; means for independently rotating said bearings; idler-wheels secured to said end-member; a driving-chain operatively connecting said gear-wheels, said chain passing over the said idler-wheels; and a brake-mechanism co-operating with each bearing to control its rotation, each brake-mechanism comprising two disks brought into frictional engagement with the said bearing by a nut.

10. In a casket-lowering device, an adjustable end-member; bearings at each end of said member; means for independently rotating said bearings; driving-means for keeping said bearings operatively connected, said means containing a compensating device; and a brake-mechanism co-operating with each bearing to control its rotation, each brake-mechanism consisting of two disks brought into frictional engagement with the bearing by a nut.

11. In a casket-lowering device, the combination of rotary adjustable side-members; an adjustable head-member; bearings in the ends of said head-member and connected to the said side-members by universal joints; a gear-wheel supported by each of the said bearings; a driving-chain passing over said gear-wheels and containing a compensating device for keeping said gear-wheels operatively connected; and an adjustable foot-member having bearings at each end, said bearings being connected to the side-members by universal joints.

12. In a casket-lowering device, the combination of rotary adjustable side-members; an adjustable head-member; bearings in the ends of said head-member and connected to said side-members by universal joints; means for independently operating said bearings; a gear-wheel supported by each of said bearings; a driving-chain passing over said gear-wheels and containing a compensating device for keeping said gear-wheels operatively connected; an adjustable foot-member having bearings in each end, said bearings being connected to the side-members by universal joints; and a brake co-operating with one of the said bearings in said head-member, said brake comprising two disks, one to interiorly engage and the other to exteriorly engage said bearing, and means for bringing said disks into frictional engagement with said bearing.

13. In a casket-lowering device, the combination of an adjustable frame, comprising a head-member, a foot-member, side-members, and corner-boxes; anti-friction bearings in said corner-boxes, each bearing being connected to a side-member by an universal joint; a gear-wheel secured to the bearing in each corner-box at the head-end of the frame; a driving-chain passing over said gear-wheels for operatively connecting said bearings; means for keeping said bearings in operative connection as the head-member is adjusted; and a brake-mechanism co-operating with each bearing in said head-member, each brake-mechanism being operable independently and consisting of two disks brought into frictional engagement with the bearing by a nut.

14. In a casket-lowering device, the combination of a frame, comprising an adjustable head-member, an adjustable foot-member, adjustable side-members, and corner-boxes; a short tubular member connected to each bearing by a universal joint, the said side-members being removably secured to said tubular members and locked against rotation; a gear-wheel secured to each of the bearings at the head-end of the frame; a driving-chain passing over the said gear-wheels for operatively connecting said bearings; means for keeping said bearings in operative connection as the head-member is adjusted; and a brake-mechanism co-operating with each bearing in said head-member, each brake-mechanism being operable independently and comprising two disks, one upon the inside, the other upon the outside of the bearing, brought into frictional engagement with said bearing by a nut.

15. In a casket-lowering device, the combination of longitudinally-adjustable end-members of the frame; bearings in the ends of each end-member; a short tubular member connected to each bearing by a universal joint; side-members of the frame, carrying supporting straps and removably secured to said tubular members and locked against rotation; means for keeping the bearings operatively connected; and means for controlling the rotation of said bearings.

16. In a casket-lowering device, an extensible side-member in the frame, comprising two outer tubes with perforations therein, a connecting member having longitudinal slots slidably within the said outer tubes, keys in said connecting member to engage said perforations, a pin in each of the adjacent ends of the outer tubes to engage said slots, and means for connecting the outer ends of said tubes with the ends of the frame.

851,862. FIRE-ESCAPE. FREDERIC J. BRYANT, New York, N. Y. Filed Dec. 17, 1906. Serial No. 348,283.

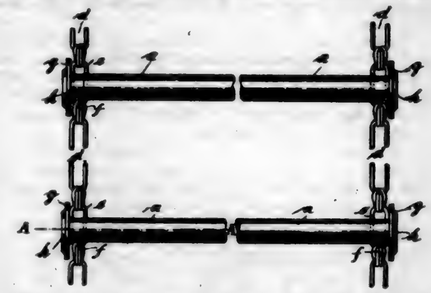

Claim.—1. In a ladder, the combination of a rung formed with a slot and with an integral flange at its end; a suspensory member which passes through said slot; and a washer interposed between said flange and said suspensory member.

2. In a ladder, the combination of a rung formed with a slot and with an integral flange at its end; a suspensory member which passes through said slot; and a washer slidably mounted on the end of said rung between said flange and suspensory member.

851,863. FIRE-EXTINGUISHER. CHARLES E. BUELL, North Plainfield, N. J., assignor to General Fire Extinguisher Company, New York, N. Y., a Corporation of New York. Filed Apr. 20, 1892. Serial No. 429,825.

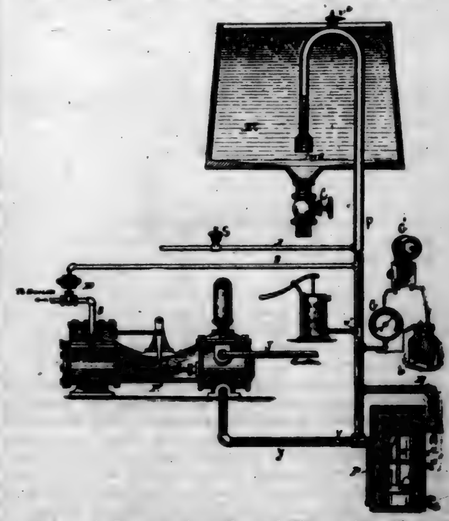

Claim.—1. In an automatic sprinkler system, the combination with the supply pipe leading from the local supply to the distributing pipes, of an auxiliary supply valve

arranged to be operated by pressure of water from the pipes leading from the local supply to the distributing pipes.

2. The combination with a system of sprinklers of a local supply, connections from said local supply to the distributing pipes, means for introducing gaseous pressure into the distributing pipes, connections from the distributing pipes to an auxiliary supply, and a valve controlling the said auxiliary supply that is arranged to be operated by pressure of water from the local supply.

3. In an automatic sprinkler system a local supply having connections to a main riser of the system, gaseous pressure in the system, an auxiliary supply connected to the main riser, a valve controlling the auxiliary supply that is arranged to be operated by the pressure of water from the local supply.

4. A system of sprinklers, a tank located above the system, connections from said tank to said system that comprise a siphon, gaseous pressure in the system, an auxiliary supply for said system and a valve for controlling the said auxiliary supply that is adapted to be operated by pressure of water from said tank.

5. A system of sprinklers, a tank located above said sprinklers, a siphon between the tank and sprinklers, an auxiliary supply for the sprinklers that is normally turned off, and a valve operated by the pressure of the tank to turn on the auxiliary supply when a sprinkler is opened.

6. A system of sprinklers, a tank located above the sprinklers, a siphon between said tank and sprinklers gaseous pressure normally holding the water from the said tank from entering into the pipes of the system, an auxiliary water supply that is normally turned off, and a valve controlling the same that is adapted to be operated by the pressure from the tank to turn on the auxiliary supply when a sprinkler opens.

7. A system of sprinklers, a local supply, a gaseous pressure in said system, an auxiliary supply connected to the said system that includes a power pump, and a valve for turning on the auxiliary supply by the pressure of water of the local supply.

8. A system of automatic sprinklers, a local supply, gaseous pressure normally restraining the water of the local supply from entering the system, an auxiliary supply that is normally prevented from entering the system by a valve that is adapted to be operated to turn on the auxiliary supply by the pressure of water from the local supply, and an alarm apparatus having connections to the system, and that is made operative by the discharge of the gaseous pressure when a sprinkler opens.

851,864. GAME APPLIANCE. WILLIAM H. C. D. CHARITY and THOMAS CRITCHLEY, Hindley, England. Filed June 9, 1906. Serial No. 320,969.

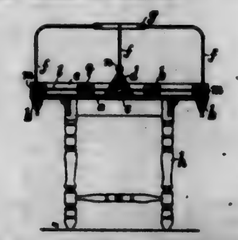

Claim.—1. A game appliance consisting of a flat board or table, a raised cushion or rim forming the periphery thereof, peripheral pockets in this rim, a plain unimpeded sloping surface rising from the game board and facing each of these pockets on a curve, a rest or support considerably above the sloping surface and a series of balls whereby great skill can be shown in dropping the balls on the sloping surface, so that they shall strike a pocket.

2. A game appliance worked with balls consisting of a plain circular flat table with a series of peripheral pockets and cushions alternating with each other round the circumference, and a smooth unimpeded cone in the center of the table, a wide annular rest above the cone and a series of balls.

3. In a game appliance in combination with a cone and table supplied with peripheral pockets and cushions round that cone, a ring supported from the cushions from the outside at a point high above the cone, and balls, substantially as described.

4. The combination of the table *a*, having peripheral pockets and cushions, a central smooth curved unbroken surfaced dome, and an annular rest supported on legs from the cushions of about the diameter of the dome, and balls, whereby balls can be dropped on to the curved surface of the dome and according as they are skilfully dropped will they hit the pocket or another ball aimed at, or only a cushion.

5. In combination with a table *a*, having peripheral pockets *b* and cushions *i*, a removable cone, and a rest normally placed above the cone and formed of a number of detachable members, whereby it may be removed and packed inside the table, and an ordinary table top whereby the apparatus may be quickly rigged up as a game board and when not required becomes an ordinary table.

851,865. TOOL-HEATING FURNACE. WILLIAM S. CONANT, Detroit, Mich, assignor to Briscoe Manufacturing Co., Detroit, Mich, a Corporation of Michigan. Filed June 30, 1905. Serial No. 267,703.

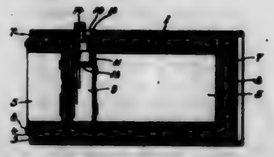

Claim.—1. In a furnace, the combination of a chamber formed with an open end and a channel in its bottom having an opening at one end and extending transversely of the chamber, and a burner extending into said channel through said opening and arranged to project the flame therefrom longitudinally of the channel and against the wall of the chamber at the end of the channel opposite that through which the burner extends.

2. In a furnace, the combination with an outer casing, of an inner chamber supported within said casing and provided with a channel in its bottom extending transversely thereof, a burner extending through the side wall of the casing and chamber into one end of said channel and consisting of a cylindrical head provided with an inner perforated end, a supply pipe screwed into the open end of said head, means for supplying air and gas to said pipe, and valves to control the flow of the air and gas.

3. In a tool-heating furnace, the combination of an outer casing consisting of a rectangular body formed of sheet metal cut to form triangular portions at one end which are turned inward to form the end wall and provided with a flanged head secured within the opposite end of the body, an inner cast chamber open at one end and supported within the casing with its open end extending through the end of the casing, a flange on the open end of the chamber secured to the triangular end portions of the casing, a filling of mineral wool or similar material between the casing and chamber, said casing and chamber having an opening, and a burner extending through said openings in the side wall of the casing and chamber.

4. In a tool-heating furnace, the combination with an outer sheet metal casing having an opening in its side wall, of an inner cast chamber having an open end, and supported in said casing with its open end extending through the end wall of the casing and formed with a channel in its bottom extending transversely of the same and having an opening in one end opposite the opening in the casing, a filling of mineral wood or similar material between said casing and chamber, a cylindrical shaped burner extending through the openings in the casing and channel and having a perforated inner end, a reducing plug screwed into the opposite end of the burner, a supply pipe engaging the plug, a valve in the supply pipe, a gas supply pipe connected to the supply pipe between said valve and burner, and a valve in the gas supply pipe.

851,866. LOAD-BINDER. ALVIN L. COX, Madison, Mo. Filed Nov. 28, 1906. Serial No. 345,548.

Claim.—1. A load holding device comprising a pointed stake for insertion into the load, said stake having at its upper end a vertical line of apertures, a handle, and a pin carried by said handle for engagement in a selected one of said apertures as a pivot.

2. A load holding device embodying a binding member, a handle member connected thereto, one of said members being formed at its upper end with an angular extension, and a pivot pin projected through the end of said extension and through the opposing member, as and for the purpose set forth.

3. A load holding device embodying a binding member, a handle member connected thereto, one of said members being formed at its upper end with an angular extension, and the other being provided with a vertical line of apertures, and a pivot pin projected through the end of said extension and through a selected one of said apertures in the opposing member, substantially as described.

4. A load holding device comprising a pointed stake for insertion into the load, a handle for rotating said stake, a sleeve slidably mounted on said stake, rope holding tines on said sleeve, and means for holding said sleeve in any selected position upon said stake.

851,867. LOAD-BINDER. ALVIN L. COX, Madison, Mo. Filed Feb. 2, 1907. Serial No. 355,374.

Claim.—1. A load binder comprising a pointed stake provided with a head and with a rope engaging tine, one of said last named elements being adjustable with relation to the other.

2. A load binder comprising a pointed stake provided with a head and with a tine carrying sleeve, said sleeve being adjustably movable with relation to said head, and means for holding said sleeve at any selected position.

3. A load holding device comprising a pointed stake, a load engaging head adjustably mounted on said stake, tines adjustably mounted on said stake, means for sustaining said head at any selected position on said stake, and independent means for sustaining said tines at any selected position on said stake.

4. A load holding device comprising a pointed stake having a squared upper portion, a head carrying sleeve having a squared opening surrounding said upper portion, a tine carrying sleeve having a squared opening surrounding said upper portion, said squared portion being formed with a line of apertures therethrough, and pins projected through said sleeves and adapted for engagement in a selected one of said apertures.

851,868. LOCKING DEVICE FOR CONTAINING-CASES. EDWARD B. CRAFT, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 24, 1906. Serial No. 302,664.

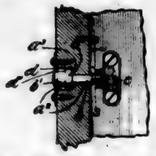

Claim.—The combination with a containing case, of a door having an opening therethrough countersunk from its outside, a screw having an enlarged portion forming a head, said head being provided with an annular shoulder at its inner end, the countersunk portion of said opening being of a size to receive said shoulder plate secured to said door over the opening therein, said plate having a hole therein of a size to permit the passage of the head of said screw but not to permit the passage of said shoulder, whereby the removal of said screw from the door is prevented, and a bracket secured to the inner wall of the case, said bracket having a threaded opening adapted to receive said screw to lock the door, said countersunk opening being of a depth corresponding to the head of said screw whereby said screw head becomes flush with the outer surface of said plate when the door is locked.

851,869. HINGED EXTENSION FOR HAY-CARRIER TRACKS. JEROME A. CROSS, Fultonville, N. Y. Filed Jan. 3, 1907. Serial No. 350,696.

Claim.—1. An extension track apparatus comprising a hanger and means for supporting the same, a fixed track secured to said hanger, a hinged extension track pivotally connected to the hanger, means for holding the hinged track in an operative position, a door automatically raised by the hinged track as it is raised to an operative position, and a carrier frame mounted upon the hinged extension track, as set forth.

2. An extension track apparatus comprising a hanger and means for supporting the same, a fixed track secured to said hanger, a hinged extension track pivotally connected to the hanger, means for holding the hinged track in an operative position, a door automatically raised by the hinged track as it is raised to an operative position, a carrier frame mounted upon the hinged extension track, and means for locking and releasing the carrier frame, as set forth.

3. An extension track apparatus comprising a hanger and means for supporting the same, a fixed track secured to said hanger, a hinged extension track pivotally connected to the hanger, means for holding the hinged track in an operative position, the outer end of the extension track being upwardly turned, a resilient bar fixed to the end of the extension track and having a lug thereon, a

carrier frame mounted upon the extension track and having an aperture formed in the frame thereof adapted to receive the lug upon said resilient bar, a yoke carrying a sheave, a projection upon said yoke adapted to raise said lug out of the aperture in said frame, and a rope secured to the carrier frame and supporting a sheave upon said yoke and passing over the sheave upon the carrier frame, as set forth.

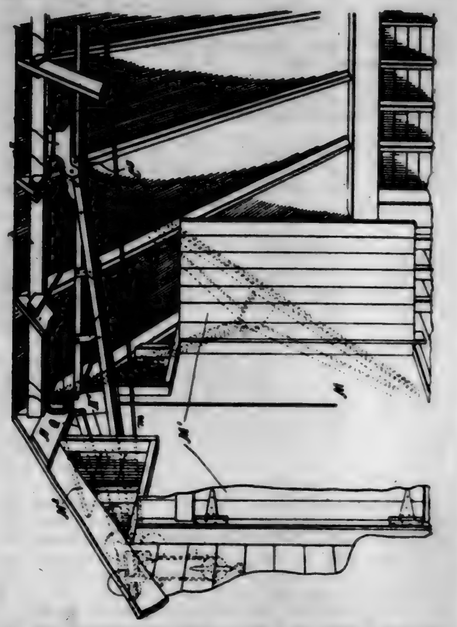

4. An extension track apparatus comprising a hanger and means for supporting the same, a fixed track secured to said hanger, an extension track hinged to said hanger and means for holding the same at an inclination when in an operative position, the outer end of said track being substantially horizontally disposed, means for supporting the swinging end of the extension track, a carrier frame, wheels journaled therein mounted upon the extension track, a sheave carried by said frame, a hoisting rope fixed at one end to said frame, and passing over said sheave, a hoisting sheave about which said cable passes, and a yoke carrying said hoisting sheave, as set forth.

5. An extension track apparatus comprising a hanger and means for supporting the same, a fixed track secured to said hanger, an extension track hinged to said hanger, a clevis secured to the truss frame of said extension track and provided with a lateral projection having an eye at its end, a sheave carried by said truss frame, a fixed bracket arm, a hook formed upon said arm adapted to receive said clevis, a rope secured to said arm and passing over said sheave, a sheave upon the bracket arm over which said rope passes, the latter adapted to pass through said eye of the clevis, a carrier frame mounted upon the extension track, and a hoisting cable connected to said frame, as set forth.

6. In combination with a hanger and means for supporting the same, one end of said hanger being slotted, an extension track, a plate secured to the inner end thereof and pivotally mounted in the slot of said hanger, said plate having a curved guide slot formed therein, a pin carried by the hanger and passing through said slot, means for hoisting and holding the extension track in an operative position, and a carrier frame adapted to travel upon said track, as set forth.

7. In combination with a hanger and means for supporting the same, one end of said hanger being slotted, an extension track, a plate secured to the inner end thereof and pivotally mounted in the slot of said hanger, said plate having a curved guide slot formed therein, a pin carried by the hanger and passing through said slot, the opposite sides of said hanger having laterally extending flanges and a horizontal recess, a permanent track having an upright portion adapted to be seated in said recess, means for raising the extension track and holding it in an operative position, and a carrier frame adapted to travel upon said track, as set forth.

851,870. LETTER-FILE. JOHANN J. DETTWYLER-BRÜDERLIN, Sissach, Switzerland. Filed July 24, 1906. Serial No. 271,076.

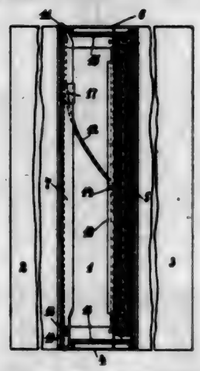

Claim.—1. In a letter file the combination of a sheet metal frame inserted therein and having three fixed walls, a hinged wall suspended in one of said fixed walls, a spring attached to said hinged wall, a bar acted upon by said spring, means for regulating the pressure of said spring on the bar, and means for detachably connecting said hinged wall to the frame aforesaid substantially as described.

2. In a letter file the combination of a sheet metal frame inserted therein and having three fixed walls, a hinged wall suspended in one of said fixed walls, a spring attached to said hinged wall, a bar acted upon by said spring, means for regulating the pressure of said spring on the bar, and a spring pressed bolt adapted to detachably connect said hinged wall to the frame aforesaid substantially as described.

3. In a letter file the combination of a sheet metal frame inserted therein and having three fixed walls, a hinged wall suspended in one of said fixed walls, a spring attached to said hinged wall, a bar of U section acted upon by said spring, a slide on said hinged wall adapted to regulate the pressure of the spring on the bar, guides for the latter and a spring pressed bolt slidably mounted in said hinged wall and adapted to detachably connect the latter to the frame aforesaid substantially as described.

851,871. STAIRWAY. FRANK B. DICKASON, Shreveport, La. Filed Aug. 27, 1906. Serial No. 332,262.

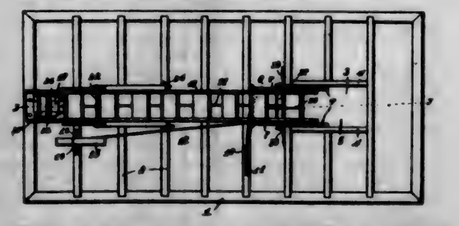

Claim.—1. In a stairway, a frame having a hatchway opening, a stairway movable longitudinally therethrough,

a counter-balance mounted upon the frame, jointed links connected with the frame and with the stairway, respectively, and a cord connected at its ends with the frame and with the jointed portions of the links, respectively, and has its intermediate portion movably connected with the counter-balance.

2. In a stairway, a frame having a hatchway opening, a stairway movable longitudinally therethrough, a support on the frame, a counter-balance pivotally suspended therein, the free end of which is provided with a roller, jointed links connected respectively with the frame between the support and said opening and with the upper end of the stairway, and a cord connected at its ends with the frame and the jointed portions of the links, respectively, and has its intermediate portion passed over said pulley in the counter-balance.

3. In a stairway, a frame provided with a hatchway opening, a stairway movable therethrough, a pulley in the opening at the side of the stairway, uprights on the frame, an L-shaped weight pivotally mounted therein at its bend, a door hinged to close said opening, and a cord connected with the door and with one end of the weight and passed over said pulley.

851,872. PLOW. WILLOUGHBY D. DOZIER, Weeksville, N. C. Filed Feb. 18, 1907. Serial No. 358,072.

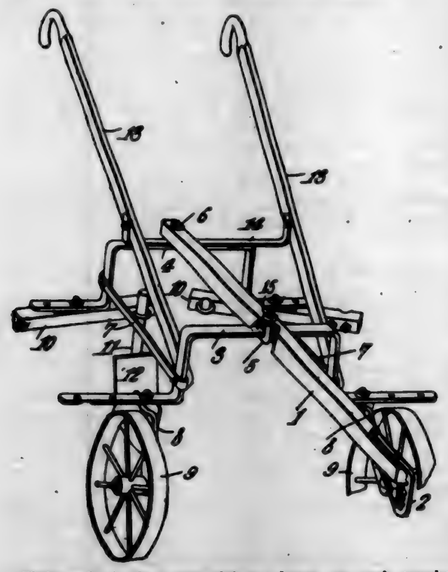

Claim.—1. A plow comprising a beam, an arch member pivotally connected to the rear portion of the beam, an arch member adjustably connected to an intermediate portion of the beam, ground wheels supporting the last said arch member, plow standards carried by the first said arch member and plow handles connected with the arch members.

2. A plow comprising a beam, an arch member pivotally connected with the rear portion thereof, an arch member adjustably connected with the intermediate portion thereof, irons connecting the vertical sides of the arch members together, ground wheels supporting the last said arch member, plow standards carried by the first said arch member and handles connected with the arch members.

3. A plow comprising a beam, an arch member pivotally connected with the rear portion thereof, an arch member adjustably connected with the intermediate portion thereof, said arch members having horizontally disposed end portions, ground wheels adjustably connected with the end portions of the last said arch member, plow bars adjustably connected with the horizontal portions of the first said arch member and handles connected with said arch members.

851,873. BAG-HOLDER. MARIETTE E. EAGLETON, Three Rivers, Mich. Filed Feb. 11, 1907. Serial No. 356,909.

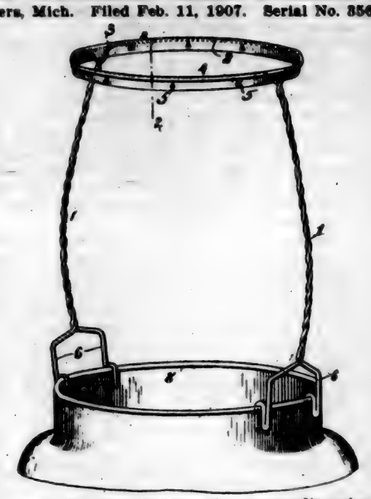

Claim.—1. In a bag holder, a bag suspending ring, outwardly bent sharpened spurs on said ring to engage the material of the bag, and supporting arms for said ring each having laterally separated hooked ends to embrace the edge of a vessel.

2. In a bag holder, a suspending ring having bag attaching means thereon, and supporting arms depending from said ring, each having a plurality of laterally separated hooked ends to embrace the edge of a vessel.

3. In a bag holder, a bag suspending ring having hooks thereon to engage the material of the bag, supporting arms for said ring formed of twisted strands, the central portion of said strands being formed into a loop surrounding said ring, and the ends of said strands being separated and formed into hooks to engage the edge of the vessel.

4. In a bag holder, a bag suspending ring having its upper edge flanged, supporting arms for said ring formed of twisted strands the central portion of said strands being formed into a loop to be engaged by the flange on said ring and the ends of said strand being separated and formed into hooks to engage the edge of the vessel.

851,874. AUTOMATIC CAR-BRAKE. CHARLES FEBO, Jr., Bay City, Mich., assignor of one-third to Frank Thompson, Bay City, Mich. Filed Oct. 8, 1906. Serial No. 338,041.

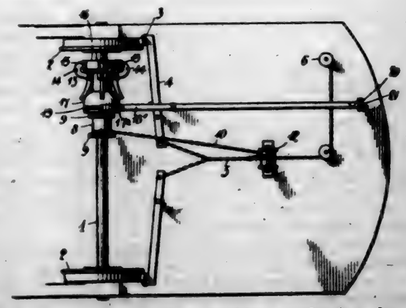

Claim.—1. An auxiliary braking mechanism for railway cars comprising a sleeve loosely mounted upon one

of the car axles, a chain winding drum formed on said sleeve, an auxiliary brake chain connected to the main brake chain of the car and adapted to be wound upon said drum, and means whereby said sleeve is locked to the car axle and turned thereby to wind up said auxiliary chain, thus drawing upon the main brake chain and applying the brake, substantially as described.

2. An auxiliary braking mechanism for railway cars comprising a sleeve loosely mounted upon one of the car axles, a winding drum arranged on said sleeve, an auxiliary brake chain connected to the main brake chain of the car and adapted to be wound upon said drum, a clutch pulley fixedly mounted on the axle of the car, friction clutch levers pivotally mounted on said sleeve, a block adapted to be applied to said levers to frictionally engage the same with said clutch pulley, and means whereby said block is shifted into and out of engagement with said levers, substantially as described.

3. An auxiliary brake applying mechanism for railway cars comprising a sleeve loosely mounted on one of the car axles, a winding drum arranged on said sleeve, a clutch pulley fixedly mounted on said axle, bell-crank clutch levers pivotally mounted on said sleeve, a block adapted to be applied to said levers to frictionally engage the same with said clutch pulley, a shifting lever connected to said block, an operating shaft arranged on the car platform, and means to connect said shaft with said shifting lever to operate the same, substantially as described.

851,875. CLAMPING DEVICE. EMIL FRANKE, Hicksville, N. Y. Filed Sept. 2, 1905. Serial No. 276,813.

Claim.—1. A clamp comprising primary jaws, one of said jaws being provided with a slotted lug, while the other of said jaws is provided with a tongue and trunnion, said trunnion being mounted in said lug, an auxiliary jaw carried by one of the primary jaws, and a spring engaging the auxiliary jaw to retain it closed and engaging the tongue to retain the primary jaws either opened or closed.

2. A clamp comprising coöperating jaws pivotally connected together, an auxiliary jaw carried by and coöperating with one of the first named jaws, and a spring for retaining the auxiliary jaw normally closed and the first named jaws either opened or closed.

3. A clamp comprising primary jaws pivotally connected together, one of said jaws being provided with a tongue extending beyond the pivot of the jaws, an auxiliary jaw carried by and co-operating with one of the primary jaws, and a spring engaging the auxiliary jaw to retain it closed and engaging the tongue to retain the primary jaws either opened or closed.

4. A clamp comprising primary jaws pivotally connected together, an auxiliary jaw carried by and co-operating with one of the primary jaws, and a spring secured to one end engaging the other of the primary jaws to retain those jaws either opened or closed, said spring engaging the auxiliary jaw to retain it normally closed.

5. A clamp comprising primary jaws pivotally connected together, an auxiliary jaw carried by and coöperating with one of the primary jaws, and a leaf spring secured within one and engaging the other of the primary jaws to retain those jaws either opened or closed, said spring engaging the auxiliary jaw to retain it normally closed.

851,876. STRAIGHTWAY VALVE. PETER FRASER, Johannesburg, Transvaal. Filed Apr. 3, 1906. Serial No. 309,671.

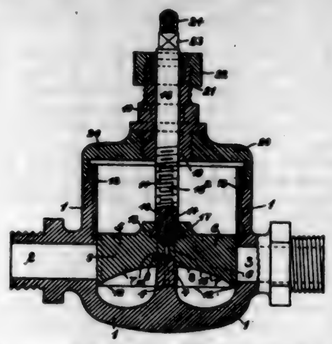

Claim.—In a valve, the combination with the body providing a cylindrical chamber and inlet and outlet ports communicating therewith, said body being constructed with an internal vertical projection substantially conical at its upper end, and with fitting strips and slots for guide keys, of a valve consisting of two hemi-cylinders hollowed on the underside and formed with an inner recess at the bottom of said hollow which inner recess engages the conical upper extremity of the projection to force the halves of the valve asunder to close the valve, guide keys fitted in the body and engaging slots in the halves of the valve, dowel pins and springs between the halves of the valve, and a spindle for raising and lowering the valve inside the casing.

851,877. TOOL-HOLDER. SILAS S. FULLER, Auburn, Me. Filed Oct. 8, 1906. Serial No. 337,905.

Claim.—1. In a tool holder, the combination of a shank, a head thereon having a plurality of lateral bearing faces, a pair of double ended jaws having corresponding bearing faces adapted to co-operate therewith mounted upon said head, and means for clamping said jaws in operative position.

2. In a tool holder, a shank having a clamp supporting head, a clamp having a plurality of lateral faces mounted on said head, and a shoulder on said shank adapted to engage one of said faces in each position of adjustment.

3. In a tool holder, the combination of a shank, a head thereon having a plurality of lateral bearing faces, a jaw having an opening therein exposing the face of said head parallel thereto, means for clamping said jaw in operative position, and means for tipping said jaw toward said exposed face when clamped.

4. In a tool holder, the combination of a shank, a head thereon having a plurality of lateral bearing faces, a pair of jaws having an opening therebetween exposing the face of said head parallel thereto, means for clamping said jaws in operative position, and means for tipping one of said jaws toward said exposed faces when clamped.

5. A tool holder having at one end a head, a plurality of lateral faces on said head, a central vertical opening, a pair of clamps straddling said head and each provided with a lateral bearing surface adapted to co-operate with a lateral face of said head, each clamp having on its side a jaw, an opening between said jaws for exposing a lateral face of the head, and a heel on one clamp adapted to bear on said head on the opposite side of said central opening,

and a bolt uniting said clamping members through said central opening.

6. A tool holder having at one end a head, an opening centrally therethrough, a plurality of lateral faces thereon, a pair of clamping members each provided with a lateral bearing surface adapted to co-operate with one face of said head, and a bolt uniting said clamping members through said central opening.

7. In a tool holder, the combination of a shank, a head thereon having a plurality of lateral faces, a pair of jaws having corresponding bearing faces mounted upon said head, and means for clamping said jaws in operative position.

8. In a tool holder, the combination of a shank, a head thereon having a plurality of lateral faces, and a tool clamp having corresponding bearing faces mounted upon said head.

9. A tool holder consisting of a shank having at one end a head, a plurality of lateral faces thereon, an adjustable clamp mounted thereon having an opening to expose the parallel face of the head, and a lateral bearing face on each side of said opening adapted to co-operate with the corresponding face of said head.

10. A tool holder consisting of a shank having at one end a head, a plurality of lateral faces thereon, a two part clamp having an opening to expose the parallel face of the head, and a lateral bearing face on each side of said opening adapted to co-operate with the corresponding face of said head, and means for adjustably supporting said clamp centrally on said head.

11. A tool holder consisting of a shank, a head thereon having a plurality of lateral faces, a clamp having two or more faces for bearing upon the lateral faces of said head, and an opening between said faces on the jaw to expose a lateral face on the head.

12. A tool holder consisting of a shank having at one end a head, a plurality of lateral faces thereon, a clamp thereon having a pair of jaws bearing upon one or more of the lateral faces of said head, an opening between said jaws exposing one of said faces, and means for causing one of said jaws to tip toward said exposed face of the head in closing.

13. A tool holder consisting of a shank having at one end an equilateral polyhedric head, a clamp having a lateral bearing face adapted to co-operate with the faces of said head, and means for adjustably supporting said clamp centrally on said head.

14. A tool holder consisting of a shank having at one end an equilateral polyhedric head, a clamp having a plurality of lateral bearing faces adapted to co-operate with the faces of said head, and means for adjustably supporting said clamp on said head.

15. In a tool holder, the combination of a shank, a jaw adjustably mounted thereon, external bearing faces on said jaw, and a shoulder on the shank adapted to co-operate with said external faces to hold the jaw in the desired position.

16. In a tool holder, a head having a lateral face, a tool jaw having a tool bearing face, an opening in said tool bearing face, and means for holding the tool jaw on the head with the lateral face exposed and in the same plane with the tool bearing face.

17. A tool holder having a head, a bearing surface thereon, a clamp having a pair of jaws, means for closing said jaws, an opening therebetween exposing said bearing surface on the head, a lateral bearing surface on said jaws in the same plane as said exposed surface on the head, one of said jaws having a tool engaging lip at an angle to said lateral surfaces and means for causing said lip to approach said lateral surfaces in closing.

18. A tool holder having a head, a bearing surface thereon, a clamp having a pair of jaws, means for closing said jaws, an opening therebetween exposing said bearing surface on the head, a lateral bearing surface on said jaws in the same plane as said exposed surface on the head, one of said jaws having a tool engaging lip surface disposed at an acute angle to said lateral surfaces and means for causing said lip to approach the lateral surfaces in closing.

851,878. FLUID-PRESSURE-CONTROLLING DEVICE. GEORGE H. GILMAN, Claremont, N. H., assignor to Sullivan Machinery Company, Claremont, N. H., a Corporation of Maine. Filed Mar. 2, 1906. Serial No. 303,758.

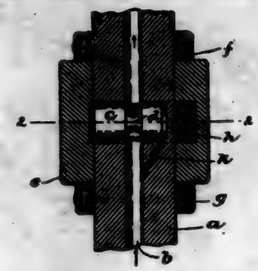

Claim.—1. A controlling device for fluid pressure comprising a tubular member having a pressure supply passage, a sleeve mounted for turning movement on said tubular member and having an eccentric annular groove, a piston valve arranged for sliding movement transversely the tubular member to control the supply passage therein and having a head projecting into the annular groove of the sleeve and a pressure duct leading from the pressure side of the supply passage to the opposite end of the valve whereby the turning of the sleeve to one position presses the valve inwardly to close the passage and to another position permits the pressure to force the valve outwardly to open the passage.

2. A controlling device for fluid pressure comprising a rotary sleeve provided with an eccentric groove, a piston controlling valve engaging the walls of said groove whereby the valve may be pressed in one direction by turning the sleeve, and means for supplying pressure to an area of the valve for moving it in the opposite direction.

3. A controlling device for fluid pressure comprising a tubular member having a pressure supply passage, a sleeve mounted for turning movement on said tubular member, and a valve arranged transversely the tubular member to control the pressure supply passage and actuated by movement of the sleeve.

4. A controlling device for fluid pressure comprising a tubular member having a pressure supply passage, a sleeve mounted for turning movement on said tubular member, a valve controlling the pressure supply passage therein, means for constantly pressing the valve in one direction, and means for pressing the valve in the opposite direction by movement of the sleeve.

5. A controlling device for fluid pressure having a fluid pressure supply passage, a valve controlling the same, and a rotary member having an eccentric cam surface engaging said valve for the actuation thereof.

851,879. DOOR. CHARLES A. GLOSKLER, Pittsburg, Pa. Filed Jan. 23, 1906. Serial No. 297,525.

Claim.—The combination of a door casing, a stationary tappet arranged on one of the uprights of the casing, a swinging door hinged to the other upright of the casing, brackets connected to the lower portion of the outer side of the door and having studs, a vertically movable strip arranged at the lower end of the door, straps fixed to and extending upward from the said strip and having vertically slotted portions loosely receiving the studs of the brackets, nuts retaining said straps on said studs, brackets secured to the outer side of the door at points above the first mentioned brackets, a rock-shaft journaled in the upper brackets and having crank arms and also having a lever arm; said lever arm arranged to be engaged by the stationary tappet on the closing of the door, links connecting the said crank arms of the rock-shaft and the straps on the strip, a bracket connected to the outer side of the door at a point above the brackets in which the rock-shaft is journaled, and having a vertically disposed aperture, a hook having a threaded stem ex-

tending loosely through the aperture of the bracket, a nut mounted on said threaded stem of the hook, and a tractile spring extending directly between and connected

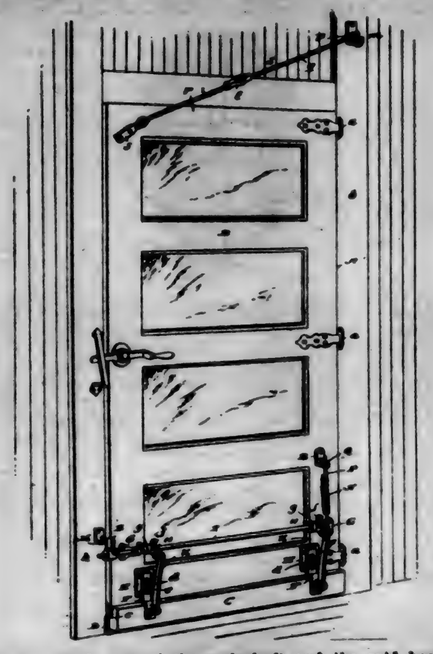

to one crank arm of the rock-shaft and the said hook, whereby when the lever arm is engaged by the stationary tappet said spring will be expanded.

851,880. SAFE. GEORGE J. H. GOEHLER, Richmond, Va. Filed Jan. 10, 1907. Serial No. 351,615.

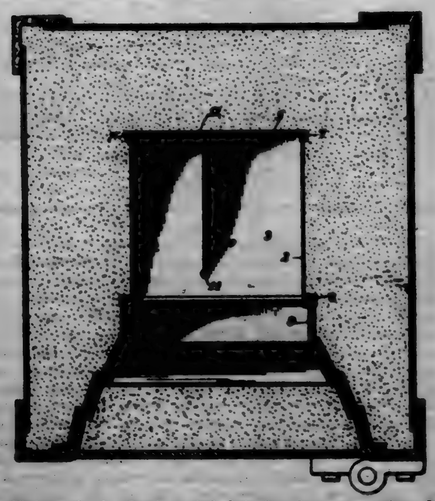

Claim.—1. A sheet metal interior box or casing for safes, comprising a body formed of one sheet of metal and comprising the top wall, the side walls and the bottom wall, a back or rear wall having an interlocking seam-engagement with the rear edges of said body, and an interior partition flanged at its rear edge and secured to the rear wall, and means for securing the front edge of said partition to the top and bottom walls of the body.

2. A sheet metal interior box or casing for safes, comprising a body formed of a single sheet of metal and comprising the top wall, the side walls, and the bottom wall of the box, a back or rear wall secured to the rear edge or end of said body, and an interior partition secured at its rear edge to the said back and at its forward edge to the top and bottom wall.

3. A sheet metal interior box or casing for safes, comprising a body formed of a single sheet of metal comprising the top wall, the side walls and the bottom wall, a back or rear wall secured to said body, an interior partition within the body, a post carried by the forward edge of said partition having its ends secured in the top wall and bottom wall of the body, and stepped-flanges carried by the front end of said body.

4. In safe construction, a sheet metal interior box or casing comprising a body formed from a blank of sheet metal having its ends secured together by an interlocking seam, stepped-flanges carried by the front end of said body, a rear or back wall having its edges secured by interlocking seams with the rear end of the body, and an interior partition secured along its rear edge to the rear wall and at its front edge by a post secured in the top wall and bottom wall.

5. In safe construction, a sheet metal interior box or casing comprising a top wall, side walls, a bottom wall, and a rear or back wall, and an interior partition having a flanged rear edge secured to the rear wall and its forward edge fastened to a post secured in the top wall and bottom wall of the box or casing.

851,881. WRENCH. DANIEL C. GROVES, Brockwayville, Pa. Filed Jan. 21, 1907. Serial No. 353,314.

Claim.—1. An adjustable wrench having its shank provided with an inclined surface, and its movable jaw slotted and provided with guides to form a chamber and having a reinforce on one side, a wedge in the chamber and a bolt for forcing the wedge into engagement with said incline.

2. An adjustable wrench having its shank provided with an inclined surface and its movable jaw provided with a chamber, said inclined portion being of less width than the shank, thereby forming shoulders and the walls of the chamber provided with guides at its front and rear to engage with said shoulders, a wedge in the chamber and a bolt for forcing the wedge into engagement with said inclined surface.

851,882. BEEHIVE. CALVIN P. HARRISON, Rice Lake, Wis. Filed Jan. 5, 1907. Serial No. 350,989.

Claim.—1. A bee hive comprising a bottom board having a strip on its upper side extending along its side and back edges, a screen removably arranged on the bottom board and having a frame and a strip on the upper side

of the frame extending along the side and back edges thereof, an entrance block closing the opening between the forward ends of said strip, and a hive box removably arranged on the said strip of the screen.

2. A bee hive comprising a bottom board having a strip on its upper side extending along its side and back edges, a screen removably arranged on the bottom board and having a frame and a strip on the upper side thereof extending along the side and back edges of the frame, an entrance block closing the opening between the forward ends of said strip, a hive box removably arranged on the said strip of the screen, and a screen removably arranged on the hive box and having a frame and a strip on the upper side of the frame extending along the back and side edges thereof.

3. A bee hive comprising a bottom board having a strip on its upper side extending along its side and back edges, a screen removably arranged on the bottom board and having a frame and a strip on the upper side of the frame extending along the side and back edges thereof, an entrance block closing the opening between the forward ends of said strip, a hive box removably arranged on the said strip of the screen, and a strip removably arranged on the box and having a frame and a strip on the upper side of the frame extending along the back and side edges thereof, and also having a forwardly extending lighting board.

4. A bee hive comprising a bottom board having a strip on its upper side extending along its side and back edges, a screen removably arranged on the bottom board and having a frame and a strip on the upper side of the frame extending along the side and back edges thereof, an entrance block closing the opening between the forward ends of said strip, a hive box removably arranged on the said strip of the screen, a surplus super arranged above the box, and a screen removably interposed between the box and said surplus super and having a frame and a strip on the upper side of the frame extending along the back and side edges thereof.

5. A bee hive comprising a hive box, a bottom board arranged below the box and having a base and a raised portion extending along the edges of the base and one or a plurality of openings in said raised portion, and also having one or more removable blocks for closing the openings, surplus supers grouped about the bottom board and each having a bottom made up of a base and a raised portion extending along the edges of the base and provided with one or more openings and blocks for controlling said openings.

6. A bee hive comprising a hive box, a bottom board arranged below the hive box and having a base and a raised portion thereon extending along the side and back edges of the base and also having openings in said raised portion and removable blocks for controlling the openings, surplus supers grouped about the bottom board below the hive box, caps removably arranged on said surplus supers, and bottoms removably arranged below the surplus supers and having bases and raised portions extending along the edges of the bases and also having openings in said raised portions and blocks for controlling the same.

7. A bee hive comprising a main portion having a box, and a bottom board removably arranged below the box, surplus supers grouped about the main portion, bottoms removably arranged below the surplus supers and communicating with the bottom board of the main portion, and caps removably arranged on the surplus supers.

851,883. TIE-PLATE. HERBERT H. HART, Chicago, Ill. Filed Aug. 27, 1906. Serial No. 332,171.

Claim.—1. A new article of manufacture, comprising a rolled steel tie plate composed of a plate portion containing spike holes, a plurality of depending flanges, transverse reinforcing and rib portions, 5 and 7, upon the bottom and top of said plate portion respectively, and said plate portion having vertical recesses at the ends of said rib portion, substantially as described.

2. A new article of manufacture, comprising a rolled steel tie plate having a transverse reinforcing or thickened portion, 5, on its bottom, near one end, an overlying transverse rib upon its top and also having vertical recesses at the ends of said rib, substantially as described.

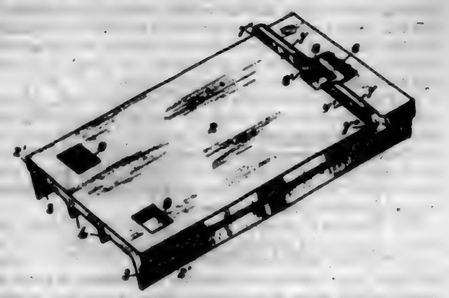

3. A new article of manufacture, comprising a rolled steel tie plate having a transverse rib on its top near one end, provided with a spike hole and having vertical recesses at the ends of said rib, substantially as described.

4. A new article of manufacture, comprising a rolled steel tie plate having a transverse rib or shoulder on its top, said rib or shoulder being interrupted to form a spike hole flat, the lower portion of said plate, beneath said rib or shoulder being thickened or reinforced and said plate having vertical recesses at the ends of said rib, substantially as described.

851,884. BOBBIN-CLUTCHING DEVICE FOR SPINDLES. COLIN A. HAWES, Pawtucket, R. I., assignor to Easton and Burnham Machine Company. Filed July 7, 1905. Serial No. 268,720.

Claim.—1. The combination of a spinning spindle, and a bobbin held upon the spindle, with bobbin clutching levers having lower arms longer than their upper arms, and a fulcrum relatively nearer their upper ends, said upper arms serving to support the bobbin by engaging with the exterior of its head, the weight of the upper engaging arms being greater than that of the said lower arms, and the center of gravity of the lower arms being farther from the fulcrum than that of the upper arms.

2. The combination of a spinning spindle, with centrifugal clutching levers having the bobbin-clutching arms of the said levers heavier than those by means of which the said clutching arms are actuated to clutch the exterior of the head of the bobbin.

3. The combination of a spinning spindle, the whirl and sleeve secured thereto, a collar mounted on the sleeve, and centrifugal clutching levers fulcrumed on the said collar and adapted to exteriorly engage and rotate a bobbin, and having the bobbin clutching arms of greater weight than that of the arms by means of which they are actuated.

4. The combination of a spinning spindle, with a plurality of centrifugal bobbin-clutching levers mounted to rotate therewith, and symmetrically arranged with reference to their axis of rotation, said levers having their bobbin-clutching arms made heavier than the arms by which they are actuated to engage exteriorly with the head of the bobbin.

5. The combination of a spinning spindle, a sleeve se-

cured thereto, and the whirl, with a plurality of centrifugal bobbin clutching levers symmetrically arranged with relation to the axis of the spindle, and having their upper arms made heavier and shorter than their downwardly extending lower arms, and mounted to rest on the whirl, the heavier upper arms being moved inwardly to externally engage the head of the bobbin by reason of the greater distance of the center of gravity of the lower arms from the fulcrum than that of the upper arms.

6. The combination of a spinning spindle, and a fulcrum with centrifugal bobbin clutching levers having their upper arms made heavier and shorter than their downwardly extending lower arms, whereby their heavier upper arms will be moved toward the axis of the spindle, when under rotation by the advantageous centrifugal action of the downwardly extending lighter arms.

7. A spinning spindle having an attached whirl and sleeve, a series of bobbin clutching levers mounted to rotate with said whirl and sleeve, and to exteriorly engage the head of a bobbin, and having the weight of their upper engaging arms made greater than the weight of their downwardly extending longer lower arms, and having the outward movement of their upper arms limited by the engagement of their lower arms with the side of the said sleeve.

8. A spinning spindle, a collar rotating therewith, a plurality of centrifugal bobbin-clutching levers fulcrumed thereon, and having their upper arms laterally curved to externally engage and hold the head of a bobbin each of the said levers being made heavier above its fulcrum than below the same.

9. A spinning spindle, a collar rotatable therewith, a plurality of centrifugal bobbin-clutching levers fulcrumed thereon, and having the engaging arms above their fulcrums heavier than the arms below the same, and a protecting shield surrounding the said levers.

10. The combination of a spinning spindle, the whirl and sleeve with the collar, and the centrifugal bobbin-clutching levers fulcrumed on the said collar, and supported at their lower ends by the whirl and adapted at their upper ends to externally engage the head of a bobbin.

11. The combination of a spinning spindle, the whirl and the sleeve, with the collar provided with the notches, and adapted to embrace the sleeve, and the centrifugal bobbin-clutching levers held in the said notches of the collar the engaging upper ends of the said clutching levers being heavier than their lower ends.

12. The combination of a spinning spindle, the whirl, the sleeve and the collar with the bobbin clutching levers fulcrumed at the outer side of the openings of the collar and provided with means for preventing upward movement therein the engaging upper ends of the said clutching levers being heavier than their lower ends.

13. The combination of a spinning spindle, the whirl, the sleeve, and the collar, with the centrifugal bobbin-clutching levers, fulcrumed at the outer side of the openings of the collar, and provided with lateral extensions for preventing the upward movement of the levers the engaging upper ends of the said clutching levers being heavier than their lower ends.

14. The combination of a spinning spindle, the whirl, and the sleeve, with the collar held upon the sleeve, the horizontally offset centrifugal bobbin-clutching levers, and the washer for supporting the bobbin.

15. The combination of a spinning spindle, the whirl, and the sleeve, with the collar held upon the sleeve, the horizontally offset centrifugal bobbin-clutching levers, and the bobbin supporting washer, resting upon the offset portion of the said levers.

16. The combination of a spinning spindle, the whirl, the sleeve, the perforated fulcrum collar held upon the sleeve, the centrifugal bobbin-clutching levers fulcrumed in the perforations of the fulcrum collar for engagement with the exterior of the head of the bobbin, and having their engaging upper ends heavier than their lower ends, and means for limiting the inward movement of the engaging ends of the said levers upon the removal of the bobbin from the revolving spindle.

17. The combination of a spinning spindle, the whirl, the sleeve, the perforated fulcrum collar held upon the sleeve, the centrifugal bobbin-clutching levers fulcrumed in the perforations of the fulcrum collar for engagement with the exterior of the head of the bobbin, and having their engaging upper ends heavier than their lower ends, and the washer arranged above the fulcrum collar for limiting the inward movement of the engaging ends of the said levers upon the removal of the bobbin from the revolving spindle.

851,885. SUSPENDERS. HENRY C. HINE, New Britain, Conn., assignor to Trant & Hine Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Feb. 5, 1907. Serial No. 355,965.

Claim.—1. A sliding connection for suspenders including a plurality of guide straps secured to the opposite parts thereof, a cord taking up all the strain of the suspenders, and a connection in common to both.

2. A sliding connection for suspenders, comprising guide straps secured to opposite parts thereof, a cord of less length than said straps taking up all the strain of the suspenders secured to the same parts and a bearing member for the cord.

3. In a pair of suspenders, a link, a bearing member secured thereto, guide straps passing through said link and secured at opposite ends to two separate parts of the suspenders, and a cord of less length than the said straps taking up all the strain of the suspenders passing through the bearing and secured to the said parts.

4. In a pair of suspenders comprising shoulder straps, button straps, a link, a pair of guide straps passing therethrough and each secured to the shoulder straps, button straps secured to the link, a bearing on the link and a cord of less length than the guide straps passing through the bearing secured to the shoulder straps.

5. In a pair of suspenders comprising shoulder straps and button straps, the combination of a link secured to the button straps, a pair of guide straps each secured at opposite ends to the shoulder straps passing through the link and having sliding connection therewith, a bearing on said link between said guide straps and a cord of less length than the guide strap passing through the said bearing and secured at each end between the guide straps and the shoulder straps.

6. A sliding connection for suspenders, comprising a link, a block carried thereby, an inelastic cord passing through said block for taking the strain of the suspenders, main straps secured to said cord in combination with a pair of guide straps connecting said main straps through said link.

7. A sliding connection for suspenders including guide straps secured at each end to opposite parts thereof, a cord connection paralleling said guide straps and relieving the latter of the main strain.

851,886. TURBINE. WILLIAM N. HOOVER, Dayton, Ohio, assignor of one-half to Robert T. Johnson, Dayton, Ohio. Filed Mar. 1, 1907. Serial No. 360,089.

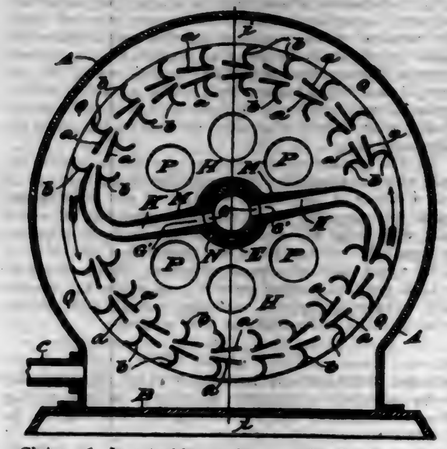

Claim.—1. In a turbine engine, a casing having exterior axial bearings with sufficient space to form inlet chambers for the energizing fluid, a hollow shaft having two series of inlet ports lying within said chambers, and a series of outlet ports lying between said inlet ports, a piston having two oppositely-disposed initial inlet ducts extending from and communicating with an axial hub which incloses the outlet ducts in said shaft, said oppositely-disposed ducts extending and being inclosed throughout the length of the piston, and conducting the energizing fluid from the axis to the periphery thereof, and a series of concentrically-disposed injectors extending the length of said piston and disposed adjacent to the rim thereof, said injectors being so constructed that the steam will pass from one to the other thus causing the continuous rotation of the piston during the period of the admission of the energizing fluid to the turbine shaft.

2. In a turbine engine, a piston having a series of elongated concentrically-disposed nozzles forming injectors, buckets or wings arranged on the opposite sides of the exit ends of said nozzles, a shaft upon which said piston is mounted, said shaft having inlet ports at its ends, and intermediate outlet ports to the nozzles of the piston, and passages forming communications between the inlet ports of said shaft and two of said nozzles oppositely-disposed.

3. In a turbine engine, a plurality of nozzles arranged around a common axis of a piston and adapted to inject expansive fluid from one to the other of said nozzles, buckets or wings located adjacent to the discharge ends of said nozzles and within which is created a vacuum by the fluid passing from one nozzle to the other, and a hollow shaft projected through the axis of the piston and having inlet and outlet ports for the energizing fluid, the outlet ports lying within the confines of the piston and adapted to discharge, intermittently, said energizing fluid to oppositely-disposed nozzles in the rotation of the shaft.

851,887. TANK-HEATER. THEODORE J. INGOLD, Farmington, Ill. Filed Feb. 5, 1907. Serial No. 355,903.

Claim.—1. A tank heater comprising a firebox and a tank, a pipe leading through the adjacent walls of the firebox and tank through which the products of combustion are adapted to pass, a pan mounted at one side of its center upon trunnions within the firebox, one of said trunnions being hollow and through which water may be fed to the pan, the top of said pan having a hollow nipple, a pipe connected to said nipple and extending into said tank, and means for holding the pan in a horizontal position, as set forth.

2. A tank heater comprising a firebox and a tank, a pipe leading through the adjacent walls of the firebox and tank through which the products of combustion are adapted to pass, a pan mounted at one side of its center upon trunnions within the firebox, one of said trunnions being hollow and through which water may be fed to the pan, the top of said pan having a hollow nipple, a pipe connected to said nipple and extending into said tank, the back of said pan being inclined, a lug projecting from the wall of the firebox and adapted to serve as a stop against which the rear of the pan is adapted to contact to hold the latter in a horizontal position, as set forth.

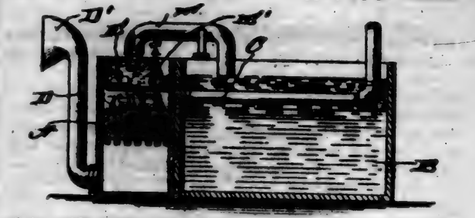

851,888. BUCKET FOR EXCAVATING-MACHINES. CHARLES C. JACOBS, Amboy, Ill., assignor to Jacobs Steel Excavator Company, Amboy, Ill., a Corporation of Illinois. Filed Jan. 2, 1906. Serial No. 294,203.

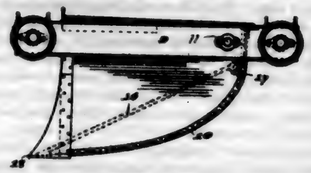

Claim.—1. The combination with an excavating bucket, of means carried thereby adapted to break up the material received by said bucket to facilitate its discharge therefrom, substantially as described.

2. The combination with an excavating bucket, of one or more cleaners in the form of a rod or bar pivotally mounted above the bottom of the bucket, substantially as described.

3. The combination with an excavating bucket having a forward cutting edge, of one or more cleaner bars pivotally connected to the rear wall of the bucket and overlying the bottom of the latter, substantially as described.

4. The combination with an excavating bucket having a forward cutting edge, of one or more cleaner bars pivotally connected to the rear wall of the bucket and extending substantially to the cutting edge, substantially as described.

851,889. ABDOMINAL BELT. CHARLES C. KNIGHT, Sherbrooke, and ERNEST A. DAVIS, Cookshire, Quebec, Canada. Filed June 1, 1905. Serial No. 263,300.

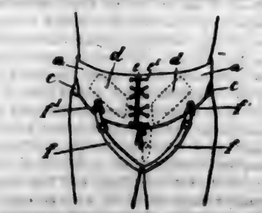

Claim.—An abdominal belt comprising two flexible members each provided at both terminals with lacing-openings, and one with a terminal protecting extension, the lower edge of each member being incut for a portion of its length so as to fit over the crest of the pelvis, an elastic gusset combined with each member at the middle portion of the incut, a pressure pad assembled with each member near

its outer terminal between the gusset and the lacing-openings and disposed obliquely relatively to the length of the belt, whereby, when the belt is positioned, pressure will be applied directly on the abdominal viscera, and means for holding the belt in position to prevent shifting, substantially as specified.

851,890. METHOD OF STARTING ALTERNATING-CURRENT MOTORS. WALDO A. LAYMAN, St. Louis, Mo. Filed Aug. 6, 1906. Serial No. 329,351.

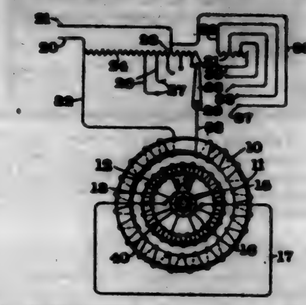

Claim.—1. The method of operating an alternating current motor, which consists in starting said motor on a voltage below normal operating voltage, and raising said voltage before normal running speed under load is attained.

2. The method of operating an alternating current motor, which consists in starting said motor on a voltage below normal operating voltage, and raising said voltage above normal operating voltage before normal running speed under load is attained.

3. The method of operating an alternating current motor which consist in starting said motor on a voltage below normal operating voltage, raising said voltage before normal running speed under load is attained, and reducing said voltage after said normal running speed is attained.

4. The method of operating an alternating current motor, which consists in starting said motor on a voltage below normal operating voltage, raising said voltage above normal operating voltage before normal running speed under load is attained and reducing said voltage after normal running speed under load is attained.

5. The method of operating an alternating current motor, which consists in starting said motor on a voltage below normal operating voltage, raising said voltage above normal operating voltage before normal running speed under load is attained, and reducing said voltage to normal operating voltage after said normal running speed is attained.

6. The method of operating an alternating current motor, which consists in starting said motor on a voltage below normal operating voltage, raising said voltage before normal running speed under load is attained and short-circuiting a member of said motor.

7. The method of operating an alternating current motor, which consists in starting said motor on a voltage below normal operating voltage, raising said voltage above normal operating voltage before normal running speed under load is attained and short-circuiting said motor when said normal running speed is attained.

8. The method of operating an alternating current motor, which consists in starting said motor on a voltage below normal operating voltage, raising said voltage before normal running speed under load is attained, short-circuiting said motor, and then reducing said voltage.

9. The method of operating an alternating current motor, which consists in predetermining the poles in one of the members of said motor at starting and starting said motor on a voltage below normal operating voltage, and raising said voltage before normal running speed is attained.

10. The method of operating an alternating current motor, which consists in starting said motor on commuted circuit and a voltage below normal operating voltage, and raising said voltage before normal running speed under load is attained.

11. The method of operating an alternating current motor, which consists in predetermining the poles of one of the members of said motor at starting, and starting said motor by supplying to the other member of said motor a current below normal operating voltage, raising the voltage of said current above said normal operating voltage before normal running speed under load is attained and reducing said voltage after said normal running speed has been attained.

12. The method of operating an alternating current motor, which consists in commuting the current in one of the members of said motor at starting and starting said motor by supplying to the other member thereof a current of a voltage below normal operating voltage, gradually raising said voltage after said motor has started to a point above that of normal operating voltage, short-circuiting said first named member, and gradually reducing said voltage to normal operating voltage after normal running speed under load has been attained.

851,891. METHOD OF ELECTRICALLY BRAKING ALTERNATING-CURRENT MOTORS. WALDO A. LAYMAN, St. Louis, Mo. Filed Aug. 6, 1906. Serial No. 329,352.

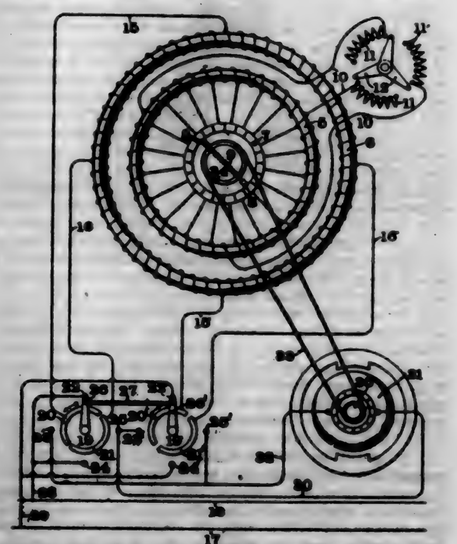

Claim.—1. The method of braking an alternating current motor, which consists, after the main driving current has been cut off from the motor, in varying an auxiliary current with the speed of the motor, and applying said auxiliary current to oppose the rotation of the motor.

2. The method of braking an alternating current motor, which consists, after the main driving current has been cut off from the motor, in generating an auxiliary current by the rotation of the motor, and applying said auxiliary current to oppose the rotation of the motor.

3. The method of braking an alternating current motor, which consists in introducing into the motor, after the main driving current has been cut off from the motor, an auxiliary current, and reorganizing the windings to establish thereby a torque opposed to the inertia or momentum torque of the motor.

4. The method of braking an alternating current motor, which consists in introducing into the motor, after the main driving current has been cut off from the motor, an auxiliary direct current, and reorganizing the windings to establish thereby a torque opposed to the inertia or momentum torque of the motor.

5. The method of braking an alternating current motor, which consists in introducing into the motor, after the main driving current has been cut off from the motor, an auxiliary current varying with the speed of the motor, and reorganizing the windings to establish thereby a torque opposed to the inertia or momentum torque of the motor.

6. The method of braking an alternating current motor, which consists in introducing into the motor, after the main driving current has been cut off from the motor, an auxiliary current generated by the rotation of the motor, and reorganizing the windings to establish thereby a torque opposed to the inertia or momentum torque of the motor.

7. The method of braking an alternating current motor, which consists in introducing into the motor, after the main driving current has been cut off from the motor, an auxiliary direct current varying with the speed of the motor, and reorganizing the windings to establish thereby a torque opposed to the inertia or momentum torque of the motor.

8. The method of braking an alternating current motor, which consists in introducing into the motor, after the main driving current has been cut off from the motor, an auxiliary direct current generated by the rotation of the motor, and reorganizing the windings to establish thereby a torque opposed to the inertia or momentum torque of the motor.

851,892. BRAKE. WILLIAM H. LEWIS, Roanoke, Va., assignor of one-half to James J. McCarthy, Chicago, Ill. Filed May 24, 1905. Serial No. 262,040.

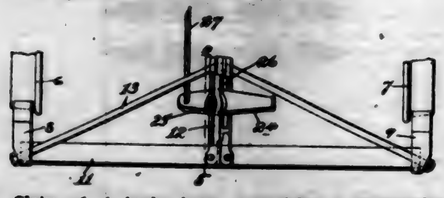

Claim.—1. A brake-beam, comprising a compression-member T-shaped in cross section, brakes carried by said compression-member at the web side thereof, a fulcrum-post connected with the web of said compression-member, means connecting the inner portion of said fulcrum-post with the end portions of said compression-member, and a lever fulcrumed upon said post.

2. A brake-beam, comprising a compression-member T-shaped in cross section, brakes carried by said compression-member at the web side thereof, a fulcrum-post connected with the web of said compression-member, rods connecting the inner portion of said fulcrum-post with the end portions of said compression-member, and a lever fulcrumed upon said post.

3. A brake-beam, comprising a compression-member T-shaped in cross section, brakes carried by said compression-member at the web side thereof, a fulcrum-post connected with the web of said compression-member, rods connected with the end portions of said compression-member at opposite sides of the web thereof, and a lever fulcrumed upon said post.

4. A brake-beam, comprising a compression-member T-shaped in cross-section, brakes carried by said compression-member at the web side thereof, a fulcrum-post connected with the web of said compression-member, and means connecting the inner portion of said fulcrum-post with the end portions of said compression-member at opposite sides of the web thereof.

851,893. PENCIL. FRANKS H. LIPPINCOTT, Philadelphia, Pa., assignor to Lippincott Pencil Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Nov. 27, 1906. Serial No. 345,274.

Claim.—1. In a device of the character described, an elongated holder provided with a longitudinal bore, a follower in said bore, having an arm provided with a rearwardly extending sharpened portion normally spring pressed against the wall of the bore and means associated with said arm for positively moving said arm out of engagement with said wall.

2. In a device of the character described, an elongated holder having a longitudinal bore and a slot extending through the side of said holder and communicating with said bore, a follower in said bore, a spring arm carried by said follower having a sharpened extremity normally engaging the wall of said bore, and means associated with said arm and extending through said slot for moving said spring arm against the tension thereof out of engagement with said wall.

3. In a device of the character described, an elongated holder provided with a longitudinal bore and a slot extending through the side of said holder and communicating with said bore, a follower in said bore adapted to grasp a lead or other insert, a projection carried by said follower and extending through said slot and an arm normally spring pressed against the wall of the bore to prevent rearward movement of the said follower, said arm being adapted to be thrown out of engagement with the said wall by manipulation of the said projection, whereby said follower may be moved rearwardly in said bore.

4. In a device of the character described, an elongated holder provided with a longitudinal bore extending therethrough and a slot extending through the side of said holder and communicating with said bore, a follower in said bore adapted to grasp a lead or other insert, a finger piece or projection carried by said follower extending through said slot and a rearwardly extending arm having a sharpened extremity normally spring pressed against the wall of the bore to prevent rearward movement of the said follower, said arm being adapted to be thrown out of engagement with said wall by manipulation of the said finger piece or projection, whereby said follower may be moved rearwardly in said bore.

5. In a device of the character described, an elongated holder provided with a longitudinal bore extending therethrough and a slot extending through the side of said holder and communicating with said bore, and a follower in said bore comprising an integral section of wire, one end of which is bent into the form of a socket or sleeve to grasp the lead or other insert, and the other end thereof sharpened and normally pressed against the side of the bore to prevent rearward movement of said holder or follower.

6. In a device of the character described, an elongated holder provided with a longitudinal bore extending therethrough and a slot extending through the side of said holder and communicating with said bore, and a follower adapted to grasp a lead or other insert, said follower comprising a section of wire having a portion at one end thereof bent into the form of a socket or sleeve to engage the said insert, and the opposite end having the form of an arm provided with a sharpened extremity, said arm being normally pressed against the side of said bore to prevent rearward movement of the follower, an intermediate portion of said wire being bent upon itself to form a projection which extends through the said slot, whereby the said follower may be manipulated.

7. In a device of the character described, an elongated holder provided with a longitudinal bore and a slot extending through the side of said holder and communicating with said bore, and a follower located in said bore and adapted to grasp a lead or other insert, said follower comprising an integral section of wire having a portion at one end thereof bent into the form of a socket or sleeve to hold the said insert and the opposite end bent into the form of an arm having a sharpened extremity, said arm being normally spring pressed against the side of the bore, and means extending through said slot adapted to throw said arm out of engagement with said wall.

851,894. KEY-ACTION. MARTIN MILLER, Columbus, Ohio. Filed Nov. 28, 1905. Serial No. 289,470.

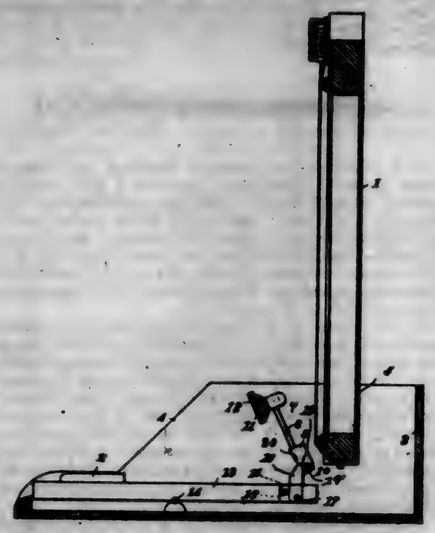

Claim.—A key action comprising a key pivotally supported for manual operation, a hammer jack pivotally attached directly to the key, and mounted to move positively and bodily therewith, a spring bearing at one end against the key and at its other end against said jack and having a tendency to expand longitudinally of the key, said jack having its rear and upper surfaces rectangularly disposed toward each other, a vertically elongated hammer block pivoted adjacent the upper end of the hammer jack, a substantially vertical hammer stem attached to the hammer block, a hammer carried by said hammer stem, said hammer block having a notch with its lower side substantially parallel with the hammer stem and its upper side convexed, the upper corner of the hammer jack normally resting at the point of merger of the convex side and the side substantially parallel with the stem of the hammer block notch.

851,895. FLYING-MACHINE. MATTHEW NIAL, Brooklyn, N. Y. Filed Oct. 14, 1905. Serial No. 282,709.

Claim.—1. In a flying machine, a body-frame having a series of standards at each side of the center thereof, and hinged propeller-wings mounted in pairs one above another on said standards, said wings each comprising a stiff bar and rearwardly extending vane, and said wings being adapted, when actuated, for propelling the machine through the air, combined with means for simultaneously actuating said wings, an upwardly inclined forwardly extending covered frame 20 secured to the forward end of said body-frame below the horizontal plane of said wings and against which the air may act to aid in the ascent of the machine, a rudder for steering the machine and means for operating said rudder; substantially as set forth.

2. In a flying machine, a body-frame having a series of standards at each side of the center thereof, and hinged propeller-wings mounted in pairs one above another on said standards, said wings each comprising a stiff bar and rearwardly extending vane, and said wings being adapted, when actuated, for propelling the machine through the air, combined with means for simultaneously actuating said wings, an upwardly inclined forwardly extending covered frame 20 secured to the forward end of said body-frame below the horizontal plane of said wings and against which the air may act to aid in the ascent of the machine, a standard 24 mounted on the forward portion of said frame 20, a rudder 25 secured on said standard for steering the machine, and means for operating said rudder; substantially as set forth.

3. In a flying machine, a body frame having standards at each side of the center thereof, and hinged wings mounted in pairs one above another on said standards, said pairs of wings being disposed so that the wings on one standard will be out of alinement with the wings on the adjacent standards, combined with means for simultaneously actuating all of said wings; substantially as set forth.

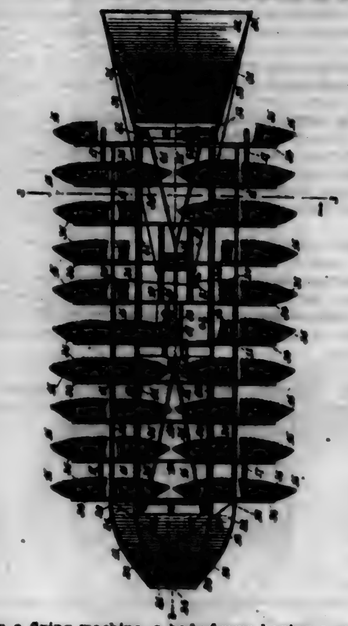

4. In a flying machine, a body-frame having a series of standards at each side of the center thereof, and hinged propeller-wings mounted in pairs one above another on said standards, said wings each comprising a stiff bar and rearwardly extending vane, and said wings being adapted, when actuated, for propelling the machine through the air, combined with means for simultaneously actuating said wings, an upwardly inclined forwardly extending covered frame 20 secured to the forward end of said body-frame below the horizontal plane of said wings and against which the air may act to aid in the ascent of the machine, and a downwardly inclined tail-frame on the rear end of said body-frame below the horizontal plane of said wings; substantially as set forth.

5. In a flying machine, a body frame having standards at each side of the center thereof, and hinged wings mounted in pairs on said standards, combined with means for operating said wings, an upwardly inclined frame having a covering thereon on the forward end of the machine, a downwardly inclined tail-frame on the rear end of the machine formed of flexible side rods connected by a fabric, and connections for deflecting said rods upwardly; substantially as set forth.

6. In a flying machine, a body-frame having standards at each side of the center thereof, and hinged wings mounted on said standards, combined with a motor carried by the machine, a longitudinally disposed cable connected to receive a reciprocating movement from said motor, and cables connected to the opposite sides of said wings and to said longitudinal cable, whereby the latter is enabled to actuate said wings; substantially as set forth.

7. In a flying machine, a body-frame having standards at each side of the center thereof, and hinged wings mounted on said standards, combined with a motor carried by the machine, a longitudinally disposed cable mounted to have a reciprocating movement, a rocking lever to which said cable is connected and from which it receives its movements, means for actuating said lever from said motor, and cables connected to the opposite sides of said wings and to said longitudinal cable, whereby the latter is enabled to actuate said wings; substantially as set forth.

8. In a flying machine, a body-frame having standards at each side of the center thereof, and hinged wings mounted on said standards, combined with a motor carried by the machine, a longitudinally disposed cable mounted to have a reciprocating movement, a rocking lever to which said cable is connected and from which it receives its movement, means enabling the adjustment of the point of connection of said cable with said lever toward or from the fulcrum of the lever for varying the stroke of the wings, means for actuating said lever from said motor, and cables connected to the opposite sides of said wings and to said longitudinal cable, whereby the latter is enabled to actuate said wings; substantially as set forth.

9. In a flying-machine, a body-frame having standards at each side of the center thereof, hinged wings mounted in pairs on said standards, means for actuating said wings, and stops for preventing said wings from folding unduly upwardly should their actuating means lose control of them; substantially as set forth.

10. In a flying machine, a body-frame having standards at each side of the center thereof, hinged wings mounted in pairs on said standards, combined with a motor carried by the machine, a longitudinally disposed cable connected to receive a reciprocating movement from said motor, and cables connected to the opposite sides of said wings and to said longitudinal cable, whereby the latter is enabled to actuate said wings; substantially as set forth.

11. In a flying machine, a body-frame having standards at each side of the center thereof, hinged wings mounted in pairs on said standards and pulleys above and below the sets of wings, the hinges of said wings having vertical openings in them adjacent to said standards, combined with a motor carried by the machine, a longitudinally disposed cable connected to receive a reciprocating motion from said motor, cables at each of said standards passing over said pulleys and connected to said longitudinal cable and to the opposite sides of said wings, whereby the latter may be operated from said longitudinal cable, the reaches of said cables not directly connected with said wings being extended close along the sides of said standards and through said openings in said hinges; substantially as set forth.

12. In a flying machine, a body-frame comprising a set of hollow U-shaped frames set transversely, longitudinal bars connecting the horizontal members of said frames, and rods connecting the vertical members of said frames, said vertical members forming standards, combined with hinged wings mounted in pairs on said standards, and means for actuating said wings; substantially as set forth.

13. In a flying machine, a body-frame having standards at each side thereof, wings hinged in pairs on said standards, a sliding seat for the operator so that he may readily vary the center of gravity of the machine, means for actuating said wings, and means for steering the machine; substantially as set forth.

851,896. NON-REFILLABLE BOTTLE. MARCUS P. NIENDAM, Los Angeles, Cal., assignor to Charles E. Potter, Los Angeles, Cal. Filed June 4, 1906. Serial No. 320,219.

Claim.—1. In a non-refillable bottle, a flaring neck in the lower part of which is a valve seat, a spherical float valve for said seat, a valve retainer in said neck, said retainer having a central aperture, an intermediate valve support with a central aperture smaller than the opening through the valve retainer, said valve support having a valve seat and vertical grooves above and below said seat, a spherical valve for the latter seat, a baffle plate under the aperture of the valve retainer, and pins connecting the baffle plate and valve retainer for supporting the baffle plate.

2. In a non-refillable bottle, a neck, means forming upper and lower air chambers, a valve in the upper chamber normally closing communication between the two chambers, a valve in the lower chamber normally closing

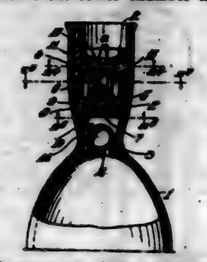

communication between the lower chamber and the body of the bottle, the upper valve passage being smaller than the lower valve passage.

851,897. SAD-IRON STAND. EMMA NICKUM, Philadelphia, Pa. Filed Feb. 15, 1905. Serial No. 245,756.

Claim.—The herein described sad iron holder for attachment to an ironing board or table and comprising the bottom plate, the end plate rising from one end of the bottom plate, and the top plate at the upper end of the end plate, spaced thereby above and partly extending over the bottom plate, said top plate having its longitudinal axis extending at right angles to the longitudinal axis of said bottom plate and provided with a shield forming a flange of such height as to cover the heated portion of a said iron to prevent the clothes from contacting with said portion of the iron, said shield flange being open at its rear end and the inner side thereof terminating short of the said open end to facilitate placing an iron on and removing the same from the top plate, said bottom plate, end plate, top plate and shield flange being integral, said top plate having upon its under side a plurality of depending spacing feet formed integral therewith, and said bottom plate being provided with a clamping screw, substantially as shown and for the purposes set forth.

851,898. SIPHON. HARRY B. PEACOCK, Easton, Pa. Filed Jan. 19, 1906. Serial No. 296,863.

Claim.—1. In a siphon, a pair of superposed and spaced clamping members, a suction tube and a discharge tube connected with the lower one of said members, air expulsion means connected with the other member, and a sight glass clamped between the two members.

2. In a siphon, a pair of clamping members, a suction tube and a discharge tube connected with the lower member, air expulsion means connected with the upper member, cup-shaped washers seated in the two members, and a sight glass clamped between the members and engaging the cup-shaped washers.

3. In a siphon, a pair of longitudinally apertured clamping members having washer seats provided with overhanging flanges, cup-shaped washers in said seats, a sight glass engaging said washers, means for connecting the clamping members and securing them upon the sight glass, a suction tube and a valved discharge tube connected with the lower clamping member, and air expulsion means connected with the upper clamping member.

4. In a siphon, a sight glass, longitudinally apertured clamping members engaging said glass, a suction tube and a valved discharge pipe connected with one of the clamping members, an upwardly opening valve seated upon the other clamping member, and a collapsible and expansible

valved bell or bulb connected with the latter clamping member.

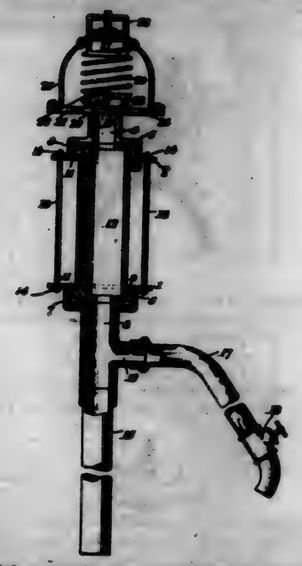

5. In a siphon, a sight glass, longitudinally apertured upper and lower clamping members confining said glass between them, a suction tube and a discharge tube connected with the lower clamping member, an expansible and collapsible bulb secured upon the upper clamping member and having an outwardly opening valve, an upwardly opening valve seated upon the upper clamping member and constituting a closure for the longitudinal aperture therethrough, and a spring within the bulb to assist in expanding the latter.

851,899. VEHICLE-TIRE. DAVID R. SALISBURY and OLIVER D. SALISBURY, Owosso, Mich.; said David R. Salisbury for himself and as guardian of said Oliver D. Salisbury, a minor, assignor to Salisbury Tire Company, Owosso, Mich., a Corporation. Filed Nov. 16, 1905. Serial No. 287,631.

Claim.—1. A vehicle tire comprising an outer tube formed of an exterior layer of leather and an interior layer of canvas, said tube being split annularly, the confronting edges of said tube being flush with respect to said layers, annular stiff leather bands having their edges flush with the edges of said tube, said bands extending at an angle to said tube and being secured thereto by stitching, the confronting edges of said tube being spaced away, whereby an annular opening with flush sides of the material of said tube is afforded and an inner tube of rubber fitting snugly within the outer tube and formed with an integral inperforate depending portion fitting within said annular opening.

2. A vehicle tire comprising an inner tube, and an outer tube surrounding the same, said outer tube embodying a body portion, an annular arcuate filling strip imposed thereupon, an annular arcuate tread strip imposed thereupon and wholly overlying said filling strip, and studs formed with enlarged heads and bifurcated shanks projecting through said tread strip, said filling strip and said body portion, said shanks having their ends upset in said body portion.

3. A vehicle tire comprising an inner tube and an outer tube surrounding the same, said outer tube embodying a body portion, an annular arcuate filling strip imposed thereupon, an annular arcuate tread strip imposed thereupon and wholly overlying said filling strip, said tread strip being secured to said body portion by annular rows of stitching beyond said filling strip, and studs formed with enlarged heads and bifurcated shanks projecting through said tread strip, said filling strip and said body portion, said shanks having their ends upset in said body portion.

851,900. LOCK. CHARLES E. SCRIBNER, Jericho, Vt., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 7, 1904. Serial No. 235,889.

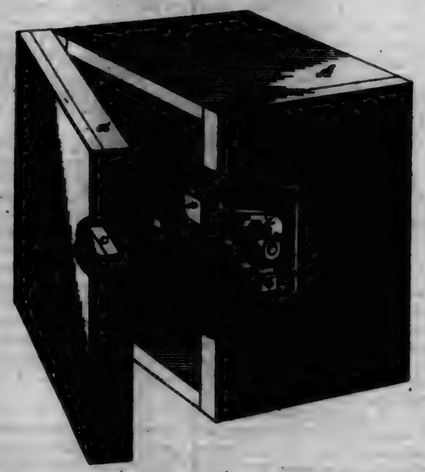

Claim.—1. A lock comprising a pivoted latch bar, a keeper adapted to engage the same, an arm carried by said latch bar having a portion adapted to be engaged by a key bit to move the latch bar out of engagement with said keeper, another portion of said arm preventing the removal of said key while the latch bar is in such position, means for locking the bar in its open position, and means for restoring the latch bar into engagement with said keeper to release the key.

2. A lock comprising a pivoted latch bar, a keeper therefor, said latch bar being adapted to be operated by a key to control its engagement with said keeper, a spring-controlled longitudinally movable blocking bar released upon the separation of said latch bar and keeper to block the latch bar in its open position and prevent the removal of the key, and means adapted to withdraw said blocking bar and permit the engagement of said latch bar and keeper, whereupon the key may be removed.

3. A lock for the door of a box or other structure, comprising a frame secured to the wall of the structure, a pivoted latch bar within the frame, a keeper upon the door with which said bar engages to lock the same, an opening being provided for the insertion of a key within the frame, the bit of the inserted key being adapted when the key is rotated to engage said bar and move the same out of engagement with said keeper, a blocking bar movably mounted within the frame, means operative as the door is opened for moving said blocking bar to block said latch bar and key in the positions to which they have been moved, whereby an inserted key cannot be withdrawn while the door is unlocked, and means actuated in closing said door adapted to move said blocking bar to permit the return movement of said latch bar and the release of said key.

4. A lock comprising a pivoted latch bar, a keeper adapted to co-operate therewith, a slidable blocking device operative upon the lifting of said latch bar from engagement with said keeper by a key, to block the latch bar in its raised position and prevent the withdrawal of said key, and means actuated as said latch bar and keeper re-engage to withdraw said blocking device and permit the removal of said key.

5. A lock comprising a latch bar, a keeper adapted to engage the same, the engagement of said latch bar and keeper being controlled by a key, and a spring actuated slidable blocking bar operative upon the separation of said latch bar and keeper adapted to prevent the withdrawal of said key.

6. A lock for the door of a box or other structure, comprising a frame secured to a wall of the structure, a pivoted latch bar within the frame, a keeper upon the door with which said bar engages to lock the same, an opening being provided for the insertion of the key within the frame, an arm carried by said latch bar having a portion adapted to be engaged by a key bit to move the latch bar out of engagement with said keeper, another portion of said arm preventing the removal of the key while the latch bar is in such position, a slide bar and a lug carried thereby, a spring adapted upon the opening of said door to move said slide bar and bring said lug in engagement with said arm, means for limiting such movement of said bar, the door being arranged in closing to move said slide bar to its normal position, whereby the latch when moved to open the door is blocked in position to prevent the removal of the key.

7. A lock for the door of a box or other structure, comprising a frame secured to an inner wall of the structure, a pivoted latch bar within the frame, a keeper carried by the door with which said bar engages to lock the door, an opening being provided through the wall for the insertion of a key within the frame, an arm carried by said latch bar having a recess to receive the bit of a key, the bar being adapted to be moved by such bit out of engagement with the keeper, said key being adapted to be held by the bar, when in such position, against removal, a blocking bar slidably mounted in said frame, a lug carried by said bar, a spring adapted upon the opening of the door to move said slide bar and bring said lug under said arm to lock the latch bar in its open position, a stud carried by said bar and engaging the frame when the bar is moved to limit the movement of said bar, a pin carried by the door adapted upon the closing thereof to return said bar to normal position, and a spring adapted upon the removal of said lug to move the latch bar into engagement with said keeper.

8. A lock for the door of a box or other structure, comprising a frame secured to the wall of said structure, a pivoted latch bar within the frame, a keeper upon the door with which said bar engages to lock the door, an opening being provided for the insertion of a key within the frame, a supporting stud carried by the frame adapted to enter the stem of such key, a segmental guide carried by the frame adapted to enter a slot in the bit of the key to guard against the insertion of an improper key, said bar having portions between which the key bit is inserted, said bit when the key is rotated moving the latch bar out of engagement with said keeper, and being held between said portions against removal, a stop carried by the frame preventing the rotation of the key in the wrong direction, a blocking member movably mounted within the frame, means operated as the door is opened for moving said member to block the latch bar in its open position, and means operated in closing said door for moving said blocking member to permit the return movement of the latch bar.

9. A lock for the door of a box or other structure, comprising a frame secured to a wall of the structure, a pivoted latch bar within the frame, a keeper upon the door with which said bar engages to lock the same, an opening being provided for the insertion of a key within the frame, a portion of the bar being adapted to be engaged by a key bit to move the latch bar away from said keeper, another portion of the latch bar being adapted to block the return movement of the key bit in such position of the bar, mechanism operative upon the opening of the door of the structure adapted to block the latch bar in its open position, means operative upon the closing of the door for withdrawing said mechanism, and means actuated upon the withdrawal of said mechanism adapted to move said latch bar into engagement with said keeper; whereby upon closing the door the same is automatically locked and the key made removable.

851,901. MOWER. JAMES H. SHEBARD, Sparta, Ill. Filed Feb. 5, 1907. Serial No. 355,908.

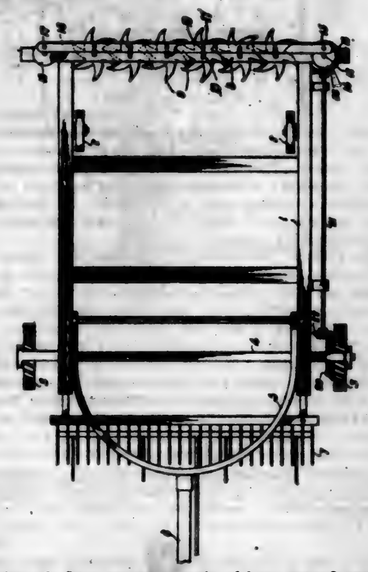

Claim.—1. In a mower, a pair of bars spaced apart in parallel relation, shafts journaled in said bars and having crank ends, sickles mounted upon said shafts, disks journaled for rotation at opposite ends of the said bars and having wrist pins, a pitman bar having perforations which receive said wrist pins and said crank ends and a means for rotating said disks.

2. In a mower a frame, parallel bars spaced apart, shafts journaled in said bars and having crank ends, sickles located between the bars and attached to said shafts, shafts journaled at the ends of the bars, disks attached to the last named shafts and having wrist pins, a pitman bar having perforations which receive said wrist pins and the crank ends of the shafts, a beveled gear wheel mounted upon one of the shafts located at the ends of the bars, a traction wheel journaled for rotation to the frame of the implement and a means for transmitting motion from said traction wheel to said gear wheel.

851,902. PLOW-JOINTER. ROY C. SMITH, East Germantown, Ind. Filed Nov. 3, 1906. Serial No. 341,932.

Claim.—A disk jointer comprising a disk, a disk standard, a casting fitting an opening centrally formed in the disk and bearing against the inner side of the disk, said casting being formed with a rounded depression, a clamp plate conforming to and bearing against the outer side of

the disk, said plate being formed with a projection to fit within the depression in the casting and with edge flanges

to embrace the standard, and a bolt passed through the standard, clamp plate and casting.

851,903. DRAFT APPARATUS. GEORGE M. SOMMER, Bradner, Ohio. Filed Mar. 12, 1906. Serial No. 305,511.

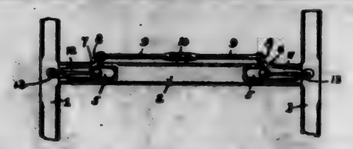

Claim.—1. In a draft apparatus, the combination of a cross bar, jaws secured near each end of the same, levers pivoted between the jaws, each lever having a rearwardly and an outwardly extending arm, a rod attached to each rearwardly extending arm, a turnbuckle for joining the ends of the rods, and means to secure the tugs to the outwardly extending arms.

2. In a draft apparatus, the combination of a cross bar, jaws secured near each end of the same, levers pivoted between the jaws, each lever having a rearwardly and an outwardly extending arm, means to connect the rearwardly extending arms, said outwardly projecting arms being each provided with a groove and a slot, an arm pivoted in said groove, a latch pivoted at the end of said arm and adapted to engage a shoulder in said slot, a spring on each arm to hold the latch outward, and means for preventing the latch and arm from moving beyond a fixed limit.

851,904. SECTIONAL MOLD. THEODORE C. STRIMER, Buckhannon, W. Va. Filed Feb. 27, 1906. Serial No. 303,258.

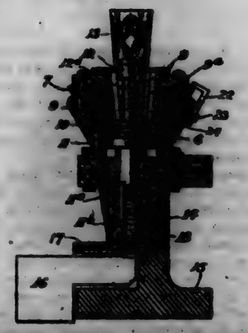

Claim.—1. A glass pressing mold for co-operation with a plunger and press ring, comprising a socket having inclined faces, and mold sections radially divided and slidingly attached on said inclined surfaces to close and open, whereby the pressure of the ring and plunger closes the mold.

2. The combination with a holder having inclined faces, of a mold comprising sections slidingly attached on said faces, and means for raising the bottom of the mold and thereby opening the sections by sliding them on said surfaces, substantially as described.

3. A press mold composed of sections divided on radial planes and having inclined outer faces and a holder for the sections having inside inclined supporting surfaces, whereby downward pressure by the plunger on the mold sections will close them in radial direction, substantially as described.

4. The combination of a holder socket having inclined guide-ways, and a plurality of press mold sections divided on radial planes and sliding on said guide-ways, and adapted to close radially, and means to open the mold by sliding the sections upwardly on the guide-ways.

5. The combination with a holding socket having inclined guideways, of a mold composed of sections engaging said guideways, and a double movable bottom for the mold, of which one part is adapted to lift the sections and the other part to eject the article after the sections are opened.

6. A mold composed of sections with inclined outer faces, a socket having inclined guideways positively engaging said faces, means for lifting the sections in the socket to open the sections, and to eject the article.

7. In a sectional mold the combination of a socket having inclined guideways, sections engaging the same and adapted to be pressed together by vertical pressure on the mold, and vertically operating means to open the mold and eject the article.

8. In a mold the combination of a socket with inclined guide slots, sections sliding in said guide slots, a movable bottom for the mold adapted to raise the sections in the guide slots, and an ejecting plunger movable independent of the bottom and through the same, substantially as described.

9. A sectional glass pressing mold comprising a socket having inclined guides, bearing plates in said guides, and co-operating radially divided mold sections removably attached to the said bearing plates, whereby the mold sections are interchangeable.

10. The combination with a sectional mold adapted to be opened by vertical movement of the parts, of a movable bottom partly supporting and adapted to raise said parts, an ejector spindle working through the bottom, and cam devices adapted to first raise the mold sections to open the mold, and then eject the article therefrom.

11. A sectional mold comprising parts adapted to be closed by downward pressure thereon, an inclined holder supporting said parts, and a movable bottom adapted to engage and raise the sectional parts in the holder and simultaneously raising the article as the mold opens, substantially as described.

12. A radially divided sectional mold, combined with a support having guides engaging and adapted to open the sections of the molds, by sliding movement therein, in an upward and outward radial direction, substantially as described.

13. A glass pressing mold comprising radially divided sections, a movable bottom engaging the sections, and a support the sections and support having inclined engaging faces, whereby the sections are opened when pushed upward in the support.

851,905. AUTOMATIC SHUTTLE-CHANGING LOOM WITH SLIDING FRONT PLATE FOR THE SHUTTLE-BOX. EDWARD S. STIMPSON, Hopedale, Mass., assignor to Draper Company, Portland, Me., a Corporation of Maine. Filed Mar. 8, 1906. Serial No. 304,852.

Claim.—1. An automatic shuttle-changing loom having, in combination, a front-plate for the shuttle-box at the supply side of the loom mounted in inclined guideways so that when the front-plate is moved away from the race-plate of the lay it will be moved forwardly, and means for moving said front-plate.

2. An automatic shuttle-changing loom having, in combination, a lay provided with inclined guideways at the supply side of the loom, the inclination of said guideways being upwardly and forwardly from the race-plate of the lay, a frame mounted to slide in said guideways, a front-plate for the shuttle-box carried by and moving with said frame, and means for moving said frame in both directions.

851,906.

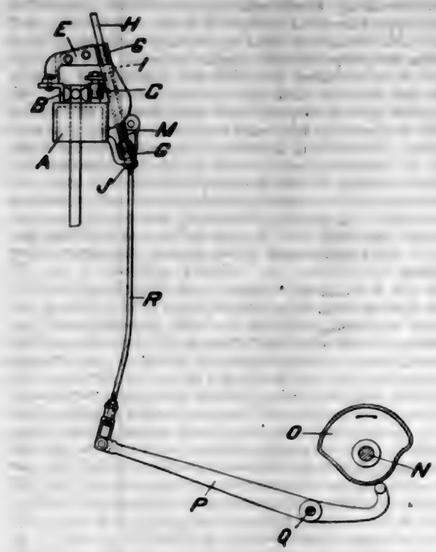

851,906. CONSTRUCTION OF PLIERS. ERNST STRASSBURGER, Chicago, Ill. Filed Aug. 13, 1906. Serial No. 330,414.

Claim.—Pliers whereof one jaw-member is provided with a notch forming a longitudinal channel in the face toward the opposite jaw and said opposite jaw provided with an end notch cut through the member so as to leave two short prongs.

851,907. WRAPPING-MACHINE. JAMES J. SULLIVAN, Long Island City, N. Y. Filed Oct. 5, 1905. Serial No. 281,457.

Claim.—1. In a wrapping machine, the combination with means for simultaneously imparting a step by step movement to a plurality of articles in successive stages during one portion of a cycle of operation of the machine and for feeding and severing wrapping material therefor, of reciprocating means for performing folding operations, operating simultaneously upon the several articles transversely of the direction of the step by step movement thereof during another portion of the cycle of operation of the machine, and folding devices operating intermediate the operation of the said step by step means and the transverse reciprocating means.

2. In a wrapping machine, the combination with a drive shaft, means driven thereby during a portion only of the revolution of same for simultaneously imparting a step by step movement to a plurality of articles in successive stages, and means for feeding wrapping material therefor, of reciprocating means for performing folding operations, driven by the main shaft during a portion only of a revolution of the drive shaft for operating simultaneously upon the several articles transversely of the direction of the step by step movement, and folding devices operating by the main shaft during an interval between the operation of the said step by step means and the transverse reciprocating means.

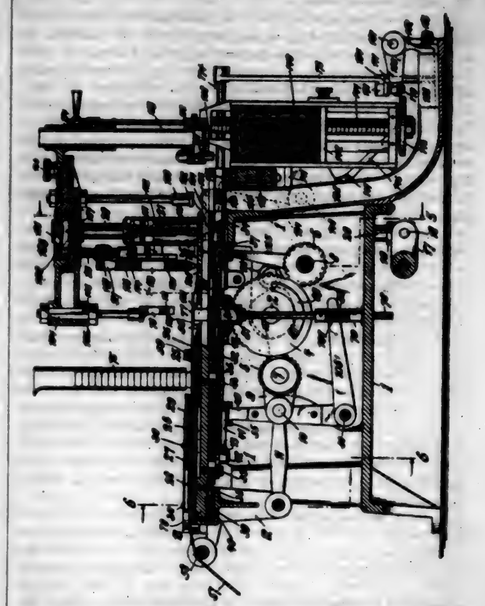

3. In a wrapping machine, the combination with a yielding supporting device arranged to receive an article to be wrapped, and a plunger for engaging the article to be wrapped, when supported upon said device, of means for reciprocating the plunger to force the article down against the resistance of the supporting device, means independent of the plunger for depressing the supporting device upon reciprocation of the plunger when no article is present upon the supporting device, and means for feeding an article forward after it has been forced downward by the plunger.

4. In a wrapping machine, the combination with a yielding supoprting device comprising a vertically movable member 77 spring-held in its uppermost position, and means for feeding articles to be wrapped upon said supporting member, of a reciprocating plunger 76 arranged in its reciprocation to engage an article supported upon the member 76 and to depress the said member, and cam operating means to depress the reciprocating device independently of the plunger when no article is supported thereby.

5. In a wrapping machine, the combination with a magazine for articles to be wrapped and a plate having an opening at a point in advance of said magazine, a reciprocating feed plate having an abutment for engaging and feeding articles from said magazine to the said opening, and having another abutment secured to move with the first said abutment, for feeding forward articles after they have moved through the said opening, of a yielding support for said articles opposite said opening, and means for forcing articles through the said opening against the resistance of said yielding support.

6. In a wrapping machine, the combination with a reciprocating member having a portion constituting a carrying member, and a finger engaging same and longitudinally movable therewith, of means for supplying wrapping material to said carrying member and for supplying articles to be wrapped to a point above said carrying member, a pusher secured to said carrying member arranged to overhang the wrapping material supported upon said car-

rying member, and to engage the side of an article to be wrapped to feed same forward with the wrapper and carrying member, means for reciprocating the carrying member, and means for lifting the clamping finger during the rearward portion of the reciprocating movement of the carrying member.

7. In a wrapping machine, the combination with a stationary top plate having a longitudinal groove therein, of a reciprocating feed plate having a portion fitted to said longitudinal groove, a clamping finger longitudinally movable with said reciprocating plate, but arranged to have a movement transversely into and out of engagement with the portion of said reciprocating plate in the groove of said stationary plate, a magazine for articles to be wrapped arranged above the groove in said top plate, and a pusher, reciprocating with said reciprocating plate, arranged to overhang said top plate and the longitudinal groove therein.

8. In a wrapping machine, the combination with a reciprocating carrying member having a plane face arranged to support a ribbon of wrapping material, and a clamping finger yieldingly forced against the surface of said carrying member to grip the wrapping material between itself and the said carrying member, of a magazine for articles to be wrapped arranged above the carrying member, and at the rear of the path of movement of the clamping finger, feeding means for the said articles comprising a plate which overhangs the said carrying member, and between which and the said carrying member the wrapping material has its path of movement, means for reciprocating the said carrying member the feed plate and the clamping finger, and means for lifting the said clamping finger during the rearward portion of the reciprocation of the carrying member.

9. In a wrapping machine, the combination with a reciprocating bar 27 constituting a carrying member for carrying wrapping material and also an article to be wrapped, a magazine for articles to be wrapped arranged above the carrying member, feeding means for the said articles, and a clamping finger 59 provided with a spring 63 for pressing it toward the said carrying member, of a rocking bar 61 supporting the said clamping finger, means reciprocating with the said bar 27 for engagement with the clamping finger to reciprocate same therewith, and means for lifting the said clamping finger during the return portion of its reciprocating movement.

10. In a wrapping machine, the combination with a reciprocating bar 27 constituting a carrying member for carrying wrapping material and also an article to be wrapped, a magazine for articles to be wrapped arranged above the carrying member, feeding means for the said articles, and a clamping finger 59 provided with a spring 63 for pressing it toward the said carrying member, of a rocking bar 61 supporting the said clamping finger, means reciprocating with the said bar 27 for engagement with the clamping finger to reciprocate same therewith, such movement being a sliding movement with respect to the rocking bar supporting same, a gear segment 65 secured to said rocking bar 61, a gear sector 66 engaging said gear segment, and a cam 69 for rocking said gear sector to lift the clamping finger during its return movement.

11. In a wrapping machine, the combination with a reciprocating carrying member having a plane face arranged to support a ribbon of wrapping material, and a clamping finger yieldingly forced toward the plane surface of said carrying member to grip the wrapping material between itself and the said carrying member, of a magazine for articles to be wrapped arranged above the carrying member, and at the rear of the path of movement of the clamping finger, feeding means for the said articles means for reciprocating the said carrying member the feeding means and the clamping finger, means for severing the wrapping material at a point between the clamping finger and the magazine after the carrying member and clamping finger have been moved forward, and means for lifting the clamping finger during its return movement.

12. In a wrapping machine, the combination with a plate having an opening therein, and means for feeding a ribbon of wrapping material over said opening, of a severing device for severing a section of the said wrapping material, steadying means engaging the severed portion of the wrapping material contiguous to the said opening, and means for lifting the said steadying means prior to a feeding movement of the wrapping material.

13. In a wrapping machine, the combination with a plate having an opening therein, means for feeding a ribbon of wrapping material over said opening, and means for feeding articles upon said wrapper to a point over said opening, of a severing device for severing a section of the said wrapping material, steadying means engaging the severed portion of the wrapping material contiguous to the said opening, means for lifting the said steadying means after the section of wrapping material has been so severed, and means for forcing the article with the portion of the wrapper upon which it rests, through the said opening.

14. In a wrapping machine, the combination with a plate having an opening therein, means for feeding a ribbon of wrapping material over said opening, means for feeding articles upon said wrapper to a point over said opening, and a yielding supporting device in line with said opening arranged to receive and support a portion of the wrapping material and an article to be wrapped therein, of a severing device for severing a section of the said wrapping material, steadying means engaging the severed portion of the wrapping material contiguous to the said opening, and means for forcing the article with the portion of the wrapper upon which it rests through the said opening against the resistance of the supporting device.

15. In a wrapping machine, the combination with a top plate 25, and a plate 108 having arms 109 pivoted to the said plate 25, said top plate, pivoted plate and arms thereof inclosing a space 101 through which an article is adapted to be forced, of means for forcing an article through said opening and for advancing same beneath said pivoted plate 108, a plunger 110 pivoted to said plate 108, a housing 111 therefor and a spring 112 within said housing bearing against said plunger, substantially as specified.

16. In a wrapping machine, the combination with folding devices, of a reciprocating feed plate having a relatively stationary shoulder or abutment for engaging and feeding an article during one step of its wrapping operation, and having a relatively movable dog for engaging an article during another step of the wrapping operation, and means comprising a pivoted cam carried by the feed plate, and operated at predetermined points in a cycle of movements of the machine, for moving the dog out of operative position during the return portion of the reciprocating movement of the feed plate.

17. In a wrapping machine, the combination with folding devices, of a reciprocating feed plate having two relatively stationary abutments in different planes for feeding forward two articles in different steps of the wrapping operation, and having a relatively movable dog for engaging an article during another step of the wrapping operation, and means for moving the dog out of operative position during the return portion of the reciprocating movement of the feed plate.

18. In a wrapping machine, the combination with folding devices, of a reciprocating feed plate 13 provided with an overhanging pusher plate 29, and having a shoulder or abutment which has a path of movement lower than the path of movement of the pusher plate, a movable abutment 131 arranged to be moved into line with the path of movement of the shoulder or abutment, and means for moving the same out of such line of movement.

19. In a wrapping machine, the combination with folding devices, and a reciprocating feed plate, of a relatively stationary bar secured to said feed plate, a relatively movable bar carried by said feed plate, a feed dog pivoted to one of said bars and engaging the other, and means for shifting the position of said movable bar with relation to the stationary bar.

20. In a wrapping machine, the combination with a reciprocating feed plate, of a relatively movable bar carried thereby, a feed dog pivoted to said bar and engaging a portion stationary with said feed plate, means for reciprocating said feed plate, means for engaging the said bar to shift its position with relation to the feed plate at about the end of the forward movement of the said feed plate, including a device for locking the said feed plate and bar together in their adjusted positions during the major portion of the movement thereof in either direction.

21. In a wrapping machine, the combination with a reciprocating feed plate, of a relatively movable bar carried thereby, a feed dog pivoted to said bar and engaging a portion stationary with said feed plate, means for reciprocating said feed plate, a stationary abutment engaging said bar near the end of the forward movement of the feed plate to shift the relative position thereof, and cam operated means operating independently of the movement of the feed plate, for reversing the relative position of said movable bar with respect to said feed plate during another portion of the movement of said feed plate.

22. In a wrapping machine, the combination with a reciprocating feed plate, of a relatively movable bar carried thereby, a feed dog pivoted to said bar and engaging a portion stationary with said feed plate, means for reciprocating said feed plate, a stationary abutment engaging said bar near the end of the forward movement of the feed plate to shift the relative position thereof, a cam, and means operated thereby for reversing the relative position of said movable bar with respect to said feed plate during another portion of the movement of said feed plate.

23. In a wrapping machine, the combination with a reciprocating feed plate, of a relatively movable bar carried thereby, a feed dog pivoted to said bar and engaging a portion stationary with said feed plate, a cam piece carried by said feed plate and engaging a part carried by said bar, and means for shifting the position of said cam piece at different points in the reciprocation of said feed plate.

24. In a wrapping machine, the combination with a reciprocating feed plate, of a relatively movable bar carried thereby, a feed dog pivoted to said bar and engaging a portion stationary with said feed plate, a cam piece carried by said feed plate and engaging a part carried by said bar, a stationary abutment for engaging said cam piece to operate same during one portion of the reciprocation of the feed plate, and mechanically operated means for shifting the cam piece during another portion of the movement of the feed plate.

25. In a wrapping machine, the combination with a reciprocating feed plate, of a relatively movable bar carried thereby, a feed dog pivoted to said bar and engaging a portion stationary with said feed plate, a cam piece carried by said feed plate and engaging a part carried by said bar, a stationary abutment for engaging said cam piece to operate same during one portion of the reciprocation of the feed plate, a rotary cam, and means operated thereby for shifting the position of the cam piece during another portion of the reciprocation of the feed plate.

26. In a wrapping machine, the combination with a reciprocating feed plate 13, a movable bar 35 carried thereby, a pivoted dog 131 pivoted to said bar and engaging a portion stationary with said plate 13, a cam roller 43 secured to said bar 35, a cam piece 41 pivoted to a portion stationary with said plate 13, said cam piece having notches 44, 45 at different distances from the pivotal center of said cam piece, and means for operating said pivoted cam piece.

27. In a wrapping machine, the combination with means for holding the sides of a wrapper around an article and for feeding the article, with its wrapper so partially folded, beneath forming levers, of pivoted forming levers, means for reciprocating the forming levers across the ends of the article to fold down the projecting ends of the wrapper, and means for forcing the levers apart during the return portion of the reciprocating movement so that they will clear the ends of the article.

28. In a wrapping machine, the combination with means for folding the sides of a wrapper around an article and for feeding the article, with its wrapper so partially folded, beneath forming levers, and pivoted forming levers spring pressed toward each other, means for reciprocating the forming levers across the ends of the article to fold down the projecting ends of the wrapper, and means for forcing the levers apart against their spring tension during the return portion of the reciprocating movement, so that they will clear the ends of the article.

29. In a wrapping machine, the combination with means for folding the sides of a wrapper around an article and for feeding the article, with its wrapper so partially folded, beneath forming levers, of pivoted forming levers having intermeshing gear sector portions, means for reciprocating the forming levers across the ends of the article to fold down the projecting ends of the wrapper, and means for forcing the levers apart during the return portion of their reciprocating movement to cause them to clear the ends of the article at such time.

30. In a wrapping machine, the combination with means for folding the sides of a wrapper around an article and for feeding the article, with its wrapper so partially folded, beneath forming levers, of pivoted forming levers having intermeshing gear sector portions, spring means for forcing the said levers together, means for reciprocating the forming levers across the ends of the article to fold down the projecting ends of the wrapper, and means acting upon one of the arms to separate the said arms against spring tension during the return portion of the movement thereof.

31. In a wrapping machine, the combination with means for folding the sides of a wrapper around an article and for feeding the article, with its wrapper so partially folded, beneath forming levers, of pivoted forming levers, means for reciprocating the forming levers across the ends of the article to fold down the projecting ends of the wrapper, and a cam piece for separating the levers upon the return portion of their reciprocating movement.

32. In a wrapping machine, the combination with means for folding the sides of a wrapper around an article and for feeding the article, with its wrapper so partially folded, beneath forming levers, of pivoted forming levers, a carrier therefor, a cam piece carried by the said carrier, the said cam piece in its movement arranged to force the forming levers apart, means for reciprocating the carrier and forming levers carried thereby, and stationary abutments engaging the said cam piece, substantially as set forth.

33. In a wrapping machine, the combination with means for folding the sides of a wrapper around an article and for feeding the article, with its wrapper so partially folded, beneath forming levers, of pivoted forming levers 113 having intermeshing gear sectors 116, a spring for forcing the two levers together, a cam follower carried by one said forming lever, a carrier 115 carrying the said forming levers, a cam piece 120 upon said carrier arranged to engage said cam follower, means for reciprocating the carrier and forming levers, and stationary abutments 122 for engaging the said cam piece.

34. In a wrapping machine, the combination with means for folding the sides of a wrapper around an article and for feeding the article, with its wrapper so partially folded, beneath forming levers, of forming levers, means for moving the forming levers in one direction across the ends of the article to fold down the projecting ends of the wrapper and for returning the same to an initial position, means for moving the levers away from contact with the ends of the article during the return movement, rotary forming members for performing a folding operation upon the wrapper ends, and means for rotating the said members during the return movement of the forming levers.

35. In a wrapping machine, the combination with means for folding a wrapper in one direction around an article, and forming mechanism for folding down the projecting ends of the said partially folded wrapper, of folding means for folding over the rearward projecting end flaps, end plates having shoulders or abutments, cam members arranged beneath said plates and immediately in advance of the shoulders or abutments thereof, and means for imparting a single movement in right lines to said article past said shoulders or abutments and said cam members, whereby the former will operate to fold over the forward projecting end portions, and the latter to tuck the projecting extremities beneath the article.

36. In a wrapping machine, the combination with means for folding a wrapper in one direction around an article, and forming mechanism for folding down the projecting ends of the said partially folded wrapper, of a runway for the article having spring-pressed sides arranged immedi-

ately in advance of the point at which the said forming mechanism operates, for engaging the forward projecting end portions of the wrapper as the article is fed forward, rotary forming members pivoted about an axis immediately at the rear of said point arranged in their operation to fold over the rearward projecting end flaps, the bottom of the runway cut away at a point in advance of the portion at which the said abutments or shoulders are located, and provided with cam elements which are adapted to engage the downwardly projecting extremities of the wrapper, and feeding means for applying a single impulse to an article to feed it from the said point at which the said forming mechanism operates to a point beyond the said cam members, whereby the forward projecting end flaps will be folded over and the extremities tucked under the article, all in substantially one operation.

37. In a wrapping machine, the combination with a feed plate having an abutment for engaging an article, and means for reciprocating the feed plate, of a gripper jaw carried stationary with the feed plate, a relatively movable bar carried by said feed plate, a gripper jaw pivoted to said relatively movable bar and engaging a part stationary with the feed plate, a label magazine, and means for lifting labels one at a time from the magazine and presenting them to the gripper jaws.

38. In a wrapping machine, the combination with a feed plate having an abutment for engaging an article, and means for reciprocating the feed plate, of a gripper jaw carried stationary with the feed plate, a relatively movable bar carried by said feed plate, a gripper jaw pivoted to said relatively movable bar and engaging a part stationary with the feed plate, means for shifting the position of the relatively movable bar with respect to the feed plate and for retaining it in its adjusted position, a label magazine, and means for lifting labels one at a time from the magazine and presenting them to the gripper jaws.

39. In a wrapping machine, the combination with a feed plate having an abutment for engaging an article, and means for reciprocating the feed plate, of a gripper jaw carried stationary with the feed plate, a relatively movable bar carried by said feed plate, a gripper jaw pivoted to said relatively movable bar and engaging a part stationary with the feed plate, a cam piece carried by said feed plate and adapted to operate said movable bar, means for operating said cam piece, a label magazine, and means for lifting labels one at a time from the magazine and presenting them to the gripper jaws.

40. In a wrapping machine, the combination with a feed plate having an abutment for engaging an article, and means for reciprocating the feed plate, of a gripper jaw carried stationary with the feed plate, a relatively movable bar carried by said feed plate, a gripper jaw pivoted to said relatively movable bar and engaging a part stationary with the feed plate, a cam piece carried by said feed plate and adapted to operate said movable bar, a stationary abutment for engaging and operating said cam piece at about the limit of the forward movement of the feed plate, a label magazine, and means for lifting labels one at a time from the magazine and presenting them to the gripper jaws.

41. In a wrapping machine, the combination with a feed plate having an abutment for engaging an article, and means for reciprocating the feed plate, of a gripper jaw carried stationary with the feed plate, a relatively movable bar carried by said feed plate, a gripper jaw pivoted to said relatively movable bar and engaging a part stationary with the feed plate, a cam piece carried by said feed plate and adapted to operate said movable bar, an operating cam, and intermediate mechanism between said operating cam and said cam piece to shift the position of said cam piece at a predetermined position of the reciprocating feed plate, a label magazine, and means for lifting the labels one at a time from the magazine and presenting them to the gripper jaws.

42. In a wrapping machine, the combination with a feed plate having an abutment for engaging an article, and means for reciprocating the feed plate, of a gripper jaw carried stationary with the feed plate, a relatively movable bar carried by said feed plate, a gripper jaw pivoted to said relatively movable bar and engaging a part stationary with the feed plate, a cam piece carried by said feed plate and adapted to operate said movable bar, a stationary abutment for engaging the cam piece to operate same near the limit of the forward movement of the feed plate, an operating cam, and mechanism between the operating cam and the cam piece to operate the said cam piece when the feed plate is in another position, a label magazine, and means for lifting labels one at a time from the magazine and presenting them to the gripper jaws.

43. In a wrapping machine, the combination with a reciprocating feed plate 13 and means for reciprocating same, of a stationary gripper jaw 34 carried thereby, a relatively movable bar 35 carried by said feed plate, another gripper jaw 36 pivoted to said movable bar and engaging a portion stationary with said feed plate, a cam piece 41 pivoted to a portion stationary with said feed plate, said cam piece having two notches 44 and 45 at different distances from the pivotal center of said cam piece, a spring 40 between said feed plate and said movable bar, and means for operating said cam piece.

44. In a wrapping machine, the combination with a reciprocating feed plate 13 and means for reciprocating same, of a stationary gripper jaw 34 carried thereby, a relatively movable bar 35 carried by said feed plate, another gripper jaw 36 pivoted to said movable bar and engaging a portion stationary with said feed plate, a cam piece 41 pivoted to a portion stationary with said feed plate, said cam piece having two notches 44 and 45 at different distances from the pivotal center of said cam piece, a spring 40 between said feed plate and said movable bar, a stationary abutment 47 for engaging the cam piece 41 near the end of the forward movement of the reciprocating feed plate, an operating cam, and intermediate mechanism between said operating cam and said cam piece to operate same when the reciprocating feed plate is in another position.

45. In a wrapping machine, the combination with wrapping and feeding means, of a label magazine, having a movable follower for supporting a pile of labels, a paste receiver, a member arranged to receive paste from the receiver, means for reciprocating the said member toward and away from a pile of labels in the magazine, to cause said member to engage the topmost label and to lift same by adhesion, a gripper, means for operating and reciprocating same, and automatic feeding means comprising a feed screw for the follower, step by step mechanism for the feed screw, and means for adjusting the throw of the step by step mechanism to vary the extent of movement imparted to the feed screw at each operation.

46. In a wrapping machine, the combination with a horisontally reciprocating feed plate having abutments for engaging and feeding articles in different planes, of overhead mechanism, including means for engaging an article and transferring it from one said plane to another, and folding means for simultaneously engaging another article which has been previously so transferred, and means for vertically reciprocating said overhead mechanism.

47. In a wrapping machine, the combination with a horisontally reciprocating feed plate having three abutments for simultaneously engaging and feeding forward three articles in successive stages in the machine, the first of said abutments arranged upon a different plane to the other two, and the last of said abutments arranged to be lowered out of the feeding plane during the rearward portion of the reciprocating movement of said feed plate, of overhead mechanism comprising plungers adapted to operate upon the articles fed forward by the first and last of said abutments, and forming means adapted to operate upon the article fed forward by the intermediate said abutment; and means for vertically reciprocating said overhead mechanism.

48. In a wrapping machine, the combination with feed mechanism, of a reciprocating upper head, and operating elements carried by said upper head, adjustable thereon, whereby they may be moved into and out of operative position.

49. In a wrapping machine, the combination with feed mechanism, of an upper head, operating elements pivotally carried by said upper head, and means for bodily reciprocating said upper head and operating elements.

50. In a wrapping machine, the combination with feed mechanism, of an upper head, a plunger and forming members pivotally carried by said upper head, means for securing the same in their adjusted position, and means for bodily reciprocating said upper head and parts carried thereby.

851,908. ROTARY ENGINE. PAUL WALLOT and FRIEDRICH C. KAUDER, Hanover, Germany. Filed May 19, 1906. Serial No. 317,788.

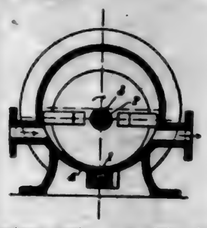

Claim.—1. A rotary engine comprising in combination a casing, a piston carrier, a radial piston slidably mounted therein, said piston being longitudinally divided into wedging members, and yieldingly acting means engaging one of said members to force said piston into engagement with said casing, said means also serving to maintain steam tight engagement between said members and said carrier.

2. A rotary engine comprising in combination a casing, a piston carrier, a radial piston mounted therein, said piston being horisontally divided into wedging members, a pin and slot connection for said members, and yieldingly acting means engaging one of said members to force said piston into engagement with said casing, said means also serving to maintain engagement between said members and said carrier.

3. A rotary engine comprising in combination a casing, a piston carrier, a radial piston mounted therein, said piston being horisontally divided into wedging members, devices connecting said members, and yieldingly acting means engaging one of said members to force said piston into engagement with said casing, said means also serving to maintain engagement between said members and said carrier.

4. A rotary engine comprising in combination a casing, a piston carrier, a radial piston slidably mounted therein, said piston being horisontally divided into wedging members, yieldingly acting means engaging one of said members, and wedging devices interposed between said means and one of said members.

5. A rotary engine comprising in combination a casing, a piston carrier therefor, a piston slidably mounted in said carrier, said piston being longitudinally divided into members adapted to move laterally against the sides of the casing, and wedging devices for effecting lateral and forward movement of said members.

6. A rotary engine comprising in combination a casing, a piston carrier therefor, a piston slidably mounted in said carrier, said piston being longitudinally divided into laterally movable members, wedging devices for effecting lateral movement of said members, and yieldingly acting means for actuating said devices.

7. A rotary engine comprising in combination a casing, a piston carrier therefor, a piston slidably mounted in said carrier, said piston being longitudinally divided into laterally movable members, a steam tight connection for said members, wedging devices effecting lateral movement of said members, and yieldingly acting means for operating said devices.

8. A rotary engine comprising in combination a casing, a piston carrier, a piston slidably mounted therein, said piston having wedging members for effecting steam tight engagement at its upper and lower walls with said carrier, and wedging devices for effecting steam tight engagement between said piston and the walls of the casing.

9. A rotary engine comprising in combination a casing, a piston carrier therefor, a piston slidably mounted in said carrier and divided horisontally in wedging members, said piston being divided longitudinally into laterally movable members, a steam tight connection for said laterally movable members, a pin and slot connection for said wedge shaped members, and wedging devices engaging one pair of said members effecting steam tight engagement between the piston and said carrier and between the piston and the walls of the casing.

10. A rotary engine comprising in combination a casing, a piston carrier, a radial piston mounted therein, said piston being horisontally divided into wedging members, a pin and slot connection for said members, and yieldingly acting means engaging one of said members to force said piston into engagement with said casing, said means serving to maintain engagement between said members and said carrier and a packing strip angularly disposed with respect to the axis of said casing.

851,909. SAFETY DEVICE. DAVID M. WATKINS, Providence, R. I. Filed Mar. 17, 1906. Serial No. 306,590.

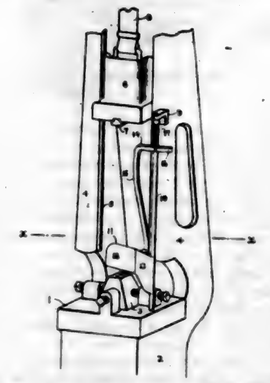

Claim.—1. In a press or similar device, the combination, with a work-support, of an arm adapted to reciprocate across said work-support, said arm being provided with a projection extending below the top of said work-support, substantially as described.

2. In a press or similar device, the combination with a work-support, of an arm adapted to reciprocate across said work-support, the fixed end of said arm being at an angle with the plane of movement of the arm and provided with a projection extending below the top of the work-support, substantially as described.

3. In a press or similar device, the combination of a stationary die, a die mounted in a movable carrier, a rock-shaft provided with a cam extending into the path of the movable carrier and adapted to be operated thereby, an arm secured to said rock-shaft and adapted to swing across the stationary die, and means for limiting the movement of the rock-shaft, substantially as described.

4. In a press or similar device, the combination, with a suitable frame, of a stationary die, a die mounted in a movable carrier, a rock-shaft mounted on the frame, a cam-bar secured to said rock-shaft and extending into the path of the movable carrier, said cam-bar being provided with means for limiting the movement of said rock-shaft, and an arm secured to said rock-shaft and adapted to swing across the face of the stationary die, substantially as described.

851,910. FOLDING BED. JOHN M. WILFLEY, Salt Lake City, Utah. Filed Feb. 7, 1907. Serial No. 356,244.

Claim.—1. The combination with an inclosure and a door-controlled opening thereto, of a folding-bed compris-

ing a frame pivotally-mounted within the walls of said opening, said frame having a counter-weight at the rear end and a support at the front end, a bed-frame mounted within the pivoted-frame and adapted to have a longitudinally slidable movement relative thereto, and co-acting stop-means on the two frames for limiting the sliding movement of the bed-frame in both directions.

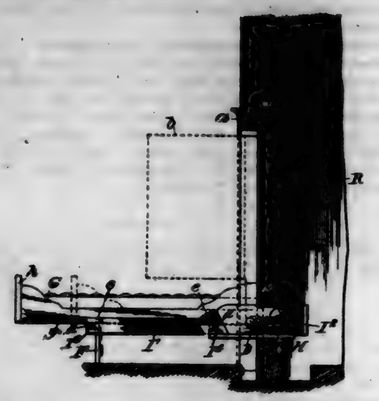

2. In an apartment having an opening through the wall, and doors controlling said opening, a folding bed comprising an inner and an outer frame said outer frame supporting and forming a guide for the inner frame, and being pivotally hung between its ends within the wall opening, and said inner frame being a bed structure and comprising side rails, and foot and head boards, and being longitudinally slidable relative to the outer frame, rollers on the outer frame upon which the inner frame is mounted, and co-acting stop-means on the two frames for limiting the sliding movement of the inner frame in both directions, said outer frame having a weight to counterbalance the weight of said inner frame.

3. In a folding bed, the combination of a pivotally-mounted frame, a bed-frame slidably mounted for longitudinal movement therein, a plurality of rollers on the pivoted frame upon which the bed frame is mounted, brackets fixed to the pivoted frame and extending upwardly and having their upper ends turned transversely, said bed-frame having side rails and rails on the inner sides thereof and disposed beneath the transversely turned upper end of said brackets.

4. On a folding bed a frame pivotally mounted between its ends and adapted to fold into and out of an opening through the wall of an apartment, said frame having a weight bar fixed to its rear end, a bed frame slidably mounted within and relative to the pivoted frame and supported endwise against said weight-bar when the two frames are vertically disposed, means for limiting the outward horizontal movement of the bed-frame, and a foldable leg-support at the front end of the pivoted frame.

851,911. SPRING-BED. WILLIAM F. ADE, Williamsport, Pa. Filed Sept. 29, 1906. Serial No. 336,711.

Claim.—1. A spring bed bottom composed of units each of which consists of two slats carrying at one end springs of one strength and at the other end springs of another strength.

2. A spring bed bottom composed of units each formed of two channels one of the ends of said channels carrying springs of one strength, the other ends carrying springs of another strength.

3. The combination in a spring bed bottom of a series of units each of which consists of two slats carrying for part of their length springs of one strength and for the rest of their length springs of another strength, said springs, and crimped adjusting bars carried by said slats for adjustably holding said units in place.

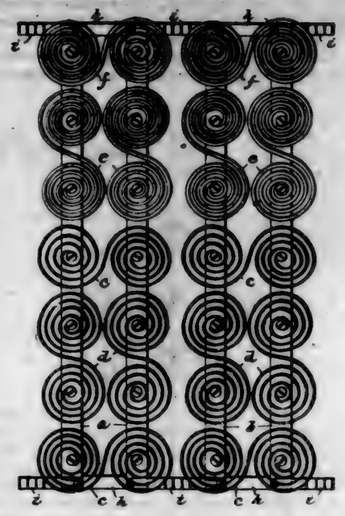

851,912. LIFTING APPARATUS. LOUIS O. BEAUDET, Mendota, Minn. Filed July 9, 1906. Serial No. 325,250.

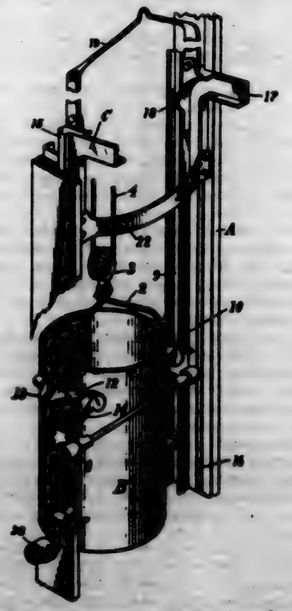

Claim.—1. In an apparatus of the class described, the combination of a pivotally supported slidable receptacle and hoisting means therefor, a lock holding the receptacle normally in upright position, an adjustable switching track arranged in the path of the receptacle, and tripping means for said lock arranged in connection with said switching track whereby said lock is released when said receptacle is adjusted to the position of said switching track.

2. In apparatus of the class described, the combination of a pivotally supported receptacle, an upwardly extending track, guides carried by the receptacle co-operating with said track, an adjustable switching track alining with said main track, hoisting mechanism for the receptacle, locking means for holding the receptacle in upright position, and means carried by said switching track for engaging and releasing said locking means.

3. In apparatus of the class described, the combination of a pivotally supported receptacle, an upwardly extending track, guides carried by the receptacle co-operating with said track, an adjustable switching track alining with said vertical track, locking means normally holding the receptacle in upright position, means carried by the switching track for engaging and releasing said locking means, and means carried by the receptacle for limiting the tilting of the receptacle upon its support, for the purpose set forth.

851,913. RAILWAY-SWITCH. ORLEY A. BIRD, Centerburg, Ohio. Filed Jan. 16, 1907. Serial No. 352,559.

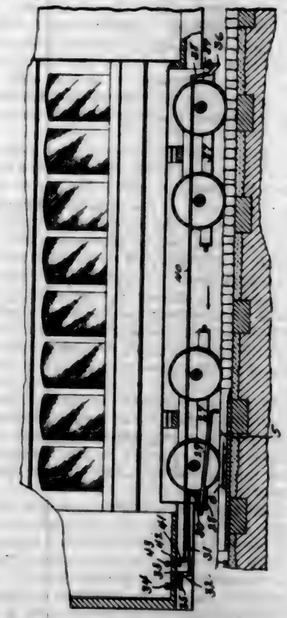

Claim.—1. In a switch operating mechanism, the combination with the truck of a car, of a rocking bar journaled in said truck, manually operable members controllable from the motorman's station adapted to rock said bar, a switch throwing hook carried by said bar, a grooved plate, a lever projecting into the grooved portion of said plate and adapted to be engaged by said hook throwing bar, a switch tongue, connections between said lever and said switch tongue, a switch closing member adapted to be thrown up above the road-bed when said lever is actuated, and a manually operable member carried by the car and adapted to strike said switch closing member.

2. In a device of the character described, the combination with a switch tongue, of a rocking lever, a link connection between the switch tongue and said rocking lever, a switch closing lever, a link connection between said switch closing lever and said rocking lever, a switch closing hook carried by a car, a lever adapted to be engaged by said switch closing hook, and a connecting member between the last named member and the rocking member.

3. In a device of the character described, the combination with a switch tongue, of mechanism connected to said switch tongue and adapted to be actuated from a car, a switch closing lever adapted to be elevated when said mechanism is actuated, a yoke carried by the rear truck of the car, and manually operable means for depressing a portion of said yoke, said yoke being adapted to engage and depress the switch closing member.

851,914. FEED-WATER STRAINER FOR LOCOMOTIVES. ALBERT C. BOTTGER, Wilkes-Barre, Pa., assignor of one-half to Frank W. Howorth, Wilkes-Barre, Pa. Filed May 12, 1906. Serial No. 316,514.

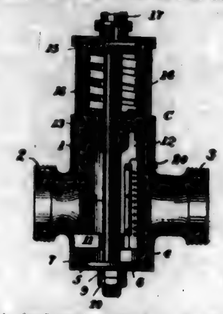

Claim.—1. A feed water strainer for locomotives comprising a valve casing having an inlet and outlet on opposite sides thereof, a strainer plate covering the outlet, a discharge opening at the bottom thereof, a valve for said opening normally under spring pressure, and means for operating said valve by air pressure.

2. A feed water strainer for locomotives comprising a casing having an inlet and outlet on opposite sides thereof, a strainer controlling the flow from the outlet, a valve opening in the bottom thereof, a valve plate controlling said opening, a stem extending through the top of the casing, a head on the stem, a spring, a spring casing inclosing the head and spring, and an air pipe connection leading to the spring casing for operating the valve.

3. A feed water strainer for locomotives comprising a casing having an inlet and outlet on opposite sides thereof, a discharge opening at the bottom thereof having an inclined valve seat on its edge, a disk shaped valve having an inclined seat, a brace extending across the opening, a valve stem extending through the top of the casing, a head on the stem, a spring casing surrounding the head, an air pipe connection leading to the spring casing, and a strainer plate opposite the outlet, the whole being adapted to be connected to the ordinary hose pipe leading from the tank and the injector pipe leading to the boiler and the air pipe being adapted to be connected to the air reservoir.

851,915. AUTOMATIC ALARM MECHANISM. CHRISTIAN BREILAND, Bellingham, Wash. Filed Mar. 27, 1906. Serial No. 308,339.

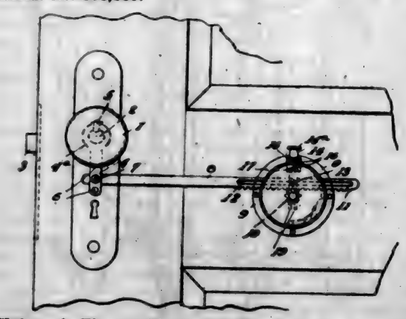

Claim.—1. The combination with a closure, its latch, and its unlatching device, of an alarm mechanism, an arm arranged for attachment to the shaft of the unlatching

device and adapted to have a swinging movement when said shaft is turned, an actuating rod pivotally connected at one end to said arm and arranged to have a longitudinal reciprocating movement, means whereby such movement of the rod will actuate the alarm, a vertically adjustable support on which the last named end of the actuating rod is mounted to slide, and means for holding said support at different elevations, as and for the purpose set forth.

2. A device of the character described, comprising an alarm mechanism, an actuating rod designed to be moved longitudinally to operate the alarm and provided with a longitudinal slot, means for connecting said actuating rod to an unlatching device whereby the actuation of the unlatching device will move said rod longitudinally, and a slide provided with a pin received in the slot of the actuating rod, said slide being arranged to be held at different elevations whereby to carry the actuating rod into and out of operative relation to the alarm mechanism.

3. A device of the character described, comprising an alarm mechanism including a pinion, an actuating rod arranged for operation by an unlatching device and provided with a rack designed to engage with said pinion and also provided with a longitudinal slot, a slide provided with a stud working in said slot, and means for adjusting said slide whereby to hold the rack out of or in engagement with said pinion.

4. A device of the character described, comprising an alarm mechanism including a pinion, an actuating rod arranged for operation by an unlatching device and provided with a rack designed to engage with said pinion and also provided with a longitudinal slot, a slide provided with a stud working in said slot, and a guiding bearing for said slot, said bearing being provided with upper and lower sockets, the slide being formed with a protuberance, and spring pressed in a direction for said protuberance to enter either the upper or the lower socket in the bearing, whereby the rack will be held out of or in engagement with said pinion.

851,916. BROOM-MACHINE. CHARLES CLEMENS, Philadelphia, Pa. Filed Aug. 7, 1906. Serial No. 329,530.

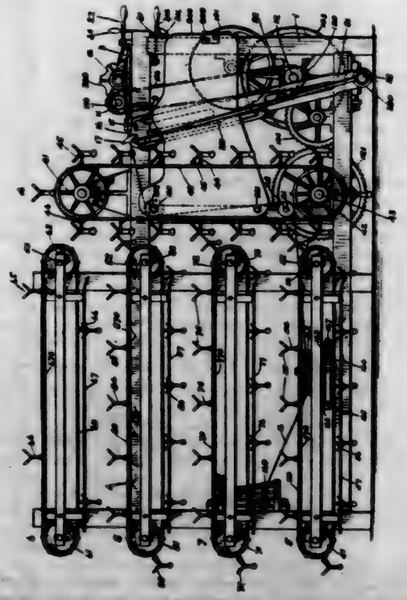

Claim.—1. In a broom machine, the combination with a broom-handle support, of a source of wire supply from which wire extends to the under part of the handle, means to deliver corn to the wire and convey it along the top thereof to the handle, and means to turn said support, thereby causing the corn to be bound between the handle and wire.

2. In a broom machine, the combination with a broom-handle support, of a source of wire supply from which wire is delivered to the handle, a traveling carrier, conveying mechanism adapted to take the corn from the carrier and deliver it to the part of the wire contiguous to the handle, and means to turn said support and actuate the carrier.

3. In a broom machine, the combination with a broom-handle support, of a source of wire supply from which wire is delivered to the handle, a plurality of supply carriers, an intermediate transfer carrier, conveying mechanism adapted to take the corn from the transfer carrier and deliver it to the part of the wire contiguous to the handle and means to turn said support and actuate the carriers.

4. In a broom machine, the combination with a broom-handle support, of a source of wire supply from which wire is delivered to the handle, a plurality of supply carriers, an intermediate transfer carrier, conveying mechanism adapted to take the corn from the transfer carrier and deliver it to the part of the wire contiguous to the handle, means to turn said support step by step, means to move each of the carriers, and timing mechanism adapted to cause the successive operation of the several supply carriers.

5. In a broom machine, the combination with a broom-handle support, of a carrier for the corn, and mechanism to convey the corn from the carrier directly to the handle to permit the attachment of the corn to the handle.

6. In a broom machine, the combination with a plurality of supply carriers, of a broom handle support, an intermediate transfer carrier adapted to receive the corn from the supply carriers, means to operate the supply carriers successively, means to operate the transfer carrier, and conveying mechanism adapted to convey the corn from the transfer carrier to a point contiguous to the handle-support to permit the attachment of the corn to the handle.

7. In a broom machine, the combination with a broom-handle support, of a source of wire supply from which wire is delivered to the handle, a conveyer adapted to carry the corn toward the handle, a pusher adapted to engage the corn and push it against the handle, means to turn the handle-support, thereby causing the wire to bind the corn upon the handle, and means to actuate the conveyer and pusher.

8. In a broom machine, the combination with a broom-handle support, of a source of wire supply from which wire is delivered to the handle, a pair of fingers adapted to take the corn and convey it toward the handle, means to open and close said fingers and move them up and down, a pusher adapted to engage the corn and push and hold it against the handle, means to actuate the pusher, and means to turn the handle-support, thereby causing the wire to bind the corn upon the handle.

9. In a broom machine, the combination with a broom-handle support, of a source of wire supply from which wire is delivered to the handle, means to deliver corn to the part of the wire contiguous to the handle, a breaker adapted to underride the wire and relieve it of strain, and actuating means for the breaker.

10. In a broom machine, the combination with a broom-handle support, of a source of wire supply from which wire is delivered to the handle, means to deliver stalk cover to the part of the wire contiguous to the handle, a cutter adapted to slice the stalks longitudinally, a breaker adapted to underride the wire during the slicing operation, and actuating means for the cutter and breaker.

11. In a broom machine, the combination with a broom-handle support, of a source of wire supply from which wire is delivered to the handle, a conveyer adapted to carry the corn toward the handle, a pusher, extending above and on each side of said wire, adapted to engage the corn and push and hold it against the handle, and means to so actuate the conveyer and pusher.

12. In a broom machine, the combination with the broom-handle support, of a conveyer adapted to carry the corn toward the handle, a pusher adapted to push and hold said corn against the handle, a cutter adapted to slice certain corn longitudinally, actuating means for the conveyer, pusher and cutter, and means to render the cutter inoperative.

13. In a broom machine, the combination with the broom handle support, of a source of wire supply from which wire is delivered to the handle, a conveyer adapted to carry the corn toward the handle, a pusher adapted to push said corn against the handle, a breaker adapted to underride the wire, a cutter adapted to slice certain corn longitudinally, actuating mechanism for the conveyer, pusher and cutter, and means to render the cutter inoperative.

14. In a broom machine, the combination with a support for the broom-handle, of a reciprocating lever, a slide carried thereby, fingers carried on the slide adapted to receive corn and convey it toward the handle, means to reciprocate the lever, and means to move the slide along the lever.

15. In a broom machine, the combination with a support for the broom-handle, of a reciprocating lever, a slide carried thereby, fingers carried on the slide adapted to receive corn and convey it toward the handle, means to reciprocate the lever, a roller carried by the slide, and a cam along which said roller travels.

16. In a broom machine, the combination with the broom handle support, of a lever, means to reciprocate the same, fingers carried by the lever adapted to receive and convey corn toward the handle, cams, and devices controlled by the cams, in the reciprocation of the lever, to open and close the fingers.

17. In a broom machine, the combination with the broom handle support, of a lever, means to reciprocate the same, and a slide movable longitudinally of the lever, fingers carried by the slide, a cam, a roller carried by the slide adapted, in the reciprocation of the lever, to travel along said cam and thereby move the slide longitudinally of the lever, other cams, and devices connected with the fingers and adapted, in the reciprocation of the lever, to coact with the last named cams and open and close said fingers.

18. In a broom machine, the combination with the broom-handle support, of a reciprocating lever, intermeshing pinions carried thereby, fingers carried by the pinions adapted to receive corn and convey it toward the handle, cam devices, and an arm actuated by the cam devices to turn said pinions, thereby opening and closing the fingers.

19. In a broom machine, the combination with the broom-handle support, of a reciprocating lever, intermeshing pinions carried thereby, fingers carried by the pinions adapted to receive corn and convey it forwardly toward the handle, means to reciprocate said lever, an arm secured to one of said pinions, a roller thereon, a cam along which said roller travels in its return movement, said cam having an inclined section, a second cam above the first cam, a pivoted gate cam at the rear end of the second cam, its free end resting substantially at the rear end of the inclined section of the first cam, said roller in its return movement traveling along the first cam and in its forward movement traveling along the gate cam and the second cam and dropping off the front end of the latter onto the first cam, thereby actuating the arm to open and close said fingers.

20. In a broom machine, the combination with the broom-handle support, of a lever, means to reciprocate the same, a source of wire supply from which wire is delivered to the handle, a pusher carried by said lever adapted to push corn deposited on the wire toward the handle, and means to turn the handle support.

21. In a broom machine, the combination with the broom handle support, of a lever, means to reciprocate the same, a source of wire supply from which wire is delivered to the handle, a pusher carried by said lever adapted to push corn deposited on the wire toward the handle, said pusher being recessed to permit the wire to extend through it, and means to turn the handle support.

22. In a broom machine, the combination with the broom-handle support, of a lever, means to reciprocate the same, a source of wire supply from which wire is delivered to the handle, a pusher carried by said lever adapted to push corn deposited on the wire toward the handle, and a tension device between the lever and pusher adapted to forcibly press the pusher against the corn and handle as the lever moves beyond the handle support.

23. In a broom machine, the combination with the broom-handle support, of a lever, means to reciprocate the same, a source of wire supply from which wire is delivered to the handle, a pusher pivoted to said lever and adapted to push corn deposited on the wire toward the handle, a rod secured to the lever, a nut thereon, and a spring confined between the nut and pusher.

24. In a broom machine, the combination with the broom handle support, of a source of wire supply from which wire is delivered to the handle, a lever, means to reciprocate the same, a conveyer carried by the lever, means to move said conveyer below the wire in the forward movement of the lever and above the wire in the return movement thereof, a breaker carried by the lever, a roller thereon, and a cam along which said roller travels whereby the breaker is moved toward and from said wire.

25. In a broom machine, the combination with the broom handle support, of a source of wire supply from which wire is delivered to the handle, a lever, means to reciprocate the same, means supported by the lever to convey and push corn along said wire toward said handle, a cutter supported by the lever, and cams adapted, in the reciprocation of the lever, to coact with the cutter to operate the same.

26. In a broom machine, the combination with the broom handle support, of a source of wire supply from which wire is delivered to the handle, a lever, means to reciprocate the same, means supported by the lever to convey and push corn along said wire toward said handle, a cutter supported by the lever, a cam having an inclined section, a gate cam pivoted above the rear portion of the first cam and whose free end rests substantially at the top of said incline, a second pivoted gate cam back of the first gate cam and adapted to move in and out of line therewith, and a roller on the cutter adapted, when the second gate is moved out of line with the first gate cam, to drop upon the rear end of the first cam, whereby the cutter is placed in position to operate on the forward movement of the lever.

27. In a broom machine, the combination with the broom-handle support, of a source of wire supply from which wire is delivered to the handle, a lever, means to reciprocate the same, means supported by the lever to convey and push corn along said wire toward said handle, a pinion and a vertically movable bar both supported by said lever, a cutter connected to the pinion, a rack on the bar engaging the pinion, and means adapted, in the reciprocation of the lever, to move the rack bar vertically, thereby turning the pinion and operating the cutter.

28. In a broom machine, the combination with the broom-handle support, of a source of wire supply from which wire is delivered to the handle, a lever, means to reciprocate the same, a conveyer carried by the lever adapted in the forward movement thereof to receive and convey corn toward the handle, a pusher carried by the lever adapted to push the corn toward the handle, a pinion carried by the pusher, a bar movable along the pusher, a rack on the bar engaging the pinion, a cutter connected to the pinion, a roller on the bar, and cams coacting with the roller, in the reciprocation of the lever, to move said bar and thereby operate the cutter.

29. In a broom machine, the combination with the broom-handle support, of a source of wire supply from which wire is delivered to the handle, a lever, means to reciprocate the lever, a conveyer to take the corn and convey it toward the handle along the wire, a pusher to push toward the handle the corn carried by the conveyer, a breaker adapted to move toward the wire and reinforce it under downward strain, a cutter to cut the stalks longitudinally, said conveyer, pusher, breaker and cutter being carried by the reciprocating lever, and cam devices adapted in the reciprocation of the lever to coact respectively

with the conveyer, breaker and cutter and cause them to operate.

30. In a broom-machine, the combination with the broom-handle support, of a source of wire supply from which wire is delivered to the handle, a lever, means to reciprocate the lever, a conveyer to take the corn and convey it toward the handle along the wire, a pusher to push toward the handle the corn carried by the conveyer, a breaker adapted to move toward the wire and reinforce it under downward strain, a cutter to cut the stalks longitudinally, said conveyer, pusher, breaker and cutter being carried by the reciprocating lever, and cam devices adapted in the reciprocation of the lever to coact respectively with the conveyer, breaker and cutter and cause them to operate, timing mechanism, and means actuated by the timing mechanism to rearrange the cam devices for the cutter to cause them to coact with the cutter to render it inoperative.

31. In a broom machine, the combination with the broom-handle support, of a source of wire supply from which wire is delivered to the handle, a carrier, means adapted to convey corn from the carrier and apply it to the handle at the latter's point of engagement with the wire, a driving shaft, a rotary member driven from the driving shaft, a second shaft driven from said rotary member, mechanism connecting the second shaft with the carrier, mechanism connecting the second shaft with the corn-operating means, mechanism connecting the rotary member with the handle-support, and means to disrupt the driving connection between said rotary member and the second shaft.

32. In a broom machine, the combination with the broom-handle support, of a source of wire supply from which wire is delivered to the handle, a carrier, means adapted to convey corn from the carrier and apply it to the handle at the latter's point of engagement with the wire, a driving shaft, a rotary member driven from the driving shaft, a second shaft, a clutch by means of which the rotary member drives the second shaft, mechanisms connecting the second shaft respectively with the corn-operating means and the carrier, mechanism connecting the rotary member with the handle support, timing mechanism, and means operated by the timing mechanism to unclutch the rotary member from the second shaft.

33. In a broom machine, the combination with a broom-handle support, of a carrier, means adapted to convey corn from the carrier and apply it to the handle, timing mechanism, driving mechanisms respectively for the corn-operating means, the carrier, the timing mechanism and the handle-support, and devices actuated by the timing mechanism to render inoperative all of said driving mechanisms except that for the handle shaft.

34. In a broom machine, the combination with a broom-handle support, of a carrier, means adapted to convey corn from the carrier and apply it to the handle, timing mechanism, a driving shaft, connections therefrom respectively to the carrier, the corn-operating means, the handle-support and the timing mechanism, and means operated by the timing mechanism and controlling the operation of the driving shaft.

35. In a broom machine, the combination with a broom-handle support, of a carrier, means adapted to convey corn from the carrier and apply it to the handle, timing mechanism, a driving shaft, connections therefrom respectively to the carrier, the corn-operating means, the handle-support and the timing mechanism, means to drive the driving shaft, a belt shifter to engage and disengage the driving shaft from its driving means, a tension device tending to move the belt shifter into position to disengage the driving shaft from its driving means, a belt-shifting lever by which the belt shifter is moved into position to engage the driving shaft with its driving means, means to hold the belt-shifting lever in its operative position, a control lever adapted when operated to disengage the belt-shifting lever from its holding means, and means operated by the timing mechanism to operate said control lever.

36. In a broom machine, the combination with the support for the handle, of means to convey and apply corn to the handle, timing mechanism, a shaft, driving mechanisms connecting said shaft with the timing mechanism and corn-operating means, driving means for said shaft, mechanism connecting said driving means with the handle-support, and devices operated by the timing mechanism to disrupt the connection between said driving means and shaft.

37. In a broom machine, the combination with the support for the handle, of means to convey and apply corn to the handle, timing mechanism, a shaft, driving mechanisms connecting said shaft with the timing mechanism and corn-operating means, driving means for said shaft, mechanism connecting said driving means with the handle-support, an unclutching lever adapted when operated to disrupt the connection between the driving means and shaft, a timing lever adapted to be actuated by the timing mechanism, and a rod connecting the two levers.

38. In a broom machine, the combination with the support for the handle, of means to convey and apply corn to the handle, timing mechanism, a shaft, driving mechanisms connecting said shafts with the timing mechanism and corn-operating means, driving means for said shaft, mechanism connecting said driving means with the handle-support, an unclutching lever adapted when operated to disrupt the connection between the driving means and shaft, a lever adapted to be actuated by the timing mechanism, a rod slotted at one end to receive the unclutching lever and connected at the other end to the timing lever, a manually operated lever, and a second rod slotted at one end to receive the unclutching lever and connected at the other end to the manually operated lever, whereby the unclutching lever may be restored to its normal position after its operation by the timing lever.

39. In a broom machine, the combination with the support for the handle, of a carriage, carrying said handle-support, driving mechanism to turn said support, and means to shift the carriage.

40. In a broom machine, the combination with the support for the handle, of a carriage carrying said handle-support, driving mechanism to turn said support, normally inoperative devices adapted to be actuated by said driving mechanism to shift the carriage, and means to place said devices in operative relation with the driving mechanism.

41. In a broom machine, the combination with the support for the handle, of a carriage carrying said handle-support, a secondary shaft also carried by the carriage, driving means for the secondary shaft, driving connections between the secondary shaft and support, a pinion, normally inoperative clutch mechanism adapted when operative to cause the secondary shaft to drive the pinion, a gear meshing with the pinion and adapted when moved axially to shift the carriage, a cam on the gear, a roller engaging the cam, and means to render the clutch mechanism operative.

42. In a broom machine, the combination with a rotary support for the handle, of a secondary shaft, driving means for the secondary shaft, a driving gear on the shaft, a driven gear meshing therewith loose on the handle-support, a driven wheel loose on the handle-support, a driving wheel on the secondary shaft adapted to intermittently engage the driven wheel on the handle-support, and a clutch feathered on the handle-support and adapted to be moved to clutch either the driven gear or the driven wheel to the support, whereby the handle may be either turned step by step or constantly rotated.

43. In a broom machine, the combination of a rotary handle support, a source of wire supply from which wire is delivered to the handle, reciprocating means adapted to convey and apply corn to the handle, means to simultaneously turn the handle-support intermittently, thereby wiring the corn as it is applied to the handle, means to rotate the handle-support continuously, and means to disengage the support from its intermittent driving means and to engage it with its continuous driving means, thereby coiling the wire continuously around the corn.

44. In a broom machine, the combination with a plurality of supply carriers and their driving shafts, driving means therefor, clutch mechanism for each shaft adapted when rendered operative to cause said driving means to drive the respective shafts, an intermediate transfer carrier, a handle-support, means to convey corn from the transfer carrier and apply it to the handle, timing mechanism, driving means respectively for the timing mechanism, the handle-support and the transfer carrier, unclutching levers normally holding their respective clutch mechanisms inoperative, and timing levers connected respectively to the unclutching levers and adapted to be successively operated by the timing mechanism to successively withdraw the unclutching levers and permit the clutch mechanisms to successively operate.

45. In a broom machine, the combination with a support for the handle, of driving mechanism to turn the support, means to convey and apply corn to the handle, driving mechanism for the corn-operating means, a source of wire supply adapted to supply wire to be wrapped around the corn applied to the handle as the handle is turned, a pulley around which said wire extends, and brake mechanism adapted to yieldingly resist the rotation of said pulley.

46. In a broom machine, the combination with a support for the handle, of driving mechanism to turn the support, means to convey and apply corn to the handle, driving mechanism for the corn-operating means, a source of wire supply adapted to supply wire to be wrapped around the corn applied to the handle as the handle is turned, a source of supply for the wire, a two-part roller between the source of supply and the handle-support, said wire extending about said roller and between the two parts thereof, and a spring tending to move the two parts toward each other.

47. In a broom machine, the combination with a support for the handle, of driving mechanism to turn the support, means to convey and apply corn to the handle, driving mechanism for the corn-operating means, a source of wire supply adapted to supply wire to be wrapped around the corn applied to the handle as the handle is turned, a source of wire supply, a two part roller between the source of supply and the handle-support, one of said parts having an inwardly-extending annular shoulder and the other part having an inwardly-extending annular projection extending outside the shoulder, said wire extending between said parts, and a spring tending to move the two parts toward each other to hold the wire from movement about the roller except when forcibly pulled.

48. In a broom machine, the combination with a support for the handle, of driving mechanism to turn the support, means to convey and apply corn to the handle, driving mechanism for the corn-operating means, a source of wire supply adapted to supply wire to be wrapped around the corn applied to the handle as the handle is turned, a source of supply for the wire, a pulley between the source of supply and the handle-support and around which said wire extends, brake mechanism adapted to yieldingly resist the rotation of said pulley, a tension roller between said pulley and handle-support and engaging said wire, and a two part roller between the tension roller and the handle-support, the wire extending about the last named roller between the two parts thereof, and a spring tending to move the parts of the roller toward each other.

49. In a broom machine, the combination with the handle-support, of reciprocating means to convey the corn to the handle, and a beater working in unison with said conveying means to push toward the handle the outer ends of the corn.

50. In a broom machine, the combination with the handle-support, of a shaft, means to oscillate the same, a lever secured to the shaft, means carried by the lever to convey and apply corn to the handle, said means acting upon the inner part of the corn, and a beater secured to the shaft to engage the outer ends of the corn.

51. In a broom machine, the combination with a broom-handle-support, of a source of wire supply from which wire is delivered to the handle, means to deliver corn to the part of the wire contiguous to the handle, and to simultaneously bend down the ends of the corn on either side of the wire.

52. In a broom machine, the combination with a broom-handle support, of a source of wire supply from which wire is delivered to the handle, a pair of fingers adapted to take the corn and convey it toward the handle, said fingers working respectively on opposite sides of the wire, and means to move down the fingers, thereby bending the ends of the corn below the level of the wire.

851,917. VENDING-MACHINE. WILLIAM L. COLBY, East St. Louis, Ill. Filed June 16, 1905. Serial No. 265,499

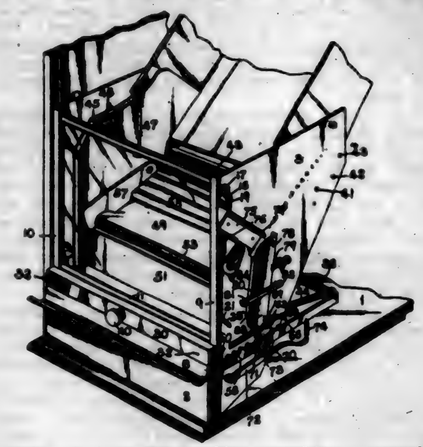

Claim.—1. A vending machine comprising a manually actuated ejecting member, a pawl arranged to normally prevent ejecting movement of said member and to be rendered ineffective by a coin, a star wheel having teeth in different planes, the teeth in one plane being arranged to trip said pawl on both its forward and rearward movements and the tooth in the other plane being arranged to trip said pawl on its forward movement only, said wheel being automatically rotated in one direction by engagement with said pawl and a detent to prevent rotation of said wheel in the opposite direction.

2. A vending machine comprising a frame, an ejecting member movably mounted in said frame, a rack mounted on said frame, a reversible pawl mounted on said ejecting member and arranged to engage said rack with either end, the teeth of said rack being so spaced as to permit a slight initial movement of said ejecting member when the front end of said pawl is in engagement with said rack, and said pawl being arranged to be reversed by engagement with a coin.

3. A vending machine comprising a frame, an ejecting member movably mounted in said frame, a reversible pawl mounted to move with said member and having a seat for a coin so located that the pressure thereupon will reverse the pawl, a rack arranged to be engaged by either end of said pawl, and a stop on said frame in position to support a coin seated in said seat when said pawl is in its normal position and to prevent the movement of said coin with said pawl, whereby said pawl will be reversed by the ejecting movement of said ejecting member and means to reverse said pawl as said ejecting movement is being completed.

4. A vending machine comprising a frame, an ejecting member movably mounted in said frame, a rack mounted in said frame, a pawl mounted on said ejecting member arranged to normally engage said rack to prevent ejecting movement of said member, and an adjustable stop mounted on said frame, said stop and said pawl in its normal position being arranged to support a coin in such a position that relative movement of said stop and pawl will trip said pawl and permit ejecting movement of said ejecting member.

5. A vending machine comprising a frame, an ejecting member movably mounted in said frame, a pawl mounted to move with said member and having a seat for a coin, a

rack on said frame arranged to be normally engaged by said pawl to prevent ejecting movement of said ejecting member, and a coin-chute adjustably mounted on said frame and terminating near the normal position of said pawl, one wall of said chute being arranged to support a coin seated in said seat in said pawl.

6. A vending machine comprising a coin chute, an ejecting member, a pawl and a rack arranged to prevent ejecting movement of said ejecting member but permitting an initial movement thereof, said pawl being arranged to support a coin at the lower end of said chute, whereby upon actuation of said ejecting member said pawl will be tripped and rendered ineffective to prevent ejecting movement of said member.

7. A vending machine comprising a frame, an ejecting member movably mounted in said frame, a rack mounted on said frame, a reversible pawl carried by said ejecting member and arranged to engage said rack with either end and normally preventing ejecting movement of said member, a coin-chute terminating above the position of said pawl when said ejecting-member is in its rearmost position, a flange of said chute and said pawl being arranged to support a coin, whereby said pawl will be tripped when said ejecting member is moved forward and will be rendered ineffective to prevent movement of said member.

8. A vending machine comprising a frame, an ejecting member movably mounted in said frame, and mechanism to control the movement of said ejecting member comprising a reversible pawl, a rack arranged to be engaged by either end of said pawl, said pawl and said rack being normally arranged to prevent ejecting movement of said ejecting member, means to initially reverse said pawl by movement of said ejecting member when a coin is inserted, a star-wheel having a tooth arranged to trip said pawl as said ejecting member is completing its full forward movement and its full rearward movement and a tooth arranged to trip said pawl as said ejecting member is completing a full forward movement but not when it is completing a full rearward movement.

9. A vending machine comprising a frame, an ejecting member movably mounted in said frame, and mechanism to control the movement of said ejecting member comprising a reversible pawl mounted to move with said member, a rack mounted on said frame in position to be engaged by either end of said pawl, and a star-wheel having teeth arranged to be engaged by said pawl and to reverse the same both when it is moving forwardly and rearwardly and a tooth arranged to be engaged by one end of said pawl only to reverse the same when it is moving in one direction only.

10. A vending machine comprising a frame, an ejecting member movably mounted in said frame, mechanism to control the movement of said ejecting member comprising a reversible pawl having lateral projections of different lengths on its front and rear ends, respectively, a rack arranged to be engaged by either end of said pawl, and a star-wheel having a plurality of teeth arranged to be engaged by both of said projections of said pawl, and a tooth arranged to be engaged by only one of said projections of said pawl.

11. A vending machine comprising a frame, an ejecting member movably mounted in said frame, mechanism to control the movement of said ejecting member comprising a reversible pawl having lateral projections on both ends, one of said projections being longer than the other, a rack arranged to be engaged by either end of said pawl, and a star-wheel having a plurality of teeth in the same plane arranged to be engaged by either of said projections and a tooth in a plane parallel to the plane of said teeth and arranged to be engaged by only the longer of said projections.

12. A vending machine comprising a frame, an ejecting member movably mounted in said frame, a reversible pawl mounted to move with said member and having lateral projections of different lengths on its front and rear ends, respectively, and a coin seat, a rack arranged to be engaged by either end of said pawl, a coin-chute terminating near the normal position of said pawl, one wall of said chute being arranged to support a coin on said seat of said pawl in position to trip said pawl upon relative movement of said pawl and said chute, and a star-wheel having teeth arranged to be engaged by both the projections of said pawl to trip the same, and a tooth arranged to be engaged by one only of said projections on said pawl.

13. A vending machine comprising a frame, an ejecting member reciprocatingly mounted in said frame, a shaft pivotally mounted on said member, reversible pawls rigidly mounted on the opposite ends of said shaft, racks arranged to be engaged by said pawls, respectively, a spring engaging one of said pawls and arranged to hold either end of said pawls in engagement with said racks, means to reverse said pawls by the intervention of a coin, and means to reverse said pawls subsequent to the reversal by the insertion of a coin.

851,918. PROCESS OF MANUFACTURING PRINTING BLOCKS AND PLATES. LOUIS COLLARDON, Leipsig, Germany. Filed Jan. 23, 1905. Serial No. 242,452.

Claim.—1. The process of manufacturing printing blocks and plates which consists in moistening insoluble casein in form of a very fine powder and mixing the same with a hardening medium throughout its entire mass and submitting it to pressure and heat substantially as described.

2. The process of manufacturing printing blocks and plates which consists in moistening the casein with a small quantity of ammonia, mixing it with hexamethylentetramine and submitting it to pressure and heat, substantially as described.

3. The process of manufacturing printing blocks and plates which consists in moistening insoluble casein mixing the same with a hardening medium and substances modifying the hardness throughout its entire mass and submitting it to pressure and heat substantially as described.

851,919. FIREPROOF BUILDING CONSTRUCTION. CORNELIUS COLLINS, San Francisco, Cal. Filed Mar. 12, 1906. Serial No. 305,728.

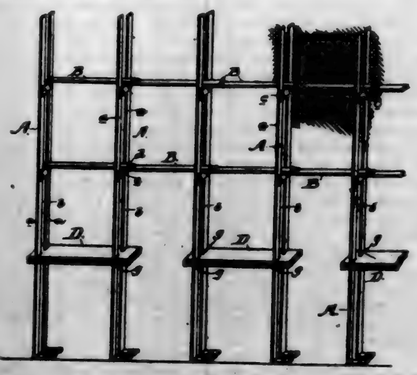

Claim.—1. In a fireproof building construction, a beam or upright composed of separate, parallel members spaced edgewise from each other, a bracing piece adapted to extend transversely from said beam or upright to an adjacent one, said bracing piece having an integral heel portion bent at an angle and made of greater width transversely than the body of said piece and of sufficient width to extend across the space between the members of the beam or upright and to be secured to each of the members to fixedly maintain the space therebetween.

2. In a fireproof building construction, a series of beams or uprights formed of sheet metal set edgewise substantially parallel one with the other, and bracing pieces arranged substantially at right angles to the beams or uprights and extending from one beam or upright to an adjacent one, said bracing pieces being of less width than the width of the beam or upright and having a heel portion bent at right angles to its body and of greater width than said body so that it may extend transversely over the beam to a plane at one side of the edge of said body.

3. In a fireproof building construction, the combination with parallel uprights of thin sheet metal, of bracing pieces extending transversely between two adjacent uprights said bracing pieces having a heel end made wider than the remainder of the piece and bent at right angles thereto whereby it projects transversely beyond the plane of the edge of the piece and may be fixed to said upright.

4. In a fireproof building construction, the combination with parallel uprights formed of separate and spaced strips of thin sheet metal, of bracing pieces extending transversely between two adjacent uprights, said bracing pieces having a heel portion wider than the body of the piece whereby it bridges the space between the separated strips of each upright and projects right and left beyond the plane of the edges of the piece and over said strips, and is secured to the latter.

5. In a fireproof building construction, the combination of an upright, or beam, of thin sheet metal set edgewise, of a bracing piece extending transversely between adjacent uprights, or beams, said bracing piece having a downturned heel portion of greater width transversely than the width of the piece whereby it overlaps the upright or beam, and means for securing the extended portion of the heel to the upright, said bracing piece extending to and beyond an adjacent upright and fixed to a like bracing piece thereof.

6. In a fireproof building construction, the combination with an upright, or beam, of a bracing piece of uniform width for the major portion of its length and having one end widened transversely and bent at right angles, and means for securing said widened portion to an upright member or beam.

7. In a fireproof building construction, the combination with uprights each formed of two parallel and spaced strips of sheet metal, of bracing pieces extending transversely between adjacent uprights said spacing pieces having transversely widened heel portions which bridge the space between the strips and overlap the strips said strips being independent of each other whereby they may be moved toward and from each other to adjust the width of the upright, and means fixing the heel portions of the bracing pieces to the strips and thereby maintaining the strips in a fixed relation to each other, the free ends of the bracing pieces from one upright extending to and between the corresponding pieces of an adjacent upright and being fixed to a corresponding bracing piece thereof.

8. The combination with the overlapping ends of two pieces of sheet metal, of means for fastening said pieces together said fastening means comprising upper and lower heads and a connecting shank, said shank passing through the overlapping portions of the pieces and said heads being turnable to twist said shank and thereby shorten the same to cause the heads to firmly clamp the pieces.

9. The combination with the overlapping ends of two pieces of metal said ends having elongated slots adapted to register, of a fastener for said ends said fastener including upper and lower heads and a connecting shank, one of said heads and said shank being passed through said slots and said heads being then turned crosswise of the slots whereby the shank is twisted to reduce its length and cause the heads to clamp the pieces tightly together.

10. In a fireproof building construction, the combination with spaced, parallel uprights having slots or openings in their central portions, of connecting pieces of greater width than said slots and passed endwise therein said pieces having grooves in their edges adapted to register with the edges of the uprights whereby the pieces may be turned into a horizontal position to receive said edges and form a lock and rigid connection between adjacent uprights.

11. In a fireproof building construction, the combination with spaced, parallel uprights having slots or openings in their central portions, of wooden blocks of greater width than said slots and passed endwise therein, said blocks having grooves cut transversely into opposite edges so as to register with the opposite edges of each of two adjacent uprights whereby the blocks may be turned into a horizontal position and made to lock with the uprights, said blocks serving as nailing pieces for wainscoting.

851,920. FASTENING FOR PLATE-GLASS AND SHOW-CASES. CHARLES M. CONLEY, Cleveland, Ohio. Filed Feb. 23, 1907. Serial No. 358,928.

Claim.—1. In a construction of the character indicated, the combination of two glass plates arranged at an angle to each other, an outer clamp member arranged on the outer faces of said plates, an inner clamp member arranged on the inner faces of said plates opposite the outer clamp member, a stem connected with the outer clamp member and extending between the abutting edges of the glass plates and through the inner clamp member, an abutment on the inner end of said stem and a locking member arranged between said inner clamp member and said abutment.

2. In a construction of the character indicated the combination of two glass plates arranged at an angle to each other, an outer clamp member arranged on the outer faces of said plates an inner clamp member on the inner faces of said plates opposite the outer clamp member, a stem connected with the outer clamp member and extending between the abutting edges of the glass plates and through the inner clamp member, a resilient abutment on the inner end of said stem and a locking member arranged between said inner clamp member and said abutment.

3. In a construction of the character indicated, the combination of two glass plates arranged at angle to each other, an outer clamp member arranged on the outer faces of said plates, an inner clamp member arranged on the inner faces of said plates, opposite the outer clamp member, a stem connected with the outer clamp member and extending between the abutting edges of the glass plates and through the inner clamp member, an abutment on the inner end of said stem and a wedge-shaped locking member arranged between said inner clamp member and said abutment.

4. In a construction of the character indicated, the combination of two glass plates arranged at an angle to each other, an outer clamp member arranged on the outer faces of said plates an inner clamp member arranged on the inner faces of said plates opposite the outer clamp member, a stem connected with the outer member and extending between the abutting edges of the glass plates and through the inner clamp member, an abutment on the inner end of said stem and a yoke-shaped wedge arranged to straddle said stem between said inner clamp member and said abutment.

5. In a construction of the character indicated, the combination of two glass plates arranged at an angle to each other an outer clamp member arranged on the outer faces of said plates an inner clamp member arranged on the inner faces of said plates opposite the outer clamp member and extending between the abutting edges of the glass plates and through the inner clamp member, an abutment on the inner end of said stem and a yoke shaped wedge arranged to straddle said stem between said inner clamp member and said abutment said wedge having lugs on each side for reinforcing the inner clamp member.

6. In a construction of the character indicated, the combination of two glass plates arranged at an angle to each

other an outer angle plate arranged on the outer faces of said plates an inner angle plate arranged on the inner faces of said plates opposite the outer angle plate, a stem connected with the outer angle plate and extending between the abutting edges of the glass plates and through the inner angle plate, an abutment on the inner end of said stem and a locking member arranged between said inner angle plate and said abutment.

7. In a construction of the character indicated the combination of two glass plates arranged at an angle to each other, an outer angle plate arranged on the outer faces of said plates, an inner angle plate arranged on the inner faces of said plates opposite the outer angle plate, a stem connected with the outer angle plate and extending between the abutting edges of the glass plates and through the inner angle plate, a resilient abutment on the inner end of said stem and a locking member arranged between said inner angle plate and said abutment.

8. In a construction of the character indicated, the combination of two glass plates arranged at an angle to each other, an outer angle plate arranged on the outer faces of said plates, an inner angle plate arranged on the inner faces of said plates opposite the outer angle plate, a stem connected with the outer angle plate and extending between the abutting edges of the glass plates and through the inner angle plate, an abutment on the inner end of said stem and a wedge-shaped locking member arranged between said inner angle plate and said abutment.

9. In a construction of the character indicated, the combination of two glass plates arranged at an angle to each other, an outer angle plate arranged on the outer faces of said plates an inner angle plate arranged on the inner faces of said plates opposite the outer angle plate, a stem connected with the outer angle plate and extending between the abutting edges of the glass plates and through the inner angle plate, an abutment on the inner end of said stem and a yoke shaped wedge arranged to straddle said stem between said inner angle plate and said abutment.

10. In a construction of the character indicated, the combination of two glass plates arranged at an angle to each other, an outer angle plate arranged on the outer faces of said plates, an inner angle plate arranged on the inner faces of said plates opposite the outer angle plate and extending between the abutting edges of the glass plates and through the inner angle plate, an abutment on the inner end of said stem and a yoke shaped wedge arranged to straddle said stem between said inner angle plate and said abutment, said wedge having lugs on each side for reinforcing the inner angle plate.

11. In a construction of the character indicated, the combination of two glass plates arranged at an angle to each other, an outer angle plate arranged on the outer faces of said plates, an inner angle plate arranged on the inner faces of said plates opposite the outer angle plate and having a slot extending upwardly from the lower edge thereof, a stem connected with the outer angle plate and extending between the abutting edges of the glass plates and through the slot in the inner angle plate, an abutment on the inner end of said stem and a locking member arranged between said inner angle plate and said abutment.

12. In a construction of the character indicated the combination of two glass plates arranged at an angle, an outer clamp member comprising an angle plate and a stem integral therewith, formed from a single strip of sheet metal folded so as to impart a double thickness to the angle plate and to the stem, tongues formed on the inner end of said stem, an inner angle plate arranged to slip over said stem and a wedge-shaped locking member arranged to straddle said stem between the said tongues and said inner clamp member.

851,921. SPINDLE OF TEXTILE-MACHINES. HENRY CRUSH, Blackley, Manchester, England. Filed Mar. 26, 1906. Serial No. 308,077.

Claim.—The combination with a spindle, of a bolster surrounding the spindle, springs placed between the spindle and bolster and bearing against each, and means for rotating the bolster.

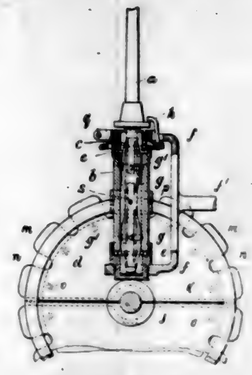

851,922. METHOD OF EXTRACTING POTASH FROM FELDSPATHIC OR OTHER POTASH-BEARING ROCK. ALLERTON S. CUSHMAN, Connecticut. Filed Jan. 14, 1907. Serial No. 352,187.

Claim.—1. A method of extracting potash soda and other alkaline bases, from rocks and materials containing the alkaline metals, which consists in electrolysing the material in the anode chamber of a diaphragm cell in an aqueous electrolyte containing hydrofluoric acid.

2. A method for the preparation of the various salts of potash and other bases as set forth, which consists in electrolysing the fine ground material in an aqueous electrolyte containing hydrofluoric acid, which is placed in a cell in which the anode and cathode chambers are separated by a diaphragm.

3. A method of extracting potash soda and other alkaline bases from rocks and minerals containing the alkaline metals, which consists in electrolysing the materials in the anode chamber of a diaphragm cell in an aqueous electrolyte containing hydrofluoric acid and neutralising the alkali so obtained in the cathode chamber by an acid to form a salt.

851,923. GARMENT-SUPPORTER. FANNIE L. DE GRAFF, Portland, Oreg. Filed Oct. 30, 1906. Serial No. 341,351.

Claim.—A garment-supporter comprising a belt carrying a series of pins having their attaching shanks located on one side of the belt, and looped at their ends through the belt adjacent its upper and lower edges, respectively; a pin on the opposite side of the belt extending from one of the loops; and a guard on the other loop to receive the point of the pin.

851,924. WINDOW-SHADE SUPPORT. CLARENCE U. DIXSON and CHARLES L. HOWARD, Columbus, Ohio. Filed July 13, 1906. Serial No. 326,020.

Claim.—In a device of the character described, the combination with a supporting member having flanges adapted to be secured to a window frame and having a forwardly extending offset portion in the front wall of which a key-hole slot is formed, a shade roller supporting bracket carrying a rearwardly extending headed member which is adapted to pass through the enlarged portion of the key-hole slot and to engage behind the front walls of the offset portion, and a binding nut threaded upon said headed member between the shade roller bracket and the front wall of the offset portion of the supporting member, said binding member being adapted to clamp said wall between itself and the head of the headed member.

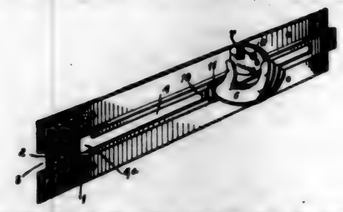

851,925. NON-REFILLABLE BOTTLE. GEORGE V. DOHERTY, Boston, Mass. Filed June 20, 1906. Serial No. 322,574.

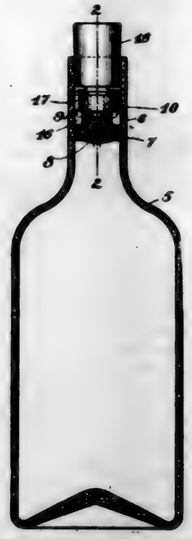

Claim.—1. As an article of manufacture, a bottle, a sleeve fast to the interior of the neck of said bottle, and a hollow stopper having a hole in the bottom thereof, said stopper consisting of a head adapted to fit the neck of said bottle and a stem of smaller diameter than said head having screw-threaded engagement with said sleeve, and a valve pivoted within said stopper, said stopper having an annular passage extending therearound between said head and sleeve, said stopper being provided with ports connecting the interior thereof with said annular passage above said valve, said head having grooves therein extending from said passage out of the upper end of said stopper.

2. As an article of manufacture, a hollow stopper for a bottle, having a hole in the bottom thereof, said stopper consisting of a head adapted to fit the neck of said bottle and a screw-threaded stem of smaller diameter than said head, and a valve pivoted within said stopper, said stopper having ports above said valve extending from the interior thereof to the exterior of said stem, said head having grooves in its periphery extending thereacross longitudinally of said stopper.

3. As an article of manufacture, a bottle, a sleeve fast to the interior of the neck of said bottle, and a hollow stopper having a hole in the bottom thereof, said stopper consisting of a head adapted to fit the neck of said bottle, and a stem of smaller diameter than said head having screw-threaded engagement with said sleeve, and a valve pivoted within said stopper, said stopper having an annular passage extending therearound between said head and sleeve, said stopper being provided with ports connecting the interior thereof with said annular passage above said valve, said head having a plurality of grooves in the periphery thereof extending from said passage out of the upper end of said stopper.

4. As an article of manufacture, a hollow stopper for a bottle, having a hole in the bottom thereof, said stopper consisting of a head adapted to fit the neck of said bottle and a stem of smaller diameter than said head, a valve pivoted within said stopper, and a spring acting to hold said valve normally closed, said stopper having a port above said valve extending from the interior thereof to the exterior of said stem, said head having a groove in its periphery extending thereacross longitudinally of said stopper.

851,926. ABDOMINAL CORSET. MOSES M. DOWNER and GEORGE E. HAWES, Bridgeport, Conn., assignors to Downer, Hawes and Company, Incorporated, Bridgeport, Conn., a Corporation of Connecticut. Filed Jan. 10, 1907. Serial No. 351,657.

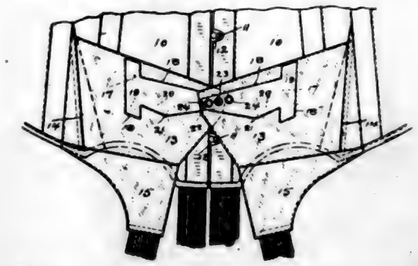

Claim.—1. In a corset, the combination with a body and tabs secured thereto, of anchor plates secured in the tabs, a stud secured in one of the anchor plates and an eyelet in the other tab which is seated in the anchor plate and will receive the stud when the tabs lie parallel, the stud making a locking engagement with the top of the eyelet when the tabs are bowed outward.

2. In a corset, the combination with a body and tabs whose rear ends are secured thereto between the front and the sides, of anchor plates secured in the tabs, a stud secured in one of the anchor plates, and a plurality of eyelets in the other tab which are seated in the anchor plate and either of which will receive the stud when the tabs lie parallel, the stud engaging the top of the eyelet and locking the tabs together when the tabs are bowed outward.

3. In a corset, the combination with a body and tabs secured thereto, of anchor plates secured in the tabs, a stud having a head in the form of a backwardly-turned hook secured in one of the anchor plates, the under side of said hook being straight and parallel with the anchor plate, and a plurality of eyelets in the other tab which are seated in the anchor plate and either of which will receive the hook when the tabs lie parallel, the straight under side of said hook passing over and partly inclosing the top of the eyelet when the tabs are bowed outward, substantially as described, for the purpose specified.

4. In a corset, the combination with a body and tabs secured thereto, of anchor plates secured in the tabs, each comprising a transverse portion, a longitudinal portion, and a lateral enlargement, a stud secured in one of the anchor plates and a plurality of eyelets in the other tab which are seated in the anchor plate and either of which will receive the stud when the tabs lie parallel.

5. In a corset, the combination with a body, tabs secured thereto and hose supporters secured to the lower edges of the tabs and to the body of the corset beyond the rear ends of the tabs, of anchor plates secured in the tabs, one of said tabs being provided with an engaging stud seated in the anchor plate and the other tab with a plurality of eyelets seated in the anchor plate, whereby the ends of the tabs may be adjustably connected together.

851,027. TENT AND HAMMOCK SUPPORT. JOHN M. FYFE, Waltham, Mass. Filed May 22, 1906. Serial No. 318,215.

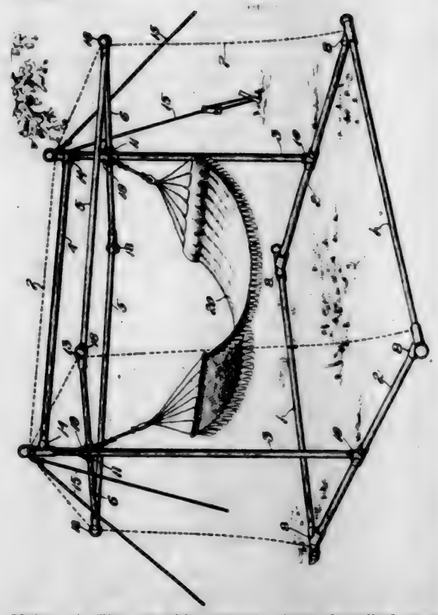

Claim.—1. The portable support above described comprising a rectangular base frame made up of two side bars and two end bars separably connected, two uprights each separably connected at its lower end to one of the end bars of the base frame, a rectangular tent supporting top frame made up of two side bars and two end bars separably connected, means separably connecting the end bars of the top frame with the uprights near the upper ends of the latter, and a ridge pole separably connected at its ends to the uprights.

2. The portable knock-down support above described comprising a rectangular base frame made up of two side bars and two end bars, the side bars having sockets at their ends to removably hold the extremities of the end bars, and the end bars being provided near their middle each with an upright socket; two uprights each held removably at its lower end in the upright socket of one of the end bars of the base frame, and each made at its upper end with a top frame socket and a ridge pole socket; a rectangular tent supporting top frame made up of two side bars and two end bars, the side bars having sockets at their ends to removably hold the extremities of the end bars, and the end bars being removably fitted into the top frame sockets of the uprights, and a ridge pole removably fitted at its end in the ridge pole sockets of the uprights.

851,928. MANURE-SPREADER. FRANK M. GOODHUE, Batavia, Ill. Filed Nov. 7, 1904. Serial No. 231,818.

Claim.—1. In a manure spreader, the combination with a reciprocating load-carrying apron, of means normally out of gear for actuating said apron in a rearward direction, a manually operable lever for throwing said actuating means into gear, a locking device normally holding said lever in inoperative position, said locking device being automatically releasable by the apron at the limit of its return movement, substantially as described.

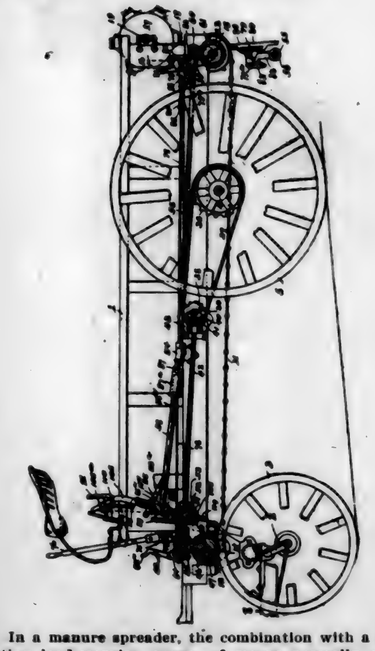

2. In a manure spreader, the combination with a reciprocating load-carrying apron, of means normally out of gear for actuating said apron on its return movement, a foot-operated lever for throwing said actuating means into gear, and a tripping mechanism automatically actuated by the apron when the latter has returned to either its load-receiving position or the full limit of its return movement; substantially as described.

3. In a manure spreader, the combination with a reciprocating load-carrying apron, of mechanism for actuating said apron on its return movement, said mechanism including a worm and a worm-wheel movable bodily toward and from said worm, a foot-operated lever and connections therefrom to said worm-wheel whereby the latter is moved into and out of gear with said worm, and a tripping mechanism automatically actuated by the apron on its return movement serving to disengage said worm and worm wheel and restore said lever to normal position, substantially as described.

4. In a manure spreader, the combination with a rotatable spreader-drum, of a sprocket-wheel loosely mounted on the drum-shaft having a hub constituting one member of a clutch, a companion clutch member splined on said shaft, a spring normally tending to force said clutch members into engagement, and cam-faced members surrounding said clutch members and having a relative rotary movement through which said clutch members are separated to disconnect said spreader-drum from its driving means, substantially as described.

5. In a manure spreader, the combination with a load-carrying apron and a rotatable spreader-drum, of a sprocket wheel loosely mounted on the drum shaft having a hub constituting one member of a clutch, a companion clutch member splined on said shaft, a spring normally tending to force said clutch members into engagement, co-operating stationary and rotatable cam-faced collars surrounding said clutch members, manually operable means

for actuating said rotatable cam-faced collar in a direction to permit the engagement of said clutch members, and means automatically set into operation by the apron at the limit of its outward movement serving to turn said rotatable collar in the opposite direction, to separate said clutch members, substantially as described.

6. In a manure spreader, the combination with a body-frame and a reciprocable load-carrying apron mounted thereon, of a plurality of rows of rollers mounted on said body-frame beneath and longitudinally of said apron and supporting the latter, each of said rollers comprising a fixed shaft, a hardened bushing mounted thereon, said bushing having a conical bearing and an annular shoulder, a roller mounted on said conical bearing, and means carried by said shaft serving to confine said bushing thereon and further co-operating with said annular shoulder of the bushing to confine said roller on the latter with freedom of rotary movement, substantially as described.

7. In a fertilizer distributer, in combination, a hopper, a carrying wheel for the hopper, a movable bottom for the hopper, means actuated b ythe carrying wheel for moving the hopper bottom, and automatic means for arresting the movement of the bottom as it is extended within the hopper before the limit of such movement is reached.

8. In a manure distributer, in combination, a load support, a rotatable beater, means for relatively moving the support and the beater to cause the beater to act on all parts of the load, means for returning the movable member to its normal position, and automatic means for arresting such return movement before the movable member has reached its normal position.

9. In a manure spreader, the combination with a reciprocating load-carrying apron, of means normally out of gear for actuating said apron on its return movement, a lever for throwing said actuating means into gear, and a tripping mechanism automatically actuated by the apron when the latter has returned to either its load-receiving position or the full limit of its return movement, substantially as described.

851,929. SEALING DEVICE FOR PIPE-COUPLINGS. HENRY F. GRAY, Columbus, Ohio, assignor to The Adjustable Clip Company, Columbus, Ohio, a Corporation of Ohio. Filed Dec. 19, 1905. Serial No. 292,478.

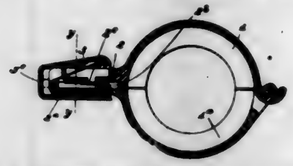

Claim.—1. A locking device for a pipe coupling and the like, comprising separable members for inclosing the coupling, said members having extensions, in combination with a sealing device comprising a box-like structure having openings around three sides and having a frangible wall connecting its opposite sides, said sealing device adapted to engage the aforesaid extensions and means for securing the same thereto, and means coöperating with the side openings to effect the fracture of said frangible wall when the box-like structure is struck with a blow.

2. A locking device for a pipe coupling and the like, comprising separable members for inclosing the coupling, said members having extensions, in combination with a sealing device consisting of a box-like structure having openings around three sides and a frangible wall connecting its opposite sides, said sealing device adapted to engage the aforesaid extensions, and means for securing the same thereto, said sealing device being so fitted to said extensions that the sealing device is fractured when driven forcibly on to said extensions.

3. A locking device for a pipe coupling and the like, comprising separable members for inclosing the coupling, said members having extensions one of which is wider than the other, in combination with a frangible box-like structure having a slot in its side and adapted to engage said extensions with the edge of one of the extensions projecting into said slot, and means between one of the extensions and the box-like structure to lock the latter to the extensions.

4. A locking device for a pipe coupling and the like, comprising separable members for inclosing the coupling, said members having extensions one of which is wider than the other, in combination with a frangible box-like structure having a slot in its side and adapted to engage said extensions with the edge of one of the extensions projecting into the slot, and means between one of the extensions and the box-like structure to lock the latter to the extensions, said slot in the box-like structure being sufficiently long to permit the box-like structure to be thrust farther onto the extensions after it is locked thereto to fracture the box-like structure.

851,930. TROUSERS-SUPPORT. DAVID GREENBERGER, Cleveland, Ohio. Filed Oct. 18, 1906. Serial No. 339,525.

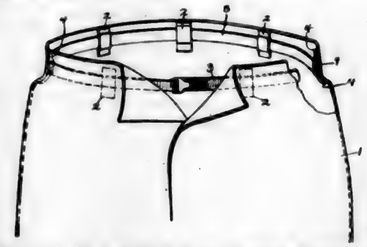

Claim.—1. In a device of the character indicated, the combination with a garment and a belt of a pair of hip plates means for securing said plates to the garment immediately over the hips and means for supporting the undergarments from said plates, substantially as described and for the purpose set forth.

2. In a device of the character indicated the combination with a garment of a pair of thin metallic plates shaped to conform to the curvature of the body immediately above the hips, each of said plates being provided with a series of holes for stitching or otherwise securing said plates to the garment, a strap receiving recess, a tongue for holding the strap in said recess and means for supporting the undergarment from said plate.

851,931. TABLE FOR PUNCHING STAIR-STRINGERS. MARTIN GROSSMAN, New York, N. Y. Filed July 26, 1906. Serial No. 327,817.

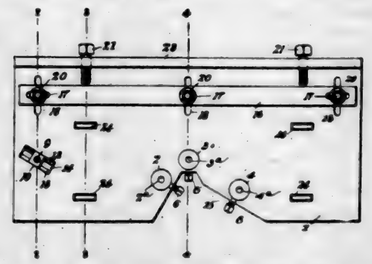

Claim.—1. In an apparatus for punching rivet holes in stair stringers, the combination of a table, means for forming groups of rivet holes for the risers and treads, and means for relatively changing the relation of said hole forming means relative to a longitudinal edge of the stringer, whereby the apparatus is adapted to punch for differently proportioned risers and treads.

2. In an apparatus for punching rivet holes in stair

stringers, the combination of a table, means for forming groups of rivet holes for the risers and treads, and means for relatively changing the relation of said hole forming means relative to a longitudinal edge of the stringer, whereby the apparatus is adapted to punch for differently proportioned risers and treads, and adjustable positioning means projecting above the surface of the table to enter a previously punched hole in the stringer.

3. In a machine for punching rivet holes in stair stringers, the combination of a table having a group of dies mounted thereon to co-operate with the punching tools, an adjustable gage member for the stringer having angular and transverse adjustment with relation to such group of dies, whereby the position of the holes in the stringer may be varied to vary the relative height and depth of the riser and tread, respectively.

4. In a machine for punching rivet-holes in stair-stringers, the combination of a table or platform having a set of dies mounted in triangular relation thereon to receive the punching-tools, an adjustable positioning and locking device for entering one of the holes of a set that has been punched to position and hold the stringer for locating the next succeeding set of holes to be punched, and an angularly and transversely adjustable gage-member for engaging one long edge of the stringer when placed on said table.

5. In a machine for punching rivet-holes in stair-stringers, the combination of a table or platform having a set of dies mounted in triangular relation thereon to receive the punching-tools, an adjustable gage-member for engaging one long edge of the stringer when placed on said table, a vertical positioning and locking pin adjustably mounted on said table and adapted to be set to enter a certain hole of a set that has been punched to position and hold the stringer for punching the next succeeding set of holes.

6. In a machine for punching rivet-holes in stair-stringers, the combination of a table or platform having a set of dies mounted in triangular relation thereon to receive the punching-tools, an adjustable gage-member for engaging one long edge of the stringer when placed on said table, a positioning and locking pin projecting upwardly from said table and adjustable diagonally thereon and adapted to be set to enter a certain hole of a set that has been punched to position and hold the stringer for punching the next succeeding set of holes.

7. In a machine for punching rivet-holes in stair-stringers, the combination of a table or platform having a set of dies mounted in triangular relation thereon to receive the punching-tools, an adjustable gage-member for engaging one long edge of the stringer when placed on said table, a positioning and locking device comprising an obliquely arranged opening or slot in said table, a slide mounted in said slot and a pin mounted on said slide so as to project above the table, and means for holding the slide in fixed position.

8. In a machine for punching rivet-holes in stair-stringers, the combination of a table or platform having a set of dies mounted in triangular relation thereon to receive the punching-tools, a positioning and locking device for entering one of the holes of a set that has been punched to position and hold the stringer for locating the next succeeding set of holes to be punched, and an adjustable gage-device comprising a bar, a set of transverse slots in the table and releasable fastening devices mounted in said slots and upon which said bar is mounted, and set screws at the back of said table for engaging the back of said gage bar.

851,932. METALLIC STAIR. SAMUEL GROSSMAN, New York, N. Y. Filed Mar. 11, 1907. Serial No. 361,660.

Claim.—1. A metallic structure comprising the combination of a sheet metal stringer or like piece having the longitudinal edges thereof bent over upon the same side thereof, and an ornamental plate or sheet of material inserted beneath and between said overturned edges.

2. A metallic structure comprising the combination of a sheet metal stringer or like piece having the longitudinal edges thereof bent over upon the same side thereof and constituting a strengthening rib and such bent over parts being suitably ornamented, and an ornamental plate or sheet of material inserted beneath and between said overturned edges.

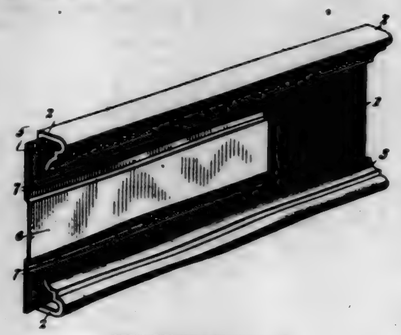

851,933. ELECTRIC-ELEVATOR CONTROLLER. HOWARD F. GURNEE, Jersey City, N. J. Filed Apr. 30, 1906. Serial No. 314,397.

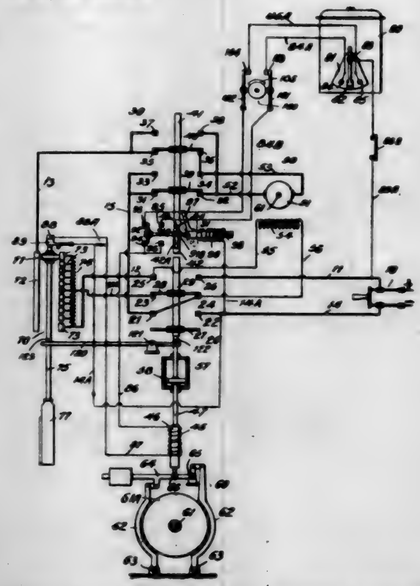

Claim.—1. In combination with a motor, a reversing switch therefor having two operative positions and arranged to be held in either of said operative positions, an electrically actuated starting switch for said motor arranged to be actuated independently of the reversing switch and means for mechanically connecting the reversing switch to move with the starting switch.

2. In combination with a motor, a reversing switch therefor having two operative positions and arranged to be held in either of said operative positions, a starting switch for said motor, an electromagnet arranged to actuate the starting switch independently of the reversing switch, and means for mechanically connecting the reversing switch to be actuated by the electromagnet with the starting switch.

3. In combination with a motor, a brake, a reversing switch for the motor having two operative positions and arranged to be held in either of said operative positions, a starting switch, an electromagnet arranged to actuate the brake and the starting switch independently of the reversing switch, and means for mechanically connecting the reversing switch to be actuated by the electromagnet with the brake and the starting switch.

4. In combination with a motor, a brake, a starting switch for the motor, an electromagnet arranged to actuate the starting switch and the brake, and an air-cushion arranged to control the movement of the electromagnet in both directions.

5. In combination with a motor, circuits therefor, a brake, an automatic rheostat in the motor circuits, a reversing switch for the motor having two operative positions and arranged to be held in either of said operative positions, a starting switch, an electromagnet arranged to actuate the brake and the starting switch independently of the reversing switch and to control the automatic rheostat, and means for mechanically connecting the reversing switch to be moved by the electromagnet with the brake and the starting switch.

6. In combination with a motor, circuits therefor, a brake, an automatic rheostat having a resistance in the motor circuit, a reversing switch for the motor having two operative positions and arranged to be held in either of said operative positions, a starting switch, an electromagnet arranged, when energized, to actuate the starting switch and the brake independently of the reversing switch and to control the automatic rheostat, means for mechanically connecting the reversing switch to be moved by the electromagnet with the starting switch and the brake, and means to prevent the energization of the electromagnet until all of the resistance of the automatic rheostat is in the motor circuit.

7. In combination with a motor, circuits therefor, a brake, an automatic rheostat having a resistance in the motor circuit, a dash-pot for controlling the action of the rheostat, said dash-pot arranged to control the rheostat to cut out a portion of the resistance from the motor circuit slowly and to cut out the remainder of the resistance more rapidly at a predetermined rate of speed, means for regulating said predetermined rate of speed, a reversing switch for the motor having two operative positions and arranged to be held in either of said operative positions, a starting switch, an electromagnet arranged, when energized, to actuate the starting switch and the brake independently of the reversing switch and to control the automatic rheostat, and means for mechanically connecting the reversing switch to be moved by the electromagnet with the starting switch and the brake.

8. In an electric elevator, the combination of a motor, an elevator-car, a reversing switch for the motor having two operative positions and arranged to be held in either of said operative positions, a starting switch for said motor, an electromagnet arranged to actuate the starting switch independently of the reversing switch, and means for mechanically connecting the reversing switch to be actuated by the electromagnet with the starting switch.

9. In an electric elevator, the combination of a motor, an elevator-car, a brake, a starting switch for the motor, an electromagnet arranged to actuate the starting switch and the brake, and an air-cushion arranged to control the movement of the electromagnet in both directions.

10. In an electric elevator, the combination of a motor, an elevator-car, circuits for the motor, a brake, an automatic rheostat in the motor circuits, a reversing switch for the motor having two operative positions, and arranged to be held in either of said operative positions, a starting switch, an electromagnet arranged to actuate the brake and the starting switch independently of the reversing switch and to control the automatic rheostat, and means for mechanically connecting the reversing switch to be moved by the electromagnet with the brake and the starting switch.

11. In combination with a motor, circuits therefor, a brake, an automatic rheostat in the motor circuits, a dash-pot for controlling the action of the rheostat, said dash-pot arranged to control the rheostat to cut out a portion of the resistance from the motor circuits slowly and to cut out the remainder of the resistance more rapidly at a predetermined rate of speed, means for regulating said predetermined rate of speed; a reversing switch for the motor having two operative positions and arranged to be held in either of said operative positions, a starting switch, an electromagnet arranged, when energized, to actuate the starting switch and the brake independently, of the reversing switch and to control the automatic rheostat, means for mechanically connecting the reversing switch to be moved by the electromagnet with the starting switch and the brake, and means for preventing the full energization of the electromagnet until all of the resistance of the automatic rheostat is in the motor circuit.

12. In combination with a motor, a reversing switch therefor, said reversing switch having a movable member arranged to be held in one operative position by gravity and in a second operative position by a latch, an electrically actuated starting switch for the motor arranged to be actuated independently of the reversing switch, means for mechanically connecting the movable member of the reversing switch to be moved by the starting switch into its second operative position, and means for releasing said latch and allowing the reversing switch to move back into its first operative position.

13. In combination with a motor, a reversing switch therefor, said reversing switch having a movable member arranged to be held in one operative position by gravity and in a second operative position by a latch, an electrically actuated starting switch for the motor arranged to be actuated independently of the reversing switch, means for mechanically connecting the reversing switch to be moved by the starting switch into its second operative position, and an electromagnet for controlling the connecting means and for releasing the latch to allow the reversing switch to move back into its first operative position.

14. In an electric elevator, the combination of a motor, an elevator-car, a reversing switch for the motor having two operative positions and arranged to be held in either of said operative positions, a starting switch for said motor, an electromagnet arranged to actuate the starting switch independently of the reversing switch, means for mechanically connecting the reversing switch to be actuated by the electromagnet with the starting switch, and a manually operated switch in the car.

15. In an electric elevator, the combination of a motor, an elevator-car, circuits for the motor, a brake, an automatic rheostat in the motor circuits, a dash-pot for controlling the action of the rheostat, said dash-pot arranged to control the rheostat to cut out a portion of the resistance from the motor circuit slowly and to cut out the remainder of the resistance more rapidly at a predetermined rate of speed, means for regulating said predetermined rate of speed, a reversing switch for the motor having two operative positions and arranged to be held in either of said operative positions, a starting switch, an electromagnet arranged, when energized, to actuate the starting switch and the brake independently of the reversing switch and to control the automatic rheostat, means for mechanically connecting the reversing switch to be moved by the electromagnet with the starting switch and the brake, means for preventing the full energization of the electromagnet until all of the resistance of the automatic rheostat is in the motor circuit, and a manually operated switch in the car.

16. In combination with a motor, a reversing switch therefor having two operative positions arranged to be held in either of said operative positions, a starting switch, an electromagnet arranged to actuate the starting switch independently of the reversing switch, a circuit for said electromagnet, a second electromagnet arranged to mechanically connect the reversing switch to be moved by the starting switch, said electromagnet being arranged to control the circuit of the first electromagnet.

17. In an electric elevator, the combination of a motor, an elevator-car, a reversing switch for the motor having two operative positions and arranged to be held in one of said operative positions by gravity and in another of its operative positions by a latch, a starting switch, an electromagnet arranged to actuate the starting switch independently of the reversing switch, a circuit for said electromagnet, a second electromagnet arranged to be moved by

the starting switch into its second operative position and to release the latch, and allow the reversing switch to move back into its first operative position, contacts controlled by said second electromagnet, the circuits of the first electromagnet being connected to said contacts and controlled by said second electromagnet.

18. In an electric elevator, the combination of a motor, circuits therefor, an elevator-car, a brake, an automatic rheostat in the motor circuits, a reversing switch for the motor, having two operative positions and arranged to be held in one of said operative positions by gravity and in the other of said operative positions by a latch, a starting switch, an electromagnet arranged to actuate the brake and the starting switch independently of the reversing switch, and to control the automatic rheostat, a circuit for said electromagnet; a second electromagnet arranged to mechanically connect the reversing switch to be moved by the starting switch into its second operative position and to release the latch and allow the reversing switch to move back into its first operative position, contacts controlled by said second electromagnet, a circuit of the first electromagnet being connected to said contacts and controlled by said second electromagnet, means for preventing the actuation of the first electromagnet until all of the resistance of the automatic rheostat is in the motor circuit, and a manually operated switch in the car.

851,934. ELECTRIC ELEVATOR. HOWARD F. GURNEY, Jersey City, N. J. Filed Apr. 30, 1906. Serial No. 314,398.

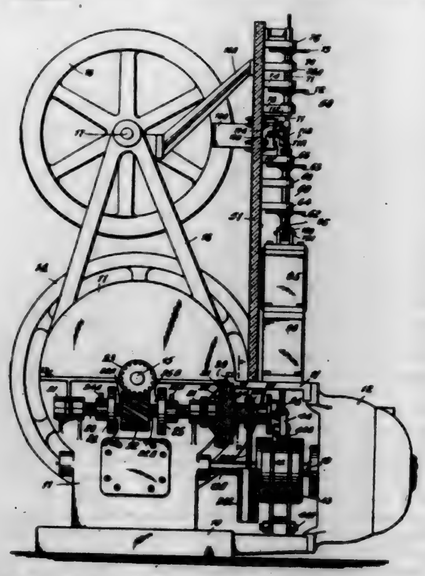

Claim.—1. In an electric elevator, the combination of a hoisting mechanism, a motor, a starting switch, a reversing switch and an automatic rheostat, and an electromagnet arranged to control the starting switch, the reversing switch and the automatic rheostat.

2. In an electric elevator, the combination of a hoisting mechanism, a motor, a starting switch, a reversing switch, an automatic rheostat and a brake, and an electromagnet arranged to control the starting switch, the reversing switch, the automatic rheostat and the brake.

3. In an electric elevator, the combination of a hoisting mechanism, a motor, a reversing switch therefor having two operative positions and arranged to be held in either of said operative positions, an electrically actuated starting switch for said motor, said switch being entirely independent of the reversing switch, and means for mechanically connecting the reversing switch to move with the starting switch.

4. In an electric elevator, the combination of a hoisting mechanism, a motor, a brake, a reversing switch for the motor having two operative positions and arranged to be held in either of said operative positions, a starting switch, an electromagnet arranged to actuate the brake and the starting switch independently of the reversing switch, and means for mechanically connecting the reversing switch to be actuated by the electromagnet with the brake and the starting switch.

5. In an electric elevator, the combination of a hoisting mechanism, a motor, a reversing switch therefor having two operative positions and arranged to be held in either of said operative positions, a starting switch, an electromagnet arranged to actuate the starting switch independently of the reversing switch, an air-cushion arranged to control the movement of the electromagnet, and means for mechanically connecting the reversing switch to be actuated by the electromagnet with the starting switch.

6. In an electric elevator, the combination of a hoisting mechanism, a motor, a brake, an automatic rheostat for the motor, a reversing switch having two operative positions and arranged to be held in either of said operative positions, a starting switch, an electromagnet arranged to actuate the brake and the starting switch independently of the reversing switch and to control the automatic rheostat, and means for mechanically connecting the reversing switch to be moved by the electromagnet with the brake and the starting switch.

7. In an electric elevator, the combination of a hoisting mechanism, a motor, a brake, an automatic rheostat for the motor, a dash-pot for controlling the action of the rheostat, a reversing switch for the motor having two operative positions and arranged to be held in either of said operative positions, a starting switch, an electromagnet arranged, when energized, to actuate the starting switch and the brake independently of the reversing switch and to control the automatic rheostat, and means for mechanically connecting the reversing switch to be moved by the electromagnet with the starting switch and the brake.

8. In an electric elevator, the combination of a hoisting mechanism, a motor, a reversing switch therefor, said reversing switch having a movable member arranged to be held in one operative position by gravity and in a second operative position by a latch, an electrically actuated starting switch for the motor arranged to be actuated independently of the reversing switch, means for mechanically connecting the reversing switch to be moved by the starting switch into its second operative position, and an electromagnet for controlling the connecting means and for releasing the latch to allow the reversing switch to move back into its first operative position.

9. In an electric elevator, the combination of a hoisting mechanism, a motor, a starting switch therefor, a brake, an electromagnet arranged to control the starting switch and the brake, and an automatic stop-motion actuated by the motor and arranged to successively de-energize the electromagnet, to force open the starting switch, and to force on the brake.

10. In an electric elevator, the combination of a hoisting mechanism, a motor, an electrically actuated starting switch therefor, an electrically actuated brake, an electromagnet arranged to control the starting switch and the brake, a switch arranged to control said magnet, and an automatic stop-motion actuated by the movement of the motor and arranged to successively open said magnet-controlling switch, to mechanically force open the starting switch and to mechanically force on the brake.

11. In an electric elevator, the combination of a hoisting mechanism, a motor, a starting switch, a reversing switch, an automatic rheostat, an electromagnet arranged to control the starting switch, the brake and the automatic rheostat, and an automatic stop-motion actuated by the movement of the motor and arranged to successively de-energize the electromagnet to force open the starting switch and to force on the brake.

12. In an electric elevator, the combination of a hoisting mechanism, a motor, a brake, a reversing switch for the motor having two operative positions and arranged to be held in either of said operative positions, a starting switch, an electromagnet arranged to actuate the starting switch independently of the reversing switch, an air-cushion arranged to control the movement of the electromagnet, means for mechanically connecting the reversing switch to be actuated by the electromagnet with the starting switch, and an automatic stop-motion actuated by the movement of the motor and arranged to successively de-energize the electromagnet to force open the starting switch and to force on the brake.

13. In an electric elevator, the combination of a hoisting mechanism, a motor, a brake, a reversing switch for the motor, said reversing switch having a movable member arranged to be held in one operative position by gravity and in a second operative position by a latch, an electrically actuated starting switch for the motor arranged to be actuated independently of the reversing switch, an electromagnet for actuating the starting switch and the brake, means for mechanically connecting the reversing switch to be moved by the starting switch into its second operative position, and a second electromagnet for controlling the connecting means and for releasing the latch to allow the reversing switch to move back to its first operative position, and an automatic stop-motion actuated by the movement of the motor and arranged to successively de-energise both electromagnets to mechanically force open the starting switch and to mechanically force on the brake.

14. In an electric elevator, the combination of a winding-drum, a motor, intermediate mechanism connecting the winding-drum and the motor, a brake, a switch arranged to control the brake, a starting switch for the motor, an electromagnet arranged to control the starting switch and the brake, a threaded shaft connected to run with the winding-drum, a traveling nut on said threaded shaft, adjustable collars associated with said traveling nut, and a cam arranged to be actuated by said traveling nut and adjustable collars and arranged to successively open the magnet-controlling switch to mechanically force open the starting switch and to mechanically force on the brake.

851,935. AUTOMATIC SWITCH. JOHN HENCY, Perry, N. Y. Filed Sept. 13, 1906. Serial No. 334,427.

Claim.—1. In a switch, a pivoted switch rail, a bell-crank for operating said rail, a horizontally-movable auxiliary rail normally in position to be engaged by the wheels of a car passing over the track and adapted to be moved by the car, connections between said bell-crank and said auxiliary rail, said connections being normally inoperative to effect movement of the bell-crank by movement of the auxiliary rail, and means to render the connections operative at the desired times.

2. A switch, a pivoted switch rail, a bell-crank for actuating said rail, an auxiliary rail and connected slide, connections between said auxiliary rail and bell-crank, said connections being normally disconnected from the slide, and means to connect said connections to the slide, whereby movement of the latter will operate the bell-crank.

3. In a switch, a pivoted switch rail, a bell-crank for operating the same, a second bell-crank 23, a link connecting said bell-cranks, a locking member connected to the bell-crank 23, a notched slide adapted to be actuated by a car and normally disconnected from the lock, and means to connect the lock to the slide at the desired times.

4. In a switch, a pivoted switch rail, an actuator therefor, a slide 19 having an auxiliary rail 15 secured thereto for operating the actuator, said slide being normally disconnected from the actuator, and manually-controlled car-actuated means to connect said means to the actuator at desired times.

5. In a switch, a pivoted switch-rail, a bell-crank actuator therefor, a slide adapted to be moved by the movement of the car, connections between the bell-crank and the slide which are normally disconnected from the slide, and means operated by a car to connect said connections to the slide.

6. In a switch, a pivoted switch rail, an actuator therefor, a slide having a notch and adapted to be moved by a car passing over the track, a locking member connected to the actuator, said locking member standing normally without the notch, and means to throw the locking member into the notch thereby to lock the slide to the actuator when it is desired to throw the switch.

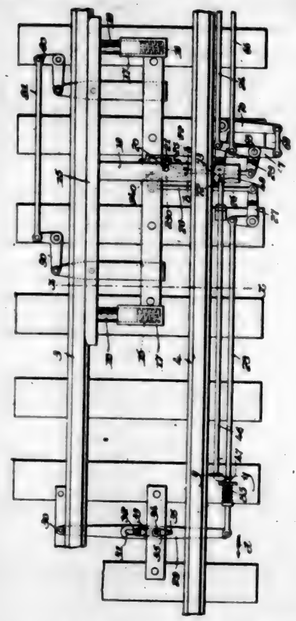

7. In a switch, a pivoted switch rail, an actuator therefor, a slide having a notch and adapted to be moved by a car moving over the track, a locking member connected to the actuator, said locking member standing normally without the notch, and car actuated means to throw the locking member into the notch thereby to lock the slide to the actuator when it is desired to throw the switch.

8. In a switch, a pivoted switch rail, an actuator therefor, normally-inoperative car-actuated mechanical means to operate the actuator, means to render said car-actuated means operative when it is desired to throw the switch, a lock to hold the switch in its thrown position, and mechanical car-actuated means to release the lock.

9. In a switch, normally inoperative mechanical switch actuating mechanism, combined with mechanical car-controlled means to render said switch actuating mechanism operative, and other car controlled means to maintain the switch in fixed position until the last car has passed off the switch.

10. In a switch, the combination of a pivoted switch rail, an actuator therefor, mechanical car-actuated means to operate the actuator, said means being normally disconnected from the actuator, and car-actuated means to connect said means to the actuator at desired times with mechanical car-actuated means to hold the switch rail in fixed position until the last car has passed off the switch.

851,936. GATE. AUGUST HENDRICH, Greencastle, Ind., assignor to The Hercules Gate Company, Putnam county, Ind., a Corporation. Filed Nov. 5, 1906. Serial No. 342,160.

Claim.—1. A gate comprising vertical pickets, horizontal bars secured in said pickets having holes adapted to receive the pintles of hinges, horizontal rods secured in

said pickets, and a diagonal brace rod secured through said pickets, substantially as shown and described.

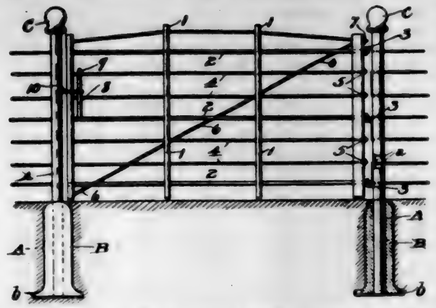

2. A gate comprising vertical pickets, tubular horizontal bars secured in said pickets and having holes adapted to receive the pintles of hinges, horizontal rods secured in said pickets, a diagonal brace rod secured in said pickets, a latch bolt slidably mounted in the end one of said vertical pickets, and a lever arm fulcrumed on the gate and pivotally secured to said latch bolt, substantially as shown and described.

851,937. WIRE-FENCE CLIP. MENTOR HOWARD, Lewisville, Tex. Filed Nov. 1, 1906. Serial No. 341,649.

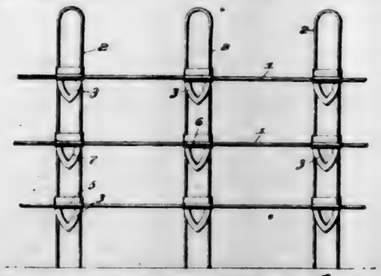

Claim.—As an improved article of manufacture, the herein described wire fence clip, consisting of a plate provided with opposite curved edges, and with a crimp extending perpendicularly to the curved edges and adapted to abut against one side of a wire strand, said plate being provided at a point intermediate of the crimp with a punched out portion, and said punched out portion continuing the curve of the crimp and adapted to extend around the opposite side of said strand and positively engaging the same, as and for the purpose set forth.

851,938. MACHINE FOR UNWINDING, MEASURING, AND REWINDING ROLLS OF SHEET MATERIAL. ROBERT W. HULL, Boston, Mass. Filed Apr. 29, 1905. Serial No. 257,997.

Claim.—1. In a machine for unwinding sheet material from a bale on which said material is doubled longitudinally thereof, unfolding said material, and rewinding said material in its unfolded state, a pair of parallel unwinding rolls adjacent to each other, a spreader roll for unfolding said sheet material, said spreader roll extending transversely of said unwinding rolls, a rewinding roll parallel to said spreader roll, and a convexly curved stationary spreader located between said spreader roll and said rewinding roll.

2. In a machine for unwinding sheet material from a bale on which said material is doubled longitudinally thereof, unfolding, measuring, and rewinding said material in its unfolded state, a pair of parallel unwinding rolls, a spreader roll extending transversely of said unwinding rolls, a V-shaped guide located between said unwinding rolls and spreader roll, a rewinding roll parallel to said spreader roll, a convexly curved stationary spreader located between said spreader roll and unwinding rolls, an indicator, an indicator roll, mechanism operatively connecting said indicator roll and indicator, said rewinding roll resting upon the periphery of said indicator roll and movable toward and away therefrom.

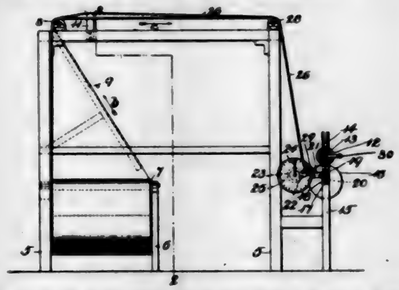

3. In a machine for unwinding sheet material from a bale on which said material is doubled longitudinally thereof, unfolding, measuring, and rewinding said material in its unfolded state, a pair of parallel unwinding rolls, a spreader roll extending transversely of said unwinding rolls, a V-shaped guide located between said unwinding rolls and spreader roll, a rewinding roll parallel to said spreader roll, a convexly curved stationary spreader located between said spreader roll and rewinding roll, an indicator, an indicator roll, mechanism operatively connecting said indicator roll and indicator, said rewinding roll resting upon the periphery of said indicator roll and movable toward and away therefrom.

851,939. MOLDING OR FORMING MECHANISM. PEARLY HUNT, Centerville, Iowa. Filed June 25, 1906. Serial No. 323,359.

Claim.—1. In a mechanism of the class described, the combination with a support, of a stationary and an adjustable standard carried by said support, a core positioned between and supported upon said standards, and a vertically adjustable gage positioned contiguous to said core.

2. In a mechanism of the class described, the combination of a support, a revoluble core carried by said support, a gage carried by said support, and spring locking means carried by said support and securing said gage in an adjusted position.

3. In a mechanism of the class described, the combination of a platform, a longitudinal adjustable standard secured at one end of said platform, a stationary standard secured at the opposite end of said platform, a slatted core positioned between said standards, means carried by and connecting and supporting said core upon said standards, and means for rotating said core.

4. In a mechanism of the class described, the combination of a platform, standards carried by said platform, a threaded member carried by one of said standards, a rotary shaft carried by the other standard, a core supported upon said threaded and rotary members, and means for rotating said core.

5. In a mechanism of the class described, the combination of a platform, transverse base members supporting said platform, supports secured to said base members, an adjustable gage secured to the upper ends of said supports, and a core supported upon and positioned above said platform and contiguous to said gage.

6. In a mechanism of the class described, the combination of curved supports, a vertically adjustable gage secured to the upper end of said supports, means for locking said gage in an adjusted position, a revoluble core positioned contiguous to said gage, and means for revolving said core.

7. In a mechanism of the class described, the combination with a support, of a gage carried by said support, said gage comprising a flat body provided with notches and transverse, elongated apertures, fingers secured to the ends of said gage, means positioned within the elongated apertures and normally securing said gage in an adjusted position, and a revoluble core carried by said support and positioned contiguous to said gage.

8. In a mechanism of the class described, the combination with a support, of a flat gage carried by said support, said gage provided with transverse elongated apertures, spring locking means positioned within said apertures and normally securing said gage in an adjusted position, removable fingers secured to the ends of said gage, said gage provided with a notched edge, a marker secured to said gage, and a core positioned contiguous to said gage.

9. In a mechanism of the class described, the combination with a support, of a revoluble core carried by said support, a gage positioned contiguous to said core, said gage provided with a recess, and an adjustable marker positioned within said recess and extending from one of the edges of said gage.

10. In a mechanism of the class described, the combination with a platform, of standards positioned at the ends of said platform, a removable core carried by said standards, curved supports positioned contiguous to said platform, said supports provided with upper ends overhanging said core, a longitudinally extending gage engaging the overhanging ends of said supports and positioned contiguous to said core, and means for rotating said core.

11. In a mechanism of the class described, the combination with a support, of a core carried by said support, a vertical support positioned contiguous to said core, the upper end of said vertical support overhanging said core, a removable gage carried by the upper overhanging end of said vertical support, means securing said gage to said vertical support, and means for imparting movement to said core.

12. In a mechanism of the class described, the combination with a support, of a core carried thereby, said core comprising a plurality of disks of varying diameters, slats secured to said disk, a slidable handle positioned within each end of said core, and means for rotating said core.

13. In a mechanism of the class described, the combination with a support, of a slatted core carried by said support, said core provided at each end with a longitudinal grooved block and with a grooved disk, a handle seated within the grooves of said block and disk, said handle provided with a hooked end.

14. In a mechanism of the class described, the combination with a support, standards carried by said support, one of said standards provided with a rotary shaft, the other standard provided with an adjustable bolt, and a core supported upon said shaft and bolt.

15. In a mechanism of the class described, the combination with a support, of standards carried by said support, rotary members carried by said standards, a disk secured to each of said members, and a core mounted upon said members and in engagement with said disks.

16. In a mechanism of the class described, the combination with a support, a rotatable core carried by said support, of a vertical support positioned contiguous to said first mentioned support, said vertical support having its upper end overhanging said core, a gage engaging the upper end of said support, and locking means for securing said gage in different positions upon said vertical support.

17. In a mechanism of the class described, the combination with a support, a core carried by said support, of a vertical support positioned contiguous to said first mentioned support, an adjustable gage engaging said vertical support and positioned contiguous to said core, and means for securing said gage in different positions upon said vertical support.

18. In a mechanism of the class described, the combination with a support, of a standard carried by said support, an adjustable bolt or member carried by said standard, another standard carried by said support, a rotatable shaft carried by said last mentioned standard, a core positioned upon and supported between said bolt and shaft, means for locking said core against independent rotary movement with respect to said shaft, and means for imparting rotary movement to said shaft and core.

19. In a mechanism of the class described, the combination with a support, of standards carried by said support, a core positioned between said standards, means carried by one of said standards and co-operating with said core for imparting rotary movement thereto, and movable means carried by the other standard for supporting one end of said core and permitting said core to be removed from between said standards.

20. In a mechanism of the class described, the combination of standards, a core positioned contiguous to said standards, means supporting one end of said core upon one of said standards, a shaft rotatably mounted upon the other standard, said shaft provided with a squared inner end and a disk positioned upon said shaft contiguous to said squared end, said squared end positioned within a portion of said core and the disk in engagement with said core.

21. In a mechanism of the class described, the combination with a support, of a pair of standards carried by said support, a core positioned between said standards, means supporting one end of said core upon one of said standards, a rotatable shaft supported upon the other standard, said shaft provided with a shoulder and a squared end, and a disk positioned upon said shaft between its squared end and shoulder, and said squared end in engagement with one end of said core.

22. In a mechanism of the class described, the combination with a support, of standards carried by said support, a removable core positioned between said standards, means for rotating said core, and means for fixedly securing said core upon said standards.

23. In a mechanism of the class described, the combination with a support, of standards carried by said support, a revoluble core, means carried by one of said standards for rotating said core, and means for removably securing said core upon said standards.

24. In a mechanism of the class described, the combination with a support, a rotatable core carried by said support, of a gage carried by said support, and a finger in engagement with each end of and extending upon opposite sides of said gage.

25. In a mechanism of the class described, the combination with a support, of a core carried by said support, a gage carried by said support, an adjustable marker carried by and adapted to be extended beyond one edge of said gage.

26. The combination with a support, a rotatable core carried by said support, of an auxiliary support positioned contiguous to said first mentioned support, an adjustable gage in engagement with said last mentioned support and positioned contiguous to said core, and locking means for adjustably securing said gage in a fixed position upon said auxiliary support.

27. In a mechanism of the class described, the combination with a support, a core carried by said support, of an auxiliary support positioned contiguous to said first mentioned support, a gage in engagement with said auxiliary support and positioned contiguous to said core, and spring-locking means securing said gage upon said auxiliary support.

28. In a mechanism of the class described, the combination with a support, a core carried by said support, a gage, means supporting said gage contiguous to said core, of a removable finger in engagement with one end of said gage, and means securing said finger to said gage.

29. In a mechanism of the class described, the combination with a support, of standards carried by said support, a core positioned contiguous to said standards, means supporting one end of said core upon a standard, an adjustable member carried by the other standard, said member supporting one end of said core, and said member adapted to be adjusted for permitting removal of said core.

30. In a mechanism of the class described, the combination with a support, of a core carried by said support, means for rotating said core, said core comprising solid disks, slats spaced apart and secured to said disks, a support positioned contiguous to said first mentioned support, a removable gage secured to said last mentioned support, and locking means for securing said gage in an adjusted position upon said last mentioned support.

31. In a mechanism of the class described, the combination with a support, of a removable standard carried by said support, said standard being capable of adjustment upon said support, fastening means for securing said standard in an adjusted position, a core positioned contiguous to said support, means for supporting one end of said core upon said support, and means for supporting the other end of said core upon said standard.

32. In a mechanism of the class described, the combination with a support, of a core carried by said support, an auxiliary support, a gage in engagement with said auxiliary support, a yieldable member secured to and locking said gage in an adjusted position upon said auxiliary support.

851,940. PULLEY. JOSEPH A. KAPLAN, Pittsburg, Pa., assignor to Joshua Rhodes, Allegheny, and William H. Latshaw, Pittsburg, Pa. Filed Jan. 25, 1906. Serial No. 297,846.

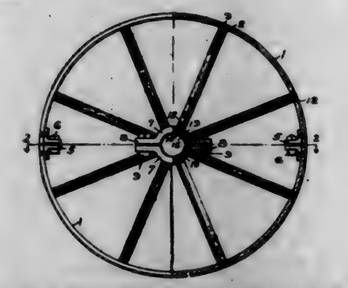

Claim.—1. A metal wheel provided with a hub, rim, and connected spokes, said hub having spoke-receiving openings provided with flaring outer ends, said spokes having reduced end portions fitting in said openings and riveted therein, and having shoulders resting on the outer face of the hub and curved portions connecting said shoulders and reduced end portions and contained in the flaring outer ends of the openings in the hub.

2. A metal wheel provided with a hub, rim, and connecting spokes, said hub having spoke-receiving openings provided with flaring outer ends and with seats surrounding the same, said spokes having reduced end portions fitting in said openings and riveted therein, and having shoulders resting against the seats on the hub with curved portions connecting said shoulders and reduced end portions and contained in the flaring outer ends of the openings in the hub.

3. A sectional metal wheel comprising a partible hub and rim, and spokes connecting the same, said partible hub having spokes holes provided with flaring outer ends and being provided with a circular groove in its inner face with which the spoke holes communicate, said spokes having shoulders resting against the outer face of the hub and having reduced end portions projecting through the spoke holes and upset on the inner face of the hub with the upset ends lying in said circular groove, the shoulders on the spokes being joined to the end portions by means of fillets or curved portions.

851,941. SURGICAL INSTRUMENT. JOHN E. KENNEDY, New York, N. Y. Filed Jan. 25, 1906. Serial No. 297,750.

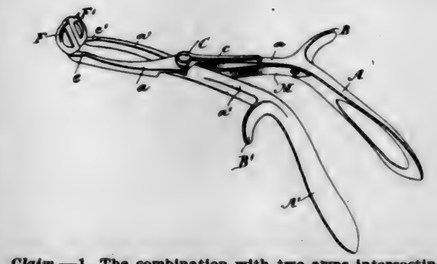

Claim.—1. The combination with two arms intersecting each other and pivotally secured together, of two blades one rotatably secured at its outer edge to the outer end of each of said arms, and one blade having at its inner edge a barrel provided with a bore and the other having at its inner edge a pin to fit in said bore.

2. The combination with two arms intersecting each other and pivotally secured together and provided at their outer ends with inclined surfaces, of blades, one rotatably mounted on each of said inclined surfaces and having their inner edges hinged together.

3. The combination with two arms, of curetting blades, one mounted at its outer edge on each of said arms and said blades being removably and rotatably connected together at their inner edges.

4. The combination with two arms, of curetting blades, one removably and rotatably mounted at its outer edge on each of said arms, and said blades being removably and rotatably connected together at their inner edges.

5. The combination with two arms, of curetting blades, one having a screw connection at its outer edge with each of said arms, and said blades being removably and rotatably connected together at their inner edges.

6. The combination with two arms, of curetting blades, one having a screw connection at its outer edge with each of said arms, and said blades being removably and rotatably connected together at their inner edges by a pin and barrel connection.

7. The combination with two arms intersecting each other and pivotally secured together and provided at their outer ends with inclined surfaces, of two curetting blades, one rotatably mounted on each of said inclined surfaces and having their inner edges hinged together, and the cutting edges of said blades being generally perpendicular to said inclined surfaces.

851,942. CHIMNEY-TOP. TRAUGOTT KERNCHEN, Rendsburg, Germany. Filed Oct. 12, 1906. Serial No. 338,604.

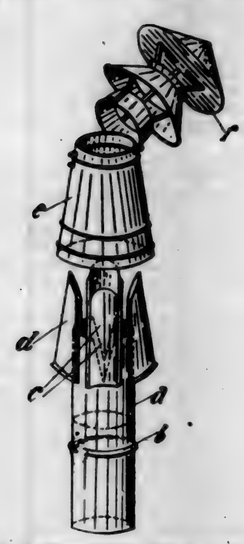

Claim.—In a chimney-top, the combination; an eduction-pipe *a* having a foot-plate at its bottom adapted to fix on the chimney and having V-shaped openings *c* provided at the top end of the said pipe, caps *d* covering each of the said openings and protruding above the level of the pipe, a conical case *e* adapted to be placed over the said caps for holding them together and forming channels between the caps in addition to those which are under the caps through which air can enter in the direction of the head cover *f* whereby the gases of a stove are withdrawn and the head cover *f* attached to the case *e* by means of a hinge, all as described and shown.

851,943. DRAG. GEORGE E. KETCHUM, Marceline, Mo. Filed Sept. 28, 1906. Serial No. 336,639.

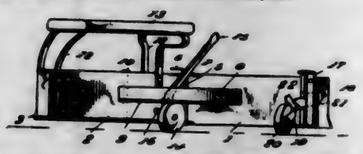

Claim.—1. In a drag of the class described, the combination of drag and scraping bars, means adjustably connecting the front end portions of said bars together, and means for holding the bars at a predetermined angle relatively to one another.

2. In a drag of the class described, the combination of drag and scraping bars, a pivotal connection between the front end portion of said bars, means for adjusting the pivotal connection and a member adjustably connecting the rear portions of the bars for holding the latter at a predetermined angle relatively to one another.

3. In a drag of the class described, the combination of drag and scraping bars, plates offstanding from the front end portion of the scraping bar, a pivot pin at the front end of the drag bar and adapted for adjustable connection with the plates applied to the scraping bar, an arm projecting from the scraping bar, and means for adjustably connecting said arm with the drag bar.

4. In a drag of the class described, the combination of drag and scraping bars, means for connecting the front end of the drag bar with the scraping bar at different points in the length of the latter, and means for connecting the scraping bar with the drag bar at different points in the length of said drag bar.

5. In a drag of the class described, the combination of drag and scraping bars, means for connecting the front end of the drag bar with the scraping bar at different points in the length of the latter, and means for connecting the scraping bar with the drag bar at different points in the length of said drag bar, the last mentioned connecting means being adjustable to vary the angle of the drag and scraping bars.

6. In a drag of the class described, the combination of a drag bar and a scraping bar, means connecting the front end of the drag bar with the scraping bar intermediate of the ends of the latter, whereby the ends of the scraping bar project beyond it in advance of the drag bar, and means connecting the rear portion of the drag and scraping bars.

7. In a drag of the class described, the combination of drag and scraping bars, means for connecting the drag bar with the scraping bar between the ends of the latter, whereby the front ends of the scraping bar project from and in advance of the drag bar, and a blade applied to the projecting end of the scraping bar for the purpose specified.

8. In a drag of the class described, the combination of a drag bar and a scraping bar, means for elevating said bars from the front, including a yoke offstanding from the scraping bar, a rod applied to said yoke, and a clevis having a standard adjustably connected with the rod and the yoke aforesaid as specified.

9. In a drag of the class described, the combination of drag and scraping bars, means for connecting the front end of the drag bar with the scraping bar at different points in the length of the latter, and means connecting the rear ends of the drag and scraping bars.

851,944. ROTARY ENGINE. JOHN A. KRAY, Lancaster, Pa., assignor of one-third to Daniel M. Rothenberger and one-third to Charles S. Foltz, Lancaster, Pa. Filed June 5, 1905. Serial No. 263,820.

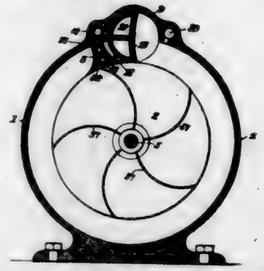

Claim.—1. The combination in a rotary engine, of the casing having an enlarged peripheral chamber, a disk confined by said casing within which it is adapted to rotate, a piston carried by said disk and adapted to the peripheral chamber, a rocking member mounted in the casing and having its axis coincident with the inner wall of the same, said rocking member arranged to be displaced to permit movement of the piston and then to close the passage for the latter and form an abutment between which and the moving piston the expanding motive fluid is adapted to act and having one face on the same arc as the path of the piston and another face on the arc of rotation, which latter face when said rocking member forms an abutment is disposed toward the moving piston and pressure controlled packing carried by said piston.

2. The combination in a rotary engine, of the casing having an enlarged peripheral chamber, a disk confined by said casing within which it is adapted to rotate, a piston carried by said disk and adapted to the peripheral chamber, a rocking member journaled in the casing and arranged to be displaced to permit the movement of the piston and then to close the passage for the latter and form

an abutment between which and the moving piston the expanding motive fluid is adapted to act, means for admitting fluid under pressure to act upon the piston after it has passed said rocking member or abutment, the latter having its face on the arc of rotation adjacent to the motive fluid inlet and disposed toward the moving piston, and packing carried by said piston for engagement with the walls of the casing, said packing being held to such engagement by pressure entering the piston.

3. In a rotary engine, the combination of the casing having an enlarged peripheral chamber, a rotating disk disposed therein, a piston carried by said disk and adapted to the peripheral chamber, a rocking abutment journaled in the casing having one face on the arc of movement of the rotating piston and another on the arc of rotation, an inlet valve mounted adjacent to said piston, means for operating the rocking abutment to permit the piston to pass the same and restoring said abutment after the piston has passed, means for operating the inlet valve after the rocking abutment has been restored to its normal position with its face on the arc of rotation adjacent the motive fluid inlet and disposed toward the moving piston, and pressure controlled packing carried by said piston.

4. In a rotary engine, the combination of the casing having an enlarged peripheral chamber, a rotating disk disposed therein, a piston carried by said disk and adapted to the peripheral chamber, a rocking abutment journaled in the casing having one face on the same arc as the path of the piston and another on the arc of rotation, means for operating said abutment to permit the passage of the piston, a rocking inlet valve mounted beyond the rocking abutment, means for operating said valve after the piston has passed the rocking abutment and the latter has been restored to its normal position with its face on the arc of rotation adjacent the motive fluid inlet and disposed toward the moving piston and pressure controlled packing carried by said piston.

5. In a rotary engine, the combination of the casing having an enlarged peripheral chamber, a rotating disk mounted therein, a piston carried by said disk and adapted to the peripheral chamber, a rocking abutment journaled in said casing having one face on the arc of movement of the piston and another on the arc of rotation, a rocking valve controlling the supply of motive fluid to act on said piston and mounted beyond the rocking abutment, a fly-wheel, and means combined therewith for rocking said valve after the piston has passed the rocking abutment and inlet port.

6. In a rotary engine, the combination of the casing having an enlarged peripheral chamber, a rotating disk mounted therein, a piston carried by said disk and adapted to the peripheral chamber, a rocking abutment journaled in said casing having one face on the arc of movement of the piston and another on the arc of rotation, a rocking valve controlling the supply of motive fluid, a fly-wheel, an arm carried by the rocking valve, and a cam carried by the fly-wheel and adapted to engage the arm of the valve and rock the same so as to admit motive fluid after the piston has passed the rocking abutment.

7. The combination in a rotary engine, of the casing having an enlarged peripheral chamber, a disk inclosed thereby and rotatable therein, a piston carried by said disk and adapted to the peripheral chamber, means for supplying motive fluid to act upon said piston, a rocking abutment journaled in the casing having one face on the arc of movement of the piston and another face on the arc of rotation, a fly-wheel, means carried by said fly-wheel for moving said abutment to permit passage of the piston, and means for restoring said piston to its normal position with its face on the arc of rotation adjacent the motive fluid inlet.

8. The combination in a rotary engine, of the casing having an enlarged peripheral chamber, a disk rotatable therein, a piston carried by said disk and adapted to said peripheral chamber, means for supplying motive fluid to act upon said piston, a rocking abutment having a face on the arc of movement of the piston and another face on the arc of rotation, having its flattest face disposed normally toward the approaching piston, a fly-wheel, a cam carried by said fly-wheel for moving the abutment to permit the passage of the piston, and means for restoring said abutment to its normal position.

9. The combination in a rotary engine, of the disk, a casing inclosing the same and having an enlarged peripheral chamber, a piston carried by said disk adapted to said chamber and having dovetailed recesses in its faces, dovetailed packing plates disposed in said recesses and having their narrow faces disposed outwardly, and means for holding said packing plates against the walls of the peripheral chamber.

10. The combination in a rotary engine, of the disk, a casing inclosing the same and having an enlarged peripheral chamber, a piston carried by said disk adapted to said chamber and having dovetailed recesses in its faces, and dovetailed packing plates arranged in said recesses and having their narrow faces disposed outwardly, the piston having openings for the passage of motive fluid to hold said packing plates against the walls of the peripheral chamber.

11. The combination in a rotary engine, of the casing, a disk mounted therein and contacting with the walls of the casing, hubs mounted on said disk, said disk having a series of grooves disposed on its faces and radiating from said hubs, and means for supplying oil to said grooves.

12. The combination in a rotary engine, of the casing having an enlarged peripheral chamber, a disk confined thereby and rotatable therein, a piston carried by said disk and adapted to the peripheral chamber, means for supplying motive fluid to act upon said piston, a rocking abutment journaled in the casing having its axis coincident with the arc of travel of the piston, a face on the same arc and another face on the arc of rotation, a fly-wheel, a cam carried by said fly-wheel, an arm carried by the abutment and projecting into the path of the cam whereby said abutment may be moved by such engagement, and means for automatically restoring said abutment to its normal position after the cam passes said arm.

13. The combination in a rotary engine, of the casing having an enlarged peripheral chamber, a disk rotatable therein, a piston carried by said disk and adapted to the peripheral chamber, means for supplying motive fluid to act upon said piston, a rocking abutment journaled in said casing and having its axis coincident with the arc of travel of the piston, a fly-wheel, a cam carried by said fly-wheel, an arm carried by the abutment and disposed in the path of the cam whereby said abutment may move by such engagement, and a torsion spring encircling the hub of the abutment and having one end connected thereto and its opposite end connected to the casing, said spring serving to automatically restore said abutment to its normal position after it has been released by the cam.

14. The combination in a rotary engine, of the casing having an enlarged peripheral chamber, a disk rotatable therein, a piston carried by said disk and adapted to the peripheral chamber, and a rocking member mounted in the casing and having its axis coincident with the inner wall of the same, said rocking member arranged to be displaced to permit movement of the piston and then to close the passage for the latter and form an abutment between which and the moving piston the expanding motive fluid is adapted to act and having one face on the same arc as the path of the piston and another face on the arc of rotation, which latter face when said rocking member forms an abutment is disposed toward the moving piston, said piston having its front and rear walls on the same arc as the rocking member whereby said rocking member may be shifted immediately after the passage of the piston so that the initial supply of motive fluid will enter a small space and exert its greatest force upon the moving piston.

851,945. CAR-VESTIBULE. JOHN KREMBIEL, Cleveland, Ohio, assignor to The American Machinery Company, Cleveland, Ohio, a Corporation of Ohio. Filed June 30, 1906. Serial No. 324,142.

Claim.—1. The combination with a car body and a truck at one end of said body to support the same, of a vestibule and a king bolt to pivotally attach the truck and vestibule to the body.

2. The combination with a car body, of a supporting platform extending from one end of said body, a truck beneath said platform to support the car and pivotally attached thereto, a vestibule supported by and pivotally attached to the platform and a king bolt extending through the floor of the vestibule, through the platform and through the bolster of the truck to pivotally connect the vestibule and truck to the car to turn upon a common pivot.

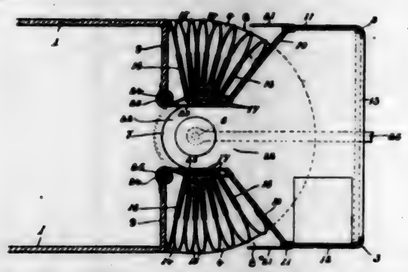

3. The combination with a car body, of a supporting platform extending from one end of said body, a truck beneath the platform, a vestibule supported upon the platform and having a center pivot bearing adjacent to the end of the body, and a vertical pivot bolt extending through said bearing and through the platform and bolster of the truck.

4. The combination with a car body, of a vestibule pivotally attached to the end of the body in the longitudinal center line thereof and with a space between the end of the body and the vestibule to permit said vestibule to turn on its pivot, side walls for the vestibule, and yielding means connecting said side walls and the end of the body to close said space.

5. The combination with a car body, of a vestibule pivotally attached to the end of the body in the longitudinal center line thereof and provided with a portion formed concentric with said pivot, and a projecting portion on the car body formed to conform to the curve of the concentric portion of the vestibule.

6. The combination with a car body, of a vestibule, a longitudinally extending semi-circular portion on one end of the floor of the vestibule forming a passage connecting the car body and vestibule, a vertical pivot located in the axis of said semi-circular extension for pivotally attaching the vestibule to the body, and flexible walls connecting the body and vestibule and extending along the sides of said extension to form the side walls of said passage.

7. The combination with a car body having a pivot bearing at one end and a truck beneath said end to support the body, of a vestibule having a pivot bearing concentric with the bearing on the body and the pivot bearing of the truck, a bolt engaging the bearings therefor in the vestibule body and truck, and a draw bar pivoted upon said bolt.

8. The combination with a car body, of a vestibule having a longitudinally extending semi-circular extension at one end, a pivot in the axis of said extension to attach the vestibule to the body, rigid walls on the vestibule extending from the base of said extension outward, a flexible wall at each side of said extension connected at one end to the body and at the opposite end to the inner ends of the rigid walls, and means for yieldingly holding said yielding walls drawn taut.

9. The combination with a car body, of a vestibule pivotally attached to one end of said body with a space at each side of said pivot between the body and vestibule, fixed vertical side-walls for the vestibule, vertical flexible walls attached at one end to the fixed walls and forming a passage from the car body to the vestibule, and spring actuated rollers carried by the body to which rollers the opposite ends of the flexible walls are secured.

10. The combination with a car body and a vestibule attached thereto with a space between, of a bellows within the space to close the same consisting of folds of flexible material, rods secured in the inner loops of said folds and projecting therefrom at each end, and tracks to engage the projecting ends of said rods and guide and support the folds.

11. The combination with a car body and a vestibule attached thereto with a space between, of a bellows within the space consisting of outer folds formed of strips of flexible material, loops of sheet metal secured to the inner edges of said strips, and tracks to guide and support the upper and lower ends of said loops.

12. The combination with a car body and a vestibule attached thereto with a space between, of a bellows within the space consisting of outer folds formed of strips of flexible material, strips of sheet metal each folded longitudinally upon itself to form loops with the edges of the flexible strips secured within the loops, rods secured within the inner closed ends of the loops and bent at their upper ends to form hooks, and tracks engaged by the ends of said rods.

13. The combination with a car body, of a vestibule, a semi-circular portion on said vestibule with a space at each side thereof between the body and vestibule, a pivot bolt in the axis of said portion to pivotally attach the vestibule to the car body, bellows to fill said spaces consisting of folds of flexible material secured together and to the walls of the body and vestibule, vertical rods in the inner ends of the loops of said folds, and tracks engaged by the ends of the rods and secured to the vestibule and formed concentric with the semi-circular portion.

14. The combination with a car body, of a supporting platform extending from one end of said body, a pivoted truck beneath the platform, a vestibule supported by the platform and formed with a semi-circular projection having an axial bearing, a king bolt engaging said bearing and extending through the platform and engaging the truck to pivotally attach the truck and vestibule to the body, a draw-bar pivoted on said bolt, a projection on the end of the car body formed to conform to the curve of the semi-circular portion of the vestibule and together with said portion forming a floor for a passage leading from the body to the vestibule, vertical walls on the vestibule extending inward to the base of the semi-circular portion, and bellows connecting the end of the body and said walls.

851,946. PROCESS OF DETINNING. FRANZ VON KÜGELGEN and GEORGE O. SEWARD, Holcombs Rock, Va., assignors, by mesne assignments, to Tin Products Company, a Corporation of New York. Filed Aug. 4, 1905. Renewed Mar. 30, 1907. Serial No. 365,603.

Claim.—1. The recovery of tin from tin scrap by treating the latter in a closed vessel with dry chlorin to form stannic chlorid, and so limiting the quantity of scrap that the heat generated by the reaction is absorbed by the contents of the vessel and the temperature prevented from rising to a point at which the iron is attacked.

2. The recovery of tin from tin scrap by treating the latter in a closed vessel with dry chlorin to form stannic chlorid, so limiting the quantity of scrap that the heat generated by the reaction is absorbed by the contents of the vessel, and water-cooling the vessel, whereby the temperature is kept below that at which the iron is attacked.

3. The recovery of tin from tin scrap by treating the latter in a closed vessel with dry chlorin to form stannic chlorid, and passing through the vessel such a surplus of chlorin above the amount necessary for the reaction that the heat generated by the reaction is absorbed by the large amount of cool gas and the temperature thereby kept below the point at which the iron is attacked.

851,947. DEGREE-SQUARE. LOUIS LALONE, South Chicago, Ill. Filed Aug. 21, 1906. Serial No. 331,519.

Claim.—A device of the kind described comprising a protractor, a disk mounted upon the center of the pro-

tractor base, a set screw eccentrically secured in said disk, a flanged cap, the screw working loosely through the cap and the flange bearing upon the protractor base, a longi-

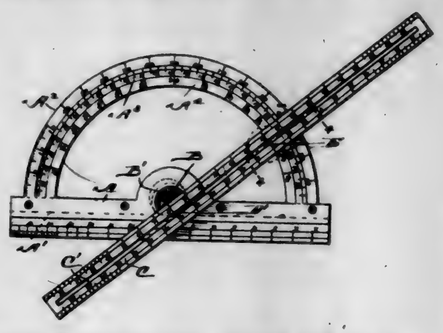

tudinally slotted rule, and a set screw connecting the cap and disk and passing loosely through the said slot.

851,948. TELEPHONE SYSTEM. JACOB W. LATTIG and CHARLES L. GOODRUM, Philadelphia, Pa. Filed Apr. 4, 1903. Serial No. 151,179.

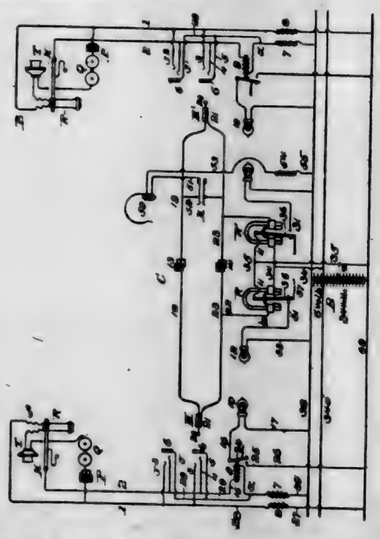

Claim.—The combination with a multiple switchboard telephone line, a pair of line conductors, a battery permanently connected between the line conductors, a plurality of testing terminals connected with one line conductor, the portion of said line conductor between the testing terminals and the battery having an appreciable resistance whereby when a subscriber calls and connects the two line conductors together the testing terminals have their potential raised and the line is placed in condition to test busy, an operator's cord and plug testing terminal to cooperate with any of the before-mentioned testing terminals, a line relay and means to short circuit the same by the insertion of the plug, and a polarized supervisory relay connected from the cord to an intermediate point on the battery whereby the opening of the line by the subscriber will reverse the potential of the said relay simultaneously with lowering of the test potential.

851,949. CHIMNEY-FLUE PROTECTOR. CHARLEY LEAK, Numa, Iowa. Filed Oct. 11, 1906. Serial No. 338,475.

Claim.—1. In combination, a chimney, and a protector therefor, the latter consisting of a shell adapted to receive and surround the upper portion of the chimney and of hollow form so that its sides will be spaced from the sides of said chimney, the top of the shell overlapping the top of the chimney and being provided with an opening coincident with that of the chimney, the shell being further provided with openings communicating with the space between said shell and chimney, and a binder of plastic material received in the space between the sides of the shell and the sides of the chimney.

2. In combination, a chimney, and a protector therefor, the latter consisting of a shell surrounding the upper portion of and receiving said chimney the sides of the shell being spaced from the sides of the chimney, the lower portion of the shell snugly fitting about the chimney, the upper portion of the shell overlapping the top of the chimney and being provided with an opening substantially of the same size and form as that of the chimney and coinciding with the latter, openings being provided in the upper portion of the shell through which to pass plastic material, and a binder of plastic material received in the space between the shell and the sides of the chimney for the purpose specified.

851,950. ANKLE-SUPPORTER. RAOUL F. LE MAT, Washington, D. C., assignor to George A. Reach, Philadelphia, Pa. Filed Dec. 27, 1906. Serial No. 349,646.

Claim.—An ankle supporter comprising an ankle part and a foot part having openings for the foot and heel and a slit and lacings in the front thereof, said parts being made of non-elastic material united by a beam located on the side of the supporter between the ankle joint and the back of the heel, substantially as described.

851,951. OPERATING DEVICE FOR MILKING-MACHINES. BIRGER LJUNGSTRÖM and FREDRIK LJUNGSTRÖM, Stockholm, Sweden, assignors to Aktiebolaget Separator, Stockholm, Sweden. Filed Jan. 24, 1907. Serial No. 353,932.

Claim.—1. In pump operating devices for milking machines, in combination, wires having a relative reciprocating motion, a pump connected therewith and a fluid receptacle, communicating with the pump cylinder, a suction valve and a force valve controlling the communication between the pump cylinder and receptacle.

2. In pump operating devices for milking machines, in combination, wires having a reciprocating motion in relation to each other, a pump connected therewith and a fluid receptacle, inclosing said pump and communicating with the pump cylinder, a suction and a force valve controlling the communication between the pump cylinder and receptacle.

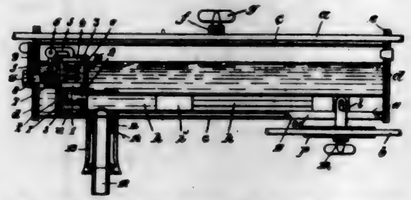

3. In pump operating devices for milking machines, in combination, wires having a relative reciprocating motion, a pump cylinder, connected with the one wire, a piston in the said cylinder, connected with the other wire, a fluid receptacle, inclosing said cylinder and communicating therewith, a suction valve and a force valve controlling the communication between the pump cylinder and receptacle.

4. In pump operating devices for milking machines, in combination, wires having a relative reciprocating motion, a pump connected therewith and a fluid receptacle, communicating with the pump cylinder by means of a suction valve, and a force valve controlling the connection between the pump cylinder and receptacle, and means to produce and regulate pressure upon the force valve against movement to open.

5. In pump operating devices for milking machines, in combination, wires having a relative reciprocating motion, a pump connected therewith and a fluid receptacle, communicating with the pump cylinder, a suction valve, and a force valve controlling the communication between the pump cylinder and receptacle, and a spring acting upon the force valve.

6. In pump operating devices for milking machines, in combination, wires having a relative reciprocating motion, a pump connected therewith and a fluid receptacle, communicating with the pump cylinder, a suction valve, and a force valve controlling the communication between the pump cylinder and receptacle, a spring acting upon the force valve, and means to vary the power of said spring.

7. In pump operating devices for milking machines, in combination, wires having a relative reciprocating motion, a pump connected therewith and a fluid receptacle, communicating with the pump cylinder, a suction valve, and a force valve controlling the communication between the pump cylinder and receptacle, a spring acting upon the force valve, a device, exterior of the apparatus, for varying the power of the spring and connection between the device and spring.

8. In pump operating devices for milking machines, in combination, wires having a relative reciprocating motion, a pump connected therewith and a fluid receptacle, communicating with the pump cylinder by means of a suction valve, and a force valve controlling the connection between the pump cylinder and receptacle, and means to produce pressure upon the force valve.

9. In pump operating devices for milking machines, in combination, wires having a relative reciprocating motion, a pump connected therewith and a fluid receptacle, communicating with the pump cylinder, and a disk covering the opening by which the pump cylinder communicates with the liquid receptacle.

10. In pump operating devices for milking machines, in combination, wires having a relative reciprocating motion, a pump connected therewith and a fluid receptacle, communicating with the pump cylinder, a disk, closing an opening by which the pump cylinder communicates with the fluid receptacle, and pressure means tending to hold said valve on its seat.

11. In pump operating devices for milking machines, in combination, wires having a relative reciprocating motion, a pump connected therewith and a fluid receptacle, communicating with the pump cylinder, a disk, closing an opening by which the pump cylinder communicates with the fluid receptacle, pressure means tending to hold said valve on its seat, and means to vary the power of said pressure means.

12. In pump operating devices for milking machines, in combination, wires having a relative reciprocating motion, a pump connected therewith and a fluid receptacle, communicating with the pump cylinder, a disk, closing an opening by which the pump cylinder communicates with the fluid receptacle, and a spring acting on said disk to press it against its seat.

13. In pump operating devices for milking machines, in combination, wires having a relative reciprocating motion, a pump connected therewith and a fluid receptacle, communicating with the pump cylinder, a disk, closing an opening by which the pump cylinder communicates with the fluid receptacle, and a spring acting on said disk to press it against its seat, and means to vary the power of said spring.

14. In pump operating devices for milking machines, in combination, wires having a relative reciprocating motion, a pump connected therewith and a liquid receptacle communicating with the pump cylinder, a force valve, consisting of a disk, closing an opening by which the pump cylinder communicating with the fluid receptacle, a spring pressing said valve on its seat abutting with one end against the disk, a second disk against which the other end of said spring abuts, a lever extending to the exterior of the apparatus to which said second disk is connected whereby the space between said disks may be varied, varying the power of the spring.

15. In pump operating devices for milking machines, in combination, wires having a relative reciprocating motion, a pump connected therewith and a fluid receptacle, communicating with the pump cylinder, a disk, closing an opening by which the pump cylinder communicates with the liquid receptacle, a spiral spring, abutting with one end against said disk, a second disk against which the other end of the spring abuts, a lever connected with said second disk, a screw, engaging the end of said lever, said screw being journaled in the bottom of the liquid receptacle, and an arm connected with the screw and moving over a scale.

851,952. SPINNING AND TWISTING MACHINE. CHARLES E. LOMBARD, East Wilton, Me. Filed Jan. 9, 1907. Serial No. 351,563.

Claim.—1. A twisting and spinning apparatus comprising a rotatable shaft, a bobbin fixed thereto, a hollow shaft mounted to move longitudinally upon said bobbin carrying shaft, a shell swiveled to said hollow shaft, a flier, and cam-actuated means for imparting an intermittent longitudinal movement to said flier, as set forth.

2. A twisting and spinning apparatus comprising a rotatable shaft, a bobbin fixed thereto, a hollow shaft mounted to move longitudinally upon said bobbin carrying shaft, a shell swiveled to said hollow shaft, a flier, a rock shaft, an angle lever fixed to said rock shaft, pivotal connections between one arm of said lever and said shell, a longitudinally movable screw, a nut mounted upon said screw, pivotal connections between said nut and angle lever, and cam-actuated mechanism for rotating said screw and moving the same longitudinally, as set forth.

3. A twisting and spinning apparatus comprising a rotatable shaft, a bobbin fixed thereto, a hollow shaft mounted to move longitudinally upon said bobbin carrying shaft, a shell swiveled to said hollow shaft, a flier, a rock shaft, an angle lever fixed to said rock shaft, pivotal connections between one arm of said lever and said shell, a longitudinally movable screw, a nut mounted upon said screw, a plunger pivotally connected to said angle lever and also to said nut, cam-actuated means for moving said plunger, and mechanism for imparting an intermittent movement to said screw, as set forth.

4. A twisting and spinning apparatus comprising a rotatable shaft, a bobbin fixed thereto, a hollow shaft mount-

ed to move longitudinally upon said bobbin carrying shaft, a shell swiveled to said hollow shaft, a flier, a rock shaft, an angle lever fixed to said rock shaft, pivotal connections between one arm of said lever and said shell, a longitudinally movable screw, a nut mounted upon said screw, a plunger pivotally connected to said angle lever and also to said nut, a ratchet wheel mounted upon said screw, a cam-actuated pivotal lever, a pawl engaging said ratchet wheel, and connections between the same and the cam-actuated lever, as set forth.

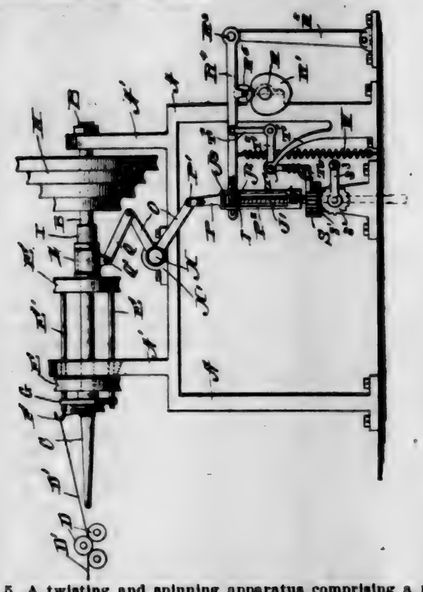

5. A twisting and spinning apparatus comprising a rotatable shaft, a bobbin fixed thereto, a hollow shaft mounted to move longitudinally upon said bobbin carrying shaft, a shell swiveled to said hollow shaft, a flier, a rock shaft, an angle lever fixed to said rock shaft, pivotal connections between one arm of said lever and said shell, a longitudinally movable screw, a nut mounted upon said screw, a plunger pivotally connected to said angle lever and also to said nut, a ratchet wheel mounted upon said screw, a cam-actuated pivotal lever, a pawl engaging said ratchet wheel, a pivotal angle lever connected to said pawl, and a link pivotally connecting said pawl carrying angle lever and said cam-actuated lever, as set forth.

6. A twisting and spinning apparatus comprising a rotatable shaft, a bobbin fixed thereto, a hollow shaft mounted to move longitudinally upon said bobbin carrying shaft, a shell swiveled to said hollow shaft, a flier, a rock shaft, an angle lever fixed to said rock shaft, pivotal connections between one arm of said lever and said shell, a longitudinally movable screw, a nut mounted upon said screw, a plunger pivotally connected to said angle lever and also to said nut, a ratchet wheel mounted upon said screw, a cam-actuated pivotal lever, a collar swiveled upon said screw, pivotal connections between said collar and cam-actuated lever, and a spring connected to the cam-actuated lever, as set forth.

851,953. OIL-BURNING SYSTEM. MICHAEL N. MACRATH and JOHN A. TOOMEY, Los Angeles, Cal. Filed Sept. 25, 1906. Serial No. 336,192.

Claim.—1. In an oil burning system, a main tank, an auxiliary tank, an oil burner, a circulatory system which includes the tanks and burner, pressure means for maintaining a flow of oil through the circulatory system, a drain connection normally cut off from the main tank, and means controlled by a single device for cutting out the main tank, but not the auxiliary tank, from the circulatory system, and connecting the main tank with the drain connection to enable the evacuation of the main tank of the pressure medium and its replenishment with oil without interrupting the service of oil under pressure to the burner.

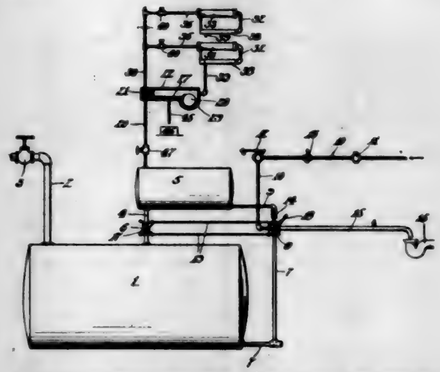

2. In an oil burning system, a main tank, an auxiliary tank, a pipe connecting said tanks, a valve in said pipe, a four way valve, a pipe from the four way valve to the main tank, a pipe from the four way valve to the auxiliary tank, a check valve in the latter pipe, a drain pipe leading from the four way valve, a pipe from the four way valve connected with a water pressure system, a burner, and a pipe from the auxiliary tank to the burner.

3. In an oil burning system, a main tank, an auxiliary tank, a pipe connecting said tanks, a valve in said pipe, a four way valve, a pipe from the four way valve to the main tank, a pipe from the four way valve to the auxiliary tank, a check valve in the latter pipe, a drain pipe leading from the four-way valve, a pipe from the four way valve connected with a water pressure system, a burner, and a pipe from the auxiliary tank to the burner, and means for automatically operating the first named valve when the four way valve is operated.

4. In an oil burning system, a main tank, an auxiliary tank, a pipe connecting said tanks, a valve in said pipe, a four way valve, a pipe from the four way valve to the main tank, a pipe from the four way valve to the auxiliary tank, a check valve in the latter pipe, a drain pipe leading from the four way valve, a pipe from the four way valve connected with a water pressure system, a burner, and a pipe from the auxiliary tank to the burner, and means for automatically opening said first valve when the four way valve is operated to place the water pressure pipe in communication with the main tank, and to automatically close said first valve when the four way valve is operated to place the main tank in communication with the drain pipe and the water pressure pipe in communication with the auxiliary tank.

5. In an oil burning system, a main tank, an auxiliary tank, a pipe connecting said tanks, a valve in said pipe, a four way valve, a pipe from the four way valve to the main tank, a pipe from the four way valve to the auxiliary tank, a check valve in the latter pipe, a drain pipe leading from the four way valve, a pipe from the four way valve connected with a water pressure system, a burner and a pipe from the auxiliary tank to the burner, a lever on the first valve, a lever on the four way valve, and links connecting the two levers.

851,954. APPARATUS FOR PRODUCING GAS. GEORGES MARCONNET, Paris, France. Filed Jan. 30, 1905. Serial No. 243,364.

Claim.—1. In apparatus for the production of combustible gas from pulverulent fuel, a gas producer comprising a long vertically arranged combustion chamber throughout the length of which jets of flame extend, a conduit adapted to feed fuel and air to said gas producer and having an inlet orifice, means whereby powdered fuel is caused to pass in a continuous shower more or less closely in front of said inlet orifice and means that draw regulated quantities of air and powdered fuel through said inlet orifice to said gas producer, substantially as described.

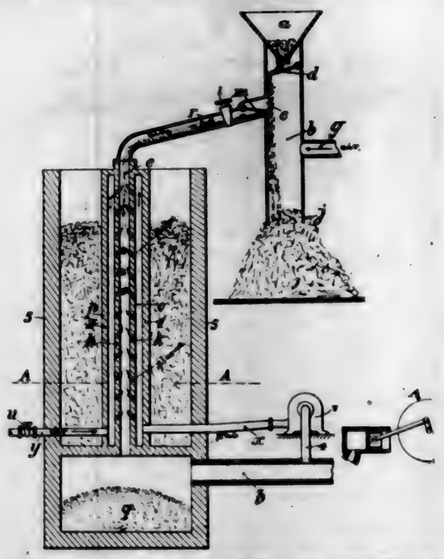

2. In apparatus for the production of combustible gas from pulverulent fuel, a gas producer comprising a long vertically arranged combustion chamber throughout the length of which jets of flame extend, a conduit adapted to feed fuel and air to said gas producer and having an inlet orifice, means for adjusting the area of said inlet orifice, means whereby powdered fuel is caused to pass in a continuous shower more or less closely in front of said inlet orifice and means that draw regulated quantities of air and powdered fuel through said inlet orifice to said gas producer, substantially as described.

3. In apparatus for the production of combustible gas from pulverulent fuel, a gas producer comprising a long vertically arranged combustion chamber throughout the length of which jets of flame extend, a conduit adapted to feed fuel and air to said gas producer and having an inlet orifice, a second conduit communicating with the inlet orifice of said feed conduit, and with the atmosphere, distributing means whereby powdered fuel is caused to pass in a continuous shower through said second conduit and more or less closely in front of the inlet orifice of said feed conduit and means that draw regulated quantities of air and powdered fuel through said inlet orifice to said gas producer, substantially as described.

4. In apparatus for the production of combustible gas from pulverulent fuel, a gas producer comprising a long vertically arranged combustion chamber throughout the length of which jets of flame extend, a conduit adapted to feed fuel and air to said gas producer and having an inlet orifice, a vertically arranged conduit communicating with the inlet orifice of said feed conduit, a pipe supplying air to said vertical conduit, a powdered fuel hopper at the upper end of said vertical conduit, distributing means for causing fuel from said hopper to fall in a continuous shower through said vertically arranged conduit and more or less closely in front of the inlet orifice of said feed conduit and means that draw regulated quantities of air and powdered fuel through said inlet orifice to said gas producer, substantially as described.

5. In apparatus for the production of combustible gas from pulverulent fuel, a gas producer comprising a long vertically arranged combustion chamber throughout the length of which jets of flame extend, a conduit adapted to feed fuel and air to said gas producer and having an inlet orifice, an adjustable plate controlling the area of said inlet orifice, a vertically arranged conduit communicating with the inlet orifice of said feed conduit, a pipe supplying air to said vertical conduit, a powdered fuel hopper at the upper end of said vertical conduit, distributing means for causing fuel from said hopper to fall in a continuous shower through said vertically arranged conduit and more or less closely in front of the inlet orifice of said feed conduit and means that draw regulated quantities of air and powdered fuel through said inlet orifice to said gas producer, substantially as described.

6. In apparatus for the production of combustible gas from pulverulent fuel, a gas producer comprising a long vertically arranged combustion chamber throughout the length of which jets of flame extend, a conduit adapted to feed fuel and air to said gas producer and having an inlet orifice, an adjustable plate controlling the area of said inlet orifice, a vertically arranged conduit communicating with the inlet orifice of said feed conduit, a pipe supplying air to said vertical conduit, a powdered fuel hopper at the upper end of said vertical conduit, an adjustable inclined plate located below said hopper and from the lower edge of which powdered fuel is caused to fall in a continuous shower through said vertically arranged conduit and more or less closely in front of the inlet orifice of said feed conduit and means that draw regulated quantities of air and powdered fuel through said inlet orifice to said gas producer, substantially as described.

7. In apparatus for the production of combustible gas from pulverulent fuel, a gas producer comprising a long vertically arranged combustion chamber throughout the length of which jets of flame extend, and a gas and cinder collecting chamber with which the lower end of said combustion chamber communicates, a feed conduit having an inlet orifice for fuel and air to the upper end of said combustion chamber, means whereby powdered fuel is caused to pass in a continuous shower more or less closely in front of the inlet orifice of said conduit, a gas exit pipe from the said gas and cinder chamber of said producer and suction means that draw gas from said pipe and regulated quantities of air and powdered fuel through said inlet orifice and into said combustion chamber, substantially as described.

8. In apparatus for the production of combustible gas from pulverulent fuel, a gas producer comprising a long vertically arranged combustion chamber throughout the length of which jets of flame extend, and a gas and cinder collecting chamber with which the lower end of said combustion chamber communicates, a feed conduit having an inlet orifice for fuel and air to the upper end of said combustion chamber, means whereby powdered fuel is caused to pass in a continuous shower more or less closely in front of the inlet orifice of said conduit, a gas exit pipe from the said gas and cinder chamber of said producer and a motor driven by the gas delivered through said exit pipe and adapted to draw regulated quantities of air and powdered fuel through said inlet orifice according to the work being done, substantially as described.

9. In apparatus for the production of combustible gas from pulverulent fuel, a gas producer comprising a long vertically arranged combustion chamber throughout the length of which jets of flame extend, and a gas and cinder collecting chamber with which the lower end of said combustion chamber communicates, a feed conduit having an inlet orifice for fuel and air to the upper end of said combustion chamber, a second conduit communicating with the inlet orifice of said feed conduit, and with the atmosphere, distributing means whereby powdered fuel is caused to pass in a continuous shower through said second conduit and more or less closely in front of the inlet orifice of said feed conduit, a gas exit pipe from the said gas and cinder chamber, and a motor driven by the gas delivered through said exit pipe and adapted to draw regulated quantities of air and powdered fuel through said inlet orifice according to the work being done, substantially as described.

10. In apparatus for the production of combustible gas from pulverulent fuel, a gas producer comprising a long vertically arranged combustion chamber throughout the length of which jets of flame extend, and a gas and cinder collecting chamber with which the lower end of said combustion chamber communicates, a feed conduit having an inlet orifice for fuel and air to the upper end of said combustion chamber, a vertically arranged conduit communicating with the inlet orifice of said feed conduit, a pipe supplying air to said vertical conduit, a powdered fuel hopper at the upper end of said vertical conduit, distributing means for causing fuel from said hopper to fall in a continuous shower through said vertically arranged conduit and more or less closely in front of the inlet orifice of said feed conduit and a motor driven by the gas delivered through said exit pipe and adapted to draw regulated quantities of air and powdered fuel through said inlet orifice according to the work being done, substantially as described.

851,955. WIRE-FENCE MACHINE. ISAAC N. MORFORD, Waynesville, Ill. Filed Aug. 14, 1906. Serial No. 330,608.

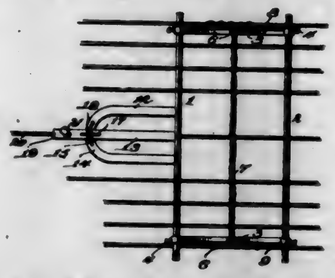

Claim.—1. A wire fence machine comprising a pair of standards, means carried by one of the standards for engaging the fence wires, and horisontal cross heads disposed transversely of the fence and extending from one side thereof and composed of opposite sides connected with the standards, and a central integral arm connected with the said sides and provided with a terminal fork arranged to engage a stay and adapted also to engage the top and bottom wires of the fence to prevent the same from being drawn together by the twisting of the stay.

2. A wire fence machine comprising a pair of standards, and horisontally disposed substantially double semi-circular cross heads arranged horisontally and extending laterally from one side of the fence and composed of opposite sides secured to the standards, and a central arm having terminal means for engaging a stay and a line wire of a fence.

3. A wire fence machine, comprising a pair of standards, means for connecting the same, a substantially U-shaped bar or member having an arcuate portion and secured to one of the standards, a pivoted arm mounted on such standard and crossing the arcuate portion of the said bar or member, the said arcuate portion and the arm being provided with intersecting slots, a fastening device arranged in the intersecting slots for adjustably securing the arm to the said arcuate portion, and terminal means carried by the arm for engaging the fence.

851,956. FRICTION-CLUTCH FOR AUTOMOBILES AND OTHER PURPOSES. MICHAEL F. MCMAHON, Worcester, Mass. Filed May 4, 1906. Serial No. 315,134.

Claim.—1. In combination, as described, with the two clamping-disks, intervening frictional-disk, draft-bolts arranged in pairs and shipper-slide-collar; the radially disposed inwardly extending clamp-actuating levers having bifurcated heads each pivotally connected with the heads of a pair of draft-bolts by an axis-pin passing through the same, each lever provided with a fulcrum bearing roller in and extending across the face of its head, adjacent to the side of the clamping-disk, and adapted to throw past the dead-center line, when operating the clutch; the heads of the pair of draft-bolts fitting against the respective ends of the roller and lever-head and supporting the same, substantially as shown.

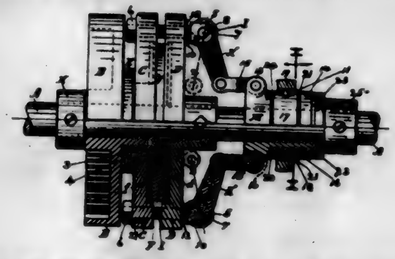

2. The combination, substantially as described, with the axis-shaft, the frictional-disk loose on said shaft, the power-wheel, the toothed coupling-plate connecting said disk and power-wheel, a pair of clamping-disks that embrace said frictional-disk, and draft-bolts arranged in pairs therethrough; of the radially disposed clamp-actuating levers each having a protuberant T-head extending between the heads of a pair of draft-bolts, a pivot-pin through the draft-bolt-heads and lever-head, said lever-heads having a protuberant face provided with a bore parallel with the pivot-axis, a roller disposed in said bore with a portion of its cylindrical body protruding therefrom as a fulcrum support, means for preventing the escape of said roller, the fulcrum-bearing-plates each mounted on two draft-bolts adjacent to said roller, a clutch-operating slide, and links connecting said slide with the inner ends of said clamp-actuating levers.

3. In a clutch actuating mechanism, the shipper-slide comprising the tubular body having the pivoting ears and extended sleeve portion provided with annular collar members or shoulders having rollway surfaces, a loose shipper-connecting ring surrounding said sleeve and provided with opposite rollway surfaces, bearing-balls disposed between the rollways on said ring and the rollways of said shoulders, and a nut threaded to the outer end of said sleeve for confining the collar members.

4. In combination with the clutch-disks and clutch-operating devices, comprising the toggle lever; of the slide or shifting-collar provided with annular rollways, and a fork-connecting ring having annular grooved edges, said ring being revolubly supported by ball-bearings between said rollways, and having a space between its inner surface and the exterior surface of the slide.

5. The combination, of the clutch-disks, intervening frictional disk, clamp-bolts arranged in pairs connecting the clutch-disks, and clamp-actuating levers for operating said pairs of bolts, the clamp-adjusting nuts threaded upon said bolts and seated against the back of the clutch-disk opposite the lever, and an automatically retractable retaining device inclosed and concealed beneath each of the nuts, and automatically engageable therewith at positions corresponding with the angles of the nut, whereby adjustment for regulating the pair of clamp-bolts can be effected to a uniform degree for the several bolts, by simple application of a wrench to the respective nuts, substantially as set forth.

851,957. WATER-PURIFYING APPARATUS. EDWIN D. PACKARD, Marion, Ohio, assignor, by direct and mesne assignments, to The Marion Incline Filter and Heater Company, Marion, Ohio, a Corporation of Ohio. Filed June 22, 1906. Serial No. 322,606.

Claim.—1. In a water purifying apparatus, the combination, with a cold water supply pipe and means to automatically stop and permit the flow of water therethrough, of a series of expansible pans, upon which said water is discharged, adapted to expand or contract according to the flow of said water, the pans having exterior water surfaces and interior steam surfaces.

2. In a water purifying apparatus, the combination, with a cold water supply pipe and means to automatically stop and permit the flow of water therethrough, of a series of expansible pans, upon which said water is discharged, adapted to expand or contract according to the flow of said water, the pans having exterior convex water surfaces, and interior steam surfaces, being open to permit the circulation of steam therethrough.

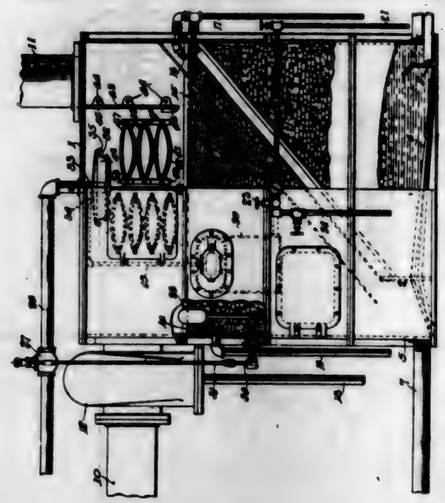

3. In a water purifying apparatus, the combination, with a cold water supply pipe and means to automatically stop and permit the flow of water therethrough, of a series of expansible pans, upon which said water is discharged, adapted to expand or contract according to the flow of said water, the pans being elliptical in cross-section and open at their ends, being placed one above the other, and the lower wall of each pan being perforated, substantially as described.

4. In a water purifying apparatus, a cold water feed pipe, a receiving pan into which it discharges, said pan having a reduced water exit at its edges, a series of pans one above the other, each series located under one of said water exits, and each pan of the series being substantially elliptical and adapted to receive steam in its interior and to distribute water on its exterior.

5. In a water purifying apparatus, a series of purifying pans, each elliptical in cross-section and closed against the admission of water to the interior thereof and each open at its ends for the admission of steam.

6. In a water purifying apparatus, a series of purifying pans, each elliptical in cross-section and each open at its ends for the admission of steam, a ledge or raised surface at the ends of the pans to constitute a water guard and prevent the water from working into the interior of the pans.

7. In a water purifying apparatus, a series of purifying pans, each having convex upper and lower surfaces and adapted to receive steam in its interior, and each having a raised surface at its ends to constitute a water ledge, and a series of supporting devices in the apparatus upon which rest the ledges of the pans.

8. In a water purifying apparatus, a purifying pan substantially elliptical in cross-section and closed against admission of water to the interior thereof to present convex exterior water surfaces, and an interior steam space.

9. In a water purifying apparatus, a purifying pan having exterior water surfaces and an interior steam space and constructed to admit steam thereinto and exclude water therefrom.

10. In a water purifying apparatus, a purifying pan substantially elliptical in cross-section to present exterior water surfaces and an interior steam space, a pan having a water ledge at its ends and perforations near the center of its bottom.

11. In a water purifying apparatus, the combination, with a series of expansible pans adapted to expand and contract under the influence of the water entering said apparatus and having exterior water surfaces and interior steam surfaces, of means intermittently feeding cold water thereto.

12. In a water purifying apparatus, the combination, with a purifier proper having a steam inlet and a steam outlet, of a series of purifying pans located essentially between said inlet and outlet, and a baffle plate located between the pans and the outlet and having perforations to keep up the draft of steam from one outlet to the other.

13. In a water purifying apparatus, the combination, with a purifier proper having a steam inlet and a steam outlet, of a series of purifying pans located essentially between said inlet and said outlet, of a baffle plate located between the pans and the outlet and having perforations and a condensation trough near its lower edge.

851,958. SELF-OILING BUSHING. WILLIAM L. PERKINS and SILAS W. JENNEY, Barre, Vt. Filed Mar. 24, 1906. Serial No. 307,853.

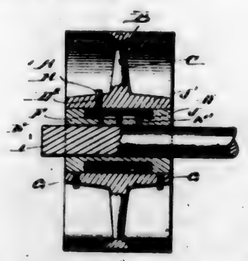

Claim.—1. In a device of the kind described, the combination with an axle, of a pulley mounted on said axle, and having an annular chamber, a loop arranged in said chamber and a wick supported in said chamber by said loop, for the purpose described.

2. In a device of the kind described, the combination with an axle, of a pulley mounted on said axle, and provided with a central opening, a bushing arranged in said opening, said bushing and pulley co-operating to form an annular chamber, a loop arranged in said bushing and wicks supported by said loop in said chamber, for the purpose described.

3. In a device of the kind described the combination with an axle, of a flanged bushing mounted on said axle, a rim secured on said bushing and a loop carrying wicks secured between the flanges of the bushing for the purpose described.

4. In a device of the kind described, the combination with a flanged bushing and a rim carried thereby, said bushing and rim co-operating to form an annular chamber, of a loop secured between the flanges of said bushing and wicks arranged in said loop and extending through said bushing for the purpose described.

5. In a device of the kind described, the combination with a flanged bushing, provided with spaced openings and mounted on an axle of a rim secured on said flanged bushing, said bushing and rim co-operating to form an annular chamber, said rim being provided with an opening leading into said chamber, a loop secured between the flanges of the bushing and wicks secured in said loop adapted to ex-

10. In apparatus for the production of combustible gas from pulverulent fuel, a gas producer comprising a long vertically arranged combustion chamber throughout the length of which jets of flame extend, and a gas and cinder collecting chamber with which the lower end of said combustion chamber communicates, a feed conduit having an inlet orifice for fuel and air to the upper end of said combustion chamber, a vertically arranged conduit communicating with the inlet orifice of said feed conduit, a pipe supplying air to said vertical conduit, a powdered fuel hopper at the upper end of said vertical conduit, distributing means for causing fuel from said hopper to fall in a continuous shower through said vertically arranged conduit and more or less closely in front of the inlet orifice of said feed conduit and a motor driven by the gas delivered through said exit pipe and adapted to draw regulated quantities of air and powdered fuel through said inlet orifice according to the work being done, substantially as described.

851,955. WIRE-FENCE MACHINE. ISAAC N. MORFORD, Waynesville, Ill. Filed Aug. 14, 1906. Serial No. 330,608.

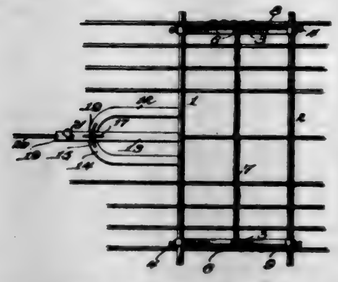

Claim.—1. A wire fence machine comprising a pair of standards, means carried by one of the standards for engaging the fence wires, and horizontal cross heads disposed transversely of the fence and extending from one side thereof and composed of opposite sides connected with the standards, and a central integral arm connected with the said sides and provided with a terminal fork arranged to engage a stay and adapted also to engage the top and bottom wires of the fence to prevent the same from being drawn together by the twisting of the stay.

2. A wire fence machine comprising a pair of standards, and horizontally disposed substantially double semi-circular cross heads arranged horizontally and extending laterally from one side of the fence and composed of opposite sides secured to the standards, and a central arm having terminal means for engaging a stay and a line wire of a fence.

3. A wire fence machine, comprising a pair of standards, means for connecting the same, a substantially U-shaped bar or member having an arcuate portion and secured to one of the standards, a pivoted arm mounted on such standard and crossing the arcuate portion of the said bar or member, the said arcuate portion and the arm being provided with intersecting slots, a fastening device arranged in the intersecting slots for adjustably securing the arm to the said arcuate portion, and terminal means carried by the arm for engaging the fence.

851,956. FRICTION-CLUTCH FOR AUTOMOBILES AND OTHER PURPOSES. MICHAEL F. MCMAHON, Worcester, Mass. Filed May 4, 1906. Serial No. 315,134.

Claim.—1. In combination, as described, with the two clamping-disks, intervening frictional-disk, draft-bolts arranged in pairs and shipper-slide-collar; the radially disposed inwardly extending clamp-actuating levers having broad heads each pivotally connected with the heads of a pair of draft-bolts by an axis-pin passing through the same, each lever provided with a fulcrum bearing roller in and extending across the face of its head, adjacent to the side of the clamping-disk, and adapted to throw past the dead-center line, when operating the clutch; the heads of the pair of draft-bolts fitting against the respective ends of the roller and lever-head and supporting the same, substantially as shown.

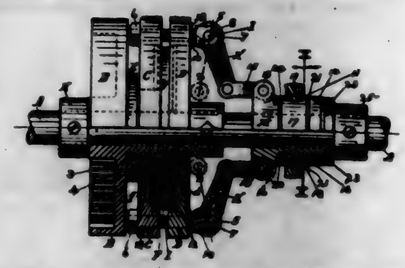

2. The combination, substantially as described, with the axis-shaft, the frictional-disk loose on said shaft, the power-wheel, the toothed coupling-plate connecting said disk and power-wheel, a pair of clamping-disks that embrace said frictional-disk, and draft-bolts arranged in pairs therethrough; of the radially disposed clamp-actuating levers each having a protuberant T-head extending between the heads of a pair of draft-bolts, a pivot-pin through the draft-bolt-heads and lever-head, said lever-heads having a protuberant face provided with a bore parallel with the pivot-axis, a roller disposed in said bore with a portion of its cylindrical body protruding therefrom as a fulcrum support, means for preventing the escape of said roller, the fulcrum-bearing-plates each mounted on two draft-bolts adjacent to said roller, a clutch-operating slide, and links connecting said slide with the inner ends of said clamp-actuating levers.

3. In a clutch actuating mechanism, the shipper-slide comprising the tubular body having the pivoting ears and extended sleeve portion provided with annular collar members or shoulders having roll way surfaces, a loose shipper-connecting ring surrounding said sleeve and provided with opposite roll way surfaces, bearing-balls disposed between the roll ways on said ring and the roll ways of said shoulders, and a nut threaded to the outer end of said sleeve for confining the collar members.

4. In combination with the clutch-disks and clutch-operating devices, comprising the toggle lever; of the slide or shifting-collar provided with annular roll ways, and a fork-connecting ring having annular grooved edges, said ring being revolubly supported by ball-bearings between said roll ways, and having a space between its inner surface and the exterior surface of the slide.

5. The combination, of the clutch-disks, intervening frictional disk, clamp-bolts arranged in pairs connecting the clutch-disks, and clamp-actuating levers for operating said pairs of bolts, the clamp-adjusting nuts threaded upon said bolts and seated against the back of the clutch-disk opposite the lever, and an automatically retractable retaining device inclosed and concealed beneath each of the nuts, and automatically engageable therewith at positions corresponding with the angles of the nut, whereby adjustment for regulating the pair of clamp-bolts can be effected to a uniform degree for the several bolts, by simple application of a wrench to the respective nuts, substantially as set forth.

851,967. WATER-PURIFYING APPARATUS. EDWIN D. PACKARD, Marion, Ohio, assignor, by direct and mesne assignments, to The Marion Incline Filter and Heater Company, Marion, Ohio, a Corporation of Ohio. Filed June 22, 1906. Serial No. 322,806.

Claim.—1. In a water purifying apparatus, the combination, with a cold water supply pipe and means to automatically stop and permit the flow of water therethrough, of a series of expansible pans, upon which said water is discharged, adapted to expand or contract according to the flow of said water, the pans having exterior water surfaces and interior steam surfaces.

2. In a water purifying apparatus, the combination, with a cold water supply pipe and means to automatically stop and permit the flow of water therethrough, of a series of expansible pans, upon which said water is discharged, adapted to expand or contract according to the flow of said water, the pans having exterior convex water surfaces, and interior steam surfaces, being open to permit the circulation of steam therethrough.

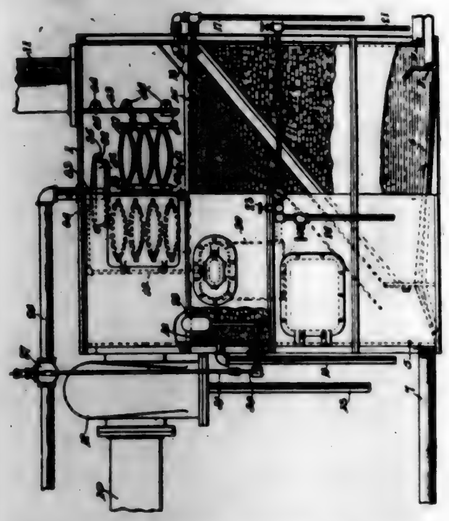

3. In a water purifying apparatus, the combination, with a cold water supply pipe and means to automatically stop and permit the flow of water therethrough, of a series of expansible pans, upon which said water is discharged, adapted to expand or contract according to the flow of said water, the pans being elliptical in cross-section and open at their ends, being placed one above the other, and the lower wall of each pan being perforated, substantially as described.

4. In a water purifying apparatus, a cold water feed pipe, a receiving pan into which it discharges, said pan having a reduced water exit at its edges, a series of pans one above the other, each series located under one of said water exits, and each pan of the series being substantially elliptical and adapted to receive steam in its interior and to distribute water on its exterior.

5. In a water purifying apparatus, a series of purifying pans, each elliptical in cross-section and closed against the admission of water to the interior thereof and each open at its ends for the admission of steam.

6. In a water purifying apparatus, a series of purifying pans, each elliptical in cross-section and each open at its ends for the admission of steam, a ledge or raised surface at the ends of the pans to constitute a water guard and prevent the water from working into the interior of the pans.

7. In a water purifying apparatus, a series of purifying pans, each having convex upper and lower surfaces and adapted to receive steam in its interior, and each having a raised surface at its ends to constitute a water ledge, and a series of supporting devices in the apparatus upon which rest the ledges of the pans.

8. In a water purifying apparatus, a purifying pan substantially elliptical in cross-section and closed against admission of water to the interior thereof to present convex exterior water surfaces, and an interior steam space.

9. In a water purifying apparatus, a purifying pan having exterior water surfaces and an interior steam space and constructed to admit steam thereinto and exclude water therefrom.

10. In a water purifying apparatus, a purifying pan substantially elliptical in cross-section to present exterior water surfaces and an interior steam space, a pan having a water ledge at its ends and perforations near the center of its bottom.

11. In a water purifying apparatus, the combination, with a series of expansible pans adapted to expand and contract under the influence of the water entering said apparatus and having exterior water surfaces and interior steam surfaces, of means intermittently feeding cold water thereto.

12. In a water purifying apparatus, the combination, with a purifier proper having a steam inlet and a steam outlet, of a series of purifying pans located essentially between said inlet and outlet, and a baffle plate located between the pans and the outlet and having perforations to keep up the draft of steam from one outlet to the other.

13. In a water purifying apparatus, the combination, with a purifier proper having a steam inlet and a steam outlet, of a series of purifying pans located essentially between said inlet and said outlet, of a baffle plate located between the pans and the outlet and having perforations and a condensation trough near its lower edge.

851,958. SELF-OILING BUSHING. WILLIAM L. PERKINS and SILAS W. JENNEY, Barre, Vt. Filed Mar. 24, 1906. Serial No. 307,853.

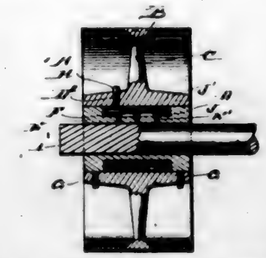

Claim.—1. In a device of the kind described, the combination with an axle, of a pulley mounted on said axle, and having an annular chamber, a loop arranged in said chamber and a wick supported in said chamber by said loop, for the purpose described.

2. In a device of the kind described, the combination with an axle, of a pulley mounted on said axle, and provided with a central opening, a bushing arranged in said opening, said bushing and pulley co-operating to form an annular chamber, a loop arranged in said bushing and wicks supported by said loop in said chamber, for the purpose described.

3. In a device of the kind described the combination with an axle, of a flanged bushing mounted on said axle, a rim secured on said bushing and a loop carrying wicks secured between the flanges of the bushing for the purpose described.

4. In a device of the kind described, the combination with a flanged bushing and a rim carried thereby, said bushing and rim co-operating to form an annular chamber, of a loop secured between the flanges of said bushing and wicks arranged in said loop and extending through said bushing for the purpose described.

5. In a device of the kind described, the combination with a flanged bushing, provided with spaced openings and mounted on an axle of a rim secured on said flanged bushing, said bushing and rim co-operating to form an annular chamber, said rim being provided with an opening leading into said chamber, a loop secured between the flanges of the bushing and wicks secured in said loop adapted to ex-

tend out through the openings in the bushing and bear against the axle, for the purpose described.

851,959. AGRICULTURAL IMPLEMENT. PETER PETERSEN, Chicago, Ill. Filed Jan. 17, 1907. Serial No. 352,772.

Claim.—1. An agricultural implement comprising a triangular frame having inclined side bars and a rear cross bar, a draft piece at the front to which the front ends of the side bars are connected, a central longitudinal bar extending from the draft piece to the rear bar, and a plurality of longitudinal bars extending from the side bars to the rear bar, parallel to the central bar, and blades secured to the side and longitudinal bars.

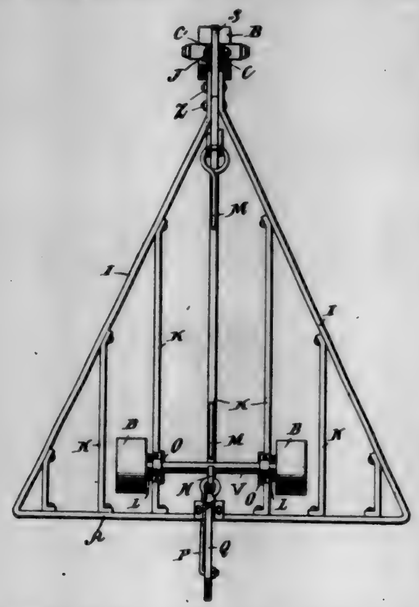

2. In an agricultural implement, in combination, a triangular frame having inclined side bars and a cross rear bar connecting the rear ends of the side bars, and longitudinal bars connecting the side bars and the rear bar, blades carried by said bars, a lever pivoted at the front of the frame and having a roller at its lower end, a rock shaft extending across some of the longitudinal bars at the rear of the frame and mounted in bearings thereon, and having depending arms carrying rollers at the opposite ends thereof, said arms being arranged to contact with the under side of the rear bar when swung up, a lever arm extending upwardly from the rock shaft and connected to the front lever, and an operating lever connected to the said lever arm.

851,960. PROCESS FOR MANUFACTURING ELASTIC FILLINGS FOR TIRES. FRITZ PFLEUMER, Dresden, Germany. Filed Jan. 27, 1906. Serial No. 298,129.

Claim.—The herein-described improvement in manufacturing tires, consisting in converting a gelatinous mass into a foam under a pressure higher than that required in the tire, augmenting the foaming operation by reducing the pressure from that of the foaming tank to that of the tire, for the purpose of thereby allowing the mass to expand, and then forcing the expanded mass into the tire, substantially as set forth.

851,960.

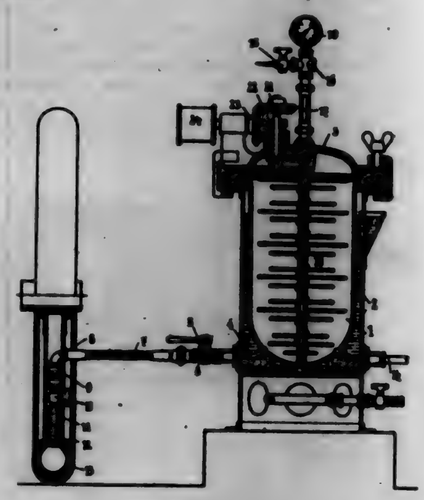

851,961. ELECTRIC FURNACE. HENRY N. POTTER, New Rochelle, N. Y., assignor to Geo. Westinghouse, Pittsburg, Pa. Original application filed July 23, 1903, Serial No. 166,669. Divided and this application filed July 1, 1905. Serial No. 267,913.

Claim.—1. In a furnace of the character described, means for heating the furnace body, and means for superposing in the furnace the heat of an electric arc or conducting gap.

2. In an electric furnace, a conducting resistance constituting the body of the furnace, means for applying electrical energy to the said resistance, and one or more auxiliary electrodes adapted to constitute the terminal or terminals of a conducting gap in operative relation to the furnace body.

3. In an electric furnace, a conducting resistance constituting the body of the furnace, means for applying electrical energy to the said resistance, and one or more auxiliary electrodes adapted to constitute the terminal or terminals of a conducting gap in the furnace body.

4. In an electric furnace, a conducting resistance constituting a portion of the electric circuit, an auxiliary or supplemental electrode constituting one terminal of a conducting gap inside the furnace body, and means for causing current to flow through the said conducting resistance and through the conducting gap.

5. In an electric furnace, a source of heat for the furnace, a pair of electrodes, and means for passing current across a gap between the same, in combination with means for varying the dimensions of the gap.

6. In an electric furnace, two sources of heat, one being applied to the furnace itself and the other being derived from an electric current passing between suitable electrodes, in combination with means for varying the said current.

7. In an electric furnace, suitable electrodes, and means for passing current across a gap between the same, in combination with an auxiliary source of heat, and means for varying the temperature produced by the said auxiliary heat source.

8. In an electric furnace, a pair of electrodes, means for passing current across a gap between the same, in conjunction with a second or auxiliary source of heat, and means for causing a current of gas to flow at varying speeds past the said gap.

9. An electric furnace, consisting of a heating conductor in two parts, together with means for causing an oscillatory contact and separation between the two parts of the heating conductor, so that during the periods of separation an electric current passes across the gap under the combined influence of a high temperature and a difference of potential.

10. An electric furnace, consisting of a tubular conductor, closable by a second conductor, an electric current through the two conductors, whereby they are highly heated, together with a current of gas through the tubular conductor causing alternate opening and closing of the said tubular conductor due to relative movements of the two conductors.

11. An electric resistance and gap furnace having conductors carrying a heating current, means for passing electric current through the electric resistance and thereby developing one source of heat, means for passing current across the gap and thereby developing another source of heat, and means for alternately opening and closing the said gap.

851,962. INTERNAL-COMBUSTION ROTARY ENGINE. LOUIS P. PROSSER, New York, N. Y. Filed Apr. 4, 1906. Serial No. 309,774.

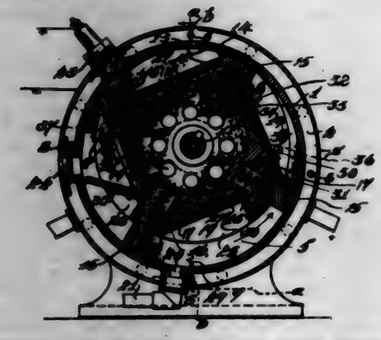

Claim.—1. An internal combustion rotary engine comprising a casing, a rotatable drum within said casing provided with pistons, said drum being eccentric to the axis of said casing and adapted to contact the casing at one point thereof, said drum being provided with peripheral pockets, movable scavenging devices in said pockets and between said pistons, means adapted to operate said scavenging devices, an inlet for an explosive mixture, an ignition device, and an exhaust passage.

2. An internal combustion rotary engine comprising a casing, a rotatable drum within said casing provided with pistons, said drum being eccentric to the axis of said casing and adapted to contact the casing at one point thereof, said drum being provided with peripheral pockets, scavenging wings pivotally mounted in said pockets, means adapted to throw said wings outwardly at a predetermined point during the rotation of said drum, an inlet for an explosive mixture, an ignition device and an exhaust passage.

3. An internal combustion rotary engine comprising a casing, a rotatable drum within said casing provided with pistons, said drum being provided with an interior chamber having no communication with the compression space within said casing, an inlet for cooling medium to said chamber, said drum being provided with peripheral pockets, scavenging wings pivotally mounted in said pockets, means adapted to throw said wings outwardly at a predetermined point during the rotation of said drum, an inlet for an explosive mixture, an ignition device, and an exhaust passage.

4. An internal combustion rotary engine comprising a casing, heads for said casing one of which is provided with a cam groove, a rotatable drum in said casing provided with pistons, peripheral pockets in said drum, scavenging wings pivotally mounted in said pockets, means carried by said wings adapted to engage the cam groove in said head whereby said wings are thrown outwardly at a predetermined point, said drum being also provided with an interior chamber, means adapted to permit of the introduction of a cooling medium to said chamber through said heads, an inlet for an explosive mixture, an ignition device, and an exhaust passage.

851,963. CAR-FENDER. JACOB P. ROHN, Philadelphia, Pa. Filed Dec. 27, 1906. Serial No. 349,671.

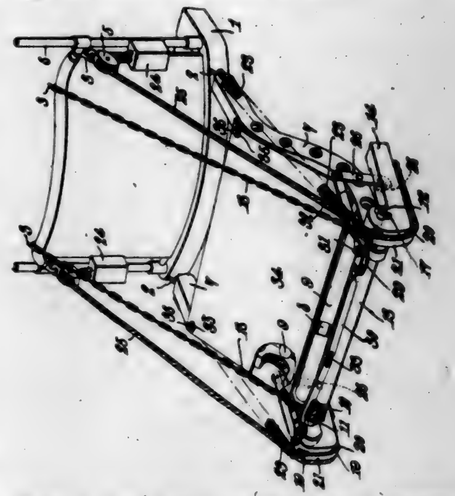

Claim.—1. A car fender comprising a body, a throwing frame movably connected thereto, means for holding the frame against movement, means adapted to be operated by an object contacting with the fender for releasing the throwing frame, and means for swinging the frame, when released, backward into position over the body.

2. A car fender comprising a body, hinged means for throwing thereon an object contacted thereby, and a lock for holding said means against movement, said lock adapted to be contacted and released by the object to be thrown.

3. A car fender comprising a body, a throwing frame hingedly connected thereto and adapted to extend thereunder, means for locking the frame against movement, means operated by contact of an object with the fender for unlocking the frame and means for swinging the frame when unlocked into position over the body.

4. A car fender comprising a body, a throwing device movably connected thereto and normally disposed entirely above the body, means for locking said device in lowered position beneath the body, and means operated by the contact of an object with the fender for unlocking the throwing device.

5. A car fender comprising a body, a throwing device movably connected thereto and adapted to extend thereunder, means for locking said device in position beneath the body, means operated by the contact of the fender with an object for unlocking said device, and means for swinging the frame when unlocked into position entirely over the body.

6. A car fender comprising a body, a throwing device pivotally connected thereto and adapted to extend thereunder, means for locking said device in position beneath the body, means movably mounted upon the body for unlocking the throwing device upon contact with an object, and means for automatically swinging the throwing device in front of and in position entirely over the body when unlocked.

7. A car fender comprising a body consisting of side arms, rigid connections therebetween, a resilient connection between the front portions of the arms, a flexible

cover upon the arms and above the rigid connections, and a second resilient connection between the front portions of the arms; and means operated by an object contacting with the fender for throwing said object upon the body.

8. A car fender comprising a body, connected arms pivotally connected to the front portion of the body, locking levers mounted upon the body, means upon the arms for engaging the levers to hold the arms below the body, means carried by the body for actuating the levers to release the arms when the body is contacted by an object, and means for automatically swinging the arms in front of and above the body when released.

9. In a car fender the combination with a body; of a throwing frame hingedly connected to the front end of the body, guides carried by said frame, frame actuating means disposed upon the guides and secured to the frame for swinging the frame when unlocked into position entirely over the body, means for locking the frame against movement by the actuating means, and means operated by the contact of an object therewith for unlocking the frame.

10. In a car fender the combination with a body; of a throwing frame hingedly connected to the front end of the body, guides carried by said frame, frame actuating means disposed upon the guides and secured to the frame for swinging the frame when unlocked into position entirely over the body, locking levers for engaging the frame to hold it against movement by the actuating means, connected tripping levers extending in front of the body and adapted to be actuated by an object contacting therewith, and connections between the tripping and locking levers.

851,964. NUT-LOCK. MATHIAS ROSENKRANZ, Pueblo, Colo. Filed Jan. 30, 1907. Serial No. 354,922.

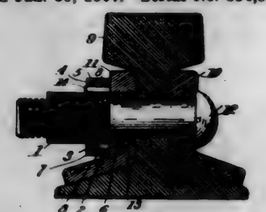

Claim.—1. A nut lock comprising a washer having a smooth bore and provided with a reduced boss which is non-circular on its exterior and concentric with the bore, the washer being substantially circular in shape and provided with an annular series of perforations, there being edge notches in the periphery of the washer in alinement with the respective perforations, and a nut provided at one end with a substantially circular flange pierced by a perforation adapted to successively register with the perforations of the washer and provided with an edge notch indicating the position of the perforations.

2. A nut lock comprising a washer having a smooth bore and a non-circular boss upon one side of the washer and an opening in the other side of the washer, and a nut provided with a perforation arranged to register with the opening of the washer, the peripheral edge of the washer having an index indicating the position of the opening, and the periphery of the nut having an index indicating the position of the opening in the nut and arranged for registration with the index of the washer.

3. The combination of a bolt and a member pierced thereby, said member having a non-circular opening through which the bolt projects, a washer having a smooth bore and a non-circular boss upon its rear side fitting the non-circular opening and thereby held against rotation, a nut upon the bolt, the washer and nut having registered openings, and provided with notches in their peripheries indicating their respective openings, and a locking key fitting in the registered openings.

4. A nut lock comprising a substantially circular washer having a smooth bore and a non-circular boss upon one side thereof and concentric with the bore, the other side of the washer being provided with an annular series of openings, the periphery of the washer having an annular series of indexes indicating the positions of the respective openings, and a nut having a perforation for successive registration with the openings of the washer and also provided with an index indicating the position of the opening and arranged for successive registration with the indexes of the washer to indicate when the opening of the nut is alined with an opening of the washer.

851,965. WHEEL-FENDER FOR CARS. JAMES F. SARGENT, Jr., Grand Rapids, Mich. Filed Jan. 29, 1907. Serial No. 354,715.

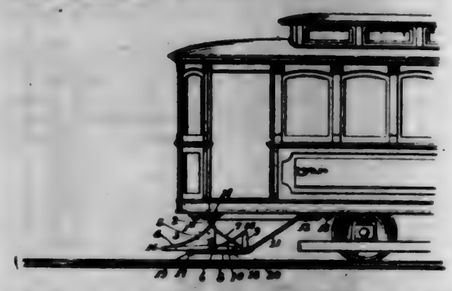

Claim.—1. In a fender, a frame consisting of a transverse bar having downwardly extended ends, horizontally disposed levers pivoted to the said ends, a netting supported at the front by the front ends of the levers and attached at the rear to the horizontal portion of the bar, a horizontally disposed rear fender frame, having upwardly extended arms, and pivotally supported at the rear, said frame also being attached to the rear ends of the levers and movably supported at the front thereby, and a netting attached at the front to the front of said frame and supported at the rear by said arms.

2. In a fender, downwardly projecting hangers having vertical slots, levers having pivots movable in said slots, said levers also oppositely projecting from said pivots, a front fender supported by the front ends of said levers and upwardly movable at the front, and a rear fender supported by the rear ends of the levers and downwardly movable at the front.

3. In a fender, a frame having downwardly projecting hangers provided with vertical slots, means for vertically adjusting said frame, levers fulcrumed on pivots movable in said slots, a front fender supported by the front ends of said levers and upwardly movable at the front, a rear fender pivoted at the rear and downwardly movable at the front, and means for connecting the rear ends of the levers to said rear fender to support the front of the same.

4. In a fender, a frame consisting of a transverse bar having downwardly turned and vertically slotted ends, levers fulcrumed on pivots movable in said slots, a front fender supported at the front by the front ends of the levers and supported at the rear by the transverse bar, rearwardly and downwardly projecting braces attached to the bar, a rear fender pivoted at the rear to said braces, and downwardly movable at the front, and means for connecting the rear ends of the levers to the rear fender near its pivots.

5. In a fender, a frame comprising a transverse bar, having downwardly extended and vertically slotted ends, vertically adjustable supports for said bar, downwardly and rearwardly extended braces attached to said bar at the front end, rearwardly and upwardly extended braces attached to the lower ends of the first named braces, levers fulcrumed on pivots movable in said slots, a front fender supported at the front by the front ends of said levers and supported at the rear by said bar, a horizontally disposed rear fender frame having upwardly extended arms at the rear and pivoted at the rear to said braces, means for connecting the rear ends of the levers to the sides of the rear fender frame near the pivots of the same, and a fender

carried at the front by the front side of said frame and carried by the upwardly projecting arms at the rear.

6. In a fender, a frame having downwardly projecting hangers provided with vertical slots, horizontal levers fulcrumed on pivots movable in said slots, a rod connecting the front ends of said levers, a front fender connected to the said rod at the front and to the frame at the rear, side rods pivoted at the rear to fixed supports and having arms extending upward from the pivots, a rod connecting the upper ends of said arms, a rod connecting the front ends of the side rods, a rear fender attached at its front and rear to the respective connecting rods, and means for pivotally connecting the rear ends of the levers to the side rods.

851,966. SAFETY-POCKET. EDGAR SHAW, Swampscott, Mass. Filed Feb. 11, 1907. Serial No. 356,719.

Claim.—1. A garment pocket having a stiffening member attached to the inner end portion of one of its sides, said member being narrower than the side to which it is attached, so that the portion of the pocket having the stiffening member may be folded against the back of the other portion.

2. A garment pocket having a stiffening member attached to the inner end portion of one of its sides, said member being narrower than the side to which it is attached, and a flap attached at one edge to the same side above the stiffening member, said flap having a free portion located beside the stiffening member, and adapted to protect an article interposed between the stiffening member and flap, substantially as described.

851,967. CLOSURE FOR LIFTER-OPENINGS FOR STOVE LIDS AND PLATES. HENRY L. SHELDON, Sharon Springs, Kans. Filed July 13, 1904. Serial No. 216,405.

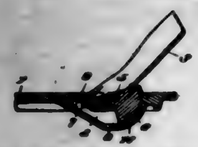

Claim.—1. The combination of a stove lid provided with a lifter opening and a pivoted closure for said opening said closure adapted to be moved from its closed position and to serve as a fulcrum for the lifter, when the lifter is applied, and to return to its closed position when the lifter is removed.

2. The combination of a stove lid formed with a recess adapted to receive a lifter, said recess being in communication with the space beneath the lid, and a pivotally mounted closure for said recess weighted at one end, said closure adapted to be moved from closed position and to serve as a fulcrum for the lifter, when the lifter is applied, and to return to its closed position when the lifter is removed.

851,968. LAST. WALTER E. TRUFANT, Whitman, Mass. Filed Jan. 6, 1902. Serial No. 88,539.

Claim.—1. In a transversely divided last the combination of a toe section, a heel section, a connecting device permanently connected to each section and comprising a plurality of relatively movable members, said connection in the toe section consisting of a bar extending forward toward the bottom of the last, said section containing a recess extending to the bottom of the last to receive said bar, and means for adjusting said bar in said recess.

2. A transversely divided last consisting of a toe-part section and a heel-part section, pivoted members secured to and connecting said sections, an adjustable bar in one section to which one of said members is secured, and means for adjusting said bar.

3. A transversely divided last consisting of a toe-part section and a heel-part section, connecting links pivoted to each of said respective parts, an adjustable bar in one of said parts, one of said links being pivoted to said bar, and means for adjusting the bar.

4. A transversely divided last consisting of a toe-part section and a heel-part section, pivoted members, one of said members being fastened to each of said respective parts, a bar in one section to which one of said members is pivoted which extends away from the other section toward the outside of the last, and means for moving said bar to adjust the tension on said pivoted members.

5. A divided last comprising sections, articulating members connecting said sections the connecting point whereof is adapted to pass the dead center line of articulation to lock the sections, adjusting means by which one of said members is connected to its last part, and means for locking said adjusting means.

6. A multipart last comprising sections, members connecting said sections having vertical movement for separating and drawing together said sections, and means for longitudinally adjusting said members to vary the tension on the parts resulting from said vertical movement.

7. A multipart last comprising a toe section and a heel section, an extensible connecting device composed of members, means for shortening said connecting device, and adjusting means between one of the members of said connecting device and its last part to vary the effective shortening operation of said connecting device.

8. A multipart last including a toe section and a heel section, a connecting device comprising, a plurality of relatively movable members connected respectively with the complementary parts of said last, and adjusting means between one of said members and its last part by which to vary the relative shortening movement of said members and thus the connection between the last parts.

851,969. LID FOR PANS. WALTER C. VERNON, Columbus, Ohio. Filed Aug. 14, 1906. Serial No. 330,598.

Claim.—1. The combination with a pan having a handle, provided with openings, of a wire carrying a lid mounted in said openings and a lever connected to said wire, for the purpose described.

2. The combination with a pan having a rigid handle provided with spaced openings, of an angle-wire slidably mounted in said openings and a lid, and a lever mounted on said handle connected to said wire, for the purpose described.

3. The combination with a pan having a rigid handle provided with spaced openings, of an angled wire slidably mounted in said openings, a lid secured to one end of said wire, and a spring actuated lever pivoted in one of said

openings connected to the free end of said wire, for the purpose described.

4. The combination with a pan having a rigid handle provided with spaced openings, of a spring actuated lever mounted in one of said openings, an angled wire slidably mounted in said opening carrying a lid at one end, and connected to the lever at the other end, and a coil-spring surrounding said wire between the handle and the lever.

5. The combination with a pan provided with a rigid handle and having openings formed therein of a lever mounted on said handle and an angled wire carrying a lid extending up through said openings of the handle connected to said lever for the purpose described.

6. The combination with a pan having a rigid handle provided with spaced openings, of a lever mounted on said handle and an angle wire connected to said lever extending through said openings carrying a lid for the purpose described.

7. The combination with a pan having a rigid handle provided with spaced openings, of a lever mounted on a cross-bar extending across one of said openings, an angle-wire connected to said lever extending through said openings carrying a lid and a coil-spring surrounding said wire between said handle and lever, for the purpose described.

851,970. PICK FOR MINING OR CUTTING MACHINES. THOMAS N. WALLACE, Centerville, Iowa, assignor of fifteen one-hundredths to John R. Needham, Centerville, Iowa. Filed Aug. 7, 1906. Serial No. 329,519.

Claim.—1. A pick, comprising a stem, a pair of side-points integral therewith, and a central-point integral with said stem and of greater length than said side-points, said central and side-points provided with cutting edges upon one side thereof and a longitudinally extending groove formed upon the sides of said points opposite to said cutting edges.

2. A pick for mining or cutting machines, comprising a stem, a central and side-points integral with said stem, the central point of greater length than said side-points, said side-points positioned in the same horizontal plane, the central-point positioned in a different horizontal plane from said side-points, said side and central-points provided with a longitudinally extending groove formed upon one side thereof, and upon their opposite sides said points taper to longitudinally extending cutting edges.

3. A pick, comprising a stem, a point integral with said stem, said point substantially V-shaped in cross-section and provided with a longitudinally-extending cutting edge, and said point provided with a longitudinally-extending groove formed in the side opposite to its cutting edge.

4. A pick, comprising a stem, a point secured to said stem, said point provided with a cutting edge upon one side and with a groove upon the side opposite to said cutting edge.

5. As a new article of manufacture, a mining or cutting pick, comprising a stem, provided with a central and side points, the central point of greater length than the side points, and each point tapering from the stem throughout its entire length to its forward end.

6. As a new article of manufacture, a pick, comprising a stem provided with a central and side points, the central point of greater length than the side points, and each point provided with a cutting edge upon the same side, and the cutting edges extending throughout the entire length of all of said points.

7. A mining pick, comprising a stem, a central and side points secured to said stem, each point tapering from a broad back downwardly to a longitudinally-extending cutting edge, and the central point of greater length than and positioned in a horizontal plane below the side points.

8. A pick, comprising a stem, a series of points integral with said stem, each point tapering from a broad back to a lower cutting edge, the cutting edges of all of the points formed on the same side, and one of the points of greater length than the remaining points.

851,971. COMBINED MILK AND CREAM PASTEURIZER AND COOLER. JOACHIM L. AHLERS, Santa Ana, Cal. Filed Apr. 30, 1906. Serial No. 314,887.

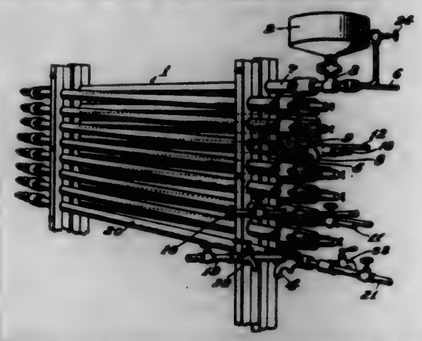

Claim.—1. A pasteuriser comprising a plurality of pipes arranged to convey milk, cream, and other liquids, said pipes being arranged in an inclined plane whereby the flow is accelerated by gravity, a steam-conveying pipe surrounding said milk pipe, an inlet for said steam pipe, a cooling pipe within said milk pipe and a cooling pipe surrounding said milk pipe whereby the milk lies between two cooling surfaces, and an inlet for the cooling medium.

2. A pasteuriser comprising a plurality of tubes, said tubes being out of horizontal alinement with each other and arranged to convey milk by gravity, said tubes being contiguous with each other and having an inlet and an outlet; a pipe surrounding the milk pipe, a steam inlet for said pipe, cooling pipes surrounding the milk pipes, cooling pipes extending through the milk pipes, an inlet for said pipes, the steam inlet and water inlet being intermediate the inlet and outlet for the pipes, and means whereby the tubes may be drained.

3. A pasteuriser comprising a plurality of pipes arranged out of horizontal alinement and contiguous with each other whereby the milk fed from one end courses through said pipes by gravity to the outlet, a pipe surrounding said milk pipe, a steam inlet for said pipe for heating the milk while in its travel, the steam being injected in a direction opposite to that of the travel of the milk, an outlet for said steam, a cooling pipe surrounding said milk pipe, a cooling pipe within said milk pipe, an inlet for the cooling medium, said cooling pipe being arranged on a level lower than that of the steam inlet ? an outlet for said cooling pipe, and means for draining the pipe.

4. A pasteuriser comprising a pipe composed of sections arranged out of horizontal alinement with each other, a pipe extending through a portion of said pipes, a steam inlet for said pipe for allowing the steam to be injected in a direction reverse to that of the travel of the milk, an outlet for the heated milk, an outlet for the heating medium, two pipes within the lower section of said pasteurizing pipe arranged to carry a cooling medium, the milk being forced to travel between said pipes whereby the cooling area of the adjacent surfaces of the pipes is increased, and an outlet for the cooling medium.

5. A pasteuriser comprising a plurality of pipes arranged to convey milk, cream, and other liquids, said pipes being arranged in an inclined plane whereby the flow is accelerated by gravity, removable headers on said pipes for cleanding said pipes of adhering impurities, a steam conveying pipe surrounding said milk pipe, an inlet for said steam pipe, a cooling pipe within said milk pipe, and a cooling pipe surrounding said milk pipe whereby the milk lies between two cooling surfaces, and an inlet for the cooling medium.

6. A pasteuriser comprising a plurality of pipes arranged to convey milk, cream, and other liquids, said pipes being arranged in an inclined plane whereby the flow is accelerated by gravity, a steam conveying pipe surrounding said milk pipe, an inlet for said steam pipe, a cooling pipe within said milk pipe, a cooling pipe surrounding said milk pipe whereby the milk lies between two cooling surfaces, and two inlets for cooling media, one being arranged on a lower level than the other.

851,972. COMBINED DOOR CLOSER AND CHECK. WILLIAM N. AMESBURY, Seattle, Wash., assignor of one-half to Fred McCoy and one-half to George H. Thomas, Seattle, Wash. Filed Dec. 12, 1905. Serial No. 291,460.

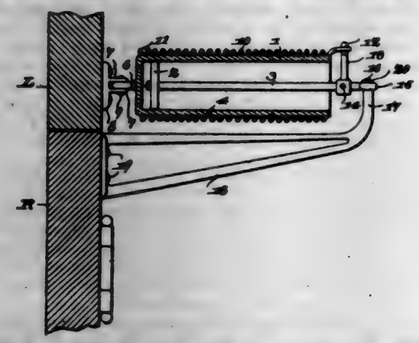

Claim.—A door closer and check comprising a cylinder cast in one piece with one end open and having a perforated lug formed at the closed end and extending outwardly from the center thereof, a bracket secured to a door casing and pivotally connected to said lug, a helical extension spring encircling the cylinder and of substantially the same length as the cylinder and adapted to expand and contract over the open end thereof, a hook and eye connection for securing the spring to the cylinder adjacent the closed end, a piston in the cylinder, a piston rod round in cross section and connected with the piston and extending through the open end of the cylinder and provided with an eye at its outer extremity, an arm mounted on the said rod for adjustment longitudinally and angularly thereon, a set screw for holding the said arm in adjusted position, a hook and eye connection between the spring and the said arm whereby the latter is adapted to adjust the tension of the spring, a bracket secured to a door and having a length greater than the cylinder and extending parallel with and at one side thereof and having its outer end turned upwardly at right angles to the general length of the bracket and having a pin on the end thereof to engage in the eye of the piston rod, and a removable pin to hold the piston rod and pin in operative position.

851,973. MEANS OF CONNECTING CHANNEL-IRONS IN THE CONSTRUCTION OF COLUMNS. GUNVALD AUS, New York, N. Y. Filed Jan. 25, 1907. Serial No. 354,068.

Claim.—1. A column comprising two channel irons, a web or flange projecting from each iron and apertured, the two flanges designed to overlap each other and rivets passing through registering apertures in said webs or flanges, as set forth.

2. A column comprising two channel irons, each provided with a web or flange projecting at right angles therefrom and at one side of its longitudinal center, said flanges or webs being apertured, rivets passing through registering apertures in said webs and designed to hold the latter overlapping and together, as set forth.

851,974. BRACE FOR VEHICLE-WHEELS. CARET H. BADGER, Rocky Ford, Colo. Filed Mar. 13, 1906. Serial No. 305,809.

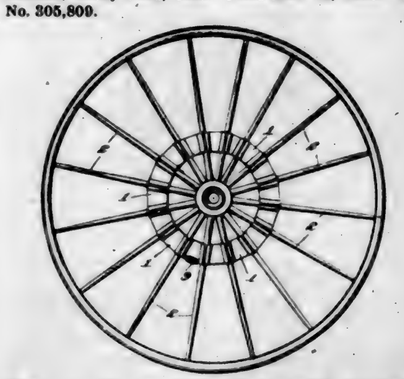

Claim.—1. The combination with a wheel, of a series of reinforcing blocks arranged between the spokes of the wheel so as to form a ring, a band extending around the ring of blocks, and means for drawing the ends of the band together, whereby to circumferentially compress the ring and force the blocks into a close engagement with the spokes.

2. The combination with a wheel, of a series of reinforcing blocks arranged between the spokes of the wheel in circular series, the sides of the blocks being formed

with depressions to receive the spokes and the outer ends of the blocks being provided with notches, a band extending around the series of blocks and received in said notches, and means for drawing together the ends of the band, as and for the purpose set forth.

3. The combination with a wheel, of a series of reinforcing blocks arranged between the spokes of the wheel so as to form a continuous ring and mutually reinforce each other, the said blocks comprising a web having oppositely extending flanges at the ends thereof which are adapted to embrace the spokes and having at the opposite outer corners notches, two bands encircling the ring of blocks and received in said notches, and means for drawing the ends of the bands together, as and for the purpose set forth.

4. The combination of a wheel, a series of reinforcing blocks arranged between the spokes of the wheel so as to form a continuous ring and mutually reinforce each other, the said blocks comprising a web having oppositely extending flanges at the ends thereof which are adapted to embrace the spokes, and means for holding the blocks into a close engagement with the spokes.

5. The combination of a wheel, a series of reinforcing blocks arranged between the spokes of the wheel so as to form a continuous ring and mutually reinforce each other, the said blocks comprising a web having oppositely extending flanges at the ends thereof which are adapted to embrace the spokes, and a band extending around the blocks and adapted to hold them in a close engagement with the spokes.

6. The combination of a wheel, a series of reinforcing blocks arranged between the spokes of the wheel so as to form a continuous ring and mutually reinforce each other, the said blocks comprising a web having oppositely extending flanges at the ends thereof which are adapted to embrace the spokes, lateral extensions at the outer corners of the flanges, and a band extending around the reinforcing blocks upon each side of the spokes, said bands engaging with the lateral extensions to force the blocks into a close engagement with the spokes.

851,975. INCANDESCENT-LAMP SUPPORT. EDMOND BEAUDETTE, Montreal, Quebec, Canada. Filed Apr. 28, 1906. Serial No. 314,223.

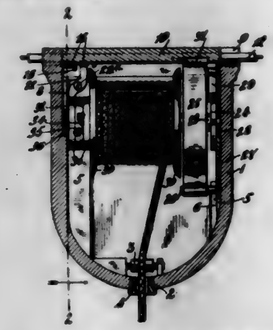

Claim.—1. In a device of the character described, a canopy provided with recesses, bearings disposed in the recesses, a rotatable spindle carried by the bearings, contact disks carried by the spindle, contacts carried by the canopy and adapted to bear on the contacts and the spindle, a base secured to the canopy, and contacts on the base adapted to bear on the contacts on the canopy.

2. In a device of the character described, a canopy provided with recesses and having projecting ledges, bearings disposed in the recesses, one of which bearings is held in position by the ledges, a rotatable spindle carried by the bearings, contacts carried on the spindle, contacts carried by the canopy and adapted to bear on the contacts on the spindle, a base secured to the canopy, and contacts on the base adapted to bear on the contacts on the canopy.

3. In a device of the character described, a canopy provided with slots adapted to receive feed wires and provided with recesses, bearings disposed in the recesses, a rotatable spindle carried by the bearings, contacts carried by the spindle, contacts carried by the canopy, a base secured to the canopy and provided with channels registering with the slots in the canopy, and contacts on the base adapted to bear on the contacts carried by the canopy.

4. In a device of the character described, a canopy provided with slots, a spindle mounted to rotate in the canopy, contacts carried by the spindle, contacts carried by the canopy, a base provided with channels registering with the slots in the canopy, contacts on the base adjacent the channels, contacts on the base arranged to bear on the contacts carried by the canopy, and a connection between said contacts and the base.

5. In a device of the character described, a canopy provided with a recess having projecting ledges and provided with a recess on the opposite side thereof, a bearing plate disposed in the recess behind the ledges and provided with an opening, an inserted bearing in the recess on the opposite side of the canopy, a spindle disposed in the bearings, a base adapted to support the canopy, and means for making electrical connection from the base to the spindle.

851,976. ELECTRICAL MEASURING INSTRUMENT. ADELBERT O. BENECKE, Vailsburg, N. J. Filed Sept. 19, 1902. Renewed Apr. 1, 1907. Serial No. 365,861.

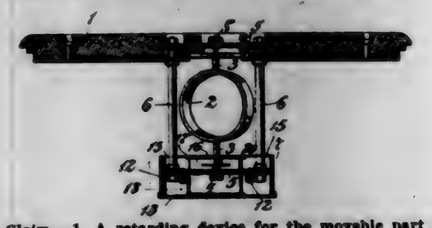

Claim.—1. A retarding device for the movable part of an electrical measuring instrument, the same consisting of a duplex air chamber and a two part vane or fan located therein, said vane or fan being constructed with the lateral edges of each part thereof turned outward in opposite directions to form forwardly directed marginal flanges.

2. A retarding device for the movable part of an electrical measuring instrument, the same consisting of a double or duplex air chamber and a two-part rotatory vane located therein, said vane being symmetrically disposed with relation to the location of the movable part and with the lateral edges of each part of said vane turned outward in opposite directions to form forwardly directed marginal flanges.

3. In an electrical measuring instrument, the combination of a movable part thereof with a retarding device for said movable part, said device embracing an air chamber having a slotted opening and a vane or fan located in said chamber, said vane or fan being attached to said movable part by a disk which closes the upper end of the air chamber and the slotted opening, so that the contained air in the chamber is held in check when the vane is moved, substantially as described.

4. In an electrical measuring instrument, the combination of a movable part thereof with a retarding device for said movable part, said device embracing two vanes or fans oppositely disposed with relation to the axis of said movable part, each of said vanes or fans being located in an air chamber and connected to the movable part of the instrument by a disk which holds the air in check when the vanes are moved, substantially as described.

5. In an electrical measuring instrument, the combination of a movable part thereof with a retarding device for said movable part, said device embracing an air chamber; a vane or fan located therein and operatively connected to said movable part, and a rotatable disk adapted to hold the air contained within the chamber in check when the vane is moved, substantially as described.

6. An electrical measuring instrument provided with a movable part and supporting posts or pillars therefor, in combination with a retarding device detachably secured to said posts or pillars, said device comprising a duplex air chamber, a duplex vane or fan secured to said movable part by means of a disk integral with said vane or fan, the individual parts of said vane or fan being inclosed in the individual compartments of said air chamber.

7. A retarding device for an electrical measuring instrument embracing an air-chamber and a vane or fan inclosed therein, said vane or fan being provided with forwardly directed marginal flanges and with means for connecting it to the movable part of an electrical measuring instrument and the cross-section of the air chamber and the area of the vane being relatively such that the outflow of the air under pressure from the vane bears a substantially constant relation to the torque applied to the movable part of the instrument, substantially as described.

8. A retarding device for an electrical measuring instrument having a rotary or movable part, said device consisting of an air-chamber, a vane located therein and attached to the rotary or movable part of the instrument, pillars secured to the body of the instrument, bridges mounted upon said pillars for carrying the rotary or movable part of the instrument and means for detachably securing said air chamber to one of said bridges.

9. An electrical measuring instrument provided with two bridges or pivot supports which carry the usual jewel bearings pillars or posts attached directly to the casing for supporting said bridges or pivot supports; in combination with a dampening device embracing an air chamber and a vane inclosed therein and attached to the pivoted movable part of the instrument; together with means for detachably securing said dampening device as a whole to one of said bridges, substantially as described.

10. A retarding device for electrical measuring instruments, combined with a rotatable part of said instrument said device comprising an air chamber, a vane inclosed within said chamber and secured to said rotatable part to move therewith, said vane being provided with forwardly directed marginal flanges.

851,977. EXPLOSIVE-ENGINE CYLINDER. JESSE W. BIGSBY and FRED W. BARHOFF, Hartford, Conn. Filed Mar. 9, 1906. Serial No. 305,059.

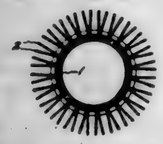

Claim.—1. An explosive engine cylinder having a cast metal body with under-cut grooves extending longitudinally in the outer surface of the body and metal plates located in groups with the plates of each group separated at their outer edges but secured together near their inner edges and having their inner edges occupying the under-cut grooves, substantially as specified.

2. An explosive engine cylinder having a cast metal body with under-cut grooves extending longitudinally in the outer surface of the body and metal plates located in groups with the plates of each group separated at their outer edges but secured together near their inner edges and having their inner edges spread apart and occupying the under-cut grooves, substantially as specified.

3. An explosive engine cylinder having a cast metal body with under-cut grooves extending longitudinally in the outer surface of the body, and metal plates located in groups with the plates of each group separated at their outer edges but secured together near their inner edges and having their inner edges separated by wedge-like portions of metal and occupying the under-cut grooves, substantially as specified.

4. An explosive engine cylinder having a cast metal body with a large number of grooves extending longitudinally in the outer surface of the body, the walls of the adjacent grooves inclining oppositely with relation to each other, and metal plates located in groups with the plates of each group separated near their outer edges but secured together near their inner edges and having their inner edges separated and occupying the inclined longitudinal grooves, substantially as specified.

851,978. EXPLOSIVE-ENGINE CYLINDER. JESSE W. BIGSBY and FRED W. BARHOFF, Hartford, Conn. Filed Mar. 9, 1906. Serial No. 305,061.

Claim.—1. An explosive engine cylinder having a cast metal body and metal angle plates of high heat conductivity and with the wider sections of the plates extending outwardly from the body and the narrower sections of the plates embedded within and forming a core of high heat conductivity in the interior of the body, substantially as specified.

2. An explosive engine cylinder having a cast metal body and metal plates of high heat conductivity extending outwardly from the body and having their inner edges embedded within the body and extending from plate to plate so as to form a cylindrical shell of high heat conductivity in the interior of the body, substantially as specified.

3. An explosive engine cylinder having a cast metal body, and thin metal plates extending outwardly from the body and having sections of their inner edges bent in opposite directions and embedded within the body, so that the bent sections of each plate extend into recesses formed between bent sections of the adjacent plate, substantially as specified.

851,979. ELECTROMAGNETIC SEPARATOR. WILLIAM BLACKMORE, London, England. Filed Sept. 19, 1904. Serial No. 225,107.

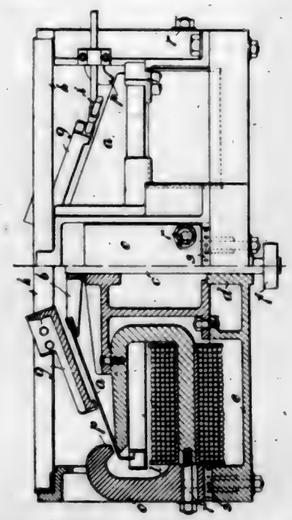

Claim.—1. A magnetic ore wet separator, comprising in combination, a revolving conical table, a plurality of separate electromagnets disposed at intervals around said table, windings on the electromagnets, electromagnet pole pieces on each side of said table, the upper pole pieces of

said magnets being removable without moving the windings, distributing boxes for distributing ore on to said table, and water jets for distributing water on to said table, as set forth.

2. A magnetic ore wet separator, comprising in combination, a revolving conical table, a plurality of separate electromagnets disposed at intervals around said table, electromagnet pole pieces on each side of said table, the lower pole pieces being fixed to the frame of the machine, the upper pole pieces being adjustable in a vertical direction, means securing said upper pole pieces to said lower pole pieces, the upper pole pieces of said magnets being removable without moving the windings thereof, distributing boxes for distributing ore on to said table, and water jets for distributing water on to said table, as set forth.

3. A magnetic ore wet separator comprising in combination, a revolving conical table, a plurality of separate electromagnets disposed at intervals around said table, electromagnet pole pieces on each side of said table, the lower pole pieces being fixed to the frame of the machine, said lower pole pieces only having windings thereon, upper pole pieces having slots therethrough, screw means engaging said lower pole pieces, the diameter of said slots being greater than the diameter of said screw means, the upper pole pieces being adjustable in a vertical direction and removable without moving the windings, distributing boxes for distributing ore on to said table, and water jets for distributing water on to said table, as set forth.

4. A magnetic ore wet separator comprising in combination, a revolving conical table, a plurality of separate electromagnets disposed at intervals around said table, windings on the electromagnets, electromagnet pole pieces on each side of said table, the upper pole pieces of said magnets being removable without moving the windings, distributing boxes for distributing ore on to said table, said distributing boxes having fan shaped mouths with projections in said mouths, and water jets for distributing water on to said table, as set forth.

5. A magnetic ore wet separator comprising in combination, a revolving conical table, a downwardly projecting rim to said table, collecting boxes arranged about said rim to collect the different qualities of the ore, a plurality of separate electromagnets disposed at intervals around said table, windings on the electromagnets, electromagnet pole pieces on each side of said table, the upper pole pieces of said magnets being removable without moving the windings, distributing boxes for distributing ore on to said table, and water jets for distributing water on to said table, as set forth.

6. A magnetic ore wet separator comprising in combination, a revolving conical table, a plurality of separate electromagnets disposed at intervals around said table, windings on the electromagnets, electromagnet pole pieces on each side of said table, the upper pole pieces of said magnets being removable without moving the windings, distributing boxes for distributing ore on to said table, and water jets disposed tangentially at intervals around said table for distributing water on to said table, as set forth.

851,980. HOSE-SUPPORTER BUTTON. EDWARD CLEARY, Bridgeport, Conn., assignor to The Connecticut Web Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Apr. 12, 1906. Serial No. 311,293.

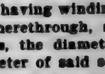

Claim.—In a hose supporter button, the combination with a wooden head having a reduced stem, of a sheet metal base plate having an annular shank portion struck up therefrom to receive the stem of the head and having its upper annular edge forced into the said stem, and additional indentations in the side of the shank to engage the stem of head.

851,981. PRESSURE-REDUCING VALVE. JACOB CLOOS, Milwaukee, Wis. Filed Aug. 6, 1906. Serial No. 329,293.

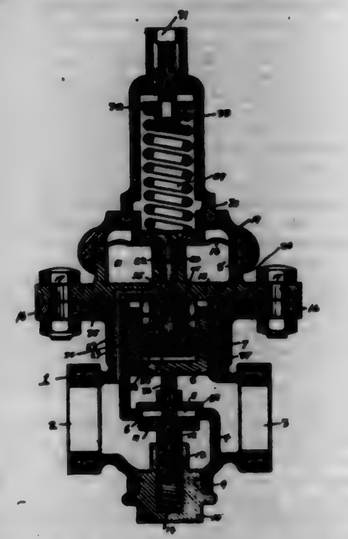

Claim.—1. In a pressure regulator of the class described, the combination of a valve chamber provided with inlet and outlet ports, a partition interposed between said ports provided with a valve port, a main fluid controlling valve adapted to close said valve port with the initial pressure in said regulator, means for guiding said valve to and from its seat, means for normally holding said valve in its closed position, means actuated by the initial pressure for temporarily opening said main valve against such pressure, a slidable impact shield located in front of said main fluid controlling valve adapted to deflect the current of the fluid as it passes said valve, means actuated by the fluid at a predetermined reduced pressure for actuating an auxiliary valve which controls the initial pressure by which said main valve is opened, and means for regulating the resistance to the closing movement of the auxiliary valve, whereby the pressure of the fluid which has passed through said main controlling valve may be retained at any desired predetermined pressure below the initial pressure, substantially as set forth.

2. In a pressure regulator of the class described, the combination of a valve chamber provided with inlet and outlet ports, a partition interposed between said ports provided with a valve port, a main fluid controlling valve adapted to close said port with the initial pressure, means for guiding said valve to and from its seat, means for normally holding said valve to its seat, a piston chamber and piston located in said chamber in contact with the protruding stem of said valve, a fluid duct communicating from the initial side of said regulator with said piston chamber, an auxiliary valve for controlling the passage of fluid through said duct, said auxiliary valve having longitudinal projections above and below its seat closely fitted to its inclosing sleeves, a longitudinal duct formed in the side of the valve inclosing sleeve for the passage of the fluid beneath said auxiliary valve, a transverse duct communicating from the valve inclosing sleeve to the inclosing piston chamber, a diaphragm adapted to normally retain said auxiliary valve in its open position, a duct communicating from the outlet side of said regulator to the diaphragm chamber, said diaphragm being adapted when the predetermined pressure upon the outlet side of said regulator is exceeded to be forced back from the stem of said auxiliary valve, said valve permitted to close, and the pressure above said valve controlling piston to be excluded, whereby said main controlling valve will be permitted to close with the pressure, and means for increasing or diminishing the resistance to said diaphragm, whereby the movement of said diaphragm and auxiliary valve may be regulated and the predetermined pressure upon the outlet side of said regulator may be increased or diminished as desired.

3. In a pressure regulator of the class described, the combination of a valve chamber provided with inlet and outlet ports, a partition interposed between said ports provided with a valve port, a main fluid controlling valve adapted to close said port with the initial pressure, means for guiding said valve to and from its seat, a spiral spring located beneath the stem of said valve and adapted to normally hold the same to its seat, a piston chamber located above said valve, a piston located in said chamber in contact with the protruding stem of said valve, a fluid duct communicating from the initial side of said regulator with said piston chamber through an aperture formed within its walls, an auxiliary valve for controlling the passage of steam through said duct having longitudinal projections above and below its seat and closely fitted to its inclosing walls, the walls of said valve being provided with a longitudinal duct for the passage of fluid under pressure beneath said auxiliary valve and a transverse duct communicating from said valve inclosing sleeve with said piston chamber, a diaphragm adapted to normally retain said auxiliary valve in its open position, a duct communicating through the walls of said piston chamber from the outlet side of said regulator, a spiral spring located above said diaphragm in an inclosing chamber, an adjusting screw having screw threaded bearings above said spiral spring in its inclosing walls, said adjusting screw serving as a means of regulating the tension of said spring, means for communicating motion from said spring through said diaphragm to the fluid controlling valve, all substantially as and for the purpose specified.

851,982. MACHINE FOR CONSTRUCTING RAILWAYS. RICHARD F. DOWNEY, Milwaukee, Wis., assignor, by direct and mesne assignments, to United States Railroad Track Building Machine Company, a Corporation of Wisconsin. Filed Aug. 27, 1906. Serial No. 332,200.

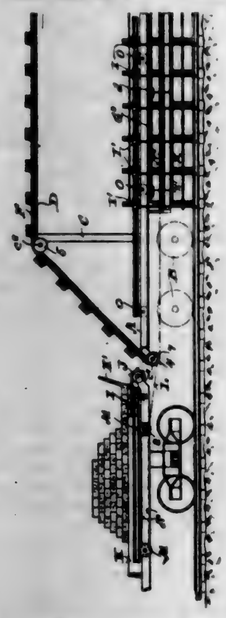

Claim.—1. A portable machine for constructing railways, consisting of a frame mounted upon rail supported trucks, endless carrier mechanism mounted upon the frame for delivering ties forward of the machine at suitable intervals apart, means for clearing the ties from said carrier and depositing the same upon the roadbed, mechanism for feeding rails longitudinally and forward of the machine, other means for releasing the rails from the feed-mechanism and delivering the same in position upon the ties, and spike feeding and driving mechanism for securing said rails and ties together.

2. A portable machine for constructing railways, consisting of a frame mounted upon rail supported trucks, a forward boom-extension secured to the frame, endless carrier mechanism mounted upon the frame, and booms for delivering ties forward of the machine and returning the same under the booms at suitable intervals apart, overhead supports and guides for the carriers upon which the ties travel, other guides for supporting said ties under said booms, and means for releasing the aforesaid ties from the last named guides and depositing the same upon the roadbed.

3. A portable machine for constructing railways, consisting of a frame mounted upon rail supported trucks, a forward boom-extension secured to the frame, endless carrier mechanism mounted upon the frame, and booms for delivering ties forward of the machine and returning the same under the booms at suitable intervals apart, overhead supports and guides for the carriers upon which the ties travel, other guides for supporting said ties under said booms, means for releasing the aforesaid ties from the first named guides and depositing the same upon the roadbed, mechanism for feeding rails longitudinally and forward of the machine, other means for releasing the rails from the feed mechanism and delivering the same in position upon the ties, and spike feeding and driving mechanism for securing said rails and ties together.

4. A portable machine for constructing railways, consisting of a frame mounted upon rail supported trucks, a forward boom extension secured to the frame, endless carrier mechanism mounted upon the frame, and booms for delivering ties forward of the machine and returning the same under the booms at suitable intervals apart, overhead supports and guides for the carriers upon which the ties travel, other guides for supporting said ties under said booms, means for releasing the aforesaid ties from the last named guides and depositing the same upon the roadbed, and mechanism for feeding rails longitudinally and forward of the machine to the booms and over the deposited rails, and means for releasing the rails from the feed-mechanism and delivering the same in position upon the ties.

5. A portable machine for constructing railways, consisting of a frame mounted upon rail supported trucks, gangs of spike-feeders secured to said frame at suitable intervals apart for delivering spikes to a corresponding gang of ties having rails adjusted thereto, and spiking mechanisms in connection with the feeders.

6. A portable machine for constructing railways, consisting of a frame mounted upon rail supported trucks, a forward boom-extension secured to the frame, endless carrier mechanism mounted upon the frame, and booms for delivering ties forward of the machine and returning the same under the booms at suitable intervals apart, overhead supports and guides for the carriers upon which the ties travel, a revoluble plate carrying drum in connection with the carriers and overhead guides, whereby tie-plates are secured to the aforesaid ties, other guides for supporting said ties under said boom, and means for releasing the aforesaid ties from the last named guides and depositing the same upon the roadbed.

851,983. MILK-STRAINER. NICHOLAS ENTRINGER, St. Cloud, Wis. Filed Mar. 16, 1907. Serial No. 362,627.

Claim.—1. In a milk strainer, the combination, with an inclined trough, provided with partitions formed of imperforate plates and perforated plates above them, of a receiving vessel for the milk having an inclined bottom provided with a small opening at its lower part which is arranged over the higher end portion of the said trough.

2. In a milk strainer, the combination, with an inclined

flanged members in contact with each other, means for separating the flanged members, and rotatable means adapted to connect a portion of the clutch members for reverse rotation of one of said members.

8. In a clutch, the combination comprising a driving shaft, a driven shaft, a clutch member secured on the driving shaft and provided with a lug thereon, a clutch member slidable on and fixed to rotate with the driven shaft and provided with a lug thereon, flanged members disposed on the clutch members in contact with said lugs, screws adapted to secure the flanged members in position, means adapted to normally maintain the flanged members in contact with each other, means for separating the flanged members, and rotatable means adapted to connect the clutch members for reverse rotation of one of them.

9. In a clutch, the combination comprising a driving shaft, a driven shaft, a clutch member secured on the driving shaft, a clutch member slidable on and fixed to rotate with the driven shaft, flanged members secured to the clutch members, means adapted normally to maintain said flanged members in contact with each other, a sleeve slidably disposed on the driven shaft and arranged to move the slidable clutch member, a lever pivoted adjacent the sleeve and secured thereto, and rotatable means adapted to connect a portion of the clutch members for reverse rotation of one of them.

10. In a clutch, the combination comprising a driving shaft, a driven shaft, a clutch member secured on the driving shaft, a clutch member slidable on and fixed to rotate with the driven shaft, flanged members secured to the clutch members, means adapted normally to maintain said flanged members in contact with each other, a sleeve slidably disposed on the driven shaft and arranged to move the slidable clutch member, bearing rings interposed between the sleeve and the slidable clutch member, friction reducing members disposed between the bearing rings, a lever pivoted adjacent the sleeve and secured thereto, and rotatable means adapted to connect a portion of the clutch members for reverse rotation of one of them.

11. In a clutch, the combination comprising a casing, a driven shaft projected into the casing, a driving shaft projected into the casing, a hub fixed on the driving shaft and provided with a peripheral flange, an inclined flange on the annulus, a hub slidably disposed and fixed to rotate with the driven shaft and provided with a peripheral flange, an annulus on said latter hub adjacent its flange and provided with an inclined flange, means normally maintaining the inclined flanges in contact, means for separating the inclined flanges, and means for connecting the peripheral flanges of the hubs.

12. In a clutch, the combination comprising a casing, a driven shaft projected into the casing, a driving shaft projected into the casing, a hub fixed on the driving shaft and provided with a peripheral flange, an annulus secured to the hub adjacent the flange, an inclined flange on the annulus, a hub slidably disposed and fixed to rotate with the driven shaft and provided with a peripheral flange, an annulus on said latter hub adjacent its flange and provided with an inclined flange, means normally maintaining the inclined flanges in contact, means for separating the inclined flanges, and rotatable means for connecting the peripheral flanges of the hubs when the inclined flanges are sufficiently separated.

13. In a clutch, the combination comprising a casing, a driven shaft projected into the casing, a driving shaft projected into the casing, a hub fixed on the driving shaft and provided with a peripheral flange, an annulus secured to the hub adjacent the flange, an inclined flange on the annulus, a hub slidably disposed on and fixed to rotate with the driven shaft and provided with a peripheral flange, an annulus on said latter hub adjacent its flange and provided with an inclined flange, means normally maintaining the inclined flanges in contact, means for separating the inclined flanges, a stud carried by the casing and provided with bearing cones, annular angle iron members disposed around the stud, bearing rings carried by the annular angle iron members, friction reducing means disposed between the bearing rings and the cones, and an annular friction member carried by the angle iron members and disposed in contact with said peripheral flanges when the inclined flanges are widely separated.

14. In a clutch, the combination comprising a casing, a driven shaft projected into the casing, a driving shaft projected into the casing, a hub fixed on the driving shaft and provided with a peripheral flange, an annulus secured to the hub adjacent the flange, an inclined flange on the annulus, a hub slidably disposed on and fixed to rotate with the driven shaft and provided with a peripheral flange, an annulus on said latter hub adjacent its flange and provided with an inclined flange, means normally maintaining the inclined flanges in contact, means for separating the inclined flanges, and means for connecting the peripheral flanges of the hubs, and an oil-retaining member secured to the rotatable connecting means.

851,987. CRUCIBLE-TONGS. WILLIAM H. HEWITT, Cleveland, Ohio. Filed Jan. 22, 1906. Serial No. 297,178.

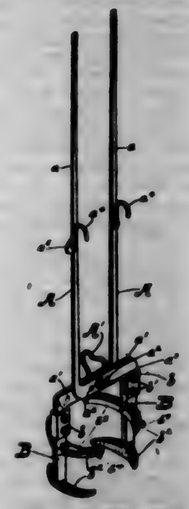

Claim.—1. In a pair of crucible tongs, the combination with two reins pivotally secured together, of jaws mounted upon said reins, and flexible members borne by said jaws respectively and adapted to conform with the curvature of crucibles of different sizes, each of said members being supported by the corresponding jaw at a plurality of points.

2. In a pair of crucible tongs, the combination with two reins pivotally secured together, of jaws mounted upon said reins, and flexible members borne by said jaws, each of said members being adjustably supported upon the corresponding jaw.

3. In a pair of crucible tongs, the combination of two reins each having an angular portion provided with a plurality of apertures, a pin adapted to register in such apertures to pivotally secure said reins together in various positions relatively to each other, whereby said tongs may be adjusted to crucibles of different diameters, and jaws mounted upon said reins, said jaws being adjustable to conform with the different curvatures of such crucibles.

4. In a pair of tongs, the combination of two reins pivotally secured together, jaws mounted upon said reins, and flexible members transversely disposed relatively to said jaws, said members being rigidly attached at their mid-points to said jaws and adjustably attached thereto at their ends.

5. In a pair of tongs, the combination of two reins adapted to be pivotally secured together at different points, jaws detachably mounted upon said reins, and flexible members transversely disposed relatively to said jaws, said members being rigidly attached at their mid-points to said jaws and adjustably attached thereto at their ends.

6. In a pair of tongs, the combination of two reins each having an angular portion provided with a plurality of apertures, a clevis adapted to receive such angular portions, a pin fitted to said clevis and adapted to register in said reins to pivotally secure said reins together, jaws detachably mounted upon said reins, and flexible members transversely disposed relatively to said jaws, said members being rigidly attached at their mid-points to said jaws and adjustably attached thereto at their ends.

7. In a pair of crucible tongs, the combination with a jaw provided with oppositely disposed laterally projecting curved arms, of a flexible member disposed in front of said arms and rigidly attached at its mid-point to said jaw, and adjustably attached at its ends to said arms.

8. In a pair of crucible tongs, the combination with a jaw provided with oppositely disposed, laterally projecting, curved arms having inwardly projecting set-screws mounted in their extremities, of a flexible member secured at its mid-point to said jaw and having its ends resting against said set-screws.

9. In a pair of crucible tongs, the combination with a jaw provided with oppositely disposed, laterally projecting, curved arms, having inwardly projecting set-screws mounted in their extremities, of a flexible member secured at its mid-point to said jaw and having its ends slidably secured to said set-screws.

10. In a pair of crucible tongs, the combination of two reins each having an angular portion provided with a plurality of apertures, a pin adapted to register in such apertures to pivotally secure said reins together in various positions relatively to each other, whereby said tongs may be adjusted to crucibles of different diameters, jaws mounted upon said reins, and flexible members transversely disposed relatively to said jaws, said members being rigidly attached at their mid-points to said jaws and adjustably attached thereto at their ends whereby said jaws may be made to conform with the different curvatures of such crucibles.

851,988. TYPE-WRITING MACHINE. CHARLES W. HOWELL, Newark, N. J., assignor to Sun Typewriter Company, Newark, N. J., a Corporation of New Jersey. Filed Aug. 18, 1906. Serial No. 331,189.

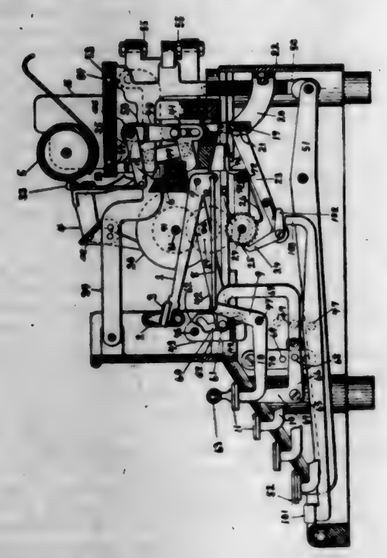

Claim.—1. In a typewriting machine comprising a carriage-feeding universal bar operated by the type keys, the combination of an arm connected to said universal bar and carrying a pawl, a ribbon-winding ratchet wheel actuated by the pawl, and a space key having means to silence said pawl and vibrate said arm to feed the carriage.

2. In a typewriting machine comprising a carriage-feeding universal bar operated by the type keys, the combination of an arm connected to said universal bar and carrying a pawl, a ribbon-winding ratchet wheel actuated by the pawl, a releasing arm upon said pawl, and a space-key having means to actuate said pawl releasing arm, and to vibrate said pawl-carrying arm to feed the carriage.

3. In a typewriting machine comprising key-actuated lever arms movable forwardly and backwardly at the front of the machine, rearwardly striking swinging type bars connected to said lever arms, and a letter feeding universal bar operated by said type bars, the combination of a second universal bar extending along said lever arms and operated thereby, said lever arms having variable movements, and said second universal bar being variably cut away where engaged by said lever arms to compensate for the variable movements of the latter, a ribbon vibrating device in rear of the type bars, and means connecting said ribbon vibrating device to said second universal bar.

4. In a typewriting machine having a platen and mechanism for shifting the platen, to enable different types to print thereon, the combination of a ribbon vibrating device supported upon the framework of the machine, a linkage, one member whereof is connected to said ribbon vibrating device, and another member whereof is connected to said platen shifting mechanism, to cause the linkage to be moved at the operation of the platen shifting mechanism sufficiently to operate said ribbon vibrating device to compensate for the shifting movement of the platen, and means also connected to said linkage for actuating said ribbon vibrating device to cover and uncover the printing point at the type strokes.

5. In a typewriting machine having a platen and mechanism for shifting the platen, to enable different types to print thereon, the combination of a ribbon-vibrating rock arm mounted upon the framework of the machine, and having a wrist, a link having at one end a slot transverse to the length of the link and engaging said wrist, means to which the other end of the link is pivoted for moving the link endwise to rock said arm, and an idle link connecting said link to the platen shifting mechanism, so as to swing the slotted end of the main link when the platen is shifted, and cause said slot to shift upon said wrist; the direction of the slot being such that its shifting movement causes sufficient rocking of said arm to vibrate the ribbon, to compensate for the shifted position of the platen.

6. In a typewriting machine comprising a platen, means for shifting the platen up and down to enable different types to print thereon, type bars striking rearwardly against the platen, and forwardly and rearwardly movable key-actuated levers connected to said type bars, the combination of a universal bar frame operated by said lever arms, a main link connected to said frame and having at its other end a slot extending upwardly and downwardly, a ribbon vibrating rock arm mounted upon the framework of the machine and having a wrist to engage said slot, and an idle link connecting said main link to the platen shifting mechanism, and causing said slot to shift up and down upon said wrist when the platen is shifted; the direction of the slot being such that its shifting movement causes sufficient rocking of said arm to vibrate the ribbon, to compensate for the shifted position of the platen.

7. In a typewriting machine having a ribbon vibrator, the combination of a swinging arm having a radial slot, means for swinging said arm at the type strokes, a link connected to said ribbon vibrator and having means to engage said slot, and means for adjusting said link along said slot to vary the length of stroke of said vibrator.

8. In a typewriting machine having a ribbon vibrator, the combination of a link connected at one end to said vibrator, a swinging arm, means for swinging said arm at the type strokes, means for connecting the other end of said link to said swinging arm in such a manner as to permit adjustment of the link toward and away from the axis of said swinging arm, so as to vary the length of

flanged members in contact with each other, means for separating the flanged members, and rotatable means adapted to connect a portion of the clutch members for reverse rotation of one of said members.

8. In a clutch, the combination comprising a driving shaft, a driven shaft, a clutch member secured on the driving shaft and provided with a lug thereon, a clutch member slidable on and fixed to rotate with the driven shaft and provided with a lug thereon, flanged members disposed on the clutch members in contact with said lugs, screws adapted to secure the flanged members in position, means adapted to normally maintain the flanged members in contact with each other, means for separating the flanged members, and rotatable means adapted to connect the clutch members for reverse rotation of one of them.

9. In a clutch, the combination comprising a driving shaft, a driven shaft, a clutch member secured on the driving shaft, a clutch member slidable on and fixed to rotate with the driven shaft, flanged members secured to the clutch members, means adapted normally to maintain said flanged members in contact with each other, a sleeve slidably disposed on the driven shaft and arranged to move the slidable clutch member, a lever pivoted adjacent the sleeve and secured thereto, and rotatable means adapted to connect a portion of the clutch members for reverse rotation of one of them.

10. In a clutch, the combination comprising a driving shaft, a driven shaft, a clutch member secured on the driving shaft, a clutch member slidable on and fixed to rotate with the driven shaft, flanged members secured to the clutch members, means adapted normally to maintain said flanged members in contact with each other, a sleeve slidably disposed on the driven shaft and arranged to move the slidable clutch member, bearing rings interposed between the sleeve and the slidable clutch member, friction reducing members disposed between the bearing rings, a lever pivoted adjacent the sleeve and secured thereto, and rotatable means adapted to connect a portion of the clutch members for reverse rotation of one of them.

11. In a clutch, the combination comprising a casing, a driven shaft projected into the casing, a driving shaft projected into the casing, a hub fixed on the driving shaft and provided with a peripheral flange, an annulus secured to the hub adjacent the flange, an inclined flange on the annulus, a hub slidably disposed and fixed to rotate with the driven shaft and provided with a peripheral flange, an annulus on said latter hub adjacent its flange and provided with an inclined flange, means normally maintaining the inclined flanges in contact, means for separating the inclined flanges, and means for connecting the peripheral flanges of the hubs.

12. In a clutch, the combination comprising a casing, a driven shaft projected into the casing, a driving shaft projected into the casing, a hub fixed on the driving shaft and provided with a peripheral flange, an annulus secured to the hub adjacent the flange, an inclined flange on the annulus, a hub slidably disposed and fixed to rotate with the driven shaft and provided with a peripheral flange, an annulus on said latter hub adjacent its flange and provided with an inclined flange, means normally maintaining the inclined flanges in contact, means for separating the inclined flanges, and rotatable means for connecting the peripheral flanges of the hubs when the inclined flanges are sufficiently separated.

13. In a clutch, the combination comprising a casing, a driven shaft projected into the casing, a driving shaft projected into the casing, a hub fixed on the driving shaft and provided with a peripheral flange, an annulus secured to the hub adjacent the flange, an inclined flange on the annulus, a hub slidably disposed on and fixed to rotate with the driven shaft and provided with a peripheral flange, an annulus on said latter hub adjacent its flange and provided with an inclined flange, means normally maintaining the inclined flanges in contact, means for separating the inclined flanges, a stud carried by the casing and provided with bearing cones, annular angle iron members disposed around the stud, bearing rings carried by the annular angle iron members, friction reducing means disposed between the bearing rings and the cones, and an annular friction member carried by the angle iron members and disposed in contact with said peripheral flanges when the inclined flanges are widely separated.

14. In a clutch, the combination comprising a casing, a driven shaft projected into the casing, a driving shaft projected into the casing, a hub fixed on the driving shaft and provided with a peripheral flange, an annulus secured to the hub adjacent the flange, an inclined flange on the annulus, a hub slidably disposed on and fixed to rotate with the driven shaft and provided with a peripheral flange, an annulus on said latter hub adjacent its flange and provided with an inclined flange, means normally maintaining the inclined flanges in contact, means for separating the inclined flanges, and means for connecting the peripheral flanges of the hubs, and an oil-retaining member secured to the rotatable connecting means.

851,987. CRUCIBLE-TONGS. WILLIAM H. HEWITT, Cleveland, Ohio. Filed Jan. 22, 1906. Serial No. 297,178.

Claim.—1. In a pair of crucible tongs, the combination with two reins pivotally secured together, of jaws mounted upon said reins, and flexible members borne by said jaws respectively and adapted to conform with the curvature of crucibles of different sizes, each of said members being supported by the corresponding jaw at a plurality of points.

2. In a pair of crucible tongs, the combination with two reins pivotally secured together, of jaws mounted upon said reins, and flexible members borne by said jaws, each of said members being adjustably supported upon the corresponding jaw.

3. In a pair of crucible tongs, the combination of two reins each having an angular portion provided with a plurality of apertures, a pin adapted to register in such apertures to pivotally secure said reins together in various positions relatively to each other, whereby said tongs may be adjusted to crucibles of different diameters, and jaws mounted upon said reins, said jaws being adjustable to conform with the different curvatures of such crucibles.

4. In a pair of tongs, the combination of two reins pivotally secured together, jaws mounted upon said reins, and flexible members transversely disposed relatively to said jaws, said members being rigidly attached at their mid-points to said jaws and adjustably attached thereto at their ends.

5. In a pair of tongs, the combination of two reins adapted to be pivotally secured together at different points, jaws detachably mounted upon said reins, and flexible members transversely disposed relatively to said jaws, said members being rigidly attached at their mid-points to said jaws and adjustably attached thereto at their ends.

6. In a pair of tongs, the combination of two reins each having an angular portion provided with a plurality of apertures, a clevis adapted to receive such angular portions, a pin fitted to said clevis and adapted to register in said reins to pivotally secure said reins together, jaws detachably mounted upon said reins, and flexible members transversely disposed relatively to said jaws, said members being rigidly attached at their mid-points to said jaws and adjustably attached thereto at their ends.

7. In a pair of crucible tongs, the combination with a jaw provided with oppositely disposed laterally projecting curved arms, of a flexible member disposed in front of said arms and rigidly attached at its mid-point to said jaw, and adjustably attached at its ends to said arms.

8. In a pair of crucible tongs, the combination with a jaw provided with oppositely disposed, laterally projecting, curved arms having inwardly projecting set-screws mounted in their extremities, of a flexible member secured at its mid-point to said jaw and having its ends resting against said set-screws.

9. In a pair of crucible tongs, the combination with a jaw provided with oppositely disposed, laterally projecting, curved arms, having inwardly projecting set-screws mounted in their extremities, of a flexible member secured at its mid-point to said jaw and having its ends slidably secured to said set-screws.

10. In a pair of crucible tongs, the combination of two reins each having an angular portion provided with a plurality of apertures, a pin adapted to register in such apertures to pivotally secure said reins together in various positions relatively to each other, whereby said tongs may be adjusted to crucibles of different diameters, jaws mounted upon said reins, and flexible members transversely disposed relatively to said jaws, said members being rigidly attached at their mid-points to said jaws and adjustably attached thereto at their ends whereby said jaws may be made to conform with the different curvatures of such crucibles.

851,988. TYPE-WRITING MACHINE. CHARLES W. HOWELL, Newark, N. J., assignor to Sun Typewriter Company, Newark, N. J., a Corporation of New Jersey. Filed Aug. 18, 1906. Serial No. 331,189.

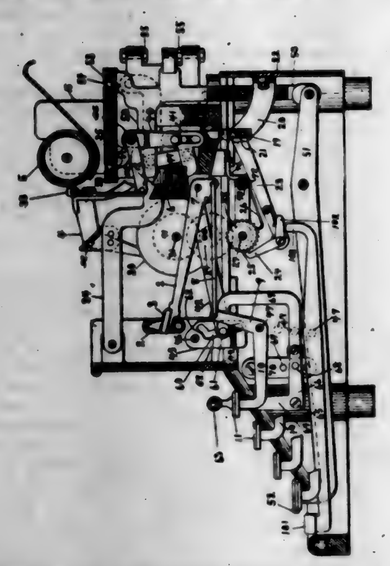

Claim.—1. In a typewriting machine comprising a carriage-feeding universal bar operated by the type keys, the combination of an arm connected to said universal bar and carrying a pawl, a ribbon-winding ratchet wheel actuated by the pawl, and a space key having means to silence said pawl and vibrate said arm to feed the carriage.

2. In a typewriting machine comprising a carriage-feeding universal bar operated by the type keys, the combination of an arm connected to said universal bar and carrying a pawl, a ribbon-winding ratchet wheel actuated by the pawl, a releasing arm upon said pawl, and a space key having means to actuate said pawl releasing arm, and to vibrate said pawl-carrying arm to feed the carriage.

3. In a typewriting machine comprising key-actuated lever arms movable forwardly and backwardly at the front of the machine, rearwardly striking swinging type bars connected to said lever arms, and a letter feeding universal bar operated by said type bars, the combination of a second universal bar extending along said lever arms and operated thereby, said lever arms having variable movements, and said second universal bar being variably cut away where engaged by said lever arms to compensate for the variable movements of the latter, a ribbon vibrating device in rear of the type bars, and means connecting said ribbon vibrating device to said second universal bar.

4. In a typewriting machine having a platen and mechanism for shifting the platen, to enable different types to print thereon, the combination of a ribbon vibrating device supported upon the framework of the machine, a linkage, one member whereof is connected to said ribbon vibrating device, and another member whereof is connected to said platen shifting mechanism, to cause the linkage to be moved at the operation of the platen shifting mechanism sufficiently to operate said ribbon vibrating device to compensate for the shifting movement of the platen, and means also connected to said linkage for actuating said ribbon vibrating device to cover and uncover the printing point at the type strokes.

5. In a typewriting machine having a platen and mechanism for shifting the platen, to enable different types to print thereon, the combination of a ribbon-vibrating rock arm mounted upon the framework of the machine, and having a wrist, a link having at one end a slot transverse to the length of the link and engaging said wrist, means to which the other end of the link is pivoted for moving the link endwise to rock said arm, and an idle link connecting said link to the platen shifting mechanism, so as to swing the slotted end of the main link when the platen is shifted, and cause said slot to shift upon said wrist; the direction of the slot being such that its shifting movement causes sufficient rocking of said arm to vibrate the ribbon, to compensate for the shifted position of the platen.

6. In a typewriting machine comprising a platen, means for shifting the platen up and down to enable different types to print thereon, type bars striking rearwardly against the platen, and forwardly and rearwardly movable key-actuated levers connected to said type bars, the combination of a universal bar frame operated by said lever arms, a main link connected to said frame and having at its other end a slot extending upwardly and downwardly, a ribbon vibrating rock arm mounted upon the framework of the machine and having a wrist to engage said slot, and an idle link connecting said main link to the platen shifting mechanism, and causing said slot to shift up and down upon said wrist when the platen is shifted; the direction of the slot being such that its shifting movement causes sufficient rocking of said arm to vibrate the ribbon, to compensate for the shifted position of the platen.

7. In a typewriting machine having a ribbon vibrator, the combination of a swinging arm having a radial slot, means for swinging said arm at the type strokes, a link connected to said ribbon vibrator and having means to engage said slot, and means for adjusting said link along said slot to vary the length of stroke of said vibrator.

8. In a typewriting machine having a ribbon vibrator, the combination of a link connected at one end to said vibrator, a swinging arm, means for swinging said arm at the type strokes, means for connecting the other end of said link to said swinging arm in such a manner as to permit adjustment of the link toward and away from the axis of said swinging arm, so as to vary the length of

flanged members in contact with each other, means for separating the flanged members, and rotatable means adapted to connect a portion of the clutch members for reverse rotation of one of said members.

8. In a clutch, the combination comprising a driving shaft, a driven shaft, a clutch member secured on the driving shaft and provided with a lug thereon, a clutch member slidable on and fixed to rotate with the driven shaft and provided with a lug thereon, flanged members disposed on the clutch members in contact with said lugs, screws adapted to secure the flanged members in position, means adapted to normally maintain the flanged members in contact with each other, means for separating the flanged members, and rotatable means adapted to connect the clutch members for reverse rotation of one of them.

9. In a clutch, the combination comprising a driving shaft, a driven shaft, a clutch member secured on the driving shaft, a clutch member slidable on and fixed to rotate with the driven shaft, flanged members secured to the clutch members, means adapted normally to maintain said flanged members in contact with each other, a sleeve slidably disposed on the driven shaft and arranged to move the slidable clutch member, a lever pivoted adjacent the sleeve and secured thereto, and rotatable means adapted to connect a portion of the clutch members for reverse rotation of one of them.

10. In a clutch, the combination comprising a driving shaft, a driven shaft, a clutch member secured on the driving shaft, a clutch member slidable on and fixed to rotate with the driven shaft, flanged members secured to the clutch members, means adapted normally to maintain said flanged members in contact with each other, a sleeve slidably disposed on the driven shaft and arranged to move the slidable clutch member, bearing rings interposed between the sleeve and the slidable clutch member, friction reducing members disposed between the bearing rings, a lever pivoted adjacent the sleeve and secured thereto, and rotatable means adapted to connect a portion of the clutch members for reverse rotation of one of them.

11. In a clutch, the combination comprising a casing, a driven shaft projected into the casing, a driving shaft projected into the casing, a hub fixed on the driving shaft and provided with a peripheral flange, an annulus secured to the hub adjacent the flange, an inclined flange on the annulus, a hub slidably disposed and fixed to rotate with the driven shaft and provided with a peripheral flange, an annulus on said latter hub adjacent its flange and provided with an inclined flange, means normally maintaining the inclined flanges in contact, means for separating the inclined flanges, and means for connecting the peripheral flanges of the hubs.

12. In a clutch, the combination comprising a casing, a driven shaft projected into the casing, a driving shaft projected into the casing, a hub fixed on the driving shaft and provided with a peripheral flange, an annulus secured to the hub adjacent the flange, an inclined flange on the annulus, a hub slidably disposed and fixed to rotate with the driven shaft and pfovided with a peripheral flange, an annulus on said latter hub adjacent its flange and provided with an inclined flange, means normally maintaining the inclined flanges in contact, means for separating the inclined flanges, and rotatable means for connecting the peripheral flanges of the hubs when the inclined flanges are sufficiently separated.

13. In a clutch, the combination comprising a casing, a driven shaft projected into the casing, a driving shaft projected into the casing, a hub fixed on the driving shaft and provided with a peripheral flange, an annulus secured to the hub adjacent the flange, an inclined flange on the annulus, a hub slidably disposed on and fixed to rotate with the driven shaft and provided with a peripheral flange, an annulus on said latter hub adjacent its flange and provided with an inclined flange, means normally maintaining the inclined flanges in contact, means for separating the inclined flanges, a stud carried by the casing and provided with bearing cones, annular angle iron members disposed around the stud, bearing rings carried by the annular angle iron members, friction reducing means disposed between the bearing rings and the cones, and an annular friction member carried by the angle iron members and disposed in contact with said peripheral flanges when the inclined flanges are widely separated.

14. In a clutch, the combination comprising a casing, a driven shaft projected into the casing, a driving shaft projected into the casing, a hub fixed on the driving shaft and provided with a peripheral flange, an annulus secured to the hub adjacent the flange, an inclined flange on the annulus, a hub slidably disposed on and fixed to rotate with the driven shaft and provided with a peripheral flange, an annulus on said latter hub adjacent its flange and provided with an inclined flange, means normally maintaining the inclined flanges in contact, means for separating the inclined flanges, and means for connecting the peripheral flanges of the hubs, and an oil-retaining member secured to the rotatable connecting means.

851,987. CRUCIBLE-TONGS. WILLIAM H. HEWITT, Cleveland, Ohio. Filed Jan. 22, 1906. Serial No. 297,178.

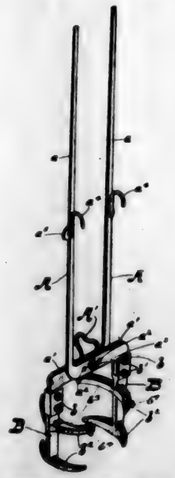

Claim.—1. In a pair of crucible tongs, the combination with two reins pivotally secured together, of jaws mounted upon said reins, and flexible members borne by said jaws respectively and adapted to conform with the curvature of crucibles of different sizes, each of said members being supported by the corresponding jaw at a plurality of points.

2. In a pair of crucible tongs, the combination with two reins pivotally secured together, of jaws mounted upon said reins, and flexible members borne by said jaws, each of said members being adjustably supported upon the corresponding jaw.

3. In a pair of crucible tongs, the combination of two reins each having an angular portion provided with a plurality of apertures, a pin adapted to register in such apertures to pivotally secure said reins together in various positions relatively to each other, whereby said tongs may be adjusted to crucibles of different diameters, and jaws mounted upon said reins, said jaws being adjustable to conform with the different curvatures of such crucibles.

4. In a pair of tongs, the combination of two reins pivotally secured together, jaws mounted upon said reins, and flexible members transversely disposed relatively to said jaws, said members being rigidly attached at their midpoints to said jaws and adjustably attached thereto at their ends.

5. In a pair of tongs, the combination of two reins adapted to be pivotally secured together at different points, jaws detachably mounted upon said reins, and flexible members transversely disposed relatively to said jaws, said members being rigidly attached at their mid-points to said jaws and adjustably attached thereto at their ends.

6. In a pair of tongs, the combination of two reins each having an angular portion provided with a plurality of apertures, a clevis adapted to receive such angular portions, a pin fitted to said clevis and adapted to register in said reins to pivotally secure said reins together, jaws detachably mounted upon said reins, and flexible members transversely disposed relatively to said jaws, said members being rigidly attached at their mid-points to said jaws and adjustably attached thereto at their ends.

7. In a pair of crucible tongs, the combination with a jaw provided with oppositely disposed laterally projecting curved arms, of a flexible member disposed in front of said arms and rigidly attached at its mid-point to said jaw, and adjustably attached at its ends to said arms.

8. In a pair of crucible tongs, the combination with a jaw provided with oppositely disposed, laterally projecting, curved arms having inwardly projecting set-screws mounted in their extremities, of a flexible member secured at its mid-point to said jaw and having its ends resting against said set-screws.

9. In a pair of crucible tongs, the combination with a jaw provided with oppositely disposed, laterally projecting, curved arms, having inwardly projecting set-screws mounted in their extremities, of a flexible member secured at its mid-point to said jaw and having its ends slidably secured to said set-screws.

10. In a pair of crucible tongs, the combination of two reins each having an angular portion provided with a plurality of apertures, a pin adapted to register in such apertures to pivotally secure said reins together in various positions relatively to each other, whereby said tongs may be adjusted to crucibles of different diameters, jaws mounted upon said reins, and flexible members transversely disposed relatively to said jaws, said members being rigidly attached at their mid-points to said jaws and adjustably attached thereto at their ends whereby said jaws may be made to conform with the different curvatures of such crucibles.

851,988. TYPE-WRITING MACHINE. CHARLES W. HOWELL, Newark, N. J., assignor to Sun Typewriter Company, Newark, N. J., a Corporation of New Jersey. Filed Aug. 18, 1906. Serial No. 331,189.

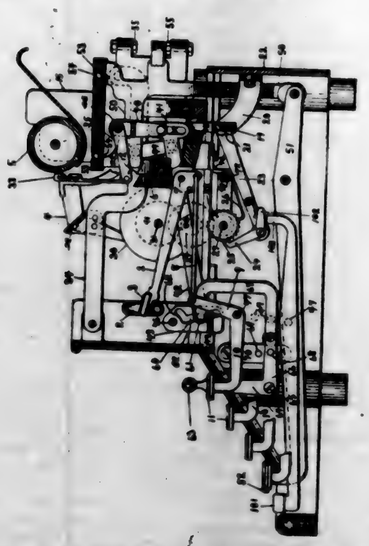

Claim.—1. In a typewriting machine comprising a carriage-feeding universal bar operated by the type keys, the combination of an arm connected to said universal bar and carrying a pawl, a ribbon-winding ratchet wheel actuated by the pawl, and a space key having means to silence said pawl and vibrate said arm to feed the carriage.

2. In a typewriting machine comprising a carriage-feeding universal bar operated by the type keys, the combination of an arm connected to said universal bar and carrying a pawl, a ribbon-winding ratchet wheel actuated by the pawl, a releasing arm upon said pawl, and a space key having means to actuate said pawl releasing arm, and to vibrate said pawl-carrying arm to feed the carriage.

3. In a typewriting machine comprising key-actuated lever arms movable forwardly and backwardly at the front of the machine, rearwardly striking swinging type bars connected to said lever arms, and a letter feeding universal bar operated by said type bars, the combination of a second universal bar extending along said lever arms and operated thereby, said lever arms having variable movements, and said second universal bar being variably cut away where engaged by said lever arms to compensate for the variable movements of the latter, a ribbon vibrating device in rear of the type bars, and means connecting said ribbon vibrating device to said second universal bar.

4. In a typewriting machine having a platen and mechanism for shifting the platen, to enable different types to print thereon, the combination of a ribbon vibrating device supported upon the framework of the machine, a linkage, one member whereof is connected to said ribbon vibrating device, and another member whereof is connected to said platen shifting mechanism, to cause the linkage to be moved at the operation of the platen shifting mechanism sufficiently to operate said ribbon vibrating device to compensate for the shifting movement of the platen, and means also connected to said linkage for actuating said ribbon vibrating device to cover and uncover the printing point at the type strokes.

5. In a typewriting machine having a platen and mechanism for shifting the platen, to enable different types to print thereon, the combination of a ribbon-vibrating rock arm mounted upon the framework of the machine, and having a wrist, a link having at one end a slot transverse to the length of the link and engaging said wrist, means to which the other end of the link is pivoted for moving the link endwise to rock said arm, and an idle link connecting said link to the platen shifting mechanism, so as to swing the slotted end of the main link when the platen is shifted, and cause said slot to shift upon said wrist; the direction of the slot being such that its shifting movement causes sufficient rocking of said arm to vibrate the ribbon, to compensate for the shifted position of the platen.

6. In a typewriting machine comprising a platen, means for shifting the platen up and down to enable different types to print thereon, type bars striking rearwardly against the platen, and forwardly and rearwardly movable key-actuated levers connected to said type bars, the combination of a universal bar frame operated by said lever arms, a main link connected to said frame and having at its other end a slot extending upwardly and downwardly, a ribbon vibrating rock arm mounted upon the framework of the machine and having a wrist to engage said slot, and an idle link connecting said main link to the platen shifting mechanism, and causing said slot to shift up and down upon said wrist when the platen is shifted; the direction of the slot being such that its shifting movement causes sufficient rocking of said arm to vibrate the ribbon, to compensate for the shifted position of the platen.

7. In a typewriting machine having a ribbon vibrator, the combination of a swinging arm having a radial slot, means for swinging said arm at the type strokes, a link connected to said ribbon vibrator and having means to engage said slot, and means for adjusting said link along said slot to vary the length of stroke of said vibrator.

8. In a typewriting machine having a ribbon vibrator, the combination of a link connected at one end to said vibrator, a swinging arm, means for swinging said arm at the type strokes, means for connecting the other end of said link to said swinging arm in such a manner as to permit adjustment of the link toward and away from the axis of said swinging arm, so as to vary the length of

stroke of said vibrator, and means for detaining the link where adjusted.

9. In a typewriting machine having a ribbon vibrator, the combination of a swinging arm having a radial slot, means for swinging said arm at the type strokes, a link connected to said ribbon vibrator and having means to engage said slot, and means for adjusting said link along said slot to vary the length of stroke of said vibrator, said slot having at its inner end an enlargement to prevent the link from being reciprocated when adjusted to the inner end of the slot.

10. In a typewriting machine comprising a platen, a ribbon vibrating rocker beneath the platen, rearwardly striking type bars and key-actuated lever arms movable forwardly and backwardly at the front of the machine and connected to said type bars, the combination of a universal bar extending along said lever arms and operated thereby, an arm swinging with said universal bar at the front of the machine and having a radial slot, a link engaging said slot, and extending rearwardly to said ribbon vibrating rocker, and a finger piece connected to means for adjusting said link in said slot to vary the stroke of said rocker.

11. In a typewriting machine comprising a platen, rearwardly striking type bars, mechanism for shifting the platen to enable different types to print thereon, a ribbon vibrating rocker mounted on the framework of the machine beneath the platen, and key-actuated lever arms movable forwardly and backwardly at the front of the machine and connected to said type bars, the combination of a universal bar extending along said lever arms and operated thereby, an arm swinging with said universal bar at the front of the machine and having a radiating slot, a link having means to engage said slot, means for detaining the link where adjusted in said slot; said link extending rearwardly from said swinging arm; and an idle link connecting said main link to the platen shifting mechanism; said main link having at its rear end a slot extending up and down and engaging the wrist provided upon said ribbon vibrating rocker; the direction of the last mentioned slot being such that when the main link is shifted with the platen, said rocker is caused to vibrate the ribbon sufficiently to compensate for the shifting of the platen.

12. In a typewriting machine having a ribbon vibrator, the combination of a link connected at one end to said vibrator, a swinging arm, means for swinging said arm at the type strokes, means for connecting the other end of said link to said swinging arm, a finger lever mounted upon the framework of the machine, and connected to said link, to adjust it relatively to said swinging arm, so as to vary the stroke of the ribbon vibrator, and means for detaining said lever where adjusted.

13. In a typewriting machine having a ribbon vibrator, the combination of a link connected at one end to said vibrator, a swinging arm having a radiating slot, means for swinging said arm at the type strokes, means for engaging the other end of said link with said slot, a finger piece mounted upon the framework of the machine, and a second link connecting said finger piece to the first link to adjust it along said slot, so as to vary the stroke of the ribbon vibrator.

14. In a typewriting machine having a ribbon vibrator, the combination of a swinging arm having a radiating slot, means for swinging said arm at the type strokes, a connecting device between said ribbon vibrator and said slot, a finger piece having means to adjust said connecting device along said slot, and means for detaining said finger piece where adjusted.

15. In a typewriting machine comprising a platen, a ribbon vibrating rocker beneath the platen, rearwardly striking type bars and key-actuated lever arms movable forwardly and backwardly at the front of the machine and connected to said type bars, the combination of a universal bar extending along said lever arms and operated thereby, an arm swinging with said universal bar at the front of the machine and having a radial slot, a link engaging said slot, and extending rearwardly to said ribbon vibrating rocker, a finger lever, a second link connecting said finger lever to the first link to shift the latter along said slot, and a yielding detent for holding said lever where adjusted.

16. In a typewriting machine, the combination of a stud having a head, a hub confined by said head and revoluble upon said stud, said hub having a slot, and a yielding detent protruding from said slot, and a ribbon spool having in its core an opening to be engaged by said detent.

17. In a typewriter ribbon-reversing mechanism comprising a pair of spools, and a power-rotated shaft common to the spools, said shaft being provided with winding gears one for each spool, the combination of a second pair of gears, means controlled by the ribbon for alternately disengaging and engaging the gears in the first pair with the gears in the second pair, and movement-reducing gearing between the second pair of gears and the spools.

18. In a typewriter ribbon-reversing mechanism comprising a pair of spools, and a power-rotated shaft common to the spools, said shaft being provided with winding gears one for each spool, the combination of a second pair of gears, means controlled by the ribbon, and operated automatically by a moving part of the typewriting machine, for alternately disengaging and engaging the gears in the first pair with the gears in the second pair, and movement-reducing gearing between the second pair of gears and the spools.

19. In a typewriter ribbon-winding mechanism comprising a pair of spools having gears, and a power-rotated swinging shaft having gears to swing alternately into mesh with the spool gears, the combination with a universal bar vibrated at the key strokes, of a pair of devices connected to said universal bar for swinging said driving shaft to and fro, and a pair of followers mounted to ride upon the coils of ribbon upon the spools, and having means to silence said shaft swinging devices; each follower constructed to cause its associated shaft swinging device to operate upon said shaft when the ribbon is paid off from its associated spool.

20. In a typewriting machine comprising a pair of ribbon spools having winding gears, and a power-rotated shaft having gears with provision for enabling the shaft gears to mesh alternately with the spool gears, and also comprising a universal bar vibrated at the key strokes, the combination of a pair of devices connected to said universal bar for meshing the gear shafts with the spool shafts, and a pair of followers mounted to ride upon the coils of ribbon upon the spools, and each having means to silence its associated universal bar device, except when its associated spool is empty.

21. In a typewriting machine comprising a pair of ribbon-spool winding-gears, and a power-rotated shaft having gears and movable to enable its gears to mesh alternately with said spool gears, and also comprising a universal bar vibrated at the key strokes, the combination of a pair of shifters pivoted upon said universal bar and capable of shifting said shaft, and a pair of followers associated with said shifters and mounted to ride upon the coil of the ribbon upon the spools, and each having means to silence its shifter except when its spool is empty.

22. In a typewriting machine comprising a pair of ribbon-spool winding-gears, and a power-rotated shaft having gears and movable to enable its gears to mesh alternately with said spool gears, and also comprising a universal bar vibrated at the key strokes, the combination of a pair of shifters pivoted upon said universal bar and capable of shifting said shaft, and a pair of pivoted followers associated with said shifters and constructed to ride upon the coils of ribbon upon the spools, each of said followers having an arm extending to its shifter to hold the same out of effective position, except when the spool is empty.

23. In a typewriting machine comprising a pair of ribbon-spool winding-gears, and also comprising a universal bar vibrated at the key strokes, the combination of a shaft having gears at its ends and mounted to swing to bring its gears into mesh alternately with said spool gears, a shaft rotating wheel mounted between the ends of said shaft, a pair of shifters pivoted upon said universal bar, a pair of levers operable by said shifters to swing said shaft, and a pair of followers mounted to ride upon the coils of ribbon upon the spools, and having arms to hold the shifters away from the levers except when the spools are empty.

24. In a typewriting machine comprising a pair of ribbon-spool winding-gears, and also comprising a universal bar vibrated at the key strokes, the combination of a shaft having gears at its ends and mounted to swing to bring its gears into mesh alternately with said spool gears, a shaft rotating wheel mounted between the ends of said shaft, a pair of shifters pivoted upon said universal bar, a pair of levers operable by said shifters to swing said shaft, and a pair of followers mounted to ride upon the coils of ribbon upon the spools, and having arms to hold the shifters away from the levers except when the spools are empty, said lever having cams provided thereon engageable by projections upon said shifters.

25. In a typewriting machine comprising a pair of ribbon-spool winding-gears, and also comprising a universal bar vibrated at the key strokes, the combination of a shaft having gears at its ends and mounted to swing to bring its gears into mesh alternately with said spool gears, a shaft rotating wheel mounted between the ends of said shaft, a pair of shifters pivoted upon said universal bar, a pair of levers operable by said shifters to swing said shaft, and a pair of followers mounted to ride upon the coils of ribbon upon the spools, and having arms to hold the shifters away from the levers except when the spools are empty, links being pivoted upon said levers and extending to the end portions of said shaft and loosely connected to the latter.

26. In a typewriting machine comprising type-bars, key-levers connected thereto, a letter-feeding universal-bar actuated by the type-bars, and ribbon-winding mechanism, the combination of a second universal bar actuated directly by the key-levers, and mechanism for reversing the winding of the ribbon, said reversing mechanism including a member shiftable back and forth, and means actuated by said second universal-bar for shifting said member, and also including means controlled by the ribbon for controlling the action of said second universal-bar upon said shiftable member.

27. In a typewriting machine, the combination with a series of types, of two universal bars, means controlled by one of said bars for effecting the longitudinal feed of a ribbon, and means controlled by the other of said bars for effecting both lateral movement and automatic reversal of the ribbon.

851,989. FOG SIGNALING APPARATUS FOR RAILWAYS AND THE LIKE. ARTHUR W. HUMPHREY and ALEXANDER H. MAWBEY, Griff Crossing, near Nuneaton, England. Filed Dec. 17, 1906. Serial No. 348,155.

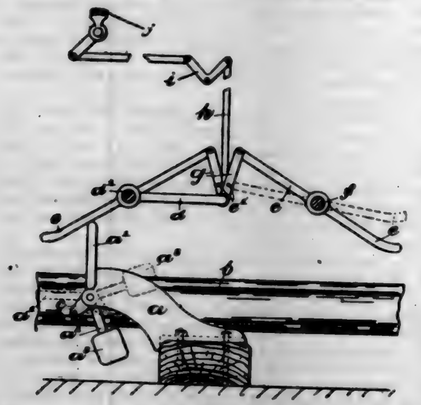

Claim.—1. The combination, with a tappet supported adjacent to the track, of a tappet lever pivoted to the engine, a frame also pivoted to the engine, a link connecting the free end portion of the said frame with the said tappet lever, said link being provided with a plurality of pivot holes at different points of its length so that the said lever can be pivoted to it in a position to engage with or to clear the said tappet, and a rod for operating an audible signal also connected to the said frame.

2. The combination, with a tappet supported adjacent to the track, of two pivots carried by the engine, two tappet levers mounted on the said pivots and inclined in opposite directions, a frame mounted on one of the said pivots, links connecting the free end portion of the said frame with the upper and adjacent ends of the said tappet levers, and a rod for operating an audible signal also connected to the said frame.

851,990. BOTTLE-STOPPER. EDWARD C. LEACH, Norwalk, Conn. Filed Oct. 9, 1905. Renewed Oct. 3, 1906. Serial No. 337,276.

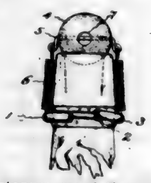

Claim.—A bottle stopper consisting of a band formed of spring wire and rubber tubing, a globular stopper, a bail extending through the center of the stopper, and spiral springs connecting the ends of the bail and the band, substantially as specified.

851,991. METALLIC STRUCTURE. EDMOND MOLLOY, Philadelphia, Pa. Filed Mar. 20, 1905. Serial No. 251,180.

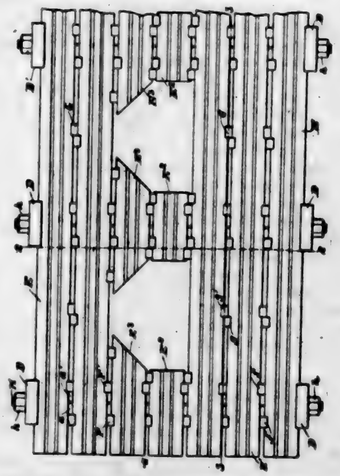

Claim.—1. In a metallic structure, a series of studdings, continuous runners engaging sidewise with said studdings, means for confining said runners in sidewise engagement with the studdings, and means for exerting tension vertically on the runners and the aforesaid runner-confining means.

2. A metallic structure comprising suitable studdings, runners lapping said studdings, interposed clips between tiers of said runners, and means for binding the several parts to exert a vertical tension thereon.

3. A metallic structure comprising suitable studdings, runners between the studdings, means for confining the runners and studdings in lateral engagement, and tie

bolts arranged to clamp the runners solidly against the studdings.

4. A metallic structure comprising suitable studdings, runners between the studdings, means for confining the runners and studdings in proper relation, and tie bolts extending lengthwise of the studdings and operating to bind the several parts into a solid structure.

5. In a metallic structure, a plurality of studdings, runners engaging sidewise with said studdings, clips between the runners and operating to confine the latter in sidewise engagement with the studdings, and means for exerting tension vertically and through the studdings on the runners and the clips.

6. A metallic structure comprising studdings, runners extending across the studdings, means for confining the parts in order, stress plates extending transverse to the runners, and tie bolts connecting the stress plates and clamping the parts rigidly together.

7. A metallic structure comprising studdings, runners across the studdings, stress plates at top and bottom of the runners, transverse members intermediate the stress plates for holding runners in engagement sidewise with the studdings, and tie bolts binding the parts solidly together.

8. A metallic structure comprising hollow studdings, runners crossing the studdings, stress plates across the studdings, and tie bolts incased within the studdings and binding the stress plates and parts solidly together.

9. A metallic structure comprising hollow studdings, runners crossing the studdings, clips engaging the runners for holding them against sidewise displacement, stress plates across the studdings and runners, and tie bolts housed in the studdings and connecting the stress plates.

10. In a metallic structure, the combination of parallel runners, and plates provided with clips, said plates being interposed between tiers of runners, and said clips engaging with adjacent runners for holding them against sidewise displacement, the said clips extending alternately in opposite directions.

11. In a metallic structure, the combination of tiers of runners, of transverse plates interposed between adjacent runners and having their ends bent into engagement with adjacent runners, for confining them against sidewise displacement, and means for exerting tension on the runners and plates.

12. In a metallic structure a hollow studding composed of channeled members assembled into matching relation, runners fitted to said studding, stress plates fitted to the end portions of the studding, and tie bolts incased within the members of the studding and clamping the stress plates against the studding.

13. In a metallic structure, a plurality of hollow studdings each composed of channeled opposed members, runners crossing the studdings, and means for binding the several parts solidly together.

14. In a metallic structure, a plurality of studdings, runners applied sidewise against the respective sides of the studdings, interposed plates for confining the runners against sidewise displacement, and means for clamping the several parts solidly together and exerting tension thereon.

15. In a metallic structure, a plurality of studdings, runners applied sidewise against the studdings, interposed plates engaging with the studdings and the runners, and means for exerting tension on the several parts and binding them into a solid structure.

16. In a metallic structure, a plurality of hollow studdings, stress plates at top and bottom thereof, runners crossing the studdings, interposed plates engaging with the runners, and tie bolts housed in the studdings and connecting the stress plates.

851,992. FURNACE. JOHN F. MONNOT, New York, N. Y. Filed Dec. 26, 1905. Serial No. 293,409.

Claim.—1. In a furnace of the class described, the combination of an internally-fired main heating chamber and an externally-fired dipping chamber having a flame passage completely surrounding the same, said chambers being conjointly adapted to contain and maintain a body of molten metal, the heating chamber comprising a relatively broad and shallow dished hearth and the dipping chamber extending from the lowest portion of the dished hearth and being relatively deep as compared with the heating chamber and in fluid connection therewith.

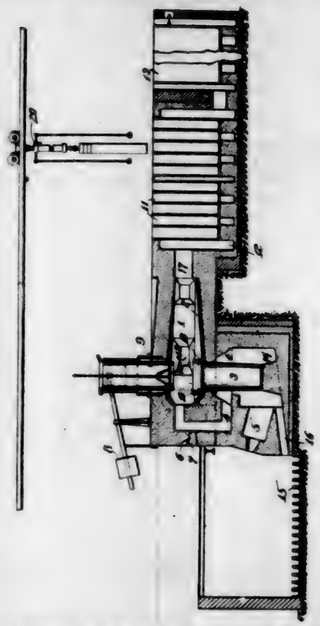

2. In a furnace of the class described, the combination of a main internally-fired and reverberatory-roofed heating chamber and an externally-fired dipping chamber having a flame passage completely surrounding the same, said chambers being conjointly adapted to contain and maintain a body of molten metal, the heating chamber comprising a relatively broad and shallow dished hearth and the dipping chamber extending from the lowest portion of the dished hearth and being relatively deep as compared with the heating chamber and in fluid connection therewith.

3. In a furnace of the class described, the combination of a reverberatory furnace and a crucible furnace conjointly adapted to contain and maintain a body of molten metal, the former comprising a relatively broad and shallow dished hearth and the latter having a crucible in fluid connection with the dished hearth at the bottom of the dishing.

4. In a furnace of the class described, the combination with a main heating chamber having a shallow dished hearth for containing molten metal, of a well extending down from the bottom of the dishing of said hearth and receiving molten metal therefrom, said well and heating chamber being conjointly adapted to contain and maintain a body of molten metal, and means for heating the metal in said chamber.

5. In a furnace of the class described, the combination with a main heating chamber having a hearth dished to contain molten metal and a relatively deep dipping chamber or well extending downward from the level of the lowest place in the dishing for receiving molten metal therefrom, said well and heating chamber being conjointly adapted to contain and maintain a body of molten metal, of means for circulating heating gases around said well and for introducing such gases into said main chamber.

6. In a furnace of the class described, the combination of a reverberatory heating chamber having a hearth dished to contain molten metal and a relatively deep dipping chamber or well extending downward from the level of the lowest place in the dishing for receiving molten metal therefrom, said well and heating chamber being conjointly adapted to contain and maintain a body of molten metal, and means for circulating heating gases completely around said well and for introducing such gases into said reverberatory chamber.

7. In a furnace of the class described, the combination with a heating chamber having a well for containing molten metal and means for passing heating gases over said well, of means for isolating said well from the atmosphere of said chamber while permitting introduction of objects into said well.

8. In a furnace of the class described, the combination with a heating chamber having a well for containing molten metal and means for passing heating gases over said well, of means for isolating said well from the atmosphere of said chamber while permitting flow of metal between said chamber and well.

9. In a furnace of the class described, the combination with a heating chamber having a well for containing molten metal and means for passing heating gases over said well, of an imperforate sleeve extendible into said chamber to a point at or just above the top of said well.

10. In a furnace of the class described, the combination with a heating chamber having a well for containing molten metal and an opening above the same, of a sealing imperforate sleeve substantially connecting said opening and well, extendible into said chamber to a point at or just above the top of said well.

11. In a furnace of the class described, the combination with a heating chamber having a well for containing molten metal and an opening above the same, of an adjustable cutoff passage which in one position substantially connects said opening and well and in another position permits passage of heating gases over said well.

12. In a furnace of the class described, the combination with a reverberatory heating chamber, and a well extending downward from the hearth thereof, said chamber having an opening above said well for the introduction of articles into the latter, of a vertically adjustable cutoff sleeve which in one position substantially connects said opening and well, forming an isolated passage for the introduction of articles into the well, and which in another position permits passage of furnace gases over said well.

13. In a furnace of the class described, the combination of a heating chamber, a well, said chamber having an opening above said well, a sliding cutoff sleeve, and means for raising and lowering the same.

14. In a furnace of the class described, the combination of a heating chamber, a well, said chamber having an opening above said well, a sliding cutoff sleeve, and means for closing the same.

15. In a furnace of the class described, the combination of a heating chamber, a well, said chamber having an opening above said well, a sliding cutoff sleeve, a closure for the same, and means for raising and lowering said closure.

16. In a furnace of the class described, the combination of a heating chamber, a well, said chamber having an opening above said well, a sliding cutoff sleeve, means for adjusting the position thereof, a closure for closing said sleeve, and means for raising and lowering the closure with respect to said sleeve.

17. In a furnace of the class described, the combination of a reverberatory heating chamber, a well, said chamber having an opening above said well, a sliding cutoff sleeve, means for adjusting the position thereof, a closure for said sleeve, and means for raising and lowering the closure with respect to said sleeve.

18. In a furnace of the class described, the combination with a reverberatory heating chamber comprising a dished hearth having in its bottom at the lowest point in the dishing a well for receiving the molten metal, said hearth and well being conjointly adapted to contain and maintain a body of molten metal, said chamber having also above said well a recess whereby heat is concentrated over the well, of means for supporting combustion in said chamber.

19. In a furnace of the class described, the combination with a reverberatory heating chamber comprising a hearth having in its bottom a well for receiving the molten metal, said chamber having also above said well a recess whereby heat is concentrated over the well, of means for supporting combustion in said chamber, and means for adjusting the depth of said recess.

20. In a furnace of the class described, the combination with a reverberatory heating chamber comprising a hearth having in its bottom a well for receiving the molten metal, said chamber having also above said well a recess whereby heat is concentrated over the well, of means for supporting combustion in said chamber, and means for adjusting the vertical position of such recess.

21. In a furnace of the class described, the combination of a main heating chamber having a hearth and a well extending downward therefrom, said hearth having a floatable flux-localising ring normally above said well.

22. In a furnace of the class described, the combination with a heating chamber adapted to contain molten metal and provided with means for introducing articles into such metal, of heating baths heated by the gases from such heating chamber, and a reservoir connected to said baths and adapted to maintain approximately uniform level therein.

23. In combination, a reverberatory furnace and a crucible furnace, the former comprising a relatively broad and shallow dished hearth and the latter having a crucible in fluid connection with the dished hearth, said furnaces each having independent means for heating it and said hearth and crucible being conjointly adapted to contain and maintain a body of molten metal.

24. In a furnace of the class described, the combination with a main heating chamber and a dipping chamber adapted to receive molten metal therefrom, said chambers independently heated, of heating baths and means for heating same by gases discharged from said furnaces.

851,993. APPARATUS FOR COATING METALS. JOHN F. MONNOT, New York, N. Y. Filed Dec. 26, 1905. Serial No. 293,411.

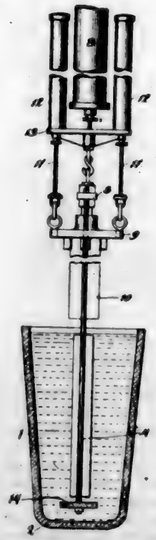

Claim.—1. In an apparatus of the class described, the combination with means for supporting an object to be coated, and for contacting the same with molten metal, of relatively movable segregating means, adapted to operate after such contact occurs, and to segregate from such metal, a layer thereof, in immediate proximity to said object.

2. In an apparatus of the class described, the combination with means for supporting an object to be coated, and for immersing the same in molten metal, of relatively mov-

able segregating means, adapted to operate after such contact occurs, and to segregate from such metal, a layer thereof, in immediate proximity to said object.

3. In an apparatus of the class described, the combination with means for supporting an object to be coated and for contacting the same with molten metal, of a movable casing adapted to inclose a portion of such molten metal in proximity to the surface of such object, and means for guiding and operating such casing.

4. In an apparatus of the class described, the combination with supporting means, of a movable segregating casing adapted to segregate from a body of molten metal a layer of such metal in immediate proximity to the surface of an object to be coated, and means for operating the casing.

5. In an apparatus of the class described, the combination with a support comprising means for holding an object to be coated, of a movable segregating casing suitably guided, and means for operating the same.

6. In an apparatus of the class described, the combination with a supporting frame comprising means for holding an object to be coated, of a movable segregating casing guided by said frame, and means for operating the same.

7. In an apparatus of the class described, the combination with a support, of a segregating casing suitably guided, means for raising and lowering said support with the casing, and means for moving said casing with respect to the support.

8. In an apparatus of the class described, the combination with a crosshead, a support carried thereby, and a segregating casing movably mounted on said support, of means carried by said crosshead for operating said casing.

9. In an apparatus of the class described, the combination with a supporting frame provided with centering means for centering and holding an object to be coated, of a segregating casing suitably guided, and means for moving the same over said object.

10. In an apparatus of the class described, the combination with supporting means provided with means for holding an object to be coated, of a segregating casing suitably guided and adapted to be moved over said object, said frame comprising an end-piece for said casing adapted to close one end thereof when said casing is moved over such object.

11. In an apparatus of the class described, the combination with supporting means provided with means for holding an object to be coated, and means for contacting an object so held with molten metal, of a segregating casing adapted to inclose such object after the same has been so contacted with the molten metal, and means for operating said casing.

12. In an apparatus of the class described, the combination with supporting means of a relatively movable holding device mounted thereon, and arranged to hold a segregating casing and means for operating the same.

851,994. TELEPHONE-SWITCH. TIMOTHY S. MOUNT, Rhome, Tex. Filed Sept. 19, 1903. Serial No. 173,762.

Claim.—1. In a telephone box provided with a bell, a transmitter, a receiver, and suitable electrical connections; switching mechanism and a hook for said receiver operatively connected to said switching mechanism and to said receiver whereby the operator can by the removal of said receiver from said hook cause said switching mechanism to short-circuit one of the sets of lines leading to said box and to make electrical connection with the other set of lines leading to said box.

2. In a telephone box of the character described, a shifting block pivotally mounted in said box and normally maintaining a circuit through the bell of the box and the line wires and a receiver hook operatively connected to said block whereby the operator can by the removal of the receiver from the hook disconnect the bell circuit, short-circuit one set of line connections with said box, and complete a circuit with the other set of line connections.

3. In a telephone box of the character described, shifting mechanism mounted in said box and normally maintaining a circuit through the bell of the box and the line wires, and a receiver hook operatively connected to said shifting mechanism whereby the operator can by the removal of the receiver from the hook disconnect the bell circuit, short-circuit one end of the line connections with said box, and complete a circuit through the other end of the line connections.

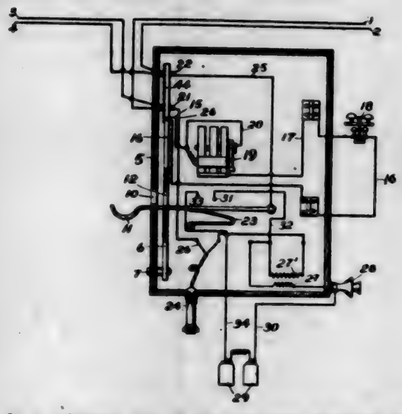

4. In a telephone box of the character described provided with party line terminals and suitable connections, mechanism for short-circuiting one end of the said party line connections and for completing a circuit with the other end of said party line connections at the will of the operator.

5. In a telephone switch provided with party line terminals and party line connections with said terminals; a receiver, a shifting mechanism for each terminal and means for operating said mechanism manually whereby one end of the party line connections may be short-circuited and a circuit completed with the other end of said line connections by removing the receiver from the box mechanism.

6. In a telephone provided with a receiver, a transmitter, a plurality of line connections, and a bell; a hook for said receiver and switching mechanism operatively connected with said hook, said receiver completing a circuit through said switching mechanism, and said hook, when said receiver is removed from said hook, automatically short-circuiting one end of the line connections with said box and completing a circuit with the other end of the line connections at the will of the operator.

7. In a telephone box provided with a receiver, a bell, a transmitter, and party line connections; a shifting block pivotally mounted in said box and carrying contacts for all of the connections of said box, a hook for said receiver pivotally mounted in said box and passing through a slot in said block, and controlling means for operating said hook consisting of a V-shaped slot in the side of said box.

8. In a telephone box of the character described, a bell circuit, suitable line connections, a shifting block pivotally mounted in said box and carrying means for making and breaking the bell circuit, means for short-circuiting either end of the line connections, and means for simultaneously making a circuit of the switch with the other end of the line connections.

851,995. PROCESS OF COLORING LEATHER. WILLIAM M. NORRIS, Princeton, N. J. Filed July 9, 1906. Serial No. 325,245.

Claim.—1. A step in the process of dyeing leather which consists in subjecting it to an acidulated solution of permanganate of potash.

2. A step in the process of dyeing leather which consists in subjecting it to an acidulated solution of permanganate of potash and then to a solution of ferrous salt of iron.

3. Those steps in the process of dyeing leather which consists in subjecting it to an acidulated solution of permanganate of potash and then to a solution of a ferrous salt of iron and then to a solution of a suitable vegetable extract.

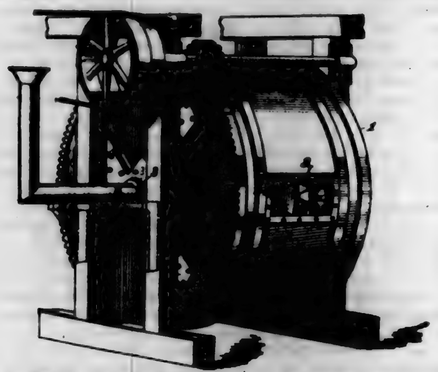

4. Those steps in the process of dyeing leather which consists in subjecting it to an acidulated solution of permanganate of potash and then to a solution of a ferrous salt of iron and then to a solution of vegetable extract and sal soda and then to a thorough washing with warm water.

851,996. HOSE-CLAMP. LAFAYETTE PALMER and ABRAHAM L. TAYLOR, Harrisburg, Pa. Filed Jan. 30, 1906. Serial No. 298,715.

Claim.—1. The herein described hose-clamp comprising oppositely arranged stiff clamp members having substantially semi-circular body portions, means for drawing said clamp members toward each other, and a spring clip connected to one of said members and comprising arms which together exceed a semi-circle, said arms being adapted to embrace and hold the hose sections frictionally, for the purpose described.

2. The herein described clamp comprising oppositely arranged members having substantially semi-circular body portions, means for drawing said clamp members toward each other, and a spring-clip carried by one of said members and comprising apertured spring arms with inbent extremities, said clip as a whole exceeding a semi-circle, and said arms being adapted to embrace and hold the hose sections frictionally, for the purpose described.

851,997. FUSE-HOLDER. JOHN C. RALLS, Los Angeles, Cal., assignor of one-fourth to Edward J. Fleming and one-fourth to Paul Usser, Los Angeles, Cal. Filed Aug. 8, 1904. Serial No. 219,874.

Claim.—1. An elongated fuse-holder provided at each end with means for making connection with a wire, said means at one end of the fuse-holder consisting of flanges of malleable metal adapted to coöperate to grip a single wire.

2. An elongated fuse-holder provided at each end with means for making connection with a wire, said means at one end of the fuse-holder consisting of flanges of malleable metal, said flanges projecting in a direction longitudinal to the length of the fuse-holder and being adapted to grip a single wire and suspend the fuse-holder therefrom.

3. A fuse-holder provided with a central insulating body having a tubular extension 3 at the end, an externally-threaded cap fastened to said extension and engaging against the end of said body, an internally-threaded head screwing onto said cap and also engaging against the head of said body to form a closure therearound, and means carried by said head for connecting the same with a wire.

851,997.

851,998. VALVE MECHANISM FOR INTERNAL-COMBUSTION ENGINES. CLARK SINTE, Philadelphia, Pa., assignor to Pennsylvania Iron Works Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Mar. 21, 1905. Serial No. 251,342.

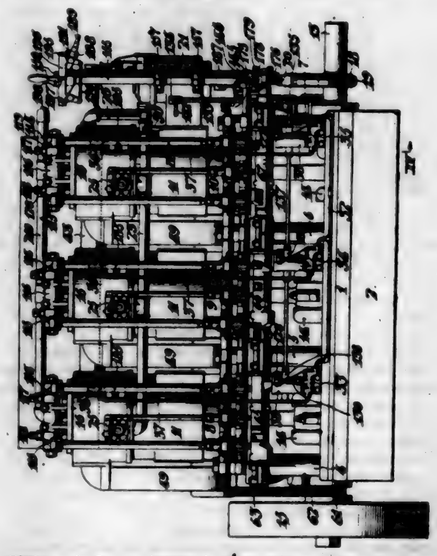

Claim.—1. In an internal combustion engine, the combination with a series of three cylinders; of starting mechanism comprising means to first direct a supply of compressed air *per se* to each of said cylinders; then shut off the supply of compressed air from the opposite end cylinders and admit a combustion charge into said end cylinders, while admitting compressed air *per se* to the intermediate cylinder; then shut off the supply of compressed air to said intermediate cylinder and supply all of the cylinders with a combustion charge, substantially as set forth.

2. In an internal combustion engine, the combination with a series of cylinders; of starting mechanism comprising means to first direct a supply of compressed air *per se* to each of said cylinders, at alternate strokes of their pistons; means to contemporaneously terminate the supply of compressed air to selected cylinders in the series and to admit a combustion charge to said selected cylinders at each fourth stroke of said pistons, and means to terminate the supply of compressed air and to admit a combustion charge to all of said cylinders at each fourth stroke of their pistons, substantially as set forth.

3. In an internal combustion engine, comprising a cylinder provided with inlet and exhaust valves; the combination with a rotary cam shaft having a plurality of cams; of a slide rod in parallel relation to said cam shaft; a series of valve operating levers pivoted to independently oscillate on said rod, and arranged to be contemporaneously shifted axially therewith; a roller carried by each of said levers arranged to engage selected cams on said shaft; a stationary shaft; levers pivoted on said stationary shaft and provided with rollers arranged to engage said valve shifting levers; centrally pivoted levers, adjacent to said valves, valve rods adjustably connected to the levers on the stationary shaft and pivotally connected to said centrally pivoted levers, which latter are arranged to actuate their respective valves in accordance with the movement of said cams and the rollers coöperating therewith, substantially as set forth.

4. In an internal combustion engine, comprising a cylinder provided with inlet and exhaust valves, the combination with a rotary cam shaft having a plurality of cams; of a slide rod in parallel relation to said cam shaft; a series of valve operating levers pivoted to independently oscillate on said rod; and arranged to be contemporaneously shifted axially therewith; a stationary shaft; levers pivoted on said stationary shaft and provided with rollers arranged to engage said valve operating levers; connections between said pivoted levers and said valves; a vertical shaft connected to shift said rod axially; a handle for said vertical shaft; and means coöperative with said handle whereby the successive positions of said rod are determined, substantially as set forth.

5. In an internal combustion engine, comprising a cylinder provided with inlet and exhaust valves; the combination with a rotary cam shaft having a plurality of cams; of a slide rod in parallel relation to said cam shaft; a series of valve operating levers pivoted to independently oscillate on said rod and arranged to be contemporaneously shifted therewith; a stationary shaft; levers pivoted on said stationary shaft and provided with rollers arranged to engage said valve operating levers; connections between said pivoted levers and said valves; a vertical shaft connected to shift said rod axially; a handle for said vertical shaft; a pawl on said handle; and a quadrant having notches therein arranged to be engaged by said pawl, whereby the extent of the successive axial movements of said rod is determined, substantially as set forth.

6. In an internal combustion engine, comprising a cylinder provided with inlet and exhaust valves; the combination with a rotary cam shaft having a plurality of cams; of a slide rod in parallel relation to said cam shaft; a series of valve operating levers pivoted to independently oscillate on said rod, and arranged to be contemporaneously shifted axially therewith; a vertical shaft connected to shift said rod axially; a handle for said vertical shaft; a spark-timer mounted on the cam shaft, a contact arm carried by said shaft in operative relation to said spark-timer; buffer levers pivoted at each side of said handle; a link connecting said levers; a link connecting one of said levers and said spark-timer; means carried by said handle arranged to engage in its extreme position one or the other of said buffer levers to set said spark-timer in accordance with the forward or reverse direction in which the engine is to be operated, substantially as set forth.

851,990. GAS-REGULATOR. DANIEL P. SKELLENGER, Morristown, N. J. Filed Jan. 29, 1906. Serial No. 298,430.

Claim.—1. The combination with a ferrule or nipple, the inner bore of which has two diameters, the smaller of which has a constricted outer end, of a ball valve of less diameter than the smaller diameter of the ferrule or nipple and a valve seat removably secured in the larger portion of the ferrule or nipple and provided with a grooved bore so that even when the valve rests upon its seat, it does not entirely cut off the supply of gas.

2. The combination with a ferrule or nipple, having an enlarged screw threaded lower end, of a ball valve of less diameter than the diameter of the smaller end of the ferrule or nipple, and a valve seat having a grooved bore and removably screwed in the threads of the ferrule or nipple,

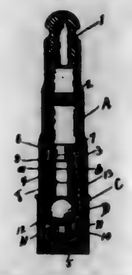

it being of less length than the length of the threads, whereby the nipple may be screwed to the pillar cock.

852,000. FURNACE-RAIL. MAX SKLOVSKY, Moline, Ill., assignor to Deere & Company, Moline, Ill., a Corporation of Illinois. Filed Feb. 27, 1905. Serial No. 247,589.

Claim.—A compound furnace-rail comprising a heavy cast-iron bed-member having a deep longitudinal groove along its upper side and a comparatively narrow steel rail fitted and embedded in said groove and having its bearing edge slightly above the surface of said bed-member.

852,001. SHOCK-ABSORBER. RUDOLPH H. SMITH, Englewood, N. J. Filed Mar. 6, 1906. Serial No. 304,438.

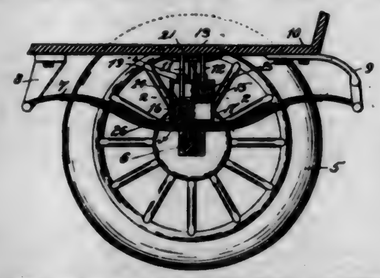

Claim.—1. A shock absorber embodying a casing and a pair of rods secured to the axle and the vehicle body respectively, and a pair of coiled springs within said casing and secured to the same and to said rods whereby these will be respectively compressed and extended upon the respective relative movements of the body and axle toward and from each other.

2. The combination with a cylinder, of a pair of pistons projecting into the same, said cylinder and pistons secured to the axle and vehicle respectively, a coil extension and compression spring secured to each piston and arranged so that one of these will be compressed and the other extended upon the relative movement of the axle from the body and one will be extended and the other compressed upon the relative movement of the axle toward the body.

3. In a vehicle embodying a body and an axle and a spring connecting these, the combination with an abutment connected to the axle, of a pair of heads secured to the body, a coil spring below one of these and between the same and the axle and secured thereto and to the axle, and a coil spring above the other of these and between the same and said abutment and secured thereto and to said abutment, the organization being such that each coil spring will be compressed when the other is extended.

4. In a vehicle having a body and an axle connected by a spring, the combination with a double intercommunicating cylinder carried by the axle, a pair of rods carried by the body and extending into the cylinder and being provided with heads located therein, a spring between one head and the top of the cylinder, and a spring between the other head and the bottom of the cylinder, said springs being connected to the cylinder and to said heads so that movement in opposite directions will respectively compress and expand the coiled springs.

5. The combination with a vehicle embodying an axle and a body, of a pair of rods carried by one of these, a pair of open side cylinders joined to one another at their open sides and producing an intercommunication between substantially their entire length, a coiled spring located in each of said cylinders, one of said rods extending into each of said cylinders and engaging the spring therein for compressing and extending the same upon opposite relative movements of the body and axle respectively.

852,002. ELASTIC TIRE FOR WHEELS. WILLIAM R. SMITH, Buffalo, N. Y., assignor of one-half to Herbert H. Hewitt, Buffalo, N. Y. Filed May 8, 1906. Serial No. 315,804.

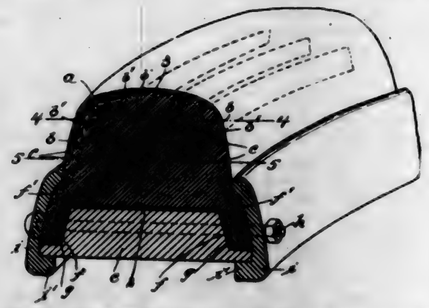

Claim.—An elastic tire comprising a resilient body of vulcanized rubber, and flattened non-metallic flexible bushings having internal surfaces of unvulcanizable or non-adhesive material embedded in said body, and normally closed or pressed together by the resilience of the body, so that substantially the entire cross sectional area of the body is occupied by the resilient material thereof, the flattened sides of said bushings being separable and constituting the sides of slits in the said body.

852,003. LETTER SEALING AND STAMPING MACHINE. JAMES N. STACY, Portland, Oreg. Filed Mar. 6, 1906. Serial No. 304,567.

Claim.—1. In a machine of the character specified, a tapered moistener adapted to enter the angular space formed between the sealing flap and body of the package and hinged at the edge remote from the tapered edge and having a pendent portion, a spring exerting pressure upon said pendent portion to hold the moistener in normal position, an arm, and an adjustable stop applied to said arm to limit the movement of the moistener in one direction.

2. In a machine of the character specified, a loosely mounted moistener for the sealing flap, and a second moistener for the postage stamp or address slip, the latter moistener being arranged above the sealing flap moistener and adapted to actuate the latter when itself operated.

3. In a machine of the character set forth, the combination of a pivotally mounted sealing flap moistener, and a second moistener located above the sealing flap moistener and adapted to actuate the latter upon application of pressure thereto.

4. In a machine of the character specified, the combination of an elongated sealing flap moistener inwardly tapered and having its lower side adapted to apply the moistening medium and its top side adapted to form a support for the package, said moistener being pivotally supported and spring actuated, a forwardly extended spring actuated pivoted arm, and a second moistener at the outer end thereof overhanging an end portion of the sealing flap moistener to actuate the latter when itself operated.

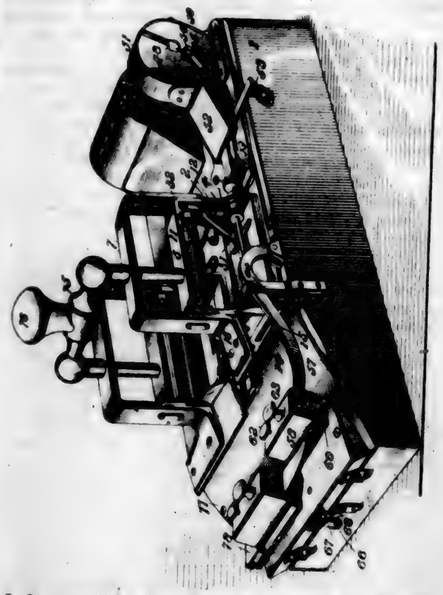

5. In a machine of the character specified, the combination of a sealing flap moistener pivotally supported and tapered inwardly from the pivoted edge, other moisteners arranged above the sealing flap moistener and carried by a common support, and adapted to dampen the envelop or package to cause adhesion thereto of the stamp and address slips, slip feeding, cutting and affixing mechanisms, and a single handle for effecting simultaneous movement of said mechanisms.

6. In a machine of the character specified, the combination of a strip feeding mechanism, an operating frame for actuating said strip feeding mechanism, cutting mechanism actuated by the operating frame for severing the strip, a pressure head for applying the separated portion of the strip to the package, and a pressure arm for sealing the package simultaneously with the application of affixing the severed portion of the strip thereto, the cutting mechanism, the pressure head and the pressure arm being carried by the said operating frame.

7. In a machine of the character set forth, the combination of a slip feeding mechanism, an operating frame, a cutting mechanism for severing the strip and actuated by the operating frame, a pressure head, and a pressure arm extended from the pressure head and deflected in its length to conform to the deflected edge portion of the sealing flap so as to apply the force to the gummed edge portion thereof.

8. In a machine substantially as specified, the combination of a bed plate provided with a way or passage for the strip, a reciprocating feeder having spurs to engage with the strip to feed the same, said feeder having a lateral extension and normally tending to move away from the way or passage through which the strip is directed, means for

holding the feeder repressed while advancing and in normal position, and other means for holding the feeder in engagement with the strip when nearing the limit of its forward stroke, and means for regulating the last mentioned and confining means to admit of regulating the feed of the strip.

9. In a machine of the character specified, the combination of a reciprocating feeder adapted to advance the strip, confining means for the feeder to hold the same in engagement with the strip and having cut away portions, an adjustable confining means for the feeder to admit of regulating the feed of the strip, means for disengaging the feeder from the strip when the latter has been advanced the required distance, and resetting means for returning the feeder to normal position when reaching the limit of its return stroke.

10. In a machine of the character set forth, the combination of a bed plate provided with a way or passage for a strip, a reciprocating feeder having a lateral extension, confining means for said feeder to hold the same in engagement with the strip when advancing and having cut-away portions, a flat spring secured at one end to the bed plate and having its opposite end deflected to enter a cut-away portion of said confining means for the feeder, and an adjustable feed regulator for holding the feeder in engagement with the strip for a greater or less distance of its forward movement.

11. In a machine of the character specified, the combination of a bed plate provided with a way or passage for a strip, a feeder having an extension, confining means overhanging the extension of the feeder and having a notch and a cut-away portion, spring resetting means secured at one end to the bed plate and extending about parallel therewith and having the opposite end projected into the notch of the feeder confining means, a feed regulator having an extension forming in effect a continuation of the feeder confining means, and means for disengaging the feeder from the strip when at the predetermined point of its forward stroke.

12. In a machine of the character specified, the combination of a bed plate provided with a strip way or passage, a spring actuated feeder having lateral extension, confining flanges upon opposite sides of the feeder to extend over the extensions thereof and having corresponding notches and cut away portions, horizontal springs secured at one end to the bed plate and having the opposite end bent and extended into said notches, a U shaped feed regulator having a centrally disposed trip extended into the path of the feeder, and means for adjusting the said feed regulator and holding it in an adjusted position.

13. In a machine of the character specified, the combination of a bed plate having a strip way or passage and having slots at opposite sides of said strip way, a slide having pendent portions at its rear end to extend through the slots of the bed plate, a spring having connection with the pendent portions of the slide to return and normally hold the latter in a given position, and a feeder connected with said slide and actuated thereby.

14. In a machine of the character set forth, the combination of strip cutting and feeding mechanisms, a holder for the strip roll, a brake member in contact with the strip, and a covering piece for the roll holder and brake member provided with an extension adapted to receive a lock device to prevent tampering with the parts.

15. In a machine of the character described and in combination with strip cutting and affixing mechanisms, a feeder, and means for confining the feeder and holding it in positive engagement with the strip for a definite length of its stroke, the same consisting of a plate having front and rear notches or cut away portions, the front notch having its forward edge beveled to provide an incline upon which the feeder is adapted to ride to insure and effect positive disengagement thereof from the strip.

16. In a machine of the character described, the combination with strip cutting and affixing mechanisms, of a feeder for the strip provided with a lateral extension, and means for holding the feeder to its work for a definite length of its stroke, said means consisting of a plate having front or rear notches or cut away portions, the front notch being of a less length than the length of the lateral extension of the feeder and having the forward edge beveled or inclined to engage with the front end of said lateral extension and deflecting the same upward through the notch, whereby instantaneous release of the feeder from the strip is effected.

17. In a machine of the character described, the combination of strip cutting and affixing mechanisms, a feeder provided with a lateral extension having its front end upwardly deflected, and a feed regulator consisting of a plate having a notch, the forward edge of which is beveled to provide an incline to engage with the deflected end of the feeder extension to cause the same to move upward and effect a quick release of the strip when the latter has reached the required advancement.

18. In a machine of the character described, the combination of strip cutting and affixing mechanisms, a feeder for the strip having a lateral extension, the front end of which is upwardly deflected, and an adjustable feed regulator comprising a plate having a notch of a less length than the length of the feeder extension and having the front edge of said notch upwardly beveled to provide an incline to engage with the deflected end of the feeder extension to effect instantaneous release of the strip.

19. In combination, strip cutting and affixing mechanisms, a reciprocating feeder having opposite lateral extensions, side plates having notches for said lateral extensions to pass through, means for compelling the extensions of the feeder to pass downward through said notches, a plate having opposite notches for the lateral extensions of the feeder to pass upward through and having the front edge of the notches beveled to form inclines, and means for adjusting and securing said plate in the required adjusted position.

852,004. AUTOMATIC TELEPHONE SWITCH SYSTEM. JOHN WICKS and DONALD D. MCKAY, Riverside, Cal. Filed Aug. 30, 1905. Serial No. 276,407.

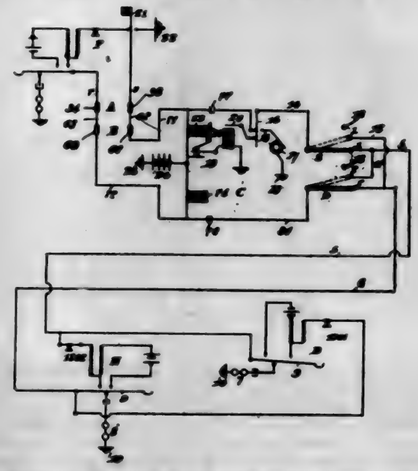

Claim.—1. In an automatic telephone exchange system, the combination with a party line including two wires, of party signals, each of which is connected to one only of the wires, ringing current-generating means, and line-selecting mechanism including wipers connecting the generating means to either of the wires of the said party line and constituting part of the ringing current carrying means between the generating means and the signals.

2. In an automatic telephone exchange system, the combination with a party line including two wires, of party signals, each of which is connected to one only of the wires, ringing current-generating means, line-selecting mechanism including contacts bridged to the wires of the party line, and wipers co-operating with the contacts and having connections with the generating means to electrically connect the same to either wire of said party line, said wipers constituting part of the means for carrying the ringing current from the generating means to the signals.

3. In an automatic telephone exchange system, the combination with a party line including two wires, of party signals connected respectively to the wires, ringing current-generating means, line-selecting mechanism including banks of contacts, certain of said contacts being bridged to the wires of said party line, wipers operating over said contacts, and connections between the wipers and current-generating means to cause the connection of the latter to either wire of the line, said connections being independent of the line wires.

4. In an automatic telephone exchange system, the combination with a plurality of lines including a party line having two wires, of party signals, each of which is connected to one of the wires and is grounded, ringing current-generating means also grounded, line-selecting mechanism including contacts, wipers operating thereover, bridge connections between certain of the contacts and the different wires of the party line, and electrical connections between the generating means and the wipers that engage the bridged contacts, said connections being separate from the line wires.

5. In an automatic telephone exchange system, the combination with a plurality of lines including a party line having two wires, of party signals, each of which is connected to one only of the wires, line-selecting mechanism including selector and connector switches that co-operate with the different lines, ringing current-generating means electrically connected to the selecting mechanism, and bridging connections between the party line wires and the connector switches, whereby the generating means may be electrically connected to either wire independently of the other.

852,005. WATER-PURIFYING DEVICE FOR STEAM-BOILERS. WILLIAM P. WIEMANN, Allegheny, Pa., assignor to Wiemann-Munhall Company, Pittsburg, Pa., a Copartnership. Filed Dec. 3, 1906. Serial No. 346,064.

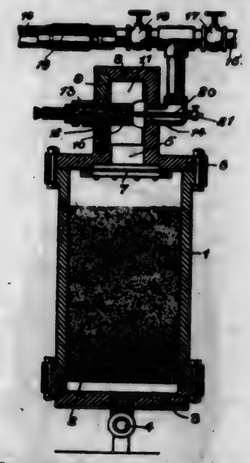

Claim.—1. In a water purifying apparatus for boilers the combination of a boiler, a filter connected to the boiler and means connected to the filter and to the boiler for imparting a uniform circulating pressure to the water.

2. In a water purifying apparatus for boilers, the combination of a boiler, a filter connected at its lower end to the boiler, and means connected to the boiler and to the upper end of the filter for imparting a uniform circulating pressure to the water.

3. In a purifying apparatus for boilers, the combination of a boiler, a filter connected to the boiler, and a centrifugal pump connected to the filter and to the boiler.

4. In a water purifying apparatus for boilers the combination of a shell for the filtering material and a centrifugal pump having its box or case secured to the filter shell.

5. In a water purifying apparatus for boilers, the combination of a shell for the filtering material and a centrifugal pump having its case or box formed integral with a portion of said shell.

6. In a water purifying apparatus for boilers, the combination of a boiler, a filter connected to the boiler, a centrifugal pump connected to the boiler and the filter and means for removing air or vapor from the pump.

7. In a water purifying apparatus for boilers, the combination of a boiler and filter connected to the boiler in such manner as to permit the movement of boiler water through the filter and means arranged in the line of connection of the filter to the boiler for imparting a uniform circulating pressure to the water in its movement through the filter.

8. In a water purifying apparatus for boilers the combination of the boiler, a filter connected to the boiler and a centrifugal pump arranged in the line of connection of the filter to the boiler.

852,006. FLEXIBLE WHEEL. ERNEST WIGGLESWORTH, Leeds, England. Filed Nov. 16, 1906. Serial No. 343,754.

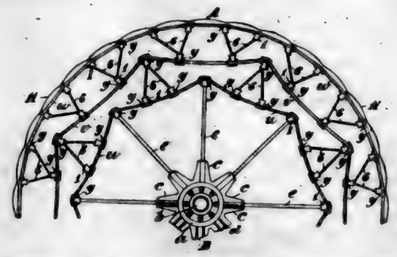

Claim.—1. In a flexible wheel, the combination with a hub provided with a number of adjustable spokes, of a number of concentric flexible fibrous rims, one of which bands is supported by the outer ends of the spokes, each of the other bands being supported and loosely attached to each other.

2. In a flexible wheel, the combination of a hub provided with sockets for the reception of the spokes, means for regulating the position of each spoke separately and simultaneously, spokes having enlarged ends adapted to engage with projecting troughs fixed to flexible fibrous bands, and a number of concentric flexible fibrous bands retained at the proper distance apart by plates, said plates being arranged in pairs, as set forth.

3. In a flexible wheel, the combination of the spokes having enlarged ends, with a hub having a central boss with a number of sockets arranged around it and radiating to its center, each socket having a hole varying in size for the reception of the spokes, and for a number of balls adapted to press against the inner end of each spoke, a pin to pass in the end of the said hole at the face of the boss, each of said pins being screwed into a disk sliding upon the boss, and a cap screwed upon the boss and adapted to press the pins simultaneously inward for adjusting the said spokes to their work.

4. In a flexible wheel, the combination of a hub having sockets for the reception of the spokes, spokes fitting into holes in said sockets and having enlarged ends, means for adjusting the position of the spokes in the sockets, a number of concentric flexible fibrous bands arranged around the spokes, sockets fixed to said bands, and plates for retaining the bands at the required distances apart, said plates being adapted to engage with the sockets and to slightly oscillate therein.

5. In a flexible wheel, the combination of a number of flexible fibrous bands adapted to be arranged concentrically around the spokes of the wheel, sockets fixed to each flexible band, each socket composed of a main portion and having pins projecting in rows from its surface for attaching it to the flexible band, and a trough from its undersurface, plates for retaining the flexible bands apart, said plates being arranged in pairs so that two of their edges are in contact with one another, and the ends of the plates when inserted in the troughs of the sockets are prevented from moving laterally but are free to oscillate therein.

6. In a flexible wheel, the combination with a hub provided with a number of adjustable spokes, of a plurality of concentric flexible bands, one of which is supported by the spokes, and supporting connections between said bands.

7. In a flexible wheel, the combination of a hub provided with sockets for the reception of spokes, means for regulating the position of the spokes, spokes engaged with sockets fixed to flexible bands, a plurality of flexible bands, and means for retaining said bands a proper distance apart.

8. In a flexible wheel, the combination of a hub having sockets for the reception of spokes, spokes fitting into holes in said sockets, means for adjusting the position of spokes in the sockets, a plurality of concentric flexible bands arranged around the spokes, sockets fixed to said bands, and means engaging said sockets and adapted to oscillate therein for retaining the bands at the required distance apart.

9. In a flexible wheel, the combination of a plurality of flexible bands adapted to be arranged concentrically around the spokes of the wheel, sockets fixed to each flexible band, each socket composed of a main portion and having pins projecting in rows from its surface for attaching it to the flexible band, a trough, and plates arranged in pairs connected together at one edge and adapted to engage the troughs of said sockets.

852,007. AIR-BRAKE APPARATUS. ROBERT J. WILSON, Pittsburg, Pa. Filed Nov. 16, 1905. Serial No. 287,664.

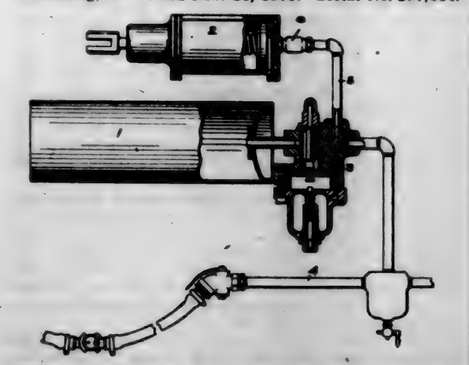

Claim.—1. In an air brake system, the combination of an auxiliary reservoir, brake cylinder and triple valve, and an automatically acting ball valve in the passage from the auxiliary reservoir to the brake cylinder and seating toward the brake cylinder, said valve being normally open and arranged to throttle said connection on an excess rush of air.

2. In an air-brake system, the combination of an auxiliary reservoir, brake cylinder and triple valve, and a valve in the connection between the auxiliary reservoir and brake cylinder and operable by an excess rush of air to throttle said connection independently of the movement of the brake cylinder piston.

3. In an air-brake system, the combination of an auxiliary reservoir, brake cylinder and triple valve, and a valve in the connection between the auxiliary reservoir and brake cylinder arranged to seat toward the brake cylinder, said valve being normally open and being arranged to throttle said connection by an excess rush of air independently of the movement of the brake cylinder piston.

4. In an air-brake system, the combination of an auxiliary reservoir, brake cylinder and triple valve, and a regulating check valve in the connection between the auxiliary reservoir and brake cylinder, said valve being arranged to remain normally open and to partially close said connection by an excess rush of air independently of the movement of the brake cylinder piston.

5. In an air brake system, the combination of an auxiliary reservoir, brake cylinder and triple valve, and an automatically acting check valve in the passage from the auxiliary reservoir to the brake cylinder and seating toward the brake cylinder, said check valve being normally arranged to open by gravity and to move toward its closed position on an excess rush of air.

6. In an air brake system, the combination of an auxiliary reservoir, brake cylinder and triple valve, and a ball valve in the connection between the reservoir and the brake cylinder, said valve being arranged to remain normally open and to partially close said connection upon an excess rush of air.

852,008. BY-PASS VALVE. WILLIAM L. WILSON, Hinton, W. Va. Filed May 19, 1906. Serial No. 317,832.

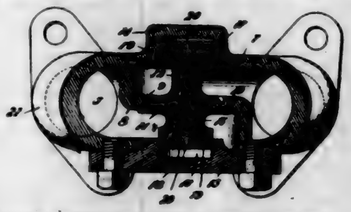

Claim.—In combination with a cylinder having a movable piston, a valve adapted to equalize the pressure on both sides of said piston, said valve consisting of a casing having a valve seat, a valve adapted to engage said seat, said valve having on its opposite faces extending stems, pistons located at the ends of said valve stems, recesses formed in the casing and receiving said pistons and adapted to operate as dash pots, said pistons having ports which extend from the piston sides to the faces thereof.

852,009. ANIMAL-TRAP. JOHN WOLF, Carlisle, Pa. Filed Jan. 10, 1907. Serial No. 351,701.

Claim.—In combination, a base having an opening, platforms pivoted intermediate their ends to the base, said pivotal points being at the ends of the opening in the base, guides arranged adjacent the longitudinal edges of the opening, said guides consisting of slotted housings approximately square in cross section, the slots being positioned in the top thereof and adjacent the openings and a hood movable in the guides, said hood having angular portions fitting within the guides.

852,010. SHIPPING-CASE. CHARLES O. WRIGHT, Bluefield, W. Va. Filed Sept. 12, 1906. Serial No. 334,249.

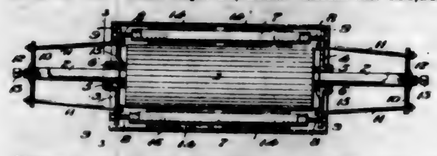

Claim.—1. In a shipping case for grinding rolls, the combination, of longitudinal sections adapted to inclose the roll and having threaded bosses meeting to form annular bosses, and threaded collars engaging said annular bosses to secure the sections together.

2. In a shipping case for grinding rolls, the combination of separable longitudinal sections adapted to inclose the roll and having segmental bosses which meet when the sections are brought together, and means engaging said bosses to secure the sections together.

3. In a shipping case for grinding rolls, the combination, of separable longitudinal sections adapted to inclose the roll and having segmental bosses at their ends forming annular bosses threaded externally, and threaded collars engaging said bosses to secure the sections together.

4. In a shipping case for grinding rolls, the combination, of separable longitudinal sections adapted to inclose the roll and having segmental bosses at their ends forming annular bosses threaded externally, and threaded collars engaging said bosses to secure the sections together, and a removable case or cover inclosing the sections of the shipping case.

5. In a shipping case for grinding rolls, the combination, of separable longitudinal sections adapted to inclose the roll and having segmental bosses at their ends forming annular bosses threaded externally, threaded collars engaging said bosses, and a removable inclosing case comprising hinged semi-cylindrical sections and means for securing said hinged sections together.

6. In a shipping case for grinding rolls, the combination, of separable longitudinal sections adapted to inclose the roll and having segmental bosses at their ends forming annular bosses threaded externally, and threaded collars engaging said bosses; together with a removable inclosing case comprising semi-cylindrical sections hinged together at one edge and formed at their other edge with ears which interlock when the sections of said inclosing case are brought together, and a rod engaging the ears.

7. In a shipping case for grinding rolls, the combination, of separable longitudinal sections adapted to inclose the roll and having threaded segmental bosses, threaded collars adapted to engage said bosses, plates adapted to engage the ends of the shaft of the grinding-roll, and rods or bolts connecting said plates to the aforesaid longitudinal sections.

8. In a shipping case for grinding rolls, the combination, of two longitudinal sections each comprising opposite half-disks, adjustable connections between the same and threaded segmental bosses on said half-disks, collars engaging the threaded bosses to connect the longitudinal sections together, plates adapted to engage the ends of the shaft of the grinding-roll, and bolts connecting said plates to the disks.

9. In a shipping case, the combination, of two longitudinal sections each comprising opposite half-disks, oppositely threaded bolts engaging said half-disks and threaded tubes engaging the bolts to vary the distance between the half-disks, and means for securing the sections together upon the grinding-roll.

10. In a shipping case for grinding-rolls, the combination, of two separable longitudinal sections each comprising opposite half-disks having segmental openings and corresponding bosses surrounding the same, said bosses being threaded, oppositely threaded bolts engaging the outer edges of the half-disks and threaded tubes engaging the bolts; together with threaded collars engaging the bosses to secure the longitudinal sections together on the roll.

11. In a shipping case for grinding rolls, the combination, of two separable longitudinal sections each comprising opposite half-disks having segmental openings and bosses surrounding the same, said bosses being threaded, oppositely threaded bolts engaging the outer edges of the half-disks and threaded tubes engaging the bolts; together with threaded collars engaging the bosses, plates adapted to engage the ends of the shaft of the grinding-roll, and bolts connecting said plates to the disks.

12. In a shipping case for grinding rolls the combination, of two separable longitudinal sections each comprising opposite half-disks having segmental openings and bosses surrounding the same, said bosses being threaded, oppositely threaded bolts engaging the outer edges of the half-disks, threaded tubes engaging the bolts and packing sleeves mounted on said tubes; together with threaded collars engaging the bosses, plates adapted to engage the ends of the shaft of the grinding-roll, bolts connecting the plates to the disks, and an inclosing case, substantially as shown and described.

852,011. EXTENSION-TABLE LOCK. JOHN L. ARNOLD, Canton, Ohio. Filed Oct. 18, 1906. Serial No. 339,443.

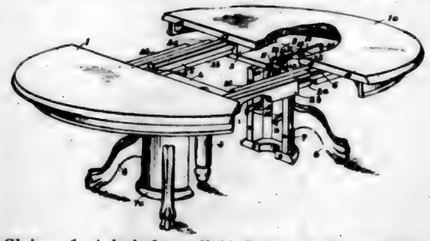

Claim.—1. A lock for a divided-pedestal extension-table comprising two posts on the inner sides of the walls of one pedestal part, a crank journaled on the bridging of the other pedestal part, two fingers pivoted on the inner sides of the walls of the same pedestal part, and a bail with suitable guides having the ends of its arms pivoted to the inner ends of the fingers, and its cross-bar resting across the crank, the fingers being adapted to operate against the upper-inner sides of the posts when the pedestal parts are approximately closed.

2. A lock for a divided-pedestal extension-table comprising two posts on the inner sides of the walls of one pedestal part, a crank journaled on the other pedestal part, two fingers pivoted on the inner sides of the walls of the same pedestal part, and a substantially inverted V-shaped bail pivoted to the fingers and adapted to be operated by the crank applied to its apex, the fingers being adapted to operate against the posts to close the table when the pedestal parts are brought approximately together.

3. A lock for a divided-pedestal extension-table comprising two posts on one pedestal part, a crank journaled on the other pedestal part, two fingers pivoted on the same pedestal part, and a substantially inverted V-shaped bail pivoted to the fingers and adapted to be operated by the crank applied to its apex, the fingers being adapted to operate against the posts to close the table when the pedestal parts are brought approximately together.

4. In a lock for a divided-pedestal extension-table, locking fingers pivoted on one pedestal part, an adjacent crank journaled on the same part, and a substantially inverted V-shaped bail pivoted to the fingers and having operative connection at its apex with the crank, means for vertically adjusting the operating end of the crank; and means on the other pedestal part adapted to co-operate with the fingers.

5. In a lock for a divided-pedestal extension table, locking fingers pivoted on one pedestal part, an adjacent crank

journaled on the same part, and a substantially inverted V-shaped bail pivoted to the fingers and having operative connection at its apex with the crank; and means on the other pedestal part adapted to co-operate with the fingers.

6. In a lock for a divided-pedestal extension table, locking fingers pivoted on one pedestal part, an adjacent crank journaled on the same part, and an operative connection in a direct line between the crank and each of the fingers; and means on the other pedestal part adapted to co-operate with the fingers.

7. In a lock for a divided-pedestal extension table, locking fingers pivoted on one pedestal part, a flexible substantially inverted V-shaped bail connected with the fingers, and operating mechanism applied to the apex of the bail; and means on the other pedestal part adapted to co-operate with the fingers.

8. In a lock for a divided-pedestal extension table, locking fingers mounted on one pedestal part, a substantially inverted V-shaped bail connected with the fingers and having a cross bar at its apex, a crank mounted on the same part adapted to operate against the inner side of the cross-bar and to be stopped against one side of the bail when rotated beyond the dead center; and means on the other pedestal part adapted to co-operate with the fingers.

852,012. CHARGING-TRUCK FOR ANNEALING-FURNACES. JOHN G. BLUM, Toledo, Ohio. Filed July 15, 1905. Serial No. 269,806.

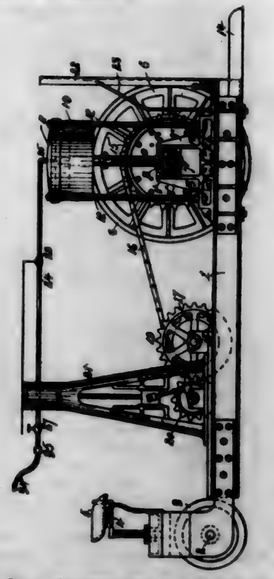

Claim.—1. In a charging truck, a frame, an axle near one end of the frame, a piston rigidly supported upon the axle, a cylinder in operative relation with the piston, and connections between the cylinder and frame.

2. In a charging truck, a horizontal frame, driving wheels at one end and a steering wheel at the other end of the frame, a driving mechanism on said frame connected with said driving wheels, a mechanism supported by the axle of the driving wheels for raising and lowering one end of the frame, and means for connecting a stationary source of power with said two mechanisms, whereby the truck may be driven from place to place and the end of said frame raised and lowered at will.

3. In a charging truck, a horizontal frame, forwardly projecting arms secured to the front of the frame, driving wheels and a steering wheel for the truck, a piston and cylinder adapted to raise and lower the front end of the frame, a driving engine on the frame connected with the driving wheels, a pipe connected with said cylinder and with said driving engine, and means for extensibly connecting said pipe with an air-compressor.

4. In a charging truck, a horizontal frame, a pair of driving wheels at one end of the frame, a steering wheel at the other end of the frame, an axle for the driving wheels, a piston supported upon the axle, a cylinder upon the piston, connections between the cylinder and the frame, an engine on the truck connected with the driving wheels, and extensible means, adapted for connection with said cylinder and with said engine, for conveying power from a stationary source.

852,013. LEVELING DEVICE. HERBERT BROWN, Rochford, S. D. Filed May 31, 1906. Serial No. 319,595.

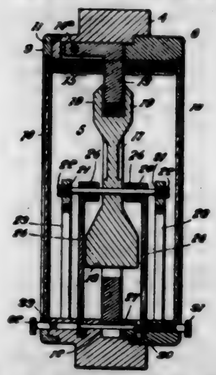

Claim.—1. A device of the character described comprising a body, a graduated dial therein, a weighted vernier pivotally mounted to coact with said dial, clamping arms to engage said vernier, and a screw rod for operating said clamping arms.

2. A device of the character described comprising a body, a graduated dial therein, a swinging indicator to coact with said dial, clamps to engage said indicator, and a screw for operating said clamps.

3. A device of the character described comprising a body having an opening therein and means whereby it may be attached to a support, bezels for closing said opening, a graduated dial retained in said opening by one of said bezels, means for adjusting said dial, bearings, a weight pivotally suspended from said bearings, a vernier upon said weight to coact with said dial, and means for clamping said weight against movement, substantially as described.

4. A device of the character described comprising a body having an opening therein and means whereby it may be attached to a support, bezels for closing said opening, a graduated dial retained in said opening by one of said bezels, means for adjusting said dial, bearings, a weight pivotally suspended from said bearings, a vernier upon said weight to coact with said dial, clamping arms to engage said weight, and a screw rod for operating said arms, substantially as described.

5. A device of the character described comprising a body having an opening therein and means whereby it may be attached to a support, bezels for closing said opening, a graduated dial retained in said opening by one of said bezels, a screw for adjusting said dial, bearings, a weight pivotally suspended in said bearings, a vernier carried by said weight to coact with said dial, clamping arms to engage said weight, and a screw rod to operate said arms, substantially as described.

852,014. TYPE-WRITING MACHINE. LOUIS P. DIAS, Ilion, N. Y., assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y., a Corporation of New York. Filed Jan. 11, 1904. Serial No. 188,505.

Claim.—1. In a typewritting machine, the combination of a platen frame; a platen having a shaft journaled in said frame; and a line space feed device comprising a rock shaft journaled in said frame and having an enlarged opening for the platen shaft.

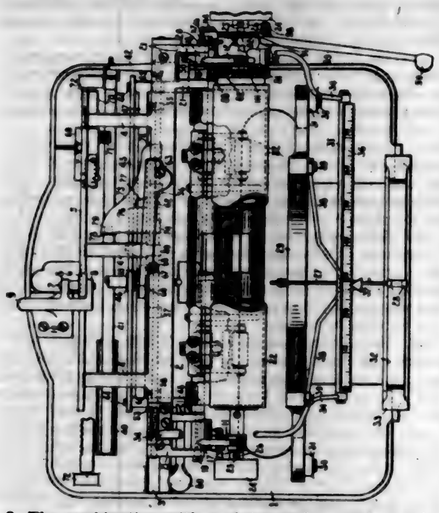

2. The combination with a platen and a carriage, of a letter space mechanism comprising a feed rack carried by a frame pivoted to said carriage and also movable endwise thereon; an oscillating member comprising a carriage-returning handle and having a line space pawl connected thereto; said oscillating member adapted to engage a portion of said feed rack frame and to be disengaged therefrom by relative endwise movement of said carriage and said feed rack frame; and a stop for arresting said feed rack frame.

3. The combination with a carriage, of a letter space mechanism comprising a feed rack carried by a frame pivoted to said carriage and also movable endwise thereon; an oscillating member comprising a carriage-returning handle; said oscillating member adapted to engage a portion of said feed rack frame and to be disengaged therefrom by relative endwise movement of said carriage and said feed rack frame; and a stop for arresting said feed rack frame.

4. The combination with a platen and a carriage, of a letter space mechanism comprising a feed rack carried by a frame pivoted to said carriage; a member which oscillates about an axis that lies fore-and-aft of the machine, said member engaging a portion of said pivoted frame and carrying a line space pawl; a line space wheel operated by said pawl; and an adjustable guard interposed between said wheel and pawl for controlling the engagement of said pawl with said ratchet wheel.

5. The combination with a movable carriage and a platen journaled therein, of a letter space feed mechanism comprising a feed rack carried by a frame pivoted to said carriage; a line space wheel connected to said platen and having ratchet teeth on the side thereof; an oscillating member having its axis arranged transversely of the axis of the platen and carrying a pawl co-operating with said line space ratchet wheel; said oscillating member also directly engaging a portion of said feed rack frame; and a handle connected to said oscillating member, whereby a single movement of the handle in the general direction of the travel of the carriage is effective to disengage the rack, produce a line spacing movement of the platen and return the carriage.

6. The combination with a platen and a carriage therefor, of a letter space rack pivotally mounted on said carriage; and a carriage returning handle; and connections operated by a pressure upon said handle in the direction of the travel of the carriage for imparting a line-space movement to said platen, raising said letter space rack, returning said carriage and then releasing said letter space rack.

7. In a typewriting machine having a movable carriage, the combination of a platen journaled in a platen frame; a rock shaft journaled in said platen frame transversely of said platen; a carriage-returning handle and a line space pawl that slides in a bearing connected to said rock shaft; a letter space feed rack carried by a frame pivoted to said carriage; and an eccentric carried by said rock shaft and directly engaging a portion of said feed rack frame.

852,015. BALE OF FIBROUS MATERIALS. HARRY L. DUNCAN, New York, N. Y. Filed Mar. 21, 1903. Serial No. 148,810.

Claim.—1. A cylindrical bale of substantially uniform density formed of nested helical layers having a substantially parabolic cross-section.

2. A cylindrical bale formed of nested layers having a substantially parabolic cross-section.

3. A cylindrical bale composed of nested layers having a substantially parabolic cross-section each layer having a substantially uniform density from center to circumference.

4. A cylindrical bale composed of nested layers having a varying cross-section, the portions of said layers adjacent the axis of the bale being more nearly perpendicular to said axis than portions more remote from said axis.

5. A cylindrical bale composed of nested layers, each having a substantially uniform density from center to circumference, said layers having a curved cross-section and the portions of said layers adjacent the axis of the bale forming a greater angle therewith than portions more remote from said axis.

852,016. COMBINED TYPE-WRITING AND ADDING MACHINE. ALBERT H. ELLIS, New York, N. Y., assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y., a Corporation of New York. Filed Oct. 2, 1903. Serial No. 176,457.

Claim.—1. The combination of a series of registering elements of different denominations, each independently driven to add numbers by frictional contact, one friction member for each registering element being adapted to continue its movement after the other has been arrested.

2. The combination of a series of registering elements of different denominations, each independently driven to add numbers by frictional contact, one of the contacting members for each registering element being adapted to continue its movement after the other has been arrested, and selective controlling means for said registering elements.

3. The combination of a series of registering elements of different denominations, each independently driven to add numbers by frictional contact, one of the contacting members for each registering element being adapted to continue

its movement after the other has been arrested; and means for controlling the movements of said registering elements through differential distances.

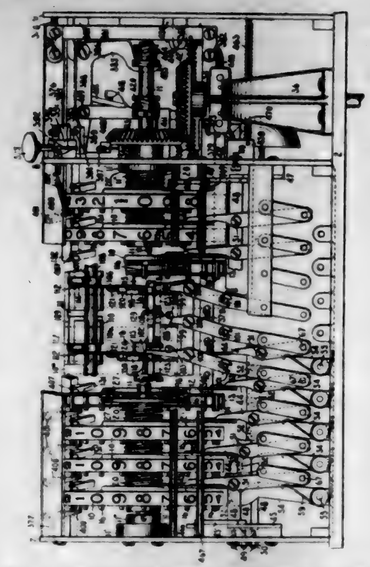

4. The combination of a series of registering elements of different denominations, each independently driven to add numbers by frictional contact, one of the contacting members for each of said registering elements being adapted to continue its motion after the other has been arrested; selective controlling means; and differential controlling means for said registering elements.

5. The combination of a series of registering elements of different denominations, each independently driven to add numbers by frictional contact, one of the contacting members for each of said registering elements being adapted to continue its movement after the other has been arrested; and a series of keys and connections for controlling the motion of said registering elements.

6. The combination of a series of register wheels; a group of keys common to said register wheels; means whereby any of said keys may control any of said wheels; and frictional driving means for operating said register wheels to add numbers.

7. The combination of a group of keys; a carriage; a series of register wheels controlled selectively by said keys and carriage; and frictional driving means for operating said register wheels to add numbers.

8. The combination of a rotary shaft and a series of register wheels of different denominations mounted on said rotary shaft and operatively connected thereto by frictional contact.

9. The combination of a series of register wheels of different denominations; a rotative driver; friction means connecting said rotative driver to each of said register wheels independently; and means for controlling the turning of said register wheels under the impulse of said driver to add numbers.

10. The combination of a rotative driver; a series of register wheels independently frictionally connected to said driver; means for controlling the movements of said register wheels under the impulse of said driver; and transfer devices between said register wheels.

11. The combination of a rotative driver; a series of register wheels independently frictionally connected to said driver; key controlled differential devices for controlling the movements of said register-wheels under the impulse of said driver; and transfer devices between said register wheels.

12. The combination of a rotative driver; a series of register wheels independently frictionally connected to said driver; a group of keys common to said register wheels; and selective means co-operating with said keys to selectively control the movements of said register wheels under the impulse of said driver.

13. The combination of a rotative driver; a series of driven members, each independently frictionally connected to said driver; and means for allowing to any selected driven member differential movements under the impulse of said driver.

14. The combination of a continuously rotative driver; a series of driven members, each independently frictionally connected to said driver and each having differential feed movements; and differential devices for controlling the movements of said driven members selectively.

15. The combination of a continuously rotative driver; a series of driven members, each independently frictionally connected to said driver, and each having differential feed movements; devices for controlling the movements of said driven members selectively; and keys for controlling said differential devices.

16. The combination of a continuously rotative driver; a series of driven members, each independently frictionally connected to said driver and each having differential feed movements; and keys for controlling the movements of said driven members under the impulse of said driver.

17. The combination of a continuously rotative driver; a series of driven members frictionally connected to said driver; a series of keys for selectively controlling the movements of said driven members under the impulse of said driver; and selecting means for placing any selected driven member under the control of the keys.

18. The combination of a continuously rotative driver; a series of driven members frictionally connected to said driver; a series of keys for selectively controlling the movements of said driven members under the impulse of said driver; and a carriage for connecting said driven members one after another to said keys.

19. The combination of a continuously rotative driver, a series of registering elements of different denominations having independent frictional connection with said driver, and digit determining means co-operating with each of said registering elements.

20. The combination of a continuously rotative driver, a series of registering elements having independent frictional connection with said driver, and means for allowing to any selected element a differential degree of freedom of motion under the impulse of said driver.

21. The combination of a rotary shaft; a series of register wheels mounted on said shaft and having independent frictional connection therewith; settable stop devices for holding said wheels against rotation but settable to allow to any of said wheels a freedom of motion with said shaft through differential distances.

22. The combination of a shaft, a registering wheel mounted loosely thereon, a friction disk fixed to said shaft on one side of said registering wheel; another friction disk slidably mounted on said shaft and engaging said registering wheel on its other side; and a spring pressing said slidable disk toward said wheel.

23. The combination of a shaft, a series of disks fixed to said shaft; a series of disks alternating with said fixed disks and slidably mounted on said shaft; a series of register wheels, one of said wheels being loosely mounted on said shaft between each fixed disk and its adjacent slidable disk; and a series of compression springs pressing said slidable disks against said register wheels.

24. The combination of a rotative driver, register wheels having frictional connection with said driver, and a series of settable stops carried by said register wheels.

25. The combination of register wheels, a driver adapted to actuate said register wheels by frictional contact, and settable stops carried by said register wheels.

26. The combination of a continuously rotative driver, register wheels having frictional connection with said driver, and a series of settable stops carried by said register wheels.

27. The combination with a series of register wheels each carrying a series of settable stops, of a series of keys and connections whereby any key may set its appropriate stop in any of said register wheels.

28. The combination of a register wheel having settable stops mounted therein, means for setting said stops, and means independent of the wheel for limiting the setting movement of said stops.

29. The combination of an adding wheel; means for actuating said wheel; a settable stop mounted in said wheel and zero setting mechanism for automatically setting said stop to arrest said wheel at the zero position.

30. The combination of a series of adding wheels; settable digit determining members mounted in said wheels; and means for automatically selecting and setting the appropriate digit-determining members carried by the several wheels to set said wheels to zero.

31. The combination of a series of register wheels; settable digit determining means carried by said wheels; digit selectors and denomination selectors for setting said digit determining means; and resetting means for said digit determining means operated by said denomination selectors.

32. The combination of a series of register wheels, a continuously rotative driver adapted to rotate said register wheels, and settable digit determining means carried by said register wheels.

33. The combination of a rotative driver, a series of register wheels having independent frictional connection with said driver, and settable limiting means carried by each of said register wheels, and a stop co-operating with said settable limiting means.

34. The combination of a series of register wheels, a continuously rotative driver adapted to rotate said register wheels, settable limiting means carried by each of said register wheels, and a movable stop co-operating with said settable limiting means.

35. The combination of a series of register wheels, a continuously rotative driver for said register wheels, and settable members carried by said register wheels and adapted to control the rotation of said wheels under the impulse of said driver.

36. The combination of a series of register wheels each independently frictionally driven, settable limiting means carried by each of said register wheels, and a movable stop co-operating with said limiting means.

37. The combination of a series of register wheels each independently frictionally driven, and settable members carried by said register wheels, and adapted to control the rotation thereof.

38. The combination with a series of register wheels each carrying a series of settable stops, of a rotative driver common to all of said wheels, and means adapted to permit said driver to rotate one or more of said wheels at a time.

39. The combination with a series of register wheels carrying a series of settable stops, of a rotative driver common to all of said wheels, and means including keys adapted to permit said driver to rotate one or more of said wheels at a time.

40. The combination with a series of register wheels carrying a series of settable stops, of a rotative driver common to all of said wheels, and means including a carriage adapted to permit said driver to rotate one or more of said wheels at a time.

41. The combination with a series of register wheels carrying a series of settable stops, of a rotative driver common to all of said wheels, and means including keys and a carriage adapted to permit said driver to rotate one or more of said wheels at a time.

42. The combination with a series of register wheels mounted upon a rotative driver and each carrying a series of settable stops, of means adapted to permit said driver to rotate one or more of said wheels at a time.

43. The combination with a series of register wheels mounted upon a rotative driver and each carrying a series of settable stops, of means including a carriage to permit said driver to rotate one or more of said wheels at a time.

44. The combination with a series of register wheels mounted upon a rotative driver and each carrying a series of settable stops, of means including keys to permit said driver to rotate one or more of said wheels at a time.

45. The combination of a series of register wheels carrying a series of settable stops, a rotative driver common to all of said wheels, means whereby said driver may rotate one or more of said wheels to add, and means by which said driver may also rotate one or more of said wheels to transfer.

46. The combination of a register wheel; means for driving said register wheel by frictional contact, one of the contacting members being adapted to continue its motion after the other has come to rest; and settable stops carried by said register wheel.

47. The combination with a series of register wheels carrying a series of settable stops, of a rotative driver common to all of said wheels, and means governing said wheels selectively.

48. The combination with a series of register wheels carrying a series of settable stops, of a rotative driver common to all of said wheels, and a selecting device co-operating with said settable stops.

49. The combination with a series of register wheels carrying a series of settable stops, of a rotative driver common to all of said wheels, and means including a selective device adapted to permit said driver to rotate one or more of said wheels at a time.

50. The combination with a series of register wheels carrying a series of settable stops, of a driver common to all of said wheels, and means adapted to permit said driver to actuate one or more of said wheels at a time.

51. The combination with a series of register elements carrying a series of settable stops, of a driver common to all of said elements, and means adapted to permit said driver to actuate one or more of said elements at a time.

52. The combination with a series of registering elements carrying a series of settable stops, of a driver common to all of said registering elements, and a selective device co-operating with said settable stops.

53. The combination with a series of register wheels carrying a series of settable stops, of a rotative driver common to all of said wheels, and means including a selective device adapted to permit said driver to rotate one or more of said wheels at a time.

54. The combination with a series of register wheels carrying a series of settable members, of a driver common to all of said register wheels, and a selective device co-operating with said settable members.

55. The combination with a series of registering elements carrying a series of settable members, of a driver common to all of said registering elements, and means including a selective device adapted to permit said driver to actuate one or more of said registering elements at a time.

56. The combination with a series of registering elements carrying a series of settable members, of a driver common to all of said elements, and means including a group of keys and a selective device governed thereby adapted to permit said driver to actuate one or more of said elements at a time.

57. The combination with a series of registering elements carrying a series of settable members, of a driver common to all of said elements, a selective device for said elements, and a group of keys controlling said selective device and said elements.

58. The combination with a series of registering elements each carrying a group of settable members, of a driver common to all of said elements, a selective device co-operating with said settable members, and a group of keys controlling said selective device.

59. The combination with a series of registering elements, each carrying a series of settable members, of a driver common to all of said elements, and means including a group of keys and a selective device governed thereby adapted to permit said driver to actuate one or more of said elements at a time.

60. The combination with a series of registering elements each carrying a series of settable members, of a rotative driver common to all of said elements, a group of keys controlling said members, and a selective device controlled by said keys.

61. The combination with a series of register wheels carrying a series of settable stops, of a rotative driver common to all of said wheels, and a group of keys common to all of said register wheels and governing the action of said driver upon said wheels.

62. The combination with a series of registering elements carrying a series of settable stops, of a driver common to all of said elements, and a group of keys common to all of said registering elements and adapted to control said stops and the action of said driver upon said elements.

63. The combination with a series of register wheels mounted upon a rotative driver and each carying a series of settable members, of a group of figure keys common to all of said register wheels and governing said settable members.

64. The combination with a series of register wheels each carrying a series of settable stops, of means common to all of said wheels and adapted to rotate said wheels one or more at a time, and a group of keys governing such rotation.

65. The combination with a series of register wheels each carrying a series of settable stops, of means adapted to rotate said wheels one or more at a time, and means governing said wheels selectively.

66. The combination with a series of register wheels mounted upon a common shaft and each carrying a series of settable stops, of means adapted to rotate one or more of said wheels at a time, a carriage governing the selection of said wheels, and a group of keys that control said carriage.

67. The combination of a rotative driver; a series of register wheels mounted on said rotative driver and each carrying a series of settable stops; means for rotating said driver; a group of keys common to all of said register wheels; and means controlled by said keys for controlling said stops.

68. The combination with a series of register wheels carrying a series of settable stops, of a rotative driver, means for rotating said driver, and means co-operating with said settable stops for controlling the action of said driver upon said wheels without affecting the rotation of said driver.

69. The combination of a series of register wheels carrying a series of settable stops, a rotative driver common to all of said wheels, a group of keys, and means controlled by said keys for controlling said stops to govern the action of said driver upon said wheels without affecting the rotation of said driver.

70. The combination of a group of keys, a driver, and a series of register wheels each bearing a series of settable stops controlled by said keys and governing the action of said driver upon the said wheels without affecting said driver.

71. The combination with a series of register wheels each carrying settable stops, of a driver common to all of said register wheels, keys co-operating with said settable stops to control the rotation of said wheels under the impulse of said driver, and transfer devices also controlling the rotation of said wheels under the impulse of said driver.

72. The combination of a series of register wheels each carrying a series of settable stops, a series of keys adapted to control said settable stops, a carriage controlling the connection between said keys and said settable stops, and transfer devices also controlling said stops.

73. The combination of a series of register wheels each carrying a series of settable stops, a group of keys operatively connected to said settable stops, and a carriage controlling the connection between said keys and said stops.

74. The combination of a series of adding wheels normally idle but tending to turn; a movable carriage; and means controlled by said carriage for releasing said wheels one at a time.

75. The combination of a series of adding wheels normally idle but tending to turn; means for holding said wheels against rotation; and a movable carriage for controlling said holding means.

76. The combination of a series of adding wheels normally idle but tending to turn, a group of keys common to all of said adding wheels, and key controlled means for releasing said adding wheels one at a time.

77. The combination with a series of adding wheels normally idle but tending to turn, of key controlled means controlling the rotation of said adding wheels selectively.

78. The combination of a series of adding wheels normally idle but tending to turn, and a group of keys and a carriage controlling the rotation of said adding wheels.

79. The combination of a series of adding wheels, means tending to rotate said adding wheels, typewriting mechanism having keys and a carriage, and arresting means for said adding wheels controlled by said keys and carriage.

80. The combination with a typewriter including a series of figure keys and a carriage, of a series of adding wheels normally idle but tending to turn, arresting means for said wheels controlled by the keys of said typewriter, and selecting means controlled by said carriage.

81. The combination with typewriting mechanism including a series of figure keys and a carriage, of a series of adding wheels normally idle but tending to turn; differential arresting means for said wheels controlled by said keys; and selecting means controlled by said carriage.

82. The combination with a typewriting mechanism including a series of figure keys, of a series of adding wheels normally idle but tending to turn, arresting means and selecting means for said wheels controlled by said figure keys.

83. The combination of a continuously rotative driver, a series of register wheels engaged by said rotative driver, and means for rendering said driver operative to turn any of said register wheels.

84. The combination of a continuously rotative driver, a series of register wheels, a group of keys, and means whereby any key may render the said driver operative to turn any of said register wheels.

85. The combination of a continuously rotating shaft, a series of register wheels mounted on said shaft, and digit determining means settable to allow any selected register wheel to turn with said shaft through differential distances.

86. The combination of a continuously rotative driver, a series of registering elements each having differential movements and having independent connection with said driver, and selective coupling and uncoupling means for controlling the connection between the several registering elements and said driver.

87. The combination of a continuously rotative driver; a series of register wheels; a group of keys; and means whereby any key may render said driver operative to turn any of said register wheels through a distance depending on the particular key depressed.

88. The combination of a series of register wheels, a continuously rotative driver adapted to rotate any of said register wheels, in combination with a group of keys and a carriage for controlling the movements of said register wheels under the impulse of said driver.

89. The combination with a continuously rotative shaft and a series of register wheels mounted thereon and adapted to be rotated thereby, of means for controlling the rotation of said register wheels by said shaft.

90. The combination of a continuously rotative shaft, a series of register wheels, and selective means for causing any selected register wheel to turn under the impulse of said shaft through differential distances.

91. The combination of a register wheel, driving means engaging said register wheel, and means for controlling the rotation of said register wheel through differential distances without affecting said driving means.

92. The combination of a register wheel, a rotative driver engaging one portion of said wheel, and means engaging another portion of said register wheel to control the motion of said register wheel through differential distances without affecting the rotation of said driver.

93. The combination of a series of register wheels of different denominations, a rotative driver engaging one portion of each of said register wheels, and controlling means engaging another portion of each of said register wheels.

94. The combination of a register wheel, means for applying power at one portion of said register wheel, and means operative at another portion of said register wheel to control the motion of said register wheel through differential distances without affecting said power-applying means.

95. The combination of a source of power, a series of register wheels of different denominations, means for applying said power at one portion of each of said register wheels, and controlling means operative at another portion of each of said register wheels.

96. The combination with register wheels, of driving means connected to the said register wheels by frictional contact, and transfer devices for controlling the motion of said wheels under the impulse of said driving means.

97. The combination of a plurality of register wheels, continuously rotative driving means for said register wheels, and transfer means actuated by a register wheel of lower denomination to couple a wheel of higher denomination to said driving means.

98. The combination of a plurality of register wheels; a series of stop pieces movably mounted in each wheel; means, including a series of keys, for setting said stop pieces; and transfer devices also adapted to set said stop pieces.

99. The combination of register wheels, settable stops carried by said wheels, and transfer devices comprising means whereby one of said settable stops operates to set the next succeeding stop.

100. The combination with a series of register wheels, each carrying a series of settable digit determining members, of a stop for that settable member of a wheel of higher denomination which is in set position; means carried by a wheel of lower denomination for moving the stop out of the path of said member; and means operated by said member to move the next succeeding settable member to set position.

101. The combination with a plurality of register wheels, each carrying settable digit determining members, of transfer devices including means for setting said digit determining members.

102. The combination of a plurality of register wheels arranged side by side along a common axis; settable digit determining members carried by said register wheels; and transfer devices co-operating with said settable digit determining members.

103. The combination of a pair of register wheels arranged side by side along a common axis; settable digit determining members carried by said register wheels; a movable stop co-operating with said settable digit determining members of the wheel of higher denomination; means whereby the wheel of lower denomination may move said stop to transfer; and means for returning said stop to normal position.

104. The combination with a register wheel and a series of settable stops carried thereby, of means for setting said stops to operative position, and a wiper for returning said settable stops to inoperative position.

105. The combination with a pair of register wheels, each carrying settable arresting members, of stops co-operating with said arresting members when the same are in operative position; means whereby the wheel of lower denomination may move the stop of the wheel of higher denomination out of the path of said arresting members to transfer; and a wiper for restoring the arresting members to inoperative position.

106. The combination of a register wheel; settable arresting members carried by said register wheel; a stop adapted to co-operate with any of said arresting members which is in operative position; means for resetting to inoperative position that arresting member which is in engagement with said stop and setting to operative position the arresting member which corresponds to a digit to be added; and means, independent of the arresting members, for rotating said register wheel.

107. The combination of a series of register wheels each tending to rotate and carrying a series of settable stops, one stop of each series being out of normal position and in position to prevent such rotation; means by which any stop out of normal position may be replaced to normal position and another stop of the same series displaced out of normal position to allow the wheel to rotate a distance depending on the particular stop displaced.

108. An adding mechanism; a series of keys for controlling the same; and a timing device called into action by each of said keys when the same is depressed for limiting the length of time during which the adding mechanism is under the control of the key, irrespective of the speed with which the key is operated and returned to normal position.

109. The combination of a register wheel carrying a series of settable stops, a key, and key controlled means for setting said stops, with provision for automatically disconnecting said key from said setting means.

110. The combination of a register wheel carrying a series of settable stops, a key, and key controlled means for setting said stops, with provision for disconnecting said key from said setting means.

111. The combination of a series of register wheels, a series of keys, controlling means for said register wheels operated upon the depression of a key, and electrically controlled means for automatically disconnecting said controlling mechanism from said key.

112. The combination of a series of register wheels, a series of keys, and controlling means for said register wheels operated upon the depression of a key, and electrically controlled means for disconnecting said controlling means from said key.

113. The combination of a series of register wheels, settable digit determining members carried by said register wheels, means for setting said digit determining members upon the depression of a key, and means for disconnecting said setting means from said key.

114. The combination of a series of register wheels, settable digit determining members carried by said register wheels, a series of keys, means for setting said settable digit determining members upon the depression of a key, and means for automatically disconnecting said setting means from said key.

115. An adding mechanism comprising setting means; a series of keys for controlling the actuation of said setting means; and electrically controlled means for restoring said setting means to normal position immediately after the actuation thereof, independently of the further motion of the key.

116. A series of keys; setting means controlled by said keys at a predetermined point in the stroke thereof; and electrically controlled means for quickly restoring said setting means to normal position independently of the further motion of the key.

117. The combination of a series of registering elements; quick acting setting means controlling the several registering elements one at a time; slow acting means for operating the several elements independently; said registering elements being set in operation one at a time by said setting means and continuing in operation whether other registering elements are immediately set in operation or not.

118. The combination of a series of power impelled register wheels; means adapted to set one of said wheels in operation at a time, whether other wheels are then in motion or not, and a transfer device for transferring from one wheel to the next.

119. The combination with a series of registering elements, and keys for controlling the same; of timed operating means for said registering elements; and setting means having a timing device for controlling said setting means without reference to the speed with which the key is operated.

120. The combination with a series of registering elements, of means for operating said elements independently; and selective setting means for setting said registering elements in operation one at a time; said operating means being timed to act slowly and said setting means being timed to act and to return to normal position quickly.

121. The combination with typewriting mechanism comprising number keys and a movable carriage; of a series of adding wheels; means controlled by said carriage and keys

for controlling said wheels selectively; and operating means for said wheels actuated by power independent of that applied to the typewriting mechanism and so timed as to utilize for turning the wheels the time spent in the movement of the carriage.

122. The combination of typewriting mechanism including a carriage, an adding mechanism connected thereto by electric circuits, circuit controllers operated by the figure keys of the typewriting mechanism, adjustable means for determining at what location in the line of writing the said circuit controllers shall be effective, and means for determining the length of time during which said circuit controllers shall be effective.

123. The combination of typewriting mechanism including a series of figure keys, electric circuits, circuit controllers operated by said figure keys, and means for determining the length of time during which said circuit controllers shall be effective.

124. The combination of typewriting mechanism including a series of figure keys, electric circuits circuit controllers operated by said figure keys, and means called into action by the depression of a key for disconnecting said circuit controllers from said keys.

125. The combination of typewriting mechanism including a series of figure keys; an adding mechanism; electrical devices controlled by said keys for actuating said adding mechanism, and means called into action by the depression of a key for disconnecting said keys from said devices.

126. The combination of a typewriting mechanism, including a carriage and a series of figure keys, an adding mechanism, electric circuits connecting said typewriting mechanism and adding mechanism, each of which contains two circuit controllers, one operated by a figure key and the other by the carriage, and a third circuit controller for determining the length of time during which said first mentioned circuit controllers shall be effective.

127. The combination with a typewriting mechanism including a carriage and figure keys; and an adding mechanism, of electric circuits connecting said mechanisms, each of said circuits containing three circuit controllers, one operated by a figure key and another by the carriage and the third operated when the other two are made effective.

128. The combination with a typewriting mechanism including a carriage and figure keys, and an adding mechanism, of electric circuits connecting said mechanisms, each of said circuits containing three circuit controllers, one operated by a figure key and another by the carriage and the third operated when the other two are made effective, said third circuit controller operating to limit the time during which the first two circuit controllers shall be effective.

129. The combination with a key, of an electric circuit controlled by said key; registering means controlled by said electric circuit; and a circuit controller for said circuit, also controlled by said circuit.

130. The combination with a series of keys, of electric circuits controlled by said keys; registering means controlled by said circuits; and circuit controlling means for said circuits also controlled by said circuits.

131. The combination with a series of keys, of electric circuits controlled by said keys and having a conductor in common; registering means controlled by said circuits; an electro-magnet in said common conductor; and circuit controlling means for said circuits controlled by said electro-magnet.

132. The combination with a series of keys, of a series of electric circuits, one for each key; registering mechanism controlled by said circuits; a controller for each of said circuits arranged to be operated by its appropriate key; and means controlled by any of said circuits for disconnecting a circuit controller from its key.

133. The combination with a series of keys, of a series of electric circuits, one for each key; registering mechanism controlled by said circuits; a controller for each of said circuits; a hook to connect each key to its circuit controller; and means controlled by said circuits for moving said hooks to inoperative position.

134. The combination of a series of registering elements; separate setting means for the several registering elements; a series of keys for controlling the actuation of said setting means; and means for restoring said setting means to normal position immediately after the actuation thereof, independently of the further motion of the keys.

135. The combination with a series of registering elements; separate setting means for the several registering elements; a series of keys for controlling the actuation of said setting means, means for restoring said setting means to normal position immediately after the actuation thereof, independently of the further motion of the keys; and operating means for the several registering elements, set in operation by said setting means.

136. The combination with a series of register wheels, of a group of keys adapted to be operated one at a time, controlling means for the several register wheels adapted to be operated one after another upon successive operations of the keys, said controlling means being timed to operate within the time required for a single operation of a key; and operating means for the register wheels, said operating means being set in operation by said setting means and so timed that the operation of any register wheel may occupy a greater time than that occupied by a single depression of a key.

137. The combination with a typewriting mechanism including a series of figure keys, of an adding mechanism including a series of adding wheels; selecting means and limiting means for said adding wheels controlled by said figure keys; and rotating means for said adding wheels set in operation immediately upon the actuation of said selecting and limiting means; the construction and arrangement being such that upon the operation of any figure key the selecting and limiting means will operate within the time occupied in operating said key while the rotating means may occupy a much longer period of time.

138. The combination with a typewriting mechanism including a series of figure keys and a carriage, of an adding mechanism including a series of register wheels; selecting means and limiting means controlled by said figure keys, rotating means capable of being made operative by said figure keys; the construction and arrangement being such that upon the operation of any figure key the selecting and limiting means will operate within the time occupied in operating said key while the time occupied in rotating the wheel may be as slow as that occupied in replacing the carriage of the typewriter to the denominational point at which the key was formerly operated.

139. The combination of a register wheel, a figure key controlling said wheel, and means for limiting the time during which said key can be connected to said wheel.

140. The combination of a series of register wheels, a series of keys for controlling said register wheels, means whereby any key may be connected to any register wheel to control the same, and means for limiting the length of time during which a key can be connected to a wheel.

141. The combination of a series of frictionally driven register wheels, a series of settable digit determining members carried by each of said register wheels, means for setting said digit determining members, including a series of electro-magnets; and means for controlling the circuits of said electro-magnets.

142. The combination of a series of frictionally driven register wheels, a series of settable digit determining members carried by each of said register wheels, and a group of keys and a carriage for controlling said settable digit determining members.

143. The combination of a series of frictionally driven register wheels, a series of settable digit determining members carried by each of said register wheels, and setting means for said digit determining members controlled by the keys and carriage of a typewriting machine.

144. The combination of a series of frictionally driven register wheels; a series of digit determining members carried by each of said register wheels; means including a series of reciprocatory bars for setting said digit determining members; a group of keys for controlling said bars, and denomination selecting means controlled by a carriage.

145. The combination of a series of frictionally driven register wheels; settable digit determining members carried by each of said register wheels; selective means for setting said digit determining members, and typewriting mechanism adapted to control said setting means.

146. The combination with a series of register wheels each carrying a series of digit determining members, of means including a series of reciprocatory bars for setting said digit determining members; a group of keys for controlling said bars; and means whereby, upon the depression of a key, at least one of said bars is operated and returned to normal position whether the key is immediately returned to normal position or not.

147. The combination of driving means, a series of register wheels each independently frictionally connected to said driving means and an electric motor for said driving means.

148. The combination of a continuously rotative driver, a series of register wheels each having independent connection with said driver, and an electric motor for rotating said driver.

149. The combination of a rotative shaft, a series of register wheels mounted on said shaft and having independent frictional connection therewith, and an electric motor for rotating said shaft.

150. The combination of a continuously rotative driver, a series of register wheels mounted thereon, and an electric motor for rotating said driver.

151. The combination of a series of register wheels, a series of digit determining members for each of said register wheels, a series of electro-magnets, the electric circuits of which are controlled by a group of keys and a carriage and which are adapted to set a digit determining member of a denomination determined by the carriage and of a numerical value determined by the key depressed.

152. The combination of a series of register wheels, a series of digit determining members for each of said register wheels, setting devices for the several digit determining members, and means for actuating a single setting device, a group of keys and a carriage; a series of said setting devices being controlled by each key and all of said setting devices being controlled by the carriage.

153. The combination of a series of register wheels, a series of digit determining members for each register wheel, digit-selecting electro-magnets and denomination selecting electro-magnets adapted to set said digit determining members, and a series of keys adapted to control said electro-magnets.

154. The combination of a series of register wheels, a series of digit determining members for each register wheel, two series of electro-magnets, and means whereby any selected digit determining member may be set by the combined action of electro-magnets of both series.

155. The combination of a series of register wheels, a series of digit determining members for each register wheel; digit-selecting electro magnets and denomination-selecting electro magnets; and setting members for said digit determining members controlled by said digit-selecting and denomination-selecting electro magnets.

156. The combination of a series of registering elements arranged to add numbers in different denominations; a series of frames one for each denomination; a series of frames one for each digit; register controlling means set by the joint action of a denomination frame and a digit frame; electro magnets controlling said frames; and a series of keys for controlling the circuits of said electro magnets.

157. The combination with registering elements, of digit determining members; electro magnets; means whereby any of said digit determining members may be operated by the joint action of a plurality of said electro magnets; and keys for controlling the circuits of said electro magnets.

158. The combination with a group of keys and printing devices actuated thereby, of means for automatically adding numbers printed by said keys in a plurality of denominations, said means comprising register wheels; setting devices actuated simultaneously with the depression of the keys entirely by power independent of that applied to the keys; and means adapted to rotate said register wheels after the depression of the keys.

159. The combination with a series of register wheels and devices for controlling said register wheels to add numbers thereon, of a group of keys common to all of said register wheels; means for setting said controlling devices one at a time as the several keys are depressed, said setting means being actuated entirely by a power independent of that applied to the keys; and means for rotating said register wheels, said means being adapted to act at least in part after said keys have returned to normal position.

160. The combination with typewriting mechanism comprising a group of numeral keys and a carriage, of a series of register wheels for automatically adding numbers written by said numeral keys; digit determining means for the several register wheels; power actuated means controlled selectively by the keys and carriage as said keys are depressed one at a time to set said digit determining members; and operating means for said register wheels adapted to operate at least in part after the numeral keys have been actuated and have been returned to normal position.

161. The combination with typewriting mechanism comprising numeral keys and a carriage, of adding mechanism for automatically adding numbers printed by said typewriting mechanism, said adding mechanism comprising register wheels, controlling devices for said register wheels, said controlling devices being actuated entirely by a power independent of that applied to the figure keys; means controlled by the keys and carriage for setting said controlling devices one at a time as the keys are operated; and rotating means for said register wheels adapted to rotate said wheels at least in part after said keys have been operated and have returned to normal position.

162. The combination with typewriting mechanism including numeral keys and a carriage, of adding mechanism for automatically adding numbers written in a plurality of denominations by said typewriting mechanism, said adding mechanism including a series of settable digit determining members for each denomination, and electro magnets for actuating said digit determining members selectively, the circuits of said electro magnets being controlled by said keys and carriage.

163. The combination with typewriting mechanism including a group of numeral keys and a carriage, of a series of adding wheels for automatically adding numbers printed by said typewriting mechanism and including setting means, electro magnets controlled by said keys and carriage and operating said setting means one at a time as the keys are depressed; and rotating means for said register wheels operating to rotate said wheels at least in part after the actuation of said keys.

164. The combination of a series of register wheels; means for controlling the rotation of said register wheels; electro magnets for actuating said controlling means; a group of keys for controlling said electro magnets; and means independent of the keys for rotating said wheels.

165. The combination with a series of register wheels, each carrying a series of settable digit determining members, of a group of numeral keys, a series of reciprocatory digit selecting bars and denomination selecting means co-operating with said bars; the construction and arrangement being such that upon the depression of any key the corresponding reciprocatory bar may operate its appropriate digit determining member in any selected register wheel.

166. The combination of a series of register wheels, each carrying settable digit determining members, a series of reciprocatory digit selecting bars, a series of keys and denomination selecting means; the construction and arrangement being such that upon the depression of any key the digit determining members of a value corresponding to the key depressed will be operated in the wheel determined by the denomination selecting devices.

167. The combination of a series of register wheels carrying a plurality of settable stops, and a plurality of sources of power to control said stops less in number than said stops.

168. The combination of a series of register wheels carrying a plurality of differential settable means, a plurality of sources of power for operating said settable means, and

a group of keys controlling said sources of power less in number than said settable means.

169. The combination of a series of register wheels, a carriage, an electrical controller for said wheels controlled by said carriage and having a plurality of controlling contact points, a series of figure keys also controlling said wheels, and a series of limiting devices greater in number than said controlling points and said keys.

170. The combination of a series of register wheels, an electrical controller having a plurality of controlling contact points, a series of figure keys, and a series of limiting devices for said wheels controlled by said keys and differing in number from said controlling points and keys.

171. The combination of a series of register wheels, a series of digit determining means carried by each of said register wheels, actuating devices for said digit determining means, means whereby the depression of any key causes the operation of a plurality of said actuating devices.

172. The combination of a series of register wheels; a group of keys common to all of said register wheels; digit determining means for said register wheels; actuating means for said digit determining means; and means whereby the depression of any key results in the actuation of one of said digit determining means by the simultaneous operation of a plurality of said actuating means.

173. The combination with a series of register wheels, a series of actuating devices, a series of digit determining means for each of said register wheels, and means whereby any of said digit determining means may be actuated by the combined operation of a plurality of said actuating means.

174. The combination of a series of registering elements in combination with denomination selecting means, digit selecting means, and a setting member operated by both of said selecting means acting simultaneously.

175. The combination of denomination selecting mechanism; digit selecting mechanism; and setting members; certain of said setting members being partially operated by said denomination selecting mechanism, certain of said setting members being partially operated by said digit selecting mechanism, and one of said setting members being fully operated by the combined action of both of said selecting mechanisms.

176. In an adding device, the combination of a denomination selector, a digit selector and a setting member arranged to be fully operated by the simultaneous actuation of both of said selectors.

177. In an adding device, the combination of a group of keys, a denomination selector and a digit selector controlled by said keys, and a setting member arranged to be fully operated by the action of both selectors.

178. In an adding device, the combination with a group of keys and a carriage, of a digit selector and a denomination selector controlled by said keys and carriage, and a setting member arranged to be fully operated by the simultaneous actuation of both of said selectors.

179. In an adding device, the combination of a group of keys and printing means operatively connected thereto; a denomination selector and a digit selector controlled by said keys; and a setting member arranged to be fully operated by the simultaneous actuation of both of said selectors.

180. In an adding device, the combination of a group of keys; printing means operatively connected thereto; a carriage; a denomination selector and a digit selector controlled by said keys and carriage, and a setting member fully operated by the simultaneous actuation of both of said selectors.

181. In an adding device, the combination of a series of setting members, a denomination selector, and digit selectors, the construction and arrangement being such that any setting member may be fully operated by the simultaneous actuation of the denomination selector and a digit selector.

182. In an adding device, the combination of denomination selectors; digit selectors; and a plurality of series of setting members any one of which may be fully operated by the joint simultaneous actuation of a denomination selector and a digit selector.

183. The combination of denomination selectors, digit selectors, a plurality of series of setting members any one of which may be fully operated by the simultaneous actuation of a denomination selector and a digit selector, and a series of keys adapted to control said selectors.

184. The combination of denomination selectors, digit selectors, a plurality of series of setting members any one of which may be fully operated by the simultaneous actuation of a denomination selector and a digit selector; and a series of keys and a carriage adapted to control said selectors.

185. The combination of denomination selectors; digit selectors; a plurality of series of setting members any one of which may be fully operated by the simultaneous actuation of a denomination selector and a digit selector; a series of keys adapted to control said selectors; and printing means operatively connected to said keys.

186. The combination of denomination selectors; digit selectors; and a plurality of series of setting members any one of which may be fully operated by the simultaneous actuation of a denomination selector and a digit selector; said selectors being controlled by the keys and carriage of a typewriting machine.

187. The combination of a series of registering elements, a series of digit determining means for each of said registering elements, digit setting means for each of said determining means, a denomination selector partially operating certain of said setting means, a digit selector partially operating certain of said setting means, one of said setting means being fully operated by the joint action of both of said selectors.

188. The combination with registering elements, of a setting lever pivoted at two points, and means for oscillating said lever about either of its pivots.

189. The combination with a series of registering elements, of a setting lever pivoted at two points, and means for moving either of said pivots to oscillate said lever about the other pivot.

190. The combination with a series of registering elements, of a setting lever pivoted at two points, and means for moving both of said pivotal points to give said lever an operating movement greater than would be caused by the movement of either pivotal point alone.

191. The combination with registering elements, of a setting lever pivoted at two points, and means for moving either of said pivots to impart to said lever a partial oscillation about the other pivot as a fulcrum or to move both of said pivots to impart to said lever a full oscillation.

192. The combination with a series of registering elements, of a series of setting levers each pivoted at two points, means for moving certain of said levers about one of their pivots, means for moving certain of said levers about the other of their pivots, one of said levers being moved about both of its pivots.

193. The combination of a shaft; a series of adding wheels mounted thereon; a series of bars arranged parallel to said shaft and having setting levers pivoted thereto; a series of balls, one for each wheel, extending across said series of bars, and engaging the ends of said levers; means for reciprocating said bars to determine the digit to be added; and means for oscillating said balls to determine the denomination.

194. The combination with a series of registering elements arranged to add digits in different denominations; a series of frames one for each denomination; a series of frames one for each digit; and register controlling means set by the simultaneous actuation of a denomination frame and a digit frame.

195. The combination with a series of register wheels, of denomination selecting mechanism comprising a series of oscillating frames one for each wheel; digit selecting mechanism comprising a series of reciprocating bars one for each digit; and setting levers controlled by said frames and bars.

196. The combination with a series of register wheels, of a series of setting levers for each of said wheels; a denomination selector for giving all of the levers of the series a partial oscillation; and means for imparting to one of said levers an additional extent of oscillation.

197. The combination with a typewriting mechanism, of a series of register wheels normally tending to turn; settable stops for said wheels; and means controlled by the typewriting mechanism for resetting one stop to release a wheel and setting another stop to limit the motion of the wheel.

198. The combination of a series of register wheels; digit selecting devices and denomination selecting devices for controlling said wheels; and wheel releasing members operated by said denomination selecting devices.

199. The combination with adding mechanism; an electric motor for operating said mechanism; and electric circuits for controlling said mechanism, of a circuit controller for breaking said motor circuit and said controlling circuit simultaneously.

200. The combination with typewriting mechanism, of mechanism for automatically adding numbers printed in a column by said typewriting mechanism, said adding mechanism having digit determining means for each denomination; electrical connections between said typewriting mechanism and said digit determining means; and means for operatively disconnecting said typewriting mechanism from said digit determining means, whereby other numbers may be written in the same column with the numbers to be added without affecting said digit determining means.

201. The combination with typewriting mechanism, of a series of registering elements; digit determining means for each of said registering elements; setting devices for said digit determining means controlled by the keys of the typewriting mechanism; and means for operatively disconnecting said keys and said setting devices.

202. The combination with typewriting mechanism having numeral keys, and a case shift device, of a series of registering elements, digit determining means for each of said registering elements, and means adapted to be operated by said case shift device for operatively disconnecting said typewriting mechanism from said digit determining means.

203. The combination of typewriting mechanism, a series of frictionally driven registering elements and controlling means for said registering elements operatively connected to said typewriting mechanism, with provision for operatively disconnecting said typewriting mechanism from said controlling means.

204. The combination with a series of registering elements, a continuously rotative driver adapted to actuate said registering elements, and controlling means for said registering elements operatively connected to a typewriting mechanism, with provision for operatively disconnecting said controlling means from said typewriting mechanism.

205. The combination of a series of adding wheels; electric circuits arranged to control said wheels; a zero setting device for said wheels; and a circuit breaker connected to said zero setting device.

206. The combination of a series of keys; electric circuits controlled by said keys; adding wheels controlled by said electric circuits; and a zero setter for said wheels arranged to break said circuits.

207. The combination with a series of adding wheels; driving means for said adding wheels, and means for controlling the turning of said wheels by said driving means in the process of addition; of means for controlling the turning of said wheels by said driving means to cause them to be reset to zero and arranged also to render said addition wheel controlling means inoperative.

208. The combination of a series of adding wheels; driving means for said wheels; means for controlling the turning of said wheels by said driving means to add numbers; means for controlling the turning of said wheels by said driving means to reset said wheels to zero; and an alarm arranged to indicate when the zero setting operation is complete.

209. The combination of a series of keys and adding devices controlled by said keys; means arranged to control the connection between said adding devices and said keys; and an alarm connected to said connection controlling means.

210. The combination of a series of adding wheels; means for actuating said wheels; settable digit determining members for each of said wheels for determining the limit of motion thereof in the operation of addition; and zero setting means adapted to set the proper digit determining member of each wheel automatically to cause all of the wheels to assume their zero positions.

211. The combination of a series of normally idle adding wheels; continuously operative driving means for said wheels; and zero setting means arranged to afford to said wheels movement under the impulse of said driving means and to arrest the movement of said wheels at zero position.

212. The combination of a series of register wheels, a continuously rotative driver for said register wheels, and means for controlling the rotation of said register wheels under the impulse of said driver to set said register wheels to zero.

213. The combination of a series of register wheels, settable digit determining means carried by said wheels, means by which said wheels may be operated to add numbers; and means for automatically setting said wheels to zero.

214. The combination of a series of register wheels, settable digit determining members carried by said wheels and zero setting devices co-operating with said digit determining members.

215. The combination of a series of register wheels; driving means for said register wheels having frictional connection therewith, means for controlling the rotation of said register wheels under the impulse of said driving means to add numbers; and means for controlling the rotation of said register wheels under the impulse of said frictional connection to set said register wheels to zero.

216. An adding wheel mounted on a rotary shaft and having frictional connection therewith; in combination with means adapted to automatically afford to said wheel a freedom of motion with said shaft and to arrest said wheel at its zero position.

217. The combination of a series of adding wheels mounted on a rotary shaft and having frictional connection therewith; and means co-operating with all of said wheels and adapted to afford to said wheels a freedom of motion with said shaft and to arrest said wheels in their zero positions.

218. The combination with a series of register wheels and driving means therefor, of zero setting mechanism comprising arresting means movable to position to arrest said register wheels, means for holding said arresting means in operative position, and means for releasing said arresting means.

219. The combination of a series of register wheels and a rotative driver therefor, of zero setting mechanism comprising arresting means movable to position to arrest said register wheels and means operated by said driver to automatically restore said arresting means after all of the register wheels have been arrested.

220. The combination with register wheels and driving means therefor, of zero setting mechanism comprising a hand operated member, means for holding said hand operated member in operative position, and means controlled by said driving means for automatically releasing said hand operated member.

221. The combination of a series of register wheels; settable digit determining members carried by said register wheels; and means for simultaneously restoring to inoperative position all of said digit determining members which are in operative position.

222. The combination of a series of register wheels, settable digit determining members carried by said register wheels, one of said digit determining members being normally in position to arrest said wheels; and means for simultaneously restoring all of said digit determining members which are in arresting position to release the wheels.

223. The combination of a series of register wheels, settable stops carried by said register wheels, means co-operating with each wheel to reset that stop which is in operative position in the operation of addition; and means for simultaneously operating all of said resetting means.

224. The combination of a series of register wheels; settable digit determining members carried by said register wheels; means for operating said settable digit determining members; and means for restoring any of said digit determining members that may have become accidentally displaced.

225. The combination of a series of register wheels, settable digit determining members carried by said register wheels, and zero setting mechanism comprising means for restoring any of said digit determining members that may have become accidentally displaced.

226. The combination with a series of register wheels, and a rotary driver therefor, of zero setting mechanism for said register wheels, a lever 385, the depression of which brings said zero setting mechanism into operation, a latch 408 for holding said lever 385 in depressed position, a worm 420 connected to said rotary driver, and means operated by said worm for tripping said latch.

227. The combination of a series of register wheels; means for controlling said register wheels to add numbers; means for resetting said register wheels to zero; means for rendering said controlling means inoperative during the zero setting operation; and means for rendering said controlling means again operative and sounding an alarm when the zero setting operation is complete.

228. The combination with a series of register wheels, of differential controlling devices for said register wheels, keys controlling said differential devices, zero setting means for said register wheels, means whereby said zero setting keys disconnect said keys from said differential devices, means for holding said zero setting means in operative position, and means for automatically releasing said zero setting means and restoring the connection between said keys and differential devices.

229. The combination with a series of register wheels, driving means therefor, and electric circuits for controlling said register wheels, of zero setting mechanism, a circuit controller for said electrical circuits operative by said zero setting mechanism, means for holding said circuit controller in inoperative position, and means for automatically restoring it to normal position.

230. The combination of an adding mechanism and zero setting means therefor, of a typewriting mechanism adapted to control said adding mechanism, and means for rendering said adding mechanism inoperative in connection with the typewriting mechanism during the zero setting operation.

231. The combination with adding mechanism and zero setting devices therefor, of a series of keys adapted to control said adding mechanism, and means for operatively disconnecting said keys from said adding mechanism during the zero setting operation.

232. The combination with a series of register wheels, of digit selecting devices and denomination selecting devices for controlling the rotation of said register wheels, of zero setting devices and means for rendering said denomination selecting devices and digit selecting devices inoperative during the zero setting operation.

233. The combination of register wheels, settable digit determining members carried thereby and spring pressed devices for automatically setting the proper digit determining member to bring the register wheel to zero position.

234. The combination with registering devices, of electric circuits for controlling the same, a rotary shaft for actuating said registering devices, a worm connected to said rotary shaft, a circuit controller for said electric circuits, means for operating said circuit controller, and means co-operating with said worm to control the restoration of said circuit controller.

235. The combination of a series of register wheels carrying settable digit determining members, spring pressed devices for operating the appropriate member in each wheel to set said wheel to zero, and means carried by said wheel for determining which of said members shall be operated.

236. The combination of a register wheel, settable digit determining members carried by said register wheel, and means controlled by said register wheel for setting the appropriate digit determining member to bring the register wheel to zero position.

237. The combination of an adding wheel carrying settable digit determining members; a setting device for said members tending to operate; means carried by the wheel to prevent said operation except on that digit determining device which is adapted to set the register wheel to zero.

238. The combination of a series of rotatable register wheels, differential devices for controlling the rotation of said wheels to add numbers, and means for automatically controlling said differential devices to set the wheels to zero.

239. The combination of a series of register wheels, driving means therefor, and a zero setting mechanism comprising means for temporarily arresting and aligning said wheels, and means for automatically freeing said wheels from said arresting means.

240. The combination with a series of register wheels and driving means therefor, of zero setting mechanism comprising means for releasing the register wheels, means for arresting the register wheels; and means for automatically releasing the wheels from said arresting means.

241. The combination with a series of register wheels and driving means therefor, of zero setting mechanism comprising means for releasing said register wheels, means for temporarily arresting said register wheels, and means for arresting said register wheels at zero.

242. The combination with a series of register wheels having settable digit determining members and driving means for said register wheels, of zero setting mechanism comprising means for setting the proper digit determining members and temporarily arresting said register wheels.

243. The combination of a registering wheel carrying a series of settable members, driving means for said wheel, zero setting devices including means for automatically selecting one of the settable members, and means co-operating with said selected settable member to set the next succeeding settable member to arrest said wheel at zero.

244. The combination with a series of register wheels each carrying a series of settable members, and driving means for said wheels and transfer devices, of a zero setting device including means for selecting a settable member in each wheel with provision for actuating the next succeeding settable member in each dial except that of the lowest denomination.

245. The combination with a group of keys and printing means actuated thereby, of adding mechanism; electric circuits for controlling said adding mechanism; circuit controllers actuated by said keys; and means for disconnecting said circuit controllers from said keys.

246. The combination with a group of keys, and printing means actuated thereby, of adding mechanism; electric circuits for controlling said adding mechanism; circuit controllers for said electrical circuits; and hook arms connecting said circuit controllers to said keys.

247. The combination with a typewriter mechanism including numeral keys and a movable carriage, of a tabulator to control the movement of the carriage, said tabulator including an adjustable tappet, adding mechanism adapted to automatically add numbers printed by said typewriting mechanism and a controller adapted to be adjustably mounted on a portion of said typewriting machine and adjustable co-operatively with said tappet.

248. The combination with a series of adding wheels, of a typewriting machine having a carriage and a framework, a controller for said adding wheels comprising two members, one of which is adjustably connected to the carriage of a typewriting machine, and the other of which is adjustably connected to the framework of said typewriting machine.

249. In an adding attachment for a typewriting machine, the combination of a typewriting machine having a framework, a holding member adapted to be adjustably mounted on the framework of said typewriting machine, and a controller member adapted to be detachably retained in position by said holding member.

250. In a combined typewriting and adding device, the combination of an electrical controller for said adding device comprising a block of insulating material having contact pieces mounted therein, and an insulated shoe having spring pressed contact members mounted therein and adapted to engage said contact pieces.

251. In a combined typewriting and adding device, the combination of a typewriting machine having a framework, a controller member connected to the framework of the typewriting machine, and a shoe co-operating with said controller member and adjustably connected to the typewriter carriage.

252. The combination of a typewriting mechanism; a tabulating device co-operating therewith, said tabulating device having a tabulator scale; and an adding attachment for said typewriting mechanism including a controller, one member of which is adjustably mounted on said tabulator scale.

253. The combination of a typewriting mechanism; a tabulator therefor, said tabulator including a tabulator scale, an adding attachment for said typewriting mechanism including electric circuits; a controller for said electric circuits, one member of which is connected to the framework of the typewriting machine and the other member of which is connected to said tabulator scale and is adjustable lengthwise thereof, whereby contact between said controller members may be made at different predetermined portions of the travel of the typewriter carriage.

254. In an adding attachment for a typewriting machine, the combination of adding mechanism and electric circuits for controlling the same, of numeral keys; spring actuated circuit controllers; means connecting said circuit controllers to said keys; and an electromagnet and connections for automatically disconnecting said circuit controllers from said keys.

255. The combination of numeral keys; spring pressed circuit controllers; hook arms connected to said keys and adapted to operate said circuit controllers; an adding mechanism controlled by said circuit controllers; a movable frame adapted to disconnect said hook arms from said circuit controllers; and means controlled by said circuit controllers for actuating said movable frame.

256. The combination with figure keys, of adding mechanism; electric circuits for controlling said adding mechanism; circuit controllers for said electric circuits controlled by said keys; each of said circuit controllers including an adjustable spring pressed contact point, and a second adjustable spring pressed contact point adapted to be operated by a key.

257. The combination of a series of adding wheels; typewriting mechanism including a movable carriage; a controller co-operating with said carriage and having a plurality of controller points; electric circuits controlled by said controller and controlling said adding wheels; and a switchboard and switch for varying the connection between said controller point and said adding wheels, said switch comprising a series of insulated contacts mounted on a pivoted arm.

258. The combination of a series of adding wheels; typewriting mechanism including a movable carriage; a controller co-operating with said carriage and having a plurality of controller points; electric circuits controlled by said controller and controlling said adding wheels; and a switchboard and switch for varying the connection between said controller points and said adding wheels; said switch comprising a series of insulated contacts mounted on a pivoted arm, a lug on said arm, and retaining notches co-operating with said lug, said spring contacts being adapted to press said lug into one of said notches.

259. The combination of a series of adding wheels; typewriting mechanism including a movable carriage; a controller co-operating with said carriage and having a plurality of controller points; electric circuits controlled by said controller and controlling said adding wheels; and a switchboard and switch for varying the connection between said controller points and said adding wheels, said switch comprising a series of insulated contacts mounted on a pivoted arm, a handle for moving said switch, and means for indicating the character of connections corresponding to each position of the switch.

260. The combination with a series of adding wheels, of a typewriter carriage; a controller for said adding wheels governed by said typewriter carriage, said controller having a plurality of controlling points; means for varying the connection between the several controller points and the several register wheels; a tabulator co-operating with the carriage, and an adjustable indicator co-operating with said tabulator to indicate the several characters of connection between the controller points and the register wheels.

261. The combination with a series of register wheels, a typewriter carriage, and a series of typewriter keys adapted to control said register wheels, the construction being such that numbers written by said typewriter keys are automatically added on said register wheels; means for varying the connection between said typewriter carriage and said register wheels to vary the spacing of the printing; a tabulator adapted to set the carriage at any one of a series of letter space positions; and an adjustable indicator for indicating the various denominational values of the adding wheels, operable at the various letter space positions according to the character of connection used between said typewriter and adding wheels.

262. The combination with a typewriter and a series of adding wheels, of a tabulator for said typewriter, a controller operatively connected to and adapted to be set by said tabulator, means for varying the connection between said controller and said adding wheels, a group of denominational tabulator keys, and an adjustable indicator for indicating the different denominational values of said tabulator keys according to the character of the connection between said controller and said adding wheels.

263. The combination of a series of registering elements, differential devices carried by each of said registering elements; a typewriting mechanism having numeral keys and a carriage; and connections whereby said keys and carriage may control said differential devices selectively, said connections being changeable to vary the spacing of the printing.

264. The combination of register wheels, differential devices carried by each of said register wheels, a typewriting mechanism having numeral keys and a carriage, connections whereby said keys and carriage may control said differential devices selectively, and means for changing said connections to vary the spacing of the printing.

265. The combination with a series of register wheels, each carrying a series of settable digit determining means, of a movable frame comprising a series of plates 256 for returning to normal position any of said settable digit determining members which may have become displaced.

266. The combination with the register wheels 10 each carrying the settable pieces 16, of a movable frame having plates 256 adapted to set said pins, hand operated means for moving said frame, and zero setting means also adapted to move said frame.

267. The combination of the register wheels 10 arranged side by side along the axis, and each having the settable members 16 of the levers 106 between said register wheels, the frame bar 108 to which said levers are pivotally connected, the stops 18 on said levers co-operating with said settable members, means for displacing said levers and cams 118 by which said pins replace said settable members.

268. The combination of a series of register wheels having the settable members 16, the stops 18 co-operating with said settable members, levers 120 actuated by one of said settable members in the operation of transferring, and the levers 123 actuated by said levers 120 and adapted to set the next succeeding settable member.

269. The combination with a series of register wheels each carrying settable members 16, of zero setting devices including the reciprocatory bar 376, the spring actuated arms 400 pivoted to said bar, flanges 14 on said register wheels adapted to be engaged by said levers 400, and the notches 406 in said flanges whereby said levers 400 arrest said register wheels in alinement and set said settable members 16.

270. The combination of a series of register wheels, digit determining members for said wheels, a series of reciprocatory setting bars for said digit determining mem-

bers, and means for adjustably limiting the movement of said bars.

271. The combination of a series of register wheels, movable denomination selecting frames for said register wheels, and adjustable means for limiting the movement of said frames.

272. The combination of register wheels, digit determining members for said register wheels, setting devices for said digit determining members, and electro magnets for actuating said setting devices, the armatures of said electro magnets being adjustably connected to said setting devices.

273. The combination of a pair of register wheels, each carrying settable digit determining members, transfer devices having a movable part adapted to set said digit determining members, and means for adjustably limiting the movement of said movable part.

852,017. FLUX. CARLETON ELLIS, White Plains, N. Y., assignor, by direct and mesne assignments, to Ellis-Foster Company, a Corporation of New Jersey. Filed Mar. 23, 1906. Serial No. 307,071.

Claim.—1. Brazing flux which consists of chemically pure iron and a fusible salt.

2. Brazing flux for cast iron which consists of chemically-pure finely divided iron, anhydrous borax and carbonate of potash.

3. Composition for fluxing cast iron surfaces in the soldering thereof which consists of pure finely-divided iron and anhydrous borax.

4. Brazing flux for cast iron consisting of chemically-pure finely-divided iron and finely divided anhydrous borax in intimate mixture.

5. Brazing flux for cast iron consisting of chemically-pure finely-divided iron and an easily fusible non-oxidizing anhydrous salt.

6. Brazing flux consisting of chemically pure iron powder, fused borax powder and pure carbonate of potash substantially in the proportions specified.

7. Brazing flux for cast iron surfaces which comprises an intimate mixture of pure iron powder and pulverized anhydrous borax.

8. Brazing flux for cast iron surfaces which consists of pure iron powder forty parts, anhydrous pulverized borax twelve parts, and carbonate of potash nine parts.

852,018. PICTURE-MOUNTING DEVICE. ALBERT W. ENGEL, Chicago, Ill. Filed Nov. 4, 1904. Serial No. 231,456.

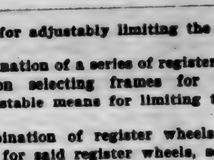

Claim.—1. A picture-mounting device comprising a corner piece gummed upon one side only and apertured for the insertion through it of the corner of the card to be secured, so that a portion only of each surface of the corner piece shall be lapped by a portion of the card, and a remaining portion of each surface shall be free from lap on the card.

2. A picture-mounting device comprising a corner-piece gummed upon one surface and having a diagonal band severed at the sides and unsevered at the ends from the remainder of the piece.

3. A picture-mounting device comprising a corner-fitting gummed on one surface and apertured diagonally at two lines forming an intervening band.

4. A picture-mounting device comprising a corner-piece gummed upon one surface and having a band formed by diagonal slits which stop short of the marginal edges and are adapted for the insertion of the corner of a card or picture through them across the intervening band.

5. A picture-mounting device comprising a corner-fitting gummed upon one surface and apertured diagonally at two lines forming an intervening band, the two apertures being terminated at their corresponding ends respectively at two converging lines which correspond to the edges which form the corner of the picture which is served by the fitting.

6. A picture-mounting device comprising a corner-piece gummed on one surface and having a diagonal band severed at the sides and unsevered at the ends from the remainder of the piece, said corner-piece having at the opposite side of said diagonal band from the corner, lugs, 3, projecting inward across the lines which correspond to the edges forming the corner which is served by the fitting.

852,019. STEAM-HEATING SYSTEM FOR RAILWAY-CARS. EDWARD E. GOLD, New York, N. Y. Filed Nov. 30, 1904. Serial No. 234,864.

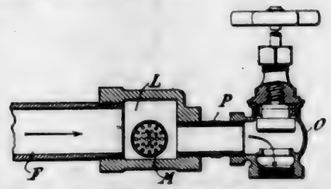

Claim.—1. In a steam heating system for railway cars, a substantially horizontal steam pipe, means at one side thereof for discharging condensation-water and having its entrance above the bottom of the pipe, and a valve beyond the entrance to said means, an unobstructed passage for dirt being left through said pipe, whereby the opening of the valve causes the steam to blow across such entrance and to carry dirt past and beyond without entering the same.

2. In a steam heating system for railway cars, a substantially horizontal steam pipe, means at one side thereof for discharging condensation-water and having its entrance above the bottom of the pipe, and a mud well beyond the entrance to said means, an unobstructed passage for dirt being left through said pipe, whereby dirt passes beyond without entering such entrance and into said mud well.

3. In a steam heating system for railway cars, a substantially horizontal steam pipe, a branch therefrom having its entrance above the bottom of said pipe, a screen at the entrance to said branch, and a valve in the pipe beyond said screen, an unobstructed passage for dirt being left through said pipe, whereby the opening of the valve causes the steam to pass over and beyond said screen to clean it and to carry the dirt from it and out of the valve.

4. In a steam heating system for railway cars, a substantially horizontal discharge pipe, a branch therefrom having its entrance above the bottom of said pipe, a screen at the entrance to said branch, and a blow-off valve in the discharge pipe beyond said screen, an unobstructed passage for dirt being left through said pipe, whereby the opening of the blow-off valve causes the steam to pass over and beyond said screen to clean it and to carry the dirt from it and out of the valve.

5. In a steam heating system for railway cars, a substantially horizontal discharge pipe, a branch therefrom having its entrance above the bottom of said pipe, a screen at the entrance to said branch and projecting into said discharge pipe, and a blow-off valve in the discharge pipe beyond said screen, an unobstructed passage for dirt being left through said pipe, whereby the opening of the blow-off valve causes the steam to pass over and beyond said screen to clean it and to carry the dirt from it and out of the valve.

6. In a steam heating system for railway cars, a substantially horizontal main discharge pipe, a pair of branches therefrom each having its entrance above the bottom of said pipe, a trap on each of said branches, a screen at the entrance to each of said branches and projecting into the main pipe, and a blow-off valve in said main pipe beyond said branches, an unobstructed passage for dirt being left through said pipe, whereby the opening of the blow-off valve causes the steam to pass over and beyond the entrances of said branches and to carry the dirt from them and out of the valve.

7. In a steam heating system for railway cars, a main discharge pipe, a pair of branches therefrom, a trap on each of said branches, a screen Q extending entirely across the pipe between the entrances to said branches and constituting a screen for each of said branches, and a blow-off valve in said main pipe beyond said branches, an unobstructed passage for dirt being left through said pipe, whereby the opening of the blow-off valve causes the steam to pass over and beyond said screen and to carry the dirt therefrom and out of the valve.

8. In a steam heating system for railway cars, a substantially horizontal steam pipe, means at one side thereof for discharging condensation-water and having its entrance above the bottom of the pipe, and a valve beyond the entrance to said means, an unobstructed passage for dirt being left along the bottom of the pipe, whereby the opening of the valve causes the steam to blow across such entrance and to carry dirt along on the bottom of the pipe past and beyond without entering such entrance.

9. In a steam heating system for railway cars, a substantially horizontal steam pipe, means at one side thereof for discharging condensation-water and having its entrance above the bottom of the pipe, and a mud well beyond the entrance to said means, an unobstructed passage for dirt being left along the bottom of the pipe, whereby the opening of the valve causes the steam to blow across such entrance and to carry dirt along on the bottom of the pipe past and beyond without entering such entrance.

10. In a steam heating system for railway cars, a fitting L at one end of which the steam enters and through which the steam passes in a substantially horizontal direction, a substantially horizontal pipe P connected to the opposite end of said fitting, a valve connected to said pipe P beyond said fitting, and means for discharging condensation-water connected to the side of said fitting and having its entrance above the bottom thereof so as to leave an unobstructed passage for dirt along the bottom of said fitting to said pipe and valve, whereby the opening of the valve causes the steam to blow across the entrance to said means and to carry dirt past and beyond without entering the same.

852,020. STEERING-TRUCK FOR AGRICULTURAL IMPLEMENTS. MOORE GOODFELLOW, Cleveland, Ohio, assignor of one-half to Joseph O. Dye, Springfield, Ohio. Filed Jan. 28, 1904. Serial No. 191,011.

Claim.—1. The combination, with the implement to be drawn, of a truck supporting the forward end thereof and having a body fixed with relation to the implement, ground wheels having steering spindles pivotally connected with said truck, a steering member operatively connected with said spindles, means for manually operating said steering member, a draft pole connected to said truck so as to swing laterally with respect to the same, and means under the control of the operator for connecting the draft pole with and disconnecting it from said steering member, whereby, when said pole is so connected, its movements will control the position of the ground wheels, substantially as described.

2. The combination, with the implement to be drawn, of a truck supporting the forward end thereof and having a body fixed with relation to the implement, ground wheels having steering spindles pivotally connected with said truck, a shaft mounted to rotate in said body, a draft pole connected to said shaft so as to rotate the same when said pole swings laterally, a steering member loosely mounted on said shaft and operatively connected with the steering spindles of the ground wheels, means for connecting said steering member with said shaft so as to cause it to rotate in unison therewith, and for disconnecting it from said shaft so as to move independently thereof, and means for manually operating said steering member when disconnected from said shaft, substantially as described.

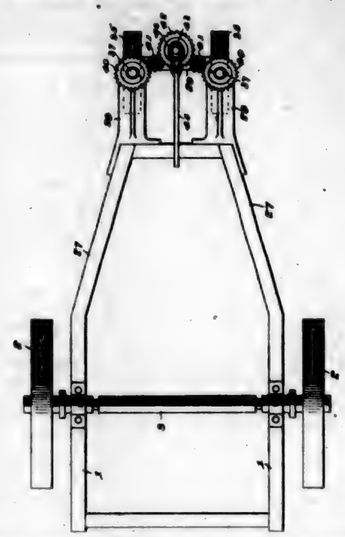

3. The combination, with the implement to be drawn, of a truck supporting the forward end thereof and having a body fixed with relation to the implement, ground wheels having vertical steering spindles pivotally mounted in said truck, a vertical shaft mounted in said truck, a draft pole connected to said shaft so as to rotate the same when said pole swings laterally, a steering member loosely mounted on said shaft and operatively connected with the steering spindles, and means under the control of the operator for connecting said steering member with and disconnecting it from said shaft and for manually operating it when so disconnected, substantially as described.

4. The combination, with the implement to be drawn, of a truck supporting the forward end thereof, ground wheels having vertical steering spindles pivotally mounted in said truck, a vertical steering shaft mounted in said truck, a draft pole connected to said shaft so as to rotate the same as the pole swings laterally, gearing connecting said spindles and shaft, comprising a gear loosely mounted on said shaft and provided with locking means whereby it may be connected with and disconnected from the shaft, and an operating lever adapted to be connected to said gear to rotate the same, said lever being longitudinally movable and controlling the locking mechanism through its longitudinal movement, substantially as described.

5. In a mechanism of the character described, the combination, with a steering shaft, and a steering member loosely mounted thereon, of a spring-actuated locking bolt mounted to move radially on the steering member and normally engaging the shaft, and a longitudinally movable slotted operating lever through which the shaft extends, said lever being adapted to engage the locking bolt to move the same longitudinally by its longitudinal movement, and to rotate the steering member by its lateral vibration when thus engaged, substantially as described.

6. In a mechanism of the character described, the combination, with a steering shaft, and a steering member loosely mounted thereon and provided with a projection, of a spring-actuated locking bolt mounted to slide radially on said steering member, normally engaging the shaft, and provided with a finger normally in contact with said projection and extending above the same, and an operating lever slotted to receive the shaft and finger and provided with a part adapted to engage the finger and to fit between the finger and projection when said lever is depressed, substantially as described.

7. In a mechanism of the character described, the combination, with a vertical steering shaft, ground wheels, and means for operatively connecting said steering shaft and the ground wheels, of a collar secured on said shaft, a horizontal sleeve carried by said collar, and a draft pole provided with a horizontal pivot passing through said sleeve, substantially as described.

8. The combination, with the implement to be drawn, of arms extending forward from the frame of said implement and provided with vertical bearing sleeves, a cross-bar connecting said arms, ground wheels having vertical steering spindles mounted in said sleeves, a vertical steering shaft mounted on said cross-bar, a laterally swinging draft pole operatively connected to said steering shaft, gears mounted upon the upper ends of the steering spindles, a gear loosely mounted on the upper end of the steering shaft and connected with the spindle gears by intermediate gearing, means for locking said central gear to the steering shaft, and an operating lever controlling said locking mechanism and central gear, substantially as described.

9. In a mechanism of the character described, a draft pole, a steering shaft operatively connected therewith, ground wheels, and a steering member loosely mounted on said shaft and operatively connected with the ground wheels, said steering member being provided with locking mechanism whereby it may be connected with and disconnected from the shaft, in combination with an operating lever adapted to vibrate both horizontally and vertically and to move longitudinally, the vertical movements of said lever connecting it with and disconnecting it from the steering member and locking mechanism, the longitudinal movements of said lever operating the locking mechanism, and the horizontal vibratory movements of said lever operating the steering member when disconnected from the shaft and engaged by said lever, substantially as described.

852,021. GRINDING APPARATUS. GRAHAM GROSVENOR and FREDERIC A. COOLIDGE, New York, N. Y., assignors to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed May 27, 1905. Serial No. 262,549.

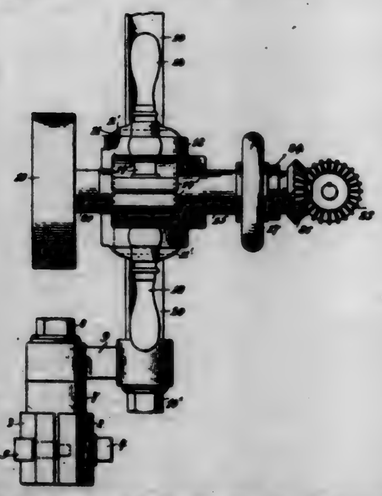

Claim.—1. In a grinding apparatus, the combination of a guide bar, a grinding wheel shaft adjustable in a plane transverse to and about an axis coincident with the axis of said guide bar, and means for holding the shaft in its position of adjustment.

2. In a grinding apparatus, the combination of a guide bar of angular cross section, a grinding wheel shaft slidably mounted on said bar and adjustable in a plane transverse to and about an axis coincident with the axis of the bar, and means for holding the shaft in its position of adjustment in said plane.

3. In a grinding apparatus, the combination of a guide, a grinding wheel shaft extending transversely to and slidably mounted on said guide and adjustable in a plane transverse to said guide, a support for the apparatus, means extending between said guide and said support for adjusting the guide laterally and holding it in its adjusted position, and means for holding said shaft in its position of adjustment in said plane.

4. In a grinding apparatus, the combination of a guide bar, a bearing whose axis is disposed at an angle to the axis of the bar, said bearing being slidably mounted on said bar and adjustable about the axis of said bar, means for holding the bearing in its position of adjustment about said axis, a grinding wheel shaft carried by said bearing, a support for the apparatus and means extending between said guide and said support for adjusting the guide laterally and holding it in its adjusted position.

5. In a grinding apparatus, the combination of a guide bar, a bearing whose axis is disposed at an angle to the axis of the bar, said bearing being slidably mounted on said bar and adjustable about the axis of said bar, means for holding the bearing in its position of adjustment about said axis, a grinding wheel shaft carried by said bearing, means for moving said shaft toward and away from the surface to be ground, a support for the apparatus and means extending between said guide and said support for adjusting the guide laterally and holding it in its adjusted position.

6. In a grinding apparatus, the combination of a laterally adjustable guide bar, a bearing whose axis is disposed at an angle to the axis of the bar, said bearing being slidably mounted on said bar and adjustable about the axis of said bar, a sleeve mounted to turn and to slide axially in said bearing, and a grinding wheel shaft eccentrically mounted in said sleeve.

7. In a grinding apparatus, the combination of a pivotally adjustable arm, a guide bar of angular cross section extending laterally therefrom, a bearing whose axis is disposed at an angle to the axis of the bar, said bearing being slidably mounted on said bar and adjustable about the axis of the bar, a sleeve mounted to turn and slide axially in said bearing, and a grinding wheel shaft eccentrically mounted in said sleeve.

8. In a grinding apparatus, the combination of a clamping device, a guide bar adjustable laterally in a curved path about said clamping device, a bearing whose axis is disposed at an angle to the axis of the bar, said bearing being slidably mounted on said bar and adjustable about the axis of said bar, means for holding the bearing in its position of adjustment about said axis, and a grinding wheel shaft carried by said bearing.

9. In a grinding apparatus, the combination of a clamping device, a guide bar adjustable laterally in a curved path about said clamping device, a bearing whose axis is disposed at an angle to the axis of the bar, said bearing being slidably mounted on the bar and adjustable about the axis of said bar, means for holding the bearing in its position of adjustment about said axis, a grinding wheel shaft carried by said bearing, and means for moving said shaft toward and away from the surface to be ground.

10. In a grinding apparatus, the combination of a clamping device, a guide bar adjustable laterally in a curved path about said clamping device, a bearing whose axis is disposed at an angle to the axis of the bar, said bearing being slidably mounted on said bar and adjustable about the axis of said bar, a sleeve mounted to move in said bearing, and a grinding wheel shaft eccentrically mounted in said sleeve.

11. In a grinding apparatus, the combination of a clamping device, an arm pivotally adjustable thereon, a guide bar of angular cross section extending laterally therefrom, a bearing whose axis is disposed at an angle to the axis of the bar, said bearing being slidably mounted on said bar, and adjustable about the axis of the bar, a sleeve mounted to turn and slide axially in said bearing, and a grinding wheel shaft eccentrically mounted in said sleeve.

12. A grinding apparatus comprising in combination, a clamping device, an arm pivotally adjustable on said device, a guide bar of angular cross section secured to the arm, a sleeve slidably mounted on said bar, a split clamp rotatably mounted on said sleeve, a split bearing rigid with said split clamp, a sleeve mounted in said bearing, a shaft eccentrically mounted in said latter mentioned sleeve, and operating handles substantially as set forth.

13. In a grinding apparatus, the combination of a clamping device, a grinding wheel, and means of adjustment comprising two axes of adjustment parallel to the plane of rotation of the grinding wheel whereby said wheel may be positioned at one setting of the clamping device to grind surfaces whose planes are disposed at an angle to each other.

852,022. CURRENT-MOTOR. JOHN KIRSCHWENG, Butte, Mont. Filed Nov. 23, 1905. Serial No. 288,639.

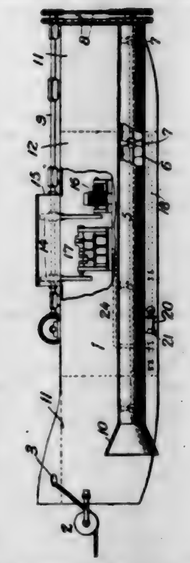

Claim.—1. In a current motor, the combination with a supporting hull adapted for submersion and provided with water tanks of a capacity adapted to cause submersion of said hull when said tanks are filled and a hermetically sealable machinery compartment, and with one or more current wheels, of a pump within said machinery compartment, and driven by said current wheel or wheels, means for admitting water to said tanks, and means connecting said pump to said tanks.

2. In a current motor, the combination with a supporting hull adapted for submersion and provided with submersion water tanks and with a hermetically closable machinery compartment, a power shaft passing through a wall of such compartment, and a current wheel connected to said shaft, of means for admitting water to said tanks.

3. In a current motor, the combination with a supporting hull adapted for submersion and provided with submersion water tanks and with a hermetically closable machinery compartment, a power shaft passing through a wall of such compartment, and a current wheel connected to said shaft, of means for admitting water to said tanks, and a pump located within said machinery compartment, driven by said shaft, and connected to said tanks to empty the same.

4. In a current motor, the combination with a supporting hull provided with one or more longitudinal shafts carrying current wheels, and with a longitudinal deck shaft driven thereby, and provided also with a hermetically-closable chamber, of power-converting machinery located within said hermetically-closable chamber and driven from said deck shaft, and a windlass likewise driven by said shaft and adapted for maneuvering the hull.

5. In a current motor, the combination of a supporting hull having within it a hermetically closable machinery chamber, one or more longitudinal shafts carrying current wheels, a longitudinal deck shaft extending into said chamber, sprocket gearing connecting said deck shaft and current wheel shaft, and machinery within said chamber driven from said deck shaft.

6. In a current motor, the combination of a supporting hull having within it a closed machinery chamber, one or more longitudinal shafts carrying current wheels and extending substantially to the stern of the hull, a longitudinal deck shaft likewise extending substantially to the stern of the hull, gearing at the stern of the hull connecting said shafts, a transverse windlass shaft forward of said machinery chamber, gearing connecting the windlass shaft and said longitudinal deck shaft, and machinery within said chamber likewise driven by said longitudinal deck shaft.

852,023. CORN-CAP. WILLIAM E. KLOKKE, St. Louis, Mo. Filed Aug. 18, 1906. Serial No. 331,183.

Claim.—1. A device for the treatment of corns, comprising an elastic covering adapted to inclose the affected member, a section of elastic soft material within the covering, an element fastening the soft material and elastic covering together, and a draw string device to bind the covering on the affected member, substantially as specified.

2. A device for the treatment of corns, comprising an elastic covering adapted to inclose the affected member, a section of elastic soft material within the covering at one side thereof, elastic cement binding the soft material to the covering, and a draw string device to bind the covering on the affected member, substantially as specified.

852,024. APPARATUS FOR PREPARING PULVERULENT MATERIALS FOR MOLDING OR BRIQUETTING. GEORGE J. MASHEK, Newark, N. J. Filed July 3, 1906. Serial No. 324,623.

Claim.—1. In apparatus for preparing pulverulent materials for molding or briqueting, the combination of a drying chamber, means for showering the pulverulent material in such drying chamber whereby the pulverulent material will be maintained with its particles in a separated condition in such drying chamber, means for passing heating and drying gases through such drying chamber in contact with such separated particles, a mixing chamber receiving the heated and dried material from the drying chamber, means for delivering a binder to the material in the mixing chamber, and means in said mixing chamber for mixing the binder with the heated and dried material, substantially as set forth.

2. In apparatus for preparing pulverulent materials for molding or briqueting, the combination of a drying chamber, means for showering the pulverulent material in such drying chamber whereby the pulverulent material will be maintained with its particles in a separated condition in such drying chamber, means for passing heating and drying gases through such drying chamber in contact with such separated particles, a mixing chamber receiving the

heated and dried material from the drying chamber, means for delivering a binder to the material in the mixing chamber, and rotating stirrers for stirring the binder into the heated and dried pulverulent material in the mixing chamber, substantially as set forth.

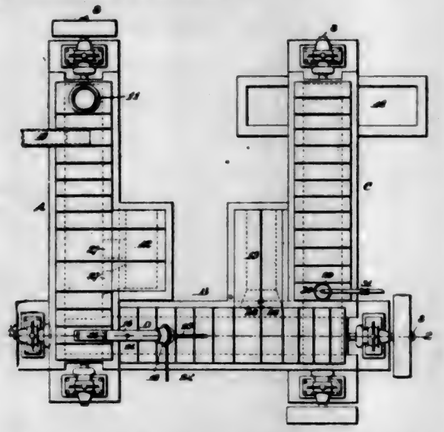

3. In apparatus for preparing pulverulent materials for molding or briqueting, the combination of horizontally arranged drying and mixing chambers connected in succession, rotating shafts passing longitudinally through said chambers and carrying blades for acting upon the material, and means for rotating such shafts at different speeds, so as to shower the material in the drying chamber but not in the mixing chamber, substantially as set forth.

4. In apparatus for preparing pulverulent materials for molding or briqueting, the combination of horizontally arranged drying and mixing chambers connected in succession, rotating shafts running longitudinally through both said chambers and carrying blades for acting upon the material, means for rotating such shafts at different speeds so as to shower the material in the drying chamber but not in the mixing chamber, and a furnace for delivering heating and drying gases to the drying chamber, substantially as set forth.

5. In apparatus for preparing pulverulent materials for molding or briqueting, the combination of horizontally arranged drying and mixing chambers connected in succession, rotating shafts running longitudinally through both said chambers and carrying blades for acting upon the material, means for rotating such shafts at different speeds so as to shower the material in the drying chamber but not in the mixing chamber, a furnace for delivering heating and drying gases to the drying chamber, and a furnace for delivering heating gases to the mixing chamber for maintaining the temperature of the latter chamber, substantially as set forth.

6. In apparatus for preparing pulverulent materials for molding or briqueting, the combination of drying, mixing and cooling chambers, means for feeding the material through these chambers in succession, means for delivering heating and drying gases to the drying chamber, means for feeding a binder to the mixing chamber, and means for drawing air through the cooling chamber, substantially as set forth.

7. In apparatus for preparing pulverulent materials for molding or briqueting, the combination of a drying chamber, means for maintaining the pulverulent material with its particles in a separated condition in such drying chamber, means for passing heating and drying gases through said drying chamber, a mixing chamber receiving the heated and dried material from the drying chamber, means for delivering a binder to the material in the mixing chamber, means in said mixing chamber for mixing the binder with the heated and dried material, a cooling chamber receiving the material from the mixing chamber, and means for drawing air through the cooling chamber, substantially as set forth.

8. In apparatus for preparing pulverulent materials for molding or briqueting, the combination of horizontally arranged drying, mixing and cooling chambers connected in succession, rotating shafts passing longitudinally through these chambers and carrying stirring and feeding blades, and means for driving the blades in the mixing chamber at a lower speed than the blades in the drying chamber, substantially as set forth.

9. In apparatus for preparing pulverulent materials for molding or briqueting, the combination of horizontally arranged drying, mixing and cooling chambers connected in succession, rotating shafts passing longitudinally through these chambers and carrying stirring and feeding blades, and means for driving the blades in the mixing chamber at a lower speed than the blades in the drying and cooling chambers, substantially as set forth.

10. In apparatus for preparing pulverulent materials for molding or briqueting, the combination of horizontal drying, mixing and cooling chambers located at successively lower elevations and discharging directly one into another, means for feeding the material through these chambers successively, means for supplying heating and drying gases to the drying chamber, means for supplying a binder to the mixing chamber, and means for supplying a cooling medium to the cooling chamber, substantially as set forth.

11. In apparatus for preparing pulverulent materials for molding or briqueting, the combination with a mixer in which the pulverulent material and binder are mixed, of means for producing pitchfoam and means for delivering the pitchfoam to such mixer, substantially as set forth.

12. In apparatus for preparing pulverulent materials for molding or briqueting, the combination with a mixer in which the pulverulent material and binder are mixed, of a pitchfoamer comprising a chamber, means for delivering pitch and water to said chamber and means for maintaining said chamber in a heated condition so as to cause the pitch and water to unite and form pitchfoam, and means for delivering the pitchfoam to such mixer, substantially as set forth.

13. In apparatus for preparing pulverulent materials for molding or briqueting, a pitch foamer having in combination a chamber, a steam jacket surrounding said chamber, means for delivering melted pitch and water to the bottom of said chamber, and an opening for discharging pitch foam at the top of said chamber, substantially as set forth.

14. In apparatus for preparing pulverulent materials for molding or briqueting, a pitch foamer having in combination concentric pipes forming a jacketed chamber, an expansion flange connecting such pipes together at one end, a rigid connection between such pipes at the other end, a pipe for supplying steam to the steam jacket, pipes for supplying melted pitch and water to the central chamber, a drip pipe for the steam jacket, and a draw-off cock for drawing off the pitch from the central chamber, substantially as set forth.

852,025. PROCESS OF PREPARING PULVERULENT MATERIALS FOR MOLDING OR BRIQUETING. GEORGE J. MASHEK, Newark, N. J. Filed July 3, 1906. Serial No. 324,624.

Claim.—1. The process of preparing pulverulent materials for molding or briqueting, consisting in first subjecting the material to heating and drying gases while its particles are maintained in a separated condition, and subsequently mixing the binder with the dried and heated material, substantially as set forth.

2. The process of preparing pulverulent materials for molding or briqueting, consisting in first subjecting the material to heating and drying gases while the material is maintained with its particles in a separated condition, and then mixing the binder with the dried and heated material by the action of stirring blades upon such material and binder, substantially as set forth.

3. The process of preparing pulverulent materials for molding or briqueting, consisting in first subjecting the pulverulent material to heating and drying gases while the material is maintained with its particles in a separated condition, then mixing the binder with such dried and heated material, and finally subjecting the material to a cooling medium to reduce the binder to the plastic condition, substantially as set forth.

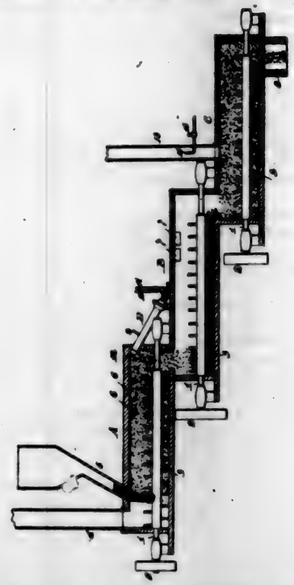

4. The process of preparing pulverulent materials for molding or briqueting, consisting in first subjecting the material to heating and drying gases while the material is maintained with its particles in a separated condition, then mixing the binder with the dried and heated material, and then tossing or showering the combined material in a chamber through which air is drawn to reduce the temperature of the binder to the point of plasticity, substantially as set forth.

5. The process of preparing pulverulent materials for molding or briqueting, consisting in first subjecting the material to heating and drying gases while the material is maintained with its particles in a separated condition, then mixing the binder with the dried and heated material by stirring the binder therein, and then cooling the material to the point where the binder is plastic by tossing it in a chamber through which air is drawn, substantially as set forth.

6. The method of mixing coal-tar pitch with pulverulent material for molding or briqueting, consisting in diluting the pitch with water while in a heated condition, thereby foaming the pitch, and then mixing such pitch foam with the pulverulent material, substantially as set forth.

7. The method of preparing pulverulent materials for molding or briqueting, consisting in first heating and drying the material, and then mixing with the dried and heated material a foam of pitch, substantially as set forth.

8. The method of preparing pulverulent materials for molding or briqueting, consisting in first subjecting the pulverulent material to heating and drying gases while such material is maintained with its particles in a separated condition, and then mixing with the dried and heated material a foam of pitch, substantially as set forth.

9. The method of preparing pulverulent materials for molding or briqueting, consisting in first subjecting the material to heating and drying gases while the material is maintained with its particles in a separated condition, then mixing with the dried and heated material a foam of pitch, and then cooling the material until the pitch becomes plastic, substantially as set forth.

852,026. PROTECTION OF ELECTRICAL SYSTEMS FROM LIGHTNING AND OTHER STATIC DISTURBANCES. RALPH D. MERSHON, New York, N. Y. Filed May 8, 1905. Serial No. 259,329.

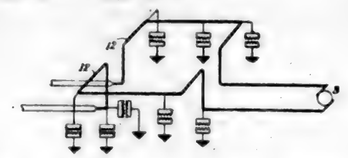

Claim.—1. The combination of electrical apparatus; a line conductor connected therewith, a portion of the conductor being of diminished electrostatic capacity; and one or more arrester devices connected to the conductor and to ground; the portion of the conductor having diminished electrostatic capacity being located between the arrester device or devices and the apparatus; as set forth.

2. The combination of electrical apparatus; a line conductor connected therewith, reduced in size for a portion of its length; and one or more arrester devices connected to the conductor and to ground; the reduced portion of the conductor being located between the arrester device or devices and the apparatus; as set forth.

3. The combination of electrical apparatus; an aerial line conductor connected therewith; a portion of the conductor being elevated from the ground higher than the normal distance therefrom; and one or more arrester devices connected to the conductor and to ground; the said elevated portion of the conductor being located between the arrester device or devices and the apparatus; as set forth.

4. The combination of electrical apparatus; an aerial line conductor connected therewith, a portion of the conductor being reduced in size and elevated from the ground higher than the normal distance therefrom; and one or more arrester devices connected to the conductor and to ground; the said elevated and reduced portion of the conductor being located between the arrester device or devices and the apparatus, as set forth.

5. The combination of electrical apparatus; a plurality of conductors connected therewith constituting a circuit, said conductors for a portion of their extent being separated more than their normal distance apart; and one or more arrester devices connected to one or more of the conductors and to ground; the said separated portion of the circuit being located between the arrester device or devices and the apparatus; as set forth.

6. The combination of electrical apparatus; a plurality of conductors connected therewith constituting a circuit, said conductors for a portion of their extent being separated more than their normal distance apart, and one or more of the conductors being reduced in size at said separated portion of the circuit; and one or more arrester devices connected to one or more of the conductors and to ground; the separated portion of the circuit being located between the arrester device or devices and the apparatus, as set forth.

7. The combination of electrical apparatus; a plurality of aerial conductors connected therewith constituting a circuit, said conductors for a portion of their extent being separated more than their normal distance apart and elevated above the ground more than their normal distance therefrom; and one or more arrester devices connected to one or more of the conductors and to ground; the said separated and elevated portion of the circuit being located between the arrester device or devices and the apparatus, as set forth.

8. The combination of electrical apparatus; a plurality of aerial conductors connected therewith constituting a circuit, said conductors for a portion of their extent being separated more than their normal distance apart and elevated more than their normal distance above the ground, one or more of the conductors being reduced in size at said separated and elevated portion of the circuit; and one or more arrester devices connected to one or more of the conductors and to ground; the said separated, elevated and re-

duced part of the circuit being located between the arrester device or devices and the apparatus; as set forth.

852,027. ALTERNATING-CURRENT MACHINES ON SINGLE-PHASE CIRCUITS. RALPH D. MERSHON, New York, N. Y. Filed Sept. 20, 1904. Serial No. 226,451.

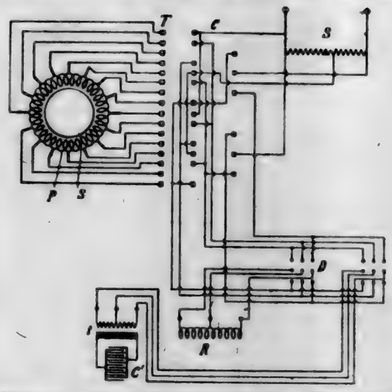

Claim.—1. The combination with the primary element of an alternating current machine, of a reactance and a capacity connected to the primary element, and connections from the primary element to a single phase circuit, said circuit connections being intermediate to the connections of the reactance and capacity, as set forth.

2. The combination with the primary element of an alternating current machine, of a reactance and a capacity connected to the primary element on electrical diameters substantially 90 electrical degrees apart, and connections from the primary element to a single phase circuit, said circuit connections being intermediate to the connections of the reactance and capacity, as set forth.

3. The combination with the primary element of an alternating current machine, of a reactance and a capacity connected to the primary element, and connections from the primary element to a single phase circuit, said circuit connections being midway between the connections of the reactance and capacity, as set forth.

4. The combination with the primary element of an alternating current machine, of a reactance and a capacity connected to the primary element on electrical diameters substantially 90 electrical degrees apart, and connections from the primary element to a single phase circuit, said circuit connections being midway between the connections of the reactance and capacity, as set forth.

5. The combination with the primary element of an alternating current machine, connections therefrom to a single phase circuit, and means for varying the number of poles, of a reactance and a capacity connected to the primary element, said circuit connections being intermediate to the connections of the reactance and capacity, and means for shifting the connections of the reactance and capacity to maintain the relation thereof to the said circuit connections for the different numbers of poles, as set forth.

6. The combination with the primary element of an alternating current machine, connections therefrom to a single phase circuit, and means for varying the number of poles, of a reactance and a capacity connected to the primary element on electrical diameters substantially 90 electrical degrees apart, said circuit connections being intermediate to the connections of the reactance and capacity, and means for shifting the connections of the reactance and capacity to maintain the relation thereof to the said circuit connections for the different numbers of poles, as set forth.

7. The combination with the primary element of an alternating current machine, connections therefrom to a single phase circuit, and means for varying the number of poles, of a reactance and a capacity connected to the primary element, said circuit connections being midway between the connections of the reactance and capacity, and means for shifting the connections of the reactance and capacity to maintain the relation thereof to the said circuit connections for the different numbers of poles, as set forth.

8. The combination with the primary element of an alternating current machine, connections therefrom to a single phase circuit, and means for varying the number of poles, of a reactance and a capacity connected to the primary element on electrical diameters substantially 90 electrical degrees apart, said circuit connections being midway between the connections of the reactance and capacity, and means for shifting the connections of the reactance and capacity to maintain the relation thereof to the said circuit connections for the different numbers of poles, as set forth.

9. The combination with the primary element of an alternating current machine, and means for varying the number of poles, of a reactance and a capacity connected to the primary element, connections from the primary element to a single phase circuit, said connections being intermediate to the connections of the reactance and capacity, means for shifting the connections of the reactance and capacity to maintain the relation thereof to the said circuit connections for the different numbers of poles, and means for regulating the current taken by the reactance and the capacity, as set forth.

10. The combination with the primary element of an alternating current machine, connections therefrom to a single phase circuit, and means for varying the number of poles, of a reactance and a capacity connected to the primary element on electrical diameters substantially 90 electrical degrees apart, said circuit connections being intermediate to the connections of the reactance and capacity, means for shifting the connections of the reactance and capacity to maintain the relation thereof to the said circuit connections for the different numbers of poles, and means for regulating the current taken by the reactance and the capacity, as set forth.

11. The combination with the primary element of an alternating current machine, connections therefrom to a single phase circuit, and means for varying the number of poles, of a reactance and a capacity connected to the primary element, said circuit connections being midway between the connections of the reactance and capacity, means for shifting the connections of the reactance and the capacity to maintain the relation thereof to the said circuit connections for the different numbers of poles, and means for regulating the current taken by the reactance and the capacity, as set forth.

12. The combination with the primary element of an alternating current machine, connections therefrom to a single phase circuit, and means for varying the number of poles, of a reactance and a capacity connected to the primary element on electrical diameters substantially 90 electrical degrees apart, said circuit connections being midway between the connections of the reactance and the capacity, means for shifting the connections of the reactance and capacity to maintain the relation thereof to the said circuit connections for the different numbers of poles, and means for regulating the current taken by the reactance and the capacity, as set forth.

13. The combination with the primary element of an alternating current machine, connections therefrom to a single phase circuit, and means for varying the number of poles, of a capacity connected to the primary element across one or more common electrical diameters for one number of poles, and means for shifting the connections of the capacity to maintain the relation thereof to the circuit connections for other numbers of poles, as set forth.

14. The combination with the primary element of an alternating current machine, connections therefrom to a single phase circuit, and means for varying the number of poles, of a capacity connected to the primary element across one or more common electrical diameters substantially 45 electrical degrees from the circuit connections for one number of poles, and means for shifting the connections of the capacity to maintain the relation thereof to the circuit connections for other numbers of poles, as set forth.

15. The combination with the primary element of an alternating current motor, of a reactance and a capacity connected to the primary element, connections from the primary element to a single phase circuit, the said circuit connections being intermediate to the connections of the reactance and capacity, and means for interchanging the connections of the reactance and capacity to reverse the motor, as set forth.

852,028. ELECTRIC MOTOR AND OTHER APPARATUS IN WHICH THERE IS MAGNETIC FLUX. RALPH D. MERSHON, New York, N. Y. Filed Mar. 14, 1904. Renewed Jan. 28, 1907. Serial No. 354,538.

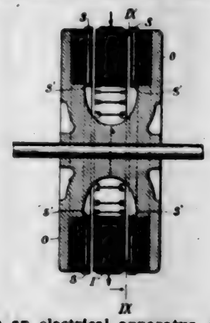

Claim.—1. In an electrical apparatus, the combination with an annular element of polygonal cross section, windings on the opposite plane sides of the element, and means for feeding current or currents to the windings to produce poles in the same relative positions in the faces, of an annular element having a plurality of surfaces parallel and adjacent the wound faces of the others, as set forth.

2. In an electrical apparatus, the combination with an annular element of polygonal cross section having a ring winding or windings laid in slots therein, of an annular element having a plurality of faces adjacent the same number of surfaces on the first element, as set forth.

3. In an electrical apparatus, the combination with an annular element of polygonal cross section having a ring winding or windings laid in slots therein, of an annular element having a plurality of faces adjacent the same number of surfaces on the first element and having a winding or windings laid in slots in said faces, as set forth.

4. In a electrical apparatus, the combination with an annular element of polygonal cross section having a ring winding or windings laid in slots therein, of an annular element having a plurality of faces adjacent the same number of surfaces on the first element and having short-circuited windings laid in slots in said faces, as set forth.

5. In an electrical apparatus, the combination with an annular element of rectangular cross section having a ring winding or windings laid in slots therein, of an annular element having two faces adjacent the same number of surfaces on the first element and having windings laid in slots in said faces, as set forth.

6. In an electrical apparatus, the combination with an annular element of rectangular cross section having a ring winding or windings laid in slots therein, of an annular element having two faces adjacent the same number of surfaces on the first element and having short-circuited windings laid in slots in said faces, as set forth.

852,029. APPARATUS FOR MAKING SECTIONAL PIPES OR CONDUITS. JOHN C. MITCHELL, Newport News, Va., assignor to Lock Joint Pipe Company, a Corporation of New Jersey. Filed July 19, 1906. Serial No. 326,937.

Claim.—1. An apparatus for the manufacture of pipe sections of the kind described from plastic substances comprising, in combination, an open mold having a contour corresponding to that required for the exterior of the pipe section, and a die or cutter conforming to the contour of the inner surface of the pipe section and movable across and through the mold to shear off and remove the material therein in excess of that filling the space between the mold and cutter and having its shearing or cutting edge formed to compact the material filling the said space, as set forth.

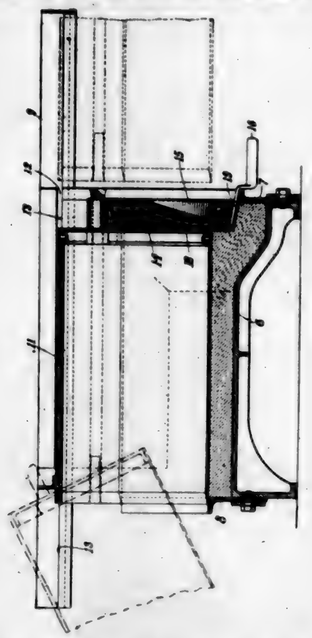

2. An apparatus for the manufacture of pipe sections of the kind described, from plastic substances, comprising, in combination, an open mold with detachable sections at its ends and edges, and having a contour corresponding to that required for the exterior of the pipe section, and a die or cutter conforming to the contour of the inner surface of the pipe section and movable across and through the mold to shear off and remove the material therein in excess of that filling the space between the mold and cutter and having its shearing or cutting edge formed to compact the material filling the said space, as set forth.

3. An apparatus for the manufacture of pipe sections of the kind described, from plastic substances, comprising, in combination, an open mold having a contour corresponding to that required for the exterior of the pipe section, a die or cutter conforming to the contour of the inner surface of the pipe section, except at the bell end, and movable across and through the mold to shear off and remove the material in excess of that filling the space between the cutter and the mold, and a rotary wiper carried by the cutter for fashioning the inner surface of the bell end, as set forth.

4. The combination with an open mold of longitudinal guides in fixed relation thereto, and a cutter conforming to the contour of the inner surface of the article to be molded and movable along said guides for shearing off and removing material from the mold in excess of that filling the space between the cutter and mold, the shearing or cutting edge of the cutter being formed to compact the material filling the said space, as set forth.

5. An apparatus for the manufacture of pipe sections of the kind described, from plastic material, comprising, in combination, an open mold having a contour corresponding with that required for the exterior of the pipe section, and a cutter or die conforming to the contour of

the inner surface of the pipe section and movable across and through the mold in fixed relation thereto, the entering edges of the cutter being inclined so as to shear off and remove from the mold less than the total excess of material normally filling the space between the cutter and mold and compact the material remaining in the mold, as set forth.

6. An apparatus for the manufacture of pipe sections of the kind described, from plastic material, comprising, in combination, an open mold having a contour corresponding with that required for the exterior of the pipe section, and a cutter or die conforming to the contour of the inner surface of the pipe section and movable across and through the mold in fixed relation thereto, the entering edges of the cutter being of smaller diametrical dimensions than the body of the same, whereby the material not sheared off and removed by the cutter will be compacted in the mold, as set forth.

7. The combination with an open mold, a cutter movable across and through the same, the mold and cutter being so related that the space between them corresponds in shape to that required in the article to be molded, a rotary wiper pivoted to the rear end of the cutter and adapted to form and finish the end portion of said article when the cutter has been forced to a given point in said mold, as set forth.

8. The combination with an open mold having longitudinal detachable plates 9, formed or provided with guides, a cutter 10 having projecting edges or flanges for engaging with the guides, and a rotary wiper 15 pivoted to the rear of the cutter, as and for the purpose set forth.

852,030. ELASTIC-FLUID TURBINE. WILLIAM A. NUSSBAUMER, Milwaukee, Wis. Filed Sept. 8, 1906. Serial No. 333,839.

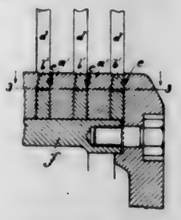

Claim.—1. The combination of a number of interlocking selfcentering vane supporting rings having radiating grooves arranged in circular series and vanes having their shanks fitted in said grooves and clamped between adjoining rings, substantially as described.

2. The combination of a number of concentric vane supporting rings fitted together side by side and having radiating grooves arranged in circular series, vanes having shanks fitted in said grooves and clamped between adjoining rings, and a key piece fitted in annular grooves in the opposing faces of adjoining rings and engaging with corresponding notches in the vane shanks, substantially as described.

3. The combination of a number of concentric vane supporting rings having interfitting lateral annular recesses and flanges, and vanes having their shanks fitted and clamped in circular series of radiating grooves between said rings, substantially as described.

852,031. SCORE-TABLET FOR GAMES. JOHN C. PATTERSON, Philadelphia, Pa. Filed Mar. 28, 1906. Serial No. 308,882.

Claim.—A score tablet for games composed of a plurality of firmly attached sheets having a localised region for individual detachment, said sheets being inscribed upon the face toward one side of the tablet with markings appropriate for individual games, and being inscribed upon the face toward the opposite side of the tablet with markings appropriate for groups of games constituting the unit of the ultimate score.

852,032. JOURNAL-BOX. JOHN PEARSON, Chicago, Ill. Filed May 2, 1906. Serial No. 314,751.

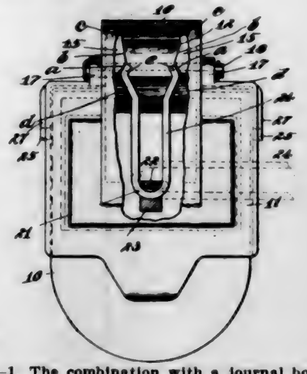

Claim.—1. The combination with a journal box having a hinged lid, of cams fixed to the box, and a U-shaped spring carried by the lid and coöperating with the cams to move the lid into and hold it in its closed position.

2. The combination with a journal box having a hinged lid, of opposing cam faces on the box, and a U-shaped spring having angular ends coöperating with the cams.

3. The combination with a journal box having a hinge-pin lug, of a lid having its hinge-pin journaled in the lug, shoulders on the lug having two pairs of opposing cam faces, one pair of such cam faces being arranged divergingly and the other convergingly, a U-shaped spring carried by the lid and the ends of which coöperate with one pair of cam faces to swing the lid into its closed position and with the other pair of cam faces to swing the lid into its open position.

4. The combination with a journal box having a hinge-pin lug, and a lid having a hinge-pin pivoted in the lug, of oppositely disposed shoulders concentric with the turning center of the lid and provided on their adjacent sides with opposed pairs of cam faces, one pair of which converges upwardly and the other pair of which diverges from the upper ends of the first pair, and a U-shaped spring carried by the lid the limbs of such spring having angular ends which when the lid is in one position react against the converging pair of cam faces to close the lid and when the lid is in another position react against the other pair of cam faces to throw the lid to its full open position.

5. The combination with a journal box, of a lid having a hinge-pin pivoted on the box, the hinge pin opening having a hinge-pin support with which such pin is out of engagement when the lid is closed, and the opening being elongated to permit of sliding of the lid upwardly so that the pin will ride upon the pin support when the lid is swung open.

6. The combination with a journal box having a hinge-pin lug the opening of which is provided with a shoulder, of a lid having a hinge-pin in the opening normally out of engagement with the shouder, the said opening being elongated vertically to permit of sliding movement of the lid so that the pin will ride on the shoulder when the lid is swung to open or close the lid.

7. The combination with a journal box having a hinge-pin opening, of a lid having a hinge-pin in the opening, lid locking means disengaged by sliding movement of the lid, and a bearing in the hinge pin opening with which the pin is normally out of engagement but upon which the pin rests and turns after the locking means are disengaged.

8. The combination with a journal box having a vertically elongated hinge-pin opening provided with an angular shoulder, of a lid having a hinge-pin in the opening, such pin having a segmental recess which straddles the shoulder when the lid is closed, lugs on the box, and lug engaging hooks on the lid which are disengaged from the lugs by sliding movement of the lid which movement elevates the pin so that the latter will ride upon the shoulder when the lid is swung on its pivot.

9. The combination with a journal box having a vertically elongated opening and provided with opposing cam faces, a lid having a fixed pin located in the opening, locking lugs on the box, and coöperating hooks on the lid disengaged from the lugs by vertical sliding movement of the lid, of a U-shaped spring carried by the lid and the ends of which react against the opposing cam faces to slide the lid downwardly to engage the hooks with the lugs and close the lid.

10. The combination with a journal box having a hinge-pin lug provided with a vertically elongated opening, the box being provided with a lower pair of opposing cam faces converging upwardly and a reversely arranged pair of cam faces extending upwardly from the first mentioned pair, a lid having a hood inclosing the cams and provided with a hinge-pin in the opening, locking lugs on the box, and coöperating hooks on the lid which are disengaged from the lugs by sliding movement of the lid, of a U-shaped spring secured in the hood and having angular ends which when in engagement with the lower cam faces and the lid is partially closed slides the lid downwardly to move the hooks into locking engagement with the lugs and when in engagement with the upper cam faces throw the lid into full open position.

11. The combination with a journal box having a hinge-pin lug provided with a vertically elongated opening and a hinge-pin support at the lower end of the opening, of a lid having a recessed hinge pin in the opening straddling the support, locking lugs on the box, and lug-engaging hooks on the lid which are disengaged from the lugs by a vertical sliding movement of the lid which movement elevates the hinge pin so that when the lid is swung the pin rides on the support, shoulders on the hinge-pin lug concentric with the axis of the pin in its elevated position, upper and lower pairs of opposing cam faces on the adjacent sides of the shoulders, and a U-shaped spring carried by the lid, the ends of which react against one pair of opposing cam faces to slide the lid downwardly to engage the hooks with the lugs and react against the other pair of cam faces to throw the lid into and hold it in its open position.

12. The combination with a journal box having a hinged lid, of a removable spring carried by the lid and adapted to be engaged therewith by rotary movement in a plane parallel with the face of the lid.

13. The combination with a journal box lid having a button on its inner face, of a spring for holding the lid in closed position and adapted to be engaged and disengaged from the button by movement of the spring on the button as its axis.

14. The combination with a journal box, having a cam thereon, and a lid hinged to the box, of a spring for holding the lid in closed position, and a button on the lid with which the spring is adapted to be engaged by a rotary movement of the spring on the button.

15. The combination with a journal box having opposing cams, and a lid hinged to the box, of a U-shaped spring the free ends of which extend vertically and coöperate with the cams to maintain the lid in closed position, a button on the lid having a shank curved transversely on its under face and straddled by the spring, said spring being adapted to be engaged with the button by slipping the same over the button and then turning the spring to its vertical position, and a lug under the button shank and having its upper face concentric with the curvature of the shank on which the spring rests.

16. The combination with a journal box having a hinged lid, of cams on one of the parts and a U-shaped spring on the other part coöperating with the cams to move the lid into and hold it in its open and closed positions.

852,033. MOTOR. RAOUL PHILIPPE, Paris, France. Filed Nov. 6, 1905. Serial No. 286,160.

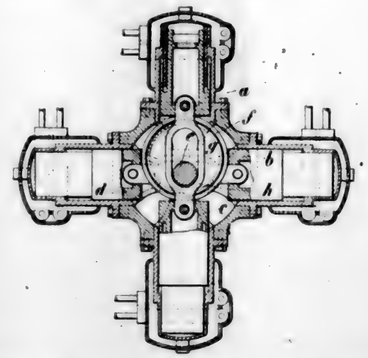

Claim.—1. The combination with a shaft, of a plurality of eccentrics secured thereon and set quartering, a ring concentric with each eccentric, balls between each ring and its eccentric, a pair of pistons bearing against each ring at diametrically opposite points, and links connecting said pistons and provided with slots for the shaft to pass through.

2. The combination with a shaft, of eccentrics secured thereon and set quartering, a ring revoluble on each eccentric, a pair of pistons bearing against each ring at diametrically opposite points, said pistons being arranged in pairs side by side, and slotted links connecting said pistons in each pair.

852,034. DEVICE FOR PROMOTING THE IMPETUS OF FOOT-POWER MACHINES. AMANDA J. PIERCE, Salt Lake City, Utah. Filed Jan. 22, 1906. Serial No. 297,225.

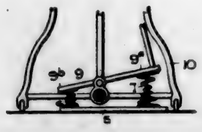

Claim.—As an article of manufacture, a device for use in connection with sewing machine and like treadles, comprising a single flat base piece designed to rest upon the floor beneath the treadle, and two springs of unequal length carried by the opposite ends of said base piece and designed to bear against the under side of the treadle on opposite sides of its pivot, substantially as described.—

852,035. DUST-DEFLECTOR. JACOB L. REPLOGLE and GEORGE B. THACKRAY, Westmont, Pa. Filed Oct. 19, 1906. Serial No. 339,627.

Claim.—1. A dust-deflector comprising a portion having a plane surface adapted to project laterally in an inclined direction, said inclined portion being provided with a locking strip arranged to fit within the groove of a window frame and means for positively and removably securing the same thereto.

2. A dust-deflector for window openings or the like, comprising a portion having a plane surface projecting laterally and outwardly in an inclined direction, a locking strip adapted to fit within the groove of a window frame, one or more locking teeth mounted in said strip and means for positively projecting and retracting the teeth therefrom for the purpose of locking and unlocking the same in and from the window frame.

3. In a dust-deflector, a locking-strip adapted to fit within the groove of a window frame, a series of locking teeth mounted in said strip, a sinuous locking bar adapted to coact with said teeth and to project or retract same by the longitudinal movement of said strip.

4. In a dust-deflector, a locking strip adapted to fit within the groove or recess of a window frame, one or more locking teeth slidably mounted in said strip, grooves or rabbets in said locking teeth, a sinuous locking bar fitted within the rabbets of said teeth, all so arranged that a movement of said bar in one direction will project said teeth from the locking strip, and a movement in the opposite direction will retract said teeth.

5. A dust-deflector comprising a portion adapted to project from the side of a window in a laterally inclined direction, said projecting portion being provided with a locking strip secured thereto adapted to fit within the groove of a window frame, one or more locking teeth slidably mounted in recesses provided therefor in said locking-strip, rabbets in said locking teeth, a slidable bar provided with a series of parallel and inclined surfaces on both sides thereof mounted within the rabbets of said teeth, a knob or handle projecting from said locking bar whereby said bar may be moved longitudinally in either direction for the purpose of projecting said teeth from or retracting same within said locking strip by the action of said inclined surfaces, and means for securing the locking mechanism aforesaid in position.

852,036. REPRODUCING DEVICE. EDWARD ROLLANDET, Pueblo, Colo. Filed June 7, 1905. Serial No. 264,156.

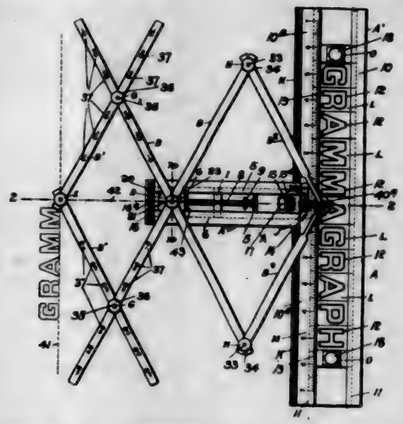

Claim.—1. In a reproducing device, a base comprising a copy-plate holder having a beveled edge and a centrally located arm connected to said beveled edge and extending at right angles to said holder, said arm having a recess adjacent its attached end, the outer end wall for said recess and the free end of the arm being parallel to the beveled edge of the holder, said beveled portions of the arm having marks thereon designating a line extending at right angles to said edge, copy plates in said holder and pantographic reproducing means including a reproducing and a tracing point mounted on said arm in operative relation to said plates.

2. In a reproducing device a base comprising a copy-plate holder having a longitudinal guideway therein and a centrally located arm extending at right angles to said holder, and having longitudinally extending guideways, a fulcrum block movably mounted in said ways in the arm, an adjusting screw mounted in a stationary nut on said arm and operatively connected with said block to move the same back and forth longitudinally, copy-plates movable in the guide way in said holder, and pantographic reproducing means pivotally mounted on said block in operative relation to said plates.

3. In a reproducing device, a base comprising a copy-plate holder and a centrally located arm extending at right angles thereto, and having longitudinally extending guideways, a fulcrum block movably mounted in said ways, an adjusting screw mounted in a stationary nut on said arm, and operatively connected with said block, and vertically adjustable pantographic reproducing means pivotally mounted on said block in operative relation to copy-plates in the said holder.

4. A reproducing device comprising a movable base having means to hold a plurality of copy-plates, intersecting graduated arms pivotally mounted on said base at their point of intersection, intersecting graduated arms carrying a reproducing point at their point of intersection, adjustably secured to the first named arms in parallel relation thereto and intersecting links carrying a tracing point their point of intersection pivotally secured to the opposite extremities of said arms in parallel relation thereto and in operative relation to said copy-plates.

5. A reproducing device comprising a base having means to hold a plurality of design-bearing copy-plates and a centrally located outwardly extending arm, pantographic reproducing means including a reproducing and a tracing point mounted on said arm to bring the last named point in operative relation to said plates, and an apertured arm movably mounted on said base and adapted to support the tracing point in its aperture at a predetermined point.

6. A reproducing device comprising a base having means to hold a plurality of design-bearing copy-plates, and a centrally located, outwardly extending arm, pantographic reproducing means including a reproducing and a tracing point mounted on said arm to bring the last named point in operative relation to said plates, and means on said base to hold said tracing point at the point of intersection of the base line of the design on said plates and the center line on the said base.

852,037. SAFETY-FUSE TERMINAL. JOSEPH SACHS, Hartford, Conn., assignor to The Sachs Company, Hartford, Conn., a Corporation of Connecticut. Filed Mar. 9, 1906. Serial No. 305,089.

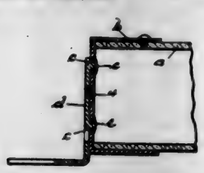

Claim.—1. A safety fuse terminal comprising an end cap, a contact terminal and lugs or ears provided integral with one of said members, the other member being provided with holes through which the said lugs or ears are passed to secure the said members together.

2. A safety fuse terminal comprising an end cap, a contact terminal, lugs or ears on said terminal and integral therewith, the said end cap being provided with holes through which the said lugs or ears are adapted to be passed and turned down to secure the said terminal and end cap together.

3. A safety fuse comprising an end cap and an angular screw contact terminal, and lugs on one part of said terminal, the face of the said end cap being provided in positions corresponding to the said ears or lugs with holes adapted to receive the said ears or lugs and through which the same are passed and turned down to secure the said terminals and end cap together.

4. A safety fuse terminal comprising an end cap, a contact terminal, both of which members are provided with an aperture for receiving and making electrical connection with a fuse strip or its terminal, and means connected with one of said members and independent of the said electrical connection for securing said members together.

5. A safety fuse terminal comprising an end cap, a contact terminal, both of which members are provided with an aperture for receiving and making electrical connection with a fuse strip or its terminal and means connected with one of said members for securing the same to the other of said members independently of the said electrical connection and fixing the relationship of said members.

6. A safety fuse terminal comprising an end cap, a contact terminal and lugs or ears provided integral with one of said members, the other member being provided with means for receiving the said lugs or ears and by which the relationship of said members is fixed.

7. A safety fuse terminal comprising an end cap, a contact terminal, both of which members are provided with means for receiving and making electrical connection with a fuse strip or its terminal, and means connected with one of said members and independent of the said electrical connection for securing said members together.

852,038. SPLICE OR ANGLE BAR. EDWARD C. SEWARD, Guilford, Conn., assignor to Railway Supplies Limited, East Toronto, Canada, a Corporation. Filed Feb. 1, 1907. Serial No. 355,190.

Claim.—1. The combination with railway rails, of angle bars connecting the meeting ends of the rails, the neutral surface and neutral axes of the bars being in substantial harmony with the neutral surface and neutral axes of the rails which the bars connect.

2. The combination with railway rails having their neutral surfaces and neutral axes below the middle points in the heights of the rails, of angle bars for connecting the ends of said rails, the said bars having their neutral surfaces and neutral axes in substantial harmony with those of the rails.

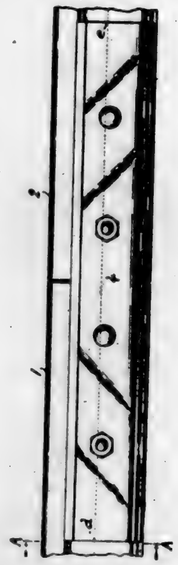

3. The combination with railway rails having their neutral surfaces and neutral axes below the middle points in the heights of the rails, of reinforced angle bars for connecting the ends of said rails, the said bars having their neutral surfaces and neutral axes in substantial harmony with those of the rails.

852,039. LUBRICATOR. CHARLES F. SCHROYER, Chicago, Ill. Filed Dec. 11, 1905. Serial No. 291,168.

Claim.—1. In a lubricator, the combination of an oil cylinder with a plunger having a threaded stem, a disk at the top of the cylinder having a central threaded aperture to receive the threaded stem, a dish-shaped member extending over and engaging with the disk whereby the movement of the former is imparted to the latter, and an oscillating driving member, such member and the dish-shaped member adjustably connected one to the other so as to vary the amplitude of motion of the dish-shaped member.

2. In a lubricator, the combination of an oil cylinder with a plunger having a threaded stem, a disk at the top of the cylinder having a central threaded aperture to receive the threaded stem, a dish-shaped member extending over and engaging with the disk whereby the movement of the former is imparted to the latter, and an oscillating driving member, said member and the dish-shaped member constantly and adjustably connected so as to vary the amplitude of motion of the dish-shaped member.

3. In a lubricator, the combination of an oil cylinder with a plunger having a threaded stem, a disk with a central threaded aperture to receive the threaded stem of the plunger, means for rotating the plunger, and a brake consisting of a plunger of soft material bearing upon the rotating part.

4. In a lubricator, the combination of an oil cylinder with a plunger having a threaded stem, a disk at the top of the cylinder having a central threaded aperture to re-

ceive the threaded stem, an oscillating member extending over said disk, connections between said oscillating member and the disk whereby the movement of the former is imparted to the latter, means for oscillating said oscillating member, and a removable yoke engaging with the oil cylinder and extending over said oscillating member and disk so as to form a bearing therefor.

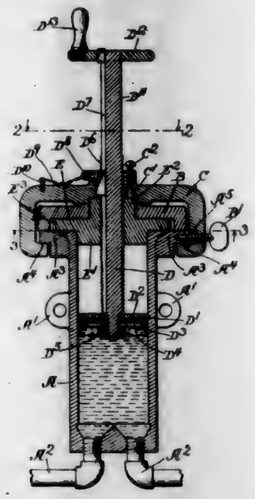

5. In a lubricator, the combination of an oil cylinder with a plunger having a screw threaded stem, a pair of driving disks surrounding said stem, and a driving device, one of the disks being a ratchet-disk and screw threaded to engage with the stem, and the other connected with the driving device, and having pawls to engage with the teeth of the ratchet disk.

6. In a lubricator, the combination of an oil cylinder with a plunger having a threaded stem, a ratchet disk at the top of the cylinder having a central threaded aperture to receive the threaded stem, an oscillating device extending over said disk, a series of pawls on the inside of said oscillating device and arranged so as to engage successively with the teeth of the ratchet disk, and means for oscillating said oscillating device.

7. In a lubricator, the combination of an oil cylinder with a plunger having a threaded stem, a disk with a central threaded aperture to receive the threaded stem of the plunger, a yoke in engagement with the oil cylinder and extending over the disk and forming a bearing therefor, a brake consisting of a plug of soft material associated with said yoke and bearing upon the disk, and means for intermittently rotating said disk.

8. In a lubricator, the combination of an oil cylinder with a plunger having a threaded stem, a disk at the top of the cylinder having a central threaded aperture to receive the threaded stem, an oscillating device engaging with the disk whereby the movement of the former is imparted to the latter, a pivoted arm on the outside of the oil cylinder, and means for engaging said oscillating device with said arm at different distances from the pivotal point of the arm.

9. In a lubricator, the combination of an oil cylinder with a plunger having a threaded stem, a disk at the top of the cylinder having a central threaded aperture to receive the threaded stem, an oscillating device engaging with the disk whereby the movement of the former is imparted to the latter, a pivoted slotted arm on the outside of the oil cylinder, said oscillating device provided with a slot, and a set pin adapted to be set so as to engage with the slots of the oscillating device and of said pivoted arm at a variety of positions.

10. In a lubricator, the combination of an oil cylinder with a plunger having a screw threaded stem, a pair of driving disks surrounding said stem, one cup-shaped and inclosing the other, and a driving device, one of the disks screw threaded and engaging with the stem, and the other connected with the driving device, and connecting devices between the disks.

11. In a lubricator, the combination of an oil cylinder with a plunger having a screw threaded stem, a ratchet disk at the top of the cylinder with a hub extending therein, a cover mounted so as to oscillate over said disk, a series of pawls on the interior of said cover adapted to engage in succession with the teeth of the ratchet disk, a removable yoke engaging with the oil cylinder and extending over said disk and cover and forming a bearing therefor, a pivoted arm on the outside of said oil cylinder, and means for engaging the cover with said arm at different distances from its pivot.

12. In a lubricator, the combination of an oil cylinder with a plunger having a screw threaded stem, a pair of driving disks surrounding said stem, and a driving device, one of said disks screw threaded to engage the stem, and provided with an inwardly projecting hub to close the upper part of the oil cylinder and serve as a bearing, and the other connected with the driving device, and connecting devices between the disks.

13. In a lubricator, the combination of an oil cylinder with a plunger having a screw threaded stem, a pair of driving disks surrounding said stem, and a driving device, the inner disk having two hubs one entering the oil cylinder to close the same and serving as a bearing, the other adapted to serve as a bearing for the outer disk, a connection between the outer disk and the driving device, and a connecting device between the two disks.

14. In a lubricator, the combination of an oil cylinder, with a plunger having a stem, a rotatable driving disk connected with the stem to advance the plunger, an oscillating device in contact with the rotating disk, connections between the disk and the oscillating device whereby the disk is rotated with the forward oscillations of the oscillating device, and a brake comprising a body of material bearing upon the disk to keep the disk from being rotated back with the backward oscillations of the oscillating device.

15. In a lubricator, the combination of an oil cylinder with a plunger having a stem, a rotatable driving disk connected with the stem, a second disk mounted on the rotatable disk, means for imparting oscillating movement to the second disk, connections between the second disk and the first disk whereby the first disk is rotated with the forward oscillations of the second disk, and a brake consisting of a body of material bearing upon the first disk to keep the same from being rotated back with the backward oscillations of the second disk.

16. In a lubricator, the combination of an oil cylinder, with a plunger therein, a ratchet disk engaging with the plunger so as to advance the same in the cylinder, an oscillating device, means for imparting oscillating motion to the same, and means for rotating the ratchet disk from the oscillating device through arcs less than the distance between its teeth comprising a series of pawls mounted upon the oscillating device at distances different from the distances between the teeth of the ratchet disk.

852,040. BARREL-TRUSSING AND HOOP-DRIVING MACHINE. JOHN B. STANHOPE, Philadelphia, Pa. Filed May 7, 1904. Serial No. 206,816.

Claim.—Means for driving hoops on barrels, consisting of the combination of the rings, means for reciprocating the same toward and from each other, the series of independent L-shaped radially movable plates mounted on said rings respectively, one of the limbs of said plates being adapted to slide radially in suitable guide-ways of a ring, and the other limb thereof extending over said ring, the rod secured to the latter and passing through the last-mentioned limb, a stop for limiting the inward movement of the plate, and the spring bearing against said last-mentioned limb and tending to maintain the plate projected inwardly, substantially as and for the purpose set forth.

852,040.

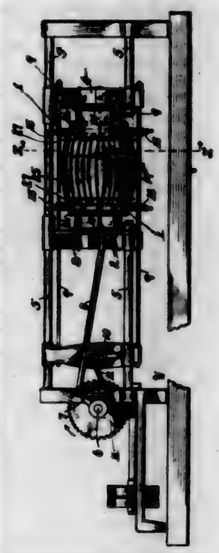

852,041. BED. NICHOLAS S. STEIN, Philadelphia, Pa. Filed May 22, 1906. Serial No. 318,150.

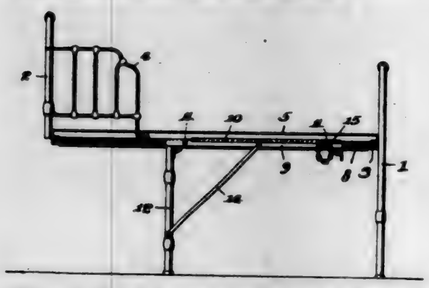

Claim.—1. A bed having the head legs thereof independently movable with respect to its body, whereby the said legs may be shifted toward the foot of said bed to permit the head-portion of the body thereof to project beyond them.

2 In a bed of the character described, the combination with the bed-body, of a pair of legs longitudinally movable with relation thereto, whereby one end of said bed-body may be caused to project beyond said legs.

3. In a bed of the character described, the combination with the body thereof, of a pair of legs independently and longitudinally adjustable with reference to said body, whereby when the adjustable legs are shifted from their normal position a portion of the bed body will project over and beyond said adjustable legs.

4. In a bed of the character described, the combination with a support, of a bed-body, having a support rigid therewith and carried thereby, slidably mounted on said first named support and adapted to be adjusted with respect thereto, whereby when the support carried by the bed-body is shifted toward the first named support a portion of said bed-body will project over and beyond said first mentioned support.

5. In a bed of the character described, the combination with a set of loose legs, of a bed body slidably mounted thereon and adapted to be adjusted with respect thereto.

6. In a bed of the character described, the combination with a set of loose legs, of a bed body slidably mounted thereon and capable of being adjusted longitudinally with respect thereto, and means for holding said bed body locked to said legs, either in normal or adjusted position.

852,042. CAR CONSTRUCTION. WILLIAM G. THUMMEL, St. Louis, Mo. Filed Oct. 29, 1906. Serial No. 341,168.

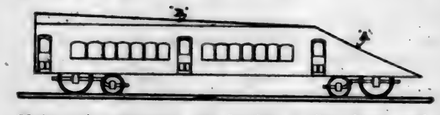

Claim.—A passenger car having a flat front end A which rises gradually from the end sill and merges into the roof B intermediate the transverse center of the car and the front end sill, said roof being flat and rising gradually from its junction with the front end; substantially as described.

852,043. MOP-WRINGER. WILLIAM W. TODD, Chicago, Ill. Filed Feb. 16, 1903. Serial No. 143,744.

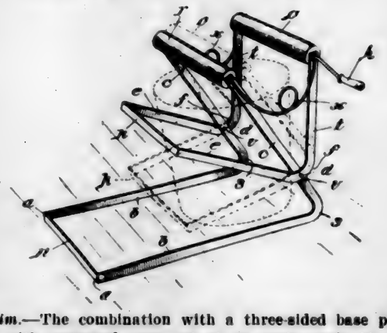

Claim.—The combination with a three-sided base provided with upturned arms set at an acute angle to the base, and a roller in the ends of said arms, of a vibratable element pivoted to the arms of said base consisting of an end-piece and side-pieces bent edgewise into upturned arms provided with a roller, and means to operate said roller.

852,044. SIEVE FOR SINKS AND THE LIKE. WILLIAM B. VAN DER MINDEN, New York, N. Y. Filed Apr. 17, 1906. Serial No. 312,186.

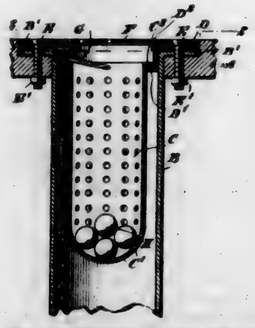

Claim.—1. The combination of the body having an aperture and being provided with a recess in its upper surface adjacent to the aperture, a waste pipe extending through said aperture and having a series of outwardly extending tongues fitted within said recess, a top member

comprising a ring adapted to rest on the series of tongues, a sleeve extending into the waste pipe and a flange at the lower end of the sleeve extending inwardly therefrom, a sieve having an elongated body set within the upper portion of the waste pipe and being further provided with a projecting portion adapted to rest on the flange of the said sleeve, a handle pivoted to the sieve and fastening devices for connecting the ring, tongues of the waste pipe and the body.

2. The combination of the body having an aperture and being provided with a recess in its upper surface adjacent to the aperture, a waste pipe extending through said aperture and having outwardly extending tongues located at its upper edge and fitted within the recess, an apertured top member having a socket, and adapted to rest on said tongues, a sieve supported by said top member and having an elongated body extending into the waste pipe, a perforated disk removably fitted into the socket of the top member, and fastening devices for holding the top member against said tongues.

3. The combination of the body having an aperture and being provided with a recess in its upper surface adjacent to the aperture, a waste pipe fitted into said aperture and having outwardly extending tongues located at its upper edge and fitted within the recess, an apertured top member resting on said tongues, a sieve having an elongated body extending into said waste pipe and further having a top flange engaged and supported by said top member, a spider forming a handle and pivoted to said sieve and fastening devices for holding said member against the tongues.

852,045. CLUTCH. ALEXIS VIVINUS, Brussels, Belgium. Filed Jan. 11, 1905. Serial No. 240,533.

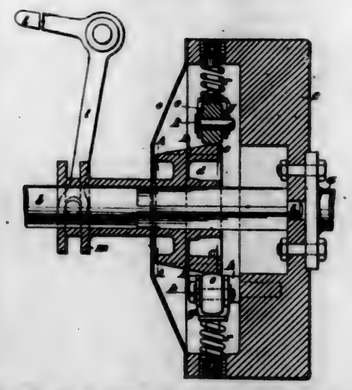

Claim.—1. In a clutch, a rotating member, a non-rotating or loose member, a sliding conical faced clutch-piece carried by one member, a plurality of rollers adapted to engage with the conical clutch-piece carried by the other member, and individual spring means for normally forcing each of the rollers toward the conical clutch-piece.

2. In a clutch, a rotating member, a non-rotating or loose member, a sliding conical faced clutch-piece carried by one member, a plurality of rollers adapted to engage with the conical clutch-piece carried by the other member, and individual coil spring means for normally forcing each of the rollers toward the conical clutch-piece.

3. In a clutch, a rotating member, a non-rotating or loose member, a sliding conical faced clutch-piece carried by one member, a lever or levers pivoted to the member not carrying the clutch-piece the free ends of which move to and from the clutch-piece, a roller or rollers carried by the levers, a stop for the lever or levers to limit the movement toward the clutch-piece, and a spring or springs normally forcing the lever or levers toward the clutch-piece.

4. In a clutch, a wheel member or head-piece secured rigidly at the end of a shaft, and provided with a hollow upon the side opposite to the shaft, a shaft extending into the central cavity of the wheel member in alinement with the first shaft, a conical-faced clutch-piece rotating with the second shaft slidingly mounted thereon within the cavity of the wheel member, a plurality of levers pivoted within the central cavity of the wheel member, an anti-friction wheel rotating in the plane of the rotation of the clutch carried by each lever, a spring for forcing the levers normally toward the clutch-piece and a stop for limiting the movement of the levers.

5. In a clutch, a wheel member or head-piece secured rigidly at the end of a shaft and provided with a hollow upon the side opposite to the shaft, a shaft extending into the central cavity of the wheel member in alinement with the first shaft, a conical-faced clutch-piece rotating with the second shaft slidingly mounted thereon within the cavity of the wheel member, a lever pivoted within the central cavity of the wheel member, an anti-friction wheel rotating in the plane of the rotation of the clutch carried by the lever, a spring for forcing the lever normally toward the clutch-piece, and a stop for limiting the movement of the lever.

6. In a clutch, a wheel member or headpiece secured rigidly at the end of a shaft and provided with a hollow upon the side opposite to the shaft, a shaft extending into the central cavity of the wheel member in alinement with the first shaft, a conical-faced clutch-piece rotating with the second shaft slidingly mounted thereon within the cavity of the wheel member, a plurality of levers pivoted within the central cavity of the wheel member, an anti-friction wheel rotating in the plane of the rotation of the clutch carried by each lever and a spring for each of the levers normally forcing the same toward the clutch-piece.

7. In a clutch, a wheel member or headpiece secured rigidly at the end of a shaft and provided with a hollow upon the side opposite to the shaft, a shaft extending into the central cavity of the wheel member in alinement with the first shaft, a conical-faced clutch-piece rotating with the second shaft slidingly mounted thereon within the cavity of the wheel member, a lever pivoted within the cavity of the wheel member, and means for yieldingly forcing the lever into operative engagement with the clutch-piece.

852,046. DRILLING-MACHINE. ERIK WESTBERG, Geoff, N. D. Filed July 7, 1906. Serial No. 325,125.

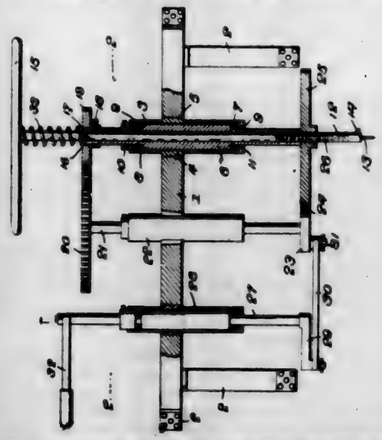

Claim.—1. A drill of the class described comprising a shelf, a vertically extending tubular socket disposed through an opening in said shelf, wings on said socket engaging ways in the shelf to prevent rotation of the socket, a flange at the lower end of said socket, a tubular shaft extending through said socket, the upper and lower ends thereof being reduced to form shoulders, a collar surrounding the reduced upper end of the shaft, a grooved drill shaft longitudinally movable in said tubular shaft, a lug on said tubular shaft adapted to engage the groove in said drill shaft, whereby the drill shaft may move longitudinally in the tubular shaft and be caused to rotate therewith and means to move said drill shaft longitudinally in said tubular shaft.

2. A drill of the class described comprising a shelf, a socket in said shelf, a tubular shaft in said socket, bearings for said shaft, a drill shaft extending through said tubular shaft and having its lower end exteriorly threaded, means to rotatably secure said shafts together, a gear at the upper end of said tubular shaft, a feed nut provided with teeth engaging the threaded end of said drill shaft, a vertically disposed shaft 21 parallel with said drill shaft, a socket for said vertically disposed shaft, a gear at the upper end of said vertically disposed shaft adapted to mesh with the gear at the upper end of said tubular shaft, an interrupted gear at the lower end of said vertically disposed shaft adapted to intermittently engage said feed nut and check the revolution of the same whereby the drill shaft will be lowered and means to rotate said vertically disposed shaft whereby the tubular shaft and parts carried thereby will be operated.

852,047. SIGHT. BERTRAND B. WESTLAKE, Pittsfield, Ill. Filed Sept. 6, 1906. Serial No. 333,569.

Claim.—1. A sight for firearms, consisting of a light-colored blade, an L-shaped recess formed at one end thereof, an L-shaped plug engaging said recess, said plug being in contrast with said blade, said blade having a beveled portion, extending from the inner end of the top down to the upper part of said plug, substantially as and for the purpose described.

2. A sight for sporting rifles, comprising a metallic blade of light color, a metallic wire plug, secured to the inner end thereof, and extending from the base to a point near the top, said blade being beveled from the upper end of a the wire plug to the top of said blade, said plug forming a contrast in color with said blade.

852,048. SAFETY MEANS FOR ELEVATORS. MILTON T. WESTON, New York, N. Y., assignor of one-third to Catharine Mahony and one-third to Adolph A. Schaefer, Yonkers, N. Y. Filed Nov. 23, 1905. Serial No. 288,692.

Claim.—1. In combination with the other elements of a safety device for elevators, a main shaft, a constantly moving operating wheel mounted loosely thereon, a lever fast on the shaft, a catching device connected for operation with said lever, a clutch fast on said shaft for producing engagement with said wheel when the shaft is rotated, a spring and catch for said lever and a governor for releasing said catch, substantially as described.

2. In a safety device for elevators, gripping jaws, a main shaft, a lever fast thereon, connected to said jaws, an operating wheel turning loosely on said shaft, a clutch fast on said shaft and operated by movement thereof to connect the same to said wheel, a spring for operating said lever, a catch for said lever and a governor controlling said catch, substantially as described.

3. In a safety device for elevators, gripping jaws, a main shaft, an operating wheel turning loosely thereon, a pivoted pawl carried by said shaft so as to turn therewith, a ratchet on said operating wheel, and a guard plate for holding said pawl out of engagement with said ratchet substantially as described.

4. A safety device for elevators, comprising gripping jaws, a main shaft for operating the same, a constantly moving ratchet wheel, a spring-pressed pawl carried by said shaft and a guard plate for said pawls having its operating surface so inclined as to hold said pawl away from said ratchet in one position of said shaft, and to permit engagement between the pawl and ratchet in another position of said shaft, substantially as described.

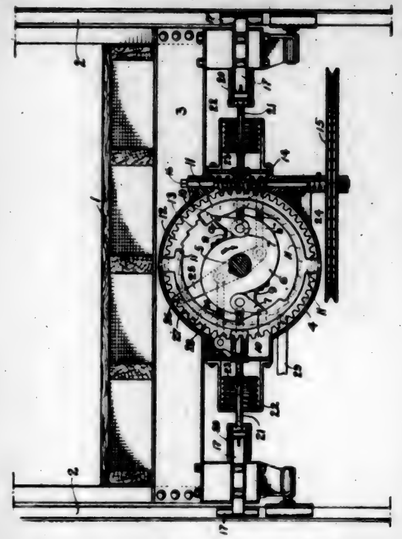

5. In safety device for elevators the combination of clutching means on the moving cage and co-operating device extending along the shaft of the elevator with a governor shaft, a hollow pulley turning loosely thereon, a cable fixed at one end and extending along the shaft and around said pulley, means connecting said shaft with said clutching means for operation of the latter, a jamming plate within said pulley and fastened on said shaft and a loose ball within said pulley and under said jamming plate, substantially as described.

6. A safety device for elevators comprising a casing, a pair of gripping jaws, a tension rod connected with said jaws and passing into said casing, a worm wheel and worm within said casing, an exterior pulley moved by motion of the elevator car, for turning said worm, and engaging means within said casing for bringing said tension rod into operative relation to said worm wheel, substantially as described.

852,049. POST AND MOLDING-MACHINE. JAMES G. ASH, Manchester, Iowa. Filed Aug. 7, 1906. Serial No. 329,614.

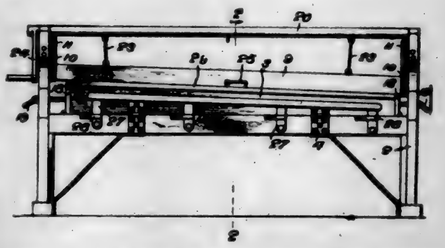

Claim.—1. In a mold for plastic material, the combination with standards having a bed secured there between; of side rails hingedly secured to said bed, a plurality of bars pivotally secured to the side of said bed, means to connect the upper ends of said bars and cause them to swing upon their pivot points in unison, straps secured to

said bed and adapted to engage said bars whereby the side rails will be held in a vertical position, plates pivoted to said bed, and at the ends of said side rails, said plates and side rails forming a mold and locking arms pivotally secured to said standards to hold said plates in a vertical position said locking arms having handles at their outer ends.

2. A mold of the class described, the combination with standards, a bed between said standards and suitable mold forming devices secured to said bed; of a plunger vertically movable between said standards, guides for said plunger, one of said guides being shorter than the other, a shaft rotatably mounted above said plunger, means to yieldingly secure said plunger to the shaft, a track at the upper end of each of said standards, a block slidably mounted upon each track, said blocks carrying said shaft whereby when the plunger is elevated to its full height it may be disposed from over the mold by directing the blocks rearwardly upon the tracks.

3. In a mold of the class described the combination with a suitable bed and supporting standards therefor; of side rails hingedly secured to said bed, bars pivoted at their lower ends to said bed, a rail pivotally connected with the upper ends of said bars whereby said bars will be caused to move in unison, straps secured to said bed and adapted to engage said bars, and hold the same vertically whereby when the bars are disposed into engagement with the straps the side rails will be held rigidly in a vertical position.

852,050. DISTRIBUTER FOR GRAIN-SEPARATORS. MALCOLM L. BARBEAU, Silver Creek, N. Y., assignor to The S. Howes Company, Silver Creek, N. Y., a Corporation of New York. Filed Mar. 1, 1906. Serial No. 303,659.

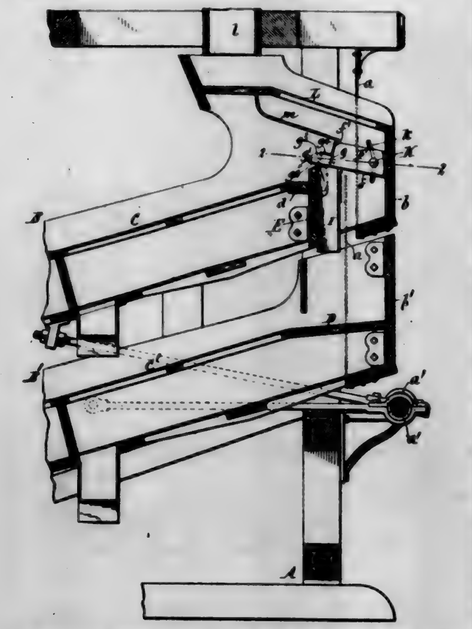

Claim.—1. The combination of upper and lower separating screens, a distributing box arranged above said screens, a plurality of long discharge spouts leading laterally from a side wall of the box to the upper screen, and a plurality of short discharge spouts alternating with said long spouts and leading laterally from said side wall of the box to said lower screen, substantially as set forth.

2. The combination of an upper separating screen, a lower separating screen, means for reciprocating said screens in opposite directions, a distributing box, a plurality of long discharge spouts leading laterally from a side wall of said box to the upper screen, and a plurality of short discharge spouts alternating with the long spouts and leading laterally and downwardly from said side wall of the box to the lower screen, substantially as set forth.

3. The combination of a plurality of screens, a distributing box provided in its side wall with a plurality of long discharge spouts which communicate at their open rear ends with said box and lead with their open front ends to one of said screens and with a plurality of short discharge spouts which alternate with the long spouts and communicate at their open rear ends with the box while their open lower ends or bottoms lead to another screen, each of said long spouts having a bottom which forms an extension of the bottom of the box and two upright side walls which extend forwardly from the side wall of the box along opposite longitudinal edges of the bottom of the long spout, and each of said short spouts having a top wall which extends forwardly between the side walls of the adjacent long spouts from the upper edge of the opening whereby the short spout communicates with the distributing box and a vertical front wall arranged between the side walls of the adjacent long spouts and extending downwardly from the front end of said top wall, substantially as set forth.

4. The combination of two shaking shoes arranged one above the other and each having a separating screen, and a grain distributer mounted on the upper shoe and comprising a distributing box having a plurality of long discharge spouts leading laterally from a side wall of the box to the screen of the upper shoe and a plurality of short discharge spouts alternating with said long spouts and leading laterally and downwardly from said side wall of the box to the screen of the lower shoe, substantially as set forth.

5. The combination of two shaking shoes arranged one above the other and each having a separating screen, and a grain distributer mounted on the upper shoe and comprising a distributing box having a plurality of long discharge spouts leading laterally from a side wall of the box to the screen of the upper shoe and a plurality of short discharge spouts alternating with said long spouts and leading laterally and downwardly from said side wall of the box to the screen of the lower shoe, and an upright partition arranged on the upper shoe between the outlets of the long spouts and the outlets of the short spouts, substantially as set forth.

6. The combination of two shaking shoes arranged one above the other and each having a separating screen and a grain distributer mounted on the upper shoe and comprising a distributing box having a plurality of long discharge spouts leading laterally from a side wall of the box to the screen of the upper shoe and a plurality of short discharge spouts alternating with said long spouts and leading laterally and downwardly from said side wall of the box to the screen of the lower shoe, an upright partition arranged on the upper shoe between the outlets of the long spouts and the outlets of the short spouts, and a vertical chute arranged on the upper shoe and leading from the outlet of the short spouts to the screen of the lower shoe, substantially as set forth.

7. The combination of a plurality of separating screens, a distributing box, a plurality of spouts arranged side by side in a row and delivering the grain from said box to said screens, said spouts being arranged in sets one of which sets of spouts delivers the grain to one of said screens while another set of said spouts delivers the grain to another screen and alternates with the first mentioned set of spouts, a vibrating shoe which supports said screens and distributing box, and means for varying the inclination of said box relatively to said shoe, substantially as set forth.

8. The combination of two shaking shoes arranged one above the other and each having a separating screen, and a grain distributer mounted on the upper shoe and comprising a distributing box having a plurality of long discharge spouts leading laterally from a side wall of the box to the screen of the upper shoe and a plurality of short discharge spouts alternating with said long spouts and leading laterally and downwardly from said side wall of the box to the screen of the lower shoe, and means for tilting said distributer on said upper shoe, substantially as set forth.

9. The combination of two shaking shoes arranged one above the other and each having a separating screen, and a grain distributer mounted on the upper shoe and comprising a distributing box having a plurality of long discharge spouts leading laterally from a side wall of the box to the screen of the upper shoe and a plurality of short discharge spouts alternating with said long spouts and leading laterally and downwardly from said side wall of the box to the screen of the lower shoe, an upright partition arranged on the upper shoe between the outlets of the long spouts and the outlets of the short spouts, and means for tilting said distributer comprising a hinge connecting the front part of the distributer with the upper end of said partition, and a clamping bolt arranged on the rear part of the distributer and passing through a slot in the upper shoe, substantially as set forth.

852,051. THILL-COUPLING. ALOIS BAUER, Cleveland, Minn. Filed July 12, 1906. Serial No. 325,899.

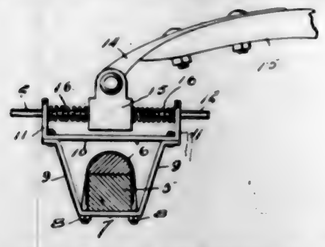

Claim.—The combination with a vehicle axle and a thill, of a clip engaged with the axle, a bracket supported by the clip, a rod arranged for reciprocatory movement in the bracket, a sleeve fixedly carried by the rod and including spaced ears which are formed integral with the sleeve, and between which the thill is received, and springs arranged upon the rod and bearing against the ends of the sleeve and the corresponding ends of the bracket.

852,052. TOBACCO-TRUCK. WILLIAM BECHTOL, Arcanum, Ohio. Filed June 5, 1906. Serial No. 320,358.

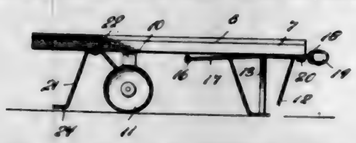

Claim.—1. A tobacco truck comprising a body having depending longitudinal and transverse sills; an axle secured to one of said transverse sills toward the rear end of said body and carrying supporting wheels; a pair of oppositely disposed U-shaped braces secured to said transverse sills in advance of said axle; and a brace secured to one of said longitudinal sills in the rear of said axle.

2. A tobacco truck comprising a body having depending transverse and longitudinal sills; an axle secured to one of said transverse sills toward the rear end of said body, and carrying supporting wheels; a pair of oppositely-disposed depending U-shaped braces secured to said transverse sills in advance of said axle; a transverse brace secured at opposite ends to said U-shaped braces, and intermediate its ends to one of said longitudinal sills; and a brace secured at its forward end to said axle, and at its rear end to said longitudinal sill, said brace extending rearwardly of said axle.

3. A tobacco truck comprising a body having depending side and end sills secured to its under face, and intermediate sills connecting the respective side and end sills; an axle secured to one of said connecting sills toward the rear end of said body and carrying supporting wheels; a pair of oppositely-disposed depending U-shaped braces connecting said front end sill with the adjacent intermediate sill; a pair of rods pivotally connected at their rear ends to said side sills and extending beyond the front sill, said rods passing through the respective U-shaped braces; a whiffle-tree secured to the forward ends of said rods; means secured to said front sill for limiting the pivotal movement of said rods; and a depending brace secured at one end to said axle and extending rearwardly thereof.

852,053. ATTACHMENT FOR HARVESTERS. AUGUST G. BERTGEN, Tipton, Mo. Filed June 8, 1906. Serial No. 320,807.

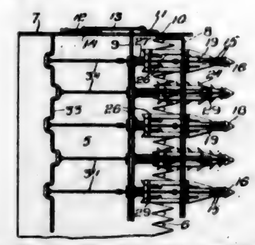

Claim.—1. The combination with a platform of a harvester, of draw-combs mounted for reciprocatory movement thereon, and shields slidably mounted upon said draw-combs and arranged to cover the same during their forward movement.

2. The combination with a platform of a harvester, of draw-combs mounted for reciprocatory movement thereon, and shields arranged to cover said combs durjng their forward movement.

3. The combination with the platform of a harvester, of draw-combs mounted for reciprocatory movement thereon, shields slidably mounted upon said draw-combs, a shaft mounted upon said platform, rods connecting said shaft and said draw-combs whereby the latter may be reciprocated, and connections between said rod and said shields whereby the latter may be moved to cover the said draw-combs during their forward movement.

4. The combination with the platform of a harvester, of draw-combs mounted upon said platform and arranged for reciprocatory movement thereon, a crank-shaft mounted upon said platform, rods connecting said crank-shaft and said draw-combs, bell-crank levers pivotally mounted upon said draw-combs, and having one of each of their arms connected to said rods, and shields slidably mounted upon said draw-combs and connected to the other of the arms of each of said bell-crank levers.

852,054. HEATING-STOVE. ERIK ELOPSON, Forest Lake, Minn. Filed Jan. 22, 1907. Serial No. 353,425.

Claim.—1. In a stove, the combination with a hollow base divided into compartments and an upper shell also divided into compartments, of a perforated upright casing interposed between said base and upper shell and having a partition affording a combustion chamber, which combustion chamber opens into one of the compartments of said upper shell and the other compartment of said upper shell having an outlet passage, and upright flues connecting the compartments of said base and upper shell and causing the products of combustion to travel alternately upward and downward on the way from said combustion chamber to the said outlet passage of the stove, substantially as described.

2. In a stove, the combination with a hollow base *a* having compartments *a*'—3—7 of the perforated shell *d* connected at its lower end to said base *a*, and the hollow upper

shell *f* connected to the upper end of said casing *d* and having compartments 1, 5 and 9, which latter leads to an outlet passage, the partition *d*[9] within the said casing *d* affording a combustion chamber that communicates at its upper end with said chamber 1, a flue 2 connecting said

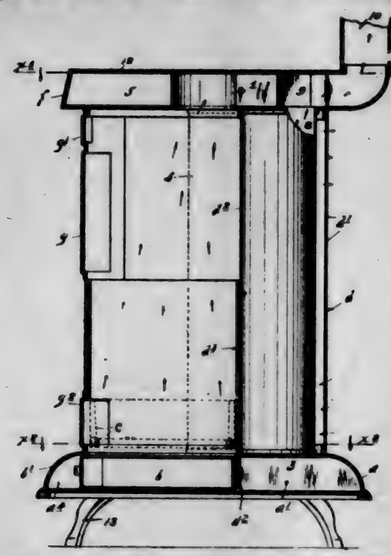

chamber 1 with said chamber 3, a flue 4 connecting said chamber 3 with said chamber 5, a flue 6 connecting said chamber 5 with said chamber 7, and a flue 8 connecting said chamber 7 with said chamber 9, substantially as described.

852,055. MOTOR FAN ATTACHMENT. BENJAMIN FESENMAIER, Jr., New Ulm, Minn. Filed July 18, 1903. Serial No. 326,727.

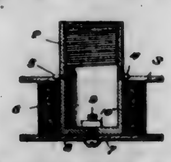

Claim.—1. A pulley of the class described comprising a tubular shaft interiorly threaded and having a closed end, a collar adapted to be disposed on said shaft, means to limit the movement of said collar on said shaft, a band on said tubular shaft, a second collar adapted to be secured to the closed end of said shaft, said collars being of greater circumference than said band, and means to secure said second collar to the end of said shaft.

2. A pulley of the class described comprising a tubular shaft having one of its ends closed, a collar having notches in one face thereof, studs in said tubular shaft and adapted to enter said notches, a collar adapted to be secured to the closed end of said shaft, a bolt extending through said collar and end whereby said collar will be held securely in place thereon and a band disposed around said shaft between said collars, said band being of less circumference than the collars.

852,056. HEATING-FURNACE. LELAND A. FISK, Rockton, Ill. Filed Nov. 4, 1905. Serial No. 285,889.

Claim.—1. In a furnace the combination with a casing having an air inlet and outlet adjacent opposite ends; of a drum within the casing and interposed between said inlet and outlet, there being a compartment formed around the drum for the passage of air, said drum having a smoke outlet, a fire pot within the drum, and a core closed at its ends and concentrically separated from the ends of the drum and inclosed within the drum and interposed between the fire pot and smoke outlet.

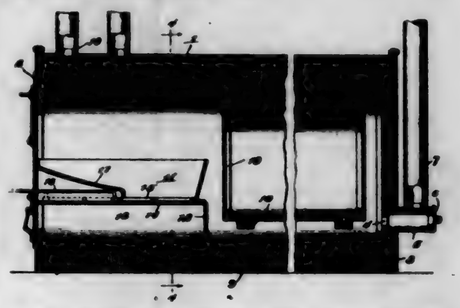

2. In a furnace the combination with a casing having an outlet in the top thereof adjacent one end and an inlet in the other end adjacent the bottom of the casing; of a drum supported within the casing and interposed between the inlet and outlet, said drum having a smoke outlet extending through the casing and there being a compartment around the drum for the circulation of air between the inlet and outlet, a core closed at its ends and concentrically supported within the drum adjacent the smoke outlet disconnected from the ends of the drum, and a fire pot within said drum and adjacent the other end of the core, said fire pot comprising side and end walls, a flange supporting them and fitting snugly upon the drum to form an ash pit, supporting flanges extending from the side walls, a grate slidably mounted thereon, and an inclined bottom extending downward to and contacting with the upper surface of the grate to form a scraper.

3. In a furnace the combination with a casing having an air inlet and outlet and a cylindrical drum within the casing and having a smoke outlet; of a fire pot within said drum adjacent one end and comprising an end and side walls, a segmental flange supporting said walls and constituting one end wall of an ash pit, supporting flanges extending from the side walls, a grate slidably mounted thereon, a cylindrical core closed at both ends and supported concentrically within said drum, said drum having an outlet opening near the bottom of said core and communicating with the smoke stack and an inclined bottom between the side walls extending downward to and contacting with the grate and constituting a scraper.

4. In a furnace the combination with a casing having an air inlet and outlet and a cylindrical drum within the casing and having a smoke outlet; of a fire pot within said drum adjacent one end and comprising an end and side walls, a segmental flange supporting said walls and constituting one end wall of an ash pit, supporting flanges extending from the side walls, a grate slidably mounted thereon, an inclined bottom between the side walls extending downward to and contacting with the grate and constituting a scraper, and a core closed at its ends and concentrically inclosed within the drum and interposed between the fire pot and the smoke outlet with its ends independent of the drum.

5. In a furnace the combination with a casing having an air inlet and outlet at opposite ends; of a cylindrical drum extending into the casing and between the inlet and outlet, there being a compartment around the drum for the circulation of air between the inlet and outlet, said drum having a smoke outlet at one end and adjacent the air inlet, a fire pot within the drum at its other end, and a hollow closed cylindrical core supported concentrically within the drum between the fire pot and smoke outlet and out of contact with the end and side walls of said drum.

6. In a furnace, the combination with a casing having air inlet and outlet, of a cylindrical drum within said casing and having smoke outlet extended through the wall of the casing at one end near its bottom, a fire pot within said drum at the end opposite said smoke outlet, a core closed at both ends and disposed in the said drum between the said fire pot and the smoke outlet with its lower portion extended below the upper wall of said outlet and supported with its ends at a distance from the ends of the drum with a space entirely around the same and independent of and separated from said drum and fire pot whereby the products of combustion are forced to pass beneath and entirely around said core.

7. In a furnace, the combination with a horizontally disposed casing having air inlet openings near its bottom, of a cylindrical drum supported within said casing and having an outlet in its rear end adjacent the bottom thereof, a pipe extending from said outlet and through the rear end of the casing, a closure for the outer end of the said pipe, a smoke pipe extending upward from said pipe, said casing having air outlets in its top near the front end, a fire pot in said drum near its front end with an ash pit therebeneath, a grate in said fire pot, and a horizontally disposed cylindrical core supported within said drum concentric with and detached from the ends of said drum and disposed between the inner end of the fire pot and the rear end of the drum, the bottom of said core extended below the upper wall of the outlet in the rear end of the drum.

852,057. CLUTCH FOR COUNTER-SHAFTS. ISAAC M. FOSTER, West Covington, Ky. Filed Dec. 11, 1905. Serial No. 291,199.

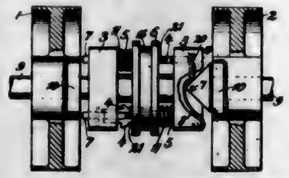

Claim.—1. A positive clutch, comprising, in combination with driving and driven members, a clutch body provided with a plurality of triangularly-shaped members which connect the driving and driven members; a plurality of pawls for resisting backward motion of said triangularly-shaped members when in engagement with said driving member; a plurality of studs for sustaining said pawls; a sliding collar mounted in central position of the clutch body for the purpose of bringing the said pawls into resisting position with respect to said triangularly-shaped members, substantially as described.

2. A clutch for driving counter-shafts, comprising, in combination with driving and driven members, a clutch body provided with a plurality of triangularly-shaped members which connect said clutch to said drivers; pawls mounted on the ends of said studs for the purpose of resisting backward motion of said triangularly-shaped members when in engagement with said drivers; said pawls also constituting the means by which the clutch is released from the said drivers, substantially as heretofore described.

3. A clutch for driving counter-shafts, comprising, in combination with driving and driven members, a clutch body, a plurality of triangularly-shaped members, a plurality of pawls mounted on a plurality of studs with respect to said triangularly-shaped members; a sliding collar mounted on said clutch body, said collar being provided with circular openings to receive said pawls, and bring them into resisting position with respect to said triangularly-shaped members; substantially as heretofore described.

4. A driving clutch comprising, in combination with driving and driven members, a clutch body, a plurality of triangularly-shaped members, a plurality of pawls mounted on a plurality of studs, four of said studs, a sliding collar mounted in central position with respect to said clutch body, a plurality of springs on said studs for the purposes heretofore shown, substantially as described.

5. A clutch for driving counter-shafts, comprising, in combination with driving and driven members, a clutch body, a plurality of triangularly-shaped members, a plurality of pawls, a plurality of studs carrying said pawls, a plurality of springs on said studs for preventing jar when clutch is engaging with said driver, a collar mounted in central position with respect to said clutch body, said collar being provided with circular openings through which said studs pass, said circular openings constituting the means by which said pawls are brought to resisting position with respect to said triangularly-shaped members and springs secured to said clutch body and bearing on said triangularly-shaped members to bring said triangularly-shaped members to normal position for engagement after being released from the said drivers, substantially as described.

852,058. STEAM-COOKER FOR OIL-BEARING MEAL AND THE LIKE. ALFRED W. FRENCH, Piqua, Ohio. Filed June 10, 1905. Serial No. 264,664.

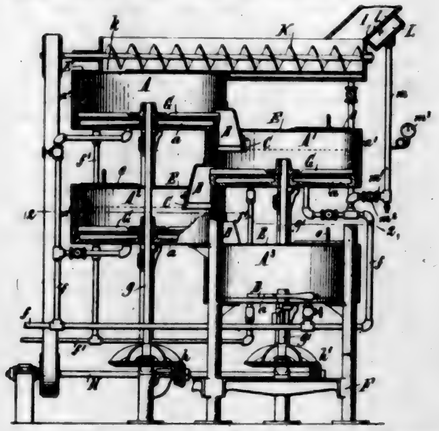

Claim.—1. The combination of a plurality of heating vessels or chambers for solid material arranged in a descending series and having openings at the bottom thereof for discharging the material, the discharge opening for each vessel except the last being arranged to discharge into a lower vessel and located below the top of such lower vessel in position to be stopped by the material rising in said lower vessel, and agitating means for causing the discharge of the material from the vessels, whereby material will automatically discharge from each vessel except the last into a lower vessel when material is withdrawn from the last vessel and the quantity of material in each vessel except the first will be maintained substantially constant, substantially as set forth.

2. The combination of a plurality of heating vessels or chambers arranged in a descending series, a discharge spout extending from each vessel except the last into the vessel below and having its discharge opening located in such lower vessel above the bottom thereof, and agitating devices for the material to cause the discharge thereof, whereby the quantity of material in each vessel except the first is automatically regulated, substantially as set forth.

3. The combination of a plurality of heating vessels or chambers arranged in a descending series, and an open-ended discharge spout depending from each vessel except the last into the vessel next below, said discharge spouts terminating above the bottoms of the vessels into which they depend, and stirrers for agitating the material in the vessels, whereby material is discharged from each vessel into that next below when material is withdrawn from the last vessel and all of the vessels are automatically kept partially filled, substantially as set forth.

4. The combination of a plurality of heating vessels or chambers arranged in a descending series, an open-ended discharge spout depending from each vessel except the last

into the vessel next below, and agitating devices for causing the material to discharge through said spouts, said spouts terminating at substantially equal distances from the bottoms of the vessels into which they depend, whereby each vessel automatically discharges into that next below when material is withdrawn from the last vessel and a substantially constant quantity of material is automatically maintained in each of the vessels except the first, substantially as set forth.

5. The combination of a plurality of heating vessels arranged in a descending series, and an open-ended discharge spout which enlarges downwardly from its upper to its lower end depending from each vessel except the last into a lower vessel, said spouts terminating above the bottoms of the vessels into which they depend, whereby each vessel discharges the material into such lower vessel when material is withdrawn from the last vessel and the quantity of material in the vessels is automatically regulated, substantially as set forth.

6. The combination of a plurality of heating vessels or chambers arranged in a descending series, means for heating said vessels, means for withdrawing the material from the last vessel, a discharge spout leading from each vessel except the last into the vessel next below, and means for changing the elevation of the discharge opening of each discharge spout, whereby the quantity of material in each vessel except the first is automatically regulated, substantially as set forth.

7. The combination of a plurality of heating vessels or chambers arranged in a descending series, means for heating said vessels, means for withdrawing the material from the last vessel, and a discharge spout leading from each vessel except the last into the vessel next below, each discharge spout having a telescopic section, substantially as set forth.

8. The combination of a plurality of heating vessels or chambers arranged in a descending series in staggered order so that one vessel projects laterally beyond the next, a discharge spout depending from each vessel except the last into the vessel next below, and agitating devices for causing the material to discharge through said spouts, said spouts terminating above the bottoms of the vessels into which they depend, whereby each vessel discharges material into the vessel next below when material is withdrawn from the last vessel and the quantity of material in the vessels is automatically regulated, substantially as set forth.

9. The combination with a cooking apparatus, and a feed chute for the same, of a steam box located at the bottom of said feed chute and having a top over which the material passes provided with discharge perforations, a steam supply pipe for said steam box having an area greater than the combined area of said discharge perforations whereby steam pressure is maintained in said box, means for regulating the supply of steam to said steam box, and a steam gage located between said regulating means and said discharge perforations for indicating the steam pressure at that point to enable the proper adjustment of said regulating means to discharge a predetermined amount of steam into the material, substantially as set forth.

852,059. GIRTH. JAMES W. GARDNER, Jarratt, Va. Filed Mar. 30, 1906. Serial No. 308,971.

Claim.—1. In a trace holder, a curved frame in two sections, the meeting ends of said sections adapted to overlap each other, means to adjustably secure the overlapped ends of said sections together, the free ends of said sections having curved ways therein to receive the traces.

2. The herein described holder for harness traces; comprising a girth made in sections the meeting ends of which are adapted to overlap each other, means to adjustably secure said sections together, each of said sections having curved ways at its upper end to receive the traces.

3. A holder for harness traces; comprising a girth made in sections, and having a plurality of registering openings in the meeting ends thereof, means to engage said registering openings and adjustably secure said ends together, the upper ends of said sections being provided with ways having curved outlets whereby the traces may be disposed in said ways.

4. A holder for harness traces, comprising a girth made in sections, said sections having ways directed inwardly from one edge thereof to receive said traces, and means to adjustably secure said sections together.

5. A trace holder, comprising a girth made in sections, the meeting ends of said sections overlapping each other and having a plurality of registering openings therethrough, means to engage said openings and adjustably secure said sections together, each of said sections having a plurality of ways at its upper end to receive the traces, said ways being directed inwardly from the inner edges of said sections.

852,060. DUMPING-WAGON. WILLIAM T. GARRISON, Columbia, Pa. Filed Oct. 5, 1906. Serial No. 337,806.

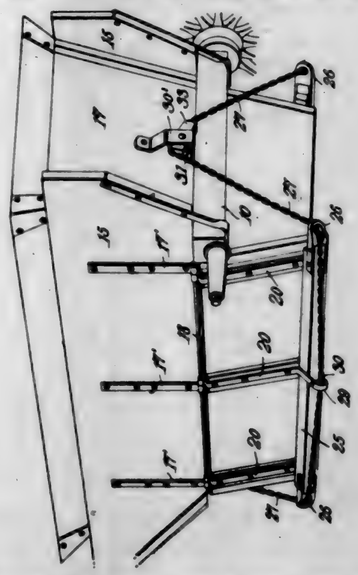

Claim.—1. A dumping wagon having hinged bottom gates, guiding members on said gates, a lever pivoted at the rear portion of the wagon, and having arms of unequal length and unequal weight, the longer and heavier arm acting at all times to maintain the shorter and lighter arm in elevated position, flexible gate closing members secured to the lever and extending through the guiding members, and a winding means for the flexible members, whereby on the winding movement, the gate connected to the shorter arm of the lever will at all times move to closed position in advance of the gate connected to the longer arm.

2. A dumping wagon including a body portion, a front, and rear axles, a pair of bottom gates, the rear ends of which are arranged to fit closely against the forward edge of the axle bed, and flanges arranged at the front edges of the gates for engagement with the front wall of the load receptacle.

852,061. DEEP-OIL-WELL PUMPING. ROSS J. HOFFMAN, Bradford, Pa. Filed Jan. 24, 1907. Serial No. 353,818.

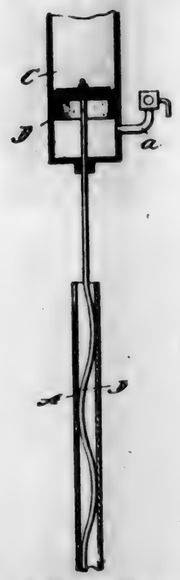

Claim.—1. The method employed in pumping oil which consists in retarding the movement of the pump rod as it approaches and recedes from the limit of its downward movement.

2. In combination with a pumping engine, and with the pump and pump rod, means for retarding the movement of the piston as it approaches and recedes from at or near the limit of its downward movement.

852,062. FAIR-LEAD FOR DONKEY-ENGINES. HARRY HOLMES, Gracy, Cal. Filed Sept. 19, 1906. Serial No. 335,337.

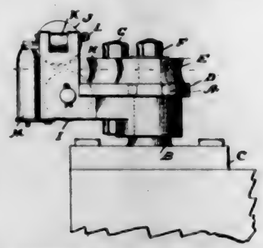

Claim.—1. A device of the class described consisting of a suitable body, a series of sheaves carried by said body and having vertical axes of revolution, a secondary series of sheaves arranged to guide the cable to said former sheaves and having horizontal axes of revolution, vertical elongated rollers in line with said secondary sheaves, and a vertical post about which said body is arranged to revolve as set forth.

2. In combination with a suitable post, a body revolubly mounted on said post, a sheave carried by said post, a secondary sheave carried by said body and having its axis of revolution parallel to said post, a series of sheaves carried by said body and having their axes of revolution at right angles to said post, and elongated rollers carried by said body and arranged to guide the cable to said series of sheaves, and means for admitting said cable between said sheaves, substantially as set forth.

852,063. HOT-AIR-REGISTER ATTACHMENT. ALMON O. JONES, Battle Creek, Mich. Filed May 25, 1906. Serial No. 318,734.

Claim.—1. The combination with the front plate of a registering box provided with an opening, of a shaft mounted in said box, a curved deflector provided with a slotted depression secured on said shaft, a slotted plate secured to the rear of said depression, a head mounted in the opening of the front plate, a thumb-nut carried by said head, an eye formed on one end of said head, a strand of wire passing through said eye bent back and twisted upon itself forming a screw adapted to work in the slot, of the depression, and plate, for the purpose described.

2. In a device of the kind described, the combination with the front plate of a register box provided with an opening, of a curved deflector provided with a slotted depression pivotally mounted in said box, a slotted plate secured over said depression, a head having a reduced round portion mounted in the opening in the front plate, a square reduced portion formed on said head, a thumb-nut provided with a socket adapted to be secured on said portion by a screw working in a threaded recess formed in the end of said squared reduced portion, an eye formed on the other end of said head and a wire passing through said eye bent back and twisted upon itself to form a screw adapted to work in the slot of the depression and plate, for the purpose described.

3. In a device of the kind described, the combination with a front plate carrying a casing provided with double-walls, of a shaft mounted in the casing, a curved plate secured to said shaft provided with a slotted depression, a plate secured over said depression provided with a slot registering with the slot of the depression, a head mounted in the front plate provided with an eye and a screw carried by said eye formed of a single piece of wire working in the slot of the depression and plate, for the purpose described.

852,064. HEATING SYSTEM. JEFFERSON D. JONES, Brownwood, Tex. Filed July 26, 1904. Serial No. 218,238.

Claim.—A heating system comprising a stove, a smoke pipe leading upwardly therefrom, a hot air flue extending vertically through the stove and smoke-pipe, the lower end of the said flue opening below the stove and the upper end of the flue opening without the stove pipe, and curved branches carried by the said flue, said branches being arranged within the stove and extending outwardly through the side walls of the stove, as and for the purpose set forth.

852,064.

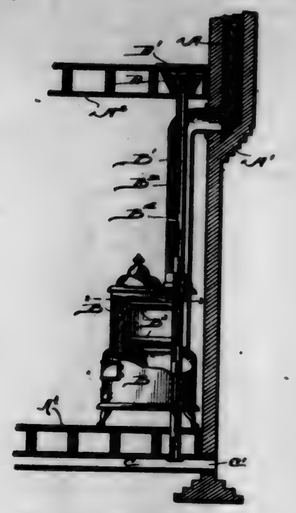

852,065. SYRINGE. BENJAMIN E. F. KELLER, Camden, Ohio. Filed June 27, 1906. Serial No. 323,723.

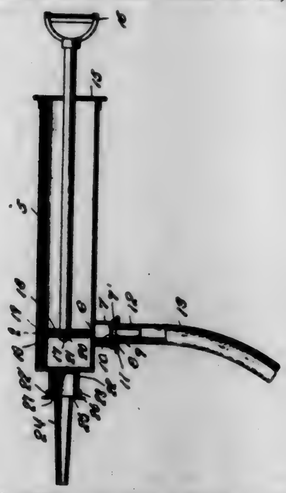

Claim.—A syringe comprising a barrel provided with inlet and discharge openings formed therein; a piston slidably mounted in the barrel; a piston rod connected with the piston; an outwardly extending flange surrounding the inlet opening and threaded interiorly and exteriorly at its outer end; a disk disposed within the flange in engagement with the inner threads thereof, said disk having an opening formed therethrough; an inwardly movable valve secured to said disk in position to open and close said opening; a cap removably engaged with the exterior threads of said flange and provided with an opening; a supply pipe communicating with said cap opening; an outwardly extending flange surrounding the discharge opening; a nozzle removably engaged with said last mentioned flange; a sleeve carried by the nozzle and disposed within said last-mentioned flange, said sleeve surrounding the discharge opening; and an outwardly-opening valve for the discharge opening located within the sleeve.

852,066. ACETYLENE-GAS GENERATOR. JAMES T. KITTREDGE, Stilwell, Ind. Ter. Filed May 31, 1905. Serial No. 263,199.

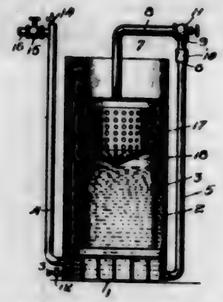

Claim.—A gas generator comprising a cylindrical body having a purifier located in its lower end, a partition dividing the purifier from the remainder of the body, a valved gas inlet pipe communicating with the purifier adjacent its bottom, said pipe being extended upwardly and turned laterally and thence extended downwardly into the body, a bell supported by the pipe within the body, a foraminous carbid receptacle supported within the bell and in spaced relation thereto at all points, a gas conducting pipe leading from the purifier adjacent the partition in the body of the generator, and an air outlet valve leading from the pipe for permitting withdrawal of air from the bell before formation of gas therein.

852,067. CHURN. RUDOLPH KOCH, Temple, Tex. Filed June 5, 1906. Serial No. 320,320.

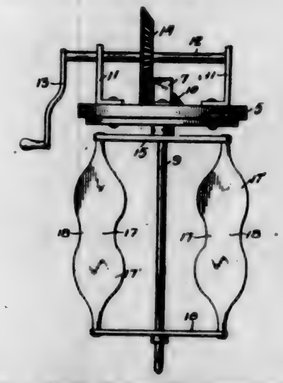

Claim.—In a churn dasher, the combination with a shaft, of transversely extending spaced cross bars carried by the shaft, and paddles journaled at their ends in the cross bars, said paddles including rounded end portions and a connecting reduced neck, said end portions extending further in one direction beyond the axes of the paddles than in the other.

852,068. APPARATUS FOR THE COMBINED VENTILATION AND MOISTENING OF WORKSHOPS. CHARLES G. LAMBERT and ALPHONSE G. LAMBERT, Levallois, France. Filed Jan. 17, 1907. Serial No. 352,777.

Claim.—1. A system of combined ventilation and moistening for work-shops and the like, comprising a large sized pipe T' extending from one end of the room to the other and through which air from outside is caused to pass, a fan blower V adapted to force the air through pipe T', openings O arranged on each side of said pipe T' at large intervals, a pipe T² arranged above the large pipe T' and parallel therewith adapted to receive a supply of compressed air, atomizers P distributed in suitable numbers on each side of said pipe T², a compressor C adapted to supply with compressed air all the atomizers, and a pipe T³ arranged under the large pipe T' and adapted to be supplied with water for the atomizers P, substantially as described and for the purpose set forth.

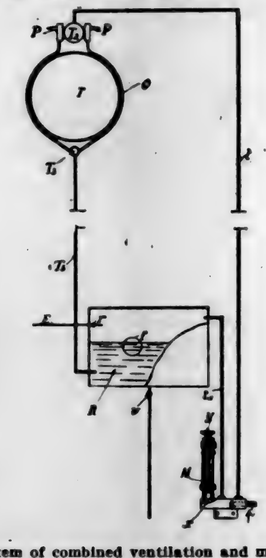

2. A system of combined ventilation and moistening for work-shops and the like, comprising a large sized pipe T' extending from one end of the room to the other and through which air from outside is caused to pass, a fan blower V adapted to force the air through pipe T', openings O arranged on each side of said pipe T' at large intervals, a pipe T² arranged above the large pipe T' and parallel therewith adapted to receive a supply of compressed air, atomizers P distributed in suitable numbers on each side of said pipe T², a compressor C adapted to supply with compressed air all the atomizers, a pipe T³ arranged under the large pipe T' and adapted to be supplied with water for the atomizers P, a constant level water tank R supplying the pipe T³ with water, and regulating means adapted to control the quantity of water supplied from the tank to the pipe T³ and consequently the moistening of the work-shop, substantially as described and for the purpose set forth.

3. A system of combined ventilation and moistening for work-shops and the like, comprising a large sized pipe T' extending from one end of the room to the other and through which air from outside is caused to pass, a fan blower V adapted to force the air through pipe T', openings O arranged on each side of said pipe T' at large intervals, a pipe T² arranged above the large pipe T' and parallel therewith adapted to receive a supply of compressed air, atomizers P distributed in suitable numbers on each side of said pipe T², a compressor C adapted to supply with compressed air all the atomizers, a pipe T³ arranged under the large pipe T' and adapted to be supplied with water for the atomizers P, a constant level water tank R supplying the pipe T³ with water, a chamber *a* connected with the compressed air pipe, a pin-valve *p* fitted on said chamber and adapted to maintain a uniform pressure therein, a pipe *t'* connecting the chamber *a* to the tank R, a pipe *t* connecting the chamber *a* to the atomizers, a valve box fitted on the chamber *a*, and a valve M arranged within the valve box and adapted to control the pressure in the chamber *a* and consequently the moistening of the work-shop, substantially as described and for the purpose set forth.

852,069. LAND-MARKER. ARMAND E. LE BLANC, Houma, La. Filed Nov. 12, 1906. Serial No. 343,127.

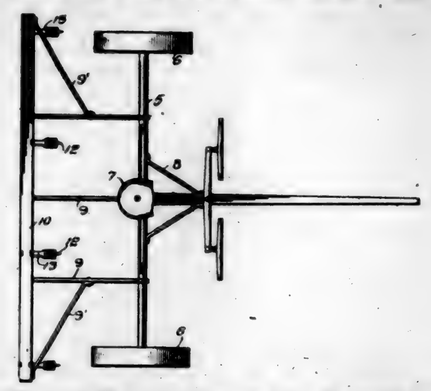

Claim.—1. The combination, with the axle, wheels, pole and their equipments, comprising a sulky for agricultural implements, of a ground-marker consisting of a beam connected with the axle, a plurality of marking devices connected in spaced relationship with the beam, rods connected at their rear ends with the beam and projected forward, one in front of each marking device, cutting disks journaled on the forward ends of said rods and constructed and arranged to operate on a line in front of that followed by the points of the markers.

2. The combination, with the axle, wheels, pole and their equipments, comprising a sulky for agricultural implements, of a ground-marker consisting of a beam connected with the axle, a plurality of marking devices connected in spaced relationship with the beam, rods connected at their rear ends with the beam and projected forward, one in front of each marking device, cutting disks journaled on the forward ends of said rods and constructed and arranged to operate on a line in front of that followed by the points of the markers, and means connecting the beam swivelly with the axle, to allow the former to be raised and turned over out of working position without moving or interfering with the axle.

3. The combination, with the axle, wheels, pole and their equipments, comprising a sulky for agricultural implements, of a ground marker consisting of a beam connected with the axle, a plurality of marking devices consisting of rod-iron bent to V-shaped form and connected in spaced relationship with the beam, rods connected at their rear ends with the beam and markers and projected forward, one in front of each marking device, cutting disks journaled on the forward ends of said rods and constructed and arranged to operate on a line in front of that followed by the points of the markers.

852,070. FISHING-REEL. WALTER E. MARHOFF, Kalamazoo, Mich., assignor to William Shakespeare, Jr., Kalamazoo, Mich. Filed May 9, 1904. Serial No. 207,031.

Claim.—1. In a fishing reel, the combination of a suitable frame; a threaded bearing block projecting from said frame; a spool; a journal therefor projecting through said bearing block; a cap threaded to engage said bearing block; and a ring D having an inwardly-projecting tongue D' thereon, adapted to engage the end of said spool journal, and having a slot *d* therein arranged within said cap, for the purpose specified.

2. In a fishing reel, the combination of a suitable frame; a threaded bearing block projecting from said frame; a spool; a journal therefor projecting through said bearing block; a cap threaded to engage said bearing block; and a ring having an inwardly-projecting tongue D' thereon adapted to engage the end of said spool journal, arranged within said cap, for the purpose specified.

3. In a fishing reel, the combination of a suitable frame; a spool; a journal or pivot therefor; a suitable journal bearing; a bearing cap; and a spring having a tongue portion adapted to engage said journal and a base portion adapted to engage said bearing cap, for the purpose specified.

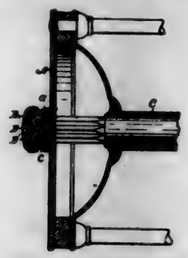

4. In a fishing reel, the combination of a suitable frame; a spool; a journal or pivot therefor; a suitable journal bearing; an adjustable bearing cap; and a spring having a tongue portion adapted to engage said journal and a base portion adapted to engage said bearing cap, for the purpose specified.

852,071. SELF-ADJUSTING WRENCH. GUSTAV A. MEYERS, Jr., Jeannette, Pa. Filed June 6, 1906. Serial No. 320,482.

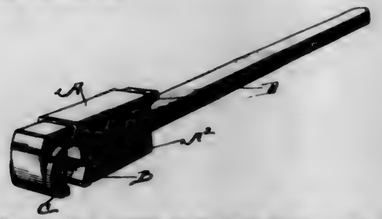

Claim.—1. In a wrench of the kind described, the combination with a casing, of a jaw pivoted in the casing, a jaw slidably mounted in said casing and a handle arranged in said casing between said jaws for the purpose described.

2. In a wrench of the kind described, the combination with a casing provided with a pivoted jaw having a toothed shank, of a jaw slidably mounted in said casing provided with a toothed shank and a handle provided with a toothed end arranged in said casing meshing with said shanks, for the purpose described.

3. In a wrench of the kind described, the combination with a casing having a notched end, of a jaw adapted to fit in said notches provided with a toothed shank pivoted in said casing, a jaw provided with a toothed shank slidably mounted in said casing on the pivoted jaw, and a handle provided with a toothed enlargement arranged between said shanks in said casing, for the purpose described.

4. In a device of the kind described, the combination with a casing having a notched end, of a jaw adapted to fit in said notches provided with a toothed shank pivoted in said casing, a jaw provided with a toothed shank, slidably mounted in said casing, a coil-spring arranged on a pin between said shank one end of which engages the pivoted head and the other fits in a recess formed in the shank of the sliding jaw, and a handle having a toothed end arranged in said casing meshing with said shanks, for the purpose described.

852,072. SAFETY-STOP FOR ELEVATORS. JOSEPH N. MICHELL, Germiston, Transvaal. Filed June 12, 1906. Serial No. 321,404.

Claim.—1. In a safety arrangement such as described, the combination of two pairs of oppositely disposed toothed gripping levers adapted to engage the skids or runners of the shaft, a centrally disposed spring located beneath said levers, means carried by the extremities of said spring which serve for simultaneously operating said gripping levers in pairs, a shackle or drawbar and flexible connections between said shackle or drawbar and the extremities of the spring which serve for placing the spring in compression when the weight is on the winding rope and putting the gripping levers out of operation.

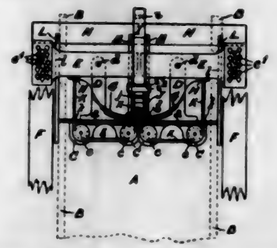

2. In a safety arrangement such as described, the combination of two pairs of oppositely disposed toothed gripping levers adapted to engage the skids or runners of the shaft, a centrally disposed spring located beneath said levers, means carried by the extremities of said springs which serve for simultaneously operating said gripping levers in pairs, a shackle or drawbar and flexible connections between said shackle or drawbar and the extremities of the spring which serve for placing the spring in compression when the weight is on the winding rope and putting the gripping levers out of operation, and means which move the toothed faces of the gripping levers toward or away from the skids or runners, substantially as described.

3. In a safety arrangement such as described, the combination with two pairs of oppositely disposed gripping levers adapted to engage the skids or runners of the shaft, said gripping levers being constructed at the back of their gripping faces with a beveled or inclined surface and a projection serving as a stop, and inclined bars which by engaging the inclined backs of said levers force the toothed surfaces into the faces of the skids or runners, substantially as described.

4. In a safety arrangement such as described, the combination of two pairs of gripping levers, one pair for the skids or runners at each side of the shaft, means for pivotally supporting said levers, a centrally disposed spring located beneath said levers and adapted to simultaneously operate both pairs of levers, guides which serve for moving the gripping faces of said levers into engagement with the skids or runners when said levers are moved in one direction, guides which serve for moving the gripping levers out of engagement with the skids or runners when said levers are moved in the opposite direction, a shackle or drawbolt forming the connection with the winding rope, flexible connections between said shackle and the ends of the spring which place the latter in compression when the weight of the vehicle is on the winding rope and so allow the gripping levers to run clear of the skids or runners, and inclined bars carried by the vehicle which engage the gripping levers to force them into contact with the skids or runners when actuated by the spring and serve as stops for said levers, substantially as described.

5. In a safety arrangement such as described, in combination, two pairs of oppositely arranged gripping levers which are adapted to engage the skids or runners of the shaft, said gripping levers being formed with an enlargement at their toothed or gripping end and beveled or inclined at the back of the gripping face and formed with a projection or stop, stationary inclined bars carried by the vehicle which are adapted to engage the inclined or beveled backs of the gripping levers to cause the latter to engage the skids or runners and which serve as stops when engaged by the projections on the backs of said levers, guides which serve for moving the levers into contact with the skids or runners when said levers are moved in one direction, and guides which serve for moving said levers out of contact with the skids or runners when the levers are moved in the opposite direction, a centrally disposed spring adapted to simultaneously actuate both pairs of gripping levers, a shackle or drawbolt, flexible connections between said shackle and the ends of the spring, guide pulleys for said flexible connections, said flexible connections serving to place the spring in compression when the load of the vehicle is on the winding rope, substantially as described.

6. In a safety arrangement such as described, in combination, the vehicle A, the brackets D fixed on the vehicle, the spindles *d* supported in the brackets, the gripping levers E pivotally mounted on the spindles, said levers each being constructed with a hole rounded at the edges to permit it to move on the spindles toward or away from the skids or runners the ends of said gripping levers being enlarged and formed with the teeth e^1 and at the back with the incline e^2 and projection e^3, the guides L and M for the opposite ends of the levers E, the inclined plates N adapted to engage the inclined backs of the gripping levers and the stops e^3, the spring G arranged on the top of the vehicle beneath the gripping levers, the plates H fixed to the ends of the spring so that the latter actuates both levers of each pair simultaneously, the shackle I, the pulleys C, and the ropes K connecting the shackle with the ends of the spring, substantially as described.

7. In a safety arrangement such as described, in combination, the vehicle A, the plate *a* secured on the top thereof and formed with holes at the center and at each end, the laminated spring G and plate *g* for bolting it to the plate *a* and top of the vehicle, the plates H fixed to the ends of the spring G, the shackle I, the ropes K connecting the lower end of the shackle with the plates H, the brackets C, the guide-pulleys *c* round which the ropes K pass, the brackets D fixed on top of the vehicle, the spindles *d* carried by the brackets D, the gripping levers E each beveled as at e^4 formed with a hole *e* rounded at the edges to permit it to move on the spindles *d* toward or away from the skids or runners and formed with an enlargement constructed with the teeth e^1 on one face and inclined or beveled at the back as at e^2 and constructed with the projection e^3, the guides L and M fixed to the vehicle for moving the levers E toward and away from the skids or runners, the skids or runners F and the inclined plates N fixed to the frame of the vehicle A above the levers E, substantially as and for the purpose described.

852,073. GUIDE. JOHN R. MITCHELL, New York, N. Y., assignor to Mitchell-Bissell Co., New York, N. Y., a Corporation of New Jersey. Filed Jan. 3, 1907. Serial No. 350,654.

Claim.—A guide consisting of a block having a vertical central opening, and a slot extending in a diagonal direction from said opening to the outer end of the guide forming overlapping fingers, and a lip 2 on the inner part of each finger forming a notch *u* between the lip and the body of the finger, as and for the purpose set forth.

852,074. MEASURING ATTACHMENT FOR BOTTLE-STOPPERS. ALEXANDER MORRISON, Shoshone, Idaho. Filed Aug. 31, 1906. Serial No. 332,848.

Claim.—1. In a device of the character described, a stopper adapted to be secured in the neck of a bottle and having an opening extending longitudinally therethrough, a measuring chamber adjustable to various capacities carried by said stopper and provided with an outlet opening, a valve for alternately opening and closing the opening in the stopper and the outlet opening of the measuring chamber, and means without the measuring chamber for actuating said valve.

2. In a device of the character described, a stopper adapted to be secured in the neck of a bottle and provided with a portion extending upwardly therefrom, a measuring chamber fitting said portion and longitudinally adjustable thereon, and means controlling the entrance of the liquid from the bottle into said measuring chamber and its discharge therefrom.

3. In a device of the character described, a bottle stopper provided with an upwardly extending cylindrical portion and with an opening extending longitudinally therethrough, a measuring cylinder fitting said cylindrical portion of the stopper and adjustable thereon, said measuring cylinder being provided with a discharge opening, and means for alternately opening and closing the opening in the bottle stopper and the discharge opening of the measuring cylinder.

4. In a device of the character described, a bottle stopper provided with an upwardly extending cylindrical portion and with an opening extending longitudinally therethrough, a measuring cylinder fitting said cylindrical portion of the stopper and adjustable thereon, said measuring cylinder being provided with a discharge opening, and a valve for alternately opening and closing the opening in the bottle stopper and the discharge opening of the measuring cylinder.

5. In a device of the character described, a bottle stopper provided with an upwardly extending cylindrical portion and with an opening extending longitudinally therethrough, a measuring cylinder fitting the cylindrical portion of the stopper and adjustable thereon, said measuring cylinder being provided with a discharge opening in the top thereof, a vertically movable valve rod loosely mounted in the openings in the top of the measuring cylinder and in the bottle stopper, and a valve carried by said valve rod for alternately opening and closing the openings in the bottle stopper and in the top of the measuring cylinder.

6. In a device of the character described, a measuring chamber adjustable to various capacities provided with openings permitting the admission of liquid thereto and its discharge therefrom, a valve within the chamber for alternately opening and closing said openings, and a valve

rod for operating said valve, said rod having an actuating portion extending without the measuring chamber.

852,075. RAILWAY-SWITCH LOCK. FRANK MCGUIRE, Detroit, Mich. Filed Feb. 13, 1907. Serial No. 357,172.

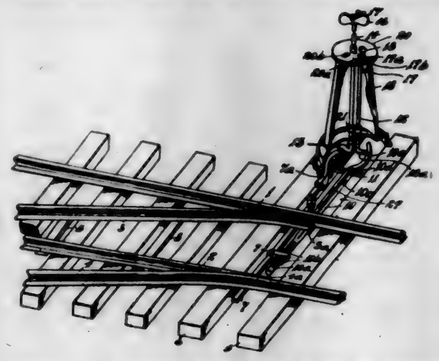

Claim.—1. A railway switch lock, having in combination with fixed rails and movable rail points, a resilient bar attached to the under side of one of the movable rails and engaging against the corresponding parts of the other rails, a blocking bar fixed in position on one side of the track, with which said resilient bar is adapted to interlock, and means for engaging the resilient bar to permit relative movement of its interlocking portion with respect to the blocking bar and for moving the bar lengthwise of itself to accomplish a new location of it and of the rails with which it is connected, substantially as described.

2. A railway switch, having in combination with fixed rails and movable rails, a resilient bar yieldingly engaging against the under side of said rails, being attached to one of the movable rails, a holding bar with which said bar is adapted to interlock in any one of a variety of positions, a switch stand provided with a vertically slidable stem, interconnecting means between said stem and the resilient bar, and means whereby the stem and consequently the bar may be deflected sufficiently to permit its passage from one position to another upon the longitudinal movement of the bar under actuation imparted from said stem through said interconnecting means, substantially as described.

3. A railway switch lock, having in combination with a fixed locking member and with the rails constituting the main and side tracks, a resilient bar engaging thereacross, being pivotally attached to the movable rails in the track and bearing closely against the lower face of each of the fixed rails, the free end of the bar being adapted to interlock with said fixed member at any one of a plurality of points, means for engaging said resilient bar to effect the release of said bar from said fixed locking member, and means for causing said bar to move longitudinally while thus held from locking engagement to a new position of possible engagement with said fixed locking member, substantially as described.

852,076. SUSPENDERS. JAMES T. MCNEELY, Los Angeles, Cal. Filed Nov. 16, 1905. Serial No. 287,552.

Claim.—1. A knitted suspender, comprising the shoulder straps a^2 and a^3, and the ends a and a' uniting the shoulder straps at their opposite ends and all formed integrally, substantially as described.

2. A knitted suspender, comprising the relatively wide ends a and a' uniting the integral shoulder straps a^2 and a^3, and the tabs a^4 and a^5 relatively thicker and stronger than the ends, substantially as described.

3. A knitted suspender, comprising the ends a and a', the integral shoulder straps a^2 and a^3 and the knitted gussets a^7 located at the junction of the shoulder straps and the ends, substantially as described.

4. A knitted suspender, comprising the ends a and a', the shoulder straps a^2 and a^3 and the double tabs a^4 and a^5

forming extensions of the ends a and a', substantially as described.

852,077. T-SQUARE. ERNST. R. E. NILSSON, Astoria, Oreg. Filed June 16, 1905. Serial No. 265,569.

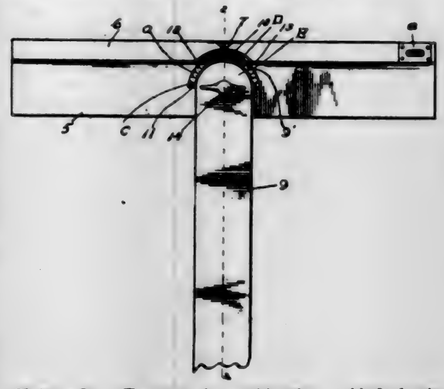

Claim.—In a T-square, in combination, a blade having an upstanding longitudinal rib on its outer edge, said rib having a concaved seat formed in its forward edge and disposed centrally thereof; a quadrant secured to the upper face of said blade and extending into the concave seat in said rib, said quadrant having a scale marked thereon; a blade having a rounded end pivoted to the head concentrically with said end and with the quadrant, said blade being movable into and out of position to lie with a longitudinal edge against said rib; an indicator carried by the rounded end of the blade and extending forwardly across the quadrant; and means for holding the blade at different points of its movement.

852,078. PROCESS OF EXTRACTING PRODUCTS FROM WOOD. FREDERICK POPE, New York, N. Y., assignor of one-half to William C. Clark, Pittsburg, Pa. Filed Sept. 6, 1906. Serial No. 333,532.

Claim.—1. The process of treating wood which consists in placing wood in a closed vessel, circulating through the vessel a hot bath which is mobile at usual temperatures, which slowly volatilises, and which is maintained in the vessel at a pressure sufficiently high above atmospheric pressure to prevent any substantial escape of vapor from the vessel.

2. The process of treating wood for the purpose of extracting products therefrom, which consists in placing the wood in a closed vessel, circulating through the vessel a hot bath which is mobile at usual temperatures, which slowly volatilizes, which is a solvent, and which is maintained in the vessel at a pressure sufficiently high above atmospheric pressure to prevent any substantial escape of vapor from the vessel.

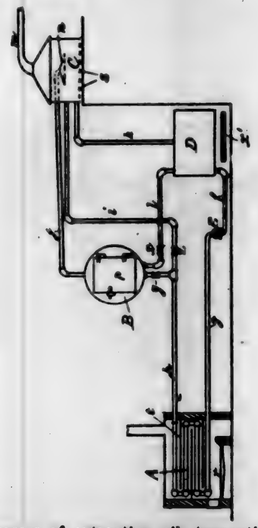

3. The process of extracting oil, turpentine and resin, from wood, which consists in circulating through the vessel a hot bath which is mobile at usual temperatures, which slowly volatilizes and which is maintained in the vessel at a pressure sufficiently high above atmospheric pressure to prevent any substantial escape of vapor from the vessel.

4. The process of extracting products from wood, which consists in circulating through the vessel a hot bath of pine tar, heavy residuum of wood extraction and pine oil.

5. The process which consists in placing the wood in a closed vessel, circulating through the vessel above atmospheric pressure a hot bath of pine tar, heavy residuum of wood extraction and pine oil, separating the products extracted from the bath and then separating the products by distillation.

852,079. SIDE-FRAME CONSTRUCTION. OSWALD S. PULLIAM, Pittsburg, Pa., assignor to Pittsburgh Equipment Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Jan. 29, 1907. Serial No. 354,678.

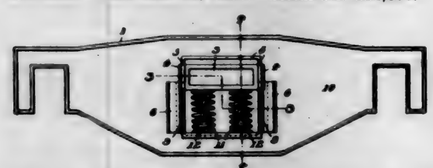

Claim.—1. In a truck side-frame construction, the combination with a bolster having column-guides, a side-frame proper having a bolster receiving opening, fixed bolster-guides formed on the side-frame adjacent to the sides of the opening and removable bolster-guides below the fixed bolster-guides and forming a continuation thereof.

2. In a truck side-frame construction, the combination with a bolster having column-guides, a side-frame proper provided with a bolster receiving opening having its lower portion at least as wide as the bolster measured over its column-guides and the upper portion of less width than the bolster measured over its column-guides, bolster-guides formed on the side-frame adjacent to the sides of the smaller portion of the opening, and removable bolster-guides below the fixed bolster-guides.

852,080. BURIAL-CASE. JOSEPH F. RUSSELL, Battle Creek, Mich., assignor of one-half to Oscar S. Russell, Battle Creek, Mich. Filed Dec. 20, 1905. Serial No. 292,532.

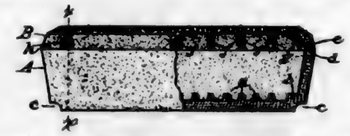

Claim.—1. In an artificial stone burial case, comprising a box and its cover, said box portion having transversely disposed gains formed on the bottom thereof and intersecting the ends thereof, to form means for lowering and removing the lowering means thereof.

2. In an artificial stone burial case, comprising a box and its cover, said cover having upwardly-tapering sides, each of said sides near either end thereof being provided with indentures or concavities the tops of which form hand grips for lifting said cover, substantially as and for the purpose set forth.

852,081. TELEPHONE-HOLDER. THOMAS J. SKELLEY, Collinwood, Ohio, assignor to Skelley & Company, a Copartnership, Cleveland, Ohio. Filed Apr. 17, 1903. Serial No. 153,000.

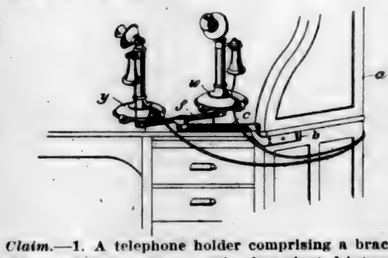

Claim.—1. A telephone holder comprising a bracket, an arm pivoted thereto, a supporting bar pivoted intermediate the ends thereof to said arm, said bar carrying at each end thereof a pivotal telephone support, and a stop on said arm positioned to engage said bar and prevent complete rotation thereof, substantially as specified.

2. A telephone holder comprising a bracket, an arm pivoted thereto, a supporting bar pivoted intermediate the ends thereof to said arm, said bar carrying telephone supports arranged on opposite sides of the pivot thereof, and means for preventing a complete rotation of said bar in either direction, substantially as specified.

3. A telephone holder comprising an arm, a supporting bar pivoted intermediate the ends thereof to said arm, said bar carrying telephone supports arranged on opposite sides of the pivot thereof, and a stop arranged to prevent rotation of the bar when it is substantially in line with the direction of the arm, substantially as specified.

4. A telephone holder comprising an arm, a bar pivoted intermediate of its ends to said arm, and a telephone support adjacent each end of said bar, said support comprising a central hub portion rotatable on the bar, a plurality of radial arms projecting from said hub, and a clamping member on each of said radial arms, substantially as specified.

852,082. FRUIT-GATHERER. ASA A. SMITH, Malaga, N. J. Filed Aug. 10, 1906. Serial No. 330,016.

Claim.—1. A fruit gatherer consisting of a receptacle having a downwardly extending recess in the upper portion

of its rear and having integral strap-securing means at the base of the recess, and a strap held by said means, said means being bent down from said base presenting uncut bends at top.

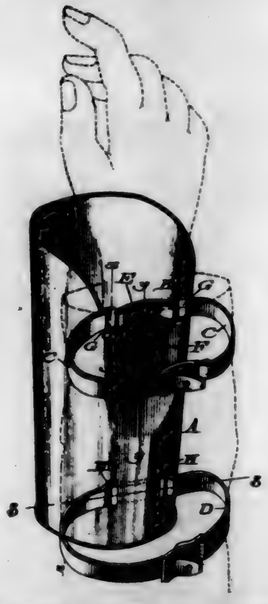

2. A fruit gatherer consisting of a receptacle having a downwardly extending recess in the upper portion of its rear and having integral strap-securing means at the base of the recess, and a strap held by said means, the back of said receptacle below said base being flattened to conform to the contour of the contacting portion of the forearm.

3. A fruit gatherer consisting of a receptacle, the same having a downwardly extending recess in the upper portion of its rear, lips on the wall of said recess, integral therewith bent on said receptacle forming loops, and a securing strap partly occupying said loops.

4. A fruit gatherer consisting of a receptacle, the same having a downwardly extending recess in the upper portion of its rear, lips on the wall of said recess integral therewith bent on said receptacle forming loops, a securing strap partly occupying said loops, openings and lips on the lower portion of said receptacle, and a securing strap partly occupying said openings and being adapted to contact with the bends of said lips.

852,083. AUTOMATIC ENDING-MACHINE FOR BOXES. PRESTON L. SMITH, Philadelphia, Pa., assignor of one-third to Alfred Day and one-third to John C. Breithaupt, Philadelphia, Pa. Filed Jan. 5, 1906. Serial No. 294,722.

Claim.—1. In a box ending machine, a support for the box, clamping bars pivoted to said support, means for maintaining said clamping bars normally open, rollers carried by said bars, crossheads movable with respect to said support, means for feeding the box ends thereto, means for applying adhesive material to said ends, and means yieldingly actuated for simultaneously securing said ends to said box.

2. In a box ending machine, a box support, means for adjusting the size thereof, clamping bars pivoted to said support, means for maintaining said clamping bars normally open, rollers carried by said bars, crossheads movable with respect to said support, a feeding device for the box ends, means for automatically clamping a box on said support, and means yieldingly actuated for simultaneously securing the ends to said box.

3. In a box ending machine, an adjustable box support, clamping bars pivoted thereto, means for actuating said bars, an adjustable support for the box ends, means for applying adhesive material to said ends, means for simultaneously bringing the ends into alinement with said box, and means yieldingly actuated for pressing said ends against said box.

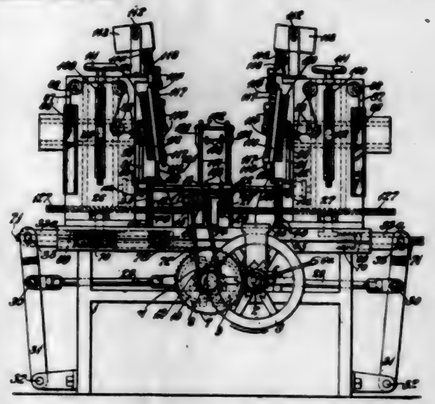

4. In a box ending machine, an adjustable box support, clamping bars pivoted thereto, means for actuating said bars, an adjustable support for the box ends, means for applying adhesive material to said ends, means for simultaneously bringing the ends into alinement with said box, means yieldingly actuated for pressing said ends against said box, and means for automatically removing the finished boxes from said box support.

5. In a box ending machine, a support for the box, clamping bars pivoted to said support, means for actuating said bars, means for feeding the box ends thereto, means for applying adhesive material to said ends, means yieldingly actuated for simultaneously securing said ends to said box, and means for adjusting said last mentioned means with respect to said box support.

6. In a box ending machine, a box support, means including bars pivoted to said support for automatically clamping a box thereon, adjustable means for bringing the box ends into operative position, means for applying adhesive material near three edges of each end, and tension means for simultaneously securing the ends in position.

7. In a box ending machine, a box support, a frame adjustably secured with respect to said support, a plurality of sprocket wheels mounted thereon, an endless chain engaging said sprocket wheels, hooks carried by said chain adapted to remove a box from said support, and means for rotating one of said sprocket wheels.

8. In a box ending machine, a frame having a guideway thereon, a box support adjustably mounted in said guideway, cross-heads adjustably mounted in said guideway, plates mounted on said crossheads, plates yieldingly connected therewith and adapted to support a box end, and means for reciprocating said crossheads.

9. In a box ending machine, a box support, crossheads movable toward and away from said support, a plurality of plates mounted on each crosshead, a plate yieldingly connected with each plurality of plates, a ledge adjustably mounted on said plate adapted to support a box end, and means for actuating said crossheads.

10. In a box ending machine, a box support, crosaheads movable toward and away from said support, a plurality of plates mounted on each crosshead, a plate yieldingly connected with each plurality of plates, a ledge adjustably mounted on said plate adapted to support a box end, a catch for the box end yieldingly carried at the upper end of said plate, and means for actuating said crossheads.

11. In a box ending machine, an adjustable box support, clamping bars pivoted thereto, rollers carried by said bars, crossheads movable with respect to said support, a plurality of plates mounted on each crosshead, a plate yieldingly connected with each plurality of plates and adapted to support a box end, a cam carried by said plate for actuating said clamping bars, and means for reciprocating said crossheads.

12. In a box ending machine, an adjustable box support, clamping bars pivoted thereto, means for maintaining said clamping bars normally open, rollers carried by said bars, crossheads movable with respect to said support, a plurality of plates mounted on each crosshead, a plate yieldingly connected with each plurality of plates and adapted to support a box end, a cam carried by said plate for actuating said clamping bars, and means for reciprocating said crossheads.

13. In a box ending machine, an adjustable box support, an adjustable support for the box ends, means for applying adhesive material to said ends, means for simultaneously bringing the ends into alinement with said box, means for pressing said ends against said box, means for automatically raising the finished box above its support, and means for removing the finished box.

14. In a box ending machine, a driven shaft, a cam thereon, a crosshead, a roller mounted thereon and coacting with said cam, a box lifter comprising a plurality of laterally adjustable members connected with said cross head, and means for adjusting the size of said lifter.

15. In a box machine, a driving shaft, a driven shaft, eccentrics mounted on said driven shaft, crossheads operatively connected with said eccentrics and reciprocated thereby, an adjustable box support adjustably mounted on said crossheads, means actuated by the driving shaft for applying adhesive material to the box ends, means for feeding the box end into position, and yielding means mounted on each of said cross heads for simultaneously pressing the two ends against a box on said box support.

16. In a box ending machine, a box support having end sections comprising a fixed central section and movable side sections, a screw having a right and a left thread thereon engaging said sections, said right thread engaging said central and one side section, said left thread engaging said central and the other side section, clamping devices carried by said support, tension devices therefor, and means for longitudinally adjusting the size of said support.

17. In a box ending machine, a driven shaft, a cam thereon, a crosshead mounted on said shaft, a roller carried by said crosshead, a slotted arm connected with said crosshead, bars adjustably secured in said slots, and supports for a box carried by said bars and longitudinally adjustable thereon.

18. In a box ending machine, a frame, crossheads thereon, means for reciprocating said cross-heads, an adjustable box support located between said cross-heads, clamping means carried by said support, and means carried by said cross-head for actuating said clamping means.

19. In a box ending machine, a frame, an adjustable box support thereon, cross-heads between which said support is mounted, means for reciprocating said cross-heads, a fixed plate carried by each cross-head, rods connected with said plates, recessed plates secured to said rods, ledges adjustably mounted in said recesses and each adapted to support a box end, and catches at the upper end of said plates adapted to engage said box ends.

20. In a box ending machine, cross-heads adapted to be reciprocated, a plate mounted on each cross-head, rods extending through said plate, a second plate carried by said cross-heads, springs interposed between said plates, and a plate secured to said rod adapted to support a box end.

21. In a box ending machine, cross-heads adapted to be reciprocated, a plate mounted on each cross-head, rods extending through said plate, a second plate adjustably mounted on said rods, springs interposed between said plates, a plate adapted to support a box end secured to said rods, and a plate secured to said rods adapted to support a box end.

22. In a box ending machine, cross-heads adapted to be reciprocated, a plate secured to each cross-head, rods passing through said plates, a second plate adjustably mounted on said rods, springs interposed between said plates, a plate adapted to support a box end secured at the ends of said rods and means for locking a box end in position thereon.

23. In a box ending machine, an adjustable box support, clamping bars pivoted thereto, rollers carried by said bars, cross-heads adapted to be reciprocated, supports for a box end yieldingly mounted on each cross-head, means for locking the box end in position on its support, and means carried by said box end support adapted to co-act with said rollers to actuate said clamping bars.

24. In a box ending machine, an adjustable box support, clamping bars pivoted thereto, rollers carried by said bars, cross-heads adapted to be reciprocated, support for a box end yieldingly mounted on each cross-head, means for locking the box end in position on its support, and cams carried by said box end support adapted to co-act with said rollers to actuate said clamping bars.

25. In a box ending machine, an adjustable box support, a box end receptacle in proximity thereto, a shaft suitably mounted with respect to said receptacle, a lever fixed on said shaft, arms extending from said shaft, a roller mounted in said arms, a spring carried by said lever engaging said roller, a stop for said arms carried by said lever, a feed plate secured to said roller, means for partially rotating the said shaft, and means coacting with a box end and including a lever loosely mounted on said shaft between which and said feed plate a box end is supported and brought into proper position with respect to said box support.

26. In a box ending machine, an adjustable box end receptacle, a receptacle for adhesive material supported in proximity to said box end receptacle, a pipe having swiveled connections connected therewith, paste receptacles connected with said pipe, a second pipe extending from said receptacle for the adhesive material, a third paste receptacle in communication with said second pipe, a valve for said pipe, and a valve for said first mentioned pipe.

852,084. LOOSE-LEAF BINDER. JAMES STRANG, New York, N. Y. Filed Jan. 21, 1907. Serial No. 353,174.

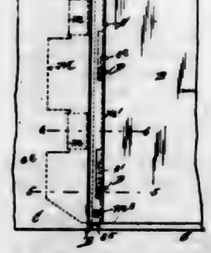

Claim.—1. In a binder of the character designated, the combination with the covers and perforated sheets, of a lock tube attached to a cover and formed with recesses for the reception of the ends of sheet bars, said sheet bars passing through said perforated sheets and formed with end perforations, and a bolt slide in said flat lock tube, said bolt slide being formed with bolt tongues arranged to successively engage with the bolt holes in sheet bars, for the purpose described.

2. In a binder of the character designated, the combination with the back and covers and with the perforated sheets, of a plurality of sheet bars passing through said perforated sheets each bar being formed with a bolt hole at each end, two flat lock tubes one attached to and projecting from each of the covers in the same general plane as that of the cover, each of said lock tubes being formed

with recesses for the reception of the ends of the sheet bars and with a depressible tongue on one side wall, and two bolt slides, one in each of said flat lock tubes, said slides being each formed with bolt tongues for engagement with the bolt holes in the sheet bars and a slot or depression communicating with the depressible tongue in the side of the lock tube in which it is inserted, whereby the sheets may be removed from one side of the binder and replaced at the other side thereof, and whereby when the book is completed, the bolt slides may be permanently locked in position in the lock tubes for the purpose described.

3. In a binder of the character designated, the combination with the back and covers and with the perforated sheets, of a plurality of sheet bars passing through said perforated sheets, each bar being formed with a bolt hole at each end, two flat lock tubes one attached to and projecting from each of the covers in the same general plane as that of the cover, each of said lock tubes being formed with recesses for the reception of the ends of the sheet bars, and two bolt slides one in each of said flat lock tubes, each of said slides being formed with bolt tongues arranged to engage successively one in advance of the other, the bolt holes in the sheet bars, for the purpose described.

852,085. GAME APPARATUS. WALTER J. THOMAS, Oakland, Cal. Filed Aug. 2, 1906. Serial No. 328,959.

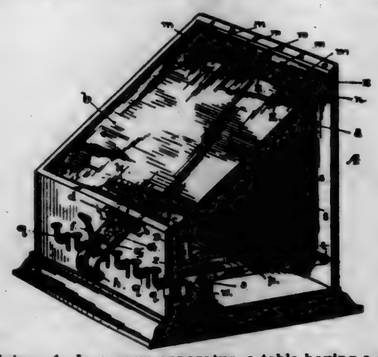

Claim.—1. In a game apparatus, a table having a plane-surface provided with a plurality of pockets across one end, an adjustable spring-actuated gun at the opposite end of the plane-surface adapted to impel a projectile over the surface toward the pockets, a glass top covering said surface and the pockets, and means for selecting and placing in operative condition any selected one of said pockets and rendering inoperative for the time all the remaining pockets.

2. In a game apparatus, a table having an inclined surface, a plurality of pockets located across the upper end of the incline, means for selecting and placing any one of said pockets in operative condition and the remaining pockets temporarily out of operative condition, and a spring-actuated gun pivotally mounted at the lower end of the incline and adjustable in a plane parallel with the said inclined surface, the gun being adapted to fire a projectile up the inclined surface.

3. A game apparatus comprising an inclined plane having a plurality of pockets across the upper end of the incline separated by standing-strips, a drop-bottom to each pocket, a glass top covering the inclined plane and the pockets and preventing access thereto, means operative from the outside for setting the drop-bottoms below the plane of the incline, a locking-out device operating to prevent the drop bottoms from the remaining parts from being moved after the bottom of a selected one of the pockets is set for action, and a spring-actuated gun pivotally mounted at the bottom of the incline and adapted to impel a projectile through the alley between said inclined surface and the glass top, said gun being adjustable in an arc on its pivot.

4. In a game apparatus, an inclined surface having a plurality of pockets across its upper end, a drop-bottom to each pocket, key-actuated means to each pocket for drawing down and locking the drop bottom below the plane of the incline, and means actuated by each key operating to temporarily lock out all the remaining key-actuated means when any one key is selected and operated.

852,086. PLOW ATTACHMENT. WILSON B. TUNNELL, Van, Tex. Filed Apr. 22, 1904. Serial No. 204,443.

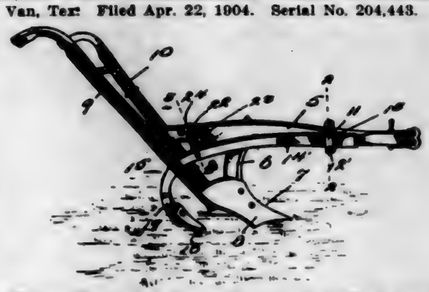

Claim.—The combination with a plow including a beam, of the supplemental beam 14 detachably and adjustably connected with the plow beam and offset adjacent its forward end to cause the same to extend at an angle to the beam of the plow, the rear end portion of the beam 14 being bent downwardly and forwardly as at 15 and provided adjacent its lower end with the single offset portion 16, the beam being bent upon itself below the offset portion 16 and having its extreme end portion arranged to bear against the inner face of the down-turned portion 15 of the beam at a point directly above the offset portion 16 thereof, the said extreme end portion of the beam being bolted in this position, and the soil-treating blade 18 secured to the beam by means of the bolt 13 which is engaged between the members 16 and 17, substantially as described and for the purpose stated.

852,087. FLOOR-WAXING MACHINE. CYRA B. WATTLES, Providence, R. I., assignor to Surfacing Machine Company, Providence, R. I., a Corporation of Rhode Island. Filed Feb. 5, 1906. Serial No. 299,595.

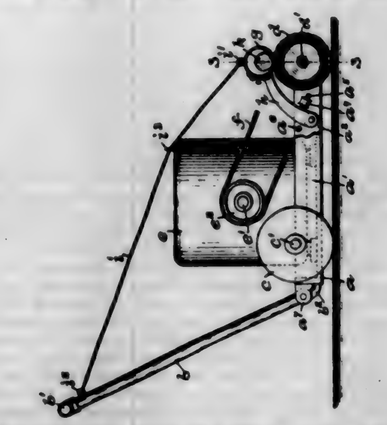

Claim.—1. A floor waxing machine comprising a frame, a handle pivotally secured to the frame, wheels rotatably secured to the frame, a motor secured to the frame, a roller brush rotatably secured in bearings in the frame, means for operatively connecting the motor with the roller brush to revolve the brush, a cylindrical casing having a longitudinal slot, arms rigidly secured to the casing and pivotally secured to the frame of the machine in a position to bring the cylindrical rod of wax into frictional contact with the roller brush through the slot in the casing, and means for adjusting the casing relative to the roller brush.

2. A floor waxing machine comprising a frame, a handle pivotally secured to the frame, wheels rotatably secured to the frame, a motor secured to the frame, a roller brush rotatably secured in bearings in the frame, means for operatively connecting the motor with the roller brush to revolve the brush, a cylindrical casing having a longitudinal slot, a closed end and an open end, a cover adapted to close the open end of the casing, arms rigidly secured to the casing and pivotally secured to the frame of the machine in a position to bring the casing over the brush and the wax into frictional contact with the brush through the slot in the casing, means for adjusting the casing relative to the brush, means for raising the casing and the wax out of contact with the brush, and means for limiting the upward movement of the casing.

3. In a floor waxing machine, the combination of a frame *a*, a handle *b* pivotally secured to the frame, wheels *c c* rotatably secured to the frame, a roller brush *d* rotatably secured in bearings in the frame, a motor *e* secured to the frame, means for operatively connecting the motor with the roller brush to revolve the brush, a casing *g* consisting of a cylindrical tube *g'* having the closed end g^3, the open end g^2, the longitudinal slot g^4 and the cover g^5, curved arms *h h* rigidly secured at their upper ends to the casing *g* and pivotally secured at their lower ends to the frame *a* of the machine in a position to bring the slot g^4 in the casing *g* over the top of the roller brush *d*, a cord *i* secured at one end to the casing *g* and at the other end to the handle *b*, and means for adjusting the casing *g* relative to the roller brush *d*, as described.

4. In apparatus of the class described, a plurality of rods, delivery fingers at one end of the rods, tappet arms at the opposite end of the rods, springs tending to maintain the rods in one position, stops for limiting the movement of the tappet arms under the influence of the springs, tappet arm engaging cams, and a cam carrier arranged to receive step by step revoluble movement.

5. In apparatus of the class described, a plurality of article guiding rods, delivery fingers at one end of the rod, tappet arms at the opposite ends of the rod, stops for limiting movement of the tappet arms, springs engaging the rods and tending to force the tappet arms against the stops, a plurality of tappet arm engaging cams, a revoluble disk carrying said cams, means for imparting a step by step movement to the disk, and means for preventing reverse movement of said disk.

6. In apparatus of the class described, a plurality of column guiding rods, article delivery fingers at one end of the rods, tappet arms at the opposite ends of said rods, stops for limiting movement of the tappet arms, springs for engaging the rods and tending to move the tappet arms against the stops, a revoluble disk, a plurality of cams carried thereby and adapted to engage the tappet arms, a crown ratchet on the disk, a lock pawl engaging said ratchet, and means for imparting a step by step rotative movement to the disk.

7. In apparatus of the class described, a pair of parallel spaced plates, connecting posts between said plates, the upper ends of the posts projecting through the uppermost plate and forming stops, a plurality of rods mounted for oscillatory movement on said plates, article delivery fingers at the lower ends of said rods, tappet arms at the upper ends of said rods, springs encircling the rods and tending to move the tappet arms against the stops, a shaft journaled centrally of the plate, a disk carried by the shaft, a plurality of cams carried by the disk and arranged to engage said tappet arms, and means for effecting a step by step rotative movement of the disk.

8. In apparatus of the class described, a plurality of guiding rods, article delivery fingers at one end of the rod, tappet arms at the opposite ends of said rods, stops for limiting movement of the tappet arms, springs for engaging the rods and tending to move the tappet arms against the stops, a revoluble disk, a plurality of cams carried thereby and adapted to engage the tappet arms, a crown ratchet on the disk, a lock pawl engaging said ratchet, a spring for preventing excessive movement of the pawl, and means for imparting a step by step rotative movement to the disk.

852,088. VENDING-MACHINE. RICHARD WEITLICH, Sturgeon Bay, Wis. Filed Sept. 18, 1906. Serial No. 335,092.

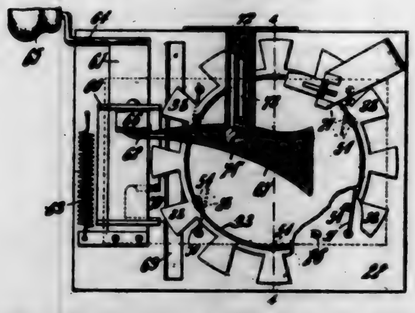

Claim.—1. In apparatus of the class described, a plurality of approximately vertical rods forming guides at the reëntering angles of a column of articles arranged criss cross fashion, supporting and delivery fingers at the lower portions of the rods, and means for rocking the rods.

2. In apparatus of the class described, a plurality of approximately vertical rods forming guides at the reëntering angles of a column of articles arranged criss cross fashion, auxiliary bars forming end guides for the column, article supporting and delivery fingers arranged at the lower ends of the rods, and means for rocking said rods.

3. In apparatus of the class described, a plurality of vertically disposed rods, article supporting fingers at the lower portions of the rods, tappet arms at the upper portions of said rods, a step by step revoluble member, and cams carried thereby and adapted to engage the tappet arms.

852,089. DELIVERY MECHANISM FOR FOLDING-MACHINES. SETH WHEELER, Castleton, N. Y. Filed Mar. 28, 1906. Serial No. 308,398.

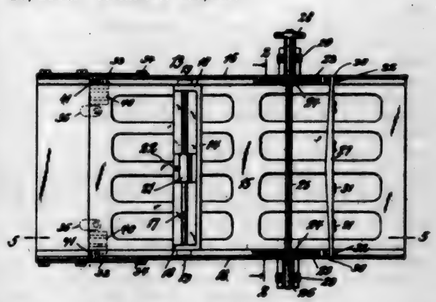

Claim.—1. In a delivery mechanism, the combination with a receiving box, of a follower, a rack, a pinion, and a retarding device for the pinion.

2. In a delivery mechanism, the combination with a receiving box, of a movable follower, a rack, a pinion, an arbor for the pinion, and a friction bearing for said arbor.

3. In a delivery mechanism, the combination with a receiving box, of a movable follower, a shaft carried thereby,

a friction bearing for said shaft, also carried by said follower, a pinion on said shaft, and a stationary rack for engagement with said pinion.

4. In a delivery mechanism, the combination with a receiving box, of a movable follower, a shaft carried thereby, a friction bearing for said shaft, also carried by said follower, pinions on the opposite ends of said shaft, and stationary racks with which said pinions engage.

5. In a delivery mechanism, the combination with a receiving box, of a movable follower, a shaft carried thereby, an adjustable friction bearing for said shaft, also carried by said follower, pinions on the opposite ends of said shaft, and stationary racks with which said pinions engage.

6. In a delivery mechanism, the combination with a receiving box, of main and supplemental followers, the latter arranged to be moved into and out of the path of movements of the articles delivered, at will, and adjustable resistance means for both the said followers.

7. In a delivery mechanism, the combination with a receiving box, a movable follower, and a resistance device therefor, of a supplementary removable follower, means for supporting the said follower in the path of movement of articles to be delivered, and a resistance device for the said supplementary removable follower.

8. A delivery mechanism comprising a receiving box having a part adapted to be moved out of register with the remaining portion of the box, said part forming normally a continuation of the said box, and a follower arranged to move from one part of said box to the other, and to be carried by said movable part of said box when the same is moved out of such register.

9. In a delivery mechanism, the combination with a receiving box comprising a main portion and an extension, of a movable follower arranged to move along said box and into said extension, a resistance device for the movable follower, and means for moving said extension and said follower out of register with the main portion of said receiving box.

10. In a delivery mechanism, the combination with a receiving box having a part thereof pivoted to the main portion, and means for normally maintaining the extension in register with the main portion, of a follower arranged to move along said receiving box into said extension, and resistance means for said follower operating during the movement of said follower both in the main portion of said box and in the extension thereof.

11. In a delivery mechanism, the combination with a receiving box having a movable portion, and a follower arranged to move along said box into said movable portion, of a supplemental follower, and resistance means for both main and supplemental followers.

12. A delivery mechanism comprising a receiving box having a movable extension forming normally a continuing part of said box, and a removable table adapted to be substituted at will for said movable extension.

13. A delivery mechanism comprising a receiving box having a movable extension forming normally a continuing part of said box, a follower arranged to travel along said box and into the extension thereof, and a removable table adapted to be substituted at will for said movable extension.

852,090. APPARATUS FOR CARBONIZING PEAT. HORACE J. WICKHAM, Manchester, Conn. Filed July 5, 1906. Serial No. 324,742.

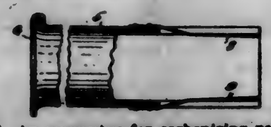

Claim.—1. An apparatus for carbonising peat having a furnace, a stack, a long flue inclining from the combustion chamber of the furnace to the stack, a fixed tube extending on an incline through the furnace, flue and stack, and a liquid receptacle arranged to seal the lower end of the tube, substantially as specified.

2. An apparatus for carbonising peat having a furnace with an extended flue, a tube extending on an incline through the furnace and the flue, and residuum outlets leading from the underside of the tube, substantially as specified.

3. An apparatus for carbonisins peat having a furnace, a stack, and an inclined flue extending from the furnace to the stack, an inclined tube extending through the furnace and the flue, residuum collectors communicating with the lower side of the tube, and a by-product collector communicating with the upper side of the tube, substantially as specified.

4. An apparatus for carbonising peat having a furnace with an inclined flue, a number of fixed inclined tubes extending through the furnace and the flue and terminating in a liquid receptacle at the lower end, and residuum collectors connected with the tubes, substantially as specified.

852,091. DOOR SPRING AND STOP. ALVA C. WYMAN, Shelburn, Ind. Filed Dec. 19, 1906. Serial No. 348,479.

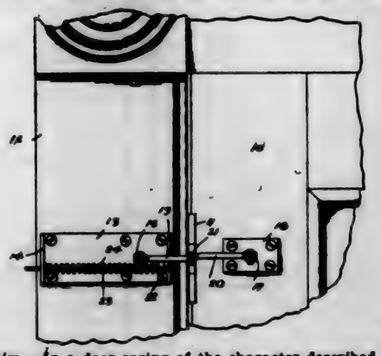

Claim.—In a door spring of the character described, the combination with a hinged door and its support, of an angle plate one arm of which is secured to the support and provided with a stud projecting therefrom at right angles and the other arm projecting also at right angles thereto, a plate secured to the door and provided with a standard projecting at right angles therefrom, toggle levers pivotally connected to each other at their inner ends and pivotally connected at their outer ends respectively to said stud and standard, a rod pivotally connected to the lever 19 and mounted to slide in the arm 14 of the angle plate and a coiled spring loosely mounted on said rod and interposed between said arm 14 and the lever 19.

852,092. ELECTRICALLY-CONTROLLED SEMAPHORE-SIGNAL. HARRY M. ABERNETHY, Cleveland, Ohio, assignor to The American Railway Signal Company, Cleveland, Ohio, a Corporation of Ohio. Filed Dec. 7, 1905. Serial No. 290,740.

Claim.—1. In a semaphore signal, a spectacle case and blade, and a rotatable friction brake, comprising a casing and friction shoes therein, said brake being operated by the movement of the spectacle case and semaphore blade to prevent the jar of the blade in coming to a stop.

2. A semaphore blade and spectacle case pivotally connected to a support in position to normally assume the danger position, means for locking said blade and case in other positions, means for locking said blade and case in such positions, means for unlocking said locking means, and a friction brake operated by the movement of the blade and case for retarding the motion of the blade and preventing it from coming to a sudden stop.

3. In a semaphore signal, a spectacle case and blade, and a centrifugal friction brake, comprising a casing and brake shoes therein for retarding the motion of the spectacle case and blade and preventing the said casing and blade from coming to a sudden stop.

4. In a semaphore signal, a pivoted blade weighted to normally assume the danger position, means for locking the blade in safety position, electrical means for releasing the blade from locked position, and a centrifugal friction brake actuated by the movement of the blade to prevent the blade from coming to a sudden stop.

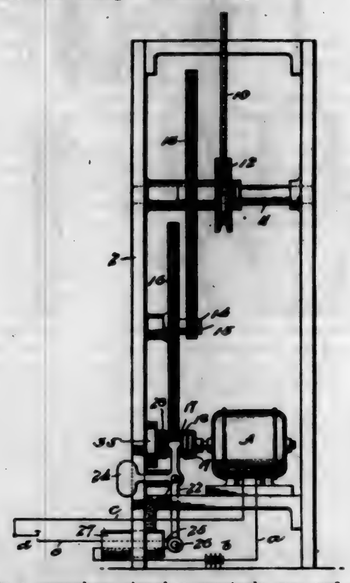

5. In a semaphore signal, a spectacle case and a semaphore blade pivoted to a support, a quadrant sheave connected to the pivot shaft of said case and blade, a chain or cable connected to said sheave, means connected to said chain or cable for holding the case and blade in different positions, and a friction brake for preventing the jar of the case and blade when coming to a stop.

6. In a semaphore signal, a spectacle case, a semaphore blade connected thereto, a quadrant sheave connected to move, with the blade and case, a flexible connection secured at one end to said sheave, a pulley to which the opposite end of said flexible connection is secured, a friction brake for stopping said blade and case gradually, and means between said pulley and brake for moving the blade and case to different positions.

7. In a semaphore signal, the combination of a hollow post, a hollow casting secured thereto, a quadrant sheave pivotally mounted in said casting, a spectacle case and blade movable with said sheave, a chain or cable connected to said sheave, a pulley to which said chain or cable is connected, a gear wheel mounted on the pulley shaft, a stub shaft, a gear wheel and pinion mounted thereon, a friction brake, a clutch pinion, clutch faces on said clutch pinion, a weighted lever for shifting said clutch pinion, a motor, a clutch disk on the motor shaft, a solenoid for operating said lever and electrical connections for energising said solenoid.

8. In a semaphore signal, the combination with a pivoted spectacle case and blade, of a friction brake for gradually stopping said spectacle case and blade, said brake comprising a casing having a flange, a brake wheel, brake shoes mounted to move radially thereon, and means for rotating said brake wheel.

852,093. RAILWAY SEMAPHORE-SIGNAL. HARRY M. ABERNETHY, Cleveland, Ohio, assignor to The American Railway Signal Company, Cleveland, Ohio, a Corporation of Ohio. Filed Dec. 7, 1905. Serial No. 290,741.

Claim.—1. In a semaphore signal, a friction brake and a revolving fan operated by the movement of the semaphore blade to prevent the jar or shock of the blade in coming to a stop.

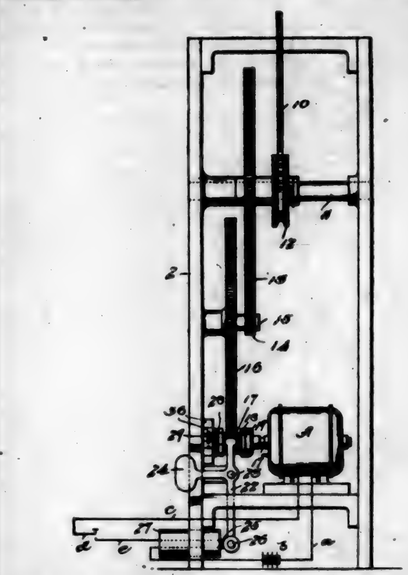

2. In a semaphore signal, a centrifugal friction brake and a revolving fan for absorbing the jar of the blade in coming to a stop.

3. A semaphore blade and spectacle case pivotally connected to a support in position to normally assume the danger position, means for moving said blade and case to other positions, means for locking said blade and case in such positions, means for unlocking said locking means, and a friction brake and fan operated by the movement of the blade and case for retarding the motion of said blade and case to prevent the blade from coming to a sudden stop.

4. In a semaphore signal, the combination of a semaphore blade and a spectacle case, means for moving said blade and case in various positions, a friction brake and a revolving fan for gradually retarding said blade and case as they approach the position indicating danger.

852,094. RAILWAY SEMAPHORE-SIGNAL. HARRY M. ABERNETHY, Cleveland, Ohio, assignor to The American Railway Signal Company, Cleveland, Ohio, a Corporation of Ohio. Filed Dec. 7, 1905. Serial No. 290,742.

Claim.—1. In a semaphore signal, the combination of a spectacle case and blade pivotally connected to a suitable support, and adapted to move to the danger position by gravity, means for moving said case and blade to other signal positions, and a revolving fan operated by the weight of the spectacle case for preventing the blade and case from coming to a sudden stop at the danger position.

2. In a semaphore signal, a spectacle case and blade pivoted to a suitable support, and means to change the positions of said case and blade to give signals, in combination with rotatable pneumatic means automatically operated by the downward movement of said blade and case.

3. In a semaphore signal, a spectacle case and blade pivoted to a support, and means to operate said case and blade, in combination with a brake mechanism and a revolving fan automatically set in operation by the downward movement of said case and blade.

4. A railway semaphore signal, comprising a spectacle case and blade, a support for said case and blade, means for shifting said case and blade to give the required signals, a revolving fan or blower automatically set in mo-

tion by the downward movement of said case and blade, and electrical means for starting and stopping said fan or blower.

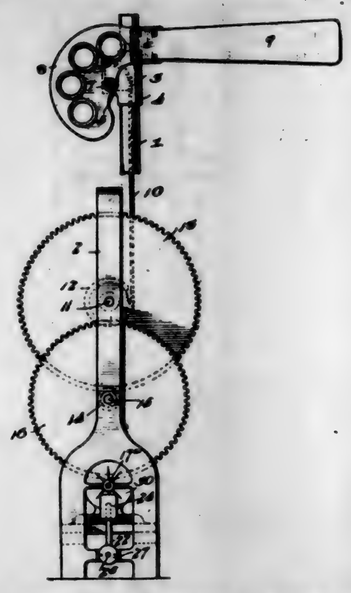

5. A railway signal, comprising a spectacle case and blade pivoted to a suitable support, electrical means for moving said case and blade to a position to indicate safety, means whereby the case and blade will assume a danger position automatically after each operation from the safety position, and a fan operated by the movements of the case and blade.

6. A railway signal, comprising a weighted spectacle case, a blade secured thereto, said case being pivoted to a suitable support, means for moving said case and blade to a position to indicate safety, means whereby the case and blade will assume a danger position automatically after each operation from the safety position, and a fan operated by the weight of the case and blade.

7. In a semaphore signal, a pivoted spectacle case and blade, in combination with a brake mechanism for governing the movements of the case and blade, a revolving fan, a motor, a clutch, and electrical connections for controlling the clutch, substantially as described.

852,095. TILE-MACHINE. CHARLES L. BALDWIN, Waterloo, Iowa. Filed Feb. 5, 1907. Serial No. 355,835.

Claim.—1. In a tile-machine, in combination, an outer former-casing adapted for simultaneous rotatory and progressive longitudinal movement, and a mold casing contained therein.

2. In a tile-machine, in combination, an outer former-casing adapted for simultaneous rotatory and progressive longitudinal movement, and a removable mold casing contained therein.

3. In a tile-machine, in combination, an outer former-casing adapted for simultaneous rotatory and progressive longitudinal movement, said casing having an interior thread, and a mold casing contained in said outer casing.

4. In a tile-machine, in combination, an outer former-casing adapted for simultaneous rotatory and progressive longitudinal movement, a removable mold casing therein, and means for raising or lowering said outer casing independently of the movement of the inner casing.

5. In a tile-machine, in combination, an outer rotatable casing, means for moving said casing in either direction, a removable inner casing spaced apart from said outer casing, and a removable base-plate for said casings.

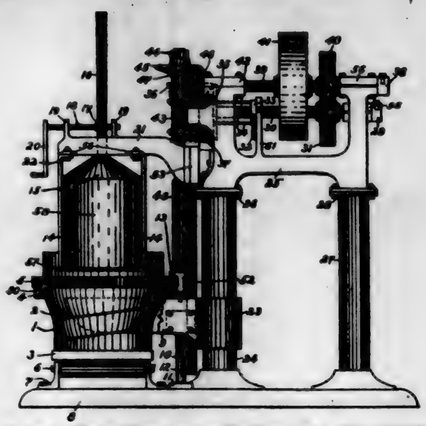

6. In a tile-machine, in combination, an outer rotatable casing, means for imparting longitudinal movement to said casing in either direction along the line of its axis, a removable inner casing therein and spaced apart therefrom, a removable base-plate for said casings, and means for moving said inner casing in and out of said outer casing independently of the movement of the latter.

852,096. PULVERIZER. GEORGE J. BELSTNER, Chicago, Ill., assignor of one-half to Walter H. Stone, Chicago, Ill. Filed July 9, 1906. Serial No. 325,294.

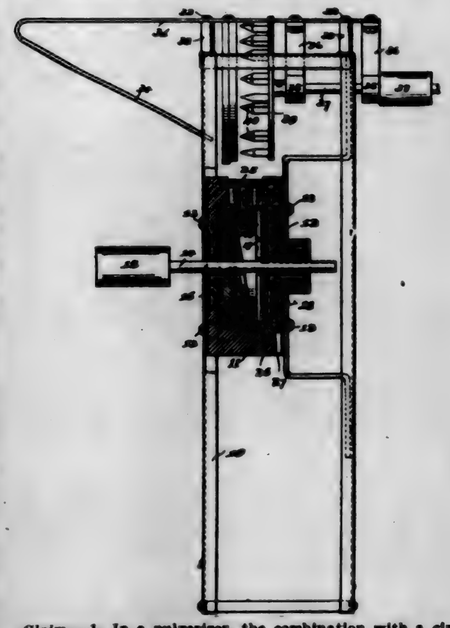

Claim.—1. In a pulverizer, the combination with a circular casing disposed in a vertical plane and having a radial feed opening at its upper end and an inclined discharge-opening at its lower end one wall whereof is provided with grinding teeth, of a pair of relatively inclined disks in said casing having flat opposed grinding faces, one of said disks having a beveled periphery provided with grinding teeth co-operating with the grinding teeth of said discharge opening, substantially as described.

2. In a pulverizer, the combination with a circular casing disposed in a vertical plane and having a radial feed opening at its upper end and an inclined discharge opening at its lower end one wall whereof is provided with grinding teeth, of rotatable and stationary disks in said casing having flat vertical and oblique opposed grinding faces, respectively, said rotatable disk having a beveled periphery provided with grinding teeth co-operating with the grinding teeth of said discharge opening, substantially as described.

3. In an apparatus of the character described, the combination with a supporting frame, of a pulverizer mounted thereon having a feed opening at its upper end, a slide-way for drums containing the material to be pulverized mounted on said frame above the pulverizer, and a drum-opening device mounted on said frame opposite the inner end of said slide-way, substantially as described.

4. In an apparatus of the character described, the combination with a supporting frame, of a pulverizer mounted thereon having a feed opening at its upper end, an inclined slide-way for drums containing the material to be pulverized mounted on said frame above the pulverizer, and a rotary drum-opening device mounted on said frame opposite and across the inner end of said slide-way, substantially as described.

5. In an apparatus of the character described, the combination with a supporting frame, of a pulverizer mounted thereon having a feed opening at its upper end, a slide-way for drums containing the material to be pulverized mounted on said frame above the pulverizer, a rotatable disk mounted on said frame opposite and across the inner end of said slide-way, and spikes or teeth on the face of said disk adapted to tear open the inner end of the drum to effect the discharge of the material therefrom, substantially as described.

852,097. MACHINE FOR SHAPING GLASS. WILLIAM E. BOCK, Toledo, Ohio, assignor to The Toledo Glass Company, Toledo, Ohio, a Corporation of Ohio. Filed Aug. 11, 1906. Serial No. 330,166.

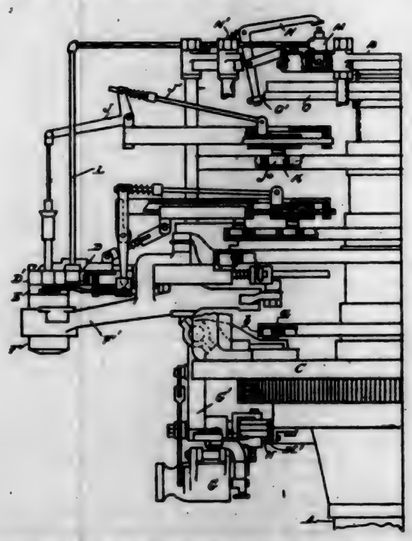

Claim.—1. In a glass-shaping machine, the combination of a blank mold, mechanism for shaping the blank therein, means for forcing a portion of the glass of the blank out of the end of the blank free from the blank mold, and means for blowing the blank to form.

2. In a glass-shaping machine, the combination of a blank mold, mechanism for shaping a blank therein, means for forcing a portion of the glass of the blank out of the end of the blank free from the blank mold, means for upsetting this blown-out portion, and means for blowing the blank to form.

3. In a glass-shaping machine, the combination of a blank mold, a cut-off for the open end thereof, means for projecting a portion of the glass of the blank at the cut-off end, and means for finally shaping the blank to form.

4. In a glass-shaping machine, the combination of a blank mold, a cut-off for the open end thereof, an air connection to the opposite end thereof, means for causing a puff of air to enter the blank from the air connection to blow out a portion of the blank at the cut off end, and means for blowing the blank to form.

5. In a glass-shaping machine, the combination with a blank mold of a blowing mold, and a core or plunger, and means for projecting said core or plunger into the neck of the shaped article while held by said blowing mold.

6. In a glass-shaping machine, the combination of a blank mold, a core or plunger for shaping the neck of the blank, means for withdrawing the plunger, an opening and closing sectional body or blowing mold, means for blowing the article therein, and mechanism for projecting the core or plunger into the neck of the shaped article during the opening of the blowing mold.

852,098. METHOD OF SHAPING GLASS ARTICLES. WILLIAM E. BOCK, Toledo, Ohio, assignor to The Toledo Glass Company, Toledo, Ohio, a Corporation of Ohio. Filed Aug. 18, 1906. Serial No. 331,128.

Claim.—1. The method of shaping glass into hollow articles, consisting in forming a blank with a solid body portion, forcing out a solid teat or projection on the bottom thereof, and blowing the blank to form.

2. The method of shaping glass, consisting in forming a blank, with a solid body portion, forcing out the bottom of the blank, and upsetting the blown out portion and blowing the blank to form.

3. The method of shaping glass into hollow articles consisting in forming in a blank mold a blank with a solid body portion, blowing the blank in the blank mold, blowing into the blank to force out a solid teat or projection at the bottom, upsetting such projection, and then in blowing the blank to form.

4. The method of making bottles, consisting in gathering a blank about a core to form a cavity at the end of the blank, withdrawing the core, blowing into the cavity to more perfectly shape the blank, and finally blowing the blank to its final form.

852,099. MOLD FOR GLASS-SHAPING MACHINES. WILLIAM E. BOCK, Toledo, Ohio, assignor to The Toledo Glass Company, Toledo, Ohio, a Corporation of Ohio. Filed Aug. 25, 1906. Serial No. 332,032.

Claim.—1. In a glass shaping machine, the combination of a sectional mold, movable members or arms carrying the sections, and means for angularly adjusting the molds on the carrying members.

2. In a glass shaping machine, the combination of a section of a sectional mold, a movable member or arm carrying said section, a plurality of bearing points between the section and its carrying member, and means for adjusting the mold section upon its bearing points.

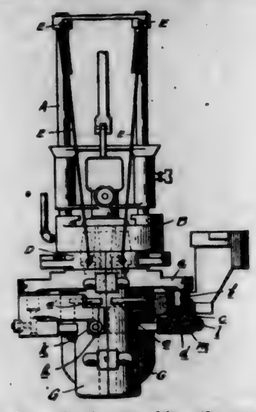

3. In a glass shaping machine the combination of a sectional mold, a movable member or arm carrying said section, a plurality of separated adjustable bearings on the arm, and complementary bearings on the mold section.

4. In a glass-shaping machine, the combination of a section of a sectional mold, a movable member or arm carrying said section, a plurality of bearing points located at the front and rear edges and intermediate such front and rear edges of said mold section, complementary bearings on the arm, and means for adjusting the mold section upon its bearings.

5. In a glass shaping machine of the kind described, the combination of a frame, a blowing head arm thereon, sectional neck molds movable beneath said arm, and springs connected to the frame and to said neck mold sections acting to hold the face of the neck mold tightly against the arm.

6. In a glass shaping machine, the combination of a sectional mold, movable members or arms carrying the sections, and means for angularly and vertically adjusting the molds on the carrying members.

852,100. FEEDING ATTACHMENT FOR TYPE-WRITERS. FRANK D. BULLARD, Los Angeles, Cal. Filed May 26, 1904. Serial No. 209,940.

Claim.—1. In a typewriter the combination of a carriage having a platen; a magazine removably secured thereto; said magazine having a feeding-slot therein; a feeding roll revolubly mounted adjacent to said feeding-slot in bearings secured to said magazine; a pinion secured upon the feeding roll, a gear secured to the platen; a gear revolubly mounted in bearings secured to the magazine and meshing with the pinion on the feeding roll and the gear on the platen; a lever having a curved end pivotally mounted on the platen; said curved end being adapted to lock the gear on the platen to the gear on the magazine.

2. A feeding attachment for typewriters such as described herein a revoluble feeding roll longitudinally movable in its bearings; a cam lever mounted in bearings secured to the bearings of the feeding roll, said cam lever being adapted to move said feeding roll longitudinally in its bearings in one direction; a spring bearing against said feeding roll and adapted to return it to its normal position upon the release of said cam.

3. In a typewriter the combination of a carriage having a platen; a gear secured to said platen; a magazine removably secured to said carriage, said magazine having a feeding-slot therein; a feeding roll revolubly mounted adjacent to said feeding slot in bearings secured to said magazine; a pinion secured upon said feeding roll; a gear revolubly mounted in bearings secured to the magazine and meshing with the pinion on the feeding roll and the gear on the platen; a lever having a curved end pivotally mounted on the platen; said curved end being adapted to lock the gear on the magazine from separation from the gear on the platen; a spring pressed follower in said magazine; guiding arms slidingly secured to said magazine and adapted to guide the material therein; adjusting screws passing in threaded contact through the rear of the magazine and adapted to regulate the tension of the spring on the follower on the magazine; arms secured to the base of the magazine one of said arms having a groove therein and the other a spring operated catch, said arms forming means whereby said magazine is secured upon said carriage.

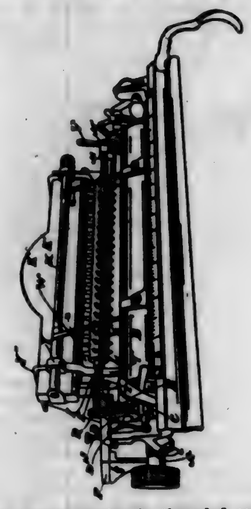

852,101. TILE-MACHINE. LORON O. BURNHAM, Clare, Mich. Filed June 22, 1906. Serial No. 322,933.

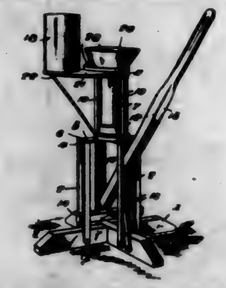

Claim.—1. A machine of the class described comprising a base, standards on said base, an auxiliary base secured to said standards, a core on said auxiliary base, bars disposed around said core and at a distance therefrom, means to secure said bars in position around said core, a shelf at the upper end of said bars, a hopper pivotally secured to said shelf, a casing between said bars and surrounding said core and means to elevate said casing whereby the plastic material may be removed from the core.

2. A machine of the class described comprising a base, standards secured to said base, an auxiliary base on said standards, a core on said auxiliary base, a plurality of bars surrounding said core and at a distance therefrom, a ring at each end of said bars, a casing removably disposed between said bars and of a greater diameter than the core whereby a space is formed for plastic material, a shelf at the upper end of said bars, a hopper pivotally secured to said shelf and adapted to rest thereon when the plastic material is being removed and means to elevate said casing and the plastic material therein.

3. A machine of the class described comprising the combination with a suitable molding device, of a shelf secured thereto and a hopper pivotally secured to said shelf and adapted to be disposed thereover when desired.

4. A machine of the class described comprising a base, standards on said base, an auxiliary base, a core secured to said auxiliary base, a collar surrounding said core and longitudinally movable thereon, a casing surrounding said core of greater diameter than said core, means to concentrically dispose said casing around the core, arms integral with said collar, a cross-head at the lower end of said arms an operating lever pivotally secured to the central portion of said cross-head, links disposed between said operating lever and the base and pivotally secured thereto, and means to adjust said casing with respect to said core.

5. A machine of the class described comprising a base, standards on said base, an auxiliary base having slots therein, a core secured to said base, bars around said core, rings on said bars, the lower ends of said bars being threaded and disposed through the slots in the auxiliary base and nuts on said bars to raise and lower the same whereby the rings may be alined with the core.

852,102. ROTARY PUMP. RASMUS P. CHRISTENSEN, Buffalo, N. Y. Filed June 19, 1906. Serial No. 322,433.

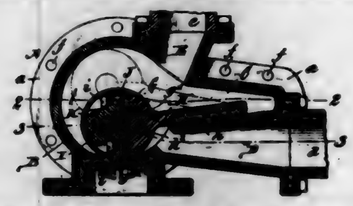

Claim.—1. In a rotary-pump, a casing comprising a cylindrical portion having an inlet and an outlet, and an abutment-chamber between the said inlet and outlet, a crank-shaft passing through said cylindrical-portion, a piston comprising two members secured to said shaft on opposite sides of the crank thereof, and an abutment movable in said abutment-chamber and secured to said crank.

2. In a rotary-pump, a casing comprising a cylindrical portion having an inlet and an outlet, and an abutment-chamber between the said inlet and an outlet, a crank-shaft passing through said cylindrical-portion, a piston comprising two members secured to said shaft on opposite sides of the crank thereof, and an abutment movable in said abutment-chamber and having a cylindrical portion secured loosely to said crank between the two members of the piston.

3. In a rotary-pump, a casing comprising a cylindrical portion having an inlet and an outlet, and an abutment-chamber between the said inlet and outlet, a crank-shaft passing through said cylindrical-portion, a piston comprising two members secured to said shaft on opposite sides of the crank thereof, and an abutment comprising a flat-portion movable in said abutment-chamber and a cylindrical portion secured loosely to said crank between the two members of the piston; said cylindrical portion comprising a part integral with said flat portion, a cap secured to said integral part, and a curved face-plate fitting over said cap and having its ends secured to said integral part.

4. In a rotary pump, a casing having an inlet and an outlet, a crank-shaft passing through the casing, a piston comprising two members secured to said crank-shaft at opposite sides of the crank thereof, and an abutment positioned between said inlet and said outlet and having a flat-portion and a cylindrical-portion secured loosely to said crank between the two members of the piston; the inner edge of the flat-portion of said abutment bearing against the piston-members.

852,103. MACHINE FOR MANUFACTURING SHOE OR SIMILAR LACINGS. WILLIAM H. CHURCH, Pawtuxet, R. I., assignor to Providence Tipping Machine Company, Providence, R. I. Filed Jan. 14, 1907. Serial No. 352,257.

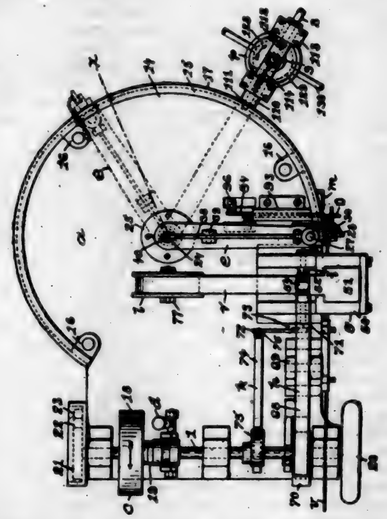

Claim.—1. In a machine for manufacturing lacings, a driving mechanism, a lacing feed arm adapted to have a circular reciprocating movement to feed a strip of lacing material into the machine, means on the arm for grasping the strip of lacing material, means for releasing the lacing after the lacing feed arm has reached a predetermined point on its return movement, and means for operatively connecting the lacing feed arm with the driving mechanism.

2. In a machine for manufacturing lacings, a driving mechanism, a lacing feed arm having a circular reciprocating movement, an auxiliary lacing feed mechanism adapted to give an intermittent feed motion to a strip of lacing material, means for operatively connecting the lacing feed arm with the driving mechanism, and means for operatively connecting the auxiliary feed mechanism with the driving mechanism.

3. In a machine for manufacturing lacings, a driving mechanism, a counting mechanism, a rotatable lacing receiver, a swinging frame pivotally secured to the frame of the machine and operatively supporting the lacing receiver, means for operatively connecting the driving mechanism with the counting mechanism, and means for operatively connecting the counting mechanism with the rotatable lacing receiver.

4. In a machine for manufacturing lacings, a frame, a driving mechanism on the frame, a semi-circular form on the frame, means for drawing a strip of lacing material around the form, a lacing holding mechanism adapted to hold the lacing centrally against the face of the form, means for supporting the lacing holding mechanism, and means for operatively connecting the driving mechanism with the lacing holding mechanism.

5. In a machine for manufacturing lacings, a frame, a driving mechanism on the frame, a lacing feed arm adapted to have a circular reciprocating movement, an auxiliary lacing feed mechanism adapted to have an intermittent reciprocating movement, a lacing tipping mechanism

adapted to form a double tip on a strip of lacing material, means for operatively connecting the driving mechanism with the lacing feed arm, means for operatively connecting the driving mechanism with the auxiliary lacing feed mechanism, and means for operatively connecting the driving mechanism with the tip forming mechanism.

6. In a machine for manufacturing lacings, a frame, a driving mechanism on the frame, means for intermittently feeding a strip of lacing material into the machine, an intermittent auxiliary lacing feed mechanism, a tip forming mechanism, a tip cutting mechanism, means for operatively connecting the intermittent auxiliary lacing feed mechanism with the driving mechanism, means for operatively connecting the tip forming mechanism with the driving mechanism and means for operatively connecting the tip cutting mechanism with the driving mechanism.

7. In a machine for manufacturing lacings, a frame having a semi-circular end, a semi-circular form on the frame, a driving mechanism on the frame, a lacing feed arm adapted to have a circular reciprocating motion over the form, jaws on the arm adapted to grasp a strip of lacing material and draw the same around the face of the form, means for operatively connecting the lacing feed arm with the driving mechanism and means for operatively connecting the jaws on the lacing feed arm with the driving mechanism, whereby the lacing is held by the jaws on the outward movement of the lacing feed arm and on the return movement until the arm has reached a predetermined point, when the lacing is released from the jaws.

8. In a machine for manufacturing lacings a bed, supported on a frame, a driving mechanism on the bed, a lacing feed arm pivotally supported on the bed, means for operatively connecting the lacing feed arm with the driving mechanism to give a circular reciprocating motion to the arm, a slide adapted to have a vertical reciprocating motion on the end of the arm, jaws on the slide adapted to grasp a strip of lacing material, means for closing the jaws on a downward movement of the slide, means for opening the jaws on an upward movement of the slide, and means for operatively connecting the slide with the driving mechanism to give a vertical reciprocating motion to the slide.

9. In a machine for manufacturing lacings, a frame, a bed supported on the frame, a driving mechanism on the bed, a lacing feed arm pivotally supported on the bed, an auxiliary lacing feed mechanism operatively supported on the bed and having arms adapted to grasp a strip of lacing material, means for operatively connecting the lacing feed arm with the driving mechanism to give a circular reciprocating motion to the feed arm, means for operatively connecting the arms of the auxiliary lacing feed mechanism to give an intermittent reciprocating motion to the arms and means for operatively connecting the arms to open and close the arms at predetermined intervals.

10. In a machine for manufacturing lacings, a frame, a bed on the frame, a driving mechanism on the bed, means for feeding a strip of lacing material into the machine, a tip forming mechanism on the bed adapted to form a double tip on the strip of lacing material, a tip cutting mechanism on the bed adapted to cut the double tip centrally and consisting of a guide frame on the bed, two cutting blades in the guide frame adapted to have reciprocating motions in opposite directions, means for operatively connecting the cutting blades with eccentrics set in oppositely-disposed positions, and means for operatively connecting the eccentrics with the driving mechanism to give an intermittent rotary motion to the eccentrics.

11. In a machine for manufacturing lacings, a frame, a bed on the frame, a driving mechanism on the bed, means for feeding a strip of lacing material into the frame, means for holding the end of the lacing material consisting of arms pivotally secured to the bed and held in the closed position by a spring, a tip forming mechanism on the bed adapted to form a double tip on the strip of lacing material, a tip cutting mechanism on the bed adapted to cut the tip centrally, means for operatively connecting the tip cutting mechanism with the arms to automatically open the jaws against the tension of the spring and release the end of the lacing material and means for operatively connecting the tip cutting mechanism with the driving mechanism.

12. In a machine for manufacturing lacings, a frame, a bed having a semi-circular end and supported on the frame, a semi-circular form secured to the bed in a position to coincide with the semi-circular end of the bed, means for drawing a strip of lacing material around the peripheral face of the form, means for forming a double tip on the strip of lacing material, means for cutting the tip centrally, a lacing holding mechanism consisting of a slide reciprocally supported in a frame, a spring secured to the slide and the frame, the tension of the spring holding the end of the slide against the strip of lacing material on the face of the form, a roll on the slide, a cam adapted to engage with the roll and move the slide outward against the tension of the spring to release the lacing, means for supporting the slide frame in its operative position, and means for operatively connecting the cam with the driving mechanism.

13. In a machine for manufacturing lacings, a frame, a bed on the frame, a semi-circular form on the bed, a driving mechanism on the bed, means for drawing a strip of lacing material around the peripheral face of the form, means for forming a double tip on the strip of lacing material, means for cutting the double tip centrally, means for holding the end of the lacing material, means for holding the strip of lacing centrally and then releasing the same, and means for receiving the released lacing, as described.

14. In a machine for manufacturing lacings, a frame, a bed on the frame, a semi-circular form on the bed, a driving mechanism on the bed, means for drawing a strip of lacing material into the machine and around the peripheral face of the form, auxiliary means for giving an intermittent feed motion to the strip of lacing material, means for forming a double tip on the strip of lacing material, means for cutting the double tip centrally, means for holding the end of the lacing material, means for holding the strip of lacing centrally and then releasing the same, and means for receiving the released lacing, as described.

15. In a machine for manufacturing lacings, a frame, a bed on the frame, a semi-circular form on the bed, a driving mechanism on the bed, means for drawing a strip of lacing material into the machine and around the peripheral face of the form, auxiliary means adapted to give an intermittent feed motion to the strip of lacing material, means for forming a double tip on the strip of lacing material, means for cutting the double tip centrally, means for holding the lacing centrally and then releasing the same, a rotatable lacing receiver, and means for giving an intermittent rotary motion to the lacing receiver at predetermined intervals, as described.

16. In a machine for manufacturing lacings, a frame, a bed on the frame, a semi-circular form on the bed, means for drawing a strip of lacing material into the machine and around the form, auxiliary means adapted to give an intermittent feed motion to the strip of lacing material, means for forming a double tip on the strip of lacing material, means for cutting the double tip centrally, means for holding the lacing centrally and then releasing the same, a rotatable lacing receiver, a counting mechanism, and means for operatively connecting the counting mechanism with the lacing receiver, as described.

17. In a machine for manufacturing lacings, a frame, a bed on the frame, a semi-circular form on the bed, a driving mechanism on the bed, mechanism adapted to draw a strip of lacing material into the machine and around the form, auxiliary mechanism adapted to give an intermittent feed motion to the strip of lacing material, mechanism adapted to form a double tip on the strip of lacing material, mechanism adapted to cut the double tip centrally, mechanism adapted to hold the end of the lacing material, mechanism adapted to hold the lacing centrally and then release the same, a rotatable lacing receiver, and a counting mechanism, as described.

18. In a machine for manufacturing lacings, the combination of the following instrumentalities: a bed *a* supported on a frame *b*, a semi-circular form 15 on the bed, a driving mechanism *c* on the bed operatively connected with a driving shaft 1, a gear shaft 2, a cam shaft 3, a back eccentric shaft 4 and a rock shaft 5, an opening lever *d* operatively connected with the driving mechanism *c*, a lacing feed arm *e* having a circular reciprocating motion and jaws adapted to grasp a strip of lacing material and draw the lacing around the semi-circular form 15, a feed arm operating mechanism *f* operatively connecting the driving mechanism *c* with the lacing feed arm *e* and the jaws on the arm *e*, a tip forming mechanism *g* adapted to form a double tip on a strip of lacing material, an operative mechanism *h* operatively connecting the driving mechanism *c* with the tip forming mechanism *g*, the tip stock feed rolls *i*, an operating mechanism *k* operatively connected with the driving mechanism *c* and the feed rolls *i*, a tip stock reel *l*, an auxiliary lacing feed mechanism *m* adapted to give an intermittent feed motion to a strip of lacing material, an operating mechanism *n* operatively connecting the driving mechanism *c* with the auxiliary feed mechanism *m*, a tip cutting mechanism *o* adapted to cut a double tip centrally and operatively connected with the driving mechanism *c*, means for holding the end of a strip of lacing material consisting of two arms pivotally secured to the bed *a*, operated by a spring, and the tip cutting mechanism *o*, a lacing holding mechanism *p*, an operating mechanism *r* operatively connecting the driving mechanism *c* with the lacing holding mechanism *p*, a rotatable lacing receiver *s*, a counting mechanism *t*, means for operatively connecting the counting mechanism *t* with the driving mechanism *c* and with the rotatable lacing receiver *s*, and means for adjusting the machine for different lengths of lacings, as described.

852,104. APPARATUS FOR MAKING CARPETS AND THE LIKE. EUGENE F. CLARK and THOMAS C. POOLE, Philadelphia, Pa. Filed May 29, 1905. Serial No. 262,937.

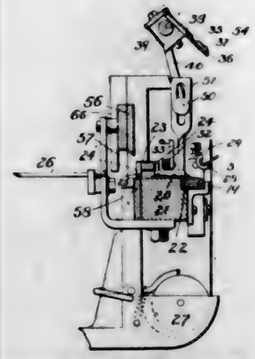

Claim.—1. An aligning guide for holding the free ends of the tuft yarns in carpet manufacture, said guide comprising means for clamping the yarns separated and in proper order, substantially as described.

2. An aligning guide for holding the free ends of the tuft yarns in carpet manufacture comprising a toothed or comb part and a clamping part removably connected thereto and adapted, when in place, to clamp the yarns separated and in proper order.

3. In apparatus of the class described and in combination with spooling mechanism, means for receiving the yarns before being severed from the bobbin strands to hold said yarns separated and in proper order, said means being transferable with the spool for subsequent operations.

4. In apparatus of the class described and in combination with spooling mechanism, means for receiving the yarns before being severed from the bobbin strands, to hold said yarns separated and in proper order, said means comprising two members, one having notches or guide spaces to receive the yarns and the other being adapted to fit over the said spaces, said means being removable with the spool, substantially as described.

5. In combination, in apparatus of the class described, means for spooling the yarns comprising a comb through which the yarns pass on their way to the spooling rollers, and means supported adjacent the said comb and removable with the spool for receiving the yarns before they are separated from the bobbin strands, said means holding the yarns separated and in proper order, substantially as described.

6. In combination in apparatus of the class described, spooling mechanism, a yarn alining guide arranged between the spool and the bobbin, means for directing the yarns thereover, and for lowering the yarns into the said guiding means before severing the same from the bobbin strands, said guide being removable with the spool to maintain the yarns separated and in proper order.

7. In combination in apparatus of the class described, spooling mechanism, a yarn alining guide, a sliding support therefor by which said guide may be slid into position beneath the yarns and means for placing the yarns before severing from the spool strands within the guide, the said guide with the spool being removable, substantially as described.

8. In combination in apparatus of the class described, a spooling machine comprising the spooling rolls, a fixed comb, a movable guide adapted to engage and hold the yarns separated and in proper order before severing from the bobbins, a sliding support for said guide, an elevated support for directing the yarns above the said guide and means for raising and lowering the said support, substantially as described.

9. In combination in apparatus of the class described, a guide or clamp to hold the free ends of the tuft threads separate and in proper order, and means for threading the said threads through the guide tubes of the spool frame, substantially as described.

10. In combination in apparatus of the class described, a guide or clamp to hold the free ends of the tuft threads separate and in proper order, means for holding the said clamp and the guide tubes of the spool carrying frame in proper relation, and means for threading the yarns simultaneously through the said guide tubes and in the relation maintained by the guide, substantially as described.

11. In combination in apparatus of the class described, a guide or clamp to hold the free ends of the tuft threads separate and in proper order, means for holding the said clamp and the guide tube of the spool carrying frame in proper relation, a series of needles, means for advancing and retracting the said needles through the guide tubes, and a shifting comb for laying the yarns across the stems of the needles, substantially as described.

12. In combination in apparatus of the class described, a guide or clamp to hold the free ends of the tuft threads separate and in proper order, means for holding the said clamp and the guide tube of the spool carrying frame in proper relation, a series of needles, means for advancing and retracting the said needles through the guide tubes, and a shifting comb for laying the yarns across the stems of the needles and a pivoted support for the said shifting comb, substantially as described.

13. In combination in apparatus of the class described, a guide or clamp to hold the free ends of the tuft threads separate and in proper order, means for holding the said clamp and the guide tube of the spool carrying frame in proper relation, a series of needles, means for advancing and retracting the said needles through the guide tubes, and a shifting comb for laying the yarns across the stems of the needles, said shifting comb having its teeth grooved and having a longitudinal groove to receive the hooks of the needles, substantially as described.

14. In combination in apparatus of the class described, the needles, an alining guide to hold the free ends of the tuft threads, means for holding said guide and the guide tubes of the spool frame in proper relation including a registering bar having cavities or seats to receive the ends of the guide tubes, said registering bar also serving to direct the needles to the tubes, and a sliding comb for laying the threads across the stems of the needles, substantially as described.

15. In apparatus of the class described, means for hold-

ing the guide tubes of the spool frame, a series of needles, one for each tube, with means for operating the same therethrough and means for engaging the free ends of the threads to be taken simultaneously by the needles and threaded through the tubes.

16. In apparatus of the class described, means for holding the guide tubes of the spool frame, a series of needles, one for each tube, with means for operating the same therethrough and means engaging the free ends of the threads to be taken simultaneously by the needles and threaded through the tubes, said means having a shifting movement to lay the yarns across the stems of the needles, substantially as described.

17. In combination in apparatus of the class described, means for holding the spool frames and guide tubes, means for threading the yarn through the said guide tubes and cutting means for trimming the yarns while the guide tubes are maintained in the threading position, substantially as described.

18. In combination in apparatus of the class described, means for holding the spool frames with the guide tubes in position for threading, a series of needles for threading said tubes simultaneously, and cutting means for trimming the yarns while the tubes are still in the threading machine, substantially as described.

852,105. SILO. WALTER CLEMENT, Adrian, Mich. Filed Apr. 19, 1904. Serial No. 203,840.

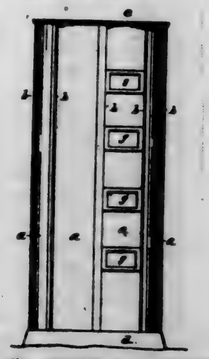

Claim.—1. A silo embodying a plurality of upright studs spaced apart and arranged in a circle and constituting a supporting frame, a plurality of upright plates secured to said studs and each of which has its opposite vertical edges overlapping the adjacent edges of two adjacent studs on the inside thereof with the edges of the plates abutting, and suitable bars connecting the upper ends of opposite studs to provide a support for a covering or roof, substantially as specified.

2. A silo embodying a plurality of upright studs spaced apart and arranged in a circle and constituting a supporting frame, a plurality of upright plates secured to said studs and each of which has its opposite vertical edges overlapping the adjacent edges of two adjacent studs on the inside thereof with the edges of the plates abutting, and discharge doors arranged in one of said plates and connected to the contiguous edges of two adjacent studs.

852,106. SIGHT FOR FIREARMS. GEORGE H. CONRAD, Great Falls, Mont. Filed Jan. 15, 1907. Serial No. 352,446.

Claim.—1. A sight for fire-arms comprising a flexible member adapted to be secured at one end to the fire-arm, combined with a sight disk having a central aperture and secured to the other end of said flexible member, said sight disk comprising two sections hingedly secured together substantially as shown and described.

2. In a sight for fire-arms, a spring metal member fixedly securable at one end to the barrel of a fire-arm, means coöperating with said member for elevating one end of the same, a sight disk secured to said elevatable end of the spring member, said sight disk having a sighting aperture and forming a peep-sight, and means whereby a portion of said sight disk may be folded over to convert the same into an open-sight.

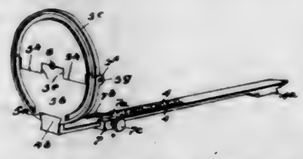

3. An apparatus of the class described, comprising a spring metal member adapted to be secured at one end to the barrel of a fire-arm, a sliding carriage carried by said member for raising and lowering one end thereof, said flexible member having a plurality of sets of scales, said sliding carriage having corresponding indicating marks, a sight disk carried by the other end of said first mentioned member, said sight disk having a central peep aperture and formed in sections, one of said sections being foldable against the other section to form an open-sight, substantially as shown and described.

4. In a sight for fire-arms, a spring metal member securable at one end to the fire-arm barrel, a sighting disk supported on the other end of said spring metal member, means coöperating with said spring metal member for raising and lowering said sight disk, said sight disk having a central aperture and formed in two sections hingedly secured together to be foldable one section against the other, the pivot axis of the hinge connection lying in a plane below the peep aperture, substantially as shown and described.

5. In a sight for fire-arms, a spring metal member securable at one end to the fire-arm barrel, a sighting disk supported on the other end of said spring metal member, means coöperating with said spring metal member for raising and lowering said sight disk, said sight disk having a central aperture and formed in two sections hingedly secured together to be foldable one section against the other, the pivot axis of the hinge connection lying in a plane below the peep aperture, said disk having a countersunk portion on one face surrounding the peep aperture substantially as shown and described.

6. A sight for fire-arms, comprising a spring metal member having a plurality of sets of scale marks, means for securing said spring metal member at one end to a fire-arm barrel, a sight disk, having a sight aperture, secured to said spring metal member at its free end, a sliding carriage carried by said spring metal member and having indicating marks coöperating with the sections of the spring metal member, and means for folding a portion of said sight disk down against the remaining portion thereof to form an open-sight, substantially as shown and described.

7. A sight for fire-arms, comprising a spring metal member having a plurality of sets of scale marks, means for securing said spring metal member at one end to a fire-arm barrel, a sight disk, having a sight aperture, secured to said spring metal member at its free end, a sliding carriage carried by said spring metal member and having indicating marks coöperating with the sections of the spring metal member, said sight disk comprising two members each having interprojecting hinge portions, means for joining said members hingedly, each of said members having shoulders to engage one another when the sight disk is used as a peep-sight all being arranged substantially as shown and described.

8. A sight for fire-arms, comprising a spring metal member having a plurality of sets of scale marks, means for securing said spring metal member at one end to a fire-arm barrel, a sight disk, having a sight aperture, secured to said spring metal member at its free end, a sliding carriage carried by said spring metal member and having indicating marks coöperating with the sections of the spring member, said sight disk comprising two members each having interprojecting hinge portions, means for joining said members hingedly together, each of said members having shoulders to engage one another when the sight disk is used as a peep-sight, the pivotal axis of the hinge connection lying below the peep aperture, substantially as shown and described.

9. In a sight for fire-arms, a sight disk having a central aperture, said sight disk comprising two sections foldably secured together whereby the sight may be used as a peep-sight or an open-sight, substantially as shown and described.

10. A sight for fire-arms comprising a sight disk having a central aperture, means for mounting said sight disk on a fire-arm barrel, said sight disk comprising two sections hingedly secured together whereby the sight may be used as a peep-sight or an open sight, substantially as shown and described.

852,107. CUTTING-WIRE. WILLIAM R. CUNNINGHAM, Bucyrus, Ohio, assignor to The American Clay Machinery Company, Bucyrus, Ohio, a Corporation. Filed Mar. 4, 1907. Serial No. 360,551.

Claim.—1. A cutting wire having an enlargement through which the wire passes, the end of said wire being extended beyond the enlargement and being looped across itself exterior to the enlargement to form a retaining means for the enlargement.

2. A cutting wire and a ball at the attaching end thereof, said wire being passed through the ball and having its projecting end looped backwardly transversely across the wire at substantially the junction of the wire with the outer surface of the ball, and retaining the ball in place on the wire.

3. The combination with a claw-shaped hanger, of a cutting wire having a ball member seating against the claws of the hanger with the wire entering the space between the claws, said wire having its outer end projected beyond the ball and thence looped back substantially upon and transversely across itself, and exterior to the ball member and in contact with said ball member.

852,108. AIR-BRAKE SYSTEM. DANIEL M. DALEY, West Seneca, N. Y. Filed May 29, 1906. Serial No. 319,369.

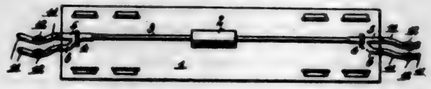

Claim.—1. In an air-brake system, the combination of the main air-pipe, an auxiliary pipe connected with the main air-pipe and normally closed against air-pressure, and means to direct the air through the auxiliary air-pipe and cut-out the main air-pipe between the connections of the auxiliary pipe thereto.

2. In an air-brake system, the combination of the main air-pipe, an auxiliary pipe connected at opposite ends to said main air-pipe and normally closed against air-pressure, and valves at the points of connections of the auxiliary air-pipe to the main air-pipe to open the auxiliary air-pipe and close the main air-pipe between the connections thereto of the auxiliary air-pipe.

3. In an air-brake system, the combination of the main air-pipe, an auxiliary air-pipe connected at opposite ends to said main air-pipe and normally closed against air-pressure, valves at the points of connections of the auxiliary air-pipe to the main air-pipe to open the auxiliary air-pipe and close the main air-pipe between the connections of the auxiliary air-pipe thereto, and means for automatically controlling said valves.

4. In an air-brake system, the combination of the main air-pipe, an auxiliary air-pipe connected at opposite ends to said main air-pipe, valves at the points of connections of the auxiliary air-pipe to the main air-pipe to open the auxiliary air-pipe and close the main air-pipe between the connections of the auxiliary air-pipe thereto, and air-controlled means for actuating said valves.

5. In an air-brake system, the combination of a main air-pipe including flexible connections between the cars, auxiliary air-pipes including flexible connections and each having connection with the main air-pipe at adjacent ends of two adjoining cars, said auxiliary-air-pipes being normally closed against air-pressure and means for directing air through the auxiliary air-pipe when the air escapes into the open air from the main air-pipe between the connections thereto of any auxiliary pipe.

6. In an air-brake system, the combination of a main air-pipe including flexible connections between the cars and having a cylinder connected therewith underneath each car, an auxiliary air-pipe including a flexible connection between adjoining cars and having connection with the main air-pipe underneath two adjoining cars, valves at the points of connections of the auxiliary air-pipe with the main air-pipe, and an air-controlled piston in each of the cylinders having connection with said valves to actuate the same.

7. In an air-brake system, the combination of the main air-pipe having flexible connections between the cars, an auxiliary air-pipe between adjoining cars having connection with the main air-pipe underneath adjoining cars and including a flexible connection between the cars, valves in the main air-pipe at the points of connection of the auxiliary air-pipe to the main air-pipe, a cylinder underneath each of two adjoining cars having air-passages at or near opposite ends connecting the same with the main air-pipe, a piston in each of the cylinders between the air-passages thereof, and operative connections between said pistons and the valves in the main air-pipe.

8. In an air-brake system, the combination of the main air-pipe having flexible connections between the cars, an auxiliary air-pipe between adjoining cars having connection with the main air-pipe underneath adjoining cars and including a flexible connection between the cars, valves in the main air-pipe at the points of connection of the auxiliary air-pipe to the main air-pipe, a cylinder underneath each of two adjoining cars having air-passages at or near opposite ends connecting the same with the main air-pipe, a valve in one of said passages arranged to prevent the

escape of air from the cylinder when the pressure in the main air-pipe in reduced, a piston in each of the cylinders between the air-passages thereof, and operative connections between said pistons and the valves in the main air-pipe.

9. In an air-brake system, the combination of the main air-pipe having flexible connections between the cars, an auxiliary air-pipe between adjoining cars having connection with the main air-pipe underneath adjoining cars and including a flexible connection between the cars, valves in the main air-pipe at the points of connection of the auxiliary air-pipe to the main air-pipe, a cylinder underneath each of two adjoining cars having air-passages at or near opposite ends connecting the same with the main air-pipe, a valve in one of said passages arranged to prevent the escape of air from the cylinder when the pressure in the main air-pipe is reduced, a piston in each of the cylinders between the air-passages thereof, a spiral-spring serving to maintain the piston in normal position, and operative connection between said pistons and the valves in the main air-pipe.

10. In an air-brake system, the combination of the main air-pipe having flexible connections between the cars, an auxiliary air-pipe between adjoining cars having connection with the main air-pipe underneath adjoining cars and including a flexible connection between the cars, valves in the main air-pipe at the points of connection of the auxiliary air-pipe to the main air-pipe, a cylinder underneath each of two adjoining cars having air-passages at or near opposite ends connecting the same with the main air-pipe, a valve closing the passage at the inner end of each cylinder and opening inward into the cylinders, a piston in each of the cylinders between the passages thereof having a piston-rod and rollers mounted on the rod, one of said rollers being adapted to ride onto said last mentioned valve to hold the valve closed when the piston is moved toward the outer end of the cylinder, and operative connections between said pistons and the valves in the main air-pipe.

11. In an air-brake system, the combination of the main air-pipe having flexible connections between the cars, an auxiliary air-pipe between adjoining cars having connection with the main air-pipe underneath adjoining cars and including a flexible connection between the cars, valves in the main air-pipe at the points of connection of the auxiliary air-pipe to the main air-pipe, a cylinder underneath each of two adjoining cars having air-passages at or near opposite ends connecting the same with the main air-pipe, a valve closing the passage at the inner end of each cylinder and opening inward into the cylinders, a piston in each of the cylinders between the passages thereof, means for holding said last mentioned valve closed when the piston is moved toward the outer end of the cylinder, and operative connections between the pistons and the valves in the main air-pipe.

12. In an air-brake system, the combination of the main air-pipe having flexible connections between the cars, an auxiliary air-pipe between adjoining cars having connection with the main air-pipe underneath adjoining cars and including a flexible connection between the cars, rotatable valves having stems and situated in the main air-pipe at the points of connection of the auxiliary air-pipe thereto, a cylinder underneath each of two adjoining cars having air-passages at or near opposite ends connecting the same with the main air-pipe and a sleeve connection through which the stem of the adjacent valve passes, a disk at the end of each valve-stem having a stud arranged eccentrically thereon, and a piston in each of the cylinders between the air-passages thereof, said pistons having grooves into which the studs on the disks of the valve-stems fit.

852,109. DRILL. DEAN B. EDWARDS, Wauchope, Saskatchewan, Canada. Filed Aug. 3, 1906. Serial No. 329,063.

Claim.—1. In a planter, the combination with a frame, of shoes connected therewith for movement into and out of operative position, means for holding the shoes yieldably in operative position, a whiffle tree slidably connected with the frame, connections between the shoes and whiffle tree for movement of the shoes into inoperative position when the whiffletree is slid in one direction, and means for holding the whiffle tree at times against movement and with the shoes in operative position and at times with the shoes in inoperative position.

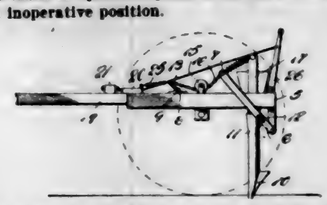

2. In a machine of the class described, the combination with a frame, of ground-treating devices connected with the frame for movement into and out of operative position, springs arranged to hold said devices yieldably in operative position, a shaft journaled upon the frame, connections between the shaft and ground-treating devices for movement of the latter against the action of the springs when the shaft is moved, a movable member connected with the frame, connections between the member and shaft for movement of the shaft to move the ground-treating devices when the member is moved, means for holding the member at times with the ground-treating devices in operative position and at times with them in inoperative position, a whiffle tree connected with the member, and means for moving the member-holding means into and out of operative position.

852,110. VAGINAL SYRINGE. DANIEL O. FOSGATE, Chicago, Ill. Filed Apr. 20, 1906. Serial No. 312,450.

Claim.—1. A device of the class described, comprising a tubular sheath closed at the front end and provided with two sets of elongated slots, an annular web separating the slots from each other, an induction tube arranged within the sheath and terminating close to the front end thereof, and a conical deflector arranged within and secured to the closed end of the sheath in alinement with the open end of the tube, said deflector serving to direct the fluid outward through the forward set of slots, while the sheath maintains the parts dilated to permit the rear set of slots to act as discharge passages.

2. A device of the character described comprising a tubular sheath having one end open and its other end closed, two sets of longitudinal slots within the sheath, said slots being separated by an annular web, the outer ends of the slots being disposed within depressions extending longitudinally of the sheath, an induction tube extending through the open end of the sheath and having its open end adjacent the closed end of said sheath, and a conical deflector within and upon the closed end of the sheath and in alinement with the induction tube.

852,111. FRAUD-PREVENTIVE DEVICE FOR COIN MECHANISMS. JOHN FRITSCHE, Philadelphia, Pa. Original application filed Mar. 3, 1906, Serial No. 304,041. Divided and this application filed June 20, 1906. Serial No. 322,548.

Claim.—1. In a coin controlled apparatus, a coin chute, comprising a stationary member and a pivoted member, said members forming a coin slot therebetween, means for adjusting the size of said slot, an adjustable stop carried by said pivoted member, and means for causing an abnormally thin coin to engage said stop.

2. In a coin controlled apparatus, a coin chute comprising a stationary member and a pivoted member, said members forming a coin slot therebetween, means for adjusting the size of said slot, an adjustable stop carried by said pivoted member, and means for causing a coin having a reduced diameter to engage said stop.

3. In a coin controlled apparatus, a coin chute comprising a stationary and a pivoted member forming a coin slot therebetween, an adjustable stop carried by one of said members, means for causing a coin of improper dimensions to engage said stop, and means for causing the return of said coin to the intending purchaser.

4. In a coin controlled apparatus, a coin chute comprising a stationary and a pivoted member having a coin slot therebetween, an adjustable stop carried by one of said members, means for causing a coin of improper dimensions to engage said stop, a second stop for the coin carried by one of said members, and means for actuating said last mentioned stop.

5. In a coin controlled apparatus, a coin chute comprising a stationary and a pivoted member having a coin slot therebetween, an adjustable stop carried by one of said members, means for causing a coin of improper dimensions to engage said stop, a second stop for the coin carried by one of said members, means for causing the return of said coin to the intending purchaser, and means for actuating said second stop.

6. In a coin controlled apparatus, a coin chute comprising a stationary and a pivoted member forming a coin slot therebetween, an adjustable stop carried by one of said members, means for causing a coin of improper dimensions to engage said stop, means for preventing the entrance of a bent coin into said slot, devices for adjusting the size of said slot, and means for causing the return of a coin of improper dimensions to the intending purchaser.

7. In a coin controlled apparatus, a stationary and a pivoted member having a coin slot therebetween, one of said members having a guide groove at the upper portion thereof and an inwardly extending angularly inclined face at the lower end thereof, the other of said members having a substantially plane surface, an adjustable stop carried by the latter member, means for adjusting the relative position of said members to vary the size of said slot, and means for causing the return of a coin held in said slot to the intending purchaser.

8. In a coin controlled apparatus, a coin chute comprising a stationary member and a pivoted member, said members forming a coin slot therebetween, the lower portion of which is V-shaped, means for causing a coin of improper dimensions to engage said stop an adjustable stop carried by said pivoted member, and means for permitting said pivoted member to move outwardly from said stationary member.

9. In a coin controlled apparatus, a coin chute comprising a stationary member and a member pivoted with respect thereto so as to normally move outwardly therefrom by its own weight, there being a coin slot between said members, means for adjusting the distance between said members to vary the size of said coin slot, means for normally maintaining said coin slot in closed position, an adjustable stop carried by one of said members for stopping a coin therebetween, and means for returning said coin to the intending purchaser.

10. In a coin controlled apparatus, a coin chute comprising a stationary member having a longitudinally extending groove therein, a member pivoted with respect thereto adapted to move outwardly therefrom by its own weight, the inner face of said stationary member extending downwardly from said groove forming a substantially plane surface, the lower end of said member being angularly inclined to the face contiguous thereto, an adjustable coin stop carried by said pivoted member, said members forming a coin slot therebetween, means for varying the relative position of said members to vary the size of said slot, and means for effecting the return of a coin stopped in said slot to the intending purchaser.

11. In a coin chute, a stationary member having a longitudinal groove therein, a member pivoted to said stationary member so as to move outwardly therefrom by its own weight, said members forming a coin slot therebetween, means carried by the pivoted member for preventing the entrance of a bent coin, means for arresting the passage therethrough of a coin of improper dimensions, means for normally closing said slot and permitting the opening thereof, a return chute into which an arrested coin falls on the opening of said pivoted member, and a receiver without the machine into which the return coin is deposited.

12. In a coin chute, a stationary member, brackets extending outwardly therefrom, a pivoted member carried by said brackets, the upper portion of the inner face of said stationary member forming a substantially plane surface and having a lip overhanging the upper end thereof to form a longitudinally extending groove, the lower portion of said inner face being inwardly beveled, the inner face of said pivoted member forming a substantially plane surface, said stationary member having on its inner face at its forward end an angularly inclined block so as to form a substantially straight slot between said members at their forward end, an adjustable stop carried by said pivoted member, adapted to stop a coin of improper dimensions passing therethrough, means for adjusting said pivoted member relative to said stationary member to vary the size of said slot, and means co-acting with said pivoted member adapted to open said slot on its forward movement and to close said slot on its return movement.

13. In a coin controlled apparatus, a coin chute comprising a stationary and a pivoted member having a coin slot therebetween, an adjustable stop carried by one of said members, means for causing a coin of improper dimensions to engage said stop, said stationary member having an aperture therethrough, a second stop for the coin adapted to pass through said aperture, a lever to which said second stop is pivoted, and means for actuating said lever.

14. In a coin controlled apparatus, a coin chute comprising a stationary and a pivoted member forming a coin slot therebetween, an adjustable stop carried by one of said members, means for causing a coin of improper dimensions to engage said stop, a spring secured at one end to said pivoted member, a roller adapted to co-act with said spring, and a spring pressed plunger adapted to actuate said roller, and thereby maintain said pivoted member in open or closed position.

852,112. VEHICLE. VICTOR G. GILBREATH, Seattle, Wash. Filed Oct. 23, 1905. Renewed Mar. 1, 1907. Serial No. 360,103.

Claim.—1. In a vehicle of the type set forth, in combination with the bed and the rear axle, a front axle, and a frame pivoted to the bed, said frame comprising a top member formed with sockets, and bars secured at one end in said sockets and having their other ends fixed to said front axle.

2. In a vehicle of the type set forth, in combination with the bed, a fifth wheel member having an edge flange, bolts projecting through said fifth wheel member for securing the same to the bed, a lower fifth wheel member having a boss formed with an opening and a flange spaced therefrom, said last named fifth wheel member having a depending flange formed with opposite sockets, bars secured in said sockets and to the axle, and a pivot bolt project-

ing through the upper fifth wheel member and into the bone of said lower fifth wheel member.

3. In a vehicle of the type set forth, in combination with the bed and the rear axle, a front axle, a fifth wheel having one member secured to the bed, the other member being formed with oppositely disposed sockets, and bars having their upper end portions secured in said sockets and having their lower end portions secured to said front axle.

852,113. TIRE REPAIR AND PROTECTIVE DEVICE. CHARLES D. GILMAN, Oakland, Cal. Filed Dec. 12, 1906. Serial No. 347,450.

Claim.—1. A repair device for a pneumatic tire, said device consisting of a segmental sheath to be interposed between the inner and outer tubes of said tire, and having tying portions which extend between the inner and outer tubes of the tire and between the outer tube and the wheel rim to a point outside of said tire.

2. The combination with the inner and outer tubes of a tire, and the wheel rim, of a sheath interposed between the two tubes, said sheath having extended strap-portions passing to the outside of the outer tube and between said tube and the rim, whereby the straps are clamped to hold the sheath in position.

3. In a tire consisting of an outer flexible casing and an inner air tube, a sleeve or segment having its ends and edges beveled and adapted to fit between the casing and tube, said sleeve having slots made in its sides, straps extending around the sleeve through the slots in the tube, and outwardly between the meeting edges of the casing so as to be clamped and held in place between the casing and the wheel rim.

4. A wheel rim having inturned flanges, an outer flexible tire casing having corresponding lugs to interlock with the rim, an inner air tube fitting within the casing, and a protective segmental sleeve fitting between the casing and the tube, said sleeve having slots made at intervals through its sides, straps surrounding the sleeve passing through the slots and out between the meeting edges of the casing, thence between the interlocking lugs and flanges of the wheel rim.

852,114. AGITATOR. FRANK W. GOWAN, Somerset, Wis. Filed June 20, 1906. Serial No. 322,626.

Claim.—1. An agitator adapted to be applied to a vat comprising a frame, means for adjusting said frame transversely of the vat, a prime mover mounted upon the frame, and a dasher carried by the frame.

2. An agitator adapted to be applied to a vat comprising a frame, a prime mover located upon the frame and actuating the same, a dasher attached to the frame, and means for adjusting said dasher transversely of the vat.

3. An agitator adapted to be applied to a vat, a frame having means for reciprocating the same over a vat, a dasher attached to the frame and adapted to swing in the vat and having leaves pitched at an angle to each other, said leaves having horizontal rods and means for adjusting said rods longitudinally.

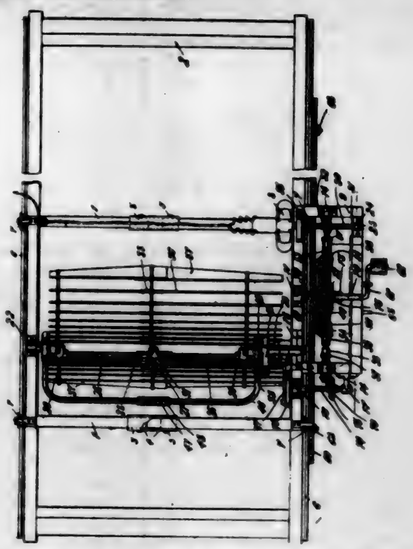

4. An agitator adapted to be applied to a vat consisting of a frame having means adapted to reciprocate the same over the vat, a dasher attached to the frame and adapted to enter the vat, dasher wings adapted to be vertically adjusted within the vat, and means for adjusting the dasher frame and wings transversely.

852,115. RUNWAY OR GUIDE. LOUIE J. HARRIS, New York, N. Y. Filed Feb. 5, 1907. Serial No. 355,967.

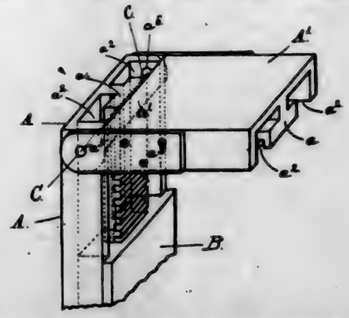

Claim.—1. A jointed runway or guide consisting of two members, the lower member being constructed with a horizontal upper face and having an undercut track or runway formed on its inner longitudinal face constructed and arranged to sustain a slide in working relation, and also having orifices for the pintles of the hinge, and the upper member having a similarly formed track or runway and being constructed with a concave lower face forming an arc of a circle of which the pintles are the axis, and straps apertured for the pintles of the joint, in combination with pintles to engage the said orifices.

2. A jointed runway or guide consisting of two members, the lower member being constructed with a horizontal upper face and having an undercut track or runway formed on its inner longitudinal face constructed and arranged to sustain a slide in working relation, and also having orifices for the pintles of the hinge, and the upper member having a similarly formed track or runway and being constructed with a concave lower face forming an arc of a circle of which the pintles are the axis, and straps apertured for the pintles of the joint, in combination with pintles to engage the said orifices, and with a slide to work on the track or runway, the whole being arranged so that when the upper member occupies a horizontal position, the lower face of the said member rests against the inner longitudinal face of the lower member, and the upper face of the lower member and the outer longitudinal face of the upper member coincide, or lie in the same plane, and when the upper member occupies a vertical position, both the outer and inner longitudinal faces of the upper and lower members coincide, or lie in the same plane; whereby the slide will work freely along the runways or guides of the upper and lower members at will.

852,116. STOVE COVER OR MAT. LILY J. HERRICK, Chicago, Ill. Filed Sept. 30, 1905. Serial No. 280,734.

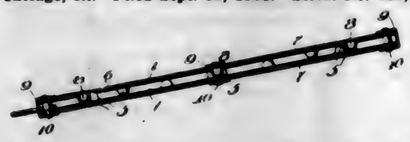

Claim.—In a stove mat, the combination of two thin imperforate metal plates having raised separating portions in the adjacent surfaces thereof adapted to hold the plates sufficiently apart to permit a free circulation of air therebetween and above the stove or heating means, each plate being covered on its outer surface with a sheet of fire-proof material, and means suitable for holding the plates and the sheets together, substantially as shown and described.

852,117. PNEUMATIC APPLIANCE FOR CARS. GEORGE H. HOLLINGSWORTH, Belmont, Mass., assignor to Consolidated Car Fender Company, Providence, R. I., a Corporation of Rhode Island. Filed Feb. 12, 1907. Serial No. 357,084.

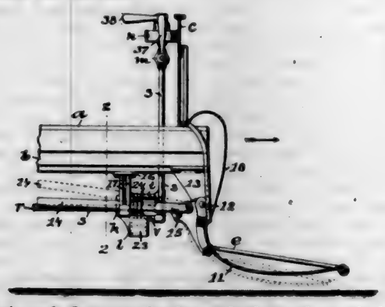

Claim.—1. In a car having a fender and an air brake system, means operatively connected with the air brake system and the fender adapted to drop the fender, set the brakes, and raise the fender to its normal carrying position.

2. In a car having a fender and an air brake system, means operatively connected with the air brake system and the fender adapted to hold the fender in a position to clear the roadbed, to drop the fender to the roadbed, set the brakes and to raise the fender to its normal carrying position.

3. In a car having a fender and an air brake system, means operatively connected with the air brake system and the fender adapted to hold the fender in a position to clear the roadbed, to drop the fender to the roadbed, set the brakes, raise the fender to its normal carrying position and to release the brakes.

4. In a street car having a fender and an air brake system, pistons operatively connected with the fender and the air brake system and an auxiliary valve operatively connected with the pistons and the air brake system, whereby on operating the auxiliary valve the fender is raised to its normal carrying position.

5. The combination with a street car having a fender and an air brake system, of pistons operatively connected with the air brake system and the fender, an emergency valve operatively connected with the air brake system and the pistons, pistons operatively connected with the air brake system and the fender and an auxiliary valve operatively connected with the air brake system and the last-named pistons, whereby on operating the emergency valve the fender is dropped to the roadbed, the brakes set and the brakes released and on operating the auxiliary valve the fender is raised to its normal carrying position.

6. The combination with a street car having an air brake system with a controlling valve and a fender pivotally secured to the car, of levers on the fender, latches adapted to engage with the levers and hold the fender in its normal carrying position, pistons operatively connected with the latches and the air brake system and an emergency valve operatively connected with the air brake system and the pistons, whereby on operating the emergency valve the brakes are set and the latches are operated simultaneously by the pistons to release the levers and allow the fender to drop to the roadbed.

7. The combination with a street car having an air brake system with a controlling valve and a fender pivotally secured to the car, of levers secured to the fender, pistons operatively connected with the levers and the air brake system and an auxiliary valve operatively connected with the air brake system and the pistons, whereby on operating the auxiliary valve the levers are depressed and the fender raised to its normal carrying position.

8. The combination with a street car having an air brake system with controlling valve and a fender pivotally secured to the car, of levers on the fender, latches adapted to engage with the levers and hold the fender in its normal carrying position, pistons operatively connected with the latches and the air brake system, an emergency valve operatively connected with the air brake system and the pistons, pistons operatively connected with the levers and the air brake system and an auxiliary valve operatively connected with the air brake system and the lever pistons, whereby on operating the emergency valve the fender is dropped to the roadbed, the brakes set and the brakes released, and on operating the auxiliary valve the fender is raised to its normal carrying position.

9. The combination with a street car of a fender *e* one member of which is pivotally secured to the car, brackets 16 16 secured to the car, latches 17 17 in the brackets, levers 14 14 on the fender extending through slots in the brackets, a combined motor and air pump *f*, an air cylinder *g*, a brake mechanism *h*, a brake piston cylinder *i*, the emergency piston cylinders *k k* having the pistons 21 21, the stems 22 22 on the pistons operatively connected with the latches 17 17, the auxiliary piston cylinder *l l* having the pistons 23 23, the stems 24 24 on the pistons operatively connected with the levers 14 14, an emergency valve *m*, an air brake valve *n*, an auxiliary valve *o*, a pipe *p* connecting the air pump *f* with the air cylinder *g*, the pressure pipes *r r* connecting the air cylinder *g* with the emergency valve *m* and the air brake valve *n*, the pipes *s s* connecting the brake valve *n* with the emergency valve *m* and the brake piston cylinder *i*, the pipes *t t* connecting the brake valve *n* with the emergency valve *m* and the emergency piston cylinders *k k*, the pipe *u* connecting the pressure pipe *r* with the auxiliary valve *o* and the pipe *v* connecting the auxiliary valve *o* with the piston cylinders *l l*, as described.

852,118. RIDING ATTACHMENT FOR HARROWS. GERIT HUISMAN, Kamrar, Iowa. Filed Oct. 19, 1906. Serial No. 339,670.

Claim.—1. A riding attachment for harrows, comprising two convergent reach bars having forward ends designed for connection with the harrow, and their rear

ends adjacent to each other, a cross piece fixed to the rear ends of the reach bars, a re-inforcing frame fixed to the outer ends of said cross piece extending forwardly and attached to the reach bars and connected by a cross piece, a seat support secured to the top of the central portion of the cross piece, a cross brace with its central portion spaced below said cross piece and its sides extended upwardly and outwardly and secured to the ends of said cross piece, an upright rotatably mounted in a vertical position in said cross piece and in said cross brace, the upper end of said upright engaging the bottom of the seat support, a wheel frame fixed to the lower end of said upright and extending rearwardly and a supporting wheel in said frame.

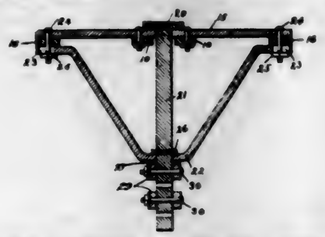

2. A riding attachment for harrows, comprising two converging reach bars having their forward ends designed for attachment to a harrow, a cross piece secured to the rear ends thereof, a cross brace with its central portion spaced below said cross piece and its ends extending upwardly and outwardly and adjustably fixed to the ends of said cross piece, an upright rotatably mounted in said cross piece and cross brace, a wheel frame adjustably secured to the lower end of the upright, and a supporting wheel in said frame.

852,119. TELESCOPE ATTACHMENT FOR GUNS. THOMAS C. JOHNSON, New Haven, Conn., assignor to Winchester Repeating Arms Co., New Haven, Conn., a Corporation. Filed Mar. 4, 1907. Serial No. 360,476.

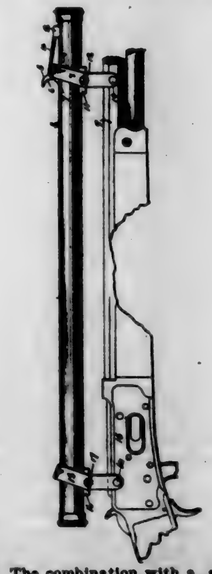

Claim.—1. The combination with a gun, of a telescope, swinging mountings therefor, and mechanical means for preventing the telescope from rebounding rearwardly owing to recoil.

2. The combination with a gun, of a telescope, swinging mountings therefor, and a yielding latch in position to engage with one of the said mountings when the telescope is longitudinally swung forward with respect to the gun.

3. The combination with a gun, of a telescope, swinging mountings therefor, and a yielding latch fixed upon the telescope in position to engage one of the said mountings when the telescope is swung forward, whereby the telescope is prevented from rebounding and striking the user of the gun in the face.

852,120. AUTOMATIC FEEDING MECHANISM FOR TEMPER-SCREWS. ROBERT C. JONES, New Cumberland, W. Va. Filed Dec. 1, 1906. Serial No. 345,945.

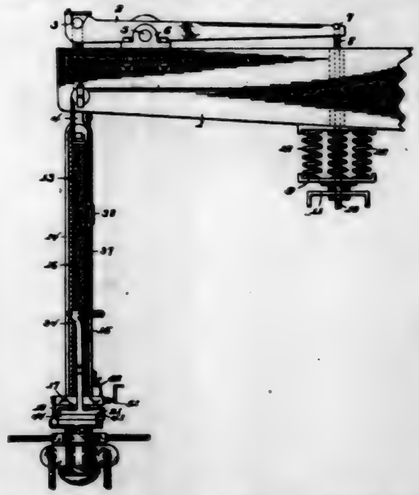

Claim.—1. In a device of the character described, the combination with a walking-beam, of a yieldable support mounted upon said walking-beam, tension-adjusting means for said support, a temper-screw for carrying a cable suspended from said support, and means controlled by the relaxation of the cable's tension whereby said temper-screw is automatically paid out.

2. In a device of the character described, the combination with a walking-beam, of a yieldable support carried by said walking-beam, a temper-screw for carrying a cable suspended from said support, tension-adjusting means for said support, a pinion in operative slidable engagement with said temper-screw, a rod carried by said walking-beam in fixed relation thereto, and means intermediate said rod and said pinion whereby the latter is rotated, paying out the temper-screw, upon the relaxation of the cable's tension.

3. In a device of the character described, the combination with a walking-beam, of a yieldable support carried by said walking-beam, a temper-screw for carrying a cable suspended from said support, a pinion in operative slidable engagement with said temper-screw, a rod carried by said walking-beam in fixed relation thereto, a rack in operative engagement with said pinion, and means intermediate said rod and said rack whereby the latter is swung forward, rotating the pinion and paying out the temper-screw, upon the relaxation of the cable's tension.

4. In a device of the character described, the combination with a walking-beam, of a yieldable support carried by said walking-beam, a temper-screw for carrying a cable suspended from said support, a pinion in operative slidable engagement with said temper-screw, a rack in operative engagement with said pinion, a rod suspended from said walking-beam, and a member intermediate said rod and said rack whereby the latter is swung forward, rotating the pinion and paying out the temper-screw, upon the relaxation of the cable's tension.

5. In a device of the character described, the combination with a walking-beam, of a yieldable support carried by said walking-beam, a temper-screw for carrying a cable suspended from said support, a pinion in operative slidable engagement with said temper-screw, a rod suspended from said walking-beam, a pivoted lever connected to said rod, a rack carried by said lever in operative proximity to said pinion, whereby when the cable's tension is relaxed said pinion is rotated forward, paying out the temper-screw.

6. In a device of the character described, the combination with a walking-beam, of a yieldable support carried by said walking-beam, a temper-screw for carrying a cable suspended from said support, a pinion in operative slidable engagement with said temper-screw, a rod suspended from the walking-beam, a bell-crank connected to said rod, a rack carried by said bell-crank in operative proximity to said pinion whereby when the cable's tension is relaxed said pinion is rotated forward paying out the temper-screw.

7. In a device of the character described, the combination with a walking-beam, of a yieldable support carried by said walking-beam, a temper-screw for carrying a cable suspended from said support, a rod suspended from the walking-beam and carried in fixed relation thereto, a bell-crank connected to said rod and pivoted in fixed relation to said support, a rack carried by said crank, and means in operative proximity to said rack whereby the action of the drilling tools automatically pays out the temper-screw.

8. In a device of the character described, the combination with a walking-beam, of a temper-screw for carrying a cable, a flexible connection between said temper-screw and said walking-beam, means for adjusting the tension of said flexible connection, a rod suspended from said beam, said rod being carried in fixed relation to said beam, a pinion in operative relation to said temper-screw, means intermediate said rod and said pinion whereby the latter is actuated to turn said temper-screw forward, and means whereby said pinion is retracted without retracting said temper-screw.

9. In a device of the character described, the combination with a walking-beam, of a temper-screw for carrying a cable, a flexible connection between said temper-screw and said walking-beam, tension-adjusting means for said flexible connection a rod suspended from said beam, said rod being carried in fixed relation to said beam, a pinion encircling said temper-screw, a key carried by said pinion in engagement with a groove provided in said temper-screw, means intermediate said rod and said pinion for rotating the latter forward upon the relaxation of the cable's tension, paying out the temper-screw, and for retracting said pinion, and means for admitting of the retraction of said pinion without the retraction of the temper-screw.

10. In a device of the character described, the combination with a temper-screw for carrying a cable, said temper-screw having a longitudinal groove therein, of a pinion encircling said temper-screw, said pinion having a key in engagement with said groove, a stationary support for said pinion, and means in operative engagement with said pinion whereby the latter is actuated to rotate forward carrying therewith the temper-screw when the cable relaxes after a downward thrust of the drill, said pinion consisting of a ratchet and gear, the latter being rotatable about the former.

11. In a device of the character described, the combination with a temper-screw for carrying a cable, said temper-screw having a longitudinal groove therein, of a pinion encircling said temper-screw, interlocking means between said pinion and said temper-screw, and means in operative engagement with said pinion whereby the latter is actuated by the relaxation of the cable after a downward thrust of the drill to rotate forward, carrying the temper-screw therewith, said pinion consisting of a ratchet and a gear, the latter rotatable about the former, and a spring-pressed pawl carried by the gear for engagement with the ratchet.

12. In automatic feeding mechanism for temper-screws, the combination with a walking-beam, of a yieldable support carried by said walking-beam, a temper-screw for carrying a cable suspended from said support, a ratchet encircling said temper-screw and keyed thereto in such manner as to admit only of longitudinal movement of the latter with respect to the former, a gear rotatable about said ratchet, a spring-pressed pawl carried by said gear in operative engagement with said ratchet, and means associated with said gear whereby the latter is actuated to rotate forward, automatically rotating the ratchet and temper-screw, upon the relaxation of the cable's tension after a downward outreaching thrust of the drill.

13. In automatic feeding mechanism for temper-screws, the combination with a walking-beam, of a yieldable support carried by said walking-beam, a temper-screw for carrying a cable suspended from said support, a ratchet encircling said temper-screw and keyed thereto in such manner as to admit only of longitudinal movement of the latter with respect to the former, a gear rotatable about said ratchet, a spring-pressed pawl carried by said gear in operative engagement with said ratchet, a member carried by the walking-beam in fixed relation thereto, and a member in fixed relation to said support interposed between the first-mentioned member and said gear, whereby, when the relative positions of said support and said beam are changed, said gear is rotated.

14. In automatic feeding mechanism for temper-screws, the combination with a walking-beam, of a yieldable support carried by said walking-beam, a temper-screw for carrying a cable suspended from said support, a ratchet encircling said temper-screw and in operative engagement therewith, a gear rotatable about said ratchet, a spring-pressed pawl carried by said gear in operative engagement with said ratchet, a movable rack meshing with said gear, a member mounted in fixed relation to said support, said member carrying said rack, and a member interposed between the first-mentioned member and the walking-beam whereby the changing of the relative positions of said beam and said support actuates said rack to move, rotating said gear.

15. In automatic feeding mechanism for temper-screws, the combination with a walking-beam, of a yieldable support carried by said walking-beam, a temper-screw for carrying a cable, said temper-screw having a longitudinal groove therein suspended from said support, a ratchet encircling said temper-screw, a key carried by said ratchet in engagement with said groove, a gear rotatable about said ratchet, a spring-pressed pawl carried by said gear in operative engagement with said ratchet, a member carried by the walking-beam in fixed relation thereto, a bell-crank mounted in fixed relation to said support, said member being adjustably connected to one arm of said crank, and a rack carried by the opposite arm of said crank in meshing engagement with said gear, whereby, when the relative positions of said support and said walking-beam is changed, said gear is actuated to rotate.

16. In automatic feeding mechanism for temper-screws, the combination with a temper-screw for carrying a cable, said temper-screw having a longitudinal groove therein and a walking-beam; of a pinion comprising a sleeve encircling the temper-screw, a key carried by said sleeve in engagement with said groove in the temper-screw, annular flanges about the opposite ends of said sleeve, said flanges having a plurality of spaced registering pin-holes therein, pins mounted in said holes, said sleeve, said flanges and said pins constituting a ratchet, a gear rotatable about said ratchet, a pawl carried by said gear, a spring for holding said pawl inwardly pressed for successively engaging said pins; and means interposed between said walking-beam and said gear for rotating the latter backward and forward respectively with the reaching forth of the drill and with the relaxation of the cable carrying the drill.

17. In automatic feeding mechanism for temper-screws, the combination with a temper-screw for carrying a cable and having a longitudinal groove therein and a walking-beam; of a pinion; a support for said pinion; said pinion comprising a sleeve encircling said temper-screw, a key carried by said sleeve in engagement with said groove in the temper-screw, annular flanges about the opposite ends

of said sleeve, said flanges having a plurality of spaced registering pin-holes therein, pins mounted in said holes, said sleeve, said flanges and said pins constituting a ratchet, a gear rotatable about said ratchet, a pawl carried by said gear, a spring for holding said pawl inwardly pressed for successively engaging said pins; and means actuated by a downward outreaching thrust of the drill for rotating said gear rearwardly and actuated by the relaxation of the cable's tension after such a thrust for rotating said gear forward, carrying therewith the ratchet and temper-screw.

18. In automatic feeding mechanism for temper-screws, the combination with a temper-screw for carrying a cable and having a longitudinal groove therein and a walking-beam; of a pinion; a support for said pinion; said pinion comprising a sleeve encircling said temper-screw, a key carried by said sleeve in engagement with said groove in the temper-screw, annular flanges about the opposite ends of said sleeve, said flanges having a plurality of spaced registering pin-holes therein, pins mounted in said holes, said sleeve, said flanges and said pins constituting a ratchet, a gear rotatable about said ratchet, a pawl carried by said gear, a spring for holding said pawl inwardly pressed for successively engaging said pins; and means actuated by a downward outreaching thrust of the drill for rotating said gear rearwardly and actuated by the relaxation of the cable's tension after such a thrust for rotating said gear forward, carrying therewith the temper-screw.

852,121. INCANDESCENT-LIGHT ATTACHMENT. WILLIAM V. D. KELLEY, Newark, N. J., assignor of one-half to Howard S. Jones, Brooklyn, N. Y. Filed Jan. 5, 1907. Serial No. 350,904.

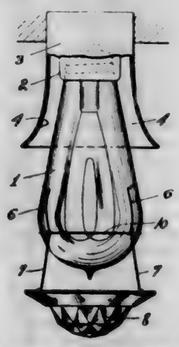

Claim.—1. The combination with an incandescent lamp, of a frame having jaws adapted to slide over the end of said lamp and engage the sides, means for limiting the movement of said frame on said lamp, and a transparency carried by jaws pivoted on said frame and separated from the lamp, substantially as described.

2. The combination with an incandescent lamp, of a ring having a plurality of jaws adapted to frictionally engage said lamp, said ring being smaller in diameter than the lamp so as to rest against the lamp bulb, and a transparency supported by means carried by the ring out of contact with the lamp and adapted to be illuminated by the lamp, substantially as described.

3. A frame for attachment to a lamp comprising a ring adapted to bear against the surface of the bulb and carrying jaws on one side for resiliently engaging the bulb, and oppositely projecting jaws on the other side for holding a disk, transparency or the like out of contact with the lamp, substantially as described.

4. A frame for attachment to a lamp comprising a ring adapted to bear on the surface of a lamp bulb and carrying pivoted jaws frictionally engaging the same, and oppositely projecting resilient jaws for holding a disk, transparency or the like out of contact with the lamp, said jaws being adapted to interact to clamp both the lamp bulb and the transparency, substantially as described.

5. A transparency for attachment to a lamp bulb comprising a transparency removably held by jaws carried by a ring, and a second set of jaws carried by the ring and adapted to engage a lamp bulb, substantially as described.

6. A transparency for attachment to a lamp bulb comprising a transparency removably carried by a frame having jaws, and a second set of jaws adapted to engage a lamp bulb, said jaws being of resilient material and pivoted so as to move oppositely whereby to increase the holding effect on both the lamp and the transparency, substantially as described.

852,122. AIR-PURIFYING APPARATUS. JOHN H. KINEALY, Ferguson, Mo. Filed Aug. 31, 1905. Serial No. 276,536.

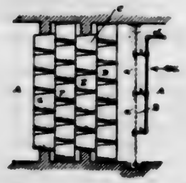

Claim.—1. In combination in an air purifying apparatus, a thoroughfare for the passage of air, an air washer, and a water eliminator consisting of tubes provided with a lip at one end and arranged in sections, the sections being placed one back of the other in such a way that the tubes of one section are eccentric as regards the tubes of the section immediately in front, substantially as described.

2. In combination in an air purifying apparatus, a thoroughfare for the passage of air, an air washer, and a water eliminator consisting of cylindrical tubes provided with a lip at one end and arranged in sections, the sections being placed one back of the other in such a way that the tubes of one section are eccentric as regards the tubes of the section immediately in front, substantially as described.

3. In combination in an air purifying apparatus, a thoroughfare for the passage of the air, an air washer, and a water eliminator consisting of tubes provided with an inward turned lip at one end and arranged in sections, the sections being placed one back of the other in such a way that the tubes of one section are eccentric as regards the tubes of the section immediately in front, substantially as described.

4. In combination in an air purifying apparatus, a thoroughfare for the passage of air, an air washer, and a water eliminator consisting of cylindrical tubes provided with an inward turned lip at one end and arranged in sections, the sections being placed one back of the other in such a way that the tubes of one section are eccentric as regards the tubes of the section immediately in front, substantially as described.

5. In combination in an air purifying apparatus, a thoroughfare for the passage of air, an air washer, and a water eliminator consisting of cylindrical tubes provided with an inward turned lip at one end and inclined so that moisture will drain from them, said tubes being arranged in sections, and the sections being placed one back of the other in such a way that the tubes of one section are eccentric as regards the tubes of the section immediately in front, substantially as described.

6. In combination in an air purifying apparatus, a thoroughfare for the passage of air, means for forming a transverse wall of downward falling water in a sprayed or finely divided condition, and a water eliminator consisting of cylindrical tubes provided with an inward turned lip at one end and arranged in sections, the sections being placed one back of the other in such a way that the tubes of one section are eccentric as regards the tubes of the section immediately in front, substantially as described.

7. In combination in an air purifying apparatus, a thoroughfare for the passage of air, means for forming a transverse wall of downward falling water in a sprayed or finely divided condition, and a water eliminator consisting of cylindrical tubes provided with an inward turned lip at one end and inclined so that moisture will drain from them, said tubes being arranged in sections, the sections being placed one back of the other in such a way that the tubes of one section are eccentric as regards the tubes of the section immediately in front, substantially as described.

852,123. CARRIER FOR TARGET-TRAPS. JOSEPH P. LEGGETT, Carthage, Mo., assignor to The Chamberlin Cartridge & Target Company, Cleveland, Ohio. Filed Apr. 25, 1903. Serial No. 154,212.

Claim.—1. A carrier for target traps consisting of a target-supporting base having, near its inner end, means wherewith it may be pivotally connected with the throwing arm of the target trap, and having also near said inner end an upwardly extending spring-support, and having, near its outer end, an upwardly extending fixed post, combined with a target restraining arm which is rigidly fastened at its inner end to said spring support and extends therefrom toward the front end of said base at a short distance above the top surface thereof, said arm being made of a thin strip of spring metal which, under the strain of use, will yield in a direction parallel with the top of said base and only in that direction, substantially as specified.

2. A carrier for target traps consisting of a target-supporting base having, near its inner end, means wherewith it may be pivotally connected with the throwing arm of the target trap, and having also, near said inner end, an upwardly extended spring support, and having near its outer end an upwardly extending fixed post, combined with a target restraining arm which is rigidly fastened at its inner end to said spring support and extends therefrom toward the front end of said base at a short distance above the top surface thereof, said arm being made of a thin strip of spring metal which, under the strain of use, will yield in a direction parallel with the top of said base and only in that direction, the inner face of said spring arm being in planes at right angles to the top surface of said base, substantially as specified.

3. A carrier for target-traps consisting of a target-supporting base having near its inner end means wherewith it may be pivotally connected with the throwing arm of the target trap, and having also near said inner end an upwardly extended spring support, and having near its outer end an upwardly extending fixed post, combined with a target restraining arm which is rigidly fastened at its inner end to said spring support and extends therefrom toward the front end of said base at a short distance above the top surface thereof, said arm being made of a thin strip of spring metal which, under the strain of use, will yield in a direction parallel with the top of said base and only in that direction, said arm being curved so as to present a concave face for engagement with the target, substantially as specified.

4. A carrier for target traps comprising a base plate, a fixed post secured to said base plate, a yielding arm extending over said base plate and substantially parallel thereto and having a free outer end, and means for adjustably securing the inner end of said yielding arm to the inner end of said carrier, substantially as set forth.

852,124. BED-MOTION FOR CYLINDER PRINTING-PRESSES. EDWIN F. LEILICH, San Francisco, Cal. Filed Oct. 23, 1902. Renewed June 4, 1906. Serial No. 320,055.

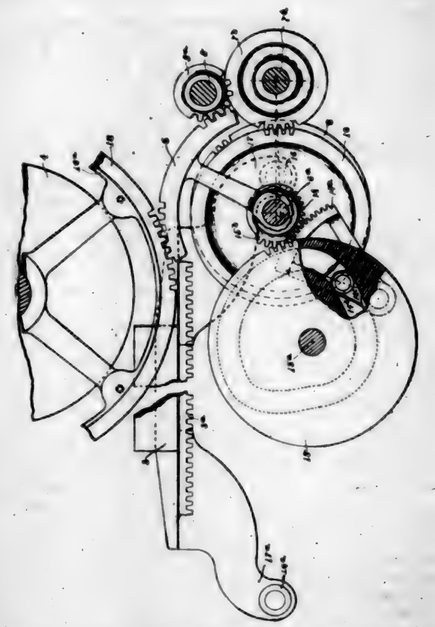

Claim.—1. In a printing press comprising among its elements a bed and rack; a rotating shaft, means for moving the bed in one direction, a second means for moving the bed in the opposite direction, a body rigidly secured to said shaft and confined to movement in a single plane, and an operative connection between said body and second means.

2. In a printing press comprising among its elements a bed and rack; a rotating shaft, two gear wheels supported around said shaft, means for rotating one of them in a direction opposite to that of said shaft, a body rigidly secured upon said shaft, and an operative connection between said body and the other of said gear wheels.

3. In a printing press comprising among its elements a bed and rack; a rotating shaft supported in two bearings, two gear wheels surrounding said shaft, means for rotating one of them in an opposite direction to that of said shaft, a body rigidly secured to said shaft, and an operative connection between said body and the other of said gear wheels; to communicate motion from the former to the latter, said body and gear wheels being supported upon and around said shaft between the two bearings thereof.

4. In a printing press comprising among its elements a bed and rack; a shaft supported in two bearings, two gear wheels surrounding said shaft between the bearings, means for rotating one of them in one direction, means for giving said gear wheels vertical reciprocations, a rotating body, and an operative connection between said body and the other of said gear wheels; to communicate motion from the former to the latter.

5. In a printing press comprising among its elements a bed and rack; a rotating shaft, two gear wheels surrounding said shaft, means for rotating one of them in a direction opposite to that of said shaft, means for giving said gear wheels vertical reciprocations, a body rigidly secured to said shaft, and an operative connection between said body and the other of said gear wheels; to communicate motion from the former to the latter.

6. In a printing press comprising among its elements a bed and rack; a sleeve, a shaft, means for rotating it, the shaft being extended through the sleeve eccentrically thereto, one or more eccentrics supported on the sleeve, and one or more gear wheels supported on said one or more eccentrics.

7. In a printing press comprising among its elements a bed and rack with downwardly projecting teeth; a shaft supported in two bearings, two gear wheels supported around said shaft between the bearings, means for rotating one of them in one direction, a body supported upon said shaft, an operative connection between said body and the other of said gear wheels, and means for alternately moving each of said gear wheels in and out of the path of said rack.

8. In a printing press comprising among its elements a bed and rack; a shaft, two gear wheels surrounding said shaft, means for rotating them in opposite directions, a sleeve placed eccentrically around said shaft and held in a fixed position by an attachment to the frame, two eccentrics supported upon said sleeve and supporting said gear wheels, and means for alternately reversing the position of said eccentrics and gear wheels.

9. In a printing press comprising among its elements a bed and rack; a shaft, two gear wheels surrounding said shaft, means for rotating one of them in one direction, a body supported upon said shaft, means for rotating said body in an opposite direction to the last named gear wheel, an operative connection between said body and the other of said gear wheels, to communicate the motion of the former to the latter, a sleeve placed eccentrically around said shaft and held in a fixed position by an attachment to the frame, two eccentrics supported upon said sleeve and supporting said gear wheels, and means for alternately reversing the position of said eccentrics and gear wheels.

10. In a printing press comprising among its elements a bed and rack; a rotating shaft, two gear wheels surrounding said shaft, means for rotating one of them in a direction opposite to that of said shaft, a body rigidly secured to the rotating shaft, an operative connection between said body and the other of said gear wheels, to communicate the motion of the former to the latter, a sleeve placed eccentrically around said shaft and held in a fixed position by an attachment to the frame, two eccentrics supported upon said sleeve and supporting said gear wheels, and means for alternately reversing the position of said eccentrics and gear wheels.

11. In a printing press comprising among its elements a bed and rack; means for moving the bed in one direction, a second means for moving the bed in the opposite direction, and a third means for reversing the direction of the movement of the bed, said third means including two hangers rigidly attached to the bed and bearing each a stud and roller, to alternately engage with and disengage from the rotating element of said third means, each of said means being confined to movement in a single plane.

12. In a printing press comprising among its elements a bed and rack; means for moving the bed in one direction, a second means for moving the bed in the opposite direction, a shaft supported in two bearings, two hangers suitably attached to the bed and bearing each a stud and roller, a cam supported upon said shaft between the two bearings, and means for rotating said cam to alternately engage with and disengage from said studs and rollers, to reverse the direction of the movement of the bed, each of said means being confined to movement in a single plane.

13. In a printing press comprising among its elements a bed and rack; a shaft supported in two bearings, two gear wheels surrounding said shaft between the bearings, means for rotating one of them in one direction, two hangers suitably attached to the bed and bearing each a stud and roller, a cam supported upon said shaft between the bearings, means for rotating said cam in an opposite direction to that of the gear wheel last named, to alternately engage with and disengage from the said studs and rollers, to reverse the direction of the movement of the bed, and an operative connection between said cam and the other of said gear wheels.

14. In a printing press comprising among its elements a bed and rack; a rotating shaft supported in two bearings, two gear wheels surrounding said shaft, means for rotating one of them in a direction opposite to that of said shaft, two hangers suitably attached to the bed and bearing each a stud and roller, a cam rigidly fixed upon the rotating shaft between the two bearings, to alternately engage with and disengage from the said studs and rollers, to reverse the direction of the movement of the bed, an operative connection between the cam and the other of said gear wheels, and means for alternately moving each of said gear wheels in and out of the path of the rack; to drive the latter and bed attached thereto to and fro.

15. In a printing press comprising among its elements a bed and rack; a rotating shaft, a gear wheel supported around said shaft, means for moving said gear wheel in and out of the path of said rack, a body rigidly fixed upon said shaft, a stud secured to said gear wheel provided with a block, and a slot formed in said body with which said stud and block engages; whereby the motion of the body is communicated to the gear wheel.

16. In a printing press, comprising among its elements a bed and rack; a rotating body, a gear wheel, an operative connection between the former and the latter, and means for changing the position of the center of the gear wheel relatively to that of the rotating body, to move the gear wheel in and out of the path of the rack; whereby the gear wheel when in a position in which its center coincides with the center of the rotating body is driven with an isochronous movement and when in other positions with a variable movement.

17. In a printing press comprising among its elements a bed and rack; a rotating shaft, a gear wheel supported around said shaft, a body rigidly secured upon said shaft, an operative connection between said gear wheel and body, and means for giving vertical reciprocations to said gear wheel.

18. In a printing press comprising among its elements a bed and rack; a rotating shaft, a gear wheel surrounding said shaft, means for moving said gear wheel in and out of the path of said rack, a cam rigidly secured to said shaft, and an operative connection between said cam and gear wheel.

19. In a printing press comprising among its elements a bed and a single rack; a rotating shaft, a gear wheel surrounding said shaft, an operative connection between said shaft and gear wheel, and means for giving vertical reciprocations to said gear wheel.

20. In a printing press comprising among its elements a bed and rack; a shaft, two gear wheels surrounding said shaft, means for giving alternate reciprocations to each of said gear wheels, comprising a sleeve placed eccentrically around said shaft and held in a fixed position by an attachment to the frame, two eccentrics supported upon said sleeve and supporting said gear wheels, and mechanism for alternately reversing the position of said eccentrics and gear wheels; to move the latter in and out of the path of the rack.

21. In a printing press comprising among its elements a bed and rack; a shaft, two gear wheels surrounding said shaft, and means for giving alternate reciprocations to each of said gear wheels, comprising a sleeve placed eccentrically around said shaft and held in a fixed position by an attachment to the frame, two eccentrics supported upon said sleeve and supporting said gear wheels, a gear 14 secured to a collar extended from one of the eccentrics, and a geared sector engaging with the gear 14 fixed upon a shaft having a bearing in the frame, said shaft having secured to its opposite end an arm provided with a stud and roller engaging with a rotating cam.

22. In a printing press comprising among its elements a bed and rack; a shaft, a sleeve placed eccentrically around said shaft and held in a fixed position by an attachment to the frame, and provided with a longitudinal oil chamber open at the end by which said sleeve is held in a fixed position and communicating with an oil supply and also with one or more holes extending downwardly from the inside to the outside of the sleeve and intersecting the oil chamber, one or more eccentrics supported upon said sleeve and provided with one or more holes extending from the inside to the outside thereof, and means for bringing the holes in said eccentrics and sleeve into relative positions; whereby oil may flow into them from the oil chamber and connected oil supply.

23. In a printing press comprising among its elements a bed and rack; a rotating shaft, two gear wheels surrounding said shaft, means for driving them in opposite directions, and further means for alternately and vertically moving each of said gear wheels in and out of the path of said rack.

24. In a printing press comprising among its elements a bed and rack; a shaft, two gear wheels surrounding said shaft, means for rotating them in opposite directions, two eccentrics surrounding said shaft and supporting said gear wheels, and means, competent to move said eccentrics through an arc of one hundred and eighty degrees, for alternately moving each of said gear wheels in and out of the path of said rack.

25. In a printing press comprising among its elements a bed and a single rack; means for moving the bed to and fro including a shaft supported in two bearings, a cam supported upon said shaft, two hangers suitably secured to the bed and having each a stud and roller, and means for rotating said cam to alternately engage with and disengage from said studs and rollers, to reverse the direction of the movement of the bed.

26. In a printing press comprising among its elements a bed and rack; a rotating shaft, two gear wheels surrounding said shaft, a sleeve supported eccentrically relatively to said shaft and held in a fixed position by suitable means, two eccentrics supported upon said sleeve and supporting said gear wheels, a gear wheel secured to one of said eccentrics concentrically to its core, and means for oscillating said gear wheels and eccentrics upon the concentric center of said sleeve, to alternately move each of said gear wheels in and out of the path of said rack.

27. In a printing press comprising among its elements a bed and rack; a rotating shaft, two gear wheels surrounding said shaft, means for driving said gear wheels in opposite directions, means for alternately and vertically moving each of said gear wheels in and out of the path of said rack, and further means, including a body rigidly secured to said shaft, for reversing the direction of the movement of the bed.

28. In a printing press comprising among its elements a bed and rack; a rotating shaft, two gear wheels surrounding said shaft, means for driving said gear wheels in opposite directions, means for alternately moving each of said gear wheels in and out of the path of said rack, a cam rigidly secured upon said shaft, and two hangers, each provided with a stud and roller, secured to the bed, for reversing the direction of the movement of the latter.

29. In a printing press comprising among its elements a bed and rack; a cylinder, a gear wheel attached thereto, a rotating shaft, a gear wheel rigidly fixed thereon engaging with the gear wheel attached to the cylinder, means, including a second gear wheel supported around said rotating shaft, for moving the bed in one direction, a second means for moving the bed in the opposite direction, and a third means, including a body rigidly fixed upon said rotating shaft and operatively connected to said second gear wheel, for reversing the direction of the movement of the bed.

30. In a printing press comprising among its elements a bed and rack; a cylinder, a gear wheel attached thereto, a rotating shaft, a gear wheel provided with two series of teeth of the same diameter and pitch secured to each other and adjustable relatively to each other along their pitch lines, said gear wheel being rigidly secured upon the rotating shaft and directly connected to the gear wheel attached to the cylinder, and means, actuated from said shaft, for moving the bed in one direction.

31. In a printing press comprising among its elements a bed and rack; a cylinder, a gear wheel attached thereto provided with two series of teeth of the same diameter and pitch secured to each other, means for adjusting them relatively to each other along their pitch lines, a rotating shaft, a gear wheel rigidly secured thereon engaging with the gear wheel attached to the cylinder, a second gear wheel supported around said shaft, a body firmly secured upon said shaft, an operative connection between said body and second gear wheel, to communicate motion from the former to the latter, and means for moving said second gear wheel in and out of the path of said rack.

32. In a printing press comprising among its elements a bed and rack; a cylinder, a gear wheel attached thereto, a rotating shaft, a gear wheel rigidly secured thereto engaging with the gear wheel attached to the cylinder, a second gear wheel independently supported around said shaft, a body firmly secured upon said shaft, an operative connection between said second gear wheel and body, whereby the motion of the latter is communicated to the former, and means for vertically moving said second gear wheel in and out of the path of said rack.

33. In a printing press comprising among its elements a bed and rack; a rotating shaft, two eccentrics surrounding said shaft, two gears mounted on the eccentrics, one of them being driven from the rotating shaft, and means for alternately reversing the position of said eccentrics.

34. In a printing press comprising among its elements a bed and rack; a driving pinion, a cylinder, a gear wheel attached thereto, a rotating shaft, a gear wheel rigidly secured thereon engaging directly with the gear wheel attached to the cylinder and with the driving pinion, means including said rotating shaft and gear wheel rigidly secured thereon, connected positively with the driving pinion, for moving the bed in one direction, a second means, connected positively with the driving pinion and independently of the first means, for moving the bed in the opposite direction, and a third means for reversing its direction of movement.

35. In a printing press comprising among its elements a bed and rack; a driving pinion, a cylinder, a gear wheel attached thereto, a rotating shaft, a gear wheel rigidly secured thereon engaging directly with the gear wheel attached to the cylinder and with the driving pinion, means including said rotating shaft and gear wheel rigidly secured thereon, connected positively with the driving pinion, for moving the bed in one direction, a second means, connected positively with the driving pinion and independently of the first means, for moving the bed in the opposite direction, a third means for reversing its direction of movement, and an operative connection between said second and third means.

36. In a printing press comprising among its elements a bed and rack; a cylinder, a gear wheel attached thereto, a rotating shaft supported in two bearings, a gear wheel rigidly secured thereon engaging with the gear wheel attached to the cylinder, two gear wheels supported around said shaft between the two bearings, means for rotating said gear wheels in opposite directions, means for alternately moving each of said gear wheels in and out of the path of said rack, and further means for reversing the direction of the movement of the bed.

37. In a printing press comprising among its elements a bed and rack; a cylinder, a gear wheel secured thereto, a rotating shaft, a gear wheel secured thereon engaging directly with the gear wheel attached to the cylinder, a second gear wheel independently supported around said shaft, and means including a movable element for communicating the motion of said shaft to said second gear wheel.

38. In a printing press comprising among its elements a bed and rack; a cylinder, a gear wheel attached thereto, a rotating shaft supported in two bearings, a gear wheel rigidly secured thereon engaging with the gear wheel attached to the cylinder, two gear wheels supported around said shaft between the bearings, means for rotating said gear wheels in opposite directions, means for alternately moving each of said gear wheels in and out of the path of said rack, two hangers suitably attached to the bed and bearing each a stud and roller, and a cam rigidly secured to said shaft between the two bearings, to alternately engage with and disengage from the said studs and rollers, to reverse the direction of the movement of the bed.

39. In a printing press comprising among its elements

a bed and rack with downwardly projecting teeth; a rotating shaft supported in two bearings, a sleeve placed eccentrically relatively to said shaft and held in a fixed position by an attachment to the frame, two eccentrics supported upon said sleeve, two gear wheels supported upon said eccentrics, a gear wheel 14 secured to a collar extended from one of the eccentrics, a geared sector engaging with the gear wheel 14 and secured to one end of a shaft having a bearing in the frame, an arm secured upon said shaft at its other end bearing a stud and roller extending into the path of a rotating cam, means for imparting a rotating motion to one of said gear wheels in a direction opposite to that of said shaft, a cam rigidly fixed upon said shaft, a stud and block secured to the other of said gear wheels engaging with a slot formed in the body of said cam, and two hangers suitably attached to the bed and bearing each a stud and roller, whereby the bed and rack are driven to and fro and reversed at each end of the to and fro movement.

40. In a printing press comprising among its elements a bed and rack; a cylinder, a gear wheel attached thereto, a main gear wheel engaged with the latter, a driving pinion engaging directly with the main gear wheels, means, including the main gear wheel and driving pinion, for moving the bed in one direction, a second means, including a rotating shaft having rigidly secured thereon a gear wheel engaging directly with the driving pinion, for moving the bed in the opposite direction, and a third means for reversing the direction of the movement of the bed.

41. In a printing press comprising among its elements a bed and rack; a driving pinion, means, connected positively therewith, for moving the bed in one direction, a second means for moving the bed in the opposite direction including among its members a rotating shaft having rigidly secured thereon a gear wheel engaging directly with the driving pinion, a third means for reversing the direction of the movement of the bed, and an operative connection between the second and third means.

42. In a printing press comprising among its elements a bed and rack with downwardly projecting teeth; a cylinder, a gear wheel attached thereto, a main gear wheel engaged with the latter, a driving pinion engaging directly with the main gear wheel, means, including the main gear wheel and driving pinion, for moving the bed in one direction, a second means, including a rotating shaft having rigidly secured thereon a gear wheel engaging directly with the driving pinion, for moving the bed in the opposite direction, and a third means for reversing the direction of the movement of the bed.

43. In a printing press comprising among its elements a bed and rack with downwardly projecting teeth; a driving pinion, means, connected positively therewith, for moving the bed in one direction, a second means, including a rotating shaft having rigidly secured thereon a gear wheel engaging directly with the driving pinion, for moving the bed in the opposite direction, a third means for reversing the direction of the movement of the bed, and an operative connection between the second and third means.

44. In a printing press comprising among its elements a bed and rack; a shaft, two gear wheels supported around the shaft independently thereof, means for rotating the gear wheels in opposite directions, and means for alternately and vertically moving each of the gear wheels in and out of the path of the rack.

45. In a printing press comprising among its elements a bed and rack; a shaft, two gear wheels supported around the shaft independently thereof, means for rotating the gear wheels in opposite directions, means for alternately and vertically moving each of the gear wheels in and out of the path of the rack, and further means for reversing the direction of the movement of the bed.

46. In a printing press comprising among its elements a bed and rack; a shaft, two gear wheels supported around the shaft independently thereof, means for rotating the gear wheels in opposite directions including a rotating shaft having a gear wheel rigidly secured thereon engaging with one of said gear wheels, and means for alternately moving each of said gear wheels in and out of the path of the rack.

47. In a printing press comprising among its elements a bed and rack; two gear wheels supported around the shaft independently thereof, means for rotating the gear wheels in opposite directions, two eccentrics supported around the shaft independently thereof and supporting the gear wheels, and means for alternately reversing the positions of the eccentrics and gear wheels.

852,125. HAT-FASTENER. HANNAH V. LEVISON, New York, N. Y. Filed June 1, 1906. Serial No. 319,688.

Claim.—A hat-fastener comprising a pointed shank having an elongated loop formed thereon at its butt end, said shank being straight and of single thickness for a considerable distance from its pointed end, and an undulating shank having at its butt end a reverse bend connected to the side-portion of said loop intermediately of the length of the latter.

852,126. MANUFACTURE OF ARTIFICIAL THREAD FROM SOLUTIONS OF CELLULOSE. RUDOLF LINKMEYER, Herford, Germany. Filed Mar. 29, 1905. Serial No. 252,633.

Claim.—1. A process for the preparation of cupro-ammoniacal solutions of cellulose for the purpose of manufacturing artificial threads, consisting in withdrawing from these solutions a portion of their ammonia before converting them into threads.

2. A process for the preparation of cupro-ammoniacal solutions of cellulose for the purpose of manufacturing artificial threads, consisting in extracting from these solutions the ammonia contained therein in an uncombined state.

3. A process for the extraction of ammonia from a cupro-ammoniacal solution of cellulose, consisting in creating a vacuum above the solution and extracting the ammonia by suction.

4. A process for the extraction of ammonia from a cupro-ammoniacal solution of cellulose, consisting in creating a vacuum above the solution, stirring or mixing this latter and extracting the ammonia by suction.

852,127. BOTTLE-WASHING MACHINE. CHARLES H. LOEW, Lakewood, Ohio. Filed Jan. 11, 1906. Serial No. 295,543.

Claim.—1. In a machine of the class described, the combination with a brushing mechanism, and a main bottle-conveyer adapted to discharge the bottles toward the brushing mechanism, of an endless traveling second conveyer arranged to receive the bottles from the main conveyer and to carry the same past the brushing mechanism, and means for controlling the discharge of the bottles from the main conveyer and guiding the same to the second mentioned conveyer comprising a guard having a bottle receiving space between the first and second conveyers.

2. In a machine of the class described, the combination with a pair of brushes, and a main bottle-conveyer adapted to discharge the bottles toward the brushes, of a guard having a bottle receiving space alined with the space between the brushes and adapted to guide the bottles thereto, and an endless traveling conveyer provided with bottle holders and arranged to have one of the runs travel beneath said space and between the brushes.

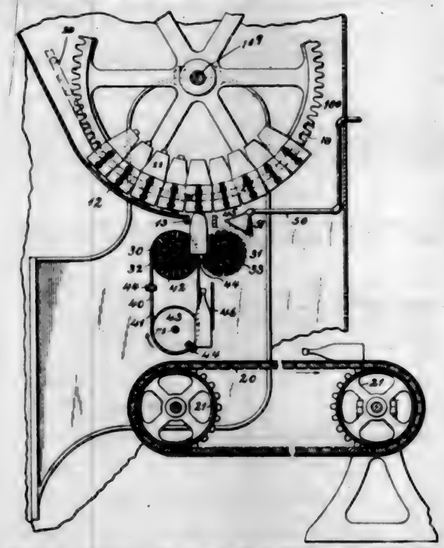

3. In a machine of the class described, the combination with a brushing mechanism, and a main bottle conveyer adapted to discharge the bottles toward the brushing mechanism, of an endless traveling second conveyer arranged to receive the bottles from the main conveyer and to carry the same past the brushing mechanism, and a guard arranged outside the plane of the second conveyer and adapted to prevent the premature discharge of the bottles therefrom.

4. In a machine of the class described, the combination with a brushing mechanism, and a main bottle conveyer adapted to discharge the bottles toward the brushing mechanism, of an endless traveling second conveyer arranged to receive the bottles from the main conveyer and to carry the same past the brushing mechanism, a third conveyer aranged to receive the bottles from said second conveyer, and a guard arranged outside the plane of the second conveyer and adapted to prevent the premature discharge of the bottles from the second conveyer to the third conveyer.

5. In a machine of the class described, the combination with a pair of brushes, and a main bottle conveyer adapted to discharge the bottles toward the brushes, of an endless-traveling second conveyer provided with bottle holders and arranged to receive the bottles from the main conveyer and having one of its runs in the space between the brushes, and guard means arranged outside the plane of the second conveyer and adapted to guide the bottles thereto and prevent their premature discharge therefrom.

6. In a machine of the class described, the combination with a pair of brushes, and a main bottle conveyer adapted to discharge the bottles toward the brushes, of an endless-traveling second conveyer provided with bottle holders and arranged to receive the bottles from the main conveyer and having one of its runs in the space between the brushes, guard means arranged outside the plane of the second conveyer and adapted to guide the bottles thereto and prevent their premature discharge therefrom, and a third conveyer arranged to receive the bottles from the second conveyer.

7. In a machine of the class described, the combination with a main conveyer having bottle pockets which open downward at the place of discharge therefrom, and a brushing mechanism arranged beneath said place of discharge, of an endless traveling second bottle conveyer which travels close to said place of discharge and past the brushing mechanism, means between the main conveyer and brushes for guiding the bottles from the former to the second conveyer, a third conveyer adapted to receive the bottles from the second conveyer and a guard arranged between the brushing mechanism and third conveyer and adapted to prevent the premature discharge of the bottles from the second conveyer.

8. In a machine of the class described, the combination with a main conveyer having bottle pockets which open downward at the place of discharge therefrom, and a pair of brushes arranged beneath said place of discharge, of an endless traveling second bottle conveyer which travels close to said place of discharge and with one of its runs between the pair of brushes, means between the main conveyer and brushes for guiding the bottles from the former to the second conveyer, a third conveyer adapted to receive the bottles from the second conveyer and a guard arranged between the brushing mechanism and third conveyer and adapted to prevent the premature discharge of the bottles from the second conveyer.

852,128. HAT-PIN. MORRIS LOWY, New York, N. Y. Filed Nov. 28, 1906. Serial No. 345,507.

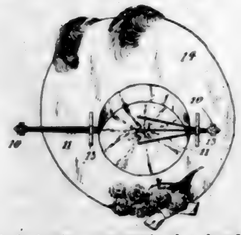

Claim.—1. A hat pin composed of a head, a series of resilient needles and a diverging straight prong secured to the head, and a keeper engaged by the needles, substantially as specified.

2. A hat pin composed of a head, a series of resilient needles and a diverging straight prong secured to the head, a keeper having a pair of perforated parallel flanges engaged by the needles, and a pin removably securing the keeper to the hat, substantially as specified.

852,129. METHOD OF FORMING APERTURES IN GLASS. GEORGE A. MACBETH, Pittsburg, Pa. Filed Feb. 11, 1907. Serial No. 356,728.

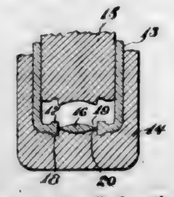

Claim.—1. The herein described method of making holes through glass which consists in pressing a depression in the hot plastic glass wall to be penetrated, and subsequently drilling out the remaining material from the side opposite the depression.

2. The herein described method of making holes through glass which consists in pressing opposing depressions in the hot plastic glass wall and subsequently drilling out the material between said depressions.

3. The herein described method of making holes through glass which consists in pressing opposing depressions with outer rounded edges in the hot plastic glass wall and sub-

sequently drilling out the material between said depressions.

852,130. PROCESS OF MAKING RUBBER ARTICLES. FRANK A. MAGOWAN, New York, N. Y. Filed Apr. 20, 1906. Serial No. 312,834.

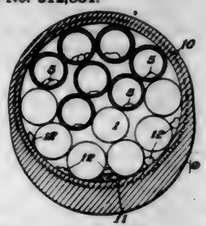

Claim.—1. The process of making a rubber vehicle tire, consisting in placing hollow bodies of yielding material, each containing a gas producing agent, into an unvulcanized rubber tire or cover, and then subjecting the whole to heat, so as to vulcanize said cover and expand the gas producing agent in said bodies.

2. The process of making a rubber vehicle tire, consisting in placing hollow bodies of unvulcanized rubber, each containing a gas producing agent, into an unvulcanized rubber tire or cover, and then subjecting the whole to heat, so as to vulcanize the tire and said hollow bodies, and expand the volatile substance in said bodies.

3. The process of making a rubber vehicle tire, consisting in placing hollow expansible bodies of unvulcanized rubber, each containing a gas producing agent, into an unvulcanized rubber tire or cover so that the bodies are loose in the tire, and then subjecting the whole to heat, so as to vulcanize the tire and said hollow bodies, and expand the volatile substances in said bodies, so as to distend the bodies and cause them completely to fill the tire.

4. The process of making a rubber vehicle tire, consisting in placing hollow bodies of yielding material, each containing a gas producing agent, into an unvulcanized rubber tire or cover, and then subjecting the whole to heat, so as to vulcanize said cover, and expand the gas producing agents in said bodies, the gas producing agents being originally introduced in such quantities in said bodies that at the completion of the vulcanizing operation, each body contains gas at a very high pressure so that the tire is highly distended thereby.

5. The process of making a flexible vehicle tire, consisting in placing hollow bodies of unvulcanized rubber, each containing a gas producing agent, into a tire or cover, and then subjecting the same to heat sufficient to vulcanize the bodies and volatilize the gas producing agent.

6. The process of making a flexible vehicle tire, consisting in placing hollow expansible bodies of unvulcanized rubber, each containing a gas producing agent, into a flexible tire or cover, and then subjecting the same to heat so as to vulcanize said hollow bodies, and expand the latter sufficiently to cause them completely to fill the tire, the gas producing agent being originally introduced in such quantities in said bodies that at the completion of the vulcanizing operation, each body contains gas at a very high pressure so that the tire is highly distended thereby.

7. The process of producing a distended rubber body, consisting in inclosing therein small bodies of rubber, each containing a gas producing agent, and then subjecting the same to heat.

8. The process of making a hose-pipe vehicle tire consisting in introducing a mass of hollow balls of uncured rubber, each containing a charge of gas producing agent, then splicing the tire and subjecting the whole to heat so as to cure the tire and the balls, and to cause the gas producing agent to expand.

9. The process of making a flexible tire consisting in making rubber cups of vulcanizable soft rubber, introducing a gas producing agent into the cups, closing the cups to form balls, placing the cups in a vulcanizable tire or cover, and subjecting the whole to heat.

10. The process of making a flexible tire, consisting in forming cups of unvulcanized rubber, placing a gas producing agent in the cups, and cementing the cups together to form balls, partially curing the balls so as to set the joints, filling a tire or cover with the balls, and then subjecting the whole to heat.

11. The process of forming a flexible tire, consisting in introducing into a tire or cover a mass of vulcanizable soft rubber bullets together with a mass of loose or free powdered graphite, each bullet containing a gas producing agent, and then subjecting the whole to heat.

12. The process of making a distended tire, consisting in filling an uncured tire or cover with partly cured rubber bullets, each containing a gas-producing agent, and completing their vulcanization simultaneously with the vulcanization of the tire itself.

852,131. EXCAVATOR. WILLIAM R. MARTIN, Idaho Falls, Idaho. Filed June 19, 1906. Serial No. 322,458.

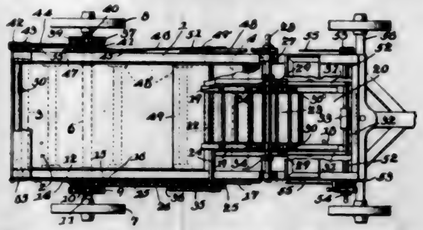

Claim.—1. An excavator comprising a body portion, traction wheels supporting said body portion, a conveyer horizontally located in said body portion, means operatively connecting said conveyer with a traction wheel whereby the said conveyer is moved at intervals, an earth elevating conveyer attached to said body portion, an earth cutting means attached to the last said conveyer, and a means operatively connected with a traction wheel for imparting movement to the earth elevating conveyer.

2. An excavator comprising a body portion, traction wheels supporting the same, a conveyer horizontally located in the body portion, means operatively connecting said conveyer with a traction wheel whereby the conveyer is moved at intervals, a flap pivoted in the body portion above the conveyer, a lever connected to the pivot end of said flap, means operatively connecting said lever with a clutch mechanism associated with the means for transmitting motion to the conveyer, an earth conveyer attached to the body portion, an earth cutting device attached to the last said conveyer, and means connecting said earth elevating conveyer with a traction wheel whereby the last said conveyer is operated.

3. An excavator consisting of a body, a conveyer horizontally located therein, means for operating said conveyer, an earth elevating conveyer disposed at an angle to the longitudinal axis of said body, an earth cutting device carried by the earth elevating conveyer, means for regulating the depth of cut of said cutting device consisting of arms attached to the earth elevating conveyer, a shaft connecting the end of said arms, and a roller located upon said shaft above the earth cutting device and adapted to run upon the surface of the earth.

4. An excavator comprising a load carrying receptacle having an endless conveyer bottom, a flap pivoted in said receptacle and operable by the load accumulating in the receptacle for intermittently actuating said endless conveyer and means attaching the pivot of the flap and connecting with the endless conveyer actuating means.

852,132. DRAWING INSTRUMENT. HANS MEYTLER, Aarau, Switzerland. Filed June 28, 1906. Serial No. 323,948.

Claim.—In a drawing instrument of the character described, the combination with the tube B, of a ruling pen D mounted on said tube, the rear portion of said pen being provided with a scale and with an exterior screw-thread d^2 and the forward end of said pen being provided with spring jaws, each of which latter has a wedge shaped portion d intermediate the screw-thread and the forward end of said jaws, and a sleeve E interiorly threaded and screwing upon the screw-thread of the pen D and playing over the scale thereon, the forward end of the sleeve E being adapted to bear upon the tapered portion of the jaws for the purpose set forth.

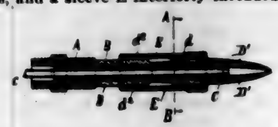

852,133. ELECTROTHERAPEUTICAL INSTRUMENT. JAMES W. MOLIÈRE, Oakland, Cal. Filed July 18, 1906. Serial No. 326,661.

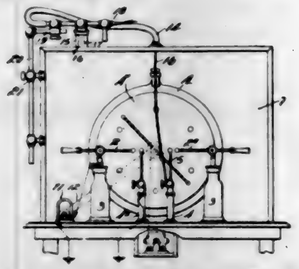

Claim.—1. An apparatus for the generation of electrical currents and the production of ozone, said apparatus including stationary and revoluble plates, electrical brushes and collectors, and an inclosing case therefor, a disk revoluble in unison with the generating disk and carrying radially disposed buckets, a hood having connection with the air outside of the case and open connection between the interior of the hood and the central portion of the buckets.

2. An apparatus for the generation of electrical currents and the production of ozone, said apparatus including an electrical machine inclosed in an air-tight insulated casing, an air-forcing device consisting of a disk revoluble in close proximity to the stationary plate of the electrical machine, said disk having substantially radial arms carried on its inner face and discharging outwardly, a hood having open communication with the outer air and with the central portion of the disk, a discharge passage and conductor connecting with the upper part of the case, and an inhaling tube connected therewith.

3. An apparatus for the production of electricity and ozone, said apparatus consisting of an electrical machine and a magnetic generator inclosed in an air-tight insulated casing, means by which power is transmitted to revolve the electrical plates and the magnetic generator simultaneously, a revoluble disk carrying radially disposed buckets, and located in close proximity with the stationary plate of the electrical machine, connections between the central portion of the disk and the outer air whereby centrifugal action will deliver air into the machine to be acted upon by the electrical discharges, a flexible pipe connecting the upper part of the casing with a liquid-containing jar, an electrical conductor extending from the discharge post of the machine through the tube, and having a terminal within the liquid in the jar, a continuation of the pipe and a mouth-piece therefor, a second wire having a terminal within the jar and extending into the mouth-piece.

4. In an electrical and ozone producing apparatus, an electrical machine and magnetic generator inclosed in an air-tight insulated casing and connected to be revolved in unison, an air-forcing mechanism connected with and revoluble with the electrical plates, a discharge pipe and an electrical conductor extending there-through, a liquid containing jar in which the conductor is submerged, a second wire submerged within the jar, and a continuation of the pipe having a mouth-piece within which the second wire terminates, means for supporting and changing the position of the mouth-piece and charge, said means comprising a bracket, and a turnable and slidable rod adjustable on the containing case.

852,134. TOOL-HOLDER. ARTHUR MUNCH, St. Paul, Minn. Filed Nov. 10, 1905. Serial No. 286,704.

Claim.—A tool holder comprising in combination a shank formed with a transverse tool receiving opening in one end, and with a longitudinally extending groove in one side, a yoke fitted over the end of said shank, and a set screw extending through said yoke and bearing against the adjacent portion of the shank.

852,135. TRAWL-NET. RICHARD R. OBEE, New York, N. Y. Filed May 3, 1906. Serial No. 315,062.

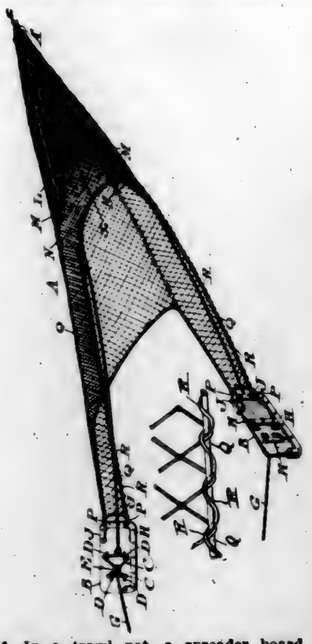

Claim.—1. In a trawl net, a spreader board at the mouth thereof, a pair of oppositely disposed brackets pivotally mounted on said board with their apices adapted to overlap, an eye at the apex of one of said brackets, means on said board for the attachment of a net, and a shackle engaging said eye and the apex of the other bracket.

2. In a trawl net, the combination with a spreader board, of a shoe extending along the bottom, along the rear end and the top of the spreader board, couplings secured to the rear end portion of said shoe, angular brackets oppositely disposed and pivotally mounted on said spreader board, and stiffening plates upon the opposite side of said board in proximity to the securing means of said brackets.

3. In a trawl net, a suspended yielding flap within and

inclosed by the net and disposed across the throat of the latter.

4. In a trawl net, pockets, and a flap suspended between said pockets within the net and adapted to obstruct the central throat between the pockets.

5. In a trawl net, pockets closed at the front and inner sides by the walls of the net, and a flap suspended between said pockets within the net and adapted to obstruct the central throat between the pockets.

6. In a trawl net, pockets closed at the front and inner sides by the walls of the net, and a swinging, yielding flap suspended between said pockets within the net and adapted to obstruct the central throat between the pockets.

7. In a trawl net, a shaping and weighting member thereof, consisting of a piece of material such as wire and rope wound on said piece the mesh of the net being on said piece between the convolutions of said rope.

852,136. PROCESS FOR PRODUCING PICTURE COPIES BY MEANS OF TRANSFER PHOTOGRAPHIC FILMS. CARL PIETENER, Vienna, Austria-Hungary. Filed Nov. 12, 1906. Serial No. 342,966.

Claim.—1. The process of preparing picture copies which consists in reproducing the outline of a transfer photographic film onto a suitable background, filling in the outline thus produced in imitation of the original object, detachably applying the film to a suitable support, placing the support, with the film attached, on the back-ground and causing the film to adhere to the back-ground, and then removing the support, substantially as described.

2. The process of preparing picture copies which consists in reproducing the outline of a transfer photographic film onto a suitable background, filling in the outline thus produced in imitation of the original object, detachably applying the film to a suitable support, applying a film-softening adhesive to the background, placing the support, with the film attached, on the background and with the film in contact with the background, and then removing the support, substantially as described.

852,137. MACHINE FOR STUFFING HORSE-COLLARS. LEONARD J. POWERS, Waterloo, Iowa, assignor to The Powers Manufacturing Company, Waterloo, Iowa. Filed Aug. 30, 1906. Serial No. 332,710.

Claim.—1. In a machine for stuffing collars, the combination with a hopper having swinging sides, of means for distributing the material in the hopper, a tube connected with the hopper, and a toothed rod reciprocating through the hopper and tube.

2. In a machine for stuffing collars, the combination with a hopper having linked swinging sides, of a distributing drum rotatably mounted in said hopper, a tube in communication with said hopper and a toothed rod reciprocating through said hopper and tube.

3. In a machine for stuffing collars, the combination with a slotted hopper having inwardly movable sides, of a packing rod adapted to reciprocate through the slot in said hopper to press down the material therein, means for distributing said material in said hopper, a tube in communication with said hopper, and means for conveying said distributed material through said tube.

4. In a machine for stuffing collars, the combination with a slotted hopper having inwardly movable sides arranged to synchronously move together in the same direction, of a drum rotatably mounted in said hopper, distributing pins on said drum, a tube in communication with said hopper and means for conveying the distributed material through said tube.

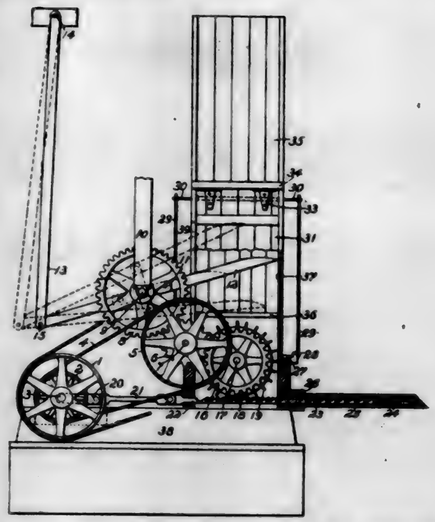

5. In a machine for stuffing collars, the combination with a hopper having inwardly movable sides, of a drum rotatably mounted therein, circumferential rows of distributing pins on said drum spaced apart, a tube, a toothed rod reciprocating through said hopper and tube whose teeth are arranged to move between the rows of pins on said drum to gather the material carried thereon.

6. In a machine for stuffing collars, the combination with a hopper having inwardly movable sides, of a drum rotatably mounted therein, circumferential rows of distributing pins on said drum spaced apart, means for packing the material down upon said drum, a tube, and a toothed rod reciprocating through said hopper and tube whose teeth are arranged to move between the rows of pins on said drum to gather the material carried thereon.

852,138. PIPE-LIFTER. LOUIS REIDEL, Tampico, Ill. Filed May 25, 1906. Serial No. 318,717.

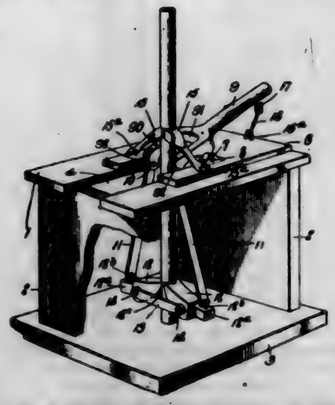

Claim.—1. A pipe rod gripping means, comprising a slotted support, a pair of oppositely disposed bearings located at the inner end of the slot, an actuating lever fulcrumed on the said bearings, said lever having a bifurcated end projected into the slot in the support, a flexible hanger pivotally hung from each member of the bifurcated end of the lever, a pair of oppositely disposed drop dogs or pawls pivotally mounted on the slotted support, and having gripping faces for engaging the pipe or rod, a gripping jaw loosely connected to the lower end of each of the flexible hanger members, said jaws having their cam faces oppositely disposed, and a pair of link members that pivotally connect with said jaws as set forth.

2. The combination with the slotted support, a jack lever having a bifurcated head fulcrumed on the said support and a pair of gravity dropped gripper dogs pivotally mounted on the support and projected above it, the said dogs being located in advance of the bifurcated head of the lever and disposed transversely thereof; of a pair of transversely disposed link members located below and in a vertical plane of the gravity dropped dogs, of a pair of opposing pipe clutch members eccentrically fulcrumed in the opposite ends of said link members, and flexible metallic hangers loosely connected at the lower ends of the clutch members and pivotally connected at the upper ends with the bifurcated ends of the jack lever.

3. The combination with a slotted support; a pair of oppositely and transversely disposed drop dogs or pawls pivotally mounted on the support, and having opposing gripping faces, a jack lever disposed at right angles to the drop dogs and fulcrumed on the support, in advance of the drop dogs or pawls, said lever having a bifurcated head, that extends into the slot of the support, hangers pivotally suspended in the outer bifurcated ends of the lever head, a pipe clutching claw loosely hung on each hanger and held to oppose each other, a pair of parallel link members, bolts connecting the outer ends of said hanger members with the pipe clutches, said bolts forming the fulcrums for the clutch claws, the said pipe clutches having their front or gripping face eccentric to their fulcrums.

852,139. LOOSE-LEAF BINDER. PAUL REVERE, New York, N. Y., assignor to Asa L. Shipman's Sons, New York, N. Y., a Firm. Filed Nov. 16, 1906. Serial No. 343,675.

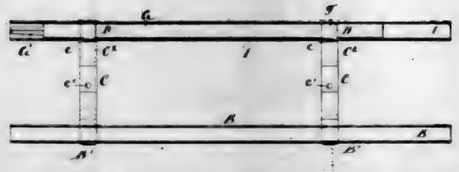

Claim.—1. In a loose leaf binder, a bottom bar, screw-threaded sockets therein, a top bar, tubular thimbles therein, locking means in said top bar constructed to compress said thimbles, and posts composed of interchangeable sections constructed to be screwed into said sockets and each other, and a top section for each post having a shoulder, and an extension matching to and received in one of said thimbles and terminating within said thimbles.

2. In a loose leaf binder, a bottom bar of U-section, screw-threaded sockets extending through said bottom bar and riveted in the lower plate thereof, a top bar of U-section, tubular thimbles extending loosely through said top bar and held therein by flanges on said thimbles, a locking-rod rotatably mounted in the fold of said top bar and constructed to compress said thimbles, posts composed of interchangeable cylindrical sections screwed axially into said sockets and each other, and a top section for each post, a shoulder on said top section, and a solid cylindrical extension thereon matching to and received in one of said thimbles.

3. A loose-leaf binder, comprising a bottom-bar, screw-threaded sockets therein, a top-bar, compressible tubular thimbles therein, locking means within the top-bar to compress said thimbles, posts comprising sections screwed into said sockets and each other, and a top-section for each post having a portion received in one of said thimbles, said top-section having means to limit its entrance into its thimble to prevent the upper end of said top-section at all times from protruding therethrough.

852,140. LOCKING DEVICE FOR BEER-COOLERS. MORGAN D. SADTLER, Baltimore, Md., assignor of one-half to Henry A. Brehm and one-fourth to Jesse B. Forrester. Filed July 24, 1906. Serial No. 327,567.

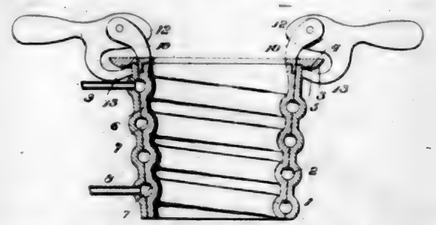

Claim.—1. A combination of two cones, one meshing within the other, the exterior cone having upon its interior surface a spiral groove, the interior cone having upon its exterior surface a spiral groove, which surfaces register to form a spiral channel extending from the top to the bottom of the cone; a locking and unlocking device for the cones mounted upon one of them and adapted to bear upon the other to press them apart when unlocked and press them together when locked.

2. A combination of two cones, one meshing within the other, the exterior cone having upon its interior surface a spiral groove, the interior cone having upon its exterior surface a spiral groove, which surfaces register to form a spiral channel extending from the top to the bottom of the cone; and a locking and unlocking device mounted upon one of the cones consisting of a cam and a hook made integral, the cam adapted to operate to force the members apart and the hook adapted to operate to force them and bind them together.

3. A combination of two cones, one meshing within the other, the exterior cone having upon its interior surface a spiral groove, the interior cone having upon its exterior surface a spiral groove, which surfaces register to form a spiral channel extending from the top to the bottom of the cone; and a locking and unlocking device mounted upon the interior cone and consisting of a lever provided with a cam surface and a hook, the cam surface adapted to bear upon the exterior cone to separate the cones and the hook adapted to bear upon the exterior cone to lock them together.

4. A combination of two cones, one meshing within the other, the exterior cone having upon its interior surface a spiral groove, the interior cone having upon its exterior surface a spiral groove, which surfaces register to form a spiral channel extending from the top to the bottom of the cone; and a locking and unlocking device consisting of a lever mounted upon the interior cone and having a cam surface to bear upon the exterior cone to unlock their contact and a hook also adapted to bear upon a cam surface on the exterior cone to lock them.

852,141. SCAFFOLDING. ROBERT M. SEBREE, Kansas City, Kans. Filed Mar. 12, 1907. Serial No. 362,026.

Claim.—1. A scaffolding comprising hanger beams, carriages movable on said beams, a scaffold plate supported by the carriages, and a seat frame connected to the scaffold plate.

2. A scaffolding comprising hanger beams, carriages movable on said beams, a scaffold plate supported by the carriages, and a seat frame movable longitudinally of the scaffold plate.

3. A scaffolding comprising hanger beams, carriages movable on said beams, a scaffold plate movably connected to the carriages, and a seat frame movable longitudinally of the plate.

4. A scaffolding comprising hanger beams, each formed with a series of teeth, a carriage movable on each beam and comprising a slide encircling the beam and an arm pivotally connected to the slide, a pawl carried by the slide and arranged to engage the teeth, and a scaffold plate arranged for removable engagement with the arms of the carriages.

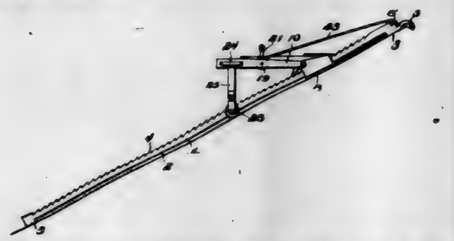

5. A scaffolding comprising hanger beams, each formed with a series of teeth, a carriage movable on each beam and comprising a slide encircling the beams and an arm pivotally connected to the slide, a pawl carried by the slide and arranged to engage the teeth, a scaffold plate arranged for removable engagement with the arms of the carriages, and means for independently supporting the scaffold plate.

6. A scaffolding comprising hanger beams, each formed with a series of teeth, a carriage movable on each beam and comprising a slide encircling the beams and an arm pivotally connected to the slide, a pawl carried by the slide and arranged to engage the teeth, a scaffold plate arranged for removable engagement with the arms of the carriages, and a seat frame supported by and movable longitudinally of the scaffold plate.

7. A scaffolding comprising hanger beams, each formed with a series of teeth, a carriage movable on each beam and comprising a slide encircling the beam and an arm pivotally connected to the slide, means for adjusting the carriage longitudinally of the beam, means for locking the carriage in adjusted position with relation to the beam, said means being supported on the slide and cooperating with the teeth on the beam, and a scaffold plate supported in openings formed in the arms.

8. A scaffolding comprising hanger beams, carriages movable on said beams, a scaffold plate supported by the carriages, a seat frame movably connected to the scaffold plate, a seat normally supported in parallel relation to the plane of said frame, and means for supporting the seat at approximately right angles to the frame.

9. A scaffolding comprising hanger beams, carriages movable on said beams, a scaffold plate supported by the carriages, a seat frame movably connected to the scaffold plate, a seat normally supported in parallel relation to the plane of said frame, means for supporting the seat at approximately right angles to the frame, and means to engage the seat and prevent its rotation when in the latter position.

852,142. EXPLOSIVE. FIN SPARRE, Wilmington, Del., assignor to The E. I. du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed Sept. 11, 1906. Serial No. 334,082.

Claim.—1. An explosive containing tetranitrodiglycerin, an inorganic oxidising agent and a porous substance substantially as described.

2. An explosive containing tetranitrodiglycerin, trinitroglycerin and a porous substance in which the same are absorbed substantially as described.

3. An explosive containing tetranitrodiglycerin, trinitroglycerin, an inorganic oxidising agent and a porous carbonaceous substance substantially as described.

4. An explosive containing trinitroglycerin, tetranitrodiglycerin, nitrate of soda and wood pulp substantially as described.

5. An explosive substance containing of tetranitrodiglycerin 5 to 30 per cent., of trinitroglycerin 10 to 45 per cent., of an inorganic oxidising agent 15 to 75 per cent. and of a porous carbonaceous substance 5 to 25 per cent., substantially as described.

852,143. EXPLOSIVE. FIN SPARRE, Wilmington, Del., assignor to The E. I. du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed Sept. 11, 1906. Serial No. 334,083.

Claim.—1. An explosive containing nitrocellulose and tetranitrodiglycerin substantially as described.

2. An explosive containing nitrocellulose, nitroglycerin and tetranitrodiglycerin substantially as described.

3. An explosive containing nitrocellulose, nitroglycerin, trinitrotoluol and tetranitrodiglycerin substantially as described.

4. An explosive containing nitrocellulose, trinitrotoluol and tetranitrodiglycerin substantially as described.

5. An explosive containing nitrocellulose, nitroglycerin, trinitrotoluol, tetranitrodiglycerin and vaseline substantially as described.

6. An explosive containing nitrocellulose and less than 60% of tetranitrodiglycerin substantially as described.

852,144. ROTARY MOTOR. JOHN W. STAM, Chinook, Mont. Filed Jan. 12, 1907. Serial No. 351,993.

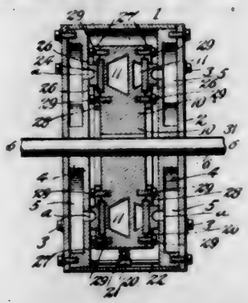

Claim.—1. In a rotary motor, a casing, steam chests disposed at opposite sides of said casing, an inlet ring secured to said steam chests and provided with an opening communicating therewith, and a rotary element having oppositely inclined steam pockets upon opposite faces thereof, abutments at the terminal ends of said pockets, exhaust valves communicating with said pockets, cams on said valves, and means for opening said valves at intervals to exhaust, substantially as described.

2. In a rotary motor, oppositely disposed steam chests, a rotary element having inclined pockets in opposite sides thereof, plain surfaces intermediate said pocket, said surfaces operating as valves to cut off the inlet steam, rings disposed between the rotary element and the steam chests and provided with diagonal openings which communicate with said steam chests and with said pockets, substantially as described.

3. In a rotary engine, a casing, oppositely disposed steam chests within said casing, a rotary element provided with oppositely inclined curved pockets provided with inclined end abutments, inlet rings disposed between the rotary element and the steam chests, and automatically operated exhaust valves.

4. In a rotary engine, a casing, oppositely disposed steam chests therein, a rotary element mounted upon a shaft and disposed intermediate said steam chests, oppositely inclined dovetailed pockets in said rotary element, inclined abutments at the ends of said pockets, means for admitting steam to said pockets intermittently, and means for exhausting the steam from said pockets intermittently and automatically.

5. In a rotary motor, a rotary element provided with curved oppositely inclined dovetailed pockets, inclined abutments at the terminal ends of said pockets, and plain cut-off portions between said pockets, substantially as described.

6. In a rotary motor, a casing, oppositely disposed steam chests within said casing, said steam chests comprising a plurality of chambers with intercommunicating passages, a rotary element disposed between said steam chests, and inclined dovetailed pockets in said rotary element.

7. In a rotary motor, a casing, steam chests therein, a rotary element in said casing, said rotary element having curved dovetailed pockets therein, rings interposed between said rotary element and said steam chests, said rings having diagonally disposed inlets which communicate with the steam chests and with said pockets.

8. A rotary motor comprising a casing, steam chests in said casing, a rotary element mounted between said steam chests and provided with inclined curved pockets, an inlet ring interposed between said rotary element and said steam chests, said ring having inclined openings which establish communication between the steam chests and the pockets, and said inlet ring being mounted in a guideway formed by two retainer rings secured to the rotary element.

852,145. VALVE-JACK. ERNEST STEVENS, Chicago, Ill. Filed Mar. 4, 1907. Serial No. 360,403.

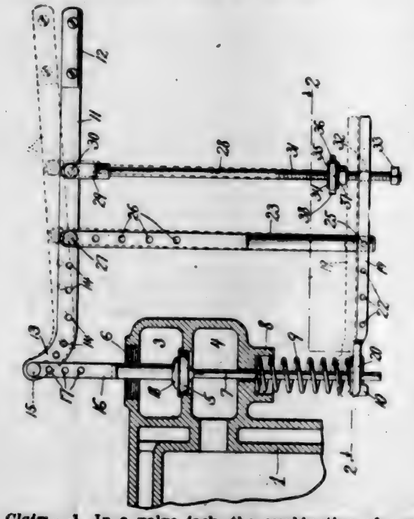

Claim.—1. In a valve jack, the combination of a stem to rest upon the top of the valve, with a plate to engage the valve seating spring, a lever arm pivoted to the stem, and a connecting bar between the lever arm and the plate.

2. In a valve jack, the combination of a stem to rest upon the top of the valve, with a plate to engage the valve seating spring, a lever arm pivoted to the stem, a connecting bar between the lever arm and the plate, and a connecting rod with a lock nut whereby the lever arm and plate are locked in rigid relation.

3. In a valve jack, the combination of a stem to rest upon the top of the valve, with a bifurcated plate to receive the valve stem and engage the lower end of the valve seating spring, a lever arm pivoted to the stem, and a connecting bar between the lever arm and plate.

4. In a valve jack, the combination of a stem to rest upon the top of the valve, with a plate to engage the valve seating spring, a lever arm pivoted to the stem, a connecting bar between the lever arm and the plate, and a connecting rod with a lock nut whereby the lever arm and plate are locked in rigid relation, said rod being screw threaded, and said nut composed of two parts pivoted and held together by a spring.

5. In a valve jack, the combination of a lever arm and a plate approximately parallel to each other, with a stem pivoted to the lever arm and adapted to engage a fixed part, the plate adapted to engage the lower end of the valve seating spring, and a bar connecting the lever arm and plate.

852,146. VEHICLE-TOP. OSCAR SUTTON, Goldsboro, N. C. Filed June 28, 1906. Serial No. 323,829.

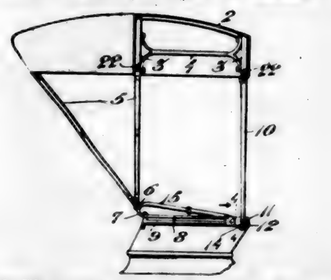

Claim.—1. The combination with a pivotally mounted vehicle top, of a slidably mounted block, and a lever pivotally secured to the top and the block, the movement of said block lowering and raising the top.

2. The combination with a pivotally mounted vehicle top, of a slidably mounted block, a lever pivotally connected to the top and block, and means by which said block may be moved to lower and raise the top.

3. The combination with a pivotally mounted vehicle top, of a slidably mounted block, a lever pivotally connected to the top and block, and a lever by which the block may be moved to lower and raise the top.

4. The combination with a pivotally mounted vehicle top, of a slidably mounted block, a lever pivotally connected to the top and the block, a lever connected to the block, and another lever connected to a stationary pivot, said levers being hingedly connected together.

5. The combination with a pivotally mounted vehicle top, of a rail, a block slidably mounted on said rail, and a lever connected to the top and the block, the movement of the block lowering or raising the vehicle top.

6. The combination with a pivotally mounted vehicle top, of a rail, a block slidably mounted upon said rail, a lever pivotally connected to the top and the block, a lever pivotally connected to the rail, and a lever pivotally connected to the block, said last named levers being hingedly connected together.

7. The combination with a pivotally mounted vehicle top, of a pair of rails, said rails being secured in parallel and spaced relation to each other, a block slidably mounted between the rails, and a lever connected to the top and the block, the movement of the block lowering or raising the vehicle top.

8. The combination with a pivotally mounted vehicle top, of a slidably mounted block, a lever connected to the top and the block, the movement of the block lowering or raising the vehicle top, a rod carried by the top, another rod carried independently of the top, and a side curtain carried by said rods.

852,147. WINDOW-SCREEN. ARTHUR G. TIDD and SAMUEL COOK, Northampton, Mass. Filed Nov. 9, 1906. Serial No. 342,710.

Claim.—1. The combination with vertically grooved guiding parts provided at opposite sides of a window cas-

ing, of a screen frame having recesses within its opposite vertical edges, sheet metal springs located in said recesses each having a portion thereof connected to the screen frame, and a yielding and outwardly reacting portion having a boss, formed by an indentation in the spring, for acquiring a detachable snap-catch engagement in the groove of one of said guiding parts of the window casing.

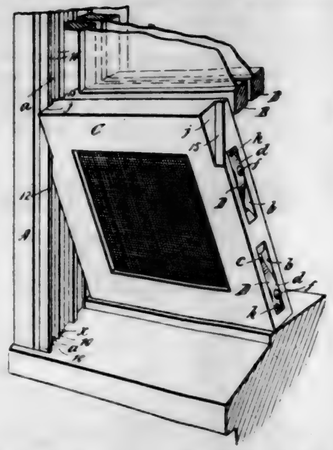

2. The combination with frame guiding parts provided at opposite sides of the window casing, each consisting of a flat strip of thin metal having separated vertical parallel ribs formed by outward displacement of the metal from which said strip is constituted along separated longitudinal lines thereof, producing a continuous intermediate track-like groove, of a frame having in the opposite vertical edges thereof sheet metal springs having bosses for acquiring detachable snap catch engagements in the grooves in said frame guiding parts at the sides of the casing.

3. The combination with frame guiding parts provided at opposite sides of the window casing, each consisting of a sheet strip of thin metal having separated vertical parallel ribs formed by outward displacement of the metal from which said strip is constituted along separated longitudinal lines thereof, producing a continuous intermediate track-like groove, and each said strip having a vertically continuous portion outside of said groove forming ribs bent at right angles to the plane of contact of the strip on the window casing, of a frame having in the opposite vertical edges thereof sheet metal springs having bosses for acquiring detachable snap catch engagements in the grooves in said frame guiding parts at the sides of the casing.

4. The combination with a frame having in the opposite vertical edges thereof outwardly reacting, and yielding, engagement members, and having at opposite edges, at an end portion thereof rearwardly opening recesses, one boundary of each being constituted by a shoulder oblique to the face of the frame, of frame guiding parts provided at opposite sides of the window casing, each comprising a vertical longitudinally continuous, track groove, in which said members detachably engage, and a vertical member outwardly beyond said groove; arranged parallel with the plane of, and extended partially across, the window casing opening, said vertical members serving as rests for said shoulders in the action of placing the frame in its engagement in the casing.

5. The combination with screen frame guiding parts for provision at opposite sides of a window casing, each consisting of a flat strip of thin metal having separate vertical parallel ribs constituted by longitudinal corrugations of the strip, producing a trackway groove between said ribs, and each strip having a longitudinally continuous right angular member at its outer portion, of a screen frame having recesses within its opposite vertical edges and having at opposite edges at an end portion thereof recesses, a boundary of each being constituted by a shoulder oblique to the face of the frame, sheet metal springs located in said recesses, each having an end portion thereof secured to the screen frame and having an outwardly deflected and yieldingly reacting portion provided with an outwardly projecting boss and having an aperture in its free end portion and a screw for each spring having its shank passed loosely through the said aperture and with the thread engagement into the screen frame, and having its head in limiting relation to the free end portion of the spring.

852,148. WIRE-CONNECTOR. JOSEPH S. TUCKER, Chicago, Ill., assignor of one-third to Samuel N. Pond, Morgan Park, Ill. Filed Feb. 13, 1905. Serial No. 245,551.

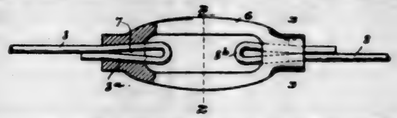

Claim.—1. The combination with a wire having its end portion bent over and doubled back on said wire, of a connection-piece having a tapered unobstructed bore extending therethrough and entirely surrounded by metal, the smaller end of said bore having a maximum diameter not exceeding twice the diameter of said wire, said bore receiving said wire and its bent-over end with the latter extending entirely through said bore, whereby a lateral compressive action is exerted upon said wire and its bent-over end under a pulling strain on said wire, substantially as described.

2. The combination with a pair of wires having the adjacent end portions thereof bent over and doubled back to form wedge-shaped terminals, of a connection-piece having formed in its opposite ends tapered unobstructed bores extending therethrough and entirely surrounded by metal, the outer ends of said bores having a maximum diameter not exceeding twice the diameter of said wire, said bores engaging said wedge-shaped terminals with said bent-over ends extending entirely therethrough, whereby said terminals are wedged tightly into said bores under a pulling strain on one or both of said wires, substantially as described.

852,149. AMUSEMENT APPARATUS. NATHANIEL G. WARTH, Columbus, Ohio. Filed Aug. 4, 1905. Serial No. 272,686.

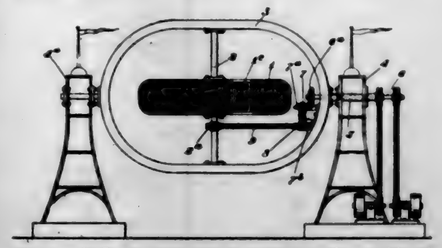

Claim.—1. In an amusement apparatus, the combination of a rotary carriage, a rotary frame in which said rotary carriage is mounted, the axis of rotation of the carriage being fixed angularly with reference to the axis of rotation of the frame, and said carriage constructed to carry passengers and permit them to move with unobstructed freedom substantially from its center to its circumference.

2. In an amusement apparatus, the combination of a rotary carriage adapted to receive passengers and having a seat adapted to sustain a passenger in upright position, and a rotatable frame in which the carriage is supported, the axis of rotation of the carriage being substantially at right angles to the axis of movement of the frame, the line of the axis of rotation of the frame intersecting the rotary carriage.

3. In an amusement apparatus, the combination of a rotary carriage and a rotatable frame in which the carriage is mounted, the axis of rotation of the rotatable frame being substantially at right angles to the axis of rotation of the rotary carriage, the line of the axis of rotation of the frame intersecting the rotary carriage.

4. In an amusement apparatus, a rotary carriage adapted to carry persons as passengers on its interior and having the interior of a side and its rim substantially at right angles to each other and adapted as floors to receive said passengers in standing position combined with means for rotating said carriage at a speed sufficient to enable a passenger to be held by centrifugal action upon the rim floor.

5. In an amusement apparatus, a rotary carriage adapted to carry persons as passengers on its interior and having the interior of a side and the rim substantially at right angles to each other and adapted as floors to sustain said passengers in standing position and a curved foot-way connecting the side and rim floors said curved way blending with both said floors.

6. In an amusement apparatus, a rotary carriage adapted to carry persons as passengers on its interior and having the interior of a side and the rim substantially at right angles to each other and adapted as floors to receive passengers in standing position and a curved foot-way connecting the side and rim floors, said side floor being flat and said curved connecting floor blending with both said side and rim floors.

7. In an amusement apparatus, a rotary carriage adapted to carry persons as passengers on its interior and having the interior of a side and the rim adapted as floors to receive passengers in standing position and a hand-hold for the passenger while standing on the rim floor.

8. In an amusement apparatus, the combination with a rotary carriage and a rotatable frame in which the carriage is mounted, the axis of rotation of the frame being at an angle to the axis of rotation of the carriage, of a universally movable seat mounted in said carriage.

9. In an amusement apparatus, the combination with a rotary carriage and a rotatable frame in which the carriage is mounted, the axis of rotation of the frame being at an angle to the axis of rotation of the carriage, of a universally movable seat structure mounted in said carriage, said seat structure being weighted to hold it normally in upright position.

10. In an amusement apparatus, the combination of a rotary carriage adapted to carry passengers, a movable frame supporting said carriage, the axis of rotation of the carriage being at an angle to the axis of rotation of the frame means for operating said carriage and means for operating the frame independently of the carriage.

11. In an amusement apparatus, the combination of a rotary carriage adapted to carry persons as passengers on its interior and having a side and its rim adapted as floors to sustain such passengers, a curved connecting floor between and blending with said side and rim floors and a guard or inclosure opposite the side floor to prevent accident to a passenger or his egress from the carriage in that direction.

12. In an amusement apparatus, the combination of a rotary carriage having a substantially flat side floor extending outward from the axis of rotation of the carriage and adapted to sustain passengers, and a circumambient rim floor standing substantially at right angles to said first-named floor and also adapted to sustain passengers and a curved or inclined foot-way intermediate the aforesaid floors.

13. In an amusement apparatus, the combination of a horizontally rotatable carriage or support for passengers, a track in said carriage, a seat adapted to be occupied by a passenger mounted on said track carriage or support and adapted to change its inclination with reference to the carriage under the influence of centrifugal action by the rotation of said carriage or support.

14. In an amusement apparatus, the combination of a rotary carrier, a guide rail or track in said carrier, and a seat movably supported on said rail or track to normally rest in a horizontal position thereon, and adapted by rotation of the carrier to move outwardly, and upon reduction or cessation of the motion of the carrier to tend to return to horizontal position.

15. In an amusement apparatus, the combination of a rotary carriage having its axis of rotation at right angles to the plane of the body of the carriage, and a rotatable frame in which the carriage is supported, the axis of movement of the frame being substantially at right angles to the axis of rotation of the carriage, the line of the axis of rotation of the frame intersecting the carriage.

16. In an amusement apparatus, the combination of a carriage adapted to receive a passenger and having a side floor extending outwardly from the axis of rotation of the carriage, and a rim floor, said side and rim floors being approximately at right angles to each other and connected by a blending intermediate floor, combined with means adapted to rotate said carriage with such velocity that the passenger therein will be impelled by centrifugal action toward the rim floor with sufficient force to enable him to be held thereon.

17. An amusement device, comprising a rotatable carrier, means operating in connection therewith whereby passengers are retained in position thereon by centrifugal force and means for turning the axis of rotation thereof from vertical to horizontal.

852,150. PRESSURE-EQUALIZER. FRANK E. WHITNEY, Melrose, Mass. Filed Jan. 11, 1907. Serial No. 351,770.

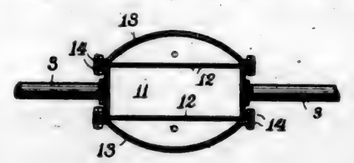

Claim.—1. A pressure equalizer comprising a metal chamber having one side open, a sheet of rubber covering said open side, and means delivering gas to and from said chamber.

2. A pressure equalizer comprising a metal chamber having its upper side open, a sheet of rubber covering said side, and means delivering gas to and from said chamber.

3. A pressure equalizer comprising a cast iron chamber having an open flanged side, a metal guard disposed to be bolted tightly upon said flange, and a sheet rubber diaphragm clamped at its edges between said flange and guard; said guard being provided with a pipe communicating with the atmosphere, and said chamber being adapted to have gas delivered to and from it.

4. A pressure equalizer comprising a cylindrical metal chamber constituting a section of a gas engine supply conduit, sheet rubber diaphragms forming opposite walls of said chamber, guards inclosing said diaphragms, a pipe terminating in communication with the atmosphere, and valved tubular branches joining said pipe to the spaces between said guards and diaphragms.

852,151. CHART FOR GARMENT-PATTERNS. WILLIAM P. AHNELT, New York, N. Y. Filed Sept. 11, 1906. Serial No. 334,090.

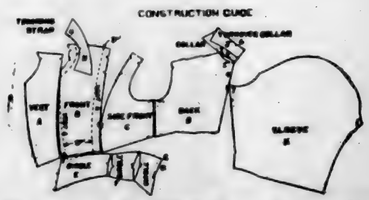

Claim.—A chart for commercial paper patterns for guidance in assembling the component parts of a garment, consisting of a representation, on a reduced scale, of the sev-

eral parts of the paper pattern arranged relatively in the order in which the sections of the garment cut to the paper pattern are to be successively sewed together, each part being designated by the name of the corresponding part of the garment for which the paper pattern is designed bearing also a mark indicating the order of sequence of the garment section which it represents in the assembling of the component parts of such garment, overlying sections of such parts being provided with lines indicating the point of attachment of underlying parts.

852,152. SIGHT FOR FIREARMS. GEORGE E. ALLEN, New Haven, Conn., assignor to Winchester Repeating Arms Co., New Haven, Conn., a Corporation. Filed Jan. 31, 1907. Serial No. 355,042.

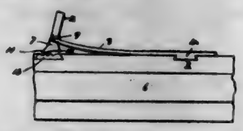

Claim.—1. In a rear sight for guns, the combination with a spring shank adapted at its forward end to be attached to a gun-barrel and formed at its rear end with an up-turned arm, of an elevator dog pivoted in the said arm and having two teeth adapted to be engaged with the gun-barrel so as to support the arm at predetermined elevations above the same.

2. In a rear sight for guns, the combination with a spring shank formed at its rear end with an upturned arm having a centrally arranged slot, of a pivotal elevator dog located in the said slot and formed with two teeth adapted to be engaged with the gun barrel for supporting the arm at different predetermined elevations above the same.

3. In a rear sight, the combination with a shank formed at its rear end with an upturned arm having a central slot, of a pivotal elevator dog located in the said slot and formed with two teeth, and a gun barrel formed with notches for co-action with the teeth of the said dog in supporting the said arm at different predetermined elevations above the barrel which is furnished with one or more graduated scales for the said notches.

852,153. TOY OR ADVERTISING NOVELTY. ARTHUR APPEL, Philadelphia, Pa. Filed Apr. 14, 1906. Serial No. 311,675.

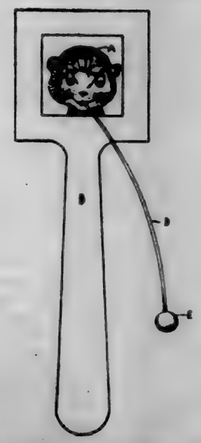

Claim.—In a toy, a hand support, an effigy yieldingly mounted upon and attached thereto, and a projectile resiliently attached to the effigy aforesaid.

852,154. SYRINGE. MARTIN BARIFFI, New York, N. Y. Filed Jan. 16, 1906. Serial No. 296,264.

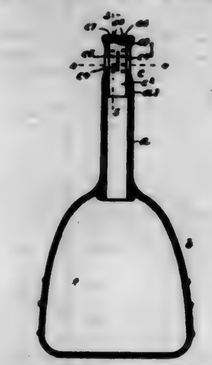

Claim.—1. A discharge nozzle for syringes, said nozzle being oblong and tubular in form and open at one end and reduced in size at said end, the other or discharge end being counter-sunk, and the central body portion thereof being reduced in size longitudinally so as to form enlarged annular portions at the discharge end and adjacent to the open end, the counter-sunk or discharge end and the reduced body portion being both provided with ports or passages, the ports or passages in the body portion being arranged radially to the longitudinal axis and also at an inclination thereto in both directions, and the ports or passages in the counter-sunk or discharge end portion being arranged in line with the longitudinal axis of the nozzle and also at an inclination thereto.

2. A discharge nozzle for syringes, said nozzle being oblong and tubular in form and open at one end and reduced in size at said end, the other or discharge end being counter-sunk, and the central body portion thereof being reduced in size longitudinally so as to form enlarged annular portions at the discharge end and adjacent to the open end, said reduced body portion being also provided with longitudinal slots forming ports or passages, the counter-sunk or discharge end and the reduced body portion being both provided with other ports or passages, the ports or passages in the body portion being arranged radially to the longitudinal axis and also at an inclination thereto in both directions, and the ports or passages in the counter-sunk or discharge end being arranged in line with the longitudinal axis of the nozzle and also at an inclination thereto.

852,155. SELF-CLOSING FAUCET. WILLIAM M. BASHLIN, Warren, Pa. Filed June 1, 1903. Serial No. 159,578.

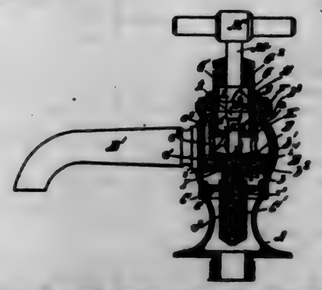

Claim.—1. In a self closing faucet the combination of a valve body having the diaphragm with the movable seat thereon; the follower arranged on said seat and having the cylindrical neck e' thereon; the valve I having the seating portion i and telescoping portion i' arranged to operate with the neck e', the telescoping portion being provided with the ways i^2; and a spring arranged to close the valve I.

2. In a self closing faucet the combination with the valve body of the removable seat D; the follower E thereon, said follower and seat being adapted to be removed from the valve body; means for forcing the follower onto the seat and for closing the opening in the valve body; and a cam valve actuating mechanism carried by the follower.

3. In a self closing faucet the combination of the base A; the valve body B screwed onto the base; the web C secured between the base and valve body; the guide socket C' carried by the web; the valve I having the stem i^2 extending into the socket, said valve I having the closing portion i and cylindrical portion i'; the spring J for acting upon the stem i^2 for closing the valve; the movable seat D; the follower E upon said seat having the neck e' arranged to operate with the cylindrical portion i' of the valve to effect a partial closure of the valve before the closure of the valve upon the seat D; the diaphragm e^3 in the follower, said diaphragm having a valve seat thereon; the stem K having the valve k thereon; the valve k and seat e^3 being so placed relatively as to bring the valve to the seat with the opening of the valve I; the cams L and K'; and means for actuating one of said cams.

4. A faucet having a valve chamber provided internally with an annular flange and with inlet and outlet portions opening into the said chamber at opposite sides of said flange, a peripherally grooved and perforated cage normally stationary but removably associated with the faucet and provided in its bottom with a packing arranged to seat against the upper side of said flange, a packing between the cage and faucet, a valve below the cage provided with a perforated boss to extend into the cage from the bottom thereof, a portion to seat against said first mentioned packing when the valve is closed, and a second closing portion to seat against the under side of the flange when the cage is removed, a spring acting against the valve to seat the same, and a spindle extending through the cage and arranged to apply an opening pressure to the valve.

5. A faucet having a chamber provided internally with an annular flange and with inlet and outlet portions opening into the said chamber at opposite sides of said flange, a cage having a packing in its bottom, arranged to seat against the upper side of said flange, the cage being perforated for the passage of water, a removable sleeve fitted into the upper side of the faucet and removably united with the upper portion of the cage, a packing ring between the sleeve and cage and in engagement with the body of the faucet, a cap nut threaded on to the upper side of the faucet and engaging the said sleeve, and a spindle extending through the sleeve and adapted to engage the valve to open the same.

852,156. MEANS FOR SIGNALING AND STOPPING RAILWAY-VEHICLES. WILLIAM M. BECK, Elwood, Ind., assignor of one-third to Charles T. Parker, Fairmount, Ind. Filed Dec. 14, 1905. Serial No. 291,688.

Claim.—1. The combination with a railway, a locomotive movable thereon, a throttle lever on said locomotive, of a cylinder on a locomotive, a piston therein, a piston-rod with its outer end provided with a longitudinal slot through which said throttle lever extends so that said piston-rod may draw the lever in one direction and leave the lever free to be operated by the engineer when the piston-rod is idle, an exhaust at one end of the cylinder, a pipe entering the cylinder from a supply of fluid under pressure, means for regulating the admission of said fluid to said cylinder, and means in the railway track for causing the operation of said regulating means.

2. The combination with a railway, of means in the railway track for actuating parts of a vehicle passing on the track, a switch with a movable switch-rail recessed on the side next to the main rail, means for throwing said switch-rail, a rod passing loosely through said switch and main rail with a stop-nut thereon registering with the recess in the switch-rail, a bell-crank mounted in the track with one arm pivoted to said rod and a connection between the other arm of said bell-crank and the means in the track for operating the parts of the vehicle.

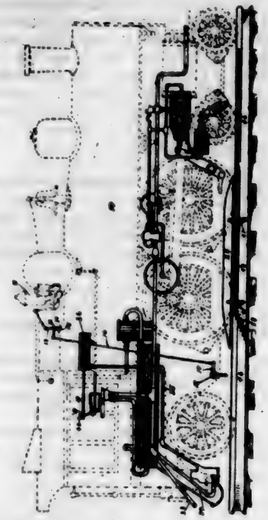

3. The combination with a railway, of a plate extending longitudinally of the railway and adapted when elevated to engage parts of a vehicle traveling on said railway, a pair of crank-rods mounted transversely in the rails with said plate mounted on the cranks thereof, a switch provided with a switch-rail, and means actuated thereby for oscillating said crank-rods.

852,157. SAFETY-VALVE FOR AIR-BRAKES. THOMAS BEHAN, Aliquippa, Pa. Filed Mar. 20, 1906. Serial No. 307,115.

Claim.—1. In a coupling for air brake systems, the combination with two train pipe sections, angle pipe sections

connected to the adjacent ends of the train pipe sections, a plug valve in the passage-way of each angle pipe section, a longitudinal auxiliary passage-way in each angle pipe section, pistons in said auxiliary passage ways having their rods extending outside the angle pipe sections and provided with heads, levers carried by said plug valves and engaged by said head of the piston rods, and sections of hose mounted one within the other connecting said coupling members with the angle pipe sections having the space between the hose in communication with the auxiliary passage way in the angle pipe sections.

2. In a coupling for air brake systems, the combination with two train pipe sections, of angle pipe sections connected to the adjacent end of the train pipe sections, a valve in each angle pipe section, an auxiliary passage way in each angle pipe section, a piston in each auxiliary passage way having one end extending outside the auxiliary passage-way, a U-shaped head on said end, a lever on the valve engaged by said head, coupling members, coupling pipes connecting said coupling members with the angle pipe sections and air tight pipes surrounding the coupling pipes.

3. A train pipe safety device, comprising an angle pipe section, a plug valve therein, an auxiliary passage way in the pipe section, a piston therein having one end extending outside the passage way, a U-shaped head on said outer end engaging said lever and a stop carried by the angle pipe section engaging in a groove in the piston and limiting the travel of said piston in said auxiliary passage way.

852,158. YELLOW SULFIN DYE OF THE QUINOPHTHALONE SERIES AND PROCESS OF MAKING SAME. ALBERT BERTSCHMANN, Basel, Switzerland, assignor to The Firm of Society of Chemical Industry in Basle, Basel, Switzerland. Filed Feb. 20, 1907. Serial No. 358,375.

Claim.—1. The described process for the manufacture of yellow sulfin dyestuffs of the quinophthalone series by condensing thiophthalic acids with quinaldins.

2. As new products, the described yellow sulfin dyestuffs of the quinophthalone series constituting in dry state yellow powders soluble in alkali sulfids or in alkalies in presence of reducing agents with formation of orange yellow alkali salts, soluble in hydrosulfite preparations with yellow coloration and dyeing unmordanted cotton in alkali sulfid baths orange yellow tints becoming by oxidation on the fiber more pure yellow and fast to washing and to light.

852,159. DENTAL-TOOL HANDLE. JOSEPH BODE, Philadelphia, Pa., assignor to James W. Ivory, Philadelphia, Pa. Filed Jan. 18, 1907. Serial No. 352,866.

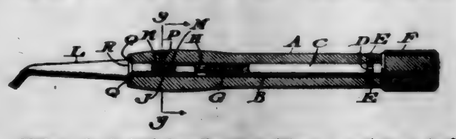

Claim.—1. A tool handle comprising, a casing, a tool holder therein, means for operating said tool holder in opposite directions, and a shoulder on said casing, said shoulder being adapted to be engaged by a shoulder on a tool.

2. A tool handle comprising, a casing, a tool holder therein adapted to have a tool connected therewith, means for operating said tool holder in opposite directions, and means on said casing adapted to interlock the tool therewith.

3. A casing for a tool handle, the same having a bore and provided at the end thereof with a shoulder adapted to engage a shoulder on a tool, the shoulder on the casing having serrations.

4. A tool handle comprising, a casing, a tool holder therein adapted to have a tool connected therewith, means for operating said tool holder in opposite directions, and means on said casing adapted to interlock the tool therewith, said tool holder being adapted to be moved in outward direction, whereby the tool may be removed from its locking engagement with the casing and then disconnected from the tool holder.

852,160. DRY-PAN CRUSHER. JACOB W. BOLTZ, Topeka, Kans. Filed Nov. 28, 1906. Serial No. 345,483.

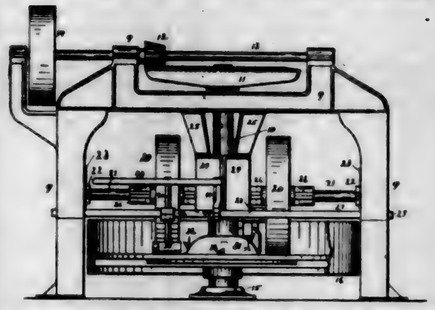

Claim.—1. The combination of a frame, a vertical central shaft, a circular pan secured to the shaft and having an outer grated portion, a wearing-board, and a conical hub, mullers mounted loosely on the wearing-board to crush the clay, and plows to force the clay onto the wearing-board and under the mullers; with projections from the conical hub; and a toothed implement resting on the grated portion and diagonally disposed so as to push the larger lumps toward the wearing-board.

2. The combination with a frame, a vertical central shaft, a circular pan secured to the shaft and having an outer graded portion, a wearing-board, and a conical hub, mullers loosely mounted on the wearing-board to crush the clay, and plows to force the clay onto the wearing-board and under the mullers; of projections on the conical hub between the mullers and the shaft.

3. The combination with a frame, a vertical central shaft, a circular pan secured to the shaft and having an outer grated portion, a wearing-board, and a hub, mullers loosely mounted on the wearing-board to crush the clay, and plows to force the clay onto the wearing-board and under the mullers; of projections on the hub between the mullers and the shaft.

852,161. PNEUMATIC PLAYER FOR MUSICAL INSTRUMENTS. GEORGE P. BRAND, New York, N. Y. Filed Feb. 23, 1905. Serial No. 246,864.

Claim.—1. In pneumatic apparatus of the character designated, chest work formed with an internal tension chamber with an external valve chamber formed directly in one side of said chest work and communicating with said internal tension chamber through a valve port in the intervening partition, and a detachable valve plate for said valve chamber secured directly to the chest work and formed with a valve port opening directly into the said valve chamber on one side of said detachable plate and communicating with the atmosphere on the other side thereof, for the purpose described.

2. In pneumatic apparatus of the character designated, chest work formed with an internal tension chamber, with an external diaphragm chamber formed directly in one side of said chest work and communicating with said internal tension chamber through the intervening partition, and a detachable diaphragm plate for said diaphragm chamber secured directly to the chest work and communicating through a port with a source of intermittent air supply, for the purpose described.

3. In pneumatic apparatus of the character designated, a tension chest with an external valve chamber formed directly in one side thereof, said valve chamber communicating directly with the tension chamber in the chest, a detachable valve plate for said valve chamber, secured directly to the chest, an external diaphragm chamber formed directly in another side of said chest, said diaphragm chamber communicating directly with the tension chamber in said chest, and a detachable diaphragm plate formed with a chamber communicating with the said diaphragm chamber in the side of the chest and secured directly to the latter, for the purpose described.

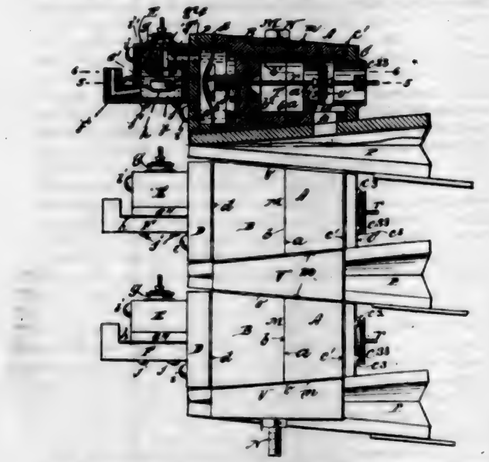

4. In pneumatic apparatus of the character designated, a tension chest with an external valve chamber formed directly in one side thereof, said valve chamber communicating directly with the tension chamber in the chest, a detachable valve plate for said valve chamber, secured directly to the chest, an external diaphragm chamber formed directly in another side of said chest, said diaphragm chamber communicating directly with the tension chamber in said chest, and a detachable diaphragm plate formed with a chamber communicating with the said diaphragm chamber in the side of the chest and secured directly to the latter, a valve rod passing through said tension chamber and into said valve and diaphragm chambers a valve and diaphragm butt on said rod, for the purpose described.

5. In pneumatic apparatus of the character designated a tension chest with external valve chambers formed directly in one side thereof, each of said valve chambers communicating directly with a common tension chamber in the chest, and a detachable valve plate common to all the valve chambers formed with valve seats for each valve chamber, and secured directly to the tension chest, for the purpose described.

6. In pneumatic apparatus of the character designated, a tension chest with external diaphragm chambers formed directly in one side thereof, each of said chambers communicating directly with a common tension chamber in the chest, and a detachable diaphragm plate common to and formed with chambers communicating with each of the individual diaphragm chambers in the chest, for the purpose described.

7. In pneumatic apparatus of the character designated a tension chest with external valve chambers and external diaphragm chambers formed directly in the sides thereof each of said chambers communicating directly with a common tension chamber in the chest, together with a detachable valve plate common to the individual valve chambers, and a detachable diaphragm plate common to, and formed with chambers coinciding with, the individual diaphragm chambers in the chest, for the purpose described.

8. In pneumatic apparatus of the character designated, a tension chest with external valve chambers and diaphragm chambers formed directly in external faces thereof each of said chambers communicating directly with a common tension chamber in the chest, valve rods passing through said tension chamber and into said valve and diaphragm chambers, a valve and a diaphragm butt on each of said rods, a detachable valve plate common to each and all of the individual valve chambers, and a detachable diaphragm plate common to, and formed with chambers coinciding with, the individual diaphragm chambers, for the purpose described.

9. In pneumatic apparatus of the character designated, a tension chest built up of sections formed with a tension chamber between them, said sections being secured rigidly together, and a diaphragm chamber formed directly in an external face of the chest and communicating directly with the tension chamber therein, for the purpose described.

10. In a pneumatic apparatus of the character designated, a tension chest built up of sections formed with a tension chamber between them, said sections being secured rigidly together, and a valve chamber formed directly in an external face of the chest and communicating directly with the tension chamber therein, for the purpose described.

11. In pneumatic apparatus of the character designated, a tension chest built up of sections formed with a tension chamber between them, said sections being rigidly secured together, a valve chamber formed directly in one external face of the chest and communicating directly with the tension chamber therein, and a diaphragm chamber formed directly in another external face of the chest and communicating directly with the tension chamber therein, for the purpose described.

12. In pneumatic apparatus of the character designated, a tension chamber built up of sections formed with a tension chamber between them said sections being rigidly secured together and a plurality of diaphragm chambers formed directly in an external face of the chest and each communicating directly and independently with the tension chamber therein, for the purpose described.

13. In pneumatic apparatus of the character designated, a tension chamber built up of sections formed with a tension chamber between them, said sections being rigidly secured together, and a plurality of valve chambers formed directly in an external face of the chest and each communicating directly and independently with the tension chamber therein, for the purpose described.

14. In pneumatic apparatus of the character designated, a tension chamber built up in sections formed with a tension chamber between them, said sections being rigidly secured together, a plurality of diaphragm chambers formed directly in an external face of the chest and each communicating directly and individually with the tension chamber therein, and a plurality of valve chambers formed directly in another external face of the chest and each communicating directly and independently with the tension chamber therein, for the purpose described.

15. In pneumatic apparatus of the character designated, a tension chest built up of sections formed with a tension chamber between them, said sections being rigidly secured together, a valve chamber formed directly in one external face of the chest and communicating directly with the tension chamber therein, a diaphragm chamber formed directly in another external face of the chest and communicating directly with the tension chamber therein, a valve rod passing through said tension chamber and into said diaphragm and valve chambers, and a valve and diaphragm butt on said rod, for the purpose described.

16. In pneumatic apparatus of the character designated a tension chest built up in sections formed with a tension chamber between them, said sections being rigidly secured together, a plurality of diaphragm chambers formed directly in an external face of the chest and each communicating directly and individually with the tension chamber therein, and a plurality of valve chambers formed directly in another external face of the chest and each communicating directly and independently with the tension chamber therein, valve rods passing through said tension chamber, and a valve and diaphragm butt on said rod, for the purpose described.

17. In pneumatic apparatus of the character designated a tension chest built up of two parts the opposed faces of which are recessed to form a common internal tension

chamber between them and are then united to form a single rigid structure, in one external face of which is formed a series of diaphragm chambers communicating directly with the internal tension chamber, and in another external face of which is formed a series of valve chambers communicating directly with said internal tension chamber for the purpose described.

18. In pneumatic apparatus of the character designated, a tension chest built up of two parts the opposed faces of which are recessed to form a common internal tension chamber between them and are then united integrally to form a single rigid structure, in one external face of which is formed a series of diaphragm chambers communicating directly with the said internal tension chamber, the external face of the opposite side of the chest being formed with a series of valve chambers communicating directly with said internal tension chamber for the purpose described.

19. In pneumatic apparatus of the character designated a tension chest built up of two parts the opposed faces of which are recessed to form a common internal tension chamber between them and are then united integrally to form a single rigid structure, in one external face of which is formed a series of diaphragm chambers communicating directly with the said internal tension chamber, the external face of the opposite side of the chest being formed with a series of valve chambers communicating directly with said internal tension chamber, in combination with a detachable diaphragm plate, and a detachable valve plate secured respectively and directly to the said opposite external sides of the chest for the purpose described.

20. In pneumatic apparatus of the character designated, a tension chest built up of sections formed with a tension chamber between them and secured rigidly together, valve chambers formed externally thereon and communicating directly with said tension chamber, and diaphragm chambers also formed externally on said chest and communicating with the tension chamber therein through ducts which are relatively small in cross section as compared with the valve ports, for the purpose described.

21. In pneumatic apparatus of the character designated, a chest formed with a central tension chamber, a diaphragm chamber formed in said chest on one side of and communicating with, said central tension chamber, a detachable diaphragm plate formed with a coinciding diaphragm chamber, a valve chamber formed in said chest on the other side of said central tension chamber, and communicating therewith, and a valve rod extending through said central tension chamber and abutting against the diaphragm at one extremity and supporting a valve within the valve chamber, for the purpose described.

22. In pneumatic apparatus of the character designated a chest formed with an internal central tension chamber, one external face of said chest being formed with a series of diaphragm chambers communicating directly with the internal tension chamber, and the opposite external face of said chest being formed with a series of valve chambers communicating directly with said internal tension chamber, for the purpose described.

23. In pneumatic apparatus of the character designated a chest formed with an internal central tension chamber, one external face of said chest being formed with a series of diaphragm chambers communicating directly with the said internal tension chamber, the external face on the opposite side of the chest being formed with a series of valve chambers communicating directly with said internal chamber, in combination with a detachable diaphragm plate and a detachable valve plate secured respectively and directly to the said opposite external sides of the chest, for the purpose described.

24. In pneumatic apparatus of the character designated, a chest formed with an internal tension chamber, one external face of said chest being formed with a series of diaphragm chambers communicating directly with the said internal tension chamber, and the external face on the opposite side of the chest being formed with a series of valve chambers communicating directly with said internal valve chamber the individual ducts connecting the diaphragm chambers with the internal tension chamber being relatively small in cross area as compared with the individual valve ports between said internal tension chamber and said valve chambers, for the purpose described.

25. In pneumatic apparatus of the character designated, a chest formed with an internal tension chamber, one external face of said chest being formed with a series of diaphragm chambers communicating directly with the said internal tension chamber, and the external face of the opposite side of the chest being formed with a series of valve chambers communicating directly with said internal valve chambers, the web or partition in the chest between the tension chamber and the diaphragm chambers being formed with a duct for each diaphragm chamber connecting it with the tension chamber and being also formed with a bearing or support for each of the valve rods, in combination with said valve rods and their valves and butts, for the purpose described.

26. In pneumatic apparatus of the character designated a tension chest built up of two parts the opposed faces of which are recessed to form a common internal tension chamber between them and are then united integrally to form a single rigid structure, in one external face of which is formed a series of diaphragm chambers communicating directly with the said internal tension chamber, the external face of the opposite side of the chest being formed with a series of valve chambers communicating directly with said internal tension chamber, the web or partition in the chest between the tension chamber and the diaphragm chambers being formed with a duct for each diaphragm chamber connecting it with the tension chamber and with a bearing or support for each of the valve rods, in combination with said valve rods and their valves and butts, for the purpose described.

27. In pneumatic apparatus of the character designated a tension chest formed with external convergent side walls to one of which a power pneumatic is attached with its larger end adjoining the narrower edge of the said tension chest for the purpose described.

28. In pneumatic apparatus of the character designated a plurality of tension chests formed with external convergent side walls, and a series of spacing blocks also formed with convergent sides and interposed between adjoining tension chests with their broader ends in juxtaposition to the narrower edges of the tension chests, means for binding the tension chests and spacing blocks together and power pneumatics attached at their larger ends to the narrower edges of the tension chests for the purpose described.

29. In pneumatic apparatus of the character designated a plurality of tension chests formed with external convergent side walls, and a series of spacing blocks also formed with convergent side walls and interposed between adjoining tension chests with their broader ends in juxtaposition to the narrower edges of the tension chests, and a bolt passing through both tension chests and spacing blocks and securing the same rigidly together for the purpose set forth.

30. In pneumatic apparatus of the character designated a plurality of tension chests formed with external convergent side walls, and a series of spacing blocks formed with convergent side walls and interposed between adjoining tension chests with their broader ends in proximity to the narrower edges of the tension chests, said tension chests and spacing blocks being formed with coinciding openings communicating with the tension chambers in the chests and with suitable exhaust mechanism, and means for securing said tension chests and spacing blocks rigidly together for the purpose described.

31. In pneumatic apparatus of the character designated, a tension chest formed with a series of external secondary diaphragm chambers, a detachable secondary diaphragm plate secured directly to said tension chest, and a primary valve chest attached to said detachable secondary diaphragm plate and having ducts connecting its valve chambers directly with the secondary diaphragm chambers on the inner side of said detachable plate for the purpose described.

32. In pneumatic apparatus of the character designated, the combination with the main tension or secondary valve and diaphragm chest, of a primary valve chest formed with a plurality of primary valve seats and passages, with a plurality of diaphragm chambers and with a longitudinal tension chamber common to all the said primary valve passages, and a detachable secondary diaphragm plate having a plurality of diaphragm chambers formed therein communicating with the primary valve passages, said primary valve chest being rigidly attached to the said secondary diaphragm plate opposite the diaphragm chambers therein and being removable with said secondary diaphragm plate, for the purpose described.

33. In pneumatic apparatus of the character designated, the combination with the main tension or secondary valve and diaphragm chest, of a primary valve chest formed with a plurality of primary valve passages and seats, with a plurality of diaphragm chambers and with a longitudinal tension chamber formed entirely within the said primary chest, independent of the secondary diaphragm chest, and common to all the said primary valve passages, and a detachable secondary diaphragm plate having a plurality of diaphragm chambers formed therein communicating with the primary valve passages, said primary valve chest being rigidly attached to the said secondary diaphragm plate opposite the diaphragm chambers therein and being removable with said secondary diaphragm plate, for the purpose described.

34. In pneumatic apparatus of the character designated, the combination with the main tension or secondary valve and diaphragm chest, of a primary valve chest having a plurality of valve passages and seats formed therein, and an independent tension chamber formed entirely within said tension chest and common to all the valve passages, a detachable primary diaphragm plate formed in one piece with a plurality of diaphragm chambers coinciding with the valve chambers in the said primary valve chest, and a single continuous strip of flexible material interposed and secured between the opposed surfaces of the said primary valve chest and the said detachable primary diaphragm plate, and affording a diaphragm for each diaphragm chamber, for the purpose described.

35. In pneumatic apparatus of the character designated, a tension chest having a plurality of diaphragm chambers formed directly in an external surface thereof and each communicating directly and independently with the tension chamber in said chest, a detachable diaphragm plate common to the diaphragm chambers in the external face of the chest and formed with coinciding diaphragm chambers, and a strip of leather or other suitable flexible material interposed and secured between the opposed surfaces of the tension chest and the detachable primary diaphragm plate, for the purpose described.

852,162. MOLD FOR CASTING TYPE, SPACES, AND QUADS. FRANK H. BROWN and JOHN E. HANRAHAN, Baltimore, and GEORGE A. BOYDEN, Mount Washington, Md., assignors to National Compositype Company, a Corporation of Delaware. Filed May 19, 1905. Renewed Feb. 8, 1907. Serial No. 356,340.

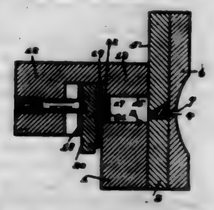

Claim.—1. A type mold provided with a cavity, and a matrix movable in a direction parallel with the length of the cavity and having a projection to enter said cavity at the end to reduce its length.

2. A type mold comprising a stationary section and a section movable at right angles to the stationary section whereby to form a cavity between said sections, and a matrix carried by one of said sections and having a projection which enters the cavity to reduce its length.

3. A mold for casting type bodies comprising the mold sections; an ejector coacting with the mold sections to form the mold cavity, and a matrix having a projection which enters one end of said mold cavity to reduce the size of said cavity in a lengthwise direction.

4. A mold in which metal type bodies are to be cast provided with a cavity; an ejector having one end which is wider than the other in a direction lengthwise with respect to the mold cavity and said ejector capable of reversal end for end, and matrices arranged to coact with the ends of said ejector whereby type bodies of different heights may be cast.

852,163. MASSAGE IMPLEMENT. LEONARD B. BUCHANAN, Woburn, Mass. Filed Oct. 27, 1906. Serial No. 340,821.

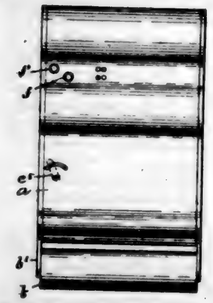

Claim.—1. In a massaging-implement the combination of a hand-piece, a pair of massaging-electrodes borne by it, which are insulated from each other and connected with a source of electric energy, and a medicament-carrier, independent of said electrodes, but disposed adjacent thereto, which is constructed and arranged to apply a medicament in the path of movement of said electrodes, substantially as described.

2. A massaging-implement comprising a hand-piece, a pair of massaging-electrodes borne by it, which are connected with a source of electric energy, and a rolling medicament-carrier independent of said electrodes, but disposed adjacent thereto, which is constructed and arranged to apply a medicament in the path of movement of said electrodes, substantially as described.

3. In a massaging-implement, the combination of a hand-piece, a pair of massaging-electrodes borne by it, which are insulated from each other and connected with a source of electric energy, a shocking-coil adapted to be connected in circuit with said electrodes, and a medicament-carrier independent of said electrodes, but disposed adjacent thereto, constructed and arranged to apply a medicament in the path of movement of said electrodes, substantially as described.

4. In a massaging implement, the combination of an inclosing case, a battery and a shocking coil contained therein, a pair of conducting rollers supported on the exterior of said case and insulated from each other and electrically connected respectively to the opposite sides of said battery, a circuit closing device for the circuit of said battery, a switch for including therein or excluding therefrom the shocking coil, and a medicament-carrier, independent of said electrodes, but disposed adjacent thereto which is constructed and arranged to apply a medicament in the path of movement of said electrodes, substantially as described.

5. In a massaging implement, the combination of an inclosing case, a battery contained therein, a pair of massaging electrodes supported in said case and insulated from each other, and electrically connected respectively to the opposite sides of said battery, two independent circuit closing devices for the circuit of said battery, each accessible from the outside of the case, one of which is adapted, when depressed, to include a portion of said battery in

circuit, and the other, when depressed, to include all of said battery in circuit, and a medicament-carrier, independent of said electrodes, but disposed adjacent thereto which is constructed and arranged to apply a medicament in the path of movement of said electrodes, substantially as described.

6. In a massaging implement, the combination of an inclosing case, a pair of massaging electrodes supported by it, which are insulated from each other and connected with a battery circuit, an electro-magnet in said circuit having a vibrating armature to repeatedly short-circuit said massaging electrodes, a circuit closing device for said battery circuit, and a medicament-carrier, independent of said electrodes, but disposed adjacent thereto which is constructed and arranged to apply a medicament in the path of movement of said electrodes, substantially as described.

7. In a massaging implement, the combination of an inclosing case, a pair of massaging electrodes supported by it which are insulated from each other and connected with a battery circuit, an electro-magnet in said circuit having a vibrating armature, a circuit closing device operated by said vibrating armature to repeatedly short-circuit said massaging electrodes, a circuit closing device for said battery circuit, a switch for including said repeatedly operated circuit closing device in said battery circuit or excluding it therefrom, and a medicament-carrier, independent of said electrodes, but disposed adjacent thereto which is constructed and arranged to apply a medicament in the path of movement of said electrodes, substantially as described.

8. In a massaging implement, the combination of an inclosing case, a battery and a shocking coil contained therein, a pair of conducting rollers supported on the exterior of said case and insulated from each other and electrically connected respectively to the opposite sides of said battery, means for closing the circuit of said battery and means for including the shocking coil in said circuit, and a roller of absorbent material located adjacent to said conducting rollers adapted to contain a medicament, substantially as described.

9. In a massaging implement, the combination of a hand piece, a pair of massaging rollers borne by it, which are insulated from each other and connected with a source of electric energy, and a roller of absorbent material mounted adjacent to said massaging-rollers, the contact surface of all of said rollers being in substantially the same plane, substantially as described.

10. A massaging implement comprising a hand piece, a pair of massaging rollers disposed in parallelism, end supports therefor borne by the hand piece and insulated from each other and connected with a source of electric energy, and a rolling medicament carrier disposed in parallelism with said massaging rollers, and end supports for said carrier attached to said hand piece, substantially as described.

852,164. GRINDER FOR COFFEE-MILLS. WILLIAM J. BUSSINGER, Philadelphia, Pa., assignor to National Specialty Manufacturing Company, Philadelphia, Pa., a Firm. Filed Oct. 21, 1905. Serial No. 283,771.

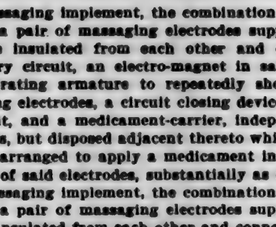

Claim.—1. In a grinding plate, main drifts spirally arranged on the working face but forming a reverse curve near the outer edge of the plate, shorter drifts intermediate said main drifts, and parallel therewith and extending to the periphery of the plate, and a series of short drifts parallel with the reverse curved portion of said main drifts.

2. In a grinding plate, main drifts arranged spirally on the working face but forming a reverse curve at the outer edge of the plate, shorter drifts intermediate said main drifts and parallel therewith and extending to the periphery of the plate, a series of short drifts at the outer edge of the plate and parallel with the reverse curved portion of said main drifts and stops interposed about midway said intermediate and said main drifts.

3. In a guiding plate, main drifts spirally arranged on the working face but forming a reverse curve at the outer edge of the plate, intermediate drifts shorter than said main drifts and extending parallel therewith to the outer periphery of the plate and parallel with the reverse curved portions of said main drifts, and depressions between the drifts near the outer end thereof inclining inwardly and downwardly.

4. In a grinding plate, main drifts spirally arranged on the working face, intermediate drifts shorter than said main drifts and extending parallel therewith to the outer periphery of the plate, a series of short drifts at the outer edge of the plate parallel with the reverse curved portion of said intermediate and said main drifts, depression between the drifts near the outer edge of the plate and inclining inwardly and downwardly and stops arranged about midway between said main and said intermediate drifts.

5. In a grinding plate, main drifts spirally arranged thereon but forming a reverse curve near the outer edge thereof, intermediate drifts shorter than said main drifts, and extending parallel therewith to the outer periphery of the plate, a series of short drifts parallel with said main and said intermediate drifts and located near the outer edge of the plate, depressions between the drifts beginning near the outer edge of the plate and inclining inwardly and downwardly and angularly shaped stops radially disposed substantially midway between said main and said intermediate drifts.

6. In a grinding plate, main drifts spirally arranged thereon forming a reverse curve near the outer edge of the plate, intermediate drifts shorter than said main drifts and extending parallel therewith to the outer periphery of the plate, short drifts at the outer edge of the plate, parallel with said main drifts, depressions between the drifts at the outer edge of the plate, said depression inclining inwardly and downwardly and tapering from their central point toward their end, and an angular stop arranged about midway between said main and said intermediate drifts.

7. In a grinding plate, having a curved face A and face B angularly disposed thereto and a raised face C, main drifts beginning at the inner edge of said face A and extending outwardly to the periphery of the plate but forming a reverse curve on the face C, intermediate drifts beginning at the inner edge of angular face B and extending parallel with said main drifts to the periphery of the plate, short drifts arranged on the face C parallel with said main and said intermediate drifts, depressions between said drifts near the outer edge of the plate inclining inwardly and downwardly and vanishing in face B and angular stops radially disposed on the face B, substantially midway said main and said intermediate drifts.

8. In a grinding plate, having a curved face A and a face B angularly disposed thereto and a face C extending outwardly from face B, main drifts beginning at the lower edge of face A and extending spirally on the face B and forming a reverse curve on the face C, intermediate drifts beginning at the inner edge of face B and extending parallel with said main drifts to the periphery of the plate, short drifts arranged on the face C parallel with said main and said intermediate drifts, each of said drifts on the face C having a substantially vertical cutting edge, a flat upper face and the side opposite said cutting face being inclined or beveled, depressions between the drifts near the outer edge of the plate and inclining inwardly and downwardly and vanishing in the face B, said depressions being widest near the inner ends of said short drifts and an angular stop radially disposed on the face B substantially midway said main and said intermediate drifts.

9. In a grinding plate, a dress consisting of series of drifts of three different lengths extending spirally outward to the periphery of the plate, so as to form grinding teeth at the outer edge thereof, said teeth having a substantially vertical cutting edge, a flat upper face and a beveled or inclined rear face, a depression between said drifts at the outer edge of the plate inclining inwardly and downwardly and vanishing at a suitable point and an angular stop radially disposed substantially midway said main and intermediate drifts, adapted to regulate the feed of the grain to the shortest drifts.

10. In a grinding plate, a working face comprising a curved face A, a face B angularly disposed to the face A and inclining slightly upward and a raised face C extending outwardly from said face B, main drifts spirally arranged on faces A and B but forming a reverse curve on the face C, intermediate shorter drifts arranged on the faces B and C parallel with and substantially midway said main drifts, a series of short drifts arranged on the face C parallel with the outer ends of said main and intermediate drifts, depressions between said drifts at the outer edge of the plate inclining inwardly and downwardly, and vanishing in the face B at a suitable point, the inner ends of said short drifts inclining inwardly and downwardly and the inner ends of said main and intermediate drifts being substantially vertical, the upper face of all of said drifts lying in substantially the same plane, and a triangular stop radially arranged at the inner edge of the face B, substantially midway said main and said intermediate drifts and adapted to regulate the feed of the grain to said short drifts.

11. In a grinding plate, main drifts and drifts intermediate said main drifts, a series of shorter drifts and stops interposed between said intermediate and said main drifts.

12. In a grinding plate, main drifts and drifts intermediate said main drifts and shorter than the same, a series of short drifts and depressions extending below the base of the plate and between said short drifts adjacent the inner end thereof and extending inwardly therefrom.

13. In a grinding plate, main drifts, shorter drifts intermediate said main drifts, a series of short drifts, stops between said intermediate and said main drifts and depressions between said series of short drifts.

14. In a grinding plate, main drifts spirally arranged on the working face, shorter drifts intermediate said main drifts, and stops interposed between said intermediate and said main drifts.

15. In a grinding plate, main drifts spirally arranged on the working face, shorter drifts intermediate said main drifts, a series of short drifts intermediate said first drifts, and stops interposed between said intermediate and said main drifts.

16. In a grinding plate, main drifts spirally arranged on the working face, intermediate drifts shorter than said main drifts, and depressions between the drifts inclining inwardly and increasing in depth.

17. In a grinding plate, main drifts spirally arranged on the working face, intermediate drifts shorter than said main drifts, depressions between the drifts inclining inwardly and increasing in depth, and stops interposed between said intermediate and said main drifts.

852,165. LUBRICATOR. ALBERT BYINGTON, Rochelle, Ill. Filed May 28, 1906. Serial No. 319,209.

Claim.—1. In a lubricator, the combination of a cylinder, a piston located in the cylinder capable of a lengthwise movement but held against rotation, a screw having a screw-thread connection with the piston, held against lengthwise movement but capable of rotation, a toothed wheel loosely supported by the screw, friction devices for forming a connection between the wheel and screw and means for imparting an intermittent rotary movement to the wheel.

2. In a lubricator, the combination of a cylinder, a piston located in the cylinder capable of a lengthwise movement but held against rotation, a screw having a screw-thread connection with the piston, held against lengthwise movement but capable of rotation, a toothed wheel loosely supported by the screw, friction devices for forming a connection between the wheel and screw, a rotative spiral projection in engagement with the toothed wheel, and means for imparting an intermittent rotary movement to the spiral projection.

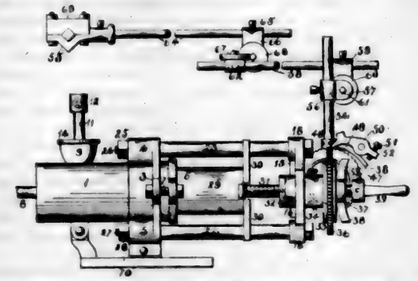

3. In a lubricator, the combination of a cylinder, a piston located in the cylinder capable of a lengthwise movement but held against rotation, a screw having a screw-thread connection with the piston, held against lengthwise movement but capable of rotation, a collar rigidly connected to the screw, a toothed wheel loosely supported by the screw, a screw-nut having a screw-thread engagement with the screw and capable of clamping the wheel against the collar, and means for imparting an intermittent rotary movement to the wheel.

4. In a lubricator, the combination of a cylinder, a cross-head, two pipes forming a connection between the cylinder and cross-head, a bolt passing through each pipe and projections on the cylinder and cross-head serving to clamp the parts together, a piston located in the cylinder capable of a lengthwise movement but held against rotation through an engagement with the pipes, a screw having a screw-thread connection with the piston capable of a rotary movement but held against lengthwise movement, and means for imparting an intermittent rotary movement to the screw.

5. In a lubricator, the combination of a cylinder, a piston located in the cylinder capable of a lengthwise movement but held against rotation, means for imparting an intermittent inward sliding movement to the piston, a cup-shaped receptacle having a screw-threaded opening, a movable cap for the receptacle, and a screw plug for the opening extending through the cap.

6. In a lubricator, the combination of a cylinder, a piston located in the cylinder capable of a lengthwise movement but held against rotation, a screw having a screw-thread connection with the piston capable of a rotary movement but held against lengthwise movement, a toothed wheel having a connection with the screw for imparting a rotary movement thereto, a ratchet wheel having a connection with the toothed wheel, a shaft supporting the ratchet wheel, a box, a lengthwise movable cap for the box, the shaft supported by the box, a collar on the shaft located between the cap and ratchet wheel, and a dog pivotally supported by the collar and capable of engaging the teeth of the ratchet wheel.

852,166. RAILWAY-TIE. JOHN CAMPBELL, Harrisburg, Pa. Filed Dec. 5, 1906. Serial No. 346,381.

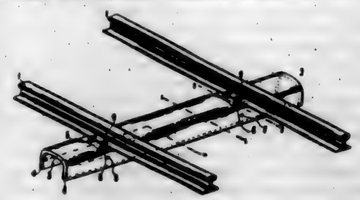

Claim.—1. In a device of the class described, in combination, means into which spikes are adapted to be driven, and

metallic means disposed over said first mentioned means and secured thereto and extending downwardly into the road-bed.

2. In a device of the class described, in combination, a railway tie comprising a metallic member of inverted channel conformation, and means disposed within said member into which spikes from the rails are adapted to be driven.

3. In a device of the class described, in combination, a railway tie comprising a metallic member of inverted channel conformation, and a pair of members within said first mentioned member into which spikes from each rail are adapted to be respectively driven.

4. In a device of the class described, in combination, a railway tie comprising a metallic member of inverted channel conformation, a pair of members within said first mentioned member into which spikes from each rail are adapted to be respectively driven, and means independent of the spikes holding said second members within said first member.

5. In a device of the class described, in combination, a pair of members in which spikes from each rail are adapted respectively to be driven, and a metallic member resting upon said first mentioned members through which the spikes pass and provided with a depending portion adapted to extend downwardly into the roadbed and anchor the same.

6. In a device of the class described, in combination, a pair of members into which spikes from each rail are adapted to be respectively driven, and a metallic member mounted upon said first mentioned members and spacing the same one from another and provided with a convexed upper surface and having flattened portions at points at which the rails rest.

7. In a device of the class described, in combination, a metallic member of an inverted channel conformation having a convexed upper surface and flattened at portions at which the rails rest, and means within said member into which spikes from the rails are adapted to be driven.

8. In a device of the class described, in combination, a metallic member of an inverted channel conformation having a convexed upper surface and flattened at portions at which the rails rest, and a pair of blocks positioned within said member under each of said rails into which the spikes are adapted to be driven.

9. In a device of the class described, in combination, a metallic member of an inverted channel conformation upon which the rails are adapted to rest, a pair of blocks within said member into which spikes from said rails are adapted to be driven, and bolts passing transversely through said blocks and securing the same within said first mentioned member.

10. A railway tie comprising a horizontal portion adapted to support the rails, a pair of flanges depending from opposite edges of said horizontal portion, each of which is adapted to enter the roadbed and form a substantially open bottomed tie between the flanges of which the material of the roadbed is free to enter, and a pair of wooden blocks respectively positioned beneath the rails and disposed between said flanges whereby spikes co-acting with the rails and passing through said first-mentioned portion may pass into and be held by said blocks.

11. A railway tie comprising a horizontal portion adapted to support the rails, a pair of flanges depending from opposite edges of said horizontal portion, each of which is adapted to enter the roadbed and form a substantially open bottomed tie between the flanges of which the material of the roadbed is free to enter, and a pair of wooden blocks respectively positioned beneath the rails and disposed between said flanges whereby spikes co-acting with the rails and passing through said first-mentioned portion may pass into and be held by said blocks, said flanges being disposed substantially at right angles with said first-mentioned portion.

12. A railway tie comprising a horizontal portion adapted to support the rails, a pair of flanges depending from opposite edges of said horizontal portion, each of which is adapted to enter the roadbed and form a substantially open bottomed tie between the flanges of which the material of the roadbed is free to enter, and a pair of wooden blocks respectively positioned beneath the rails and disposed between said flanges whereby spikes co-acting with the rails and passing through said first-mentioned portion may pass into and be held by said blocks, said flanges and horizontal portion being cast in a single piece.

13. A railway tie comprising a horizontal portion adapted to support the rails, a pair of flanges depending from opposite edges of said horizontal portion, each of which is adapted to enter the roadbed and form a substantially open bottomed tie between the flanges of which the material of the roadbed is free to enter, and a pair of wooden blocks respectively positioned beneath the rails and disposed between said flanges whereby spikes co-acting with the rails and passing through said first-mentioned portion may pass into and be held by said blocks, said flanges and horizontal portion being cast in a single piece with the flanges substantially at right angles with said first-mentioned portion.

14. A railway tie comprising a horizontal portion adapted to support the rails, a pair of flanges depending from opposite edges of said horizontal portion, each of which is adapted to enter the roadbed and form a substantially open bottomed tie between the flanges of which the material of the roadbed is free to enter, and a pair of wooden blocks respectively positioned beneath the rails and disposed between said flanges whereby spikes co-acting with the rails and pass through said first-mentioned portion may pass into and be held by said blocks, said first portion being formed with a convex upper surface flattened to receive the rails and cast integral with said flanges.

852,167. CAR-STAKE. FRANK V. CARMAN, Oakland, Cal. Filed Jan. 5, 1907. Serial No. 350,987.

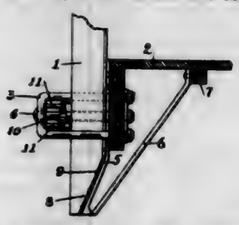

Claim.—1. In combination with a vehicle-body, a U-shaped yoke diagonally secured to the side of said body; a stake passing through and pivoted in said yoke; and a locking device mounted in the yoke to hold and release said stake.

2. In combination with a vehicle-body, a U-shaped yoke diagonally secured to the side of said body; a stake passing through and pivoted in said yoke; and a cam mounted in the yoke, to lock and release said stake.

3. In combination with a vehicle-body, a U-shaped yoke diagonally secured to the side of said body; a stake passing through said yoke; a bolt in the yoke pivoting the stake to the side of the body; a locking cam rotatably mounted on the bolt, arranged to bind upon the stake; and a projection on the yoke to impinge upon and operate the cam.

4. In combination with a vehicle-body, a U-shaped yoke diagonally secured to the side of said body; a stake passing through and pivoted in said yoke; a bracket secured to the body, having means to engage the foot of the stake when the latter is upright, to steady it; and a locking device mounted in the yoke to hold and release the stake.

5. In combination with a vehicle-body, a U-shaped yoke diagonally secured to the side of said body; a stake passing through and pivoted in said yoke; a bracket secured to the body, having means to engage the foot of the stake when the latter is upright, to steady it; and a cam mounted in the yoke to lock and release said stake.

6. In combination with a vehicle-body, a U-shaped yoke diagonally secured to the side of said body; a stake passing through said yoke; a bolt in the yoke pivoting the stake to the side of the body; a bracket secured to the

body, having means to engage the foot of the stake when the latter is upright, to steady it; a locking cam rotatably mounted on the bolt, arranged to bind upon the stake; and a projection on the yoke to impinge upon and operate the cam.

7. In combination with a vehicle-body, a U-shaped yoke diagonally secured to the side of said body; a stake passing through and pivoted in said yoke, said stake having the inner face of its foot, below the yoke, beveled outwardly away from the side of the body; and a locking device to hold and release the stake.

8. In combination with a vehicle-body, a U-shaped yoke diagonally secured to the side of the body; a stake passing through and pivoted in said yoke, said stake having the inner face of its foot, below the yoke, beveled outwardly away from the side of the body; and a cam mounted in the yoke to lock and release said stake.

9. In combination with a vehicle-body, a U-shaped yoke diagonally secured to the side of the body; a stake passing through said yoke, said stake having the inner face of its foot, below the yoke, beveled outwardly away from the side of the body; a bolt in the yoke pivoting the stake to the side of the body; a bracket secured to the body, having means to engage the foot of the stake when the latter is upright, to steady it; a locking cam rotatably mounted on the bolt, arranged to bind upon the stake; and a projection on the yoke to impinge upon and operate the cam.

10. In combination with a vehicle-body, a U-shaped yoke diagonally secured to the side of the body; a stake passing through said yoke, said stake having the inner face of its foot, below the yoke, beveled outwardly away from the side of the body; a bolt in the yoke pivoting the stake to the side of the body; a locking cam rotatably mounted on the bolt, arranged to bind upon the stake; and a projection on the yoke to impinge upon and operate the cam.

11. In combination with a vehicle-body, a U-shaped yoke diagonally secured to the side of the body; a stake passing through and pivoted in said yoke, said stake having the inner face of its foot, below the yoke, beveled outwardly away from the side of the body; a bracket secured to the body and inclining outwardly to correspond with the beveled foot of the stake, said bracket having a means to engage the stake-foot to steady the stake when upright; and a locking device to hold and release the stake.

852,168. PAPER-CUTTER FOR DUPLEX SHELL-MACHINES. JOHN CHESNEY, Paulsboro, N. J., assignor to The E. I. du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed Dec. 11, 1906. Serial No. 347,383.

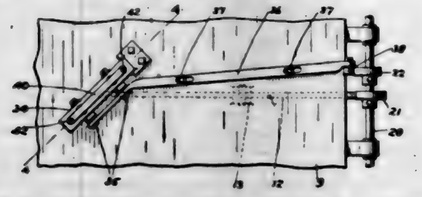

Claim.—1. An attachment for cutting a sheet of paper comprising a recessed table, a knife projecting within the recess and extending under the table, a recessed presser-bar above the table, blocks supporting the presser-bar, a frame supporting the blocks and in which the latter are vertically movable, means to raise and depress the blocks, and means to raise the knife and move its cutting edge into the recess in the presser-bar and to depress the cutting edge of the knife below the level of the table.

2. An attachment for cutting a sheet of paper comprising a recessed table, a knife projecting within the recess and extending under the table, a recessed presser-bar above the table, blocks supporting the presser-bar, a frame supporting the blocks and in which the latter are vertically movable, cam orifices in said blocks, shafts having projections engaging said orifices, means to turn said shafts, and means to raise the knife and move its cutting edge into the recess in the presser bar and to depress the cutting-edge of the knife below the level of the table.

3. An attachment for cutting a sheet of paper comprising a recessed table, a knife projecting within the recess and extending under the table, a recessed presser-bar above the table, blocks supporting the presser-bar, a frame supporting the blocks and in which the latter are vertically movable, springs engaging said blocks and tending to depress them, cam orifices in said blocks, shafts having projections engaging said orifices, means to turn the shafts, thereby raising the blocks against their springs, and means to raise the knife and move its cutting edge into the recess in the presser-bar and to depress the cutting edge of the knife below the level of the table.

4. An attachment for cutting a sheet of paper comprising a recessed table, a knife projecting within the recess and extending under the table, a recessed presser-bar above the table, cams, mechanism actuated by one of said cams adapted to move the presser bar vertically, and mechanism actuated by the other of said cams adapted to move the knife vertically.

5. An attachment for cutting a sheet of paper comprising a recessed table, a knife projecting within the recess and extending under the table, a recessed presser-bar above the table, cams, mechanism actuated by one of said cams adapted to move the presser-bar vertically in one direction, a spring acting to move the presser-bar in the opposite direction, mechanism actuated by the other cam adapted to move the knife vertically in one direction, and a spring acting to move the knife in the opposite direction.

6. An attachment for cutting a sheet of paper comprising a recessed table, a knife projecting within the recess and extending under the table, a recessed presser-bar above the table, a spring tending to depress the presser-bar against the table, a cam, mechanism actuated thereby to raise the knife and move its cutting edge into the recess in the presser bar when the latter is depressed, a second cam, mechanism actuated thereby to raise the presser bar, and a spring tending to depress the knife out of action.

7. An attachment for cutting a sheet of paper comprising a frame, blocks slidable therein, a presser-bar movable with the blocks, a spring tending to move the presser-bar in one direction, shafts, projections thereon engaging cam orifices in the blocks, means to turn the shafts and move the blocks against the action of said springs, and a knife coöperating with the presser-bar.

8. An attachment for cutting a sheet of paper comprising a frame, blocks slidable therein, a presser-bar movable with the blocks, a spring tending to move the presser-bar in one direction, shafts, projections thereon engaging cam orifices in the blocks, a slide-bar, a cam actuating the slide-bar, cranks connecting the slide-bar and shafts, a knife coöperating with the presser-bar, a cam, and mechanism actuated by the last-named cam and actuating the knife.

9. An attachment for cutting a sheet of paper comprising a recessed table, a knife projecting within the recess and extending under the table, a recessed presser-bar above the table, blocks supporting the presser-bar, a frame supporting the blocks and in which the latter are vertically movable, springs tending to force the presser-bar toward the table, shafts, projections thereon engaging cam orifices in said blocks, a slide-bar, cranks thereon engaging said shafts, a cam adapted to actuate said slide-bar, a lever on one end of which the knife is secured, a spring tending to depress the knife, and a second cam adapted to rock said lever and raise said knife to project its cutting edge into the presser-bar recess.

852,169. AXLE-STUB. HOMER DETAR and WILLIAM SCHOONOVER, Fryburg, Pa. Filed Feb. 20, 1906. Serial No. 302,134.

Claim.—The combination with an axle spindle having an enlarged collar at the inner end and with a tapered threaded cavity within the portion having the collar, of an axle having a tapered threaded stud corresponding to and engaging said threaded cavity and enlarged into a collar ad-

jacent to the stud to form a shoulder for bearing against the inner end of the spindle.

852,170. ADVERTISING DEVICE. HARRY F. ECKERSBERG, Monessen, Pa. Filed Feb. 13, 1907. Serial No. 357,188.

Claim.—1. An advertising device consisting of a supporting base, an arm adjustably connected thereto, a standard carried by said arm, brackets carried by said standards, an actuating shaft revoluibly supported by said brackets, a bladed propeller wheel carried by the upper end of said shaft, a plate secured to said brackets and said adjustable arm, a rod loosely connected to the upper end of said plate, a jointed figure suspended from said rod, and means carried by said shaft for engaging and oscillating said rod.

2. An advertising device consisting of a base, a standard supported thereby, brackets carried by said standard, a shaft revoluibly supported by said brackets, a propeller wheel carried by the upper end of said shaft, a plate supported by said brackets and said base, a rod loosely mounted at the upper end of said plate, a jointed figure suspended from said rod, and means carried by said revoluible shaft for oscillating said rod.

3. An amusement device consisting of a base, a vertically disposed plate, a revoluible shaft arranged in the rear of said plate, a jointed figure suspended in front of said plate, a propeller wheel carried by the upper end of said shaft, and means actuated by said shaft, to oscillate said jointed figure.

4. An advertising device consisting of a vertically disposed plate, a revoluible shaft journaled in the rear of said plate, a jointed figure suspended in front of said plate, a propeller wheel carried by said shaft, and means actuated by said shaft to impart a "jumping jack" movement to said jointed figure.

852,171. WRENCH. JOSHUA R. EDDY, Slicker, W. Va. Filed Aug. 16, 1906. Serial No. 330,911.

Claim.—In a wrench, the combination with a toothed shank provided at its outer end with fixed jaws, a housing mounted to slide on the shank, having jaws at its outer end and having a recess in one side extending from the outer face of the housing to the central opening therethrough, a rod journaled in the housing having a squared portion lying within said recess, a dog mounted on said squared portion of the rod, having a flat face, and having teeth on a part of the remainder of its face, a set screw fixedly securing the dog to said rod, and a finger piece carried by the outer end of said rod and curved upwardly to over-lie the housing whereby when the teeth of said dog

are in engagement with the teeth of the wrench the overlying free end of said finger piece engages with the said housing.

852,172. SUPPORTING ATTACHMENT FOR WINDOWS. OTTO A. ESCHHOLZ, Springfield, Mass., and HENRY WEBER, Winsted, and KARL H. WOLLMANN, Burlington, Conn. Filed Jan. 2, 1907. Serial No. 350,456.

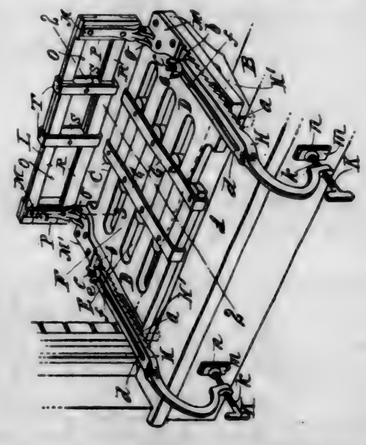

Claim.—In a window scaffold, the combination of a platform adapted to project outward from the base of a window, being constructed to rest thereon and to bear rearward thereagainst, a plate secured rigidly along each side of the top of the platform, being provided with a longitudinal series of upstanding serrations having their forward faces substantially vertical, brackets parallel to and overlying said plates, being vertically and longitudinally slotted and provided with a longitudinal series of depending serrations having their rearward faces substantially vertical, said brackets being further provided with rear downturned ends, bolts passing vertically through the platform, plates and slots, clamp nuts threaded on the ends of said bolts, and horisontal screw-clamps threaded through the downturned ends of the brackets and adapted to bear against the inner side of the window base.

852,173. PULVERIZING OR GRINDING MILL. JAMES W. FULLER, Jr., Catasauqua, Pa. Filed Jan. 5, 1906. Serial No. 294,683.

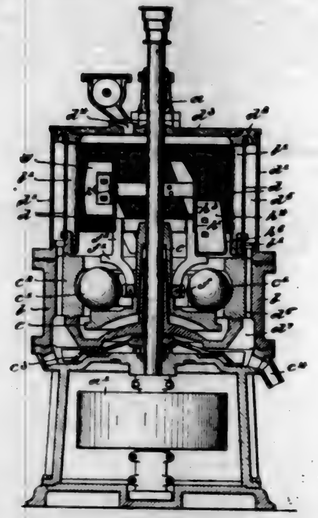

Claim.—1. In a pulverising or grinding mill, a casing, a frame provided with a surrounding screen forming a central chamber, said casing and screen covered frame forming an outer chamber leading directly to discharge ducts of the mill, rings supported within said screen covered frame, said rings provided with two series of wings or blades obliquely arranged in respect to said rings, the blades or wings of one series occupying a position intermediate of the blades or wings of the other series and the arrangement being such as to elevate matter from the grinding means of the mill into said central chamber to force thereby finely ground material from said grinding means through the screen of said frame into said outer chamber and therefrom into said discharge ducts and to permit the coarser or partially ground material to fall by gravity back into the path of the grinding means of said mill.

2. In a pulverising or grinding mill, a casing, a grinding ring arranged in said casing, a frame having openings carried by said casing, a screen surrounding said frame, said casing and frame forming a central chamber, a shaft, a carrier mounted on said shaft, arms supported by said carrier, rings carried by said arms, wings or blades carried by said rings, grinding balls supported by said carrier and held by the same opposite said grinding ring, said shaft, when rotated, adapted to actuate said carrier and by the same to rotate said balls within said ring to grind material fed thereto, said arms and rings arranged to form a skeleton frame within said central chamber and adapted to permit of free descent of material to be ground through said rings and between said arms, and said wings or blades, when rotated, adapted to elevate ground material from said balls and ring and force the same through the screen of said frame.

852,174. AUTOMATIC SHUT-OFF VALVE. GEORGE A. FULLIFF, East McKeesport, Pa. Filed June 12, 1906. Serial No. 321,832.

Claim.—1. In a regulating valve, the combination with a valve casing, valve seat, and valve, of a stem extending above the casing, a spring-controlled lever fulcrumed above the casing, and connected to said stem, a gravity-dog to engage said lever, and a pivoted locking arm, adapted to bear against the upper end of the valve stem, and a connection between said lever and locking arm.

2. In a regulating valve, the combination with a valve casing, valve seat, and valve, of a valve stem extending above the casing, a plate projecting upwardly from said casing, a spring-controlled lever fulcrumed on said plate, and extending through the valve stem, a gravity-dog to engage the free end of said lever, a weighted lever fulcrumed upon said plate, a locking arm or tumbler carried by said weighted lever, and a link connecting said levers.

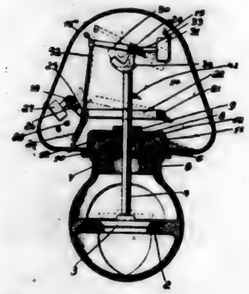

3. In a regulating valve, the combination with a valve casing, valve seat, and valve, of a closure for said casing, a valve stem extending through said closure, a vertically disposed plate extending upward from said closure, a lever fulcrumed on said plate and extending through the valve stem, a retracting spring for said lever, a weighted dog adapted to engage the free end of said lever, a weighted lever fulcrumed on said plate, a locking arm, depending from said weighted lever, a link connecting said levers, and an indicator pointer carried by the pivotal support of said weighted lever.

4. In a regulating valve, the combination with a valve casing, valve seat, and valve, of a closure cap for said casing, a block projecting from said cap, a valve stem extending through said block, parallel plates secured to opposite sides of said block, a lever fulcrumed between said plates and extending through a slot in said stem, a weighted dog adapted to engage a notch in one end of said lever, a retracting spring for said lever, a weighted lever fulcrumed between said plates above the valve stem, a curved locking arm depending from said weighted lever, and a link connecting said levers.

5. In a regulating valve, the combination with a casing, a valve seat, and valve, of a closure cap for said casing, a block projecting upward from said cap, a valve stem extending through said block, parallel plates secured to opposite sides of said block, hollow studs projecting from the inner sides of said plates, shafts supported in said studs, a lever fulcrumed on one of said shafts and extending through said valve stem, a gravity-dog mounted on another of said shafts and adapted to engage the free end of said lever, a retracting spring for said lever, a weighted lever fulcrumed on the remaining shaft, a locking arm depending from said weighted lever, a link connecting said levers, and a finger-piece on the shaft of the gravity-dog.

852,175. WHEEL-RIM. THOMAS FURLONG, St. Louis, Mo. Filed May 26, 1906. Serial No. 318,912.

Claim.—A wheel comprising a felly having a flat face metal rim connected thereto, said rim being provided with an integral flange, a removable flange, a tire having a solid rectangular-shaped base portion confined between said flanges, metal sleeves extending transversely through said base portion and of less length than the width of said portion, bolts extending through said sleeves and through the flanges, and nuts on the outer ends of said bolts; substantially as described.

852,175.

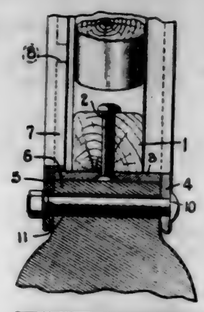

852,176. AXLE-NUT LOCK. AURELIUS J. GARRISON, Greenville, Va. Filed May 26, 1906. Serial No. 318,946.

Claim.—1. In a nut lock, the combination of a spindle having the outer threaded end thereof provided with a recess, an axle nut mounted on the threaded portion of the spindle and provided at its outer end with a key opening, a spring attached to the inner side of the outer inclosing end of the axle nut, a pawl carried by said spring and normally in engagement with the recess on the threaded portion of the spindle, and a key having a projection to engage the spring aforesaid to withdraw the pawl from the recess.

2. In a nut lock, the combination of a spindle having the outer threaded end thereof provided with a recess, an axle nut mounted on the threaded portion of the spindle and provided at its outer end with a key opening, a spring attached to the inner side of the outer inclosing end of the axle nut, a pawl carried by said spring and normally in engagement with the recess on the threaded portion of the spindle, and a key having a projection to engage the spring aforesaid to withdraw the pawl from the recess, said key being formed adjacent to said portion with a shoulder adapted to abut against the outer side of the outer inclosing end of the said nut to hold the same in such position as to disengage the pawl from the spindle.

852,177. POULTRY-FOUNTAIN. CHARLES F. GILL, La Harpe, Ill. Filed Dec. 4, 1906. Serial No. 346,208.

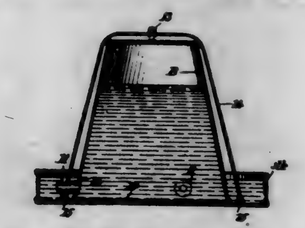

Claim.—1. A poultry fountain consisting of a tray, a tank resting upon the tray, said tank having an inlet in its bottom, and an outlet in the side thereof within the tray, and means for removably holding the tank into engagement with the tray, said means comprising a spring keeper on the top of the tank, and a bail connected with the tray for engaging the keeper.

2. A drinking fountain for poultry, consisting of a tray, a tank closed with the exception of an opening at its base, the base of the tank being in engagement with the upper face of the bottom of the tray, spouts extending out from the sides of said tank into the said tray, a spring keeper secured to the top of the tank, and a bail pivotally attached to the tray and adapted for engagement with the said keeper.

3. A drinking fountain for poultry consisting of a tray, a conical tank the bottom of which rests upon the upper face of the bottom of the tray, the bottom of the tank being provided with an opening therein, said tank being otherwise closed, spouts extending out from the sides of the tank into said tray, occupying a position about midway between the top and the bottom of said tray, a spring hook secured to the top of the tank, and a bail of spring material pivoted to the tray and shaped to conform to the tank, being adapted for engagement with the hook carried by the tank.

852,178. DETACHABLE HEEL. JULIUS GREENSTEIN and JENÖ LEDNITSKY, New York, N. Y. Filed July 18, 1906. Serial No. 326,724.

Claim.—In a boot or shoe, the combination with a permanent sole, of a plate secured thereto, a plurality of bolts attached to said plate, a removable heel-section, a companion-plate secured to said removable heel-section and having a plurality of holes adapted to be engaged by said bolts, and a U-shaped spring attached to said companion-plate and suitable to engage all of said bolts and adapted to become disengaged from said bolts by being pressed together from the front-end of said detachable heel-section.

852,179. BRACKET. JOHN HILBERT, Brooklyn, N. Y. Filed Feb. 13, 1906. Serial No. 300,902.

Claim.—As a new article of manufacture, a fastener comprising a body portion and a pair of engaging portions formed at the terminals of said body and extended at right angles thereto in relatively reverse directions, one of said engaging portions being of substantially triangular form and having a sharpened outer end and the body being provided with an opening disposed at the juncture of the inner end of the sharpened engaging portions with the body.

852,180. BEDCLOTHES-FASTENER. ANNA M. HOFFMAN, McKees Rocks, Pa. Filed Mar. 15, 1907. Serial No. 362,486.

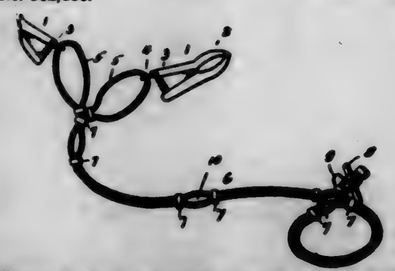

Claim.—1. In a bed clothes holder, the combination with spring clamps having openings formed in the handles thereof, of a double cable having loops engaging in the openings of said clamps, retaining bands carried by said cable and providing loop openings, a bar or rod loosely connected to the end of said double cable and adapted to retain the end of said double cable in one of said loop openings.

2. The combination with clamps, of a double cable having loops connecting with said clamps, a bar or rod loosely connected to the end of said double cable, and adapted to extend into loop openings formed in said double cable.

852,181. RAIL-SPLICE. GEORGE W. HOLFORTY, Neosho Rapids, Kans. Filed Oct. 11, 1906. Serial No. 338,410.

Claim.—A splice bar comprising a base plate, spaced side plates rising therefrom and provided with bolt holes in combination with rail ends having the base flange removed therefrom for a distance back of the end thereof and the flange portion of the rail being partially removed to provide a shoulder against which the flange of the splice bar abuts and apertures in the web portion of the rail for the securing bolts, substantially as described.

852,182. WEIGHING-SCOOP. FRANK C. HOWE, El Paso, Tex. Filed Oct. 5, 1906. Serial No. 337,559.

Claim.—1. In a weighing scoop, in combination, a handle having its inner extremity formed into a hood, an arm constituting a bell crank lever pivotally mounted in said handle, a pan carried by said arm, said arm having a short arm projecting therefrom, a spring connecting said first arm with said hood and adapted to support a weight in said pan, a pointer pivotally mounted within said hood and adapted to co-operate with a scale and connecting said arm with said pointer for actuating the same.

2. In a weighing scoop, in combination, a handle having a hood wormed at the inner extremity thereof, an arm pivotally mounted in said handle, a pan carried by said arm, a spring connected with said arm and adapted to support a weight in said pan, said arm having a laterally projecting tooth near the pivot point thereof, a catch carried by said handle and co-operating with said tooth to lock said arm to said handle, and means for indicating the amount of a weight carried in said pan and actuated by said arm.

3. In a weighing scoop, in combination, a handle having its inner extremity formed into a hood, a bell crank lever pivoted to said hood and having a long arm, a pan attached to said long arm, said bell crank lever having a short arm, a spring attached to said bell crank lever and adapted to support a weight in said pan, a pointer adapted

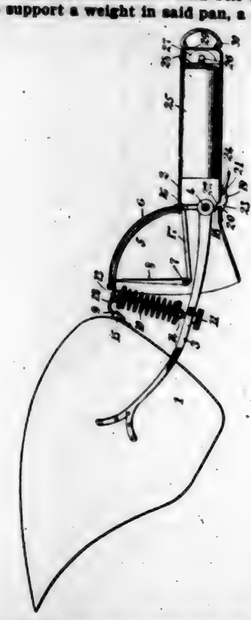

to co-operate with a scale, a connection from said pointer to said short arm, said bell crank lever having a laterally projecting tooth near the pivot point thereof, and a catch carried by said handle and co-operating with said tooth to lock said bell crank lever to said handle.

852,183. WEIGHING-SCOOP. FRANK C. HOWE, El Paso, Tex. Filed Oct. 5, 1906. Serial No. 337,560.

Claim.—1. In a weighing scoop, in combination, a pan, a handle having a joint connection therewith, weighing mechanism mounted in said handle and comprising a runner adapted to be extended by a weight placed in said pan, a drum adapted to receive tabulated figures indicating different prices per pound, a spring resisting a movement of said runner and means for driving said drum from said runner.

2. In a weighing scoop, in combination, a pan, a handle having a joint connection therewith, weighing mechanism mounted in said handle and comprising a runner adapted to be extended by a weight placed in said pan, a drum adapted to receive tabulated figures indicating different prices per pound, means for driving said drum from said runner, a spring connected with said runner and means for locking said runner to said handle.

3. In a weighing scoop, in combination, a pan, a handle having a joint connection therewith, a runner slidably mounted in said handle, a connection from said runner to said pan, a spring attached to said runner and adapted to be extended by a weight in said pan, said runner having teeth formed thereon whereby said runner constitutes a rack, a drum adapted to have tabulated figures corresponding to the different prices per pound, and gear wheels rigid with said drum and driven by said runner.

4. In a weighing scoop, in combination, a pan, a handle jointed thereto, a runner slidably mounted in said handle and adapted to be extended by a weight in said pan, said runner having a head formed thereupon, a catch attached to said handle extending longitudinally thereof and having a shoulder adapted to engage said head to lock the

same against movement in one direction, a spring connected with said runner and a finger lever movably mounted on said handle and having a pin-and-slot connection with said catch whereby said finger lever may move said catch in and out of engagement with said head.

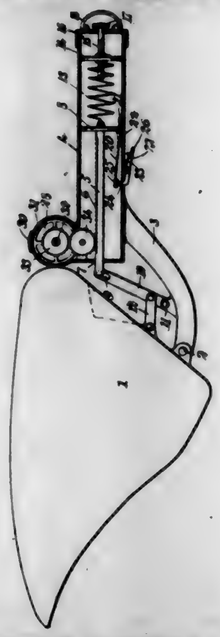

5. In a weighing scoop, in combination, a pan, a handle having an arm pivotally attached to said pan, a runner slidably mounted in said handle and having teeth thereupon, a lever pivotally attached to said arm and making a pin-and-slot connection with said runner, a link connecting said lever with said pan, a spring attached to said runner and adapted to be extended by a weight in said pan, a transversely disposed case carried by said handle, a drum rotatably mounted in said case and adapted to receive tabulated figures indicating different prices per pound, a gear wheel rigid with said drum, and an idler gear connecting said last gear with said runner.

852,184. PLEASURE-RAILWAY. ROLAND HUNT, Philadelphia, Pa. Filed Dec. 15, 1906. Serial No. 347,961.

Claim.—1. The combination with a vehicle, a trackway therefor, and means for propulsion thereto, of a rotatable carriage mounted on said vehicle, a plurality of seats therein, a spur gear connected to the carriage and fixed racks arranged at intervals adjacent to the said track-way and operatable with relation to the said gear, all substantially as shown and described.

2. The combination with a track-way, vehicle and means for operating the same along the track-way, of a circular superstructure, mounted on the vehicle, spur gears combined therewith and a plurality of racks, so disposed along the said track-way as to come into operative engagement with the said spur gears, all substantially as shown and described.

3. The combination with a track-way, a truck movable thereon, a platform supported by the truck, a rotatable carriage provided with seats mounted on the platform, stationary seats at each end of the platform, means to impart lateral motion to the platform, along the said track-way and means to rotate the carriage on its vertical axis at predetermined points and at different rates of velocity, all substantially as shown and described.

852,184.

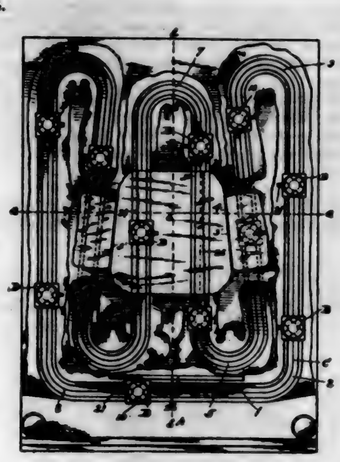

852,185. TUBULAR WELL-PLUNGER. ELIAS R. LOCKWOOD, Pratt, Kans. Filed May 4, 1906. Serial No. 315,152.

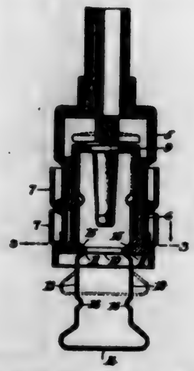

Claim.—1. A tubular plunger, a valve therein, the lower portion of the plunger having an interior annular flange provided with opposite notches, and a valve lifting and holding device consisting of a length of resilient metal slidable through said notches, and having upper depressions for engaging with the flange, and lower depressions for engaging with the flange.

2. A lifting and holding device for a well plunger valve, consisting of a strip of resilient metal having side members and a cross-member at the lower portion in said side members, each of said side members having two inward depressions.

852,186. ELECTRICAL-CURRENT INTERRUPTER. FREDERIC W. LORD and FREDERIC W. ERICKSON, New York, N. Y. Filed Jan. 28, 1907. Serial No. 354,488.

Claim.—1. The combination in an arrester device of a casing partly filled with liquid insulation, inclosing and supporting spark gap electrodes, adapted to be arranged in series from the line wire to the ground, consisting of a self-adjusting pivoted line electrode, a series of rotatable spark gap segments arranged in a circle, with a grounded electrode.

2. The combination in an arrester device of a casing containing liquid insulation, inclosing and supporting

the line wire to the ground, consisting of a self adjusting pivoted line electrode, a series of rotatable insulated spark gap segments separated from each other and arranged in a circle, with a grounded electrode.

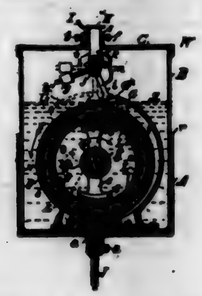

3. The combination in an arrester device of a casing containing liquid insulation, inclosing and supporting spark gap electrodes adapted to be arranged in successive series from the line wire to the ground, consisting of a self adjusting pivoted line electrode normally free from the liquid insulation, but when the liquid is agitated changes its position and becomes immersed therein, a series of rotatable insulated spark gap segments separated from each other and arranged in a circle, with a grounded electrode.

4. The combination in an arrester device of a casing partly filled with liquid insulation, inclosing and supporting spark gap electrodes adapted to be arranged in series from the line wire to the ground, consisting of a self adjusting pivoted line electrode, a series of spark gap segments arranged in a circle and adapted to be rotated in a certain direction, a plurality of electrodes located within the said segmental circle adapted to be rotated in a direction opposite the motion thereof, with a grounded electrode.

5. The combination in an arrester device of a casing inclosing and supporting spark gap electrodes adapted to be arranged in successive series from the line wire to the ground, consisting of a self adjusting pivoted line electrode, a series of rotatable insulated spark gap segments separated from each other and arranged in a circle, with a grounded electrode.

6. The combination in an arrester device of a casing containing liquid insulation, inclosing and supporting spark gap electrodes adapted to be arranged in successive series from the line wire to the ground, consisting of a self adjusting pivoted line electrode, a series of rotatable insulated spark gap segments separated from each other by passages and arranged in a circle upon a disk or frame, a shield at one end of the casing arranged to inclose the said segments, and a grounded electrode, as set forth.

7. The combination in an arrester device of a casing containing liquid insulation, inclosing and supporting spark gap electrodes adapted to be arranged in successive series from the line wire to the ground, consisting of a self adjusting pivoted line electrode, a series of rotatable insulated spark gap segments separated from each other by passages and arranged in a circle upon a disk, a shield at one end of the casing arranged to inclose the said segments, a plurality of electrodes located within the said segmental circle adapted to be rotated in a direction opposite the motion thereof.

8. The combination in an arrester device of a plurality of electrodes separated from each other by air gaps adapted to be arranged in successive series from the line wire to the ground, consisting of a line electrode, and a ground electrode, between which are a series of rotatable insulated electrodes separated from each other.

9. The combination in an arrester device of spark gap electrodes adapted to be arranged in successive series from the line wire to the ground, consisting of a line electrode and a ground electrode between which are a series of rotatable insulated electrodes separated from each other, with a plurality of electrodes located within the said series of electrodes adapted to be rotated in a direction opposite the motion thereof.

10. The combination in an arrester device of spark gap electrodes adapted to be arranged in successive series from the line wire to the ground, consisting of a line electrode normally held at a high resistance position and means for automatically forcing it into a low resistance position; and a grounded electrode; with a series of rotatable insulated electrodes between the line and ground electrode separated from each other, as set forth.

11. The combination in an arrester device of a casing containing liquid insulation, inclosing and supporting spark gap electrodes adapted to be arranged in successive series from the line wire to the ground; consisting of a self adjusting pivoted line electrode, a series of rotatable insulated spark gap segments separated from each other and arranged in a circle upon a suitable support carried by a shaft to which is attached a suitable motor, with a grounded electrode completing any series of spark gaps.

12. The combination in an arrester device of a casing containing liquid insulation, inclosing and supporting spark gap electrodes adapted to be arranged in successive series from the line wire to the ground; consisting of a self adjusting pivoted line electrode; a series of rotatable spark gap segments separated from each other and arranged in a circle upon a suitable support carried by a shaft to which is attached a suitable motor and rotating in a certain direction, a plurality of electrodes located within the said segmental circle and carried by a shaft to which is attached a motor adapted to rotate in a direction opposite that of the first motor, with a grounded electrode completing any series of spark gaps.

13. The combination in an arrester device of a casing whose lower portion is metal and its upper portion of insulating material, provided with a cover or lid, containing liquid insulation, a line electrode supported upon the lid; a series of independent spark gap segments arranged in a circle upon a suitable support carried by a shaft which passes through the wall of the metal casing to an external motor; with a grounded electrode completing any series of spark gaps; the line electrode being automatically adjustable relative to the succeeding spark gaps, as set forth.

14. The combination in an arrester device of a casing whose lower portion is metal and its upper portion of insulating material, provided with a cover or lid; a series of independent insulated spark gap segments arranged in a circle upon a suitable support carried by a shaft which passes through the wall of the metal casing to an external motor, which rotates in a certain direction; a plurality of electrodes located within the said segmental circle and carried by a shaft which passes through the wall of the metal casing to an external motor rotating in a contrary direction to the first motor; with a grounded electrode completing any series of spark gaps; the line electrode being automatically adjustable relative to the succeeding spark gaps, as set forth.

15. The combination in an arrester device of a plurality of electrodes insulated from each other, adapted to be arranged in successive series from the line wire to the ground, consisting of a line electrode and a ground electrode, between which are a series of insulated electrodes separated from each other and supported by a frame which is carried by a rotatable spindle.

16. The combination in an arrester device of a plurality of electrodes insulated from each other, adapted to be arranged in successive series from the line wire to the ground consisting of a line electrode and a ground electrode, between which is a disk carrying a series of separate and insulated electrodes, adapted to be rotated by a motor.

17. The combination in an arrester device of a casing inclosing and supporting spark gap electrodes adapted to be arranged in successive series from the line wire to the ground, consisting of an adjustable line electrode, a series of rotatable insulated spark gap electrodes separated from each other and arranged in a circle, with a grounded electrode.

852,187. CURTAIN-SUPPORT. WILLIAM LUFT, Jersey City, N. J. Filed Nov. 9, 1906. Serial No. 342,605.

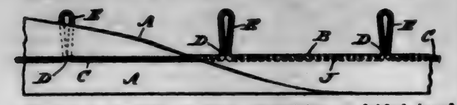

Claim.—A curtain support comprising a folded band having openings in the fold at intervals, a spacing cord located in the fold and extending through the openings to provide loops, and longitudinal stitching whereby the spacing cord is secured at its greatest diameter within the fold so as to leave the folded parts and spacing cord free from the greatest diameter or seat of the spacing cord.

852,188. DRY BATTERY. CLAY D. MANVILLE, Pittsburg, Pa., assignor of one-half to Julius Baer, Pittsburg, Pa. Filed Nov. 20, 1906. Serial No. 344,255.

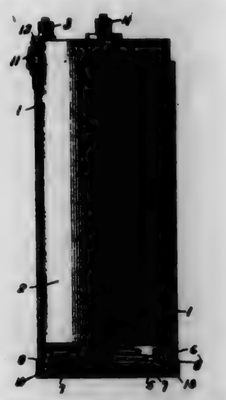

Claim.—1. The combination with a casing and a battery arranged therein, of a coil spring within the casing below the battery, and means for supporting said spring comprising a disk having loops or keepers to secure the lower convolution of the spring.

2. The combination with a casing and a battery therein, of a coil spring within the casing below the battery, and a spring connection between the upper end of the battery and the upper end of the casing.

3. The combination with a casing and a battery therein, of a disk resting on the bottom of the casing, a coil spring secured to said disk, and a resilient connection between the upper end of the battery and the upper end of the casing.

4. The combination with a casing and a battery arranged therein, of a spring within the casing below the battery and supporting the latter, and a spring located exteriorly of the casing having one end connected to the latter and its other end connected to the battery.

852,189. MACHINE FOR ORNAMENTING DIALS. EDWARD A. MARSH, Newton, Mass. Filed Jan. 31, 1907. Serial No. 355,025.

Claim.—1. An automatic engraving machine, comprising a work-holding member, a graving member, mechanism for moving one of said members in a substantially straight line, mechanism independent of the movement of said member for producing vibratory movements of the other member, and controlling means for bringing the graving member into cutting engagement with the work at the points where the design is to be cut and for rendering the graving member inoperative at other points.

2. An automatic engraving machine, comprising a work-holder, a graving tool means for moving one relatively to the other to produce the effect of a travel of the tool across the face of the work, mechanism for moving the tool back and forth transversely of the said traveling motion, said mechanism being independent of any traveling part or member, and controlling devices for bringing the tool into cutting engagement with the work at the desired points and for disabling the tool at other points.

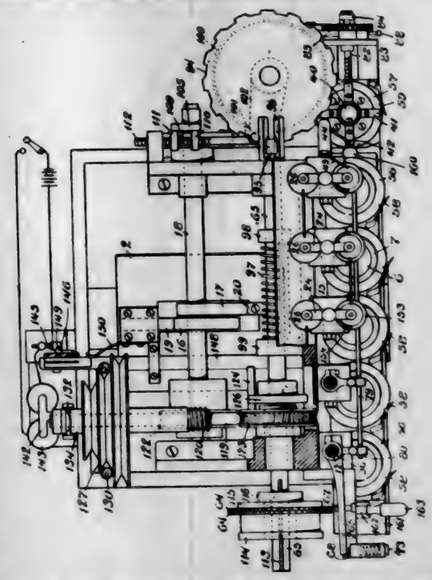

3. An automatic engraving machine, comprising a work-holder, a tool-holder, a graving tool eccentrically mounted on said tool-holder, mechanism for moving the work-holder and work back and forth past the tool, electro-magnetic devices automatically controlled to bring the tool into and out of cutting engagement with the work at the points necessary for producing the designs, and mechanism for vibrating the tool holder to displace the tool transversely of the motion of the work, whereby undulating engraved lines are produced.

4. A machine for automatically producing identical ornamentation on a plurality of parts, comprising a plurality of work-holders; a plurality of graving tools; mechanism for reciprocating the holders past the tools; electro-magnets operable to bring the tools into cutting relation with the work; a controller including a point and a plate, the latter movable simultaneously with the work-holders, in circuit with the magnets, for causing them to be energized when the parts of the work on which the ornamentation is to be cut are adjacent the tools; and means independent of the work-holders or the carrier therefor for vibrating the tools transversely of the motion of the work, while the cutting takes place.

5. A machine for automatically producing engraved ornamentation, consisting of a graving tool, an oscillatable and reciprocable holder therefor; a work-holding carriage movable to carry the face of the work past the tool; opposed means, consisting of an electro-magnet and a spring for reciprocating the tool-holder and the tool toward and from the work; a controller having portions made of conducting material carried with the work-holder on the carriage; a contact style, the controller and style being in circuit with the magnet, and when making electric contact with each other, serving to energize the same, thereby locating the position of the ornamentation on the work; a lateral arm on the tool-holder; a cam member; and connections between said lateral arm and cam member for vibrating the tool while in its cutting position.

6. A machine for producing engraved ornamentation, comprising a reciprocable and oscillatable tool-holder; a graving tool eccentrically mounted on the holder; a work-holding carriage movable to carry work past the tool in close propinquity thereto; suitably controlled magnetic means for moving the tool into contact with the work to cut the ornamentation; a rotating pattern cam having projections and indentations; an arm engaged and oscillated by said cam; and connections between said arm and the tool for vibrating the latter transversely to the operative movement of the carriage.

7. A machine for producing engraved ornamentation, comprising a reciprocable and oscillatable tool-holder; a graving tool eccentrically mounted on the holder; a work-holding carriage movable to carry work past the tool in close propinquity thereto; suitably controlled magnetic means for moving the tool to the work to cut the ornamentation; a rotating cam having projections and indentations, a sleeve surrounding the tool-holder; an arm secured to said sleeve, engaged and oscillated by said cam; and arms on the sleeve and tool-holder engaged with each other, through which the tool is vibrated.

8. A machine for producing engraved ornamentation, comprising a reciprocable and oscillatable tool-holder; a graving tool eccentrically mounted on the holder; a work-holding carriage movable to carry work past the tool in close propinquity thereto; suitably controlled magnetic means for moving the tool to the work to cut the ornamentation; a rotating shaft; a plurality of pattern cams thereon, connections between the tool-holder and the cams, operated by the latter to vibrate the tool; and mechanism for periodically moving said cams transversely to bring one or another thereof into operative position.

9. A machine for producing engraved ornamentation, comprising a reciprocable and oscillatable tool-holder; a graving tool eccentrically mounted on the holder; a work-holding carriage movable to carry work past the tool in close propinquity thereto; suitably controlled magnetic means for moving the tool to the work to cut the ornamentation; an endwise-movable rotating shaft; a plurality of pattern disks thereon having peripheral protuberances and depressions, an arm adapted to bear yieldingly against one of the cams and be oscillated thereby; connections between the arm and tool whereby the latter is vibrated by the former; a cam bearing against the end of said shaft for moving the same to bring one or other of the disks into operative relation with the arm; and pawl-and-ratchet mechanism for rotating said cam step-by-step.

10. A machine for simultaneously engraving identical ornamentation on a plurality of parts, comprising a plurality of graving tools eccentrically mounted on oscillatable holders; oscillatory arms each having connection with one of the holders to communicate oscillations thereto; a clamp pivoted to each of said arms; a single rod secured to all of said clamps; means for oscillating one of said arms, the oscillations thereof being uniformly communicated by said rod to all the arms; and a carriage on which the work is mounted reciprocable to move the same while the graving tools are in engagement therewith.

11. A machine for simultaneously engraving identical ornamentation on a plurality of parts, comprising a plurality of graving tools, oscillatory holders on which said tools are eccentrically mounted; a sleeve surrounding each holder; connections between the sleeves and tool holders for communicating oscillations; an arm rigid with each sleeve; a single connecting rod pivotally joined to all the arms; a second arm on one of the sleeves; a rotating corrugated disk against which said second arm is yieldingly held, for oscillating all the sleeves and tool holders in unison; and a work-holding carriage for moving the work while the tools are in engagement therewith.

12. In a machine of the character described, a sleeve mounted to oscillate; an arm fixed to said sleeve; a rotating disk having peripheral corrugations; a pin on said arm; a spring yieldingly pressing said pin against the disk, whereby the arm may be oscillated; a tool holder passing through said sleeve and reciprocable therein; a graving tool eccentrically mounted on the holder; and lateral projections on the holder and sleeve respectively engaged with each other whereby both oscillate simultaneously.

13. In a machine of the character described, a graving tool suitably supported; a main carriage, means for reciprocating the same; a cross-feed carriage adapted to hold the work mounted on the main carriage and movable transversely of the motion thereof; a feed screw mounted on the main carriage and engaged with the cross-feed carriage; a ratchet and an arm both loose on the screw and relatively movable; a pawl on the arm for engaging the ratchet; a fixed arm by which the screw may be manually turned; means for detachably engaging said fixed arm with the ratchet; and stationary stops for arresting the movable arm before the reversal of the main carriage at each limit of its reciprocations, whereby to rotate the screw and advance the cross-feed carriage.

14. In a machine of the character described, a movable work-holding carriage; a graving tool; a main shaft for operating the machine; a loose driving pulley on the shaft; a clutch for detachably connecting the pulley and shaft; spring means tending to disconnect the clutch; a latch for retaining the clutch in connection; an electro-magnet for securing the latch against yielding resistance; and automatic means for breaking the circuit of the magnet to release the latch and permit disconnection of the clutch at the conclusion of the cutting.

15. In a machine of the character described, a movable work-holding carriage; a cross feed for the work; a graving tool; a main shaft for operating the machine; a loose driving pulley on the shaft; a clutch for detachably connecting the pulley and shaft; spring means tending to disconnect the clutch; a latch for retaining the clutch in connection; an electro-magnet for securing the latch against yielding resistance; and a member carried by the work-holding carriage and operated by the cross-feed to break the circuit of the magnet at the end of the cutting operations and release the latch, thereby permitting the clutch to be disconnected.

16. In a machine of the character described, a movable work-holding carriage; a cross feed for the work; a graving tool; a main shaft for operating the machine; a loose driving pulley on the shaft; a clutch for detachably connecting the pulley and shaft; a manually-operable lever for connecting the clutch; spring means tending to disconnect the clutch; a latch arranged to abut against a projection on said lever when the latter has been manually displaced for retaining the clutch in connection; an electro-magnet for bringing and securing the latch in locking position against yielding resistance; a separable contact in the circuit of the magnet; and a circuit breaker movable bodily with the carriage and transversely shiftable by the cross feed for separating the contact at the end of the engraving operations.

17. In a machine of the character described, a movable work-holding carriage; a shaft engaged therewith to reciprocate the same; a graving tool holder; a plurality of disks having peripheral irregularities; connections with the tool-holder operated by said disks to oscillate the holder; an endwise-movable shaft on which the disks are mounted; a cam bearing against the end of the latter shaft; a ratchet secured to the cam; a pawl; and mechanism reciprocated by the first shaft for rotating the cam step-by-step.

18. In a machine of the character described, a movable work-holding carriage; a shaft engaged therewith to reciprocate the same; a graving tool holder; a plurality of disks having peripheral irregularities; connections with the tool-holder operated by said disks to oscillate the holder; an endwise-movable shaft on which the disks are mounted; a cam bearing against the end of the latter shaft; a ratchet secured to the cam; a pawl; a reciprocable slide connected with the pawl for operating the same to rotate the ratchet and cam step-by-step; an arm oscillated by the first shaft; and stops secured to the slide between which said arm plays and alternately engaged thereby to reciprocate the slide.

19. In a machine of the character described, a movable work-holding carriage; a shaft engaged therewith to reciprocate the same; a graving tool holder; a plurality of

pattern disks having peripheral irregularities; connections with the tool-holder operated by said disks to oscillate the holder; an endwise-movable shaft on which the disks are mounted; a cam bearing against the end of the latter shaft; a ratchet secured to the cam; a pawl; a reciprocable slide connected with the pawl for operating the same to rotate the ratchet and cam step-by-step; adjustable stops secured to the slide; and driving means operated by the first shaft playing between said stops for reciprocating the slide.

20. In a machine of the character described, the combination of a graving tool, a work-holder; one of which moves relatively to the other to engrave the work; an electro-magnet for bringing the tool toward the work, a spring for removing the tool; the devices for locating the position of the ornamentation on the work, consisting of a pattern plate and a style having relative motions similar to those of the work and graving tool and both in circuit with the electro-magnet, the plate having a surface of conducting material similar to the ornamented area, with which the style is adapted to make contact, whereby the magnet is energized and the tool brought into cutting position; means for vibrating the tool while the cutting movement takes place; and a connection from the tool to the style whereby the latter may be given a corresponding simultaneous vibration.

21. In a machine for producing similar ornamentation on a plurality of parts, work-holders, graving tools and holders therefor, a plurality of electro-magnets, an armature for each magnet arranged, when attracted to the latter, to move one of the tools into cutting relation with the work, and a stop on each magnet independently adjustable to prevent movement of the armature of that magnet.

22. In a machine for producing similar ornamentation on a plurality of parts, work-holders, graving tools and holders therefor, a plurality of electro-magnets, an armature for each magnet arranged, when attracted to the latter, to move one of the tools into cutting relation with the work, and a cap frictionally held on each magnet, having a stop projection which can be moved between the magnet and its armature to prevent operation of the latter.

852,190. SOAP CUTTING AND PRESSING MACHINE. HUGH W. MCEWEN, Chicago, Ill. Filed Aug. 14, 1906. Serial No. 330,526.

Claim.—1. In a soap cutting and pressing machine in combination, means for sub-dividing a bar into a plurality of cakes, pockets to receive each of said cakes, means for moving said pockets to space the same apart, and means adapted to receive the cakes from the pockets and press them to the desired shape.

2. In combination, a platform having a slot therein, a plurality of wires extending across said slot, a plunger mounted above said platform and adapted to pass through the slot therein, vertical rods upon which said plunger is mounted, and longitudinally moving plates having cam surfaces adapted to engage the lower end of said rods and depress the same, and causing the plunger to pass through the said slot.

3. In combination, two vertical standards, a platform mounted on the said standards, a vertical reciprocating rod adjacent each of said standards, a spring on each of said rods normally tending to raise the same, a plunger carried by said rods and adapted to pass through an opening in the platform, and plates movable in respect to the platform and having cam surfaces adapted to engage with said vertical rods, whereby upon the longitudinal movement of said plates, the plunger is forced through the opening in the platform.

4. In combination, means for sub-dividing a bar of plastic material into a plurality of sections, pockets adapted to receive said sections, a plurality of molds in which said sections are pressed, and means for moving said molds toward said pockets and simultaneously spacing said pockets apart.

5. In combination, means for sub-dividing a bar of plastic material into a plurality of sections, a plurality of open-ended pockets beneath said sub-dividing mechanism and adapted to receive the said sections, means for moving said pockets longitudinally to space the sections a greater distance, and means for opening the lower side of each of said pockets to permit the escape of the contents thereof.

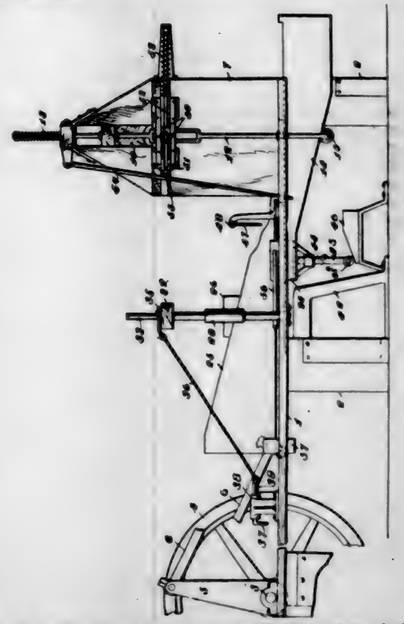

6. In combination, means for sub-dividing a bar of plastic material into a plurality of sections, a plurality of longitudinally movable pockets mounted beneath said sub-dividing mechanism and adapted to receive said sections, means connecting each of said pockets to the next succeeding one to limit the distance to which they may be separated, and means for moving one of said pockets longitudinally.

7. In combination, a plurality of mold sections, corresponding mold sections mounted above the same and adapted to be brought in contact with said first mentioned mold sections, means for moving said first mentioned mold sections laterally and simultaneously raising the bottom thereof, and a baffle adapted to engage with the contents of the molds to remove the same upon further lateral movement of the mold sections.

8. In combination, a laterally movable base mold section, a reciprocating mold section adapted to be brought into engagement therewith, means for raising the bottom of said mold section as the latter is moved laterally, means for removing the contents of said mold section upon further lateral movement thereof, and means for refilling said mold section upon still further lateral movement.

9. In combination, a laterally movable mold section, means for removing the contents thereof upon the lateral movement of said section, a pocket, means for moving said pockets into alinement with the mold sections, and means for discharging the contents of said pocket into said mold section upon the further lateral movement of the latter.

10. In combination, a laterally movable mold section, means for filling the said section, supports over which said section is adapted to be moved, a vertical reciprocating mold section adapted to be brought in contact with said base section, and means for releasing said vertically movable section and permitting it to drop upon the base section as the latter reaches a position above said supports.

11. In combination, a rectangular frame, standards mounted upon the said frame, a vertically movable mold section slidable on the said standards, two plates mounted to move longitudinally of said frame, the upper edge of each of said plates being inclined, means whereby the mold section will be raised upon the longitudinal movement of said plates, means for holding said mold section in its raised position during the return movement of said plates, and means for releasing said mold section upon the completion of said return movement.

12. In combination, a frame, an upper mold section movable only in a vertical plane, a lower mold section movable only in a lateral plane, and means for simultaneously raising said upper mold section and laterally moving said lower mold section.

13. In combination, a frame, sub-dividing means mounted thereon, receiving pockets, a vertically movable mold section, a laterally movable mold section, and means for simultaneously raising said vertically movable mold section, removing the contents of said laterally movable mold section and raising said sub-dividing means.

14. In combination, a plurality of pockets, a plurality of mold sections, and means whereby upon the lateral movement of said sections the contents of said molds is removed and the contents of said pockets delivered to said molds.

15. In combination, a plurality of pockets, means for sub-dividing a bar of plastic material and delivering a section to each of said pockets, chains connecting said pockets, molds adapted to be moved beneath said pockets, and means whereby the chains are drawn taut and the pockets placed to the maximum distance simultaneously with the movement of the mold sections beneath said pockets.

16. In combination, a plurality of pockets, means for supporting said pockets, a bar secured to one of said pockets, a plate having an inclined edge adapted to be moved in contact with said bar and move the same longitudinally, a spring normally tending to move said bar in the opposite direction, flexible means connecting said pockets, and means for moving said plate in contact with said bar, whereby the latter is moved longitudinally and the pockets spaced to a greater distance apart.

852,191. ERASER FOR TYPE-WRITERS. EMERSON C. MCFADDEN, Short Hills, N. J. Filed Jan. 28, 1907. Serial No. 354,462.

Claim.—1. An eraser for inking out characters produced by a typewriter or the like, comprising an inked ribbon of the same color as the background of the paper on which said characters appear, and spring arms for holding said ribbon in an outstretched position.

2. An eraser for inking out characters produced by a typewriter or the like, comprising a holder with spring arms, and an inked and uninked ribbon secured at opposite edges, carried by said arms.

3. An eraser for inking out characters as produced by a typewriter or the like, comprising a holder with spring arms, the latter having hooked extremities, and an inked and an uninked ribbon secured at opposite edges, carried by said arms.

4. A process for erasing characters as produced on paper or other material by a typewriter, which consists in reproducing in a color corresponding to the color of the paper, the same characters by the typewriter on said paper coincident with the characters desired to erase.

5. A process for erasing characters as produced on paper or other material by a typewriter, which consists in covering said characters with a ribbon inked in the color of the background of the paper, and then repeating the same characters by the typewriter on said paper coincident with the characters desired to erase.

6. An eraser for rendering invisible the characters produced on paper or other material by a typewriter, comprising an inked ribbon of a color corresponding to the paper on which said characters are produced, and means for holding said ribbon in an outstretched position.

7. An eraser for rendering invisible the characters produced on paper or other material by a typewriter, comprising an inked ribbon of a color corresponding to the paper on which said characters are produced, and an uninked ribbon for shielding one side of said inked ribbon.

8. An eraser for rendering invisible the characters produced on paper or other material by a typewriter, comprising an inked ribbon of a color corresponding to the paper on which said characters are produced, an uninked ribbon for shielding one side of said inked ribbon, and means for holding said ribbons in an outstretched position.

852,192. SWITCH. WILLIAM J. MCKEWEN, Philadelphia, Pa. Filed Feb. 19, 1907. Serial No. 358,186.

Claim.—1. A switch comprising a base plate having a longitudinal recess and a turn-out rail communicating therewith, a switch plate pivoted in said recess and provided with a diagonal recess, a guide rail, a switch point, and a button pivotally attached to the end of said switch plate adapted to bear against opposite walls of said recess, substantially as shown and described.

2. A switch comprising a base plate provided with a longitudinal recess and a turn-out communicating therewith, a switch plate pivotally mounted on said base plate within said recess and provided with a diagonal groove, a guide rail and switch point, and a button pivotally attached to the end of said switch plate adapted to bear at

its end against opposite side walls of said base plate, said base plate being formed with apertures adapted to receive an operating bar for adjusting the button, substantially as shown and described.

3. A switch comprising a base plate having a longitudinal recess and a turn-out communicating therewith, a switch plate pivoted to said base plate within said recess and provided with a diagonal groove, a switch point and a guide rail, and a button pivoted to the under side of the end of said switch plate adapted to bear against the side walls of the base plate, and means connected with said base plate and switch plate adapted to enable said button to be rotated on said switch plate, substantially as shown and described.

4. A switch comprising a base plate provided with a longitudinal recess, and a turn-out communicating therewith, a switch plate pivoted to said base plate within said recess and provided with a switch point, and a button pivotally connected with the free ends of said switch point adapted to bear at its end against the side walls of said recess, substantially as shown and described.

852,193. ELECTRIC EXERCISING APPARATUS. ARCHIE B. MCMILLAN, Brooklyn, N. Y. Filed Apr. 4, 1906. Serial No. 309,877.

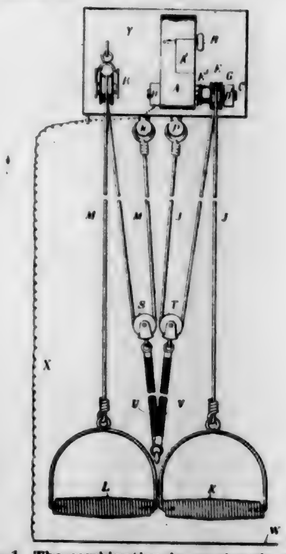

Claim.—1. The combination in an electric generator for exercising apparatus, of a field magnet, a rotatable armature, a pulley fitted with two insulated conducting contacts in its periphery at diametrically opposite points, said pulley being mounted on, but insulated from, the armature shaft, one end of the armature winding connected to said insulated pulley and the other end to said insulated conducting contacts, and an exercising cord of conducting material for the operation of said pulley, substantially as set forth.

2. The combination in an electric exercising apparatus, of a field magnet, a rotatable armature, an insulated pulley on the armature shaft, a conducting pin passing diametrically through the center of the said pulley and shaft, said pin being in contact with the shaft but insulated from the pulley, the ends of said pin appearing flush with the periphery of said pulley on opposite sides thereof, one end of the armature winding connected to said insulated pulley and the other end to said armature shaft thereby making connection with the insulated pin, and an exercising cord of conducting material for the operation of said pulley, substantially as set forth.

3. The switching arrangement of the electric circuit comprising the looped ends of the cords J, M, and the terminals N, P, adapted to receive and hold said looped ends in suspension, said terminal N having electrical connection with the footplate and one end of the armature winding and said terminal P having electrical connection with the other end of the armature winding through the medium of cord J, whereby by the transfer of cord M from terminal N to terminal P the cords J, M, are changed from series to parallel circuit, substantially as set forth.

4. In an electric generator for exercising apparatus, a field magnet having an adjustable section, said section pivoted on and adapted to be locked in different positions by a suitable screw, for the purpose and substantially as set forth.

5. In an electric exercising apparatus, a grip handle formed of two lengths of bare wire, one of said lengths being wound in a single cylindrical or barrel shaped coil and terminating in a small axial loop at either end, the other length of wire suitably curved to form a semi-circular bridge between the ends of said coil and provided in its middle part with a suitable loop for the convenient attachment of a bare wire exercising cord and the ends of said wire bent inward at right angles to fit into the said axial loops, substantially as set forth.

6. In an electric generator for exercising apparatus adapted to be operated by drawing an exercising cord over a pulley mounted on the armature shaft, a pulley for the reception of said exercising cord, said pulley being formed of conducting material and provided with two conducting contacts inserted in and flush with the periphery of said pulley at diametrically opposite points, said conducting contacts being electrically connected together and insulated from said pulley, substantially as set forth.

852,194. CHOPPER AND CULTIVATOR. ELBERT T. ODOM, Sherman, Tex. Filed May 12, 1906. Serial No. 316,577.

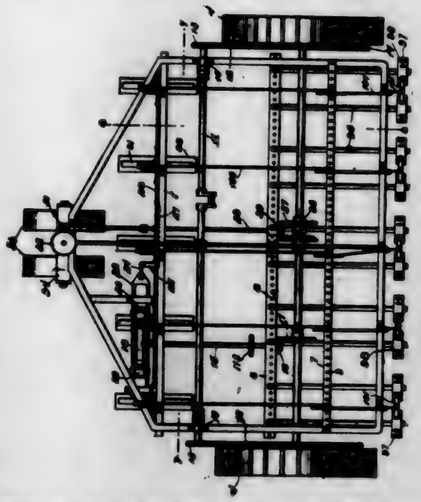

Claim.—1. In a machine of the type described, a main frame, a rotary power shaft, a reciprocatory actuating rod sustained in the frame, a slide member connected with the rod and provided with spaced abutments, a rotary cam shaft having a head provided with a cam portion adapted to act on the abutments for reciprocating the slide member, operative connections between the power shaft and cam shaft, and movable devices connected for operation by the actuating rod.

2. In a machine of the type described, a main frame, a rotary power shaft mounted therein, a reciprocatory actuating rod sustained in the frame, movable devices connected for operation by the rod, intermediate operative connections between the shaft and rod for actuating the latter, and means included in said connections for moving the rod at regular predetermined intervals.

3. In a machine of the type described, a main frame, a rotary power shaft mounted therein, a reciprocatory actuating rod sustained in the frame, movable devices connected for actuation by the rod, a slide member mounted in the frame and operatively connected with the rod, spaced rotary abutments provided on the slide member, a rotary head arranged between the abutments and having a cam portion adapted to act thereon for reciprocating the slide, and operative connections between the head and power shaft.

4. In a machine of the type described, a frame, a rotary power shaft mounted therein, a reciprocatory actuating rod sustained in the frame, a slide member mounted in the frame and operatively connected with the rod, said slide having a pair of side portions, rollers journaled in spaced relation between the guide portions, a cam shaft journaled in the frame and operatively connected with the power shaft, a head carried for rotation with the cam shaft and arranged between said rollers, said head being provided with a cam portion adapted to act on the rollers for reciprocating the slide, and movable devices connected for operation by the actuating rod.

852,195. CARPET-BEATER. OSCAR O'HALLORAN, New York, N. Y. Filed July 24, 1906. Serial No. 327,491.

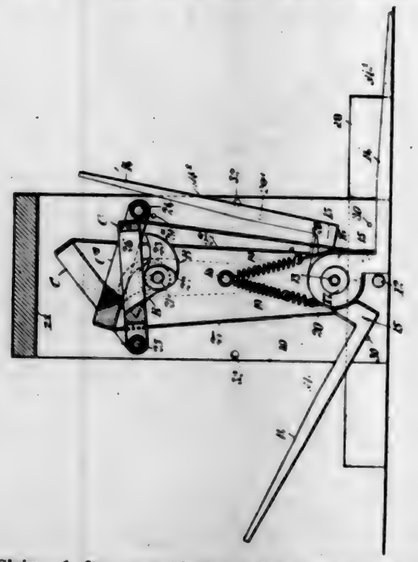

Claim.—1. In a carpet beater, a frame, opposing series of spring-controlled beaters, a shaft upon which said beaters are mounted, series of lift arms for the beaters and connected therewith, and means for raising and releasing said arms.

2. In a carpet beater, a frame, opposing series of spring-controlled beaters in the frame, a support located in the frame and upon which the beaters of the series are alternately loosely mounted, tension devices for the beaters tending to normally hold them in horizontal position, and means for intermittently raising and releasing the beaters.

3. In a carpet beater, a frame, opposing series of spring-controlled beating arms located within the frame, a shaft upon which the said beating arms are loosely and alternately mounted, a series of lifting arms located above the beater arms, the series being oppositely mounted and alternately arranged, and a series of cams for the said lift arms, said cams being spirally arranged upon their support.

4. In a carpet beater, series of oppositely extending beater arms, a shaft upon which the said beater arms are mounted to turn, series of oppositely extending and alternately arranged lift arms pivoted at their outer ends in the said frame, said lift arms corresponding in number and position to the series of beater arms, flexible connections between the outer ends of the lift arms and the outer faces of the beater arms adjacent to the shaft, springs for the said beater arms, supports for the upper ends of the said springs, the lower ends of said springs being attached to the beater arms at their pivotal sections, a shaft mounted to turn below the lift arms, and a series of cams spirally arranged upon said shaft, a cam being provided for each lift arm.

5. In a carpet beater, the combination with a frame, a fixed shaft in the frame, opposing series of beater arms loosely mounted and alternately arranged upon said fixed shaft, opposing series of lift arms located above the beater arms, each lift arm having a longitudinal opening therein, supports upon which the outer ends of the lift arms are pivoted, flexible connections between the free ends of the lift arms and of the beater arms at their pivotal portions, springs secured to the beater arms, opposite the points of attachment of the said flexible connections supports for the upper ends of said springs, which springs normally tend to hold the beater arms in horizontal position, a shaft mounted to rotate below the lift arms, and a series of cams corresponding in number to the lift arms and spirally arranged upon said shaft, each cam being provided with a segmental tongue section, adapted at its convexed surface for engagement with the under face of a lift arm, and in one position of said cam the tongue being adapted to enter the opening in the lift arm permitting the same to drop.

6. In a carpet beater, a frame, a shaft secured in the frame, a series of beater arms loosely mounted on the shaft, an upper series of lift arms, supports upon which said lift arms are pivoted, flexible connections between the free ends of the lift arms and the pivot arms, springs attached to the beater arms, supports for the upper ends of said springs, said springs serving normally to hold the beater arms in horizontal position, a shaft mounted to revolve beneath the lift arms, and cams carried by said shaft for lifting and releasing engagement with said lift arms.

852,196. APPARATUS FOR DELIVERING MOLTEN GLASS. ROGER S. PEASE, Allegheny, Pa., assignor to Alfred M. Lee, trustee, Pittsburg, Pa. Filed June 20, 1906. Serial No. 322,502.

Claim.—1. A rotatable glass holding vessel provided with a receiving opening and a laterally extending drawing chamber, substantially as set forth.

2. A rotatable glass holding vessel provided with a receiving opening and a removable laterally extending drawing chamber, substantially as set forth.

3. A rotatable glass holding vessel provided with a laterally extending drawing chamber, substantially as set forth.

4. A rotatable glass holding vessel provided with a receiving opening and a laterally extending drawing chamber, and having a bridge wall extending downwardly below the normal level of the contained glass, substantially as set forth.

5. A rotatable glass holding vessel provided with a receiving opening and oppositely extending drawing chambers provided with downwardly extending bridge walls and adapted to receive a quantity of glass from the interior cavity, substantially as set forth.

6. A rotatable glass holding vessel provided with a receiving opening and oppositely extending drawing chambers provided with upwardly opening drawing apertures, and oppositely extending bridge walls projecting downwardly below the normal level of the contained glass, substantially as set forth.

7. The combination with a stationary glass-containing

vessel, of a relatively movable receiving and delivering vessel provided with a laterally extending drawing compartment, substantially as set forth.

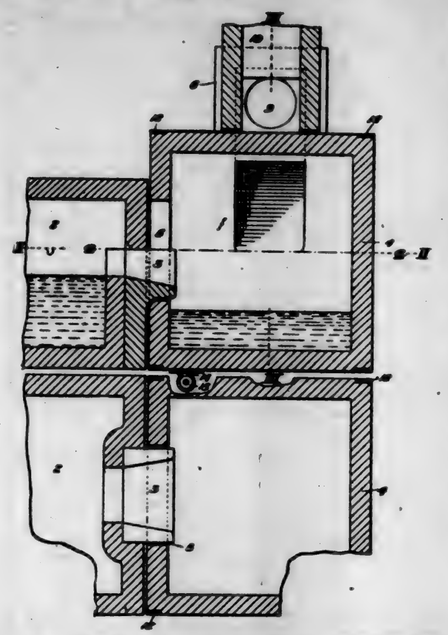

8. The combination with a stationary glass-containing vessel, of a relatively movable receiving and delivering vessel provided with oppositely arranged laterally extending drawing compartments communicating with its main interior cavity and arranged to be located alternately in drawing position upon partial tipping of the vessel, substantially as set forth.

9. The combination with a stationary glass-containing vessel and an outlet flue, of a tipping vessel arranged to receive glass in its interior, and having laterally arranged drawing compartments adapted to be alternately positioned for drawing and in communication with said flue, substantially as set forth.

10. The combination with a stationary glass containing vessel having a projecting spout, of a tipping vessel provided with an aperture surrounding the spout and having a laterally extending drawing compartment, substantially as set forth.

11. The combination with a stationary glass-containing vessel having a projecting spout, of a tipping vessel provided with an aperture surrounding the spout and having oppositely extending drawing compartments adapted to be located in drawing position and in registering position with an outlet flue alternately, substantially as set forth.

12. The combination with a stationary glass-containing vessel having a delivery spout, of a vessel located below said spout having a laterally projecting delivering compartment, means for providing a rolling support for the vessel, and means for rotating the vessel upon said supports, substantially as set forth.

13. The combination with a tilting receiving vessel, of a separably attached withdrawing chamber, substantially as set forth.

14. The combination with a tilting receiving vessel, of oppositely disposed separably attached withdrawing chambers, substantially as set forth.

15. The combination with a movable receiving vessel having a charging opening, of a stationary glass-containing receptacle having a separable delivering spout attached thereto and projecting through the charging opening into the interior of the receiving vessel, substantially as set forth.

16. The combination with a stationary glass-containing receptacle having a separable delivery spout, of a relatively movable vessel having an aperture surrounding the spout and provided with a plurality of separable withdrawing compartments, substantially as set forth.

17. The combination with a stationary glass-containing receptacle having a separable delivery spout, and a downwardly depending flue; of a movable vessel having oppositely extending withdrawing compartments adapted to be positioned for drawing and in communicating relation to said flue alternately, substantially as set forth.

18. The combination with a downwardly depending flue having a damper gate, of a relatively movable glass containing vessel having oppositely extending withdrawing compartments adapted to make alternate communicating contact with said flue during the time that the other compartment is in withdrawing position, substantially as set forth.

852,197. METHOD OF DRAWING GLASS. ROGER S. PEASE, Allegheny, Pa., assignor to Alfred M. Lee, trustee, Pittsburg, Pa. Filed June 21, 1906. Serial No. 322,671.

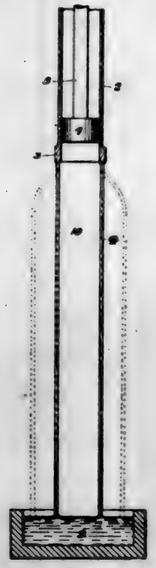

Claim.—1. The method of forming hollow glass articles, consisting in drawing a hollow article from a bath of molten glass around a relatively stationary column of fluid, substantially as set forth.

2. The method of forming hollow glass articles, consisting in drawing a hollow article from a bath of molten glass around a relatively stationary column of fluid, and utilizing the expansion of the fluid due to the radiated heat of the batch and cylinder-in-process, to distend the article, substantially as set forth.

3. The method of forming hollow glass articles, consisting in drawing a hollow article from a bath of molten glass around a relatively stationary column of fluid, and allowing the inclosed fluid to expand by radiated heat, substantially as set forth.

4. The method of forming hollow glass articles, consisting in lowering a bait cylinder having a bait upon the surface of molten glass and causing the bait to adhere thereto, and then drawing the bait cylinder upwardly around an air-tight abutment, substantially as set forth.

5. The method of forming hollow glass articles, consisting in lowering a bait cylinder having a bait upon the surface of molten glass and causing the bait to adhere thereto, and then drawing the bait cylinder upwardly around a stationary air-tight abutment, substantially as set forth.

6. The method of forming hollow glass articles, consisting in drawing a hollow article from a bath of molten glass around a relatively stationary column of fluid, allowing the inclosed fluid to expand by radiated heat, and exhausting excess pressure, substantially as set forth.

7. The method of forming hollow glass articles, consisting in drawing a hollow article from a bath of molten glass around a relatively stationary column of fluid, allowing the inclosed fluid to expand by radiated heat, and supplying additional fluid pressure to the column, substantially as set forth.

8. The method of forming hollow glass articles consisting in lowering a bait cylinder having a bait upon the surface of molten glass and causing the bait to adhere thereto, then drawing the bait cylinder upwardly around an air-tight abutment, and then moving the abutment, substantially as set forth.

852,198. LINING FOR PNEUMATIC TIRES AND OTHER PNEUMATIC ARTICLES. FRED PETMECKY, Austin, Tex. Filed Dec. 22, 1906. Serial No. 349,073.

Claim.—1. A lining for pneumatic tires and like pneumatic articles consisting of a thin permanent coating for the inner surface of the article, the coating being composed of dextrin, water, carbolic acid, a rubber solution, and cotton fibers in the proportion specified.

2. A lining for pneumatic tires and like pneumatic articles, consisting of a thin permanent coating for the inner surface of the article, the coating being composed of dextrin 12 oz.; water 8 oz.; carbolic acid ½ oz.; rubber solution 5 oz., and fibers 3 oz.

852,199. CRANK-SHAFT. JOHN POEHNER, Clearwater, Kans. Filed Jan. 3, 1907. Serial No. 350,563.

Claim.—1. In a crank shaft construction, a crank comprising arms, one having a laterally extending socket, and the other a laterally extending projection to seat within the socket, a fastening member extending through the parts and coupling them against disconnection, the engaging surfaces of the socket and projection being angular to prevent relative rotation thereof, a bearing, and anti-friction bearing members between said bearing and the wrist formed by said socket and projection.

2. In a crank shaft construction, a bearing, a crank comprising arms, said crank being provided with a wrist pin comprising a socket upon one arm and an interfitting projection upon the other arm, a fastening extending axially through the socket and projection, and anti-friction bearing members between said wrist pin and the wall of the bearing.

3. In a crank shaft construction, the combination of bearings, crank shaft sections, outer crank arms upon the crank shaft sections, inner crank arms integral with each other and connected with the outer crank arms by wrist pins extending through the bearings, each wrist pin comprising a socket on one arm and an interfitting projection on the other arm, combined with a fastening uniting the arms to hold the socket and pin from disconnection, and anti-friction bearings between the respective crank pins and the bearings.

852,200. TYPE-WRITING MACHINE. ROBERT REIN, Berlin, Germany, assignor to Louis Te Kock, Dessau, Germany. Filed Mar. 6, 1905. Serial No. 248,474.

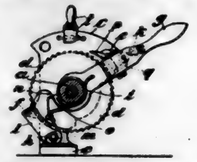

Claim.—1. In line-spacing mechanism, the combination with a paper-roller, of oscillating operating mechanism for the roller, locking mechanism, and means whereby the movement of the operating mechanism in a reverse direction beyond the limit of its normal oscillation will release the locking mechanism.

2. In line-spacing mechanism, the combination with a paper-roller, of an oscillating operating mechanism therefor, locking mechanism, and means whereby the movement of the operating mechanism in a reverse direction beyond the limit of its normal travel may release the operating mechanism from the paper-roller.

3. In line-spacing mechanism, the combination with a paper-roller, of an oscillating operating mechanism therefor, locking mechanism, and means whereby the movement of the operating mechanism in a reverse direction beyond the limit of its normal travel may release the operating mechanism and the locking mechanism from the paper roller.

4. In a line-spacing mechanism, the combination with a paper-roller and operating mechanism therefor, of a carrier which may be engaged by the operating mechanism, locking means for the paper-roller mounted upon the carrier, and a spring connecting the operating means and carrier.

5. In line-spacing mechanism, the combination with a paper-roller and operating mechanism therefor, of a carrier which may be engaged by the operating mechanism, locking means for the paper-roller mounted upon the carrier, a spring serving to normally maintain the engagement of the operating mechanism and carrier, and a spring connecting the operating means and carrier.

6. In line-spacing mechanism, the combination with a paper-roller and operating mechanism therefor, of locking mechanism, and means for simultaneously throwing the operating mechanism out of action and releasing the locking mechanism.

852,201. SEA-ANCHOR. FREDERICK ROUSE, Honolulu, Hawaii. Filed Apr. 12, 1906. Serial No. 311,251.

Claim.—1. A sea anchor or drag comprising a cylindrical oil reservoir, links pivotally connected with the ends of the reservoir, rods pivotally connected to the links and to each other, a rod supported by the reservoir and forming with the other rods a triangular frame, a section of canvas removably connected with the frame, a bridle connected with the corners of the frame, and a grapple connected with the lower corner of the said frame.

2. The combination of an oil reservoir, a sea anchor or drag connected to and depending from the same, a grap-

piling hook suspended from the lower part of the drag, and means for connecting said parts with a vessel.

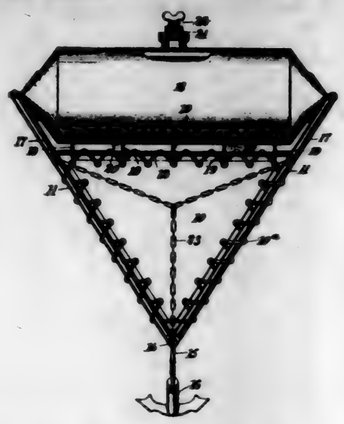

852,202. REINFORCED CONCRETE ARCH. HENRY M. RUSSELL, Jr., Wheeling, W. Va. Filed Mar. 23, 1906. Serial No. 307,810.

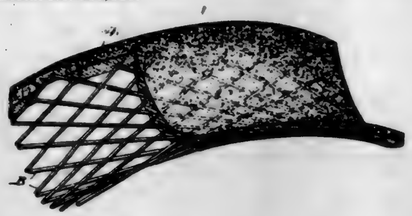

Claim.—1. A reinforced concrete arch comprising a concrete body having a cross section of an inverted arch shape, and metallic reinforcing members embedded in the said concrete body, the said reinforcing members being straight.

2. A reinforced concrete arch comprising a concrete body having a cross section of an inverted arch shape, and metallic reinforcing members embedded in the said concrete body, the said reinforcing members being straight and crossing each other diagonally.

3. A reinforced concrete arch comprising a concrete body having a cross section of an inverted arch shape, and metallic reinforcing members embedded in the said concrete body, the said reinforcing members being straight and extending diagonally from the sides to the abutment ends.

4. A reinforced concrete arch comprising a concrete body having a cross section of an inverted arch shape, metallic reinforcing members embedded in the said concrete body, the said reinforcing members being straight, and sundry of the reinforcing members extending from one side to the other, and sundry of the said members extending from the sides to the abutment ends.

5. A reinforced concrete arch comprising a concrete body having a cross section of an inverted arch shape, metallic reinforcing members embedded in the said concrete body, the said reinforcing members being straight, and sundry of the reinforcing members extending from one side to the other, and sundry of the said members extending from the sides to the abutment ends, the reinforcing members crossing each other to form a net work.

6. A concrete arch having its longitudinal section in the form of an ellipse and its cross section in the form of an inverted arch of hyperbolic shape.

7. A concrete arch comprising a concrete body having its longitudinal section in the form of an ellipse and its cross section in the form of an inverted arch of hyperbolic shape, and reinforcing members wholly embedded in the said concrete body.

8. A concrete arch comprising a concrete body having its longitudinal section in the form of an ellipse and its cross section in the form of an inverted arch of hyperbolic shape, and reinforcing members wholly embedded in the said concrete body, the said members being straight.

9. A concrete arch comprising a concrete body having its longitudinal section in the form of an ellipse and its cross section in the form of an inverted arch of hyperbolic shape, and reinforcing members wholly embedded in the said concrete body, the said members crossing each other diagonally to form a net work.

852,203. CENTRIFUGAL-SEPARATOR BEARING. CHARLES H. SHAW, Milwaukee, Wis. Filed Nov. 30, 1906. Serial No. 345,640.

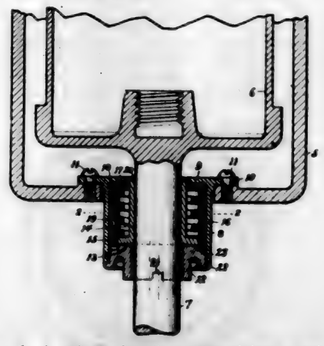

Claim.—1. A spindle bearing, comprising a pair of stationary seats, a sleeve for loosely receiving the spindle mounted on one stationary seat to have movement thereon, a thimble tiltably mounted on the other stationary seat and engaging the sleeve, and spring means for forcibly holding the sleeve and the thimble against their seats.

2. A spindle bearing, comprising a pair of stationary seats, a sleeve for loosely receiving the spindle mounted on one stationary seat to have movement thereon, a thimble tiltably mounted on the other stationary seat and engaging the sleeve, and spring means confined between the thimble and the sleeve for holding them on their seats.

3. A spindle bearing, comprising a pair of stationary seats, a flanged sleeve for loosely receiving the spindle mounted on one stationary seat to have movement thereon, a flanged thimble tiltably mounted on the other stationary seat and engaging the flange of the sleeve, and spring means confined between the thimble and the sleeve and bearing on the flanges thereof for holding them on their seats.

4. A spindle bearing, comprising a sleeve for loosely receiving the spindle, a stationary seat on which the sleeve is slidably mounted to have movement laterally of the spindle, a thimble surrounding and engaging the sleeve and pivotally seated along its periphery, and a spring confined between the thimble and the sleeve for holding the thimble on its seat and tending thereby to yieldably hold the sleeve in its normal position.

5. A spindle bearing, comprising a sleeve for loosely receiving the spindle, a stationary seat on which the sleeve is slidably mounted to have movement laterally of the spindle, there being a flange on the sleeve, a thimble surrounding the sleeve and engaging the flange at one end, said thimble having a pivotal bearing at the periphery of the other end, and a compression spring confined between the flange and the thimble for pressing the thimble on its bearing and holding the sleeve yieldingly in its normal position.

6. A spindle bearing, comprising a sleeve for loosely receiving the spindle, a cylindrical casing surrounding the sleeve and secured to the casing of the centrifugal separator, a thimble seated on the end of the casing and having a peripheral pivotal bearing against the walls thereof, there being a flange on the sleeve loosely engaging the inner walls of the thimble, a compression spring bearing against the flange and the end of the thimble, and a seat on the casing against which the sleeve is held by the spring, said sleeve being slidable on the seat laterally of the spindle.

7. A spindle bearing for centrifugal separators, comprising a sleeve for loosely receiving the spindle, a cylindrical casing surrounding the sleeve and secured to the casing of the centrifugal separator, a thimble surrounding the sleeve and bearing at one end against the end of the casing, there being a rounded bead at the bearing end of the thimble pivotally engaging the walls of the casing, and a rounded flange on the sleeve loosely engaging the inner walls of the thimble, a compression spring surrounding the sleeve and bearing on the flange and on the bearing end of the thimble, and a screw plug threaded in the casing having a bearing surface fitting the end of the sleeve on the curvature of a sphere about the bearing point of the lower bearing of the spindle as a center.

852,204. CONVEYER SYSTEM. JOHN H. SHAY, Wallace, La., assignor of one-half to David J. McKay, New Orleans, La.; Adolfo Dugue administrator of said John H. Shay, deceased. Filed Jan. 31, 1906. Serial No. 298,801.

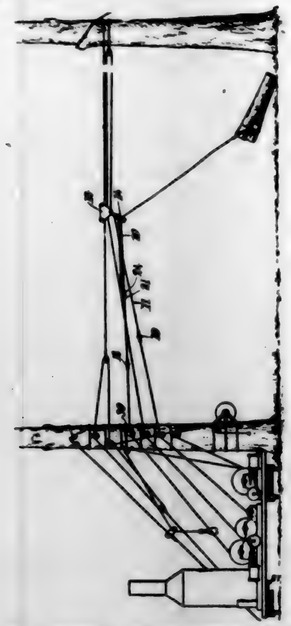

Claim.—1. A conveyer system having a skidding line, a skidding line out-haul, and a double block, the sheaves of which are adapted respectively to carry the skidding line and skidding line outhaul, said block having an idler sheave interposed between the two active sheaves of the block to prevent confusion of the said skidding line and skidding line out-haul.

2. A cable-way having a skidding line, a skidding line out-haul, a block with two sheaves located at different points along the length of the block, and adapted respectively to carry the skidding line and skidding line outhaul, and an idler sheave located intermediate the two first named sheaves, for the purpose specified.

3. A cable-way having a skidding line in two sections, a swivel connection between the two sections, a skidding line out-haul, and a swivel connection between the two lines.

4. A cable-way having a skidding line out-haul in two sections, and a swivel connection between said sections, for the purpose specified.

5. A cable-way having a skidding line, a stop thereon, a skidding line outhaul, and means establishing sliding connection between the outhaul and skidding line, said means being adapted to fetch up against the stop.

6. A cable-way having a skidding line, a stop clamp adjustably fastened thereto, a skidding line outhaul, and means establishing sliding connection between the outhaul and skidding lines, said means being adapted to fetch up against said stop clamp.

7. A cable-way having a skidding line, a stop thereon, a skidding line outhaul, and means establishing sliding connection between the outhaul and skidding line, said means being adapted to fetch up against the stop, and said means including a swivel at the end of the skidding line outhaul.

8. A cable-way having a skidding line, a stop clamp adjustably fastened thereto, a skidding line outhaul, and means establishing sliding connection between the outhaul and skidding lines, said means being adapted to fetch up against the said stop clamp, and said means including a swivel at the end of the skidding line outhaul.

9. A cable-way having a skidding line, a clamp adjustably secured thereon, a collar sliding loose on the skidding line and adapted to fetch up against the clamp, a skidding line outhaul, and means connecting the outhaul with the collar.

10. A cable-way having a skidding line, a clamp adjustably fastened thereon, a collar sliding on the skidding line and adapted to strike the clamp, a skidding line outhaul, and a swivel connecting the end of the outhaul with the collar.

852,205. SHOCK-COMPRESSOR. ELMER M. SMITHBURG, Lockridge, Iowa. Filed Nov. 17, 1906. Serial No. 343,911.

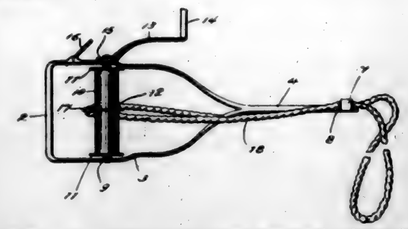

Claim.—In a device of the class described, a frame having forwardly converging upper and lower side members and a vertically disposed end bar constituting a handle, a curved horizontally disposed cross head connected with the converging side members of the frame, a vertically disposed drum supported for rotation in the upper and lower side members of the frame guide pulleys supported adjacent to the ends of the cross head, a flexible member guided over said pulleys and having its ends connected with the drum, a ratchet wheel upon the shaft of the drum, a crank connected with the latter, and a gravity pawl pivoted upon the upper side member of the frame and adapted to engage the ratchet wheel.

852,206. RAIL-JOINT CHAIR. GEORGE W. STROTHER, Jenifer, Ala., assignor of one-half to John H. Wilson, Jenifer, Ala. Filed Sept. 19, 1906. Serial No. 335,299.

Claim.—The herein described rail splice consisting of splice bars disposed upon opposite sides of the rail joint, said splice bars each being provided with a longitudinal rib to bear against the web of the rail at a point under the head of said rail, and a rib to bear against the web of the rail at the top of the base flange thus providing a space between said ribs at each side of the web of the rail, and a rail chair consisting of enlarged central portions and op-

positely disposed flanges to rest upon the upper surface of the splice bars, a cross brace connecting said enlarged central portion, said cross brace lying in a horizontal plane to

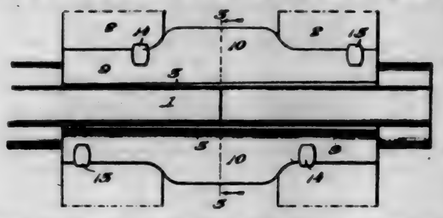

span the space between the ties at the joint of the rails, and spike apertures provided in the outer edges of said flanges, essentially as described.

852,207. DITCHING-MACHINE. WALTER UMSTEAD, Jerseytown, Pa. Filed Feb. 21, 1906. Serial No. 302,305.

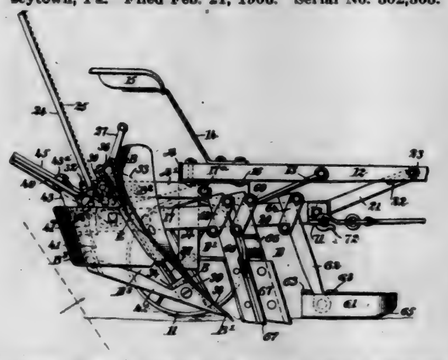

Claim.—1. In a ditching machine a wheel supported frame, having forwardly and rearwardly extending members, said members being out of alinement, a plow beam, a link connection between the forward and rear ends of the plow beam and the members of the frame, and means connecting the rearwardly extending member of the frame with the rear end of the plow beam whereby the beam may be raised and lowered.

2. In a ditching machine an arched wheel supported frame bar, a forwardly extending frame beam secured at one end to the frame bar, a bar secured to the frame bar between its ends and out of alinement with the frame beam, a plow beam, a link connecting the rear end of the plow beam with the said bar, a link connecting the forward end of the plow beam with the frame beam, and means for raising and lowering the plow beam.

3. In a ditching machine, a plow beam, a plow having its land side pivoted intermediate of its ends to the beam, and means for locking the land side to said beam.

4. In a ditching machine, a plow beam, a plow having its land side pivoted to the beam, a handle secured to the land side of the plow, and a locking device carried by the handle for locking the land side to the beam.

5. In a ditching machine, a wheel supported frame, a frame beam secured to the frame, a plow beam, a link connection between the forward and rear ends of the plow beam and the said frame and frame beam, a rack pivoted at its lower end to the plow beam, a pinion on the frame and meshing with the rack, means for operating the pinion, and means for locking the pinion in position.

6. In a ditching machine, an arched frame bar having spindles at its ends, wheels on the spindles, a longitudinal bar secured to the frame bar, a frame beam secured to the arched bar and to the longitudinal bar, a plow beam having a U-shaped head section at its rear end, a link pivoted to the head section of the plow beam and to the longitudinal bar, a link pivoted to the forward end of the plow beam and to the frame beam, and means for raising and lowering the plow beam and locking it in position.

7. In a ditching machine, a plow beam, a plow having its land side pivoted intermediate of its end to the beam, means for limiting the movement of the plow on the beam, and means for locking the landside to the beam.

8. In a ditching machine, a plow beam, a plow having its land side pivoted to the beam, the rear edge of the land side being recessed, means on the plow beam for engaging the recess of the land side, and means for locking the land side to the beam.

9. In a ditching machine, a plow beam having an apertured bracket at its rear end, a plow having its land side apertured and pivoted to the beam, means for limiting the swinging movement of the plow, and a pin for engaging the apertures of the bracket and land side.

10. In a ditching machine, a plow beam, an apertured bracket projecting upwardly from the rear end of the plow beam, a plow having its land side pivoted to the plow beam, said land side being provided with an aperture at its rear upper portion, an operating lever carried by the plow, and a spring actuated locking pin carried by the operating lever and adapted to engage an aperture in the bracket of the beam and the aperture of the land side.

11. In a ditching machine, a plow beam having an upwardly projecting and apertured bracket, the lower end of the bracket having a lateral flange, a plow having its land side pivoted to the beam, the rear portion of the land side being notched and provided with an aperture, an operating lever carried by the plow, a locking pin adapted to engage an aperture of the bracket of the beam and the aperture of the land side, and means for operating the pin.

12. In a ditching machine, an arched body bar, axles secured to the ends of the body bar, wheels mounted on said axle, a beam also secured to said body bar, a ditching apparatus located beneath the beam, pivoted hangers connecting the beam with the ditching apparatus, and means for raising and lowering the ditching apparatus.

13. In a ditching machine, a wheel supported frame, a plow beam adjustably suspended from the frame, a plow having its landside pivoted to the beam, and means for locking the landside to the beam.

14. In a ditching machine, a plow, a shank therefor, a guide adjustably attached to the beam in front of the plow, the said boat-shaped guide being in longitudinal alinement with the plow point, cutters adjustably secured to the said beam between the guide and the plow point, one cutter extending from the beam substantially flush with the left-hand side of the plow and the other cutter extending from the said beam flush with the right-hand side of the plow.

852,208. CAKE-MACHINE. GEORGE S. WARD, Pittsburg, Pa. Filed Aug. 29, 1906. Serial No. 332,548.

Claim.—1. In a cake forming machine, the combination with suitable supporting frames, of a stationary hopper carried by said frames, spring dies supported from said hopper and communicating with the interior of said hopper, an endless intermittently movable apron arranged between said frames, a vertically reciprocating table mounted between the lateral portions of said apron and adapted to elevate said apron to engage said dies, means to feed the contents of said hopper to said dies, means to move said apron, means to move said table, and compensating means operating simultaneously with the elevating and lowering of the table to provide for the tightening and slack in the apron due to the elevating and lowering of said table, substantially as described.

2. In a cake forming machine, the combination with suitable supporting frames, of a stationary hopper carried by said frames, spring dies supported from said hopper and communicating with the interior of said hopper, an endless intermittently movable apron arranged between said frames, a vertically reciprocating table mounted between the lateral portions of said apron and adapted to elevate said apron to engage said dies, an apron tightening roller actuated by the movement of said table, means to feed the contents of said hopper to said dies, and means actuated from a revoluble shaft to operate said apron and table, substantially as described.

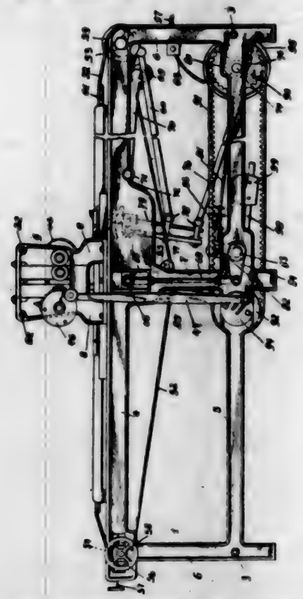

3. In a cake forming machine, the combination with suitable supporting frames, of a stationary partitioned hopper carried by said frames, spring dies loosely supported from said hopper and communicating therewith, an endless apron mounted between said frames, a table adapted to engage said apron, a tightening roller engaging said apron, means to reciprocate said table, means actuated by said table to move said roller, and means to intermittently move said apron, substantially as described.

4. In a cake machine, the combination with suitable frames, of a stationary partitioned hopper carried by said frames, spring dies loosely supported from said hopper, corrugated revoluble rolls journaled in said hopper and adapted to force the contents of said hopper into said dies, an apron movably mounted beneath said hopper, a table adapted to elevate a portion of said apron to engage said dies, a tightening roller engaging said apron, and lowered by said table when said table is raised, means to intermittently move said apron, and means to simultaneously move said table and said rolls, substantially as described.

5. In a cake machine, the combination with suitable frames, of a stationary partitioned hopper carried by said frames, spring dies loosely supported from said hopper, corrugated revoluble rolls journaled in said hopper and adapted to force the contents of said hopper into said dies, and intermittently movable apron mounted beneath said hopper, a tightening roller engaging said apron, means to alternately raise said apron and said roller, and means to revolve said rolls, substantially as described.

6. In a cake machine, a hopper to receive dough, spring dies carried thereby, an apron to carry dough from said dies, means for elevating said apron to engage said dies, revoluble means working in said hopper to force dough into said dies, and means actuated by the first named means to loosen said apron when raised, substantially as described.

7. In a cake machine, a hopper, removable spring dies resiliently supported by said hopper, an intermittently movable apron adapted to engage said dies, a tightening roller engaging said apron, and means to alternately move said apron and tighten said apron, substantially as described.

8. In a machine of the type described, a stationary hopper, an apron arranged beneath said hopper and carried upon revoluble rollers, a table adapted to elevate a portion of said apron, and means to relieve the tension of said apron when raised, substantially as described.

9. In a machine for placing deposits on cakes or pans, a vertically reciprocatory table, an endless apron traveling over said table, a tightening roller engaging said apron, actuating means for said table, and means actuated by said table to move said roll, substantially as described.

10. In a machine of the type described, a hopper, an endless apron traveling beneath said hopper, means to raise a portion of said apron, and means actuated by the first named means to release a portion of said apron, substantially as described.

11. In a cake machine, a supporting frame, a vertically movable table, means for operating said table, an intermittently-movable apron, and means for intermittently-actuating the said apron, in combination with a dough hopper mounted on the frame and having removable roll-housings, a removable partition in said dough hopper, feed rolls in said dough hopper journaled all in the same plane and two of which are journaled in the removable roll-housings and are removable from the hopper therewith, and means for operating said feed rolls.

12. In a cake machine, a vertically movable table, means for operating said table, an intermittently movable endless apron, and means for operating said apron, in combination with a dough hopper having removable roll-housings and a removable partition, feed rolls carried by the removable roll-housings of the dough hopper and removable from the hopper with said housings, coacting feed rolls journaled in the stationary part of the dough hopper, all of said feed rolls being journaled in the same plane, and means for driving said rolls in unison.

13. In a cake machine, a dough hopper having a removable partition, and removable roll-housings, feed rolls journaled in the end walls of the dough hopper, coacting feed rolls journaled in the removable roll-housings, and removable from the hopper with said roll-housings, all of said rolls being journaled in the same plane, and means for driving said rolls.

14. In a cake machine, a dough hopper having a removable partition and removable roll-housings, feed rolls journaled in the stationary end walls of the dough hopper and removable from the hopper with said roll-housings and coacting feed rolls journaled in the removable roll-housings of the dough hopper, all of said rolls being journaled in the same plane.

15. In a cake machine, a dough hopper provided with a removable partition, with removable-roll housings constituting a part of the end walls of the hopper, and with removable side walls, rolls journaled in the dough hopper end walls and in the removable roll housings and arranged in pairs, the rolls of each pair being in the same plane, and means for driving one pair of rolls at a greater rate of speed than the other pair of said rolls.

16. In a cake machine, a vertically movable table, means for operating said table, an endless apron traveling over the table, means for adjusting the tension of said apron, compensating means to provide for the elevating and lowering of the apron and means for intermittently operating the apron to move the same along the table.

17. In a cake machine, a dough hopper, having removable roll-housings constituting a part of the end walls of said hopper, feed rolls journaled in said roll-housings and removable from the hopper with said housings, coacting feed rolls journaled in another part of the end walls of the dough hopper, all of said rolls being journaled in the same plane, and means for operating said rolls.

18. In a cake machine, a vertically reciprocatory table, means for operating said table, an endless apron passing over the table, and compensating means operating simultaneously with the elevating and lowering of the table to provide for the tightening and slack in the apron due to the elevating and lowering of said table.

19. In a cake machine, a supporting frame, a vertically reciprocatory table, arms on which said table is mounted, a shaft carried by said arms, elevating rods connected to

said shaft, means for operating said elevating rods to actuate the table, an intermittently movable apron, and a compensating roller for the apron to provide for the tightening and slack in the apron due to the elevating and lowering of the table.

20. In a cake machine, a vertically movable table, means for operating said table, an endless apron, intermittently movable over said table, means for intermittently operating said apron, means for adjusting the apron, and compensating means independent of the apron operating means and operating simultaneously with the elevating of the table to provide for the tightening of said apron due to the elevating thereof.

21. In a cake machine, a vertically movable table, means for operating said table, an endless apron intermittently traveling over the table, means for intermittently operating said apron, and compensating means operating independently of the apron operating means and simultaneously therewith to loosen the apron when the table is elevated and tighten the same when the table is lowered.

852,209. STOVE. EDMOND P. WATSON, Sr., Bentonville, Ark. Filed Apr. 16, 1906. Serial No. 311,896.

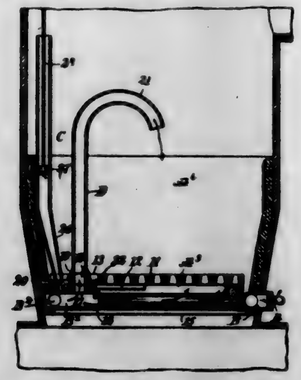

Claim.—1. In a stove, a circular trunk below the grate, and having a draft box and a chest, the chest being at the side of the stove opposite the box and provided with outlets, delivering air above and below the grate.

2. In a stove, a trunk supported beneath the grate, embracing a draft box and an air-receiving chest, the chest being provided with an outlet in its top opening into the fire box and an outlet at its inner end, which end extends in direction of the center of the grate, a damper for the said outlet, and means for operating the damper from the exterior of the stove.

3. In a stove, an air-supplying trunk of circular formation, embracing in its circuit a draft box having communication with the exterior, and an air-receiving chest wholly within the stove, provided with an outlet at its inner end and a damper controlling said outlet, the said trunk being gradually reduced in diameter as it reaches the said chest, being of greatest diameter at its connection with the draft box.

4. In a stove, a circular trunk located beneath the grate, embracing in its circuit a draft-box and an air-receiving chest, the latter being wholly within the stove, both the chest and the draft box being at points below the grate, the said chest having an outlet opening at its inner end and an outlet opening at its upper portion, a hot air conducting pipe connected with the chest at its upper outlet, a damper located at the end outlet for the chest, and means for operating the damper from the exterior of the stove.

5. In a stove, an air-conducting trunk located beneath the grate, a draft box, and an air-receiving chest connected with the said trunk, the chest being wholly within the stove and provided with an outlet at its inner end, both the draft box and the chest being below the grate, a damper for the outlet end of the chest, a force pump located within the stove and connected with the chest, and devices for operating the piston of the force pump and the said damper from without the stove.

6. In a stove, a circular trunk located beneath the grate, a draft box and an air-receiving chest connected with the said trunk, the air-receiving chest being wholly within the stove and provided with an outlet at its inner end and with an outlet at its upper portion, the said trunk diminishing in diameter as it reaches the chest, being of greatest diameter at the draft box, an exteriorly operated damper for the end outlet of the chest, a heat conducting pipe located at the upper outlet in the said chest, which pipe extends beyond the grate and has its upper end downwardly curved, a force pump located within the stove and having its delivery end tapering and inclined downwardly and inwardly and connected with the said chest between its inlets and its outlets, and means for operating the pump from the exterior of the stove.

7. In a stove, an air chest below the grate and in communication with the outer air, the chest being provided at its inner end with a valved outlet opening below the grate, and a pipe leading from the top of the chest through the grate up into the fire pot and having a downwardly extending upper end.

8. In a stove, an air chest below the grate and communicating with the outer air, said chest having an open inner end, a valve for closing the open end of the chest, means for operating the valve from the exterior of the stove, and a pipe leading from the top of the chest through the grate into the fire box and having its end curved downwardly.

9. In a stove, an air chest below the grate and in communication with the outer air, said chest being provided with a valved outlet opening below the grate, a pipe leading from the chest into the fire box and having its end curved downwardly, and a pump within the stove and connected with the chest.

852,210. RAIL-JOINT. VINTON C. YOUNG, Verona, Mo. Filed Sept. 19, 1906. Serial No. 335,304.

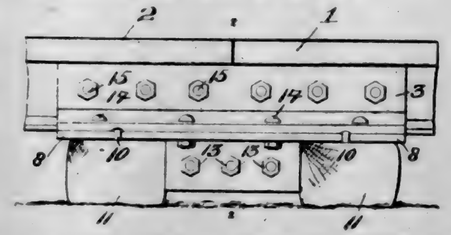

Claim.—A rail joint comprising splice bars having vertical flanges secured to the webs of the rails, flanges for covering the base flanges of the rails, stay bars for supporting the rails, said splice bars being bolted to the stay bars and vertical flanges on the stay bars extending between the ties and bolted together, substantially as described.

852,211. FEED-BOX FOR POULTRY. FRANK G. ALLEN, Ames, Iowa. Filed June 18, 1906. Serial No. 322,266.

Claim.—1. The combination, in a feed box for poultry, of an upper compartment or box provided with a cover, a substantially flat feed board placed below said upper compartment to receive the feed discharged from said upper compartment, said feed board being provided with a plurality of short pins fastened to its upper surface and placed opposite or around the opening through which said upper compartment discharges upon the feed board, with a lower compartment into which feed that has passed over the feed board may fall, all substantially as set forth.

2. In a feed box for poultry, the combination of an upper compartment, a feed board upon which said upper compartment discharges, a lower compartment placed below said feed board to catch any feed that may fall from the feed board, with a guard composed of substantially vertical rods placed around said feed board and extending upward from the upper edges of the outer walls of the

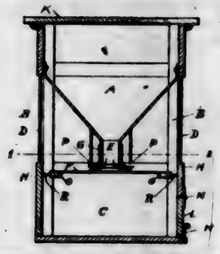

lower compartment to keep the fowls from getting their feet upon the feed board or above any uncovered part of the lower compartment and soiling the feed upon the feed board or in the said lower compartment, all substantially as described.

852,212. SWITCH STRUCTURE. VICTOR ANGERER, Ridley Park, Pa., assignor to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Nov. 3, 1906. Serial No. 341,883.

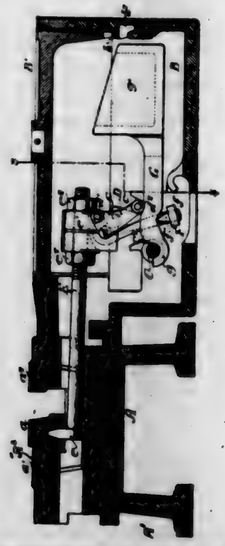

Claim.—1. The combination of a movable switch tongue, means for holding the tongue in its normal position, a rocker connected to the tongue, a series of bearings for the rocker, arranged so that by changing the rocker from one bearing to another it will return the tongue to normal position in one or the other direction, or hold it in either position, substantially as described.

2. The combination in a switch structure, of a movable switch tongue, means for holding or returning the switch tongue to normal position, a rod extending laterally from the switch tongue, a pivoted rocker and bearings for the reception of the rocker, said rocker being capable of being set in different positions in the bearings and connected to said means from any of these positions, substantially as described.

3. The combination in a switch structure, of a switch tongue, and automatic means for returning said tongue to a predetermined position, including a rod extending laterally from the tongue, a rocker coupled to the rod, bearings for the rocker, a lever, a link connecting the rocker with the lever, and means for applying pressure to the lever by which the tongue is held or returned to its normal position, substantially as described.

4. The combination in a switch structure, of a casing at one side of the structure, bearings in the casing, a movable tongue on the switch structure, a rod extending laterally from the tongue into the casing, a rocker mounted in bearings and coupled to the rod, a lever in the casing, and a link connecting the rocker with the lever, substantially as described.

5. The combination in a switch structure, of a casing attached to one side of the structure, a movable tongue on the switch structure, a rod extending laterally from the switch tongue and into the casing, bearings within the casing, a rocker coupled to the rod and mounted in said bearings so that it will operate through a vertical arc, a weighted lever pivotally mounted in the casing, and a link connecting the rocker to the weighted lever, substantially as described.

6. The combination in a switch structure, of a casing at the side of the structure, bearings in the casing, a pivoted switch tongue mounted on the structure, a rod extending laterally from the switch tongue and into the casing, a head longitudinally adjustable on the rod, a rocker pivoted to the casing and engaging the head, a lever pivoted in the casing, a link connecting the lever to the head, and means for exerting pressure on the lever, substantially as described.

7. The combination in a switch structure, of a movable tongue, a casing at one side of the structure, a rod extending laterally from the switch tongue into the casing, a forked head secured to the rod, a rocker having hubs mounted in sockets in the casing and having a cross bar engaged by the head, a link hung to the cross bar, a lever pivoted to the casing, and connected to the link, and means for exerting pressure on the lever, substantially as described.

8. The combination in a switch structure, of a movable tongue, a casing at one side of the structure, a rod extending laterally from the switch tongue and into the casing, a forked head secured to the rod, a rocker having hubs mounted in sockets in the casing and having a cross bar engaged by the head, a link hung to the cross bar, a lever pivoted to the casing and connected to the link, means for exerting pressure on the lever, and means for adjusting the length of the link, substantially as described.

9. The combination in a switch structure, of a movable tongue, a casing at the side of the structure, three sets of sockets in the casing, a rocker having two pairs of hubs and a cross bar, the said cross bar being engaged by a head on the rod, one of the sets of hubs being mounted in one of the sockets, and a weighted lever connected to the cross bar, said rocker being so formed that it can be shifted to rock in any of the three sockets for the purpose specified.

10. The combination in a switch structure, of a movable tongue, a casing at the side of the switch structure, a rod extending into the casing, said casing having three sockets at each side, a rocker having two sets of hubs and a cross bar, a weighted lever, a link hung from the cross bar and engaging the lever, a head on the switch rod also engaging the cross bar, one set of hubs being nearer the cross bar than the other set of hubs, the rocker being so designed that it can be shifted from one set of sockets to another for the purpose specified.

11. The combination in a switch structure, of a movable tongue, a rod extending from the tongue, a rocker adjustably mounted in sockets in the casing, a weighted lever connected to the rocker, a hub on one side of the rocker being longer than those on the opposite side so that a rocker cannot be misplaced in the casing, substantially as described.

12. The combination in a switch structure, of a movable point, a casing at the side of the switch structure, sockets in the casing, a rocker mounted in the said sockets, a weighted lever connected to the rocker, a rod extending laterally from the switch rod, a head on the switch rod,

said head being made in two parts and adjustably mounted on the rod, and shaped to engage a cross bar on the rocker, substantially as described.

852,213. WATER-TOWER. FREDERICK A. BALLIN, Portland, Oreg. Filed Dec. 6, 1904. Serial No. 235,676.

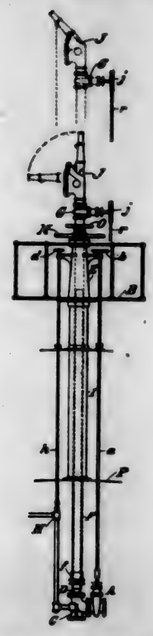

Claim.—1. A water tower having a vertical stationary stand pipe, a movable pipe telescoping thereover, a nozzle on said movable pipe, a stationary stand for guiding said movable pipe which is entirely apart from the water passage and locking devices therefor, substantially as shown and described.

2. A water tower having in combination with a telescopic pipe section, the valves and clamping devices for controlling the height and direction of the nozzle, and a stationary platform arranged above the valves, and means connecting said valves with said platform to permit manipulation of the valves and the clamping devices from the platform, substantially as shown and described.

3. A water tower having an outside telescopic pipe, antifriction bearings in which said pipe is guided, a locking device and a stand including means for relieving vertical and lateral strains on the pipes, substantially as shown and described.

4. A water tower having a fixed stand pipe, a movable pipe telescoping thereover, a stationary platform surrounding said pipe, said movable pipe being arranged to be lowered by hydraulic means under control from said platform and means for locking said movable pipe from movement at times, substantially as shown and described.

5. A water tower comprising a vertical stationary stand pipe, a movable pipe rotatably telescoped there-over, a nozzle carried by said movable pipe, a stationary platform surrounding said stand pipe, means for guiding said movable pipe, hydraulic means for elevating said movable pipe, means for locking said pipe to its various positions, said locking means, said guiding and said hydraulic means controllable from said platform, substantially as shown and described.

6. A water tower comprising a fixed section and a movable section telescopically arranged thereover, anti-friction bearings for said movable section, a platform through which said movable section passes, means for supporting said platform, and means for raising and lowering said movable section.

7. A water tower comprising a fixed section and a movable section telescopically arranged thereover, a discharge nozzle for said movable section, a control valve for said nozzle, means for forcing water into the fixed section to raise the movable section, a control valve for controlling the admission of water to the fixed section, a waste pipe connected with the fixed section, a valve inside said waste pipe for controlling the exit of water through the waste pipe, and a platform surrounding said movable pipe, means connecting all of said valve mechanisms with said platform to be operable therefrom, all being arranged substantially as shown and described.

8. A water tower comprising a vertical stationary stand pipe, a movable pipe, a nozzle carried by said movable pipe, means for guiding said movable pipe, hydraulic means for elevating said movable pipe, a stationary platform, means for controlling said elevating means from said stationary platform, means controllable from said stationary platform for locking said pipe to its various positions, substantially as shown and described.

9. A water tower having an outside and inside telescoping pipe, anti-friction bearings in which said pipe is guided, a locking device and a stand including means for relieving vertical and lateral strains on the pipes, a stationary platform on said stand, means controllable from said platform for raising and lowering said telescoping pipe, substantially as shown and described.

10. A water tower having a fixed stationary pipe, a movable pipe telescoping thereover, a stationary platform surrounding said pipe, said movable pipe being arranged to be moved by hydraulic means, means for controlling said hydraulic means from said platform, means controllable from the platform for locking said movable pipe from movement at times, substantially as shown and described.

852,214. MARKER. CARL BECKMANN, New York, N. Y. Filed June 27, 1906. Serial No. 323,599.

Claim.—1. In a device of the class described, in combination, a member carrying a rotatable marker, means for supporting a cartridge rotatably on said member, and means for pressing said cartridge against the face of said marker said marker affording means for rotating said cartridge, said marker being disposed in a plane inclined with respect to the axis of said cartridge whereby the edge of said marker wipes laterally on said cartridge.

2. In a device of the class described, in combination, a member carrying a marking wheel rotatably mounted thereupon, means for rotatably mounting a cartridge on said member, means for guiding said cartridge to move in the direction of said wheel, and means for pressing said cartridge against the edge of said wheel, said wheel being disposed in an inclined position with respect to the plane of rotation of said cartridge.

3. In a device of the class described, in combination, a case presenting a guide pin, a cartridge having a bore received over said guide pin, a rotatable marker mounted in said case, and a spring adapted to press said cartridge against the face of said marker whereby the rotation of said marker will rotate said cartridge, said marker being disposed in an inclined plane with respect to the plane of rotation of said cartridge.

852,215. PUNCH. STERLING BOISSEAU, Richmond, Va. Filed Oct. 3, 1906. Serial No. 337,225.

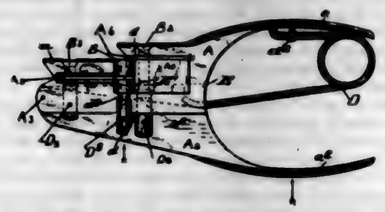

Claim.—1. A punch consisting of the opposing jaws pivoted together at their front ends and provided in rear of said pivot with the central punch proper and in rear thereof and at its opposite sides with the lateral punches proper one of said jaws having a passageway extending between the lateral punches and the intermediate forward punch and forming a guide in which a ticket may be passed from punch to punch, the jaw having said guides being provided on opposite sides of a central line with the rearwardly projecting guide and guard lugs between which the hand may be passed to operate the device, substantially as set forth.

2. A punch comprising the pivoted jaws, one of which is provided with the punching devices and the other being provided with the dies arranged in triangular form with the intermediate die projecting in advance of the side dies and having upper and lower plates extending between the side and intermediate dies and spaced apart forming a passageway in which a ticket may be guided between the dies, substantially as set forth.

3. A punch comprising the jaws pivoted together and having the rearwardly projecting handles and the punching devices in advance of the said handles, one of said jaws being provided on opposite sides of the handles with rearwardly extending guide and guard projections spaced apart from the opposite sides of the handles and adapted to permit the insertion between them and the handles of the hand in operating the punch, substantially as set forth.

4. A punch comprising the pivoted jaws and having said jaws arranged with the opposite or side punching devices and with the intermediate punching device projecting in advance of the side punching devices and having passageways extending between the side and the intermediate punching devices forming guides for the ticket, the said passages being unobstructed in rear of the side punching devices whereby the ticket may be inserted and punched by one of the side punches and arranged at such time parallel to the direction of length of the punch and then turned at a right angle to such direction and punched by the intermediate device and then turned to a position parallel with its first said position to be punched by the opposite side device without removing the ticket from its guiding passageway, substantially as set forth.

5. A punch having the opposite or side punching devices and the punching device between and in advance of such side devices and having the ticket inserting slot at the side unobstructed in front and rear and the ticket inserting slot at the front unobstructed laterally whereby a ticket may be arranged in the side slots and extend indefinitely to the front or rear on lines parallel with the direction of length of the punch and may be arranged for operation by the front punch in a direction at a right angle to the direction of length of the punch and extend indefinitely to the right and left when so arranged, substantially as set forth.

6. A punch having the pivoted jaws and provided with the side punching devices on opposite sides of its central line and having the ticket inserting slots unobstructed at such sides whereby a ticket may be arranged between one of said side jaws and extend indefinitely to the front or rear in order to permit its punching at any point along its length and then shifting to the opposite side slot and extend indefinitely to the front or rear thereof to permit the punching of the ticket at any point along its length by the side punch, substantially as set forth.

7. A punch comprising the jaws having the side punches and dies, and the front punch arranged between and in advance of the side punches and having the upper jaw slotted longitudinally from its front end for the introduction of a ticket and provided with punching devices intersecting said slot, substantially as set forth.

852,216. WIRE-SPLICER. ELI BOWMAN, Arlington, Ohio. Filed May 25, 1906. Serial No. 318,719.

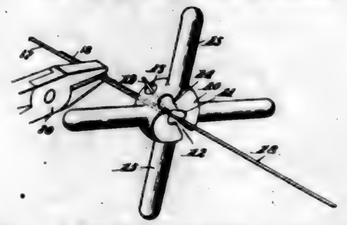

Claim.—1. A device of the character described comprising a body having a longitudinally-extending passage therein and a longitudinally extending groove communicating with the passage, one end of said body having a transversely-extending passage disposed in the same plane with the longitudinal groove, and arms radiating from the body.

2. A device of the character described comprising a rotatable body having a central longitudinal passage therein, a longitudinally disposed groove extending from the outer face of the body and opening into the passage, and a transverse passage communicating with the longitudinal passage and disposed in the same plane with the longitudinal groove.

3. A device of the character described comprising a rotatable body having a longitudinally extending passage therein, and a longitudinally extending groove communicating with the passage, said body having a transversely extending passage disposed in the same plane with the longitudinal groove, and means for rotating the body.

852,217. TRUCK. CHARLIE A. BRUST and JOSHUA H. DU BOSE, Memphis, Tenn. Filed Nov. 1, 1906. Serial No. 341,644.

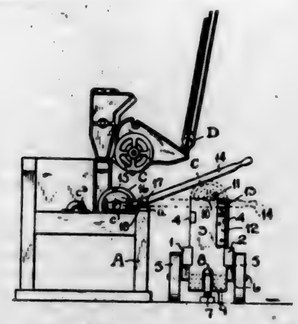

Claim.—1. A truck comprising a wheeled supporting frame embodying uprights, each provided in its upper end with a seat, a stop disposed adjacent to each seat, and a keeper carried by each upright.

2. A truck comprising a wheeled supporting frame embodying uprights, each provided in its upper end with a seat, a stop disposed adjacent each seat, a keeper carried by each upright, and skids to engage the keepers in directing the axled ends of a saw cylinder to the seats.

3. A truck comprising a wheeled supporting frame embodying uprights, each provided in its upper end with a seat, a stop disposed adjacent to each seat, a keeper car-

ried by each upright, and skids to engage the keepers in directing the axle ends of a saw cylinder to the seats, said skids being each provided with a curved terminal.

852,218. ROTARY ENGINE. FELIX R. BUSSARD, Hays, Kans. Filed July 7, 1906. Serial No. 325,091.

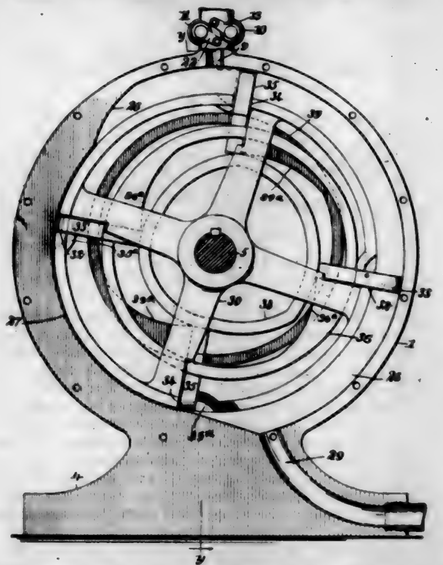

Claim.—1. A rotary engine, comprising a cylinder, a shaft extended through the cylinder, a wheel mounted on said shaft within the cylinder, and having two sets of opposite openings in its rim, the said cylinder having an interior working chamber extending partly around the cylinder, two pairs of connected blades, the blades of each pair being opposite and operating the openings formed in the wheel rim, and a fixed cam for moving the blades inward and outward.

2. A rotary engine, comprising a cylinder having a block extended segmentally at its inner side and terminating at the top in an abutment, the space between the ends of said block forming a working chamber, a shaft extended through the cylinder, a wheel keyed to said shaft and having two pairs of opposite openings in its rim, two pairs of blades operating in said openings, the opposite blades of the pairs being connected, a cam shaft, a casing extended inward from one side of the cylinder, and having peripheral channels in which the inner ends of the blades engage, and means operated by the working shaft for controlling the inlet of motive agent.

3. A rotary engine, comprising a cylinder, a shaft extended through the cylinder, a wheel mounted on the shaft within the cylinder, the interior of said cylinder having a segmental block at one side and a working chamber extending from one end of said block to the other, a cam casing attached to the interior of the cylinder, and conforming in shape to the inner periphery of the cylinder, the rim of said wheel being provided with opposite openings, two pairs of piston blades movable through the openings, the blades of each pair being connected one with the other, and the inner ends of said blades engaging with said cam casing, a pair of valves for controlling the inlet of steam to the cylinder, cranks on the stems of said valves, rods extended downward from said cranks and having ring-like lower ends having interior cam surfaces, a disk mounted on the shaft, and rollers on opposite sides of said disk for engaging in the said ring-shaped ends of the rods, which are arranged at opposite sides of the disk.

4. In a rotary engine, a cylinder, a shaft extending through the cylinder, a wheel mounted on said shaft within the cylinder, the rim of said wheel being provided with openings, the said cylinder having a working chamber extending partly around the cylinder, piston blades operating in said openings, in the wheel rim, a fixed cam, and a ring connected with the piston blades and having interior projections engaging the fixed cam to move the blades inward and outward.

5. In a rotary engine, a cylinder consisting of two sections secured together and mounted on a base, a shaft extending through the cylinder, a wheel mounted on said shaft within the cylinder, the rim of the wheel being provided with openings, the said cylinder being provided with an inlet and an exhaust and having an interior working chamber, piston blades operating in the openings in the wheel rim and adapted to be moved outward into the said working chamber, a fixed cam connected with the inner face of one of the cylinder sections, and rings connected with the piston blades and having interior projections engaging said fixed cam to move the blades inward and outward, and means operated by the shaft of the engine for controlling the inlet of the motive agent.

6. A rotary engine comprising a cylinder, a shaft extending through the cylinder, a wheel mounted on said shaft within the cylinder and having two sets of opposite openings in its rim, the said cylinder having an interior working chamber extending partly around the cylinder, two pairs of piston blades, the blades of each pair being oppositely located and operating in the openings formed in the wheel rim, a ring connecting each pair of opposite blades, the rings having interior projections, and a fixed cam engaged by said projections on the rings for moving the blades inward and outward.

852,219. LABEL-PASTER. GEORGE N. BYL and JOSEPH KOEHLER, Jersey City, N. J. Filed Oct. 15, 1906. Serial No. 338,946.

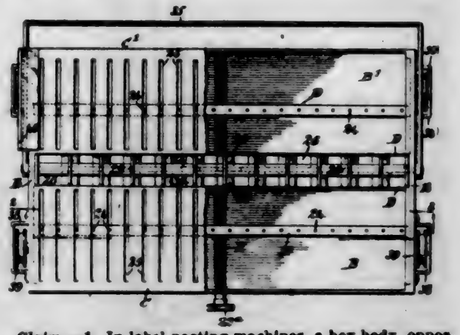

Claim.—1. In label pasting machines, a box body, opposing retaining bars movable in the body and provided with pins capable of extending above said body, means for adjusting said bars, and spacing plates having vertical movement in said body between the pins of the retaining bars.

2. In label pasting machines, a hollow box body having a central opening in its top and transverse openings at each side of the central opening, retaining bars vertically movable in said body, one at each side of its center extending parallel with the central opening in the body, pins extending up from the said bars through the transverse slots in the body, means for adjusting the bars to and from each other, tension devices normally forcing said bars upward, spacing plates laterally adjustable in the central opening in the body, and means for raising and lowering the said plates.

3. In label pasting machines, a hollow box body provided with a central chamber open at the top, the upper portion of the body at each side of said chamber being provided with transverse openings, retaining bars vertically movable in said body, one at each side of said central chamber, one of said bars being provided with a right hand and the other with a left-hand thread, a right-and-left-hand threaded screw passed through the threaded openings in said bars, means for operating the screw from the exterior of the body, tension devices normally acting to force the retaining bars upward, fingers connected with the retaining bars and extending through the transverse openings at the top of the body, a carrier located in the central chamber of the body, means for raising and lowering said carrier, and spacing plates adjustable upon the carrier.

4. In label pasting machines, a box body divided into side compartments and a central compartment, the central compartment being open at the top, a cover for each side compartment having openings therein, spring-controlled retaining bars vertically movable in the side compartments, means for limiting the upward movement of said retaining bars, pins extending from the retaining bars through the openings in the side covers for the body, a right-and-left-hand threaded screw device in operative connection with said retaining bars, whereby to separate them or to bring them in direction of each other, a carrying plate horisontally located in the central compartment of the body, means for raising and lowering the carrying plate, and spacing plates laterally adjustable on the carrying plate.

5. In label pasting machines, a box body divided into side compartments and a central compartment, the central compartment being open and the covers of the side compartments provided with openings, a retaining bar located in each side compartment, being vertically movable therein, springs exerting upward tension on said retaining bars, exteriorly operated means for bringing the retaining bars to or from each other, pins extending from the retaining bars through the openings in the covers for the said body, a carrying plate vertically movable in the central compartment, means for elevating the said carrying plate, which plate when released falls by gravity, and spacing plates laterally adjustable upon said carrying plate.

6. In label pasting machines, a box body divided into side compartments and a central compartment, the central compartment being open and the covers of the side compartments provided with openings, a retaining bar located in each side compartment, having frictional engagement therein, springs exerting upward tension on said retaining bars, exteriorly operated means for bringing the retaining bars to or from each other, pins extending from the retaining bars through the openings in the covers for said body, a carrier plate movable in the central compartment, means for elevating said carrying plate, which plate when released falls by gravity, spacing plates laterally adjustable upon the carrying plate, means for limiting the downward movement of the carrying plate, a reflecting plate located at the top of the body, and wheels mounted at each end of the said body.

7. In a label pasting machine, the combination with a box body divided into side compartments and a central compartment, the central compartment being open at the top and the covers for the side compartments having openings therein, a spring-controlled retaining bar located in each side compartment, means for limiting the upward movement of the retaining bars, fingers extending from the retaining bars through the openings in the covers for the compartments in which said bars are located, and a right-and-left-hand screw mounted to be exteriorly operated, the threads of said screw engaging correspondingly threaded portions of the retaining bars, of a carrying plate located in the central compartment of the body, which carrying plate is adapted to fall by gravity, means for limiting the downward movement of the carrying plate, spacing plates adjustably mounted on the carrying plate, a bail pivoted on the body and connected with the carrying plate, a keeper for said bail, and a reflector at the upper marginal portion of said body.

852,220. CLAMP FOR BABIN-COCKS. THOMAS L. CECIL, Coldwater, Mich. Filed Feb. 28, 1906. Serial No. 303,364.

Claim.—1. In a device of the class described, the combination of a faucet provided with a flange, a screw-threaded shank and an intermediate polygonal portion, a slab provided with an aperture through which the shank passes, a spring plate having a central aperture in engagement with the shank and tapered arms extending radially therefrom carrying, respectively, a fulcrum leg and a set-screw, and a resistance nut on the shank, whereby when the set-screw is tightened, the spring plate will draw the flange against the slab and bind the threads of the nut and shank.

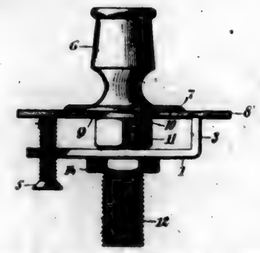

2. In a device of the class described, a spring-clamping or locking plate having an adjustable element, a faucet having a shank, and means on the shank, co-acting with the plate, for locking the faucet in position.

3. The combination with a faucet provided with a shank, a spring-clamping or locking plate having a central aperture in engagement with the shank, a fulcrum leg, and a set-screw extending from and carried by the locking plate, and means at each side of the plate co-acting with the screw, for locking the faucet in position.

4. A locking device for faucets and the like, comprising a spring plate having an enlarged apertured middle portion, and a tapered extension or wing at each side of the middle portion, one of said extensions being provided with an inturned leg and the other with a threaded aperture.

5. In a clamping device for faucets, a faucet having a base flange in engagement with a slab, a threaded pipe shank extending therebeyond and through an aperture in the slab, an intermediate polygonal portion, an apertured plate inclosing the polygonal portion between itself and the slab, a nut threaded upon the shank, and means carried by the plate engaging the slab at each side of the shank for locking the faucet in position.

852,221. FLYING-MACHINE. BARTHOLOMEW CONNOLLY, Tonopah, Nev. Filed Apr. 13, 1906. Serial No. 311,449.

Claim.—1. In an aerial machine, a frame with a plurality of spaced shafts journaled across it and having cranks at their outer ends, vertical standards fixed to the frame contiguous to the cranks, vertically slotted guides fixed to the standards, cross-heads slidable in the slots of the guides and connections between said rods and the cranks, guided rods connected with the cross-heads, said first-named guides having other guides at the upper ends through which said rods pass, and conical flexible ribbed and expansible structures carried on the upper ends of the rods and movable therewith.

2. In an apparatus of the character described, a frame, a series of flexible ribbed foldable cones, vertically guided and slidable rods upon the upper ends of which the cones are carried, transverse shafts with cranks at the ends outside of the ends of the frame, with which the cone-carrying rods are connected, shafts and gears by which the crank shafts are caused to revolve in unison, and a motor from which power is transmitted to drive the gears.

3. In an apparatus of the character described, a plurality of flexible ribbed foldable cones, vertically guided and slidable rods upon the upper ends of which the cones are carried, a series of parallel transverse shafts having cranks at the outer ends with which the cone-carrying rods are connected, shafts and transmission gears connecting the crank shafts, a longitudinally journaled propeller bearing shaft, a motor and intermediate mechanism to transmit power to the crank and propeller shafts in

unison, and clutches with actuating means whereby the propeller, or either end of any crank shaft, may be engaged or disengaged.

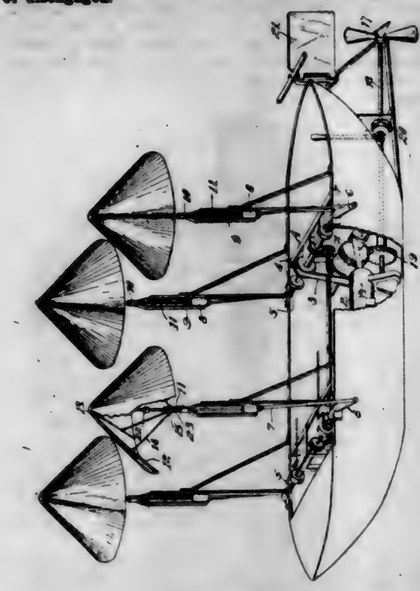

852,222. VENDING-MACHINE. HOWARD B. CONOVER, Detroit, Mich., assignor to Caille Brothers Company, Detroit, Mich, a Corporation of Michigan. Filed Oct. 22, 1906. Serial No. 339,958.

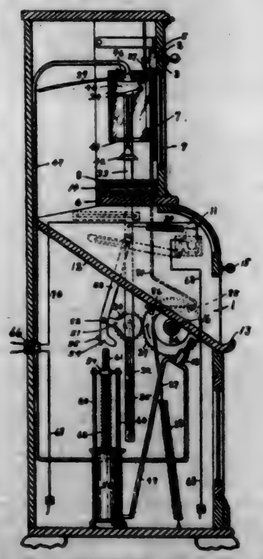

Claim.—1. The combination of a case, a plurality of groups of articles therein, a selecting means movable to indicate the group containing the article desired, and automatic mechanism positioned by the selecting means for engaging the article desired and removing it from the group indicated.

2. The combination of a case, a series of superimposed articles therein, means adapted to lift the uppermost of the articles by suction and carry it laterally, an air pump to produce the suction, and a motor to actuate the parts.

3. The combination of a case, a series of superimposed articles therein, means adapted to lift the uppermost of the articles by suction and carry it laterally, an air pump to produce the suction, a motor to actuate the parts and resilient means to return the parts to normal position.

4. The combination of a case, a plurality of series of superimposed articles therein, means adapted to lift the uppermost article by suction and carry it laterally, an air pump to produce the suction, manually operated means to position the lifting mechanism, and a motor to actuate the parts.

5. The combination of a case, a plurality of series of superimposed articles therein, means adapted to lift the uppermost article by suction and carry it laterally, an air pump to produce the suction, manually operated means to position the lifting mechanism, and a lock for said manually operated means.

6. In a vending mechanism, a longitudinally vertically, and laterally movable conveying mechanism adapted to raise and transport the article to be vended and means to operate the conveying mechanism.

7. In a vending machine, a case, a plurality of piles of thin flat articles arranged therein, a shelf upon which said articles are supported, said case having an opening through which the articles may pass out of the case and an inclined chute extending up from said opening to the rear of the shelf, an indicator movable along adjacent to the articles in the case, a conveying mechanism positioned thereby, and means to operate said mechanism so it may lift any desired one of said articles and carry it to the rear of the shelf and there let it fall so the article may slide out of the case on the chute.

8. In a vending machine, a shelf, a series of piles of articles supported thereon, an air-pump, a flexible connection thereto, a suction device attached thereto, an indicator for moving the suction device over any desired one of the articles in the case, and operating mechanism adapted to cause the suction device to lower, engage the desired article, lift it and carry it to the rear and drop it.

9. In a vending machine, a case, a pile of articles to be vended supported in said case, an air pump, a connection thereto, a suction device attached thereto, a valve in said suction pipe, and operating mechanism adapted to cause the suction device to lower, engage the uppermost of the articles to be vended, rise with it and move to the rear, then open the valve to break the suction and permit the article to fall, and to return the suction device to its former position, said case having a chute upon which the article may slide out.

10. In a vending machine, the combination of a case, a series of piles of articles to be vended within the case, an indicator, a motor, a conveyer actuated thereby, and connecting means between the conveyer and the indicator whereby the conveyer will be properly positioned to carry the desired article from the selected pile.

852,223. PAN-SUPPORT. RAY P. COOK, Hastings, Mich. Filed July 21, 1906. Serial No. 327,174.

Claim.—1. In a pan support, a wire bent to form a plurality of alining eyes, a second wire bent to pass through said eyes and provide clamping jaws with extending U-shaped handle members, and a base plate joined to the end of said second wire, for the purpose described.

2. A pan support comprising two wire members and a base plate, one of said wires being bent to form a series of alining eyes, the other of said wires passing through said eyes and being bent to provide spring clamping jaws with handle members for operating them and connected to said base plate at its outer ends.

852,224. METHOD OF PRODUCING LOGOTYPES. PHILIP T. DODGE, Washington, D. C., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Dec. 20, 1906. Serial No. 348,820.

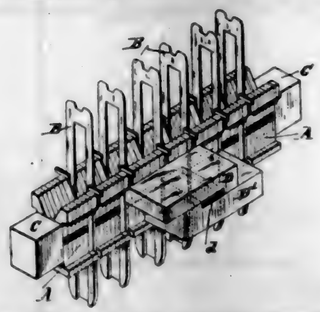

Claim.—1. The method of producing a line of justified logotypes consisting in the following steps: first, assembling in the required order individual matrices representing the characters admissible to the line; second, justifying the composed line to a predetermined length; third, casting against the different portions of the integral line, one after another, logotypes, each including the characters in one word-group of matrices and the adjacent space.

2. The method of producing a series of logotypes to form a justified line consisting in the following steps: first, assembling in the required order individual matrices representing the characters admissible to the line; second, adjusting between the word-groups of matrices spaces of suitable width to justify the line to a predetermined length; third, presenting to the word-groups of matrices in the integral line in succession a mold adjusted to the length of the respective groups plus the width of the adjacent space, if any, and casting in said mold, one at a time, the successive logotypes; whereby the logotypes are produced with the justified spaces integral therewith.

3. The method of producing a series of logotypes to form a justified line consisting in casting said logotypes successively against a composed, justified line of matrices, each logotype being cast against a word-group of matrices and the adjacent space, if any.

4. The method of producing a series of logotypes to form a justified line, consisting in the following steps: first, assembling in proper order the matrices representing all the characters admissible to the line; second, adjusting between the word groups of matrices spaces adapted to give the line a predetermined length; third, presenting to the word groups of matrices in succession in the integral line a mold corresponding to the width of that group and the adjacent space; fourth, casting in said mold, one at a time, logotypes corresponding to the successive word groups and the adjacent justifying spaces.

852,225. COLD-STORAGE BOX. CHARLES B. EMMERICH and CHARLES C. HEIDLAND, St. Louis, Mo. Filed Jan. 3, 1907. Serial No. 350,639.

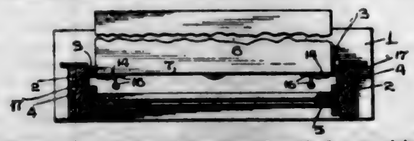

Claim.—1. A device of the class described, comprising a box, a door normally closing the front thereof, flanges integral with the ends of the box for engaging against the outer stops of a window frame, and means arranged on the ends of the box for engaging the parting strips of the window frame to rigidly hold said box in position in the frame.

2. The combination with a window frame, of a cold storage box positioned on the window sill, flanges integral with the ends of the box for engaging portions of the window frame, and rotating members arranged to slide on the ends of the box for rigidly positioning the box in the window frame.

852,226. BURGLAR-ALARM RELAY-DROP. DAVID D. FRIEDMAN, New York, N. Y. Filed May 17, 1906. Serial No. 317,389.

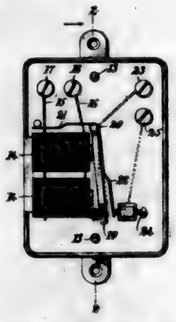

Claim.—1. In combination, an electromagnet, an armature adapted to occupy a position either in contact with said magnet or spaced therefrom, means for normally holding said armature in one of said positions, and a longitudinally movable pin normally held from movement by said armature when in the last mentioned position and adapted to be released and engage with the side of said armature to prevent the return of the latter after the armature has been moved to its oppositely disposed position.

2. In combination, an electromagnet, an armature adapted to occupy a position in contact with said magnet or spaced therefrom, means for normally holding said armature in one of said positions, means operatively connected to the armature for closing a circuit when said armature is in its oppositely disposed position, and a longitudinally movable locking pin normally engaging with one edge of said armature when the latter is in its first mentioned position and adapted to be released and prevent the return of the armature by the movement of said armature to its oppositely disposed position.

3. In combination, an electromagnet, an armature pivotally mounted adjacent thereto and adapted to occupy either one of two positions, means normally holding said armature in one of said positions, means operatively connected to said armature for closing a circuit when said armature is in its second position, and a spring pressed longitudinally movable pin normally engaging with the edge of the armature when the latter is in one position and adapted to engage with one side of the armature to prevent the return of the armature when the latter is in its second position.

4. In combination, a base plate, an electromagnet mounted thereon, an armature movably mounted adjacent said electromagnet, a casing secured to said base plate and inclosing said armature and electromagnet, and a longitudinally movable pin carried by said casing and normally engaging with said armature.

5. In combination, a base plate, an electromagnet carried thereby, an armature adjacent said magnet and adapted to occupy either one of two positions, means for normally holding said armature in one of said positions, means operatively connected to the armature for closing a circuit when the armature is in the second position, and a longitudinally movable spring pressed pin carried by said casing and normally engaging with the edge of said armature when it is in the first mentioned position, and adapted to engage with the side of the armature to prevent its return movement when the armature is in its second position.

6. In combination, a base plate, an electromagnet mounted thereon, an armature adjacent said magnet and capable

of occupying either one of two positions, a casing surrounding said armature and magnet, and a longitudinally movable pin extending through said casing and carried thereby, said pin being normally held in its outermost position when the armature is in one of its two positions and movable into the casing to engage with the side of the armature to prevent its return movement when said armature is in its second position.

852,227. RAILROAD-SIGNAL. ALBERT W. HARVEY, Rockwall, Tex. Filed Dec. 17, 1906. Serial No. 348,204.

Claim.—In combination, a housing, a shaft rotatably mounted in the housing and projecting to one side thereof, an upright on the exterior portion of the shaft normally extending vertically, a lever mounted on the shaft within the housing extending upwardly normally vertically, springs secured to the lever and the housing, a depending lever on the shaft within the housing, a bell and a connection between the depending lever and the bell.

852,228. GAS-PRODUCER. CHARLES L. HUSTON, Coatesville, Pa. Filed Dec. 5, 1906. Serial No. 346,405.

Claim.—1. The combination in a gas producer, of a body portion, a water sealed ash pit, an inner and an outer bosh plate, both bosh plates being solid, the outer bosh plate extending to a point below the water line of the ash pit, the inner bosh plate terminating at a point slightly above the water line of the ash pit, forming an annular air space between the surface of the water and the edge of the inner bosh plate, the parts being so arranged that there will be a solid body of ash extending from the water sealed ash pit to a point above the lower end of the inner bosh plate, so that air forced in the space between the inner and outer bosh plates will pass under the inner bosh plate and penetrate the body of ashes, substantially as described.

2. The combination in a gas producer, of a body portion, a water sealed ash pit, an inner and an outer bosh plate, the outer bosh plate extending below the water line of the ash pit, the inner bosh plate terminating above the water line of the ash pit, said inner bosh plate being solid and so arranged that an annular air passage will be formed between the upper edge of said inner bosh plate and the frame of the producer, substantially as described.

3. The combination in a gas producer, of a body portion, a water sealed ash pit, two conically shaped bosh plates one mounted within the other and both solid forming an annular air space, an air inlet passage in the outer bosh plate, the outer bosh plate extending below the water line of the ash pit and the inner bosh plate terminating above the water line of the ash pit, and the upper edge of the said inner bosh plate terminating short of the body of the producer, with means for supplying air to the space between the inner and outer bosh plates, substantially as described.

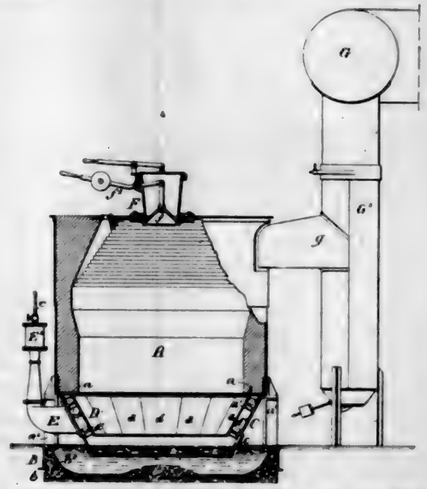

4. The combination in a gas producer, of a body portion, a water sealed ash pit, an outer bosh plate extending from the body portion to a point below the water line of the ash pit, an inner bosh plate consisting of a series of segmental plates having projections secured to the outer bosh plate, said inner bosh plate terminating above the water line of the ash pit, substantially as described.

5. The combination in a gas producer, of a body portion, a water sealed ash pit, a conically shaped outer bosh plate extending from the body portion to a point below the water line of the ash pit, an inner bosh plate consisting of a series of segmental plates having projections secured to the outer bosh plate and forming an annular air passage between the two bosh plates, the lower edge of the inner bosh plate being above the water line of the ash pit and the upper edge being some distance from the underside of the body portion of the producer, so as to form air spaces in order that the air will enter the producer above and below the inner bosh plate, substantially as described.

6. The combination in a gas producer, of a frame, legs supporting the said frame, the body portion of the said producer being mounted on the said frame, a water sealed ash pit under the frame, said frame having a depending annular flange, an outer conical bosh plate having its upper edge secured to the flange of the frame and terminating below the water line of the ash pit, an inner bosh plate consisting of a series of sections secured to the outer bosh plate, the said inner bosh plate extending to a point above the water line of the ash pit, substantially as described.

7. The combination in a gas producer, of a body portion, a water sealed ash pit, inner and outer bosh plates each conical in shape and solid, the sides of the inner bosh plate being parallel with the sides of the outer bosh plate, the inner bosh plate extending to a point above the water line of the ash pit, the outer bosh plate extending to a point below the water line of the ash pit, the parts being so formed that there is a solid body of ashes resting upon the bottom of the ash pit and extending up to a point above the lower end of the inner bosh plate, the ashes resting upon both the inner bosh plate and the lower portion of the outer bosh plate, means for supplying air to the space between the two bosh plates so that it will pass under the inner bosh plate and through a mass of ashes supported by the outer bosh plate, substantially as described.

852,229. DISPLAY-SHELVING. ROBERT T. JOYCE, Mount Airy, N. C. Filed Oct. 27, 1906. Serial No. 340,847.

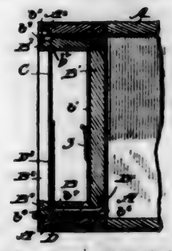

Claim.—1. As an improvement in shelving, the combination with an open front compartment, of a frame adapted to be placed in front of said compartment and form a closure for the same, a hollow display door hinged to said frame, said hollow display door having bottom, side and top walls and a glass front, the rear portion of said hollow display door being heavier than the front portion thereof.

2. An improvement in shelving consisting of an open frame adapted to be placed in front of a compartment, a hollow display door hinged to fit within said frame, said door having bottom, side and top walls and a glass front, the top wall being detachable and sloping downwardly to the rear.

3. An improvement in shelving consisting of an open frame adapted to be placed in front of a compartment, and a hollow display door hinged at its lower end to fit within said frame, and having bottom, side and top walls, and a glass front held in said walls, the upper face of the top wall having a depression therein, and the front face of the top of the frame having a cut out portion adjacent to said depression.

852,230. FLOOR CONSTRUCTION. JULIUS KAHN, Detroit, Mich., assignor to Trussed Concrete Steel Company, Detroit, Mich., a Corporation of Michigan. Filed Apr. 26, 1906. Serial No. 313,763.

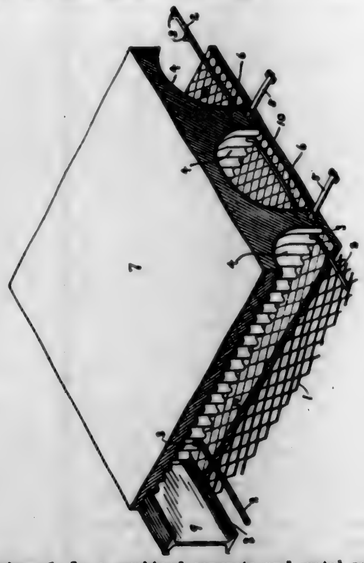

Claim.—1. In a combined concrete and metal construction, the combination of a series of parallel molds formed of corrugated sheets, space bars having upwardly extending projections to position said molds, a plastic material extending over and between said molds to form a floor and a series of parallel beams connected thereto, tension members molded into said beams near the bottoms of the same, metal webbing secured in the bottom faces of said beams, and plaster attached to said webbing to form a flat surface.

2. In a concrete and metal construction, the combination of a series of molds, space bars to position said molds, a plastic material extending over and between said molds to form a floor and a series of beams connected thereto, and tension members molded into said beams near the bottoms of the same.

852,231. LOG-TURNER. DONALD A. KENNEDY, Ashland, Wis. Filed Apr. 26, 1905. Serial No. 257,404.

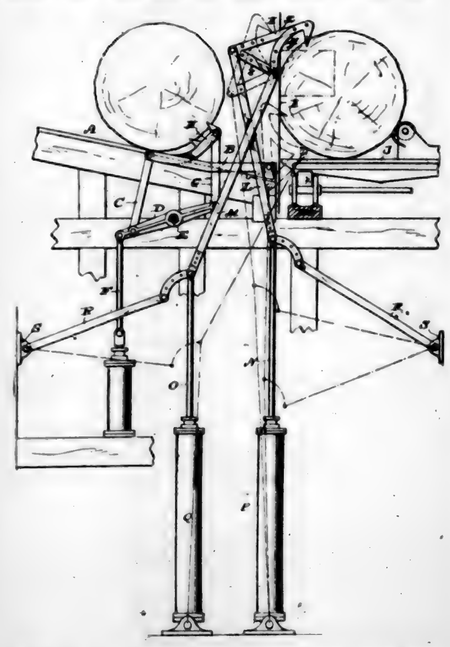

Claim.—1. A log-turner comprising a canter-head of approximately triangular form hook-pointed at the apex as well as provided with a series of apertures adjacent to its sides and base, and pitmen in pivot-bolt connection with selected apertures in the series.

2. A log-turner comprising a canter-head of approximately triangular form hook-pointed at the apex, a roller journaled in connection with said head longitudinally of the same to project therefrom in opposite directions, and pitmen in connection with the aforesaid head for which each connection constitutes an axis.

3. A log-turner comprising a canter-head of approximately triangular form hook-pointed at the apex, pitmen having ends thereof in pivotal connection with said head, piston-rods with which the other ends of the pitmen are in pivotal connection, oscillative cylinders in which the rods aforesaid are reciprocative, and means in connection with said pitmen for guiding the piston rods in substantially rectilinear lines, oscillation of the cylinders serving to compensate for slight departure of said rods from said lines incidental to the movements of said pitmen and their connections.

4. A log-turner comprising a canter-head of approximately triangular form hook-pointed at the apex, pitmen having ends thereof in pivotal connection with said head,

piston-rods with which the other ends of the pitmen are in pivotal connection, oscillative cylinders in which the rods aforesaid are reciprocative, a slide and vertical guide for same, and a link connecting one of the pitmen with a projection of the other, a pivot-pin joining the link and pitman projection being in connection with the slide aforesaid.

5. A log-turner comprising a canter-head of approximately triangular form hook-pointed at the apex, pitmen having ends thereof in pivotal connection with said head, piston-rods with which the other ends of the pitmen are in pivotal connection, oscillative cylinders in which the rods aforesaid are reciprocative, a slide and vertical guide for same, a segment-projection of one of the pitmen, and a link by which adjustable connection is had of the other pitman with the segment-projection of the one aforesaid, a pivot-pin joining the link and pitman-projection being in connection with the slide aforesaid.

6. A log-turner comprising a canter-head of approximately triangular form hook-pointed at the apex, a pair of pitmen each in pivotal connection with the head, actuating mechanism for the pitmen, and means controlling the movement of said pitmen to effect a combined forward pull and rock of the canter-head in proportion to the roll of the log turned by same, whereby the relative position of said head with respect to said log remains the same throughout the turning operation and pressure is exerted against the aforesaid log toward adjacent head-blocks.

7. A log-turner comprising a canter-head of approximately triangular form hook-pointed at the apex in opposite directions, one of its sides being curvilinear and the other straight; and means in conjunction with said head to present either side of same to the log, and to vary the manipulation of said head with respect to turning the log or for supporting and lowering a plank cut therefrom.

852,232. WAVE-MOTOR. ERNEST KOHLER, San Francisco, Cal. Filed Nov. 20, 1906. Serial No. 344,193.

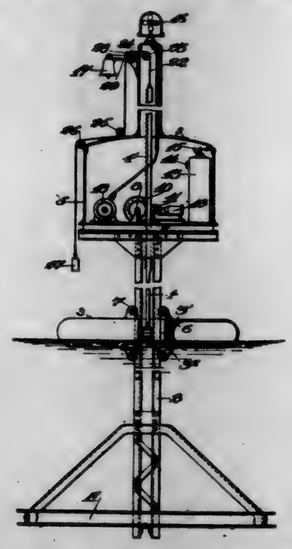

Claim.—1. A wave-motor comprising a suitably supported vertical channel-iron-column, a float slidably mounted on said column and having grooved rollers engaging the flanges of the column, said float comprising a buoyant-annulus clamped between separable castings which surround the column and carry said rollers, and mechanism with operative connection with the float for storing the energy generated by the rise and fall of the float.

2. A wave-motor comprising a suitably supported vertical column, a float slidably mounted thereon, a platform supported on the column above the float, said float comprising a buoyant-annulus clamped between separable castings which surround the column, a rack-bar connected with the float, a gear mounted on said platform and engageable by said rack, said gear having a shaft, a loose-gear on said shaft, clutch-mechanism for intermittently locking said loose gear to the shaft, an air-compressor operably connected with said loose-gear, and means on the platform for storing the energy generated by said compressor.

3. In a wave-motor, a plurality of fixedly supported vertical columns carrying a platform, a float slidable on each of said columns, said float comprising a buoyant-annulus clamped between separable castings which surround the column, an air-compressor corresponding to each float mounted on said platform, means connected with the float for operating said compressors, a main-service-pipe receiving the compressed-air from said compressors, a series of connected reservoirs connected with said service-pipe, and motors operated by the energy stored in said reservoirs.

852,233. SINK-STRAINER. NATHANIEL LYKE, Jamestown, N. Y. Filed Mar. 8, 1906. Serial No. 304,983.

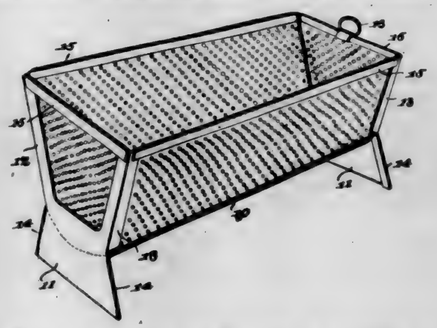

Claim.—1. A strainer having a body of perforated material and supported at the ends by frames, each frame formed from a single piece of sheet metal extending below the body and having integral branches bent around the corners of the same, the extended portions being reinforced by bending the metal at the edge upon itself.

2. A strainer having a body of perforated material and supported at the ends by frames, each frame formed from a single piece of sheet metal extending below the body and having integral branches bent around the corners of the same, the extended portions being reinforced by bending the metal at the edges upon itself, and binding strips of sheet metal folded longitudinally upon themselves and bearing over the upper edges of the body and the upper ends of the bent corner supporting branches.

852,234. JAR-WRENCH. WILLIAM H. MACY and JOSEPH H. WILBUR, Carthage, Mo. Filed Aug. 10, 1906. Serial No. 330,017.

Claim.—In a jar wrench, the combination of a handle C provided with corners *o o* at its inner end on opposite sides of the central axial line thereof, and a flexible metallic ring arranged to encircle a jar cap, such ring comprising a number of segmental links, the end ones of which are pivotally connected respectively to the said inner corners of the handle and at substantially equal distances from the said central axial line thereof, whereby either of the links connected directly with the handle may be brought into close engagement with the jar cap accordingly as the handle is turned in one direction or the other, substantially as set forth.

852,234.

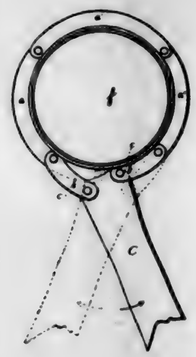

852,235. METALLIC FENCE-POST AND FASTENING DEVICE THEREFOR. ROYAL MATTICE, Wichita, Kans. Filed Jan. 18, 1907. Serial No. 352,845.

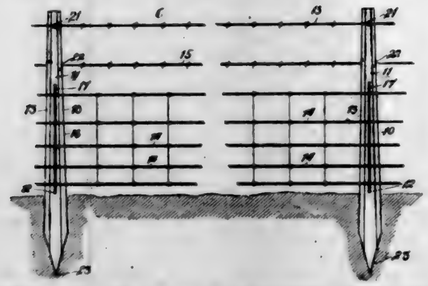

Claim.—1. A fence post of substantially W formation, having rounded front shoulders and a body portion of channel formation provided with holes, a plurality of strand wires extending across the channel, and an attaching rod overlying the strand wires and secured to the post and clamping the strand wires within the channel in the post, substantially as described.

2. A fence post of substantially W formation, provided with holes in its channel, a plurality of strand wires extending across the channel, and a rod having its upper and lower ends entered through the holes in the channel, the rod bridging the wires and serving to draw down the wires into the channel and hold them therein, substantially as described.

3. A fence post of substantially W formation, provided with a plurality of holes in its channel, a fence fabric extending across the channel in the post, a rod having at one end a shoulder terminating in an end in angular relation thereto, the shoulder being entered through one of the holes, the rod having at its other end a finger entered through another one of the holes and held therein, the rod bridging over the wire fence fabric and clamping the fabric within the channel in the post, substantially as described.

4. The combination of a fence post of channel formation, provided with a plurality of holes in its channel, a fence fabric extending across the channel in the post, an attaching rod overlying the fence fabric and provided at its ends with bent portions entered into the holes and secured therein and clamping the fence fabric within the channel, substantially as described.

5. The combination of a fence post of channel formation, provided with a plurality of holes, a fence fabric extending across the channel, an attaching rod of resilient material normally outwardly bowed and provided at its ends with inwardly bent portions entered through and secured within the holes, the rod overlying the fence fabric and clamping the fabric within the channel, substantially as described.

6. The combination of a fence post of channel formation, provided with a plurality of holes, a fence fabric extending across the channel in the post, an attaching rod overlying the fence fabric and normally outwardly bowed from the post, the rod having at one end a shoulder entered through one of the holes and a terminal end abutting against the rear face of the post, the rod having at its other end a finger entered through another hole in the post and secured therein and clamping the fence fabric within the channel in the post, substantially as described.

852,236. APPARATUS FOR EXTRACTING TURPENTINE AND OTHER SUBSTANCES FROM WOOD. MALCOLM MCKENZIE, Plainfield, N. J. Filed Dec. 30, 1905. Serial No. 293,920.

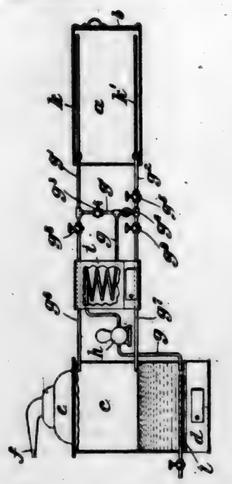

Claim.—1. An apparatus for the extraction of turpentine, etc., from wood, comprising a closed vessel for the reception of the wood to be treated provided with inlets and outlets at the top and bottom for the bath and combined products, a vessel for the reception of the bath with which the wood is to be treated, means for circulating the bath between the two vessels, means for introducing steam into the bath in the second named vessel, means for condensing the vapors from the second named vessel, and means for reheating the bath on its return from the second named vessel to the first named vessel.

2. An apparatus for the extraction of turpentine, etc., from wood, comprising a vessel for the reception of the wood to be treated, provided with inlets and outlets at the top and bottom for the bath and combined products, a vessel for the reception of a portion of the bath with which the wood is to be treated, means for circulating a portion of the bath between the two vessels, means for introducing steam into the portion of the bath in the second named vessel to remove the extracted products, and means for condensing all the vapors from the second named vessel, substantially as described.

852,237. FASTENING OF HOSE-PIPES TO PIPE ENDS. CARL NIELSEN, Copenhagen, Denmark. Filed Oct. 5, 1905. Serial No. 281,480.

Claim.—1. In a hose coupling, the combination of a member having a conical end, a hose on the conical end of said member, a member having a tapered bore through which the hose end extends, said member movable longi-

tudinally to compress the hose between said sleeve and the conical end of said first-mentioned member, said first-mentioned member having an annular recess at the base of said conical portion presenting an inclined surface over which the end of the hose is forced and becomes thickened and heaped up, the depth and breadth of the said annular recess being such that the same becomes only partially filled by said thickened and heaped-up end of the hose and the latter is preserved from injury.

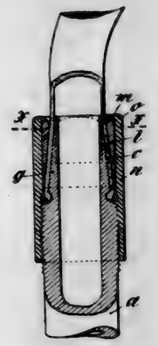

2. In a hose coupling the combination of a member having a conical end of reduced diameter, an annular recess at the base of said conical end, and external screw threads in rear of said recess, a hose on the conical end of said member, a sleeve member having a tapered bore through which the hose end extends, and an outer sleeve member engaging the outer end of the first-mentioned sleeve member and having its inner end internally screw-threaded to engage the first-mentioned member and move the first-mentioned sleeve member inwardly on the hose and force the end of the hose into, and cause the same to become thickened and heaped-up in, the said annular recess, the width and depth of such recess being such that the same becomes only partially filled with said heaped-up end of the hose and said end of the hose is preserved from coming in contact with and being injured by the screw threads.

3. In a hose coupling, the combination of a member having a conical end of reduced diameter, an annular recess at the base of said conical end, external screw threads in rear of said recess and longitudinal passages intersecting said screw threads, a hose on the conical end of said member, an inner sleeve member having a tapered bore through which the hose end extends, and an outer sleeve member engaging the outer end of the inner sleeve member and having its inner end internally screw-threaded to engage the conical ended member and provided with longitudinal passages intersecting said screw threads, for the purpose set forth, said first-mentioned member and said inner and outer sleeve members coacting to force the end of the hose into, and cause the same to become thickened and heaped-up in, the said annular recess, the width and depth of such recess being such that the same becomes only partially filled with said heaped-up end of the hose and said end of the hose is prevented from coming in contact with and being injured by the screw threads.

4. In a hose coupling, the combination of a member having a conical end and an annular recess at the base of said conical portion presenting an inclined surface at such base, a hose on the conical end of such member, and means to move the hose longitudinally on the conical portion of the first-mentioned member and compress the hose on such conical portion, so that the end of the hose is forced over the inclined surface of such annular recess and becomes thickened and heaped-up in such annular recess, the depth and breadth of the said annular recess being such that the same becomes only partially filled by such thickened and heaped-up end of the hose and the said end is preserved from injury.

852,238. COAL-PILING APPARATUS. CHARLES PIKE, Philadelphia, Pa., assignor to Dodge Coal Storage Company, Naugatuck, Conn., a Corporation of Connecticut. Filed Feb. 2, 1907. Serial No. 355,384.

Claim.—1. The combination in a conveying apparatus, of a frame, an endless belt conveyer carried by said frame, a movable ribbon forming the bottom of the trough of the said conveyer over which the conveyer travels, guides for that portion of the ribbon not in use, and a cable connected to both ends of the ribbon, with means for engaging the cable for longitudinally shifting the ribbon, substantially as described.

2. The combination of a truss structure arranged at an inclination, an endless belt conveyer mounted on said truss structure, wheels at each end of the structure around which the conveyer passes, guides on the structure below the lower run of the conveyer, and guides on the structure above the upper run of the conveyer, a ribbon arranged to travel in said guides, a cable connected to each end of the said ribbon, and means engaging the cable for moving the ribbon longitudinally in its guides, substantially as described.

3. The combination of an elevating conveyer, a truss structure arranged at an inclination, an endless flight conveyer mounted on the said structure, wheels at each end of the structure around which the said conveyer passes, means for driving the conveyer, a trough mounted on the under side of the conveyer, said trough having an open center and guides at each side of the trough, guides on the structure above the return run of the conveyer, and guides at the lower end of the structure, with a flexible ribbon adapted to the said guides, a cable attached to each end of the apron, sheaves at the upper end of the structure around which the cable passes, and means engaging the cable for longitudinally moving the ribbon, substantially as described.

852,239. AIR-SHIP. JOHN C. RECKWEG, Los Angeles, Cal. Filed Dec. 11, 1905. Serial No. 291,316.

Claim.—1. An air ship comprising a body, oscillating wings arranged in pairs and pivotally mounted upon the opposite sides of said body, a rudder pivotally mounted at the rear end of said body, vertically reciprocating slides in said body pivotally connected to the inner ends of said wings and said rudder, a longitudinally extending shaft, and eccentrics upon said shaft for actuating said slides.

2. An air ship comprising a body, oscillating wings arranged in pairs and pivotally mounted upon the opposite sides of said body, a rudder pivotally mounted at the rear end of said body, vertically reciprocating slides in said body pivotally connected to the inner ends of said wings and said rudder, a longitudinally extending shaft, eccentrics upon said shaft for actuating said slides, and means for tilting said rudder angularly.

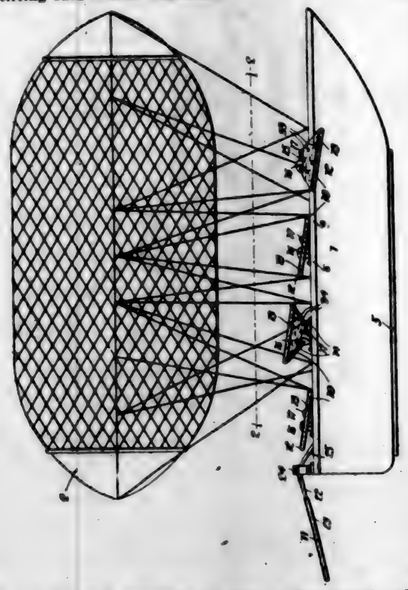

3. An air ship comprising a body, a fan-shaped rudder mounted to swing vertically and rotate axially upon the rear portion of said frame, diverging arms or ends at the inner portion of said rudder, a vertically reciprocating slide, a cross bar pivoted centrally in said slides and having the inner ends or arms of said rudder secured in its ends, a shaft, an eccentric upon said shaft for reciprocating said slide, and operating connections attached to the ends of said cross bar to swing the latter and hence said rudder axially.

852,240. GATE-LATCH. BRADLEY S. RECTOR, Washington county, Va., assignor of one-fourth to James L. White, Abingdon, Va., and one-fourth to John A. Buchanan, Morgan, Va. Filed Aug. 16, 1905. Serial No. 274,426.

Claim.—The herein described gate provided with a latch mounted to slide thereon, a guide secured to the gate in a position parallel to the latch, said guide provided with an elongated opening, a lever pivotally connected to the gate, a bolt carried by said lever and disposed at a right angle thereto, and passed through the latch and through the opening in the guide, and a spring for projecting the latch, said spring having one end secured to the gate and mounted upon the guide for engagement with the bolt to retain the latch, and a tension bar secured at the top of the gate, said lever passing through a slot in the tension bar, substantially as described.

852,241. MAGAZINE-RIFLE. EDWARD E. REDFIELD, Glendale, Oreg. Filed July 3, 1906. Serial No. 324,642.

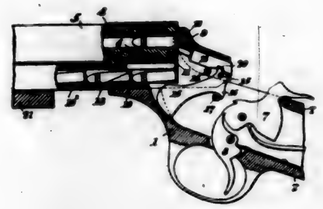

Claim.—1. In a magazine gun, the combination of a movable breech block, a cartridge lifter, a fixed pivot on the block on which the lifter is directly mounted for swinging movement, a breech frame for guiding the movement of the block, a hammer arranged on the frame in the path of a portion of the lifter during the rearward movement of the block for forcibly swinging the lifter upwardly, and means on the frame arranged in the path of the said portion of the lifter for insuring the downward movement of the latter.

2. In a magazine gun, the combination of a breech frame, a breech block mounted thereon and having a longitudinally extending slot extending to the rear of the block, a cartridge lifter pivotally mounted at its rear end in the slot and provided with a depending projection, and means on the frame against which the projection forcibly strikes during the rearward movement of the block to impart a swinging movement to the lifter.

3. In a magazine gun, the combination of a breech frame, a single piece magazine tube and breech block having a longitudinal groove and an extractor groove, a firing pin in the breech block, a lifter mounted in the longitudinal groove arranged to eject cartridges through the extractor groove, and means connecting the lifter with the firing pin.

4. In a magazine gun, the combination of a breech frame, a single piece magazine tube and breech block, a lifter carried thereby having a depending nose, a firing pin mounted in the breech block and operatively connected with the lifter, a hammer that is adapted to engage the nose of the lifter to raise the latter, and an abutment located in the path of the nose for lowering the lifter.

5. In a magazine gun, the combination of a breech frame, a single piece magazine tube and breech block, a lifter carried thereby having a depending nose, a firing pin mounted in the breech block, a slot and projection operatively connecting the firing pin and lifter, a hammer adapted to engage the nose of the lifter to raise the latter, and an abutment located in the path of the nose for lowering the lifter.

6. In a magazine gun, the combination of a movable breech block, a cartridge lifter mounted thereon, and a hammer with which the lifter engages for receiving its ejecting movement.

7. In a magazine gun, the combination of a breech frame, a breech block movable thereon, a cartridge lifter mounted on and movable with the breech block, and a hammer on the frame arranged to be engaged by the breech block on its backward movement so as to be automatically cocked and to engage the lifter adjacent the end of the rearward movement of the block to actuate the lifter.

8. In a magazine gun, the combination of a breech frame having a longitudinal groove and an abutment in one of the walls of the latter, a breech block guided therein, a grip piece, and a device arranged to connect the grip piece with the breech block during the extracting and loading movements of the latter and to lock the breech block with respect to the frame during the firing operation, said device comprising a pivotally mounted locking member carried by the breech block adapted to engage the abutment and having a laterally extending projection which is movable in the groove of the frame, a finger on the grip piece which is disposed in the groove for engagement with the projection of the locking member, and a lost motion connection between the finger and locking member.

9. In a magazine gun, the combination of a movable magazine tube, a breech block connected with the tube, a breech frame on which the tube and block are guided, a grip piece, and a pivotally mounted locking member carried by the tube for locking the latter to the frame and for connecting the tube with the grip piece.

10. In a magazine gun, the combination of a movable magazine tube, a breech block connected with the tube, a grip piece, and a pivotally mounted locking member on the tube for connecting the grip piece to the latter.

11. In a magazine gun, the combination of a movable magazine tube having a recess at one side thereof, a breech block attached to and movable with the tube, a grip piece mounted on the tube, a spring bar attached to the said piece having a beveled and notched portion, and a pivotally mounted locking piece held in the said recess by the walls thereof and having a projection for engagement with the notched and beveled part of the bar, and a breech frame for guiding the movement of the magazine tube.

12. In a magazine gun, the combination of a slotted breech block, a firing pin mounted in the breech block, and a lifter pivoted in the slot and connected with the firing pin with a limited degree of lost motion.

13. In a magazine gun, the combination with a slotted breech block, a firing pin mounted therein, a lifter disposed in the slot and connected with the firing pin, and a pivot on the block for the lifter which acts through the latter to form the sole means for retaining the firing pin in position.

852,242. BOTTLE-STOPPER. ALEXANDER E. REDLICH, Chicago, Ill. Filed Mar. 1, 1907. Serial No. 359,969.

Claim.—1. A bottle stopper, and a drinking vessel support carried thereby.

2. A bottle stopper, a bracket to which the stopper is secured, and a drinking vessel receptacle supported by the bracket.

3. In combination, a bracket, a bottle stopper secured to one end thereof, and a drinking vessel support secured to the opposite end of said bracket.

4. In combination, a bracket having an obliquely disposed arm, a stopper or cork secured to one end of the bracket, and a drinking vessel support secured to the obliquely disposed arm.

5. In combination, a bracket having an obliquely disposed arm, screws projecting from the lower end of the bracket, and the upper end of the arm, a cork or stopper carried by the lower screw, a block secured to the upper screw, and an approximately cylindrical drinking vessel support carried by said block.

6. A bottle stopper carrying an advertising dial, and a drinking vessel support.

7. A bottle stopper having a bracket to which is secured a receptacle for a drinking vessel surrounded by an annular advertising dial.

852,242.

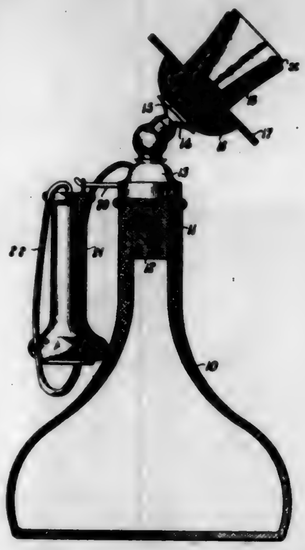

852,243. COMBINED TRUNK AND DRESSER. WILLIAM RIMKE, Jefferson City, Mo., assignor of one-half to Fred Rimke, Chaska, Minn. Filed Oct. 13, 1906. Serial No. 338,798.

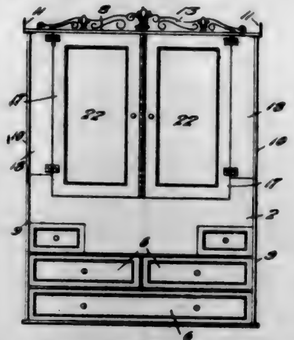

Claim.—1. In a combined trunk and dresser, a box or receptacle comprising a bottom, end walls and front and rear walls, foldable sections attached to and for forming a vertical extension of the rear wall, a removable section included in the front wall and adapted for use as a top for the dresser, means on said section for holding the foldable end sections in folded condition, a door for the dresser adapted to be normally housed within the receptacle, and means for detachably connecting the door with one wall of the dresser.

2. In a combined trunk or dresser, a box or receptacle comprising a bottom, end walls and front and rear walls, a plurality of drawers removably sustained in the receptacle, a removable section disposed at the front of said drawers and detachably engaged with the bottom and adapted for use as a top for the dresser, foldable end sections attached to the end walls, means on the removable section for holding said end sections in folded condition, a foldable section attached to and for forming a vertical extension of the rear wall, a door for the front of the dresser, and means for detachably securing the door in place.

3. In a combined trunk and dresser, a box or receptacle comprising a bottom, end walls and front and rear walls, said bottom being provided at its forward edge with recesses, pins arranged in said recesses, foldable end sections attached to the end walls, a foldable section attached to and forming a vertical extension of the rear wall, a removable front section adapted for use as a top for the dresser, engaging members on said front section adapted for engagement with the pins to detachably secure the section in place, means on the front section for holding the end sections in folded condition, a door for the dresser normally housed in the receptacle, and means for detachably securing the door in place.

852,244. BROOM. RALPH ROSENBAUM, Atlanta, Ga. Filed Aug. 16, 1906. Serial No. 330,885.

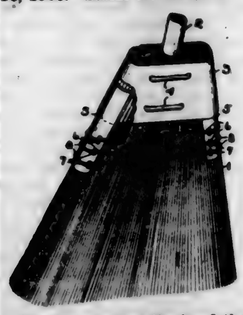

Claim.—In a broom, a cap on the head thereof, a curved guard plate on each side of the broom, the upper end of which is removably seated under said cap and the lower end is perforated upon each edge, binding threads around the head and around the lower ends of said plates, said threads passing over said perforations, and cross threads through the head and through said perforations and around the binding threads, whereby the straining contact of the threads with sharp edges is avoided.

852,245. HANDLE FOR HOES AND RAKES. OLIVER STEWART, Centralia, Ill. Filed Dec. 27, 1906. Serial No. 349,668.

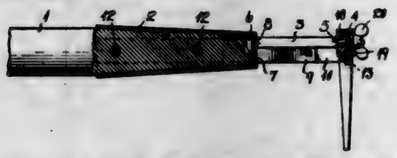

Claim.—1. A handle of the character described having arranged on its outer end a ferrule, a tang arranged in the outer end of said ferrule and handle, a curved brace to engage said tang and hold the same in place in the ferrule, means to secure a hoe or rake head on the outer end of said tang, and a forwardly-projecting arm connected to the ferrule and to said tang brace to engage and brace the hoe or rake head secured to the tang, substantially as described.

2. A handle of the character described having arranged on its outer end a ferrule, a headed tang arranged in the outer end of the ferrule and handle, a notched brace bar to engage said tang and hold the same in position in the end of the ferrule, a reduced threaded hoe or rake head engaging portion formed on the outer end of said tang adapted to be inserted through the head of the rake or hoe, a clamping nut adapted to be screwed onto said portion to hold the rake or hoe head thereon, and means to brace and support said hoe or rake head, substantially as described.

3. A handle of the character described having arranged on its outer end a ferrule, a headed tang arranged in the outer end of the ferrule and handle, a notched brace bar to engage said tang and hold the same in position in the end of the ferrule, a reduced threaded hoe or rake head engaging portion formed on the outer end of said tang adapted to be inserted through the head of the rake or hoe, a clamping nut adapted to be screwed onto said portion to hold the rake or hoe head thereon, forwardly-projecting arms or bars secured at their inner ends to the opposite side of the ferrule, said bars having on their upper ends notches or recesses to receive the bar of the rake or hoe head, and means to secure the outer ends of the tang brace to said arms or bars, substantially as described.

852,246. ADJUSTABLE TOOL-POST. JOHN W. SWIFT, Berkeley, Cal. Filed Mar. 8, 1906. Serial No. 304,895.

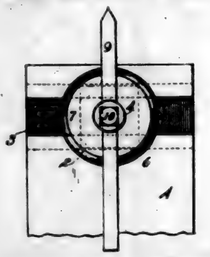

Claim.—The combination with a slidable and channeled tool-rest, of a rectangular slide adjustable in the channel and having an opening and enlarged concavity below, a single piece tool-post having an enlarged convex head at the lower end fitting the lower part of the slide, a collar having a flat surface of support upon the rest, and above the bottom of the post, a globular convexity above and a central opening of larger diameter than the tool-post, a second concave collar fitting and slidable upon the surface of the first named collar, a tool passing through a slot in the post and resting upon the upper collar, and a clamping screw to lock all movable parts together.

852,247. DRAWER-STOP. WILLIAM L. TUELL and HERMAN H. BORGERDING, New Albany, Ind. Filed Dec. 18, 1905. Serial No. 292,309.

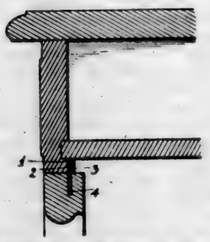

Claim.—A drawer stop comprising a head having laterally extending, transversely curved wings lying in approximately the same plane as the head, and forming in conjunction therewith a transversely concavo-convex strain-resisting member, said wings having means for penetrating and engaging the article to which the stop is to be applied, and a securing point formed on said head in the same plane therewith and having notches for holding it against withdrawal.

852,248. AMUSEMENT DEVICE. WILLIAM T. WATSON, Vancouver, British Columbia, Canada. Filed Nov. 15, 1906. Serial No. 343,484.

Claim.—1. An amusement device, comprising a track, rollers in engagement with said track, a horizontal shaft,

a wheel mounted on said shaft and in engagement with said rollers, and cars carried by said wheel.

2. An amusement device, comprising an annular track, rollers in engagement with said track, a horizontal shaft, wheels mounted on said shaft and in engagement with said rollers, cars carried by said wheels, and means for moving said shaft in a horizontal plane whereby the wheels are caused to rotate by their engagement with said rollers.

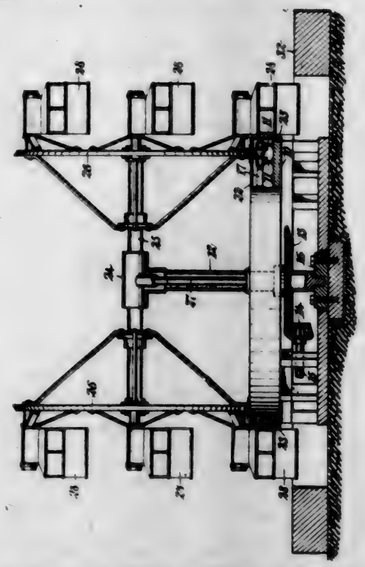

3. An amusement device, comprising an annular track, a frame, rollers supported within said frame and in engagement with said track, a horizontal shaft, a wheel mounted on said shaft and in engagement with said rollers, cars carried by said wheel and means for moving said shaft in a horizontal plane to cause the rotation of the wheel due to its engagement with said rollers.

4. An amusement device, comprising an annular track, a rotating platform, rollers supported adjacent the circumference of said platform and in engagement with said track, a horizontal shaft, a wheel mounted on said shaft and in engagement with said rollers, cars carried by said wheels and means for moving said shaft, platform and rollers in a horizontal plane.

5. An amusement device, comprising an annular track, rollers supported upon said track, a wheel having its circumferential edge in engagement with said rollers, a plurality of cars carried by said wheel, and means for moving said wheel along said track, whereby it is caused to rotate by its engagement with said rollers.

6. An amusement device, comprising a stationary annular track, a circular platform above said track, rollers in engagement with said track and below said platform, a wheel supported above said platform and having its lower edge in engagement with said rollers, cars carried by said wheel and means for simultaneously moving said platform and said wheel around said track while the wheel is caused to rotate in the reverse direction.

7. An amusement device, comprising an annular track, rollers supported upon said track, a platform above said rollers and having a slot directly above the latter, a horizontal shaft parallel to said platform, a wheel mounted on said shaft and having its lower edge extending through said slot and into engagement with said rollers, and a plurality of cars suspended from said wheel.

8. An amusement device, comprising a vertical shaft, a frame carried thereby, rollers carried in said frame, a stationary track in engagement with said rollers, a horizontal shaft rotatably mounted in the upper end of the first mentioned shaft, wheels at the ends of said horizontal shaft and having their lower edges in engagement with said rollers, and a plurality of cars suspended from said wheels.

9. An amusement device, comprising a stationary platform, an annular track supported thereon, a vertical shaft, a rotating platform carried thereby, rollers supported beneath said platform and in engagement with said track, a horizontal shaft rotatably mounted within the upper end of said first mentioned shaft, wheels supported upon the outer ends of said horizontal shaft and having their lower edges extending through slots in said platform and into engagement with said rollers, and a plurality of cars suspended from said wheels.

10. An amusement device, comprising an annular track, a vertical shaft, a frame carried by said shaft, rollers mounted in said frame and in engagement with said track, a rotary platform carried by said shaft and having slots adjacent said rollers, a horizontal shaft rotatably mounted in the upper end of said vertical shaft, wheels upon the opposite ends of said horizontal shaft and having their beveled circumferential edges extending through the slots in the platform and into engagement with said rollers, and a plurality of cars suspended from said wheels.

11. An amusement device, comprising a stationary platform, two annular tracks supported thereon, a vertical shaft, a platform carried thereby and substantially parallel to said stationary platform, rollers supported intermediate said platform and in engagement with said tracks, each of said rollers having cylindrical portions in engagement with each track and having an intermediate conical section, a horizontal shaft rotatably mounted at the upper end of said first mentioned shaft, wheels mounted on the ends of said horizontal shaft and having their beveled circumferential edges in engagement with the conical portions of said rollers, and a plurality of cars mounted upon said wheels.

852,249. KNOCKDOWN BOX. THOMAS WERTZ, St. Louis, Mo. Filed July 9, 1906. Serial No. 325,338.

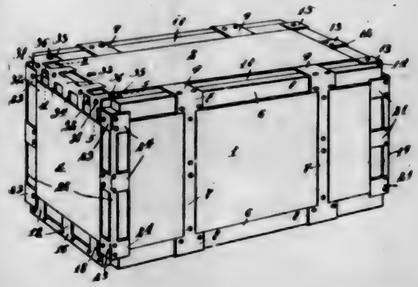

Claim.—1. A knockdown box comprising side, top, bottom and end pieces, each of which is provided around its outer side with a continuous rabbet, transversely-disposed brace bars secured to the outer sides of said side pieces, guide and brace plates formed on the outer ends of said brace bars to engage the side rabbets of said top and bottom pieces, brace bars secured to the opposite ends of said top and bottom piece, guide and brace plates formed on said bars to engage the upper and lower rabbets of said end pieces, brace bars secured to the side edges of said end pieces, guide plates formed on said brace bars to engage the end rabbets of said side pieces, a locking bar adapted to be connected with the meeting ends of the top and one end piece of the box, a keeper on said locking bar and a lock arranged on said cover piece, the bolt of which is adapted to be engaged with said keeper to lock said cover in a closed position and thereby hold the parts of the box in a set up or operative position, substantially as described.

2. A knockdown box comprising side, top, bottom and end pieces, each of which is provided around its outer side with a continuous rabbet, transversely-disposed brace bars secured to the outer sides of said side pieces, guide and brace plates formed on the outer ends of said brace bars to engage the side rabbets of said top and bottom pieces, brace bars secured to the opposite ends of said top and bottom pieces, guide and brace plates formed on said bars to engage the upper and lower rabbets of said end pieces, brace bars secured to the side edges of said end pieces, guide plates formed on said brace bars to engage the end rabbets of said side pieces, brace bars arranged on the inner sides of said side pieces of the box, catches formed on the upper ends of said brace bars, similar bars arranged on the inner sides of the top and bottom pieces of said box, lugs on the ends of said latter bars to engage the catches on the ends of said side brace bars, a locking bar secured to the forward end of the top piece and adapted to engage the upper edge of the forward end piece, removable fastening devices to secure said locking bar on the end of said top piece, a keeper formed on said locking plate, and a lock arranged on said top piece the bolt of which is adapted to be turned into engagement with said keeper, substantially as described.

3. A knockdown box comprising side, top, bottom and end pieces, each of which is provided around its outer side with a continuous rabbet, transversely-disposed brace bars secured to the outer sides of said side pieces, guide and brace plates formed on the outer ends of said brace bars to engage the side rabbets of said top and bottom pieces, brace bars secured to the opposite ends of said top and bottom piece, guide and brace plates formed on said bars to engage the upper and lower rabbets of said end pieces, brace bars secured to the side edges of said end pieces, guide plates formed on said brace bars to engage the end rabbets of said side pieces, catch lugs arranged on the forward end of said top piece, a locking plate adapted to be engaged with said catch lugs, right angularly projecting top and end engaging plates formed on said locking bar, a metallic bar arranged between said locking bar and the end of said top piece and secured to the latter, removable fastening devices to detachably secure said locking plate on the ends of said top piece, a keeper formed on said locking bar, and a lock arranged on said top piece, the bolt of said lock being adapted to be turned into engagement with said keeper, thereby locking said top piece in closed position and holding the parts of the box in a set up or operative position, substantially as described.

852,250. ANIMAL-POKE. ANTON WILLIMAN, Washington, Mass. Filed Dec. 18, 1906. Serial No. 348,379.

Claim.—1. An animal poke, comprising a collar, puncturing devices carried by the collar, and a guard plate having its ends secured to the collar and provided with openings for permitting the passage of the puncturing devices said collar having a flange on its inner edge for guiding the guard plate.

2. An animal poke, comprising side members longitudinally curved and pivotally connected together at the top, means for locking the lower ends of the members together, puncturing devices carried by the members, guard plates having their ends secured to said side members and having perforations, puncturing devices extended from the side members into said perforations, and springs arranged between the side members and the guards.

3. An animal poke comprising side members pivotally connected at their upper ends, a stud for engaging in the lower end of one of said members, the other member having a plurality of perforations, a plate movable on said other member and having openings having enlargements at one end, a locking device for said plate, puncturing devices carried by said side members, and spring yielding guards attached to the side members and having perforations for receiving the puncturing devices.

852,250.

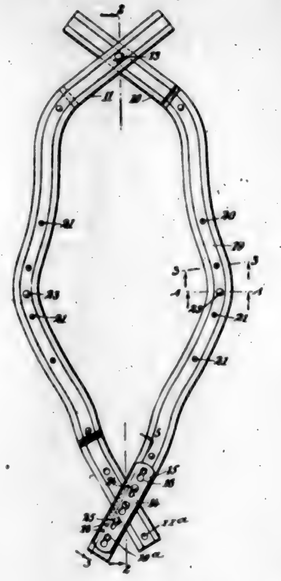

852,251. PLOW. CHARLIE C. ADDINGTON, Wheelersburg, Ohio. Filed Nov. 1, 1905. Serial No. 285,482.

Claim.—A mold-board comprising a body portion having its rear end increased in thickness, said thickened portion being provided with a series of perforations formed transversely therethrough, and having a second series of perforations formed in its front face in communication with said transverse perforations, teeth passed through said transverse perforations, and means disposed within the second series of perforations for engagement with the teeth, to adjustably secure the latter against displacement.

852,252. BALING-PRESS. LEWIS P. AGNEW, Wapanucka, Ind. Ter. Filed Aug. 22, 1906. Serial No. 331,628.

Claim.—1. In a baling press, the combination of a frame carrying press boxes, plungers operating therein, spring retracted pitmen connected with the plungers, an eccentric for actuating the pitmen on their working stroke, bell crank levers on the frame having friction rollers engaging the outer face of the eccentric, whereby said levers are adapted to be rocked by the eccentric, contacts on the pitmen, and means controlled by the bell crank levers to engage said contacts to impart movement to the pitmen to start the plungers on their return stroke.

2. In a baling press, the combination of a frame carrying press boxes, plungers operating therein, pitmen con-

nected with the plungers, a spring for retracting each pitman, a rotating eccentric for actuating the pitmen to force the plungers on their working stroke, and means actuated by said eccentric for starting the plungers on their return stroke.

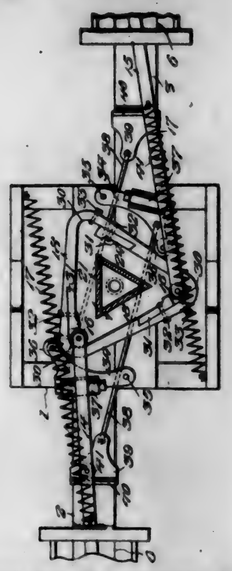

3. In a baling press, the combination of a frame carrying press boxes, plungers operating therein, spring retracted pitmen connected with the plungers, an eccentric for operating the pitmen to force the same on their working stroke, levers operated by the eccentric, and means controlled by said levers for engaging the pitmen to start the plungers on their return stroke.

4. In a baling press, the combination of a frame carrying press boxes, plungers operating therein, spring retracted pitmen connected with the plungers, an eccentric for actuating the pitmen on their working stroke, each pitman being provided with a contact member, slides adapted to engage said contact members, rocking levers actuated by the eccentric, and connections between said levers and slides to move the latter into engagement with said contact members and impart movement to the pitmen to start the plungers on their return stroke.

852,253. SEMI-AUTOMATIC GUN. LAURENCE V. BENÉT and HENRI A. MERCIÉ, Paris, France. Filed Dec. 29, 1906. Serial No. 350,012.

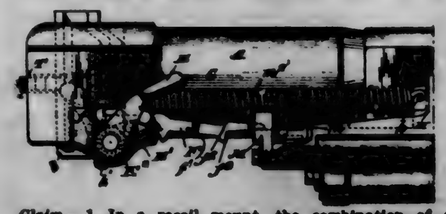

Claim.—1. In a recoil mount, the combination of a crank-shaft and mechanism operated thereby for opening and closing the breech, of a hand-lever and an arm detachably connected to said crank-shaft, and an operating bar detachably connected to said arm and adapted to engage a non-recoiling part of the mount on counter-recoil of the gun, said bar being provided with a boss on the upper portion thereof, and a stop block secured to a non-recoiling part of the mount and adapted to engage said bar on counter-recoil, and also provided with a lug adapted to engage said boss and to throw the end of the bar downward on recoil, substantially as described.

2. In a recoil mount, the combination of a crank-shaft and mechanism operated thereby for opening and closing the breech, of a hand lever and an arm detachably connected to said crank-shaft, and an operating bar detachably connected to said arm and adapted to engage a non-recoiling part of the mount on counter-recoil of the gun, said bar being provided with a boss on the upper portion thereof, a spring under tension connecting said operating bar and a non-recoiling portion of the mount, and a stop block secured to a non-recoiling part of the mount and adapted to engage said bar on counter-recoil, and also provided with a lug adapted to engage said boss and to throw the end of the bar downward on recoil, substantially as described.

3. The combination of a cradle and a gun mounted therein, of a reciprocating breech block, semi-automatic mechanism for automatically reciprocating said breech block, a sliding extractor operated by said breech block on opening and adapted to automatically lock said breech block in the open position, a lug on the heel of the extractor adapted to engage a fixed part of the gun body, and an extractor controlling block adapted to throw said lug into or out of engagement, substantially as described.

4. The combination with a cradle and a gun mounted therein, of a reciprocating breech block, semi-automatic mechanism for automatically reciprocating said breech block, a sliding extractor operated by said breech block on opening and adapted to automatically lock said breech block in the open position, a lug on the heel of the extractor adapted to engage a fixed part of the gun body, and a reversible spring impressed extractor controlling block adapted to throw said lug into or out of engagement, substantially as described.

5. The combination of a cradle and a gun mounted therein, of a reciprocating breech block, means for reciprocating said breech block, a sliding extractor operated by said breech block on opening and adapted to automatically lock said breech block in the open position, a lug on the heel of the extractor adapted to engage a fixed part of the gun body, and a reversible extractor controlling block adapted to throw said lug into or out of engagement, substantially as described.

6. The combination with a cradle and a gun mounted therein, of a reciprocating breech block, means for reciprocating said breech block, a sliding extractor operated by said breech block on opening and adapted to automatically lock said breech block in the open position, a lug on the heel of the extractor adapted to engage a fixed part of the gun body, and a reversible spring impressed extractor controlling block having a locking face adapted to hold said lug out of engagement, and a wedge face adapted to hold said lug in yielding engagement with the gun body, substantially as described.

7. The combination of a cradle and a gun mounted therein, of a reciprocating breech block, means for reciprocating said breech block, both semi-automatically and by hand, a sliding extractor operated by said breech block on opening and adapted to automatically lock said breech block in the open position, a lug on the heel of the extractor adapted to engage a fixed part of the gun body, and a reversible extractor controlling block adapted to throw said lug into or out of engagement, substantially as described.

8. The combination with a cradle and a gun mounted therein, of a reciprocating breech block, means for reciprocating said breech block, both semi-automatically and by hand, a sliding extractor operated by said breech block on opening and adapted to automatically lock said breech block in the open position, the said extractor having a laterally projecting claw, with a lug on the heel of the extractor adapted to engage a fixed part of the gun body, and a reversible spring impressed extractor controlling block having a locking face adapted to hold said lug out of engagement, and a wedge face adapted to hold said lug in yielding engagement with the gun body, and to release said lug against the action of said spring when a sufficient blow is given to the claw of said extractor, substantially as described.

852,254. VEHICLE-WHEEL. LOUIS DE COPPET BERGH, Newport, R. I. Filed Apr. 16, 1906. Serial No. 311,935.

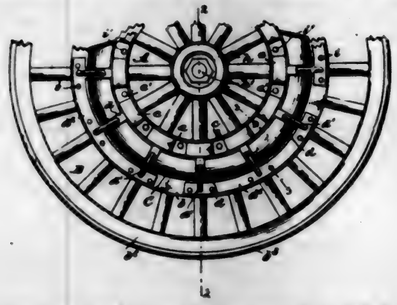

Claim.—A vehicle wheel of the character described, comprising an inner or hub section, an outer or tread section, an inflated tube interposed between said sections, a plate on one of the sections providing keepers, and plates on the other section having bars extending into the keepers, said bars being provided with ribs terminating near the keepers, substantially as shown and for the purpose set forth.

852,255. BED-BOTTOM. GILBERT BEZANGER, Boston, Mass. Filed May 22, 1906. Serial No. 318,130.

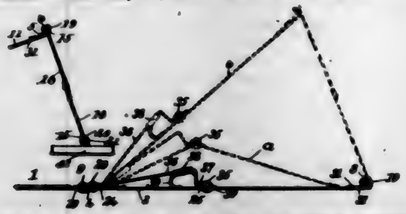

Claim.—1. A device of the class described comprising a frame having a section jointed thereto, a plurality of members jointed one to the other and supported upon said section, one of said members being jointed to said section, means for elevating the free end of said section, and means for holding said members in a plurality of positions.

2. A device of the class described comprising a frame having a section jointed thereto, said section having an adjustable support at its free end, comprising a double toggle adapted to elevate said free end of said section, a member supported upon said section and jointed thereto, a second member supported upon said section and jointed to said first member, and means for holding said members in a plurality of positions.

3. A device of the class described, comprising a frame having a section jointed thereto, means for elevating the free end of said section, a member supported upon said section and jointed thereto, a second member supported upon said section and jointed to said first member, and means for elevating said members at the joint connecting the same.

4. A device of the class described, comprising a frame having a section jointed thereto, said section comprising sides and transverse bars, adjustable means for holding said section in a plurality of elevated positions, a member having flexible slats and supported upon said sides, said member further having a hinged connection with a transverse bar of said section, a second member having flexible slats supported upon said sides and jointed to said first member, and adjustable means for elevating the said members at the joint connecting them.

5. A device of the class described, comprising a frame having a section jointed thereto at one end of the same, said section having sides, a longitudinal slat intermediate between said sides and transverse bars, a double toggle mounted at the free end of said section and adapted to support the same in a plurality of elevated positions, a plurality of jointed members having slats and transverse bars projecting beyond said sides and adapted to rest thereupon and upon said longitudinal slat, and means for elevating said members at the joint connecting them.

6. In a device of the class described, sections having slats and transverse bars adapted to rest upon a supporting frame, said sections having a hinged connection, a removable rod mounted upon the transverse bars near the ends thereof and near the end of one of said sections at an angle with the normal position of said member, said rod affording means for elevating said member, a block slidably mounted on the rod, said block being adapted to rest upon the supporting frame and to hold said member in a plurality of positions.

7. A device of the class described, comprising a frame, a section having sides, a slat intermediate between said sides and transverse bars, one of said transverse bars being hinged to said frame, a transverse bar remote from said hinged bar having an upwardly projecting flange, a double toggle pivotally mounted upon said flange and having a bar adapted to rest upon a support, said double toggle being adapted to hold the end of said section in a plurality of elevated positions, a plurality of hinged members having flexible slats and transverse bars adapted to rest upon said sides and said intermediate slat of said section, one of said members having a hinged connection with said section, a removable rod mounted upon the transverse bars of one of said members and at an angle with the normal horizontal position thereof, said rod affording means for the elevating of said member, and a slidable block upon said rod having a curved extension adapted to rest upon the side of said section and to hold said member in a plurality of positions.

852,256. SCRAPING ATTACHMENT FOR BUCKETS. JOHN T. BOYD, Valdosta, Ga. Filed Feb. 6, 1907. Serial No. 356,051.

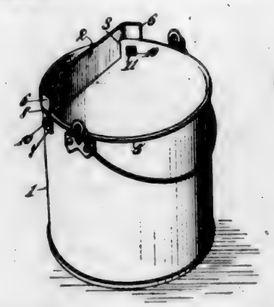

Claim.—1. The combination with a bucket, of a scraping attachment consisting of a strip of material having slots extending transversely thereof near opposite extremities and angularly deflected at the slots to embrace the outer portion of the rim of the bucket, the strip being disposed in the bucket to have the side edges thereof in vertical alinement, and securing means engaging the angularly deflected extremities and the adjacent portions of the bucket.

2. The combination with a bucket, of a scraping attachment consisting of a strip of material having slots adjacent to opposite extremities opening through the lower edge thereof and also provided with angularly deflected extremities to bear against the outer surface of the upper rim portion of the bucket, the strip being disposed to have the side edges thereof in vertical alinement with relation to the bucket and the greater portion within the

confines of the upper part of the bucket, and securing means inserted through the angularly deflected extremities and adjacent portions of the bucket.

3. The combination with a bucket, of a scraping attachment consisting of a strip of material having the opposite extremities slotted and angularly deflected, the slots opening through the lower edge of the strip and the angularly deflected portions of the extremities having corrugations extending thereover to receive the upper edge portion of the bucket, the strip when applied having the opposite side edges in vertical alinement and the angularly deflected extremities bearing against the outer surface of the bucket and the remaining part of the strip located within the confines of the upper portion of the bucket, and means for removably securing the angularly deflected extremities against the outer surface of the upper or rim portion of the bucket.

852,257. FORM OF CHECK AND LIKE VALUE OR AMOUNT INDICATING DOCUMENT. ALFRED COLLIER, Geelong, Victoria, Australia. Filed Jan. 20, 1906. Serial No. 297,037.

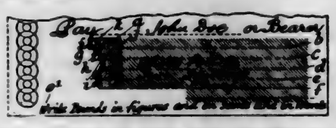

Claim.—1. A check or other form provided on its face with suitably designated squares in which the amount of the check may be written in figures, said squares being arranged in horizontal lines, one square if the amount is under ten, two squares if the amount is under one hundred, and so on, and horisontal lines on a line with the bottoms of the squares, the context indicating that on said horizontal lines the amount may be written in words, both the squares and the spaces between and around said horizontal lines being cross-hatched, the edges of said squares and said lines being embossed, substantially as described.

2. A check having on its face a plurality of series of squares suitably designated for the reception of amounts to be written in figures, each of said series being arranged in a horizontal line, there being three of these squares for amounts less than one thousand and over ninety-nine, two of said squares for amounts less than one hundred and over nine, and one of said squares for amounts less than ten, the horizontal lines forming continuations of the bottoms of each series of squares, said horizontal lines and the spaces therearound and said squares having cross hatchings arranged at different angles to each other inside said squares and around said horizontal lines, the context indicating that the amount may be written in words on the proper horizontal lines, and similar means suitably designated on which fractional amounts may be stated, said means being located under the space in which amounts under ten are to be written, the edges of said squares and said lines being embossed, substantially as described.

852,258. MOTOR-DRIVEN HAND-TOOL. ELVIN COLLINS and MARK HEARN, Maitland, Colo. Filed June 20, 1905. Serial No. 266,194.

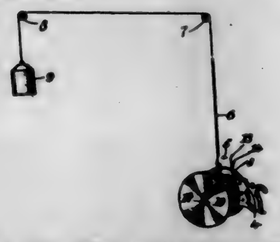

Claim.—A motor driven hand tool comprising an antifriction support, a cable arranged on said support and having end portions depending from the same, an electric motor having a casing connected to and depending from one end portion of the cable and also having a horizontal armature shaft journaled in and extending laterally from said casing, a vertically-disposed, rotating tool fixed on the extended portion of the armature shaft and arranged at one side of the casing, a handle fixed to and extending rearward from the casing and arranged in a plane parallel to that of the rotating tool, and a counterweight connected to the other end portion of the cable and balancing the motor casing and the parts carried thereby.

852,259. MOLD FOR PLASTIC MATERIAL. HUGH B. COPELAND, Denver, Colo. Filed Apr. 20, 1906. Serial No. 312,893.

Claim.—1. In combination with a mold comprising a base plate (5) with handles attached, two reciprocal pivoted end forming pieces (7 and 9) whose cross-section views are L shaped, substantially as shown, two reciprocal pivoted rigid side pieces (6 and 8), whose cross-section views are L shaped, a top plate (13) bolted to the base plate, and a plurality of ornamental ellipsoidal bolts (11 and 12) having enlarged recessed heads, connecting the top and design plates, a removable design plate bearing the reverse of the design to be cast and adapted to be temporarily attached to the base plate.

2. In combination with a mold for plastic material a plurality of ellipsoidal bolts, having enlarged, ornamented, recessed heads.

3. In combination with a mold for plastic material two reciprocal pivoted side pieces and two reciprocal pivoted end pieces, whose cross section views are L shaped.

4. In combination with a mold for plastic material and comprising a base plate (5), with handles attached, a design plate (17) bearing the reverse of the design to be molded, a top plate (13) attached to the base plate, and a plurality of ornamental ellipsoidal bolts (11 and 12) having enlarged recessed heads adjacent to the design plate connecting the top and the design plate; two reciprocal pivoted end forming pieces (7 and 9), whose cross section views are L shaped, substantially as shown, and two reciprocal pivoted side forming pieces (6 and 8) whose cross-section views are L shaped.

5. In combination with a mold for plastic material and comprising a base plate (5) with handles attached, a design plate (17), bearing the reverse of the design to be molded, two reciprocal pivoted end forming pieces (7 and 9), whose cross-section views are L shaped, substantially as shown, two reciprocal pivoted side pieces (6 and 8), whose cross-section views are L-shaped; a plurality of ornamental ellipsoidal bolts (11 and 12) having enlarged recessed heads adapted to leave their impress on the molded slab when removed said bolts, connecting the top and design plate.

6. A mold for plastic material, comprising a base plate (5) with handles attached, a design plate (17), bearing the reverse of the design to be molded, two reciprocal pivoted end forming pieces (7 and 9), whose cross-section views are L shaped, substantially as shown, two reciprocal pivoted side pieces (6 and 8), whose cross-section views are L shaped, a top plate (13), bolted to the base plate (5), and a plurality of ornamental ellipsoidal (11 and 12) having enlarged recessed heads, bolts connecting the top and design plate.

852,260. NON-REFILLABLE BOTTLE. ALVA B. COURT, U. S. Navy. Filed July 12, 1906. Serial No. 325,866.

Claim.—1. The combination with a bottle provided with a recessed portion in the neck thereof, of valve mechanism therefor, and means for holding said valve mechanism within said bottle neck, comprising a split resilient ring adapted to be sprung in said recessed portion of said bottle neck above and in operative relation with said valve

mechanism, said resilient ring being provided on its respective adjacent edges with a tongue and a non-alined slot sufficiently deep to receive said tongue and allow the closing of said split ring, substantially as described.

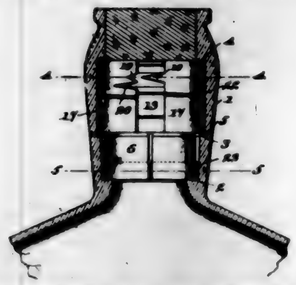

2. The combination with a bottle provided with a recessed portion in the neck thereof, of a valve casing, a valve therefor, a protecting cap for said valve, and means for holding said protecting cap within said bottle neck comprising a split resilient ring adapted to be sprung in the recessed portion of said bottle neck, said split ring being provided on its adjacent respective edges with a tongue and a deep and a shallow slot, substantially as described.

3. The combination with a bottle, of a valve casing communicating with the body portion of the bottle and having an upward annular extension provided with outlet-slots, a valve seated in said chamber, a split cylinder inclosing said annular extension, a protecting cap operating immediately above said valve within said annular extension and provided with a hollow stem, and a spring interposed between said protecting cap and said valve, substantially as described.

4. The combination with the bottle provided with a recessed portion in the neck thereof, of a valve casing, a valve therefor, a protecting cap for said valve, and means for holding said protecting cap and valve within said bottle neck, comprising a split resilient ring adapted to be sprung in said recessed portion of said bottle neck, said split ring being provided with inwardly disposed radial projections adapted to rest above said protecting cap and said split ring being also provided on its adjacent edges with a tongue and slot, substantially as described.

852,261. MECHANISM FOR MAKING MASTER-SHEETS OF MUSICAL INSTRUMENTS. HARRY N. CROSS, San Francisco, Cal. Filed Mar. 12, 1906. Serial No. 305,670.

Claim.—1. In an apparatus for the described purpose, the combination with a series of keys, of a perforating punch for each key of the series, of means actuated by the movement of a key for setting parts connected to the punch designated by such key in operative position, of devices for holding a sheet or web to be perforated above the line of punches, of mechanism including a pivoted bar for actuating the punch of any depressed key to perforate the sheet or web to correspond with the note represented by such key, and means for advancing the perforated sheet or web on the actuated punch or punches being restored to normal position, including a receiving roll for the sheet or web, and a reciprocatory actuating arm operatively associated with said roll and actuated by the aforementioned mechanism for actuating the punch.

2. In an apparatus for the described purpose, the combination with a stem, of a punch secured thereto, of a jack block pivoted to said stem and adapted when brought into alinement therewith to be engaged by instrumentalities including a pivoted hammer bar for operating the stem and punch carried thereby, and means for bringing the jack block into alinement with said stem including a depressible key and connections between said key and the before mentioned jack block.

3. An apparatus for the described purpose, the same comprising a suitable casing, of a series of keys working therein, a movable perforating punch for each key of parts connected to said punch, connection between each key and such parts by which such parts corresponding to any key of the series are brought into operative position when the said key is actuated to designate a note, of means for holding a sheet or web to be perforated above the series of punches, of mechanism for actuating any punch of an operated key to perforate the sheet or web, and devices actuated by said mechanism on its return movement for advancing the sheet or web a given distance.

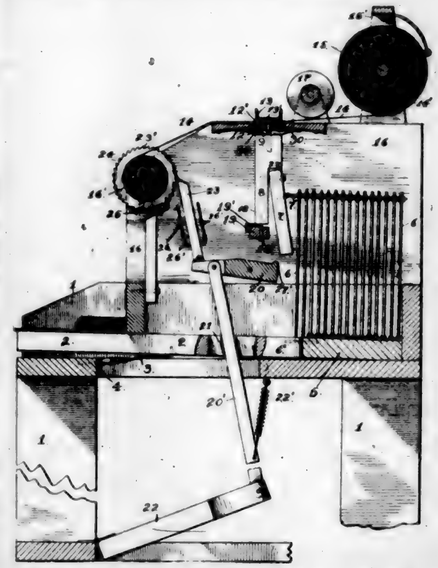

4. In an apparatus for the described purpose, the combination with a stem, of a punch secured thereto, of a jack block pivoted to said stem and adapted when brought into alinement therewith to be engaged by mechanism including a pivoted hammer bar for elevating the stem and punch carried thereby, of means for bringing said jack block into such alinement including a depressible key, and connections between said key and the before mentioned jack block, of devices for holding a sheet or web to be perforated above the punch, and instrumentalities for advancing said web or sheet, said instrumentalities being brought into operation by the return movement of the said mechanism for elevating the punch.

5. In an apparatus for the described purpose, the combination with a series of independently operable keys, of a movable punch for each key, of the said series, of connections between each key and its punch by which the said punch is brought into operative relation with the actuating mechanism when the said key is depressed to designate a note, of mechanism for elevating said punch, said mechanism including a pivoted hammer bar, of means for holding and advancing a sheet to be perforated above the punch, said means including a feeding roll and a receiving roll, a ratchet wheel carried by said receiving roll, and instrumentalities for turning said ratchet wheel and advancing said sheet, said instrumentalities being brought into operation on the return movement of the mechanism for elevating the punch.

6. In an apparatus for the described purpose, the combination with a series of independently movable perforating punches, of parts connected to said punches, of means for operatively positioning said parts on the striking of a note to be designated on a master sheet, of a pivoted device common to all for actuating any number of punches operatively related to the actuating mechanism, of foot

operated means for moving said punch actuating device, means for holding the sheet to be perforated above the line of punches, the movement of said sheet being produced by the return movement of the aforesaid foot-actuating device.

7. In an apparatus for the described purpose, the combination with a series of independently movable keys, of a perforating punch for each key, of devices for holding a sheet to be perforated above the line of punches, of a jack block hinged to the stem of each punch, of connection between each key and the jack block carried by the punch to be operated to perforate the sheet to designate the note struck by the key of such punch, a pivoted hammer bar common to all the punches for actuating such punches of the series as may be operatively connected by the movement of its key in the striking of a note, of foot-operated means for actuating the hammer bar for the punches, and devices actuated by the return movement of the foot operated means for advancing the perforated sheet to expose an unperforated surface to the action of the punches.

8. In an apparatus for the described purpose, the combination with a series of perforating punches, of means actuated by the striking of a note of music for operatively connecting the punch to designate such note, including a pivoted member carried by the punch of devices for holding a sheet to be perforated in advance of the series of punches, of foot operated mechanism for actuating the operatively connected punch or punches to perforate the sheet to form a master sheet of perforated music, and means for advancing the perforated sheet to expose an unperforated surface to the action of the punches, said means being actuated by the return movement of the said foot operated mechanism.

852,262. APPAREL. CHARLES R. DE BEVOISE, Newark, N. J. Filed June 7, 1906. Serial No. 320,671.

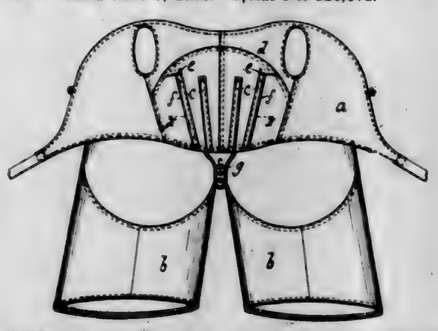

Claim.—1. A bodice having an entirely closed front and provided with bone stays, leg portions secured to the bodice and depending therefrom, and a tab interposed between the leg portions and secured and depending from said bodice and having a series of eyelets, said bodice being extended at opposite sides beyond the leg portions to close said bodice at the rear thereof.

2. A bodice having a closed front and separate legs fastened to the lower edge of the bodice, the rear portions of the bodice being free of the legs and extending rearwardly beyond the latter, the bodice having a pendent flap or tab between the legs for connection with a corset.

852,263. FRONT OR FEED GUIDE FOR PRINTING-PRESSES. GEORGE P. FENNER, New London, Conn. Filed Jan. 10, 1907. Serial No. 351,727.

Claim.—1. A feed guide comprising a spindle with spring metal presser piece and an adjusting screw for the presser piece said screw being tapped into the spindle of the feed guide and engaging an end portion of the presser piece so as to set the same according to the thickness of the sheet to be guided.

2. A feed guide provided with an adjusting screw and with spring presser piece consisting of an elastic strip secured at one end to the guide, and curved back of said guides and having its other end engaged by said adjusting screw.

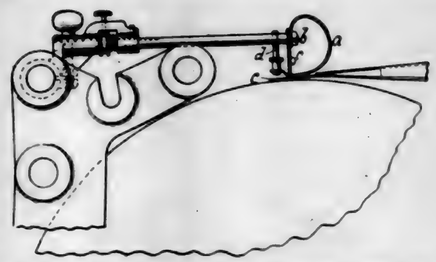

3. A feed guide provided with a grooved screw and a spring piece secured at one end to said guide and having its other end slotted to engage the groove in the screw.

852,264. MEANS FOR CONNECTING CABLE-CHAINS. AARON FRANKENHEIM, New York, N. Y., assignor to Paul L. Crowe, Jersey City, N. J. Filed Apr. 2, 1906. Serial No. 309,420.

Claim.—1. In a device of the class described, the combination with a conveyer chain, of an object provided with a web, hooked members inserted through a link of the chain and clamped thereby upon opposite sides of the web.

2. In a device of the class described, the combination with conveyer chains, of an object proportioned to extend transversely between the chains and provided with a web, hooked members at each end inserted through links of the chains and clamped thereby upon opposite sides and ends of the web.

3. In a device of the class described, attaching means composed of similar parts, each embodying a hooked portion proportioned for insertion through the links of a chain, and to be clamped by said chain upon opposite sides of an object.

4. In a device of the class described, attaching means composed of similar parts, each embodying a hooked portion proportioned for insertion through the links of a chain and be clamped by said chain upon opposite sides of an object with the hooked portions extending in opposite directions.

5. In a device of the class described, attaching means composed of like parts, each provided with a curved face proportioned to fit within the curve in an object to which it is to be connected and with a hooked portion proportioned to be inserted through a chain link and provided with a rib defining a depression proportioned to accommodate an adjacent chain link.

6. In a device of the class described, an object attaching means composed of two parts, each provided with a curved depressed face, proportioned to accommodate the curved shoulder of the adjacent chain links, and held in position by the hooked portion thereof being inserted in a chain link.

7. In a device of the class described, the combination with conveyer chains, an object attaching means consisting of two parts, each embodying hooked portions proportioned for insertion through the links of a chain, and having curved depressed portions engaging the shoulders of adjacent links.

8. In a device of the class described, attaching means composed of a plurality of parts each embodying a hooked portion proportioned to be inserted through a link of a chain and held by the adjacent links of said chain upon opposite sides of an object.

9. In a device of the class described, attaching means composed of dissimilar parts, each embodying a hooked portion proportioned for insertion through a link of a chain, and to be clamped by adjacent links of said chain upon opposite sides of an object extending transversely relative to said chain.

852,265. HEADLIGHT. MANES E. FULD, Baltimore, Md. Filed Jan. 30, 1906. Serial No. 298,649.

Claim.—1. The combination with a resilient lip provided with end plates adapted to engage the head of the wearer, of an electric lamp adjustably connected to the front one of said end plates, and insulated leading in wires carried by said clip and electrically connected to said lamp, with means located at the rear of said support for connecting said leading in wires to a source of electricity, substantially as described.

2. The combination with a spring clip provided with front and rear end plates adapted to engage the head of the wearer, of a bracket secured to the front end plate, an electric lamp socket hinged to said bracket, and leading in wires mounted on said clip and electrically connected to said lamp socket, an inner tube inclosing said lamp socket, a lamp mounted in said socket, an annular reflector mounted on the base of said lamp and inclosed in said tube, and an outer telescopic tube carrying a lens mounted exterior of said inner tube, substantially as described.

852,266. ARTIFICIAL TEETH. ERNEST DE WITT R. GARDEN, Tarrytown, N. Y. Filed June 11, 1906. Serial No. 321,224.

Claim.—An artificial tooth comprising a facing having a longitudinally-convex inner face provided with spaced, inwardly-extending undercut grooves diverging toward the cutting edge thereof, and a metal backing having spaced ribs diverging to conform to the grooves in the face and adapted to fit therein, whereby the strain on the edge of the facing is thrown upon the metal backing and its connections.

852,267. CANE-LOADER. JULES B. GAUSSIRAN, Baldwin, La. Filed May 4, 1906. Serial No. 315,246.

Claim.—1. A cane loader comprising a platform, supporting wheels for said platform, a swinging derrick mounted upon said platform adapted to deliver the load to one side of the apparatus, a grapple supported by said derrick, means for operating said derrick and said grapple, and a raking device and a draft device connected to said platform, substantially as described.

2. A cane loader comprising a platform, supporting wheels for said platform, a swinging derrick mounted on said platform adapted to deliver the load to one side of the apparatus, a grapple supported by said derrick, means for operating said derrick and said grapple separately, brake devices controlling the operation of said grapple, and raking devices and draft devices connected to said platform, substantially as described.

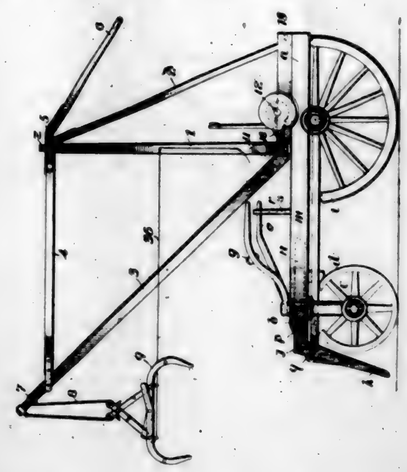

3. A cane loader comprising a platform, supporting and steering wheels upon which said platform is mounted, a swinging derrick mounted on said platform adapted to deliver the load to one side of the apparatus, a lever for moving said derrick, a grapple carried by said derrick, means for operating said grapple, a detent brake and a friction brake for controlling the operation of said grapple, and raking devices and draft devices connected to said platform, substantially as described.

4. In a cane loader, the combination of a platform, a derrick arm mounted so as to swing on said platform and adapted to deliver the load to one side of the apparatus, a lever for moving said derrick arm, a shaft provided with two drums mounted on said platform, a rope fastened to each of said drums, said drums and ropes being so arranged that when one is being wound up the other is being unwound, and a grapple carried by one of said ropes, and raking and draft devices carried by said platform substantially as described.

5. In a cane loader, the combination of a platform, wheels supporting said platform, a shaft revolubly mounted upon said platform and provided with a drum near each end, a rope attached to each drum, said ropes and drums being so arranged that the winding up of the one causes the unwinding of the other, a swinging derrick arm mounted on said platform adapted to deliver the load to one side of the apparatus, means for swinging said arm, and a grapple, the rope from one of said drums being operatively connected to said grapple, and raking and draft devices carried by said platform substantially as described.

6. In a cane loader, the combination of a cart, a loader provided with a movable derrick and adjustable means for fastening said cart to said loader, consisting of a pivoted arm and a guide for said arm, a link adapted to connect said arm with a perforated portion of the cart, and a pin for holding said arm in one of several possible adjustments, substantially as described.

852,268. METHOD OF DISTILLING COAL. OLIVIER A. GOSSE, Jumet, Belgium. Filed May 10, 1906. Serial No. 316,127.

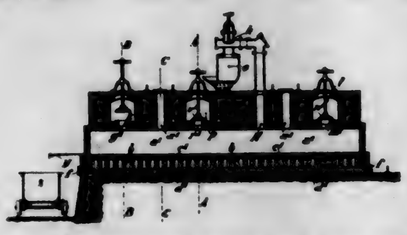

Claim.—1. A method of distilling coal which consists in forcing the heat from a bed of hot coke through a bed of coal, then passing gases given off from the bed of coal through the hot bed of coke to heat such gases, and then forcing the heated gases through the distilling coal.

2. A method of distilling coal which consists in extracting heat from a body of new made coke and distilling a body of coal therewith, then passing gases given off through the distillation of coal through the bed of coke thereby heating such gases, and then passing said gases through the bed of distilling coal.

3. A method of distilling coal which consists of extracting heat from a body of new made coke and distilling a body of coal therewith, then passing a part of the gases given off through the distillation of coal through the bed of coke, thereby heating such gases, then passing the gases through the bed of distilling coal, the excess of gases given off through the distillation of the coal being withdrawn.

4. A method of distilling coal which consists in coking a bed of coal, then forcing the heat derived from the bed of new made coke through a bed of coal, thereby distilling the coal, then passing gases given off from the distilling of said bed of coal through the hot bed of coke thereby heating such gases, and then passing the heated gases through the bed of distilling coal.

5. A method of distilling coal which consists in coking a bed of coal, then forcing the heat derived from the bed of new made coke through a bed of coal, thereby distilling the coal, then passing gases given off from the distilling of said bed of coal through the hot bed of coke thereby heating such gases, then passing the heated gases through the bed of distilling coal, the excess of gases given off through the distillation of the coal being withdrawn.

852,269. MACHINE FOR RAKING AND COCKING HAY. HUGH A. GRANT, Comox, British Columbia, Canada. Filed Apr. 12, 1905. Serial No. 255,139.

Claim.—1. In an apparatus of the character described, a supporting frame, gathering means, elevating means, a platform, a rack extending upwardly from said platform, a lock normally in engagement with said rack, and means for raising said platform.

2. In an apparatus of the character described, a supporting frame, gathering means, elevating means, a conveyer, a platform, a rack extending upwardly from said platform, a lock normally in engagement with said rack, and means for raising said platform.

3. In an apparatus of the character described, a supporting frame, gathering means, elevating means, a support extending downwardly from said frame, a platform pivotally connected therewith, a ratchet bar connected with said platform intermediate the ends thereof, a lock normally in engagement with said bar, and yielding lifting means connected with said platform.

4. In an apparatus of the character described, a supporting shaft, actuating means connected therewith, a yieldingly mounted picker, an elevator, a pivoted platform, a lock therefor, and resilient restoring means connected with said platform.

5. In an apparatus of the character described, a supporting shaft, actuating means, rakes, a picker, an elevator, a pivoted platform, vertical supporting arms, a catch engaging said arms, a releasing means, and resilient restoring means connected with said platform.

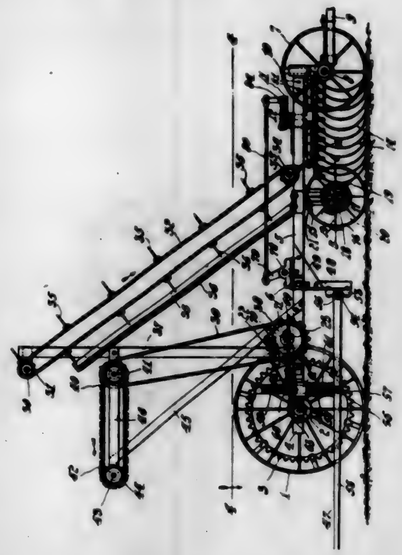

6. In an apparatus of the character described, a main supporting frame, a bracket carried thereby, a pivoted platform carried by said bracket, supporting means intermediate the length of said platform, a lock therefor, and means for actuating in one direction said platform on its pivot.

852,270. WRENCH. FREDERICK HAIGHT, Spartanburg, S. C., assignor of one-half to Frank G. Houser, Boise, Idaho. Filed May 23, 1906. Serial No. 318,351.

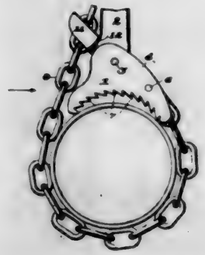

Claim.—In a wrench of the character described, the combination of a jaw comprising two separate plates rigidly connected by spacing pins 3 and 6 also serving as pivots and placed in the direction of strain as described, the lower or inner edges of said plates being concave and serrated throughout their entire length; a handle placed between the said two plates and pivoted thereto by the pin 3, said handle having near its pivotal end a centrally-slotted hook provided with shoulders or stops 12 to limit the movement of the handle; a shackle placed between the said plates and pivoted thereto by the pin 6, and a linked chain attached at one end to said shackle and adapted at one of its links to be placed and retained within said centrally-slotted hook, substantially as set forth.

852,271. CORN-HUSKER AND FODDER-SHREDDER. JOSEPH R. HALL, Indianapolis, Ind. Filed July 20, 1905. Serial No. 270,594.

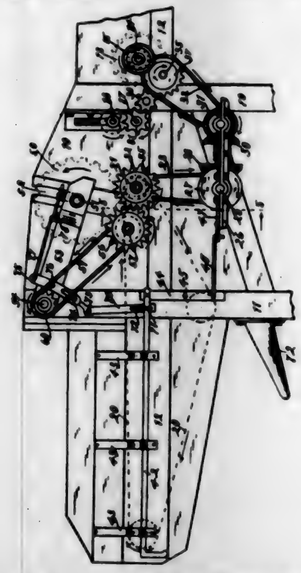

Claim.—1. In a corn-husker and fodder-shredder, the combination of snap rolls, a conveyer for feeding the stalks to the snap rolls, a feed roll mounted above the conveyer and adapted to engage the stalks between it and the conveyer, means for actuating the feed roll that permits it to be moved by the stalks more rapidly than by said actuating means, and means for simultaneously reversing both the conveyer and feed roll whereby the stalks may be withdrawn from the snap rolls.

2. In a corn husker and fodder shredder, the combination of snap rolls, a conveyer for feeding the stalks to the snap rolls, a feed roll mounted above and co-operating with the conveyer, a shaft upon which said feed roll is loosely mounted, means for actuating said shaft, a pawl and ratchet drive mechanism for transmitting power from said shaft to the feed roll whereby the feed roll may be rotated in a forward direction more rapidly than by said shaft and pawl and ratchet, and means for driving said feed roll and the conveyer simultaneously in a reverse direction.

852,272. GOVERNING MEANS FOR INTERNAL-COMBUSTION ENGINES. RUDOLF HENNIG, Zweibrücken, Germany. Filed Mar. 3, 1904. Serial No. 196,391.

Claim.—1. In a fluid-pressure engine, the combination of a cylinder, an inlet-valve for controlling the admission of fluid to said cylinder, a governor, a side or way-shaft driving said governor, a governor-cam arranged on said side-shaft and movable relatively to said shaft by said governor, a countershaft driven from said side shaft a lever oscillated by said governor-cam and bearing cam-surfaces, a second lever, a cam rotated from said countershaft and serving to oscillate said second lever, an actuating lever pivotally mounted on said second lever and engaging said cam surfaces on said first or cam-lever, and mechanism connecting said actuating lever with said inlet-valve.

2. Valve-gearing comprising a side- or way-shaft, a governor on said side-shaft, a cam mounted on said side-shaft and movable relatively to said side-shaft and by said governor, an intermediate lever having camways formed thereon and moved by said cam, a bent lever coaxial with said intermediate lever, an actuating lever pivotally mounted on said bent lever and sliding on the camways of said intermediate lever, a countershaft, gearing for driving said countershaft at half the speed of said side shaft, a tappet mounted on said countershaft and acting on said bent lever, an admission-valve, a link connecting said actuating lever and said admission-valve, the said link produced extending substantially toward the common axis of said intermediate and bent levers.

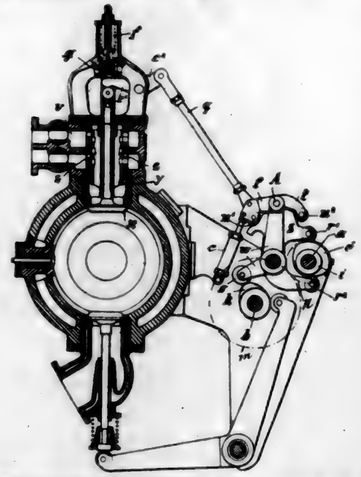

3. Valve-gearing comprising a side- or way-shaft, a governor on said side-shaft, racks pivotally connected to the weights of said governor, a hollow shaft rotatable on said side-shaft, a gear-wheel mounted on said hollow shaft and gearing with said racks, guide-rollers for said racks, a cam mounted on said hollow shaft, an intermediate lever having camways formed thereon and moved by said cam, a bent lever coaxial with said intermediate lever, an actuating lever pivotally mounted on said bent lever and sliding on the camways of said intermediate lever, a countershaft, gearing for driving said countershaft at half the speed of said side shaft, a cam mounted on said countershaft and acting on said bent lever, an admission-valve, a link connecting said actuating lever and said admission-valve.

852,273. ELASTIC COMB. MAX HESS, Munich, Germany. Filed Dec. 10, 1906. Serial No. 347,191.

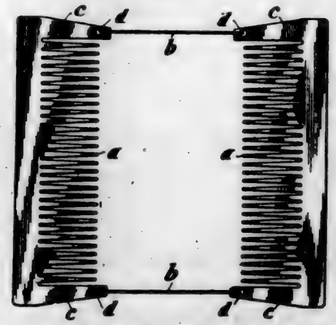

Claim.—In a device of the class described, a pair of combs having a plurality of teeth, the end teeth of each comb being of increased size with respect to the remaining teeth thereof and extending a distance beyond the latter, said end teeth provided with an opening in the extended free end of the same, and elastic members, each of the same having their ends connected in the openings at each

end of the respective combs for flexibly connecting the said combs together.

852,274. ADJUSTABLE TOOL. ROBERT T. JOHNSTON, Taunton, Mass. Filed Mar. 6, 1905. Serial No. 248,535.

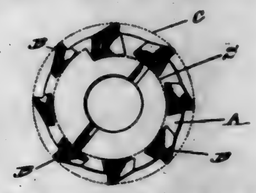

Claim.—1. The combination of a body having a plurality of seats arranged at varying distances from the center and a plurality of interchangeable blades therefor, said blades having means whereby their cutting edges will be located at equal distances from the axis of the body when the blades are in position in the seats.

2. The combination of a body having a plurality of seats arranged at varying distances from the center and a plurality of interchangeable blades of different thicknesses therefor.

3. The combination of a body having a plurality of seats arranged parallel to its axis and at progressive radial distances therefrom and interchangeable blades of progressive relative thickness therefor.

4. The combination of a body having a series of dovetailed grooves arranged at different distances from the axis, the bottoms of said grooves being of the same width, and blades therefor.

5. A tool having a body provided with a plurality of seats, the bases of said seats being arranged tangent to a spiral, and a plurality of blades adapted to fit removably in said seats, said blades being of varying thicknesses, whereby their cutting edges will be at equal distances from the axis of the body when they are in position in the seats.

852,275. WINDMILL. SAMUEL E. KEENER and WILLIAM A. MUNSON, Clay Center, Kans. Filed May 22, 1905. Serial No. 261,495.

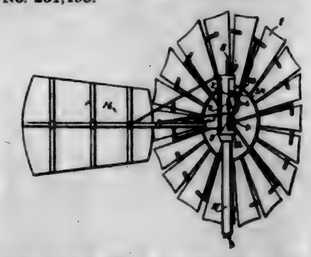

Claim.—In a windmill, the combination with a supporting frame, of a shaft journaled therein and carrying a pair of pinions, a pair of alined stud shafts journaled in the frame carrying gears which mesh with said pinions, a crank rod connecting said gears, said rod consisting of a straight bar having its ends connected to the gears, and a reciprocating rod having a slotted cross head in which said crank rod travels, and guides for said reciprocating rod.

852,276. JOINT-PLATE. LOUIS W. KERSHAW, Wakefield, England, assignor to E. Green and Son Limited, Wakefield, England, a Corporation. Filed June 11, 1906. Serial No. 321,279.

Claim.—1. A joint plate comprising a substantially angular corrugated body, the axes of the corrugations being parallel with the angular contour of the body.

2. A joint plate comprising a substantially angular body having a continuous channel parallel with the angular contour of said body, the latter being provided with oppositely extended flanges on its open side.

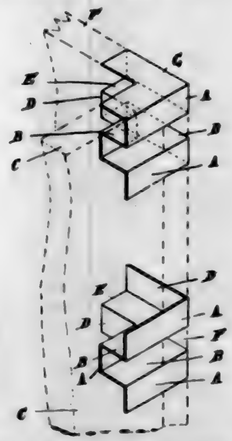

3. A joint plate comprising a substantially angular body having a continuous channel parallel with the angular contour of said body, the latter being provided with opposite flanges extending the complete length thereof on its open side.

4. A joint plate comprising a substantially angular body having a continuous channel and oppositely extending angular flanges, the said channel and flanges being parallel with the angular contour of the body.

5. A joint plate comprising a substantially angular body open at its opposite ends and having a continuous channel parallel with the angular contour of said body, the latter being provided with opposite flanges on its open side extending uninterruptedly from one open end to the other.

852,277. LEATHER-SKIVING MACHINE. PAUL J. LAPHAM, Genoa, Ill. Filed Aug. 11, 1905. Serial No. 273,730.

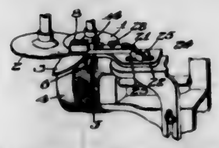

Claim.—1. In a leather skiving machine the combination with a feed roll and a knife, of a presser foot for holding the leather against the said roll in advance of the knife, comprising a series of independently movable sections having their lower ends rounded downwardly toward the roll and beveled or inclined from the inner end of the series upwardly and outwardly.

2. In a leather skiving machine the combination with a feed roll and a knife of a presser foot for holding the leather against the roll in advance of the knife, a longitudinally adjustable arm movable lengthwise of the axis of the roll, a second arm carrying the presser foot, an adjusting screw screw-threaded in the second arm and bearing against the first arm, and two additional adjusting screws passing loosely through the second arm and screw-threaded in the first arm at both sides of said first screw.

3. In a leather skiving machine, the combination with a feed roll and a knife, of a presser foot for holding the leather against the said roll in advance of the knife, comprising a series of independently movable sections having their lower ends rounded downwardly toward the roll and beveled or inclined from the inner end of the series upwardly and outwardly and contacting with each other to form an approximately continuous pressing surface.

852,278. FLUE-JOINT STRUCTURE. ALEXANDER LEGGETT, Michigan City, Ind. Filed May 23, 1906. Serial No. 318,394.

Claim.—1. The combination with a flue sheet having an opening therethrough, of a reduced flue extremity fitted in said opening, metal rings on opposite sides of the flue sheet and held close to the edges of the said opening, and a metal sleeve surrounding the reduced extremity of the flue within the opening of the flue sheet, the rings being also closely held against the opposite side edges of the sleeve.

2. In a flue joint structure, the combination with a flue sheet having an opening therethrough, the sheet having the opposite edges around the opening reamed out or countersunk, of a flue having a reduced extremity fitted in said opening, a metal sleeve surrounding the flue extremity within the opening, and metal rings on the flue extremity held close to opposite sides of the opening of the flue sheet and within the reamed out or countersunk edges of the sheet around the opening.

3. In a flue joint structure, the combination with a flue sheet having an opening therein, of a flue extremity fitted in said opening, a metal sleeve surrounding the said extremity and located within the opening, and ring devices applied to the flue extremity and held closely against opposite edges of the opening.

4. In a flue joint structure, the combination with a flue sheet having an opening therein, of a reduced flue extremity inserted in said opening, a metal sleeve surrounding the flue extremity within the opening, and ring devices held in close contact with opposite edges of the flue sheet opening and the opposite edges of the sleeve by portions of the flue.

5. In a flue joint structure, the combination with a flue sheet having an opening therein, of a reduced flue extremity inserted in said opening, a copper sleeve surrounding the flue extremity within the opening, and soft copper rings also surrounding the flue extremity and closely held against the opposite edges of the sleeve.

852,279. ELECTRIC DOOR-OPENER. JOSEPH LOCH, Brooklyn, N. Y. Filed Apr. 17, 1906. Serial No. 312,198.

Claim.—1. In an electric door opener, a magnet, an armature, a lever engaged by the armature, and a strike and a slide pivoted to the strike and made to straddle the fulcrum of the lever for connecting the strike and lever.

2. In an electric door opener, a magnet and armature, a lever engaged by the armature, a strike, and a slide pivoted to the strike and made to straddle the fulcrum of the lever.

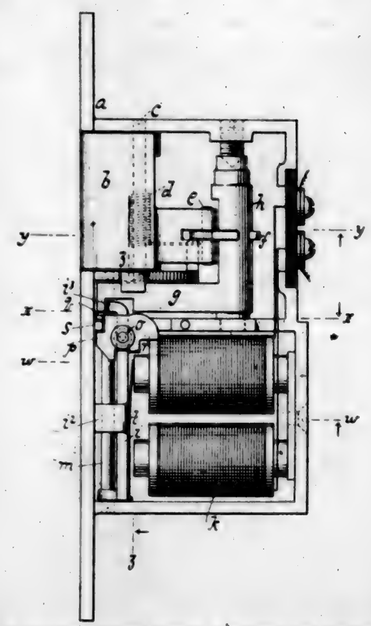

3. In an electric door opener, a magnet and armature, a lever engaged by the armature, a strike and a connecting piece pivoted to the strike and made to slide on and non-rotatively engage the lever.

4. In an electric door opener, a magnet, a strike controlling the armature, and a dictator or holding device for the armature to hold such armature in releasing position with respect to the strike.

5. An electric door opener, comprising a magnet, a strike controlling armature, a holding device to keep the armature retracted with respect to the said strike, and a rib or stop for the holding device.

6. In an electric door opener a magnet, a strike controlling armature, a holding device actuated by the magnet adapted to hold the armature in engagement with the poles of the magnet, and a rib or step for supporting the holding device when holding the magnet in disengaging position.

7. A door opener comprising a magnet, an armature and holding device both within the field of the magnet, said holding device adapted to hold the armature in engagement with the poles of the magnet and a strike engaged by the armature.

8. A door opener comprising a magnet, an armature, a holding device pivoted to the armature and attracted by the magnet, said holding device being adapted to hold the armature in engagement with the poles of the magnet and a strike engaged by the armature.

9. A door opener comprising a magnet and armature with a holding device having an armature tail or portion attracted by said magnet said holding device being adapted to hold the armature in engagement with the poles of the magnet.

10. A door opener comprising a strike and lever, an armature for engaging the lever, and a holding device for the armature having a releasing tail or arm, said holding device being adapted to hold the armature in engagement with the poles of the magnet.

11. A door opener comprising a strike and lever, an armature for engaging the lever, and a holding device for holding the armature in engagement with the poles of the

magnet said holding device having a releasing tail or arm, said releasing tail being placed in the path of the lever, to move the holding device to releasing position by said lever.

852,280. DEVICE FOR HANDLING INVALIDS. WALLACE N. MASON, Richburg, N. Y. Filed June 18, 1906. Serial No. 322,231.

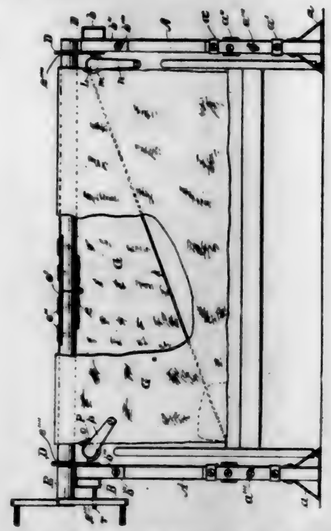

Claim.—1. A device for handling invalids comprising two frames, each frame composed of two standards and cross bars thereon, a hinge at the inner angle formed by said standard and said cross bar and an angular plate on the outer parts of said standard and cross bar, said plate being secured to said cross bar and detachably attached to said standard by a set screw as stated.

2. In a device for handling invalids formed of a supporting frame composed of standards, cross-bars, and rollers having a lifting canvas thereon, bearings *m* on a cross-bar B, a cord-roller L provided with a crank in said bearings *m*, cords on said roller L having terminal loops, a back support attached to said canvas at the side farthest from said cord-roller, and means on said back support to engage the loops on said cords, as herein set forth.

3. In a device of the character described, the combination with a supporting frame composed of standards, cross-bars and rollers with a canvas G thereon, of bearings *o* on one of said cross-bars, a roller P in said bearings *o*, a crank on said roller P, and a strip of cannvas R, having one end attached to said roller P and its other end unattached, said canvas R being adapted to be laid upon said canvas G, for the purpose specified.

852,281. SCALE. JOHN H. MILBURN, Detroit, Mich. Filed Jan. 22, 1906. Serial No. 297,153.

Claim.—1. The combination with a pivoted beam, of carrying means movable along said beam, a counter-balance, means for moving the carrying means and counter-balance simultaneously in opposite directions to maintain the balance of the beam, a value bar attached to and movable with the carrying means, a counter-poise slidable on the value bar, and price-per-pound indicating means movable with and proportionately to the value bar.

2. The combination of a beam pivoted intermediate its ends and having price-per-pound markings at one end and markings indicating quantity in numbers at the opposite end, a carrier adapted to receive and carry an article slidable on the end of said beam having the number markings toward and from its pivot, a value bar attached to and movable with said carrier, a counter-poise on said value bar, a counter-balance, means for simultaneously moving the counter balance and carrier in opposite directions from and toward the pivot of the beam, and means attached to the carrier and movable along the beam adjacent to the price-per-pound markings.

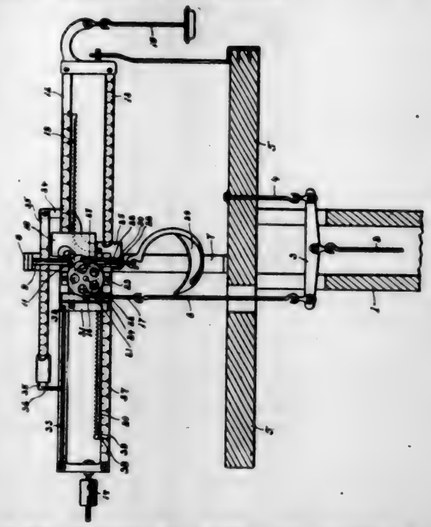

3. The combination of a double beam consisting of a weight beam and a number beam, a counter-poise on the weight beam, a carrier block for supporting an article slidable upon the number beam, a counter-weight, means for moving the counter-weight and carrier block simultaneously in opposite directions, a value bar attached to and movable with the carrier block, a counter-poise on said value bar, and means attached to the carrier block and movable therewith to indicate on the beam the price per pound.

4. The combination of a beam pivotally supported intermediate its ends and provided with markings at one side of its pivot representing quantity in number and at the other side of its pivot with markings representing prices-per-pound, a carrier slidable on said beam, a value bar attached to and movable with said carrier, a counter-poise, on said bar, a counter-balance-weight for balancing the weight of said carrier, and means attached to the carrier for moving the same which serves to indicate on the price-per-pound markings the desired price.

5. The combination of a beam pivotally supported intermediate its ends and provided with markings at one side of its pivot representing quantity in number and at the other side of its pivot with markings representing prices-per-pound, a carrier slidable on said beam for supporting an article, a rack attached at one end to said carrier and movable longitudinally of the bar with its opposite end adjacent to the price-per-pound markings, a value bar attached to and movable with the carrier, a counter-poise on said bar, a counter-balance-weight, a rack-bar attached to said counter-balance-weight and adapted to move longitudinally in parallelism with the other rack-bar at a distance therefrom, and means interposed between said racks to move the same simultaneously in opposite directions.

6. The combination of a double beam consisting of an upper weighing beam and a lower number beam, a carrier block for supporting an article slidable upon the number beam, a rack-bar attached to said carrier and slidable longitudinally upon the upper edge of said number beam, a counter-balance-weight guided and supported by the weighing beam, a rack-bar attached to said counter-balance-weight and extending longitudinally of and adjacent to the lower edge of said weighing beam, bearing members connecting said beams, a shaft mounted in said bearing numberb, a gear on said shaft engaged at each side by said rack bars, and a hand wheel on said shaft.

7. The combination of a weighing beam and a number beam connected at their ends to form a double beam pivotally supported intermediate its ends, a block slidable on the number beam, a rack-bar pivotally attached at one end of said block and slidable upon the upper edge of the number beam, a counter-balance-weight guided and supported between said beams, a rack-bar pivotally attached at one end to said counter-balance-weight and movable longitudinally adjacent to the lower edge of the weighing beam, bearing members connecting the beams adjacent to their supporting pivot, a shaft mounted in said members, a gear on said shaft between the rack-bars, and a spring interposed between the lower rack bar and the upper edge of the number beam to hold said rack in close mesh with the gear.

8. The combination with a weighing beam, of a number beam extending parallel with the weighing beam and connected thereto at each end, a carrier block slidable on the number beam, a pan pivotally supported by said block, a rack-bar attached to said block and slidable longitudinally of the number beam, a counter-balance-weight supported by the weighing beam, a rack-bar attached to said counter-balance-weight and extending adjacent to the lower edge of the weighing beam, a gear interposed between said racks to actuate the same in opposite directions, an upwardly extending arm on the carrier block, a value bar attached at one end to said arm and resting at its opposite end upon the upper edge of the weighing beam to slide thereon, and a counter-poise on said bar.

9. The combination with a supporting bracket, of hangers on said bracket formed with bearing seats at their lower ends, an upper weighing beam formed with a longitudinal slot at one end, a lower number beam connected at each end to the weighing beam, connecting members connecting said beams intermediate their ends, a bearing pin secured to said members and engaging the bearing seats to support the beams, a carrying block slidable on the number beam, a loop pivotally attached to said block, a pan attached to said loop, a rack-bar pivotally attached to said block and slidable on the upper edge of the number bar, a counter-balance-weight having a pin extending through the slot in the weighing bar, a rack-bar attached to said counter-balance-weight, bearing members connecting the beams adjacent to their pivot, a shaft mounted in said members, a gear on said shaft to engage the racks, and a hand wheel on the shaft to turn the same.

10. The combination with a supporting bracket, of parallel hangers on said bracket formed with bearing seats at their lower ends, a double beam consisting of an upper weighing beam and a lower number beam connected at their ends, members connecting said beams near their center, a transverse pin secured to said members between the beams to engage the bearings on the hangers and support the beams, a carrier block on the number beam having a rearward extension, laterally and upwardly extending arms on said extension, bearing pins on the ends of said arms, a loop engaging said pins, a pan supported by said loop, a counter-balance-weight slidable longitudinally of said beams, rack-bars attached to said carrier block and counter-balance-weight to move the same, a gear journaled between the beams to engage the racks and move the same in opposite directions to move the block to bring the supporting arms into vertical alinement with the beam pivot, said bearing pins on said arms being substantially in the horizontal plane of said beam pivot.

11. The combination of a pivotally supported beam the neutral or sero point of which is in the vertical plane of its supporting pivot and provided with markings at one side of its pivot representing quantity in number and price-per-pound markings at the opposite side of its pivot, a carrier to support and move an article along the beam and indicate the number of units on the unit markings, a value bar movable with said carrier, and means for indicating on the price-per-pound markings the distance which the value bar is moved.

12. The combination of a double beam consisting of an upper weight and a lower number beam, a pivot for said beam which is coincident with the neutral or sero point of the number beam, a counter-poise on the weight beam, a carrier adapted to be moved along the number beam and to support an article in vertical alinement with said pivot, a counter-balance, members slidable on said beams for moving the carrier and counter-balance simultaneously in opposite directions, a pointer on one of said members to indicate upon one of the beams the price per-pound, and a value bar attached to the carrier and movable with the member having the pointer.

852,282. CAR-SIGNAL. PETER D. MILLOY, Buffalo, N. Y. Filed Nov. 9, 1903. Renewed Sept. 24, 1906. Serial No. 335,995.

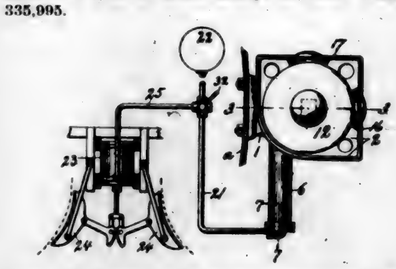

Claim.—1. A rear end car signal comprising a bracket secured to the car and provided with a vertical bearing and a horizontal guide opening, a cylinder secured to the bracket at one side of said bearing and opening into the guide opening, a signal head journaled on the bearing, a piston movable in the cylinder and operatively connected to rock the signal head, and means for introducing compressed air into the cylinder to operate the piston.

2. A signal for the purpose described comprising a fixed bracket having a horizontal guide opening and a horizontal cylinder secured to the bracket and opening into said guide-opening, a toothed rack movable endwise in the cylinder and guide-opening and provided with a piston, a rocking signal head mounted directly on the bracket and provided with a toothed segment meshing with the rack, and means for introducing air under pressure to the cylinder to actuate the piston and rack.

3. A rear end signal for cars, comprising a bracket secured to the car and provided with a vertical bearing and a horizontal guide opening at one side of the bearing, a toothed rack sliding endwise in the guide opening, a signal head journaled directly upon the bracket and provided with a toothed segment projecting into said guide-opening and meshing with the rack, a cylinder, a piston on one end of the rack operated by compressed air and means to supply compressed air to the cylinder.

4. The combination with an air brake cylinder for railway cars, of a bracket fixed to the car and provided with a vertical bearing and a horizontal guide opening, a cylinder having one end secured directly to the bracket in line with the guide opening and its other end provided with an air inlet, a compressed air reservoir connected to the air brake cylinder and to said inlet, means in the connection between the reservoir and cylinders to admit air to both cylinders simultaneously, a piston movable in the cylinder on the bracket and actuated by the inflowing air, a rod projecting from the piston into the guide opening and a signal head journaled directly on the bearing and operatively connected to and rocked by the piston rod.

5. The combination with an air-brake cylinder of a railway car, of an automatic signal comprising a bracket secured to the car and provided with a vertical bearing and

with a horizontal guide opening at one side of the bearing, a cylinder secured directly to the bracket in alinement with the guide opening, a reservoir containing compressed air connected to said cylinders, a signal head journaled in the vertical bearing and overlying the guide opening, said head being provided with a toothed segment projecting into said guide-opening, a toothed rack guided in said guide-opening and a piston movable in the cylinder and actuated by the inflowing compressed air, said rack being attached to the piston and meshing with the toothed segment.

6. A car signal for the purpose described, comprising a fixed bracket having a guide-opening and a rotary signal head mounted directly upon the upper end of the bracket, the signal head being provided with a toothed segment projecting into said opening at one side of and concentric with its axis of rotation, a cylinder secured directly to the bracket, a piston movable in the cylinder, a rack in said opening connected to the piston and meshing with the segment and means for introducing compressed air into the cylinder to actuate the piston.

852,283. SPLICE-CALLER. MATTHEW R. MOLONEY, Chicago, Ill. Filed June 22, 1906. Serial No. 322,905.

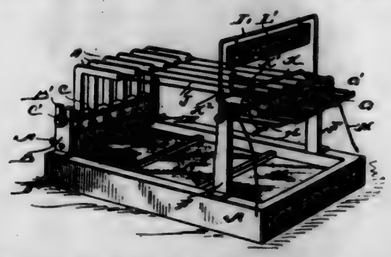

Claim.—1. The device of the kind described, comprising a plurality of signal blades having numerals thereon, said numerals corresponding to the numbers of wires running through a galvanizing tank, and separate means for actuating each blade and bringing its numeral into view when a wire of the corresponding number having a splice therein enters the tank.

2. The combination with a galvanizing tank, through which a plurality of wires are run, a plurality of pivoted paddles having numerals thereon, a plurality of forks through which the wires pass and adapted to be moved by a splice upon a wire, and means connecting said forks to the said paddles thereby moving a certain paddle upon the actuation of a certain fork by a splice.

3. A device of the kind described comprising a plurality of pivoted arms, depending forks carried by said arms, wires to be galvanized being adapted to normally pass freely through the forks, a plurality of pivoted paddles adapted to normally rest in a horizontal position, and means for connecting said paddles to the said arms as and for the purpose specified.

4. The combination with a galvanizing vat, a plurality of pivoted normally horizontal paddles, a plate of a resonate material adapted to be engaged by the paddles when the latter are thrown into a vertical position, and means for automatically throwing one of the said paddles into a vertical position when a spliced portion of a certain wire enters the vat.

5. The combination with a galvanizing vat, a plurality of pivoted paddles supported above the vat and normally held in a horizontal position, a plate adapted to be engaged by said paddles when the latter are thrown into a vertical position, means for throwing said paddles into a vertical position when the spliced portion of a wire enters the vat, said paddle indicating the number of the wire having the splice, and means for returning the paddle to its normal position.

852,284. TIE-PLATE. ANDREW MORRISON, Pittsburg, Pa., assignor to Dilworth, Porter & Company, Limited, Pittsburg, Pa., a Corporation of Pennsylvania. Filed July 24, 1906. Serial No. 327,472.

Claim.—1. A tie-plate having longitudinal tie-engaging flanges, reduced extensions projecting from its side edges beyond the flanges, and a transverse shoulder of less length than the width of the plate but extending across a major portion of the rail-bearing surface of the plate; substantially as described.

2. A tie-plate having longitudinal tie-engaging flanges, reduced extensions projecting from its side edges beyond its rail-bearing surface, and a transverse shoulder formed on the rail-bearing surface and terminating at the edges thereof; substantially as described.

852,285. CENTER SWIVELING HOOK. GEORGE F. MURRAY, Pittsburg, Pa. Filed June 8, 1906. Serial No. 320,889.

Claim.—The combination with a tackle-block having a hook, and a clamp having swinging links, of a swivel hook comprising a stirrup for engagment with the hook of the tackle-block, and having eyes in its ends, a head provided at opposite sides with pins trunnioned in the eyes of said stirrup, and a depending anchor-shaped member, having a reduced portion swiveled in said head, the hook portions of said member receiving the links carried by said clamp.

852,286. AUTOMATIC BOILER-FEEDER. JAMES H. MURRAY, Fairfield, Me. Filed May 18, 1906. Serial No. 317,603.

Claim.—1. In an apparatus of the character described, the combination with a series of boilers, of a regulator chamber, a drain pipe, blow-off pipes connecting all the boilers with the drain pipe, a water pipe connecting the regulator chamber with all the blow off pipes, three-way plug cocks at the juncture of the water pipes and blow-off pipes, and means controlled by the level of water in the regulator chamber for controlling the feed of water to the boilers.

2. In an apparatus of the character described, the combination with a series of boilers, of a regulator chamber, a drain pipe, blow-off pipes connecting all the boilers with the drain pipe, a water pipe connecting the regulator chamber with all the blow-off pipes, three-way cocks at the juncture of the water pipes and blow-off pipes normally

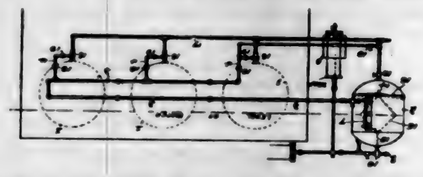

turned to open communication with the boiler and close communication with the drain, valves permitting the cutting out of any boiler from the circuit, and means in the regulator chamber controlling the feed of water to the boilers.

852,287. WAGON-GEAR. WILLIAM A. MURRAY, Sanford, Fla. Filed Nov. 24, 1906. Serial No. 344,858.

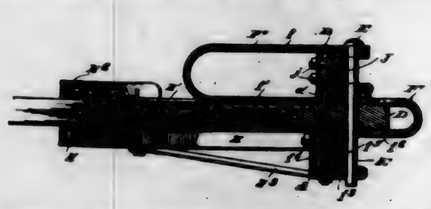

Claim.—1. The combination, with the front axle, the bolster and reach, of the coupling device and brace F having four reverse curves, the top portion extending over the bolster, the body or central portion formed as a loop that receives the reach, and the lower part embracing the front and rear sides of the axle, and a king-bolt passing through coincident holes in all the parts or members of the device save the rear flange, and also through the reach, as shown and described.

2. The combination, with the front axle, the bolster and the reach, of the reverse-curve coupling device and brace, the bolster being arranged in the space between the two upper members, the axle being engaged by the flanges of the lower part of the device, the reach extending into the space between the middle members, a supplemental brace J having parallel horizontal flanges and bolted to the front side of the bolster, and a king-bolt passing, on the front side of the axle, through such supplemental brace, the combined coupling and brace, and the reach, substantially as described.

3. The combination, with a front axle, bolster and reach, of a coupling comprising a metal strap or piece, having a rearwardly extending curve in which the bolster is arranged, a forwardly extending curve into which the reach extends, and a lower or bottom portion which embraces the axle, and a king-bolt passing through members of the coupling and the reach in front of the bolster and axle, substantially as described.

4. In a wagon gear, the improved coupling and brace formed of a metal strap having a series of reverse curves, and intervening parallel portions which are spaced apart to adapt them to receive the bolster, the reach, and the axle in the manner described.

5. In a wagon gear, the combination, with a front axle, the axle-bed, and the reach passing through said bed, of the combined brace and coupling having a forwardly extended loop, whose lower portion extends forward and is formed as a return or front loop whose end portion is provided with vertical flanges f^4 f^5, spaced apart to embrace the front and rear sides of the axle and bed, and a king bolt passing through the reach and the portions of the coupling in front of the axle, as described.

852,288. PAPER-FILE. CHARLES F. MCBEE, Athens, Ohio. Filed Feb. 21, 1907. Serial No. 358,695.

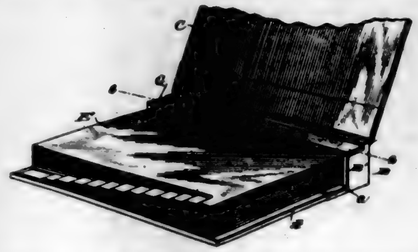

Claim.—1. A file substantially as described comprising a body having a back plate and a box hinged at one edge thereto and having upwardly projecting end plates and a cover, a series of tubes projecting upwardly within the box between said end plates and open and unobstructed at their upper ends, a cross-bar or pin carrier provided on its under side with a series of depending pins corresponding to and adapted to telescope within said tubes, the said cross-bar or carrier resting at its ends upon the end plates of the box, a hook secured to said cross-bar or carrier, a bar for engagement by said hook whereby to lock said cross-bar or carrier in position for use, and upwardly projecting pins or studs on said cross-bar or carrier, the cover being provided with sockets receiving said studs or projections when the file is closed, substantially as set forth.

2. A file comprising a body having a cover provided in its inner face with sockets, a cross-bar or carrier having on its upper face studs or projections entering the sockets in the cover and posts having telescoping sections secured respectively to the cross-bar and to the body of the file, substantially as set forth.

3. A file comprising a body having a box provided with a bottom plate and end plates, tubes projecting upwardly from the bottom plate of the box and open and unobstructed at their upper ends, a cross-bar or carrier having depending pins to fit in said tubes, said bar resting at its ends on the end plates of the box; and a fastening for securing the said carrier in position for use, substantially as set forth.

4. A file comprising a body having a box to receive the ends of the papers filed, said box having end plates, a cross-bar resting at its ends on said end plates, posts having telescoping sections secured, respectively, to the cross-bar and the said box, studs or projections extending upwardly from the said cross-bar, and a cover having sockets to receive said studs or projections when the cover is closed substantially as set forth.

852,289. VEHICLE-WHEEL. WILLIAM F. M. MCCARTY, Pleasantville, N. Y. Filed Dec. 19, 1906. Serial No. 348,639.

Claim.—1. A wheel of the type set forth comprising a fixed inner section, an outer section loosely surrounding the same and having its tread portion overlying the periphery of said inner section, said inner section having a projective annular portion adjacent its hub overlying said outer section and defining an annular recess, a pneumatic annular tube interposed between the periphery of said inner section and the tread of said outer section and one or more annular pneumatic tubes interposed in said annular recess.

2. A wheel of the type set forth comprising a fixed inner section, an outer section loosely surrounding the same, and having its tread portion overlying the periphery of said inner section, said inner section having an outwardly extending angular annular flange overlying said inner section adjacent to the edge thereof, and coacting with said edge to afford an annular recess, a pneumatic annular tube interposed between the periphery of said inner section and

the tread of said outer section, and one or more annular pneumatic tubes interposed in said annular recess.

3. A wheel of the type set forth comprising a fixed inner section, an outer section loosely surrounding the same and having its tread portion overlying the periphery of said inner section, said outer section having a central opening, an outwardly extending flange provided upon said inner section adjacent the hub thereof and extending in approximately spaced parallel relation to the body of said section, said flange overlying the edge of the central opening of said outer section and coacting with said edge to define an annular recess, an annular pneumatic tube interposed between the periphery of said inner section and the tread of said outer section, and one or more annular pneumatic tubes interposed in said recess.

4. A wheel of the type set forth comprising a fixed inner section, an outer section of U-shape in cross section loosely surrounding said inner section and having parallel side portions overlying said inner section, said side portions each having a central opening, said inner section being provided on each side thereof with annular outwardly extending flanges overlying said respective side portions, and coacting therewith to define annular recesses, and spaced away from said inner section, a pneumatic annular tube interposed between the periphery of said inner section and the tread of said outer section, and one or more annular pneumatic tubes interposed in said recesses.

852,290. WATCHMAKER'S TOOL. GEORGE V. NEAL, Thomaston, Conn. Filed Feb. 16, 1907. Serial No. 357,759.

Claim.—1. A watchmakers' tool for the purpose described comprising an exteriorly threaded tubular body and handle split to form resilient jaws possessed of a tendency to spring outward and having the said jaws interiorly threaded and exteriorly tapered, a sleeve-driving member carried by and arranged to turn with the tubular body and handle and extending from the opposite end thereof, with reference to the said jaws, and a jaw-adjusting sleeve arranged on and carried by the tubular body and handle and having an interior thread engaging the thread of the body and also having an interior taper arranged to coöperate with the exterior tapers of the jaws to force said jaws inward.

2. A watchmakers' tool for the purpose described, comprising a tubular body split to form resilient jaws and having the jaws exteriorly tapered, a sleeve adjustable on the tubular body and having a taper arranged to coöperate with that of the jaws, and a sleeve-driving member having a shank removably arranged in the tubular body and held against casual displacement by the binding of the portions of the tubular body thereagainst.

3. A watchmakers' tool for the purpose described, comprising an exteriorly threaded tubular body split to form resilient jaws and having the jaws exteriorly tapered, an interiorly threaded sleeve engaging the exterior thread of and adjustable on the tubular body and having a taper arranged to coöperate with that of the jaws, and a sleeve-driving member having a shank removably arranged in the tubular body and held against casual displacement by the binding of the portions of the tubular body thereagainst.

4. A watchmakers' tool for the purpose described, comprising a tubular body split to form resilient jaws and having the jaws exteriorly tapered; said body being provided with a kerf in its upper end, a sleeve adjustable on the tubular body and having a taper arranged to coöperate with that of the jaws, and a sleeve-driving member having a shank removably arranged in the tubular body and held against casual displacement by the binding of the portions of the tubular body thereagainst and also having a lug to seat in the kerf in the upper end of the body.

852,291. PERMUTATION-PADLOCK. MATTHEW J. O'LEARY, Chickasha, Ind. Ter., assignor of one-half to Charles Everett Platt, Chickasha, Ind. Ter. Filed June 6, 1906. Serial No. 320,423.

Claim.—1. A permutation padlock consisting of a body portion, a shackle member having one leg revolubly and slidably mounted in one side of said body portion, and an independently mounted spring actuated plunger in the opposite side of said body, said plunger adapted to lock and unlock the free end of the shackle.

2. A permutation padlock consisting of a body portion, a shackle member having one leg revolubly and simultaneously slidably mounted in said body portion, a slidable plunger mounted in said body portion and adapted to lock the free end of said shackle, and rotatable tumblers mounted on said plunger.

3. A permutation padlock consisting of a body portion, a shackle member rotatably and slidably mounted in said body portion, a spring actuated plunger mounted in said body portion, locking sleeves mounted on said plunger, said sleeves provided with lugs or projections, indicator rings fitted on said locking sleeves, each provided with a series of internal notches to fit the lugs of the locking sleeves, and pins operated by the revolution of the shackle to lock the indicator rings.

4. A permutation padlock consisting of a body portion having two vertical bores at opposite sides, a shackle member comprising a loop and legs of unequal lengths, the longer leg mounted in one of said bores, a hollow plunger mounted in the other of said bores, and having a socket in its upper end, the shorter leg of the shackle having a pin at its lower end adapted to engage said socket, said body having horizontal passages intersecting the vertical bore containing the plunger, sleeves mounted on said plunger within the passages, lugs projecting from said sleeve, indicator rings mounted on said sleeves and having internal notches to fit said lugs, and notches in their peripheries, a plug fitted in the lower end of said plunger, a spring mounted in the body and adapted to normally force the plug and plunger upwardly, a vertical groove in the body portion extending into the bore carrying the plunger and rings, a latch pivoted in the upper part of the body portion, said latch having a nose adapted to engage the upper end of the plunger, and a heel adapted to be engaged and moved vertically by the long leg of the shackle, and spring actuated horizontal pins mounted in the body portion and adapted to engage at their free ends the notches in the periphery of the indicator rings.

5. A permutation padlock consisting of a body portion, having vertical bores at opposite sides, a shackle member consisting of a loop and legs of unequal length, the longer leg revolubly and longitudinally movable in one of said bores, a spring actuated plunger mounted in the other of said bores, locking sleeves mounted on said plunger and having lugs projecting outwardly therefrom, indicator rings mounted on said sleeves and having internal notches adapted to fit over said lugs, said indicator sleeves having also notches in their periphery, horizontal pins mounted in the body portion and engaging at one end the peripheral notches of the indicator rings, dowel pins mounted in horizontal openings in the longer leg of the shackle member and adapted to engage the opposite end of the horizontal pins, springs located in said horizontal openings in the rear of said dowel pins, the bore of the body portion carrying the plunger having a vertical notch or groove to permit vertical movement of the lugs of the locking sleeves when they are in alinement.

6. A permutation padlock consisting of a body portion having two vertical bores at opposite sides, a spring actuated plunger mounted in one of said bores, and carrying locking sleeves and indicator rings on said sleeves, a shackle member comprising a short leg adapted to be engaged by said plunger, a loop and a long leg mounted in the other of said vertical bores, and having in its face an angular groove, a latch pivoted in the upper part of the body portion, and having a heel adapted to engage the said angular groove and a nose adapted to engage a groove in the upper end of the plunger, said long leg of the shackle having a screw threaded end fitting in threads within its bore, whereby a rotary movement of said shackle will cause the same to move vertically and tilt the latch on its pivot.

7. A permutation padlock consisting of a body portion, a shackle member having one leg revolubly and slidably mounted in said body portion, a spring actuated plunger mounted in said body portion and adapted to lock and unlock the free end of the shackle, and rotatable tumblers mounted on said plunger.

8. A permutation padlock consisting of a body portion, a shackle member having one leg revolubly and slidably mounted in said body portion, an independently mounted spring actuated plunger in the opposite side of the body portion, and a latch engaging the long leg of the shackle and the said plunger, whereby rotation of said long leg of the shackle in one direction will cause the said plunger to move downwardly to unlock the free end of the shackle.

9. A permutation padlock consisting of a body portion, a shackle member having one leg revolubly and simultaneously slidably mounted in said body portion, a slidable plunger mounted in said body portion and adapted to lock the free end of said shackle, a pivoted latch engaging the shackle member and slidable plunger, and rotatable tumblers mounted on said plunger.

852,292. AERIAL VESSEL. TONY ORGREN, San Diego, Cal. Filed Sept. 21, 1905. Serial No. 279,499.

Claim.—1. In aerial vessels, a frame, means for supporting the frame, a propeller for the frame, paddle wheels at the side of the frame, and propellers mounted to revolve within the paddle wheels, said propellers and paddle wheels having independent driving means.

2. In aerial vessels, a body, aeroplanes connected with the upper portion of the body at each side, a gas-containing cylinder located within the body, a propeller at the stern, paddle wheels at the side of the body, and propellers mounted to revolve within the paddle wheels, the propellers and the paddle wheels having independent driving mechanism.

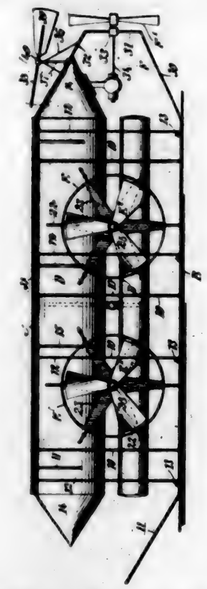

3. In aerial vessels, a body, aeroplanes hinged to the body at its upper side portion, brace rods hinged to the aeroplanes and adapted for removable connection with the body, paddle wheels mounted to revolve in the said body, two at each side an equal distance from the center, a propeller mounted to revolve within each paddle wheel, an independent motor for driving each paddle wheel and each propeller, a stern propeller, and an independent motor for the same.

852,293. ROTARY IMPACT-MOTOR. JOHN T. PRITCHARD, Newark, N. J. Filed Sept. 2, 1904. Serial No. 223,148.

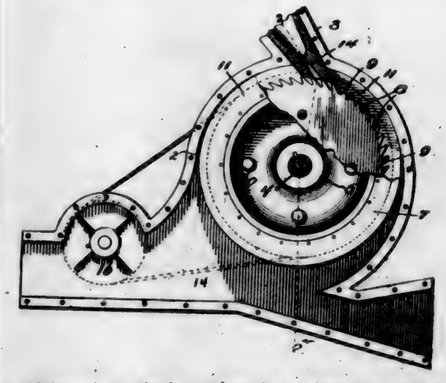

Claim.—1. A wheel or piston for an impact rotary motor provided with a series of peripheral buckets whose division walls incline rearward and are each composed of two parts that converge from the opposite sides of the wheel toward the transverse central plane thereof, substantially as set forth.

2. A wheel or piston for an impact rotary motor provided with a series of peripheral buckets separated from

each other by division walls, which walls incline rearward at approximately an angle of 22½ degrees and each of which is formed of two parts disposed approximately at an angle of 45 degrees to each other, their meeting edges being in the central transverse plane of the wheel, substantially as set forth.

3. In a motor of the rotary impact type arranged to be driven by highly heated gases, the combination of the rotary wheel, the nozzle, and the casing provided with a discharge passage for the gases after they have acted on the wheel, and an air passage 36 adjacent to the discharge passage through which air may be passed to mix with the discharged gases to cool the same, the outer larger end of said passage being adapted to be left open to the atmosphere, substantially as set forth.

4. In a rotary impact motor, the combination of the wheel, the nozzle, a three-way connection, one branch thereof being connected with the supply pipe and another with the nozzle, and the connection being formed of two parts, the plane of separation between them being at the central longitudinal plane of the connection considered as a whole, and a valve arranged within the three-way connection for diverting the supply either to the nozzle or away therefrom, substantially as set forth.

5. In a rotary impact motor, the combination of the wheel, the nozzle, a three-way connection, one branch thereof being connected with the supply pipe and another with the nozzle, the connection being formed of two parts, the plane of separation between them being at the central longitudinal plane of the connection considered as a whole, and there being formed in each part of the connection valve seats 33, 35, and a valve within the connection fitted to the said valve seats, and having one face shaped to correspond with the direction of the fluid passage between the supply pipe and the branch that is united with the nozzle, and the other face shaped to correspond with the fluid passage between the supply pipe and the other branch, substantially as set forth.

852,294. ADJUSTABLE FIRE BOX AND GRATE. EDWARD A. PROBST, Brigham, Utah. Filed Mar. 22, 1906. Serial No. 307,498.

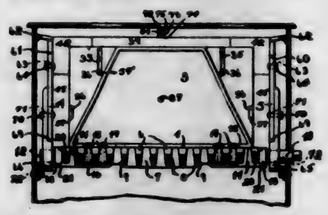

Claim.—1. A fire box for stoves comprising a grate adapted to be reduced in size, trunnions arranged on the ends of said grate, one of which is extended to receive a shaker, and means to adjustably connect said trunnions to the grate, a grated front plate or lining having a vertically adjustable section, and longitudinally adjustable end sections, having grooves therein to facilitate the breaking of pieces therefrom, a laterally projecting guard flange formed on the upper edge of said vertically adjustable section, said flange having grooves formed therein to facilitate the breaking of the same, a back plate having an upper vertically adjustable section, upper longitudinally adjustable end sections, and lower longitudinally and vertically adjustable end sections, tongues formed on said end sections to engage recesses in said vertically adjustable upper section, a retaining strip adjustably connected with said upper end sections, means whereby the lower ends of said strip are adjustably engaged with said lower end sections, tongues formed on said lower end sections to engage recesses in said upper end sections, a laterally projecting guard flange formed on said vertically adjustable section, adjustable end strips to extend said guard flange, end plates formed of a series of vertically and laterally adjustable sections and securing bolts arranged in slots in the sections and main portions of said front, back and end plates to hold said parts in their adjusted positions, substantially as described.

2. A fire box for stoves comprising a grate having adjustable trunnions, a back plate or lining, means to adjust the size of the same in all directions, a front plate or lining, means to adjust the size of the same in all directions, end plates, means to adjust the size of the same, a top supporting bracket, having a pivoted, adjustable section, and an adjustable brace to hold said pivoted section in position, substantially as described.

852,295. COTTON-CULTIVATOR. RICHARD H. PURNELL, Rosedale, Miss. Filed Oct. 16, 1906. Serial No. 339,258.

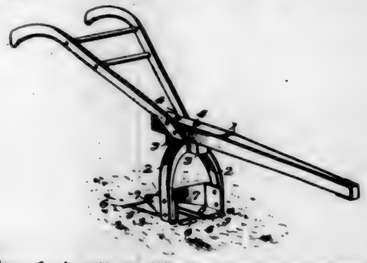

Claim.—1. A cotton-cultivating implement adapted for ridging or scraping cotton rows, the same comprising a beam, standards which are secured thereto detachably and adapted for reversal, and cultivating devices proper, each comprising a horizontal plate having its ends curved downwardly and a vertical plate arranged on the first-named one and lying at a horizontal angle thereto, substantially as described.

2. The improved cotton-cultivating implement, comprising a beam, standards secured thereto, and cultivating devices proper attached to the standards and arranged in duplicate but separated by a space sufficing for the passage of the cotton plants, the two devices being each composed of a horizontal plate and a vertical plate arranged thereon and inclined from the standards at a horizontal angle, substantially as described.

3. In a cotton cultivator, a detachable and reversible attachment for a beam, the same comprising pendent standards which diverge laterally from each other, and cultivating devices consisting of plates adapted to serve as mold-boards or scrapers, and vertical plates arranged on the former and at an inclination thereto horizontally, substantially as described.

4. In a cotton cultivator, a cultivating device proper comprising a flat plate having a downwardly-curved end and a vertical plate extending from the horizontal plate at an inclination to the axis of the latter, substantially as described.

5. In a cotton-cultivating implement, the combination, with standards, of cultivating devices proper comprising horizontal plates adapted to serve as mold-boards or scrapers, the same having their inner edges bent downwardly to form a guide, and a vertical plate arranged on the latter at a horizontal angle, as described.

6. In a cotton-cultivating implement, the combination, with standards, of cultivating devices constructed in duplicate and separated from each other by a narrow space, each comprising a horizontal plate adapted to serve as a mold-board or scraper, and a vertical plate arranged on the former at a horizontal inclination, the two plates being formed from a single blank or constructed integral, substantially as described.

7. In a cotton-cultivating implement, a reversible cultivating device proper comprising a flat plate having its ends curved downwardly and provided with a pendent side guide, and a vertical plate which lies upon the horizontal one and is inclined at a horizontal angle, substantially as described.

852,296. COLLAPSIBLE CRIB. CHARLES E. RAYMOND, Wheeling, W. Va. Filed July 11, 1906. Serial No. 325,660.

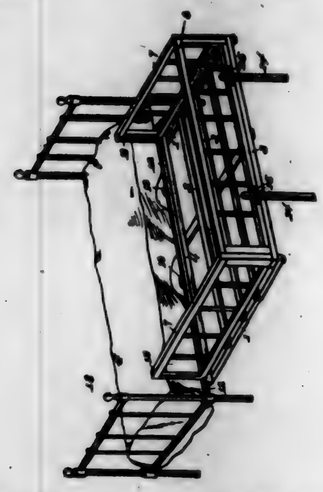

Claim.—1. In a collapsible crib, end-rails, longitudinal slats and side-rails pivoted at their ends to said end-rails, a side-railing hinged upon one of said side-rails so as to be foldable inward, end-railings hinged to the opposite ends of said side-railing so as to be foldable inward thereagainst, hooks for securing the free ends of said end-railings in extended positions, shoulders on the ends of the inner pivoted side-rail, against which the free ends of said end-railings abut, legs pivoted upon the outer face of the outer side-rail, and oppositely-disposed lugs carried by the side-railing, said lugs being adapted to embrace said legs to hold them in rigid vertical positions only when said side-railing is upright.

2. In a collapsible crib, end-rails, longitudinal slats and side-rails pivoted at their ends to said end-rails, a side-railing hinged upon the outer of said side-rails so as to be foldable inward, end-railings hinged to the opposite ends of said side-railing so as to be foldable inward thereagainst, hooks for securing the free ends of said end-railings in extended positions, shoulders on the ends of the inner side-rail against which the free ends of said end-railings abut, legs pivoted upon the outer face of the outer side-rail, oppositely-disposed lugs carried by the side-railing near each end thereof, said lugs being adapted to embrace said legs to hold them in rigid vertical positions only when said side-railing is upright, and a detachable side-railing having tongues upon its opposite ends for engaging grooves provided in the inner faces of the free ends of said end-railings, substantially as described.

852,297. FIGURE TOY. ANTHONY R. REIHING, Toledo, Ohio. Filed Jan. 4, 1907. Serial No. 350,862.

Claim.—1. A figure toy comprising a box or nest section having an opening in its upper side, a cross bar below said opening and provided with an opening in line with said opening in the top of the box, a hen section, a spring bearing between the cross bar and hen section for lifting the hen section, a loop connected with the hen section and extending down through the opening in the cross bar, a latch below the cross bar for entering said loop, whereby to restrain the operation of the spring, an egg holder in the box and having a discharge opening, a valve controlling said discharge opening, and a rod connecting the valve with the latch, substantially as set forth.

2. A figure toy comprising a nest section, a figure section, a spring for lifting the figure section from the nest section, means for restraining the action of the spring, and egg delivery devices connected with the restraining means for operation thereby, substantially as set forth.

3. A figure toy comprising a box or nest section, a figure or hen section, a spring for lifting the hen section from the nest section, a latch for restraining such action of the spring, egg delivery devices connected with said latch for operation thereby, and intermediate devices between the latch and hen section substantially as set forth.

4. A figure toy comprising a box or nest section, an egg holder within said box and having an outlet opening and a valve controlling the same, a figure or hen section movable toward and from the box, a spring for moving the hen section away from the box, means for restraining such action of the spring, and intermediate devices between the said valve and the spring restraining means, substantially as set forth.

5. The combination of a nest section, a hen section, a spring for lifting the hen section from the nest section, a latch devices between the latch and hen section whereby the latch may restrain such action of the spring, said latch extending to one side of the box, an egg holder having an outlet opening, a valve controlling said opening and connected with the latch, and a rod in connection with the valve and extending from said latch to the opposite side of the box from the latch, whereby the latch and valve may be operated from either side of the box, substantially as set forth.

6. A figure toy comprising a hen section, a nest section, a spring for moving the hen section bodily upward relatively to the nest section, egg holding and delivery means within the nest section, and means for discharging the eggs in connection with the movements of the hen section including a latch for restraining the operation of said spring and connections between the latch and hen section, substantially as set forth.

7. A figure toy comprising a hen section, egg holding and delivery means apart from the hen section, a spring for moving the hen bodily upward, and means for operating the egg delivery means relatively to the movements of the hen section, and including a latch and devices intermediate the latch and the hen section substantially as set forth.

8. A figure toy comprising a box or nest section, an egg holder therein and having an outlet opening and a valve controlling the same, a hen section, a spring for lifting the hen section from the box, a latch devices between the latch and hen section whereby the latch may restrain such operation of the spring, and connections between the latch and valve for controlling the discharge of eggs, substantially as set forth.

852,298. MAIL-BOX. ISAAC W. SAMPLE, Elgin, Oreg. Filed Jan. 17, 1906. Serial No. 296,483.

Claim.—A receptacle of the character described comprising a rotary drum consisting of a body having a centrally arranged opening and a surrounding series of pockets having open outer ends, a frame arranged in the upper portion of the central opening in said drum, a pivot stud depending from the center of said frame and formed in its lower end with a socket, an outer casing inclosing said drum and consisting of a top and a surrounding side wall formed

with an opening with which the open outer ends of said pockets aline, a door for closing said opening, means for detachably securing said top upon said side wall, an open base frame for supporting said drum and said casing and consisting of spaced arms on the outer ends of which said surrounding side wall is supported, the inner ends of said arms projecting upwardly into the central opening in said

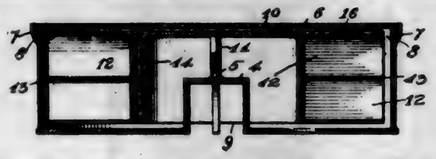

drum and being united and formed with a centrally arranged socket, a bearing ball arranged in the last mentioned socket and adapted to enter the socket in the depending pivot stud of said drum, and a brake spring arranged between the top of the casing and the top of said drum to retard the rotation of the latter, substantially as shown and for the purposes set forth.

852,299. PERFORATED-MUSIC-SHEET FEED DEVICE. HENRY K. SANDELL, Chicago, Ill., assignor to Mills Novelty Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 18, 1906. Serial No. 339,572.

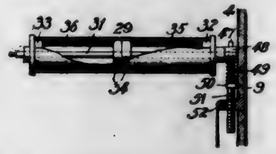

Claim.—1. In a perforated music-sheet feed-device, the combination of sheet-tautening means in the path of the sheet, and a pair of co-operating feed-rollers supported in advance of said tautening means and about one of which the sheet passes with a separate spring-pressure device on each end of the one of said rollers about which the sheet passes from said tautening means, for yieldingly engaging said roller with the other roller.

2. In a perforated music-sheet feed-device, the combination of a guide-table for the sheet provided with tautening-means therefor, and a pair of co-operating feed-rollers supported in advance of said table, and about one of which the sheet passes with a separate spring-pressure device on each end of the one of said rollers about which the sheet passes from said tautening means, for yieldingly engaging said roller with the other roller.

3. In a perforated music-sheet feed-device, the combination of a guide-table for the sheet provided with tautening-means therefor, and a pair of co-operating feed-rollers supported in advance of said table, and about one of which the sheet passes with a separate and independently adjustable spring-pressure device on each end of the one of said rollers about which the sheet passes from said tautening means, for yieldingly engaging said roller with the other roller.

4. In a perforated music-sheet feed-device, the combination of sheet-tautening means in the path of the sheet, and a pair of co-operating feed-rollers supported in advance of said tautening means, one of said rollers being formed in independently rotatable cylindrical sections and having a separate spring-pressure device on each end for yieldingly engaging said sectional roller with the other roller.

5. In a perforated music-sheet feed-device, the combination of a support having a pair of depending brackets, a feed-roller journaled on said brackets, a hanger pivoted on one bracket, a spring-pressed support on the other bracket, a roller having its bearings on said hanger and said spring-pressed support and movable on said bearings back and forth relative to said feed-roller, and a spring on said hanger engaging the end of the roller supported thereon.

6. In a perforated music-sheet feed-device, the combination of a support having a pair of depending brackets, a feed-roller journaled on said brackets, a roller consisting of a shaft and a sectional cylinder supported thereon, the sections being adapted to be rotated independently of each other, a spring-pressed hanger on one bracket in which one end of said shaft is movably supported, a spring bearing against said shaft-end, a set-screw supported on the other bracket and movably carrying the opposite end of said shaft, and a spring on said set-screw confined against the adjacent shaft-end.

7. In a perforated music-sheet feed-device, the combination of a support having a pair of depending brackets, a feed-roller journaled on said brackets, a roller consisting of a shaft having flanged heads on its end-portions and intermediate collars, and cylinder-sections mounted on said heads and collars to surround the shaft, a spring-pressed hanger pivotally supported on one bracket and having a recess forming a bearing for one end of the shaft, a spring bearing against said shaft-end, a lug and a flange on the other bracket, a pin movably supported at one end in said lug and passing through the opposite end of said shaft and having a set-screw section working in said flange, and a spring confined on said pin against the adjacent shaft-end.

8. In a perforated music-sheet feed-device, the combination of a pair of co-operating feed-rollers adapted to feed the sheet between them, and a sheet-guiding table supported behind said rollers, comprising a pair of plates between which to feed said sheet by the operation of the rollers, with the bottom-plate supported in inclined position relative to the feed, and with the top-plate removably seated on the bottom-plate to bear upon and yieldingly hold by the pressure of its gravity the sheet when moving between the plates.

9. In a perforated music-sheet feed-device, the combination of a pair of co-operating feed-rollers adapted to feed the sheet between them, and a sheet-guiding table supported behind said rollers, comprising a pair of plates between which to feed said sheet by the operation of the rollers, with the bottom-plate supported in inclined position relative to the feed and provided with openings, and the top-plate removably seated on the bottom-plate to bear upon and yieldingly hold by the pressure of its gravity the sheet when moving between the plates and provided with guide-studs to enter said openings and with a handle.

10. In a perforated music-sheet feed-device, the combination of a pair of co-operating feed-rollers adapted to feed the sheet between them, and a sheet-guiding table comprising an angular inclinedly-supported flanged arm, and a pair of plates between which to feed said sheet by the operation of the rollers, with the bottom-plate secured on said arm and the top-plate removably seated on said bottom-plate and provided with a handle and with guide-studs engaging the bottom-plate for centering and holding in place thereon the top-plate, an apron extending from the upper end of said bottom-plate and an apron extending from the lower end of said top-plate.

852,300. TELESCOPE. ADAM J. SCHOENBORN, Greenleaf, Kans. Filed Dec. 31, 1906. Serial No. 350,233.

Claim.—1. In a device of the character described, a lower section having a plurality of vertically disposed apertures in the end walls thereof, vertically disposed shields closed at their lower ends secured to the inner faces of said end walls and covering the apertures therein, an upper section telescoping with said lower section and provided with catches coöperating with the apertures in the lower section.

2. In a device of the character described, a section having a plurality of vertically disposed apertures in the end walls thereof, a second section telescoping with said first mentioned section and provided with openings in the end walls thereof, spring catches secured to the end walls of said second section and provided with inwardly bent shouldered portions projecting through the openings therein said shouldered portions being arranged to co-operate with the apertures in the end walls of said first mentioned section when the sections are assembled, and bars secured across the openings in the end walls of said second section, said bars being adapted to contact with the inwardly bent shouldered portions of the catches to limit the movement thereof.

3. In a device of the character described, a section provided with recesses in the end walls thereof, a second section telescoped with said first mentioned section and provided with openings in the end walls thereof, spring plates secured at their upper ends to the exterior of the end walls of said section and provided with inwardly bent portions projecting through the apertures therein, the lower ends of said spring plates extending outwardly to constitute operating portions.

852,301. POWER-GENERATING TRACTION-WHEEL. MATTHEW C. SHARPNECK, Boston, Mass. Filed Aug. 28, 1906. Serial No. 332,364.

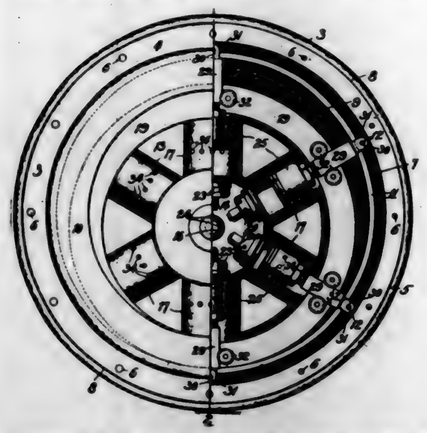

Claim.—1. In a power-generating traction-wheel, the combination with the rim-portion containing an annular recess provided with side-walls and opening toward the center of the wheel, of a wheel-center of smaller diameter than the diameter of the recess, journaled on a hollow axle, and slidably confined at its periphery between said walls, said wheel-center having a hollow hub opening into said axle and carrying a series of radiating fluid-pressure cylinders provided with pistons actuated by the eccentric rotation of the rim relative to said axle.

2. In a power-generating traction-wheel, the combination with the rim-portion containing an annular recess provided with side walls and opening toward the center of the wheel, of a hollow axle and a wheel-center of smaller diameter than the diameter of the recess, and comprising a hollow hub journaled on and opening into said axle, a series of fluid-compression cylinders radiating from said hub and adapted to discharge the compressed air into it, an annular circumferential portion at which the wheel-center is slidably confined between said walls, and pistons for said cylinders actuated by the eccentric rotation of the rim relative to said axle.

3. In a power-generating traction-wheel, the combination with the rim-portion containing an inner annular recess and an outer annular recess opening into each other with an interposed roller-shaft bearing-surface, of a hollow axle, a hollow hub journaled on said axle and opening into it, a series of radiating fluid-compression cylinders mounted on said hub to discharge into it, pistons in said cylinders actuated by the eccentric rotation of the rim relative to the axle, said pistons carrying piston-rods provided with roller-shafts engaging said roller-bearing surface and rollers on said roller-shafts adapted to bear against the circumferential surface of the said outer recess, for the purpose set forth.

4. In a power-generating traction-wheel, the combination with the rim-portion, of a hollow axle, a hollow hub journaled on and opening into said axle, a series of fluid-compression cylinders radiating from said hub and adapted to discharge compressed air into said hub, and pistons in said cylinders having roller-bearing connection with said wheel-rim to be actuated by the eccentric rotation of the rim relative to the axle.

5. In a power-generating traction-wheel, the combination with the rim-portion, of a hollow axle, and a wheel-center comprising a hollow hub journaled on and opening into said axle, a series of fluid-compression cylinders radiating from said hub and adapted to discharge compressed air into it, pistons in said cylinders, piston-rods connected with the pistons and having roller-bearing connections with said wheel-rim to be reciprocated by the eccentric rotation of the rim relative to the axle, and guides in the wheel-center for said piston-rods, comprising rollers engaging opposite sides of the piston-rods.

852,302. STAY-BOLT CUTTER. EARL T. STRONG, Urbana, Ill., assignor of one-third to James A. Gibson and one-third to Edward J. Buckbee, Urbana, Ill. Filed Dec. 28, 1905. Serial No. 293,654.

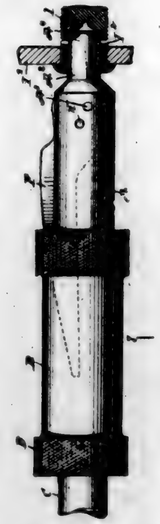

Claim.—A cutting machine for cutting off stay bolts and the like, comprising a stock, a lever extending lengthwise in the stock and carrying a lateral cutting tool, a sleeve slidably mounted on the stock and engaging the lever to feed the cutting tool, said sleeve having a longitudinal groove for receiving the lever whereby to lock the stock and the sleeve, and a latch pivoted to the sleeve and engaging the stock for maintaining the sleeve in its outward position.

852,303. LOCK FOR STOP-COCKS. CHARLES H. THOMPSON, Muncie, Ind. Filed July 30, 1906. Serial No. 328,409.

Claim.—1. A locking device of the character described, comprising relatively movable pipe-embracing jaws having

a transversely disposed handle-receiving seat between them, said seat being formed partly in each jaw and comprising transversely coacting sockets arranged in their inner opposed faces and extending entirely across said faces from edge to edge, and means for securing the jaws together.

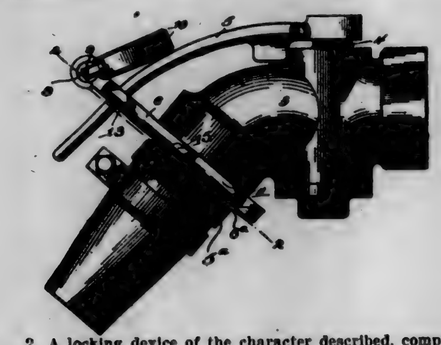

2. A locking device of the character described, comprising hingedly connected jaws having outwardly bowed portions contiguous to one end, forming a transverse pipe-receiving seat, and outwardly bowed portions contiguous to the other end, forming a transverse handle-receiving seat, said jaws having abutting portions between the seats and also having lock-receiving eyes or openings.

3. In a locking device of the character described, the combination with the pipe, of a turning valve located therein and having an offset handle adapted to be placed longitudinally of the pipe, said pipe being provided with an annular channel disposed at one side of the valve, and a locking device comprising jaws that embrace the pipe at one side of the valve and are located in the channel, said jaws also embracing the handle of the turning valve.

4. In a locking device of the character described, the combination with a pipe having an annular channel formed in its outer side, of a turning valve located in the pipe at one side of the channel and having a handle that is movable to a position longitudinally of the pipe and transversely of the annular channel, and a locking device located at one side of the valve and comprising hinged jaws, said jaws being provided with pipe receiving and handle receiving seats and engaging in the annular channel, and a lock for holding the jaws together.

852,304. LETTER-CASE. WILLIAM A. TILLEY, San Francisco, Cal. Filed Nov. 5, 1906. Serial No. 342,059.

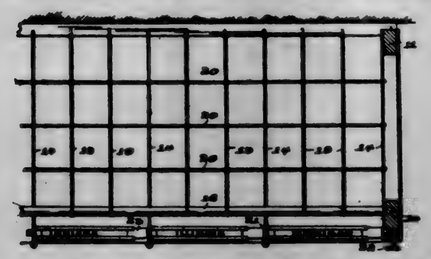

Claim.—1. In a letter-case, the combination with upright sheet-metal partitions forming the side walls of the boxes, of a transversely apertured front bar passed through said partitions, a transversely disposed rear angle-strip parallel therewith provided with means whereby it may be secured to the wall against which the case is placed, said angle-strip also having holes registering with the apertures of said front bar and cross-kerfs adapted to receive the rear edges of said partitions, wires disposed between and parallel with said front bar and rear strip and passed through said partitions, and other wires crossing said first-named wires and at one end secured in the apertures of said front bar and at the other end secured in the holes of said rear angle-strip, substantially as described.

2. In a letter case for postal cars, the combination with upright sheet-metal partitions forming the side walls of the boxes, of a spindle rotatably mounted in said partitions substantially in the plane of the front openings of the boxes, and a series of label-holders non-rotatably secured on said spindle, the ends of said label-holders abutting squarely against said partitions and serving to stiffen and brace the latter, substantially as described.

3. In a letter case for postal cars, the combination with upright sheet-metal partitions forming the side walls of the boxes, of a spindle rotatably mounted in said partitions substantially in the plane of the front openings of the boxes, and a series of label-holders polygonal in cross-section non-rotatably secured on said spindle and at their ends squarely abutting against said partitions, each of said label-holders having flanges on its corners forming slideways for the labels, said flanges terminating short of one end of the label-holder to facilitate the insertion and withdrawal of the labels, substantially as described.

4. In a letter-case, the combination with a plurality of vertical partitions forming the side walls of the boxes, of a plurality of horizontal angle-strips adapted to be secured to the wall against which the case is placed, said angle-strips having transverse kerfs receiving the rear edges of said vertical partitions, substantially as described.

5. In a letter-case, the combination with vertical sheet metal partitions forming the side walls of the boxes, and wires disposed longitudinally of the boxes and forming elements of the top and bottom walls thereof, of a series of horizontal angle-strips adapted to be secured to the wall against which the case is placed, said angle-strips having transverse kerfs receiving the rear edges of said vertical partitions, and apertures receiving the inner ends of said wires, substantially as described.

852,305. SOAP-HOLDER. EDWARD F. WACH, Chicago, Ill. Filed Apr. 14, 1906. Serial No. 311,703.

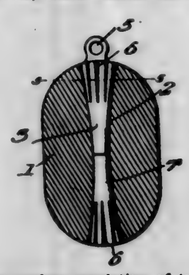

Claim.—A soap anchor consisting of two tapering cylindrical sections adapted to be embedded in a soap cake, and diminishing in cross section from their outer toward their inner ends, which ends lie adjacent to each other, coöperating interlocking means on said sections, the flaring outer portions of the sides of said sections being provided with longitudinally extending radially projecting ribs to engage the soap cake and prevent rotation of the cake on the anchor.

852,306. UNDERGARMENT. CYRUS M. WALKER, Butler, Mo. Filed Aug. 2, 1906. Serial No. 328,935.

Claim.—A union garment comprising a shirt portion open at its front, a drawers portion open at its front and rear and having as an integral part thereof a flap for overlapping the opening at the rear, a pair of reinforcing strips for the sides of the front opening of the garment and which extend from the crotch of the drawers portion to the neck opening in the shirt portion, an elastic waist band interposed between the shirt and drawer portion and having its upper edge secured to the lower edge of the shirt portion and its lower edge secured to the upper edge of the drawer portion thereby coupling said portions together, said band having one end secured to one of the reinforcing strips and its other end to the other of said strips, said band being of greater width at the back of

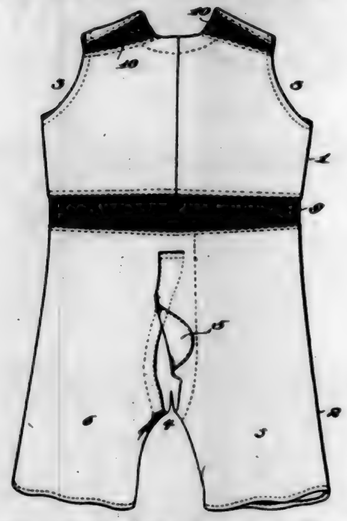

the garment than at the front, and an elastic insert for each of the shoulders of the shirt portion, said insert extending from the neck opening to the opening of the arm and gradually increasing in width toward the neck opening.

852,307. TROLLEY-POLE CATCHER. JOHN H. WALKER, Lexington, Ky. Filed June 27, 1906. Serial No. 323,622.

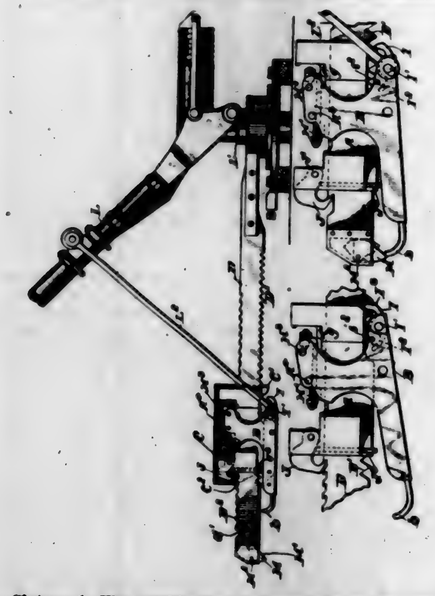

Claim.—1. The combination substantially as described, of a track having its upper and lower edges notched, the trolley pole, the carrier having a body portion sliding along the track and provided above the track with a supplemental catch for coöperating with the top notches, a pin or pins extending through the body portion and engaging with the supplemental catch, and a rocker pivoted to the body portion and extending below the position to operate said pin or pins, a spring actuated rod extending longitudinally above the track and having a stud, a bearing on the rocker for engagement by said stud, a dog pivoted between its ends to the rocker and having its front end or point arranged to coöperate with the notches in the lower edge of the track and its rear portion or tail piece to engage with the track and adjust the said front end or point into locking engagement with the track, a tongue at the rear end of the rocker, and a cam pivoted to the track for engagement by said tongue.

2. The combination with a trolley pole and a track, of a carrier sliding thereon and having a body portion and a rocker pivoted thereto and provided with a dog for engagement with the track, and a rod extending between the rocker and the trolley pole and having a sliding connection with the one of said parts whereby it may operate with a hammer action.

3. The combination with a trolley pole and a track, of a carrier sliding on the track and having a body portion and a rocker pivoted thereto, connections between the rocker and trolley pole, a dog on the rocker for engagement with the track, a supplemental catch on the body portion for engagement with the track, and means for freeing the supplemental catch from engagement with the track.

4. In an apparatus substantially as described, a carrier comprising a body portion, a rocker, a dog carried by the rocker, a supplemental catch carried by the body portion, and means whereby the rocker when adjusted to position to free the dog may also adjust the supplemental catch to neutral position.

5. The combination with the track, of a carrier sliding thereon and having a body portion and a rocker pivoted thereto, a dog carried by the rocker and movable therewith into and out of position to engage the track, a catch carried by the body portion, and means whereby the rocker may adjust the supplemental catch to neutral position when the dog is moved out of engagement with the track.

6. In a trolley pole catcher, the combination with a track having a safety notch, of a carrier movable on the track and having a body portion provided with a supplemental catch to enter the safety notch, and a rocker pivoted to the body portion and having a rearwardly projecting tongue, means whereby the rocker when raised at its rear end may move the supplemental catch out of the safety notch, and means at the rear end of the track for operating upon the tongue of the rocker to depress the rear end of the rocker.

7. The combination with a track, of a carrier movable thereon and having a body portion provided with a supplemental catch and a rocker provided with a dog, intermediate devices between the rocker and supplemental catch whereby the rocker may adjust the latter to neutral position, and a cam plate pivoted to the track in position for engagement by the rear end of the rocker whereby to depress the same, the cam plate being pivoted to swing freely in a direction toward the carrier.

8. The combination in a trolley pole catcher of a track having a rack at its upper edge and a rack at its lower edge, the carrier sliding along the track and having a body portion and a rocker pivoted thereto, a dog pivoted to the rocker for engagement with the lower rack of the track, and a catch pivoted to the body portion for engagement with the top rack of the track.

9. The combination of a trolley pole, a track extending longitudinally therefrom, a carrier sliding along the track and having a body portion and a rocker pivoted thereto and provided with means for engagement with the track to lock the trolley against upward movement on its sudden escape from the wire, and a supplemental catch on the body portion for engagement with the track.

10. The combination in a trolley pole catcher of a carrier having a body portion, a rocker pivoted thereto and

provided with a dog and a supplemental catch pivoted to the body portion and having a portion projecting in rear thereof and a cover fitting over the carrier and having its opposite ends slotted for the passage of a track bar, and provided on its inner side with upright ribs fitting along the rear edge of the body portion of the carrier and with a portion extending beyond said ribs forming a housing for the supplemental catch.

11. The combination in a trolley pole catcher with the body portion of a sliding carrier, of a rocker pivoted between its front and rear ends thereto, a dog at the front end of the rocker, a supplemental catch at the upper rear end of the body portion, and a pin extending through the body portion and arranged at its upper end to engage beneath the supplemental catch to lift the same and extending at its lower end into position to be operated by the rear end of the rocker.

12. The combination of a trolley pole, a track having its lower edge notched forming teeth, a carrier movable along the track and having a dog pivoted between its ends forming a front end or point for engagement with the track and a rear end or tail piece to engage with the teeth of the track for throwing the point end into engagement therewith, and means whereby the initial upward movement of the trolley pole on escapement from the wire will throw the dog into engagement with the track to lock the trolley pole against further upward movement.

13. The combination in a carrier for trolley pole catchers of the body portion having a longitudinal passage for a track bar, and a rod movable longitudinally in the body portion above said passage and provided at one end with a presser point, a spring actuating said rod longitudinally, and a rocker having a dog for engagement with the track bar, said rocker being pivoted to the top portion and provided with a bearing for engagement by the presser point of said spring actuated rod.

14. The combination with the trolley pole and track bar extending longitudinally therefrom, of a carrier sliding on the track bar and connected with the trolley pole for operation thereby, a catch on the carrier for engagement with the track bar when the trolley pole is pulled down to the car, means on the carrier for releasing said catch under certain conditions, and means on the track bar for restraining said catch releasing means from releasing the catch.

852,308. AMUSEMENT DEVICE. WILLIAM T. WATSON, Vancouver, British Columbia, Canada. Filed Nov. 10, 1905. Serial No. 286,692.

Claim.—1. An amusement device comprising a base provided with an annular track, a vertical shaft fixed to the base at the center of the annular track, a sleeve journaled on the shaft and having a bevel gear at the lower end thereof beneath the base, and provided upon its upper end with a plurality of bearings, horizontal shafts journaled in the bearings and having on the outer ends thereof wheels running on the annular tracks, pins projecting at spaced intervals from the outer faces of the wheels, cars having journal boxes engaging the pins and suspended from the said pins, braces connecting the pins with the outer faces of the wheels, a collar on each horisontal shaft intermediate the wheel and the bearing, adjustable braces connecting the collar with the inner face of the adjacent wheel, said braces being connected with said wheel opposite the pins, a circular platform encircling the base on a level with the bottom of the cars when in their lowermost position, and means engaging the bevel gear of the sleeve for rotating the same.

2. An amusement device comprising a base provided with an annular track, a vertical shaft fixed to the base at the center of the annular track, a sleeve journaled on the shaft and having a bevel gear at the lower end thereof beneath the base, and provided upon its upper end with a plurality of bearings, horizontal shafts journaled in the bearings and having on the upper ends thereof wheels running on the annular tracks, pins projecting at spaced intervals from the outer faces of the wheels, cars having journal boxes engaging the pins and suspended from the said pins, braces connecting the pins with the outer faces of the wheels, a circular platform encircling the base on a level with the bottom of the cars when in their lower-

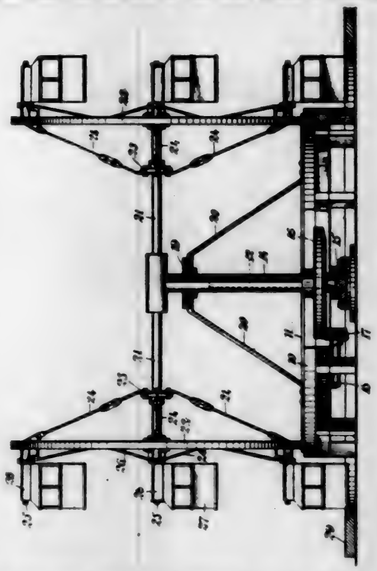

most position, and means engaging the bevel gear of the sleeve for rotating the same.

852,309. GOODS-HANDLER. EDGAR E. WELCH, Springdale, Ark. Filed July 11, 1906. Serial No. 325,591.

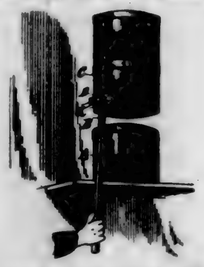

Claim.—1. A handler constructed with a handle having a beveled end, a curved bar secured to the handle near its beveled end, and teeth on the curved bar, formed by slitting it, leaving a tongue adapted to be bent out into projecting position.

2. The combination with a handle constructed with an upper beveled end, of a curved bar secured to the handle near its upper end, leaving the arm portions thereof projecting transversely from the handle, and a series of penetrating teeth on both arm portions of the bar.

852,310. CHANGEABLE DRIVE-GEAR. JOHN WIECHMANN, Albany, N. Y. Filed June 13, 1906. Serial No. 321,534.

Claim.—1. A gear, comprising a pair of friction wheels, of which one is provided in its face with revoluble disks adapted to be engaged by the peripheral face of the other friction wheel.

2. A changeable gear, comprising a pair of friction wheels, of which one is provided in its face with concentric rows of revoluble disks adapted to be engaged by the peripheral face of the other friction wheel.

3. A changeable gear, comprising a pair of friction wheels, of which one is provided in its face with concentric rows of revoluble disks adapted to be engaged by the peripheral face of the other friction wheel, and ball bearings for the said disks in their friction wheel.

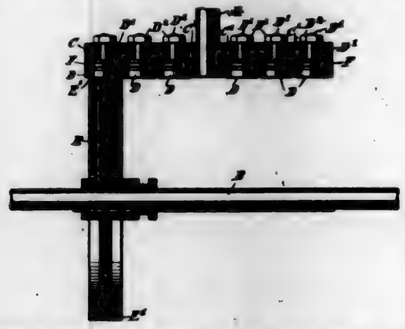

852,311. PROGRESSIVE BRAKE AND CLUTCH. CHARLES A. ARBEY, Besançon, France. Filed Nov. 22, 1904. Serial No. 233,858.

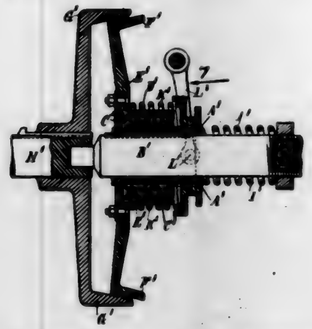

Claim.—A rotating shaft and a set of friction disks carried thereby in combination with a member to which the shaft is to be connected up, a part carrying a set of disks alternating with those carried by the shaft, and means to press said disks together, with a friction brake means to clutch said second mentioned disk-carrying part to the member to which the shaft is to be connected up, and one operating means to throw both the brake and the disks into action.

852,312. METHOD OF REPRODUCING MUSICAL COMPOSITIONS. HENRY P. BALL, Schenectady, N. Y., assignor of one-half to Samuel Insull, Chicago, Ill. Filed May 3, 1904. Serial No. 206,128.

Claim.—1. The herein described method of making a perforated record of the performance of a musical composition which consists in recording a portion of the composition, and then using this record to reproduce itself simultaneously with the recording, on the reproduced record, of additional portions of the composition as played by the performer.

2. The herein described method of making a perforated record of the performance of a musical composition, which consists in building up a complete record by causing a master record to reproduce itself upon a new record and simultaneously recording manually selected notes upon such new record.

3. The herein-described method of making a master sheet which consists in first forming in a separate sheet a series of perforations less than is required to indicate the musical composition, causing said separate sheet to actuate mechanism to produce in the master sheet corresponding perforations and simultaneously actuating perforating mechanism to introduce in said master sheet such remaining perforations as is necessary to cause the master sheet to contain a record of the entire musical composition.

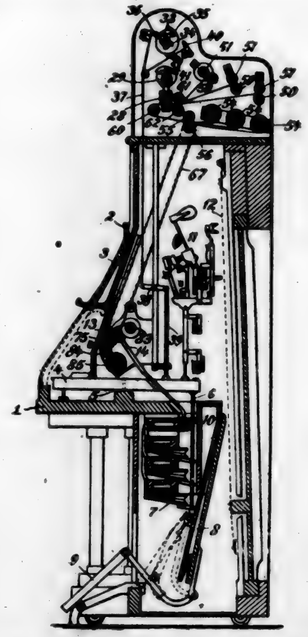

4. The herein described method which consists in employing a perforated musical record as a master to reproduce itself, and simultaneously inserting in such reproduction an additional perforated record as part of the same musical composition.

5. The herein described method which consists in making a perforated master, then causing such master to produce a second perforated master, and simultaneously recording on the second master an additional part of the same composition.

6. The herein described method which consists in making a perforated master, then causing such master to produce a second perforated master, and simultaneously recording on the second master a series of manually selected notes as part of the same composition.

7. The herein described method which consists in making a perforated master of a portion of a musical composition, then causing such perforated master to produce a second master, and simultaneously recording on the second master an additional part of the same musical composition.

8. The herein described method which consists in making a master in the form of a perforated sheet, then causing such master to produce a second master as a perforated sheet, and simultaneously recording, as perforations in the second master, an additional part of the same composition.

9. The herein described method which consists in making a perforated master, then causing the master to reproduce itself, and simultaneously recording on the second perforated master an additional portion of the same composition.

10. The herein described method which consists in causing a perforated musical record to reproduce itself, and simultaneously inserting in such reproduction an additional perforated record as part of the same composition.

852,313. TYPE-WRITING MACHINE. EDWIN E. BARNEY, Syracuse, N. Y., assignor to The Monarch Typewriter Company, Syracuse, N. Y., a Corporation of New York. Filed Nov. 29, 1904. Serial No. 234,754.

Claim.—1. In a typewriting machine, the combination of an actuating member; a connecting member, one of said parts being formed with a key-hole slot and the other with a headed pin adapted to enter the wider part of said slot; a flat spring secured to the face of one of said members and adapted to maintain the headed pin in the narrow end of the key-hole slot; and a type bar connected with said connecting member.

2. In a typewriting machine, the combination of an actuating lever; a connecting link, one of said parts being formed with a key-hole slot and the other with a headed pin adapted to enter the wider part of said slot; a flat spring riveted to the face of one of said parts and adapted to maintain the headed pin in the narrow end of the key-hole slot; and a type bar connected with said connecting link.

3. In a typewriting machine, the combination of an actuating member; a connecting member, one of said members being formed with a key-hole slot and the other with a headed pin adapted to enter the wider part of said slot; a spring on one of said members, said spring being adapted to maintain the headed pin in the narrow end of the key-hole slot and to release said pin by being pulled away from the face of the part on which said spring is secured; and a type bar connected with one of said members.

4. In a typewriting machine, the combination of an actuating member; a connecting link, one of said parts being formed with a key-hole slot and the other with a headed pin adapted to enter the wider part of said slot; a flat spring secured to the face of one of said parts and adapted to maintain the headed pin in the narrow end of the key-hole slot and to release said pin by being pulled away from the face of the part to which it is secured; and a type bar connected with said connecting link.

5. In a typewriting machine, the combination of an actuating member; a connecting member, one of said members being formed with a key-hole slot and the other with a headed pin adapted to enter the wider part of said slot; a spring on one of said members, said spring being adapted to maintain the headed pin in the narrow end of said key-hole slot and to release said pin by being moved longitudinally of the latter; and a type bar connected with said connecting member.

6. In a typewriting machine, the combination of an actuating member; a connecting member, one of said members being formed with a key-hole slot and the other with a headed pin adapted to enter the wider part of said slot; a spring secured to one of said members, the free end of said spring normally standing within the key-hole slot and being adapted to maintain the headed pin in the narrow end of said slot and to release said pin by being withdrawn from said slot; and a type bar connected with said connecting member.

7. In a typewriting machine, the combination of a type bar; a lever formed with a key-hole slot; a connecting link carrying a headed pin adapted to enter the wider part of said key-hole slot; and a spring secured to the face of said lever, the end of said spring being adapted to maintain the headed pin in the narrow end of the key-hole slot and to release said pin by being pulled away from the face of said lever.

8. In a typewriting machine, the combination of an actuating member; a connecting member, one of said parts being formed with a key-hole slot and the other with a headed pin adapted to enter the wider part of said slot; a flat spring secured to the face of one of said members and adapted to maintain the headed pin in the narrow end of the key-hole slot and to permit rotary movement of said pin therein; and a type bar connected with said connecting member.

9. In a typewriting machine, the combination of an actuating member; a connecting member, one of said members being formed with a key-hole slot and the other with a headed pin adapted to enter the wider part of said slot; a spring on one of said members, said spring being adapted to maintain the headed pin in the narrow end of the key-hole slot and to permit rotary movement of said pin in said narrow end, said spring being further adapted to release said pin by being pulled away from the face of the part on which said spring is secured; and a type bar connected with one of said members.

10. In a typewriting machine, the combination of an actuating member; a connecting link, one of said parts being formed with a key-hole slot and the other with a headed pin adapted to enter the wider part of said slot; a flat spring secured to the face of one of said parts and adapted to maintain the headed pin in the narrow end of the key-hole slot and to permit rotary movement of said pin while so maintained, said spring being further adapted to release said pin by being pulled away from the face of the part to which it is secured; and a type bar connected with said connecting link.

11. In a typewriting machine, the combination of an actuating member; a connecting member, one of said members being formed with a key-hole slot and the other with a headed pin adapted to enter the wider part of said slot; a spring secured to one of said members, the free end of said spring normally standing within the key-hole slot and being adapted to maintain the headed pin in the narrow end of said slot and to release said pin by being moved longitudinally of the latter until withdrawn from said slot; and a type bar connected with said connecting member.

12. In a typewriting machine, the combination of a type bar, a lever formed with a key-hole slot; a connecting link carrying a headed pin adapted to enter the wider part of said key-hole slot; and a spring secured to the face of said lever, the end of said spring being adapted to maintain the headed pin in the narrow end of the key-hole slot and to permit rotary movement of said pin while so maintained, said spring being further adapted to release said pin by being pulled away from the face of said lever.

13. The combination with two members one of said members having a slot, a pin extending from the other member through the slot and having a head provided with a flat side next to the open end of the slot, of a spring on the slotted member provided with a tongue entering the slot past the flattened side of the head.

852,314. STOCK-LOADER. WILLIAM S. BOURNE, Afton, Iowa. Filed July 30, 1906. Serial No. 328,456.

Claim.—1. A stock loading device comprising a platform, an inclosure therefor, means arranged to bodily elevate the platform, a stop on the inclosure arranged in the path of the platform for limiting the forward movement thereof and a mechanism exterior to the inclosure and arranged to exert a pull in a direction away from the inclosure for elevating the platform on the said means.

2. A stock loading device comprising an inclosure open at one end, a platform supported to swing in and out of the open end of the inclosure, and a flexible element connected with the platform and having a free end adapted to be attached to a vehicle for moving the platform into operative relation to the vehicle.

3. A stock loading device comprising a platform, an inclosure therefor which is open at one end, a stop on the side of the inclosure for limiting the upward movement of the platform parallel links for mounting the platform on the bottom of the inclosure and for permitting the platform to be simultaneously elevated and advanced through the open end of the inclosure, and mechanism for actuating the platform, said mechanism comprising longitudinally movable members connected with the platform, guides for the members, and means exterior to the inclosure for actuating the members.

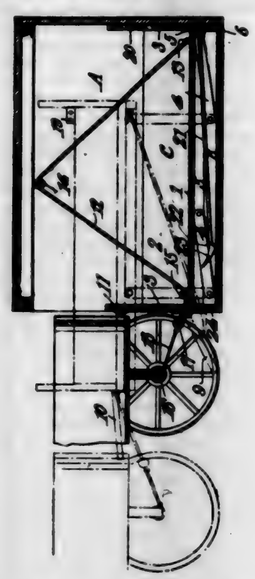

4. A stock loading device comprising a platform, means for movably mounting the platform, flexible elements for actuating the platform, and a draft mechanism connected with the elements and movable back and forth at the front end of the device.

5. A stock loading device comprising a pen platform mounted to move bodily in a curvilinear path, an inclosure for the same, means for movably mounting the platform within the inclosure, flexible elements connected with the platform and extending exterior to the inclosure for actuating the former, a cross member at the front of the inclosure connected with the elements, and a flexible element connected with the cross member.

6. A stock loading device comprising a pen platform, a structure in which the same is located, parallel links for mounting the platform in the structure, means for elevating the platform by means of the links, a device for automatically holding the platform in an elevated position, and a stationary stop in the structure for limiting the forward movement of the platform and coöperating with the said device for preventing the platform from moving in either direction.

7. A stock loading device comprising an inclosing structure open at one end, a door for closing said end, and a liftable platform arranged within the inclosure and movable to an elevated position extending partly from the open end.

8. A stock loading device comprising a box-shaped pen platform having an opening at one end and mounted to have a swinging movement, a structure supporting the platform and open at one end to permit the latter to swing in and out of the same, and doors at the open end of the structure.

9. A stock loading device comprising a liftable pen platform, a mechanism for actuating the same, and means for connecting said mechanism to a vehicle whereby the latter moves the platform into operative relation to the vehicle for loading the stock.

10. A stock loading device comprising a platform forming a pen with an opening at one end, means on which the platform swings, flexible elements connected with the platform and extending through the front end thereof, means for guiding the movement of the elements, a device for connecting the free ends of the elements for actuating the platform, and means for connecting the said device with a vehicle to elevate the platform into operative relation by a forward movement of the vehicle.

852,315. PERFORATING OR SCORING DEVICE FOR PRINTING-PRESSES. CHARLES E. BURCH, Minneapolis, Minn. Filed Jan. 22, 1907. Serial No. 353,551.

Claim.—1. The combination, with a scoring or perforating device for printing presses, with a suitable base, a rocking bar mounted thereon and having a spiral formed thereon, and mechanism for operating said spiral to rock said bar, substantially as described.

2. The combination, in a scoring or perforating device for printing presses, with a suitable base, a rocking bar mounted thereon and having a spiral formed thereon and provided with a perforating or scoring edge, a plunger, and operative connections provided between said plunger and spiral, whereby said bar will be rocked when said plunger is operated.

3. The combination, with a base, of a rocking bar mounted thereon and having a perforating or scoring edge, and a spiral at one end, a lever having a forked end to engage said spiral, and means for oscillating said lever to rock said bar.

4. The combination, with a base, of a rocking bar mounted thereon and having a perforating or scoring edge, and a spiral at one end, a pivoted lever having a fork to engage said spiral and a notch or recess, a plunger having a lip to enter said notch, and a spring for yieldingly holding said plunger and lever in their normal position.

5. The combination, with a base having a recess in one edge, of a rocking bar fitting within said recess and having an edge provided with a series of teeth and a spiral at one end, a post secured to the end of said base and having a bearing for said spiral, a plunger fitting within a socket in said post at right angles substantially to said spiral, a spring normally holding said plunger in its raised position, said plunger having a lip at its lower end, a lever pivoted at a point intermediate to its ends within a recess formed between said post and the end of said base, one end of said lever having a notch to receive the lip on said plunger and the other end being forked to straddle said spiral whereby when said plunger is reciprocated said lever will be oscillated and said bar rocked.

6. The combination, with a base having a recess in its edge, said recess being curved in cross section, of a rocking bar having a curved edge fitting within said recess, the sides of said bar being beveled and merging into a thin edge provided with a series of teeth, and means for rocking said bar to adjust it to an operative or inoperative position, substantially as described.

7. In a scoring or perforating device for printing presses, a rocking bar having an edge to engage the paper and, a twisted or spirally formed portion, and means engaging said spirally formed portion for rocking said bar.

8. The combination, with a base, of a rocking bar mounted thereon and having a perforating or scoring edge, and a spiral, a lever adapted to engage said spiral and means for operating said lever to rock said bar.

852,316. CULTIVATOR SHOVEL OR TOOTH. CHARLES BUERMEISTER and ERNEST BOLDT, Calumet, Iowa. Filed Jan. 2, 1907. Serial No. 350,547.

Claim.—The herein described cultivator shovel or tooth, comprising a curved blade having equilateral and triangular formed sides and top, said blade having a central shank, and a clamp holder secured to the rear surface of said

shank for adjusting the blade upward and downward on the carrying arm, substantially as described.

852,317. HORSESHOE-CALK. WILLIAM B. COLE, Rhinebeck, N. Y. Filed Aug. 25, 1906. Serial No. 332,033.

Claim.—1. A horseshoe calk comprising a central rib, thin radial wings extending outward from said rib, said wings each terminating in enlarged oppositely beveled spurs having plane outer ends.

2. A horseshoe calk comprising a central enlarged rib, radially extending wings, said wings terminating in enlarged spurs having oppositely beveled sides, and said wings being cut away, as at 5, substantially as described.

3. A horseshoe calk provided with an enlarged central rib, thin radial wings extending from said rib, said wings terminating in enlarged oppositely beveled spurs and said wings being cut away, substantially as described.

4. A horseshoe calk comprising a threaded shank, a central rib, thin wings extending radially from said rib and terminating in oppositely beveled spurs, said spurs and central rib extending beyond the wings, substantially as described.

852,318. BOX-BASE FOR RADIATORS. MONTGOMERY E. DANFORTH, Washington, D. C., assignor to United States Radiator Company, Dunkirk, N. Y., a Corporation of New York. Filed Nov. 17, 1906. Serial No. 343,803.

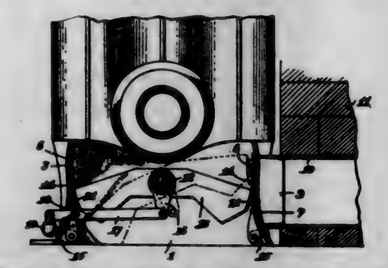

Claim.—1. In a box base for radiators having an air inlet in each side, dampers for said air inlets, and means for retaining both of said dampers closed or for permitting either of said dampers at a time to be opened.

2. In a box base for radiators having an air inlet in each side, dampers for said air inlets, and a common means for retaining both of said dampers closed, or for permitting either of said dampers at a time to be opened.

3. In a box base for radiators having an air inlet in each side, dampers for said air inlets opening by gravity, and means for retaining both of said dampers closed or for permitting either of said dampers at a time to be opened.

4. In a box base for radiators having an air inlet in each side, dampers for said air inlets opening by gravity, a wing spanning the space between said dampers to retain them both closed, and means for moving said wing to release either of said dampers while retaining the other damper closed.

5. In a box base for radiators having an air inlet in each side, dampers for said air inlets opening by gravity, a wing pivoted intermediate its length and spanning the space between said dampers to retain them both closed, and means for rocking said wing on its pivot to release either of said dampers while retaining the other damper closed.

6. In a box base for radiators having an air inlet in each side, dampers for said air inlets opening by gravity, a shaft mounted in said box base, a wing fixed intermediate its length upon said shaft and spanning the space between said dampers to retain them both closed, and means for rocking said shaft and wing to release either of said dampers while retaining the other damper closed.

7. In a box base for radiators having an air inlet in each side, dampers for said air inlets opening by gravity, a shaft mounted in said box base, a wing fixed intermediate its length upon said shaft and spanning the space between said dampers to retain them both closed, a rock arm connected with said shaft, and a rod connected with said rock arm and extending outside the box base for operating said shaft and wing to release either of said dampers while retaining the other damper closed.

8. In a box base for radiators having an air inlet a damper for said air inlet pivoted at its bottom and adapted to open by gravity when released, a rocking wing normally contacting with said damper to hold it closed, the contact surface of said wing with said damper being curved on the arc of movement of said wing to cause a constant contact with said damper when said wing is rocked in one direction, said wing leaving said damper when rocked in the other direction to permit the latter to open, and means for rocking said wing.

852,319. SNAP-LEVER OILER. JOSEPH H. DEARE, Detroit, Mich. Filed Dec. 24, 1906. Serial No. 349,254.

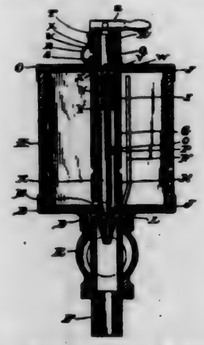

Claim.—1. In a snap-lever oiler, the combination with a reservoir, of a feed-tube, an adjustable nut threaded on the upper edge of said feed-tube, a chambered plug loose in the upper end of said feed-tube, a valve-stem within said feed-tube consisting of two parts, one part being connected to the other and having a limited longitudinal movement independent thereof, independently operating springs, one to actuate each part of the valve-stem, a valve on one end of said valve-stem, a hand lever pivoted to the opposite end of the valve-stem, and a packing surrounding said stem.

2. In a snap-lever oiler, the combination with a reservoir, of an axial feed-tube extending out through the top and bottom thereof, an adjustable nut threaded on and a chambered plug in the upper end of said feed-tube engaging said nut and means for holding said nut in any of its adjusted positions, a valve-stem within said feed-tube consisting of two parts, one part being slotted longitudinally near its end and the other part provided with a fixed pin to engage said slot and connect said parts, springs sleeved on the parts of said stem one within said plug and engaging said nut and the other engaging said plug and operating independently to actuate said parts, a valve on the lower end of said stem, and a hand-lever on the upper end thereof.

3. In a snap-lever oiler, the combination with a reservoir, of an axial feed-tube, projecting out through the reservoir and terminating in externally screw-threaded nipples at its opposite ends and having a valve-seat in its lower end, a chambered plug fitting in the upper end of said feed tube, an internally threaded adjusting nut engaging said plug and one of said nipples, a spring dog sleeved on said nipple co-operating with said nut to hold it in any of its adjusted positions and a lock-nut on the nipple for holding said dog in place, a valve-stem within said feed-tube consisting of two parts, the upper part being provided at its lower end with a recess to receive the flattened upper end of the lower part of said stem and the lower part provided with a slot, a pin on said upper part to engage said slot and connect the parts, springs of different tension sleeved on the parts of said stem and operating independently to actuate said parts, a valve on the lower end of the stem, and a hand-lever on the upper end thereof.

4. In a snap-lever oiler, the combination of a reservoir, an axial feed-tube in said reservoir projecting through the top thereof, a chambered plug fitting within and an adjusting nut closing the upper end of said feed-tube and having a knurled surface, a spring dog sleeved on the feed-tube co-operating with said knurled surface, a valve seat in the lower end of said feed-tube, a valve stem consisting of an upper and a lower part, the lower part being provided with a flattened portion having a slot near its upper end, the lower end of said upper part of the valve-stem having a recess to receive the upper end of the lower part of the stem, a transverse pin in said recessed portion to engage the said slot, a hand-lever pivoted to the upper end of the upper part of the stem and adapted to engage the top of said nut, a spring sleeved on the upper part of the stem and engaging said pin and the inner end of the adjusting nut to hold the hand-lever in engagement with the top of said nut, a valve on the lower end of the lower part of said stem, an abutment on said lower part, a shoulder formed by the lower end of said plug, and a spring engaging said shoulder and abutment to hold the valve to its seat.

852,320. TOOL-CHUCK. THOMAS A. DICKS, Wilkinsburg, Pa., assignor of one-half to William Henry Mack, Wilkinsburg, Pa. Filed June 13, 1906. Serial No. 321,502.

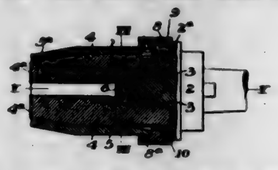

Claim.—1. A tool chuck having a head, a shell fixed to said head and extending forwardly beyond the same, and longitudinally-movable clamping jaws seated at one end portion in guides or grooves of the head, and at the opposite end portion in guides or grooves of the shell; substantially as described.

2. A tool chuck having a longitudinally-movable jaw and a fixed surrounding shell having a groove which receives and guides the outer edge portion of the jaw, together with means for actuating the jaw; substantially as described.

3. A tool chuck having jaws fitting at their outer edges in grooves of the chuck shell, and having their inner faces shaped to fit into grooves of a tool shank, whereby both the inner and outer edges of the jaws are supported against torsional strains; substantially as described.

852,321. LAWN-MOWER. RICHARD A. DICKSON, Kansas City, Mo. Filed Apr. 13, 1906. Serial No. 311,588.

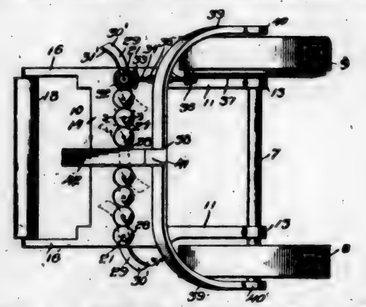

Claim.—1. A device of the class described, comprising an axle, ground wheels associated with said axle, a frame connected at its forward end to said axle, said frame including upper and lower spaced arms connected at their rear ends by means of web portions, vertical shafts mounted for rotation in said web portions, means for rotating the said shafts, and blades carried by said shafts at their lower ends.

2. In a device of the class described, the combination with an axle and ground-wheels associated with said axle, of a frame including upper and lower spaced arms, the spaced arms at each side of the frame being connected at their forward ends to each other and to the said axle, web portions connecting said arms at their rear ends, vertical shafts journaled in said web portions, stub-shafts journaled in the upper web portion, pinions carried by said first and last named shafts, means for rotating said shafts, and blades carried by said vertical shafts at their lower ends and below the lower web portions.

852,322. HAY-LOADING MACHINE. FREDRICK E. FOX, Kinsley, Kans. Filed Apr. 25, 1906. Serial No. 313,639.

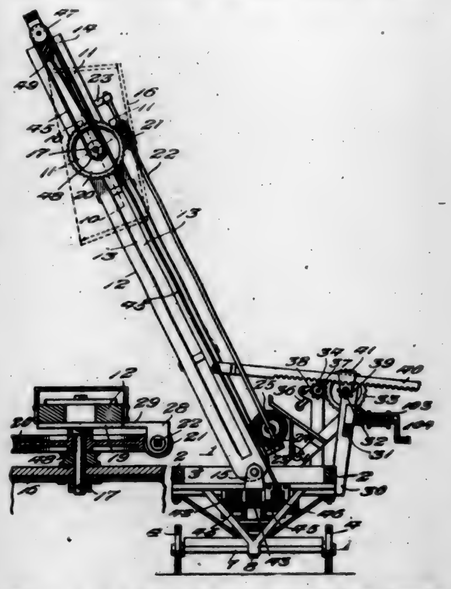

Claim.—1. In a device of the class described, an elevator frame having spaced guides, a receptacle mounted for movement longitudinally of the guides and adapted for ro-

tation, a worm gear fixedly connected for rotation with the receptacle, a worm shaft, a worm slidably disposed thereon in engagement with the gear, means for connecting the worm for movement with the receptacle in a direction longitudinally of the guides, means for raising the receptacle in the frame, and means for operating the shaft to rotate the receptacle through the medium of the worm and gear connection.

2. In a device of the class described, an elevator frame including upright guide members having longitudinal guide openings, bearings slidably disposed in said openings, a receptacle having end journals rotatably mounted in said bearings, a worm gear fixed on one of the journals, a worm shaft extended longitudinally of one of the guides, a worm journaled on one of the bearings in engagement with the gear, said worm being slidable on the shaft for movement with the receptacle in its movements on the guides, means for raising and lowering the receptacle bodily in the frame, and means for operating the worm shaft to rotate the receptacle through the medium of the worm and gear connection.

3. In a device of the class described, an elevator frame including upright guides having longitudinal guide-openings, a receptacle arranged between the guides and having projecting end journals extended through the guide slots, antifriction rollers rotatively mounted on the journals within the slots, bearing plates applied on the journals to bear at the inner and outer faces of the guides, a worm gear fixed upon one of the journals, a worm shaft extended longitudinally of the adjacent guide, a worm slidably disposed on the shaft in engagement with the gear, said worm being journaled in bearings on one of the bearing plates and sustained for movement with the receptacle in a direction longitudinally of the guides, means for operating the shaft to rotate the receptacle through the medium of the worm and gear connection, and means for raising and lowering the receptacle ni the frame.

4. In a device of the class described, an elevator frame including guide bars provided with longitudinal slots, bearings arranged for travel in said slots, a receptacle having projecting end journals rotatably mounted in said bearings, guide pulleys sustained at the upper end of the frame, corresponding pulleys rotatively mounted on said journals, hoisting cables engaged with the frame and extending for travel around the pulleys, said cables being operable for raising and lowering the receptacle in the frame, a worm gear fixed on the receptacle, a worm shaft, a worm slidably disposed thereon in engagement with the gear and sustained for movement with the receptacle, and means for operating the shaft to rotate the receptacle through the medium of the worm and gear connection.

5. In a device of the class described, a main frame, an elevator frame pivotally sustained thereon for vertical swinging movement, and including spaced guide members, an operating shaft journaled on the main frame and carrying pinions, bearing clips disposed on the shaft over said pinions, rack bars connected with the guides and slidable through said bearing clips in engagement with the pinions, said shaft being operable for varying the vertical inclination of the elevator frame, a receptacle rotatably sustained in the latter for movement longitudinally of the guides, means for raising the receptacle, and means for rotating the latter.

852,323. METHOD OF CAPPING BOTTLES. HENRY L. FULENWIDER, SAMUEL C. BOND, and WILLIAM G. BOND, Wilmington, Del., assignors to National Cork and Seal Company, Wilmington, Del., a Corporation of Delaware. Filed Aug. 13, 1906. Serial No. 330,449.

Claim.—1. The method of applying flanged sealing caps to bottles, which consists in pressing the cap on the top of a bottle mouth, simultaneously forcing the peripheral edge of the top of the cap downwardly around the edge of the bottle mouth, and then stretching the flange of the cap down and into locking contact with the bead or locking shoulder on the bottle, whereby the periphery of the cap top and the depending flange are placed under strain or tension tending to exert a sealing pressure.

2. The method of applying flanged sealing caps to bottles which consists in pressing the cap on the top of the bottle, subjecting the metal of the top and flange of the cap to a stretching action within the limits of elasticity and locking the edges of the flange to the bottle.

3. The method of applying flanged sealing caps to bottles which consists in pressing the cap on the top of the bottle, and simultaneously radially stretching the metal of the top of the cap, stretching the metal along the locking bead of the bottle and locking the edge of the flange under said bead.

4. The method of applying flanged sealing caps to bottles, which consists in pressing the cap on the top of the bottle, stretching the metal of the cap flange down along the bottle and locking the flange to the bead or locking shoulder of the bottle.

852,324. TABULATOR FOR TYPE-WRITERS. BÉLA GEREBEN, Budapest, Austria-Hungary, assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Jan. 12, 1905. Serial No. 240,779.

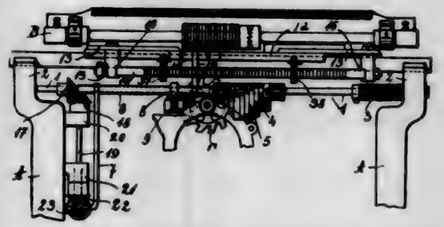

Claim.—1. In a typewriting and tabulating mechanism, the combination with a carriage, of a tabulator comprising a carriage-releasing lever, a substantially helicoidal rotary stop mounted on a spindle parallel to the path of the carriage, a sleeve mounted on said spindle and supporting a brake plate which is adapted to co-act with a brake bar, an arm coacting with said releasing lever, and means to rotate said spindle independently of the sleeve and also to turn said sleeve independently of the spindle.

2. A tabulator for typewriters, comprising a carriage-releasing lever, a substantially helicoidal rotary stop mounted on a spindle parallel to the path of the carriage, a sleeve mounted on said spindle and supporting a brake plate which is adapted to co-act with a brake bar, an arm co-acting with said release lever, a sleeve-operating lever extending into the path of a spindle which is rotated and shifted axially by means of an operating knob and which rotates by means of a suitable gearing said helicoidal stop, means to secure the operating spindle against rotation during the axial shifting, stops arranged adjustably on a rod which is pivoted on the carriage, and springs to return the parts to their initial positions.

3. In a tabulating mechanism, the combination with stops to arrest the carriage, of a carriage-releasing device, a key connected to said carriage-releasing device, and means also operable by said key, to control the speed of the released carriage, including a brake-plate operated by the key, and a brake bar extending along the carriage to co-operate with said brake-plate throughout substantially the entire range of travel of the carriage, the active face of said brake bar being slightly divergent to the path of the carriage and co-operating with said brake-plate to force said key to recede during the entire run of the carriage and in opposition to the pressure of the operator's finger on the key, thereby tending to gradually increase the pressure between the finger and the key, and hence between the brake-plate and the brake-bar.

4. In a tabulating mechanism, the combination with stops to arrest the carriage, of a carriage-releasing device, a key connected to said carriage-releasing device, and means also operable by said key to control the speed of the released carriage, said controlling means including one member set at an angle to the direction of the carriage movement and extending substantially the entire length of the travel of the carriage, and a second member caused by means of pressure on said key to rub against the angle member during substantially the entire travel of the carriage; said angle being such as to enable the carriage to cause said rubbing members to co-operate to force said key to recede during the entire run of the carriage and in opposition to the pressure of the operator's finger on the key, thereby to increase the pressure between the finger and the key, and hence between the rubbing members, to an extent dependent upon the length of travel of the carriage.

5. In a typewriting and tabulating mechanism, the combination with a carriage, of a rotary helicoidal stop, an axially shiftable rotary key connected by gearing to said helicoidal stop, an index for said key, and a carriage-releasing mechanism operable by shifting said key.

6. In a typewriting and tabulating mechanism the combination with a carriage and a rotary helicoidal stop, of a pinion connected to said stop, a vertical shaft having a pinion and engaging said stop pinion, a horizontal shaft geared to said vertical shaft and extending forwardly therefrom, a key mounted on the front end of said horizontal shaft, and an index for said key.

7. In a typewriting and tabulating mechanism, the combination with a carriage and a rotary helicoidal stop, of a pinion connected to said stop, a vertical shaft having a pinion and engaging said stop pinion, a horizontal shaft geared to said vertical shaft and extending forwardly therefrom, a key mounted on the front end of said horizontal shaft, an index for said key, and carriage-releasing means including a member operable by a longitudinal movement of said horizontal shaft.

8. In a typewriting and tabulating mechanism, the combination with a carriage, of a rotary helicoidal stop, a rotary key axially shiftable and connected by gearing to said helicoidal stop, a curved rack 35 connected to said key and movable by a depression of the key, and a registering tooth 36 to engage said rack when the key is shifted.

9. In a typewriting and tabulating mechanism, the combination with a carriage, of a rotary helicoidal stop, a rotary key axially shiftable and connected by gearing to said helicoidal stop, a circular rack 35 connected to said key and movable by the shifting of the key, a registering tooth 36 to engage said rack when the key is shifted; and a carriage-releasing mechanism operable by the shifting of said key.

10. In a typewriting and tabulating mechanism, the combination with a carriage, of a carriage-releasing mechanism, a rotary helicoidal stop, means for rotating said stop, and means distinct from said rotating means for locking said stop against accidental rotation from its adjusted position during the movement of the carriage after the latter is released.

11. In a typewriting and tabulating mechanism, the combination with a carriage, of a helicoidal stop, a shaft with which said stop rotates, a spring upon said shaft for returning said stop, a rotary axially shiftable key, gearing between said key and said shaft and means rendered effective by the shifting of said key for locking said stop against accidental rotation.

12. In a typewriting and tabulating mechanism, the combination with a carriage, of a rotary helicoidal stop, a column stop bar, and column stops adjustable along said bar, the latter being pivoted so that when any column stop stands opposite said helicoidal stop, a rotation of the latter will force the column stop and bar to swing out of the way.

13. In a typewriting and tabulating mechanism comprising a carriage, the combination with a plurality of column stops adjustable to arrest the carriage at different points in its travel, and a stop to co-operate with any of said column stops, of a carriage-releasing device, a key connected to said carriage-releasing device, and means brought into action by the carriage-releasing movement of said key to control the speed of the released carriage; said controlling means including two relatively movable members caused by the carriage-releasing action of said key to rub together during substantially the entire range of travel of the carriage, one of said rubbing members being set at an angle to enable the carriage to effect throughout its run a gradual recession of one of said rubbing members, and means being provided to cause such recession to effect increased pressure between the rubbing members, to cause the final frictional opposition of said rubbing members to the movement of the carriage to be proportioned to the length of run of the carriage to the nearest column stop.

14. In a typewriting and tabulating mechanism, the combination with a carriage, of a stepped stop, a column stop bar, and column stops adjustable along said bar, the latter being pivoted so that when any column stop stands opposite said stepped stop, a movement of the latter will force the column stop and bar to swing out of the way.

852,325. PROCESS OF MAKING LEAD OXID. CLARENCE A. HALL, Philadelphia, Pa. Filed Nov. 17, 1905. Serial No. 287,762.

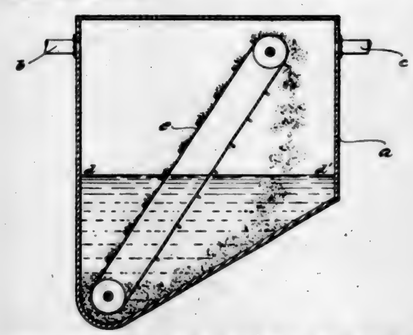

Claim.—1. The process of preparing lead oxid which consists in causing a body of comminuted water wet lead to repeatedly pass as a shower through a changing body of air under pressure to induce oxidation, repeatedly plunging the showers of lead particles into a body of water thereby detaching the oxid and exposing fresh surfaces of the lead particles for further oxidation, and repeating the foregoing steps until substantially all the lead is oxidized, substantially as described.

2. The process of preparing lead oxid which consists in causing a body of comminuted water wet lead to repeatedly pass as a shower through a changing body of hot air under pressure to induce oxidation, repeatedly plunging the showers of lead particles into a body of water thereby detaching the oxid and exposing fresh surfaces of the lead particles for further oxidation, and repeating the foregoing steps until substantially all the lead is oxidized, substantially as described.

3. The process of preparing lead oxid which consists in causing a body of water wet blown lead to repeatedly pass as a shower through a changing body of air under pressure to induce oxidation, repeatedly plunging the showers of lead particles into a body of water thereby detaching the oxid and exposing fresh surfaces of the lead particles for further oxidation, and repeating the foregoing steps until substantially all the lead is oxidized, substantially as described.

4. The process of preparing lead oxid which consists in causing a comminuted water wet body containing lead to

pass as a shower through a changing body of air under pressure to induce oxidation, plunging the showers of particles into a body of water, and repeating the foregoing steps until the desired degree of oxidation is attained, substantially as described.

852,326. APPARATUS FOR REPAIRING PNEUMATIC TIRES. FREDERICK L. HARLEY, Quakertown, Pa. Filed Dec. 22, 1906. Serial No. 349,101.

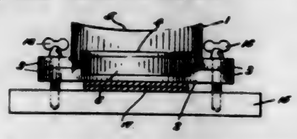

Claim.—1. Apparatus for repairing pneumatic tires which comprises two similar separable members arranged face to face and each having lateral attaching ears and a longitudinal groove on the abutting faces and whereof one is flat and the other convex on its outer face and the grooves of said members constituting a chamber, a heating unit or device detachably applied to the chamber and adapted to impart heat to said members, and clamping means for said ears, substantially as described.

2. Apparatus for repairing pneumatic tires which comprises a housing having a concaved and flat surface, an open ended chamber and a heating unit or device attached to the chamber and provided with electrical heating apparatus which includes a thermostatic cut-out, substantially as described.

3. Apparatus for repairing pneumatic tires which comprises a housing having a concave and a flat face and provided with laterally extending perforated lugs or ears and with electrical connections, clamping means engaging said ears or lugs, and electrical heating provisions arranged in the housing and including a thermostatic cut-out for limiting the heat, substantially as described.

852,327. PIPE-WRENCH. JOSEPH HARTIGAN, Mount Pleasant, Pa., assignor of one-fourth to Joseph P. Keller, Mount Pleasant, Pa. Filed Mar. 12, 1906. Serial No. 305,588.

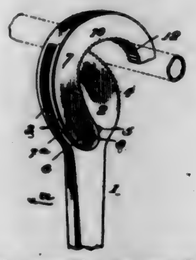

Claim.—A wrench comprising an operating jaw having oppositely curved gripping edges, and formed with a slot, each gripping edge formed with a series of serrations, and a receiving jaw pivotally connected to the operating jaw, a pin pivoting the two jaws together, said pin passing through the slot in the operating jaw, the receiving jaw having the relatively inner edge curved and formed with a series of serrations, a portion of the serrated edge of the receiving jaw curving concentrically of one of the serrated edges of the operating jaw, the remaining portion of the serrated edge of the receiving jaw curving concentrically to the other serrated edge of the operating jaw, whereby each of the serrated edges of the operating jaw is adapted for co-operating with a different portion of the serrated edge of the receiving jaw, when the pivot pin is at one end of the slot in the operating jaw, and a different relative relationship of the adjacent edges of the two jaws when said pivot pin is at the opposite end of said slot.

852,328. CORN-PROTECTOR. LOUIS C. HASSELMAN and HARRY M. SMITH, St. Louis, Mo. Filed May 14, 1906. Serial No. 316,841.

Claim.—1. A protector of the character described comprising a substantially U-shaped body tapered longitudinally in the direction of its opening, substantially as shown and described.

2. A protector of the character described comprising a substantially U-shaped body of soft material, tapered longitudinally in the direction of its opening and from its thick closed end to the pointed ends of its arms, substantially as shown and described.

3. A protector of the character described comprising a substantially U-shaped body of soft material, tapered longitudinally in the direction of its opening and from its thick closed end to the pointed ends of its arms, and an adhesive substance upon one face of said body, substantially as shown and described.

852,329. OPEN-SIDE PLANER. AUGUST JOHNSTON, Brooklyn, N. Y. Filed July 21, 1904. Serial No. 217,495.

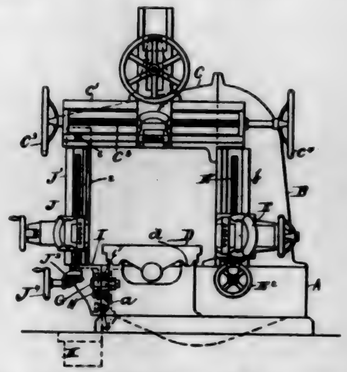

Claim.—In an open side planer, a bed a tool post column connected to and extending from the bed, a cross rail extending at right angles from the column forming a unit therewith, a swinging tool post bracket journaled to the bed on the open side of the planer, a bolt connecting one end of said bracket and the cross rail, tool holders on the column, cross rail and bracket arranged to operate independently of each other.

852,330. CARDING-MACHINE. MARTIN A. KEHOE, Philadelphia, Pa. Filed Dec. 12, 1906. Serial No. 347,426.

Claim.—1. The combination in a carding machine, of a ring doffer and wipe roll, a bearing carrying both the ring doffer and the wipe roll, means for adjusting said bearing toward and from the main cylinder of the carding machine, substantially as described.

2. The combination of the main frame of a carding machine, a bearing adjustably mounted on said frame, a ring doffer and wipe roll carried by said bearing, substantially as described.

3. The combination of the ring doffer and wipe roll of a carding-machine and their shafts, with an adjustable bearing for the ring doffer shaft, and a bearing for the wipe roll shaft carried by said ring doffer shaft bearing, but having a member movable longitudinally in respect thereto, substantially as described.

4. The combination of the ring doffer and wipe roll of a carding-machine and their shafts, with an adjustable bearing for the ring doffer shaft, and a bearing for the wipe roll shaft carried by said ring doffer shaft bearing, but having a member movable vertically in respect thereto, substantially as specified.

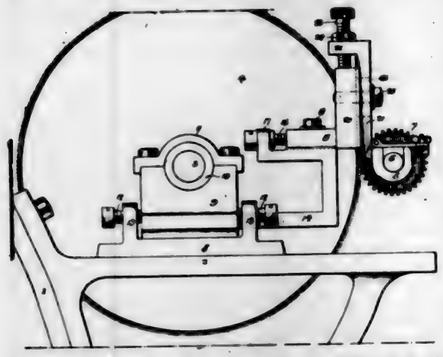

5. The combination of the ring doffer and wipe roll of a carding-machine and their shafts, with an adjustable bearing for the ring doffer shaft, and a bearing for the wipe roll shaft carried by said ring doffer shaft bearing, but having connected members, one movable longitudinally in respect to the ring doffer shaft and the other movable vertically in respect thereto, substantially as specified.

6. The combination of the ring doffer and wipe rolls of a carding-machine and their shafts, an adjustable bearing for the ring doffer shaft, an arm projecting therefrom, a slide longitudinally movable on said arm, means for adjusting and retaining said slide, a wipe roll shaft-hanger vertically adjustable on said slide, and means for adjusting and retaining said hanger on the slide, substantially as described.

852,331. GRAIN-DOOR. GEORGE W. KELLOGG, Grand Forks, N. D. Filed June 22, 1906. Serial No. 322,895.

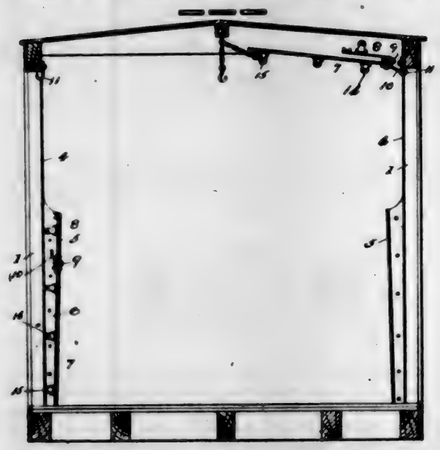

Claim.—In a car door, the combination of a door comprising the upper and the lower sections hinged together, the sections being composed of sheet metal reinforced by cross-bars of channel section, anti-friction rollers carried in the ends of the cross-bars, and metal guides, one at each side of the door, of which the lower part is of channel section, having a web and two flanges, the flanges converging toward the bottom, so that when the door is closed the rollers firmly engage the outer flange and force the sheet metal surface of the door against the inner surface of the inner flange, preventing escape of the contents of the car, the outer flange being extended above the top of the inner flange toward the top of the door opening, eyelets on the top of the lower door section, and hooks at the top of the door to engage the eyelets.

852,332. PAPER PATTERN. GEORGE M. LAUB, New York, N. Y., assignor to May Manton Pattern Company, New York, N. Y., a Corporation of New York. Filed July 11, 1906. Serial No. 325,710.

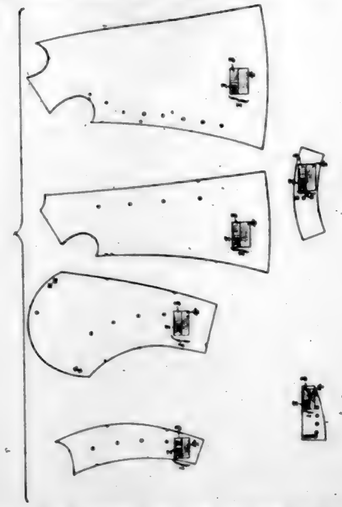

Claim.—1. In garment patterns, sections of the same, each section having an identifying mark or symbol common to all the sections.

2. In garment patterns, sections of the same, each section having an identifying mark or symbol common to all the sections, the name of the section and instructions for its use, displayed thereon.

3. In garment patterns, sections of the same, each section having an identifying reference mark or symbol common to all the sections and consisting of a number representing the "bust" "waist" or other measurement of the garment for which the pattern is intended, such number being employed as a key.

4. In garment patterns, sections of the same, each section having an identifying reference mark or symbol common to all the sections and consisting of a number representing the "bust," "waist" or other measurement of the garment for which the pattern is intended, such number being employed as a key, in combination with the name of the part of the garment each pattern section represents.

5. In garment patterns, sections of the same, each section having an identifying reference mark or symbol common to all the sections and consisting of a number representing the "bust," "waist" or other measurement of the garment for which the pattern is intended, such number being employed as a key, in combination with the name of the part of the garment each pattern section represents, such data being printed in several languages.

6. In garment patterns, sections of the same, each section containing a common identifying reference mark or symbol consisting of a number representing the "bust," "waist" or other measurement, in combination with the name of the section, the name of the garment of which it is a pattern section, and instructions for its use, the whole being shown in several languages in a frame or panel suitably displayed upon each section, and the data of the respective items separated by dividing lines.

852,333. AIR-VALVE FOR RADIATORS. FRED W. LEUTHESSER, Chicago, Ill., assignor to Monash-Younker Company, Chicago, Ill., a Corporation of Illinois. Original application filed Apr. 5, 1902, Serial No. 101,475. Divided and this application filed Mar. 24, 1904. Serial No. 199,825.

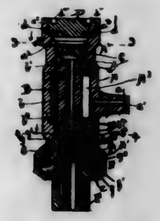

Claim.—1. In an air valve for radiators, the combination of a shell or casing having a chamber therein with an opening at each end of the chamber and an inlet leading into the chamber between its ends, an expansible member or stem having an acting or seating upper end, a socket snugly entered into the lower end of the shell or casing at the terminus of the lower end of the chamber and having fixedly secured therein the lower end of the expansible member or stem, the socket having a depending flange on its under face and when inserted tightly and atmospherically closing the opening at the lower end of the chamber of the shell or casing, an adjustable seat for the acting or seating end of the expansible member or stem, located and movable within the upper end of and below and clear of the top of the shell or casing, and when in place tightly and atmospherically closing the opening at the upper end of the chamber of the shell or casing, with a space at the top of the shell or casing above the adjustable seat, a coupling nut entered onto the lower end of the shell or casing, and a coupling nipple carried by the nut and entered into the lower end of the shell or casing and engaging the depending flange of the socket and effecting an additional seal for the lower end of the chamber, substantially as described.

2. In an air valve for radiators, the combination of a shell or casing having a chamber therein with an opening at each end of the chamber and an inlet leading into the chamber between its ends, an expansible member or stem having an acting or seating upper end, a socket snugly entered into the lower end of the shell or casing at the terminus of the lower end of the chamber and having fixedly secured therein the lower end of the expansible member or stem, the socket having a depending flange on its under face and when inserted tightly and atmospherically closing the opening at the lower end of the chamber of the shell or casing, an adjustable seat for the acting or seating end of the expansible member or stem, located and movable within the upper end of and below and clear of the top of the shell or casing, and when in place tightly and atmospherically closing the opening at the upper end of the chamber of the shell or casing, with a space at the top of the shell or casing above the adjustable seat, a coupling nut entered onto the lower end of the shell or casing, a coupling nipple carried by the nut and entered into the lower end of the shell or casing and engaging the depending flange of the socket and effecting an additional seal for the lower end of the chamber, and a removable closing and sealing cap entered into the interior of and engaged with the upper end of the shell or casing and located above the adjustable seat for effecting a double sealing at the upper end of the chamber of the shell or casing and enabling access to be had to the adjustable seat without breaking the seal of the adjustable seat, substantially as described.

3. In an air valve for radiators, the combination of a shell or casing having a chamber therein with an opening at each end of the chamber the wall forming the lower opening having formed therein an under cut shoulder, an inlet leading into the chamber between its ends, an expansible member or stem, located in the chamber and having an acting or seating upper end, and a socket having fixedly secured therein the lower end of the expansible member or stem, the socket having a rim or wall to enter and engage with a wall of the shell or casing and having an enlarged lower end forming a shoulder adapted to engage from below the under cut shoulder on the wall of the shell or casing, for the socket with its shoulder, the stem, and the wall of the shell or casing with its shoulder to tightly close and furnish an atmospheric seal for the opening at the lower end of the chamber of the shell or casing, substantially as described.

4. In an air valve for radiators, the combination of a shell or casing having a chamber therein with an opening at each end of the chamber and an inlet leading into the chamber between its ends, an expansible member or stem located in the chamber and having an acting or seating upper end, a socket having fixedly secured therein the lower end of the expansible member or stem the socket having a rim or wall to enter and engage with a wall of the shell or casing and having a shoulder at the start of the rim or wall to engage from below a shoulder on the wall of the shell or casing, for the socket with its shoulder, the stem, and the wall of the shell or casing with its shoulder to tightly close and atmospherically seal the opening and the lower end of the chamber of the shell or casing, and an adjustable seat for the acting or seating end of the expansible member or stem, located and movable in the open upper end of and below and clear of the shell or casing, and when in place closing and atmospherically sealing the opening at the upper end of the chamber of the shell or casing, substantially as described.

5. In an air valve for radiators, the combination of a shell or casing having a chamber therein with an opening ar each end of the chamber and an inlet leading into the chamber between its ends, an expansible member or stem located in the chamber and having an acting or seating upper end, a socket having fixedly secured therein the lower end of the expansible member or stem, the socket having on its under side a depending flange with an inner contact edge and having a rim or wall to enter and engage with a wall of the shell or casing and having a shoulder at the start of the rim or wall to engage from below a shoulder on the wall of the shell or casing, for the socket with its shoulder, the stem, and the wall of the shell or casing with its shoulder to tightly close and atmospherically seal the opening and the lower end of the chamber of the shell or casing, a coupling nut entered onto the lower end of the shell or casing, and a coupling nipple entered into the coupling nut and having a bearing end to engage with the contact edge of the depending flange of the socket, making a joint for effecting an additional atmospheric sealing for the chamber of the shell or casing at its lower end, substantially as described.

852,334. CHECK-VALVE. RAYMOND W. LEWIS, Findlay, Ohio. Filed Jan. 25, 1906. Serial No. 297,829.

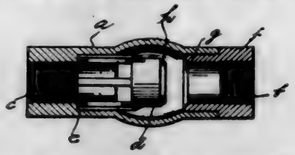

Claim.—A three part check valve comprising a casing including a central enlarged portion and reduced cylindrical end portions, one of said end portions having the outer portion of its bore internally threaded to receive a pipe and having the inner portion of its bore enlarged and forming a guide, there being a resultant shoulder between the reduced and enlarged portions of the bore, a valve comprising a body portion within the central portion of the casing and integral fingers slidably fitting in said guide and adapted to rest against said shoulder when the valve is open, and a short tube section screwed into the opposite end portion of the casing and having a valve seat formed at its inner end to receive said valve in its closed position and having its outer end internally threaded to receive a pipe, the valve being removable through one end of the casing when the valve seat is disengaged.

852,335. HOSE-SUPPORTER. CARL J. LJUNGGREN, Providence, R. I. Filed Nov. 27, 1906. Serial No. 345,333.

Claim.—1. A device of the character described, embracing a clasp provided with engaging arms or branches requisitely spaced apart, to receive between them the object to be engaged and adapted for stressing the latter and means effective for the retention of said clasp in position under stress.

2. A device of the character described, embracing a clasp provided with engaging arms or branches, separated a slight interval apart and having its head-end provided with opposed slots, and a band or garter proper having one end looped through one slot and its other end equipped with a hook or clip effective for engagement with the other slot.

3. A device of the character described, embracing a clasp member provided with engaging arms or branches separated a slight interval apart and equipped upon their outer lateral edges with teeth or corrugations, said clasp-member also having its head end provided with opposed inclined slots and a band or garter proper having one end looped through one of said slots and its other end adjustably looped through, and equipped with a clip or hook effective for engagement with the other of said slots.

852,336. BANDED STAVE-PIPE. JOHN S. F. MARKS, Olympia, Wash., assignor to National Wood Pipe Company, San Francisco, Cal., a Corporation of California. Filed Mar. 29, 1906. Serial No. 308,629.

Claim.—1. A wire-end securing clip comprising a rectriangular-shaped piece of metal, upwardly projecting ears arranged on two of its opposite corners, downwardly projecting ears on the other two of said corners, said downwardly projecting ears adapted to engage the body around which the wire is wrapped, and the upwardly extending ears adapted to be bent over and engage said wire, substantially as described.

2. The combination with a stave-pipe, and the winding-band, of a clip comprising a rectangular-shaped bed-plate, having downwardly extending pipe engaging ears on each of two of its corners, and upwardly extending ears on each of its other two corners, said second named ears adapted to engage said winding band.

852,337. PIPE-WINDING MACHINE. JOHN S. F. MARKS, Olympia, Wash., assignor to National Wood Pipe Company, San Francisco, Cal., a Corporation of California. Filed Apr. 13, 1906. Serial No. 311,493.

Claim.—1. A pipe winding machine consisting of the machine-frame having ways, a tail-stock, a head-frame, a mandrel carrying a face-plate for the tail-stock and also for the head-frame, devices for connecting the face-plates to the ends of a pipe, a screw shaft, disengageable means to drive the screw shaft, a carriage upon the frame-ways and adapted to be slidably moved by said screw-shaft, a spool rotatably mounted upon said carriage, and frictional devices for adjustably retarding the rotation of said spool.

2. A pipe winding machine consisting of the machine-frame having ways, a tail-stock, a head-frame, a mandrel carrying a face-plate for the tail-stock and also for the head-frame, devices for connecting the face-plates to the ends of a pipe, a screw-shaft, disengageable means to drive the screw shaft, a carriage upon the frame-ways and adapted to be slidably moved by said screw shaft, a spool rotatably mounted upon said carriage, frictional devices for adjustably retarding the rotation of said spool, and a steady rest adjustably connected with said carriage.

3. A pipe winding machine consisting of the machine-frame having ways, a tail-stock, a head-frame, a mandrel carrying a face plate for the tail-stock and also for the head-frame, devices for connecting the face-plates to the ends of a pipe, a screw shaft, disengageable means to drive the screw shaft, a carriage upon the frame-ways and adapted to be slidably moved by said screw shaft, a spool rotatably mounted upon said carriage, frictional devices for adjustably retarding the rotation of said spool, and a steady rest adjustably connected with said carriage by a hinged support.

4. A pipe winding machine consisting of the machine-frame having ways, a tail-stock, a head-frame, a mandrel carrying a face-plate for the tail-stock and also for the head-frame, devices for connecting the face plates to the ends of a pipe, a screw shaft, disengageable means to drive the screw shaft, a carriage upon the frame-ways and adapted to be slidably moved by said screw-shaft, a spool rotatably mounted upon said carriage, and frictional devices for adjustably retarding the rotation of said spool, and a steady rest adjustably connected with said carriage by a hinged support.

5. In a pipe winding machine, the combination of the machine-frame having ways, a tail-stock, a mandrel carrying a tail face-plate, a head frame, a mandrel carrying a head face-plate journaled in the head frame, chucking devices for the head face-plate, a screw shaft journaled in bearings of the machine frame, driving connections for said screw shaft, a carriage slidably mounted on the said ways and operatively connected with said screw shaft, a spool upon the carriage, and adjustable friction devices engaging the spool.

6. In a pipe winding machine, the combination of the machine-frame having ways, a tail stock, a mandrel carrying a tail face-plate, a head frame, a mandrel carrying a head face-plate journaled in the head frame, chucking devices for the head face-plate, a screw shaft journaled in bearings of the machine frame, driving connections for said screw-shaft, a carriage slidably mounted on the said ways and operatively connected with said screw shaft, a spool upon the carriage, adjustable friction devices engaging the spool, and a pipe steady-rest connected with the carriage by a hinged support.

7. In a pipe winding machine, the combination of the machine-frame having ways, a tail stock, a mandrel carrying a tail face-plate, a head frame, a mandrel carrying a head face-plate journaled in the head frame, chucking devices for the head face-plate and comprising a plurality of radially adjustable dogs adapted to be interiorly engaged with the end of a pipe, a screw shaft journaled in bearings of the machine frame, driving connections for said screw shaft, a carriage slidably mounted on the said ways and operatively connected with said screw shaft, a spool upon the carriage, and adjustable friction devices engaging the spool.

8. In a pipe winding machine, the combination of the machine-frame having ways, a tail stock, a mandrel carrying a tail face-plate, a head frame, a mandrel carrying a head face-plate journaled in the head frame, a detachable socket ring for each of said face-plates, chucking devices for the head face-plate, a screw shaft journaled in bearings of the machine-frame, driving connections for said screw-shaft, a carriage slidably mounted on the said ways and operatively connected with said screw shaft, a spool upon the carriage, and adjustable friction devices engaging the spool.

9. In a pipe winding machine, the combination of the machine-frame having ways, a tail stock, a mandrel carrying a tail face-plate, a head frame, a mandrel carrying a head face-plate journaled in the head frame, chucking devices for the head face-plate, a screw shaft journaled in bearings of the machine frame, driving connections for said screw shaft, means for operatively engaging or disengaging said driving connections, a carriage slidably mounted on the said ways and operatively connected with said screw shaft, a spool upon the carriage, adjustable friction devices engaging the spool, and a pipe steady-rest connected with the carriage by a hinged support.

10. In a pipe winding machine, the combination of the machine-frame having ways, a tail stock, a mandrel carrying a tail face-plate, a head frame, a mandrel carrying a head face-plate journaled in the head frame, chucking devices for the head face-plate and comprising a plurality of radially adjustable dogs adapted to be interiorly engaged with the end of a pipe, a screw shaft journaled in bearings of the machine frame, driving connections for said screw-shaft, a carriage slidably mounted on the said ways and operatively connected with said screw shaft, a spool upon the carriage, adjustable friction devices engaging the spool, and a pipe steady-rest connected with the carriage by a hinged support.

11. In a pipe winding machine, the combination of the machine-frame having ways, a tail stock, a mandrel carrying a tail face-plate, a head frame, a mandrel carrying a head face-plate journaled in the head frame, chucking devices for the head face-plate and comprising a plurality of radially adjustable dogs adapted to be interiorly engaged with the end of a pipe, a screw shaft journaled in bearings of the machine frame, driving connections for said screw shaft, means for operatively engaging or disengaging said driving connections, a carriage slidably mounted on the said ways and operatively connected with said screw shaft, a spool upon the carriage, and adjustable friction devices engaging the spool.

12. In a pipe winding machine, the combination of the machine-frame having ways, a tail stock, a mandrel carrying a tail face-plate, a head frame, a mandrel carrying a head face-plate journaled in the head frame, a detachable socket ring for each of said face-plates, chucking devices for the head face-plate, a shaft journaled in the head frame, a shaft intermediate the last named mandrel and the other shaft and in geared connection with both, a slidable clutch member upon the first named shaft adapted to be engaged with either of two pulleys which are likewise mounted upon this shaft, means to effect such engagement with the pulleys, said pulleys, a screw shaft journaled in bearings of the machine frame, driving connections for said screw shaft, a carriage slidably mounted on the said ways and operatively connected with said screw shaft, a spool upon the carriage, adjustable friction devices engaging the spool, and a pipe steady-rest connected with the carriage by a hinged support.

13. In a pipe winding machine, the combination of the machine-frame having ways, a tail stock, a mandrel carrying a tail face-plate, a head frame, a mandrel carrying a head face-plate journaled in the head frame, a detachable socket ring for each of said face-plates, chucking devices for the head face-plate, a shaft journaled in the head frame, a shaft intermediate the last named mandrel and the other shaft and in geared connection with both, a slidable clutch member upon the first named shaft adapted to be engaged with either of two pulleys which are likewise mounted upon this shaft, means to effect such engagement with the pulleys, said pulleys, a screw shaft journaled in bearings of the machine frame, driving connections for said screw shaft, means for operatively engaging or disengaging said driving connections, a carriage slidably mounted on the said ways and operatively connected with said screw shaft, a spool upon the carriage, and adjustable friction devices engaging the spool.

14. In a pipe winding machine, the combination of the machine-frame having ways, a tail stock, a mandrel carrying a tail face-plate, a head-frame, a mandrel carrying a head face-plate journaled in the head frame, a detachable socket ring for each of said face-plates, chucking devices for the head face-plate and comprising a plurality of radially adjustable dogs adapted to be interiorly engaged with the end of a pipe, a shaft journaled in the head frame, a shaft intermediate the last named mandrel and the other shaft and in geared connection with both, a slidable clutch member upon the first named shaft adapted to be engaged with either of two pulleys which are likewise mounted upon this shaft, means to effect such engagement with the pulleys, said pulleys, a screw shaft journaled in bearings of the machine frame, driving connections for said screw shaft, a carriage slidably mounted on the said ways and operatively connected with said screw shaft, a spool upon the carriage, and adjustable friction devices engaging the spool.

15. In a pipe winding machine, the combination of the machine-frame having ways, a tail stock, a slidable frame upon said tail stock, power devices for moving the slidable frame, a mandrel carrying a tail face-plate journaled in said sliding frame, a head frame, a mandrel carrying a head face-plate journaled in the head frame, a detachable socket ring for each of said face-plates, chucking devices for the head face-plate and comprising a plurality of radially adjustable dogs adapted to be interiorly engaged with the end of a pipe, a shaft journaled in the head frame, a shaft intermediate the last named mandrel and the other shaft and in geared connection with both, a slidable clutch member upon the first named shaft adapted to be engaged with either of two pulleys which are likewise mounted upon this shaft, means to effect such engagement with the pulleys, said pulleys, a screw shaft journaled in bearings of the machine frame, driving connections for said screw shaft, means for operatively engaging or disengaging said driving connections, a carriage slidably mounted on the said ways and operatively connected with said screw shaft, a spool upon the carriage, adjustable friction devices engaging the spool, and a pipe steady-rest connected with the carriage by a hinged support.

852,338. ELECTRIC STOVE. ALBERT L. MARSH, Lake Bluff, Ill., assignor to Hoskins Co., Chicago, Ill., a Corporation of Illinois. Filed Feb. 18, 1907. Serial No. 358,003.

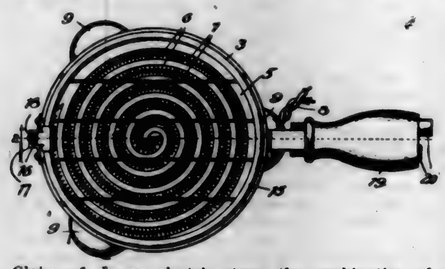

Claim.—1. In an electric stove, the combination of a block of refractory material provided on its outer surface with an uncovered groove, an electrical resistance conductor confined under exposure to the atmosphere in said groove, and terminals, with which said conductor is connected, for coupling it to a supply of current.

2. In an electric stove, the combination of a block of refractory material provided about its outer surface with a spiral uncovered groove, an electrical resistance conductor confined under exposure to the atmosphere in said groove, and terminals, with which said conductor is connected, for coupling it to a supply of current.

3. In an electric stove, the combination of a block of refractory material provided about its outer surface with a spiral uncovered groove, a helical electrical resistance wire laid along and confined under exposure to the atmosphere in said groove, and terminals, with which said wire is connected, for coupling it to a supply of current.

4. In an electric stove, the combination of a block of refractory material provided about its outer surface with an uncovered groove, an electrical resistance conductor confined under exposure to the atmosphere in said groove, terminals, with which said conductor is connected, for coupling it to a supply of current, a handle on the stove, and an electric switch on the handle.

5. In an electric stove, the combination of a base, a metal ring on supports rising from said base, a block of refractory material within said ring and provided on its upper surface with an uncovered groove, an electrical resistance conductor confined under exposure to the atmosphere in said groove, and terminals, with which said conductor is connected, for coupling it to a supply of current.

6. In an electric stove, the combination of a heat-insulating base, a metal ring on supports rising from said base, a block of refractory material seated in said ring and provided on its upper surface with a spiral uncovered groove, a helical electric resistance wire laid along and confined under exposure to the atmosphere in said groove, and terminals, with which said wire is connected, for coupling it to a supply of current.

7. In an electric stove, the combination of a body having a block of refractory material provided on its upper surface with a groove, an electrical resistance element confined in said groove, terminals, with which said conductor is connected, for coupling it to a supply of current, and a support surmounting said block.

8. In an electric stove, the combination of a heat-insulating base, a metal ring on supports rising from said base, a block of refractory material seated in said ring and provided on its upper surface with a spiral groove, a helical electrical resistance wire laid along and confined in said groove, terminals, with which said wire is connected, for coupling it to a supply of current, and a grid adjustably supported to surmount said block.

9. An electric stove comprising, in combination, a heat-insulating base, a metal ring on supports rising from said base, a block of refractory material seated in said ring and provided on its upper surface with a groove, an electrical resistance conductor confined in said groove, terminals, with which said conductor is connected, for coupling it to a supply of current, a handle on said ring, and an electric switch on the handle.

852,339. PLANING-MACHINE. ROBERT J. MINNERY, Portsmouth, Ohio. Filed Sept. 1, 1906. Serial No. 332,064.

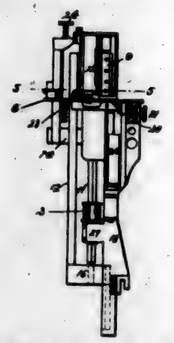

Claim.—1. In a planing machine, a cutter-head, knives adapted to be attached thereto, said cutter head and knives being in multiples in length of the surface which they are to dress, means for adjusting and holding them during the cutting operation in different positions of such lengths to engage the work, whereby as a partial surface of said knives may become dulled, a sharpened undulled portion of the knife blades may be presented to the work, substantially as described.

2. In a planing machine, a plurality of cutter-heads, knives adapted to be attached thereto, said cutter-heads and knives occupying two or more sides of a guide throat, said cutter head and knives being in multiples in length of the surfaces which they are to dress, means for adjusting and holding them during the cutting operation in different positions of such lengths to engage the work, and supports for the work to be dressed, whereby as a partial surface of said knives becomes dulled, a sharpened undulled portion of the knife blades may be presented to the work, substantially as described.

3. In a planing machine, a throat composed of supports for the work and adjustable both longitudinally and vertically, cutter-heads provided with knives having a proper bite within said throat, said cutter heads and knives being in multiples in length of the surfaces which they are to dress, means for adjusting and holding them during the cutting operation in different positions of such lengths to engage the work, and driving mechanism for said cutter-heads and knives, substantially as described.

852,340. BELT-CUTTER. RICHARD T. MORE, Dayton, Ohio. Filed Feb. 1, 1907. Serial No. 355,297.

Claim.—1. In a cutter for flexible material, a base rod, a cutting knife supported on said base rod, an adjustable gage on said base rod on each side of said knife, and a guide-rod supported in said gages parallel with said base rod, substantially as and for the purpose specified.

2. In a cutter for flexible material, a base rod, a knife supported thereon, an adjustable gage on each side of said knife, a guide rod supported in said gages parallel with said base rod, and means for adjusting the distance between the respective base and guide rods, substantially as and for the purpose specified.

3. In a cutter for flexible material, a base rod, an angularly projecting knife supported in a lateral projection on said base rod, a gage on said base rod located on each side of said knife, with means for adjustably securing said

gages in different positions on said base rod, graduations on said base rod on one side of said knife, and an adjustable guide rod located in said gages and extending parallel with the base rod, substantially as and for the purpose specified.

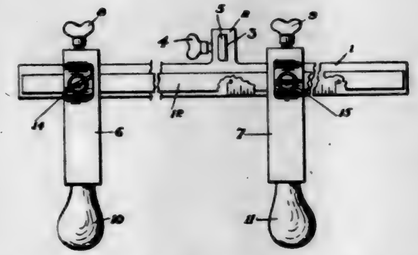

4. In a cutter for flexible material, a base rod, a knife supported thereon, a gage located on said base rod on each side of said knife, means for adjusting the positions of the knife and gages relative to each other to correspond to the width of the material and to the width of cut, and a guide rod supported in said gages parallel with said base rod, substantially as specified.

852,341. PIPE-CUTTER. PETER MCGREGOR, Chicago, Ill. Filed Feb. 5, 1907. Serial No. 355,918.

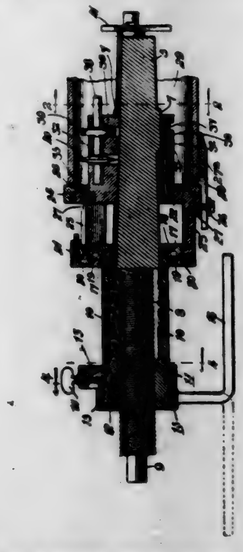

Claim.—1. In a pipe cutter, the combination of a tapered mandrel terminating at its rear end in a screw threaded stem, a mounting for the stem, a portion of said mounting being removable to permit the retraction of the stem, means for clamping the removable portion of the mounting in place, a cutter head, a mounting therefor, and cutters within the head adapted to be expanded by the movement of the mandrel, substantially as described.

2. In a pipe cutter, the combination of a tapered mandrel terminating at its rear end in a screw threaded stem, a mounting for the stem, a portion of said mounting being removable to permit the retraction of the stem, a housing surrounding the mounting, an adjustable screw entered through the housing and adapted to clamp the removable section of the mounting in place, a cutter head, a mounting therefor, and cutters carried by the head and adapted to be distended by a movement of the mandrel, substantially as described.

3. In a pipe cutter, the combination of a tapered mandrel terminating at its rear end in a screw threaded stem, a sleeve surrounding the stem and having a head provided with a screw threaded opening through which the stem is entered, a frame-work surrounding the sleeve, a ball bearing mounting between the frame and sleeve, a cutter comprising sections adapted to be distended by the movement of the mandrel, said sections being mounted to the frame-work and revoluble therewith in conformity with the revolution of the mandrel, and cutters within the sections, substantially as described.

4. In a pipe cutter, the combination of a tapered mandrel terminating at its rear end in a screw threaded stem, a sleeve surrounding the stem and having a head provided with a screw threaded opening through which the stem is entered, a frame-work surrounding the sleeve, a ball bearing mounting between the frame and sleeve, a cutter comprising sections adapted to be distended by the movement of the mandrel, said sections being mounted to the frame-work and revoluble therewith in conformity with the revolution of the mandrel, and cutters and rollers mounted within the sections of the head, substantially as described.

5. In a pipe cutter, the combination of a triangular mandrel terminating in its rear end in a screw threaded stem, a sleeve surrounding the stem, a head through which the screw threaded stem is entered, a portion of said head being removable to permit the retraction of the stem, means for clamping the removable portion of the head in place, a frame-work revoluble around the sleeve, a sectional cutter head revoluble with and adapted to be distended by the mandrel, the sections of the cutter head being mounted to the frame and revolve therewith, and cutters within the sections of the cutter head, substantially as described.

6. In a pipe cutter, the combination of a triangular mandrel terminating in its rear end in a screw threaded stem, a sleeve surrounding the stem, a head through which the screw threaded stem is entered, a portion of said head being removable to permit the retraction of the stem, means for clamping the removable portion of the head in place, a frame-work revoluble around the sleeve, a sectional cutter head revoluble with and adapted to be distended by the mandrel, the sections being each provided with a dove tail lug adapted to enter a co-operating channel within the frame for holding the parts together and permitting the in-and out-movement of the sections, and cutters within the sections, substantially as described.

7. In a pipe cutter, the combination of a triangular mandrel, a sleeve surrounding the mandrel and provided with an annular flange at its forward end, the flange having in its rear face a ball bearing track, balls within the track, a frame comprising a ring bearing against the balls, a forward wall and arms connecting the ring and wall, the forward wall being provided with radially extending dove tail slots, a sectional cutter head, each of the sections being provided with a dove tail lug adapted to enter one of the slots, a ring surrounding the wall of the frame and adapted to permit rotation thereof, cutters within the sections of the cutter head, rollers within the sections of the cutter head, and a split ring spring surrounding the sections and binding them together, substantially as described.

8. In a pipe cutter, the combination of a tapered mandrel terminating at its rear end in a screw threaded stem, a mounting for the stem, a portion of said mounting being removable to permit retraction of the stem, means for clamping the removable portion of the mounting in place, a sectional cutter head, a mounting therefor, and cutters within the sections, substantially as described.

9. In a pipe cutter, a sectional cutter head, each of the sections being provided with a shaft having mounted thereon a cutter and a roller of lesser diameter than the cutter, and means for distending and revolving the sections of the cutter head, substantially as described.

852,342. ELECTRIC GAS-IGNITER. FRANKLIN C. NICKEL, JOHN E. MARTIN, and CHARLES E. BLACKBURN, Jacksonville, Ill. Filed Feb. 6, 1906. Serial No. 299,739.

Claim.—1. An igniter comprising a valve, an angular stem movable therewith, a bracket, a clip mounted upon and insulated from the bracket, said clip having oppositely-extending tongues, a coil seated upon one of the tongues, a hook integral with the coil and engaging the other tongue and a resilient stem projecting from the coil into the path of the first mentioned stem.

2. In an igniter, the combination with an angular bracket adapted to be secured to a fixture; of a clip mounted upon and insulated from the bracket and having integral oppositely-extending tongues, a coil mounted on one of the tongues, a hook integral with the coil and engaging the other tongue and a resilient contact projecting from the coil.

3. The combination with a fixture having a burner thereon; of an angular bracket clamped upon the fixture by the burner, a clip secured to the upper end of said bracket a valve, a stem projecting from the valve, oppositely-extending tongues integral with the clip, a coil mounted on one of the tongues, a hook integral with the coil and engaging the other tongue and a resilient contact extending from the coil into the path of the stem.

4. The combination with a fixture having a burner thereon; of an L-shaped bracket clamped upon the fixture by the burner, a U-shaped clip secured to and insulated from the upper end of said bracket, oppositely extending tongues integral with said clip, a coil mounted on one of the tongues, a hook integral with the coil and engaging the other tongue, a resilient contact extending from the coil, a valve, a stem projecting from the valve and into the path of said resilient contact.

852,343. MEANS FOR DELIVERING MEASURED QUANTITIES OF LIQUID. RICHARD P. PARK, South Melbourne, Victoria, Australia, assignor to Frederick Charles Bird, Lynchford, Australia. Filed Dec. 29, 1906. Serial No. 349,988.

Claim.—1. The combination with a can, comprising a storage chamber and a communicating measuring chamber, provided with an outlet, of a reciprocating spindle passing through said chambers, a valve loosely mounted on said spindle adjacent said outlet and normally closing said outlet, a valve loosely mounted on said spindle at the upper end of said measuring chamber and normally maintaining open communication between said storage chamber and said measuring chamber, and means coöperating with said spindle and valves to initially close said upper valve against its seat upon the upward movement of said spindle and upon continued upward movement to raise said lower valve from its seat, and upon the return movement of said spindle to initially close said lower valve oh its seat before opening communication between said storage and measuring chambers, substantially as described.

2. The combination with a can comprising a storage and measuring chamber, an outlet being provided for said measuring chamber, and a communicating passage being formed between said measuring chamber and said storage chamber, of a spindle passing through said chambers, a valve loosely mounted on said spindle and coöperating with said outlet, a second valve loosely mounted on said spindle at the upper end of said measuring chamber, a spring interposed between said valves for normally supporting said upper valve in its open position, means carried by said spindle engaging said lower valve during the upward movement of said spindle, and means for reciprocating said spindle, substantially as described.

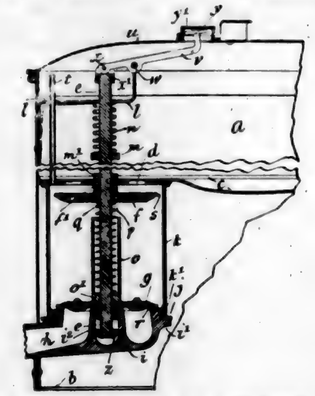

3. The combination with a can comprising a storage chamber and a communicating measuring chamber provided with an outlet, of a spindle passing through said chambers, an outlet valve loosely mounted on the lower end of said spindle, an upper valve loosely mounted on said spindle at the upper end of said measuring chamber, a stop secured to said spindle between said valves, and springs interposed between said stop and upper valve, means for reciprocating said spindle, and means carried by the lower end of said spindle for engaging said outlet valve at a predetermined point in the upper movement of said spindle, substantially as described.

4. The combination with a can comprising a storage chamber and a communicating measuring chamber provided with an outlet, of a reciprocating spindle passing through said chambers, an outlet valve loosely mounted on said spindle at its lower end, an upper valve loosely mounted on said spindle and provided with a boss, abutments carried by said spindle above said upper valve, the lower one of said abutments coöperating with said boss, substantially as described, a spring engaging said upper abutment and a rigid part of said can, a stop secured to said spindle comprising a cylindrical hollow member disposed between said valves, a spring contained within said hollow stop and normally supporting said upper valve in its open position, and a stop carried at the lower end of said spindle for engaging said outlet valve at a predetermined position in the upward stroke of said spindle, and a lever pivotally connected to said spindle, substantially as described.

5. The combination with a can comprising a storage chamber and a measuring chamber, said measuring chamber being provided with an outlet consisting of a base member having an upwardly extending cup formed thereon and forming with the upper edge of said base member a valve seat, of a reciprocating spindle extending through said chambers and disposed at its lower end in said cup member, a valve loosely mounted on said spindle, adapted to be normally seated on said cup and base member, means for opening and closing communication between said chambers, and means for reciprocating said spindle, substantially as described.

852,344. SUPERVISORY SIGNAL SYSTEM. CHARLES F. PATTERSON, New York, N. Y. Filed June 14, 1906. Serial No. 321,725.

Claim.—1. The combination with a supervisory signal system comprising receiving means, circuits, and a plurality of transmitters comprising transmitting mechanism, a

periodic controller therefor, and other independent controlling means, of a plurality of objects to be supervised, removable with respect to said transmitters and provided with means whereby said independent controlling device of each transmitter is operated when the corresponding object to be supervised is removed and again when the same is returned.

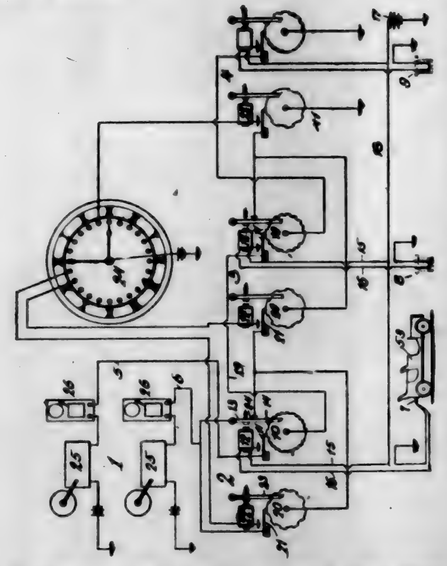

2. The combination with a supervisory signal system comprising receiving means, circuits, and a plurality of transmitters comprising transmitting mechanism, a periodic controller therefor, and other independent controlling means, of a plurality of objects to be supervised, removable with respect to said transmitters and provided with means whereby said independent controlling device of each transmitter is operated when the corresponding object to be supervised is removed and again when the same is returned, said transmitting means each comprising means preventing transmission of the periodic signals during the absence of the corresponding object to be supervised.

3. In a supervisory signaling system, the combination of transmitters, one for each object supervised comprising alarm-circuit and time-circuit transmitting devices, means operated by one of said transmitting devices for cutting out the other such transmitting device, and controlling means comprising separable members, one connected to said transmitting means and the other adapted for connection to an object to be supervised.

4. In a supervisory signaling system, the combination of a series of transmitting means each comprising alarm-circuit and time-circuit transmitting devices, a time-controlled operating device for a group of such time-circuit transmitting devices operatively connected thereto and arranged to cause the same to operate in rotation, controlling means for said alarm-circuit transmitting devices arranged to operate the latter upon the departure of the object to be supervised and again upon the return of the latter, and means for cutting out the time signals of each transmitter during the absence of the corresponding object to be supervised.

5. In a supervisory signaling system, the combination of a plurality of transmitters, one for each object supervised, comprising alarm-circuit and time-circuit transmitting devices, each comprising a controlling magnet, an armature operated thereby, and means controlled by said armature controlling the operation of the corresponding transmitting device, a main controller for causing said time-circuit magnets to operate periodically in rotation, controlling means for the alarm-circuit transmitting device of each such transmitter and electrical contact means operated by the armature of each alarm-circuit transmitting device and arranged to cut out the corresponding time-circuit transmitting device in one position of the armature of said alarm-circuit device.

6. In a supervisory signaling system, the combination with two line circuits, and signal receiving means connected thereto, of a plurality of transmitters, one for each object supervised, each such transmitter comprising means for transmitting signals periodically through one of said circuits and means for transmitting signals through the other of said circuits when specially operated to that end, and controlling means for each such transmitter arranged to be operated automatically upon departure and return of the object supervised.

7. In a supervisory signaling system, the combination with two line circuits, and signal receiving means connected thereto, of a plurality of transmitters, one for each object supervised, each such transmitter comprising means for transmitting signals periodically through one of said circuits and means for transmitting signals through the other of said circuits when specially operated to that end, and controlling means for each such transmitter arranged to be operated automatically upon departure and return of the object supervised, said transmitters each comprising means for cutting out the periodic signals during absence of the object supervised.

8. In a supervisory signaling system, the combination with two line circuits, and signal receiving means connected thereto, of a plurality of transmitters, one for each object supervised, each such transmitter comprising means for transmitting signals periodically through one of said circuits and means for transmitting signals through the other of said circuits when specially operated to that end, controlling means for each such transmitter arranged to be operated automatically upon departure and return of the object supervised, and a periodic controller controlling the transmission of periodic signals by said transmitters and arranged to cause the same to be transmitted by the several transmitters successively.

9. In a supervisory signaling system, the combination with two line circuits, and signal receiving means connected thereto, of a plurality of transmitters, one for each object supervised, each such transmitter comprising means for transmitting signals periodically through one of said circuits and means for transmitting signals through the other of said circuits when specially operated to that end, controlling means for each such transmitter arranged to be operated automatically upon departure and return of the object supervised, a periodic controller controlling the transmission of periodic signals by said transmitters and arranged to cause the same to be transmitted by the several transmitters successively, and means for shunting the periodic transmitting devices of each transmitter during absence of the object supervised.

852,345. BOTTLE-HOLDER. JOHN T. H. PAUL, Chicago, Ill., assignor to E. Goldman & Co., Chicago, Ill., a Corporation of Illinois. Filed Feb. 16, 1907. Serial No. 357,604.

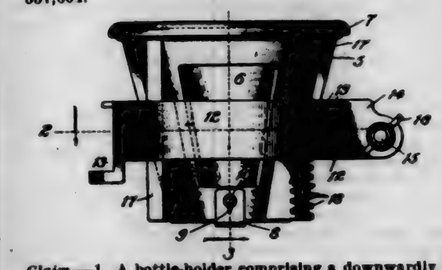

Claim.—1. A bottle-holder comprising a downwardly tapered metallic frame, a tapered shell of cushioning material in said frame with its upper margin extended over the upper end thereof, and means for releasably fastening the shell in the frame.

2. A bottle-holder comprising a downwardly tapered metallic frame, a tapered shell of cushioning material in said frame and extending through the same with its upper margin curved outwardly and downwardly over the upper end of the frame, and means for releasably fastening the shell in the frame.

3. A bottle-holder comprising a downwardly tapered metallic frame provided with a stud on its outer surface, a tapered shell of cushioning material in said frame with its upper margin extended over the upper end thereof and provided on its lower end with a lip-extension adapted to be bent over the lower edge of the frame and buttoned on said stud.

4. In combination, a bottle-holder provided with a rack on its outer surface, and a support for said holder adapted to be attached to a conveyer and consisting of a ring provided on its inner side with a seating-lug to engage said rack, for the purpose set forth.

5. In combination, a bottle-holder provided with a rack on its outer surface, and a support for said holder adapted to be attached to a conveyer and consisting of an expansible split ring provided with means for tightening it about the holder and with inner seating-lugs to engage said rack, for the purpose set forth.

6. In combination, a downwardly tapered bottle-holder provided at intervals about its outer surface with flanges and a rack widening toward the narrower end of the holder, and a support for said holder adapted to be attached to a conveyer and consisting of a ring provided with inner seating-lugs to engage said rack, for the purpose set forth.

7. In combination, a downwardly tapered bottle-holder provided at intervals about its outer surface with flanges and a rack widening toward the narrower end of the holder, and a support for said holder adapted to be attached to a conveyer and consisting of an expansible split ring provided with means for tightening it about the holder and with inner seating-lugs to engage said rack, for the purpose set forth.

852,346. MILLING-MACHINE. WILLIAM PORTEOUS, College Hill, Ohio. Filed Sept. 11, 1905. Serial No. 278,016.

Claim.—1. In a milling machine of the character described, the combination of a supporting and guiding bed, a transversely movable work carrying table carried thereby, means for securing work to said table, opposing cutters for operating on the lower part of the work carried on said table, and opposing cutters for operating on the upper part of said work, said opposing pairs of cutters having their axes occupying a plane oblique to the table so as to act on the work successively at its lower and upper parts, substantially as described.

2. In a milling machine of the character described, the combination of an automatically operated work carrying table having a path of travel in a straight line back and forth, clamping mechanism for the work upon said table, live spindles in pairs journaled on each side of said work carrying table, each pair journaled obliquely above the other and carrying facing tools, the upper pair to face off opposite sides of a nut of a fitting carried by said work carrying table and the lower pair to face off opposite sides of a nut on said fitting, said pairs of cutters operating on the work successively, and mechanism to arrest the travel of the table after it has passed the cutters, substantially as described.

3. In a milling machine of the character described, the combination of a bed carrying a transversely movable work carrying table, an intermittingly revolving work carrying chuck carried thereon, means for securing work to said table, adjustable opposing cutters for operating on the lower part of the work carried on said table, and adjustable opposing cutters for operating on the upper part of said work, the axes of said cutters being in a plane oblique to the table, substantially as described.

4. In a milling machine of the character described, the combination of a bed carrying a transversely movable work carrying table, an intermittingly revolving work carrying chuck carried thereon, mechanism for intermittingly revolving said chuck automatically, means for securing work to said table, adjustable opposing cutters for operating on the lower part of the work carried on said table, and adjustable opposing cutters for operating on the upper part of said work, the axes of said cutters being in a plane oblique to the table, substantially as described.

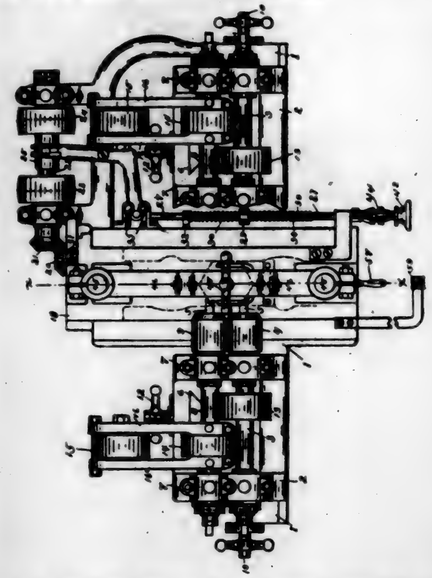

5. In a milling machine of the character described, the combination of a bed carrying a transversely movable work carrying table, an intermittingly revolving work carrying chuck carried thereon, means for securing work to said chuck, adjustable opposing revolving cutters for operating on the lower part of the work carried on said chuck automatically, adjustable opposing revolving cutters for operating on the upper part of said work, the axes of said cutters being in a plane oblique to the table, and mechanism for revolving said cutters, substantially as described.

6. In a milling machine of the character described, the combination of a bed carrying a transversely movable work carrying table, an intermittingly revolving work carrying chuck carried thereon, mechanism for automatically and intermittingly revolving said chuck, means for securing work to said chuck, adjustable opposing revolving cutters for operating on the lower part of the work carried on said chuck, adjustable opposing revolving cutters for operating on the upper part of said work, the axes of said cutters being in a plane oblique to the table, and mechanism for revolving said cutters, substantially as described.

852,347. PROCESS OF PRODUCING LOW-CARBON FERRO ALLOYS. EDGAR F. PRICE, Niagara Falls, N. Y. Filed Nov. 14, 1905. Serial No. 287,353.

Claim.—1. The process of producing ferro-alloys, which consists in producing ferrosilicon by smelting a suitable charge, removing the molten silicid from the smelting zone and bringing it in contact with a compound of a metal reducible by silicon and alloyable with iron, as set forth.

2. The process of producing ferro-alloys, which consists in producing ferrosilicon by electrically smelting a charge containing silica, carbon and a source of iron, removing the molten silicid from the smelting zone and bringing it in contact with a compound of a metal reducible by silicon

and alloyable with iron, and supplying heat to facilitate the reduction of said compound, as set forth.

3. The process of producing ferro-alloys, which consists in producing ferrosilicon by electrically smelting a charge containing silica, carbon and a source of iron, removing the molten silicid from the smelting zone and bringing it in contact with a compound of a metal reducible by silicon and alloyable with iron, and electrically supplying heat to facilitate the reduction of said compound, as set forth.

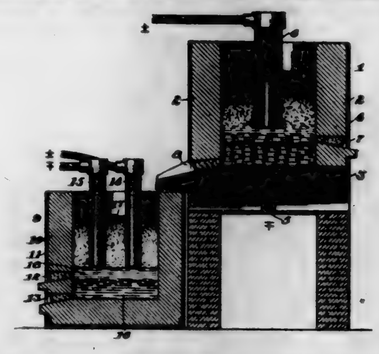

4. The process of producing low-carbon ferro-alloys, which consists in producing ferrosilicon high in silicon and low in carbon by smelting a charge containing silica, carbon and a source of iron, the silica and carbon being in relatively large amount, removing the molten silicid from the smelting zone and bringing it in contact with a compound of a metal reducible by silicon and alloyable with iron, and supplying heat to facilitate the reduction of said compound, as set forth.

5. The process of producing ferro-alloys, which consists in producing ferrosilicon by smelting a suitable charge, removing the molten silicid from the smelting zone and bringing it in contact with an oxid of a metal reducible by silicon and alloyable with iron, and providing a basic flux to slag the resulting silica, as set forth.

6. The process of producing low-carbon ferro-alloys, which consists in producing ferrosilicon high in silicon and low in carbon by smelting a charge containing silica, carbon and a source of iron, the silica and carbon being in relatively large amount, removing the molten silicid from the smelting zone and bringing it in contact with an oxid of a metal reducible by silicon and alloyable with iron, providing a basic flux to slag the resulting silica, and supplying heat to facilitate the reduction of said compound, as set forth.

7. The process of producing ferro-alloys, which consists in producing ferrosilicon by smelting a suitable charge, removing the molten silicid from the smelting zone and bringing it in contact with an oxid of a metal reducible by silicon and alloyable with iron, providing a basic flux to slag the resulting silica, and withdrawing the slags and ferro-alloy and supplying fresh charge-materials as required, as set forth.

8. The process of producing low-carbon ferro-alloys, which consists in producing ferrosilicon high in silicon and low in carbon by smelting a charge containing silica, carbon and a source of iron, the silica and carbon being in relatively large amount, removing the molten silicid from the smelting zone and bringing it in contact with an oxid of a metal reducible by silicon and alloyable with iron, providing a basic flux to slag the resulting silica, supplying heat to facilitate the reduction of said compound, and withdrawing the slags and ferro-alloy and supplying fresh charge-materials as required, as set forth.

852,348. GRAB-HOOK. ALBERT W. ROBINSON, Ochiltree, Tex. Filed May 3, 1906. Serial No. 315,094.

Claim.—1. A grab hook, comprising a shank a longitudinal slot in one end and having a horizontal extension projected from the extremity of said slotted end and provided with a longitudinal slot, the longitudinal slots of the shank and horizontal extension registering and in communication, one of the members bordering upon the longitudinal slot of the shank having an opening extending therethrough to afford ready ingress and egress from the longitudinal slots of said shank and the horizontal terminal extension thereof.

2. A new article of manufacture, a grab hook comprising a shank, an eye at one end and a longitudinal slot at the opposite end, and having a horizontal extension projected from the slotted end and formed with a longitudinal slot in register with the longitudinal slot of the shank, and in communication therewith, a web connecting the shank and its horizontal extension and arranged at one side of the longitudinal openings thereof, said shank having a lateral opening in the member bordering upon the longitudinal slot thereof remote from the member connected to the horizontal extension by the aforesaid web.

852,349. COTTON AND CORN STALK CUTTER. GEORGE R. ROBINSON, Bienville, La. Filed July 10, 1906. Serial No. 325,520.

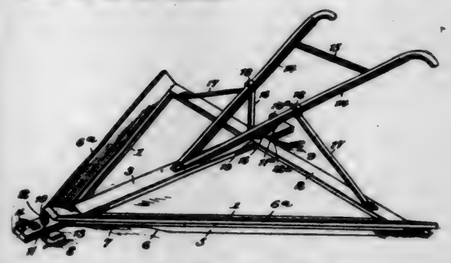

Claim.—1. A stalk cutter provided with side bars arranged at an angle to each other, cutters extending longitudinally of the side bars, and wings also disposed longitudinally of the side bars and projecting outwardly beyond the cutters throughout the entire length of the same and arranged to flex the stalks before the latter are severed by the cutters.

2. A stalk cutter provided with said bars arranged at an angle to each other, cutters secured to the lower faces of the side bars and extending longitudinally of the same, and rigid wings secured to the upper faces of the side bars and disposed longitudinally of the same and projecting outwardly beyond the cutters throughout the entire length of the latter to flex the stalks before the same are severed by the cutters.

3. A stalk cutter provided with side bars arranged at an angle to each other, cutters extending longitudinally of the side bars, and wings also disposed, longitudinally of the side bars and projecting outwardly beyond the cutters throughout the entire length of the same, said wings being set at an angle to flex the stalks before the latter are severed by the cutters.

4. A stalk cutter comprising a frame composed of a central beam and forwardly converging side bars having means for flexing the stalks, secured at their front ends to the beam at opposite sides thereof, a rear transverse bar connecting the side bars with each other and with the beam, and runner bars secured at the lower faces of the side bars and extended at their front ends beneath the beam, and cutting means carried by the frame.

5. A stalk cutter comprising a frame, cutting members carried by the frame, handle bars mounted on the frame, and inner and outer inclined braces constructed of a single piece of metal and secured to the frame and to the handle bars, the said braces being connected at their upper ends by bends forming grips for embracing the handle bars.

6. A stalk cutter comprising a tapering frame provided at opposite sides with cutters, an adjustable runner supporting the front of the frame, and an adjustable colter arranged at the back of the frame to penetrate the soil for holding the stalk cutter against lateral movement.

7. A stalk cutter comprising a frame composed of a central longitudinal beam, forwardly converging side bars connected at their front ends to the beam, and a rear transverse connecting bar secured to the side bars and to the longitudinal bar, cutters mounted on the side bars, a runner depending from the front end of the longitudinal bar, and a colter connected with the rear end of the longitudinal bar and adapted to penetrate the soil to prevent lateral movement of the stalk cutter.

8. A stalk cutter comprising a triangular frame provided at opposite sides with cutters, a runner supporting the front of the frame, a colter arranged at the back of the frame to penetrate the soil for holding the stalk cutter against lateral movement, said runner and cutter being arranged in a line with each other midway between the cutters.

9. A stalk cutter comprising a triangular frame provided at opposite sides with cutters, a runner supporting the front of the frame and consisting of a vertical portion adjustably secured to the frame, and a rearwardly extending horizontal portion to trail on the ground, and a colter arranged at the back of the frame to penetrate the soil for holding the stalk cutter against lateral movement.

10. A stalk cutter comprising a triangular frame provided at opposite sides with cutters, a runner supporting the front of the frame, and a colter arranged at the back of the frame to penetrate the soil for holding the stalk cutter against lateral movement, said cutter consisting of a vertical shank adjustably secured to the frame, and a blade curved rearwardly and tapered to a point and provided with a front cutting edge.

852,350. STOCKING. ROBERT W. SCOTT, Philadelphia, Pa., assignor of one-half to Louis N. D. Williams, Ogonts, Pa. Filed Mar. 13, 1905. Serial No. 249,869.

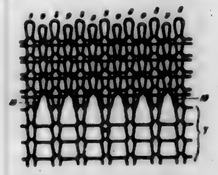

Claim.—1. A stocking having at the top of the leg a hem or welt composed of two webs, one comprising continuations of the wales of the leg web and the other composed of additional wales, substantially as specified.

2. A stocking having at the top of the leg a hem or welt composed of two webs, one comprising continuations of the wales of the leg web and the other composed of additional wales, said two sets of wales being united at the top and also integrally united to the leg web, substantially as specified.

3. A stocking having at the top of the leg a hem or welt composed of two webs, one comprising continuations of the wales of the leg web, and the other composed of additional wales, said two sets of wales being integrally united to the leg web, and provided at the top with confining stitches composed of a separate yarn, substantially as specified.

4. A stocking having at the top of the leg a hem or welt composed of two webs, one comprising continuations of the wales of the leg web and the other composed of additional wales knitted with an independent yarn, substantially as specified.

5. A stocking having at the top of the leg a hem or welt composed of two webs, one comprising continuations of the wales of the leg web and the other composed of additional wales knitted with an independent yarn but having its starting course integrally united to the leg web, substantially as specified.

6. A stocking having at the top of the leg a hem or welt composed of two webs, one comprising continuations of the wales of the leg web and the other composed of additional wales knitted with an independent yarn, but united to the other web at the top of the stocking, substantially as specified.

7. A stocking having at the top of the leg a hem or welt composed of two webs, one comprising continuations of the wales of the leg web and the other composed of additional wales knitted with an independent yarn, said wales being integrally united to the leg web, and also united to the wales of the other web at the top of the stocking, substantially as specified.

8. A stocking having at the top of the leg a hem or welt composed of two webs, one comprising continuations of the wales of the leg web and the other composed of additional wales knitted with an independent yarn, but united to the other web at the top of the stocking by stitches composed of a third yarn, substantially as specified.

9. A stocking having at the top of the leg a hem or welt composed of two webs, one comprising continuations of the wales of the leg web and the other composed of additional wales knitted with an independent yarn, said wales being integrally united to the leg web, and also united by a third yarn to the wales of the other web at the top of the stocking, substantially as specified.

10. A stocking having a leg of plain web provided at the top with a hem or welt composed of two separate plies of fabric, integrally united to the leg web at the bottom, and provided at the top with confining stitches composed of a separate yarn, substantially as specified.

11. A stocking having a leg of plain web provided at the top with a hem or welt composed of two separate plies of fabric knitted with independent yarns, said webs being integrally united to the leg web at the bottom and provided at the top with confining stitches composed of a third yarn, substantially as specified.

12. A stocking seamless as to the leg and foot, and provided at the top with a hem or welt composed of two webs, one consisting of wales which form continuations of the leg wales, and the other consisting of independent wales, substantially as specified.

13. A stocking seamless as to the leg and foot, and provided at the top with a hem or welt composed of two webs, one consisting of wales which form continuations of the leg wales, and the other consisting of independent wales, each of said webs being knitted with an independent yarn, substantially as specified.

14. A stocking seamless as to the leg and foot, and provided at the top with a hem or welt composed of two webs, one consisting of wales which form continuations of the leg wales, and the other consisting of independent wales, said wales being provided at the top with confining stitches composed of a separate yarn, substantially as specified.

15. A stocking seamless as to the leg and foot, and provided at the top with a hem or welt composed of two webs, one consisting of wales which form continuations of the leg wales, and the other consisting of independent wales, each of said webs being knitted with an independent yarn and the webs being provided at the top with confining stitches composed of a third yarn, substantially as specified.

852,351. ENGINE. DANIEL A. SEYLER, Jr., Ann Arbor, Mich. Filed Dec. 10, 1906. Serial No. 347,000.

Claim.—1. In an opposed cylinder engine, the combination with connected pistons, and a crank between said pis-

tons, of a disk revolubly mounted upon the crank pin of the crank, and an abutment adjustably secured to each piston and each provided with a vertical groove to receive one edge of the disk.

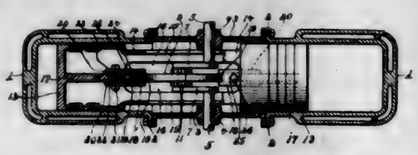

2. In an opposed cylinder engine, the combination with connected pistons and a crank shaft having crank arms and a crank pin connecting said arms, of a disk made in halves and formed with an opening at its center, lugs on the disk, bearing blocks fitting in said opening, bolts extending through the lugs and blocks to secure the bearing upon the crank pin and the two halves of the disk together, and abutments carried by the pistons engaging the edge of the disk.

3. In an opposed cylinder engine, the combination of cylinders each provided with a flange at its base, a crank case secured to said flanges and formed with bearings in its sides and divided into two parts along the vertical center-line of said bearings, a crank shaft in said bearings, pistons in the cylinders, a hollow cylindrical web formed integral with and connecting the pistons and provided with longitudinal slots in its sides for the crank shaft, a crank on the crank shaft, a disk carried by the crank, and abutments on the pistons in engagement with the disk.

4. In an opposed cylinder engine, the combination with connected pistons and a crank between said pistons, of a vertical wall extending diametrically across each piston, abutments each having parallel flanges projecting into the end of the piston at each side of the wall and formed with elongated holes, bolts extending through said holes in the walls to secure the abutments to the walls, and a revoluble disk carried by the crank and engaging said abutments at diametrically opposite points of its periphery.

5. In an opposed cylinder engine, the combination with opposed pistons, of a hollow cylindrical web portion formed integral with and connecting said pistons, said web being provided with longitudinal slots in its sides and top and bottom, a crank shaft extending through the side slots, a revoluble disk mounted upon the crank shaft, a vertical wall extending diametrically across each piston, an abutment adjustably secured to the end of each wall and formed with a vertical groove in its contact face and a chamber adjacent to the end of the wall having an inclined end, a wedge in said chamber having an inclined side engaging the inclined end of the chamber, and a bolt extending through an opening in the top of the chamber and engaging a screw-threaded opening in the upper end of the wedge.

852,352. CASH-REGISTER ATTACHMENT. FRED L. SHELDON, Tacoma, Wash. Filed Mar. 30, 1906. Serial No. 308,988.

Claim.—1. The combination with a cash register having a plurality of keys adapted to be manually operated, of a phonograph attachment comprising a plurality of records, and means connecting the keys with and to actuate the records.

2. The combination with a cash register having a plurality of keys adapted to be manually operated, of a phonograph attachment comprising a plurality of records equaling in number the keys, and means connecting the keys with and to actuate the records.

3. The combination with a cash register having a plurality of keys adapted to be manually operated, of a phonograph attachment comprising a plurality of records, and means connecting each of the keys with and to operate one of the records.

4. The combination with a cash register having a plurality of keys adapted to be manually operated, of a phonograph attachment comprising a plurality of rotatable records, and means connecting the keys with and to actuate the records.

5. The combination with a cash register having a plurality of keys adapted to be manually operated, of a phonograph attachment comprising a plurality of records, means connecting the keys with and to actuate the records, means engaging said records for producing sound vibrations, and means adapted to disengage the vibration producing means and the records at times.

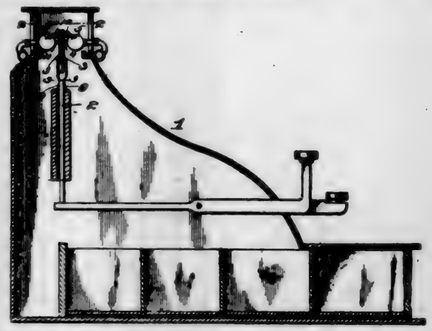

6. The combination with a cash register having a plurality of keys adapted to be manually operated, of a phonograph attachment comprising a plurality of records, means connecting the keys with and to actuate the records, means engaging said records for producing sound vibrations, and means adapted to disengage the vibration producing means and the records during return movement of the records.

7. The combination with a cash register having a plurality of keys adapted to be manually operated, of a phonograph attachment comprising a plurality of records, and means connecting each key with and to actuate a record independently of the other records.

8. The combination with a cash register having a plurality of keys adapted to be manually operated, of a phonograph attachment comprising a plurality of records, means connecting each of the keys with and to actuate one of the records independently of the other records, means engaging said records for producing sound vibrations, and means adapted to disengage the vibration producing means and records at times.

9. The combination with a cash register having a plurality of keys adapted to be manually operated, a phonograph attachment comprising a plurality of records, means connecting each of the keys with and to actuate one of the records independently of the other records, means engaging said records for producing sound vibrations, means to normally hold the record in engagement with the vibration producing means, and means adapted to disengage the vibration producing means and records at times.

10. The combination with a cash register having a plurality of keys adapted to be manually operated, of a phonograph attachment comprising a plurality of records, means connecting each of the keys with and to actuate one of the records independently of the other records, means engaging said records for producing sound vibrations, means to normally hold the records in engagement with the vibration producing means, and means adapted to disengage the vibration producing means and records during the return movement of the record.

11. The combination with a cash register having a plurality of keys adapted to be manually operated, of a plurality of records equaling in number the keys, means connecting each of the keys with and to actuate one of the records independently of the other records, means engaging said records for producing sound vibrations, a spring adapted to hold the record in engagement with the vibration producing means, and means adapted to disengage the spring during a return movement of the record.

12. The combination of a cash register having a plurality of keys adapted to be manually operated, of a plurality of rotating records equaling in number the keys, means connecting each of the keys with and to actuate one of the records independently of the other records, and means adapted to vary the rate of movement of the records.

13. The combination of a cash register having a plurality of keys adapted to be manually operated, of a phonograph attachment comprising a plurality of rotatable records, means connecting each of the keys with and to rotate one of the records independently of the other records, and a weighted lever adapted to vary the movement of the records.

852,353. TRACE-HOLDER. THOMAS B. SMITH, Cynthiana, Ky. Filed July 23, 1906. Serial No. 327,413.

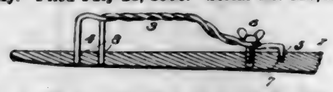

Claim.—1. The combination of a whiffle tree, and a trace holder formed of two strands of wire twisted together throughout a portion of their length and having one end fastened to the whiffle tree while at the opposite end the extremities of the two strands are extended laterally to form spaced retaining fingers designed to embrace the trace.

2. The combination of a whiffle tree having a recess formed therein, and a trace holder formed of two strands of wire twisted together throughout a portion of their length and having one end fastened to the whiffle tree and provided with a projection entering the before mentioned recess, while at the opposite end the extremities of the strands are extended laterally to form spaced retaining fingers designed to engage the trace.

3. The combination of a whiffle tree, a trace holder formed of two strands of wire twisted together throughout a portion of their length and having their extremities at one end of the trace holder extended laterally to form spaced retaining fingers for engaging the trace, and a fastening member passing between the twisted strands at the opposite end of the trace holder and entering the whiffle tree.

852,354. RAILWAY-GATE. WILLIE L. SMYTH, Dudleyville, Ala. Filed Sept. 19, 1906. Serial No. 335,300.

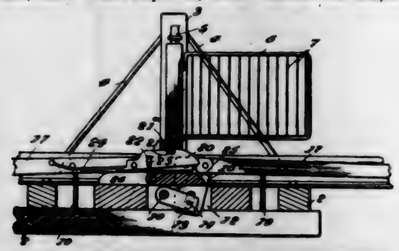

Claim.—1. An automatic railway gate comprising a gate arranged to swing across and away from the track, actuating bars adapted to be depressed by the passage of a car along the track, means whereby the depressing of said bars will open the gate, a latch carried by one of said bars and adapted to engage the gate, the latch being moved out of engagement with the gate when the bar that carries it is depressed, and means whereby the initial movement of said bars is independent of any movement of the gate.

2. An automatic railway gate, comprising a gate arranged to swing across and away from the track, actuating bars adapted to be depressed by the passage of a car along the track, means whereby the depressing of said bars will open the gate, a latch carried by one of said bars and adapted to engage the lower edge of the gate, said latch being spring pressed or yielding, and means whereby the initial movement of said bars will carry the latch out of engagement with the gate and impart no movement to the gate.

3. In an automatic railway gate, the combination with a gate arranged to swing across and away from the track, an actuating shaft therefor provided with a crank and a wrist pin secured on said crank, of actuating bars adapted to be depressed by the passage of a car along the track, a link secured to said bars and provided with a slot receiving said wrist pin, and a latch carried by one of said bars and arranged to engage the gate to hold the same closed, the pin and slot connection between the crank and link permitting the initial movement of the bars to unlatch the gate before the link will move the crank and turn the shaft.

4. In an automatic railway gate, the combination with the gate arranged to be swung across and away from the track, of an actuating shaft operatively connected to said gate to move the same, said shaft being provided with a crank, a link provided with a slot, a wrist pin secured to said crank and working within said slot, oppositely extending actuating bars both secured to said link and extending alongside one of the track rails in position to be depressed by the flange of the car wheel, a latch pivotally secured to one of said actuating bars and provided with a slot, a spring for holding said latch elevated in position to engage the gate, and a pin secured to the actuating bar which carries the latch, said pin working in the slot of said latch, for the purpose specified.

5. In an automatic railway gate, the combination with the gate arranged to swing across and away from the track, of automatically actuating means for the said gate, said means including a shaft, a door pivoted at its lower edge between the rails, a crank secured to said shaft, and a link connected to said door, and to said crank as and for the purpose set forth.

6. An automatic railway gate, comprising a supporting frame work embodying side sills and cross sills secured together, gate posts supported on said side sills, gates mounted to swing in a horizontal plane and provided with pintles having a pivotal connection with said post, miter segments secured to said pintles, a shaft extending transversely of the track underneath the rails, bearing blocks supported between adjacent cross ties and in which said shaft is journaled, miter segments secured to said shaft and meshing with the first named segments, a crank secured to said shaft and provided with a wrist pin, a link provided with a slot receiving said wrist pin, oppositely extending actuating bars arranged alongside of one of the track rails and connected at their meeting ends to said link, said bars being pivotally mounted at their opposite ends and being adapted to be depressed by the flange of a car wheel, a spring designed to return said bars to their normal raised positions, a latch pivotally connected to one of said bars and provided with a notch designed for engagement with the lower edge of one of said gates, said latch being also provided with a slot, a pin projecting from one of the actuating bars and working in said slot, and a spring arranged to swing said latch upwardly with respect to the actuating bars.

852,355. AUTOMATIC GAS CUT-OFF. RAYMOND K. STEVENS, Sidney, Iowa. Filed Dec. 4, 1905. Serial No. 290,209.

Claim.—1. In an automatic gas cut-off, the combination with a valve stem, of means for holding the stem in position to open the valve, automatic means for turning the stem to close the valve, expansible means engaged with the valve-releasing means and arranged to automatically adjust its engagement therewith when expanded, and means for manually actuating the releasing means.

2. In an automatic gas cut-off, the combination with a valve stem, of means for turning the stem to close the valve, a notched disk carried by the stem, a rod arranged for engagement with the notch in the disk, means for holding the rod in such engagement, a toothed member carried by the rod, and an expansible rod engaged with the toothed member and arranged to successively engage the teeth thereon when expanded and to retract the member when cool.

3. In an automatic cut-off, the combination with a valve stem, of means connected with the valve stem for automat-

ically closing the same, a notched disk carried by the valve stem, a rod arranged for engagement normally with the notch in the disk, a block carried by the rod, a tapered toothed member carried by the block, and an expansible

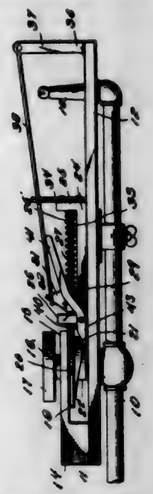

rod having a looped end engaged with the toothed member and arranged to ride downwardly over the teeth of the same when expanded and to retract the same when cool.

852,356. PARTY-COLORED YARN AND MODE OF MAKING SAME. WILLIAM M. STEVENSON, Indian Orchard, Mass., assignor to Hodges Fiber Carpet Company, Indian Orchard, Mass., a Corporation of Massachusetts. Filed Jan. 29, 1907. Serial No. 354,717.

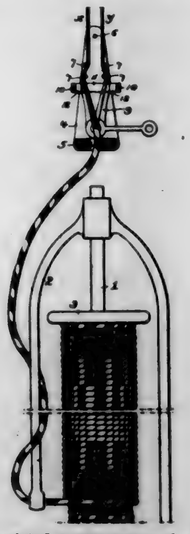

Claim.—1. A twisted yarn composed of a plurality of strands of ribbon form, said yarn having portions in which all of the strands appear upon the surface, alternating with portions in which one of the strands acts as a core and is enveloped by the other strand or strands.

2. A yarn composed of a plurality of strands of ribbon form, said yarn having portions in which the number of surface strands exceeds the number of such strands in the adjoining portions.

3. A yarn composed of a plurality of strands of ribbon form, each of such strands serving alternately as a core strand and as part of a party-colored portion of the yarn.

4. A yarn composed of a plurality of strands of ribbon form, each of such strands serving alternately as a core strand and as part of a party-colored portion of the yarn, all of the strands being of equal length in a given length of yarn.

5. A yarn composed of a plurality of strands of ribbon form, said yarn having party-colored portions alternating with portions of solid color in which one strand is enveloped by the other.

6. A yarn composed of a plurality of strands of ribbon form, said yarn having party-colored portions and portions of solid color corresponding to that of each of the strands, each of such latter portions having a core composed of the other strand.

7. The mode herein described of producing a composite and party-colored yarn, said mode consisting in twisting together a plurality of strands of ribbon form, and subjecting one of said strands, at intervals, to greater tension than that of the other strand or strands.

8. The mode herein described of producing a composite and party-colored yarn, said mode consisting in twisting together a plurality of strands of ribbon form, and subjecting each of the strands, in alternation, to a greater tension than that of the other strand or strands.

9. The mode herein described of producing a composite and party-colored yarn, said mode consisting in twisting together a plurality of strands of ribbon form, and imparting to each of the strands, in alternation, a partial fold before it reaches the point at which the strands are twisted together.

10. The mode herein described of producing a composite and party-colored yarn, said mode consisting in twisting together a plurality of strands of ribbon form, imparting to each of the strands, in alternation, a partial fold before it reaches the point at which the strands are twisted together, and, simultaneously with such folding of the strand, increasing the tension upon the same.

852,357. AUTOMATIC CONTROL DEVICE FOR ELEVATORS. SAMUEL S. TEAGUE, Washington, D. C., assignor of fifty-one one-hundredths to Joseph I. Saks. Filed May 16, 1906. Serial No. 317,226.

Claim.—1. In a control device for elevators, the combination, with the motor, and shipper mechanism controlling the same, of means acting independently of the shipper mechanism to stop the motor and throw the shipper mechanism to its inoperative position.

2. In a control device for elevators, the combination, with the motor, and shipper mechanism controlling the same, of means acting independently of the shipper mechanism by fluid pressure to stop the motor and throw the shipper mechanism to its inoperative position.

3. In a control device for elevators, the combination, with the motor, and shipper mechanism controlling the same, of means acting independently of the shipper mechanism to stop the motor and throw the shipper mechanism to its inoperative position and lock the same.

4. In a control device for elevators, the combination, with the motor, and shipper mechanism controlling the same, of means acting automatically and independently of the shipper mechanism to stop the motor and throw the shipper mechanism to its inoperative position.

5. In a control device for elevators, the combination, with the motor, and shipper mechanism controlling the same, of means acting automatically and independently of the shipper mechanism upon the opening of the elevator door to stop the motor and throw the shipper mechanism to its inoperative position.

6. In a control device for elevators, the combination, with the motor, an operating valve, and a shipper mechanism for opening and closing the said valve, of means operating automatically and independently of the shipper mechanism upon the opening of an elevator door to close said valve.

7. In a control device for elevators, the combination, with the motor, and shipper mechanism controlling the same, of means acting independently of the shipper mechanism to stop the motor, and a connection between the said means and the shipper mechanism whereby they normally operate in unison.

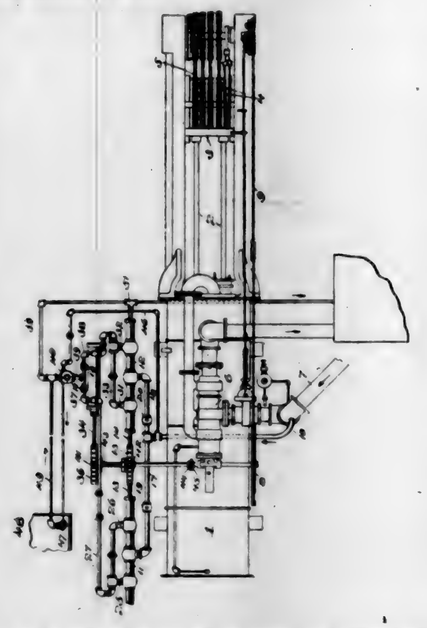

8. In a control device for elevators, the combination, with the motor, and shipper mechanism controlling the same, of means acting automatically and independently of the shipper mechanism upon the opening of the elevator door to stop the motor, and a connection between the said means and the shipper mechanism whereby they normally operate in unison.

9. In a control device for elevators, the combination, with the motor, and shipper mechanism controlling the same, of an auxiliary valve and motor system, means acting automatically through the said auxiliary system, and independently of the shipper mechanism to stop the motor, and a connection between the auxiliary system and the shipper mechanism whereby they normally act in unison.

10. In a control device for elevators, the combination, with the motor, and shipper mechanism controlling the same, of an auxiliary valve and motor system, means acting automatically through the said auxiliary system and independently of the shipper mechanism upon the opening of the elevator door to stop the motor, and a connection between the auxiliary system and the shipper mechanism whereby they normally act in unison.

11. In a control device for elevators, the combination, with the motor, and shipper mechanism controlling the same, of an auxiliary valve and motor system acting upon the motor independently of the shipper mechanism, and means acting automatically through the said auxiliary system to stop the motor and throw the shipper mechanism to its inoperative position.

12. In a control device for elevators, the combination, with the motor, and shipper mechanism controlling the same, of an auxiliary valve and motor system acting upon the motor independently of the shipper mechanism, and means acting automatically through the said auxiliary system upon the opening of an elevator door to stop the motor and throw the shipper mechanism to its inoperative position and lock the same.

13. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system coupled with the shipper mechanism, a pressure fluid supply to the auxiliary system, a control valve governing the discharge therefrom, and means to actuate the control valve to cause the operation by pressure fluid of the auxiliary system and through it the shifting of the shipper mechanism to an inoperative position.

14. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system coupled with the shipper mechanism, a pressure fluid supply to the auxiliary system, a control valve governing the discharge therefrom, and means actuated by the opening of the elevator door to close the control valve to cause the operation by pressure fluid of the auxiliary system and through it the shifting of the shipper mechanism to an inoperative position.

15. In a control device for elevators, the combination with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system positively coupled with the shipper mechanism, a pressure fluid supply to the auxiliary system, a control valve governing the discharge therefrom, and means actuated by the opening of the elevator door to close the control valve to cause the operation by the pressure fluid of the auxiliary system and through it the shifting of the shipper mechanism to an inoperative position.

16. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system positively coupled with the shipper mechanism, a pressure fluid supply to the auxiliary system, a regulating valve in the discharge therefrom, a control valve governing the operation of the regulating valve, and means operating automatically to actuate the control valve to close the regulating valve to cause the operation by the pressure fluid of the auxiliary system and through it the shifting of the shipper mechanism to an inoperative position.

17. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system coupled with the shipper mechanism, a pressure fluid supply to the auxiliary system, a regulating valve operable by variations in fluid pressure arranged in the discharge therefrom, an auxiliary pressure fluid pipe around the auxiliary system by way of the regulating valve to a point adjacent the elevator shaft, a control valve in the auxiliary pressure pipe, and means operating automatically upon the opening of the elevator door to close the control valve to operate the regulating valve to cause the operation by the pressure fluid of the auxiliary system and through it the shifting of the shipper mechanism to an inoperative position.

18. In a control device for elevators, the combination with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system positively coupled with the shipper mechanism, a pressure fluid supply to the auxiliary system, a regulating valve operable by variations in fluid pressure arranged in the discharge from the auxiliary system, an auxiliary pressure fluid pipe extending by way of the regulating valve to a point adjacent the elevator shaft, a control valve in the auxiliary pressure pipe, and means connecting the control valve stem with the elevator door whereby the opening of the elevator door will operate the control valve to close the regulating valve to cause the operation by the pressure fluid of the auxiliary system and through it the shifting of the shipper mechanism to an inoperative locked position.

19. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system coupled with the shipper mechanism and comprising a pair of twin valves having their stems provided with spaced disks controlling inlet and outlet ports and a valve motor having its stem provided with a disk, a control valve ar-

ranged to govern the discharge from the auxiliary system, a pressure fluid supply at one position of the shipper mechanism and valves through one of the twin valves and one end of the valve motor to the discharge and at another position thereof through the other twin valve to the other end of the valve motor and to the discharge, and means operating automatically to close the control valve to cause the pressure fluid within the auxiliary system to act upon the disks and shift the same and the coupled shipper mechanism to an inoperative position.

20. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor mechanism coupled with the shipper mechanism and comprising a pair of twin valves having their stems rigidly coupled and provided with spaced disks controlling inlet and outlet ports and a valve motor having its stem provided with a disk and coupled with the stems of the twin valves, a control valve arranged to govern the discharge from the auxiliary system, a pressure fluid supply at one position of the shipper mechanism and valves through one of the twin valves and one end of the valve motor to the discharge and at another position thereof through the other twin valve and the other end of the valve motor to the discharge, check valves in the supply to each of the twin valves and between each end of the valve motor and discharge, and means operating automatically upon the opening of an elevator door to actuate the control valve to cause pressure fluid within the auxiliary system to act upon the disks to shift the same and the coupled shipper mechanism to an intermediate position and there lock the same.

21. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system comprising a pair of twin valves having their stems rigidly coupled by a rack and provided with spaced disks controlling inlet and outlet ports and a valve motor having its stem provided with a disk and a rack, a spindle coupled to the shipper mechanism and carrying pinions in engagement with the racks, a control valve in the discharge from the auxiliary system, a pressure fluid supply at one position of the valves through one of the twin valves and one end of the valve motor to the discharge and at another position thereof through the other twin valve and the other end of the valve motor to the discharge, check valves in the supply to each of the twin valves and between each end of the valve motor and the discharge, and means operating automatically upon the opening of the elevator door to actuate the control valve to cause the pressure fluid within the auxiliary system to act upon the disks to shift the same and the coupled shipper mechanism to an intermediate position.

22. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system coupled with the shipper mechanism and comprising a pair of twin valves having their stems rigidly coupled and provided with spaced disks controlling inlet and outlet ports and a valve motor having its stem provided with a disk and coupled with the stems of the twin valves, a regulating valve operable by variations in fluid pressure arranged in the discharge from the auxiliary system, a pressure fluid supply at one position of the auxiliary valves through one of the twin valves and one end of the valve motor to the discharge and at another position thereof to the other twin valve to the other end of the valve motor to the discharge, an auxiliary pressure pipe extending by way of the regulating valve to a point adjacent the elevator shaft, a control valve in the auxiliary pressure pipe, and means operating automatically upon the opening of the elevator door to actuate the control valve to close the regulating valve to cause the pressure fluid within the auxiliary system to act upon the disks to shift the same and the coupled shipper mechanism to an intermediate position.

23. In a control device for elevators, the combination with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system comprising a pair of twin valves having their stems rigidly coupled by a rack and provided with spaced disks controlling inlet and outlet ports and a valve motor having its stem provided with a disk and with a rack, a spindle coupled to the shipper mechanism and carrying pinions in engagement with the racks, a regulating valve operable by variations in fluid pressure arranged in the discharge from the auxiliary system, a pressure fluid supply at one position of the valves through one of the twin valves and one end of the valve motor to the discharge and at another position thereof through the other twin valve and the other end of the valve motor to the discharge, check valves in the supply to each of the twin valves and between each end of the valve motor and discharge, an auxiliary pressure pipe extending by way of the regulating valve to a point adjacent the elevator shaft, a control valve in the auxiliary pressure pipe beyond the regulating valve, and means operating automatically upon the opening of the elevator door to actuate the control valve to close the regulating valve and cause the pressure fluid within the auxiliary system to act upon the disks to shift the same and the coupled shipper mechanism to an intermediate locked position.

24. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of means to control and actuate the valve acting independently of shipper mechanism, and means operative through said actuating means when the elevator door is open to throw the operating valve and shipper mechanism automatically to an inoperative position.

25. In a control device for elevators, the combination, with an operating valve, shipper mechanism acting thereon, and means to close said valve acting independently of the shipper mechanism, of a member movably mounted adjacent the elevator door, and a connection between said member and the valve closing means whereby the opening of the elevator door will operate to automatically stop the elevator.

26. In a control device for elevators, the combination, with an operating valve, shipper mechanism acting thereon, and means to control and actuate the shipper mechanism of a lever pivoted adjacent the elevator door and arranged to be operated by the opening of the door, and a mechanical connection between the lever and means controlling and actuating the shipper mechanism whereby the opening of the door will operate to shift the shipper mechanism to an inoperative position.

27. In a control device for elevators, the combination, with an operating valve, shipper mechanism acting thereon, and means to control and actuate the shipper mechanism of a lever pivoted adjacent the elevator door and provided with an anti-friction roll arranged to ride upon the door when opened, and a mechanical connection between the lever and means controlling and actuating the shipper mechanism whereby the opening of the door will operate to shift the shipper mechanism to an inoperative locked position.

28. In a control device for elevators, the combination, with an operating valve, shipper mechanism acting thereon, and means to control and actuate the shipper mechanism of means tending to act upon the controlling and actuating means to shift the shipper mechanism to an inoperative position, a detent holding said shifting means out of action, and a trip under the control of the elevator conductor for displacing the detent to permit the shifting of the shipper mechanism.

29. In a control device for elevators, the combination, with an operating valve, shipper mechanism acting thereon, and means to control and actuate the shipper mechanism of a spring pressed bolt connected with said controlling and actuating means and tending to act upon the same to shift the shipper mechanism to an inoperative position, a detent holding said bolt out of action, and a trip under the control of the elevator conductor for displacing the detent to release the bolt to permit the shifting of the shipper mechanism.

30. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of means operating automatically to throw said shipper mechanism from an operative into an inoperative position, and means under the control of the conductor and other than the shipper mechanism for shifting the shipper mechanism into an inoperative position.

31. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system coupled with the shipper mechanism, and distinct means one under the control of the elevator conductor and the other acting automatically through the auxiliary system to throw the shipper mechanism into an inoperative position.

32. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system coupled with the shipper mechanism, and distinct means one under the control of the elevator conductor and the other beyond his control and acting automatically upon the opening of an elevator door to throw the shipper mechanism into an inoperative locked position.

33. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system coupled with the shipper mechanism, a lever pivoted adjacent the elevator door beyond the control of the elevator conductor and arranged to be actuated by the opening of the door, a spring pressed bolt, a detent holding said bolt out of action, a trip under the control of the elevator conductor for displacing the detent to release the bolt, and means connecting the lever and bolt with the auxiliary system whereby the shifting of the lever or the releasing of the bolt will act through the auxiliary system to throw the shipper mechanism into an inoperative locked position.

34. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system coupled with the shipper mechanism, a lever pivoted adjacent the elevator door and arranged to be actuated by the opening of the door, and a mechanical connection between the lever and auxiliary system whereby the opening of the door will shift the shipper mechanism to an inoperative position.

35. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system coupled with the shipper mechanism, a pressure fluid supply to the auxiliary system, a control valve governing the discharge therefrom, a lever pivoted adjacent the elevator door and arranged to ride upon the door when opened, and a connection between the lever and control valve whereby the opening of the door will through the auxiliary system shift the shipper mechanism to an inoperative position.

36. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system positively coupled with the shipper mechanism, a pressure fluid supply to the auxiliary system, a regulating valve in the discharge therefrom, a control valve governing the operation of the regulating valve, a lever pivoted adjacent the elevator door and arranged to ride upon the door when opened, and a connection between the lever and control valve whereby the opening of the door will through the auxiliary system shift the shipper mechanism to an inoperative position.

37. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system coupled with the shipper mechanism and comprising a pair of twin valves having their stems provided with spaced disks controlling inlet and outlet ports and a valve motor having its stem provided with a disk, a control valve arranged to govern the discharge from the auxiliary system, a pressure fluid supply at one position of the shipper mechanism and valves through one of the twin valves and one end of the valve motor to the discharge and at another position thereof through the other twin valve and the other end of the valve motor to the discharge, a lever pivoted adjacent the door and arranged to ride upon the door when opened, and a connection between the lever and control valve whereby the opening of the door will operate the auxiliary system and shift the shipper mechanism to an inoperative position.

38. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor mechanism coupled with the shipper mechanism and comprising a pair of twin valves having their stems rigidly coupled by a rack and provided with spaced disks controlling inlet and outlet ports and a valve motor having its stem provided with a disk and a rack, a spindle coupled to the shipper mechanism and carrying pinions in engagement with the racks, a control valve in the discharge from the auxiliary system, a pressure fluid supply at one position of the valves through one of the twin valves and one end of the valve motor to the discharge and at another position thereof through the other twin valve and the other end of the valve motor to the discharge, check valves in the supply to each of the twin valves and between the two ends of the valve motor, a lever pivoted adjacent the elevator door and arranged to ride upon the door when opened, and a connection between the lever and control valve whereby the opening of the door will operate the auxiliary system to shift the shipper mechanism to an inoperative locked position.

39. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system comprising a pair of twin valves having their stems rigidly coupled by a rack and provided with spaced disks controlling inlet and outlet ports and a valve motor having a stem provided with a disk and with a rack, a spindle coupled to the shipper mechanism and carrying pinions in engagement with the racks, a regulating valve operable by variations in fluid pressure arranged in the discharge from the auxiliary system, a pressure fluid supply at one position of the valves through one end of the twin valves and one end of the valve motor to the discharge and at another position thereof through the other twin valve and the other end of the valve motor to the discharge, check valves in the supply to each of the twin valves and between the two ends of the valve motor, an auxiliary pressure pipe extending by way of the regulating valve to a point adjacent the elevator shaft, a control valve in the auxiliary pressure pipe beyond the regulating valve, a lever pivoted adjacent the elevator door and arranged to ride upon the door when opened, and a connection between the lever and the stem of the control valve whereby the opening of the elevator door will through the auxiliary system shift the shipper mechanism to an inoperative locked position.

40. In a control device for elevators, the combination with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system coupled with the shipper mechanism and comprising a pair of twin valves having their stems provided with spaced disks controlling inlet and outlet ports and a valve motor having its stem provided with a disk, a pressure fluid supply at one position of the shipper mechanism and valves through one of the twin valves to the discharge and at another position thereof through the other twin valve to the discharge, a control valve arranged to govern the discharge from the auxiliary system, a connection between each of the twin valves and each end of the valve motor, and means operating automatically upon the opening of the elevator door to close the control valve to cause the pressure fluid within the auxiliary system to act upon the disk of the valve motor and shift the same and the coupled shipper mechanism to an inoperative position.

41. In a control device for elevators, the combination, with an operating valve and shipper mechanism acting thereon, of an auxiliary valve and motor system coupled with the shipper mechanism, a pressure fluid supply to the auxiliary system, a control valve arranged directly in the discharge from the auxiliary system, and a connection between the stem of the control valve and the elevator door whereby the opening of the door will actuate the control valve to cause the operation by the pressure fluid of the auxiliary system and through it the shifting of the shipper mechanism to an inoperative position.

852,358. AUTOMATIC CONTROL DEVICE FOR ELEVATORS. SAMUEL S. TRAGUE, Washington, D. C., assignor of fifty-one one-hundredths to Joseph I. Saks. Filed June 7, 1906. Serial No. 320,509.

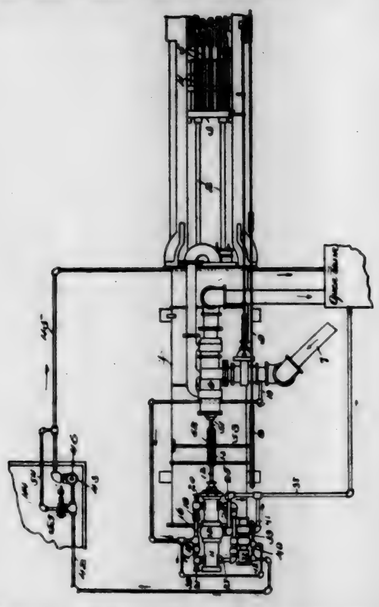

Claim.—1. In a control device for elevators, the combination, with elevator operating means, and shipper mechanism acting thereon, of a valve having its stem coupled with the shipper mechanism and provided with a disk, a pressure fluid supply to both ends of the valve, discharge ports from both ends of the valve and from an intermediate point, the intermediate discharge port controlled by the valve disk, and means operating automatically to interrupt the flow through the end discharge ports.

2. In a control device for elevators, the combination, with elevator operating means, and shipper mechanism acting thereon, of a valve having its stem coupled with the shipper mechanism and provided with a disk, a pressure fluid supply to both ends of the valve, discharge ports from both ends of the valve and from an intermediate point, the intermediate discharge port controlled by the valve disk, and means operating automatically upon the opening of an elevator door to interrupt the flow through the end discharge ports.

3. In a control device for elevators, the combination, with elevator operating means, and shipper mechanism acting thereon, of a valve having its stem coupled with the shipper mechanism and provided with a disk, a pressure fluid supply to both ends of the valve, discharge ports from both ends of the valve and from an intermediate point, the intermediate discharge port controlled by the valve disk, check valves arranged in the pressure fluid supply and in the discharge from the end ports, and means operating automatically to interrupt the flow through the end discharge ports.

4. In a control device for elevators, the combination, with elevator operating means, and shipper mechanism acting thereon, of an auxiliary valve having its stem coupled with the shipper mechanism and provided with a disk, a pressure fluid supply leading by branch pipes containing check valves to both ends of the auxiliary valve, a discharge port from the auxiliary valve intermediate its two ends and arranged to be controlled by the disk, discharge pipes containing check valves and leading from both ends of the auxiliary valve to a common pipe, and a control valve operating automatically upon the opening of an elevator door to interrupt the flow through the last named discharge pipes.

5. In a control device for elevators, the combination, with elevator operating means, and shipper mechanism acting thereon, of an auxiliary valve having its stem coupled with the shipper mechanism and provided with spaced disks, a pressure fluid supply to both ends of the valve, a discharge from both ends of the valve and from an intermediate point, the intermediate point of discharge occupying a position between the spaced disks when the shipper mechanism is in an inoperative position, and means operating automatically upon the opening of an elevator door to interrupt the discharge from the two ends of the auxiliary valve.

6. In a control device for elevators, the combination, with elevator operating means, and shipper mechanism acting thereon, of an auxiliary valve having its stem coupled with the shipper mechanism and provided with a disk, a pressure fluid supply by branch pipes containing check valves to both ends of the auxiliary valve, a discharge port arranged intermediate the two ends of the auxiliary valve and controlled by the disk, discharge pipes containing check valves leading from the two ends of the auxiliary valve to a common pipe, a differential piston valve provided with inlet and outlet ports for the passage of the discharge from the two ends of the auxiliary valve, said ports controlled by disks carried by the piston of said valve, a pressure fluid supply to the larger and smaller ends of the differential valve, a waste pipe leading from the larger end of the differential valve, a control valve arranged in the waste pipe, and means operating automatically upon the opening of an elevator door to close the control valve to interrupt the waste from the differential valve.

7. In a control device for elevators, the combination, with elevator operating means, and shipper mechanism acting thereon, of an auxiliary valve having its stem coupled with the shipper mechanism and provided with a disk, a pressure fluid supply by branch pipes containing check valves to both ends of the auxiliary valve, a discharge port arranged intermediate the two ends of the auxiliary valve and controlled by the disk, discharge pipes containing check valves leading from the two ends of the auxiliary valve to a common pipe, a differential piston valve provided with inlet and outlet ports for the passage of the discharge from the two ends of the auxiliary valve, said ports controlled by disks carried by the piston of said valve, a pressure fluid supply to the larger and smaller ends of the differential valve, a waste pipe leading from the larger end of the differential valve, a control valve arranged in the waste pipe, a spring pressed bolt normally held retracted against the tension of its spring by the closed elevator door, and a connection between the bolt and the control valve whereby the opening of the door will close the control valve.

8. In a control device for elevators, the combination, with elevator operating means, and shipper mechanism acting thereon, of means operating automatically upon the opening of an elevator door to throw said shipper mechanism from an operative into an inoperative locked position, and means under the control of the conductor and other than the shipper mechanism for releasing the said shipper mechanism.

9. A control device for elevators, the combination, with elevator operating means and shipper mechanism acting thereon, of an auxiliary valve system coupled with the shipper mechanism, means operating automatically upon the opening of an elevator door through the auxiliary valve system to throw said shipper mechanism from an operative into an inoperative locked position, and means under the control of the conductor and other than the shipper mechanism for releasing the shipper mechanism from its locked position.

10. In a control device for elevators, the combination, with elevator operating means, and shipper mechanism acting thereon, of an auxiliary valve having its stem coupled with the shipper mechanism and provided with a disk, a pressure fluid supply by branch pipes containing check valves to both ends of the auxiliary valve, a discharge port arranged intermediate the two ends of the auxiliary valve and controlled by the disk, discharge pipes containing check valves leading from the two ends of the auxiliary valve to a common pipe, a differential piston valve provided with inlet and outlet ports for the passage of the discharge from the two ends of the auxiliary valve, said ports controlled by disks carried by the piston of said valve, a pressure fluid supply to the larger and smaller ends of the differential valve, a waste pipe leading from the larger end of the differential valve, a control valve arranged in the waste pipe, means operating automatically upon the opening of an elevator door to close the control valve to interrupt the waste from the differential valve, and means for reëstablishing the waste independent of the control valve.

11. In a control device for elevators, the combination, with elevator operating means, and shipper mechanism acting thereon, of an auxiliary valve having its stem coupled with the shipper mechanism and provided with a disk, a pressure fluid supply by branch pipes containing check valves to both ends of the auxiliary valve, a discharge port arranged intermediate the two ends of the auxiliary valve and controlled by the disk, discharge pipes containing check valves leading from the two ends of the auxiliary valve to a common pipe, a differential piston valve provided with inlet and outlet ports for the passage of the discharge from the two ends of the auxiliary valve, said ports controlled by disks carried by the piston of said valve, a pressure fluid supply to the larger and smaller ends of the differential valve, a waste pipe leading from the larger end of the differential valve, a control valve arranged in the waste pipe, means operating automatically upon the opening of an elevator door to close the control valve to interrupt the waste from the differential valve, a by-pass arranged in the waste around the control valve, a valve controlling said by-pass, and means within the control of the conductor for operating the said last named valve.

12. In a control device for elevators, the combination, with elevator operating means, and shipper mechanism acting thereon, of an auxiliary valve having its stem coupled with the shipper mechanism and provided with a disk, a pressure fluid supply by branch pipes containing check valves to both ends of the auxiliary valve, a discharge port arranged intermediate the two ends of the auxiliary valve and controlled by the disk, discharge pipes containing check valves leading from the two ends of the auxiliary valve to a common pipe, a differential piston valve provided with inlet and outlet ports for the passage of the discharge from the two ends of the auxiliary valve, said ports controlled by disks carried by the piston of said valve, a pressure fluid supply to the larger and smaller ends of the differential valve, a waste pipe leading from the larger end of the differential valve, a control valve arranged in the waste pipe, means operating automatically upon the opening of an elevator door to close the control valve to interrupt the waste from the differential valve, a by-pass in the waste around the control valve, a safety valve arranged in the by-pass and normally held closed, and means within the control of the conductor for opening the safety valve.

852,359. STREET STOP-COCK BOX FOR WATER AND GAS PIPES. ERASTUS L. WALCOTT and GEORGE J. FISCHER, Quincy, Ill. Filed Nov. 11, 1905. Serial No. 286,850.

Claim.—1. A box for street stop cock connections embodying a lower section having a stop cock housing at its lower end and a packing box at the upper end, a tubular upper section having a surface plate screw threaded on its upper end and telescoping into the lower section through the packing box, a coupling adapted for loose connection with the stop cock, the lower end of said coupling projecting into the stop cock housing and its upper end having a greater external diameter than the external diameter of the upper section projecting loosely into the lower section, and means whereby said coupling is loosely confined in and guided by the lower section below the lower end of the upper section the construction being such that the coupling may be positioned on the stop cock prior to the placing of the box in position.

2. A box for street stop cocks embodying sections telescoped together, a surface plate secured on the top of the upper section and having a central recess, a central aperture and lateral drainage channel from the recess and a plug for closing the aperture having a head located in the recess when the plug is in position; substantially as described.

3. A box for street stop cocks embodying telescopic sections, a surface plate on the top of the upper section and having radial ribs and a central aperture, a closure for said aperture and a removable annular extension plate having its central opening formed to receive the radial ribs of the top plate; substantially as described.

4. A box for street stop cocks embodying sections telescoped together, a stop cock at the lower end having a loosely connected coupling adapted to be positioned thereon before the box is placed in position over the coupling, said coupling having a reduced intermediate portion and set screws in the lower section of the box loosely engaging in the reduced portion of the coupling, whereby they may be positioned after the box and coupling are positioned to prevent the entire separation of the box and stop cock.

5. A box for street stop cocks embodying telescopic sections each formed of small uniform diameter, and the upper section fitting within the lower section a stop cock coupling below the end of the upper section and having a socketed upper end fitting in and guided by the lower end of the lower section, and a loose connection between the said coupling and stop cock whereby the coupling may conform to the movements of the box and be held in position to receive the key; substantially as described.

6. A box for street stop cocks embodying telescopic sections, a surface plate on the upper end of the upper section having a central threaded aperture and plug for closing the same and a key having a loose collar adapted to fit in said aperture to protect the threads when the key is manipulated; substantially as described.

852,360. SYRUP-BOTTLE. WILLIAM R. WARNER, Vergennes, Vt. Filed June 6, 1906. Serial No. 320,415.

Claim.—1. A receptacle for fluids, having exterior ribs adjoining the main surface of the bottle, the ribs having under-cut grooves adjacent to the surface of the bottle.

2. A receptacle for fluids, having exterior ribs adjoining the main surface of the bottle, the sides and tops of the ribs having under-cut grooves adjacent to the surface of

the bottle for aiding in preventing liquid from getting upon the exposed portions of the ribs.

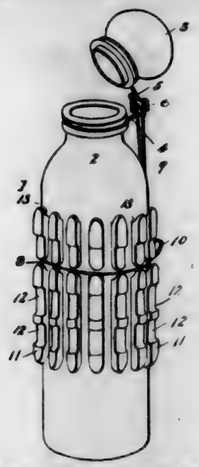

3. A bottle having a large number of exterior ribs projecting a suitable distance from the normal surface of the bottle and arranged close together so that they form deep grooves between them, the grooves extending continuously from one end of the ribbed surface of the bottle to the other, the outer surfaces of the ribs being transversely corrugated.

852,361. DUMP-WAGON. DAVID S. WATSON, Canastota, N. Y. Filed June 13, 1906. Serial No. 321,539.

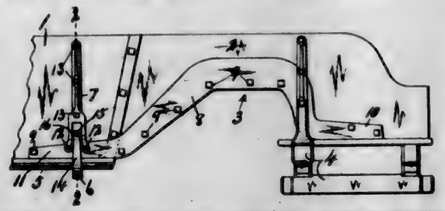

Claim.—In a dump-wagon, a dump-box having swinging bottom doors and forwardly projecting side extensions having their lower portions cut away directly in front of the doors, reinforcing plates secured to the side extensions and having their rear ends extending some distance beyond the front ends of the doors, a fixed hinge section secured to the side of the box and having its lower end secured to the rearward extension of the reinforcing plate for distributing the strain on the reinforcing plate over a greater area of the side of the box, and a movable hinge section secured to one of the doors and terminating at its outer end in an upward and inward extension pivoted to the fixed hinge section some distance above the lower edge of the side of the box.

852,362. DUMP-WAGON. DAVID S. WATSON, Canastota, N. Y., assignor to Watson Wagon Company, Canastota, N. Y., a Corporation of New York. Filed Jan. 15, 1907. Serial No. 352,458.

Claim.—1. In a dump wagon, a dump box having downwardly and laterally swinging bottom doors meeting at substantially the longitudinal center of the box, one of the doors having a portion of its meeting edge overlapping upon the other door when closed, cables passing under the meeting edges of the doors and winding means therefor, an equaliser consisting of a pair of rock arms having bearings for the cables at different distances from their swinging axes, whereby the overlapping door is caused to close earlier than the other door.

2. In a dump wagon, a dump box having laterally swinging bottom doors, chains passed under the doors, a winding drum connected to the front ends of the chains, and an equalizer connected to the ends of the chains, said equalizer comprising a pair of rock-arms having chain bearings at different distances from their swinging axes whereby the pull exerted by the opening of the doors always rocks the equalizer arms in the same direction and causes the doors to swing through unequal arcs, the one moving through the lesser arc being the first to close when the cables are wound upon the drum.

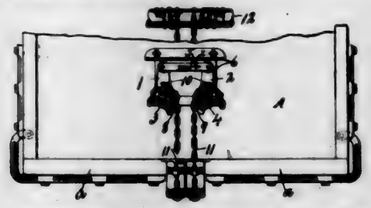

3. In combination with the swinging bottom doors of a dump wagon and their operating cables, of an equalizer consisting of two rocking members connected to the chains or cables at different distances from their swinging axes, whereby the doors are caused to swing through unequal arcs so that the door moving through the lesser arc will be closed first and operate through its cable or chain to rock the equalizer to take up the lag in the other door.

4. In combination with the swinging bottom doors of a dump wagon and controlling cables therefor, winding means for the cables and an equalizer consisting of two rock-arms arranged side by side and having their adjacent faces operatively connected to the cables at different distances from their swinging axes, whereby the doors are caused to swing through arcs of different lengths so that the one swinging through the arc of lesser length will close first and operate through its cable to move the rocking members of the equalizer to take up the lag of the other door during the continued winding of the cables on their winding drum.

852,363. TOY. FRED WHEELER, Sodus, N. Y. Filed Oct. 24, 1906. Serial No. 340,369.

Claim.—1. In a toy, a casing having the representation of a head thereon and having openings corresponding to the eyes of such representation, and a single carrier rotatably mounted within the casing and provided with the representation of a plurality of eyes that are movable into and out of register with said openings.

2. In a toy, the combination with a casing having a removable top on which is located the representation of a head having view portions corresponding to the eyes of such representation, of a bracket rigidly secured in the casing and having spaced ears, a shaft journaled in the ears and carrying a roller provided with the representation of a plurality of pairs of eyes of different characteristics, and a knob mounted on the exposed end of said shaft for rotating the shaft and roller and moving the different pairs of eyes located on the roller into and out of register with the view portions.

3. In a toy, the combination with a casing having a removable top on which is located the representation of a head having view portions corresponding to the eyes of such representation, of a shaft journaled in the casing, said shaft passing through the casing and cover and holding them against relative rotation, and the representation of a plurality of sets of eyes that are rotatable with the shaft and are movable into and out of register with the view portions.

852,364. APPAREL-DRAWERS. HARRIET P. WHEELER, Toronto, Ontario, Canada. Filed Dec. 8, 1905. Serial No. 290,944.

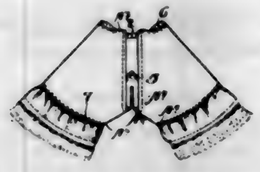

Claim.—1. A blank for the formation of women's drawers, comprising substantially a tri-angular piece having one straight divided side provided with a central arc-shaped recess, which forms the edge constituting the complete waist portion, the two portions of the straight side forming the two sides of the back, and two opposite curved sides forming the bottom of the leg portion, the apexes of the material between the straight and the curved sides being cut away obliquely and the apexes of the juncture of the curved side being provided with a V-shaped notch, the sides of which with the aforesaid obliquely cut away portions being designed to be connected together to form the crotch, as and for the purpose specified.

2. A blank for the formation of women's drawers comprising substantially a tri-angular piece having one straight divided side provided with a central arc-shaped recess, which forms the edge constituting the complete waist portion, the two portions of the straight side forming the two sides of the back, and two opposite curved sides forming the bottom of the leg portion, the apexes of the material between the straight and the curved sides being cut away obliquely and the apex of the juncture of the curved side being provided with a V-shaped notch, the sides of which with the aforesaid obliquely cut away portions being designed to be connected together to form the crotch, and the V-shaped notch at the apex of the curved sides being slit inwardly, as specified.

852,365. PIPE-COUPLING. JACOB T. WILLIS, Macon, Ga., assignor of one-half to Arthur H. Williamson, Macon, Ga. Filed Jan. 3, 1906. Serial No. 294,414.

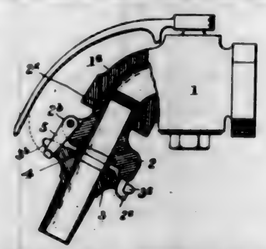

Claim.—A pipe-coupling comprising two members or pipe-sections, one having an arm-extension beyond its face curving or hooked downward and opposite of this latter a gravity T-shaped link, and the other member or pipe-section provided with an eye-ended lug to receive said hook-ended arm-extension and opposite said lug with a bifurcated or slotted lug having an underneath beveled surface, said T-form of link entering the slot of the latter lug and having its head engaging the beveled surface of said lug.

852,366. CRATE. THOMAS G. WILSON, Los Angeles, Cal. Filed July 17, 1905. Serial No. 269,961.

Claim.—1. A crate comprising a front and back, ends hinged to both front and back, each end comprising two sections hinged together, a bottom hinged to one of the first two members and a top hinged to the other member, and a revoluble bar forming a pintle common to both end sections, the bar having lateral extensions at its ends forming means of support for the bottom and top when said extensions are in engagement therewith, the upper lateral extension being forked to straddle the edge of the top.

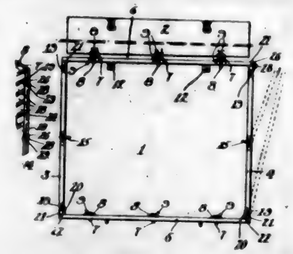

2. A crate comprising a front and back, ends hinged to both front and back, each end comprising two sections hinged together, a bottom hinged to one of the first two members and a top hinged to the other member to swing inside or outside the crate, the top or bottom preventing the ends from folding inwardly when either the top or bottom is closed, a revoluble pintle on each end of the crate having lateral extensions at its ends forming means of support for the bottom and the top when said extensions are in engagement therewith, the upper lateral extension being forked to straddle the edge of the top, and allowing the top and bottom to be folded when the extensions are swung out of engagement with the top and bottom.

3. A crate comprising a front, a back, and ends, corner posts 21 hinged to the respective ends of said front, each end comprising two sections *a* and *b* hinged together at the middle to fold inwardly flat against each other, each section *a* being hinged to its adjacent post 21, a bottom for the crate, and a top therefor.

4. A crate comprising a front and a back, corner posts 21 hinged to the respective ends of said front, end sections *a* and *b* hinged together, each section *a* being hinged to its adjacent post 21, and hinge hasps 25 hinging and also detachably fastening an end section *b* to the back.

5. A crate comprising a front and back, ends for the crate, each end comprising two sections *a* and *b* hinged together, means for connecting sections *a* with the front to enable said sections to be swung outside or inside, and hinge hasps detachably fastening a section *b* to the back allowing a section *b* to be folded inside against the back or swung outside away from the back.

6. A crate comprising a front and back, ends for the crate, each end comprising two sections, means hinging a section of an end to the front to enable the section to be folded inside the crate, the other section of that end being hinged to its mate and having a detachable and hinged connection with the back whereby that end section can be folded in to collapse the crate or the two sections can be swung out together like a door to open the entire end or to permit the back section alone to be swung out to open half the end.

7. A crate comprising a front and back, end sections hinged together, means hinging the sections to the front and back respectively to allow the end sections to fold inwardly, and to allow a section to be swung outside away from the back, a top hinged to one of the first two members to fold inside or outside the crate, and a bottom hinged to one of the first two members.

8. A crate comprising a front and back, end sections hinged together, means hinging the sections to the front and back respectively to allow the end sections to fold inwardly, and to allow a section to be swung away from the back, a top hinged to one of the first two members to fold inside or outside the crate, and a bottom hinged to one of the first two members to fold inside or outside the crate.

852,367. SPRING ATTACHMENT FOR SUSPENDERS, &c. PAUL E. WIRT, Bloomsburg, Pa. Filed Feb. 28, 1906. Serial No. 303,462.

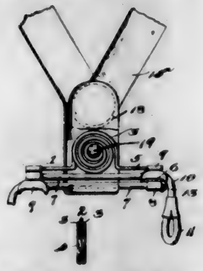

Claim.—1. A spring attachment of the class described, comprising a spring wire body provided with a pair of parallel spring-coils arranged side by side and having a common core or center coil, said spring wire body carrying attaching elements.

2. A spring attachment of the class described, comprising a spring wire body carrying attaching elements and provided with a plurality of parallel spiral spring-coils having a common center coil and the convolutions of both of which coils are formed outwardly from said center coil.

3. A spring attachment of the class described, comprising a spring wire body carrying attaching elements and provided with a pair of spiral flat spring coils arranged side by side in parallel planes and having a common center coil, said separate spring-coil being wound in reverse directions, but having their convolutions formed outwardly from the common center coil.

4. In a device of the class described, the combination with the body having a holding element, of an attaching element consisting of a cord provided with an unraveled, hardened and compressed retaining head or button.

852,368. FOUNTAIN-PEN. PAUL E. WIRT, Bloomsburg, Pa. Filed June 25, 1906. Serial No. 323,267.

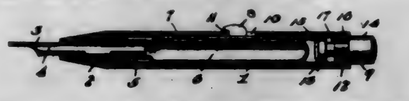

Claim.—1. In a fountain pen, a holder having a side opening, a collapsible reservoir, a longitudinally shiftable compressor for the reservoir provided with a button projecting through said side opening and having an interlocking engagement with the holder, a fastening device operating inside of one end of the holder and movable against the compressor to shift the latter longitudinally in one direction, and locking means for said fastening device.

2. In a fountain pen, a holder having a side opening, a collapsible reservoir, a press bar having a button projecting through the side opening and provided with a catch hook for engagement with the holder, and a reciprocal fastening plug mounted in one end of the holder and engaging one end of the press bar for moving the same longitudinally, said plug having locking means.

3. In a fountain pen, a holder having a side opening, a press-bar having a button projecting through said opening and provided with a catch hook for engagement with the holder at one end of the side opening, and a reciprocal fastening plug slidably mounted in the rear end of the holder and provided with an inner engaging head for engagement with one end of the press-bar, and with an outer operating head, said plug being also provided with a retaining stud or pin guided through the rear end of the holder and adapted to be turned to a locking position at the inner side of said end of the holder.

4. In a fountain pen, a holder having a side opening, a collapsible reservoir, a press-bar having a button projecting through said side opening and having a catch hook for engagement with the holder, and a fastening plug slidably mounted in one end of the holder and having an inner engaging head for the press-bar and also provided with locking means.

852,369. PRESS-BAR-LOCKING DEVICE. PAUL E. WIRT, Bloomsburg, Pa. Filed July 10, 1906. Serial No. 325,485.

Claim.—1. In a fountain pen, the holder having a side opening, and a longitudinally arranged guiding opening in its wall, a collapsible reservoir, a press bar having a press button, a reciprocal locking shaft slidably mounted in said guiding opening and arranged to engage and disengage said press button, and a shifting operating head supported at one end of the holder and connected with said shaft.

2. In a fountain pen, a holder having a side opening and a longitudinally arranged guiding opening leading into the side opening, a collapsible reservoir, a press bar having a projecting press button, a reciprocal locking shaft slidably mounted in said guiding opening and having an inner catch end arranged to engage and disengage said press button, and an operating head mounted at one end of the holder and connected with one end of the locking shaft.

3. In a fountain pen, a holder having a side opening, a longitudinally arranged guiding opening, a collapsible reservoir, a press bar having a projecting press button provided with a keeper element, a cap closing the upper end of the holder and provided therein with a guiding socket, an operating head consisting of a slide pin working in said socket, and a longitudinally reciprocal locking shaft slidably mounted in the guiding opening of the holder and at its outer end having a centrally disposed stem connected with and carried by the operating head, said locking shaft having an inner catch end movable into and out of engagement with said keeper element of the press button.

852,370. AUTOMATIC SAFETY-BURNER. NATHAN WISE, New York, N. Y. Filed June 29, 1906. Serial No. 324,036.

Claim.—1. In a safety-burner, in combination, a member presenting a shoulder, a split ring disposed around the flame and adapted to engage said shoulder directly when heated, and means for producing a relative sliding movement between said ring and said shoulder to bring the same opposite to each other whereby to engage, said last means being actuated by turning on the gas.

2. In a burner, in combination, a tube through which the gas may flow, a member movably mounted thereupon, a thermally sensitive member carried between said tube and said movable member, said tube and said member having a shoulder therebetween, said thermally sensitive member affording means for engaging said shoulder when heated, to lock said movable member to said tube, and means for moving said movable member when the gas is turned on.

3. In a gas burner, in combination, a tube adapted to conduct the gas, a sleeve slidably mounted on said tube, one of said members presenting a shoulder, a thermally sensitive member carried by the other member opposite said shoulder and adapted to engage said shoulder to lock said sleeve against sliding on said tube, a plug for turning on the gas, and a connection from said plug to said sleeve for actuating said sleeve.

4. In a burner, in combination, a tube, a thermally sensitive member disposed around said tube near the locality of the flame, a plug adapted to turn on the gas, a sleeve slidably mounted in said tube and adapted to be locked by said thermally sensitive member when the gas is turned on, and a connection between said plug and said sleeve affording means for moving said sleeve in one direction only.

5. In a burner, in combination, a tube adapted to conduct the gas, a sleeve slidably mounted on said tube, a thermally sensitive member disposed about said tube near the location of the flame and affording means for locking said sleeve to said tube, a plug adapted to turn on the gas, a stem rigid with said sleeve and adapted to slide longitudinally therewith, a member adapted to slide upon said stem, means for limiting the movement of said last member on said stem, and means for advancing said last member when said plug is rotated.

6. In a burner, in combination, a body, a gas tube carried thereby, a plug mounted in said body and adapted to admit gas to said tube, a sleeve slidably mounted on said tube, a thermally sensitive member disposed near the locality of the flame and adapted to lock said sleeve to said tube, said sleeve having a stem guided in said body, a spring constraining said sleeve toward an extreme position, a rack slidably mounted on said stem, means whereby said rack may advance said stem in one direction only, and a pinion carried by said plug and meshing with said rack.

852,371. METHOD OF PRODUCING DICALCIUM PHOSPHATE. EUGEN BERGMANN, Ohlau, Germany. Filed Oct. 13, 1903. Serial No. 176,873.

Claim.—1. The process of manufacturing dicalcium phosphate, which consists of treating the product resulting from the solution of tricalcium phosphate in aqueous sulfurous acid with monocalcium phosphate, and applying heat to decompose the sulfite and expel sulfurous acid.

2. The process of manufacturing dicalcium phosphate, which consists of boiling a solution of tricalcium phosphate in aqueous sulfurous acid forming a precipitate containing calcium sulfite, adding monocalcium phosphate to the precipitate and subsequently boiling this mixture for the purpose of obtaining a precipitate free from calcium sulfite.

3. The process of producing dicalcium phosphate from tricalcium phosphate by treating the latter with aqueous sulfurous acid and adding monocalcium phosphate and causing re-action by heating, whereby the sulfite is decomposed and sulfurous acid finally expelled.

852,372. METHOD OF PRODUCING DICALCIUM PHOSPHATE. EUGEN BERGMANN, Ohlau, Germany. Original application filed Oct. 13, 1903, Serial No. 176,873. Divided and this application filed May 11, 1904. Serial No. 207,423.

Claim.—1. In the process of manufacturing dicalcium phosphate by treating tricalcium phosphate with aqueous sulfurous acid and eliminating the sulfurous acid by boiling, the improvement which consists in decomposing the calcium sulfite by adding a mineral acid.

2. The process of manufacturing dicalcium phosphate, which consists of boiling a solution of tricalcium phosphate in aqueous sulfurous acid forming a precipitate containing calcium sulfite, adding a mineral acid to the precipitate and subsequently boiling this mixture for the purpose of obtaining a precipitate free from calcium sulfite.

852,373. IRONING-BOARD. DAVID BLOCK, Philadelphia, Pa. Filed Feb. 20, 1904. Serial No. 194,571.

Claim.—The combination with an ironing board having supporting legs, of plates provided with ribs upon one face to form seats for the said legs, of an off-set portion carried by the upper end of each of said plates, said off-set portions being pivotally secured to the sides of the ironing board, each of said portions being provided with an inwardly extending lug adapted to bear upon the upper face

of the ironing board, and gripping fingers carried by the plates and adapted to engage an under surface of the object upon which the board is rested, the lugs limiting the gripping action of said fingers.

852,374. TYPE-WRITING MACHINE. ALEXANDER T. BROWN, Syracuse, N. Y. Original application filed June 4, 1904, Serial No. 211,128. Divided and this application filed Oct. 21, 1904. Serial No. 229,486.

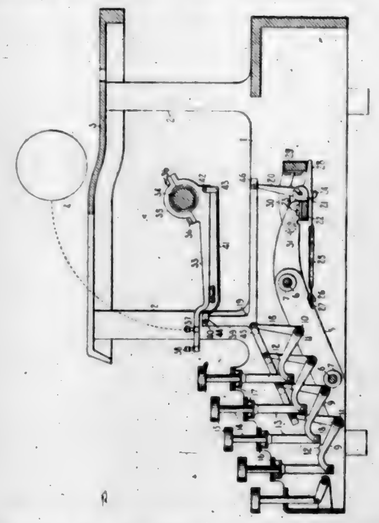

Claim.—1. In a typewriting machine, the combination with the main frame; of a frame detachably fixed in said main frame; a series of key levers mounted in said detachable frame; a series of secondary levers mounted in said detachable frame and operatively connected with said key levers; and a universal bar operated by said secondary levers.

2. In a typewriting machine, the combination of a link consisting of a curved strip of resilient sheet metal having one or more ears struck up therefrom at each end; a type bar pivotally connected to the ear or ears at one end of said link; and a key actuated member pivotally connected to the ear or ears at the other end of said link.

3. A type bar operating link consisting of a curved strip of resilient sheet metal having at its end a pair of ears bent back from its edges.

4. In a typewriting machine, the combination with the main frame, of a frame detachably fixed in said main frame and comprising parallel plates extending from front to back of the machine, parallel transverse rods supported by said plates, and a transverse bar rigidly supported by said plates; key levers mounted on said parallel rods; secondary levers mounted on said transverse bar; and links connecting said key levers and said secondary levers.

5. In a typewriting machine, the combination of a main frame; a series of front-strike upwardly and rearwardly striking type bars mounted in said main frame; a secondary frame comprising cross-rods supported by and detachably fixed in said main frame, plates extending fore and aft of the machine and supported by said cross rods, and a cross bar supported by said plates; key levers supported by said plates; secondary levers supported by said crossbar; parallel moving links connecting said key levers and secondary levers; and means separate from said secondary levers connecting said parallel moving links with said type bars.

6. In a typewriting machine, the combination of a main frame; a series of front-strike type bars mounted in said main frame; a secondary frame detachably fixed in said main frame; key levers and secondary levers mounted in said detachable frame; parallel moving links connecting said key levers with said secondary levers; and links directly connecting said parallel moving links with said type bars.

7. In a typewriting machine, the combination of a main frame; front-strike type bars mounted in said main frame; a secondary frame detachably fixed in said main frame and comprising transverse rods supported by said main frame, and a series of plates mounted on said rods; key levers and secondary levers supported by said plates; parallel moving links connecting said key levers and secondary levers; links directly connecting said parallel moving links with said type bars; and a universal bar operated by said secondary levers.

8. In a front-strike typewriting machine, the combination of a main frame, a platen mounted to travel on said main frame, upwardly and rearwardly striking type bars that impact against the front face of the platen, an auxiliary frame detachably fixed in the main frame so that the auxiliary frame and the parts carried thereby may be inserted in and removed as a whole from the main frame, key levers and secondary levers carried by said auxiliary frame, and intermediate links between said key levers and secondary levers, the connections between said key levers and type bars being effected through said intermediate links.

9. In a front-strike typewriting machine, the combination of a main frame, a platen mounted to travel on said main frame, upwardly and rearwardly striking segmentally arranged type bars that impact against the front face of the platen, an auxiliary frame detachably fixed in the main frame so that the secondary frame and the parts carried thereby may be inserted in and removed as a whole from the main frame, key levers, and secondary levers carried by said auxiliary frame, said levers having upright substantially parallel members, intermediate links between the upright members of said key levers and secondary levers, type bar actuating links between the type bars and said intermediate links, and a universal bar actuated by said secondary levers.

852,375. PAPER PERFORATING OR IMPRESSING MACHINE. CORTLAND CARLTON, Kansas City, Mo., assignor to National Perforating Machine Company, Kansas City, Mo., a Corporation. Filed Feb. 19, 1906. Serial No. 301,753.

Claim.—1. In a paper-perforating machine, in combination with the rotating platen roll, feed rolls for delivering the paper thereto and an intermediate roll for supporting the paper in its passage from the delivery side of the feed rolls on to the platen rolls.

2. In a paper-perforating machine, in combination with a platen roll and means for rotating it, feed rolls for delivering the paper thereto and an intermediate roll driven frictionally by the platen roll and frictionally driving the lower feed roll.

3. In a paper-perforating machine, in combination with the platen roll and means for rotating it, a roll mounted for frictional contact at its end portions only with the platen roll, and lower feed rolls for delivering the paper to the platen roll in frictional contact with said end portions only of said intermediate roll.

4. In a paper-perforating machine, in combination with the platen roll, a lower feed roll for delivering the paper thereto, and a roll for transmitting rotation from the platen roll to the feed roll lodged between the two in frictional contact with both, and springs pressing it yieldingly into said interval.

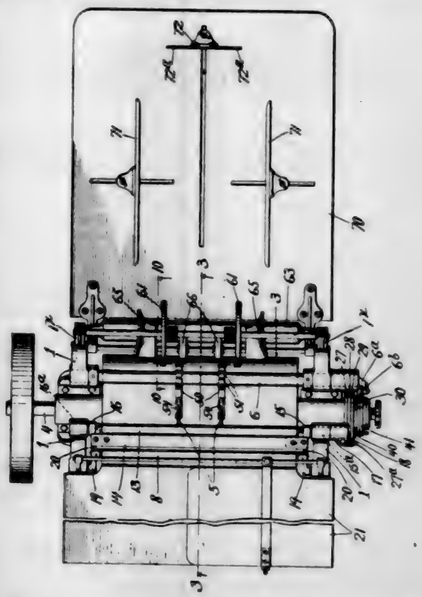

5. In a paper-perforating machine, in combination with a platen roll and means for rotating it, a lower feed roll for delivering the paper to the platen roll; an intermediate roll of greater diameter than the shortest distance between the platen roll and said feed roll lodged between said two rolls above their point of nearest approach; springs attached to the frame and bearings for said intermediate roll connected to the ends of the springs respectively for pressing said intermediate roll toward the other two rolls.

6. In a paper-perforating machine in combination with a platen roll and means for rotating it, a lower platen roll for delivering the paper thereto; an intermediate roll of greater diameter than the shortest distance between the platen roll and said feed roll lodged at its end portions upon both said rolls above the point of their nearest approach; spring-pressed bearings for said intermediate roll, said roll being reduced in diameter between said end portions and annularly grooved; a paper stop bar mounted for movement toward and from said grooved roll having fingers taking into the grooves of the latter, and means for lifting and depressing said bar.

7. In a paper-perforating machine, in combination with a platen roll and means for rotating it, a pair of feed rolls for delivering the paper to the platen roll; means for driving the lower of said feed rolls by connection with the platen roll; means for raising and lowering the upper feed roll to intermit the feed; an annularly grooved roller intermediate the lower feed roll and the platen roll adapted to support the paper in passing from the former to the latter; a paper stop bar mounted for movement toward and from said grooved roll, having fingers adapted to enter the grooves of the latter at the depressed position of the bar; means for raising and lowering said feed bar, and connections between said means and the means for raising and lowering the upper feed roll for causing said roll and said bar to have reverse movement.

8. In a paper-perforating machine, in combination with a rotating platen, a lower feed-roll and means for rotating it; an upper feed roll and bearings for the same movable toward and from the lower roll; a paper stop bar mounted for up-and-down movement in the interval between the feed rolls on the one hand and the platen roll on the other hand; connections between the upper feed roll bearings and said stop bar for causing them to move oppositely; a cam rotating with the platen roll and means operated thereby for giving said upper feed roll and the stop bar such opposite movement.

9. In a perforating machine, in combination with a platen roll, means for feeding the paper thereto; perforating or impressing disks and means for advancing them to or retracting them from the platen cylinder; cams for controlling the feeding devices and the impressing disks, said cams consisting of disks mounted on the platen roll shaft, the feed-controlling cam having the disk which controls the commencement of the feeding action fixed with respect to the shaft, two disks of the cam for controlling the perforating disks being adjustable about the shaft; a graduated disk or dial plate non-rotatable on the shaft adjacent to said two cam disks respectively, and means on said cam disks for reading their position on the respectively adjacent graduated disks.

10. In a machine for the purpose indicated, in combination with a platen roll, means for feeding the paper thereto; a cam for controlling said paper-feeding means mounted on the platen roll shaft and having the part thereof which controls the commencement of the feed fixed with respect to the shaft; perforating or impressing rolls mounted for movement toward and from the platen roll; means for operating them comprising a cam consisting of two disks mounted on the platen roll shaft adjustable thereabout for controlling respectively the lifting and depressing of the perforating disks each having an index; two disks mounted non-rotatably on the shaft adjacent to said cam disks respectively each having a graduated scale for indicating the position of the cam disks respectively, the zero point of the said scales being related to the feed-controlling cam so as to correspond to the point at which the froward edge of the paper reaches the perforating disk.

11. In a machine for the purpose indicated, in combination with a platen cylinder, means of feeding the paper thereto comprising a cam on the platen roll shaft; perforating disks mounted for movement toward and from the platen roll; means for so operating said perforating disks comprising a cam consisting of two disks for controlling respectively the movement of the perforating disks toward and away from the platen cylinder, said disks being adjacent to each other on the shaft and adjustable thereabout; dial plates on the shaft fixed relatively to the point of the feed-controlling cam which controls the commencement of the feeding movement, said dial plates being adjacent to the two cam disks respectively, and means for clamping all said cam disks and dial plates rigidly together and holding them fixed to the shaft.

12. In a machine for the purpose indicated, in combination with the platen cylinder, a perforating or impressing disk co-operating therewith to impress the paper; a roll bearing upon the platen cylinder beyond the disk, and curlers mounted below the line of delivery of the paper past said roll at the opposite sides of the path of the sheet, concave upwardly and toward each other oblique to the normal path of the edge of the sheet, and means for receiving the paper located beyond and lower than said curlers.

13. In a machine for the purpose indicated, in combination with a platen cylinder, the perforating or impressing disk co-operating therewith; a deflecting roller bearing upon the cylinder beyond the perforating disks; curlers mounted for lateral adjustment below the path of delivery of the paper from the under side of said roll; a receiving table mounted beyond and lower than the curlers, and adapted to be set inclined downward away from the curlers; lateral gages and an end gage or paper stop mounted adjustably on such table.

14. In a machine for the purpose indicated, in combination with a platen cylinder, a perforating or impressing disk; a carriage in which the same is mounted; a rock-shaft parallel with the axis of the cylinder on which said carriage is mounted; means for rocking the shaft to lift and lower the disk, the means for mounting the disk in the carriage comprising a lever in which the disk is journaled pivoted to the carriage; a spring reacting between the carriage and said lever for yieldingly holding the disk-carrying end of the latter toward the cylinder; a second lever pivoted to the carriage at the side of the rock-shaft toward the cylinder; a roll mounted in the free end of said last mentioned lever adapted to bear on the cylinder beyond the delivery side of the perforating disk, and a spring reacting on said lever arm to hold the roll yieldingly against the cylinder.

15. In a machine for the purpose indicated, in combination with a platen cylinder, a rock shaft mounted parallel to the axis thereof; means for rocking the shaft; a carriage mounted on the rock shaft for rocking therewith; a lever pivoted to the carriage and extending from its pivot past the shaft toward the platen cylinder; a perforating disk mounted on the free end of the lever; a spring reacting between the lever and the carriage to press the disk upon the platen cylinder; a collar on the shaft; a second lever pivoted to the carriage on the side of the shaft toward the cylinder; a pressure roll mounted on the free end of the last mentioned lever for bearing on the cylinder in the path of the perforating disk; a stop on the collar encountered by the disk-carrying lever in opposition to the action of its spring; a spring reacting between the second lever and the collar for holding the latter onto the cylinder, and a second stop on the collar for limiting the action of such spring.

16. In a machine for the purpose indicated, in combination with a platen cylinder, a rock shaft mounted parallel to the axis thereof and means for rocking it; a carriage mounted on the rock shaft consisting of a collar or disk which is split radially and bolts for clamping it to the shaft, said collar being also forked or split transversely to the shaft; a disk-carrying lever pivoted in the transverse fork, and a perforating disk mounted in its free end; a spring reacting against the lever to hold the disk toward the platen cylinder; a collar on the shaft within the transverse fork of the carriage having a stop for the disk-carrying lever; a second lever pivoted in said fork outside of the shaft toward the cylinder; a pressure roll mounted in the free end of such lever; a spring reacting between said lever and collar for holding the pressure roll onto the cylinder, the collar having a stop for the second lever at the opposite side of the fulcrum of the latter from the pressure roll.

17. In a machine for the purpose indicated, in combination with the platen cylinder and means co-operating therewith for perforating the paper, means for deflecting the paper from the cylinder and edge curlers mounted beyond the deflecting device in position for receiving the lateral edges of the paper, and means beyond the curlers for receiving the sheets delivered therefrom.

18. In a machine for the purpose indicated, in combination with a platen on which the paper is supported during perforation and means co-operating therewith for perforating the paper; means for advancing the paper from the supporting platen; a support for the paper on to which it is advanced comprising curlers in position to be encountered by the lateral edges of the paper in its advance, and a receptacle for the paper beyond such support.

19. In a machine for the purpose indicated, in combination with a platen on which the paper is supported during perforation, means co-operating therewith for perforating the paper; means for advancing the paper off from the platen; a transverse bar and curlers mounted adjustably thereon in position to be encountered by the lateral edges of the paper as it is advanced off the platen, and intermediate paper-supporting fingers also adjustable longitudinally on the bar.

20. In a machine for the purpose indicated, in combination with means for perforating the paper and advancing it from the perforating devices, a receptacle for the paper having a stop for the forward edge of the paper in the path of advance into the receptacle, said stop comprising a bar and relatively narrow edge projections protruding therefrom toward the advancing edge of the paper.

852,376. MACHINE FOR MAKING HORSESHOE-NAILS. SOLOMON M. CUTTER, Ashland, Mass. Filed June 17, 1904. Serial No. 213,026.

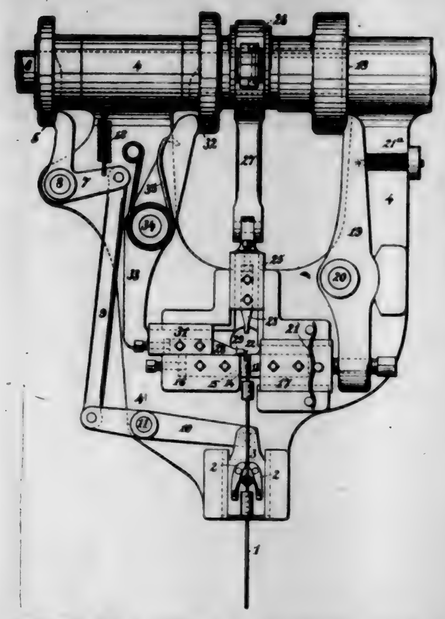

Claim.—1. In a machine to manufacture blanks for nails, dies having a cavity between them corresponding to the size and shape of the blank to be formed, a wire feeding mechanism, a cutting off die having an inclined surface back of its cutting edge to prevent bending the end of the wire by the withdrawal of the cutting off die after the blank has been severed therefrom, and to leave the end of the wire with an incline corresponding to the incline of the top of the head of the next blank to be formed from said wire and means to operate said dies.

2. In a machine to manufacture blanks for horseshoe nails from wire, dies having a cavity between them, corresponding to the size and shape of the blank to be formed, a wire feeding mechanism, and a cutting off mechanism, a cam operating the feeding mechanism so shaped as to produce a slight return movement during the operation of the blank forming dies to allow for the elongation of the wire thereby.

3. In a machine to manufacture blanks for horseshoe nails from wire, dies having a cavity between them, corresponding to the size and shape of the blank to be formed, a wire feeding mechanism to feed the blank from between said dies, and a cutting off die movable across the ends of the cavity between the blank-forming dies to sever the blank from the wire, said cutting off die having a groove on its face forming a guide for the proper guidance of the wire during the cutting off of the blank and to leave the wire in position to enter the blank forming die.

4. In a machine to manufacture blanks for horse shoe nails from wire, dies having a cavity between them corresponding to the size and shape of the blank to be formed, a heading die, means for causing it to enter the cavity between said dies to form the head on the blank, a wire feeding mechanism to feed the blank from said dies, and a cutting off die movable across the end of the cavity into which the heading die enters to sever the blank from the wire, mechanism to operate the cutting off die, causing its front end to rest against the heading die and thereby form a guide for the heading die during the heading of the blank.

852,377. DECORTICATING-MACHINE. CHARLES N. DAVIS, New York, N. Y., assignor, by direct and mesne assignments, of one-half to Charles Leffer, Brooklyn, N. Y., and one-half to International Fibre Company, Portland, Me., a Corporation of Maine. Filed Dec. 19, 1904. Serial No. 237,394.

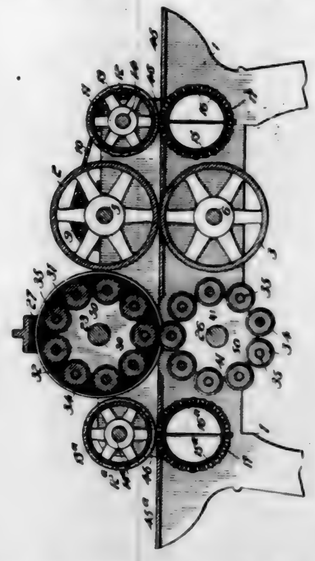

Claim.—1. In a machine for separating fiber, a series of upper rollers disposed about a common axis, and each being free to rotate on its own axis, carriers in which the said series of rollers are mounted, and means for revolving the said carriers in combination with a lower series of rollers mounted in carriers and free to have a similar double revolution, the members of one series acting in conjunction with the members of the other series to receive the material between them without friction and subdivide the same.

2. In a machine for separating fiber, the combination of a circular series of rollers each free to revolve on its own axis, carriers for the said series of rollers arranged to turn about an axis at the center of the series, the surface of the rollers being provided with a series of circumferential grooves and ribs, and a lower series of rollers similarly constructed and mounted, the said series of rollers being arranged to receive the material between them, and means for rotating the carriers and for also rotating the individual rollers, substantially as set forth.

3. In a machine for separating fiber, a circular series of rollers, each roller having its surface formed with ribs and grooves, a second circular series of similar rollers below the first, means for imparting a revolution to each series of rollers, means for positively rotating each roller on its own axis, and means for feeding the fiber to said rollers.

4. In a machine for separating fiber, an upper circular series of grooved and ribbed rollers each having thereon a friction pinion, a frame for bodily revolving said rollers, a stationary friction casing engaged by the friction pinions, a lower similar series of rollers, a revolving frame carrying them, a stationary friction casing engaged by the friction pinions of the lower series, and gearing for driving the frames carrying the two sets of rollers.

5. In a machine for separating fiber, a feed couple consisting of a roller having an elastic surface and a coöperating roller consisting of a stationary cylinder and a series of rollers working thereover.

6. In a decorticating machine, a feed couple consisting of a positively-driven roller and a drum having a roller surface, between which drum and roller the fiber is introduced.

7. In a machine for separating fiber, a feed couple consisting of a positively driven roller and a drum or bearing opposed thereto having its surface formed of a series of freely turning independent rollers.

8. In a machine for separating fiber, a feed couple consisting of means for advancing the material being treated, and a co-operating drum, between which parts the material is passed, the said drum comprising a stationary support and a series of independently turning rollers arranged to move over the said stationary support.

9. In a machine for separating fiber, the combination of a feed device, means for stripping or subdividing the fiber consisting of an upper series of positively-driven grooved rollers mounted on a common axis and a lower series of positively-driven coöperating similar rollers also mounted on a common axis, and a pair of crushing rollers.

10. In a machine for separating fiber, the combination of a feed device consisting of a roller having an elastic surface and a drum, relatively small rollers surrounding the drum, an upper series of grooved rollers revolving as a series about a common axis and also each roller being mounted so as to be free to have an independent rotation about its own axis, a lower series of similarly-arranged and grooved mounted rollers, between which upper and lower series of rollers the fiber is introduced from the feed mechanism and stripped, subdivided or otherwise operated upon, and a pair of crushing rollers for receiving the fiber after it leaves the threaded rollers.

11. In a machine for separating fiber, the combination of an upper circular series of grooved rollers revolving about a common axis and each having a rotation on its own axis, a lower circular series of similarly-arranged and driven grooved rollers, means for revolving the rollers as series about their common axes and also for revolving each roller about its own axis, a pair of crushing rollers, and means for driving the crushing rollers independently of the grooved rollers.

12. In a decorticating machine, a feed couple consisting of a positively-driven roller and a roller surface the latter consisting of small freely turning rollers.

13. In a decorticating machine, a feed couple consisting of means for advancing the material being treated, said means operating positively, and a roller surface, consisting of a bodily movable series of freely turning rollers, opposed thereto, between which surface and the aforesaid means the fiber is introduced.

14. In a decorticating machine, a feed couple consisting of a positively-driven roller, a roller surface consisting of a bodily movable series of freely turning rollers, and a stationary support for said roller surface.

852,378. DECORTICATING-MACHINE. CHARLES N. DAVIS, New York, N. Y.; Charles E. Teale, administrator of said Davis, deceased, assignor to International Fibre Company, Portland, Me., a Corporation of Maine. Filed Jan. 17, 1906. Serial No. 296,475.

Claim.—1. In a decorticating machine, the combination of a feed device, a squeeze device, and a stripping mechanism consisting of a circular series of rollers having a revolution in series and each an individual reverse revolution and a second co-operating circular series of rollers, all the rollers being positively actuated and arranged so that the roller couples may separate the fiber.

2. In a decorticating machine, the combination of a feed device, and a plurality of roller stripping mechanisms, each mechanism consisting of a circular series of rollers having a serial revolution and an individual revolution, and a second co-operating similar circular series of rollers having a serial revolution and an individual revolution, all the rollers of the different series being positively actuated and the individual revolution being reverse to that of the serial revolution, the fiber being passed from one roller mechanism to the next in series until the operation is complete.

3. In a decorticating machine, a plurality of roller stripping mechanisms, each consisting of a circular series of rollers having a serial revolution and an individual revolution, and a co-operating similar circular series of rollers co-acting therewith and having a serial revolution and an individual revolution, all the rollers of the different mechanisms being positively actuated, and the individual revolution of each roller being reverse to that of the serial revolution, and the rollers of the different mechanisms differing only in respect to their surfaces, some being grooved, some plain, and the grooves of some differing from the grooves of others.

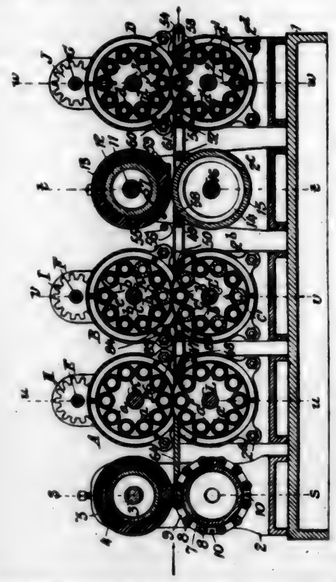

4. In a decorticating machine, the combination of a roller mechanism consisting of a circular series of rollers having a revolution in series and individually, and a second co-operating similar circular series of rollers, the rollers of both series being positively actuated and all being grooved, a second roller mechanism consisting of a circular series of rollers having a double motion and a co-operating series of similar rollers, the rollers of this second mechanism being alternately grooved and plain, and a third roller mechanism consisting of a circular series of rollers having a double motion and a co-operating circular series of similar rollers, all the rollers of this third mechanism being yielding and grooved so as to be capable of engaging with each other.

5. In a decorticating machine, the combination of a feed couple, a plurality of stripping mechanisms each consisting of a circular series of rollers positively actuated with a double motion and a co-operating circular series of similar rollers, and a squeeze couple, together with means for delivering the material from one roller mechanism to the other throughout the machine.

6. In a decorticating machine, the combination of a feeding couple, a plurality of roller stripping mechanisms each consisting of a circular series of rollers positively actuated with a double motion, and a co-operating similar circular series of rollers, a squeeze couple, and conveyers for carrying the material from one roller mechanism to the other and to the squeeze couple.

7. In a decorticating machine, the combination of a feeding couple, a plurality of roller mechanisms each consisting of a circular series of rollers positively actuated with a double motion and a co-operating similar series of rollers, conveying devices for carrying the material from one roller mechanism to the action of the next, a squeeze couple for crushing the material delivered thereto from the adjacent roller mechanism, and another roller mech-

anism similar to the others for imparting a final stripping operation.

8. In a decorticating machine, the combination of a feeding couple, a roller mechanism consisting of a circular series of grooved stripping rollers positively actuated with a double motion and a co-operating circular series of similar grooved rollers, the edges of the ribs of each roller couple nearly touching when in action, a second roller mechanism consisting of a circular series of rollers positively actuated with a double motion, every alternate roller being plain and every alternate roller being grooved, and a co-operating series of similar alternately plain and grooved rollers, so that each roller couple consists of one plain and one grooved roller, a squeese couple consisting of an upper and a lower roller for receiving the material from the adjacent roller mechanism, and a final roller mechanism consisting of a circular series of rollers positively actuated with a double motion, the rollers having a yielding surface and grooved, and a co-operating circular series of yielding grooved rollers, so that the grooves in the rollers of each couple may interlock when in action.

9. In a decorticating machine, a circular series of grooved stripping rollers positively actuated with a double motion, and a similar circular series of grooved stripping rollers coacting therewith and likewise positively actuated with a double motion, revolving frames in which the ends of the rollers are journaled, a stationary rod on which the frames revolve, and stationary casings within which friction rings on all the rollers act to impart an individual rotation to each roller which is the reverse of the serial revolution of the rollers.

10. In a decorticating machine, a circular series of grooved stripping rollers positively actuated with a double action, and a co-operating circular series of similar grooved stripping rollers, providing roller couples which strip the fiber, revolving frames in which the ends of the rollers are journaled, friction rings or surfaces on the rollers, stationary casings surrounding the friction rings, removable friction rings within and against which the roller frictions act, and bevel clamping rings for holding the latter friction rings in position within the casings.

11. In a decorticating machine, a circular series of grooved stripping rollers positively actuated with a series and an individual motion, the latter being the reverse of the former, and a similar circular series of grooved stripping rollers positively actuated with a series and an individual motion, the latter being the reverse of the former, revolving frames in which the ends of the rollers are journaled, said frames having gear teeth, means for connecting the frames together, a stationary rod on which the frames revolve, stationary casings, and friction rings on the rollers, which rings operate within the casings.

12. In a decorticating machine, a circular series of grooved stripping rollers positively actuated with a series and an individual motion, the latter being the reverse of that of the former, to avoid friction on the material, and a similar circular series of grooved stripping rollers coacting therewith, a stationary rod, revolving frames in which the ends of the rollers are journaled, said frames revolving on said rod, revolving rings on the rod, stationary casings, friction surfaces on the rollers which operate against the rings to revolve the rollers, and a series of rollers between said friction surfaces and the revolving rings.

13. In a decorticating machine, a circular series of grooved stripping rollers positively actuated with a series and an individual motion, and a second similar circular series of grooved stripping rollers co-acting therewith, revolving frames in which the ends of the rollers are journaled, said frames being provided with gear teeth, a stationary rod on which the gear frames revolve, stationary casings within which friction surfaces on all the rollers operate to impart a rotation to the rollers, revolving rings on the stationary casings, and a series of rollers in the same line between the roller friction surfaces and the revolving rings, together with means on the stationary rod for keeping the revolving rings and the rollers in correct alinement.

14. In a decorticating machine, a circular series of grooved stripping rollers positively actuated with a series and an individual motion and a second similar circular series of grooved stripping rollers co-acting therewith, gear wheels in which the ends of the rollers are journaled, a stationary rod on which the gear wheels revolve, stationary casings, removable friction rings within said casings friction surfaces on the rollers act against the friction rings to rotate the rollers, beveled clamping rings for holding the removable friction rings in position, revolving rings on the stationary rod, a series of loose rollers between said revolving rings and the friction surfaces on the stripping rollers, and means for keeping the revolving rings and the loose rollers in correct alinement.

15. In a decorticating machine, a circular series of grooved stripping rollers positively actuated with a series and individual motion, the latter being the reverse of the former, and a second similar series of grooved stripping rollers co-acting therewith, gear wheels in which the ends of the rollers are journaled, a stationary rod on which the gears revolve, tie devices for holding the gears together, stationary casings, friction rings in said casings, friction surfaces on the rollers acting to rotate the latter, clamping rings for holding the friction rings in casings, and a series of loose rollers between the stationary rod and the roller friction surfaces, for contributing to the ease of movement of the rollers.

16. In a decorticating machine, the combination of a feed couple, a plurality of stripping mechanisms each consisting of a circular series of rollers and a co-operating second circular series of similar rollers, all of the rollers having a double motion, one the reverse of the other, a squeeze couple, and means for supplying air pressure to deliver the material from one operation to the next.

17. In a decorticating machine, the combination of a feed couple, a roller mechanism whose rollers have a double motion, a second roller mechanism co-acting with the first mechanism whose rollers have a double motion, means for conveying the material from the first roller mechanism to the second, means for supplying fluid or liquid pressure for facilitating the passage of the material from one mechanism to the next, and means for treating the material after it leaves the second roller mechanism.

852,379. APPARATUS FOR APPLYING COMPOSITION TO SPLINTS. FERRAL C. DININNY, New York, N. Y. Filed Aug. 16, 1906. Serial No. 330,783.

Claim.—1. In match making machinery, the combination with splint supporting and carrying means, of composition applying means comprising individual fingers, one for each splint to be supplied at a time, and means for reciprocating the fingers from a point to receive composition to a point to apply same to the splints.

2. In match making machinery, the combination with splint supporting and carrying means, of composition applying apparatus comprising a reciprocating member having a plurality of fingers, one for each splint to be acted upon during an operation of the machine, and means for reciprocating the member from a point immersing the fingers in composition to a point to apply composition to the splints.

3. In match making machinery, the combination with splint supporting and carrying means, of a tank for containing composition, a member adapted to be reciprocated backward and forward from a point within the tank, a plurality of fingers carried by the said member, one for each splint to be acted upon at a time, said fingers having each a concavity at the upper end thereof and means for reciprocating the member.

4. In match making machinery, the combination with splint supporting and carrying means, of composition applying means comprising a reciprocating member and upwardly convergent individual fingers, one for each splint to be operated upon at a time, means for reciprocating the fingers from a point to receive composition to a point to apply same to the splints, and means for applying a step by step movement to the splint supporting and carrying means.

5. In match making machinery, the combination with splint supporting and carrying means, of composition applying means comprising a reciprocating member and a plurality of individual fingers, one for each splint to be operated upon at a time, uprising from the said member, said member having openings between adjacent fingers, and means for reciprocating the said member and fingers carried thereby from a point to receive composition to a point to apply same to the splints.

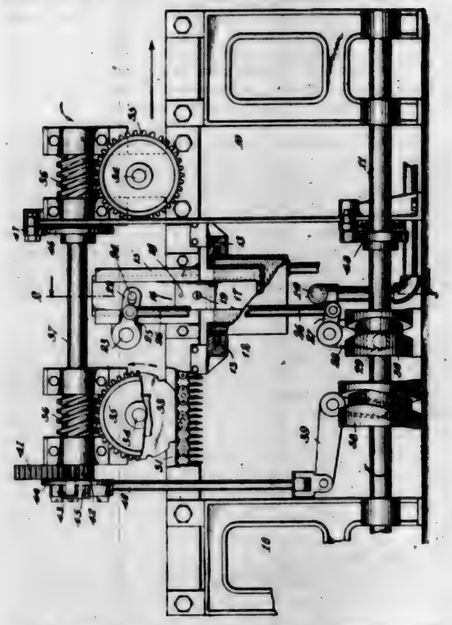

6. In match making machinery, the combination with splint supporting and carrying means, of composition applying means comprising individual fingers, one for each splint to be supplied at a time, means for reciprocating the fingers from a point to receive composition to a point to apply same to the splints, means for imparting a step by step movement to the splint supporting and carrying means, and positive locking means for holding the splint supporting and carrying means stationary while the composition is being applied.

852,380. BOAT. GUILLERMO A. FARINI, Toronto, Ontario, Canada, asignor of one-half to Rensselaer Hunt, Hamilton, Canada. Filed Aug. 22, 1906. Serial No. 331,573.

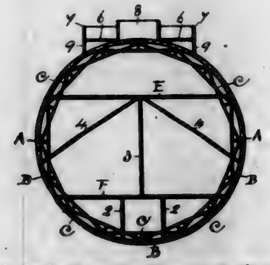

Claim.—1. In boat construction, a single tubular shell, longitudinal I-beams therein, and spaced straight girders each passing centrally over the inner edge of one beam and connected with the outer edges of the two beams on either side thereof.

2. In boat construction, a single tubular shell, circumferential sets of girders therein forming trusses, and longitudinal beams in the shell forming struts to said trusses.

3. In boat construction, a single tubular shell, circumferential sets of girders therein forming trusses, and longitudinal beams in the shell forming struts to said trusses, the girders of one set being in alternated relation to those in the next.

852,381. WIRELESS-TELEGRAPH RECEIVING SYSTEM. LEE DE FOREST, New York, N. Y., assignor to George K. Woodworth, Boston, Mass. Filed Dec. 4, 1905. Serial No. 290,054.

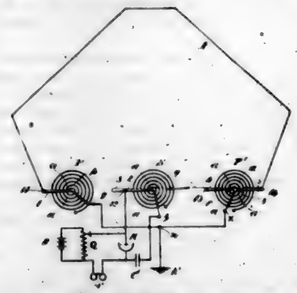

Claim.—1. In a wireless telegraph receiving system, the combination with a loop antenna and a tuned receiving circuit, of a transformer having two primary windings serially connected in said loop antenna and a secondary winding inductively related to said primary windings and forming part of said tuned receiving circuit.

2. In a wireless telegraph receiving system, the combination with a loop antenna and a tuned receiving circuit, of a transformer having as its primary windings two flat spirals serially connected in said loop antenna, and a secondary winding, also consisting of a flat spiral, inductively related to said primary windings and forming part of said tuned receiving circuit.

3. In a wireless telegraph receiving system, the combination with a loop antenna and a tuned receiving circuit, of a transformer having two adjustable primary windings serially connected in said loop antenna, and an adjustable secondary winding inductively related to said primary windings and forming part of said tuned receiving circuit.

4. In a wireless telegraph receiving system, the combination with a loop antenna and a tuned receiving circuit, of a transformer having two primary windings serially connected in said loop antenna, means whereby said transformer windings may be moved toward and away from each other, and a secondary winding inductively related to said primary windings and forming part of said tuned receiving circuit.

5. In a wireless telegraph receiving system, the combination with a loop antenna and a tuned receiving circuit, of a transformer having two primary windings serially connected in said loop antenna, a secondary winding inductively related to said primary windings and forming part of said tuned receiving circuit, and means whereby said secondary winding may be moved with respect to said primary windings.

6. In a wireless telegraph receiving system, the combination with a loop antenna and a tuned receiving circuit, of a transformer having two primary windings serially connected in said loop antenna, a secondary winding placed between said primary windings and forming part of said tuned receiving circuit and means whereby said secondary winding may be moved with respect to said primary windings.

7. In a wireless telegraph receiving system, an antenna, a circuit consisting of two branches connecting said antenna to earth, a transformer having two primary windings each serially connected in a different one of said branches, and a secondary winding inductively related to said primary windings and forming part of a tuned receiving circuit.

8. In a wireless telegraph receiving system, an antenna, a circuit consisting of two branches connecting said antenna to earth, a transformer having two primary windings each serially connected in a different one of said branches, a secondary winding inductively related to said primary windings and forming part of a tuned receiving circuit, and a circuit connecting the upper end of said antenna to earth.

9. In a wireless telegraph receiving system, an antenna, a transformer having two primary windings associated therewith, a secondary winding inductively related to said primary windings and means for causing the electrical oscillations developed in said antenna to have either a differential or a conjunctional effect on said secondary winding.

10. The combination with a wireless telegraph receiving antenna of an oscillation transformer consisting of three flat spirals, two of which are primaries and one of which is a secondary and heavy bases each having a different one of said spirals mounted thereon whereby said primaries may be moved with respect to said secondary and said secondary may be moved with respect to said primaries.

11. The combination with a wireless telegraph receiving antenna of an oscillation transformer consisting of three flat spirals, two of which are primaries and one of which is a secondary, said primaries being constructed and arranged to act differentially upon said secondary and means whereby the number of effective convolutions of said primaries and said secondary may be varied in a continuous manner.

12. The combination with a wireless telegraph receiving antenna of an oscillation transformer consisting of three flat spirals, two of which are primaries and one of which is a secondary, said primaries being constructed and arranged to act differentially upon said secondary means whereby said primaries may be moved toward and away from each other and means whereby said secondary may be moved with respect to said primaries.

13. In a wireless telegraph receiving system, the combination with a loop antenna and a receiving circuit, of a transformer having as its primary windings two flat spirals serially connected in said loop antenna, a secondary winding, also consisting of a flat spiral, inductively related to said primary windings and forming part of said receiving circuit, and means for varying the number of effective convolutions of said flat spirals.

14. The combination with a wireless telegraph receiving antenna of an oscillation transformer consisting of three flat spirals, two of which are primaries and one of which is a secondary, said primaries being constructed and arranged to act differentially upon said secondary and means whereby said secondary may be moved with respect to said primaries.

15. In a wireless telegraph receiving system, an antenna, a circuit consisting of two branches connecting said antenna to earth, a transformer having as its primary windings two flat spirals each serially connected in a different one of said branches, and a secondary winding, consisting of a flat spiral, inductively related to said primary windings and forming part of a tuned receiving circuit.

16. In a wireless telegraph receiving system, an antenna, a circuit consisting of two branches connecting said antenna to earth, a transformer having two adjustable primary windings each serially connected in a different one of said branches, and an adjustable secondary winding inductively related to said primary windings and forming part of a tuned receiving circuit.

17. In a wireless telegraph receiving system, an antenna, a circuit consisting of two branches connecting said antenna to earth, a transformer having two primary windings each serially connected in a different one of said branches, means whereby said transformer windings may be moved each with respect to the other, and a secondary winding inductively related to said primary windings and forming part of a tuned receiving circuit.

18. In a wireless telegraph receiving system, an antenna, a circuit consisting of two branches connecting said antenna to earth, a transformer having two primary windings each serially connected in a different one of said branches, a secondary winding inductively related to said primary windings and forming part of a tuned receiving circuit, and means whereby said secondary winding may be moved with respect to said primary windings.

19. In a wireless telegraph receiving system, an antenna, a circuit consisting of two branches connecting said antenna to earth, a transformer having two primary windings each serially connected in a different one of said branches, a secondary winding placed between said primary windings and forming part of a tuned receiving circuit, and means whereby said secondary winding may be moved with respect to said primary windings.

20. In a wireless telegraph receiving system, an antenna, a circuit consisting of two branches connecting said antenna to earth, a transformer having as its primary windings two flat spirals, each serially connected in a different one of said branches, means whereby the number of effective convolutions of said primary windings may be varied, a secondary winding, consisting of a flat spiral, inductively related to said primary windings and forming part of a receiving circuit, and means whereby the number of effective convolutions of said secondary winding may be varied.

852,382. OIL-BURNING APPARATUS. EDGAR J. FOSTER, Los Angeles, Cal., assignor of two-thirds to Henry S. Woolner, Los Angeles, Cal. Filed Jan. 16, 1906. Serial No. 296,434.

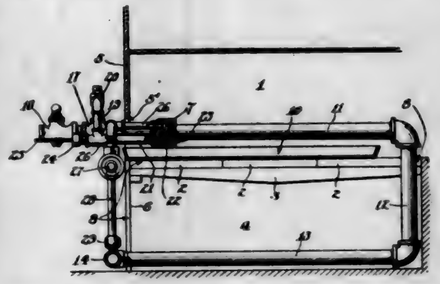

Claim.—1. In combination with a combustion chamber, having a heat insulating floor, a water pipe extending under the said floor and having a riser extending up through the floor, a steam generator pipe extending from said riser forwardly to and through the front wall of the chamber and provided with a blow-off valve at its outer end, two pipes extending laterally and oppositely from said steam generator pipe, and each provided with a shut off valve, a burner head for each pipe having a steam outlet connected to said pipe and an oil outlet above the steam outlet, and an oil pipe having branches provided with valves and connected to the oil outlets of the burner heads, the burner heads being directed parallel to the steam generator pipe, on opposite sides thereof.

2. In combination with a combustion chamber having a heat insulating floor with a slot therein extending rearwardly from the front of the chamber, a water supply pipe having a shut off means, a pipe extending rearwardly from said water pipe, below the floor of the chamber, a riser extending up from the last named pipe through the aforesaid slot, a steam generator pipe extending forwardly from said riser, above said floor, to and through the front wall of the chamber, and provided at its front end with a blow-off valve, a burner head at one side of the steam generator pipe and having a steam outlet and an oil outlet above the steam outlet, a pipe having a valve and connected to the steam generator and to the steam outlet of the burner head, an oil supply pipe having a valve and connected to the outlet of the burner head, and a cleaner device slidably mounted in the burner head to penetrate the steam outlet thereof.

852,383. CRANBERRY SCOOP OR PICKER. GEORGE W. GRISWOLD, Manomet, Mass., assignor of one-half to Melvin L. Childs, Waltham, Mass. Filed Jan. 21, 1907. Serial No. 353,295.

Claim.—1. A cranberry picker including a scoop, a cover, and means operatively connected with the cover and adapted to engage the ground for moving the cover to closed position.

2. A cranberry picker including a scoop having a pivoted cover, and means operatively connected with the cover for moving the latter to closed position when the scoop is tilted rearwardly in engagement with the ground.

3. A cranberry picker including a scoop, a cover for the scoop, means for moving the cover to closed position when the rear end of the scoop is tilted downwardly, and means for releasing the cover when the scoop is tilted in the opposite direction.

4. A cranberry picker including a scoop, a cover pivotally mounted on the scoop, and shoes operatively connected with the scoop for moving the cover to closed position.

5. A cranberry picker including a scoop, a cover pivotally mounted on the scoop, shoes operatively connected with one end of the cover and normally projecting below the scoop, and means for yieldably holding the shoes in normal position.

6. A cranberry picker including a scoop, a cover pivotally mounted on the scoop, a rod extending transversely of one end of the cover and provided with depending shoes for moving the cover to closed position, and springs connected with the scoop and shoes, respectively.

7. A cranberry picker including a scoop, a perforated cover pivotally mounted on the scoop and provided with an arm, a transverse rod engaging the arm, depending shoes carried by the rod, and springs connecting the scoop and shoes for normally holding the cover in open position.

8. A cranberry picker including a scoop having spaced tines, a perforated cover extending over the tines, shoes operatively connected with one end of the cover for moving said cover to closed position, and springs engaging the shoes for moving the cover to open position.

9. A cranberry picker including a scoop, a cover pivotally mounted on the scoop and provided with spaced arms, keepers carried by the arms, a shaft extending through the keepers and provided with depending shoes for moving the cover to closed position, and springs operatively connected with the shoes and scoop respectively.

10. A cranberry picker including a scoop provided with spaced tines, a cover pivotally mounted on the scoop and having one end thereof extended beyond its pivot point to form spaced arms, keepers carried by the arms, a shaft extending through the keepers, shoes depending from the opposite ends of the shaft for moving the cover to closed position, springs operatively connected with the shoes for returning the cover to open position, and an operating handle secured to the scoop.

11. A cranberry picker including a scoop provided with side members, a reinforcing block interposed between the side members and provided with spaced sockets, spacing blocks, tines interposed between the spacing blocks and having their adjacent ends seated in the sockets, and a locking bar engaging the tines for holding the same in engagement with the spacing blocks.

12. A cranberry picker including a scoop having side members, a reinforcing block connecting the side members, said block having sockets formed therein, spacing blocks, tines interposed between the adjacent spacing blocks and having their adjacent ends seated in the sockets in the reinforcing blocks, a transverse bar having perforations formed therein for the reception of the tines and having its opposite ends extending through the side members of the scoop and provided with terminal threads, and clamping nuts engaging the threads on the bar for locking the tines in engagement with the spacing blocks.

13. A cranberry picker including a scoop provided with spaced tines, a cover pivotally mounted on the scoop, shoes operatively connected with the cover for moving the same to closed position, springs for returning the cover to open position, and means for locking the tines in position on the scoop.

14. A cranberry picker including a scoop provided with side members, spaced detachable tines interposed between the side members, a locking bar having perforations formed therein for the reception of the tines, a cover pivotally mounted on the scoop above the tines, shoes operatively connected with the cover for moving the latter to closed position, springs secured to the side members of the scoop and operatively connected with the shoes for moving the cover to open position, and means for adjusting the locking bar thereby to prevent accidental displacement of the tines.

15. A cranberry picker including a scoop, a cover, and means operatively connected with the cover and projecting beyond the bottom of the scoop for moving the cover to closed position.

852,384. FLUID-PRESSURE POWER-TRANSMISSION MECHANISM. JOHN W. HALL, London, England, assignor to Hall's Transmission Gear Syndicate, Limited, London, England. Filed Oct. 24, 1905. Serial No. 284,406.

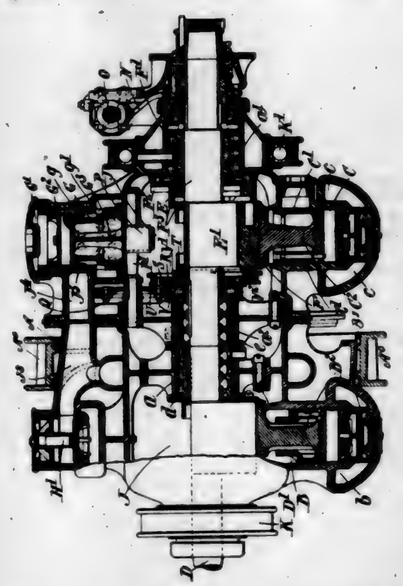

Claim.—1. In a power-transmitting apparatus, the combination with a rotary pump-casing, a pump-cylinder fixed to it, a rotary adjuster-casing in operative connection with the pump-casing, and an adjuster-cylinder fixed to the adjuster-casing, of bearings co-axial with one another on which the pump-casing and adjuster-casing turn, a pump crank-shaft and an adjuster-crank-shaft, and bearings that support both of said shafts, supported by said casings and co-axial with but independent of the aforesaid bearings on which the casings turn.

2. In a power-transmitting apparatus, the combination with a rotary pump-casing, a pump-cylinder fixed to it, a

rotary adjuster-casing in operative connection with the pump-casing, and an adjuster-cylinder fixed to the adjuster-casing, of bearings co-axial with one another on which the pump-casing and adjuster-casing turn, a pump crank-shaft and an adjuster crank-shaft, and a plurality of bearings that support both of said shafts at both sides of each crank supported by said casings and co-axial with but independent of the aforesaid bearings on which the casings turn.

3. In a power-transmitting apparatus, the combination with a rotary pump-casing, a pump-cylinder fixed to it, a rotary adjuster-casing in operative connection with the pump-casing, and an adjuster-cylinder fixed to the adjuster-casing, of bearings co-axial with one another on which the pump-casing and adjuster-casing turn, a pump-crank-shaft and an adjuster crank-shaft, bearings that support both of said shafts supported by said casings and co-axial with, but independent of, the aforesaid bearings on which the casings turn, a sleeve F^1 encircling the adjuster crank-shaft between it and its bearing in the casing and rotatably adjustable with relation to said shaft, an eccentric upon the adjuster crank-pin, and a coupling constituting an operative connection between the sleeve and the eccentric.

4. In a power-transmitting apparatus, the combination with a rotary pump-casing, a pump-cylinder fixed to it, a rotary adjuster-casing in operative connection with the pump-casing, and an adjuster-cylinder fixed to the adjuster-casing, of bearings co-axial with one another upon which the pump-casing and adjuster-casing turn, a pump crank-shaft and an adjuster crank-shaft, bearings for the pump crank-shaft and adjuster crank-shaft, and an eccentric encircling the crank-pin on the adjuster crank-shaft, means whereby that eccentric is rotatably adjustable round the crank-pin, a valve-operating crank-shaft (P^1) mounted in bearings in one of the rotary casings, a gear-ring (U) rotatable in relation to the adjuster crank-shaft and concentric therewith, and operatively connected to the eccentric, a gear-ring T, smaller than the aforesaid gear-ring, concentric with the adjuster crank-shaft and fixed to it so as not to be rotatable in relation thereto, gear-wheels (S) meshing with both of the gear rings, a rotatable toothed annulus (R) encircling the adjuster crank-shaft, capable of rotation in relation to that shaft and having upon it pivots which carry the said gear-wheels, and a positive operative connection between the valve-operating crank-shaft and the toothed annulus.

5. In a power-transmitting apparatus, the combination of a rotary pump-casing, a pump-cylinder fixed to it, a rotary adjuster-casing in operative connection with the pump-casing, an adjuster cylinder fixed to the adjuster casing, bearings co-axial with one another upon which the pump-casing and adjuster-casing turn, a pump crank-shaft and an adjuster crank-shaft, bearings that support both of said shafts supported by said casings and co-axial with, but independent of, the aforesaid bearings on which the casings turn, a pump valve-chamber in the plane in which the pump-cylinder moves, and an adjuster valve-chamber in the plane in which the adjuster-cylinder moves.

6. In a power transmitting mechanism the combination with a rotary casing, a fluid-pressure-creating device such as a pump having two co-operative elements one of which is operatively connected with the casing and a fluid pressure power and speed adjuster of the same maximum capacity as the pump, having two co-operating elements one of which is connected with the casing, and a valve controlling the distribution of motive fluid, of a shaft projecting through the pump end of the device, a crank on the shaft, a connection between the second pump element and the crank, a fixed eccentric, a rotatable eccentric surrounding said fixed eccentric, a connection between the second element of the power and speed adjuster and the rotatable eccentric and sun and planet gearing between the controlling valve and the adjustable eccentric.

7. In a power transmitting mechanism the combination with a rotary casing, a fluid-pressure-creating device such as a pump having two co-operating elements one of which is operatively connected with the casing, and a fluid-pressure power and speed adjuster having two co-operating elements one of which is connected with the casing, and a valve controlling the distribution of motive fluid through the adjuster cylinder, of a shaft, a crank on the shaft, a connection between the crank and the pump piston, a fixed eccentric, an adjustable eccentric surrounding said fixed eccentric, a connection between the second element of the power and speed adjuster and said movable eccentric and sun and planet gearing between the controlling valve and the said movable eccentric.

8. In a power transmitting mechanism the combination with a rotary casing, a fluid pressure-creating device such as a pump having two co-operating elements, one element of which is operatively connected with the casing, a fluid pressure power and speed adjuster of the same maximum capacity as the pump and having two co-operative elements, one of which is connected with the casing, and a valve controlling the distribution of motive fluid to the adjuster cylinder, of a shaft, a crank on the shaft, bearings for the shaft on each side of the crank, a connection between the crank and the second element of the pump, a stationary eccentric, a stationary support to which the eccentric is fixed, a movable eccentric surrounding the stationary eccentric, a connection between the second element of the adjuster and the movable eccentric, planet gearing for operating the controlling valve, and operative connection between the movable eccentric and the planet gearing.

9. In a power transmitting mechanism the combination with a rotary casing a fluid-pressure-creating device such as a pump having two co-operative elements one of which is operatively connected with the casing, a fluid pressure power and speed adjuster having two co-operative elements one of which is connected with the casing, and a valve controlling the distribution of motive fluid to an adjuster cylinder, of a shaft, a crank on the shaft, bearings for the shaft on each side of the crank, a connection between the crank and the second element of the pump, a stationary eccentric, a stationary support to which the eccentric is fixed, a movable eccentric surrounding the stationary eccentric, a connection between the movable eccentric and the second element of the adjuster, an eccentric connected with the controlling valve, and planet gear between the valve eccentric and the aforesaid movable eccentric.

10. In a power-transmitting mechanism the combination with a rotary casing, a fluid-pressure-creating device such as a pump having two co-operative elements one of which is operatively connected with the shaft, a fluid-pressure power and speed adjuster of the same maximum capacity as the pump having two co-operative elements one of which is connected with the casing, and a valve controlling the distribution of motive fluid to an adjuster cylinder, of a rotary shaft projecting through the pump end of the device, a crank on the shaft, bearings for the shaft on each side of the crank, a stationary shaft in line with the rotary shaft, an eccentric fixed to the stationary shaft, and adjustable eccentric surrounding the fixed eccentric, a connection between the movable eccentric and the second element of the power and speed adjuster, a movable sleeve, a flexible connection between the sleeve and the movable eccentric, a movable eccentric connected with the controlling valve, planet gearing connected with this eccentric, a flexible connection between the planet gearing and the eccentric operating the adjuster.

11. In a power transmitting device the combination with a rotary casing, a pump cylinder, an adjuster cylinder having the same capacity as the pump cylinder, a valve for controlling the passage of fluid to and from the cylinders and the center of the casing, of a shaft, a crank on the shaft, a connection between the pump piston and the crank, a fixed eccentric, a movable eccentric surrounding the fixed eccentric, a connection between the movable eccentric and the adjuster piston, a rotatable sleeve, a flexible connection between the rotatable sleeve and the movable eccentric, a movable eccentric, a connection between this eccentric and the controlling valve, planet gearing connected with this eccentric and an operative connection between the planet gearing and the adjuster-controlling eccentric.

12. In a power-transmitting mechanism the combination with a rotary casing, a cylinder connected to the casing, a pump piston in the cylinder, a fluid pressure power and speed adjuster cylinder having the same maximum capacity as the pump cylinder and connected with the casing, a piston in the adjuster cylinder, a valve controlling the distribution of motive fluid to the adjuster cylinder, a rotary shaft projecting through one end of the device, a crank on the shaft, bearings for the shaft on each side of the crank, of a fixed eccentric, an adjustable eccentric surrounding the fixed eccentric, a connection between the adjuster piston and the adjustable eccentric, a rotatable sleeve, a flexible connection between the sleeve and the adjustable eccentric, a rotatable internally toothed ring, a flexible connection between the adjustable eccentric and the ring, a rotatable plate, a planet pinion carried by the plate and gearing with the teeth of the ring, a fixed toothed ring gearing with the planet pinion, a pinion on the rotatable plate, a shaft, a pinion fixed to the shaft, an eccentric on the shaft connected with the controlling valve, and a pinion on the shaft gearing with the central pinion on the plate.

13. In a power-transmitting mechanism the combination with a rotary casing, a pump cylinder connected to the casing, a piston in the cylinder, a fluid-pressure power and speed adjuster cylinder connected with the casing, a piston in the adjuster cylinder, a valve controlling the distribution of motive fluid to the adjuster cylinder, of a rotary shaft, a crank on the shaft, a connection between the crank and the pump piston, a fixed eccentric, an adjustable eccentric surrounding the fixed eccentric, a connection between the adjuster piston and the adjustable eccentric, a rotatable sleeve, a flexible connection between the sleeve and the adjustable eccentric, a rotatable internally toothed ring, a flexible connection between the ring and the adjustable eccentric, a rotatable plate, a planet pinion on the plate and gearing with the teeth of the ring, a fixed toothed ring gearing with the planet pinion, a central pinion on the rotatable plate, a shaft, an eccentric on the shaft connected with the controlling valve, and a pinion on the shaft gearing with the central pinion on the plate.

14. In a power-transmitting mechanism the combination with a rotary casing, a pump cylinder connected with the casing, a piston in the pump cylinder a fluid-pressure power and speed adjuster cylinder carried by the casing and having the same maximum capacity as the pump cylinder, a piston in the adjuster cylinder, a valve controlling the distribution of motive fluid to the adjuster cylinder, of a rotary shaft in coincident axial alinement with the casing, and projecting through the pump end of the device, a crank on the shaft, bearings on the casing for the shaft, at each side of the crank, a connection between the crank and the pump piston, a stationary shaft in alinement with the rotary shaft, a fixed eccentric on the shaft, bearings in the casing for the shaft on each side of the fixed eccentric, a rotatable eccentric surrounding the fixed eccentric, a connecting rod making pivotal engagement by one of its ends with the rotatable eccentric and by its other end with the adjuster piston a sleeve surrounding said fixed shaft, a flexible connection between the rotatable eccentric and the sleeve, an internally toothed ring loose on the stationary shaft, a flexible connection between the toothed ring and the rotatable eccentric, a toothed pinion fast on the stationary shaft, a rotary disk, a planet pinion on the disk meshing with the internally toothed ring and the stationary pinion, a pinion on the disk, a pinion gearing with the disk pinion, a shaft carried in the casing for the pinion, an eccentric on the shaft, and a connection between the controlling-valve piston and the eccentric substantially as described.

15. In a power transmitting mechanism the combination with a rotary casing, a pump cylinder connected with the casing, a piston in the cylinder, a fluid-pressure power and speed adjuster cylinder connected with the casing, a piston in the cylinder, a valve controlling the distribution of motive fluid to an adjuster cylinder, of a shaft, a crank on the shaft, a connection between the crank and the pump piston, bearings carried by the casing for the shaft at each side of the crank, a stationary shaft in alinement with the rotary shaft, an eccentric fixed on the stationary shaft, bearings in the casing for the shaft on each side of the eccentric, a rotatable eccentric surrounding the stationary eccentric, a connecting rod making pivotal engagement by one of its ends with the rotatable eccentric and by its other end with the adjuster piston a hollow shaft extending through the adjuster end of the device, a flexible connection between the hollow shaft and the rotatable eccentric, means for rotating the hollow shaft, an internally toothed ring loose on the stationary shaft, a flexible connection between the toothed ring and the rotatable eccentric, a toothed pinion fast on the stationary shaft, a rotary disk, a planet pinion on the disk meshing with the internally toothed ring and the stationary pinion, a pinion on the disk, a pinion gearing with the disk pinion, a shaft carrying the pinion, an eccentric on the shaft, and a connection between the controlling-valve piston and the eccentric.

852,385. FRUIT-COOKER. MILO F. HOLBROOK, Longview, Tex., assignor of one-half to J. Y. Holbrook, Dallas, Tex. Filed Oct. 17, 1906. Serial No. 339,404.

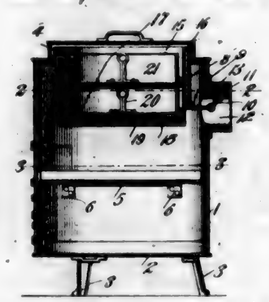

Claim.—The herein described fruit cooker comprising a casing, a cylinder fitted in the upper end of the casing, said cylinder having a horizontal flange, said flange being cut away to provide a communicating passage between the upper and lower portions of the casing, a receptacle fitted within the cylinder provided with a top flange resting upon the upper edge of said cylinder, a cover for said cylinder, a pipe section communicating with said casing, a semi-circular damper hinged within said pipe section for closing the upper or lower portions of said pipe section to throw the heat underneath the receptacle or around the upper portion thereof, essentially as described.

852,386. HAND-OPERATED ELECTRIC-CIRCUIT CONTROLLER. RAY P. JACKSON, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Dec. 18, 1905. Serial No. 292,237.

Claim.—1. The combination with a rotatable shaft or rod, of means for automatically returning the shaft or rod to a predetermined position after it is rotated therefrom in either direction comprising a spring disposed in a plane perpendicular to the shaft, and lost motion connections between the ends of the spring and the shaft.

2. In a controller, the combination with a contact-carrying drum, of means for automatically returning the said drum to a predetermined "off" position, after it has been rotated in either direction, that comprises a compression spring and links that severally make operative connection between the drum and the ends of the spring for either direction of rotation.

3. In a controller, the combination with a rotatable, contact-carrying member, of means for automatically returning said member to a predetermined "off" position, when it is moved therefrom in either direction, that comprises a compression spring, a pair of longitudinally movable members which engage the ends of the spring and a pair of links that connect said longitudinally movable members to the contact-carrying member.

4. The combination with a rotatable shaft or rod, of

means for automatically returning the shaft or rod to a predetermined position after it is rotated therefrom in either direction comprising a spring, and lost motion connections between the ends of the spring and the shaft.

5. In a controller, the combination with a contact-carrying drum, of means for exerting a substantially constant returning force upon said drum, when it is moved in either direction from a predetermined position, that comprises a single spring located in a plane substantially perpendicular to the axis of the drum and a pair of links having lost motion connections with the ends of the spring and interposed between the spring and the drum.

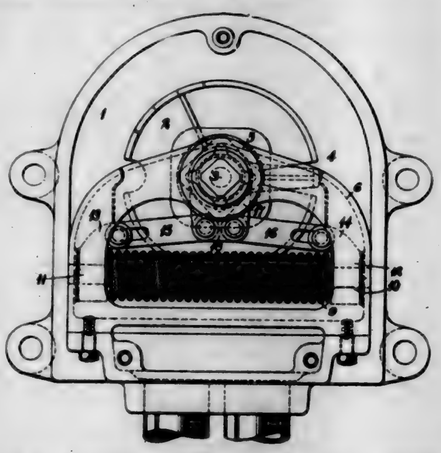

6. In a controller, the combination with a rotatable member and a shaft therefor having a bushing provided with laterally projecting ears, of means for exerting a returning force upon said rotatable member and its shaft, when moved in either direction from a predetermined position, that comprises a spring, two engaging members and a pair of links interposed between said members and the bushing-ears and attached to the spring engaging members by lost motion connections.

7. In a controller, the combination with a rotatable member and a shaft therefor having a bushing provided with laterally projecting ears, of means for exerting a returning force upon said rotatable member and its shaft, when moved in either direction from a predetermined position, that comprises a spring, two engaging members and a plurality of links that are pivotally attached to said projecting ears and have slot and pin connections with the spring-engaging members.

8. In a controller, the combination with a drum that is rotatable in either direction from its "off" position and a shaft therefor having a bushing at one end, of a helical spring the axis of which is substantially at right-angles to that of the drum shaft, a rod extending through the spring, compressing members loosely mounted upon the ends of the rod and engaging the ends of the spring, and links pivoted at their inner ends to the shaft bushing and having slot and pin connection at their outer ends with the spring-compressing members.

9. In a controller, the combination with a contact-carrying drum, of means for automatically returning the said drum to a predetermined "off" position, after it has been rotated in either direction, that comprises a spring and links that severally make operative connection between the drum and the ends of the spring for either direction of rotation.

10. In a controller, the combination with a contact-carrying drum, of means for automatically returning the said drum to a predetermined "off" position, after it has been rotated in either direction, that comprises a spring, and slotted links that make operative lost motion connection between the drum and the ends of the spring.

852,387. RAILWAY-CAR TRUCK. EDWARD KAYLOR, Allegheny, Pa. Filed Oct. 17, 1904. Serial No. 228,679.

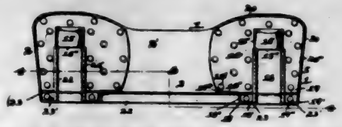

Claim.—1. A sheet metal side-frame for a railway truck comprising a flanged main-member having an integral pedestal portion formed thereon, and another pedestal portion adapted to be attached to said integral portion to form double sheets of metal.

2. A sheet metal side-frame for a railway truck comprising a flanged main-member having an integral pedestal portion formed thereon, another pedestal portion adapted to be attached to said integral portion to form double sheets of metal, and an integral flanged portion on said pedestal portions to form a spring-cap.

3. A sheet metal side-frame for a railway truck comprising a flanged main-member having an integral pedestal portion formed thereon, another pedestal portion adapted to be attached to said integral pedestal portion to form doubled sheets of metal, and an integral flanged portion on said pedestal portions to form guide-bar plates.

4. A sheet metal side-frame for a railway truck comprising a flanged main-member having an integral pedestal portion formed thereon, another pedestal portion adapted to be attached to said integral portion to form doubled sheets of metal, and integral flanged portions on said pedestal portions to form a spring-cap and guide-bar plates.

5. A sheet metal side-frame for a railway truck comprising a flanged main-member having an integral pedestal portion formed thereon, and another pedestal portion adapted to be attached to said integral portion to form doubled sheets of metal, said pedestal portions having recesses therein for the reception of a tie-bolt or bar.

6. A sheet metal side-frame for a railway truck comprising a flanged main-member having an integral pedestal portion formed thereon, another pedestal portion adapted to be attached to said integral portion to form doubled sheets of metal, and raised portions on said pedestal portions for the reception of a tie-bolt or bar.

7. A sheet metal side-frame for a railway truck comprising a flanged main-member having an integral pedestal portion formed thereon, another pedestal portion adapted to be attached to said integral portion to form doubled sheets of metal, raised portions on said pedestal portions for forming recesses between said portions, and a tie-bolt or bar secured to and fitting within said recesses and between said pedestal portions.

8. A sheet metal side-frame for a railway truck comprising a flanged main-member, pedestal portions on said main-member for forming a pedestal, a yoke formed of a T-bar for being secured to and fitting around and between said pedestal portions to form wearing surfaces by its body portion, said yoke having its flanged portion cut-away at its base to receive a tie-bolt or bar.

9. A sheet metal side-frame for a railway truck comprising a flanged main-member, pedestal portions on said main-member for forming a pedestal, a yoke secured to and fitting around and between said pedestal portions and wearing-plates fitting over and around said yoke.

10. A sheet metal side-frame for a railway truck comprising a flanged main-member, pedestal portions on said main-member for forming a pedestal, a yoke formed of a T-bar for being secured to and fitting around and between said pedestal portions, and wearing-plates fitting over and around the body portion of said yoke.

11. A sheet metal side-frame for a railway truck comprising a flanged main-member, pedestal portions on said main-member for forming a pedestal, a yoke formed of a T-bar for being secured to and fitting around and between said pedestal portions, said yoke having its flanged portion cut-away at its base to receive a tie-bolt or bar, and wearing-plates fitting over and around the body portion of said yoke.

12. A sheet metal side-frame for a railway truck comprising a flanged main-member, pedestal portions on said main-member for forming a pedestal, a yoke formed of a T-bar for being secured to and fitting around and between said pedestal portions, said yoke being cut-away at its base and having openings through its body portion at such cut-away portion, a tie-bolt or bar passing through and secured within said openings, and wearing-plates fitting over and around the body-portion of said yoke.

852,388. TOY. WILLIAM T. KEEFER, Bedford, Ind., assignor of one-half to David F. Holt, Bedford, Ind. Filed Feb. 26, 1907. Serial No. 359,350.

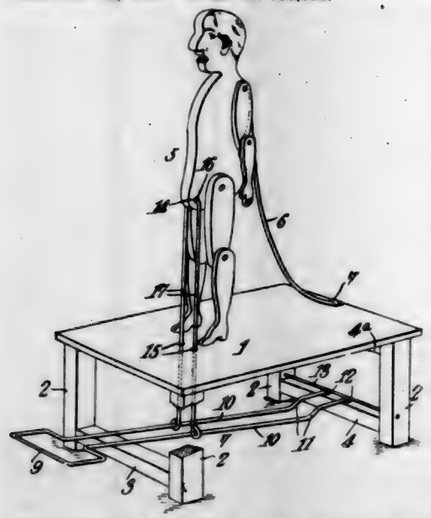

Claim.—1. A toy, comprising a fixed platform, a jointed figure, a spring support attached to said platform and supporting said figure above the platform, a spring actuating lever, below said platform and a connection between said figure and said actuating lever.

2. A toy, comprising a fixed platform, a spring supported jointed figure supported above said platform, and means for pulling the figure downwardly and into contact with said platform.

3. A toy, comprising a fixed platform, a spring supported jointed figure supported a short distance above said platform, an operating lever formed of spring wire rigidly connected at one end to said platform and projecting unsupported beyond the platform at its front end, and unyielding means connecting said figure to said operating lever.

852,389. VALVE-GEAR. HUGO LENTZ, Halensee, near Berlin, Germany. Original application filed Dec. 22, 1905, Serial No. 292,954. Divided and this application filed Dec. 6, 1906. Serial No. 346,574.

Claim.—1. In an explosion motor, means for diminishing the counter-pressure in starting, which consist in a movable boss arranged in the reciprocating distributer contoling the exhaust valve, which boss rocks with the distributer and being pressed toward the interior of the distributer by a spring and caused to project by the displacement of an axial wedge or an equivalent part, in order to act upon the exhaust member substantially as described.

2. In an explosion motor, means for diminishing the counter-pressure in starting, which consist in a movable rocking boss arranged in the reciprocating distributer, said boss being connected with a part serving to displace it, for example a rod capable of axial displacement in such a manner that when this part is acted upon this movable boss is either caused to project or to recede substantially as described.

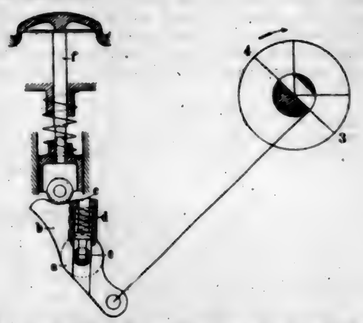

8. In a gas engine, the combination of an exhaust valve, a rocker adapted to operate the same, a pin carried by the rocker and movable in and out of active position, the pin being adapted to open the exhaust valve during the compression period, and means for operating the pin.

852,390. ACID COOLING AND GENERATING CHAMBER. IENS P. LIHME, Cleveland, Ohio, assignor to The Grasselli Chemical Company, Cleveland, Ohio, a Corporation of Ohio. Filed Mar. 14, 1905. Serial No. 250,031.

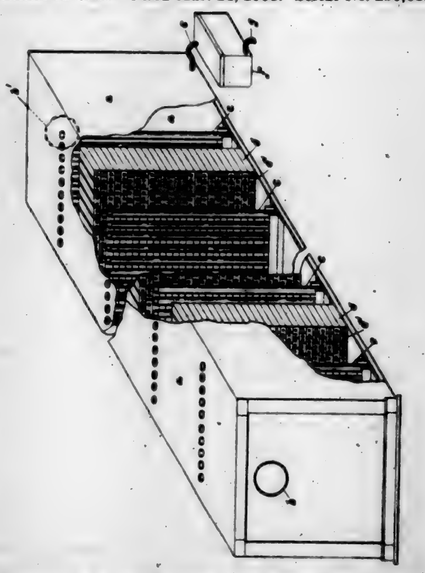

Claim.—1. An acid cooling and generating chamber having a series of spaced acid-cooling ventilated pipes arranged at intervals throughout its length and transverse of the latter, and partition walls disposed between said pipes and distantly spaced therefrom, said walls consisting of longitudinally perforated tiles disposed in superimposed relation, substantially as set forth.

2. In an acid producing or generating chamber, the combination with a lead-lined chamber exteriorly sealed, series of vertical lead pipes extending therethrough wherein currents of air circulate to cool the same, of partition walls disposed midway between each of said series of pipes and spaced at a distance therefrom; said partition walls being formed of acid-proof tiles with numerous transverse openings therethrough, means for supplying the acid-producing elements to said chamber and for conducting away the acid as formed, substantially as set forth.

3. An acid cooling and generating chamber having a series of spaced acid-cooling ventilated pipes arranged at intervals throughout its length and transverse of the latter, and partition walls disposed between said pipes and spaced therefrom, said walls consisting of a plurality of elements each having an interior basin to hold the generated acid, substantially as set forth.

4. In a sulfuric acid-making plant, the combination with adjacent chambers thereof, of an intermediate chamber comprising a lead-lined compartment having a series of air cooling pipes disposed in spaced and transverse relation therein, and condensing partitions disposed between said series of pipes and consisting of elements having open ends and formed with interior basins to hold the generated acid, substantially as set forth.

5. An acid cooling and generating chamber consisting of a lead-lined compartment having a series of spaced acid-cooling ventilated pipes arranged at intervals throughout its length and transverse to the latter, and condensing partitions disposed between said series of ventilating pipes, each of said partitions being formed with a plurality of apertures which extend longitudinally through the same and with a plurality of interior basins to hold the generated acid, substantially as set forth.

6. In a sulfuric acid-making plant, the combination with adjacent chambers thereof, of an intermediate chamber comprising a lined compartment formed with a series of ventilating pipes at spaced intervals throughout its length, and partition walls disposed between said series of pipes, each of said walls consisting of a series of open-ended receptacles formed with interior basins, and disposed in super-imposed relation, substantially as set forth.

7. An acid cooling and generating chamber consisting of a receptaclee closed on all sides and having an inlet and an outlet in its ends, a series of spaced transversely arranged acid-cooling ventilated pipes located at intervals throughout the length of said receptacle, and a series of partition walls disposed between said series of pipes, said walls being spaced at their ends from said pipes, and consisting of a plurality of tiles formed with basins and arranged in superimposed relation and transverse of the length of said receptacle, substantially as set forth.

8. An acid cooling and generating chamber consisting of a receptacle having an inlet and an outlet in its opposite ends, a series of spaced acid-cooling ventilated pipes arranged at intervals throughout the length of said receptacle and transverse of the same, and partition walls disposed between said pipes, said walls consisting of tiles arranged in superimposed relation and having interior basins to hold the generated acid, substantially as set forth.

9. An acid cooling and generating chamber, consisting of a receptacle having a series of spaced transversely disposed ventilated pipes, and partition walls arranged between said series of pipes; said walls consisting of tiles having interior basins and being open at the ends, substantially as set forth.

852,391. BOLSTER. ARTHUR LIPSCHUTZ, Chicago, Ill. Filed Nov. 22, 1906. Serial No. 344,601.

Claim.—1. A bolster consisting of two parallel members provided with upper and lower flanges, a truss-shaped member the opposite ends of which are connected to the lower flanges of said parallel members, devices arranged at the center of the bolster and connected to said truss member and parallel members, and a top cover plate connected to the upper flanges of the parallel members.

2. A bolster consisting of parallel flanged members, a top cover plate connecteed to said members, a truss-shaped member connected at its opposite ends to the end portions of the parallel members, and a filler connected to said truss-shaped member, and to the lower flanges of the parallel members.

3. A bolster, consisting of parallel flanged members, a truss-shaped member having its opposite ends connected to the lower flanges of said parallel members, and a filler interposed between said flanges and truss-shaped member.

4. A bolster consisting of flanged members connected together by a top plate, a truss-shaped member connected at its opposite ends to said flanged members, and a filler arranged between the lower flanges of said members and said truss-shaped member and consisting of parallel pieces connected at their centers by a web.

5. A bolster consisting of flanged members connected together by a top plate, a truss-shaped member connected at its opposite ends to said flanged members, and a filler arranged between the lower flanges of said members and said truss-shaped member and consisting of channel-shaped pieces extending parallel to each other and joined at their centers by a web, said pieces being provided with upwardly extending flanges which contact with the inner faces of the flanged members.

6. A bolster consisting of parallel flanged members, a top plate fastened to the upper flanges of said members, a truss-shaped member connected at its opposite ends to the lower flanges of said members, and fillers interposed between the lower flanges of said members and the truss-shaped members, said fillers consisting of a plurality of sections having their co-operating ends shaped to form scarf joints.

7. A bolster consisting of parallel members provided with outwardly projecting flanges, a top cover plate connected to the upper flanges of said members, a flat plate bent into truss form and connected at its opposite ends to the lower flanges of said members, and a filler interposed between said lower flanges and the truss-shaped member, said filler consisting of parallel pieces having wedge-shaped ends and a central connecting web.

8. A bolster consisting of parallel members connected together, a truss-shaped member arranged underneath said members and fastened thereto, and a filler interposed between said members and the truss-shaped member and consisting of parallel channel-shaped pieces, each of which has perforated ribs arranged between its horizontal legs, and a web which connects said pieces and is provided with a flange that surrounds a king bolt opening.

9. A bolster consisting of flanged members arranged parallel to each other and connected together, a truss-shaped member connected to the lower flanges of said parallel members, and a filler extending throughout the major portion of the length of the bolster and interposed between said lower flanges and the truss-shaped member; substantially as described.

852,392. BOLSTER. ARTHUR LIPSCHUTZ, Chicago, Ill. Filed Nov. 22, 1906. Serial No. 344,602.

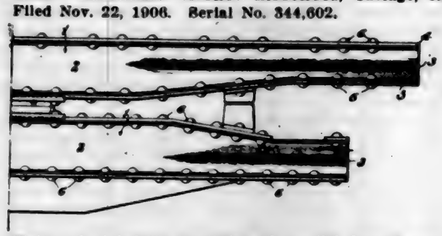

Claim.—1. A bolster consisting of parallel flanged members having their webs bent at the end portions of the bolster so as to bring their upper and lower flanges closer together but in different vertical planes, and means for fastening said members together; substantially as described.

2. A bolster in which the sides are composed of flanged members that have their webs bent so that the end portions of the bolster will be of less depth than the central portion thereof and the flanges of said members will be in different vertical planes; substantially as described.

3. A bolster consisting of two parallel flanged members connected together, the webs of said members being bent out of their normal planes to produce a bolster which varies in depth from its center toward its opposite ends, the flanges of said members lying in different vertical planes; substantially as described.

4. A bolster comprising parallel flanged members, the webs of which are bent out of their normal planes at the end portions of the bolster, thereby causing the flanges of said members to lie in different vertical planes, and top and bottom plates connected to the flanges of said members; substantially as described.

852,393. FIRE-EXTINGUISHER. HANS MIKOREY, Schöneberg, near Berlin, Germany, assignor to The Firm of W. Graaff & Company, Gesellschaft mit Beschränkter Haftung, Berlin, Germany. Filed Mar. 18, 1905. Serial No. 250,853.

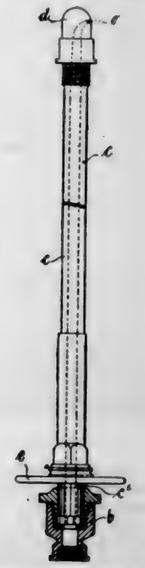

Claim.—In an improved fire extinguisher, a long ejecting pipe having a screw threaded end, a cap internally screw threaded to fit said screw threaded end, said cap having a curved passage therein, which communicates with the pipe and has its outlet in the side of the cap, a handle near the other end of the pipe, a collar on said end, a socket secured to the extinguisher and adapted to receive the collar and a nut surrounding the end of the pipe above the collar and screwing into the socket to hold the pipe therein.

852,394. ALTERNATING GEARING. MERTON L. MOSES, Portland, Oreg. Filed Oct. 31, 1905. Serial No. 285,332.

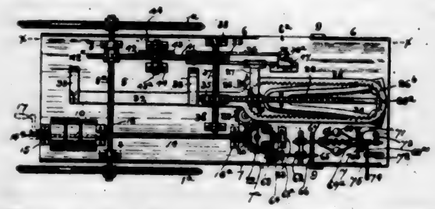

Claim.—1. In an alternating limited motor mechanism, the combination of a driven gear, a rack frame in engagement with and reciprocated by the rotation of such gear, a rack bar pivoted to the rack-frame, guiding means holding the rack bar parallel to and in the longitudinal path of the rack-frame; a guide plate, and means carried by the rack-frame co-operating therewith, whereby the rack-frame is caused to travel on a transverse, curved path at the end of each longitudinal movement and in so doing causing the rack bar to have an interval of rest at the end of each longitudinal movement; a gear driven by the reciprocation of the rack bar, and means for transmitting the power of such gear.

2. In an alternating limited motor mechanism, the combination of a driven gear, a rack-frame in engagement with and reciprocated by the rotation of such gear, a rack bar pivoted to the rack-frame, guiding means holding the rack bar parallel to and in the longitudinal path of the rack-frame; a guide plate, and means carried by the rack-frame co-operating therewith, whereby the rack-frame is caused to travel on a transverse, curved path at the end of each longitudinal movement and in so doing causing the rack-bar to have an interval of rest at the end of each longitudinal movement; a gear driven by the reciprocation of the rack-bar, means for transmitting the power of such gear, and means adapted to control the speed of the driving element during the interval the rack-frame is traveling on its transverse path.

3. In an alternating limited motor mechanism, the combination of a driven gear, a rack-frame in engagement with and reciprocated by the rotation of such gear, a rack-bar, and guiding means holding the same parallel to and in the longitudinal path of the rack-frame, such rack-bar being pivoted to the rack-frame and reciprocated thereby, a guide pin on the base of the rack-frame and a guide plate made with a flanged rim adapted to guide the rack-frame, by its said pin, on a longitudinal course during a part of its travel and on a transverse curved path at the end of each longitudinal movement, and thereby to cause the rack-bar to have a diminishment in speed, and an interval of rest at the end of each longitudinal movement, a gear driven by the reciprocation of the rack-bar, and means for transmitting the power of such gear.

4. An alternating limited motor mechanism, comprising a supporting base, driven devices, a driving element, a primary gear driven thereby, a rack-frame in engagement with and reciprocated by the rotation of such primary gear, a rack-bar pivoted to the rack-frame, guiding means holding the rack-bar parallel to and in the longitudinal path of the rack-frame; a guide-plate, and means carried by the rack-frame co-operating therewith whereby the rack-frame is caused to travel on a transverse, curved path at the end of each longitudinal movement and in so doing causing the rack-bar to have an interval of rest at the end of each longitudinal movement; a secondary gear

driven by the reciprocation of the rack bar, means for transmitting the power of such secondary gear to the driven devices, and governor controlling the driving element.

5. An alternating limited motor mechanism, comprising a supporting base, driven devices, a driving element, a primary gear driven thereby, a rack-frame in engagement with and reciprocated by the rotation of such primary gear, a rack-bar, guiding means holding the same parallel to and in the longitudinal path of the rack-frame, such rack-bar being pivoted to the rack-frame and reciprocated thereby, guiding means for the rack-frame adapted to cause the same to travel on a transverse curved path at the end of each longitudinal movement, so as to cause the rack-bar to have a diminishment in its speed and an interval of rest at the end of each longitudinal movement, a secondary gear driven by the reciprocation of the rack-bar, means for transmitting the power of such secondary gear to the driven devices, and means adapted to control the speed of the driving element during the interval the rack-frame is traveling on its transverse path.

852,395. CIRCUIT-CONNECTOR. CHARLES F. PATTERSON, New York, N. Y. Original application filed June 14, 1906, Serial No. 321,725. Divided and this application filed June 29, 1906. Serial No. 324,008.

Claim.—1. A series of circuit connectors of the same general type and size, each comprising relatively separable members, and individualizing means for said members, whereby each such member will coact in its own circuit connector and not in other circuit connectors of said series.

2. A circuit connector constituting one of a series of circuit connectors of the same general type and size, said circuit connector comprising in combination a plug constituting one of a series of such plugs, and a socket constituting one of a series of such sockets, and individualizing means for said plug and socket, adapting the same one to the other, but preventing said plug from coacting with other sockets of the series.

3. A circuit connector comprising a plug and a socket adapted to be fitted together separably, said plug and socket each constituting one of a series of similar plugs or sockets, said plug and socket comprising means fitting them together individually but preventing them from being fitted to other plugs or sockets of the series.

4. A circuit connector comprising a plurality of relatively separable members provided the one with a key and the other with corresponding lock mechanism, and contact devices.

5. A circuit connector comprising a plurality of relatively separable members, and contact devices arranged to be actuated by the bringing together in proper relation of said members, one of said members comprising locking means preventing operation of said contact devices until said locking means is operated, another of said members comprising means for operating said locking means.

6. A circuit connector comprising a plurality of relatively separable members, and contact devices arranged to be actuated by the bringing together in proper relation of said members, one of said members comprising locking means preventing operation of said contact devices until said locking means is operated, another of said members comprising a key for operating said locking means.

7. A circuit connector comprising a plurality of relatively separable members, and contact devices arranged to be actuated by the bringing together in proper relation of said members, one of said members comprising locking means including tumblers, another of said members comprising a key for operating said tumblers.

8. A circuit connector comprising two members, a plug and a socket, and contact devices arranged to be actuated by the bringing together in proper relation of said members, one of said members comprising locking means preventing the complete bringing together of said members until operated, the other comprising a key for said locking means.

9. A circuit connector comprising a plurality of relatively separable members and contact devices arranged to be actuated by the bringing together in proper relation of said members, one of said members comprising locking means preventing the complete bringing together of said members until operated, another of said members comprising a key for said locking means.

10. A circuit connector comprising a plurality of relatively separable members and contact devices, one of said members comprising a contact chamber, means for closing the same, and locking means preventing opening of said chamber until said locking means is operated and comprising lock tumblers, another of said members comprising a key for operating said locking means.

11. A circuit connector comprising a plug and a socket and contact members adapted to coöperate, said plug and socket comprising locking mechanism and a key preventing complete union of the plug and socket until said locking mechanism is operated by said key.

12. In a circuit connector, the combination of two coöperative and relatively separable members, and contact means, one of said members comprising a main section and tumbler-barrel and tumbler-mechanism, the other of said members comprising a key for said tumbler mechanism, said tumbler mechanism preventing complete union of said members until operated by said key.

13. A circuit connector comprising two coöperative and relatively separable members, and contact devices, one of said members having a contact chamber and comprising a main section, a tumbler-barrel, means operated by said tumbler-barrel for opening and closing said contact chamber, and tumbler mechanism, the other of said members comprising a key for operating said tumbler mechanism.

14. A circuit-connector member comprising a main section, a tumbler-barrel, and tumbler mechanism, normally preventing movement of said barrel with respect to said main section, but adapted to be actuated by a key, and electric contact devices.

15. A circuit-connector member comprising a main section, a tumbler-barrel, and tumbler mechanism, normally preventing movement of said barrel with respect to said main section, but adapted to be actuated by a key, a contact chamber, contact devices therein, and means operated by movement of said tumbler-barrel relative to said main section for opening and closing said contact chamber.

16. A circuit-connector member comprising contact devices, a chamber inclosing same, means for opening and closing said chamber, and key-controlled locking mechanism controlling the opening and closing of such chamber.

17. A plug for circuit connectors comprising a main section having a contact chamber, contact means therein, a tumbler-barrel, tumbler mechanism adapted to be actuated by a key, and means controlled by said tumblers for opening and closing said contact chamber.

18. A plug for circuit connectors comprising a main section, a tumbler-barrel, and coacting tumblers in said tumbler-barrel and main section, said tumbler-barrel arranged to retreat into said main section when unlocked.

852,396. APPARATUS FOR MAKING GLASS. ROGER S. PEASE, Allegheny, Pa. Filed Oct. 19, 1904. Serial No. 229,085.

Claim.—1. In an apparatus for forming glass, an inclosed rotary pot, a burner for internally heating the same and a flue for conveying away the products of combustion the pot having communication with the flue by separate orifices therein when the pot is in both its normal and its rotated positions.

2. In an apparatus for forming glass, an inclosed pot having an extension with an open top, a burner for internally heating the same, an off-take for removing the products of combustion, said pot having normally connection with said off-take, and means for bringing the mouth of the extension into connection with the off-take whereby the extension may be reheated.

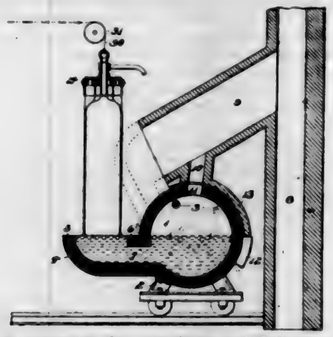

3. In an apparatus for containing and delivering molten glass, the combination with a stationary flue, of a rotatable glass-containing pot having a lateral open-top extension arranged for drawing position or gas circulation position with respect to said flue respectively, and means for supplying fuel to the interior of the pot in either position, substantially as set forth.

4. In an apparatus for forming glass, a rotatable pot having an inclosed portion provided with a burner and another portion opening upwardly whence glass may be drawn, and a passage between such portions whereby the burner may, upon rotation of the pot, melt out the glass in the second portion and reheat the same.

5. In an apparatus for forming glass, a rotatable pot, a metal fabric guide tube extending up through the bottom thereof, and means for drawing upwardly the fabric and attached glass.

6. In an apparatus for containing and delivering molten glass, the combination with a stationary flue, of a rotatable glass-containing pot having a lateral open-top extension arranged for drawing position or gas circulation position with respect to said flue respectively, means for supplying fuel to the interior of the pot in either position, with means for positively arresting movement of the pot in its lowered position, substantially as set forth.

7. In an apparatus for containing and delivering molten glass, the combination with a stationary flue having two independent gas circulation inlet orifices, of a rotatable glass-containing pot provided with a gas outlet orifice arranged to communicate with one of said flue orifices in drawing position, and a lateral drawing extension arranged to be located in drawing position and to communicate with the other circulation orifice of the flue when the pot is tilted upwardly, substantially as set forth.

852,397. FABRIC-SHIPPING PACKAGE. WILLIAM L. PENNEY, Walpole, Mass., assignor to Charles S. Bird, East Walpole, Mass. Filed Sept. 19, 1903. Serial No. 173,819.

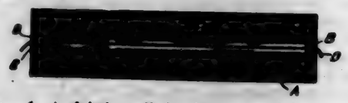

Claim.—1. A fabric roll having an axial cavity combined with terminal plugs formed therein from expansible, quick-hardening material applied in the plastic state and self held frictionally when hardened, substantially as set forth.

2. A fabric roll having an axial cavity and terminal, perfect fitting plugs formed therein from expansible, quick-hardening material applied in the plastic state without driving in, in combination with a hollow scroll-like core filling the cavity between said plugs, and with articles for use with such fabric inclosed within said core, substantially as set forth.

3. A fabric roll having an axial cavity and cylindrical terminal plugs formed therein from expansible, quick hardening material applied in the plastic state and self-held to the fabric walls, in combination with a tubular core within said cavity inclosing materials for use with said fabric, and with a binder secured laterally to the core and terminally to the fabric roll, substantially as set forth.

4. The described shipping package, comprising a merchantable roll of suitable fabric having the ends of its axial cavity closed by plugs formed therein from plastic, quick-hardening material which expands in hardening, combined with articles inclosed intermediately in such axial cavity, substantially as set forth.

852,398. SEED-PLANTER. JOHN B. REED, Gridley, Kans. Filed Nov. 30, 1906. Serial No. 345,817.

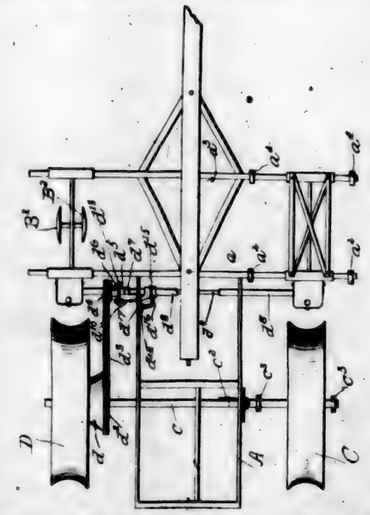

Claim.—1. In a corn-drill, or the like, a shaft, a runner mounted for limited reciprocatory movement thereon, and a dish-shaped or concaved disk supported on each side of the runner with the concavity thereof toward the runner.

2. In a corn-drill, or the like, an axle, a wheel mounted for limited reciprocatory movement thereon, a runner, and a dish-shaped or concaved disk supported on each side of the runner with the concavity thereof toward the runner.

3. In a corn-drill, or the like, a hinged axle, a wheel mounted for limited reciprocatory movement thereon, a runner, and a dish-shaped or concaved disk supported on each side of the runner with the concavity thereof toward the runner.

4. In a corn-drill, or the like, a hinged axle, means for moving the hinged portion of the axle, a wheel mounted for limited reciprocatory movement thereon, a runner, and a dish-shaped or concaved disk supported on each side of the runner with the concavity thereof toward the runner.

5. In a corn-drill, or the like, a hinged axle, a lever for moving the hinged portion of the axle, a wheel mounted for limited reciprocatory movement thereon, a runner, and a dish-shaped or concaved disk supported on each side of the runner with the concavity thereof toward the runner.

852,399. APPARATUS FOR TREATING FLAX. FRANCIS H. RICHARDS, Hartford, Conn., assignor to American Linen Company, New Haven, Conn., a Corporation of Maine. Filed May 8, 1905. Serial No. 259,298.

Claim.—1. A crushing roll for fibrous plants comprising a metal shaft, a wooden core on said shaft, a rubber cush-

ion on the core, a helically disposed metal strip on said cushion, and a fabric layer between said metal strip and the cushion.

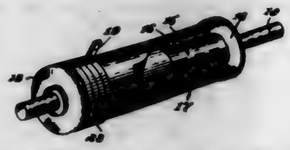

2. In a crushing roll for fibrous plants, the combination of an elastic body portion, an armor of resilient material upon said body portion, and a protecting layer between the body portion and the armor.

3. In a crushing roll for fibrous plants, the combination with a rubber body portion, of an armor of resilient material helically disposed thereon, and a protecting layer between the said body portion and helically disposed armor.

4. In a crushing roll for fibrous plants, the combination of a body portion, an elastic cushion thereon, a helically disposed elastic strip of metal upon said cushion, and a fabric layer between said strip of metal and the cushion.

852,400. LINE-LOCKING MECHANISM. AUGUST SCHNEELOCH, Syracuse, N. Y., assignor to E. C. Stearns & Co., Syracuse, N. Y., a Corporation of New York. Original application filed May 9, 1902, Serial No. 106,524. Divided and this application filed Oct. 9, 1902. Serial No. 126,600.

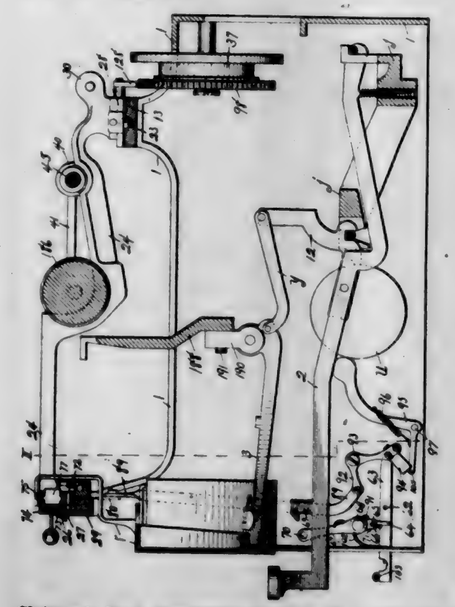

Claim.—1. In a typewriting machine, the combination with the frame and the carriage, of a front bar and top piece on the carriage correspondingly grooved, a front carriage rack, an adjustable sliding piece fitted to said grooves, a spring dog connected to the sliding piece and adapted to engage with the rack, a swinging pawl on the sliding piece, a cam surface lever pivotally supported on the front of the machine having cam surfaces to engage with the swinging pawl, and means from the lever to ring the bell, and means from the lever to lock the keys, said means being operated by the engagement of the pawl with the cam surfaces.

2. In a typewriting machine, the combination with the frame and the carriage, of an adjustable swinging pawl arranged on the front of the carriage, a cam surface lever journaled on the front of the frame at about its center and having a cam surface on its inner end, a bar connected to the outer end of said lever, a bell-crank lever suitably journaled on the frame and connected to said bar, a pivoted dog on said bell-crank lever, a bell, a bell hammer lever, a spring to draw the bell hammer lever against the bell, and a pin to engage with said pivoted dog, whereby the bell hammer lever is rocked away from the bell and released.

3. In a typewriting machine, the combination with the frame and the carriage thereon, of an adjustable swinging pawl arranged on the front of the carriage, a cam surface lever journaled on the front of the frame at about its center and having a cam surface on its inner end, with which surface the pawl engages and the lever is rocked, a downwardly extending bar connected to the outer end of said lever, a bell-crank lever suitably journaled on the frame and having its upper arm connected to the lower end of said downwardly extending lever, a pivoted dog on the lower end of said bell-crank lever, a bell, a bell hammer lever, a spring to draw the bell hammer against the bell, and a pin to engage with said pivoted dog, whereby the bell hammer lever is rocked away from the bell and released.

4. In a typewriting machine, the combination with the frame and the carriage, of a front bar and top piece on the carriage correspondingly grooved, a front carriage rack, an adjustable sliding piece fitted to said grooves, a spring dog connected to the sliding piece and adapted to engage with the rack, a swinging pawl on said sliding piece, stops to limit the movement of the pawl, a cam surface rocking lever pivotally supported on the front of the machine having two cam surfaces to engage with the swinging pawl, whereby the lever is rocked, connections from the end of the lever to ring the bell operated by the rocking of the lever caused by the engagement of the pawl with the first cam surface, and means connected to the lever to lock the keys, said means being operated by the engagement of the pawl with the second cam surface.

5. In a typewriting machine, the combination with the frame and the carriage, of an adjustable swinging pawl supported on the carriage, a cam surface lever pivotally supported on the frame at about its center and having a cam surface on its inner end adapted to engage with the pawl as the carriage moves, a downwardly extending bar connected to the outer end of the lever, a bell-crank lever connected to the lower end of said bar and journaled on the frame, a sliding lever connected to the lower arm of said bell-crank lever, key lever catches, a locking rod suitably journaled and adapted to engage with said catches, a spring to hold said rod out of engagement and a projection on the sliding rod to engage with said locking rod and rock it into engagement with the key lever catches.

6. In a typewriting machine, the combination with the frame and the carriage, of an adjustable pawl arranged on the front of the carriage, a cam surface lever pivotally supported on the front of the machine having two cam surfaces on its inner end adapted to engage with the pawl as the carriage moves, a downwardly extending bar connected to the outer end of the lever, a bell-crank lever pivotally supported on the frame and having its upper arm connected to said bar, a sliding bar connected to the lower arm of said bell-crank lever, key lever catches, a locking rod frame suitably journaled, a locking rod thereon to engage with said key lever catches, a spring to hold said locking rod out of engagement, a tail pivotally connected to the said locking rod frame, a stronger spring to hold said tail in normal position, and a pin on the sliding lever to engage with said tail and rock the locking rod into engagement with the key lever catches.

7. In a typewriting machine, the combination with the frame and the carriage, of an adjustable swinging pawl arranged on the front of the carriage, a cam surface lever pivotally supported on the front of the machine having two cam surfaces adapted to engage with the pawl as the carriage moves, an abutment on said lever a downwardly extending bar connected to the outer end of the lever, a bell-crank lever pivotally supported on the frame and having its upper arm connected to said bar, a sliding lever connected to the lower arm of said bell-crank lever, key lever catches, a locking rod frame suitably journaled, a locking rod thereon to engage with said key lever catches, a spring to hold said locking rod out of engagement, a tail pivotally connected to the said locking rod frame, a stronger spring to hold said tail in normal position, a pin on the sliding lever to engage with said tail and rock the locking rod into engagement with the key lever catches, a releasing button on the sliding rod to draw it out by hand to depress the abutment, and a spring to return the cam surface lever to normal position.

8. In a typewriting machine, the combination with the frame and the carriage, of a pawl on the carriage, a cam surface lever pivotally supported on the front of the machine and adapted to engage with said pawl, a sliding bar, connections from said sliding bar to said cam surface lever, a releasing pin on the sliding lever, a rock rod journaled in the front of the machine, lever arms thereon, a locking rod supported on said arms, key lever catches on the key levers, to engage with said locking rod, a spring to hold said locking rod out of engagement with said key lever catches, an extension on said rock rod, a tail pivotally supported on said extension, a stronger spring to hold said tail in normal position, and an extension on the sliding rod to engage with the tail and rock the locking rod into engagement with the spring catches.

9. In a typewriting machine, the combination with the frame and the carriage, of an adjustable sliding piece arranged on the front of the carriage frame, means to lock the sliding piece in the position in which it is adjusted, a depending pawl on the sliding piece, a rocking lever journaled on the frame and having two cam surfaces adapted to engage successively with the pawl as the carriage moves, a depending connecting bar connected to one end of the lever, a lever pivotally supported on the machine and connected to said connecting bar to ring the bell operated by the rocking of the lever by the engagement of the pawl with the first cam surface and connections from the lever to lock the keys operated by the engagement of the pawl with the second cam surface.

10. In a line locking mechanism of a typewriting machine the combination with the frame and carriage, of a sliding piece on the carriage, a loose pawl on the sliding piece, a cam surface lever journaled on the frame in the path of the pawl, having a two cam surfaces to engage with the pawl and rock the lever, a connecting bar connected to one end of the lever, a bell lever pivotally supported on the machine and connected to the lower end of the connecting bar, said bell lever being operated by the first cam surface, a locking lever to lock the keys operated by the engagement of the pawl with the second cam surface, and connections between the bell lever and the locking lever.

11. In the line locking mechanism of a typewriting machine, the combination with the frame and carriage, of a sliding piece on the carriage, stops in the sliding piece, a pawl hung on the sliding piece between the stops, a cam surface lever journaled on the frame in the path of the pawl, having two cam surfaces to engage with the pawl and rock the lever, a depending connecting bar, a bell crank lever pivotally supported on the lower portion of the machine and connected to the end of the connecting bar to ring the bell, said bell ringing being operated by the first cam surface, a locking lever to lock the keys operated by the engagement of the pawl with the second cam surface, and connections between said lever and the bell lever.

12. In a typewriting machine, the combination with the frame and the carriage, of a sliding piece on the front of the carriage, a depending swinging pawl arranged on the sliding piece, a rocking lever journaled on the frame and having two cam surfaces at its inner end adapted to engage successively with the pawl as the carriage moves, a depending bar connected to the outer end of said lever, means for ringing the bell connected to the lower end of said bar and operated by the rocking of the lever by the engagement of the pawl with the first cam surface, and means to lock the keys also connected to the lower end of said bar and operated by the engagement of the pawl with the second cam surface.

852,401. SWITCH-THROWING DEVICE. GEORGE J. THOMAS, Irwin, Pa., assignor of five-eighths to Cyrus Smith, Irwin, Pa. Filed Oct. 19, 1906. Serial No. 339,652.

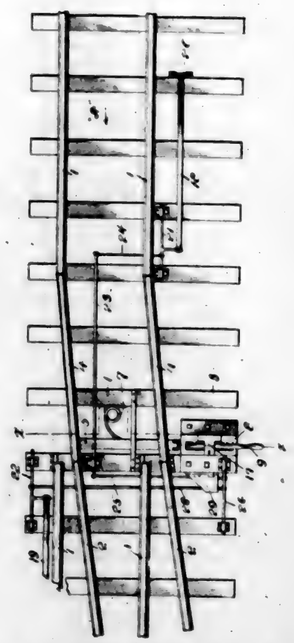

Claim.—1. In a switch throwing device, the combination with a main track, a siding track, tongues controlling the passage upon said track, and a locomotive adapted to travel upon said tracks, of a spring-held bar connecting said tongues, a casing mounted adjacent to said tongues, a lever pivoted in said casing and having a hook-shaped slot formed therein, a link mounted in the slot of said lever and connecting with said bar, a rock shaft journaled adjacent to said casing and adapted to contact with said link, contact arms mounted at the side of said track and adapted to rock said shaft, an adjustable roller carried by said locomotive and adapted to contact with said arms to move said shaft and release said link from the hook-shaped end of said slot, means carried by said locomotive to move said roller, and means carried by said casing to lock said lever in a fixed position, substantially as described.

2. In a switch throwing device, the combination with tracks, switch tongues, and a locomotive, of a bar connecting said tongues, a lever pivotally mounted adjacent to said tongues and having a hook-shaped slot formed therein, a link riding in said slot and connecting with said bar, a rock shaft journaled adjacent to said lever and adapted to contact with said link to elevate the same, means mounted adjacent to said tracks to rock said shaft, means carried by said locomotive to actuate the first named means, and means to move said bar when said link is moved by said rock shaft, substantially as described.

3. In a switch throwing device, the combination with rails, and switch tongues, of a spring-held bar connecting said tongues, a slotted lever pivotally mounted adjacent to said tongues, a link loosely mounted in said lever and connecting with said bar, means mounted adjacent to said rails to move said link and release said spring-held bar,

and means engaging said lever to hold said lever in a fixed position, substantially as described.

4. In a switch throwing device, the combination with rails, and switch tongues, of a slotted lever mounted adjacent to said switch tongues, a link mounted in said lever and adapted to move said tongues, means mounted adjacent to said rails and said lever to move said link, and means to lock said lever in a fixed position, substantially as and for the purpose described.

852,402. ROOFING-TILE. ALBERT VOIGT, Portland, Oreg. Continuation of application filed July 1, 1904, Serial No. 214,951. This application filed Jan. 22, 1906. Serial No. 297,326.

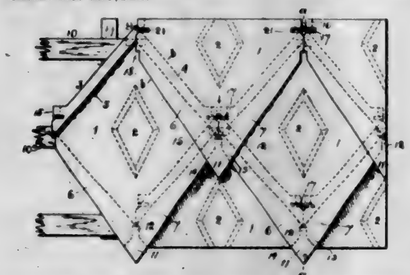

Claim.—1. In a roof-tiling system, tiles arranged to overlap one the other, said tiles being substantially of rhomb form, and each thereof being made along its two upper sides with upwardly projecting flanges the inner vertical faces 5 of which are concaved for the purpose specified, and the lower sides of said tiles being made with downwardly projecting flanges which cover said concavities of the upper flanges of the underlying tile, the upper corners of the tiles being made with hooks 9 adapted to engage with the roof-timbers, locking balls each comprising a loop encircling the upper corner of the underlying tile and laterally extending arms, the lateral ends of the tiles being made with flat abutting surfaces having intermediate spaces through which the locking balls extend and provided with grooves for the arms of the balls to lie in, and the opposite portions of said lateral ends being made with a notch or recess, 18, and the bottom faces of the lower ends of the tiles being respectively made with protuberances having a tongue 12 and angular faces 13, 14 adapted to constitute a closure for the crevices between said abutting lateral ends of the tiles.

2. As a new article of manufacture a tile substantially of rhomb form and made along its two upper sides with upwardly projecting flanges, and made along its lower sides with downwardly projecting flanges, adapted to cover said upper flanges of two contiguous tiles when arranged to underlie the same, and the lateral ends of the tile being made with flat faces 15 having a recess arranged to provide a space between contiguous tiles for the insertion of a locking ball, said lateral ends being further made with a notch or recess 18, and the bottom face of the lower end of the tile having a protuberance 11 comprising a tongue 12, and angular faces 13, 14, for the purpose specified.

3. As a new article of manufacture a tile substantially of rhomb form and made along its two upper sides with upwardly projecting flanges, the inner vertical faces 5 of which are concaved, and made along its lower sides with downwardly projecting flanges, adapted to cover said concavities of the upper flanges of two contiguous tiles when arranged to underlie the same, and the lateral ends of the tile being made with flat faces 15 having a recess arranged to provide a space between contiguous tiles for the insertion of a locking ball, said lateral ends being further made with a notch or recess 18, and the bottom face of the lower end of the tile having a protuberance 11 comprising a tongue 12, and angular faces 13, 14, for the purpose specified.

852,403. GRINDING AND POLISHING MACHINE. FRANK L. O. WADSWORTH, Morgantown, W. Va., assignor to Pressed Prism Plate Glass Company, New York, N. Y., a Corporation of West Virginia. Filed June 24, 1905. Renewed Aug. 27, 1906. Serial No. 332,203.

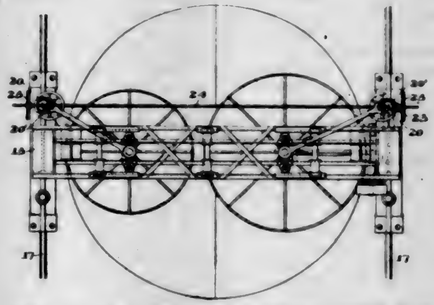

Claim.—1. In a grinding or polishing system having traveling bridges, supporting wheels for the bridges mounted on rotary stems, and small turntables on which the wheels are adapted to rest, said small turntables being located in front of the table; substantially as described.

2. In a grinding or polishing bridge system, a pair of tables having tracks leading outwardly therefrom, transverse tracks between the table tracks, and small turntables at the junctures of the tracks arranged to turn the spindles of the supporting wheels for the bridges; substantially as described.

3. In a grinding or polishing system, a series of work-supporting tables, two track systems at an angle to each other, bridges arranged to travel on the track systems, grinding or polishing mechanism carried by the bridges, and means for transferring the bridges from one track system to another; substantially as described.

4. In a grinding or polishing system, two series of rotary tables for supporting the work arranged side by side, a track for each system, cross tracks having turntables at the junctures and bridges movable on the tracks and having grinding or polishing apparatus thereon; substantially as described.

5. In a grinding or polishing system, a series of work-supporting tables, a track leading past the tables, bridges arranged to travel on the track and carrying grinding or polishing mechanism, a return track, and means for transferring the bridges from the first named track to the return track; substantially as described.

6. In a grinding or polishing system, a series of work-supporting tables, a track leading past the tables, bridges arranged to travel on the track and carrying grinding or polishing mechanism, a return track, means for transferring the bridges from the first named track to the return track and a second series of tables along the return track; substantially as described.

852,404. BRICK-KILN. EDWARD WEISS, Denver, Colo. Filed Feb. 5, 1906. Serial No. 299,465.

Claim.—1. The combination of a brick kiln having a fireplace, an underground flue below the fireplace and communicating therewith by a valve-controlled port, a damper located in the flue between the port and the bottom of the kiln which is perforated to communicate with an extension of the flue on the side of the damper opposite the port, and another kiln communicating with the first named kiln by way of the flue and port.

2. The combination with a number of brick kilns having perforated bottoms, underground flues communicating with said bottoms, fire-places located above said flues and communicating therewith by ports, horizontally disposed dampers for controlling the ports located between the flues and the fire places of the kilns and vertically disposed dampers located in said flues between the ports and the bottoms of the kilns which are perforated, for controlling the direction of the heat and products of combustion.

3. In a brick kiln construction, the combination of a number of kilns, a series of underground flues, the bottoms of the kilns being perforated to communicate with the flues below, the kilns being provided with fire-places located above the flues, the construction being provided with dampers located in the flues between the fire places and the perforated bottoms of said kilns whereby the heat from any kiln may be caused to pass upwardly into another kiln and downwardly through the perforated bottom of the kiln and thence into the conduits below for the purpose set forth.

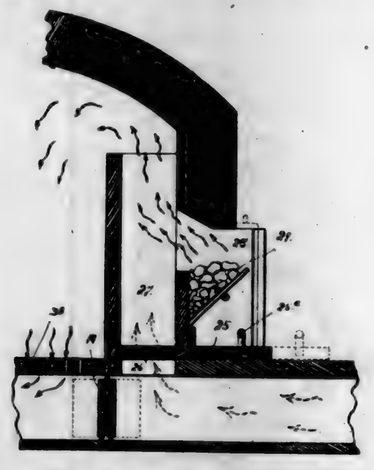

4. In a brick kiln construction, the combination of a number of kilns, a series of underground conduits, the kilns being provided with perforated bottoms communicating with the said conduits, vertical dampers journaled in the conduits, and ports formed in the bottom of the kilns, the latter being provided with fireplaces communicating with the said conduits through the said ports, and horizontally disposed dampers for controlling the said ports located between the flues and the fire places of the kilns.

852,405. RAILWAY SIGNALING APPARATUS. EDSON R. WOLCOTT, Golden, Colo. Filed Dec. 27, 1904. Serial No. 238,295.

Claim.—1. In railway inductive signaling apparatus, the combination with one or more conductors mounted in suitable proximity to the track, of a train having an instrument operated to transmit inductive electrical impulses to said conductors, a normally open circuit in which the transmission instrument is located, means mounted on the car for automatically closing said circuit at predetermined intervals, and means located at the station and automatically operated by impulses taken inductively from the said conductors to indicate the location of trains.

2. In railway inductive signaling apparatus, the combination with one or more conductors mounted in suitable proximity to the track, of a train having an instrument operated to transmit inductive electrical impulses to said conductors, an instrument operating to receive inductive electrical impulses from said conductors, a normally closed receiving circuit, a normally open transmission circuit, and means mounted on the train for automatically and simultaneously opening the receiving circuit and closing the transmission circuit.

3. In railway induction signaling apparatus, the combination with one or more conductors mounted in suitable proximity to the track, of a car having a transmission circuit normally open when the train is in motion, means for automatically closing the circuit when the train is in motion, and means for automatically and permanently closing the circuit when the train stops.

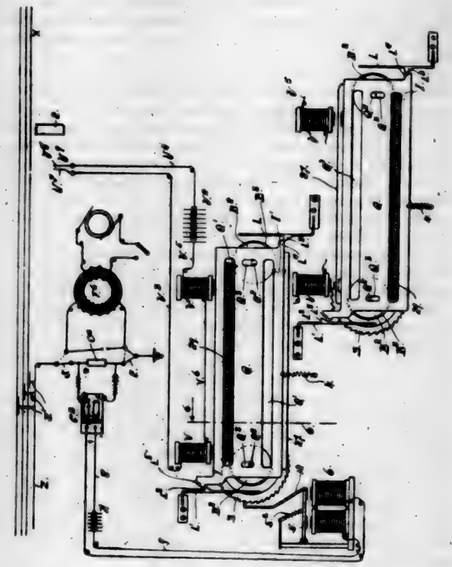

4. In railway inductive signaling-apparatus, the combination with one or more conductors mounted in suitable proximity to the track, of a train having railway signaling, transmitting and receiving instruments, a normally closed circuit in which the receiving and signaling instruments are located, the said instruments operating to transmit and receive inductive electrical impulses through the instrumentality of the said conductors, a normally closed receiving circuit and a signaling circuit, and means for automatically and simultaneously closing the transmission circuit and opening the receiving and signaling circuit at predetermined intervals.

5. In railway inductive signaling apparatus, the combination with one or more electrical conductors mounted in suitable proximity to the track, of a car or train having railway transmitting and receiving instruments, operating in connection with the said conductors to transmit and receive signals produced by inductive impulses, means mounted on the car or train for automatically and intermittently closing the transmission circuit and opening the receiving and signaling circuit, and a station having an indicating instrument for receiving the inductive impulses produced on the cars or trains going in both directions and on both sides of the station, to indicate the location of trains.

6. In railway inductive signaling apparatus, the combination with instruments mounted on the train for transmitting and receiving inductive electrical impulses, circuits in which the said instruments are located, means mounted on the train for automatically and intermittently opening and closing said circuits, alternately, and means located at the station and automatically operated by impulses taken inductively from said circuit to indicate the location of trains.

7. In railway inductive signaling apparatus, the combination of an instrument mounted on the car or train for transmitting inductive electrical impulses, a circuit in which said instrument is located, means mounted on the car or train for automatically and intermittently opening and closing said circuit, and means located at the station and automatically operated by impulses taken inductively from said circuit to indicate the location of trains.

8. In railway inductive signaling apparatus, the combination with one or more conductors mounted in suitable proximity to the track, an instrument mounted on the train for transmitting electrical impulses to the said conductors by induction, and mechanism located at stations and automatically operated by impulses taken inductively from said line conductors, to indicate the location of trains.

9. In railway inductive signaling apparatus, the combination with one or more conductors mounted in suitable proximity to the track, of an instrument mounted on the car or train for transmitting electrical impulses to the said conductors by induction, and indicating mechanism located at stations and operated by impulses taken inductively from the said line conductors, the said indicating mechanism being constructed to indicate the location or distance from the station of trains going toward and away from the station on both sides thereof.

10. In railway inductive signaling apparatus, the combination of an instrument mounted on the train for receiving inductive electrical impulses, a circuit in which said instrument is located, means mounted on the train for automatically and intermittently opening and closing said circuit, and means located at the station and automatically operated by impulses taken inductively from said circuit to indicate the location of trains.

11. In a railway inductive signaling apparatus, the combination with one or more conductors mounted in suitable proximity to the track, an instrument mounted on the train for transmitting electrical impulses to the said conductors by induction, an indicating mechanism located at stations and operated by impulses taken inductively from said line conductors, the line conductors being provided with choke coils to prevent the impulses from passing the stations where the indicating mechanism to be actuated is located.

12. In railway signaling apparatus, the combination with one or more conductors mounted in suitable proximity to the track, of an instrument mounted on the car or train for transmitting the electrical impulses to the said conductors, and indicating mechanism located at stations and operated by impulses taken from the said line conductors, the said indicating mechanism including an endless traveling band.

13. In railway signaling apparatus, the combination with one or more conductors mounted in suitable proximity to the track, of an instrument mounted on the car or train for transmitting the electrical impulses to the said conductors, and indicating mechanism located at stations and operated by impulses taken from the said line conductors, the said indicating mechanism including an endless traveling band, and pointers carried thereby for the purpose set forth.

14. In railway signaling apparatus, the combination with one or more conductors mounted in suitable proximity to the track, of an instrument mounted on the car or train for transmitting electrical impulses to the said conductors, indicating mechanism located at stations and operated by impulses taken from the said line conductors, the said indicating mechanism including an endless traveling band and pointers carried thereby, a casing located in proximity to the band and having graduated parts utilized by the aid of the pointers to indicate the location or distance of trains from stations.

15. In railway signaling apparatus, the combination with one or more conductors mounted in suitable proximity to the track, of an instrument mounted on the car or train for transmitting electrical impulses to the said conductors, indicating mechanism located at stations and operated by impulses taken from the said line conductors, the said indicating mechanism including an endless traveling band and pointers carried thereby, a casing located in proximity to the band and having separated graduated parts, utilized by the aid of the pointers to indicate the location of trains approaching or leaving the station, a plate movably mounted adjacent the casing and provided with slots so arranged that when actuated in opposite directions the graduated parts of the casing are alternately exposed through the slots, electro-magnetic means automatically controlled from the train for moving the said plate in one direction or the other, the plate being provided with spring-hooks for holding it in the position to which it has been moved by the electro-magnetic means, the said hooks being so located that they are acted on and released by the pointers whereby they are allowed to assume the opposite position.

16. In railway inductive signaling apparatus, the combination of one or more conductors mounted in suitable proximity to the track, an instrument mounted on the train for transmitting electrical impulses to said conductors by induction, and mechanism located at stations, and automatically operated by the inductive impulses of said line conductors, to indicate the location of trains.

17. In railway signaling apparatus, the combination of an instrument mounted on the train for receiving electrical impulses, a circuit in which said instrument is located, means mounted on the train for automatically and intermittently opening and closing said circuit, and means located at a station and automatically operated from said circuit to indicate the location of trains.

852,406. MIXING-MACHINE. BYRON S. BLAKE and EDWIN A. LONGSHORE, Des Moines, Iowa; said Longshore assignor to said Blake. Filed June 4, 1906. Serial No. 320,193.

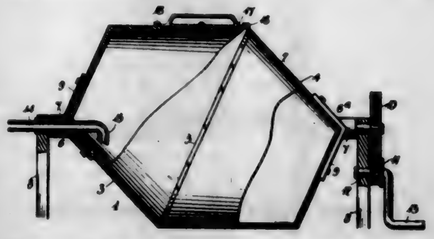

Claim.—The hereindescribed mixing machine comprising supports, a hollow drum formed of two conic frustums, united at their bases, said drum having an opening in one side and a closure for said opening, journals on said drum for rotation in bearings on said supports, said journals being in longitudinal alinement on a diagonal axis of said drum intersecting corners thereof and each provided with angularly-disposed base flanges overlapping, reinforcing and secured respectively to one end and one side of the drum, one of said journals being solid and the other being hollow, a liquid supply pipe extending through said hollow journal and an opening in the corner of the drum to which said journal is secured, a gear on the solid journal on the outer side of one of said supports, a crank shaft journaled in the said support and a pinion on the said crank shaft meshing with the said gear.

852,407. DEVICE FOR SECURING CHARTS TO STRINGED INSTRUMENTS. ULYSSES G. GALBRAITH, Sedalia, Mo., assignor of one-half to Joseph D. Donnohue, Sedalia, Mo. Filed Oct. 4, 1906. Serial No. 337,416.

Claim.—1. The combination with a stringed instrument having a plurality of frets thereon, of a body portion having slots to receive said frets, strips hingedly secured at each edge of said body portion and having perforations therethrough, said strips being severed transversely to their length and retaining pins on said instrument adapted to engage said perforations and secure the body portion in position.

2. The combination with a stringed instrument having a plurality of frets thereon, of a body portion having slots to receive said frets, strips hingedly secured at each edge of said body portion, said strips being severed transversely to their length, one portion of each of said strips being perforated and adapted to fold downwardly along the side of the instrument while the remaining portion is provided with similar perforations and adapted to extend over the top of the instrument and pins on the sides and top of the

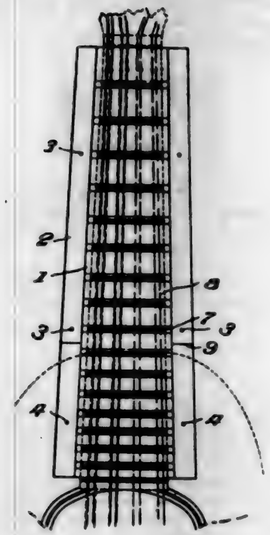

instrument adapted to enter the perforations in the strips and secure the body portion to the instrument.

852,408. NON-REFILLABLE BOTTLE. HARRY O. MCCLURG, Baltimore, Md. Filed Aug. 3, 1905. Renewed Oct. 2, 1906. Serial No. 337,133.

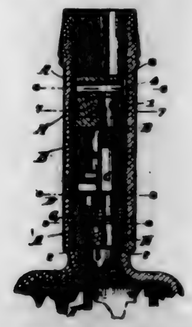

Claim.—1. The combination, with a bottle-neck having interior shoulders spaced apart, of a stopper provided with washers spaced apart corresponding to said shoulders, which they are adapted to engage, the stopper having also a discharge opening above the upper washer, and in its lower portion a passage that opens above the lower washer, and a spring valve adapted to normally close such lower opening or inlet, substantially as described.

2. The combination, with a bottle neck provided interiorly with means for holding a stopper in place, of a stopper comprising a tubular body having a washer and provided with a liquid passage extending and opening above and below the said washer, a hollow part arranged in said body and having a side discharge passage and a spring-pressed valve applied to and adapted to normally close the said passage, substantially as shown and described.

3. The improved tubular stopper for non-refillable bottles, comprising an upper portion having a lateral opening and a lower portion having a lateral opening for discharge of liquid, a spring flap valve for normally closing the said lower opening, the said stopper being also further provided with an air vent in the lower portion, substantially as described.

4. The improved stopper for non-refillable bottles, comprising a tubular body having an annular washer which is elastic and adapted to spring outward for engaging the bottle neck, and also having a liquid discharge passage extending above and below the washer, said body being provided with a part having a side passage and a self-closing spring valve, and a part having an air passage and a self-closing valve therefor, as described.

5. The combination, with a bottle neck, of a stopper adapted for insertion therein, and provided with means for forming a liquid-tight joint, the said stopper comprising a tubular body having a lateral discharge opening at the top and an attached part inserted in its chamber and comprising a lower portion having a passage for liquid and also having a lateral opening, a self-closing valve arranged to normally close such liquid passage, the said lower portion of the stopper having also an air-vent arranged substantially as described.

6. A stopper for non-refillable bottles, comprising a tubular body having a lateral opening at the top, a lower part provided with a passage for liquid, which passage has a lateral opening, a flap valve for normally closing such opening, and the said lower part having also an air-vent comprising a passage in the upper portion of the tubular body and a communicating passage in the lower portion of the stopper and a self-closing valve applied for regulating admission of air to the lower passage, a movable weight arranged below said valve for applying pressure thereto, by gravity, when the bottle is inverted as described.

7. The improved stopper for non-refillable bottles, comprising a body portion having an opening at the top for discharge of liquid, and another opening for admission of air, a lower part having a lateral discharge opening, and a valve normally closing the same, but adapted to open to pressure of liquid, said lower port being also provided with an air passage opening upward and having a spring valve for normally closing it, and a movable weight which applies pressure to such valve for opening it, when the bottle is inverted, substantially as described.

8. The improved bottle stopper for non-refillable bottles, comprising the tubular body, having openings at the top for passage of liquid and air, and a part inserted in the lower portion of the body and comprising a base which is secured to said body and provided with an elongated portion having a passage and chamber opening laterally, a spring valve adapted to normally close the opening but yielding outwardly to pressure of liquid, and means for controlling the admission of air thus forming an air vent, substantially as described.

9. The improved stopper for non-refillable bottles, comprising a tubular body which is open at the bottom and provided at the top with air and liquid passages, a base portion provided with a liquid passage opening laterally and a spring valve for normally closing the same, also with an air passage and a valve for normally closing it, substantially as described.

10. In a stopper for non-refillable bottles, the combination, with a tubular body part having openings at the top for passage of air and liquid, of an inserted part which is inclosed and protected by the body part, and comprises a base and an elongated portion having liquid and air passages and elastic valves for normally closing them, substantially as described.

11. The improved stopper for non-refillable bottles, comprising a tubular body portion having air and liquid passages in the top portion, a part, provided with air and liquid passages and elastic valves for closing them, which is adapted to be inserted and secured in the body portion, and tubes attached respectively to the body portion and the inserted portion and serving for conduction of air, substantially as described.

REISSUES.

12,643. METHOD OF FORMING BLOCKS OF ORES FOR METALLURGICAL PURPOSES. ÁRPÁD RÓNAY, Budapest, Austria-Hungary. Filed Jan. 14, 1907. Serial No. 352,320. Original No. 778,899, dated Jan. 3, 1905.

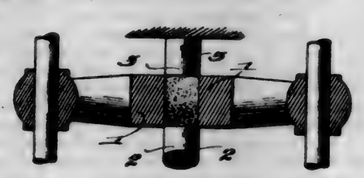

Claim.—1. The method of rendering material capable of use for metallurgical purposes suitable therefor by converting it into blocks by means of pressure and the exposure of the blocks to the action of combustion-gases containing carbon, which consists in subjecting the material, which may be in a finely-granulous form or in certain cases in the form of powder to a pressure increasing gradually to a very high degree (for example one thousand to two thousand atmospheres,) so that the air entirely escapes from the material during the pressing operation, and the pressure is only carried at the last stage to such a degree as to render the material plastic, whereupon, for the purpose of increasing their firmness, the blocks are exposed for a short time to the action of combustion products containing carbon at a temperature which prevents any fritting.

2. A process for the manufacture of bricks or blocks of ores for metallurgical treatment without the use of a binding material, which consists in subjecting the ores in a dry or slightly-dampened condition to a pressure of at least eight hundred atmospheres up to two thousand atmospheres in such a manner that the pressure is gradually increased for the purpose of letting the air completely escape so that the high pressure at which the material becomes plastic will only be applied at the last stage of the pressing process, whereupon the briquets or blocks are further subjected to the action of carbonic-acid gas.

3. The method of rendering material capable of use for metallurigical purposes suitable therefor by converting it into blocks by means of pressure, which consists in subjecting the material, which may be in a fine-granulous form or in certain cases in the form of powder to a pressure increasing gradually to a very high degree (for example one thousand to two thousand atmospheres,) so that the air entirely escapes from the material during the pressing operation, and the pressure is only carried at the last stage to such a degree as to render the material plastic.

4. A process for the manufacture of bricks or blocks of ores for metallurgical treatment without the use of a binding material, which consists in subjecting the ores in a dry or slightly dampened condition to a pressure of at least eight hundred atmospheres up to two thousand atmospheres in such a manner that the pressure is gradually increased for the purpose of letting the air completely escape so that the high pressure at which the material becomes plastic will only be applied at the last stage of the pressing process.

12,644. BOOT-CALK. CHRISTIAN PFEIFFER, New Britain, Conn., assignor to The North & Pfeiffer Manufacturing Company, a Corporation of Connecticut, and Levi H. Maxwell, New Britain, Conn. Filed Aug. 18, 1906. Serial No. 331,207. Original No. 817,090, dated Apr. 3, 1906.

Claim.—1. As a new article of manufacture, a boot-calk having a dished stop-disk, a screw-threaded shank extending from the concave side thereof, and a spike extending from the convex side of the disk, said spike tapering toward its lower end, the surface of the disk from which the spike extends having strengthening-ribs extending from the spike toward the periphery of the disk, and adapted also to be engaged by the chuck of an inserting-tool, the ribs terminating short of the point of the spike, substantially as described.

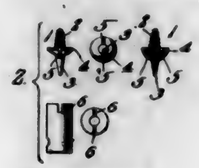

2. A boot-calk comprising a dished disk having radiating ribs on its convex side, a spike projecting beyond the ribs, and a threaded shank extending from the concave side of the disk.

3. A boot-calk comprising a dished disk having radiating ribs on its convex side, a cone-shaped spike projecting beyond the ribs, and a threaded shank extending from the concave side of the disk.

4. As a new article of manufacture, a boot calk, having a stop plate or disk, a screw-threaded shank extending from one side thereof and a spike extending from the opposite side thereof, said spike tapering toward its lower end, the surface of the disk or plate from which the spike extends having strengthening ribs extending from the spike toward the periphery of the disk, and adapted also to be engaged by the chuck of an inserting tool, the ribs terminating short of the point of the spike.

DESIGNS.

38,541. BADGE. SIDNEY Y. BALL, Cleveland, Ohio, assignor to The Webb C. Ball Watch Company, Cleveland, Ohio, a Corporation of Ohio. Filed Mar. 13, 1907. Serial No. 362,586. Term of patent 3½ years.

Claim.—The ornamental design for a badge as shown.

38,542. BADGE. SIDNEY Y. BALL, Cleveland, Ohio, assignor to The Webb C. Ball Watch Company, Cleveland, Ohio, a Corporation of Ohio. Filed Mar. 20, 1907. Serial No. 363,525. Term of patent 3½ years.

Claim.—The ornamental design for a badge as shown.

38,543. ARTIFICIAL-LIGHT REFLECTOR. OTIS A. MYGATT, New York, N. Y. Filed July 14, 1905. Serial No. 269,730. Term of patent 14 years.

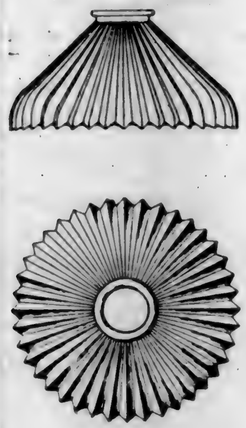

Claim.—The ornamental design for an artificial light reflector, as shown.

38,544. STOVE. BARTOW BEE COHEN, Sheffield, Ala., assignor of one-half to Sheffield Stove & Foundry Co. and one-half to King Stove & Range Co., Sheffield, Ala. Filed Mar. 26, 1907. Serial No. 364,738. Term of patent 14 years.

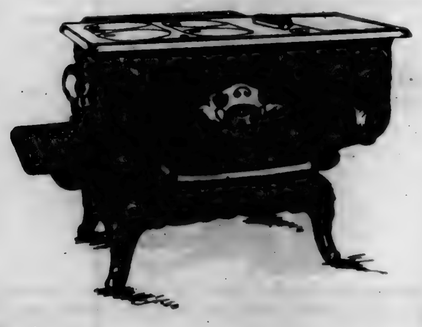

Claim.—The ornamental design for a stove as shown.

38,545. HAMMOCK. HERMAN L. HOHLFELD, Philadelphia, Pa. Filed Feb. 21, 1907. Serial No. 358,754. Term of patent 3½ years.

Claim.—The ornamental design for a hammock, as shown.

38,546. LEVERS LACE. CHARLES WILFRED BIRKIN, Nottingham, England. Filed Dec. 1, 1906. Serial No. 345,973. Term of patent 3½ years.

Claim.—The ornamental design for Levers lace as shown.

38,547. LEVERS LACE. CHARLES WILFRED BIRKIN, Nottingham, England. Filed Dec. 1, 1906. Serial No. 345,974. Term of patent 3½ years.

Claim.—The ornamental design for Levers lace as shown.

38,548. LEVERS LACE. CHARLES WILFRED BIRKIN, Nottingham, England. Filed Dec. 1, 1906. Serial No. 345,975. Term of patent 3½ years.

Claim.—The ornamental design for Levers lace as shown.

38,549. LEVERS LACE. CHARLES WILFRED BIRKIN, Nottingham, England. Filed Dec. 1, 1906. Serial No. 345,976. Term of patent 3½ years.

Claim.—The ornamental design for Levers lace as shown.

TRADE-MARKS

PUBLISHED APRIL 30, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 1,623. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FRIEDRICH ADOLF RICHTER, New York, N. Y., and Rudolstadt, Germany. Filed Apr. 15, 1905.

Particular description of goods.—Liniments, Ointments, Pills, Tinctures, and Remedies for Stomach Diseases.

Ser. No. 5,242. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 11, 1905.

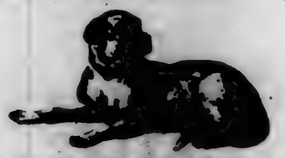

Particular description of goods.—Sheetings, Shirtings, Drillings, Ducks, Osnaburgs, Flannels, Denims, and Ginghams.

Ser. No. 6,789. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) BENJAMIN MOORE & COMPANY, New York, N. Y. Filed May 27, 1905.

Particular description of goods.—Dry and Mixed Paints and Pigment Colors.

Ser. No. 11,135. (CLASS 8. DETERGENTS.) LEVER BROTHERS COMPANY, Portland, Me., and Cambridge, Mass. Filed Aug. 2, 1905.

Particular description of goods.—Soap Powder.

Ser. No. 12,077. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) CHANCE & HUNT, LD., Oldbury, England. Filed Aug. 29, 1905.

FORTRESS.

Particular description of goods.—Caustic Soda.

Ser. No. 12,590. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) EDGAR ALLEN & CO., LIMITED, Sheffield, England. Filed Sept. 14, 1905. Used ten years.

Particular description of goods.—Cutlery and All other Hand-Tools Having a Cutting Edge.

Ser. No. 13,477. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HARTLAND LAW, HERBERT E. LAW, San Francisco, Cal. Filed Oct. 10, 1905.

VIAVI

Particular description of goods.—Remedies for Diseases of Women, More Particularly Diseases of the Genital and Urinary Organs, Catarrhal and other Conditions.

Ser. No. 13,686. (CLASS 43. THREAD AND YARN.) JAS. CHADWICK & BROS. LTD., Bolton, England. Filed Oct. 17, 1905. Used ten years.

Particular description of goods.—Sewing-Cotton on Spools and Reels.

Ser. No. 14,134. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) K. D. C. COMPANY, LIMITED, New Glasgow, Nova Scotia, Canada, and Boston, Mass. Filed Oct. 31, 1905.

Particular description of goods.—A Remedy for Dyspepsia.

Ser. No. 15,076. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) THE MURALO COMPANY, New Brighton, N. Y. Filed Nov. 29, 1905. Used ten years.

KALSO

Particular description of goods.—Calcimine.

Ser. No. 17,038. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) FRATELLI CAMPARI, Milan, Italy. Filed Feb. 15, 1906. Used ten years.

Particular description of goods.—Cordial.

Ser. No. 17,039. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FRATELLI CAMPARI, Milan, Italy. Filed Feb. 15, 1906. Used ten years.

Particular description of goods.—Bitters.

Ser. No. 17,200. (CLASS 17. WOOD MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE BELBER TRUNK & BAG CO., Philadelphia, Pa. Filed Feb. 20, 1906.

ATLAS

Particular description of goods.—Wooden Trunks.

Ser. No. 17,525. (CLASS 68. PUBLICATIONS.) ALBAUGH BROS., DOVER & CO., Chicago, Ill. Filed Mar. 5, 1906.

THE SCIENTIFIC CO-OPERATOR

Particular description of goods.—A Monthly Magazine.

Ser. No. 18,053. (CLASS 33. GLASSWARE NOT OTHERWISE CLASSIFIED.) AERATORS LIMITED, London, England. Filed Mar. 20, 1906.

PRANA

Particular description of goods.—Glass Bottles for Aerated Waters or other Liquids.

Ser. No. 18,083. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) S. EWART & CO., Pittsburg, Pa. Filed Mar. 21, 1906.

EWART'S RICE

Particular description of goods.—Rice.

Ser. No. 18,164. (CLASS 64. MEDICAL AND SURGICAL APPARATUS, APPLIANCES, AND INSTRUMENTS.) ERNST SCHEFFLER, Zwota, Germany. Filed Mar. 22, 1906.

Particular description of goods.—Raw Catgut for Surgical Purposes and Surgical Sewing-Silk.

Ser. No. 20,994. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) KATARNO COMPANY, New York, N. Y. Filed July 18, 1906.

KATARNO

Particular description of goods.—A Preparation for the Treatment of Catarrh and Catarrhal Diseases.

Ser. No. 20,995. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) KATARNO COMPANY, New York, N. Y. Filed July 18, 1906.

KATARNO THE GREAT TONIC.

Particular description of goods.—A Preparation for the Treatment of Catarrh and Catarrhal Diseases.

Ser. No. 20,996. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) KATARNO COMPANY, New York, N. Y. Filed July 18, 1906.

Particular description of goods.—A Preparation for the Treatment of Catarrh and Catarrhal Diseases.

Ser. No. 21,442. (CLASS 51. MALT LIQUORS.) SCHWENK BARTH BREWING COMPANY, Yankton, S. D. Filed Aug. 9, 1906.

Particular description of goods.—Beer.

Ser. No. 21,729. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FRANK M. PITTS, Jr., Hubbard, Tex., assignor to Gyn-A-Septin Company, Hubbard, Tex., a Corporation of Texas. Filed Aug. 23, 1906.

GYN-A-SEPTIN.

Particular description of goods.—A Proprietary Preparation in the Form of Tablets for the Treatment of Diseases of Women, Especially Uterine and Genito-Urinary Diseases.

Ser. No. 21,819. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, Jersey City, N. J., and New York, N. Y. Filed Aug. 30, 1906.

Particular description of goods.—Rubber Gums, Raw Rubber, and Substitutes Therefor, and the Plants or Trees from Which Such Gums, Rubber, or Substitutes are Derived, Prepared for Shipment.

Ser. No. 21,820. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, Jersey City, N. J., and New York, N. Y. Filed Aug. 30, 1906.

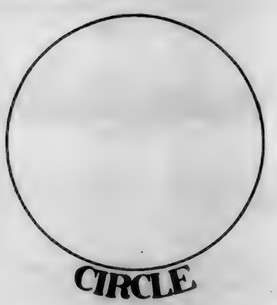

Particular description of goods.—Rubber Gums, Raw Rubber, and Substitutes Therefor, and the Plants or Trees from Which Such Gums, Rubber, or Substitutes are Derived, Prepared for Shipment.

Ser. No. 21,821. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, Jersey City, N. J., and New York, N. Y. Filed Aug. 30, 1906.

Particular description of goods.—Rubber Gums, Raw Rubber, and Substitutes Therefor, and the Plants or Trees from Which Such Gums, Rubber, or Substitutes are Derived, Prepared for Shipment.

Ser. No. 21,822. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, Jersey City, N. J., and New York, N. Y, Filed Aug. 30, 1906.

Particular description of goods.—Rubber Gums, Raw Rubber, and Substitutes Therefor, and the Plants or Trees from Which Such Gums, Rubber, or Substitutes are Derived, Prepared for Shipment.

Ser. No. 21,823. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, Jersey City, N. J., and New York, N. Y. Filed Aug. 30, 1906.

C M R Co

Particular description of goods.—Rubber Gums, Raw Rubber, and Substitutes Therefor, and the Plants or Trees from Which Such Gums, Rubber, or Substitutes are Derived, Prepared for Shipment.

Ser. No. 21,900. (CLASS 53. SACCHARINE FOODS NOT INCLUDED IN CLASS 47.) CRESCENT MANUFACTURING Co., Seattle, Wash. Filed Sept. 4, 1906.

Mapleine

Particular description of goods.—Syrup.

Ser. No. 22,093. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) R. E. DIETZ COMPANY, New York, N. Y. Filed Sept. 14, 1906. Used ten years.

15

Particular description of goods.—Oil-Burning Lamps.

Ser. No. 22,354. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) DAVID JONES, New York, N. Y. Filed Sept. 27, 1906.

Particular description of goods.—Jams, Jellies, and Marmalades.

Ser. No. 22,412. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE ROBERTS LUMBER CO., Minneapolis, Minn. Filed Oct. 1, 1906.

Rexlide CUT RE BOARD

Particular description of goods.—Boxes Made from Pulp-Board.

Ser. No. 22,907. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) ROYAL BAKING POWDER Co., Jersey City, N. J., and New York, N. Y. Filed Oct. 25, 1906.

ROYAL

Particular description of goods.—Yeast.

Ser. No. 23,059. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) LINK-BELT COMPANY, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind. Filed Nov. 3, 1906. Used ten years.

LINK BELT

Particular description of goods.—Drive-Chains, Conveyer-Chains, and Chain Cables.

Ser. No. 23,061. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) LINK-BELT COMPANY, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind. Filed Nov. 3, 1906. Used ten years.

MONOBAR

Particulr description of goods.—Conveyer-Chains and Drive-Chains.

Ser. No. 23,779. (CLASS 68. PUBLICATIONS.) THE JEWELERS CIRCULAR PUBLISHING Co., New York, N. Y. Filed Dec. 5, 1906. Used ten years.

THE JEWELERS REVIEW

Particular description of goods.—Periodicals.

Ser. No. 23,804. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) MEADE & BAKER CARBOLIC MOUTH WASH Co., Richmond, Va. Filed Dec. 6, 1906. Used ten years.

CARBOLIC
Mouth Wash

Particular description of goods.—A Mouth-Wash.

Ser. No. 24,121. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) LUIGI RONCORONI, West Hoboken, N. J. Filed Dec. 18, 1906.

Particular description of goods.—Liquid Remedies for Burns.

Ser. No. 24,313. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) AERATORS LIMITED, London, England. Filed Dec. 28, 1906.

PRANA

Particular description of goods.—The Metal Parts of Seltzogenes and Siphons.

Ser. No. 24,335. (CLASS 8. DETERGENTS.) DOCKTER & BARNDOLLAR, Allegheny, Pa. Filed Dec. 29, 1906.

Particular description of goods.—Fluid Washing and Cleaning Compounds.

Ser. No. 24,764. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich. Filed Jan. 19, 1907. Used ten years.

The United States Graphite Co.,

Particular description of goods.—Graphite Machinery-Lubricant, Graphite Auto-Lubricant, Graphite Cable-Grease, Graphite Axle-Grease, Graphite Journal and Gear Grease, Graphite Cup-Grease, and Lubricating-Graphite.

Ser. No. 24,858. (CLASS 7. CORDAGE NOT INCLUDED IN CLASS 13.) THE PORTLAND CORDAGE Co., Portland, Oreg. Filed Jan. 23, 1907.

The quatrefoil being printed in red.

Particular description of goods.—Rope, Cord, and Twine.

Ser. No. 24,970. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) FRANK BROS. & Co., New York, N. Y. Filed Jan. 28, 1907.

Particular description of goods.—Knit Underwear.

Ser. No. 25,020. (CLASS 12. MASONRY MATERIALS.) OKLAHOMA PORTLAND CEMENT COMPANY, Ada, Ind. Ter. Filed Jan. 30, 1907.

OK

Particular description of goods.—Portland Cement.

Ser. No. 25,067. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) T. A. SLOCUM CO., New York, N. Y. Filed Feb. 2, 1907.

PSYCHINE

Particular description of goods.—A Pharmaceutical Preparation for Consumption and All Disorders of the Throat, Lungs, and Heart.

Ser. No. 25,081. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) OZOMULSION CO., New York, N. Y. Filed Feb. 2, 1907. Used ten years.

Ozomulsion

Particular description of goods.—Emulsions of Cod-Liver Oil.

Ser. No. 25,089. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) EDWARD A. ZEBEST, St. Joseph, Mo. Filed Feb. 2, 1907.

GRIPALETS

FOR COLDS LA GRIPPE

Particular description of goods.—Remedies for Colds and La Grippe.

Ser. No. 25,135. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) T. A. SLOCUM CO., New York, N. Y. Filed Feb. 4, 1907.

X-RAY
POROUS
PLASTER

Particular description of goods.—Porous Plasters.

Ser. No. 25,143. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) TAYLOR BROS., Camden, N. J. Filed Feb. 5, 1907.

KEYSTONE

Particular description of goods.—Poultry and Pigeon Supplies—Namely, Lice-Powder and Lice-Paint.

Ser. No. 25,224. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) NATIONAL WATER CO., Waukesha, Wis. Filed Feb. 9, 1907.

CORINNIS

Particular description of goods.—Mineral Water.

Ser. No. 25,281. (CLASS 12. MASONRY MATERIALS.) STANDARD ASPHALT AND RUBBER COMPANY, Jersey City, N. J., and Chicago, Ill. Filed Feb. 12, 1907.

SARCO

Particular description of goods.—Paving, Roofing, and Building Asphalt, Asphalt Filler, Asphalt Mastic, and Asphaltic Matrix.

Ser. No. 25,282. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) STANDARD ASPHALT AND RUBBER COMPANY, Jersey City, N. J., and Chicago, Ill. Filed Feb. 12, 1907.

SARCO

Particular description of goods.—Mineral Rubber and Asphaltic Insulation for Electrical Purposes.

Ser. No. 25,321. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FOSTER-MCCLELLAN COMPANY, Buffalo, N. Y. Filed Feb. 15, 1907.

Particular description of goods.—Ointments.

Ser. No. 25,322. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) JOHN HASSELBRING, New York, N. Y. Filed Feb. 15, 1907.

Particular description of goods.—Silver-Mounted Corkscrews, Carving Sets, Shaving-Brushes, Shaving-Cups, Children's Cups, Candlesticks, Bottle-Openers, Bottle-Tops, Whisk-Brooms, Pepper and Salt Cellars, and Tea Sets.

Ser. No. 25,459. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

Particular description of goods.—Canned Fish.

Ser. No. 25,469. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

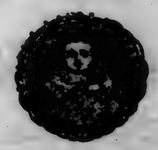

Particular description of goods.—Canned Fish.

Ser. No. 25,484. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ALBERT W. YOUNG, Philadelphia, Pa. Filed Feb. 20, 1907.

Particular description of goods.—A Remedy for Toothache.

Ser. No. 25,563. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HUGO ROSENBERG, Charlottenburg, near Berlin, Germany. Filed Feb. 23, 1907.

CHOLOGEN

Particular description of goods.—A Remedy for Gall-Stones.

Ser. No. 25,596. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JULIUS LEWENTHAL, Sonora, Tex. Filed Feb. 25, 1907.

Particular description of goods.—A Remedy for Screw-Worms Which Affect Domestic Quadrupeds.

Ser. No. 25,667. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE BENJAMIN HOBART COMPANY, Whitman, Mass. Filed Feb. 27, 1907.

Particular description of goods.—Nails.

Ser. No. 25,668. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HUGO ROSENBERG, Charlottenburg, near Berlin, Germany. Filed Mar. 1, 1907.

EUSEMIN

Particular description of goods.—A Local Anesthetic.

Ser. No. 25,669. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HUGO ROSENBERG, Charlottenburg, near Berlin, Germany. Filed Mar. 1, 1907.

PHAGOCYTIN

Particular description of goods.—Subcutaneous Injections Which are Particularly Employed for Producing Leucocytosis in Septic Maladies.

Ser. No. 25,670. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HUGO ROSENBERG, Charlottenburg, near Berlin, Germany. Filed Mar. 1, 1907.

NUCLEOGEN

Particular description of goods.—A Remedy for Chlorosis, Anemia, Neurasthenia, Rickets, Inanition, Maladies of the Lymphatic Glands, and Tuberculosis.

Ser. No. 25,677. (CLASS 50. FOODS NOT OTHERWISH CLASSIFIED.) BASILEA & CALANDRA, New York, N. Y. Filed Mar. 1, 1907.

CALBAS

Particular description of goods.—Olive-Oil.

Ser. No. 25,695. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) BOYER & COMPANY, Philadelphia, Pa. Filed Mar. 2, 1907. Used ten years.

Particular description of goods.—Shoe-Polish and Shoe-Blacking.

Ser. No. 25,696. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) BOYER & COMPANY, Philadelphia, Pa. Filed Mar. 2, 1907. Used ten years.

Particular description of goods.—Shoe-Polish and Shoe-Blacking.

Ser. No. 25,708. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) THE MONOHANSETT M'F'G. CO., Putnam, Conn. Filed Mar. 2, 1907. Used ten years.

FEARLESS

Particular description of goods.—Cotton Sheetings, Shirtings, and Drills, Brown and Bleached.

Ser. No. 25,725. (CLASS 12. MASONRY MATERIALS.) HENRY B. CABOT and HELEN N. CABOT, Boston, Mass., executors u/w of Samuel Cabot. Filed Mar. 4, 1907. Used ten years.

CABOT'S

Particular description of goods.—Builders' Sheathing and Mortar-Coloring.

Ser. No. 25,726. (CLASS 8. DETERGENTS.) HENRY B. CABOT and HELEN N. CABOT, Boston, Mass., executors u/w of Samuel Cabot. Filed Mar. 4, 1907. Used ten years.

SULPHO-NAPTHOL

Particular description of goods.—A Liquid Chemical Preparation for Use as a Detergent Cleaner with Water for Toilet Purposes and for Cleaning Floors, Walls, &c.

Ser. No. 25,755. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) WASHINGTON IRON WORKS CO., Seattle, Wash. Filed Mar. 4, 1907.

Particular description of goods.—Logging and Hoisting Engines.

Ser. No. 25,797. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) DENTON BROTHERS, Wellesley, Mass. Filed Mar. 6, 1907.

BUTTERFLY

Particular description of goods.—Jewelry for Personal Wear.

Ser. No. 25,888. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J. Filed Mar. 11, 1907. Used ten years.

Particular description of goods.—Lead and Crayon Pencils.

Ser. No. 25,889. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J. Filed Mar. 11, 1907. Used ten years.

AMERICAN GRAPHITE

Particular description of goods.—Lead and Crayon Pencils.

Ser. No. 25,897. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) THE BROOKLYN TURKISH BATH COMPANY, New York, N. Y. Filed Mar. 11, 1907.

GLYNTA

Particular description of goods.—Ginger-Ale, Sarsaparilla, Distilled Waters, and Non-Alcoholic Carbonated Beverages.

Ser. No. 25,912. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) WM. J. STANGE CO., Chicago, Ill. Filed Mar. 11, 1907.

GOLD

Particular description of goods.—Ginger-Ale.

Ser. No. 25,934. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) SAMUEL SHAFFER, Allegheny, Pa. Filed Mar. 12, 1907.

Particular description of goods.—Prepared Polishing-Cloth.

Ser. No. 25,967. (CLASS 30. CROCKERY, EARTHENWARE, AND PORCELAIN.) GEO. BORGFELDT & CO., New York, N. Y. Filed Mar. 14, 1907.

CORONET

Particular description of goods.—China for Domestic and Household Purposes.

Ser. No. 25,972. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) LOUISA F. PIQUETT, Baltimore, Md. Filed Mar. 14, 1907.

Particular description of goods.—An Antiseptic Compound.

Ser. No. 25,988. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE ELK EYE MILLING COMPANY, McConnelsville, Ohio. Filed Mar. 15, 1907.

Particular description of goods.—Wheat-Flour.

Ser. No. 26,006. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) GOODYEAR RUBBER COMPANY, New York, N. Y. Filed Mar. 16, 1907. Used ten years.

CRACK PROOF

Particular description of goods.—Rubber Boots and Shoes.

Ser. No. 26,014. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) HERMAN BROTHERS COMPANY, Lincoln, Nebr. Filed Mar. 16, 1907.

THE LINCOLN

Particular description of goods.—Dress and Negligée Shirts, Coats, Pants, Overalls, Felt Hats, Cloth, Leather, and Skin Gloves and Mittens.

Ser. No. 26,016. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) PAYNE SHOE COMPANY, Charleston, W. Va. Filed Mar. 16, 1907.

HAND-OVER

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 26,029. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) MANHATTAN BRASS CO., New York, N. Y. Filed Mar. 18, 1907. Used ten years.

EUREKA

Particular description of goods.—Kerosene-Oil-Lamp Burners.

Ser. No. 26,031. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE WEST HAVEN MFG. CO., West Haven, Conn. Filed Mar. 18, 1907.

UNIVERSAL

Particular description of goods.—Hacksaw-Blades.

Ser. No. 26,034. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) CHICAGO SAFETY STARCH COMPANY, Chicago, Ill. Filed Mar. 18, 1907.

Particular description of goods.—Fireproofing Liquid and Fireproofing-Starch.

Ser. No. 26,035. (CLASS 18. AGRICULTURAL AND DAIRY MACHINERY AND PARTS OF SUCH MACHINERY.) LA CROSSE PLOW COMPANY, La Crosse, Wis. Filed Mar. 18, 1907.

IMPERIAL

Particular description of goods.—Disk Plows.

Ser. No. 26,036. (CLASS 18. AGRICULTURAL AND DAIRY MACHINERY AND PARTS OF SUCH MACHINERY.) LA CROSSE PLOW COMPANY, La Crosse, Wis. Filed Mar. 18, 1907.

PRIVATE

Particular description of goods.—Seeding-Machines and Grain-Drills.

Ser. No. 26,050. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) WRIGHT WIRE COMPANY, Worcester, Mass. Filed Mar. 18, 1907.

"EXCELSIOR"

Particular description of goods.—Wire Picture-Cord.

Ser. No. 26,090. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) JOHN BLAUL'S SONS COMPANY, Burlington, Iowa. Filed Mar. 20, 1907.

VAUA

Particular description of goods.—Coffee.

Ser. No. 26,092. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) SAMUEL A. BIGELOW, trustee, Boston, Mass. Filed Mar. 20, 1907. Used ten years.

Particular description of goods.—Hatchets, Axes, Chisels, Tinners Snips, Saws, Bits, Augers, and Boring Tools.

Ser. No. 26,126. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) P. L. CUSACHS, LIMITED, New Orleans, La. Filed Mar. 21, 1907.

SAGA-CURA

Particular description of goods.—A Remedy for Purifying the Blood.

Ser. No. 26,133. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) TROY COLD WATER KALSOMINE COMPANY, Green Island, N. Y. Filed Mar. 21, 1907. Used ten years.

KLARK'S COLD WATER PAINT

Particular description of goods.—Cold-Water Paint.

Ser. No. 26,141. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) GREAT WESTERN OIL REFINING COMPANY, Erie, Kans. Filed Mar. 21, 1907.

Particular description of goods.—Axle-Grease.

Ser. No. 26,187. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) EDWARD C. WEEKS, New York, N. Y. Filed Mar. 23, 1907.

BALEINA

Particular description of goods.—Corset-Stiffeners and Corset-Stays.

Ser. No. 26,195. (CLASS 63. PUBLICATIONS.) THE GARFIELD SAVINGS BANK CO., Cleveland, Ohio. Filed Mar. 25, 1907.

THRIFT

Particular description of goods.—A Periodical Relating to Banking and Allied Subjects.

Ser. No. 26,198. (CLASS 47. CONFECTIONERY.) WENDAL V. MOSER, Canton, Ohio. Filed Mar. 25, 1907.

Particular description of goods.—Chewing-Gum.

Ser. No. 26,200. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HAROLD G. REINICKER, Baltimore, Md. Filed Mar. 25, 1907. Used ten years.

Particular description of goods.—Whooping-Cough Syrup.

Ser. No. 26,230. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) KELLEY-HOW-THOMSON CO., Duluth, Minn. Filed Mar. 25, 1907.

HIGHERY

Particular description of goods.—Barbed Wire, Oil-Cans, Milk-Cans, Tea-Kettles, Washbasins, and Galvanized Water-Pails.

Ser. No. 26,235. (CLASS 18. AGRICULTURAL AND DAIRY MACHINERY AND PARTS OF SUCH MACHINERY.) KELLEY-HOW-THOMSON CO., Duluth, Minn. Filed Mar. 25, 1907.

HIGHERY

Particular description of goods.—Lawn-Mowers.

Ser. No. 26,240. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) MAX L. ROSENTHAL, Bay City, Mich. Filed Mar. 25, 1907.

Gold Bond

Particular description of goods.—Men's and Boys' Clothing, Comprising Overcoats, Coats, Vests, Pants, and Trousers.

Ser. No. 26,241. (CLASS 51. MALT LIQUORS.) THE WACKER & BIRK BR'G & M'LT'G CO., Chicago, Ill. Filed Mar. 25, 1907.

PIONEER

Particular description of goods.—A Malt Tonic.

Ser. No. 26,252. (CLASS 54. SEA FOODS.) BERGENS VARMBOGERI MOLT & CO., Bergen, Norway. Filed Mar. 26, 1907.

Particular description of goods.—Canned, Smoked, Pickled, and Preserved Fish.

Ser. No. 26,254. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) ENDICOTT-JOHNSON COMPANY, Endicott, N. Y. Filed Mar. 26, 1907.

HOOF TO FOOT

Particular description of goods.—Boots and Shoes of Leather.

Ser. No. 26,255. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) ACME WHITE LEAD & COLOR WORKS, Detroit, Mich. Filed Mar. 26, 1907.

Particular description of goods.—White Lead, Red Lead, Zinc-White, Turpentine, Linseed-Oil, Driers, Pigments, Fillers, Finishes, Liquid Slating, Rubbing, Polishing and

Finishing Oils, Paint and Varnish Removers, Polishes for Varnish, Lacquer, or Gloss Surfaces, Putty, Shellac, Dry Colors, Colors in Oil, Calcimine, Distemper Colors, Japan Colors, Reducing-Oils, and Painters' Waxes.

Ser. No. 26,266. (CLASS 29. BROOMS, BRUSHES, AND DUSTERS.) ALFRED H. SMITH CO., New York, N. Y. Filed Mar. 26, 1907.

Brisco

Particular description of goods.—Toilet Brushes.

Ser. No. 26,279. (CLASS 8. DETERGENTS.) GIBSON SOAP COMPANY, South Omaha, Nebr., assignor to The Cudahy Packing Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 27, 1907.

SOLVENE

Particular description of goods.—A Saponaceous Scouring and Cleansing Preparation.

Ser. No. 26,285. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MATTHEW K. SCHILLING, New Orleans, La. Filed Mar. 27, 1907.

Particular description of goods.—Liniment.

Ser. No. 26,286. (CLASS 47. CONFECTIONERY.) A. SLAUSON & Co., New York, N. Y. Filed Mar. 27, 1907. Used ten years.

SCOTCH MINTS

Particular description of goods.—Candy.

Ser. No. 26,292. (CLASS 8. DETERGENTS.) ROBINSON BROS. & COMPANY INCORPORATED, Portland, Me., and Malden, Mass. Filed Mar. 28, 1907. Used ten years.

ROBINSON BROS. & CO. OAT MEAL BOSTON.

Particular description of goods.—Soap.

Ser. No. 26,294. (CLASS 8. DETERGENTS.) ROBINSON BROS. & COMPANY INCORPORATED, Portland, Me., and Malden, Mass. Filed Mar. 28, 1907. Used ten years.

Newfoth

Particular description of goods.—Soap.

Ser. No. 26,296. (CLASS 8. DETERGENTS.) ROBINSON BROS. & COMPANY INCORPORATED, Portland, Me., and Malden, Mass. Filed Mar. 28, 1907. Used ten years.

ROBINSON BROS. & CO. PUMICE FOR THE HANDS BOSTON.

Particular description of goods.—Soap.

Ser. No. 26,303. (CLASS 68. PUBLICATIONS.) THE BENCH AND BAR COMPANY, New York, N. Y. Filed Mar. 28, 1907.

The Bench and Bar

Particular description of goods.—Monthly Magazine for Lawyers.

Ser. No. 26,306. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JNO. B. DANIEL, Atlanta, Ga. Filed Mar. 28, 1907. Used ten years.

DANIEL'S

Particular description of goods.—A Sedative, Antispasmodic, and Nerve Tonic for the Relief and Cure of Chloral and Tobacco Habits, Alcoholism, Neuralgia, Epilepsy, St. Vitus' Dance, Paralysis, Morphine or Opium Habit, Nerve Exhaustion, Headache, Convulsions, Hysteria, Deficient Menstruation, Insomnia, and All other Diseases Resulting from Weakness or Relaxation of the Nerves.

Ser. No. 26,319. (CLASS 18. AGRICULTURAL AND DAIRY MACHINERY AND PARTS OF SUCH MACHINERY.) LA CROSSE PLOW CO., La Crosse, Wis. Filed Mar. 28, 1907.

Particular description of goods.—Sulky and Gang Plows, Disk Plows, Seeders, Drills, Disk Harrows, Tooth-Harrows, and Listers.

Ser. No. 26,324. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) C. BLOOMBERG & Co., New York, N. Y. Filed Mar. 29, 1907.

Crown

Particular description of goods.—Suspenders, Garters, and Belts.

Ser. No. 26,329. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) PERCY F. HOGAN, New York, N. Y. Filed Mar. 29, 1907.

Particular description of goods.—Steel.

Ser. No. 26,340. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) LYON & GREENLEAF, Wauseon, Ohio. Filed Mar. 30, 1907.

CLIPPER

Particular description of goods.—Wheat-Flour.

Ser. No. 26,341. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) LYON & GREENLEAF, Wauseon, Ohio. Filed Mar. 30, 1907.

Good Luck

Particular description of goods.—Wheat-Flour.

Ser. No. 26,342. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) LYON & GREENLEAF, Wauseon, Ohio. Filed Mar. 30, 1907.

WASEO

Particular description of goods.—Wheat-Flour.

Ser. No. 26,344. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) SAMUEL H. GUNDRY, Richmond, Va. Filed Mar. 30, 1907. Used ten years.

DOCTOR GRAVES TOOTH POWDER

Particular description of goods.—Tooth-Powder.

Ser. No. 26,345. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) SAMUEL H. GUNDRY, Richmond, Va. Filed Mar. 30, 1907. Used ten years.

DOCTOR GRAVES UNEQUALED TOOTH POWDER

Particular description of goods.—Tooth-Powder.

Ser. No. 26,349. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) BAUM COHEN AND SHIRE, New York, N. Y. Filed Mar. 30, 1907.

The "Mayfair" Belt

Particular description of goods.—Belts.

Ser. No. 26,358. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FREDERICK AUGUST LUYTIES, St. Louis, Mo. Filed Mar. 30, 1907.

FAREOL

Particular description of goods.—An Antipyretic, Sedative, and Anodyne.

Ser. No. 26,362. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) UNITED STATES PAPER CUTTER CO., St. Louis, Mo. Filed Mar. 30, 1907.

NUGGET.

Particular description of goods.—Roll-Paper Holders and Cutters.

Ser. No. 26,363. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) VALENTINE & BENTLEY SILK CO., Newton, N. J. Filed Mar. 30, 1907.

BUNGALOW

Particular description of goods.—Silk Piece Goods.

Ser. No. 26,365. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed Mar. 30, 1907.

Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 26,370. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed Mar. 30, 1907.

Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 26,384. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE BRISTOL COMPANY, Waterbury, Conn. Filed Apr. 1, 1907. Used ten years.

BRISTOL'S

Particular description of goods.—Metallic Fasteners for Belts.

Ser. No. 26,389. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) SAML P. HALLER, Pittsburg, Pa. Filed Apr. 1, 1907.

TROTTER

Particular description of goods.—Whisky.

Ser. No. 26,391. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) GEORGE LUEDERS & CO., New York, N. Y. Filed Apr. 1, 1907.

EDOL

Particular description of goods.—Perfumers' Raw Materials, Consisting of Compound Oils from Which Perfumes are Manufactured.

Ser. No. 26,409. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) LEFRANC & CO., Paris, France. Filed Apr. 2, 1907.

GRISOL

Particular description of goods.—Paints.

Ser. No. 26,411. (CLASS 47. CONFECTIONERY.) DAVID D. LONG, Oswego, N. Y. Filed Apr. 2, 1907.

OX HEART

Particular description of goods.—Candy.

Ser. No. 26,412. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) MICHIGAN SHOE COMPANY, Detroit, Mich. Filed Apr. 2, 1907.

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 26,429. (CLASS 47. CONFECTIONERY.) JAMES DE FREMERY & CO., Oakland, Cal. Filed Apr. 3, 1907.

Peek-a-boo

Particular description of goods.—Chocolate.

Ser. No. 26,434. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) WILLIAMS-KNEELAND COMPANY, South Braintree, Mass. Filed Apr. 3, 1907.

Particular description of goods.—Leather Shoes.

Ser. No. 26,437. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) RUBBERHIDE COMPANY, Boston, Mass. Filed Apr. 3, 1907.

EZOA

Particular description of goods.—Rubber Boots and Shoes.

Ser. No. 26,452. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) THE ESTERBROOK STEEL PEN MFG. CO., Camden, N. J., and New York, N. Y. Filed Apr. 4, 1907. Used ten years.

ESTERBROOK

Particular description of goods.—Metallic Pens.

Ser. No. 26,473. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) THE HARTFORD RUBBER WORKS COMPANY, Hartford, Conn., and New York, N. Y. Filed Apr. 4, 1907.

Particular description of goods.—Rubber Wheel-Tires.

Ser. No. 26,475. (CLASS 12. MASONRY MATERIALS.) ROGERS WHITE LIME COMPANY, Rogers, Ark. Filed Apr. 5, 1907.

LILY BRAND

Particular description of goods.—Lime.

Ser. No. 26,476. (CLASS 12. MASONRY MATERIALS.) ROGERS WHITE LIME COMPANY, Rogers, Ark. Filed Apr. 5, 1907.

FLAG BRAND

Particular description of goods.—Lime.

Ser. No. 26,483. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) EDWARD PERLBERG, Jersey City, N. J. Filed Apr. 5, 1907.

Rambler

Particular description of goods.—Leather Shoes.

TRADE-MARKS

REGISTERED APRIL 30, 1907.

62,239. STERILIZED CREAM AND CONDENSED MILK. ABRAHAM & STRAUS, New York, N. Y.
Filed April 27, 1906. Serial No. 19,109. PUBLISHED MARCH 5, 1907.

62,240. CANNED FRUITS, CANNED VEGETABLES, JELLY, AND JAM. ABRAHAM & STRAUS, New York, N. Y.
Filed June 8, 1906. Serial No. 20,151. PUBLISHED MARCH 5, 1907.

62,241. ISINGLASS. CAPE ANN ISINGLASS COMPANY, Boston, Mass.
Filed December 6, 1906. Serial No. 23,816. PUBLISHED MARCH 5, 1907.

62,242. FUSES. COAST MANUFACTURING & SUPPLY CO., Berkeley, Cal.
Filed February 4, 1907. Serial No. 25,111. PUBLISHED MARCH 5, 1907.

62,243. FUSES. COAST MANUFACTURING & SUPPLY CO., Berkeley, Cal.
Filed February 6, 1907. Serial No. 25,161. PUBLISHED MARCH 5, 1907.

62,244. FUSES. COAST MANUFACTURING & SUPPLY CO., Berkeley, Cal.
Filed February 8, 1907. Serial No. 25,201. PUBLISHED MARCH 5, 1907.

62,245. CERTAIN STARCH OR SIZE. GREENE & COMPANY, Boston, Mass.
Filed December 13, 1906. Serial No. 23,997. PUBLISHED MARCH 5, 1907.

62,246. CANDIES. HENRY HEIDE, New York, N. Y.
Filed July 21, 1906. Serial No. 21,058. PUBLISHED MARCH 5, 1907.

62,247. PLAYING-CARDS. KALAMAZOO PLAYING CARD CO., Kalamazoo, Mich.
Filed February 4, 1907. Serial No. 25,114. PUBLISHED MARCH 5, 1907.

62,248. PREPARATION FOR CLEANING AND BLEACHING WHITE-COTTON AND LINEN-DUCK ARTICLES. ISIDOR NACHMANN, New York, N. Y.
Filed July 9, 1906. Serial No. 20,808. PUBLISHED NOVEMBER 6, 1906.

62,249. CORN-SYRUP. O. W. PEIRCE COMPANY, La Fayette, Ind.
Filed December 15, 1906. Serial No. 24,049. PUBLISHED MARCH 5, 1907.

62,250. CERTAIN THREAD. ONEIDA COMMUNITY LIMITED, Kenwood, N. Y.
Filed November 21, 1905. Serial No. 14,874. PUBLISHED MARCH 5, 1907.

62,251. KEROSENE. POLLEDO, TORRES & CA., Buenos Aires, Argentina.
Filed July 26, 1906. Serial No. 21,187. PUBLISHED MARCH 5, 1907.

62,252. CERTAIN SEA FOODS. REISS & BRADY, New York, N. Y.
Filed December 8, 1906. Serial No. 23,873. PUBLISHED MARCH 5, 1907.

62,253. WRITING-PAPER, BOND-PAPER, AND LEDGER-PAPER. UNION CARD & PAPER CO., New York, N. Y.
Filed October 24, 1906. Serial No. 22,572. PUBLISHED MARCH 5, 1907.

62,254. CIGARS. WERTHEIMER BROS., Baltimore, Md.
Filed September 12, 1906. Serial No. 22,060. PUBLISHED MARCH 5, 1907.

62,255. RUBBER ROOFING. H. A. WHITEMAN & CO., Wilkes-Barre, Pa.
Filed June 11, 1906. Serial No. 20,202. PUBLISHED MARCH 5, 1907.

62,256. CANDLES. THE WILL & BAUMER COMPANY, Syracuse, N. Y.
Filed June 27, 1905. Serial No. 9,161. PUBLISHED MARCH 5, 1907.

62,257. CANDLES. THE WILL & BAUMER COMPANY, Syracuse, N. Y.
Filed June 27, 1905. Serial No. 9,162. PUBLISHED MARCH 5, 1907.

62,258. CIGARS AND CIGARETTES. GEORGE HAROLD GRANT WING, New York, N. Y.
Filed November 20, 1906. Serial No. 23,486. PUBLISHED MARCH 5, 1907.

62,259. PERFUMED SOAP. A. & F. PEARS LIMD., London, England.
Filed January 17, 1906. Serial No. 16,230. PUBLISHED MARCH 5, 1907.

62,260. EMERY-CLOTH AND SANDPAPER. AMERICAN GLUE CO., Boston, Mass., assignor to American Glue Company, a Corporation of Massachusetts.
Filed May 3, 1905. Serial No. 4,106. PUBLISHED MARCH 5, 1907.

62,261. GAS-STOVES, GASOLENE OR VAPOR STOVES, AND VAPOR BURNERS AND OVENS. AMERICAN STOVE COMPANY, Jersey City, N. J., and St. Louis, Mo.
Filed May 20, 1905. Serial No. 6,896. PUBLISHED SEPTEMBER 25, 1906.

62,262. PIE-FILLINGS, PRESERVES, AND JELLIES. MAX AMS, New York, N. Y.
Filed January 25, 1907. Serial No. 24,894. PUBLISHED MARCH 5, 1907.

62,263. SOAPS. WASHINGTON BERRY, Chicago, Ill.
Filed December 31, 1906. Serial No. 24,361. PUBLISHED MARCH 5, 1907.

62,264. CANNED FRUITS AND VEGETABLES. THE C. CALLAHAN CO., La Fayette, Ind.
Filed May 29, 1905. Serial No. 6,851. PUBLISHED MARCH 5, 1907.

62,265. DUCK-PINS. JOHN DITTMAR & SONS, Baltimore, Md.
Filed February 4, 1907. Serial No. 25,125. PUBLISHED MARCH 5, 1907.

62,266. RUBBER TIRES. THE GOODYEAR TIRE AND RUBBER COMPANY, Akron, Ohio.
Filed June 2, 1905. Serial No. 7,204. PUBLISHED AUGUST 21, 1906.

62,267. REFINED SUGARS OF ALL DESCRIPTION. HENRY TATE & SONS, LIMITED, London, England.
Filed May 22, 1905. Serial No. 6,215. PUBLISHED MARCH 5, 1907.

62,268. SAUSAGES, HAMS, BACON, SALT PORK, AND LARD. THE JONES DAIRY FARM, Fort Atkinson, Wis.
Filed July 6, 1906. Serial No. 20,760. PUBLISHED MARCH 5, 1907.

62,269. CANDY AND CHEWING-GUM. MANUFACTURING CO. OF AMERICA, Philadelphia, Pa.
Filed January 28, 1907. Serial No. 24,943. PUBLISHED MARCH 5, 1907.

62,270. TEA AND COFFEE. CHARLES E. MOODY & CO., Boston, Mass.
Filed January 18, 1907. Serial No. 24,740. PUBLISHED MARCH 5, 1907.

62,271. WHITE LEAD. ROBT. SHOEMAKER & Co., Philadelphia, Pa.
Filed February 6, 1907. Serial No. 25,170. PUBLISHED MARCH 5, 1907.

62,272. READY-MIXED PAINTS. ROBT. SHOEMAKER & Co., Philadelphia, Pa.
Filed February 6, 1907. Serial No. 25,171. PUBLISHED MARCH 5, 1907.

62,273. COTTON-SEED OILS. THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La.
Filed July 27, 1905. Serial No. 10,894. PUBLISHED MARCH 5, 1907.

62,274. CERTAIN GAME. J. W. SPEAR & SÖHNE, Nuremberg, Germany.
Filed January 23, 1906. Serial No. 16,426. PUBLISHED OCTOBER 23, 1906.

62,275. SYRUP. WELCH BROS. MAPLE CO., Burlington, Vt.
Filed February 4, 1907. Serial No. 25,137. PUBLISHED MARCH 5, 1907.

62,276. BUCKLES. ALMA MANUFACTURING COMPANY OF BALTIMORE CITY, Baltimore, Md.
Filed January 30, 1907. Serial No. 25,011. PUBLISHED MARCH 5, 1907.

62,277. PROPRIETARY MEDICINE. EMORY L. BAUER, New York, N. Y.
Filed December 6, 1906. Serial No. 23,811. PUBLISHED MARCH 5, 1907.

62,278. WINES. CARMEL WINE COMPANY, New York, N. Y.
Filed November 19, 1906. Serial No. 23,452. PUBLISHED MARCH 5, 1907.

62,279. PIPE THREADING AND CUTTING MACHINES. THE CURTIS & CURTIS COMPANY, Bridgeport, Conn.
Filed November 23, 1906. Serial No. 23,553. PUBLISHED JANUARY 1, 1907.

62,280. STORAGE AND CONVEYING APPARATUS. DODGE COAL STORAGE COMPANY, Naugatuck, Conn., and Philadelphia, Pa.
Filed November 17, 1906. Serial No. 23,444. PUBLISHED JANUARY 1, 1907.

62,281. AUTOMOBILES AND PARTS THEREOF, EXCEPT RUBBER TIRES. GASTON DUMOND, Paris, France.
Filed December 5, 1906. Serial No. 23,770. PUBLISHED MARCH 5, 1907.

62,282. REMEDY FOR MALARIA AND GRIPPE. ANTHONY FISCHER, Flushing, N. Y.
Filed August 11, 1906. Serial No. 21,480. PUBLISHED MARCH 5, 1907.

62,283. CERTAIN RAILWAY EQUIPMENT. FRIED. KRUPP AKTIENGESELLSCHAFT, Essen-on-the-Ruhr, Germany.
Filed October 11, 1906. Serial No. 22,642. PUBLISHED MARCH 5, 1907.

62,284. HEMORRHOIDAL PREPARATIONS IN THE FORM OF SUPPOSITORIES, SALVES, AND TEAS. GREGOIRE KERSCHENMEYER, Luxemburg, Luxemburg.
Filed October 8, 1906. Serial No. 22,502. PUBLISHED MARCH 5, 1907.

62,285. ALMOND-MEAL. PEROXIDENT MANUFACTURING COMPANY, St. Louis, Mo.
Filed January 16, 1907. Serial No. 24,665. PUBLISHED MARCH 5, 1907.

62,286. FACE-CREAM. WILLIAM CADWALLADER SCHLEY, Pittsburg, Pa.
Filed December 27, 1906. Serial No. 24,289. PUBLISHED FEBRUARY 26, 1907.

62,287. ENAMELED-METAL HOUSEHOLD UTENSILS. HENRY M. SCHNARR, Ossining, N. Y.
Filed April 11, 1906. Serial No. 1,170. PUBLISHED MARCH 5, 1907.

62,288. CASTOR-OIL. JOHN N. STEARNS, Syracuse, N. Y.
Filed February 2, 1907. Serial No. 25,085. PUBLISHED MARCH 5, 1907.

62,289. CERTAIN MEDICINES. EPHRAIM S. WELLS, Jersey City, N. J.
Filed August 28, 1906. Serial No. 21,749. PUBLISHED MARCH 5, 1907.

62,290. CERTAIN HAND-TOOLS. THE COLLINS COMPANY, Collinsville, Conn.
Filed October 29, 1906. Serial No. 22,961. PUBLISHED MARCH 5, 1907.

62,291. CERTAIN HAND-TOOLS. THE COLLINS COMPANY, Collinsville, Conn.
Filed October 29, 1906. Serial No. 22,962. PUBLISHED MARCH 5, 1907.

62,292. MAST-ARMS FOR THE SUPPORT OF LAMPS. GEORGE CUTTER CO., South Bend, Ind.
Filed September 4, 1906. Serial No. 21,874. PUBLISHED MARCH 5, 1907.

62,293. RHEUMATIC REMEDY. AUGUST GIESECKE, Milwaukee, Wis.
Filed January 9, 1907. Serial No. 24,539. PUBLISHED MARCH 5, 1907.

62,294. SEWING-MACHINES. L. C. KING & Co., Frankfort, Ind.
Filed February 5, 1907. Serial No. 25,157. PUBLISHED MARCH 5, 1907.

62,295. NON-ALCOHOLIC CARBONATED BEVERAGE AND SYRUP FOR MAKING THE SAME. MOXIE NERVE FOOD COMPANY OF NEW ENGLAND, Saco, Me.; Boston, Mass., and New York, N. Y.
Filed January 14, 1907. Serial No. 24,624. PUBLISHED MARCH 5, 1907.

62,296. REMEDY FOR DISEASES OF THE BLOOD. JAMES M. MYERS, Cincinnati, Ohio.
Filed January 22, 1907. Serial No. 24,843. PUBLISHED MARCH 5, 1907.

62,297. DRESS-SHIELDS. THE OMO MANUFACTURING COMPANY, Middletown, Conn.
Filed February 2, 1907. Serial No. 25,079. PUBLISHED MARCH 5 1907.

62,298. JEWELRY. THE H. N. PERVEAR COMPANY, Providence, R. I.
Filed January 23, 1907. Serial No. 24,857. PUBLISHED MARCH 5, 1907.

62,299. BAKING-POWDER. PURE FOOD BAKING POWDER CO., Chicago, Ill.
Filed January 2, 1907. Serial No. 24,384. PUBLISHED MARCH 5, 1907.

62,300. CERTAIN MEDICINE. SOCIETY OF CHEMICAL INDUSTRY IN BASLE, Basel, Switzerland.
Filed February 6, 1907. Serial No. 25,165. PUBLISHED MARCH 5, 1907.

62,301. PILLS AND HEADACHE-TABLETS. J. L. WARD MEDICINE COMPANY, Big Spring, Tex.
Filed February 2, 1907. Serial No. 25,088. PUBLISHED MARCH 5, 1907.

62,302. SEWING-MACHINE NEEDLES. WHITE SEWING MACHINE CO., Cleveland, Ohio.
Filed January 17, 1907. Serial No. 24,731. PUBLISHED MARCH 5, 1907.

62,303. MINERAL WATER. WILD PIGEON MINERAL SPRINGS COMPANY, Portland, Oreg.
Filed January 22, 1907. Serial No. 24,841. PUBLISHED MARCH 5, 1907.

62,304. SHAVING CREAM OR PASTE. ARMOUR & COMPANY, Chicago, Ill.
Filed August 30, 1905. Serial No. 12,083. PUBLISHED MARCH 5, 1907.

62,305. EMBALMING FLUIDS AND DISINFECTANTS. EGYPTIAN CHEMICAL COMPANY, Boston, Mass.
Filed June 2, 1905. Serial No. 7,265. PUBLISHED MARCH 5, 1907.

62,306. MEN'S AND BOYS' FUR HATS. GAUSS-LANGENBERG HAT CO., St. Louis, Mo.
Filed April 24, 1906. Serial No. 2,738. PUBLISHED AUGUST 21, 1906.

62,307. PORT AND SHERRY WINES. GEO. G. SANDEMAN SONS & Co. LIMITED, London, England.
Filed November 20, 1906. Serial No. 14,206. PUBLISHED MARCH 5, 1907.

62,308. TABLE-WATER. GREAT BEAR SPRING CO., Oswego and Albany, N. Y.; Philadelphia, Pa.; Jersey City, N. J., and Washington, D. C.
Filed April 29, 1905. Serial No. 3,608. PUBLISHED MARCH 5, 1907.

62,309. HEMATOGENIC OR BLOOD-FORMING IRON COMPOUNDS. ALFRED GUDE & Co., Berlin, Germany.
Filed May 26, 1906. Serial No. 19,579. PUBLISHED MARCH 5, 1907.

62,310. WATCHSPRINGS. HAMMEL, RIGLANDER & Co., New York, N. Y.
Filed August 8, 1906. Serial No. 11,413. PUBLISHED MARCH 5, 1907.

62,311. MEDICATED STOCK FOODS. DR. HESS & CLARK, Ashland, Ohio.
Filed June 15, 1905. Serial No. 8,184. PUBLISHED MARCH 5, 1907.

62,312. WIRE FENCE. INTERLOCKING FENCE COMPANY, Morton, Ill.
Filed November 20, 1905. Serial No. 14,857. PUBLISHED MARCH 5, 1907.

62,313. WIRE FENCE. KEYSTONE FENCE COMPANY, Peoria, Ill.
Filed June 12, 1905. Serial No. 7,920. PUBLISHED MARCH 5, 1907.

62,314. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. LANGENDORF WATCH CO., Langendorf, Switzerland.
Filed June 16, 1906. Serial No. 20,344. PUBLISHED MARCH 5, 1907.

62,315. LIQUID FACE-ENAMEL. REUBEN E. MARTIN, Fort Worth, Tex.
Filed June 9, 1906. Serial No. 20,179. PUBLISHED MARCH 5, 1907.

62,316. CERTAIN MACHINERY. NEWTON MACHINE TOOL WORKS, INCORPORATED, Philadelphia, Pa.
Filed April 25, 1906. Serial No. 19,067. PUBLISHED JANUARY 22, 1907.

62,317. CERTAIN HAND-TOOLS. SOCIÉTÉ ANONYME DES Anciens ÉTABLISSEMENTS PANHARD & LEVASSOR, Paris, France.
Filed May 24, 1905. Serial No. 6,473. PUBLISHED MARCH 5, 1907.

62,318. CERTAIN METAL MANUFACTURES. S. STERNAU & Co., Brooklyn, N. Y.
Filed June 23, 1906. Serial No. 20,509. PUBLISHED MARCH 5, 1907.

62,319. SILVER-PLATED JEWELRY, TOILET WARE, HOLLOW WARE, AND FLAT WARE. E. & J. BASS, New York, N. Y.
Filed July 21, 1906. Serial No. 21,061. PUBLISHED MARCH 5, 1907.

62,320. NEWSPAPER. WILLIS BULLOCK, Canajoharie, N. Y.
Filed January 2, 1907. Serial No. 24,420. PUBLISHED MARCH 5, 1907.

62,321. COMBINED STEAM-ENGINE AND DYNAMO-ELECTRIC MACHINE. A. L. IDE & SONS, Springfield, Ill.
Filed August 6, 1906. Serial No. 21,345. PUBLISHED MARCH 5, 1907.

62,322. STEAM-ENGINES. A. L. IDE & SONS, Springfield, Ill.
Filed August 6, 1906. Serial No. 21,346. PUBLISHED MARCH 5, 1907.

62,323. STEAM-ENGINES. A. L. IDE & SONS, Springfield, Ill.
Filed August 6, 1906. Serial No. 21,347. PUBLISHED MARCH 5, 1907.

62,324. PERIODICALS. THE JEWELERS' CIRCULAR PUBLISHING CO., New York, N. Y.
Filed December 5, 1906. Serial No. 23,781. PUBLISHED MARCH 5, 1907.

62,325. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. LANGENDORF WATCH CO., Langendorf, Switzerland.
Filed June 16, 1906. Serial No. 20,345. PUBLISHED MARCH 5, 1907.

62,326. PERIODICAL. THE NATIONAL BAKER PUBLISHING COMPANY, Philadelphia, Pa.
Filed February 7, 1907. Serial No. 25,188. PUBLISHED MARCH 5, 1907.

62,327. WHISKY. THE FRANKFORT DISTILLERY, Frankfort, Ky.
Filed June 30, 1905. Serial No. 9,502. PUBLISHED MARCH 5, 1907.

62,328. COUGH-DROPS. FREDERICKS & TAMMEN, San Diego, Cal.
Filed October 23, 1906. Serial No. 22,858. PUBLISHED MARCH 5, 1907.

62,329. APRICOT LIQUOR. J. & A. FREIBERG, Cincinnati, Ohio.
Filed June 24, 1905. Serial No. 8,897. PUBLISHED DECEMBER 26, 1906.

62,330. LIQUID SOAP. ANTHON V. HASSMAN, Elkhart, Ind.
Filed November 12, 1906. Serial No. 23,270. PUBLISHED. MARCH 5, 1907.

62,331. COTTON PIECE GOODS AND COTTON BLANKETS. INDIAN HEAD MILLS OF ALABAMA, Walker County, Ala.
Filed September 21, 1906. Serial No. 22,214. PUBLISHED MARCH 5, 1907.

62,332. CANNED FRUITS AND VEGETABLES. FREDERICK M. KETCHUM, Arlington, Md.
Filed October 13, 1905. Serial No. 13,547. PUBLISHED MARCH 5, 1907.

62,333. WASHING COMPOUNDS. THE LAUNDRY BLUE CO., Chicago, Ill.
Filed January 23, 1907. Serial No. 24,854. PUBLISHED MARCH 5, 1907.

62,334. APRICOT-BRANDY. PAGE & SANDEMAN, London, England.
Filed November 20, 1905. Serial No. 14,825. PUBLISHED MARCH 5, 1907.

62,335. PREPARATION FOR CLEANING AND WHITENING ARTICLES MADE OF CANVAS OR DUCK. THE RAVEN GLOSS MFG. CO., New York, N. Y.
Filed October 23, 1906. Serial No. 22,865. PUBLISHED MARCH 5, 1907.

62,336. APRICOT-BRANDY. SOCIETE ANONYME DE LA GRANDE DISTILLERIE E. CUSENIER FILS AINE ET COMPAGNIE, Paris, France.
Filed January 10, 1907. Serial No. 24,562. PUBLISHED MARCH 5, 1907.

62,337. MONTHLY PUBLICATION. ROBERT M. VAN ARSDALE, New York, N. Y.
Filed February 5, 1907. Serial No. 25,155. PUBLISHED MARCH 5, 1907.

62,338. ILLUMINATING-GLASSWARE, COMPRISING GLOBES, SHADES, AND CHIMNEYS. WELSBACH CO., Philadelphia, Pa.
Filed November 15, 1906. Serial No. 23,272. PUBLISHED MARCH 5, 1907.

62,339. CHOCOLATES AND CHOCOLATE CANDIES. STEPHEN F. WHITMAN & SON, Philadelphia, Pa.
Filed January 28, 1907. Serial No. 24,968. PUBLISHED MARCH 5, 1907.

62,340. MEASURING AND SCIENTIFIC OPTICAL APPARATUS, APPLIANCES, AND INSTRUMENTS. THE FIRM OF CARL ZEISS, Jena, Germany.
Filed August 4, 1905. Serial No. 11,262. PUBLISHED MARCH 5, 1907.

62,341. HOSIERY AND KNITTED UNDERWEAR. BROWN DURRELL CO., Boston, Mass.
Filed February 4, 1907. Serial No. 25,121. PUBLISHED MARCH 5, 1907.

62,342. SHIRTS. BRONNE-MAYER COMPANY, New York, N. Y.
Filed January 28, 1907. Serial No. 24,966. PUBLISHED MARCH 5, 1907.

62,343. PRINTING-INK REDUCERS AND DRIERS. JOHN P. CONNER, West New Brighton, N. Y.
Filed January 11, 1907. Serial No. 24,560. PUBLISHED MARCH 5, 1907.

62,344. SURFACE-COATED ENGRAVING-PAPERS. THE DELL & COLLINS CO., Philadelphia, Pa.
Filed December 15, 1906. Serial No. 24,062. PUBLISHED MARCH 5, 1907.

62,345. WHISKY. ANTHONY FISCHER, Flushing, N. Y.
Filed August 11, 1906. Serial No. 21,478. PUBLISHED MARCH 5, 1907.

62,346. CHIMNEYS AND GLOBES FOR LIGHTS. THE FOSTORIA GLASS SPECIALTY COMPANY, Fostoria, Ohio.
Filed July 13, 1906. Serial No. 20,920. PUBLISHED MARCH 5, 1907.

62,347. KNITTED UNDERWEAR. H. FRANK & SONS, Wheeling, W. Va.
Filed January 22, 1907. Serial No. 24,831. PUBLISHED MARCH 5, 1907.

62,348. BEER, ALE, BROWN STOUT, AND EXTRACT OF MALT. FRED FEIL BREWING COMPANY, Philadelphia, Pa.
Filed December 13, 1906. Serial No. 23,994. PUBLISHED MARCH 5, 1907.

62,349. TALKING-MACHINES. GEO. BORGFELDT & CO., New York, N. Y.
Filed January 31, 1907. Serial No. 25,029. PUBLISHED MARCH 5, 1907.

62,350. WHISKY. GOODHART-HARTMAN CO., Chicago, Ill.
Filed June 15, 1905. Serial No. 8,232. PUBLISHED MARCH 20, 1906.

62,351. TEXTILE COLLARS, CUFFS, AND OUTER AND DRESS SHIRTS. HARGADINE-MCKITTRICK DRY GOODS COMPANY, St. Louis, Mo.
Filed December 13, 1906. Serial No. 23,981. PUBLISHED MARCH 5, 1907.

62,352. REFRIGERATORS AND ICE-BOXES. ILLINOIS REFRIGERATOR CO., Morrison, Ill.
Filed June 24, 1905. Serial No. 9,004. PUBLISHED SEPTEMBER 4, 1906.

62,353. CORDIALS. IMPERIAL DISTILLING & CORDIAL CO., Chicago, Ill.
Filed January 22, 1907. Serial No. 24,820. PUBLISHED MARCH 5, 1907.

62,354. HANDKERCHIEFS. THE INTERNATIONAL M'F'G. CO., New York, N. Y.
Filed February 4, 1907. Serial No. 25,129. PUBLISHED MARCH 5, 1907.

62,355. COTTON PIECE GOODS AND COTTON BLANKETS. JACKSON COMPANY, Nashua, N. H.
Filed August 31, 1906. Serial No. 21,829. PUBLISHED MARCH 5, 1907.

62,356. MINERAL WATER. JOHN A. MORGART, Isle of Wight County, Va.
Filed January 29, 1907. Serial No. 24,994. PUBLISHED MARCH 5, 1907.

62,357. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
Filed April 1, 1905. Serial No. 49. PUBLISHED MARCH 27, 1906.

62,358. LAMP-CHIMNEYS. WM. R. NOE, New York, N. Y.
Filed October 8, 1906. Serial No. 22,595. PUBLISHED MARCH 5, 1907.

62,359. HOSIERY. OWEN OSBORNE, Philadelphia, Pa.
Filed February 1, 1907. Serial No. 25,056. PUBLISHED MARCH 5, 1907.

62,360. HOSIERY. OWEN OSBORNE, Philadelphia, Pa.
Filed February 1, 1907. Serial No. 25,057. PUBLISHED MARCH 5, 1907.

62,361. WHISKY. RECORDS & GOLDSBOROUGH, Baltimore, Md.
Filed January 18, 1907. Serial No. 24,754. PUBLISHED MARCH 5, 1907.

62,362. BELTING, HOSE, AND MACHINERY PACKINGS. REVERE RUBBER COMPANY, Boston, Mass.
Filed December 6, 1906. Serial No. 23,807. PUBLISHED MARCH 5, 1907.

62,363. KNITTED, NETTED, AND LACE GLOVES. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed November 20, 1906. Serial No. 23,504. PUBLISHED MARCH 5, 1907.

62,364. COTTON PIECE GOODS. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed February 2, 1907. Serial No. 25,091. PUBLISHED MARCH 5, 1907.

62,365. COTTON PIECE GOODS. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed February 2, 1907. Serial No. 25,093. PUBLISHED MARCH 5, 1907.

62,366. COTTON PIECE GOODS. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed February 2, 1907. Serial No. 25,096. PUBLISHED MARCH 5, 1907.

62,367. COATS, PANTS, VESTS, AND OVERCOATS. ROSENZWEIG BROS. & CO., New York, N. Y.
Filed October 30, 1906. Serial No. 23,004. PUBLISHED MARCH 5, 1907.

62,368. PATENT SIDE LEATHER. SETON LEATHER CO., Newark, N. J.
Filed February 2, 1907. Serial No. 25,083. PUBLISHED MARCH 5, 1907.

62,369. HOSIERY. JOHN SILVEY & CO., Atlanta, Ga.
Filed December 20, 1906. Serial No. 24,173. PUBLISHED MARCH 5, 1907.

62,370. CORDIAL. SOCIETE ANONYME DE LA GRANDE DISTILLERIE E. CUSENIER FILS AINE ET COMPAGNIE, Paris, France.
Filed September 21, 1906. Serial No. 22,259. PUBLISHED MARCH 5, 1907.

62,371. CORDIALS. SOCIETE ANONYME DE LA GRANDE DISTILLERIE E. CUSENIER FILS AINE ET COMPAGNIE, Paris, France.
Filed September 21, 1906. Serial No. 22,260. PUBLISHED MARCH 5, 1907.

62,372. WHISKY. JOHN PH. STRAUB, Chicago, Ill.
Filed May 6, 1905. Serial No. 4,546. PUBLISHED MARCH 6, 1906.

62,373. STRAW HATS AND CAPS. TOWNSEND GRACE CO. OF BALTIMORE CITY, Baltimore, Md.
Filed February 1, 1907. Serial No. 25,052. PUBLISHED MARCH 5, 1907.

62,374. GIN. THE WM. BERGENTHAL CO., Milwaukee, Wis.
Filed May 25, 1905. Serial No. 6,575. PUBLISHED AUGUST 14, 1906.

62,375. CORN CURE, SPAVIN CURE, AND LIQUID COURT-PLASTER. ELI ATWELL, Mountain Dale, N. Y.
Filed January 21, 1907. Serial No. 24,798. PUBLISHED MARCH 5, 1907.

62,376. CRAVATS. BERNSTEIN, KAUFMAN & COMPANY, Philadelphia, Pa.
Filed November 26, 1906. Serial No. 23,599. PUBLISHED MARCH 5, 1907.

62,377. ARRAKS PUNCH. C. A. LINDGREN & CIE., VINHANDELS AKTIEBOLAG, Stockholm, Sweden.
Filed October 2, 1905. Serial No. 13,222. PUBLISHED MARCH 5, 1907.

62,378. MARYLAND RYE WHISKY. CIOTTI, VINCENTI & Co., Baltimore, Md.
Filed June 28, 1906. Serial No. 9,252. PUBLISHED MARCH 5, 1907.

62,379. TEXTILE-FABRIC WATERPROOF COATS, CAPES, OVERALLS, PANTS, AND HATS. E. A. ARMSTRONG MFG. CO., Chicago, Ill.
Filed June 8, 1906. Serial No. 20,159. PUBLISHED MARCH 5, 1907.

62,380. STOCK FOOD. FARMERS FRIEND STOCK FOOD COMPANY, West Milton, Ohio.
Filed October 29, 1906. Serial No. 22,982. PUBLISHED MARCH 5, 1907.

62,381. WHISKY. ANTHONY FISCHER, Flushing, N. Y.
Filed August 11, 1906. Serial No. 21,477. PUBLISHED MARCH 5, 1907.

62,382. COTTON PIECE GOODS. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed February 2, 1907. Serial No. 25,097. PUBLISHED MARCH 5, 1907.

62,383. CERTAIN MEDICINE. FREDERICK A. STECK, Oil City, Pa.
Filed July 12, 1906. Serial No. 20,863. PUBLISHED MARCH 5, 1907.

LABELS

REGISTERED APRIL 30, 1907.

13,503.—*Title:* "HEE HAW." (For Chewing-Tobacco.) VICTOR TOBACCO COMPANY, Cincinnati, Ohio. Filed April 1, 1907.

13,504.—*Title:* "OLD COLONY." (For Cigars.) LOUIS WM. KEYER, Dayton, Ohio. Filed January 17, 1907.

13,505.—*Title:* "EL BARIO." (For Cigars.) LOUIS WM. KEYER, Dayton, Ohio. Filed January 14, 1907.

13,506.—*Title:* "SCHILLER." (For Cigars.) LOUIS MUELLER, Chicago, Ill. Filed January 14, 1907.

13,507.—*Title:* "CALIFORNIA'S CLUB WATER." (For Mineral Water.) THOMAS P. CONVERSE, San Diego, Cal. Filed February 4, 1907.

13,508.—*Title:* "NIGHT CAP WHISKEY." (For Whisky.) JULIUS REUSCH, Lincoln, Nebr. Filed March 26, 1907.

13,509.—*Title:* "K. B. C. BOHEMIAN." (For Beer.) THE KITTANNING BREWING CO., Kittanning, Pa. Filed March 4, 1907.

13,510.—*Title:* "PUR-IT-IS. TOILET WATER." (For Toilet Water.) PUR-IT-IS MFG. CO., Cleveland, Ohio. Filed April 8, 1907.

13,511.—*Title:* "ROMANZA LILAC." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed April 9, 1907.

13,512.—*Title:* "ROMANZA VIOLET." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed April 9, 1907.

13,513.—*Title:* "ROMANZA HELIOTROPE." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed April 9, 1907.

13,514.—*Title:* "ROMANZA ROSE." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed April 9, 1907.

13,515.—*Title:* "OLD PFISTER'S LIFE ELIXIR." (For a Medicine.) HANSEN & AAGAARD, Chicago, Ill. Filed March 18, 1907.

13,516.—*Title:* "COTTAGE BREAD." (For Bread.) LEONARD BAKING COMPANY, Chicago, Ill. Filed April 8, 1907.

13,517.—*Title:* "PETER'S NUTRO BREAD." (For Bread.) AUGUST PETER, Peoria, Ill. Filed April 5, 1907.

13,518.—*Title:* "VEZINO'S DIGESTIVE HEALTH FOOD CHOCOLATES." (For Health-Food Chocolates.) VEZINO DE VEZINO, San Francisco, Cal. Filed March 20, 1907.

13,519.—*Title:* "THE SIGN OF THE KETTLE." (For Candies.) ELIZABETH B. JONES, Concord Junction, Mass. Filed February 27, 1907.

13,520.—*Title:* "UNKLE SAM'S CONES." (For Ice-Cream Cones.) SAMUEL KART, Pittsburg, Pa. Filed March 4, 1907.

PRINTS

REGISTERED APRIL 30, 1907.

1,974.—*Title:* "MEN'S AND BOYS' APPAREL." (For Men's and Boys' Apparel.) H. C. LYTTON, Chicago, Ill. Filed April 5, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

DAGGETT v. KAUFMANN.

Decided March 29, 1907.

1. INTERFERENCE—MOTION FOR DISSOLUTION—INTERFERENCE IN FACT.

If there is no interference in fact, it is either because one of the parties has no right to make the claims or because the claims have different meanings in the applications of the different parties. The parties will not be heard to deny their own right to make the claims. (*Miller* v. *Perham*, 121 O. G., 2667.)

2. SAME—SAME—APPEAL—RIGHT OF OPPONENT TO MAKE CLAIM.

There is no appeal from the decision of the Primary Examiner affirming the opponent's right to make the claims or the identity of meaning of the claims in their respective applications.

3. SAME—SAME—EXERCISE OF SUPERVISORY AUTHORITY OF COMMISSIONER.

Where at the hearing upon a motion for dissolution attention is directed to a patent which is in a remote art and it appears that the Examiner has held the claims in issue patentable thereover, no such unusual circumstances as will justify the exercise of supervisory authority exist.

APPEAL on motion.

MANTLE.

Mr. A. B. Stoughton for Daggett.

Mr. Joseph L. Levy for Kaufmann.

ALLEN, *Commissioner:*

This is an appeal by Kaufmann from the decision of the Primary Examiner denying his motion for dissolution of the interference.

The appeal alleges error in the Examiner's conclusions that the declaration was regular and that there is interference in fact. Appellant also called attention at the hearing to a prior patent alleging anticipation of the claims in issue thereby.

It was conceded at the hearing that the alleged irregularity raises no other questions than those of patentability and interference in fact. The distinctions between the several grounds of dissolution which are enumerated in Rule 122 have been frequently pointed out and should be observed. The Primary Examiner did not err in denying the motion so far as the same relates to the regularity of the declaration, and his decision to that extent is affirmed.

If there is no interference in fact, it is either because one of the parties has no right to make the claims or because the claims have different meanings in the applications of the different parties. The parties will not be heard to deny their own right to make the claims. (*Miller* v. *Perham*, 121 O. G., 2667.) There is no appeal from the decision of the Primary Examiner affirming the opponent's right to make the claims or the identity of meaning of the claims in their respective applications. (Rule 124.) The appeal, so far as it presents the question of interference in fact, is dismissed.

The patent to which attention was called is in a remote art, and the Examiner, it is understood, has held the claims in issue patentable thereover. No such unusual circumstances as will justify the exercise of supervisory authority exist. The request for consideration of the question of patentability is denied.

EX PARTE THE YALE & TOWNE MANUFACTURING COMPANY.

Decided April 5, 1907.

1. TRADE-MARK—NAME OF PATENTED ARTICLE—REGISTRABLE UNDER TEN-YEAR PROVISO OF SECTION 5 OF ACT OF 1905—"YALE" FOR LOCKS AND LATCHES.

Held that the word "Yale" is registrable as a trade-mark for locks and latches under the ten-year proviso of section 5 of the act of 1905, although it is the name of a patented article.

2. SAME—SAME—SAME—EXCLUSIVE USE.

The function of the name of a patented article is twofold: (1) It designates or identifies the thing patented, and (2) it indicates the original source of manufacture of the article. Where a word or name which has been applied to a patented article has in addition to its descriptive significance also become indicative of the origin of that article, a limited right remains in the original maker after the expiration of the patent to exclude others from such unqualified use of the word or name as would deceive a careful public into the belief that their articles are those of the original maker. This right to exclude, it is believed, satisfies the requirement of "exclusive use" stated in the ten-year proviso of the act of February 20, 1905.

ON APPEAL.

TRADE-MARK FOR LOCKS AND KEYS.

Mr. Henry A. Seymour for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register the word "Yale" as a trade-mark for locks and latches.

Registration was refused upon the ground that "Yale" as applied to locks is the name of a patented article, the patents upon which have expired, as was held in the decision of Commissioner Butterworth in *ex parte Yale & Towne Manufacturing Company*, (81 O. G., 801.)

This application for registration is presented in accordance with the ten-year proviso of the Trade-Mark Act, being accompanied by an affidavit alleging actual and exclusive use of the trade-mark by the applicant for ten years next preceding the passage of the act of February 20, 1905.

The Examiner of Trade-Marks has held that the word "Yale," having become the identifying or generic name of a patented article, is public property and incapable of appropriation by any one and that therefore the applicant has not had the right to exclude others from the use of this mark for ten years next preceding the passage of the act of February 20, 1905, which was held in my decision in *ex parte Cahn, Belt & Company* (118 O. G., 1936) to be a prerequisite to registration under the ten-year proviso of this act. In my opinion the position taken by the Examiner of Trade-Marks is untenable in the present case.

Upon close scrutiny of the decisions upon the subject it appears that an exclusive right in the name of a patented article upon the part of the manufacturer who first adopted it is not wholly precluded by the expiration of the patents upon such article. The function of the name in such cases is twofold: First, it designates or identifies the thing patented, and, second, it indicates the source of manufacture of that article. Upon the expiration of the patent the right to use the word or name as the means of designating or identifying the article passes irretrievably to the public; but by reason of the second significance of the mark a member of the public who chooses to manufacture the article and designate it by the name it has acquired must so distinguish his use of that name that it will not indicate to the public that the article is the product of the original maker.

This fact was recognized in the leading case of *Singer Manufacturing Company* v. *June Manufacturing Company*, (163 U. S., 169; C.D., 1896, 687; 75 O. G., 1703,) in which the Supreme Court of the United States, while holding that the name "Singer" for sewing-machines had become public property by reason of having become the generic name of an article, the patents upon which had expired, nevertheless perpetually enjoined the defendant from—

marking upon sewing-machines or upon any plate or device connected therewith or attached thereto the word "Singer" or words or letters equivalent thereto without unmistakably specifying in connection therewith that such machines are the product of the defendant or other manufacturer and therefore not the product of the Singer Manufacturing Company.

In that case the Court said:

It is obvious that if the name dedicated to the public, either as a consequence of the monopoly or by the voluntary act of the party, has a twofold significance, one generic and the other pointing to the origin of manufacture and the name is availed of by another without clearly indicating that the machine, upon which the name is marked, is made by him, then the right to use the name because of its generic signification, would imply a power to destroy any good-will which belonged to the original maker. It would import, not only this, but also the unrestrained right to deceive and defraud the public by so using the name as to delude them into believing that the machine made by one person was made by another.

To say that a person who has manufactured machines under a patented monopoly can acquire no good-will, by the excellence of his work, or the development of his business, during the patent, would be to seriously ignore rights of private property, and would be against public policy, since it would deprive the one enjoying the patent of all incentive to make a machine of a good quality, because at its termination all the reputation or good-will resulting from meritorious work would be subject to appropriation by every one. On the other hand, to compel the one who uses the name after the expiration of the patent, to indicate that the articles are made by himself, in no way impairs the right of use, but simply regulates and prevents wrong to individuals and injury to the public.

In the case of *Singer Manufacturing Company* v. *Hipple* (109 Fed. Rep., 152) the Court, in referring to the decision of the Supreme Court in *Singer Manufacturing Company* v. *June Manufacturing Company*, *supra*, said;

In short the principle of that decision is not that the first user of a mark indicative of origin forfeits his exclusive right thereto for that purpose by allowing it to be applied for the additional purpose of designating the thing itself, but that this monopoly of it for the one purpose cannot be so enforced as to nullify the general right to apply it for the other.

In the case of *Centaur Company* v. *Killenberger* (87 Fed. Rep., 725) the Court said:

The right to manufacture "Castoria" according to Pitcher's patented process or formula may be free to the world, also the right to sell the manufactured article by the name "Castoria;" but, in putting it upon the market, the new manufacturer must clearly identify his goods, and not engage in unfair competition, nor do anything which will tend to deceive the public, and induce them to take his goods under the belief that they are those which it has theretofore been accustomed to purchase under the same name.

It is therefore clear that where a word or name which has been applied to a patented article has also become indicative of the origin of that article a limited right remains in the original maker after the expiration of the patent to exclude others from such unqualified use of the word or name as would deceive a careful public into the belief that their articles are those of the original maker. This right to exclude, it is believed, satisfies the requirement of "exclusive use" stated in the ten-year proviso of the act of February 20, 1905.

It is believed that the same reasons and principles apply in many cases of geographical and descriptive terms and names of individuals. Here, as in the case of the name of a patented article, the first adopter may often have the right to exclude others from using the exact term or mark, although no technical trade-mark right could exist. (*Elgin National Watch Company* v. *Illinois Watch Case Company*, C. D., 1901, 273; 94 O. G., 755; 179 U. S., 665; *Walter Baker & Company* v. *Baker*, C. D., 1897, 797; 78 O. G., 1427; 77 Fed. Rep., 884; *Shaver et al.* v. *Heller & Merg Company*, C. D., 1901, 424; 96 O. G., 2229; 108 Fed. Rep., 821; *Genesee Salt Company* v. *Burnap*, 73 Fed. Rep., 818; *American Waltham Watch Company* v. *Sandman*, 96 Fed. Rep., 330.)

The affidavit filed by the applicant in the present case affirms the exclusive use required by the statute as a basis for registration under the ten-year proviso. In view of the authorities and conclusions hereinabove discussed no reason is found for believing that there was not such exclusive use. It is therefore held that the applicant should be permitted to register the mark for which he has made application for registration.

The decision of the Examiner of Trade-Marks is reversed.

OPINION OF THE ATTORNEY-GENERAL.

NOTARIES PUBLIC—AMENDED LAW.

AMENDED SECTION 558 OF THE CODE OF THE DISTRICT OF COLUMBIA CONSTRUED.

Held that the "proviso"—

"And provided further, That no notary public shall be authorized to take acknowledgments, administer oaths, certify papers, or perform any official acts in connection with matters in which he is employed as counsel, attorney, or agent in which he may be in any way interested before any of the Departments aforesaid,"

in the recent act of Congress amending section 558 of the code of the District of Columbia applies to all notaries who may practice before the Departments and not merely to notaries of the District of Columbia.

DEPARTMENT OF JUSTICE,
Washington, April 18, 1907.

THE SECRETARY OF THE INTERIOR.

SIR: I duly received your request for my opinion whether the "proviso" in the recent act of Congress amending section 558 of the code of the District of Columbia applies to local notaries only or to notaries throughout the country. Briefs on both sides of the question and an opinion of the Assistant Attorney-General for your Department accompanying your letter have been carefully considered by me.

Section 558 before amendment was as follows:

Notaries. The President shall also have power to appoint such number of notaries public, residents of said District, as, in his discretion, the business of the District may require.

The amendatory act, complete, is as follows:

An act to amend section five hundred and fifty-eight of the code of law for the District of Columbia.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that section five hundred and fifty-eight of the code of law for the District of Columbia, relating to notaries public, be amended by adding at the end of said section the following: "Provided, That the appointment of any person as such notary public, or the acceptance of his commission as such, or the performance of the duties thereunder, shall not disqualify or prevent such person from representing clients before any of the Departments of the United States Government in the District of Columbia or elsewhere, provided such person so appointed as a notary public who appears to practice or represent clients before any such Department is not otherwise engaged in Government employ, and shall be admitted by the heads of such Departments to practice therein in accordance with the rules and regulations prescribed for other persons or attorneys who are admitted to practice therein: And provided further, That no notary public shall be authorized to take acknowledgments, administer oaths, certify papers, or perform any official acts in connection with matters in which he is employed as counsel, attorney, or agent in which he may be in any way interested before any of the Departments aforesaid."

Do the words "no notary" in the last sentence mean *no notary of the District of Columbia*, or is the prohibition general? This question is not altogether free from difficulty.

It appears probable that this second proviso was added to the bill to meet an objection raised by the Secretary of the Treasury and the Comptroller, which is thus stated by the latter officer:

Persons who are notaries public and not Government employees may, in the business represented by them as attorneys before the Departments, act as notaries, *e. g.*, have executed before them affidavits and powers of attorney, in cases in which they are acting as attorneys in claims before the Departments. Such practice, in my opinion, would open the doors to fraud and deceit.

I do not see that any sufficient reason exists for limiting the prohibition contained in this proviso to notaries public of the District of Columbia: the practice it was intended to prevent is no less objectionable on the part of other notaries than on theirs. Doubtless the law was originally intended to remove a legal disability which affected only notaries of the District. But it must be remembered that the one legislative body, by one method of law making at one and the same sitting, enacts laws for at least three different classes of business in the District. It makes laws to be applied by the Executive Department, situated in the District, to the whole country; it makes laws to regulate the practice and management of those Executive Departments themselves and it is the legislature of the District considered as a quasi-Territory. There is no constitutional or other legal obstacle to the embodiment of laws of all three kinds in one act.

Such being the case, when debate or committee deliberation may suggest a wise and needed rule of law, so busy a body as the Congress may be unwilling to postpone its enactment merely to effect a logical separation of subjects among these three classes. The Senate added this final proviso to the bill after it had passed the House.

The amendatory law not only deals with notaries of the District, but also with the practice and management of the Executive Departments; and with the relations of notaries to that practice.

The attention of the Congress being thus directed to the subject of departmental practice, it seems, to my mind, reasonable to believe that when it said "no notary public" shall act as such in cases in which he is attorney before any of the Departments, it meant what it said; that is to say, it intended to embrace all the notaries who could practice before those Departments.

The fact that the enactment took the form of a proviso in an act relating in other respects to notaries of the District is unquestionably entitled to weight; but it is not decisive. Had Congress intended to restrict the operation of the proviso to notaries of that District, it could have inserted the word "such" or some equivalent qualifying expression, as it actually did in the body of the act: not having done this, I feel bound to assume it acted advisedly and intended to say what it said in fact. Therefore, although there may be room for a reasonable divergence of views in the premises, I am, on the whole, of the opinion that the proviso applies to all notaries who may practice before the Departments.

Respectfully,
(Signed) CHARLES J. BONAPARTE,
Attorney-General.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

GIBBONS *v.* PELLER.

Decided January 8, 1907.

INTERFERENCE—ORIGINALITY—DISCLAIMER OF INVENTORSHIP.

A statement by applicant to his assignee that he does not regard himself as the inventor of the subject-matter claimed in such application is not sufficient to warrant an award of priority to an opponent where it appears that such statement was made during a controversy between the parties with regard to the amount of royalty which should be paid to the assignor.

Mr. Robert B. Killgore for Gibbons.

Mr. George D. Seymour for Peller.

MCCOMAS, *J.*:

It appears that the application of Stephen P. Gibbons was filed March 21, 1903, that the application of Morris Peller was filed January 8, 1902, and that all the tribunals of the Patent Office have awarded priority of invention to Peller, the senior party. We find no error in the decision of the Commissioner of Patents upon the issue now before us. The issue of this interference is as follows:

1. In a rustless suspender-buckle, the combination with a frame having an upper and a lower side with an opening between the same, of a lever pivoted to the upper side of the frame in position to have its clamping edge coact with the upper edge or top of the lower side of the frame, and a piece of webbing having its lower reach attached to the lower side of the frame and its upper reach passed from front to rear through the said opening and engaged by the clamping edge of the lever which deflects it over or approximately over the upper edge or top of the lower side of the frame.

2. In a rustless buckle, the combination with a frame having an upper and a lower side with an opening between them, the lower side of the frame being wider than the upper side to form a finger-piece, of a lever pivoted to the smaller upper side of the frame in position to have its clamping edge coact with the upper edge or top of the wider lower side of the frame, and a piece of webbing having its lower reach attached to the lower side of the frame and its upper reach passed from front to rear through the said opening and engaged by the clamping edge of the lever which deflects it over or approximately over the upper edge or

top of the lower side of the frame, whereby the upper reach of the webbing is brought into or approximately into line with the lower reach of the webbing on the back of the buckle when the webbing is under draft as in use.

Of numerous parties once included in this interference only Gibbons and Peller remain. Peller did not testify nor is there any testimony confirming the dates of conception of invention and disclosure alleged by Peller in his preliminary statement. There are circumstances indicating that after Peller had assigned his interest he became indifferent to the rights of his assignee, the Waterbury Buckle Company. Maltby, the secretary of that company, testifies that in the fall of 1901, he corresponded with Peller and talked with him about a "rustless buckle" and that on December 31, 1901, buckles made in accordance with Peller's disclosure were first shipped and that the buckle exhibited to him was substantially the same as those then shipped, and this buckle embodies the issue of this interference. Thus December 31, 1901, is the date of reduction to practice by Peller. Gibbons is the junior party and the burden of proof is upon him and to prevail he must prove a reduction to practice prior to the last-mentioned date or at least to Jaunary 8, 1902, when Peller filed his application, or a prior conception followed by due diligence in reduction to practice. Gibbons claimed that he conceived the invention in November, 1900, and that he disclosed it to M. L. and L. Rothschild then. These men were officers of the Connecticut Web Company from which Gibbons, as manager of the Gibbons Manufacturing Company of Baltimore, bought supplies. Each of the tribunals of the Patent Office after reviewing the testimony, conclude that Gibbons failed to make a disclosure to these persons of the specific form of buckle which is here in issue, and it is quite remarkable that although Gibbons alleges that he is the inventor, yet when he testifies after repeated efforts he did not succeed in describing the invention in issue. His testimony is vague and indefinite upon the point and the tribunals of the Patent Office concur that Gibbons had no conception of the invention in issue prior to the time when the first shipment of Peller buckles was made or to the time when Peller filed his application. The testimony of M. L. Rothschild appears to be unreliable and it is not clear that the buckle he claims to have made for Gibbons can aid Gibbons's case for it does not appear to embody the invention in issue.

The Examiners-in-Chief say—

> It is to be noted that this issue is specific and carefully drawn as to its language and has only been held to be patentable after much discussion by the Examiner and this Board. Where the invention is so specific any oral testimony must of course correspond in every detail with the requirements of the issue. (See *Blackford* v. *Wilder*, 21 App. D. C., 1.)

And as the Commissioner of Patents says, this issue calls for a buckle with a frame having an upper and a lower side with an opening between the same, of a lever pivoted to the upper side of the frame in position to have its clamping edge coact with the upper edge or top of the lower side of the frame, which is not found in this "buckle of original disclosure" produced by M. L. Rothschild. The device in issue has a lever pivoted above the top edge of the lower side of the frame, the lever in the buckle exhibited is pivoted to ears in the same plane as the frame of the buckle and it is the former construction which produces the result of holding the web by deflection rather than by a clamping action. At most this buckle produced by Rothschild as Gibbons's original disclosure, was an experimental model put away in a drawer for years. It was in the nature of an abandoned experiment. Gibbons has given no explanation of his long delay in filing his application, except that he thought the buckle on which he did obtain a patent at home and three patents abroad was a better buckle and he lacked the money to make an earlier application for the invention of the issue. That other invention Gibbons understood although when repeatedly asked he repeatedly proved unable to state intelligently what the construction here in issue is. We agree with the tribunal of the Patent Office that Gibbons's case wholly failed, and here discussion would end were it not that the appellant further urges that the testimony shows that Peller was not the inventor of the buckle shown in his application. Here the appellant relies upon the case of *Oliver* v. *Felbel*, (20 App. D. C., 260,) where Oliver, when a witness in his own behalf, swore that he did not claim to be the inventor of the mechanism embracing the particular combination of parts or elements specified in the issue of interference. The circumstances in this case are different. Maltby, the secretary of the Waterbury Buckle Company, did testify that at one time after Peller had assigned his application for a patent to Maltby's company, Peller intimated that he was not the real inventor of the construction shown in his application and now involved in this interference. It appears that Peller's brother had been the mechanic in this instance and the testimony indicates that Rothschild, who with another first made application for this invention, and later testified that it was Gibbons's invention and sought to explain the inconsistency by his former belief that the mechanic who constructed the invention for another was the inventor, had about this time striven to enlist Peller against Peller's assignee, and it appears that Peller was at that time seeking a better agreement for a royalty from the Waterbury Buckle Company.

We do not find that Peller deliberately denied that he was the inventor but we conclude that his acts and declarations and his refusal to testify at Maltby's request were part of an effort to secure better terms from his assignee. When Peller executed the application in interference he testified under oath that he was the inventor of the invention of the issue and we do not find evidence sufficient to overcome it. The decision of the Commissioner is affirmed. The clerk of this court will certify this opinion and the proceedings in this court to the Commissioner of Patents according to law.

Court of Appeals of the District of Columbia.

IN RE AMS.

Decision February 5, 1907.

1. REISSUE—DELAY OF TWO YEARS—PRESUMPTION OF ABANDONMENT.

Delay of two years in filing an application for a reissue of a patent with broader claims will usually be treated as an abandonment to the public of everything not claimed in the original. This rule is based upon the analogy between a reissue application and the case of an inventor who fails to apply for a patent of his invention within two years from the date of its public use or sale, which the statute ordains is conclusive evidence of its abandonment. (See *In re Starkey*, 104 O. G., 2150; 21 App. D. C., 519, and cases cited therein.)

2. SAME—LONG DELAY—FAILURE OF ATTORNEYS TO UNDERSTAND INVENTION.

Where the invention covered by a patent is simple and the patent clearly and definitely describes it, and the patentee immediately upon the issue thereof discovers that the single claim allowed is too narrow and does not properly cover his invention, and upon calling his attorneys' attention to this fact they advised him that the claim was as broad as could be obtained, and it does not appear that they acted in bad faith, *Held* that a delay of five years in seeking a reissue cannot be excused upon the plea that the original attorneys did not understand the invention, since under the circumstances it was the duty of the patentee to consult other counsel without delay.

Mr. H. P. Doolittle for the appellant.

Mr. Fairfax Bayard for the Commissioner of Patents.

ROBB, *J.*:

This is an appeal from concurrent decisions of the Patent Office tribunals refusing to reissue a patent. The original patent, issued November 3, 1896, relates, quoting from the specification, "to a sheet-metal can designed for packing food products, and more particularly to an improved construction of the seam between the can-body and the cover," and is described in said specification as follows:

> The sheet-metal cover is countersunk or depressed at its center, so as to be provided with an upright neck or shoulder, which is adapted to fit snugly within the opening of the can-body. Around this neck the cover is provided with the laterally-extending flange, which should be considerably wider than the flange. After the cover has been pressed into the above-described form its neck and flange are covered with an air-excluding adhesive body, that adheres to the cover and constitutes in effect a packing. *This coating consists of a layer of rubber cement, which may be applied to the parts with a brush, and a thin layer of asbestos pulp, which forms a film on the surface of the cement.* * * * The rubber in my improved packing forms the air-excluding body proper, while the asbestos forms a coating or skin upon the surface of the same which greatly increases the tightness of the joint. Thus a packing of superior merit is produced, and, moreover the resistance offered by the ordinary washers to the crimping operation and the consequent frequent imperfections of the seam are entirely avoided.

The application contained but one claim, which is as follows:

> The combination of a sheet-metal can with a flanged and countersunk cover and with an adhesive coating secured to the cover, and consisting of rubber cement and an asbestos film, substantially as and for the purpose specified.

More than five years after the date of the original, namely on March 31, 1902, appellant filed his application for a reissue. Owing to the simplicity of the invention, the exactness with which it is described in the original application, the specific and limited nature of the claim therein, and the long delay attending the filing of this reissue application, we must carefully scrutinize the reasons assigned by the patentee why it should be allowed. The reissue claims are as follows:

> 1. A metal can comprising a can-body and cover and joined by a crimped seam having on one side of said parts at the seam portion a permanently fixed composition coating forming the packing means, substantially as described.
>
> 2. A metal can for containing food products having a can-body and its cover joined by a crimp-joint composed of overlapped and tightly-closed flanges in combination with a heat-resisting, non-deleterious composition inherently adhesive in application and fixed to the neck of the can at said joint in a dry coating or layer and forming a packing between said flanges, substantially as described.
>
> 3. An air and water tight packing for a joint for a sheet-metal can-body and its cover designed for food products, consisting of an inherent adhesive, heat-resisting non-deleterious yielding coating dried on said cover and independent of the can-body, substantially as described.
>
> 4. In a joint for a metal can-body and its cover, a fixed coating forming a packing for said joint and plastered on one of said parts, said coating consisting of an adherent and packing layer affixed to the article and an outside non-deleterious and heat-resisting layer or film, substantially as described.
>
> 5. The combination of a sheet-metal can with a flanged and countersunk cover and with an adhesive coating secured to the cover, and consisting of rubber cement and an asbestos film, substantially as and for the purpose specified.
>
> 6. A sheet-metal can designed for packing food products, comprising a can-body and a cover, said body and cover connected by a lap-joint, in combination with a tight packing for sealing the cover and body independent of the lap-joint, said packing consisting of a non-deleterious, heat-resisting, air-excluding and adhesive plastered compound extending into every portion of the lap-joint and between the inner surface of the can-body and the neck of the cover, substantially as described.

In appellant's affidavit, accompanying his reissue application, he states that the original—

> Letters Patent do not protect and cover by their claim the real invention of deponent nor its equivalent, but only a particular form of embodiment thereof, such defect being due to the omission to claim the following essential parts of the invention, namely, a fixed coating forming the packing in combination with the joint of the can and cover; second, the heat-resisting character of the coating, apart from the particular ingredients thereof; third the non-deleterious character of the coating apart from the particular ingredients thereof; fourth, the feature of having a coating consisting of an adherent medium affixed to a complementary part of the article to be joined and a heat-resisting and non-deleterious film or covering without limitation to the particular ingredients employed; fifth, in combination with the crimped joint of the can and cover, a packing consisting of an adhesive water and air tight, heat-resisting, non-deleterious coating applied to said cover, all of which enumerated parts or features are essential characteristics of the coating described and claimed or necessarily of any coating which is the true equivalent thereof;

that he carefully explained his invention to his attorneys at the time of making the original application, and—

> informed his attorneys that he wanted to have a claim for an adhesive *coating* forming a packing in combination with the flanged and countersunk cover and lapped joint; that he does not believe that said attorneys ever understood the deponent's explanation of the value of his invention and its essential features; that deponent was informed by his attorneys that a claim such as he has above set forth could not be obtained; but that he is informed and believes that said attorneys did attempt to obtain a claim or claims for an adhesive *packing* but not for an adhesive *coating* forming a packing in combination with the flanged and countersunk cover and lapped joint, but that upon the citation of references thereto said attorneys canceled said claim or claims and retained merely the claim now set forth in said Letters Patent; * * * that at the time said Letters Patent were issued and were examined by deponent he discovered that the claim thereof was limited to the combination of a sheet-metal can with a flanged and countersunk cover, and consisting of rubber cement and an asbestos film, substantially as described; that to the best of deponent's knowledge and belief, no cans for food similar to his invention having been ever made prior to said invention, deponent was greatly disappointed that his patent was not issued to a better advantage; whereupon he informed his attorneys that there were other ingredients that could be used instead of rubber cement and asbestos to constitute the affixing and packing medium and the heat-resisting and non-deleterious surface respectively and that therefore the claim was too narrow; whereupon his said attorneys informed deponent that said claim was as broad as could be obtained from the Patent Office in view of the previous state of the art and the objections of the Patent Office; that thereupon, deponent, relying upon the said statement of his attorneys as to the position and objections of the Patent Office, and being entirely ignorant of the remedy of a defective patent by reissue and no mention of such a remedy having been made by his said attorneys took no further steps in the matter but very reluctantly accepted the situation;
>
> * * * * * * *
>
> that at about the time of the issuance of said patent deponant formed a company known as The Max Ams Machine Company which company was organized for the purpose of making and selling machines for making tin cans for food articles and for making and selling a composition for use in producing the invention set forth in the said Letters Patent, and also for making said invention and that said company did carry on such manufacture and sale;

that appellant was abroad from May until November, 1897, for the purpose of having a surgical operation performed, and from October, 1899, until April, 1900, he was "distressed and worried over the illness and death of his wife;"

> that in consequence of these circumstances whereby he was unable to devote much if any time to the business of the said The Max Ams Machine Company, said business did not develop and did not attain much importance; that the said The Max Ams Machine Company's business was and is a side issue with deponent and is distinct from his main business;
>
> * * * * * * *
>
> that in view of the above circumstances deponent has been obliged to devote nearly all his time since the issue of said patent to his said main business;

that appellant subsequently intrusted the management of said company to his son, who in December, 1901, through other counsel learned "of the proceeding and remedy known as reissue of a defective patent;" that appellant thereupon authorized the filing of this application for reissue; that he believes—

there is great danger that his invention will be appropriated and his rights thereto invaded by parties who may make, use and sell his real invention without embodying it in the particular form set forth in the claim of said Letters Patent; and by substituting for either or both of the ingredients of the coating set forth in said claim other ingredients or for both of said ingredients a single ingredient, thereby avoiding or attempting to avoid said claim while really appropriating the essence of deponent's invention.

All doubt as to the scope and purpose of this reissue application is removed by reading the above affidavit. The patentee therein frankly states that he was greatly disappointed at the time his patent was issued because of the narrow and limited nature of the claim granted him; that he now fears others will take advantage of his failure to obtain a broader claim unless this reissue is allowed.

No good purpose will be subserved by a reiteration of the well-established rules applicable to such a case as this. Suffice it to say that a delay of two years in filing an application for a reissue of a patent with broader claims will usually be treated as an abandonment to the public of everything not claimed in the original. This rule is based upon the analogy between a reissue application and the case of an inventor who fails to apply for a patent of his invention within two years from the date of its public use or sale, which the statute ordains is conclusive evidence of its abandonment. (See *in re Starkey*, 104 O. G., 2150; 21 App. D. C., 519, and cases cited therein.)

The facts relied upon by the patentee do not, in our opinion, constitute a sufficient excuse for his lack of diligence. As above stated, his invention is a simple one, and his patent as issued clearly and definitely describes it. The real object, therefore, of this application is to secure something not originally claimed, or, if claimed, not pressed or abandoned. In such a case unusual circumstances must be present, or the delay will be fatal. No such circumstances are shown here. Appellant himself immediately discovered that his patent was "too narrow" and after discussing the subject with his attorneys "took no further steps in the matter but very reluctantly accepted the situation." He now asks relief because he believes his then attorneys were mistaken as to the law. As Mr. Chief Justice Fuller aptly observed in a similar case: "Manifestly this will not do." (*Halliday* v. *Stuart*, 151 U. S., 229.) There is no allegation that his attorneys did not act in good faith; on the contrary, it is expressly stated that they informed him "that said claim was as broad as could be obtained from the Patent Office in view of the previous state of the art and the objections of the Patent Office." That other attorneys undertook to appeal from the judgment of the Patent Office in 1896 to its judgment in 1902 certainly does not excuse the intervening delay. If the patentee did not think the attorneys who prosecuted his original application thoroughly understood his invention, and for that reason failed to obtain as broad a claim as might have been obtained, he should have consulted other counsel without delay. It is apparent, however, as he himself says, that this was merely a "side issue" with him, to which he gave little thought or attention until a considerable business had been established, when the importance of his invention and the necessity for giving it wider scope was first pressed upon him. We note his statement that he "knows of no one who is practicing or using said invention without his consent or whose business would be dominated by the reissue of said Letters Patent to protect said invention," but this statement would not justify us in overruling the tribunals of the Patent Office and granting him a patent that might affect the business of those of whom appellant has no present information. Moreover, we believe applications for reissue filed long after the date of the patent, and which have for their object the enlargement of its claims, should be discouraged, and should be countenanced only in exceptional cases.

The decision appealed from will, therefore, be affirmed, and it is so ordered. The clerk of the court will certify this opinion and the proceedings in this court to the Commissioner of Patents, as required by law. Affirmed.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 1, 1907.

Empire Soap Company, its assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Magnolia Healing Soap Company, of Muscatine, Iowa, for registration of a trade-mark, an application for registration of a trade-mark filed by The Southern Cotton Oil Company, of Jersey City N. J., and a trade-mark registered to the Empire Soap Company, of St. Louis, Mo. The notice of said declaration mailed by the Patent Office in the usual manner to the said Empire Soap Company at its address as above given has been returned by the Post-Office Department undelivered, and it has been impossible to locate said company.

Notice is therefore hereby given to the Empire Soap Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE *Assistant Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 29, 1907.

Fred W. Smith, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of The New Era Milling Company, of Arkansas City, Kans., for registration of a trade-mark and a trade-mark registered to Fred W. Smith, of New York, N. Y. The notice of said declaration mailed by the Patent Office in the usual manner to the said Fred W. Smith at his known address, 4 State street, New York, N. Y. has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said Fred W. Smith, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 27, 1907.

Jeptha J. Lamb and James H. Patton, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application for patent filed by Winne Gordon, of Sharon Springs, N. Y., and an application for patent filed by Jeptha J. Lamb and James H. Patton, of Bellevue, Idaho. It appears from the record of the interference that the present whereabouts of said Jeptha J. Lamb and James H. Patton is unknown, and all communications directed to their address above given within the past two years have been returned unclaimed by the Post-Office Department.

Notice is therefore hereby given to the said Jeptha J. Lamb and James H. Patton, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

INDEX TO DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS

IN THE MATTER OF

PATENTS, TRADE-MARKS, ETC.

OFFICIAL GAZETTE—MARCH-APRIL, 1907.

INDEX TO DECISIONS.

[Decisions of the United States courts are indicated by an asterisk (*) and the opinion of the Attorney-General by a dagger (†).]

	Page.
A. A. Rosenbush & Company *v.* The Rose Shoe Manufacturing Company	391
*A. A. Rosenbush & Co. The Rose Shoe Manufacturing Company *v.*	394
Adkins and Lewis *v.* Seeberger	1578
*American Circular Loom Company. *In re*	393
*Ams. *In re*	3644
*Automatic Scale Company, The. Computing Scale Company of America *v.*	849
Baldwin. Funke *v.*	392
Barber *v.* Wood	1991
Barrett and Alter. *Ex parte*	847
Bastian *v.* Champ	2816
Bay State Belting Company *v.* Kelton-Bruce Manufacturing Company	1580
Beall, Jr., *v.* Lyon	3215
*Bechman *v.* Southgate	1254
Bettendorf. *Ex parte*	848
*Blackford *v.* Wilder	1255
Blair. Kugele *v.*	1253
Bomhard. The United States Graphite Company *v.*	3215
Brooks. *Ex parte*	847
Bullock. *Ex parte*	1580
Champ. Bastian *v.*	2816
*Computing Scale Company of America *v.* The Automatic Scale Company	849
Continental Car and Equipment Company. *Ex parte*	2816
Daggett *v.* Kaufmann	2817, 3641
Dixon and Marsh *v.* Graves and Whittemore	1993
Dixon *v.* McElroy	2393
Fowler, Jr. *Ex parte*	1578
Funke *v.* Baldwin	392
*Geen. Kreag *v.*	1581
*Gibbons *v.* Peller	3643
Graves and Whittemore. Dixon and Marsh *v.*	1993
*Heroult. *In re*	3217
Hertaberg. Karpenstein *v.*	2393
Hewitt. Holz *v.*	1992
Hoey. *Ex parte*	2815
*Hoey. *In re*	2817
Holz *v.* Hewitt	1992
Hunter. *In re*	1253
Karpenstein *v.* Hertzberg	2393
Kaufmann. Daggett *v.*	2817, 3641
Kelton-Bruce Manufacturing Company. Bay State Belting Company *v.*	1580
*Kreag *v.* Geen	1581
Kugele *v.* Blair	1253
*Larkin *v.* Richardson	2394
Lincoln. *Ex parte*	3216
Lyon. Beall, Jr., *v.*	3215
M. Zimmermann Company. *Ex parte*	1991
Martin *v.* Mullin	3216
McElroy. Dixon *v.*	2393
*McIntosh. Potter *v.*	1995
Midgley. *Ex parte*	1577
Mullin. Martin *v.*	3216
†Opinion of the Attorney-General	3642
*Peller. Gibbons *v.*	3643
Pietro. *Ex parte*	2394
*Potter *v.* McIntosh	1995
*Richardson. Larkin *v.*	2394
Rose Shoe Manufacturing Company, The. A. A. Rosenbush & Company *v.*	391
*Rose Shoe Manufacturing Company, The, *v.* A. A. Rosenbush & Co	394
Seeberger. Adkins and Lewis *v.*	1578
*Southgate. Beehman *v.*	1254
Trebon. *Ex parte*	2815
United States Graphite Company, The, *v.* Bomhard	3215
*Wilder. Blackford *v.*	1255
Wood. Barber *v.*	1991
Yale & Towne Manufacturing Company, The. *Ex parte*	3641

SUBJECT-MATTER.

[Decisions of the United States courts are indicated by an asterisk (*) and the opinion of the Attorney-General by a dagger (†).

	Page.
Abandonment of applications, *ex parte* Brooks	847
Ex parte Fowler, Jr	1578
Ex parte Midgley	1577
Delay in action, intent of applicant, *ex parte* Trebon	2815
Delay in action not excused by lack of authorization of attorney by applicant, *ex parte* Trebon	2815
Joint applications must be signed by all the applicants, *ex parte* Barrett and Alter	847
*Abandonment of invention, *in re* Ams	3644
Access to pending applications, Kugele *v.* Blair	1253
Action of Office, request for explanation as guide for further prosecution of application, *ex parte* Fowler, Jr	1578
Amendments, claims presented in, for independent invention, *ex parte* Bullock	1580
*Ancillary invention, Larkin *v.* Richardson	2394
Appeal from the Examiner of Interferences, Barber *v.* Wood	1991
Favorable decision, Daggett *v.* Kaufmann	3641
Appeal to the court of appeals, Holz *v.* Hewitt	1992
*Potter *v.* McIntosh	1995
Applicant responsible for failure to comply with rules, *ex parte* Midgley	1577
Unresponsive action by, not entitled to consideration, *ex parte* Midgley	1577
Applications, abandonment results from delay in prosecution unless it can be shown to have been unavoidable, *ex parte* Midgley	1577
Prosecution of by one applicant where coapplicant refuses to act, *ex parte* Barrett and Alter	847
Attorneys, appointment by one of two joint applicants, *ex parte* Barrett and Alter	847
*Failure to understand invention, *in re* Ams	3644
Claims, independent invention, *ex parte* Bullock	1580
Indefinite and functional, *ex parte* Bullock	1580
*Construction of claims, Computing Scale Company of America *v.* The Automatic Scale Company	849
Construction of Rule 105, Kugele *v.* Blair	1253
Rule 124, Bastian *v.* Champ	2816
Rule 130, Barber *v.* Wood	1991
Dixon and Marsh *v.* Graves and Whittemore	1993
Rule 157, Beall, Jr., *v.* Lyon	3215
Rule 166, *ex parte* Brooks	847
†Construction of amended section 858, code District of Columbia, opinion of Attorney-General	3642
Section 4904, Revised Statutes, Dixon and Marsh *v.* Graves and Whittemore	1993
*Section 4916, Revised Statutes, *in re* Heroult	3217
Section 10, Trade-Mark Act February 20, 1905, *in re* Hunter	1253
Section 1, Trade-Mark Act May 4, 1906, *ex parte* M. Zimmermann Company	1991
Trade-Mark acts of 1881, 1882, and 1905, Funke *v.* Baldwin	392
Declaration of interference limited to question of priority of invention, Dixon and Marsh *v.* Graves and Whittemore	1993
Delay in filing appeal, Adkins and Lewis *v.* Seeberger	1578
*Delay in filing reissue application, *in re* Ams	3644
Device of opponent, inoperativeness of, Barber *v.* Wood	1991
*Employer and employee, Kreag *v.* Geen	1581
*Larkin *v.* Richardson	2394
Evidence, records used to refresh memory not offered as, Bay State Belting Company *v.* Kelton-Bruce Manufacturing Company	1580
Examination of applications, citation of references, *ex parte* Lincoln	3216
*First and original inventor, Kreag *v.* Geen	1581
*Larkin *v.* Richardson	2394
Hearing by Commissioner, Rules 126 and 130 distinguished, Holz *v.* Hewitt	1992
Interference, copies of parts of applications, Kugele *v.* Blair	1253
*Decisions of Patent Office tribunals usually accepted by the court of appeals, Bechman *v.* Southgate	1254
*Disclaimer of inventorship, Gibbons *v.* Peller	3643
*Second interference, res adjudicata, Blackford *v.* Wilder	1255
Joint inventors, *ex parte* Barrett and Alter	847
Limit of appeal, extension of, Adkins and Lewis *v.* Seeberger	1578
Mechanical skill, *ex parte* Hoey	2815
In re Hoey	2817
Motion for leave to take testimony to show inoperativeness, Barber *v.* Wood	1991
Motion to dissolve interference, Adkins and Lewis *v.* Seeberger	1578
Bastian *v.* Champ	2816
Denial by party of his right to make claim, Daggett *v.* Kaufmann	2817, 3641
Martin *v.* Mullin	3216
Irregularity in declaration, Daggett *v.* Kaufmann	2817
Under Rule 122, Dixon and Marsh *v.* Graves and Whittemore	1993
Motion to strike out testimony, Dixon and Marsh *v.* Graves and Whittemore	1993
†Notaries public, amended law, opinion of the Attorney-General	3642
Patentability, Holz *v.* Hewitt	1992
Ex parte Hoey	2815
In re Hoey	2817
Design, new ornamental appearance must be shown, *Ex parte* Bettendorf	848
Issue, lack of to opponent cannot be urged at final hearing under Rule 130 and testimony taken in support except as essential to his own right to patent, Dixon and Marsh *v.* Graves and Whittemore	1993
*Question of not considered on appeal to the court of appeals on priority except in extraordinary cases, Potter *v.* McIntosh	1995
*Rearrangement of elements of combination, Computing Scale Company of America *v.* The Automatic Scale Company	849
Preliminary statement, amendment of, Dixon *v.* McElroy	2393
Karpenstein *v.* Hertzberg	2393
Priority of invention, concession of not necessarily acquiescence in identity of claims, Martin *v.* Mullin	3216
Testimony as to patentability irrelevant, Dixon and Marsh *v.* Graves and Whittemore	1993
References, explanation of by Examiner, *ex parte* Lincoln	3216
Under Rule 126, patentability of issue, Holz *v.* Hewitt	1992
*Reissue application, delay in filing, *in re* Ams	3644
*New matter, *in re* Hoey	2817
*Process and apparatus, *in re* Heroult	3217
Rejection of claims, Holz *v.* Hewitt	1992
*Acquiescence in, Computing Scale Company of America *v.* The Automatic Scale Company	849
Explanation by Examiner, Bastian *v.* Champ	2816
When unwarranted, *ex parte* Fowler, Jr	1578
*Res adjudicata, doctrine stated by Supreme Court, Blackford *v.* Wilder	1255

	Page.
Responsive action by applicant, *ex parte* Fowler, Jr	1578
Ex parte Midgley	1577
Unavoidable delay in, *ex parte* Trebon	2815
Supervisory authority of the Commissioner of Patents, Adkins and Lewis v. Seeberger	1578
Barber v. Wood	1991
Daggett v. Kaufmann	3641
Testimony, power of Patent Office to compel attendance of witnesses, Bay State Belting Company v. Kelton-Bruce Manufacturing Company	1580
Use in subsequent interference, Beall, Jr., v. Lyon	3215
*Trade-marks, arbitrary words, secondary meaning, *in re* American Circular Loom Company	393
Assignment, must be acknowledged conformably to the laws of the country or State where executed, *in re* Hunter	1253
Cancelation of registration Funke v. Baldwin	392
Color should be described, *ex parte* M. Zimmermann Company	1991
Construction of section 13, Trade-Mark Act, Funke v. Baldwin	392
*Continuous use, presumption of where several firms in same business occupy same factory, The Rose Shoe Manufacturing Company v. A. A. Rosenbush & Co	394
*Descriptive terms, *in re* American Circular Loom Company	393
Drawings, foreign applicant, *ex parte* Pietro	2394
Exclusive use, act February 20, 1905, *ex parte* The Yale & Towne Manufacturing Company	3641
Foreign applicant, mark to be registered must correspond with foreign registration, *ex parte* Pietro	2394
Geographical terms, *ex parte* Continental Car and Equipment Company	2816
Trade-marks, interference, motion to dissolve, The United States Graphite Company v. Bomhard	3215
Testimony, credibility of witnesses, A. A. Rosenbush & Company v. The Rose Shoe Manufacturing Company	391
*Sufficiency of, The Rose Shoe Manufacturing Company v. A. A. Rosenbush & Co.	394
Priority of adoption and use, A. A. Rosenbush & Company v. The Rose Shoe Manufacturing Company	391
*The Rose Shoe Manufacturing Company v. A. A. Rosenbush & Co	394
Registrability depends on predominance of arbitrary feature, *ex parte* Continental Car and Equipment Company	2816
Registration by foreign applicant, *ex parte* Pietro	2394
*The words "Circular Loom" refused registration as descriptive, *in re* American Circular Loom Company	393
"Continental" refused registration, as a geographical term, *ex parte* Continental Car and Equipment Company	2816
"Raven" and "Crow," resemblance not sufficient to confuse purchaser, The United States Graphite Company v. Bomhard	3215
Under ten-year proviso of section 5, act 1905, name of article registrable, *ex parte* The Yale & Towne Manufacturing Company	3641
Withdrawal of application from issue and failure to take action within the statutory period, the application becomes abandoned, *ex parte* Brooks	847
On request of applicant does not extend limit of time, *ex parte* Brooks	847
Witnesses, suppression of deposition, Bay State Belting Company v. Kelton-Bruce Manufacturing Company	1580

DIGEST OF DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS

IN THE MATTER OF

PATENTS, TRADE-MARKS, ETC.

OFFICIAL GAZETTE—MARCH-APRIL, 1907.

DIGEST OF DECISIONS.

[Decisions of the United States courts are indicated by an asterisk (*) and the opinion of the Attorney-General by a dagger (†).]

ABANDONMENT.

(See Reissue Applications, 4, 6.)

ABANDONMENT OF APPLICATIONS.

1. APPLICATION JOINT—PROSECUTION OF BY ONE APPLICANT WHERE COAPPLICANT REFUSES TO ACT.
Where one of two joint inventors seeks to cause the abandonment of their application by preventing amendment thereof, claiming that he is a sole inventor, and also files a written abandonment of the application, *Held* that permission will be given to the coinventor to prosecute the application through an attorney of his own selection.
[*Ex parte* Barrett and Alter, 847.

2. ATTORNEYS—APPOINTMENT OF BY ONE OF TWO JOINT APPLICANTS.
Where the attorneys for joint applicants are prevented from amending the application by one of the joint inventors, who in order to cause the case to become abandoned also refuses to permit them to give an associate power of attorney to an attorney of the other joint applicant's selection, *Held* that an attorney appointed by the coinventor will be permitted to prosecute the application. [Id.

3. MUST BE SIGNED BY ALL JOINT INVENTORS.
Where one coapplicant does not join in the written abandonment of an application, it can be given no effect. [Id.

4. WITHDRAWAL FROM ISSUE—FAILURE TO TAKE ACTION.
Where an application is withdrawn from issue at the request of the applicant to await the allowance of a related application and no action is taken therein until after the expiration of the statutory period allowed for taking action, which dates from the notice of allowance, the application is abandoned in the absence of special circumstances excusing the delay.
[*Ex parte* Brooks, 847.

5. WHEN HOLDING IS PROPER.
Where twenty-seven claims were rejected on August 9, 1906, and on June 9, 1906, the applicant amended two of the rejected claims and added two new claims, but made no allusion to the remaining twenty-five rejected claims, and the Examiner on August 14, 1906, on taking up the case in the regular course of his work, notified applicant that his case was abandoned, *Held* that the Examiner's action is entirely in accord with sound reason and well-established practice and is the only proper action which could have been given under the circumstances.
[*Ex parte* Midgley, 1577.

6. UNRESPONSIVE ACTION NOT ENTITLED TO CONSIDERATION.
Petitioner's contention that his unresponsive amendment filed within the year is entitled to consideration and action upon its merits is clearly unfounded, since the statutes provide for no piecemeal consideration and the rules prohibit the same.
[Id.

7. APPLICANT RESPONSIBLE FOR FAILURE TO COMPLY WITH RULES.
The fact that the Examiner in the regular course of business did not reach applicant's case and give him notice of the insufficiency of his action until after the year allowed for action had expired does not relieve applicant of the necessity of taking responsive action within the year required by the rules or shift the responsibility for failure to comply with the rules to the Patent Office. [Id.

8. WHERE DELAY WAS NOT UNAVOIDABLE.
Where the delay has not been terminated by the filing of an action fully responsive to the last rejection and where no good reason appears why such an action should not have been filed within the year allowed therefor, *Held* that the delay was not unavoidable and that the application is abandoned. [Id.

9. WHAT IS RESPONSIVE ACTION.
On October 16, 1905, the Examiner finally rejected certain claims. The applicant on June 6, 1906, filed an amendment substituting new claims for those rejected, which amendment was refused entry by the Examiner in view of the final rejection. On September 24, 1906, applicant filed a request for reconsideration of the final rejection and refusal of his amendment, accompanied by a statement of reasons why he considered said actions improper. In reply he was notified by the Examiner on November 2, 1906, that his application was abandoned, and on November 6, 1906, he took this petition. *Held* that if the final rejection of October 16, 1905, was proper the condition of the case called for either a cancelation of the rejected claims or an appeal to the Examiners-in-Chief, and since such action was not taken within the year the case is abandoned; but in case the final rejection was irregular or premature, then the actions of June 6 and September 24 were such as the condition of the case required, and the application is not abandoned.
[*Ex parte* Fowler, Jr., 1578.

10. FAILURE OF APPLICANT TO AUTHORIZE ATTORNEY TO TAKE ACTION DOES NOT EXCUSE.
The failure of the attorney to act within the statutory period is not excused by the allegation that he did not act earlier because not authorized by the applicant to do so, where it does not appear that he could not have been earlier authorized to proceed.
[*Ex parte* Trebon, 2815.

11. UNAVOIDABLE DELAY.
The delay of more than one year in responding to the Office action is not unavoidable in those cases where action might have been taken had reasonable efforts been exercised to that end at any time within the period following the Office action. [Id.

12. SAME—INTENTION OF APPLICANT.
Applications are abandoned without regard to what the intention of the applicant may have been in case of delay for more than one year in responding to the Office action unless the delay was unavoidable. [Id.

ACQUIESCENCE.

(See Construction of Claims.)

AMENDMENTS.

(See Abandonment of Applications, 5, 6, 9; Claims, 1.)

AMENDMENT TO PRELIMINARY STATEMENT.

(See Preliminary Statement.)

ANCILLARY INVENTION.

(See Employer and Employee, 2.)

APPEAL.

(See Interference, 7 9; Rejection of Claims.)

APPEAL FROM THE EXAMINER OF INTERFERENCES.

(See Motion for Leave to Take Testimony.)

APPEAL FROM FAVORABLE DECISION.

(See Motion to Dissolve Interference, 9.)

APPEAL TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

(See Priority of Invention, 1.)

APPLICATIONS.

(See Abandonment of Applications; Claims; Designs; Examination of Applications; Reissue Applications; Withdrawal of Allowed Cases from Issue.)

ARBITRARY TERMS.

(See Trade-Marks, 5.)

ASSIGNEES.

(See Interference, 13.)

ASSIGNMENTS.

(See Trade-Marks, 8.)

ATTORNEYS.

(See Abandonment of Applications, 1, 2, 10; Reissue Applications, 4, 6.)

CANCELATION OF REGISTRATION.

(See Trade-Marks, 2, 3.)

CERTIFIED COPIES OF PARTS OF APPLICATIONS.

(See Interference, 1.)

CLAIMS.

(See Construction of Claims; Interference, 6, 7, 11; Motion to Dissolve Interference, 7, 8, 9, 10; Rejection of Claims.)

1. INDEPENDENT INVENTIONS—PRACTICE.
Where claims presented by amendment are held by the Examiner to be for an independent invention from that presented in the other claims, *Held* that the question of whether the claims are in fact for an independent invention must be settled before applicant can demand an action upon their merits. If for an independent invention, applicant is estopped from prosecuting said claims on their merits in this application, and they should be canceled. This question is the same as that ordinarily presented in a requirement for division, with the exception that in originally presenting and prosecuting claims to one invention only applicant has already made his election and has now no choice as to which set of claims he will cancel. (*Ex parte Selle*, 110 O. G., 1728; *ex parte Tuttle*, 113 O. G., 1967.)
[*Ex parte* Bullock, 1580.

2. INDEFINITE AND FUNCTIONAL.
Where the claim is not for a combination of which the "means" for the purpose mentioned is an element, but is merely for means as an element and covers all possible means for accomplishing a certain function regardless of structure, *Held* that the claim is indefinite and functional. [Id.

COLOR.

(See Trade-Marks, 9.)

CONCESSION OF PRIORITY.

(See Priority of Invention, 2.)

CONSTRUCTION OF CLAIMS.

ACQUIESCENCE IN REJECTION BY PATENT OFFICE.
Where an inventor seeking a broad claim which is rejected, in which rejection he acquiesces, substitutes therefor a narrower claim, he cannot be heard to insist that the construction of the claim allowed shall cover that which has been previously rejected. (*Corbin Cabinet Lock Company* v. *Eagle Lock Company*, 68 O. G., 1066; 150 U. S., 38-43, and cases there cited.)
[*Computing Scale Company of America v. The Automatic Scale Company, 948.

CONSTRUCTION OF RULES.

(See Construction of Statutes; Interference, 1, 4, 5, 9, 10, 13; Motion to Dissolve Interference, 3, 4; Rejection of Claims; Withdrawal of Allowed Cases from Issue.)

CONSTRUCTION OF STATUTES.

(See Notary Public; Reissue Applications, 2, 4, 5; Trade-Marks 2, 3, 5, 6, 16, 17.)

LIMITED TO QUESTION OF PRIORITY OF INVENTION.
The United States Supreme Court in the case of *ex rel. George A. Lowry* v. *Frederick T. Allen, Commissioner of Patents*, (126 O. G., 2355,) held that section 4904 of the Revised Statutes limits the declaration of interferences to the question of priority of invention. Should a party be permitted to urge that the claims of the issue are patentable to neither party in the interference, a decision that the issue is not patentable would not result in a decision of priority of invention in favor of either party or in the issue of a patent to one of the parties. In the cases contemplated by Rule 130, however, a decision that the issue is not patentable to one party would necessarily result in a decision of priority in favor of the other party.
[Dixon and Marsh v. Graves and Whittemore, 1933

CONTINUOUS USE.

(See Trade-Marks, 7.)

DECISIONS OF PATENT OFFICE TRIBUNALS.

(See Interference, 2; Priority of Invention, 1.)

DELAY IN FILING MOTIONS.

(See Preliminary Statement, 1.)

DELAY IN FILING REISSUE APPLICATIONS

(See Reissue Applications, 1, 5, 6.)

DELAY IN MAKING APPEAL.

(See Motion to Dissolve Interference, 2.)

DELAY IN PROSECUTING APPLICATION.

(See Abandonment of Applications, 4, 8, 10, 11, 12.)

DESCRIPTIVE TERMS.

(See Trade-Marks, 4, 5.)

DESIGNS.

PATENTABILITY—NEW APPEARANCE MUST BE ORNAMENTAL.
A design patent for an article will be granted only when there can be found in such article a new appearance created by inventive process which serves the purpose of embellishment. It is not enough that the design should possess features of utilitarian attractiveness which would commend it to persons familiar with the art because of its functional value; it must possess an inherent beauty. *Ex parte* Bettendorf, 840.

DISCLAIMER OF INVENTORSHIP.

(See Interference, 13.)

DISCRETION.

(See Preliminary Statement, 2.)

DISSOLUTION OF INTERFERENCE.

(See Motion to Dissolve Interference.)

DIVISION OF APPLICATIONS.

(See Claims, 1.)

DRAWINGS.

(See Trade-Marks, 9, 11.)

EMPLOYER AND EMPLOYEE.

1. ORIGINALITY—IMPROVEMENTS BY EMPLOYEE.
When one conceives the principle or plan of an invention and employs another to perfect the details and realize his conception, though the latter may make valuable improvements therein, such improved result belongs to the employer.
[*Kneag v. Gess, 1581.

2. SAME—ANCILLARY INVENTION.
Where a person has discovered an improved principle in a manufacture and employs others in assisting him to carry out that principle, and these in that employment make valuable additions to the preconceived design of the employer, such suggested improvements are in general to be regarded as the property of the party who discovered the original improved principle and may be embodied in his patent as part of his invention. (See *Agawam Co.* v. *Jordan*, 7 Wall., 583, 602; *Gedge* v. *Cromwell*, 98 O. G., 1480; 19 App. D. C., 198; *Milton* v. *Kingsley*, 75 O. G., 2196; 7 App. D. C., 327.)
[*Larkin v. Richardson, 2304.

EVIDENCE.

1. INTERFERENCE—TESTIMONY—CONTROL OF WITNESSES.
The Patent Office has no power to compel the attendance of witnesses or to enforce the production of evidence of any kind. (*Lindstrom* v. *Lipschutz*, 120 O. G., 904; *Kelly et al.* v. *Park et al.*, C. D., 1897, 182; 81 O. G., 1931.)
[Bay State Belting Company v. Kelton-Bruce Manufacturing Company, 1580.

2. SAME—SAME—BOOKS USED TO REFRESH MEMORY NEED NOT BE OFFERED IN EVIDENCE.
Books produced at the examination of a witness for the purpose of refreshing his memory need not be offered in evidence. (*Lees and Spoonsberg* v. *Scott*, 122 O. G., 383; *McCormick* v. *Osal*, C. D., 1898, 422; 83 O. G., 1514.) [Id.

SAME—SAME—SUPPRESSION—REFUSAL TO PLACE BOOKS IN EVIDENCE.
Where certain books were referred to by a witness for the purpose of refreshing his recollection, and opposing counsel, who was given an opportunity to examine them, did not interpose any objection to the books or cross-examine the witness relative to the entries, *Held* that a subsequent refusal to produce the books for inspection or to offer them in evidence does not warrant the suppression of any part of the deposition of the witness who referred to said books. [Id.

EXAMINATION OF APPLICATIONS.

(See Abandonment of applications, 9; Claims, 1; Motion to Dissolve Interference, 5; Rejection of Claims.)

1. FINAL REJECTION—WHEN UNWARRANTED.
Where appellant's letter stated that the prior Office action was not understood, requested that the pertinency of the references be pointed out as a guide to applicant in the further prosecution of the case, and expressly stated that it was not intended as a request for reconsideration, *Held* that the action of the Examiner in treating this letter as calling for a reconsideration and in finally rejecting the claims was unwarranted.
[*Ex parte* Fowler, Jr., 1578.

2. SAME—WHEN PREMATURE.
Where in the Office action prior to the final rejection a claim was criticised, but its rejection was inadvertently omitted, *Held* that the final rejection was premature. [Id.

3. CITATION OF REFERENCES.
Where several claims are rejected, it should appear in the Examiner's letter whether all the references are cited against each claim or whether they are cited distributively against the various claims. In the latter event it should be made clear in connection with each claim which references are relied upon in the rejection thereof. [*Ex parte* Lincoln, 2216.

4. COMBINATION OF REFERENCES.
Where references cited are to be taken jointly, the theory upon which they are combined must be pointed out. The Examiner need not, however, ordinarily apply the references to the claim element for element, the specification and drawings of the references being ordinarily sufficient to indicate their application to the claims. [Id.

5. EXPLANATION OF REFERENCES.
If any doubt exists as to the interpretation placed by the Examiner upon a feature of the drawing or portion of the specification, he will furnish an explanation in response to a specific request making clear the uncertainty existing in the mind of the applicant. [Id.

EXAMINER OF INTERFERENCES.

(See Interference, 3; Motion for Leave to Take Testimony; Motion to Dissolve Interference, 4; Preliminary Statement, 2.)

EXAMINERS-IN-CHIEF.

(See Interference, 4, 5, 6, 7.)

FIRST AND ORIGINAL INVENTOR.

(See Employer and Employee; Interference, 13.)

FOREIGN APPLICANT.

(See Trade-Marks, 10, 11.)

FOREIGN REGISTRATION OF TRADE-MARKS.

(See Trade-Marks, 10, 11.)

FORMER DECISIONS CITED.

(See Claims, 1; Construction of Claims; Construction of Statutes; Employer and Employee, 2; Evidence, 1, 2; Interference, 4, 11; Motion to Dissolve Interference, 2, 8; Reissue Applications, 4, 5; Res Adjudicata.)

FRAUDULENT INTENT.

(See Reissue Applications, 4.)

FUNCTIONAL CLAIMS.

(See Claims, 2.)

GEOGRAPHICAL TERMS.

(See Trade-Marks, 12, 14.)

HEARING.

(See Interference, 6, 9, 10.)

IDENTICAL CLAIMS.

(See Interference, 11; Motion to Dissolve Interference, 8, 9; Priority of Invention, 2.)

INADVERTENCE OR MISTAKE.

(See Reissue Applications, 3, 4.)

INOPERATIVENESS.

(See Motion for Leave to Take Testimony; Motion to Dissolve Interference, 4.)

INTERFERENCE.

(See Construction of Statutes; Employer and Employee; Evidence; Motion for Leave to Take Testimony; Motion to Dissolve Interference; Preliminary Statement; Priority of Invention; Rejection of Claims; Trade-Marks, 1, 6, 15.)

1. ACCESS TO OPPONENT'S APPLICATION, PART OF WHICH IS CONCEALED UNDER RULE 105.
Where the interfering subject-matter of the application of one of the parties to an interference is disclosed to the other by means of a certified copy, as provided by Rule 105, an auxiliary invention which has been described and claimed by the former, but which might be omitted without destroying the operativeness of the invention in issue, will not be disclosed where the latter has presented no claim which includes this invention either broadly or specifically. [Kugele v. Blair, 1263.

2. PRIORITY—INTERFERENCE IN FACT—CONCLUSIONS BY PATENT OFFICE GENERALLY ACCEPTED BY COURT OF APPEALS.
Ordinarily where the point has been raised whether the application of one of the parties was broad enough in the terms of its specification and claims to embrace the invention of the other, and especially where the invention is one of elaborate and complicated mechanism, the decisions of the expert tribunals of the Patent Office in respect of identity have, for obvious reasons, been accepted as conclusive.
[*Beckman v. Southgate, 1284.

3. SECOND INTERFERENCE—RES ADJUDICATA.
Where a second interference is declared between the same applications on an issue relating to the same subject-matter of invention as that of a prior interference, of broader scope

than the first issue, and the constructions relied on, respectively, as evidencing conception and reduction to practice of the invention of both issues are the same and the fundamental facts of both cases are the same, *Held* that the final decision in the first interference is conclusive and that the question of priority is *res adjudicata* unless it can be made to appear that the question upon which the determination of the second case rests is one that neither was nor could have been presented and determined in the first case. [*Blackford v. Wilder, 1256.

4. REFERENCE UNDER RULE 126—REJECTION OF CLAIMS.
Where the Examiners-in-Chief in their decision in an interference upon priority of invention call the attention of the Commissioner under Rule 126 to the fact that in their opinion the issue is not patentable and the decision becomes final by the expiration of the limit of appeal without appeal, the Examiner will be directed to reject in the application of the successful party the claim corresponding to the issue found by the Examiners-in-Chief to be unpatentable. (*Snider* v. *Bunnell*, 103 O. G., 900, distinguished.) [Hols v. Hewitt, 1992.

5. SAME—SAME.
It is not to be presumed that the Examiners-in-Chief would form an opinion adverse to a party's interest and call attention to the same upon the record without careful consideration in those cases where the grounds of their opinion had already been considered by the Primary Examiner and held insufficient to warrant such adverse opinion. When they express an opinion under these circumstances, the same is clearly of sufficient force to bind the Primary Examiner and sustain his *pro forma* rejection of claims until the opinion is withdrawn by the Examiners-in-Chief themselves or overruled by the Commissioner or court of appeals in the regular course of appeal. [Id.

6. HEARING—RULES 126 AND 139 DISTINGUISHED.
Rule 126 does not provide for a hearing by the Commissioner, and no reason appears why a hearing should be given to an applicant whose claims are found to be unpatentable by the Board of Examiners-in-Chief in their consideration of the claim in connection with the question of priority of invention. [Id.

7. APPEAL AFTER REJECTION OF CLAIM.
Where upon reference by the Examiners-in-Chief, under Rule 126, stating that in their opinion the issue of an interference is unpatentable, the Examiner is directed to reject the claims in the application of the successful party, the *pro forma* rejection of the Examiner puts the case at once in condition for a course of appeal which may be carried to the court of appeals if the application is otherwise in condition therefor. [Id.

8. TESTIMONY TO SHOW ISSUE UNPATENTABLE TO EITHER PARTY IRRELEVANT TO QUESTION OF PRIORITY.
Where during the time assigned him for the purpose of taking testimony upon the question of priority of invention one party took merely the testimony of an expert for the purpose of showing that the issue is not patentable to either party over the prior art, *Held* that the decision of the Examiner of Interference was proper in granting a motion to strike said testimony from the record on the ground that it is irrelevant to the question of priority.
[Dixon and Marsh v. Graves and Whittemore, 1998.

9. UNPATENTABILITY OF ISSUE TO ALL PARTIES—PROPERLY RAISED BY MOTION TO DISSOLVE UNDER RULE 122.
Where it is contended that the non-patentability of the issue to either party to the interference may be urged at final hearing, *Held* that during the preliminary stages of the interference and before the parties have been put to the trouble and expense of taking testimony on the question of priority either party may raise the question of the patentability of the issue by motion to dissolve the interference under Rule 122. Contestants are thus given an opportunity to have determined the question of whether the Office was right in declaring the interference and whether the proceeding should continue before testimony as to priority is taken. It is essential to the orderly proceeding of the interference that the question of patentability be finally settled at this time, and for this purpose the rules provide for an appeal from the rejection of claims based on the decision on the motion to the full extent permitted by law. [Id.

10. SAME—CANNOT BE RAISED UNDER RULE 130.
Where it is contended by one party to an interference that he has a right to urge the unpatentability of the issues to either party at the final hearing under Rule 139 and to take testimony in support thereof, *Held* that the contention is erroneous and that this rule permits a party to urge the non-patentability of a claim to his opponent as a basis for the decision upon priority of invention only when it is material to his own right to a patent. [Id.

11. INTERFERENCE IN FACT.
If there is no interference in fact, it is either because one of the parties has no right to make the claims or because the claims have different meanings in the applications of the different parties. Parties will not be heard to deny their own right to make the claims. (*Miller* v. *Perham*, 121 O. G., 2667.)
[Daggett v. Kaufmann, 2817.

12. TESTIMONY—USE IN SUBSEQUENT INTERFERENCE.
Where the real parties in interest in a pending interference are the same as in a prior interference and the inventions involved are substantially the same, permission may be obtained, under the provisions of Rule 147, to use in the pending interference the testimony taken in the former interference.
[Beall, Jr., v. Lyon, 2216.

12. ORIGINALITY—DISCLAIMER OF INVENTORSHIP.
A statement by applicant to his assignee that he does not regard himself as the inventor of the subject-matter claimed in such application is not sufficient to warrant an award of priority to an opponent where it appears that such statement was made during a controversy between the parties with regard to the amount of royalty which should be paid to the assignor. [*Gibbons v. Peller, 3642.

INTERVENING RIGHTS.

(See Reissue Applications, 2, 4.)

INVENTION.

1. PATENTABILITY—REARRANGEMENT OF ELEMENTS OF COMBINATION.
Where a given combination of elements is old in an automatic computing-scale of the horizontal type and the prior art also shows a computing-scale arranged vertically, although it was not entirely automatic, a claim covering a rearrangement of the elements of the automatic horizontal scale to provide a vertical construction can be sustained only to a limited extent.
[*Computing Scale Company of America v. The Automatic Scale Company, 849.

2. SAME—CHANGE OF LOCATION.
The change of location of projections on the seat portion of a bed-couch *Held* to relate to mechanical skill.
[*Ex parte* Hoey, 2815.

3. SAME—SAME.
The change in location of projections on the seat portion of a bed-couch from the upper to the lower side of the seat does not amount to invention. It is possible, but not apparent, that a better balance of the seat and back is secured by changing these projections. It is possible that a more attractive exterior is thereby presented. It is possible that a more salable article is thereby secured; but all this does not prove originality of invention. While courts deal liberally with inventors in sustaining patents having but slight distinctions over prior structures, they do not and ought not to permit the real inventor to be deprived of the fruits of his genius and labor by a mere copyist. [*In re Hoey, 2817.

JOINT APPLICATIONS.

(See Abandonment of Applications, 1, 2, 3.)

JOINT INVENTORS.

(See Abandonment of Applications, 1, 2, 3.)

LIMITATION OF CLAIMS.

(See Invention, 1; Reissue Applications, 2, 3, 5, 6.)

LIMIT OF APPEAL.

(See Interference, 4; Motion to Dissolve Interference, 1, 2.)

LIMIT OF TIME.

(See Abandonment of Applications, 4; Withdrawal of Allowed Cases from Issue.)

MECHANICAL SKILL.

(See Invention, 2, 3.)

MOTION FOR LEAVE TO TAKE TESTIMONY.

INTERFERENCE—TESTIMONY TO SHOW INOPERATIVENESS.
Where a motion for permission to take testimony for the purpose of showing that the opponent's device is inoperative, pending the determination of a motion to dissolve the interference, was denied by the Examiner of Interferences on the ground that the rules do not provide for the taking of testimony in interference cases prior to the determination of a motion to dissolve, *Held* that no appeal lies from the decision of the Examiner of Interferences on the question of taking testimony to show inoperativeness and that no occasion is presented for the exercise of the supervisory authority of the Commissioner. [Barber v. Wood, 1991.

MOTION TO DISSOLVE INTERFERENCE.

(See Interference, 9, 10; Trade-Marks, 14.)

1. INTERFERENCE—EXTENSION OF LIMIT OF APPEAL.
The limit of appeal will not be extended to permit an appeal upon motion to transmit a motion for dissolution where the transmission of said motion would merely result in a reconsideration by the Primary Examiner under the head of irregularity in declaring the interference of the facts he has already considered under the right to make the claims.
[Adkins and Lewis v. Seeberger, 1578.

2. SAME—SAME.
A long and unexcused delay in filing an appeal constitutes a sufficient reason for denying an extension of the limit of appeal. (*Hewitt* v. *Steinmetz*, 122 O. G., 1295.) [Id.

3. SAME—EXERCISE OF SUPERVISORY AUTHORITY OF COMMISSIONER.
Where the question presented upon a motion for dissolution can be raised, under Rule 130, at final hearing before the Examiner of Interferences and upon appeals from such decision, there is no occasion for the exercise of the supervisory authority of the Commissioner. [Id.

4. SAME—INOPERATIVENESS OF OPPONENT'S DEVICE—PRACTICE.
Under Rule 130 where the operativeness of an opponent's device or his right to make the claim is material to the right of a party to a patent said party may urge the matter at final hearing before the Examiner of Interferences as a basis for his award of priority; but as a condition precedent to such right the party must first present the matter upon a motion for dissolution or show good reason why such motion was not made and prosecuted. [Barber v. Wood, 1991.

5. SAME—REJECTION OF CLAIMS—REQUEST FOR FURTHER EXPLANATION.
Where in acting upon a motion to dissolve the interference the Primary Examiner held the counts of the issue unpatentable and upon reconsideration finally rejected the claims, *Held* that if petitioner did not understand the position of the Examiner or desired a more specific statement of his position concerning the references he should have made his request before the dates set for reconsideration and closing of the case before the Examiner. While the Examiner should indicate the grounds for his rejection as fully as in the ordinary *ex parte* consideration of a case, the applicant can request as a matter of right a more complete explanation only while the case is still pending before the Examiner. [Bastian v. Champ, 2816.

6. SAME—IRREGULARITY—NO SPECIFIC INFORMALITY ALLEGED.
Where in a motion for dissolution upon the ground of irregularity in the declaration of the interference no specific irregularity was alleged, the Primary Examiner did not err in denying the motion as to this ground. [Daggett v. Kaufmann, 2817.

7. SAME—DENIAL BY A PARTY OF HIS OWN RIGHT TO MAKE CLAIM—TRANSMISSION.
A motion for dissolution based upon the ground that the moving party has no right to make the claim to the subject-matter in issue should not be transmitted to the Primary Examiner.
[Martin v. Mullin, 2216.

8. SAME—INTERFERENCE IN FACT.
If there is no interference in fact, it is either because one of the parties has no right to make the claims or because the claims have different meanings in the applications of the different parties. The parties will not be heard to deny their own right to make the claims. (*Miller* v. *Perham*, 121 O. G., 2667.)
[Daggett v. Kaufmann, 3641.

9. SAME—APPEAL—RIGHT OF OPPONENT TO MAKE CLAIM.
There is no appeal from the decision of the Primary Examiner affirming the opponent's right to make the claims or the identity of meaning of the claims in their respective applications.
[Id.

10. SAME—EXERCISE OF SUPERVISORY AUTHORITY OF COMMISSIONER.
Where at the hearing upon a motion for dissolution attention is directed to a patent which is in a remote art and it appears that the Examiner has held the claims in issue patentable thereover, no such unusual circumstances as will justify the exercise of supervisory authority exist. [Id.

MOTION TO STRIKE OUT TESTIMONY.

(See Interference, 8.)

NEW MATTER.

(See Reissue Applications, 1.)

NOTARY PUBLIC.

AMENDED SECTION 858 OF THE CODE OF THE DISTRICT OF COLUMBIA CONSTRUED.
Held that the "proviso"—
"And provided further, That no notary public shall be authorized to take acknowledgments, administer oaths, certify papers, or perform any official acts in connection with matters in which he is employed as counsel, attorney, or agent in which he may be in any way interested before any of the Departments aforesaid"—
in the recent act of Congress amending section 858 of the code of the District of Columbia applies to all notaries who may practice before the Departments and not merely to notaries of the District of Columbia.
[*Opinion of the Attorney-General, 3642.

OPINION OF THE ATTORNEY-GENERAL.

(See Notary Public.)

OWNERSHIP.

(See Trade-Marks, 5, 14.)

PATENTABILITY.

(See Designs; Interference, 4, 5, 6, 7, 8, 9, 10; Invention; Priority of Invention, 1.)

PRELIMINARY STATEMENT.

(See Priority of Invention, 1.)

1. INTERFERENCE—AMENDMENT.
Where D. was notified that his preliminary statement was indefinite and should be amended, but no amendment was made, and the present motion was not brought until eight months later and after testimony had been taken by D., and was inspired by a statement placed on the record by his opponent, *Held* that the motion was properly denied in the absence of a showing in excuse for the long delay in bringing the motion or the failure to respond to the requirement for a more definite statement or of a satisfactory showing of accident or mistake or of newly-discovered evidence. [Dixon v. McElroy, 2393.

2. SAME—SAME.
The question of amending the preliminary statement is a matter largely within the discretion of the Examiner of Interference. Unless it be shown that such discretion has been abused his decision will not be disturbed.
[Karpenstein v. Hertzberg, 2393.

PRIORITY OF ADOPTION AND USE.

(See Trade-Marks, 1, 6.)

PRIORITY OF INVENTION.

(See Construction of Statutes; Interference, 2, 3, 4, 6, 8, 9, 10, 13.)

1. INTERFERENCE—APPEAL—CONSIDERATION OF PATENTABILITY.
Where the junior party to an interference concedes that his preliminary statement fails to overcome the filing date of the senior party and the patentability of the issue has been favorably passed upon by the tribunals of the Patent Office, before whom the question was brought in accordance with the practice of that Office, on appeal to the court of appeals from a judgment on priority the question of patentability will not be considered where it is raised merely for the purpose of preventing the grant of a patent to the senior party, except in an extraordinary case.
[*Potter v. McIntosh, 1995.

2. SAME—CONCESSION OF NOT NECESSARILY ACQUIESCENCE IN IDENTITY OF CLAIMS.
An award of priority may mean either that one of two inventors of the same thing is subsequent in date to another or that one party is the only inventor of the issue, because the other never invented the same at all, and there seems to be no reason why this should not be as true where the award is based upon concession as where it is based upon testimony.
[Martin v. Mullin, 2216.

PROCESS AND APPARATUS.

(See Reissue Applications, 2, 3.)

PROSECUTION OF APPLICATIONS.

(See Abandonment of Applications, 1, 2, 3.)

RECONSIDERATION.

(See Examination of Applications, 1, 2; Motion to Dissolve Interference, 1, 5.)

REFERENCES.

(See Examination of Applications, 1, 3, 4, 5.)

REGISTRABILITY.

(See Trade-Marks, 13, 14, 17.)

REISSUE APPLICATIONS.

1. NEW MATTER.
Where a patent describes certain parts of a device as having a specified function, a claim in an application for the reissue of such patent which refers to such parts as "means" for performing a different function, requiring a relative location of the parts which was not originally disclosed, relates to new matter. The facts that the reissue application was not filed for about two years after the grant of the patent and that the claim was not made for about nine months after the filing of such application strongly indicate that the claim was not suggested by the original disclosure. [*In re* Hoey, 2317.

2. SAME INVENTION—PROCESS AND APPARATUS.
Where an application clearly discloses a process and an apparatus and through inadvertence, accident, or mistake the applicant accepts a patent with a limited claim to the apparatus, although the process is the dominant part of his invention, *Held* that the patent may be reissued to include the process in the absence of intervening rights. [*In re* Heroult, 2217.

3. SAME—INADVERTENCE, ACCIDENT, OR MISTAKE.
Where a patentee clearly discloses a process and an apparatus for carrying out the process and claims only the apparatus, the failure to claim the process was either intentional or the result of inadvertence, accident, or mistake, for which section 4916, Revised Statutes, furnishes a remedy. [*Id.

4. SAME—ACTS OF ATTORNEYS.
Applicants usually act through solicitors or attorneys, and their inadvertence, accidents, and mistakes, if such in fact, are remediable under the statute permitting reissue when it is clear that there is no fraudulent or deceptive intent or attempt to destroy an intervening right. (*In re Briale*, 123 O. G., 422; 27 App. D. C., 298, 301.) [*Id.

5. DELAY OF TWO YEARS—PRESUMPTION OF ABANDONMENT.
Delay of two years in filing an application for a reissue of a patent with broader claims will usually be treated as an abandonment to the public of everything not claimed in the original. This rule is based upon the analogy between a reissue application and the case of an inventor who fails to apply for a patent of his invention within two years from the date of its public use or sale, which the statute ordains is conclusive evidence of its abandonment. (See *in re Starkey*, 104 O. G., 2150; 21 App. D. C., 519, and cases cited therein.) [*In re* Ams, 3644.

6. LONG DELAY—FAILURE OF ATTORNEYS TO UNDERSTAND INVENTION.
Where the invention covered by a patent is simple and the patent clearly and definitely describes it, and the patentee immediately upon the issue thereof discovers that the single claim allowed is too narrow and does not properly cover his invention, and upon calling his attorneys' attention to this fact they advised him that the claim was as broad as could be obtained, and it does not appear that they acted in bad faith, *Held* that a delay of five years in seeking a reissue cannot be excused upon the plea that the original attorneys did not understand the invention, since under the circumstances it was the duty of the patentee to consult other counsel without delay. [*Id.

REJECTION OF CLAIMS.

(See Construction of Claims; Examination of Applications; Interference, 4, 5, 7, 9; Motion to Dissolve Interference, 5.)

INTERFERENCE—MOTION TO DISSOLVE—REQUEST FOR FURTHER EXPLANATION—PRACTICE.
Where the Examiner rejected the claims constituting the issue in his decision dissolving the interference and not in the application files, *Held* the proper practice under Rule 124 is for the Examiner to indicate his findings regarding the claims in his decision on the motion in the interference file and at the same time to make the rejection of the claims affected in the application files. In making such rejection, if desired, reference may be made as a basis therefor to the findings in the decision on the motion. The purpose of this practice is to enable applicants to appeal to the full extent provided by statute and, if an appeal is desired, to require the appeal to be taken at once. [Bastian *v.* Champ, 2316.

RES ADJUDICATA.

(See Interference, 3.)

DOCTRINE STATED BY THE SUPREME COURT.
The doctrine of *res adjudicata*, or estoppel by former judgment, has been thus declared by the Supreme Court of the United States:

"When the second suit is upon the same cause of action, and between the same parties as the first, the judgment in the former is conclusive in the latter as to every question which was or might have been presented and determined in the first action; but when the second suit is upon a different cause of action, though between the same parties, the judgment in the former action operates as an estoppel only as to the point or question actually litigated and determined, and not as to other matters which might have been litigated and determined." (*Nesbit v. Riverside Independent District*, 144 U. S., 610, 618; *New Orleans v. Citizen's Bank*, 167 U. S., 371, 386; *S. P. R. R. v. U. S.*, 168 U. S., 1, 48)—
and the doctrine as thus laid down is applicable to adjudications made in the Patent Office. [*Blackford *v.* Wilder, 1255.

RESPONSIVE ACTION BY APPLICANT.

(See Abandonment of Applications, 5, 6, 7, 8, 9, 11, 12.)

SUPERVISORY AUTHORITY OF THE COMMISSIONER OF PATENTS.

(See Motion for Leave to Take Testimony; Motion to Dissolve Interference, 7, 10.)

SUPPRESSION OF EVIDENCE.

(See Evidence, 3.)

SUPREME COURT OF THE UNITED STATES.

(See Res Adjudicata.)

TEN-YEARS' CLAUSE.

(See Trade-Marks, 16, 17.)

TESTIMONY.

(See Evidence; Interference, 8, 12; Motion for Leave to Take Testimony; Preliminary Statement, 1; Priority of Invention, 2; Trade-Marks, 1, 6.)

TRADE-MARKS.

1. INTERFERENCE—PRIORITY—CREDIBILITY OF TESTIMONY.
Where the testimony presented in behalf of both the opposing parties is subject to uncertainty, the testimony of Rosenbush concerning the adoption of the mark in 1895 or 1896, which is supported by the testimony of his former partner, Levie, is entitled to as great weight as the testimony of a single disinterested witness testifying from his unaided memory concerning the adoption of the mark by The Rose Shoe Manufacturing Company nearly eight years after the event.
[A. A. Rosenbush & Company *v.* The Rose Shoe Manufacturing Company, 391.

2. CANCELATION OF REGISTRATION—SECTION 13 OF ACT OF 1905 CONSTRUED.
Section 13 of the act of 1905, providing for the cancelation of trade-mark registrations, applies only to those registrations made under that act. (Funke *v.* Baldwin, 392.

3. SAME—SAME—NOT APPLICABLE TO REGISTRATIONS UNDER ACTS OF 1881 AND 1882.
By section 20 of the act of 1905 all legislation inconsistent with the provisions of the act of 1905 is repealed except the Trade-Mark Acts of 1881 and 1882 in their application to registrations made thereunder. The acts of 1881 and 1882 are to stand, so far as registrations made thereunder are concerned, whether consistent with the act of 1905 or otherwise. [Id.

4. "CIRCULAR LOOM"—DESCRIPTIVE.
The words "Circular Loom" refused registration as a trade-mark for "conduits and coverings for electrical conductors consisting of fiber spirals wrapped with fiber and tape, and covered with a protective cotton tube with an outer coating of an insulating compound and mica" on the ground that they are descriptive of the protective cotton tube, which is one of the material parts of the construction. An inspection of the article shows that the cotton tube is woven on a circular loom, which must be known to dealers in the goods, and it may well be inferred that this product of a circular loom is considered a superior quality in the trade.
[*In re* American Circular Loom Company, 393.

5. ARBITRARY WORDS—SECONDARY MEANING.
Sometimes arbitrary words, adopted primarily as a mark to indicate origin or ownership, may through long-continued and wide sale of the particular article come to indicate quality also, and in such event the owner would not be debarred from their protection as a trade-mark. It would have to appear with certainty, however, that at the time of adoption the mark was for the purpose of indicating origin, manufacture, or ownership and not at all as descriptive of grade or quality. [*Id.

6. PRIORITY.
Where Rosenbush in his application alleges adoption in 1891, but the earliest date mentioned in his testimony is the "spring of 1895," and his testimony is only supported by that of a former partner, who fixes the date as "about a year and a half" after August 1, 1894, when the firm commenced business, *Held* insufficient to prevail over The Rose Shoe Manufacturing Company which presents the testimony of several credible witnesses who clearly trace the use of the trade-mark by The Rose Shoe Manufacturing Company and its predecessors in business from the year 1894.
[*The Rose Shoe Manufacturing Company *v.* A. A. Rosenbush & Co., 394.

7. CONTINUOUS USE—PRESUMPTION.
Where several successive firms manufacturing ladies' shoes are shown to have occupied the same factory, it is reasonable to suppose that once having adopted a trade-name they would continue its use notwithstanding a reorganization of the firm. [*Id.

8. ASSIGNMENT—MUST BE ACKNOWLEDGED TO BE RECORDABLE—SECTION 10 OF TRADE-MARK ACT OF FEBRUARY 20, 1905, CONSTRUED.
In order that an assignment of a trade-mark may be recordable in this Office, section 10 of the Trade-Mark Act of February 20, 1905, clearly provides that the assignment must not only be by an instrument in writing, but that it must be acknowledged according to the laws of the country or State in which the same is executed. If the laws of the country or State do not require assignments of trade-marks to be acknowledged or are silent on this point, it is believed to be necessary in order to comply with the section mentioned that there be an acknowledgment such as the laws of the country or State provide for other instruments in writing or legal documents of similar character. [*In re* Hunter, 1253.

9. PRACTICE REGARDING EXPRESSION OF COLOR.
Where in an application for registration of a trade-mark colors are indicated in the drawing by conventional lining in accordance with the chart for draftsmen on page 87 of the Rules of Practice in the United States Patent Office, *Held* that if color forms a material feature of the mark the colors should be described in order to comply fully with section 1 of the act of May 4, 1906, while if color is not an essential feature a new drawing omitting the conventional lining used to express color should be filed. [*Ex parte* M. Zimmermann Company, 1991

10. REGISTRATION BY FOREIGNERS—MUST CORRESPOND WITH FOREIGN REGISTRATION.
The only mark which a foreign applicant is entitled to register in this country is the mark which he has registered in the country in which he is located. Such mark is presumably that set forth and shown in the foreign registration, and the Office must so assume until furnished with proofs to the contrary.
[*Ex parte* Pietro, 2394.

11. SAME—SAME—DRAWING.
Where a foreigner applies for registration in this country, his registration in the country in which he is located will be presumed to set forth and show his trade-mark, and in the absence of proof to the contrary the drawing of his application for registration in this country will be required to conform to such foreign registration. [Id.

12. GEOGRAPHICAL—"CONTINENTAL."
The word "Continental" as applied to dump, flat, logging, and ballast push and mine cars is primarily geographical and not registrable.
[*Ex parte* Continental Car and Equipment Company, 2816.

13. REGISTRABILITY DEPENDS UPON PREDOMINANCE OF ARBITRARY FEATURE.
The registrability of a trade-mark depends upon the predominance of the arbitrary features to give character to the mark. It cannot be based upon features incapable of exclusive appropriation merely because they are embellished by arbitrary features which are in themselves insignificant. [Id.

14. SAME—"CONTINENTAL" NOT MADE REGISTRABLE BY SURROUNDING SAME WITH DIAMOND-SHAPED FIGURE.
The geographical word "Continental" being the predominant feature of the mark by which the goods would become known, a diamond-shaped figure surrounding the same instead of being a further distinguishing feature of the mark serves merely as a frame to give prominence to the inclosed symbol of ownership. [Id.

15. INTERFERENCE—MOTION TO DISSOLVE—INTERFERENCE IN FACT.
The marks of the parties consist, respectively, of the words "Raven" and "Crow" accompanied in each case by a representation of a black bird perched on a branch of a tree. *Held* there is no interference between the words "Raven" and "Crow," and although there is a certain similarity in the representations of the birds, taking the marks as a whole, there is no such resemblance as would be likely to cause confusion or mistake in the mind of the public or deceive purchasers.
[The United States Graphite Company *v.* Bomhard, 3213.

16. NAME OF PATENTED ARTICLE—REGISTRABLE UNDER TEN-YEAR PROVISO OF SECTION 5 OF ACT OF 1905—"YALE" FOR LOCKS AND LATCHES.
Held that the word "Yale" is registrable as a trade-mark for locks and latches under the ten-year proviso of section 5 of the act of 1905, although it is the name of a patented article.
[*Ex parte* The Yale & Towne Manufacturing Company, 3641.

17. SAME—SAME—EXCLUSIVE USE.
The function of the name of a patented article is twofold: (1) It designates or identifies the thing patented, and (2) it indicates the original source of manufacture of the article. Where a word or name which has been applied to a patented article has in addition to its descriptive significance also become indicative of the origin of that article, a limited right remains in the original maker after the expiration of the patent to exclude others from such unqualified use of the word or name as would deceive a careful public into the belief that their articles are those of the original maker. This right to exclude, it is believed, satisfies the requirement of "exclusive use" stated in the ten-year proviso of the act of February 20, 1905. [Id.

TRANSMISSIONS OF MOTIONS.

(See Motion to Dissolve Interference, 1, 7.)

WITHDRAWAL OF ALLOWED CASES FROM ISSUE.

(See Abandonment of Applications, 4.)

STATUTORY PERIOD FOR ACTION NOT EXTENDED BY.
Rule 166 was intended to indicate to applicants that the withdrawal of an application from issue at their request would not operate to extend the period within which the statute requires that applications be prosecuted. [*Ex parte* Brooks, 847.

WITNESSES.

(See Evidence, 1, 2.)

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED DURING THE MONTH OF MARCH, 1907.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
A. F. Meisselbach & Brother. (See Meisselbach, August F., assignor.)						
A. I. Root Company. (See Calvert and Marbach, assignors.)						
A. W. Benson Manufacturing Company. (See Benson, Adolph W., assignor.)						
Abbé, Max F., New York, N. Y. Feeding device for ball-mills	845,902	Mar. 5	558	117	127	143
Abbott, Charles C., assignor to Triumph Voting Machine Company, Pittsfield, Mass. Grouping mechanism for voting-machines	847,037	Mar. 12	2643	583	127	700
Abbott, Edgar, Boston, Mass. Emergency shut-off for sprinkler-heads	845,918	Mar. 5	402	82	127	104
Abbott, George A., Melbourne, Victoria, Australia. Filter	847,537	Mar. 19	3639	802	127	979
Abbott, George O. (See Weatherhead and Abbott.)						
Abbott, Hale V. and N. W., Lawton, Mich. Harrow	848,525	Mar. 26	5616	1228	127	1501
Abbott, Nathan W. (See Abbott, Hale V. and N. W.)						
Abisaid, Ameen G., Washington, D. C. Smoking-pipe	848,424	Mar. 26	5436	1185	127	1458
Abt, Mathew, New York, N. Y. Electric signal control	846,276	Mar. 5	1104	239–40	127	281
Abzug, Alois, Breslau, Germany. Combined hinge and fastening for doors	847,145	Mar. 12	2841	627	127	748
Acme Automatic Street Indicating Company. (See Small, Thomas W., assignor.)						
Acton, John S., *et al.* (See Casper, James M., assignor.)						
Adams, Arthur H., London, England. Speed-changing and brake gear for motor-driven road-vehicles	846,376	Mar. 5	1300	286–7	127	328
Adams, Earl C., Belle Vernon, Pa. Washer for lathes	846,440	Mar. 12	1459	325	127	399
Adamson, George P., Easton, Pa., assignor to General Chemical Company, New York, N. Y. Receptacle for acids	846,541	Mar. 12	1658	368	127	452
Addicks, Diedrich C., Stroh, Ind. Post-mold	846,641	Mar. 12	1882	413	127	509
Adler, Samuel M., *et al.* (See Gooch, Phillip W., assignor.)						
Adreon, Robert E., St. Louis, Mo. Combined air-brake-setting device and alarm	845,736	Mar. 5	1	1	127	3
Adt, Leo F., Troy, N. Y. Nose-guard for eyeglasses	845,737	Mar. 5	4	1	127	3
Advance Furnace Company of America. (See Stevens, Le Roy W., assignor.)						
Agnell, Ernest G., Chanute, Kans. Tailor's measuring-wheel	847,996	Mar. 26	4649	1014	127	1261
Aiken, Edward L., East Orange, assignor to New Jersey Patent Company, West Orange, N. J. Phonograph	847,631	Mar. 19	3855	842	127	1034
Ainley, William T. (See Nichols, George H., assignor.)						
Aitken, Edwin J., Spokane, Wash. Horse-hitch	846,715	Mar. 12	1997	439	127	537
Ajax Metal Company. (See Clamer and Hopkins, assignors.)						
Akers, Charles W., Bluefield, W. Va. Valve-controlling mechanism	847,219	Mar. 12	2998	661	127	787
Akimoff, Nicholas W., Philadelphia, Pa. Multistage turbo-pump	846,971	Mar. 12	2523	556	127	671
Aktiebolaget Baltic-Separator. (See Risberg, Johannes V. M., assignor.)						
Aktiebolaget Separator. (See Ljungström, Birger, assignor.)						
Alberger Condenser Company. (See Alberger, Louis R., assignor.)						
Alberger, Louis R., Greenwich, Conn., assignor to Alberger Condenser Company, New York, N. Y. Vacuum-pump	845,738	Mar. 5	5	1	127	4
Albertson, Albert E., Evansville, Minn. Chimney-damper	846,542	Mar. 12	1659	369	127	453
Albertson, Martin C., Oakes, N. D. Band-cutter for threshing-machines	846,377	Mar. 5	1302	287	127	329
Albin, Jeremiah W., and D. C. Ricketts, Babylon, N. Y. Clasp	848,584	Mar. 26	5731	1253	127	1530
Albinson, James E., Washington, D. C. Hot-air heater	846,220	Mar. 26	5012	1096	127	1353
Alexander, Alpheus, and J. Frederickson, Jewell, Iowa. Building-block mold	847,220	Mar. 12	3000	661	127	788
Alexander, Alpheus, and J. Frederickson, Jewell, Iowa. Mold	847,221	Mar. 12	3001	662	127	788
Alexander, Julius, Stendal, Germany. Multitubular-boiler-cleaning device	848,082	Mar. 26	4784	1043	127	1295
Alexander, Thomas L. (See Melvin, Mark G., assignor.)						
Allan, John, New York, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	846,972	Mar. 12	2524	557	127	672
Allen, Isabell, Kansas City, Mo., and G. Hanlon, Shawneetown, Ill. Hair-drier	847,372	Mar. 19	4341	952	127	1151
Allen, Jean M. (See Ferris and Allen.)						
Allen, Orcenith F., Temple, Tex. Toboggan-slide	847,304	Mar. 19	3187	695	127	855
Allen, Samuel, *et al.* (See Draper, Stephen H., assignor.)						
Aller, Edward W., Napoleon, Ohio. Check-valve	847,148	Mar. 12	2843	628	127	748
Alles, John P. (See Bahr, Ewald E., assignor.)						
Allington, William E., Saginaw, Mich. Dust-collecting system	846,973	Mar. 12	2525	557	127	672
Allyn, William B., Ponoto, Ind. Wire-fence stay	848,585	Mar. 26	5732	1254	127	1531
Alson, Louis A., Watervalley, Miss. Display-rack	845,739	Mar. 5	8	1–2	127	5
Alston, James. (See Cannell, Charles, assignor.)						
Althen, William C., assignor of three-sixths to W. F. Miesse, W. N. Gearhart, and B. F. Hirt, Columbus, Ohio. Wire-retrieving attachment for trolley-wheels	846,378	Mar. 5	1304	287	127	329
Althin, Olof, Boston, Mass. Concealed hinge	847,717	Mar. 19	4020	879	127	1075
Ambos, Walter P., Cleveland, Ohio. Outlet-box and wall-plate	847,718	Mar. 19	4021	879	127	1075
Ambrose, Charles, and F. D. Schwartz, Chicago, Ill. Steam-condenser	846,379	Mar. 5	1305	287–8	127	329
Ambrose, Charles, and F. D. Schwartz, Chicago, Ill. Condenser	846,380	Mar. 5	1310	288–9	127	331

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Drf.	Vol.	Page.
American Brake Company. (See Stambaugh, Francis M., assignor.)						
American Can Company. (See Kannenberg, Baldwin H., assignor.)						
American Can Company. (See Rudolphi, Frank, assignor.)						
American Can Company. (See Rudolphi and Brhanninger, assignors.)						
American Can Company. (See Rudolphi and Nelson, assignors.)						
American Can Company. (See Weber, George W., assignor.)						
American Car & Foundry Company. (See Brown, Thomas R., assignor.)						
American Car & Foundry Company. (See Ostrander, Allen E., assignor.)						
American Car & Foundry Company. (See Voss, William, assignor.)						
American Cheese Cutter Company. (See Van Deventer and Swank, assignors.)						
American Chemical Manufacturing & Mining Company. (See Savage, Edward S., assignor.)						
American Cotton Separator Company. (See Patterson, Warren A., assignor.)						
American Diamond Blast Company. (See Wise, Franklyn M., assignor.)						
American Instrument Company. (See Benecke, Adelbert O., assignor.)						
American Linen Company. (See Schofield, Robert, assignor.)						
American Linting Company *et al.* (See Casebolt, Charles H., assignor.)						
American Multigraph Co. (See Gammeter, Harry C., assignor.) (Reissue.)						
American Multigraph Company. (See Gammeter, Harry C., assignor.)						
American Pulley Company. (See Brinley, Charles E., assignor.)						
American Serial Lock Company. (See Hart, Albert B., assignor.)						
American Sheet & Tin Plate Company. (See Smiley, Ura S., assignor.)						
American Specialty Company (See Stebbins and Bergstrom, assignors.)						
American Steam Pump Company. (See Metcalf, Foster M., assignor.)						
American Steel & Wire Company. (See Backlin, Axel F., assignor.)						
American Stove Company. (See Blackford, Atwell J., assignor.)						
American Thread Company. (See Cook, Richard H., assignor.)						
American Tobacco Company. (See Harris, Fred R., assignor.)						
American Wrapping and Box Machine Company. (See Giroud, Felipe, assignor.)						
Ames, Alonzo L. and B. S., Newberry, Pa. Propeller	847,222	Mar. 12	3003	662	127	799
Ames, Byron S. (See Ames, Alonzo L. and B. S.)						
Ammann, Frank X., Weehawken, N. J. Drawer-pull	846,441	Mar. 12	1469	325	127	398
Ammon, John, New York, N. Y. Piano-action	847,233	Mar. 13	3004	662	127	799
Amsler, Walter O., Pittsburg, Pa. Glass-melting furnace	847,632	Mar. 19	3858	842–3	127	1034
Anderson, Alfred S., Milwaukee, Wis. Resilient switch-stand connection	847,526	Mar. 19	3840	802	127	979
Anderson, Charley W., assignor of one-half to T. Thoreson. Portal, N. D. Grain-shocking machine	846,988	Mar. 12	2357	518–19	127	631
Anderson, Clarence A., assignor of one-half to J. Anderson, Salina, Kans. Telephone-exchange	846,381	Mar. 5	1313	289–90	127	332
Anderson, Clarence A., assignor of one-half to J. Anderson, Salina, Kans. Switching mechanism	846,382	Mar. 5	1316	290	127	332
Anderson, David B., St. Marys, Pa. Target-trap-controlling means	847,539	Mar. 19	3842	803	127	980
Anderson, Edward L., assignor to himself, H. Atchinson, St. Louis, Mo., J. H. Miller and C. G. Cloud, McLeansboro, Ill. Reducing metallic sulfids	846,642	Mar. 12	1983	413	127	509
Anderson, Edward N., assignor of one-fourth to P. S. Horton, Warren, Pa. Weather-strip	847,373	Mar. 19	4042	966	127	1151
Anderson, Henry W., *et al.* (See Topliff, Francis W., assignor.)						
Anderson, James C., Washington, D. C. Bottle	846,177	Mar. 5	926	196	127	235
Anderson, James C., Rutherford, N. J., assignor to Autocoil Company. Speed-governor	846,814	Mar. 12	2204	483	127	591
Anderson, John. (See Anderson, Clarence A., assignor.)						
Anderson, Laurits, Quincy, Ill. Carbureter for gasolene-engines	846,436	Mar. 26	5437	1135–6	127	1458
Anderson, Robert W. (See Pluard, Leon, assignor.)						
Anderson, Rufus, Southampton, Mass. Glass-cutter	847,633	Mar. 19	3859	843	127	1035
Andree, Frank W., Milwaukee, Wis. Fish-reel	847,574	Mar. 19	4044	953	127	1152
Andreé, William E., assignor to Nelson & Kreuter Company, Chicago, Ill. Ironing-machine	846,890	Mar. 12	2369	520–1	127	633
Andrew B. Hendryx Co. (See Hendryx, Andrew B., assignor.)						
Andriano, Albert K., assignor to Direct-Line General Telephone Company, San Francisco, Cal. Telephone system	846,899	Mar. 12	2363	519–20	127	632
Angier, George S., Schaller, Iowa. Attachment for threshing-machines	847,575	Mar. 19	4046	963	127	1152
Ansley, Sherman, assignor of one-half to W. Hankens, Portland, Oreg. Sewing-awl	847,534	Mar. 19	3980	843	127	1035
Appie, Vincent G., Dayton, Ohio. Spark-timing device for ignition systems	847,576	Mar. 19	4047	963–4	127	1152
Appleby, Henry, London, and A. A. Gardner, Hanwell, England. Kettle for boiling water	845,993	Mar. 5	589	117	127	143
Appleby, James F. (See Wadsworth and Appleby.)						
Arbol Manufacturing Company. (See Drittler, Frederick, assignor.)						
Arcouet, Edward A., Chicago, Ill. Sand-blast apparatus	845,919	Mar. 5	404	82	127	104
Arden, Harry B., New York, N. Y. Chaining device	846,283	Mar. 5	1318	290	127	333
Armour & Company. (See Smith, Carlton L., assignor.)						
Armstrong, Henry, Rochester, N. Y. Brick-machine	846,277	Mar. 5	1108	240–1	127	261
Armstrong, James T., and A. Orling, London, England. Electrocapillary detector and recording apparatus	846,088	Mar. 26	4788	1044	127	1226
Arney, John W., Menominee, Mich. Combination merry-go-round and teeter	847,997	Mar. 26	4683	1014	127	1202
Arnold, Charles H., New London, Ohio. Knuckle-joint	847,719	Mar. 19	4022	879	127	1075
Arterburn, W. N. (See Fay, Alpheus, assignor.)						
Arther, James B., Pittsburg, Pa. Tray	847,147	Mar. 12	2344	626	127	749
Artista Piano Player Company. (See Warren, Charles, assignor.)						
Asbestos Wood Company. (See Norton, Charles L., assignor.)						
Ascue, Elbert, Blum, assignor of one-third to R. H. Crank, Cleburne, Tex. Sewing device	847,462	Mar. 19	3977	781	127	935
Ashcan, Paul, Berlin, Germany. Machine for assembling leaves	846,716	Mar. 12	1998	449	127	537
Ashley, Burton J., Chicago, Ill. Apparatus for sewage disposal	846,379	Mar. 26	5141	1121–2	127	1337
Ashley, Frank M., *et al.* (See Cadwell, Edwin B., assignor.)						
Ashley, Frank M., assignor of one-half to A. T. Scharps, New York, N. Y. Pencil-holder	846,442	Mar. 12	1469	325	127	399
Aschlick, Willand, Tegel, near Berlin, Germany. Press for forming tubes, &c	847,625	Mar. 19	3861	844	127	1035
Atchison, Fred R. (See Choate, Charles N., assignor.)						
Atchison, Harvey, *et al.* (See Anderson, Edward L., assignor.)						
Athanasiadis, Estrato J., New York, N. Y. Bar-soap cutter	846,974	Mar. 12	2367	557	127	672
Atkinson, Claude W., Beckenham, England. Electric meter	847,540	Mar. 19	3844	808	127	961
Atkinson, Helen, Boston, Mass. Hook and eye	847,371	Mar. 12	2367	662	127	811
Aten, Eva, Independence, Kans. Vehicle-brace	847,294	Mar. 12	2336	665	127	789
Atwood, George F., East Orange, N. J., assignor to Western Electric Company, Chicago, Ill. Telephone set	847,205	Mar. 19	3160	696–6	127	866
Aultman & Taylor Mach. Company. (See Herrold, Amos, assignor.)						
Austen, Peter T., and F. J. Maywald, New York, N. Y. Paint-remover and making the same	845,980	Mar. 5	746		127	190
Austin, John T., assignor to Austin Organ Company, Hartford, Conn. Organ-action	847,698	Mar. 26	3982	844	127	1036
Austin, Louis W., Washington, D. C., assignor to National Electric Signaling Company, Pittsburg, Pa. Receiver	846,081	Mar. 5	749	148	127	191
Austin Organ Company. (See Austin, John T., assignor.)						
Auto-Manuel Piano Action Company. (See Wuest, Philip, Jr., assignor.)						
Autocoil Company. (See Anderson, James C., assignor.)						
Autocoil Company. (See Varley, Richard, assignor.)						
Autocoil Company. (See Varley and Scott, assignors.)						
Automatic Adding Machine Company. (See Gancher and Zabriskie, assignors.)						
Automatic Fire Alarm Company. (See Reeve, Henry E., assignor.)						
Automatic Fire Protection Company. (See McElroy, Shepherd, and Nolen, assignors.)						
Avery, Morris H., Woonsocket, R. I. Clutch	846,178	Mar. 5	929	196	127	235
Avett, Pinknie E. (See Ellis and Avett.)						
Ayers, Alva, Payson, Okla. Ter. Floor-set	847,272	Mar. 12	3008	663	127	812
Ayers, Elwood S., assignor to Philadelphia Textile Machinery Company, Philadelphia, Pa. Drying-machine	847,038	Mar. 12	2645	583	127	701
Ayers, Gerald P., Chicago, Ill. Ice-remover	847,453	Mar. 19	3479	761–2	127	936
Ayers, Jacob F., Kalkaska, Mich. Shaft-bearing	847,541	Mar. 19	3646	803	127	962
B. A. Ballou and Company. (See Morehouse, Eugene W., assignor.)						
B. F. Sturtevant Company. (See Freeman, Ernest B., assignor.)						
Bachelet, Emile, New York, N. Y. Electric-current interrupting and varying apparatus	847,877	Mar. 19	4351	954	127	1153
Backlin, Axel F., assignor to American Steel & Wire Company, Worcester, Mass. Wire-fence machine	846,836	Mar. 26	5617	1226–9	127	1502
Backus, Henry N., Detroit, Mich. Delivery-crate	846,236	Mar. 26	5268	1148	127	1417
Bacon, Isaac H., and N. Nelson, Salem, N. J., assignors to Salem Glass Works. Burner-block as applicable to furnaces	846,426	Mar. 26	5441	1186	127	1459
Bacon, Nathaniel T., Peace Dale, R. I. Drying air for blast-furnaces	847,273	Mar. 12	3009	663	127	812
Badeau, Isaac F. (See Badeau, Louis C. and I. F.)						
Badeau, Louis C. and I. F., Mahopac, N. Y. Music type-writer	846,443	Mar. 12	1463	325–6	127	399
Bager, Svante R. W. (See Ferris and Bager.)						
Baggaley, Ralph, Pittsburg, Pa. Apparatus for removing impurities from furnace-gases	846,815	Mar. 12	2205	484	127	592
Baggaley, Ralph, Pittsburg, Pa. Apparatus for sinking shafts	846,816	Mar. 12	2208	484–5	127	592
Baggaley, Ralph, Pittsburg, Pa. Generating steam from waste heat of slag	846,817	Mar. 12	2212		127	593
Baggaley, Ralph, Pittsburg, Pa. Recovering values from fine-dust	846,818	Mar. 12	2214	485	127	593
Baggaley, Ralph, Pittsburg, Pa. Copper-refining furnace	846,891	Mar. 12	2373	531–2	127	634
Bagley, John, Tacoma, Wash. Grader	846,278	Mar. 5	1111	241	127	262
Bahr, Ewald E., Blair Station, assignor of one-fourth to J. P. Alles, McKeesport, Pa. Metallic tie, rail-fastener, and rail-joint combined	847,148	Mar. 12	2345	626	127	749
Bailey, Charles L., Morris, Ind. Ter. Hasp-fastener	846,527	Mar. 26	5519	1230	127	1502
Bailey, Cyrus, Chicago, Ill. Mortising-tool	846,237	Mar. 26	5267	1148	127	1417
Bailey, Herbert L., assignor to Handy Things Company, Ludington, Mich. Vegetable-cutter	847,206	Mar. 19	3162	696	127	857
Bailey, James W., Ottawa, assignor, by mesne assignments, of one-half to R. A. Leach, Chicago, Ill. Musical instrument	847,307	Mar. 19	3164	696	127	857
Bailey, John W., New York, N. Y., assignor, by mesne assignments, to United Lead Company. Lead product	846,384	Mar. 5	1319	291	127	333
Bailey, John W., Jersey City, N. J., assignor, by mesne assignments, to United Lead Company. Making metallic oxide	846,444	Mar. 12	1466	326–7	127	400
Baird, James J., Los Angeles, Cal. Fabric-tufting machine	846,717	Mar. 12	2000	440	127	538
Baker, Alonzo, Granbury, Tex. Nut-lock	847,998	Mar. 26	4653	1014	127	1202
Baker, Charles A., Weehawken, N. J., assignor to New York Couch Bed Company, Rome, N. Y. Folding mattress	846,445	Mar. 12	1470	327	127	401
Baker, George, *et al.* (See Halliwan, William, assignor.)						
Baker, Henry R., Attleboro, Mass. assignor to R. F. Simmons Company. Catch	846,179	Mar. 5	932	197	127	236
Baker, Malcolm H., and F. S. Friebie, assignors to Multiplex Safety Razor Company, Boston, Mass. Multiple-edge safety-razor	847,308	Mar. 19	3165	696	127	857
Baldwin, Arthur J., East Orange, N. J. Apparatus for making wire-glass	846,771	Mar. 12	2116	464–5	127	569
Baldwin, Arthur J., East Orange, N. J. Making wire-glass	847,637	Mar. 19	3865	844	127	1036
Baldwin, Arthur J., East Orange, N. J. Machine for making wire-glass	847,878	Mar. 19	4358	955	127	1154
Baldwin, Clarence K., and L. Moss, New York, N. Y. Tripper or deliverer for conveyers	847,309	Mar. 19	3167	697	127	857
Baldwin, Newton, Coldwater, Mich. Molding-machine	847,454	Mar. 19	3481	762	127	936
Balke, Charles H. (See Teetor, John M., assignor.)						
Ball, Herman F., New York, N. Y. Operating mechanism for dumping-cars	845,920	Mar. 5	406	82–3	127	105
Ball, William R. A., St. Thomas, N. D. Chimney-cowl	846,446	Mar. 12	1471	327	127	401
Ballard, Arthur F., Sequndo, Colo. Expanding piston-packing	847,455	Mar. 19	3482	762	127	937
Ballard, Charles M., *et al.* (See Reese, John E., assignor.)						
Ballard, Milton H., Lynn, Mass., assignor to Tripp Fruit Wrapping Machine Co., San Francisco, Cal. Paper-feeding device for wrapping-machines	847,398	Mar. 19	3357	735	127	906
Ballard, Milton H., assignor to Tripp Fruit Wrapping Machine Company, Lynn, Mass. Feeding device for paper	847,977	Mar. 19	4570	1004	127	1203
Bannon, Henry, Elwood, Ind. Molding-machine	846,279	Mar. 5	1112	242	127	262
Barber, George T., assignor to F. Dittmar, Philadelphia, Pa. Hinge for surgical and other instruments	847,542	Mar. 19	3648	803	127	962
Barber, H. B. (See Lake, Golladay, assignor.)						
Barber, John C., Chicago, Ill. Antifriction lateral-motion center-bearing	846,892	Mar. 12	2375	522	127	634
Barber, John C., Chicago, Ill. Antifriction center-bearing	846,893	Mar. 12	2377	522	127	635
Barber, John C., Chicago, Ill. Antifriction center-bearing	846,894	Mar. 12	2378	523	127	635
Barber, William J., assignor of one-half to C. E. Boult, Honeoye Falls, N. Y. Powder-distributer	846,718	Mar. 12	2001	440	127	538
Barbo, Michael, Butte, Mont. Angle-measuring tool	847,720	Mar. 19	4024	879	127	1075
Barclay, David. (See Schmitz, Gerhard, assignor.)						
Barclay, John C., New York, N. Y. Telegraphy	846,221	Mar. 26	5013	1096	127	1324
Barker, Amos M., Franklin, Nebr. Cultivator	847,879	Mar. 19	4359	955	127	1155
Barker, Joseph C., Oblong, Ill. Animal-trap	845,921	Mar. 5	409	83	127	105
Barker, Lewis W., and J. Jackson, Clinton, Iowa. Chair	847,880	Mar. 19	4361	956	127	1155
Barlow, Cassius U., Oakland, Cal. Cooler	846,528	Mar. 26	5520	1230	127	1503
Barlow, John B., Grand Rapids, Mich. Loose-leaf binder	847,039	Mar. 12	2646	583	127	701
Barlow, John H., New Haven, Conn. Bullet	847,149	Mar. 12	2347	628	127	749
Barnard, Henry E., East Orange, N. J. Cooking utensil	847,225	Mar. 12	3006	663	127	789
Barnard, William L., St. Louis, Mo. Pneumatic wheel	845,942	Mar. 5	211	43	127	55
Barnes, Emmet D., Traverse City, Mich. Radiator vent attachment	847,468	Mar. 19	3483	762	127	937
Barnes, James H., Baltimore, Md. Non-refillable bottle	846,529	Mar. 26	5521	1230	127	1503
Barnes, John S., Detroit, Mich. Fence-machine	847,721	Mar. 19	4024	880	127	1075
Barnes, Joshua B., Springfield, Ill. Brake-beam	846,519	Mar. 12	2216	486	127	594
Barnes, Joshua B., Springfield, Ill., assignor to Davis Locomotive Wheel Company, St. Louis, Mo. Locomotive buffer-beam	846,427	Mar. 26	5443	1186	127	1459
Barnes, Louis, Cleveland, Ohio. Non-refillable vessel	846,180	Mar. 5	933	197	127	237
Barnes Manufacturing Company. (See Flosser, Anthony A., assignor.)						
Barnes, William M., Philadelphia, Pa. Apparatus for the extraction of liquids from solid materials	846,447	Mar. 12	1472	327–8	127	402
Barnett, Eugene, Atlanta, Ga. Trimble	846,530	Mar. 26	5522	1230	127	1503
Barnum, Carl G., assignor to Triumph Voting Machine Company, Pittsfield, Mass. Counting mechanism for voting-machines	847,040	Mar. 12	2648	584	127	701

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Baron, Charles S. (See Haffey, James F., assignor.)						
Baron, Charles S., and J. F. Haffey, Tiffin, Ohio; said Haffey assignor to said Baron. Protective covering for glass or other fragile receptacles	846,719	Mar. 12	2003	441	127	630
Baron, Jules. (See Cory, Randolph P., assignor.)						
Barrenpohl, Charles J., New York, N. Y. Compound for cleaning and polishing metals, porcelain, glass, &c.	847,150	Mar. 12	2949	.....	127	780
Barrenpohl, Charles J., New York, N. Y. Compound for cleaning and polishing wood surfaces	847,226	Mar. 12	3006	.....	127	790
Barrett, Michael F. (See Smith, William H., assignor.)						
Barry, Edwin A., Sutherland, Iowa. Draft-equalizer	846,260	Mar. 5	1115	242	127	283
Bartenstein, John J., assignor of two-thirds to F. A. Heiser and C. B. Kelley, Cleveland, Ohio. Power-transmission device	847,457	Mar. 19	3485	763	127	927
Bartlett, Frank V., *et al.* (See Gray, Almon J., assignor.)						
Bassell, John Y., and F. C. Blenkner, Columbus, Ohio. Gun-sight	846,385	Mar. 5	1322	291	127	333
Batault, Emile, Geneva, Switzerland. Thermally-operated apparatus	847,543	Mar. 19	3649	804	127	982
Batterton, John. (See Miller, Ellis W., assignor.)						
Bauer, Ludwig, Niederlossnitz, Germany. Medicinal extract	846,896	Mar. 12	2380	.....	127	635
Baughn, Samuel C., Bertrand, assignor of one-half to H. L. Finley, Charleston, Mo. Quilting-frame	847,909	Mar. 26	4655	1014	127	1263
Baumgarn, Hans H., Davenport, Iowa. Coating metal	847,581	Mar. 19	4363	.....	127	1156
Baur, John C., St. Louis, Mo. Pencil	848,531	Mar. 26	4623	1231	127	1808
Bausher, Thomas D., Reading, Pa. Fire-kindler	848,180	Mar. 26	4602	.....	127	1221
Bavier, Charles S., New York, N. Y. Lubricating device	847,544	Mar. 19	3653	804	127	984
Bawden, Herbert, and W. Hoskin, Central City, Colo., assignors of one-third to H. C. Eastman. Safety mechanism for elevators	846,386	Mar. 5	1324	291-2	127	334
Bawden, Herbert, and W. Hoskin, Central City, Colo., assignors of one-third to H. C. Eastman. Safety mechanism for elevators	846,436	Mar. 5	1446	321-2	127	365
Baylis, Robert N., Englewood, N. J. Commutator-brush for dynamo-electric machines	845,740	Mar. 5	9	2	127	5
Bayne, Eugene D. C., and L. A. Subers, Cleveland, Ohio. Automobile-tire-winding machine	847,041	Mar. 12	2653	584-5	127	703
Bayne, W. M. (See Leineweber, Herman, assignor.)						
Beach, Elmer R., assignor of two-thirds to G. Perrine and J. Nelson, Traverse City, Mich. Shaft-collar	847,882	Mar. 19	4364	956	127	1156
Beadle, Frank E., London, England. Tractor	846,772	Mar. 12	2117	465-6	127	569
Beard, John B. (See Gray, William E., assignor.)						
Beaudry, Zotique, Lynn, Mass. Tool for trimming the edges of soles and heels for boots and shoes	848,000	Mar. 26	4656	1015	127	1263
Beaver, John M., Fort Worth, Tex. Saw-filing machine	845,843	Mar. 5	212	44-5	127	56
Beck, Carrie L., executrix. (See Beck, Warren F.) (Reissue.)						
Beck, Edward, New York, N. Y. Veneer-cutter	847,151	Mar. 12	2950	629	127	750
Beck, Edward E., Chicago, Ill., assignor to Nye Tool and Machine Works. Mechanism for finishing screw-threading dies	845,741	Mar. 5	10	2	127	5
Beck, John C., and J. A. Bowyer, Chicago, Ill. Air-pump	847,304	Mar. 19	3360	736	127	905
Beck, Warren F., deceased; C. L. Beck, Elmira, N. Y., executrix. Manifolding-pad and holder. (Reissue)	12,624	Mar. 26	4618	1267	127	1551
Becker, Anton, Columbus, assignor, by mesne assignments, to Ralston Steel Car Company, East Columbus, Ohio. Dumping mechanism for metallic cars. (Reissue)	12,623	Mar. 26	4612	1267	127	1550
Becker, Nicolaus, Frankfort-on-the-Main, Germany. Turbine	846,906	Mar. 12	2381	523	127	636
Beckwith, Frank A., Evanston, Wyo., assignor of one-half to T. W. Jones, Salt Lake City, Utah. Safety device for firearms	845,994	Mar. 5	560	117	127	144
Beckwith, Frank A., Evanston, Wyo., assignor of one-half to R. Dumbeck, Salt Lake City, Utah. Automatic temperature-regulator	848,280	Mar. 26	4146	1123-8	127	1398
Bedell, Richard M., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	848,338	Mar. 26	4208	1146	127	1417
Beebe, Charles C., Arlington, Mass. Material of fabric and rubber	846,387	Mar. 5	1327	292	127	335
Beebe, Elmer. (See Melvin, Charles T., assignor.)						
Beebe, Robert H., Kalama, Wash. Swivel	847,152	Mar. 12	2951	629	127	751
Beecher, Walter N., Chicago, Ill. Interchangeable vehicle-body	845,844	Mar. 5	219	45	127	57
Begole, Joshua F., assignor to Wagner Electric Manufacturing Company, St. Louis, Mo. Frequency and volt indicator	845,922	Mar. 5	411	84	127	106
Behan, Howard A., assignor of one-third to J. A. Gregaire, Renfrew, Okla. Ter. Tobacco and match box	847,456	Mar. 19	3487	763	127	978
Behringer, Peter J., Cleveland, Ohio. Plate-glass-cutter's table	847,459	Mar. 19	3489	764	127	980
Belanger, John D., Chicago, Ill. Oil-cake trimmer	848,428	Mar. 26	4643	1135-7	127	1469
Belding, George L. (See Franklin and Belding.)						
Belknap, Edward L. (See Foote and Johnston, assignors.)						
Belknap, Edwin C., and E. H. Jackson, Chicago, Ill. Combination door latch and bolt	847,883	Mar. 19	4365	956	127	1156
Belknap, Edwin C., and E. H. Jackson, Chicago, Ill. Locking latch and bolt mechanism	847,884	Mar. 19	4366	957	127	1158
Belknap, Ellsworth, Polo, assignor to W. C. Ross, Chicago, Ill. Roller-bearing	847,374	Mar. 12	3100	683	127	812
Bell, S. Frank, *et al.* (See Mallard, Logan L., assignor.)						
Bell, Edwin H., assignor to Railroad Supply Company, Chicago, Ill. Tie-plate	846,261	Mar. 5	1116	240	127	283
Bellmann, Charles, assignor to himself and A. Glenn, Milwaukee, Wis. Roof-pad	846,062	Mar. 5	780	166	127	191
Bellmann, Charles, assignor to himself and A. Glenn, Milwaukee, Wis. Horseshoe	846,063	Mar. 5	781	166	127	192
Bellows, Arthur B., Pittsburg, Pa. Truck-bolster	847,295	Mar. 19	4376	957-8	127	1159
Bender, Edward A., Philadelphia, Pa., assignor to E. A. Bender & Company. Liquid-soap cup	847,722	Mar. 19	4080	881	127	1077
Bender, John, *et al.* (See Leichter, Edward, assignor.)						
Benecke, Adelbert O., Newark, N. J., assignor to American Instrument Company. Electrical measuring instrument	845,995	Mar. 5	562	118	127	144
Benecke, Adelbert O., Newark, N. J., assignor to American Instrument Company. Shunt for electrical measuring instruments	845,996	Mar. 5	565	118	127	144
Benecke, Adelbert O., assignor to American Instrument Company, Newark, N. J. Electrical resistance	845,997	Mar. 5	566	119	127	145
Benecke, Adelbert O., assignor to American Instrument Company, Newark, N. J. Electrical measuring instrument	846,094	Mar. 5	782	167	127	192
Benjamin, Reuben B., Chicago, Ill. Gas-Engine	846,897	Mar. 12	2382	522-4	127	636
Bennett, Albert D., Cleveland, Ohio. Puzzle	845,845	Mar. 5	222	45	127	58
Bennett, Albert D., Cleveland, Ohio. Toy	845,846	Mar. 5	223	46	127	58
Benson, Adolph W., assignor to A. W. Benson Manufacturing Company, Minneapolis, Minn. Lumber-cart	848,239	Mar. 26	4200	1149	127	1418
Benson, Alvarado T. (See Phillips, Elwood C., assignor.)						
Benson, John H. (See Hadley, William S., assignor.)						
Benson, Samuel, Chicago, Ill. Means for separating and eliminating smoke-suspended matter	845,448	Mar. 12	1476	338	127	406
Benson, Samuel, Chicago, Ill. Means for separating and eliminating smoke-suspended matter	847,695	Mar. 19	4377	958	127	1160
Bentley, John W., Erlanger, Ky. Vehicle running-gear	848,321	Mar. 26	4189	1138	127	1399
Benton, Francis E., Stoughton, Mass. Ringed last	846,720	Mar. 12	2004	441	127	539

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bents, Harry, Larchmont, N. Y. Moistening air	848,340	Mar. 26	4271	1140	127	1418
Bents, Harry, Larchmont, N. Y. Apparatus for moistening air	848,341	Mar. 26	4273	1140-50	127	1418
Bents, William T., and M. F. Capron, Elyria, Ohio. Type-cleaning device	846,151	Mar. 26	4202	1068	127	1329
Berardini, Michael, New York, N. Y. Check, draft, and similar instrument	845,923	Mar. 5	413	84	127	107
Berg, Albert, assignor of one-half to A. D. Miller, Mount Pleasant, Pa. Car-coupling	846,898	Mar. 12	2385	524	127	636
Berg, Emil. (See Berg, Estella, assignor.)						
Berg, Ernst J., Schenectady, N. Y., assignor to General Electric Company. Alternating-current motor	847,153	Mar. 12	2952	629	127	751
Berg, Estella, assignor of one-half to E. Berg, Cleveland, Ohio. Educational game	848,282	Mar. 26	5154	1123	127	1389
Berger, Joseph, South Columbus, assignor to C. M. Henley, Columbus, Ohio. Metallic railway-tie	847,154	Mar. 12	2954	629	127	752
Berger, Louis, New York, N. Y. Umbrella-rod	845,743	Mar. 5	13	3	127	6
Berger Manufacturing Company. (See Schlafly, Julius H., assignor.)						
Bergmann, Bernard, Detroit, Mich. Flush-valve	847,723	Mar. 19	4031	881	127	1077
Bergmann, Bertha, Goliad, Tex. Cotton-boll-weevil destroyer	847,867	Mar. 19	4381	958-9	127	1160
Bergstrom, Hilmer. (See Stebbins and Bergstrom.)						
Berk, Joseph, San Francisco, Cal. Hose-coupling	847,042	Mar. 12	2657	585	127	704
Berlien, John, St. Louis, Mo. Rail-brace	846,181	Mar. 5	934	197	127	237
Bernard, Harry, Fort Sheridan, assignor of one-half to T. W. Thorne, Chicago, Ill. Piccolo or other musical instrument	845,998	Mar. 5	568	119-20	127	146
Bernard, Philip, Jefferson, S. D. Chicken-waterer	846,388	Mar. 5	1328	292	127	335
Berninghaus, Eugene, Cincinnati, Ohio. Head-rest for barber and other chairs	848,001	Mar. 26	4658	1015	127	1264
Bernstein, Lewis, Grafton, W. Va. Shirt	845,999	Mar. 5	571	120	127	146
Berold, Frederick H., Jr., Cincinnati, Ohio. Paper receptacle	846,899	Mar. 12	2388	524	127	637
Berry, Mark H., New York, N. Y. Combination check-book	848,429	Mar. 26	4647	1137	127	1461
Berry, Milton H., Evanston, assignor to Berry Ventilator Company, Chicago, Ill. Window-ventilator	845,721	Mar. 12	2005	441-2	127	539
Berry, Milton H., Evanston, assignor to Berry Ventilator Company, Chicago, Ill. Window-ventilator	845,722	Mar. 12	2008	442	127	540
Berry Ventilator Company. (See Berry, Milton H., assignor.)						
Bertin, Isaac, New York, N. Y. Paper dish	846,975	Mar. 12	2528	557	127	673
Beskow, Bernhard. (See Goodspeed and Beskow.)						
Besson, Jules A., Caen, France. Purifying and concentrating sugar-juices	846,543	Mar. 12	1660	.....	127	452
Bestul, Severin O., Iola, Wis. Thermo-electric annunciator	847,310	Mar. 19	3171	697	127	859
Bethlehem Steel Company. (See Philp, Casimir von, assignor.)						
Beum, Stephen D., Columbus, Ohio. Farm-gate	848,222	Mar. 26	5016	1096	127	1354
Bifler, Fred. (See Reimers, Dycke H., assignor.)						
Bigenho, Christopher, Verona, Pa. Rail splice	847,227	Mar. 12	3008	663	127	790
Biggert, Florence C., Jr. (See Gardner and Biggert.)						
Bigley, John, *et al.* (See Bowler, Giles, assignor.)						
Bim, Josef, assignor to Union Bank, Vienna, Austria-Hungary. Shuttle-box for looms	848,002	Mar. 26	4661	1015	127	1264
Bindner, Alfred C., assignor, by mesne assignments, of one-half to W. L. Schafer, St. Louis, Mo. Safety key-ring snap	845,743	Mar. 5	14	3	127	6
Binkey, J. A. (See Wright, Charles, assignor.)						
Biondi, Angelo F., New York, N. Y. Illusion device	847,724	Mar. 19	4032	881-2	127	1077
Biondi, Angelo F., New York, N. Y. Illusion apparatus	847,725	Mar. 19	4034	882	127	1078
Birdsall, Charles A., Holden, Mo. Nail	847,898	Mar. 19	4383	959	127	1161
Birmingham, Willburn B., Raleigh, N. C., assignor to Draper Company, Hopedale, Mass. Filling-replenishing mechanism for looms	846,773	Mar. 12	2119	466	127	570
Birsfield, Jules A., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y. Switching device	848,283	Mar. 26	5155	1124	127	1389
Bishop, George, Oxbow, Saskatchewan, Canada. Gang-plow	846,643	Mar. 12	1885	414	127	510
Bitzer, John. (See Schreiber, Carl, assignor.)						
Bixby, John L., Jr., River Forest, Ill. Belting	847,228	Mar. 12	3009	664	127	790
Bjur, William L., New York, N. Y. Piano string-plate	847,899	Mar. 19	4384	959	127	1161
Black, Henry B., *et al.* (See Monroe, Charles H., assignor.)						
Blackburn, Arthur H., Matteawan, N. Y. Automatic lathe for working pipes or bars	846,000	Mar. 5	574	120-1	127	147
Blackburn, George R. (See Cox, Warren R., assignor.)						
Blackburn, George W., Sarasota, Fla. Fishing-reel	847,900	Mar. 19	4386	959	127	1161
Blackburn, Jasper, Chillicothe, Mo. Extension-handle for augers	846,389	Mar. 5	1329	293	127	335
Blackford, Atwell J., Cleveland, Ohio, assignor to American Stove Company, St. Louis, Mo. Oil-burner	848,586	Mar. 26	5733	1254	127	1531
Blackford, Wilton F., *et al.* (See Reese, John E., assignor.)						
Blaisdell, Hiram W., Los Angeles, Cal. Machine for cleansing filter-beds	845,744	Mar. 5	15	3-4	127	7
Blaisdell, Hiram W., Los Angeles, Cal. Transfer mechanism	845,745	Mar. 5	20	4-5	127	8
Blaisdell, Hiram W., Los Angeles, Cal. Machine for cleaning covered filters	845,746	Mar. 5	25	6-7	127	9
Blakeslee, John R., Jr., Cleveland, Ohio. Metal-working apparatus	848,264	Mar. 26	5100	1124	127	1391
Blank, John H., Chicago, Ill. Hen's nest	848,430	Mar. 26	5449	1137	127	1461
Blauvelt, William E., New York, assignor of one-half to E. West, Brooklyn, N. Y. Bookbinding-machine	847,891	Mar. 19	4388	960-5	127	1161
Blaxter, George H., Beaver, assignor to Pittsburgh Seamless Tube Company, Beaver Falls, Pa. Blank-support for tube-mills	848,285	Mar. 26	5162	1124	127	1391
Blee, William C., Santa Ana, Cal. Wrench	845,924	Mar. 5	415	84	127	107
Bleits, Louis. (See Bleits, Rollen, assignor.)						
Bleits, Rollen, assignor of one-half to L. Bleits, Sandwich, Ill. Speed-changing mechanism	847,460	Mar. 19	3492	764	127	940
Blenkner, Fred C. (See Bassel and Blenkner.)						
Blessing, Frank C., *et al.* (See McCann, Lee, assignor.)						
Blessing, Louis, Jackson, Mich. Sectional cement railway-tie	845,925	Mar. 5	416	85	127	108
Blessing, Louis, Jackson, Mich. Metal truss telegraph-pole	846,001	Mar. 5	576	121	127	147
Blood, Charles W. H., assignor to S. A. Woods Machine Company, Boston, Mass. Radial setting-gage for cutter-head knives	846,723	Mar. 12	2010	442	127	541
Bloom, William O., Worcester, Mass. Tooth-brush	846,900	Mar. 12	2389	525	127	637
Blout, Charles E. (See Barber, William J., assignor.)						
Blumberg, Moses, St. Louis, Mo. Display-box	848,431	Mar. 26	5450	1138	127	1461
Bock, William J., Loomis, Cal. Mail-bag catcher	846,390	Mar. 5	1330	293	127	335
Bodenstein, Albert, assignor to T. A. Stoll, Trenton, N. J. Spring-seat	846,086	Mar. 5	756	157	127	189
Boehm, Valere, West Bridgewater, Pa. Washer	847,155	Mar. 12	2955	630	127	752
Boesche, Edward F., assignor of three-eighths to W. A. Borgschulze and one-fourth to E. Seider, Evansville, Ind. Covered box-crate	847,978	Mar. 19	4573	1004	127	1304
Bohannon, Charley R. (See Carr and Bohannon.)						
Böhm, Ernest, London, England. Light-transmitting and light-diffusing object	847,226	Mar. 19	3361	736	127	906
Böhm, Ernest, London, England. Producing light-transmitting objects	847,396	Mar. 19	3362	736	127	906
Bolens, Harry W., Port Washington, Wis. Chair-iron	847,979	Mar. 19	4574	1005	127	1304
Bommer, Joseph. (See Liemann and Bommer.)						
Bonar, James L., Moundsville, W. Va. Paper-hanger's support	846,976	Mar. 12	2530	558	127	673
Bond, Alexander R. (See Walker and Bond.)						
Bond, Eaton D., Mercer, Tenn. Horse hay-rake	848,532	Mar. 26	5624	1231	127	1504
Bonnenberger, George, assignor to Handy Scaffold Co., Evansville, Ind. Scaffold	847,275	Mar. 12	3108	685	127	812
Bonham, Walter R., Chicago, Ill., assignor of two-fifths to A. J. Schram, Lake Geneva, Wis. Calculating-machine	845,747	Mar. 5	20	7	127	11

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf.	Official Gazette. Vol.	Official Gazette. Page.
Bonsen, Alfred, New York, N. Y. Steam-turbine	846,623	Mar. 26	5451	1188	127	1462
Boocock, Edward H., West Vale, near Halifax, and J. Sutcliffe, Cow Green, Halifax, England. Bobbin breach or creel-pin	847,026	Mar. 19	3998	845	127	1037
Booth, Alba C., Burlington, Vt. Bottle-cap puller	847,002	Mar. 19	4397	993	127	1162
Booth, Benjamin F., Indianola, Iowa. Stock-watering trough	847,026	Mar. 19	4396	995	127	1162
Booth, Clarence H., Detroit, Mich. Bath-tub-leg fastening	846,977	Mar. 12	2531	538	127	673
Booth, Irving E., *et al.* (See Flynt, Louis W. G., assignor.)						
Booth, Quentin W., *et al.* (See Flynt, Louis W. G., assignor.)						
Booth, Thomas C., New York, N. Y. Closure for bottles and the like	846,153	Mar. 26	4994	1088	127	1322
Borgschulze, William A., *et al.* (See Boesche, Edward F., assignor.)						
Bornhoeft, Edward, New York, N. Y. Piano pedal-action	847,039	Mar. 19	3998	845	127	1037
Boesche, John W., assignor of one-half to I. F. Cragin, Buffalo, N. Y. Fastening device	845,748	Mar. 5	34	7	127	11
Boss, Martin P., San Francisco, Cal. Stamp-mill stamp-head	847,397	Mar. 19	3363	736	127	906
Bossert, William F., Utica, N. Y. Insulated rail-joint	846,901	Mar. 12	2360	525	127	657
Bossing, Louis. (See Perry, Bossing, and Farmer.)						
Bossuet, Emile M., Paris, France. Mixed whalebone for bodices	846,625	Mar. 26	5454	1188	127	1462
Boston, George, Chicago, Ill. Tobacco-pipe	845,847	Mar. 5	223	46	127	58
Bostrom, Axel G. (See Holmes and Bostrom.)						
Bostrom, John M. (See Holmes and Bostrom.)						
Bostwick, Edwin G., Kalamazoo, Mich. Piston-rod packing	846,532	Mar. 26	4627	1022	127	1504
Bostwick, Walter E., Algonac, Mich. Jar-closure	847,040	Mar. 19	3998	845	127	1037
Boswell, Elias W., Darlington, S. C. Vehicle-pole tip	846,902	Mar. 12	2362	526	127	638
Bothwell, Henry B. (See Newman and Bothwell.)						
Bothwell, Jay W., Denver, Colo. Making and applying decorative paint colors to articles and materials	846,774	Mar. 12	2121	.....	127	570
Bottle, Edward K., New York, assignor to Carter-Crume Company, Limited, Niagara Falls, N. Y. Triplicate manifolding sales-book	846,002	Mar. 5	577	121	127	148
Bouchard, Jean B., North Grosvenor Dale, Conn. Pallet-setting implement	846,084	Mar. 26	4788	1044	127	1296
Boudreaux, Leandre, Thibodaux, La. Nut-lock	847,041	Mar. 19	3999	845	127	1038
Boughton, Judson H., New York, N. Y. Variable-speed transmission mechanism	846,182	Mar. 5	935	198	127	237
Bouvier, George E. and J. N. Proulx, Woonsocket, R. I. Gearing	846,086	Mar. 5	757	157	127	193
Bovaird & Company. (See Crawford, William, assignor.)						
Bowen, Clarence M., Bowens, Md. Cultivator	847,396	Mar. 19	3363	737	127	906
Bowen, Edward A. (See Ellis and Bowen.)						
Bowen, Marion. (See Garland, Proudfoot, and Bowen.)						
Bower, Daniel, *et al.* (See Crain, Zardis, assignor.)						
Bower, Harry A., Boston, Mass. Base-drum and cymbal beater	846,291	Mar. 5	1332	293-4	127	336
Bowler, Giles, Cavendish, assignor of two-thirds to J. A. Walker and J. Bigley, Peck, Idaho. Clippers	847,980	Mar. 19	4576	1005	127	1205
Bowman, Jacob F., Artesia, N. Mex. Ter. Means for attaching rails to metallic ties	846,734	Mar. 12	2013	443	127	542
Bowman, Lucien W., assignor of one-half to J. H. Lewis, Reading, Pa. Electrical blasting-machine	846,153	Mar. 26	4996	1086	127	1323
Bowyer, John A. (See Beck and Bowyer.)						
Boyajian, John. (See Craddock, Edward S., assignor.)						
Boyer, Allen P., Goshen, Ind. Swing	846,534	Mar. 26	4629	1232	127	1505
Boyer, Edward B., Peoria, Ill. Pneumatic tool	847,043	Mar. 12	2358	526	127	704
Boyles, William E., Grafton, W. Va. Rail-tie	847,642	Mar. 19	3670	845	127	1039
Boynton, Frank L., Washington, D. C. Fastening device for picture-wire	846,778	Mar. 12	2128	466	127	571
Brackett, Ernest W., assignor to Dean Electric Company, Elyria, Ohio. Electrical switch	845,846	Mar. 5	223	46	127	58
Bradbeer, Frank A., Detroit, Mich. Carbureter	846,908	Mar. 12	2263	526	127	638
Bradbury, Thomas H., *et al.* (See Glossop, Gilbert, assignor.) (Reissue.)						
Bradford, Oscar, *et al.* (See Curtis, Lewis E., assignor.)						
Bradley, Charles W., assignor to J. Williamson, Chicago, Ill. Combined gas seal and regulator	845,749	Mar. 5	36	8	127	12
Bradley, Edward F., Tufnell Park, London, England. Sparking device for internal-combustion engines	847,894	Mar. 19	4400	995-6	127	1163
Bradley, Louis F., Washington, D. C. Cigar-moistener	846,494	Mar. 26	4465	1189	127	1462
Bradley Pulverizer Company. (See Hayward, Josiah P., assignor.)						
Bradley, Richard C. (See Yarbrough and Bradley.)						
Bradshaw, Charles T., Philadelphia, Pa. Telephone-call meter	847,481	Mar. 19	3494	764-5	127	940
Bradt, Samuel W., West Sand Lake, assignor of one-half to H. E. Clinton, Troy, N. Y. Folding paste-table and tool-box	846,667	Mar. 5	756	157-8	127	193
Brady, Hugh D., and C. Gerstenmeier, St. Paul, Minn. Lazy-back	846,904	Mar. 12	2360	526	127	638
Brady, James E., assignor to M. A. Brady, Covington, Ky. Valve	846,644	Mar. 12	1857	414	127	510
Brady, Mary A. (See Brady, James E., assignor.)						
Braine, Bancroft G., New York, N. Y. Puzzle	847,545	Mar. 26	3654	806	127	984
Branam, James M., Carrollton, Ill. Pumping-jack	847,339	Mar. 12	2013	464	127	791
Branch, Edward, Moose Jaw, Saskatchewan, Canada. Wire fence	847,482	Mar. 19	3496	765	127	941
Brand, George F., New York, N. Y. Mechanical musical apparatus	847,286	Mar. 19	4401	998	127	1163
Brannon, Thomas J., Pittsburg, Pa. Salt and pepper shaker	847,736	Mar. 19	4037	882	127	1079
Brantley, Thomas, Albany, Ga. Brush	846,008	Mar. 5	579	121	127	148
Braun & Sons, John. (See Fleming, John, assignor.)						
Braunsinger, Emil. (See Rudolphi and Braunsinger.)						
Braunschweig, Fred W., Watertown, Wis. Screw	846,068	Mar. 26	4963	1016	127	1264
Breaux, Berthine, Taylor, N. D. Wagon end-gate rod	846,084	Mar. 26	4963	1016	127	1295
Breck, Daniel, St. Louis, Mo. Plant for storing baled cotton	845,920	Mar. 5	417	85	127	108
Breitenstein, Friederich W., Mount Pleasant, Vancouver, British Columbia, Canada. Safety-stirrup	847,390	Mar. 19	4408	998	127	1164
Breitenstein, Julius F., Burlington, Iowa. Steam-actuated valve for pumping-engines	847,227	Mar. 19	4407	995	127	1165
Bremer, Albert H., W. J. Chattin, and A. H. Hoenisch, Philadelphia, Pa. Electric heater	846,544	Mar. 12	1861	389	127	452
Bremer, Max, assignor to Western Casket Hardware Company, Elgin, Ill. Reinforced casket-handle	846,549	Mar. 12	1863	389	127	453
Bremer, William. (See Harris, Bremer, and Rasmussen.)						
Brenlan, Charles W., assignor to L. A. Harkness, Chicago, Ill. Vestibule-car platform	845,780	Mar. 5	38	8	127	12
Brennan, Charles W., Cincinnati, Ohio. Shade-cloth with identification-mark thereon	845,927	Mar. 5	419	88	127	108
Brenzinger, Julius, assignor to Max Ams Machine Company, Mount Vernon, N. Y. Forming covers for sheet-metal cans	845,751	Mar. 5	42	9	127	14
Brenzinger, Julius, assignor to Max Ams Machine Company, Mount Vernon, N. Y. Heading sheet-metal cans	846,095	Mar. 26	4964	1016	127	1265
Brewer, Horatio J., New York, N. Y. Spring-clamp for electric terminal wires	846,688	Mar. 26	4780	1044-5	127	1296
Bridgeport Brass Company. (See Stanley, William S., assignor.)						
Brill, John A. (See Pipkins, Charles K., assignor.)						
Brimmer, Edgar W., Copemish, Mich. Toy	846,449	Mar. 12	1481	328	127	404
Brinley, Charles E., assignor to American Pulley Company, Philadelphia, Pa. Shaft-collar	846,686	Mar. 5	760	158	127	194
Brinton, Joseph H. (See Coxton, Robert, assignor.)						
Britton, Lovell H., Cleveland, Ohio. Thermostatic circuit-controlling device	847,644	Mar. 12	2361	526	127	704
Brock, Frederick C., and E. M. de Pala, assignors to Vehicle Apron & Hood Company, Columbus, Ohio. Storm-front for vehicles	846,530	Mar. 12	2359	466	127	505

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf.	Official Gazette. Vol.	Official Gazette. Page.
Brock, John M., New York, N. Y., assignor to William M. Crane Company. Toaster	846,546	Mar. 12	1664	369	127	453
Brockhaus, Friedrich O., Port Angeles, Wash. Gun-sight	847,643	Mar. 19	3672	846	127	1038
Brockt, Leopold, Breslau, Germany. Apparatus for sorting articles according to weight	847,230	Mar. 12	2014	464	127	791
Brogan, James A., *et al.* (See Mayo, Benjamin F., assignor.)						
Bronnenkant, Joseph, Racine, assignor to Fischer Manufacturing Company, Milwaukee, Wis. Metatarsophalangeal protector	847,311	Mar. 19	3173	698	127	859
Bronner, Edmond D., Detroit, Mich., assignor to Chicago Railway Equipment Company, Chicago, Ill. Brake-beam	847,188	Mar. 12	2357	630	127	782
Brooks, Isaac, Pottstown, Pa. Damper-actuating device for ranges, &c.	846,321	Mar. 12	2221	486	127	595
Brooks, Arthur J., Manchester, England. Boot cleaning and polishing outfit	845,926	Mar. 5	420	86	127	108
Brooks, Asa P., New Ulm, Minn. Auxiliary printing attachment for cylinder printing-presses	846,845	Mar. 12	1857	414	127	510
Brooks, Byron A., New York, N. Y., assignor to Union Typewriter Company, Jersey City, N. J. Type-writing machine	846,978	Mar. 12	2532	558	127	674
Brooks, Charles H., assignor to Brooks Motor Company, Detroit, Mich. Explosive-engine	846,004	Mar. 5	580	122	127	148
Brooks, Edward J., East Orange, N. J. Seal for boxes	847,276	Mar. 12	3103	684	127	813
Brooks, Edward J., East Orange, N. J. Bung-tin	846,342	Mar. 26	4377	1150	127	1419
Brooks, Henry F. L., Sheldon, Iowa. Foot-rest	846,435	Mar. 26	5456	1189	127	1463
Brooks Motor Company. (See Brooks, Charles H., assignor.)						
Brooks, Thomas E., Chicago, Ill. Lubricator	847,398	Mar. 19	4409	997	127	1165
Breconippolito, Nicolas, Allegheny, Pa. Filter and distiller	845,929	Mar. 5	420	86	127	109
Brown, Alexander E., assignor to Brown Hoisting Machinery Company, Cleveland, Ohio. Insulator for tension-guys	847,546	Mar. 19	3656	806	127	984
Brown, Charles F., trustee. (See Reeve, Sidney A., assignor.)						
Brown, Conrad F., San Jose, Cal. Mercury retort and furnace	847,399	Mar. 19	3365	737	127	907
Brown, Conrad F., San Jose, Cal. Mercury-condenser	847,547	Mar. 19	3656	806	127	985
Brown, Edgar, New York, and J. W. T. Duvel, Ohio. Apparatus for the rapid determination of the moisture-content of grain	846,616	Mar. 26	5810	1296	127	1550
Brown, Francis C., New York, N. Y. Fountain-pen	846,547	Mar. 12	1667	370	127	453
Brown, Frank B., *et al.* (See Crickler, Harry F., assignor.)						
Brown, Frank H. and F. H., Colfax, Wash. Portable elevator	846,725	Mar. 12	2015	443	127	542
Brown, Fred H. (See Brown, Frank H. and F. H.)						
Brown, George K., *et al.* (See Crickler, Harry F., assignor.)						
Brown, Harlin, Mayfield, Mich. Wooden column	846,450	Mar. 12	1481	329	127	405
Brown, Harold G., West Ealing, London, and E. D. Maian, Highgate, London, England, assignors of one-third to J. H. Neal, Boston, Mass. Signaling apparatus	847,157	Mar. 12	2858	630-1	127	753
Brown, Harry M., and H. M. Dahl, El Campo, Tex. Blower and suction device	846,343	Mar. 26	5278	1150	127	1419
Brown Hoisting Machinery Company. (See Brown, Alexander E., assignor.)						
Brown, Mae, Nampa, Idaho. Mattress	846,437	Mar. 26	5450	1190	127	1463
Brown, Miller, Richmond, Mo. Combined lister, planter, and roller	846,154	Mar. 26	4997	1068-9	127	1322
Brown, Nicholas E., Marion, S. D. Table	847,899	Mar. 19	4410	997	127	1166
Brown, Peabody A., Denver, Colo. Thermostat	847,981	Mar. 19	4577	1005-6	127	1205
Brown, Robert S. (See Parks and Brown.)						
Brown, Roy W., Amsterdam, N. Y. Electric controller	846,008	Mar. 26	4965	1016-17	127	1265
Brown and Sharpe Manufacturing Company. (See Parker, John, assignor.)						
Brown, Thomas L., *et al.* (See Webster, Chesver L., assignor.)						
Brown, Thomas R., New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo. Tank-car	845,752	Mar. 5	42	9	127	14
Brown, Thomas R., New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo. Tank-car	846,392	Mar. 5	1335	294	127	337
Brown, Thomas R., New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo. Tank-car	846,646	Mar. 12	1889	415	127	511
Brown, Thomas R., New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo. Tank-car	846,276	Mar. 26	5163	1126	127	1292
Brown, William C., Prescott, Ontario, Canada, assignor to Henry R. Worthington, New York, N. Y. Compensating direct-acting engine	846,006	Mar. 5	582	122	127	149
Brown, William H., Lockhart, Tex. Machine for developing photographic plates	846,776	Mar. 12	2125	466-7	127	571
Brown, William H., Pittsburg, Pa. Rolling-mill	846,628	Mar. 26	5459	1189	127	1464
Browning, George. (See Collins and Browning.)						
Browning, Victor R., Nottingham, Ohio. Hoisting apparatus	846,257	Mar. 26	5165	1126	127	1292
Bruchner, Rudolph E., Mount Vernon, assignor to Commercial Acetylene Company, New York, N. Y. Charging gas-tanks	847,727	Mar. 19	4036	883	127	1079
Brush, Henry L., Orange, N. J., assignor to Vaut Wood Rubber Company, New York, N. Y. Connection for bath-sprays and the like	846,906	Mar. 12	2305	527	127	637
Brunsman, Anthony G., Cincinnati, Ohio. Vehicle-coach	847,548	Mar. 19	3660	807	127	985
Brunswick Refrigerating Company. (See Whitaker, Richard, assignor.)						
Brusseau, Fred A., Springfield, Mass. Clamp for base-ball covers	846,007	Mar. 26	4667	1017	127	1266
Bryan, Crockett L., Paducah, Ky. Cloth-cutting machine	846,777	Mar. 12	2128	467	127	573
Bryant, William A., assignor of one-fourth to T. W. Rouse, Wetumpka, Ala. Reinforced concrete cross-tie	845,155	Mar. 26	4999	1069	127	1323
Bryce, Alexander F., Chicago, Ill. Pneumatic tire	847,221	Mar. 12	3016	665	127	791
Bryson, Milton D., Los Angeles, Cal. Ruler	846,006	Mar. 5	585	122	127	150
Buchanan, Benjamin G., Ashland, Wis. Rail-joint	846,156	Mar. 26	4901	1069	127	1324
Buchanan, Mitchell T. (See Lutes, Lewis I., assignor.)						
Buchner, Max, Mannheim-Waldhof, Germany. Treatment of corundum	846,439	Mar. 26	5460	.....	127	1464
Buckingham, Benjamin J., Chicago, Ill. Garment-holder	847,644	Mar. 19	3674	847	127	1039
Buckley, John, Waterbury, Conn. Nail and rivet machine	846,393	Mar. 5	1336	294-6	127	337
Bückmann, August and O., Odenkirchen, Germany. Feeding device for textile fabrics, paper, &c.	847,645	Mar. 19	3676	847	127	1039
Bückmann, Otto. (See Bückmann, August and O.)						
Bucyrus Company. (See Ferris and Allen, assignors.)						
Bucyrus Company. (See Ferris and Bager, assignors.)						
Bucyrus Company. (See Knox, Samuel L. G., assignor.)						
Budde & Westermann. (See Müller and Zipprich, assignors.)						
Buhlmann, Dora, Kaiserslautern, Germany. Apparatus for cooling, moistening, and purifying the air in rooms	847,222	Mar. 12	3013	665	127	792
Buhse, Alexander F. (See Buhse, Maximilian E., W. W., H. L., and A. F.)						
Buhse, Henry L. (See Buhse, Maximilian E., W. W., H. L., and A. F.)						
Buhse, Maximilian E., W. W., H. L., and A. F., Minneapolis, Minn. Candy-wrapping machine	846,344	Mar. 26	5279	1151-3	127	1419
Buhse, Walter W. (See Buhse, Maximilian E., W. W., H. L., and A. F.)						
Büky, Aurel. (See Fodor and Büky.)						
Bunton, Samuel E., Van Horn, Tex. Wire-stretching and twisting apparatus	847,188	Mar. 12	2856	631	127	754
Buntrock, Otto H., Wausau, Wis. Wagon-bolster and standard	847,189	Mar. 12	2856	631	127	755
Burdett, Bennie W., and G. W. Goodwin, Jr., Simpsonville, S. C. Planter and fertilizer-distributer	846,726	Mar. 12	2017	443-4	127	543
Burg, Louis, Dallas City, Ill. Ball-bearing	846,727	Mar. 19	3019	444	127	543

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Burke, Charles G. and E. J., Brooklyn, N. Y., assignors of one-half to J. Q. A. Whittemore, Boston, Mass. Telephone system	846,304	Mar. 5	1344	296–7	127	339
Burke, Edward J. (See Burke, Charles G. and E. J.)						
Burkholder, John D., Lancaster, Pa. Automatic railway-switch	846,906	Mar. 12	2396	527	127	630
Burkholder, Preston T., Fishersville, Va. Mold	847,312	Mar. 19	3174	698	127	859
Burleson, Pleasant W., Linden, Tex. Clothes-pin	847,313	Mar. 19	3176	698	127	860
Burnett, Alice W., Lisbon, Ohio. Harness attachment	846,822	Mar. 12	2223	486	127	595
Burns, Frank, Westfield, N. Y. Pump	845,849	Mar. 5	226	46	127	59
Burns, James A., assignor to Westinghouse Electric & Manufacturing Company. Coil-bender	847,349	Mar. 19	3660	807–8	127	985
Burns, Jeremiah D., assignor to Columbia Folding Box Co., Washington, D. C. Box	847,314	Mar. 19	3177	699	127	860
Burns, Robert. (See Harris, Varian M., assignor.)						
Burroughs, Charles S., *et al.* (See Leavitt, John M., assignor.)						
Burrows, Eastman A. (See Smythe and Burrows.)						
Burry, William C., Allegheny, Pa. Truck	846,451	Mar. 12	1482	329	127	605
Burton, Charles H., New York, N. Y., assignor to J. M. Thurston, trustee, Washington, D. C. Pneumatic-despatching-tube system	847,233	Mar. 12	3020	665	127	792
Burton, Charles H., New York, N. Y., assignor to J. M. Thurston, trustee, Washington, D. C. Pneumatic-despatch carrier	847,234	Mar. 12	3022	666	127	792
Burton, George F., Woodlawn, Ala. Rotary engine	846,440	Mar. 26	3461	1190–2	127	1464
Busch-Freund Brewers' Supply Co. (See Dippel, Henry C., assignor.)						
Busenbenz, Jacob J., assignor to Industrial Gas Construction Co., Chicago, Ill. Gas-manufacturing apparatus	846,395	Mar. 5	1349	297	127	341
Bussard, William B., assignor of one-half to W. F. Stuver, Huntington, Ind. Mold	846,007	Mar. 5	589	122–3	127	150
Bussell, William H., Necedah, Wis. Wheel-runner for baby-carriages	847,900	Mar. 19	4411	967	127	1166
Busselle, Arthur S., and J. W. Pedigo, Chariton, Iowa. Grinding-machine	847,463	Mar. 19	3497	765	127	941
Butler, William M., assignor to Whitney Manufacturing Company, Hartford, Conn. Drive-chain	847,235	Mar. 12	3023	666	127	793
Buxbee, Frank J., Mobile, Ala. Flat-car stanchion	848,086	Mar. 26	4792	1045	127	1297
Buzzell, Ernest L., Lynn, Mass. Nail-polisher	848,346	Mar. 26	5284	1153	127	1420
Byl, George N., and J. Koehler, Jersey City, N. J. Label-spreader	846,282	Mar. 5	1118	243	127	283
Byrne, Frank T., *et al.* (See Ralston, William A., assignor.)						
Byrne, Joseph H., Pittsburg, Pa. Cracker-box	846,452	Mar. 12	1484	329	127	605
Cabell, Charles A., Carbon, W. Va. Check-lock for mining-cars	846,441	Mar. 26	5469	1192	127	1467
Cadwell, Edwin B., New York, N. Y., assignor of two-thirds to F. Johnston and F. M. Ashley. Tire	846,453	Mar. 12	1485	329–30	127	606
Cady, Orrin, Cincinnati, Ohio. Spittoon	846,454	Mar. 12	1488	330	127	606
Calder, John W., Parnassus, Pa. Metallic rail-tie and fastener therefor	848,346	Mar. 26	5285	1153	127	1420
Caldwell, Eugene W., New York, N. Y. X-ray apparatus	847,726	Mar. 19	4030	883	127	1079
Caldwell, James P., Winnsboro, S. C., and W. A. Rockwell, Harriman, Tenn. Planter	847,901	Mar. 19	4413	967–8	127	1160
Caldwell, John D., Seattle, Wash. Marking-machine	847,646	Mar. 19	3877	847–8	127	1040
Caldwell, Samuel H., *et al.* (See Martin, Ivison B., assignor.)						
Caldwell, William L., *et al.* (See Curtis, Lewis E., assignor.)						
Caldwell, William T., assignor to himself and A. J. Lepper, Edgar, Nebr. Corn-husker	846,008	Mar. 26	4689	1017	127	1206
Calkins, Addison N., Quincy, Ill. Gasolene-engine truck	847,647	Mar. 19	3881	848	127	1041
Call, Charles C., Hayden, Ind. Hair-straightener	846,183	Mar. 5	937	198	127	238
Callan, John G., and H. J. Hanzlik, Lynn, Mass., assignors to General Electric Company. Elastic-fluid turbine	846,157	Mar. 26	4902	1070	127	1325
Calvert, John T., and F. G. Marbach, assignors to A. I. Root Company, Medina, Ohio. Beehive-frame	846,306	Mar. 5	1352	297	127	342
Cameron, James A., Brooklyn, N. Y. Tension and regulating mechanism for traveling fabrics	847,315	Mar. 19	3179	699–700	127	860
Camp, Arthur B. (See Delavan and Camp.)						
Camp, Arthur B., assignor to Triumph Voting Machine Company, Pittsfield, Mass. Sectional case for voting-machines	847,045	Mar. 12	2664	586	127	705
Campbell, Alonzo C., Asheville, N. C. Ore-concentrator	847,236	Mar. 12	3025	666	127	793
Campbell Bosworth Machinery Company. (See Wilson, William, assignor.)						
Campbell, Edward L., Kings Mountain, N. C. Plotting instrument	845,758	Mar. 5	44	10	127	15
Campbell, J. C., *et al.* (See Leichter, Edward, assignor.)						
Campbell, Sterling H., Detroit, Mich., assignor to J. M. Hopkins, Chicago, Ill. Rail-joint	847,400	Mar. 19	3367	737	127	907
Campbell, Willard B., Jackson, Mich. Elbow pipe-joint	848,223	Mar. 26	5017	1097	127	1354
Campion, George G., Manchester, England. Bed-rest for invalids	847,550	Mar. 19	3663	808–9	127	988
Canda, Ferdinand E., New York, N. Y., assignor to Chrome Steel Works, Chrome, N. J. Jail-bar and similar composite metal object	847,551	Mar. 19	3664	809	127	987
Cannell, Charles, St. Mary's, Tasmania, assignor to J. Alston, South Melbourne, Victoria, Australia. Gear for pumps	847,902	Mar. 19	4414	968	127	1168
Cannon, John F., Erick, Okla. Ter. Adjustable window-shade-supporting means	846,089	Mar. 5	765	158–9	127	194
Cappe, Nellie F., Red Bluff, Cal. Window-shade adjuster	847,903	Mar. 19	4416	969	127	1167
Capron, Marshall F. (See Beals and Capron.)						
Carlin, William J. (See O'Brien, Patrick A., assignor.)						
Carlson, Charles A., Chicago, Ill. Apparatus for mixing fluids	847,552	Mar. 19	3666	809	127	987
Carlson, Charles E., Chicago, Ill. Printing or engraving block	847,237	Mar. 12	3026	667	127	794
Carman, Stanley E., *et al.* (See Sills, Berton E., assignor.)						
Carmichael, Oscar H. (See Krueger, Kimble, and Carmichael.)						
Carnahan, Charles M., Newport, Ky., assignor to Globe-Wernicke Company, Cincinnati, Ohio. Expansible envelop for vertical files	847,921	Mar. 19	3883	849	127	1041
Carr, Charles L. and T. P., Yellow Springs, Ohio. Telephone system	847,316	Mar. 19	3182	700–1	127	861
Carr, James B., and F. M. Schmitt, Portland, Oreg. Oblique feeding attachment for sewing-machines	846,158	Mar. 26	4904	1070	127	1325
Carr, Robert C., and C. R. Schoonover, Ezzy Gap, Ky. Traction wheel and rail	846,442	Mar. 26	5470	1192	127	1467
Carr, Thaddeus P. (See Carr, Charles L. and T. P.)						
Carroll, John B., Philadelphia, Pa. Gas-demonstration apparatus	847,995	Mar. 19	4007	1010	127	1212
Carroll, John P., *et al.* (See Barbour, Morgan B., assignor.)						
Carroll, Samuel C., Dallas, Tex. Vulcanizing system for vehicles	847,228	Mar. 12	3029	667	127	794
Carson-Cross Company. (See Smith, Edward E., assignor.)						
Carter, B. L., *et al.* (See Hall, Joseph C., assignor.)						
Carter, Samuel A., Bowling Green, Mo. Motor-car	845,860	Mar. 5	227	47	127	59
Carver, Clifford L., Cleveland, Tex. Packing for doors and like closures	847,553	Mar. 19	3669	810	127	988
Carver, William L., Louisville, Ky. Apparatus for distilling	846,194	Mar. 5	967	199–200	127	238
Case, Allen T., assignor to J. M. Case Ball Mfg. Co., Louisville, Ky. Apparatus for distilling	845,861	Mar. 5	229	47	127	60
Case, Allen T., assignor to J. M. Case Ball Mfg. Co., Louisville, Ky. Apparatus for distilling	846,511	Mar. 26	4891	1064	127	1342
Case, Allen T., assignor to J. M. Case Ball Mfg. Co., Louisville, Ky. Apparatus for distilling	845,862	Mar. 5	231	47	127	60
Case, Allen T., assignor to J. M. Case Ball Mfg. Co., Louisville, Ky. Apparatus for distilling	846,347	Mar. 26	4897	1144	127	1421
Case, Allen T., assignor to J. M. Case Ball Mfg. Co., Louisville, Ky. Apparatus for distilling	846,000	Mar. 26	4899	1013	127	1205

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Castleman, Benjamin T., St. Louis, Mo. Vibratory massage instrument	847,239	Mar. 12	3032	668	127	795
Caswell, Frederick K., Chicago, Ill., assignor to Railway Steel-Spring Company. Spring-load computer	847,904	Mar. 19	4417	969	127	1167
Cazin, Francis M. F., Hoboken, N. J. Apparatus for and method of uniting vitreous parts	846,823	Mar. 12	2224	487–8	127	596
Ceska, George D., assignor to H. L. Shepherd, Duluth, Minn. Shovel	846,824	Mar. 12	2229	488	127	597
Chamberlain, Edward N., Natchez, Miss. Amusement device	847,240	Mar. 12	3033	668	127	795
Champion Lever Machine Company. (See King, Robert P., assignor.)						
Champion Lever Machine Company. (See Ogborn, Harrison, assignor.)						
Champion Machinery Company. (See Meyer, Ernest C., assignor.)						
Chapman, Alonso E., Redlands, Cal. Flume-gate	847,160	Mar. 12	2867	632	127	755
Chartener, Victor, Pittsburg, Pa. Universal rolling-mill	846,825	Mar. 12	2230	488–9	127	597
Chase, Charles A., Chicago, Ill. Lamp-socket	845,754	Mar. 5	40	10	127	15
Chattin, William J. (See Bremer, Chattin, and Hoenisch.)						
Chemische Fabrik von Heyden, Aktiengesellschaft. (See Hirsch, Jacob G., assignor.)						
Cheney, Thomas J., Lodi, Ohio, assignor to F. D. Merrill, Seattle, Wash. Churn. (Reissue)	12,617	Mar. 19	4607	1010	127	1212
Chicago Railway Equipment Company. (See Bronner, Edmond D., assignor.)						
Chicago Title and Trust Company. (See Cothran, Grove, assignor.)						
Choate, Charles N., Woodstock, Ontario, Canada, assignor of one-half to F. E. Atchison, Detroit, Mich. Powder-distributer	847,464	Mar. 19	3500	766	127	942
Chouteau, Eugenio, Jr., St. Louis, Mo. Electric signal system	847,905	Mar. 19	4419	969–70	127	1168
Christensen, Hjalmar, Seattle, Wash. Sign	848,288	Mar. 26	5168	1126	127	1393
Christian, Franklin E., Bethlehem, Pa. Electric-light hanger	846,778	Mar. 12	2330	468	127	572
Christoph Heims & Sohn Gesellschaft mit beschränkter Haftung. (See Homeyer, Christian H., assignor.)						
Chrome Steel Works. (See Canda, Ferdinand E., assignor.)						
Church, Edwin B., Sattley, Cal. Potato-digger	848,348	Mar. 26	5290	1154	127	1421
Churchward, James, New York, N. Y. Tempering-bath for steel	845,755	Mar. 5	50		127	16
Churchward, James, New York, N. Y. Self-hardening alloy of iron and steel	845,756	Mar. 5	51		127	17
Churchward, James, New York, N. Y. Self-hardening alloy of steel	845,757	Mar. 5	52		127	17
Churchward, James, New York, N. Y. Steel alloy and its manufacture	846,979	Mar. 12	2537		127	676
Chute, Albert P., Boston, Mass. Rain guard or hood for windows	846,980	Mar. 12	2538	559	127	676
Claffey, Frank. (See Lamb, Edwin F., assignor.)						
Claiborne, James H., Jr., San Francisco, Cal. Screw	846,981	Mar. 12	2539	559	127	677
Clamer, Guilliam H., and C. F. Hopkins, Philadelphia, Pa., assignors to Ajax Metal Company. Railway journal-bearing	846,307	Mar. 5	1353	297	127	342
Clar, Laurence F., Willits, Cal. Anvil	846,548	Mar. 12	1069	370	127	454
Clark, Albert C. (See Pearson, Geoffrey H., assignor.)						
Clark, Albert M., Marshalltown, Iowa. Heater	847,906	Mar. 19	4422	970	127	1168
Clark, Charles E., Chicago, Ill. Attachment for newspaper-presses	847,161	Mar. 12	2869	632	127	755
Clark, Donald, Balmedale, Victoria, Australia. Separating gold from silver and other metals	845,853	Mar. 5	233		127	61
Clark, Edward S., Boston, Mass. Boiler	846,982	Mar. 12	2540	559	127	677
Clark, Emma F. (See Clark, Percy L., assignor.)						
Clark, Francis L., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Recharging-valve for air-brakes	847,317	Mar. 19	3191	701	127	863
Clark, George, Chicago, Ill. Steam-separator	845,758	Mar. 5	52	11	127	17
Clark, Melville, Chicago, Ill. Automatic piano	846,090	Mar. 5	764	150	127	195
Clark, Morgan S., Roanoke, Va. Screen	846,907	Mar. 12	2360	527	127	639
Clark, Percy L., assignor to E. F. Clark, Champaign, Ill. Laminated wheel	846,549	Mar. 12	1672	370	127	455
Clark, Robert G., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	848,349	Mar. 26	5291	1154	127	1422
Clark, Valentine, Dryad, Wash. Device for rendering bottles non-refillable	846,550	Mar. 12	1674	370	127	455
Clausen, Jens M., assignor of one-fourth to H. Nelson, one-eighth to E. F. Coddington, and one-eighth to W. L. Feudner. Hopkins, Minn. Line-holder	846,008	Mar. 5	590	123	127	151
Clay, Harry C., assignor to Reeves & Company, Columbus, Ind. Sand-cap for wheel-hubs	845,759	Mar. 5	54	11	127	17
Clem, John, Jr., Malvern, Ark. Cotton cleaner and distributer	847,162	Mar. 12	2870	632–3	127	755
Clements, George, and J. M. Hostler, Chicago, Ill., assignors to Hygienic Renovating Co. Attachment for vacuum cleaning systems	847,729	Mar. 19	4043	884	127	1080
Clemm, Adolf, Mannheim, Germany. Manufacture of alumina and alkali compounds of sulfur	845,854	Mar. 5	245		127	61
Clemm, Adolf, Mannheim, Germany. Manufacture of alumina and alkali sulfur salts	848,612	Mar. 26	5808		127	1548
Climax Patents Limited. (See Stocks and Webb, assignors.)						
Clinton, Harry E. (See Bradt, Samuel W., assignor.)						
Cloud, Chalon G., *et al.* (See Anderson, Edward L., assignor.)						
Clough, Edwin S., Seattle, Wash. Adjustable bearing	848,224	Mar. 26	5030	1097	127	1355
Coale, Harvey. (See Serra (y Carbó), José, assignor.)						
Coates, Robert, assignor to J. H. Brinton, Philadelphia, Pa. Staple-machine	846,826	Mar. 12	2233	489–90	127	598
Coburn, Howard L., Boston, Mass. Reinforced concrete dam	845,855	Mar. 5	237	48	127	61
Cochran, Mary L., Thomasville, Ga. Waist-shield	847,241	Mar. 12	3034	668	127	795
Cochrane Bly Company. (See Cochrane and Warman, assignors.)						
Cochrane, Robert B., and W. A. Warman, assignors to Cochrane Bly Company, Rochester, N. Y. Shaping-machine	846,728	Mar. 12	2021	444–5	127	544
Cockren, Archibald C., Barnsbury, assignor to Johnson, Walker & Tolhurst, Ltd., London, England. Bracelet, chain, and the like	847,554	Mar. 19	3670	810	127	988
Coddington, Elmer F., *et al.* (See Clausen, Jens M., assignor.)						
Coffin, Charles L., Nacoochie, Ga., assignor to Electric Metal Working Company, Detroit, Mich. Metallic barrel	845,760	Mar. 5	56	11	127	18
Coffin, Howard E., assignor to Olds Motor Works, Lansing, Mich. Detachable running-board for motor-vehicles	846,091	Mar. 5	767	150	127	195
Cohen, Hyman. (See Nathan and Cohen.)						
Cohen, Joseph, New York, N. Y. Body-brace and hose-supporter	846,551	Mar. 12	1676	371	127	456
Coker, David H., Piedmont, Ala. Ammoniator	848,535	Mar. 26	5431	1222	127	1508
Colavecchio, Luigi, Middletown, Conn. Elevated carrier	847,907	Mar. 19	4424	971	127	1169
Colborne, Oliver, Chicago, Ill. Pie-crust-trimming machine	847,649	Mar. 19	3884	849	127	1041
Cole, William, St. Louis, Mo. Attachment for burial-caskets	846,289	Mar. 26	5170	1126	127	1393
Coleman, Clarence W., Westfield, N. J., assignor to Hall Signal Company. Signaling apparatus	846,779	Mar. 12	2132	468–9	127	573
Coleman, Edward, Minneapolis, Minn. Adjustable knife-gage	847,377	Mar. 12	2105	464	127	813
Coleman, Jerome M., assignor to Rogers Shear Company, Warren, Pa. Corner-bead	846,398	Mar. 5	1354	298	127	342
Coleman, Leslee E., and W. H. Spake, Anaheim, Cal.; said Coleman assignor to said Spake. Toy animal	846,009	Mar. 5	591	123	127	151
Collins, Jesse D., Chicago, Ill. Refrigerator car & truck	848,289	Mar. 26	5171	1127	127	1394
Collins, John W., Washington, D. C. Cut-off for harness	846,780	Mar. 12	2138	469	127	574
Collins, Nathaniel A., Lisbon, Okla. Ter. Boring-machine	847,908	Mar. 19	4425	971	127	1169
Collins, Sydney T., and G. Brownell, Memphis, Ill. Automatic holding chisel	846,552	Mar. 12	1676	371	127	456
Colton, Hosea B., Assignor of one-half to J. L. Lyman, Easthampton, Mass. Lathe tool-holder	848,610	Mar. 26	5870	1013	127	1206

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hebert, Felix J., *et al.* (See Le Blanc, Jules, assignor.)						
Hebert, Helaire T., *et al.* (See Le Blanc, Jules, assignor.)						
Hebert, Philip J., *et al.* (See Le Blanc, Jules, assignor.)						
Hedfeldt, Axel T., Chicago, Ill., assignor to Hedfeldt Company. Cleaning and separating machine	845,870	Mar. 5	280	56	127	72
Hedfeldt Company. (See Hedfeldt, Axel T., assignor.)						
Heimerdinger, William C., Louisville, Ky. Safety-razor	845,782	Mar. 5	99	19	127	29
Heimerdinger, William C., Louisville, Ky. Safety-razor	845,783	Mar. 5	101	20	127	29
Heimerdinger, William C., Louisville, Ky. Safety-razor	845,784	Mar. 5	103	20	127	30
Hellman, Henry, and L. C. Bayles, Johannesburg, Transvaal. Drill or bit rotating mechanism for rock-drilling machines or engines	845,962	Mar. 5	484	96	127	120
Henderson, William M., High Spire, assignor to Pennsylvania Steel Company, Philadelphia, Pa. Movable-point crossing	846,089	Mar. 5	631	132	127	162
Hendryx, Andrew B., assignor to Andrew B. Hendryx Co., New Haven, Conn. Birdcage	845,785	Mar. 5	104	20	127	30
Henry Disston & Sons. (See Freas, Samuel, assignor.)						
Henry, John L. (See Sparmaker and Henry.)						
Henry R. Worthington. (See Brown, William C., assignor.)						
Henry R. Worthington. (See Mueller, Otto H., assignor.)						
Herbert, Charles G., Detroit, Mich. Starting mechanism for gas-engines	846,108	Mar. 5	796	167	127	204
Hess, Herman, Indianapolis, Ind. Friction-pulley	845,871	Mar. 5	284	56	127	73
Hettrich, John, Grand Island, Nebr. Corn-harvester	846,204	Mar. 5	979	208–10	127	248
Hibbard, Charles and W., Sandy Hill, assignors to Glens Falls Improved Trolley Fork Company, Glens Falls, N. Y. Trolley-harp	846,205	Mar. 5	982	210	127	249
Hibbard, Warren. (See Hibbard, Charles and W.)						
Hildreth, Edwin A., Harvard, Mass. Splitting-machine	845,984	Mar. 5	471	96	127	122
Hirt, Benjamin F., *et al.* (See Althen, William C., assignor.)						
Hitchcock, Samuel S., Indianapolis, Ind. Drive-head for well-pipes	845,983	Mar. 5	469	96	127	122
Hix, Howard L., Frankfort, Ind. Brick-machine	845,872	Mar. 5	285	57–8	127	73
Hobart, Franklin G., Beloit, Wis., assignor to Fairbanks, Morse & Co., Chicago, Ill. Gas-engine-regulating valve	846,207	Mar. 5	1167	256	127	295
Hobert, Benjiman F., assignor of one-half to T. F. Hobert, Watertown, Pa. Device for forming and holding sand cores	845,788	Mar. 5	105	20	127	30
Hobert, Thomas F. (See Hobert, Benjiman F., assignor.)						
Hoffmann, Joseph C. (See Schmidt, Charles, assignor.)						
Hogan, Daniel. (See Meinecke and Hogan.)						
Hopkins, Charles F. (See Clamer and Hopkins.)						
Hopkins, Charles L., Chicago, Ill. Curtain-fixture	846,107	Mar. 5	797	167	127	204
Horix, Carl, Cleveland, Ohio. Metallic reinforcement in concrete structural work	845,787	Mar. 5	108	21	127	31
Horn, Ernest H., assignor to Waterbury Clock Co., Waterbury, Conn. Balance-wheel bridge for watches	846,308	Mar. 5	1168	256	127	295
Horsey, John G., Sidcup, England. Lock	846,309	Mar. 5	1169	256	127	296
Hoskin, William. (See Bawden and Hoskin.)						
Hotaling, Irving L., Riverton, assignor to Curtain Supply Company, Newark, N. J. Curtain-fixture	845,788	Mar. 5	107	21	127	31
Hullhorst, William G., assignor to Ransom & Randolph Company, Toledo, Ohio. Instrument-tray	846,030	Mar. 5	632	133	127	163
Hullings, Charles W., Philadelphia, Pa. Boiler fire-box	846,310	Mar. 5	1171	257	127	296
Hunter, Mary A., Philadelphia, Pa. Converting iron castings into steel or malleable iron	846,031	Mar. 5	634	.....	127	163
Hussey, William P., assignor to Standard Dry Kiln Company, Indianapolis, Ind. Steam-heating apparatus	845,789	Mar. 5	108	21–2	127	31
Hutson, William A., Orlando, Fla. Car-replacer	846,311	Mar. 5	1172	257–8	127	296
Hyde, Theophilus R., Jr., assignor to Scovill Manufacturing Company, Waterbury, Conn. Snap-fastener	846,312	Mar. 5	1174	258	127	297
Hysom, Hollis R. (See Leland and Hysom.)						
Ideal Novelty Manufacturing Co. (See Newman, Samuel B., assignor.)						
Industrial Gas Construction Co. (See Busenbenz, Jacob J., assignor.)						
International Cotton Company. (See Graves, John W., assignor.)						
International Harvester Company. (See Dennis and Rice, assignors.)						
International Harvester Company. (See Kennedy and Sharp, assignors.)						
International Harvester Company. (See Pearson, Charles, assignor.)						
International Harvester Company. (See Phelps, George L., assignor.)						
International Harvester Company. (See Sharp, Charles S., assignor.)						
Irving, James A., Philadelphia, Pa. Inkstand	846,208	Mar. 5	985	210	127	250
Irvington Manufacturing Company. (See Cottrell, Herbert, assignor.)						
Isaacs, Mone R., Philadelphia, Pa. Treating proteids	845,790	Mar. 5	110	.....	127	32
Isaacs, Mone R., Philadelphia, Pa. Adhesive compound, glue, &c	845,791	Mar. 5	111	.....	127	32
J. M. Case Mill Mfg. Co. (See Case, John M., assignor.)						
Jackman, Stephen E., New York, N. Y. Railway	846,207	Mar. 5	988	211	127	250
Jackman, Stephen E., New York, N. Y. Railway	846,208	Mar. 5	989	211	127	251
Jackman, Stephen E., New York, N. Y. Railway	846,209	Mar. 5	990	212	127	252
Jackman, Stephen E., New York, N. Y. Brake mechanism for inclined railways	846,210	Mar. 5	992	212	127	252
Jenkins, Luther E., Cecilian, Ky. Knife	846,108	Mar. 5	800	167–8	127	204
Johansen, Johannes C., Copenhagen, Denmark. Massage apparatus	845,792	Mar. 5	112	22	127	32
Johnson, Alfred S., Jr., Waupun, Wis. Device for washing photographic prints	846,412	Mar. 5	1380	307	127	353
Johnson, Carl P. J. (See Thompson, Lars O. T., assignor.)						
Johnson, Frank, Fredericksburg, Mo. Corn-shock loader and unloader	846,109	Mar. 5	804	168	127	205
Johnson, Lewis J., Springfield, Ill. Grain-renovator	845,955	Mar. 5	473	97	127	123
Johnson, Oliver O., Windom, Minn. Mail-transportation system	846,211	Mar. 5	994	213	127	253
Johnson, Walter C., Colemans Hatch, England. Motor-cycle	846,213	Mar. 5	1175	256	127	297
Johnston, Edward A., Sterling, Ill. Harvester	846,212	Mar. 5	995	213	127	253
Johnston, Norton W. (See Turner and Johnston.)	845,873	Mar. 5	288	58–9	127	74
Jones, Thomas W. (See Beckwith, Frank A., assignor.)						
Jurick, George H., Jersey City, N. J. Game apparatus						
Kabele, Henry M., Westford, Mass. Match-box	846,110	Mar. 5	805	168	127	205
Kannenberg, Baldwin H., Oak Park, Ill., assignor to American Can Company, New York, N. Y. Slip-cover sheet-metal can for lard and other articles	846,314	Mar. 5	1178	259	127	298
Kasoander, Leopold, assignor to Nathan Manufacturing Company, New York, N. Y. Boiler check-valve	846,111	Mar. 5	805	169	127	206
Keech, Dora M., Chicago, Ill. Sunshade or umbrella support	846,213	Mar. 5	996	213–14	127	253
Keller, Alfred, assignor to Mermod Frères, St. Croix, Switzerland. Liquid-distributer	846,215	Mar. 5	1180	259	127	298
Keller, Frederick R., Lancaster, Pa. Voltage-regulator for alternating-current generators	846,032	Mar. 5	636	133	127	163
Kelley, John T., New London, Ohio. Platter or ruffler for sewing-machines	846,214	Mar. 5	998	214	127	253
Kelly-Arnold Manufacturing Company. (See Kelly and Royer, assignors.)	846,215	Mar. 5	1000	214–15	127	254
Kelly, George E., and G. F. Royer, assignors to Kelly-Arnold Manufacturing Company, Wilkes-Barre, Pa. Coupling apparatus for fluid-pressure brake mechanisms	845,874	Mar. 5	289	59–60	127	74
Kelly, Thomas J., Marietta, Ohio. Stalk and filler	845,793	Mar. 5	113	.....	127	32
Kemp, William, Tucson, Ariz. Ter. Treating ores	846,216	Mar. 5	1002	215	127	254

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Kennedy, Samuel V., and C. S. Sharp, Auburn, N. Y., assignors, by mesne assignments, to International Harvester Company. Mowing-machine	845,794	Mar. 5	114	22	127	33
Kermode, William J. (See Duckett, Samuel L., assignor.)						
Keyes, William W. W., assignor of one-half to G. B. Roberts and J. F. Merker, Alexandria, Ind. Machine for making window or plate glass	846,316	Mar. 5	1181	259–61	127	299
Kiddle, Richard H., Kinsman, Ohio. Check-valve	846,317	Mar. 5	1187	261	127	300
Kidney, William C., New York, N. Y. Cycle	846,033	Mar. 5	636	134	127	163
Kieley, Timothy J., and F. T. Mueller, New York, N. Y. Grease-extractor	846,034	Mar. 5	639	134	127	164
King, Dean W., Jr., San Francisco, Cal. Gun-sight	846,217	Mar. 5	1004	215	127	255
Kirkegaard, Georg, New York, N. Y. Machine for capping bottles	846,218	Mar. 5	1006	216	127	255
Kitsee, Isidor, Philadelphia, Pa. Telephone system	846,413	Mar. 5	1391	307	127	353
Kitsee, Isidor, Philadelphia, Pa. Telegraphic receiving device	846,416	Mar. 5	1399	308	127	355
Kitsee, Isidor, assignor of one-half to W. J. Latta, Philadelphia, Pa. Receiving device for electric transmission	846,414	Mar. 5	1395	307	127	354
Kitsee, Isidor, assignor of one-half to W. J. Latta, Philadelphia, Pa. Telegraphy	846,415	Mar. 5	1396	308	127	355
Kitts Manufacturing Company. (See Kitts, Willard A., assignor.)						
Kitts, Willard A., assignor to Kitts Manufacturing Company, Oswego, N. Y. Steam-meter	846,112	Mar. 5	807	169	127	206
Kitts, Willard A., Alpena, Mich. Mechanical connection	846,318	Mar. 5	1188	261–2	127	300
Kline, Lewis T., Alpena, Mich. Mechanical connection	846,319	Mar. 5	1189	262	127	301
Knapp, Zera, assignor of one-half to O. Munson, Cleveland, Ohio. Kitchen cabinet-table	845,795	Mar. 5	116	22	127	33
Knox, Samuel L. O., Milwaukee, assignor to Bucyrus Company, South Milwaukee, Wis. Upper tumbler for dredges and the like	846,035	Mar. 5	640	134	127	164
Koehler, Joseph. (See Byl and Koehler.)	846,113	Mar. 5	810	169–70	127	206
Koppers, Heinrich, Essen-on-the-Ruhr, Germany. Recovery of ammonia from gas	846,219	Mar. 5	1010	216	127	256
Krieger, Andrew, Columbus, Ohio. Manufacture of single-spiral augers	846,417	Mar. 5	1401	308–9	127	355
L. Moore Dry Kiln Company. (See Moore, La Fayette, assignor.)	846,320	Mar. 5	1191	262–3	127	301
Labeau, Louis, Briggsville, Mass. Guard for take-up mechanisms for looms	846,321	Mar. 5	1192	263	127	302
Lake, Simon, Bridgeport, Conn. Propulsion of submarine vessels						
Lambert, Richard T., Boston, Mass. Game apparatus						
Lane, John T., Kansas City, Mo. Combined trousers-button and drawers-supporter						
Langan, John. (See Marshall, John, assignor.)						
Langsdorf, Alexander S., assignor to Wagner Electric Manufacturing Company, St. Louis, Mo. Frequency-indicator	845,956	Mar. 5	475	97	127	123
Latta, William J. (See Kitsee, Isidor, assignor.)	845,796	Mar. 5	118	22	127	34
Lattig, Jacob W., Wynoote, and C. L. Goodrum, Philadelphia, Pa. Multiplex telephony	846,114	Mar. 5	812	170	127	207
Lattig, Jacob W., Wynoote, and C. L. Goodrum, Philadelphia, Pa. Electrical winding	846,036	Mar. 5	642	135	127	164
Lawler, Joseph A., Braddock, Pa. Device for disintegrating ore in cars	846,322	Mar. 5	1193	263	127	302
Lazenby, Henry C. (See Lazenby, Robert S. and H. C.)						
Lazenby, Robert S. and H. C., Waco, Tex. Water-distilling apparatus						
Le Blanc, Jules, assignor of three-fourths to P. J., H. T., and F. J. Hebert, Jeanerette, La. Cane-stubble cutter and destroyer	846,323	Mar. 5	1195	264	127	302
Lee, James E., Grand Haven, Mich. Printing-press	845,797	Mar. 5	122	23–4	127	35
Lehman, Benjamin N., F. Cook, and J. Robertson, Eureka, Utah. Wrench	846,220	Mar. 5	1011	216	127	257
Lehr, Anton A., Boston, Mass. Game apparatus	845,798	Mar. 5	120	24	127	36
Leidel, Joseph H., Dresbach, Minn. Corn-husking machine	845,957	Mar. 5	477	97–8	127	124
Leidel, Joseph H., Dresbach, Minn. Corn-picker	845,958	Mar. 5	479	98–9	127	124
Leland, Charles S., and H. R. Hysom, Mount Desert, Me. Lantern	846,115	Mar. 5	815	170	127	207
Leland, Charles S., and H. R. Hysom, Mount Desert, Me. Lantern-lighting device	846,116	Mar. 5	817	170	127	208
Leon, Kalman, and A. E. Dowell, Washington, D. C.; said Dowell assignor to said Leon. Fire-escape	846,418	Mar. 5	1405	309	127	356
Lewis, Andrew L., Petersburg, Va. Sliding door	846,324	Mar. 5	1196	264	127	302
Lewis, Percy E., assignor of one-fourth to L. C. Franck, Johannesburg, Transvaal. Instrument for surveying bore-holes	845,875	Mar. 5	293	60	127	75
Liebig, William G., Detroit, Mich. Brush-making machine	845,959	Mar. 5	483	99–100	127	125
Lindner, John C., Jr., assignor to J. D. Robertson, Buffalo, N. Y. Hanger for pipes and conduits	845,799	Mar. 5	131	24	127	37
Lindström, Charles A., Allegheny, assignor to Pressed Steel Car Company, Pittsburg, Pa. Carline for railway-cars	845,960	Mar. 5	489	100–1	127	126
Lindström, Charles A., Allegheny, assignor to Pressed Steel Car Company, McKees Rocks, Pa. Carline for railway-cars	845,961	Mar. 5	490	101	127	127
Lipschutz, Arthur, St. Louis, Mo. Journal-box lid	845,800	Mar. 5	133	25	127	37
Littlefield, Charles A., New Bedford, assignor to G. O. Draper, Hopedale, Mass. Rotary explosion-motor	846,037	Mar. 5	643	135	127	165
Littlefield, George E., Buffalo, N. Y. Incubator	846,325	Mar. 5	1198	264–5	127	303
Littlefield, George S. (See Wood, Littlefield, and Philbrick.)	846,117	Mar. 5	818	171	127	208
Lober, John F., Pittsburg, Pa. Machine for making bolts, pins, &c	846,118	Mar. 5	820	171–2	127	208
Lockwood, Samuel T., Portland, Oreg. Bag-holding mechanism for bag-turning machines	846,119	Mar. 5	827	173	127	210
Lockwood, Samuel T., Portland, Oreg. Turning-arm-actuating mechanism for bag-turning machines	846,038	Mar. 5	647	136	127	165
Loew Supply & Manufacturing Company. (See Miller, Henry G., assignor.)	845,801	Mar. 5	134	25	127	37
Lohnes, David T., Omaha, Nebr. Wheel-brake for vehicles	846,326	Mar. 5	1201	265	127	303
London Electric Firm. (See Wunderlich, Adolph, assignor.)						
Loorye, Solomon H., Washington, D. C. Suspenders						
Loudon, Milton H., Kansas City, Mo. Railway-gate-operating mechanism	845,802	Mar. 5	135	25	127	38
Lowe, Frank H., *et al.* (See McKee, Thomas A., assignor.)	846,221	Mar. 5	1013	217	127	257
Lucey, Leo J., Broken Bow, Nebr. Pole-tip	845,876	Mar. 5	302	60	127	78
Ludewig, William H., Rock Island, Ill. Flushing-tank valve						
Luke, Abraham, Elkhart, Ind. Hood for stackers						
Lumaghi, Joseph D., *et al.* (See Rapp, Joseph, assignor.)	846,327	Mar. 5	1202	265–6	127	303
Lumaghi, Louis F., *et al.* (See Rapp, Joseph, assignor.)	846,328	Mar. 5	1026	267	127	305
Lundquist, Frank A., Chicago, Ill. Calling device for telephone-exchanges	846,329	Mar. 5	1206	267	127	305
Lundquist, Frank A., Chicago, Ill. Registering device for telephone-exchanges	845,877	Mar. 5	304	61	127	79
Lundquist, Frank A., Chicago, Ill. Cleaning and separating cotton from its impurities						
Lysholm, Henry, Woodbury, N. J. Chain-making machine	845,962	Mar. 5	491	101	127	127
Macbeth-Evans Glass Company. (See Macbeth and Schnelbach, assignors.)	845,878	Mar. 5	306	61	127	80
Macbeth, George A., and M. A. Schnelbach, assignors to Macbeth-Evans Glass Company, Pittsburg, Pa. Lamp-globe	846,039	Mar. 5	650	136	127	166
Machacek, Mike, New Prague, Minn. Emery grinding-machine	846,222	Mar. 5	1016	217	127	258
Major, Enoch H., Nashua, N. H., assignor to Draper Company, Hopedale, Mass. Lug-strap holder for looms	845,963	Mar. 5	492	101	127	127
Makepeace, Nancie S., Dayton, Ohio. Flag-holder	845,803	Mar. 5	136	25	127	38
Malton, Charles C., Worcester, Mass. Lamp	846,120	Mar. 5	830	173	127	211
Manross, Arthur N., assignor to Corbin Motor Vehicle Corporation, New Britain, Conn. Step-hanger	846,330	Mar. 5	1210	268	127	306
Manson, Ray H., assignor to Dean Electric Company, Elyria, Ohio. Electrical switch	846,438	Mar. 5	1449	322	127	334
Marbach, Frank G. (See Calvert and Marbach.)						
Marggraff, Frederick, Augusta, Ky. Wire-button machine						
Marshall, John, New York, assignor of one-half to J. Langan, Brooklyn, N. Y. Box-opener						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Marshall, Thomas, Chicago, Ill. Means for maintaining constant the voltage of an electric circuit	845,722	Mar. 5	1017	218	127	218
Martin, George L., *et al.* (See Reese, John E., assignor.)						
Martin, Myron A., Chicago, Ill. Reservoir	845,804	Mar. 5	137	26	127	39
Masoord, George W., Barnes, London, England. Cylinder for printing-presses	845,949	Mar. 5	462	136	127	165
Matthews, Jesse H., Des Moines, Iowa. Metallic strip for dashes	845,931	Mar. 5	1213	266	127	307
Matthews, Leonard, Jr., assignor to Norvell-Shapleigh Hardware Company, St. Louis, Mo. Merchandise-cabinet	845,121	Mar. 5	838	174	127	209
Max Ams Machine Company. (See Brensinger, Julius, assignor.)						
May, William R., Newton, Mass. Clutch	845,979	Mar. 5	309	62	127	69
May, William H., Bridgeport, Conn. Violin-bridge	845,980	Mar. 5	1214	266	127	307
Mayer, Emerich C., *et al.* (See Mehle, Michael, assignor.)						
Maywald, Frederick J. (See Austen and Maywald.)						
McAlear, James, St. Paul, Minn. Valve for sprinkler systems	845,235	Mar. 5	1219	269	127	308
McBlain, Alexander W., Killduff, Iowa. Road-grader	845,989	Mar. 5	801	103-4	127	139
McCaskey Register Company. (See Pardee, Rollin D., assignor.)						
McCormick, William J., Trivoli, Ill. Flue-cleaner	845,994	Mar. 5	1034	222	127	263
McElroy, Robert L., J. E. Shepherd, and J. G. Nolen, Chicago, Ill., assignors to Automatic Fire Protection Company. Automatic fire-signal system	845,995	Mar. 5	1222	269-71	127	309
McFarland, Thomas W., Chicago, Ill. Means for drying or curing paper-board	845,997	Mar. 5	1220	271	127	310
McGraw, Rhoda, Syracuse, N. Y. Supply-valve for flush-tanks	845,152	Mar. 5	857	179	127	218
McIntyre, Frank, assignor to Eagle Pencil Company, New York, N. Y. Assortment-box or display-rack for lead-pencils	845,153	Mar. 5	808	179	127	218
McKee, Thomas A., assignor to F. M. Nichols and F. H. Lowe, Peoria, Ill. Corn-planter	845,998	Mar. 5	144	27	127	40
McKenney, Albert W., Roxbury, Mass. Dental bracket	845,999	Mar. 5	1416	314	127	357
McKnight, John W., Hanover Pa., assignor to Hanover Gas Regenerating Company. Combined cock and support for cluster gas-burners	845,970	Mar. 5	808	104	127	130
McNamara, Patrick J., Baltimore, Md. Promoting combustion	845,938	Mar. 5	1222	.....	127	311
McNeely Company. (See Dunn, James, assignor.)						
McPhayden, John A., Evansville, Ind. Sliding-door fastener	845,395	Mar. 5	1035	222	127	263
McRaven, John, Little Rock, Ark. Safety third rail for railway-tracks	845,339	Mar. 5	1233	271	127	311
Mead, George A., Mansfield, Ohio. Rail-bond	845,122	Mar. 5	834	174	127	212
Medley, Clarence, Calgary, Alberta, Canada. Non-refillable bottle	845,333	Mar. 5	1215	269	127	307
Medlock, Augustus L., Stratford, Tex. Well-pump	845,225	Mar. 5	1019	218	127	259
Medlock, Augustus L., Midland, Tex. Well-tube	845,226	Mar. 5	1021	219	127	260
Mehle, Michael, Laibach, assignor of two-thirds to E. C. Mayer, Gratz, and A. Deeman, Laibach, Austria-Hungary. Paper-folding machine	845,158	Mar. 5	835	174-5	127	212
Meinecke, Christian W., Jersey City, and D. Hogan, Hoboken, N. J., assignors to Whitall Tatum Company, New York, N. Y. Chamber, slop-jar, and the like	845,234	Mar. 5	1043	218	127	259
Meisselbach, August F., assignor to A. F. Meisselbach & Brother, Newark, N. J. Fishing-reel	845,805	Mar. 5	140	26	127	39
Mendelson, David, Brooklyn, N. Y. Electric motor	845,227	Mar. 5	1034	219	127	260
Mergenthaler Linotype Company. (See Rogers, John R., assignor.)						
Merker, John F., *et al.* (See Keyes, William W. W., assignor.)						
Mermod Frères. (See Keller, Alfred, assignor.)						
Merrow Machine Company. (See Stedman, William H., assignor.)						
Metcalf, Foster M., assignor to American Steam Pump Company, Battle Creek, Mich. Steam-valve	845,041	Mar. 5	663	127	127	167
Metcalf, George A., Malden, Mass. Guard or gate for street-cars, &c	845,880	Mar. 5	311	62	127	61
Metcalf, George E., assignor to Harrington & Richardson Arms Co., Worcester, Mass. Work-holding attachment for drills	845,394	Mar. 5	1217	269	127	308
Meyer, Ernest C., assignor to Champion Machinery Company, Cleveland, Ohio. Heading-machine	845,806	Mar. 5	142	26-7	127	39
Meyer, Hermann, New York, N. Y. Rewinding mechanism for self-playing pianos	845,419	Mar. 5	1427	308-13	127	357
Meyer, Peter, Cologne-Nippe, Germany. Cash-register	845,124	Mar. 5	837	178-6	127	213
Michels, Christian N. (See Foerster, Julius T., assignor.)						
Miesse, William F., *et al.* (See Althen, William C., assignor.)						
Miller, Adam, Jr. (See Flohr and Miller.)						
Miller, Ellis W., assignor of one-half to J. Batterton, Greensburg, Ind. Step-ladder	845,288	Mar. 5	1035	219	127	261
Miller, Henry G., assignor to Loew Supply & Manufacturing Company, Cleveland, Ohio. Water-separator	845,207	Mar. 5	143	27	127	40
Miller, Thomas S., South Orange, and J. H. Dickinson, Montclair, N. J. Hoisting and conveying apparatus	845,042	Mar. 5	665	127-8	127	167
Mills, Herbert S., Chicago, Ill. Motor	845,429	Mar. 5	1460	223-3	127	306
Mills, William S. (See Draper, Stephen H., assignor.)						
Mitchell, Ernest G., Bowden, England. Means for forming announcements on glass windows and other plane surfaces	845,043	Mar. 5	668	126	129	168
Mittendorf, Charles C., St. Louis, Mo. Garbage-receptacle	845,264	Mar. 5	493	102	127	128
Mobley, Richard, St. Louis, Mo. Fastener for car-doors	845,126	Mar. 5	845	176	127	214
Moncus, Joseph G., Crowell, Tex. Shears	845,881	Mar. 5	314	66	127	81
Montgomery, James P., assignor of forty-nine one-hundredths to G. L. Edwards, Wichita, Kans. Pump	845,995	Mar. 5	494	102	127	128
Montgomery, John, Toronto, Ontario, Canada. Car-door	845,128	Mar. 5	844	177	127	214
Montgomery, Joseph H., Puerto de Luna, N. Mex. Ter. Wagon	845,229	Mar. 5	1027	220	127	261
Moody, William O., and H. A. Simms, Chicago, Ill. Gondola-car stake	845,127	Mar. 5	845	177	127	215
Moore, La Fayette, assignor to L. Moore Dry Kiln Company, Jacksonville, Fla. Dry-kiln	845,044	Mar. 5	668	128-9	127	168
Moore, Otto N., Indianapolis, Ind. Fare-register	845,882	Mar. 5	314	65-6	127	81
Morden, Lucena M., Waterbury, Conn. Temporary binder	845,883	Mar. 5	332	66	127	83
Morden, Lucena M., Waterbury, Conn. Hinged post for loose-leaf binders	845,230	Mar. 5	1030	220	127	262
Morehead, James T. (See Roberts, Isaiah L., assignor.)						
Morris, John H., Maquoketa, Iowa. Truck	845,998	Mar. 5	667	168	127	129
Morris, Samuel, Newark, assignor of one-half to M. H. Neil, Columbus, Ohio. Car-coupling	845,178	Mar. 5	849	177	127	216
Morse, Clyde S., Shabbona, Ill. Sliding-door fastener	845,179	Mar. 5	849	178	127	216
Morton, Thomas S., Quincy, Ill. Lock	845,231	Mar. 5	1031	221	127	262
Mossovits, Isidor S., New York, N. Y. Amusement device	845,087	Mar. 5	668	168	127	129
Motherwell, David M., Chicago, Ill., assignor to Whitman & Barnes Manufacturing Co., Akron, Ohio. Traveling carrier	845,884	Mar. 5	333	66-7	127	83
Mourne, John E., and H. J. Tinsley, Chillicothe, Ohio. Reservoir-bleeder	845,232	Mar. 5	1031	221	127	262
Moxley, Minor. (See Dolson and Moxley.)						
Mueller, Frederick T. (See Kiely and Mueller.)						
Mueller, Otto H., Berlin, Germany, assignor to Henry R. Worthington, New York, N. Y. Equalizing device for direct-acting engines	845,045	Mar. 5	669	129	127	168
Müller, John P., Freeport, Ill. Combined wagon and sled	845,130	Mar. 5	852	178	127	216
Mulligan, James. (See Roehm, Bernard J., assignor.)						
Mumford, Joseph A., Rosiyn, N. Y., and D. W. Robb, Amherst, Nova Scotia, Canada. Steam-generator	845,885	Mar. 5	297	67	127	84

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Munnecke, Theodore, New York, N. Y. Sign-painting process	846,233	Mar. 5	1033	221	127	263
Munson, Otis. (See Kinney, Rees, assignor.)						
Muns, Charles W., Detroit, Mich. Machine for graining wood	846,131	Mar. 5	854	178	127	217
Murray, Horace M., Bridgeton, Me. Coffee-pot	845,998	Mar. 5	490	103	127	129
Myers, Charles A., Niagara Falls, N. Y. Street or station indicator	845,886	Mar. 5	330	66	127	85
Nasmith, John D., Toronto, Ontario, Canada. Baking-oven	846,046	Mar. 5	662	140	127	169
Nathan Anklet Support Company. (See Nathan and Cohen, assignors.)						
Nathan, Benjamin, and H. Cohen, assignors to Nathan Anklet Support Company, New York, N. Y. Hosiptore	845,809	Mar. 5	140	28	127	41
Nathan, M. E. (See Fuhrmann, Joseph C., assignor.)						
Nathan Manufacturing Company. (See Kassander, Leopold, assignor.)						
National Electric Signaling Company. (See Austin, Louis W., assignor.)						
National Gas Drill Co. (See Duryea, Otho C., assignor.)						
National Smoke Cleansing Company. (See Rosener, John, assignor.)						
Naylor, Thomas F., Kidderminster, and O. S. Hall, Bury, England. Loom for weaving chenille or pile fabrics	845,810	Mar. 5	132	28-9	127	42
Neal, William, *et al.* (See Reese, John E., assignor.)						
Nealy, Charles M., Chicago, Ill. Puzzle	846,134	Mar. 5	859	179	127	218
Neal, Moses H. (See Morris, Samuel, assignor.)						
Nelson, Charles J. (See Rudolphi and Nelson.)						
Nelson, Hans, *et al.* (See Clausen, Jens M., assignor.)						
Newell, Frank C., Williamsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Electric switch mechanism	846,340	Mar. 5	1234	272	127	311
Newman, Samuel, Cincinnati, Ohio. Display outfit	845,987	Mar. 5	332	66	127	85
Newman, Samuel B., assignor to Ideal Novelty Manufacturing Co., Cleveland, Ohio. Top-spinning pistol	846,047	Mar. 5	665	140	127	170
Nichols, Frank M., *et al.* (See McKee, Thomas A., assignor.)						
Niven, Andrew M., *et al.* (See Gleaney, Gilbert, assignor.) (Reissue.)						
Niven, John W. C., *et al.* (See Gleaney, Gilbert, assignor.) (Reissue.)						
Niven, Robert, *et al.* (See Gleaney, Gilbert, assignor.) (Reissue.)						
Noble, Nettie R., Ithaca, N. Y. Bedstead	846,236	Mar. 5	1037	222-3	127	264
Noe, George L., and C. B. Weiland, Erie, Nov. Hinge	845,971	Mar. 5	305	104	127	131
Nolan, Frederick T., Crystal River, Fla. Shaft-packing	846,237	Mar. 5	1039	223	127	264
Nolen, James G. (See Mallory, Shepherd, and Nolen.)						
Norris, Jesse L. (See Norris, Michael E. and J. L.)						
Norris, Michael E. and J. L., Temple, Tex. Cotton-cleaner and gin-feeder	846,421	Mar. 5	1417	314	127	358
Northrop, Jessee, assignor to Draper Company, Hopedale, Mass. Filling-replenishing loom	846,048	Mar. 5	666	140-1	127	170
Norvell-Shapleigh Hardware Company. (See Matthews, Leonard, Jr., assignor.)						
Nye Tool and Machine Works. (See Bent, Edward E., assignor.)						
O'Brien, John C., Murphysboro, W. Va. Pruning implement	846,135	Mar. 5	860	180	127	219
O'Dowd, James, Tapanui, New Zealand. Roof-gutter	846,238	Mar. 5	1041	223	127	265
Odell, Preston R., Mason City, Ill. Hot-air furnace	845,888	Mar. 5	333	66	127	85
Oelschläger, Ernst, Charlottenburg, assignor to Siemens-Schuckert-Werke, Gesellschaft mit Beschränkter Haftung, Berlin, Germany. Dynamo-electric machine	846,422	Mar. 5	1419	314	127	358
Ogden, Frederick, Kalsbury, England. Bearing for rotary shafts	846,241	Mar. 5	1236	272	127	312
Ohmit, Jacob, *et al.* (See Brandley, William F., assignor.)						
Olde Meter Works. (See Coffin, Howard E., assignor.)						
Olesak, John A. (See Whipple and Olesak.)						
Osborne, Frank M., Auburndale, Mass. Crank-hanger	846,239	Mar. 5	1042	223	127	265
Osgood, Frederick M., Manchester, N. H. Game	845,811	Mar. 5	154	30	127	42
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Car-truck	846,240	Mar. 5	1043	224	127	265
Ougst, Webb M., St. Louis, Mo. Lead, ring, rule, and furniture case	845,972	Mar. 5	508	104	127	131
Overland, Thomas M. E., New York, N. Y. Grade-meter	846,241	Mar. 5	1045	224	127	266
Owens, John M. and M. H., Oolitic, Ind. Scabbling-machine	846,242	Mar. 5	1237	272-3	127	312
Owens, Mack H. (See Owens, John M. and M. H.)						
Page, Edward H. L., *et al.* (See White, Edwin F., assignor.)						
Paige, James W., Chicago, Ill., assignor, by mesne assignments, to Garland-Vila Manufacturing Company, Muskegon, Mich. Feeding mechanism for corn-husking machines	846,423	Mar. 5	1420	315	127	358
Pape, William A. C., Los Angeles, Cal. Rotary engine	845,973	Mar. 5	509	105	127	131
Pardee, Rollin D., Garrettsville, assignor to McCaskey Register Company, Alliance, Ohio. Credit-accounting appliance	846,136	Mar. 5	861	180	127	219
Park, George W. Denver, Colo. Eraser	845,889	Mar. 5	334	69	127	86
Parker, Arthur M., Los Angeles, Cal. Scoring-awl	846,242	Mar. 5	1047	225	127	266
Parsons, Raymond S., Real Hampton, N. Y. Outlet-box, electric conductor	845,974	Mar. 5	511	105	127	132
Patterson, John, Flesher, Mont. Combined coupling-pin and compound tool	845,975	Mar 5	513	106	127	132
Patterson, Warren A., assignor to American Cotton Separator Company, St. Louis, Mo. Cotton-separator	845,976	Mar. 5	514	106-7	127	133
Payton, Alma, Sylvester, Ga. Loom-preventing device	845,812	Mar. 5	155	30	127	42
Pearson, Charles, Chicago, Ill., assignor to International Harvester Company. Corn picker and husker	846,049	Mar. 5	675	141-2	127	173
Peckham, Edgar, Kingston, N. Y. Trunk	845,977	Mar. 5	518	107	127	134
Pelmulder, Charles, Grant City, Iowa. Automatic hog-waterer	845,424	Mar. 5	1422	315	127	359
Pennsylvania Steel Company. (See Henderson, William M., assignor.)						
Perry, Charles B., Mortimer, N. Y. Type-writer cabinet	846,243	Mar. 5	1048	225	127	267
Pester, Max E., Glen Cove, N. Y. Submarine structure	845,813	Mar. 5	156	30	127	43
Peteler, Francis, Minneapolis, Minn. Dumping-car	846 137	Mar. 5	863	180-1	127	219
Petrie, Charles, St. John's, Newfoundland. Hawse-pipe	846,244	Mar. 5	1050	225	127	267
Petrikin, Charles L., Money, Pa. Attachment for grinding centers	846,245	Mar. 5	1051	226	127	267
Pfander, Otto, Brussels, Belgium. Gear-case for motor-vehicles, &c	845,814	Mar. 5	157	30-1	127	43
Pfleger, Otto, New York, N. Y., assignor to W. F. Burns Company, Chicago, Ill. Lock for savings-banks	845,815	Mar. 5	158	31	127	43
Phelps, George L., Chicago, Ill., assignor to International Harvester Company. Tongue-truck for harvesters	846,136	Mar. 5	865	181	127	220
Philbrick, Frank W. (See Wood, Littlefield, and Philbrick.)						
Philp, Casimir Von, Bethlehem, assignor to Bethlehem Steel Company, South Bethlehem, Pa. Multiple-pressure system	846,266	Mar. 5	1053	226	127	276
Piepenbring, Emil, Dortmund, Germany. Miner's safety-lamp	846,050	Mar. 5	677	142-3	127	174
Plym, Francis J., Kansas City, Mo. Store-front construction	846,343	Mar. 5	1242	273	127	313
Pollard, Julian A., Jr. (See Watkins, Benjamin G., assignor.)						
Poole, Arthur F., Wheeling, W. Va. Electrically-driven step-by-step machine	845,890	Mar. 5	336	69	127	86
Pooler, Orilla A., George, Mo. Box-fastener	846,246	Mar. 5	1052	226	127	268
Prescott, George S., New London, N. H. Stable implement	845,891	Mar. 5	338	70	127	87
Pressed Prism Plate Glass Company. (See Wadsworth, Frank L. O., assignor.)						
Pressed Steel Car Company. (See Underhill, Charles A., assignor.)						
Prindle, Roscoe R., assignor of one-half to C. H. and V. C. Tompkins, New York, N. Y. Centripetal-centrifugal pump and condenser	845,816	Mar. 5	160	31	127	44
Proulx, Joseph M. (See Bouvier and Proulx.)						
Pruden, Clarence D., St. Paul, Minn. Making troughs	846,139	Mar. 5	866	181	127	220

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pullman Company. (See Dodds, Ethan I., assignor.)						
Quick, Howard L., New York, N. Y. Tentering-machine	845,817	Mar. 5	163	32-3	127	44
R. F. Simmons Company. (See Baker, Henry R., assignor.)						
Radford, Stephen C., Oshkosh, Wis. Combined water and chemical sprinkling system	845,892	Mar. 5	230	70	127	67
Rafferty, William J., Chicago, Ill. Air-purifying water-screen	846,244	Mar. 5	1244	274	127	312
Railroad Supply Company. (See Bell, Edwin H., assignor.)						
Rainwater, James E., Georgetown, S. C. Advertising device	845,883	Mar. 5	348	70	127	91
Ransom & Randolph Company. (See Hullhorst, William G., assignor.)						
Rapp, Joseph, assignor of one-half to L. F. Lumaghi, Collinsville, Ill., and J. D. Lumaghi, St. Louis, Mo. Coal screening and grading apparatus	846,149	Mar. 5	886	181	127	221
Rapp, Joseph, assignor of one-half to L. F. Lumaghi, Collinsville, Ill., and J. D. Lumaghi, St. Louis, Mo. Coal-washer	846,141	Mar. 5	886	182	127	221
Rappelee, Francis D., Green Bay, Wis. Screw-driver attachment	845,978	Mar. 5	823	208	127	135
Rasmussen, Nels. (See Harris, Bremer, and Rasmussen.)						
Rauh, Leopold. (See Dana, William H., assignor.)						
Ray, James A., Wichita, Kans. Boiler-cleaner	846,051	Mar. 5	870	143	127	174
Redmond, Harry G. (See Temple, Edward, assignor.)						
Reed, William H., Pittsburg, Pa. Seal-envelop	846,245	Mar. 5	1245	274	127	314
Reese, John E., assignor of one-sixth to C. M. Ballard, one-half to W. F. Blackford, one-fifth to W. Neal, and two-fifteenths to G. L. Martin, Louisville, Ky. Railway-crossing	846,426	Mar. 5	1428	215-16	127	339
Reeve, Henry E., assignor to Automatic Fire Alarm Company, New York, N. Y. Thermostat	845,854	Mar. 5	349	71	127	91
Reeves & Company. (See Clay, Harry C., assignor.)						
Reeves, William, New Haven, Conn. Eye-cleansing device	846,142	Mar. 5	870	182	127	222
Regondi, Giuseppe, New Brighton, N. Y. Music-leaf turner	845,895	Mar. 5	351	71	127	91
Rennerfelt, Gustaf T., Scranton, Pa., assignor to W. H. Foster, New York, N. Y. Speed-varying mechanism	845,896	Mar. 5	353	72	127	92
Reuter, Henry J., St. Louis, Mo. Temporary binder	845,818	Mar. 5	170	33	127	46
Rhodes, Carl C., Honolulu, Hawaii, and H. G. Rhodes, San Francisco, Cal. Sprinkler	846,426	Mar. 5	1426	216	127	339
Rhodes, Harry G. (See Rhodes, Carl C. and H. G.)						
Rice, Frank W. (See Dennis and Rice.)						
Rich, Jerome, Jackson, Mich. Scrubbing-brush	846,246	Mar. 5	1246	274	127	314
Richards Manufacturing Company. (See Wideman, Gustavus, assignor.)						
Richardson, Samuel, Tulare, Cal. Bridge and bridge guard or railing	845,897	Mar. 5	353	72	127	92
Richert, Christina W., Buffalo, N. Y. Neckband-holder	845,970	Mar. 5	894	208	127	135
Richter, Rudolf, Charlottenburg, assignor to Siemens-Schuckert-Werke, G. M. B. H., Berlin, Germany. Alternating-current machine with commutators and with compensating windings	846,427	Mar. 5	1427	216	127	339
Ricker, Charles. (See Draper, Stephen H., assignor.)						
Rickles, Jasper N., Altoona, Ala. Mining-drill	846,896	Mar. 5	350	72	127	92
Ridgely, Charles T., assignor to Standard Trimmer Company, Springfield, Ohio. Folding table	846,142	Mar. 5	871	182-3	127	222
Riedy, Joseph F., Hamburg, Iowa. Display-stand	846,247	Mar. 5	1246	274	127	314
Robb, David W. (See Mumford and Robb.)						
Roberts, Gilford B., et al. (See Keyes, William W. W., assignor.)						
Roberts, Isaiah L., assignor of one-half to J. T. Morehead, New York, N. Y. Treatment of alloys to alter their composition	845,819	Mar. 5	171	.....	127	46
Roberts, John D., Oakmont, Pa. Odometer	845,820	Mar. 5	174	33	127	46
Robertson, James. (See Lehman, Cook, and Robertson.)						
Robertson, James D. (See Lindner, John C., Jr., assignor.)						
Robinson, William, Muskegon, Mich., assignor to W. G. Nagel Electric Company, Toledo, Ohio. Pole-distribution rack for telephone systems	846,144	Mar. 5	870	182	127	223
Rockwell, Joseph H., Providence, R. I. Folding music-rack	846,248	Mar. 5	1249	275	127	314
Roehm, Bernard J., assignor of one-half to J. Mulligan, Cincinnati, Ohio. Combination caliper-gage	845,898	Mar. 5	350	73	127	94
Roesser, John, Baltimore, Md., assignor to National Smoke Cleansing Company. Smoke-cleaner and cinder-catcher as applied to locomotives	846,062	Mar. 5	881	143	127	174
Rogers, John R., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	846,053	Mar. 5	883	143	127	175
Rogers, John R., New York, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	846,054	Mar. 5	886	144	127	175
Rogers, John R., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	846,055	Mar. 5	888	144	127	176
Rogers Shear Company. (See Coleman, Jerome M., assignor.)						
Roland, Edward S., Cleveland, Ohio. Trolley wheel and harp	845,900	Mar. 5	352	73	127	94
Root, Joseph T., Boston, Mass. Door-gage	846,249	Mar. 5	1250	275	127	315
Rothe, William F., East St. Louis, Ill. Friction-clutch	846,250	Mar. 5	1252	275	127	315
Royer, George F. (See Kelly and Royer.)						
Rudolphi, Frank, and C. J. Nelson, Chicago, Ill., assignors to American Can Company, New York, N. Y. Can-end-soldering machine	846,145	Mar. 5	877	182-3	127	223
Rudolphi, Frank, and E. Brauninger, Chicago, Ill., assignors to American Can Company, New York, N. Y. Sheet-metal display can or box	846,251	Mar. 5	1264	275	127	316
Rudy, Frank, Paola, Kans. Display-rack	846,221	Mar. 5	178	34	127	47
Ruffin, John A., assignor to Hammond Typewriter Company, New York, N. Y. Polychrome-ribbon attachment for type-writers	846,026	Mar. 5	894	131	127	160
Russell & Erwin Manufacturing Company. (See Voight, Henry G., assignor.)						
Sanford, Hugh W., Knoxville, Tenn. Axle-lubricating mechanism	846,026	Mar. 5	880	144	127	176
Sarason, David, Berlin, Germany. Head-rest for chairs	846,222	Mar. 5	178	34	127	47
Savage, M. W. (See Sprague, Newton C., assignor.)						
Schafer, W. L. (See Bindner, Alfred C., assignor.)						
Schies, John, Anderson, Ind. Apparatus for feeding and delivering glass	846,057	Mar. 5	891	145	127	176
Schillinger, Theodore, New York, N. Y. Plate for arches	846,247	Mar. 5	1063	227	127	268
Schmalz, William A., Duryea, Pa. Square	846,248	Mar. 5	1064	227	127	269
Schmidt, Benjamin F., Modesto, Cal. Nail-holding attachment for driving-tools	846,099	Mar. 5	880	146	127	179
Schmidt, Charles, New York, assignor of one-half to J. C. Hoffmann, Brooklyn, N. Y. Comb	846,223	Mar. 5	177	34	127	47
Schmitt, Joseph, Woonsocket, R. I. Spinning-mule	846,056	Mar. 5	890	145	127	176
Schmitz, Gerhard, assignor of one-half to D. Barclay, Byesville, Ohio. Automatic switch	846,146	Mar. 5	889	185	127	224
Schneider, Adolph, Chicago, Ill., assignor to H. Schneider, Trinidad, Colo. Regulator for use with filling-valves	846,147	Mar. 5	892	185-6	127	225
Schneider, Henry. (See Schneider, Adolph, assignor.)	845,822	Mar. 5	1265	276	127	316
Schnelbach, Henry A. (See Macbeth and Schnelbach.)						
Schram, A. J. (See Bonham, Walter R., assignor.)						
Schreiber, Carl, assignor of one-half to J. Bitzer, Chicago, Ill. Oval compasses	845,824	Mar. 5	177	34	127	47
Schuis, Richard, Berlin, Germany. Fastening of blades in turbines	845,901	Mar. 5	353	72-4	127	94
Schuis, Richard, Berlin, Germany. Steam-turbine	845,902	Mar. 5	355	102-3	127	136
Schwartz, Frank D. (See Ambrose and Schwartz.)						
Schwartz, Herman M., assignor to Florence Manufacturing Company, Northampton, Mass. Making toilet-mirrors and other like articles	846,148	Mar. 5	893	186	127	225

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Scott, Robert W., Leeds Point, N. J., assignor of one-half to L. N. D. Williams, Ogontz, Pa. Knitted fabric	846,353	Mar. 5	1258	276	127	316
Scott, Robert W., Leeds Point, N. J., assignor of one-half to L. N. D. Williams, Ogontz, Pa. Ribbed knitted fabric	846,428	Mar. 5	1429	316	127	361
Scott, Robert W., Leeds Point, N. J., assignor of one-half to L. N. D. Williams, Ogontz, Pa. Ribbed knitted fabric	846,429	Mar. 5	1430	317	127	361
Scott, Robert W., Leeds Point, N. J., assignor of one-half to L. N. D. Williams, Ogontz, Pa. Open-work knitting-machine	846,430	Mar. 5	1431	317-18	127	361
Scott, Robert W., Leeds Point, N. J., assignor of one-half to L. N. D. Williams, Ogontz, Pa. Open-work knitting-machine	846,431	Mar. 5	1436	318-19	127	362
Scovill Manufacturing Company. (See Hyde, Theophilus R., Jr., assignor.)						
Scully, George H., Kansas City, Mo. Garment-fitting stand	846,149	Mar. 5	885	186	127	225
Seiler, Paul, Oakland, Cal. Foundation for buildings	846,249	Mar. 5	1055	227	127	269
Seig, Otto, New York, N. Y. Separator	846,060	Mar. 5	705	146	127	181
Sellers, Philip. (See Sellers, Richard C. and P.)						
Sellers, Richard C., Swarthmore, Pa., and P. Sellers, Meriden, Conn.; said P. Sellers assignor to said Richard C. Sellers. Calendar	846,250	Mar. 5	1056	228	127	269
Sennett, Walter C., Portland, Me. Handsaw attachment	846,061	Mar. 5	706	146	127	181
Serra (y Carbó), José, Barcelona, Spain, assignor to H. Coale, Baltimore, Md. Artificial cork and making the same	846,251	Mar. 5	1059	.....	127	270
Sharood, Charles K., St. Paul, Minn. Fastener for shoe-uppers	846,252	Mar. 5	1061	228	127	270
Sharp, Charles S. (See Kennedy and Sharp.)						
Sharp, Charles S., Auburn, N. Y., assignor to International Harvester Company. Disk harrow	845,902	Mar. 5	366	74-5	127	95
Sharp, Joseph W., Jr., assignor to Haines, Jones and Cadbury Company, Philadelphia, Pa. Water-closet	846,150	Mar. 5	887	186	127	226
Shaw, George F., San Francisco, Cal. Extension vehicle-step	846,151	Mar. 5	889	187	127	227
Shaw, Pearl L., Detroit, Mich. Duplex dumping and shaking grate	845,903	Mar. 5	367	75	127	95
Shear, Gertrude, Bergman, Ark. Darning implement	846,253	Mar. 5	1062	228	127	270
Shepherd, John E. (See McElroy, Shepherd, and Nolen.)						
Shields, George F., Kern, Cal. Curling-iron	846,354	Mar. 5	1259	276	127	317
Shinn, Joseph A., Pittsburg, Pa., assignor to Fireproof Materials Company. Article of manufacture	845,825	Mar. 5	180	.....	127	48
Siemens-Schuckert-Werke, G. M. B. H. (See Richter, Rudolf, assignor.)						
Siemens-Schuckert-Werke, Gesellschaft mit Beschränkter Haftung. (See Oelschläger, Ernst, assignor.)						
Simms, Harold A. (See Moody and Simms.)	846,152	Mar. 5	890	187	127	227
Simpson, Hezradius G., Elkhorn, W. Va. Horse-detacher	845,826	Mar. 5	181	35	127	48
Sims, Edward B., Western, Nebr. Spring-wheel	845,981	Mar. 5	529	110	127	137
Sinclair Laundry Machinery Co. (See Thurber, William, assignor.)						
Singer, Harold D., Omaha, Nebr. Nursing-bottle	846,355	Mar. 5	1260	276-7	127	317
Singsby, Walter, assignor to Drakes Limited, Ovenden, Halifax, England. Apparatus for charging gas-retorts	846,254	Mar. 5	1063	229	127	270
Sloan, Emanuel, Bastrop, Tex. Seed-planter	846,432	Mar. 5	1432	319-20	127	362
Smiley, William H., Niles, Ohio. Printing-press	846,356	Mar. 5	1263	277	127	318
Smith, Adelbert, Seward, N. Y. Vending-machine	846,255	Mar. 5	1064	229	127	271
Smith, Cullen R., Fentress, Tex. Stalk-puller	846,357	Mar. 5	1265	277-8	127	318
Smith, Harry F., Lexington, Ohio. Producer-gas apparatus	846,358	Mar. 5	1267	278-9	127	319
Smith, Harry F., Lexington, Ohio. Handling ash in gas-producers	845,904	Mar. 5	369	75	127	95
Smith, Harry W., North Grafton, assignor to Draper Company, Hopedale, Mass. Weft-replenishing loom	846,256	Mar. 5	1068	230	127	271
Smith, Purnell W., Philadelphia, Pa. Salt and pepper cellar	845,982	Mar. 5	530	110	127	137
Smith, Robert S., Alva, Okla. Tax. Feed-box						
Snell, Harry K. (See Vogel and Snell.)						
Snow, Fred W., Hillburn, N. Y., assignor to Standard Equipment Company, Mahwah, N. J. Switch-stand	846,062	Mar. 5	707	147	127	181
Snow, Fred W., Hillburn, N. Y., assignor to Standard Equipment Company, Mahwah, N. J. Switch-stand	846,063	Mar. 5	709	147-8	127	182
Souder, John, Philadelphia, Pa. Combination bill-head, duplicate, label, receipt, and envelop	846,064	Mar. 5	711	148	127	182
Souther, Elbridge G., Lynn, Mass. Counting device for blank-cutting machines	846,153	Mar. 5	892	187-8	127	227
Spake, William H. (See Coleman and Spake.)						
Sparmaker, Frank P., and J. L. Henry, Philadelphia, Pa.; said Sparmaker assignor to said Henry. Display-rack	846,359	Mar. 5	1269	279	127	319
Sprague, Newton C., assignor to M. W. Savage, Minneapolis, Minn. Incubator	846,154	Mar. 5	893	188	127	228
Sprague, Newton C., assignor to M. W. Savage, Minneapolis, Minn. Brooder	846,155	Mar. 5	896	188	127	228
Sprowls, Frederick, West Finley, Pa. Wrench	846,360	Mar. 5	1271	279-80	127	320
Stamps, William M., Newman, Ga. Cultivator	846,156	Mar. 5	897	189	127	229
Standard Dry Kiln Company. (See Hussey, William P., assignor.)						
Standard Equipment Company. (See Snow, Fred W., assignor.)						
Standard Trimmer Company. (See Ridgely, Charles T., assignor.)						
Stedman, William H., assignor to Merrow Machine Company, Hartford, Conn. Trimming device for sewing-machines	846,065	Mar. 5	714	149	127	183
Steedman, George F., St. Louis, Mo. Fluid-actuated regulated cushioned hoist	845,827	Mar. 5	182	35	127	48
Steell, Alfred, Stanton, near Keighley, England. Bearing for spinning-machine spindles	846,361	Mar. 5	1272	280	127	320
Stephens, Lawrence, Mackaburg, Ohio. Rope-grab for oil or other drilled wells	846,157	Mar. 5	899	189	127	229
Stewart, William B., Philadelphia, Pa. Socket bushing or fitting for electrical purposes	846,158	Mar. 5	900	189	127	229
Stimson, Robert W. (See Gez Vincent D., assignor.)						
Stocks, Harry B., and J. R. Webb, Jr., assignors to Climax Patents Limited, Manchester, England. Percussive hand-tool	845,905	Mar. 5	372	76	127	96
Stoll, Thomas A. (See Bodenstein, Albert, assignor.)						
Stone, Martin V. B., Swampscott, Mass. Sandpaper-holder	846,159	Mar. 5	900	190	127	230
Strain, Thomas, Fullerton, Cal. Fruit-brushing machine	846,160	Mar. 5	902	190	127	230
Strain, Thomas, Fullerton, Cal. Fruit-brushing machine	846,161	Mar. 5	903	190	127	230
Strain, Thomas, Fullerton, Cal. Fruit-brushing machine	846,162	Mar. 5	905	190	127	231
Strand, Henry, Cleveland, Ohio. Furnace	845,828	Mar. 5	184	36	127	48
Stratiff, James C., Tyrone, Pa. Safety-cock	846,257	Mar. 5	1069	230	127	272
Stubinger, William F., St. Louis, Mo. Coffee-urn	846,163	Mar. 5	906	191	127	231
Stuver, William F. (See Bussard, William B., assignor.)	846,066	Mar. 5	716	149	127	183
Sunshine, Monroe, New York, N. Y. Ironing device	846,258	Mar. 5	1070	230-1	127	272
Sutcliffe, Edgar R., Leigh, England. Brickmaking-machine	846,259	Mar. 5	1072	231-2	127	273
Swan, Peter B., Calcutta, India, and M. Fraser, Arbroath, Scotland. Machine for measuring and cutting cloth	845,906	Mar. 5	377	77	127	97
Swart, Philip F., Brockport, N. Y. Guiding and supporting mechanism for canopy-standards	846,362	Mar. 5	1274	280-1	127	321
Swift, George W., Jr., Bordentown, N. J. Press	846,260	Mar. 5	1075	233	127	273
Symons, William E., Chicago, Ill. Railway bumping-post	845,829	Mar. 5	185	36	127	49
Tacke, Frederick C., St. Louis, Mo. Shelf-door	846,164	Mar. 5	908	191	127	231
Teator, John M., assignor of one-half to C. R. Balke, Indianapolis, Ind. Tenpin						
Temple, Edward, Springfield, assignor of one-half to H. G. Redmond, Redmonds Mills, Ohio. Automobile	845,983	Mar. 5	531	110-11	127	137

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Thalberg, Maximilian F. (See Voller and Thalberg.)						
Thayer, Harry M., Woodhull, Ill. Metallic feed-box	845,627	Mar. 5	717	149	127	103
Thomas, George, Endicott, Va. Milk-pail	845,781	Mar. 5	1078	233	127	275
Thomas, George N., Pacific, Mo. Well-drilling machine	845,145	Mar. 5	938	191-2	127	231
Thomas, William H., Ermelo, Transvaal. Billiard-cue	845,193	Mar. 5	939	192	127	232
Thomas, William J. (See Worley and Thomas.)						
Thompson, Andrew F., Hornick, Iowa. Nut-lock	845,989	Mar. 5	1079	234	127	275
Thompson, Lars O. T., assignor to C. P. J. Johnsson, Stockholm, Sweden. Automatic selling and delivering apparatus	845,934	Mar. 5	835	111-12	127	126
Thornburgh, Lawrence D., Morrison, Okla. Ter. Washing-machine	845,167	Mar. 5	940	192	127	232
Thorne, Thomas W. (See Bernard, Harry, assignor.)						
Thornton, George R., *et al.* (See Thornton, Harry W., assignor.)						
Thornton, Harry W., Winona, Minn., assignor to E. L. Wallwork and G. R. Thornton, Chicago, Ill. Dancing toy	845,935	Mar. 5	838	112	127	126
Thurber, William, assignor to Sinclair Laundry Machinery Co., Chicago, Ill. Ironing or bosom board	845,632	Mar. 5	1441	220	127	264
Tibbits, James P., New York, N. Y. Dish-drainer	845,228	Mar. 5	1080	234	127	275
Tinsley, Homer J. (See Mourne and Tinsley.)						
Tompkins, Charles H., *et al.* (See Prindle, Roscoe S., assignor.)						
Tompkins, Vincent C., *et al.* (See Prindle, Roscoe, S., assignor.)						
Triumph Voting Machine Company. (See Delavan, Willard M., assignor.)						
Turner, Kelley M., New York, and N. W. Johnston, Chappequa, N. Y., assignors, by mesne assignments, to General Acoustic Company. Acousticon	845,988	Mar. 5	716	150	127	104
Tyden, Emil, Hastings, Mich. Sheet-feeding device	845,827	Mar. 5	879	77-8	127	68
Tyler, Charles C., Anneta, N. C. Convertible fork and rake	845,284	Mar. 5	1081	234	127	275
Uhrich, Burns H., Atchison, Kans. Revolving-door structure	845,629	Mar. 5	720	150-1	127	104
Underwood, Herbert G., New York, N. Y. Internal-combustion engine	845,679	Mar. 5	724	151-2	127	105
Underwood, Herbert G., New York, N. Y. Internal-combustion engine	845,680	Mar. 5	1443	220-1	127	264
United Alkali Company. (See Driffield and Wright, assignors.)						
United Lead Company. (See Bailey, John W., assignor.)						
Upson, Charles R., Bristol, Conn., assignor to G. Upson, Philadelphia, Pa. Drinking-fountain for poultry	845,269	Mar. 5	1276	261	127	221
Upson, George. (See Upson, Charles R., assignor.)						
Valentine, Daniel A., Oakland, Cal. Ink-well	845,168	Mar. 5	943	193	127	232
Valerius, Theodore L., Fort Atkinson, Wis., assignor to Creamery Package Mfg. Company, Chicago, Ill. Machine for filling cased bottles	845,169	Mar. 5	944	193	127	233
Van Winkle, Walter H., Newark, N. J. Apparatus for tapping mains	845,889	Mar. 5	1285	35-7	127	68
Vaughn, Edwin assignor to W. F. Burns Company, Chicago, Ill. Pocket savings-bank	845,283	Mar. 5	834	78	127	69
Victor Talking Machine Company. (See Gleason, Edward D., assignor.)						
Vogel, William C., and H. K. Snell, Rockford, Ill. Pianissimo device	845,671	Mar. 5	737	153-3	127	186
Voight, Henry G., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Lock and latch mechanism	845,889	Mar. 5	837	78-9	127	100
Voigtmann & Company. (See Duffy, Thomas I., assignor.)						
Voller, Ernest, Jersey City, and M. F. Thalberg, Hoboken, N. J. Composition of matter	845,285	Mar. 5	1082	.....	127	276
Volt-Ampère-Gesellschaft, Fleischmann & Co. (See Fleischmann, Adalbert, assignor.)						
W. F. Burns Company. (See Pfleger, Otto, assignor.)						
W. F. Burns Company. (See Vaughn, Edwin, assignor.)						
W. G. Nagel Electric Company. (See Robinson, William, assignor.)						
Wadsworth, Frank L. O., Morgantown, W. Va., assignor to Pressed Prism Plate Glass Company, New York, N. Y. Apparatus for grinding and polishing	845,927	Mar. 5	840	113	127	126
Wadsworth, Frank M., and J. P. Appleby, Minneapolis, Minn. Operating mechanism for advertising devices	845,926	Mar. 5	839	113-13	127	126
Waggoner, John C., Anthony, Kans. Grain-shocking device	845,264	Mar. 5	1278	261	127	222
Wagner Electric Manufacturing Company. (See Begole, Joshua F., assignor.)						
Wagner Electric Manufacturing Company. (See Langsdorf, Alexander S., assignor.)						
Waite, Clarence. (See Dohrmann and Waite.)						
Waite, Henry E., Newton, Mass. Mail-marking machine	845,911	Mar. 5	880	79-80	127	100
Walke, John H., Brockton, Mass. Last	845,672	Mar. 5	731	153	127	186
Walker, John B., New York, N. Y., and A. R. Bond, Plainfield, N. J. Music-sheet	845,287	Mar. 5	1027	235	127	277
Walker, Robert J., Anderson, Ind. Automatic trolley-retriever	845,285	Mar. 5	1279	261-2	127	222
Walker, Robert L., *et al.* (See White, Edwin F., assignor.)						
Wallace, Charles R. (See Wilcox, Ray, assignor.)						
Wallrath, Peter, Oxford, Mich. Casket-holder	845,873	Mar. 5	726	154	127	187
Wallwork, Edward L., *et al.* (See Thornton, Harry W., assignor.)						
Walsh, Harry C. H., assignor to Consolidated Press and Tool Company, Chicago, Ill. Can-body-side-seaming machine	845,982	Mar. 5	849	118-18	127	140
Warden, William F., Akron, Ohio. Ventilator	845,940	Mar. 5	839	78	127	100
Waterbury Clock Co. (See Horn, Ernest H., assignor.)						
Waterman, Frank W., assignor of two-thirds to H. E. Gibson and F. T. Dorton, Baltimore, Md. Coin-controlled liquid-vending apparatus	845,674	Mar. 5	726	154	127	187
Watkins, Benjamin G., assignor of one-third to J. A. Pollard, Jr., Nehawka, Nebr. Trolley-switch	845,286	Mar. 5	1281	262	127	223
Watkins, Orla H., Ames, Iowa. Reclining-chair	845,912	Mar. 5	880	80	127	101
Watson, Frank H., Huntingdon, Tenn. Violin-piano	845,913	Mar. 5	885	80	127	102
Watson, Gardner K., Farrell, Miss. Bottle-washer	845,282	Mar. 5	1026	235-6	127	277
Watson, Thomas S., Milwaukee, Wis. Motor-controller	845,280	Mar. 5	1024	230	127	276
Watt, John A., Halifax, Nova Scotia, Canada. Bucket-making machine	845,831	Mar. 5	132	37	127	49
Weaver, Amos, Keota, Iowa. Hay and grain rack	845,270	Mar. 5	1022	230-7	127	276
Weaver, John D. and W. H., Beavertown, Pa. Hydraulic ram	845,282	Mar. 5	131	37	127	50
Weaver, William H. (See Weaver, John D. and W. H.)						
Webb, John R., Jr. (See Stocks and Webb.)						
Weber, George W., assignor to American Can Company, New York, N. Y. Handle for sheet-metal can-jackets or other receptacles	845,674	Mar. 5	730	155	127	187
Weber, George W., assignor to American Can Company, New York, N. Y. Means for applying handles to sheet-metal vessels	845,675	Mar. 5	1445	221	127	264
Weeks, William C., Spokane, Wash. Water-gate	845,170	Mar. 5	947	194	127	233
Weiland, Charles S. (See Noe and Weiland.)						
Weintraud, Alfred, London, England. Suspenders for wearing-apparel	845,297	Mar. 5	1284	263	127	223
Weints, Jacob, Cleveland, Ohio. Drier	845,833	Mar. 5	886	80-0	127	51
Weman, Klas, Buffalo, N. Y. Telephone signaling device	845,298	Mar. 5	1285	263	127	223
West, John, West Didsbury, England. Machine for charging and drawing gas-retorts	845,834	Mar. 5	886	80-0	127	51
Westinghouse Electric & Manufacturing Company. (See Newell, Frank C., assignor.)						
Wheeler, Wilmot M., Danbury, Conn. Waterproofing composition	845,249	Mar. 5	1280	.....	127	223
Whaldes, Benjamin F., Ludlow, Vt. Stopper	845,571	Mar. 5	1034	237	127	279
Whipple, Ray S., and J. A. Olesnak, Philadelphia, Pa. Combined turning-tool and calipers	845,272	Mar. 5	1026	237	127	279
Whitehead, Lemuel M., Monroe county, Ala. Plow	845,171	Mar. 5	949	194	127	234
Whittall Tatum Company. (See Meinecke and Hogan, assignors.)						
White, Edwin F., assignor of two-thirds to E. H. L. Page, Hollidaysburg, and R. L. Walker, Duncansville, Pa. Hot-water heater	845,570	Mar. 5	1287	263	127	224

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Whitman & Barnes Manufacturing Co. (See Motherwell David M., assignor.)						
Whittemore, John Q. A. (See Burke, Charles G. and E. J., assignors.)						
Wideman, Gustavus, assignor to Richards Manufacturing Company, Aurora, Ill. Door-hanger	845,914	Mar. 5	396	81	127	102
Wideman, Gustavus, assignor to Richards Manufacturing Company, Aurora, Ill. Door-hanger	845,989	Mar. 5	551	115	127	141
Wiedner, Joseph H., Chicago, Ill., assignor to George Lanz & Company. Satchel-latch	845,915	Mar. 5	398	81	127	103
Wightman, Elmer E., Chicago, Ill. Gas-regulator for dental vulcanizers	845,835	Mar. 5	200	40	127	52
Wilcox, Ray, Detroit, assignor of one-half to C. R. Wallace, Jackson, Mich. Feeding device for conveying-apparatus	845,990	Mar. 5	553	116	127	142
Williams, Louis H. D. (See Scott, Robert W., assignor.)						
Williamson, John. (See Bentley, Charles W., assignor.)						
Willitts, William C., Richland, Mich. Carriage-top attachment	846,172	Mar. 5	920	194	127	234
Willour, Le Roy, Ashland, Ohio. Store-service ladder	846,371	Mar. 5	1240	284	127	325
Wilmot, John D., Denver, Colo. Electric igniter	845,836	Mar. 5	202	41	127	53
Wilson, Steven. (See Donohoe, William F., assignor.)						
Wines, Walter E., Minneapolis, Minn. Newspaper-assembling machine	845,837	Mar. 5	204	41-2	127	54
Wise, Alexander W., Arkansas, Kans. Adjustable head-rest for cooling-boards	845,916	Mar. 5	399	81	127	103
Wise, Harry J. and T. T., Waymire, Minn. Gun-sight	846,173	Mar. 5	921	195	127	234
Wise, Thomas T. (See Wise, Harry J. and T. T.)						
Wishon, Ralph, Columbus, Ohio. Puppet-valve	846,077	Mar. 5	742	155	127	190
Wolff, Charles H., Philadelphia, Pa. Base-ball game-board	845,838	Mar. 5	206	42	127	54
Wood, Frank J., Brooklyn, N. Y. Safety gas-trap	846,078	Mar. 5	743	155	127	190
Wood, Frederick H., Boston. (See Wood, Littlefield, and Philbrick, assignors.)						
Wood, Frederick H., Boston, C. H. Littlefield and F. W. Philbrick, Winchester, Mass., assignors to F. H. Wood, trustee. Bowling-pin	846,372	Mar. 5	1291	284	127	325
Woodard, A. J., *et al.* (See Cronin, Sarelia, assignor.)						
Wooll, William W., Machine City, Mich. Side bearing for cars	845,839	Mar. 5	207	42	127	54
Worden, William J., New York, N. Y. Burial-robe	845,840	Mar. 5	209	43	127	55
Worley, Joshua J., and W. J. Thomas, Sterrett, Ind. Ter. Shelf-supporting bracket	845,917	Mar. 5	400	81	127	103
Wray, Arthur. (See Wray, George and A.)						
Wray, George and A., Keighley, England. Apparatus for spraying and conditioning yarns	846,373	Mar. 5	1293	284-5	127	325
Wright, Frederick W. (See Driffield and Wright.)						
Wright, Hebden. (See Wright, James and H.)						
Wright, Ira O., assignor to Barlow Draft Gear Co., Baltimore, Md. Draft and buffing gear for cars	846,374	Mar. 5	1295	285	127	326
Wright, James and H., Ingrow, near Keighley, England. Spinning-machine spindle and its appurtenances	846,375	Mar. 5	1296	285-6	127	327
Wuest, Philip, Jr., assignor to Auto-Manual Piano Action Company, Philadelphia, Pa. Pressure-regulator for bellows	845,841	Mar. 5	210	43	127	55
Wunderlich, Adolph, assignor to London Electric Firm, Croydon, England. Driving mechanism	846,273	Mar. 5	1097	237-8	127	279
Wyeth, Augustus G., Newark, Ohio. Sleigh-runner attachment for wheeled vehicles	846,174	Mar. 5	923	195	127	234
Xevera, Zachariah, Santa Cruz, Cal. Poultry-feeder	846,175	Mar. 5	924	195-6	127	235
Xevera, Zachariah, Santa Cruz, Cal. Sash lock and holder	846,176	Mar. 5	925	196	127	235
Yates, George, Wyoming, Pa. Carpenter's square	846,274	Mar. 5	1100	238-9	127	280
York, David W., Shute Farm, Mass. Valved outlet for waste and overflow pipes	846,275	Mar. 5	1102	239	127	280
Yost, Victor A., Owasco, N. Y. Extensible shaft	846,079	Mar. 5	745	156	127	190
Zorge, Robert J., assignor to Zorge Safety Railway Equipment Company, Chicago, Ill. Alarm-signal	845,991	Mar. 5	555	116-17	127	142
Zorge Safety Railway Equipment Company. (See Zorge, Robert J., assignor.)						

DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Ahrenfeldt, Charles J., New York, N. Y. Covered dish or similar article	38,470	Mar. 5	127	367
Ahrenfeldt, Charles J., New York, N. Y. Plate or similar article	38,471	Mar. 5	127	367
Ahrenfeldt, Charles J., New York, N. Y. Plate or similar article	38,472	Mar. 5	127	368
Ahrenfeldt, Charles J., New York, N. Y. Plate or similar article	38,473	Mar. 5	127	368
Montgomery, James A., Los Angeles, Cal. Badge	38,469	Mar. 5	127	367

TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
A. Baldwin & Co. Ltd., New Orleans, La. Certain edge-tools	61,155	Mar. 5	127	385
Acker, Merrall & Condit Company, New York, N. Y. Coffee	61,047	Mar. 5	127	385
American Cotton Oil Company, near Guttenberg, N. J. Summer white cotton-seed oil	61,037	Mar. 5	127	385
American Cotton Oil Company, near Guttenberg, N. J. Cotton-seed oil	61,038	Mar. 5	127	385
American Cotton Oil Company, near Guttenberg, N. J. Cotton-seed oil	61,039	Mar. 5	127	386
American Cotton Oil Company, near Guttenberg, N. J. Cotton-seed oil	61,070	Mar. 5	127	386
American Dyewood Company, Philadelphia, Pa. Dyestuffs	61,191	Mar. 5	127	389
Argus Motoren Gesellschaft Jeanette & Co. Comm.-Ges., Berlin, Germany. Automobiles and parts thereof, except rubber tires	61,145	Mar. 5	127	386

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page
Atlantic Export Company, New York, N. Y. Brewer's grain	61,071	Mar. 5	127	386
Atlas Specialty Company, Buffalo, N. Y. Preparations for cleaning and polishing furniture and woodwork	61,109	Mar. 5	127	387
Bangor Roofing Slate Manufacturers Association, Bangor, Pa. Roofing-slate	61,040	Mar. 5	127	385
Bernese Alps Milk Co., Staiden, Emmenthal, Switzerland. Milk, cream, butter, and milk-powder	61,041	Mar. 5	127	385
Bissell Carpet Sweeper Company, Grand Rapids, Mich. Carpet-sweepers	61,146	Mar. 5	127	388
Bissell Carpet Sweeper Company, Grand Rapids, Mich. Carpet-sweepers	61,147	Mar. 5	127	388
Blanke-Baer Chemical Company, St. Louis, Mo. Flavoring extracts	61,083	Mar. 5	127	385
Bristol Co., Waterbury, Conn. Metallic fasteners for belts	61,148	Mar. 5	127	388
Canter, Abram R., Wilkinsburg, Pa. Eye medicine	61,188	Mar. 5	127	388
Chambers, Alice W., Philadelphia, Pa. Periodical publications devoted to photography	61,107	Mar. 5	127	387
Chandler & Taylor Company, Indianapolis, Ind. Certain machinery and parts thereof	61,149	Mar. 5	127	388
Charles Jacquin et Cie., Inc., New York, N. Y. Flavoring extract	61,048	Mar. 5	127	385
Charles Jacquin et Cie., Inc., New York, N. Y. Flavoring extract	61,049	Mar. 5	127	385
Chase & Sanborn, Boston, Mass. Tea	61,056	Mar. 5	127	385
Chicago Thread Mfg. Co., Chicago, Ill. Sewing-thread and art-needlework yarns	61,105	Mar. 5	127	387
Clarkson & Ford Co., New York, N. Y. Lubricating-oil	61,073	Mar. 5	127	386
Clarkson & Ford Co., New York, N. Y. Cutting-oil	61,073	Mar. 5	127	386
Cohen, Adolph, New York, N. Y. Outer waists, outer skirts, and suits	61,074	Mar. 5	127	386
Columbian Rope Company, Auburn, N. Y. Certain cordage	61,075	Mar. 5	127	386
Corbin & Co., H. F., Cincinnati, Ohio. Whisky	61,091	Mar. 5	127	386
Couch Bros. & J. J. Eagan Co., Atlanta and East Point, Ga. Collars, collar-pads, and back-bands for horses	61,109	Mar. 5	127	387
Defiance Machine Works, Defiance, Ohio. Certain machinery	61,150	Mar. 5	127	388
Denison Cotton Mill Co., Denison, Tex. Cotton duck	61,157	Mar. 5	127	388
Digney, Nellie L., Bridgeport, Conn. Combined abdominal supports and hose-supporters	61,133	Mar. 5	127	389
Dührssen, R., New York, N. Y. Decalcomanias and transfer-pictures	61,082	Mar. 5	127	385
Eberhard Manufacturing Company, Cleveland, Ohio. Certain metal manufactures	61,151	Mar. 5	127	388
Edw. B. Bruce Co., Baltimore, Md. Whisky	61,110	Mar. 5	127	387
Fabrik von Maggis Nahrungsmitteln, Kempttal, Switzerland. Certain named soup preparations	61,042	Mar. 5	127	385
Fabrik von Maggis Nahrungsmitteln, Kempttal, Switzerland. Certain named soup preparations	61,043	Mar. 5	127	385
Fahey, Edward F., Pittsfield, Mass. Blood-tonic	61,134	Mar. 5	127	389
Fortiner, Byron E., Camden, N. J. Remedy for seasickness	61,126	Mar. 5	127	389
Geo. D. Witt Shoe Co., Lynchburg, Va. Leather boots and shoes	61,111	Mar. 5	127	387
Geo. D. Witt Shoe Co., Lynchburg, Va. Leather boots and shoes	61,112	Mar. 5	127	389
Goetz & Company, Ludwig E., New York, N. Y. Embroideries, embroidery-patterns, and needle-work designs on linen or other fabrics	61,126	Mar. 5	127	387
Gordshell Chemical Company, Baltimore, Md. Salve	61,166	Mar. 5	127	388
Grendel Mills, Greenwood, S. C. Cotton piece goods	61,112	Mar. 5	127	387
Guthmann Carpenter & Telling, Chicago, Ill. Leather boots and shoes	61,113	Mar. 5	127	387
H. J. Heinz Company, Allegheny, Pa. Certain food preparations	61,051	Mar. 5	127	385
H. J. Heinz Company, Allegheny, Pa. Certain food preparations	61,052	Mar. 5	127	385
H. J. Heinz Company, Allegheny, Pa. Certain food preparations	61,053	Mar. 5	127	385
Hall & Ruckel, New York, N. Y. Preparation for removing superfluous hair from the human body	61,198	Mar. 5	127	389
Hinckley & Schmitt, Inc., Chicago, Ill. Mineral water	61,127	Mar. 5	127	387
Hohmann & Maurer Mfg. Co., Rochester, N. Y. Thermometers, barometers, mercury-gages, spring-gages, and hydrometers	61,120	Mar. 5	127	388
Home Fertilizer & Chemical Company of Baltimore City, Baltimore, Md. Fertilizers	61,114	Mar. 5	127	387
Humphreys Homeopathic Medicine Co., New York, N. Y. Certain medicines	61,160	Mar. 5	127	388
International Cutlery Company, Fremont, Ohio. Razors	61,153	Mar. 5	127	388
Iosaline Company, New York, N. Y. Transparent non-staining paste of iodin, true oil of winter-green, and menthol	61,161	Mar. 5	127	388
J. A. Pozzoni Pharmacal Co., St. Louis, Mo. Complexion-powder	61,162	Mar. 5	127	388
Jacquin & Co., H., New York, N. Y. Men's, women's, and children's knitted undershirts and drawers	61,168	Mar. 5	127	388
John C. Weller Co., Louisville, Ky. Gin	61,088	Mar. 5	127	386
Johnston, William J., New York, N. Y. Monthly periodical	61,115	Mar. 5	127	387
Judson L. Thomson Mfg. Co., Waltham, Mass. Rivets	61,164	Mar. 5	127	388
Kinahan & Company Limited, Dublin, Ireland. Gin	61,076	Mar. 5	127	386
Kirschbaum & Co., A. B., Philadelphia, Pa. Coats, trousers, vests, overcoats, and rain-coats	61,123	Mar. 5	127	387
Knoll & Co., Ludwigshafen-on-the-Rhine, Germany. Certain medicinal compounds	61,165	Mar. 5	127	388
Langendorf Watch Co., Langendorf, Switzerland. Watches, watchcases, and watch-movements	61,129	Mar. 5	127	387
Langendorf Watch Co., Langendorf, Switzerland. Watches, watchcases, and watch-movements	61,130	Mar. 5	127	387
Langendorf Watch Co., Langendorf, Switzerland. Watches, watchcases, and watch-movements	61,131	Mar. 5	127	387
Langendorf Watch Co., Langendorf, Switzerland. Watches, watchcases, and watch-movements	61,132	Mar. 5	127	387
Langendorf Watch Co., Langendorf, Switzerland. Watches, watchcases, and watch-movements	61,135	Mar. 5	127	387
Langendorf Watch Co., Langendorf, Switzerland. Watches, watchcases, and watch-movements	61,166	Mar. 5	127	388
Lappe, Th., Neudietendorf, Germany. Stomach-bitters	61,167	Mar. 5	127	388
Le Ripolin (Société Anonyme Française de peintures Laquées et d'enduits sous-marins procédés Lefrano & Briegleb réunis), Paris, France, and Amsterdam, Netherlands. Enamel paint	61,163	Mar. 5	127	388
Letzelter, Michael, Pittsburg, Pa. Whisky	61,082	Mar. 5	127	385
Levi, Jacob, Paterson, N. J. Certain shirts, overalls, and pantaloons	61,169	Mar. 5	127	388
Magnet Knitting Mills, Clinton, Tenn. Knitted socks and stockings	61,077	Mar. 5	127	386
Marshall, A. W., London, England. Prepared food made from fish and other ingredients	61,170	Mar. 5	127	388
Marvel Furniture Company, Jamestown, N. Y. Chiffonniers, dressers, and commodes	61,054	Mar. 5	127	385
Massie, C. W., Fort Worth, Tex. Liniment	61,116	Mar. 5	127	387
Mayer & Sons, S., New York, N. Y. Infants' hats and caps	61,158	Mar. 5	127	388
McCart-Mosset Co., Cleveland, Ohio. Bitters	61,078	Mar. 5	127	386
McPherson & Co., T. E., Kennett, Mo. Medicinal remedies for the eyes	61,156	Mar. 5	127	388
Meade & Baker Carbolic Mouth Wash Co., Richmond, Va. Dentifrice	61,157	Mar. 5	127	388
Medin Milling Co., Fort Worth, Tex. Wheat-flour	61,171	Mar. 5	127	388
Murphey, Thomas C., Philadelphia, Pa. Non-poisonous insecticide and antiseptic	61,079	Mar. 5	127	386
National Disinfectant Company, Cincinnati, Ohio. Insect-powders	61,194	Mar. 5	127	389
National Electrolytic Co., Niagara Falls, N. Y. Chlorates and bichromates	61,195	Mar. 5	127	389
National Refining Company, Cleveland, Ohio. Stove-gasolene	61,197	Mar. 5	127	389
National Refining Company, Cleveland, Ohio. Lubricating-oil	61,085	Mar. 5	127	385
Obernauer, Herman, Pittsburg, Pa. Gin	61,080	Mar. 5	127	386
Obernauer, Herman, Pittsburg, Pa. Whisky	61,084	Mar. 5	127	385
Obrock, August, New York, N. Y. Antiseptic salve	61,086	Mar. 5	127	386
Ohio Coffee & Spice Company, Columbus, Ohio. Coffee	61,172	Mar. 5	127	388
	61,088	Mar. 5	127	386

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page
Oklahoma Wholesale Grocer Co., Oklahoma, Okla. Ter. Canned vegetables	61,096	Mar. 5	127	386
Oneida Community Limited, Oneida and Niagara Falls, N. Y. Animal-traps	61,173	Mar. 5	127	388
Paragon Malt Extract Co., New York, N. Y. Malt extracts	61,117	Mar. 5	127	387
Paul Brothers, Philadelphia, Pa. Leather boots, shoes, and slippers	61,134	Mar. 5	127	387
Paul Brothers, Philadelphia, Pa. Leather boots, shoes, and slippers	61,135	Mar. 5	127	387
Paul Brothers, Philadelphia, Pa. Leather boots, shoes, and slippers	61,136	Mar. 5	127	387
Paul Brothers, Philadelphia, Pa. Ladies' and misses' leather shoes and slippers	61,137	Mar. 5	127	387
Paul Brothers, Philadelphia, Pa. Leather boots, shoes, and slippers	61,138	Mar. 5	127	387
Peal Medicine Company, Cleveland, Ohio. Nerve-tonics	61,198	Mar. 5	127	389
Peerless Herb Co., Williamsport, Pa. Remedy for diseases of the blood, liver, stomach, and kidneys	61,199	Mar. 5	127	389
Phelps, Ephraim, Jr., New Orleans, La. Leather boots and shoes	61,118	Mar. 5	127	387
Pittsburgh Brewing Company, Pittsburg, Pa. Beer	61,139	Mar. 5	127	387
Pompeian Mfg. Co., Cleveland, Ohio. Soap	61,081	Mar. 5	127	386
Pompeian Mfg. Co., Cleveland, Ohio. Certain named toilet preparations	61,200	Mar. 5	127	389
Potsdam Clothing Manufacturing Company, Potsdam, N. Y. Trousers	61,082	Mar. 5	127	386
Queisner, Max, Berlin, Germany. Preparation for cleaning straw and bast hats	61,083	Mar. 5	127	386
Ralston Purina Co., St. Louis, Mo. Meal, flour, and cereal breakfast food	61,057	Mar. 5	127	385
Ralston Purina Co., St. Louis, Mo. Poultry and stock food	61,064	Mar. 5	127	385
Reading Hardware Company, Reading, Pa. Certain metal manufactures	61,174	Mar. 5	127	388
Reading Hardware Company, Reading, Pa. Certain metal manufactures	61,175	Mar. 5	127	388
Red Seal Never Damp Salt Company, Kearny, N. J. Table-salt	61,201	Mar. 5	127	389
Reis & Brady, New York, N. Y. Certain named bakery products	61,058	Mar. 5	127	385
Reis & Brady, New York, N. Y. Cheese	61,059	Mar. 5	127	385
Remsen Manufacturing Company, Hartford, Conn. Catamenial bandages	61,119	Mar. 5	127	387
Remsen Manufacturing Company, Hartford, Conn. Maternity outfits	61,202	Mar. 5	127	389
Revere Rubber Company, Boston, Mass. Horseshoe-pads	61,060	Mar. 5	127	385
Reynolds, Lowell M., Brockton, Mass. Fruits, vegetables, nuts, and flavoring extracts and essences	61,044	Mar. 5	127	385
Rheinstrom, Bottman, Johnson & Co., Cincinnati, Ohio. Blackberry brandy and cordials	61,098	Mar. 5	127	386
Rieger & Lindley, Salt Lake City, Utah. Whisky	61,084	Mar. 5	127	386
Robert Bosch, New York, Inc., New York, N. Y. Magnetos	61,176	Mar. 5	127	388
Robert Stevenson & Co., Chicago, Ill. Olive-oil	61,065	Mar. 5	127	385
Rosenheim & Son, H., Baltimore, Md. Whisky	61,140	Mar. 5	127	387
Rossing Paint & Roofing Co., Minneapolis, Minn. Mineral roof-paint, hot-surface paint, and roof cement paint	61,061	Mar. 5	127	385
Runkel Brothers, Incorporated, New York, N. Y. Chocolate, sweet and unsweetened, and cocoa	61,066	Mar. 5	127	386
Schwabacher Bros. & Co. Inc., Seattle, Wash. Barley	61,067	Mar. 5	127	386
Schwabacher Bros. & Co. Inc., Seattle, Wash. Dried fruits, sago, bird-seed, tapioca, and split peas	61,086	Mar. 5	127	386
Schwarzschild and Sulzberger Company, Kansas City, Kans.; Chicago, Ill., and New York, N. Y. Certain named meats, lard, lard substitutes, and unctuous food substances	61,045	Mar. 5	127	385
Sharp & Dohme, Baltimore, Md. Certain chemicals	61,203	Mar. 5	127	389
Siebert, Fred W., Yonkers, N. Y. Sliced smoked beef	61,089	Mar. 5	127	386
Sielemann Distilling Co., St. Louis, Mo. Whisky	61,099	Mar. 5	127	386
Southern Chemical Company, Dallas, Tex. Remedy for curing la grippe, colds, and similar ailments	61,177	Mar. 5	127	389
Southern Cotton Oil Company, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La. A mixture having for its essential ingredients a vegetable-oil and an animal fat	61,100	Mar. 5	127	386
Stärker, Hermann, Chemnitz, Germany, and New York, N. Y. Hosiery	61,178	Mar. 5	127	389
Stein & Co., A., Chicago, Ill. Hose-supporters	61,188	Mar. 5	127	389
Studebaker Bros. Mfg. Co., South Bend, Ind. Buggies and carriages	61,153	Mar. 5	127	388
Thaddeus Davids Company, New York, N. Y. Sealing-wax of all varieties, mucilage, and paste	61,085	Mar. 5	127	385
Thayer, George C., Indianapolis, Ind. Relief-printing plates	61,179	Mar. 5	127	389
35% Automobile Supply Co., New York, N. Y. Automobile hats and caps	61,090	Mar. 5	127	386
Thomas' Sons, J. R., Youngstown, Ohio. Wheat, rye, and Graham flours	61,045	Mar. 5	127	385
Tilden Company, New Lebanon, N. Y. Expectorant, sedative, antispasmodic medicine	61,180	Mar. 5	127	389
Toledo Railways & Light Company, Toledo, Ohio. Arc and incandescent electric lamps	61,181	Mar. 5	127	389
Turpin, Henry E., Haywards, Cal. Remedy for various diseases of poultry	61,182	Mar. 5	127	389
Union Bag & Paper Company, New York, N. Y. Wrapping-paper, paper-boards, and paper bags	61,120	Mar. 5	127	387
Union Bag & Paper Company, New York, N. Y. Wrapping-paper and paper-boards	61,121	Mar. 5	127	387
United States Playing Card Co., Cincinnati, Ohio. Game-counters and chips	61,101	Mar. 5	127	386
United States Playing Card Co., Cincinnati, Ohio. Game-counters and chips	61,102	Mar. 5	127	386
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Remedy for certain diseases	61,189	Mar. 5	127	389
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Remedy for certain diseases	61,190	Mar. 5	127	389
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Carbolic ointment	61,204	Mar. 5	127	389
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Essence of Jamaica ginger	61,205	Mar. 5	127	389
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Preparation for the cure of skin diseases	61,206	Mar. 5	127	389
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Itch-ointment	61,207	Mar. 5	127	389
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Preparation for the cure of venereal diseases and their results	61,208	Mar. 5	127	389
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Remedy for the cure of chills and fever	61,209	Mar. 5	127	389
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Remedy for colds and coughs, la grippe, and headache	61,210	Mar. 5	127	389
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Kidney medicine	61,211	Mar. 5	127	389
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Candy vermifuge	61,212	Mar. 5	127	389
Verno Company, Milwaukee, Wis. Medicine for the cure of diseases of the stomach, liver, and kidneys	61,213	Mar. 5	127	389
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	61,103	Mar. 5	127	386
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	61,104	Mar. 5	127	386
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	61,105	Mar. 5	127	387
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	61,141	Mar. 5	127	388
Virginia Etna Lithia Springs Co., Jersey City, N. J., and New York, N. Y. Mineral water	61,142	Mar. 5	127	388

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Vogel & Bros., Wm., Brooklyn, N. Y. Certain metal manufactures	61,134	Mar. 5	127	386
Wagner, W., Jr., Plettenberg, Germany. Tuning-pins for pianos	61,143	Mar. 5	127	386
Wagner, W., Jr., Plettenberg, Germany. Tuning-pins for pianos	61,144	Mar. 5	127	386
Walker, Leigh W., Pittsburg, Pa. Whisky	61,088	Mar. 5	127	386
Walsh & Co., James, Cincinnati, Ohio. Whisky	61,097	Mar. 5	127	386
Weil, Alexander J., Cincinnati, Ohio. Whisky	61,120	Mar. 5	127	387
Weil, Alexander J., Cincinnati, Ohio. Whisky	61,121	Mar. 5	127	387
Wierhake, William, St. Louis, Mo. Stove-polish	61,093	Mar. 5	127	386
Wilcox & White Company, Meriden, Conn. Automatic music-playing instruments and music-rolls therefor	61,124	Mar. 5	127	387
Winchester Repeating Arms Co., New Haven, Conn. Certain firearms, equipments, and projectiles	61,092	Mar. 5	127	386
York Silk Manufacturing Co., York, Pa. Silk piece goods	60,125	Mar. 5	127	387

LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Altree, George, Jacksonville, Fla. "Union Beer, Hop, and Horehound Beverage." (For a Beverage)	13,285	Mar. 5	127	388
Cross, Arthur H., New York, N. Y. "Gilt Edge." (For a Metal-Polish)	13,289	Mar. 5	127	388
Michigan Soap Works, Detroit, Mich. "Chinese." (For Soap)	13,287	Mar. 5	127	388
Schmidt, F. C. Louis, New York, N. Y. "Schmidt's New Star Piano Polish." (For a Piano-Polish)	13,291	Mar. 5	127	388
Scott, Arthur H., Oak Lane, Pa. "Balsam Sanitissue." (For Toilet-Paper)	13,288	Mar. 5	127	388
Scott Paper Co., Philadelphia, Pa. "S. P. Co's." (For Toilet Paper)	13,290	Mar. 5	127	388
Swift Specific Co., Atlanta, Ga. "Swift's Specific." (For a Medicine for the Cure of All Blood and Skin Diseases and for Purifying the Blood)	13,286	Mar. 5	127	388

PRINTS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
H. Mueller Manufacturing Company, Decatur, Ill. "Lead Flange Union Coupling-Lead and Inside Thread." (For Lead Flange Union-Couplings)	1,916	Mar. 5	127	389
H. Mueller Manufacturing Company, Decatur, Ill. "Lead Flange Union Coupling-Lead Pipe." (For Lead Flange Union-Couplings)	1,917	Mar. 5	127	390
Samuel Mundheim Co., Brooklyn, N. Y. "Spring and Summer Styles 1907." (For Hats)	1,915	Mar. 5	127	390
W. E. Long Co., Chicago, Ill. "Buster Brown Bread." (For Bread)	1,914	Mar. 5	127	390

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
A. & F. Pears Limd., London, England. Perfumed soap	16,280	Mar. 5	127	371
Abraham & Straus, Brooklyn, N. Y. Sterilized cream and condensed milk	19,169	Mar. 5	127	372
Abraham & Straus, Brooklyn, N. Y. Canned fruits and vegetables, jelly, and jam	20,151	Mar. 5	127	372
Alma Manufacturing Company of Baltimore City, Baltimore, Md. Buckles	25,011	Mar. 5	127	381
American Glue Co., Boston, Mass., assignor to American Glue Company. Emery-cloth and sand-paper	4,102	Mar. 5	127	369
Ams, Max, New York, N. Y. Pie-fillings, preserves, and jellies	24,284	Mar. 5	127	380
Armour & Company, Chicago, Ill. Shaving cream or paste	12,089	Mar. 5	127	371
Astrom, John, Milwaukee, Wis. Signaling apparatus	24,240	Mar. 5	127	378
Atwell, Eli, Mountain Dale, N. Y. Corn and spavin cure and court-plaster	24,718	Mar. 5	127	379
Bass, E. & J., New York, N. Y. Silver-plated jewelry, toilet, hollow, and flat ware	21,088	Mar. 5	127	373
Beaver, Emory L., New York, N. Y. Medicine for the cure of malaria, chills, &c.	20,811	Mar. 5	127	377
Bernstein Kaufman & Company, Philadelphia, Pa. Cravats	22,220	Mar. 5	127	376
Berry, Washington, Chicago, Ill. Soaps	24,239	Mar. 5	127	378
Bruno-Mayer Company, New York, N. Y. Men's and boys' shirts	24,088	Mar. 5	127	380
Brown Durrell Co., Boston, Mass. Hosiery and knitted underwear	25,121	Mar. 5	127	382

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Bullock, Willis, Canajoharie, N. Y. Newspaper	24,429	Mar. 5	127	378
C. Callahan Co., La Fayette, Ind. Canned fruits and vegetables	6,851	Mar. 5	127	370
C. A. Lindgren & Ole Vinkenoogels Aktiebolag, Stockholm, Sweden. Arrack punch	13,222	Mar. 5	127	371
Cape Ann Isinglass Company, Boston, Mass. Isinglass	23,816	Mar. 5	127	377
Carmel Wine Company, New York, N. Y. Wines	23,452	Mar. 5	127	376
Ciotti, Vincenti & Co., Baltimore, Md. Rye whisky	9,352	Mar. 5	127	370
Coast Manufacturing & Supply Co., Berkeley, Cal. Fuses	25,110–11	Mar. 5	127	382
Coast Manufacturing & Supply Co., Berkeley, Cal. Fuses	25,161	Mar. 5	127	383
Coast Manufacturing & Supply Co., Berkeley, Cal. Fuses	25,201	Mar. 5	127	383
Collins Company, Collinsville, Conn. Pickaxes, cavadores, crowbars, picks, &c.	22,961	Mar. 5	127	376
Collins Company, Collinsville, Conn. Pickaxes, cavadores, crowbars, picks, &c.	22,963	Mar. 5	127	376
Collins Company, Collinsville, Conn. Pickaxes, cavadores, crowbars, picks, &c.	24,569	Mar. 5	127	379
Conner, John P., West New Brighton, N. Y. Printing-ink reducers and driers	18,403	Mar. 5	127	372
Conservenfabrik Lenzburg vorm. Henckell & Roth A. G., Lenzburg, Switzerland. Beverages	24,053	Mar. 5	127	377
Dill & Collins Co., Philadelphia, Pa. Engraving-papers	25,125	Mar. 5	127	382
Dittmar & Sons, John, Baltimore, Md. Dusk-pine	23,770	Mar. 5	127	376
Dumond, Gaston, Paris, France. Automobiles and parts thereof	20,159	Mar. 5	127	372
E. A. Armstrong Mfg. Co., Chicago, Ill. Waterproof coats, capes, &c	7,265	Mar. 5	127	370
Egyptian Chemical Company, Boston, Mass. Embalming fluids and disinfectants	24,891	Mar. 5	127	380
Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Coal-tar dyes, disinfectants, &c	22,982	Mar. 5	127	376
Farmers Friend Stock Food Company, West Milton, Ohio. Stock food	21,477–8	Mar. 5	127	374
Fischer, Anthony, Flushing, N. Y. Whisky	21,480	Mar. 5	127	374
Fischer, Anthony, Flushing, N. Y. Remedy for malaria and grippe	20,920	Mar. 5	127	373
Fostoria Glass Specialty Company, Fostoria, Ohio. Chimneys and globes for lights	24,831	Mar. 5	127	380
Frank & Sons, H., Wheeling, W. Va. Knitted underwear	9,502	Mar. 5	127	370
Frankfort Distillery, Frankfort, Ky. Whisky	23,994	Mar. 5	127	377
Fred Fell Brewing Company, Philadelphia, Pa. Beer, ale, brown stout, and extract of malt	22 858	Mar. 5	127	375
Freericks & Tammen, San Diego, Cal. Cough-drops	22,642	Mar. 5	127	375
Fried, Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Railway rolling-stock, fish-plates, rail-chairs, &c	25,029	Mar. 5	127	381
Geo. Borgfeldt & Co., New York, N. Y. Talking-machines	14,806	Mar. 5	127	371
Geo. G. Sandeman Sons & Co., Limited, London, England. Port and sherry wines	21,874	Mar. 5	127	374
George Cutter Co., South Bend, Ind. Mast-arms	24,539	Mar. 5	127	378
Gieseeke, August, Milwaukee, Wis. Rheumatic remedy	3,008	Mar. 5	127	369
Great Bear Spring Co., Oswego and Albany, N. Y.; Jersey City, N. J.; Philadelphia, Pa., and Washington, D. C. Table-water	23,997	Mar. 5	127	377
Greene & Company, Boston, Mass. Starch or size	19,879	Mar. 5	127	372
Güde & Co., Alfred, Berlin, Germany. Hematogenic or blood-forming iron compounds	11,413	Mar. 5	127	371
Hammel, Rislander & Co., New York, N. Y. Watchsprings	23,981	Mar. 5	127	377
Hargadine-McKittrick Dry Goods Company, St. Louis, Mo. Collars, cuffs, and shirts	23,270	Mar. 5	127	376
Hassman, Anthon V., Elkhart, Ind. Liquid soap	21,058	Mar. 5	127	373
Heide, Henry, New York, N. Y. Candies	6,215	Mar. 5	127	369
Henry Tate & Sons, Limited, London, England. Refined sugars	8,184	Mar. 5	127	370
Hess & Clark, Dr., Ashland, Ohio. Medicated stock foods	21,345	Mar. 5	127	373
Ide & Sons, A. L., Springfield, Ill. Combined steam-engine and dynamo-electric machine	21,346–7	Mar. 5	127	373–4
Ide & Sons, A. L., Springfield, Ill. Steam-engines	24,820	Mar. 5	127	379
Imperial Distilling & Cordial Co., Chicago, Ill. Cordials	22,214	Mar. 5	127	374
Indian Head Mills of Alabama, Walker, Ala. Cotton piece goods and blankets	14,857	Mar. 5	127	371
Interlocking Fence Company, Morton, Ill. Wire fence	25,129	Mar. 5	127	383
International M'f'g. Co., New York, N. Y. Handkerchiefs	21,829	Mar. 5	127	374
Jackson Company, Nashua, N. H. Cotton piece goods and blankets	23,781	Mar. 5	127	377
Jewelers Circular Publishing Co., New York, N. Y. Periodicals	20,750	Mar. 5	127	373
Jones Dairy Farm, Fort Atkinson, Wis. Sausages, hams, lard, &c	25,114	Mar. 5	127	382
Kalamazoo Playing Card Co., Kalamazoo, Mich. Playing-cards	22,892	Mar. 5	127	375
Kerschensmeyer, Grégoire, Luxembourg, Grand Duchy of Luxembourg. Suppositories, salves, and teas	13,547	Mar. 5	127	371
Ketchum, Frederick M., Arlington, Md. Canned fruits and vegetables	7,920	Mar. 5	127	370
Keystone Fence Company, Peoria, Ill. Wire fence	25,157	Mar. 5	127	383
King & Co., L. C., Frankfort, Ind. Sewing-machines	20,344–5	Mar. 5	127	372
Langendorf Watch Co., Langendorf, Switzerland. Watches, watch cases and movements	24,854	Mar. 5	127	380
Laundry Blue Co., Chicago, Ill. Washing compounds	24,960	Mar. 5	127	380
M. K. Goetz Brewing Co., St. Joseph, Mo. Malt extract	24,943	Mar. 5	127	380
Manufacturing Co. of America, Philadelphia, Pa. Candy and chewing-gum	20,179	Mar. 5	127	372
Martin, Reuben E., Fort Worth, Tex. Liquid face-enamel	24,740	Mar. 5	127	379
Moody & Co., Charles E., Boston, Mass. Tea and coffee	24,994	Mar. 5	127	381
Mongart, John A., Smithfield, Va. Mineral water	24,624	Mar. 5	127	379
Moxie Nerve Food Company of New England, Saco, Me.; Boston, Mass., and New York, N. Y. Beverage and syrup for making the same	24,843	Mar. 5	127	380
Myers, James M., Cincinnati, Ohio. Remedy for diseases of the blood	25,188	Mar. 5	127	383
National Baker Publishing Company, Philadelphia, Pa. Periodical	24,659	Mar. 5	127	379
Navassa Guano Company of Wilmington, Wilmington, N. C. Fertilizers	22,595	Mar. 5	127	375
Noe, Wm. R., New York, N. Y. Lamp-chimneys	24,089	Mar. 5	127	377
O. W. Peirce Company, La Fayette, Ind. Corn-syrup	25,079	Mar. 5	127	381
Omo Manufacturing Company, Middletown, Conn. Dress-shields	14,874	Mar. 5	127	371
Oneida Community Limited, Kenwood, N. Y. Silk twist, thread, embroidery-silk, &c	25,056–7	Mar. 5	127	381
Osborne, Owen, Philadelphia, Pa. Hosiery	14,825	Mar. 5	127	371
Page & Sandeman, London, England. Apricot-brandy	24,665	Mar. 5	127	379
Peroxident Manufacturing Company, St. Louis, Mo. Almond-meal	24,857	Mar. 5	127	380
Pervear Company, H. M., Providence, R. I. Jewelry	21,187	Mar. 5	127	373
Polledo, Torres & Co., Buenos Aires, Argentine Republic. Kerosene	24,384	Mar. 5	127	378
Pure Food Baking Powder Co., Chicago, Ill. Baking-powder	22,865	Mar. 5	127	375
Raven Gloss Mfg. Co., New York, N. Y. Canvas or duck cleaning and whitening preparation	24,385	Mar. 5	127	378
Rea-Patterson Milling Company, Coffeyville, Kans. Wheat-flour	24,754	Mar. 5	127	379
Records & Goldsborough, Baltimore, Md. Whisky	23,873	Mar. 5	127	377
Reisa & Brady, New York, N. Y. Sardines, sardine paste, sprats, &c	23,807	Mar. 5	127	377
Revere Rubber Company, Boston, Mass. Belting, hose, and machinery packings	23,504	Mar. 5	127	376
Rice, Stix Dry Goods Company, St. Louis, Mo. Gloves	25,091	Mar. 5	127	381
Rice, Stix Dry Goods Company, St. Louis, Mo. Cotton piece goods	25,093	Mar. 5	127	382
Rice, Stix Dry Goods Company, St. Louis, Mo. Cotton piece goods	25,096–7	Mar. 5	127	382
Rice, Stix Dry Goods Company, St. Louis, Mo. Cotton piece goods	24,779	Mar. 5	127	379
Robinson, Everett, Baltimore and Hopewell, Md. Canned tomatoes				

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Rosenzweig Bros. & Co., New York, N. Y. Coats, pants, vests, and overcoats	23,024	Mar. 5	127	376
Rothenberg Company, San Francisco, Cal. Whisky	15,889	Mar. 5	127	371
Schnarr, Henry M., Ossining, N. Y. Enameled-metal household utensils	1,179	Mar. 5	127	369
Seton Leather Co., Newark, N. J. Patent side leather	28,699	Mar. 5	127	381
Shoemaker & Co., Robt., Philadelphia, Pa. White lead	25,170	Mar. 5	127	383
Shoemaker & Co., Robt., Philadelphia, Pa. Ready-mixed paints	25,171	Mar. 5	127	383
Silvey & Co., John, Atlanta, Ga. Hosiery	24,173	Mar. 5	127	378
Societe Anonyme de la Grande Distillerie E. Cusenier Fils Aine et Compagnie, Paris, Ornans, Charenton, and Marseilles, France; Mulhouse, Germany, and Brussels, Belgium. Cordials	22,289-99	Mar. 5	127	375
Societe Anonyme de la Grande Distillerie E. Cusenier Fils Aine et Compagnie, Paris, France. Apricot-brandy	24,882	Mar. 5	127	379
Société Anonyme Des Anciens Établissements Panhard & Levassor, Paris, France. Wrenches, hammers, screw-drivers, &c	6,478	Mar. 5	127	370
Society of Chemical Industry in Basle, Basel, Switzerland. Antipyretic tonics	25,185	Mar. 5	127	383
Southern Cotton Oil Company, Jersey City, N. J. Cotton-seed oils	10,894	Mar. 5	127	370
Stearns, John N., Syracuse, N. Y. Castor-oil	25,095	Mar. 5	127	381
Steck, Frederick A., Oil City, Pa. Preparation used for throat and head spray, &c	20,883	Mar. 5	127	373
Sternau & Co., S., Brooklyn, N. Y. Metal chafing-dishes, fancy kettles, towel-racks, &c	20,809	Mar. 5	127	372
Townsend Grace Co. of Baltimore City, Baltimore, Md. Hats and caps	25,082	Mar. 5	127	381
Turnbull, W. C. R., Aiken, S. C. Non-alcoholic carbonated beverage	24,178	Mar. 5	127	378
Union Card & Paper Co., New York, N. Y. Writing, bond, and ledger paper	22,872	Mar. 5	127	376
Van Ardale, Robert M., New York, N. Y. Monthly publication	25,155	Mar. 5	127	383
Ward Medicine Company, J. L., Big Springs, Tex. Pills and tablets	25,098	Mar. 5	127	381
Welch Bros. Maple Co., Burlington, Vt. Syrup	25,137	Mar. 5	127	383
Wells, Ephraim S., Jersey City, N. J. Veterinary remedies, cough medicines, &c	21,749	Mar. 5	127	374
Welsbach Co., Gloucester, N. J. Illuminating-glassware	22,372	Mar. 5	127	376
Wertheimer Bros., Baltimore, Md. Cigars	22,049	Mar. 5	127	374
White Sewing Machine Co., Cleveland, Ohio. Sewing-machine needles	24,721	Mar. 5	127	379
Whiteman & Co., H. A., Wilkes-Barre, Pa. Rubber roofing	20,393	Mar. 5	127	372
Whitman & Son, Stephen F., Philadelphia, Pa. Chocolates and chocolate candies	24,993	Mar. 5	127	380
Wild Pigeon Mineral Springs Company, Portland, Oreg. Mineral water	24,841	Mar. 5	127	380
Will & Baumer Company, Syracuse, N. Y. Candles	9,161-2	Mar. 5	127	370
Wing, George H. G., New York, N. Y. Cigars and cigarettes	23,495	Mar. 5	127	376
Zeiss, Firm of Carl, Jena, Germany. Optical apparatus, appliances, &c	11,262	Mar. 5	127	370

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE ISSUED ON THE 5TH DAY OF MARCH, 1907.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Accounting appliance. Credit	R. D. Pardee	846,136	Mar. 5	861	180	127	219
Acid. Purification of sulfuric	V. C. Driffield and F. W. Wright	846,298	Mar. 5	1128	246	127	286
Acousticon	K. M. Turner and N. W. Johnston	846,068	Mar. 5	718	150	127	184
Adding-machines. Book-holder for	Z. Crain	846,012	Mar. 5	597	124-5	127	153
Adhesive compound, glue, &c	M. R. Isaacs	845,791	Mar. 5	111	.....	127	32
Advertising device	J. E. Rainwater	845,893	Mar. 5	348	70	127	91
Advertising-device-operating mechanism	F. M. Wadsworth and J. P. Appleby	845,986	Mar. 5	539	112-13	127	139
Air and gases. Thermic compressor for	E. Gobbe	846,302	Mar. 5	1155	253	127	293
Air-brake-setting device and alarm. Combined	R. E. Adreon	845,736	Mar. 5	1	1	127	3
Air-purifying water-screen	W. J. Rafferty	846,344	Mar. 5	1244	274	127	313
Alarm-signal	R. J. Zorge	845,991	Mar. 5	555	116-17	127	142
Alloy of iron and steel. Self-hardening	J. Churchward	845,756	Mar. 5	51	.....	127	17
Alloy of steel. Self-hardening	J. Churchward	845,757	Mar. 5	52	.....	127	17
Alloys to alter their composition. Treatment of	I. L. Roberts	845,819	Mar. 5	171	.....	127	45
Alumina and alkali compounds of sulfur. Manufacture of	A. Clemm	845,854	Mar. 5	235	.....	127	61
Ammonia from gas. Recovery of	H. Koppers	846,035	Mar. 5	640	134	127	164
Amusement device	I. S. Moscovitz	845,967	Mar. 5	498	103	127	129
Animal-trap	J. C. Barker	845,921	Mar. 5	409	83	127	105
Arch-plate	T. Schillinger	846,247	Mar. 5	1053	227	127	268
Article of manufacture	J. A. Shinn	845,825	Mar. 5	180	.....	127	48
Auger	W. Hallinan	846,200	Mar. 5	974	207	127	247
Auger-handle. Extension	J. Blackburn	846,389	Mar. 5	1329	293	127	335
Augers. Manufacture of single-spiral	A. Krieger	846,113	Mar. 5	810	169-70	127	206
Automatic switch	A. C. Dohrmann and C. Walte	846,096	Mar. 5	777	162-3	127	198
Automatic switch	G. Schmitz	846,147	Mar. 5	882	185-6	127	225
Automobile	E. Temple	845,983	Mar. 5	531	110-11	127	137
Awl. Sewing	A. M. Parker	846,242	Mar. 5	1047	225	127	266
Axle-lubricating mechanism	H. W. Sanford	846,056	Mar. 5	689	144	127	176
Bag-turning machines. Bag-holding mechanism for	S. T. Lockwood	846,118	Mar. 5	820	171-2	127	208
Bag turning machines. Turning-arm-actuating mechanism for	S. T. Lockwood	846,119	Mar. 5	827	173	127	210
Baling-press	J. W. Graves	846,199	Mar. 5	972	206-7	127	247
Bank lock. Savings	O. Pfleger	845,815	Mar. 5	158	31	127	43
Bank. Pocket savings	E. Vaughn	845,908	Mar. 5	384	78	127	90
Barrel. Metallic	C. L. Coffin	845,760	Mar. 5	56	11	127	18
Bath: *See* Steel-tempering bath.							
Bearing. Ball	A. C. Hachfield	845,778	Mar. 5	91	18	127	27
Bearing. Rotary-shaft	F. Ogden	846,341	Mar. 5	1236	272	127	312
Bedstead	N. B. Noble	846,236	Mar. 5	1037	222-3	127	264
Beehive-frame	J. T. Calvert and F. G. Marbach	846,396	Mar. 5	1352	297	127	342
Bellows. Pressure-regulator	P. Wuest, Jr	845,841	Mar. 5	210	43	127	55
Bill-head, duplicate, label, receipt, and envelop. Combination	J. Souder	846,064	Mar. 5	711	148	127	182
Billiard-cue	W. H. Thomas	846,166	Mar. 5	900	192	127	232
Binder. Temporary	H. J. Reuter	845,818	Mar. 5	170	33	127	46
Binder. Temporary	L. M. Morden	845,883	Mar. 5	322	65	127	83
Binders. Hinged post for loose-leaf	L. M. Morden	846,230	Mar. 5	1028	220	127	262
Bird-cage	A. B. Hendryx	845,785	Mar. 5	104	20	127	30
Blank-cutting machines. Counting device for	E. G. Souther	846,153	Mar. 5	892	187-8	127	227
Board: *See* Game-board. Ironing or bosom board. Ironing-board.							
Boiler attachment. Steam	B. A. Estep	846,100	Mar. 5	785	164	127	200
Boiler-cleaner	J. A. Ray	846,051	Mar. 5	679	143	127	174
Boiler fire-box	C. W. Hullings	846,310	Mar. 5	1171	257	127	296
Bolts, pins, &c. Machine for making	J. F. Lober	846,147	Mar. 5	818	171	127	208
Book cover or protector	G. A. Flohr and A. Miller, Jr	846,195	Mar. 5	964	204	127	245
Book. Triplicate manifolding sales	E. K. Bottle	846,002	Mar. 5	577	121	127	146
Boot cleaning and polishing outfit	A. J. Brooks	845,928	Mar. 5	420	86	127	108
Boot machinery	W. Heaton	846,028	Mar. 5	629	132	127	162
Bottle	J. C. Anderson	846,177	Mar. 5	926	196	127	235
Bottle-capping machine	G. Kirkegaard	846,218	Mar. 5	1006	216	127	255
Bottle-carrier	C. B. Hall	845,947	Mar. 5	453	94	127	116
Bottle-filling machine	M. Hamburger	845,779	Mar. 5	94	18	127	28
Bottle-filling machine. Cased	T. L. Valerius	846,169	Mar. 5	914	193	127	233
Bottle. Non-refillable	C. Medley	846,333	Mar. 5	1215	269	127	307
Bottle. Nursing	H. D. Singer	845,981	Mar. 5	529	110	127	137
Bottle protector. Milk	J. Groseman	845,777	Mar. 5	90	18	127	27
Bottle-washer	G. K. Watson	846,269	Mar. 5	1091	236	127	278

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bowling-pin	F. M. Wood, G. S. Littlefield, and F. W. Philbrick	845,373	Mar. 5	1291	284	127	335
Box:							
See Boiler fire-box. Talking-machine sound-box. Feed-box. Match-box.							
Box-fastener	G. A. Prather	845,543	Mar. 5	1082	226	127	288
Box-lid holder	J. C. Feldman	845,621	Mar. 5	619	129	127	139
Box-making machine	F. R. Harris	845,410	Mar. 5	1276	302-6	127	140
Box-opener	J. Marshall	845,688	Mar. 5	1449	322	127	286
Brace:							
See Rail-brace.							
Bracket:							
See Dental bracket. Shelf-supporting bracket.							
Bracket	A. A. Flesner	845,693	Mar. 5	619	129	127	140
Brake:							
See Vehicle-brake.							
Brewing apparatus	C. B. Davis	845,157	Mar. 5	947	201	127	240
Brick-machine	H. L. Hix	845,372	Mar. 5	295	57-8	127	73
Brick-machine	H. Armstrong	845,377	Mar. 5	1103	240-1	127	261
Brickmaking-machine	E. R. Sutcliffe	845,388	Mar. 5	1070	230-1	127	272
Bridge and bridge guard or railing	S. Richardson	845,397	Mar. 5	362	72	127	93
Brooder	N. C. Sprague	845,115	Mar. 5	856	186	127	228
Brush	T. Brantley	845,038	Mar. 5	570	121	127	148
Brush	H. Dello	845,327	Mar. 5	1127	246	127	285
Brush-making machine	W. G. Liebig	845,869	Mar. 5	453	98-100	127	125
Brush. Scrubbing	J. Rich	845,345	Mar. 5	1248	274	127	314
Bucket-making machine	J. A. Watt	845,570	Mar. 5	1093	238-7	127	278
Building-foundation	P. Seller	845,349	Mar. 5	1055	227	127	269
Burial-robe	W. J. Worden	845,849	Mar. 5	209	43	127	55
Button and drawers-supporter. Combined trousers-	J. T. Lane	845,291	Mar. 5	1192	263	127	302
Button machine. Wire-	F. Manggraf	845,299	Mar. 5	1210	268	127	306
Cabinet. Merchandise-	L. Matthews, Jr.	845,151	Mar. 5	803	174	127	212
Cabinet-table. Kitchen	Z. Knapp	845,319	Mar. 5	1139	262	127	301
Calculating-machine	W. R. Bonham	845,747	Mar. 5	39	7	127	11
Calendar	R. C. and P. Sellers	845,338	Mar. 5	1065	226	127	269
Caliper-gage. Combination	B. J. Roehm	845,889	Mar. 5	365	73	127	94
Camera	C. L. Flory	845,894	Mar. 5	269	53-4	127	66
Can:							
See Display-can. Sheet-metal can.							
Can-jackets or other receptacles. Handle for sheet-metal	G. W. Weber	845,076	Mar. 5	739	155	127	189
Cans. Forming covers for sheet-metal	J. Brenzinger	845,781	Mar. 5	42	9	127	14
Canopy-standards. Guiding and supporting mechanism for	P. F. Swart	845,908	Mar. 5	377	77	127	97
Car construction	E. I. Dodds	845,883	Mar. 5	488	97-8	127	110
Car-coupling	S. Morris	845,128	Mar. 5	849	177	127	216
Car-door	J. Montgomery	845,136	Mar. 5	844	177	127	214
Car-door fastener	R. Mobley	845,135	Mar. 5	843	176	127	214
Car draft and buffing gear	I. O. Wright	845,374	Mar. 5	1295	265	127	326
Car. Dumping-	F. Peteler	845,137	Mar. 5	933	180-1	127	219
Car. Motor-	H. O. Carter	845,039	Mar. 5	227	47	127	59
Car-operating mechanism. Dumping-	H. F. Ball	845,889	Mar. 5	488	98-3	127	105
Car platform. Vestibule-	C. W. Bremken	845,780	Mar. 5	38	8	127	12
Car-replacer	W. A. Hutson	845,311	Mar. 5	1172	257-8	127	296
Car side bearing	W. W. Woolf	845,389	Mar. 5	387	42	127	54
Car stake. Gondola-	W. O. Moody and H. A. Simms	845,127	Mar. 5	849	177	127	215
Car-standard	G. W. Du Bee	845,269	Mar. 5	1229	248	127	286
Car-standards. Self-clearing chain-stay for	G. W. Du Bee	845,269	Mar. 5	1231	247	127	286
Car. Tank-	T. R. Brown	845,732	Mar. 5	42	9	127	14
Car. Tank-	T. R. Brown	845,733	Mar. 5	1236	264	127	337
Car underframe structure. Transverse	E. I. Dodds	845,884	Mar. 5	489	98-9	127	111
Car-ventilator	J. H. Elward	845,060	Mar. 5	783	162-4	127	200
Cars. Carline for railway-	C. A. Lindström	845,980	Mar. 5	489	100-1	127	126
Cars. Carline for railway-	C. A. Lindström	845,981	Mar. 5	489	101	127	127
Cars, &c. Guard or gate for street-	G. A. Metcalf	845,880	Mar. 5	311	63	127	81
Carriage-top attachment	W. C. Willitts	845,172	Mar. 5	889	194	127	234
Carrier:							
See Bottle-carrier. Traveling carrier.							
Case:							
See Display-case.							
Cash-register	P. Meyer	845,124	Mar. 5	837	175-6	127	213
Casket-holder	P. Wallrath	845,073	Mar. 5	732	154	127	187
Catch	H. R. Baker	845,179	Mar. 5	882	187	127	236
Centrifugal machine. Single-shaft	W. L. D'Olier	845,032	Mar. 5	1263	269	127	345
Chain-making machine	H. Lysholm	845,377	Mar. 5	294	61	127	79
Chaining device	H. B. Arden	845,393	Mar. 5	1310	289	127	333
Chair:							
See Reclining-chair.							
Chair head-rest	D. Sarason	845,822	Mar. 5	170	34	127	47
Chamber, slop-jar, and the like	C. W. Meinecke and D. Hogan	845,234	Mar. 5	1018	218	127	259
Check, draft, and similar instrument	M. Berardini	845,923	Mar. 5	413	84	127	107
Chimney-cowl	E. S. Egy	845,262	Mar. 5	286	52	127	66
Cheek. Drill-	L. T. Gause	845,778	Mar. 5	89	19	127	24
Churn	H. Garbutt	845,940	Mar. 5	445	91	127	115
Cleaner:							
See Boiler-cleaner. Intestine-cleaner. Cotton-cleaner. Shoe-cleaner. Flue-cleaner.							
Cleaning and separating machine	A. T. Hedfeldt	845,270	Mar. 5	289	58	127	72
Clock. Watchman's	O. E. Hausburg	845,961	Mar. 5	486	98-6	127	118
Closet:							
See Water-closet.							
Clutch	W. R. May	845,279	Mar. 5	289	60	127	80
Clutch	M. H. Avery	845,178	Mar. 5	889	186	127	235
Clutch. Centrifugal	J. Fellows	845,193	Mar. 5	881	202-4	127	244
Clutch. Friction-	W. F. Rothe	845,380	Mar. 5	1289	276	127	315
Coal screening and grading apparatus	J. Rapp	845,140	Mar. 5	883	191	127	221
Coal-washer	J. Rapp	845,141	Mar. 5	883	193	127	221

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cock. Safety-	J. C. Stratiff	846,257	Mar. 5	1060	230	127	272
Coffee and tea flask	J. Garrigan	846,299	Mar. 5	1145	252	127	290
Coffee-pot	H. M. Murray	845,966	Mar. 5	499	103	127	129
Coffee-urn	W. F. Stuhlinger	846,163	Mar. 5	906	191	127	231
Comb	C. Schmidt	846,058	Mar. 5	698	145	127	178
Combustion. Promoting	P. J. McNamara	846,338	Mar. 5	1232		127	311
Commutator-brush for dynamo-electric machines	R. N. Baylis	845,740	Mar. 5	9	2	127	5
Compasses. Oval	C. Schreiber	845,824	Mar. 5	177	34	127	47
Composition of matter	E. Voller and M. F. Thalberg	846,265	Mar. 5	1082		127	276
Concrete construction. Reinforced	W. Curlett	845,763	Mar. 5	60	12	127	19
Concrete dam. Reinforced	H. L. Coburn	845,855	Mar. 5	237	48	127	61
Concrete foundation-piers. Constructing	G. W. Jackson	846,108	Mar. 5	800	167-8	127	204
Concrete metal construction	E. Flad	845,938	Mar. 5	438	90	127	112
Concrete-mixer feeding device	R. Wilcox	845,990	Mar. 5	553	116	127	142
Concrete structural work. Metallic reinforcement in	C. Horix	845,787	Mar. 5	106	21	127	31
Condenser	C. Ambrose and F. D. Schwartz	846,380	Mar. 5	1310	288-9	127	331
Condenser. Steam-	C. Ambrose and F. D. Schwartz	846,379	Mar. 5	1305	287-8	127	329
Conveyer	J. F. Doehle	846,402	Mar. 5	1358	299	127	343
Cooking vessel	M. J. Corbell	846,010	Mar. 5	592	123	127	151
Cooling-board head-rest. Adjustable	A. N. Wise	845,916	Mar. 5	399	81	127	103
Core forming and holding device. Sand-	B. F. Hobert	845,786	Mar. 5	105	20	127	30
Cork and making the same. Artificial	J. Serra (y Carbó)	846,251	Mar. 5	1059		127	270
Corn-husking machine	J. H. Leidel	845,957	Mar. 5	477	97-8	127	124
Corn-husking-machine feeding mechanism	J. W. Paige	846,423	Mar. 5	1420	315	127	358
Corn-picker	J. H. Leidel	845,958	Mar. 5	479	98-9	127	124
Corn picker and husker	C. Pearson	846,049	Mar. 5	675	141-2	127	173
Corn-shock loader and unloader	F. Johnson	845,955	Mar. 5	473	97	127	123
Corner-bead	J. M. Coleman	846,398	Mar. 5	1354	298	127	342
Cotton-cleaner and gin-feeder	M. E. and J. L. Norris	846,421	Mar. 5	1417	314	127	356
Cotton from its impurities. Machine for cleaning and separating	J. S. Lyle	846,329	Mar. 5	1208	267	127	305
Cotton. Plant for storing baled	D. Breck	845,926	Mar. 5	417	85	127	108
Cotton-separator	W. A. Patterson	845,976	Mar. 5	514	106-7	127	133
Coupling:							
See Car-coupling.							
Coupling device	V. D. Gas	846,409	Mar. 5	1374	302	127	349
Coupling-pin and compound tool. Combined	J. Patterson	845,975	Mar. 5	513	106	127	132
Crank-hanger	F. M. Osborne	846,239	Mar. 5	1042	223	127	265
Crossing. Movable-point	W. M. Henderson	846,029	Mar. 5	631	132	127	162
Cultivator	W. M. Stamps	846,156	Mar. 5	897	189	127	229
Cup:							
See Grease-cup.							
Curling-iron	G. F. Shields	846,354	Mar. 5	1259	276	127	317
Current generators. Voltage-regulator for alternating-	F. R. Keller	846,214	Mar. 5	998	214	127	253
Current machine with commutators and with compensating windings. Alternating-	R. Richter	846,427	Mar. 5	1427	316	127	360
Curtain and shade fixture. Combination	M. O. Dolson and M. Moxley	845,935	Mar. 5	432	90	127	111
Curtain-fixture	I. L. Hotaling	845,788	Mar. 5	107	21	127	31
Curtain-fixture	C. L. Hopkins	846,107	Mar. 5	797	167	127	204
Cuspidor	D. S. Green	845,944	Mar. 5	449	93	127	115
Cutter:							
See Stalk-cutter. Threshing-machine band-cutter. Stubble-cutter.							
Cutting and polishing machine	H. E. Hall	846,303	Mar. 5	1157	254	127	293
Cycle	W. C. Kidney	846,033	Mar. 5	636	134	127	163
Cycle. Motor-	W. C. Johnson	846,212	Mar. 5	995	213	127	253
Darning implement	G. Shear	846,253	Mar. 5	1062	228	127	270
Dashes. Metallic strip for	J. H. Matthews	846,331	Mar. 5	1213	268	127	307
Dental bracket	A. W. McKenney	846,420	Mar. 5	1416	314	127	357
Dental vulcanizers. Gas-regulator for	E. E. Wightman	845,835	Mar. 5	200	40	127	53
Direct-acting engine. Compensating	W. C. Brown	846,005	Mar. 5	583	122	127	149
Dish-drainer	J. P. Tibbits	846,263	Mar. 5	1080	234	127	275
Disintegrating apparatus. Soft-middlings-	J. M. Case	845,851	Mar. 5	229	47	127	60
Display can or box. Sheet-metal	F. Rudolphi and E. Brauninger	846,351	Mar. 5	1254	275	127	316
Display-case	H. C. Egly	846,191	Mar. 5	958	203	127	243
Display outfit	S. Newman	845,887	Mar. 5	332	68	127	85
Display-rack	L. A. Alson	845,739	Mar. 5	8	1-2	127	5
Display-rack	F. Rudy	845,821	Mar. 5	175	34	127	47
Display-rack	F. P. Sparmaker and J. L. Henry	846,359	Mar. 5	1209	270	127	319
Display-rack	J. F. Riedy	846,347	Mar. 5	1248	274	127	314
Display-stand	R. S. and H. C. Larenby	846,322	Mar. 5	1193	263	177	302
Distilling apparatus. Water-	A. M. Gifford	845,989	Mar. 5	277	56	127	71
Door and window screen	C. S. Môres	846,129	Mar. 5	850	178	127	216
Door fastener. Sliding-	J. A. McPhayden	846,235	Mar. 5	1035	222	127	263
Door fastener. Sliding-	J. T. Root	846,349	Mar. 5	1250	275	127	315
Door-gage	G. Wideman	845,914	Mar. 5	396	81	127	102
Door-hanger	G. Wideman	845,989	Mar. 5	551	115	127	141
Door-hanger	F. C. Tacke	845,829	Mar. 5	185	36	127	49
Door. Sheet-	A. L. Lewis	846,324	Mar. 5	1196	264	127	302
Door. Sliding	B. H. Uhrich	846,069	Mar. 5	720	150-1	127	184
Door structure. Revolving	E. A. Barry	846,280	Mar. 5	1115	242	127	283
Draft-equalizer	S. L. G. Knox	845,795	Mar. 5	116	22	127	33
Dredges and the like. Upper tumbler for	J. Weintz	845,833	Mar. 5	193	38-9	127	51
Drier	L. Moore	846,044	Mar. 5	658	138-9	127	166
Dry-kiln							
Drill:							
See Mining-drill.							
Drills. Work-holding attachment for	G. E. Metcalf	846,334	Mar. 5	1217	280	127	308
Drinking-fountain. Poultry	C. R. Upson	846,363	Mar. 5	1276	281	127	321
Driving mechanism	A. Wunderlich	846,273	Mar. 5	1097	237-8	127	279
Drum and cymbal beater. Bass-	H. A. Bower	846,391	Mar. 5	1332	293-4	127	336
Electric circuit. Means for maintaining constant the voltage of an	T. Marshall	846,223	Mar. 5	1017	218	127	258
Electric machine. Dynamo-	E. Oelschläger	846,422	Mar. 5	1419	314	127	358
Electric motor	D. Mendelson	846,227	Mar. 5	1024	219	127	260
Electric switch mechanism	F. C. Newell	846,340	Mar. 5	1234	272	127	311
Electric-transmission-receiving device	I. Kitsee	846,414	Mar. 5	1395	307	127	354
Electrical connections. Clamp for ground-wire	W. R. Cox	846,400	Mar. 5	1356	298	127	343
Electrical indicating device	C. Crandall	846,185	Mar. 5	943	200-1	127	239

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Electrical purposes. Socket bushing or fitting for	W. B. Stewart	846,188	Mar. 5	900	189	127	229
Electrical resistance	A. O. Benecke	845,997	Mar. 5	566	119	127	145
Electrical switch	E. W. Brackett	845,848	Mar. 5	223	46	127	96
Electrical switch	R. H. Manson	846,120	Mar. 5	830	173	127	211
Electrical winding	J. W. Lattig and C. L. Goodrum	846,114	Mar. 5	812	170	127	207
Electrically-driven step-by-step machine	A. F. Poole	845,890	Mar. 5	336	69	127	85
Elevator safety mechanism	H. Bawden and W. Hoskin	846,299	Mar. 5	1324	201-2	127	324
Elevator safety mechanism	H. Bawden and W. Hoskin	846,436	Mar. 5	1446	321-2	127	365
Emery grinding-machine	M. Machacek	845,878	Mar. 5	308	61	127	80
Engine:							
See Direct-acting engine. Rotary engine. Explosive-engine. Internal-combustion engine.							
Engine-starting mechanism. Gas-	C. G. Herbert	846,108	Mar. 5	796	167	127	204
Engines. Equalizing device for direct-acting	O. H. Mueller	846,046	Mar. 5	689	139	127	193
Envelop. Seal-	W. H. Reed	846,345	Mar. 5	1245	274	127	314
Eraser	G. W. Park	845,889	Mar. 5	334	69	127	85
Explosion-motor. Rotary	C. A. Littlefield	846,037	Mar. 5	643	135	127	185
Explosive-engine	C. H. Brooks	846,004	Mar. 5	580	122	127	146
Extractor:							
See Grease-extractor.							
Eye-cleansing device	W. Reeves	846,142	Mar. 5	870	182	127	222
Eyeglass nose-guard	L. F. Adt	845,737	Mar. 5	4	1	127	3
Fabric:							
See Knitted fabric.							
Fabric and rubber material	C. C. Beebe	846,267	Mar. 5	1227	262	127	235
Fabric. Means for storing and dispensing sheet	J. E. Hart	845,950	Mar. 5	456	95	127	117
Fare-register	O. N. Moore	845,892	Mar. 5	314	63-5	127	81
Fastening device	J. W. Boesche	845,748	Mar. 5	34	7	127	13
Feed-box	R. S. Smith	845,982	Mar. 5	530	110	127	137
Feed-box. Metallic	H. M. Thayer	846,057	Mar. 5	717	149	127	183
Feeder. Poultry-	Z. Xevers	846,175	Mar. 5	936	195-6	127	235
Fence-post	P. J. Harrah	846,208	Mar. 5	977	208	127	248
Fertilizer-distributer	S. K. Dennis and F. W. Rice	846,188	Mar. 5	950	201-2	127	241
Filter and distiller	N. Broonoippolito	845,920	Mar. 5	420	86	127	109
Filter-bed-cleansing machine	H. W. Blaisdell	845,744	Mar. 5	15	3-4	127	7
Filter-cleaning machine. Covered-	H. W. Blaisdell	845,746	Mar. 5	28	6-7	127	9
Fire-escape	K. Leon and A. E. Dowell	846,418	Mar. 5	1405	309	127	356
Fire-signal system. Automatic	R. L. McElroy, J. E. Shepherd, and J. G. Nolen.	846,226	Mar. 5	1232	269-71	127	309
Firearm safety device	F. A. Beckwith	845,994	Mar. 5	560	117	127	144
Fishing-reel	A. F. Meiselbach	845,816	Mar. 5	140	28	127	30
Flag-holder	N. S. Makepeace	846,222	Mar. 5	1016	217	127	258
Flask:							
See Coffee and tea flask.							
Fleshing and slating machine	J. Dunn	845,768	Mar. 5	72	15	127	22
Floor construction. Steel	J. A. Emerson	846,291	Mar. 5	1123	247-8	127	287
Flue-cleaner	W. J. McCormick	846,224	Mar. 5	1094	222	127	283
Fluid-pressure brake mechanisms. Coupling apparatus for	G. E. Kelly and G. F. Royer	845,874	Mar. 5	299	59-60	127	74
Folding table	C. T. Ridgely	846,143	Mar. 5	871	183-3	127	222
Fork and rake. Convertible	C. C. Tyler	846,284	Mar. 5	1081	234	127	275
Fountain:							
See Drinking-fountain.							
Frame:							
See Beehive-frame.							
Frequency and volt indicator	J. F. Begole	845,922	Mar. 5	411	84	127	105
Frequency-indicator	A. S. Langadorf	845,966	Mar. 5	475	97	127	123
Fruit-brushing machine	T. Strain	846,160	Mar. 5	902	190	127	230
Fruit-brushing machine	T. Strain	846,161	Mar. 5	903	190	127	230
Fuel. Artificial	T. Strain	846,162	Mar. 5	905	190	127	231
Furnace:	D. Drawbaugh and B. E. Gamble	846,437	Mar. 5	1449	.....	127	365
See Hot-air furnace.							
Furnace	H. Strand	845,828	Mar. 5	184	36	127	46
Fuse. Electric	L. W. Downes	846,404	Mar. 5	1364	299	127	346
Gage:							
See Caliper-gage. Door-gage.							
Game	F. M. Osgood	845,811	Mar. 5	154	30	127	42
Game apparatus	A. A. Lehr	845,798	Mar. 5	130	24	127	36
Game apparatus	G. H. Jurick	846,110	Mar. 5	806	168	127	205
Game-board. Base-ball	R. T. Lambert	846,320	Mar. 5	1191	262-3	127	301
Game device	C. H. Wolff	845,838	Mar. 5	206	42	127	54
Garbage-receptacle	H. D. Darlington	846,286	Mar. 5	1124	246	127	285
Garment-fitting stand	C. C. Mittendorf	845,964	Mar. 5	498	102	127	128
Garment-hanger	G. H. Scully	846,149	Mar. 5	895	186	127	225
Garment-supporter	C. H. Gage	845,922	Mar. 5	630	130	127	159
Gas apparatus. Producer-	H. E. Gifford	845,942	Mar. 5	443	93	127	115
Gas-burners. Combined cock and support for cluster	H. F. Smith	846,257	Mar. 5	1265	277-8	127	318
Gas-generator	J. W. McKnight	845,970	Mar. 5	608	104	127	130
Gas-generator-controlling device	C. D. Finley	846,296	Mar. 5	1120	251	127	288
Gas-manufacturing apparatus	F. Dürr	846,018	Mar. 5	614	128	127	158
Gas-producers. Handling ash in	J. J. Busenbens	846,326	Mar. 5	1249	297	127	341
Gas-retort charging and drawing machine	H. F. Smith	846,388	Mar. 5	1267	278-9	127	319
Gas-retort-charging apparatus	J. West	845,834	Mar. 5	198	39-40	127	51
Gas seal and regulator. Combined	W. Slingsby	846,255	Mar. 5	1260	276-7	127	317
Gas-trap. Safety	C. W. Bradley	845,749	Mar. 5	36	8	127	12
Gate:	F. J. Wood	846,078	Mar. 5	743	155	127	190
See Tilting gate. Water-gate.							
Gearing	G. E. Bouvier and J. N. Proulx	846,086	Mar. 5	787	157	127	193
Gearing	W. Crawford	846,285	Mar. 5	1123	244	127	285
Generator:							
See Gas-generator. Steam-generator.							
Glass feeding and delivering apparatus	J. Schies	846,057	Mar. 5	691	146	127	176
Glass. Machine for making window or plate	W. W. Keyes	845,816	Mar. 5	1183	260-61	127	259
Glass. Method and apparatus for drawing	R. L. Frink	846,102	Mar. 5	789	166	127	201
Gold from silver and other metals. Separating	D. Clark	845,883	Mar. 5	283	.....	127	61

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Grade-meter	T. M. K. Overland	846,241	Mar. 5	1045	224	127	266
Grader	J. Bagley	846,278	Mar. 5	1111	241	127	282
Grader	A. W. McBlain	843,909	Mar. 5	501	103-4	127	129
Grader. Road-	L. J. Johnson	846,211	Mar. 5	994	213	127	253
Grain-renovator	J. C. Waggoner	846,364	Mar. 5	1278	281	127	322
Grain-shocking device	J. Demarest	846,015	Mar. 5	608	126	127	156
Grate	P. L. Shaw	845,903	Mar. 5	367	75	127	95
Grate. Duplex dumping and shaking	T. L. Derr	845,932	Mar. 5	427	87	127	110
Grease-cup. Automatic	T. J. Kieley and F. T. Mueller	846,034	Mar. 5	639	134	127	164
Grease-extractor	F. L. O. Wadsworth	845,987	Mar. 5	542	113	127	139
Grinding and polishing apparatus	C. L. Petrikin	846,245	Mar. 5	1051	226	127	267
Grinding centers. Attachment for	H. J. and T. T. Wise	846,173	Mar. 5	921	195	127	234
Gun-sight	D. W. King, Jr.	846,217	Mar. 5	1004	215	127	255
Gun-sight	J. Y. Bassell and F. C. Blenkner	846,385	Mar. 5	1322	291	127	333
Gun-sight	C. C. Call	846,183	Mar. 5	937	198	127	238
Hair-straightener							
Handle:							
See Auger-handle.							
Handles to sheet-metal vessels. Means for applying	G. W. Weber	846,435	Mar. 5	1445	321	127	364
Hanger:							
See Crank-hanger. Pipe conduit and hanger. Door-hanger. Garment-hanger. Step-hanger.							
Harrow-cart. Detachable	J. W. Harmon	846,201	Mar. 5	975	208	127	248
Harrow. Disk	C. S. Sharp	845,902	Mar. 5	366	74-5	127	95
Harvester	E. A. Johnston	845,873	Mar. 5	288	58-9	127	74
Harvester. Corn-	J. Hettrich	846,204	Mar. 5	979	208-10	127	248
Hawse-pipe	C. Petrie	846,244	Mar. 5	1050	225	127	267
Hay and grain rack	A. Weaver	845,832	Mar. 5	191	37	127	50
Heading-machine	E. C. Meyer	845,806	Mar. 5	142	26-7	127	39
Headlight. Locomotive-	T. D. Comer	846,092	Mar. 5	767	159	127	196
Heater:							
See Hot-water heater.							
Heating apparatus. Steam-	W. P. Hussey	845,789	Mar. 5	108	21-2	127	31
Heel-piece	B. Nathan and H. Cohen	845,800	Mar. 5	149	28	127	41
Hinge	G. L. Noe and C. S. Weiland	845,971	Mar. 5	505	104	127	131
Hinge. Flush	J. Erickson	845,953	Mar. 5	257	53	127	68
Hoist. Fluid-actuated regulated cushioned	F. S. Miller and J. H. Dickinson	845,827	Mar. 5	182	35	127	48
Hoisting and conveying apparatus	C. Bellmann	846,042	Mar. 5	655	137-8	127	167
Hoof-pad	L. B. Engelhart	846,082	Mar. 5	750	156	127	191
Hopple	H. G. Simpson	845,760	Mar. 5	74	15	127	22
Horse-detacher	C. Bellmann	846,152	Mar. 5	890	187	127	227
Horseshoe	P. E. Odell	846,083	Mar. 5	751	156	127	192
Hot-air furnace	F. H. Dudley	845,888	Mar. 5	333	69	127	85
Hot-air register	E. F. White	846,189	Mar. 5	953	202	127	242
Hot-water heater	H. C. Clay	846,370	Mar. 5	1287	283	127	324
Hubs. Sand-cap for wheel-	E. F. Evans	845,759	Mar. 5	54	11	127	17
Ice-cutting machine	J. D. Wilmot	846,292	Mar. 5	1134	248	127	287
Igniter. Electric	N. C. Sprague	845,836	Mar. 5	202	41	127	53
Incubator	G. E. Littlefield	846,154	Mar. 5	893	188	127	238
Incubator		846,325	Mar. 5	1198	264-5	127	308
Indicator:							
See Frequency-indicator. Frequency and volt indicator. Street or station indicator.							
Ink-well	D. A. Valentine	846,168	Mar. 5	913	193	127	222
Inkstand	J. A. Irving	846,206	Mar. 5	985	210	127	250
Internal-combustion engine	H. G. Underwood	846,070	Mar. 5	724	151-2	127	185
Internal-combustion engine	H. G. Underwood	846,434	Mar. 5	1443	320-1	127	364
Intestine-cleaner	W. F. Duncker	846,406	Mar. 5	1367	300-1	127	347
Iron:							
See Curling-iron.							
Iron castings into steel or malleable iron. Converting	M. A. Hunter	846,031	Mar. 5	634	.....	127	163
Ironing-board	E. W. Harris, W. Bremer, and N. Rasmussen.	846,105	Mar. 5	794	166	127	203
	M. Sunshine	846,066	Mar. 5	716	149	127	183
Ironing device	W. Thurber	846,433	Mar. 5	1441	320	127	364
Ironing or bosom board							
Jack:							
See Window-jack.							
Jar wrench. Fruit-	J. L. De Steiger	846,016	Mar. 5	610	126	127	157
Journal-bearing railway	G. H. Clamer and C. F. Hopkins	846,397	Mar. 5	1353	297	127	342
Journal-box lid	A. Lipschutz	845,800	Mar. 5	133	25	127	37
Journal-box. Locomotive	G. J. Hatz	845,780	Mar. 5	96	19	127	28
Jug-top	J. F. Haffey	845,946	Mar. 5	452	94	127	116
Kettle for boiling water	H. Appleby and A. A. Gardner	845,993	Mar. 5	559	117	127	143
Key-ring snap. Safety	A. C. Bindner	845,743	Mar. 5	14	3	127	6
Keyless lock	J. W. Davenport	845,931	Mar. 5	423	87	127	109
Kiln:							
See Dry-kiln.							
Knife	L. E. Jenkins	845,792	Mar. 5	112	22	127	33
Knitted fabric	R. W. Scott	846,353	Mar. 5	1258	276	127	316
Knitted fabric. Ribbed	R. W. Scott	846,428	Mar. 5	1429	316	127	361
Knitted fabric. Ribbed	R. W. Scott	846,429	Mar. 5	1430	317	127	361
Knitting-machine. Open-work	R. W. Scott	846,430	Mar. 5	1431	317-18	127	361
Knitting-machine. Open-work	R. W. Scott	846,431	Mar. 5	1436	318-19	127	362
Knob and bail. Combination door	R. W. Scott	845,866	Mar. 5	274	55	127	70
Label-spreader	J. T. Foerster	846,282	Mar. 5	1118	243	127	283
Ladder. Step-	G. N. Byl and J. Koehler	846,228	Mar. 5	1025	219	127	261
Ladder. Store-service	E. W. Miller	846,371	Mar. 5	1280	284	127	325
Lamp	L. Willour	845,963	Mar. 5	492	101	127	127
Lamp-globe	C. C. Malton	845,962	Mar. 5	491	101	127	127
	G. A. Macbeth and H. A. Schnelbach.	846,050	Mar. 5	677	142-3	127	174
Lamp. Miner's safety-	E. Piepenbring	845,754	Mar. 5	49	10	127	16
Lamp-socket	C. A. Chase	846,115	Mar. 5	815	170	127	207
Lantern	C. S. Leland and H. R. Hysom	846,116	Mar. 5	817	170	127	208
Lantern-lighting device	C. S. Leland and H. R. Hysom	846,104	Mar. 5	793	166	127	203
Lantern. Signal-	A. H. Handlan, Jr.	846,072	Mar. 5	731	153	127	188
Last	J. H. Waite	846,000	Mar. 5	574	120-1	127	147
Lathe for working pipes or bars. Automatic	A. H. Blackburn	846,384	Mar. 5	1319	291	127	333
Lead product	J. W. Bailey	845,972	Mar. 5	508	104	127	131
Lead slug, rule, and furniture case	W. M. Ougust						

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Lifter:							
See Pot or pan lifter.							
Lighting device. Automatic time	W. M. Glun	845,774	Mar. 5	82	17	127	24
Line-holder	J. M. Clausen	845,908	Mar. 5	889	123	127	151
Linotype-machine	J. R. Rogers	845,923	Mar. 5	923	143	127	175
Linotype-machine	J. R. Rogers	845,924	Mar. 5	923	144	127	175
Linotype-machine	J. R. Rogers	845,925	Mar. 5	923	144	127	176
Liquid-distributer	A. Keller	845,982	Mar. 5	825	133	127	163
Lock:							
See Bank-lock. Nut-lock. Keyless lock. Sash-lock.							
Lock	T. S. Morton	845,221	Mar. 5	1021	221	127	262
Lock	J. G. Horsey	845,309	Mar. 5	1149	256	127	296
Lock and latch mechanism	H. G. Voight	845,929	Mar. 5	267	78-9	127	109
Locomotive supply system	A. P. Dodge	845,783	Mar. 5	95	14	127	20
Loom. Filling-replenishing	J. Northrop	845,946	Mar. 5	695	140-1	127	170
Loom for weaving chenille or pile fabrics	T. F. Naylor and O. S. Hall	845,210	Mar. 5	132	28-9	127	42
Loom lug-strap holder	E. H. Major	845,889	Mar. 5	440	136	127	166
Loom. Weft-replenishing	H. W. Smith	845,904	Mar. 5	300	75	127	95
Looms. Figure-weaving attachment for dobby-	J. A. Gnose	845,198	Mar. 5	967	206-6	127	245
Looms. Guard for take-up mechanisms for	L. Labeau	845,319	Mar. 5	1010	216	127	256
Loss-preventing device	A. Payton	845,813	Mar. 5	155	30	127	42
Lubricator	C. G. Glasrud	845,201	Mar. 5	1182	253	127	292
Mail and parcel delivery apparatus. Automatic	Z. P. Dederick	845,795	Mar. 5	62	13-14	127	19
Mail-bag catcher	W. J. Bock	845,320	Mar. 5	1220	293	127	335
Mail-marking machine	H. E. Waite	845,911	Mar. 5	320	70-80	127	100
Mail-transportation system	O. O. Johnson	845,313	Mar. 5	1175	288	127	297
Massage apparatus	J. C. Johansen	845,412	Mar. 5	1220	307	127	353
Match-box	H. M. Kabele	845,314	Mar. 5	1178	259	127	298
Measure. Computing-	M. E. Cummings	845,013	Mar. 5	804	125-6	127	155
Measuring and cutting machine. Cloth	P. S. Swan and N. Fraser	845,220	Mar. 5	1072	231-2	127	273
Measuring instrument. Electrical	A. O. Benecke	845,086	Mar. 5	682	118	127	144
Measuring instrument. Electrical	A. O. Benecke	845,084	Mar. 5	732	157	127	192
Measuring instruments. Shunt for electrical	A. O. Benecke	845,085	Mar. 5	865	118	127	144
Mechanical connection	L. T. Kline	845,318	Mar. 5	1188	261-2	127	300
Metallic screen. Extensible	A. A. Day	845,094	Mar. 5	771	160-1	127	198
Meter:							
See Grade-meter. Steam-meter.							
Mills. Feeding device for ball-	M. F. Abbé	845,962	Mar. 5	588	117	127	143
Mining-drill	J. N. Rickles	845,896	Mar. 5	389	72	127	93
Mirrors and other like articles. Making toilet-	H. M. Schwartz	845,148	Mar. 5	888	186	127	225
Mixer:							
See Mortar-mixer.							
Mold	W. B. Bussard	845,097	Mar. 5	589	122-3	127	150
Molding-machine	H. Bannon	845,279	Mar. 5	1113	242	127	282
Mortar-mixer	L. D. Gentzler	845,942	Mar. 5	447	92	127	115
Motor:							
See Electric motor. Explosion-motor.							
Motor	S. J. Evans	845,288	Mar. 5	1135	248	127	288
Motor	H. S. Mills	845,439	Mar. 5	1480	322-3	127	366
Motor-controller	T. S. Watson	845,831	Mar. 5	198	37	127	40
Mowing-machine	S. V. Kennedy and C. S. Sharp	845,794	Mar. 5	114	22	127	33
Music-leaf turner	G. Regondi	845,926	Mar. 5	351	71	127	91
Music-rack. Folding	J. H. Rockwell	845,245	Mar. 5	1240	275	127	314
Music-sheet	J. B. Walker and A. R. Bond	845,267	Mar. 5	1087	226	127	277
Nail and rivet machine	J. Buckley	845,266	Mar. 5	1236	264-6	127	337
Nail-holding attachment for driving-tools	B. F. Schmidt	845,223	Mar. 5	177	34	127	47
Neckband-holder	C. W. Richert	845,979	Mar. 5	534	108	127	136
Newspaper-assembling machine	W. E. Wines	845,857	Mar. 5	294	41-2	127	54
Nut-lock	T. E. Curd	845,980	Mar. 5	422	87	127	109
Nut-lock	A. F. Thompson	845,262	Mar. 5	1079	234	127	275
Odometer	J. D. Roberts	845,820	Mar. 5	174	33	127	40
Ore in cars. Device for disintegrating	J. A. Lawler	845,086	Mar. 5	642	135	127	164
Ores. Treating	W. Kemp	845,316	Mar. 5	1033	215	127	254
Outlet-box, electric conductor	R. S. Parsons	845,974	Mar. 5	511	105	127	132
Oven. Baking-	J. D. Nasmith	845,046	Mar. 5	662	140	127	169
Packing. Shaft-	F. T. Nolan	845,337	Mar. 5	1088	223	127	264
Packing. Shaft-	C. L. Cook	845,283	Mar. 5	1120	243	127	284
Pad:							
See Hoof-pad.							
Pail. Milk-	G. Thomas	845,261	Mar. 5	1078	223	127	275
Paint-remover and making the same	P. T. Austen and F. J. Maywald	845,060	Mar. 5	748	.....	127	190
Painting. Sign-	T. Munnecke	845,333	Mar. 5	1088	221	127	263
Paper-board. Means for drying or curing	T. W. McFarland	845,337	Mar. 5	1220	271	127	310
Paper-folding machine	M. Mehle	845,123	Mar. 5	888	174-5	127	212
Paper holder and cutter. Roll-	J. F. Finan	845,194	Mar. 5	962	204	127	244
Paper sheets. Machine for forming flexible bands across	R. L. Crain	845,011	Mar. 5	888	124	127	151
Paper sheets to increase their flexibility. Treating	R. L. Crain	845,761	Mar. 5	67	11	127	18
Paste-table and tool-box. Folding	S. W. Bradt	845,057	Mar. 5	720	157-8	127	193
Pencils. Assortment-box or display-rack for lead-	F. McIntyre	845,133	Mar. 5	888	179	127	218
Phonograph-record-duplicating apparatus	V. M. Harris	845,411	Mar. 5	1220	308	127	353
Photographic prints. Device for washing	A. S. Johnson, Jr	845,109	Mar. 5	804	168	127	205
Photoplate-holder	J. R. Garlick	845,208	Mar. 5	1143	233	127	289
Pianissimo device	W. C. Vogel and H. K. Snell	845,071	Mar. 5	727	189-3	127	186
Piano. Automatic	M. Clark	845,030	Mar. 5	764	159	127	195
Piano. Violin-	F. H. Watson	845,268	Mar. 5	1088	266-6	127	277
Pianos. Rewinding mechanism for self-playing	H. Meyer	845,419	Mar. 5	1497	308-13	127	357
Piccolo or other musical instrument	H. Bernard	845,988	Mar. 5	888	119-20	127	146
Picker:							
See Corn-picker.							
Picture-mounting page or sheet	C. F. Engstrom	845,089	Mar. 5	734	164	127	200
Pin:							
See Bowling-pin. Coupling-pin.							
Pipe:							
See Hawse-pipe. Tobacco-pipe.							
Pipe and conduit hanger	J. C. Lindner, Jr	845,799	Mar. 5	121	24	127	37
Pipes and other cylindrical objects. Means for gripping and lifting	A. J. Edwards	845,986	Mar. 5	426	89	127	112
Pipes. Drive-head for well-	S. S. Hitchcock	845,963	Mar. 5	469	96	127	127

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pipes. Valved outlet for waste and overflow	D. W. York	846,275	Mar. 5	1102	239	127	280
Planter. Corn-	T. A. McKee	845,808	Mar. 5	144	27	127	40
Plotting instrument	E. L. Campbell	845,753	Mar. 5	44	10	127	15
Plow	L. M. Whisenhant	846,171	Mar. 5	919	194	127	234
Plow. Ridding-	W. L. Casaday	846,184	Mar. 5	937	198-200	127	238
Pneumatic wheel	W. L. Barnard	845,842	Mar. 5	211	43	127	55
Pole-tip	L. J. Lucey	845,802	Mar. 5	135	25	127	38
Post:							
See Fence-post. Railway bumping-post.							
Pot:							
See Coffee-pot.							
Pot or pan lifter	E. L. Fisk	845,771	Mar. 5	77	15	127	23
Press:							
See Baling-press. Printing-press.							
Press	G. W. Swift, Jr	846,362	Mar. 5	1274	280-1	127	321
Pressure system. Multiple-	C. von Philp	846,286	Mar. 5	1083	235	127	276
Printing-press	J. E. Lee	845,797	Mar. 5	122	23-4	127	35
Printing-press	W. H. Smiley	846,432	Mar. 5	1439	319-20	127	363
Printing-press	G. W. Mascord	846,040	Mar. 5	652	136	127	166
Printing-press cylinder	G. P. Fenner	846,294	Mar. 5	1137	248-50	127	288
Printing-press taking arrangement	S. Lake	846,417	Mar. 5	1401	308-9	127	355
Propulsion of submarine vessels	M. R. Isaacs	845,790	Mar. 5	110	.....	127	32
Proteids. Treating	J. C. O'Brien	846,135	Mar. 5	860	180	127	219
Pruning implement							
Puller:							
See Stalk-puller. Staple-puller.							
Pulley. Friction-	H. Hess	845,871	Mar. 5	284	56	127	73
Pump	F. Burns	845,849	Mar. 5	226	46	127	59
Pump	J. P. Montgomery	845,965	Mar. 5	494	102	127	128
Pump	H. M. Etter	846,101	Mar. 5	786	164-5	127	201
Pump	R. S. Prindle	845,816	Mar. 5	160	31	127	44
Pump and condenser. Centripetal-centrifugal	L. R. Alberger	845,738	Mar. 5	5	1	127	4
Pump. Vacuum-	A. L. Mediock	846,225	Mar. 5	1019	218	127	259
Pump. Well-	J. F. Hardy	846,304	Mar. 5	1160	254	127	293
Punch	A. D. Bennett	845,845	Mar. 5	222	45	127	55
Puzzle	C. M. Nealy	846,134	Mar. 5	859	179	127	218
Puzzle							
Rack:							
See Display-rack. Music-rack. Hay and grain rack.							
Rail-bond	G. A. Mead	846,122	Mar. 5	834	174	127	212
Rail-brace	J. Berlien	846,181	Mar. 5	934	197	127	237
Railway	S. E. Jackman	846,207	Mar. 5	988	211	127	250
Railway	S. E. Jackman	846,208	Mar. 5	989	211	127	251
Railway	S. E. Jackman	846,209	Mar. 5	990	212	127	252
Railway	S. E. Jackman	846,210	Mar. 5	992	212	127	252
Railway brake mechanism. Inclined-	W. E. Symons	846,260	Mar. 5	1075	233	127	273
Railway bumping-post	E. T. Dumas	846,190	Mar. 5	955	202-3	127	242
Railway-crossing	J. E. Reese	846,425	Mar. 5	1423	315-16	127	359
Railway-crossing	M. H. Loudon	846,326	Mar. 5	1201	266	127	303
Railway-gate-operating mechanism	L. Blessing	845,925	Mar. 5	416	85	127	108
Railway-tie. Sectional cement	J. McRaven	846,339	Mar. 5	1233	271	127	311
Railway-tracks. Safety third rail for	J. D. and W. H. Weaver	846,075	Mar. 5	734	154-5	127	187
Ram. Hydraulic	W. C. Heimerdinger	845,782	Mar. 5	99	19	127	29
Razor. Safety-	W. C. Heimerdinger	845,783	Mar. 5	101	20	127	29
Razor. Safety-	W. C. Heimerdinger	845,784	Mar. 5	102	20	127	30
Razor. Safety-	L. W. Austin	846,081	Mar. 5	749	156	127	191
Receiver	W. W. Edwards	845,861	Mar. 5	254	52	127	65
Reclining-chair	O. H. Watkins	845,913	Mar. 5	395	80	127	102
Reclining-chair							
Reel:							
See Fishing-reel.							
Register:							
See Cash-register. Hot-air register. Fare-register.							
Registering letters and the like. Coin-freed apparatus for	A. Fodor and A. Büky	845,865	Mar. 5	267	54-5	127	66
Reservoir	M. A. Martin	845,804	Mar. 5	137	26	127	38
Reservoir-bleeder	J. E. Mourne and H. J. Tinsley	846,242	Mar. 5	1031	221	127	262
Road construction	C. P. Walter	845,910	Mar. 5	389	79	127	100
Rock-drill making and sharpening apparatus	G. Glossop. (Reissue)	12,614	Mar. 5	1455	324	127	367
Rock-drills. Means for circulating a cooling medium in gas-actuated	O. C. Duryea	846,407	Mar. 5	1370	301	127	348
Rock-drilling machines or engines. Drill or bit rotating mechanism for	H. Hellman and L. C. Bayles	845,952	Mar. 5	464	96	127	120
Rod:							
See Umbrella-rod.							
Roller:							
See Shade-roller.							
Roof-gutter	J. O'Dowd	846,238	Mar. 5	1041	223	127	265
Rotary engine	W. A. C. Pape	845,973	Mar. 5	509	105	127	131
Rotary engine	S. H. Draper	846,017	Mar. 5	611	127-8	127	157
Ruler	M. D. Bryson	846,006	Mar. 5	585	122	127	150
Salt and pepper cellar	P. W. Smith	846,256	Mar. 5	1068	230	127	271
Sand-blast apparatus	E. A. Arcouet	845,919	Mar. 5	404	82	127	104
Sandpaper-holder	M. V. B. Stone	846,159	Mar. 5	900	190	127	230
Sash-fastener	E. Sloan	846,254	Mar. 5	1063	229	127	270
Sash lock and holder	Z. Xevers	846,176	Mar. 5	925	196	127	236
Sash lock. Window-	M. H. Gaba	845,772	Mar. 5	78	16	127	23
Satchel-latch	J. H. Wiedner	845,915	Mar. 5	398	81	127	103
Saw attachment. Hand-	W. C. Sennett	846,061	Mar. 5	706	147	127	181
Saw-filing machine	J. M. Beaver	845,843	Mar. 5	212	44-5	127	56
Saws. Insertible tooth for metal	S. Freas	846,196	Mar. 5	966	205	127	245
Scabbling-machine	J. M. and M. H. Owens	846,342	Mar. 5	1237	272-3	127	312
Screen:							
See Door and window screen. Metallic screen.							
Screens. Fly-escapement for window and door	J. A. Gee	845,941	Mar. 5	446	92	127	115
Screw-driver attachment	F. D. Rappelee	845,978	Mar. 5	523	108	127	135
Screw. Jack-	W. Ferris and S. R. W. Bager	845,770	Mar. 5	75	15	127	23
Screw-threading dies. Mechanism for finishing	E. E. Beck	845,741	Mar. 5	10	2	127	5
Seal. Spring-lock	J. C. Davis	846,098	Mar. 5	769	160	127	196

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Seaming machine. Can-body-side-	H. C. H. Walsh	845,998	Mar. 5	843	113-15	127	140
Seat: *See* Spring-seat.							
Selling and delivering apparatus. Automatic	L. O. T. Thompson	846,984	Mar. 5	836	111-12	127	128
Separator: *See* Cotton-separator. Water-separator. Steam-separator.							
Separator	O. Selg	846,060	Mar. 5	706	146	127	181
Sewing-machine plaiter or ruffler	J. T. Kelley	846,215	Mar. 5	1000	214-15	127	254
Sewing-machine trimming device	W. H. Stedman	846,065	Mar. 5	714	149	127	183
Shade-cloth with identification-mark thereon	C. W. Breneman	845,927	Mar. 5	619	86	127	108
Shade-roller	J. Evans	846,102	Mar. 5	980	203	127	248
Shade-supporting means. Adjustable window-	J. F. Cannon	846,080	Mar. 5	763	158-9	127	194
Shaft-bearings and the like. Indicator for overheated	F. W. Dick	846,096	Mar. 5	775	161-2	127	197
Shaft-collar	C. E. Brinley	846,088	Mar. 5	760	158	127	194
Shaft. Extensible	V. A. Yost	846,079	Mar. 5	745	156	127	189
Shears	J. G. Moncus	845,881	Mar. 5	514	62	127	81
Sheet-feeding device	E. Tyden	845,907	Mar. 5	579	77-8	127	98
Sheet-metal can for lard and other articles. Slip-cover	B. H. Kannenberg	846,111	Mar. 5	805	160	127	205
Sheet-metal-slitting machine	L. E. Curtis	845,764	Mar. 5	61	12-13	127	19
Shelf-supporting bracket	J. J. Worley and W. J. Thomas	845,917	Mar. 5	600	81	127	103
Shirt	L. Bernstein	846,020	Mar. 5	671	130	127	146
Shoe-cleaner	S. Feld	846,020	Mar. 5	618	129	127	139
Shoe-upper fastener	C. K. Sharood	846,262	Mar. 5	1091	228	127	270
Signal: *See* Alarm-signal. Train-signal.							
Signal control. Electric	M. Abt	846,276	Mar. 5	1104	230-40	127	281
Smoke-cleaner and cinder-catcher as applied to locomotives.	J. Rossner	846,082	Mar. 5	681	143	127	174
Snap-fastener	T. R. Hyde, Jr.	846,312	Mar. 5	1174	258	127	307
Soldering compound	R. A. Hall	845,946	Mar. 5	454		127	117
Soldering machine. Can-end-	F. Rudolphi and C. J. Nelson	846,145	Mar. 5	877	183-5	127	223
Sounder and resonator. Combined	S. F. Cox	845,858	Mar. 5	243	49-50	127	63
Speed transmission mechanism. Variable-	J. H. Boughton	846,182	Mar. 5	935	198	127	237
Speed-varying mechanism	G. T. Rennerfelt	845,886	Mar. 5	353	72	127	92
Speedometer	A. Fleischmann	846,206	Mar. 5	1140	251	127	249
Spinning-machine spindle and its appurtenances	J. and H. Wright	846,375	Mar. 5	1298	285-6	127	327
Spinning-machine-spindle bearing	A. Stell	846,361	Mar. 5	1273	280	127	320
Spinning-mule	J. Schmitt	846,146	Mar. 5	880	185	127	224
Splitting-machine	E. A. Hildreth	845,964	Mar. 5	471	96	127	122
Spring-seat	A. Bodenstein	846,085	Mar. 5	756	157	127	193
Spring-wheel	E. B. Sims	845,826	Mar. 5	181	35	127	46
Sprinkler	C. C. and H. G. Rhodes	846,426	Mar. 5	1425	316	127	359
Sprinkler-heads. Emergency shut-off for	E. Abbott	846,918	Mar. 5	402	82	127	104
Sprinkling system. Combined water and chemical	S. C. Radford	845,892	Mar. 5	349	70	127	87
Square	W. A. Schmals	846,248	Mar. 5	1064	227	127	289
Square. Carpenter's	G. Yates	846,274	Mar. 5	1100	238-9	127	280
Stable implement	G. S. Prescott	845,891	Mar. 5	338	70	127	87
Stacker-hood	A. Luke	845,876	Mar. 5	302	60	127	78
Stain and filler	T. J. Kelly	845,793	Mar. 5	113		127	32
Stair-rod holder	I. N. Giffin	846,103	Mar. 5	793	166	127	203
Stalk-cutter	E. A. Frantz	845,867	Mar. 5	275	55	127	70
Stalk-puller	C. R. Smith	846,255	Mar. 5	1064	229	127	271
Stamping-machine	C. W. Gray	845,775	Mar. 5	93	17	127	24
Stamping-machine	C. W. Gray	845,776	Mar. 5	97	17	127	26
Stand: *See* Display-stand. Switch-stand. Garment-fitting stand.							
Staple-puller and fence-maker's tool	H. Cottrell	845,857	Mar. 5	248	49	127	62
Steam-generator	J. A. Mumford and D. W. Robb	845,885	Mar. 5	327	67	127	84
Steam-meter	W. A. Kitts	846,112	Mar. 5	807	169	127	206
Steam-separator	G. Clark	845,758	Mar. 5	53	11	127	17
Steam-trap	W. Geipel	846,300	Mar. 5	1146	232-3	127	290
Steel-tempering bath	J. Churchward	845,755	Mar. 5	30	1	127	16
Steering and propelling mechanism. Boat	W. H. Fahrney	845,937	Mar. 5	426	89-90	127	112
Steering-gear	F. Y. Harrison	845,949	Mar. 5	455	94	127	117
Step-hanger	A. N. Manross	845,803	Mar. 5	136	28	127	36
Stitch impressions or indentations. Burnishing-machine for imitation-	L. W. G. Flynt	845,939	Mar. 5	440	90-1	127	113
Stone blocks. Machine for making artificial-	V. W. Grumman	845,945	Mar. 5	469	93	127	116
Stopper	B. F. Whelden	846,271	Mar. 5	1094	237	127	279
Store-front construction	F. J. Plym	846,343	Mar. 5	1342	272	127	313
Stove or oven door support	R. A. Culter	846,180	Mar. 5	949	201	127	240
Street or station indicator	C. A. Myers	845,880	Mar. 5	320	66	127	85
Striking-bag apparatus	J. F. Emes	846,019	Mar. 5	616	128-9	127	158
Stubble cutter and destroyer. Cane-	J. Le Blanc	846,323	Mar. 5	1195	244	127	302
Submarine structure	M. E. Pester	845,813	Mar. 5	156	30	127	43
Sulfid ores. Treating	O. Fronek	845,966	Mar. 5	376		127	71
Sunshade or umbrella support	D. M. Keech	846,315	Mar. 5	1180	239	127	296
Surveying instrument. Bore-hole-	P. E. Lewis	845,878	Mar. 5	288	60	127	75
Suspenders	S. H. Loorye	845,801	Mar. 5	134	28	127	37
Suspenders for wearing-apparel	A. Weintraud	846,367	Mar. 5	1284	263	127	323
Switch: *See* Automatic switch. Trolley-switch. Electrical switch.							
Switch-stand	F. W. Snow	846,062	Mar. 5	707	147	127	181
Switch-stand	F. W. Snow	846,063	Mar. 5	709	147-8	127	182
Switching mechanism	C. A. Anderson	846,262	Mar. 5	1216	260	127	332
Table: *See* Cabinet-table. Paste-table. Folding table.							
Talking-machine sound-box	E. D. Gleason	846,024	Mar. 5	621	130	127	160
Tapping mains. Apparatus for	W. H. Van Winkle	845,830	Mar. 5	188	36-7	127	49
Telegraph-pole. Metal truss	L. Blessing	846,001	Mar. 5	576	121	127	147
Telegraphic receiving device	I. Kitsee	846,416	Mar. 5	1289	308	127	355
Telegraphy	I. Kitsee	846,415	Mar. 5	1288	308	127	355
Telephone-exchange	C. A. Anderson	846,261	Mar. 5	1213	260-60	127	332
Telephone-exchanges. Calling device for	F. A. Lundquist	846,227	Mar. 5	1202	255-6	127	303
Telephone-exchanges. Registering device for	F. A. Lundquist	846,228	Mar. 5	1203	257	127	305

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Telephone signaling device	K. Weman	846,368	Mar. 5	1285	283	127	323
Telephone system	C. G. and E. J. Burke	846,394	Mar. 5	1344	296-7	127	339
Telephone system	I. Kitsee	846,413	Mar. 5	1391	307	127	353
Telephone system	W. Robinson	846,144	Mar. 5	876	183	127	223
Telephone systems. Pole-distribution rack for	J. W. Lattig and C. L. Goodrum	845,706	Mar. 5	118	23	127	34
Telephony. Multiplex	J. M. Teetor	846,164	Mar. 5	908	191	127	231
Tenpin	H. L. Quick	845,817	Mar. 5	163	32-3	127	44
Tentering-machine	H. E. Reeve	845,894	Mar. 5	349	71	127	91
Thermostat	M. C. Albertson	846,377	Mar. 5	1302	287	127	329
Threshing-machine band-cutter							
Tie: *See* Railway-tie.							
Tie-plate	E. H. Bell	846,281	Mar. 5	1116	243	127	283
Tilting gate	E. C. Compher	846,399	Mar. 5	1365	298	127	343
Tobacco-pipe	G. Boston	845,847	Mar. 5	223	46	127	55
Tool. Percussive hand-	H. B. Stocks and J. R. Webb, Jr.	845,905	Mar. 5	372	76	127	98
Top-spinning pistol	S. B. Newman	846,047	Mar. 5	665	140	127	170
Toy	A. D. Bennett	845,846	Mar. 5	222	46	127	55
Toy animal	L. E. Coleman and W. H. Spake	846,009	Mar. 5	591	123	127	151
Toy. Dancing	H. W. Thornton	845,985	Mar. 5	538	112	127	138
Train signal and indicating apparatus. Combined	W. A. and B. S. H. Harris	846,305	Mar. 5	1162	254-5	127	294
Train signal and indicating apparatus. Combined	W. A. and B. S. H. Harris	846,306	Mar. 5	1164	255	127	294
Train-ventilating system	J. H. Elward	846,097	Mar. 5	780	163	127	199
Transfer mechanism	H. W. Blaisdell	845,745	Mar. 5	20	4-5	127	8
Trap: *See* Animal-trap. Steam-trap. Gas-trap.							
Traveling carrier	D. M. Motherwell	845,884	Mar. 5	323	65-7	127	83
Tray. Instrument-	W. G. Hullhorst	846,030	Mar. 5	632	133	127	163
Trolley-harp	C. and W. Hibbard	846,205	Mar. 5	982	210	127	249
Trolley-retriever. Automatic	R. J. Walker	846,365	Mar. 5	1279	281-2	127	322
Trolley-switch	B. G. Watkins	845,912	Mar. 5	393	80	127	101
Trolley wheel and harp	E. S. Roland	845,900	Mar. 5	362	73	127	94
Trolley-wheels. Wire-retrieving attachment for	W. C. Althen	846,378	Mar. 5	1304	287	127	329
Troughs. Making	C. D. Pruden	846,139	Mar. 5	866	181	127	220
Truck	J. H. Morris	845,966	Mar. 5	497	103	127	129
Truck	E. Peckham	845,977	Mar. 5	518	107	127	134
Truck. Car-	A. E. Ostrander	846,240	Mar. 5	1043	224	127	266
Truck for harvesters. Tongue-	G. L. Phelps	846,138	Mar. 5	865	181	127	220
Trunk or the like fastener	E. W. Hawley	845,781	Mar. 5	98	19	127	28
Tube: *See* Well-tube.							
Turbine-muffler	C. R. Crary	845,762	Mar. 5	58	12	127	18
Turbine. Steam-	R. Schulz	845,980	Mar. 5	526	108-9	127	136
Turbines. Fastening of blades in	R. Schulz	845,901	Mar. 5	363	73-4	127	94
Turning-tool and calipers. Combined	R. S. Whipple and J. A. Olessak	846,272	Mar. 5	1095	237	127	279
Type-writer	J. B. Hammond	846,027	Mar. 5	626	131	127	161
Type-writer cabinet	C. B. Perry	846,243	Mar. 5	1048	225	127	267
Type-writers. Polychrome-ribbon attachment for	J. A. Rumin	846,026	Mar. 5	624	131	127	160
Type-writers. Sight attachment for	J. B. Hammond	846,025	Mar. 5	622	130	127	160
Umbrella-rod	L. Berger	845,742	Mar. 5	13	3	127	6
Underwear	C. R. De Bevoise	846,401	Mar. 5	1357	299	127	343
Valve	H. C. Cronemeyer	845,859	Mar. 5	245	50	127	63
Valve. Automatic relief and back-pressure	J. V. Schmid	846,059	Mar. 5	669	146	127	179
Valve. Boiler check-	L. Kassander	846,213	Mar. 5	996	213-14	127	253
Valve. Check-	R. H. Kiddle	846,317	Mar. 5	1187	261	127	300
Valve. Flushing-tank	W. H. Ludewig	846,221	Mar. 5	1013	217	127	257
Valve for flush-tanks. Supply-	R. McGraw	846,132	Mar. 5	857	179	127	218
Valve for radiators. Air-relief	D. D. Casey	845,852	Mar. 5	231	47	127	60
Valve for sprinkler systems	J. McAlear	846,335	Mar. 5	1219	299	127	308
Valve. Gas-engine-regulating	F. G. Hobart	846,307	Mar. 5	1167	256	127	295
Valve. Puppet-	R. Wishon	846,077	Mar. 5	742	155	127	190
Valve. Steam-	F. M. Metcalf	846,041	Mar. 5	653	137	127	167
Valves. Regulator for use with filling-	A. Schneider	846,352	Mar. 5	1256	276	127	316
Vehicle-body. Interchangeable	W. N. Beecher	845,844	Mar. 5	219	45	127	57
Vehicle-brake	D. T. Lohnes	846,038	Mar. 5	647	136	127	165
Vehicle check attachment	S. L. Duckett	846,405	Mar. 5	1364	300	127	346
Vehicle-step. Extension	G. F. Shaw	846,151	Mar. 5	889	187	127	227
Vehicles. Detachable running-board for motor-	H. E. Coffin	846,091	Mar. 5	767	159	127	195
Vehicles &c. Gear-case for motor-	O. Pfänder	845,814	Mar. 5	157	30-1	127	43
Vehicles. Method of and apparatus for braking	G. H. Condict	845,856	Mar. 5	238	48-9	127	62
Vehicles. Sleigh-runner attachment for wheeled	A. G. Wyeth	846,174	Mar. 5	923	195	127	234
Vehicles. Speed-changing and brake gear for motor-driven road-	A. H. Adams	846,376	Mar. 5	1300	286-7	127	328
Vending apparatus. Coin-controlled liquid-	F. W. Waterman	846,366	Mar. 5	1281	282	127	323
Vending-machine	A. Smith	846,356	Mar. 5	1263	277	127	318
Ventilator: *See* Car-ventilator.							
Ventilator	W. F. Warden	846,074	Mar. 5	733	154	127	187
Vessel. Non-refillable	L. Barnes	846,180	Mar. 5	933	197	127	237
Vessels. Making collapsible and expansible	W. M. Fulton	846,297	Mar. 5	1141	251	127	280
Violin-bridge	W. H. May	846,332	Mar. 5	1214	268	127	307
Voting-machine	W. H. Dana	845,860	Mar. 5	246	50-2	127	64
Voting-machines. Multi-indorsement-restricting device for	W. M. Delavan	846,014	Mar. 5	606	126	127	156
Vulcanizing apparatus	H. H. Frost	846,408	Mar. 5	1371	301-2	127	348
Wagon	J. H. Montgomery	846,229	Mar. 5	1027	220	127	261
Wagon and sled. Combined	J. P. Müller	846,130	Mar. 5	852	178	127	216
Wagon-bound	A. H. Freitag	846,197	Mar. 5	967	205	127	245
Washer: *See* Bottle-washer. Coal-washer.							
Washing-machine	L. D. Thornburgh	846,167	Mar. 5	910	192	127	232
Watches. Balance-wheel bridge for	E. H. Horn	846,308	Mar. 5	1168	256	127	295
Water-closet	J. W. Sharp, Jr.	846,150	Mar. 5	887	186	127	226
Water elevating and delivering apparatus	E. D. Couch	846,284	Mar. 5	1121	244	127	284
Water-gate	W. C. Weeks	846,170	Mar. 5	917	194	127	233
Water-separator	H. G. Miller	845,807	Mar. 5	143	27	127	40
Waterer. Automatic hog-	C. Pelmulder	846,424	Mar. 5	1422	315	127	359
Waterer. Calabash-	P. Bernard	846,388	Mar. 5	1328	292	127	335
Waterproofing composition	W. M. Wheeler	846,369	Mar. 5	1286		127	323
Well-drilling machine	G. N. Thomas	845,765	Mar. 5	908	191-2	127	231

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Well-tube	A. L. Medlock	846,226	Mar. 5	1021	219	127	380
Wells. Rope-grab for oil or other drilled	L. Stephens	846,157	Mar. 5	899	189	127	229
Wheel: *See* Pneumatic wheel. Trolley-wheel. Spring-wheel.							
Window. Automatic	T. I. Duffy	845,767	Mar. 5	68	14	127	21
Window-jack	J. S. Hawley	846,208	Mar. 5	978	206	127	240
Windows and other plane surfaces. Means for forming announcements on glass	E. G. Mitchell	846,043	Mar. 5	656	138	127	165
Wood-graining machine	C. W. Muns	846,131	Mar. 5	854	178	127	217
Wrench: *See* Jar-wrench.							
Wrench	W. C. Blee	845,924	Mar. 5	415	84	127	107
Wrench	B. N. Lehman, F. Cook, and J. Robertson.	846,220	Mar. 5	1011	216	127	257
Wrench	F. Sprowls	846,360	Mar. 5	1271	279–80	127	320
Yarn spraying and conditioning apparatus	G. and A. Wray	846,273	Mar. 5	1298	284–5	127	325

DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Badge	J. A. Montgomery	39,669	Mar. 5	127	367
Dish or similar article. Covered	C. J. Ahrenfeldt	39,670	Mar. 5	127	367
Plate or similar article	C. J. Ahrenfeldt	39,671	Mar. 5	127	367
Plate or similar article	C. J. Ahrenfeldt	39,672	Mar. 5	127	368
Plate or similar article	C. J. Ahrenfeldt	39,673	Mar. 5	127	368

TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Abdominal supports and hose-supporters. Combined	N. L. Digney	61,133	Mar. 5	127	380
Antiseptic salve	A. Obrock	61,172	Mar. 5	127	396
Automobiles and parts thereof, except rubber tires	Argus Motoren Gesellschaft Jeannin & Co. Comm.-Ges.	61,146	Mar. 5	127	386
Bakery products. Certain named	Reiss & Brady	61,088	Mar. 5	127	385
Barley	Schwabacher Bros. & Co	61,097	Mar. 5	127	386
Beef. Sliced smoked	F. W. Siebert	61,089	Mar. 5	127	386
Beer	Pittsburgh Brewing Company	61,139	Mar. 5	127	387
Belt-fasteners. Metallic	Bristol Co	61,148	Mar. 5	127	388
Bitters	McCart-Mosset Co	61,195	Mar. 5	127	389
Bitters. Stomach-	T. Lappe	61,166	Mar. 5	127	388
Boots and shoes. Leather	Geo. D. Witt-Shoe Co	61,111	Mar. 5	127	387
Boots and shoes. Leather	Guthmann Carpenter & Telling	61,113	Mar. 5	127	387
Boots and shoes. Leather	E. Phelps, Jr	61,118	Mar. 5	127	387
Boots and shoes. Leather	Geo. D. Witt Shoe Co	61,192	Mar. 5	127	389
Boots, shoes, and slippers. Leather	Paul Brothers	61,134	Mar. 5	127	387
Boots, shoes, and slippers. Leather	Paul Brothers	61,135	Mar. 5	127	387
Boots, shoes, and slippers. Leather	Paul Brothers	61,136	Mar. 5	127	387
Boots, shoes, and slippers. Leather	Paul Brothers	61,138	Mar. 5	127	387
Brandy and cordials. Blackberry	Rheinstrom, Bettman, Johnson & Co.	61,098	Mar. 5	127	386
Buggies and carriages	Studebaker Bros. Mfg. Co	61,155	Mar. 5	127	388
Canned vegetables	Oklahoma Wholesale Grocer Co	61,099	Mar. 5	127	386
Carpet-sweepers	Bissell Carpet Sweeper Company	61,145	Mar. 5	127	388
Carpet-sweepers	Bissell Carpet Sweeper Company	61,147	Mar. 5	127	388
Catamenial bandages	Remsen Manufacturing Company	61,119	Mar. 5	127	387
Cheese	Reiss & Brady	61,089	Mar. 5	127	385
Chemicals. Certain	Sharp & Dohme	61,205	Mar. 5	127	389
Chiffonniers, dressers, and commodes	Marvel Furniture Company	61,116	Mar. 5	127	387
Chlorates and bichromates	National Electrolytic Co	61,197	Mar. 5	127	389
Chocolate, sweet and unsweetened, and cocoa	Runkel Brothers	61,095	Mar. 5	127	386
Coats, trousers, vests, overcoats, and rain-coats	A. B. Kirschbaum & Co	61,156	Mar. 5	127	387
Coffee	Acker, Merrall & Condit Company.	61,047	Mar. 5	127	385
Coffee	Ohio Coffee & Spice Company	61,096	Mar. 5	127	385
Collars, collar-pads, and back-bands. Horse-	Couch Bros. & J. J. Eagan Co	61,109	Mar. 5	127	387
Cordage. Certain	Columbian Rope Company	61,075	Mar. 5	127	386
Cotton duck	Denison Cotton Mill Co	61,187	Mar. 5	127	388
Cotton piece goods	Grendel Mills	61,112	Mar. 5	127	387
Decalcomanias and transfer-pictures	R. Dührssen	61,092	Mar. 5	127	386
Dentifrice	Meade & Baker Carbotic Mouth Wash Co.	61,171	Mar. 5	127	396
Dyestuffs	American Dyewood Company	61,101	Mar. 5	127	386
Edge-tools. Certain	A. Baldwin & Co	61,165	Mar. 5	127	388
Embroideries, embroidery-patterns, &c	L. E. Goetz & Company	61,120	Mar. 5	127	387

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Fertilizers	Virginia-Carolina Chemical Company.	61,103	Mar. 5	127	386
Fertilizers	Virginia-Carolina Chemical Company.	61,104	Mar. 5	127	386
Fertilizers	Virginia-Carolina Chemical Company.	61,105	Mar. 5	127	387
Fertilizers	Home Fertilizer & Chemical Company of Baltimore City.	61,114	Mar. 5	127	387
Fertilizers	Virginia-Carolina Chemical Co	61,141	Mar. 5	127	388
Firearms, equipments, and projectiles. Certain	Winchester Repeating Arms Co	61,089	Mar. 5	127	386
Flavoring extract	Charles Jacquin et Cie	61,048	Mar. 5	127	385
Flavoring extract	Charles Jacquin et Cie	61,049	Mar. 5	127	385
Flavoring extracts	Blanke-Baer Chemical Company	61,063	Mar. 5	127	385
Flour. Wheat	Medlin Milling Co	61,079	Mar. 5	127	386
Flours. Wheat, rye, and Graham	J. R. Thomas' Sons	61,046	Mar. 5	127	385
Food made from fish, &c	A. W. Marshall	61,054	Mar. 5	127	385
Food. Poultry and stock	Ralston Purina Co	61,064	Mar. 5	127	385
Food preparations. Certain	H. J. Heinz Company	61,051	Mar. 5	127	385
Food preparations. Certain	H. J. Heinz Company	61,052	Mar. 5	127	385
Food preparations. Certain	H. J. Heinz Company	61,053	Mar. 5	127	385
Fruits, sago, bird-seed, &c. Dried	Schwabacher Bros. & Co	61,068	Mar. 5	127	386
Fruits, vegetables, nuts, and flavoring extracts and essences	L. M. Reynolds	61,044	Mar. 5	127	385
Furniture and woodwork cleaning and polishing preparations	Atlas Specialty Company	61,106	Mar. 5	127	387
Game-counters and chips	United States Playing Card Co	61,101	Mar. 5	127	386
Game-counters and chips	United States Playing Card Co	61,102	Mar. 5	127	386
Gin	Kinahan & Company	61,076	Mar. 5	127	386
Gin	John C. Weller Co	61,093	Mar. 5	127	386
Gin	H. Obernauer	61,094	Mar. 5	127	386
Grain. Brewers	Atlantic Export Company	61,071	Mar. 5	127	386
Hair. Preparation for removing superfluous	Hall & Ruckel	61,193	Mar. 5	127	389
Hats and caps. Automobile	35% Automobile Supply Co	61,090	Mar. 5	127	386
Hats and caps. Infants'	S. Mayer & Sons	61,078	Mar. 5	127	386
Hats. Preparation for cleaning straw and bast	M. Queisner	61,083	Mar. 5	127	386
Horseshoe-pads	Revere Rubber Company	61,060	Mar. 5	127	385
Hose-supporters	A. Stein & Co	61,188	Mar. 5	127	389
Hosiery	H. Starker	61,178	Mar. 5	127	389
Insecticide and antiseptic. Non-poisonous	T. C. Murphey	61,194	Mar. 5	127	389
Iodin, oil of wintergreen, and menthol paste	Iosaline Company	61,161	Mar. 5	127	388
Jamaica ginger. Essence of	Van Vleet-Mansfield Drug Co	61,205	Mar. 5	127	389
Knitted socks and stockings	Magnet Knitting Mills	61,170	Mar. 5	127	388
Knitted undershirts and drawers	H. Jacquin & Co	61,163	Mar. 5	127	388
Lamps. Arc and incandescent electric	Toledo Railway & Light Company.	61,181	Mar. 5	127	389
Liniment	C. W. Massie	61,186	Mar. 5	127	389
Machinery and parts thereof. Certain	Chandler & Taylor Company	61,140	Mar. 5	127	388
Machinery. Certain	Defiance Machine Works	61,150	Mar. 5	127	388
Magnetos	Robert Bosch, New York	61,176	Mar. 5	127	388
Malt extracts	Paragon Malt Extract Co	61,117	Mar. 5	127	387
Maternity outfits	Remsen Manufacturing Company.	61,202	Mar. 5	127	389
Meal, flour, and cereal breakfast food	Ralston Purina Co	61,057	Mar. 5	127	385
Meats, lard, lard substitutes, and unctuous food substances	Schwarzschild and Sulzberger Company.	61,045	Mar. 5	127	385
Medicinal compounds. Certain	Knoll & Co	61,165	Mar. 5	127	388
Medicinal remedies for the eyes	T. E. McPherson & Co	61,187	Mar. 5	127	389
Medicine. Expectorant, sedative, antispasmodic	Tilden Company	61,180	Mar. 5	127	389
Medicine. Eye	A. R. Canter	61,156	Mar. 5	127	388
Medicine for the cure of stomach, liver, and kidney diseases	Verno Company	61,213	Mar. 5	127	389
Medicine. Kidney	Van Vleet-Mansfield Drug Co	61,211	Mar. 5	127	389
Medicines. Certain	Humphreys Homeopathic Medicine Co.	61,160	Mar. 5	127	388
Metal manufactures. Certain	Eberhard Manufacturing Company.	61,151	Mar. 5	127	388
Metal manufactures. Certain	W. Vogel & Bros	61,154	Mar. 5	127	388
Metal manufactures. Certain	Reading Hardware Company	61,174	Mar. 5	127	388
Metal manufactures. Certain	Reading Hardware Company	61,175	Mar. 5	127	388
Milk, cream, and butter	Bernese Alps Milk Co	61,041	Mar. 5	127	385
Music-playing instruments and music-rolls therefor. Automatic	Wilcox & White Company	61,124	Mar. 5	127	387
Oil and animal-fat mixture. Vegetable	Southern Cotton Oil Company	61,100	Mar. 5	127	386
Oil. Cotton-seed	American Cotton Oil Company	61,038	Mar. 5	127	385
Oil. Cotton-seed	American Cotton Oil Company	61,039	Mar. 5	127	385
Oil. Cotton-seed	American Cotton Oil Company	61,070	Mar. 5	127	386
Oil. Cutting	Clarkson & Ford Co	61,073	Mar. 5	127	386
Oil. Lubricating	Clarkson & Ford Co	61,072	Mar. 5	127	386
Oil. Lubricating	National Refining Company	61,080	Mar. 5	127	386
Oil. Olive	Robert Stevenson & Co	61,065	Mar. 5	127	385
Oil. Summer white cotton-seed	American Cotton Oil Company	61,037	Mar. 5	127	385
Ointment. Carbolic	Van Vleet-Mansfield Drug Co	61,204	Mar. 5	127	389
Ointment. Tar	Van Vleet-Mansfield Drug Co	61,207	Mar. 5	127	389
Paint	Van Vleet-Mansfield Drug Co	61,061	Mar. 5	127	385
Paint. Enamel	Rossing Paint & Roofing Co	61,062	Mar. 5	127	385
Paper and paper-boards. Wrapping	Le Ripolin (Société Anonyme Française de peintures Laquées et d'enduits sous-marins procédés Lefranc & Briegleb réunis).	61,121	Mar. 5	127	387
Paper, paper-boards, and paper bags. Wrapping	Union Bag & Paper Company	61,120	Mar. 5	127	387
Periodical. Monthly	Union Bag & Paper Company	61,115	Mar. 5	127	387
Periodical publication	W. J. Johnston	61,107	Mar. 5	127	387
Piano-tuning pins	A. W. Chambers	61,143	Mar. 5	127	388
	W. Wagner, Jr.				

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Piano-tuning pins	W. Wagner, Jr	61,144	Mar. 5	127	386
Powder. Complexion-	J. A. Pozzoni Pharmacal Co	61,162	Mar. 5	127	386
Powder. Insect-	National Disinfectant Company	61,196	Mar. 5	127	389
Preparation for the cure of skin diseases	Van Vleet-Mansfield Drug Co	61,206	Mar. 5	127	389
Preparation for the cure of venereal diseases	Van Vleet-Mansfield Drug Co	61,205	Mar. 5	127	389
Printing plates. Relief-	G. C. Thayer	61,179	Mar. 5	127	389
Razors	International Cutlery Company	61,152	Mar. 5	127	386
Remedy for certain diseases	Van Vleet-Mansfield Drug Co	61,189	Mar. 5	127	389
Remedy for certain diseases	Van Vleet-Mansfield Drug Co	61,190	Mar. 5	127	389
Remedy for colds and coughs, la grippe, and headache	Van Vleet-Mansfield Drug Co	61,210	Mar. 5	127	389
Remedy for diseases of poultry	H. E. Turpin	61,182	Mar. 5	127	389
Remedy for diseases of the blood, liver, stomach, and kidneys	Peerless Herb Co	61,199	Mar. 5	127	389
Remedy for la grippe, colds, &c	Southern Chemical Company	61,177	Mar. 5	127	389
Remedy for seasickness	B. E. Fortiner	61,185	Mar. 5	127	389
Remedy for the cure of chills and fever	Van Vleet-Mansfield Drug Co	61,209	Mar. 5	127	389
Rivets	Judson L. Thomson Mfg. Co	61,164	Mar. 5	127	386
Salt. Table-	Red Seal Never Damp Salt Company.	61,201	Mar. 5	127	389
Salve	Gordshell Chemical Company	61,158	Mar. 5	127	386
Shirts, overalls, and pantaloons. Certain	J. Levi	61,077	Mar. 5	127	386
Shoes and slippers. Ladies' and misses' leather	Paul Brothers	61,137	Mar. 5	127	387
Silk piece goods	York Silk Manufacturing Co	61,125	Mar. 5	127	387
Slate. Roofing-	Bangor Roofing Slate Manufacturing Association.	61,040	Mar. 5	127	385
Soap	Pompeian Mfg. Co	61,081	Mar. 5	127	386
Soup preparations. Certain named	Fabrik von Maggis Nahrungsmitteln.	61,042	Mar. 5	127	385
Soup preparations. Certain named	Fabrik von Maggis Nahrungsmitteln.	61,043	Mar. 5	127	385
Stove-gasolene	National Refining Company	61,055	Mar. 5	127	385
Stove-polish	W. Wierhake	61,088	Mar. 5	127	386
Tea	Chase & Sanborn	61,050	Mar. 5	127	385
Thermometers, barometers, mercury-gages, &c	Hohmann & Maurer Mfg. Co	61,159	Mar. 5	127	388
Thread and yarns	Chicago Thread Mfg. Co	61,108	Mar. 5	127	387
Toilet preparations. Certain named	Pompeian Mfg. Co	61,200	Mar. 5	127	389
Tonic. Blood-	E. F. Fahey	61,184	Mar. 5	127	389
Tonics. Nerve-	Peal Medicine Company	61,196	Mar. 5	127	389
Traps. Animal-	Oneida Community	61,173	Mar. 5	127	388
Trousers	Potsdam Clothing Manufacturing Company.	61,082	Mar. 5	127	386
Vermifuge. Candy	Van Vleet-Mansfield Drug Co	61,212	Mar. 5	127	389
Waists, shirts, and suits. Ladies' and misses'	A. Cohen	61,074	Mar. 5	127	386
Watches, watchcases, and watch-movements	Langendorf Watch Co	61,129	Mar. 5	127	387
Watches, watchcases, and watch-movements	Langendorf Watch Co	61,130	Mar. 5	127	387
Watches, watchcases, and watch-movements	Langendorf Watch Co	61,131	Mar. 5	127	387
Watches, watchcases, and watch-movements	Langendorf Watch Co	61,132	Mar. 5	127	387
Watches, watchcases, and watch-movements	Langendorf Watch Co	61,133	Mar. 5	127	387
Watches, watchcases, and watch-movements	Langendorf Watch Co	61,166	Mar. 5	127	388
Watches, watchcases, and watch-movements	Langendorf Watch Co	61,167	Mar. 5	127	388
Water. Mineral	Hinckley & Schmitt	61,127	Mar. 5	127	387
Water. Mineral	Virginia Etna Lithia Springs Co	61,142	Mar. 5	127	388
Wax, mucilage, and paste. Sealing-	Thaddeus Davids Company	61,085	Mar. 5	127	386
Whisky	Rieger & Lindley	61,084	Mar. 5	127	386
Whisky	L. W. Walker	61,086	Mar. 5	127	386
Whisky	J. Walsh & Co	61,087	Mar. 5	127	386
Whisky	H. F. Corbin & Co	61,091	Mar. 5	127	386
Whisky	H. Obernauer	61,095	Mar. 5	127	386
Whisky	Sielemann Distilling Co	61,099	Mar. 5	127	386
Whisky	Edw. B. Bruce Co	61,110	Mar. 5	127	387
Whisky	A. J. Weil	61,122	Mar. 5	127	387
Whisky	A. J. Weil	61,123	Mar. 5	127	387
Whisky	H. Rosenheim & Son	61,140	Mar. 5	127	387
Whisky	M. Letzelter	61,169	Mar. 5	127	388

LABELS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Balsam Sanitissue." (For Toilet-Paper)	A. H. Scott	13,388	Mar. 5	127	390
"Chinese." (For Soap)	Michigan Soap Works	13,387	Mar. 5	127	390
"Gilt Edge." (For a Metal-Polish)	A. H. Cross	13,390	Mar. 5	127	390
"S. P. Co's." (For Toilet-Paper)	Scott Paper Co	13,389	Mar. 5	127	390
"Schmidt's New Star Piano Polish." (For a Piano-Polish)	F. C. L. Schmidt	13,391	Mar. 5	127	390
"Swift's Specific." (For a Medicine for the Cure of All Blood and Skin Diseases and for Purifying the Blood.)	Swift Specific Co	13,386	Mar. 5	127	390
"Union Beer, Hop and Horehound Beverage." (For a Beverage)	G. Altree	13,385	Mar. 5	127	390

PRINTS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Buster Brown Bread." (For Bread)	W. E. Long Co	1,914	Mar. 5	127	390
"Lead Flange Union Coupling-Lead and Inside Thread." (For Lead Flange Union-Couplings.)	H. Mueller Manufacturing Company.	1,916	Mar. 5	127	390
"Lead Flange Union Coupling-Lead Pipe." (For Lead Flange Union-Couplings.)	H. Mueller Manufacturing Company.	1,917	Mar. 5	127	390
"Spring and Summer Styles 1907." (For Hats)	Samuel Mundheim Co	1,915	Mar. 5	127	390

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Almond-meal	Peroxident Manufacturing Company.	24,665	Mar. 5	127	379
Automobiles and parts thereof	G. Dumond	23,770	Mar. 5	127	376
Baking-powder	Pure Food Baking Powder Co	24,384	Mar. 5	127	378
Beer, ale, brown stout, and malt extract	Fred Feil Brewing Company	23,994	Mar. 5	127	377
Belting, hose, and machinery packings	Revere Rubber Company	23,807	Mar. 5	127	377
Beverage and syrup for making the same	Moxie Nerve Food Company of New England.	24,624	Mar. 5	127	379
Beverage. Non-alcoholic carbonated	W. C. R. Turnbull	24,178	Mar. 5	127	378
Beverages	Conservenfabrik Lenzburg vorm. Henckell & Roth A. G.	18,403	Mar. 5	127	372
Brandy. Apricot-	Page & Sandeman	14,825	Mar. 5	127	371
Brandy. Apricot-	Societe Anonyme de la Grande Distillerie E. Cusenier Fils Aine et Compagnie.	24,562	Mar. 5	127	379
Buckles	Alma Manufacturing Company of Baltimore City.	25,011	Mar. 5	127	381
Candies	H. Heide	21,058	Mar. 5	127	373
Candy and chewing-gum	Manufacturing Co. of America	24,943	Mar. 5	127	380
Candles	Will & Baumer Company	9,161–2	Mar. 5	127	370
Canned fruits and vegetables	C. Callahan Co	6,851	Mar. 5	127	370
Canned fruits and vegetables	F. M. Ketchum	13,547	Mar. 5	127	371
Canned fruits and vegetables, jelly, and jam	Abraham & Straus	20,151	Mar. 5	127	372
Canned tomatoes	E. Robinson	24,779	Mar. 5	127	379
Canvas or duck cleaning and whitening preparation	Raven Gloss Mfg. Co	22,865	Mar. 5	127	375
Cards. Playing-	Kalamazoo Playing Card Co	25,114	Mar. 5	127	382
Chimneys and globes for lights	Fostoria Glass Specialty Company.	20,920	Mar. 5	127	373
Chocolates and chocolate candies	S. F. Whitman & Son	24,968	Mar. 5	127	380
Cigars	Wertheimer Bros	22,050	Mar. 5	127	374
Cigars and cigarettes	G. H. G. Wing	23,486	Mar. 5	127	376
Coats, capes, pants, &c. Waterproof	E. A. Armstrong Mfg. Co	20,159	Mar. 5	127	372
Coats, vests, pants, and overcoats	Rosenzweig Bros. & Co	23,004	Mar. 5	127	376
Collars, cuffs, and shirts	Hargadine - McKittrick Dry Goods Company.	23,981	Mar. 5	127	377
Cordials	Societe Anonyme de la Grande Distillerie E. Cusenier Fils Aine et Compagnie.	22,259–60	Mar. 5	127	375
Cordials	Imperial Distilling & Cordial Co.	24,820	Mar. 5	127	379
Corn and spavin cure and court-plaster	E. Atwell	24,798	Mar. 5	127	379
Cotton piece goods	Rice, Stix Dry Goods Company	25,091	Mar. 5	127	381
Cotton piece goods	Rice, Stix Dry Goods Company	25,093	Mar. 5	127	382
Cotton piece goods	Rice, Stix Dry Goods Company	25,096–7	Mar. 5	127	382
Cotton piece goods and blankets	Jackson Company	21,829	Mar. 5	127	374
Cotton piece goods and blankets	Indian Head Mills of Alabama	22,214	Mar. 5	127	374
Cough-drops	Freericks & Tammen	22,858	Mar. 5	127	375
Cravats	Bernstein Kaufman & Company	23,599	Mar. 5	127	376
Cream and condensed milk. Sterilized	Abraham & Straus	19,100	Mar. 5	127	372
Cream or paste. Shaving	Armour & Company	12,085	Mar. 5	127	371
Dress-shields	Omo Manufacturing Company	25,079	Mar. 5	127	381
Duck-pins	J. Dittmar & Sons	25,125	Mar. 5	127	382
Dyes, disinfectants, &c. Coal-tar	Farbenfabriken vorm. Friedr. Bayer & Co.	24,991	Mar. 5	127	380
Embalming fluids and disinfectants	Egyptian Chemical Company	7,265	Mar. 5	127	370
Emery-cloth and sandpaper	American Glue Co	4,106	Mar. 5	127	369
Enameled-metal household utensils	H. M. Schnarr	1,179	Mar. 5	127	369
Engine and dynamo-electric machine. Combined steam-	A. L. Ide & Sons	21,345	Mar. 5	127	373
Engines. Steam-	A. L. Ide & Sons	21,346–7	Mar. 5	127	373–4
Face-enamel. Liquid	R. E. Martin	20,179	Mar. 5	127	372
Fence. Wire	Keystone Fence Company	7,920	Mar. 5	127	370
Fence. Wire	Interlocking Fence Company	14,857	Mar. 5	127	371
Fertilizers	Navassa Guano Company of Wilmington	24,659	Mar. 5	127	379
Flour. Wheat-	Rea-Patterson Milling Company	24,385	Mar. 5	127	378
Food. Stock	Farmers Friend Stock Food Company.	22,982	Mar. 5	127	376
Fuses	Coast Manufacturing & Supply Co	25,110–11	Mar. 5	127	382
Fuses	Coast Manufacturing & Supply Co	25,161	Mar. 5	127	383

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Fuses	Coast Manufacturing & Supply Co	25,201	Mar. 5	127	383
Gloves	Rice, Stix Dry Goods Company	22,804	Mar. 5	127	376
Handkerchiefs	International M'f'g Co	25,120	Mar. 5	127	382
Hats and caps. Straw	Townsend Grace Co. of Baltimore City.	26,062	Mar. 5	127	381
Hematogenic or blood-forming iron compounds	A. Gude & Co	19,879	Mar. 5	127	372
Hosiery	J. Silvey & Co	24,173	Mar. 5	127	378
Hosiery	O. Osborne	25,066-7	Mar. 5	127	381
Hosiery and knitted underwear	Brown Durrell Co	25,121	Mar. 5	127	382
Illuminating-glassware	Weisbach Co	23,372	Mar. 5	127	376
Ink reducers and driers. Printing-	J. P. Conner	24,589	Mar. 5	127	379
Isinglass	Cape Ann Isinglass Company	23,516	Mar. 5	127	377
Jewelry	H. N. Pervear Company	24,057	Mar. 5	127	380
Kerosene	Polledo, Torres & Co	21,187	Mar. 5	127	373
Knitted underwear	H. Frank & Sons	24,031	Mar. 5	127	380
Lamp-chimneys	W. R. Noe	22,896	Mar. 5	127	375
Lead. White	R. Shoemaker & Co	25,170	Mar. 5	127	383
Leather. Patent side	Seton Leather Co	25,063	Mar. 5	127	381
Malt extract	M. K. Goetz Brewing Co	24,980	Mar. 5	127	380
Mast-arms	George Cutter Co	21,874	Mar. 5	127	374
Medicated stock foods	Dr. Hess & Clark	8,184	Mar. 5	127	370
Medicine for the cure of malaria, chills, &c	E. L. Bauer	23,811	Mar. 5	127	377
Metal chafing-dishes, fancy kettles, towel-racks, &c	S. Sternau & Co	20,509	Mar. 5	127	372
Newspaper	W. Bullock	24,429	Mar. 5	127	378
Oil. Castor-	J. N. Stearns	25,085	Mar. 5	127	381
Oils. Cotton-seed	Southern Cotton Oil Company	10,894	Mar. 5	127	370
Optical apparatus, appliances, &c	Firm of C. Zeiss	11,262	Mar. 5	127	370
Paints. Ready-mixed	R. Shoemaker & Co	25,171	Mar. 5	127	383
Paper. Writing, bond, and ledger	Union Card & Paper Co	22,872	Mar. 5	127	376
Papers. Engraving-	Dill & Collins Co	24,033	Mar. 5	127	377
Periodical	National Baker Publishing Company.	26,188	Mar. 5	127	383
Periodicals	Jewelers Circular Publishing Co	23,781	Mar. 5	127	377
Pickaxes, cavadores, crowbars, &c	Collins Company	22,961	Mar. 5	127	376
Pickaxes, cavadores, crowbars, &c	Collins Company	22,963	Mar. 5	127	376
Pie-fillings, preserves, and jellies	M. Ams	24,894	Mar. 5	127	380
Pills and tablets	J. L. Ward Medicine Company	25,088	Mar. 5	127	381
Preparation used for throat and head spray, &c	F. A. Steck	20,863	Mar. 5	127	373
Publication. Monthly	R. M. Van Arsdale	25,155	Mar. 5	127	383
Punch. Arrack	C. A. Lindgren & Cie Vinhandels Aktiebolag.	13,223	Mar. 5	127	371
Railway rolling-stock, fish-plates, rail-chairs, &c	Fried. Krupp Aktiengesellschaft	22,642	Mar. 5	127	375
Remedies, cough medicines, &c. Veterinary	E. S. Wells	21,749	Mar. 5	127	374
Remedy for diseases of the blood	J. M. Myers	24,043	Mar. 5	127	380
Remedy for malaria and grippe	A. Fischer	21,480	Mar. 5	127	374
Remedy. Rheumatic	A. Giesecke	24,539	Mar. 5	127	378
Rubber roofing	H. A. Whiteman & Co	20,202	Mar. 5	127	372
Sardines, sardine paste, sprats, &c	Reiss & Brady	23,573	Mar. 5	127	377
Sausages, hams, lard, &c	Jones Dairy Farm	20,750	Mar. 5	127	372
Sewing-machine needles	White Sewing Machine Co	24,731	Mar. 5	127	379
Sewing-machines	L. C. King & Co	25,157	Mar. 5	127	383
Shirts. Men's and boys'	Bronne-Mayer Company	24,066	Mar. 5	127	380
Signaling apparatus	J. Astrom	24,249	Mar. 5	127	378
Silk twist, thread, embroidery-silk, &c	Oneida Community	14,574	Mar. 5	127	371
Silver-plated jewelry, toilet, hollow, and flat ware	E. & J. Base	21,061	Mar. 5	127	373
Soap. Liquid	A. V. Hasseman	23,270	Mar. 5	127	376
Soap. Perfumed	A. & F. Pears	15,230	Mar. 5	127	371
Soaps	W. Berry	24,361	Mar. 5	127	378
Starch or size	Greene & Company	23,997	Mar. 5	127	377
Sugars. Refined	Henry Tate & Sons	9,215	Mar. 5	127	369
Suppositories, salves, and teas	G. Kerschemmeyer	22,892	Mar. 5	127	375
Syrup	Welch Bros. Maple Co	25,137	Mar. 5	127	383
Syrup. Corn-	O. W. Peirce Company	24,020	Mar. 5	127	377
Talking-machines	Geo. Borgfeldt & Co	25,020	Mar. 5	127	381
Tea and coffee	C. E. Moody & Co	24,749	Mar. 5	127	379
Tonics. Antipyretic	Society of Chemical Industry of Basle.	25,105	Mar. 5	127	383
Washing compounds	Laundry Blue Co	24,864	Mar. 5	127	380
Watch-springs	Hammel, Riglander & Co	11,413	Mar. 5	127	371
Watches, watch cases and movements	Langendorf Watch Co	20,344-5	Mar. 5	127	372
Water. Mineral	Wild Pigeon Mineral Springs Company.	24,841	Mar. 5	127	380
Water. Mineral	J. A. Morgart	24,984	Mar. 5	127	381
Water. Table-	Great Bear Spring Co	3,008	Mar. 5	127	369
Whisky	Frankfort Distillery	9,302	Mar. 5	127	370
Whisky	Rothenberg Company	15,559	Mar. 5	127	371
Whisky	A. Fischer	21,477-8	Mar. 5	127	374
Whisky. Rye	Records & Goldsborough	24,754	Mar. 5	127	379
Wines	Ciotti, Vincenti & Co	9,262	Mar. 5	127	370
Wines. Port and sherry	Carmel Wine Company	23,452	Mar. 5	127	376
Wrenches, hammers, screw-drivers, &c	Geo. G. Sandeman Sons & Co	14,598	Mar. 5	127	371
	Société Anonyme Des Anciens Etablissements Panhard & Levassor.	9,478	Mar. 5	127	370

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 12TH DAY OF MARCH, 1907.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Abbott, Charles C., assignor to Triumph Voting Machine Company, Pittsfield, Mass. Grouping mechanism for voting-machines	847,037	Mar. 12	2643	583	127	700
Absug, Alois, Breslau, Germany. Combined hinge and fastening for doors	847,145	Mar. 12	2841	627	127	748
Acme Automatic Street Indicating Company. (See Small, Thomas W., assignor.)						
Adams, Earl C., Belle Vernon, Pa. Washer for lathes	846,440	Mar. 12	1459	325	127	399
Adamson, George P., Easton, Pa., assignor to General Chemical Company, New York, N. Y. Receptacle for acids	846,541	Mar. 12	1656	368	127	452
Addicks, Diedrich C., Stroh, Ind. Post-mold	846,641	Mar. 12	1882	413	127	509
Advance Furnace Company of America. (See Stevens, Le Roy W., assignor.)						
Aitken, Edwin J., Spokane, Wash. Horse-hitch	846,715	Mar. 12	1997	439	127	537
Akers, Charles W., Bluefield, W. Va. Valve-controlling mechanism	847,219	Mar. 12	2998	661	127	787
Akimoff, Nicholas W., Philadelphia, Pa. Multistage turbo-pump	846,971	Mar. 12	2522	556	127	671
Albertson, Albert E., Evansville, Minn. Chimney-damper	846,542	Mar. 12	1659	369	127	452
Alexander, Alpheus, and J. Fredericksen, Jewell, Iowa. Building-block mold	847,220	Mar. 12	3000	661	127	788
Alexander, Alpheus, and J. Fredericksen, Jewell, Iowa. Mold	847,221	Mar. 12	3001	662	127	788
Alexander, Alpheus, and J. Fredericksen, Jewell, Iowa. (See Melvin, Mark G., assignor.)						
Alexander, Thomas L. (See Melvin, Mark G., assignor.)						
Allan, John, New York, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	846,972	Mar. 12	2524	557	127	672
Aller, Edward W., Napoleon, Ohio. Check-valve	847,146	Mar. 12	2843	626	127	748
Alles, John P. (See Bahr, Ewald E., assignor.)	846,973	Mar. 12	2525	557	127	673
Allington, William E., Saginaw, Mich. Dust-collecting system						
American Brake Company. (See Stambaugh, Francis M., assignor.)						
American Car & Foundry Company. (See Brown, Thomas R., assignor.)						
American Car & Foundry Company. (See Ostrander, Allen E., assignor.)						
American Car & Foundry Company. (See Voss, William, assignor.)						
American Cheese Cutter Company. (See Van Deventer and Swank, assignors.)						
American Diamond Blast Company. (See Wise, Franklyn M., assignor.)						
American Multigraph Company. (See Gammeter, Harry C., assignor.)						
American Serial Lock Company. (See Hart, Albert B., assignor.)						
American Wrapping and Box Machine Company. (See Giroud, Felipe, assignor.)						
Ames, Alonzo L., and B. S., Newberry, Pa. Propeller	847,222	Mar. 12	3003	662	127	789
Ames, Alonzo L. and B. S. (See Ames, Alonzo L. and B. S.)	846,441	Mar. 12	1460	325	127	399
Ames, Byron S. (See Ames, Alonzo L. and B. S.)				662	127	789
Ammann, Frank X., Weehawken, N. J. Drawer-pull	847,223	Mar. 12	3004			
Ammon, John, New York, N. Y. Piano-action	846,888	Mar. 12	2357	516–19	127	631
Anderson, Charley W., assignor of one-half to T. Thoreson. Portal, N. D. Grain-shocking machine	846,642	Mar. 12	1883	413	127	509
Anderson, Edward L., assignor to himself, H. Atchisson, St. Louis, Mo., J. H. Miller and C. G. Cloud, McLeansboro, Ill. Reducing metallic sulfids	846,814	Mar. 12	2204	483	127	591
Anderson, Henry W., et al. (See Topliff, Francis W., assignor.)						
Anderson, James C., Rutherford, N. J., assignor to Autocoil Company. Speed-governor	846,890	Mar. 12	2360	520–1	127	632
Anderson, Robert W. (See Pinard, Leon, assignor.)						
Andred, William E., assignor to Nelson & Kreuter Company, Chicago, Ill. Ironing-machine	846,889	Mar. 12	2363	519–20	127	632
Andriano, Albert K., assignor to Direct-Line General Telephone Company, San Francisco, Cal. Telephone system	847,147	Mar. 12	2844	626	127	749
Arthur, James B., Pittsburg, Pa. Tray						
Artista Piano Player Company. (See Warren, Charles, assignor.)						
Asbestos Wood Company. (See Norton, Charles L., assignor.)	846,716	Mar. 12	1998	440	127	537
Asheim, Paul, Berlin, Germany. Machine for assembling leaves	846,442	Mar. 12	1460	325	127	399
Ashley, Frank M., et al. (See Cadwell, Edwin B., assignor.)						
Ashley, Frank M., assignor of one-half to A. T. Scharps, New York, N. Y. Pencil-holder	846,974	Mar. 12	2527	557	127	672
Atchisson, Harvey, et al. (See Anderson, Edward L., assignor.)	847,271	Mar. 12	3097	662	127	811
Athanassiades, Emrate J., New York, N. Y. Bar-soap cutter	847,224	Mar. 12	3005	663	127	789
Atkinson, Helen, Boston, Mass. Hook and eye						
Atom, Rue, Independence, Kans. Vehicle-brace						
Autocoil Company. (See Anderson, James C., assignor.)						
Autocoil Company. (See Varley, Richard, assignor.)						
Autocoil Company. (See Varley and Scott, assignors.)	847,272	Mar. 12	3098	663	127	812
Ayers, Alva, Payson, Okla. Ter. Floor-set	847,036	Mar. 12	2645	583	127	701
Ayers, Elwood B., assignor to Philadelphia Textile Machinery Company, Philadelphia, Pa. Drying-machine	847,273	Mar. 12	3099	663	127	813
B. A. Rallou and Company. (See Morehouse, Eugene W., assignor.)						
Bacon, Nathaniel T., Peace Dale, R. I. Drying air for blast-furnaces	846,443	Mar. 12	1463	325–6	127	399
Badeau, Isaac F. (See Badeau, Louis C. and I. F.)	846,815	Mar. 12	2205	484	127	592
Badeau, Louis C. and I. F., Mahopac, N. Y. Music type-writer	846,816	Mar. 12	2208	484–5	127	592
Baggaley, Ralph, Pittsburg, Pa. Apparatus for removing impurities from furnace-gases	846,817	Mar. 12	2212		127	593
Baggaley, Ralph, Pittsburg, Pa. Apparatus for sinking shafts	846,818	Mar. 12	2214	485	127	593
Baggaley, Ralph, Pittsburg, Pa. Generating steam from waste heat of slag	846,891	Mar. 12	2373	521–2	127	634
Baggaley, Ralph, Pittsburg, Pa. Recovering values from flue-dust	847,148	Mar. 12	2845	628	127	749
Baggaley, Ralph, Pittsburg, Pa. Copper-refining furnace						
Bahr, Ewald E., Blair Station, assignor of one-fourth to J. P. Alles, McKeesport, Pa. Metallic tie, rail-fastener, and rail-joint combined	846,444	Mar. 12	1466	326–7	127	400
Bailey, John W., Jersey City, N. J., assignor, by mesne assignments, to United Lead Company. Making metallic oxids						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Baird, James J., Los Angeles, Cal. Fabric-tufting machine	846,717	Mar. 13	2000	440	127	538
Baker, Charles A., Weehawken, N. J., assignor to New York Couch Bed Company, Rome, N. Y. Folding mattress	846,445	Mar. 13	1470	327	127	401
Baldwin, Arthur J., East Orange, N. J. Apparatus for making wire-glass	846,771	Mar. 13	2116	464–5	127	569
Ball, William R. A., St. Thomas, N. D. Chimney-cowl	846,446	Mar. 13	1471	327	127	401
Barber, John C., Chicago, Ill. Antifriction lateral-motion center-bearing	846,892	Mar. 13	2375	522	127	634
Barber, John C., Chicago, Ill. Antifriction center-bearing	846,893	Mar. 13	2377	523	127	635
Barber, John C., Chicago, Ill. Antifriction center-bearing	846,894	Mar. 13	2378	523	127	635
Barber, William J., assignor of one-half to C. E. Boult, Honeoye Falls, N. Y. Powder-distributer	846,718	Mar. 13	2001	440	127	538
Barlow, John B., Grand Rapids, Mich. Loose-leaf binder	847,039	Mar. 13	2646	583	127	701
Barlow, John H., New Haven, Conn. Bullet	847,149	Mar. 13	2647	628	127	749
Barnard, Henry R., East Orange, N. J. Cooking utensil	847,226	Mar. 13	3006	663	127	789
Barnes, Joshua B., Springfield, Ill. Brake-beam	846,819	Mar. 13	2218	495	127	594
Barnes, William M., Philadelphia, Pa. Apparatus for the extraction of liquids from solid materials	846,447	Mar. 13	1472	327–8	127	402
Barnum, Carl G., assignor to Triumph Voting Machine Company, Pittsfield, Mass. Counting mechanism for voting-machines	847,040	Mar. 13	2648	584	127	701
Baron, Charles S., and J. F. Haffey, Tiffin, Ohio; said Haffey assignor to said Baron. Protective covering for glass or other fragile receptacles	846,719	Mar. 13	2002	441	127	538
Barrenpohl, Charles J., New York, N. Y. Compound for cleaning and polishing metals, porcelain, glass, &c.	847,150	Mar. 13	2649	.....	127	750
Barrenpohl, Charles J., New York, N. Y. Compound for cleaning and polishing wood surfaces	847,228	Mar. 13	3008	.....	127	790
Bauer, Ludwig, Niederlossnitz, Germany. Medicinal extract	846,895	Mar. 13	2380	.....	127	635
Bayles, Lewis C. (See Hellman and Bayles.)						
Bayne, Eugene D. C., and L. A. Subers, Cleveland, Ohio. Automobile-tire-winding machine	847,041	Mar. 13	2652	584–5	127	703
Bayne, W. M. (See Leineweber, Herman, assignor.)						
Beadle, Frank E., London, England. Tractor	846,772	Mar. 13	2117	465–6	127	569
Beck, Edward, New York, N. Y. Veneer-cutter	847,151	Mar. 13	2650	629	127	750
Becker, Nicolaus, Frankfort-on-the-Main, Germany. Turbine	846,896	Mar. 13	2381	523	127	635
Beebe, Elmer. (See Melvin, Charles T., assignor.)						
Beebe, Robert H., Kalama, Wash. Swivel	847,152	Mar. 13	2651	629	127	751
Belknap, Edward L. (See Foote and Johnston, assignors.)						
Belknap, Ellsworth, Polo, assignor to W. C. Ross, Chicago, Ill. Roller-bearing	847,274	Mar. 13	3100	683	127	812
Benjamin, Reuben B., Chicago, Ill. Gas-Engine	846,897	Mar. 13	2382	523–4	127	635
Benson, Samuel, Chicago, Ill. Means for separating and eliminating smoke-suspended matter	846,448	Mar. 13	1475	328	127	403
Benton, Francis E., Stoughton, Mass. Hinged last	846,720	Mar. 13	2004	441	127	539
Berg, Albert, assignor of one-half to A. D. Miller, Mount Pleasant, Pa. Car-coupling	846,898	Mar. 13	2385	524	127	636
Berg, Ernst J., Schenectady, N. Y., assignor to General Electric Company. Alternating-current motor	847,153	Mar. 13	2652	629	127	751
Berger, Joseph, South Columbus, assignor to C. M. Henley, Columbus, Ohio. Metallic railway-tie	847,154	Mar. 13	2654	629	127	752
Berk, Joseph, San Francisco, Cal. Hose-coupling	847,042	Mar. 13	2657	585	127	704
Berold, Frederick H., Jr., Cincinnati, Ohio. Paper receptacle	846,899	Mar. 13	2388	524	127	637
Berry, Milton H., Evanston, assignor to Berry Ventilator Company, Chicago, Ill. Window-ventilator	846,721	Mar. 13	2005	441–2	127	539
Berry, Milton H., Evanston, assignor to Berry Ventilator Company, Chicago, Ill. Window-ventilator	846,722	Mar. 13	2006	442	127	540
Berry Ventilator Company. (See Berry, Milton H., assignor.)						
Bertin, Isaac, New York, N. Y. Paper dish	846,975	Mar. 13	2626	557	127	673
Besson, Jules A., Caen, France. Purifying and concentrating sugar-juices	846,543	Mar. 13	1660	.....	127	452
Bethlehem Steel Company. (See Philip, Casimir von, assignor.)						
Bigenho, Christopher, Verona, Pa. Rail splice	847,227	Mar. 13	3008	663	127	790
Biggert, Florence C., Jr. (See Gardner and Biggert.)						
Binkey, J. A. (See Wright, Charles, assignor.)						
Birmingham, Willburn B., Raleigh, N. C., assignor to Draper Company, Hopedale, Mass. Filling-replenishing mechanism for looms	846,773	Mar. 13	2119	466	127	570
Bishop, George, Oxbow, Saskatchewan, Canada. Gang-plow	846,643	Mar. 13	1886	414	127	510
Bixby, John L., Jr., River Forest, Ill. Belting	847,228	Mar. 13	3009	664	127	790
Blood, Charles W. H., assignor to S. A. Woods Machine Company, Boston, Mass. Radial setting-gage for cutter-head knives	846,723	Mar. 13	2010	442	127	541
Bloom, William O., Worcester, Mass. Tooth-brush	846,900	Mar. 13	2389	525	127	637
Blout, Charles E. (See Barber, William J., assignor.)						
Boehm, Valera, West Bridgewater, Pa. Washer	847,155	Mar. 13	2656	630	127	752
Bonar, James L., Moundsville, W. Va. Paper-hanger's support	846,976	Mar. 13	2629	558	127	673
Bonenberger, George, assignor to Handy Scaffold Co., Evansville, Ind. Scaffold	847,275	Mar. 13	3102	683	127	812
Booth, Clarence H., Detroit, Mich. Bath-tub-leg fastening	846,977	Mar. 13	2631	558	127	673
Bossert, William F., Utica, N. Y. Insulated rail-joint	846,901	Mar. 13	2390	526	127	637
Bossing, Louis. (See Perry, Bossing, and Farmer.)						
Boswell Elias W., Darlington, S. C. Vehicle-pole tip	846,902	Mar. 13	2393	526	127	638
Bothwell, Henry R. (See Newman and Bothwell.)						
Bothwell, Jay W., Denver, Colo. Making and applying decorative paint colors to articles and materials	846,774	Mar. 13	2131	.....	127	570
Bowman, Jacob F., Artesia, N. Mex. Ter. Means for attaching rails to metallic ties	846,724	Mar. 13	2013	443	127	542
Boynton, Frank L., Washington, D. C. Fastening device for picture-wire	847,043	Mar. 13	2656	585	127	704
Bradbeer, Frank A., Detroit, Mich. Carbureter	846,775	Mar. 13	2132	466	127	571
Bradley, Richard C. (See Yarbrough and Bradley.)						
Brady, Hugh D., and C. Gerstenmaier, St. Paul, Minn. Lazy-back	846,904	Mar. 13	2395	526	127	638
Brady, James E., assignor to M. A. Brady, Covington, Ky. Valve	846,644	Mar. 13	1887	414	127	510
Brady, Mary A. (See Brady, James E., assignor.)						
Branam, James M., Carrollton, Ill. Pumping-jack	847,229	Mar. 13	3013	664	127	791
Bremer, Albert H., W. J. Chattin, and A. H. Hoenisch, Philadelphia, Pa. Electric heater	846,544	Mar. 13	1661	399	127	452
Bremer, Max, assignor to Western Casket Hardware Company, Elgin, Ill. Reinforced casket-handle	846,545	Mar. 13	1662	399	127	453
Brimmer, Edgar W., Copemish, Mich. Toy	846,449	Mar. 13	1481	328	127	404
Brinton, Joseph H. (See Coates, Robert, assignor.)						
Britton, Louis H., Cleveland, Ohio. Thermostatic circuit-controlling device	847,044	Mar. 13	2661	586	127	704
Brook, Frederick C., and E. M. du Bois, assignors to Vehicle Apron & Hood Company, Columbus, Ohio. Storm-front for vehicles	846,820	Mar. 13	2220	466	127	595
Brook, John M., New York, N. Y., assignor to William M. Crane Company. Toaster	846,546	Mar. 13	1664	399	127	453
Brookt, Leopold, Breslau, Germany. Apparatus for sorting articles according to weight	847,230	Mar. 13	3014	664	127	791
Bronner, Edmond D., Detroit, Mich., assignor to Chicago Railway Equipment Company, Chicago, Ill. Brake-beam	847,156	Mar. 13	2657	630	127	752
Brooke, Isaac, Pottstown, Pa. Damper-actuating device for ranges, &c.	846,821	Mar. 13	2221	466	127	595
Brooks, Asa P., New Ulm, Minn. Auxiliary printing attachment for cylinder printing-presses	846,645	Mar. 13	1887	414	127	510

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Brooks, Byron A., New York, N. Y., assignor to Union Typewriter Company, Jersey City, N. J. Type-writing machine	846,978	Mar. 12	2532	558	127	674
Brooks, Edward J., East Orange, N. J. Seal for boxes	847,276	Mar 12	3103	684	127	813
Brown, Charles F., trustee. (See Reeve, Sidney A., assignor.)	846,547	Mar. 12	1667	370	127	453
Brown, Francis C., New York, N. Y. Fountain-pen	846,725	Mar. 12	2015	443	127	542
Brown, Frank B., et al. (See Crichler, Harry F., assignor.)						
Brown, Frank H. and F. H., Colfax, Wash. Portable elevator	846,450	Mar. 12	1481	329	127	405
Brown, Frank H. and F. H.)						
Brown, Fred H. (See Brown, Frank H. and F. H.)						
Brown, George K., et al. (See Crichler, Harry F., assignor.)						
Brown, Harlin, Mayfield, Mich. Wooden column	847,157	Mar. 12	2858	630–1	127	753
Brown, Harold G., West Ealing, London, and E. D. Malan, Highgate, London, England, assignors of one-third to J. H. Neal, Boston, Mass. Signaling apparatus						
Brown and Sharpe Manufacturing Company. (See Parker, John, assignor.)						
Brown, Thomas L., et al. (See Webster, Cheever L., assignor.)						
Brown, Thomas R., New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo. Tank-car	846,646	Mar. 12	1889	415	127	511
Brown, William H., Lockhart, Tex. Machine for developing photographic plates	846,776	Mar. 12	2125	466–7	127	571
Browning, George. (See Collins and Browning.)						
Bruen, Henry L., Orange, N. J., assignor to Vaut Woud Rubber Company, New York, N. Y. Connection for bath-sprays and the like	846,905	Mar. 12	2395	527	127	638
Bryan, Crockett L., Paducah, Ky. Cloth-cutting machine	846,777	Mar. 12	2128	467	127	572
Bryce, Alexander F., Chicago, Ill. Pneumatic tire	847,231	Mar. 12	3016	665	127	791
Buchanan, Mitchell T. (See Lutes, Lewis I., assignor.)						
Buhlmann, Dora, Kaiserslautern, Germany. Apparatus for cooling, moistening, and purifying the air in rooms	847,232	Mar. 12	3018	665	127	792
Bunton, Samuel E., Van Horn, Tex. Wire stretching and twisting apparatus	847,158	Mar. 12	2966	631	127	754
Buntrock, Otto H., Wausau, Wis. Wagon-bolster and standard	847,159	Mar. 12	2966	631	127	755
Burdett, Bennie W., and G. W. Goodwin, Jr., Simpsonville, S. C. Planter and fertilizer-distributer	846,726	Mar. 12	2017	443–4	127	543
Burg, Louis, Dallas City, Ill. Ball-bearing	846,727	Mar. 12	2019	444	127	543
Burkholder, John D., Lancaster, Pa. Automatic railway-switch	846,906	Mar. 12	2396	527	127	639
Burnett, Alice W., Lisbon, Ohio. Harness attachment	846,822	Mar. 12	2223	466	127	595
Burry, William C., Allegheny, Pa. Truck	846,451	Mar. 12	1482	329	127	405
Burton, Charles H., New York, N. Y., assignor to J. M. Thurston, trustee, Washington, D. C. Pneumatic-despatching-tube system	847,233	Mar. 12	3020	665	127	792
Burton, Charles H., New York, N. Y., assignor to J. M. Thurston, trustee, Washington, D. C. Pneumatic-despatch carrier	847,234	Mar. 12	3022	666	127	792
Busch-Freund Brewers' Supply Co. (See Dippel, Henry C., assignor.)						
Butler, William M., assignor to Whitney Manufacturing Company, Hartford, Conn. Drive-chain	847,235	Mar. 12	3023	666	127	793
Byrne, Joseph H., Pittsburg, Pa. Cracker-box	846,452	Mar. 12	1484	329	127	405
Cadwell, Edwin B., New York, N. Y., assignor of two-thirds to F. Johnston and F. M. Ashley. Tire	846,453	Mar. 12	1485	329–30	127	406
Cady, Orrin, Cincinnati, Ohio. Spittoon	846,454	Mar. 12	1488	330	127	406
Camp, Arthur B. (See Delavan and Camp.)						
Camp, Arthur B., assignor to Triumph Voting Machine Company, Pittsfield, Mass. Sectional case for voting-machines	847,045	Mar. 12	2664	586	127	706
Campbell, Alonzo C., Asheville, N. C. Ore-concentrator	847,236	Mar. 12	3025	666	127	793
Carlson, Charles E., Chicago, Ill. Printing or engraving block	847,237	Mar. 12	3028	667	127	794
Carmichael, Oscar H. (See Krueger, Kinkler, and Carmichael.)						
Carroll, Samuel C., Dallas, Tex. Ventilating system for vehicles	847,238	Mar. 12	3029	667	127	794
Carter, D. E., et al. (See Ray, Joseph C., assignor.)	847,239	Mar. 12	3032	668	127	795
Castleman, Benjamin T., St. Louis, Mo. Vibratory massage instrument	846,823	Mar. 12	2224	467–8	127	596
Casin, Francis M. F., Hoboken, N. J. Apparatus for and method of uniting vitreous parts	846,824	Mar. 12	2229	468	127	597
Ceska, George D., assignor to H. L. Shepherd, Duluth, Minn. Shovel	847,240	Mar. 12	3033	668	127	795
Chamberlain, Edward N., Natchez, Miss. Amusement device	847,160	Mar. 12	2967	632	127	755
Chapman, Alonzo E., Redlands, Cal. Flume-gate	846,825	Mar. 12	2230	468–9	127	597
Chartener, Victor, Pittsburg, Pa. Universal rolling-mill						
Chattin, William J. (See Bremer, Chattin, and Hoentsch.)						
Chemische Fabrik von Heyden, Aktiengesellschaft. (See Hirsch, Jacob G., assignor.)						
Chicago Railway Equipment Company. (See Bronner, Edmond D., assignor.)	846,778	Mar. 12	2130	468	127	572
Christman, Franklin F., Bethlehem, Pa. Electric-light hanger	846,979	Mar. 12	2537	.....	127	676
Churchward, James, New York, N. Y. Steel alloy and its manufacture	846,980	Mar. 12	2538	559	127	676
Chute, Albert P., Boston, Mass. Rain guard or hood for windows	846,981	Mar. 12	2539	559	127	677
Claffey, Frank. (See Lamb, Edwin E., assignor.)	846,548	Mar. 12	1669	370	127	454
Claiborne, James H., Jr., San Francisco, Cal. Screw	847,161	Mar. 12	2969	632	127	755
Clar, Laurence F., Willits, Cal. Anvil	846,982	Mar. 12	2540	559	127	677
Clark, Charles E., Chicago, Ill. Attachment for newspaper-presses	846,907	Mar. 12	2399	527	127	639
Clark, Edward S., Boston, Mass. Boiler	846,549	Mar. 12	1672	370	127	455
Clark, Emma F. (See Clark, Percy L., assignor.)	846,550	Mar. 12	1674	370	127	455
Clark, Morgan S., Roanoke, Va. Screen	847,162	Mar. 12	2970	633–3	127	755
Clark, Percy L., assignor to F. F. Clark, Champaign, Ill. Laminated wheel	846,826	Mar. 12	2233	469–90	127	598
Clark, Percy L., Malvern, Ark. Device for rendering bottles non-refillable	847,241	Mar. 12	3034	668	127	796
Clark, Valentine, Dryad, Wash. Cotton cleaner and distributer	846,728	Mar. 12	2021	444–5	127	544
Clem, John, Jr., Malvern, Ark. Cotton cleaner and distributer	846,551	Mar. 12	1676	371	127	456
Cloud, Chalon G., et al. (See Anderson, Edward L., assignor.)	846,779	Mar. 12	2132	468–9	127	573
Coates, Robert, assignor to J. H. Brinton, Philadelphia, Pa. Staple-machine	847,277	Mar. 12	3105	684	127	813
Cochran, Mary L., Thomasville, Ga. Waist-shield	846,780	Mar. 12	2138	469	127	574
Cochrane, Thomas, and G. W. Goodwin, Jr., Simpsonville, S. C. Planter and fertilizer-distributer	846,552	Mar. 12	1676	371	127	456
Cochrane Bly Company. (See Cochrane and Warman, assignors.)	846,781	Mar. 12	2139	469–70	127	574
Cochrane, Robert B., and W. A. Warman, assignors to Cochrane Bly Company, Rochester, N. Y. Shaping-machine	846,729	Mar. 12	2026	445–6	127	545
Cohen, Joseph, New York, N. Y. Body-brace and hose-supporter	847,278	Mar. 12	3106	684	127	814
Coleman, Clarence W., Westfield, N. J., assignor to Hall Signal Company. Signaling apparatus	846,782	Mar. 12	2140	470	127	575
Coleman, Edward, Minneapolis, Minn. Adjustable knife-gage	846,908	Mar. 12	2400	528	127	640
Coleman, John W., Washington, D. C. Cut-off for faucets	847,163	Mar. 12	2972	633	127	756
Collins, Sydney T., and G. Browning, Hinsdale, Ill. Automatic folding stand	846,909	Mar. 12	2401	528	127	640
Collins and Browning, assignors.)	846,730	Mar. 12	2030	446	127	546
Columbia Gas & Construction Company. (See Mason and Sinclair, assignors.)						
Connell, Elmer R., Keyser, W. Va. Clock						
Connor, Miles, Pueblo, Colo. Fire-alarm system						
Conover, William W., Toronto, Ontario, Canada, assignor to Sanitary Carpet Cleaner Co. Pneumatic cleaner						
Consolidated car Heating Company. (See McElroy, James F., assignor.)						
Continental Paper Bag Company. (See Strasburg, Frederick K., assignor.)						
Cook, Christian G., Fostoria, Ohio. Means for detaching buggy-tops						
Cook, Frank B. (See Nolen, James G., assignor.)						
Cooper, Thomas, Kings Lynn, England. Roller-bearing						
Cope, Thomas, McKees Rocks, Pa. Trolley						
Cordes, August W., New York, N. Y. Bottle-stopper						
Cormack, George, Jr., and F. C. Zumdahl, Rockford, Ill. Means for controlling the valves for explosive-engines						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Drfs.	Official Gazette. Vol.	Page.
Corn, Robert, New York, N. Y. Stick-pin retainer	847,184	Mar. 12	2673	633	127	706
Couch, Samuel H., assignor to Superior Automatic Telephone Company, Boston, Mass. Telephone-service apparatus	846,827	Mar. 12	2236	490	127	606
Cowles, William B., assignor to Long Arm System Company, Cleveland, Ohio. Bulkhead-door, hatch, or other barrier	847,166	Mar. 12	2675	632–5	127	707
Cox, Paul F., Battle Creek, Mich. Cake-soap holder	847,270	Mar. 12	2107	685	127	814
Crafts, George C., *et al.* (See Murray, John C., assignor.)						
Cram, Edwin B., Brooklyn, N. Y., assignor to New York Adding Typewriter Company, Orange, N. J. Paper-feeding mechanism	847,196	Mar. 12	2684	635	127	709
Craw, George R., and O. Miller, Chicago, Ill. Shoulder-braces	846,647	Mar. 12	1894	415	127	511
Crawford, John E. L., Lisbon, Ohio. Saddlestrap and tree-pad plate	846,781	Mar. 12	2081	446–7	127	548
Crickler, Harry F., assignor to G. K. and F. B. Brown, Wilkes-Barre, Pa. Amusement device	847,249	Mar. 12	2686	666–9	127	705
Crompton & Knowles Loom Works. (See Whitmore, Fred A., assignor.)						
Cromwell, John C., assignor to Garrett-Cromwell Engineering Company, Cleveland, Ohio. Straightening-press	846,838	Mar. 12	2286	491	127	600
Crooks, John E., *et al.* (See Reiber, Frederick W., assignor.)						
Crume, Francis M., Stiles, Tex. Obstetrical supporter	846,648	Mar. 12	1892	415	127	513
Crump, George E., Spokane, Wash. Chair	846,910	Mar. 12	2403	528	127	640
Crump, George E., Spokane, Wash. Garment-support	846,911	Mar. 12	2405	528	127	641
Cumberland Steel Company of Allegany County. (See Muncaster, Walter J., assignor.)						
Cummins, Wilson W., Lidgerwood, N. D. Automatic tilting vial-case	846,583	Mar. 12	1878	371	127	456
Cunningham, William J., Philadelphia, Pa. Attachment for bottle-washing machines	846,953	Mar. 12	2541	553	127	677
Cunningham, William J., Philadelphia, Pa. Attachment for bottle-washing machines	847,220	Mar. 12	2109	685	127	814
Curstolo, James, Philadelphia, Pa. Hydraulic separator	846,649	Mar. 12	1893	416	127	513
Currier, Robert M. (See Pratt, Charles R., assignor.)						
Curry, Joseph J., Philadelphia, Pa. Knitting-machine	847,240	Mar. 12	2089	669–70	127	706
Curtin, David E., *et al.* (See Dohrer, Henry J., assignor.)						
Curtin, David F., St. Louis, Mo. Butter weighing and computing device	847,244	Mar. 12	2042	671	127	707
Curtis, Zenas A., Channing, Tex. Cushioned tire	846,655	Mar. 12	1895	330	127	408
Dahl, John, Ashland, Wis. Air-tight oil-can	846,783	Mar. 12	2141	470	127	575
Dain, Joseph, Ottumwa, Iowa. Hay-rake	846,486	Mar. 12	1480	330–1	127	408
Dale, John H., New York, N. Y. Cluster-socket	846,912	Mar. 12	2406	529	127	641
Daley, Edwin W., and C. Johnson, assignors to Nashville Chemical Company, Nashville, Tenn. Composition of matter for fire-kindling	846,554	Mar. 12	1670	.....	127	468
Damman, Henry H. (See Kane, John H., assignor.)						
Danner, Samuel, Doniphan, Mo. Egg-beater						
Daugherty, Boyd, Chicago, Ill. Grain-car door	846,839	Mar. 12	2240	491	127	599
Davis, Newton S., Montrose, Colo. Scaffold	846,913	Mar. 12	2409	529	127	642
Dawson, Peter E., Hancock, Md. Vehicle-wheel	846,784	Mar. 12	2142	470	127	575
De Laughter, Thomas W., Niles, Ohio. Clothes-clamp	847,245	Mar. 12	2043	671	127	708
De Vries, Emma O., Washington, D. C. Glove-retaining device	847,046	Mar. 12	2086	667	127	706
Dean Electric Company. (See Manson, Ray H., assignor.)	846,914	Mar. 12	2411	529	127	642
Delavan, Willard M., and A. B. Camp, assignors to Triumph Voting Machine Company, Pittsfield, Mass. Grouping mechanism for voting-machines	847,047	Mar. 12	2086	667	127	706
Derry, Elbert R., Leadville, Colo. Press	847,167	Mar. 12	2088	635	127	709
Deshane, Thomas H., Seattle, Wash. Fruit-clipper	846,722	Mar. 12	2032	447	127	547
Devine, James A., Zanesfield, Ohio. Cement-mixer	847,281	Mar. 12	2109	685	127	814
Dickinson, Joseph H. (See Miller and Dickinson.)						
Dieterich, Fred G. (See Wilkinson and Dieterich.)						
Diets, Gustav, Yonkers, N. Y. Photographic shutter	846,984	Mar. 12	2542	560	127	677
Dippel, Henry C., assignor to Busch-Freund Brewers' Supply Co., St. Louis, Mo. Making pitch for coating the interiors of beer and ale packages	847,222	Mar. 12	2110	686	127	815
Dirand, Louis J., Torrington, Conn. Dust-protector for pool and billiard tables	847,246	Mar. 12	2045	671	127	708
Direct-Line General Telephone Company. (See Andriano, Albert K., assignor.)						
Dixon, John H., Pittsburg, Pa. Car-fender	847,247	Mar. 12	2047	672	127	709
Doepker, Frank. (See Doepker, Joseph and F.)						
Doepker, Joseph and F., Ottawa, Ohio. Clutch mechanism	846,723	Mar. 12	2034	447	127	547
Doherty, Henry L., Madison, Wis. Burning cement and apparatus therefor	846,855	Mar. 12	1860	372	127	457
Dohrer, Henry J., assignor of two-thirds to J. W. Dohrer and D. E. Curtin, St. Joseph, Mo. Brake	846,467	Mar. 12	1491	331	127	407
Dohrer, Joseph W., *et al.* (See Dohrer, Henry J., assignor.)						
Dollar, Edward F., Blowing Cave District, Grady county, Ga. Fish-trap	846,856	Mar. 12	1862	372	127	457
Donovan, John P., assignor to United States Whip Company, Westfield, Mass. String-tapering machine	846,468	Mar. 12	1493	331	127	408
Dossor, Frederick M., Doncaster, England. Apparatus for cleaning and separating seeds, &c	846,915	Mar. 12	2412	530	127	642
Downs, Charles E., Mannington, W. Va. Fishing-tool	847,166	Mar. 12	2667	636	127	700
Draper Company. (See Birmingham, Willburn B., assignor.)						
Draper Company. (See Leonard, Peter S., assignor.)						
Draper Company. (See Smith and Stimpson, assignors.)						
Drueck, Gustavus P., Jr., Chicago, Ill. Feed-bag	846,985	Mar. 12	2546	560	127	678
Du Bois, Edward M. (See Brock and Du Bois.)						
Du Brul, Napoleon, Cincinnati, Ohio. Tobacco-cutter	846,734	Mar. 12	2035	447–8	127	547
Du Pont, Francis I., assignor to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Cartridge and manufacture thereof	846,612	Mar. 12	1536	401	127	494
Dufaux, Armand and H., Geneva, Switzerland. Aeroplane or craft for aerial navigation	846,830	Mar. 12	2241	492	127	600
Dufaux, Henri. (See Dufaux, Armand and H.)						
Duke, George H. (See Fisher, Harold J., assignor.)						
Dunbar, Francis W., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Telephone trunking system	846,557	Mar. 12	1662	372	127	457
Dunbar, Harry R. H. (See Edwards and Dunbar.)						
Duncan, Harry L., New York, N. Y. Baling-press	846,736	Mar. 12	2038	448–9	127	548
Duncan, Nancy P., Pittsburg, Pa. Car-fender	846,459	Mar. 12	1486	332	127	408
Dundore, Jacob E., Wilkinsburg, Pa. Locking hat and coat rack	846,460	Mar. 12	1487	332	127	409
Dunnigan, James W., Altoona, Pa. Railway-tie	846,735	Mar. 12	2144	471	127	575
E. I. du Pont de Nemours Powder Company. (See Du Pont, Francis I., assignor.)						
E. W. Bliss Company. (See Eden, James A., Jr., assignor.)						
Earley, James O., Jr., Richmond, Va. Whistle-organ	847,169	Mar. 12	2669	636	127	700
Eastman, Harry E., assignor to L. Goldback and E. W. Krouse, Richmond, Va. Trolley-stand	847,170	Mar. 12	2670	636–7	127	700
Easton, Alexander D., assignor to National Disinfectant Company, Cincinnati, Ohio. Apparatus for applying disinfectants to water-closets	846,831	Mar. 12	2240	491	127	601
Eberhart, Frederick G., Jr., assignor to Mishawaka Woolen Manufacturing Company, Mishawaka, Ind. Knit boot	846,985	Mar. 12	2547	561	127	678
Eden, James A., Jr., New York, N. Y., assignor to E. W. Bliss Company. Work-feeding punching-machine	846,833	Mar. 12	2244	492	127	600
Edwards, Henry C., and H. R. H. Dunbar, Victoria, British Columbia, Canada. Form for displaying wearing-apparel	846,533	Mar. 12	2239	491	127	604
Egan, Naomi, Danville, Cal. Combined bed-pan and douche	846,534	Mar. 12	2264	494	127	604

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Drfs.	Official Gazette. Vol.	Page.
Ehle, Archibald H., Philadelphia, Pa. Change-gearing	847,048	Mar. 12	2672	587–8	127	707
Ehrich, John B., Indianapolis, Ind. Combined hot blast, water-coil, and gas-burner	846,916	Mar. 12	2413	530	127	643
Eichelberger, Frederick L. A., McKees Rocks, Pa. Folding trunk	847,171	Mar. 12	2693	637	127	761
Eisenbise, Harry W., Reading, Pa. Fire apparatus	846,835	Mar. 12	2255	494	127	604
Eisenschimil, Otto. (See Thomas, William M., assignor.)						
Electric Gas Lighting Company. (See Koltonski, Stanislaw A., assignor.)						
Elgar, Alfred, North Brixton, England. Submarine torpedo-boat	846,736	Mar. 12	2044	449	127	550
Elliott-Fisher Company. (See King and Milstead, assignors.)						
Elliott, William S., Pittsburg, Pa. Water-tube boiler	846,737	Mar. 12	2047	450	127	550
Elliott, William S., Pittsburg, Pa. Water-tube boiler	846,738	Mar. 12	2050	450	127	551
Elliott, William S., Pittsburg, Pa. Water-tube boiler	846,650	Mar. 12	1894	416	127	512
Ellis, James E., Plymouth, Ind. Cigar-cutter	847,049	Mar. 12	2674	588	127	707
Embury, William C., Rochester, N. Y. Stovepipe-elbow	846,836	Mar. 12	2257	495	127	605
Emerson, Harrington, Topeka, Kans. Boiler-furnace	846,651	Mar. 12	1894	416	127	513
Emmert, George C., Mount Morris, Ill. Automatic latch	847,050	Mar. 12	2676	588–9	127	708
Emmet, William L. R., Schenectady, N. Y., assignor to General Electric Company. System of lubrication for turbines	846,652	Mar. 12	1896	416–17	127	513
Engebretsen, John, San Diego, Cal. Coupling for scrapers	846,653	Mar. 12	1898	417	127	513
Engebretsen, John, San Diego, Cal. Coupling for scrapers	846,461	Mar. 12	1498	332	127	409
Engel, Albert W., Chicago, Ill. Perimeter-measuring device	847,062	Mar. 12	2682	589	127	709
Englefield, Arthur, Longford, near Gloucester, England. Book-rest and the like	846,654	Mar. 12	1899	418	127	514
Erickson, Charles H., and J. P. Nystrom, Cleveland, Ohio. Friction-clutch	846,786	Mar. 12	2145	471	127	576
Eshelman, Stephen F., Sardis, Ohio, and D. E. Thoenen, Sistersville, W. Va. Belt-stretcher	847,051	Mar. 12	2680	589	127	709
Essick, William B., Manley, Nebr. Harrow	846,837	Mar. 12	2259	495–6	127	605
Evans, Albert E., assignor to National Tube Company, Pittsburg, Pa. Traveling crane	846,987	Mar. 12	2548	561	127	678
Evans, George R., Philadelphia, Pa. Attachment for drawing-boards	847,053	Mar. 12	2682	589	127	710
Evans, John, Jr., and G. A. Steiner, Salt Lake City, Utah. Soap-holder	847,172	Mar. 12	2695	637	127	762
Everest, Augustine R., Lynn, Mass., assignor to General Electric Company. Controlling means for single-phase motors	847,054	Mar. 12	2684	590	127	710
Eyermann, Peter, Beloit, Wis. Producer-gas plant	846,655	Mar. 12	1901	418	127	514
Fairbanks, Morse & Co. (See Hobart, Franklin G., assignor.)	846,838	Mar. 12	2263	496	127	60
Falvey, Thomas J., assignor to E. Joaquin, South Boston, Mass. Game apparatus	846,839	Mar. 12	2266	496–7	127	607
Fannon, William A., Appleton, Wis. Log-splitting machine						
Fannon, William A., and E. A. Peterson, Appleton, Wis. Log-splitting machine	846,988	Mar. 12	2550	561	127	678
Farbwerke, vorm. Meister, Lucius & Brüning. (See Schumacher, Willy, assignor.)						
Farmer, Arthur J., Detroit, Mich. Combined envelop and letter-sheet						
Farmer, Charles A. (See Perry, Bossing, and Farmer.)						
Farquhar, Edmund H., Schenectady, N. Y., assignor to General Electric Company. Bucket for elastic-fluid turbines	846,739	Mar. 12	2051	450–1	127	552
Ferber, Philip, assignor to Koufal & Esser Company, Hoboken, N. J. Surveying instrument	846,989	Mar. 12	2553	561	127	679
Field, Charles F., Bangor, Me. Rake	847,055	Mar. 12	2685	590	127	710
Finsrud, Hans A. (See Iversen and Finsrud.)						
Fischer, Ernst. (See Lehnert, Franz H., assignor.)	846,558	Mar. 12	1694	473	127	469
Fischer, Joseph B., assignor to E. A. Tesch, Chicago, Ill. Fountain marking-brush	847,283	Mar. 12	3111	696	127	815
Fiscus, Charles N. (See Luff, Henry J., assignor.)	846,990	Mar. 12	2553	562	127	679
Fisher, Harold J., assignor to G. H. Duke, Hotchkiss, Colo. Telephony						
Fitzsimmons, James C., Oakland, Cal. Oil-burner	846,462	Mar. 12	1500	333–4	127	409
Fleming, Martin C. (See Pendleton, William S., assignor.)	847,248	Mar. 12	3048	672	127	709
Fletcher, Lawrence A. (See Muncaster and Fletcher.)						
Fontaine, Paul, Troyes, France. Dyeing apparatus	846,917	Mar. 12	2415	531	127	643
Forbush, Herman A., assignor of one-half to D. W. Kellogg, Auburn, N. Y. Horse-collar	846,740	Mar. 12	2052	451	127	553
Foote, Frank, Mystic, and N. M. Johnston, Hartford; said Johnston assignor of one-half to E. L. Belknap, Hartford, Conn. Vending-machine	846,656	Mar. 12	1903	418	127	515
Fordee, Milton, Thief River Falls, Minn. Wrench	846,840	Mar. 12	2268	497	127	606
Forgie, Francis J., Goshen, Ind. Swing	846,841	Mar. 12	2270	497–8	127	606
Forsyth, Joseph E., Chicago, Ill. Train-pipe coupling	846,787	Mar. 12	2147	472	127	576
Forsyth, Joseph E., Chicago, Ill. Train-pipe coupling	846,918	Mar. 12	2420	531	127	644
Fortier, George W., *et al.* (See Murray, John C., assignor.)	846,741	Mar. 12	2054	451	127	553
Foster, James H., assignor to Parish & Bingham Company, Cleveland, Ohio. Vehicle-frame	846,788	Mar. 12	2148	472	127	577
Franzmeier, Louis, Newton, Wis. Harvester attachment	847,056	Mar. 12	2686	590–1	127	710
Fraser, Robert G., Philadelphia, Pa. Circular-distributer	846,657	Mar. 12	1904	.....	127	515
Fredericksen, James. (See Alexander and Fredericksen.)	847,173	Mar. 12	2697	.....	127	762
Freidheim, Daniel F., New York, N. Y. Collapsible box	847,057	Mar. 12	2689	591–2	127	711
French, Charles H., Canton, Mass., assignor to French & Ward, New York, N. Y. Machine for producing ornamental surfaces on fleeced fabrics	846,842	Mar. 12	2271	498	127	609
French & Ward. (See French, Charles H., assignor.)	847,058	Mar. 12	2691	592	127	711
Frölich, Oscar, Berlin, Germany. Extracting copper	846,991	Mar. 12	2554	562	127	679
Froesheimer, Michael, Bad Aibling, Germany. Permanently removing wall-saltpeter and similar eruptions	847,059	Mar. 12	2693	593	127	712
Furlough, Frank F., Denver, Colo. Excavating-wheeler	847,060	Mar. 12	2694	593	127	712
Gage, Daniel W., Cambridge, Mass. Safety-razor	846,559	Mar. 12	1694	373–4	127	469
Galliard, Gaston, Paris, France. Optical device for use with measuring instruments	846,992	Mar. 12	2556	562–3	127	680
Gaisman, Henry J., New York, N. Y. Buckle						
Gallagher, Patrick F., assignor of one-half to H. Gordon, Pittsburg, Pa. Ratchet tool-holder						
Gamache, Cheapsee, Barre, Vt. Brush						
Gamble, John, East Liverpool, Ohio. Continuous decorating-kiln						
Gammeter, Harry C., assignor to American Multigraph Company, Cleveland, Ohio. Feeding mechanism for printing-machines	846,463	Mar. 12	1503	334	127	410
Garden City Fan Company. (See Green, William W., assignor.)						
Gardiner, Kirtland C., and F. C. Biggert, Jr., assignors to United Engineering & Foundry Company, Pittsburg, Pa. Straightening and bending machine	847,061	Mar. 12	2695	593–4	127	712
Garrett-Cromwell Engineering Company. (See Cromwell, John C., assignor.)	847,174	Mar. 12	2698	637–9	127	762
Gee, Norman E., Altoona, Pa. Mechanical stoker						
Gee, Norman E., Altoona, Pa. Mechanical stoker						
General Chemical Company. (See Adamson, George P., assignor.)						
General Electric Company. (See Berg, Ernst J., assignor.)						
General Electric Company. (See Emmet, William L. R., assignor.)						
General Electric Company. (See Everest, Augustine R., assignor.)						
General Electric Company. (See Farquhar, Edmund H., assignor.)						
General Electric Company. (See Grisdrod, John R., assignor.)						
General Electric Company. (See Kruesi, August H., assignor.)						
General Electric Company. (See Lasche, Oskar, assignor.)						
General Electric Company. (See Platt, Frederick, assignor.)						
General Electric Company. (See Reist, Henry G., assignor.)	846,464	Mar. 12	1504	335	127	411
Gentili, Alberto, Veneto, Italy. Telegraphic instrument and the like						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Pages.
George Murphy. (See King, Edwin P., assignor.)						
Gerber, Alphonse, assignor to King Quick Gerber Co., Paterson, N. J. Gearing	846,465	Mar. 12	1805	335	127	611
Gerstenmaier, Carl. (See Brady and Gerstenmaier.)						
Getz, Frederick E., Ellicott City, Md. Recording system for salesmen's orders and shipments	847,092	Mar. 13	2709	504-5	127	712
Gibbons, Edward F., Jersey City, N. J. Folder attachment for hammers	846,749	Mar. 13	2093	452	127	698
Gilbert, Walter V., London, England. Toy	846,580	Mar. 13	1698	374-5	127	699
Gilbert, Walter V., London, England. Spring device for producing differential movements	846,581	Mar. 13	1699	375-6	127	699
Gilman, Lyman J., Pinemount, Fla. Plow	846,730	Mar. 13	2130	472	127	698
Gilmore, William R., Williams, Cal. Oil-burner	846,988	Mar. 13	2889	663	127	699
Giroud, Felipe, assignor to American Wrapping and Box Machine Company, New York, N. Y. Cigarette-box making and packing machine	846,698	Mar. 13	1808	419-20	127	516
Glascock, George, Vedersburg, Ind. Concrete bridge	846,699	Mar. 13	1910	420	127	516
Glass, Perley R., Quincy, Mass., and L. Muther, Denver, Colo., said Glass assignor to Peerless Machinery Company, Boston, Mass. Gage	846,690	Mar. 13	1911	420	127	516
Godfrey, Phillip J., Taunton, Mass. Handle for coffee or tea pots	847,178	Mar. 13	2805	630	127	704
Godward, Ernest R., Invercargill, New Zealand. Egg-beater, whisk, &c.	846,681	Mar. 13	1913	421	127	517
Godward, Ernest R., Invercargill, New Zealand. Egg-beater	846,682	Mar. 13	1914	421	127	517
Gold, Egbert H., Chicago, Ill. Coupling	846,904	Mar. 13	2689	568	127	699
Goldback, Louis, *et al.* (See Eastman, Harry E., assignor.)						
Good, Charles A., Jonesboro, Ark. Gage	847,176	Mar. 13	2806	630	127	704
Goodwin, George W., Jr. (See Burdett and Goodwin.)						
Gordon, Harry. (See Gallagher, Patrick F., assignor.)						
Granberg, Emil, St. Louis, Mo. Pulley	847,240	Mar. 13	2080	472	127	709
Granbery, Albert M., Collierville, Tenn. Chain-saw	846,683	Mar. 13	1914	421	127	517
Grasberger, Boniface A., Richmond, Va. Ice-pick	846,845	Mar. 13	2273	498	127	699
Grayson, Belle M., Milwaukee, Wis. Supporting-garment	846,822	Mar. 13	1703	376	127	683
Greeley, William L., New York, N. Y. Adjustable anchor device	846,896	Mar. 13	2060	444	127	681
Green, William W., Niles, Mich., assignor to Garden City Fan Company, Chicago, Ill. Blower	846,944	Mar. 13	2274	498-9	127	699
Greenberg, Isaac, New York, N. Y. Slipper-sole	847,083	Mar. 13	2708	505	127	714
Greenfield, Edwin T., Kiamesha, N. Y. Tubing	847,082	Mar. 13	2862	564	127	681
Greth, John C. W., assignor to Wm. B. Scaife & Sons Company, Pittsburg, Pa. Water-purifying apparatus	846,845	Mar. 13	2275	499	127	699
Griffin, William H., Oxford, Ala. Buckle	847,084	Mar. 13	2705	505	127	714
Grindrod, John R., Lynn, Mass., assignor to General Electric Company. Commutator	847,204	Mar. 13	3113	695	127	834
Gschwind, Adolph R., assignor of one-half to G. Ranninger, Chicago, Ill. Combined squeegee and scrubber	847,260	Mar. 13	2089	472	127	709
Guerin, Edmond H., Woonsocket, R. I. Cop-tube	847,177	Mar. 13	2807	640	127	704
Guidemann, Arnold, Paterson, N. J. Loom-shuttle	846,696	Mar. 13	1907	336	127	611
H. D. Smith and Company. (See Ward, William S., assignor.)						
Haagn, Ernst, assignor to Firm of W. C. Heraeus, Hanau, Germany. Body to be heated electrically	847,085	Mar. 13	2706	505	127	714
Hacker, John, Caledonia, Mich. Cattle-stanchion	846,684	Mar. 13	1917	422	127	518
Hadland, Carl A., Bennington, Minn. Reeling device	847,178	Mar. 13	2808	640	127	704
Haffey, James F. (See Baron and Haffey.)						
Hall-Borchert Dress Form Company. (See Herman, Raymond L., assignor.)						
Hall, Francis L., San Pedro, N. Mex. Ter. Cane	847,086	Mar. 12	2707	506	127	714
Hames, William J. M., Atlanta, Ga. Cleaner and polisher	846,685	Mar. 13	1918	422	127	518
Hamilton, Addington B., Roslindale, assignor of two-thirds to J. F. O'Brien, Boston, Mass. Bottle-stopper	846,687	Mar. 13	1909	336	127	612
Hamilton, Henry P., Two Rivers, Wis., and H. Hamilton, Detroit City, Minn., assignors to Hamilton Manufacturing Company, Two Rivers, Wis. Printer's ink-roller cabinet	846,897	Mar. 13	2863	564	127	681
Hamilton, Hubbard. (See Hamilton, Henry P. and H.)						
Hamilton Manufacturing Company. (See Hamilton, Henry P. and H., assignors.)						
Hammond, John F., Brewster, N. Y., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Pyrometer	846,998	Mar. 13	2066	564	127	682
Hancock, Harrison S., Newbern, N. C. Log-spur attachment for conveyer-chains	846,698	Mar. 13	1513	336	127	613
Handy Scaffold Co. (See Bonemberger, George, assignor.)						
Hansen, Lars, Oshkosh, Wis. Molding apparatus	847,179	Mar. 13	2911	641	127	705
Hanson, Bengt M. W., assignor to Pratt & Whitney Company, Hartford, Conn. Cylindrical reamer	846,686	Mar. 13	1910	422	127	519
Hanwell, Herbert W., Northampton, England. Lamp-pendant	846,803	Mar. 13	1704	376-7	127	683
Harbager, Frank J. (See Wallace and Harbager.)						
Harmon, Eugene W., Blaine, Me. Wagon	847,087	Mar. 12	2708	506	127	715
Harris, Alfred D., Caldwell, Kans. Harrow	847,088	Mar. 13	2709	507	127	715
Harris, Louis J., New York, N. Y. Railway-car	846,846	Mar. 13	2277	499-500	127	610
Harris, Louis J., New York, N. Y. Railway-car	846,847	Mar. 13	2279	500-2	127	611
Harris, Marvin L., Newport News, Va. Door-check	847,205	Mar. 13	3114	695	127	816
Harrison, Frank B. (See Williams and Harrison.)						
Hart, Albert B., assignor, by mesne assignments, to American Serial Lock Company, Hartford, Conn. Mail-collector	846,854	Mar. 13	1707	377	127	683
Hatfield, Charles N., Fountain City, Ind. Grain and seed cleaner, separator, and grader	846,989	Mar. 13	2068	565	127	682
Havell, George, Newark, N. J., assignor to L. C. Langie, Rochester, N. Y. Nail-clipper	846,855	Mar. 13	1714	377	127	465
Havell, George, Newark, N. J., assignor to L. C. Langie, Rochester, N. Y. Combined cigar-cutter and nail-clipper	846,743	Mar. 13	2089	482	127	553
Hawkins, Theodore L., Pittsburg, Pa. Car-wheel	847,089	Mar. 12	2711	507	127	716
Hawley, Charles G., Minneapolis, Minn. Bottle-seal	846,744	Mar. 13	2090	482	127	553
Hayes, John F., Scranton, Pa. Cash-carrier	847,090	Mar. 12	2712	507-8	127	716
Heilman, Henry, and L. C. Bayles, Johannesburg, Transvaal. Water-supplying attachment for rock-drilling machines	846,816	Mar. 13	2116	487	127	816
Heilmund, Rudolf E., New York, N. Y. Circuit-breaker	846,689	Mar. 13	1513	336	127	613
Helmold, Julius F., Chicago, Ill. Liquid-soap holder	847,000	Mar. 13	2871	565	127	683
Henley, Charles M. (See Berger, Joseph, assignor.)						
Hensel-Colladay Company. (See Kirberg, Jacob E., assignor.)						
Heraeus, W. C., Firm of. (See Haagn, Ernst, assignor.)						
Herbert, James P., and H. S. and E. J. Price, New Brunswick, N. J. Potato digger and assorter	847,071	Mar. 13	2714	508	127	717
Herman, Raymond L., New York, N. Y., assignor, by mesne assignments, to Hall-Borchert Dress Form Company. Combined marker and tracing-wheel	846,919	Mar. 13	2021	482	127	645
Hermance, J. Henry, Hot Springs, Ark. Time-controlled mechanism	846,670	Mar. 13	1517	336-7	127	614
Herzog Art Furniture Co. (See Herzog, John, assignor.)						
Herzog, John, Saginaw, Mich., assignor to Herzog Art Furniture Co. Cabinet	846,848	Mar. 13	2280	502	127	611
Hess, Christopher A., Bismarck, N. D. Chalk-trough	846,687	Mar. 13	1921	422	127	519
Hickey, Daniel K. (See Saunders, William L., assignor.)						
High Duty Saw and Tool Company. (See Tindel, Adam, assignor.)						
Highfield, John S., London, England. High-tension direct-current electric system	846,688	Mar. 13	1716	378	127	465
Hill, Warren E., assignor to T. F. Rowland, New York, N. Y. Buoy, torpedo, and similar device	846,857	Mar. 13	1717	378	127	466

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Pages.
Hirsch, Jacob G. Halberstadt, assignor to Chemische Fabrik von Heyden, Aktiengesellschaft, Radebeul, near Dresden, Germany. Solution of mercurous oxycyanid and dianisyl-monophenetidyl-guanidinchlorhydrate	846,849	Mar. 12	2282		127	611
Hirt, Louis J., Brookline, Mass. Coking-oven	847,001	Mar. 12	2573	565	127	664
Hoag, James W., assignor to Hoag Rapid Press Company, San Francisco, Cal. Apparatus for feeding separate sheets of paper to printing-presses	846,850	Mar. 12	2283	503	127	611
Hoag Rapid Press Company. (See Hoag, James W., assignor.)						
Hoal, Edwin. (See Worsey and Hoal.)						
Hobart, Franklin G., Beloit, Wis., assignor to Fairbanks, Morse & Co., Chicago, Ill. Feed-governor for oil-engines	846,471	Mar. 12	1518	337	127	415
Hobson, Arthur E., Meriden, Conn., assignor to International Silver Co. Metal alloy	846,851	Mar. 12	2284		127	612
Hobson, Francis J. (See Kennedy and Hobson.)						
Hobson, James, Portland, Oreg. Chuck	84 ,251	Mar. 12	3052	673	127	800
Hodson, James. (See Bremer, Chattin, and Hoenisch.)						
Hoenisch, August H. (See Bremer, Chattin, and Hoenisch.)	846,668	Mar. 12	1922	423	127	519
Hoey, William, Chicago, Ill. Metallic piston-packing	847,282	Mar. 12	3054	673	127	800
Hofman, Wilmot G., San Francisco, Cal. Fountain blacking-brush						
Holcomb, William M. (See Lomeka and Holcomb.)	846,472	Mar. 12	1520	337	127	415
Holden, Charles L., Indianapolis, Ind. Heating-boiler	846,852	Mar. 12	2285	503	127	612
Holgate, George H., Philadelphia, Pa. Carbureter	846,473	Mar. 12	1522	337	127	416
Holman, George F. W., Philadelphia, Pa. Coffee-pot						
Holman, Howard B. (See McBerty and Holmes.)	846,474	Mar. 12	1524	338	127	416
Holmes, William, Mülheim-on-the-Ruhr, Germany. Planing-machine	847,002	Mar. 12	2575	566	127	684
Holthaus, Chicago, Ill. Metallic piston-packing	846,745	Mar. 12	2063	453	127	554
Hoogerwerf, Peter, Beverly, Mass. Seesaw	846,566	Mar. 12	1720	378-9	127	466
Hopiner, Joseph F., Fenston, Minn. Hame						
Horne, Jessey C., and D. H. Yates, Madison, Fla. Dumping-wagon	846,920	Mar. 12	2422	532	127	645
Hornaday, Lute. (See Mills, Edwin H., assignor.)	846,921	Mar. 12	2423	532	127	645
Horth, John W., Salamanca, N. Y. Fanner						
Horton, Rose W., and J. E. Molesworth, New Athens, Ohio. Can-opener	846,475	Mar. 12	1524	338	127	416
Hosking, Seth, Wheeling, W. Va., assignor to National Tube Company, Pittsburg, Pa. Peep-sight for tuyer-stocks	847,180	Mar. 12	2913	641	127	705
Housan, William, O'Fallon, Ill. Veterinary's operating-table	846,689	Mar. 12	1923	423	127	519
Howell, Edward B., Butte, Mont. Weir-gage	846,853	Mar. 12	2287	503	127	613
Howell, James T., Seattle, Wash. Electric heater	846,790	Mar. 12	2151	472-3	127	577
Hueg, Herman F. W., New York, N. Y. Dough-shaping machine	847,072	Mar. 12	2716	509	127	717
Hughes, William, Sharon, Pa. Motor	847,073	Mar. 12	2719	509	127	718
Hunt, James S. A., Mattie, W. Va. Rail-joint						
Hunt, Major C. (See Williams, Nathan W., assignor.)	847,074	Mar. 12	2720	509	127	718
Hurd, James W., Dover, Va. Hay-rake	847,075	Mar. 12	2722	509	127	719
Hürlimann, Jakob, Haldon, N. J. Bottle or jar and the like	846,476	Mar. 13	1525	338	127	416
Hynard, William C., and G. F. Meehan, New York, N. Y. Belt and buckle						
International Silver Co. (See Hobson, Arthur E., assignor.)	847,003	Mar. 12	2576	566	127	685
Iscbewsky, Bocslaus von, Kiew, Russia. Electric furnace	847,253	Mar. 12	3055	674	127	801
Iversen, Olof A., and H. A. Finsrud, Chicago, Ill. Snap-button	847,181	Mar. 12	2915	641-2	127	705
Ivy, William D., Memphis, Tenn. Baling-press						
Jackson, Elisa G., Washington, D. C., assignor of one-half to L. W. Jackson. Knife and fork case	847,254	Mar. 12	3056	674	127	801
Jackson, Laura W. (See Jackson, Elisa G., assignor.)	847,182	Mar. 12	2917	642	127	706
Jacobsen, Frederick E., Portland, Oreg. Automatic valve	846,670	Mar. 12	1925	423-4	127	520
Jaquet, Charles, assignor to Schneider, Jaquet & Cie., G. M. B. H., Strassburg-Königshofen, Germany. Grits and dust purifier	847,076	Mar. 12	2723	600-1	127	719
Jarrett, Landon C., Marshall, N. C. Mail-transportation system	847,077	Mar. 12	2726	601	127	719
Jean, Julius A., assignor of one-half to G. A. Moore, Denver, Colo. Amalgamator and concentrator	846,922	Mar. 12	2424		127	645
Jebsen, Fridtjof. (See Kirkegaard, Georg, assignor.)						
Jenkins, Newell S., Dresden, Germany. Plastic soldering-paste	847,078	Mar. 12	2727		127	720
Jijinaky, Michael, Cwbeld, assignor to R. Wedekind & Co., Uerdingen-on-the-Rhine, Germany. Production of organic sulfonic acids	847,079	Mar. 12	2728	601-2	127	720
Joaquin, Elisabeth. (See Falvey, Thomas J., assignor.)	847,183	Mar. 12	2918	642	127	706
Johannet, Max, Paris, France. Electromagnetic transmitting device						
Johnson, Allen, Lincoln, Nebr. Urinal	847,184	Mar. 12	2921	643	127	707
Johnson, Charles. (See Daley and Johnson.)						
Johnson, Duval, Pine Bluff, Ark. Ledger-index						
Johnson and Johnson. (See Lee, John E., assignor.)						
Johnston, Frank, *et al.* (See Cadwell, Edwin B., assignor.)						
Johnston, Norman M. (See Foote and Johnston.)	846,569	Mar. 12	1722	379	127	467
Jones, Albert E., East Orange, N. J. Tracing or marking tool						
Jones Improved Loose Leaf Specialty Company. (See Mogland, Nels F., assignor.)	846,854	Mar. 12	2289	504	127	613
Jones, Lee A., Covington, Va. Shears	846,923	Mar. 12	2425	532-3	127	646
Juengst, Charles A., Croton Falls, N. Y. Signature-conveying and wire-stitching machine	846,924	Mar. 12	2434	534	127	646
Kampa, Otto, New York, N. Y. Nail-clipper	847,004	Mar. 12	2578	566	127	685
Kane, John H., assignor to H. H. Damman, Kiowa, Kans. Pump-operating mechanism	846,855	Mar. 12	2290	504	127	613
Karlson, Henry C., Hasbrouck Heights, N. J. Turbine	847,080	Mar. 12	2730	602	127	720
Katzman, Adolph S., and H. A. Vissthaam, New York, N. Y. Interrupted contact for third-rail systems						
Kellogg, Dan W. (See Fontaine, Herman A., assignor.)						
Kellogg Switchboard and Supply Company. (See Dunbar, Francis W., assignor.)	847,185	Mar. 12	2922	643	127	707
Kelly, James, assignor of one-half to J. D. Minto, Providence, R. I. Air cooling and humidifying apparatus	846,570	Mar. 12	1726	380	127	468
Kelsey, Oliver, Connell, Wash. Grain-bin						
Kemmler, Charles, *et al.* (See Reiber, Frederick W., assignor.)	846,791	Mar. 12	2152	473-4	127	578
Kennedy, Joseph E., New York, N. Y., and F. J. Hobson, Guanajuato, Mexico. Excavator	846,792	Mar. 12	2155	474	127	578
Kennedy, Joseph E., New York, N. Y., and F. J. Hobson, Guanajuato, Mexico. Distributing device for ores	847,081	Mar. 12	2732	602-3	127	720
Kern, Engelbert E., Faribault, Minn. Automatic funnel	846,746	Mar. 12	2064	453	127	555
Kerr, Charles V., Wellsville, N. Y. Combined bushing and bearing for shafts of steam-turbines	846,747	Mar. 12	2066	453	127	555
Kerr, Charles V., assignor to Kerr Turbine Company, Wellsville, N. Y. Steam-turbine						
Kerr Turbine Company. (See Kerr, Charles V., assignor.)						
Kerr Turbine Company. (See Moore, James L., assignor.)	847,186	Mar. 12	2924	643-4	127	707
Kerr, William A., New Castle, Pa. Die-head	846,477	Mar. 12	1526		127	417
Kessler, John J., Jr., St. Louis, Mo. Oil-proof electrical insulating compound and making same	846,571	Mar. 12	1726	380-1	127	468
Keuffel & Esser Company. (See Farber, Philip, assignor.)						
Kevorkian, Zareh H., Pittsburg, Pa. Elastic-fluid turbine						
Keystone Brake Shoe Company. (See Lamb, Van Buren, assignor.)						
King, Clarence D., and A. H. Millstead, Atlanta, Ga., assignors, to Elliott-Fisher Company, New York, N. Y. Type-writer attachment	846,671	Mar. 12	1927	424-5	127	520

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
King, Edwin P., assignor, by mesne assignments, to George Murphy, Incorporated, New York, N. Y. Light-controller	847,227	Mar. 12	3113	687	127	817
King Quick Gerber Co. (See Gerber, Alphonse, assignor.)						
King, William H. T., Dallas, Tex. Railway-rail joint	847,187	Mar. 12	2926	644	127	798
Kinkler, Emil J. (See Krueger, Kinkler, and Carmichael.)						
Kinnard, Will M. (See Marsh, William P.)						
Kirberg, Jacob E., assignor to Hensel-Colladay Company, Philadelphia, Pa. Braiding-machine	847,005	Mar. 12	2670	567	127	695
Kirkegaard, Georg, assignor of one-half to F. Jebsen, New York, N. Y. Bottle-stopper	847,008	Mar. 12	2683	567	127	695
Kitsee, Isidor, Philadelphia, Pa. Electric switch	847,007	Mar. 12	2683	568	127	695
Kitsee, Isidor, Philadelphia, Pa. Converter	847,008	Mar. 12	2686	568	127	697
Kitsee, Isidor, Philadelphia, Pa. Telegraphy	847,188	Mar. 12	2927	644	127	798
Kitsee, Isidor, Philadelphia, Pa. Electric telegraphy	847,189	Mar. 12	2931	644	127	798
Klell, Albert, Cleveland, Ohio. Filter	846,748	Mar. 12	2096	454	127	588
Klimsch & Co. (See Schumacher, Peter, assignor.)						
Klousnitzer, Frank, assignor of one-third to A. Smith, Herman, Pa. Envelop	846,478	Mar. 12	1837	338	127	617
Knudsen, Ivar P. B., Copenhagen, Denmark. Flexible spindle for centrifugal machines	847,009	Mar. 12	2687	568	127	697
Kobusch, Fredrich J., St. Louis, Mo. Ventilator	847,205	Mar. 12	2968	674	127	801
Kobusch, Fredrich J., St. Louis, Mo. Heating-drum	847,206	Mar. 12	2969	675	127	801
Koch, Franz J., Dresden, Germany. High-pressure electrical apparatus	846,673	Mar. 11	1933	425	127	522
Koerting, Ernst, Pegli, Italy. Jet-condenser	847,010	Mar. 12	2683	568	127	697
Koesche, Andrew, assignor to Liquid Carbonic Company, Chicago, Ill. Electric switch	846,673	Mar. 12	1933	425	127	522
Kolb, Henry M., and C. Foehl, Philadelphia, Pa. Firearm	847,011	Mar. 12	2690	569	127	698
Koltonski, Stanislaw A., assignor to Electric Gas Lighting Company, Boston, Mass. Telephone	846,479	Mar. 12	1839	339	127	617
Korper, Simon, New York, N. Y. Manicuring implement	847,012	Mar. 12	2693	569	127	698
Kramer, George, Kansas City, Mo. Amusement device	846,925	Mar. 12	2437	534	127	649
Kraus, Otto, New York, N. Y. Horn-support for talking-machines	846,926	Mar. 12	2440	535	127	649
Kreag, John A., Rochester, N. Y. Polishing-brush	846,798	Mar. 12	2157	475	127	579
Krouse, Edward W., *et al.* (See Eastman, Harry E., assignor.)						
Krueger, Louis, E. J. Kinkler, and O. H. Carmichael, Beeville, Tex. Pipe-clamp	847,082	Mar. 12	2733	603	127	721
Kruesi, August H., Schenectady, N. Y., assignor to General Electric Company. Means for supplying lubricant for the bearings of elastic-fluid turbines	846,794	Mar. 12	2156	475	127	579
Kruesi, August H., Schenectady, N. Y., assignor to General Electric Company. Shaft-bearing	846,795	Mar. 12	2162	476	127	580
Kruesi, August H., Schenectady, N. Y., assignor to General Electric Company. Lubricating system for turbine-shaft bearings	846,796	Mar. 12	2167	476–7	127	582
Kuhn, Thomas, Hornell, N. Y. Drill-brace	847,013	Mar. 12	2694	569	127	699
Kunzler, Charles J., Pittsburg, Pa. Roofing construction	846,573	Mar. 12	1729	361	127	600
Kupelwieser, Paul, Brioni, near Pola, Austria-Hungary. Sash-window	846,573	Mar. 12	1732	362	127	600
Lachman, Laurence, New York, N. Y., assignor to Standard Pulley Manufacturing Company. Electric welding	846,480	Mar. 12	1838	339	127	618
Laird, John A., St. Louis, Mo. Mechanical movement	846,749	Mar. 12	2070	454	127	588
Lamb, Edwin E., assignor of one-half to F. Claffey, Hartford, Conn. Gun-rack	846,674	Mar. 12	1937	426	127	522
Lamb, Van Buren, New Haven, Conn., assignor to Keystone Brake Shoe Company, New York, N. Y. Brake	846,481	Mar. 12	1832	340	127	618
Lambert, Benjaman F., Anderson, Ind. Peat-drier	846,574	Mar. 12	1734	362–3	127	600
Lamplough, Frederick, London, England. Antivibration device for vehicles	846,797	Mar. 12	2170	477	127	582
Land, James F., Danville, Va. Boiler-tube cleaner	846,866	Mar. 12	2201	804	127	614
Landers, Frary and Clark. (See Walker, George, assignor.)						
Landes, Solomon, Canton, Ohio. Cement fence-post	846,798	Mar. 12	2171	477	127	583
Landis, Ezra F., La Salle, N. Y. Abrading material	847,190	Mar. 12	2932	645	127	799
Langie, Louis C. (See Havell George, assignor.)						
Larson, William, Astoria, Oreg. Seining-machine						
Lasche, Oskar, Berlin, Germany, assignor to General Electric Company. Fluid-pressure thrust-bearing	846,575	Mar. 12	1736	363	127	670
Lauber, Josef, Vienna, Austria-Hungary. Magazine-gun	846,927	Mar. 12	2442	535	127	650
Laughlin, Henry D. (See Perry, Hubert M., assignor.)	846,576	Mar. 12	1737	364	127	671
Laughlin, Henry D., Chicago, Ill. Side bearing for cars						
Laughlin, Henry D., Chicago, Ill. Side bearing for cars	846,577	Mar. 12	1739	364–5	127	671
Law, Alexander H. (See Parsons, Stoney, and Law.)	846,578	Mar. 12	1741	365–6	127	672
Layden, John J. (See Marble, James E., assignor.)						
Layman, George R., Lincoln, Ill. Safety device for elevators	847,083	Mar. 12	2734	603	127	721
Layne, Mahlon E., Houston, Tex. Forming perforated tubes and screens	846,482	Mar. 12	1839	340	127	621
Le Vasseur, John B., Duluth, Minn. Adjustable rule	846,580	Mar. 12	1745	366	127	673
Leahy, James W., Jersey City, N. J. Track construction	846,799	Mar. 12	2172	477–8	127	583
Lee, John E., Conshohocken, Pa., assignor to Johnson and Johnson, New Brunswick, N. J. Holder for liquid soap	847,014	Mar. 12	2695	569	127	699
Lee, Olof, Minneapolis, Minn. Cooking-stove	846,579	Mar. 12	1744	366	127	673
Leftwich, William D., Pittsburg, Pa. Street-car fender	847,084	Mar. 12	2735	603–4	127	721
Leggett, James H., Oroville, Cal. Gold-saving apparatus	846,483	Mar. 12	1840	341	127	621
Lehmann, Louis A., New York, N. Y. Dumping-bucket	846,800	Mar. 12	2173	478	127	584
Lehnert, Carl, Marxloh, Germany. Automatic closing device for doors of railway-cars	846,675	Mar. 12	1930	426	127	524
Lehnert, Franz H., Dresden-Plauen, assignor to E. Fischer, Dresden, Germany. Apparatus for treating foaming liquids	847,085	Mar. 12	2737	604	127	722
Leineweber, Herman, assignor of one-half to W. M. Bayne, Chicago, Ill. Pneumatic tool	846,857	Mar. 12	2203	805	127	614
Leitch, Andrew, Sunderland, England. Apparatus for teaching arithmetic	846,484	Mar. 12	1843	341–2	127	622
Leitch, Andrew, Sunderland, England. Kindergarten apparatus	846,485	Mar. 12	1843	342	127	622
Lentz, Hugo, Berlin, Germany. Turbine-engine	846,928	Mar. 12	2444	535	127	651
Lentz, Hugo, Berlin, Germany. Combined air and gas admission valve for explosive-engines	847,086	Mar. 12	2738	604	127	722
Leonard, John N. (See Mitchell, Albert W., assignor.)						
Leonard, Peter S., St. Louis, Mo., assignor to Draper Company, Hopedale, Mass. Thin-place detector for looms	846,801	Mar. 12	2175	478	127	584
Lepley, George, Tiffin, Ohio. Ice-tool	846,486	Mar. 12	1844	342	127	622
Leslie, Benjamin J., Chicago, Ill. Window	846,856	Mar. 12	2200	805	127	615
Levavasseur, Leon M. J. C., Puteaux, France. Reversing mechanism for explosive-engines	846,487	Mar. 12	1845	342–3	127	623
Lewis, Samuel, Meridian, Miss. Coat	846,581	Mar. 12	1748	366–7	127	673
Libby, Charles T., Portland, Me. Linotype-machine	846,584	Mar. 13	1754	368	127	675
Liden, Gustav W., New York, N. Y. Electric switch	847,087	Mar. 12	2740	605	127	722
Lieberich, Heinrich, Neustadt-on-the-Hardt, Germany, assignor to L. Lieberich Sohne, G. M. B. H. Filter	846,582	Mar. 12	1749	367	127	673
Lieberich Sohne, G. M. B. H., L. (See Lieberich, Heinrich, assignor.)						
Liebig, William G., Detroit, Mich. Brush-making machine	846,583	Mar. 12	1750	367–8	127	674
Liebold, Richard, Berlin, Germany. Manufacture of waterproof and non-exuding cements						
Lincoln Company. (See Lincoln, John C., assignor.)	847,015	Mar. 12	2696	.....	127	699
Lincoln, John C., East Cleveland, assignor to Lincoln Company, Cleveland, Ohio. Variable-speed electric motor	847,088	Mar. 12	2742	606	127	723

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Lindfors, Olaf E., Fruita, Colo. Pumping-motor	846,750	Mar. 12	2072	455	127	557
Linklater, Robert J., Buffalo, N. Y. Trousers-hanger	846,676	Mar. 12	1940	426	127	524
Liquid Carbonic Company. (See Koesche, Andrew, assignor.)						
Livingstone, William, New York, N. Y. Receptacle for card-indexes	846,468	Mar. 12	1546	343	127	623
Lloyd, Donald W., Cleveland, Ohio. Retaining-brake	846,802	Mar. 12	2176	478	127	584
Logan, Ferdinand, Phœnixville, Pa. Apparatus for the manufacture of gas	846,489	Mar. 12	1551	344	127	624
Logan, Hugh R., Carson, Nev. Crushing mortar and separator	847,016	Mar. 12	2597	570	127	699
Logan, Hugh R., and W. M. Holcomb, Blanchard, Ark. Lumber-wagon	846,490	Mar. 12	1553	344	127	625
Loocks, Silas J., and W. M. Holcomb, Blanchard, Ark. Lumber-wagon						
Long Arm System Company. (See Cowles, William B., assignor.)						
Lorenz, William A., Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine	847,191	Mar. 12	2933	645–6	127	770
Lorenz, William A., Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine	847,192	Mar. 12	2938	646–7	127	771
Lorenz, William A., Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine	847,193	Mar. 12	2943	648–9	127	772
Lorenz, William A., Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine	847,194	Mar. 12	2951	649–50	127	775
Lorenz, William A., Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine	847,195	Mar. 12	2957	651–2	127	777
Lotti, Alfredo, Marseille, France. Smelting lead and copper ores	847,017	Mar. 12	2599	.....	127	699
Lotti, Alfredo, Marseille, France. Smelting lead and copper ores	847,196	Mar. 12	2963	652	127	778
Lovell, Elbert R., Brookhaven, Miss. Plow	846,677	Mar. 12	1941	426	127	524
Lowery, Osmond E. and W. D., Brooklyn, N. Y. Slipper-sole						
Lowery, William D. (See Lowery, Osmond E. and W. D.)	846,585	Mar. 12	1759	.....	127	676
Ludewig, Carl A. E., Hamburg, Germany. Producing bronze-printings	846,929	Mar. 12	2446	536	127	651
Luff, Henry J., assignor to C. N. Fiecus, Cleveland, Ohio. Waste-pipe connection for closet-bowls	846,586	Mar. 12	1760	388	127	676
Lukens, Clarence D., St. Louis, Mo. Identification device	846,491	Mar. 12	1555	344	127	625
Lutes, Lewis I., Detroit, Mich., assignor to M. T. Buchanan. Sprayer						
Lyman Gun Sight Corporation. (See Wilcox, George S., assignor.)						
Lyman Gun Sight Corporation. (See Windridge, James, assignor.)						
MacIver, Ralph W. E., assignor to Metals Extraction Corporation Limited, London, England. Treating nickel ores, &c	846,492	Mar. 12	1556	.....	127	625
Madden, J. F., *et al.* (See Miller, Harry H., assignor.)	847,018	Mar. 12	2600	570	127	699
Maddock, John, Trenton, N. J. Lavatory and means for supporting same	847,089	Mar. 12	2746	655–6	127	724
Madeley, George E., Kaufman, Tex. Railway-switch	846,587	Mar. 12	1762	389	127	677
Maechler, Walter, Chicago, Ill. Codfish-holder						
Magee, Spencer K. (See Patterson and Magee.)	847,019	Mar. 12	2602	570–1	127	699
Magnier, Paul F. E., Amiens, France. Machine for preparing chocolate icing						
Malan, Ernest D. (See Brown and Malan.)	846,493	Mar. 12	1556	345	127	626
Mallon, Francis T., Brooklyn, N. Y. Means for securing portraits and other tablets to walls						
Maloney, John L. (See Springer and Maloney.)						
Mansfield, King W. (See Thompson, William B., assignor.)						
Mansmann, Andrew A. (See Mansmann, Frank J. and A. A.)	846,494	Mar. 12	1558	345	127	626
Mansmann, Frank J. and A. A., Pittsburg, Pa. Window-shade adjuster	847,197	Mar. 12	2964	652	127	779
Manson, Ray H., assignor to Dean Electric Company, Elyria, Ohio. Relay						
Marble, James E., assignor of one-third to J. J. Layden, Albany, N. Y. Automatic steam and air pipe coupling	847,288	Mar. 12	3121	687–8	127	818
Mark, Charles E., Chicago, Ill. Apparatus for treating materials	846,588	Mar. 12	1762	389	127	677
Marsh, William P., assignor to W. M. Kinnard, Dayton, Ohio. Bailing-machine	846,589	Mar. 12	1768	390	127	679
Martin, Joseph, Midland, Ohio. Combined horse-collar and hame	847,090	Mar. 12	2748	606	127	724
Martinez, Mario L., Baltimore, Md. Fastening device	846,678	Mar. 12	1942	427	127	824
Mason, Charles T., assignor to Sumter Telephone M'f'g. Co., Sumter, S. C. Hook-switch	846,590	Mar. 12	1771	391	127	680
Mason, Morris B., and E. M. Sinclair, assignors, by mesne assignments, to Columbia Gas & Construction Company, Sioux City, Iowa. Carburetor	846,679	Mar. 12	1944	427	127	825
Mason, Morris B., and E. M. Sinclair, Sioux City, Iowa, assignors, by mesne assignments, to Columbia Gas & Construction Company. Gas-machine	846,680	Mar. 12	1945	427–8	127	826
Mason, William, assignor to Winchester Repeating Arms Co., New Haven, Conn. Automatic firearm	846,591	Mar. 12	1773	391–2	127	681
Matcham, Charles A., Allentown, Pa. Rotary cement-kiln and fuel-feeder therefor	847,257	Mar. 12	3060	675–6	127	802
Mathews, William A. (See Reeves and Mathews.)	847,198	Mar. 12	2966	653	127	779
Maul, Alfred, Dresden, Germany. Rocket apparatus	846,592	Mar. 12	1781	3/2	127	682
Maurer, Ludwig, Nuremberg, Germany. Friction-gearing	846,686	Mar. 12	1953	430	127	827
McAneany, Bernard, Fitchburg, Mass. Loom-shuttle	847,096	Mar. 12	2760	610	127	727
McBee, Marshall E., Alto, Tex. Fan-hanger						
McBerty, Frank R., Evanston, and H. B. Holmes, Park Ridge, assignors to Western Electric Company, Chicago, Ill. Coin-collector	846,500	Mar. 12	1575	348–50	127	630
McClintock, David L., Kansas City, Mo. Power-transmitting mechanism for automobiles	846,754	Mar. 12	2079	456–7	127	559
McClintock, Elmer R. B., Baltimore, Md. Railway cross-tie	846,935	Mar. 12	2455	538	127	653
McCormick, Benjamin D., Akron, Ohio. Cupola-furnace	847,097	Mar. 12	2761	610	127	727
McDonald, French, Hiawatha, Kans. Dough-raiser	847,020	Mar. 12	2604	571–2	127	691
McDougall, William, Chicago, Ill. Hammer	846,687	Mar. 12	1954	430	127	827
McElroy, James P., assignor to Consolidated Car Heating Company, Albany, N. Y. Hose-coupling	847,292	Mar. 12	3130	689–90	127	820
McEvoy, Patrick, Oil City, Pa. Incubator for poultry	846,688	Mar. 12	1956	430	127	828
McFarren, Edward W., Saginaw, Mich. Polishing compound	847,098	Mar. 12	2762	.....	127	727
McKaig, James, Allegheny, Pa. Ball-cock for flush-tanks	846,598	Mar. 12	1793	395	127	496
McKee, Willis. (See Parrock and McKee.)						
McKillop, William J. H. (See Pasqualin, Simon, assignor.)						
McKnight, Thomas E., assignor to Western Wheeled Scraper Company, Aurora, Ill. Dump-car	846,501	Mar. 12	1580	350–1	127	632
McNamara, James, Montreal, Quebec, Canada, assignor, by mesne assignments, to Mergenthaler Linotype Company. Monoline composing-machine	847,021	Mar. 12	2606	572–6	127	691
McNeal, Joseph, Laporte City, Iowa. Traction-wheel	846,689	Mar. 12	1957	430	127	828
Mead, Charles B., East Palestine, Ohio. Street-car fender	847,091	Mar. 12	2749	606	127	724
Meadows Manufacturing Company. (See Moick, Emil F., assignor.)						
Meehan, George F. (See Hymard and Meehan.)						
Melvin, Charles T., Springfield, assignor of one-half to E. Beebe, Holyoke, Mass. Mixing device	846,751	Mar. 12	2073	456	127	557
Melvin, Mark G., assignor of one-fourth to T. L. Alexander, Scranton, Pa. Filter	846,859	Mar. 12	2200	506	127	616
Menking, Ernest A., Pittsburg, Pa. Steam-actuated valve	847,092	Mar. 12	2750	606–7	127	725
Mergenthaler Linotype Company. (See Allan, John, assignor.)						
Mergenthaler Linotype Company. (See McNamara, James, assignor.)						
Metals Extraction Corporation Limited. (See MacIver, Ralph W. E., assignor.)	846,681	Mar. 12	1946	428	127	825
Meyer, Herman, Salt Lake City, Utah. Blackboard-eraser cleaner	846,930	Mar. 12	2448	536	127	652
Meyers, Albert J., Kansas City, Kans. Gas-burner						
Miller, Asaacias D. (See Berg, Albert, assignor.)	846,931	Mar. 12	2449	536	127	652
Miller, Clifford G., New York, N. Y. Drink-mixer						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Miller, Harry H., assignor of three-eighths to G. H. Watson and one-fourth to J. F. Madden, St. Louis, Mo. Signal device for street-cars	847,289	Mar. 12	2124	686	127	819
Miller, John H., *et al.* (See Anderson, Edward L., assignor.)						
Miller, Otto. (See Craw and Miller.)						
Miller, Thomas S., South Orange, and J. H. Dickinson, Montclair, N. J. Logging apparatus	846,382	Mar. 12	2480	536	127	662
Miller, William H., Galveston, Tex. Fireproof window construction	846,662	Mar. 12	1947	426	127	525
Milligan, William P. (See Sulteen, George E., assignor.)						
Mills, Edwin H., Columbus, assignor of one-half to L. Hornickle, Cleveland, Ohio. Chain-link	846,803	Mar. 12	2170	479	127	585
Milstead, Andrew H. (See King and Milstead.)						
Minne, André, Asnières, France. Lock-nut	846,888	Mar. 12	1782	393	127	482
Minto, James D. (See Kelly, James, assignor.)						
Mishawaka Woolen Manufacturing Company. (See Eberhart, Frederick G., Jr., assignor.)						
Mitchell, Albert W., assignor, by mesne assignments, to J. N. Leonard, trustee, New Haven, Conn. Paper-box machine	847,028	Mar. 12	2733	607-9	127	726
Mobley, Richard, assignor of one-half to Republic Railway Appliance Company, St. Louis, Mo. Car-door	846,894	Mar. 12	1783	393	127	483
Mobley, Richard, assignor of one-half to Republic Railway Appliance Company, St. Louis, Mo. Flush car-door	846,895	Mar. 12	1786	393	127	484
Morland, Nels F., assignor to Jones Improved Loose Leaf Specialty Company, Chicago, Ill. Binder	846,920	Mar. 12	2301	506	127	616
Molck, Emil F., Sibley, assignor to Meadows Manufacturing Company, Meadows, Ill. End-gate seeding-machine	847,280	Mar. 12	2125	608-9	127	619
Molesworth, Jehiel E. (See Horton and Molesworth.)						
Monnet, Fleury V. M., and E. J. A. Moyne, Paris, France. Machine for bending metallic tubes	847,094	Mar. 12	2737	609	127	728
Moore, Arthur, War Eagle, W. Va. Dumping and distributing apparatus	846,895	Mar. 12	1789	394	127	485
Moore, Daniel M., Newark, N. J., assignor to Moore Electrical Company, New York, N. Y. Rotary vacuum-pump	846,923	Mar. 12	2451	537	127	652
Moore Electric Cigar Lighter Company. (See Moore, James H., assignor.)						
Moore Electrical Company. (See Moore, Daniel M., assignor.)						
Moore, George H. and W. C., Morgantown, W. Va. Match-dispensing box	846,893	Mar. 12	1949	429	127	528
Moore, J. A., *et al.* (See Ray, Joseph C., assignor.)						
Moore, James H., assignor to Moore Electric Cigar Lighter Company, Portland, Oreg. Cigar-lighter	846,894	Mar. 12	1950	429	127	528
Moore, James L., assignor to Kerr Turbine Company, Wellsville, N. Y. Steam-turbine	846,782	Mar. 12	2075	455	127	558
Moore, William C. (See Moore, George H. and W. C.)						
Moors, George A. (See Jean, Julius A., assignor.)						
Moragne, Joseph H., Honolulu, Hawaii. Dirt-carrier	847,189	Mar. 12	2667	653-4	127	770
Morehouse, Eugene W., assignor to B. A. Ballou and Company, Inc., Providence, R. I. Spring-ring	846,897	Mar. 12	1792	396	127	486
Morley, William, Millvale, Pa. Carpenter's square	846,626	Mar. 12	1589	345	127	426
Moyne, Emile J. A. (See Monnet and Moyne.)						
Mulock, William R., Winnipeg, Manitoba, Canada. Waist-belt	846,804	Mar. 12	2454	536	127	653
Mulock, William R., Winnipeg, Manitoba, Canada. Railway freight-car. (Reissue)	12,615	Mar. 12	2140	603-4	127	526
Mumford, Edgar H., Newton township, Delaware county, Pa. Fluid-pressure plunger	846,626	Mar. 12	1962	429	127	527
Muncaster, Walter J., assignor to Cumberland Steel Company of Allegany County, Cumberland, Md. Machine for straightening shafting and the like	846,497	Mar. 12	1554	346-7	127	427
Muncaster, Walter J., and L. A. Fletcher, Cumberland, Md. Grinding-machine	846,498	Mar. 12	1560	346-6	127	426
Munson, Corydon W., Toledo, Ohio. Smelting sulfid ores	846,498	Mar. 12	1559	347-8	127	429
Murphy, John A., White Haven, Pa. Rail-anchor	846,753	Mar. 12	2076	456	127	559
Murphy, William B., New York, N. Y. Separable fastening	847,291	Mar. 12	3129	669	127	820
Murray, John C., assignor of two-thirds to G. C. Crafts, Bangor, and G. W. Fortier, Orono, Me. Apparatus for making bisulfite liquor	846,499	Mar. 12	1573	348	127	429
Muther, Lorenz. (See Glass and Muther.)						
Myers, Levi B., Altoona, Pa. Envelop	847,095	Mar. 12	2739	610	127	727
Nashville Chemical Company. (See Daley and Johnson, assignors.)						
National Disinfectant Company. (See Easton, Alexander D., assignor.)						
National Tube Company. (See Evans, Albert E., assignor.)						
National Tube Company. (See Hosking, Seth, assignor.)						
Neal, James H. (See Brown and Malan, assignors.)						
Neddo, Philip, Barre, Vt. Lifting-tongs	847,200	Mar. 12	2969	664	127	780
Nelson, Elon A., Chicago, Ill. Spring-wheel	847,099	Mar. 12	2703	610-11	127	728
Nelson & Kreuter Company. (See Andreé, William E., assignor.)						
New Era Machinery Company. (See Pierce, George H., assignor.)						
New York Adding Typewriter Company. (See Cram, Edwin B., assignor.)						
New York Couch Bed Company. (See Baker, Charles A., assignor.)						
Newbaker, John J., Steelton, Pa. Brake-shoe	846,755	Mar. 12	2057	457	127	561
Newell, Edward M., St. Vincent, Minn. Match-safe	846,756	Mar. 12	2058	458	127	561
Newman Manufacturing Co. (See Newman and Bothwell, assignors.)						
Newman, Samuel, and H. R. Bothwell, assignors to Newman Manufacturing Co., Cincinati, Ohio. Display outfit	846,890	Mar. 12	1938	431	127	528
Neyland, Cary A., Lewiston, Idaho. Pump	847,201	Mar. 12	2970	654	127	780
Nicholson, Alexander, and I. T. Rude, Chicago, Ill. Automobile-frame	846,899	Mar. 12	1794	395	127	486
Nicholson, Charles F., Penn Grove, N. J. Shade and curtain bracket	847,160	Mar. 12	2705	611	127	728
Nishimoto, Kenzaemon, San Francisco, Cal. Soap-box	846,936	Mar. 12	2455	536	127	653
Noël, Louis A., Paris, France. Spring-wheel	846,937	Mar. 12	2456	536	127	653
Noël, Louis A., Paris, France. Spring-wheel	846,938	Mar. 12	2457	536	127	654
Nolen, James G., assignor of one-half to F. B. Cook, Chicago, Ill. Fire-alarm system	846,502	Mar. 12	1585	351-2	127	433
Nolf, Arnold, Copemish, Mich. Cultivator	847,101	Mar. 12	2703	611-12	127	726
Nolle, Ernst, Weissenfels, Germany. Apparatus for bending or coiling of metal bars, stripe, wire, &c.	847,102	Mar. 12	2703	612	127	729
Nolthenius, Hugo T., Delft, Netherlands. Apparatus for transposing the key-note in performances of the pianola	847,022	Mar. 12	2621	576	127	694
Norton, Charles L., Manchester, Mass., assignor to Asbestos Wood Company. Refractory material and producing it	847,286	Mar. 12	3123	.....	127	821
Nystrom, John P. (See Erickson and Nystrom.)						
O'Brien, James F. (See Hamilton, Addington B., assignor.)						
O'Reilly, Patrick, San Francisco, Cal. Fireproof shutter	846,608	Mar. 12	1805	397	127	480
Oakes, Ben, Detroit, Mich. Water-closet bend	846,609	Mar. 12	1798	396	127	487
Oliver, George T. (See Slingluff, Harry G., assignor.)						
Oltmanns, Johannes, Rintheim, Baden, Germany. Forming building material	847,202	Mar. 12	2973	665	127	781
Oram, John S., Cleveland, Ohio. Barrel-leveling machine	846,601	Mar. 12	1793	395	127	487
Oram, John S., Cleveland, Ohio. Barrel leveling machine	846,602	Mar. 12	1802	397	127	488
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Seat and seat-back for railway rolling-stock	847,023	Mar. 12	2622	576	127	695
Oswald, Paul E., Los Angeles, Cal., assignor to Western Electric Company, Chicago, Ill. Toll-box	846,604	Mar. 12	1807	397-8	127	480
Otto, Mathias N., Lancaster, Pa. Filtering apparatus	847,103	Mar. 12	2709	612	127	729

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Padgett, Benjamin F., Laurel, Miss. Wagon running-gear	846,939	Mar. 12	2459	539-40	127	654
Paige, Francis A., Central Falls, R. I. Twisting-frame	846,605	Mar. 12	1813	399	127	491
Painter, Gwynne F., Baltimore, Md. Thermal cut-out for electric circuits	846,691	Mar. 12	1961	431	127	529
Palmer, Charles, Harvard, Ill. Post-maul	846,503	Mar. 12	1589	352	127	434
Panek, Casimir, McKeesport, Pa. Envelop	846,504	Mar. 12	1589	352	127	434
Parenti, Louis, Isleton, Cal. Cultivator	847,258	Mar. 12	3064	676	127	804
Parge, George, Allegheny, Pa. Hot-water regulator	847,104	Mar. 12	2770	613	127	730
Parish & Bingham Company. (See Foster, James H., assignor.)						
Parker, John, assignor to Brown and Sharpe Manufacturing Company, Providence, R. I. Gear-cutting machine	846,505	Mar. 12	1560	352-4	127	434
Parrish, William H., Jr., Nashville, Tenn. Signal	847,105	Mar. 12	2772	613	127	730
Parrock, Harry, Youngstown, and W. McKee, Elyria, Ohio; said Parrock assignor to said McKee. Continuous heating-furnace	846,506	Mar. 12	1596	354	127	435
Parsons, Charles A., Newcastle-upon-Tyne, and J. Turnbull, Wallsend, England; said Turnbull assignor to said Parsons. Controlling means for valves	846,692	Mar. 12	1964	431	127	529
Parsons, Charles A., G. G. Stoney, and A. H. Law, Newcastle-upon-Tyne, England; said Stoney and Law assignors to said Parsons. Rotating magnet for dynamo-electric machines	846,693	Mar. 12	1966	432	127	530
Pasqualin, Simon, New York, assignor of one-half to W. J. H. McKillop, Brooklyn, N. Y. Clothes-pin	847,106	Mar. 12	2776	613	127	731
Patterson, Frank J., and S. E. Magee, Trent, S. D.; said Magee assignor to said Patterson. Running-gear	846,606	Mar. 12	1815	399	127	492
Patterson, Maud R., Baltimore, Md. Shield	847,107	Mar. 12	2777	614	127	731
Patton, Mordica O., Rayville, Mo. Gate-latch	846,804	Mar. 12	2180	479	127	585
Pattyn, Henri, Paterson, N. J. Dyeing apparatus	846,940	Mar. 12	2460	540	127	655
Paul, Howard M., Philadelphia, Pa. Boot-puller	846,694	Mar. 12	1967	432	127	530
Paxton, Francis M., Washington, Pa. Combined rail-fastener and tie	847,024	Mar. 12	2624	577	127	695
Pease, Charles F., Chicago, Ill. Continuous blue-printing, washing, and drying apparatus	846,941	Mar. 12	2492	541-2	127	655
Peddycoart, John L., Waterloo, Iowa. Micrometer-gage	846,607	Mar. 12	1817	399	127	492
Pederson, Andrew, Edington, S. D. Plow	847,025	Mar. 12	2625	577	127	695
Peerless Machinery Company. (See Glass and Muther, assignors.)						
Pendleton, William B., assignor of one-half to M. C. Fleming, Shawnee, Okla. Ter. Grave-filler	846,757	Mar. 12	2090	458	127	562
Perfection Mop and Clothes Rack Co. (See Slusser, Harry L., assignor.)						
Perry, Charles E., and L. Bossing, Marion, and C. A. Farmer, Columbus, Ohio. Composition for coating meat	846,861	Mar. 12	2303	.....	127	616
Perry, Hubert M., Joliet, assignor to H. D. Laughlin, Chicago, Ill. Side bearing for cars	846,608	Mar. 12	1819	400	127	493
Perry, Hubert M., assignor to H. D. Laughlin, Chicago, Ill. Side bearing for cars	846,609	Mar. 12	1820	400	127	493
Perry, Hubert M., assignor to H. D. Laughlin, Chicago, Ill. Side bearing for cars	846,610	Mar. 12	1823	400-1	127	494
Peterson, Emil A. (See Fannon and Peterson.)						
Pettit, Silas W. (See Waddell, Montgomery, assignor.)						
Philadelphia Textile Machinery Company. (See Ayres, Elwood B., assignor.)						
Philp, Casimir von, assignor to Bethlehem Steel Company, South Bethlehem, Pa. Mill for rolling annular articles	846,942	Mar. 12	2465	542-4	127	656
Phippe, Joseph C., Melrose, Mass. Fluid-check device	846,943	Mar. 12	2471	545	127	657
Pichard, Charles and E., Paris, France. Machine for carroting hides	846,944	Mar. 12	2474	545	127	658
Pichard, Emile (See Pichard, Charles and E.)						
Pierce, George H., Quincy, assignor to New Era Machinery Company, Boston, Mass. Device for feeding sheet material	846,945	Mar. 12	2475	545-6	127	658
Pike, Morris, Westmont, N. J. Holder for domestic articles	846,758	Mar. 12	2092	459	127	562
Pitney, Charles H., assignor to Triumph Voting Machine Company, Pittsfield, Mass. Paper-feed-actuating mechanism for voting-machines	847,109	Mar. 12	2779	614	127	732
Platt, Frederick, Lynn, Mass., assignor to General Electric Company. Electrical conductor	847,303	Mar. 12	3148	683	127	825
Plauk, James R., Camden, Ind. Fender	847,108	Mar. 12	2778	614	127	731
Pliske, Max F. W., Lakewood, Ohio. Heater	846,611	Mar. 12	1825	401	127	494
Plourde, Eugene, Paterson, N. J. Bill-file	846,946	Mar. 12	2477	546	127	659
Pluard, Leon, assignor of one-half to E. W. Anderson, Chicago, Ill. Car-replacing frog	847,259	Mar. 12	3065	676	127	804
Pollman, Casper J. (See Volk, Ferdinand, assignor.)						
Potter, Edward C., Chicago, Ill. Metallic railway-tie	846,902	Mar. 12	2304	506	127	616
Pratt, Charles R., Montclair, N. J., assignor to R. M. Currier, Boston, Mass. Elevator safety device	846,613	Mar. 12	1827	402	127	495
Pratt & Whitney Company. (See Hanson, Bengt, M. W., assignor.)						
Pribil, Adolphe, Marseille, France. Automatic lubricator	846,507	Mar. 12	1598	355	127	436
Price, Edward J. (See Herbert and Price.)						
Price, Henry S. (See Herbert and Price.)						
Price, Joshua H., Cleveland, Iowa. Railway-tie	847,110	Mar. 12	2782	614	127	732
Pugh, Burton H., Topeka, Kans. Vehicle-cleaning device	846,614	Mar. 12	1829	402	127	495
Purtle, Albert D., and L. E. Rowland, Salem, W. Va. Automatic gas-regulator and cut-off	846,947	Mar. 12	2479	546-7	127	659
Pye, James, Chicago, Ill. Means for the prevention of the freezing of water-hydrants	847,294	Mar. 12	3134	680	127	821
Randall, Arthur F., Somerville, Mass. Fastener	847,295	Mar. 12	3137	680	127	822
Randolph, Jeptha B., Omaha, Nebr. Ink-well	846,615	Mar. 12	1830	402	127	495
Ratz, John W., Tavistock, Ontario, Canada. Hot-air register	846,616	Mar. 12	1833	403	127	496
Rautenberg, Isidor, Chicago, Ill. Folding sled or go-cart	846,618	Mar. 12	1836	404	127	497
Rawson, Frank C., Worcester, Mass. Stone-boat	846,617	Mar. 12	1834	403	127	496
Ray, Joseph C., assignor of one-half to D. E. Carter and J. A. Moore, Selmer, Tenn. Switch	846,863	Mar. 12	2304	507	127	617
Reed, William H., Sawtelle, Cal. Bicycle package-carrier	846,695	Mar. 12	1967	433	127	530
Reeve, Sidney A., Worcester, assignor to C. F. Brown, trustee, Reading, Mass. Explosion-engine	846,508	Mar. 12	1599	355	127	436
Reiber, Frederick W., Sugar Grove, assignor to N. Schlee, C. Kemmler, J. E. Crooks, and F. Siegel, Columbus, Ohio. Non-explosive oil-can	846,619	Mar. 12	1839	404	127	498
Reist, Henry G., Schenectady, N. Y., assignor to General Electric Company. Starting resistance for motors	847,111	Mar. 12	2783	615	127	733
Reist, Henry G., Schenectady, N. Y., assignor to General Electric Company. Centrifugal oiling device	847,203	Mar. 12	2974	655	127	781
Remsburg, Charles J., Lewistown, Md. Live-fish holder	846,864	Mar. 12	2306	507	127	617
Renaux, Prosper, Paris, France. Change-speed and reversing mechanism	846,620	Mar. 12	1840	404-5	127	498
Rennerfelt, Gustaf, Scranton, Pa. Roller-bearing	847,260	Mar. 12	3067	676	127	804
Rennerfelt, Gustaf, Scranton, Pa. Roller-bearing	847,261	Mar. 12	3071	677	127	805
Renton, George W., Brooklyn, N. Y. Boat-plug	847,112	Mar. 12	2784	615	127	733
Republic Railway Appliance Company. (See Mobley, Richard, assignor.)						
Richter, Emil, Zabrze, Germany. Apparatus for aspirating, treating, and forcing liquids	846,759	Mar. 12	2093	459	127	562
Richter, Eugene H., Chicago, Ill. Game apparatus	846,509	Mar. 12	1603	356	127	437
Richter, Jacob, Milwaukee, Wis. Revolving tray	846,948	Mar. 12	2481	547	127	660
Ridgway, John L., Chevy Chase, Md. Door-check	847,113	Mar. 12	2786	615	127	733
Riedel, Edward C., Ander, Tex. Ironing-board	846,696	Mar. 12	1968	433	127	530

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Rife, Isaac N., Coatesville, Pa. Nut-lock	846,949	Mar. 12	2462	547	127	699
Riggs, Arthur S. (See Velna, Gaston de, assignor.)						
Robbins, Leroy K., St. Louis, Mo. Well-boring tool	846,980	Mar. 13	2488	547	127	681
Robertson, James M., Montreal, Quebec, Canada. Stove	846,821	Mar. 13	1842	405	127	625
Robinson, Arthur S. F., Barsham, England. Spring-wheel	846,951	Mar. 13	2484	548	127	681
Robinson, David H., Indianapolis, Ind. Post-hole digger and pole-setter	846,822	Mar. 13	1844	406	127	626
Roeder, Fredrick, Buffalo, N. Y. Vehicle-fender	847,204	Mar. 12	2975	655-6	127	723
Roewe, Frederick H., and W. A. Mathews, Fennimore, Wis. Rope-coupling	847,114	Mar. 12	2787	616	127	724
Rogers, Nathan, and L. Rosenwasser, New York, N. Y. Adjustable gage for sewing-machines	847,202	Mar. 13	3073	677	127	800
Rogers, Walter H., Lebanon, Tenn. Brooder	846,936	Mar. 13	2308	507	127	617
Rolfes, George H., St. Louis, Mo. Lantern	846,953	Mar. 13	2487	548	127	682
Rosenow, Max, Peoria, Ill. Sawing-machine	846,810	Mar. 13	1805	356	127	626
Rosenthal, Sigismund, New York, N. Y. Hat-retaining device	846,983	Mar. 13	2489	549	127	683
Rosenwasser, Leo. (See Rogers and Rosenwasser.)						
Ross, William C. (See Belknap, Ellsworth, assignor.)						
Rowe, Edward, Indiana, Pa. Step-ladder brace	847,205	Mar. 13	3077	656	127	782
Rowland, Irven E. (See Purtle and Rowland.)						
Rowland, Thomas F. (See Hill, Warren E., assignor.)						
Royer, Henry C., Terminal Island, Cal. Ignition apparatus for explosion-engines	847,206	Mar. 12	3128	691	127	823
Rozar, Charles B., Empire, Ga. Fertiliser-distributer	846,823	Mar. 12	1845	406	127	699
Rucker, Melville S. (See Rucker, Rufus E., assignor.)						
Rucker, Rufus E., assignor of one-half to M. S. Rucker, Longbeach, Cal. Speed-regulator	847,115	Mar. 12	2786	616	127	724
Rude, Ingwald T. (See Nicholson and Rude.)						
Russell, Halsey W., Manchester, N. H. Sad-iron heater	847,116	Mar. 12	2790	617	127	724
Rust, William J., Sollitt, Ill. Jar-closure	846,780	Mar. 12	2094	459	127	563
S. A. Woods Machine Company. (See Blood, Charles W. H., assignor.)						
S. S. White Dental Manufacturing Company. (See Hammond, John F., assignor.)						
Sallows, Charles, Cordova, Ill. Device for keeping vehicle-boxes from rocking	846,966	Mar. 12	2310	508	127	618
Salmon, William C., Minneapolis, Minn. Steam cooking apparatus	847,117	Mar. 12	2792	617	127	725
Sandberg, Melvin O., Granite Falls, Minn. Motor-driven farm implement	847,020	Mar. 12	2626	577-8	127	666
Sanders, Louis, New York, N. Y. Buckle	847,118	Mar. 12	2794	617	127	725
Sanford, Hugh W., Knoxville, Tenn. Axle-lubricating mechanism	847,203	Mar. 13	3074	677	127	807
Sanitary Carpet Cleaner Co. (See Conover, William W., assignor.)						
Sauer, Arthur, Zwingenberg, Germany. Preparing a buttermilk substitute	846,697	Mar. 12	1960	.....	127	531
Saunders, William L., assignor of two-thirds to D. K. Hickey, Denver, Colo. Device to disclose opening of the shunt-circuits of electric meters	846,624	Mar. 12	1846	406	127	600
Saunderson, Saunder, Northwood, N. D. Pocket-knife	847,206	Mar. 12	2978	656	127	782
Sawyer, Harry, Muskegon, Mich. Electric switch	846,625	Mar. 12	1847	407	127	600
Schaefer, Frederic, Wilkinsburg, Pa. Controller for electric motors	846,626	Mar. 12	1849	407	127	600
Scharps, Albert T. (See Ashley, Frank M., assignor.)						
Schlee, Nicholas, *et al.* (See Reiber, Frederick W., assignor.)						
Schlüter, Anton, Munich, Germany. Starting-crank for explosion-engines	846,696	Mar. 12	1970	433	127	531
Schneider, Alfred, New York, N. Y. Watch-guard	847,207	Mar. 12	2980	656	127	783
Schneider, Jaquet & Cie., G. M. B. H. (See Jaquet, Charles, assignor.)						
Schoenle, Peter, Afton, Iowa. Covering for hay, grain, &c.	846,627	Mar. 13	1982	407	127	602
Schumacher, Peter, assignor to Klimsch & Co., Frankfort-on-the-Main, Germany. Treating photographic prints	846,954	Mar. 13	2491	.....	127	683
Schumacher, Willy, assignor to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Ortho-oxy-monoazo dye	846,511	Mar. 13	1603	.....	127	626
Scott, Archibald D. (See Varley and Scott.)						
Scott, Walter, Plainfield, N. J. Lubricating device	846,987	Mar. 13	2511	508	127	618
Sears, Willard T., Philadelphia, Pa. Plunger-cleaning means for fluid-operating machines	847,119	Mar. 13	2795	618	127	726
Sederwall, Theodore, Barry, Ill. Brick-machine	847,120	Mar. 13	2796	618	127	726
Sedgwick, Alonzo. (See Sullivan, Michael H., assignor.)						
Seehausen, Oscar J., Chicago, Ill. Vapor-lamp	846,512	Mar. 13	1609	356	127	626
Seibt, William, Chicago, Ill. Screen for windows	846,955	Mar. 13	2492	549	127	683
Sevic, Rudolph, Chicago, Ill. Shears	846,808	Mar. 13	2316	508	127	620
Sharp, Thomas, Carlisle, Pa. Heating device	847,121	Mar. 13	2797	618	127	726
Shaw, Waldo H., Springfield, Mass. Apparel hanger and support	846,956	Mar. 13	2494	549	127	684
Shaw, William H., Murphy, Cal. Key-retainer	846,957	Mar. 13	2496	550	127	684
Shea, John J., Beverly, Mass. Fiber vessel. (Reissue)	12,616	Mar. 13	2154	604	127	626
Sheldon, Hadley H., Albion, Mich. Show-case	847,122	Mar. 13	2799	619	127	727
Sheldon, Samuel B., Buffalo, N. Y. Coking coal	846,988	Mar. 13	2497	550-51	127	684
Shepherd, H. L. (See Ceska, George D., assignor.)						
Shepherd, Lonell V., Los Angeles, Cal. Square	847,208	Mar. 12	2981	657	127	783
Shepherd, William H., Des Moines, Iowa. Picture-frame attachment	846,989	Mar. 12	2991	551	127	685
Sherwood, William I., assignor to W. Vogel & Brothers, New York, N. Y. Stereoscope	846,905	Mar. 13	2181	479-80	127	595
Siegel, Ferdinand, *et al.* (See Reiber, Frederick W., assignor.)						
Sinclair, Edward M. (See Mason and Sinclair.)						
Skipp, Herbert J., Newark, N. J. Button-machine	846,806	Mar. 12	2134	480	127	595
Slick, Edwin E., Pittsburg, Pa. Hotbed for rolling-mills	846,761	Mar. 12	2095	459-60	127	563
Slingluff, Harry G., Hartford City, Ind., assignor to G. T. Oliver, Allegheny county, Pa. Glass drawing and blowing apparatus	847,027	Mar. 12	2638	578	127	666
Slusser, Harry L., Columbus Grove, assignor to Perfection Mop and Clothes Rack Co., Leipsic, Ohio. Combination mop and wringer	847,123	Mar. 13	2799	619	127	727
Small, Thomas W., assignor, by mesne assignments, to Acme Automatic Street Indicating Company, Cleveland, Ohio. Street-indicating mechanism	846,512	Mar. 13	1610	357	127	626
Small, Thomas W., assignor, by mesne assignments, to Acme Automatic Street Indicating Company, Cleveland, Ohio. Circuit-closing mechanism for railway-indicators	846,514	Mar. 13	1612	357	127	626
Small, Thomas W., assignor, by mesne assignments, to Acme Automatic Street Indicating Company, Cleveland, Ohio. Circuit-closing mechanism	846,960	Mar. 13	2982	561-2	127	685
Smedberg, Ruben W., St. Peter, Minn. Electrically-actuated clock	846,515	Mar. 13	1614	358	127	626
Smith, Abram L., Juniata borough, Pa. Plate and pan lifter	846,699	Mar. 13	1971	433	127	531
Smith, Albert. (See Klousnitzer, Frank, assignor.)						
Smith, John and E. S. Stimpson, assignors to Draper Company, Hopedale, Mass. Filling-replenishing loom	846,700	Mar. 12	1972	434	127	531
Smith, Ray, Elkins, W. Va. Socket	846,701	Mar. 12	1975	434	127	532
Smith, William C., Minneapolis, Minn. Means for attaching rails to ties	846,516	Mar. 13	1616	358	127	449
Smythe, Edwin H., assignor to Western Electric Company, Chicago, Ill. Telephone-exchange apparatus	846,628	Mar. 13	1983	408	127	602
Snow, Alonzo J., Fromberg, Mont. Draft-regulator for steam-boilers	847,209	Mar. 12	2982	657	127	784
Snow, Asa V. Worcester, Mass. Tree-felling machine	846,989	Mar. 12	2817	509	127	621
Somers, Carl, Fairmont, W. Va. Boring-machine	846,570	Mar. 13	2816	509	127	621
Sparano, Gennaro, Philadelphia, Pa. Cork-puller	847,124	Mar. 13	2801	619	127	727
Speciale, Michele, New York, N. Y. Safety-lock	846,708	Mar. 13	2997	460	127	564
Sperry, Elmer A., (See Townsend, Clinton P., assignor.)						
Spierling, Charles, Dalton Station, Ill. Beehive	846,517	Mar. 13	1617	358	127	449
Spies, Charles A., Menominee, Mich. Shoe-fastener	846,709	Mar. 13	1976	434	127	532

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Springer, Daniel C., Connellsville, Pa. Steam-actuated valve for engines	847,028	Mar. 12	2632	579	127	698
Springer, Edward S., and J. L. Maloney, Leavenworth, Kans. Gas-burner	847,210	Mar. 12	2984	657	127	784
Springer, Frank W., Minneapolis, Minn. System for the supply of current demands	846,703	Mar. 12	1977	434-5	127	532
Stafford, Jerome F. (See White and Stafford.)						
Stambaugh, Frankie M., assignor to American Brake Company, St. Louis, Mo. Metal-working machine	846,871	Mar. 12	2319	509-12	127	621
Stambaugh, Frankie M., assignor to American Brake Company, St. Louis, Mo. Drilling-machine	847,297	Mar. 12	3140	691	127	823
Standard Pulley Manufacturing Company. (See Lachman, Laurence S., assignor.)						
Steele, Robert W., Twin Falls, Idaho. Weed-cutter	847,125	Mar. 12	2802	619-20	127	737
Steely, Charles M., Philadelphia, Pa. Hen's nest	847,029	Mar. 12	2633	579	127	698
Steere and Company, George N. (See Steere, George N., assignor.)						
Steere, George N., assignor to G. N. Steere and Company, Cranston, R. I. Hat-pin	846,518	Mar. 12	1618	359	127	440
Stefan, Carl, Vienna, Austria-Hungary. Treatment of beet-root, &c.	847,126	Mar. 12	2805	620	127	739
Stein, Jacob M., Washington, D. C. Garment-hanger	847,211	Mar. 12	2986	658	127	785
Stein, Jacob M., Washington, D. C. Garment-hanger	847,212	Mar. 12	2987	658	127	785
Steiner, George A. (See Evans and Steiner.)						
Stellwagen, William, assignor to C. W. Stevens, New York, N. Y. Imitation animal-head	846,519	Mar. 12	1619	359	127	440
Stenman, Ete F., Worcester, Mass. Shutter-operator	846,520	Mar. 12	1620	359	127	441
Stevens, Charles W. (See Stellwagen, William, assignor.)						
Stevens, Le Roy W., Syracuse, assignor to Advance Furnace Company of America, Utica, N. Y. Electric furnace	846,521	Mar. 12	1621	360	127	441
Stewart, Adelia Z., Atlanta, Ga. Window-lock	847,127	Mar. 12	2808	620	127	739
Stewart, Daniel L., New Vineyard, Me. Churn	846,872	Mar. 12	2325	512	127	622
Stimpson, Edward S. (See Smith and Stimpson.)						
Stoney, George G. (See Parsons, Stoney, and Law.)						
Strasburg, Frederick E., assignor to Continental Paper Bag Company, Rumford Falls, Me. Paper-bag machine	847,264	Mar. 12	3076	677-80	127	807
Strayer, Eber C., Cresco, Iowa. Refrigerator	846,873	Mar. 12	2327	513	127	622
Stucy, Henry S., Louisville, Ky. Pipe-coupling	846,704	Mar. 12	1980	435	127	533
Stump, Ira E., Cleveland, Ohio. Automobile-horn	846,961	Mar. 12	2504	552	127	668
Subers, Lawrence A. (See Bayne and Subers.)						
Sullivan, Charles L., assignor, by mesne assignments, to M. E. B. Sullivan, Chicago, Ill. Fishing-rod attachment	847,208	Mar. 12	3142	692	127	823
Sullivan, Mary E. B. (See Sullivan, Charles L., assignor.)						
Sullivan, Michael H., assignor to A. Sedgwick, Poughkeepsie, N. Y. Automobile	847,128	Mar. 12	2809	621	127	740
Sultzen, George E., Redkey, Ind., assignor of one-half to W. F. Milligan, Portland, Ind. Wire-cutter	846,629	Mar. 12	1859	408	127	604
Sumter Telephone M'f'g. Co. (See Mason, Charles T., assignor.)						
Sunkle, Robert H., Cleveland, Ohio. Dish-washing machine	847,129	Mar. 12	2811	621	127	740
Super, Frank J., Mount Tabor, Oreg. Safe	847,265	Mar. 12	3082	680	127	808
Superior Automatic Telephone Company. (See Couch, Samuel H., assignor.)						
Swan, Charles W., Bolton, Kans. Pump-packing	846,874	Mar. 12	2329	513	127	623
Swank, Lafe. (See Van Deventer and Swank.)						
Swenson, John A., New York, N. Y. Lawn-mower	847,213	Mar. 12	2989	658	127	785
Talt, Le Roy E., Red Cloud, Nebr. Feed-gage	446,630	Mar. 12	1860	408	127	604
Tartsch, Herculan, Königsberg, Germany. Candle-holder	846,705	Mar. 12	1982	435	127	533
Tartsch, Herculan, Königsberg, Germany. Candle-holder	846,706	Mar. 12	1982	435	127	533
Taylor, John E., Jackson, Miss. Display-rack	847,214	Mar. 12	2990	658-9	127	786
Taylor, John H., Normandy, Tenn. Hand-car	847,030	Mar. 12	2634	580	127	698
Tebbutt, Elizabeth G., Albany, N. Y. Waist	846,631	Mar. 12	1861	408	127	604
Tesch, Ernest A. (See Fischer, Joseph B., assignor.)						
Thatcher, Robert, and W. A. Wedding, Cincinnati, Ohio. Rail-joint	847,130	Mar. 12	2813	622	127	740
Thayer, Eugene B., Jersey City, N. J. Sheet-packing carrier	846,962	Mar. 12	2506	552	127	667
Thoenen, David E. (See Zahnleiter and Thoenen.)						
Thomas, William M., assignor of one-half to O. Eisenschiml, Chicago, Ill. Polarized electric signal-bell	846,522	Mar. 12	1623	360	127	442
Thompson, Andrew J., Chicago, Ill. Egg-beater	846,763	Mar. 12	2099	461	127	564
Thompson, Philip H., Waldron, Ark. Device for protecting safes and vaults	846,523	Mar. 12	1624	360	127	442
Thompson, William E., South Norwalk, assignor of one-half to K. W. Mansfield, Norwalk, Conn. Switch	846,764	Mar. 12	2100	461	127	564
Thomson, Samuel G. (See Thomson, William P. and S. G.)						
Thomson-Thomson Company. (See Thomson, William P. and S. G. assignors.)						
Thomson, William P., Lansdowne, and S. G. Thomson, Altoona, assignors to Thomson-Thomson Company, Philadelphia, Pa. Rail-joint	846,524	Mar. 12	1625	361	127	442
Thoreson, Theodore. (See Anderson, Charley W., assignor.)						
Thornber, William, Johannesburg, Transvaal. Safety arrangement for hoisting apparatus	846,807	Mar. 12	2187	481	127	587
Thos. H. Dallett Co. (See Van Stekel, Wilber H., assignor.)						
Thurston, John M., trustee. (See Burton, Charles H., assignor.)						
Tice, Allen K. (See Tice, George W., assignor.)						
Tice, George W., Riley Center, Mich., assignor of one-half to A. K. Tice, Larimore, N. D. Grain-shocker	846,632	Mar. 12	1862	409-10	127	604
Tilford, George H., Providence, R. I. Hinge-joint for pin-tongues	846,633	Mar. 12	1867	410	127	605
Tindel, Adam, Philadelphia, Pa., assignor to High Duty Saw and Tool Company. Metal-sawing apparatus	846,525	Mar. 12	1626	361-2	127	442
Tindel, Adam, Philadelphia, assignor to Tindel-Morris Company, Eddystone, Pa. Chuck mechanism	846,875	Mar. 12	2332	513	127	624
Tindel-Morris Company. (See Tindel, Adam, assignor.)	846,876	Mar. 12	2332	514	127	624
Toepfer, Henry M., Mount Carroll, Ill. Cultivator	847,031	Mar. 12	2635	580	127	698
Tolman, Abraham L., Orange, Mass. Manicure implement	846,963	Mar. 12	2507	553	127	667
Toomey, John A., Chicago, Ill. Car-stake and attaching means therefor	846,877	Mar. 12	2333	514	127	624
Topliff, Francis W., Greenland, assignor of two-thirds to H. W. Anderson, Exeter, and J. Walter, New Market, N. H. Car-stake	846,964	Mar. 12	2510	553	127	668
Tors, John, Matlock, Wash. Crosscut saw guard and handle connection	846,965	Mar. 12	2511	554	127	668
Tors, John, Matlock, Wash. Appliance for crosscut-saws	846,878	Mar. 12	2335	514-15	127	625
Toussaint, Harry H., Newark, N. J. Labeling-machine	846,526	Mar. 12	1628	362	127	443
Townsend, Clinton P., Washington, D. C., assignor to E. A. Sperry, Cleveland, Ohio. Apparatus for the production of pigments	847,032	Mar. 12	2636	580	127	698
Townsend, Clinton P., Washington, D. C., assignor to E. A. Sperry, Cleveland, Ohio. Production of pigments						
Tribb, George L. (See Veatch, Everett F., assignor.)						
Triumph Voting Machine Company. (See Abbott, Charles C., assignor.)						
Triumph Voting Machine Company. (See Barnum, Carl G., assignor.)						
Triumph Voting Machine Company. (See Camp, Arthur B., assignor.)						
Triumph Voting Machine Company. (See Delavan and Camp, assignors.)						
Triumph Voting Machine Company. (See Pitney, Charles H., assignor.)	846,966	Mar. 12	2512	554-5	127	668
Troyer, Nelson, Portland, Oreg. Can-heading machine	846,527	Mar. 12	1630	362-3	127	443
Truman, William C., London, England. Necktie-frame						

Name, residence, and invention.	No.	Date	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Tudor, James H., Lexington, Ky. Mail-bag catcher	847,215	Mar. 12	2991	659-60	127	798
Turnbull, John. (See Parsons and Turnbull.)						
Turner, Walter V., Wilmerding, assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Air-brake system	846,528	Mar. 12	1632	363	127	444
Unger, Frank, Rimersburg, Pa. Attachment for wheels	846,529	Mar. 12	1636	364	127	445
Union Paper Bag Machine Company. (See Lorenz, William A., assignor.)						
Union Typewriter Company. (See Brooks, Byron A., assignor.)						
United Engineering & Foundry Company. (See Gardner and Biggert, assignors.)						
United Lead Company. (See Bailey, John W., assignor.)						
United States Construction and Utilization Company. (See Wieslogel, Frederick G., assignor.)						
United States Whip Company. (See Donovan, John P., assignor.)						
Upton, George W., Warren, Ohio. Artificial bait and weed-guard	847,200	Mar. 12	3096	681	127	809
Van Deventer, James E., and L. Swank, assignors to American Cheese Cutter Company, Anderson, Ind. Cheese guard and support for cheese-cutters	846,624	Mar. 12	1926	410-11	127	508
Van Sickel, Wilber H., Philadelphia, Pa., assignor to Thos. H. Dallett Co. Stone-dressing machine	846,808	Mar. 12	2162	462	127	585
Vance, Charles E., Pittsburg, Pa. Steam-trap	847,131	Mar. 12	2815	622	127	741
Vandenameele, Alphonse, Forest, near Brussels, Belgium. Water-elevator	846,520	Mar. 12	1627	364	127	445
Vant Woud Rubber Company. (See Bruen, Henry L., assignor.)						
Varley, Richard, Englewood, N. J., assignor to Autocoil Company. Ignition system	846,810	Mar. 12	2197	483	127	590
Varley, Richard, Englewood, N. J., assignor to Autocoil Company. Ignition system for explosion-engines	846,811	Mar. 12	2200	483	127	590
Varley, Richard, Englewood, N. J., and A. D. Scott, Providence, R. I., assignors to Autocoil Company. Spark-ignition system for explosion-engines	846,809	Mar. 12	2194	482	127	589
Veatch, Everett F., assignor of one-half to G. L. Trible, Palco, Kans. Automatic wagon-brake	847,123	Mar. 12	2817	622	127	741
Vehicle Apron & Hood Company. (See Brock and Du Bois, assignors.)						
Velasco, Ramón, Guadalajara, Mexico. Trepan	847,133	Mar. 12	2819	622	127	742
Velna, Gaston de, Paris, France, assignor to A. S. Riggs, East Orange, N. J. Utilizing close-burning coal-dust for making metallurgical coke or other kinds of coke	847,134	Mar. 12	2819	.....	127	742
Victor Electric & Manufacturing Co. (See Wohl, Maurice J., assignor.)						
Vieta, Eugene E., Troy Center, Pa. Picture-cabinet	846,831	Mar. 12	1689	364	127	446
Vinton, Frederick H., Bedford, N. Y. Horse-blanket	846,812	Mar. 12	2202	483	127	591
Viskochil, Charles, Carnegie, Pa., and J. Viskochil, Warrensville, Ohio. Windmill	846,532	Mar. 12	1640	366	127	446
Viskochil, Jerry. (See Viskochil, Charles and J.)						
Vizethann, Henry A. (See Katzman and Vizethann.)						
Vogel, Betty. (See Vogel, William, assignor.)						
Vogel & Brothers, William. (See Sherwood, William I., assignor.)						
Vogel, William, assignor to B. Vogel, New York, N. Y. Fruit and vegetable peeling machine	846,766	Mar. 12	2102	461	127	565
Volk, Ferdinand, assignor of one-sixth to C. J. Pollman, Pittsburg, Pa. Electric controller	846,533	Mar. 12	1642	365	127	447
Voorhees, John J., Jersey City, N. J. Material for flexible wearing-surfaces	846,534	Mar. 12	1644	365	127	447
Vose, William, Wilmington, Del., assignor to American Car & Foundry Company, St. Louis, Mo. Passenger-car	847,135	Mar. 12	2820	623	127	742
Waddell, Montgomery, New York, N. Y., assignor to S. W. Pettit, Philadelphia, Pa. Apparatus for forming filaments of metamorphosed cellulose, &c	846,870	Mar. 12	2228	515-16	127	625
Walker, George, assignor to Landers, Frary and Clark, New Britain, Conn. Spring-scale	846,960	Mar. 12	2343	516	127	627
Walker, James F., Carthage, Mo. Rail and chair	846,535	Mar. 12	1645	366	127	448
Walker, John, *et al.* (See Topliff, Francis W., assignor.)						
Wallace, George J., and F. J. Harbager, Scottdale, Pa. Floor-cleaning device	847,136	Mar. 12	2821	623	127	743
Walsh, Hiram H., Little Ferry, N. J. Brickmaking plant	846,536	Mar. 12	1647	366	127	448
Walton, Samuel T., Brooklyn, N. Y. File-cabinet	846,961	Mar. 12	2344	516	127	627
Wantzen, Anton, London, England. Coin-controlled ticket-issuing machine	846,708	Mar. 12	2103	462	127	565
Ward, Daniel O., Oak Park, Ill. Composite brake-shoe	846,707	Mar. 12	1983	436	127	533
Ward, William S., assignor to H. D. Smith and Company, Plantsville, Conn. Making drawing-knives	847,127	Mar. 12	2824	624	127	744
Warman, William A. (See Cochrane and Warman.)						
Warren, Charles, assignor to Artista Piano Player Company, Milan, Ill. Winding mechanism for spring-motors	847,126	Mar. 12	2823	624	127	744
Washer, Peter S. (See Wright, John, assignor.)						
Watson, George H., *et al.* (See Miller, Harry H., assignor.)						
Watson, O'Neal, Crawfordsville, Ind. Water-filter	846,962	Mar. 12	2347	517	127	628
Wauters, Joseph, New York, N. Y. Automatic violin-player	846,963	Mar. 12	2349	517	127	629
Wawrina, Eduard, Vienna, Austria-Hungary. Gramophone mechanism	847,033	Mar. 12	2636	551	127	669
Weaver, John P., Terre Haute, Ind. Device for supporting trial-frames	846,706	Mar 12	1986	437	127	534
Weber, Charles S., New York, N. Y. Tuning device	847,216	Mar. 12	2969	660	127	787
Webster, Cheever L., assignor to T. L. Brown and R. M. Webster, Galion, Ohio. Rolling window-shade connection	846,709	Mar. 12	1986	437	127	535
Webster, Howard M., Chicago, Ill. Photographic-printing machine	846,767	Mar. 12	2105	462-3	127	566
Webster, Rosa M., *et al.* (See Webster, Cheever L., assignor.)						
Wedekind & Co., R. (See Jljinsky, Michael, assignor.)						
Weiderman, George. (See Willard, Frederick L., assignor.)						
Weiler, Anton, Syracuse, N. Y. Hair-waving attachment for curling-irons	846,813	Mar. 12	2203	483	127	591
Weinberg, Berthold, New York, N. Y. Spring-mattress	846,535	Mar. 12	1870	411	127	506
Wensinger, Andrew A., Toledo, Ohio. Toilet-brush	846,626	Mar. 12	1871	412	127	506
Wesson, Joseph H., Springfield, Mass. Positive-feed lubricator	846,987	Mar. 12	2615	555	127	669
Western Casket Hardware Company. (See Bremer, Max, assignor.)						
Western Electric Company. (See McBerty and Holmes, assignors.)						
Western Electric Company. (See Oswald, Paul E., assignor.)						
Western Electric Company. (See Smythe, Edwin H., assignor.)						
Western Wheeled Scraper Company. (See McKnight, Thomas R., assignor.)						
Westinghouse Air Brake Company. (See Turner, Walter V., assignor.)						
Whinery, Samuel B., Pittsburg, Pa. Blue-printing machine	847,034	Mar. 12	2639	551	127	669
White, Frank S., and J. F. Stafford, Minneapolis, Kans. Mail-conveyer	847,035	Mar. 12	2640	552	127	669
White, James H., Electra, Cal. Garment-fastener	847,217	Mar. 12	2965	660	127	787
Whiteford, David, Chicago, Ill. Antisiphon drainage-trap	846,537	Mar. 12	1649	367	127	449
Whitmore, Fred A., Philadelphia, Pa., assignor to Crompton & Knowles Loom Works. Ball-winder	846,908	Mar. 12	2516	555	127	670
Whitney Manufacturing Company. (See Butler, William M., assignor.)						
Wilcox, George S., Hartford, assignor to Lyman Gun Sight Corporation, Middlefield, Conn. Sight for firearms	846,637	Mar. 12	1872	412	127	507
Wilkin, Alfred, New York, N. Y. Drop-regulating bottle	847,218	Mar. 12	2967	660	127	787
Wilkinson, James, Providence, R. I., assignor to Wilkinson Turbine Company. Turbine-governing mechanism	846,538	Mar. 12	1651	367	127	449
Wilkinson, Thomas B., New York, N. Y., and F. G. Dieterich, Washington, D. C.; said Dieterich assignor to W. P. Wilkinson, Los Angeles, Cal. Detonating toy	846,894	Mar. 12	2382	517	127	629

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wilkinson Turbine Company. (See Wilkinson, James, assignor.)						
Wilkinson, William P. (See Wilkinson and Dieterich, assignors.)						
Willard, Frederick L., assignor of one-half to G. Weiderman, New York, N. Y. Circuit making and breaking device	847,299	Mar. 12	3143	692	127	824
William M. Crane Company. (See Brock, John M., assignor.)						
Williams, James F., Sturgis, Miss. Harrow	847,036	Mar. 12	2642	582	127	700
Williams, Joseph J., Jackson, Miss. Means for producing aerial gymnastic performances	847,139	Mar. 12	2827	624	127	744
Williams, Lacey Y., Toledo, Ohio. Making head-linings for barrels	846,885	Mar. 12	2355	517-18	127	630
Williams, Lacey Y., and F. B. Harrison, Toledo, Ohio. Car-journal-box lid	847,140	Mar. 12	2830	624	127	745
Williams, Nathan W., assignor of one-fourth to M. C. Hunt, Seattle, Wash. Cash-drawer	846,710	Mar. 12	1989	437-8	127	535
Willson, Thomas L., Ottawa, Ontario, Canada. Producing metallic silicids	847,267	Mar. 12	3088	.....	127	809
Willson, Thomas L., Ottawa, Ontario, Canada. Producing metallic silicid	847,200	Mar. 12	3145	.....	127	824
Wilson, Otto A., Blythedale, Mo. Metal fence-post	847,141	Mar. 12	2832	625	127	746
Winchester Repeating Arms Co. (See Mason, William, assignor.)						
Windridge, James, assignor to Lyman Gun Sight Corporation, Middlefield, Conn. Sight for firearms	846,638	Mar. 12	1874	412	127	507
Windridge, James, assignor to Lyman Gun Sight Corporation, Middlefield, Conn. Sight for firearms	846,639	Mar. 12	1878	412	127	508
Wirt, Reuben D., Philadelphia, Pa. Automatic hose-valve	847,268	Mar. 12	3090	681	127	809
Wise, Franklyn M., assignor to American Diamond Blast Company, New York, N. Y. Sand-blast apparatus	847,269	Mar. 12	3092	681	127	810
Wise, Franklyn M., assignor to American Diamond Blast Company, New York, N. Y. Sand-blast apparatus	847,270	Mar. 12	3094	682	127	811
Wieslogel, Frederick G., Indianapolis, Ind., assignor to United States Construction and Utilization Company, Rochester, N. Y. Rendering-tank	846,539	Mar. 12	1654	367-8	127	450
Wm. B. Scaife & Sons Company. (See Groth, John C. W., assignor.)						
Wohl, Maurice J., New York, N. Y., assignor to Victor Electric & Manufacturing Co. Shunt for electric circuits	846,969	Mar. 12	2518	556	127	670
Wold, Nikolai O., Sheyenne, N. D. Sod-cutter	846,711	Mar. 12	1991	438	127	536
Wolf, Charles, St. Louis, Mo. Force-pump	846,640	Mar. 12	1879	413	127	509
Wolf, William, Entiat, Wash. Adjustable cultivator	847,142	Mar. 12	2833	625	127	746
Wollensak, Andrew, assignor to Wollensak Optical Company, Rochester, N. Y. Photographic shutter	846,540	Mar. 12	1655	368	127	451
Wollensak Optical Company. (See Wollensak, Andrew, assignor.)						
Woodman, George A., Chicago, Ill. Journal-box	847,301	Mar. 12	3146	692	127	824
Worden, John B., Montrose, Iowa. Line-holder for vehicles	846,886	Mar. 12	2356	518	127	631
Worsey, James W., St. Helens, and E. Hoel, Liverpool, England. Extraction of gold	846,768	Mar. 12	2111	.....	127	568
Wright, Charles, assignor to J. A. Binkey, Greensburg, Pa. Tank-valve	846,712	Mar. 12	1992	438	127	536
Wright, Charles, assignor to J. A. Binkey, Greensburg, Pa. Hose-rack	846,713	Mar. 12	1995	439	127	537
Wright, John, Chicago, assignor to P. S. Washer, Litchfield, Ill. Thill-guard	847,302	Mar. 12	3147	693	127	824
Wylie, Thomas B., Pittsburg, Pa. Diaphragm-clamp for pressure-regulators	846,769	Mar. 12	2112	464	127	568
Wyse, Vincent, Pittsburg, Pa. Window-blind	847,143	Mar. 12	2835	625-6	127	746
Yarnall, Elizabeth S., administratrix. (See Yarnall, Zachariah S.)						
Yarnall, Zachariah S., deceased; E. S. Yarnall, St. Louis, Mo., administratrix. Effervescent laundry bluing	846,887	Mar. 12	2357	.....	127	631
Yarbrough, Todd M., and R. C. Bradley, Bossier parish, La. Stalk-cutter	847,144	Mar. 12	2839	626	127	747
Yates, David H. (See Herne and Yates.)						
Young, William T., Grand Rapids, Mich. Whiffletree	846,714	Mar. 12	1996	439	127	537
Zimmerman, William A., Brooklyn, N. Y. Sign character	846,970	Mar. 12	2520	556	127	670
Zolling, Richard, Oakland, Cal. Life-boat-launching means	846,770	Mar. 12	2113	464	127	568
Zumdahl, Frederick C. (See Cormack and Zumdahl.)						

DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Arnold, Frank W., Providence, R. I., assignor to Wightman and Hough Company. Locket or similar article	38,475	Mar. 12	127	827
Arnold, Frank W., Providence, R. I., assignor to Wightman and Hough Company. Locket or similar article	38,476	Mar. 12	127	827
Booth, Kraft, assignor to Gillinder & Sons, Inc., Philadelphia, Pa. Artificial-light reflector	38,477	Mar. 12	127	827
Gillinder & Sons. (See Booth, Kraft, assignor.)				
Hawthorne & Sheble Manufacturing Company. (See Sheble, Horace, assignor.)				
Lawrence, William B., Columbus, Ohio. Fabric for pincushions	38,479	Mar. 12	127	828
Reed & Barton Corporation. (See Rogers, John, assignor.)				
Robertson, Sherwood B., New York, N. Y. Badge or similar article	38,474	Mar. 12	127	827
Rogers, John, Raynham, Mass., assignor to Reed & Barton Corporation. Tea or coffee pot	38,480	Mar. 12	127	828
Sheble, Horace, assignor to Hawthorne & Sheble Manufacturing Company, Philadelphia, Pa. Horn for talking-machines	38,478	Mar. 12	127	827
Wightman and Hough Company. (See Arnold, Frank W., assignor.)				

TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Adam, Alfred, Basel, Switzerland. Milky or lacteous meal for children	61,273	Mar. 12	127	842
Alma Manufacturing Company of Baltimore City, Baltimore, Md. Snap-fasteners	61,281	Mar. 12	127	842
American Hominy Company, Indianapolis, Ind. Hominy, hominy-grits, hominy-flake, and corn-meal	61,214	Mar. 12	127	841

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
American Horse Shoe Company, Phillipsburg, N. J. Horseshoes and mule-shoes	61,318	Mar. 12	127	843
Ammen, Charles, New Orleans, La. Antipyretic, stimulant, analgesic, and anodyne	61,302	Mar. 12	127	842
Andrews, Edw. F., Chicago, Ill. Plugs for filling the teeth	61,310	Mar. 12	127	843
Armored Tire Co., H. M. & S., Pittsburg, Pa. Rubber tires for automobiles	61,230	Mar. 13	127	841
Arnold, Louchheim & Co., Philadelphia, Pa. Trousers, coats, vests, and overcoats	61,230	Mar. 12	127	841
Athanassiades Sons, J. E., New York, N. Y. Olive-oils	61,315	Mar. 12	127	841
Atlantic Refining Company, Franklin and Philadelphia, Pa. Lubricating-oils	61,282	Mar. 13	127	842
Atlantic Refining Company, Franklin and Philadelphia, Pa. Lubricating-oils	61,284	Mar. 13	127	842
Austin, Albert W., Pittsburg, Pa. Antiseptic cleanser for artificial teeth	61,321	Mar. 12	127	841
B. F. Goodrich Company, Akron, Ohio. Certain belting, hose, and machinery packing	61,246	Mar. 13	127	841
Baker, William H., Winchester, Va. Chocolate	61,216	Mar. 12	127	841
Barclay & Barclay, New York, N. Y. Certain named medicinal and toilet preparations	61,233	Mar. 13	127	841
Barclay & Barclay, New York, N. Y. Soap for toilet and medicinal purposes	61,235	Mar. 13	127	843
Barclay & Barclay, New York. N. Y. Soap	61,236	Mar. 12	127	843
Bensmann, Hermann, Bremen, Germany. Insecticides	61,246	Mar. 13	127	842
Blanke-Baer Chemical Company, St. Louis, Mo. Massage-cream and eczema cure	61,247	Mar. 13	127	842
Blumer, Arthur, Le Varenne St. Hilaire, France. Corks	61,223	Mar. 13	127	841
C. N. Dietz Lumber Company, Omaha, Nebr. Certain wood manufactures	61,248	Mar. 12	127	842
Carlowitz & Co., New York, N. Y. Cigars, cigarettes, smoking and chewing tobacco	61,287	Mar. 12	127	843
Central Kansas Milling Company, Lyons, Kans. Wheat-flour	61,217	Mar. 13	127	841
Champion Roller Milling Company, Richmond, Ind. Wheat-flour	61,218	Mar. 13	127	841
Chester, Frank E., Providence, R. I. Fishing-tackle	61,268	Mar. 12	127	843
Chester, Frank E., Providence, R. I. Fishing-tackle	61,320	Mar. 12	127	843
Chester, Frank E., Providence, R. I. Fishing-tackle	61,321	Mar. 12	127	844
Clinton Canning Co., Rome and Clinton, N. Y. Canned vegetables	61,219	Mar. 13	127	841
Clinton Canning Co., Rome and Clinton, N. Y. Canned fruits and vegetables	61,220	Mar. 13	127	841
Clinton Canning Co., Rome and Clinton, N. Y. Canned vegetables	61,224	Mar. 13	127	841
Clinton Canning Co., Rome and Clinton, N. Y. Canned vegetables	61,225	Mar. 13	127	841
Clinton Canning Co., Rome and Clinton, N. Y. Canned vegetables	61,226	Mar. 12	127	841
Columbia Phonograph Company, New York, N. Y. Talking-machine records, talking-machines, and supplies therefor	61,267	Mar. 13	127	841
Coombs, John T., Boston, Mass. Certain medicinal preparation	61,274	Mar. 12	127	843
Cudahy Packing Company, Chicago, Ill., and South Omaha, Nebr. Cured, smoked, and sweet-pickled meats	61,221	Mar. 13	127	841
Currier, Frank J., Lynn, Mass. Leather shoes	61,249	Mar. 13	127	843
Davis Milling Company, St. Joseph, Mo. Wheat-flour	61,222	Mar. 13	127	841
De Laval Separator Company, New York and Poughkeepsie, N. Y. Cream-separators of all kinds	61,289	Mar. 13	127	843
Deitsch Brothers. (See Martin, William L., assignor.)				
Du Rocher, Chas. L., Annapolis, Md. Hair-tonic	61,238	Mar. 13	127	841
Eberhard Manufacturing Company, Cleveland, Ohio. Certain parts of vehicles	61,289	Mar. 12	127	843
Eclipse Cement & Blacking Company, Philadelphia, Pa. Shoe, leather, and harness polishes, blackings, and dressings	61,291	Mar. 13	127	843
Edw. K. Tryon Company, Philadelphia, Pa. Fish-hooks, rods, reels, and artificial bait	61,292	Mar. 13	127	843
Electrose Manufacturing Co., New York, N. Y. Certain composition of matter	61,276	Mar. 13	127	842
Enterprise Manufacturing Co. of Pennsylvania, Philadelphia, Pa. Bung-hole borers	61,288	Mar. 13	127	843
Father Schubert Rheumatic Cure Company, Chicago, Ill. Medicine for the cure of rheumatism	61,250	Mar. 13	127	843
Flynn, William B., Fall River, Mass., and Providence, R. I. Tooth-paste	61,251	Mar. 12	127	842
Franklin Electric Mfg. Co., Hartford, Conn., and New York, N. Y. Incandescent electric lamps	61,322	Mar. 12	127	844
Froelich, Gottlieb W., St. Paul, Minn. Washing-machines, washtubs, wringers, mangles, and clothes-driers	61,323	Mar. 12	127	844
Funk & Wagnalls Company, New York, N. Y. Monthly journal	61,263	Mar. 12	127	842
George Ziegler Co., Milwaukee, Wis. Chocolates, caramels, and all kinds of candies	61,222	Mar. 13	127	841
Goltze, Ella, New York, N. Y. Soap for cleansing fine linen and embroidery	61,324	Mar. 13	127	844
H. F. Webb Company, Portland, Me. Canned corn, succotash, and beans	61,224	Mar. 13	127	841
Haggerty Co., J. S., Fairmont, W. Va. Stogies	61,325	Mar. 13	127	844
Haskins Bros. & Co., Sioux City, Iowa, and Omaha, Nebr. Pumice soap	61,326	Mar. 13	127	844
Healaletts Chemical Co., New York, N. Y. Face-lotions	61,253	Mar. 12	127	842
Hoggson & Pettis Manufacturing Company, New Haven, Conn. Copying-baths and copying-cloths	61,240	Mar. 13	127	841
Hollywood Company, New York, N. Y. Whisky	61,294	Mar. 13	127	843
James S. Kirk & Company, Chicago, Ill. Laundry soap	61,295	Mar. 13	127	843
Johnson Co., H. Heron, New York, N. Y. Pills for diseases of the stomach, liver, and bowels	61,254	Mar. 13	127	842
Johnson, William S., Putnam, Conn. Leather shoes	61,280	Mar. 13	127	843
Jones Dairy Farm, Fort Atkinson, Wis. Sausages, hams, bacon, salt pork, and lard	61,297	Mar. 13	127	843
Knoll & Co., Ludwigshafen, Germany. Medical preparation to be used as an antigonorrheic	61,255	Mar. 13	127	842
Kny-Scheerer Company, Brooklyn, N. Y. Certain medical and surgical apparatus, appliances, and instruments	61,298	Mar. 13	127	843
Kohn Distilling Co., Montgomery, Ala. Whisky	61,299	Mar. 13	127	843
Lamphear, Benjamin O., Wheeling, W. Va. Certain medicinal preparation	61,300	Mar. 13	127	843
Leidiger Brewing Co., Merrill, Wis. Lager-beer	61,260	Mar. 13	127	842
Levi Strauss & Co., San Francisco, Cal. Stockings	61,241	Mar. 13	127	841
Lewis & Company, David W., New York. N. Y. Butter	61,235	Mar. 13	127	841
Lord & Taylor, New York, N. Y. Hosiery	61,276	Mar. 13	127	842
M. Schuis Co., Chicago, Ill. Pianos and organs	61,301	Mar. 13	127	843
Manhattan Medicine Co., New York, N. Y. Remedy for certain diseases	61,257	Mar. 13	127	842
Martin, William L., assignor to Deitsch Brothers, New York, N. Y. Tooth and nail brushes	61,302	Mar. 13	127	843
Maspero Frères, Limited, London, England. Cigarettes	61,303	Mar. 13	127	843
May Company, Cleveland, Ohio. Leather shoes	61,258	Mar. 13	127	842
Mexican Amole Soap Co., Peoria, Ill. Soap	61,304	Mar. 13	127	843
Mexican Amole Soap Co., Peoria, Ill. Soap	61,305	Mar. 13	127	843
Miller & Co., Clifford L., New York, N. Y. Caen-stone cement	61,259	Mar. 13	127	842
Moshelmer, Isa, Chicago, Ill. Bitters	61,260	Mar. 13	127	842
Morse, Felicia V., Canton, Mass. Polish comprising black lead, plumbago, or graphite, and for stove-polish	61,306	Mar. 13	127	843
National Coal Tar Company, Wilmington, Del., and Boston, Mass. Insecticides	61,261	Mar. 13	127	842
National Refining Company, Cleveland, Ohio. Illuminating-oil	61,307	Mar. 13	127	843
Neuss, Hesslein & Co., New York, N. Y. Sandpaper and emery-paper	61,262	Mar. 13	127	842
New York Mackintosh Company, New York, N. Y. Women's coats, cloaks, rain-coats, suits, and outer skirts	61,308	Mar. 13	127	843
Newman Clock Co., Chicago, Ill. Time-recorders, clocks, and watches	61,309	Mar. 13	127	843
Pain, Henry J., New York, N. Y. Fireworks	61,310	Mar. 13	127	843
Patterson Sargent Co., Cleveland, Ohio. Varnishes	61,264	Mar. 13	127	842

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Phelps Co., Meadville, Pa. Chocolate-covered candy	61,226	Mar. 12	127	841
Pierce, Louis D., New York, N. Y. Medicinal preparations for the relief of toothache	61,277	Mar. 12	127	842
Plymouth Gypsum Co., Fort Dodge, Iowa. Wall-plasters	61,310	Mar. 12	127	843
Red Cross Mfg. Co., Bluffton, Ind. Windmills, windmill-towers, pumps, and pump-cylinders	61,227	Mar. 12	127	844
Richmond Abattoir Co., Richmond, Ind. Lard	61,227	Mar. 12	127	841
Ries, Jacob, Shakopee, Minn. Mineral waters	61,278	Mar. 12	127	842
Rogers & Thompson, assignors to Rogers & Thompson, New York, N. Y. Silk dress goods in the piece	61,311	Mar. 12	127	843
Rosenstein Brothers Inc., New York, N. Y. Canned vegetables	61,242	Mar. 12	127	841
S. Liebmann's Sons Brewing Company, Brooklyn, N. Y. Ale	61,265	Mar. 12	127	842
Safety Systems Co., New York, N. Y. Certain paper manufactures	61,266	Mar. 12	127	842
Saffa, John G., St. Louis, Mo. Cigarettes	61,312	Mar. 12	127	843
Sawyer Crystal Blue Company, Boston, Mass. Washing-blue	61,326	Mar. 12	127	844
Schroer, August, Cincinnati, Ohio. Scrap-tobacco, chewing-tobacco, and smoking-tobacco	61,313	Mar. 12	127	843
Schwarzschild and Sulzberger Co., Chicago, Ill., and New York, N. Y. Beef oil or fat	61,228	Mar. 12	127	841
Schwarzschild, Wenzel, Salzburg, Austria-Hungary. Medicated tablets for baths	61,279	Mar. 12	127	842
Sedlitzky, Wenzel, Salzburg, Austria-Hungary. Medicated tablets for baths	61,280	Mar. 12	127	842
Sherman, Reid & Co., New York, N. Y. Quilts	61,267	Mar. 12	127	842
Strasburger, Byron L., New York, N. Y. Watches, watch-movements, and watchcases	61,243	Mar. 12	127	841
Swann Abram Hat Co., Louisville, Ky. Hats, not including rubber hats or knitted hats	61,314	Mar. 12	127	843
Taylor Iron & Steel Co., High Bridge, N. J. Certain machinery and parts thereof				
Tilden Company, New Lebanon, N. Y., and St. Louis, Mo. Alterative, resolvent, aperient medicine	61,268	Mar. 12	127	842
Toussaint, Philip, New York, N. Y. Finger-cots made of leather	61,269	Mar. 12	127	842
U. S. Industrial Alcohol Co., New York, N. Y. Denatured alcohol	61,270	Mar. 12	127	842
Universal Cable Grip Company, Syracuse, N. Y. Metal grips for cables, ropes, chains, and rods	61,329	Mar. 12	127	844
Valdes & Co., Fesna, Havana, Cuba. Leather boots, shoes, and oxfords	61,271	Mar. 12	127	842
Virginia-Carolina Chemical Company, Jersey City, N. J., Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	61,315	Mar. 12	127	843
Virginia-Carolina Chemical Company, Jersey City, N. J., Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	61,331	Mar. 12	127	844
Virginia Etna Lithia Springs Co., Jersey City, N. J., and New York, N. Y. Mineral water	61,272	Mar. 12	127	842
Walter R. Johnston Manuf'g Co., New York, N. Y. Hand-operated fire-extinguishing engines or devices	61,332	Mar. 12	127	844
Wardlow, S. & C., New York, N. Y. Steel	61,316	Mar. 12	127	843
Wessent, Geo. J., East Liverpool, Ohio. Medicine for the lungs	61,244	Mar. 12	127	841
Whitman Grocery Company, Orange, Mass. Prepared tapioca	61,220	Mar. 12	127	841
William Prym G. M. B. H., Stolberg, Germany. Certain named toilet articles	61,317	Mar. 12	127	843

LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Burkstrom, Carl O. F., Chicago, Ill. "Himmalia Tonic." (For Medicine)	13,398	Mar. 12	127	845
Clark, Preston, Peoria, Ill. "Get Rosy Malt." (For Malt Liquors)	13,395	Mar. 12	127	845
Clayton, Geo. W., Chicago, Ill. "Killico." (For Dog-Soap)	13,400	Mar. 12	127	845
Harris & Harris, Scranton, Pa. "Burn Salve." (For Ointments)	13,399	Mar. 12	127	845
Hawthorne & Steble Mfg. Co., Philadelphia, Pa. "Star Record." (For Records for Talking-Machines)	13,401	Mar. 12	127	845
Manahan, Joseph A., New York, N. Y. "Recordol." (For Cleaning, Preserving, Polishing, and Lubricating Preparation)	13,402	Mar. 12	127	845
Nachtigall, John, Cleveland, Ohio. "Tonsilliol." (For Medicine)	13,397	Mar. 12	127	845
O. L. Schwencke Lithographic Co., New York, N. Y. "El Inspiro." (For Cigars)	13,392	Mar. 12	127	845
O. L. Schwencke Lithographic Co., New York, N. Y. "La Ultreza." (For Cigars)	13,394	Mar. 12	127	845
O. L. Schwencke Lithographic Co., New York, N. Y. "Rexalos." (For Cigars)	13,396	Mar. 12	127	845
Pyorronol Co., Chicago, Ill. "Pyorronol." (For Mouth-Wash)	13,403	Mar. 12	127	845
Winfield, Charles G., Aberdeen, Wash. "Anti-Wet Waterproof." (For Leather-Dressing)				

PRINTS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Faulker, August, Syracuse, N. Y. "Faulker's Velvet Suede." (For Suede Skins)	1,926	Mar. 12	127	845
Lytton, H. C., Chicago, Ill. "Men's and Boys' Apparel." (For Apparel)	1,925	Mar. 12	127	845
Washburn Crosby Company, Minneapolis, Minn. "The Best in the Basket." (For Flour)	1,918	Mar. 12	127	845
Washburn Crosby Company, Minneapolis, Minn. "Don't Discharge the Cook." (For Flour)	1,919	Mar. 12	127	845
Washburn Crosby Company, Minneapolis, Minn. "Are You Opinionated?" (For Flour)	1,920	Mar. 12	127	845
Washburn Crosby Company, Minneapolis, Minn. "Good Bread—The Secret's Out." (For Flour)	1,921	Mar. 12	127	845
Washburn Crosby Company, Minneapolis, Minn. "We Ought to Charge More Than We Do—." (For Flour)	1,922	Mar. 12	127	845
Washburn Crosby Company, Minneapolis, Minn. "If You Please—Don't Merely Ask for Flour." (For Flour)	1,923	Mar. 12	127	845
Washburn Crosby Company, Minneapolis, Minn. "The Professional Baker." (For Flour)	1,924	Mar. 12	127	845

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
A. & F. Pears Limd., London, England. Perfumed fancy soaps	19,235	Mar. 12	127	831
Abraham & Straus, Brooklyn, N. Y. Baking-powder	25,261	Mar. 12	127	830
Abraham & Straus, Brooklyn, N. Y. Chocolate	25,262	Mar. 12	127	830
Albion Manufacturing Company, New York, N. Y. Shoe-polish	22,557	Mar. 12	127	832
American Thread Company, Jersey City, N. J. Spool-cotton and thread	25,263	Mar. 12	127	839
American Thread Company, Jersey City, N. J. Spool-cotton and thread	25,264	Mar. 12	127	839
American Thread Company, Jersey City, N. J. Spool and sewing cotton and thread	25,256-60	Mar. 12	127	839
American Washboard Company, Cleveland, Ohio. Washboards	21,563	Mar. 12	127	832
Ams, Max, New York, N. Y. Pie-fillings, preserves, and jellies	25,120	Mar. 12	127	837
Atlantic Refining Company, Franklin and Philadelphia, Pa. Lubricating-oils	6,060	Mar. 12	127	829
Atlas Portland Cement Company, Northampton, Pa. Hydraulic and other building cement	16,500	Mar. 12	127	831
Aubeuf, Frank J., Oneida, N. Y. Hand-carts	24,477-8	Mar. 12	127	835
Ballerstein & Company, R., Hartford, Conn. Ribbons and silk and velvet dress goods	24,137	Mar. 12	127	834
Balucinski, Tadeus G., Buffalo, N. Y. Salves	21,591-2	Mar. 12	127	832
Barker, Mary S., New York, N. Y. Hair-tonic	18,773	Mar. 12	127	831
Barry, Margaret, St. Louis, Mo. Corsets	25,199	Mar. 12	127	838
Best Light Company, Canton, Ohio. Gas, gasolene, kerosene, &c., lamps and mantles	24,226	Mar. 12	127	835
Bishop & Company, Los Angeles, Cal. Chocolate	23,409	Mar. 12	127	833
Blackman Stock Remedy Co., Chattanooga, Tenn. Medicated salt brick for live stock	19,801	Mar. 12	127	831
Brown-Hurley Hardware Company, Des Moines, Iowa. Shovels, spades, hoes, rakes, and screw-drivers	7,206	Mar. 12	127	830
Calvet & Co., J., Bordeaux, France. Claret, Burgundy, and Sauterne wines	24,273	Mar. 12	127	835
Carter-Crume Company, Limited, Toronto, Canada, and Niagara Falls, N. Y. Sales-books	24,261	Mar. 12	127	835
Century Preserver Co., Chicago, Ill. Liquid coating compositions for preserving metal, wood, &c.	24,790	Mar. 12	127	836
Climax Refining Company, Minneapolis, Minn. Oils and greases	24,208	Mar. 12	127	834
Climax Refining Company, Minneapolis, Minn. Oils and greases	24,209	Mar. 12	127	834
Coffin-Fletcher Packing Co., Indianapolis, Ind. Cured, dressed, cooked, and canned meats, lard, and sausage	24,809	Mar. 12	127	836
Collins & Company, New York, N. Y. Cotton shrunks	24,512-13	Mar. 12	127	835-6
Cortright Metal Roofing Company, Philadelphia, Pa. Stamped metal roofing and wall-covering	25,851-3	Mar. 12	127	833
Craddock-Terry Company, Lynchburg, Va. Leather boots and shoes	25,124	Mar. 12	127	837
Cyclone Drilling Machine Co., Orrville, Ohio. Drilling-machines	15,054	Mar. 12	127	831
Donovan & Co., James, Everett, Mass. Boots, shoes, and slippers	25,267	Mar. 12	127	840
Earl Manufacturing Company, Pittsburg, Pa. Popcorn and mixed popcorn and peanuts	25,219	Mar. 12	127	840
Englewood Candy Company, Chicago, Ill. Candy	25,126	Mar. 12	127	838
Evans, George, New York, N. Y. Antiseptic mouth-wash	24,984	Mar. 12	127	837
Falck, James S., Washington, D. C. Antiseptic powder	24,830	Mar. 12	127	836
Feahney, Grace B., New Orleans, La. Coffee	23,449	Mar. 12	127	833
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	25,204	Mar. 12	127	838
Frank Bros. & Co., New York, N. Y. Men's flannel shirts	24,657	Mar. 12	127	836
Frank & Co., Ivan, New York, N. Y. Suits for boys and children	25,205	Mar. 12	127	838
Friedenwald & Co., J. H., Baltimore, Md. Buchu gin	3,211	Mar. 12	127	829
Fritzsche Brothers, New York, N. Y. Essential oils and essences	24,189	Mar. 12	127	834
Garratt, John E., New York, N. Y. Massage and vibration instruments	25,074	Mar. 12	127	837
Gedformol Manufacturing Company of Baltimore City, Baltimore, Md. Ointments	25,220	Mar. 12	127	839
Germaofert Manufacturing Company, Charleston, S. C. Fertilizers	24,820	Mar. 12	127	836
Glidden Varnish Company, Cleveland, Ohio. Liquid wood-filler	14,704	Mar. 12	127	831
Goodyear Rubber Company, New York, N. Y. Rubber boots and shoes	13,512	Mar. 12	127	831
Guilden, Charles, New York, N. Y. Prepared mustard	25,207	Mar. 12	127	839
Hargadine-McKittrick Dry Goods Company, St. Louis, Mo. Towels, handkerchiefs, bedspreads, &c	20,455	Mar. 12	127	833
Harris & Bro., Robt., Reidsville, N. C. Smoking and chewing tobacco	20,794	Mar 12	127	832
Ideal Manufacturing Company, Chicago, Ill. Varnish-removers	25,136	Mar. 12	127	838
Indian Head Mills of Alabama, Walker, Ala. Cotton piece goods and blankets	22,215	Mar. 12	127	832
J. E. Linde Paper Co., New York, N. Y. Paper, envelope, cardboards, &c	20,021	Mar. 12	127	833
Jonas F. Brown & Co., Minneapolis, Minn. Rye and Bourbon whisky	25,219	Mar. 12	127	839
Kendrick & Davis, Lebanon, N. H. Watchmakers' hand-tools	17,810	Mar. 13	127	831
King Powder Company, Cincinnati, Ohio. Gunpowder	16,898	Mar. 13	127	831
Lewis, William E., Joplin, Mo. Antiseptic wash	25,251	Mar. 13	127	839
Luhrig Coal Co., Cincinnati, Ohio. Coal	24,446	Mar. 13	127	835
Mabbs Hydraulic Packing Co., Chicago, Ill. Rawhide packing	25,320	Mar. 13	127	840
McMahon, Kate, Washington, D. C. Pile-ointment	21,489	Mar. 13	127	832
Medicinal Products Co., Denver, Colo. Plasters and salves	24,438	Mar. 13	127	835
Merle, Victor F., Paris, France. Toilet lotions, powders, creams, &c	23,316	Mar. 13	127	833
Merrill, Charles A., Nora Springs, Iowa. Ointment or salve	24,546	Mar. 13	127	836
Middleton Baking Co., New Orleans, La. Bread	25,018	Mar. 13	127	837
Morse, Isaac S., Nashville, Tenn. Candies	10,079	Mar. 12	127	830
Nelson Distilling Co., St. Louis, Mo. Whisky	6,802	Mar. 12	127	830
New Jersey Car Spring & Rubber Co., Jersey City, N. J. Hose and belting	25,132	Mar. 12	127	838
"New Way" Motor Company, Lansing, Mich. Internal-combustion engines	23,398	Mar. 13	127	833
Parker-Clark Electric Company, New York, N. Y. Incandescent electric lamps	25,037	Mar. 13	127	837
Parker, Webb & Co., Detroit, Mich. Leaf-lard	6,307	Mar. 12	127	830
Pepsol Chemical Company, Nashville, Tenn. Beverage	24,892	Mar. 13	127	837
Pope Manufacturing Company, Hartford, Conn. Self-propelled road-vehicles	24,807	Mar. 13	127	836
Portland Milling Company, Portland, Mich. Wheat-flour	25,295	Mar. 13	127	840
R. Schiffmann Company, St. Paul, Minn. Medical compound for asthma, hay-fever, &c	24,172	Mar. 12	127	834
Ralston Purina Company, St. Louis, Mo. Cereal breakfast food	24,888	Mar. 13	127	835
Rath, Carl J., New York, N. Y. Soap	21,740-1	Mar. 13	127	832
Red Rock Company, Jacksonville, Fla. Cider and soda-water	23,201	Mar. 13	127	833
Reed & Carnrick, Jersey City, N. J. Remedy for dyspepsia	20,518	Mar. 13	127	832
Reliance Edge Tool Company, Youngstown, Ohio. Chisels, gouges, and drawing-knives	24,585	Mar. 13	127	836
Rice & Hochster, New York, N. Y. Hair-pins and hair ornaments	22,886	Mar. 13	127	833
Ritzlin, Lebstein & Nechtowitz, Chicago, Ill. Salve	24,035	Mar. 13	127	834
Roberts, Johnson & Rand Shoe Company, St. Louis, Mo. Rubber boots and shoes	23,120	Mar. 13	127	833
Robinson & Co., O., Kansas City, Mo. Animal-dip	20,921	Mar. 13	127	832
Rothschild Bros. Hat Co., St. Louis, Mo. Hats and caps	24,802	Mar. 13	127	835
S. S. Pierce Co., Boston, Mass. Cigars	9,680	Mar. 13	127	840
Saginaw Milling Company, Saginaw, Mich. Poultry food	25,226	Mar. 13	127	839
Saylor, Albert R., Allentown, Pa. Remedies, liniments, ointments, &c	24,149	Mar. 13	127	834
Schaarschmidt, Louis H., Limbach, Saxony. Knit undershirts and drawers	14,924	Mar. 13	127	831
Shayne & Co., C. C., New York, N. Y. Manufactured furs	25,000	Mar. 13	127	837

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Smith-Briscoe Shoe Company, Incorporated, Lynchburg, Va. Leather boots and shoes	25,154	Mar. 12	127	838
Smokeless Powder and Cartridge Company, Cleveland, Ohio. Gun and blasting powder	16,099	Mar. 12	127	831
Star Incubator and Brooder Co., Boundbrook, N. J. Incubators and brooders	25,166	Mar. 12	127	838
Sterling Knit Goods Co., Boston, Mass. Knit undergarments and sweaters	1,150	Mar. 12	127	829
Stollwerck Bros., New York, N. Y. Candy, chocolate, cocoa, &c	7,808	Mar. 12	127	830
Stone-Ordean-Wells Co., Duluth, Minn. Canned fruits and vegetables	18,255	Mar. 12	127	831
Thompson, John E., Worcester, Mass. Exercising-machines, dumb-bells, and hand-grips	24,004	Mar. 12	127	834
United States Paper Cutter Co., St. Louis, Mo. Roll-paper holders and cutters	24,582	Mar. 12	127	836
Valentine & Company, New York, N. Y. Varnish	25,067	Mar. 12	127	837
Weaver's Pharmacy, Philadelphia, Pa. Medical tonic of beef, wine, and iron	9604	Mar. 12	127	829
Welsh & Co., J. H., Philadelphia, Pa. Hats	24,951	Mar. 12	127	837
Welsh & Co., J. H., Philadelphia, Pa. Hats and caps	24,952	Mar. 12	127	837
Wiebusch & Hilger Lt'd., New York, N. Y. Pliers	25,207	Mar. 12	127	839
Will & Baumer Company, Syracuse, N. Y. Candles	9,163-7	Mar. 12	127	830
Will & Baumer Company, Syracuse, N. Y. Candles	24,637-8	Mar. 12	127	836
Willock, Samuel M., Pittsburg, Pa. Lubricating-oils	25,140	Mar. 12	127	838
Willock, Samuel M., Pittsburg, Pa. Illuminating-oils	25,141	Mar. 12	127	838
Willock, Samuel M., Pittsburg, Pa. Gasolene, oils, and greases	25,142	Mar. 12	127	838
Winter, Howard, Waterford, Wash. Canned salmon	24,884	Mar. 12	127	837
Wood, William E., Philadelphia, Pa. Silver toilet articles, flat, table, and hollow ware	24,032	Mar. 12	127	834

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE ISSUED ON THE 12TH DAY OF MARCH, 1907.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Specification.	Drawing.	Volume.	Page.
Abrading material	E. F. Landis	847,190	Mar. 12	2932	645	127	769
Acid-receptacle	G. P. Adamson	846,541	Mar. 12	1658	368	127	452
Acids. Production of organic sulfonic	M. Jijinsky	847,078	Mar. 12	2727		127	720
Aeroplane or craft for aerial navigation	A. and H. Dufaux	846,830	Mar. 12	2241	492	127	600
Air-brake system	W. V. Turner	846,528	Mar. 12	1632	363	127	444
Air cooling and humidifying apparatus	J. Kelly	847,185	Mar. 12	2922	643	127	767
Air in rooms. Apparatus for cooling, moistening, and purifying the	D. Buhlmann	847,232	Mar. 12	3018	665	127	792
Alloy and its manufacture. Steel	J. Churchward	846,979	Mar. 12	2537		127	676
Alloy. Metal	A. E. Hobson	846,851	Mar. 12	2284		127	612
Amalgamator and concentrator	J. A. Jean	847,077	Mar. 12	2726	601	127	719
Amusement device	G. Kramer	846,925	Mar. 12	2437	534	127	649
Amusement device	E. N. Chamberlain	847,240	Mar. 12	3033	668	127	793
Amusement device	H. F. Crickler	847,242	Mar. 12	3035	668–9	127	793
Amusement device	W. L. Greeley	846,995	Mar. 12	2580	564	127	681
Anchor device. Adjustable	W. Stellwagen	846,519	Mar. 12	1619	359	127	440
Animal-head. Imitation	L. F. Clar	846,548	Mar. 12	1669	370	127	454
Anvil	W. H. Shaw	846,956	Mar. 12	2494	549	127	664
Apparel hanger and support	A. Pribil	846,507	Mar. 12	1598	355	127	436
Automatic lubricator	M. H. Sullivan	847,128	Mar. 12	2809	621	127	740
Automobile	A. Nicholson and I. T. Rude	846,599	Mar. 12	1794	395	127	486
Automobile-frame	I. E. Stump	846,961	Mar. 12	2504	552	127	666
Automobile-horn	H. W. Sanford	847,263	Mar. 12	3074	677	127	807
Axle-lubricating mechanism	W. P. Marsh	846,589	Mar. 12	1768	390	127	479
Bag: *See* Feed-bag.	G. W. Upton	847,266	Mar. 12	3086	681	127	809
Baling-machine	H. L. Duncan	846,735	Mar. 12	2038	448–9	127	548
Bait and weed-guard. Artificial	W. D. Ivy	847,181	Mar. 12	2915	641–2	127	785
Baling-press	L. Y. Williams	846,885	Mar. 12	2355	517–18	127	630
Baling-press	J. S. Oram	846,601	Mar. 12	1798	396	127	487
Barrel-head fixings. Making	J. S. Oram	846,602	Mar. 12	1802	397	127	488
Barrel-leveling machine	H. L. Bruen	846,905	Mar. 12	2395	527	127	638
Barrel-leveling machine	C. H. Booth	846,977	Mar. 12	2531	558	127	673
Bath-sprays and the like. Connection for	J. C. Barber	846,893	Mar. 12	2377	523	127	635
Bath-tub-leg fastening	J. C. Barber	846,894	Mar. 12	2378	523	127	635
Bearing. Antifriction center-	J. C. Barber	846,892	Mar. 12	2375	522	127	634
Bearing. Antifriction center-	L. Burg	846,727	Mar. 12	2019	444	127	543
Bearing. Antifriction lateral-motion center-	O. Lasche	846,927	Mar. 12	2442	535	127	650
Bearing. Ball-	T. Cooper	846,908	Mar. 12	2400	528	127	640
Bearing. Fluid-pressure thrust-	G. Rennerfelt	847,260	Mar. 12	3067	676	127	804
Bearing. Roller-	G. Rennerfelt	847,261	Mar. 12	3071	677	127	805
Bearing. Roller-	E. Belknap	847,274	Mar. 12	3100	683	127	812
Bearing. Roller-	A. H. Kruesi	846,795	Mar. 12	2162	476	127	589
Bearing. Roller-	N. Egan	846,834	Mar. 12	2254	494	127	604
Bearing. Shaft-	C. Spierling	846,517	Mar. 12	1617	358	127	440
Bed-pan and douche. Combined	C. Steffen	847,126	Mar. 12	2805	620	127	739
Beehive	W. C. Hynard and G. F. Meehan	846,476	Mar. 12	1525	338	127	416
Beet-root, &c. Treatment of	S. F. Eshelman and D. E. Thoenen	846,786	Mar. 12	2145	471	127	576
Belt and buckle	W. R. Mulock	846,934	Mar. 12	2454	538	127	653
Belt-stretcher	J. L. Bixby, Jr.	847,228	Mar. 12	3009	664	127	790
Belt. Waist-	W. H. Reed	846,695	Mar. 12	1967	433	127	530
Belting	N. F. Mogland	846,860	Mar. 12	2301	506	127	616
Bicycle package-carrier	J. B. Barlow	847,039	Mar. 12	2646	583	127	701
Bin: *See* Grain-bin.	J. C. Murray	846,499	Mar. 12	1573	348	127	429
Binder	V. Wyss	847,143	Mar. 12	2835	625–6	127	746
Binder. Loose-leaf	W. W. Green	846,844	Mar. 12	2274	498–9	127	610
Bisulfite liquor. Apparatus for making	S. B. Whinery	847,034	Mar. 12	2639	581	127	699
Blind. Window-	C. F. Pease	846,941	Mar. 12	2462	541–3	127	655
Block: *See* Printing or engraving block.	Z. S. Yarnall	846,887	Mar. 12	2357		127	631
Blower	R. Zolling	846,770	Mar. 12	2113	464	127	595
Blue-printing machine	G. W. Renton	847,112	Mar. 12	2784	615	127	732
Blue-printing, washing, and drying apparatus. Continuous	F. C. Rawson	846,617	Mar. 13	1834	403	127	496
Bluing. Effervescent laundry	A. Elgar	846,736	Mar. 12	2044	449	127	550
Board: *See* Ironing-board.	J. Cohen	846,551	Mar. 12	1676	371	127	456
Boat-launching means. Life-	E. S. Clark	846,982	Mar. 12	2540	539	127	677
Boat-plug	A. J. Snow	847,209	Mar. 12	2982	657	127	784
Boat. Steam-							
Boat. Submarine torpedo-							
Body-brace and hose-supporter							
Boiler: *See* Heating-boiler. Water-tube boiler.							
Boiler							
Boiler draft-regulator. Steam-							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Boiler-furnace	H. Emerson	846,826	Mar. 12	2287	495	127	605
Boiler-tube cleaner	J. F. Land	846,885	Mar. 12	2391	504	127	614
Book-rest and the like	A. Englefield	847,022	Mar. 12	2982	589	127	709
Boot-puller	H. M. Paul	846,694	Mar. 12	1967	432	127	550
Boring-machine	C. Somers	846,870	Mar. 12	2318	870	127	621
Bottle. Drop-regulating	A. Wilkin	847,218	Mar. 12	3267	660	127	787
Bottle or jar and the like	J. Hürlimann	847,075	Mar. 12	2723	600	127	719
Bottle-stopper	A. B. Hamilton	846,467	Mar. 12	1809	336	127	412
Bottle-stopper	A. W. Cordes	846,909	Mar. 12	2401	528	127	640
Bottle-stopper	G. Kirkegaard	847,006	Mar. 12	2963	567	127	666
Bottle-washing-machine attachment	W. J. Cunningham	846,963	Mar. 12	2941	549	127	677
Bottle-washing-machine attachment	W. J. Cunningham	847,289	Mar. 12	3109	695	127	814
Bottles non-refillable. Device for rendering	V. Clark	846,580	Mar. 12	1674	370	127	448
Box:							
See Collapsible box. Soap-box. Cracker-box. Toll-box. Match-dispensing box.							
Brace:							
See Body-brace. Ladder-brace. Drill-brace. Vehicle-brace.							
Bracket:							
See Shade and curtain bracket.							
Braiding-machine	J. E. Kirberg	847,005	Mar. 12	2979	567	127	665
Brake:							
See Retaining-brake. Wagon-brake.							
Brake	H. J. Dohrer	846,457	Mar. 12	1491	331	127	407
Brake	V. Lamb	846,481	Mar. 12	1532	340	127	418
Brake-beam	J. B. Barnes	846,819	Mar. 12	2218	496	127	594
Brake-beam	E. D. Bronner	847,185	Mar. 12	3057	630	127	752
Brake-shoe	J. J. Newbaker	846,755	Mar. 12	2087	467	127	561
Brake-shoe. Composite	D. O. Ward	846,707	Mar. 12	1993	436	127	533
Brick-machine	T. Sederwall	847,120	Mar. 12	3090	618	127	736
Brickmaking plant	H. H. Walsh	846,539	Mar. 12	1947	366	127	448
Brooder	W. H. Rogers	846,845	Mar. 12	2308	507	127	617
Brush	C. Gamache	847,060	Mar. 12	2994	593	127	712
Brush. Fountain blacking	W. G. Hoffman	847,282	Mar. 12	3054	673	127	800
Brush. Fountain marking	J. B. Fischer	846,486	Mar. 12	1894	373	127	459
Brush-making machine	W. G. Liebig	846,582	Mar. 12	1789	387–8	127	474
Brush. Polishing	J. A. Kreag	846,793	Mar. 12	2157	475	127	579
Brush. Toilet	A. A. Wensinger	846,686	Mar. 12	1871	413	127	508
Brush. Tooth	W. O. Bloom	846,900	Mar. 12	2389	526	127	637
Bucket. Dumping	L. A. Lehmann	846,800	Mar. 12	2173	478	127	584
Buckle	H. J. Gaisman	846,991	Mar. 12	2954	562	127	679
Buckle	W. H. Griffin	847,064	Mar. 13	3708	595	127	714
Buckle	L. Sanders	847,113	Mar. 13	3794	617	127	735
Buggy-top-detaching means	C. G. Cook	846,782	Mar. 12	2140	470	127	575
Building-block mold	A. Alexander and J. Frederickson	847,220	Mar. 13	3000	661	127	796
Building material. Forming	J. Oltmanns	847,202	Mar. 13	3073	655	127	781
Bulkhead-door, hatch, or other barrier	W. B. Cowles	847,165	Mar. 13	3078	633–5	127	757
Bullet	J. H. Barlow	847,140	Mar. 13	3047	626	127	749
Buoy, torpedo, and similar device	W. E. Hill	846,867	Mar. 12	1717	378	127	466
Burner:							
See Gas-burner. Oil-burner.							
Buttermilk substitute. Preparing a	A. Sauer	846,697	Mar. 12	1900	.....	127	531
Button-machine	H. J. Skipp	846,809	Mar. 13	2124	480	127	586
Button. Snap	O. A. Iversen and H. A. Finsrud	847,263	Mar. 13	3065	674	127	801
Cabinet	J. Herzog	846,848	Mar. 12	2390	503	127	611
Cabinet. Picture	E. E. Viets	846,531	Mar. 12	1939	364	127	446
Can:							
See Oil-can.							
Can-heading machine	N. Troyer	846,966	Mar. 12	2512	554–5	127	668
Can-opener	R. W. Horton and J. E. Molesworth.	846,921	Mar. 12	2438	532	127	645
Candle-holder	H. Tartsch	846,705	Mar. 13	1993	435	127	532
Candle-holder	H. Tartsch	846,706	Mar. 13	1993	435	127	533
Cane	F. L. Hall	847,088	Mar. 13	3707	596	127	714
Car-coupling	A. Berg	846,882	Mar. 13	2382	524	127	636
Car-door	R. Mobley	846,994	Mar. 13	1783	382	127	483
Car-door automatic closing device. Railway	C. Lehnert	846,675	Mar. 13	1989	439	127	524
Car-door. Flush	R. Mobley	846,995	Mar. 13	1783	382	127	484
Car door. Grain	B. Daugherty	846,913	Mar. 13	2402	529	127	642
Car. Dump	T. R. McKnight	846,501	Mar. 13	1889	360–1	127	432
Car-fender	N. P. Duncan	846,456	Mar. 13	1486	332	127	406
Car fender. Street	J. H. Dixon	847,247	Mar. 13	3047	672	127	790
Car fender. Street	W. D. Leftwich	847,084	Mar. 13	3735	602–4	127	871
Car. Hand	C. B. Mead	847,091	Mar. 13	3749	606	127	724
Car. Passenger	J. H. Taylor	847 020	Mar. 13	3034	640	127	698
Car. Railway	W. Voes	847,125	Mar. 13	3030	622	127	742
Car. Railway	L. J. Harris	846,846	Mar. 12	2377	498–500	127	610
Car. Railway freight	L. J. Harris	846,847	Mar. 12	2379	500–2	127	611
Car-replacing frog	W. R. Mulock. (Reissue)	12,615	Mar. 12	3149	692–4	127	825
Car side bearing	L. Fluard	847,269	Mar. 12	3065	676	127	804
Car side bearing	H. D. Laughlin	846,577	Mar. 12	1730	384–5	127	471
Car side bearing	H. D. Laughlin	846,578	Mar. 12	1741	385–6	127	472
Car side bearing	H. M. Perry	846,808	Mar. 12	1819	400	127	493
Car side bearing	H. M. Perry	846,809	Mar. 12	1820	400	127	493
Car signal device. Street	H. H. Miller	846,610	Mar. 12	1888	400–1	127	494
Car-stake	F. W. Topliff	847,289	Mar. 13	3124	696	127	819
Car-stake and attaching means therefor	J. A. Toomey	846,577	Mar. 12	2032	514	127	624
Car. Tank	T. R. Brown	846,983	Mar. 13	2907	553	127	667
Car-wheel	T. L. Hawkins	846,648	Mar. 13	1889	418	127	511
Carburetor	M. B. Mason and E. M. Sinclair	847,099	Mar. 13	3711	597	127	716
Carburetor	G. H. Holgate	846,579	Mar. 12	1944	457	127	525
Carrier:	F. A. Bradbeer	846,852	Mar. 12	2385	503	127	612
See Bicycle package-carrier. Packing-carrier. Cash-carrier. Pneumatic-despatch carrier. Dirt-carrier.		846,908	Mar. 12	2402	528	127	638
Cartridge and manufacture thereof	F. I. Du Pont	846,613	Mar. 12	1838	401	127	494

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Case:							
See Knife and fork-case. Vial-case. Show-case. Voting-machine case.							
Cash-carrier	J. F. Hajas	847,070	Mar. 12	2712	597–8	127	716
Cash-drawer	N. W. Williams	846,710	Mar. 12	1999	437–8	127	535
Casket-handle. Reinforced	M. Brenner	846,545	Mar. 12	1663	369	127	453
Cement and apparatus therefor. Burning	H. L. Doherty	846,555	Mar. 12	1680	372	127	457
Cement-kiln and fuel-feeder therefor. Rotary	C. A. Matcham	847,257	Mar. 12	3060	675–6	127	802
Cement-mixer	J. A. Devine	847,281	Mar. 12	3109	695	127	814
Cements. Manufacture of waterproof and non-eroding	R. Liebold	847,015	Mar. 12	2996	.....	127	689
Centrifugal machines. Flexible spindle for	I. P. B. Knudsen	847,009	Mar. 12	2587	568	127	687
Chain. Drive	W. M. Butler	847,235	Mar. 12	3022	666	127	793
Chain-link	E. H. Mills	846,803	Mar. 12	2179	479	127	585
Chair	G. E. Crump	846,910	Mar. 12	2403	528	127	640
Chalk-trough	C. A. Hess	846,667	Mar. 12	1921	422	127	519
Cheese-cutters. Cheese guard and support for	J. E. Van Deventer and L. Swank	846,634	Mar. 12	1868	410–11	127	508
Chimney-cowl	W. R. A. Ball	846,446	Mar. 12	1471	327	127	401
Clinch	J. Hodson	847,251	Mar. 12	3052	673	127	800
Clinch mechanism	A. Tindel	846,875	Mar. 12	2332	513	127	624
Churn	D. L. Stewart	846,872	Mar. 12	2325	512	127	622
Cigar-cutter	J. E. Ellis	846,650	Mar. 12	1894	416	127	512
Cigar-cutter and nail-clipper. Combined	G. Havell	846,743	Mar. 12	2068	452	127	553
Cigar-lighter	J. H. Moore	846,684	Mar. 12	1950	429	127	526
Cigarette-box making and packing machine	F. Giroud	846,658	Mar 12	1906	419–20	127	510
Circuit-breaker	R. E. Hellmund	846,469	Mar 12	1513	336	127	413
Circuit-closing mechanism	T. W. Small	846,980	Mar 12	2502	551–2	127	665
Circuit-controlling device. Thermostatic	L. H. Britton	847,044	Mar. 12	2661	586	127	704
Circuit making and breaking device	F. L. Willard	847,299	Mar. 12	3143	692	127	824
Circular-distributer	R. G. Fraser	846,741	Mar. 12	2054	451	127	552
Clamp:							
See Clothes-clamp. Pipe-clamp.							
Cleaner:							
See Boiler-tube cleaner. Grain and seed cleaner. Cotton-cleaner. Pneumatic cleaner. Eraser-cleaner.							
Cleaner and polisher	W. J. M. Hames	846,665	Mar. 12	1918	422	127	518
Clock	E. R. Connell	846,781	Mar. 12	2139	469–70	127	574
Clock. Electrically-actuated	R. W. Smedberg	846,515	Mar. 12	1614	358	127	439
Closet-bowls. Waste-pipe connection for	H. J. Luff	846,929	Mar. 12	2446	536	127	651
Cloth-cutting machine	C. L. Bryan	846,777	Mar. 12	2128	467	127	572
Clothes-clamp	T. W. De Laughter	847,046	Mar. 12	2686	587	127	705
Clothes-pin	S. Pasqualin	847,106	Mar. 12	2776	613	127	731
Cluster-socket	J. H. Dale	846,912	Mar. 12	2406	529	127	641
Clutch. Friction	C. H. Erickson and J. P. Nystrom	846,654	Mar. 12	1899	418	127	514
Clutch mechanism	J. and F. Doepker	846,733	Mar. 12	2034	447	127	547
Coal. Coking	S. B. Sheldon	846,958	Mar. 12	2497	550–1	127	664
Coal-dust for making metallurgical coke or other kinds of coke. Utilizing close-burning	G. de Velna	847,134	Mar. 12	2819	.....	127	742
Coat	S. Lewis	846,581	Mar. 12	1748	386–7	127	473
Cock for flush-tanks. Ball	J. McKaig	846,598	Mar. 12	1793	395	127	486
Coffee-holder	W. Maechler	846,587	Mar. 12	1762	389	127	477
Coffee or tea pot handle	P. J. Godfrey	847,175	Mar. 12	2906	639	127	764
Coffee-pot	G. F. W. Holman	846,473	Mar. 12	1522	337	127	416
Coin-collector	F. R. McBerty and H. B. Holmes	846,500	Mar. 12	1575	348–50	127	430
Coking-oven	L. J. Hirt	847,001	Mar. 12	2573	565	127	684
Collapsible box	D. F. Friedheim	846,798	Mar. 12	2148	472	127	577
Collar and hame. Combined horse	J. Martin	847,090	Mar. 12	2746	606	127	724
Collar. Horse	H. A. Fonteine	847,248	Mar. 12	3048	672	127	799
Column. Wooden	H. Brown	846,450	Mar. 12	1481	329	127	405
Commutator	J. R. Grindrod	847,284	Mar. 12	3113	686	127	816
Concrete bridge	G. Glascock	846,659	Mar. 12	1910	420	127	516
Condenser. Jet	E. Koerting	847,010	Mar. 12	2588	568	127	687
Contact for third-rail systems. Interrupted	A. S. Katzman and H. A. Visthann.	847,080	Mar. 12	2730	602	127	720
Converter	I. Kitsee	847,008	Mar. 12	2586	568	127	687
Cooking apparatus. Steam	W. C. Salmon	847,117	Mar. 12	2792	617	127	735
Cooking utensil	H. R. Barnard	847,225	Mar. 12	3006	663	127	789
Cop-tube	E. H. Guerin	847,177	Mar. 12	2907	640	127	764
Copper. Extracting	O. Frölich	846,657	Mar. 12	1904	.....	127	515
Copper-refining furnace	R. Baggaley	846,891	Mar. 12	2373	521–2	127	634
Cork-puller	G. Sparano	847,124	Mar. 12	2801	619	127	737
Cotton cleaner and distributer	J. Clem, Jr.	847,102	Mar. 12	2870	632–3	127	755
Coupling:							
See Car-coupling. Rope-coupling. Hose-coupling. Scraper-coupling. Pipe-coupling.							
Coupling	E. H. Gold	846,994	Mar. 12	2550	563	127	680
Cracker-box	J. H. Byrne	846,452	Mar. 12	1484	329	127	405
Crane. Traveling	A. E. Evans	846,837	Mar. 12	2259	405–6	127	606
Cultivator	H. M. Toepfer	846,876	Mar. 12	2332	514	127	624
Cultivator	A. Nolf	847,101	Mar. 12	2766	611–12	127	738
Cultivator	L. Parenti	847,258	Mar. 12	3084	676	127	804
Cultivator. Adjustable	W. Wolf	847,142	Mar. 12	2833	625	127	746
Cupola-furnace	B. D. McCormick	847,097	Mar. 12	2761	610	127	727
Curling-irons. Hair-waving attachment for	A. Weiler	846,813	Mar. 12	2203	483	127	581
Current demands. System for the supply of	F. W. Springer	846,703	Mar. 12	1977	434–5	127	532
Current motor. Alternating	E. J. Berg	847,153	Mar. 12	2852	629	127	751
Cutter:							
See Cigar-cutter. Tobacco-cutter. Soap-cutter. Veneer-cutter. Sod-cutter. Weed-cutter. Stalk-cutter. Wire-cutter.							
Cutter-head knives. Radial setting-gage for	C. W. H. Blood	846,723	Mar. 12	2010	442	127	541
Damper-actuating device for ranges, &c	I. Brooke	846,821	Mar. 12	2221	486	127	595
Damper. Chimney	A. E. Albertson	846,542	Mar. 12	1650	369	127	452
Decorating-kiln. Continuous	J. Gamble	846,559	Mar. 12	1694	373–4	127	460
Die-head	W. A. Kerr	847,186	Mar. 12	2924	642–4	127	767
Digger:							
See Post-hole digger. Potato-digger.							
Dirt-carrier	J. H. Moragne	847,199	Mar. 12	2967	653–4	127	779

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Dish-washing machine	R. H. Sunkle	847,129	Mar. 12	2611	621	127	729
Disinfectants to water-closets. Apparatus for applying	A. D. Easton	846,891	Mar. 12	2262	493	127	570
Display outfit	S. Newman and H. R. Bothwell	846,880	Mar. 12	1998	431	127	568
Display-rack	J. E. Taylor	847,214	Mar. 12	2890	658-9	127	781
Displaying form. Wearing-apparel	H. C. Edwards and H. R. H. Dunbar	846,882	Mar. 12	2260	494	127	564
Door-check	J. L. Ridgway	847,113	Mar. 12	2736	615	127	727
Door-check	M. L. Harris	847,288	Mar. 12	3114	686	127	826
Dough-raiser	F. McDonald	847,039	Mar. 12	2604	571-3	127	698
Dough-shaping machine	H. F. W. Hug	846,799	Mar. 12	2151	472-3	127	537
Drainage-trap. Antisiphon	D. Whiteford	846,887	Mar. 12	1649	367	127	569
Drawer-pull	F. X. Ammann	846,441	Mar. 12	1460	325	127	389
Drawing-board attachment	G. R. Evans	846,987	Mar 12	2648	561	127	670
Drier: *See* Peat-drier.							
Drying-machine	E. B. Ayres	847,086	Mar. 12	2645	583	127	701
Drill-brace	T. Kuhn	847,013	Mar. 12	2594	569	127	689
Drilling-machine	F. M. Stambaugh	847,297	Mar. 12	3140	691	127	833
Drink-mixer	C. G. Miller	846,951	Mar. 12	2449	536	127	668
Drum. Heating-	F. J. Kobusch	847,286	Mar. 12	3089	675	127	831
Dumping and distributing apparatus	A. Moore	846,896	Mar. 12	1789	394	127	605
Dust-collecting system	W. E. Allington	846,973	Mar. 12	2826	657	127	671
Dye. Ortho-oxy-monoazo	W. Schumacher	846,511	Mar. 12	1408		127	393
Dyeing apparatus	P. Fontaine	846,492	Mar. 12	1380	332-4	127	389
Dyeing apparatus	H. Pattyn	846,940	Mar. 12	2402	540	127	666
Egg-beater	E. R. Godward	846,982	Mar. 12	1914	421	127	547
Egg-beater	A. J. Thompson	846,769	Mar. 12	2090	461	127	554
Egg-beater	S. Danner	846,939	Mar. 12	2240	491	127	589
Egg-beater, whisk, &c	E. R. Godward	846,981	Mar. 12	1913	421	127	547
Electric circuits. Shunt for	M. J. Wohl	846,960	Mar. 12	2515	556	127	670
Electric circuits. Thermal cut-out for	G. E. Painter	846,491	Mar. 12	1961	421	127	389
Electric controller	F. Volk	846,533	Mar. 12	1642	365	127	447
Electric furnace	L. W. Stevens	846,821	Mar. 12	1681	369	127	441
Electric furnace	B. von Ischewsky	847,060	Mar. 12	2670	595	127	695
Electric heater	A. H. Bremer, W. J. Chattin, and A. H. Hoenisch	846,544	Mar. 12	1661	369	127	452
Electric heater	J. T. Howell	846,883	Mar. 12	2257	503	127	613
Electric-light hanger	F. E. Christman	846,778	Mar. 12	2130	468	127	572
Electric meters. Device to disclose opening of the shunt-circuits of	W. L. Saunders	846,894	Mar. 12	1949	406	127	588
Electric-motor controller	F. Schaefer	846,826	Mar. 12	1849	407	127	559
Electric motor. Variable-speed	J. C. Lincoln	847,088	Mar. 12	2742	606	127	702
Electric switch	H. Sawyer	846,626	Mar. 12	1847	407	127	559
Electric switch	A. Koesche	846,673	Mar. 12	1926	425	127	553
Electric switch	I. Kitsee	847,007	Mar. 12	2585	588	127	686
Electric switch	G. W. Liden	847,087	Mar. 12	2740	605	127	702
Electric system. High-tension direct-current	J. S. Highfield	846,898	Mar. 12	1716	378	127	605
Electrical apparatus. High-pressure	F. J. Koch	846,672	Mar. 12	1923	425	127	553
Electrical conductor	F. Platt	847,208	Mar. 12	3146	693	127	826
Electrically-heated body	E. Haagn	847,055	Mar. 12	2705	595	127	714
Electromagnetic transmitting device	M. Johannet	847,070	Mar. 12	2726	601-2	127	720
Elevator: *See* Portable elevator. Water-elevator.							
Elevator safety device	C. R. Pratt	846,613	Mar. 12	1827	402	127	486
Elevator safety device	G. R. Layman	847,083	Mar. 12	2734	603	127	721
Engine: *See* Explosion-engine. Turbine-engine. Gas-engine.							
Engine ignition apparatus. Explosion-	H. C. Royer	847,206	Mar. 12	3136	691	127	825
Engine ignition system. Explosion-	R. Varley	846,811	Mar. 12	2200	483	127	560
Engine reversing mechanism. Explosive-	L. M. J. C. Levavasseur	846,457	Mar. 12	1545	342-3	127	425
Engine spark-ignition system. Explosion-	R. Varley and A. D. Scott	846,809	Mar. 12	2194	482	127	560
Engine starting-crank. Explosion-	A. Schlüter	846,626	Mar. 12	1970	432	127	551
Engines. Feed-governor for oil-	F. G. Hobart	846,671	Mar. 12	1818	327	127	415
Envelop	F. Klousnitzer	846,476	Mar. 12	1527	338	127	417
Envelop	C. Panek	846,894	Mar. 12	1889	393	127	494
Envelop	L. B. Myers	847,098	Mar. 12	2720	610	127	727
Envelop and letter-sheet. Combined	A. J. Farmer	846,888	Mar. 12	2450	551	127	676
Eraser cleaner. Blackboard-	H. Meyer	846,981	Mar. 12	1946	426	127	625
Excavating-wheeler	F. F. Furlough	847,087	Mar. 12	2660	591-2	127	711
Excavator	J. E. Kennedy	846,701	Mar. 12	2183	479-4	127	578
Explosion-engine	S. A. Reeve	846,803	Mar. 12	1899	395	127	496
Fabric-tufting machine	J. J. Baird	846,717	Mar. 12	2009	440	127	538
Fabrics. Machine for producing ornamental surfaces on fleeced.	C. H. French	847,080	Mar. 12	2698	600-1	127	710
Fan-hanger	M. E. McBee	847,096	Mar. 12	2760	610	127	727
Farm implement. Motor-driven	M. O. Sandberg	847,095	Mar. 12	2626	577-8	127	696
Fastener	A. F. Randall	847,296	Mar. 12	3127	690	127	832
Fastening device	M. L. Martines	846,978	Mar. 12	1943	427	127	534
Fastening. Separable	W. B. Murphy	847,201	Mar. 12	3120	689	127	820
Faucet	J. W. Horth	846,988	Mar. 12	2422	532	127	645
Faucets. Cut-off for	J. W. Collins	846,720	Mar. 12	2128	468	127	574
Feed-bag	G. P. Drueck, Jr.	846,986	Mar. 12	2646	580	127	676
Feed-gage	L. E. Tait	846,630	Mar. 12	1899	408	127	504
Fence-post. Cement	S. Landes	846,702	Mar. 12	2171	477	127	583
Fence-post. Metal	O. A. Wilson	847,141	Mar. 12	2733	602	127	746
Fender: *See* Car-fender. Vehicle-fender.							
Fender	J. R. Plauk	847,109	Mar. 12	2778	614	127	731
Fertiliser-distributer	C. B. Rozar	846,628	Mar. 12	1845	406	127	499
Fiber vessel	J. J. Shea. (Reissue)	12,616	Mar. 12	3154	694	127	826
Filaments of metamorphosed cellulose, &c. Apparatus for forming	M. Waddell	846,570	Mar. 12	2626	515-16	127	626
File. Bill-	E. Plourde	846,946	Mar. 12	2477	546	127	650
File-cabinet	S. T. Walton	846,881	Mar. 12	2244	516	127	627
Filter	H. Lieberich	846,582	Mar. 12	1749	387	127	473
Filter	A. Kiell	846,749	Mar. 12	2088	454	127	556
Filter. Water-	M. G. Melvin	846,939	Mar. 12	2239	506	147	616
	O. Watson	846,823	Mar. 12	2247	517	127	626

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Filtering apparatus	M. N. Otto	847,103	Mar. 12	2769	612	127	729
Fire-alarm system	J. G. Nolen	846,502	Mar. 12	1585	351-2	127	433
Fire-alarm system	M. Connor	846,720	Mar. 12	2026	445-6	127	546
Fire apparatus	H. W. Eisenbise	846,835	Mar. 12	2255	494	127	604
Fire-kindling. Composition of matter for	E. W. Daley and C. Johnson	846,554	Mar. 12	1679		127	456
Firearm	H. M. Kolb and C. Foehl	847,011	Mar. 12	2590	589	127	688
Firearm. Automatic	W. Mason	846,591	Mar. 12	1773	391-2	127	481
Firearm-sight	G. S. Wilcox	846,637	Mar. 12	1872	412	127	507
Firearm-sight	J. Windridge	846,638	Mar. 12	1874	412	127	507
Firearm-sight	J. Windridge	846,639	Mar. 12	1878	412	127	508
Firearm-sight	P. O'Reilly	846,603	Mar. 12	1805	397	127	480
Fireproof shutter	W. H. Miller	846,682	Mar. 12	1947	428	127	525
Fireproof window construction	C. J. Remsburg	846,804	Mar. 12	2306	507	127	617
Fish holder. Live-	E. F. Dollar	846,556	Mar. 12	1682	372	127	457
Fish-trap	C. L. Sullivan	847,298	Mar. 12	3142	692	127	823
Fishing-rod attachment	C. E. Downs	847,168	Mar. 12	2887	636	127	760
Fishing-tool	G. J. Wallace and F. J. Harbager	847,126	Mar. 12	2823	623	127	743
Floor-cleaning device	A. Ayers	847,272	Mar. 12	3096	683	127	812
Floor-set	R. Baggaley	846,818	Mar. 12	2214	485	127	562
Flue-dust. Recovering values from	J. C. Phipps	846,943	Mar. 12	2471	545	127	657
Fluid-check device	W. T. Sears	847,119	Mar. 12	2795	618	127	736
Fluid-operating machines. Plunger-cleaning means for	E. H. Mumford	846,685	Mar. 12	1952	429	127	527
Fluid-pressure plunger	A. E. Chapman	847,160	Mar. 12	2867	632	127	755
Flume-gate	S. T. Collins and G. Browning	846,552	Mar. 12	1676	371	127	456
Folding stand. Automatic							
Frame: *See* Automobile-frame. Twisting-frame. Neckti-frame. Vehicle-frame.	J. Pye	847,294	Mar. 12	3134	690	127	821
Freezing of water-hydrants. Means for the prevention of	T. H. Deshane	846,732	Mar. 12	2032	447	127	547
Fruit-clipper	E. R. Kern	847,081	Mar. 12	2732	602-3	127	720
Funnel. Automatic							
Furnace: *See* Boiler-furnace. Cupola-furnace. Copper-refining furnace. Electric furnace. Heating-furnace.	N. T. Bacon	847,273	Mar. 12	3099	683	127	812
Furnaces. Drying air for blast-							
Gage: *See* Feed-gage. Sewing-machine gage. Knife-gage. Weir-gage. Micrometer-gage.	P. R. Glass and L. Muther	846,660	Mar. 12	1911	420	127	516
Gage	C. A. Good	847,176	Mar. 12	2906	639	127	764
Gage	E. H. Richter	846,509	Mar. 12	1603	356	127	437
Game apparatus	T. J. Falvey	846,655	Mar. 12	1901	418	127	514
Game apparatus	J. H. White	847,217	Mar. 12	2995	660	127	787
Garment-fastener	J. M. Stein	847,211	Mar. 12	2986	658	127	785
Garment-hanger	J. M. Stein	847,212	Mar. 12	2987	658	127	785
Garment-hanger	G. E. Crump	846,911	Mar. 12	2405	528	127	641
Garment-support	B. M. Grayson	846,562	Mar. 12	1703	376	127	463
Garment. Supporting-	A. J. Meyers	846,930	Mar. 12	2448	536	127	653
Gas-burner	E. S. Springer and J. L. Maloney	847,210	Mar. 12	2984	657	127	784
Gas-burner	R. B. Benjamin	846,897	Mar. 12	2382	523-4	127	636
Gas-engine	M. B. Mason and E. M. Sinclair	846,680	Mar. 12	1945	427-8	127	525
Gas-machine	F. Logan	846,480	Mar. 12	1551	344	127	424
Gas manufacture. Apparatus for	P. Eyermann	847,054	Mar. 12	2684	590	127	710
Gas plant. Producer-	A. D. Purtle and I. E. Rowland	846,947	Mar. 12	2479	546-7	127	650
Gas regulator and cut-off. Automatic	R. Baggaley	846,815	Mar. 12	2206	484	127	592
Gases. Apparatus for removing impurities from furnace-							
Gate: *See* Flume-gate.	J. Parker	846,505	Mar. 12	1590	353-4	127	439
Gear-cutting machine	A. Gerber	846,465	Mar. 12	1505	335	127	411
Gearing	A. H. Ehle	847,048	Mar. 12	2672	587-8	127	707
Gearing. Change-	L. Maurer	846,592	Mar. 12	1781	392	127	482
Gearing. Friction-	H. G. Slingluff	847,027	Mar. 12	2628	578	127	698
Glass drawing and blowing apparatus	A. J. Baldwin	846,771	Mar. 12	2116	464-5	127	569
Glass-making apparatus. Wire-	C. S. Baron and J. F. Haffey	846,719	Mar. 12	2002	441	127	539
Glass or other fragile receptacles. Protective covering for	E. O. De Vries	846,914	Mar. 12	2411	529	127	642
Glove-retaining device	J. W. Worsey and E. Hoal	846,768	Mar. 12	2111		127	568
Gold. Extraction of	J. H. Leggett	846,493	Mar. 12	1540	341	127	421
Gold-saving apparatus	J. C. Anderson	846,814	Mar. 12	2204	483	127	561
Governor. Speed-	C. N. Hatfield	846,999	Mar. 12	2568	565	127	682
Grain and seed cleaner, separator, and grader	O. Kelsey	846,570	Mar. 12	1725	380	127	468
Grain-bin	G. W. Tice	846,632	Mar. 12	1862	409-10	127	504
Grain-sheller	C. W. Anderson	846,888	Mar. 12	2357	518-19	127	631
Grain-shocking machine	E. Wawrina	847,033	Mar. 12	2638	581	127	699
Gramophone mechanism	W. S. Pendleton	846,757	Mar. 12	2090	458	127	562
Grave-filler	W. J. Muncaster and L. A. Fletcher	846,490	Mar. 12	1360	345-6	127	426
Grinding-machine	C. Jaquet	846,670	Mar. 12	1925	423-4	127	520
Grist and dust purifier	J. Lauber	846,576	Mar. 12	1737	384	127	471
Gun. Magazine-	E. E. Lamb	846,674	Mar. 12	1937	426	127	523
Gun-rack	J. J. Williams	847,139	Mar. 12	2827	624	127	744
Gymnastic performances. Means for producing aerial	J. F. Hopfner	846,745	Mar. 12	2063	453	127	554
Hame	W. McDougall	846,687	Mar. 12	1954	430	127	527
Hammer							
Handle: *See* Casket-handle. Coffee or tea pot handle.							
Hanger: *See* Apparel-hanger. Garment-hanger. Electric-light hanger. Trousers-hanger. Fan-hanger.	A. W. Burnett	846,822	Mar. 12	2223	496	127	595
Harness attachment	J. F. Williams	847,036	Mar. 12	2642	582	127	700
Harrow	W. B. Essick	847,051	Mar. 12	2680	589	127	709
Harrow	A. D. Harris	847,068	Mar. 12	2709	597	127	718
Harrow							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Harvester attachment	L. Franzmeier	846,918	Mar. 12	2420	531	127	544
Hat and coat rack. Locking	J. E. Dundore	846,469	Mar. 12	1497	332	127	69
Hat-pin	G. N. Steere	846,516	Mar. 12	1618	359	127	69
Hat-retaining device	S. Rosenthal	846,598	Mar. 12	2499	549	127	69
Hay, grain, &c. Covering for	P. Schoesale	846,627	Mar. 12	1952	407	127	69
Hay-rake	J. Dain	846,488	Mar. 12	1490	330-1	127	69
Hay-rake	J. W. Hurd	847,074	Mar. 12	2720	600	127	716
Heater:							
See Electric heater. Sad-iron heater.							
Heater	M. F. W. Pliske	846,611	Mar. 12	1626	401	127	69
Heating-boiler	C. L. Holden	846,472	Mar. 12	1520	337	127	69
Heating device	T. Sharp	847,131	Mar. 12	2707	618	127	73
Heating-furnace. Continuous	H. Parrock and W. McKee	846,396	Mar. 12	1396	354	127	69
Hemmers. Folder attachment for	E. F. Gibbons	846,742	Mar. 12	2066	452	127	55
Hide-carroting machine	C. and E. Pichard	846,944	Mar. 12	2474	545	127	69
Hinge and fastening for doors. Combined	A. Abeng	847,145	Mar. 12	2841	627	127	74
Hitch. Horse	E. J. Aitken	846,715	Mar. 12	1597	439	127	55
Hoisting-apparatus safety arrangement	W. Thornber	846,807	Mar. 12	2157	481	127	55
Holder for domestic articles	M. Pike	846,788	Mar. 12	2082	459	127	56
Hook:							
See Whiffletree-hook.							
Hook and eye	H. Atkinson	847,271	Mar. 12	3097	662	127	81
Hook-switch	C. T. Mason	846,880	Mar. 12	1771	391	127	69
Horse-blanket	F. H. Vinton	846,813	Mar. 12	2302	493	127	69
Hose-coupling	J. Berk	847,042	Mar. 12	2857	645	127	70
Hose-coupling	J. F. McElroy	847,282	Mar. 12	3120	669-90	127	73
Hose-rack	C. Wright	846,713	Mar. 12	1595	439	127	55
Hot-air register	J. W. Hats	846,534	Mar. 12	1533	403	127	69
Hot blast, water-coil, and gas-burner. Combined	J. B. Ehrlich	846,914	Mar. 12	2413	530	127	64
Hot-water regulator	G. Parge	847,104	Mar. 12	2770	613	127	73
Hydraulic separator	J. Curatolo	846,540	Mar. 12	1503	416	127	51
Ice-pick	B. A. Grasberger	846,543	Mar. 12	2273	498	127	60
Ice-tool	G. Lepley	846,486	Mar. 12	1544	343	127	62
Icing-preparing machine. Chocolate	P. F. E. Magniez	847,010	Mar. 12	2932	570-1	127	68
Identification device	C. D. Lukens	846,586	Mar. 12	1760	388	127	67
Ignition system	R. Varley	846,830	Mar. 12	2197	483	127	58
Index. Ledger	D. Johnson	847,184	Mar. 12	2821	643	127	70
Indexes. Receptacle for card	W. Livingstone	846,488	Mar. 12	1546	343	127	62
Ink-well	J. B. Randolph	846,615	Mar. 12	1630	402	127	69
Insulated rail-joint	W. F. Bossert	846,901	Mar. 12	2390	525	127	63
Insulating compound and making same. Oil-proof electrical	J. J. Kessler, Jr	846,477	Mar. 12	1536		127	41
Ironing-board	E. C. Riedel	846,696	Mar. 12	1966	433	127	53
Ironing-machine	W. E. Andreé	846,880	Mar. 12	2360	520-1	127	63
Jack:							
See Pumping-jack.							
Jar-closure	W. J. Rust	846,760	Mar. 12	2094	459	127	56
Joint:							
See Insulated rail-joint. Railway-rail joint. Rail-joint.							
Journal-box	G. A. Woodman	847,201	Mar. 12	3146	692	127	52
Journal-box lid. Car	L. Y. Williams and F. B. Harrison	847,140	Mar. 12	2830	624	127	74
Key-retainer	W. H. Shaw	846,967	Mar. 12	2496	550	127	66
Kiln:							
See Cement-kiln. Decorating-kiln.							
Kindergarten apparatus	A. Leitch	846,495	Mar. 12	1543	342	127	42
Knife:							
See Pocket-knife.							
Knife and fork case	E. G. Jackson	847,254	Mar. 12	3093	674	127	80
Knife-gage. Adjustable	E. Coleman	847,277	Mar. 12	3105	684	127	81
Knives. Making drawing	W. S. Ward	847,137	Mar. 12	2824	624	127	74
Knit boot	F. G. Eberhart, Jr	846,995	Mar. 12	2547	561	127	67
Knitting-machine	J. J. Curry	847,243	Mar. 12	3088	669-70	127	79
Labeling-machine	H. H. Toussaint	846,878	Mar. 12	2335	514-15	127	62
Ladder brace. Step	E. Rowe	847,205	Mar. 12	2977	656	127	78
Laminated wheel	F. L. Clark	846,549	Mar. 12	1572	370	127	45
Lamp-pendant	H. W. Hanwell	846,563	Mar. 12	1704	376-7	127	46
Lamp. Vapor	O. J. Seehausen	846,512	Mar. 12	1609	356	127	43
Lantern	G. H. Rolfes	846,922	Mar. 12	2467	546	127	66
Last. Hinged	F. E. Benton	846,720	Mar. 12	2004	441	127	53
Latch. Automatic	G. C. Emmert	846,651	Mar. 12	1894	416	127	51
Latch. Gate	M. O. Patton	846,894	Mar. 12	2120	479	127	58
Lathe-washer	E. C. Adams	846,449	Mar. 12	1489	325	127	39
Lavatory and means for supporting same	J. Maddock	847,018	Mar. 12	2930	570	127	68
Lazy-back	H. D. Brady and C. Gerstenmaier	846,904	Mar. 12	2395	526	127	63
Leaves. Machine for assembling	P. Asheim	846,716	Mar. 12	1596	440	127	53
Lifter:							
See Plate and pan lifter.							
Light-controller	E. P. King	847,287	Mar. 12	3118	687	127	81
Linotype-machine	C. T. Libby	846,594	Mar. 12	1764	388	127	47
Linotype-machine	J. Allan	846,972	Mar. 12	2824	557	127	67
Liquids. Apparatus for aspirating, treating, and forcing	E. Richter	846,789	Mar. 12	2096	459	127	56
Liquids. Apparatus for treating foaming	F. H. Lehnert	847,085	Mar. 12	2737	604	127	72
Liquids from solid materials. Apparatus for the extraction of	W. M. Barnes	846,447	Mar. 12	1472	327-8	127	40
Lock:							
See Nut-lock. Window-lock. Safety-lock.							
Log-splitting machine	W. A. Fannon	846,838	Mar. 12	2263	494	127	60
Log-splitting machine	W. A. Fannon and E. A. Peterson	846,839	Mar. 12	2265	496-7	127	60
Log-spur attachment for conveyer-chains	H. S. Hancock	846,466	Mar. 12	1512	336	127	41
Logging apparatus	T. S. Miller and J. H. Dickinson	846,932	Mar. 12	2469	536	127	65
Loom. Filling-replenishing	J. Smith and E. S. Stimpson	846,700	Mar. 12	1972	434	127	53
Loom filling-replenishing mechanism	W. B. Birmingham	846,773	Mar. 12	2119	486	127	57
Loom-shuttle	A. Guldemann	846,466	Mar. 12	1507	335	127	41
Loom-shuttle	B. McAneany	846,686	Mar. 12	1963	430	127	52
Looms. Thin-place detector for	P. S. Leonard	846,801	Mar. 12	2175	473	127	58
Lubricating device	W. Scott	846,987	Mar. 12	2811	608	127	61

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Lubricator:							
See Automatic lubricator.							
Positive-feed lubricator.							
Magnet for dynamo-electric machines. Rotating	C. A. Parsons, G. G. Stoney and A. H. Law	846,693	Mar. 12	1966	432	127	53
Mail-bag catcher	J. H. Tudor	847,215	Mar. 12	2991	659-60	127	78
Mail-collector	A. B. Hart	846,564	Mar. 12	1707	377	127	46
Mail-conveyer	F. S. White and J. F. Stafford	847,035	Mar. 12	2640	582	127	69
Mail-transportation system	L. C. Jarrett	847,076	Mar. 12	2723	600-1	127	71
Manure implement	A. L. Tolman	847,031	Mar. 12	2635	580	127	69
Mattress and tracing-wheel. Combined	S. Korper	847,012	Mar. 12	2593	569	127	68
Massage instrument. Vibratory	R. L. Herman	846,919	Mar. 12	2421	532	127	64
Match and match-dispensing box	B. T. Castleman	847,239	Mar. 12	3032	668	127	79
Match-safe	G. H. and W. C. Moore	846,693	Mar. 12	1949	429	127	52
Materials. Apparatus for treating	E. M. Newell	846,756	Mar. 12	2088	458	127	56
Mattress. Folding	C. E. Mark	846,588	Mar. 12	1762	389	127	47
Mattress. Spring	C. A. Baker	846,445	Mar. 12	1470	327	127	40
Mast. Post	B. Weinberg	846,635	Mar. 12	1870	411	127	50
Measuring device. Perimeter	C. Palmer	846,503	Mar. 12	1589	352	127	43
Measuring instruments. Optical device for use with	A. W. Engel	846,461	Mar. 12	1498	332	127	40
Meat-coating composition	G. Gaillard	847,058	Mar. 12	2691	592	127	71
Mechanical movement	C. E. Perry, L. Boesing, and C. A. Farmer	846,861	Mar. 12	2303		127	66
Medicinal extract	J. A. Laird	846,749	Mar. 12	2070	454	127	55
Mercurous oxycyanid and diamiyl-monophenetidyl-guanidinchlorhydrate. Solution of	L. Bauer	846,895	Mar. 12	2380		127	63
Metal bars, strips, wire, &c. Apparatus for bending or coiling of	J. G. Hirsch	846,849	Mar. 12	2282		127	61
Metal-sawing apparatus	E. Nolle	847,102	Mar. 12	2768	612	127	72
Metal-working machine	A. Tindel	846,525	Mar. 12	1626	361-2	127	44
Metals, porcelain, glass, &c. Compound for cleaning and polishing	F. M. Stambaugh	846,871	Mar. 12	2319	509-12	127	62
Metallic silicid. Producing	C. J. Barrenpohl	847,150	Mar. 12	2849		127	75
Metallic silicids. Producing	T. L. Willson	847,300	Mar. 12	3145		127	82
Metallic tie, rail-fastener, and rail-joint. Combined	T. L. Willson	847,267	Mar. 12	3088		127	80
Micrometer-gage	E. E. Bahr	847,148	Mar. 12	2845	628	127	74
Mill:	J. L. Peddycoart	846,607	Mar. 12	1817	399	127	49
See Rolling-mill.							
Mixer:							
See Cement-mixer. Drink-mixer.	C. T. Melvin	846,751	Mar. 12	2073	455	127	55
Mixing device	A. Alexander and J. Fredericksen	847,221	Mar. 12	3001	662	127	78
Mold:	L. Hansen	847,179	Mar. 12	2911	641	127	76
See Building-block mold. Post-mold.	J. McNamara	847,021	Mar. 12	2606	572-6	127	69
Mold	H. L. Slusser	847,123	Mar. 12	2799	619	127	73
Molding apparatus	H. R. Logan	847,016	Mar. 12	2597	570	127	68
Monoline composing-machine							
Mop and wringer. Combination							
Mortar and separator. Crushing							
Motor:							
See Current-motor. Pumping-motor. Electric motor.	W. Hughes	847,072	Mar. 12	2716	599	127	71
Motor	A. R. Everest	847,172	Mar. 12	2895	637	127	76
Motor-controlling means. Single-phase	H. G. Reist	847,111	Mar. 12	2783	615	127	73
Motor starting resistance	C. Warren	847,138	Mar. 12	2825	624	127	74
Motor winding mechanism. Spring	W. V. Gilbert	846,561	Mar. 12	1699	375-6	127	46
Movements. Spring device for producing differential	J. A. Swenson	847,213	Mar. 12	2989	658	127	78
Mower. Lawn	G. Havell	846,565	Mar. 12	1714	377	127	46
Nail-clipper	O. Kampfe	846,924	Mar. 12	2434	534	127	64
Nail-clipper	W. C. Truman	846,527	Mar. 12	1630	362-3	127	44
Necktie-frame	C. M. Steely	847,029	Mar. 12	2633	579	127	69
Nest. Hen's	R. W. E. MacIvor	846,492	Mar. 12	1556		127	42
Nickel ores, &c. Treating	I. N. Rife	846,949	Mar. 12	2482	547	127	66
Nut-lock	A. Miane	846,593	Mar. 12	1782	392	127	48
Nut. Lock	F. M. Crume	846,648	Mar. 12	1892	415	127	51
Obstetrical supporter	J. C. Fitzsimmons	846,990	Mar. 12	2553	562	127	67
Oil-burner	W. R. Gilmore	846,993	Mar. 12	2558	563	127	68
Oil-burner	J. Dahl	846,783	Mar. 12	2141	470	127	57
Oil-can. Air-tight	F. W. Reiber	846,619	Mar. 12	1839	404	127	49
Oil-can. Non-explosive	H. G. Reist	847,203	Mar. 12	2974	655	127	78
Oiling device. Centrifugal	A. C. Campbell	847,236	Mar. 12	3025	666	127	79
Ore-concentrator	J. E. Kennedy and F. J. Hobson	846,792	Mar. 12	2155	474	127	57
Ore-distributing device	J. O. Earley, Jr	847,189	Mar. 12	2889	636	127	76
Organ. Whistle	J. W. Bailey	846,444	Mar. 12	1466	326-7	127	40
Oxids. Making metallic	E. B. Thayer	846,962	Mar. 12	2506	552	127	66
Packing carrier. Sheet	W. Hoey	846,668	Mar. 12	1922	423	127	51
Packing. Metallic piston	J. W. Bothwell	846,774	Mar. 12	2121		127	57
Paint colors to articles and materials. Making and applying decorative							
Pan:							
See Bed-pan.	W. A. Lorenz	847,191	Mar. 12	2933	645-6	127	77
Paper-bag machine	W. A. Lorenz	847,192	Mar. 12	2938	646-7	127	77
Paper-bag machine	W. A. Lorenz	847,193	Mar. 12	2943	648-9	127	77
Paper-bag machine	W. A. Lorenz	847,194	Mar. 12	2951	649-50	127	77
Paper-bag machine	W. A. Lorenz	847,195	Mar. 12	2957	651-2	127	77
Paper-bag machine	F. E. Strasburg	847,264	Mar. 12	3076	677-80	127	80
Paper-box machine	A. W. Mitchell	847,093	Mar. 12	2753	607-9	127	72
Paper dish	I. Bertin	846,975	Mar. 12	2528	557	127	67
Paper-feeding mechanism	E. B. Cram	847,166	Mar. 12	2984	635	127	75
Paper-hanger's support	J. L. Bonar	846,976	Mar. 12	2529	558	127	67
Paper receptacle	F. H. Beroid, Jr	846,899	Mar. 12	2388	524	127	63
Peat-drier	B. F. Lambert	846,574	Mar. 12	1734	382-6	127	47
Peeling machine. Fruit and vegetable	W. Vogel	846,765	Mar. 12	2102	461	127	56
Pen. Fountain	F. C. Brown	846,547	Mar. 12	1667	370	127	45
Pencil-holder	P. M. Ashley	846,442	Mar. 12	1460	325	127	39
Photographic-plate-developing machine	W. H. Brown	846,776	Mar. 12	2125	466-7	127	57
Photographic-printing machine	H. M. Webster	846,767	Mar. 12	2106	462-3	127	56
Photographic prints. Treating	P. Schumacher	846,954	Mar. 12	2491		127	66

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Photographic shutter	A. Wollensak	846,849	Mar. 12	1655	308	127	493
Photographic shutter	G. Dietz	846,894	Mar. 12	2042	560	127	577
Piano-action	J. Ammon	847,223	Mar. 12	2804	662	127	732
Pianola. Apparatus for transposing the key-note in performances of the	H. T. Nolthenius	847,089	Mar. 12	2321	576	127	694
Picture-frame attachment	W. H. Shepherd	846,889	Mar. 12	2301	551	127	686
Picture-wire-fastening device	F. L. Boynton	846,775	Mar. 12	2123	406	127	571
Pigments. Apparatus for the production of	C. P. Townsend	846,836	Mar. 12	1626	362	127	548
Pigments. Production of	C. P. Townsend	847,082	Mar. 12	2836	580	127	698
Pin: See Clothes-pin. Hat-pin.							
Pin retainer. Stick-	R. Corn	847,164	Mar. 12	2873	63o	127	736
Pin-tongues. Hinge-joint for	G. H. Tilford	846,833	Mar. 12	1957	410	127	566
Pipe-clamp	L. Krueger, E. J. Kinkler, and O. H. Carmichael.	847,092	Mar. 12	2733	603	127	722
Pipe-coupling	H. S. Stacy	846,704	Mar. 12	1980	435	127	538
Pipe coupling. Automatic steam and air	J. E. Marble	847,208	Mar. 12	3121	667-8	127	818
Pipe coupling. Train-	J. E. Forsyth	846,840	Mar. 12	2268	497	127	606
Pipe coupling. Train-	J. E. Forsyth	846,841	Mar. 12	2270	497-8	127	606
Pitch for coating the interior of beer and ale packages. Making	H. C. Dippel	847,202	Mar. 12	3110	666	127	815
Planing-machine	W. Holthaus	846,674	Mar. 12	1884	336	127	516
Planter and fertilizer-distributer	B. W. Burdett and G. W. Goodwin, Jr.	846,726	Mar. 12	2017	443-4	127	542
Plate and pan lifter	A. L. Smith	846,889	Mar. 12	1971	433	127	531
Plow	L. J. Gilman	846,789	Mar. 12	2150	472	127	577
Plow	A. Pederson	847,025	Mar. 12	2926	577	127	695
Plow	E. R. Lovell	847,166	Mar. 12	2963	683	127	778
Plow. Gang-	G. Bishop	846,643	Mar. 12	1895	414	127	510
Pneumatic cleaner	W. W. Conover	847,278	Mar. 12	3103	634	127	814
Pneumatic-despatch carrier	C. H. Burton	847,204	Mar. 12	3023	666	127	792
Pneumatic-despatching-tube system	C. H. Burton	847,205	Mar. 12	3020	665	127	792
Pocket-knife	S. Saunderson	847,208	Mar. 12	2978	656	127	785
Pole tip. Vehicle-	E. W. Boswell	846,902	Mar. 12	2262	526	127	606
Polishing compound	E. W. McFarren	847,088	Mar. 12	2782		127	727
Pool and billiard tables. Dust-protector for	L. J. Dtrand	847,240	Mar. 12	3045	671	127	798
Portable elevator	F. H. and F. H. Brown	846,726	Mar. 12	2015	443	127	542
Portraits and other tablets to walls. Means for securing	F. T. Mallon	846,693	Mar. 12	1556	345	127	438
Positive-feed lubricator	J. H. Wesson	846,967	Mar. 12	2615	555	127	669
Post: See Fence-post.							
Post-hole digger and pole-setter	D. H. Robinson	846,622	Mar. 12	1944	406	127	490
Post-mold	D. C. Addicks	846,641	Mar. 12	1982	413	127	500
Pot: See Coffee-pot.							
Potato digger and assorter	J. P. Herbert, H. S and E. J. Price.	847,071	Mar. 12	2714	598	127	717
Poultry-inclosure	P. McEvoy	846,898	Mar. 12	1986	420	127	528
Powder-distributer	W. J. Barber	846,718	Mar. 12	2001	440	127	538
Power-transmitting mechanism for automobiles	D. L. McClintock	846,784	Mar. 12	2079	456-7	127	550
Press: See Baling-press. Straightening-press.							
Press	E. R. Derry	847,167	Mar. 12	2885	635	127	736
Press attachment. Newspaper-	C. E. Clark	847,161	Mar. 12	2880	632	127	735
Pressure-regulators. Diaphragm-clamp for	T. B. Wylie	846,709	Mar. 12	2113	464	127	568
Printer's ink-roller cabinet	H. P. and H. Hamilton	846,997	Mar. 12	2563	664	127	681
Printing or engraving block	H. C. Gammeter	846,902	Mar. 12	2266	562-3	127	606
Printing-presses. Apparatus for feeding separate sheets of paper to	C. E. Carlson	847,227	Mar. 12	2933	667	127	794
Printing-presses. Auxiliary printing attachment for cylinder	J. W. Hoag	846,950	Mar. 12	2260	508	127	611
Printings. Producing bronze	A. P. Brooks	846,845	Mar. 12	1957	414	127	510
Propeller	C. A. R. Ludewig	846,886	Mar. 12	1780		127	478
Puller: See Boot-puller. Cork-puller.	A. L. and B. S. Ames	847,222	Mar. 12	3008	662	127	730
Pulley	E. Granberg	847,249	Mar. 12	3080	673	127	750
Pump	C. A. Neyland	847,201	Mar. 12	2970	654	127	780
Pump. Force-	C. Wolf	846,640	Mar. 12	1879	413	127	509
Pump. Multistage turbo-	N. W. Akimoff	846,971	Mar. 12	2533	656	127	671
Pump-operating mechanism	J. H. Kane	847,004	Mar. 12	2578	566	127	688
Pump-packing	C. W. Swan	846,874	Mar. 12	2529	513	127	628
Pump. Rotary vacuum-	D. M. Moore	846,982	Mar. 12	2451	537	127	663
Pumping-jack	J. M. Branam	847,220	Mar. 12	3013	664	127	791
Pumping-motor	O. E. Lindfors	846,780	Mar. 12	2073	455	127	557
Punching-machine. Work-feeding	J. A. Eden, Jr.	846,832	Mar. 12	2244	493	127	600
Pyrometer	J. F. Hammond	846,966	Mar. 12	2666	564	127	682
Rack: See Display-rack. Hat and coat rack. Gun-rack. Hose-rack.							
Rail-anchor	J. A. Murphy	846,753	Mar. 12	2070	456	127	549
Rail and chair	J. F. Walker	846,535	Mar. 12	1945	396	127	493
Rail-fastener and tie. Combined	F. M. Paxton	847,094	Mar. 12	2824	577	127	695
Rail-joint	W. P. and S. G. Thomson	846,824	Mar. 12	1956	381	127	443
Rail-joint	J. S. A. Hunt	847,073	Mar. 12	2719	599	127	718
Rail-splice	R. Thatcher and W. A. Wedding	847,130	Mar. 12	2813	622	127	740
Rails to metallic ties. Means for attaching	C. Bigenho	847,237	Mar. 12	3008	663	127	799
Rails to ties. Means for attaching	J. P. Bowman	846,724	Mar. 12	2013	443	127	543
Railway cross-tie	W. C. Smith	846,816	Mar. 12	1946	395	127	440
Railway-indicators. Circuit-closing mechanism for	E. E. B. McClintock	846,985	Mar. 12	2465	538	127	653
Railway-rail joint	T. W. Small	846,514	Mar. 12	1612	357	127	479
Railway rolling-stock. Seat and seat-back for	W. H. T. King	847,187	Mar. 12	2923	644	127	788
Railway-switch	A. E. Ostrander	847,033	Mar. 12	2923	576	127	695
Railway-switch. Automatic	G. E. Madeley	847,060	Mar. 12	2765	606-6	127	724
Railway-tie	J. D. Burkholder	846,906	Mar. 12	2005	527	127	630
Railway-tie	J. W. Dunnigan	846,786	Mar. 12	2144	471	127	575
Railway-tie. Metallic	J. H. Price	847,110	Mar. 12	2782	614	127	702
	E. C. Potter	846,902	Mar. 12	2264	508	127	616

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Railway-tie. Metallic	J. Berger	847,154	Mar. 12	2854	629	127	732
Rake: See Hay-rake.							
Rake	C. F. Field	847,055	Mar. 12	2685	590	127	710
Rake	P. F. Gallagher	847,059	Mar. 12	2693	593	127	711
Ratchet tool-holder	D. W. Gage	846,842	Mar. 12	2271	498	127	609
Razor. Safety-	B. M. W. Hanson	846,666	Mar 12	1919	422	127	519
Reamer. Cylindrical	F. E. Getz	847,062	Mar. 12	2700	594-5	127	713
Recording system for salesmen's orders and shipments	C. A. Hadland	847,178	Mar. 12	2908	640	127	764
Reeling device	C. L. Norton	847,293	Mar. 12	3122		127	821
Refractory material and producing it	E. C. Strayer	846,873	Mar. 12	2327	513	127	622
Refrigerator							
Register: See Hot-air register.							
Regulator: See Draft-regulator. Hot-water regulator. Gas-regulator. Speed-regulator.							
Relay	R. H. Manson	847,197	Mar. 12	2964	652	127	779
Rendering-tank	F. G. Wiselogel	846,539	Mar. 12	1654	367-8	127	430
Retaining-brake	D. W. Lloyd	846,902	Mar. 12	2176	478	127	584
Ring: See Spring-ring.							
Rock-drilling machines. Water-supplying attachment for	H. Hellman and L. C. Bayles	847,286	Mar. 12	3116	667	127	816
Rocket apparatus	A. Maul	847,198	Mar. 12	2966	653	127	779
Rolling annular articles. Mill for	C. von Philp	846,942	Mar. 12	2465	542-4	127	656
Rolling-mill hotbed	E. E. Slick	846,761	Mar. 12	2095	459-60	127	563
Rolling-mill. Universal	V. Chartener	846,825	Mar. 12	2230	488-9	127	597
Roofing construction	C. J. Kunzler	846,572	Mar. 12	1729	381	127	468
Rope-coupling	F. H. Roewe and W. A. Mathews	847,114	Mar. 12	2767	616	127	734
Rule. Adjustable	J. B. Le Vasseur	846,580	Mar. 12	1745	386	127	473
Running-gear	F. J. Patterson and S. E. Magee	846,606	Mar. 12	1815	399	127	492
Sad-iron heater	H. W. Russell	847,116	Mar. 12	2790	617	127	734
Saddletree and tree-pad plate	J. E. L. Crawford	846,731	Mar. 12	2031	446-7	127	546
Safe	F. J. Super	847,265	Mar. 12	3082	680	127	808
Safe and vault protecting device	P. H. Thompson	846,823	Mar. 12	1624	360	127	442
Safety-lock	M. Speciale	846,762	Mar. 12	2097	460	127	564
Saltpeter and similar eruptions. Permanently removing wall-	M. Froschmaier	847,173	Mar. 12	2897		127	762
Sand-blast apparatus	F. M. Wise	847,269	Mar. 12	3092	681	127	810
Sand-blast apparatus	F. M. Wise	847,270	Mar. 12	3094	682	127	811
Saw. Chain-	A. M. Granbery	846,663	Mar. 12	1914	421	127	517
Saw guard and handle connection. Crosscut-	J. Tors	846,964	Mar. 12	2510	553	127	668
Saws. Appliance for crosscut-	J. Tors	846,965	Mar. 12	2511	554	127	668
Sawing-machine	N. S. Davis	846,510	Mar. 12	1605	356	127	436
Scaffold	G. Bonenberger	846,784	Mar. 12	2142	470	127	575
Scaffold	G. Walker	847,275	Mar. 12	3102	683	127	812
Scale. Spring-	J. Engebretsen	846,880	Mar. 12	2343	516	127	627
Scraper-coupling	J. Engebretsen	846,552	Mar. 12	1896	416-17	127	513
Screen: See Window-screen.		846,653	Mar. 12	1898	417	127	513
Screen	M. S. Clark	846,907	Mar. 12	2399	527	127	639
Screw	J. H. Claiborne, Jr	846,981	Mar. 12	2539	559	127	677
Seal. Bottle-	C. G. Hawley	846,744	Mar. 12	2060	452	127	553
Seal for boxes	E. J. Brooks	847,276	Mar. 12	3103	684	127	813
Seeding-machine. Rod-gate	E. F. Molck	847,290	Mar. 12	3125	688-9	127	819
Seeds, &c. Cleaning and separating apparatus for	P. Hoogersell	846,915	Mar. 12	2412	530	127	642
Seesaw	W. Larson	847,002	Mar. 12	2575	566	127	684
Seining-machine		846,575	Mar. 12	1736	382	127	470
Separator: See Hydraulic separator.							
Sewing-machine gage. Adjustable	N. Rogers and L. Rosenwasser	847,262	Mar. 12	3073	677	127	806
Shade adjuster. Window-	F. J. and A. A. Mansmann	846,494	Mar. 12	1558	345	127	426
Shade and curtain bracket	C. F. Nicholson	847,100	Mar. 12	2765	611	127	728
Shade connection. Rolling window-	C. L. Webster	846,709	Mar. 12	1986	437	127	535
Shaft-sinking apparatus	R. Baggaley	846,816	Mar. 12	1564	346-7	127	427
Shafting and the like. Machine for straightening	W. J. Muncaster	846,497	Mar. 12	2021	444-5	127	544
Shaping-machine	R. B. Cochran and W. A. Warman	846,728	Mar. 12	2289	504	127	613
Shears	L. A. Jones	846,854	Mar. 12	2316	508	127	620
Shears	R. Sevic	846,868	Mar. 12	2475	545-6	127	656
Sheet material. Device for feeding	G. H. Pierce	846,945	Mar. 12	2777	614	127	731
Shield	M. E. Patterson	847,107	Mar. 12	1976	434	127	532
Shoe-fastener	C. A. Spies	846,702	Mar. 12	1891	415	127	511
Shoulder-brace	G. R. Craw and O. Miller	846,647	Mar. 12	2229	488	127	597
Shovel	G. D. Ceska	846,824	Mar. 12	2799	619	127	737
Show-case	H. H. Sheldon	847,122	Mar. 12	1620	359	127	441
Shutter-operator	E. F. Stenman	846,520	Mar. 12	2520	556	127	670
Sign character	W. A. Zimmerman	846,970	Mar. 12	2772	613	127	730
Signal	W. H. Parrish, Jr	847,105	Mar. 12	1623	360	127	442
Signal-bell. Polarized electric	W. M. Thomas	846,522	Mar. 12	2132	468-9	127	572
Signaling apparatus	C. W. Coleman	846,779	Mar. 12	2857	630-1	127	752
Signaling apparatus	H. G. Brown and E. D. Malan	847,157	Mar. 12	2425	532-3	127	646
Signature-conveying and wire-stitching machine	C. A. Juengst	846,923	Mar. 12	1836	404	127	497
Sled or go-cart. Folding	I. Rautenberg	846,618	Mar. 12	2509		127	660
Smelting lead and copper ores	A. Lotti	847,017	Mar. 12	1569	347-8	127	429
Smelting sulfid ores	C. W. Munson	846,498	Mar. 12	1475	328	127	493
Smoke-suspended matter. Means for separating and eliminating	S. Benson	846,448					
Soap-box	K Nishimoto	846,936	Mar. 12	2455	539	127	653
Soap cutter. Bar-	E. J. Athanassiades	846,974	Mar. 12	2527	557	127	672
Soap-holder	J. Evans, Jr., and G. A. Steiner	847,053	Mar. 12	2682	589	127	710
Soap holder. Cake-	P. F. Cox	847,279	Mar. 12	3107	685	127	814
Soap holder. Liquid-	J. F. Heimold	847,000	Mar. 12	2571	565	127	683
Soap holder. Liquid-	J. E. Lee	847,014	Mar. 12	2595	569	127	689
Socket	R. Smith	846,701	Mar. 12	1975	434	127	532
Soil-cutter	N. O. Wold	846,711	Mar. 12	1991	438	127	536
Soldering-paste. Plastic	N. S. Jenkins	846,922	Mar. 12	2424		127	645
Sole. Slipper-	O. E. and W. D. Lowery	846,677	Mar. 12	1941	426	127	524
Sole. Slipper-	I. Greenberg	847,063	Mar. 12	2705	595	127	714

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sorting articles according to weight. Apparatus for.	L. Brockt	847,220	Mar. 12	2014	664	127	701
Speed and reversing mechanism. Change-	P. Renaux	846,620	Mar. 12	1849	404–5	127	486
Speed-regulator	R. E. Rucker	847,118	Mar. 12	2703	616	127	734
Spittoon	O. Cady	846,454	Mar. 12	1486	330	127	488
Sprayer	L. I. Lutes	846,491	Mar. 12	1555	344	127	488
Spring-ring	E. W. Morehouse	846,397	Mar. 12	1702	395	127	488
Spring-wheel	L. A. Nodl	846,527	Mar. 12	2466	538	127	488
Spring-wheel	L. A. Nodl	846,528	Mar. 12	2467	539	127	488
Spring-wheel	A. S. F. Robinson	846,961	Mar. 12	2494	548	127	488
Square	E. A. Nelson	847,090	Mar. 12	2703	610–11	127	728
Square. Carpenter's	L. V. Shepherd	847,208	Mar. 12	2931	657	127	783
Squeegee and scrubber. Combined	W. Morley	846,496	Mar. 12	1550	345	127	488
Stalk-cutter	A. R. Gashwind	847,220	Mar. 12	3039	673	127	888
	T. M. Yarbrough and R. C. Bradley.	847,144	Mar. 12	2939	626	127	767
Stanchion. Cattle-	J. Hacker	846,694	Mar. 12	1917	422	127	513
Stand:							
See Folding stand. Trolley-stand.							
Staple-machine	R. Coates	846,826	Mar. 12	2223	489–90	127	888
Steam from waste heat of slag. Generating	R. Baggaley	846,817	Mar. 12	2212		127	888
Steam-trap	C. E. Vance	847,131	Mar. 12	2815	622	127	749
Stereoscope	W. I. Sherwood	846,936	Mar. 12	2181	479–80	127	886
Stoker. Mechanical	N. E. Gee	847,081	Mar. 12	2696	563–4	127	712
Stoker. Mechanical	N. E. Gee	847,174	Mar. 12	2898	637–9	127	762
Stone-dressing machine	W. H. Van Sickel	846,896	Mar. 12	2122	482	127	888
Stopper:							
See Bottle-stopper.							
Stove	J. M. Robertson	846,821	Mar. 12	1843	405	127	888
Stove. Cooking-	O. Lee	846,579	Mar. 12	1744	386	127	672
Stovepipe-elbow	W. C. Embury	847,049	Mar. 12	2674	588	127	707
Straightening and bending machine	K. C. Gardner and F. C. Biggert, Jr.	846,483	Mar. 12	1908	334	127	488
Straightening-press	J. C. Cromwell	846,826	Mar. 12	2226	491	127	888
Street-indicating mechanism	T. W. Small	846,513	Mar. 12	1610	357	127	488
String-tapering machine	J. P. Donovan	846,458	Mar. 12	1492	331	127	488
Sugar-juices. Purifying and concentrating	J. A. Besson	846,543	Mar. 12	1660		127	452
Sulfids. Reducing metallic	E. L. Anderson	846,648	Mar. 12	1853	413	127	888
Surveying instrument	P. Ferber	846,899	Mar. 12	2562	561	127	679
Swing	F. J. Forget	846,866	Mar. 12	1908	418	127	513
Switch:							
See Electric switch. Railway-switch. Hook-switch.							
Switch	W. R. Thompson	846,764	Mar. 12	2109	461	127	564
Switch	J. C. Ray	846,863	Mar. 12	2304	507	127	617
Swivel	R. H. Beebe	847,152	Mar. 12	2851	629	127	751
Table:							
See Veterinary's operating-table.							
Talking-machine horn-support							
Tank:	O. Kraus	846,926	Mar. 12	2440	535	127	680
See Rendering-tank.							
Teaching arithmetic. Apparatus for	A. Leitch	846,494	Mar. 12	1542	341–2	127	422
Telegraphic instrument and the like	A. Gentili	846,464	Mar. 12	1504	335	127	411
Telegraphy	I. Kitsee	847,188	Mar. 12	2927	644	127	788
Telegraphy. Electric	I. Kitsee	847,189	Mar. 12	2931	644	127	789
Telephone	S. A. Koltonski	846,479	Mar. 12	1529	339	127	417
Telephone-exchange apparatus	E. H. Smythe	846,626	Mar. 12	1853	408	127	502
Telephone-service apparatus	S. H. Couch	846,627	Mar. 12	2236	490	127	508
Telephone system	A. K. Andriano	846,869	Mar. 12	2365	519–20	127	632
Telephony	F. W. Dunbar	846,557	Mar. 12	1683	372	127	457
Thill-guard	H. J. Fisher	847,283	Mar. 12	3111	686	127	815
Ticket-issuing machine. Coin-controlled	J. Wright	847,202	Mar. 12	3147	693	127	824
Tie:	A. Wantzen	846,706	Mar. 12	2103	462	127	565
See Metallic tie. Railway cross-tie. Railway-tie.							
Time-controlled mechanism	J. H. Hermance	846,470	Mar. 12	1517	336–7	127	414
Tire	E. B. Cadwell	846,453	Mar. 12	1485	329–30	127	408
Tire. Cushioned	Z. A. Curtis	846,455	Mar. 12	1488	330	127	408
Tire. Pneumatic	A. F. Bryce	847,231	Mar. 12	2916	666	127	791
Tire-winding machine. Automobile-	E. D. C. Bayne and L. A. Subers.	847,041	Mar. 12	2653	584–5	127	705
Toaster	J. M. Brock	846,546	Mar. 12	1664	369	127	453
Tobacco-cutter	N. Du Brul	846,734	Mar. 12	2035	447–8	127	547
Toll-box	P. E. Oswald	846,604	Mar. 12	1807	397–8	127	499
Tongs. Lifting-	P. Neddo	847,200	Mar. 12	2989	654	127	780
Tool. Pneumatic	H. Leineweber	846,857	Mar. 12	2298	505	127	614
Tool. Pneumatic	E. B. Boyer	847,043	Mar. 12	2658	586	127	704
Toy	E. W. Brimmer	846,449	Mar. 12	1481	328	127	404
Toy. Detonating	W. V. Gilbert	846,560	Mar. 12	1698	374–5	127	460
	T. B. Wilkinson and F. G. Dieterich.	846,884	Mar. 12	2362	517	127	630
Tracing or marking tool	A. E. Jones	846,569	Mar. 12	1722	370	127	467
Track construction	J. W. Leahy	846,799	Mar. 12	2172	477–8	127	583
Traction-wheel	J. McNeal	846,689	Mar. 12	1957	430	127	528
Tractor	F. E. Beadle	846,772	Mar. 12	2117	465–6	127	569
Trap:							
See Drainage-trap. Steam-trap. Fish-trap.							
Tray	J. B. Arthur	847,147	Mar. 12	2844	628	127	749
Tray. Revolving	J. Richter	846,946	Mar. 12	2481	547	127	660
Tree-felling machine	A. V. Snow	846,869	Mar. 12	2317	509	127	621
Trepan	R. Velasco	847,123	Mar. 12	2819	622	127	742
Trial-frames. Device for supporting	J. P. Weaver	846,708	Mar. 12	1998	437	127	534
Trolley	T. Cope	847,163	Mar. 12	2872	633	127	756
Trolley-stand	H. E. Eastman	847,170	Mar. 12	2880	636–7	127	760
Trough:							
See Chalk-trough.							
Trousers-hanger							
Truck	R. J. Linklater	846,676	Mar. 12	1949	426	127	524
Trunk. Folding	W. C. Burry	846,451	Mar. 12	1483	329	127	405
	F. L. A. Eichelberger	847,171	Mar. 12	2888	637	127	761

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Tube:							
See Cop-tube.							
Tube-bending machine. Metallic-	F. V. M. Monnet and E. J. A. Moyne.	847,094	Mar. 12	2757	609	127	726
Tubes and screens. Forming perforated	M. E. Layne	846,482	Mar. 12	1539	340	127	421
Tubing	E. T. Greenfield	846,996	Mar. 12	2562	564	127	681
Tuning device	C. S. Weber	847,216	Mar. 12	2993	660	127	787
Turbine	H. C. Karlson	846,855	Mar. 12	2290	504	127	613
Turbine	N. Becker	846,896	Mar. 12	2381	523	127	636
Turbine	Z. H. Kevorkian	846,571	Mar. 12	1726	380–1	127	468
Turbine. Elastic-fluid	H. Lents	846,928	Mar. 12	2444	535	127	651
Turbine-engine		846,538	Mar. 12	1651	367	127	449
Turbine-governing mechanism	J. Wilkinson	846,796	Mar. 12	2167	476–7	127	582
Turbine-shaft bearings. Lubricating system for	A. H. Kruesi	846,747	Mar. 12	2066	453	127	555
Turbine. Steam-	C. V. Kerr	846,752	Mar. 12	2075	455	127	558
Turbine. Steam-	J. L. Moore	846,739	Mar. 12	2051	450–1	127	552
Turbines. Bucket for elastic-fluid	E. H. Farquhar	846,746	Mar. 12	2064	453	127	555
Turbines. Combined bushing and bearing for shafts of steam-	C. V. Kerr	846,794	Mar. 12	2158	475	127	579
Turbines. Means for supplying lubricant for the bearings of elastic-fluid	A. H. Kruesi	847,050	Mar. 12	2676	588–9	127	708
Turbines. System of lubrication for	W. L. R. Emmet	846,805	Mar. 12	1813	399	127	491
Twisting-frame	F. A. Paige	846,475	Mar. 12	1524	338	127	416
Twyer-stocks. Peep-sight for	S. Hosking	846,671	Mar. 12	1927	424–5	127	520
Type-writer attachment	C. D. King and A. H. Milstead	846,443	Mar. 12	1463	325–6	127	399
Type-writer. Music	L. C. and I. F. Badeau	846,978	Mar. 12	2532	558	127	674
Type-writing machine	B. A. Brooks	847,183	Mar. 12	2918	642	127	766
Urinal	A. Johnson	846,644	Mar. 12	1887	414	127	510
Valve	J. E. Brady	847,182	Mar. 12	2917	642	127	766
Valve. Automatic	F. R. Jacobsen	847,268	Mar. 12	3090	681	127	809
Valve. Automatic hose-	R. D. Wirt	847,146	Mar. 12	2843	628	127	748
Valve. Check-	E. W. Aller	846,692	Mar. 12	1964	431	127	529
Valve-controlling means	C. A. Parsons and J. Turnbull	847,219	Mar. 12	2998	661	127	787
Valve-controlling mechanism	C. W. Akers	847,028	Mar. 12	2632	579	127	698
Valve for engines. Steam-actuated	D. C. Springer	847,086	Mar. 12	2738	604	127	722
Valve for explosive-engines. Combined air and gas admission	H. Lentz	847,092	Mar. 12	2750	606–7	127	725
Valve. Steam-actuated	E. A. Menking	846,712	Mar. 12	1992	438	127	536
Valve. Tank-	C. Wright	846,730	Mar. 12	2030	446	127	546
Valves for explosive-engines. Means for controlling the	G. Cormack, Jr., and F. C. Zumdahl.	846,797	Mar. 12	2170	477	127	582
Vehicle antivibration device	F. Lamplough	846,866	Mar. 12	2310	508	127	618
Vehicle-boxes from rocking. Device for keeping	C. Sallows	847,224	Mar. 12	3005	663	127	789
Vehicle-brace	R. Aton	846,614	Mar. 12	1829	402	127	495
Vehicle-cleaning device	B. H. Pugh	847,204	Mar. 12	2975	655–6	127	782
Vehicle-fender	F. Roeder	846,787	Mar. 12	2147	472	127	576
Vehicle-frame	J. H. Foster	846,820	Mar. 12	2220	486	127	595
Vehicle storm-front	F. C. Brock and E. M. Du Bois	847,238	Mar. 12	3029	667	127	794
Vehicle-ventilating system	S. C. Carroll	847,245	Mar. 12	3043	671	127	798
Vehicle-wheel	P. E. Dawson	846,888	Mar. 12	2356	518	127	631
Vehicles. Line-holder for	J. B. Worden	846,917	Mar. 12	2415	531	127	643
Vending-machine	F. Foote and N. M. Johnston	847,151	Mar. 12	2850	629	127	750
Veneer-cutter	E. Beck						
Ventilator:							
See Window-ventilator.							
Ventilator	F. J. Kobusch	847,255	Mar. 12	3058	674	127	801
Veterinary's operating-table	W. Housam	847,180	Mar. 12	2913	641	127	765
Vial-case. Automatic tilting	W. W. Cummins	846,553	Mar. 12	1678	371	127	456
Violin-player. Automatic	J. Wauters	846,883	Mar. 12	2349	517	127	629
Vitreous parts. Apparatus for and method of uniting	F. M. F. Cazin	846,823	Mar. 12	2224	487–8	127	596
Voting-machine case. Sectional	A. B. Camp	847,045	Mar. 12	2664	586	127	705
Voting-machine counting mechanism	C. G. Barnum	847,040	Mar. 12	2648	584	127	701
Voting-machine grouping mechanism	C. C. Abbott	847,037	Mar. 12	2643	583	127	700
Voting-machine grouping mechanism	W. M. Delavan and A. B. Camp.	847,047	Mar. 12	2666	587	127	706
Voting-machines. Paper-feed-actuating mechanism for	C. H. Pitney	847,109	Mar. 12	2779	614	127	732
Wagon	E. W. Harmon	847,067	Mar. 12	2708	596	127	715
Wagon-bolster and standard	O. H. Buntrock	847,159	Mar. 12	2866	631	127	755
Wagon-brake. Automatic	E. F. Veatch	847,132	Mar. 12	2817	622	127	741
Wagon. Dumping-	J. C. Horne and D. H. Yates	846,568	Mar. 12	1720	378–9	127	466
Wagon. Lumber-	S. J. Loncks and W. M. Holcomb	846,490	Mar. 12	1553	344	127	425
Wagon running-gear	B. F. Padgett	846,939	Mar. 12	2459	539–40	127	654
Waist	E. G. Tebbutt	846,631	Mar. 12	1861	408	127	504
Waist-shield	M. L. Cochran	847,241	Mar. 12	3034	668	127	795
Washer:							
See Lathe-washer.							
Washer	V. Boehm	847,155	Mar. 12	2856	630	127	752
Watch-guard	A. Schneider	847,207	Mar. 12	2980	656	127	783
Water-closet bend	B. Oakes	846,600	Mar. 12	1796	396	127	487
Water-elevator	A. Vandenameele	846,530	Mar. 12	1637	364	127	445
Water-purifying apparatus	J. C. W. Greth	846,845	Mar. 12	2275	499	127	610
Water-tube boiler	W. S. Elliott	846,737	Mar. 12	2047	450	127	550
Water-tube boiler	W. S. Elliott	846,738	Mar. 12	2050	450	127	551
Wearing-surfaces. Material for flexible	J. J. Voorhees	846,534	Mar. 12	1644	365	127	447
Weed-cutter	R. W. Steele	847,125	Mar. 12	2802	619–20	127	737
Weighing and computing device. Butter	D. F. Curtin	847,244	Mar. 12	3042	671	127	797
Weir-gage	E. B Howell	846,669	Mar. 12	1923	423	127	519
Welding. Electric	L. S. Lachman	846,480	Mar. 12	1530	339	127	418
Well-boring tool	L. K. Robbins	846,950	Mar. 12	2483	547	127	661
Wheel:							
See Car-wheel. Traction-wheel. Laminated wheel. Vehicle-wheel. Spring-wheel.							
Wheel attachment	F. Unger	846,529	Mar. 12	1636	364	127	445
Whiffletree	W. T. Young	846,714	Mar. 12	1996	439	127	537
Winder. Ball-	F. A. Whitmore	846,968	Mar. 12	2516	555	127	670
Windmill	C. and J. Viskochil	846,532	Mar. 12	1640	365	127	446
Window	B. J. Leslie	846,858	Mar. 12	2296	505	127	615
Window-lock	A. Z. Stewart	847,127	Mar. 12	2808	620	127	736

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Window. Sash-	P. Kupelwieser	848,672	Mar. 12	1782		127	840
Window-screen	W. Selbt	848,685	Mar. 12	1783	392	127	840
Window-ventilator	M. H. Berry	848,721	Mar. 12	1783	540	127	840
Window-ventilator	M. H. Berry	848,722	Mar. 12	1783	441-2	127	840
Windows. Rain guard or hood for	A. P. Chute	848,689	Mar. 12	1783	442	127	840
Wire-cutter	G. E. Sultzen	848,698	Mar. 12	1783	550	127	840
Wire stretching and twisting apparatus	S. E. Bunton	847,158	Mar. 12	1783	402	127	840
Wood cleaning and polishing compound	C. J. Barrvapohl	847,328	Mar. 12	1783	631	127	840
Wrench	M. Forder	848,760	Mar. 12	1783	451	127	840

DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Badge or similar article	S. B. Robertson	39,474	Mar. 12	127	837
Locket or similar article	F. W. Arnold	39,475	Mar. 12	127	837
Locket or similar article	F. W. Arnold	39,476	Mar. 12	127	837
Pincushion fabric	W. B. Lawrence	39,470	Mar. 12	127	837
Reflector. Artificial-light	K. Booth	39,477	Mar. 12	127	837
Talking-machine horn	H. Sibble	39,478	Mar. 12	127	837
Tea or coffee pot	J. Rogers	39,469	Mar. 12	127	836

TRADE-MARKS.

Title	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Alcohol. Denatured	U. S. Industrial Alcohol Co	61,270	Mar. 12	127	842
Ale	S. Liebmann's Sons Brewing Company.	61,286	Mar. 12	127	842
Antipyretic, stimulant, analgesic, and anodyne	C. Ammen	61,282	Mar. 12	127	843
Antiseptic cleanser for artificial teeth	A. W. Austin	61,231	Mar. 12	127	841
Beef oil or fat	Schwarzschild and Sulzberger Co	61,229	Mar. 12	127	841
Beer. Lager	Leidiger Brewing Co	61,256	Mar. 12	127	842
Belting, hose, and machinery packing, &c. Certain	B. F. Goodrich Company	61,245	Mar. 12	127	841
Bitters	I. Monheimer	61,280	Mar. 12	127	842
Blue. Washing	Sawyer Crystal Blue Company	61,228	Mar. 12	127	844
Boots, shoes, and oxfords. Leather	F. Valdes & Co	61,277	Mar. 12	127	842
Brushes. Tooth and nail	W. L. Martin	61,208	Mar. 12	127	843
Bung-hole borers	Enterprise Manufacturing Co. of Pennsylvania.	61,288	Mar. 12	127	843
Butter	D. W. Lewis & Company	61,235	Mar. 12	127	841
Cables, ropes, chains, and rods. Metal grips for	Universal Cable Grip Company	61,220	Mar. 12	127	844
Candies	George Ziegler Co	61,238	Mar. 12	127	841
Candy. Chocolate-covered	Phelps Co	61,236	Mar. 12	127	841
Canned corn, succotash, and beans	H. F. Webb Company	61,224	Mar. 12	127	841
Canned fruits and vegetables	Clinton Canning Co	61,220	Mar. 12	127	841
Canned vegetables	Clinton Canning Co	61,219	Mar. 12	127	841
Canned vegetables	Clinton Canning Co	61,224	Mar. 12	127	841
Canned vegetables	Clinton Canning Co	61,225	Mar. 12	127	841
Canned vegetables	Clinton Canning Co	61,226	Mar. 12	127	841
Cement. Caen-stone	Rosenstein Brothers	61,242	Mar. 12	127	841
Chocolate	C. L. Miller & Co	61,239	Mar. 12	127	842
Cigarettes	W. H. Baker	61,216	Mar. 12	127	841
Cigarettes	Maspero Frères	61,208	Mar. 12	127	843
Cigars, cigarettes, smoking and chewing tobacco	J. G. Saffa	61,213	Mar. 12	127	843
Coats, cloaks, suits, and skirts. Women's	Carlowitz & Co	61,287	Mar. 12	127	843
Composition of matter. Certain	New York Mackintosh Company	61,283	Mar. 12	127	842
Copying baths and cloths	Electrose Manufacturing Co	61,276	Mar. 12	127	842
Corks	Hoggson & Pettis Manufacturing Company.	61,240	Mar. 12	127	841
Cream and eczema cure. Massage	A. Blumer	61,289	Mar. 12	127	841
Cream-separators	Blanke-Baer Chemical Company	61,247	Mar. 12	127	842
Fertilizers	De Laval Separator Company	61,209	Mar. 12	127	843
Fertilizers	Virginia-Carolina Chemical Company.	61,215	Mar. 12	127	843
Finger-cots. Leather	Virginia-Carolina Chemical Company.	61,221	Mar. 12	127	844
Fire-extinguishing engines or devices. Hand-operated	P. Toussaint	61,269	Mar. 12	127	842
Fireworks	Walter R. Johnston Manuf'g. Co	61,233	Mar. 12	127	844
Fish-hooks, rods, reels, and artificial bait	H. J. Pain	61,239	Mar. 12	127	843
Fishing-tackle	Edw. K. Tryon Company	61,268	Mar. 12	127	843
Fishing-tackle	F. E. Chester	61,266	Mar. 12	127	843
Fishing-tackle	F. E. Chester	61,220	Mar. 12	127	843
Flour. Wheat	Central Kansas Milling Company	61,231	Mar. 12	127	841
Flour. Wheat	Champion Roller Milling Company.	61,219	Mar. 12	127	841
	Davis Milling Company	61,232	Mar. 12	127	841

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Hair-tonic	C. L. Du Rocher	61,238	Mar. 12	127	841
Hats	Swann Abram Hat Co	61,243	Mar. 12	127	841
Hominy, hominy grits and flakes, and cornmeal	American Hominy Company	61,214	Mar. 12	127	841
Horse and mule shoes	American Horse Shoe Company	61,313	Mar. 12	127	843
Hosiery	Lord & Taylor	61,276	Mar. 12	127	843
Insecticides	H. Bensmann	61,246	Mar. 12	127	843
Insecticides	National Coal Tar Company	61,261	Mar. 12	127	843
Journal. Monthly	Funk & Wagnalls Company	61,252	Mar. 12	127	843
Lamps. Incandescent electric	Franklin Electric Mfg. Co	61,223	Mar. 12	127	844
Lard	Richmond Abattoir Co	61,237	Mar. 12	127	841
Lotions. Face	Healaletta Chemical Co	61,253	Mar. 12	127	843
Machinery and parts thereof. Certain	Taylor Iron & Steel Co	61,214	Mar. 12	127	843
Meats. Cured, smoked, and sweet-pickled	Cudahy Packing Company	61,221	Mar. 12	127	841
Medical and surgical apparatus, appliances, and instruments	Kny-Scheerer Company	61,298	Mar. 12	127	843
Medical preparation	Knoll & Co	61,255	Mar. 12	127	843
Medicated tablets for baths	W. Sedlitzky	61,270	Mar. 12	127	843
Medicinal and toilet preparations. Certain named	Barclay & Barclay	61,232	Mar. 12	127	841
Medicinal preparation. Certain	J. T. Coombs	61,274	Mar. 12	127	843
Medicinal preparation. Certain	B. O. Lamphear	61,300	Mar. 12	127	843
Medicinal preparations for the relief of toothache	L. D. Pierce	61,277	Mar. 12	127	843
Medicine. Alterative, resolvent, aperient	Tilden Company	61,208	Mar. 12	127	843
Medicine for the cure of rheumatism	Father Schubert Rheumatic Cure Company.	61,250	Mar. 12	127	843
Medicine for the lungs	G. J. Weisent	61,244	Mar. 12	127	841
Milky or lactoseus meal	A. Adam	61,273	Mar. 12	127	842
Oil. Illuminating	National Refining Company	61,207	Mar. 12	127	843
Oils. Lubricating	Atlantic Refining Company	61,283	Mar. 12	127	843
Oils. Lubricating	Atlantic Refining Company	61,284	Mar. 12	127	843
Oils. Olive	J. P. Athanassiades Sons	61,215	Mar. 12	127	841
Paper manufactures. Certain	Safety Systems Co	61,266	Mar. 12	127	842
Pianos and organs	M. Schulz Co	61,201	Mar. 12	127	843
Pills for diseases of the stomach, liver, and bowels	H. H. Johnson Co	61,254	Mar. 12	127	842
Plasters. Wall	Plymouth Gypsum Co	61,310	Mar. 12	127	843
Polish comprising black lead, plumbago, or graphite, and for stove-polish	F. V. Morse	61,308	Mar. 12	127	843
Quilts	Sherman, Reid & Co	61,280	Mar. 12	127	842
Remedy for certain diseases	Manhattan Medicine Co	61,257	Mar. 12	127	842
Sand and emery paper	Neuss, Hesslein & Co	61,282	Mar. 12	127	842
Sausages, hams, bacon, salt pork, and lard	Jones Dairy Farm	61,297	Mar. 12	127	843
Shoe, leather, and harness polishes, blackings, and dressings	Eclipse Cement & Blacking Company.	61,291	Mar. 12	127	843
Shoes. Leather	F. J. Currier	61,249	Mar. 12	127	842
Shoes. Leather	May Company	61,256	Mar. 12	127	842
Shoes. Leather	W. S. Johnson	61,206	Mar. 12	127	843
Silk dress goods in the piece	Rogers & Thompson	61,311	Mar. 12	127	843
Snap-fasteners	Alma Manufacturing Company of Baltimore City.	61,281	Mar. 12	127	842
Soap	Barclay & Barclay	61,285	Mar. 12	127	843
Soap	Barclay & Barclay	61,286	Mar. 12	127	843
Soap	Mexican Amole Soap Co	61,304	Mar. 12	127	843
Soap	Mexican Amole Soap Co	61,305	Mar. 12	127	843
Soap	E. Goltze	61,324	Mar. 12	127	844
Soap. Laundry	James S. Kirk & Company	61,295	Mar. 12	127	843
Soap. Pumice	Haskins Bros. & Co	61,230	Mar. 12	127	844
Steel	S. & C. Wardlow	61,316	Mar. 12	127	843
Stockings	Levi Strauss & Co	61,241	Mar. 12	127	841
Stogies	J. S. Haggerty Co	61,325	Mar. 12	127	844
Talking-machines, records, and supplies	Columbia Phonograph Company	61,237	Mar. 12	127	841
Tapioca. Prepared	Whitman Grocery Company	61,229	Mar. 12	127	841
Teeth. Plugs for filling the	E. F. Andrews	61,319	Mar. 12	127	843
Time-recorders, clocks, and watches	Newman Clock Co	61,308	Mar. 12	127	843
Tires for automobiles. Rubber	H. M. & S. Armored Tire Co	61,226	Mar. 12	127	841
Tobacco. Scrap, chewing, and smoking	A. Schroer	61,313	Mar. 12	127	843
Toilet articles. Certain named	William Prym G. M. B. H	61,317	Mar. 12	127	843
Tooth-paste	W. B. Flynn	61,254	Mar. 12	127	843
Trousers, coats, vests, and overcoats	Arnold, Louchheim & Co	61,230	Mar. 12	127	841
Varnishes	Patterson Sargent Co	61,264	Mar. 12	127	842
Vehicles. Certain parts of	Eberhard Manufacturing Company.	61,290	Mar. 12	127	843
Washing-machines, washtubs, wringers, &c	G. W. Froelich	61,323	Mar. 12	127	844
Watches, watch movements and cases	B. L. Strasburger	61,267	Mar. 12	127	842
Water. Mineral	Virginia Etna Lithia Springs Co	61,272	Mar. 12	127	843
Waters. Mineral	J. Ries	61,278	Mar. 12	127	843
Whisky	Hollywood Company	61,294	Mar. 12	127	843
Whisky	Kohn Distilling Co	61,290	Mar. 12	127	843
Windmills, windmill-towers, pumps, and pump-cylinders	Red Cross Mfg. Co	61,327	Mar. 12	127	844
Wood manufactures. Certain	C. N. Dietz Lumber Company	61,248	Mar. 12	127	843

LABELS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Anti-Wet Waterproof." (For Leather-Dressing)	C. G. Winfield	13,398	Mar. 12	127	845
"Burn Salve." (For Ointments)	Harris & Harris	13,399	Mar. 12	127	845
"El Inspiro." (For Cigars)	O. L. Schwencke Lithographic Co.	13,392	Mar. 12	127	845
"Get Rosy Malt." (For Malt Liquors)	P. Clark	13,396	Mar. 12	127	845
"Himmalia Tonic." (For Medicine)	C. O. F. Burkstrom	13,398	Mar. 12	127	845
"Kilflea." (For Dog-Soap)	G. W. Clayton	13,400	Mar. 12	127	845
"La Ultreza." (For Cigars)	O. L. Schwencke Lithographic Co.	13,393	Mar. 12	127	845
"Pyorronol." (For Mouth-Wash)	Pyorronol Co.	13,396	Mar. 12	127	845
"Recordol." (For Cleaning, Preserving, Polishing, and Lubricating Preparation.)	J. A. Manahan	13,402	Mar. 12	127	845
"Rexalos." (For Cigars)	O. L. Schwencke Lithographic Co.	13,394	Mar. 12	127	845
"Star Record." (For Records for Talking-Machines)	Hawthorne & Sheble Mfg. Co.	13,401	Mar. 12	127	845
"Tonsilloi." (For Medicine)	J. Nachtigall	13,397	Mar. 12	127	845

PRINTS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Are You Opinionated?" (For Flour)	Washburn Crosby Company	1,920	Mar. 12	127	846
"Don't Discharge the Cook." (For Flour)	Washburn Crosby Company	1,919	Mar. 12	127	846
"Falker's Velvet Suede." (For Suede Skins)	A. Faulker	1,926	Mar. 12	127	846
"Good Bread—The Secret's Out." (For Flour)	Washburn Crosby Company	1,921	Mar. 12	127	846
"If You Please—Don't Merely Ask for Flour." (For Flour)	Washburn Crosby Company	1,923	Mar. 12	127	846
"Men's and Boys' Apparel." (For Apparel)	H. C. Lytton	1,925	Mar. 12	127	846
"The Best in the Basket." (For Flour)	Washburn Crosby Company	1,918	Mar. 12	127	846
"The Professional Baker." (For Flour)	Washburn Crosby Company	1,924	Mar. 12	127	846
"We Ought to Charge More Than We Do—." (For Flour)	Washburn Crosby Company	1,922	Mar. 12	127	846

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Animal-dip	O. Robinson & Co	20,821	Mar. 12	127	832
Antiseptic mouth-wash	G. Evans	24,894	Mar. 12	127	837
Antiseptic powder	J. S. Falck	24,830	Mar. 12	127	836
Antiseptic wash	W. E. Lewis	25,261	Mar. 12	127	839
Baking-powder	Abraham & Straus	25,261	Mar. 12	127	839
Beverage	Pepsol Chemical Company	24,882	Mar. 12	127	837
Books. Sales-	Carter-Crume Company	24,248	Mar. 12	127	835
Boots and shoes. Leather	Craddock-Terry Company	25,124	Mar. 12	127	837
Boots, shoes, and slippers	Smith-Briscoe Shoe Company	25,154	Mar. 12	127	838
Bread	J. Donovan & Co	25,267	Mar. 12	127	840
Candies	Middleton Baking Co	25,018	Mar. 12	127	837
Candy	I. S. Morse	10,079	Mar. 12	127	830
Candy, chocolate, cocoa, &c	Englewood Candy Company	25,126	Mar. 12	127	838
Candles	Stollwerck Bros	7,898	Mar. 12	127	830
Candles	Will & Baumer Company	9,162–7	Mar. 12	127	830
Canned fruit and vegetables	Will & Baumer Company	24,637–8	Mar. 12	127	836
Canned salmon	Stone-Ordean-Wells Co	18,255	Mar. 12	127	831
Carts. Hand-	H. Winter	24,824	Mar. 12	127	837
Cement. Hydraulic and other building	F. J. Aubeuf	24,677–8	Mar. 12	127	835
	Atlas Portland Cement Company.	14,009	Mar. 12	127	831
Chisels, gouges, and drawing-knives	Reliance Edge Tool Company	24,895	Mar. 12	127	836
Chocolate	Bishop & Company	22,469	Mar. 12	127	833
Chocolate	Abraham & Straus	25,262	Mar. 12	127	839
Cider and soda-water	Red Rock Company	22,501	Mar. 12	127	833
Cigars	S. S. Pierce Co	9,880	Mar. 12	127	830
Coal	Luhrig Coal Co	24,445	Mar. 12	127	835
Coating for preserving metal wood, &c	Century Preserver Co	24,799	Mar. 12	127	838
Coffee	G. B. Feahney	22,449	Mar. 12	127	833
Corsets	M. Barry	25,199	Mar. 12	127	838
Cotton piece goods and blankets	Indian Head Mills of Alabama	22,515	Mar. 12	127	833
Cotton shrunks	Collins & Company	24,813–13	Mar. 12	127	836
Drilling-machines	Cyclone Drilling Machine Co	15,084	Mar. 12	127	831
Engines. Internal-combustion	"New Way" Motor Company	22,260	Mar. 12	127	833
Exercising-machines, dumb-bells, and hand-grips	J. E. Thompson	24,094	Mar. 12	127	834

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Fertilizers	Germofert Manufacturing Company.	24,620	Mar. 12	127	836
Flour. Wheat	Portland Milling Company	25,285	Mar. 12	127	840
Food. Cereal breakfast	Ralston Purina Company	24,393	Mar. 12	127	835
Food. Poultry	Saginaw Milling Company	25,226	Mar. 12	127	839
Furs. Manufactured	C. C. Shayne & Co	25,000	Mar. 12	127	837
Gin. Buchu	J. H. Friedenwald & Co	3,211	Mar. 12	127	829
Hair-pins and hair ornaments	Rice & Hochster	22,866	Mar. 12	127	833
Hair-tonic	M. S. Barker	18,773	Mar. 12	127	831
Hats	J. H. Welsh & Co	24,951	Mar. 12	127	837
Hats and caps	Rothschild Bros. Hat Co	24,502	Mar. 12	127	835
Hats and caps	J. H. Welsh & Co	24,952	Mar. 12	127	837
Hose and belting	New Jersey Car Spring & Rubber Co.	25,132	Mar. 12	127	838
Incubators and brooders	Star Incubator and Brooder Co	25,166	Mar. 12	127	838
Knit undergarments and sweaters	Sterling Knit Goods Co	1,150	Mar. 12	127	829
Knit undershirts and drawers	L. H. Schaarschmidt	14,924	Mar. 12	127	831
Lamps and mantles. Gas, gasolene, &c	Best Light Company	24,238	Mar. 12	127	835
Lamps. Incandescent electric	Parker-Clark Electric Company	25,037	Mar. 12	127	837
Lard. Leaf-	Parker, Webb & Co	6,307	Mar. 12	127	830
Lotions, powders, creams, &c	V. F. Merle	23,316	Mar. 12	127	833
Massage and vibration instruments	J. E. Garratt	25,074	Mar. 12	127	837
Meats, lard, and sausage	Coffin-Fletcher Packing Co	24,800	Mar. 12	127	836
Medical compound for asthma, hay-fever, &c	R. Schiffmann Company	24,172	Mar. 12	127	834
Medical tonic	Weaver's Pharmacy	9604	Mar. 12	127	829
Medicated salt brick for live stock	Blackman Stock Remedy Co	19,601	Mar. 12	127	831
Mustard. Prepared	C. Gulden	25,267	Mar. 12	127	839
Oils and essences. Essential	Fritzsche Brothers	24,159	Mar. 12	127	834
Oils and greases	Climax Refining Company	24,206	Mar. 12	127	834
Oils and greases	Climax Refining Company	24,208	Mar. 12	127	834
Oils, gasolene, &c. Illuminating-	S. M. Willock	25,142	Mar. 12	127	838
Oils. Illuminating-	S. M. Willock	25,141	Mar. 12	127	838
Oils. Lubricating-	S. M. Willock	6,050	Mar. 12	127	829
Oils. Lubricating-	Atlantic Refining Company	25,140	Mar. 12	127	838
Ointment or salve	S. M. Willock	24,546	Mar. 12	127	836
Ointment. Pile-	C. A. Merrill	21,469	Mar. 12	127	832
Ointments	K. McMahon	25,239	Mar. 12	127	839
	Gedformol Manufacturing Company of Baltimore City.	25,330	Mar. 12	127	840
Packing. Rawhide	Mabbs Hydraulic Packing Co	20,621	Mar. 12	127	832
Paper, envelops, cardboards, cut cards, &c	J. E. Linde Paper Co	24,582	Mar. 12	127	836
Paper holders and cutters. Roll-	United States Paper Cutter Co	25,120	Mar. 12	127	837
Pie-fillings, preserves, and jellies	M. Ams	24,428	Mar. 12	127	835
Plasters and salves	Medicinal Products Co	25,207	Mar. 12	127	839
Pliers	Wiebusch & Hilger	25,319	Mar. 12	127	840
Popcorn and mixed popcorn and peanuts	Earl Manufacturing Company	16,886	Mar. 12	127	831
Powder. Gun-	King Powder Company	16,099	Mar. 12	127	831
Powder. Gun and blasting	Smokeless Powder and Cartridge Company.	24,149	Mar. 12	127	834
Remedies, liniments, ointments, &c	A. R. Saylor	20,518	Mar. 12	127	832
Remedy for dyspepsia	Reed & Carnrick	24,137	Mar. 12	127	834
Ribbons and silk and velvet dress goods	R. Ballerstein & Company	23,851–3	Mar. 12	127	833
Roofing and wall-covering. Stamped-metal	Cortright Metal Roofing Company	18,512	Mar. 12	127	831
Rubber boots and shoes	Goodyear Rubber Company	23,120	Mar. 12	127	833
Rubber boots and shoes	Roberts, Johnson & Rand Shoe Company.	24,035	Mar. 12	127	834
Salve	Ritzlin, Lebstein & Nechtowitz	21,391–2	Mar. 12	127	832
Salves	T. G. Balucinski	24,657	Mar. 12	127	836
Shirts. Men's flannel	Frank Bros. & Co	22,587	Mar. 12	127	833
Shoe-polish	Albion Manufacturing Company	7,295	Mar. 12	127	830
Shovels, spades, hoes, rakes, and screw-drivers	Brown-Hurley Hardware Company.	24,032	Mar. 12	127	834
Silver toilet articles, flat, table, and hollow ware	W. E. Wood	21,740–1	Mar. 12	127	832
Soap	C. J. Rath	16,235	Mar. 12	127	831
Soaps. Perfumed fancy	A. & F. Pears	25,205	Mar. 12	127	838
Suits. Boys' and children's	I. Frank & Co	25,259–60	Mar. 12	127	839
Thread and spool and sewing cotton	American Thread Company	25,253	Mar. 12	127	839
Thread and spool-cotton	American Thread Company	25,256	Mar. 12	127	839
Thread and spool-cotton	American Thread Company	25,204	Mar. 12	127	838
Tin and terne plates	Follansbee Brothers Company	20,794	Mar. 12	127	832
Tobacco. Smoking and chewing	R. Harris & Bro	20,455	Mar. 12	127	832
Towels, handkerchiefs, bedspreads, &c	Hargadine-McKittrick Dry Goods Company.	25,087	Mar. 12	127	837
Varnish	Valentine & Company	25,128	Mar. 12	127	838
Varnish-removers	Ideal Manufacturing Company	24,807	Mar. 12	127	836
Vehicles. Self-propelled road-	Pope Manufacturing Company	21,562	Mar. 12	127	832
Washboards	American Washboard Company	17,810	Mar. 12	127	831
Watchmakers' hand-tools	Kendrick & Davis	6,502	Mar. 12	127	830
Whisky	Nelson Distilling Co	25,219	Mar. 12	127	839
Whisky. Rye and Bourbon	Jonas F. Brown & Co	24,273	Mar. 12	127	835
Wines. Claret, Burgundy, and Sauterne	J. Calvet & Co	14,764	Mar. 12	127	831
Wood-filler. Liquid	Glidden Varnish Company				

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 19TH DAY OF MARCH, 1907.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Abbott, George A., Melbourne, Victoria, Australia. Filter	847,537	Mar. 19	3639	802	127	979
Adler, Samuel M., *et al.* (See Gorsch, Phillip W., assignor.)						
Aiken, Edward L., East Orange, assignor to New Jersey Patent Company, West Orange, N. J. Phonograph	847,631	Mar. 19	3855	842	127	1034
Aktiebolaget Baltic-Separator. (See Risberg, Johannes V. M., assignor.)	847,872	Mar. 19	4341	952	127	1151
Allen, Isabell, Kansas City, Mo., and G. Hanlon, Shawneetown, Ill. Hair-drier	847,304	Mar. 19	3157	695	127	855
Allen, Jean M. (See Perrin and Allen.)						
Allen, Orcenith P., Temple, Tex. Toboggan-slide	847,717	Mar. 19	4020	879	127	1075
Alston, James. (See Channell, Charles, assignor.)	847,718	Mar. 19	4021	879	127	1075
Althin, Olof, Boston, Mass. Concealed hinge						
Ambos, Walter P., Cleveland, Ohio. Outlet-box and wall-plate						
American Can Company. (See Rudolph, Frank, assignor.)						
American Can Company. (See Rudolph and Brüninger, assignors.)						
American Can Company. (See Ostrander, Allen E., assignor.)						
American Car & Foundry Company. (See Savage, Edward S., assignor.)						
American Chemical Manufacturing & Mining Company.						
American Linen Company. (See Schofield, Robert, assignor.)						
American Multigraph Co. (See Gammeter, Harry C., assignor.) (Reissue.)						
American Sheet & Tin Plate Company. (See Smiley, Ura S., assignor.)						
American Specialty Company. (See Stebbins and Bergstrom, assignors.)	847,632	Mar. 19	3856	842–3	127	1034
Ameler, Walter O., Pittsburg, Pa. Glass-melting furnace	847,538	Mar. 19	3640	802	127	979
Anderson, Alfred E., Milwaukee, Wis. Resilient switch-stand connection	847,539	Mar. 19	3642	803	127	980
Anderson, David B., St. Marys, Pa. Target-trap-controlling means	847,873	Mar. 19	4342	955	127	1151
Anderson, Edward N., assignor of one-fourth to P. S. Horton, Warren, Pa. Weather-strip	847,633	Mar. 19	3859	843	127	1035
Anderson, Rufus, Southampton, Mass. Glass-cutter	847,874	Mar. 19	4344	953	127	1152
Andres, Frank W., Milwaukee, Wis. Fish-reel	847,875	Mar. 19	4346	953	127	1152
Angier, George S., Schaller, Iowa. Attachment for threshing-machines	847,634	Mar. 19	3860	843	127	1035
Ansley, Sherman, assignor of one-half to W. Hankens, Portland, Oreg. Sewing awl	847,876	Mar. 19	4347	953–4	127	1152
Apple, Vincent G., Dayton, Ohio. Spark-timing device for ignition systems						
Arabol Manufacturing Company. (See Drittler, Frederick, assignor.)	847,719	Mar. 19	4022	879	127	1075
Arnold, Charles H., New London, Ohio. Knuckle-joint						
Arterburn, W. N. (See Fay, Alphonso, assignor.)	847,452	Mar. 19	3477	761	127	935
Ascue, Elbert, Blum, assignor of one-third to R. H. Crank, Cleburne, Tex. Sewing device	847,635	Mar. 19	3861	844	127	1035
Astfalck, Willand, Treptow, near Berlin, Germany. Press for forming tubes, &c.	847,540	Mar. 19	3644	803	127	981
Atchison, Fred E. (See Choate, Charles N., assignor.)						
Atkinson, Claude W., Rochdale, England. Electric meter	847,305	Mar. 19	3160	695–6	127	856
Atwood, George F., East Orange, N. J., assignor to Western Electric Company, Chicago, Ill. Telephone-cut	847,636	Mar. 19	3862	844	127	1036
Austin, John T., assignor to Austin Organ Company, Hartford, Conn. Organ-action						
Austin Organ Company. (See Austin, John T., assignor.)						
Auto-Manual Piano Action Company. (See Wuest, Philip, Jr., assignor.)						
Automatic Adding Machine Company. (See Gensber and Zabriskie, assignors.)	847,453	Mar. 19	3479	761–2	127	936
Ayers, Gerald P., Chicago, Ill. Tie-remover	847,541	Mar. 19	3646	803	127	982
Ayers, Jacob F., Kalkaska, Mich. Shaft-bearing	847,877	Mar. 19	4351	954	127	1153
Bachelet, Emile, New York, N. Y. Electric-current interrupting and varying apparatus						
Bailey, Herbert L., assignor to Handy Things Company, Ludington, Mich. Vegetable-cutter	847,306	Mar. 19	3162	696	127	857
Bailey, James W., Oak Park, assignor, by mesne assignments, of one-half to R. A. Leach, Chicago, Ill. Measuring instrument	847,307	Mar. 19	3164	696	127	857
Baker, Malcolm H., [illegible] E. Fribble, assignors to Multiplex Safety Razor Company, Boston, Mass. Multiplex safety-razor	847,308	Mar. 19	3165	696	127	857
Baldwin, Arthur J., East Orange, N. J. Making wire-glass	847,637	Mar. 19	3865	844	127	1036
Baldwin, Arthur J., East Orange, N. J. Machine for making wire-glass	847,878	Mar. 19	4358	955	127	1154
Baldwin, Clarence K., and L. Moss, New York, N. Y. Tripper or deliverer for conveyers	847,309	Mar. 19	3167	697	127	857
Baldwin, Newton, Coldwater, Mich. Molding-machine	847,454	Mar. 19	3481	762	127	936
Ballard, Arthur J., Sequoia, Ohio. Expanding piston-packing	847,455	Mar. 19	3482	762	127	937
Ballard, Milton H., Lynn, Mass., assignor to Tripp Fruit Wrapping Machine Co., San Francisco, Cal. Paper-feeding device for wrapping-machines	847,393	Mar. 19	3357	735	127	905
Ballard, Milton H., assignor to Tripp Fruit Wrapping Machine Company, Lynn, Mass. Feeding device for paper	847,977	Mar. 19	4570	1004	127	1203
Barber, George T., assignor to F. Dittmar, Philadelphia, Pa. Hinge for surgical and other instruments	847,542	Mar. 19	3648	803	127	982
Barber, H. B. (See Lee, Gerald Gay, assignor.)	847,720	Mar. 19	4024	879	127	1075
Barbo, Michael, Butte, Mont. Angle-measuring tool	847,879	Mar. 19	4359	955	127	1155
Barker, Amos M., Franklin, Kans. Cultivator	847,880	Mar. 19	4361	956	127	1155
Barker, Lewis W., and J. Jackson, Clinton, Iowa. Chair	847,456	Mar. 19	3483	762	127	937
Barnes, Emmet D., Traverse City, Mich. Radiator vent attachment	847,721	Mar. 19	4024	880	127	1075
Barnes, John S., Detroit, Mich. Spoke-machine						
Baron, Jules. (See Carey, Hamilton P., assignor.)	847,457	Mar. 19	3485	763	127	937
Bartenstein, John J., assignor of two-thirds to F. A. Heiser and C. B. Kelley, Cleveland, Ohio. Power-transmission device	847,543	Mar. 19	3649	804	127	982
Bartlett, Frank V., *et al.* (See Gray, Alison J., assignor.)						
Batault, Emile, Geneva, Switzerland. Thermally-operated apparatus						

Name, residence and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Baumgarn, Hans H., Davenport, Iowa. Coating metal	847,381	Mar. 19	4363	.....	127	1158
Bavier, Charles S., New York, N. Y. Lubricating device	847,544	Mar. 19	3663	804	127	984
Beach, Elmer R., assignor of two-thirds to G. Perrine and J. Nelson, Traverse City, Mich. Shaft-collar	847,382	Mar. 19	4364	956	127	1158
Beard, John B. (See Gray, William E., assignor.)						
Beck, John C., and J. A. Bowyer, Chicago, Ill. Air-pump	847,394	Mar. 19	3360	736	127	906
Beham, Howard A., assignor of one-third to J. A. Gregaire, Renfrew, Okla. Ter. Tobacco and match box	847,458	Mar. 19	3487	763	127	908
Behringer, Peter J., Cleveland, Ohio. Plate-glass-cutter's table	847,459	Mar. 19	3489	764	127	908
Belding, George L. (See Franklin and Belding.)						
Belknap, Edwin C., and E. H. Jackson, Chicago, Ill. Combination door latch and bolt	847,883	Mar. 19	4365	956	127	1158
Belknap, Edwin C., and E. H. Jackson, Chicago, Ill. Locking latch and bolt mechanism	847,884	Mar. 19	4369	957	127	1158
Bell, B. Frank, *et al.* (See Mallard, Logan L., assignor.)						
Bellows, Arthur B., Pittsburg, Pa. Truck-bolster	847,885	Mar. 19	4376	957-8	127	1159
Bender, Edward A., Philadelphia, Pa., assignor to E. A. Bender & Company. Liquid-soap cup	847,722	Mar. 19	4030	881	127	1077
Benson, Samuel, Chicago, Ill. Means for separating and eliminating smoke-suspended matter	847,886	Mar. 19	4377	958	127	1160
Berger Manufacturing Company. (See Schlafly, Julius H., assignor.)						
Bergmann, Bernard, Detroit, Mich. Flush-valve	847,723	Mar. 19	4031	881	127	1077
Bergmann, Bertha, Goliad, Tex. Cotton-boll-weevil destroyer	847,887	Mar. 19	4381	958-9	127	1160
Bergstrom, Hilmer. (See Stebbins and Bergstrom.)						
Bestul, Severin O., Iola, Wis. Thermo-electric annunciator	847,310	Mar. 19	3171	697	127	859
Bigley, John, *et al.* (See Bowler, Giles, assignor.)						
Biondi, Angelo F., New York, N. Y. Illusion device	847,724	Mar. 19	4032	881-2	127	1077
Biondi, Angelo F., New York, N. Y. Illusion apparatus	847,725	Mar. 19	4034	882	127	1078
Birdsall, Charles A., Holden, Mo. Nail	847,388	Mar. 19	4383	959	127	1161
Bjur, William L., New York, N. Y. Piano string-plate	847,389	Mar. 19	4384	959	127	1161
Black, Henry B., *et al.* (See Monroe, Charles H., assignor.)						
Blackburn, George W., Sarasota, Fla. Fishing-reel	847,390	Mar. 19	4385	959	127	1161
Blauvelt, William E., New York, assignor of one-half to E. West, Brooklyn, N. Y. Bookbinding-machine	847,391	Mar. 19	4386	960-5	127	1161
Bleitz, Louis. (See Bleitz, Rollen, assignor.)						
Bleitz, Rollen, assignor of one-half to L. Bleitz, Sandwich, Ill. Speed-changing mechanism	847,460	Mar. 19	3492	764	127	940
Boesche, Edward F., assignor of three-eighths to W. A. Borgschulze and one-fourth to E. Seufer, Evansville, Ind. Covered box-crate	847,978	Mar. 19	4573	1004	127	1204
Böhm, Ernest, London, England. Light-transmitting and light-diffusing object	847,306	Mar. 19	3361	736	127	908
Böhm, Ernest, London, England. Producing light-transmitting objects	847,309	Mar. 19	3362	736	127	908
Bolens, Harry W., Port Washington, Wis. Chair-iron	847,970	Mar. 19	4574	1005	127	1204
Bommer, Joseph. (See Liessem and Bommer.)						
Bond, Alexander R. (See Walker and Bond.)						
Boocock, Edward H., West Vale, near Halifax, and J. Sutcliffe, Cow Green, Halifax, England. Bobbin broach or creel-pin	847,638	Mar. 19	3666	845	127	1037
Booth, Alba C., Burlington, Vt. Bottle-cap puller	847,382	Mar. 19	4367	965	127	1162
Booth, Benjamin F., Indianola, Iowa. Stock-watering trough	847,386	Mar. 19	4368	965	127	1162
Borgschulze, William A., *et al.* (See Boesche, Edward F., assignor.)						
Bornhoeft, Edward, New York, N. Y. Piano pedal-action	847,639	Mar. 19	3668	845	127	1037
Bosa, Martin P., San Francisco, Cal. Stamp-mill stamp-head	847,307	Mar. 19	3363	736	127	908
Bostwick, Walter E., Algonac, Mich. Jar-closure	847,640	Mar. 19	3669	845	127	1037
Boudreaux, Leandre, Thibodaux, La. Nut-lock	847,641	Mar. 19	3670	845	127	1038
Bowen, Clarence M., Bowens, Md. Cultivator	847,308	Mar. 19	3364	737	127	908
Bowler, Giles, Cavendish, assignor of two-thirds to J. A. Walker and J. Bigley, Peck, Idaho. Clippers	847,980	Mar. 19	4576	1005	127	1205
Bowyer, John A. (See Beck and Bowyer.)						
Boyajian, John. (See Craddock, Edward S., assignor.)						
Boyles, William E., Grafton, W. Va. Rail-tie	847,642	Mar. 19	3670	846	127	1038
Bradley, Edward F., Tufnell Park, London, England. Sparking device for internal-combustion engines	847,894	Mar. 19	4400	965-6	127	1163
Bradley Pulverizer Company. (See Hayward, Josiah P., assignor.)						
Bradshaw, Charles T., Philadelphia, Pa. Telephone-call meter	847,461	Mar. 19	3494	764-5	127	940
Braine, Bancroft G., New York, N. Y. Puzzle	847,545	Mar. 19	3664	806	127	984
Branch, Edward, Moose Jaw, Saskatchewan, Canada. Wire fence	847,462	Mar. 19	3496	765	127	941
Brand, George P., New York, N. Y. Mechanical musical apparatus	847,896	Mar. 19	4401	966	127	1163
Brannon, Thomas J., Pittsburg, Pa. Salt and pepper shaker	847,726	Mar. 19	4037	882	127	1079
Braun & Sons, John. (See Fleming, John, assignor.)						
Bräuninger, Emil. (See Rudolphi and Bräuninger.)						
Breitenstein, Friederich W., Mount Pleasant, Vancouver, British Columbia, Canada. Safety-stirrup	847,896	Mar. 19	4402	966	127	1164
Breitenstein, Julius F., Burlington, Iowa. Steam-actuated valve for pumping-engines	847,897	Mar. 19	4407	966	127	1165
Bridgeport Brass Company. (See Stapley, William S., assignor.)						
Brockhaus, Friedrich O., Port Angeles, Cal. Gun-sight	847,643	Mar. 19	3672	846	127	1038
Brogan, James A., *et al.* (See Mayo, Benjamin F., assignor.)						
Bronnenkant, Joseph, Racine, assignor to Fischer Manufacturing Company, Milwaukee, Wis. Metatarsophalangeal protector	847,311	Mar. 19	3173	698	127	859
Brooks, Thomas E., Chicago, Ill. Lubricator	847,898	Mar. 19	4409	967	127	1165
Brown, Alexander E., assignor to Brown Hoisting Machinery Company, Cleveland, Ohio. Insulator for tension-guys	847,546	Mar. 19	3665	806	127	984
Brown, Conrad F., San Jose, Cal. Mercury retort and furnace	847,309	Mar. 19	3365	737	127	907
Brown, Conrad F., San Jose, Cal. Mercury-condenser	847,547	Mar. 19	3666	806	127	985
Brown Hoisting Machinery Company. (See Brown, Alexander E., assignor.)						
Brown, Nickolas E., Marion, S. D. Table	847,899	Mar. 19	4410	967	127	1166
Brown, Peabody A., Denver, Colo. Thermostat	847,981	Mar. 19	4577	1006-8	127	1205
Brown, Robert S. (See Parks and Brown.)						
Bruckner, Rudolph E., Mount Vernon, assignor to Commercial Acetylene Company, New York, N. Y. Charging gas-tanks	847,727	Mar. 19	4038	883	127	1079
Brunsman, Anthony G., Cincinnati, Ohio. Vehicle-reach	847,548	Mar. 19	3669	807	127	985
Buckingham, Benjamin J., Chicago, Ill. Garment-holder	847,644	Mar. 19	3674	847	127	1039
Bückmann, August and O., Odenkirchen, Germany. Feeding device for textile fabrics, paper, &c.	847,645	Mar. 19	3676	847	127	1039
Bückmann, Otto. (See Bückmann, August and O.)						
Bucyrus Company. (See Ferris and Allen, assignors.)						
Burkholder, Preston T., Fishersville, Va. Mold	847,312	Mar. 19	3174	698	127	859
Burleson, Pleasant W., Linden, Tex. Clothes-pin	847,313	Mar. 19	3176	699	127	860
Burns, James A., assignor to Westinghouse Electric & Manufacturing Company. Coil-bender	847,549	Mar. 19	3670	807-8	127	985
Burns, Jeremiah D., assignor to Columbia Folding Box Co., Washington, D. C. Box	847,314	Mar. 19	3177	699	127	860
Burrows, Eastman A. (See Smythe and Burrows.)						
Bussell, William H., Necedah, Wis. Wheel-runner for baby-carriages	847,900	Mar. 19	4411	967	127	1166
Busselle, Arthur S., and J. W. Pedigo Chariton, Iowa. Grinding-machine	847,463	Mar. 19	3497	765	127	941

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Byrne, Frank T., *et al.* (See Ralston, William A., assignor.)						
Caldwell, Eugene W., New York, N. Y. X-ray apparatus	847,728	Mar. 19	4039	883	127	1079
Caldwell, James P., Winnsboro, S. C., and W. A. Rockwell, Harriman, Tenn. Planter	847,901	Mar. 19	4413	967-8	127	1160
Caldwell, John D., Seattle, Wash. Marking-machine	847,646	Mar. 19	3677	847-8	127	1040
Calkins, Addison N., Quincy, Ill. Gasoline-engine truck	847,647	Mar. 19	3681	848	127	1041
Cameron, James A., Brooklyn, N. Y. Tension and regulating mechanism for traveling fabrics	847,315	Mar. 19	3179	699-700	127	860
Campbell Bosworth Machinery Company. (See Wilson, William, assignor.)						
Campbell, Sterling H., Detroit, Mich., assignor to J. M. Hopkins, Chicago, Ill. Rail-joint	847,400	Mar. 19	3367	737	127	907
Campion, George G., Manchester, England. Bed-rest for invalids	847,550	Mar. 19	3663	808-9	127	986
Canda, Ferdinand E., New York, N. Y., assignor to Chrome Steel Works, Chrome, N. J. Jail-bar and similar composite metal object	847,551	Mar. 19	3664	809	127	987
Cannell, Charles, St. Mary's, Tasmania, assignor to J. Alston, South Melbourne, Victoria, Australia. Gear for pumps	847,902	Mar 19	4414	968	127	1166
Capps, Nellie F., Red Bluff, Cal. Window-shade adjuster	847,903	Mar. 19	4416	969	127	1167
Carlin, William J. (See O'Brien, Patrick A., assignor.)						
Carlson, Charles A., Chicago, Ill. Apparatus for mixing fluids	847 552	Mar. 19	3666	809	127	987
Carnahan, Charles M., Newport, Ky., assignor to Globe-Wernicke Company, Cincinnati, Ohio. Expansible envelop for vertical files	847,648	Mar. 19	3883	849	127	1041
Carr, Charles L. and T. P., Yellow Springs, Ohio. Telephone system	847,316	Mar. 19	3182	700-1	127	861
Carr, Thaddeus P. (See Carr, Charles L. and T. P.)						
Carroll, John E., Philadelphia, Pa. Gas-demonstration apparatus	847,995	Mar. 19	4607	1010	127	1212
Carroll, John P., *et al.* (See Sarkess, Maroon B., assignor.)						
Carter, William H., Marshall, Tex. Packing for doors and like closures	847,553	Mar. 19	3669	810	127	988
Caswell, Frederick K., Chicago, Ill., assignor to Railway Steel-Spring Company. Spring-load computer	847,904	Mar. 19	4417	969	127	1167
Champion Lever Machine Company. (See King, Robert P., assignor.)						
Champion Lever Machine Company. (See Ogborn, Harrison, assignor.)						
Cheney, Thomas J., Lodi, Ohio, assignor to F. D. Merrill, Seattle, Wash. Churn. (Reissue)	12,617	Mar. 19	4607	1010	127	1212
Chicago Title and Trust Company. (See Cothran, Grove, assignor.)						
Choate, Charles N., Woodstock, Ontario, Canada, assignor of one-half to F. E. Atchison, Detroit, Mich. Powder-distributer	847,464	Mar. 19	3500	766	127	942
Chouteau, Eugenio, Jr., St. Louis, Mo. Electric signal system	847,905	Mar. 19	4419	969-70	127	1168
Chrome Steel Works. (See Canda, Ferdinand E., assignor.)						
Clark, Albert C. (See Pearson, Geoffrey H., assignor.)	847,906	Mar. 19	4422	970	127	1168
Clark, Albert M., Marshalltown, Iowa. Heater	847,317	Mar. 19	3191	701	127	863
Clark, Francis L., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Re-charging-valve for air-brakes	847,729	Mar. 19	4043	884	127	1080
Clements, George, and J. M. Hostler, Chicago, Ill., assignors to Hygienic Renovating Co. Attachment for vacuum cleaning systems	847,554	Mar. 19	3670	810	127	988
Cockren, Archibald C., Barnesbury, assignor to Johnson, Walker & Tolhurst, Ltd., London, England. Bracelet, chain, and the like	847,907	Mar. 19	4424	971	127	1169
Colavecchio, Luigi, Middletown, Conn. Elevated carrier	847,649	Mar. 19	3684	849	127	1041
Colborne, Oliver, Chicago, Ill. Pie-crust-trimming machine	847,908	Mar. 19	4425	971	127	1169
Collins, Nathaniel A., Lela, Okla. Ter. Boring-machine	847,730	Mar. 19	4044	884	127	1080
Columbia Folding Box Co. (See Burns, Jeremiah D., assignor.)						
Colwell, Walter E., Oakville, Ontario, Canada. Photographic apparatus	847,731	Mar. 19	4047	884-5	127	1080
Commercial Acetylene Company. (See Bruckner, Rudolph E., assignor.)	847,909	Mar. 19	4427	971	127	1169
Conger, John B., assignor, by mesne assignments, to Straw Pulp and Paper Company, New York, N. Y. Cooking and washing apparatus	847,732	Mar. 19	4050	885	127	1081
Conklin, Edward, Channahon, Ill. Door check and tightener	847,910	Mar. 19	4428	972	127	1170
Cook, Robert M., *et al.* (See Sarkess, Maroon B., assignor.)						
Cook, William, Hoboken, N. J. Car-replacer	847,318	Mar. 19	3193	702	127	863
Cooper, Edward, Newton Lower Falls, Mass. Making artificial mica sheets	847,650	Mar. 19	3687	849	127	1042
Cooper Hewitt Electric Company. (See Flichtner, Stanwood E., assignor.)						
Cope, Alonso M., Chicago, Ill. Rack or holder						
Corbett, Addison B., Waldo, Wis. Combined tablet and pencil-box						
Corcoran, Cornelius J., *et al.* (See Mayo, Benjamin F., assignor.)						
Cory, Randolph P., assignor of forty-nine one-hundredths to J. Baron, St. Louis, Mo. Choke attachment for guns	847,911	Mar. 19	4429	972	127	1170
Cothran, Grove, Chicago, Ill., assignor to Chicago Title and Trust Company, trustee. Generating gas	847,733	Mar. 19	4052	885-6	127	1081
Counselman, Phillip W., Toledo, Ohio. Emergency-brake for railway-cars	847,319	Mar. 19	3194	702	127	863
Covert, John, Valparaiso, Ind. Corn-husker	847,734	Mar. 19	4058	886	127	1082
Cox, Paul F., Battle Creek, Mich. Printing-press	847,912	Mar. 19	4430	972-3	127	1170
Cox, Paul F., Battle Creek, Mich. Printing-press	847,913	Mar. 19	4437	973	127	1172
Craddock, Edward S., assignor to J. Boyajian, New York, N. Y. Apparatus for renovating, finishing, and smoothing rugs	847,651	Mar. 19	3688	850	127	1043
Craft, Edward B., assignor to Western Electric Company, Chicago, Ill. Adjusting device for relays	847,555	Mar. 19	3671	810	127	988
Crane, Charles E., Lake City, Minn. Folding mushroom-anchor	847,320	Mar. 19	3195	702	127	864
Crane Company. (See Doolittle, William W., assignor.)						
Crank, R. H. (See Agnew, Elbert, assignor.)	847,914	Mar. 19	4443	973-4	127	1173
Crawford, William I., St. Louis, Mo. Gearing for automobiles	847,652	Mar. 19	3891	850	127	1043
Creasey, Samuel E., Sanford, Me. Calender-bank	847,982	Mar. 19	4579	1006	127	1205
Crocker, Edwin P., and C. A. Walhof, assignors of one-third to I. S. Large, Rock Valley, Iowa. Projecting apparatus	847,735	Mar. 19	4059	886	127	1082
Cruikshank, William Y., assignor of one-half to N. Maley, Freeland, Pa. Pump	847,653	Mar. 19	3892	851	127	1044
Cunniff, John V., Fall River, assignor to Draper Company, Hopedale, Mass. Protector mechanism for looms	847,915	Mar. 19	4446	974	127	1174
Cunningham, David W., Des Moines, Iowa. Water-heater for locomotives	847,737	Mar. 19	4130	904	127	1101
Curtain Supply Company. (See Kesler, Herbert E., assignor.)	847,736	Mar. 19	4060	887	127	1082
D'Humy, Fernand E. D., Englewood, N. J. Telephonic repeating circuit and apparatus	847,737	Mar. 19	4062	887	127	1083
Dahl, Benjamin, Bloomer, Wis. Traction and power attachment for threshing-machines	847,916	Mar. 19	4448	974	127	1174
Daly, Benjamin F., New York, N. Y. Ice-making apparatus	847,654	Mar. 19	3894	851	127	1044
Daniel, Jefferson D., Pleasanthill, Ga. Wrench	847,738	Mar. 19	4063	887	127	1083
Daniels, Jay V., London, England. Device for producing vibrations						
Darnall, Milton T., Greencastle, Ind. Hog and meat hanger	847,321	Mar. 19	3196	702	127	864
Date, David D., and A. B. Kugelmann, New York, assignors, by mesne assignments, to Vortex Manufacturing Company, Brooklyn, N. Y. Corn and brush knife	847,655	Mar. 19	3895	851	127	1045
Davidson, Charles G., New York, N. Y. Card-table	847,401	Mar. 19	3368	738	127	908
Davis, George C., assignor to G. M. Davis Regulator Company, Chicago, Ill. Valve	847,739	Mar. 19	4064	888	127	1083
Daw, Albert W. and Z. W., London, England. Valve for percussive rock-drills						
Daw, Zacharias W. (See Daw, Albert W. and Z. W.)						
Dawson, Arthur T., Westminster, and J. Horne, Barrow-in-Furness, assignors to Vickers Sons & Maxim Limited, Westminster, England. Ammunition-hoisting apparatus for ordnance	847,917	Mar. 19	4449	975	127	1175

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfg.	Official Gazette. Vol.	Official Gazette. Page.
Day, Harry, Upper Sandusky, Ohio. Nut-lock	847,322	Mar. 19	3198	703	127	984
De la Mar, Joseph, New York, N. Y. Propeller-wheel	847,393	Mar. 19	4540	998	127	1188
Deach, Elizabeth, St. Paul, Minn. Curtain-stretcher frame	847,486	Mar. 19	3972	810	127	989
Dean, Benjamin S., San Francisco, Cal. Means for producing expression-marks on music record-sheets	847,740	Mar. 19	4066	868-9	127	1084
Dennis, Alfred A., assignor of one-half to Royal Furniture Company, Grand Rapids, Mich. Veneer-gluing machine. (Reissue)	12,622	Mar. 19	4617	1012	127	1214
Dennis, Samuel K., and F. W. Rice, Chicago, Ill., assignors to International Harvester Company. Fertiliser-distributer	847,322	Mar. 19	3199	708-4	127	984
Denny, Winfield A., assignor of two-thirds to B. D. Emanuel and C. W. Hoover, Anderson, Ind. Electric hammer	847,741	Mar. 19	4069	869	127	1085
Deutsche Steinzeug Waarenfabrik für Canalisation und Chemische Industrie. (See Lindner, Georg, assignor.)						
Dilbert, Loyd C. (See Judge and Dilbert.)						
Dickert, Dilpert S., Salt Lake City, Utah. Telephone-relay	847,656	Mar. 19	3897	851	127	1045
Dittmar, Frederick. (See Barber, George T., assignor.)						
Dohren, Henry R. (See Onsum and Dohren.)						
Donaldson, William H., Joliet, Ill. Headlight-operating device	847,918	Mar. 19	4468	976	127	1176
Doolittle, William W., Evanston, assignor to Crane Company, Chicago, Ill. Steam-trap	847,457	Mar. 19	3998	852	127	1046
Dosch, Peter, Bridgeport, Conn. Miter-box	847,537	Mar. 19	3973	811	127	989
Douds, James D., Swissvale, Pa. Combined step-ladder and table	847,919	Mar. 19	4465	976	127	1176
Dowling, John, Olympia, Wash. Boring-tool	847,742	Mar. 19	4071	869	127	1085
Draper Company. (See Cunniff, John V., assignor.)						
Draper Company. (See Roper, Charles F., assignor.)						
Drittler, Frederick, Rutherford, N. J., assignor to Arabol Manufacturing Company, New York, N. Y. Treating starch	847,698	Mar. 19	3909	.....	127	1046
Drittler, Frederick, Rutherford, N. J., assignor to Arabol Manufacturing Company, New York, N. Y. Treating starch	847,995	Mar. 19	4999	.....	127	1206
Du Brul, Napoleon, Cincinnati, Ohio. Cigar-mold	847,540	Mar. 19	3975	811	127	989
Duckworth, Richard, Preston, England. Current-controller	847,743	Mar. 19	4072	869	127	1085
Dudly, Albert, Sr., Menominee, Mich. Stopper-extractor	847,744	Mar. 19	4074	869	127	1086
Dull, Raymond W., Aurora, Ill., assignor to Stephens-Adamson Mfg. Co. Sprocket-chain	847,999	Mar. 19	4991	1006	127	1206
Dunbar, Francis W., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Telephone trunking system	847,994	Mar. 19	4993	1007	127	1206
Durand, Alexander, Toledo, Ohio. Metallic railway-tie	847,745	Mar. 19	4076	891	127	1088
Dyke, Henry S., Milborne Port, England. Glove-fastener	847,999	Mar. 19	4468	977	127	1177
E. A. Bender & Company. (See Bender, Edward A., assignor.)						
Earles, James W., Fort Hancock, N. J. Omnigraph	847,931	Mar. 19	4469	977	127	1177
Eckhardt & Co., Philip. (See Rafalsky, Albert, assignor.)						
Edison, Thomas A., Orange, N. J. Electrical welding apparatus	847,748	Mar. 19	4078	891-2	127	1088
Edwards, Oliver M., Syracuse, N. Y. Binding for car trap-doors	847,680	Mar. 19	3978	811	127	990
Effenberger, Alexander. (See Freeman, Alexander E., assignor.)						
Egge, Frederick, Bridgeport, Conn. Garment-clasp	847,999	Mar. 19	4993	1007	127	1206
Elsman, Julius, Toronto, Ontario, Canada. Hose-supporter	847,747	Mar. 19	4994	892	127	1088
Ekenberg, Martin, Stockholm, Sweden. Charring or carbonizing peat	847,748	Mar. 19	4994	986	127	1088
Ekin, Lorian M., Indiana, Pa. Rail-joint	847,999	Mar. 19	3983	813	127	991
Ekstrom, Axel. (See Rennerfelt, Gustaf, assignor.)						
Elder, Edward H., assignor to J. Stevens Arms & Tool Company, Chicopee Falls, Mass. Double-barreled firearm	847,999	Mar. 19	3999	863	127	1046
Eldridge, Ernest R., Sumter, S. C. Music-leaf turner	847,999	Mar. 19	4451	978	127	1178
Elliott, Charles, Scammon, Kans. Miner's fuse-tool	847,999	Mar. 19	4452	978	127	1178
Ellis, Carleton, White Plains, N. Y. Fertilizer and making same	847,749	Mar. 19	4087	.....	127	1089
Ely, Ella Y., Belton, Tex. Foot-tub	847,324	Mar. 19	3200	704	127	985
Emanuel, Benjamin D., *et al.* (See Denny, Winfield A., assignor.)						
Emery, Benjamin F., Thayer, Iowa. Swingletree-hook	847,981	Mar. 19	3984	812	127	991
Englund, Alexander. (See Newell and England.)						
Erbes, Philip H., Chicago, Ill. Fireless cook-stove or cooking-oven	847,982	Mar. 19	3999	736	127	908
Espy, George F., Union Furnace, Pa. Sliding jack-switch	847,730	Mar. 19	4999	898	127	1089
Etter, Edward E., Chambersburg, Pa. Wall-papering machine	847,924	Mar. 19	4464	975-6	127	1179
Eustice, Alfred L., Chicago, Ill. Switch	847,925	Mar. 19	4466	976	127	1179
F. A. Neider Co. (See Marggraff, Fredrick, assignor.)						
Falx, John, San Francisco, Cal. Combined latch or bolt and handle	847,751	Mar. 19	4093	893	127	1089
Farmer, Arthur J., Detroit, Mich. Machine for attaching sheets of paper together	847,326	Mar. 19	3208	704-5	127	986
Fawkes, Jacob H., Detroit, Mich. Spring-wheel	847,926	Mar. 19	4468	976-80	127	1180
Fay, Alpheus, Louisville, Ky. Treating butter	847,983	Mar. 19	3987	813	127	991
Fay, Alpheus, assignor of one-half to W. N. Arterburn, Louisville, Ky. Treating cream or milk and butter	847,988	Mar. 19	3990	.....	127	992
Ferris, Walter, and J. M. Allen, assignors to Bucyrus Company, South Milwaukee, Wis. Throttle-valve	847,328	Mar. 19	3208	706	127	987
Feval, Leon, Newark, N. J., assignor, by mesne assignments, to Guardian Trust Company of New York, trustee. Producing a dull finish on coated leather	847,987	Mar. 19	4998	1008	127	1208
Finch, John W., Elizabeth, Miss. Hand-car	847,927	Mar. 19	4470	980	127	1180
Finkensieper, Adolph, West Hoboken, N. J. Shoe-lace	847,731	Mar. 19	4095	894	127	1090
Fischer, Jens J. O., Racine, Wis., assignor, by mesne assignments, to Laas & Sponsenburg Co. Railway-rail stay	847,699	Mar. 19	3979	736	127	908
Fischer Manufacturing Company. (See Bronnenkant, Joseph, assignor.)						
Fittipaldi, Pascual, and F. S. Lucia, Buenos Ayres, Argentina. Construction of shot-guns	847,994	Mar. 19	3990	813	127	992
Fitzgerald, Joseph R., Springfield, Ohio. Portable awning	847,327	Mar. 19	3209	706	127	987
Fitzpatrick, Henry J., Athens, Ga. Attachment for cleaning cotton-gin saws	847,752	Mar. 19	4094	894	127	1090
Flatow, Leo. (See Kaiser, Charles A. assignor.)						
Fleming, John, assignor to J. Braun & Sons, Philadelphia, Pa. Handle for lawn-mowers and similar articles	847,995	Mar. 19	3991	813	127	992
Fletcher, Homer M., Sanco, Tex. Pump-rod coupling	847,329	Mar. 19	4471	980-1	127	1181
Flichtner, Stanwood E., Englewood, N. J., assignor to Cooper Hewitt Electric Company. Adjustable support for vapor-lamps	847,995	Mar. 19	3998	813	127	992
Flichtner, Stanwood E., Englewood, N. J., assignor to Cooper Hewitt Electric Company. Blue-printing and similar apparatus	847,997	Mar. 19	3999	814	127	993
Flinchbaugh, Frederick T., York, Pa. Hoisting-engine	847,754	Mar. 19	4096	894-5	127	1090
Flora, John H., Tunnel Hill, Ill. Pneumatic toy	847,755	Mar. 19	4098	895	127	1091
Foerster, Edward R., Chicago, Ill. Window-ventilator	847,929	Mar. 19	4472	981	127	1181
Foote, Abram L., Fayette, Iowa. Disk land-cultivator, harrow, road-machine, and farm-wagon	847,401	Mar. 19	3272	729-0	127	909
Ford, Henry, Detroit, Mich. Steering mechanism	847,405	Mar. 19	3275	730	127	909
Fowler, Peter H. (See Gates, Carroll E., assignor.)						
France, Harvey, Chicago, Ill. Lock	847,999	Mar. 19	4473	981	127	1181
Franklin, George H., Boulder, Colo. Ore-roasting furnace	847,758	Mar. 19	4099	896	127	1091
Franklin, Thomas, and G. L. Belding, West Point, N. Y. Vegetable-peeler	847,228	Mar. 19	3210	705-7	127	988

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfg.	Official Gazette. Vol.	Official Gazette. Page.
Frawley, William J. (See Wilson and Frawley.)						
Freeman, Alexander E., assignor of one-half to A. Effenberger, Orange, N. J. Button	847,660	Mar. 19	3904	853	127	1047
Fretz, Samuel S., Jr., and H. Van Buren, Sr., Philadelphia, Pa. Window-mirror	847,757	Mar. 19	4102	895-6	127	1092
Frisbie, Franklin S. (See Baker and Frisbie.)						
Frisbie, Franklin S. (See Rasor and Frisbie.)						
Fritts, William H., Tinsley, S. D. Bed	847,465	Mar. 19	3501	766	127	942
Frye, Clara C., Tampa, Fla. Surgical-appliance	847,758	Mar. 19	4103	896	127	1092
Fuller, George R., *et al.* (See Ralston, William A., assignor.)						
G. M. Davis Regulator Company. (See Davis, George C., assignor.)	847,931	Mar. 19	4474	981	127	1182
Gage, Oscar S., Tecumseh, Ohio. Ter. Switch						
Gale, Frank. (See Maynard and Gale.)						
Gammeter, Harry C., assignor to American Multigraph Co., Cleveland, Ohio. Duplicating-machine. (Reissue)	12,622	Mar. 19	4621	1012	127	1214
Gammon, John F., *et al.* (See Gooch, Philip W., assignor.)						
Gancher, Abraham L., New York, N. Y., and A. T. Zabriskie, Passaic, N. J., assignors to Automatic Adding Machine Company, New York, N. Y. Adding-machine	847,759	Mar. 19	4105	896-7	127	1092
Gare, Thomas, New Brighton, England. Vehicle-tire	847,466	Mar. 19	3502	766	127	942
Gash, John L., Elmer, Mo. Reversible mail-bag catcher and deliverer	847,661	Mar. 19	3906	853	127	1047
Gates, Carroll E., New York, N. Y., assignor to P. H. Fowler, East Orange, N. J. Syrup-dispensing apparatus	847,760	Mar. 19	4106	897	127	1093
Gay, John H., Argyle, Ga. Gate-valve	847,932	Mar. 19	4476	981-2	127	1182
Gebhardt, Heinrich, Munich, Germany. Garment-hanger	847,329	Mar. 19	3213	707	127	988
General Chemical Company. (See Hill, Rowland F., assignor.)						
Gerbing, Max P., Wentworth, Mo. Fender for harvesters	847,568	Mar. 19	3894	814-15	127	993
Geurink, Harry J., Cleveland, Ohio. Stop and waste cock	847,406	Mar. 19	3377	739	127	910
Gibbs, Elmer W., assignor to Gibbs Manufacturing Company, Canton, Ohio. Top	847,933	Mar. 19	4477	982	127	1182
Gibbs Manufacturing Company. (See Gibbs, Elmer W., assignor.)						
Gifford, Robert L., assignor to Illinois Engineering Company, Chicago, Ill. Heating system	847,934	Mar. 19	4479	982	127	1182
Gill, John, Edinburgh, Scotland. Means for compressing air and the like	847,569	Mar. 19	3697	815	127	993
Gilda, Albert, New York, N. Y. Rotary engine	847,761	Mar. 19	4111	897-8	127	1093
Globe-Wernicke Company. (See Carnahan, Charles M., assignor.)						
Golding, John F., Washington, D. C., assignor to Monolith Steel Company, Incorporated. Electrical grounding device	847,935	Mar. 19	4481	983	127	1183
Gooch, Philip W., Bessemer, assignor of two-thirds to S. M. Adler, Birmingham, and J. F. Gammon, Bessemer, Ala. Feed-water regulator	847,762	Mar. 19	4113	898	127	1094
Good, Adam, Claflin, Kans. Air-compressor	847,763	Mar. 19	4115	898-9	127	1094
Goodknight, Alva L., Council Bluffs, Iowa. Air-brake mechanism	847,936	Mar. 19	4483	983	127	1183
Goodlets, Katherine G. B., Kansas City, Mo. Coin-pouch	847,467	Mar. 19	3503	766-7	127	942
Goreau, Thomas W., New Orleans, La. Liquid-seal trap	847,468	Mar. 19	3505	767	127	943
Graham, Frank E., Washington, D. C. Meat-tag	847,469	Mar. 19	3507	767	127	943
Graham, Joseph H., Kempton, Ind. Concrete-block machine	847,764	Mar. 19	4116	899	127	1095
Granger, Lorenzo O., Oakland, Cal. Playing-card package and cribbage-board	847,570	Mar. 19	3696	815	127	994
Gray, Almon J., St. Paul, Minn., assignor, by mesne assignments, to W. E. S. Strong, Chicago, Ill., and F. V. Bartlett, Detroit, Mich. Grease-cup	847,988	Mar. 19	4994	1008	127	1208
Gray, William E., assignor of one-half to J. B. Beard, Vinton, Va. Air-compressor	847,470	Mar. 19	3508	767-8	127	944
Greenberg, Leon. (See Hartwich, Albert J., assignor.)						
Greene, Robert, *et al.* (See McDonald, William T. B., assignor.)						
Greenleaf, George E. (See Sears, Greenleaf, and Reiss.)						
Gregaire, Joseph A. (See Beham, Howard A., assignor.)	847,571	Mar. 19	3699	816	127	994
Grice, John E., and O. E. Pidcock, Deuel, Colo. Calf-weaner	847,471	Mar. 19	3510	768	127	944
Grinnell, William E., *et al.* (See Monroe, Charles H., assignor.)	847,330	Mar. 19	3214	707	127	988
Gross, Freeman P., Chicago, Ill. Pavement	847,331	Mar. 19	3214	707-8	127	989
Groesmith, Alfred R., Corby, near Kettering, England. Excavator						
Groesmith, Alfred R., Corby, near Kettering, England. Excavating machinery	847,472	Mar. 19	3511	768	127	944
Guardian Trust Company of New York, trustee. (See Feval, Leon, assignor.)						
Hafer, Jasper N., Tacoma, Wash. Pipe-coupling	847,937	Mar. 19	4486	983-4	127	1184
Hafer, Quigley. (See Kyle, George S., assignor.)	847,765	Mar. 19	4118	899	127	100
Hall, George L., assignor to National Railway Materials Company, New York, N. Y. Insulated rail-joint						
Hall, Julius C., Wallingford, Conn. Bread-mixer						
Handy Things Company. (See Bailey, Herbert L., assignor.)						
Hanes, W. M., *et al.* (See Robinson, William H., assignor.)						
Hankens, William. (See Ansley, Sherman, assignor.)						
Hanlon, George. (See Allen and Hanlon.)						
Hanson, Bengt M. W., assignor to Pratt & Whitney Company, Hartford, Conn. Fluid-actuated clutch	847,572	Mar. 19	3700	816	127	994
Hanson, Bengt M. W., assignor to Pratt & Whitney Company, Hartford, Conn. Chuck	847,573	Mar. 19	3703	816-17	127	995
Hanson, Bengt M. W., assignor to Pratt & Whitney Company, Hartford, Conn. Fluid-tight joint for rotary shafts	847,574	Mar. 19	3705	817	127	995
Hanson, Bengt M. W., assignor to Pratt & Whitney Company, Hartford, Conn. Friction-clutch	847,575	Mar. 19	3707	817	127	996
Hanson, Bengt M. W., assignor to Pratt & Whitney Company, Hartford, Conn. Indicating and locking device for change-gear mechanism	847,938	Mar. 19	4490	984	127	1185
Hanson, John H., Chicago, Ill. Combined pull and key socket	847,939	Mar. 19	4492	984	127	1185
Hanson, William C., Cedar Rapids, Iowa. Truck	847,766	Mar. 19	4119	900	127	1095
Hara, Lewis O., Auburn, N. Y. Lifting-jack	847,062	Mar. 19	3908	854	127	1048
Hardman, Peck & Company. (See Hattemer, Justus, assignor.)						
Harlan, Martin C., Stuart, Iowa. Secret-code apparatus	847,767	Mar. 19	4120	900	127	1096
Harmison, Calvin P., Rice Lake, Wis. Milk-can	847,473	Mar. 19	3512	769	127	945
Hart, Joel T., Independence, Mo. Adjustable chair	847,332	Mar. 19	3216	708	127	989
Hartford Carpet Corporation. (See Lyford, William E., assignor.)						
Hartman, John, Morral, Ohio. Bolt-retainer	847,768	Mar. 19	4121	900	127	1096
Hartough, Edward W., Thayer, Mo. Tandem-spring friction draft-rigging	847,769	Mar. 19	4122	900-1	127	1096
Hartwich, Albert J., assignor of one-half to L. Greenberg, New York, N. Y. Sewing-machine	847,940	Mar. 19	4493	984-5	127	1186
Hartwig, William J. (See Millis, Charlie J., assignor.)						
Hattemer, Justus, West New York, N. J., assignor to Hardman, Peck & Company, New York, N. Y. Brake for self-playing musical instruments	847,770	Mar. 19	4127	901	127	1096
Haughton, Frank A., Schenectady, N. Y. Steam generator and superheater	847,407	Mar. 19	3378	739-40	127	910
Hawley, Edwin H., Washington, D. C. Pocket-knife	847,474	Mar. 19	3513	769	127	945
Hayes, James N., St. Louis, Mo. Trolley-wire crossing	847,989	Mar. 19	4595	1008	127	1209
Hays, Frank, Oskaloosa, Iowa. Horse-collar attachment	847,475	Mar. 19	3514	769	127	945
Hayward, Josiah P., Malden, assignor, by mesne assignments, to Bradley Pulverizer Company, Boston, Mass. Shaft-coupling	847,333	Mar. 19	3218	709	127	870
Hayward, Melville P., Quincy, Mass. Pneumatic buffer	847,941	Mar. 19	4495	985	127	1187
Heermans, Theddeus W., Chicago, Ill. Speed-controlling device for electric motors	847,663	Mar. 19	3909	854	127	1048
Helmer, Frank A., *et al.* (See Bartenstein, John J., assignor.)						
Hemingway, Joseph, Beulah, Wyo. Bottle	847,334	Mar. 19	3220	709	127	870

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Drg.	Official Gazette. Vol.	Page.
Henry Vogt Machine Company. (See Thurstensen, Soren, assignor.)						
Herman, Benno. (See Heubach, Ernst, assignor.)						
Hermanson, Gustaf A., Chicago, assignor to J. Munton, Maywood, Ill. Car-coupling	847,408	Mar. 19	3381	740	127	911
Hero Fruit Jar Company. (See Riling and Sagee, assignors.)						
Herstein, Henry, New York, N. Y. Hat-brim sizing and paring device	847,409	Mar. 19	3383	741	127	912
Heubach, Ernst, Berlin, Germany, assignor to B. Herman, Detroit, Mich. Tube-cleaner	847,235	Mar. 19	3222	709–10	127	870
Heyenga, Martin W., Hartsburg, Ill. Vehicle	847,570	Mar. 19	3700	817–18	127	997
Hill, Ebenezer, Norwalk, Conn. Lubricating-cup	847,771	Mar. 19	4129	901	127	1086
Hill, John W. (See Ohmer, Kirchner, and Hill.)						
Hill, Rowland F., assignor to General Chemical Company, New York, N. Y. Apparatus for desulfurizing and agglomerating pyrites-cinder, &c	847,410	Mar. 19	3385	741	127	912
Hill, Rowland F., assignor to General Chemical Company, New York, N. Y. Desulfurizing and agglomerating pyrites-cinder and the like	847,864	Mar. 19	3913	854	127	1049
Hinchcliff, John W., Jackson, Miss. Lubricator	847,772	Mar. 19	4130	902	127	1086
Hodges, Emery C., Bloomington, Ill. Building-block	847,476	Mar. 19	3515	769	127	945
Hodgson, William M., Kimberley, Cape Colony. Safety-clutch for mine cages, lifts, hoisting-skips, &c	847,773	Mar. 19	4131	902–3	127	1086
Hoffman, Clemence E., Thomaston, Conn. Screw-driver	847,774	Mar. 19	4134	903	127	1100
Hohein, George C., Norfolk, Va. Medicine-spoon	847,942	Mar. 19	4406	985	127	1187
Hollinger, Adam P., Lebanon, Pa. Display-stand	847,943	Mar. 19	4406	985	127	1187
Holmberg, Charles G., New York, N. Y. Chuck	847,396	Mar. 19	3224	710	127	871
Holmes, Grant, assignor to Robert Holmes & Brothers, Danville, Ill. Automatic car-lift	847,411	Mar. 19	3386	741–2	127	912
Hooton, Alonzo F., Greenfield, Ind. Electrical rail-bond	847,337	Mar. 19	3225	710	127	871
Hooven, Clement W., *et al.* (See Denny, Winfield A., assignor.)						
Hopkins, James M. (See Campbell, Sterling H., assignor.)						
Horix, Carl, Cleveland, Ohio. Metallic reinforcement for concrete structural work	847,577	Mar. 19	3711	818	127	997
Horn, William H., Jr., Philadelphia, Pa. Truss-pad	847,776	Mar. 19	4135	903	127	1100
Horne, James. (See Dawson and Horne.)						
Horton, Paul S. (See Anderson, Edward N., assignor.)						
Hostler, James M. (See Clements and Hostler.)						
Hoyt, William H., Wyoming, N. J. Apparatus for making flat talking-machine records	847,336	Mar. 19	3227	711	127	871
Hübner, Josef, and I. Mayer, Vienna, Austria-Hungary. Pressure-reducing valve	847,944	Mar. 19	4409	986	127	1187
Hudson, William H., Mount Vernon, N. Y., assignor to Peerless Fashion Company. Perforating and marking machine	847,578	Mar. 19	3712	818–19	127	997
Huising, Garrett H., assignor to Porter Safety Seal Co., Chicago, Ill. Seal-press	847,776	Mar. 19	4135	903	127	1100
Hulsen Fabrik A. Jaunsem, (Andreas Jaunsem.) (See Nowitzky, Wilhelm F., assignor.)						
Hygienic Chemical Company of New Jersey. (See Wadman, Walter E., assignor.)						
Hygienic Renovating Co. (See Clements and Hostler, assignors.)						
Ilett, George W., Chicago, Ill. Means for converting motion	847,945	Mar. 19	4409	986	127	1188
Illinois Engineering Company. (See Gifford, Robert L., assignor.)						
Iman, Oris H., assignor to Voigtmann & Company, Chicago, Ill. Automatic window	847,477	Mar. 19	3516	770	127	946
International Harvester Company. (See Dennis and Rice, assignors.)						
International Harvester Company. (See Robinson, Charles W., assignor.)						
Irvine, Archibald J., D. Mills, and W. H. Wood, Johannesburg, Transvaal. Steam and water separator	847,478	Mar. 19	3519	770–1	127	946
Ivory, James W., Philadelphia, Pa. Tooth-separator	847,778	Mar. 19	4141	904	127	1102
J. Stevens Arms & Tool Company. (See Elder, Edward H., assignor.)						
J. Stevens Arms and Tool Company. (See La Riviere, Alfred G., assignor.)						
Jackson, Alfred G., Brisbane, Queensland, Australia. System for electrically releasing drawers in cash-registers, &c	847,479	Mar. 19	3522	771	127	947
Jackson, Erskine H. (See Belknap and Jackson.)						
Jackson, John. (See Barker and Jackson.)						
Jacobs, Frank D., Canton, Mass. Pencil	847,579	Mar. 19	3720	819	127	1004
Jacobs, Max. (See Schlee and Jacobs.)						
Jacobsen, Henrik T., Chicago, Ill. Adjustable drop-light	847,580	Mar. 19	3720	819	127	1004
Jarrett, John R., Mishawaka, Ind. Suspensory	847,779	Mar. 19	4143	904	127	1102
Jennings, Joseph H., Middleway, W. Va. Railway-tie	847,780	Mar. 19	4144	905	127	1103
Jensen, Christian, Philadelphia, Pa. Washer	847,685	Mar. 19	3915	854–5	127	1049
Jenson, John E., Minneota, Minn. Wrench	847,581	Mar. 19	3721	819	127	1004
Johnson, Sylvester A., Lincoln, Nebr. Hoop for washboilers and the like	847,582	Mar. 19	3724	820	127	1005
Johnson, Walker & Tolhurst. (See Cochren, Archibald C., assignor.)						
Jones, Albert F., Salem, Mass. Stone-dressing machine	847,339	Mar. 19	3228	711–12	127	872
Jordan, Oswald P., Chicago, Ill. Unloading device	847,480	Mar. 19	3523	771	127	947
Joy, Francisco D., Glendora, Cal. Paddle-wheel for boats	847,481	Mar. 19	3526	772	127	948
Judge, Edward J., and L. C. Dibert, San Francisco, Cal. Scalder and washer	847,781	Mar. 19	4145	905	127	1103
Kaiser, Charles A., Astoria, assignor of one-third to L. Flatow, New York, N. Y. Rotary air or fluid compressor	847,946	Mar. 19	4602	999–7	127	1188
Kampfe, Frederick and O., New York, N. Y. Hair-trimmer	846,782	Mar. 19	4147	906	127	1103
Kampfe, Otto. (See Kampfe, Frederick and O.)						
Kate, John H. (See Porter, Louis N., assignor.)						
Kearns, John E., assignor of one-half to H. S. Lindberg, Ottumwa, Iowa. Plow attachment	847,582	Mar. 19	3724	820	127	1005
Keeler, Herbert E., New York, assignor to Curtain Supply Company, Chicago, Ill. Curtain-fixture	847,584	Mar. 19	3725	820	127	1005
Keith, James, London, England. Pressure-fan	847,585	Mar. 19	3726	820–1	127	1006
Keller, Peter, assignor of one-half to J. M. Tierney, Chicago, Ill. Gas-burner	847,412	Mar. 19	3389	742–3	127	914
Keller, Peter, assignor of one-half to J. M. Tierney, Chicago, Ill. Gas-pressure regulator	847,413	Mar. 19	3389	743	127	914
Kellogg, Charles B., *et al.* (See Bartenstein, John J., assignor.)						
Kellogg Switchboard and Supply Company. (See Dunbar, Francis W., assignor.)						
Kellogg Switchboard and Supply Company. (See Webster, Harry G., assignor.)						
Kellogg Switchboard and Supply Company. (See Weiss, Alfred H., assignor.)						
Kelly, Patrick J., Elizabeth, N. J. Thread-cutting tool for lathes	847,586	Mar. 19	3728	821	127	1006
Kelly, William W., Hartland, Vt., assignor, by mesne assignments, to United Shoe Machinery Company. Pegging-machine. (Reissue)	12,618	Mar. 19	4609	1010–11	127	1212
Kendis, Michael B., Omaha, Nebr. Key-changing attachment for cornets	847,240	Mar. 19	3226	713	127	873
Kenney, David T., assignor to Vacuum Cleaner Company, North Plainfield, N. J. Apparatus for removing dust	847,947	Mar. 19	4603	987–8	127	1189
Kenney, David T., assignor to Vacuum Cleaner Company, North Plainfield, N. J. Apparatus for removing dust	847,948	Mar. 19	4607	988–9	127	1189
Ketch, Alva W., Orlando, Okla. Ter. Windmill	847,949	Mar. 19	4510	989	127	1189
Kilbourne, Henry S., Nashville, Tenn. Railway-tie	847,783	Mar. 19	4150	905–6	127	1104
Kimball, Frank I., Herminie, Pa. Apparatus for shifting cars	847,950	Mar. 19	4513	990	127	1190
King, Robert P., assignor, by mesne assignments, to Champion Lever Machine Company, Indianapolis, Ind. Machine-driving mechanism	847,784	Mar. 19	4153	906	127	1105
Kirchner, Albert J. (See Ohmer, Kirchner, and Hill.)						
Kleinsberg, Paul E., Croton Falls, N. Y. Air-pump	847,785	Mar. 19	4153	906	127	1106
Knaff, John, Pueblo, Colo. Cigar-holder	847,341	Mar. 19	3230	713	127	874
Knauss, Frank V., Portsmouth, Ohio. Oven-bottom	847,482	Mar. 19	3530	772	127	949

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Drg.	Official Gazette. Vol.	Page.
Koenig, Christian J., Alton, Ill. Automatic glass gathering and blowing machine	847,666	Mar. 19	3917	855	127	1050
Koenig, George F., La Sueur, Minn. Hoisting device	847,667	Mar. 19	3922	856–7	127	1051
Koepf, Otto, Göppingen, Germany. Drying apparatus	847,786	Mar. 19	4156	907	127	1106
Kugelmann, August B. (See Date and Kugelmann.)						
Kundtz, Theodor, and J. Rehor, Cleveland, Ohio; said Rehor assignor to said Kundtz. Sewing-machine cabinet	847,483	Mar. 19	3530	772–3	127	949
Kurtz, Stewart S. (See Nusly, Samuel C., assignor.)						
Kyle, George S., assignor of one-half to Q. Hafer, Chambersburg, Pa. Seesaw	847,787	Mar. 19	4158	907	127	1106
La Fleur, William J., Northampton, Mass. Roller attachment for sled-runners	847,789	Mar. 19	4160	908	127	1107
La Hodny, William, Buffalo, N. Y. Combination cheval-glass and desk or the like	847,342	Mar. 19	3238	713	127	874
La Riviere, Alfred G., assignor to J. Stevens Arms and Tool Company, Chicopee Falls, Mass. Gun-sight	847,953	Mar. 19	4519	991	127	1191
Laas & Sponsenburg Co. (See Fischer, Jens J. O., assignor.)						
Lace, Raymond P., Columbus, Ohio. Boring-bar	847,788	Mar. 19	4159	908	127	1106
Lain, James P., Chicago, Ill. Vehicle	847,414	Mar. 19	3395	743	127	914
Lake, Golladay, Memphis, Tenn., assignor to H. B. Barber, Grenada, Miss. Buggy-top-prop attachment	847,951	Mar. 19	4515	990	127	1191
Lamwers, Otto, Paterson, N. J. Shuttle-motion for looms	847,952	Mar. 19	4516	991	127	1191
Lang, Albert, Karlsruhe, Germany. Heating-cartridge	847,668	Mar. 19	3927	857	127	1052
Lantagne, Joseph, Central Falls, R. I. Article of store furniture	847,484	Mar. 19	3535	773	127	951
Large, I. S. (See Crocker and Walbot, assignors.)						
Larsen, Laurits, San Francisco, Cal. Drill-chuck	847,790	Mar. 19	4162	908	127	1107
Latta, Emmit G., Friendship, assignor of one-half to H. A. Moyer, Syracuse, N. Y. Type-writing machine	847,343	Mar. 19	3239	714	127	874
Latta, Emmit G., Friendship, assignor of one-half to H. A. Moyer, Syracuse, N. Y. Type-writing machine	847,990	Mar. 19	4596	1008–9	127	1209
Latta, Emmit G., assignor of one-half to H. A. Moyer, Syracuse, N. Y. Type-writing machine	847,415	Mar. 19	3396	743–4	127	915
Lausterer, William J., Jamestown, assignor to U. S. Standard Voting Machine Company, Rochester, N. Y. Voting-machine	847,416	Mar. 19	3402	744–5	127	916
Lazear, Le Roy C., Chicago, Ill. Curtain-supporting rod	847,344	Mar. 19	3245	715	127	876
Le Baron, Herbert A., Ridleonville, Me. Sleigh	847,954	Mar. 19	4520	991–2	127	1192
Leach, Charles, Kansas City, Kans. Sash-fastener	847,345	Mar. 19	3249	715	127	876
Leach, Rhoda A. (See Bailey, James W., assignor.)						
Lee, John W., Washington, D. C. Bottle-stopper	847,791	Mar. 19	4163	908	127	1107
Lehman, Charles M., Middlebury, Ind. Trace-fastening device	847,417	Mar. 19	3406	745	127	918
Levi, Bernhardt, New York, N. Y. Artificial floral decoration	847,669	Mar. 19	3928	857	127	1052
Lichtenstadt, Charles, Chicago, Ill. Apparatus for rewinding fabrics	847,418	Mar. 19	3407	745–	127	918
Liebknecht, Otto, Frankfort-on-the-Main, Germany, assignor to Roessler & Hasslacher Chemical Company, New York, N. Y. Making calcium peroxid	847,670	Mar. 19	3929		127	1053
Liessem, Gottfried, and J. Bommer, San Francisco, Cal. Bottle-stopper	847,994	Mar. 19	4606	1010	127	1211
Lilley, Florence M., Ealing, England. Spreading device for apparel-collars	847,485	Mar. 19	3536	774	127	951
Lindberg, Hokan S. (See Kearns, John E., assignor.)						
Lindner, Georg, Karlsruhe, assignor to Deutsche Steinzeug Waarenfabrik für Canalisation und Chemische Industrie, Friedrichsfeld, Germany. Cask or vessel from which liquid is discharged under pressure	847,792	Mar. 19	4164	909	127	1108
Lindquist, Carl E. (See Pearson and Lindquist.)						
Lindsay, John N., Fall Creek, Oreg. Snatch-block	847,955	Mar. 19	4521	992	127	1192
Lindström, Charles A., Allegheny, assignor to Pressed Steel Car Company, Pittsburg, Pa. Brake-beam	847,671	Mar. 19	3930	857	127	1053
Lindström, Charles A., Allegheny, and J. F. Streib, Avalon, assignors to Pressed Steel Car Company, Pittsburg, Pa. Car-door-shaft-operating mechanism	847,956	Mar. 19	4522	992–3	127	1192
Linn, John A., Gayville, S. D. Collar-fastener	847,346	Mar. 19	3250	715	127	876
Little, Kirby S., Conover, N. C. Pipe and monkey wrench	847,419	Mar. 19	3411	747	127	919
Little, Robert H., Chicago, Ill. Accounting mechanism	847,672	Mar. 19	3932	858	127	1053
Livengood, Winfield S., assignor to Smith & Sons Mfg. Co., Kansas City, Mo. Road-grader	847,793	Mar. 19	4166	909–10	127	1108
Locke, Bradford H., New York, N. Y. Rock-drill	847,587	Mar. 19	3740	821	127	1007
Lomb, Carl F., assignor to U. S. Standard Voting Machine Company, Rochester, N. Y. Interlocking mechanism for voting-machines	847,347	Mar. 19	3251	716	127	877
Lord, Charles N., Santa Fe, N. Mex. Ter. Electrical apparatus	847,794	Mar. 19	4170	910	127	1109
Lorenz, William A., Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine	847,957	Mar. 19	4524	994–5	127	1193
Lorenz, William A., Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine	847,958	Mar. 19	4529	995–6	127	1194
Lorenz, William A., Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine	847,959	Mar. 19	4534	996–7	127	1195
Los Angeles Metals Extraction Company. (See Waterbury, George H., assignor.)	847,795	Mar. 19	4171	911	127	1109
Lovell, Albert K., New York, N. Y. Buckle	847,673	Mar. 19	3936	858	127	1054
Lowe, John C., Cleveland, Ohio. Detachable handle	847,796	Mar. 19	4173	911	127	1110
Lowrey, Joseph H., Neola, Iowa. Automatic wagon-brake	847,674	Mar. 19	3937	859	127	1054
Lubbers, John H., Allegheny, assignor to Window Glass Machine Company, Pittsburg, Pa. Drawing glass articles	847,797	Mar. 19	4177	912	127	1111
Lucia, Federico S. (See Fittipaldi and Lucia.)						
Lyford, William E., assignor to Hartford Carpet Corporation, Thompsonville, Conn. Filling-finger	847,675	Mar. 19	3938	859	127	1054
Lyman Gun Sight Corporation. (See Windridge and Wilcox, assignors.)						
Lynch, Charles, Chicago, Ill. Dumping-wagon						
Lynch, Michael C., *et al.* (See Lynch, Timothy D., assignor.)						
Lynch, Peter J., *et al.* (See Lynch, Timothy D., assignor.)						
Lynch, Timothy D., assignor of two-thirds to M. C. and P. J. Lynch, San Francisco, Cal. Fireproof construction of buildings	847,420	Mar. 19	3412	747	127	919
Lynn, Robert H., Bolivar, Pa. Veneering-machine. (Reissue)	12,619	Mar. 19	4614	1011	127	1213
Lyons, John C., McComb, Miss., assignor of one-half to M. D. Wilson, Buffalo, N. Y. Permutation door-knob	847,348	Mar. 19	3255	716	127	878
Mable, William, Fort Collins, Colo. Window-cleaner	847,486	Mar. 19	3538	774	127	951
MacKethan, Alfred A., Fayetteville, N. C. Wood-distilling apparatus	847,676	Mar. 19	3940	860	127	1055
Machlet, Adolph W., Elizabeth, N. J. Case-hardening	847,588	Mar. 19	3741	822	127	1007
Mack, David, Dana, Ind. Mail-bag exchanger	847,940	Mar. 19	4539	997	127	1196
Mailloux, Harvey A., St. Albans, Vt. Curtain-pole	847,580	Mar. 19	3748	822	127	1008
Maley, Nixon. (See Cruikshank, William Y., assignor.)						
Mallard, Logan L., assignor of one-half to B. F. Bell and one-third to W. A. Sims, Atlanta, Ga. Switch mechanism	847,349	Mar. 19	3257	716–17	127	879
Marggraff, Fredrick, assignor to F. A. Neider Co., Augusta, Ky. Carriage-curtain fastener	847,421	Mar. 19	3413	747	127	919
Marhoff Reel Co. (See Marhoff, Walter E., assignor.)	847,350	Mar. 19	3260	717	127	879
Marhoff, Walter E., assignor to Marhoff Reel Co., Kalamazoo, Mich. Fish-line reel	847,422	Mar. 19	3414	748–9	127	919
Marquis, Charles A., St. Louis, Mo. Winding and measuring machine						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Marsh, Wilbur W. (See Morgan, Thomas W., assignor.)						
Marsh, William B. (See Pickett, William, assignor.)						
Martin, Silas C. (See Obear and Martin.)						
Marvin, Benjamin W. (See Willmarth, Charles A., assignor.)						
Maxwell, Bert C., Canton, Ohio. Manifolding book or pad	847,991	Mar. 19	3600	1009	127	1220
Maxwell, Jonathan D., Tarrytown, N. Y. Annular ball-bearing	847,497	Mar. 19	3539	774	127	951
May, Rudolf A., Akron, Ohio. Stove and furnace	847,381	Mar. 19	3283	717	127	883
Mayer, Isidor. (See Hübner and Mayer.)						
Maynard, Aldrovand V. T. (See Maynard and Gale.)						
Maynard, Sigismund R. J. and A. V. T., and F. Gale, Fordsburg, Transvaal. Rock-drilling-machine chuck	847,890	Mar. 19	3749	823	127	1089
Mayo, Benjamin F., Salem, assignor of two-thirds to C. J. Corcoran and J. A. Brogan, Lawrence, Mass. Pencil-sharpener	847,422	Mar. 19	3418	749	127	930
Maytham, George W., Buffalo, N. Y. Ship construction	847,577	Mar. 19	3542	860	127	1055
McAulay, John D., Baddeck, Nova Scotia, Canada. Saw-sharpening machine	847,504	Mar. 19	4196	918–19	127	1114
McAvoy, John F., Baltimore, Md. Umbrella and parasol	847,505	Mar. 19	4200	919	127	1115
McCloud, Edward H., Columbus, Ohio. Flexible fire-resisting curtain	847,651	Mar. 19	3948	861–2	127	1087
McCormak, Harry S., Providence, R. I., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	847,428	Mar. 19	3430	752	127	923
McCoy, John A., Kennett, Cal. Collapsible lantern	847,430	Mar. 19	3431	753	127	923
McCreary, George B., Indianapolis, Ind. Hose or pipe mender	847,894	Mar. 19	3788	824	127	1010
McDonald, Alice F G. (See McDonald, William T. B., assignor.)						
McDonald, William T. B., Granby, Quebec, assignor to R. Greene, London, and A. F. G. McDonald, Granby Canada. Buffer	847,367	Mar. 19	3282	720	127	884
McGuire, John H., Heuvelton, N. Y. Stanchion	847,306	Mar. 19	4202	919–20	127	1116
McKee, Belle R. (See McKee, Mary M., assignor.)						
McKee, Mary M., assignor of one-half to B. R. McKee, Tacoma, Wash. Dish-washer	847,495	Mar. 19	3538	773–9	127	955
McMurtry, Alden L., New York, N. Y. Speed-timing device for vehicles	847,595	Mar. 19	3789	824	127	1011
McMurtry, Alden L., New York, N. Y. Nut-wrench	847,596	Mar. 19	3791	825	127	1012
Meech, Harrison B., New York, N. Y. Furnace	847,282	Mar. 19	4241	908	127	1197
Meincke, Alfred M., Winchester, Mass. Pulp-screen roll	847,362	Mar. 19	3285	718	127	881
Merkels, John B., Chicago, Ill. Bag or envelop closure	847,363	Mar. 19	3286	718	127	881
Merrill, Frank D. (See Cheney, Thomas J., assignor.) (Reissue.)						
Metterhausen, Carl, Chicago, Ill. Mechanism for operating double sliding doors	847,488	Mar. 19	3540	774–5	127	952
Metzler, John A., Newark, N. J. Machine for treating hides and skins	847,364	Mar. 19	3287	718–19	127	881
Meyer, Hermann, New York, N. Y. Self-playing piano	847,798	Mar. 19	4179	913–14	127	1111
Michael, Henry, Hamburg, N. Y. Closet-seat	847,678	Mar. 19	3944	860	127	1056
Mier y Miura, Eduardo, Madrid, Spain. Measuring apparatus for electricity	847,434	Mar. 19	3430	749–50	127	921
Milhollin, John C., assignor of one-half to C. W. Summerville, Springfield, Ohio. Separable spring-hinge	847,988	Mar. 19	4542	999	127	1197
Millar, Charles H., Ervillagh, Foxrock, Ireland. Rotary engine	847,439	Mar. 19	3544	775–6	127	953
Miller, Conrad, Denver, Colo. Dumping-body for vehicles	847,264	Mar. 19	4545	999	127	1198
Miller, George L. R., Oxford, Ohio. Marker for hats	847,799	Mar. 19	4188	916	127	1112
Miller, Henry S., Rochester, N. Y. Dental handpiece	847,891	Mar. 19	3781	822	127	1009
Miller, James M., Washington, D. C. Air-ship	847,985	Mar. 19	4546	999	127	1198
Miller, John, Orange, N. J. Combined water-heater, smoke and gas consumer, and damper regulator	847,426	Mar. 19	3432	750	127	921
Miller, Sidney W., Chicago, Ill. Triple alternating siphon	847,892	Mar. 19	3784	823	127	1010
Millis, Charlie J., Pontiac, assignor of one-half to W. J. Hartwig, Detroit, Mich. Speed-measure	847,670	Mar. 19	3945	861	127	1056
Mills, David. (See Irvine, Mills, and Wood.)						
Mills, Francis A., Lawrence, Mass. Means for hanging knitted leased harness for looms	847,800	Mar. 19	4188	916	127	1112
Moen, William E. (See Peterson and Moen.)						
Moffitt, Frank A., Chicago, Ill. Tunneling apparatus	847,801	Mar. 19	4189	916–18	127	1113
Moll, Johann, Augsburg, Germany. Machine for treating cylindrical machine parts	847,429	Mar. 19	3485	751	127	922
Monolith Steel Company. (See Golding, John F., assignor.)						
Monroe, Charles H., assignor of two-thirds to W. E. Grinnell, Searsport, Me., and H. B. Black, Everett, Mass. Steam-engine	847,499	Mar. 19	3545	776	127	953
Monson, August A., Minneapolis, Minn. Signaling apparatus for telephones	847,265	Mar. 19	3270	719	127	882
Monson, August A., Minneapolis, Minn. Automatic telephone-switchboard	847,266	Mar. 19	3273	719–20	127	882
Montague Compressed Air Company. (See Obear, Bryan, assignor.)						
Montague Compressed Air Company. (See Obear and Martin, assignors.)						
Moore, Leo. (See Moskowitz, Rudolph, assignor.)						
Morden, Lucena M., Waterbury, Conn. Index clip and label	847,893	Mar. 19	3786	824	127	1010
Morgan Engineering Company. (See Taylor, Clarence L., assignor.)						
Morgan, Henry A. and W. A., Birmingham, England. Mechanism for use in edging wall-paper	847,421	Mar. 19	3547	777	127	954
Morgan, Thomas W., assignor to W. W. Marsh, Waterloo, Iowa. Driving mechanism for centrifugal separators	847,502	Mar. 19	4194	918	127	1114
Morgan, Thomas W., assignor to W. W. Marsh, Waterloo, Iowa. Spindle step-bearing	847,503	Mar. 19	4195	918	127	1114
Morgan, William A. (See Morgan, Henry A. and W. A.)						
Morrin, Thomas F., deceased, Jersey City, N. J.; Thomas F. Morrin, Jr., administrator. Steam-boiler	847,427	Mar. 19	3427	751–2	127	922
Morris, Emerson T., Derwent, Ohio. Clamp for cutters or bits of cutter-machines	847,669	Mar. 19	3947	861	127	1057
Morris, Henry G., Philadelphia, Pa. Mixing-machine	847,492	Mar. 19	3539	777–8	127	954
Moskowitz, Rudolph, assignor to L. Moore, South Bend, Ind. Laundrying device	847,498	Mar. 19	3551	778	127	955
Moss, Lincoln. (See Baldwin and Moss.)						
Moyer, Harvey A. (See Latta, Emmit G., assignor.)						
Müller, Adolph. (See Schröder and Müller.)						
Multiplex Safety Razor Company. (See Baker and Frisbie, assignors.)						
Munton, James. (See Hermanson, Gustaf A., assignor.)						
Munz, Charles W., Detroit, Mich. Adhering round forms and apparatus for same	847,966	Mar. 19	4540	1000	127	1199
Murphy, James F., Michigan City, Ind. Railway stand-pipe	847,494	Mar. 19	3542	778	127	955
Naslund, Eric A., Dunkirk, N. Y. Apparatus for catching and delivering mail-bags	847,982	Mar. 19	3940	862	127	1058
National Enameling & Stamping Company. (See Schaefer, Albert, assignor.)						
National Railway Materials Company. (See Hall, George L., assignor.)						
National Sewing Machine Co. (See Pettey, John O., assignor.)						
Neff, Asa J. (See Rollins and Neff.)						
Neider, Fred A., Augusta, Ky. Carriage-curtain fastener	847,420	Mar. 19	3432	753	127	924
Nelson, John, *et al.* (See Beach, Elmer R., assignor.)						
Nelson, Reuben C., Healdsburg, Cal. Vapor-burner	847,496	Mar. 19	3535	776	127	955
Nesbitt, William H., Roland, Manitoba, Canada. Cultivator	847,431	Mar. 19	3434	753–4	127	924
New Britain Machine Company. (See Parks and Brown, assignors.)						
New Haven Clock Co. (See Porter, Wilson E., assignor.)						
New Jersey Patent Company. (See Aiken, Edward L., assignor.)						
New Jersey Patent Company. (See Pierman, Alexander N., assignor.)						
Newcomb, Michael P., Priest River, Idaho. Journal-box	847,988	Mar. 19	4538	1000	127	1211
Newell, Frank C., and A. England, Wilkinsburg, assignors to Westinghouse Air Brake Company, Pittsburg, Pa. Crimping-machine	847,488	Mar. 19	3535	888	127	1059

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ney Manufacturing Company. (See Thurston, Mathias, assignor.)						
Nicolaus, Frederic G., assignor to Walworth Run Foundry Company, Cleveland, Ohio. Register and ventilator	847,497	Mar. 19	3556	779–80	127	956
Noecker, Harry M., Washington, Iowa. Rifle	847,967	Mar. 19	4552	1000	127	1199
Norcross, Levi W., Fort Worth, Tex. Auxiliary piano-pedal	847,498	Mar. 19	3559	780	127	956
Norgrave, George B., assignor to Peabody Leather Machinery Company, Peabody, Mass. Machine for treating hides and skins	847,684	Mar. 19	3958	863–4	127	1060
Northern Engineering Works. (See True, George A., assignor.)						
Nowitzky, Wilhelm F., Riga, Russia, assignor to Hulsen Fabrik A. Jaunsem, (Andreas Jaunsem.) Cigarette-making apparatus	847,968	Mar. 19	4555	1000–1	127	1200
Nugent, William W., Chicago, Ill. Ball-joint-lubricating apparatus	847,432	Mar. 19	3436	754	127	924
Nualy, Samuel C., assignor to S. S. Kurtz, Canton, Ohio. Manifold pad or book	847,993	Mar. 19	4604	1009	127	1211
O'Brien, Patrick A., assignor to W. J. Carlin, Boston, Mass. Device for holding charts or the like	847,434	Mar. 19	3440	754	127	925
O'Flaherty, Frank, Franklin, Pa. Toy	847,499	Mar. 19	3560	780	127	956
Obear, Bryan, assignor to Montague Compressed Air Company, St. Louis, Mo. Air lift-pump	847,433	Mar. 19	3438	754	127	925
Obear, Bryan, and S. C. Martin, assignors to Montague Compressed Air Company, St. Louis, Mo. Regulator for fluid-operated pumps and motors	847,358	Mar. 19	3283	721	127	884
Ogborn, Harrison, assignor, by mesne assignments, to Champion Lever Machine Company, Indianapolis, Ind. Machine-driving mechanism	847,807	Mar. 19	4204	920	127	1116
Ohmer, Wilfred I., A. J. Kirchner, Dayton, Ohio, and J. W. Hill, Providence, R. I., assignors to Recording and Computing Machines Company, Dayton, Ohio. Fare register and recorder	847,808	Mar. 19	4206	920–6	127	1117
Ollard, Harry D., Tacoma, Wash. Attachment for hats	847,809	Mar. 19	4234	926	127	1122
Olson, George O., Chicago, Ill. Fastening means	847,350	Mar. 19	3286	721	127	885
Oman, Charles G., Jonesboro, Ind. Cider-mill	847,810	Mar. 19	4234	927	127	1122
Onsum, Peter, Jackson, Tenn., and H. R. Dohren, Champaign, Ill. Governor	847,597	Mar. 19	3763	825	127	1012
Osius, Frederick J., assignor to United States Standard Electrical Works, Racine, Wis. Messaging implement	847,360	Mar. 19	3287	721	127	885
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Roof construction for passenger-cars	847,500	Mar. 19	3562	781–2	127	957
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Vestibule trap-door and steps for passenger-cars	847,501	Mar. 19	3564	782	127	958
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Side deck for passenger-car roofs	847,502	Mar. 19	3566	783	127	959
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Car construction	847,503	Mar. 19	3567	783	127	959
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Passenger-car	847,504	Mar. 19	3569	783–5	127	960
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Passenger-car construction	847,505	Mar. 19	3575	786	127	962
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Ornamental pressed-metal molding	847,506	Mar. 19	3576	786	127	962
Otis, Spencer. (See White and Otis.)	847,598	Mar. 19	3764	825	127	1012
Overgaard, Thomas K., Orgryte, Gothenburg, Sweden. Disjointable packing-case	847,361	Mar. 19	3288	722	127	886
Packard Motor Car Company. (See Schmidt, Charles, assignor.)						
Palmer, Scott A. and W. H., San Diego, Cal. Automatic flush-tank	847,362	Mar. 19	3290	722–3	127	886
Palmer, William H. (See Palmer, Scott A. and W. H.)						
Paris, James T., Chicago, Ill. Apparatus for manufacture of gas	847,599	Mar. 19	3765	825–6	127	1013
Parks, Charles H., and R. S. Brown, assignors to New Britain Machine Company, New Britain, Conn. Means for clamping and filing saws	847,363	Mar. 19	3292	723	127	887
Parrish, John E., Johnson City, Tenn. Pencil-sharpener	847,364	Mar. 19	3294	723	127	887
Parry, Ross F., Dallas, Tex. Loose-leaf binder	847,685	Mar. 19	3961	864	127	1061
Pavert, Remy J., Baker City, Oreg. Rake-tooth						
Peabody Leather Machinery Company. (See Norgrave, George B., assignor.)						
Pearson, Geoffrey H., Swindon, England, assignor to A. C. Clark, Chicago, Ill. Apparatus for facilitating the removal of deposit in locomotive-boilers	847,435	Mar. 19	3441	755	127	926
Pearson, Olin, and C. E. Lindquist, Chicago, Ill. Sash-lock	847,600	Mar. 19	3768	826	127	1013
Pedigo, James W. (See Bussells and Pedigo.)						
Peerless Fashion Company. (See Hudson, William H., assignor.)						
Peller, Morris, New York, N. Y., assignor to Waterbury Buckle Company, Waterbury, Conn. Suspender-buckle	847,811	Mar. 19	4236	927	127	1122
Perrine, George, *et al.* (See Beach, Elmer R., assignor.)	847,812	Mar. 19	4238	928	127	1123
Peterson, Gustave E., and W. E. Moen, Red Jacket, Mich. Twine-cutter	847,666	Mar. 19	3962	864–7	127	1061
Pettey, John O., assignor to National Sewing Machine Co., Belvidere, Ill. Machine for grooving needles	847,436	Mar. 19	3443	755	127	926
Pfeiffer, Oskar, Kaiserslautern, Germany. Grinding-mill	847,813	Mar. 19	4230	928	127	1123
Phillips, Elwood C., Chicago, Ill. Fire-cleaner	847,365	Mar. 19	3296	724	127	888
Phillips, George W., Buena Vista, Va. Steam-boiler furnace	847,814	Mar. 19	4239	928	127	1123
Phillips, John, Philadelphia, Pa. Water-shedding attachment for carriages	847,437	Mar. 19	3444	755–6	127	926
Pickett, William, assignor of one-half to W. B. Marsh, Lynn, Mass. Car-fender	847,601	Mar. 19	3770	826–7	127	1014
Pickop, George B., New Britain, Conn. Ratchet-wrench						
Pidcock, Orie R. (See Grice and Pidcock.)						
Pierman, Alexander N., Newark, assignor to New Jersey Patent Company West Orange, N. J. Phonic apparatus	847,687	Mar. 19	3972	867–8	127	1063
Pigg, William A., Fort Barrancas, Fla. Tobacco-knife	847,815	Mar. 19	4240	928	127	1124
Pittsburgh Equipment Company. (See Pulliam, Oswald S., assignor.)	847,688	Mar. 19	3973	868	127	1063
Plummer, Horace, Pittsboro, Ind. Ticket-box	847,816	Mar. 19	4241	929	127	1124
Pollard, Walter S., Philadelphia, Pa. Adjustable miter-box for commutator-brushes	847,366	Mar. 19	3296	724	127	888
Pollock, Ralph E., Syracuse, N. Y. Candy-spinning machine	847,817	Mar. 19	4242	929	127	1124
Pomeroy, James A., Palo Alto, Cal. Vehicle-wheel	847,818	Mar. 19	4243	929	127	1124
Porst, Gustav, Baltimore, Md. Gas-regulator	847,507	Mar. 19	3577	786	127	963
Porter, Louis M., Ponca, assignor of one-half to J. H. Kate, Wayne, Nebr. Incubator.						
Porter Safety Seal Co. (See Huising, Garrett H., assignor.)						
Porter, Wilson E., assignor to New Haven Clock Co., New Haven, Conn. Time-limit clock	847,689	Mar. 19	3975	868	127	1064
Porter, Wilson E., assignor to New Haven Clock Co., New Haven, Conn. Stem-winding and stem-setting watch	847,819	Mar. 19	4245	929	127	1125
Post, Charles B., New London, Ohio. Wall-fastening for stovepipes	847,690	Mar. 19	3977	869	127	1064
Potter, Frank E., Jr., Rome, N. Y. Telephone-switch-operating mechanism	847,367	Mar. 19	3300	724	127	888
Powers, Alexander C., Louisville, Ky. Kitchen implement	847,969	Mar. 19	4558	1001	127	1200
Pratt & Whitney Company. (See Hanson, Bengt M. W., assignor.)						
Pratt & Whitney Company. (See Thayer, Arthur E., assignor.)	847,820	Mar. 19	4246	930	127	1125
Pratt & Whitney Company. (See Thayer, Charles A., assignor.)						
Prescott, John O., Summit, N. J. Mechanism for making sound-records						
Pressed Steel Car Company. (See Lindström, Charles A., assignor.)						
Pressed Steel Car Company. (See Lindström and Streib, assignors.)						
Pressed Steel Car Company. (See Warren and Preston.)						
Preston, William H. (See Warren and Preston.)	847,603	Mar. 19	3772	827	127	1014
Pulliam, Oswald S., assignor to Pittsburgh Equipment Company, Pittsburg, Pa. End sill for cars						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Rafalsky, Albert, Stapleton, assignor to P. Eckhardt & Co., New York, N. Y. Suit-case handle	847,821	Mar. 19	4246	930	127	1128
Railroad Supply Company. (See Vaughan, Henry H., assignor.)						
Railway Steel-Spring Company. (See Caswell, Frederick K., assignor.)						
Ralston, James H., Snowmass, Colo. Water-elevating device	847,808	Mar. 19	3879	787	127	963
Ralston, William A., assignor of one-half to G. R. Fuller and one-fourth to F. T. Byrne, Rochester, N. Y. Coin-sorter	847,628	Mar. 19	3446	736	127	927
Randolph Inkwell Company. (See Randolph, Jeptha B., assignor.)						
Randolph, Jeptha B., assignor to Randolph Inkwell Company, Omaha, Nebr. Ink-well	847,668	Mar. 19	3773	827	127	1014
Rankin, Cora I., New York, N. Y. Collar-supporter	847,694	Mar. 19	3775	828	127	1014
Raza, Gladys L., Montreal, Quebec, Canada, and F. S. Frisbie, Boston, Mass. Dress-shield or garment fastener	847,268	Mar. 19	3302	725	127	889
Rebholz, Joseph M., Troy, Ohio. Vehicle-top	847,970	Mar. 19	4559	1002	127	1201
Recording and Computing Machines Company. (See Ohmer, Kirchner, and Hill, assignors.)						
Rector, Alcorn, assignor to himself, D. O. Sprague, and A. P. Smith, New York, N. Y. Telephone attachment	847,691	Mar. 19	3978	869	127	1014
Reed, Charles A., New York, N. Y., and A. H. Stam, St. Paul, Minn. Building construction	847,692	Mar. 19	3980	869-70	127	1015
Rees, Napoleon B. (See Rees, Noland B. and N. B.)						
Rees, Noland B. and N. B., Lincoln, Kans. Washing-machine	847,822	Mar. 19	4249	930	127	1128
Reeves, Harry E., Chicago, Ill. Dust-pan	847,998	Mar. 19	3982	870	127	1015
Rehor, Joseph. (See Kundtz and Rehor.)						
Reiss, George T. (See Sears, Greenleaf, and Reiss.)						
Rennerfelt, Gustaf, Scranton, Pa., assignor of one-half to A. Ekstrom, Albany, N. Y. Steam-condenser	847,805	Mar. 19	3776	828	127	1015
Reuther, John, Le Roy, and W. Reuther, Marilla, N. Y. Potato-digger	847,806	Mar. 19	3779	828-9	127	1016
Reuther, William. (See Reuther, John and W.)						
Reynolds, Clifford W., Omaha, Nebr. Refrigerator	847,823	Mar. 19	4250	931	127	1128
Reyscher, Karl, Bielefeld, Germany. Drying apparatus	847,694	Mar. 19	3983	871	127	1015
Riblet, George E., Erie, Pa. Steam-engine valve	847,260	Mar. 19	3303	725-6	127	889
Rice, Frank W. (See Dennis and Rice.)						
Richter, Ernst, Cincinnati, Ohio. Variable-speed-transmitting device	847,695	Mar. 19	3984	871	127	1015
Riling, Joseph, and C. W. Sagee, assignors to Hero Fruit Jar Company, Philadelphia, Pa. Conveying apparatus	847,509	Mar. 19	3880	787	127	963
Riling, Joseph, and C. W. Sagee, assignors to Hero Fruit Jar Company, Philadelphia, Pa. Glass-forming machine	847,696	Mar. 19	3987	871	127	1015
Risberg, Johannes V. M., Södertelje, assignor to Aktiebolaget Baltic-Separator, Stockholm, Sweden. Manufacture of butter in centrifugal apparatus	847,697	Mar. 19	3989	871	127	1015
Ritter, Abraham, New York, N. Y. Buckle	847,971	Mar. 19	4561	1002	127	1201
Ritter, Albert, Boston, Mass. Universal joint	847,629	Mar. 19	3447	756-7	127	927
Ritz, Robert R., Milwaukee, Wis. Paste-receptacle	847,270	Mar. 19	3305	726	127	889
Rivett, Edward, Boston, Mass. Driving mechanism	847,440	Mar. 19	3460	757	127	928
Robert Holmes & Brothers (See Holmes, Grant, assignor.)						
Roberts, George W., Ravenna Nebr. Gage	847,824	Mar. 19	4252	931	127	1128
Robinson, Charles W., Hamilton, Ontario, Canada, assignor to International Harvester Company. Wheel-machine	847,807	Mar. 19	3782	829-31	127	1017
Robinson, William H., New York, N. Y., assignor, by mesne assignments, to himself, and W. M. Hanes, Winston Salem, N. C. Apparatus for converting feathers into down	847,371	Mar. 19	3306	726-7	127	889
Rockwell, Warren A. (See Caldwell and Rockwell.)						
Roessler & Hasslacher Chemical Company (See Liebknecht, Otto, assignor.)						
Rogers, Orin J., Spokane, Wash. Sash-lock	847,510	Mar. 19	3881	787	127	964
Rogers, William H., Camden, N. J. Shoe-lace tip	847,826	Mar. 19	4253	931	127	1127
Rolfe, Charles A., Adrian, Mich., assignor, by mesne assignments, to Rolfe Electric Co., Rochester, N. Y. Lightning-arrester	847,372	Mar. 19	3813	727	127	889
Rolfe Electric Co. (See Rolfe, Charles A., assignor.)						
Rollins, Henry M., and A. J. Neff, Houston, Tex. Truck for wood-preserving retorts	847,826	Mar. 19	4253	931	127	1127
Root, Charles A., Kalamazoo, Mich. Photographic shutter	847,373	Mar. 19	3314	727	127	889
Roper, Charles F., assignor to Draper Company, Hopedale, Mass. Take-up mechanism for looms	847,808	Mar. 19	3791	831	127	1018
Roux, George L., Fernandina, Fla. Razor	847,809	Mar. 19	3794	831	127	1019
Royal Furniture Company. (See Dennis, Alfred A., assignor.) (Reissue.)						
Rudolphi, Frank, Chicago, Ill., assignor to American Can Company, New York, N. Y. Sheet-metal display can or box	847,441	Mar. 19	3462	758	127	928
Rudolphi, Frank, Chicago Ill., assignor to American Can Company, New York, N. Y. Sheet-metal display-can	847,972	Mar. 19	4562	1002	127	1201
Rudolphi, Frank, and E. Bräuninger, Chicago, Ill., assignors to American Can Company, New York, N. Y. Sheet-metal display can or box	847,973	Mar. 19	4563	1002	127	1202
Rutherford, Arthur L., Tarentum, Pa. Combined curtain-pole and curtain-shade-roller bracket	847,827	Mar. 19	4255	932	127	1127
Sackett, Frederick E., Harvey, Ill. Elevated carrier	847,511	Mar. 19	3882	788	127	964
Sagee, Charles W. (See Riling and Sagee.)						
Sandleben, Wilhelm, Hamburg, Germany. Toothpick-holder	847,828	Mar. 19	4256	932	127	1127
Sarkees, Maroon B., assignor of two-thirds to J. P. Carroll, Philadelphia, Pa., and R. M. Cook, Washington, D. C. Curing tobacco	847,698	Mar. 19	3990		127	1067
Sausser, John M., Osnaburg, Ohio. Plow-depth regulator	847,512	Mar. 19	3885	788	127	964
Savage, Edward S., Brooklyn, assignor to American Chemical Manufacturing & Mining Company, Rochester, N. Y. Device for detaching box-covers	847,374	Mar. 19	3317	727	127	889
Schaal, Karl, Seward, Nebr. Gooseberry-picker	847,829	Mar. 19	4257	933	127	1128
Schaefer, Albert, assignor to National Enameling & Stamping Company, St. Louis, Mo. Lid for coffee-pots and similar articles	847,375	Mar. 19	3317	728	127	890
Schaefer, Marguerite, Indianapolis, Ind. Sand and mineral drier	847,513	Mar. 19	3886	789	127	965
Schantz, Edwin M., Zimmerman, Ohio. Marking apparatus	847,810	Mar. 19	3795	832	127	1028
Scheihing, George, Riverdale, Nebr. Hay-stacker	847,376	Mar. 19	3319	728	127	890
Scherbner, Paul, New York, N. Y. Metal staircase	847,699	Mar. 19	3991	872	127	1067
Schildback, Ernest, Elmhurst, Ill. Wind-shield	847,830	Mar. 19	4258	933	127	1128
Schlafly, Julius H., assignor to Berger Manufacturing Company, Canton, Ohio. Side-walk or concrete construction	847,700	Mar. 19	3992	872	127	1067
Schlee, Herman C., and M. Jacobs, Cleveland, Ohio. Ventilator for head-coverings	847,831	Mar. 19	4261	933	127	1129
Schmidt, Charles, assignor to Packard Motor Car Company, Warren, Ohio. Starting device for explosion-engines	847,514	Mar. 19	3888	789	127	965
Schmidt, Godfried H., Lexington, assignor of one-half to C. W. Tobin, St. Louis, Mo. Hame-tug	847,377	Mar. 19	3320	729	127	890
Schmunk, Fredrich and P. B., Beaver Falls, Pa. Trolley and crossover	847,701	Mar. 19	3993	872	127	1067
Schmunk, Paul B. (See Schmunk, Fredrich and P. B.)						
Schneider, William E., Washington, D. C. Machine for making receptacles of compressed pulp	847,832	Mar. 19	4261	933-4	127	1129
Schofield, Robert, New Bedford, Mass., assignor to American Linen Company, New Haven, Conn. Machine for treating flax	847,611	Mar. 19	3891	833-4	127	1021

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Schröder, Ludwig, and A. Müller, Berlin, Germany. Alternating-current plant combined with storage battery	847,974	Mar. 19	4565	1003	127	1202
Schroeder, George G., Washington, D. C. Street-car propulsion	847,515	Mar. 19	3589	789-91	127	966
Schroeder, George G., Washington, D. C. Combination cement and metal fence-post	847,516	Mar. 19	3591	791	127	966
Schroeder, George G., Washington, D. C. Combination cement and metal fence-post	847,612	Mar. 19	3806	833	127	1022
Schroeder, William S., Chicago, Ill. Car-coupling	847,517	Mar. 19	3592	791-2	127	967
Schwarz, Georg, Bismarck, Germany. Ammunition-box	847,833	Mar. 19	4272	936	127	1132
Sears, Willard T., Philadelphia, Pa., G. E. Greenleaf, Plainfield, N. J., and G. T. Reiss, Hamilton, Ohio. Controlling means for planer-platen-driving mechanisms	847,834	Mar. 19	4273	936	127	1133
Secor, Jerome B., Derby, Conn. Carriage-controlling mechanism for type-writing machines	847,613	Mar. 19	3806	833-4	127	1022
Secor, Jerome B., assignor to Williams Typewriter Company, Derby, Conn. Type-writing machine	847,702	Mar. 19	3995	873	127	1068
Secor, Jerome B., assignor to Williams Typewriter Company, Derby, Conn. Type-writing machine	847,835	Mar. 19	4275	936-8	127	1133
Seibert, Oscar H. (See Steinhoff, Frederick W., assignor.)						
Sessoms, Consuelo A. (See Usher and Sessoms.)						
Seuter, Ernst, *et al.* (See Boessneck, Edward F., assignor.)						
Sheldon, Samuel B., Buffalo, N. Y. Coke-furnace	847,614	Mar. 19	3813	834-6	127	1024
Shenefelt, Francis L., Estherville, Iowa. Ditching-machine	847,703	Mar. 19	3997	873-4	127	1069
Shepard, James M., Findlay, Ohio. Tire	847,442	Mar. 19	3455	758	127	929
Sheppard, William D., Exeter, England. Gas cooking-stove or the like	847,704	Mar. 19	3999	874	127	1069
Sherman, Pleas M., Sharon, Kans. Cultivator	847,836	Mar. 19	4279	938	127	1135
Shiltz, Charles M., Carrollton, Ohio. Filter	847,518	Mar. 19	3595	792	127	968
Shimer, Milton J., Freemansburg, Pa. Pistol	847,837	Mar. 19	4280	939	127	1135
Sims, Wm. A., *et al.* (See Mallard, Logan L., assignor.)						
Sinclair Laundry Machinery Co. (See Thurber, William, assignor.)						
Sjöbring, Nils P., Jamestown, N. Y. Sheet-metal door	847,443	Mar. 19	3457	758	127	929
Skidmore, William D., Pelham, N. Y. Machine for cutting web materials	847,838	Mar. 19	4282	939	127	1136
Slick, Edwin E., Pittsburg, Pa. Apparatus for transferring metal blooms, &c. (Reissue)	12,620	Mar. 19	4616	1011-12	127	1213
Sloan, Joseph A., Seattle, Wash. Draft and vent regulator	847,378	Mar. 19	3321	729	127	895
Sloane, John B., Los Angeles, Cal. Rifle	847,519	Mar. 19	3597	792	127	968
Smiley, Ura S., Monessen, assignor to American Sheet & Tin Plate Company, Pittsburg, Pa. Sheet-feeding mechanism	847,615	Mar. 19	3824	836	127	1027
Smiley, William H., Milton, Ohio. Printing-press	847,379	Mar. 19	3322	729-31	127	895
Smith, Arthur P., *et al.* (See Rector, Alcorn, assignor.)						
Smith, Charles F., New York, N. Y. Culinary tongs	847,839	Mar. 19	4286	940	127	1136
Smith, Edward F., Corry, Pa. Cylinder for hide-fleshing machines	847,616	Mar. 19	3825	837	127	1027
Smith, Joseph J., New York, N. Y. Portable humidifier	847,840	Mar. 19	4287	940	127	1136
Smith, Lincoln, Braddock, Pa. Ironing-board	847,705	Mar. 19	4001	875	127	1070
Smith & Sons Mfg. Co. (See Livengood, Winfield S., assignor.)						
Smythe, Edwin H., and E. A. Barrows, assignors to Western Electric Company, Chicago, Ill. Circuit-breaker	847,520	Mar. 19	3598	793-4	127	968
Snow, Gertrude M., Kalamazoo, Mich. Music-holder	847,444	Mar. 19	3460	759	127	930
Sparks, Walter P., St. Louis, Mo. Animal-shears	847,706	Mar. 19	4002	875	127	1070
Spindler, Henry W., Verona, Pa. Folding chair	847,707	Mar. 19	4003	875	127	1070
Sprague, Daniel O., *et al.* (See Rector, Alcorn, assignor.)	847,841	Mar. 19	4288	940	127	1137
Stanley, Clarence A., Cambridge, Md. Picking-rod	847,617	Mar. 19	3827	837	127	1027
Stapley, William S., assignor to Bridgeport Brass Company, Bridgeport, Conn. Mode of attaching pump-tubes to hubs	847,445	Mar. 19	3462	759	127	931
Stearns, Henry A., Jr., Milford, Mass. Machine for polishing rings	847,521	Mar. 19	3602	794-5	127	969
Stebbins, Walter A., and H. Bergstrom, assignors to American Specialty Company, Denver, Colo. Turn-down-cellar folder and shaper	847,522	Mar. 19	3606	796	127	970
Steel, Will, Texarkana, Ark. Combined fan and score-card	847,842	Mar. 19	4289	940	127	1137
Steinberger, Louis, New York, N. Y. Telephone-receiver	847,618	Mar. 19	3827	837	127	1028
Steinhoff, Frederick W., assignor to O. H. Seibert, Eddyville, Iowa. Hand brick-machine	847,708	Mar. 19	4005	875	127	1071
Steinmeyer, Gustav, Sr., St. Louis, Mo. Car-roof construction						
Stem, Allen H. (See Reed and Stem.)						
Stephens-Adamson Mfg. Co. (See Dull, Raymond W., assignor.)						
Sterling, Rufus T., assignor of one-half to A. J. Swearingen, San Antonio, Tex. Cotton-chopper	847,380	Mar. 19	3328	731	127	897
Stewart, Floyd J., Grinnell, Iowa. Logging	847,843	Mar. 19	4291	941	127	1137
Stillman, Millicent M., New York, N. Y. Garment-pattern	847,844	Mar. 19	4292	941	127	1138
Stirton, James E., Monroe, Wash. Paper-rack	847,523	Mar. 19	3610	795	127	971
Storrs, Fred C., Chicago, Ill. Sawing-machine	847,845	Mar. 19	4294	941	127	1138
Straw Pulp and Paper Company. (See Conger, John B., assignor.)						
Streib, John F. (See Lindström and Streib.)	847,446	Mar. 19	3463	759	127	931
Strom, John A., Pullman, Ill. Expansion-drum						
Strong, William E. S., *et al.* (See Gray, Almon J., assignor.)						
Summerville, C. W. (See Millhollin, John C., assignor.)	847,524	Mar. 19	3611	795	127	972
Sundberg, Per T., Stockholm, Sweden. Centrifugal separator	847,525	Mar. 19	3613	796	127	972
Sutcliffe, Joseph. (See Boocock and Sutcliffe.)	847,846	Mar. 19	4295	942	127	1139
Swan, James, Seymour, Conn. Window and door alarm						
Swan, James, Seymour, Conn. Window and door alarm	847,381	Mar. 19	3330	731	127	897
Swearingen, Alonzo J. (See Sterling, Rufus T., assignor.)	847,619	Mar. 19	3828	837-8	127	1028
Symmes, Frederick W., St. Matthews, S. C. Ventilator						
Taylor, Allen C., Charleston, S. C. Invalid-bed	847,526	Mar. 19	3614	796-7	127	972
Taylor, Clarence L., assignor to Morgan Engineering Company, Alliance, Ohio. Beam-shear	847,447	Mar. 19	3467	760	127	932
Teel, Richard C., Clanton, Ala. Cotton chopper and cultivator						
Thayer, Arthur E., assignor to Pratt & Whitney Company, Hartford, Conn. Turning attachment for lathes	847,527	Mar. 19	3616	797-8	127	973
Thomas, Frederick, Newark, N. J. Combined ladder and jack	847,528	Mar. 19	3618	798	127	973
Thompson, Channing M., Newark, Ohio. Hose-clamp	847,620	Mar. 19	3830	838	127	1028
Thompson, William J., Duke, N. C. Spinning-frame	847,621	Mar. 19	3832	838	127	1029
Thurber, William, assignor to Sinclair Laundry Machinery Co., Chicago, Ill. Shirt-ironing machine	847,622	Mar. 19	3835	839	127	1029
Thuresson, Sven, assignor to Henry Vogt Machine Company, Louisville, Ky. Steam-condenser	847,709	Mar. 19	4006	876	127	1071
Thurston, Mathias, Stryker, assignor to Ney Manufacturing Company, Canton, Ohio. Hay-carrier	847,847	Mar. 19	4296	942	127	1139
Tierney, John M. (See Keller, Peter, assignor.)	847,848	Mar. 19	4299	942	127	1139
Tilton, Frank, McPherson, Kans. Haystack-cover						
Tobin, C. W. (See Schmidt, Godfried H., assignor.)	847,975	Mar. 19	4567	1004	127	1202
Todd, Albert V., Denver, Colo. Detonating burglar-alarm						
Trinks, Wilhelm, Pittsburg, Pa., assignor to William Tod Company, Youngstown, Ohio. Throttle-valve system	847,623	Mar. 19	3841	840	127	1030

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Tripp Fruit Wrapping Machine Company. (See Ballard, Milton H., assignor.)						
True, George A., assignor to Northern Engineering Works, Detroit, Mich. Trolley for traveling cranes	847,849	Mar. 19	4290	943	127	1139
Trumbull, George T., Chicago, Ill. Vertically-adjustable stool	847,520	Mar. 19	3620	799	127	974
Tuteur, Julius, Cleveland, Ohio. Timber seat and support	847,889	Mar. 19	4301	943	127	1140
U. S. Standard Voting Machine Company. (See Lausterer, William J., assignor.)						
U. S. Standard Voting Machine Company. (See Lomb, Carl F., assignor.)						
Uedelhofen, Valentin, Lakeside, Ill. Rail-joint	847,382	Mar. 19	3233	721	127	896
Ulrich, Julius, Radebeul, near Dresden, Germany. Lime color	847,530	Mar. 19	3621		127	974
Underwood Typewriter Company. (See McCormack, Harry S., assignor.)						
Union Paper Bag Machine Company. (See Lorenz, William A., assignor.)						
United Shoe Machinery Company. (See Kelly, William W., assignor.) (Reissue.)						
United States Standard Electrical Works. (See Osius, Frederick J., assignor.)						
Usher, Francis M. C., Fulton, Ky., and C. A. Secane, Merrifield, Va. Revolving mercury-dip current-interrupter	847,851	Mar. 19	4302	944	127	1140
Vacuum Cleaner Company. (See Kenney, David T., assignor.)						
Van Buren, Hildebert, Sr. (See Fretz and Van Buren.)						
Van Roy, Gustave V., Brussels, Belgium. Runner for umbrellas and the like	847,882	Mar. 19	4295	944	127	1141
Varley, Thomas W., New York, N. Y. Electrical measuring instrument	847,834	Mar. 19	3944	840	127	1031
Vaughan, Henry H., Cleveland, Ohio, assignor to Railroad Supply Company, Chicago, Ill. Manufacturing channel-pins	847,710	Mar. 19	4288	876	127	1071
Veik, Adolph, Chicago, Ill. Blank-feeding attachment for can-making machines	847,695	Mar. 19	3946	841	127	1031
Venter, Otto, Chemnitz, Germany. Apparatus for drying textile material	847,388	Mar. 19	3324	722	127	899
Vickers Sons & Maxim. (See Dawson and Horne, assignors.)						
Viedt, Hermann, Morristown, N. J. Ice-cream freezer	847,888	Mar. 19	4299	944	127	1141
Villard, John F., Rexton, New Brunswick, Canada. Paint	847,894	Mar. 19	3326		127	899
Villiers, Walter H., Chicago, Ill. Souvenir postal card	847,581	Mar. 19	3622	799	127	974
Voels, Louis J., Kenosha, Wis. Thread-cutting attachment	847,626	Mar. 19	3945	841	127	1032
Voigtmann & Company. (See Iman, Orie H., assignor.)						
Voorhorst, Clarence J., Chicago, Ill. Division-plate for egg-cases	847,864	Mar. 19	4303	945	127	1142
Vortex Manufacturing Company. (See Date and Kugelmann, assignors.)						
Vroome, Garrett M., Castleton Corners, N. Y. Combination power-machine	847,885	Mar. 19	4289	943-7	127	1142
Wadman, Walter E., Bayonne, N. J., assignor to Hygienic Chemical Company of New Jersey. Treating silicious ores containing lithia	847,856	Mar. 19	4312		127	1143
Walhof, Charles A. (See Crocker and Walhof.)						
Walker, John B., and A. R. Bond, New York, N. Y. Paper-making machine	847,857	Mar. 19	4314	947	127	1143
Walker, Joseph A., *et al.* (See Bowler, Giles, assignor.)						
Walworth Run Foundry Company. (See Nicolaus, Frederic G., assignor.)						
Ware, Rodney B., Brooklyn, N. Y. Mechanical movement	847,888	Mar. 19	4313	947	127	1144
Warren, Frederick C., and W. H. Preston, Valley Junction, Wis.; said Preston assignor to said Warren. Fruit-jar and can closure	847,979	Mar. 19	4289	1004	127	1293
Warren, William R., New York, N. Y. Rotary kiln	847,880	Mar. 19	4323	948	127	1145
Warren, William R., New York, N. Y. Rotary kiln	847,880	Mar. 19	4323	948	127	1145
Warren, William R., New York, N. Y. Rotary kiln	847,881	Mar. 19	4324	948	127	1145
Washburn, Robert, Harriston, Ontario, Canada. Sash-lifter	847,882	Mar. 19	4324	948	127	1145
Waterbury Buckle Company. (See Peller, Morris, assignor.)	847,627	Mar. 19	3940	841	127	1032
Waterbury, George H., Denver, Colo., assignor to Los Angeles Metals Extraction Company, Los Angeles, Cal. Treatment of silicate of copper	847,448	Mar. 19	3469		127	948
Watts, Thomas A., Springfield, Ohio. Vending-machine	847,886	Mar. 19	4295	949	127	1147
Watzelhan, Joseph, New York, N. Y. Slip-sheet attachment for printing-presses	847,532	Mar. 19	3622	799-800	127	975
Weaver, Harold L., Seymour, Conn. Nail-transferring device	847,884	Mar. 19	4297	949	127	1147
Webster, Harry G., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Telephone trunking system	847,386	Mar. 19	3336	732	127	898
Weiss, Alfred H., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Transmitter-front	847,449	Mar. 19	3470	799	127	933
Wernke, Frederick W., McKeesport, Pa. Wagon-brake	847,886	Mar. 19	4295	949	127	1147
West, Edward. (See Blauvelt, William E., assignor.)						
West, Georg, Godesberg, Germany. Stopper for vessels	847,888	Mar. 19	4320	949	127	1146
Westbrook, John J., Danville, Va. Safety device for elevators	847,887	Mar. 19	4320	950	127	1146
Western Electric Company. (See Atwood, George F., assignor.)						
Western Electric Company. (See Craft, Edward B., assignor.)						
Western Electric Company. (See Smythe and Burrows, assignors.)						
Westinghouse Air Brake Company. (See Clark, Francis L., assignor.)						
Westinghouse Air Brake Company. (See Newell and England, assignors.)						
Westinghouse Air Brake Company. (See Westinghouse, Henry H., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Burns, James A., assignor.)						
Westinghouse, Henry H., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Fluid-pressure brake	847,711	Mar. 19	4010	876	127	1072
Wheeler, Claud H., Wills Point, Tex. Cultivator	847,896	Mar. 19	4332	950-1	127	1149
White, Edward F., Easton, Pa. Sulfur-smelting apparatus	847,890	Mar. 19	4295	951	127	1149
White, William, Chicago, Ill. System of washing and filling locomotive-boilers	847,227	Mar. 19	3342	733	127	900
White, William, Chicago, Ill. System of washing and filling locomotive-boilers	847,228	Mar. 19	3345	733	127	900
White, William, and S. Otis, Chicago, Ill. System of washing and filling locomotive-boilers	847,388	Mar. 19	3340	733	127	899
Wilcox, George S. (See Windridge and Wilcox.)						
William Tod Company. (See Trinks, Willibald, assignor.)						
Williams, Griffith D., Peckville, Pa. Feed-head for drilling-machines	847,469	Mar. 19	3471	760	127	933
Williams Typewriter Company. (See Secor, Jerome B., assignor.)						
Willmarth, Charles A., assignor to B. W. Marvin, Detroit, Mich. Machine for weaving wire fences	847,533	Mar. 19	3623	800	127	975
Wilmore, John T., Denver, Colo. Means for turning and arranging can-caps	847,451	Mar. 19	3474	761	127	934
Wilson, George E., and W. J. Frawley, Stillwater, Minn. Cylinder steam-jacket	847,712	Mar. 19	4012	877	127	1072
Wilson, M. D. (See Lyons, John C., assignor.)	847,713	Mar. 19	4013	877	127	1072
Wilson, Ralph B., Chicago, Ill. Loose-leaf ledger	847,628	Mar. 19	3939	841	127	1032
Wilson, Turner W., assignor to W. E. Wilson, Washington, D. C. Flux for welding copper	847,529	Mar. 19	3953		127	1033
Wilson, William, Garfield, Kans. Draft-equalizer	847,988	Mar. 19	3947	734	127	901
Wilson, William, Boston, Mass., assignor to Campbell Bosworth Machinery Company, Portland, Me. Work-guiding device	847,714	Mar. 19	4014	877	127	1073
Wilson, William E. (See Wilson, Turner W., assignor.)						
Winchenbaugh, Lester P., Hyde Park, Mass. Penholder	847,390	Mar. 19	3343	734	127	900
Window Glass Machine Company. (See Lubbers, John H., assignor.)						
Windridge, James, and G. S. Wilcox, assignors to Lyman Gun Sight Corporation, Middlefield, Conn. Sight for firearms	847,530	Mar. 19	3953	948	127	1033
Wood, William H. (See Irvine, Mills, and Wood.)						
Wood, William T., Nashville, Tenn. Toy	847,715	Mar. 19	4016	878	127	1073
Woodmancy, George B., Randolph, N. Y. Trousers-presser	847,392	Mar. 19	3343	735	127	900

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Woodmansee, Arnold, Woonsocket, S. D. Straw-stoker	847,391	Mar. 19	3350	734-5	127	902
Worney, Theodore, Milwaukee, Wis. Flat-car	847,716	Mar. 19	4018	878	127	1074
Wuest, Philip, Jr., assignor to Auto-Manual Piano Action Company, Philadelphia, Pa. Divided pianissimo device	847,534	Mar. 19	3630	801	127	977
Wytman, Jan, Avalon, Pa. Punching-machine	847,535	Mar. 19	3632	801	127	977
Young, Frank, Creston, Iowa. Steam-boiler valve	847,870	Mar. 19	4339	952	127	1150
Young, Ira J., St. Louis, Mo. Woven-wire fence	847,871	Mar. 19	4340	952	127	1151
Zabriskie, Albert T. (See Gancher and Zabriskie.)						
Zimmerman, Harry, Fremont, Ohio. Apparatus for feeding and cutting multiple fabrics	847,536	Mar. 19	3637	802	127	979

DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Atwood, William H., New Haven, Conn., assignor to Electric Vehicle Company, Jersey City, N. J. Automobile-body	38,486	Mar. 19	127	1229
Electric Vehicle Company. (See Atwood, William H., assignor.)				
Kahn Fred D., assignor to L. Wolf & Co., New York, N. Y. Hand-bag, purse, or similar article	38,482	Mar. 19	127	1228
Lee, Fred E., Dowagiac, Mich. Stove ornament	38,485	Mar. 19	127	1229
Mebane, James A., South Boston, Va. Socket for incandescent electric lamps	38,484	Mar. 19	127	1228
O'Sullivan, Florence, Washington, D. C. Badge	38,481	Mar. 19	127	1228
Roberton, Emma, New York, N. Y. Bottle	38,483	Mar. 19	127	1228
Wolf & Co., L. (See Kahn, Fred D., assignor.)				

TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
A. Priesmeyer Shoe Co., Jefferson City, Mo. Leather shoes	61,451	Mar. 19	127	1252
Actiengesellschaft Paulanerbräu (zum Salvatorkeller), Munich, Germany. Beer	61,358	Mar. 19	127	1247
Albert Dickinson Company, Chicago, Ill. Grass-seeds, grain-seeds, timothy-seed, and clover-seed	61,430	Mar. 19	127	1249
Albert Dickinson Company, Chicago, Ill. Grass-seeds, grain-seeds, timothy-seed, and clover-seed	61,431	Mar. 19	127	1249
Allen & Co., S. L., Philadelphia, Pa. Sleds	61,432	Mar. 19	127	1249
Allen & Co., S. L., Philadelphia, Pa. Sleds	61,433	Mar. 19	127	1249
American Chicle Co., New York, N. Y. Chewing-gum	61,345	Mar. 19	127	1247
American Glove Co., Chicago, Ill. Gloves, mittens, and gauntlets made of horsehide	61,350	Mar. 19	127	1247
American Mica Company, Newton, Mass. Certain insulation materials	61,434	Mar. 19	127	1249
Boott Mills, Lowell, Mass. Cotton piece goods	61,368	Mar. 19	127	1248
Boott Mills, Lowell, Mass. Cotton piece goods	61,372	Mar. 19	127	1248
Boott Mills, Lowell, Mass. Cotton piece goods	61,373	Mar. 19	127	1248
Boott Mills, Lowell, Mass. Cotton piece goods	61,374	Mar. 19	127	1248
Boott Mills, Lowell, Mass. Cotton piece goods	61,375	Mar. 19	127	1248
Boott Mills, Lowell, Mass. Cotton piece goods	61,400	Mar. 19	127	1248
Boston Wine & Spirits Co., Boston, Mass. Whisky, brandy, gin, rum, punch, cocktails, and grain alcohol	61,360	Mar. 19	127	1247
Browning Press, Collinwood, Ohio. Periodical publications	61,413	Mar. 19	127	1249
Childs, Robert A., Syracuse, N. Y. Certain musical instruments	61,401	Mar. 19	127	1248
Chipmans Sons, Chas., Easton, Pa. Hosiery	61,376	Mar. 19	127	1248
Choate Drug and Chemical Company, Boston, Mass. Medicines for bronchial and pulmonary affections	61,435	Mar. 19	127	1249
Colbert, Frederick, Butte, Mont. Medicine	61,414	Mar. 19	127	1249
Columbia Wagon Co., Columbia, Pa. Farm-wagons, delivery-wagons, carts, and dumping-wagons	61,436	Mar. 19	127	1249
Confectioners' Journal Publishing Co., Philadelphia, Pa. Periodical	61,437	Mar. 19	127	1250
Copeland & Co., Charles C., New York, N. Y. Cotton piece goods	61,438	Mar. 19	127	1249
Cutler, C. F., Deep River, Iowa. Medicines for blood diseases of horses, mules, and cattle	61,402	Mar. 19	127	1249
Davis, Charles W., Allegheny, Pa. Lotions	61,415	Mar. 19	127	1249
Davis and Day Engineering Company, Muscatine, Iowa. Boiler-cleaning compound in liquid form	61,403	Mar. 19	127	1249
Dietz, August, Richmond, Va. Envelops for advertising purposes	61,404	Mar. 19	127	1249
Dr. Rainey Medicine Co., Chicago, Ill. Remedy for coughs	61,405	Mar. 19	127	1249
Duff & Sons, P., Pittsburg, Pa. Molasses	61,346	Mar. 19	127	1247
Duff & Sons, P., Pittsburg, Pa. Molasses	61,347	Mar. 19	127	1247
Dunham, Carrigan & Hayden Company, San Francisco, Cal. Certain cutlery and edge-tools	61,439	Mar. 19	127	1250
Dunham, Carrigan & Hayden Company, San Francisco, Cal. Certain cutlery and edge-tools	61,440	Mar. 19	127	1250
Dunham, Carrigan & Hayden Company, San Francisco, Cal. Certain cutlery and edge-tools	61,441	Mar. 19	127	1250
Dunham, Carrigan & Hayden Company, San Francisco, Cal. Certain cutlery and edge-tools	61,442	Mar. 19	127	1250
Dunham, Carrigan & Hayden Company, San Francisco, Cal. Certain cutlery and edge-tools	61,416	Mar. 19	127	1249
E. Z. Shoe Company, Hornell and Buffalo, N. Y. Leather boots and shoes	61,417	Mar. 19	127	1249
Eagle Lamp Company, Danvers, Mass. Incandescent lamps	61,443	Mar. 19	127	1250
Eagle Lamp Company, Danvers, Mass. Incandescent lamps	61,391	Mar. 19	127	1248
Eagle Lock Co., Terryville, Conn. Padlocks, trunk-locks, cabinet-locks, and door-locks	61,361	Mar. 19	127	1247
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile draperies	61,444	Mar. 19	127	1250
Este, Charles, Philadelphia, Pa. Certain wood manufactures	61,377	Mar. 19	127	1248
Frank Jones Brewing Company Limited, Portsmouth, N. H. Ale	61,362	Mar. 19	127	1247
Fred Miller Brewing Co., Milwaukee, Wis. Beer	61,378	Mar. 19	127	1248
Fredberg & Workum, Cincinnati, Ohio. Whisky	61,379	Mar. 19	127	1249
Freiler, Philip, Elgin, Ill. Whisky	61,445	Mar. 19	127	1250
Gerhard Mennen Chemical Co., Newark, N. J. Tooth-powder	61,418	Mar. 19	127	1249
Hamburger, Felix, New York, N. Y. Electric-arc lamps	61,462	Mar. 19	127	1250
Hansen & Van Winkle Co., Newark, N. J.; New York, N. Y., and Chicago, Ill. Metal-polishes				

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Hargadine-McKittrick Dry Goods Company, St. Louis, Mo. Fur garments	61,380	Mar. 19	127	1246
Hargadine-McKittrick Dry Goods Company, St. Louis, Mo. Certain clothing	61,381	Mar. 19	127	1246
Harrell, Earle G., Camilla, Ga. Remedy for certain diseases	61,406	Mar. 19	127	1249
Hartmann Trunk Company, Racine, Wis. Trunks	61,419	Mar. 19	127	1249
Hawley & Hoops, New York, N. Y. Candy, chocolates, and bonbons	61,348	Mar. 19	127	1247
Hawley & Hoops, New York, N. Y. Candy, chocolates, and bonbons	61,349	Mar. 19	127	1247
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Varnishes, enamels, rough-stuffs, paint-oil, and pigments used for paint	61,333	Mar. 19	127	1247
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Varnishes, enamels, rough-stuffs, paint-oil, and pigments used for paint	61,334	Mar. 19	127	1247
Hirschberg, Sidney G., New York, N. Y. Hats and caps	61,407	Mar. 19	127	1249
Hitt, Daniel C., Indianapolis, Ind. Cigars	61,335	Mar. 19	127	1247
Home Silk Mills, New York, N. Y. Silk piece goods	61,363	Mar. 19	127	1247
Hosterman, Arthur D., Springfield, Ohio. Monthly magazine	61,420	Mar. 19	127	1249
Hughes, Enos J., Chicago, Ill. Remedy for stomach and bowel affections	61,446	Mar. 19	127	1250
J. H. Rushton, Incorporated, Canton, N. Y. Canoes, row-boats, and sail-boats, and parts thereof, and oars and paddles	61,408	Mar. 19	127	1249
Jacoway, Duncan L., Denver, Colo. Smoking-tobacco	61,336	Mar. 19	127	1247
Jacquin & Company, H., New York, N. Y. Knitted undershirts and drawers	61,362	Mar. 19	127	1248
Jones Bros. & Co. Inc., Louisville, Ky. Certain food preparations	61,360	Mar. 19	127	1247
Kerfoot, Miller and Company, Oklahoma, Okla. Ter. Certain clothing	61,383	Mar. 19	127	1248
King, Brinsmade Mercantile Company, St. Louis, Mo. Silk piece goods and silk ribbon	61,394	Mar. 19	127	1248
Kolb, Frances S., Columbus, Ohio. Muslin undergarments for women	61,395	Mar. 19	127	1248
Lactobacilline Company, New York, N. Y. Milk	61,351	Mar. 19	127	1247
Lactobacilline Company, New York, N. Y. Milk	61,352	Mar. 19	127	1247
Louisville Dental Laboratory & Mfg. Co., Louisville, Ky. Dental alloy	61,392	Mar. 19	127	1248
Lyman Gun Sight Corporation, Middlefield, Conn. Gun-sights	61,393	Mar. 19	127	1248
McMahon, Michael, Brooklyn, N. Y. Cleaners for glassware and porcelain	61,337	Mar. 19	127	1247
Memphis Column Company, Benton Harbor, Mich., and Memphis, Tenn. Wooden columns	61,421	Mar. 19	127	1249
Mills, John C., Duke Center, Pa. Liniment for external application	61,447	Mar. 19	127	1250
Mistrot Bros. & Co., Galveston, Tex. Leather shoes	61,422	Mar. 19	127	1249
Montanye, Chas. H., New York, N. Y., assignor to W. H. Montanye & Company. Certain food preparations	61,394	Mar. 19	127	1248
Mountain, Howard, San Francisco, Cal. Face-powder, face-cream, and hair-tonic	61,448	Mar. 19	127	1250
Munter, Charles, New York, N. Y. Body-braces and conformer-corsets	61,409	Mar. 19	127	1249
Musica, Antonio, New York, N. Y. Macaroni	61,353	Mar. 19	127	1247
N. K. Fairbank Company, Chicago, Ill. Laundry soap	61,338	Mar. 19	127	1247
National Grocer Company, Chicago, Ill. Dried and evaporated fruits	61,395	Mar. 19	127	1248
National Sportsman, Incorporated, Boston, Mass. Monthly magazine	61,410	Mar. 19	127	1249
Noake-Wheeler-Clough Company, Chicago, Ill. Varnishes	61,411	Mar. 19	127	1249
Oelschlaeger Bros., New York, N. Y. Certain measuring and scientific apparatus, appliances, and instruments	61,339	Mar. 19	127	1247
Palmer, Mary E., New York, N. Y. Cigars in boxes	61,340	Mar. 19	127	1247
Park & Tilford, New York, N. Y. Cigars and cigarettes	61,354	Mar. 19	127	1247
Paulson Brothers Company, Pittsburg, Pa. Certain clothing	61,341	Mar. 19	127	1247
Peetz, Gustav E., New York, N. Y. Corsets, bust-forms, and supporters	61,396	Mar. 19	127	1248
Penn-American Plate Glass Co., Pittsburg, Pa. Certain glassware	61,423	Mar. 19	127	1249
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	61,449	Mar. 19	127	1250
Phoenix Horse Shoe Co., Chicago, Ill. Horse and mule shoes	61,397	Mar. 19	127	1248
Prudential Heating Company, Akron, Ohio. Steam and hot-water boilers	61,450	Mar. 19	127	1250
R. M. Rose Co., Atlanta, Ga. Corn whisky	61,398	Mar. 19	127	1248
Reiche, Anton, Dresden, Germany. Chocolate-molds	61,398	Mar. 19	127	1248
Rippen, Hyman, Perth Amboy, N. J. Smoking-tobacco	61,432	Mar. 19	127	1250
Risdon Iron & Locomotive Works, San Francisco, Cal. Ore-concentrators	61,342	Mar. 19	127	1247
Rosenstein Brothers Inc., New York, N. Y. Canned vegetables	61,424	Mar. 19	127	1249
Rothgiesser Bros., St. Louis, Mo. Men's and boys' coats, vests, pants, jackets, and overcoats	61,355	Mar. 19	127	1247
S. Liebmann's Sons Brewing Company, Brooklyn, N. Y. Lager-beer, ale, stout, and malt extract	61,425	Mar. 19	127	1249
S. Liebmann's Sons Brewing Company, Brooklyn, N. Y. Stout	61,364	Mar. 19	127	1248
S. M. Bixby & Co., New York, N. Y. Leather and shoe blackings, paste, polish, and leather and shoe varnish	61,365	Mar. 19	127	1248
Schieren & Co., Chas. A., New York, N. Y. Leather belting	61,397	Mar. 19	127	1248
Schwabacher Bros. & Co. Inc., Seattle, Wash. Tea	61,453	Mar. 19	127	1250
Slater, Rodger & Co. Ltd., Kinning Park, near Glasgow, Scotland. Scotch whisky	61,396	Mar. 19	127	1248
Smith Drug Company, Baldwinsville, N. Y. Remedy for rheumatism	61,399	Mar. 19	127	1248
Standard Brewery Company of Baltimore City, Baltimore, Md. Beer	61,454	Mar. 19	127	1250
Tannehill, Jabez B., Wilzetta, Okla. Ter. Salve	61,390	Mar. 19	127	1248
Taylor Provision Co., Trenton, N. J. Pork-roll	61,426	Mar. 19	127	1249
Thomas Thorkildsen & Company, Chicago, Ill. Food-preservatives	61,356	Mar. 19	127	1247
Thompson and Trimble, Plattsburg, Mo. Remedy for skin diseases	61,427	Mar. 19	127	1249
Tom Ray Cutlery Company, Kansas City, Mo. Pocket-knives	61,428	Mar. 19	127	1249
Towle Mfg. Company, Newburyport, Mass. Solid and plated silver knives, forks, spoons, dishes, and condiment-receptacles	61,455	Mar. 19	127	1250
Utz & Dunn, Rochester, N. Y. Leather boots and shoes	61,398	Mar. 19	127	1248
Valdes & Co., Fernz., Havana, Cuba. Women's, misses', and children's leather boots and shoes	61,456	Mar. 19	127	1250
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga., Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	61,429	Mar. 19	127	1249
W. A. Ross & Brother Incorporated, New York, N. Y. Sherry	61,343	Mar. 19	127	1247
W. H. Montanye & Co. (See Montanye, Chas. H., assignor.)	61,367	Mar. 19	127	1248
W. S. Moore & Co., Chicago, Ill. Butter, milk, and cheese				
Wandka, Anna M. E., New York, N. Y. Certain pharmaceutical preparations	61,399	Mar. 19	127	1248
Ware Bros. Company, Philadelphia, Pa. Periodical	61,451	Mar. 19	127	1250
Ware Bros. Company, Philadelphia, Pa. Periodical	61,457	Mar. 19	127	1250
Weiss Manufacturing Company, New York, N. Y. Leather fobs of all kinds	61,458	Mar. 19	127	1250
Whorton Sons Drug Co., Gadsden, Ala. Internal remedy for the treatment of typhoid fever	61,459	Mar. 19	127	1250
William Hunt & Sons, The Brades, Limited, Brades Steel Works, near Birmingham, England. Trowels	61,413	Mar. 19	127	1249
Worlds Dispensary Medical Association, Buffalo, N. Y. Remedies for certain diseases	61,344	Mar. 19	127	1247
Woronoco Paper Company, Woronoco, Mass. All kinds of writing-paper	61,460	Mar. 19	127	1250
Wrought Iron Range Company, St. Louis, Mo. Ranges and stoves	61,400	Mar. 19	127	1250
	61,357	Mar. 19	127	1247

LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
A. H. Berry Shoe Company, Portland, Me. "Red Diamond." (For Boots and Shoes)	13,413	Mar. 19	127	1251
Both, W. C., Chicago, Ill. "Men's Apparel." (For Men's Apparel)	13,412	Mar. 19	127	1251
California Roscoint Company, Alameda, Cal. "Roscoint." (For Medical Compound)	13,411	Mar. 19	127	1251
Doolittle, George E., Washington, D. C. "The Dolly Madison Home-Made Candies." (For Candy)	13,407	Mar. 19	127	1251
Grossman, Max, Peoria, Ill. "El Dora." (For Cigars)	13,404	Mar. 19	127	1251
Harvey, N. O., Spokane, Wash. "Belmont Club." (For Catchup)	13,405	Mar. 19	127	1251
Hueber, Frank, Cleveland, Ohio. "Banquet Cake." (For Cake)	13,406	Mar. 19	127	1251
Hutchinson, Charles R., Springfield, Mass. "3 In One Soap." (For Soap)	13,408	Mar. 19	127	1251
Koppel, Sophie, New York, N. Y. "Growdine." (For Medicine)	13,409	Mar. 19	127	1251
Myers, Frank S., Detroit, Mich. "Myers' Pa-Pay-A Tablets." (For Medicine)	13,410	Mar. 19	127	1251
Newman Clock Co., Wawarsing, N. Y., and Chicago, Ill. "Watch." (For Time-Recorders, Watches, and Clocks)	13,414	Mar. 19	127	1251
Newman Clock Co., Wawarsing, N. Y., and Chicago, Ill. "Accurate Recorders." (For Time-Recorders, Watches, and Clocks)	13,415	Mar. 19	127	1251

PRINTS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
David Adler & Sons Clothing Co., Milwaukee, Wis. "Adler's Styles for Spring and Summer 1907." (For Men's Apparel)	1,934	Mar. 19	127	1251
De Laval Separator Co., New York, N. Y. "De Laval Cream Separators" (For Cream-Separators)	1,933	Mar. 19	127	1251
Green, George G., Woodbury, N. J. "Boschee's German Syrup, August Flower." (For Medicines)	1,931	Mar. 19	127	1251
Mi-cro-line Medicine Co., Dallas, Tex. "A Charge on the Picador." (For Medicine)	1,927	Mar. 19	127	1251
Mi-cro-line Medicine Co., Dallas, Tex. "The Bull Enters the Arena." (For Medicine)	1,928	Mar. 19	127	1251
Mi-cro-line Medicine Co , Dallas, Tex. "The Bull Ring." (For Medicine)	1,929	Mar. 19	127	1251
Mi-cro-line Medicine Co., Dallas, Tex. "The Bull Rushes on the Banderillero." (For Medicine)	1,930	Mar. 19	127	1251
Nucoa Butter Co., Belleville, N. J. "Healthful Nucoa Confectionery." (For Confectionary Materials)	1,932	Mar. 19	127	1251

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Name., residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Abraham & Straus, Brooklyn, N. Y. Flavoring extracts and jams	19,690	Mar. 19	127	1233
Ahlstrom, Charles A., Jamestown, N. Y. Pianos	21,665	Mar. 19	127	1234
Airedale Mills Company, Boston, Mass. Broadcloth, casket, carriage, and cap cloth	25,027	Mar. 19	127	1240
American Bar-Lock Company, Philadelphia, Pa. Illuminating-prisms, vault, sidewalk, door, and sky lights	5,402	Mar. 19	127	1231
American Fork & Hoe Co., Cleveland, Ohio. Forks, hoes, rakes, and potato-hooks	24,683	Mar. 19	127	1237
American Stove Company, Jersey City, N. J., and St. Louis, Mo. Gas ranges, stoves, heaters, &c.	24,406	Mar. 19	127	1236
American Stove Company, St. Louis, Mo. Refrigerators and ice-boxes	24,872	Mar. 19	127	1238
American Thread Company, Jersey City, N. J. Spool-cotton and thread	25,257-8	Mar. 19	127	1241
Arabol M'f'g Co., New York, N. Y. Starch sizes	24,516	Mar. 19	127	1236
Associated Portland Cement Manufacturers (1900), Limited, London, England. Portland cement	25,364	Mar. 19	127	1243
Ball Chemical Co., Allegheny, Pa. Paints, varnishes, stains, fillers, &c	25,315	Mar. 19	127	1242
Barrett Manufacturing Company, New York, N. Y. Coal-tar pitch	25,159	Mar. 19	127	1240
Barrett Manufacturing Company, New York, N. Y. Felt for use in buildings	25,353	Mar. 19	127	1243
Beane, Chester H., Gardiner, Me. Preparation for treatment of disorders of the kidneys	24,981	Mar. 19	127	1239
Bird & Co. J. A. & W., Boston, Mass. Felt and paper for roofing, &c	22,561	Mar. 19	127	1234
Blue Ribbon Mining, Milling, and Investment Co., Idaho Springs and Denver, Colo. Mineral waters, ginger-ale, root-beer, &c	23,986	Mar. 19	127	1235
Bomhard, Henry C., Milwaukee, Wis. Stove-polish	25,339	Mar. 19	127	1242
Boyer & Co., W. W., Baltimore, Md. Canned vegetables	25,200	Mar. 19	127	1241
Brenneman Baking Company, Columbus, Ohio. Bread	25 156	Mar. 19	127	1240
Broadwalk Shoe Company, Haverhill, Mass. Leather shoes	25,234	Mar. 19	127	1241
Burrill, Charles C., Ellsworth, Me. Spring-water and flavored soda-water	23,728	Mar. 19	127	1235
Butler-Butler Incorporated, New York, N. Y. Cigarettes	25,495	Mar. 19	127	1245
Canton Fertilizer and Chemical Company, Canton, Ohio. Fertilizers	22,804	Mar. 19	127	1234
Cattell, Millard F., *et al.*, executors. (See Green, Lewis M.)	15,903	Mar. 19	127	1233
Chicago Consolidated Bot Co., Chicago, Ill. Mineral, medicinal, and distilled waters	24,588	Mar. 19	127	1237
China & Japan Trading Company, Limited, New York, N. Y. Sheetings, shirtings, drills, &c	24,591	Mar. 19	127	1239
China & Japan Trading Company, Limited, New York, N. Y. Sheetings, shirtings, drills, &c	24,957	Mar. 19	127	1237
China & Japan Trading Company, Limited, New York, N. Y. Bicarbonate of soda	24,709	Mar. 19	127	1238
Citizens' Wholesale Supply Co., Columbus, Ohio. Boiler-headers, manhole-plates smelting-furnaces, &c	24,710	Mar. 19	127	1235
Continental Iron Works, Brooklyn, N. Y. Turbine rotors and shafting and twyers	23,850	Mar. 19	127	1235
Continental Iron Works, Brooklyn, N. Y. Boiler-headers, manhole-plates smelting-furnaces, &c				
Cortright Metal Roofing Company, Philadelphia, Pa. Stamped metal roofing and wall-covering				

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Crane, Z. & W. M., Dalton, Mass. Writing-paper and envelops	25,300	Mar. 19	127	1242
Crocov, Peter G., Pittsburg, Pa. Cigars	25,309	Mar. 19	127	1245
Diamond Chain and Manufacturing Company, Indianapolis, Ind. Machine-made chains	25,267	Mar. 19	127	1243
Diamond Trading Stamp Company, Philadelphia, Pa. Trading-stamps	25,186	Mar. 19	127	1241
Dixon-Bartlett Co., Baltimore, Md. Leather boots and shoes	24,978	Mar. 19	127	1230
English, Charles A., Ottumwa, Iowa. Eggs	24,906	Mar. 19	127	1230
F. F. Dalley Co. of Hamilton, Limited, Hamilton, Canada. Shoe-polish paste	5,639	Mar. 19	127	1231
Fahrig Metal Company, New York, N. Y. Antifriction bearing metals	25,220	Mar. 19	127	1242
Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Coal-tar dyes, food-preservatives, disinfectants, &c	24,885	Mar. 19	127	1238
Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Analgesic	24,887-8	Mar. 19	127	1239
Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Coal-tar dyes, food-preservatives, disinfectants, &c	24,889-90	Mar. 19	127	1239
Fernandez, Wodiska y Corral, Tampa, Fla. Cigars	13,554	Mar. 19	127	1232
Fisk Rubber Co., Chicopee Falls, Mass. Pneumatic bicycle-tires	24,656	Mar. 19	127	1237
Frederick Stearns & Co., Detroit, Mich. Perfumery, toilet water, face-powder, &c	24,777	Mar. 19	127	1238
French & Co., Samuel H., Philadelphia, Pa. Paints, stains, varnishes, enamels, &c	23,099	Mar. 19	127	1235
French & Co., Samuel H., Philadelphia, Pa. Paints, stains, and colors	23,102	Mar. 19	127	1235
Friend & Marks, Milwaukee, Wis. Coats, vests, trousers, and overcoats	23,346	Mar. 19	127	1235
Fries Harley Co., Gloucester, N. J. Rugs and carpets	24,007	Mar. 19	127	1236
Garner & Co., New York, N. Y. Calicoes, percales, ducks, and drills	24,268	Mar. 19	127	1236
Glidden, Hyde & Co., Boston, Mass. Hosiery	15,612	Mar. 19	127	1233
Globe-Wernicke Company, Cincinnati, Ohio. Bookcases and parts thereof	25,409	Mar. 19	127	1244
Gordon, Wolf and Co., New York, N. Y. Sweetmeat or confection	24,411	Mar. 19	127	1236
Green, Lewis M., deceased; M. A. Lupton, M. F. Cattell, and P. S. Horts, Woodbury, N. J., executors. Preparation for diseases of the throat and lungs	18,720	Mar. 19	127	1233
H. B. Ives Company, New Haven, Conn. Sash-fasteners	13,009	Mar. 19	127	1232
H. E. Bucklen & Company, Chicago, Ill. Medicinal preparations for the relief of coughs, colds, &c	25,318	Mar. 19	127	1242
Henderson, Stutley I., West Allis, Wis. Medicinal paste for use in pulmonary troubles	25,240	Mar. 19	127	1241
Hilker, Herman, New York, N. Y. Cloth for the manufacture of type-writer ribbons	24,928	Mar. 19	127	1230
Holmes and Barnes Limited, Baton Rouge, La. Wheat-flour	25,076	Mar. 19	127	1240
Hortz, Philip S., *et al.*, executors. (See Green, Lewis M.)				
Hostetter Company, Pittsburg, Pa. Stomach-bitters	13,475	Mar. 19	127	1232
Houdaille et Priquet, Choisy-le-Roi, (Seine,) France. Glass shades, globes, and chimneys	20,303	Mar. 19	127	1233
Ichthyol Gesellschaft Cordes, Hermanni & Co., Hamburg, Germany. Medicinal sulfonic acids, &c	21,799-800	Mar. 19	127	1234
Ichthyol Gesellschaft Cordes, Hermanni & Co., Hamburg, Germany. Medicated soap	24,040	Mar. 19	127	1236
Jackson Company, Nashua, N. H. Cotton piece goods and blankets	21,831	Mar. 19	127	1234
Jefferson, Edward Z., Pittsburg, Pa. Rubber belting and hose	25,151	Mar. 19	127	1240
Josiah Wedgwood & Sons, Ltd., Etruria, England. Earthenware and porcelain	9,525	Mar. 19	127	1231
K K K Medicine Company, Keokuk, Iowa. Spices and mustard	68	Mar. 19	127	1231
Klaas, Max, New York, N. Y. Razors, knives, scissors, and shears	25,304	Mar. 19	127	1242
Kolassa, Michael, Chicago, Ill. Bitter wine	25,344	Mar. 19	127	1243
Kraeger, Oscar H., New York, N. Y. Leather boots and shoes	24,471	Mar. 19	127	1236
Kuskuna, Joseph, New York, N. Y. Hair tonics and restorers and shampoo	15,420	Mar. 19	127	1233
L. Sonneborn Sons, Inc., New York, N. Y. Paint	25,482	Mar. 19	127	1245
L. & J. G. Stickley Inc. Fayetteville N. Y. Furniture	25,167	Mar. 19	127	1241
Little, Alexander E., Lynn, Mass. Milk, cream, and butter	24,753	Mar. 19	127	1238
Loreh & Company, A. T., De Haven, Pa. Plants and cut flowers	25,242	Mar. 19	127	1241
Luder, Friedrick, Mount Horeb, Wis. Cheese	23,882	Mar. 19	127	1235
Lupton, Mary A., *et al.*, executors. (See Green, Lewis M.)				
McDonald, Charles C., Elyria, Ohio. Canned fruit, vegetables, and baked beans	25,025	Mar. 19	127	1240
Moore, Richard, McKeesport, Pa. Hair-pomade	24,817	Mar. 19	127	1238
Neuss, Hesslein & Co., New York, N. Y. Printed cotton goods	25,423	Mar. 19	127	1245
Norddeutsche Wollkämmerei & Kammgarnspinnerei, Bremen and Delmenhorst, Germany. Inks	17,955	Mar. 19	127	1233
Oakman Manufacturing Company, New York, N. Y. Gas-burners	22,245	Mar. 19	127	1234
Ohio Bottling Co., Cincinnati, Ohio. Mineral and lithia waters, giner-ale, and seltzer	19,473	Mar. 19	127	1233
Panghorn Company, Thomas W., New York, N. Y. Cinder-mills, core-machines, cranes, elevators, &c	23,257	Mar. 19	127	1235
Patterson-Cabell Co., New York, N. Y. Canned soups and bouillons	24,674	Mar. 19	127	1237
Penn Drug Company, Chicago, Ill. Remedies for constipation, biliousness, jaundice, &c	21,589	Mar. 19	127	1234
Peters Shoe Co., St. Louis, Mo. Leather shoes	25,380	Mar. 19	127	1243
Pfleghardt, Lewis H., Fayette, Pa. Tooth-powder	25,391	Mar. 19	127	1243
Pneumatic Cushion Rubber Heel Company, Boston, Mass. Rubber heels for boots and shoes	25,272	Mar. 19	127	1241
Radigan, Rich & Co., New York, N. Y. Razors, pocket-knives, scissors, &c	24,611	Mar. 19	127	1237
Rice, Stix Dry Goods Company, St. Louis, Mo. Percales	20,667	Mar. 19	127	1233
Robeson Process Company, Camden, N. J. Adhesive used for the manufacture of cores, bricks, &c., from sand, earths, cements, &c	24,367	Mar. 19	127	1236
Robinson, Thomas A., North Baltimore, Ohio. Cigars	25,307	Mar. 19	127	1242
Roche, William J., New Bethlehem, Pa. Card game	22,176	Mar. 19	127	1234
Rock Spring Distilling Co., Owensboro, Ky. Whisky	25,347	Mar. 19	127	1243
Roman, Martin, New York, N. Y. Hair curlers or wavers	24,523	Mar. 19	127	1236
Rosenstein Brothers Inc., New York, N. Y. Preserved fish	23,828	Mar. 19	127	1235
Ruben & Co., Albert, Chicago, Ill. Cloaks, suits, and dress-skirts	21,074	Mar. 19	127	1233
Runkel Brothers, Incorporated, New York, N. Y. Chocolate and cocoa	25,426	Mar. 19	127	1245
S. S. Pierce Co., Boston, Mass. Canned vegetables, fruits, and soups, eggs, nuts, &c	5,695	Mar. 19	127	1231
Saylor, Albert R., Allentown, Pa. Insecticides and antiseptic tooth-wash	24,609	Mar. 19	127	1237
Schaeffer, James E., Baltimore, Md. Candies	25,033	Mar. 19	127	1240
Schroeder, Peter, Perham, Minn. Wheat-flour	25,244	Mar. 19	127	1241
Schwabacher, A., Louisville, Ky. Whisky	24,796-7	Mar. 19	127	1238
Smith, George F., Woodsboro, Md. Remedy for the treatment of the hair and scalp	24,998	Mar. 19	127	1239
Southern Cotton Oil Company, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La. Cotton-seed oils	25,246	Mar. 19	127	1241
Sprague, Warner & Company, Chicago, Ill. Mixed rye and wheat flour	25,393-400	Mar. 19	127	1243-4
Steinberger & Kallsher, San Francisco, Cal. Kid gloves	25,172	Mar. 19	127	1241
Sternau & Co., S., Brooklyn, N. Y. Chafing-dishes, fancy kettles, towel-racks, &c	22,625-6	Mar. 19	127	1234
Suntych, John F., St. Paul, Nebr. Cigars	14,335	Mar. 19	127	1232
Tennessee Fibre Company, Memphis, Tenn. Cotton-seed feed-meal	24,808	Mar. 19	127	1230
Thornton, Frank L., Providence, R. I. Buckwheat, self-raising, &c., flour, cornmeal, and rolled oats	25,287	Mar. 19	127	1243
	11,065	Mar. 19	127	1232

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Todd Manufacturing Co., New Albany, Ind. Hames	12,422	Mar. 19	127	1232
Trevor, William, New York, N. Y. Ladies' string-ties	25,313	Mar. 19	127	1242
Union Bag & Paper Company, New York, N. Y. Paper bags, paper, and paper-boards	25,327	Mar. 19	127	1242
Union Wholesale Liquor Co., Chicago, Ill. Bitters	25,351	Mar. 19	127	1243
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	25,427	Mar. 19	127	1245
Vacuum Oil Company, Rochester, N. Y. Chemical mixtures for tanning	24,813	Mar. 19	127	1238
Vacuum Oil Company, Rochester, N. Y. Floor and linoleum dressing waxes, coating-oils, &c	24,967	Mar. 19	127	1239
Ventilated Cushion & Spring Company, Chicago, Ill. Cushion-springs	25,286	Mar. 19	127	1243
William Hunt & Sons, The Bradley, Limited, Brades Steel Works, near Birmingham, England. Hoes, spades, shovels, scoops, rakes, and forks	15,740	Mar. 19	127	1233
Williams, William E., Philadelphia, Pa. Medicine for indigestion, &c	23,583	Mar. 19	127	1235
Willis & Co., Grinnell, New York, N. Y. Shirtings, cambrics, and long-cloth	14,703	Mar. 19	127	1232
Wilson, Clay, New York, N. Y. Metallic clamps or clasps for wearing-apparel	24,696	Mar. 19	127	1237
Wire & Telephone Co. of America, Rome, N. Y. Telephones	25,296	Mar. 19	127	1242
Wire & Telephone Co. of America, Rome, N. Y. Wire	25,297	Mar. 19	127	1242
Wire & Telephone Co. of America, Rome, N. Y. Sad-irons	23,739	Mar. 19	127	1235
Wonderlich, Herman, Providence, R. I. Soap and soap powders	24,839	Mar. 19	127	1238
Zarnitz Brothers Grocery Company, Wheeling, W. Va.				

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE ISSUED ON THE 19TH DAY OF MARCH, 1907.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Accounting mechanism	R. H. Little	847,672	Mar. 19	3932	958	127	1053
Adding-machine	A. I. Gancher and A. T. Zabriskie	847,759	Mar. 19	4105	896–7	127	1092
Adhering round forms. Method of and apparatus for.	C. W. Muns	847,966	Mar. 19	4550	1000	127	1190
Adjustable chair	J. T. Hart	847,332	Mar. 19	3216	708	127	860
Air and the like. Means for compressing	J. Gill	847,569	Mar. 19	3697	815	127	993
Air-brake mechanism	A. L. Goodknight	847,936	Mar. 19	4483	983	127	1183
Air-compressor	W. E. Gray	847,470	Mar. 19	3508	767–8	127	944
Air-compressor	A. Good	847,763	Mar. 19	4115	898–9	127	1094
Air or fluid compressor. Rotary	C. A. Kaiser	847,946	Mar. 19	4502	986–7	127	1188
Air-ship	J. M. Miller	847,955	Mar. 19	4548	999	127	1196
Alarm:							
See Burglar-alarm.							
Window and door alarm.	G. Schwarz	847,833	Mar. 19	4273	936	127	1132
Ammunition-box	A. T. Dawson and J. Horne	847,917	Mar. 19	4440	975	127	1175
Ammunition-hoisting apparatus for ordnance	C. E. Crane	847,320	Mar. 19	3195	702	127	864
Anchor. Folding mushroom	W. P. Sparks	847,706	Mar. 19	4002	875	127	1070
Animal-shears	S. O. Bestul	847,310	Mar. 19	3171	697	127	859
Annunciator. Thermo-electric	W. I. Crawford	847,914	Mar. 19	4443	973–4	127	1173
Automobile-gearing	S. Ansley	847,634	Mar. 19	3860	843	127	1035
Awl. Sewing	J. R. Fitzgerald	847,327	Mar 19	3208	706	127	867
Awning. Portable	J. B. Merkels	847,353	Mar. 19	3266	718	127	881
Bag or envelop closure	S. E. Creasey	847,652	Mar. 19	3891	850	127	1043
Bank. Calendar							
Bar:							
See Boring-bar. Jail-bar.	C. L. Taylor	847,526	Mar. 19	3614	796–7	127	972
Beam-shear	J. D. Maxwell	847,487	Mar. 19	3539	774	127	961
Bearing. Annular ball	J. F. Ayers	847,541	Mar. 19	3646	803	127	982
Bearing. Shaft	T. W. Morgan	847,803	Mar. 19	4195	918	127	1114
Bearing. Spindle step	W. H. Fritts	847,465	Mar. 19	3501	766	127	942
Bed	A. C. Taylor	847,619	Mar. 19	3828	837–8	127	1028
Bed. Invalid	G. G. Campion	847,550	Mar. 19	3663	808–9	127	988
Bed-rest for invalids	R. F. Parry	847,364	Mar. 19	3294	723	127	887
Binder. Loose-leaf							
Block:							
See Building-block. Snatch-block.	S. E. Flichtner	847,567	Mar. 19	3693	814	127	998
Blue-printing and similar apparatus	E. H. Boocock and J. Sutcliffe	847,638	Mar. 19	3866	845	127	1037
Board:							
See Ironing-board.							
Bobbin brooch or creel-pin	G. W. Phillips	847,365	Mar. 19	3206	724	127	886
Boiler:	G. H. Pearson	847,435	Mar. 19	3441	755	127	926
See Steam-boiler.							
Boiler furnace. Steam	W. White and S. Otis	847,386	Mar. 19	3340	732	127	899
Boilers. Apparatus for facilitating the removal of deposits in locomotive	W. White	847,387	Mar. 19	3342	733	127	900
Boilers. System of washing and filling locomotive	W. White	847,388	Mar. 19	3345	733	127	900
Boilers. System of washing and filling locomotive	B. Bergmann	847,887	Mar. 19	4381	956–9	127	1160
Boilers. System of washing and filling locomotive	J. Hartman	847,768	Mar. 19	4121	900	127	1096
Boll-weevil destroyer. Cotton	B. C. Maxwell	847,991	Mar. 19	4600	1009	127	1210
Bolt-retainer	W. E. Blauvelt	847,891	Mar. 19	4388	960–5	127	1161
Book or pad. Manifolding	R. F. Lace	847,788	Mar. 19	4150	908	127	1106
Bookbinding-machine	N. A. Collins	847,908	Mar. 19	4425	971	127	1169
Boring-bar	J. Dowling	847,742	Mar. 19	4071	890	127	1085
Boring-machine	J. Hemingway	847,334	Mar. 19	3230	709	127	870
Boring-tool	A. C. Booth	847,892	Mar. 19	4397	965	127	1102
Bottle	J. W. Lee	847,791	Mar. 19	4163	908	127	1107
Bottle-cap puller	G. Liessem and J. Bommer	847,994	Mar. 19	4606	1010	127	1211
Bottle-stopper							
Bottle-stopper							
Box:							
See Ammunition-box. Ticket-box. Miter-box. Tobacco and match box. Outlet-box.	J. D. Burns	847,314	Mar. 19	3177	699	127	860
Box	E. S. Savage	847,374	Mar. 19	3317	727	127	894
Box-cover-detaching device	A. C. Cockren	847,554	Mar. 19	3670	810	127	998
Bracelet, chain, and the like							
Brake:							
See Car emergency-brake. Wagon-brake. Fluid-pressure brake. Musical-instrument brake.	C. A. Lindström	847,671	Mar. 19	3930	857	127	1053
Brake-beam	J. C. Hall	847,765	Mar. 19	4118	899	127	1098
Bread-mixer	F. W. Steinhoff	847,618	Mar. 19	3827	837	127	1028
Brick-machine. Hand	A. K. Lovell	847,795	Mar. 19	4171	911	127	1109
Buckle	A. Ritter	847,971	Mar. 19	4561	1002	127	1201
Buckle	M. Peller	847,811	Mar. 19	4236	927	127	1122
Buckle. Suspender							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Buffer	W. T. B. McDonald	847,357	Mar. 19	3393	720	127	894
Buffer. Pneumatic	M. F. Hayward	847,941	Mar. 19	4486	985	127	1127
Buggy-top-prop attachment	G. Lake	847,501	Mar. 19	4513	990	127	1161
Building-block	E. C. Hodges	847,476	Mar. 19	3515	769	127	945
Building construction	C. A. Reed and A. H. Stem	847,682	Mar. 19	3980	869–70	127	1035
Burglar-alarm. Detonating	A. V. Todd	847,978	Mar. 19	4567	1004	127	1205
Burner:							
See Gas-burner. Vapor-burner.							
Butter in centrifugal apparatus. Manufacture of	J. V. M. Risberg	847,697	Mar. 19	3669	871	127	1008
Butter. Treating	A. Fay	847,362	Mar. 19	3687	913	127	991
Button	A. E. Freeman	847,680	Mar. 19	3994	853	127	1067
Calcium peroxid. Making	O. Liebknecht	847,670	Mar. 19	3939	.....	127	1065
Can:							
See Display-can. Milk-can.							
Can-cap turning and arranging means	J. T. Wilmore	847,451	Mar. 19	3474	761	127	894
Can-making machine blank-feeding attachment	A. Velk	847,626	Mar. 19	3846	841	127	1021
Candy-spinning machine	R. E. Pollock	847,368	Mar. 19	3398	724	127	888
Car construction	A. E. Ostrander	847,508	Mar. 19	3567	783	127	949
Car construction. Passenger-	A. E. Ostrander	847,506	Mar. 19	3575	786	127	949
Car-coupling	G. A. Hermanson	847,408	Mar. 19	3361	740	127	911
Car-coupling	W. S. Schroeder	847,517	Mar. 19	3592	791–2	127	957
Car-door-shaft-operating mechanism	C. A. Lindström and J. F. Streib	847,956	Mar. 19	4522	992–3	127	1132
Car emergency-brake. Railway-	P. W. Counselman	847,319	Mar. 19	3194	702	127	983
Car end sill	O. S. Pulliam	847,602	Mar. 19	3772	827	127	1014
Car-fender	W. Pickett	847,437	Mar. 19	3444	755–6	127	928
Car. Flat-	T. Wozney	847,716	Mar. 19	4018	878	127	1074
Car-lift. Automatic	J. W. Finch	847,927	Mar. 19	4470	980	127	1120
Car. Passenger-	G. Holmes	847,411	Mar. 19	3388	741–2	127	913
Car propulsion. Street-	A. E. Ostrander	847,504	Mar. 19	3569	783–5	127	949
Car-replacer	G. G. Schroeder	847,515	Mar. 19	3589	789–91	127	956
Car-roof construction	W. Cook	847,732	Mar. 19	4050	886	127	1031
Car-roof construction. Passenger-	G. Steinmeyer, Sr	847,708	Mar. 19	4005	875	127	1071
Car-roof side deck. Passenger-	A. E. Ostrander	847,500	Mar. 19	3562	781–2	127	947
Car-shifting apparatus	A. E. Ostrander	847,502	Mar. 19	3566	783	127	949
Car trap-doors. Binding for	F. I Kimball	847,950	Mar. 19	4513	990	127	1130
Car vestibule trap-door and steps. Passenger-	O. M. Edwards	847,559	Mar. 19	3578	811	127	980
Card package and cribbage-board. Playing-	A. E. Ostrander	847,501	Mar. 19	3564	782	127	958
Card-table	L. O. Granger	847,570	Mar. 19	3998	815	127	994
Carriage-curtain fastener	C. G. Davidson	847,655	Mar. 19	3995	851	127	1045
Carriage-curtain fastener	F. Marggraff	847,421	Mar. 19	3413	747	127	919
Carriages. Water-shedding attachment for	F. A. Neider	847,430	Mar. 19	3433	753	127	924
Carrier:	J. Phillips	847,814	Mar. 19	4239	926	127	1123
See Elevated carrier. Hay-carrier.							
Case:							
See Packing-case.							
Case-hardening	A. W. Machlet	847,588	Mar. 19	3741	822	127	1037
Cash-registers, &c. System for electrically releasing drawers in	A. G. Jackson	847,479	Mar. 19	3822	771	127	947
Cask or vessel from which liquid is discharged under pressure	G. Lindner	847,792	Mar. 19	4164	909	127	1108
Centrifugal separator	P. T. Sundberg	847,524	Mar. 19	3611	798	127	972
Chain. Sprocket-	R. W. Dull	847,982	Mar. 19	4581	1006	127	1208
Chair:							
See Adjustable chair. Folding chair.							
Chair	L. W. Barker and J. Jackson	847,880	Mar. 19	4361	966	127	1155
Chair-iron	H. W. Bolens	847,979	Mar. 19	4574	1005	127	1204
Channel-pins. Manufacturing	H. H. Vaughan	847,710	Mar. 19	4008	876	127	1071
Charts or the like. Device for holding	P. A. O'Brien	847,434	Mar. 19	3440	754	127	925
Cheval-glass and desk or the like. Combination	W. La Hodny	847,342	Mar. 19	3238	713	127	874
Chopper:							
See Cotton-chopper.							
Chuck	C. G. Holmberg	847,336	Mar. 19	3224	710	127	871
Chuck	B. M. W. Hanson	847,573	Mar. 19	3708	816–17	127	995
Chuck. Drill-	L. Larsen	847,790	Mar. 19	4162	908	127	1107
Chuck. Rock-drilling-machine	S. R. J. and A. V. T. Maynard and F. Gale	847,590	Mar. 19	3749	823	127	1009
Churn	T. J. Cheney. (Reissue)	12,617	Mar. 19	4007	1010	127	1212
Cider-mill	C. G. Oman	847,810	Mar. 19	4334	927	127	1122
Cigar-holder	J. Knaff	847,341	Mar. 19	3236	713	127	874
Cigar-mold	N. Du Brul	847,558	Mar. 19	3675	811	127	980
Cigarette-making apparatus	W. F. Nowitzky	847,988	Mar. 19	4555	1000–1	127	1203
Circuit-breaker	E. H. Smythe and E. A. Burrows	847,520	Mar. 19	3598	793–4	127	968
Clamp:							
See Hose-clamp.							
Clasp:							
See Garment-clasp.							
Cleaner:							
See Flue-cleaner. Window-cleaner. Tube-cleaner.							
Cleaning systems. Attachment for vacuum	G. Clements and J. M. Hostler	847,720	Mar. 19	4043	884	127	1080
Clip:							
See Index-clip.							
Clippers	G. Bowler	847,980	Mar. 19	4576	1005	127	1205
Clock. Time-limit	W. E. Porter	847,689	Mar. 19	3975	868	127	1064
Closet-seat	H. Michael	847,678	Mar. 19	3944	860	127	1056
Clothes-pin	P. W. Burleson	847,313	Mar. 19	3176	696	127	880
Clutch. Fluid-actuated	B. M. W. Hanson	847,572	Mar. 19	3709	816	127	994
Clutch. Friction-	B. M. W. Hanson	847,575	Mar. 19	3707	817	127	995
Cock Stop and waste	H. J. Geurink	847,406	Mar. 19	3377	739	127	910
Code apparatus. Secret-	M. C. Harlan	847,767	Mar. 19	4120	900	127	1096
Coffee-pots and similar articles. Lid for	A. Schaefer	847,375	Mar. 19	3317	726	127	904
Coil-bender	J. A. Burns	847,549	Mar. 19	3660	807–8	127	985
Coin-pouch	K. G. R. Goodlett	847,467	Mar. 19	3998	799–7	127	942
Coin-sorter	W. A. Ralston	847,426	Mar. 19	3445	756	127	927
Coke-furnace	S. B. Sheldon	847,814	Mar. 19	3813	834–6	127	1024
Collar attachment. Horse-	F. Hays	847,476	Mar. 19	3514	769	127	945
Collar-fastener	J. A. Linn	847,246	Mar. 19	3230	715	127	875
Collar folder and shaper. Turn-down-	W. A. Stebbins and H. Bergstrom	847,521	Mar. 19	3600	794–5	127	969
Collar spreading device. Apparel-	F. M. Lilley	847,485	Mar. 19	3536	774	127	951
Collar-supporter	C. I. Rankin	847,604	Mar. 19	3775	828	127	1014
Color. Lime-	J. Ullrich	847,530	Mar. 19	3621	.....	127	974
Commutator-brushes. Adjustable miter-box for	W. S. Pollard	847,816	Mar. 19	4241	929	127	1124
Computer. Spring-load	F. K. Caswell	847,904	Mar. 19	4417	969	127	1167
Concrete-block machine	J. H. Graham	847,764	Mar. 19	1416	899	127	1095
Concrete structural work. Metallic reinforcement for	C. Horix	847,577	Mar. 19	3711	818	127	997
Condenser. Mercury-	C. F. Brown	847,547	Mar. 19	3658	806	127	985
Condenser. Steam-	G. Rennerfelt	847,605	Mar. 19	3776	828	127	1015
Condenser. Steam-	S. Thurstenson	847,709	Mar. 19	4006	876	127	1071
Conveyer tripper or deliverer	C. K. Baldwin and L. Moss	847,309	Mar. 19	3167	697	127	857
Conveying apparatus	J. Rilling and C. W. Sagee	847,509	Mar. 19	3580	787	127	963
Cooking and washing apparatus	J. B. Conger	847,731	Mar. 19	4047	884–5	127	1080
Copper. Treatment of silicate of	G. H. Waterbury	847,448	Mar. 19	3469	.....	127	933
Corn and brush knife	D. B. Date and A. B. Kugelmann	847,321	Mar. 19	3196	702	127	864
Corn-husker	J. Covert	847,734	Mar. 19	4056	886	127	1082
Corset key-changing attachment	M. B. Kendis	847,340	Mar. 19	3235	713	127	873
Cotton-chopper	R. T. Sterling	847,390	Mar. 19	3328	731	127	897
Cotton chopper and cultivator	R. C. Teel	847,447	Mar. 19	3467	760	127	932
Coupling:							
See Car-coupling. Pump-rod coupling. Pipe-coupling. Shaft-coupling.							
Crate. Covered box-	E. F. Boesche	847,978	Mar. 19	4573	1004	127	1204
Cream or milk and butter. Treating	A. Fay	847,563	Mar. 19	3688	.....	127	992
Crimping-machine	F. C. Newell and A. England	847,683	Mar. 19	3955	863	127	1059
Culinary tongs	C. F. Smith	847,839	Mar. 19	4286	940	127	1136
Cultivator	C. M. Bowen	847,398	Mar. 19	3363	737	127	906
Cultivator	W. H. Nesbitt	847,431	Mar. 19	3434	753–4	127	924
Cultivator	P. M. Sherman	847,836	Mar. 19	4279	938	127	1135
Cultivator	C. H. Wheeler	847,868	Mar. 19	4333	950–1	127	1149
Cultivator	A. M. Barker	847,879	Mar. 19	4359	955	127	1155
Cultivator	A. L. Foote	847,404	Mar. 19	3372	738–9	127	909
Cultivator, harrow, road-machine, and farm-wagon. Disk land-							
Cup:							
See Grease-cup. Soap-cup. Lubricating-cup.							
Current-controller	R. Duckworth	847,743	Mar. 19	4073	890	127	1085
Current-interrupter. Revolving mercury-dip	F. M. C. Usher and C. A. Secane	847,851	Mar. 19	4302	944	127	1140
Current plant combined with storage battery. Alternating-	L. Schröder and A. Müller	847,974	Mar. 19	4565	1003	127	1203
Curtain-fixture	H. E. Keeler	847,884	Mar. 19	3735	820	127	1005
Curtain-pole	H. A. Mailloux	847,589	Mar. 19	3748	822	127	1008
Curtain-pole and curtain-shade roller bracket. Combined	A. L. Rutherford	847,827	Mar. 19	4255	932	127	1127
Curtain-stretcher frame	E. Deach	847,556	Mar. 19	3672	810	127	989
Curtain-supporting rod	L. C. Lazear	847,344	Mar. 19	3245	715	127	876
Cutter:							
See Glass-cutter. Vegetable-cutter. Twine-cutter.							
Cutter-machines. Clamp for cutters or bits of	E. T. Morris	847,680	Mar. 19	3947	861	127	1057
Cylinder steam-jacket	G. E. Wilson and W. J. Frawley	847,712	Mar. 19	4012	877	127	1072
Dental handpiece	H. S. Miller	847,591	Mar. 19	3751	823	127	1009
Detachable handle	J. C. Lowe	847,673	Mar. 19	3936	858	127	1054
Digger:							
See Potato-digger.							
Dish-washer	M. M. McKee	847,495	Mar. 19	3553	778–9	127	955
Display can or box. Sheet-metal	F. Rudolphi	847,441	Mar. 19	3452	758	127	928
Display can or box. Sheet-metal	F. Rudolphi and F. Bräuninger	847,973	Mar. 19	4563	1002	127	1202
Display-can. Sheet-metal	F. Rudolphi	847,972	Mar. 19	4562	1002	127	1201
Display-stand	A. P. Hollinger	847,943	Mar. 19	4498	986	127	1187
Distilling apparatus. Wood-	A. A. MacKethan	847,676	Mar. 19	3940	860	127	1055
Ditching-machine	F. L. Shenefelt	847,703	Mar. 19	3997	873–4	127	1069
Door check and tightener	E. Conklin	847,909	Mar. 19	4427	971	127	1160
Door-operating mechanism. Double-sliding-	C. Metterhausen	847,488	Mar. 19	3540	774–5	127	952
Door. Sheet-metal	N. P. Sjöbring	847,443	Mar. 19	3457	758	127	929
Draft and vent regulator	J. A. Sloan	847,378	Mar. 19	3321	729	127	895
Draft-equalizer	W. Wilson	847,389	Mar. 19	3347	734	127	901
Draft-rigging. Tandem-spring friction	E. W. Hartough	847,769	Mar. 19	4122	900–1	127	1098
Dress-shield or garment fastener	G. L. Raza and F. S. Frisbie	847,368	Mar. 19	3302	725	127	889
Drier:							
See Hair-drier. Sand and mineral drier.							
Drying apparatus	K. Reyscher	847,694	Mar. 19	3983	871	127	1066
Drying apparatus	O. Koepff	847,786	Mar. 19	4156	907	127	1106
Drill:							
See Rock-drill.							
Drilling-machine feed-head	G. D. Williams	847,450	Mar. 19	3471	760	127	933
Driving mechanism	E. Rivett	847,440	Mar. 19	3450	757	127	928
Drop-light Adjustable	H. T. Jacobsen	847,580	Mar. 19	3730	819	127	1004
Drum. Expansion-	J. A. Strom	847,446	Mar. 19	3465	759	127	931
Duplicating-machine	H. C. Gammeter. (Reissue)	12,622	Mar. 19	4621	1012–13	127	1214
Dust-pan	H. E. Reeves	847,693	Mar. 19	3982	870	127	1065
Dust-removing apparatus	D. T Kenney	847,947	Mar. 19	4503	987–8	127	1139
Dust-removing apparatus	D. T. Kenney	847,948	Mar. 19	4507	988–9	127	1139
Egg-case division-plate	C. J. Voorhorst	847,854	Mar. 19	4306	945	127	1142
Electric-current interrupting and varying apparatus	E. Bachelet	847,877	Mar. 19	4351	954	127	1153
Electric meter	C. W. Atkinson	847,540	Mar. 19	3644	803	127	981
Electro-motor speed-controlling device	T. W. Heermans	847,663	Mar. 19	3909	854	127	1045
Electrical apparatus	C. N. Lord	847,794	Mar. 19	4170	910	127	1109
Electrical grounding device	J. F. Golding	847,935	Mar. 19	4481	983	127	1133
Elevated carrier	F. E. Sackett	847,511	Mar. 19	3582	788	127	964
Elevated carrier	L. Colavecchio	847,907	Mar. 19	4424	971	127	1160
Elevator safety device	J. J. Westbrook	847,867	Mar. 19	4330	950	127	1148
Engine:							
See Hoisting-engine. Steam-engine. Rotary engine.							
Engine sparking device. Internal-combustion-	E. F. Bradley	847,894	Mar. 19	4400	965–6	127	1163
Engine-starting device. Explosion-	C. Schmidt	847,514	Mar. 19	3598	789	127	965
Envelop. Vertical-file expansible	C. M. Carnahan	847,648	Mar. 19	3883	849	127	1041
Excavating machinery	A. R. Grossmith	847,331	Mar. 19	3214	707–8	127	899
Excavator	A. R. Grossmith	847,330	Mar. 19	3214	707	127	899

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Extractor:							
See Stopper-extractor.							
Fabric feeding and cutting apparatus. Multiple-	H. Zimmerman	847,536	Mar. 19	3837	802	127	970
Fabric-rewinding apparatus	C. Lichtenstadt	847,418	Mar. 19	3407	745–7	127	918
Fabrics, paper, &c. Feeding device for textile	A. and O. Böckmann	847,645	Mar. 19	3876	847	127	1039
Fabrics. Tension and regulating mechanism for traveling	J. A. Cameron	847,315	Mar. 19	3179	699–700	127	899
Fan and score-card. Combined	W. Steel	847,522	Mar. 19	3808	796	127	970
Fan. Pressure-	J. Keith	847,585	Mar. 19	3738	820–1	127	1006
Fare register and recorder	W. I. Ohmer, A. J. Kirchner, and J. W. Hill	847,808	Mar. 19	4208	920–6	127	1117
Fastening means	G. O. Olson	847,339	Mar. 19	3286	721	127	865
Feathers into down. Apparatus for converting	W. H. Robinson	847,371	Mar. 19	3308	726–7	127	880
Feed-water regulator	P. W. Gooch	847,762	Mar. 19	4113	898	127	1094
Fence-machine	J. S. Barnes	847,721	Mar. 19	4024	880	127	1075
Fence-post. Combination cement and metal	G. G. Schroeder	847,516	Mar. 19	3591	791	127	998
Fence-post. Combination cement and metal	G. G. Schroeder	847,612	Mar. 19	3806	833	127	1022
Fence-weaving machine. Wire-	C. A. Willmarth	847,533	Mar. 19	3626	800	127	975
Fence. Wire	E. Branch	847,462	Mar. 19	3496	765	127	941
Fence. Woven-wire	I. J. Young	847,871	Mar. 19	4340	952	127	1151
Fender:							
See Car-fender. Harvester-fender.							
Fertilizer and making same	C. Ellis	847,749	Mar. 19	4057		127	1089
Fertilizer-distributer	S. K. Dennis and F. W. Rice	847,323	Mar. 19	3199	703–4	127	864
Filling-finger	W. E. Lyford	847,797	Mar. 19	4177	912	127	1111
Filter	C. M. Shilts	847,518	Mar. 19	3595	792	127	998
Filter	G. A. Abbott	847,537	Mar. 19	3630	802	127	979
Fire-resisting curtain. Flexible	E. H. McCloud	847,661	Mar. 19	3948	861–2	127	1057
Firearm. Double-barreled	E. H. Elder	847,669	Mar. 19	3902	853	127	1046
Firearm-sight	J. Windridge and G. S. Wilcox	847,630	Mar. 19	3853	842	127	1033
Fireproof construction of buildings	T. D. Lynch	847,420	Mar. 19	3412	747	127	919
Fish-line reel	W. E. Marhoff	847,350	Mar. 19	3260	717	127	879
Fish-reel	F. W. Andres	847,874	Mar. 19	4344	953	127	1152
Fishing-reel	G. W. Blackburn	847,890	Mar. 19	4386	959	127	1161
Flax-treating machine	R. Schofield	847,611	Mar. 19	3801	832–3	127	1021
Floral decoration. Artificial	B. Levi	847,669	Mar. 19	3928	857	127	1052
Flue-cleaner	E. C. Phillips	847,813	Mar. 19	4239	928	127	1123
Fluid-mixing apparatus	C. A. Carlson	847,552	Mar. 19	3666	809	127	987
Fluid-pressure brake	H. H. Westinghouse	847,711	Mar. 19	4010	876	127	1072
Flush-tank. Automatic	S. A. and W. H. Palmer	847,361	Mar. 19	3288	722	127	866
Folding chair	H. W. Spindler	847,707	Mar. 19	4003	875	127	1070
Foot-tub	E. Y. Ely	847,224	Mar. 19	3202	704	127	866
Frame:							
See Curtain-stretcher frame. Spinning-frame.							
Furnace:							
See Boiler-furnace. Glass-melting furnace. Coke-furnace. Ore-roasting furnace.							
Furnace	H. B. Meech	847,962	Mar. 19	4541	908	127	1197
Furniture. Article of store	J. Lantagne	847,484	Mar. 19	3535	773	127	951
Fuse-tool. Miner's	C. Elliott	847,923	Mar. 19	4462	978	127	1178
Gage	G. W. Roberts	847,824	Mar. 19	4252	931	127	1126
Garment-clasp	F. Egge	847,986	Mar. 19	4592	1007	127	1208
Garment-hanger	H. Gebhardt	847,320	Mar. 19	3213	707	127	866
Garment-holder	B. J. Buckingham	847,644	Mar. 19	3874	847	127	1039
Garment-pattern	M. M. Stillman	847,844	Mar. 19	4292	941	127	1138
Gas-burner	P. Keller	847,412	Mar. 19	3290	742–3	127	914
Gas-demonstration apparatus	J. E. Carroll	847,995	Mar. 19	4607	1010	127	1212
Gas. Generating	G. Cothran	847,733	Mar. 19	4052	885–6	127	1081
Gas manufacture. Apparatus for	J. T. Paris	847,262	Mar. 19	3200	722–3	127	866
Gas-pressure regulator	P. Keller	847,413	Mar. 19	3302	743	127	914
Gas-regulator	G. Porst	847,818	Mar. 19	4243	929	127	1124
Gas-tanks. Charging	R. E. Bruckner	847,727	Mar. 19	4038	883	127	1079
Gear mechanism. Indicating and locking device for change-	B. M. W. Hanson	847,936	Mar. 19	4490	984	127	1185
Generator:							
See Steam-generator.							
Gin-saw-cleaning attachment. Cotton-	H. J. Fitzpatrick	847,753	Mar. 19	4094	894	127	1090
Glass:							
See Cheval-glass.							
Glass articles. Drawing	J. H. Lubbers	847,874	Mar. 19	3937	859	127	1054
Glass-cutter	R. Anderson	847,633	Mar. 19	3859	843	127	1035
Glass-cutter's table. Plate-	P. J. Behringer	847,459	Mar. 19	3499	764	127	939
Glass-forming machine	J. Riling and C. W. Sagee	847,696	Mar. 19	3957	871	127	1066
Glass gathering and blowing machine. Automatic	C. J. Koenig	847,666	Mar. 19	3917	855	127	1050
Glass. Machine for making wire-	A. J. Baldwin	847,878	Mar. 19	4358	935	127	1154
Glass. Making wire-	A. J. Baldwin	847,637	Mar. 19	3865	844	127	1036
Glass-melting furnace	W. O. Amsler	847,632	Mar. 19	3858	842–3	127	1034
Glove-fastener	H. S. Dyke	847,920	Mar. 19	4458	977	127	1177
Gluing machine. Veneer-	A. A. Dennis. (Reissue)	12,621	Mar. 19	4617	1012	127	1214
Gooseberry-picker	K. Schaal	847,829	Mar. 19	4257	932	127	1126
Governor	P. Onsum and H. R. Dohren	847,597	Mar. 19	3793	825	127	1012
Grader. Road-	W. S. Livengood	847,793	Mar. 19	4186	909–10	127	1106
Grease-cup	A. J. Gray	847,988	Mar. 19	4594	1005	127	1208
Grinding-machine	A. S. Bussello and J. W. Pedigo	847,463	Mar. 19	3497	765	127	941
Grinding-mill	O. Pfeiffer	847,436	Mar. 19	3443	755	127	926
Gun-sight	F. O. Brockhaus	847,643	Mar. 19	3872	846	127	1038
Gun-sight	A. G. La Riviere	847,953	Mar. 19	4519	991	127	1191
Guns. Choke attachment for	R. P. Cory	847,911	Mar. 19	4439	972	127	1170
Hair-drier	I. Allen and G. Hanlon	847,872	Mar. 19	4341	952	127	1151
Hair-trimmer	F. and O. Kampfe	847,782	Mar. 19	4147	905	127	1103
Hammer. Electric	W. A. Denny	847,741	Mar. 19	4069	889	127	1085
Handle:							
See Detachable handle. Suit-case handle.							
Hanger:							
See Garment-hanger. Hog and meat hanger.							
Harvester-fender	M. P. Gerbing	847,566	Mar. 19	3694	814–15	127	993
Hat attachment	H. D. Ollard	847,809	Mar. 19	4234	926	127	1122
Hat-brim sizing and paring device	H. Herstein	847,499	Mar. 19	3393	741	127	912

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Hat-marker	G. L. R. Miller	847,799	Mar. 19	4186	916	127	1112
Hay-carrier	M. Thurston	847,847	Mar. 19	4296	942	127	1139
Haystack-cover	F. Tilton	847,848	Mar. 19	4299	942	127	1139
Head-covering ventilator	H. C. Schlee and M. Jacobs	847,831	Mar. 19	4261	933	127	1129
Headlight-operating device	W. H. Donaldson	847,918	Mar. 19	4453	976	127	1176
Heater:							
See Locomotive water-heater. Water-heater.							
Heater	A. M. Clark	847,906	Mar. 19	4422	970	127	1168
Heating-cartridge	A. Lang	847,668	Mar. 19	3927	857	127	1052
Heating system	B. L. Gifford	847,934	Mar. 19	4479	982	127	1182
Hide-fleshing-machine cylinder	E. F. Smith	847,616	Mar. 19	3825	837	127	1027
Hides and skins. Machine for treating	J. A. Metzler	847,354	Mar. 19	3267	718–19	127	881
Hides and skins. Machine for treating	G. B. Norgrave	847,684	Mar. 19	3958	863–4	127	1060
Hinge. Concealed	O. Althin	847,717	Mar. 19	4020	879	127	1075
Hinge. Separable spring-	J. C. Milhollin	847,963	Mar. 19	4543	999	127	1197
Hog and meat hanger	M. T. Darnall	847,738	Mar. 19	4063	887	127	1083
Hoisting device	G. F. Koenig	847,667	Mar. 19	3922	856–7	127	1051
Hoisting-engine	F. T. Flinchbaugh	847,754	Mar. 19	4095	894–5	127	1090
Hook:							
See Swingletree-hook.							
Hoop for washboilers, &c	S. A. Johnson	847,582	Mar. 19	3734	820	127	1005
Hose-clamp	C. M. Thompson	847,620	Mar. 19	3830	838	127	1028
Hose or pipe mender	G. B. McCreary	847,594	Mar. 19	3758	824	127	1010
Hose-supporter	J. Eisman	847,747	Mar. 19	4084	892	127	1088
Humidifier. Portable	J. J. Smith	847,840	Mar. 19	4287	940	127	1136
Ice-cream freezer	H. Vledt	847,853	Mar. 19	4306	944	127	1141
Ice-making apparatus	B. F. Daly	847,737	Mar. 19	4062	887	127	1083
Ice-remover	G. P. Ayers	847,453	Mar. 19	3479	761–2	127	936
Ignition systems. Spark-timing device for	V. G. Apple	847,876	Mar. 19	4347	953–4	127	1152
Illusion apparatus	A. F. Biondi	847,725	Mar. 19	4034	882	127	1078
Illusion device	A. F. Biondi	847,724	Mar. 19	4032	881–2	127	1077
Incubator	L. N. Porter	847,507	Mar. 19	3577	786	127	983
Index clip and label	L. M. Morden	847,593	Mar. 19	3756	824	127	1010
Ink-well	J. B. Randolph	847,603	Mar. 19	3773	827	127	1014
Insulated rail-joint	G. L. Hall	847,937	Mar. 19	4486	983–4	127	1184
Insulator for tension-guys	A. E. Brown	847,546	Mar. 19	3656	806	127	984
Iron:							
See Chair-iron.							
Ironing-board	L. Smith	847,705	Mar. 19	4001	875	127	1070
Ironing machine. Shirt-	W. Thurber	847,622	Mar. 19	3835	839	127	1029
Jack:							
See Lifting-jack.							
Jack-switch. Sliding	G. F. Espy	847,730	Mar. 19	4090	893	127	1089
Jail-bar and similar composite metal object	F. E. Canda	847,551	Mar. 19	3664	809	127	987
Jar and can closure. Fruit-	F. C. Warren and W. H. Preston	847,976	Mar. 19	4569	1004	127	1203
Jar-closure	W. E. Bostwick	847,640	Mar. 19	3868	845	127	1037
Joint:							
See Insulated rail-joint. Shaft-joint. Knuckle-joint. Universal joint. Rail-joint.							
Journal-box	M. P. Newcomb	847,902	Mar. 19	4603	1009	127	1211
Kiln:							
See Rotary kiln.							
Kitchen implement	A. C. Powers	847,909	Mar. 19	4558	1001	127	1200
Knife:							
See Corn and brush knife. Tobacco-knife. Pocket-knife.							
Knob. Permutation door-	J. C. Lyons	847,348	Mar. 19	3255	716	127	873
Knuckle-joint	C. H. Arnold	847,719	Mar. 19	4022	879	127	1075
Lace. Shoe-	A. Finkensieper	847,752	Mar. 19	4093	894	127	1090
Lace tip. Shoe-	W. H. Rogers	847,825	Mar. 19	4253	931	127	1127
Ladder and jack. Combined	F. Thomas	847,528	Mar. 19	3618	798	127	973
Ladder and table. Combined step-	J. D. Douds	847,919	Mar. 19	4455	976	127	1176
Lamps. Adjustable support for vapor-	S. E. Flichtner	847,506	Mar. 19	3692	813	127	993
Lantern. Collapsible	J. A. McCoy	847,429	Mar. 19	3431	753	127	923
Latch and bolt. Combination door	E. C. Belknap and E. H. Jackson	847,883	Mar. 19	4365	956	127	1156
Latch and bolt mechanism. Locking	E. C. Belknap and E. H. Jackson	847,884	Mar. 19	4369	957	127	1158
Latch or bolt and handle. Combined	J. Faix	847,751	Mar. 19	4092	893	127	1089
Lathe thread-cutting tool	P. J. Kelly	847,586	Mar. 19	3739	821	127	1006
Lathe turning attachment	A. E. Thayer	847,827	Mar. 19	3616	797–8	127	973
Laundrying device	R. Moskowitz	847,493	Mar. 19	3551	778	127	955
Leather. Producing a dull finish on coated	L. Feval	847,987	Mar. 19	4593	1008	127	1206
Ledger. Loose-leaf	R. B. Wilson	847,628	Mar. 19	3850	841	127	1032
Legging	F. J. Stewart	847,843	Mar. 19	4291	941	127	1137
Lifter:							
See Sash-lifter.							
Lifting-jack	L. O. Hars	847,662	Mar. 19	3908	854	127	1048
Light:							
See Drop-light.							
Light-transmitting and light-diffusing object	E. Böhm	847,395	Mar. 19	3361	736	127	908
Light-transmitting objects. Producing	E. Böhm	847,396	Mar. 19	3362	736	127	908
Lightning-arrester	C. A. Rolfe	847,372	Mar. 19	3313	727	127	893
Lock:							
See Nut-lock. Sash-lock.							
Lock	H. France	847,930	Mar. 19	4473	981	127	1181
Locomotive water-heater	D. W. Cunningham	847,915	Mar. 19	4446	974	127	1174
Loom protector mechanism	J. V. Cunniff	847,653	Mar. 19	3892	851	127	1044
Loom shuttle-motion	O. Lamwers	847,952	Mar. 19	4516	991	127	1191
Loom take-up mechanism	C. F. Roper	847,808	Mar. 19	3791	831	127	1018
Looms. Means for hanging knitted leased harness for	F. A. Mills	847,800	Mar. 19	4188	916	127	1112
Lubricating apparatus. Ball-joint-	W. W. Nugent	847,432	Mar. 19	3436	754	127	924
Lubricating-cup	E. Hill	847,771	Mar. 19	4129	901	127	1098
Lubricating device	C. S. Bavier	847,544	Mar. 19	3653	804	127	986
Lubricator	J. W. Hinchcliff	847,772	Mar. 19	4130	902	127	1098
Lubricator	T. E. Brooks	847,998	Mar. 19	4409	987	127	1194
Machine-driving mechanism	R. P. King	847,784	Mar. 19	4152	906	127	1105
Machine-driving mechanism	H. Ogborn	847,937	Mar. 19	4204	920	127	1116

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Machine parts. Machine for treating cylindrical	J. Moll	847,426	Mar. 19	3425	751	127	922
Mail-bag catcher and deliverer. Reversible	J. L. Gash	847,681	Mar. 19	3906	833	127	1067
Mail-bag catching and delivering apparatus	E. A. Naslund	847,682	Mar. 19	3950	862	127	1068
Mail-bag exchanger	D. Mack	847,980	Mar. 19	4539	997	127	1166
Manifold pad or book	S. C. Nusly	847,986	Mar. 19	4604	1009	127	1211
Marking apparatus	E. M. Schantz	847,810	Mar. 19	3795	832	127	1120
Marking-machine	J. D. Caldwell	847,846	Mar. 19	3877	847-8	127	1140
Massaging implement	F. J. Ostus	847,320	Mar. 19	3287	721	127	985
Measuring apparatus for electricity	E. Mier y Miura	847,434	Mar. 19	3420	749-50	127	921
Measuring instrument. Electrical	T. W. Varley	847,824	Mar. 19	3844	840	127	1081
Measuring tool. Angle-	M. Barbe	847,720	Mar. 19	4024	879	127	1055
Mechanical movement	R. B. Ware	847,868	Mar. 19	4218	947	127	1144
Metal blooms, &c. Apparatus for transferring	E. E. Slick. (Reissue)	12,620	Mar. 19	4516	1011-12	127	1212
Metal. Coating	H. H. Baumgarn	847,881	Mar. 19	4363		127	1138
Metatarsophalangeal protector	J. Bronnenkant	847,311	Mar. 19	3173	696	127	899
Meter: *See* Electric meter. Telephone-call meter.							
Mica sheets. Making artificial	E. Cooper	847,910	Mar. 19	4428	972	127	1170
Milk-can	C. P. Harmison	847,473	Mar. 19	3512	769	127	945
Mill: *See* Cider-mill. Windmill. Grinding-mill.							
Mine-cages, lifts, hoisting-skips, &c. Safety-clutch for	W. M. Hodgson	847,773	Mar. 19	4131	902 3	127	1090
Mirror. Window-	S. S. Fretz, Jr., and H. Van Buren, Sr.	847,787	Mar. 19	4102	896-6	127	1092
Miter-box	P. Dosch	847,847	Mar. 12	3673	811	127	999
Mixer: *See* Bread-mixer.							
Mixing-machine	H. G. Morris	847,493	Mar. 19	3520	777-8	127	954
Mold: *See* Cigar-mold.							
Mold	P. T. Burkholder	847,312	Mar. 19	3174	696	127	899
Molding-machine	N. Baldwin	847,454	Mar. 19	3481	762	127	926
Molding. Ornamental pressed-metal	A. E. Ostrander	847,506	Mar. 19	3576	786	127	952
Motion. Means for converting	G. W. Ilett	847,945	Mar. 19	4500	986	127	1160
Mowers and similar articles. Handle for lawn-	J. Fleming	847,585	Mar. 19	3891	813	127	992
Music-holder	G. M. Snow	847,444	Mar. 19	3460	739	127	920
Music-leaf turner	E. R. Eldridge	847,922	Mar. 19	4451	978	127	1171
Music record-sheets. Means for producing expression-marks on	B. S. Dean	847,740	Mar. 19	4066	888-9	127	1094
Musical apparatus. Mechanical	G. P. Brand	847,895	Mar. 19	4401	966	127	1163
Musical instrument	J. W. Bailey	847,307	Mar. 19	3164	695	127	897
Musical-instrument brake. Self-playing	J. Hattemer	847,770	Mar. 19	4127	901	127	1096
Nail	C. A. Birdsall	847,898	Mar. 19	4403	959	127	1161
Nail-transferring device	H. L. Weaver	847,854	Mar. 19	4237	949	127	1147
Needle-grooving machine	J. O. Pettey	847,698	Mar. 19	3962	864-7	127	1091
Nut-lock	H. Day	847,322	Mar. 19	3198	703	127	894
Nut-lock	L. Boudreaux	847,641	Mar. 19	3999	845	127	1026
Nut-wrench	A. L. McMurtry	847,894	Mar. 19	3761	825	127	1012
Omnigraph	J. W. Earles	847,921	Mar. 19	4459	977	127	1177
Ore-roasting furnace	G. H. Franklin	847,756	Mar. 19	4080	895	127	1091
Ores containing lithia. Treating silicious	W. E. Wadman	847,856	Mar. 19	4312		127	1143
Organ-action	J. T. Austin	847,636	Mar. 19	3982	844	127	1025
Outlet-box and wall-plate	W. P. Ambos	847,718	Mar. 19	4021	879	127	1075
Oven-bottom	F. V. Knause	847,492	Mar. 19	2329	772	127	949
Packing. Expanding piston-	T. K. Övergaard	847,898	Mar. 19	3764	825	127	1012
Packing for doors and like closures	A. F. Ballard	847,455	Mar. 19	3482	762	127	937
Pad: *See* Manifold-pad. Truss-pad.	W. H. Carter	847,553	Mar. 19	3660	810	127	998
Paddle-wheel for boats	F. D. Joy	847,631	Mar. 19	3526	772	127	948
Paint	J. F. Villard	847,394	Mar. 19	3385		127	896
Pan: *See* Dust-pan.							
Paper-bag machine	W. A. Lorenz	847,957	Mar. 19	4454	994-5	127	1160
Paper-bag machine	W. A. Lorenz	847,958	Mar. 19	4229	995-6	127	1164
Paper-bag machine	W. A. Lorenz	847,959	Mar. 19	4534	996-7	127	1166
Paper-feeding device	M. H. Ballard	847,977	Mar. 19	4570	1004	127	1203
Paper. Mechanism for use in edging wall-	J. B. Walker and A. R. Bond	847,857	Mar. 19	4314	947	127	1143
Paper-rack	H. A. and W. A. Morgan	847,491	Mar. 19	3647	777	127	954
Paper sheets together. Machine for attaching	J. E. Stirton	847,523	Mar. 19	3610	795	127	971
Papering machine. Wall-	A. J. Farmer	847,325	Mar. 19	3220	704-5	127	895
Paste-receptacle	E. E. Etter	847,924	Mar. 19	4464	978-9	127	1179
Pattern: *See* Garment-pattern.	R. R. Ritz	847,370	Mar. 19	3305	726	127	890
Pavement	F. F. Gross	847,471	Mar. 19	3510	768	127	944
Peat. Charring or carbonizing	M. Ekenberg	847,746	Mar. 19	4084	893	127	1088
Peeler. Vegetable-	T. Franklin and G. L. Belding	847,328	Mar. 19	3210	706	127	895
Pegging-machine	W. W. Kelly. (Reissue)	12,618	Mar. 19	4609	1010-11	127	1212
Pencil	F. D. Jacobs	847,570	Mar. 19	3720	819	127	1004
Pencil-sharpener	J. E. Parrish	847,263	Mar. 19	3292	722	127	887
Pencil-sharpener	B. F. Mayo	847,493	Mar. 19	3418	749	127	920
Penholder	L. P. Winchenbaugh	847,280	Mar. 19	3248	734	127	891
Perforating and marking machine	W. H. Hudson	847,578	Mar. 19	3712	818-19	127	997
Phonic apparatus	A. N. Pierman	847,687	Mar. 19	3973	867-8	127	1063
Phonograph	E. L. Aiken	847,631	Mar. 19	3965	842	127	1024
Photographic apparatus	W. E. Colwell	847,730	Mar. 19	4044	884	127	1089
Photographic shutter	C. A. Root	847,373	Mar. 19	3314	727	127	893
Pianissimo device. Divided	P. Wuest, Jr	847,534	Mar. 19	3630	801	127	977
Piano pedal-action	E. Bornhoeft	847,630	Mar. 19	3960	846	127	1037
Piano-pedal. Auxiliary	L. W. Norcross	847,498	Mar. 19	3699	780	127	956
Piano. Self-playing	H. Meyer	847,798	Mar. 19	4179	913-16	127	1111
Piano string-plate	W. L. Bjur	847,980	Mar. 19	4564	989	127	1161
Picker: *See* Gooseberry-picker. Picking-rod.							
Pie-crust-trimming machine	C. A. Stanley	847,841	Mar. 19	4288	949	127	1137
	O. Colborne	847,849	Mar. 19	3894	849	127	1041
Pin: *See* Clothes-pin.							
Pipe: *See* Railway stand-pipe.	K. S. Little	847,419	Mar. 19	3411	747	127	919
Pipe and monkey wrench	J. N. Hafer	847,472	Mar. 19	3511	768	127	944
Pipe-coupling	M. J. Shimer	847,837	Mar. 19	4280	939	127	1135
Pistol	J. P. Caldwell and W. A. Rockwell.	847,901	Mar. 19	4413	967-8	127	1166
Planter	W. T. Sears, G. E. Greenleaf, and G. T. Reiss.	847,834	Mar. 19	4273	936	127	1133
Plates-driving mechanisms. Controlling means for planer-	J. E. Kearns	847,583	Mar. 19	3734	820	127	1005
Plow attachment	J. M. Sausser	847,512	Mar. 19	3585	788	127	964
Plow-depth regulator	E. H. Hawley	847,474	Mar. 19	3513	769	127	945
Pocket-knife							
Post: *See* Fence-post.	W. H. Villiers	847,531	Mar. 19	3622	799	127	974
Postal card. Souvenir	J. and W. Reuther	847,606	Mar. 19	3770	828-9	127	1016
Potato-digger	C. N. Choate	847,464	Mar. 19	3500	766	127	942
Powder-distributer	G. M. Vroome	847,855	Mar. 19	4309	945-7	127	1142
Power-machine. Combination	J. J. Bartenstein	847,457	Mar. 19	3485	763	127	937
Power-transmission device							
Press: *See* Printing-press. Seal-press.	W. H. Smiley	847,370	Mar. 19	3322	729-31	127	895
Printing-press	P. F. Cox	847,912	Mar. 19	4430	972-3	127	1170
Printing-press	P. F. Cox	847,913	Mar. 19	4437	973	127	1172
Printing-press	J. Wateslhan	847,522	Mar. 19	3622	799-800	127	975
Printing-presses. Slip-sheet attachment for	E. P. Crocker and C. A. Walhof	847,982	Mar. 19	4579	1006	127	1205
Projecting apparatus	J. De la Mar	847,961	Mar. 19	4540	998	127	1196
Propeller-wheel	J. H. Hanson	847,939	Mar. 19	4492	984	127	1186
Pulf and hay sealer. Combined							
Puller: *See* Bottle-cap puller.	W. E. Schneider	847,832	Mar. 19	4261	933-5	127	1129
Pulp. Machine for making receptacles of compressed	A. M. Meincke	847,352	Mar. 19	3265	718	127	891
Pulp-screen roll	W. Y. Cruikshank	847,735	Mar. 19	4059	886	127	1082
Pump	J. C. Beck and J. A. Bowyer	847,204	Mar. 19	3269	726	127	905
Pump. Air-	P. E. Kleinsberg	847,785	Mar. 19	4153	906	127	1105
Pump. Air-	B. Obear	847,433	Mar. 19	3438	754	127	925
Pump. Air-lift-	B. Obear and S. C. Martin	847,258	Mar. 19	3283	721	127	894
Pump and motor regulator. Fluid-operated	C. Cannell	847,902	Mar. 19	4114	903	127	1166
Pump-gear	H. M. Fletcher	847,928	Mar. 19	4471	980	127	1181
Pump-rod coupling	W. S. Stapley	847,617	Mar. 19	3827	837	127	1027
Pump-tubes to bores. Attaching	J. Wytman	847,535	Mar. 19	3632	801	127	977
Punching-machine	B. G. Braine	847,545	Mar. 19	3654	805	127	984
Puzzle	R. F. Hill	847,664	Mar. 19	3913	854	127	1049
Pyrites-cinder and the like. Desulfurizing and agglomerating	R. F. Hill	847,410	Mar. 19	3385	741	127	912
Pyrites-cinder, &c. Apparatus for desulfurizing and agglomerating							
Rack: *See* Paper-rack.	A. M. Cope	847,318	Mar. 19	3193	702	127	883
Rack or holder	E. D. Barnes	847,456	Mar. 19	3483	762	127	937
Radiator vent attachment	A. F. Hooton	847,337	Mar. 19	3225	710	127	871
Rail-bond. Electrical	V. Uedelhofen	847,382	Mar. 19	3333	731	127	898
Rail-joint	S. H. Campbell	847,400	Mar. 19	3367	737	127	907
Rail-joint	L. M. Ekin	847,560	Mar. 19	3682	812	127	991
Rail-joint	W. E. Boyles	847,642	Mar. 19	3870	846	127	1038
Rail-tie	J. J. O. Fischer	847,403	Mar. 19	3370	738	127	908
Railway-rail stay	J. F. Murphy	847,494	Mar. 19	3552	778	127	955
Railway stand-pipe	J. H. Jennings	847,780	Mar. 19	4144	906	127	1103
Railway-tie	H. S. Kilbourne	847,783	Mar. 19	4150	905-6	127	1104
Railway-tie	A. Durand	847,745	Mar. 19	4076	891	127	1086
Railway-tie. Metallic	R. J. Pavert	847,685	Mar. 19	3961	864	127	1061
Rake-tooth	G. B. Pickop	847,901	Mar. 19	3770	836-7	127	1014
Ratchet-wrench	G. L. Roux	847,809	Mar. 19	3794	831	127	1019
Razor	M. H. Baker and F. S. Frisbie	847,208	Mar. 19	3165	696	127	887
Razor. Multiple-edge safety-							
Reel: *See* Fish-reel. Fishing-reel. Fish-line reel.	C. W. Reynolds	847,823	Mar. 19	4250	931	127	1126
Refrigerator							
Register: *See* Fare-register.	F. G. Nicolaus	847,497	Mar. 19	3556	770-80	127	956
Register and ventilator							
Regulator: *See* Draft and vent regulator. Feed-water regulator. Gas-regulator. Gas-pressure regulator. Flow-depth regulator. Pump and motor regulator.	G. E. Wilson and W. J. Frawley	847,713	Mar. 19	4013	877	127	1072
Reheater	E. B. Craft	847,555	Mar. 19	3671	810	127	988
Relay-adjusting device	C. F. Brown	847,209	Mar. 19	3365	737	127	907
Retort and furnace. Mercury	J. B. Sloane	847,519	Mar. 19	3597	792	127	968
Rifle	H. M. Noecker	847,967	Mar. 19	4552	1000	127	1199
Rifle	H. A. Stearns, Jr	847,445	Mar. 19	3462	789	127	931
Ring-polishing machine	B. H. Locke	847,587	Mar. 19	3740	821	127	1007
Rock-drill	A. W. and Z. W. Daw	847,739	Mar. 19	4064	888	127	1053
Rock-drills. Valve for percussive-							
Rod: *See* Curtain-supporting rod. Picking-rod.	C. H. Miller	847,489	Mar. 19	3544	775-6	127	953
Rotary engine	A. Gildie	847,761	Mar. 19	4111	897-8	127	1099
Rotary engine	W. R. Warren	847,859	Mar. 19	4322	940	127	1145
Rotary kiln	W. R. Warren	847,860	Mar. 19	4323	940	127	1146
Rotary kiln	W. R. Warren	847,861	Mar. 19	4324	940	127	1146
Rotary kiln	W. R. Warren	847,862	Mar. 19	4324	940	127	1146
Rotary kiln	E. S. Craddock	847,851	Mar. 19	3888	850	127	1040
Rug renovating, finishing, and smoothing apparatus	T. J. Brannon	847,726	Mar. 19	4037	882	127	1079
Salt and pepper shaker	M. Schaeffer	847,513	Mar. 19	3586	789	127	965
Sand and mineral drier	C. Leach	847,345	Mar. 19	3249	718	127	876
Sash-fastener							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf'g.	Official Gazette. Vol.	Official Gazette. Page.
Sash-lifter	R. Washburn	847,627	Mar. 19	3549	841	127	1032
Sash-lock	O. J. Rogers	847,510	Mar. 19	3581	787	127	994
Sash-lock	O. Pearson and C. E. Lindquist	847,600	Mar. 19	3703	826	127	1013
Saw clamping and filing means	C. H. Parks and R. S. Brown	847,599	Mar. 19	3705	825-6	127	1013
Sawing-machine	F. C. Storrs	847,648	Mar. 19	4104	941	127	1128
Scalder and washer	E. J. Judge and L. C. Dibert	847,783	Mar. 19	4145	905	127	1103
Screw-driver	C. E. Hoffman	847,774	Mar. 19	4134	902	127	1100
Seal-press	G. H. Huising	847,776	Mar. 19	4136	903	127	1100
Seal trap. Liquid-	T. W. Gorman	847,498	Mar. 19	3505	767	127	943
Seat: *See* Closet-seat. Timber-seat.							
Seesaw	G. S. Kyle	847,787	Mar. 19	4158	907	127	1106
Separator: *See* Centrifugal separator. Tooth-separator. Steam and water separator.							
Separators. Driving mechanism for centrifugal	T. W. Morgan	847,502	Mar. 19	4194	918	127	1114
Sewing device	E. Ascue	847,452	Mar. 19	3477	761	127	935
Sewing-machine	A. J. Hartwich	847,940	Mar. 19	4498	984-5	127	1189
Sewing-machine. Cabinet	T. Kundts and J. Rebor	847,483	Mar. 19	3520	772-3	127	940
Shade adjuster. Window-	N. F. Cappe	847,908	Mar. 19	4416	980	127	1167
Shaft-collar	E. R. Beach	847,822	Mar. 19	4264	956	127	1136
Shaft-coupling	J. P. Hayward	847,333	Mar. 19	3218	709	127	870
Shafts. Fluid-tight joint for rotary	B. M. W. Hanson	847,574	Mar. 19	3705	817	127	995
Sharpening machine. Saw-	J. D. McAulay	847,804	Mar. 19	4196	918-19	127	1115
Shears: *See* Animal-shears. Beam-shears.							
Sheet-feeding mechanism	U. S. Smiley	847,615	Mar. 19	3894	836	127	1027
Ship construction	G. W. Maytham	847,577	Mar. 19	3943	860	127	1055
Shotgun construction	P. Fittipaldi and F. Santa Lucia	847,364	Mar. 19	3660	813	127	902
Sidewalk or concrete construction	J. H. Schlafly	847,700	Mar. 19	3962	872	127	1057
Signal system. Electric	E. Chouteau, Jr	847,905	Mar. 19	4419	969-70	127	1168
Siphon. Triple alternating	S. W. Miller	847,392	Mar. 19	3754	838	127	1010
Sled-runner roller attachment	W. J. La Fleur	847,789	Mar. 19	4149	908	127	1107
Sleigh	H. A. Le Baron	847,954	Mar. 19	4520	991-2	127	1193
Smelting apparatus. Sulfur-	E. F. White	847,389	Mar. 19	4235	951	127	1140
Smoke-suspended matter. Means for separating and eliminating	S. Benson	847,886	Mar. 19	4377	959	127	1160
Snatch-block	J. N. Lindsay	847,955	Mar. 19	4521	992	127	1193
Soap cup. Liquid-	E. A. Bender	847,723	Mar. 19	4080	881	127	1077
Sound-records. Mechanism for making	J. O. Prescott	847,520	Mar. 19	4245	930	127	1126
Speed-changing mechanism	R. Bleits	847,460	Mar. 19	3482	764	127	940
Speed-measure	C. J. Millis	847,579	Mar. 19	3945	861	127	1058
Speed-transmitting device. Variable-	E. Richter	847,696	Mar. 19	3994	871	127	1066
Spinning-frame	W. J. Thompson	847,821	Mar. 19	3982	838	127	1020
Spoon. Medicine-	G. C. Hobein	847,943	Mar. 19	4493	986	127	1187
Spring-wheel	J. H. Fawkes	847,926	Mar. 19	4493	979-80	127	1180
Stacker. Hay-	G. Scheibing	847,370	Mar. 19	3610	726	127	894
Staircase. Metal	P. Scherbner	847,699	Mar. 19	3991	873	127	1067
Stamp-mill stamp-head	M. P. Boss	847,397	Mar. 19	3983	736	127	903
Stanchion	J. H. McGuire	847,899	Mar. 19	4493	919-20	127	1116
Stand: *See* Display-stand.							
Starch. Treating	F. Drittler	847,658	Mar. 19	3903	.....	127	1046
Starch. Treating	F. Drittler	847,985	Mar. 19	4560	.....	127	1208
Steam and water separator	A. J. Irvine, D. Mills, and W. H. Wood.	847,478	Mar. 19	3519	770-1	127	940
Steam-boiler	T. F. Morrin	847,427	Mar. 19	3487	751-2	127	922
Steam-engine	C. H. Monroe	847,490	Mar. 19	3545	776	127	953
Steam generator and superheater	F. A. Haughton	847,407	Mar. 19	3378	739-40	127	910
Steam-trap	W. W. Doolittle	847,657	Mar. 19	3998	858	127	1045
Steering mechanism	H. Ford	847,405	Mar. 19	3375	739	127	909
Stirrup. Safety-	F. W. Breitenstein	847,896	Mar. 19	4493	986	127	1164
Stoker. Straw-	A. E. Woodmansee	847,391	Mar. 19	3260	734-5	127	902
Stone-dressing machine	A. F. Jones	847,239	Mar. 19	3228	711-12	127	872
Stool. Vertically-adjustable	G. T. Trumbull	847,520	Mar. 19	3620	709	127	974
Stopper: *See* Bottle-stopper. Vessel-stopper.							
Stopper-extractor	A. Dudiy, Sr	847,744	Mar. 19	4074	880	127	1096
Stove and furnace	R. A. May	847,351	Mar. 19	3263	717	127	881
Stove or cooking-oven. Fireless cook-	P. H. Erbes	847,402	Mar. 19	3360	738	127	908
Stove or the like. Gas cooking-	W. D. Sheppard	847,704	Mar. 19	3990	874	127	1069
Stovepipes. Wall-fastening for	C. B. Post	847,670	Mar. 19	3977	869	127	1064
Suit-case handle	A. Rafalsky	847,821	Mar. 19	4043	930	127	1126
Surgical and other instruments. Hinge for	G. T. Barber	847,542	Mar. 19	3645	803	127	982
Surgical appliance	C. C. Frye	847,738	Mar. 19	4160	896	127	1097
Suspensory	J. R. Jarrett	847,779	Mar. 19	4143	904	127	1102
Swingletree-hook	B. F. Emery	847,881	Mar. 19	3994	813	127	991
Switch: *See* Jack-switch.							
Switch	A. L. Eustice	847,925	Mar. 19	4498	979	127	1179
Switch	O. S. Gage	847,931	Mar. 19	4474	981	127	1183
Switch mechanism	L. L. Mallard	847,349	Mar. 19	3957	716-17	127	879
Switch-stand connection. Resilient	A. E. Anderson	847,536	Mar. 19	3640	802	127	979
Syrup-dispensing apparatus	C. E. Gates	847,760	Mar. 19	4005	897	127	1093
Table: *See* Card-table. Glass-cutter's table.							
Table	N. E. Brown	847,839	Mar. 19	4410	967	127	1166
Tablet and pencil-box. Combined	A. B. Corbett	847,630	Mar. 19	3957	840	127	1042
Tag. Meat-	F. E. Graham	847,469	Mar. 19	3997	797	127	943
Talking-machine records. Apparatus for making flat	W. H. Hoyt	847,388	Mar. 19	3227	711	127	871
Tank: *See* Flush-tank.							
Target-trap-controlling means	D. B. Anderson	847,530	Mar. 19	3642	803	127	980
Telephone attachment	A. Rector	847,671	Mar. 19	3973	869	127	1064
Telephone-call meter	C. T. Bradshaw	847,481	Mar. 19	3484	764-5	127	940
Telephone-receiver	L. Steinberger	847,542	Mar. 19	3980	840	127	1137
Telephone-relay	D. S. Dickart	847,656	Mar. 19	3997	851	127	1045
Telephone set	G. F. Atwood	847,205	Mar. 19	3160	694-5	127	856
Telephone signaling apparatus	A. A. Monson	847,285	Mar. 19	3270	719	127	882

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf'g.	Official Gazette. Vol.	Official Gazette. Page.
Telephone-switch-operating mechanism	F. M. Potter, Jr	847,367	Mar. 19	3700	724	127	888
Telephone-switchboard. Automatic	A. A. Monson	847,356	Mar. 19	3273	719-20	127	882
Telephone system	C. L. and T. P. Carr	847,316	Mar. 19	3182	700-1	127	861
Telephone trunking system	H. G. Webster	847,385	Mar. 19	3335	732	127	898
Telephone trunking system	F. W. Dunbar	847,984	Mar. 19	4583	1007	127	1208
Telephonic repeating circuit and apparatus	F. E. D. d'Humy	847,777	Mar. 19	4139	904	127	1101
Textile material. Apparatus for drying	O. Venter	847,393	Mar. 19	3334	732	127	898
Thermally-operated apparatus	F. Batault	847,543	Mar. 19	3649	804	127	982
Thermostat	P. A. Brown	847,981	Mar. 19	4577	1005-6	127	1205
Thread-cutting attachment	L. J. Voelz	847 626	Mar. 19	3948	841	127	1032
Threshing-machine attachment	G. S. Angier	847,875	Mar. 19	4346	953	127	1152
Threshing-machines. Traction and power attachment for	B. Dahl	847,736	Mar. 19	4080	887	127	1082
Ticket-box	H. Plummer	847,688	Mar. 19	3973	868	127	1063
Tie: *See* Rail-tie. Railway-tie.							
Timber seat and support	J. Tuteur	847,850	Mar. 19	4301	943	127	1140
Tire	J. M. Shepard	847,442	Mar. 19	3455	758	127	929
Tire. Vehicle-	T. Gare	847,466	Mar. 19	3502	766	127	942
Tobacco and match box	H. A. Beham	847,458	Mar. 19	3487	763	127	939
Tobacco. Curing	M. B. Sarkees	847,608	Mar. 19	3990	.....	127	1067
Tobacco-knife	W. A. Pigg	847,815	Mar. 19	4240	928	127	1124
Toboggan-slide	O. F. Allen	847,304	Mar. 19	3157	695	127	855
Tooth-pick holder	W. Sandleben	847,828	Mar. 19	4256	932	127	1127
Tooth-separator	J. W. Ivory	847,778	Mar. 19	4141	904	127	1102
Top	E. W. Gibbs	847,933	Mar. 19	4477	982	127	1182
Toy	F. O'Flaherty	847,499	Mar. 19	3560	780	127	956
Toy	W. T. Wood	847,715	Mar. 19	4018	878	127	1073
Toy. Pneumatic	J. H. Flora	847,755	Mar. 19	4098	895	127	1091
Trace-fastening device	C. M. Lehman	847,417	Mar. 19	3406	745	127	918
Transmitter-front	A. H. Weise	847,449	Mar. 19	3470	760	127	932
Trap: *See* Seal-trap. Steam-trap.							
Trimmer: *See* Hair-trimmer.	F. and P. B. Schmunk	847,701	Mar. 19	3993	872	127	1067
Trolley and crossover	C. A. True	847,849	Mar. 19	4299	943	127	1139
Trolley for traveling cranes	J. N. Hayes	847,989	Mar. 19	4595	1008	127	1209
Trolley-wire crossing							
Trough: *See* Watering-trough.							
Trousers-presser	C. B. Woodmancy	847,392	Mar. 19	3356	735	127	905
Truck	W. C. Hanson	847,766	Mar. 19	4119	900	127	1098
Truck-bolster	A. B. Bellows	847,895	Mar. 19	4376	967-8	127	1159
Truck for wood-preserving retorts	H. M. Rollins and A. J. Neff	847,826	Mar. 19	4253	931	127	1127
Truck. Gasoline-engine	A. N. Calkins	847,647	Mar. 19	3981	848	127	1041
Truss-pad	W. H. Horn, Jr	847.775	Mar. 19	4135	903	127	1100
Tub: *See* Foot-tub.							
Tube-cleaner	E. Heubach	847,335	Mar. 19	3223	709-10	127	870
Tubes, &c. Press for forming	W. Astfalck	847,635	Mar. 19	3961	844	127	1036
Tug. Hame-	G. H. Schmidt	847,377	Mar. 19	3320	729	127	895
Tunneling apparatus	F. A. Moffitt	847,801	Mar. 19	4189	916-18	127	1113
Twine-cutter	G. R. Peterson and W. E. Moen	847,812	Mar. 19	4238	928	127	1123
Type-writing machine	E. G. Latta	847,343	Mar. 19	3239	714	127	874
Type-writing machine	H. S. McCormack	847,415	Mar. 19	3306	743-4	127	915
Type-writing machine	J. B. Secor	847,702	Mar. 19	3995	873	127	1068
Type-writing machine	J. B. Secor	847,835	Mar. 19	4275	936-8	127	1133
Type-writing machine	E. G. Latta	847,990	Mar. 19	4596	1008-9	127	1209
Type-writing machine	J. B. Secor	847,613	Mar. 19	3806	833-4	127	1022
Type-writing machine carriage-controlling mechanism	J. F. McAvoy	847,805	Mar. 19	4200	919	127	1115
Umbrella and parasol	G. V. Van Roy	847,852	Mar. 19	4305	944	127	1141
Umbrellas and the like. Runner for	A. Ritter	847,439	Mar. 19	3447	756-7	127	927
Universal joint	O. F. Jordan	847,480	Mar. 19	3523	771	127	947
Unloading device	G. C. Davis	847,401	Mar. 19	3368	738	127	908
Valve	B. Bergmann	847,723	Mar. 19	4031	881	127	1077
Valve. Flush-	F. L. Clark	847,317	Mar. 19	3191	701	127	869
Valve for air-brakes. Recharging-	J. F. Breitenstein	847,897	Mar. 19	4407	986	127	1165
Valve for pumping-engines. Steam-actuated	J. H. Gay	847,932	Mar. 19	4476	981-2	127	1182
Valve. Gate-	J. Hübner and I. Mayer	847 944	Mar. 19	4499	986	127	1187
Valve. Pressure-reducing	F. Young	847,870	Mar. 19	4339	952	127	1150
Valve. Steam-boiler	G. E. Riblet	847,369	Mar. 19	3203	725-6	127	899
Valve. Steam-engine	W. Trinks	847,623	Mar. 19	3941	840	127	1060
Valve system. Throttle-	W. Ferris and J. M. Allen	847,326	Mar. 19	3206	705	127	867
Valve Throttle-	R. C. Nelson	847,498	Mar. 19	3555	779	127	955
Vapor-burner	H. L. Bailey	847,306	Mar. 19	3162	696	127	857
Vegetable-cutter	J. P. Lain	847,414	Mar. 19	3395	743	127	914
Vehicle	M. W. Heyenga	847,576	Mar. 19	3709	817-18	127	997
Vehicle	C. Miller	847,984	Mar. 19	4545	999	127	1198
Vehicle dumping-body	A. G. Brunsman	847,548	Mar. 19	3660	807	127	985
Vehicle-reach	A. L. McMurtry	847,595	Mar. 19	3759	824	127	1011
Vehicle speed-timing device	J. M. Rebholz	847,970	Mar. 19	4559	1002	127	1201
Vehicle-top	J. A. Pomeroy	847.817	Mar. 19	4242	929	127	1124
Vehicle-wheel	T. A. Watts	847,963	Mar. 19	4325	949	127	1147
Vending-machine	R. H. Lynn. (Reissue)	12,619	Mar. 19	4614	1011	127	1213
Veneering-machine							
Ventilator: *See* Head-covering ventilator. Window-ventilator.							
Ventilator	F. W. Symmes	847,381	Mar. 19	3330	731	127	897
Vessel-stopper	G. West	847,866	Mar. 19	4320	949	127	1146
Vibration-producing device	J. V. Daniels	847,654	Mar. 19	3994	881	127	1044
Voting-machine	W. J. Lausterer	847,416	Mar. 19	3402	744-5	127	916
Voting-machines. Interlocking mechanism for	C. F. Lomb	847,347	Mar. 19	3251	716	127	877
Wagon-brake	F. W. Wernke	847,885	Mar. 19	4328	949	127	1147
Wagon-brake. Automatic	J. H. Lowrey	847,796	Mar. 19	4173	911	127	1119
Wagon. Dumping-	C. Lynch	847,675	Mar. 19	3938	859	127	1054
Washer: *See* Dish-washer.							
Washer	C. Jensen	847,665	Mar. 19	3915	854-5	127	1049

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Washing-machine	N. B. and N. B. Rees	847,822	Mar. 19	4346	930	127	1126
Watch. Stem winding and setting	W. E. Porter	847,819	Mar. 19	4345	929	127	1125
Water-elevating device	J. H. Ralston	847,808	Mar. 19	3670	787	127	963
Water-heater, smoke and gas consumer, and damper-regulator.	J. Miller	847,425	Mar. 19	3422	750	127	921
Watering trough. Stock-	B. F. Booth	847,393	Mar. 19	4366	965	127	1162
Weaner. Calf-	J. R. Grice and O. E. Pidcock	847,571	Mar. 19	3690	816	127	994
Weather-strip	E. N. Anderson	847,573	Mar. 19	4342	962	127	1161
Web materials. Machine for cutting	W. D. Skidmore	847,538	Mar. 19	4282	939	127	1126
Welding apparatus. Electrical	T. A. Edison	847,746	Mar. 19	4078	891-2	127	1086
Welding flux. Copper-	T. W. Wilson	847,629	Mar. 19	3853		127	1032
Wheel: *See* Paddle-wheel. Spring-wheel. Propeller-wheel. Vehicle-wheel.							
Wheel-machine	C. W. Robinson	847,607	Mar. 19	3783	829-31	127	1017
Wheel-runner for baby-carriages	W. H. Bussell	847,900	Mar. 19	4411	967	127	1169
Wind-shield	E. Schildback	847,330	Mar. 19	4266	932	127	1128
Windmill	A. W. Ketch	847,949	Mar. 19	4510	989	127	1189
Winding and measuring machine	C. A. Marquis	847,422	Mar. 19	3414	748-9	127	919
Window and door alarm	J. Swan	847,825	Mar. 19	3613	796	127	972
Window and door alarm	J. Swan	847,846	Mar. 19	4295	942	127	1139
Window. Automatic	O. H. Iman	847,477	Mar. 19	3516	770	127	946
Window-cleaner	W. Mable	847,486	Mar. 19	3533	774	127	951
Window-ventilator	E. R. Foerster	847,920	Mar. 19	4472	981	127	1181
Work-guiding device	W. Wilson	847,714	Mar. 19	4014	877	127	1073
Wrapping-machine paper-feeding device	M. H. Ballard	847,393	Mar. 19	3367	735	127	906
Wrench: *See* Nut-wrench. Pipe and monkey wrench. Ratchet-wrench.							
Wrench	J. E. Jenson	847,561	Mar. 19	3721	819	127	1004
Wrench	J. D. Daniel	847,916	Mar. 19	4443	974	127	1174
X-ray apparatus	E. W. Caldwell	847,728	Mar. 19	4089	883	127	1079

DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Automobile-body	W. H. Atwood	38,626	Mar. 19	127	1229
Badge	F. O. Sullivan	38,631	Mar. 19	127	1228
Bag, purse, or similar article. Hand-	F. D. Kahn	38,632	Mar. 19	127	1228
Bottle	E. Roberton	38,633	Mar. 19	127	1228
Lamp socket. Incandescent electric-	J. A. Mebane	38,634	Mar. 19	127	1228
Stove ornament	F. E. Lee	38,635	Mar. 19	127	1229

TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Advertising-envelopes	A. Dietz	61,404	Mar. 19	127	1249
Ale	Frank Jones Brewing Company	61,377	Mar. 19	127	1248
Beer	Actiengesellschaft Paulanerbräu (zum Salvatorkeller).	61,258	Mar. 19	127	1247
Beer	Fred Miller Brewing Co	61,262	Mar. 19	127	1247
Beer, ale, stout, and malt extract. Lager-	Standard Brewery Company of Baltimore City.	61,260	Mar. 19	127	1248
Beer. Lager-	S. Liebmann's Sons Brewing Company.	61,264	Mar. 19	127	1248
Belting. Leather	Peter Schoenhofen Brewing Company.	61,267	Mar. 19	127	1248
Boiler-cleaning compound	C. A. Schieren & Co	61,453	Mar. 19	127	1250
Boilers. Steam and hot-water	Davis and Day Engineering Company.	61,403	Mar. 19	127	1249
Boots and shoes. Leather	Prudential Heating Company	61,396	Mar. 19	127	1248
Boots and shoes. Leather	E. Z. Shoe Company	61,416	Mar. 19	127	1249
Boots and shoes. Women's, misses', and children's leather	Utz & Dunn	61,466	Mar. 19	127	1250
Butter, milk, and cheese	F. Valdes & Co	61,429	Mar. 19	127	1249
Candy, chocolates, and bonbons	W. S. Moore & Co	61,399	Mar. 19	127	1248
Candy, chocolates, and bonbons	Hawley & Hoops	61,343	Mar. 19	127	1247
Canned vegetables	Hawley & Hoops	61,340	Mar. 19	127	1247
Canoes, row and sail boats, parts thereof, and oars and paddles	Rosenstein Brothers	61,355	Mar. 19	127	1247
Chocolate-molds	J. H. Rushton, Incorporated	61,408	Mar. 19	127	1249
Cigars	A. Reiche	61,453	Mar. 19	127	1250
Cigars and cigarettes	D. C. Hitt	61,335	Mar. 19	127	1247
Cigars in boxes	Park & Tilford	61,341	Mar. 19	127	1247
Clothing. Certain	M. E. Palmer	61,354	Mar. 19	127	1247
Clothing. Certain	Hargadine-McKittrick Dry Goods Company.	61,361	Mar. 19	127	1248
	Kerfoot, Miller and Company	61,398	Mar. 19	127	1248

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Clothing. Certain	Paulson Brothers Company	61,386	Mar. 19	127	1248
Coats, vests, pants, jackets, and overcoats	Rothgiesser Bros	61,425	Mar. 19	127	1249
Columns. Wooden	Memphis Column Company	61,421	Mar. 19	127	1249
Corsets and body-braces. Conformer-	C. Munter	61,409	Mar. 19	127	1249
Corsets, bust-forms, and supporters	G. E. Peetz	61,423	Mar. 19	127	1249
Cotton piece goods	Boott Mills	61,368	Mar. 19	127	1248
Cotton piece goods	Boott Mills	61,369	Mar. 19	127	1248
Cotton piece goods	Boott Mills	61,370	Mar. 19	127	1248
Cotton piece goods	Boott Mills	61,371	Mar. 19	127	1248
Cotton piece goods	Boott Mills	61,372	Mar. 19	127	1248
Cotton piece goods	Boott Mills	61,373	Mar. 19	127	1248
Cotton piece goods	Boott Mills	61,374	Mar. 19	127	1248
Cotton piece goods	Boott Mills	61,375	Mar. 19	127	1248
Cotton piece goods	Boott Mills	61,400	Mar. 19	127	1248
Cotton piece goods	Boott Mills	61,438	Mar. 19	127	1250
Cotton piece goods	C. C. Copeland & Co	61,439	Mar. 19	127	1250
Cutlery and edge-tools. Certain	Dunham, Carrigan & Hayden Company.	61,440	Mar. 19	127	1250
Cutlery and edge-tools. Certain	Dunham, Carrigan & Hayden Company.	61,441	Mar. 19	127	1250
Cutlery and edge-tools. Certain	Dunham, Carrigan & Hayden Company.	61,442	Mar. 19	127	1250
Dental alloy	Louisville Dental Laboratory & Mfg. Co.	61,392	Mar. 19	127	1248
Draperies. Textile	Eddystone Manufacturing Company.	61,361	Mar. 19	127	1247
Fertilizers	Virginia-Carolina Chemical Company.	61,343	Mar. 19	127	1247
Food preparations. Certain	Jones Bros. & Co	61,350	Mar. 19	127	1247
Food preparations. Certain	C. H. Montanye	61,394	Mar. 19	127	1248
Food-preservatives	Thomas Thorkildsen & Company	61,427	Mar. 19	127	1249
Fruits. Dried and evaporated	National Grocer Company	61,395	Mar. 19	127	1248
Fur garments	Hargadine-McKittrick Dry Goods Company.	61,380	Mar. 19	127	1248
Glassware and porcelain cleanser	M. McMahon	61,337	Mar. 19	127	1247
Glassware. Certain	Penn-American Plate Glass Co	61,449	Mar. 19	127	1250
Gloves, mittens, and gauntlets	American Glove Co	61,359	Mar. 19	127	1247
Gum. Chewing-	American Chicle Co	61,345	Mar. 19	127	1247
Gun-sights	Lyman Gun Sight Corporation	61,393	Mar. 19	127	1248
Hats and caps	S. G. Hirschberg	61,407	Mar. 19	127	1249
Horse and mule shoes	Phoenix Horse Shoe Co	61,450	Mar. 19	127	1250
Hosiery	C. Chipmans Sons	61,376	Mar. 19	127	1248
Insulation materials. Certain	American Mica Company	61,434	Mar. 19	127	1249
Knitted undershirts and drawers	H. Jacquin & Company	61,392	Mar. 19	127	1248
Knives. Pocket-	Tom Ray Cutlery Company	61,455	Mar. 19	127	1250
Lamps. Electric-arc	F. Hamburger	61,418	Mar. 19	127	1249
Lamps. Incandescent	Eagle Lamp Company	61,417	Mar. 19	127	1249
Lamps. Incandescent	Eagle Lamp Company	61,443	Mar. 19	127	1250
Leather and shoe blackings, paste, polish, and varnish	S. M. Bixby & Co	61,397	Mar. 19	127	1248
Leather fobs	Weiss M'f'g. Co	61,463	Mar. 19	127	1250
Liniment	J. C. Mills	61,447	Mar. 19	127	1250
Locks. Pad, trunk, cabinet, and door	Eagle Lock Co	61,391	Mar. 19	127	1248
Lotions	C. W. Davis	61,415	Mar. 19	127	1249
Macaroni	A. Musica	61,353	Mar. 19	127	1247
Magazine. Monthly	National Sportsman	61,410	Mar. 19	127	1249
Magazine. Monthly	A. D. Hosterman	61,420	Mar. 19	127	1249
Measuring and scientific apparatus, appliances, and instruments. Certain	Oelschlaeger Bros	61,340	Mar. 19	127	1247
Medicine	F. Colbert	61,414	Mar. 19	127	1249
Medicines for blood diseases of horses, mules, and cattle	C. F. Cutler	61,402	Mar. 19	127	1249
Medicines for bronchial and pulmonary affections	Choate Drug and Chemical Company.	61,435	Mar. 19	127	1249
Metal-polishes	Hanson & Van Winkle Co	61,462	Mar. 19	127	1250
Milk	Lactobacilline Company	61,351	Mar. 19	127	1247
Milk	Lactobacilline Company	61,352	Mar. 19	127	1247
Molasses	P. Duff & Sons	61,346	Mar. 19	127	1247
Molasses	P. Duff & Sons	61,347	Mar. 19	127	1247
Musical instruments. Certain	R. A. Childs	61,401	Mar. 19	127	1248
Muslin undergarments. Women's	F. S. Kolb	61,385	Mar. 19	127	1248
Ore-concentrators	Risdon Iron & Locomotive Works.	61,424	Mar. 19	127	1249
Paper and butter-wrappers. Waxed	Newark Paraffine & Parchment Paper Co.	61,411	Mar. 19	127	1249
Paper. Writing-	Woronoco Paper Company	61,460	Mar. 19	127	1250
Periodical	Confectioners' Journal Publishing Co.	61,437	Mar. 19	127	1249
Periodical	Ware Bros. Company	61,457	Mar. 19	127	1250
Periodical	Ware Bros. Company	61,458	Mar. 19	127	1250
Periodical publications	Browning Press	61,413	Mar. 19	127	1249
Pharmaceutical preparations. Certain	A. M. E. Wandka	61,461	Mar. 19	127	1250
Pork-roll	Taylor Provision Co	61,256	Mar. 19	127	1247
Powder and cream and hair-tonic. Face	H. Mountain	61,448	Mar. 19	127	1250
Powder. Tooth-	Gerhard Mennen Chemical Co	61,445	Mar. 19	127	1250
Ranges and stoves	Wrought Iron Range Company	61,357	Mar. 19	127	1247
Remedies for certain diseases	Worlds Dispensary Medical Association.	61,459	Mar. 19	127	1250
Remedy. Cough	Dr. Rainey Medicine Co	61,405	Mar. 19	127	1249
Remedy for certain diseases	E. G. Harrell	61,406	Mar. 19	127	1249
Remedy for skin diseases	Thompson and Trimble	61,428	Mar. 19	127	1249
Remedy for stomach and bowel affections	E. J. Hughes	61,446	Mar. 19	127	1250
Remedy for typhoid fever	Whorton Sons Drug Co	61,412	Mar. 19	127	1249

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Remedy. Rheumatism	Smith Drug Company	51,454	Mar. 19	127	1359
Salve	J. B. Tannehill	51,459	Mar. 19	127	1359
Seed. Grass, grain, timothy, and clover	Albert Dickinson Company	51,460	Mar. 19	127	1359
Seed. Grass, grain, timothy, and clover	Albert Dickinson Company	51,461	Mar. 19	127	1359
Sherry	W. A. Ross & Brother	51,397	Mar. 19	127	1358
Shoes. Leather	Mistrot Bros. & Co	51,422	Mar. 19	127	1359
Shoes. Leather	A. Friesmeyer Shoe Co	51,451	Mar. 19	127	1359
Silk piece goods	Home Silk Mills	51,363	Mar. 19	127	1357
Silk piece goods and silk ribbon	King, Brinsmade Mercantile Company.	51,394	Mar. 19	127	1358
Silver knives, forks, spoons, &c. Solid and plated	Towle Mfg. Company	51,345	Mar. 19	127	1356
Sleds	S. L. Allen & Co	51,432	Mar. 19	127	1359
Sleds	S. L. Allen & Co	51,433	Mar. 19	127	1359
Soap. Laundry	N. K. Fairbank Company	51,338	Mar. 19	127	1357
Stout	S. Liebmann's Sons Brewing Company.	51,395	Mar. 19	127	1358
Tea	Schwabacher Bros. & Co	51,393	Mar. 19	127	1358
Tobacco. Smoking	D. L. Jacoway	51,399	Mar. 19	127	1357
Tobacco. Smoking	H. Rippon	51,342	Mar. 19	127	1357
Trowels	William Hunt & Sons, The Brades	51,344	Mar. 19	127	1357
Trunks	Hartmann Trunk Company	51,415	Mar. 19	127	1359
Varnishes	Noaks-Wheeler-Clough Company	51,339	Mar. 19	127	1357
Varnishes, enamels, paint, oil, rough-stuffs, &c	Hibbard, Spencer, Bartlett & Co	51,333	Mar. 19	127	1357
Varnishes, enamels, paint, oil, rough-stuffs, &c	Hibbard, Spencer, Bartlett & Co	51,334	Mar. 19	127	1357
Wagons and carts. Farm, delivery, and dumping	Columbia Wagon Co	51,496	Mar. 19	127	1360
Whisky	Freiberg & Workum	51,378	Mar. 19	127	1358
Whisky	P. Freller	51,379	Mar. 19	127	1358
Whisky, brandy, gin, rum, &c	Boston Wine & Spirits Co	51,360	Mar. 19	127	1357
Whisky. Corn	R. M. Rose Co	51,398	Mar. 19	127	1358
Whisky. Scotch	Slater, Rodger & Co	51,369	Mar. 19	127	1358
Wood manufactures. Certain	C. Este	51,444	Mar. 19	127	1359

LABELS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Accurate Recorders." (For Time-Recorders, Watches, and Clocks.)	Newman Clock Co	13,415	Mar. 19	127	1351
"Banquet Cake." (For Cake)	F. Hueber	13,408	Mar. 19	127	1351
"Belmont Club." (For Catchup)	N. O. Harvey	13,405	Mar. 19	127	1351
"El Dora." (For Cigars)	M. Grossman	13,404	Mar. 19	127	1351
"Growdina." (For Medicine)	S. Koppel	13,409	Mar. 19	127	1351
"Men's Apparel." (For Men's Apparel)	W. C. Both	13,412	Mar. 19	127	1351
"Myers' Pa-Pay-A Tablets." (For Medicine)	F. S. Myers	13,410	Mar. 19	127	1351
"Rosoint." (For Medical Compound)	A. H. Berry Shoe Company	13,413	Mar. 19	127	1351
"The Dolly Madison Home-Made Candies." (For Candy)	California Rosoint Company	13,411	Mar. 19	127	1351
"3 In One Soap." (For Soap)	G. E. Doolittle	13,407	Mar. 19	127	1351
"Watch." (For Time-Recorders, Watches, and Clocks)	C. R. Hutchinson	13,406	Mar. 19	127	1351
	Newman Clock Co	13,414	Mar. 19	127	1351

PRINTS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"A Charge on the Picador." (For Medicine)	Mi-cro-line Medicine Co	1,327	Mar. 19	127	1351
"Adler's Styles for Spring and Summer 1907." (For Men's Apparel.)	David Adler & Sons Clothing Co.	1,324	Mar. 19	127	1351
"Boschees German Syrup, August Flower." (For Medicines)	G. G. Green	1,321	Mar. 19	127	1351
"De Laval Cream Separators." (For Cream-Separators)	De Laval Separator Co	1,323	Mar. 19	127	1351
"Healthful Nucoa Confectionery." (For Confectionary Materials.)	Nucoa Butter Co	1,322	Mar. 19	127	1351
"The Bull Enters the Arena." (For Medicine)	Mi-cro-line Medicine Co	1,328	Mar. 19	127	1351
"The Bull Ring." (For Medicine)	Mi-cro-line Medicine Co	1,329	Mar. 19	127	1351
"The Bull Rushes on the Banderillero." (For Medicine)	Mi-cro-line Medicine Co	1,330	Mar. 19	127	1351

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Adhesive for use in the manufacture of cores, bricks, &c	Robeson Process Company	24,357	Mar. 19	127	1236
Analgesic	Farbenfabriken vorm. Friedr. Bayer & Co.	24,887	Mar. 19	127	1239
Analgesic and antirheumatic	Farbenfabriken vorm. Friedr. Bayer & Co.	24,888	Mar. 19	127	1239
Bitters	Union Wholesale Liquor Co	25,351	Mar. 19	127	1242
Bitters. Stomach	Hostetter Company	13,475	Mar. 19	127	1232
Boiler-headers, manhole-plates, smelting-furnaces, &c	Continental Iron Works	24,710	Mar. 19	127	1238
Bookcases and parts thereof	Globe-Wernicke Company	26,409	Mar. 19	127	1244
Boots and shoes. Leather	O. H. Krueger	24,471	Mar. 19	127	1236
Boots and shoes. Leather	Dixon-Bartlett Co	24,978	Mar. 19	127	1239
Bread	Brenneman Baking Company	25,136	Mar. 19	127	1240
Broadcloth, casket, carriage, and cap cloth	Airedale Mills Company	25,027	Mar. 19	127	1240
Calicoes, percales, ducks, and drills	Garner & Co	24,268	Mar. 19	127	1236
Candies	J. E. Schaefer	25,244	Mar. 19	127	1241
Canned fruit, vegetables, and baked beans	C. C. McDonald	25,025	Mar. 19	127	1240
Canned soups and bouillons	Patterson-Cabell Co	24,674	Mar. 19	127	1237
Canned vegetables	W. W. Boyer & Co	25,200	Mar. 19	127	1241
Canned vegetables, fruits, and soups, eggs, gelatin, &c	S. S. Pierce Co	5,695	Mar. 19	127	1231
Cards. Playing	United States Playing Card Co	25,427	Mar. 19	127	1245
Cement. Portland	Associated Portland Cement Manufacturers (1900).	25,264	Mar. 19	127	1243
Chafing-dishes, fancy lattice, coffee-machines, towel-racks, &c	S. Sternau & Co	14,335	Mar. 19	127	1232
Chains. Machine-made	Diamond Chain and Manufacturing Company.	25,267	Mar. 19	127	1243
Cheese	F. Luder	23,882	Mar. 19	127	1236
Chocolate and cocoa	Runkel Brothers	25,425	Mar. 19	127	1245
Cigarettes	Butler-Butler	25,426	Mar. 19	127	1245
Cigars	Fernandez, Wodiska y Corral	13,554	Mar. 19	127	1233
Cigars	J. F. Suntych	24,508	Mar. 19	127	1238
Cigars	T. A. Robinson	25,307	Mar. 19	127	1242
Cigars	P. G. Crocov	25,509	Mar. 19	127	1245
Cigars	T. W. Pangborn Company	23,257	Mar. 19	127	1236
Cinder-mills, core-machines, cranes, elevators, &c	C. Wilson	24,696	Mar. 19	127	1237
Clamps or clasps for wearing-apparel	A. Ruben & Co	21,074	Mar. 19	127	1233
Cloaks, suits, and dress-skirts	Friend & Marks	22,346	Mar. 19	127	1236
Coats, vests, trousers, and overcoats	Neuss, Hesslein & Co	25,423	Mar. 19	127	1245
Cotton goods. Printed	Jackson Company	21,831	Mar. 19	127	1234
Cotton piece goods and blankets	Sanitation & Supply Co	24,699	Mar. 19	127	1237
Disinfectants and deodorizers	Farbenfabriken vorm. Friedr. Bayer & Co.	24,885	Mar. 19	127	1239
Dyes, disinfectants, food-preservatives, &c. Coal-tar	Farbenfabriken vorm. Friedr. Bayer & Co.	24,889-90	Mar. 19	127	1239
Dyes, disinfectants, food-preservatives, &c. Coal-tar	Josiah Wedgwood & Sons	9,825	Mar. 19	127	1231
Earthenware and porcelain	C. A. English	24,908	Mar. 19	127	1239
Eggs	Tennessee Fibre Company	25,387	Mar. 19	127	1243
Feed-meal. Cotton-seed	J. A. & W. Bird & Co	22,561	Mar. 19	127	1234
Felt and paper for roofing, &c	Barrett Manufacturing Company	25,363	Mar. 19	127	1243
Felt for use in buildings	Canton Fertilizer and Chemical Company.	22,804	Mar. 19	127	1234
Fertilizers	Rosenstein Brothers	23,826	Mar. 19	127	1236
Fish. Preserved	Abraham & Straus	19,890	Mar. 19	127	1233
Flavoring extracts and jams	F. L. Thornton	11,085	Mar. 19	127	1232
Flour, cornmeal, and rolled oats. Buckwheat, whole-wheat, and Graham.	Sprague, Warner & Company	25,172	Mar. 19	127	1241
Flour. Mixed rye and wheat	P. Schroeder	24,796-7	Mar. 19	127	1238
Flour. Wheat	Holmes and Barnes	25,076	Mar. 19	127	1240
Flour. Wheat	American Fork & Hoe Co	24,883	Mar. 19	127	1237
Forks, hoes, rakes, and potato-hooks	L. & J. G. Stickley	25,167	Mar. 19	127	1241
Furniture	W. J. Roche	22,176	Mar. 19	127	1234
Game. Card	Oakman Manufacturing Company.	22,346	Mar. 19	127	1236
Gas-burners	Houdaille et Triquet	20,303	Mar. 19	127	1233
Glass shades, globes, and chimneys	Steinberger & Kallisher	22,425-6	Mar. 19	127	1234
Gloves. Kid	M. Roman	24,522	Mar. 19	127	1238
Hair curlers or wavers	R. Moore	24,517	Mar. 19	127	1238
Hair-pomade	J. Kuskuna	15,420	Mar. 19	127	1233
Hair tonics and restorers and shampoo	Todd Manufacturing Co	12,422	Mar. 19	127	1233
Hames	William Hunt & Sons, The Brades	15,740	Mar. 19	127	1233
Hoes, spades, scoops, shovels, rakes, and forks	Glidden, Hyde & Co	15,612	Mar. 19	127	1233
Hosiery	American Bar-Lock Company	5,402	Mar. 19	127	1231
Illuminating-prisms, vault, sidewalk, door, and sky lights	Norddeutsche Wollkämmerei & Kammgarnspinnerei.	17,955	Mar. 19	127	1233
Inks	A. R. Saylor	25,033	Mar. 19	127	1240
Insecticides and antiseptic tooth-wash	S. I. Henderson	25,240	Mar. 19	127	1241
Medicinal paste for use in pulmonary troubles	H. E. Buckton & Company	25,318	Mar. 19	127	1242
Medicinal preparations for coughs, colds, &c	Ichthyol Gesellschaft Cordes, Hermanni & Co.	21,799-800	Mar. 19	127	1234
Medicinal salicylic acids, &c	W. E. Williams	23,583	Mar. 19	127	1236
Medicine for indigestion, &c	Fahrig Metal Company	25,220	Mar. 19	127	1239
Metals. Antifriction bearing	A. E. Little	24,753	Mar. 19	127	1238
Milk, cream, and butter	Southern Cotton Oil Company	25,393-400	Mar. 19	127	1242-4
Oils. Cotton-seed	L. Sonneborn Sons	25,482	Mar. 19	127	1245
Paint	S. H. French & Co	23,102	Mar. 19	127	1235
Paints, stains, and colors	S. H. French & Co	23,099	Mar. 19	127	1235
Paints, stains, varnishes, enamels, &c	S. H. French & Co	25,315	Mar. 19	127	1242
Paints, varnishes, stains, fillers, &c	Ball Chemical Co	25,300	Mar. 19	127	1242
Paper and envelops. Writing	Z. & W. M. Crane	25,327	Mar. 19	127	1243
Paper bags, paper, and paper-boards	Union Bag & Paper Company	20,557	Mar. 19	127	1233
Percales	Rice, Stix Dry Goods Company	24,777	Mar. 19	127	1238
Perfumery, toilet water, face-powder, &c	Frederick Stearns & Co	21,665	Mar. 19	127	1234
Pianos	C. A. Ahlstrom				

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Pitch. Coal-tar	Barrett Manufacturing Company.	35,139	Mar. 19	127	1240
Plants and cut flowers	A. T. Lovell & Company	35,246	Mar. 19	127	1241
Powder. Tooth-	L. E. Pfleghardt	35,232	Mar. 19	127	1241
Preparation for the treatment of throat and lung diseases	L. M. Green	35,228	Mar. 19	127	1240
Preparation for treatment of disorders of the kidneys	C. H. Evans	34,882	Mar. 19	127	1239
Ranges, stoves, heaters, &c. Gas	American Stove Company	34,883	Mar. 19	127	1239
Razors, knives, scissors, and shears	M. Klaus	35,204	Mar. 19	127	1240
Razors, pocket-knives, scissors, files, &c	Rodgers, Rish & Co	34,851	Mar. 19	127	1239
Refrigerators and ice-boxes	American Stove Company	34,873	Mar. 19	127	1239
Remedies for constipation, biliousness, jaundice, &c	Pure Drug Company	21,689	Mar. 19	127	1239
Remedy for the treatment of the hair and scalp	G. F. Smith	35,243	Mar. 19	127	1241
Roofing and wall-covering. Stamped metal	Certright Metal Roofing Company.	35,230	Mar. 19	127	1240
Rubber belting and hose	E. T. Jefferson	35,151	Mar. 19	127	1240
Rubber heels for boots and shoes	Pneumatic Cushion Rubber Heel Company.	35,273	Mar. 19	127	1241
Rugs and carpets	Friss Hanley Co	34,887	Mar. 19	127	1239
Sad-irons	H. Wenderlich	35,170	Mar. 19	127	1240
Sash-fasteners	H. B. Ives Company	12,620	Mar. 19	127	1235
Sheetings, shirtings, drills, &c	China & Japan Trading Company.	34,892	Mar. 19	127	1239
Sheetings, shirtings, drills, &c	China & Japan Trading Company.	34,891	Mar. 19	127	1239
Shirtings, cambrics, and long-cloth	G. Willis & Co	12,703	Mar. 19	127	1235
Shoe-polish paste	F. F. Dalley Co. of Hamilton	5,660	Mar. 19	127	1231
Shoes. Leather	Broadwalk Shoe Company	35,264	Mar. 19	127	1241
Shoes. Leather	Peters Shoe Co	35,260	Mar. 19	127	1241
Sizes. Starch	Arabol M'f'g Co	34,816	Mar. 19	127	1238
Soap and soap powders	Zarnitz Brothers Grocery Company.	34,880	Mar. 19	127	1239
Soap. Medicated	Ichthyol Gesellschaft Cordes, Hermanni & Co.	34,949	Mar. 19	127	1240
Soda. Bicarbonate of	Cttizens' Wholesale Supply Co	34,957	Mar. 19	127	1240
Spices and mustard	K K K Medicine Company	60	Mar. 19	127	1231
Springs. Cushion-	Ventilated Cushion & Spring Company.	35,220	Mar. 19	127	1240
Stamps. Trading-	Diamond Trading Stamp Company.	35,139	Mar. 19	127	1241
Stove-polish	H. C. Bombard	35,260	Mar. 19	127	1241
Sweetmeat or confection	Gordon, Wolf and Co	34,611	Mar. 19	127	1236
Tanning. Chemical mixtures for	Vacuum Oil Company	34,872	Mar. 19	127	1239
Telephones	Wire & Telephone Co. of America	34,826	Mar. 19	127	1240
Thread and spool-cotton	American Thread Company	35,257-9	Mar. 19	127	1241
Ties. Ladies' string-	W. Trevor	35,213	Mar. 19	127	1240
Tires. Pneumatic bicycle-	Fisk Rubber Co	34,886	Mar. 19	127	1239
Turbine rotors and shafting and twyers	Continental Iron Works	34,709	Mar. 19	127	1237
Type-writer ribbons. Cloth for the manufacture of	H. Hilker	34,988	Mar. 19	127	1239
Water and flavored soda-water. Spring-	C. C. Burrill	35,738	Mar. 19	127	1239
Waters, ginger-ale, root-beer, &c. Mineral	Blue Ribbon Mining, Milling, and Investment Co.	35,000	Mar. 19	127	1239
Waters. Mineral, medicinal, and distilled	Chicago Consolidated Bot Co	15,908	Mar. 19	127	1233
Waters, seltzer, and ginger-ale. Mineral and lithia	Ohio Bottling Co	10,673	Mar. 19	127	1233
Waxes, coating-oils, &c. Floor and linoleum	Vacuum Oil Company	34,867	Mar. 19	127	1239
Whisky	A. Schwabacher	34,980	Mar. 19	127	1239
Whisky	Rock Spring Distilling Co	35,247	Mar. 19	127	1241
Wine. Bitter	M. Kolasca	35,246	Mar. 19	127	1241
Wire	Wire & Telephone Co. of America	35,227	Mar. 19	127	1241

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 26TH DAY OF MARCH, 1907.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
A. W. Benson Manufacturing Company. (See Benson, Adolph W., assignor.)						
Abbott, George O. (See Westerfield and Abbott.)	848,525	Mar. 26	5616	1226	127	1501
Abbott, Hale V. and N. W. Lawton, Mich. Harrow						
Abbott, Nathan W. (See Abbott, Hale V. and N. W.)	848,424	Mar. 26	5426	1185	127	1458
Abbott, Amzen G., Washington, D. C. Smoking-pipe	847,906	Mar. 26	4640	1014	127	1281
Acton, John S., et al. (See Cooper, James M., assignor.)						
Agnell, Ernest G., Chanute, Kans. Tailor's measuring-wheel						
Ainley, William T. (See Nichols, George H., assignor.)						
Artificial Sugar Separator. (See Langestrom, Birger, assignor.)	848,584	Mar. 26	5731	1263	127	1530
Albin, Jeremiah W., and D. C. Huletta, Babylon, N. Y. Clasp	848,220	Mar. 26	5012	1098	127	1355
Albinson, James H. Washington, D. C. Hot-air heater	848,082	Mar. 26	4784	1043	127	1296
Alexander, Julius, Sendal, Germany. Multitubular-boiler-cleaning device	848,595	Mar. 26	5732	1264	127	1331
Allyn, William E., Peoneo, Ind. Wire-fence stay						
American Car & Foundry Company. (See Brown, Thomas R., assignor.)						
American Linking Company et al. (See Casebolt, Charles H., assignor.)						
American Steel & Wire Company. (See Backlin, Axel F., assignor.)						
American Stove Company. (See Blackford, Atwell J., assignor.)						
American Thread Company. (See Cook, Richard H., assignor.)	848,425	Mar. 26	5437	1185-6	127	1458
Andersen, Leuritz, Quincy, Ill. Carburetor for gasolene-engines						
Armour & Company. (See Smith, Carlton L., assignor.)						
Armstrong, James T., and A. Orling, London, England. Electrocapillary detector and recording apparatus	848,083	Mar. 26	4786	1044	127	1296
Arney, John W., Menominee, Mich. Combination merry-go-round and teeter	847,907	Mar. 26	4652	1014	127	1282
Ashley, Burton J., Chicago, Ill. Apparatus for sewage disposal	848,379	Mar. 26	5141	1121-2	127	1357
Aultman & Taylor Mach. Company. (See Harrold, Amos, assignor.)						
Avett, Pinkale B. (See Ellis and Avett.)						
B. F. Sturtevant Company. (See Freeman, Ernest B., assignor.)						
Backlin, Axel F., assignor to American Steel & Wire Company, Worcester, Mass. Wire-fence machine	848,526	Mar. 26	5617	1226-9	127	1502
Backus, Henry N., Detroit, Mich. Delivery-crate	848,336	Mar. 26	5266	1146	127	1417
Bacon, Isaac H., and H. Nelson, Salem, N. J., assignors to Salem Glass Works. Burner-block as applicable to furnaces	848,426	Mar. 26	5441	1186	127	1459
Bailey, Charles L., Morris, Ind. Tar. Heat-designer	848,527	Mar. 26	5619	1220	127	1502
Bailey, Cyrus, Chicago, Ill. Manufacture of	848,337	Mar. 26	5267	1146	127	1417
Baker, Alonzo, Gregory, Tex. Stock-car	847,908	Mar. 26	4653	1014	127	1282
Barclay, John C., New York, N. Y. Telegraphy	848,221	Mar. 26	5013	1099	127	1354
Barlow, Caselius C., Oakland, Cal. Oyster	848,528	Mar. 26	5620	1220	127	1502
Barnes, James H., Baltimore, Md. Non-refillable bottle	848,532	Mar. 26	5621	1220	127	1502
Barnes, Joshua D., Springfield, Ill., assignor to Davis Locomotive Wheel Company, St. Louis, Mo. Locomotive buffer-beam	848,427	Mar. 26	5442	1186	127	1459
Barnett, Hayman, Atlanta, Ga. Thimble	848,530	Mar. 26	5623	1220	127	1502
Barrett, Michael F. (See Smith, William H., assignor.)						
Baughn, Samuel C., Bertrand, assignor of one-half to H. L. Finley, Charleston, Mo. Quilting-frame	847,999	Mar. 26	4655	1014	127	1283
Baur, John C., St. Louis, Mo. Pencil	848,531	Mar. 26	5622	1221	127	1355
Bauhar, Thomas D., Reading, Pa. Fire-kindler	848,180	Mar. 26	4803		127	1281
Beaudry, Rodrigue, Lynn, Mass. Tool for trimming the edges of soles and heels for boots and shoes	848,000	Mar. 26	4656	1015	127	1283
Beck, Carrie L., executrix. (See Beck, Warren F.) (Reissue.)						
Beck, Warren F., deceased; C. L. Beck, Elmira, N. Y., executrix. Manifolding-pad and holder. (Reissue)	12,624	Mar. 26	5816	1267	127	1351
Becker, Anton, Columbus, assignor, by mesne assignments, to Ralston Steel Car Company, East Columbus, Ohio. Dumping mechanism for metallic cars. (Reissue)	12,622	Mar. 26	5812	1267	127	1349
Beckwith, Frank A., Evanston, Wyo., assignor of one-third to R. Dumbeck, Salt Lake City, Utah. Automatic temperature-regulator	848,280	Mar. 26	5146	1123-3	127	1298
Bedell, Richard H., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	848,338	Mar. 26	5268	1146	127	1417
Belanger, John D., Chicago, Ill. Oil-can trimmer	848,429	Mar. 26	5443	1186-7	127	1459
Bender, John, et al. (See Leichter, Edward, assignor.)						
Benson, Adolph W., assignor to A. W. Benson Manufacturing Company, Minneapolis, Minn. Lumber-cart	848,339	Mar. 26	5269	1149	127	1445
Bensen, Alexander T. (See Phillips, Elwood C., assignor.)						
Benson, John F. (See Hadley, William S., assignor.)						
Benton, John W., Belanger, Ky. Vehicle running-gear	848,261	Mar. 26	5142	1138	127	1399
Benton, Henry, Lackawanna, N. Y. Moistening air	848,340	Mar. 26	5271	1149	127	1445
Benton, Henry, Lackawanna, N. Y. Apparatus for moistening air	848,341	Mar. 26	5272	1149-50	127	1445
Benton, Wilbur T., and M. F. Capron, Elyria, Ohio. Type-cleaning device	848,151	Mar. 26	4802	1068	127	1355
Berg, Emil. (See Berg, Estelle, assignor.)						
Berg, Estelle, assignor of one-half to E. Berg, Cleveland, Ohio. Educational game	848,282	Mar. 26	5154	1138	127	1399
Berg, Estelle, assignor of one-half to E. Berg, Cleveland, Ohio. Head-rest for barber and other chairs	848,601	Mar. 26	4658	1015	127	1284
Berkowitz, Simon, Cincinnati, Ohio. Combination check-book	848,429	Mar. 26	5447	1187	127	1461
Berry, Hart H., New York, N. Y. Combination check-book	848,222	Mar. 26	5016	1099	127	1354
Bertolet, Reinhard. (See Goodspeed and Bertolet.)						
Beum, Stephen D., Columbus, Ohio. Farm-gate						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Biffar, Fred. (See Reimers, Dycke H., assignor.)						
Bim, Josef, assignor to Union Bank, Vienna, Austria-Hungary. Shuttle-box for looms	848,690	Mar. 26	4661	1015	127	1264
Binsfeld, Jules A., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y. Switching device	848,508	Mar. 26	5166	1124	127	1389
Blackford, Atwell J., Cleveland, Ohio, assignor to American Stove Company, St. Louis, Mo. Oil-burner	848,559	Mar. 26	5723	1254	127	1531
Bidlesake, John R., Jr., Cleveland, Ohio. Metal-working apparatus	848,204	Mar. 26	5169	1124	127	1389
Blank, John H., Chicago, Ill. Hen's nest	848,659	Mar. 26	5449	1167	127	1461
Blaxter, George H., Beaver, assignor to Pittsburgh Seamless Tube Company, Beaver Falls, Pa. Blank-support for tube-mills	848,205	Mar. 26	5162	1124	127	1391
Blessing, Frank C., *et al.* (See McCann, Lee, assignor.)						
Blumberg, Moses, St. Louis, Mo. Display-box	848,451	Mar. 26	5469	1186	127	1461
Bohannon, Charley R. (See Carr and Bohannon.)						
Bond, Eaton D., Mercer, Tenn. Horse hay-rake	848,322	Mar. 26	5324	1231	127	1324
Bonom, Alfred, New York, N. Y. Steam-turbine	848,488	Mar. 26	5451	1158	127	1462
Booth, Thomas C., New York, N. Y. Closure for bottles and the like	848,132	Mar. 26	5324	1093	127	1333
Bossuet, Emile M., Paris, France. Mixed whalebone for bodices	848,623	Mar. 26	5454	1186	127	1462
Bostrom, Axel G. (See Holmes and Bostrom.)						
Bostrom, John M. (See Holmes and Bostrom.)						
Bostwick, Edwin G., Kalamazoo, Mich. Piston-rod packing	848,332	Mar. 26	7827	1232	127	1324
Bouchard, Jean B., North Grosvenor Dale, Conn. Pallet-setting implement	848,654	Mar. 26	6788	1044	127	1396
Bowen, Edward A. (See Ellis and Bowen.)						
Bowen, Marion. (See Garland, Proudfoot, and Bowen.)						
Bowman, Lucien W., assignor of one-half to J. H. Lewis, Reading, Pa. Electrical blasting-machine	848,153	Mar. 26	5166	1093	127	1333
Boyer, Allen P., Goshen, Ind. Swing	848,214	Mar. 26	5239	1232	127	1325
Bradley, Louis F., Washington, D. C. Cigar-moistener	848,494	Mar. 26	5455	1159	127	1462
Braunschweig, Fred W., Watertown, Wis. Screw	848,655	Mar. 26	5453	1186	127	1461
Breeam, Berthine, Taylor, N. D. Wagon end-gate rod	848,644	Mar. 26	5466	1046	127	1398
Bremsinger, Julius, assignor to Max Ams Machine Company, Mount Vernon, N. Y. Heading sheet-metal cans	848,632	Mar. 26	5454	1096	127	1335
Brewer, Horatio J., New York, N. Y. Spring-clamp for electric terminal wires	848,535	Mar. 26	4769	1044-5	127	1396
Brill, John A. (See Pickles, Charles K., assignor.)						
Brooks, Edward J., East Orange, N. J. Bung-tin	848,246	Mar. 26	5277	1159	127	1462
Brooks, Henry F. L., Sheldon, Iowa. Foot-rest	848,495	Mar. 26	5469	1159	127	1462
Brown, Edgar, New York, and J. W. T. Duvel, Ohio. Apparatus for the rapid determination of the moisture-content of grain	848,616	Mar. 26	5716	1253	127	1532
Brown, Harry M., and H. M. Dahl, El Campo, Tex. Blower and suction device	848,542	Mar. 26	5273	1159	127	1462
Brown, Mae, Nampa, Idaho. Mattress	848,427	Mar. 26	5463	1159	127	1462
Brown, Miller, Richmond, Mo. Combined lister, planter, and roller	848,134	Mar. 26	4997	1093-9	127	1333
Brown, Roy W., Amsterdam, N. Y. Electric controller	848,696	Mar. 26	4666	1016-17	127	1395
Brown, Thomas R., New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo. Tank-car	848,206	Mar. 26	5163	1125	127	1392
Brown, William H., Pittsburg, Pa. Rolling-mill	848,488	Mar. 26	5459	1159	127	1464
Browning, Victor R., Nottingham Ohio. Hoisting apparatus	848,267	Mar. 26	5165	1126	127	1392
Brunswick Refrigerating Company. (See Whitaker, Richard, assignor.)						
Brusseau, Fred A., Springfield, Mass. Clamp for base-ball covers	848,667	Mar. 26	4667	1017	127	1396
Bryant, William A., assignor of one-fourth to T. W. Rouse, Wetumpka, Ala. Reinforced concrete cross-tie	848,185	Mar. 26	4999	1069	127	1333
Buchanan, Benjamin G., Ashland, Wis. Rail-joint	848,168	Mar. 26	4981	1069	127	1334
Buchner, Max, Mannheim-Waldhof, Germany. Treatment of corundum	848,439	Mar. 26	5459		127	1464
Budde & Westermann. (See Müller and Zipprich, assignors.)						
Buhse, Alexander F. (See Buhse, Maximilian E., W. W., H. L., and A. F.)						
Buhse, Henry L. (See Buhse, Maximilian E., W. W., H. L., and A. F.)						
Buhse, Maximilian E., W. W., H. L., and A. F., Minneapolis, Minn. Candy-wrapping machine	848,244	Mar. 26	5270	1161-3	127	1459
Buhse, Walter W. (See Buhse, Maximilian E., W. W., H. L., and A. F.)						
Burroughs, Charles S., *et al.* (See Leavitt, John M., assignor.)						
Burton, George F., Woodlawn, Ala. Rotary engine	848,449	Mar. 26	5461	1159-2	127	1464
Busbee, Frank J., Mobile, Ala. Flat-car stanchion	848,093	Mar. 26	4788	1045	127	1397
Bussell, Ernest L., Lynn, Mass. Nail-polisher	848,345	Mar. 26	5324	1163	127	1459
Cabell, Charles A., Carbon, W. Va. Check-lock for mining-cars	848,441	Mar. 26	5459	1159	127	1467
Calder, John W., Parnassus, Pa. Metallic rail-tie and fastener therefor	848,346	Mar. 26	5325	1163	127	1459
Caldwell, Samuel H., *et al.* (See Martin, Ivison B., assignor.)						
Caldwell, William T., assignor to himself and A. J. Lepper, Edgar, Nebr. Corn-husker	848,696	Mar. 26	4669	1017	127	1396
Callan, John G., and H. J. Hanslik, Lynn, Mass., assignors to General Electric Company. Elastic-fluid turbine	848,137	Mar. 26	4992	1070	127	1335
Campbell, J. C., *et al.* (See Leichter, Edward, assignor.)						
Campbell, Willard B., Jackson, Mich. Elbow pipe-joint	848,220	Mar. 26	5017	1097	127	1364
Capron, Marshall F. (See Beentz and Capron.)						
Carman, Stanley E., *et al.* (See Sills, Berton H., assignor.)						
Carr, James B., and F. M. Schmitt, Portland, Oreg. Oblique feeding attachment for sewing-machines	848,189	Mar. 26	4994	1070	127	1335
Carr, Matt C., and C. R. Bohannon, Easy Gap, Ky. Traction wheel and rail	848,446	Mar. 26	5470	1160	127	1467
Caseboit, Charles H., Columbus, Miss., assignor to Grant Bros. Company, Memphis, Tenn., and American Linting Company. Delinting cotton-seed linters	848,611	Mar. 26	5698	1254	127	1548
Cass, James A., Syracuse, N. Y. Automatic sprinkler-head	848,247	Mar. 26	5227	1154	127	1421
Cast Steel Platform Company. (See Howard, Clarence H., assignor.)						
Castle, Lewis D., Barberton, Ohio, assignor to Pittsburgh Valve & Fittings Company, Pittsburg, Pa. Gate-valve	848,680	Mar. 26	4668	1018	127	1396
Christensen, Hjalmar, Seattle, Wash. Sign	848,288	Mar. 26	5166	1126	127	1393
Christoph Heims & Sohn Gesellschaft mit beschränkter Haftung. (See Homeyer, Christian H., assignor.)						
Church, Edwin B., Sattley, Cal. Potato-digger	848,249	Mar. 26	5230	1154	127	1421
Clark, Robert G., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	848,249	Mar. 26	5230	1154	127	1422
Clemm, Adolf, Mannheim, Germany. Manufacture of alumina and alkali sulfur salts	848,612	Mar. 26	5698		127	1548
Clough, Edwin S., Seattle, Wash. Adjustable bearing	848,284	Mar. 26	5269	1097	127	1455
Coker, David H., Piedmont, Ala. Annunciator	848,288	Mar. 26	5271	1253	127	1505
Cole, William, St. Louis, Mo. Attachment for burial-caskets	848,289	Mar. 26	5270	1126	127	1393
Collins, Jesse D., Chicago, Ill. Refrigerator tub or bucket	848,290	Mar. 26	5271	1127	127	1394
Colton, Roste E., assignor of one-half to J. L. Lyman, Easthampton, Mass. Lathe tool-holder	848,010	Mar. 26	4670	1046	127	1396
Conger, William S., *et al.* (See Silis, Berton H., assignor.)						
Conklin, L. A. (See Wilson, Curtis S., assignor.)						
Conner, George F. (See Tolton and Conner.)						
Connor, Michael E., *et al.* (See Casper, James M., assignor.)						
Conolly, John J., and J. Herron. Marquette, Mich. Machine for setting locomotive-valves	848,011	Mar. 26	4671	1046	127	1397
Conrath, Frederick, St. Paul, Minn. Lamp-jack	848,443	Mar. 26	5471	1160-2	127	1468

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Consolidated Car Heating Company. (See Hawley, Green, Fulton, and McElroy, assignors.)						
Cook, Richard H., Fall River, Mass., assignor to American Thread Company, New York, N. Y. Stop-motion for bobbins	848,012	Mar. 26	4673	1019	127	1267
Cook, Richard H., Fall River, Mass., assignor to American Thread Company, New York, N. Y. Stop-motion for bobbins	848,013	Mar. 26	4674	1019	127	1268
Corey, Franklin A., Santa Paula, Cal. Fruit-cleaning apparatus	848,380	Mar. 26	5296	1155	127	1462
Cooper, James M., Assignor of two-thirds to J. S. Aston, Brighton, Ala., and M. E. Connor, Milwaukee, Wis. Balanced valve for engines	848,536	Mar. 26	5622	1233	127	1396
Cotton, Charles E., assignor of one-half to L. G. Van Liew, Bellaire, Mich. Hydrant or fire-plug	848,014	Mar. 26	4676	1019	127	1268
Coughlin, William L., Binghamton, N. Y. Discharging-door for dumping-cars and other receptacles	848,189	Mar. 26	4996	1071-2	127	1336
Coulas, William W., Hadley, Pa. Gas-burner	848,444	Mar. 26	5474	1193	127	1468
Crocker Bleaching Company. (See Crocker, William W., assignor.)						
Crocker, William W., assignor to Crocker Bleaching Company, Lynn, Mass. Leather-finishing composition and method of using the same	848,445	Mar. 26	5474		127	1468
Crowell, Gilmer, deceased, Brooklyn, N. Y.; J. H. Crowell, executrix. Lubricating system	848,446	Mar. 26	5476	1193	127	1469
Crowell, Jane H., executrix. (See Crowell, Gilmer.)	848,087	Mar. 26	4793	1045	127	1397
Crowley, James, Grand Rapids, Mich. Crossing-signal for railways						
Cruver M'f'g. Co. (See Featherston, Solomon B., assignor.)						
Cunningham, Clarence O. (See McCord and Cunningham.)						
Dahl, Harry M. (See Brown and Dahl.)	848,257	Mar. 26	5720	1254	127	1532
Dake, Charles W., Grand Rapids, Mich. Elastic-fluid turbine	848,598	Mar. 26	5740	1255-6	127	1538
Dake, Charles W., Grand Rapids, Mich. Elastic-fluid turbine	848,160	Mar. 26	4909	1072	127	1337
Dampman, David E., Reading, Pa. Floor-scraper	848,537	Mar. 26	5634	1233	127	1396
Davis, Charles C., Philadelphia, Pa. Reinforced tile or slab						
Davis, Lemuel W., Wheel Company. (See Barnes, Joshua B., assignor.)	848,391	Mar. 26	5173	1127	127	1394
Davis, Spencer R., Minneapolis, Minn. Bumper for disk drills						
Davis, Walter S. (See Fitch, Charles, assignor.)	848,447	Mar. 26	5479	1194	127	1470
Dawe, William H., Huddersfield, England. Valve mechanism for rotary engines						
Dawson, Charles B., Indianapolis, assignor to A. W. Fisher, South Bend, Ind. Automatic speed-controlled circuit-closer for electric generators	848,282	Mar. 26	5173	1127	127	1394
De Grandchamp, Ferdinand F., Mount Bethel, Pa. Game apparatus	848,168	Mar. 26	4919	1074	127	1339
De Montford, C. E., (See Volstad and Mannhand, assignors.)	848,351	Mar. 26	5295	1155	127	1462
De Walt, William T., Homestead borough, Pa. Base-ball-game board						
Dean, William W., assignor to Western Electric Company, Chicago, Ill. Telephone-toll-line system	848,448	Mar. 26	5481	1194	127	1470
Delaware Machine Works. (See Seymour, Charles, assignor.)	848,449	Mar. 26	5487	1195	127	1471
Dakin, DeRoy, McRae, Ga. Watchman's tool	848,450	Mar. 26	5488	1195-6	127	1471
Dalen, Edward C., Reading Spring, Pa. Fish cutting and dressing machine	848,536	Mar. 26	5635	1234	127	1536
Dansey, James H., Portland, Ind. Vault-cover mold	848,203	Mar. 26	5175	1127-9	127	1394
Dauvillier, Albert, Paris, France. System for operating switch-points and signals	848,085	Mar. 26	4794	1046	127	1398
Davenport, Joseph A., Montreal, Quebec, Canada. Faucet						
Day, Alexander. (See Day, John and A.)	848,284	Mar. 26	5179	1129	127	1396
Day, John, Syracuse, N. Y., and A. Day, Glasgow, Scotland, assignors to Day Time Register Company, Syracuse, N. Y. Ribbon mechanism for time-recorders, &c.	848,451	Mar. 26	5491	1196	127	1473
Day Time Register Company. (See Day, John and A., assignors.)						
Dierickx, Joseph, Ouale, Belgium. Sliding-door fastener	848,161	Mar. 26	4909	1072	127	1337
Dierig, Hermann M., Dayton, Ky., assignor to J. G. Matthews, Three Rivers, Mich. Manufacturing metal-working tools	848,015	Mar. 26	4677	1019	127	1268
Dilworth, Frederick S., Welland, Ontario, Canada. Toilet-powder sifter	848,530	Mar. 26	5626	1234	127	1536
Dinkel, Edward S., Bridgewater, Va. Window-shade roller						
Donnell, Martin J. O. (See Duggan, Thomas J., assignor.)	848,016	Mar. 26	4678	1020	127	1269
Donnell, Martin J. O. (See Duggan, Thomas J., assignor.)	848,089	Mar. 26	4795	1046	127	1398
Donnesworth, Joseph R., Leicester, Alberta, Canada. Electric alarm						
Dotson, George R., Kibert, Colo. Beet-harvesting device	848,090	Mar. 26	4796	1046-7	127	1398
Doty, Walter G., assignor to Hydaw Manufacturing Company, Dayton, Ohio. Computing chronometer	848,226	Mar. 26	5021	1097-8	127	1364
Duell, James, Butte, Mont. Timber-framing machine	848,228	Mar. 26	5023	1098	127	1364
Duell, James, Butte, Mont. Chuck for timber-framing machines	848,227	Mar. 26	5024	1098-9	127	1365
Dumble, Robert M., assignor to Keystone Driller Co., Beaver Falls, Pa. Core-drill						
Dunmire, Robert, and W. C. Lieberknecht, New York, N. Y.; said Lieberknecht assignor to said Dunmire. Type-casting machine	848,352	Mar. 26	5287	1155-6	127	1428
Dupuis, James M., Bagwell, Tex. Animal-trap	848,295	Mar. 26	5182	1129	127	1396
Dutcher, Frederick, assignor to M. J. O. Donnell, Cleveland, Ohio. Can-making machine	848,296	Mar. 26	5185	1130-2	127	1396
Dutton, Thomas F., assignor to Beakwitch, Frank A., assignor.)	848,091	Mar. 26	4802	1047	127	1399
Dunbar, Rudolph, Sterling, Ill. Concrete-building-block machine						
Dunmore, George W. (See Brown and Duvel.)						
Duvel, Joseph W. T. (See Brown and Duvel.)	848,540	Mar. 26	5637	1234-5	127	1537
E. H. Hunnicutt Company. (See Flannery, Michael A., assignor.)	848,017	Mar. 26	4679	1020	127	1269
Early, James M., Indiana, Pa. Purchaser and lime distributer	848,092	Mar. 26	4804	1048	127	1399
Ebner, Peter, Columbus, Ohio. Vehicle-rim	848,452	Mar. 26	5492	1196	127	1472
Eddy, Albert P., Boston, Mass. Sea-sounding	848,541	Mar. 26	5639	1235	127	1537
Ellis, Edward S., and F. E. Avest, Alta Pass, Ill. Washing-machine	848,353	Mar. 26	5289	1156-7	127	1428
Ellis, Marion, and E. A. Bowen, Huntington, W. Va. Nut-lock	848,453	Mar. 26	5493	1196	127	1472
Elmer, William, Jr., Altoona, Pa. Drop-table						
Emerson, Fred L., Denver, Colo. Elevator-rope clamp	848,098	Mar. 26	4805	1048	127	1399
Emmett, William L. R., Schenectady, N. Y., assignor to General Electric Company. Governing mechanism for turbines						
Empire Ventilating Company. (See Garland, Proudfoot, and Bowen, assignors.)	848,018	Mar. 26	4680	1020	127	1269
Empire Wire Company. (See Mathias and Murray, assignors.)						
Engelhardt, Stephen A., Columbus, Ohio. Meat-broiler	848,254	Mar. 26	5302		127	1424
Engi, Gottlieb, assignor to Society of Chemical Industry in Basle, Basel, Switzerland. Red-violet wool dye and making same	848,255	Mar. 26	5303		127	1424
Engi, Gottlieb, assignor to Society of Chemical Industry in Basle, Basel, Switzerland. Red-violet wool dye and making same	848,256	Mar. 26	5304		127	1424
Engi, Gottlieb, assignor to Society of Chemical Industry in Basle, Basel, Switzerland. Red-violet to blue wool dyes and making same	848,207	Mar. 26	5189	1132	127	1397
Engstrand, John, Minneapolis, Minn. Means for retarding the movements of vessels	848,208	Mar. 26	5191	1133	127	1398
Ennis, William P., U. S. Army. Station-indicator	848,019	Mar. 26	4681	1020-1	127	1269
Enos, Stevenson F., assignor of one-half to J. J. Hoag, Mattoon, Ill. Geographical locator	848,162	Mar. 26	4911	1072-3	127	1337
Esrig, Reuben, Los Angeles, Cal. Universal joint for pipes	848,228	Mar. 26	5028	1099	127	1367
Esterly, Eugene, Washington, D. C. Cooler for beer or other beverages	848,163	Mar. 26	4912	1073	127	1338
Ettel, Johann, Bozen, Austria-Hungary. Electric heating						
Evelund, Samuel G., Philadelphia, Pa. Cooler for beer or other beverages	848,454	Mar. 26	5495	1197	127	1473
Faucher, Christopher, assignor of one-half to N. H. Fancher and D. Landrum, McCool, Miss. Corn-sprouting						
Faucher, Noah H., *et al.* (See Faucher, Christopher, assignor.)	848,229	Mar. 26	5029	1099	127	1368
Farbenfabriken vorm. Friedr. Bayer & Co. (See Fischer, Emil, assignor.)						
Farley, Hugh, Washington, D. C. Closet-seat						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Featherstone Foundry & Machine Company. (See Gee, Harold, assignor.)						
Feeny, James J., Saltville, Va. Railway-rail joint	848,455	Mar. 26	5486	1197	127	1473
Fehrenbacher, Anton A., assignor of one-half to C. H. Smith, Condon, Oreg. Rotary weed-cutter and cultivator	848,513	Mar. 26	5504	1364-5	127	1510
Feld, Charles, North Attleboro, Mass. Making chains	848,290	Mar. 26	5189	1133	127	1363
Feldmann, Herman. (See Platt, Edward T., assignor.)						
Ferlin, George H., San Diego, Cal. Composition of matter	848,694	Mar. 26	5683	1049	127	1511
Ferris, Alonzo K., New York, N. Y. Playing-cards	848,542	Mar. 26	5640	1236	127	1511
Feuerstein, Solomon B., assignor to Cruver M'f'g. Co., Chicago, Ill. Frame and handle structure	848,699	Mar. 26	5693	1021	127	1570
Feval, Leon, Newark, N. J., assignor, by mesne assignments, to Guardian Trust Company of New York, trustee. Leather and making the same	848,267	Mar. 26	5625	.....	127	1511
Fickett, Walter, Portland, Me. Store-ladder	848,521	Mar. 26	5685	1031	127	1570
Finley, Henry L. (See Baughn, Samuel C., assignor.)						
Firsching, Joseph A., assignor to Johnston Novelty & Mill Specialty Company, Utica, N. Y. Machine for cutting and winding cutlaries	848,614	Mar. 26	5695	1246	127	1540
Fischer, Emil, Berlin, assignor to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Bromin derivative of fatty acids	848,280	Mar. 26	5630	.....	127	1512
Fish, Harry P., Youngstown, Ohio. Hot-air furnace	848,548	Mar. 26	5642	1236	127	1512
Fisher, Artemus W. (See Dawson, Charles E., assignor.)						
Fiske, G. Walter, *et al.* (See Geiger, Charles E., assignor.)						
Fitzberger, Thomas F., Jr. (See Grace, Harry E., assignor.)						
Flannery, Michael A., Newport, Ky., assignor to E. H. Huenefeld Company, Cincinnati, Ohio. Stovepipe	848,164	Mar. 26	4913	1073	127	1328
Flynn, John K., Duluth, Minn. Grapple	848,221	Mar. 26	5002	1089	127	1363
Foltz, Albert Y., Salem, Ohio. Belt stretcher and tightener	848,220	Mar. 26	5196	1133	127	1363
Forrester, Peter C., Tacoma, Wash. Lime-hydrating machine	848,288	Mar. 26	5228	1187	127	1405
Forsythe, Jesse H., Washington, Pa. Indicating mechanism	848,222	Mar. 26	5202	1160	127	1363
Forter Miller Engineering Company. (See Miller, William R., assignor.)						
Forth, Charles, Boston, assignor to W. S. Davis, Malden, Mass. Vending-machine	848,289	Mar. 26	5747	1264	127	1553
Foster, Bertram G., Washington, D. C., assignor to Long Furniture Co., Hanover, Pa. Extension-table	848,226	Mar. 26	5204	1159-1	127	1389
Frayer, Lee A., and W. J. Miller, assignors to Oscar Lear Automobile Company, Columbus, Ohio. Fender for vehicles	848,622	Mar. 26	5696	1082	127	1570
Frederiksen, Anton, Copenhagen, Denmark. Bottle-forming apparatus	848,695	Mar. 26	5695	1049	127	1561
Freeman, Ernest B., Dedham, assignor to B. F. Sturtevant Company, Boston, Mass. Expansion-coupling	848,324	Mar. 26	5230	1161	127	1389
Fripp, Isaac, assignor to J. Watt, Catford, England. Means for effecting escape of occupants from sunken vessels	848,615	Mar. 26	5205	1266-6	127	1540
Fritschka, Leo, and C. Koch, Chicago, Ill. Power-transmission device	848,690	Mar. 26	5690	1049	127	1561
Fryckberg, William F., assignor of one-half to T. P. Lowry, Philadelphia, Pa. Non-refillable bottle	848,105	Mar. 26	4915	1073	127	1328
Frye, Alburney W., Newark, and F. S. Green, Irvington, N. J. Trace-fastener	848,240	Mar. 26	5210	1160	127	1405
Fuller, George E., South Hanson, assignor to F. H. Poole, Brockton, Mass. Long-tooth finder for cutters for edge-trimming machines for boots and shoes	848,097	Mar. 26	4911	1060	127	1363
Fuller, M Z L, Akron, Ohio. Self-filling fountain-pen	848,628	Mar. 26	5698	1022	127	1571
Fulton, William H. (See Hawley, Green, Fulton, and McElroy.)						
Funk, Henry, Tawas City, Mich. Adjustable platform for tree-sawing devices	848,260	Mar. 26	5211	1168	127	1425
Gagedois, Albert, Don, near Annequillin, France. Production of white pulp	848,261	Mar. 26	5212	.....	127	1425
Gallup, Floyd S., C. Shanahan, F. L. and J. N. Gallup, Hancock, Iowa. Car and railway switch	848,690	Mar. 26	5734	1266-7	127	1530
Gallup, Frederick L. (See Gallup, Shanahan, and Gallup.)						
Gallup, John N. (See Gallup, Shanahan, and Gallup.)						
Gardner, William A. (See Schroyer, Charles A., assignor.)						
Gariand, Charles L., Sydney, G. Proudfoot and M. Bowen, Belmain, near Sydney, assignors to Empire Inventions Company Limited, Sydney, New South Wales, Australia. Fire-escape	848,235	Mar. 26	5041	1161-2	127	1361
Garrecht, Frederick, Idaho City, Idaho. Can-opener	848,456	Mar. 26	5497	1197	127	1473
Gassett, John N., Laurin, Mont. Bomb for coyotes	848,544	Mar. 26	5642	1236	127	1508
Gathmann, Emil, Bethlehem, Pa. Armor-plate	848,694	Mar. 26	5690	1022-8	127	1571
Gee, Harold, Kenilworth, assignor to Featherstone Foundry & Machine Company, Chicago, Ill. Pile-driver	848,098	Mar. 26	4913	1059	127	1328
Gee, Harold, Kenilworth, assignor to Featherstone Foundry & Machine Company, Chicago, Ill. Pile-driving machine	848,106	Mar. 26	4916	1074	127	1329
Geiger, Charles E., assignor to himself, W. E. Koop, and G. W. Fiske, Louisville, Ky. Drier	848,262	Mar. 26	5213	1168	127	1426
General Electric Company. (See Callan and Hanzlik, assignors.)						
General Electric Company. (See Emmet, William L. R., assignor.)						
General Electric Company. (See Junggren, Oscar, assignor.)						
Gilbert, Harris & Company. (See Gilbert, James E., assignor.)						
Gilbert, James E., assignor to Gilbert, Harris & Company, Chicago, Ill. Adjustable cross-bar for printers' chases	848,263	Mar. 26	5215	1168	127	1426
Ginaca, Henry G., Honolulu, Hawaii. Apron-conveyer	848,236	Mar. 26	5042	1102-8	127	1361
Glenn, William H., assignor of one-half to B. Hardie, El Paso, Tex. Display-stand	848,297	Mar. 26	5045	1160-4	127	1362
Gleasner, A. W. (See Scherer, Albert G., assignor.)						
Glidden, Charles C., Birmingham, Ala. Ruling device	848,546	Mar. 26	5643	1236	127	1508
Goddard, Clair E., *et al.* (See Taylor, James M., assignor.)						
Golden, John F., Columbus, Ga. Gearing for cane-mills	848,035	Mar. 26	4993	1088	127	1272
Goodspeed, Arthur B., and B. Beakow, assignors to Industrial Development Company, New York, N. Y. Generating power	848,036	Mar. 26	4994	1088	127	1272
Goodspeed, Arthur B., and B. Beakow, assignors to Industrial Development Company, New York, N. Y. Apparatus for increasing the efficiency of steam-generating power plants	848,027	Mar. 26	4986	1094	127	1273
Gould Coupler Company. (See Richards, Willard F., assignor.)						
Gowan, Allen J., Norwich, Ontario, Canada. Adjustable hanger for electric drop-lights	848,167	Mar. 26	4917	1074	127	1329
Grace, Harry E., assignor of one-half to T. F. Fitzberger, Jr., Baltimore, Md. Boat propulsion	848,457	Mar. 26	5498	1198	127	1473
Grafton, Walter P., Old Charlton, England. Clinical thermometer	848,488	Mar. 26	5499	1198	127	1474
Grant Bros. Company *et al.* (See Casebolt, Charles H., assignor.)						
Grant, Charles E., Allendale, Cal. Chipping-machine	848,489	Mar. 26	5500	1198	127	1474
Grant, Frank, Westfield, Mass. Envelop-machine	848,099	Mar. 26	4913	1059	127	1303
Grapp, Albert E., Minneapolis, Minn. Addressing-machine	848,543	Mar. 26	5644	1236-7	127	1509
Grasberger, Boniface A., Richmond, Va. Clamp-setting machine	848,490	Mar. 26	5497	1198	127	1463
Gray, Banning. (See Myers, William S., assignor.)						
Gray, William L. (See Hadley and Gray.)						
Green, Francis C. (See Hawley, Green, Fulton, and McElroy.)						
Green, Francis S. (See Frye and Green.)						
Green, William, Honolulu, Hawaii. Spool-holder	848,499	Mar. 26	5501	1199	127	1474
Greenawalt, David F., York, Pa. Display-rack	848,109	Mar. 26	4915	1060-1	127	1328

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Greenfield, Edwin T., Kinderhook, N. Y. Metallic hose	848,228	Mar. 26	5048	1104	127	1362
Gregory, Henry R., New York, assignor to W. A. Ker, Brooklyn, N. Y. Thin leaf or fabric	848,201	Mar. 26	5194	.....	127	1389
Griesing, Wilhelm. (See Mädler, Hartung, and Griesing.)						
Grimsrud, Lamas A., Spokane, Wash. Hose-reel	848,239	Mar. 26	5060	1104	127	1363
Groff, John M., North Lawrence, Ohio. End-gate	848,240	Mar. 26	5061	1104	127	1363
Guardian Trust Company of New York, trustee. (See Feval, Leon, assignor.)						
Hadley, Arthur H., and W. L. Gray, Philadelphia, Pa. Clock	848,547	Mar. 26	5647	1237	127	1509
Hadley, William S., San Antonio, assignor of one-fourth to J. H. Benson, Cleburne, Tex. Vehicle-wheel	848,451	Mar. 26	5503	1199	127	1475
Haiman, Elias, and G. W. Murray, assignors to Empire Plow Company, Cleveland, Ohio. Hand-cultivator	848,591	Mar. 26	5705	1257	127	1535
Hale, Henry S., Philadelphia, Pa. Apparatus for supplying food to fish and land animals	848,101	Mar. 26	4918	1051	127	1304
Hamilton, Charles E., Winnipeg, Manitoba, Canada, assignor to Joshua Oldham and Sons, Brooklyn, N. Y. Braiding compound	848,892	Mar. 26	5756	.....	127	1538
Hamilton, James L. E. (See McGahan, George R., assignor.)						
Hansen, Gustav A. (See Krug and Hansen.)						
Hanzlik, Henry J. (See Callan and Hanzlik.)						
Hardesty, Thornton S., Riversville, and S. Stewart, Fairmont, W. Va. Recording water-gage	848,102	Mar. 26	4819	1051	127	1304
Hardie, Bradford. (See Glenn, William H., assignor.)						
Harding, Paul, Long Island City, N. Y. Multiple-beading plane	848,304	Mar. 26	5317	1159	127	1425
Harrigan, John F., Boston, Mass. Stphon	848,305	Mar. 26	5318	1159	127	1427
Harris, William F., South Bend, Ind. Self-locking seal	848,462	Mar. 26	5504	1199	127	1475
Harrold, Amos, assignor to Aultman & Taylor Mach. Company, Mansfield, Ohio. Guide for saws	848,548	Mar. 26	5648	1237	127	1510
Hart, Gerald W., assignor to Hart Manufacturing Co., Hartford, Conn. Electric switch	848,026	Mar. 26	4999	1094	127	1274
Hart Manufacturing Co. (See Hart, Gerald W., assignor.)						
Hartung, Valentin. (See Mädler, Hartung, and Griesing.)						
Harvey, George L., Chicago, Ill. Vehicle-stake	848,103	Mar. 26	4821	1052	127	1304
Harvey, Watson F., Omaha, Nebr. Pocket coin-bank	848,302	Mar. 26	5195	1133	127	1389
Haselwander, Friedrich A., Mannheim, Germany. Internal-combustion engine	848,030	Mar. 26	4999	1094-5	127	1274
Hatfield, Charles B., Rochester, assignor to Hatfield Motor Vehicle Company, Cortland, N. Y. Friction-gearing	848,593	Mar. 26	5706	1267	127	1538
Hatfield Motor Vehicle Company. (See Hatfield, Charles B., assignor.)						
Hawley, Charles G., assignor, by mesne assignments, to United States Flexible Joint Company, Chicago, Ill. Flexible fluid-joint	848,109	Mar. 26	4920	1075	127	1330
Hawley, Cornell S., F. C. Green, New York, W. H. Fulton and J. F. McElroy, assignors to Consolidated Car Heating Company, Albany, N. Y. Gasket and holder therefor	848,540	Mar. 26	5640	1237-8	127	1510
Hayden, Arthur C., Brockton, Mass. Photographic-plate holder	848,241	Mar. 26	5063	1105	127	1363
Head, Benson J., assignor of one-fourth to C. J. Swasey, Fort Worth, Tex. Tobacco-pouch	848,020	Mar. 26	4704	1025	127	1275
Hearn, James W., New Orleans, La. Can and means for venting and closing same	848,463	Mar. 26	5505	1199	127	1476
Heartt, William A., New York, N. Y., assignor to Voigtmann and Company, Chicago, Ill. Window-stop	848,208	Mar. 26	5198	1134	127	1400
Hedstrom, Carl O., Springfield, Mass. Carburetor	848,170	Mar. 26	4923	1075	127	1330
Heins Manufacturing Company. (See Doty, Walter G., assignor.)	848,171	Mar. 26	4925	1076	127	1331
Hemmerling, Josef, Dresden, Germany. Press for moist materials	848,520	Mar. 26	5632	1236	127	1511
Hemstreet, George P., Hastings-upon-Hudson, N. Y., assignor to International Pavement Company, Hartford, Conn. Covering apparatus	848,031	Mar. 26	4705	1025	127	1275
Henniger, Adolf, Berlin, Germany. Pencil	848,104	Mar. 26	4822	1052	127	1305
Herdle, Frederick J., Chicago, Ill. Form-bed for printing-presses	848,032	Mar. 26	4707	1026	127	1276
Herman, James H., Ambridge, Pa. Douche-cot	848,266	Mar. 26	5221	1159	127	1427
Hermanson, Carl G., Derby, Conn. Pedal-action for piano-players						
Herron, John. (See Connolly and Herron.)						
Hill, Alfred, assignor to Kendrick and Hill Manufacturing Company, Denver, Colo. Lawn-mower	848,551	Mar. 26	5654	1239	127	1511
Hines, John S., Portland, Ind. Sectional derrick	848,204	Mar. 26	5199	1134-5	127	1400
Hippard, Charles F., Minonk, Ill. Vine and weed cutter	848,464	Mar. 26	5507	1200	127	1476
Hipwell, Harry H., assignor to Hipwell Manufacturing Company, Allegheny, Pa. Gas-burner	848,267	Mar. 26	5222	1159	127	1428
Hipwell Manufacturing Company. (See Hipwell, Harry H., assignor.)						
Hoag, Joseph J. (See Knox, Silvanus F., assignor.)	848,268	Mar. 26	5224	1160	127	1428
Hobbs, John O., Chicago, Ill. Transmission mechanism	848,242	Mar. 26	5065	1105	127	1364
Hoelscher, Adolph G., assignor to A. T. Palmer, Boston, Mass. Temporary-binding device	848,305	Mar. 26	5208	1136	127	1402
Holland, Benjamin B. (See Spangin, Nicholas, assignor.)	848,242	Mar. 26	5066	1105	127	1364
Holmes, Gustav E., A. G. and J. E. Bostrom, Milwaukee, Wis. Sofa-bed	848,455	Mar 26	5509	1200	127	1476
Holtzmann, Ernest, New York, N. Y. Fishing-rod	848,033	Mar. 26	4708	1026	127	1276
Homeyer, Christian H., Bremen, assignor to Christoph Heims & Sohn Gesellschaft mit beschränkter Haftung, Berlin, Germany. Chair and the like	848,244	Mar. 26	5067	1106	127	1365
Hood, Arthur M. (See Hood, Ernest K., assignor.)	848,245	Mar. 26	5069	1106	127	1365
Hood, Ernest K., assignor of one-half to A. M. Hood, Indianapolis, Ind. Apparatus for processing packaged goods	848,553	Mar. 26	5657	1239	127	1512
Horstmann, William H., Philadelphia, Pa. Variable-speed gear and reversing mechanism	848,269	Mar. 26	5227	1160	127	1429
Horwitz, Jacob E., New York, N. Y. File-book, &c	848,270	Mar. 26	5229	1160	127	1429
House, Samuel D., St. Louis, Mo. Attachment for cold-tire-shrinking machines	848,172	Mar. 26	4926	1075-6	127	1331
Howard, Clarence H., assignor to Locomotive Tender Frame Company, St. Louis, Mo. Locomotive-tender and tank-car frame	848,173	Mar. 26	4928	1076-7	127	1332
Howard, Clarence H., assignor to Cast Steel Platform Company, St. Louis, Mo. Car-underframe	848,271	Mar. 26	5230	1161	127	1429
Howell, Robert R., Minneapolis, Minn. Wind-stacker	848,306	Mar. 26	5210	1137	127	1403
Hubbell, Samuel G., Milwaukee, Wis. Fracture apparatus	848,034	Mar. 26	4711	1027	127	1277
Huben, Gustav A., Chicago, Ill. Game apparatus						
Hull, Lycurgus E., Great Falls, Mont. Farm implement	848,372	Mar. 26	5331	1161	127	1430
Husmann, Charles, St. Louis, Mo. Door-latch	848,373	Mar. 26	5335	1161	127	1431
Ihlder, John D., New York, N. Y., and R. W. Scott, Washington, D. C., assignors to Otis Elevator Company, Jersey City, N. J. Electric hoisting system						
Ihlder, John D., New York, N. Y., and R. W. Scott, Washington, D. C., assignors to Otis Elevator Company, Jersey City, N. J. Safety-catch for elevators						
Indiana Trust Company, executor. (See Wimmer, John.)						
Industrial Development Company. (See Goodspeed and Beakow, assignors.)						
International Pavement Company. (See Hemstreet, George P., assignor.)						
J. B. Wehr & Co. (See Wehr, Perry, and Merchens, assignors.)						
J. P. Karns Tunneling Machine Co. (See Karns, John P., assignor.)	848,207	Mar. 26	5211	1137	127	1403
Jacoby, Josiah, Lodi, Ohio. Nut-lock	848,174	Mar. 26	4932	1077	127	1332
Jebsen, Fridtjof, Bergen, Norway, assignor of one-half to G. Kirkegaard, Brooklyn, N. Y. Bottle-stopper	848,553	Mar. 26	5659	1239	127	1512
Jeffries, Harry L., Grimes, Iowa. Feed-operating mechanism						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Jenks, Charles O., Havre, Mont. Cattle-guard	848,374	Mar. 26	5329	1162	127	1462
Johnson, Moses E., Pittsburg, Pa. Fence-stretcher	848,376	Mar. 26	5340	1162	127	1462
Johnston, George E., Denver, Colo. Window-shade fastener	848,175	Mar. 26	4983	1077	127	1333
Johnston Novelty & Mill Specialty Company. (See Firsching, Joseph A., assignor.)						
Jones, John A., Cincinnati, Ohio. Structural reinforced concrete	848,195	Mar. 26	4994	1062	127	1335
Jordan, Elmore C., Los Angeles, Cal. Means for filling lubricators	848,345	Mar. 26	5081	1107	127	1385
Jordan, Orie F., Los Angeles, Cal. Nut-retainer for vehicle-axles	848,178	Mar. 26	4994	1077	127	1333
Jorde. William P., Wilmington, Del. Bustle attachment for skirts	848,854	Mar. 26	5060	1240	127	1512
Joshua Oldham and Sons. (See Hamilton, Charles E., assignor.)						
Junggren, Oscar, Schenectady, N. Y., assignor to General Electric Company. Governing mechanism for turbines	848,108	Mar. 26	4924	1053-4	127	1325
Kaiser, William L., Seattle, and W. H. Oakes, Georgetown, Wash. Switch-point lock	848,347	Mar. 26	5082	1107	127	1385
Kaley, Jacob L., et al. (See Taylor, James M., assignor.)						
Karns, John P., assignor to J. P. Karns Tunneling Machine Co., Boulder, Colo. Tunneling-machine	848,107	Mar. 26	4937	1064	127	1336
Kavle, Oscar C., assignor to H. A. Moyer and E. G. Latta, Syracuse, N. Y. Type-bar bearing for type-writing machines	848,346	Mar. 26	5085	1107	127	1387
Keller Mechanical Engraving Company. (See Warman, William A., assignor.)						
Kellum, Orlando E., Longbeach, Cal. Street and station indicator	848,240	Mar. 26	5057	1108	127	1387
Kendall, Charles A., Concord, N. H., assignor of one-half to H. Merrill, Boston, Mass. Mail-assorting table	848,486	Mar. 26	5510	1200	127	1476
Kendrick and Hill Manufacturing Company. (See Hill, Alfred, assignor.)						
Kennard, Herbert A., Hazlehurst, Miss. Automatic wagon-brake	848,289	Mar. 26	5070	1108	127	1387
Kennedy, David S., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	848,288	Mar. 26	5213	1127-8	127	1468
Kennedy, David S., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	848,289	Mar. 26	5214	1128	127	1468
Kennedy, David S., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	848,510	Mar. 26	5215	1128-9	127	1468
Ker, Walter A. (See Gregory, Henry E., assignor.)						
Ketteman, Charles W., Dayton, Ohio. Trolley-wire sleeve	848,086	Mar. 26	4712	1057	127	1277
Keystone Driller Co. (See Downie, Robert M., assignor.)						
Killian, Edward J., Los Angeles, Cal. Cutlery	848,241	Mar. 26	5071	1108	127	1388
Kimball, Charles E., Dunning, Nebr. Fire-protector	848,177	Mar. 26	4986	1078	127	1334
Kimes, David, et al. (See McCann, Lee, assignor.)						
Kindermann, August, Cincinnati, Ohio. Hat-frame machine	848,497	Mar. 26	5511	1201	127	1477
King, James B. (See Schultis, Charles F., assignor.)						
Kingsley, Frank E., Everett, Mass. Vacuum-valve	848,178	Mar. 26	4988	1078	127	1334
Kirkegaard, Georg. (See Jebsen, Fridtjof, assignor.)						
Kirkpatrick, Alexander L. and J. C., Hugo, Ind. Ter. Reach-coupling	848,515	Mar. 26	5065	1240	127	1513
Kirkpatrick, James C. (See Kirkpatrick, Alexander L. and J. C.)						
Kitterman, Jerome, Chillicothe, Iowa. Rivet-displacing device	848,222	Mar. 26	5072	1109	127	1388
Kitton, John C., Detroit, Mich. Double valve	848,311	Mar. 26	5117	1139	127	1464
Klaber, Augustus D., London, England. Copying-machine	848,516	Mar. 26	5068	1240	127	1513
Klaber, Augustus D., London, England. Making stencils	848,517	Mar. 26	5067	1241	127	1514
Klaber, Augustus D., London, England. Copying-machine	848,894	Mar. 26	5788	1238	127	1339
Klepfer, David J., deceased, Philadelphia, Pa.; S. L. Klepfer, administratrix. Electric recorder	848,498	Mar. 26	5513	1201	127	1477
Klepfer, Sarah L., administratrix. (See Klepfer, David J.)						
Klinger, Georg, Leipzig, Germany. Molding soap	848,179	Mar. 26	4989	1078	127	1334
Koch, Carl. (See Fritschka and Koch.)						
Kohler, Ernest, San Francisco, Cal. Adjustable table	848,499	Mar. 26	5515	1201	127	1478
Konsalik, Arthur, Allegheny, Pa. Ventilator	848,376	Mar. 26	5346	1163	127	1462
Koop, William E., et al. (See Geiger, Charles E., assignor.)						
Kountz, Jacob G., Wellsville, Ohio. Apron-supporter	848,470	Mar. 26	5516	1201-2	127	1478
Kraft Combination Telephone Company. (See Laing, Thaddeus R., assignor.)						
Krag, Nils A., and G. A. Hansen, Christiania, Norway. Postmarking and canceling machine	848,535	Mar. 26	5060	1241	127	1515
Kraus, John, Oakland, Cal. Street-display sign	848,263	Mar. 26	5074	1109	127	1388
Krause, William G. C., Waterbury, Conn., assignor to C. B. Schoenmehl. Battery-plate	848,540	Mar. 26	5071	1241-2	127	1516
Krüger, August, Köslin, Germany. Joiner's clamp	848,028	Mar. 26	4713	1057	127	1277
Kudrle, Jaroslav, and L. Svoboda, Chicago, Ill. Cloth-steaming brush	848,377	Mar. 26	5344	1163	127	1463
Kunath, Edward F., Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	848,380	Mar. 26	5073	1242	127	1516
Laing, Thaddeus R., assignor to Kraft Combination Telephone Company, Chicago, Ill. Apparatus for telephone toll-lines	848,278	Mar. 26	5345	1163-4	127	1438
Lake, Simon, Berlin, Germany. Friction-clutch	848,279	Mar. 26	5346	1164	127	1434
Lake, Simon, Bridgeport, Conn. Friction-clutch	848,280	Mar. 26	5351	1165-6	127	1435
Lamson, Charles H., Elston, Mo. Carpet-stretcher	848,312	Mar. 26	5220	1139	127	1465
Landrum, Dionysus, et al. (See Fancher, Christopher, assignor.)						
Langton, Harry D., Cleveland, Ohio. Coil for steam-generators	848,284	Mar. 26	5075	1109	127	1388
Lanier, Paul A. M., Paris, France. Folding ladder	848,108	Mar. 26	4920	1054	127	1305
Lasch, Eugene E., et al. (See McCann, Lee, assignor.)						
Latta, Emmit G., et al. (See Kavle, Oscar C., assignor.)						
Laudenbach, Jean H., Paris, France. Keyboard for type-writing machines and pianofortes	848,471	Mar. 26	5510	1202	127	1479
Leavitt, John M., assignor to W. B. Reed and C. S. Burroughs, New York, N. Y. Scenery	848,180	Mar. 26	4940	1079	127	1335
Lechner, Frederick W., Winona, Ill. Device for smoothing wagon-roads	848,472	Mar. 26	5519	1202-3	127	1479
Lee, Thomas B., Charlotte, N. C. Insulating-clamp	848,473	Mar. 26	5520	1203	127	1479
Lehman, William H., Detroit, Mich. Strength-testing machine	848,181	Mar. 26	4943	1079	127	1335
Leichter, Edward, assignor of one-fourth to J. C. Campbell, Nevada City, Cal., and one-fourth to J. Bender, Hamilton, Ohio. Pneumatic engine	848,255	Mar. 26	5076	1110	127	1389
Leiger, George F., Oak Park, Ill. Speed-regulating mechanism	848,109	Mar. 26	4939	1055	127	1306
Lepper, Albert J. (See Caldwell, William T., assignor.)						
Lewis, John H. (See Bowman, Lucien W., assignor.)						
Lichte, William, Bigspring, Mo. Loading-frame	848,474	Mar. 26	5082	1108	127	1480
Lieberknecht, William C. (See Drummond and Lieberknecht.)						
Limberg, William H., Plymouth, Wis. Silo	848,110	Mar. 26	4922	1056	127	1307
Lindall, John, Boston, Mass. Brush-holder for motors and generators	848,139	Mar. 26	4945	1080	127	1336
Lindsey, John Y., Fairfield, Nebr. Heating system for incubators	848,212	Mar. 26	5220	1140	127	1466
Lipp, Louis, Millcreek township, Hamilton county, Ohio. Flushing-tank for water-closets	848,281	Mar. 26	5354	1166	127	1435
Littlefield, Vernon T., Bangor, assignor of one-half to H. A. M., J. A., and E. Rush, Millsocket, Me. Cake-cutter	848,861	Mar. 26	5070	1240	127	1513
Ljungström, Birger, assignor to Aktiebolaget Separator, Stockholm, Sweden. Centrifugal machine	848,027	Mar. 26	4713	1057	127	1277
Locomotive Tender Frame Company. (See Howard, Clarence H., assignor.)						
Logan, Marshall, assignor of one-half to S. Logan, Plymouth, Ind. Appliance for sliding doors	848,475	Mar. 26	5083	1204	127	1480

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Logan, Sylvester. (See Logan, Marshall, assignor.)						
Long Furniture Co. (See Foster, Bertram G., assignor.)						
Lord, Allen P., and N. Wilkins, Bradford, Pa. Overhead trolley	848,282	Mar. 26	5355	1166	127	1439
Loudon, William, Seattle, Wash. Boiler-feed-regulating mechanism	848,476	Mar. 26	5524	1204	127	1480
Lowry, Thomas P. (See Fryesberg, William F., assignor.)						
Luke, Abraham, Hobart, Ind. Cloth for belt-pulleys	848,183	Mar. 26	4947	1080	127	1336
Lyman, John L. (See Colton, Rosto E., assignor.)						
Lyon, Fred C., Evanston, Ill. Foot-actuated lantern	848,184	Mar. 26	4948	1080-1	127	1337
Lyon, Sarah L., Philadelphia, Pa. Thread-guard and spool-holder for sewing-machines	848,185	Mar. 26	4950	1081	127	1337
Maakrant, Cornelis, Waterval Boven, Transvaal. Lock for railway-trucks	848,256	Mar. 26	5078	1110	127	1389
MacKenzie, Francis A., Louisville, Ky. Boot tree and stretcher	848,038	Mar. 26	4714	1026	127	1278
Macfarlane, Oliver P., et al. (See Ross, Sidney J., assignor.)						
Midler, Arno V. Hartung, and W. Griesing, Cassel, Germany. Snap-hook	848,257	Mar. 26	5081	1110	127	1370
Mandeville, Charles E. (See Mandeville and Walker, assignors.)						
Mandeville, Paul, and W. C. Walker, said Mandeville assignor to C. E. Mandeville, Chicago, Ill. Regulating the temperature of air	848,595	Mar. 26	5763	1238	127	1540
Mankins, Guy S., Rowlesburg, W. Va. Whip-socket	848,283	Mar. 26	5356	1166-7	127	1439
Mann, Horace. (See Morton and Mann.)						
March, William W., Nacogdoches, Tex. Wire-cloth supporting and measuring apparatus	848,552	Mar. 26	5679	1243	127	1518
Marchand, Albert. (See Voland and Marchand.)						
Martel, Edgar J., Wash., Mass. Means for fastening the movements of watches in the cases	848,186	Mar. 26	4951	1081	127	1337
Martin, Dumas L., et al. (See Martin, Ivison B., assignor.)						
Martin, Ivison B., assignor of one-half to S. H. Caldwell and D. I. Martin, Paris, Tenn. Trace-fastening device for whiffletrees	848,596	Mar. 26	5766	1239	127	1540
Martins, Francisco F., Gloucester, Mass. Rail-joint	848,111	Mar. 26	4934	1065	127	1307
Marvin, William H., and R. B. Veasey, assignors to F. White, New York, N. Y. Machine for manufacturing hooks	848,563	Mar. 26	5681	1243-6	127	1519
Matthews, John G. (See Dierig, Hermann H., assignor.)						
Matthews, John G., Three Rivers, Mich. Manufacturing boring or milling cutters	848,112	Mar. 26	4935	1056	127	1307
Matthews, John G., Three Rivers, Mich. Reamer	848,113	Mar. 26	4936	1066	127	1308
Matthews, John G., Three Rivers, Mich. (See Brenzinger, Julius, assignor.)						
Max Ams Machine Company. (See Brenzinger, Julius, assignor.)						
McAllister, John E. (See Garner, Whistler, and McAllister.)						
McCann, Lee, assignor of one-half to D. Kimes, Braddock, one-twentieth to E. E. Lasch, and one-twentieth to F. C. Blessing, Pittsburg, Pa. Attachment for bags	848,481	Mar. 26	5535	1206	127	1483
McCarthy, Elisha B. (See Reynolds and McCarthy.)						
McComas, Isaac T., Baltimore, Md. Device for constructing tunnels under water	848,315	Mar. 26	5225	1140	127	1406
McCord, Ralph and C. O. Cunningham, St. Louis, Mo. Closet-seat	848,042	Mar. 26	4724	1030	127	1280
McCormick, Edward, Duquesne, Pa. Splice-bar	848,122	Mar. 26	4954	1060	127	1312
McCrackin, Robert H., Monroe, Ohio. Signaling device	848,482	Mar. 26	5536	1206	127	1483
McElroy, James F. (See Hawley, Green, Fulton, and McElroy.)						
McEwen, Addison C., Brooklyn, N. Y. Registering device	848,483	Mar. 26	5536	1206-7	127	1483
McGahan, George R., Paisley, Scotland, assignor to J. L. B. Hamilton, Los Angeles, Cal. Treatment of leaves	848,386	Mar. 26	5360	1166	127	1437
McKeen, Thomas L., Easton, Pa. Friction draft and buffing gear	848,260	Mar. 26	5067	1112	127	1371
McLaughlin, John C., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	848,316	Mar. 26	5226	1140	127	1407
McMullin, Joseph, Casey, Iowa. Plow	848,565	Mar. 26	5697	1247	127	1352
McMurtry, Alden L., New York, N. Y. Magazine-socket nut-wrench	848,194	Mar. 26	4967	1066	127	1341
McNeil, Fred W., St. Louis, Mo. Music-leaf turner	848,599	Mar. 26	5772	1259-60	127	1541
Meaker, John W., assignor to Meaker Sales Company, Detroit, Mich. Combined desk, table, and book-rest	848,258	Mar. 26	5063	1111	127	1370
Meaker Sales Company. (See Meaker, John W., assignor.)	848,114	Mar. 26	4939	1056	127	1308
Medart, Frederick, St. Louis, Mo. Gymnasium-ladder						
Merckens, John. (See Weir, Perry, and Merckens.)						
Mergenthaler Linotype Company. (See Bedell, Richard M., assignor.)						
Mergenthaler Linotype Company. (See Clark, Robert G., assignor.)						
Mergenthaler Linotype Company. (See Kennedy, David S., assignor.)						
Mergenthaler Linotype Company. (See Petri-Palmedo, David, assignor.)						
Merrill, Horace. (See Kendall, Charles A., assignor.)						
Merrill, John E., Garland, Tex. Cultivator-standard	848,115	Mar. 26	4940	1057	127	1309
Merritt, Benjamin F., East Orange, N. J., assignor to New York Telephone Company. Telephone-booth	848,116	Mar. 26	4942	1057	127	1309
Meyenberg, Johannes, Baar, near Zug, Switzerland. Production of an insulating material for electrical purposes	848,117	Mar. 26	4943	.....	127	1309
Meyers, George, New York, N. Y. Cutter	848,187	Mar. 26	4953	1081	127	1338
Michel, John M., New York, N. Y. Registering-target	848,477	Mar. 26	5527	1204	127	1481
Midgley, Frederick W., Jersey City, N. J. Silk-reclaiming machine	848,039	Mar. 26	4717	1026	127	1278
Miller, Gustaf. (See Miller, Henry and G.)	848,188	Mar. 26	4955	1082	127	1338
Miller, Henry and G., St. Paul, Minn. Car and coach washing machine						
Miller, William J. (See Frayer and Miller.)						
Miller, William R., assignor to Porter Miller Engineering Company, Pittsburg, Pa. Gas-producer	848,118	Mar. 26	4944	1057-8	127	1310
Mills Novelty Company. (See Sandell, Henry K., assignor.)	848,119	Mar. 26	4945	1058	127	1310
Miner, Charles, Chester, S. C. Apparatus for hulling cotton-seed						
Minneapolis Steel and Machinery Company. (See Smith, George T., assignor.)						
Minnich, Samuel R. (See Weiss and Minnich.)						
Mitchell, Willis, Malden, Mass. Steam-generator	848,384	Mar. 26	5362	1246	127	1531
Mitchell, Willis, Malden, Mass. Burner	848,597	Mar. 26	5767	1250	127	1541
Monette, Arthur B., New York, N. Y. Street-sweeper	848,040	Mar. 26	4719	1028-9	127	1279
Monson, August A., St. Paul, Minn. Automatic trunking device and selective signaling apparatus	848,120	Mar. 26	4946	1058-9	127	1311
Mooney, Patrick J., Brazil, Ind. Foraminous-ledge stove	848,314	Mar. 26	5223	1140	127	1406
Moore, Charles N., Douglas, Ariz. Ter. Oil-burner	848,294	Mar. 26	5357	1167	127	1436
Moore, George D., Worcester, Mass., assignor to Multiple Woven Hose & Rubber Co., New York, N. Y. Multiply fabric	848,121	Mar. 26	4953	1059	127	1312
Moore, George D., Worcester, Mass., assignor to Multiple Woven Hose & Rubber Co., New York, N. Y. Tubular fabric and making the same	848,189	Mar. 26	4957	1082	127	1339
Moore, Silas C., South Omaha, Nebr. Controlling means for release-valves	848,598	Mar. 26	5769	1250	127	1541
Morgan Engineering Company. (See Taylor, Clarence L., assignor.)	848,259	Mar. 26	5068	1112	127	1371
Morton, Fred B., Pasadena, Cal. Drainage-fitting						
Morton, Henry E. (See Morton, Matthew and H. E.)						
Morton, Matthew and H. E., Muskegon, Mich. Shaper for crowning and finishing driving-beams on locomotives, &c	848,190	Mar. 26	4958	1083-4	127	1339
Morton, Matthew and H. E., Muskegon, Mich. Attachment for draw-cut shapers	848,191	Mar. 26	4962	1065	127	1340
Morton, Matthew and H. E., Muskegon, Mich. Apparatus for holding connecting-rod brasses for locomotives, &c	848,192	Mar. 26	.....	1066	127	1340
Morton, Matthew and H. E., Muskegon Heights, Mich. Scribing device	848,193	Mar. 26	4966	1066	127	1341
Morton, Matthew, and H. Mann, Muskegon Heights, Mich. Cotton-chopper	848,385	Mar. 26	5359	1167	127	1437
Mounce, Wilas E., and S. L. Southern, Alberta, La.						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Moyer, Harvey A., *et al.* (See Kavis, Oscar C., assignor.)						
Müller, Herman, Astoria, and E. Zipprich, assignors to Budde & Westermann, New York, N. Y. Bottle-capping machine	848,670	Mar. 26	5559	1205	127	1461
Multiple Woven Hose & Rubber Co. (See Moore, George D., assignor.)						
Munter, Charles, New York, N. Y. Body-conformer	848,679	Mar. 26	5561	1205	127	1462
Murphy, Edward B., Blackwater, Mo. Plowshare	848,641	Mar. 26	5558	1209	127	1459
Murray, George N. (See Haiman and Murray.)						
Musgrave, Edith P., Boston, Mass. Card-table	848,643	Mar. 26	5558	1209	127	1459
Myers, William S., assignor of one-half to B. Gray, Ashland, Ky. Mold for sash-weights, &c.	848,695	Mar. 26	5565	1206	127	1463
National Tube Company. (See Townsend, Frank P., assignor.)						
Nekarada, Francis J. (See Schwabek, George G., assignor.)						
Nelson, Charles H., Iola, Wis. Combined shade-bracket and curtain-rod support	848,186	Mar. 26	5562	1207	127	1464
Nelson, Nels. (See Bacon and Nelson.)						
New York Telephone Company. (See Merritt, Benjamin F., assignor.)						
Newnham, Thomas, White Springs, Fla. Apparatus for extracting by-products from wood	848,494	Mar. 26	5539	1207	127	1460
Nichols, George H., assignor of one-fourth to W. T. Ainley, Norwalk, Conn. Mail-bag catcher	848,196	Mar. 26	5562	1207	127	1464
Nicols, Elizabeth A., administratrix. (See Nicols, Parshall D.)						
Nicols, Parshall D., deceased, Edgeworth borough, Pa.; E. A. Nicols, administratrix. Railway-tie	848,207	Mar. 26	5573	1207	127	1466
Nielsen, Corfitz, Sacramento, Cal. Marking-gage for rules	848,227	Mar. 26	5569	1208	127	1467
Nilsson, John E., Sioux Falls, S. D. Horse-detacher	848,228	Mar. 26	5569	1168	127	1467
Nilsson, Lars A., Katrineholm, Sweden. Boring-chuck	848,229	Mar. 26	5569	1168	127	1468
Nishizaki, Den-ichiro, Tokyo, Japan. Elastic-fluid turbine	848,230	Mar. 26	5569	1247	127	1468
Nishizaki, Den-ichiro, Tokyo, Japan. Elastic-fluid turbine	848,231	Mar. 26	5569	1207-8	127	1468
Nishizaki, Den-ichiro, Tokyo, Japan. Turbine-regulator	848,232	Mar. 26	5569	1208-10	127	1468
Nobles, Frank T., McCloud, Cal. Manually-propelled sled	848,233	Mar. 26	5569	1210	127	1468
Norrington, William P., Greenpoint, N. Y. Seat for wagons	848,234	Mar. 26	5567	1210	127	1466
Norton, Edwin, New York, N. Y. Work-reversing mechanism for rolling-mills	848,235	Mar. 26	5568	1112	127	1372
Nurse, Thomas W., Derby, Vt. Threading-tool	848,236	Mar. 26	5568	1060	127	1372
Oakes, William H. (See Kaiser and Oakes.)	848,237	Mar. 26	5569	1211	127	1468
Obregon, Victor A., Bluefields, Nicaragua. Extractor for firearms	848,238	Mar. 26	5574	1208	127	1469
Ogden, John E. L., Liscard, England. Valve and valve-seat for steam-traps	848,239	Mar. 26	5568	1169	127	1468
Ogden John E. L., Liscard, England. Steam-trap	848,240	Mar. 26	5564	1169	127	1468
Ohio Cultivator Co. (See Tuttle, Josiah S., assignor.)						
Ohmer, Wilfred I., D. B. Whistler, and J. E. McAllister, assignors to Recording and Computing Machines Company, Dayton, Ohio. Fare-register	848,243	Mar. 26	5561	1113-4	127	1373
Oliver, Walton F., Templeton, Mass. Locking device for chair-trays	848,321	Mar. 26	5563	1169	127	1466
Olmstead, Medora M., Lawrence, Mass. Eraser-holder	848,322	Mar. 26	5563	1169	127	1466
Onderdonk, Lansing, New York, N. Y., assignor to Union Special Machine Company, Chicago, Ill. Vibrating-lever-operating mechanism	848,360	Mar. 26	5567	1115	127	1377
Orling, Axel. (See Armstrong and Orling.)						
Oscar Lear Automobile Company. (See Frayer and Miller, assignors.)						
Ostrum, John, Traer, Iowa. Shocker attachment for grain harvesters and binders	848,190	Mar. 26	4975	1208	127	1343
Otis Elevator Company. (See Ihlder and Scott, assignors.)						
Otis Elevator Company. (See Sundh, August, assignor.)						
Palmer, Alfred T. (See Holscher, Adolph G., assignor.)						
Parker, Albert H., New York, N. Y. Trimmer for sewing-machines	848,490	Mar. 26	5560	1211	127	1461
Parker, John H. (See Torsch and Parker.)						
Patrick, Charles P., Boonton, N. J. Bracket	848,644	Mar. 26	4725	1060	127	1339
Pauly, Peter J., Jr., St. Louis, Mo. Closet-seat	848,309	Mar. 26	4977	1208	127	1344
Pearson, James H., Bloomfield, Ind. Lightning-arrester	848,645	Mar. 26	4726	1060	127	1339
Peeler, Warren F., Elwood, assignor of one-half to W. C. Vanneman, Anderson, Ind. Lifter and carrier	848,134	Mar. 26	4987	1060	127	1313
Pelham, John M. (See Vance, Sidney F., assignor.)						
Pelton, Charles W., Hyannis, Mass. Insect-trap	848,135	Mar. 26	4988	1061	127	1313
Percy, Harry C., Natchitoches, La. Range-finder	848,267	Mar. 26	5020	1247	127	1332
Perry, Ira D. (See Weir, Perry, and Merckens.)						
Petri-Palmedo, David, Hoboken, N. J., assignor to Mergenthaler Linotype Company. Logotype-machine	848,318	Mar. 26	5572	1148-9	127	1467
Petrovics, Max, New York, N. Y. Lock for swing-sashes	848,283	Mar. 26	5560	1170	127	1466
Phillips, Elwood C., assignor of one-half to A. T. Benson, Chicago, Ill. Automobile-wheel	848,046	Mar. 26	4727	1061	127	1341
Phillips, Lewis J., Foss, Okla. Ter. Alarm attachment for self-binders	848,491	Mar. 26	5563	1211	127	1468
Phillips, William M., Northville, Mich. Silo	848,319	Mar. 26	5564	1149	127	1469
Pickles, Charles K., assignor to J. A. Brill, Philadelphia, Pa. Car-seat	848,321	Mar. 26	5570	1060	127	1344
Piehn, Arnold R., Alta Vista, Iowa. Telephone-detector	848,586	Mar. 26	5703	1245	127	1534
Pierce, Eugene, Ilion, N. Y. Reversible duplex planer-tool holder	848,320	Mar. 26	5565	1149	127	1469
Pinney, Jemima W., executrix. (See Pinney, William.)						
Pinney, William, deceased; J. W. Pinney, Salt Lake City, Utah, executrix. Smoke-consumer	848,321	Mar. 26	5567	1149	127	1469
Pirani, Marcello von, Wilmersdorf, assignor to Siemens & Halske A.-G., Berlin, Germany. Production of homogeneous bodies from tantalum or other metals	848,600	Mar. 26	5573	1209	127	1542
Pittsburgh Seamless Tube Company. (See Blaxter, George H., assignor.)						
Pittsburgh Valve and Fittings Company. (See Castle, Lewis D., assignor.)						
Platt, Edward T., assignor of one-half to H. Feldmann, Chicago, Ill. Electric-trolley retainer	848,691	Mar. 26	5575	1209	127	1542
Poelke, August, Detroit, Mich. Floor-surfacing machine	848,322	Mar. 26	5565	1149	127	1470
Politsky, Simon A., Boston, Mass. Car-fender	848,602	Mar. 26	5576	1209	127	1542
Poole, F. H. (See Fuller, George E., assignor.)						
Poor, George H., assignor, by mesne assignments, to Raymond Concrete Pile Company, Chicago, Ill. Shell-winding machine	848,324	Mar. 26	5570	1170-1	127	1440
Porteous, John, Cincinnati, Ohio. Pop safety-valve	848,208	Mar. 26	5570	1169	127	1344
Procunier, Henry E., Oak Park, Ill. Electric-cable splicing and distributing box	848,047	Mar. 26	4730	1061	127	1282
Proudfoot, George. (See Garland, Proudfoot, and Bowen.)						
Pryce-Jones, Rosina I., Newtown, England. Hair-pin	848,048	Mar. 26	4731	1061	127	1282
Quinn, Richard S., assignor to Wonder Manufacturing Company, Washington Court-House, Ohio. Range	848,304	Mar. 26	5568	1115	127	1378
Railway Supplies. (See Williams, George H., assignor.) (Reissue.)						
Raleson Steel Car Company. (See Becker, Anton, assignor.) (Reissue.)						
Raymond, Alfred A., assignor to Raymond Concrete Pile Company, Chicago, Ill. Pile-core	848,325	Mar. 26	5576	1172-3	127	1440
Raymond Concrete Pile Company. (See Poor, George H., assignor.)						
Raymond Concrete Pile Company. (See Raymond, Alfred A., assignor.)						
Read, Joseph H., Burlington, N. J. Snap-hook	848,623	Mar. 26	5570	1061	127	1543
Reardon, Charles E., Kansas City, Mo. Embroidery attachment for sewing-machines	848,326	Mar. 26	5570	1178	127	1442
Recording and Computing Machines Company. (See Ohmer, Whistler, and McAllister, assignors.)						
Redenbaugh, Adam, Pittsburg, Pa. Pipe-stopper or test-plug	848,492	Mar. 26	5554	1213	127	1467

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Reed, Washington B., *et al.* (See Leavitt, John M., assignor.)						
Rees, Abram, Bunker Hill, Ind. Poultry feeder and waterer	848,492	Mar. 26	5553	1211	127	1467
Rees, Abram, Bunker Hill, Ind. Poultry feeder and waterer	848,204	Mar. 26	4981	1059	127	1345
Rehart, Solomon V., Pico, Cal. Adjusting means for monkey-wrenches						
Reid, Edwin T., *et al.* (See Taylor, James M., assignor.)						
Reimers, Dyson H., Chicago, assignor of one-half to P. Bifar, Oak Park, Ill. Antirecoil device for explosive-engines	848,604	Mar. 26	5779	1261	127	1543
Renault, Louis, Billancourt, France. Speed-changing mechanism	848,494	Mar. 26	5555	1212	127	1467
Reynolds, Alton G., *et al.* (See Taylor, James M., assignor.)	848,495	Mar. 26	5557	1213	127	1468
Reynolds, William B., and E. B. McCarthy, Fulton, N. Y. Shade-roller attachment	848,265	Mar. 26	5110	1115	127	1378
Richards, Willard F., Buffalo, assignor to Gould Coupler Company, New York, N. Y. Trunk-bolster	848,307	Mar. 26	5281	1173	127	1442
Richardson, George J., West Charleston, W. Va. Rail-joint	848,049	Mar. 26	4733	1032	127	1283
Richmond, William H., Mount Pleasant, Mich. Folding clothes-reel						
Richter, Josef, Dienstleute-an-the-Aisch, Germany. Apparatus for pulling up rods, piles, pickets, and the like from the ground	848,208	Mar. 26	4980	1059	127	1346
Ricketts, David C. (See Albin and Ricketts.)						
Ridd, Ambrose, Newport, Ky. Preparing rolls for rolling	848,323	Mar. 26	5240	1143-4	127	1410
Rimailho, Emile. (See Schneider and Rimailho.)						
Robbins, Edward J., Boston, Mass. Pipe-coupling	848,266	Mar. 26	5113	1116	127	1379
Roberts, John G., assignor to Western Electric Company, Chicago, Ill. Automatic-exchange selector	848,366	Mar. 26	5362	1173-4	127	1442
Robinson, Elias W., Boston, Mass. Safety-plug	848,205	Mar. 26	4982	1060	127	1345
Robinson, Elias W., Boston, Mass. Safety-plug	848,206	Mar. 26	4984	1060	127	1349
Robinson, William D., Traverse City, Mich. Ventilator	848,050	Mar. 26	4735	1033	127	1283
Rodesch Piano and Player Co. (See Rodesch, Robert A., assignor.)						
Rodesch, Robert A., Dixon, Ill. Automatic piano	848,206	Mar. 26	4982	1091	127	1345
Rodesch, Robert A., Dixon, Ill., assignor to Rodesch Piano and Player Co. Automatic piano	848,207	Mar. 26	4986	1060	127	1346
Roosevelt, Ohioe F., Denver, Colo. Anastomotic clamp	848,126	Mar. 26	4959	1061	127	1313
Ross, Sidney J., assignor of two-thirds to H. Schofield and O. F. Macfarlane, London, England. Means for promoting circulation in steam-boilers	848,496	Mar. 26	5558	1213	127	1468
Rossiger, Jessie, Golconda, Ill. Cooking utensil	848,209	Mar. 26	4993	1091	127	1346
Rouse, Thomas W. (See Bryant, William A., assignor.)						
Rowell, William F., Salem Depot, N. H. Attachment for squares	848,360	Mar. 26	5383	1174	127	1442
Ruff, William, New York, N. Y. Combination turbine motor and muffler	848,127	Mar. 26	4961	1061-2	127	1314
Rumsey, Herbert R. (See Rumsey, John C. S. and H. R.)						
Rumsey, John C. S. and H. R., Vinland, Kans. Device for loading manure, earth, gravel, &c.	848,128	Mar. 26	4963	1062	127	1314
Ruse, William S., Twin Bluffs, Wis. Corn-husking machine	848,497	Mar. 26	5560	1212-14	127	1468
Rush, Eugene, *et al.* (See Littlefield, Vernon T., assignor.)						
Rush, Harry A. M., *et al.* (See Littlefield, Vernon T., assignor.)						
Rush, James A., *et al.* (See Littlefield, Vernon T., assignor.)	848,129	Mar. 26	4965	1062	127	1314
Ryerson, Eva L., Denver, Colo. Burglar-alarm	848,224	Mar. 26	5242	1144	127	1411
Sager, James H., Rochester, N. Y. Bicycle attachment						
Salem Glass Works. (See Bacon and Nelson, assignors.)	848,400	Mar. 26	5384	1175	127	1442
Sandell, Henry K., assignor to Mills Novelty Company, Chicago, Ill. Sheet-winder						
Sandman, John T., assignor of one-half to F. Woerner, Philadelphia, Pa. Stopper for bottles	848,560	Mar. 26	5706	1248	127	1535
Schafer, William J., *et al.* (See Taylor, James M., assignor.)	848,130	Mar. 26	4966	1063	127	1315
Scheer, Peter A. B., Hamburg, Germany. Device for producing fillers for cigars	848,051	Mar. 26	4736	1032	127	1283
Schenk, William, Jersey City, N. J. Tool for cutting and grooving flat chain-link blanks	848,052	Mar. 26	4736	1032	127	1284
Schenk, William, Jersey City, N. J. Milling-machine						
Scherer, Albert G., assignor to A. W. Gleesmer, Chicago, Ill. Machine for seaming together the edges of sheet-metal sections	848,053	Mar. 26	4739	1033	127	1284
Schertz, Joseph A., Marquette, Nebr. Tilting gate	848,498	Mar. 26	5562	1214	127	1469
Schlechter, Gustavus A., Reading, Pa. Watchcase	848,131	Mar. 26	4967	1063	127	1315
Schmid, Peter, Basel, Switzerland. Ungumming silk	848,605	Mar. 26	5780	.....	127	1543
Schmidt, Ida W., Detroit, Mich., and H. R. Schweinler, Brooklyn, N. Y.; said Schweinler assignor to said Schmidt. Motor-driven vehicle	848,267	Mar. 26	5113	1116	127	1379
Schmitt, Ewald. (See Thomsen and Schmitt.)						
Schmitt, Frank M. (See Carr and Schmitt.)						
Schneider, Charles P. E., Le Creusot, and E. Rimailho, Neuilly-sur-Seine, France. Theodolite or similar instrument	848,132	Mar. 26	4968	1063	127	1315
Schneider, Heinrich, Altona-Ottensen, Germany. Treating citron-peel	848,210	Mar. 26	4993	.....	127	1346
Schnell, Franz, Gutenstein, Austria-Hungary. Wood substitute	848,133	Mar. 26	4970	.....	127	1315
Schnellpressenfabrik Action-Gesellschaft. (See Stamm, Henry, assignor.)						
Schnyder, Adolph P., Posey, Ill. Nail-puller	848,211	Mar. 26	4994	1091	127	1349
Schocks, August E., Williams, Nebr. Lifting-jack	848,499	Mar. 26	5562	1214	127	1469
Schoendelen, Joseph W. (See Steinmann and Schoendelen.)						
Schoenmehl, Charles B. (See Krause, William G. C., assignor.)						
Schoenmehl, Charles B., Waterbury, Conn. Zinc electrode	848,570	Mar. 26	5707	1248	127	1535
Schofield, Harry, *et al.* (See Ross, Sidney J., assignor.)						
Schroyer, Charles A., Oak Park, assignor of one-half to W. A. Gardner, Evanston, Ill. Railway-car	848,134	Mar. 26	4971	1063	127	1316
Schubert, George, Fort Worth, Tex. Plunger for baling-presses	848,054	Mar. 26	4741	1033	127	1284
Schultis, Charles F., Warren, assignor to J. B. King, Mantua, Ohio. Die-stock	848,401	Mar. 26	5385	1175	127	1444
Schwabek, George G., assignor to himself and F. J. Nekarada, New York, N. Y. Air-ship	848,055	Mar. 26	4742	1034	127	1285
Schwarz, George, Bismarck, Germany. Case for holding ammunition	848,500	Mar. 26	5564	1215	127	1469
Schweinler, Henry R. (See Schmidt and Schweinler.)						
Scofield, Fred H., Kern, Cal. Oil-well cleaner	848,501	Mar. 26	5567	1215	127	1469
Scott, Ramsey W. (See Ihlder and Scott.)						
Scott, Walter, Plainfield, N. J. Lubricating device	848,056	Mar. 26	4744	1034	127	1285
Scovell, Josiah B., Duluth, Minn. Churn-drill	848,502	Mar. 26	5569	1216	127	1469
Scovell, Josiah B., Duluth, Minn. Sweeper	848,571	Mar. 26	5709	1249	127	1535
Seehamsdorff, Hermann, Hanover, Germany. Bread cutter and box	848,057	Mar. 26	4745	1035	127	1285
Seidelmann, Rehle, Philadelphia, Pa., assignor to Union Typewriter Company, Jersey City, N. J. Type-writing machine	848,402	Mar. 26	5387	1178-9	127	1444
Seymour, Charles, assignor to Defiance Machine Works, Defiance, Ohio. Machine for making compressed bungs	848,803	Mar. 26	5670	1216-18	127	1469
Shanahan, Charles. (See Gallup, Shanahan, and Gallup.)	848,572	Mar. 26	5711	1249	127	1536
Shaw, Henry F., Boston, Mass. Balancing locomotive-engines	848,212	Mar. 26	4996	1091	127	1349
Shelton, Laywood B., Denver, Colo. Skirt-supporter	848,058	Mar. 26	4745	1035	127	1285
Shepherd, James H., Idaho Springs, Colo. Wrench						
Shirley, Ralph W. (See Silcott, Charles, assignor.)	848,135	Mar. 26	4972	1064	127	1316
Siemens & Halske A.-G. (See Pirani, Marcello von, assignor.)						
Sikes, Simeon R. and T. E., Ocilla, Ga. Seed-planter						
Sikes, Simeon R. and T. E. (See Sikes, Simeon R. and T. E.)						
Sikes, Thomas E. (See Sikes, Simeon R. and T. E.)	848,059	Mar. 26	4746	1036	127	1286
Silcott, Charles, assignor of one-half to R. W. Shirley, Henderson, Ky. Removable bottom frame for vehicle-tops						
Silk, Burton E., assignor of one-half to W. S. Conger and S. E. Carman, Belleville, Ontario, Canada. Wheel	848,225	Mar. 26	5243	1144	127	1411

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Skinner, Perry R., Amsterdam, N. Y. Dental obtundor	848,496	Mar. 26	5294	1176	127	1442
Sloan, William S., assignor of one-half to R. A. Stacey, Williamstown, Mass. Rack for memorandum desk-calendars	848,669	Mar. 26	4746	1035	127	1288
Smart, Campbell, Swansea, England. Suspension device for electric lamps	848,673	Mar. 26	5713	1250	127	1388
Smith, Carlton L., assignor to Armour & Company, Chicago, Ill. Means for preventing the escape of noxious vapors and gases from rendering-tanks into the atmosphere	848,288	Mar. 26	5114	1116	127	1370
Smith, Clarence H. (See Fehrenbacher, Anton A., assignor.)						
Smith, Edward A., Yonkers, N. Y. Amusement apparatus	848,061	Mar. 26	4749	1036	127	1288
Smith, George T., assignor of three-fourths to Minneapolis Steel and Machinery Company, Minneapolis, Minn. Middlings-purifier	848,424	Mar. 26	5280	1176-7	127	1442
Smith, Harry W., Worcester, Mass. Cross-tree for supporting electric conductors	848,260	Mar. 26	5113	1116	127	1370
Smith, Ollie F., Valley Head, Ala. Burglar-alarm	848,060	Mar. 26	4751	1036	127	1287
Smith, Patrick J. A., Washington, D. C., assignor of one-half to B. R. Weltzman, Brooklyn, N. Y. Stair-rod	848,574	Mar. 26	5715	1250	127	1387
Smith, Walter E., Salem, Mass. Exerciser for felines	848,130	Mar. 26	4873	1064	127	1316
Smith, William H., assignor of one-half to M. F. Barrett, Cleveland Ohio. Stop and waste cock	848,127	Mar. 26	4874	1064	127	1317
Soar, Henry, Goodmayes, England. Speed indicator and recorder	848,234	Mar. 26	5276	1218-19	127	1402
Society of Chemical Industry in Basle. (See Engi, Gadient, assignor.)						
Sommer, Felix A., Twickenham, England. Inking-pad for rubber and other stamps	848,033	Mar. 26	4783	1036	127	1287
Southern, Samuel L. (See Mounce and Southern.)						
Spencer, Christopher M., Windsor, assignor to Universal Machine Screw Company, Hartford, Conn. Variable-speed mechanism	848,696	Mar. 26	5781	1261	127	1444
Spurgin, Nickolas, assignor of one-half to B. B. Holland, Ottawa, Ill. Pulverizer	848,213	Mar. 26	4996	1092	127	1360
Stacey, Robert A. (See Sloan, William S., assignor.)						
Stafford, Albert B., Chicago, Ill. Collar	848,575	Mar. 26	5716	1250	127	1387
Stamm, Henry, Rentzschmuhle, near Jocksts, assignor to Schnellpressenfabrik Actien-Gesellschaft, Heidelberg, Germany. Printing-machine	848,034	Mar. 26	4753	1037	127	1287
Stamm, Henry, Rentzschmuhle, near Jocksts, assignor to Schnellpressenfabrik Actien-Gesellschaft, Heidelberg, Germany. Printing-machine	848,035	Mar. 26	4736	1037	127	1288
Stanley, George P. (See Tainter and Stanley.)						
Stanton, Patrick M., Troy, N. Y. Ash-sifter	848,370	Mar. 26	5119	1117	127	1361
Starr, Andrew M., Hollywood, Cal. Swing power transmission	848,314	Mar. 26	5090	1092	127	1350
Steedman, George F., St. Louis, Mo. Valve control for pneumatic elevators	848,271	Mar. 26	5130	1117-18	127	1361
Steinberger, Louis, New York, N. Y. Interlocking terminal base	848,808	Mar. 26	5862	1219	127	1402
Steinberger, Louis, New York, N. Y. Insulator-pin and support therefor	848,809	Mar. 26	5862	1220	127	1402
Steinmann, Edward, Bettendorf, and J. W. Schoendelen, Davenport, Iowa. Safety-fuse	848,338	Mar. 26	5247	1145	127	1413
Stephens, Augustus W., Waltham, Mass. Bottle opener and stopper	848,576	Mar. 26	5717	1251	127	1387
Stewart, David A., J. F., and R. C., Molesworth, Ontario, Canada. Straw-cutter	848,698	Mar. 26	4787	1038	127	1288
Stewart, John F. (See Stewart, David A., J. F., and R. C.)						
Stewart, Robert C. (See Stewart, David A., J. F., and R. C.)						
Stewart, Scott. (See Hardesty and Stewart.)						
Still, David, Melton, Oreg. Portable feeder for threshing-machines	848,577	Mar. 26	5719	1251-2	127	1388
Stockham, John E., et al. (See Taylor, James M., assignor.)						
Stromberg-Carlson Telephone Manufacturing Company. (See Birnfield, Jules A., assignor.)						
Strong, Wilmont E., Tacoma, Wash. Bleaching-cabinet	848,128	Mar. 26	4876	1064	127	1317
Stuppar, Gottfried, South Chicago, Ill. Device for mending pipes	848,129	Mar. 26	4877	1065	127	1318
Sullivan, Sylvester M., San Francisco, Cal. Underground electric railway	848,807	Mar. 26	5485	1220	127	1402
Sumner, Charles R. (See Towne, William F., assignor.)						
Sundh, August, Yonkers, N. Y., assignor to Otis Elevator Company, Jersey City, N. J. Current-controlling apparatus	848,605	Mar. 26	5268	1177	127	1443
Surfacing Machine Company. (See Wattles, Cyra B., assignor.)						
Svensen, Andes A., Evanston, Ill. Key-fastener	848,067	Mar. 26	4761	1039	127	1289
Svoboda, Lawrence. (See Kudrle and Svoboda.)						
Swasey, Charles J. (See Head, Benson J., assignor.)						
Tainter, Willis W., and G. P. Stanley, Dixfield, Me. Toothpick-machine	848,406	Mar. 26	5469	1178	127	1449
Taylor, Clarence L., assignor to Morgan Engineering Company, Alliance, Ohio. Overhead traveling crane	848,407	Mar. 26	5486	1178	127	1450
Taylor, James M., assignor of six-sevenths to W. J. Schafer, A. G. Reynolds, J. E. Stockham, J. L. Kaley, C. E. Goddard, Omaha, and E. T. Reid, South Omaha, Nebr. Roundabout or carousel	848,408	Mar. 26	5469	1178-9	127	1451
Thacher, John B., Albany, N. Y. Sidewalk-conduit	848,088	Mar. 26	4764	1039	127	1290
Thelin, William A., Bridgeport, Conn. Protector for planer-ways	848,578	Mar. 26	5721	1252	127	1388
Thiede, Gustav A., Baltimore, Md. Inhaler	848,579	Mar. 26	5722	1252	127	1389
Thomas, Charles, Sr., Tecumseh, Okla. Ter. Adjustable sawing-machine	848,237	Mar. 26	5040	1145	127	1412
Thomas, Charles F., Buckeystown, Md., and E. Schmitt, Washington, D. C. Combined shovel-scraper and dump-wagon	848,808	Mar. 26	5857	1220-1	127	1403
Thompson, Ludvig, Denver, Colo. Combined pincushion and spool-holder	848,060	Mar. 26	4760	1040	127	1290
Thoms, Frederick, San Francisco, Cal. Awning	848,439	Mar. 26	5410	1102	127	1352
Thomson, Benjamin T. L., Clapham Common, England. Hydraulic clutch	848,809	Mar. 26	5860	1221	127	1404
Thomson, Elihu, Swampscott, Mass. Oil or gas engine	848,810	Mar. 26	5861	1221-2	127	1404
Thornley, Albert J., Pawtucket, R. I. Exercising-machine	848,607	Mar. 26	5782	1262	127	1444
Thorud, Marinius S., Chicago, Ill. Convertible gas and oil lamp	848,272	Mar. 26	5123	1115	127	1362
Toch, Maximilian, New York, N. Y. Cement and manufacturing same	848,070	Mar. 26	4766	1040	127	1291
Tolton, David, Guelph, Ontario, Canada, and G. F. Conner, Port Huron, Mich. Buncher for pea-harvesters	848,236	Mar. 26	5040	.....	127	1412
Tooker, Hugh R., Oleanter, Cal. Emergency stop mechanism	848,071	Mar. 26	4769	1040	127	1291
Toomey, John F., Chicago, Ill. Puzzle	848,511	Mar. 26	5694	1233	127	1405
Torras, Rosendo, Brunswick, Ga. Device for inserting explosive charges	848,580	Mar. 26	5725	1252	127	1389
Torsch, Edward L., and J. H. Parker, Baltimore, Md. Shucking oysters	848,512	Mar. 26	5695	1233-4	127	1406
Towne, William F., assignor of one-half to C. R. Sumner, Los Angeles, Cal. Steering-wheel for autovehicles	848,698	Mar. 26	5785	1263-4	127	1544
Townsend, Frank P., Elyria, Ohio, assignor to National Tube Company, Pittsburg, Pa. Controller for rolling-mill repeaters	848,149	Mar. 26	4878	1065	127	1318
Trafton, Mathew E., Los Angeles, Cal. Step-ladder	848,581	Mar. 26	5726	1253	127	1389
Travis, Herbert J., New York, N. Y. Pulverizer	848,513	Mar. 26	5697	1233	127	1406
Trefts, Fred H., Chicago, Ill. Metal sash-bar	848,273	Mar. 26	5126	1116	127	1362
Triestram, John, Kalamazoo, Mich. Shifting thill	848,141	Mar. 26	4870	1064	127	1318
Tromanhauser, Jesse H., Minneapolis, Minn. Storage-bin	848,514	Mar. 26	5699	1233	127	1407
Turnbull, Luke W., assignor to Wat Engine Company, Port Huron, Mich. Spark-controller for explosive-engines	848,410	Mar. 26	5462	1180	127	1452
Turner, Kelley M., New York, N. Y. Modulating telephone-receiver	848,072	Mar. 26	4771	1041	127	1292
Tuttle, Josiah S., Kansas City, Mo., assignor to Ohio Cultivator Co., Bellevue, Ohio. Baling-press	848,073	Mar. 26	4772	1041	127	1292
Tuttle, Josiah S., Kansas City, Mo., assignor to Ohio Cultivator Co., Bellevue, Ohio. Baling-press	848,411	Mar. 26	5463	1180-1	127	1452
Tuttle, Josiah S., Kansas City, Mo., assignor to Ohio Cultivator Co., Bellevue, Ohio. Self-feed mechanism for baling-presses	848,412	Mar. 26	5464	1181	127	1453
Tysinger, Herbert, Little Rock, Ark. Latch	848,413	Mar. 26	5465	1181-2	127	1453
	848,515	Mar. 26	5699	1233	127	1407

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Umstead, Walter, Jerseytown, Pa. Jack	848,516	Mar. 26	5800	1224	127	1407
Underwood Typewriter Company. (See Kunath, Edward F., assignor.)						
Underwood Typewriter Company. (See McLaughlin, John C., assignor.)						
Underwood Typewriter Company. (See Wagner, Frans X., assignor.)						
Underwood Typewriter Company. (See Wagner, Herman L., assignor.)						
Union Bank. (See Bim, Joost, assignor.)						
Union Special Machine Company. (See Onderdonk, Lansing, assignor.)						
Union Typewriter Company. (See Seidelinger, Robie, assignor.)						
United States Flexible Joint Company. (See Hawley, Charles G., assignor.)						
Universal Machine Screw Company. (See Spencer, Christopher M., assignor.)						
Upright, Ern S., Ord, Nebr. Mail-transportation system	848,517	Mar. 26	5801	1224-5	127	1408
Utzinger, Werner, Zurich, Switzerland. Folding stretcher	848,215	Mar. 26	5002	1093	127	1351
Van Bergh, Carlos, Winnipeg, Manitoba, Canada. Electrical medical apparatus	848,518	Mar. 26	5803	1225-6	127	1408
Van Liew, Leon G. (See Cotton, Charles E., assignor.)						
Vance, Sidney F., assignor of one-half to J. M. Pelham, Salmon, Tex. Cultivator	848,414	Mar. 26	5419	1182	127	1454
Vanneman, William C. (See Peeler, Warren F., assignor.)						
Vawter, Charles E., Jr., Blacksburg, Va. Recording instrument	848,239	Mar. 26	5260	1145-6	127	1413
Veasey, Felix A., Dallas, Tex. Printing-press	848,330	Mar. 26	5254	1146	127	1414
Verstegg, Chester, Ashton, S. D. Indicator	848,519	Mar. 26	5806	1226	127	1409
Vessey, Robert R. (See Marvin and Vessey.)						
Vogelsang, Arthur, Waterbury, Conn. Smoking-pipe	848,415	Mar. 26	5420	1182	127	1454
Volgtmann and Company. (See Hearst, William A., assignor.)						
Voland, Frasslequin, and A. Marchand, Lyon, France, assignors to G. R. de Montlord, New York, N. Y. Machine for blazing cloth	848,416	Mar. 26	5421	1182	127	1454
Wachter, Ernst, Basle, Switzerland. Acetylene-generating lamp	848,074	Mar. 26	4774	1041	127	1293
Wagner, Frans X., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine and the like	848,274	Mar. 26	5126	1119	127	1363
Wagner, Herman L., Mount Vernon, N. Y., assignor to Underwood Typewriter Company. Type-writing machine	848,520	Mar. 26	5808	1226	127	1409
Wagoner, John J., Delong, Ind. Corn-harvester	848,809	Mar. 26	5790	1263	127	1545
Wainwright, Henry H., Philadelphia, Pa. Metal nosing for concrete steps and other structures	848,075	Mar. 26	4775	1041	127	1293
Walger, Philip and W., Chicago, Ill. Awning	848,216	Mar. 26	5002	1093	127	1351
Walger, William. (See Walger, Philip and W.)	848,142	Mar. 26	4880	1065-6	127	1318
Walk, George W., Pittsburg, Pa. Wheel						
Walker, William C. (See Mandeville and Walker.)	848,582	Mar. 26	5728	1253	127	1530
Wallace, Austin C., Medford, Mass. Goods-separating device	848,331	Mar. 26	5255	1146	127	1414
Walter, Robert H., Los Angeles, Cal. Acetylene-gas machine	848,417	Mar. 26	5424	1183	127	1455
Warman, William A., assignor to Keller Mechanical Engraving Company, New York, N. Y. Turbine-motor	848,521	Mar. 26	5809	1227	127	1500
Warner, William R., Vergennes, Vt. Bottle-closure	848,583	Mar. 26	5729	1253	127	1530
Wat Engine Company. (See Turnbull, Luke W., assignor.)						
Watson, David S., Canastota, N. Y. Fire-shield	848,076	Mar. 26	4776	1042	127	1293
Watson, David S., assignor to Watson Wagon Company, Canastota, N. Y. Dump-wagon	848,077	Mar. 26	4778	1042	127	1293
Watson, David S., assignor to Watson Wagon Company, Canastota, N. Y. Dump-wagon						
Watson Wagon Company. (See Watson, David S., assignor.)						
Watt, James. (See Fripp, Isaac, assignor.)						
Wattles, Cyra B., assignor to Surfacing Machine Company, Providence, R. I. Floor brushing and waxing machine	848,275	Mar. 26	5129	1119-20	127	1363
Weatherhead, Frederick S., and G. O. Abbott, Springfield, Vt. Checkrein-holder	848,418	Mar. 26	5426	1183	127	1456
Webb, John L. and M. H., Thornton, Idaho. Beet-harvesting machine	848,217	Mar. 26	5004	1093-5	127	1351
Webb, Marcellus H. (See Webb, John L. and M. H.)						
Webster, Daniel, Jr., Philadelphia, Pa. Automatic closure for cans, bottles, &c	848,419	Mar. 26	5428	1183	127	1456
Wehrenberg, Charles E., Mound City, Ill. Baling-press	848,420	Mar. 26	5429	1183-4	127	1456
Weill, André, Brussels, Belgium. Apparatus for forming tiles provided with flanged edges	848,078	Mar. 26	4779	1042	127	1294
Weir, John B., I. D. Perry, and J. Mercheans, assignors to J. B. Weir & Co., Chicago, Ill. Pocket-bank	848,218	Mar. 26	5008	1095	127	1352
Weiss, Friedrich, Rixdorf, Germany. Steam-cylinder drain-valve	848,079	Mar. 26	4781	1042	127	1294
Weitzman, Bernard R. (See Smith, Patrick J. A., assignor.)						
Welch, Josephine, and S. R. Minnich, Nicholasville, Ky. Watering device for concrete blocks	848,276	Mar. 26	5131	1120	127	1364
Wemlinger, Julius R., Brooklyn, N. Y. Metal sheet-piling	848,143	Mar. 26	4882	1066	127	1319
Wemlinger, Julius R., Brooklyn, N. Y. Metal sheet-piling	848,144	Mar. 26	4884	1066	127	1319
Wemlinger, Julius R., Brooklyn, N. Y. Metal sheet-piling	848,145	Mar. 26	4885	1066	127	1320
Wemlinger, John G., Lancaster, Pa. Nut-lock	848,080	Mar. 26	4782	1043	127	1294
Western Electric Company. (See Dean, William W., assignor.)						
Western Electric Company. (See Roberts, John G., assignor.)	848,332	Mar. 26	5257	1146-7	127	1415
Westervelt, Benjamin L., New York, N. Y. Truck for baggage, &c						
Whistler, David B. (See Ohmer, Whistler, and McAllister.)						
Whitaker, Richard, New Brunswick, N. J., assignor to Brunswick Refrigerating Company. Gas-pump	848,277	Mar. 26	5133	1120	127	1364
White, Fred. (See Marvin and Vessey, assignors.)						
Whitmer, Joseph N., Sanford, Fla. Wind or water power wheel	848,522	Mar. 26	5810	1227	127	1500
Wilbur, Burt, Syracuse, N. Y. Overhead trolley-frog	848,610	Mar. 26	5798	1264	127	1546
Wilhelmi, Arthur, San Francisco, Cal. Piano-playing attachment	848,278	Mar. 26	5137	1121	127	1366
Wilkins, Nathaniel. (See Lord and Wilkins.)	848,333	Mar. 26	5259	1147	127	1415
Williams, Elmer V., Glendale, Cal. Coin-holder						
Williams, George H., Kansas City, Mo., assignor to Railway Supplies, Limited, Toronto, Canada. Graduated reinforced arched angle-bar for railway-track joints. (Reissue)	12,625	Mar. 26	5817	1268	127	1553
Williams, Jesse L., Mount Hamil, Iowa. End-gate	848,146	Mar. 26	4886	1067	127	1320
Williams, Percy E., Savannah, Ga. Combination dental plugger	848,334	Mar. 26	5260	1147	127	1415
Willms, Charles, Baltimore, Md. Water-tank	848,147	Mar. 26	4887	1067	127	1320
Wilson, Curtis S., assignor of one-half to L. A. Conklin, Forest, Ohio. Nut-lock	848,523	Mar. 26	5812	1227	127	1500
Wily, Arthur S., New York, N. Y. Steam-cooker	848,081	Mar. 26	4783	1043	127	1294
Wimmer, John, deceased, Indianapolis, Ind.; Indiana Trust Company, executor. Manufacturing bifocal lenses	848,335	Mar. 26	5264	1148	127	1416
Woehrle, Albert C., New York, N. Y. Circuit-breaker	848,148	Mar. 26	4889	1067	127	1321
Woerner, Frederick. (See Sandman, John T., assignor.)						
Woerner, Robert, Mannheim, Germany. Washing-machine	848,219	Mar. 26	5010	1096	127	1353
Wonder Manufacturing Company. (See Quinn, Richard S., assignor.)						
Wood, Robert A., New York, N. Y. Automatic recorder for machines	848,149	Mar. 26	4890	1067	127	1321
Wyatt, John R., McGowan, Ky. Railway switch-stand and switch-lock	848,421	Mar. 26	5420	1184	127	1457
Wynne, Frank, Westminster, London, England. Maintaining or increasing the fluidity of protein or carbonaceous materials by means of electricity	848,422	Mar. 26	5432	1184-5	127	1457
Yeager, Earnest C., Thorndale, Tex. Lifting-jack	848,524	Mar. 26	5613	1228	127	1501
Young, Marshal I., Fort Dodge, Iowa. Surgical-table top	848,422	Mar. 26	5435	1185	127	1458
Zipprich, Eugene. (See Müller and Zipprich.)						

DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Anderson, William C., Lansing, Mich. Cut-glass vessel	23,630	Mar. 26	127	1569
Court, Charles S. (See Cross and Court.)				
Cross, Eustace, and C. S. Court, Providence, R. I., assignors to Wightman and Hough Company. Lockst or similar article	23,631	Mar. 26	127	1569
Davis, John J., Pittsburg, Pa. Badge	23,632	Mar. 26	127	1569
Davis, John J., Pittsburg, Pa. Badge	23,633	Mar. 26	127	1569
Higert, Henry H., Indianapolis, Ind. Heating-stove	23,627	Mar. 26	127	1569
Marchesini, Gaetano, New York, N. Y. Automobile-horn	23,629	Mar. 26	127	1569
Sherrard, Robert C., assignor to United Order of Foresters, Chicago, Ill. Badge	23,634	Mar. 26	127	1569
Sherrard, Robert C., assignor to United Order of Foresters, Chicago, Ill. Badge	23,635	Mar. 26	127	1569
United Order of Foresters. (See Sherrard, Robert C., assignor.)				
Wagner, Louis C., New York, N. Y. Cigar band or wrapper	23,628	Mar. 26	127	1569
Wagner, Louis C., New York, N. Y. Cigar band or wrapper	23,636	Mar. 26	127	1569
Wagner, Louis C., New York, N. Y. Cigar band or wrapper	23,637	Mar. 26	127	1569
Wagner, Louis C., New York, N. Y. Cigar band or wrapper	23,638	Mar. 26	127	1569
Wehrle, August T., Newark, Ohio. Stove	23,626	Mar. 26	127	1569
Wightman and Hough Company. (See Cross and Court, assignors.)				

TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Agricultural Publishing Company, Raleigh, N. C. Weekly journal	61,617	Mar. 26	127	1576
Alabastine Company, Grand Rapids, Mich. Calcimine	61,472	Mar. 26	127	1571
American Bar-Lock Co., Philadelphia, Pa. Vault-lights, sidewalk-lights, and door and window lights	61,537	Mar. 26	127	1573
American-La France Fire Engine Co., Elmira, N. Y. Fire-extinguishers, chemical-engines, and hand-grenades and attachments therefor	61,494	Mar. 26	127	1571
American Lace Leather Co., Inc., Richmond, Va. Lace-leather	61,535	Mar. 26	127	1572
American Law Book Company, Jersey City, N. J., and New York, N. Y. Law-books	61,580	Mar. 26	127	1576
American Printing Company, Fall River, Mass. Cotton piece goods	61,476	Mar. 26	127	1571
Ashepoo Fertiliser Company, Charleston, S. C. Fertilisers	61,504	Mar. 26	127	1572
Atkinson, Mentzer & Grover, Chicago, Ill. Matting	61,477	Mar. 26	127	1571
Baker, Geo. H., New Haven, Conn. Varnish-like preservative for linoleum, oil-cloth, and like materials	61,484	Mar. 26	127	1571
Ball Bros. Glass Mfg. Co., Muncie, Ind. Fruit or preserving jars	61,527	Mar. 26	127	1572
Barnhart Brothers & Spindler, Chicago, Ill. Type	61,535	Mar. 26	127	1572
Bergeron, Louis E., Fall River, Mass. Bread	61,561	Mar. 26	127	1573
Bridgeport Specialty Company, Bridgeport, Conn. Magnetos	61,588	Mar. 26	127	1573
Bridgeport Specialty Company, Bridgeport, Conn. Magnetos	61,589	Mar. 26	127	1573
Bodine, David M., Trenton, N. J. Pork-relish	61,515	Mar. 26	127	1576
Böhler Gebr. & Co. Aktiengesellschaft, Berlin, Germany. Cast-steel	61,520	Mar. 26	127	1574
Burton & Davis Co., New York, N. Y. Teas	61,504	Mar. 26	127	1570
Castell & Co., J. S., New York, N. Y. Broad silk	48,473	Mar. 26	127	1571
Charles Roesch and Sons Company, Philadelphia, Pa. Fresh, smoked, and cured meats	61,505	Mar. 26	127	1570
Chillington Tool Company, Limited, Wolverhampton, England. Horseshoes	61,496	Mar. 26	127	1571
Citizens' Wholesale Supply Co., Columbus, Ohio. Leather blackings and dressings	61,499	Mar. 26	127	1572
Citizens' Wholesale Supply Co., Columbus, Ohio. Certain bakery products, cereal foods, and yeast	61,500	Mar. 26	127	1573
Citizens' Wholesale Supply Company, Columbus, Ohio. Certain oils	61,502	Mar. 26	127	1576
Commercial Milling Company, Detroit, Mich. Wheat-flour	61,473	Mar. 26	127	1571
Cooper & McKee, New York, N. Y. Cigar-cabinets	61,554	Mar. 26	127	1573
Copeland & Co., Charles C., New York, N. Y. Cotton, cotton and silk, and cotton and wool piece goods	61,555	Mar. 26	127	1573
Clarke Bros., Scranton, Pa. Men's leather shoes	61,479	Mar. 26	127	1571
Clarke Bros., Scranton, Pa. Men's, boys', and youths' leather shoes	61,539	Mar. 26	127	1572
Clarke Bros., Scranton, Pa. Ladies' leather shoes	61,540	Mar. 26	127	1573
Clarke Bros., Scranton, Pa. Ladies' leather shoes	61,541	Mar. 26	127	1573
Clarke Bros., Scranton, Pa. Ladies', misses', and children's leather shoes	61,542	Mar. 26	127	1573
Craven Chemical Company, Newbern, N. C. Fertilizers	61,543	Mar. 26	127	1573
Craven Chemical Company, Newbern, N. C. Fertilizers	61,544	Mar. 26	127	1573
Cutaway Harrow Company, Higganum, Conn. Harrows, plows, cultivators, horse-hoes, seeders, lawn and field rollers	61,546	Mar. 26	127	1573
Davis, Mack H., Shelby, Ohio. Wheat-flour	61,507	Mar. 26	127	1572
De Erven De Wed. J. Van Nelle, assignor to De Erven De Wed. J. Van Nelle, Rotterdam, Netherlands. Smoking-tobacco, cigars, cigarettes, and snuff	61,536	Mar. 26	127	1573
Delaney & Murphy, Chicago, Ill. Whisky	61,467	Mar. 26	127	1572
Diamond Fabric Company of America, Hoboken, N. J. Bed and upholstery springs	61,570	Mar. 26	127	1574
Diets, Andrew T., Toledo, Ohio. Certain pastry	61,557	Mar. 26	127	1573
Doctor Wemm's Eucalyptus Cure Company, Denver, Colo. Chewing-gum	61,558	Mar. 26	127	1573
E. T. Smith Company, Worcester, Mass. Sea foods	61,559	Mar. 26	127	1573
Eagle Pencil Company, New York, N. Y. Lead-pencils of all kinds, including copying-pencils	61,525	Mar. 26	127	1574
Ebling Brewing Co., New York, N. Y. Malt extract	61,509	Mar. 26	127	1576
Edgar Manufacturing Company, Boston, Mass. Water-motors	61,567	Mar. 26	127	1574
El Dorado Brewing Co., Stockton, Cal. Beer	61,493	Mar. 26	127	1572
Ferment Company, New York, N. Y. Lactobacilline ferment	61,509	Mar. 26	127	1571
Ferment Company, New York, N. Y. Lactobacilline ferment	61,510	Mar. 26	127	1573
Franklin Electric Mfg. Co., Hartford, Conn., and New York, N. Y. Incandescent electric lamps	61,511	Mar. 26	127	1573
Freiberg, Meyer & Co. Cincinnati, Ohio. Whisky	61,512	Mar. 26	127	1572
Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Metal plates and steel	61,513	Mar. 26	127	1574
Fritz Bros. Co., Cincinnati, Ohio. Cigars	61,514	Mar. 26	127	1572

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
G. W. Cole Company, Rahway, N. J., and New York, N. Y. Oil for certain named purposes	61,545	Mar. 26	127	1573
G. W. Cole Company, Rahway, N. J., and New York, N. Y. Oil for certain named purposes	61,546	Mar. 26	127	1573
General Incandescent Lamp Company, Cleveland, Ohio. Incandescent lamps	61,547	Mar. 26	127	1571
Glen, Mary A., Elizabeth, N. J. Paper toys	61,481	Mar. 26	127	1574
Gordon, Wolf and [illegible], New York, N. Y. Certain clothing	61,550	Mar. 26	127	1574
Heidelberg, Wolf & Co., New York, N. Y. Certain clothing	61,499	Mar. 26	127	1572
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Files and rasps	61,511	Mar. 26	127	1573
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Certain metal manufactures	61,465	Mar. 26	127	1571
Ichthyol Gesellschaft, Cordes, Hermanni & Co., Hamburg, Germany. Medicated soap	61,562	Mar. 26	127	1573
Illinois Seed Company, Chicago, Ill. Grass, clover, and field seeds	61,552	Mar. 26	127	1574
Illinois Seed Company, Chicago, Ill. Poultry food	61,512	Mar. 26	127	1573
Illinois Seed Company, Chicago, Ill. Seeds	61,553	Mar. 26	127	1574
International Harvester Company of America, Chicago, Ill. Certain agricultural machines	61,500	Mar. 26	127	1573
Ivimy, Limited, Alexander, Edinburgh. Custard-powder	61,521	Mar. 26	127	1576
J. A. Wright & Co., Keene, N. H. Stove-polish	61,483	Mar. 26	127	1571
J. & G. Cox Limited, Granton, Edinburgh, Scotland. Gelatin for use as food	61,506	Mar. 26	127	1571
Jacob & Sons, H., New York, N. Y. Leggings	61,564	Mar. 26	127	1574
Jewett Bigelow & Brooks, Bay City, Mich. Coal	61,563	Mar. 26	127	1573
Jones and Co., W. H., Boston, Mass. Whisky	61 564	Mar. 26	127	1573
Kamp Distilling Co., St. Louis, Mo. Whisky	61,585	Mar. 26	127	1574
Keuffel & Esser Company, Hoboken, N. J. Drawing-paper	61,601	Mar. 26	127	1574
Keuffel & Esser Company, Hoboken, N. J. Drawing-paper	61,602	Mar. 26	127	1574
Kirschbraun & Sons, Charles, Meier. Creamery-butter	61,565	Mar. 26	127	1573
Lawton & Hall, Chicago, Ill. Certain rubber clothing	61,484	Mar. 26	127	1571
Le Compte, Benjamin V., Galveston, Tex. Whisky	61,467	Mar. 26	127	1571
Lehigh Valley Silk Mills, South Bethlehem, Pa. Silk dress goods	61,468	Mar. 26	127	1571
Lucas & Co., John, Philadelphia, Pa. Composition for removing paint and varnish	61,469	Mar. 26	127	1571
Lucas & Co., John, Philadelphia, Pa. Varnishes and japans				
Lucas & Co., John, Philadelphia, Pa. Paint used for finishing purposes				
Lucas & Co., John, Philadelphia, Pa. Paint used for finishing purposes				
"Lucerna" Anglo-Swiss Milk Chocolate Co., Hochdorf-Lucerne, Switzerland. Chocolate, cocoa, and bonbons	61,528	Mar. 26	127	1572
Lyon & Healy, Chicago, Ill. Furniture-polish	61,470	Mar. 26	127	1571
Madame Irbens, New York, N. Y. Corsets	61,482	Mar. 26	127	1571
Mallow Cream Co., Chicago, Ill. Confectioners' paste to be used in making candies	61,566	Mar. 26	127	1573
Manganese Bronze & Brass Co. Ld., London, England. Manganese bronze	61,603	Mar. 26	127	1574
Mayer, M. & C., New York, N. Y. Knit hosiery and underwear	61,604	Mar. 26	127	1574
Minot, Hooper & Co., New York, N. Y. Shirtings	61,485	Mar. 26	127	1571
Morgan, Grover C., Westfield, Mass. Horse-whips	61,567	Mar. 26	127	1573
Myers, Henry B., Covington, Ky. Gin	61,586	Mar. 26	127	1574
National Biscuit Company, Jersey City, N. J., and Chicago, Ill. Fruit-biscuit	61,529	Mar. 26	127	1573
National Biscuit Company, Jersey City, N. J., and New York, N. Y. Candy	61,568	Mar. 26	127	1573
National Biscuit Company, Belvidere, Ill. Sewing-machines	61,513	Mar. 26	127	1572
National Sewing Machine Company, Belvidere, Ill. Sewing-machines	61,569	Mar. 26	127	1573
Neuss, Hesslein & Co., New York, N. Y. Wooden handles for tools and implements	61,301	Mar. 26	127	1572
Ninestein Hundred Washer Co., Binghamton, N. J. Washing-machines and wringers	61,622	Mar. 26	127	1576
Oemler, Augustus, Savannah, Ga. Canned hash-meat	61,486	Mar. 26	127	1571
Omo Manufacturing Company, Middletown, Conn. Dress-shields	61,570	Mar. 26	127	1573
Owen China Company, Minerva, Ohio. Certain porcelain articles	61.571	Mar. 26	127	1573
P. Trust Co., Cleveland, Ohio. Wheat-flour	61.606	Mar. 26	127	1574
Park & Tilford, New York, N. Y. Cigars	61.608	Mar. 26	127	1574
Park & Tilford, New York, N. Y. Cigars	61,607	Mar. 26	127	1574
Park & Tilford, New York, N. Y. Cigars	61,530	Mar. 26	127	1573
Parsons Paper Co., Holyoke, Mass. High-grade paper for use in writing, printing, and engraving	61,567	Mar. 26	127	1574
Parsons Paper Co., Holyoke, Mass. High-grade paper for use in writing, printing, and engraving	61,598	Mar. 26	127	1574
Parsons Paper Co., Holyoke, Mass. High-grade paper for use in writing, printing, and engraving	61,599	Mar. 26	127	1575
Parsons Paper Co., Holyoke, Mass. High-grade paper for use in writing, printing, and engraving	61,623	Mar. 26	127	1574
Paul Brothers, Philadelphia, Pa. Leather boots, shoes, and slippers	61,572	Mar. 26	127	1574
Pfister & Vogel Leather Company, Milwaukee, Wis. All kinds of leather	61,573	Mar. 26	127	1574
Pfister & Vogel Leather Company, Milwaukee, Wis. All kinds of leather	61,574	Mar. 26	127	1571
Pfister & Vogel Leather Company, Milwaukee, Wis. All kinds of leather	61,471	Mar. 26	127	1571
Pfister & Vogel Leather Company, Milwaukee, Wis. All kinds of leather	61,474	Mar. 26	127	1574
Pompeian Mfg. Co., Cleveland, Ohio. Soap	61,590	Mar. 26	127	1574
Pompeian Mfg. Co., Cleveland, Ohio. Soap	61,575	Mar. 26	127	1574
Pressing & Ott Company, Norwalk, Ohio. Salad-dressing, catsup, and mince meat	61,487	Mar. 26	127	1571
Purdy, Herbert L., Boston, Mass. Leather boots and shoes	61,488	Mar. 26	127	1571
Rand, Ismael, Philadelphia, Pa. Ladies' and children's shirt-waists and shirt-waist suits	61,606	Mar. 26	127	1574
Raymond, F. J., Stockton, Cal. Leather gloves				
Regal Shoe Company, Inc., Boston, Mass. Leather boots and shoes	61,480	Mar. 26	127	1571
Robinhorn & Hutchins Company, New York, N. Y. Men's, women's, and children's knitted undershirts and drawers	61,524	Mar. 26	127	1576
Rosenber & Hershfield Chemical Co., New York, N. Y. Apparatus for generating oxygen	61,490	Mar. 26	127	1571
Roesch-Bowling Company, Detroit, Mich. Dolls and toy animals	61,576	Mar. 26	127	1574
Rugby Milling Company, Rugby, N. D. Wheat-grits	61,509	Mar. 26	127	1574
Salmon, Max, New York, N. Y. Whisky	61,510	Mar. 26	127	1574
Sample & Co., New York, N. Y. Dress-silks	61,491	Mar. 26	127	1571
Sando, Augustus H., New York, N. Y. Leather of all kinds	61,577	Mar. 26	127	1574
Schlosser & Co., Chas. A., New York, N. Y. Canned salmon	61,625	Mar. 26	127	1576
Schmitz & Co., C., New York, N. Y. Odometers, kilometer-counters, and tachymeters	61,611	Mar. 26	127	1576
Schneider, Adam, Berlin, Germany. Saddle-housings and saddle-pads	61,391	Mar. 26	127	1574
Smith-Worthington Company, New York, N. Y. Gas and vapor heaters and furnaces	61,514	Mar. 26	127	1573
Soc. Anon. des Anciens Etablissements Panhard & Levassor, Paris, France. Certain electrical machines and apparatus	61,502	Mar. 26	127	1572
Soc. Anon. des Anciens Etablissements Panhard & Levassor, Paris, France. Automobiles and parts thereof	61,503	Mar. 26	127	1572
Soda Mint Gum Company, Trenton, N. J., and Allegheny, Pa. Chewing-gum	61,532	Mar. 26	127	1572
Stanchard Milling Co., Houston, Tex. Wheat-flour	61,533	Mar. 26	127	1574
Star Distilling Co., Cincinnati, Ohio. Whisky	61,592	Mar. 26	127	1573
Sterling Electrical Manufacturing Company, Warren, Ohio. Decorative electric-lighting outfits	61,515	Mar. 26	127	1573
Sterling Electrical Manufacturing Company, Warren, Ohio. Decorative electric-lighting outfits	61,548	Mar. 26	127	1576
Sterling Electrical Manufacturing Company, Warren, Ohio. Link-buttons, tie-clasps, studs, and collar-supporters	61,612	Mar. 26	127	1576
Stern Brothers & Company, New York, N. Y. Thimbles	61,613	Mar. 26	127	1573
Stern Brothers & Company, New York, N. Y. Whisky	61,534	Mar. 26	127	1573
Stradley, Robert E., Lexington, Ky. Whisky	61,535	Mar. 26	127	1573
Stradley, Robert E., Lexington, Ky. Whisky	61,614	Mar. 26	127	1576
Straus, Oscar S. & Co., Richmond, Va. Whisky				

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Strong Machinery & Supply Co., New York, N. Y. Metallic packings	41,382	Mar. 26	127	1573
Successful Farming Publishing Company, Des Moines, Iowa. Monthly newspaper	41,383	Mar. 26	127	1573
Taylor Iron & Steel Co., High Bridge, N. J. Steel car-wheels	41,384	Mar. 26	127	1573
Trahn Metal Company, Medford, Mass. Bearing metals	41,385	Mar. 26	127	1573
Union Match Company, Duluth, Minn. Friction-matches	41,377	Mar. 26	127	1573
Victor Sporting Goods Co., Springfield, Mass. Certain named goods used in athletic games and sports	41,386	Mar. 26	127	1573
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	41,429	Mar. 26	127	1571
W. R. Roach & Co., Hart, Mich. Canned fruits and vegetables	41,349	Mar. 26	127	1573
W. S. Quinby Company, Boston, Mass. Coffee and tea	41,350	Mar. 26	127	1573
W. W. Lawrence & Company, Pittsburg, Pa. Combination of white lead and zinc	41,351	Mar. 26	127	1573
Wanamaker, John, Philadelphia, Pa. Broad silks, dress-silks, and piece silks	41,352	Mar. 26	127	1571
Weiss M'f'g. Co., New York, N. Y. Leather robe, match-cases, and pocket-books	41,353	Mar. 26	127	1571
Wells-Jones Plow Co., Jackson, Tenn. Soil-scrapers	41,378	Mar. 26	127	1574
Wm. Elliot & Co., New York, N. Y. Razors	41,379	Mar. 26	127	1573
Wm. Elliot & Co., New York, N. Y. Razors	41,380	Mar. 26	127	1573
Wm. Elliot & Co., New York, N. Y. Razors	41,381	Mar. 26	127	1573
Wm. Elliot & Co., New York, N. Y. Razors	41,382	Mar. 26	127	1573
Wm. Elliot & Co., New York, N. Y. Razors	41,383	Mar. 26	127	1573
Wm. Elliot & Co., New York, N. Y. Razors	41,384	Mar. 26	127	1573
Wm. Elliot & Co., New York, N. Y. Razors	41,385	Mar. 26	127	1573

LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Armstrong, Richard R., Terre Haute, Ind. "Se-be-go." (For a Carbonated Beverage)	12,429	Mar. 26	127	1576
Berlin Laboratory, Cincinnati, Ohio. "Kaffee Klatsch." (For Coffee)	12,431	Mar. 26	127	1576
Berlin Laboratory, Cincinnati, Ohio. "Bisco." (For a Baking Compound)	12,432	Mar. 26	127	1576
Berlin Laboratory, Cincinnati, Ohio. "Big Jams." (For Baking-Powder)	12,433	Mar. 26	127	1576
Berlin Laboratory, Cincinnati, Ohio. "Baking Powder." (For Baking-Powder)	12,434	Mar. 26	127	1576
Corn Crystal Company, Worcester, Mass. "Corn Crystals." (For a Cereal Food)	12,435	Mar. 26	127	1576
Keesy, Rudolph H., Canton, Ohio. "Lion Washing Powder." (For Washing-Powder)	12,436	Mar. 26	127	1576
O. L. Schwencke Lithographic Co., New York, N. Y. "Just Right." (For Cigars)	12,438	Mar. 26	127	1576
O. L. Schwencke Lithographic Co., New York, N. Y. "Orsia." (For Cigars)	12,439	Mar. 26	127	1576
O. L. Schwencke Lithographic Co., New York, N. Y. "Good Luck." (For Cigars)	12,437	Mar. 26	127	1576
Williams Bros. Co., Milwaukee, Wis. "Schipp's Export." (For Beer)	12,440	Mar. 26	127	1576

PRINTS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Bigelow Varnish Co., Newark, N. J. "Fine Varnishes and Japans." (For Varnishes and Japans)	1,941	Mar. 26	127	1576
Chapin & Hollister Co., Providence, R. I. "Rimless Eyeglass Snap." (For Eyeglass-Snap)	1,938	Mar. 26	127	1576
Ed. V. Price & Company, Chicago, Ill. "Who's Your Tailor?" (For Men's and Boys' Coats, Vests, and Trousers)	1,939	Mar. 26	127	1576
Ed. V. Price & Company, Chicago, Ill. "Fall 1907 Guess." (For Men's and Boys' Coats, Vests, and Trousers)	1,940	Mar. 26	127	1576
Gerstendorfer Bros., New York, N. Y. "Sapolin Powders for All Kinds of Gilding." (For Gilding-Powders)	1,942	Mar. 26	127	1576
Lanahan & Son, Baltimore, Md. "Jumped into Favor From The Start." (For Whisky)	1,943	Mar. 26	127	1576
Lytton, H. C., Chicago, Ill. "Men's and Boys' Apparel." (For Men's and Boys' Apparel)	1,944	Mar. 26	127	1576
Perry & Co., Philadelphia, Pa. "Perry's Fashions for Spring 1907." (For Men's Clothing)	1,937	Mar. 26	127	1576

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
A. G. Spalding & Bros., New York, N. Y. Ball and bicycle stockings, jerseys, sweaters, knit shirts, tights, &c.	25,574	Mar. 26	127	1567
A. G. Spalding & Bros., New York, N. Y. Bandages, supporters, and suspensories	25,575	Mar. 26	127	1567
A. G. Spalding & Bros., New York, N. Y. Ball and bicycle stockings, jerseys, sweaters, knit shirts, tights, &c.	25,578	Mar. 26	127	1567
A. G. Spalding & Bros., New York, N. Y. Bandages, supporters, and suspensories	25,579	Mar. 26	117	1567
A. G. Spalding & Bros., New York, N. Y. Ball and bicycle stockings, jerseys, sweaters, knit shirts, tights, &c.	25,582	Mar. 26	127	1567
A. G. Spalding & Bros., New York, N. Y. Bandages, supporters, and suspensories	25,583	Mar. 26	127	1568
A. G. Spalding & Bros., New York, N. Y. Bandages, supporters, and suspensories	25,263	Mar. 26	127	1563
Abraham & Straus, Brooklyn, N. Y. Coffee and tea	25,544	Mar. 26	127	1566
Abraham & Straus, Brooklyn, N. Y. Tea and coffee	12,051	Mar. 26	127	1566
Acme White Lead & Color Works, Detroit, Mich. Paints, enamels, stains, and varnishes	12,324	Mar. 26	127	1566
Actien-Gesellschaft für Anilin-Fabrikation, Berlin, Germany. Films, plates, and photographic papers	17,991-2	Mar. 26	127	1557
Actien-Gesellschaft für Anilin-Fabrikation, Berlin, Germany. Coal-tar dyestuffs	19,458	Mar. 26	127	1557
Actien-Gesellschaft für Anilin-Fabrikation, Berlin, Germany. Hair-dying preparations	21,594	Mar. 26	127	1555
Aktiebolaget Berthel Dahlgren, Gothenburg, Sweden. Arrack punch	23,901	Mar. 26	127	1560
Albert M. Gugenheim Co. Cincinnati, Ohio. Whisky	24,465	Mar. 26	127	1560
American Stove Company, Jersey City, N. J., and St. Louis, Mo. Gas ranges, stoves, and heaters and vapor stoves and ovens	21,566	Mar. 26	127	1557
American Washboard Company, Cleveland, Ohio. Washboards	25,619	Mar. 26	127	1568
Bedford-Willis Company, Boston, Mass. Knit underwear	25,316	Mar. 26	127	1564
Beeler, Frank A., Pleasant Hill, Mo. Powder used in the manufacture of ice-cream and ices	25,546	Mar. 26	127	1567
Bernheim Distilling Co. Inc., Louisville, Ky. Whisky	25,614-15	Mar. 26	127	1568
Blood Balm Company, Atlanta, Ga. Remedy for blood diseases	21,428	Mar. 26	127	1557
Boots Pure Drug Company Limited, Nottingham, England. Medical preparations for the skin	21,782	Mar. 26	127	1558
Brandt, Paul, Charlottenburg, Germany. Preparations for repelling insects	17,276	Mar. 26	127	1557
Breves, Charles, Chicago, Ill. Headache medicines	24,906	Mar. 26	127	1561
Bryant, Perrett & Co., Binghamton, N. Y. Silk dress goods	25,500	Mar. 26	127	1566
Butterfield & Co., Fred., New York, N. Y. Silk, silk and cotton, cotton, &c., piece goods	21,462	Mar. 26	127	1557
Byrne & Hammer Dry Goods Co., Omaha, Nebr. Shirts	25,265	Mar. 26	127	1564
Carleton & Hovey, Lowell, Mass. Remedy for lung and throat troubles, a body-builder, &c	25 501-2	Mar. 26	127	1568
Castle Brothers, Incorporated, San Francisco, Cal. Dried fruit	25,504	Mar. 26	127	1566
Cattell, Millard F., et al., executors. (See Green, Lewis M.)	25,623	Mar. 26	127	1568
Central Dakota Flouring Mill Company, Arlington, S. D. Wheat-flour	23,133	Mar. 26	127	1558
Charles E. Hires Company, Philadelphia, Pa. Root-beer	23,531	Mar. 26	127	1559
Christy & Company, Limited, London, England. Hats and caps	25,589	Mar. 26	127	1568
Clothlin Chemical Company, New York, N. Y. Emulsions of cod-liver oil	25,288	Mar. 26	127	1564
Co-operative Foundry Co., Rochester, N. Y. Stoves, ranges, furnaces, and heaters	25,064	Mar. 26	127	1562
Collins Company, Collinsville, Conn. Axes, hatchets, bush-hooks, saws, &c.	7,519	Mar. 26	127	1555
Columbus Buggy Company, Columbus, Ohio. Buggies and wagons	24,711	Mar. 26	127	1561
Compagnie Ray mit beschränkter Haftung, Berlin, Germany. Soap	25,062	Mar. 26	127	1562
Continental Iron Works, Brooklyn, N. Y. Metal cylinders, cones, spheres, buoys, &c	18,496	Mar. 26	127	1557
Dalsimer, Sylvan, Philadelphia, Pa. Shoes	25,551	Mar. 26	127	1567
Diamond Rubber Co., Akron, Ohio. Pneumatic cushion and solid rubber tires	25,039-40	Mar. 26	127	1563
Drake & Co., New York, N. Y. Leather boots and shoes	10,279	Mar. 26	127	1556
Eagle Roller Mill Company, New Ulm, Minn. Wheat-flour	25,477	Mar. 26	127	1568
Earnshaw, Basil B., Washington, D. C. Wheat-flour	17,828	Mar. 26	127	1557
Electric Chain Co., Attleboro, Mass. Jewelry	22,766	Mar. 26	127	1558
F. A. Hardy & Co., Chicago, Ill. Test-types, eyeglasses, spectacles, &c	22,730	Mar. 26	127	1558
Fay, Alpheus, Louisville, Ky. Prepared milk and cream	15,315	Mar. 26	127	1556
Fouquet et Cie, Paris, France. Salves, ointments, and lotions	25,365	Mar. 26	127	1564
G. Kaumacumann & Cie. Schweiz. Trockenmilchgesellschaft, Glockenthal, Switzerland. Mixture of dry milk and cocoa	24,575	Mar. 26	127	1561
G. A. Crayon & Co., New York, N. Y. Surgical bandages	25,055	Mar. 26	127	1562
Gill Brothers Company, Steubenville, Ohio. Electric lamps	23,771	Mar. 26	127	1559
Globe Machine and Stamping Company, Cleveland, Ohio. Magazines and pamphlets	25,519	Mar. 26	127	1566
Gostas, Otto, New York, N. Y. Dyed cotton fabrics	11,551	Mar. 26	127	1566
Gosden, Harvey J., Chicago, Ill. Monthly journal	18,719	Mar. 26	127	1557
Green, Lewis M., deceased; M. A. Lupton, M. F. Cattell, and P. S. Hortz, Woodbury, N. J., executors. Preparation for the cure of dyspepsia	24,160	Mar. 26	127	1560
Greef, Paul F. W., Viersen, Germany. Umbrellas	25,371	Mar. 26	127	1565
Haley-Laybourn Eye Infirmary, St. Louis, Mo. Eye remedies	25,467	Mar. 26	127	1566
Harris-Folk Hat Co., St. Louis, Mo. Felt and straw hats	25,388	Mar. 26	127	1565
Heal, William S., New York, N. Y. Parlor games	25,546	Mar. 26	127	1567
Heinrich Mattoni Aktiengesellschaft, Carlsbad, Austria-Hungary, and New York, N. Y. Mineral water	25,196	Mar. 26	127	1563
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws and saw-blades	22,385	Mar. 26	127	1558
Hoar, John J., Dubuque, Iowa. Pile cure	24,927	Mar. 26	127	1561
Hoerwitz, Arthur, Berlin, Germany. Prepared foods for infants and invalids	25,613	Mar. 26	127	1568
Hortz, Philip S., et al., executors. (See Sachers, Ralph J., assignor.)	25,506	Mar. 26	127	1566
Ihmsgraph Company of America. (See Green, Lewis M.)	25,543	Mar. 26	127	1566
International Factories Co., Minneapolis, Minn. Washing-machines	23,993	Mar. 26	127	1559
International Power Company, New York, N. Y.; Bridgeport, Conn.; Providence, R. I., and Worcester, Mass. Internal-combustion engines	23,994	Mar. 26	127	1559
Iowa Soap Company, Burlington, Iowa. Soap	25,528	Mar. 26	127	1566
Isaac Prouty & Co. (Incorporated), Boston, Mass. Leather boots and shoes	24,297	Mar. 26	127	1560
J. G. Hutchison & Co., Ottumwa, Iowa. Buckwheat and wheat flour, breakfast foods, rice, &c	25,241	Mar. 26	127	1563
J. G. Hutchison & Co., Ottumwa, Iowa. Canned fruits and vegetables, flavoring extracts, mince-meat, &c	16,930	Mar. 26	127	1555
Jacob Doll & Sons, Inc., New York, N. Y. Pianos	1,939	Mar. 26	127	1555
Jenkins Paint and Oil Co., Norfolk, Va., and New York, N. Y. Paint	1,871	Mar. 26	127	1555
John Hetherg Co., Green Bay, Wis. Tissue-paper	1,875-6	Mar. 26	127	1557
Jönköpings och Vulcans Tändsticksfabriksaktiebolag, Jönköping, Sweden. Safety-matches	25,555	Mar. 26	127	1567
Kampfe Bros., New York, N. Y. Razors and razor-blades	25,537	Mar. 26	127	1566
Kampfe Bros., New York, N. Y. Razors and razor-blades	23,166	Mar. 26	127	1560
Kampfe Bros., New York, N. Y. Safety-razors, razor-blades, and safety corn-knives				
Kampfe Bros., New York, N. Y. Gin				
Kaufmann Bear & Co., Cincinnati, Ohio. Pipe and nut wrenches				
Keystone Mfg. Co., Buffalo, N. Y. Combination of paint and varnish				
Keystone Varnish Co., Brooklyn, N. Y.				

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Ladd, John H., London, England. Incandescent gas-mantles	[illegible]	Mar. 26	127	[illegible]
Lord & Taylor, New York, N. Y. Hosiery	[illegible]	Mar. 26	127	[illegible]
Lund, George, London, England. Yarn produced from cellulose or viscose	[illegible]	Mar. 26	127	[illegible]
Lupton, Mary A., *et al.*, executors. (See Green, Lewis M.)				
Marvel Buckle Company, Baltimore, Md. Buckles	[illegible]	Mar. 26	127	1561
McDonald, Charles C., Elyria, Ohio. Canned fruit, vegetables, and baked beans	[illegible]	Mar. 26	127	1561
McNeil Boiler Company, Akron, Ohio. Water-tube boilers	[illegible]	Mar. 26	127	1560
Mieroline Medicine Company, Dallas, Tex. Remedies for the relief of pain, for the cure of diseases of the eyes, &c.	[illegible]	Mar. 26	127	1560
Mieroline Medicine Company, Dallas, Tex. Remedy for disorders of the bowels	[illegible]	Mar. 26	127	1564
Morgan Crucible Company Limited, Battersea, London, England. Plumbago or graphite	[illegible]	Mar. 26	127	1565
Morgan Crucible Company Limited, Battersea, London, England. Crucibles, &c., made of plumbago or graphite	[illegible]	Mar. 26	127	1560
Morse Twist Drill & Machine Company New Bedford, Mass. Calipers and gages	[illegible]	Mar. 26	127	1557
Naamlooze Vennootschap Plateelbakkerij "Delft," Amsterdam, Netherlands. Dinnerware	[illegible]	Mar. 26	127	1559
Naylor & Co., John S., Wheeling, W. Va. Hosiery and knitted underwear	[illegible]	Mar. 26	127	1560
New Era Milling Company, Arkansas City, Kans. Wheat-flour	[illegible]	Mar. 26	127	1563
Norton Company, Worcester, Mass. Abrasive and polishing materials	[illegible]	Mar. 26	127	1564
Nussey, Arthur, Paterson, N. J. Bug-powder	[illegible]	Mar. 26	127	1558
Padgett, James T., New Bloomfield, Mo. Medicines for venereal diseases	[illegible]	Mar. 26	127	1558
Palmer, Solon, New York, N. Y. Soap	[illegible]	Mar. 26	127	1566
Faye and Baker Manufacturing Co., North Attleboro, Mass. Jewelry, table, flat, and hollow ware, &c.	[illegible]	Mar. 26	127	1562
Pease, Myron E., Toledo, Ohio. Medicinal preparation for the cure of asthma, hay fever, &c.	[illegible]	Mar. 26	127	1559
Peters Shoe Co., St. Louis, Mo. Leather boots and shoes	[illegible]	Mar. 26	127	1566
Pittsburgh Waterproof Shoe Polish Company, Pittsburg, Pa. Polish for boots, shoes, and leather	[illegible]	Mar. 26	127	1562
Queen City Printing Ink Co., Cincinnati, Ohio. Printing-inks	[illegible]	Mar. 26	127	1563
Queen Metal Company, New York, N. Y. Alloy resembling silver	[illegible]	Mar. 26	127	1564
Railway Materials Company, Chicago, Ill. Oil-furnaces	[illegible]	Mar. 26	127	1555
Ralston Purina Co., St. Louis, Mo. Wheat-flour	[illegible]	Mar. 26	127	1559
Raynor & Perkins Envelope Company, New York, N. Y. Paper and envelops	[illegible]	Mar. 26	127	1556
Rosenberg & Sons, B., New Orleans, La. Leather boots and shoes	[illegible]	Mar. 26	127	1565
Rosenberg & Sons, B., New Orleans, La. Leather shoes and slippers	[illegible]	Mar. 26	127	1566
Rosenberg & Sons, B., New Orleans, La. Leather shoes and slippers	[illegible]	Mar. 26	127	1566
Roseville Pottery Co., Zanesville, Ohio. Cooking utensils	[illegible]	Mar. 26	127	1561
Sachers, Ralph J., assignor, by mesne assignments, to Ikonograph Company of America, New York, N. Y. Photographic cameras, paper, picture-exhibiting apparatus, &c.	[illegible]	Mar. 26	127	1565
Schmidt, George A., Chicago, Ill. Soap	[illegible]	Mar. 26	127	1559
Smith-Briscoe Shoe Company, Incorporated, Lynchburg, Va. Leather boots and shoes	[illegible]	Mar. 26	127	1567
Spandauer & Co., B. D., Baltimore, Md. Shirt-waists and shirt-waist suits	[illegible]	Mar. 26	127	1560
Sperry, Emory C., Canton, Ohio. Candy	[illegible]	Mar. 26	127	1560
Standard Chemical & Oil Company, Troy, Ala. Guano and bone fertilizer	[illegible]	Mar. 26	127	1558
Starry, Wallace G., Harrisburg, Pa. Waterproof collars and cuffs	[illegible]	Mar. 26	127	1558
Stebbins Lawson and Spragins Co., South Boston, Va. Cotton piece goods	[illegible]	Mar. 26	127	1561
Stephens Manufacturing Co., A. W., Waltham, Mass. Bottle-openers	[illegible]	Mar. 26	127	1562
Thos. G. Carroll & Son Co. of Baltimore City, Baltimore, Md. Rye whisky	[illegible]	Mar. 26	127	1557
Trout Hardware Company, Chicago, Ill. Garden rakes, hoes, trowels, and spades	[illegible]	Mar. 26	127	1556
Truman, John G., Bushnell, Ill. Colic and fever cure for horses and cattle	[illegible]	Mar. 26	127	1560
Union Paper & Twine Company, Cleveland, Ohio. Felt roofing	[illegible]	Mar. 26	127	1563
Vickery & Hill Publishing Co., Augusta, Me. Monthly periodical	[illegible]	Mar. 26	127	1568
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	[illegible]	Mar. 26	127	1560
Warren Featherbone Co., Three Oaks, Mich. Stiffening-blades, cords, tapes, and fabrics	[illegible]	Mar. 26	127	1563
Weiller & Herman Co., New York, N. Y. Children's dresses	[illegible]	Mar. 26	127	1568
Western Grain Products Company, Milwaukee, Wis. Stock food	[illegible]	Mar. 26	127	1561
Whaley Mill & Elevator Co., Gainesville, Tex. Wheat-flour	[illegible]	Mar. 26	127	1561-2
Wright & Ditson, Jersey City, N. J., and Boston, Mass. Base-ball caps, shirts pants, outing-suits, &c.	[illegible]	Mar. 26	127	1561
Wright, Jessie T., Cornhill, Tex. Compound for the destruction of Johnson grass, fleas, &c.	[illegible]	Mar. 26	127	1559

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE ISSUED ON THE 26TH DAY OF MARCH, 1907.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Acids. Bromic derivative of fatty	E. Fischer	848,220	Mar. 26	5030		127	1388
Addressing-machine	A. E. Grapp	848,546	Mar. 26	5644	1235–7	127	1509
Adjustable table	E. Kohler	848,469	Mar. 26	5515	1201	127	1478
Air. Moistening	H. Bentz	848,340	Mar. 26	5271	1149	127	1413
Air-moistening apparatus	H. Bentz	848,341	Mar. 26	5273	1149–50	127	1413
Air. Regulating the temperature of	P. Mandeville and W. C. Walker	848,595	Mar. 26	5763	1256	127	1540
Air-ship	O. G. Schwabek	848,055	Mar. 26	4742	1034	127	1388
Alarm: See Burglar-alarm. Electric alarm.							
Aluminium and nickel sulfur salts. Manufacture of	A. Clemm	848,612	Mar. 26	5803		127	1548
Ammunition-case	G. Schwarz	848,500	Mar. 26	5564	1215	127	1489
Amusement apparatus	E. A. Smith	848,061	Mar. 26	4749	1036	127	1389
Anaesthetic-cone	G. F. Roosevelt	848,126	Mar. 26	4859	1061	127	1313
Anaesthetic dosage	J. M. Dubois	848,295	Mar. 26	5183	1129	127	1396
Animal-trap	D. H. Coker	848,535	Mar. 26	5631	1232	127	1508
Annunciator	J. G. Kounts	848,470	Mar. 26	5516	1201–2	127	1478
Apron-supporter	E. Gathmann	848,024	Mar. 26	4690	1022–3	127	1371
Armature	E. C. Phillips	848,046	Mar. 26	4727	1031	127	1381
Automobile-wheel	P. and W. Walger	848,216	Mar. 26	5002	1093	127	1371
Awning	F. Thoms	848,509	Mar. 26	5589	1221	127	1494
Awning	O. F. Jordan	848,178	Mar. 26	4934	1077	127	1332
Axles. Nut-retainer for vehicle	L. McCann	848,461	Mar. 26	5535	1206	127	1483
Bag attachment	J. S. Tuttle	848,411	Mar. 26	5413	1180–1	127	1448
Baling-press	J. S. Tuttle	848,412	Mar. 26	5414	1181	127	1453
Baling-press	C. E. Wehrenberg	848,420	Mar. 26	5429	1182–4	127	1405
Baling-press	G. Schubert	848,054	Mar. 26	4741	1033	127	1384
Baling-press	J. S. Tuttle	848,413	Mar. 26	5416	1181–2	127	1453
Baling-press plunger	F. A. Bruneau	848,007	Mar. 26	4667	1017	127	1295
Baling-press. Self-feed mechanism for	J. B. Weir, I. D. Perry, and J. Merchens	848,218	Mar. 26	5003	1095	127	1389
Bale-tyer clamp. Base	W. P. Harvey	848,302	Mar. 26	5195	1133	127	1390
Bank. Pocket							
Bank. Pocket coin							
Bar: See Back-bar. Spike-bar.							
Battery-plate	W. G. C. Krause	848,589	Mar. 26	5671	1241–2	127	1516
Bearing. Adjustable	E. S. Clough	848,224	Mar. 26	5020	1097	127	1385
Bed. Berth	G. E. Holmes, A. G. and J. M. Bostrom	848,205	Mar. 26	5006	1120	127	1403
Beer or other beverage cooler	J. Ettel	848,228	Mar. 26	5028	1099	127	1387
Belt stretcher and tightener	A. Y. Foltz	848,200	Mar. 26	5193	1123	127	1386
Bicycle attachment	J. H. Sager	848,324	Mar. 26	5242	1144	127	1411
Bin: See Storage-bin.							
Binders. Alarm attachment for self-	L. J. Phillips	848,491	Mar. 26	5551	1211	127	1486
Binding device. Temporary	A. G. Hoelscher	848,242	Mar. 26	5055	1105	127	1354
Blasting-machine. Electrical	L. W. Bowman	848,153	Mar. 26	4896	1068	127	1333
Blanching-cabinet	W. E. Strong	848,138	Mar. 26	4876	1064	127	1317
Blower and suction device	H. M. Brown and H. M. Dahl	848,243	Mar. 26	5278	1130	127	1719
Board: See Game-board.							
Bobbin stop mechanism	R. H. Cook	848,013	Mar. 26	4674	1019	127	1295
Bobbin stop. Twister	R. H. Cook	848,012	Mar. 26	4673	1019	127	1297
Body-corner	C. Munter	848,479	Mar. 26	5531	1206	127	1482
Boiler-cleaning device. Multitubular	J. Alexander	848,082	Mar. 26	4784	1043	127	1295
Boilers. Means for promoting circulation in steam-	S. J. Rose	848,498	Mar. 26	5556	1213	127	1489
Bomb by capsules	J. N. Gassett	848,544	Mar. 26	5644	1228	127	1503
Book. Combination check-	M. H. Berry	848,429	Mar. 26	5447	1187	127	1441
Book, &c. File-	J. H. Horwitz	848,245	Mar. 26	5059	1106	127	1395
Book-manufacturing machine	W. H. Marvin and R. R. Vessey	848,563	Mar. 26	5681	1243–6	127	1519
Boot tree and stretcher	F. A. MacKenzie	848,039	Mar. 26	4714	1028	127	1376
Boots and shoes. Long-tooth finder for cutters for	G. E. Fuller	848,097	Mar. 26	4811	1050	127	1399
sole-channeling machines for	J. G. Matthews	848,112	Mar. 26	4835	1054	127	1397
Bottle or milking cutlass. Manufacturing	T. C. Booth	848,152	Mar. 26	4894	1068	127	1333
Bottle and the like closure	H. Müller and E. Zipprich	848,478	Mar. 26	5529	1205	127	1483
Bottle-capping machine	W. R. Warner	848,521	Mar. 26	5609	1227	127	1509
Bottle-cleaning apparatus	A. Frederikson	848,095	Mar. 26	4808	1049	127	1398
Bottle. Non-refillable	W. F. Fryckberg	848,165	Mar. 26	4915	1073	127	1335
Bottle. Non-refillable	J. H. Barnes	848,529	Mar. 26	5621	1230	127	1506
Bottle opener and stopper	A. W. Stephens	848,576	Mar. 26	5717	1251	127	1527
Bottle-stopper	F. Jebsen	848,174	Mar. 26	4933	1077	127	1398

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Bottle-stopper	J. T. Sandman	848,889	Mar. 26	4706	1248	127	1333
Box:							
See Display-box. Loom shuttle-box.							
Bracket:							
See Shade-bracket.							
Bracket	C. P. Patrick	848,944	Mar. 26	4726	1030	127	1289
Brake:							
See Wagon-brake.							
Braxing compound	C. E. Hamilton	848,922	Mar. 26	5726		127	1333
Bread cutter and box	H. Seckendorff	848,027	Mar. 26	4745	1035	127	1335
Broiler. Meat-	S. A. Engelhard	848,013	Mar. 26	4680	1020	127	1326
Brush. Cloth-steaming	J. Kudrle and L. Svoboda	848,277	Mar. 26	5244	1163	127	1389
Bung-making machine. Compressed-	C. Seymour	848,893	Mar. 26	5670	1216-18	127	1491
Bung-tap	E. J. Brooks	848,949	Mar. 26	5677	1150	127	1479
Burglar-alarm	O. F. Smith	848,893	Mar. 26	4751	1098	127	1337
Burglar-alarm	E. L. Ryerson	848,129	Mar. 26	4985	1032	127	1314
Burial-casket attachment	W. Cole	848,980	Mar. 26	5170	1126	127	1382
Burner:							
See Gas-burner. Oil-burner.							
Burner	W. Mitchell	848,397	Mar. 26	4707	1230	127	1541
Cake-cutter	V. T. Littlefield	848,851	Mar. 26	5670	1242	127	1518
Calendar rack. Memorandum desk-	W. S. Sloan	848,689	Mar. 26	4745	1035	127	1335
Can and means for venting and closing same	J. W. Hearn	848,488	Mar. 26	4888	1190	127	1475
Can-making machine	T. J. Dugan	848,289	Mar. 26	5135	1130-2	127	1386
Can-opener	F. Garrecht	848,450	Mar. 26	5407	1197	127	1473
Cans, bottles, &c. Automatic closure for	D. Webster, Jr	848,419	Mar. 26	5488	1183	127	1464
Cans. Heading sheet-metal	J. Brensinger	848,026	Mar. 26	4884	1016	127	1365
Candy-wrapping machine	M. F., W. W., H. L., and A. F. Buhse	848,944	Mar. 26	5270	1141-3	127	1419
Cane-mill gearing	J. P. Golden	848,695	Mar. 26	4888	1023	127	1373
Car and coach washing machine	H. and G. Miller	848,188	Mar. 26	4985	1092	127	1336
Car and railway switch	F. S. Galbup, C. Shanahan, F. L. and J. N. Galbup	848,890	Mar. 26	5754	1268-7	127	1536
Car-coupling	C. Fancher	848,454	Mar. 26	5486	1197	127	1473
Car-dumping mechanism. Metallic-	A. Becker. (Reissue)	12,638	Mar. 26	5812	1267	127	1550
Car-fender	S. A. Politsky	848,892	Mar. 26	5770	1260	127	1542
Car. Railway-	C. A. Schroyer	848,134	Mar. 26	4971	1083	127	1316
Car-seat	C. K. Pickles	848,201	Mar. 26	5078	1089	127	1344
Car stanchion. Flat-	F. J. Busbee	848,088	Mar. 26	5783	1045	127	1297
Car. Tank-	T. R. Brown	848,288	Mar. 26	5183	1125	127	1382
Car-underframe	C. H. Howard	848,270	Mar. 26	5220	1160	127	1429
Cars and other receptacles. Discharging-door for dumping-	W. L. Coughtry	848,180	Mar. 26	4905	1071-3	127	1326
Cars. Check-lock for mining-	C. A. Cabell	848,461	Mar. 26	5480	1192	127	1467
Carbureter	C. O. Hedstrom	848,170	Mar. 26	4933	1073	127	1330
Carbureter for gasolene-engines	L. Anderson	848,426	Mar. 26	5457	1185-6	127	1468
Card-table	E. P. Musgrave	848,042	Mar. 26	4733	1029	127	1329
Cards. Playing-	A. K. Ferris	848,543	Mar. 26	5640	1226	127	1508
Carpet-stretcher	C. H. Lamson	848,512	Mar. 26	5220	1130	127	1405
Cart. Lumber-	A. W. Benson	848,330	Mar. 26	5200	1140	127	1418
Case:							
See Ammunition-case. Watchcase.							
Cattle-guard	C. O. Jenks	848,374	Mar. 26	5230	1162	127	1432
Cement and manufacturing same	M. Toch	848,226	Mar. 26	5240		127	1412
Centrifugal machine	B. Ljungström	848,027	Mar. 26	4713	1027	127	1277
Chain-link blanks. Tool for cutting and grooving flat	W. Schenk	848,061	Mar. 26	4736	1032	127	1283
Chains. Making	C. Feld	848,209	Mar. 26	5192	1123	127	1396
Chair and the like	C. H. Homeyer	848,468	Mar. 26	5659	1200	127	1476
Chair head-rest. Barber and other	E. Birmingham	848,001	Mar. 26	4932	1015	127	1264
Chair-tray-locking device	W. F. Oliver	848,391	Mar. 26	5380	1169	127	1439
Checkrein-holder	F. S. Weatherhead and G. O. Abbott.	848,418	Mar. 26	5428	1183	127	1456
Cheese-cutter. Computing	W. G. Doty	848,090	Mar. 26	4793	1048-7	127	1299
Chipping-machine	C. E. Grant	848,489	Mar. 26	5600	1198	127	1474
Chopper:							
See Cotton-chopper.							
Chuck. Boring-	L. A. Nilsson	848,598	Mar. 26	5068	1247	127	1522
Chuck for timber-framing machines	J. Doull	848,236	Mar. 26	5023	1026	127	1356
Churn-drill	J. B. Scovell	848,802	Mar. 26	5660	1216	127	1490
Cigar-fillers. Device for producing	P. A. E. Scheer	848,130	Mar. 26	4985	1063	127	1315
Cigar-moistener	L. F. Bradley	848,434	Mar. 26	5465	1199	127	1462
Circuit-breaker	A. C. Woehrle	848,146	Mar. 26	4999	1067	127	1321
Citron-peel. Treating	H. Schneider	848,210	Mar. 26	4993		127	1349
Clamp:							
See Anastomotic clamp. Insulating-clamp. Ball-cover clamp. Joiner's clamp. Elevator-rope clamp.							
Clamp-setting machine	B. A. Grasberger	848,426	Mar. 26	5457	1189	127	1463
Clasp	J. W. Albin and D. C. Ricketts	848,584	Mar. 26	5721	1263	127	1530
Cleaner:							
See Well-cleaner.							
Clock	A. H. Hadley and W. L. Gray	848,847	Mar. 26	5647	1287	127	1500
Closet-seat	R. McCord and C. O. Cunningham	848,049	Mar. 26	4724	1030	127	1280
Closet-seat	P. J. Pauly, Jr	848,320	Mar. 26	4977	1083	127	1344
Closet-seat	H. Farley	848,329	Mar. 26	5039	1099	127	1356
Cloth-blazing machine	F. Voland and A. Marchand	848,416	Mar. 26	5421	1182	127	1454
Clothes-reel. Folding	W. H. Richmond	848,049	Mar. 26	4733	1029	127	1283
Clutch for belt-pulleys	A. Luke	848,183	Mar. 26	4947	1079	127	1336
Clutch. Friction-	S. Lake	848,570	Mar. 26	5240	1164	127	1434
Clutch. Friction-	S. Lake	848,380	Mar. 26	5221	1161-6	127	1435
Clutch. Hydraulic	B. T. L. Thomson	848,510	Mar. 26	5393	1321-6	127	1494
Cock. Stop and waste	W. H. Smith	848,127	Mar. 26	4976	1084	127	1317
Coin-holder	E. V. Williams	848,223	Mar. 26	5220	1147	127	1415
Collar	A. B. Stafford	848,578	Mar. 26	5716	1259	127	1527
Collaret cutting and winding machine	J. A. Firsching	848,614	Mar. 26	5693	1255	127	1549
Composition of matter	G. H. Ferlin	848,694	Mar. 26	4888	1069	127	1301
Concrete-block watering device	J. Welch and S. R. Minnich	848,276	Mar. 26	5131	1159	127	1384
Concrete-building-block machine	G. W. Dunmore	848,091	Mar. 26	4888	1047	127	1300
Concrete cross-tie. Reinforced	W. A. Bryant	848,155	Mar. 26	4999	1069	127	1323

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Concrete steps and other structures. Metal nosing for	H. H. Wainwright	848,075	Mar. 26	4775	1041	127	1286
Concrete. Structural reinforced	J. A. Jones	848,105	Mar. 26	4894	1053	127	1305
Conduit. Sidewalk-	J. B. Thacher	848,066	Mar. 26	4764	1039	127	1290
Conveyer. Apron-	H. G. Ginaca	848,236	Mar. 26	5043	1102-3	127	1351
Cooker	C. U. Barlow	848,526	Mar. 26	5620	1220	127	1503
Cooker. Steam-	A. S. Wily	848,051	Mar. 26	4782	1043	127	1284
Cooking utensil	J. Roesiger	848,209	Mar. 26	4908	1091	127	1342
Copying-machine	A. D. Kleber	848,556	Mar. 26	5662	1240	127	1513
Copying-machine	A. D. Kleber	848,594	Mar. 26	5755	1256	127	1539
Core-drill	R. M. Downie	848,237	Mar. 26	5024	1098-9	127	1355
Corn-husker	W. T. Caldwell	848,008	Mar. 26	4969	1017	127	1293
Corn-husking machine	W. S. Russ	848,497	Mar. 26	5560	1213-14	127	1482
Corundum. Treatment of	M. Buchner	848,439	Mar. 26	5460		127	1464
Cot. Douche-	J. H. Herman	848,032	Mar. 26	4707	1026	127	1276
Cotton-chopper	W. E. Mounce and S. L. Southern	848,385	Mar. 26	5289	1167	127	1427
Coupling:							
See Car-coupling. Pipe-coupling. Expansion-coupling. Reach-coupling.							
Crane. Overhead traveling	C. L. Taylor	848,407	Mar. 26	5405	1178	127	1469
Crate. Delivery-	H. N. Backus	848,236	Mar. 26	5266	1148	127	1417
Cultivator	S. F. Vance	848,414	Mar. 26	5419	1183	127	1454
Cultivator. Hand-	E. Haiman and G. N. Murray	848,591	Mar. 26	5755	1257	127	1538
Cultivator-standard	J. E. Merrill	848,115	Mar. 26	4840	1057	127	1308
Current-controlling apparatus	A. Sundh	848,405	Mar. 26	5398	1177	127	1445
Cutlery	E. J. Killian	848,261	Mar. 26	5071	1108	127	1366
Cutter:							
See Bread-cutter. Straw-cutter. Cake-cutter. Vine and weed cutter. Cheese-cutter. Weed-cutter.							
Cutter	O. Meyers	848,157	Mar. 26	4963	1081	127	1338
Dental obtunder	P. B. Skinner	848,408	Mar. 26	5394	1176	127	1447
Dental plugger. Combination	P. E. Williams	848,234	Mar. 26	5260	1147	127	1415
Derrick. Sectional	J. S. Hines	848,304	Mar. 26	5199	1134-5	127	1409
Desk, table, and book-rest. Combined	J. W. Meaker	848,258	Mar. 26	5083	1111	127	1370
Detector and recording apparatus. Electrocapillary	J. T. Armstrong and A. Oring	848,063	Mar. 26	4786	1044	127	1326
Die-stock	C. F. Schultis	848,401	Mar. 26	5396	1175	127	1444
Digger:							
See Potato-digger.							
Display-box	M. Blumberg	848,431	Mar. 26	5450	1188	127	1461
Display-rack	D. F. Greenawalt	848,100	Mar. 26	4815	1050-1	127	1333
Display-stand	W. H. Glenn	848,237	Mar. 26	5045	1103-4	127	1352
Door appliance. Sliding-	M. Logan	848,675	Mar. 26	5523	1204	127	1490
Door fastener. Sliding-	J. Dierickx	848,451	Mar. 26	5491	1196	127	1472
Drainage-fitting	F. B. Morton	848,259	Mar. 26	5086	1112	127	1371
Draw-cut-shaper attachment	M. and H. E. Morton	848,191	Mar. 26	4962	1085	127	1340
Drier	C. E. Geiger	848,362	Mar. 26	5313	1158	127	1429
Drill:							
See Churn-drill. Core-drill.							
Drill scraper. Disk-	S. E. Davis	848,291	Mar. 26	5173	1127	127	1394
Drop-table	W. Elmer, Jr	848,353	Mar. 26	5299	1156-7	127	1423
Dye and making same. Halogenated red	G. Engi	848,354	Mar. 26	5302		127	1424
Dye and making same. Red-halogen vat-	G. Engi	848,355	Mar. 26	5303		127	1424
Dyes and making same. Red-violet to blue vat-	G. Engi	848,356	Mar. 26	5304		127	1424
Electric alarm	J. R. Donnenworth	848,016	Mar. 26	4678	1020	127	1269
Electric-cable splicing and distributing box	H. E. Procunier	848,047	Mar. 26	4730	1031	127	1283
Electric conductors. Crossbrace for supporting	H. W. Smith	848,289	Mar. 26	5118	1116	127	1380
Electric controller	R. W. Brown	848,006	Mar. 26	4665	1016-17	127	1288
Electric-drop-light hanger. Adjustable	A. J. Gowan	848,167	Mar. 26	4917	1074	127	1329
Electric generators. Automatic speed-controlled circuit-closure for	C. E. Dawson	848,292	Mar. 26	5173	1127	127	1394
Electric recorder	D. J. Klepter	848,468	Mar. 26	5513	1201	127	1477
Electric switch	G. W. Hart	848,028	Mar. 26	4699	1024	127	1274
Electric terminal wire. Spring-clamp for	H. J. Brewer	848,085	Mar. 26	4789	1044-5	127	1296
Electrode. Zinc	C. B. Schoonmaki	848,570	Mar. 26	5707	1248	127	1525
Elevator-rope clamp	F. L. Emerson	848,453	Mar. 26	5493	1196	127	1472
Elevator safety-catch	J. D. Ihlder and R. W. Scott	848,373	Mar. 26	5335	1161	127	1431
Elevators. Valve control for pneumatic	G. F. Steedman	848,271	Mar. 26	5120	1117-18	127	1381
End-gate	J. L. Williams	848,146	Mar. 26	4898	1067	127	1320
End-gate	J. M. Groff	848,240	Mar. 26	5051	1104	127	1353
End-gate rod. Wagon	B. Breamn	848,004	Mar. 26	4663	1016	127	1285
Engine:							
See Internal-combustion engine. Oil or gas engine. Locomotive-engine. Pneumatic engine. Rotary engine.							
Engine spark-controller. Explosive-	L. W. Turnbull	848,072	Mar. 26	4771	1041	127	1292
Engines. Antirecoil device for explosive-	D. H. Reimers	848,604	Mar. 26	5779	1261	127	1543
Engines. Balancing locomotive-	H. F. Shaw	848,572	Mar. 26	5711	1249	127	1536
Envelop-machine	F. Grant	848,099	Mar. 26	4843	1059	127	1306
Eraser-holder	M. M. Olmstead	848,302	Mar. 26	5308	1170	127	1433
Exchange selector. Automatic-	J. G. Roberts	848,398	Mar. 26	5382	1173-4	127	1443
Examiner for latines	W. E. Smith	848,136	Mar. 26	4973	1084	127	1316
Excavating-machine	A. J. Thornley	848,272	Mar. 26	5123	1118	127	1382
Expansion-coupling	E. B. Freeman	848,234	Mar. 26	5039	1101	127	1352
Explosive charges. Device for inserting	R. Torras	848,512	Mar. 26	5396	1222-3	127	1496
Extension-table	B. G. Foster	848,223	Mar. 26	5034	1100-1	127	1350
Fabric:							
See Multiply fabric. Tubular fabric.							
Fare-register	W. I. Ohmer, D. B. Whistler, and J. E. McAllister	848,262	Mar. 26	5091	1112-14	127	1372
Farm-gate	S. D. Beum	848,222	Mar. 26	5016	1098	127	1354
Farm implement	L. E. Hull	848,306	Mar. 26	5210	1137	127	1402
Faucet	J. A. Desrosiers	848,088	Mar. 26	4794	1040	127	1293
Feed-operating mechanism	H. L. Jeffries	848,553	Mar. 26	5659	1239	127	1512
Feed-regulating mechanism. Boiler-	W. Loudon	848,476	Mar. 26	5524	1204	127	1469
Feeder and waterer. Poultry	A. Rees	848,492	Mar. 26	5617	1228-9	127	1487
Fence machine. Wire-	A. F. Backlin	848,520	Mar. 26	5732	1254	127	1533
Fence stay. Wire-	W. R. Allyn	848,585	Mar. 26	5732	1162	127	1538
Fence-stretcher	M. E. Johnson	848,375	Mar. 26	5340			

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Fender:							
See Car-fender. Vehicle-fender.							
Fertilizer and lime distributer	J. M. Early	848,440	Mar. 26	5037	1234-5	127	1457
Fire-escape	C. L. Garland, G. Priestley, and M. Bowen	848,506	Mar. 26	5041	1101-2	127	1457
Fire-kindler	T. D. Beecher	848,120	Mar. 26	4982		127	1457
Fire-shield	D. S. Watson	848,283	Mar. 26	5720	1253	127	1457
Firearms. Extractor for	V. A. Obregon	848,100	Mar. 26	4974	1098	127	1457
Fish cutting and dressing machine	E. G. Deloe	848,200	Mar. 26	5480	1105-6	127	1457
Fishing-rod	E. Holzmann	848,243	Mar. 26	5050	1106	127	1457
Floor brushing and waxing machine	C. B. Wattles	848,276	Mar. 26	5130	1119-20	127	1457
Floor-scraper	D. E. Dempsman	848,163	Mar. 26	4999	1072	127	1457
Floor-surfacing machine	A. Poelke	848,227	Mar. 26	5020	1143	127	1457
Fluid-joint. Flexible	C. G. Hawley	848,150	Mar. 26	4990	1075	127	1457
Font	J. M. Thomas	848,200	Mar. 26	5705	1040	127	1457
Food to fish and land animals. Apparatus for supplying	H. S. Hale	848,151	Mar. 26	4815	1051	127	1457
Foot-rest	H. F. L. Brooks	848,480	Mar. 26	5466	1189	127	1457
Fracture apparatus	S. G. Hubbell	848,170	Mar. 26	4988	1076-7	127	1457
Frame:							
See Loading-frame. Quilting-frame.							
Frame and handle structure	S. B. Feuerstein	848,080	Mar. 26	4982	1021	127	1270
Fruit-cleaning apparatus	F. A. Covey	848,300	Mar. 26	5055	1155	127	1457
Furnace:							
See Hot-air furnace.							
Furnaces. Burner-block as applicable to	I. H. Bacon and N. Nelson	848,426	Mar. 26	5441	1186	127	1457
Fuse. Safety-	E. Steinmann and J. W. Schoendelen	848,258	Mar. 26	5047	1145	127	1457
Gage:							
See Marking-gage. Water-gage.							
Game apparatus	F. P. de Grandsaingne	848,162	Mar. 26	4998	1074	127	1457
Game apparatus	G. A. Huben	848,371	Mar. 26	5085	1161	127	1457
Game board. Base-ball	W. T. De Walt	848,281	Mar. 26	5055	1145	127	1457
Game. Educational	E. Berg	848,322	Mar. 26	5154	1123	127	1457
Gas-burner	H. H. Hipwell	848,237	Mar. 26	5022	1139	127	1457
Gas-burner	W. W. Coates	848,444	Mar. 26	5474	1193	127	1457
Gas machine. Acety'ene-	R. H. Walter	848,321	Mar. 26	5045	1146	127	1457
Gas-producer	W. R. Miller	848,116	Mar. 26	4944	1087-8	127	1457
Gasket and holder therefor	C. S. Hawley, F. C. Green, W. H. Fulton, and J. F. McElroy	848,540	Mar. 26	5060	1197-8	127	1457
Gate:							
See End-gate. Tilting gate.							
Farm-gate.							
Gear and reversing mechanism. Variable-speed	W. H. Horstmann	848,344	Mar. 26	5057	1196	127	1457
Gear. Friction draft and buffing	T. L. McKeen	848,260	Mar. 26	5057	1113	127	1457
Gearing. Friction-	C. B. Hatfield	848,256	Mar. 26	5700	1207	127	1457
Generator:							
See Steam-generator.							
Geographical locator	S. F. Enos	848,020	Mar. 26	4921	1099-1	127	1457
Goods. Apparatus for processing packaged	E. K. Hood	848,263	Mar. 26	4705	1026	127	1457
Goods-separating device	A. C. Wallace	848,262	Mar. 26	5728	1253	127	1457
Grain. Apparatus for the rapid determination of the moisture content of	E. Brown and J. W. T. Duvel	848,440	Mar. 26	5510	1206	127	1457
Grapple	J. K. Flynn	848,326	Mar. 26	5060	1060	127	1457
Hair-pin	R. I. Fryce-Jones	848,046	Mar. 26	4722	1031	127	1457
Hanger:							
See Electric-drop-light hanger.							
Harrow	H. V. and N. W. Abbett	848,005	Mar. 26	4915	1038	127	1457
Harvester and binder shocker attachment. Grain	J. Ostrum	848,150	Mar. 26	4976	1068	127	1457
Harvester buncher. Pea-	D. Tolton and G. F. Conner	848,375	Mar. 26	5085	1060	127	1457
Harvester. Corn-	J. J. Wagoner	848,462	Mar. 26	5700	1208	127	1457
Harvesting device. Beet-	G. R. Dotzroe	848,462	Mar. 26	5700	1208	127	1457
Harvesting machine. Beet-	J. L. and M. H. Webb	848,462	Mar. 26	5700	1208	127	1457
Hasp-fastener	C. L. Bailey	848,317	Mar. 26	5054	1095-6	127	1457
Hat-frame machine	A. Kindermann	848,330	Mar. 26	5060	1060	127	1457
Hay-rake. Horse	E. D. Bond	848,462	Mar. 26	5041	1061	127	1457
Heater:							
See Hot-air heater.							
Heating. Electric	S. S. Eveland	848,162	Mar. 26	4913	1073	127	1457
Hoisting apparatus	V. R. Browning	848,327	Mar. 26	5085	1135	127	1457
Hoisting system. Electric	J. D. Ihlder and R. W. Scott	848,372	Mar. 26	5060	1161	127	1457
Hook:							
See Snap-hook.							
Horse-detacher	J. E. Nilsson	848,322	Mar. 26	5055	1160	127	1457
Hose. Metallic	E. T. Greenfield	848,370	Mar. 26	5085	1164	127	1457
Hose-reel	L. A. Grismund	848,370	Mar. 26	5085	1164	127	1457
Hot-air furnace	H. P. Fish	848,370	Mar. 26	5085	1164	127	1457
Hot-air heater	J. E. Albinson	848,370	Mar. 26	5085	1164	127	1457
Hydrant or fire-plug	C. E. Cotton	848,370	Mar. 26	5085	1164	127	1457
Incubator-heating system	J. V. Lindsey	848,324	Mar. 26	5060	1060	127	1457
Indicating mechanism	J. H. Forsythe	848,515	Mar. 26	5060	1165	127	1457
Indicator:							
See Speed-indicator. Street and station indicator. Station-indicator.							
Indicator	C. Versteeg	848,260	Mar. 26	5060	1060	127	1457
Inhaler	G. A. Thiede	848,370	Mar. 26	5085	1164	127	1457
Insect-trap	C. W. Pelton	848,370	Mar. 26	5085	1164	127	1457
Insulating-clamp	T. B. Lee	848,370	Mar. 26	5085	1164	127	1457
Insulating material for electrical purposes. Production of	J. Meyenberg	848,370	Mar. 26	5085	1164	127	1457
Insulator-pin and support therefor	L. Steinberger	848,117	Mar. 26	4944	1087-8	127	1457
Internal-combustion engine	F. A. Hasselwander	848,370	Mar. 26	5085	1164	127	1457
Jack:							
See Lifting-jack. Lifting-jack.							
Jointer-fastener	W. Umstead	848,370	Mar. 26	5085	1164	127	1457
Joints:	A. Krüger	848,370	Mar. 26	5085	1164	127	1457
See Pipe-joint. Rail-joint. Pipe-joint. Railway-rail joint.							
Key-fastener	A. A. Svensen	848,370	Mar. 26	5085	1164	127	1457

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Keyboard for type-writing machines and pianofortes	J. H. Landenbach	848,471	Mar. 26	5518	1202	127	1479
Ladder. Fruit-	P. A. M. Lanier	848,108	Mar. 26	4939	1054	127	1458
Ladder. Gymnastic-	F. Medart	848,114	Mar. 26	4939	1066	127	1458
Ladder. Step-	M. E. Trafton	848,513	Mar. 26	5597	1223	127	1480
Ladder. Step-	W. Fickett	848,021	Mar. 26	4985	1021	127	1271
Ladder. Step-	E. Washter	848,074	Mar. 26	4774	1041	127	1298
Lamp. Acetylene-generating	M. S. Thorud	848,070	Mar. 26	4706	1040	127	1301
Lamp. Convertible gas and oil	F. Conrath	848,443	Mar. 26	5471	1192-3	127	1458
Lamp-jack	C. Smart	848,573	Mar. 26	5713	1260	127	1458
Lamp support or device. Electric-	F. C. Lyon	848,184	Mar. 26	4948	1080-1	127	1327
Lantern. Foot-actuated	H. Tysinger	848,515	Mar. 26	5509	1222	127	1497
Latch	C. Husemann	848,024	Mar. 26	4711	1027	127	1277
Latch. Door-	R. E. Colton	848,010	Mar. 26	4670	1013	127	1386
Lathe tool-holder	L. Feval	848,357	Mar. 26	5305		127	1424
Leather and working same	W. W. Crooker	848,445	Mar. 26	5474		127	1459
Leather-finishing composition and making the same	G. R. McGahan	848,366	Mar. 26	5360	1166	127	1457
Leaves. Tendril of	J. Wimmer	848,335	Mar. 26	5264	1148	127	1416
Lenses. Manufacturing bifocal	L. Onderdonk	848,263	Mar. 26	5107	1115	127	1277
Lever-operating mechanism. Vibrating-	W. F. Peeler	848,124	Mar. 26	4957	1060	127	1313
Lifter and carrier	A. E. Schocke	848,490	Mar. 26	5563	1214	127	1459
Lifting-jack	E. C. Yeager	848,524	Mar. 26	5613	1228	127	1504
Lifting-jack	J. H. Pearson	848,045	Mar. 26	4726	1030	127	1281
Lightning-conductor	P. C. Forrester	848,256	Mar. 26	5305	1157	127	1426
Lime-hydrating machine	D. S. Kennedy	848,408	Mar. 26	5213	1137-8	127	1403
Linotype-machine	D. S. Kennedy	848,209	Mar. 26	5214	1139	127	1403
Linotype-machine	D. S. Kennedy	848,210	Mar. 26	5215	1138-9	127	1404
Linotype-machine	R. M. Bedell	848,238	Mar. 26	5268	1148	127	1417
Linotype-machine	R. G. Clark	848,349	Mar. 26	5291	1154	127	1432
Linotype-machine	M. Brown	848,154	Mar. 26	4997	1068-9	127	1323
Lister, planter, and roller. Combined	W. Lichte	848,474	Mar. 26	5422	1202	127	1459
Loading-frame	J. C. S. and H. R. Rumsey	848,128	Mar. 26	4963	1062	127	1314
Loading machine, earth, gravel, &c. Device for							
Lock:							
See Nut-lock. Switch-point lock. Seat-lock. Trunk-lock.							
Locomotive bridge-beam	J. B. Barnes	848,427	Mar. 26	5442	1186	127	1459
Locomotive-frame and tender-car frame	C. H. Howard	848,369	Mar. 26	5327	1160	127	1459
Locomotives, &c. Apparatus for holding connecting-rod brasses for	M. and H. E. Morton	848,192	Mar. 26	4964	1086	127	1240
Locomotives, &c. Shaper for crowning and finishing driving-boxes on	M. and H. E. Morton	848,190	Mar. 26	4958	1083-4	127	1389
Logotype-machine	D. Petri-Palmedo	848,318	Mar. 26	5228	1141-2	127	1407
Loom shuttle-box	J. Bim	848,002	Mar. 26	4661	1015	127	1264
Lubricating device	W. Scott	848,056	Mar. 26	4744	1034	127	1285
Lubricating system	G. Crowell	848,446	Mar. 26	5476	1193	127	1459
Lubrication, Means for filling	E. C. Jordan	848,246	Mar. 26	5061	1107	127	1286
Machine-recorder. Automatic	R. A. Wood	848,149	Mar. 26	4990	1067	127	1281
Mail-assorting table	C. A. Kendall	848,466	Mar. 26	5510	1200	127	1476
Mail-bag catcher	G. H. Nichols	848,196	Mar. 26	4968	1067	127	1541
Mail-transportation system	E. S. Upright	848,517	Mar. 26	5601	1224-5	127	1480
Manufacturing dust	C. Bailey	848,337	Mar. 26	5267	1148	127	1413
Manifolding-pad and holder	W. F. Beck. (Reissue)	12,624	Mar. 26	5816	1267	127	1541
Marking-gage for rules	C. Nielsen	848,267	Mar. 26	5260	1166	127	1457
Mattress	M. Brown	848,437	Mar. 26	5459	1190	127	1466
Measuring-wheel. Tailor's	E. G. Agnell	847,996	Mar. 26	4649	1014	127	1268
Medical apparatus. Electric	C. Van Bergh	848,518	Mar. 26	5603	1225-6	127	1480
Meter. Gas-pressure and tester. Combination	J. W. Arney	847,997	Mar. 26	4652	1014	127	1268
Metal-working apparatus	J. R. Blakeslee, Jr.	848,284	Mar. 26	5160	1124	127	1291
Metal-working tools. Manufacturing	H. H. Dierig	848,161	Mar. 26	4909	1072	127	1297
Metals. Production of homogeneous bodies from	M. von Pirani	848,800	Mar. 26	5773	1260	127	1548
Milling-cutter	G. T. Smith	848,494	Mar. 26	5366	1176-7	127	1467
Mill:							
See Rolling-mill.							
Milling-machine	W. Schenk	848,052	Mar. 26	4738	1032	127	1294
Mold:							
See Vault-cover mold.							
Mold for nuts, washers, &c.	W. S. Myers	848,490	Mar. 26	5533	1208	127	1462
Molten or semi-molten materials by means of electric-heating or increasing the fluidity of	F. Wynne	848,422	Mar. 26	5432	1184-5	127	1467
Motor:							
See Turbine-motor.							
Motors and generators. Brush-holder for	J. Lindall	848,182	Mar. 26	4945	1080	127	1320
Mower. Lawn-	A. Hill	848,551	Mar. 26	5654	1230	127	1513
Multiplex printer	G. D. Moore	848,121	Mar. 26	4853	1080	127	1312
Music-leaf turner	F. W. McNeil	848,509	Mar. 26	5772	1258-60	127	1541
Nail-[illegible]	E. L. Bussell	848,245	Mar. 26	5284	1153	127	1429
Nail-[illegible]	A. P. Schnyder	848,211	Mar. 26	4994	1091	127	1340
Nail-[illegible]	J. H. Blank	848,430	Mar. 26	5440	1187	127	1461
Nail-[illegible]	A. Baker	847,998	Mar. 26	4653	1014	127	1268
Nut-[illegible]	J. G. Wenninger	848,080	Mar. 26	4782	1043	127	1294
Nut-[illegible]	J. Jacoby	848,207	Mar. 26	5211	1127	127	1402
Nut-[illegible]	C. S. Wilson	848,523	Mar. 26	5612	1227	127	1480
Nut-[illegible]	M. Ellis and E. A. Bowen	848,541	Mar. 26	5639	1235	127	1497
Nut-[illegible]	A. L. McMurtry	848,194	Mar. 26	4967	1088	127	1345
Nut-[illegible]	C. N. Moore	848,384	Mar. 26	5357	1167	127	1459
Nut-wrench. Magazine-socket	A. J. Blackford	848,588	Mar. 26	5733	1254	127	1533
Oil-burner	J. D Belanger	848,428	Mar. 26	5443	1188-7	127	1459
Oil-burner	E. Thomson	848,607	Mar. 26	5782	1263	127	1544
Oil-cake trimmer	E. L. Torsch and J. H. Parker	848,608	Mar. 26	5785	1262-3	127	1545
Oil or gas engine	E. G. Bostwick	848,533	Mar. 26	5627	1232	127	1504
Oyster- [illegible]							
Packing- [illegible]-rod							
Pad:							
See Manifolding-pad.							
Pallet- [illegible]	J. B. Bouchard	848,084	Mar. 26	4788	1044	127	1298
Pan- [illegible]	M Z L Fuller	848,023	Mar. 26	4686	1022	127	1273
Pencil- [illegible]	A. Henniger	848,031	Mar. 26	4705	1025	127	1275
Pencil- [illegible]	J. C. Baur	848,531	Mar. 26	5623	1231	127	1489
Photographic-plate holder	A. C. Hayden	848,241	Mar. 26	5053	1105	127	1288
Piano. Automatic	R. A. Rodesch	848,207	Mar. 26	4986	1090	127	1340
Piano. Automatic	R. A. Rodesch	848,208	Mar. 26	4992	1091	127	1340
Piano-player. Pedal-action for	C. G. Hermanson	848,366	Mar. 26	5321	1159	127	1457

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Piano-playing attachment	A. Wilhelmj	848,570	Mar. 26	5137	1121	127	1268
Pile-core	A. A. Raymond	848,295	Mar. 26	4979	1173-3	127	1449
Pile-driver	H. Gee	848,098	Mar. 26	4913	1080	127	1268
Pile-driving machine	H. Gee	848,100	Mar. 26	4916	1074	127	1269
Piling. Metal sheet-	J. R. Wemlinger	848,143	Mar. 26	4982	1086	127	1319
Piling. Metal sheet-	J. R. Wemlinger	848,144	Mar. 26	4984	1086	127	1319
Piling. Metal sheet-	J. R. Wemlinger	848,145	Mar. 26	4986	1086	127	1320
Pin:							
See Hair-pin. Insulator-pin.							
Pincushion and spool-holder. Combined	L. Thompson	848,490	Mar. 26	5439	1180	127	1402
Pipe:							
See Smoking-pipe. Stovepipe.							
Pipe-coupling	E. J. Robbins	848,326	Mar. 26	5113	1116	127	1379
Pipe-joint. Elbow	W. B. Campbell	848,223	Mar. 26	5017	1097	127	1354
Pipe-joint. Universal	R. Enright	848,169	Mar. 26	4911	1073-3	127	1227
Pipe-mending device	G. Stuppar	848,130	Mar. 26	4977	1086	127	1318
Pipe-stopper or test-plug	A. Redenbaugh	848,498	Mar. 26	5454	1212	127	1407
Plane. Multiple-beading	P. Harding	848,304	Mar. 26	5117	1149	127	1408
Planer-tool holder. Reversible duplex	E. Pierce	848,339	Mar. 26	5285	1142	127	1409
Planer-ways. Protector for	W. A. Thelin	848,570	Mar. 26	5721	1262	127	1535
Planter. Seed-	S. E. and T. E. Sikes	848,135	Mar. 26	4979	1084	127	1316
Plow	J. McMullin	848,505	Mar. 26	5457	1247	127	1322
Plowshare	E. B. Murphy	848,041	Mar. 26	4723	1039	127	1270
Plug. Safety-	B. W. Robinson	848,395	Mar. 26	4983	1080	127	1345
Plug. Safety-	B. W. Robinson	848,396	Mar. 26	4984	1080	127	1346
Pneumatic engine	E. Leichter	848,384	Mar. 26	5076	1110	127	1360
Postmarking and canceling machine	N. A. Krag and G. A. Hansen	848,459	Mar. 26	5283	1241	127	1515
Potato-digger	E. B. Church	848,242	Mar. 26	5280	1154	127	1421
Power. Generating	A. B. Goodspeed and B. Beskow	848,028	Mar. 26	4994	1028	127	1272
Power-transmission device	L. Fritschka and C. Koch	848,086	Mar. 26	4920	1049	127	1302
Power transmission. Swing	A. M. Starr	848,234	Mar. 26	5000	1082	127	1340
Press:							
See Baling-press. Printing-press.							
Press for moist materials	J. Hemmerling	848,171	Mar. 26	4926	1075	127	1331
Printers' chases. Adjustable cross-bar for	J. E. Gilbert	848,268	Mar. 26	5515	1158	127	1426
Printing-machine	H. Stamm	848,084	Mar. 26	4788	1057	127	1267
Printing-machine	H. Stamm	848,085	Mar. 26	4790	1057	127	1268
Printing-press	F. A. Venney	848,330	Mar. 26	5264	1140	127	1414
Printing-press form-bed	F. J. Herdle	848,104	Mar. 26	4928	1062	127	1306
Propulsion. Boat	H. E. Grace	848,457	Mar. 26	5490	1198	127	1473
Puller:							
See Nail-puller.							
Pulling up rods, piles, pickets, and the like from the ground. Apparatus for	J. Richter	848,208	Mar. 26	4980	1080	127	1345
Pulp. Production of white	A. Gagedois	848,361	Mar. 26	5313	.....	127	1425
Pulverizer	N. Spurgin	848,213	Mar. 26	4998	1082	127	1350
Pulverizer	H. J. Travis	848,397	Mar. 26	5261	1173	127	1442
Pump. Gas-	R. Whitaker	848,273	Mar. 26	5126	1113	127	1382
Puzzle	J. F. Toomey	848,277	Mar. 26	5123	1120	127	1384
Quilting-frame	S. C. Baughn	848,080	Mar. 26	4725	1262	127	1520
Rack:		847,999	Mar. 26	4955	1014	127	1263
See Calendar-rack. Display-rack.							
Rail-joint	F. F. Martins	848,111	Mar. 26	4934	1055	127	1307
Rail-joint	B. G. Buchanan	848,156	Mar. 26	4991	1089	127	1326
Rail-joint	G. J. Richardson	848,397	Mar. 26	5261	1173	127	1442
Rail-tie and fastener therefor. Metallic	J. W. Calder	848,248	Mar. 26	5205	1183	127	1420
Railway crossing-signal	J. Crumley	848,087	Mar. 26	4793	1045	127	1297
Railway-rail joint	J. J. Feeny	848,455	Mar. 26	5426	1197	127	1473
Railway switch-stand and switch-lock	J. R. Wyatt	848,421	Mar. 26	5431	1184	127	1457
Railway-tie	P. D. Nicols	848,197	Mar. 26	4973	1087	127	1343
Railway-track joints. Graduated reinforced arched angle-bar for	G. H. Williams. (Reissue)	12,826	Mar. 26	5617	1206	127	1532
Railway. Underground electric	S. M. Sullivan	848,507	Mar. 26	5695	1220	127	1493
Rake:							
See Hay-rake.							
Range	R. S. Quinn	848,264	Mar. 26	5108	1115	127	1378
Range-finder	H. C. Percy	848,567	Mar. 26	5709	1247	127	1523
Reach-coupling	A. L. and J. C. Kirkpatrick	848,555	Mar. 26	5691	1249	127	1513
Reamer	J. G. Matthews	848,113	Mar. 26	4938	1088	127	1306
Recorder:							
See Electric recorder. Machine-recorder.							
Recording instrument	C. E. Vawter, Jr.	848,339	Mar. 26	5289	1145-6	127	1413
Reel:							
See Clothes-reel. Hose-reel.							
Refrigerator tub or bucket	J. D. Collins	848,280	Mar. 26	5171	1127	127	1394
Register:							
See Fare-register.							
Registering device	A. C. McEwen	848,483	Mar. 26	5496	1206-7	127	1483
Regulator:							
See Temperature-regulator. Turbine-regulator.							
Rendering-tanks into the atmosphere. Means for preventing the escape of noxious vapors and gases from	C. L. Smith	848,206	Mar. 26	5114	1116	127	1379
Rivet-displacing device	J. Kitterman	848,232	Mar. 26	5072	1109	127	1368
Road-smoothing device. Wagon-	F. W. Lechner	848,473	Mar. 26	5519	1202-3	127	1479
Rod:							
See End-gate rod. Stair-rod. Fishing-rod.							
Roller:							
See Shade-roller.							
Rolling-mill	W. H. Brown	848,426	Mar. 26	5429	1190	127	1464
Rolling-mill-repeater controller	F. P. Townsend	848,581	Mar. 26	5729	1263	127	1529
Rolling-mill work-reversing mechanism	E. Norton	848,123	Mar. 26	4955	1069	127	1312
Rolling. Preparing rolls for	A. Ridd	848,333	Mar. 26	5249	1148-4	127	1410
Rotary engine	G. F. Burton	848,440	Mar. 26	5461	1199-3	127	1464
Roundabout or carousel	J. M. Taylor	848,403	Mar. 26	5436	1178-9	127	1451
Ruling device	C. C. Glidden	848,545	Mar. 26	5643	1226	127	1508
Sash-bar. Metal	F. H. Treftz	848,141	Mar. 26	4970	1085	127	1318
Sash lock. Swing	M. Petrovics	848,202	Mar. 26	5060	1170	127	1439
Saw-guide	A. Harrold	848,548	Mar. 26	5645	1227	127	1510
Sawing devices. Adjustable platform for tree-	H. Funk	848,360	Mar. 26	5311	1158	127	1425
Sawing-machine. Adjustable	C. Thomas, Sr.	848,327	Mar. 26	5248	1145	127	1412
Sawing-machines. Oblique feeding attachment for	J. B. Carr and F. M. Schmitt	848,158	Mar. 26	5004	1070	127	1326
Scenery	J. M. Leavitt	848,180	Mar. 26	4940	1079	127	1326
Scraper and dump-wagon. Combined shovel-	C. F. Thomas and E. Schmitt	848,506	Mar. 26	5587	1220-1	117	1469
Screw	F. W. Braunschweig	848,008	Mar. 26	4662	1016	127	1264
Scribing device	M. Morton and H. Mann	848,198	Mar. 26	4966	1086	127	1341
Seal. Self-locking	W. F. Harris	848,462	Mar. 26	5504	1199	127	1476
Seaming together the edges of sheet-metal sections. Machine for	A. G. Scherer	848,068	Mar. 26	4789	1033	127	1264
Seat:							
See Car-seat. Wagon-seat. Chest-seat.							
Seed-hulling apparatus. Cotton-	C. Miner	848,110	Mar. 26	4945	1058	127	1310
Seed lintern. Delinting cotton-	C. H. Casebolt	848,511	Mar. 26	5601	1264	127	1546
Severing apparatus	G. P. Hemstreet	848,550	Mar. 26	5652	1226	127	1511
Sewage-disposal apparatus	B. J. Ashley	848,279	Mar. 26	5141	1121-2	127	1387
Sewing-machine embroidery attachment	C. E. Reardon	848,206	Mar. 26	5379	1173	127	1442
Sewing-machine thread-guard and spool-holder	S. L. Lyon	848,185	Mar. 26	4960	1081	127	1337
Sewing-machine trimmer	A. H. Parker	848,490	Mar. 26	5550	1211	127	1496
Shade-bracket and curtain-rod support. Combined	C. H. Nelson	848,195	Mar. 26	4966	1087	127	1341
Shade fastener. Window-	G. E. Johnston	848,175	Mar. 26	4933	1077	127	1333
Shade-roller attachment	W. B. Reynolds and E. B. McCarthy	848,496	Mar. 26	5567	1213	127	1496
Shade roller. Window-	E. S. Dinkel	848,530	Mar. 26	5636	1224	127	1504
Sheet-winder	H. K. Sandell	848,400	Mar. 26	5394	1175	127	1442
Shell-winding machine	G. H. Poor	848,294	Mar. 26	5270	1170-2	127	1440
Sifter. Ash-	P. M. Stanton	848,270	Mar. 26	5119	1117	127	1381
Sifter. Toilet-powder	F. S. Dilworth	848,015	Mar. 26	4677	1019	127	1268
Sign	H. Christensen	848,268	Mar. 26	5168	1126	127	1389
Sign. Street display-	J. Kraus	848,253	Mar. 26	5074	1109	127	1368
Signal:							
See Railway crossing-signal.							
Signaling device	R. H. McCrackin	848,462	Mar. 26	5535	1206	127	1498
Silk-reclaiming machine	F. W. Midgley	848,039	Mar. 26	4717	1028	127	1270
Silk. Ungumming	P. Schmid	848,605	Mar. 26	5780	.....	127	1548
Silo	W. H. Limberg	848,110	Mar. 26	4933	1055	127	1307
Silo	W. M. Phillips	848,319	Mar. 26	5224	1143	127	1402
Siphon	J. F. Harrigan	848,365	Mar. 26	5318	1159	127	1427
Skirt-supporter	L. B. Shelton	848,212	Mar. 26	4996	1091	127	1349
Skirts. Bustle attachment for	W. P. Jorde	848,554	Mar. 26	5660	1240	127	1513
Sled. Manually-propelled	F. T. Nobles	848,488	Mar. 26	5547	1210	127	1495
Smoke-consumer	W. Pinney	848,321	Mar. 26	5237	1143	127	1409
Smoking-pipe	A. Vogelsang	848,415	Mar. 26	5430	1182	127	1454
Smoking-pipe	A. G. Abizaid	848,424	Mar. 26	5436	1185	127	1456
Snap-hook	A. Mädler, V. Hartung, and W. Griesing	848,257	Mar. 26	5081	1110	127	1370
Snap-hook	J. H. Read	848,603	Mar. 26	5778	1261	127	1543
Soap. Molding	G. Klinger	848,179	Mar. 26	4939	1078	127	1334
Soles and heels for boots and shoes. Tool for trimming the edges of	Z. Beaudry	848,000	Mar. 26	4656	1015	127	1263
Sounding. Sea-	A. F. Eells	848,092	Mar. 26	4804	1048	127	1300
Speed-changing mechanism	L. Renault	848,494	Mar. 26	5555	1213	127	1487
Speed indicator and recorder	H. Soar	848,504	Mar. 26	5578	1218-19	127	1493
Speed mechanism. Variable-	C. M. Spencer	848,606	Mar. 26	5781	1261	127	1544
Speed-regulating mechanism	E. McCormick	848,109	Mar. 26	4930	1055	127	1309
Splice-bar	W. Green	848,122	Mar. 26	4954	1060	127	1312
Spool-holder	J. A. Cass	848,347	Mar. 26	5287	1154	127	1421
Sprinkler-head. Automatic	W. F. Rowell	848,390	Mar. 26	5383	1174	127	1443
Square attachment	R. R. Howell	848,172	Mar. 26	4926	1075-6	127	1331
Stacker. Wind-	P. J. A. Smith	848,574	Mar. 26	5715	1250	127	1537
Stair-rod	F. A. Sommer	848,063	Mar. 26	4752	1036	127	1267
Stamps. Inking-pad for rubber and other	W. P. Ennis	848,296	Mar. 26	5191	1133	127	1388
Stand:	A. B. Goodspeed and B. Beskow	848,027	Mar. 26	4996	1024	127	1272
See Display-stand. Railway switch-stand.							
Station-indicator	W. Mitchell	848,564	Mar. 26	5693	1246	127	1521
Steam-generating power plants. Apparatus for increasing the efficiency of	H. D. Langton	848,254	Mar. 26	5075	1109	127	1368
Steam-generator	J. E. L. Ogden	848,390	Mar. 26	5364	1160	127	1428
Steam-generator coil	W. F. Towne	848,140	Mar. 26	4978	1065	127	1318
Steam-trap	A. D. Klaber	848,557	Mar. 26	5667	1241	127	1514
Steering-wheel for autovehicles	H. R. Tooker	848,511	Mar. 26	5594	1222	127	1496
Stencils. Making	J. H. Tromanhauser	848,410	Mar. 26	5412	1180	127	1462
Stop mechanism. Emergency	P. J. Mooney	848,314	Mar. 26	5223	1140	127	1406
Stopper:	M. A. Flannery	848,164	Mar. 26	4913	1073	127	1330
See Bottle-stopper. Pipe-stopper.	D. A., J. F., and R. C. Stewart	848,066	Mar. 26	4757	1098	127	1266
Storage-bin	O. E. Kellum	848,249	Mar. 26	5097	1103	127	1367
Stove. Foraminous-ledge	A. R. Monette	848,040	Mar. 26	4719	1028-9	127	1270
Stovepipe	W. H. Lehman	848,181	Mar. 26	4942	1079	127	1335
Straw-cutter	W. Utzinger	848,215	Mar. 26	5002	1088	127	1351
Street and station indicator	M. I. Young	848,423	Mar. 26	5435	1185	127	1458
Street-sweeper	J. B. Scovell	848,571	Mar. 26	5709	1249	127	1525
Strength-testing machine	A. P. Boyer	848,534	Mar. 26	5629	1233	127	1505
Stretcher. Folding	W. I. Kaiser and W. H. Oakes	848,247	Mar. 26	5062	1107	127	1368
Surgical-table top	A. Descubes	848,293	Mar. 26	5175	1127-9	127	1394
Sweeper	J. A. Birsfeld	848,283	Mar. 26	5155	1124	127	1389
Swing	J. N. Michel	848,477	Mar. 26	5527	1204	127	1481
Switch:							
See Car and railway switch. Electric switch.							
Switch-point lock							
Switch-points and signals. System for operating							
Switching device							
Table:							
See Adjustable table. Extension-table. Card-table. Mail-assorting table. Drop-table.							
Tank:							
See Water-tank. Water-closet flushing-tank.							
Target. Registering-							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Telegraphy	J. C. Barclay	848,331	Mar. 26	5813	1096	127	1276
Telephone-booth	B. F. Merritt	848,178	Mar. 26	5763	1057	127	1267
Telephone-detector	A. R. Pisha	848,362	Mar. 26	5820	1248	127	1292
Telephone-receiver. Modulating	K. M. Turner	848,363	Mar. 26	5773	1041	127	1277
Telephone-toll-line system	W. W. Dean	848,403	Mar. 26	5831	1194	127	1301
Telephone toll-lines. Apparatus for	T. R. Lang	848,377	Mar. 26	5340	1163-4	127	1270
Temperature-regulator. Automatic	F. A. Beckwith	848,217	Mar. 26	5146	1122-3	127	1253
Terminal base. Interlocking	L. Steinberger	848,283	Mar. 26	5352	1219	127	1262
Theodolite or similar instrument	C. P. E. Schneider and E. Hellmiho.	848,136	Mar. 26	4985	1063	127	1245
Thermometer. Clinical	W. P. Grafton	848,429	Mar. 26	5480	1198	127	1284
Thill. Shifting	J. Triestram	848,514	Mar. 26	5588	1223	127	1287
Thimble	E. Barnett	848,219	Mar. 26	5522	1220	127	1287
Thin leaf or fabric	H. R. Gregory	848,094	Mar. 26	5194	.....	127	1253
Threading-tool	T. W. Nunns	848,439	Mar. 26	5548	1211	127	1283
Threshing-machine feeder. Portable	D. Still	848,277	Mar. 26	5719	1251-2	127	1295
Tie: See Rail-tie. Railway-tie.							
Tile or slab. Reinforced	C. C. Davis	848,307	Mar. 26	5834	1233	127	1288
Tiles provided with flanged edges. Apparatus for forming	A. Weill	848,476	Mar. 26	5779	1042	127	1264
Tilting gate	J. A. Scherts	848,489	Mar. 26	5862	1214	127	1289
Timber-framing machine	J. Doull	848,328	Mar. 26	5821	1097-8	127	1264
Time-recorders, &c. Ribbon mechanism for	J. and A. Dey	848,390	Mar. 26	5808	1078	127	1284
Tire-protector	C. E. Kimball	848,177	Mar. 26	5170	1129	127	1286
Tire-shrinking-machine attachment. Cold-	S. N. House	848,388	Mar. 26	5807	1239	127	1512
Tobacco-pouch	B. J. Head	848,393	Mar. 26	5837	1025	127	1276
Toothpick-machine	W. W. Talaiaz and G. F. Stanley	848,468	Mar. 26	5488	1178	127	1440
Trace-fastener	A. W. Frye and F. S. Green	848,360	Mar. 26	5338	1158	127	1426
Trace-fastening device for whiffletrees	I. B. Martin	848,286	Mar. 26	5762	1259	127	1540
Traction wheel and rail	M. C. Carr and C. R. Bohannon	848,442	Mar. 26	5570	1192	127	1457
Transmission mechanism	J. O. Hobbe	848,395	Mar. 26	5824	1160	127	1438
Trap: See Animal-trap. Steam-trap. Insect-trap.							
Tree: See Boot-tree.							
Trimmer: See Oil-cake trimmer. Sewing-machine trimmer.							
Trolley-frog. Overhead	B. Wilbur	848,510	Mar. 26	5793	1264	127	1348
Trolley. Overhead	A. P. Lord and N. Wilkins	848,322	Mar. 26	5805	1106	127	1436
Trolley retainer. Electric-	E. T. Platt	848,224	Mar. 26	5775	1260	127	1542
Trolley-wire sleeve	C. W. Ketteman	848,373	Mar. 26	5712	1027	127	1277
Truck-bolster	W. F. Richards	848,385	Mar. 26	5110	1115	127	1278
Truck for baggage, &c	B. L. Westervelt	848,332	Mar. 26	5327	1146-7	127	1415
Truck lock. Railway-	C. Masakant	848,320	Mar. 26	5273	1110	127	1309
Trunking device and selective signaling apparatus. Automatic	A. A. Monson	848,139	Mar. 26	4946	1068-9	127	1311
Tub: See Refrigerator-tub.							
Tube-mill blank-support	G. H. Blarter	848,326	Mar. 26	5169	1124	127	1301
Tubular fabric and making the same	G. D. Moore	848,139	Mar. 26	4987	1053	127	1339
Tunneling-machine	I. T. McComas	848,397	Mar. 26	5337	1064	127	1306
Tunnels under water. Device for constructing	J. G. Callan and H. J. Hanzlik	848,218	Mar. 26	5335	1149	127	1406
Turbine. Elastic-fluid	D. Nishizaki	848,137	Mar. 26	4983	1070	127	1325
Turbine. Elastic-fluid	D. Nishizaki	848,138	Mar. 26	4984	1297-9	127	1484
Turbine. Elastic-fluid	C. W. Dake	848,367	Mar. 26	5344	1299-10	127	1485
Turbine governing mechanism	C. W. Dake	848,368	Mar. 26	5720	1264	127	1532
Turbine governing mechanism	W. L. R. Emmet	848,369	Mar. 26	5721	1265-6	127	1533
Turbine-motor	O. Junggren	848,399	Mar. 26	5829	1046	127	1301
Turbine motor and muffler. Combination	W. A. Warman	848,165	Mar. 26	5054	1402-4	127	1305
Turbine-regulator	W. Ruf	848,417	Mar. 26	5459	1188	127	1455
Turbine. Steam-	D. Nishizaki	848,136	Mar. 26	4982	1301-2	127	1314
Type-casting machine	A. Bonom	848,467	Mar. 26	5845	1210	127	1435
	R. Drummond and W. C. Lieberknecht.	848,305	Mar. 26	5451	1159	127	1462
Type-cleaning device	W. T. Bents and M. F. Capron	848,133	Mar. 26	4980	1060	127	1322
Type-writing machine	J. C. McLaughlin	848,240	Mar. 26	5553	1149	127	1407
Type-writing machine	R. Seidelinger	848,482	Mar. 26	5857	1175-6	127	1444
Type-writing machine	H. L. Wagner	848,483	Mar. 26	5858	1253	127	1499
Type-writing machine and the like	F. F. Kunath	848,509	Mar. 26	5859	1262	127	1516
Type-writing-machine type-bar bearing	F. X. Wagner	848,374	Mar. 26	5713	1119	127	1283
Valve and valve-seat for steam-traps	O. C. Kayle	848,248	Mar. 26	5555	1107	127	1267
Valve. Double	J. E. L. Ogden	848,388	Mar. 26	5806	1149	127	1438
Valve for engines. Balanced	J. C. Kitton	848,351	Mar. 26	5817	1139	127	1404
Valve. Gate-	J. M. Cosper	848,288	Mar. 26	5808	1260	127	1505
Valve mechanism for rotary engines	L. D. Castle	848,289	Mar. 26	5809	1261	127	1266
Valve. Pop safety-	W. R. Dawe	848,447	Mar. 26	5470	1194	127	1470
Valve. Steam-cylinder drain-	J. Porteous	848,389	Mar. 26	5807	1093	127	1344
Valve. Vacuum-	F. Weiss	848,370	Mar. 26	5709	1042	127	1294
Valves. Controlling means for release-	F. E. Kingsley	848,170	Mar. 26	5095	1402	127	1334
Valves. Machine for setting locomotive-	S. C. Moore	848,280	Mar. 26	5799	1260	127	1541
Vault-cover mold	J. J. Conolly and J. Herren	848,241	Mar. 26	5771	1263	127	1267
Vehicle-fender	J. H. Denney	848,233	Mar. 26	5553	1264	127	1506
Vehicle. Motor-driven	L. A. Frayer and W. J. Miller	848,223	Mar. 26	5553	1402	127	1270
	I. W. Schmidt and H. R. Schwenkler.	848,327	Mar. 26	5810	1110	127	1310
Vehicle-rim	P. Ebner	848,217	Mar. 26	5170	1060	127	1260
Vehicle running-gear	J. W. Bentley	848,321	Mar. 26	5805	1105	127	1260
Vehicle-stake	G. L. Harvey	848,330	Mar. 26	5822	1100	127	1304
Vehicle-tops. Removable bottom frame for	C. Silcott	848,369	Mar. 26	5720	1265	127	1288
Vehicle-wheel	W. S. Hadley	848,451	Mar. 26	5852	1150	127	1475
Vending-machine	C. Forth	848,380	Mar. 26	5797	1263	127	1536
Ventilator	W. D. Robinson	848,230	Mar. 26	5548	1262	127	1283
Ventilator	A. Konsalik	848,276	Mar. 26	5563	1262	127	1432
Vessels. Means for effecting escape of occupants from sunken	I. Fripp	848,515	Mar. 26	5888	1264-5	127	1540
Vessels. Means for retarding the movements of	J. Englund	848,397	Mar. 26	5829	1262	127	1287

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Vine and weed cutter	C. F. Hippard	848,484	Mar. 26	5507	1200	127	1478
Wagon-brake. Automatic	H. A. Kennard	848,260	Mar. 26	5070	1108	127	1267
Wagon. Dump-	D. S. Watson	848,076	Mar. 26	4778	1042	127	1298
Wagon. Dump-	D. S. Watson	848,077	Mar. 26	4778	1042	127	1284
Wagon. Dump-	W. P. Norrington	848,261	Mar. 26	5080	1112	127	1273
Wagon-mat	E. Woerner	848,219	Mar. 26	5010	1095	127	1263
Washing-machine	E. G. Ellis and P. E. Avett	848,452	Mar. 26	5462	1196	127	1472
Washing-machine	G. A. Schlechter	848,131	Mar. 26	4957	1063	127	1315
Watch-case	E. J. Martel	848,186	Mar. 26	4961	1061	127	1287
Watches in Cheaters. Means for fastening the movements of	D. Dehls	848,449	Mar. 26	5487	1195	127	1471
Watchmaker's tool	L. Lipp	848,281	Mar. 26	5354	1188	127	1436
Water-closet flushing-tank	T. S. Hardesty and S. Stewart	848,108	Mar. 26	4819	1051	127	1304
Water-cups. Removing	C. Wilkins	848,147	Mar. 26	4987	1067	127	1320
Water-tank	A. A. Fahrenbacher	848,513	Mar. 26	5804	1264-5	127	1540
Weed-cutter and cultivator. Rotary	F. N. Scofield	848,501	Mar. 26	5567	1215	127	1492
Well cleaner, Oil-	E. M. Boessot	848,433	Mar. 26	5454	1188	127	1462
Wheelbarrow for bricks. Mixed-							
Wheel: See Automobile-wheel. Vehicle-wheel. Measuring-wheel. Wind or water power wheel. Steering-wheel. Traction-wheel.							
Wheel	G. W. Walk	848,142	Mar. 26	4980	1095-6	127	1313
Wheel	B. H. Gille	848,226	Mar. 26	5245	1144	127	1411
Whip-socket	G. B. Mankins	848,292	Mar. 26	5356	1106-7	127	1436
Wind or water power wheel	J. N. Whitner	848,522	Mar. 26	5010	1237	127	1500
Window-stop	W. A. Heartt	848,202	Mar. 26	5198	1134	127	1400
Wire-cloth supporting and measuring apparatus	W. W. March	848,562	Mar. 26	5679	1243	127	1513
Wood. Apparatus for extracting by-products from	T. Newnham	848,484	Mar 26	5539	1207	127	1483
Wood substitute	F. Schnell	848,128	Mar. 26	4970	.....	127	1315
Wrench: See Nut-wrench.	J. H. Shepherd	848,058	Mar. 26	4745	1035	127	1286
Wrench	S. V. Rehart	848,204	Mar. 26	4961	1089	127	1345
Wrenches. Adjusting means for monkey-							

DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Automobile-horn	G. Marchesini	38,499	Mar. 26	127	1538
Badge	J. J. Davis	38,487	Mar. 26	127	1542
Badge	J. J. Davis	38,488	Mar. 26	127	1542
Badge	R. C. Sherrard	38,489	Mar. 26	127	1542
Badge	R. C. Sherrard	38,490	Mar. 26	127	1543
Badge	L. C. Wagner	38,493	Mar. 26	127	1543
Cigar band or wrapper	L. C. Wagner	38,494	Mar. 26	127	1543
Cigar band or wrapper	L. C. Wagner	38,495	Mar. 26	127	1543
Cigar band or wrapper	L. C. Wagner	38,496	Mar. 26	127	1543
Cigar band or wrapper	W. C. Anderson	38,492	Mar. 26	127	1542
Glass vessel. Cut-	E. Crees and C. S. Court	38,491	Mar. 26	127	1542
Locket or similar article	A. T. Wehrle	38,498	Mar. 26	127	1543
Stove	J. H. Higart	38,497	Mar. 26	127	1543
Stove. Heating-					

TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Agricultural machines. Certain	International Harvester Company of America.	61,512	Mar. 26	127	1572
Automobiles and parts thereof	Société Anonyme Des Anciens Établissements Panhard & Levassor.	61,503	Mar. 26	127	1572
Baking-powder, cereal foods, and yeast. Certain	Citizens' Wholesale Supply Co	61,553	Mar. 26	127	1573
Bed and upholstery springs	Diamond Fabric Company of America.	61,557	Mar. 26	127	1573
Beer	El Dorado Brewing Co	61,480	Mar. 26	127	1571
Biscuit. Fruit-	National Biscuit Company	61,529	Mar. 26	127	1573
Books. Law-	American Law Book Company	61,593	Mar. 26	127	1574
Boots and shoes. Leather	H. L. Purdy	61,575	Mar. 26	127	1574
Boots and shoes. Leather	Regal Shoe Company	61,606	Mar. 26	127	1574
Boots, shoes, and slippers. Leather	Paul Brothers	61,622	Mar. 26	127	1575
Bread	L. R. Bergeron	61,551	Mar. 26	127	1573
Bronzes. Manganese	Manganese Bronze & Brass Co	61,603	Mar. 26	127	1574
Butter. Creamery-	Kirschbraun & Sons	61,601	Mar. 26	127	1574
Buttons; tie-clasps, studs, &c. Link-	Stern Brothers & Company	61,612	Mar. 26	127	1575
Cabinets	Alabastine Company	61,472	Mar. 26	127	1571
Candy	National Biscuit Company	61,566	Mar. 26	127	1573
Canned fruits and vegetables	W. R. Roach & Co	61,515	Mar. 26	127	1573

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Canned hash-meat	A. Cumier	61,488	Mar. 26	127	1572
Canned salmon	C. Schmitz & Co	61,489	Mar. 26	127	1572
Car-wheels. Steel	Taylor Iron & Steel Co	61,516	Mar. 26	127	1575
Chocolate, cocoa, and bonbons	"Lacmano." Anglo-Swiss Milk Chocolate Co.	61,556	Mar. 26	127	1572
Cigar-cabinets	Cooper & McKee	61,505	Mar. 26	127	1573
Cigars	Finzi Bros. Co	61,510	Mar. 26	127	1573
Cigars	Park & Tilford	61,553	Mar. 26	127	1576
Cigars	Park & Tilford	61,554	Mar. 26	127	1576
Cigars	Park & Tilford	61,557	Mar. 26	127	1576
Cleaners. Carpet, cloth, and glove	Citizens' Wholesale Supply Company.	61,573	Mar. 26	127	1571
Clothing. Certain	Heidelberg, Wolf & Co	61,490	Mar. 26	127	1574
Coal	Jewett Bigelow & Brooks	61,492	Mar. 26	127	1571
Coffee and tea	W. S. Quimby Company	61,516	Mar. 26	127	1575
Confectioners' paste for making candies	Mallow Cream Co	61,566	Mar. 26	127	1573
Corsets	Madame Irène	61,493	Mar. 26	127	1571
Cotton, cotton and silk, and cotton and wool piece goods	C. C. Copeland & Co	61,499	Mar. 26	127	1571
Cotton piece goods	American Printing Company	61,470	Mar. 26	127	1571
Custard-powder	Ivimy, Limited	61,500	Mar. 26	127	1574
Dolls and toy animals	Rennels-Bowden Company	61,499	Mar. 26	127	1571
Dress-shields	Omo Manufacturing Company	61,498	Mar. 26	127	1571
Electric-lighting outfits. Decorative	Sterling Electrical Manufacturing Company.	61,515	Mar. 26	127	1572
Electric-lighting outfits. Decorative	Sterling Electrical Manufacturing Company.	61,542	Mar. 26	127	1575
Electrical machines and apparatus. Certain	Société Anonyme Des Anciens Etablissements Paulhan & Levassor.	61,502	Mar. 26	127	1572
Erasers. India-rubber pencil	L. & C. Hardtmuth	61,550	Mar. 26	127	1574
Fertilisers	Ashepoo Fertilizer Company	61,504	Mar. 26	127	1572
Fertilisers	Craven Chemical Company	61,542	Mar. 26	127	1573
Fertilisers	Craven Chemical Company	61,544	Mar. 26	127	1573
Files and rasps	Virginia-Carolina Chemical Company.	61,549	Mar. 26	127	1573
Fire-extinguishers, chemical-engines, &c	Henry Disston & Sons	61,499	Mar. 26	127	1572
Flour. Wheat	American-La France Fire Engine Co.	61,494	Mar. 26	127	1571
Flour. Wheat	Standard Milling Co	61,533	Mar. 26	127	1572
Flour. Wheat	Commercial Milling Company	61,534	Mar. 26	127	1573
Flour. Wheat	M. H. Davis	61,535	Mar. 26	122	1573
Food. Poultry	P. Trust Co	61,571	Mar. 26	127	1573
Foods. Certain sea	Illinois Seed Company	61,552	Mar. 26	127	1574
Furniture-polish	E. T. Smith Company	61,553	Mar. 26	127	1574
Games and sports. Certain named goods used in athletic	Lyon & Healy	61,559	Mar. 26	127	1571
Gelatin for use as food	Victor Sporting Goods Co	61,560	Mar. 26	127	1571
Gin	J. & G. Cox	61,561	Mar. 26	127	1575
Gloves. Leather	H. R. Myers	61,562	Mar. 26	127	1574
Gum. Chewing	F. J. Raymond	61,563	Mar. 26	127	1571
Gum. Chewing	Soda Mint Gum Company	61,565	Mar. 26	127	1572
Harrows, plows, seeders, rollers, &c	Doctor Wemm's Eucalyptus Cure Co.	61,569	Mar. 26	127	1573
Heaters and furnaces. Gas and vapor	Cutaway Harrow Company	61,507	Mar. 26	127	1572
Honey compounds	Smitjer Company	61,514	Mar. 26	127	1572
Horseshoes	Gordon, Wolf and Co	61,521	Mar. 26	127	1574
Jars. Fruit or preserving	Chillington Tool Company	61,522	Mar. 26	127	1571
Journal. Weekly	Ball Bros. Glass Mfg. Co	61,527	Mar. 26	127	1572
Knit hosiery and underwear	Agricultural Publishing Company.	61,517	Mar. 26	127	1575
Knitted undershirts and drawers	M. & C. Mayer	61,524	Mar. 26	127	1574
Lactobacilline ferment	Robinchon & Peckham Company	61,525	Mar. 26	127	1571
Lactobacilline ferment	Ferment Company	61,529	Mar. 26	127	1573
Lamps. Incandescent	Ferment Company	61,531	Mar. 26	127	1573
Lamps. Incandescent electric	General Incandescent Lamp Company.	61,547	Mar. 26	127	1573
Lead and zinc. Combination of white	Franklin Electric Mfg. Co	61,568	Mar. 26	127	1572
Leather	W. W. Lawrence & Company	61,575	Mar. 26	127	1571
Leather	Pfister & Vogel Leather Company.	61,572	Mar. 26	127	1574
Leather	Pfister & Vogel Leather Company.	61,573	Mar. 26	127	1574
Leather	Pfister & Vogel Leather Company.	61,574	Mar. 26	127	1574
Leather blackings and dressings	C. A. Schieren & Co	61,577	Mar. 26	127	1574
Leather fobs, match-cases, and pocket-books	Citizens' Wholesale Supply Co	61,578	Mar. 26	127	1572
Leather. Lace	Weiss M'f'g. Co	61,580	Mar. 26	127	1574
Leggings	American Lace Leather Co	61,581	Mar. 26	127	1572
Linoleum, oil-cloth, &c. Varnish-like preservative for	H. Jacob & Sons	61,582	Mar. 26	127	1571
Magnetos	G. N. Baker	61,584	Mar. 26	127	1571
Magnetos	Bridgeport Specialty Company	61,585	Mar. 26	127	1572
Malt extract	Bridgeport Specialty Company	61,586	Mar. 26	127	1573
Matches. Friction	Ebling Brewing Co	61,587	Mar. 26	127	1514
Matting	Union Match Company	61,588	Mar. 26	127	1572
Meats. Fresh, cooked, and cured	Atkinson, Mentzer & Grover	61,589	Mar. 26	127	1571
Metal manufactures. Certain	Charles Roesch and Sons Company.	61,590	Mar. 26	127	1574
Metal plates and steel	Hibbard, Spencer, Bartlett & Company.	61,511	Mar. 26	127	1573
Metals. Bearing	Fried. Krupp Aktiengesellschaft	61,576	Mar. 26	127	1572
Newspaper. Monthly	Traka Metal Company	61,547	Mar. 26	127	1572
	Successful Farming Publishing Company.	61,555	Mar. 26	127	1576

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Odometers, kilometre-counters, and taximeters	A. Schneider	61,611	Mar. 26	127	1575
Oil for certain named purposes	G. W. Cole Company	61,545	Mar. 26	127	1573
Oil for certain named purposes	G. W. Cole Company	61,546	Mar. 26	127	1573
Oils. Certain	Citizens' Wholesale Supply Co	61,619	Mar. 26	127	1576
Oxygen-generating apparatus	Roessler & Hasslacher Chemical Co.	61,624	Mar. 26	127	1575
Packing. Metallic	Stroppi Machinery & Supply Co	61,536	Mar. 26	127	1573
Paint	J. Lucas & Co	61,469	Mar. 26	127	1571
Paint and varnish. Composition for removing	J. Lucas & Co	61,467	Mar. 26	127	1571
Paper. Drawing	Keuffel & Esser Company	61,564	Mar. 26	127	1576
Paper. Drawing	Keuffel & Esser Company	61,595	Mar. 26	127	1574
Paper for use in writing, printing, and engraving. High-grade	Parsons Paper Co	61,530	Mar. 26	127	1572
Paper for use in writing, printing, and engraving. High-grade	Parsons Paper Co	61,567	Mar. 26	127	1574
Paper for use in writing, printing, and engraving. High-grade	Parsons Paper Co	61,568	Mar. 26	127	1574
Paper for use in writing, printing, and engraving. High-grade	Parsons Paper Co	61,569	Mar. 26	127	1574
Pastry. Certain	A. T. Dietz	61,556	Mar. 26	127	1573
Pencils. Lead	Eagle Pencil Company	61,520	Mar. 26	127	1575
Porcelain articles. Certain	Owen China Company	61,570	Mar. 26	127	1573
Pork-cutlets	D. M. Bodine	61,616	Mar. 26	127	1575
Razors	Wm. Elliot & Co	61,520	Mar. 26	127	1572
Razors	Wm. Elliot & Co	61,521	Mar. 26	127	1573
Razors	Wm. Elliot & Co	61,522	Mar. 26	127	1573
Razors	Wm. Elliot & Co	61,523	Mar. 26	127	1573
Razors	Wm. Elliot & Co	61,524	Mar. 26	127	1573
Razors	Wm. Elliot & Co	61,525	Mar. 26	127	1573
Razors	Wm. Elliot & Co	61,550	Mar. 26	127	1574
Razors	Lawton & Hall	61,602	Mar. 26	127	1574
Rubber clothing. Certain	Smith-Worthington Company	61,591	Mar. 26	127	1574
Saddle bearings and pads	Pressing & Orr Company	61,590	Mar. 26	127	1573
Salad-dressing, catsup, and mince-meat	Wells-Jones Plow Co	61,519	Mar. 26	127	1573
Scrapers. Soil	Illinois Seed Company	61,563	Mar. 26	127	1573
Seeds. Grass, clover, and field	National Sewing Machine Company.	61,513	Mar. 26	127	1572
Sewing-machines	I. Rand	61,467	Mar. 26	127	1571
Shirt-waists and shirt-waist suits	Minot, Hooper & Co	61,495	Mar. 26	127	1571
Shirtings	Clarke Bros	61,541	Mar. 26	127	1573
Shoes. Ladies' leather	Clarke Bros	61,542	Mar. 26	127	1573
Shoes. Ladies' leather	Clarke Bros	61,538	Mar. 26	127	1573
Shoes. Ladies', misses', and children's leather	Clarke Bros	61,540	Mar. 26	127	1573
Shoes. Men's, boys', and youths' leather	Clarke Bros	61,539	Mar. 26	127	1571
Shoes. Men's leather	J. S. Castell & Co	61,476	Mar. 26	127	1571
Silk. Bread	Lehigh Valley Silk Mills	61,494	Mar. 26	127	1571
Silk dress goods	J. Wanamaker	61,493	Mar. 26	127	1571
Silks. Bread, dress, and piece	A. H. Sands	61,491	Mar. 26	127	1571
Silks. Dress	Pompeian Mfg. Co	61,471	Mar. 26	127	1571
Soap	Pompeian Mfg. Co	61,474	Mar. 26	127	1571
Soap	Ichthyol Gesellschaft Cordes, Hermanni & Co.	61,485	Mar. 26	127	1571
Soap. Medicated	Böhler Gebr. & Co. Aktiengesellschaft.	61,606	Mar. 26	127	1574
Steel. Cast	J. A. Wright & Co	61,600	Mar. 26	127	1572
Stove-polish	Burton & Davis Co	61,594	Mar. 26	127	1574
Teas	Stern Brothers & Company	61,613	Mar. 26	127	1575
Thimbles	De Erven De Wed. J. Van Nelle	61,497	Mar. 26	127	1573
Tobacco, cigars, cigarettes, and snuff. Smoking	Neuss, Hesslein & Co	61,549	Mar. 26	127	1571
Tool and implement handles. Wooden	M. A. Glen	61,551	Mar. 26	127	1573
Toys. Paper	J. Lucas & Co	61,606	Mar. 26	127	1571
Type	American Bar Lock Co	61,537	Mar. 26	127	1573
Varnishes and japans	Barnhart Brothers & Spindler	61,601	Mar. 26	127	1572
Vault, sidewalk, floor, and window lights	Nineteen Hundred Washer Co	61,496	Mar. 26	127	1573
Washing-machines and wringers	Edgar Manufacturing Company	61,576	Mar. 26	127	1574
Water-motors	Rugby Milling Company	61,567	Mar. 26	127	1573
Wheat-grits	G. C. Morgan	61,534	Mar. 26	127	1573
Whips. Horse	R. S. Strader	61,535	Mar. 26	127	1573
Whisky	R. S. Strader	61,563	Mar. 26	127	1573
Whisky	Kamp Distilling Co	61,555	Mar. 26	127	1574
Whisky	B. W. Le Compte	61,579	Mar. 26	127	1574
Whisky	Delaney & Murphy	61,580	Mar. 26	127	1574
Whisky	Freiberg, Meyer & Co	61,584	Mar. 26	127	1574
Whisky	W. H. Jones and Co	61,592	Mar. 26	127	1574
Whisky	Star Distillery Co	61,609	Mar. 26	127	1574
Whisky	M. Salmon	61,610	Mar. 26	127	1574
Whisky	Sample & Co	61,614	Mar. 26	127	1575
Whisky	Straus, Gunst & Co				

LABELS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Baking Powder." (For Baking-Powder)	Berlin Laboratory	13,424	Mar. 26	127	1575
"Big Jane." (For Baking-Powder)	Berlin Laboratory	13,423	Mar. 26	127	1576

LABELS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Bisco." (For a Baking Compound)	Berlin Laboratory	[illegible]	Mar. 26	127	[illegible]
"Corn Crystals." (For a Cereal Food)	Corn Crystal Company	[illegible]	Mar. 26	127	[illegible]
"Good Luck." (For Cigars)	O. L. Schwenke Lithographic Co.	[illegible]	Mar. 26	127	[illegible]
"Just Right." (For Cigars)	O. L. Schwenke Lithographic Co.	12,635	Mar. 26	127	1558
"Kaffee Klatsch." (For Coffee)	Berlin Laboratory	[illegible]	Mar. 26	127	[illegible]
"Lion Washing Powder." (For Washing-Powder)	R. H. Kegg	[illegible]	Mar. 26	127	[illegible]
"Orela." (For Cigars)	O. L. Schwenke Lithographic Co.	12,637	Mar. 26	127	1558
"Se-be-go." (For a Carbonated Beverage)	R. R. Armstrong	12,639	Mar. 26	127	1559
"Seipp's Export." (For Beer)	Williams Bros. Co.	12,640	Mar. 26	127	1559

PRINTS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"? Fall 1907 Guess." (For Men's and Boys' Coats, Vests, and Trousers.)	Ed. V. Price & Company	1,940	Mar. 26	127	1576
"Fine Varnishes and Japans." (For Varnishes and Japans)	Bigelow Varnish Co.	1,941	Mar. 26	127	1576
"Jumped Into Favor From The Start." (For Whisky)	Lanahan & Son	1,942	Mar. 26	127	1576
"Men's and Boys' Apparel." (For Men's and Boys' Apparel)	H. C. Lytton	1,943	Mar. 26	127	1576
"Perry's Fashions for Spring 1907." (For Men's Clothing)	Perry & Co.	1,944	Mar. 26	127	1576
"Rimless Eyeglass Snap." (For Eyeglass-Snap)	Chapin & Hollister Co.	1,945	Mar. 26	127	1576
"Sapolin Powders for all Kinds of Gilding." (For Gilding-Powders.)	Gerstendorfer Bros.	1,946	Mar. 26	127	1576
"Who's Your Tailor?" (For Men's and Boys' Coats, Vests, and Trousers.)	Ed. V. Price & Company	1,939	Mar. 26	127	1576

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Abrasive and polishing materials	Norton Company	26,788	Mar. 26	127	1564
Alloy resembling silver	Queen Metal Company	26,785	Mar. 26	127	1564
Axes, hatchets, bush-hooks, saws, boring-bits, &c.	Collins Company	26,786	Mar. 26	127	1564
Bandages, supporters, and suspensories. Elastic	A. G. Spalding & Bros.	26,790	Mar. 26	127	1567
Bandages, supporters, and suspensories. Elastic	A. G. Spalding & Bros.	26,789	Mar. 26	127	1567
Bandages, supporters, and suspensories. Elastic	A. G. Spalding & Bros.	26,791	Mar. 26	127	1567
Beer. Root-	Charles E. Hires Company	26,792	Mar. 26	127	1568
Boiler. Water-tube	McNeil Boiler Company	26,784	Mar. 26	127	1566
Boot, shoe, and leather polish	Pittsburgh Waterproof Shoe Polish Company.	26,783	Mar. 26	127	1566
Boots and shoes	B. Rosenberg & Sons	26,803	Mar. 26	127	1566
Boots and shoes. Leather	Peters Shoe Co.	26,780	Mar. 26	127	1566
Boots and shoes. Leather	Isaac Prouty & Co.	26,781	Mar. 26	127	1566
Boots and shoes. Leather	Drake & Co.	26,801	Mar. 26	127	1567
Bottle-openers	Smith-Briscoe Shoe Company	26,802	Mar. 26	127	1567
Buckles	A. W. Stephens Manufacturing Co.	26,804	Mar. 26	127	1562
Buggies and wagons	Marvel Buckle Company	26,805	Mar. 26	127	1561
Calipers and gages	Columbus Buggy Company	26,806	Mar. 26	127	1562
Candy	Morse Twist Drill & Machine Company.	26,808	Mar. 26	127	1557
Canned fruit, vegetables, and baked beans	E. C. Sperry	26,809	Mar. 26	127	1560
Canned fruits and vegetables, flavoring extracts, mince-meat, &c.	C. C. McDonald	26,810	Mar. 26	127	1562
Caps, shirts, pants, outing-suits, &c. Base-ball	J. G. Hutchison & Co.	26,794	Mar. 26	127	1559
Coffee and tea	Wright & Ditson	24,561	Mar. 26	127	1561
Colic and fever cure for horses and cattle	Abraham & Straus	24,562	Mar. 26	127	1563
Collars and cuffs. Waterproof	J. G. Truman	24,563	Mar. 26	127	1560
Compound for the destruction of Johnson grass, fleas, &c.	W. G. Starry	24,564	Mar. 26	127	1558
Cooking utensils	J. T. Wright	24,565	Mar. 26	127	1559
Cotton fabrics. Dyed	Roseville Pottery Co.	24,566	Mar. 26	127	1561
Cotton piece goods	O. Goetze	26,771	Mar. 26	127	1559
Crucibles, &c., made of plumbago or graphite	Stebbins Lawson and Sprague Co.	24,577	Mar. 26	127	1561
	Morgan Crucible Company	24,560	Mar. 26	127	1560

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Dollwares	Naamlooze Vennootschap Plateelbakkerij "Delft."	23,648	Mar. 26	127	1559
Dolmans. Children's	Weiler & Herman Co.	25,628	Mar. 26	127	1563
Dyestuffs. Coal-tar	Actien-Gesellschaft für Anilin-Fabrikation.	17,991-2	Mar. 26	127	1557
Emulsions of cod-liver oil	Cloftlin Chemical Company	23,531	Mar. 26	127	1559
Engines. Internal-combustion	International Power Company	25,613	Mar. 26	127	1566
Eyeglasses, spectacles, lens-mountings, &c.	F. A. Hardy & Co.	17,225	Mar. 26	127	1557
Felt roofing	Union Paper & Twine Company	25,168	Mar. 26	127	1563
Fertilizers	Virginia-Carolina Chemical Company.	23,982	Mar. 26	127	1560
Films, plates, and photographic papers	Actien-Gesellschaft für Anilin-Fabrikation.	13,324	Mar. 26	127	1556
Flour, cereal foods, rice, &c. Buckwheat and wheat	J. G. Hutchison & Co.	23,593	Mar. 26	127	1559
Flour. Wheat-	B. B. Earnshaw	10,279	Mar. 26	127	1556
Flour. Wheat-	Ralston Purina Co.	12,009	Mar. 26	127	1562
Flour. Wheat-	Whaley Mill & Elevator Co.	25,007	Mar. 26	127	1562
Flour. Wheat-	Eagle Roller Mill Company	25,039-40	Mar. 26	127	1563
Flour. Wheat-	New Era Milling Company	25,113-16	Mar. 26	127	1560
Flour. Wheat-	Central Dakota Flouring Mill Company.	25,804	Mar. 26	127	1561
Food. Stock	Western Grain Products Company.	24,600	Mar. 26	127	1561
Foods for infants and invalids	A. Horowitz	22,285	Mar. 26	127	1559
Fruit. Dried	Castle Brothers	25,501-2	Mar. 26	127	1559
Furnaces. Oil-	Railway Materials Company	2,029	Mar. 26	127	1555
Gaiters. Parlor	W. S. Heal	25,487	Mar. 26	127	1565
Gas	Kaufmann Beer & Co.	25,555	Mar. 26	127	1567
Guano and bone fertilizer	Standard Chemical & Oil Company.	22,008	Mar. 26	127	1563
Hair-dyeing preparations	Actien-Gesellschaft für Anilin-Fabrikation.	19,458	Mar. 26	127	1557
Hats and caps	Christy & Comp.	23,133	Mar. 26	127	1558
Hats. Felt and straw	Harris-Polk Hat Co.	25,371	Mar. 26	127	1565
Hosiery	Lord & Taylor	8,663	Mar. 26	127	1560
Hosiery and knitted underwear	J. S. Naylor & Co.	25,681	Mar. 26	127	1560
Ice-cream and ices. Powder used in the manufacture of	F. A. Beeler	25,316	Mar. 26	127	1564
Incandescent gas-mantles	J. H. Ladd	25,047	Mar. 26	127	1562
Inks. Printing-	Queen City Printing Ink Co.	25,052	Mar. 26	127	1563
Insect-repelling preparations	P. Brandt	21,782	Mar. 26	127	1560
Jewelry	Electric Chain Co.	25,477	Mar. 26	127	1563
Jewelry, table, flat, and hollow ware, &c.	Faye and Baker Manufacturing Co.	25,133	Mar. 26	127	1563
Journal. Monthly	H. J. Gonden	25,519	Mar. 26	127	1566
Knit underwear	Bedford-Wallis Company	25,619	Mar. 26	127	1566
Lamps. Electric	Gill Brothers Company	24,576	Mar. 26	127	1561
Magazines and pamphlets	Globe Machine and Stamping Company.	25,055	Mar. 26	127	1563
Machines. Safety-	Jönköpings och Vulcans Tändsticksfabriksaktiebolag.	18,930	Mar. 26	127	1556
Medical preparations for the skin	Boots Pure Drug Company	21,428	Mar. 26	127	1557
Medicinal preparation for the cure of catarrh, hay-fever, &c.	M. E. Pease	23,178	Mar. 26	127	1559
Medicines for venereal diseases	J. T. Padgett	22,367	Mar. 26	127	1558
Medicines. Headache	C. Breves	17,276	Mar. 26	127	1557
Metal cylinders, cones, spheres, buoys, &c.	Continental Iron Works	24,711	Mar. 26	127	1561
Milk and cocoa mixture	G. Kammermann & Cie. Schweiz. Trockenmilchgesellschaft.	15,315	Mar. 26	127	1556
Milk and cream. Prepared	A. Fay	22,706	Mar. 26	127	1558
Paint	Jenkins Paint and Oil Co.	24,207	Mar. 26	127	1560
Paint and varnish combination	Keystone Varnish Co.	23,158	Mar. 26	127	1559
Paints, enamels, stains, and varnishes	Acme White Lead & Color Works	12,051	Mar. 26	127	1560
Paper and envelops	Raynor & Perkins Envelope Company.	14,123	Mar 26	127	1555
Paper. Tissue-	John Hoberg Co.	25,241	Mar. 26	127	1563
Periodical. Monthly	Vickery & Hill Publishing Co.	25,402	Mar. 26	127	1559
Photographic cameras, paper, picture-exhibiting apparatus, &c.	R. J. Sachers	25,283	Mar. 26	127	1566
Pianos	Jacob Doll & Sons	25,528	Mar. 26	127	1559
Pile cure	J. J. Hoar	25,198	Mar. 26	127	1563
Plumbago or graphite	Morgan Crucible Company	24,105	Mar. 26	127	1560
Powder. Bug-	A. Nussey	22,845	Mar. 26	127	1562
Preparation for the cure of dyspepsia	L. M. Green	18,710	Mar. 26	127	1557
Punch. Arrack	Aktiebolaget Barthd. Dahlgren	21,594	Mar. 26	127	1558
Rakes, shovels, trowels, &c. Garden	Trout Hardware Company	17,023	Mar. 26	127	1558
Ranges, stoves, and heaters and vapor stoves and ovens. Gas	American Stove Company	24,665	Mar. 26	127	1560
Razors and razor-blades	Kampfe Bros.	1,869	Mar. 26	127	1555
Razors and razor-blades	Kampfe Bros.	1,871	Mar. 26	127	1555
Reamers, razor-blades, and safety corn-knives. Safety-	Kampfe Bros.	1,873-6	Mar. 26	127	1556
Remedies. Eye	Haley-Laybourn Eye Infirmary	24,160	Mar. 26	127	1560
Remedies for the relief of pain, for diseases of the eyes, &c.	Microline Medicine Company	25,323	Mar. 26	127	1564
Remedy for blood diseases	Blood Balm Company	25,614-15	Mar. 26	127	1565
Remedy for disorders of the bowels	Microline Medicine Company	25,439	Mar. 26	127	1564
Remedy for lung and throat troubles, a body-builder, &c.	Carleton & Hovey	25,265	Mar. 26	127	1563
Salves, ointments, and lotions	Fouquet et Cie	22,739	Mar. 26	127	1557
Saws and saw-blades	Henry Disston & Sons	25,548	Mar. 26	127	1563
Shirt-waists and shirt-waist suits	B. D. Spandauer & Co.	24,284	Mar. 26	127	1560
Shirts	Byrne & Hammer Dry Goods Co.	21,462	Mar. 26	127	1562
Shoes	S. Dalsimer	25,063	Mar. 26	127	1563
Shoes and slippers. Leather	B. Rosenberg & Sons	25,423	Mar. 26	127	1565
Shoes and slippers. Leather	B. Rosenberg & Sons	25,425	Mar. 26	127	1565

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette Vol.	Official Gazette Page
Silk dress goods	F. L. Bryant	34,926	Mar. 25	127	[illegible]
Silk, silk and cotton, cotton, &c., piece goods	F. Butterfield & Co.	35,230	Mar. 25	127	[illegible]
Soap	Compagnie Ray zait beschränkter Haftung.	7,510	Mar. 25	127	[illegible]
Soap	G. A. Schmidt	23,698	Mar. 25	127	[illegible]
Soap	S. Palmer	35,140-1	Mar. 25	127	[illegible]
Soap	Iowa Soap Company	35,295	Mar. 25	127	[illegible]
Stiffening-blades, cords, tapes, and fabrics	Warren Featherbone Co.	35,376	Mar. 25	127	[illegible]
Stockings, jerseys, sweaters, knit shirts, tights, &c. Ball and bicycle	A. G. Spalding & Bros.	35,374	Mar. 25	127	[illegible]
Stockings, jerseys, sweaters, knit shirts, tights, &c. Ball and bicycle	A. G. Spalding & Bros.	35,378	Mar. 25	127	[illegible]
Stockings, jerseys, sweaters, knit shirts, tights, &c. Ball and bicycle	A. G. Spalding & Bros.	35,382	Mar. 25	127	[illegible]
Stoves, ranges, furnaces, and heaters	Co-operative Foundry Co.	35,260	Mar. 25	127	[illegible]
Surgical bandages	G. A. Crayon & Co.	34,765	Mar. 25	127	[illegible]
Tea and coffee	Abraham & Straus	35,541	Mar. 25	127	[illegible]
Tires. Pneumatic cushion and solid rubber	Diamond Rubber Co.	13,495	Mar. 25	127	[illegible]
Umbrellas	P. F. W. Gross	11,551	Mar. 25	127	[illegible]
Washboards	American Washboard Company	21,588	Mar. 25	127	[illegible]
Washing-machines	International Factories Co.	34,227	Mar. 25	127	[illegible]
Water. Mineral	Heinrich Matteoni Aktiengesellschaft.	35,399	Mar. 25	127	[illegible]
Whisky	Albert M. Guggenheim Co.	33,891	Mar. 25	127	[illegible]
Whisky	Bernheim Distilling Co.	35,543	Mar. 25	127	[illegible]
Whisky. Rye	Thos. G. Carroll & Son Co. of Baltimore City.	12,949-1	Mar. 25	127	[illegible]
Wrenches. Pipe and nut	Keystone Mfg. Co.	35,337	Mar. 25	127	[illegible]
Yarn produced from cellulose or viscose	C. Lund	21,288	Mar. 25	127	[illegible]

TRADE-MARKS

REGISTERED APRIL 30, 1907.

62,239. STERILIZED CREAM AND CONDENSED MILK. ABRAHAM & STRAUS, New York, N. Y.
Filed April 27, 1906. Serial No. 19,109. PUBLISHED MARCH 5, 1907.

62,240. CANNED FRUITS, CANNED VEGETABLES, JELLY, AND JAM. ABRAHAM & STRAUS, New York, N. Y.
Filed June 6, 1906. Serial No. 20,151. PUBLISHED MARCH 5, 1907.

62,241. ISINGLASS. CAPE ANN ISINGLASS COMPANY, Boston, Mass.
Filed December 6, 1906. Serial No. 23,816. PUBLISHED MARCH 5, 1907.

62,242. FUSES. COAST MANUFACTURING & SUPPLY CO., Berkeley, Cal.
Filed February 4, 1907. Serial No. 25,111. PUBLISHED MARCH 5, 1907.

62,243. FUSES. COAST MANUFACTURING & SUPPLY CO., Berkeley, Cal.
Filed February 4, 1907. Serial No. 25,161. PUBLISHED MARCH 5, 1907.

62,244. FUSES. COAST MANUFACTURING & SUPPLY CO., Berkeley, Cal.
Filed February 8, 1907. Serial No. 25,201. PUBLISHED MARCH 5, 1907.

62,245. CERTAIN STARCH OR SIZE. GREENE & COMPANY, Boston, Mass.
Filed December 13, 1906. Serial No. 23,997. PUBLISHED MARCH 5, 1907.

62,246. CANDIES. HENRY HEIDE, New York, N. Y.
Filed July 21, 1906. Serial No. 21,066. PUBLISHED MARCH 5, 1907.

62,247. PLAYING-CARDS. KALAMAZOO PLAYING CARD CO., Kalamazoo, Mich.
Filed February 4, 1907. Serial No. 25,114. PUBLISHED MARCH 5, 1907.

62,248. PREPARATION FOR CLEANING AND BLEACHING WHITE-COTTON AND LINEN-DUCK ARTICLES. ISIDOR NACHMANN, New York, N. Y.
Filed July 9, 1906. Serial No. 20,808. PUBLISHED NOVEMBER 6, 1906.

62,249. CORN-SYRUP. O. W. PIERCE COMPANY, La Fayette, Ind.
Filed December 15, 1906. Serial No. 24,009. PUBLISHED MARCH 5, 1907.

62,250. CERTAIN THREAD. ONEIDA COMMUNITY LIMITED, Kenwood, N. Y.
Filed November 21, 1906. Serial No. 14,874. PUBLISHED MARCH 5, 1907.

62,251. KEROSENE. POLLEDO, TORRES & CA., Buenos Aires, Argentina.
Filed July 26, 1906. Serial No. 21,167. PUBLISHED MARCH 5, 1907.

62,252. CERTAIN SEA FOODS. REISS & BRADY, New York, N. Y.
Filed December 8, 1906. Serial No. 23,873. PUBLISHED MARCH 5, 1907.

62,253. WRITING-PAPER, BOND-PAPER, AND LEDGER-PAPER. UNION CARD & PAPER CO., New York, N. Y.
Filed October 24, 1906. Serial No. 22,372. PUBLISHED MARCH 5, 1907.

62,254. CIGARS. WEINBERGER BROS., Baltimore, Md.
Filed September 12, 1906. Serial No. 22,020. PUBLISHED MARCH 5, 1907.

62,255. RUBBER ROOFING. H. A. WHITEMAN & CO., Wilkes-Barre, Pa.
Filed June 11, 1906. Serial No. 20,202. PUBLISHED MARCH 5, 1907.

62,256. CANDLES. THE WILL & BAUMER COMPANY, Syracuse, N. Y.
Filed June 27, 1905. Serial No. 9,161. PUBLISHED MARCH 5, 1907.

62,257. CANDLES. THE WILL & BAUMER COMPANY, Syracuse, N. Y.
Filed June 27, 1905. Serial No. 9,162. PUBLISHED MARCH 5, 1907.

62,258. CIGARS AND CIGARETTES. GEORGE HAROLD GRANT WING, New York, N. Y.
Filed November 20, 1906. Serial No. 23,686. PUBLISHED MARCH 5, 1907.

62,259. PERFUMED SOAP. A. & F. PEARS LIMD., London, England.
Filed January 17, 1906. Serial No. 16,220. PUBLISHED MARCH 5, 1907.

62,260. EMERY-CLOTH AND SANDPAPER. AMERICAN GLUE CO., Boston, Mass., assignor to American Glue Company, a Corporation of Massachusetts.
Filed May 3, 1905. Serial No. 4,106. PUBLISHED MARCH 5, 1907.

62,261. GAS-STOVES, GASOLENE OR VAPOR STOVES, AND VAPOR BURNERS AND OVENS. AMERICAN STOVE COMPANY, Jersey City, N. J., and St. Louis, Mo.
Filed May 20, 1905. Serial No. 6,806. PUBLISHED SEPTEMBER 26, 1906.

62,262. PIE-FILLINGS, PRESERVES, AND JELLIES. MAX AMS, New York, N. Y.
Filed January 25, 1907. Serial No. 24,894. PUBLISHED MARCH 5, 1907.

62,263. SOAPS. WASHINGTON BERRY, Chicago, Ill.
Filed December 31, 1906. Serial No. 24,261. PUBLISHED MARCH 5, 1907.

62,264. CANNED FRUITS AND VEGETABLES. THE C. CALLAHAN CO., La Fayette, Ind.
Filed May 29, 1905. Serial No. 6,851. PUBLISHED MARCH 5, 1907.

62,265. DUCK-PINS. JOHN DITTMAR & SONS, Baltimore, Md.
Filed February 4, 1907. Serial No. 25,125. PUBLISHED MARCH 5, 1907.

62,266. RUBBER TIRES. THE GOODYEAR TIRE AND RUBBER COMPANY, Akron, Ohio.
Filed June 2, 1905. Serial No. 7,204. PUBLISHED AUGUST 21, 1906.

62,267. REFINED SUGARS OF ALL DESCRIPTION. HENRY TATE & SONS, LIMITED, London, England.
Filed May 22, 1905. Serial No. 6,216. PUBLISHED MARCH 5, 1907.

62,268. SAUSAGES, HAMS, BACON, SALT PORK, AND LARD. THE JONES DAIRY FARM, Fort Atkinson, Wis.
Filed July 6, 1906. Serial No. 20,730. PUBLISHED MARCH 5, 1907.

62,269. CANDY AND CHEWING-GUM. MANUFACTURING CO. OF AMERICA, Philadelphia, Pa.
Filed January 26, 1907. Serial No. 24,943. PUBLISHED MARCH 5, 1907.

62,270. TEA AND COFFEE. CHARLES E. MOODY & CO., Boston, Mass.
Filed January 12, 1907. Serial No. 24,760. PUBLISHED MARCH 5, 1907.

62,271. WHITE LEAD. ROBT. SHOEMAKER & Co., Philadelphia, Pa.
Filed February 6, 1907. Serial No. 25,170. PUBLISHED MARCH 5, 1907.

62,272. READY-MIXED PAINTS. ROBT. SHOEMAKER & Co., Philadelphia, Pa.
Filed February 6, 1907. Serial No. 25,171. PUBLISHED MARCH 5, 1907.

62,273. COTTON-SEED OILS. THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La.
Filed July 27, 1905. Serial No. 10,894. PUBLISHED MARCH 5, 1907.

62,274. CERTAIN GAME. J. W. SPEAR & SÖHNE, Nuremberg, Germany.
Filed January 23, 1906. Serial No. 16,426. PUBLISHED OCTOBER 23, 1906.

62,275. SYRUP. WELCH BROS. MAPLE CO., Burlington, Vt.
Filed February 4, 1907. Serial No. 25,137. PUBLISHED MARCH 5, 1907.

62,276. BUCKLES. ALMA MANUFACTURING COMPANY OF BALTIMORE CITY, Baltimore, Md.
Filed January 30, 1907. Serial No. 25,011. PUBLISHED MARCH 5, 1907.

62,277. PROPRIETARY MEDICINE. EMORY L. BAUER, New York, N. Y.
Filed December 6, 1906. Serial No. 23,811. PUBLISHED MARCH 5, 1907.

62,278. WINES. CARMEL WINE COMPANY, New York, N. Y.
Filed November 19, 1906. Serial No. 23,452. PUBLISHED MARCH 5, 1907.

62,279. PIPE THREADING AND CUTTING MACHINES. THE CURTIS & CURTIS COMPANY, Bridgeport, Conn.
Filed November 23, 1906. Serial No. 23,553. PUBLISHED JANUARY 1, 1907.

62,280. STORAGE AND CONVEYING APPARATUS. DODGE COAL STORAGE COMPANY, Naugatuck, Conn., and Philadelphia, Pa.
Filed November 17, 1906. Serial No. 23,444. PUBLISHED JANUARY 1, 1907.

62,281. AUTOMOBILES AND PARTS THEREOF, EXCEPT RUBBER TIRES. GASTON DUMOND, Paris, France.
Filed December 5, 1906. Serial No. 23,770. PUBLISHED MARCH 5, 1907.

62,282. REMEDY FOR MALARIA AND GRIPPE. ANTHONY FISCHER, Flushing, N. Y.
Filed August 11, 1906. Serial No. 21,460. PUBLISHED MARCH 5, 1907.

62,283. CERTAIN RAILWAY EQUIPMENT. FRIED. KRUPP AKTIENGESELLSCHAFT, Essen-on-the-Ruhr, Germany.
Filed October 11, 1906. Serial No. 22,642. PUBLISHED MARCH 5, 1907.

62,284. HEMORRHOIDAL PREPARATIONS IN THE FORM OF SUPPOSITORIES, SALVES, AND TEAS. GRÉGOIRE KERSCHENMEYER, Luxemburg, Luxemburg.
Filed October 8, 1906. Serial No. 22,502. PUBLISHED MARCH 5, 1907.

62,285. ALMOND-MEAL. PEROXIDENT MANUFACTURING COMPANY, St. Louis, Mo.
Filed January 16, 1907. Serial No. 24,665. PUBLISHED MARCH 5, 1907.

62,286. FACE-CREAM. WILLIAM CADWALLADER SCHLEY, Pittsburg, Pa.
Filed December 27, 1906. Serial No. 24,209. PUBLISHED FEBRUARY 26, 1907.

62,287. ENAMELED-METAL HOUSEHOLD UTENSILS. HENRY M. SCHNARR, Ossining, N. Y.
Filed April 11, 1905. Serial No. 1,179. PUBLISHED MARCH 5, 1907.

62,288. CASTOR-OIL. JOHN N. STEARNS, Syracuse, N. Y.
Filed February 2, 1907. Serial No. 25,086. PUBLISHED MARCH 5, 1907.

62,289. CERTAIN MEDICINES. EPHRAIM S. WELLS, Jersey City, N. J.
Filed August 28, 1906. Serial No. 21,749. PUBLISHED MARCH 5, 1907.

62,290. CERTAIN HAND-TOOLS. THE COLLINS COMPANY, Collinsville, Conn.
Filed October 29, 1906. Serial No. 22,961. PUBLISHED MARCH 5, 1907.

62,291. CERTAIN HAND-TOOLS. THE COLLINS COMPANY, Collinsville, Conn.
Filed October 29, 1906. Serial No. 22,963. PUBLISHED MARCH 5, 1907.

62,292. MAST-ARMS FOR THE SUPPORT OF LAMPS. GEORGE CUTTER CO., South Bend, Ind.
Filed September 4, 1906. Serial No. 21,874. PUBLISHED MARCH 5, 1907.

62,293. RHEUMATIC REMEDY. AUGUST GIESECKE, Milwaukee, Wis.
Filed January 9, 1907. Serial No. 24,539. PUBLISHED MARCH 5, 1907.

62,294. SEWING-MACHINES. L. C. KING & Co., Frankfort, Ind.
Filed February 5, 1907. Serial No. 25,157. PUBLISHED MARCH 5, 1907.

62,295. NON-ALCOHOLIC CARBONATED BEVERAGE AND SYRUP FOR MAKING THE SAME. MOXIE NERVE FOOD COMPANY OF NEW ENGLAND, Saco, Me.; Boston, Mass., and New York, N. Y.
Filed January 14, 1907. Serial No. 24,624. PUBLISHED MARCH 5, 1907.

62,296. REMEDY FOR DISEASES OF THE BLOOD. JAMES M. MYERS, Cincinnati, Ohio.
Filed January 22, 1907. Serial No. 24,843. PUBLISHED MARCH 5, 1907.

62,297. DRESS-SHIELDS. THE OMO MANUFACTURING COMPANY, Middletown, Conn.
Filed February 2, 1907. Serial No. 25,079. PUBLISHED MARCH 5, 1907.

62,298. JEWELRY. THE H. N. PERVEAR COMPANY, Providence, R. I.
Filed January 22, 1907. Serial No. 24,857. PUBLISHED MARCH 5, 1907.

62,299. BAKING-POWDER. PURE FOOD BAKING POWDER CO., Chicago, Ill.
Filed January 2, 1907. Serial No. 24,384. PUBLISHED MARCH 5, 1907.

62,300. CERTAIN MEDICINE. SOCIETY OF CHEMICAL INDUSTRY IN BASLE, Basel, Switzerland.
Filed February 6, 1907. Serial No. 25,165. PUBLISHED MARCH 5, 1907.

62,301. PILLS AND HEADACHE-TABLETS. J. L. WARD MEDICINE COMPANY, Big Spring, Tex.
Filed February 2, 1907. Serial No. 25,088. PUBLISHED MARCH 5, 1907.

62,302. SEWING-MACHINE NEEDLES. WHITE SEWING MACHINE CO., Cleveland, Ohio.
Filed January 17, 1907. Serial No. 24,731. PUBLISHED MARCH 5, 1907.

62,303. MINERAL WATER. WILD PIGEON MINERAL SPRINGS COMPANY, Portland, Oreg.
Filed January 22, 1907. Serial No. 24,841. PUBLISHED MARCH 5, 1907.

62,304. SHAVING CREAM OR PASTE. ARMOUR & COMPANY, Chicago, Ill.
Filed August 30, 1905. Serial No. 12,083. PUBLISHED MARCH 5, 1907.

62,305. EMBALMING FLUIDS AND DISINFECTANTS. EGYPTIAN CHEMICAL COMPANY, Boston, Mass.
Filed June 2, 1905. Serial No. 7,265. PUBLISHED MARCH 5, 1907.

62,306. MEN'S AND BOYS' FUR HATS. GAUSS-LANGENBERG HAT CO., St. Louis, Mo.
Filed April 24, 1905. Serial No. 2,738. PUBLISHED AUGUST 22, 1906.

62,307. PORT AND SHERRY WINES. GEO. G. SANDEMAN SONS & CO. LIMITED, London, England.
Filed November 20, 1905. Serial No. 14,806. PUBLISHED MARCH 5, 1907.

62,308. TABLE-WATER. GREAT BEAR SPRING CO., Oswego and Albany, N. Y.; Philadelphia, Pa.; Jersey City, N. J., and Washington, D. C.
Filed April 20, 1906. Serial No. 3,698. PUBLISHED MARCH 5, 1907.

62,309. HEMATOGENIC OR BLOOD-FORMING IRON COMPOUNDS. ALFRED GUMS & Co., Berlin, Germany.
Filed May 26, 1906. Serial No. 19,579. PUBLISHED MARCH 5, 1907.

62,310. WATCHSPRINGS. HAMMEL, RIEHLÄNDER & Co., New York, N. Y.
Filed August 6, 1906. Serial No. 21,412. PUBLISHED MARCH 5, 1907.

62,311. MEDICATED STOCK FOODS. DR. HESS & CLARK, Ashland, Ohio.
Filed June 15, 1906. Serial No. 6,184. PUBLISHED MARCH 5, 1907.

62,312. WIRE FENCE. INTERLOCKING FENCE COMPANY, Morton, Ill.
Filed November 20, 1905. Serial No. 14,867. PUBLISHED MARCH 5, 1907.

62,313. WIRE FENCE. KEYSTONE FENCE COMPANY, Peoria, Ill.
Filed June 12, 1905. Serial No. 7,220. PUBLISHED MARCH 5, 1907.

62,314. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. LANGENDORF WATCH CO., Langendorf, Switzerland.
Filed June 14, 1906. Serial No. 20,244. PUBLISHED MARCH 5, 1907.

62,315. LIQUID FACE-ENAMEL. REUBEN E. MARTIN, Fort Worth, Tex.
Filed June 9, 1906. Serial No. 20,179. PUBLISHED MARCH 5, 1907.

62,316. CERTAIN MACHINERY. NEWTON MACHINE TOOL WORKS (INCORPORATED), Philadelphia, Pa.
Filed April 25, 1906. Serial No. 19,697. PUBLISHED JANUARY 22, 1907.

62,317. CERTAIN HAND-TOOLS. SOCIÉTÉ ANONYME DES ANCIENS ÉTABLISSEMENTS PANHARD & LEVASSOR, Paris, France.
Filed May 24, 1905. Serial No. 4,478. PUBLISHED MARCH 5, 1907.

62,318. CERTAIN METAL MANUFACTURES. S. STERNAU & Co., Brooklyn, N. Y.
Filed June 23, 1906. Serial No. 20,409. PUBLISHED MARCH 5, 1907.

62,319. SILVER-PLATED JEWELRY, TOILET WARE, HOLLOW WARE, AND FLAT WARE. E. & J. BASS, New York, N. Y.
Filed July 21, 1906. Serial No. 21,661. PUBLISHED MARCH 5, 1907.

62,320. NEWSPAPER. WILLIS BULLOCK, Canajoharie, N. Y.
Filed January 3, 1907. Serial No. 24,429. PUBLISHED MARCH 5, 1907.

62,321. COMBINED STEAM-ENGINE AND DYNAMO-ELECTRIC MACHINE. A. L. IDE & SONS, Springfield, Ill.
Filed August 6, 1906. Serial No. 21,245. PUBLISHED MARCH 5, 1907.

62,322. STEAM-ENGINES. A. L. IDE & SONS, Springfield, Ill.
Filed August 6, 1906. Serial No. 21,246. PUBLISHED MARCH 5, 1907.

62,323. STEAM-ENGINES. A. L. IDE & SONS, Springfield, Ill.
Filed August 6, 1906. Serial No. 21,247. PUBLISHED MARCH 5, 1907.

62,324. PERIODICALS. THE JEWELERS' CIRCULAR PUBLISHING CO., New York, N. Y.
Filed December 5, 1906. Serial No. 23,781. PUBLISHED MARCH 5, 1907.

62,325. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. LANGENDORF WATCH CO., Langendorf, Switzerland.
Filed June 16, 1906. Serial No. 20,245. PUBLISHED MARCH 5, 1907.

62,326. PERIODICAL. THE NATIONAL BAKER PUBLISHING COMPANY, Philadelphia, Pa.
Filed February 7, 1907. Serial No. 25,186. PUBLISHED MARCH 5, 1907.

62,327. WHISKY. THE FRANKFORT DISTILLERY, Frankfort, Ky.
Filed June 20, 1905. Serial No. 9,552. PUBLISHED MARCH 5, 1907.

62,328. COUGH-DROPS. FREERICKS & TAMMEN, San Diego, Cal.
Filed October 23, 1906. Serial No. 22,858. PUBLISHED MARCH 5, 1907.

62,329. APRICOT LIQUOR. J. & A. FREIBERG, Cincinnati, Ohio.
Filed June 24, 1905. Serial No. 8,897. PUBLISHED DECEMBER 25, 1906.

62,330. LIQUID SOAP. ANTHON V. HASSMAN, Elkhart, Ind.
Filed November 12, 1906. Serial No. 23,270. PUBLISHED MARCH 5, 1907.

62,331. COTTON PIECE GOODS AND COTTON BLANKETS. INDIAN HEAD MILLS OF ALABAMA, Walker County, Ala.
Filed September 21, 1906. Serial No. 22,214. PUBLISHED MARCH 5, 1907.

62,332. CANNED FRUITS AND VEGETABLES. FREDERICK M. KETCHUM, Arlington, Md.
Filed October 13, 1905. Serial No. 13,547. PUBLISHED MARCH 5, 1907.

62,333. WASHING COMPOUNDS. THE LAUNDRY BLUE CO., Chicago, Ill.
Filed January 22, 1907. Serial No. 24,854. PUBLISHED MARCH 5, 1907.

62,334. APRICOT-BRANDY. PAGE & SANDEMAN, London, England.
Filed November 20, 1905. Serial No. 14,826. PUBLISHED MARCH 5, 1907.

62,335. PREPARATION FOR CLEANING AND WHITENING ARTICLES MADE OF CANVAS OR DUCK. THE RAVEN GLOSS MFG. CO., New York, N. Y.
Filed October 22, 1906. Serial No. 22,865. PUBLISHED MARCH 5, 1907.

62,336. APRICOT-BRANDY. SOCIETE ANONYME DE LA GRANDE DISTILLERIE E. CUSENIER FILS AINE ET COMPAGNIE, Paris, France.
Filed January 10, 1907. Serial No. 24,662. PUBLISHED MARCH 5, 1907.

62,337. MONTHLY PUBLICATION. ROBERT M. VAN ARSDALE, New York, N. Y.
Filed February 5, 1907. Serial No. 25,155. PUBLISHED MARCH 5, 1907.

62,338. ILLUMINATING-GLASSWARE, COMPRISING GLOBES, SHADES, AND CHIMNEYS. WELSBACH CO., Philadelphia, Pa.
Filed November 15, 1906. Serial No. 23,372. PUBLISHED MARCH 5, 1907.

62,339. CHOCOLATES AND CHOCOLATE CANDIES. STEPHEN F. WHITMAN & SON, Philadelphia, Pa.
Filed January 28, 1907. Serial No. 24,966. PUBLISHED MARCH 5, 1907.

62,340. MEASURING AND SCIENTIFIC OPTICAL APPARATUS, APPLIANCES, AND INSTRUMENTS. THE FIRM OF CARL ZEISS, Jena, Germany.
Filed August 4, 1905. Serial No. 11,262. PUBLISHED MARCH 5, 1907.

62,341. HOSIERY AND KNITTED UNDERWEAR. BROWN DURRELL CO., Boston, Mass.
Filed February 4, 1907. Serial No. 25,121. PUBLISHED MARCH 5, 1907.

62,342. SHIRTS. BRONNER-MAYER COMPANY, New York, N. Y.
Filed January 28, 1907. Serial No. 24,956. PUBLISHED MARCH 5, 1907.

62,343. PRINTING-INK REDUCERS AND DRIERS. JOHN P. CONNER, West New Brighton, N. Y.
Filed January 11, 1907. Serial No. 24,589. PUBLISHED MARCH 5, 1907.

62,344. SURFACE-COATED ENGRAVING-PAPERS. THE DILL & COLLINS CO., Philadelphia, Pa.
Filed December 15, 1906. Serial No. 24,062. PUBLISHED MARCH 5, 1907.

62,345. WHISKY. ANTHONY FISCHER, Flushing, N. Y.
Filed August 11, 1906. Serial No. 21,473. PUBLISHED MARCH 5, 1907.

62,346. CHIMNEYS AND GLOBES FOR LIGHTS. THE FOSTORIA GLASS SPECIALTY COMPANY, Fostoria, Ohio.
Filed July 13, 1906. Serial No. 20,930. PUBLISHED MARCH 5, 1907.

62,347. KNITTED UNDERWEAR. H. FRANK & SONS, Wheeling, W. Va.
Filed January 22, 1907. Serial No. 24,831. PUBLISHED MARCH 5, 1907.

62,348. BEER, ALE, BROWN STOUT, AND EXTRACT OF MALT. FRED FEIL BREWING COMPANY, Philadelphia, Pa.
Filed December 13, 1906. Serial No. 23,894. PUBLISHED MARCH 5, 1907.

62,349. TALKING-MACHINES. GEO. BORGFELDT & Co., New York, N. Y.
Filed January 31, 1907. Serial No. 25,029. PUBLISHED MARCH 5, 1907.

62,350. WHISKY. GOODHART-HARTMAN CO., Chicago, Ill.
Filed June 15, 1905. Serial No. 8,222. PUBLISHED MARCH 20, 1906.

62,351. TEXTILE COLLARS, CUFFS, AND OUTER AND DRESS SHIRTS. HARGADINE-MCKITTRICK DRY GOODS COMPANY, St. Louis, Mo.
Filed December 13, 1906. Serial No. 23,861. PUBLISHED MARCH 5, 1907.

62,352. REFRIGERATORS AND ICE-BOXES. ILLINOIS REFRIGERATOR CO., Morrison, Ill.
Filed June 24, 1905. Serial No. 9,004. PUBLISHED SEPTEMBER 4, 1906.

62,353. CORDIALS. IMPERIAL DISTILLING & CORDIAL CO., Chicago, Ill.
Filed January 22, 1907. Serial No. 24,820. PUBLISHED MARCH 5, 1907.

62,354. HANDKERCHIEFS. THE INTERNATIONAL M'F'G. CO., New York, N. Y.
Filed February 4, 1907. Serial No. 25,129. PUBLISHED MARCH 5, 1907.

62,355. COTTON PIECE GOODS AND COTTON BLANKETS. JACKSON COMPANY, Nashua, N. H.
Filed August 31, 1906. Serial No. 21,829. PUBLISHED MARCH 5, 1907.

62,356. MINERAL WATER. JOHN A. MORGART, Isle of Wight County, Va.
Filed January 29, 1907. Serial No. 24,904. PUBLISHED MARCH 5, 1907.

62,357. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
Filed April 1, 1905. Serial No. 49. PUBLISHED MARCH 27, 1906.

62,358. LAMP-CHIMNEYS. WM. R. NOE, New York, N. Y.
Filed October 8, 1906. Serial No. 22,606. PUBLISHED MARCH 5, 1907.

62,359. HOSIERY. OWEN OSBORNE, Philadelphia, Pa.
Filed February 1, 1907. Serial No. 25,056. PUBLISHED MARCH 5, 1907.

62,360. HOSIERY. OWEN OSBORNE, Philadelphia, Pa.
Filed February 1, 1907. Serial No. 25,057. PUBLISHED MARCH 5, 1907.

62,361. WHISKY. RECORDS & GOLDSBOROUGH, Baltimore, Md.
Filed January 18, 1907. Serial No. 24,754. PUBLISHED MARCH 5, 1907.

62,362. BELTING, HOSE, AND MACHINERY PACKINGS. REVERE RUBBER COMPANY, Boston, Mass.
Filed December 6, 1906. Serial No. 23,807. PUBLISHED MARCH 5, 1907.

62,363. KNITTED, NETTED, AND LACE GLOVES. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed November 20, 1906. Serial No. 23,504. PUBLISHED MARCH 5, 1907.

62,364. COTTON PIECE GOODS. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed February 2, 1907. Serial No. 25,091. PUBLISHED MARCH 5, 1907.

62,365. COTTON PIECE GOODS. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed February 2, 1907. Serial No. 25,093. PUBLISHED MARCH 5, 1907.

62,366. COTTON PIECE GOODS. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed February 2, 1907. Serial No. 25,096. PUBLISHED MARCH 5, 1907.

62,367. COATS, PANTS, VESTS, AND OVERCOATS. ROSENWEIG BROS. & CO., New York, N. Y.
Filed October 30, 1906. Serial No. 23,004. PUBLISHED MARCH 5, 1907.

62,368. PATENT SIDE LEATHER. SETON LEATHER CO., Newark, N. J.
Filed February 2, 1907. Serial No. 25,083. PUBLISHED MARCH 5, 1907.

62,369. HOSIERY. JOHN SILVEY & CO., Atlanta, Ga.
Filed December 20, 1906. Serial No. 24,173. PUBLISHED MARCH 5, 1907.

62,370. CORDIAL. SOCIETE ANONYME DE LA GRANDE DISTILLERIE E. CUSENIER FILS AINE ET COMPAGNIE, Paris, France.
Filed September 21, 1906. Serial No. 22,259. PUBLISHED MARCH 5, 1907.

62,371. CORDIALS. SOCIETE ANONYME DE LA GRANDE DISTILLERIE E. CUSENIER FILS AINE ET COMPAGNIE, Paris, France.
Filed September 21, 1906. Serial No. 22,260. PUBLISHED MARCH 5, 1907.

62,372. WHISKY. JOHN PH. STRAUB, Chicago, Ill.
Filed May 6, 1905. Serial No. 4,546. PUBLISHED MARCH 6, 1906.

62,373. STRAW HATS AND CAPS. TOWNSEND GRACE CO. OF BALTIMORE CITY, Baltimore, Md.
Filed February 1, 1907. Serial No. 25,052. PUBLISHED MARCH 5, 1907.

62,374. GIN. THE WM. BERGENTHAL CO., Milwaukee, Wis.
Filed May 25, 1906. Serial No. 6,575. PUBLISHED AUGUST 14, 1906.

62,375. CORN CURE, SPAVIN CURE, AND LIQUID COURT-PLASTER. ELI ATWELL, Mountain Dale, N. Y.
Filed January 21, 1907. Serial No. 24,798. PUBLISHED MARCH 5, 1907.

62,376. CRAVATS. BERNSTEIN, KAUFMAN & COMPANY, Philadelphia, Pa.
Filed November 26, 1906. Serial No. 23,590. PUBLISHED MARCH 5, 1907.

62,377. ARRAKS PUNCH. C. A. LINDGREN & CIE., VIINHANDELS AKTIEBOLAG, Stockholm, Sweden.
Filed October 2, 1905. Serial No. 13,222. PUBLISHED MARCH 5, 1907.

62,378. MARYLAND RYE WHISKY. CIOTTI, VINCENTI & Co., Baltimore, Md.
Filed June 28, 1905. Serial No. 9,252. PUBLISHED MARCH 6, 1907.

62,379. TEXTILE-FABRIC WATERPROOF COATS, CAPES, OVERALLS, PANTS, AND HATS. E. A. ARMSTRONG Mfg. Co., Chicago, Ill.
Filed June 8, 1906. Serial No. 20,159. PUBLISHED MARCH 5, 1907.

62,380. STOCK FOOD. FARMERS FRIEND STOCK FOOD COMPANY, West Milton, Ohio.
Filed October 29, 1906. Serial No. 22,962. PUBLISHED MARCH 5, 1907.

62,381. WHISKY. ANTHONY FISCHER, Flushing, N. Y.
Filed August 11, 1906. Serial No. 21,477. PUBLISHED MARCH 5, 1907.

62,382. COTTON PIECE GOODS. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed February 2, 1907. Serial No. 25,097. PUBLISHED MARCH 5, 1907.

62,383. CERTAIN MEDICINE. FREDERICK A. STECK, Oil City, Pa.
Filed July 12, 1906. Serial No. 20,883. PUBLISHED MARCH 5, 1907.

LABELS

REGISTERED APRIL 30, 1907.

13,503.—*Title:* "HEE HAW." (For Chewing-Tobacco.) VICTOR TOBACCO COMPANY, Cincinnati, Ohio. Filed April 1, 1907.

13,504.—*Title:* "OLD COLONY." (For Cigars.) LOUIS WM. KEYER, Dayton, Ohio. Filed January 17, 1907.

13,505.—*Title:* "EL BARIO." (For Cigars.) LOUIS WM. KEYER, Dayton, Ohio. Filed January 14, 1907.

13,506.—*Title:* "SCHILLER." (For Cigars.) LOUIS MUELLER, Chicago, Ill. Filed January 14, 1907.

13,507.—*Title:* "CALIFORNIA'S CLUB WATER." (For Mineral Water.) THOMAS P. CONVERSE, San Diego, Cal. Filed February 4, 1907.

13,508.—*Title:* "NIGHT CAP WHISKEY." (For Whisky.) JULIUS REUSCH, Lincoln, Nebr. Filed March 25, 1907.

13,509.—*Title:* "K. B. C. BOHEMIAN." (For Beer.) THE KITTANNING BREWING CO., Kittanning, Pa. Filed March 4, 1907.

13,510.—*Title:* "PUR-IT-IS. TOILET WATER." (For Toilet Water.) PUR-IT-IS MFG. CO., Cleveland, Ohio. Filed April 6, 1907.

13,511.—*Title:* "ROMANZA LILAC." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed April 9, 1907.

13,512.—*Title:* "ROMANZA VIOLET." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed April 9, 1907.

13,513.—*Title:* "ROMANZA HELIOTROPE." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed April 9, 1907.

13,514.—*Title:* "ROMANZA ROSE." (For Soap.) ARMOUR & COMPANY, Chicago, Ill. Filed April 9, 1907.

13,515.—*Title:* "OLD PFISTER'S LIFE ELIXIR." (For a Medicine.) HANSEN & AAGAARD, Chicago, Ill. Filed March 18, 1907.

13,516.—*Title:* "COTTAGE BREAD." (For Bread.) LEONARD BAKING COMPANY, Chicago, Ill. Filed April 8, 1907.

13,517.—*Title:* "PETER'S NUTRO BREAD." (For Bread.) AUGUST PETER, Peoria, Ill. Filed April 5, 1907.

13,518.—*Title:* "VEZINO'S DIGESTIVE HEALTH FOOD CHOCOLATES." (For Health-Food Chocolates.) VEZINO DE VEZINO, San Francisco, Cal. Filed March 20, 1907.

13,519.—*Title:* "THE SIGN OF THE KETTLE." (For Candies.) ELIZABETH B. JONES, Concord Junction, Mass. Filed February 27, 1907.

13,520.—*Title:* "UNKLE SAM'S CONES." (For Ice-Cream Cones.) SAMUEL KART, Pittsburg, Pa. Filed March 4, 1907.

PRINTS

REGISTERED APRIL 30, 1907.

1,974.—*Title:* "MEN'S AND BOYS' APPAREL." (For Men's and Boys' Apparel.) H. C. LYTTON, Chicago, Ill. Filed April 5, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

DAGGETT v. KAUFMANN.

Decided March 28, 1907.

1. INTERFERENCE—MOTION FOR DISSOLUTION—INTERFERENCE IN FACT.

If there is no interference in fact, it is either because one of the parties has no right to make the claims or because the claims have different meanings in the applications of the different parties. The parties will not be heard to deny their own right to make the claims. (*Miller* v. *Parham*, 121 O. G., 2067.)

2. SAME—SAME—APPEAL—RIGHT OF OPPONENT TO MAKE CLAIM.

There is no appeal from the decision of the Primary Examiner affirming the opponent's right to make the claims or the identity of meaning of the claims in their respective applications.

3. SAME—SAME—EXERCISE OF SUPERVISORY AUTHORITY OF COMMISSIONER.

Where at the hearing upon a motion for dissolution attention is directed to a patent which is in a remote art and it appears that the Examiner has held the claims in issue patentable thereover, no such unusual circumstances as will justify the exercise of supervisory authority exist.

APPEAL on motion.

MANTLE.

Mr. A. B. Stoughton for Daggett.

Mr. Joseph L. Levy for Kaufmann.

ALLEN, *Commissioner:*

This is an appeal by Kaufmann from the decision of the Primary Examiner denying his motion for dissolution of the interference.

The appeal alleges error in the Examiner's conclusions that the declaration was regular and that there is interference in fact. Appellant also called attention at the hearing to a prior patent alleging anticipation of the claims in issue thereby.

It was conceded at the hearing that the alleged irregularity raises no other questions than those of patentability and interference in fact. The distinctions between the several grounds of dissolution which are enumerated in Rule 122 have been frequently pointed out and should be observed. The Primary Examiner did not err in denying the motion so far as the same relates to the regularity of the declaration, and his decision to that extent is affirmed.

If there is no interference in fact, it is either because one of the parties has no right to make the claims or because the claims have different meanings in the applications of the different parties. The parties will not be heard to deny their own right to make the claims. (*Miller* v. *Parham*, 121 O. G., 2067.) There is no appeal from the decision of the Primary Examiner affirming the opponent's right to make the claims or the identity of meaning of the claims in their respective applications. (Rule 124.) The appeal, so far as it presents the question of interference in fact, is dismissed.

The patent to which attention was called is in a remote art, and the Examiner, it is understood, has held the claims in issue patentable thereover. No such unusual circumstances as will justify the exercise of supervisory authority exist. The request for consideration of the question of patentability is denied.

EX PARTE THE YALE & TOWNE MANUFACTURING COMPANY.

Decided April 5, 1907.

1. TRADE-MARK—NAME OF PATENTED ARTICLE—REGISTRABLE UNDER TEN-YEAR PROVISO OF SECTION 5 OF ACT OF 1905—"YALE" FOR LOCKS AND LATCHES.

Held that the word "Yale" is registrable as a trade-mark for locks and latches under the ten-year proviso of section 5 of the act of 1905, although it is the name of a patented article.

2. SAME—SAME—SAME—EXCLUSIVE USE.

The function of the name of a patented article is twofold: (1) It designates or identifies the thing patented, and (2) it indicates the original source of manufacture of the article. Where a word or name which has been applied to a patented article has in addition to its descriptive significance also become indicative of the origin of that article, a limited right remains in the original maker after the expiration of the patent to exclude others from such unqualified use of the word or name as would deceive a careful public into the belief that their articles are those of the original maker. This right to exclude, it is believed, satisfies the requirement of "exclusive use" stated in the ten-year proviso of the act of February 20, 1905.

ON APPEAL.

TRADE-MARK FOR LOCKS AND KEYS.

Mr. Henry A. Seymour for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register the word "Yale" as a trade-mark for locks and latches.

Registration was refused upon the ground that "Yale" as applied to locks is the name of a patented article, the patents upon which have expired, as was held in the decision of Commissioner Butterworth in *ex parte Yale & Towne Manufacturing Company*, (81 O. G., 801.)

This application for registration is presented in accordance with the ten-year proviso of the Trade-Mark Act, being accompanied by an affidavit alleging actual and exclusive use of the trade-mark by the applicant for ten years next preceding the passage of the act of February 20, 1905.

The Examiner of Trade-Marks has held that the word "Yale," having become the identifying or generic name of a patented article, is public property and incapable of appropriation by any one and that therefore the applicant has not had the right to exclude others from the use of this mark for ten years next preceding the passage of the act of February 20, 1905, which was held in my decision in *ex parte Cahn, Belt & Company* (118 O. G., 1936) to be a prerequisite to registration under the ten-year proviso of this act. In my opinion the position taken by the Examiner of Trade-Marks is untenable in the present case.

Upon close scrutiny of the decisions upon the subject it appears that an exclusive right in the name of a patented article upon the part of the manufacturer who first adopted it is not wholly precluded by the expiration of the patents upon such article. The function of the name in such cases is twofold: First, it designates or identifies the thing patented, and, second, it indicates the source of manufacture of that article. Upon the expiration of the patent the right to use the word or name as the means of designating or identifying the article passes irretrievably to the public; but by reason of the second significance of the mark a member of the public who chooses to manufacture the article and designate it by the name it has acquired must so distinguish his use of that name that it will not indicate to the public that the article is the product of the original maker.

This fact was recognized in the leading case of *Singer Manufacturing Company* v. *June Manufacturing Company*, (163 U. S., 169; C.D., 1896, 687; 75 O. G., 1703,) in which the Supreme Court of the United States, while holding that the name "Singer" for sewing-machines had become public property by reason of having become the generic name of an article, the patents upon which had expired, nevertheless perpetually enjoined the defendant from—

> marking upon sewing-machines or upon any plate or device connected therewith or attached thereto the word "Singer" or words or letters equivalent thereto without unmistakably specifying in connection therewith that such machines are the product of the defendant or other manufacturer and therefore not the product of the Singer Manufacturing Company.

In that case the Court said:

> It is obvious that if the name dedicated to the public, either as a consequence of the monopoly or by the voluntary act of the party, has a twofold significance, one generic and the other pointing to the origin of manufacture and the name is availed of by another without clearly indicating that the machine, upon which the name is marked, is made by him, then the right to use the name because of its generic signification, would imply a power to destroy any good-will which belonged to the original maker. It would import, not only this, but also the unrestrained right to deceive and defraud the public by so using the name as to delude them into believing that the machine made by one person was made by another.
>
> To say that a person who has manufactured machines under a patented monopoly can acquire no good-will, by the excellence of his work, or the development of his business, during the patent, would be to seriously ignore rights of private property, and would be against public policy, since it would deprive the one enjoying the patent of all incentive to make a machine of a good quality, because at its termination all the reputation or good-will resulting from meritorious work would be subject to appropriation by every one. On the other hand, to compel the one who uses the name after the expiration of the patent, to indicate that the articles are made by himself, in no way impairs the right of use, but simply regulates and prevents wrong to individuals and injury to the public.

In the case of *Singer Manufacturing Company* v. *Hipple* (109 Fed. Rep., 152) the Court, in referring to the decision of the Supreme Court in *Singer Manufacturing Company* v. *June Manufacturing Company*, *supra*, said:

> In short the principle of that decision is not that the first user of a mark indicative of origin forfeits his exclusive right thereto for that purpose by allowing it to be applied for the additional purpose of designating the thing itself, but that this monopoly of it for the one purpose cannot be so enforced as to nullify the general right to apply it for the other.

In the case of *Centaur Company* v. *Killenberger* (87 Fed. Rep., 725) the Court said:

> The right to manufacture "Castoria" according to Pitcher's patented process or formula may be free to the world, also the right to sell the manufactured article by the name "Castoria," but, in putting it upon the market, the new manufacturer must clearly identify his goods, and not engage in unfair competition, nor do anything which will tend to deceive the public, and induce them to take his goods under the belief that they are those which it has theretofore been accustomed to purchase under the same name.

It is therefore clear that where a word or name which has been applied to a patented article has also become indicative of the origin of that article a limited right remains in the original maker after the expiration of the patent to exclude others from such unqualified use of the word or name as would deceive a careful public into the belief that their articles are those of the original maker. This right to exclude, it is believed, satisfies the requirement of "exclusive use" stated in the ten-year proviso of the act of February 20, 1905.

It is believed that the same reasons and principles apply in many cases of geographical and descriptive terms and names of individuals. Here, as in the case of the name of a patented article, the first adopter may often have the right to exclude others from using the exact term or mark, although no technical trade-mark right could exist. (*Elgin National Watch Company* v. *Illinois Watch Case Company*, C. D., 1901, 273; 94 O. G., 755; 179 U. S., 665; *Walter Baker & Company* v. *Baker*, C. D., 1897, 797; 78 O. G., 1427; 77 Fed. Rep., 884; *Shaver et al.* v. *Heller & Merz Company*, C. D., 1901, 424; 96 O. G., 2229; 108 Fed. Rep., 821; *Genesee Salt Company* v. *Burnap*, 73 Fed. Rep., 818; *American Waltham Watch Company* v. *Sandman*, 96 Fed. Rep., 330.)

The affidavit filed by the applicant in the present case affirms the exclusive use required by the statute as a basis for registration under the ten-year proviso. In view of the authorities and conclusions hereinabove discussed no reason is found for believing that there was not such exclusive use. It is therefore held that the applicant should be permitted to register the mark for which he has made application for registration.

The decision of the Examiner of Trade-Marks is reversed.

OPINION OF THE ATTORNEY-GENERAL.

NOTARIES PUBLIC—AMENDED LAW.

AMENDED SECTION 558 OF THE CODE OF THE DISTRICT OF COLUMBIA CONSTRUED.

Held that the "proviso"—

> "And provided further, That no notary public shall be authorized to take acknowledgments, administer oaths, certify papers, or perform any official acts in connection with matters in which he is employed as counsel, attorney, or agent in which he may be in any way interested before any of the Departments aforesaid."

in the recent act of Congress amending section 558 of the code of the District of Columbia applies to all notaries who may practice before the Departments and not merely to notaries of the District of Columbia.

DEPARTMENT OF JUSTICE,
Washington, April 18, 1907.

THE SECRETARY OF THE INTERIOR.

SIR: I duly received your request for my opinion whether the "proviso" in the recent act of Congress

amending section 558 of the code of the District of Columbia applies to local notaries only or to notaries throughout the country. Briefs on both sides of the question and an opinion of the Assistant Attorney-General for your Department accompanying your letter have been carefully considered by me.

Section 558 before amendment was as follows:

> Notaries. The President shall also have power to appoint such number of notaries public, residents of said District, as, in his discretion, the business of the District may require.

The amendatory act, complete, is as follows:

> An act to amend section five hundred and fifty-eight of the code of law for the District of Columbia.
>
> Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that section five hundred and fifty-eight of the code of law for the District of Columbia, relating to notaries public, be amended by adding at the end of said section the following: "Provided, That the appointment of any person as such notary public, or the acceptance of his commission as such, or the performance of the duties thereunder, shall not disqualify or prevent such person from representing clients before any of the Departments of the United States Government in the District of Columbia or elsewhere, provided such person so appointed as a notary public who appears to practice or represent clients before any such Department is not otherwise engaged in Government employ, and shall be admitted by the heads of such Departments to practice therein in accordance with the rules and regulations prescribed for other persons or attorneys who are admitted to practice therein: And provided further, That no notary public shall be authorized to take acknowledgments, administer oaths, certify papers, or perform any official acts in connection with matters in which he is employed as counsel, attorney, or agent in which he may be in any way interested before any of the Departments aforesaid."

Do the words "no notary" in the last sentence mean *no notary of the District of Columbia*, or is the prohibition general? This question is not altogether free from difficulty.

It appears probable that this second proviso was added to the bill to meet an objection raised by the Secretary of the Treasury and the Comptroller, which is thus stated by the latter officer:

> Persons who are notaries public and not Government employees may, in the business represented by them as attorneys before the Departments, act as notaries, *e. g.*, have executed before them affidavits and powers of attorney, in cases in which they are acting as attorneys in claims before the Departments. Such practice, in my opinion, would open the doors to fraud and deceit.

I do not see that any sufficient reason exists for limiting the prohibition contained in this proviso to notaries public of the District of Columbia: the practice it was intended to prevent is no less objectionable on the part of other notaries than on theirs. Doubtless the law was originally intended to remove a legal disability which affected only notaries of the District. But it must be remembered that the one legislative body, by one method of law making at one and the same sitting, enacts laws for at least three different classes of business in the District. It makes laws to be applied by the Executive Department, situated in the District, to the whole country; it makes laws to regulate the practice and management of those Executive Departments themselves and it is the legislature of the District considered as a quasi-Territory. There is no constitutional or other legal obstacle to the embodiment of laws of all three kinds in one act.

Such being the case, when debate or committee deliberation may suggest a wise and needed rule of law, so busy a body as the Congress may be unwilling to postpone its enactment merely to effect a logical separation of subjects among these three classes. The Senate added this final proviso to the bill after it had passed the House.

The amendatory law not only deals with notaries of the District, but also with the practice and management of the Executive Departments; and with the relations of notaries to that practice.

The attention of the Congress being thus directed to the subject of departmental practice, it seems, to my mind, reasonable to believe that when it said "no notary public" shall act as such in cases in which he is attorney before any of the Departments, it meant what it said; that is to say, it intended to embrace all the notaries who could practice before those Departments.

The fact that the enactment took the form of a proviso in an act relating in other respects to notaries of the District is unquestionably entitled to weight; but it is not decisive. Had Congress intended to restrict the operation of the proviso to notaries of that District, it could have inserted the word "such" or some equivalent qualifying expression, as it actually did in the body of the act: not having done this, I feel bound to assume it acted advisedly and intended to say what it said in fact. Therefore, although there may be room for a reasonable divergence of views in the premises, I am, on the whole, of the opinion that the proviso applies to all notaries who may practice before the Departments.

Respectfully,
(Signed) CHARLES J. BONAPARTE,
Attorney-General.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

GIBBONS *v.* PELLER.

Decided January 8, 1907.

INTERFERENCE—ORIGINALITY—DISCLAIMER OF INVENTORSHIP.

A statement by applicant to his assignee that he does not regard himself as the inventor of the subject-matter claimed in such application is not sufficient to warrant an award of priority to an opponent where it appears that such statement was made during a controversy between the parties with regard to the amount of royalty which should be paid to the assignor.

Mr. Robert B. Killgore for Gibbons.

Mr. George D. Seymour for Peller.

McCOMAS, *J.*:

It appears that the application of Stephen P. Gibbons was filed March 21, 1903, that the application of Morris Peller was filed January 8, 1902, and that all the tribunals of the Patent Office have awarded priority of invention to Peller, the senior party. We find no error in the decision of the Commissioner of Patents upon the issue now before us. The issue of this interference is as follows:

> 1. In a rustless suspender-buckle, the combination with a frame having an upper and a lower side with an opening between the same, of a lever pivoted to the upper side of the frame in position to have its clamping edge coact with the upper edge or top of the lower side of the frame, and a piece of webbing having its lower reach attached to the lower side of the frame and its upper reach passed from front to rear through the said opening and engaged by the clamping edge of the lever which deflects it over or approximately over the upper edge or top of the lower side of the frame.
>
> 2. In a rustless buckle, the combination with a frame having an upper and a lower side with an opening between them, the lower side of the frame being wider than the upper side to form a finger-piece, of a lever pivoted to the smaller upper side of the frame in position to have its clamping edge coact with the upper edge or top of the wider lower side of the frame, and a piece of webbing having its lower reach attached to the lower side of the frame and its upper reach passed from front to rear through the said opening and engaged by the clamping edge of the lever which deflects it over or approximately over the upper edge or

top of the lower side of the frame, whereby the upper reach of the webbing is brought into or approximately into line with the lower reach of the webbing on the back of the buckle when the webbing is under draft as in use.

Of numerous parties once included in this interference only Gibbons and Peller remain. Peller did not testify nor is there any testimony confirming the dates of conception of invention and disclosure alleged by Peller in his preliminary statement. There are circumstances indicating that after Peller had assigned his interest he became indifferent to the rights of his assignee, the Waterbury Buckle Company. Maltby, the secretary of that company, testifies that in the fall of 1901, he corresponded with Peller and talked with him about a "rustless buckle" and that on December 31, 1901, buckles made in accordance with Peller's disclosure were first shipped and that the buckle exhibited to him was substantially the same as those then shipped, and this buckle embodies the issue of this interference. Thus December 31, 1901, is the date of reduction to practice by Peller. Gibbons is the junior party and the burden of proof is upon him and to prevail he must prove a reduction to practice prior to the last-mentioned date or at least to January 8, 1902, when Peller filed his application, or a prior conception followed by due diligence in reduction to practice. Gibbons claimed that he conceived the invention in November, 1900, and that he disclosed it to M. L. and L. Rothschild then. These men were officers of the Connecticut Web Company from which Gibbons, as manager of the Gibbons Manufacturing Company of Baltimore, bought supplies. Each of the tribunals of the Patent Office after reviewing the testimony, conclude that Gibbons failed to make a disclosure to these persons of the specific form of buckle which is here in issue, and it is quite remarkable that although Gibbons alleges that he is the inventor, yet when he testifies after repeated efforts he did not succeed in describing the invention in issue. His testimony is vague and indefinite upon the point and the tribunals of the Patent Office concur that Gibbons had no conception of the invention in issue prior to the time when the first shipment of Peller buckles was made or to the time when Peller filed his application. The testimony of M. L. Rothschild appears to be unreliable and it is not clear that the buckle he claims to have made for Gibbons can aid Gibbons's case for it does not appear to embody the invention in issue.

The Examiners-in-Chief say—

> It is to be noted that this issue is specific and carefully drawn as to its language and has only been held to be patentable after much discussion by the Examiner and this Board. Where the invention is so specific any oral testimony must of course correspond in every detail with the requirements of the issue. (See *Blackford* v. *Wilder*, 21 App. D. C., 1.)

And as the Commissioner of Patents says, this issue calls for a buckle with a frame having an upper and a lower side with an opening between the same, of a lever pivoted to the upper side of the frame in position to have its clamping edge coact with the upper edge or top of the lower side of the frame, which is not found in this "buckle of original disclosure" produced by M. L. Rothschild. The device in issue has a lever pivoted above the top edge of the lower side of the frame, the lever in the buckle exhibited is pivoted to ears in the same plane as the frame of the buckle and it is the former construction which produces the result of holding the web by deflection rather than by a clamping action. At most this buckle produced by Rothschild as Gibbons's original disclosure, was an experimental model put away in a drawer for years. It was in the nature of an abandoned experiment. Gibbons has given no explanation of his long delay in filing his application, except that he thought the buckle on which he did obtain a patent at home and three patents abroad was a better buckle and he lacked the money to make an earlier application for the invention of the issue. That other invention Gibbons understood although when repeatedly asked he repeatedly proved unable to state intelligently what the construction here in issue is. We agree with the tribunal of the Patent Office that Gibbons's case wholly failed, and here discussion would end were it not that the appellant further urges that the testimony shows that Peller was not the inventor of the buckle shown in his application. Here the appellant relies upon the case of *Oliver* v. *Felbel*, (20 App. D. C., 260,) where Oliver, when a witness in his own behalf, swore that he did not claim to be the inventor of the mechanism embracing the particular combination of parts or elements specified in the issue of interference. The circumstances in this case are different. Maltby, the secretary of the Waterbury Buckle Company, did testify that at one time after Peller had assigned his application for a patent to Maltby's company, Peller intimated that he was not the real inventor of the construction shown in his application and now involved in this interference. It appears that Peller's brother had been the mechanic in this instance and the testimony indicates that Rothschild, who with another first made application for this invention, and later testified that it was Gibbons's invention and sought to explain the inconsistency by his former belief that the mechanic who constructed the invention for another was the inventor, had about this time striven to enlist Peller against Peller's assignee, and it appears that Peller was at that time seeking a better agreement for a royalty from the Waterbury Buckle Company.

We do not find that Peller deliberately denied that he was the inventor but we conclude that his acts and declarations and his refusal to testify at Maltby's request were part of an effort to secure better terms from his assignee. When Peller executed the application in interference he testified under oath that he was the inventor of the invention of the issue and we do not find evidence sufficient to overcome it. The decision of the Commissioner is affirmed. The clerk of this court will certify this opinion and the proceedings in this court to the Commissioner of Patents according to law.

Court of Appeals of the District of Columbia.

IN RE ARM.

Decision February 6, 1907.

1. REISSUE—DELAY OF TWO YEARS—PRESUMPTION OF ABANDONMENT.

Delay of two years in filing an application for a reissue of a patent with broader claims will usually be treated as an abandonment to the public of everything not claimed in the original. This rule is based upon the analogy between a reissue applica-

tion and the case of an inventor who fails to apply for a patent of his invention within two years from the date of its public use or sale, which the statute declares is conclusive evidence of its abandonment. (*Ex parte Starkey*, 104 O. G., 2139; 21 App. D. C., 519, and cases cited therein.)

2. SAME—LONG DELAY—FAILURE OF ATTORNEYS TO UNDERSTAND INVENTION.

Where the invention covered by a patent is simple and the patent clearly and definitely describes it, and the patentee immediately upon the issue thereof discovers that the single claim allowed is too narrow and does not properly cover his invention, and upon calling his attorneys' attention to this fact they advised him that the claim was as broad as could be obtained, and it does not appear that they acted in bad faith, *Held* that a delay of five years in seeking a reissue cannot be excused upon the plea that the original attorneys did not understand the invention, since under the circumstances it was the duty of the patentee to consult other counsel without delay.

Mr. H. P. Doolittle for the appellant.

Mr. Fairfax Bayard for the Commissioner of Patents.

ROBB, *J.*:

This is an appeal from concurrent decisions of the Patent Office tribunals refusing to reissue a patent. The original patent, issued November 3, 1896, relates, quoting from the specification, "to a sheet-metal can designed for packing food products, and more particularly to an improved construction of the seam between the can-body and the cover," and is described in said specification as follows:

> The sheet-metal cover is countersunk or depressed at its center, so as to be provided with an upright neck or shoulder, which is adapted to fit snugly within the opening of the can-body. Around this neck the cover is provided with the laterally-extending flange, which should be considerably wider than the flange. After the cover has been pressed into the above-described form its neck and flange are covered with an air-excluding adhesive body, that adheres to the cover and constitutes in effect a packing. *This coating consists of a layer of rubber cement, which may be applied to the parts with a brush, and a thin layer of asbestos pulp, which forms a film on the surface of the cement.* * * * The rubber in my improved packing forms the air-excluding body proper, while the asbestos forms a coating or skin upon the surface of the same which greatly increases the tightness of the joint. Thus a packing of superior merit is produced, and, moreover the resistance offered by the ordinary washers to the crimping operation and the consequent frequent imperfections of the seam are entirely avoided.

The application contained but one claim, which is as follows:

> The combination of a sheet-metal can with a flanged and countersunk cover and with an adhesive coating secured to the cover, and consisting of rubber cement and an asbestos film, substantially as and for the purpose specified.

More than five years after the date of the original, namely on March 31, 1902, appellant filed his application for a reissue. Owing to the simplicity of the invention, the exactness with which it is described in the original application, the specific and limited nature of the claim therein, and the long delay attending the filing of this reissue application, we must carefully scrutinize the reasons assigned by the patentee why it should be allowed. The reissue claims are as follows:

> 1. A metal can comprising a can-body and cover and joined by a crimped seam having on one side of said parts at the seam portion a permanently-fixed composition coating forming the packing means, substantially as described.
>
> 2. A metal can for containing food products having a can-body and its cover joined by a crimp-joint composed of overlapped and tightly-closed flanges in combination with a heat-resisting, non-deleterious composition of indurative adhesive in application and fixed to the inside of the can at said joint in a dry coating or layer and forming a packing between said flanges, substantially as described.
>
> 3. An air and water tight packing for a joint for a sheet-metal can-body and its cover designed for food products, consisting of an inherently adhesive, heat-resisting, non-deleterious yielding coating dried on said cover and independent of the can-body, substantially as described.
>
> 4. In a joint for a metal can-body and its cover, a fixed coating forming a packing for said joint and plastered on one of said parts, said coating consisting of an adherent and packing layer affixed to the article and an outside non-deleterious and heat-resisting layer or film, substantially as described.
>
> 5. The combination of a sheet-metal can with a flanged and countersunk cover and with an adhesive coating secured to the cover, and consisting of rubber cement and an asbestos film, substantially as and for the purpose specified.
>
> 6. A sheet-metal can designed for packing food products, comprising a can-body and a cover, said body and cover connected by a lap-joint, in combination with a tight packing for sealing the cover and body independent of the lap-joint, said packing consisting of a non-deleterious, heat-resisting, air-excluding and adhesive plastered compound, extending into every portion of the lap-joint and between the inner surface of the can-body and the neck of the cover, substantially as described.

In appellant's affidavit, accompanying his reissue application, he states that the original—

> Letters Patent do not protect and cover by their claim the real invention of deponent nor its equivalent, but only a particular form of embodiment thereof, such defect being due to the omission to claim the following essential parts of the invention, namely, a fixed coating forming the packing in combination with the joint of the can and cover; second, the heat-resisting character of the coating, apart from the particular ingredients thereof; third the non-deleterious character of the coating apart from the particular ingredients thereof; fourth, the feature of having a coating consisting of an adherent medium affixed to a complementary part of the article to be joined and a heat-resisting and non-deleterious film or covering without limitation to the particular ingredients employed; fifth, in combination with the crimped joint of the can and cover, a packing consisting of an adhesive water and air tight, heat-resisting, non-deleterious coating applied to said cover, all of which enumerated parts or features are essential characteristics of the coating described and claimed or necessarily of any coating which is the true equivalent thereof;

that he carefully explained his invention to his attorneys at the time of making the original application,

and—

> informed his attorneys that he wanted to have a claim for an adhesive *coating* forming a packing in combination with the flanged and countersunk cover and lapped joint; that he does not believe that said attorneys ever understood the deponent's explanation of the value of his invention and its essential features; that deponent was informed by his attorneys that a claim such as he has above set forth could not be obtained; but that he is informed and believes that said attorneys did attempt to obtain a claim or claims for an adhesive *packing* but not for an adhesive *coating* forming a packing in combination with the flanged and countersunk cover and lapped joint, but that upon the citation of references thereto said attorneys canceled said claim or claims and retained merely the claim now set forth in said Letters Patent; * * * that at the time said Letters Patent were issued and were examined by deponent he discovered that the claim thereof was limited to the combination of a sheet-metal can with a flanged and countersunk cover, and consisting of rubber cement and an asbestos film, substantially as described; that to the best of deponent's knowledge and belief, no cans for food similar to his invention having been ever made prior to said invention, deponent was greatly disappointed that his patent was not issued to a better advantage; whereupon he informed his attorneys that there were other ingredients that could be used instead of rubber cement and asbestos to constitute the affixing and packing medium and the heat-resisting and non-deleterious surface respectively and that therefore the claim was too narrow; whereupon his said attorneys informed deponent that said claim was as broad as could be obtained from the Patent Office in view of the previous state of the art and the objections of the Patent Office; that thereupon, deponent, relying upon the said statement of his attorneys as to the position and objections of the Patent Office, and being entirely ignorant of the remedy of a defective patent by reissue and no mention of such a remedy having been made by his said attorneys took no further steps in the matter but very reluctantly accepted the situation;
>
> * * * * * * *
>
> that at about the time of the issuance of said patent deponent formed a company known as The Max Ams Machine Company which company was organized for the purpose of making and selling machines for making tin cans for food articles and for making and selling a composition for use in producing the invention set forth in the said Letters Patent, and also for making said invention and that said company did carry on such manufacture and sale;

that appellant was abroad from May until November, 1897, for the purpose of having a surgical operation performed, and from October, 1899, until April, 1900, he was "distressed and worried over the illness and death of his wife;"

> that in consequence of these circumstances whereby he was unable to devote much if any time to the business of the said The Max Ams Machine Company, said business did not develop and did not attain much importance; that the said The Max Ams Machine Company's business was and is a side issue with deponent and is distinct from his main business;
>
> * * * * * * *
>
> that in view of the above circumstances deponent has been obliged to devote nearly all his time since the issue of said patent to his said main business.

that appellant subsequently intrusted the management of said company to his son, who in December, 1901, through other counsel learned "of the proceeding and remedy known as reissue of a defective patent;" that appellant thereupon authorized the filing of this application for reissue; that he believes—

there is great danger that his invention will be appropriated and his rights thereto invaded by parties who may make, use and sell his real invention without embodying it in the particular form set forth in the claim of said Letters Patent; and by substituting for either or both of the ingredients of the coating set forth in said claim other ingredients or for both of said ingredients a single ingredient, thereby avoiding or attempting to avoid said claim while really appropriating the essence of deponent's invention.

All doubt as to the scope and purpose of this reissue application is removed by reading the above affidavit. The patentee therein frankly states that he was greatly disappointed at the time his patent was issued because of the narrow and limited nature of the claim granted him; that he now fears others will take advantage of his failure to obtain a broader claim unless this reissue is allowed.

No good purpose will be subserved by a reiteration of the well-established rules applicable to such a case as this. Suffice it to say that a delay of two years in filing an application for a reissue of a patent with broader claims will usually be treated as an abandonment to the public of everything not claimed in the original. This rule is based upon the analogy between a reissue application and the case of an inventor who fails to apply for a patent of his invention within two years from the date of its public use or sale, which the statute ordains is conclusive evidence of its abandonment. (See *in re Starkey*, 104 O. G., 2150; 21 App. D. C., 519, and cases cited therein.)

The facts relied upon by the patentee do not, in our opinion, constitute a sufficient excuse for his lack of diligence. As above stated, his invention is a simple one, and his patent as issued clearly and definitely describes it. The real object, therefore, of this application is to secure something not originally claimed, or, if claimed, not pressed or abandoned. In such a case unusual circumstances must be present, or the delay will be fatal. No such circumstances are shown here. Appellant himself immediately discovered that his patent was "too narrow" and after discussing the subject with his attorneys "took no further steps in the matter but very reluctantly accepted the situation." He now asks relief because he believes his then attorneys were mistaken as to the law. As Mr. Chief Justice Fuller aptly observed in a similar case: "Manifestly this will not do." (*Halliday* v. *Stuart*, 151 U. S., 229.) There is no allegation that his attorneys did not act in good faith; on the contrary, it is expressly stated that they informed him "that said claim was as broad as could be obtained from the Patent Office in view of the previous state of the art and the objections of the Patent Office." That other attorneys undertook to appeal from the judgment of the Patent Office in 1896 to its judgment in 1902 certainly does not excuse the intervening delay. If the patentee did not think the attorneys who prosecuted his original application thoroughly understood his invention, and for that reason failed to obtain as broad a claim as might have been obtained, he should have consulted other counsel without delay. It is apparent, however, as he himself says, that this was merely a "side issue" with him, to which he gave little thought or attention until a considerable business had been established, when the importance of his invention and the necessity for giving it wider scope was first pressed upon him. We note his statement that he "knows of no one who is practicing or using said invention without his consent or whose business would be dominated by the reissue of said Letters Patent to protect said invention," but this statement would not justify us in overruling the tribunals of the Patent Office and granting him a patent that might affect the business of those of whom appellant has no present information. Moreover, we believe applications for reissue filed long after the date of the patent, and which have for their object the enlargement of its claims, should be discouraged, and should be countenanced only in exceptional cases.

The decision appealed from will, therefore, be affirmed, and it is so ordered. The clerk of the court will certify this opinion and the proceedings in this court to the Commissioner of Patents, as required by law. Affirmed.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 1, 1907.

Empire Soap Company, its assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Magnolia Healing Soap Company, of Muscatine, Iowa, for registration of a trade-mark, an application for registration of a trade-mark filed by The Southern Cotton Oil Company, of Jersey City N. J., and a trade-mark registered to the Empire Soap Company, of St. Louis, Mo. The notice of said declaration mailed by the Patent Office in the usual manner to the said Empire Soap Company at its address as above given has been returned by the Post-Office Department undelivered, and it has been impossible to locate said company.

Notice is therefore hereby given to the Empire Soap Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE *Assistant Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 29, 1907.

Fred W. Smith, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of The New Era Milling Company, of Arkansas City, Kans., for registration of a trade-mark and a trade-mark registered to Fred W. Smith, of New York, N. Y. The notice of said declaration mailed by the Patent Office in the usual manner to the said Fred W. Smith at his known address, 4 State street, New York, N. Y., has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said Fred W. Smith, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 27, 1907.

Jeptha J. Lamb and James H. Patton, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application for patent filed by Winne Gordon, of Sharon Springs, N. Y., and an application for patent filed by Jeptha J. Lamb and James H. Patton, of Bellevue, Idaho. It appears from the record of the interference that the present whereabouts of said Jeptha J. Lamb and James H. Patton is unknown, and all communications directed to their address above given within the past two years have been returned unclaimed by the Post-Office Department.

Notice is therefore hereby given to the said Jeptha J. Lamb and James H. Patton, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 2D DAY OF APRIL, 1907.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
A. F. Priest Mfg. Co. (See Priest, Augustus F., assignor.)						
Abbott, Lewis W., assignor of one-half to A. Amondson, Worthington, Minn. Heating and ventilating system	849,246	Apr. 2	1455	296	127	1957
Abercrombie, William R., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Seam-trimmer and edge-binder for sewing-machines	849,347	Apr. 2	1456	296	127	1958
Adkins, Willis, assignor of one-half to A. M. Carson, Willis, Tex. Cotton-picker	849,182	Apr. 2	1151	233	127	1882
Adt, Leo F., Albany, N. Y. Spring for eyeglasses	848,617	Apr. 2	1	1	127	1585
Adzit, Henry L., Grand Rapids, Mich. Galley-lock for printers' galleys	848,717	Apr. 2	194	40	127	1637
Aeolian Company. (See Votey, Edwin S., assignor.)						
Aeppli-Stocker, Johanna J., assignor to Firm of "Sanitas" Aktiengesellschaft für Sanitäre & Heizungs-Anlagen, Zurich, Switzerland. Cock	848,951	Apr. 2	990	139	127	1764
Alderman, Henry O., *et al.* (See Fairchild, Elmer E., assignor.)						
Algert, Joseph, Denver, Colo. Ore crushing and screening mill	849,037	Apr. 2	840	172–4	127	1802
Allan, Robert B., Durham, England. Machine for grooving wood	848,797	Apr. 2	367	73	127	1682
Allen, Frank E., *et al.* (See Brackstone, Samuel, assignor.)						
Allis-Chalmers Company. (See Hetlesaeter, Olaf, assignor.)						
Allis-Chalmers Company. (See Thurston, George H., assignor.)	849,310	Apr. 2	1380	278	127	1939
Allshouse, Clarence E., Chicago, Ill. Fish-hook holder	849,005	Apr. 2	960	196	127	1832
Ambler, Arthur A., Springfield, Ohio. Vehicle-wheel						
American Battery Company. (See Kaufmann, Charles S., assignor.)						
American Locomotive Company. (See Cole, Francis J., assignor.)						
American Pulley Company. (See Bowen, Russell H., assignor.)						
American Pulley Company. (See Brinley, Charles A., assignor.)						
American Pulley Company. (See Zamboni, Lawrence, assignor.)						
American Pulley Company. (See Zimmermann, John E., assignor.)						
American Textile Specialty Machinery Company. (See Koehler, William, assignor.)						
Amondson, Adolph. (See Abbott, Lewis W., assignor.)	849,006	Apr. 2	962	196	127	1833
Anderson, Wilhelmine, Brooklyn, N. Y. Flat-top desk	849,038	Apr. 2	846	174	127	1803
Angell, Edwin E., Somerville, assignor to Angell Manufacturing Company, Boston, Mass. Printing and embossing apparatus	848,706	Apr. 2	370	73	127	1683
Angell Manufacturing Company. (See Angell, Edwin E., assignor.)						
Angle, Jackson H., Freeport, Ill. Focusing-cloth	848,618	Apr. 2	3	1	127	1585
Anson, Lorenzo A., assignor of one-half to J. C. Meyers, Cleveland, Ohio. Apparatus for cooling liquids						
Anthony & Scovill Company. (See Matheis, Frank J., assignor.)						
Antifriction Journal Box Company. (See Shumaby, William H., assignor.)						
Appleton, Albert I. (See Hoffmann and Appleton.)						
Archer, James W. (See Coventry and Archer.)	849,007	Apr. 2	963	196	127	1833
Arnold, Craig E., Philadelphia, Pa. Apparatus for extracting metals from their ores	848,952	Apr. 2	691	130	127	1764
Aronowitz, Joseph, Cambridge, England. Apparatus for packing packet goods by hand	849,183	Apr. 2	1152	233	127	1883
Atwood, William S., Montreal, Quebec, Canada, assignor to Simplex Railway Appliance Company, Hammond, Ind. Adjustable locking device	849,008	Apr. 2	965	197	127	1833
Aufrichtig, Charles G., St. Louis, Mo. Combined fork, spoon, knife, and can-opener	849,184	Apr. 2	1154	233–4	127	1883
Auld, Fredrick E., Columbus, Ohio, assignor to F. H. Cossens, New York, N. Y. Photographic-printing apparatus	849,311	Apr. 2	1381	278	127	1940
Auld, Joseph G., Miles City, Mont. Current-motor						
Austin, Frederick C. (See Page, Charles G., assignor.)						
Bailey, Theodorus S., and L. Y. Spear, Quincy, Mass., assignors to Electric Boat Company, Bayonne, N. J. Submarine or submergible boat	848,872	Apr. 2	560	112	127	1733
Baldwin, Clinton H., assignor of two-thirds to W. R. Cline and T. K. Reece, Erie, Kans. Stroke-varying mechanism	849,185	Apr. 2	1163	234	127	1885
Ball, William R. A., St. Thomas, N. D. Bowling-alley attachment	848,619	Apr. 2	4	1	127	1585
Barnard, Charles S. (See Hesselck and Barnard.)	848,953	Apr. 2	692	130	127	1764
Barnes, Dora R., Hays, Kans. Sash lock and support	849,312	Apr. 2	1383	279	127	1940
Barnes, Ernest A., Stawell, Victoria, Australia. Means for perforating to safeguard checks and for other purposes	848,620	Apr. 2	4	1	127	1585
Barnes, John S., Rockford, Ill. Fountain-pen	848,799	Apr. 2	370	73	127	1684
Barnes, Robert, Fitzroy, Victoria, Australia. Interchangeable heel for boots and shoes	848,800	Apr. 2	372	74	127	1684
Barnes, William F., assignor to W. F. & John Barnes Company, Rockford, Ill. Grinder	12,628	Apr. 2	1473	299	127	1962
Barr, Sidney U., New York, N. Y. Window. (Reissue)						
Barrett, Albert. (See Condon, William, assignor.)	848,954	Apr. 2	694	140	127	1784
Barringer, Lawrence E., Schenectady, N. Y., assignor to General Electric Company. Making resistance devices	849,186	Apr. 2	1163	235	127	1886
Bartelt, Frederick, Philadelphia, Pa. Material for rugs, carpets, &c.	848,873	Apr. 2	563	112	127	1733
Bartholomew, William, New York, assignor to Troy Laundry Machinery Company, Limited, Troy, N. Y. Pipe-coupling	848,874	Apr. 2	564	112	127	1734
Bartholomew, William, New York, assignor to Troy Laundry Machinery Company, Limited, Troy, N. Y. Cylinder washing-machine	848,955	Apr. 2	696	140	127	1785
Bartlett, George L., Mattapan, Mass. Mold	848,621	Apr. 2	5	2	127	1585
Bartlett, William H., Mera, Nebr. Hay-loader						
Bassick, Edgar W., and C. S. Bernard, assignors to Burns, Silver and Company, Bridgeport, Conn. Toilet screw-nut	849,039	Apr. 2	851	175	127	1886

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Botdorf, Charles S., Brooklyn, N. Y. Rotary motor	849,090	Apr. 2	965	197	127	1337
Bates, Charles W., St. Hyacinthe, Quebec, Canada. Beating-up mechanism for looms	849,229	Apr. 2	506	112-13	127	1370
Baubs, Fritz, Berlin, Germany. Gas-generator	849,288	Apr. 2	6	2	127	1385
Beams, Aaron, Syracuse, assignor of one-half to N. G. Pangborn, Albany, N. Y. Guy-wire fastener	849,180	Apr. 2	976	197	127	1335
Beiter, Harry T., et al. (See Gerth, Anthony C., assignor.)						
Bexter, Fielding A. (See Bexter, Lemmon M. and F. A.)						
Bexter, Lemmon M. and F. A., Norfolk, Nebr. Display-fixture	849,089	Apr. 2	8	2	127	1335
Beuman, Edwin R., Minneapolis, assignor to Monitor Drill Co., St. Louis Park, Minn. Scraper for disk drills	849,227	Apr. 2	1164	235	127	1367
Bell, Endo L., Norfolk, Va. Adjustable mirror	849,284	Apr. 2	9	3	127	1367
Ben Steele Weigher Manufacturing Company. (See Steele, Benjamin M., assignor.)						
Bennett, Albert, Arnold, and R. Binder, Melrose, Pa. Safety-elevator	849,132	Apr. 2	1166	235	127	1357
Bennett, Erastus S., New York, N. Y. Gold-saving apparatus	849,191	Apr. 2	978	198-9	127	1359
Bennett, James P., Dronfield, near Sheffield, and J. Martin, Sheffield, England. Beater	849,139	Apr. 2	1167	235	127	1357
Bennett, Joseph A., Youngwood, Pa. Angle-cock for air-brake systems	849,139	Apr. 2	1166	236	127	1357
Bennett, Stephen D., and G. Sylvia, Pittsburg, Mass. Waste-condenser for combers	849,225	Apr. 2	12	3	127	1359
Benner, Frank S., and M. M. Fencett, Hoskins, Nebr. Lock for mail-sacks	849,240	Apr. 2	852	175	127	1365
Benson, Arthur E., Providence, R. I., assignor to Draper Company, Hopedale, Mass. Filling-detecting mechanism for looms	849,291	Apr. 2	373	74	127	1364
Benzinger Bros. (See Nehr, Herman F., assignor.)						
Berens, Frank C., Washington, D. C. Lockable badge for personal wear	849,293	Apr. 2	898	140	127	1765
Berger, George A., Jr., Fremont, Ohio. Fruit-picker	849,276	Apr. 2	567	113	127	1724
Bergman, Erick P., Concordia, Kans. Windmill	849,191	Apr. 2	1160	236	127	1356
Bergman, Erick P., Concordia, Kans. Windmill	849,192	Apr. 2	1170	236	127	1359
Bernard, William A., assignor to William Scholfhera Company, New Haven, Conn. Pliers, punch, and similar tool	849,277	Apr. 2	889	113	127	1725
Best, E., et al. (See Best, Edward H., assignor.)						
Best, Edward H., St. Thomas, Ontario, assignor of three-fourths to R. M. C. Teothe and E. Best, London, Canada. Car-replacer	849,313	Apr. 2	1385	279	127	1940
Bettendorf, William P., Davenport, Iowa. Swing-motion truck	849,195	Apr. 2	1172	236-7	127	1359
Bettendorf, William P., Davenport, Iowa. Car-truck	849,194	Apr. 2	1175	237	127	1359
Bigelow, George E., assignor to Morgan Spring Co., Worcester, Mass. Spring-bed	849,196	Apr. 2	1178	238	127	1359
Billingsley, William, Quincy, Wash. Fastening device	849,241	Apr. 2	854	175	127	1365
Binder, Rudolph. (See Bennett and Binder.)						
Blackman, Thomas G., Jr., Gracesville, Fla. Automatic car-coupling	849,242	Apr. 2	856	175	127	1365
Blakiston, Ralph. (See Thomson, Blakiston, Hope, and Richards.)						
Blanchard, Virgil W., New York, N. Y. Heating apparatus	849,214	Apr. 2	1367	279	127	1941
Blanchard, Virgil W., New York, N. Y. Gas cooking-stove	849,215	Apr. 2	1391	280	127	1942
Blanchard, Virgil W., New York, N. Y. Gas cooking stove or range	849,216	Apr. 2	1393	280	127	1943
Blanchard, Virgil W., New York, N. Y. Water-heating apparatus	849,217	Apr. 2	1395	280	127	1943
Blanchard, Virgil W., New York, N. Y. Cooking apparatus	849,218	Apr. 2	1397	280-1	127	1944
Blanchard, Virgil W., New York, N. Y. Guard for gas heating-stoves	849,219	Apr. 2	1399	281	127	1944
Blanchard, Virgil W., New York, N. Y. Attachment for gas heating-stoves	849,220	Apr. 2	1400	281	127	1944
Blanchard, Virgil W., New York, N. Y. Gas cooking-stove	849,221	Apr. 2	1401	281	127	1945
Blanchard, Virgil W., New York, N. Y. Door-fastening	849,222	Apr. 2	1403	282	127	1945
Blankenagel, Carl, Bielefeld, Germany. Check-till	849,223	Apr. 2	1403	282	127	1945
Blankenburg, Edward. (See Johnson, Weddemann, and Blankenburg.)	849,186	Apr. 2	1180	238-9	127	1359
Bless, George, Brooklyn, N. Y. Pianoforte	849,287	Apr. 2	699	140-1	127	1765
Bliss, Elmer F., Schenectady, N. Y., assignor to General Electric Company. Selective signal system	849,288	Apr. 2	701	141	127	1765
Bliss, Elmer F., Schenectady, N. Y., assignor to General Electric Company. Block-signal system	849,289	Apr. 2	703	141	127	1767
Bosek, William A., South Omaha, Nebr. Block-molding machine	849,197	Apr. 2	1182	239	127	1361
Bolin, Nathan C., Decker, Tex. Cotton-thinner	849,278	Apr. 2	570	114	127	1725
Borneman, Henry, Paterson, N. J. Ear-muff attachment for hats	849,103	Apr. 2	963	199	127	1339
Borst, Frank A., assignor to Ideal Concrete Machinery Company, South Bend, Ind. Rocking mechanism for building blocks and bricks	849,230	Apr. 2	14	4	127	1335
Bosshard, Oskar. (See Gut, Jakob, assignor.)						
Boucher, Joseph L., assignor of one-half to J. Compton, Chico, Cal. Barber's heater	849,027	Apr. 2	15	4	127	1339
Bouse, William H., Audubon, Iowa. Firearm	849,198	Apr. 2	1184	239-40	127	1361
Bowen, Russell H., Palmyra, N. J., assignor to American Pulley Company, Philadelphia, Pa. Pulley-casing	849,232	Apr. 2	375	75	127	1364
Bowen, Russell H., Palmyra, N.J., assignor to American Pulley Company, Philadelphia, Pa. Wheel	849,199	Apr. 2	1185	240	127	1361
Boyer, Isaac H., Muncie, Ind. Steam-boiler furnace	849,168	Apr. 2	963	199-200	127	1340
Brackstone, Samuel, assignor of three-fourths to F. B. Allen, E. W. Mitchell, Corinth, Miss., and L. H. Harris, St. Louis, Mo. Display-stand	849,718	Apr. 2	196	40	127	1337
Bradt, Eugene P., Detroit, Mich. Method of and apparatus for sinking wells	849,042	Apr. 2	859	176	127	1365
Brady, Francis W., Englewood, N. J. Starting device for internal-combustion engines	849,224	Apr. 2	1403	282-3	127	1945
Brady, Francis W., Englewood, N. J. Lubricating-oil feed for reciprocating engines	849,225	Apr. 2	1403	283	127	1945
Brady, Joseph H., Kansas City, Mo. Means for controlling the flow of air	849,282	Apr. 2	377	75	127	1685
Braun, Wilhelm, Feuerbach, near Stuttgart, Germany. Desiccating material	849,280	Apr. 2	706	142	127	1765
Breed, William J., and J. G. Warther, assignors to Orane & Breed Manufacturing Company, Cincinnati, Ohio. Burial-casket-lowering apparatus	849,194	Apr. 2	987	200-1	127	1340
Bretch, Edward, St. Louis, Mo. Alternating-current motor	849,719	Apr. 2	197	41	127	1638
Bricker, Samuel P., Allegheny, Pa. Weather-strip	849,281	Apr. 2	707	142	127	1765
Brinker, Hermann, Hamilton, Ohio. Rotary drier	849,044	Apr. 2	860	176	127	1807
Brinley, Charles A., assignor to American Pulley Company, Philadelphia, Pa. Bushing	849,200	Apr. 2	1187	240	127	1362
Brinsmade, Daniel E. (See Smith and Brinsmade.)						
Broe-Barbier Auto Ignition Company. (See Broe, Victor H., assignor.)						
Broe, Victor H., assignor to Broe-Barbier Auto Ignition Company, New York, N. Y. Automatic current-interrupter	849,720	Apr. 2	199	41	127	1638
Brooks, Robert A., Chicago, Ill. Fire-escape	849,188	Apr. 2	994	201	127	1342
Brown, Edgar W., Dayton, Ohio. Advertising-machine	849,045	Apr. 2	861	176	127	1807
Brown, Ernest E., Carico, Oreg. Cant-dog	849,283	Apr. 2	709	142-3	127	1765
Brown, John E., Sarnia, Ontario, Canada, assignor to G. H. Sinclair, Detroit, Mich. Indicator	849,233	Apr. 2	16	4	127	1339
Brown, Lewis A., St. Louis, Mo., assignor to St. Louis Steel Enameled Brick and Seal Company. Seal	849,170	Apr. 2	572	114	127	1725
Bruen, Edwin C., Brooklyn, N. Y. Truck	849,284	Apr. 2	378	76	127	1685
Brush, Delano J., Columbus, Ohio. Railway-crossing signal	849,045	Apr. 2	862	176	127	1807
Bryer, Frank, assignor of one-half to M. Jackman, Waterloo, Iowa. Reel-runner	849,285	Apr. 2	379	76	127	1685
Bryer, Frank, assignor of one-half to M. Jackman, Waterloo, Iowa. Railway-tie	849,286	Apr. 2	380	76	127	1685
Buell, Jesse W., New York, N. Y. Attachment for horseshoes	849,721	Apr. 2	200	41	127	1639
Buell, C. H. (See Mers, John F., assignor.)						
Buell Electric Manufacturing Company. (See Garrett, Frank W., assignor.)						
Burkholder, John H., Ashland, Ohio. Pump	849,289	Apr. 2	17	4	127	1339
Burleson, Walter W., Durand, Fla. Fire-engine	849,237	Apr. 2	885	177	127	1807

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Burn, James, assignor of two-thirds to J. H. Burn and M. B. Thompson, Chester, Pa. Rotary engine	849,226	Apr. 2	1411	208-4	127	1947
Burn, John H., et al. (See Burn, James, assignor.)						
Burn, Stroud and Company. (See Bernard and Bernard, assignors.)						
Busby, E. A. G. (See Busby, Nelson J., assignor.)						
Busby, Nelson G., Brooklyn, assignor to E. A. G. Busby, Chelsea, Mass. Shipping-case	849,282	Apr. 2	1406	282	127	1943
Busselman, Enoch J., assignor to Industrial Gas Construction Co., Chicago, Ill. Gas-manufacturing apparatus	849,263	Apr. 2	710	142-4	127	1769
Busselman, Enoch J., assignor to Industrial Gas Construction Company, Chicago, Ill. Generator	849,264	Apr. 2	714	144	127	1770
Cable, Frank T., Quincy, Mass. Auxiliary valve for automobile-engines	849,722	Apr. 2	204	42	127	1640
Cable, Frank T., Quincy, Mass., assignor to Electric Boat Company, Bayonne, N. J. Fuel-feed for hydrocarbon-engines	849,045	Apr. 2	866	177	127	1808
Calmar, William C., San Francisco, Cal. Mechanism for operating awnings	849,201	Apr. 2	1187	240	127	1362
Cameron, Edgar S., assignor of one-half to M. Salomon, Chicago, Ill. Theatrical scenery	849,280	Apr. 2	573	114-15	127	1726
Cameron, Frank W., Frankfort, N. Y. Hoe-rolling machine	849,690	Apr. 2	18	5	127	1339
Cameron, Arthur G., et al. (See Matheson, Robert S., assignor.)						
Canham, Arthur G., et al. (See Matheson, Robert S., assignor.)						
Canham, John J. (See Lidly and Canham.)						
Capron, Dexter S., Woodstock, Vt. Agricultural implement	849,202	Apr. 2	1188	241	127	1362
Carlisle, Scott W., Bradshaw, Nebr. Gate-latch	849,205	Apr. 2	715	145	127	1770
Carlson, Nels A., Hallandale, Fla. Fruit and vegetable clipper	849,206	Apr. 2	716	145	127	1770
Carpenter, John A., et al. (See Taylor, Charles A., assignor.)						
Carr, John B., Pemberville, Ohio. Shut-off for oil-tanks	849,723	Apr. 2	206	42	127	1640
Carson, A. M. (See Adkins, Willis, assignor.)						
Carson, William A., Weiser, Idaho. Water-regulator	849,203	Apr. 2	1190	241	127	1362
Carstens, Charles, Denver, Colo. Boat and cotton blocker	849,237	Apr. 2	1413	284	127	1946
Castagnos, Joseph B., Iberville, assignor of one-half to J. T. Guyton, Bayou Goula, La. Cane-loader	849,166	Apr. 2	999	202	127	1343
Cates, Lerwin W., St. Louis, Mo. Pneumatic tire	849,040	Apr. 2	859	176	127	1365
Cator, Leon, Palmyra, N. Y. Sliding-door lock	849,231	Apr. 2	576	115	127	1727
Cellarius, Richard, Sorgwolsol Pesnd, Russia. Tower for sulfuric-acid plants	849,631	Apr. 2	20	5	127	1339
Chafin, George T., Stafford, Kans. Bit	849,633	Apr. 2	21	5	127	1339
Chandler, Alfred B., assignor to Roger Fountain Ink Pad Company, Chicago, Ill. Ink-pad	849,724	Apr. 2	207	42	127	1640
Charrush, Eugene L., Seattle, Wash. Weather-guard	849,282	Apr. 2	576	115	127	1727
Chase & Baker Company. (See Chase, Joseph H., assignor.)						
Chase, Joseph H., assignor to Chase & Baker Company, Buffalo, N. Y. Air-governor for musical instruments	849,060	Apr. 2	870	178	127	1809
Chemische Fabrik von Heyden Aktiengesellschaft. (See Philipp, Curt, assignor.)						
Chew, Benjamin A., Augusta, Ga. Cotton-picker	849,967	Apr. 2	717	145-6	127	1771
Chew, Benjamin A., Augusta, Ga. Cotton-picker	849,968	Apr. 2	721	146	127	1771
Chicago Fence Wire & Mfg. Co. (See Hoffmann and Appleton, assignors.)						
Chubb, Chester A., Wilmington, N. C. Padlock	849,698	Apr. 2	22	6	127	1339
Chwatkward, Alexander, Pelham, N. Y., assignor to General Electric Company. Power-transmission device	849,051	Apr. 2	873	178	127	1809
Cimmery, Edvardo A. (See McElligott and Cimmery.)						
Clark, James, assignor to S. R. Dresser Manufacturing Company, Bradford, Pa. Clamping-ring	849,969	Apr. 2	723	146	127	1772
Clark, Maurice C., assignor to Marvel Rubber Company, Providence, R. I. Making rubber footwear	849,807	Apr. 2	281	76-7	127	1686
Clark, Paul L., Chicago, Ill., assignor to General Electric Company. Synchronism-indicator	849,970	Apr. 2	724	147	127	1772
Clarke, John S., Cleveland, Ohio. Feed-water purifier	849,236	Apr. 2	1414	285	127	1946
Clarke, Lewis F., assignor to Globe Ear Phone Company, Boston, Mass. Electric ear-phone	849,203	Apr. 2	1408	283	127	1939
Clarke, Robert J., Pittsburg, Pa. Window-cleaning device	849,204	Apr. 2	1191	241	127	1362
Clay, Wellington S., and A. T. McKenney, Hutchinson, Minn. Fire-alarm apparatus	849,725	Apr. 2	209	42-3	127	1641
Cleveland Typesetter Company. (See Converse, Francis B., Jr., assignor.)						
Cline, W. R., et al. (See Baldwin, Cloise H., assignor.)						
Clough, Edwin S., assignor of one-half to W. Williamson, Seattle, Wash. Anchor-projectile	849,205	Apr. 2	1193	242	127	1363
Cockrell, Edwin L. (See Murray and Travis, assignors.)						
Coe, Walter H., Providence, R. I. Package-roll of metallic leaf	849,863	Apr. 2	570	116	127	1727
Coghlin, Bernard W. P., Montreal, Quebec, Canada. Ground-anchor	849,694	Apr. 2	24	6	127	1339
Cole, Francis J., assignor to American Locomotive Company, New York, N. Y. Superheater	849,052	Apr. 2	875	179	127	1810
Colthar, William U., Springfield, Ohio. Manufacture of cutting-disks	849,239	Apr. 2	1415	285	127	1946
Compton, Joseph. (See Boucher, Joseph L., assignor.)	849,685	Apr. 3	25	6	127	1891
Comstock, George S., Mechanicsburg, Pa. Transmission mechanism	849,686	Apr. 3	26	6-7	127	1891
Condon, William, assignor of one-half to A. Barrett, Kansas City, Mo. Fire and police signaling system	849,726	Apr. 2	211	43	127	1641
Conn, Charles G., Elkhart, Ind. Valved wind musical instrument	849,053	Apr. 2	879	180	127	1811
Conner, George F., Port Huron, Mich. Device for automatically regulating the quality of gas	849,808	Apr. 2	383	77-9	127	1686
Converse, Francis B., Jr., Louisville, Ky., assignor, by mesne assignments, to Cleveland Typesetter Company, Cleveland, Ohio. Justifying mechanism	849,809	Apr. 2	394	79-82	127	1686
Converse, Francis B., Jr., assignor, by mesne assignments, to Cleveland Typesetter Company, Cleveland, Ohio. Justifying mechanism	849,810	Apr. 2	409	82	127	1691
Converse, Francis B., Jr., assignor, by mesne assignments, to Cleveland Typesetter Company, Cleveland, Ohio. Justifying mechanism	849,811	Apr. 2	419	84	127	1692
Coon, Frank B. (See Parker, Frederick E., assignor.)	849,637	Apr. 2	26	7	127	1339
Cook, James L., Dayton, Ohio. Hot-water valve	849,206	Apr. 2	1194	242	127	1364
Cook, John M., New York, N. Y. Caster-stop trolley-bracket	849,638	Apr. 2	34	8	127	1383
Cooperrider, Thomas A., Thornville, Ohio. Well-cap	849,971	Apr. 2	726	147	127	1773
Copland, Alexander W., Detroit, Mich. Icing-machine	849,972	Apr. 2	728	147	127	1773
Cosset, Marcel, Paris, France. Elastic wheel	849,107	Apr. 2	1002	203-6	127	1344
Costello, John, Providence, R. I. Chain-clasp	849,044	Apr. 2	883	180	127	1812
Courtright, Christopher J., Marlboro, N. J. Railway-alarm	849,207	Apr. 2	1196	242	127	1364
Coventry, Edwin D., and J. W. Archer, Buffalo, N. Y. Device for holding clothes-line poles	849,284	Apr. 2	380	116	127	1727
Cowham, William F. (See Normandin, Levy P., assignor.) (Reissue.)	849,639	Apr. 2	37	8	127	1384
Cox, Howard M., administrator. (See Hill, Charles S.)	849,727	Apr. 2	212	43	127	1641
Cox, James L., Scottsville, N. Y. Latch-fastener						
Cozzens, Fred H. (See Auld, Fredrick R., assignor.)						
Craig, William D., Kansas City, Mo. Excelsior-cutting machine						
Cram, Edwin A., Brooklyn, N. Y., assignor to New York Adding Typewriter Company, Orange, N. J. Type-writer carriage						
Crane & Breed Manufacturing Company. (See Breed and Warther, assignors.)						
Crary, William P., New York, N. Y. Support for gas-generators						
Crawford, James E., Charleston, W. Va. Horse-protector						

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr's.	Vol.	Page.
Crawford, Lyter H., New York, N. Y. Dental handpiece	848,208	Apr. 2	1198	242	127	1694
Crawford, Lyter H., New York, N. Y. Combined mouth mirror and lamp	848,209	Apr. 2	1198	242	127	1695
Crawley Book Machinery Company. (See Crowley, John P., assignor.)						
Critzer, Robert, and R. C. Wright, Lapel, Ind. Dumping-wagon	848,885	Apr. 2	880	182	127	1694
Crittenden, Orlando, Akron, Ohio. Brush	848,573	Apr. 2	728	147	127	1773
Crollius, Frederick J., Pittsburg, Pa. Mechanical stoker	848,728	Apr. 2	214	43-4	127	1662
Crossman, Abner, Chicago, Ill. Rotary carpet-cleaner	848,974	Apr. 2	730	148	127	1774
Crouch & Fitzgerald. (See Fitzgerald, William P., assignor.)						
Crowley, John P., Newport, Ky., assignor to Crawley Book Machinery Company. Bevel-board-cutting machine	848,812	Apr. 2	419	84	127	1694
Cudebec, Ernest L., Dalton, N. Y. Book	848,975	Apr. 2	731	148	127	1774
Currie, Neil, assignor of one-half to C. L. Warren, Dallas, Tex., and D. Davies, St. Louis, Mo. Watch	848,976	Apr. 2	732	148	127	1774
Currier, Arthur, assignor to Dodge Needle Company, Manchester, N. H. Metal-working machine	848,813	Apr. 2	420	84-5	127	1694
Curtain Supply Company. (See Hopkins, Charles L., assignor.)						
Daley, Dennis W., C. A. Gunn, and F. R. Daley, assignors of two-fifths to M. and E. Daley, Pittsburg, Pa. Combined water heater and still	849,210	Apr. 2	1199	243	127	1695
Daley, Elvin, *et al.* (See Daley, Gunn, and Daley, assignors.)						
Daley, Frank R. (See Daley, Gunn, and Daley.)						
Daley, Mollie, *et al.* (See Daley, Gunn, and Daley, assignors.)						
Dalton, Mathew W., Willard, Utah. Fire-escape	848,640	Apr. 2	26	9	127	1694
Daly, Cornelius J., assignor of one-fourth to J. O. Eberhard, Jr., Philadelphia, Pa. Bottle and jar	848,211	Apr. 2	1201	243-4	127	1695
Daudelin, Jean B., Fall River, Mass., assignor to J. and C. J. Shambow, Woonsocket, R. I. Self-threading loom-shuttle	848,212	Apr. 2	1202	244	127	1695
Daudelin, Pierre P., Fall River, Mass., assignor to J. Shambow, Woonsocket, R. I. Self-threading loom-shuttle	848,213	Apr. 2	1203	244	127	1696
Daughenbaugh, Lawrence W., and C. A. Markle, Clearfield, Pa. Brick-press box	848,214	Apr. 2	1205	244	127	1697
Davies, Dan, *et al.* (See Currie, Neil, assignor.)						
Davis, Charles J., Lansing, Mich. Clod-crusher	848,977	Apr. 2	733	149	127	1774
Davis, Monroe, assignor of one-half to O. W. Hutchinson, Billings, Okla. Ter. Grain-weighing machine	849,215	Apr. 2	1206	245	127	1697
De Reamer, Frank C. (See Hartley and De Reamer.)						
Dean, William W., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Telephone trunking system	848,814	Apr. 2	420	85-6	127	1695
Devine, David R. C., assignor to himself and J. F. Phillips, Philadelphia, Pa. Automobile-wheel	848,586	Apr. 2	851	116	127	1735
Dial, Elliott, Vivian, La. Fence-making machine	848,687	Apr. 2	891	182-3	127	1753
Diehl, Charles J., and H. W. C. Eickhoff, Tippecanoe City, Ohio. Policeman's club	849,216	Apr. 2	1211	246	127	1698
Dodge Needle Company. (See Currier, Arthur, assignor.)						
Doherty, Henry L., Madison, Wis. Producing gas	848,720	Apr. 2	215	44	127	1642
Donoghue, James, Cleveland, Ohio. Soldering sheet-metal plates	848,978	Apr. 2	735	149	127	1775
Douglas, Richard, New York, N. Y. Safety-pin	849,217	Apr. 2	1213	246	127	1699
Draper Company. (See Benson, Arthur E., assignor.)						
Draper Company. (See Draper and Roper, assignors.)						
Draper Company. (See Roper, Charles F., assignor.)						
Draper, William F., and C. F. Roper, assignors to Draper Company, Hopedale, Mass. Stopping and starting mechanism for looms	848,815	Apr. 2	420	86	127	1695
Dress, John, Covington, Ky. Ice-scraper	849,103	Apr. 2	1004	203	127	1644
Drescher, Esther E. R., Princeton, Minn. Necktie-fastener	849,218	Apr. 2	1214	246	127	1699
Dresser, Francis E., *et al.* (See Garrett, William B., assignor.						
Dudgeon, Henry C., Locust Valley, N. Y. Hydraulic jack	848,641	Apr. 2	30	9	127	1694
Duerr, Emil, Backnang, Germany. Cooking-pot	848,816	Apr. 2	443	87	127	1695
Duryea, Charles E., Reading, Pa. Cooling device for combustion-engines	848,588	Apr. 2	883	117	127	1735
E. Goldman & Co. (See Paul, John T. H., assignor.)						
E. C. Stearns & Co., *et al.* (See Schneeloch, August, assignor.)						
E. W. Bliss Company. (See Page, Frank C. B., assignor.)						
Eagan, John J., San Francisco, Cal. System for transmitting electric currents to cars	848,720	Apr. 2	219	44	127	1645
Earle, James T., Latonia, Ky. Automatic identification-stamp	848,987	Apr. 2	888	117	127	1739
Eastman, Ruby G., assignor to National Sweeper Company, Marion, Ind. Roller-bearing	848,643	Apr. 2	41	9	127	1695
Eberhard, John O., Jr. (See Daly, Cornelius J., assignor.)						
Ecker, Maurice, Boston, Mass., assignor to L. M. Stern, Brooklyn, N. Y. Double-acting window-shade	849,219	Apr. 2	1215	247	127	1699
Edwards, Oliver M., Syracuse, N. Y. Door-opening device	848,781	Apr. 2	221	45	127	1645
Eickhoff, Henry W. C. (See Diehl and Eickhoff.)						
Eisenschimi, Otto. (See Thomas, William M., assignor.)						
Elsman, Julius, Toronto, Ontario, Canada. Combined waist-holder and skirt-supporter	848,782	Apr. 2	227	45	127	1645
Electric Boat Company. (See Bailey and Spear, assignors.)						
Electric Boat Company. (See Cable, Frank T., assignor.)						
Ellis, Claude A., Carlisle, Ind. Kitchen-cabinet	848,979	Apr. 2	736	149	127	1775
Elmer, Andrew B., *et al.* (See Garrett, William B., assignor.)						
Emerson Manufacturing Company. (See Headon, Walter P., assignor.)						
Emerson Manufacturing Company. (See Waterman, Lewis E., assignor.)						
Emmelmann, Fred G. and H. R., Indianapolis, Ind. Blow-torch	849,220	Apr. 2	1218	247	127	1699
Emmelmann, Harry R. (See Emmelmann, F. G. and H. R.)						
Emmerich, Martin, assignor of one-half to G. Rotman, New Haven, Conn. Vehicle-spring	849,109	Apr. 2	1005	203	127	1645
Engel, Frederick G., New York, N. Y. Automatic fire-escape machine	848,221	Apr. 2	1219	247-8	127	1700
Erickson, Frederic W. (See Lord and Erickson.)						
Erickson, Frederic W., New York, N. Y. Outlet-box	848,822	Apr. 2	880	117	127	1740
Erickson, Frederick W., New York, N. Y. Fountain-pen	849,110	Apr. 2	1006	203	127	1645
Ericsson, Gustaf. (See Sundberg and Ericsson.)						
Erie Engine Works. (See Hardwick, William, assignor.)						
Eureka Drill Steel Company. (See Glass, Frederick E., assignor.)						
Exhrayat, Alphonse, Levallois, France. Manufacture of briquets	849,088	Apr. 2	886		127	1815
Fabrin, Thomas. (See Fingal and Fabrin.)						
Fairchild, Elmer E., assignor of two-thirds to E. C. Gutland and H. O. Alderman, Rochester, N. Y. Post-card frame or mount	849,111	Apr. 2	1007	204	127	1645
Farver, William F., and H. H. Lehman, Ashland, Ohio. Whip-socket	848,643	Apr. 2	42	9-10	127	1595
Fassett, Miles M. (See Benner and Fassett.)						
Fingal, Robert C., and T. Fabrin, Aurora, Ill. Pane-attaching means	849,112	Apr. 2	1009	204	127	1646
Fiorentini, Henry. (See Mongardi, Giovanni, assignor.)						
Fisher, George E., Plainfield, N. J. Blind-fastener	848,989	Apr. 2	738	150	127	1775
Fisher, Michal J., Utica, N. Y. Fabric-rooting machine	848,981	Apr. 2	739	150	127	1776
Fitts, James L., Merchantville, N. J., assignor to Warren Webster & Company. Apparatus for testing feed-water, &c.	849,220	Apr. 2	227	45	127	1645
Fitzgerald, William P., Brooklyn, N. Y., assignor to Crouch & Fitzgerald. Packing-case	849,221	Apr. 2	882	118	127	1740

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr's.	Vol.	Page.
Fitzwater, Joseph E. (See Smith, Kemp, and Fitzwater.)						
Flare, Anders, Schenectady, N. Y., assignor to General Electric Company. Protection of parallel (telephone) circuits	848,982	Apr. 2	740	180	127	1776
Flegel, Harrison D., assignor to E. J. Schowalter, Racine, Wis. Door-securer	848,644	Apr. 2	44	10	127	1595
Fleming, Amelia A. (See Fleming, Ira A., assignor.)						
Fleming, Henry C., and W. F. Royster, Denison, Tex. Floor-jack	849,069	Apr. 2	894	183	127	1815
Fleming, Ira A., assignor to A. A. Fleming, Union City, Wash. Door-fastener	848,817	Apr. 2	444	87	127	1699
Fleming, John J., Carrick, assignor to Phillips Mine and Mill Supply Co., Pittsburg, Pa. Coal-digger	849,113	Apr. 2	1010	204	127	1646
Fleming, Robert, Toronto, Ontario, Canada. Extension ladder and lift	849,222	Apr. 2	1221	248	127	1900
Fletcher, James J., Toronto, Ontario, Canada. Boiler-bracket	848,890	Apr. 2	895	118	127	1741
Flegel, Josef, Mallmitz, Germany. Spring-wheel	849,223	Apr. 2	1224	249	127	1901
Foote, George W. (See Hansen and Foote.)	849,224	Apr. 2	1225	249	127	1901
Forbes, Hamlin B., Ogden, Utah. Step-ladder	848,891	Apr. 2	896	118-19	127	1741
Ford, Henry, assignor to Henry Ford Company, Detroit, Mich. Speed controller and regulator for explosive-engines	848,818	Apr. 2	445	87	127	1699
Fort, Charles H., Stafford, Kans. Measuring device	849,114	Apr. 2	1012	205	127	1846
Fortune, John B., assignor to Murphy Iron Works, Detroit, Mich. Furnace	848,983	Apr. 2	743	150	127	1777
Foster, Walter E., Chicago, Ill. Rail-bond	849,115	Apr. 2	1013	205-6	127	1847
France, Adam W., Philadelphia, Pa., assignor to France Packing Company. Rod-packing	848,645	Apr. 2	45	10	127	1696
France Packing Company. (See France, Adam W., assignor.)						
Franks, Orrin G., Kenosha, Wis. Chair	849,116	Apr. 2	1017	206	127	1848
Frary, Edward N. (See Frary, Ernest A. and E. N.)						
Frary, Ernest A. and E. N., Deerfield, Mass. Gas-lighting apparatus	848,819	Apr. 2	446	88	127	1700
Freeman, Bert G. (See Meyer, John E., assignor.)	849,117	Apr. 2	1022	206	127	1849
Freeman, Charles A., East Orange, N. J. Bushing-coupling	849,060	Apr. 2	895	183	127	1816
Frerkson, Mamie, Mount Pleasant, Iowa. Shirt-waist						
Friedbaum, Morris, Philadelphia, Pa. Invisible belt for trousers						
Friend Mfg. Co. (See Hull, Arthur B., assignor.)	848,734	Apr. 2	229	46	127	1645
Frost, Clarence B. (See Tuttle, Joseph H., assignor.)	848,735	Apr. 2	232	46	127	1646
Frost, Clarence B., Cambridge, Mass. Package-sealing device	848,892	Apr. 2	899	119	127	1742
Frost, Clarence B., Cambridge, Mass. Package-sealing apparatus	849,225	Apr. 2	1227	249	127	1902
Frost, Clarence B., Cambridge, Mass. Package-sealing apparatus	849,118	Apr. 2	1023	207	127	1849
Gana, Louis, Los Angeles, Cal. Apparatus for separating chaff from coffee	849,061	Apr. 2	896	184	127	1816
Garber, David, Lovering, Mich. Bed-spring						
Garner, James G., Chicago, Ill. Ventilating apparatus	849,120	Apr. 2	1026	207	127	1850
Garrett, Frank W., Norwood, Ohio, assignor to Bullock Electric Manufacturing Company. Brush-holder	849,226	Apr. 2	1229	250	127	1902
Garrett, William B., Ashton, assignor of one-half to F. E. Dresser and A. B. Elmer, Rochelle, Ill. Electric sign	849,119	Apr. 2	1024	207	127	1850
Garver, Martin V., Bryan, Ohio. Wheelbarrow-axle	849,062	Apr. 2	901	184	127	1817
Gauld, Chester A., Hamilton, Ontario, Canada. Vehicle-wheel	849,121	Apr. 2	1028	207	127	1850
Ge Frozer, Charles L., Philadelphia, Pa. Safety gas-cock	849,348	Apr. 2	1459	296	127	1968
Gegier, William C., Philadelphia, Pa. Wetter-up for leather-working machines	849,249	Apr. 2	1460	297	127	1969
Gegier, William C., Philadelphia, Pa. Wetting up						
Gehrtsen, Edward F., Schenectady, N. Y., assignor to General Electric Company. Switching device	848,893	Apr. 2	603	119-20	127	1743
Gemelly, Angelo, and B. Gilberti, Los Banos, Cal. Bicycle-pump	849,227	Apr. 2	1231	250	127	1903
General Electric Company. (See Barringer, Lawrence E., assignor.)						
General Electric Company. (See Bliss, Elmer F., assignor.)						
General Electric Company. (See Churchward, Alexander, assignor.)						
General Electric Company. (See Clark, Paul L., assignor.)						
General Electric Company. (See Fjare, Anders, assignor.)						
General Electric Company. (See Gehrtsen, Edward F., assignor.)						
General Electric Company. (See Hall, John L., assignor.)						
General Electric Company. (See Hartley and De Reamer, assignors.)						
General Electric Company. (See Merriam, Ezra B., assignor.)						
General Electric Company. (See Pratt, William H., assignor.)						
General Electric Company. (See Rosenberg, Emanuel, assignor.)						
General Electric Company. (See Schattner, Ernest, assignor.)						
General Electric Company. (See Schiebeler, Carl, assignor.)						
General Electric Company. (See Steinmetz, Charles P., assignor.)						
General Electric Company. (See Stevens, George E., assignor.)						
General Electric Company. (See Troy Matthew O., assignor.)						
General Electric Company. (See Van Aller, Tycho, assignor.)						
General Electric Company. (See Vogel and White, assignors.)						
General Electric Company. (See Wedmore, Edmund B., assignor.)						
George, Jerome R., assignor to Morgan Construction Company, Worcester, Mass. Conveyer for metal bars	849,122	Apr. 2	1027	208	127	1851
Gerth, Anthony C., Cincinnati, Ohio, assignor of sixty one-hundredths to J. B. Gerth and H. T. Becker. Shifting top for carriages	848,820	Apr. 2	447	88	127	1700
Gerth, Joseph B., *et al.* (See Gerth, Anthony C., assignor.)						
Gibson, Arthur H., Easton, Pa., assignor to Ingersoll-Rand Company, New York, N. Y. Electropneumatic track-channeler	848,984	Apr. 2	744	151	127	1777
Giessel, Margret K., Wapakoneta, Ohio. Guard for cooking utensils	849,228	Apr. 2	1233	250	127	1903
Gilbert, Daniel R. (See Gilbert, India J. and D. R.)	848,894	Apr. 2	605	120	127	1744
Gilbert, George D., Jennings, Mont. Water-wheel	849,063	Apr. 2	901	184	127	1817
Gilbert, India J. and D. R., Williamstown, W. Va. Belt						
Gilberti, Bernardo. (See Gemelly and Gilberti.)						
Gillespie, Alfred J., Atlantic, Iowa, assignor to U. S. Standard Voting Machine Company, Rochester, N. Y. Voting-machine	849,123	Apr. 2	1030	208-9	127	1851
Gilmartin, Michael W., Brooklyn, N. Y. Attaching device	848,895	Apr. 2	607	120	127	1744
Glass, George G., Hoopeston, Ill. Can-feeding mechanism for canning-machines	848,736	Apr. 2	234	46-7	127	1646
Glass, Frederick E., Victor, assignor to Eureka Drill Steel Company, Cripple Creek, Colo. Rock-drill	849,229	Apr. 2	1234	251	127	1904
Glidden, Oscar F., Grand Rapids, Mich. Wading-boot	848,821	Apr. 2	448	88	127	1700
Globe Ear Phone Company. (See Clarke, Lewis F., assignor.)	849,230	Apr. 2	1235	251	127	1904
Gobel, David, Zanesville, Ohio. Monkey-wrench	848,896	Apr. 2	608	121	127	1744
Goeb, Rudolph W., St. Louis, assignor to Lewis Publishing Company, University City, Mo. Clamping type in type-galleys	848,985	Apr. 2	748	151-2	127	1778
Gold, Robert H., Chicago, Ill. Engine	848,807	Apr. 2	610	121	127	1745
Golden, Justus B., Wolcott, Vt. Music-leaf turner	848,737	Apr. 2	235	47	127	1647
Golden, Martin V., Hopewell, Pa. Nut-retainer	849,064	Apr. 2	903	185	127	1818
Goldmann, Benjamin F., San Francisco, Cal. Can-cover	849,124	Apr. 2	1034	209	127	1852
Goldmann, Benjamin F., and R. C. Hall, Cynthiana, Ky. Carrier	849,231	Apr. 2	1236	251	127	1904
Gorham, Frank C., New York, N. Y. Reel-seat	848,646	Apr. 2	47	11	127	1646
Gösenkler, Bernhard, Marrioh, and W. Pancis, Holten, near Sterkrade, Germany. Locking device for doors of railway-cars	848,738	Apr. 2	237	47	127	1647
Grant, Oscar F., Pittsburg, Pa. Clothes-hanger						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'gs.	Official Gazette. Vol.	Official Gazette. Page.
Gravity Conveyor Company. (See Schwab, Martin C., assignor.)						
Green, James H., Freeport, Pa. Window-shade and curtain-pole holder	848,627	Apr. 2	752	158	127	1770
Greene, Ernest F., Silver Creek, N. Y. Railway-switch	848,695	Apr. 2	740	153-4	127	1770
Greenleaf, George E., Plainfield, assignor to Nixe-Bement-Pond Company, Jersey City, N. J. Turret tool-post	848,522	Apr.	480	98	127	1701
Gregson, William, Beaumont, Tex. Tubular-tank inspector and gage	848,596	Apr. 2	631	121	127	1745
Guenffet, Julien, and J. Nisault. Paris, France. Device for rolling tips for cigarette-machines	848,647	Apr. 2	47	11	127	1694
Guertin, Victor. (See Lalonde, Joseph O., assignor.)						
Gunn, Charles A. (See Daisy, Gunn, and Daisy.)						
Gut, Jakob, assignor of one-half to O. Rosshard, Zurich, Switzerland. Cask or valve	848,720	Apr. 2	220	47	127	1667
Gutland, Edward C., et al. (See Fairchild, Elmer E., assignor.)						
Gutta Percha & Rubber Manufacturing Company. (See Spadone, Walter W., assignor.)						
Gutteridge, Charles W., High Bridge, N. J. Rope-clamp	848,695	Apr. 2	868	185	127	1694
Guyton, John T. (See Castagnos, Joseph B., assignor.)						
Haga, Ottar B., assignor of one-half to R. A. Pence, Dogden, N. D. Whiffletree-hook	848,532	Apr. 2	1228	251	127	1694
Hahn, William C., Fort Scott, Kans. Display-rack	848,695	Apr. 2	926	185	127	1696
Hainsfurther, Solomon, Winchester, Ill. Separable fastener	848,720	Apr. 2	613	121-2	127	1745
Hall, John L., Schenectady, N. Y., assignor to General Electric Company. System of gun control	848,668	Apr. 2	783	153	127	1708
Hall, Robert C. (See Goldnamer and Hall.)						
Ham, William D., Knoxville, Tenn. Mold for forming walls	848,128	Apr. 2	1020	200	127	1695
Hamilton, George W., Columbus, Ohio. Churn	848,989	Apr. 2	786	154	127	1709
Hammerstein, Oscar, New York, N. Y. Ventilation of subways	848,989	Apr. 2	614	122	127	1745
Hannahs, John J., New York, and A. A. Hieber, Brooklyn, N. Y., assignors to Universal Typewriter Company. Type-writing machine	848,127	Apr. 2	1040	210-11	127	1663
Hannahs, John J., New York, and A. A. Hieber, Brooklyn, N. Y., assignors to Universal Typewriter Company. Type-writing machine	848,128	Apr. 2	1055	211-12	127	1695
Hanscom, Grant, Loveland, Colo. Twine-holder	848,642	Apr. 2	49	11	127	1697
Hansen, Marius H., Chicago, Ill. Spring-scale	848,749	Apr. 2	220	46	127	1667
Hansen, Peter, Jersey City, N. J., and G. W. Foote, New York, N. Y. Machine for coring and slicing fruit	848,223	Apr. 2	1220	262	127	1666
Heavey, William A., Big Rapids, assignor of one-half to W. Lambert, Reed City, Mich. Rail-joint	848,691	Apr. 2	614	122	127	1745
Harding, Fred D. (See Harding, Simeon J., assignor.)						
Harding, Simon J., Harrisburg, Pa., assignor to F. D. Harding, West Baldwin, Me. Cake-cutter	848,228	Apr. 2	461	89	127	1701
Hardman, William H., Edison, Ohio. Fender attachment for cultivators	848,741	Apr. 2	243	46	127	1668
Hardwick, Thomas W., et al. (See Matheson, Robert S., assignor.)						
Hardwick, William, assignor to Erie Engine Works, Erie, Pa. Governor	848,120	Apr. 2	1056	212	127	1699
Harmon, Willis E. (See Nunnemaker and Harmon.)						
Harris, Haston S. and M. D., Pattonsville, Va. Wire-stretcher	848,224	Apr. 2	1243	242	127	1666
Harris, Louis H., et al. (See Brackstone, Samuel, assignor.)						
Harris, Marma D. (See Harris, Haston S. and M. D.)						
Hartley, James J., and F. C. De Reamer, Schenectady, N. Y., assignors to General Electric Company. Attaching-plug and wall-receptacle	848,662	Apr. 2	615	123	127	1745
Hartnett, Veronica, Sutton, Nebr. Combination incubator and brooder	848,235	Apr. 2	1244	242-3	127	1666
Hartsough, D Maurice, Minneapolis, Minn., assignor of one-half to P. J. Lyons, Steal, N. D. Transit threshing-machine	848,690	Apr. 2	787	154	127	1720
Harvey, Frank R., Houghton, Mich. Hand-rest	848,821	Apr. 2	788	154	127	1721
Hawkins, Thomas, London, England. Apparatus for embossing name-plates, &c.	848,854	Apr. 2	462	89	127	1702
Hayhurst, Carl C., Barberton, Ohio. Puzzle	848,235	Apr. 2	1245	243	127	1666
Heaford, Edwin B. (See Kelley and Heaford.)						
Heath, George W., Crayford, England. Prism monocular and binocular glass	848,227	Apr. 2	1246	243	127	1667
Heberling, John, Rochester, N. Y. Dumping-wagon	848,697	Apr. 2	906	185-6	127	1695
Hector, Andre, East Newark, N. J. Propeller	848,223	Apr. 2	1248	243	127	1667
Helm, John, St. Louis, Mo. Excavating-machine	848,742	Apr. 2	242	46-50	127	1668
Helm, John, St. Louis, Mo. Excavating bucket and cutter	848,743	Apr. 2	243	50	127	1668
Helmond, William F., Hartford, Conn., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	848,649	Apr. 2	80	11	127	1697
Hendon, Walter P., Dallas, Tex., assignor to Emerson Manufacturing Company, Rockford, Ill. Plow	848,226	Apr. 2	465	90	127	1702
Henry Ford Company. (See Ford, Henry, assignor.)						
Henry Likly & Company. (See Likly and Cannan, assignors.)						
Herbein, Josephine A., Seattle, Wash. Artificial fuel and making the same	848,668	Apr. 2	909		127	1720
Herbert, Henry J., et al. (See Ward, Dell, assignor.)						
Heron, Alexander, Calder, Ontario, Canada. Cattle-guard	848,120	Apr. 2	1055	212	127	1699
Hetlesaeter, Olaf, assignor to Allis-Chalmers Company, Milwaukee, Wis. Suspending and hoisting mechanism	848,744	Apr. 2	240	51	127	1669
Hewitt, Harmon G., Georgetown, Ill. Penny-collector	848,668	Apr. 2	780	155	127	1721
Heywood, Henry B. (See Wolf, Louis H., assignor.)						
Hicks, Ray S., Chicago, Ill. Display-rack	848,699	Apr. 2	910	186	127	1720
Hieber, Anthony A. (See Hannahs and Hieber.)						
Hill, Charles S., deceased; H. M. Cox, administrator, Chicago, Ill. Lavatory apparatus	848,230	Apr. 2	1417	285-6	127	1696
Hill, John P., Phelps, N. Y. Dust-pan	848,230	Apr. 2	1249	254	127	1697
Hines, James M., Albany, N. Y. Slack-adjuster for brakes	848,692	Apr. 2	783	155	127	1720
Hirsal, Heinrich, Leipsig-Plagwitz, Germany. Distilling	848,693	Apr. 2	616	122	127	1746
Hodson, Walter D., assignor to National Sweeper Company, Marion, Ind. Roller-bearing	848,650	Apr. 2	58	12	127	1668
Hosgner, George, Chicago, Ill., assignor to Union Scale & Mfg. Co., San Francisco, Cal. Automatic weighing-machine	848,121	Apr. 2	1039	213-13	127	1699
Hoffmann, Otto C., New York, N. Y., and A. L. Appleton, assignors to Chicago Fuse Wire & Mfg. Co., Chicago, Ill. Electric junction and outlet box	848,694	Apr. 2	782	156	127	1722
Hollifield, Horatio B., Washington, D. C. Target attachment	848,125	Apr. 2	1035	209	127	1697
Holman, J Frank, assignor of one-half to A. V. Turner, Neosho, Mo. Well-bucket	848,240	Apr. 2	1269	254	127	1697
Holt, William. (See Rigby, James, assignor.)						
Hook, Charles H., Pittsburg, Pa. Adjustable pipe-hanger	848,122	Apr. 2	1044	213	127	1661
Hooker, Halstead T., Maryville, Mo. Safety neck-yoke	848,228	Apr. 2	455	90	127	1700
Hookey, Samuel, Wyandotte, Mich. Can-capping machine	848,681	Apr. 2	54	12-13	127	1695
Hope-Jones, Robert, New York, N. Y. Organ	848,241	Apr. 2	1251	254-5	127	1698
Hope, William. (See Thomson, Blakiston, Hope, and Richards.)						
Hopkins, Charles L., Albany, N. Y., assignor to Curtain Supply Company, Newark, N. J. Shade-holding device	848,122	Apr. 2	1035	213	127	1661
Hopkinson John E., West Drayton, England. Tire for vehicles	848,745	Apr. 2	220	51	127	1669
Hottenroth, Frederick W., New York, N. Y. Gauze apparatus	848,227	Apr. 2	488	90	127	1703
Houtsinger, Henry J., and H. A. Stilson, Rock Falls, assignors, by mesne assignments, to Sterling Specialty Company, Sterling, Ill. Trap	848,670	Apr. 2	911	186-7	127	1720
Howe, Carl M., Effington, S. D. Belt-shifter	848,694	Apr. 2	620	123	127	1747
Hoya, Ferdinand A., assignor of one-half to W. W. Plankinton, Milwaukee, Wis. Sad-iron	848,231	Apr. 2	1420	288	127	1949

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'gs.	Official Gazette. Vol.	Official Gazette. Page.
Brubeck, Albert. (See Sands, Akamo P., assignor.)						
Bryden, Arthur J., Pearl River, N. Y. Universal joint for shafts and rods	848,652	Apr. 2	57	13	127	1699
Bugnot, Georges, Paris, France. Wind-shield for vehicles	849,242	Apr. 2	1260	255	127	1910
Bulkley, Arthur F., assignor to Friend Mfg. Co., Gasport, N. Y. Spray-nozzle	848,995	Apr. 2	706	156	127	1783
Bull, Arthur F., assignor of one-half to M. I. Manowitz, San Antonio, Tex. Closure for bottles, &c.	849,243	Apr. 2	1261	255	127	1911
Bull, John W., assignor of one-half to M. I. Manowitz, San Antonio, Tex. Closure for bottles, &c.	849,124	Apr. 2	1088	214	127	1699
Bunn, John W., assignor of one-half to M. I. Manowitz, San Antonio, Tex. Closure for bottles, &c.	848,653	Apr. 2	58	13-15	127	1699
Bunn, John W., assignor of one-half to M. I. Manowitz, San Antonio, Tex. Closure for bottles, &c.	848,654	Apr. 3	65	15-16	127	1691
Bunner, John, Pittsburg, Pa. Grater	849,071	Apr. 2	915	187	127	1821
Burbank, Benjamin F. Jr., New York, N. Y. Type-writer operator						
Burbank, Benjamin F. Jr., New York, N. Y. Automatic paper-feeder for type-writers						
Burbidge, O. W. (See Davis, Monroe, assignor.)						
Burkhalter, T. Atlanta, Ga. Gas cooling and mixing tower						
Burton, John T. (See Borst, Frank A., assignor.)						
Ideal Concrete Machinery Company. (See Ledwinka, Joseph, assignor.)						
Imperial Electric Meter Company. (See Bassenberg, Jacob J., assignor.)						
Imperial Gas Construction Co. (See Gibson, Arthur H., assignor.)						
Improved Road Company. (See Prellwitz, William, assignor.)						
Improved Road Company. (See Luckett, William S., assignor.)						
International Cigar Machinery Company. (See Riley, Edwin, assignor.)	848,746	Apr. 2	263		127	1680
International Paper Company. (See Bryer, Frank, assignor.)						
Jackman, Michael. (See Smith, Watson R., assignor.)	848,655	Apr. 2	66	16	127	1692
Jackson Cushion Spring Company. (See Smith, Watson R., assignor.)	848,656	Apr. 2	60	16	127	1692
Jackson, Cyrillus G., Kemp, Tex. Meat-holder						
Jagenberg, Emil, Duesseldorf, Germany. Machine for making paper boxes	848,928	Apr. 2	457	89-1	127	1708
James, William H. C., et al. (See Matheson, Robert S., assignor.)	848,929	Apr. 2	465	91	127	1705
Jarvens, William B., Cleveland, Ohio. Oil-burner	848,930	Apr. 2	467	91	127	1705
Jarvens, William B., Cleveland, Ohio. Oil-burner	849,072	Apr. 2	917	188	127	1822
Jarvens, William B., Cleveland, Ohio. Wick-tube	848,905	Apr. 2	622	124	127	1747
Jeffery, Frank E., Chicago, Ill. Ventilating window-sash lock	849,244	Apr. 2	1262	256	127	1911
Jenson, George M., Hayward, Minn. Self-locking block and pulley	848,906	Apr. 2	623	124	127	1748
Jessup, Uras S., Provo, S. D. Rake						
Johns, Spencer M., San Francisco, Cal. Domestic steamer	849,245	Apr. 2	1263	256	127	1911
Johnson, Albert E., Brockton, Mass., assignor to United Shoe Machinery Company, Paterson, N. J. Insole for use in the manufacture of boots and shoes	848,657	Apr. 2	70	17	127	1692
Johnson, Frank A., F. Weddemann, and E. Blankenberg, Danville, Ill. Automatic sign-exhibitor	848,747	Apr. 2	258	51	127	1651
Johnson, Wallace W., et al. (See Ward, Dell, assignor.)	849,246	Apr. 2	1265	256	127	1911
Jones, Thomas, Hampton-in-Arden, England. Wheel for vehicles	848,907	Apr. 2	625	125	127	1748
Jones, William H. W., Waverly, N. Y. Non-refillable bottle	848,831	Apr. 2	470	91	127	1707
Kabasa, Max, Vienna, Austria-Hungary. Turning stage for theaters	848,656	Apr. 2	74	17	127	1693
Kampe, John E., Waltham, Mass. Indicator attachment for stringed instruments	849,135	Apr. 2	1059	214	127	1682
Kampelman, Louis A., St. Louis, Mo. Playing mechanism for stringed instruments						
Kandle, Ausbin D., Pascoyd, Pa., assignor to Kandle Sanitary Head Rest Manufacturing Company. Head-rest						
Kandle Sanitary Head Rest Manufacturing Company. (See Kandle, Ausbin D., assignor.)	848,996	Apr. 2	767	156	127	1722
Kaufmann, Charles S., assignor to American Battery Company, Chicago, Ill. Receptacle for storage-battery plates	848,748	Apr. 2	264	51	127	1651
Kawanishi, Yasuke, Vancouver, British Columbia, Canada. Wafer-lifting device	848,832	Apr. 2	471	92	127	1707
Kearns, Aaron F., Moscow, Okla. Ter. Hay-stacker	848,650	Apr. 2	75	18	127	1668
Kearns, Joseph, Seguora, Tex. Hair-cutting register	848,660	Apr. 2	76	18	127	1694
Kelley, Hugh C., Seguora, Tex. Shampoo-registering device	848,749	Apr. 2	265	52	127	1651
Kelley, Joseph D., and E. B. Hesford, Omaha, Nebr. Trunk-circuit for telephone systems	849,282	Apr. 2	1421	287	127	1949
Kelley, William H., Denver, Colo. Automatic torpedo-placing device for railways						
Kellogg, Milo G. (See Webster, Harry G., assignor.)						
Kellogg Switchboard and Supply Company. (See Dean, William W., assignor.)						
Kelsey, John, et al. (See Ward, Dell, assignor.)	848,833	Apr. 2	472	92	127	1708
Kemp, Albert M. (See Smith, Kemp, and Fitzwater.)						
Kern, Lawrence, Dayton, Ky. Preparing half-tone printing-plates	848,997	Apr. 2	769	157	127	1723
Keystone Brake Shoe Company. (See Lamb, Van Buren, assignor.)	848,908	Apr. 2	626	125	127	1749
Kiner, Nelson, assignor to I. G. and B. F. Osgood, Marseilles, Ill. Harrow-sulky	848,909	Apr. 2	627	125-6	127	1749
Kip, Frederic E., Montclair, N. J. Stiffening pile fabrics						
Kip, Frederic E., Montclair, N. J. Apparatus for dressing or stiffening pile fabrics	848,750	Apr. 2	267	52	127	1652
Kip, Frederic E., Montclair, N. J.	848,751	Apr. 2	269	52	127	1652
Kitchen, John H., et al. (See Smith, Fred P., assignor.)	848,752	Apr. 2	269	53	127	1668
Kitsee, Isidor, Philadelphia, Pa. Electric transmission of intelligence	848,753	Apr. 2	269	53	127	1668
Kitsee, Isidor, Philadelphia, Pa. Electric transmission of intelligence	848,908	Apr. 2	261	157	127	1784
Kitsee, Isidor, Philadelphia, Pa. Telegraphy	848,910	Apr. 2	770	126	127	1780
Kitsee, Isidor, Philadelphia, Pa. Electric receiving device			630			
Knudsen, Ole P. E., Seattle, Wash. Boat lowering and detaching apparatus	849,073	Apr. 2	919	186	127	1822
Koch, Gustav, St. Cloud, Minn. Sled	849,126	Apr. 2	1070	214	127	1683
Kochler, William, Fulton, assignor to American Textile Specialty Machinery Company, New York, N. Y. Shuttle-spindle	849,137	Apr. 2	1072	215	127	1683
Kopp, Dessie, New York, N. Y. Corset	848,681	Apr. 2	77	18	127	1694
Kopp, Samuel, New York, N. Y. Bone-pocket						
Kostelnitz, Israel, Brooklyn, N. Y. Door	849,350	Apr. 2	1462	287	127	1949
Kramer, Frederick, assignor of one-third to D. McConaghy, Los Angeles, Cal. Switch for overhead-trolley tracks	848,999	Apr. 2	772	157	127	1784
Kratzenstein, Lorenz, Buffalo, N. Y. Whistle-valve	849,138	Apr. 2	1074	215	127	1683
Kraus, Otto, New York, N. Y. Horn-support for talking-machines	848,911	Apr. 2	631	126	127	1780
Kropp, Maxwell, Franklin, Pa. Rod-catcher	849,139	Apr. 2	1076	215	127	1684
Kruse, Edward W., Higginsville, Mo. Bill-file						
L'Hommedieu, Charles A., Buffalo, assignor of two-thirds to W. A. L'Hommedieu, New York, and H. L'Hommedieu, Buffalo, N. Y. Combined telephone desk-stand and call-bell	849,250	Apr. 2	1270	248	127	1913
L'Hommedieu, Harry, et al. (See L'Hommedieu, Charles A., assignor.)						
L'Hommedieu, William A., et al. (See L'Hommedieu, Charles A., assignor.)	849,140	Apr. 2	1078	215	127	1684
La Bate, James H., Brockton, Mass. Thread controlling and unwinding device for sewing-machines	849,074	Apr. 2	920	188	127	1823
Labry, Joseph S., Viva, La. Lard dipper and measure	849,247	Apr. 2	1266	257	127	1912
Laching, Michel J., Dortmund, Germany. Gas-generator	849,141	Apr. 2	1079	216	127	1685
Ladd, Henry E., Washington, D. C. Cotton-gin	848,662	Apr. 2	79	18	127	1694
Lalonde, Joseph O., assignor of two-thirds to V. Guertin, Montreal, Quebec, Canada. Memorial register-sales check-book	848,663	Apr. 2	80	19	127	1695
Lamb, Van Buren, New Haven, Conn., assignor to Keystone Brake Shoe Company, New York, N. Y. Brake-shoe mounting	848,534	Apr. 2	475	93	127	1703
Lamb, Walter B., Roseneville, N. Y. System of ventilating subways	848,754	Apr. 2	263	53	127	1669
Lambert, William. (See Harvey, William A., assignor.)						
Lane Motor Vehicle Co. Cross-head						
Lane, George, Poughkeepsie, N. Y., assignor to Lane Motor Vehicle Co. Cross-head	849,142	Apr. 2	1081	216	127	1685
Lange, Friedrich A., Cologne-Riehl, Germany. Apparatus for exactly printing or impressing type	849,143	Apr. 2	1082	216	127	1685
Lange, Friedrich A., Cologne-Riehl, Germany. Device for moistening color-ribbons						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Lathan, Arthur B., Albia, Iowa. Traction-engine brake	849,099	Apr. 2	773	188	127	1704
Lauer, Martin W., Wilmette, Ill. Reinforced partition	849,144	Apr. 2	1083	216	127	1806
Laustsrer, William J., Jamestown, assignor to U. S. Standard Voting Machine Company, Rochester, N. Y. Voting-machine	849,091	Apr. 2	774	139	127	1705
Lavier, Thomas H., Dallas, Tex. Wrench	849,248	Apr. 2	1267	257	127	1913
Lawless, Philip C., Hampstead, London, England. Clasp	849,249	Apr. 2	1268	257	127	1913
Ledwinka, Joseph, assignor to Imperial Electric Motor Company, Philadelphia, Pa. Automobile	849,145	Apr. 2	1086	217-18	127	1806
Ledwinka, Joseph, assignor to Imperial Electric Motor Company, Philadelphia, Pa. Automobile	849,146	Apr. 2	1087	218	127	1807
Lehman, Henry H. (See Farver and Lehman.)						
Leonard, David, St. Louis, Mich. Tile-molding machine	849,084	Apr. 2	84	19	127	1605
Leroy, William R., Oceanpark, Cal. Chalk holder and guard	849,235	Apr. 2	479	98	127	1781
Leuty, Clyde C., Justin, Tex. Disk plow	849,213	Apr. 2	632	126	127	1750
Lewis, Edward C., *et al.* (See Smith, Fred P., assignor.)						
Lewis Publishing Company. (See Goeb, Rudolph W., assignor.)						
Lewis, Samuel H., Portsmouth, Va. Metal-cutting machine	849,147	Apr. 2	1089	219	127	1807
Leyner, John G., Denver, Colo. Air-compressor and intercooler	849,233	Apr. 2	1423	267-8	127	1909
Liberty, Emery, assignor of one-half to D. Nevius, New York, N. Y. Teller's window	849,785	Apr. 2	264	53-4	127	1654
Liberty, Emery, assignor of one-half to D. Nevius, New York, N. Y. Teller's window	849,786	Apr. 2	265	54	127	1655
Liebentritt, John F., Bankstown, near Sydney, New South Wales, Australia. Multiple pump	849,088	Apr. 2	479	94	127	1709
Likly, William C., and J. J. Canman, assignors to Henry Likly & Company, Rochester, N. Y. Wardrobe-trunk	849,234	Apr. 2	1427	268-9	127	1911
Lindsey, Joseph B., Lockwood, Mo. Calendar-chart	849,251	Apr. 2	1271	238	127	1913
Lipscomb, Mary A., Eureka, Cal. Sheep-shears	849,252	Apr. 2	1275	238	127	1914
Lloyd, Ernest P., Detroit, Mich. Closure for gas-tanks	849,092	Apr. 2	776	139	127	1705
Lomb, Henry C., and E. G. Sailer, Rochester, N. Y. Orientation device	849,787	Apr. 2	271	54	127	1655
Lombard, Levi W., Medford, Mass. Rotary explosive-engine	849,095	Apr. 2	98	19-20	127	1607
Lord, Frederic W., and F. W. Erickson, New York, N. Y. Protective device for electric circuits	849,149	Apr. 2	1092	219	127	1808
Louis, Adolph. (See Thiem, Walter, assignor.)						
Luckett, William S., East Orange, N. J., assignor to International Cigar Machinery Company, New York, N. Y. Wrapper-carrier for cigar-machines	849,096	Apr. 2	90	20	127	1609
Luckett, William S., East Orange, N. J., assignor to International Cigar Machinery Company, New York, N. Y. Cigar-machine	849,097	Apr. 2	92	21	127	1609
Lukens, Baltis P., and I. S. Diehl, Allentown, Pa. Vehicle-brake	849,098	Apr. 2	95	21	127	1609
Lumpp, Andrew. (See Silva and Lumpp.)						
Lybeck, Nils A., Kearney, Nebr. Glass-cutting device	849,148	Apr. 2	1094	219	127	1809
Lyons, Patrick J. (See Hartsough, D Maurice, assignor.)						
Macdonald, William S. (See Pemberton and Macdonald.)						
Macklind, William R., Mineral Point, Mo. Evaporating-pan	849,093	Apr. 2	778	158-9	127	1706
Main, Frank J., and R. C. Wildhagen, Madison, Wis. Band-cutter and feeder for corn-huskers	849,078	Apr. 2	922	186-9	127	1802
Mallory, Alonzo R., deceased, Atlanta, Ga.; H. P. Mallory, administrator. Plow-stock	849,213	Apr. 2	632	127	127	1750
Mallory, Howard P., administrator. (See Mallory, Alonzo R.)						
Maltby, Julius, assignor to Waterbury Buckle Co., Waterbury, Conn. Suspender-buckle	849,004	Apr. 2	780	160	127	1708
Manowitz, Max I. (See Hull, John W., assignor.)						
Mansfield, George F., Scranton, Miss. Stocking-supporting means	849,253	Apr. 2	1276	238	127	1914
Mark, Jacob H., assignor to Mark Manufacturing Company, Herkimer, N. Y. Jacket	849,089	Apr. 2	96	21	127	1610
Mark Manufacturing Company. (See Mark, Jacob H., assignor.)						
Markle, Clarence A. (See Daughenbaugh and Markle.)						
Markwitz, Lewis, San Francisco, Cal. Electric dental furnace	849,226	Apr. 2	1429	269	127	1908
Marvel Rubber Company. (See Clark, Maurice C., assignor.)						
Marx, Rudolph, and J. P. Schneider, Newport, Ky. Carpenter's floor-vise	849,237	Apr. 2	481	94	127	1708
Mastin, John. (See Bennett and Mastin.)						
Mathein, Frank J., New Haven, Conn., assignor to Anthony & Scovill Company, Binghamton, N. Y. Spool for photographic-film cartridges	849,076	Apr. 2	924	189	127	1824
Mather, W. Penn. (See Sisson, Albert T., assignor.)						
Matheson, Robert S., assignor of three-fourths to T. W. Hardwick, A. G. Canham, and W. H. C. James, Perth, Western Australia, Australia. Screw	849,214	Apr. 2	934	127	127	1750
Mayer, Max, New York, N. Y. Hat	849,151	Apr. 2	1096	220	127	1809
Maynard, William L., Hudson, Mich. Attachment for hats	849,228	Apr. 2	433	94	127	1709
Mazzocco, William, Plainfield, N. J. Shock-absorber	849,150	Apr. 2	1094	220	127	1809
McBerty, Frank R., Evanston, assignor to Western Electric Company, Chicago, Ill. Signaling system for telephone-exchanges	849,236	Apr. 2	1481	280	127	1902
McCarthy, John F., assignor of two-thirds to P. F. Moriarty and J. L. Ramsay, Indianapolis, Ind. Car-coupling	849,762	Apr. 2	260	57	127	1668
McClintock, Edward, Merriam Park, Minn. Engineer's alarm	849,157	Apr. 2	1103	222	127	1871
McConaghan, Daniel. (See Kramer, Frederick, assignor.)						
McCormack, Harry S., Providence, R. I., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	849,673	Apr. 2	111	25	127	1613
McCormack, Harry S., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	849,764	Apr. 2	261	58	127	1668
McCulloch, Marsena P., Red Oak, Iowa. Machine for laying underground drain-tiles	849,841	Apr. 2	287	95	127	1710
McElligott, Edward J., and E. A. Chamery, Manistee, Mich. Building-block	849,917	Apr. 2	327	127	127	1751
McGuigan, John, and A. Priddle, San Francisco, Cal. Vault-light	849,238	Apr. 2	1293	262	127	1917
McKam, Lawrence G., New Westminster, British Columbia, Canada. Saw-tooth	849,242	Apr. 2	480	96	127	1711
McKenney, Albion T. (See Clay and McKenney.)						
McLain, Charles F., *et al.* (See Suits, Bert C., assignor.)						
McMahill, Joseph, Walnut Grove, Ill. Road-grader	849,079	Apr. 2	930	190	127	1826
Melbeyer, Charles H., Saginaw, Mich. Hot-air register	849,722	Apr. 2	272	55	127	1656
Mendoza, Manuel, Madrid, Spain. Flushing apparatus for water-closets, lavatories, &c.	849,188	Apr. 2	1087	220	127	1870
Mergenthaler Linotype Company. (See Rogers, John R., assignor.)						
Mern, John P., assignor of one-half to C. H. Bull, Brooklyn, N. Y. Pipe-testing machine	849,709	Apr. 2	275	55-6	127	1667
Merriam, Ezra B., Schenectady, N. Y., assignor to General Electric Company. Trip-coil for circuit-breakers	849,215	Apr. 2	934	127	127	1751
Merrill, Charles W., Lead, S. D. Classifier	849,183	Apr. 2	1086	221	127	1870
Meyer, John E., assignor of one-tenth to B. G. Freeman, Shepherd, Mich. Grain-separator	849,670	Apr. 2	97	22	127	1610
Meyer, Rudolph H., Knoxville, Pa. Kitchen implement	849,698	Apr. 2	782	160	127	1786
Meyers, John C. (See Anson, Lorenzo A., assignor.)						
Mikesell, Frank, Jr., Fort Scott, Kans. Screen	849,154	Apr. 2	1090	221	127	1870
Milkowsy, Hans, Schöneberg, Germany. Propelling and floating device for boats and the like	849,236	Apr. 2	782	160	127	1786
Millar, John T. (See Nussbaum, George B., assignor.)						
Miller, Henry C., Milwaukee, Wis. Loose-leaf binder	849,671	Apr. 2	96	22	127	1610
Miller, William E., Bingham Canyon, Utah. Hat-ventilator	849,697	Apr. 2	784	160	127	1787
Mills, Samuel H., Montpelier, Vt. Stone-polishing wheel	849,709	Apr. 2	270	56	127	1657

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Mims, Walter J., New York, N. Y. Combined sink, bath, and wash tub	849,254	Apr. 2	1277	239	127	1914
	849,255	Apr. 2	1280	239	127	1915
Minchin, Paul East Rutherford, N. Y. Burner						
Mitchell, Edwin W., *et al.* (See Brackstone, Samuel, assignor.)						
Mitchell, John P. (See Mitchell, William and J. F.)	848,672	Apr. 2	102	23	127	1611
Mitchell, William and J. F., Milwaukee, Wis. Bench-drill	849,608	Apr. 2	785	161	127	1787
Mongardi, Giovanni, assignor of one-half to H. Fiorentini, Boston, Mass. Ham-pressing machine	848,916	Apr. 2	636	.....	127	1751
Monin, Alfred, Lent, France. Loading or filling substance for use in the manufacture of paper	848,839	Apr. 2	484	95	127	1710
Monitor Drill Co. (See Bowman, Edwin E., assignor.)						
Monroe, Dan C., Huntsville, Ala. Game apparatus	848,761	Apr. 2	277	56-7	127	1657
Moody, Henry T., assignor to Victor Manufacturing Company, Newburyport, Mass. Self-closing door or shutter	849,077	Apr. 2	925	189	127	1824
Moomaw, Henry E., Chattanooga, Tenn. Adjustable fireplace grate-basket	849,009	Apr. 2	786	161	127	1787
Moore, Daniel M., Newark, N. J., assignor to Moore Electrical Co., New York, N. Y. Electric lighting	848,673	Apr. 2	103	23	127	1611
Moore Electrical Co. (See Moore, Daniel M., assignor.)	849,256	Apr. 2	1281	239-40	127	1915
Moore, Elisha, Boston, Mass. Spring-hinge	848,840	Apr. 2	486	95	127	1710
Moore, Eugene P., Streator, Ill. Combined wire stretcher and fastener						
Moore, George W., Burlington, N. J. Skimming device for molten metals						
Morehead, John. (See Purser, James E., assignor.)						
Morgan Construction Company. (See George, Jerome R., assignor.)						
Morgan Spring Co. (See Bigelow, George E., assignor.)	849,156	Apr. 2	1102	222	127	1871
Moriarty, Patrick F., *et al.* (See McCarthy, John F., assignor.)	849,155	Apr. 2	1101	221	127	1870
Morris, Frank, Alliance, Ohio. Resilient vehicle-tire						
Morrison, Andrew, Coleman, Tex. Gage	848,674	Apr. 2	105	23	127	1612
Moser, Moses, New York, N. Y., assignor to Moser Safe Company, Hamilton, Ohio. Round-door safe	849,078	Apr. 2	927	189-90	127	1824
Moser Safe Company. (See Moser, Moses, assignor.)						
Moss, Lincoln, New York, N. Y. Hoisting apparatus	849,257	Apr. 2	1283	260	127	1916
Moss, Lincoln, assignor to Robins Conveying Belt Company, New York, N. Y. Hoisting apparatus	848,762	Apr. 2	260	57	127	1668
Mueller, Charles R., Detroit, Mich. Paper-clip	848,675	Apr. 2	106	23-4	127	1612
Multi-Phonograph Company. (See Ridderhof, Cornell, assignor.)	848,676	Apr. 2	108	24	127	1612
Murgas, Joseph, Wilkes-Barre, Pa. Wave-meter						
Murgas, Joseph, Wilkes-Barre, Pa. Electric transformer	849,010	Apr. 2	788	161	127	1788
Murphy Iron Works. (See Fortune, John R., assignor.)						
Murphy, John J., Boston, Mass. Oven	849,258	Apr. 2	1286	261	127	1916
Murray, Benjamin, Washington, D. C., and A. O. Travis, Del Ray, Va., assignors to E. L. Murray, Washington, D. C. Machine for re-pressing brick	848,677	Apr. 2	110	24	127	1613
Cockrell, Washington, D. C. Railway-gate	849,011	Apr. 2	789	.....	127	1788
Murray, George E., St. Regis Falls, N. Y. Picking-block	849,259	Apr. 2	1290	262	127	1917
Murray, Michael J., Dubuque, Iowa. Oil-burner						
Mustes, Lawrence F., Cleveland, Ohio. Oil-burner						
National Sweeper Company. (See Eastman, Ruby G., assignor.)						
National Sweeper Company. (See Hodson, Walter D., assignor.)						
Nef, Edwin F., *et al.* (See Suits, Bert C., assignor.)	849,012	Apr. 2	790	161	127	1788
Nehr, Herman F., Brooklyn, assignor to Bensinger Bros., New York, N. Y. Candle stick or holder	848,679	Apr. 2	119	25-6	127	1616
Nelson, Emil A., assignor to W. J. Newton and C. J. Woodall, Detroit, Mich. Starting means for explosion-motors	848,680	Apr. 2	120	26	127	1616
Nelson, Frank J. (See Roberts, Harry A., assignor.)						
Nelson, Lyman H., Portland, Me. Writing-paper tablet	848,918	Apr. 2	638	128	127	1751
Nevin, Dick Q. (See Nevin, James L. and D. Q.)						
Nevin, James L. and D. Q., New Vienna, Ohio. Connection for table-legs						
Nevius, David. (See Liberty, Emery, assignor.)	848,843	Apr. 2	489	96	127	1711
New York Adding Typewriter Company. (See Cram, Edwin B., assignor.)						
Newcomb, David L., San Diego, Cal. Counter	848,681	Apr. 2	122	26	127	1617
Newton, Edward C., assignor of one-half to W. Pickersgill, Reno, Nev. Switch for overhead railways						
Newton, William J., *et al.* (See Nelson, Emil A., assignor.)						
Nicault, Jules. (See Guenifet and Nicault.)	849,261	Apr. 2	1293	262	127	1918
Niles-Bement-Pond Company. (See Greenleaf, George E., assignor.)						
Nimmo, Fernando, West Point, Ark. Bunk-block	849,158	Apr. 2	1106	222-3	127	1872
Norgrove, George B., assignor to Peabody Leather Machinery Company, Peabody, Mass. Machine for treating hides, skins, and leather	12,626	Apr. 2	1468	238	127	1900
Normandin, Levy P., assignor to W. F. Cowham, Jackson, Mich. Supporting-stand and mold for making building-blocks. (Reissue)	849,013	Apr. 2	790	162	127	1788
Norris, John S., Red Lodge, Mont. Wheeled scraper	848,919	Apr. 2	639	128	127	1751
Nungesser Electric Battery Co. (See Nungesser and Harmon, assignors.)						
Nungesser, Philip P., and W. E. Harmon, assignors to Nungesser Electric Battery Co., Cleveland, Ohio. Roll-forming machine	849,262	Apr. 2	1294	262-3	127	1918
Nussbaum, George B., assignor of one-half to J. T. Millar, New Philadelphia, Ohio. Trolley-wheel	849,014	Apr. 2	792	163	127	1789
Ogle, James, Wingate, Ind. Hay-ladder fastener	849,015	Apr. 2	793	163	127	1789
Ohl, Edward, Strassburg, Germany. Projectile	849,080	Apr. 2	922	189	127	1825
Olcott, John D., Norwalk, Ohio. Horseshoe	849,263	Apr. 2	1295	263	127	1918
Olson, Everett W., Garfield, Kans. Wagon end-gate	849,681	Apr. 2	934	191	127	1826
Ortmann, Christian, Schopendorf, near Baumgarten, Germany. Contrivance to sprinkle manure						
Osgood, Dennis F., *et al.* (See Kiner, Nelson, assignor.)	849,264	Apr. 2	1296	263	127	1919
Osgood, Isaac G., *et al.* (See Kiner, Nelson, assignor.)	849,082	Apr. 2	934	191-2	127	1826
Otis Elevator Company. (See Sundh, August, assignor.)	849,237	Apr. 2	1434	260-2	127	1903
Overaitzer, Frank G., Stella, Wash. Stanchion						
Page, Charles G., Oak Park, assignor to F. C. Austin, Chicago, Ill. Excavating-machine.						
Page, Charles G., Oak Park, assignor to F. C. Austin, Chicago, Ill. Excavating-machine.	848,844	Apr. 2	486	96	127	1713
Page, Frank C. B., New York, N. Y., assignor to E. W. Bliss Company. Double-action press	848,845	Apr. 2	497	97	127	1714
Paige, Arthur J., Terre Haute, Ind. Engine						
Palatine Engineering Company. (See Thomson, Blakiston, Hope, and Richards, assignors.)	849,159	Apr. 2	1110	223	127	1873
Pangburn, N. G. (See Bearss, Aaron, assignor.)						
Parker, Frederick R., assignor to F. B. Cook, Chicago, Ill. Fuse-clip	849,265	Apr. 2	1299	263-4	127	1919
Parker, Nolan H. (See Torsch and Parker.)	849,016	Apr. 2	794	163	127	1789
Parkhurst, Milton I., Fancy Prairie, Ill. Draft-compensating device	849,251	Apr. 2	1464	237	127	1899
Patterson, James W., New Castle, Pa. Sash-adjuster	848,846	Apr. 2	501	97	127	1715
Patton, Charles, Fairfax, S. D. Gate						
Patton, Charles, Denver, Colo. Recorder	849,017	Apr. 2	795	163-4	127	1790
Patterson, David, Denver, Colo. (See Glotzenbier and Panels.)	849,100	Apr. 2	1112	224	127	1873
Pemble, William. (See Goldman & Co., Chicago, Ill. Filter						
Peel, John T. H., assignor to E. Goldman & Co., Chicago, Ill. Filter						
Pauly, Albert A., Youngstown, Ohio. Wet-stone car						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Drfs.	Official Gazette. Vol.	Page.
Peabody Leather Machinery Company. (See Norgrave, George R., assignor.)						
Pease, Pascal S., North East, Pa. Oil-cloth rack	848,682	Apr. 2	126	2	127	1697
Pemberton, Charles, Camp Chase, and W. S. Macdonald, Columbus, Ohio. Animal-trap	848,705	Apr. 2	267	35-6	127	1697
Penco, Ralph A. (See Haga, Ottar B., assignor.)						
Pendergrass, Sanford L., Monroe, Ga. Duster	848,688	Apr. 2	541	139	127	1703
Perkins, Josiah P., Indianapolis, Ind. Fluid-agitator	848,638	Apr. 2	263	103	127	1682
Peterson, William, Benton county, Iowa. Fence-post	848,647	Apr. 2	408	69	127	1687
Petrosky, Fred, Austin, Tex. Hunting or shooting garment	848,683	Apr. 2	1301	104	127	1703
Petrie, Daniel C., Biloxi, Miss. Fence-post	848,721	Apr. 2	542	139	127	1708
Phelon, Arthur E., Springfield, Mass. Transmission-gear	848,708	Apr. 2	288	69	127	1705
Philipp, Curt, assignor to Chemische Fabrik von Heyden Aktiengesellschaft, Dresden, Germany. Making camphor from isobornecl	849,010	Apr. 2	788		127	1720
Phillips, Clarence A., Middlebury, Vt. Plow attachment	848,648	Apr. 2	804	66	127	1676
Phillips, John F. (See Devine, David R. C., assignor.)						
Phillips Mine and Mill Supply Co. (See Fleming, John J., assignor.)						
Phillips, Walter P., New York, N. Y. Telegraphy	848,849	Apr. 2	305	99-6	127	1717
Pinkerngill, William. (See Newton, Edward C., assignor.)						
Pinnahl, Charles, Chicago, Ill. Christmas-tree holder	848,699	Apr. 2	808	99	127	1717
Plankinton, William W. (See Heye, Ferdinand A., assignor.)						
Pohahl, Heinrich H., Vivian, Miss. Fork	848,822	Apr. 2	643	139	127	1719
Pratt, William H., Lynn, Mass., assignor to General Electric Company. Alternating-current meter	848,826	Apr. 2	644	139	127	1719
Prellwitz, William, Phillipsburg, N. J., assignor to Ingersoll-Rand Company, New York, N. Y. Channeling-machine	848,880	Apr. 2	780	104-5	127	1720
Premier Last Company. (See Prindle, Edwin J., assignor.)						
Priddle, Arthur. (See McGuigan and Priddle.)						
Priest, Augustus F., Milwaukee, Wis., assignor to A. F. Priest Mfg. Co. Automatic valve	848,634	Apr. 2	942	166	127	1681
Prince, George W., Morrison, Colo. Dredger	848,692	Apr. 2	126	27	127	1681
Prindle, Edwin J., Washington, D. C., assignor to Premier Last Company, Great River, Long Island, N. Y. Turning-lasts	848,737	Apr. 2	391	39-41	127	1691
Pupke, Arnold W., New York, N. Y. Variable-speed mechanism	848,709	Apr. 2	294	61	127	1688
Purnell, Harry D., Washington Court-House, Ohio. Storm-front for vehicles	847,709	Apr. 2	301	63	127	1683
Purser, James E., Windsor, Ontario, Canada, assignor to J. Morehead, Detroit, Mich. Double-seated valve	848,694	Apr. 2	126	27	127	1681
Purser, James E., Windsor, Ontario, Canada, assignor to J. Morehead, Detroit, Mich. Single-seated valve	848,695	Apr. 2	127	27	127	1681
Railroad Supply Company. (See Vogel, Eugene W., assignor.)						
Ramsay, John L., et al. (See McCarthy, John F., assignor.)						
Rattigan, Mary J., Pittsburg, Pa. Hook and eye	848,651	Apr. 2	1113	224	127	1679
Raymond, Alfred A., Chicago, Ill., assignor to Raymond Concrete Pile Company, Trenton, N. J. Machine for making paper shells	848,651	Apr. 2	309	100-3	127	1719
Raymond Concrete Pile Company. (See Raymond, Alfred A., assignor.)						
Reardon, Patrick H., San Francisco, Cal. Air-inlet valve	848,698	Apr. 2	514	103	127	1719
Recording and Computing Machines Company. (See Whistler, David B., assignor.)						
Reece, Thomas K., et al. (See Baldwin, Cloice H., assignor.)						
Reed, Ralph R., San Francisco, Cal. Fire-shutter	848,822	Apr. 2	517	103	127	1720
Reich, Emanuel A., Wheeling, W. Va. Sidewalk-light	848,823	Apr. 2	801	165	127	1701
Reid, Robert, South Yarra, Victoria, Australia. Gas-generator	848,162	Apr. 2	1114	224-5	127	1673
Renner, Peter, Cincinnati, Ohio. Cigar-case	848,824	Apr. 2	520	103	127	1721
Richards, Francis H., Hartford, Conn. Mechanical movement	848,696	Apr. 2	128	28	127	1619
Richards, George B. (See Thomson, Blakiston, Hope, and Richards.)						
Richardson, Solon O., Jr., Toledo, Ohio. Glass-furnace	848,681	Apr. 2	803	165-6	127	1702
Ridderhof, Cornell, Grand Rapids, Mich., assignor to Multi-Phonograph Company, Winona, Minn. Phonograph	848,827	Apr. 2	122	26-9	127	1620
Rieseck, Peter, Allegheny, Pa. Dies	848,828	Apr. 2	128	29	127	1622
Rigby, James, assignor of one-half to W. Holt, Paterson, N. J. Loom	848,163	Apr. 2	1116	223	127	1674
Riley, Edwin, Livermore Falls, Me., assignor of one-half to International Paper Company, New York, N. Y. Core for rolls	848,845	Apr 2	821	104	127	1731
Rimailho, Emile. (See Schneider and Rimailho.)						
Ritchie, David A., Cambridge, Mass. Apparatus for forming perforated stripe or sheets	849,267	Apr. 2	1302	264	127	1699
Roberts, Harry A., assignor of one-half to F. J. Nelson, Hornellsville, N. Y. Cushion-sole	848,779	Apr. 2	302	62	127	1664
Roberts, John J., Loyal, Wis. Stovepipe-drum	848,829	Apr. 2	128	29	127	1623
Robertson, George W., Trego, Wis. Safety watch-pocket	848,824	Apr. 2	646	139	127	1753
Robins Conveying Belt Company. (See Moss, Lincoln, assignor.)						
Rosde, Bernhard, West Hoboken, N. J. Pearl necklace	849,164	Apr. 2	1118	225	127	1674
Rogers, Andrew W., assignor to S. W. Winslow, trustee, Beverly, Mass. Butting-machine	848,286	Apr. 2	1441	292	127	1694
Rogers, John E., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Line-type-machine	848,771	Apr. 2	304	62-4	127	1664
Rominger, Hermann, Milwaukee, Wis. Wood covering or lining	848,680	Apr. 2	140	30	127	1623
Root, Henry T., Kirksville, Mo. Osteopathic table	848,686	Apr. 2	628	104	127	1722
Roper, Charles F. (See Draper and Roper.)						
Roper, Charles F., assignor to Draper Company, Hopedale, Mass. Crack-preventing means for looms	848,772	Apr. 2	310	64	127	1665
Rosenberg, Emanuel, Berlin, Germany, assignor to General Electric Company. Dynamo-electric machine	848,826	Apr. 2	943	193	127	1828
Rosenfeld, William W., New York, N. Y. Phonograph	848,828	Apr. 2	944	193	127	1828
Rosenthal, Maurice I., Fort Wayne, Ind. Clutch mechanism	848,827	Apr. 2	943	193-4	127	1829
Rotman, George. (See Emmerich, Martin, assignor.)						
Royster, William F. (See Fleming and Royster.)						
Ruger Fountain Ink Pad Company. (See Chandler, Alfred B., assignor.)						
Ruhl, Frederick A., Stockton, Cal. Lift-pump	848,657	Apr. 2	824	104	127	1723
Rutenbeck, Lewis, Lost Nation, Iowa. Overalls	849,288	Apr. 2	1295	265	127	1920
S. R. Dresser Manufacturing Company. (See Clark, James, assignor.)						
S. R. Dresser Manufacturing Company. (See White, George H., assignor.)						
Sailer, Ernest G. (See Lemb and Sailer.)						
Salomon, Mark. (See Cameron, Edgar S., assignor.)						
Sands Alonzo P., assignor of one-half to A. Hrubets, Maryville, Ill. Truck	849,022	Apr. 2	894	166-7	127	1702
"Sanitas" Aktiengesellschaft für Sanitäre & Heizungs-Anlagen. (See Aeppli-Stockes, Johann J., assignor.)						
Sargent & Company. (See Shaw, John H., assignor.)						
Sargent, Francis M., Washington, Pa. Device for fastening sewing-machines in wagons	849,023	Apr. 2	897	167	127	1703
Sarvalla, Matti, and P. J. Zelen, De Kalb, Ill. Combined can and jar opener	848,831	Apr. 2	141	30	127	1623
Schaad, Clarence A., Williams, Cal. Seal box-fastener	849,289	Apr. 2	1295	265	127	1921
Schafer, Andrew, and G. Wanzo, Red Bluff, Cal. Trunk	849,270	Apr. 2	1297	265	127	1921
Schattner, Ernest, Schenectady, N. Y., assignor to General Electric Company. Electric governor	848,685	Apr. 2	647	139	127	1753
Schattner, Ernest, Schenectady, N. Y., assignor to General Electric Company. Prepayment time-switch apparatus	849,024	Apr. 2	895	167	127	1703

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Drfs.	Official Gazette. Vol.	Page.
Scherer, John W., assignor of one-half to W. A. Scherer, Petersburg, Va. Well-drilling machine	849,271	Apr. 2	1299	265	127	1921
Scherer, William A. (See Scherer, John W., assignor.)						
Schleicher, Carl, Berlin, Germany, assignor to General Electric Company. System of motor control	848,926	Apr. 2	949	139	127	1704
Schmeisch, August, New York, assignor to E. G. Stearns & Co., Syracuse, and J. E. Thomas, New York, N. Y. Ribbon mechanism for type-writers	849,220	Apr. 2	1442	292-3	127	1694
Schneider, Amelie C., Baldwinville, Pa. Dough-pan	849,165	Apr. 2	1119	226	127	1674
Schneider, Charles F. E., Le Creusot, and E. Rimailho, Neuilly-sur-Seine, France. Means for transferring a gun from its carriage to a gun-carrying vehicle	848,868	Apr. 2	826	104	127	1722
Schneider, John F. (See Marx and Schneider.)	849,272	Apr. 2	1299	265	127	1922
Schneider, Samuel P., Leamston, Pa. Wrench	849,227	Apr. 2	652	139	127	1754
Schoen, Charles T., Moylan, Pa. Making wheels	849,373	Apr. 2	1310	266	127	1923
Schowalter, Edward J. (See Flegel, Harrison D., assignor.)						
Schuermann, Ernest J. and T. B. Chenea, Ill. Beater or mixer	848,773	Apr. 2	313	64	127	1666
Schuermann, Tilo B. (See Schuermann, Ernest J. and T. B.)						
Schultz, George F. (See Wells, Elmer J., assignor.)	848,774	Apr. 2	314	64	127	1666
Schuls, Fritz, Chicago, Ill. Thrust-bearing	849,340	Apr. 2	1445	293	127	1955
Schwab, Martin C., Baltimore, Md., assignor to Gravity Conveyor Company. Combined conveyor and stairway	848,692	Apr. 2	142	30	127	1624
Schwab, Martin C., Baltimore, Md., assignor to Gravity Conveyor Company. Combined conveyor and stairway	848,775	Apr. 2	316	65	127	1667
Scott, Lorenzo D., East Machias, Me. Hoop-making machine						
Scranton Button Company. (See Sylvester, Philip L., assignor.)						
Scullin, Terrence. (See Shaw, Seren R., assignor.)						
Selakusky, Wilson, White Haven, Pa. Air-compressor						
Shambow, Christopher J., et al. (See Dandelin, Jean B., assignor.)						
Shambow, John, et al. (See Dandelin, Jean B., assignor.)						
Shambow, John. (See Dandelin, Pierre P., assignor.)	848,608	Apr. 2	145	31	127	1696
Sharp, Charles H., Lockport, N. Y. Toothpick-holder	849,025	Apr. 2	811	167	127	1704
Sharp, Edward F., Buffalo, N. Y. Trolley-wheel	849,166	Apr. 2	1120	226	127	1674
Shaton, Ed, Lima, Ohio. Pumping-jack	848,859	Apr. 2	827	105	127	1723
Shaw, John H., assignor to Sargent & Company, New Haven, Conn. Striker-plate	848,694	Apr. 2	146	31	127	1624
Shaw, Levi M., Chicago, Ill. Water-motor	848,695	Apr. 2	180	32	127	1636
Shaw, Robert W., London, Ontario, Canada. System of ventilation and heating	849,274	Apr. 2	1212	206	127	1922
Sheehy, William H., assignor to Antifriction Journal Box Company, Los Angeles, Cal. Journal-box	848,926	Apr. 2	653	130-1	127	1755
Sherwood, Arthur W., McDonough, Ga. Electric feeding mechanism	848,696	Apr. 2	154	32	127	1626
Shields, William S., Chicago, Ill. Siphon	848,697	Apr. 2	157	32-3	127	1626
Silva, Manuel, and A. Lumpp, Springfield, Ill. Concrete-block machine	849,341	Apr. 2	1446	293-4	127	1955
Simmons, William H., New York, N. Y. Skirt-marker	849,375	Apr. 2	1313	266	127	1923
Simon, Reuben, New York, N. Y. Terminal for electrical weldings						
Simplex Railway Appliance Company. (See Atwood, William S., assignor.)						
Sinclair, Cyrus H. (See Brown, John E., assignor.)						
Sisson, Albert T., assignor, by mesne assignments, to W. P. Mather, Providence, R. I. Ball-bearing	848,776	Apr. 2	318	65	127	1667
Skov, Soren R., assignor of one-half to T. Scullin, Cleveland, Ohio. Window-shade fixture	849,167	Apr. 2	1122	226	127	1675
Smith, Daniel F., assignor of one-fourth to E. G. Smith, New York, N. Y. Rotary engine	848,980	Apr. 2	829	105-6	127	1723
Smith, E. Osborne. (See Smith, Daniel F., assignor.)						
Smith, Erle M., A. M. Kemp, and J. E. Fitzwater, Denver, Colo. Automatic street-indicator for electric railways	849,276	Apr. 2	1315	267	127	1923
Smith, Fred P., assignor of one-half to K. C. Lewis, Chicago, Ill., and J. H. Kitchen, Kansas City, Mo. Apparatus for discharging liquids	848,929	Apr. 2	655	131	127	1755
Smith, George E., and D. E. Brinsmade, Derby, Conn. Boomerang-thrower	849,168	Apr. 2	1123	227	127	1675
Smith, Lloyd D., Detroit, Mich. Coal-magazine for automatic stokers	848,801	Apr. 2	540	103	127	1723
Smith, Mattie B., London, Ohio. Guard or extension for baking-pans	848,696	Apr. 2	156	33	127	1627
Smith, Stephen T., Jr., Stamford, Conn., assignor to Underwood Typewriter Company, New York, N. Y. Spacing-machine	848,777	Apr. 2	319	65	127	1667
Smith, Watson R., assignor to Jackson Cushion Spring Company, Jackson, Mich. Spring-cushion work	849,088	Apr. 2	960	194	127	1833
Sobon, Frederick. Washington, D. C. Photographic-print-testing device	849,277	Apr. 2	1317	267	127	1924
Soper, Lewis M., Guelph, Ontario, Canada. Piano-action	849,278	Apr. 2	1321	268	127	1925
Soulé, Edward D., New York, N. Y. Hat	848,699	Apr. 2	159	33-4	127	1627
Spadone, Walter W., assignor to Gutta Percha & Rubber Manufacturing Company, New York, N. Y. Hose	848,778	Apr. 2	320	65	127	1668
Spears, Ralph R., Wheeling, W. Va. Motor	849,279	Apr. 2	1322	268	127	1926
Stevens, William, Keown, Pa. Toy	849,280	Apr. 2	1324	268	127	1926
Strahle, George, Davenport, Iowa. Hog-trough	849,281	Apr. 2	1326	269	127	1926
Stukenborg, Louis C., Browns, Ala. Hose-supporter	849,282	Apr. 2	1327	269	127	1926
Spear, Lawrence Y. (See Bailey and Spear.)						
St. John, Thomas M., New York, N. Y. Game apparatus	848,781	Apr. 2	162	34	127	1628
St. Louis Steel Enameled Brick and Seal Company. (See Brown, Lewis A., assignor.)						
Staben, Richard A. (See Ulrig and Staben.)	848,780	Apr. 2	161	34	127	1628
Stanton, George R., Decatur, Ill. Fountain-brush	849,026	Apr. 2	812	168	127	1704
Steele, Benjamin M., assignor to Ben Steele Weigher Manufacturing Company, Peoria, Ill. Grain-weighing machine	849,169	Apr. 2	1124	227	127	1676
Stein, George J., Mount Carmel, Pa. Stock-feeder	849,027	Apr. 2	830	168	127	1707
Steinmetz, Charles P., Schenectady, N. Y., assignor to General Electric Company. Integrating photometer	848,782	Apr. 2	542	105-7	127	1729
Sterling Specialty Company. (See Houtsinger and Stilson, assignors.)	848,933	Apr. 2	845	168	127	1729
Stern, Eugene W., New York, N. Y. Ferry-bridge						
Stern, Isidore, New York, N. Y. Reinforce and backing for artificial teeth						
Stern, Louis M. (See Ecker, Maurice, assignor.)	849,028	Apr. 2	823	169	127	1705
Stevens, George E., Lynn, Mass., assignor to General Electric Company. Connector for electric conductors	848,894	Apr. 2	547	108	127	1729
Stewart, Lemuel N., Agency, Mo. Spring-support for vehicle-bodies	12,837	Apr. 2	1471	289	127	1941
Stilson, Herbert A. (See Houtsinger and Stilson.)						
Stitz, Harry B., Philadelphia, Pa. Yieldable gear. (Reissue)	848,985	Apr. 2	949	168	127	1729
Stockham, Leonard, et al. (See Winquist, Victor, assignor.)	848,702	Apr. 2	162	34-5	127	1628
Storer, Ella K., Akron, Ohio. Fly-catcher						
Stott, William, Rochdale, England. Belting-head for condenser carding-engines	849,170	Apr. 2	1125	227-8	127	1676
Struble, Jacob B., Wilkinsburg, assignor to Union Switch & Signal Company, Swissvale, Pa. Electric signaling	849,171	Apr. 2	1131	228	127	1677
Struble, Jacob B., Wilkinsburg, assignor to Union Switch & Signal Company, Swissvale, Pa. Electric signaling	849,172	Apr. 2	1133	229	127	1678
Struble, Jacob B., Wilkinsburg, assignor to Union Switch & Signal Company, Swissvale, Pa. Electric signaling						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Struble, Jacob B., Wilkinsburg, assignor to Union Switch & Signal Company, Swissvale, Pa. Signaling system for electric railways	849,173	Apr. 2	1135	229	127	1678
Stump, Asa L., Stumptown, W. Va. Cut-off for oil-tanks	849,000	Apr. 2	656	131	127	1781
Sturgill, Elbert, Eolia, Ky. Animal-trap	848,899	Apr. 2	550	109	127	1781
Suits, Bert C., assignor of one-half to M. F. Neff and C. F. McLain, Indianapolis, Ind. Bed-rail joint	849,174	Apr. 2	1138	229	127	1679
Sullivan, Arthur E., Rome, Ga. Cultivating-plow blade	848,770	Apr. 2	321	66	127	1683
Summa, Victor M., St. Louis, Mo. Dump-car	849,175	Apr. 2	1139	230	127	1680
Sundberg, August, and G. Ericsson, Stockholm, Sweden. Reversing device for shafts	848,981	Apr. 2	568	132	127	1781
Sundh, August, Yonkers, N. Y., assignor to Otis Elevator Company, Jersey City, N. J. Compound brake	849,266	Apr. 2	1226	260	127	1687
Sutton, Arthur L., Paint Rock, Ala. Blade-roller	849,264	Apr. 2	1223	260	127	1686
Swift and Company. (See Walsh, Thomas, assignor.)						
Swinbank, Thomas, Senath, Mo. Bicycle	849,342	Apr. 2	1447	304	127	1685
Switzer, Eva, Brooklyn, N. Y. Decorating walls and other surfaces	848,897	Apr. 2	551	109	127	1781
Sylvester, Philip L., assignor to Scranton Button Company, Scranton, Pa. Socket-key for electric-lamp sockets	849,080	Apr. 2	951	194	127	1685
Sylvia, George. (See Bennett and Sylvia.)						
Tate, William E., Weatherford, Tex. Baling-press	848,789	Apr. 2	322	66	127	1683
Taylor, Charles A., assignor of twenty-four and three-fourths one-hundredths to C. F. Tonn and twenty-four and three-fourths one-hundredths to J. A. Carpenter, Jacksonville, Ill. Power-transmission device	848,708	Apr. 2	164	35	127	1681
Taylor, Jack E., Wheeling, W. Va. Air-ship	849,020	Apr. 2	824	169-70	127	1781
Taylor, Joseph R., *et al.* (See Ward, Dell, assignor.)						
Taylor, William D., Hartford, Kans. Mud knife and shield for harvester-wheels	849,326	Apr. 2	1234	270	127	1682
Tellington, Jesse J., Berlin, N. H. Reel-carrier	848,923	Apr. 2	549	132	127	1787
Therrien, Charles, Sr., Lake Linden, Mich. Wheel-hub	849,236	Apr. 2	1226	270	127	1689
Thiem, Walter, Halle-on-the-Saale, Germany, assignor to A. Louis, Paris, France. Carburetor	848,980	Apr. 2	661	132	127	1787
Thomas, Henry O., Harrisburg, Nebr. Combined mop head and wringer	848,731	Apr. 2	324	66	127	1680
Thomas, Jesse F., New London, Wis. Automatic clutch-coupling for shafts	849,286	Apr. 2	1241	271	127	1680
Thomas, John E., *et al.* (See Schneetoch, August, assignor.)						
Thomas, William M., assignor of one-half to O. Eisenschimal, Chicago, Ill. Electric signaling system	849,227	Apr. 2	1236	270-1	127	1680
Thompson, Henry E., Denton, Tex. Washing-machine	849,060	Apr. 2	902	194-5	127	1682
Thompson, Myra B., *et al.* (See Burn, James, assignor.)						
Thomson, William, Largs, Scotland, R. Blakiston, W. Hope, and G. B. Richards, assignors to Palatine Engineering Company, Limited, Liverpool, England. Liquid-meter	848,704	Apr. 2	164	35-6	127	1680
Thormeyer, Hans, Friedenau, Germany. Propelling mechanism for boats	849,176	Apr. 2	1143	231	127	1681
Thowless, Orlando M. (See Wall and Thowless.)						
Thurston, George H., Johannesburg, Transvaal, assignor to Allis-Chalmers Company, Milwaukee, Wis. Rock and ore crusher	848,782	Apr. 2	326	67	127	1680
Tobey, Fred W., Grand Rapids, Mich. Knockdown sectional bookcase	848,705	Apr. 2	160	35	127	1680
Tobey, Fred W., Grand Rapids, Mich. Type-writer cabinet	848,783	Apr. 2	326	67	127	1679
Tolen, John, Maud, Okla. Ter. Breast-strap	848,934	Apr. 2	562	133	127	1787
Tonn, Charles F., *et al.* (See Taylor, Charles A., assignor.)						
Toothe, R. M. C., *et al.* (See Best, Edward H., assignor.)						
Torsch, Edward L., and J. H. Parker, Baltimore, Md. Machine for shucking oysters	848,784	Apr. 2	330	67-8	127	1679
Towle, Eugene A., St. Paul, Minn. Closing-cap	848,736	Apr. 2	342	68	127	1679
Trama, Eugène, Marseille, France. Device for feeding melting-pots	849,066	Apr. 2	952	109-10	127	1781
Travis, Asher O. (See Murray and Travis.)						
Troy Laundry Machinery Company. (See Bartholomew, William, assignor.)						
Troy, Matthew O., Lynn, Mass., assignor to General Electric Company. System of electrical distribution	848,935	Apr. 2	663	133	127	1787
Troy, Matthew O., Schenectady, N. Y., assignor to General Electric Company. Means for improving the power factor of alternating-current circuits	848,936	Apr. 2	665	133	127	1788
Turner, Andrew V. (See Holman, J. Frank, assignor.)						
Turner, John W., Terre Haute, Ind. Bridle-bit	848,937	Apr. 2	666	133	127	1788
Turney, William S., Greensburg, Pa. Hot-air furnace	849,177	Apr. 2	1144	231	127	1681
Turnstrom, Alfred, *et al.* (See Winquist, Victor, assignor.)						
Tuttle, Joseph H., West Somerville, assignor to C. B. Frost, Cambridge, Mass. Package-sealing apparatus	848,705	Apr. 2	171	37	127	1680
Tyndall, Jessie C., St. Louis, Mo. Toy lantern	848,888	Apr. 2	667	134	127	1788
U. S. Standard Voting Machine Company. (See Gillespie, Alfred J., assignor.)						
U. S. Standard Voting Machine Company. (See Lansterer, William J., assignor.)						
Uhrig, Leo, and R. A. Stalsen, Whittier, Cal. Hydrocarbon-burner	849,290	Apr. 2	1242	271	127	1680
Underwood Typewriter Company. (See Heimond, William F., assignor.)						
Underwood Typewriter Company. (See McCormack, Harry S., assignor.)						
Underwood Typewriter Company. (See Smith, Stephen T., Jr., assignor.)						
Underwood Typewriter Company. (See Wagner, Franz X., assignor.)						
Underwood Typewriter Company. (See Wagner, Herman L., assignor.)						
Union Scale & Mfg. Co. (See Hoopaer, George, assignor.)						
Union Switch & Signal Company. (See Struble, Jacob B., assignor.)						
United Shoe Machinery Company. (See Johnson, Albert E., assignor.)						
Universal Typewriter Company. (See Hannahs and Hieber, assignors.)						
Upton, Henry, Gananoque, Ontario, Canada. Perforator	848,899	Apr. 2	555	111	127	1781
Valliquette, Clement, Limestone, Ohio. Pump	849,080	Apr. 2	827	170	127	1780
Van Aller, Tycho, Schenectady, N. Y., assignor to General Electric Company. Electric heating unit	848,938	Apr. 2	668	134	127	1788
Van Buskirk, Ira L., Louisville, Ky. Electric-switch-operating apparatus	848,940	Apr. 2	670	134-5	127	1788
Van Slyke, James, Shellrock, Iowa. Door for freight-cars	849,291	Apr. 2	1245	272	127	1681
Vanderbilt, Herbert M., Suffern, N. Y. Device for supporting fowls	849,230	Apr. 2	1244	271	127	1681
Victor Manufacturing Company. (See Moody, Henry T., assignor.)						
Vogel, Eugene W., Chicago, Ill., assignor to Railroad Supply Company. Casing for electric signaling instruments	849,248	Apr. 2	1449	294-5	127	1686
Vogel, Frederick M., Lynn, and G. E. White, Malden, Mass., assignors to General Electric Company. Electrical connecting-plug	848,941	Apr. 2	672	135	127	1789
Voight, Emery A., Paducah, Ky. Steam-boiler	848,706	Apr. 2	344	69	127	1679
Votey, Edwin S., Summit, N. J., assignor to Aeolian Company, New York, N. Y. Detachable music-roll support	849,091	Apr. 2	963	196	127	1680
W. F. & John Barnes Company. (See Barnes, William F., assignor.)						
Wade, John A., Traverse City, Mich. Propeller	848,942	Apr. 2	673	135	127	1789
Wagner, Franz X., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	848,707	Apr. 2	173	37	127	1681
Wagner, Franz X., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	848,708	Apr. 2	179	37-8	127	1685
Wagner, Franz X., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	848,737	Apr. 2	348	69	127	1677

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Wagner, Herman L., Mount Vernon, assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	848,709	Apr. 2	180	36	127	1683
Wagner, Herman L., Mount Vernon, assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	848,738	Apr. 2	348	69	127	1678
Wall, Ashbel T., East Greenwich, R. I., and O. M. Thowless, Newark, N. J. Antimagnetic device for watches	849,292	Apr. 2	1348	272	127	1932
Walsh, Thomas, assignor to Swift and Company, Chicago, Ill. Treating bacon, &c.	849,178	Apr. 2	1145	231-2	127	1681
Walston, Maria C., Tullahoma, Tenn. Cake-turner	849,293	Apr. 2	1350	273	127	1933
Ward, Joseph (See Reinder and Ward.)	849,244	Apr. 2	1459	295	127	1937
Warner, Samuel H., New York, N. Y. Illuminable speculum						
Wartel, Rudolf, Grand Rapids, assignor of four-fifths to J. Kelsey, H. J. Herbert, Detroit, J. R. Taylor, Grand Rapids, Mich., and W. W. Johnson, Chicago, Ill. Attachment for vehicle-wheels	849,031	Apr. 2	826	170	127	1780
Wartel, Dell, and Taylor. (See Ward, Dell, assignor.)	849,032	Apr. 2	829	171	127	1780
Wardner, Charles A., Brooklyn, N. Y. Telephone system	849,205	Apr. 2	1353	273	127	1933
Warfield, Stanton W., Providence, R. I. Tension device	849,206	Apr. 2	1355	273	127	1933
Warfield, Stanton W., Providence, R. I. Detector device	849,204	Apr. 2	1351	273	127	1932
Warren, Elmer G., Emporia, Kans. Grainery	848,943	Apr. 2	675	136	127	1780
Warren, C. L., *et al.* (See Garvin, Neil, assignor.)						
Warren, Robert L., Weedon, Ida. Wire-fence tool						
Warren, Robert L., Weedon, Ida. Wire-fence tool						
Warren Webster & Company. (See Fiske, James L., assignor.)						
Warren Webster & Company. (See Hood and Warther.)						
Warther, Joseph G. (See Hood and Warther.)						
Waterbury Buckle Co. (See McKay, Julius, assignor.)						
Waterbury Buckle Company. (See Webb, Charles M., assignor.)	848,789	Apr. 2	349	70	127	1678
Waterman, Lewis E., assignor to Emerson Manufacturing Company, Rockford, Ill. Cultivator	848,790	Apr. 2	351	70	127	1679
Waterman, Lewis E., assignor to Emerson Manufacturing Company, Rockford, Ill. Seeding-machine	848,710	Apr. 2	183	38	127	1634
Watkins, James, Hartford, Conn. Latch for burglar-alarms	848,711	Apr. 2	187	39	127	1635
Weaver, Daniel, New York, N. Y. Game apparatus	849,092	Apr. 2	955	195	127	1831
Webb, Charles M., assignor to Waterbury Buckle Company, Waterbury, Conn. Garment-supporter clasp	849,207	Apr. 2	1359	273	127	1934
Weber, George Jr., Liberty Center, Ohio. Dental swaging device	848,791	Apr. 2	352	71	127	1679
Weber, Leo, Darmstadt, Germany. Pyrimidin derivative	848,792	Apr. 2	354	71	127	1680
Webster, Edward T., Milwaukee, Wis. Finishing-closet	848,793	Apr. 2	356	71	127	1680
Webster, Harry G., assignor to M. G. Kellogg, Chicago, Ill. Relay structure						
Weddemann, Frederick. (See Johnson, Weddemann, and Blankenberg.)						
Wedmore, Edmund B., Rugby, England, assignor to General Electric Company. Reverse-current device	848,944	Apr. 2	676	136	127	1780
Weinberg, Samuel, Scranton, Pa. Stove-lining clamp and support	848,794	Apr. 2	361	71	127	1681
Weis, Andrew L., Monroe, Mich. File-box	849,208	Apr. 2	1360	274	127	1934
Welch, William L., Jamaica, N. Y. Fence-post and socket therefor	849,209	Apr. 2	1362	274	127	1934
Weller, Franklin A., Troy, N. Y. Variable-speed mechanism	848,570	Apr. 2	556	111	127	1731
Weller, Robert W., Packwood, Iowa. Hay-loading apparatus	849,093	Apr. 2	832	171	127	1800
Wells, Elmer J., Nashua, Iowa, assignor of one-half to G. F. Schultz, Salt Lake City, Utah. Door-spring	848,712	Apr. 2	188	39	127	1636
Welsh, Pharis V. W., New York, N. Y. Photograph-plate	849,034	Apr. 2	836	172	127	1801
Werts, Peter, St. Marys, Ohio. Washing-machine	849,300	Apr. 2	1362	274	127	1935
Westcott Chuck Company. (See Westcott, James H., assignor.)						
Westcott, James H., assignor of one-half to Westcott Chuck Company, Oneida, N. Y. Compound vise	848,945	Apr. 2	678	136	127	1781
Westcott, Louis, Middleport, N. Y. Feed-water regulator	849,201	Apr. 2	1364	275	127	1935
Westenhoff, Gustave J. (See Westenhoff, Wilhelm, assignor.)						
Westenhoff, Wilhelm, Wilhelmsburg, Germany, assignor of one-half to G. J. Westenhoff, St. Louis, Mo. Means for supporting gymnastic horizontal bars	849,035	Apr. 2	837	172	127	1801
Wester, Jacob L., MacRaeville, Ga. Powder-gun	848,946	Apr. 2	679	137	127	1781
Western Electric Company. (See McBerty, Frank R., assignor.)						
Wheeler & Wilson Manufacturing Company. (See Abercrombie, William R., assignor.)	849,302	Apr. 2	1366	275	127	1935
Wheeler, Edom V., Roseville, Ga. Brake	849,303	Apr. 2	1367	275	127	1936
Whistler, David B., assignor to Recording and Computing Machines Company, Dayton, Ohio. Variable gearing for fare registers and recorders	848,947	Apr. 2	680	137	127	1781
White, Charles and M. A. S., Montreal, Quebec, Canada. Sight	848,871	Apr. 2	539	111	127	1732
White, Charles E. (See Vogel and White.)						
White, George, Jersey City, N. J. Chuck for transfer-presses	848,948	Apr. 2	685	137-8	127	1782
White, George H., Oil City, assignor to S. R. Dresser Manufacturing Company, Bradford, Pa. Pharing-machine for metal rings, &c.	849,304	Apr. 2	1370	276	127	1936
White, Margaret A. S. (See White, Charles and M. A. S.)						
Whitted, Robert H., Crawfordsville, Ind. Rake	848,795	Apr. 2	363	72	127	1681
Wildhagen, Rudolph C. (See Main and Wildhagen.)						
Wildsmith, Edward T., Birmingham, Ala. Eaves-trough hanger						
William Schollhorn Company. (See Bernard, William A., assignor.)	849,245	Apr. 2	1454	296	127	1937
Williamson, William. (See Clough, Edwin S., assignor.)	848,949	Apr. 2	689	138	127	1783
Wilmore, John T., Denver, Colo. Conveyer	849,179	Apr. 2	1145	232	127	1881
Wilson, Thomas G., Center Hall, Pa. Combined curtain-pole and shade support	849,180	Apr. 2	1147	232	127	1882
Wilson, William, Oakland, Cal. Bottle	848,713	Apr. 2	188	39	127	1636
Wilson, William G., Wheatland, Cal. Shears-sharpener						
Winkley, Braxton R., Lynn, Mass. Sole-leveling machine	849,305	Apr. 2	1371	276	127	1937
Winquist, Victor, assignor of one-half to A. Turnstrom, Rockford, and L. Stockhus, Freeport, Ill. Match-holder and lighter						
Winslow, Sidney W., trustee. (See Rogers, Andrew W., assignor.)	848,796	Apr. 2	365	72	127	1682
Winterbourn, William H., San Antonio, Tex. Illusion-ear	848,714	Apr. 2	191	39	127	1637
Wise, Charles E., Brooklyn, N. Y. Book-cover	849,082	Apr. 2	956	196	127	1832
Wolff, Louis E., assignor of two-fifths to H. B. Heywood, Indianapolis, Ind. Composite railway-tie	849,306	Apr. 2	1378	276	127	1937
Wood, James J., Fort Wayne, Ind. Coin-operated mechanism						
Woodall, Charles J., *et al.* (See Nelson, Emil A., assignor.)						
Wright, Robert C. (See Critzer and Wright.)	848,950	Apr. 2	690	139	127	1784
Wyler, Heinrich, Landbrecht, Germany. Pipe-bracket	849,181	Apr. 2	1149	232	127	1882
Yoerg, Leon M., South Hadley Falls, Mass. Machine for surface-finishing paper	849,307	Apr. 2	1375	277	127	1936
Young, George F., South Kortright, N. Y. Wagon-brake	849,094	Apr. 2	966	196	127	1833
Zahn, Oswald F., Los Angeles, Cal. Self-righting roller-bearing	849,308	Apr. 2	1476	277	127	1938
Zembsch, Lawrence, assignor to American Pulley Company, Philadelphia, Pa. Pulley-frame	848,715	Apr. 2	193	40	127	1637
Zeus, Peter J. (See Sarvelis and Zeus.)	849,088	Apr. 2	838	172	127	1801
Zeller, Edward H., Cleveland, Ohio. Eyeglass-fastener						
Zimmerman, Martin, Rochester, N. Y. Fishing-tackle	849,309	Apr. 2	1378	277-8	127	1938
Zimmerman, Solon R., Willow Grove, assignor to American Pulley Company, Philadelphia, Pa. Wheel	848,716	Apr. 2	192	40	127	1637
Zuber, William W., Osnaburg, Ohio. Mine-door						

DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Bilak, Stephen, Chicago, Ill. Picture-frame	26,510	Apr. 2	127	1004
Burke, Richard R. (See O'Neill and Burke.)				
Hall, John H., Jr., Portsmouth, Va. Watch-fob	26,501	Apr. 2	127	998
Kip, Frederic E., Montclair, N. J. Pile fabric	26,508	Apr. 2	127	1004
Kip, Frederic E., Montclair, N. J. Pile fabric	26,509	Apr. 2	127	1004
Kopetzkny, Alexander H., Jersey City, N. J. Badge	26,510	Apr. 2	127	1005
Morgan, George A., New York, N. Y. Ribbon	26,507	Apr. 2	127	1004
Murr, Richard, Chicago, Ill. Lamp-stand	26,503	Apr. 2	127	1004
O'Neill, Norris L., Oakland, Cal., and R. R. Burke, Denver, Colo. Bottle	26,502	Apr. 2	127	1005
Parcutand, Adolphe, New York, N. Y. Vessel for table use	26,505	Apr. 2	127	1004
Parcutand, Adolphe, New York, N. Y. Vessel for table use	26,506	Apr. 2	127	1004
Wright, Elizabeth W., Philadelphia, Pa. Puzzle-box	26,509	Apr. 2	127	1005

TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Actien-Gesellschaft für Anilin-Fabrikation, Berlin, Germany. Films, plates, and photographic papers	61,677	Apr. 2	127	1005
Albert Dickinson Company, Chicago, Ill. Grass-seeds, grain-seeds, timothy-seed, and clovers-seed	61,692	Apr. 2	127	1005
Ambrosia Chocolate Company, Milwaukee, Wis. Cocoa, chocolate, and chocolate candy	61,662	Apr. 2	127	1005
American Antiformin Co., New York, N. Y. Cleansing and disinfecting preparation	61,698	Apr. 2	127	1005
American Druggists Syndicate, New York, N. Y. Remedies for certain diseases	61,722	Apr. 2	127	1007
Baker & Boss Co., J. R., Kendallville, Ind. Eaves-trough hangers	61,630	Apr. 2	127	1005
Barrett Manufacturing Company, New York, N. Y. Roofing and sheathing felt	61,657	Apr. 2	127	1005
Bauer & Black, Chicago, Ill. Corn and bunion plasters	61,694	Apr. 2	127	1006
Baxter & Bro., H. C., Brunswick, Me. Canned lobster	61,696	Apr. 2	127	1007
Baxter & Bro., H. C., Brunswick, Me. Canned lobster	61,726	Apr. 2	127	1007
Beiersdorf & Co., P., Hamburg, Germany. Tooth-paste and tooth-powder	61,675	Apr. 2	127	1005
Black Hawk Coffee & Spice Company, Waterloo, Iowa. Spices	61,657	Apr. 2	127	1005
Black Hawk Coffee & Spice Company, Waterloo, Iowa. Baking-powder	61,724	Apr. 2	127	1007
Bourne, Philip, New York, N. Y. Certain medicines	61,725	Apr. 2	127	1007
Bradley, Allen M., Marion, Ind. Flavoring-syrups	61,726	Apr. 2	127	1007
Braun & Fitts, Inc., Chicago, Ill. Prepared animal fats for baking and cooking	61,660	Apr. 2	127	1005
Breitenbach, Max J., New York, N. Y. Certain medicine	61,727	Apr. 2	127	1007
Bridgeport Crucible Co., Bridgeport, Conn. Stove-clay	61,640	Apr. 2	127	1005
British Pluviusiv Company, Limited, Manchester, England. Imitation leather	61,696	Apr. 2	127	1006
Brumer Bros., Clinton, Iowa. Solution for soldering and cleansing metals	61,641	Apr. 2	127	1005
Bueginisiem & Jacobsen, New York, N. Y. Violin, mandolin, guitar, and banjo strings	61,670	Apr. 2	127	1006
Burbank, Susie P., Boston, Mass. Hair-tonic, talcum powder, tooth-powder, and skin food	61,697	Apr. 2	127	1007
Burk, William C., Philadelphia, Pa. Medicines for the treatment and regulation of the stomach, bowels, liver, and kidneys	61,693	Apr. 2	127	1007
Campbell Printing Press & Manufacturing Co., New York, N. Y. Apparatus for making stereotype printing-plates	61,726	Apr. 2	127	1007
Casey Bros., Scranton, Pa. Whisky	61,660	Apr. 2	127	1007
Casteing, Anadée, New York, N. Y. Javelle water	61,660	Apr. 2	127	1005
Celinlar Clothing Company, Limited, London, England. Certain clothing	61,664	Apr. 2	127	1005
Chemische Fabrik Grieshem-Elektron, Frankfort-on-the-Main, Germany. Detergent cleaning preparation	61,668	Apr. 2	127	1005
Citizens' Wholesale Supply Company, Columbus, Ohio. Wood and furniture polishes	61,669	Apr. 2	127	1005
Citizens' Wholesale Supply Company, Columbus, Ohio. Metal, stove, silver, and glass polishes	61,648	Apr. 2	127	1005
Coast Manufacturing & Supply Co., Berkeley, Cal. Fuses	61,644	Apr. 2	127	1005
Coast Manufacturing & Supply Co., Berkeley, Cal. Fuses	61,644	Apr. 2	127	1005
Coates, Mary D., 2nd, Chester, Pa. Toy-holding bats, hoops, or girdles	61,742	Apr. 2	127	1005
Collver Tours Company, Boston, Mass. Books and pamphlets of travel	61,665	Apr. 2	127	1005
Copeland & Co., Charles C., New York, N. Y. Certain cotton piece goods	61,700	Apr. 2	127	1007
Corona Supply Co., Rochester, N. Y. Carbon paper and type-writer ribbons	61,727	Apr. 2	127	1007
Cravenette Company, Ltd., Bradford, England. Cotton, woolen, worsted, silk, and hair piece goods	61,701	Apr. 2	127	1007
Dow, Matthew J., Muskegon, Mich. Medicinal preparation for internal and external use	61,709	Apr. 2	127	1005
Downing-Taylor Co., Springfield, Mass. Canned vegetables, fruits, and berries	61,645	Apr. 2	127	1007
Dr. Miles Medical Company, Elkhart, Ind. Remedies for certain diseases	61,728	Apr. 2	127	1007
Dreyer, Otto F., New York, N. Y. 'Maids', waitresses', and nurses' caps	61,709	Apr. 2	127	1007
Du Perow, Mortimer, Washington, D. C. Compound for use upon the commutators, collector-rings, &c., of electrical machinery	61,729	Apr. 2	127	1007
Dunton and Company, M. W., Providence, R. I. Soldering-flux	61,751	Apr. 2	127	1009
Elmira Shirt Manufacturing Company, Elmira, N. Y. Men's cotton and woolen outershirts	61,709	Apr. 2	127	1005
Exner, Emil J. E., Berlin, Germany. Bitters	61,688	Apr. 2	127	1005
F. P. Kirkendall & Co., Omaha, Nebr. Leather boots, shoes, slippers, and sandals	61,707	Apr. 2	127	1007
Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Substitutes for iodids	61,709	Apr. 2	127	1005
Farina gegenüber dem Jülichs-Platz, Johann M., Cologne, Germany. Eau-de-cologne	61,694	Apr. 2	127	1005
Fehren, Johannes von, Kiel Germany. Bitters	61,730	Apr. 2	127	1005
Fiedler, George J. C., Chicago, Ill. Meat-polish	61,646	Apr. 2	127	1005
Fonzo, Charles A., New York, N. Y. Dental alloys and dental instruments made therefrom	61,667	Apr. 2	127	1005
Fox, Chas. K., Haverhill, Mass. Leather boots and shoes	61,743	Apr. 2	127	1005
Fox, Chas. K., Haverhill, Mass. Leather boots and shoes	61,743	Apr. 2	127	1005
Freed & Pelton, New York, N. Y. Clothes and breeches	61,739	Apr. 2	127	1007
Fuller, Philip, Elgin, Ill. Whisky	61,721	Apr. 2	127	1005
Fuller, Frank, New York, N. Y. Bread	61,646	Apr. 2	127	1005
Fuller, Frank, New York, N. Y. Bread	61,646	Apr. 2	127	1005
Gary & Co., Thos. H., New York, N. Y. Hair-nets	61,751	Apr. 2	127	1009

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Geo. Benz & Sons, St. Paul, Minn. Whisky	61,752	Apr. 2	127	1009
George Frost Company, Boston, Mass. Hose-supporters	61,772	Apr. 2	127	1009
Goodman Bros., Worcester and Worcester, Mass. Remedies for certain diseases	61,722	Apr. 2	127	1007
Gray, Curran & Co., Washington, D. C. Knitted hosiery, knitted undershirts, and drawers	61,753	Apr. 2	127	1009
Guyot, Sidney C., New York, N. Y. Silk ribbon, silk piece goods, and silk fringes	61,754	Apr. 2	127	1009
Hall & Ruckel, New York, N. Y. Antiseptic toilet soap	61,778	Apr. 2	127	1007
Hallman, Edward, Lynn, Mass. Remedy for colds and throat and lung trouble	61,703	Apr. 2	127	1007
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Piles and rasps	61,704	Apr. 2	127	1007
Herrington, Thomas, Philadelphia, Pa. Insecticide	61,774	Apr. 2	127	1009
Hollingshead, Richard M., Camden, N. J. Soap	61 621	Apr. 2	127	1005
Holmquist's Compositions Company, Limited, Newcastle-upon-Tyne, England. Anticorrosive and antifouling paints, mixed paint, and enamels	61,705	Apr. 2	127	1007
Horowitz, Arthur, Berlin, Germany. Antiseptics	61,775	Apr. 2	127	1009
Kapkel, Clarence, Indianapolis, Ind. Hair-tonics and dandruff cures	61,665	Apr. 2	127	1005
Indianapolis Brewing Company, Indianapolis, Ind. Beer	61,776	Apr. 2	127	1009
Isaacs & Co., S. New York, N. Y. Glue	61,662	Apr. 2	127	1005
Irvine, Dietz & Metzger Co., Philadelphia, Pa. Wilton carpets and rugs	61,755	Apr. 2	127	1009
Jacob & Sons, H., New York, N. Y. Leggings	61,732	Apr. 2	127	1009
Jaeger Bros. Co., Dubuque, Iowa. Whisky	61,640	Apr. 2	127	1005
Jaeger Miniature Lamp Manufacturing Company, New York, N. Y. Decorative electric-lighting outfits	61,666	Apr. 2	127	1005
Jamot W. Foster Co., Bath, N. H. Ointment for piles, cuts, burns, and all eruptions of the skin	61,667	Apr. 2	127	1005
Jayne & Son, Dr. D., Philadelphia, Pa. Certain medicinal compounds	61,661	Apr. 2	127	1005
Jayne & Son, Dr. D., Philadelphia, Pa. Remedy for liver complaints	61,734	Apr. 2	127	1007
John Wyeth and Brother, Incorporated, Philadelphia, Pa. Medicinal pastes and ointments	61,777	Apr. 2	127	1009
Johnson & Johnson, New Brunswick, N. J. Disinfectants	61,706	Apr. 2	127	1007
Kalabba, Baptist, Buffalo, N. Y. Eye-salves	61,707	Apr. 2	127	1007
Kaline Company, Nashville, Tenn. Certain medical compound	61,652	Apr. 2	127	1005
Kayser, Albert J., Joplin, Mo. Grease-eradicator	61,778	Apr. 2	127	1009
Kohn Distilling Co., Montgomery, Ala. Whisky	61,770	Apr. 2	127	1009
Lanza Silk Company, Hazleton, Pa. Silk fabrics	61,766	Apr. 2	127	1009
Larwill, Theodore W., Henderson, Tenn. Medicinal preparation for coughs, colds, and croup	61,666	Apr. 2	127	1005
Lawson, Esther, Moline, Ill. Salve for the cure of eczema and kindred diseases	61,708	Apr. 2	127	1007
Lawson, George H., Hartford, Conn. Remedies for the cure of blood, liver, and kidney diseases	61,669	Apr. 2	127	1005
Leadite Company of America, Philadelphia, Pa. Cement compounds for making pipe-joints	61,632	Apr. 2	127	1005
Lever Brothers Company, Cambridge, Mass. Soap	61,735	Apr. 2	127	1007
Liebermann, Joseph M., New York, N. Y. Restorative and nutritive tonic	61,634	Apr. 2	127	1005
Lilly Varnish Company, Indianapolis, Ind. Thinners or solvents	61,709	Apr. 2	127	1007
Lipman, Albert, Cincinnati, Ohio. Whisky	61,780	Apr. 2	127	1009
M. Hyman Confectionery & Catering Co., Denver, Colo. Taffy or toffee	61,782	Apr. 2	127	1009
Macbeth-Evans Glass Company, Pittsburg, Pa. Lamp glasses and globes	61,726	Apr. 2	127	1007
Manganese Bronze & Brass Co. Ld., London, England. Alloy of metals used for bearings and other purposes	61,710	Apr. 2	127	1007
Marden, Orth & Hastings, Boston, Mass. Certain extracts	61,753	Apr. 2	127	1009
McRae and Keeler, Attleboro, Mass. Certain jewelry	61,650	Apr. 2	127	1006
Meridional Cheese and Oil Co., New York, N. Y. Olive-oil	61,636	Apr. 2	127	1005
Mexican Amole Soap Co., Peoria, Ill. Soap	61,784	Apr. 2	127	1009
Mist Rheumatic Company, (not incorporated,) Chicago, Ill. Cure for rheumatism, pleurisy, sprains, and bruises	61,670	Apr. 2	127	1006
Mohawk Condensed Milk Co., Rochester, N. Y. Evaporated milk, condensed milk, evaporated cream, and condensed cream	61,785	Apr. 2	127	1009
Monheimer, Lee, Chicago, Ill. Whisky	61,711	Apr. 2	127	1007
Morris, Leonard D., Chicago, Ill. Pipe-organs	61,671	Apr. 2	127	1005
Mountain Iron Mineral Co., Spartanburg, S. C. Medicinal compound	61,680	Apr. 2	127	1006
Müller, Albert, New York, N. Y. Accumulators	61,786	Apr. 2	127	1009
N. Erlanger, Blumgart & Co., New York, N. Y. Velveteens	61,787	Apr. 2	127	1009
Nous, Hendin & Co., New York, N. Y. Damask table-cloths, napkins, and sowels	61,788	Apr. 2	127	1009
No. Lubec Mfg. & Canning Co., North Lubec, Me. Canned sardines	61,712	Apr. 2	127	1007
Northwestern Consolidated Milling Company, Minneapolis, Minn. Wheat-flour	61,713	Apr. 2	127	1007
Ohio Injector Company, Wadsworth, Ohio. Injectors for stationary and locomotive steam-boilers	61,651	Apr. 2	127	1005
Olno Eliament Co., Boston, Mass. Liniments	61,686	Apr. 2	127	1006
Owens, T. Lloyd, Savannah, Ga. Coffee	61,755	Apr. 2	127	1005
Pepsin Syrup Co., Monticello, Ill. Remedy for diseases of the stomach and towels	61,737	Apr. 2	127	1008
Pitman-Myers Company, Indianapolis, Ind. Ointments				
Pittsburgh Filter Mfg. Co., Pittsburg, Pa. Apparatus for purifying water	61,714	Apr. 2	127	1007
Plato & Clark Co., New York, N. Y. Sweaters, cardigan jackets, knitted bathing-suits, and stockings	61,738	Apr. 2	127	1008
Plume & Atwood Mfg. Co., Waterbury, Conn., and New York, N. Y. Incandescent gas-burners	61,715	Apr. 2	127	1007
Plurion-Feuerlöscher-Gesellschaft mit beschränkter Haftung, Hamburg, Germany. Fire-extinguishing compounds	61,667	Apr. 2	127	1005
Pneumatic Machine Company, Syracuse, N. Y. Coal-cutting machines	61,673	Apr. 2	127	1005
Porosin Co., Pittsburg, Pa. Preparations for purifying and softening water	61,673	Apr. 2	127	1005
Pratt, Daniel S., Boston, Mass. Fine and cross-bred grades of wool	61,682	Apr. 2	127	1006
Putnam-Mosher Company, Cincinnati, Ohio. Cotton carpet-warp and cotton twine	61,720	Apr. 2	127	1007
Radway & Company, New York, N. Y. Remedy for certain diseases	61,739	Apr. 2	127	1009
Radway & Company, New York, N. Y. Pills	61,666	Apr. 2	127	1005
Rendelmann, Frederick C., Pittsburg, Pa. Whisky	61,739	Apr. 2	127	1009
Rhinestreen, Bettman, Johnson & Co., Cincinnati, Ohio. Tonic	61,740	Apr. 2	127	1009
Richmond Cedar Works, Richmond, Va. Washing-machines	61,790	Apr. 2	127	1009
Rosenbaum's Sons, Morris, New York, N. Y. Broadcloths	61,653	Apr. 2	127	1005
Rosenstein Brothers Inc., New York, N. Y. Preserved fish	61,674	Apr. 2	127	1005
Royal Typewriter Co., Hoboken, N. J. Type-writing machines	61,741	Apr. 2	127	1009
Rychet, Martin F., Buffalo, N. Y. Printing and lithographing inks	61,716	Apr. 2	127	1007
Sachman, Charles, Jamaica, N. Y. Toy figures	61,654	Apr. 2	127	1005
Sans, Jean B., Brussels, Belgium. Solution for repairing pneumatic tires	61,699	Apr. 2	127	1006
Schreuffert, Edward F., Springfield, Ohio. Cigars	61,717	Apr. 2	127	1007
Shoyer & Co., D. W., New York, N. Y. Hammocks	61,791	Apr. 2	127	1009
Society of Chemical Industry in Basle, Basel, Switzerland. Certain medicines	61,742	Apr. 2	127	1009
Spratley, Henry C., Baltimore, Md. Rat, vermin, and insect destroyer or exterminator	61,750	Apr. 2	127	1009
Spinal Company, Pottsville, Pa. Remedy for whooping-cough, used externally	61,656	Apr. 2	127	1005
St. Louis Dust Setting Co., St. Louis, Mo. Preparation to absorb dust when sweeping				

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Stearns Electric Paste Co., Buffalo, N. Y. Rat and roach exterminator	61,665	Apr. 2	127	1000
Sterling Electric Co., La Fayette, Ind. Magazines	61,743	Apr. 2	127	1000
Stuyvesant Company, New York, N. Y. Illustrated weekly journal	61,713	Apr. 2	127	1000
Sunset Distilling Co., Chicago, Ill. Whisky	61,710	Apr. 2	127	1000
Technical Supply Company, Scranton, Pa. Blue-printed paper	61,675	Apr. 2	127	1000
Thos. Moore Distilling Co., McKeesport, Pa. Rye whisky	61,701	Apr. 2	127	1000
Tilly, C. De Koning, Haarlem, Netherlands. Oil for medicinal purposes and applications	61,792	Apr. 2	127	1000
Vincent, Hilaire, Manchester, N. H. Internal remedy for purifying the blood and preventing cholera	61,690	Apr. 2	127	1000
W. and F. Walker Limited, Liverpool, England. Disinfectants, air-purifiers, and deodorizers	61,676	Apr. 2	127	1000
W. W. Lawrence & Company, Pittsburg, Pa. White lead	61,636	Apr. 2	127	1000
Wallace & Co., New York, N. Y. Candy	61,660	Apr. 2	127	1000
Walter Medicine Company, Peru, Ind. Certain medicines	61,702	Apr. 2	127	1000
Walther Manufacturing Co., New York, N. Y. Certain medical preparations	61,703	Apr. 2	127	1000
Ward, Elmo D., Paragould, Ark. Soap	61,657	Apr. 2	127	1000
Washburn-Crosby Company, Minneapolis, Minn. Wheat-flour	61,763	Apr. 2	127	1000
Watchman & Reynolds, Baltimore, Md. Antiseptic powder compound	61,744	Apr. 2	127	1000
White Sewing Machine Co., Cleveland, Ohio. Sewing-machines, covers, tables, stands, and attachments	61,720	Apr. 2	127	1000
William Edge & Sons, Limited, Bolton, England. Dyes	61,691	Apr. 2	127	1000
William Edge & Sons, Limited, Bolton, England. Tinting-color for bleachers' use	61,721	Apr. 2	127	1000
William H. Lee & Co., St. Louis, Mo. Whisky	61,704	Apr. 2	127	1000
William L. Barrell Co., New York, N. Y. Waterproofed cotton piece goods	61,764	Apr. 2	127	1000
William L. Barrell Co., New York, N. Y. Waterproofed cotton piece goods	61,765	Apr. 2	127	1000
Winter, Basilina, Rock Island, Ill. Bitters	61,705	Apr. 2	127	1000
Wisconsin Condensed Milk Co., Burlington, Wis., and New York, N. Y. Condensed milk	61,661	Apr. 2	127	1000
Wisconsin Condensed Milk Co., Burlington, Wis., and New York, N. Y. Evaporated cream	61,745	Apr. 2	127	1000
Wisconsin Condensed Milk Co., Burlington, Wis., and New York, N. Y. Condensed milk	61,706	Apr. 2	127	1000
X-Ray Varnish Company, Chicago, Ill. Varnishes and stains	61,638	Apr. 2	127	1000
Zolll, Walter J., Syracuse, N. Y. Washing-machines	61,767	Apr. 2	127	1000

LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Armour & Company, Chicago, Ill. "Transparent Complexion Glycerine Soap." (For Soap)	13,436	Apr. 2	127	1000
Armour & Company, Chicago, Ill. "Savon Mucha Lilac." (For Soap)	13,437	Apr. 2	127	1000
Armour & Company, Chicago, Ill. "Arbor Series Heliotrope." (For Soap)	13,438	Apr. 2	127	1000
Armour & Company, Chicago, Ill. "Savon Mucha Sandalwood." (For Soap)	13,439	Apr. 2	127	1000
Armour & Company, Chicago, Ill. "Sylvan Rose." (For Soap)	13,440	Apr. 2	127	1000
Armour & Company, Chicago, Ill. "Sylvan Lilac." (For Soap)	13,441	Apr. 2	127	1000
Armour & Company, Chicago, Ill. "Arcadia Lilac." (For Soap)	13,442	Apr. 2	127	1000
Armour & Company, Chicago, Ill. "Sylvan Carnation." (For Soap)	13,443	Apr. 2	127	1000
Armour & Company, Chicago, Ill. "Arbor Series Rose." (For Soap)	13,444	Apr. 2	127	1000
Armour & Company, Chicago, Ill. "Arcadia Heliotrope." (For Soap)	13,445	Apr. 2	127	1000
Armour & Company, Chicago, Ill. "Savon Mucha Violet." (For Soap)	13,446	Apr. 2	127	1000
Armour & Company, Chicago, Ill. "Arcadia Violet." (For Soap)	13,447	Apr. 2	127	1000
Armour & Company, Chicago, Ill. "Sylvan Sandalwood." (For Soap)	13,448	Apr. 2	127	1000
Armour & Company, Chicago, Ill. "Arbor Series Violet." (For Soap)	13,449	Apr. 2	127	1000
Armour & Company, Chicago, Ill. "Savon Mucha Heliotrope." (For Soap)	13,450	Apr. 2	127	1000
Armour & Company, Chicago, Ill. "Arbor Series Lilac." (For Soap)	13,451	Apr. 2	127	1000
Crocker, Alvin E., New York, N. Y. "Asparagus Smyrna Fig Coffee." (For Coffee)	13,426	Apr. 2	127	1000
Frickel, Harry, Philadelphia, Pa. "Frickel Nockem-All." (For Cleaning Compound)	13,425	Apr. 2	127	1000
Koelle-Mueller Label Co., St. Louis, Mo. "St Perkins." (For Cigars)	13,427	Apr. 2	127	1000
Lydia E. Pinkham Medicine Co., Lynn, Mass. "Lydia E. Pinkham's Vegetable Compound." (For Medicine)	13,428	Apr. 2	127	1000
Lydia E. Pinkham Medicine Co., Lynn, Mass. "Lydia E. Pinkham's Vegetable Compound." (For Medicine)	13,429	Apr. 2	127	1000
Patton Milling Co., Catlettsburg, Ky. "Union Maid." (For Flour)	13,430	Apr. 2	127	1000
Plymouth Rock Gelatine Co., Boston and Brighton, Mass. "Plymouth Rock Coffee Jelly Compound." (For Coffee Jelly Compound)	13,423	Apr. 2	127	1000
Roberts, M. J., Columbus, Ohio. "Rodigo." (For Cleaning Compound)	13,424	Apr. 2	127	1000
Smith, Bertha, New York, N. Y. "Extyrpo." (For a Depilatory)	13,431	Apr. 2	127	1000
South Jersey Underwear Company, Philadelphia, Pa. "Night Gowns, S. J. U. Co." (For Night-Gowns)	13,422	Apr. 2	127	1000
Titus, Lincoln G., Columbus, Ohio. "Butmorip." (For Trousers)	13,433	Apr. 2	127	1000

PRINTS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Cream of Wheat Company, Minneapolis, Minn. "The Alarm Clock." (For a Cereal Breakfast Food)	1,943	Apr. 2	127	1000
Paris Medicine Company, St. Louis, Mo. "The Household Surgeon." (For Antiseptic Healing Oil)	1,942	Apr. 2	127	1000

PRINTS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
United States Playing Card Co., Cincinnati, Ohio. "Lilies of the Valley and Sundown Backs, Congress Playing Cards." (For Playing-Cards)	1,943	Apr. 2	127	1000
	1,944	Apr. 2	127	1000
Washburn Crosby Company, Minneapolis, Minn. "Hello! Hello!" (For Flour)	1,945	Apr. 2	127	1000
Washburn Crosby Company, Minneapolis, Minn. "Some People Fuss and Fume and Fret Over Bread Making." (For Flour)	1,946	Apr. 2	127	1000
Washburn Crosby Company, Minneapolis, Minn. "If You Were a Miller." (For Flour)	1,947	Apr. 2	127	1000
Washburn Crosby Company, Minneapolis, Minn. "Handlin, the Flour Question Right." (For Flour)				

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Albion Manufacturing Company, New York, N. Y. Cleansing preparation for white canvas, buckskin, &c.	20,895	Apr. 2	127	1000
Alfred Peats Co., New York, N. Y. Wall-paper	10,745	Apr. 2	127	1000
American Gostze-Gasket & Packing Co., New York, N. Y. Machinery packing	26,732	Apr. 2	127	1002
American Milk Product Co., Chicago, Ill. Evaporated milk	24,954	Apr. 2	127	1975
American Washboard Company, Cleveland, Ohio. Washboards	21,569-7	Apr. 2	127	1000
American Washboard Company, Cleveland, Ohio. Washboards	21,570-1	Apr. 2	127	1000
American Washboard Company, Cleveland, Ohio. Washboards	21,573-4	Apr. 2	127	1000
Applegate, Hamilton C., Louisville, Ky. Whisky	25,507	Apr. 2	127	1976
Arguimbau, Daniel V., New York, N. Y. Licorice paste	25,314	Apr. 2	127	1977
Bain, John B., New Concord, Ohio. Stogies	25,317	Apr. 2	127	1976
Barrett Manufacturing Company, New York, N. Y. Sheathing-paper	25,714	Apr. 2	127	1981
Bay View Wine Co., Sandusky, Ohio. Whisky	25,545	Apr. 2	127	1976
Benedictus, Weill & Company, New York, N. Y. Crape	22,331	Apr. 2	127	1969
Berry Medical Company, Stevens Point, Wis. Medicine for the cure of rupture	24,084	Apr. 2	127	1972
Black Band Coal & Coke Co., Springhill, W. Va., and Cincinnati, Ohio. Coal	25,323	Apr. 2	127	1976
Bon-Bon Company, New York, N. Y. Chewing-gum	25,794	Apr. 2	127	1982
Buffalo Forge Company, Buffalo, N. Y. Metal drilling, punching, and shearing machines	23,814	Apr. 2	127	1973
Burdick, Justin H., Milton, Wis. Lotion	25,701	Apr. 2	127	1981
Business Man's Publishing Company, Limited, Detroit, Mich. Magazines	25,263	Apr. 2	127	1977
Butler-Butler Incorporated, New York, N. Y. Cigars	25,402-4	Apr. 2	127	1978
Cevasco, Emanuel J., San Francisco, Cal. Newspaper	25,520	Apr. 2	127	1986
Charter Oak Stove and Range Company, St. Louis, Mo. Stoves and furnaces and parts thereof	6,364	Apr. 2	127	1979
Chicago Bailey Company, Chicago, Ill. Metallic packing	25,808	Apr. 2	127	1987
Childs, Lysander D., Chester, S. C. Carbonated water	18,016	Apr. 2	127	1983
China & Japan Trading Company, Limited, New York, N. Y. Sheetings, shirtings, drills, &c.	25,760-80	Apr. 2	127	1980
Citizens' Wholesale Supply Co., Columbus, Ohio. Cream of tartar	25,671	Apr. 2	127	1980
Citizens' Wholesale Supply Company, Columbus, Ohio. Emulsions of cod-liver oil	25,672	Apr. 2	127	1971
Cloflin Chemical Company, New York, N. Y. Wheat-flour	23,532	Apr. 2	127	1975
Concordia Milling Company, Concordia, Kans. Pancake-flour	25,023	Apr. 2	127	1976
Concordia Milling Company, Concordia, Kans. Photographic papers	25,024	Apr. 2	127	1980
Cross Photo Paper Co., Rochester, N. Y. Mangles, ironers, washers, clothes-racks, &c.	21,232	Apr. 2	127	1976
Domestic Manufacturing Co., Racine, Wis. Boots, shoes, and slippers	25,510	Apr. 2	127	1977
Donovan & Co., James, Everett, Mass. Harrows, clod-crushers, and levelers	25,287	Apr. 2	127	1981
Duane H. Nash Inc., Millington, N. J. Brattice cloth	25,728-9	Apr. 2	127	1975
Edward Maclean & Co. Limited, Glasgow, Scotland. Storage batteries or accumulators	24,938	Apr. 2	127	1968
Electric Storage Battery Company, Philadelphia, Pa. Whisky	20,606	Apr. 2	127	1977
Eminence Distillery Co., St. Paul, Minn. Electric testing apparatus	25,241	Apr. 2	127	1967
Evershed & Vignoles Ltd., London, England. Spectacle and eyeglass lenses	17,497	Apr. 2	127	1977
Failing Optical Co., Buffalo, N. Y. Specific bactericide	20,092	Apr. 2	127	1966
Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Antirheumatic and analgesic	24,986	Apr. 2	127	1974
Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Straw pipes or tubes	17,043	Apr. 2	127	1967
Fauconpert, Xavier G. B. de, Paris, France. Coffee	23,450	Apr. 2	127	1971
Feahney, Grace B., New Orleans, La.	25,222	Apr. 2	127	1976
Ferro Machine and Foundry Co., Cleveland, Ohio. Internal-combustion engines and parts thereof. (See Holmes, Edw. L., assignor.)	25,805	Apr. 2	127	1983
Ferrolite Company. Whisky, gin, and brandy	24,727	Apr. 2	127	1973
Figge-Doyle Co., Milwaukee, Wis. Chewing-gum	25,708	Apr. 2	127	1981
Fitch, Asa M., Indianapolis, Ind. Remedies for the stomach, kidneys, and liver	23,104	Apr. 2	127	1970
Fortier, Amedee, Waterville, Me. White lead and zinc-white	22,105	Apr. 2	127	1971
French & Co., Samuel H., Philadelphia, Pa. Calcined and casting-plasters	23,106	Apr. 2	127	1973
French & Co., Samuel H., Philadelphia, Pa. White lead and zinc-white	22,828	Apr. 2	127	1970
French & Co., Samuel H., Philadelphia, Pa. Wheat-flour	20,763	Apr. 2	127	1968
Gallatin Valley Milling Company, Belgrade, Mont. Pickles and vinegar	24,715	Apr. 2	127	1973
Gehlert, Gustav B., Benton Harbor, Mich. Enameled steelware	24,809	Apr. 2	127	1973
Geo. Borgfeldt & Co., New York, N. Y. Wheat-flour	24,886	Apr. 2	127	1978
George Urban Milling Company, Buffalo, N. Y. Card game	25,696	Apr. 2	127	1980
Gould, Harry J., Chicago, Ill. Condensed and evaporated milk	25,697	Apr. 2	127	1981
Great Atlantic & Pacific Tea Company, New York, N. Y. Canned vegetables and spices and butter	25,699	Apr. 2	127	1980
Great Atlantic & Pacific Tea Company, New York, N. Y. Soaps	25,661	Apr. 2	127	1976
Great Atlantic & Pacific Tea Company, Davenport, Iowa. Washing-machines	25,211	Apr. 2	127	1977
H. F. Brammer Manufacturing Company, New York, N. Y. Type-writer ribbons and carbon-papers	25,342	Apr. 2	127	1972
H. M. Stearns Co., New York, N. Y. Leather boots and shoes	24,142	Apr. 2	127	1977
Hand Made Boot & Shoe Co., Chippewa Falls, Wis. Medical preparation for diseases of infants and children	25,688	Apr. 2	127	1980
Hanson, George, Independence, Wis. (See Pollock, Augustus.)				
Haslett, Howard, administrator. Finger-rings				
Hatats Bros., Buffalo, N. Y.				

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Hall & Hager Co., New York, N. Y. Sheet-music	26,220	Apr. 2	127	1957
Heymann, William, New York, N. Y. Collars made from celluloid, &c	24,726	Apr. 2	127	1957
Hills Bros., San Francisco, Cal. Spices and flavoring extracts	24,554	Apr. 2	127	1973
Hills Bros., San Francisco, Cal. Tea	24,555	Apr. 2	127	1973
Holmes, Edw. L., assignor to Perrolite Company, San Francisco, Cal. Pipes, spans, conduits, artificial stones, &c	17,607	Apr. 2	127	1957
Holmstedt's Compositions Company, Limited, Newcastle-on-Tyne, England. Aluminium paint	26,047	Apr. 2	127	1958
Hoofdene Medicine Co., Baltimore, Md. Remedy for coughs, colds, measles, &c	11,601	Apr. 2	127	1958
Hunstock, Robert H., St. Louis, Mo. Remedy for headache and neuralgia	9,261	Apr. 2	127	1958
Imperial Bit & Snap Co., Racine, Wis. Snap-hooks, combined snaps and slides, &c	26,070	Apr. 2	127	1957
Interlocking Stone Co., Oakland, Cal. Building blocks and tiles	24,551	Apr. 2	127	1973
Irwin Auger Bit Co., Wilmington, Ohio. Bits and augers	24,620	Apr. 2	127	1958
J. A. Engel & Co., East Peoria, Ill. Combined wagon-jack and grain-elevator	26,228	Apr. 2	127	1957
J. B. Pearson Company, Boston, Mass. Children's play-suits	26,556-4	Apr. 2	127	1973
Jewelers Circular Publishing Co., New York, N. Y. Periodicals	23,778	Apr. 2	127	1971
John C. Lindsay Co., New York, N. Y. Preparation for treatment of diseases of the nose and throat	26,201	Apr. 2	127	1958
Joplin Overall Company, Joplin, Mo. Overalls, pants, and coats	22,856-6	Apr. 2	127	1970
Joseph Dixon Crucible Company, Jersey City, N. J. Paint	25,721	Apr. 2	127	1961
Joseph Dixon Crucible Company, Jersey City, N. J. Graphite	25,723	Apr. 2	127	1961
Judd, William M., Marion, Mo. Eye-ointment	25,163	Apr. 2	127	1976
Kampfe Bros., New York, N. Y. Razor-strops	1,573	Apr. 2	127	1965
Keatley, John H., Minneapolis, Minn. Cornmeal	25,690	Apr. 2	127	1961
Keatley, John H., Minneapolis, Minn. Wheat, Graham, and rye flour	25,700	Apr. 2	127	1961
Kehler Flour Mills Company, St. Louis, Mo.; Kansas City, Kans., and East St. Louis, Ill. Wheat-flour	24,922	Apr. 2	127	1973
Kenton Baking Powder Company, Cincinnati, Ohio. Baking-powder	25,534	Apr. 2	127	1973
Krauss, George C., Philadelphia, Pa. Remedies for coughs, colds, anæmia, dyspepsia, &c	24,570	Apr. 2	127	1972
Kuhnl, Joseph G., Toledo, Ohio. Medicine used as a laxative, tonic, &c	25,489	Apr. 2	127	1970
Labrot & Graham, Frankfort, Ky. Whisky	3,893	Apr. 2	127	1964
Lay and Balcom Manufacturing Co., Port Allegany, Pa. Butter-dishes	25,286	Apr. 2	127	1977
Lent, Burrell L., Binghamton, N. Y. Starch polish	20,217	Apr. 2	127	1966
Lord Company, H. T., Manchester, N. H. Stimulant for external and internal use	24,855	Apr. 2	127	1974
Lord & Taylor, New York, N. Y. Hosiery	8,858	Apr. 2	127	1966
Lord & Taylor, New York, N. Y. Hosiery	8,858	Apr. 2	127	1966
Lord & Taylor, New York, N. Y. Hosiery	8,860	Apr. 2	127	1966
Lynchburg Shoe Co., Lynchburg, Va. Leather boots and shoes	14,847	Apr. 2	127	1966
Manhattan Electrical Supply Company, Jersey City, N. J., and New York, N. Y. Dry batteries	26,538-6	Apr. 2	127	1959
Manly, Thomas, Kentish Town, England. Photographic and transfer papers and carbon-tissue	23,466	Apr. 2	127	1971
Marvin, Nelson H., Boston, Mass. Leather shoes	25,559	Apr. 2	127	1960
McDonald, Charles C., Elyria, Ohio. Canned baked beans and pork and beans	25,121	Apr. 2	127	1976
McGrew, James C., Lexington, Mo. Coal	25,270	Apr. 2	127	1962
Mallitt-West Drug Co., St. Louis, Mo. Remedy for diseases of the liver	25,744	Apr. 2	127	1962
Morgan, Agustus, Seattle, Wash. Remedies for skin diseases	24,923	Apr. 2	127	1974
Morgan Crucible Co. Limited, Battersea, London, England. Motor and dynamo brushes	15,705	Apr. 2	127	1957
Morgan Crucible Company Limited, Battersea, London, England. Crucibles, cupels, roasting-dishes, &c	24,119	Apr. 2	127	1973
National Lead Company, Jersey City, N. J., and New York, N. Y. Lead oxide	25,745	Apr. 2	127	1962
National Starch Company, Jersey City, N. J., and Oswego, N. Y. Laundry starch	25,709	Apr. 2	127	1961
Nebraska Mercantile Company, Grand Island and St. Paul, Nebr. Wheat-flakes, buckwheat-flour, &c	24,661	Apr. 2	127	1973
Newark Tortoise Shell Novelty Co., Newark, N. J. Combs and hair-pins	25,557	Apr. 2	127	1970
Ozmia Chemical Co., New York, N. Y. Liquid insecticide	22,283	Apr. 2	127	1970
Organ Power Corporation, Hartford, Conn. Hydraulic motors, air-pumps, blowers, &c	8,661-3	Apr. 2	127	1965
Organ Power Corporation, Hartford, Conn. Water-motors, water-motor pumps, and water-lifts	23,161	Apr. 2	127	1971
Orzoli Co., New York, N. Y. Pharmaceutical preparation for catarrh, rose cold, &c	25,020	Apr. 2	127	1976
Part & Tilford, New York, N. Y. Cigars	23,264	Apr. 2	127	1971
Part & Tilford, New York, N. Y. Cigars	24,656-60	Apr. 2	127	1975
Perfect Safety Paper Co., Franklin, Ohio, and Chicago, Ill. Printing and writing paper	24,514	Apr. 2	127	1974
Pheo-Ferrone Manufacturing Co., St. Louis, Mo. Tonic beverages and flavoring-syrup	24,522	Apr. 2	127	1972
Pittman Medicine Co., Fitzgerald, Ga. Remedy for the blood	23,023	Apr. 2	127	1960
Pittman Medicine Co., Fitzgerald, Ga. Cure for dyspepsia	23,020	Apr. 2	127	1960
Pollack, Augustus, deceased; H. Hazlett, Wheeling, W. Va., administrator. Stogies	24,012-14	Apr. 2	127	1974-5
Pollack, Augustus, deceased; H. Hazlett, Wheeling, W. Va., administrator. Stogies	25,427	Apr. 2	127	1958
Radigan, Rich & Co., New York, N. Y. Razors, knives, and shavers	24,612	Apr. 2	127	1973
Rand, McNally & Company, Chicago, Ill. Bankers' directory, &c	19,561-2	Apr. 2	127	1957
Regina Flour Mill Co., St. Louis, Mo. Wheat-flour	23,162-4	Apr. 2	127	1971
Rice, Stix Dry Goods Company, St. Louis, Mo. Overalls and pantaloons	19,662	Apr. 2	127	1968
Rice, Stix Dry Goods Company, St. Louis, Mo. Knitted and netted underwear	25,680	Apr. 2	127	1968
Rice, Stix Dry Goods Company, St. Louis, Mo. Bleached muslin	25,694	Apr. 2	127	1970
Rice, Stix Dry Goods Company, St. Louis, Mo. Cotton piece goods	25,695	Apr. 2	127	1970
Ringe, Harry E., La Fayette, Ind. Metal-polish	25,250	Apr. 2	127	1968
Sawyer, Alvin P., Chicago, Ill. Liver remedy	25,795	Apr. 2	127	1963
Schlesinger, Harry L., Atlanta, Ga. Crackers or biscuits	19,585	Apr. 2	127	1966
Schwarzschild and Sulzberger Company, Kansas City, Kans.; Chicago, Ill., and New York, N. Y. Unctuous food products	24,122	Apr. 2	127	1972
Scognamillo, Rose B., New York, N. Y. Corsets	7,620	Apr. 2	127	1966
Sedlmayr, Brauerei zum Spaten, Gabriel, Munich, Germany. Beer	11,666-8	Apr. 2	127	1966
Shaw & Co., A. W., Freeport, Me. Leather boots and shoes and leather	11,682	Apr. 2	127	1966
Shaver-Gillett Company, Chicago, Ill. Ammonia, bluing, starch, &c	25,000	Apr. 2	127	1970
Shaver-Gillett Company, Chicago, Ill. Washing-crystals, compounds for softening water, &c	25,002	Apr. 2	127	1970
Shaver-Gillett Company, Chicago, Ill. Laundry starch	25,070	Apr. 2	127	1970
Slater Shoe Company, Montreal, Canada. Leather boots, shoes, and slippers	25,502	Apr. 2	127	1975
Smith, Orah, Of City, Pa. Gas and gasoline engines	24,622	Apr. 2	127	1967
Smith & Sons Mfg. Co., Kansas City, Mo. Scrapers, plows, and gardens	15,703	Apr. 2	127	1967
Smith & Sons Mfg. Co., Kansas City, Mo. Baling-presses	14,698	Apr. 2	127	1973
Southwestern Milling Company, Jersey City, N. J., and Kansas City, Mo. Wheat-flour	25,488	Apr. 2	127	1960
Southwestern Milling Company, Jersey City, N. J., and Kansas City, Mo. Wheat-flour	25,645-6	Apr. 2	127	1960
St. Jacobs Oil, Limited, London, W. C., England, and Baltimore, Md. Remedy for affections of the throat, lungs, and bronchial tubes	21,101	Apr. 2	127	1969

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
T. A. Slocum Co., New York, N. Y. Expectorant for coughs, colds, &c	25,068	Apr. 2	127	1976
Trevor, William, New York, N. Y. Ladies' embroidered linen collars	25,312	Apr. 2	127	1977
Trout Hardware Company, Chicago, Ill. Culinary and cooking utensils	17,030	Apr. 2	127	1967
Vacuum Oil Company, Rochester, N. Y. Oils, greases, waxes, &c	24,311	Apr. 2	127	1974
Valier & Spies Milling Company, Marine and St. Jacob, Ill., and St. Louis, Mo. Wheat-flour	20,949	Apr. 2	127	1968
Vane-Calvert Paint Co., St. Louis, Mo. Colored pigments used for paint	23,324	Apr. 2	127	1971
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,567	Apr. 2	127	1967
Voorhees, Harry B., Easton, Pa. Remedy for constipation, &c	25,664	Apr. 2	127	1970
Wakefield, William H., Charlotte, N. C. Eye-ointment	22,606	Apr. 2	127	1960
Wendt Brothers, New York, N. Y. Silk linings	25,643	Apr. 2	127	1961
Western Reserve Woolen Co., Cleveland, Ohio. Woolen piece goods	25,711	Apr. 2	127	1962
Woolson Spice Company, Toledo, Ohio. Coffee	25,766	Apr. 2	127	1962
Woolson Spice Company, Toledo, Ohio. Coffee	25,760-1	Apr. 2	127	1962

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE ISSUED ON THE 2D DAY OF APRIL, 1907.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Acid plants. Tower for sulfuric-	R. Cellarius	848,631	Apr. 2	20	5	127	1280
Adhesive compound	M. R. Isaacs	848,746	Apr. 2	283		127	1620
Advertising-machine	E. W. Brown	849,045	Apr. 2	861	176	127	1697
Agricultural implement	D. S. Capron	849,202	Apr. 2	1186	341	127	1852
Air-compressor	W. Selakosky	848,775	Apr. 2	316	66	127	1697
Air-compressor and intercooler	J. G. Leyner	849,332	Apr. 2	1423	267-8	127	1880
Air. Means for controlling the flow of	J. H. Brady	848,803	Apr. 2	377	75	127	1685
Air-ship	J. E. Taylor	849,020	Apr. 2	824	169-70	127	1706
Alarm: See Engineer's alarm. Railway-alarm.	B. W. P. Coghlin	848,634	Apr. 2	24	6	127	1280
Anchor. Ground-	C. Pemberton and W. S. Macdonald	848,765	Apr. 2	267	88-9	127	1681
Animal-trap	E. Sturgill	848,866	Apr. 2	580	109	127	1720
Animal-trap	M. W. Gilmartin	848,895	Apr. 2	607	120	127	1744
Attaching device	J. Ledwinka	849,145	Apr. 2	1088	217-18	127	1888
Automobile	J. Ledwinka	849,146	Apr. 2	1087	218	127	1887
Automobile	D. R. C. Devine	848,885	Apr. 2	561	116	127	1730
Automobile-wheel	W. O. Calmar	849,201	Apr. 2	1157	240	127	1892
Awning-operating mechanism	M. V. Garver	849,119	Apr. 2	1024	207	127	1849
Axle. Wheelbarrow-	T. Walsh	849 178	Apr. 2	1145	231-2	127	1865
Bacon, &c. Treating	F. C. Berens	848,988	Apr. 2	908	140	127	1795
Badge for personal wear. Lockable	W. E. Tate	848,780	Apr. 2	322	66	127	1688
Baling-press	J. L. Boucher	848,627	Apr. 2	15	4	127	1783
Barber's heater	C. S. Kaufmann	848,996	Apr. 2	767	156	127	1697
Battery-plates receptacle. Storage-	A. T. Sisson	848,776	Apr. 2	318	66	127	1697
Bearing. Ball-	R. G. Eastman	848,642	Apr. 2	41	9	127	1688
Bearing. Roller-	W. D. Hodson	848,650	Apr. 2	53	12	127	1688
Bearing. Roller-	O. F. Zahn	849,094	Apr. 2	956	196	127	1822
Bearing. Self-righting roller-	F. Schulz	848,773	Apr. 2	313	64	127	1666
Bearing. Thrust-	E. J. and T. R. Schuirmann	849,273	Apr. 2	1310	268	127	1822
Beater or mixer	B. C. Suits	849,174	Apr. 2	1138	229	127	1870
Bed-rail joint	D. Garber	849,118	Apr. 2	1023	207	127	1849
Bed-spring	G. E. Bigelow	849,195	Apr. 2	1178	238	127	1889
Bed. Spring-	C. Carstens	849,327	Apr. 2	1412	284	127	1948
Beet and cotton blocker	I. J. and D. R. Gilbert	849,053	Apr. 2	901	184	127	1817
Belt	M. Friedbaum	849,080	Apr. 2	886	183	127	1830
Belt for trousers. Invisible	C. M. Howe	848,904	Apr. 2	620	123	127	1767
Belt-shifter	W. and J. F. Mitchell	848,672	Apr. 2	102	22	127	1611
Bench-drill	J. P. Crowley	848,812	Apr. 2	419	84	127	1684
Bevel-board-cutting machine	T. Swinbank	849,342	Apr. 2	1447	294	127	1906
Bicycle	A. Genelly and B. Gilberti	849,227	Apr. 2	1231	250	127	1908
Bicycle-pump	H. C. Miller	848,671	Apr. 2	99	22	127	1610
Binder. Loose-leaf	G. T. Chafin	848,632	Apr. 2	21	5	127	1280
Bit: See Bridle-bit.	G. H. Fisher	848,980	Apr. 2	736	150	127	1775
Bit	W. A. Boeck	849,197	Apr. 2	1182	239	127	1892
Blind-fastener	E. F. Bliss	848,999	Apr. 2	708	141	127	1767
Block: See Building-block. Picking-block. Bunk-block.	O. P. E. Knudsen	848,998	Apr. 2	770	157	127	1794
Block-molding machine	T. S. Bailey and L. Y. Spear	848,872	Apr. 2	560	112	127	1726
Block-signal system	J. J. Fletcher	848,880	Apr. 2	595	118	127	1741
Boat lowering and detaching apparatus	I. H. Boyer	849,103	Apr. 2	983	199-200	127	1849
Boat. Submarine or submergible	S. Kope	849,137	Apr. 2	1072	215	127	1868
Boiler: See Steam-boiler.	E. L. Cudebec	848,975	Apr. 2	721	145	127	1770
Boiler-bracket	C. E. Wise	848,714	Apr. 2	191	39	127	1637
Boiler furnace. Steam-	J. O. Lalonde	848,662	Apr. 2	79	18	127	1694
Bone-pocket	F. W. Tobey	848,705	Apr. 2	169	36	127	1630
Book	O. E. Smith and D. E. Brinsmade	849,168	Apr. 2	1123	227	127	1875
Book-cover	O. F. Glidden	848,821	Apr. 2	449	88	127	1709
Book. Manifold counter-sales check-	W. Wilson	849,179	Apr. 2	1149	232	127	1881
Booktrass. Knockdown sectional	C. J. Daly	849,211	Apr. 2	1201	243-4	127	1895
Boomerang-thrower	W. H. W. Jones	849,246	Apr. 2	1285	259	127	1911
Boot. Welting-	J. W. Hull	849,243	Apr. 2	1261	255	127	1911
Bottle	W. R. A. Ball	848,619	Apr. 2	4	1	127	1695
Bottle and jar							
Bottle. Non-refillable							
Bottles, &c. Closure for							
Bowling-alley attachment							
Box: See Brick-press box. Outlet-box. File-box.	C. A. Schaad	849,266	Apr. 2	1305	265	127	1923
Box-fastener. Seal							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Bracket: *See* Boiler-bracket. Trolley-bracket. Pipe-bracket.							
Brake: *See* Compound brake. Vehicle-brake. Engine-brake. Wagon-brake.							
Brake	E. V. Whitehal	849,302	Apr. 2	1366	275	127	1815
Brake-shoe mounting	V. Lamb	848,883	Apr. 2	80	19	127	1695
Brake slack-adjuster	J. M. Hines	848,988	Apr. 2	761	155	127	1792
Breast-strap	J. Tolen	848,984	Apr. 2	662	133	127	1792
Brick-press box	L. W. Deughenbaugh and C. A. Merkle	849,314	Apr. 2	1205	244	127	1837
Brick re-pressing machine	E. Murray and A. O. Travis	849,268	Apr. 2	1286	261	127	1898
Bridge, Ferry-	E. W. Stern	848,982	Apr. 2	542	103-7	127	1792
Bridle-bit	J. W. Turner	848,987	Apr. 2	666	139	127	1792
Briquets, Manufacture of	A. Exbrayat	849,088	Apr. 2	803		127	1806
Brush	O. Crittenden	848,973	Apr. 2	729		127	1806
Brush, Fountain-	G. R. Stanton	848,700	Apr. 2	161	147	127	1773
Brush-holder	F. W. Garrett	849,130	Apr. 2	1025	34	127	1792
Bucket, Well-	J. F. Holman	849,240	Apr. 2	1250	207	127	1838
Buckle, Suspender-	J. Maltby	849,004	Apr. 2	780	254	127	1807
Buffer	J. F. Bennett and J. Martin	849,189	Apr. 2	1167	160	127	1786
Buffing-machine	A. W. Rogers	849,228	Apr. 2	1441	236	127	1837
Building-block	E. J. McElligott and E. A. Cimmery	848,917	Apr. 2	637	392	127	1854
Building blocks and bricks, Rocking mechanism for	F. A. Borst	848,636	Apr. 2	14	4	127	1751
Building-blocks, Supporting-stand and mold for making	L. P. Normandin. (Reissue)	12,626	Apr. 2	1408	286	127	1886
Bunk-block	F. Nimmo	849,261	Apr. 2	1298	282	127	1792
Burglar-alarm latch	I. Watkins	848,710	Apr. 2	183	38	127	1792
Burial-casket-lowering apparatus	W. J. Bread and J. G. Warther	848,104	Apr. 2	987	200-1	127	1751
Burner: *See* Hydrocarbon-burner. Oil-burner.							
Burner	P. Mischke	849,265	Apr. 2	1280	259	127	1915
Bushing	C. A. Brinley	849,300	Apr. 2	1157	240	127	1892
Bushing-coupling	C. A. Freeman	848,819	Apr. 2	446	88	127	1792
Cabinet, Kitchen-	C. A. Ellis	848,979	Apr. 2	736	149	127	1775
Cake-cutter	S. J. Harding	848,822	Apr. 2	451	89	127	1792
Cake-turner	M. C. Walston	849,288	Apr. 2	1350	272	127	1892
Calipers, Indicator attachment for	J. E. Kempe	848,831	Apr. 2	470	91	127	1797
Camphor from isoborneol, Making	C. Pfiffipp	849,018	Apr. 2	788		127	1792
Can and jar opener, Combined	M. Sarvalis and P. J. Zolos	848,891	Apr. 2	141	30	127	1833
Can-capping machine	S. Hookey	848,851	Apr. 2	54	12-13	127	1886
Can-cover	B. F. Goldman	849,094	Apr. 2	903	185	127	1833
Canning-machines, Can-feeding mechanism for	G. G. Glass	848,726	Apr. 2	234	46-7	127	1846
Candle stick or holder	H. F. Nehr	849,012	Apr. 2	790	161	127	1792
Cane-loader	J. B. Castagnos	849,106	Apr. 2	999	202	127	1843
Cap, Closing-	E. A. Towle	848,795	Apr. 2	342	68	127	1879
Car-coupling	J. F. McCarthy	848,709	Apr. 2	280	57	127	1833
Car-coupling, Automatic	T. G. Blackman, Jr	849,042	Apr. 2	856	175	127	1886
Car door, Freight-	J. Van Slyke	849,291	Apr. 2	1345	273	127	1891
Car-door locking device, Railway-	B. Göetzmeier and W. Pauels	848,846	Apr. 2	47	11	127	1886
Car, Dump-	V. M. Summa	849,175	Apr. 2	1139	230	127	1880
Car, Illusion-	W. H. Winterborne	848,798	Apr. 2	365	71	127	1833
Car-replacer	E. H. Best	849,313	Apr. 2	1395	279	127	1900
Car, Wet-stone	A. A. Pauly	849,160	Apr. 2	1113	224	127	1873
Cars, System for transmitting electric currents to	J. J. Eagan	848,730	Apr. 2	219	44	127	1865
Carburetor	W. Thiele	848,983	Apr. 2	661	132	127	1787
Carpet-cleaner, Rotary	A. Crossman	848,974	Apr. 2	730	148	127	1774
Carriage-top, Shifting	A. C. Gerth	848,820	Apr. 2	447	88	127	1799
Carrier: *See* Reel-carrier.							
Carrier	B. F. Goldnamer and R. C. Hall	849,124	Apr. 2	1034	209	127	1881
Case: *See* Bookcase. Packing-case. Cigar-case. Shipping-case.							
Cattle-guard	A. Heron	849,120	Apr. 2	1068	212	127	1899
Chain-clasp	J. Costello	848,973	Apr. 2	728	147	127	1773
Chair	O. G. Franks	848,845	Apr. 2	45	10	127	1886
Chalk holder and guard	W. R. Leroy	848,826	Apr. 2	479	93	127	1792
Channeling-machine	W. Prellwitz	849,019	Apr. 2	799	164-5	127	1792
Chart, Calendar-	J. B. Lindsey	849,251	Apr. 2	1271	258	127	1913
Checks and for other purposes, Means for perforating to safeguard	E. A. Barnes	849,312	Apr. 2	1283	279	127	1900
Christmas-tree holder	C. Piesahl	848,880	Apr. 2	508	99	127	1717
Chuck for transfer-presses	G. White	848,871	Apr. 2	559	111	127	1722
Churn	G. W. Hamilton	848,989	Apr. 2	736	154	127	1792
Cigar-case	P. Rapper	848,884	Apr. 2	520	103	127	1721
Cigar-machine	W. S. Lockett	848,887	Apr. 2	92	21	127	1886
Cigar-machines, Wrapper-carrier for	W. S. Lockett	848,888	Apr. 2	90	20	127	1886
Cigarette-machines, Device for rolling tips for	J. Guenther and J. Nicosit	848,847	Apr. 2	47	11	127	1886
Circuit-breakers, Trip-coil for	E. B. Merriam	848,915	Apr. 2	634	127	127	1781
Circuits, Means for improving the power factor of alternating-current	M. O. Troy	848,988	Apr. 2	665	133	127	1792
Clamp: *See* Rope-clamp. Stove-lining clamp.							
Clamping-ring	J. Clark	848,989	Apr. 2	722	146	127	1773
Clasp: *See* Chain-clasp. Garment-supporter clasp.							
Clasp	P. C. Lawless	849,240	Apr. 2	1298	257	127	1912
Classifier	C. W. Merrill	848,188	Apr. 2	1098	221	127	1870
Cleaner: *See* Carpet-cleaner.							
Clip: *See* Fuse-clip. Paper-clip.							
Coal-crusher	C. J. Davis	848,877	Apr. 2	722	149	127	1778
Closet: *See* Flushing-closet.							
Clothes-hanger	O. F. Grant	848,726	Apr. 2	227	47	127	1867

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Clothes-line poles, Device for holding	E. D. Coventry and J. W. Archer	849,054	Apr. 2	882	180	127	1812
Clutch-coupling for shafts, Automatic	J. F. Thomas	849,288	Apr. 2	1341	271	127	1920
Clutch mechanism	M. I. Rosenthal	849,087	Apr. 2	948	192-4	127	1839
Coal-tipple	J. J. Fleming	849,113	Apr. 2	1010	204	127	1846
Cock	J. J. Aeppli-Stocker	848,951	Apr. 2	690	139	127	1784
Cock for air-brake systems, Angle-	J. A. Bennett	849,190	Apr. 2	1166	235	127	1857
Cock or valve	J. Gut	848,739	Apr. 2	239	47	127	1846
Cock, Safety gas-	L. Gans	849,121	Apr. 2	1026	207	127	1902
Coffee, Apparatus for separating chaff from	J. J. Wood	849,225	Apr. 2	1227	249	127	1902
Coin-operated mechanism	A. Sundh	849,306	Apr. 2	1373	276	127	1927
Compound brake	M. Silva and A. Lumpp	849,263	Apr. 2	1328	269	127	1927
Concrete-block machine	B. D. Bennett and G. Sylvia	848,697	Apr. 2	157	33-3	127	1838
Condenser for combers, Waste-	J. T. Wilmore	848,625	Apr. 2	12	3	127	1838
Conveyer	M. C. Schwab	849,245	Apr. 2	1454	295	127	1937
Conveyer and staircase, Combined	M. C. Schwab	848,774	Apr. 2	314	64	127	1898
Conveyer and staircase, Combined	J. R. George	849,240	Apr. 2	1445	293	127	1915
Conveyer for metal bars	V. W. Blanchard	849,122	Apr. 2	1027	208	127	1851
Cooking apparatus	E. Duerr	849,318	Apr. 2	1207	280-1	127	1944
Cooking-pot	M. K. Giessel	848,816	Apr. 2	443	87	127	1899
Cooking-utensil guard	E. Riley	849,228	Apr. 2	1253	260	127	1908
Coring and slicing machine, Fruit	P. Hansen and G. W. Foote	848,855	Apr. 2	521	104	127	1731
Corn-husker hand-cutter and feeder	F. J. Main and R. C. Wildhagen	849,233	Apr. 2	1838	352	127	1905
Corset	D. Kops	849,075	Apr. 2	922	189-0	127	1833
Cotton-gin	S. B. Ladd	849,136	Apr. 2	1070	214	127	1833
Cotton-picker	B. A. Chew	849,141	Apr. 2	1079	216	127	1895
Cotton-picker	B. A. Chew	848,967	Apr. 2	717	145-6	127	1771
Cotton-picker	W. Adkins	848,968	Apr. 2	721	146	127	1771
Cotton-picker	N. C. Bolin	849,182	Apr. 2	1151	233	127	1892
Cotton-thinner	D. L. Newcomb	848,878	Apr. 2	570	114	127	1726
Counter		848,843	Apr. 2	439	96	127	1711
Coupling: *See* Bushing-coupling. Pipe-coupling. Car-coupling.	G. Lane	848,754	Apr. 2	263	53	127	1683
Cross-head							
Crusher: *See* Clod-crusher. Rock and ore crusher.	L. E. Waterman	848,780	Apr. 2	349	70	127	1678
Cultivator	W. H. Hardman	848,741	Apr. 2	242	48	127	1846
Cultivator fender attachment	E. B. Wedmore	848,944	Apr. 2	676	136	127	1760
Current device, Reverse-	V. H. Broc	848,720	Apr. 2	199	41	127	1838
Current-interrupter, Automatic	W. H. Pratt	848,923	Apr. 2	644	129	127	1782
Current meter, Alternating-	J. C. Auld	849,311	Apr. 2	1381	276	127	1899
Current-motor	E. Bretch	848,719	Apr. 2	197	41	127	1838
Current motor, Alternating-	T. G. Wilson	848,949	Apr. 2	689	138	127	1763
Curtain-pole and shade support, Combined	W. R. Smith	849,088	Apr. 2	950	194	127	1830
Cushion work, Spring-	E. E. Brown	848,962	Apr. 2	709	142-3	127	1788
Cuspidor							
Cutter: *See* Cake-cutter.	W. U. Colthar	849,329	Apr. 2	1415	285	127	1913
Cutting-disks, Manufacture of	L. Markwitz	849,335	Apr. 2	1429	288	127	1921
Dental furnace, Electric	L. H. Crawford	849,208	Apr. 2	1196	242	127	1894
Dental handpiece	W. Braun	849,297	Apr. 2	1389	273	127	1924
Dental swaging device	W. Anderson	849,096	Apr. 2	706	142	127	1798
Desiccating material	S. W. Wardwell	848,960	Apr. 2	1356	273	127	1838
Desk, Flat-top	P. Rieseck	849,296	Apr. 2	128	29	127	1823
Detector device	L. M. and F. A. Beeler	848,688	Apr. 2	9	3	127	1661
Dies	W. C. Hahn	848,623	Apr. 2	904	186	127	1815
Display-fixture	R. S. Hicks	849,066	Apr. 2	910	188	127	1830
Display-rack	S. Brackstone	849,069	Apr. 2	196	40	127	1837
Display-rack	H. Hirzel	848,718	Apr. 2	616	122	127	1746
Display-stand	I. Kostelanitz	848,903	Apr. 2	77	18	127	1824
Distilling	J. A. Fleming	848,861	Apr. 2	444	87	127	1889
Door	V. W. Blanchard	848,817	Apr. 2	1403	292	127	1905
Door-fastener	L. Cator	849,322	Apr. 2	576	115	127	1737
Door-fastening	O. M. Edwards	848,881	Apr. 2	221	45	127	1849
Door lock, Sliding-	H. T. Moody	848,731	Apr. 2	277	54-7	127	1857
Door-opening device	H. D. Flegel	848,761	Apr. 2	44	10	127	1886
Door or shutter, Self-closing	E. J. Wells	848,644	Apr. 2	188	39	127	1838
Door-securer	F. C. B. Page	848,712	Apr. 2	495	98	127	1713
Door-spring	M. I. Parkhurst	848,844	Apr. 2	1299	263-4	127	1919
Double-action press	G. W. Prince	849,265	Apr. 2	126	27	127	1815
Draft-compensating device		848,683	Apr. 2				
Drainer							
Drier: *See* Rotary drier.							
Drill: *See* Bench-drill. Rock-drill.	E. R. Beeman	849,187	Apr. 2	1164	235	127	1857
Drill scraper, Disk-	A. C. Schneider	849,165	Apr. 2	1119	226	127	1874
Drip-pan	J. P. Hill	849,239	Apr. 2	1249	254	127	1907
Dust-pan	S. L. Pendergrass	848,920	Apr. 2	641	128	127	1788
Duster	H. Borneman	849,102	Apr. 2	983	199	127	1880
Ear-muff attachment for hats	L. F. Clarke	849,253	Apr. 2	1468	296	127	1924
Ear-phone, Electric	E. T. Wildsmith	848,795	Apr. 2	726	147	127	1773
Eave-trough hanger	M. Cosset	848,971	Apr. 2	1092	219	127	1886
Elastic wheel	F. W. Lord and F. W. Erickson	849,148	Apr. 2	823	169	127	1795
Electric-circuit protective device	G. E. Stevens	849,028	Apr. 2	863	120-1	127	1746
Electric conductors, Connector for	A. W. Sherwood	848,928	Apr. 2	647	120	127	1726
Electric feeding mechanism	E. Schattner	848,925	Apr. 2	763	155	127	1788
Electric governor	O. C. Hoffmann and A. I. Appleton	848,994	Apr. 2	786	161	127	1797
Electric junction and outlet box	D. M. Moore	849,009	Apr. 2	943	193	127	1839
Electric lighting	E. Rosenberg	849,085	Apr. 2	261	53	127	1839
Electric machine, Dynamo-	I. Kitsee	848,753	Apr. 2	257	52	127	1839
Electric receiving device	I. Kitsee	848,780	Apr. 2	290	62	127	1839
Electric transmission of intelligence	I. Kitsee	848,751	Apr. 2	663	133	127	1787
Electric-transmission of intelligence	M. O. Troy	848,935	Apr. 2	1313	266	127	1899
Electrical distribution system	R. Simon	849,275	Apr. 2	744	151	127	1777
Electrical switchings, Terminal for	A. H. Gibson	848,984	Apr. 2				
Electropneumatic track-channeler							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Elevator:							
See Safety-elevator.							
Embossing name-plates, &c. Apparatus for	T. Hawkins	848,894	Apr. 2	452	89	127	1702
End-gate. Wagon	E. W. Olson	849,263	Apr. 2	1296	263	127	1795
Engine:							
See Rotary engine.							
Rotary explosion-engine.							
Engine	A. J. Paige	848,845	Apr. 2	497	97	127	1701
Engine	E. H. Gold	848,995	Apr. 2	746	134-3	127	1773
Engine brake. Traction-	A. B. Lathan	849,000	Apr. 2	773	168	127	1776
Engine cooling device. Combustion-	C. E. Duryea	848,896	Apr. 2	563	117	127	1726
Engine lubricating-oil feed. Reciprocating-	F. W. Brady	849,235	Apr. 2	1408	269	127	1795
Engine speed controller and regulator. Explosive-	H. Ford	848,891	Apr. 2	596	115-19	127	1741
Engine starting device. Internal-combustion-	F. W. Brady	849,234	Apr. 2	1406	269-3	127	1795
Engines. Balling-head for condenser carding-	W. Stott	848,702	Apr. 2	163	34-3	127	1695
Engines. Fuel-feed for hydrocarbon-	F. T. Cable	849,042	Apr. 2	866	177	127	1800
Engineer's alarm	E. McClintock	849,157	Apr. 2	1108	222	127	1871
Evaporating-pan	W. R. Mankiind	849,033	Apr. 2	778	158-9	127	1776
Excavating bucket and cutter	J. Heim	848,742	Apr. 2	248	50	127	1649
Excavating-machine	J. Heim	848,742	Apr. 2	243	48-50	127	1649
Excavating-machine	C. G. Page	849,223	Apr. 2	934	191-2	127	1788
Excavating-machine	C. G Page	849,227	Apr. 2	1434	290-2	127	1795
Excelsior-cutting machine	W. D. Craig	848,884	Apr. 2	580	116	127	1727
Eyeglass-fastener	E. H. Zaher	848,715	Apr. 2	192	40	127	1657
Eyeglass-spring	L. F. Adt	848,617	Apr. 2	1	1	127	1595
Fabric dressing or stiffening apparatus. Pile-	F. E. Kip	848,909	Apr. 2	627	125-6	127	1740
Fabric-reeling machine	M. J. Fisher	848,981	Apr. 2	739	150	127	1776
Fabrics. Stiffening pile	F. E. Kip	848,908	Apr. 2	626	125	127	1740
Face-register	W. W. Burleson	849,047	Apr. 2	865	177	127	1797
Face registers and recorders. Variable gearing for	D. B. Whistler	849,203	Apr. 2	1367	275	127	1835
Fastener. Separable	S. Heinsfurther	848,880	Apr. 2	612	121-2	127	1745
Fastening device	W. Billingsley	849,041	Apr. 2	854	175	127	1800
Feed-water, &c. Apparatus for testing	J. L. Fitts	848,733	Apr. 2	227	46	127	1645
Feed-water purifier	J. S. Clarke	849,328	Apr. 2	1414	285	127	1848
Feed-water regulator	L. Westcott	849,201	Apr. 2	1364	275	127	1835
Feeder. Stock-	G. J. Stein	848,169	Apr. 2	1124	227	127	1670
Fence-making machine	E. Dial	849,097	Apr. 2	891	182-3	127	1815
Fence-post	W. Peterson	848,847	Apr. 2	803	98	127	1710
Fence-post	D. C. Petrie	848,921	Apr. 2	642	129	127	1732
Fence-post and socket therefor	W. L. Welch	849,309	Apr. 2	1362	274	127	1834
Fence tool. Wire-	R. L. Warren	848,943	Apr. 2	675	136	127	1760
File. Bill-	E. W. Kruse	849,139	Apr. 2	1076	215	127	1804
File-box	A. L. Wale	849,298	Apr. 2	1260	274	127	1834
Filter	J. T. H. Paul	849,017	Apr. 2	796	163-4	127	1789
Fire-alarm apparatus	W. S. Clay and A. T. McKenney	848,725	Apr. 2	209	42-3	127	1641
Fire-escape	M. W. Dalton	848,849	Apr. 2	38	9	127	1704
Fire-escape machine. Automatic	F. G. Engel	849,221	Apr. 2	1219	247-8	127	1795
Fire-shutter	R. R. Reed	848,833	Apr. 2	517	103	127	1720
Firearm	W. H. Doane	849,198	Apr. 2	1184	239-40	127	1821
Fish-hook holder	C. E. Ahlstrom	849,310	Apr. 2	1360	278	127	1849
Fishing-tackle	M. Zimmerman	849,088	Apr. 2	838	172	127	1801
Floor-jack	H. C. Fleming and W. F. Reyster	849,089	Apr. 2	894	183	127	1815
Fluid-agitator	J. P. Perkins	849,093	Apr. 2	940	193	127	1837
Flushing-closet	E. T. Webster	848,792	Apr. 2	354	71	127	1689
Fluxometer	R. A. Brooks	849,105	Apr. 2	994	201	127	1842
Fly-catcher	E. K. Storer	848,845	Apr. 2	549	108	127	1720
Focusing-cloth	J. H. Anglo	848,798	Apr. 2	370	78	127	1689
Fork	H. H Pofahl	848,822	Apr. 2	643	129	127	1732
Fork, spoon, knife, and can-opener. Combined	C. G. Aufrichtig	849,086	Apr. 2	965	197	127	1833
Fowl-supporting device	H. M. Vanderbilt	849,290	Apr. 2	1344	271	127	1861
Frame:							
See Post-card frame. Pulley-frame.							
Fruit and vegetable clipper	N. A. Carlson	848,906	Apr. 2	718	145	127	1770
Fruit-picker	G. A. Berger, Jr	848,576	Apr. 2	567	113	127	1734
Fuel and making the same. Artificial	J. A. Herbein	849,088	Apr. 2	909		127	1839
Furnace:							
See Boiler-furnace. Glass-furnace.							
Dental furnace. Hot-air furnace.							
Furnace	J. R. Fortune	849,114	Apr. 2	1012	205	127	1848
Fuse-clip	F. R. Parker	849,189	Apr. 2	1110	223	127	1873
Gage	A. Morrison	849,155	Apr. 2	1101	221	127	1870
Game apparatus	T. M. St. John	849,701	Apr. 2	162	34	127	1638
Game apparatus	D. Weaver	848,711	Apr. 2	187	39	127	1638
Game apparatus	F. W. Hottenroth	848,827	Apr. 2	456	90	127	1708
Game apparatus	D. C. Monroe	848,889	Apr. 2	684	95	127	1719
Garment. Hunting or shooting	F. Potmecky	849,295	Apr. 2	1301	264	127	1859
Garment-supporter clasp	C. M. Webb	849,092	Apr. 2	955	195	127	1831
Gas cooling and mixing tower	J. T. Hutson	849,271	Apr. 2	915	187	127	1831
Gas. Device for automatically regulating the quality of	G. F. Conner	849,253	Apr. 2	879	180	127	1831
Gas-generator	F. Banks	848,832	Apr. 2	6	2	127	1595
Gas-generator	R. Reid	849,162	Apr. 2	1114	224-5	127	1873
Gas-generator	M. J. Lackner	849,247	Apr. 2	1268	257	127	1913
Gas-generator support	W. P. Crary	848,839	Apr. 2	37	8	127	1594
Gas-lighting apparatus	E. A. and E. N. Frary	849,116	Apr. 2	1017	209	127	1848
Gas-manufacturing apparatus	J. J. Busenbens	848,963	Apr. 2	710	143-4	127	1760
Gas. Producing	H. L. Doherty	848,729	Apr. 2	215	44	127	1642
Gas-tank closure	E. F. Lloyd	849,033	Apr. 2	776	158	127	1795
Gasometer	J. J. Busenbens	848,964	Apr. 2	714	144	127	1770
Gate:							
See End-gate. Railway-gate.							
Gate	C. Patten	849,251	Apr. 2	1464	297	127	1909
Gear. Transmission-	A. E. Phelon	848,788	Apr. 2	289	59	127	1661
Gear. Yieldable	H. B. Stiles. (Reissue)	12,627	Apr. 2	1471	299	127	1861
Generator:							
See Gas-generator.							
Glass-cutting device	N. A. Lytock	849,140	Apr. 2	1094	219	127	1869
Glass-furnace	S. O. Richardson, Jr	849,021	Apr. 2	808	165-6	127	1792
Glass. Prism monocular and binocular	G. W. Heath	849,237	Apr. 2	1246	253	127	1907
Gold-saving apparatus	E. S. Bennett	849,121	Apr. 2	978	198-9	127	1826

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Goods by hand. Apparatus for packing packet	J. Aronowitz	848,952	Apr. 2	491	139	127	1704
Governor	W. Hardwick	849,129	Apr. 2	1046	212	127	1826
Grader. Road-	J. McMahill	849,079	Apr. 2	980	199	127	1835
Grain-separator	J. E. Meyer	848,670	Apr. 2	97	22	127	1610
Granary	E. G. Ware	849,204	Apr. 2	1351	273	127	1823
Grate-basket. Adjustable fireplace	H. E. Moomaw	849,077	Apr. 2	925	189	127	1824
Grater	J. Husser	849,134	Apr. 2	1066	214	127	1823
Grinder	W. F. Barnes	848,800	Apr. 2	372	74	127	1684
Gun-control system	J. L. Hall	848,998	Apr. 2	753	152	127	1759
Gun from its carriage, to a gun-carrying vehicle. Means for transferring a	C. P. E. Schneider and E. Rimailho	848,888	Apr. 2	825	164	127	1722
Gun. Powder-	J. L. Wester	848,948	Apr. 2	679	137	127	1701
Guy-wire fastener	A. Bearse	849,100	Apr. 2	976	197	127	1838
Gymnastic horizontal bars. Means for supporting	W. Westenhoff	849,035	Apr. 2	837	172	127	1801
Hair-cutting register	H. C. Kelley	848,689	Apr. 2	75	18	127	1608
Ham-compressing machine	G. Mongardi	849,008	Apr. 2	785	161	127	1787
Hand-rest	F. R. Harvey	848,991	Apr. 2	758	154	127	1761
Hanger:							
See Clothes-hanger. Pipe-hanger.							
Eaves-trough hanger.							
Harrow-sulky	N. Kiner	848,997	Apr. 2	799	167	127	1788
Harvester-wheels. Mud knife and shield for	W. D. Taylor	849,285	Apr. 2	1324	270	127	1859
Hat	E. D. Sould	848,699	Apr. 2	159	33-4	127	1627
Hat	M. Mayer	849,151	Apr. 2	1098	220	127	1849
Hat attachment	W. L. Maynard	848,838	Apr. 2	683	94	127	1709
Hat-ventilator	W. E. Miller	849,007	Apr. 2	784	160	127	1787
Hay-loader	W. H. Bartlett	848,621	Apr. 2	8	2	127	1595
Hay-loading apparatus	R. W. Weller	849,033	Apr. 2	833	171	127	1823
Head-rest	A. D. Kandle	849,135	Apr. 2	1069	214	127	1823
Heater:							
See Barber's heater. Water-heater.							
Heating and ventilating system	L. W. Abbott	849,245	Apr. 2	1455	298	127	1907
Heating apparatus	V. W. Blanchard	849,314	Apr. 2	1367	279	127	1841
Heating unit. Electric	T. Van Aller	849,239	Apr. 2	998	134	127	1728
Heel for boots and shoes. Interchangeable	R. Barnes	848,789	Apr. 2	870	73	127	1694
Hides, skins, and leather. Machine for treating	G. B. Norgrave	849,168	Apr. 2	1106	222-3	127	1872
Hinge. Spring-	E. Moore	848,673	Apr. 2	103	23	127	1611
Hog-trough	G. Strahle	849,261	Apr. 2	1325	269	127	1836
Hoisting apparatus	L. Moss	849,077	Apr. 2	927	189-90	127	1824
Hoisting apparatus	L. Moss	849,267	Apr. 2	1263	260	127	1914
Hook:							
See Whiffletree-hook.							
Hook and eye	M. J. Rattigan	849,161	Apr. 2	1113	224	127	1873
Hoop-making machine	L. D. Scott	848,692	Apr. 2	142	30	127	1694
Horse-protector	J. E. Crawford	848,727	Apr. 2	213	43	127	1641
Horseshoe	J. D. Olcott	849,080	Apr. 2	932	190	127	1838
Horseshoe attachment	J. W. Buck	848,721	Apr. 2	208	41	127	1639
Hose	W. W. Spadone	848,778	Apr. 2	320	68	127	1698
Hose-supporter	L. C. Stukenborg	849,262	Apr. 2	1327	269	127	1841
Hot-air furnace	W. S. Turney	849,177	Apr. 2	1144	231	127	1859
Hot-air register	C. H. Melbeyer	848,758	Apr. 2	273	55	127	1698
Hub. Wheel-	C. Therrien, Sr	849,286	Apr. 2	1235	270	127	1859
Hydraulic jack	H. C. Dudgeon	848,641	Apr. 2	30	9	127	1594
Hydrocarbon-burner	L. Uhrig and R. A. Staben	849,269	Apr. 2	1342	271	127	1859
Ice-scraper	J. Drees	849,108	Apr. 2	1004	208	127	1844
Icing-machine	A. W. Copland	848,633	Apr. 2	34	8	127	1698
Incubator and brooder. Combination	V. Hartnett	849,226	Apr. 2	1244	252-3	127	1906
Indicator:							
See Street-indicator.							
Synchronism-indicator.							
Indicator	J. E. Brown	848,628	Apr. 2	16	4	127	1595
Ink-pad	A. B. Chandler	848,724	Apr. 2	207	42	127	1640
Insole for use in the manufacture of boots and shoes	A. E. Johnson	849,245	Apr. 2	1263	256	127	1911
Iron:							
See Sad-iron.							
Jack:							
See Floor-jack. Pumping-jack.							
Hydraulic jack.							
Jacket	J. H. Mark	848,669	Apr. 2	96	21	127	1610
Joint:							
See Bed-rail joint. Universal joint.							
Rail-joint.							
Journal-box	W. H. Sheasby	849,274	Apr. 2	1312	266	127	1883
Justifying mechanism	F. B. Converse, Jr	848,808	Apr. 2	393	77-9	127	1683
Justifying mechanism	F. B. Converse, Jr	848,809	Apr. 2	394	79-82	127	1683
Justifying mechanism	F. B. Converse, Jr	848,810	Apr. 2	409	83	127	1695
Kitchen implement	R. H. Meyer	849,005	Apr. 2	783	160	127	1787
Ladder and lift. Extension-	R. Fleming	849,222	Apr. 2	1231	248	127	1859
Ladder-fastener. Hay-	J. Ogle	849,014	Apr. 2	792	162-3	127	1787
Ladder. Step-	H. B. Forbes	849,224	Apr. 2	1226	247	127	1859
Lamp socket-key. Electric-	P. L. Sylvester	849,089	Apr. 2	861	176	127	1824
Lard dipper and measure	J. S. Labry	849,074	Apr. 2	920	188	127	1838
Lasts. Turning-	E. J. Prindle	848,787	Apr. 2	361	69-71	127	1694
Latch-fastener	J. L. Cox	849,207	Apr. 2	1196	243	127	1864
Latch. Gate-	S. W. Carlisle	848,998	Apr. 2	715	145	127	1770
Lavatory apparatus	C. S. Hill	849,320	Apr. 2	1417	292-3	127	1906
Leather-working machines. Wetter-up for	W. C. Gegier	849,349	Apr. 2	1459	298	127	1926
Light:							
See Sidewalk-light. Vault-light.							
Linotype-machine	J. R. Rogers	848,771	Apr. 2	304	69-4	127	1694
Liquid-cooling apparatus	L. A. Anson	848,618	Apr. 2	3	1	127	1595
Liquid-discharging apparatus	F. P. Smith	848,920	Apr. 2	655	131	127	1728
Liquid-meter	W. Thomson, R. Blakiston, W. Hope, and G. B. Richards.	848,704	Apr. 2	166	34-4	127	1650
Lock:							
See Door-lock. Padlock.							
Mail-pouch lock. Sash-lock.							
Locking device. Adjustable	W. S. Atwood	849,188	Apr. 2	1132	226	127	1874
Loom	J. Rigby	849,163	Apr. 2	1116	225	127	1874
Loom beating-up mechanism	C. W. Bates	848,875	Apr. 2	869	119-19	127	1704

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Loom filling-detecting mechanism	A. E. Benson	848,891	Apr. 2	373	74	127	1624
Loom-shuttle. Self-threading	J. B. Dandelin	848,312	Apr. 2	1202	244	127	1666
Loom-shuttle. Self-threading	P. P. Dandelin	848,313	Apr. 2	1203	244	127	1666
Loom stopping and starting mechanism	W. F. Draper and C. F. Roper	848,314	Apr. 2	439	98	127	1666
Looms. Crack-preventing means for	C. F. Roper	848,773	Apr. 2	310	64	127	1665
Mail-sack lock	F. S. Bentzer and M. M. Fawcett	848,049	Apr. 2	852	175	127	1666
Manure. Contrivance to sprinkle	C. Ortmann	848,081	Apr. 2	934	191	127	1625
Match holder and lighter	V. Winquist	848,226	Apr. 2	1271	276	127	1627
Measuring device	C. H. Fort	848,313	Apr. 2	445	87	127	1666
Meat-holder	C. O. Jackson	848,693	Apr. 2	68	16	127	1666
Mechanical movement	F. H. Richards	848,695	Apr. 2	128	28	127	1670
Melting-pot-feeding device	E. Trama	848,696	Apr. 2	552	109-10	127	1721
Metal-cutting machine	S. H. Lewis	848,147	Apr. 2	1089	219	127	1667
Metal-skimming device. Molten	G. W. Moore	848,840	Apr. 2	486	96	127	1710
Metal-working machine	A. Currier	848,213	Apr. 2	420	84-5	127	1664
Metals from their ores. Apparatus for extracting	C. R. Arnold	848,697	Apr. 2	963	198	127	1663
Metallic leaf. Package-roll of	W. H. Coe	848,698	Apr. 2	579	116	127	1722
Meter: See Current-meter. Wave-meter. Liquid-meter.							
Mill: See Windmill.							
Mine-door	W. W. Zuber	848,716	Apr. 2	192	40	127	1627
Mirror. Adjustable	E. L. Bell	848,624	Apr. 2	9	3	127	1667
Mirror and lamp. Combined mouth	L. H. Crawford	848,220	Apr. 2	1196	243	127	1666
Moistening color-ribbons. Device for	F. A. Langen	848,148	Apr. 2	1062	216	127	1666
Mold: See Wall-forming mold.							
Mold	G. L. Bartlett	848,905	Apr. 2	696	140	127	1701
Monkey-wrench	D. Gobel	848,230	Apr. 2	1235	251	127	1664
Mop head and wringer. Combined	H. O. Thomas	848,761	Apr. 2	324	66	127	1669
Motor: See Current-motor. Water-motor. Rotary motor.							
Motor	R. R. Spears	848,279	Apr. 2	1322	268	127	1625
Motor-control system	C. Schönholzer	848,926	Apr. 2	649	130	127	1734
Motor-starting means. Explosive	E. A. Nelson	848,670	Apr. 2	119	23-6	127	1634
Music-leaf turner	J. B. Golden	848,897	Apr. 2	610	121	127	1705
Music-roll support. Detachable	F. S. Votey	849,091	Apr. 2	963	195	127	1823
Musical instrument. Valved wind	C. G. Conn	848,722	Apr. 2	211	43	127	1641
Musical instruments. Air-governor for	J. H. Chase	848,089	Apr. 2	870	173	127	1699
Necklace. Pearl	B. Rondé	849,164	Apr. 2	1118	225	127	1674
Necktie-fastener	E. E. R. Drescher	848,320	Apr. 2	1214	246	127	1680
Nozzle. Spray	A. B. Hall	848,995	Apr. 2	766	156	127	1733
Nut-retainer	M. V. Golden	848,727	Apr. 2	336	67	127	1647
Nut. Toilet screw	E. W. Bostick and C. S. Barnard	849,089	Apr. 2	851	175	127	1696
Oil-burner	W. R. Jeavons	848,838	Apr. 2	457	90-1	127	1703
Oil-burner	W. R. Jeavons	848,839	Apr. 2	465	91	127	1703
Oil-burner	L. F. Muston	849,300	Apr. 2	1300	262	127	1917
Oil-cloth rack	P. S. Peace	848,682	Apr. 2	123	27	127	1617
Oil-cloth rack	J. Algert	848,697	Apr. 2	840	172-4	127	1632
Organ	R. Hope-Jones	849,201	Apr. 2	1251	254-5	127	1695
Orientation device	H. C. Lamb and E. G. Baker	848,727	Apr. 2	271	54	127	1655
Osteopathic table	H. T. Root	848,888	Apr. 2	523	104	127	1712
Outlet-box	F. W. Erickson	848,880	Apr. 2	590	117	127	1709
Oven	J. J. Murphy	849,220	Apr. 2	788	161	127	1705
Overalls	L. Rotenbach	849,264	Apr. 2	1305	265	127	1930
Oyster-shucking machine	E. L. Torrey and J. H. Parker	848,764	Apr. 2	329	67-8	127	1670
Packing-case	W. P. Fitzgerald	848,699	Apr. 2	582	118	127	1709
Packing. Rod	A. W. Pearce	849,115	Apr. 2	1013	205-6	127	1667
Pad: See Ink-pad.							
Padlock	C. A. Cheeb	848,630	Apr. 2	22	6	127	1699
Pan: See Drip-pan. Evaporating-pan. Dust-pan.							
Pan guard or extension. Baking	M. B. Smith	848,686	Apr. 2	188	33	127	1627
Pane-attaching means	R. C. Fingal and T. Fabrin	849,112	Apr. 2	1009	204	127	1646
Paper-box-making machine	E. Jagenberg	848,688	Apr. 2	69	16	127	1662
Paper-clip	C. R. Mueller	848,702	Apr. 2	280	57	127	1665
Paper. Loading or filling substance, for use in the manufacture of	A. Mouin	848,916	Apr. 2	626		127	1731
Paper shells. Machine for making	A. A. Raymond	848,881	Apr. 2	500	100-3	127	1715
Paper-surface-finishing machine	L. M. Young	848,181	Apr. 2	1149	232	127	1663
Partition. Reinforced	M. W. Lesan	848,144	Apr. 2	1052	216	127	1666
Pen. Fountain	J. S. Barnes	848,888	Apr. 2	4	1	127	1666
Pen. Fountain	F. W. Erickson	848,110	Apr. 2	1008	203	127	1645
Penny-collector	H. G. Hewitt	848,680	Apr. 2	769	155	127	1731
Perforated strips or sheets. Apparatus for forming	D. A. Ritchie	849,207	Apr. 2	1302	264	127	1680
Pestarator	H. Upton	848,880	Apr. 2	555	111	127	1721
Phonograph	C. Mitchell	848,697	Apr. 2	122	28-9	127	1626
Phonograph	W. W. Rounsfell	849,088	Apr. 2	944	193	127	1696
Photograph-plate	F. V. W. Welsh	848,696	Apr. 2	858	172	127	1681
Photographic-film cartridges. Spool for	F. J. Mathias	848,870	Apr. 2	924	189	127	1626
Photographic-print-testing device	F. Schon	848,277	Apr. 2	1317	267	127	1663
Photographic-printing apparatus	F. H. Auld	848,124	Apr. 2	1154	233-4	127	1663
Photometer. Integrating	C. P. Steinmetz	848,027	Apr. 2	820	169	127	1701
Piano-action	L. N. Soper	848,273	Apr. 2	1321	268	127	1665
Pianoforte	G. Blase	848,697	Apr. 2	698	140-1	127	1705
Picker: See Cotton-picker. Fruit-picker.							
Picking-block	M. J. Murray	849,231	Apr. 2	789		127	1705
Pin: See Safety-pin.							
Pipe-bracket	H. Wyler	848,680	Apr. 2	668	139	127	1704
Pipe-coupling	W. Bartholomew	848,672	Apr. 2	563	112	127	1703
Pipe-cutter. Adjustable	C. H. Hook	848,232	Apr. 2	1094	213	127	1667
Pipe-threading machine	J. P. Mann	848,788	Apr. 2	275	55-6	127	1667
Plaiting, pointing, and similar tool	W. A. Barnard	848,677	Apr. 2	580	113	127	1705

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Plow	W. P. Hendon	848,825	Apr. 2	455	90	127	1702
Plow attachment	C. A. Phillips	848,848	Apr. 2	504	98	127	1716
Plow blade. Cultivating	A. B. Sullivan	848,779	Apr. 2	321	66	127	1668
Plow. Disk	C. C. Leuty	848,912	Apr. 2	632	126	127	1730
Plow-stock	A. B. Mallory	848,913	Apr. 2	632	127	127	1570
Plug and wall-receptacle. Attaching	J. J. Hartley and F. C. De Reamer	848,902	Apr. 2	615	122	127	1746
Plug. Electrical connecting	F. M. Vogel and C. E. White	848,941	Apr. 2	672	135	127	1730
Pocket. Safety watch	G. W. Robertson	848,924	Apr. 2	646	129	127	1753
Policeman's club	C. J. Diehl and H. W. C. Eickhoff	849,216	Apr. 2	1211	245	127	1886
Post: See Fence-post. Turret tool-post.	E. E. Fairchild	849,111	Apr. 2	1007	204	127	1945
Post-card frame or mount	C. A. Taylor	848,709	Apr. 2	164	35	127	1626
Pot: See Cooking-pot.	A. Churchward	849,051	Apr. 2	873	178	127	1930
Power-transmission device							
Power-transmission device							
Press: See Baling-press. Double-acting press.	H. L. Adrit	848,717	Apr. 2	194	40	127	1627
Printers' galleys. Galley-lock for	E. E. Angell	849,086	Apr. 2	846	174	127	1803
Printing and embossing apparatus	L. Kern	848,533	Apr. 2	472	92	127	1703
Printing-plates. Preparing half-tone	E. Ohl	849,015	Apr. 2	703	163	127	1760
Projectile	E. S. Clough	849,205	Apr. 2	1198	242	127	1888
Projectile. Anchor	J. A. Wade	848,943	Apr. 2	673	135	127	1760
Propeller	A. Hector	849,238	Apr. 2	1246	253	127	1907
Propeller	H. Milkorey	849,008	Apr. 2	782	160	127	1757
Propelling and floating device for boats and the like	H. Thormeyer	849,176	Apr. 2	1143	221	127	1681
Propelling mechanism. Boat	R. H. Bowen	848,932	Apr. 2	376	78	127	1694
Pulley-casting	L. Zamboni	848,630	Apr. 2	1378	277	127	1698
Pulley-frame	J. H. Burkholder	849,080	Apr. 2	827	17	127	1689
Pump	C. Valliquette	848,857	Apr. 2	824	170	127	1709
Pump	F. A. Ruhl	848,936	Apr. 2	479	104	127	1722
Pump. Lift	J. F. Liebentritt	849,168	Apr. 2	1129	94	127	1709
Pump. Multiple	E. Shauan	849,236	Apr. 2	1245	228	127	1674
Pumping-jack	C. C. Hayhurst	848,791	Apr. 2	383	263	127	1698
Puzzle	L. Weber					127	1679
Pythiokin derivative							
Rack: See Display-rack. Oil-cloth rack.	W. E. Foster	848,983	Apr. 2	743	139	127	1777
Rail-bond	W. A. Harvey	848,901	Apr. 2	614	122	127	1746
Rail-joint	C. J. Courtright	849,167	Apr. 2	1002	202-3	127	1844
Railway-alarm	D. J. Brush	849,046	Apr. 2	963	176	127	1697
Railway-crossing signal	G. E. Murray	848,677	Apr. 2	110	24	127	1612
Railway-gate	J. B. Struble	849,173	Apr. 2	1135	239	127	1672
Railway signaling system. Electric	E. F. Greene	848,998	Apr. 2	749	152-3	127	1779
Railway-switch	E. C. Newton	849,051	Apr. 2	122	26	127	1617
Railway switch. Overhead	F. Bryer	848,806	Apr. 2	380	76	127	1693
Railway-tie	L. H. Wolff	849,098	Apr. 2	956	195	127	1822
Railway-tie. Composite	U. S. Jessup	849,244	Apr. 2	1262	256	127	1911
Rake	R. H. Whitted	849,204	Apr. 2	1370	276	127	1886
Rake	D. Patterson	848,846	Apr. 2	501	97	127	1710
Recorder	J. J. Tellington	848,953	Apr. 2	686	133	127	1737
Reel-carrier	F. C. Gorham	849,231	Apr. 2	1236	251	127	1904
Reel-seat							
Register: See Fare-register. Hot-air register. Hair-cutting register.							
Regulator: See Feed-water regulator. Water-regulator.	H. G. Webster	848,788	Apr. 2	356	71	127	1689
Relay structure	L. E. Barringer	848,954	Apr. 2	694	140	127	1704
Resistance devices. Making							
Ring: See Clamping-ring.	G. H. White	848,948	Apr. 2	695	137-8	127	1703
Rings, &c. Flaring-machine for metal	G. H. Thurston	848,782	Apr. 2	326	67	127	1669
Rock and ore crusher	F. E. Glase	849,220	Apr. 2	1234	251	127	1904
Rock-drill	M. Krepp	848,911	Apr. 2	631	126	127	1730
Rod-catcher	P. P. Numgesser and W. E. Harmon	848,919	Apr. 2	639	128	127	1731
Roll-forming machine							
Roller: See Shade-roller.	F. W. Cameron	848,680	Apr. 2	18	5	127	1699
Rolling machine. Hot	C. W. Guttzeit	849,085	Apr. 2	908	186	127	1813
Rope-clamp	H. Brinker	849,044	Apr. 2	860	176	127	1697
Rotary drier	D. F. Smith	848,860	Apr. 2	539	105-6	127	1732
Rotary engine	J. Burn	849,228	Apr. 2	1411	289-1	127	1947
Rotary engine	L. W. Lombard	848,865	Apr. 2	86	19-20	127	1697
Rotary explosion-engine	C. S. Batdorf	849,099	Apr. 2	965	197	127	1823
Rotary motor	M. C. Clark	849,207	Apr. 2	381	76-7	127	1693
Rubber footwear. Making	F. Bartelt	849,126	Apr. 2	1163	238	127	1699
Rugs, carpets, &c. Material for	F. A. Hoya	849,231	Apr. 2	1420	288	127	1949
Rust-iron	M. Moseler	848,674	Apr. 2	105	22	127	1613
Safe. Round-door	A. Bennett and R. Binder	849,186	Apr. 2	1166	235	127	1697
Safety-elevator	R. Douglas	849,217	Apr. 2	1213	246	127	1699
Safety-pin	J. W. Paterson	849,016	Apr. 2	794	163	127	1709
Sash-adjuster	D. E. Barnes	848,983	Apr. 2	692	139	127	1704
Sash lock and support	F. E. Jeffers	849,572	Apr. 2	917	186	127	1822
Sash lock. Ventilating window	L. C. McKam	848,842	Apr. 2	489	98	127	1711
Saw-tooth	M. H. Hansen	848,749	Apr. 2	330	46	127	1667
Scale. Spring	E. S. Cameron	848,980	Apr. 2	573	114-15	127	1730
Scenery. Theatrical	J. S. Norris	849,013	Apr. 2	780	162	127	1708
Scraper. Wheeled	F. Milkesell, Jr.	849,154	Apr. 2	1097	221	127	1670
Screen	R. S. Matheson	848,914	Apr. 2	634	127	127	1730
Screw	L. A. Brown	848,570	Apr. 2	572	114	127	1728
Seal	J. H. Tuttle	848,708	Apr. 2	171	37	127	1669
Sealing apparatus. Package	C. B. Frost	848,736	Apr. 2	333	46	127	1646
Sealing apparatus. Package	C. B. Frost	848,892	Apr. 2	599	119	127	1742
Sealing apparatus. Package	C. B. Frost	848,734	Apr. 2	329	46	127	1646
Sealing device. Package	C. B. Frost						
Seat: See Rest-chair.	L. E. Waterman	848,790	Apr. 2	361	70	127	1689
Seeding-machine	G. M. Jenson	848,908	Apr. 2	622	124	127	1729
Self-locking block and pulley							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Separator: *See* Grain-separator.							
Sewing-machine seam-trimmer and edge-binder	W. R. Abercrombie	848,347	Apr. 2	1456	296	127	1931
Sewing-machine thread controlling and unwinding device.	J. H. La Bate	848,140	Apr. 2	1078	215	127	1884
Sewing-machines in wagons. Device for fastening	F. M. Sargent	848,036	Apr. 2	807	167	127	1781
Shade and curtain-pole holder. Window-	J. H. Green	848,057	Apr. 2	782	153	127	1779
Shade. Double-acting window-	M. Ecker	848,219	Apr. 2	1215	247	127	1799
Shade fixture. Window-	S. R. Skov	848,167	Apr. 2	1132	226	127	1876
Shade-holding device	C. L. Hopkins	848,133	Apr. 2	1085	213	127	1861
Shade-roller	A. L. Sutton	848,284	Apr. 2	1233	269	127	1928
Shaft-reversing device	A. Sundberg and G. Ericsson	848,321	Apr. 2	688	132	127	1756
Shampoo-registering device	H. C. Kelley	848,059	Apr. 2	76	18	127	1604
Sharpener. Shears-	W. G. Wilson	848,120	Apr. 2	1147	222	127	1882
Shears: *See* Sheep-shears.							
Sheep-shears	M. A. Lipscomb	848,292	Apr. 2	1275	258	127	1914
Shipping-case	N. J. Busby	848,252	Apr. 2	1466	298	127	1960
Shirt-waist	M. Frerkson	848,117	Apr. 2	1022	208	127	1869
Shock-absorber	W. Mazzocco	848,180	Apr. 2	1094	220	127	1887
Shuttle-spindle	W. Koehler	848,073	Apr. 2	919	188	127	1822
Sidewalk-light	E. A. Reich	848,039	Apr. 2	801	165	127	1791
Sight	C. and M. A. S. White	848,347	Apr. 2	680	127	127	1781
Sign. Electric	W. B. Garrett	848,226	Apr. 2	1239	250	127	1902
Sign-exhibitor. Automatic	F. A. Johnson, F. Weddemann, and E. Blankenburg.	848,367	Apr. 2	70	17	127	1602
Signal: *See* Railway-crossing signal.							
Signal system. Electric	W. M. Thomas	849,287	Apr. 2	1238	270-1	127	1939
Signal system. Selective	E. F. Bliss	848,988	Apr. 2	701	141	127	1788
Signaling. Electric	J. B. Struble	849,170	Apr. 2	1126	227-8	127	1876
Signaling. Electric	J. B. Struble	849,171	Apr. 2	1131	228	127	1877
Signaling. Electric	J. B. Struble	849,172	Apr. 2	1133	228	127	1878
Signaling instruments. Casing for electric	E. W. Vogel	848,242	Apr. 2	1449	294-5	127	1956
Signaling system. Fire and police	W. Condon	848,260	Apr. 2	26	6-7	127	1891
Sink, bath, and wash tub. Combined	W. J. Minns	848,264	Apr. 2	1377	279	127	1914
Siphon	W. S. Shields	848,096	Apr. 2	154	32	127	1826
Skirt-marker	W. H. Simmons	848,341	Apr. 2	1446	293-4	127	1956
Sled	G. Koch	848,010	Apr. 2	630	126	127	1780
Sled-runner	F. Bryer	848,326	Apr. 2	370	76	127	1805
Soldering sheet-metal plates	J. Donoghue	848,078	Apr. 2	735	149	127	1775
Sole. Cushion	H. A. Roberts	848,776	Apr. 2	302	62	127	1864
Sole-leveling machine	F. E. Winkley	848,713	Apr. 2	186	39	127	1838
Speculum. Illuminable	R. H. Wappler	849,344	Apr. 2	1453	296	127	1957
Speed mechanism. Variable-	A. W. Pupke	848,768	Apr. 2	294	61	122	1662
Speed mechanism. Variable-	F. A. Weller	848,570	Apr. 2	556	111	127	1731
Spring: *See* Bed-spring. Eyeglass-spring. Door-spring. Vehicle-spring.							
Spring-wheel	J. Fliegel	848,233	Apr. 2	1234	249	127	1901
Stacker. Hay-	A. F. Kearns	848,532	Apr. 2	471	92	127	1707
Stamp. Automatic identification-	J. T. Earle	848,787	Apr. 2	588	117	127	1739
Stanchion	F. S. Overacker	849,264	Apr. 2	1395	283	127	1919
Stand: *See* Display-stand. Telephone desk-stand.							
Steam-boiler	E. A. Voight	848,738	Apr. 2	344	69	127	1676
Steamer. Domestic	S. M. Johns	848,908	Apr. 2	623	124	127	1748
Stenciling-machine	S. T. Smith, Jr.	848,777	Apr. 2	319	65	127	1867
Stocking-supporting means	G. F. Mansfield	849,283	Apr. 2	1276	258	127	1914
Stoker. Mechanical	F. J. Crollius	848,728	Apr. 2	214	43-4	127	1642
Stokers. Coal-magazine for automatic	L. D. Smith	848,881	Apr. 2	540	106	127	1726
Stone-polishing wheel	S. H. Mills	848,709	Apr. 2	276	56	127	1657
Stove attachment. Gas-heating-	V. W. Blanchard	849,230	Apr. 2	1400	281	127	1944
Stove. Gas-burning	V. W. Blanchard	849,232	Apr. 2	1402	282	127	1945
Stove. Gas cooking	V. W. Blanchard	849,315	Apr. 2	1291	260	127	1942
Stove. Gas cooking	V. W. Blanchard	849,231	Apr. 2	1401	281	127	1945
Stove guard. Gas-heating-	V. W. Blanchard	849,319	Apr. 2	1290	281	127	1944
Stove-lining clamp and support	S. Weinberg	848,794	Apr. 2	351	71	127	1681
Stove or range. Gas cooking	V. W. Blanchard	849,316	Apr. 2	1288	280	127	1943
Stovepipe-drum	J. J. Roberts	848,689	Apr. 2	136	29	127	1633
Strap: *See* Breast-strap.							
Street-indicator for electric railways. Automatic	E. M. Smith, A. M. Kemp, and J. E. Fitzwater.	849,276	Apr. 2	1215	267	127	1928
Striker-plate	J. H. Shaw	848,880	Apr. 2	827	105	127	1723
Stringed instruments. Playing mechanism for	L. A. Kamspelman	848,823	Apr. 2	74	17	127	1603
Stroke-varying mechanism	C. H. Baldwin	849,128	Apr. 2	1163	234	127	1885
Subway-ventilating system	W. E. Lamb	848,834	Apr. 2	475	93	127	1708
Subway ventilation	O. Hammerstein	848,900	Apr. 2	614	122	127	1746
Superheater	F. J. Cole	849,022	Apr. 2	875	179	127	1810
Suspending and hoisting mechanism	O. Hetlesaster	848,744	Apr. 2	340	51	127	1649
Switch: *See* Railway-switch. Trolley-track switch.							
Switch apparatus. Prepayment time-	E. Schattner	849,036	Apr. 2	908	167	127	1793
Switch-operating apparatus. Electric-	I. L. Van Buskirk	848,949	Apr. 2	670	134-5	127	1759
Switching device	E. F. Gehrtsens	848,898	Apr. 2	903	119-20	127	1743
Synchronism-indicator	P. L. Clark	848,970	Apr. 2	724	147	127	1772
Table: *See* Osteopathic table.							
Table-leg connection	J. L. and D. Q. Nevin	848,918	Apr. 2	635	126	127	1731
Tablet. Writing-paper	L. H. Nelson	848,680	Apr. 2	120	26	127	1616
Talking-machine horn-support	O. Kraus	849,138	Apr. 2	1074	215	127	1863
Tank cut-off. Oil-	A. L. Stump	849,080	Apr. 2	668	131	127	1756
Tank inspector and gage. Tubular-	W. Gregson	848,826	Apr. 2	611	121	127	1745
Tank shut-off. Oil-	J. R. Carr	848,728	Apr. 2	208	42	127	1640
Target attachment	H. B. Hollifield	849,153	Apr. 2	1088	209	127	1858
Teeth. Reinforce and backing for artificial	I. Stern	848,852	Apr. 2	546	108	127	1729
Telegraphy	I. Kitsee	848,782	Apr. 2	290	63	127	1863
Telegraphy	W. P. Phillips	848,940	Apr. 2	805	98-9	127	1777

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Telephone desk-stand and call-bell. Combined	C. A. L'Hommedieu	849,250	Apr. 2	1270	258	127	1913
Telephone-exchanges. Signaling system for	F. R. McBerty	849,336	Apr. 2	1431	290	127	1953
Telephone system	C. A. Wardner	849,032	Apr. 2	820	171	127	1790
Telephone systems. Trunk-circuit for	J. B. Kelley and E. B. Hesford	848,749	Apr. 2	255	53	127	1651
Telephone trunking system	W. W. Dean	848,814	Apr. 2	429	85-6	127	1696
Tension device	S. W. Wardwell	849,295	Apr. 2	1353	273	127	1923
Theaters. Turning stage for	M. Kahane	848,907	Apr. 2	625	125	127	1742
Threshing-machine. Transit	D. M. Hartsough	848,990	Apr. 2	757	154	127	1780
Tie: *See* Railway-tie.							
Tie-molding machine	D. Leonard	848,664	Apr. 2	84	19	127	1606
Tiles. Machine for laying underground drain-	M. P. McCulloch	848,841	Apr. 2	487	96	127	1710
Till. Check-	C. Blankenagel	849,196	Apr. 2	1180	238-9	127	1890
Tire. Pneumatic	L. N. Cates	849,049	Apr. 2	869	178	127	1808
Tire. Resilient vehicle-	F. Morris	849,156	Apr. 2	1102	222	127	1871
Tire. Vehicle-	J. E. Hopkinson	848,745	Apr. 2	250	51	127	1650
Toothpick-holder	C. H. Sharp	848,693	Apr. 2	145	31	127	1634
Torch. Blow-	F. G. and H. R. Emmelmann	849,220	Apr. 2	1218	247	127	1899
Torpedo-placing device for railways. Automatic	W. H. Kelley	849,332	Apr. 2	1431	287	127	1949
Toy	W. Stevens	849,280	Apr. 2	1324	266	127	1926
Toy lantern	J. C. Tyndall	848,938	Apr. 2	667	134	127	1758
Transformer. Electric	J. Murgas	848,676	Apr. 2	108	24	127	1613
Transmission-lines. Protection of parallel	A. Fjare	848,982	Apr. 2	740	150	127	1779
Transmission mechanism	G. S. Comstock	848,635	Apr. 2	26	6	127	1591
Trap: *See* Animal-trap.							
Trap	H. J. Houtsinger and H. A. Stilson.	849,070	Apr. 2	911	186-7	127	1820
Trolley-bracket. Center-stop	J. H. Cook	848,637	Apr. 2	33	7	127	1592
Trolley-track switch. Overhead-	F. Kramer	849,350	Apr. 2	1452	297	127	1960
Trolley-wheel	E. P. Sharp	849,025	Apr. 2	811	167	127	1794
Trolley-wheel	G. B. Nussbaum	849,262	Apr. 2	1294	263	127	1912
Truck	E. C. Bruen	848,804	Apr. 2	378	76	127	1665
Truck	A. P. Sands	849,022	Apr. 2	804	166-7	127	1762
Truck	A. Schafer and G. Wanee	849,270	Apr. 2	1307	265	127	1921
Truck	W. P. Bettendorf	849,194	Apr. 2	1178	237	127	1889
Truck. Car-	W. P. Bettendorf	849,193	Apr. 2	1172	236-7	127	1888
Truck/ Swing-motion	W. C. Likly and J. J. Cannan	849,334	Apr. 2	1427	286-9	127	1961
Trunk. Wardrobe-							
Tube: *See* Wick-tube.							
Turret tool-post	G. E. Greenleaf	848,822	Apr. 2	450	93	127	1701
Twine-holder	G. Hanscom	848,648	Apr. 2	49	11	127	1597
Type. Apparatus for exactly printing or impressing	F. A. Langen	849,142	Apr. 2	1081	216	127	1865
Type in type-galleys. Clamping	R. W. Goeb	848,896	Apr. 2	609	121	127	1744
Type-writer cabinet	F. W. Tobey	848,783	Apr. 2	328	67	127	1670
Type-writer carriage	E. B. Cram	849,055	Apr. 2	863	180-1	127	1813
Type-writer operator	B. F. Hutches, Jr	848,653	Apr. 2	58	13-15	127	1599
Type-writer ribbon mechanism	A. Schneeloch	849,339	Apr. 2	1443	292-3	127	1954
Type-writers. Automatic paper-feeder for	B. F. Hutches, Jr	848,654	Apr. 2	65	15-16	127	1601
Type-writing machine	W. F. Helmond	848,649	Apr. 2	50	11	127	1597
Type-writing machine	H. S. McCormack	848,678	Apr. 2	111	25	127	1613
Type-writing machine	F. X. Wagner	848,707	Apr. 2	173	37	127	1631
Type-writing machine	F. X. Wagner	848,708	Apr. 2	179	37-8	127	1633
Type-writing machine	H. L. Wagner	848,709	Apr. 2	180	38	127	1633
Type-writing machine	H. S. McCormack	848,764	Apr. 2	281	58	127	1656
Type-writing machine	F. X. Wagner	848,787	Apr. 2	346	69	127	1677
Type-writing machine	H. L. Wagner	848,788	Apr. 2	348	69	127	1678
Type-writing machine	J. J. Hannahs and A. A. Hieber	849,127	Apr. 2	1040	210-11	127	1858
Type-writing machine	J. J. Hannahs and A. A. Hieber	849,128	Apr. 2	1055	211-12	127	1858
Type-writing machine	A. J. Hughes	848,652	Apr. 2	57	13	127	1599
Universal joint for shafts and rods	P. H. Reardon	848,852	Apr. 2	514	103	127	1710
Valve. Air-inlet	A. F. Priest	849,084	Apr. 2	942	193	127	1822
Valve. Automatic	J. E. Purser	848,684	Apr. 2	126	27	127	1613
Valve. Double-seated	F. T. Cable	848,722	Apr. 2	204	42	127	1640
Valve for automobile-engines. Auxiliary	J. L. Cook	848,811	Apr. 2	418	84	127	1693
Valve. Hot-water	J. E. Purser	848,685	Apr. 2	127	27	127	1613
Valve. Single-seated	L. Kratzenstein	848,999	Apr. 2	772	157	127	1784
Valve. Whistle-	J. McGuigan and A. Priddle	849,260	Apr. 2	1292	262	127	1917
Vault-light	L. N. Stewart	848,864	Apr. 2	547	108	127	1720
Vehicle-body spring-support	B. P. Lukens and I. S. Diehl	848,868	Apr. 2	95	21	127	1609
Vehicle-brake	M. Emmerich	849,109	Apr. 2	1005	203	127	1845
Vehicle-spring	H. D. Pursell	848,769	Apr. 2	301	62	127	1663
Vehicle storm-front	T. Jones	848,747	Apr. 2	253	51	127	1651
Vehicle-wheel	C. A. Gauld	849,062	Apr. 2	901	184	127	1817
Vehicle-wheel	A. A. Ambler	849,095	Apr. 2	960	196	127	1823
Vehicle-wheel	G. Huillier	849,242	Apr. 2	1260	255	127	1910
Vehicle wind-shield	J. G. Garner	849,061	Apr. 2	896	184	127	1810
Ventilating apparatus	R. W. Shaw	848,695	Apr. 2	150	32	127	1626
Ventilation and heating. System of	R. Marz and J. P. Schneider	848,837	Apr. 2	481	94	127	1709
Ventilator: *See* Hat-ventilator.							
Vise. Carpenter's floor-	J. H. Westcott	848,945	Apr. 2	678	136	127	1761
Vise. Compound	W. J. Lausterer	849,001	Apr. 2	774	158	127	1785
Voting-machine	A. J. Gillespie	849,123	Apr. 2	1030	208-9	127	1851
Voting-machine	Y. Kawasaki	848,748	Apr. 2	254	51	127	1651
Water-lifting device	G. F. Young	849,307	Apr. 2	1375	277	127	1925
Wagon-brake	R. Critser and R. C. Wright	849,056	Apr. 2	880	183	127	1814
Wagon. Dumping-	J. Heberling	849,067	Apr. 2	906	185-6	127	1818
Wagon. Dumping-	J. Elsman	848,732	Apr. 2	227	45	127	1644
Waist-holder and skirt-supporter. Combined	W. D. Ham	849,126	Apr. 2	1033	209	127	1853
Wall-forming mold	E. Switzer	848,867	Apr. 2	551	109	127	1720
Walls and other surfaces. Decorating	H. E. Thompson	849,090	Apr. 2	952	194-5	127	1830
Washing-machine	P. Werts	849,309	Apr. 2	1362	274	127	1925
Washing-machine	W. Bartholomew	848,874	Apr. 2	564	112	127	1734
Washing-machine. Cylinder	N. Currie	848,976	Apr. 2	732	148	127	1774
Watch	A. T. Wall and O. M. Thowless	849,292	Apr. 2	1348	272	127	1922
Watches. Antimagnetic device for	M. Mendoza	849,152	Apr. 2	1097	220	127	1870
Water-closets, lavatories, &c. Flushing apparatus for	D. W. Daley, C. A. Gunn, and F. R. Daley.	849,210	Apr. 2	1190	240	127	1895
Water heater and still. Combined							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Water-heating apparatus	V. W. Blanchard	848,317	Apr. 2	1385	290	127	1942
Water-motor	L. M. Shaw	848,494	Apr. 2	146	31	127	1824
Water-regulator	W. A. Carson	848,208	Apr. 2	1190	241	127	1898
Water-wheel	G. D. Gilbert	848,394	Apr. 2	605	120	127	1744
Wave-meter	J. Murgas	848,675	Apr. 2	106	23-4	127	1612
Weather-guard	E. L. Charrois	848,382	Apr. 2	578	118	127	1737
Weather-strip	S. P. Bricker	848,361	Apr. 2	707	142	127	1798
Weighing-machine. Automatic	G. Hoogner	848,121	Apr. 2	1089	212-13	127	1869
Weighing machine. Grain-	B. M. Steele	848,026	Apr. 2	812	168	127	1794
Weighing machine. Grain-	M. Davis	848,315	Apr. 2	1206	245	127	1897
Well-cap	T. A. Cooperrider	848,268	Apr. 2	1194	242	127	1894
Well-drilling machine	J. W. Scheerer	848,271	Apr. 2	1208	265	127	1921
Wells. Method of and apparatus for sinking	E. F. Bradt	848,042	Apr. 2	880	176	127	1856
Wetting up	W. C. Gegier	848,340	Apr. 2	1460	297	127	1899
Wheel: *See* Automobile-wheel. Elastic wheel. Spring-wheel. Stone-polishing wheel. Trolley-wheel. Vehicle-wheel. Water-wheel.							
Wheel	R. H. Bowen	848,199	Apr. 2	1135	240	127	1891
Wheel attachment. Vehicle-	J. E. Zimmermann	848,309	Apr. 2	1378	277-8	127	1918
Wheels. Making	D. Ward	848,081	Apr. 2	828	170	127	1799
Whiffletree-hook	C. T. Schoen	848,387	Apr. 2	662	130	127	1734
Whip-socket	O. B. Hage	848,232	Apr. 2	1230	251	127	1896
Wick-tube	W. F. Farbes and H. H. Lehman	848,643	Apr. 2	42	9-10	127	1826
Windmill	W. R. Jeavons	848,530	Apr. 2	467	91	127	1706
Windmill	E. P. Bergman	848,191	Apr. 2	1160	236	127	1888
Window	E. P. Bergman	848,192	Apr. 2	1170	238	127	1888
Window-cleaning device	S. U. Barr. (Reissue)	12,628	Apr. 2	1473	299	127	1902
Window. Teller's	R. J. Clarke	848,204	Apr. 2	1191	241	127	1893
Window. Teller's	E. Liberty	848,755	Apr. 2	264	53-4	127	1684
Wire-stretcher	E. Liberty	848,756	Apr. 2	265	54	127	1685
Wire stretcher and fastener. Combined	H. S. and M. D. Harris	848,234	Apr. 2	1242	252	127	1906
Wood covering or facing	F. P. Moore	848,324	Apr. 2	1281	259-60	127	1915
Wood-grooving machine	H. Remfinder	848,080	Apr. 2	140	30	127	1623
Wrench: *See* Monkey-wrench.	R. S. Allan	848,797	Apr. 2	367	73	127	1662
Wrench	T. H. Lavier	848,248	Apr. 2	1267	257	127	1913
Wrench	S. P. Schneider	848,372	Apr. 2	1209	266	127	1922
Yoke. Safety neck-	H. T. Hooker	848,336	Apr. 2	456	90	127	1702

DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Badge	A. H. Kopotschny	38,500	Apr. 2	127	1963
Bottle	N. L. O'Neill and R. R. Burke	38,508	Apr. 2	127	1963
Fabric. Pile	J. E. Klip	38,509	Apr. 2	127	1964
Fabric. Pile	J. E. Klip	38,509	Apr. 2	127	1964
Lamp-stand	R. Marr	38,506	Apr. 2	127	1964
Picture-frame	S. Billet	38,510	Apr. 2	127	1964
Puzzle-box	F. W. Wright	38,502	Apr. 2	127	1963
Ribbon	G. A. Morgan	38,507	Apr. 2	127	1964
Vessel for table use	A. Paroutaud	38,504	Apr. 2	127	1963
Vessel for table use	A. Paroutaud	38,505	Apr. 2	127	1964
Watch-fob	J. H. Hall, Jr.	38,501	Apr. 2	127	1963

TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Accumulators	A. Müller	61,689	Apr. 2	127	1985
Antiseptic powder	Watchman & Reynolds	61,744	Apr. 2	127	1988
Antiseptics	A. Herowitz	61,705	Apr. 2	127	1987
Baking-powder	Black Hawk Coffee & Spice Company.	61,724	Apr. 2	127	1987
Beer	Indianapolis Brewing Company	61,685	Apr. 2	127	1986
Bitters	E. J. R. Exner	61,682	Apr. 2	127	1986
Bitters	J. von Fuhren	61,770	Apr. 2	127	1988
Boiler injectors. Steam-	B. Winter	61,796	Apr. 2	127	1989
Books and pamphlets	Ohio Injector Company	61,712	Apr. 2	127	1987
Boots and shoes. Leather	Collyer Tours Company	61,685	Apr. 2	127	1986
Boots and shoes. Leather	C. K. Fox	61,748	Apr. 2	127	1988
Boots, shoes, slippers, and sandals	C. K. Fox	61,749	Apr. 2	127	1988
Bread	P. P. Kirkendall & Co.	61,747	Apr. 2	127	1988
Bread	F. Fuller	61,648	Apr. 2	127	1982
	F. Fuller	61,683	Apr. 2	127	1986

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Broadcloths	M. Rosenbaum's Sons	61,700	Apr. 2	127	1986
Candy	Wallace & Co	61,680	Apr. 2	127	1986
Canned lobster	H. C. Baxter & Bro	61,695	Apr. 2	127	1987
Canned lobster	H. C. Baxter & Bro	61,723	Apr. 2	127	1987
Canned sardines	No. Lubec Mfg. & Canning Co	61,787	Apr. 2	127	1989
Canned vegetables, fruits, and berries	Downing-Taylor Co	61,645	Apr. 2	127	1985
Caps. Maids', waitresses', and nurses'	O. F. Dreyer	61,702	Apr. 2	127	1987
Carpet-warp and twine. Cotton	Putnam-Hooker Company	61,652	Apr. 2	127	1985
Carpets and rugs. Wilton	Ivins, Dietz & Metzger Co	61,683	Apr. 2	127	1986
Cement compounds for making pipe-joints	Leadite Company of America	61,669	Apr. 2	127	1986
Chains and bracelets	Freed & Peikes	61,750	Apr. 2	127	1988
Cigars	E. F. Schweikert	61,689	Apr. 2	127	1986
Clay. Stove-	Bridgeport Crucible Co	61,640	Apr. 2	127	1985
Cleaning preparation. Detergent	Chemische Fabrik Griesheim-Elektron	61,628	Apr. 2	127	1985
Cleansing and disinfecting preparation	American Antiformin Co	61,693	Apr. 2	127	1986
Clothing. Certain	Cellular Clothing Company	61,684	Apr. 2	127	1986
Coal-cutting machines	Pneumelectric Machine Company	61,687	Apr. 2	127	1986
Cocoa, chocolate, and chocolate candy	Ambrosia Chocolate Company	61,662	Apr. 2	127	1986
Coffee	T. L. Owens	61,651	Apr. 2	127	1985
Cologne. Eau-de-	J. M. Farina gegenüber dem Jülicher-Platz	61,694	Apr. 2	127	1986
Color for bleachers' use. Tinting-	William Edge & Sons	61,721	Apr. 2	127	1987
Cotton piece goods. Certain	C. C. Copeland & Co	61,700	Apr. 2	127	1987
Cotton piece goods. Waterproofed	William L. Barrell Co	61,764	Apr. 2	127	1988
Cotton piece goods. Waterproofed	William L. Barrell Co	61,765	Apr. 2	127	1988
Cotton, woolen, worsted, silk, and hair piece goods	Cravenette Company	61,701	Apr. 2	127	1987
Cream. Evaporated	Wisconsin Condensed Milk Co	61,745	Apr. 2	127	1988
Damask table-cloths, napkins, and towels	Neuss, Hesslein & Co	61,757	Apr. 2	127	1988
Dental alloys and instruments made therefrom	C. A. Fones	61,647	Apr. 2	127	1985
Disinfectants	Johnson & Johnson	61,777	Apr. 2	127	1989
Disinfectants, air-purifiers, and deodorizers	W. and F. Walker Limited	61,676	Apr. 2	127	1986
Dust when sweeping. Preparation to absorb	St. Louis Dust Settling Co	61,656	Apr. 2	127	1985
Dyes	William Edge & Sons	61,691	Apr. 2	127	1986
Eave-trough hangers	J. R. Baker & Sons Co	61,639	Apr. 2	127	1985
Electric-lighting outfits. Decorative	Jaeger Miniature Lamp Manufacturing Company	61,640	Apr. 2	127	1985
Electrical machinery. Cleaning and polishing compound for	M. Du Perow	61,729	Apr. 2	127	1987
Extracts. Certain	Marden, Orth & Hastings	61,710	Apr. 2	127	1987
Fats for baking and cooking	Braun & Fitts	61,663	Apr. 2	127	1986
Felt. Roofing and sheathing	Barrett Manufacturing Company	61,627	Apr. 2	127	1985
Files and rasps	Henry Disston & Sons	61,703	Apr. 2	127	1987
Films, plates, and photographic papers	Actien-Gesellschaft für Anilin-Fabrikation	61,677	Apr. 2	127	1986
Fire-extinguishing compounds	Fluvius - Feuerlöscher - Gesellschaft mit beschränkter Haftung	61,715	Apr. 2	127	1987
Fish. Preserved	Rosenstein Brothers	61,653	Apr. 2	127	1985
Flavoring-syrups	A. M. Bradley	61,725	Apr. 2	127	1987
Flour. Wheat-	Washburn-Crosby Company	61,763	Apr. 2	127	1988
Flour. Wheat-	Northwestern Consolidated Milling Company	61,788	Apr. 2	127	1989
Fuses	Coast Manufacturing & Supply Co.	61,643	Apr. 2	127	1985
Fuses	Coast Manufacturing & Supply Co.	61,644	Apr. 2	127	1985
Gas-burners. Incandescent	Plume & Atwood Mfg. Co	61,738	Apr. 2	127	1988
Glue	S. Isaacs & Co	61,776	Apr. 2	127	1989
Grease-eradicator	A. J. Kayser	61,632	Apr. 2	127	1985
Hair-tonic, talcum powder, tooth-powder, and skin food	S. P. Burbank	61,697	Apr. 2	127	1987
Hair-tonics and dandruff cures	C. Hughel	61,775	Apr. 2	127	1989
Hammocks	D. W. Shoyer & Co	61,717	Apr. 2	127	1987
Hose-supporters	George Frost Company	61,772	Apr. 2	127	1989
Inks. Printing and lithographing	E. F. Rychen	61,741	Apr. 2	127	1988
Insecticide	T. Hetherington	61,704	Apr. 2	127	1987
Iodids. Substitutes for	Farbenfabriken vorm. Friedr. Bayer & Co	61,730	Apr. 2	127	1987
Jewelry. Certain	McRae and Keeler	61,783	Apr. 2	127	1989
Journal. Illustrated weekly	Stuyvesant Company	61,718	Apr. 2	127	1987
Knitted hosiery, undershirts, and drawers	Guy, Curran & Co	61,753	Apr. 2	127	1988
Lamp glasses and globes	Macbeth-Evans Glass Company	61,782	Apr. 2	127	1989
Lead. White	W. W. Lawrence & Company	61,636	Apr. 2	127	1985
Leather. Imitation	British Pluviusin Company	61,696	Apr. 2	127	1987
Leggings	H. Jacob & Sons	61,755	Apr. 2	127	1988
Liniments	Oino Liniment Co	61,713	Apr. 2	127	1987
Magazines	Sterling Electric Co	61,743	Apr. 2	127	1988
Medical compounds. Certain	Kaline Company	61,707	Apr. 2	127	1987
Medical preparations. Certain	Walther Manufacturing Co	61,793	Apr. 2	127	1989
Medicinal compound	Mountain Iron Mineral Co	61,671	Apr. 2	127	1986
Medicinal compounds. Certain	Dr. D. Jayne & Son	61,657	Apr. 2	127	1985
Medicinal pastes and ointments	John Wyeth and Brothers	61,734	Apr. 2	127	1988
Medicinal preparation	M. J. Dow	61,768	Apr. 2	127	1988
Medicinal preparation for coughs, colds, and croup	T. W. Larwill	61,756	Apr. 2	127	1988
Medicine. Certain	M. J. Breitenbach	61,767	Apr. 2	127	1988
Medicine. Certain	Society of Chemical Industry in Basle	61,791	Apr. 2	127	1989
Medicines. Certain	W. C. Burk	61,698	Apr. 2	127	1987
Medicines. Certain	Walter Medicine Company	61,762	Apr. 2	127	1988
Medicines. Certain	P. Bourne	61,766	Apr. 2	127	1988
Metal alloy for bearings, &c	Manganese Bronze & Brass Co	61,736	Apr. 2	127	1988
Metal-polish	G. J. C. Fiedler	61,646	Apr. 2	127	1985
Metal, stove, silver, and glass polishes	Citizens' Wholesale Supply Company	61,642	Apr. 2	127	1985
Milk and cream. Evaporated and condensed	Mohawk Condensed Milk Co	61,670	Apr. 2	127	1986

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Milk. Condensed	Wisconsin Condensed Milk Co	61,661	Apr. 2	127	1956
Milk. Condensed	Wisconsin Condensed Milk Co	61,706	Apr. 2	127	1959
Nets. Hair-	T. H. Gary & Co	61,751	Apr. 2	127	1963
Oil for medicinal purposes and applications	C. D. Tilly	61,702	Apr. 2	127	1959
Oil. Olive-	Meridional Cheese and Oil Co	61,689	Apr. 2	127	1956
Ointment for piles, cuts, burns, &c	James W. Foster Co	61,688	Apr. 2	127	1956
Ointments	Pittman-Myers Company	61,726	Apr. 2	127	1961
Organs. Pipe-	L. D. Morris	61,711	Apr. 2	127	1957
Paint, mixed paint, and enamels	Holzapfel's Compositions Company.	61,681	Apr. 2	127	1955
Paper and type-writer ribbons. Carbon-	Corona Supply Co	61,727	Apr. 2	127	1957
Paper. Blue-print	Technical Supply Company	61,678	Apr. 2	127	1955
Pills	Radway & Company	61,709	Apr. 2	127	1959
Plasters. Corn and bunion	Bener & Bloch	61,696	Apr. 2	127	1956
Printing-plates. Apparatus for making stereotype	Campbell Printing Press & Manufacturing Co.	61,726	Apr. 2	127	1957
Rat and roach exterminator	Stearns Electric Paste Co	61,665	Apr. 2	127	1945
Rat, vermin, and insect destroyer or exterminator	H. C. Spetzler	61,742	Apr. 2	127	1965
Remedies for certain diseases	American Druggists Syndicate	61,722	Apr. 2	127	1957
Remedies for certain diseases	Dr. Miles Medical Company	61,726	Apr. 2	127	1957
Remedies for the cure of blood, liver, and kidney diseases	Goodness Bros	61,722	Apr. 2	127	1957
Remedy for certain diseases	G. H. Lawson	61,708	Apr. 2	127	1957
Remedy for colds and throat and lung troubles	Radway & Company	61,709	Apr. 2	127	1959
Remedy for diseases of the stomach and bowels	E. Hefferman	61,773	Apr. 2	127	1959
Remedy for liver complaints	Pepsin Syrup Co	61,695	Apr. 2	127	1956
Remedy for purifying the blood and preventing cholera	Dr. D. Jayne & Son	61,651	Apr. 2	127	1953
Remedy for whooping-cough	H. Vincent	61,690	Apr. 2	127	1956
Rheumatism, pleurisy, &c., cure	Spinol Company	61,709	Apr. 2	127	1959
Salve for the cure of eczema, &c	Miet Rheumatic Company	61,784	Apr. 2	127	1960
Salves. Eye-	E. Lawson	61,693	Apr. 2	127	1956
Seeds. Grass, grain, timothy, and clover	R. Kahabka	61,708	Apr. 2	127	1957
Sewing-machines, sewing-machine attachments, covers, tables, and stands.	Albert Dickinson Company	61,692	Apr. 2	127	1956
Shirts. Men's cotton and woolen	White Sewing Machine Company	61,720	Apr. 2	127	1957
Silk fabrics	Elmira Shirt Manufacturing Company.	61,709	Apr. 2	127	1959
Silk ribbons, piece goods, and linings	Lanza Silk Company	61,770	Apr. 2	127	1960
Soap	S. C. Guyon	61,754	Apr. 2	127	1963
Soap	Lever Brothers Company	61,833	Apr. 2	127	1965
Soap	Mexican Amole Soap Co	61,836	Apr. 2	127	1965
Soap	E. D. Ward	61,837	Apr. 2	127	1965
Soap. Antiseptic toilet	R. M. Hollingshead	61,774	Apr. 2	127	1960
Soldering and cleansing metals. Solution for	Hall & Ruslel	61,830	Apr. 2	127	1965
Soldering-flux	Brumer Bros	61,841	Apr. 2	127	1965
Spices	M. W. Dunton and Company	61,781	Apr. 2	127	1960
Sweaters, cardigan jackets, knitted bathing-suits, and stockings.	Black Hawk Coffee & Spice Company.	61,657	Apr. 2	127	1965
Taffy or toffee	Piste & Clark Co	61,714	Apr. 2	127	1957
Thinners or solvents	M. Hyman Confectionery & Catering Co.	61,760	Apr. 2	127	1959
Tires. Solution for repairing	Lilly Varnish Company	61,634	Apr. 2	127	1955
Tonic	J. B. Sana	61,654	Apr. 2	127	1955
Tonic. Restorative and nutritive	Rheinstrom, Bettman, Johnson & Co.	61,760	Apr. 2	127	1959
Tooth paste and powder	J. M. Liebermann	61,735	Apr. 2	127	1958
Toy figures	P. Betersdorf & Co	61,678	Apr. 2	127	1955
Toy-holding belts, hoops, or girdles	C. Sackman	61,716	Apr. 2	127	1957
Type-writing machines	M. D. Coates, 2nd	61,748	Apr. 2	127	1958
Varnishes and stains	Royal Typewriter Co	61,674	Apr. 2	127	1954
Velveteens	X-Ray Varnish Company	61,638	Apr. 2	127	1953
Violin, mandolin, guitar, and banjo strings	N. Erlanger, Blumgart & Co	61,726	Apr. 2	127	1959
Washing-machines	Buegeleisen & Jacobson	61,670	Apr. 2	127	1954
Washing-machines	Richmond Cedar Works	61,740	Apr. 2	127	1958
Water. Javelle	W. J. Zulli	61,797	Apr. 2	127	1959
Water purifying and softening preparation	A. Castaing	61,680	Apr. 2	127	1956
Water-purifying apparatus	Porcela Co	61,672	Apr. 2	127	1955
Whisky	Pittsburgh Filter Mfg. Co	61,737	Apr. 2	127	1958
Whisky	F. C. Ramsbhausen	61,688	Apr. 2	127	1956
Whisky	Casey Bros	61,699	Apr. 2	127	1957
Whisky	A. Lipman	61,709	Apr. 2	127	1957
Whisky	Sunset Distilling Co	61,719	Apr. 2	127	1957
Whisky	P. Freiler	61,731	Apr. 2	127	1957
Whisky	Jaeger Bros. Co	61,733	Apr. 2	127	1958
Whisky	Geo. Benz & Sons	61,782	Apr. 2	127	1960
Whisky	Kohn Distilling Co	61,776	Apr. 2	127	1960
Whisky	I. Monheimer	61,785	Apr. 2	127	1960
Whisky	William H. Lee & Co	61,794	Apr. 2	127	1960
Whisky. Rye	Thos. Moore Distilling Co	61,761	Apr. 2	127	1958
Wood and furniture polishes	Citizens' Wholesale Supply Company.	61,639	Apr. 2	127	1953
Wool. Fine and cross-bred grades of	D. S. Pratt	61,673	Apr. 2	127	1954

LABELS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Arbor Series Heliotrope." (For Soap)	Armour & Company	13,438	Apr. 2	127	1950
"Arbor Series Lilac." (For Soap)	Armour & Company	13,451	Apr. 2	127	1950
"Arbor Series Rose." (For Soap)	Armour & Company	13,444	Apr. 2	127	1950
"Arbor Series Violet." (For Soap)	Armour & Company	13,449	Apr. 2	127	1950
"Arcadia Heliotrope." (For Soap)	Armour & Company	13,445	Apr. 2	127	1950
"Arcadia Lilac." (For Soap)	Armour & Company	13,443	Apr. 2	127	1950
"Arcadia Violet." (For Soap)	Armour & Company	13,447	Apr. 2	127	1950
"Asparagus Smyrna Fig Coffee." (For Coffee)	A. E. Crocker	13,428	Apr. 2	127	1950
"Butnorip." (For Trousers)	L. G. Titus	13,458	Apr. 2	127	1950
"Extypo." (For a Depilatory)	B. Smith	13,431	Apr. 2	127	1950
"Frickel Neckseam-All." (For Cleaning Compound)	H. Frickel	13,435	Apr. 2	127	1950
"Lydia E. Pinkham's Vegetable Compound." (For Medicine)	Lydia E. Pinkham Medicine Co	13,432	Apr. 2	127	1950
"Lydia E. Pinkham's Vegetable Compound." (For Medicine)	Lydia E. Pinkham Medicine Co	13,433	Apr. 2	127	1950
"Night Gowns, S. J. U. Co." (For Night-Gowns)	South Jersey Underwear Company.	13,462	Apr. 2	127	1950
"Plymouth Rock Coffee Jelly Compound." (For Coffee-Jelly Compounds.)	Plymouth Rock Gelatine Co	13,429	Apr. 2	127	1950
"Rosligo." (For Cleaning Compound)	M. J. Roberts	13,434	Apr. 2	127	1950
"Savon Mushe Heliotrope." (For Soap)	Armour & Company	13,450	Apr. 2	127	1950
"Savon Mushe Lilac." (For Soap)	Armour & Company	13,437	Apr. 2	127	1950
"Savon Mushe Sandalwood." (For Soap)	Armour & Company	13,439	Apr. 2	127	1950
"Savon Mushe Violet." (For Soap)	Armour & Company	13,446	Apr. 2	127	1950
"El Perkins." (For Cigars)	Koelle-Mueller Label Co	13,427	Apr. 2	127	1950
"Sylvan Carnation." (For Soap)	Armour & Company	13,443	Apr. 2	127	1950
"Sylvan Lilac." (For Soap)	Armour & Company	13,441	Apr. 2	127	1950
"Sylvan Rose." (For Soap)	Armour & Company	13,440	Apr. 2	127	1950
"Sylvan Sandalwood." (For Soap)	Armour & Company	13,448	Apr. 2	127	1950
"Transparoea Complexion Glycerine Soap." (For Soap)	Armour & Company	13,436	Apr. 2	127	1950
"Union Maid." (For Flour)	Patton Milling Co	13,430	Apr. 2	127	1950

PRINTS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Handling the Flour Question—*Right.*" (For Flour)	Washburn Crosby Company	1,947	Apr. 2	127	1950
"Hello! Hello!" (For Flour)	Washburn Crosby Company	1,944	Apr. 2	127	1950
"If you Were a Miller." (For Flour)	Washburn Crosby Company	1,945	Apr. 2	127	1950
"Lilies of the Valley and Sundown Backs, Congress Playing Cards." (For Playing-Cards.)	United States Playing Card Co	1,949	Apr. 2	127	1950
"Some People Fuss and Fume and Fret Over Bread Making." (For Flour.)	Washburn Crosby Company	1,946	Apr. 2	127	1950
"The Alarm Clock." (For a Cereal Breakfast Food)	Cream of Wheat Company	1,943	Apr. 2	127	1950
"The Household Surgeon." (For Antiseptic Healing-Oil)	Paris Medicine Company	1,948	Apr. 2	127	1950

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Ammonia, bluing, starch, &c	Sherer-Gillett Company	23,008	Apr. 2	127	1970
Antirheumatic and analgesic	Farbenfabriken vorm. Friedr. Bayer & Co.	24,886	Apr. 2	127	1974
Bactericide	Farbenfabriken vorm. Friedr. Bayer & Co.	20,092	Apr. 2	127	1966
Baking-powder	Kenton Baking Powder Company.	25,534	Apr. 2	127	1978
Baling-presses	Smith & Sons Mfg. Co	15,806	Apr. 2	127	1957
Batteries. Dry	Manhattan Electrical Supply Company.	25,538-9	Apr. 2	127	1979
Batteries or accumulators. Storage	Electric Storage Battery Company.	20,606	Apr. 2	127	1966
Beer	G. Sedlmayr, Brauerei zum Spaten.	11,282-3	Apr. 2	127	1960
Bits and augers	Irwin Auger Bit Co	25,536	Apr. 2	127	1969
Boots and shoes and leather. Leather	A. W. Shaw & Co	11,668	Apr. 2	127	1960
Boots and shoes. Leather	Lynchburg Shoe Co	14,542	Apr. 2	127	1966
Boots and shoes. Leather	Hand Made Boot & Shoe Co	25,242	Apr. 2	127	1977
Boots, shoes, and slippers	J. Donovan & Co	25,287	Apr. 2	127	1977
Boots, shoes, and slippers. Leather	Slater Shoe Company	25,565	Apr. 2	127	197
Brattice cloth	Edward Macbean & Co	24,935	Apr. 2	127	1975

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Building blocks and tiles	Interlocking Stone Co	25,825	Apr. 2	127	1976
Canned baked beans and pork and beans	C. G. MacDonald	23,131	Apr. 2	127	1976
Canned vegetables and spices	Great Atlantic & Pacific Tea Company.	25,697	Apr. 2	127	1981
Canvas, buckskin, &c. Cleansing preparation for white	Albion Manufacturing Company	24,220	Apr. 2	127	1966
Cigars	Park & Tilford	23,294	Apr. 2	127	1971
Cigars	Park & Tilford	24,915-20	Apr. 2	127	1973
Cigars	Butler-Butler	24,459-1	Apr. 2	127	1976
Coal	Black Band Coal & Coke Co	25,220	Apr. 2	127	1976
Coal	J. C. McGrew	24,220	Apr. 2	127	1976
Coffee	G. B. Feabody	24,488	Apr. 2	127	1965
Coffee	Woolson Spice Company	24,728	Apr. 2	127	1971
Coffee	Woolson Spice Company	24,729-1	Apr. 2	127	1982
Collars. Ladies' embroidered linen	W. Trevor	24,219	Apr. 2	127	1977
Collars made from celluloid, &c	W. Heymann	24,728	Apr. 2	127	1973
Combs and hair-pins	Newark Tortoise Shell Novelty Co.	24,457	Apr. 2	127	1970
Concrete pipes, spans, conduits, artificial stones, &c	E. L. Holmes	17,897	Apr. 2	127	1967
Cornmeal	J. R. Keatley	25,698	Apr. 2	127	1981
Corsets	R. B. Sangamallo	7,888	Apr. 2	127	1965
Cotton piece goods	Rice, Stix Dry Goods Company	25,698	Apr. 2	127	1976
Crackers or biscuits	H. L. Schlichtmann	10,888	Apr. 2	127	1966
Crape	Benedictus, Woill & Company	23,227	Apr. 2	127	1966
Cream of tartar	Citizens' Wholesale Supply Company.	25,673	Apr. 2	127	1980
Crucibles, cupels, roasting-dishes, &c	Morgan Crucible Company	24,116	Apr. 2	127	1972
Culinary and cooking utensils	Trout Hardware Company	17,898	Apr. 2	127	1967
Culinary and household purposes. Enameled steelware for	Geo. Borgfeldt & Co	24,715	Apr. 2	127	1970
Directory and list of attorneys. Bankers'	Rand, McNally & Company	12,241-5	Apr. 2	127	1967
Dishes. Butter-	Lay and Balcom Manufacturing Co.	25,695	Apr. 2	127	1977
Dyspepsia cure	Pittman Medicine Co	22,409	Apr. 2	127	1966
Electric testing apparatus	Evershed & Vignoles	17,497	Apr. 2	127	1967
Emulsions of cod-liver oil	Claflin Chemical Company	23,230	Apr. 2	127	1971
Engines and parts thereof. Internal-combustion	Ferro Machine and Foundry Co	25,232	Apr. 2	127	1970
Engines. Gas and gasolene	O. Smith	24,228	Apr. 2	127	1976
Expectorant for coughs, colds, croup, &c	T. A. Slocum Co	24,668	Apr. 2	127	1976
Fertilisers	Virginia-Carolina Chemical Company.	17,897	Apr. 2	127	1967
Flour. Pancake-	Concordia Milling Company	25,624	Apr. 2	127	1976
Flour. Wheat-	Valley & Spice Milling Company	24,548	Apr. 2	127	1966
Flour. Wheat-	Gallatin Valley Milling Company	22,228	Apr. 2	127	1970
Flour. Wheat-	Regina Flour Mill Co	24,147-1	Apr. 2	127	1971
Flour. Wheat-	George Urban Milling Company	24,559	Apr. 2	127	1973
Flour. Wheat-	Kohler Flour Mills Company	24,668	Apr. 2	127	1976
Flour. Wheat-	Concordia Milling Company	24,668	Apr. 2	127	1976
Flour. Wheat-	Southwestern Milling Company	24,668	Apr. 2	127	1976
Flour. Wheat-	Southwestern Milling Company	24,668-1	Apr. 2	127	1980
Flour. Wheat, Graham, and rye	J. H. Kemley	25,709	Apr. 2	127	1981
Food products. Unctuous	Schwarzschild and Sulzberger Company.	24,120	Apr. 2	127	1972
Game. Card	H. J. Gould	24,668	Apr. 2	127	1976
Graphite	Joseph Dixon Crucible Company	25,728	Apr. 2	127	1981
Gum. Chewing-	A. M. Fitch	24,727	Apr. 2	127	1973
Gum. Chewing-	Bon-Bon Company	25,704	Apr. 2	127	1982
Harrows, clod-crushers, and levelers	Duane H. Mack Inc	24,730-9	Apr. 2	127	1981
Hooks, combined snaps and slides, &c. Snap-	Imperial Bit & Snap Co	24,670	Apr. 2	127	1977
Hosiery	Lord & Taylor	5,883	Apr. 2	127	1966
Hosiery	Lord & Taylor	5,883	Apr. 2	127	1966
Hosiery	Lord & Taylor	5,883	Apr. 2	127	1966
Hydraulic motors, air-pumps, blowers, &c	Organ Power Corporation	3,021-3	Apr. 2	127	1965
Insecticide. Liquid	Ormala Chemical Co	25,663	Apr. 2	127	1970
Knitted and netted underwear	Rice, Stix Dry Goods Company	25,698	Apr. 2	127	1966
Lead and zinc-white. White	S. H. French & Co	23,194	Apr. 2	127	1970
Lead and zinc-white. White	S. H. French & Co	23,195	Apr. 2	127	1971
Lead oxids	National Lead Company	25,748	Apr. 2	127	1983
Licorice paste	D. V. Arguimbau	23,214	Apr. 2	127	1977
Lotion	J. M. Burdick	25,722	Apr. 2	127	1981
Magazines	Business Man's Publishing Company.	25,688	Apr. 2	127	1977
Mangles, ironers, washers, clothes-racks, &c	Domestic Manufacturing Co	25,639	Apr. 2	127	1976
Medical preparation for diseases of infants and children	G. Hanson	24,549	Apr. 2	127	1973
Medicine for the cure of rupture	Berry Medical Company	24,668	Apr. 2	127	1976
Medicine used as a laxative, tonic, &c	J. G. Kunkel	25,630	Apr. 2	127	1976
Metal drilling, punching, and shearing machines	Buffalo Forge Company	23,214	Apr. 2	127	1972
Metal-polish	H. E. Roger	23,228	Apr. 2	127	1980
Milk and butter. Condensed and evaporated	Great Atlantic & Pacific Tea Company.	25,698	Apr. 2	127	1980
Milk. Evaporated	American Milk Product Co	24,664	Apr. 2	127	1975
Motor and dynamo brushes	Morgan Crucible Co	15,728	Apr. 2	127	1967
Music. Sheet-	Reed & Hager Co	25,228	Apr. 2	127	1977
Muslin. Bleached	Rice, Stix Dry Goods Company	25,694	Apr. 2	127	1976
Newspaper	E. J. Cowans	25,720	Apr. 2	127	1978
Oils, greases, waxes, &c	Vacuum Oil Company	24,511	Apr. 2	127	1974
Ointment. Eye-	W. H. Wankford	22,698	Apr. 2	127	1970
Ointment. Eye-	W. H. Todd	25,163	Apr. 2	127	1970
Overalls and pantaloons	Rice, Stix Dry Goods Company	25,698	Apr. 2	127	1966
Overalls, pants, and coats	Joplin Overall Company	23,685-9	Apr. 2	127	1970
Packing. Machinery	American Cotton-Cleaner & Packing Co.	25,730	Apr. 2	127	1982
Packing. Metallic	Chicago Belting Company	25,693	Apr. 2	127	1979
Paint	Joseph Dixon Crucible Company	25,721	Apr. 2	127	1981

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Paint. Aluminium	Holzapfel's Compositions Company.	25,847	Apr. 2	127	1983
Paint-pigments	Vane-Calvert Paint Co	23,324	Apr. 2	127	1971
Paper and carbon-tissue, &c. Photographic	T. Manly	23,468	Apr. 2	127	1971
Paper. Printing and writing	Perfect Safety Paper Co	24,814	Apr. 2	127	1974
Paper. Sheathing-	Barrett Manufacturing Company	25,714	Apr. 2	127	1981
Paper. Wall-	Alfred Peats Co	10,745	Apr. 2	127	1966
Papers. Photographic	Cross Photo Paper Co	21,232	Apr. 2	127	1969
Periodicals	Jewelers Circular Publishing Co	23,778	Apr. 2	127	1971
Pharmaceutical preparation for catarrh, rose cold, &c	Ozojell Co	25,080	Apr. 2	127	1976
Pickles and vinegar	G. B. Gehlert	20,763	Apr. 2	127	1968
Plasters. Calcined and casting	S. H. French & Co	23,105	Apr. 2	127	1971
Preparation for treatment of diseases of the nose and throat	John C. Lindsay Co	25,801	Apr. 2	127	1983
Razor-strops	Kampfe Bros	1,873	Apr. 2	127	1965
Razors, knives, and cleavers	Radigan, Rich & Co	24,612	Apr. 2	127	1973
Remedies for coughs, rheumatism, anæmia, dyspepsia, &c	G. C. Krusen	24,370	Apr. 2	127	1972
Remedies for skin diseases	A. Morgan	24,902	Apr. 2	127	1974
Remedies for stomach, kidneys, and liver	A. Fortier	25,703	Apr. 2	127	1981
Remedy for affections of the throat, lungs, &c	St. Jacobs Oil, Limited	21,101	Apr. 2	127	1969
Remedy for constipation, &c	H. B. Voorhees	25,664	Apr. 2	127	1980
Remedy for coughs, colds, measles, &c	Houchens Medicine Co	11,401	Apr. 2	127	1966
Remedy for diseases of the liver	Moffitt-West Drug Co	25,744	Apr. 2	127	1982
Remedy for headache and neuralgia	R. H. Hunstock	9,381	Apr. 2	127	1966
Remedy for the blood	Pittman Medicine Co	22,408	Apr. 2	127	1969
Remedy. Liver-	A. P. Sawyer	25,793	Apr. 2	127	1983
Rings. Finger-	Heintz Bros	25,656	Apr. 2	127	1980
Sauces and dressings. Meat and salad	Citizens' Wholesale Supply Co	25,671	Apr. 2	127	1980
Scrapers, plows, and graders	Smith & Sons Mfg. Co	15,805	Apr. 2	127	1967
Sheetings, shirtings, drills, &c	China & Japan Trading Company	25,788-90	Apr. 2	127	1982
Shoes. Leather	N. H. Marvin	25,660	Apr. 2	127	1980
Silk linings	Wendt Brothers	25,643	Apr. 2	127	1980
Soaps	Great Atlantic & Pacific Tea Company.	25,689	Apr. 2	127	1981
Spectacle and eyeglass lenses	Failing Optical Co	25,308	Apr. 2	127	1977
Spices and flavoring extracts	Hills Bros	25,584	Apr. 2	127	1979
Starch. Laundry	Sherer-Gillett Company	23,070	Apr. 2	127	1970
Starch. Laundry	National Starch Company	25,700	Apr. 2	127	1981
Starch polish	B. L. Lent	20,317	Apr. 2	127	1968
Stimulant for external and internal use	H. T. Lord Company	24,855	Apr. 2	127	1974
Stogies	A. Pollack	24,910-14	Apr. 2	127	1974-5
Stogies	J. B. Bain	25,217	Apr. 2	127	1976
Stogies	A. Pollack	25,497	Apr. 2	127	1978
Stogies	Charter Oak Stove and Range Company.	6,954	Apr. 2	127	1966
Stoves and furnaces and parts thereof	X. G. E. de Faucompré	17,043	Apr. 2	127	1967
Straw pipes or tubes	J. B. Pearson Company	25,505-6	Apr. 2	127	1978
Suits. Children's play-	Hills Bros	25,586	Apr. 2	127	1979
Tea	Phos-Ferrono Manufacturing Co	24,583	Apr. 2	127	1972
Tonic beverages and flavoring-syrup	H. M. Storms Co	25,211	Apr. 2	127	1976
Type-writer ribbons and carbon-papers	J. A. Engel & Co	25,236	Apr. 2	127	1977
Wagon-jack and grain-elevator. Combined	American Washboard Company	21,566-7	Apr. 2	127	1969
Washboards	American Washboard Company	21,570-1	Apr. 2	127	1969
Washboards	American Washboard Company	21,573-4	Apr 2	127	1969
Washboards	Sherer-Gillett Company	23,066	Apr. 2	127	1970
Washing-crystal, compounds for softening water, &c	H. F. Brammer Manufacturing Company.	25,651	Apr. 2	127	1980
Washing-machines	L. D. Childs	18,016	Apr. 2	127	1967
Water. Carbonated	Organ Power Corporation	23,141	Apr. 2	127	1971
Water-motors, water-motor pumps, and water-lifts	Nebraska Mercantile Company	24,681	Apr. 2	127	1973
Wheat-flakes, buckwheat-flour, &c	Labrot & Graham	3,893	Apr. 2	127	1965
Whisky	Eminence Distillery Co	25,341	Apr. 2	127	1977
Whisky	H. C. Applegate	25,507	Apr. 2	127	1978
Whisky	Bay View Wine Co	25,515	Apr. 2	127	1979
Whisky	Figge-Doyle Co	25,805	Apr. 2	127	1983
Whisky, gin, and brandy	Western Reserve Woolen Co	25,711	Apr. 2	127	1981
Woolen piece goods					

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 9TH DAY OF APRIL, 1907.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
A. A. Weeks-Hoskins Company. (See Numan, Charles H., assignor.)						
A. F. Jones Company. (See Jones, Albert F., assignor.)						
Abrego, Stephen V., Lake Charles, La. Steam-sawyer	849,958	Apr. 9	2601	840	127	2288
Adams, Edward C., Morristown, N. J. Artificial fish-bait	849,522	Apr. 9	1818	368	127	2068
Adams, James C., Petroleum, Ind. Clamp	849,354	Apr. 9	1477	300	127	1960
Adelman, Henry, Columbus, Ohio. Horseshoe	849,579	Apr. 9	2476	509	127	2263
Adt, Leo F., Albany, N. Y. Eyeglass-mounting	849,710	Apr. 9	2148	442	127	2160
Alton Machine Company. (See Alton, Thomas A., assignor.)						
Alton, Thomas A., Cleveland, Ohio, assignor to Alton Machine Company, New York, N. Y. Cooling attachment	849,711	Apr. 9	2150	442	127	2170
	849,712	Apr. 9	2151	442	127	2170
Akers, Thomas J., Riner, Va. Spike						
Alexanderson, Ernst F. W., Schenectady, N. Y., assignor to General Electric Company. Dynamo-electric machine	849,713	Apr. 9	2152	442	127	2170
	849,825	Apr. 9	2350	483-3	127	2221
Allen, Martin V., New York, N. Y. Hammer-lock for firearms	849,714	Apr. 9	2153	443	127	2171
Alm, Hans A., Hankinson, N. D. Permutation-lock						
Althoff, Walter. (See Henry and Althoff.)						
American Bank Protection Co. (See Robins, William H., assignor.)						
American Bronze Company. (See Smith, Alfred H., assignor.)						
American Column Company. (See Treadder, John J., assignor.)						
American Silver Company. (See Holley, Dwight S., assignor.)						
American Wood Extract Co. (See Rasche, Henry, assignor.)						
Amoneau, Gilbert, assignor of one-half to O. H. Jules, Minneapolis, Minn. Milling attachment for lathes	849,255	Apr. 9	1478	300	127	1960
Anderson, John B. (See Johnson, Milton, assignor.)						
Anderson, William C., San Jose, Cal. Apparatus for processing fruit	849,650	Apr. 9	2043	420	127	2142
Andrews, Charles A. (See Shay, Frank, assignor.)						
Angell, Edwin E., Somerville, assignor to Angell Manufacturing Company, Boston, Mass. Printing	849,715	Apr. 9	2156	443-4	127	2171
Angell Manufacturing Company. (See Angell, Edwin E., assignor.)						
Anthony, William H., Allentown, Pa. Mold for concrete walls	850,120	Apr. 9	2694	604	127	2355
Arnold, James E., Grand View, Ind. Reversing valve mechanism	849,523	Apr. 9	1819	368	127	2068
Arnold, Thomas R., Port Clinton, Ohio. Display-rack	849,589	Apr. 9	1940	397	127	2117
Ashford, Snowden, Washington, D. C. Alarm for fire-escapes	849,651	Apr. 9	2043	420	127	2145
Atkison, John W., Pana, Ill. Loading apparatus	850,083	Apr. 9	2814	590	127	2337
Atmore, Robert M., Cimarron, N. Mex. Ter. Nut-wrench	849,356	Apr. 9	1479	300-1	127	1960
Atwater, Harry E., Champlain, N. Y. Sparking mechanism for gasolene-engines	849,716	Apr. 9	2158	444	127	7172
Autocoil Company. (See Varley, Richard, assignor.)						
Automatic Electric Pump Company. (See Westphal, Louis H., assignor.)						
Automatic Weighing Machine Company (See Nickerson, William E., assignor.)						
Babcock, George E., assignor of two-thirds to C. L. and R. E. Wick, Fort Plain, N. Y. Front-axle construction	849,652	Apr. 9	2050	421	127	2145
	849,653	Apr. 9	2052	421	127	2146
Bachelet, Emile, Tacoma, Wash. Electromagnetic apparatus						
Badcock, Edward B., assignor to Lamp Pump Syndicate, Limited, London, England. Fluid-pressure motor	850,108	Apr. 9	2681	599-600	127	2348
	849,590	Apr. 9	1941	397	127	2118
Bailey, Lawson J., Whittier, Cal. Sales-case for tobacco, &c.						
Baker, Delos E., Delaware, Ohio. Extracting and recovering the volatilizable contents of sedimentary mineral strata	849,524	Apr. 9	1820	368	127	2068
	849,766	Apr. 9	2260	462	127	2197
Baker, Emeline A., New York, N. Y. Hair-comb						
Ball, Henry P., Schenectady, N. Y., assignor of one-half to S. Insull, Chicago, Ill. Tone producing and recording instrument	849,453	Apr. 9	1646	333	127	2046
	849,357	Apr. 9	1481	301	127	2000
Ballard, Edward L., New York, N. Y. Passenger-elevator						
Bankston, Richard C., *et al.* (See Manasco, Charles J., assignor.)	849,358	Apr. 9	1482	301	127	2000
Barmore, Nathaniel L., assignor to F. H. Hill Company, Chicago, Ill. Box-handle	849,525	Apr. 9	1822	369	127	2069
Barnes, Karl O., Brooklyn, N. Y. Vehicle-wheel	849,880	Apr. 9	2477	509	127	2265
Barnes, Frank L., Suffern, N. Y. Reamer attachment for die-stocks	849,959	Apr. 9	2602	541-2	127	2295
Barry, Walter M., Rochester, N. Y. Adjustable garment-pattern	849,591	Apr. 9	1942	397	127	2118
Bartel, Rudolph P., Bayonne, N. J. Separable hat	849,881	Apr. 9	2478	509	127	2265
Bartlett, George H., San Francisco, Cal. Punch and die-press	849,882	Apr. 9	2479	510	127	2255
Bartley, Edward, Chicago, Ill. Truck	849,767	Apr. 9	2261	463	127	2197
Barton, Bert, Dryden, Mich. Temperature-regulator						
Basch, Rose. (See Basch, Samuel and R.)						
Basch, Samuel and R., London, England. Elastic tire	849,592	Apr. 9	1944	398	127	2118
Batchelder, Adaline E., New York, N. Y. Bottle-closure	849,960	Apr. 9	2607	542	127	2297
Baxter, Berry A., Mansfield, Ohio. Burner	849,359	Apr. 9	1483	301	127	2001
Baxter, Berry A., Mansfield, Ohio. Oven	849,360	Apr. 9	1485	302	127	2001
Beard, F. M., *et al.* (See Carter, Joseph W., assignor.)						
Beaulieu, Fred G. (See Hughes and Evans, assignors.)	849,361	Apr. 9	1487	302	127	2002
Bäché, Jean, Hückeswagen, Germany. File-cutting machine	849,961	Apr. 9	2608	542	127	2297
Becker, Frederick W., New York, N. Y. Violin chin-rest plate						
Beebe, Daniel S. (See Carter and Beebe.)						
Beebe, William C., Alpena, Mich. Buoy	849,362	Apr. 9	1489	302	127	2002
Beehan, Axel V., Newark, N. J., assignor to Ira Brown Company. Printing-machine	849,454	Apr. 9	1649	334	127	2047
Beisbing, John, National Soldiers Home, Tenn. Steam-turbine	849,455	Apr. 9	1649	334	127	2047
Bell, Eugene B. (See Krauss, Romanus, assignor.)						
Bell, Henry E., Burkeville, Va. Hay-curing rack	849,962	Apr. 9	2609	543	127	2297

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Bennett, James P., Broadway, Va. Corn-thinner	849,534	Apr. 9	2053	421	127	2166
Bensch, Herman, Davenport, Iowa. Dust-guard	849,535	Apr. 9	2310	543	127	2260
Benson, William G., Mooresville, Mo. Music-leaf turner	849,717	Apr. 9	2160	444-5	127	2173
Berry, Mary D., New Milford, Conn. Tree	849,389	Apr. 9	1490	302	127	2092
Bertels, Charles E., assignor to Wyoming Valley Trust Company, trustee, Wilkes-Barre, Pa. Cover-fastener for bags. (Reissue)	12,630	Apr. 9	2086	605	127	2266
Berwick, Frederick C., New York, N. Y. Nautical signal	849,694	Apr. 9	2611	543	127	2260
Beyer, George, New London, Wis. Clutch-pulley	849,718	Apr. 9	2168	445	127	2173
Billman, William A., Colorado Springs, Colo. Automatic card-feeding device	849,653	Apr. 9	2057	421-2	127	2147
Bird, Charles S., trustee. (See Shaw, William E., assignor.)						
Blackwood, Jacob S., Columbus, Ind. Dumping-wagon	849,385	Apr. 9	2612	543-4	127	2268
Blair, William E., assignor to Buffalo Gasolene Motor Company, Buffalo, N. Y. Propeller-adjusting device	849,719	Apr. 9	2164	445-6	127	2172
Blake, George E., Greencastle, Ind. Power-transmitting device	849,703	Apr. 9	2263	463	127	2198
Blank, George W., Wilkinsburg, Pa. Lubricator	849,383	Apr. 9	2614	544-5	127	2269
Blessing, Louis, Jackson, Mich. Railway-tie	849,721	Apr. 9	2167	446	127	2174
Blessing, Louis, and A. Johns, Jackson, Mich. Nut-lock	849,720	Apr. 9	2167	446	127	2174
Blood, William H., Jr., Wellesley, Mass. Electric igniter	849,388	Apr. 9	1944	398	127	2119
Blumer-Kunz, Jean F., Engi, Switzerland. Shuttle-check for power-looms	849,387	Apr. 9	2618	545	127	2280
Boak, Theodore A. (See Morgan, Jesse, assignor.)						
Bod, Oscar J., Balfour, N. D. Draft-equaliser	849,384	Apr. 9	1491	303	127	2093
Boerner, Henry. (See Madois and Boerner.)						
Bogy, William S. (See Pearson, James H., assignor.)						
Boley, Wilhelm, and P. Pfleiderer, Esslingen, Germany. Vise	849,382	Apr. 9	2620	545	127	2280
Booth, Charles W., Milwaukee, Wis. Brake-shoe	849,722	Apr. 9	2169	446	127	2175
Bourret, Harry W., Dinsmore, N. D. Draft-equaliser	849,535	Apr. 9	1522	370	127	2089
Bowers, Bose B., Macon, Ga. Truck	849,727	Apr. 9	1523	370	127	2089
Box, Thomas W., Plymouth, England. Anti-pig-rooting device	849,389	Apr. 9	2627	545	127	2280
Boyden, George A. (See Brown, Hanrahan, and Boyden.)						
Boyden, Paul, St. Louis, Mo. Amusement device	849,570	Apr. 9	2622	546-7	127	2281
Bradford, Chester, Indianapolis, Ind. Cross-conveyer	849,694	Apr. 9	1947	398-9	127	2119
Brady, Francis W., Englewood, N. J. Sparking device for internal-combustion engines	849,709	Apr. 9	2265	463	127	2198
Brammer, Robert F. (See Le Favour and Brammer.)						
Brandl, Adolf, Munich, Germany. Flying apparatus	849,571	Apr. 9	2625	548	127	2281
Brennan, Martin T., Montreal, Quebec, Canada. Display-cabinet	849,585	Apr. 9	2089	422	127	2147
Bricker, Samuel P., Allegheny, Pa. Metal weather-strip	849,385	Apr. 9	1492	303	127	2093
Bricker, Samuel P., Allegheny, Pa. Weather-strip	849,386	Apr. 9	1494	303	127	2094
Brinckerhoff, Francis M., assignor of two-thirds to H. Haselton and L. B. Stillwell, New York, N. Y. Passenger-car construction	849,220	Apr. 9	2263	463	127	2222
Brinckerhoff, Francis M., assignor of two-thirds to H. Haselton and L. B. Stillwell, New York, N. Y. Car construction	849,227	Apr. 9	2265	464	127	2223
Brinckerhoff, Francis M., assignor of two-thirds to H. Haselton and L. B. Stillwell, New York, N. Y. Car construction	849,228	Apr. 9	2266	464	127	2223
Brinham, George W., et al. (See Shumaker, John A., assignor.)						
Brinkman, Louis H., Hartford, assignor to Whitlock Coil Pipe Company, West Hartford, Conn. Flanged metal pipe	849,223	Apr. 9	2489	510	127	2255
Brown, Alexander T., Syracuse, N. Y. Type-writing machine	849,220	Apr. 9	2267	464-5	127	2224
Brown, Alonzo L. (See Newman, Stephen A., assignor.)						
Brown, Asbury G. W., Saxtons River, Vt. Curtain-fixture	849,573	Apr. 9	2627	548	127	2282
Brown, Frank H., J. E. Hanrahan, Baltimore, and G. A. Boyden, Mount Washington, Md., assignors to National Compositype Company. Backing for matrices	849,230	Apr. 9	2268	465	127	2227
Brown, George, Sarnia, Ontario, Canada. Indicator	849,696	Apr. 9	1951	334-5	127	2047
Brown Hoisting Machinery Company. (See Cobb, Herbert F., assignor.)						
Brown, Richard P., Philadelphia, Pa. Recording speed-indicator	849,224	Apr. 9	2481	510	127	2256
Bryant Electric Company. (See Thomas, George B., assignor.)						
Buchan, Hugh G., Woodbridge, N. J. Loose-leaf binder	849,573	Apr. 9	2628	549	127	2282
Buchanan, Benjamin F., Camden, N. J. Head-rest for barbers' chairs	849,695	Apr. 9	1949	399	127	2120
Budd, Edward G., assignor to Hale-Kilburn Metal Company, Philadelphia, Pa. Seat end	849,696	Apr. 9	1951	399	127	2120
Budd, Edward G., assignor to Hale-Kilburn Metal Company, Philadelphia, Pa. Rail connection for car-seats and the like	849,697	Apr. 9	2080	422	127	2148
Buffalo Gasolene Motor Company. (See Blair, William E., assignor.)						
Bundy, Henry A. (See Emerick and Bundy.)						
Burdon, Willis C., assignor of forty-nine one-hundredths to C. H. Jenkins and T. W. Moran, jointly, Louisville, Ky. Trolley-controller	849,457	Apr. 9	1682	335	127	2048
Burke, Benjamin F., assignor of one-half to M. Corbett, Chicago, Ill. Artificial bait	849,267	Apr. 9	1495	303	127	2094
Burnham, Williams & Company. (See Wills, Henry V., assignor.)						
C. P. Kimball & Co. (See Graff, Oscar C., assignor.)						
Cable Company. (See Klugh, Paul B., assignor.)						
Cahill, Swift Manufacturing Company. (See Sullivan, John L., assignor.)						
Camden Anchor-Rockland Machine Co. (See Lamb, Elden P., assignor.)						
Cantrell, Robert B., New York, N. Y. Table for games	849,574	Apr. 9	2629	549	127	2282
Carlson, Peter J., Laporte, Ind. Stool	849,575	Apr. 9	2630	549	127	2283
Carmody, Joseph M., Washington, D. C. Concrete form	849,233	Apr. 9	2269	511	127	2256
Carney, James A., Vernon, Tex. Baling-press	849,533	Apr. 9	2081	423	127	2148
Carpenter, Mason P., assignor of one-half to W. Diessel, Mexico, Mo. Ditching-machine	849,535	Apr. 9	1954	335-6	127	2048
Carter, Joseph W., assignor of two-thirds to F. M. Beard and J. Tooley, Rossburg, Oreg. Hay-press	849,232	Apr. 9	1826	370	127	2090
Carter, Walter T., and D. S. Beebe, Beaver, Pa. Method and means for the manufacture of wire-glass	849,699	Apr. 9	1960	336	127	2050
Cartmel, Frank, Jacksonville, Fla. Fruit-picker's basket	849,576	Apr. 9	2631	550	127	2283
Cartwright, Forest S., Chicago, Ill. Massage device	849,230	Apr. 9	1827	371	127	2090
Caswell, Arthur W., Phillipsburg, Kans. Horse-releaser	849,389	Apr. 9	2485	511	127	2257
Causey, Joseph C. (See Metcalf, Jefferson D., assignor.)						
Chapman, Eugene F., Keytesville, Mo. Combination-tool	849,728	Apr. 9	2170	447	127	2175
Chase & Co., L. C. (See Kinder, Arthur H., assignor.)						
Chemische Fabrik Griesheim-Elektron. (See Laska, August L., assignor.)						
Christ, Rinehart, Hamilton, Ohio. Gas-valve	849,724	Apr. 9	2172	447	127	2175
Christensen, Niels A., Milwaukee, Wis. Compressor-valve	849,697	Apr. 9	1959	400	127	2120
Christian, Herbert W., Toledo, Ohio. Electrically-heated hot-water bottle	849,233	Apr. 9	1496	304	127	2094
Churchill, William, assignor to Corning Glass Works, Corning, N. Y. Fresnel lens	849,577	Apr. 9	2632	550	127	2283
Clark, Charles B., Bangor, Me. Gas-cooler	849,230	Apr. 9	1497	304	127	2094
Clark, James, assignor to S. R. Dresser Manufacturing Company, Bradford, Pa. Clamp-ring	849,270	Apr. 9	1498	304-5	127	2094
Clark, James, assignor to S. R. Dresser Manufacturing Company, Bradford, Pa. Clamp-ring	849,271	Apr. 9	1501	305	127	2095
Clark, Melville, Chicago, Ill. Roll-carrying mechanism for automatic musical instruments or players	849,231	Apr. 9	2269	465	127	2227
Clark, William F., Oyster Bay, N. Y. Life-saving buoy	849,227	Apr. 9	2489	512	127	2257
Clawson, Clement C., Flagtown, N. J. Speed-recorder	849,189	Apr. 9	2090	606-1	127	2348

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Clay, Harry C., assignor to Reeves & Company, Columbus, Ind. Pump	849,530	Apr. 9	1529	371	127	2091
Cloutier, Pierre, Three Rivers, Quebec, Canada. Safety signaling device for railway-vehicles	849,460	Apr. 9	1662	337	127	2051
Cobb, Herbert F., assignor to Brown Hoisting Machinery Company, Cleveland, Ohio. Clip-rivet	849,770	Apr. 9	2267	463	127	2198
Colburn, Irving W., Franklin, Pa., and J. Player, River Forest, Ill., assignors to Colburn Machine Glass Company, Franklin, Pa. Drawing sheet-glass	849,531	Apr. 9	1531	373	127	2091
Colburn Machine Glass Company. (See Colburn and Player, assignors.)						
Collman, John, San Francisco, Cal. Safety rope-clamp	849,532	Apr. 9	2372	496	127	2228
Compound Motor Company. (See Eisenhuth, John W., assignor.)						
Conway, Thomas J., Muncie, Ind. Glass-press	849,461	Apr. 9	1665	337	127	2051
Cook, Mary A., Bridgeport, Conn. Catamenial bandage	849,725	Apr. 9	2173	447	127	2175
Cooke, William A., jr., New York, N. Y. Combined letter-sheet and envelop	849,771	Apr. 9	2268	464	127	2269
Cooke, William A., New York, N. Y. (See Hewitt, Peter C., assignor.)						
Cooper Hewitt Electric Company. (See Hewitt, Peter C., assignor.)						
Cooper, Joseph P., Farmersville, Tex. Stalk-cutter	849,459	Apr. 9	1664	336	127	2050
Cooper, William, Georgetown, Colo. Automatic emergency-brake	849,399	Apr. 9	1955	400	127	2121
Coope, Charles W., Taunton, Mass. Top-holder for automobiles	849,398	Apr. 9	1954	400	127	2121
Copeland, Lemlan B., Providence, R. I., assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y. Type-writing machine	849,533	Apr. 9	2487	513-13	127	2257
Corbell, Napoleon, Charlestown, Mass. Automatic gas lighter and extinguisher	849,389	Apr. 9	2493	513-14	127	2259
Corbett, Matthew. (See Burke, Benjamin F., assignor.)						
Cordeauz, Gaston E., New York, N. Y., assignor to Hanson & Van Winkle Company, Newark, N. J. Bottle-puller	849,772	Apr. 9	2260	464	127	2199
Corning Glass Works. (See Churchill, William, assignor.)						
Cornish, Harry S., New York, N. Y., assignor to New York Liquid Dispensing Machine Company, Means for preventing waste in dispensing liquids	849,462	Apr. 9	1666	338	127	2052
Corrigan, Hamlet, Pittston, assignor of two-thirds to C. F. Curry and M. H. Keating, Pittsburg, Pa. Third-rail-protecting mechanism for electric railways	849,773	Apr. 9	2261	465	127	2200
Cory, John C., New York, N. Y. Golf-ball marker	849,800	Apr. 9	1957	401	127	2121
Coutant, George E., Springfield, Ill., assignor of one-half to S. A. King, Peru, Ind. Pop safety-valve	849,532	Apr. 9	1837	372	127	2089
Covey, William O., Appleton City, Mo. Mail-carrier's cart	849,660	Apr. 9	2065	424	127	2149
Cowen, William H., Hackensack, assignor to Underwood & Underwood, Arlington, N. J. Postal souvenir-holder	849,726	Apr. 9	2174	447	127	2175
Cowen, Louis, Philadelphia, Pa. Umbrella	849,833	Apr. 9	2373	496	127	2228
Cox, Arthur M. (See Cox, Walter M. and A. M.)						
Cox, Paul F., Battle Creek, Mich. Soap holding or retaining device	849,978	Apr. 9	2634	550	127	2283
Cox, Walter M. and A. M., Cynthiana, Ky. Automatic whistle	849,661	Apr. 9	2067	424	127	2150
Coylendall, Horatio G., San Jose, Cal. Driving and steering mechanism for motor-vehicles	849,662	Apr. 9	2069	425	127	2150
Crane, Dana, assignor to Wickes Bros., Saginaw, Mich. Sawmill-carriage	849,601	Apr. 9	1958	401	127	2122
Crary, William P., New York, N. Y. Lamp-bracket	849,727	Apr. 9	2175	448	127	2176
Crocker, Fred W. (See Crocker, Walter E. and F. W.)						
Crocker, Walter E., Providence, R. I., and F. W. Crocker, North Baltimore, Ohio; said Walter E. Crocker assignor to said F. W. Crocker. Sharpening-holder for gravers and other tools	850,084	Apr. 9	2815	560	127	2287
Croft, Calloway, et al. (See Hinton, William C., assignor.)	849,890	Apr. 9	2494	514	127	2260
Cronsie, James, Pittsburg, Pa. Furnace	849,463	Apr. 9	1670	338	127	2053
Crosby, Harold A., assignor to W. G. Lumsden, Hamilton, Ontario, Canada. Machine for peeling and coring tomatoes	849,663	Apr. 9	2071	426	127	2150
Curry, Charles F., et al. (See Corrigan, Hamlet, assignor.)						
Curtis, Lee W., assignor of one-half to W. Mattick, Breckenridge, Mich. Pump-rod bolt	849,979	Apr. 9	2635	550	127	2283
D. M. Beebler Carriage Company. (See Samuels, Jonathan H., assignor.)						
Dahms, Hugo, Berlin, Germany. Horseshoe	849,372	Apr. 9	1503	305	127	2094
Daimler, Paul, Unterürkheim, Germany. Reversing-gear	849,980	Apr. 9	2637	551	127	2284
Dansforth, Joseph B., Gelliad, Tex. Clamp	849,373	Apr. 9	1506	306	127	2095
Daugherty, Alvin A., New York, N. Y. Vehicle-wheel	849,374	Apr. 9	1507	306	127	2095
Daugherty, Alvin A., New York, N. Y. Vehicle-wheel	850,110	Apr. 9	2670	601	127	2260
Daugherty, James D., Kittanning, Pa. Type-writing machine						
Davidson, Frank E. (See Lundholm, Charles G., assignor.)						
Dean, William W., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Telephone system	849,375	Apr. 9	1510	306	127	2096
Dean, William W., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Telephone trunking system	849,461	Apr. 9	1673	338-9	127	2053
Decker, Charles. (See Imbt, William, assignor.)	12,632	Apr. 9	2008	607	127	2260
Decker, Edwin S., Malden, Mass. Water-heater. (Reissue)	849,664	Apr. 9	2073	426	127	2151
Deeds, Reed, Cuyahoga Falls, Ohio. Retaining and supporting frame for wall-molds	849,981	Apr. 9	2637	551	127	2284
Deierl, Hans, Munich, Germany. Electrical hair-curler	849,982	Apr. 9	2638	551	127	2284
Denies, Leo C. A., New York, N. Y. Window-sash fastener	849,983	Apr. 9	2639	551	127	2285
Denies, Leo C. A., New York, N. Y. Clothes-line fastener	849,802	Apr. 9	1961	402	127	2122
Denny, Hosea N., New York, N. Y. Liquid-meter	849,665	Apr. 9	2074	426	127	2151
Devereaux, Arthur F., New York, N. Y. Course or track for skating						
Diessel, William. (See Carpenter, Mason P., assignor.)						
Dingo, Alvin. (See Dingo, Myron and A.)	849,465	Apr. 9	1684	339	127	2054
Dingo, Myron and A., Milwaukee, Wis. Ore roasting and treating apparatus	849,728	Apr. 9	2170	448	127	2176
Dingo, Myron and A., Milwaukee, Wis. Drinking-trough						
Dinkmann, Joseph, Ithaca, Mich.	849,534	Apr. 9	2374	496-7	127	2229
Dins, Louis P., assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y. Type-writing machine	849,535	Apr. 9	2382	497	127	2231
Dins, Louis P., assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y. Type-writing machine	849,376	Apr. 9	1518	307	127	2012
Divisey, William W., Allport, Pa. Nut-lock	849,377	Apr. 9	1519	307	127	2012
Doehler, Conrad, Sr., deceased, St. Bernard, Ohio; M. Doehler, administratrix. Window-shade bracket	849,603	Apr. 9	1963	402	127	2123
Doehler, Margaret, administratrix. (See Doehler, Conrad, Sr.)	849,466	Apr. 9	1687	340	127	2055
Doherty, Frank F., Seattle, Wash. Hotel-register desk	849,378	Apr. 9	1521	307-9	127	2012
Donaldson, William W., Jr., Kewanee, Ill. Swivel check-valve	849,379	Apr. 9	1527	309	127	2013
Donnelly, William T., Brooklyn, N. Y. Floating dry-dock	849,984	Apr. 9	2640	552-3	127	2286
Dorr, John V., Lead, S. D. Ore-classifier	849,774	Apr. 9	2267	466	127	2201
Dougherty, Thomas, Minneapolis, Minn. Grain-bin	849,536	Apr. 9	2389	498	127	2233
Dow, Ebenezer G., London, England. File						
Dow, Ebenezer G., Hornsey Rise, London, England. Temporary binder						
Draper Company. (See French, Frank H., assignor.)						
Draper Company. (See Rhoades, Alonzo E., assignor.)	849,985	Apr. 9	2643	553	127	2286
Draper, Thomas, assignor of one-half to J. W. Hall, Middletown, Conn. Ink-eraser	849,775	Apr. 9	2268	466	127	2201
Dresser, John F., New York, N. Y. Swing-door for cold-storage rooms	849,380	Apr. 9	1531	309	127	2014
Drueker, John F., New York, N. Y. Combined threshold and weather-strip	849,729	Apr. 9	2177	448	127	2176
Duff, David, Mulberry, Kans. Combined threshold and weather-strip						
Dunbar, Wilmer, Akron, Ohio. Tire for vehicles	850,121	Apr. 9	2693	604	127	2288
Dyett, James H., Buffalo, N. Y., assignor to Hard Manufacturing Company. Couch-fastening	849,532	Apr. 9	1839	372	127	2089
Dziedzic, Andrew, Pasadena, Cal. Propeller						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
R. H. Jacobs Manufacturing Company. (See Hyde, Charles A., assignor.)						
Eaton, Charles H., Ridlonville, Me. Grate-bar	849,626	Apr. 9	2644	553	127	2285
Edwards, John R., Columbus, Ohio. Lifting-jack	849,581	Apr. 9	1532	310	127	2014
Edwards, Walter, Cedargrove, W. Va., assignor of two-thirds to G. W. Keeney and W. H. McQuilian. Trolley for electric railways	849,693	Apr. 9	2076	426	127	2182
Eggleston, Lewis W., Appleton, Wis. Valve-stem packing	849,827	Apr. 9	2392	486	127	2284
Ehle, Archibald H., Philadelphia, Pa. Motor-driven truck	849,889	Apr. 9	2304	468-9	127	2234
Eisenhuth, John W., Brooklyn, N. Y., assignor, by mesne assignments, to Compound Motor Company. Rotary valve	849,987	Apr. 9	2645	554	127	2286
Ellers, H. A., et al. (See Medearis, William R., assignor.)						
Ellingson, Edward, Havana, N. D. Combination-wrench	849,891	Apr. 9	2496	514	127	2280
Ellis, Winfield H., Augusta, Ark. Out-off and drainage apparatus	849,894	Apr. 9	1540	373	127	2092
Emerick, George S., Nazareth, Pa. Pebble-mill	849,730	Apr. 9	2178	448-9	127	2176
Emerick, William H., and H. A. Bundy, Osawatomie, Kans. Box-car-roof frame	849,982	Apr. 9	1633	340	127	2045
Epping-Carpenter Company. (See Paulsen, Peder, assignor.)						
Erste Triester-Reisenball-Fabriks-Aktien-Gesellschaft. (See Morpurgo, Giulio, assignor.)						
Evans, David C. (See Hughes and Evans.)						
Evans, John A., Yellowstone Park, Wyo. Saddle-pack cover	849,627	Apr. 9	2077	426-7	127	2182
Ewing, Lewis D., Akron, Ohio. Ventilated fireproof wall	849,776	Apr. 9	2271	466-7	127	2202
F. H. Hill Company. (See Barmore, Nathaniel L., assignor.)						
Fallor, William H., Carlisle, Pa. Trace	849,686	Apr. 9	2073	427	127	2182
Farbenfabriken vorm. Friedr. Bayer & Co. (See Fischer, Emil, assignor.)						
Fell, William P., Huron, S. D. Rein-guard	849,627	Apr. 9	1698	340	127	2055
Ferguson, Robert L. (See Moore and Ferguson.)						
Ferguson, Charles M., Lavender Hill, assignor to A. H. Spearing, London, England. Steam-superheater	849,681	Apr. 9	1699	340-1	127	2055
Ferguson, Eppy W., assignor of one-half to S. Lambert, Owensboro, Ky. Hand seeding implement	849,928	Apr. 9	2648	554	127	2286
Feuerstein, Siegmund, Rochester, N. Y. Insulator	849,929	Apr. 9	2649	554	127	2286
Fifield, James J., Boston, assignor of one-half to W. Howland, Chelsea, Mass. Lock-nut	849,731	Apr. 9	2179	449	127	2177
Fischer, Emil, Berlin, assignor to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Bromin derivative of fatty acids	849,688	Apr. 9	1641	373	127	2094
Fisk, William T., Detroit, Mich. Casket-handle	849,111	Apr. 9	2372		127	2261
Fiske, Mary L., and J. R. Smith, Port Chester, N. Y. Skirt-guard for baby-coaches	849,669	Apr. 9	2079	427	127	2182
Flora, Ellsworth E., Chicago, Ill., assignor to W. O. Williams, South Bend, Ind. Concrete-mixer	849,559	Apr. 9	2397	469	127	2225
Flyberg, Richard E., Halsted, Minn. Firearm	849,732	Apr. 9	2180	449	127	2177
Ford, Grant G., Speed, Kans. Sleigh attachment for buggy-wheels	849,559	Apr. 9	1642	373-4	127	2094
Forest, Elsear E., Stoneham, Mass. Savings-bank	849,599	Apr. 9	2020	454-5	127	2297
Forrest, Margret E., Jamestown, Pa. Mop-holder	849,629	Apr. 9	1601	341	127	2066
Forster, Samuel S., Schenectady, N. Y., assignor to General Electric Company. Dynamo-electric machine	849,891	Apr. 9	2651	555	127	2287
Forter Miller Engineering Co. (See Miller, William R., assignor.)						
Fortiner, Benjamin F., Camden, N. J., assignor to Hale and Kilburn Manufacturing Company, Philadelphia, Pa. Support for seat-backs	849,870	Apr. 9	2081	427-8	127	2153
Foster, Clair, Douglaston, N. Y., assignor to J. Hunt, Chicago, Ill. Multiple elevator system	849,604	Apr. 9	1995	402	127	2123
Foster Miller Engineering Co. (See Miller, William R., assignor.)						
Fouts, James H., Moline, Kans. Band-wagon	849,849	Apr. 9	2306	490	127	2235
Fox, Samuel, Paterson, N. J. Window-shade bracket	849,470	Apr. 9	1693	341	127	2054
Francis, Alfred E., Kent, Iowa. Device for testing the germinating power of seed-corn	849,882	Apr. 9	2497	515	127	2280
Frantz, Peter, Dixon, Ill. Feed mechanism for wire-fence machines	849,671	Apr. 9	2083	428	127	2153
Fraser, Simon A., and F. S. Kline, Lorain, Ohio. Mail-bag catching and delivering apparatus	849,672	Apr. 9	2085	428-9	127	2154
Fraser, William G. (See Thurlow and Fraser.)	849,673	Apr. 9	2086	429-30	127	2154
Frear, Jennees B., Excelsior, Minn. Paper-rack	849,893	Apr. 9	2498	515	127	2280
Fredericks, William L., Minneapolis, Minn. Rail-joint for iron beds	849,537	Apr. 9	1544	374-5	127	2094
Freestate, Charles P., Chicago, Ill. Gluing-machine	849,777	Apr. 9	2274	467	127	2203
French, Frank H., assignor to Draper Company, Hopedale, Mass. Boring-machine	850,085	Apr. 9	2617	550	127	2238
Friedheim, Arthur. (See Lehnert, Paul and M., assignors.)						
Frikart, Johann R., and O. Jaeger, Munich, Germany. Turbine-blade	849,982	Apr. 9	2652	556	127	2287
Frollo, Giovanni, Milan, Italy. Impermeable cement for resisting water	849,778	Apr. 9	2277		127	2203
Fruin, John L., New York, N. Y. Sanitary T	849,282	Apr. 9	1534	310	127	2015
Fuller, Apollos, Pasadena, Cal. Shoe-tree	849,894	Apr. 9	2499	515	127	2280
Fuller, James W., Jr., Catasauqua, Pa. Pulverizing or grinding mill	849,770	Apr. 9	2277	467-8	127	2204
Fuller, James W., Jr., Catasauqua, Pa. Pulverizing or grinding mill	849,780	Apr. 9	2279	468	127	2204
Fuller, James W., Jr., Catasauqua, Pa. Metal ring for pulverizing or grinding mills	849,781	Apr. 9	2281	469	127	2204
Gaeth, Paul, Cleveland, Ohio. Carburetor	849,782	Apr. 9	2282	469	127	2204
Galesburg Coulter-Disc Co. (See Gaylord, Arthur C., assignor.)	849,630	Apr. 9	1545	375	127	2094
Gallagher, Thomas M., Old Orchard, assignor to Scullin Gallagher Iron & Steel Company, St. Louis, Mo. Car-truck	849,888	Apr. 9	2301	515-16	127	2261
Galliher, Lawrence M., Plaquemine, La. Filter for eave-troughs	849,674	Apr. 9	2091	430	127	2155
Gamble, John, assignor to G. A. Risch, Philadelphia, Pa. Abdominal guard and supporter						
Garred, Ulysses A., Anaconda, Mont. Sample-mixer	849,471	Apr. 9	1694	342	127	2055
Garred, Ulysses A., assignor to C. H. Repath, Anaconda, Mont. Tuyer construction	849,849	Apr. 9	1543	376	127	2095
Gault, James H., Philadelphia, Pa. Universal joint for shafts or sections of shafts	849,889	Apr. 9	1547	375	127	2095
Gaylord, Arthur C., assignor to Galesburg Coulter-Disc Co., Galesburg, Ill. Disk-harrow scraper	849,894	Apr. 9	1535	310	127	2016
General Electric Company. (See Alexanderson, Ernst F. W., assignor.)	849,988	Apr. 9	2653	555-6	127	2288
General Electric Company. (See Forster, Samuel S., assignor.)						
General Electric Company. (See Hewlett, Edward M., assignor.)						
General Electric Company. (See Mallett, John P., assignor.)						
General Electric Company. (See Potter, William B., assignor.)						
General Electric Company. (See Stewart, Samuel B., Jr., assignor.)						
General Electric Company. (See Stone, Fred L., assignor.)						
General Electric Company. (See Whitney and Tirrill, assignors.)						
Gibson, John W., Milwaukee, Wis. Ore-separator	849,926	Apr. 9	1698	311	127	2016
Gifden, John W. (See Shade, Theodore, assignor.)						
Giles, Joseph S., assignor to M. J. Whittall, Worcester, Mass. Pile-wire-oiling device for looms	849,783	Apr. 9	2304	470	127	2205
Giles, Joseph S., assignor to M. J. Whittall, Worcester, Mass. Pile-wire-oiling device for looms	849,784	Apr. 9	2305	470	127	2205
Gilleland, Wilson S., and W. D. Stanley, Newkirk, Okla. Ter. Wagon-top	849,678	Apr. 9	2088	430	127	2155
Gilmore, Edward E., Philadelphia, Pa. Acute-angle crossing for electric railways	849,894	Apr. 9	2654	556	127	2288
Glass, Perley R., Boston, Mass., assignor to Peerless Machinery Company. Covering eyelets with a flexible material	849,695	Apr. 9	1697	429-3	127	2124

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Gnaegy, Albert. (See Proctor and Gnaegy.)						
Gold, Heiman, New York, N. Y. Bed-pan	849,672	Apr. 9	1695	342	127	2055
Goldstein, Albion, St. Louis, Mo. Insulator	849,606	Apr. 9	1996	402	127	2124
Goldstein, Albion, St. Louis, Mo. Insulator	849,941	Apr. 9	2405	481	127	2257
Goode, John P., Chicago, Ill. Physiographical instrument	849,676	Apr. 9	2082	480	127	2156
Goodman Manufacturing Company. (See Sperry, Elmer A., assignor.)						
Gordon, John B., Atlanta, Ga. Display-stand	850,086	Apr. 9	2621	551	127	2239
Goss, John H., assignor to Inovill Manufacturing Company, Waterbury, Conn. Powder-can top						
Gould Coupler Company. (See Turbayne, William A., assignor.)						
Graff, John. (See Schauer and Graff.)						
Graff, Oscar C., assignor to C. P. Kimball & Co., Chicago, Ill. Adjustable support for wind-shields	849,733	Apr. 9	2182	450	127	2177
Grant, William L., Columbia, Tenn. Rail-joint	849,807	Apr. 9	1969	408	127	2126
Gray, J. M., Jr., et al. (See Medearis, William R., assignor.)						
Griffith, Charles, Elizabeth, Pa. Insulator	849,896	Apr. 9	2502	516	127	2281
Griffiths, William H., Chester, Pa. Composite railway-tie	850,087	Apr. 9	2623	551	127	2239
Grigg, James R., Arapaho, Okla. Ter. Harrow-disk	849,895	Apr. 9	1538	311	127	2017
Grigg, David C. (See Lamb, Grigg, and Smith.)						
Grigg, Benjamin A., St. Louis, Mo. Combined trousers-clasp and belt-holder	849,677	Apr. 9	2084	431	127	2156
Grote, Francis H., Halesowen, England. Manufacture of buttons, brooches, belt-clasps, and buckle-fronts from horn and hoof	849,608	Apr. 9	1970		127	2125
Grover, Albert D., Malden, Mass. Coin-controlled vending-machine	849,609	Apr. 9	1971	403	127	2125
Gruesbeck, Alonzo. (See Nye and Gruesbeck.)						
Gunn, Edgar, Clapham, England. Cash-checking machine	849,473	Apr. 9	1696	342-4	127	2057
H. Herrmann Lumber Co. (See Karpp, Charles, assignor.)						
Haas, Isaac H., Atlanta, Ga. Spring-bed	849,541	Apr. 9	1549	376	127	2096
Hale and Kilburn Manufacturing Company. (See Fortiner, Benjamin F., assignor.)						
Hale-Kilburn Metal Company. (See Budd, Edward G., assignor.)	849,897	Apr. 9	2503	516	127	2281
Hall, Charles S., Lobrville, Iowa. Implement for handling hollow bricks						
Hall, John W. (See Draper, Thomas, assignor.)	849,610	Apr. 9	1972	404	127	2125
Hallstein, August J., New York, N. Y. Safety attachment for elevators	849,678	Apr. 9	2085	431	127	2156
Hamel, Nathan S. V., Portland, Me. Force draft	849,542	Apr. 9	1550	376	127	2096
Hamilton, Benjamin F., Marinton, W. Va. Metallic railway-tie	849,679	Apr. 9	2086	431	127	2156
Handlan, Alexander H., Jr., St. Louis, Mo. Lamp-burner						
Hannagan, John W. (See Taylor, Charles A., assignor.)						
Hanrahan, John E. (See Brown, Hanrahan, and Boyden.)	849,287	Apr. 9	1539	311	127	2017
Hansen, Carl H., Hellerup, Denmark. Safety device for firearms						
Hanson & Van Winkle Company. (See Cordeaux, Gaston E., assignor.)						
Hard Manufacturing Company. (See Dyett, James H., assignor.)	849,288	Apr. 9	1541	312	127	2017
Harding, Henry M., New York, N. Y. Track for telphers	849,995	Apr. 9	2656	556	127	2288
Harker, Irving G., Dodgeville, Wis. Stubble-turner	849,680	Apr. 9	2087	431	127	2157
Harner, Thomas E., St. Louis, Mo. Gate-latch	849,906	Apr. 9	2657	556-7	127	2287
Hass, Ferdinand, Ilford, England. Trolley, hand-truck, and the like	849,681	Apr. 9	2088	432	127	2199
Hauver, Walter H., assignor of one-half to W. C. Lindsay, Newport, Vt. Putty-remover	849,896	Apr. 9	2505	516-17	127	2282
Hay, Alexander G., Camden, N. J. Boiler-tube-scraping apparatus	849,899	Apr. 9	2506	517	127	2282
Hayden, Frank, Dexter, Me. Bottle	849,734	Apr. 9	2183	450	127	2177
Hayden, Joel, Jr., assignor to Hayden Machinery Company, Boston, Mass. Ring spinning and twisting apparatus	849,289	Apr. 9	1542	313-13	127	2017
Hayden Machinery Company. (See Hayden, Joel, Jr., assignor.)						
Hayden, William J., Athol Center, Mass. Mortising-machine attachment	849,290	Apr. 9	1545	313	127	2018
Hazelton, Hugh, et al. (See Brinckerhoff, Francis M., assignor.)						
Hazelton, William S., Prosser, Wash. Wire-fence builder	849,682	Apr. 9	2100	432	127	2157
Heavilin, Clifford S. (See Heavilin, William E. and C. S.)	849,474	Apr. 9	1703	345	127	2058
Heavilin, William E. and C. S., Bowerston, Ohio. Vehicle-brake						
Hedgeland, Frederick W., Chicago, Ill. Differential clutch mechanism for automobiles	849,735	Apr. 9	2287	470	127	2205
Heimbacher, Gottlieb A., assignor of one-half to W. Kennedy, Chicago, Ill. Cover for railway-cars						
Heinzeldt, Oskar G., Vienna, Austria-Hungary. Single cemented objective-lens, also applicable as double objectives	849,900	Apr. 9	2508	518	127	2282
Heinichen, Hugo A. L., Chicago, Ill. Heel-clip	849,901	Apr. 9	2509	518	127	2283
Heller, Charles S., Philadelphia, Pa. Safety-gate-controlling means	849,842	Apr. 9	2407	491	127	2257
Helm, Christ, Belpre, Ohio. Carpet-stretcher	849,907	Apr. 9	2658	557	127	2289
Helm, Wilhelm, Berlin, Germany. Cooling apparatus	849,908	Apr. 9	2660	558	127	2290
Hendricks, Augustin, Grand Rapids, Mich. Combined packing-box and stand	849,909	Apr. 9	2662	558	127	2290
Hendrickson, Sidney W., White Plains, N. Y. Manufacturing concrete blocks for building purposes	850,112	Apr. 9	2673	601	127	2351
Henry, Horace L., and W. Althoff, Geneva, N. Y. Grinding-machine	849,391	Apr. 9	1540	314	127	2019
Henry, Lydia E., Vandergrift, Pa. Bedclothes-holder	849,902	Apr. 9	2511	518	127	2283
Herring, James W., Mount Carmel, Pa. Cement-block machine	849,392	Apr. 9	1551	314	127	2020
Hess, Charles H., Steamboat Rock, Iowa. Car-replacer	849,393	Apr. 9	1552	314	127	2020
Hess, George L. (See Kelley, Edward J., assignor.)	849,735	Apr. 9	2184	450-1	127	2178
Hewlings, Samuel M., Haddonfield, N. J. Bottle-filling machine	849,475	Apr. 9	1705	345	127	2059
Hewitt, Edward G., New York, N. Y. Sun-dial	849,683	Apr. 9	2101	432	127	2157
Hewitt, Edward G., New York, N. Y. Sun-dial						
Hewitt, Peter C., assignor to Cooper Hewitt Electric Company, New York, N. Y. Mercury-pump	849,394	Apr. 9	1553	314	127	2020
Hewlett, Edward M., Schenectady, N. Y., assignor to General Electric Company. Electric switch	849,684	Apr. 9	2103	433	127	2158
Higley Machine Company. (See Juengst, Charles A., assignor.)	849,736	Apr. 9	2288	470	127	2206
Hildenbrand, Charles, Phoenixville, Pa. Gun-cleaning implement						
Hills, Clement L. (See Spencer, Joseph M., assignor.)						
Hinckman, George N., Webster Groves, assignor to Standard Adding Machine Company, St. Louis, Mo. Adding-machine	849,476	Apr. 9	1706	345-7	127	2059
Hine, Adelbert P. (See Morse, Arthur J., assignor.)	849,395	Apr. 9	1554	315	127	2020
Hinsdill, Charles A., Troy, N. Y. Conduit-box	849,396	Apr. 9	1555	315	127	2020
Hinton, William C., Danburg, assignor to J. H. Sayer, Pistol, and C. Croft, Danburg, Ga. Cultivator	849,787	Apr. 9	2289	471	127	2206
Hitz, George, Indianapolis, Ind. Growing sweet potatoes and other tubers	849,611	Apr. 9	1974	404	127	2126
Holer, William L., Manhattan, Kans. Ventilating-canopy	849,397	Apr. 9	1556	315	127	2021
Holmes, Carl O., Chicago, Ill. Combination chair and table	849,543	Apr. 9	1851	376-7	127	2096
Hoffmann, Rudolf, Mülhausen, Germany. Heating arrangement for turbines	849,612	Apr. 9	1975	404	127	2126
Hoffmann, William, Elberfeld, Germany. Wire-coupling	849,544	Apr. 9	1854	377	127	2096
Holm, George M., Harrisonville, Mo. Ice-plow	850,000	Apr. 9	2663	558	127	2290
Holder, James P., New York, N. Y. Cushion-wheel	849,398	Apr. 9	1557	315	127	2021
Holland, Henry T., New York, N. Y. Bracket	849,613	Apr. 9	1976	405	127	2126
Holley, Dwight S., Forestville, assignor to American Silver Company, Bristol, Conn. Beverage-cooling device	849,614	Apr. 9	1978	405	127	2127
Holmes, George L., Oakland, Cal. Gold washing and saving apparatus	850,001	Apr. 9	2664	558	127	2291
Helmer, Stewart, New York, N. Y. Packing						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Drfs.	Official Gazette. Vol.	Pge.
Hornsffer, Frederick L. (See Shadell, Charles E., assignor.)						
Houchin, Ernest A., and A. Huber, Brooklyn, N. Y. Conveyer-belt	849,668	Apr. 9	2666	539	127	2281
Houchin, Ernest A., and A. Huber, Brooklyn, N. Y. Forming fluted soap sheets and articles resulting therefrom	849,669	Apr. 9	2666	539	127	2281
Houchin, Ernest A., and A. Huber, Brooklyn, N. Y. Apparatus for fluting sheets of soap	849,670	Apr. 9	2666	539	127	2281
Houghton, Stephen C., Rome, N. Y. Telephone switch-box	849,604	Apr. 9	2660	539	127	2282
Houle, Velo, Muskegon, and A. W. Konkle; said Houle assignor to C. Peterson, Manistee, Mich. Street-sweeper	849,815	Apr. 9	1981	406	127	2127
Hovander, August S., Clay City, Ind. Vise	849,605	Apr. 9	2671	560	127	2282
Howe, William F., Chicago, Ill. Power-transmission device	849,816	Apr. 9	1983	406	127	2128
Howell, Charles T., Kirkman, Iowa. Ditching-plow	849,817	Apr. 9	1985	406-7	127	2128
Howland, Stephen H. (See Perkins, Arthur J., assignor.)	849,606	Apr. 9	2672	560	127	2282
Howland, Willard. (See Fifield, James J., assignor.)						
Huber, Anthony. (See Houchin and Huber.)						
Hughes, Victor H., Sabetha, and D. C. Evans, Hiawatha, assignors of one-third to F. G. Beaulieu, Sabetha, Kans. Watering-trough	849,848	Apr. 9	2410	491	127	2227
Humphreys, John, Henderson, Ky. Jack	849,788	Apr. 9	2290	471	127	2206
Hunt, Bertram, San Francisco, Cal. Grinding and pulverizing apparatus	849,545	Apr. 9	1855	377	127	2096
Hunt, Jarvis. (See Foster, Clair, assignor.)						
Hunt, Oscello R., assignor to Simmons Manufacturing Company, Kenosha, Wis. Leaf-support	849,726	Apr. 9	2157	451	127	2179
Huntoon, Fred M., Riverside, Cal. Lawn-sprinkler	849,697	Apr. 9	2674	561	127	2283
Hurd, James C., assignor of one-half to F. K. Williams, Springfield, Mass. Tweezers	849,789	Apr. 9	2292	471	127	2206
Hurlburt, Albert R., Middletown, Conn. Desk-plate	849,818	Apr. 9	1986	407	127	2128
Hutcheson, James, Johnson county, Kans. Grain and straw separator	849,695	Apr. 9	2675	561	127	2283
Hyde, Charles A., assignor to E. H. Jacobs Manufacturing Company, Danielson, Conn. Picker-stick connection for looms	849,696	Apr. 9	2824	591	127	2329
Ideal Shaft Supporter Company. (See Nestler, Emil, assignor.)						
Idov, Abraham, Baltimore, Md. Tailor's chalk-sharpener	849,699	Apr. 9	1858	316	127	2021
Insull, Samuel. (See Ball, Henry P., assignor.)	849,698	Apr. 9	2676	561	127	2283
International Harvester Company. (See Webber, William, assignor.)						
Ira Brown Company. (See Beeken, Axel V., assignor.)						
Irwin, Thomas, Cleveland, Ohio. Load-trimmer	849,477	Apr. 9	1713	347-8	127	2060
Irwin, Thomas, Cleveland, Ohio. Load-trimmer	849,478	Apr. 9	1715	348	127	2061
J. W. Barlow Company. (See Whitehead, John, assignor.)						
Jackson, John W., Richmond, Va. Curing concrete blocks	849,790	Apr. 9	2293	471	127	2207
Jackson, William H., Columbia, Pa. Toy	849,819	Apr. 9	1989	407	127	2129
Jaeger, Oskar. (See Frikart and Jaeger.)						
Jaubert, George F., Paris, France. Purifying acetylene gas	849,610	Apr. 9	2677	.....	127	2284
Jaudon, John C. (See Salvo, Joseph T., assignor.)						
Jenkins, C. H., *et al.* (See Burdon, Willis C., assignor.)						
Jennings, Alfred J., Martinez, Cal. Canopy mosquito-bar	849,791	Apr. 9	2295	472	127	2207
Jewett City Textile Novelty Company. (See McNicol, Archie, assignor.)						
Jobson, John B., Atlanta, Ga. Plow	849,611	Apr. 9	2677	561	127	2284
Jogerst, William F., Kent, Ill. Wire-guide for check-row planters	850,013	Apr. 9	2679	562	127	2284
Johns, Alfred. (See Blessing and Johns.)						
Johnson, Frank C., Portland, Me. Ink-saving adjustment	849,695	Apr. 9	2104	433	127	2158
Johnson, Jeptha L., and T. Reynolds, Nicholasville, Ky. Heating-stove	849,548	Apr. 9	1857	377	127	2097
Johnson, Milton, assignor of one-half to J. B. Anderson, Danville, Va. Overalls	850,013	Apr. 9	2680	562	127	2284
Johnson, Nels, Spokane, Wash. Furnace	849,699	Apr. 9	2104	433	127	2158
Johnson, Thorwald, Chicago, Ill. Barrel-hoop former	849,620	Apr. 9	1550	316	127	2022
Johnston, Allen, Ottumwa, Iowa. Grinding-machine	850,014	Apr. 9	2680	562-3	127	2284
Johnston, John. (See Potter and Johnston.)						
Jones, Albert F., assignor to A. F. Jones Company, Salem, Mass. Stone-cutting machine	850,113	Apr. 9	2677	602	127	2351
Jones, Richard E., Hagerstown, Md. Ice-door	849,627	Apr. 9	2106	433	127	2159
Jowitt, Josiah, Leeds, England. Vise	849,788	Apr. 9	2290	472	127	2206
Juengst, Charles A., assignor to Higley Machine Company, Croton Falls, N. Y. Metal-sawing machine	849,789	Apr. 9	2290	472-3	127	2206
Jules, Ole H. (See Amonsen, Gelbert, assignor.)						
Justison, Charles E., Wilmington, Del. Bottle	850,015	Apr. 9	2684	563	127	2285
Kahre, William, Wharton, N. J. Box-loom	849,670	Apr. 9	1716	348-9	127	2062
Kaplan, Godfrey J., Owatonna, Minn., assignor to Perfection Churn Company. Combined churn and butter-worker	849,696	Apr. 9	2107	433	127	2159
Karpp, Charles, College Point, assignor of one-half to H. Herrmann Lumber Co., New York, N. Y. Rotary cutter for woodworking-machines	849,794	Apr. 9	2296	473	127	2210
Katz, Oscar J., Rochester, N. Y. Drying frame and stretcher	850,016	Apr. 9	2685	563	127	2285
Kaufman, Emanuel, Cisco, Ind. Ter. Mowing-machine	849,695	Apr. 9	2511	518-19	127	2263
Keating, Michael H., *et al.* (See Corrigan, Hamlet, assignor.)						
Keeney, George W., *et al.* (See Edwards, Walter, assignor.)						
Keiter, Forrest W., Philadelphia, Pa. Tucking attachment for sewing-machines	849,820	Apr. 9	1990	407	127	2129
Kelley, Edward J., Washington, D. C., assignor of one-half to G. L. Hess, Pottsney, N. Y. Steam-trap	849,401	Apr. 9	1861	316	127	2022
Kellogg, Milo G. (See Webster, Harry G., assignor.)						
Kellogg Switchboard and Supply Company. (See Dean, William W., assignor.)						
Kempter, Fritz, Stuttgart, Germany. Stirring-box arrangement for agitator-shafts in vacuum stirring apparatus	849,621	Apr. 9	1992	408	127	2130
Kennedy, David S., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	849,796	Apr. 9	2297	473	127	2210
Kennedy, David S., New York, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	849,114	Apr. 9	2682	602	127	2353
Kennedy, Michael R., Dansville, assignor to National Straw Pulp Company, New York, N. Y. Sample-tester for pulp-making apparatus	850,017	Apr. 9	2686	563	127	2305
Kennedy, Winnefred. (See Helmbucher, Gottlieb A., assignor.)						
Kenny, John B., Geneva, N. Y. Basket-handle	849,622	Apr. 9	1852	317	127	2023
Kent, Daniel, Worcester, Mass. Sorting device for cards	849,623	Apr. 9	1993	408-9	127	2130
Keystone View Company. (See Pappenhagen, Charles L., assignor.)						
Killian, Charles A., Morse Bluff, Nebr. Pipe and rod grip	849,624	Apr. 9	1994	409	127	2131
Kime, Frank A., Westhall, Oreg. Hay-stacker	849,793	Apr. 9	2295	474	127	2211
Kinder, Arthur H., assignor to L. C. Chase & Co., Boston, Mass. Lap-robe	849,624	Apr. 9	1995	409	127	2131
King, George W., assignor to Marion Steam Shovel Company, Marion, Ohio. Hoisting mechanism	849,625	Apr. 9	1997	409-10	127	2131
King, Samuel A. (See Coutant, George E., assignor.)						
Kinstle, John F., and J. M. Peck, Warren, Ind. Grinding-machine	849,626	Apr. 9	2089	410	127	2133
Kirkendall, Sarah M. (See Minier, David L., assignor.)						
Kirsch, Charles W., assignor to Kirsch Manufacturing Company, Three Rivers, Mich. Curtain-rod	849,699	Apr. 9	2295	592	127	2339
Kirsch Manufacturing Company. (See Kirsch, Charles W., assignor.)						
Kiser, Alvie V., Marion, Ohio. Crane	849,628	Apr. 9	1994	317	127	2023

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Drfs.	Official Gazette. Vol.	Pge.
Kleven, Ole L., East Grand Forks, Minn. Harvesting-machine attachment	849,689	Apr. 9	2109	434	127	2189
Kline, Frederick S. (See Fraser and Kline.)						
Kluge, Paul B., assignor to Cable Company, Chicago, Ill. Adjusting device for musical instruments	849,737	Apr. 9	2190	451	127	2179
Knapp, Ada E. (See Knapp, Edmond B., assignor.)						
Knapp, Edmond B., assignor to A. B. Knapp, Yuma, Ariz. Ter. Combination buckle and coupling for harness-traces	850,115	Apr. 9	2684	603	127	2353
Koch, Frederick G. (See Wagner and Koch.)						
Koch, Henry, assignor to Regina Company, Rahway, N. J. Mandrel for talking-machines	849,604	Apr. 9	1567	318	127	2034
Kohlmyer, Cornelius, Lorain, Ohio. Motor-vehicle	850,018	Apr. 9	2688	564	127	2286
Konkle, Abram W. (See Houle and Konkle.)						
Kovics, Dydak, East Pittsburg, Pa. Vise	849,904	Apr. 9	2513	519	127	2264
Krause, Romanus, assignor of one-half to E. B. Bell, Swanquarter, N. C. Combined potato-digger and cotton-chopper	850,019	Apr. 9	2690	564	127	2286
Krehbiel, John, Cleveland, Ohio. Dish-washing machine	849,627	Apr. 9	2003	411	127	2128
Kreis, Gustavus A. (See Nye, George E., assignor.)						
Kunath, Edward F., Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	849,628	Apr. 9	2007	411	127	2134
La Beauve, Valcourt J., Houston, Tex. Trolley-wire holder	850,020	Apr. 9	2692	565	127	2287
Lacasy, George, Hammond, La. Rail-joint	849,629	Apr. 9	2010	412	127	2135
Lamb, Elden P., assignor to Camden Anchor-Rockland Machine Co., Rockland, Me. Igniter for explosive-engines	849,797	Apr. 9	2310	474	127	2212
Lamb, George E., D. C. Griggs, and R. H. Smith, assignors to Waterbury Farrel Foundry and Machine Company, Waterbury, Conn. Thread-rolling machine	849,630	Apr. 9	2011	412-13	127	2135
Lambert, James T., Chandler, Tex. Horse-arrester	849,631	Apr. 9	2014	413	127	2136
Lambert, Stinson. (See Ferguson, Eppy W., assignor.)						
Lamche, Peter, Ratibor, Germany. Automatic coupling	850,090	Apr. 9	2626	592	127	2340
Lamort, Marcel, Paris, France. Means for controlling the pulp-strainer drums of paper-making machines	850,021	Apr. 9	2693	565	127	2287
Lamp Pump Syndicate. (See Badcock, Edward B., assignor.)						
Lamson Consolidated Store Service Company. (See Wolever, Franklin H., assignor.)	849,738	Apr. 9	2192	452	127	2180
Lapointe, Francis J., Roxbury, Mass. Reamer	849,690	Apr. 9	2111	.....	127	2160
Lauka, August L., Offenbach-on-the-Main, assignor to Chemische Fabrik Griesheim-Elektron, Frankfort-on-the-Main, Germany. Yellow wool-dye	849,739	Apr. 9	2193	.....	127	2180
Lauka, August L., Offenbach-on-the-Main, assignor to Chemische Fabrik Griesheim-Elektron, Frankfort-on-the-Main, Germany. Yellow monoazo dye and making same	849,844	Apr. 9	2412	492	127	2228
Laureaus, Joseph S. C., Oakland, Cal. Vibrator	849,798	Apr. 9	2311	474-5	127	2212
Le Favour, Joseph, and E. F. Brammer, Albany, Ind. Composition railway-tie	849,480	Apr. 9	1721	.....	127	2062
Lee, Robert H., assignor of one-half to T. H. Moody and J. C. Porter, Santa Monica, Cal. Composition for removing stains and restoring paint or varnish to its original gloss	849,905	Apr. 9	2515	519	127	2264
Leedy Manufacturing Company. (See Wanamaker and Leedy, assignors.)						
Leedy, Ulysses G. (See Wanamaker and Leedy.)						
Legge, Ruth E., Sandwich, England. Busk for corsets	849,740	Apr. 9	2194	452	127	2181
Leslie, Alexander. (See Seaver and Leslie.)						
Levy, Alfred J., assignor of one-half to M. Levy, St. Louis, Mo. Button	850,022	Apr. 9	2694	566	127	2287
Levy, Montadora. (See Levy, Alfred J., assignor.)	850,023	Apr. 9	2695	566	127	2287
Lewis, Clarence B., Los Angeles, Cal. Pie-cutter	850,024	Apr. 9	2696	566	127	2288
Lewis, Frederick, Fairbanks, Alaska. Thawing-point	849,741	Apr. 9	2195	452	127	2181
Lewis, Harry, New York, N. Y. Hammer	849,633	Apr. 9	2017	414	127	2137
Lewis, Herman J. S., New York, N. Y. Soap-dispenser	850,091	Apr. 9	2627	592-3	127	2340
Lewis, Wilfred. (See Taber and Lewis.)	850,025	Apr. 9	2697	566	127	2288
Liddell, Thomas W., Anson, Wis. Snow-plow						
Lietzow, Frederick W., Chicago, Ill. Telegraph and cable cipher-code						
Lile, George R. and J. A., Cloverdale, Cal. Harness plow attachment						
Lile, Joseph A. (See Lile, George E., and J. A.)						
Lindsay, William C. (See Hauver, Walter H., assignor.)	849,548	Apr. 9	1859	378	127	2097
Linsweaver, Maud E., South English, Iowa. Forehead and ear protector	849,405	Apr. 9	1568	318	127	2034
Lingenaan, Christian, St. Louis, Mo. Egg-tester	849,799	Apr. 9	2313	475	127	2212
Lippincott, Fisher H., assignor to Lippincott Pencil Company, Philadelphia, Pa. Pencil	850,026	Apr. 9	2698	567	127	2288
Lippincott Pencil Company. (See Lippincott, Fisher H., assignor.)	849,481	Apr. 9	1723	349	127	2062
Lloyd, Edwin L., Philadelphia, Pa. Window-screen	849,406	Apr. 9	1569	318	127	2034
Lobit, Jean M., New York, N. Y. Combined fishing-rod and cane	849,845	Apr. 9	2414	492	127	2229
Longfellow, Martin W., Hamilton, Ohio. Pressure-regulator for gas-cocks	849,407	Apr. 9	1570	318	127	2034
Longley, Edmund W. (See Smith, Robert P., assignor.)	849,800	Apr. 9	2316	475	127	2213
Loughery, Frank X., Sr., Santa Rosa, Cal. Umbrella	849,549	Apr. 9	1860	378	127	2098
Lowrie, Harvey C., New York, N. Y. Umbrella	849,550	Apr. 9	1861	378	127	2098
Lowthorp, Charles S., Hope, Ark. Sash-lock	849,551	Apr. 9	1864	378	127	2099
Ludington, Francis H., *et al.* (See Montgomery, John H., assignor.)	850,027	Apr. 9	2700	567	127	2289
Lull, Lyan C., Kalamazoo, Mich. Motor-vehicle	849,482	Apr. 9	1723	349-50	127	2063
Lumsden, William G. (See Crosby, Harold A., assignor.)	849,801	Apr. 9	2318	476	127	2213
Lundholm, Charles G., Otis, assignor of one-half to F. E. Davisson, Los Angeles, Cal. Air-brake mechanism	849,905	Apr. 9	2516	520	127	2265
Lutterman, Adolf A., Ackley, Iowa. Mail-carrying device	849,552	Apr. 9	1866	379	127	2100
Lynch, Morris J., Ottawa, Kans. Indicator	849,691	Apr. 9	2112	494	127	2160
Mashke, George, Jr., Elizabeth, N. J. Air or gas pump, &c	849,802	Apr. 9	1729	350-1	127	2064
Maswilliam, Hugh G., New Rochelle, N. Y. Garment-supporter	849,553	Apr. 9	2703	568	127	2289
Maswilliam, Hugh G., New Rochelle, N. Y. Garment-supporter	849,554	Apr. 9	2704	568	127	2289
Madole, William J., and H. Boerner, Paris, Tenn. Cover or lid support for barrels	849,691	Apr. 9	2113	494	127	2160
Magaisen, Jacob A., Melville, Mont. Sheep-branding machine	849,483	Apr. 9	1729	350-1	127	2064
Magle, Morton H., and C. N. Winters, Bakersfield, Cal. Motor-vehicle	850,028	Apr. 9	2705	568	127	2289
Major, Alphonse, Brooklyn, N. Y. Cooker	850,116	Apr. 9	2685	603	127	2353
Mallett, John P., Madison, Wis., assignor to General Electric Company. Core-separator	849,907	Apr. 9	2517	520	127	2265
Mallette, James A., St. Louis, Mo. Lock-switch	849,692	Apr. 9	2114	495	127	2161
Mallory, George W., Detroit, Mich. Door-catch	849,742	Apr. 9	2197	452	127	2181
Mandry, Arthur, New Orleans, La. Metal door	849,908	Apr. 9	2519	520	127	2265
Mansfield, Albert K., Batavia, Ill. Steel supporting structure for electric transmission-cables	849,802	Apr. 9	2319	476	127	2214
Marion Steam Shovel Company. (See King, George W., assignor.)	849,406	Apr. 9	1572	319	127	2035
Marsh, Frank C., Trenton, Nebr. Counterbalance attachment for pumps						
Martin, James H., Falun, Kans. Rail-joint						
Martin, Karl, assignor to Rathenower Optische Industrie-Anstalt vormals Emil Busch, A. G., Rathenow, Germany. Telescope, field-glass, and the like	849,909	Apr. 9	1573	319	127	2035

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Martin, Samuel D., Cincinnati, Ohio Fishing-tackle	849,769	Apr. 9	2199	453	127	2182
Matilka, Georg. (See Windt and Matilka.)						
Mattick, Wm. (See Curtis, Leo W., assignor.)						
McClave-Brooks Company. (See McClave, William, assignor.)						
McClave, William, Scranton, Pa., assignor to McClave-Brooks Company. Furnace	849,822	Apr. 9	2224	522	127	2207
McClave, William, assignor to McClave-Brooks Company, Scranton, Pa. Stoking-grate mechanism	849,913	Apr. 9	2228	522-3	127	2208
McClave, William, assignor to McClave-Brooks Company, Scranton, Pa. Grate	849,914	Apr. 9	2231	522-4	127	2209
McDonough, James H., Watertown, Mass. Fire-kindler	849,915	Apr. 9	2234	524	127	2209
McGowan, William L., Philadelphia, Pa. Plug for sealing underground conduits	849,415	Apr. 9	1580	321	127	2027
McKee and Bliven Button Company. (See Miller, John W., assignor.)						
McKeen, William R., Jr., Omaha, Nebr. Unloading device for pump inlet-valves	849,916	Apr. 9	2235	524	127	2209
McKenna, Frank B. (See O'Brien, John D., assignor.)						
McKenzie, Bertram D. (See Roberts, Frederick C., assignor.)						
McKnight, Robert, Philadelphia, Pa. Ore-roasting apparatus	849,699	Apr. 9	2726	572	127	2314
McLean, George B., Elizabeth, Ill., and G. D. McLean, Powersville, Mo. Beam	849,917	Apr. 9	2236	524	127	2270
McLean, Gregory D. (See McLean, George B. and G. D.)						
McLellan, Harry R. (See Strickland, James L., assignor.) (Reissue.)						
McManus, John A., Philadelphia, Pa. Cushion-hub	849,849	Apr. 9	2726	573	127	2314
McNamara, James, Montreal, Quebec, Canada, assignor to Mergenthaler Linotype Company. Matrix for monoline-machines	849,894	Apr. 9	2236	304	127	2242
McNeal, Thomas, Kansas City, Mo. Calcining-furnace	849,941	Apr. 9	2727	573	127	2314
McNicol, Archie, assignor to Jewett City Textile Novelty Company, Jewett City, Conn. Fabric-printing machine	849,480	Apr. 9	1733	354-5	127	2070
McQuillan, William H., et al. (See Edwards, Walter, assignor.)						
Medearis, William R., assignor of two-thirds to J. M. Gray, Jr., and H. A. Ellers, Nashville, Tenn. Strap-loop	849,843	Apr. 9	2415	492	127	2239
Medearis, William R., assignor of two-thirds to J. M. Gray, Jr., and H. A. Ellers, Nashville, Tenn. Machine for setting or affixing pronged loops to leather or other material	849,847	Apr. 9	2416	493	127	2239
Meeker, George H., Media, Pa. Sealing metal in glass	849,680	Apr. 9	2704	568	127	2310
Mehling, William M., Detroit, Mich. Machine for making picture-frames	849,676	Apr. 9	2320	476	127	2214
Mellinger, Lloyd, Rapid City, S. D. Stamp-shaft tapper	849,680	Apr. 9	2705	568	127	2310
Menasco, Charles J., assignor of fifty-five one-hundredths to R. N. Rhodes and R. C. Bankston, Birmingham, Ala. Printing-telegraph	849,624	Apr. 9	1722	351-2	127	2065
Menkens, John, Chicago, Ill. Press for closing and opening sheet-metal receptacles	849,688	Apr. 9	2533	503	127	2241
Mergenthaler Linotype Company. (See Kennedy, David S., assignor.)						
Mergenthaler Linotype Company. (See McNamara, James, assignor.)						
Metcalf, Jefferson D., Bewaikowa, assignor of one-half to J. C. Causey, Gloster, Miss. Washing-machine	849,681	Apr. 9	2706	568	127	2310
Metropolitan Engineering Company. (See Wall, Benjamin, assignor.)						
Metzger, Max, Chicago, Ill. Heating device	849,695	Apr. 9	1746	353	127	2069
Michaelsen, Charles O., Salt Lake City, Utah. Machine for separating gold and platinum from other material	849,853	Apr. 9	1867	379-81	127	2100
Middleton, Albert J., Indianapolis, Ind. Broom-corn-saw machine	849,804	Apr. 9	2323	476	127	2215
Middleton, Alfred D., Savannah, Ga. Toy gun	849,854	Apr. 9	1876	382	127	2102
Miller, Du Brul and Peters Manufacturing Company. (See Roosvarno, Richard E., assignor.)						
Miller, George C., Fairfax, Minn. Refrigerator-fastening	849,689	Apr. 9	2708	569	127	2310
Miller, John W., assignor of three-fifths to McKee and Bliven Button Company, Muscatine, Iowa. Automatic button cutting and sewing machine	849,698	Apr. 9	2709	569-70	127	2311
Miller, Uriah R., Salem, Ohio. Boat	849,884	Apr. 9	2714	570	127	2312
Miller, William L., Chicago, Ill. Heating system	849,744	Apr. 9	2201	452	127	2189
Miller, William R., assignor to Porter Miller Engineering Co., Pittsburg, Pa. Gas-producer	849,849	Apr. 9	2420	493-4	127	2240
Miller, William R., assignor to Porter Miller Engineering Co., Pittsburg, Pa. Water-sealed continuous ingot-heating furnace	849,909	Apr. 9	2231	521	127	2206
Mills, Anson C., Jackson, Mich. Fish-stringer	849,630	Apr. 9	1574	319	127	2026
Mills, George M., Jersey City, N. J. Rotary ice-breaking machine	849,699	Apr. 9	2234	523	127	2241
Minier, David L., assignor of one-half to S. M. Kirkendall, Ithaca, N. Y. Railway-car	849,611	Apr. 9	1575	319-20	127	2026
Mitchell, Fredrick W. T., Iron River, Wis. Cross-line buckle	849,686	Apr. 9	1748	353	127	2069
Mitchell, John B., Hill Top, W. Va. Car-coupling	849,612	Apr. 9	1577	320	127	2026
Mitchell Reversible Window Company. (See Wagner and Koch, assignors.)						
Mook, Obel H. (See Reynolds, Chauncey W., Jr., assignor.)						
Monarch Typewriter Company. (See Young, Frank A., assignor.)						
Montgomery, John H., assignor of two-thirds to F. H. Ludington and F. Orff, St. Louis, Mo. Manufacturing metallic oxids	849,555	Apr. 9	1877	382	127	2102
Moody, Thomas H., et al. (See Lee, Robert H., assignor.)						
Moore, Charley P., Bardis, Tenn. Wire-stretcher	849,840	Apr. 9	2233	521	127	2207
Moore, Roy, and R. L. Ferguson, Haran, Va. Penholder	849,911	Apr. 9	2234	521	127	2207
Moran, Thos. W., et al. (See Burdon, Willis C., assignor.)						
Morgan Crucible Company. (See Speirs, Charles W., assignor.)						
Morgan, Jesse, assignor of one-half to T. A. Boak, Hughesville, Pa. Attachment for turning-lathes	849,685	Apr. 9	2715	570	127	2312
Morin, George, Habana, Cuba. Telegraphone	849,686	Apr. 9	2717	571	127	2313
Morley, Joseph D., Utica, N. Y., assignor to R. W. Scott, Leeds Point, N. J., and L. N. D. Williams, Ogontz, Pa. Trimming for the edges of fabrics	849,688	Apr. 9	2115	435	127	2161
Morpurgo, Giulio, assignor to Krste Triester-Reiseshäl-Fabriks-Aktien-Gesellschaft, Trieste, Austria-Hungary. Manufacture of sizing or finishing media	849,613	Apr. 9	1576	.....	127	2027
Morse, Arthur J., assignor of one-half to A. P. Hine, Torrington, Conn. Clutch	849,627	Apr. 9	1740	354	127	2069
Morse, Arthur J., assignor of one-half to A. P. Hine, Torrington, Conn. Roller-bearing	849,628	Apr. 9	1739	354	127	2070
Morse, Clyde S., Shabbona, Ill. Vehicle-wheel	849,849	Apr. 9	2422	494	127	2240
Moser, Fred J., Kane, Pa. Raising liquids from wells	849,697	Apr. 9	2710	571	127	2313
Moulton, Flora G., Chicago, Ill. Attachment to telephone-transmitters	849,745	Apr. 9	2202	453	127	2182
Mueller, Emil, Chicago, Ill. Boring-lathe	849,414	Apr. 9	1579	320	127	2027
Mueller, Friedrich, St. Louis, Mo. Brick-mold	849,698	Apr. 9	2722	572	127	2314
Miller, Leopold F., Passaic, N. J. Telephone system	849,888	Apr. 9	2424	494-5	127	2241
Nash Charles J., assignor to W. H. Miner Company, Chicago, Ill. Draft-rigging	849,580	Apr. 9	1876	382	127	2102
National Cellular Steel Company. (See Rude, James M., assignor.)						
National Compositype Company. (See Brown, Hanrahan, and Boyden, assignors.)						
National Cotton Tuft and Fibre Manufacturing Company. (See Rehfuss, Martin O. and J. G., assignors.)						
National Straw Pulp Company. (See Kennedy, Michael R., assignor.)						
Ness, Louis, and W. Vensin, Minneapolis, Minn. Automatic sash-operator	849,690	Apr. 9	1783	355	127	2070
Nelson, Emma, administratrix. (See Nelson, Knud.)						
Nelson, Knud, deceased Chicago, Ill.; E. Nelson, administratrix. Camera-stand	849,857	Apr. 9	1880	383	127	2103
Nestler, Emil, Provo City, assignor to Ideal Shaft Supporter Company, Salt Lake City, Utah. Shaft-supporter for vehicles	849,416	Apr. 9	1582	321	127	2028
Neth, Joseph A., Dayton Ohio. Coupling for electrical conduits	849,417	Apr. 9	1583	321	127	2028

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
New Departure Manufacturing Company. (See Townsend, Harry P., assignor.)						
New England Electric Company. (See Scott, James, assignor.)						
New York Liquid Dispensing Machine Company. (See Cornish, Harry S., assignor.)						
New York Vitak Company. (See Rector, Enoch J., assignor.)						
Newell, Edgar C., Hoopeston, Ill. Building-block for chimneys	849,894	Apr. 9	2117	433	127	2162
Newell, Edgar C., Hoopeston, Ill. Building-block for chimneys	849,556	Apr. 9	1881	383	127	2103
Newman, Stephen A., assignor of one-half to A. L. Brown, Caseville, Mo. Safety-pin	849,418	Apr. 9	1585	321	127	2028
Nichersen, William E., Cambridge, Mass., assignor to Automatic Weighing Machine Company, New York, N. Y. Flexible suspension	849,534	Apr. 9	2018	414	127	2137
Nicholson, Frederic G., Cleveland, Ohio. Heating gas-burner	849,491	Apr. 9	1785	355	127	2071
Noble, Jay, St. Louis, Mo. Switch-point lock	849,559	Apr. 9	1882	383	127	2103
Norcross, Joel W., Fort Worth, Tex. Piano	850,042	Apr. 9	2729	573	127	2315
Norris, John B., Tuskawa, Ill. Hay-loader						
Numan, Charles H., assignor to A. A. Weeks-Hoskins Company, New York, N. Y. Ink-stand	849,419	Apr. 9	1586	323	127	2029
Nussbaumer, William A., Milwaukee, Wis. Elastic-fluid turbine	849,420	Apr. 9	1800	322-3	127	2029
Nyberg, John A., Oakville, Iowa. Wagon-reach	849,695	Apr. 9	2113	426	127	2162
Nyvall, Edward, and A. Gruenbeck, Charlotte, Mich. Antislipping device for automobiles	849,805	Apr. 9	2325	477	127	2216
Nye, George E., assignor of one-half to G. A. Kreis, Chicago, Ill. Interlocking metal sheet-piling	850,043	Apr. 9	2730	573	127	2315
Nye, George E., assignor of one-half to G. A. Kreis, Chicago, Ill. Interlocking metal sheet-piling	850,044	Apr. 9	2732	574	127	2316
Nye, George E., assignor of one-half to G. A. Kreis, Chicago, Ill. Interlocking metal sheet-piling	850,122	Apr. 9	2896	605	127	2336
O'Brien, Charles M., Chicago, Ill. Advertising device	849,493	Apr. 9	1786	355	127	2071
O'Brien, John D., assignor of fifty-one one-hundredths to F. B. McKenna, St. Louis, Mo. Wood lathing-sheet	849,421	Apr. 9	1894	223	127	2030
O'Brien, John D., assignor of fifty-one one-hundredths to F. B. McKenna, St. Louis, Mo. Sheet-lathing machine	849,422	Apr. 9	1895	223-4	127	2031
O'Connor, John F., assignor to W. H. Miner Company, Chicago, Ill. Friction spring draft-rigging for railway-cars	849,560	Apr. 9	1883	383-4	127	2103
O'Connor, John F., assignor to W. H. Miner Company, Chicago, Ill. Friction draft-rigging for railway-cars	849,561	Apr. 9	1884	384	127	2104
O'Connor, John F., assignor to W. H. Miner Company, Chicago, Ill. Friction draft-rigging for railway-cars	849,562	Apr. 9	1886	384-5	127	2104
Oberly, William O., Canton, Ohio. Steam or water heater	849,493	Apr. 9	1787	355	127	2071
Obermaier, Julius O., Lambrecht, Germany. Apparatus for treating textile fibers with liquids and gases	849,535	Apr. 9	2021	414	127	2138
Odegard, Bertram, Chicago, Ill. Tobacco-pipe	849,745	Apr. 9	2203	454	127	2183
Ogden, John E. L., Lisvard, England. Apparatus for controlling feed-water	850,045	Apr. 9	2734	574	127	2316
Olsen, Louise J., Boston, Mass. Floral design	849,696	Apr. 9	2119	436	127	2163
Oldham, George F., assignor to himself and F. H. Young, Toledo, Ohio. Hem-finder	849,698	Apr. 9	2022	415	127	2138
Oliver, Edd C., assignor of one-half to H. E. Pence, Minneapolis, Minn. Speed-indicator	849,851	Apr. 9	2426	496	127	2241
Oppenheimer, Albert, London, England. Game device	849,806	Apr. 9	2226	477	127	2216
Ord, Frank, et al. (See Montgomery, John H., assignor.)						
Ort, Frank, Chicago, Ill. Reversible seat	849,423	Apr. 9	1600	324	127	2032
Ottoson, Otto, Jerico, Iowa. Attachment for draft-tongues	849,563	Apr. 9	1888	385	127	2105
Otsen, Charles, Schenectady, N. Y. Stop mechanism for phonographs	849,852	Apr. 9	1889	494	127	2242
Overcash, Charles M., Concord, N. C. Coffee-pot	849,564	Apr. 9	1890	385	127	2106
Owen, James G., Portland, Oreg. Lifting-jack	849,565	Apr. 9	1781	385-6	127	2072
Owens, Charles, Chattanooga, Tenn. Soap-holder	849,494	Apr. 9	2227	386	127	2216
Pagel, William F., Minneapolis, Minn. Gasolene-indicator	849,807	Apr. 9	2228	477	127	2216
Palmer, Isaac E., Middletown, Conn. Canopy-frame	849,808	Apr. 9	2229	477	127	2217
Palmer, Isaac E., Middletown, Conn. Thread-guide	849,809	Apr. 9	2230	478	127	2217
Palmer, Isaac E., Middletown, Conn. Creel	849,810	Apr. 9	2231	478	127	2217
Palmer, Truman G., Chicago, Ill. Box	850,095	Apr. 9	2835	604	127	2342
Pappenhagen, Charles L., Meadville, Pa., assignor, by mesne assignments, to Keystone View Company. Stereoscope	849,747	Apr. 9	2204	454	127	2183
Paris, George, Harrisburg, Pa. Music-leaf turner	849,434	Apr. 9	1601	324	127	2033
Parker, Harry S., Trenton, N. J. Vehicle-brake	849,918	Apr. 9	2538	524	127	2270
Parkison, John E., assignor to Western Furnace Company, Denver, Colo. Furnace for burning soft fuels	849,568	Apr. 9	1892	386	127	2106
Parks Brothers and Rogers. (See Sylvester, Irving M., assignor.)						
Parson Manufacturing Company. (See Prentiss, George L., assignor.)						
Passage, Christopher E., Milwaukee, Wis. Foot-protecting device	849,811	Apr. 9	2232	478	127	2217
Patton, John D., Rosedale, Kans. Automatic cut-off	849,637	Apr. 9	2023	415	127	2138
Paulsen, Poul, Lundsby, near Meldorf, Germany. Apparatus for the treatment of seed-corn	849,567	Apr. 9	1893	386	127	2107
Paulsen, Peder, assignor to Epping-Carpenter Company, Pittsburg, Pa. Valve for engines	849,748	Apr. 9	2207	454-5	127	2184
Pawley, Leroy F., Los Angeles, Cal. Air filter and cooler	849,538	Apr. 9	1894	387	127	2107
Pay, Charles, Providence, R. I. Scoop-bucket for dredging purposes	850,096	Apr. 9	2839	604-5	127	2342
Pearson, James H., assignor of one-half to W. S. Bogy, Bloomfield, Ind. Pants-creaser	850,046	Apr. 9	2736	574	127	2316
Peck, John M. (See Klamtle and Peck.)						
Peerless Machinery Company. (See Glass, Perley R., assignor.)						
Pence, H. E. (See Oliver, Edd C., assignor.)	850,047	Apr. 9	2737	574	127	2316
Peppard, Arbor Vita, San Luis Potosi, Mexico. Car journal-box						
Perfection Churn Company. (See Kaplan, Godfrey J., assignor.)						
Perrine, Arthur J., assignor to one-half to S. H. Howland, Springfield, Mass. Hanger-support for concrete ceilings	850,097	Apr. 9	2842	605	127	2344
Perrin, Alfred, Grenoble, France. Transmission of signals	849,919	Apr. 9	2540	525-6	127	2271
Perrin, Joseph, Cours, France. Drawing apparatus for spinning short-stapled fibers	849,812	Apr. 9	2233	479	127	2218
Petersen, C. (See Houle and Konkle, assignors.)						
Petersen, Frank J. (See Santen, George, assignor.)						
Petrosky, Fred, Austin, Tex., assignor to H. F. Thompson, New York, N. Y. Needle for gramophones and the like	849,425	Apr. 9	1603	324	127	2034
Pettit, Silas W. (See Waddell, Montgomery, assignor.)						
Pettit, Silas W. (See Waite, Charles N., assignor.)						
Pfleiderer, Paul. (See Boley and Pfleiderer.)	849,569	Apr. 9	1895	387	127	2107
Phelps, Byron, Seattle, Wash. Lock and latch mechanism	849,570	Apr. 9	1896	388	127	2108
Pino, Giuseppe, Genoa, Italy. Hydroscope	849,638	Apr. 9	2024	415	127	2139
Pipe Bending Machine Company. (See Reynolds, George H., assignor.)						
Platt, Roy G., Topeka, Kans. Folding rule	850,048	Apr. 9	2739	575	127	2317
Player, John. (See Colburn and Player.)						
Playford, Sterling T., Cassopolis, Mich. Building-block						
Pope, M. J., et al. (See Thorne, George I., assignor.)						
Porter, John C., et al. (See Lee, Robert H., assignor.)						
Potter, James C., and J. Johnston, assignors to Potter and Johnston Machine Company, Pawtucket, R. I. Clutch	849,607	Apr. 9	2120	436	127	2163
Potter and Johnston Machine Company. (See Potter and Johnston, assignors.)						
Potter, William B., Schenectady, N. Y., assignor to General Electric Company. Electric railway	850,117	Apr. 9	2987	603	127	2344

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Poulson, Paul O., Brigham, Utah. Rotary engine	849,949	Apr. 9	2742	576-6	127	2317
Powell, Albert S., Chicago, Ill. Water-gage	849,950	Apr. 9	2745	576	127	2318
Powell, James, assignor to Wm. Powell Co., Cincinnati, Ohio. Lubricator for explosive-engines	849,951	Apr. 9	1761	356	127	2073
Preisler, Ernst. (See Ruth and Preisler.)						
Prentiss, George L., Montclair, N. J., assignor to Parson Manufacturing Company. Locomotive-diaphragm	849,952	Apr. 9	1763	357	127	2073
Price, Peter, Panther, W. Va. Cant-hook or peavy	849,953	Apr. 9	2747	576	127	2319
Proctor, Augusta, Viroqua, Wis. Device for stretching and drying lace curtains	849,954	Apr. 9	2420	496	127	2243
Proctor, Cland A., and A. Gnaegy, Chester, Ill. Ballast-car	849,955	Apr. 9	2431	496	127	2243
Raditke, Albert A., Chicago, Ill. Electrical indicating apparatus	849,956	Apr. 9	2121	437	127	2163
Rainey, Harry, Newark, Ohio. Locomotive valve-gear	849,957	Apr. 9	1766	357	127	2073
Rasche, Henry, Alki Point, Wash., assignor to American Wood Extract Co. Apparatus for extracting turpentine from wood	850,026	Apr. 9	2644	595	127	2244
Rathenower Optische Industrie-Anstalt vormals Emil Busch, A. G. (See Martin, Karl, assignor.)						
Raworth, John S., Streatham, England. Controller for electrically-propelled vehicles	849,749	Apr. 9	2308	455-6	127	2194
Reach, George A. (See Gamble, John, assignor.)						
Reardon, Robert E., Ottawa, Ontario, Canada. Sight for firearms	849,958	Apr. 9	1767	357	127	2074
Reare, Morley A., Los Angeles, Cal. Chalk-line holder	850,027	Apr. 9	2748	577	127	2319
Rector, Enoch J., New York, N. Y., assignor to New York Vitak Company. Moving-picture machine	849,959	Apr. 9	1770	357-8	127	2075
Reeves & Company. (See Clay, Harry C., assignor.)						
Regtin Company. (See Koch, Henry, assignor.)						
Rehfuss, John G. (See Rehfuss, Martin O. and J. G.)						
Rehfuss, Martin O. and J. G., assignors, by mesne assignments, to National Cotton Tuft and Fibre Manufacturing Company, Philadelphia, Pa. Tuft-forming machine	849,960	Apr. 9	2730	577-8	127	2319
Rehm, Fritz, Lichtenfels, and E. Windstosser, Nuremberg, Germany. Telescope for submarine boats	849,961	Apr. 9	2732	578-9	127	2320
Reilley, John, Brooklyn, N. Y. Spring bed-bottom	850,118	Apr. 9	2630	603-4	127	2255
Reiman, Ludwig, New York, N. Y. Mailing-card or post-card	849,962	Apr. 9	1694	325	127	2024
Reiss, Richard, assignor to Tessaretypie Aktiengesellschaft, Berlin, Germany. Apparatus for printing on stone	849,963	Apr. 9	2026	415-16	127	2139
Repath, Charles H. (See Garred, Ulysses A., assignor.)						
Repp, John C., Pittsburg, Pa. Curtain-pole	849,964	Apr. 9	2432	496	127	2163
Reynolds, Chauncey W., Jr., assignor of one-half to O. H. Mook, Colorado City, Colo. Fine-stop	849,965	Apr. 9	2026	416	127	2139
Reynolds, George H., Mansfield Depot, Conn., assignor to Pipe Bending Machine Company. Pipe-bending machine	849,966	Apr. 9	1900	388-9	127	2105
Reynolds, Thomas. (See Johnson and Reynolds.)						
Rhoades, Alonzo E., assignor to Draper Company, Hopedale, Mass. Bobbin-holder	849,967	Apr. 9	2645	596	127	2245
Rhodes, Rufus N., *et al.* (See Menocco, Charles J., assignor.)						
Rhoult, Joseph A., assignor of one-half to H. W. Spaulding, Haverhill, Mass. Shoe-covering machine	849,968	Apr. 9	2727	579-80	127	2322
Richards, Francis H., Hartford, Conn. Making playing-balls	849,969	Apr. 9	1902	390	127	2109
Richmond, Norman S., Oshkosh, Wis. Mining signal system	849,970	Apr. 9	2647	596	127	2246
Richter, Franz A., Dallas, Tex. Convertible table	849,971	Apr. 9	2763	580-1	127	2323
Ritchie, Thomas E., Beverly, Mass. Lathing	849,972	Apr. 9	2433	497	127	2243
Ritz, Arthur G., Oklahoma, Okla. Ter. Hitching-strap clamp	849,973	Apr. 9	1905	390	127	2110
Roach, George, Auburn, N. Y. Wrench	849,974	Apr. 9	2394	479	127	2218
Roberts, Frederick C., Paterson, assignor to said Roberts and B. D. McKenzie, Rutherford, N. J. Steam-turbine	849,975	Apr. 9	2125	437	127	2164
Robins, William H., assignor to American Bank Protection Co., Minneapolis, Minn. Drop for electric circuits	849,976	Apr. 9	1901	389	127	2246
Robinson, Theodore D., Albany, N. Y. Ventilating subways	849,977	Apr. 9	2649	596	127	2246
Roundinder, Hermann, Milwaukee, Wis. Water softener and purifier	849,978	Apr. 9	1773	358-9	127	2075
Rose, Dickinson L., Mankato, Minn. Sod or walk trimmer	849,979	Apr. 9	2786	581	127	2324
Rosenberg, Paul, Berlin, Germany. Producing formaldehyde preparations	849,980	Apr. 9	2237		127	2218
Rosswarne, Richard E., Covington, Ky., assignor to Miller, Du Brul and Peters Manufacturing Company, Cincinnati, Ohio. Variable-speed mechanism	849,981	Apr. 9	2226	456-7	127	2191
Ross, Jonas W., Chillicothe, Mo. Broiler	849,982	Apr. 9	2727	581	127	2324
Rude, James M., Covington, Ky. Metal lath	849,983	Apr. 9	1605	325	127	2094
Rude, James M., Covington, Ky., assignor to National Cellular Steel Company, New York, N. Y. Metal-shaping machine	849,984	Apr. 9	1775	359-60	127	2076
Rude, James M., Covington, Ky., assignor to National Cellular Steel Company, New York, N. Y. Cellular steel structure	849,985	Apr. 9	1781	360	127	2077
Ruehmling, John H., New York, N. Y. Clothes-line support	849,986	Apr. 9	1606	325	127	2094
Ruger, Hugo, New York, N. Y. Illuminated sign	849,987	Apr. 9	1906	390	127	2110
Ruger, William, Jr., Janesville, Wis., assignor to Underwood Typewriter Company, New York, N. Y. Clutch for type-writer platens	849,988	Apr. 9	2227	457	127	2191
Ruth, John F., and E. Preisler, St. Louis, Mo. Range	849,989	Apr. 9	2652	597	127	2246
S. R. Dresser Manufacturing Company. (See Clark, James, assignor.)						
S. R. Dresser Manufacturing Company. (See White, George H., assignor.)						
Sadler, Arthur E., Cuthbert, Tex. Cleaning apparatus	849,990	Apr. 9	2026	416	127	2140
Salvo, Joseph T., assignor of one-half to J. C. Landon, Charleston, S. C. Switch	849,991	Apr. 9	2733	581	127	2325
Samuels, Jonathan H., assignor to D. M. Sechler Carriage Company, Moline, Ill. Plow	849,992	Apr. 9	1907	391	127	2110
Santen, George, assignor of three-fourths to F. J. Peterson, St. Paul, Minn. Game	849,993	Apr. 9	2434	497	127	2244
Sandell, Quinto, Fall River, Mass. Trolley-pole	849,994	Apr. 9	1782	361	127	2078
Sayer, John H., *et al.* (See Hinton, William C., assignor.)						
Schanz, Friedrich A., Dresden, Germany. Sight for guns	849,995	Apr. 9	1783	361	127	2078
Schauer, Ferdinand F., and J. Graff, New York, N. Y. Folding bed	849,996	Apr. 9	2654	597	127	2246
Scheib, Peter J., Fort Worth, Tex. Light-reflecting device	849,997	Apr. 9	2127	437	127	2165
Schelling, Hermann F., Weehawken, N. J. Fastener for tapes, shoe-laces, elastics, and other articles	849,998	Apr. 9	2544	527	127	2272
Schroedter, Richard C., Chicago, Ill. Automatic irrigator	849,999	Apr. 9	1785	361-2	127	2078
Schulte, August K., Philadelphia, Pa. Cooler	850,000	Apr. 9	2789	582	127	2325
Schuls, Richard, Berlin, Germany. Packing for rotating machine parts	850,001	Apr. 9	1910	391	127	2111
Schumacher, Walter, Duesseldorf, Germany. Apparatus for separating and discharging coke	849,970	Apr. 9	1907	326	127	2095
Schwarz, Wilhelm, assignor to H. Wittenmann, Pforzheim, Germany. Metallic-hose-winding machine	849,969	Apr. 9	2435	497	127	2244
Scofield, Edson M., Philadelphia, Pa. Reinforced concrete construction	849,968	Apr. 9	2648	527	127	2272
Scott, James, assignor of one-half to New England Electric Company, Denver, Colo. Water-motor	849,967	Apr. 9	2436	498	127	2245
Scott, Robert W., *et al.* (See Morley, Joseph D., assignor.)						
Scott, Robert W., Philadelphia, assignor of one-half to L. N. D. Williams, Ogonts, Pa. Fleeced-rib-knitting machine	849,701	Apr. 9	2128	437-9	127	2165
Scott, Walter, Plainfield, N. J. Paper-feeding machine	850,104	Apr. 9	2655	598	127	2247

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Scovill Manufacturing Company. (See Goss, John H., assignor.)						
Scullin Gallagher Iron & Steel Company. (See Gallagher, Thomas M., assignor.)						
Searle, George S., Rochester, N. Y. Shaft-coupling	849,860	Apr. 9	2440	498	127	2245
Seaver, John W., Cleveland, Ohio, and A. Leslie, Walkerville, Ontario, Canada, assignors to Wellman-Seaver-Morgan Company, Cleveland, Ohio. Unloading, screening, and loading apparatus	849,920	Apr. 9	2542	526-7	127	2271
Sebrell, George T., Alsea, Oreg. Combined plow, shovel, and separator	849,577	Apr. 9	1912	392	127	2111
Seifert, John W., East Point, Ga. Washing-machine	850,061	Apr. 9	2771	583	127	2325
Selzer, Michel J., Akron, Ohio. Hot-water heater	850,062	Apr. 9	2773	582-3	127	2326
Sevier, Charles A., Jackboro, Tenn. Guard and moistener for dental tools	849,702	Apr. 9	2133	439	127	2166
Sewell, Herbert, Fort Myers, Fla. Attachment to pumps	849,752	Apr. 9	2220	457	127	2192
Shadall, Charles E., assignor of one-half to F. L. Hornsfer, Milwaukee, Wis. Rock-drill	849,506	Apr. 9	1788	362-3	127	2079
Shadall, Charles E., assignor of one-half to F. L. Hornsfer, Milwaukee, Wis. Motor for rock-drills and similar tools	849,578	Apr. 9	1914	392	127	2112
Shade, Theodore, assignor to J. W. Giffen, Greensburg, Pa. Valve-gear for engines	849,861	Apr. 9	2441	498-9	127	2246
Shallcross, Wyatt, St. Louis, Mo. Loose-leaf binder	849,430	Apr. 9	1606	326	127	2095
Shaw, William E., Boston, assignor to C. S. Bird, trustee, East Walpole, Mass. Amusement-target	850,063	Apr. 9	2774	583	127	2326
Shay, Frank, Newark, assignor of one-half to C. A. Andrews, Rutherford, N. J. Poultry-perch	849,507	Apr. 9	1790	363	127	2080
Shed, Mason M., Eckman, W. Va. Car-mover	849,923	Apr. 9	2547	528	127	2273
Shelton, William G., Chicago, Ill. Massage instrument	849,924	Apr. 9	2549	528	127	2273
Sherman, Ozro G., Chicago, Ill. Pencil-sharpener	849,431	Apr. 9	1609	327	127	2096
Shoemaker, Harry, Jersey City, N. J. Apparatus for measuring electric capacity	850,064	Apr. 9	2776	583	127	2326
Shoemaker, Harry, Jersey City, N. J. High-potential-measuring instrument	850,065	Apr. 9	2777	583	127	2327
Short, Joseph B., Newark, N. J. Extractor for bottle-stoppers or corks	849,508	Apr. 9	1792	364	127	2081
Short, Joseph B., Newark, N. J. Bottle-closure	849,509	Apr. 9	1797	364	127	2082
Shumaker, John A., assignor of two-thirds to G. W. Brinham and N. R. Shumaker, Hyndman, Pa. Kiln	850,066	Apr. 9	2779	584	127	2327
Shumaker, Norman R., *et al.* (See Shumaker, John A., assignor.)						
Siebel, John E., Chicago, Ill. Distilling, concentrating, and evaporating liquids	849,579	Apr. 9	1917	393	127	2113
Silberrad, Oswald, Blackheath, England. Explosive	849,925	Apr. 9	2551		127	2273
Silberrad, Oswald, Blackheath, England. Explosive	850,119	Apr. 9	2802		127	2255
Silberrad, Oswald. (See Hunt, Ozello R., assignor.)						
Simmons Manufacturing Company. (See Hunt, Ozello R., assignor.)	849,862	Apr. 9	2444	500	127	2246
Sims, Lewis J., Lincoln, Ill. Light-reflecting attachment for type-writers	849,316	Apr. 9	2330	480	127	2219
Sjöström, Ivar L., Lawrence, Mass. Truck	849,926	Apr. 9	2553	528-9	127	2273
Slayden, Wesley, Wichita, Kans. Draft-rigging for railway-cars	849,642	Apr. 9	2020	416	127	2140
Sleeman, William W., Oil City, Pa. Connecting-rod head	849,927	Apr. 9	2554		127	2274
Smith, Alfred H., Philadelphia, Pa., assignor, by mesne assignments, to American Bronze Company. Alloy	849,580	Apr. 9	1921	394	127	2113
Smith, Benjamin, Dereham township, Oxford county, Ontario, Canada. Hay-harvesting machine	849,928	Apr. 9	2555	529	127	2274
Smith, Davit M., Sizmile, Ark. Harrow-tooth	850,067	Apr. 9	2781	585	127	2328
Smith, Frank, Philadelphia, Pa. Bottle	849,863	Apr. 9	2445	500	127	2246
Smith, James W., Sycamore, Mo. Grain bolter and separator						
Smith, Jessie R. (See Fiske and Smith.)						
Smith, Robert P., Winchester, assignor of one-third to E. W. Longley, Salem, Mass. Anchorage for building purposes	849,817	Apr. 9	2240	480	127	2219
Smith, Roy H. (See Lamb, Griggs, and Smith.)						
Smith, Seneca E., Victoria, British Columbia, Canada. Gage for determining curvature of saw-blade edges	849,510	Apr. 9	1800	365	127	2083
Smith, William W., Kittyton, Tenn. Grinding and grating apparatus	850,068	Apr. 9	2782	585-6	127	2328
Snowdon, Archibald G., Westmount, Quebec, Canada. Can-opener	849,929	Apr. 9	2556	529	127	2279
Solis, Benito, Guadalupe de los Reyes, Mexico. Agitator	850,069	Apr. 9	2784	586	127	2328
Souther, John, Newton, Mass. Ice-making machine	849,864	Apr. 9	2446	500	127	2246
Spaulding, Harris W. (See Rhoult, Joseph A., assignor.)						
Spearing, Arthur H. (See Ferguson, Charles M., assignor.)						
Spence, Charles W., assignor to Morgan Crucible Company, Limited, London, England. Brush for dynamo-electric machinery	849,511	Apr. 9	1801	365	127	2083
Spence, Charles W., Battersea, assignor to Morgan Crucible Company, Limited, London, England. Composition or compound for brushes of dynamo-electric machines	849,642	Apr. 9	2029	417	127	2140
Spencer, Channing M., Maryland, N. Y. Keeper for door-locks, &c	849,865	Apr. 9	2447	500	127	2247
Spencer, Joseph M., assignor to C. L. Hills, Cincinnati, Ohio. Drying-machine	849,581	Apr. 9	1927	395	127	2114
Spencer, Julius A., Dwight, Ill. Baling-press	850,105	Apr. 9	2857	598	127	2247
Sperry, Elmer A., Cleveland, Ohio, assignor to Goodman Manufacturing Company, Chicago, Ill. Electric locomotive	849,432	Apr. 9	1611	327	127	2096
Spilsbe, Richard B., assignor of one-half to M. C. Spirea, Bisbee, Ariz. Ter. Beer-tapper	850,070	Apr. 9	2786	586	127	2329
Spirea, Marina C. (See Spilsbe, Richard B., assignor.)						
Sprague, Stanley J., Guilford, Me. Hatchet	849,433	Apr. 9	1615	327	127	2097
Springer, Ernest O., Mason City, Iowa. Apparatus for sharpening lawn-mowers	850,071	Apr. 9	2787	587	127	2330
Standard Adding Machine Company. (See Hinchman, George N., assignor.)						
Stanley, William D. (See Gilliland and Stanley.)						
Stebbins, Rowland, New York, N. Y. Regulation of electric motors	849,582	Apr. 9	1926	395	127	2114
Steele, John W., Fresno, Cal. Wire cleat	849,930	Apr. 9	2557	530	127	2278
Stephens, Charles H., Bartlett, Tex. Rail-joint	849,434	Apr. 9	1616	328	127	2097
Stevens, Katurah, Franklin, Ohio. Extension car-step	850,072	Apr. 9	2788	587	127	2330
Stevenson, Theodore A., Lansing, Kans. Burial-vault	849,435	Apr. 9	1618	328	127	2098
Stewart, John G., Monmouth, Ill. Grain-shocker	849,931	Apr. 9	2558	530	127	2278
Stewart, Samuel B., Jr., Schenectady, N. Y., assignor to General Electric Company. Electric railway	849,703	Apr. 9	2134	439	127	2166
Stillman, Harold B., Philadelphia, Pa. Double-acting sprag for vehicles	849,512	Apr. 9	1802	365	127	2083
Stillwell, Lewis B., *et al.* (See Brinckerhoff, Francis M., assignor.)	12,630	Apr. 9	2809	605-6	127	2336
Stimson, Oscar M., Chicago, Ill. Combined freezer and refrigerator car. (Reissue)	850,073	Apr. 9	2790	587	127	2330
Stolp, Cæsar, New York, N. Y. Vehicle-frame	849,753	Apr. 9	2231	457-8	127	2192
Stone, Fred L., Schenectady, N. Y., assignor to General Electric Company. Speed-limiting device	849,563	Apr. 9	1931	396	127	2115
Stoneburner, Charles D. (See Tichenor and Stoneburner.)						
Stoskopf, Nettie, Prosper, Minn. Corset attachment	850,074	Apr. 9	2791	587	127	2330
Streich, Frank, assignor to Triumph Manufacturing Company, Cincinnati, Ohio. Dough dividing and scaling machine	12,631	Apr. 9	2903	606-7	127	2336
Strickland, James L., Westport, Nova Scotia, assignor of fifty-one one-hundredths to H. R. McLellan, St. John, New Brunswick, Canada. Rotary engine. (Reissue)	850,075	Apr. 9	2794	588	127	2331
Stupp, Ben B., Coshocton, Ohio. Making pictures	849,513	Apr. 9	1804	365	127	2084
Sturm, Felix L., Virgna, W. Va. Fountain-pen handle	849,754	Apr. 9	2233	458	127	2166
Sullivan, John, Fall River, Mass. Incandescent-electric-lamp support	849,436	Apr. 9	1619	328	127	2098
Sullivan, John L., assignor to Cahill, Swift Manufacturing Company, St. Louis, Mo. Plastering-trowel	849,755	Apr. 9	2234	458	127	2166
Sylvester, Irving M., assignor to Parks Brothers and Rogers, Providence, R. I. Bracelet						
Tabor, Harris, Elizabeth, N. J., and W. Lewis, assignors to Tabor Manufacturing Company, Philadelphia, Pa. Equalizing-support for molders' flasks	849,514	Apr. 9	1803	366	127	2084

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Drfs.	Official Gazette. Vol.	Page.
Tabor Manufacturing Company. (See Tabor and Lewis, assignors.)						
Talley, Herbert, Carthage, Mo. Packing-machine	849,457	Apr. 9	1620	329	127	2038
Tatarinoff, Constantin N., Yonkers, N. Y. Surface condenser	849,598	Apr. 9	1648	501	127	2047
Tatum, Cicero J., assignor of one-half to J. Van Tyne, Port Arthur, Tex. Door stop and lock	849,598	Apr. 9	1660	531	127	2276
Taylor, Charles A., assignor of one-half to J. W. Hannagan, Madison, Mo. Ball-cock valve	849,598	Apr. 9	2562	531	127	2276
Taylor, George E., St. Louis, Mo. Self-transcribing conductor's train-report	849,726	Apr. 9	2235	458-9	127	2198
Tennant, Edward I., Springfield, Ohio. Pneumatic-tire protector	849,488	Apr. 9	1632	329	127	2038
Tessarotypie Artiengesellschaft. (See Reiss, Richard, assignor.)						
Thibert, Napoleon R., assignor to Thibert Sanitary Cuspidor & Tool Company, Worcester, Mass. Cuspidor	849,676	Apr. 9	2704	526	127	2221
Thibert Sanitary Cuspidor & Tool Company. (See Thibert, Napoleon R., assignor.)						
Thomas, Augustus O., Kearney, Nebr. Concrete-block machine	849,704	Apr. 9	2138	439	127	2160
Thomas, George B., assignor to Bryant Electric Company, Bridgeport, Conn. Electrical rosette	849,694	Apr. 9	2563	531	127	2277
Thomas, Gwilym G., Amite, La. Railway train-order system	849,695	Apr. 9	2564	531	127	2277
Thomas, James, Tacoma, Wash. Mold	849,696	Apr. 9	2565	532	127	2277
Thomas, James M., Talladega, Ala. Chock	849,697	Apr. 9	2566	532	127	2277
Thompson, H. F. (See Petmecky, Fred, assignor.)						
Thompson, Myrvle W., Fruitland, Wash. Wrench	849,630	Apr. 9	1628	329	127	2038
Thorne, Frank D., et al. (See Thorne, George L., assignor.)						
Thorne, George L., assignor to M. J. Pope and F. D. Thorne, St. Louis, Mo. Soap-receptacle	849,627	Apr. 9	2440	501-2	127	2047
Thumann, Henry, Chicago, Ill. Toy bank	849,737	Apr. 9	2237	459	127	2194
Thurlow, Winfield S., Boston, and W. G. Fraser, Somerville, Mass. Automatic sprinkler	849,699	Apr. 9	2566	533	127	2278
Tichenor, Clarendon L., and C. D. Stoneburner, Washington, D. C. Ground-wire attachment	849,699	Apr. 9	2569	532	127	2278
Tift, Frank F., Watertown, N. Y. Tool for lathes	849,940	Apr. 9	2570	533	127	2278
Tirrill, Leonard A. (See Whitney and Tirrill.)						
Titus, John C., Marion, Ohio. Vise	849,702	Apr. 9	2238	459	127	2194
Titus, Wellington S., Glenmore, N. J. Base-ball back-stop	849,941	Apr. 9	2571	533-4	127	2278
Toennes, Richard, Boonville, Mo. Turbine-engine	849,942	Apr. 9	2574	534	127	2279
Tompkins, James B., Vanderwoort, Ark. Tanning compound	849,440	Apr. 9	1624	.....	127	2038
Tooley, James, et al. (See Carter, Joseph W., assignor.)						
Torrance, William W., Schenectady, assignor to Underwood Typewriter Company, New York, N. Y. Back-spacing mechanism	849,188	Apr. 9	2268	508-9	127	2047
Townsend, Frederick S., assignor to W. H. Miner Company, Chicago, Ill. Roller side bearing for railway-cars	849,515	Apr. 9	1806	366	127	2081
Townsend, Harry P., New Britain, assignor to New Departure Manufacturing Company, Bristol, Conn. Driving and braking mechanism for cycles	849,677	Apr. 9	2706	526	127	2221
Treaddder, John J., New York, assignor to American Column Company, Brooklyn, N. Y. Fireproof column	849,519	Apr. 9	2242	461	127	2220
Triumph Manufacturing Company. (See Streich, Frank, assignor.)						
Turbayne, William A., Lancaster, assignor to Gould Coupler Company, New York, N. Y. Self-regulating system of electrical distribution	849,644	Apr. 9	2081	417	127	2140
Turbayne, William A., Lancaster, assignor to Gould Coupler Company, New York, N. Y. System of electrical distribution and regulation	849,705	Apr. 9	2137	440	127	2167
Turner, Walter V., Wilmerding, assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Oil-cup for air-pumps	849,288	Apr. 9	2480	502	127	2247
Twitchell, Sherman B., Mobile, Ala. Folding bed	849,945	Apr. 9	2576	535	127	2279
Underwood, Frank, Chicago, Ill. Anchor-post and stretcher	849,441	Apr. 9	1634	330	127	2039
Underwood Typewriter Company. (See Kunath, Edward F., assignor.)						
Underwood Typewriter Company. (See Ruger, William, Jr., assignor.)						
Underwood Typewriter Company. (See Torrance, William W., assignor.)						
Underwood & Underwood. (See Cowee, William H., assignor.)						
Van Camp, Edward, Brookston, Ind. Cash-register	849,289	Apr. 9	2482	502-4	127	2248
Van Cleve, Joseph, Newark, N. J. Buckle attachment for straps	849,516	Apr. 9	1807	367	127	2082
Van den Heuvel, William, Los Angeles, Cal. Sectional condenser	849,944	Apr. 9	2577	535	127	2280
Van Tyne, Jas. (See Tatum, Cicero J., assignor.)						
Van Valkenburg, Charles J., Manchester, Mich. Folding chair	849,945	Apr. 9	2581	535-6	127	2281
Varley, Richard, Englewood, N. J., assignor to Autocoil Company. Spark-ignition system for explosion-engines	849,634	Apr. 9	1983	395	127	2115
Varney, William E., Wellman, Iowa. Cement post	849,699	Apr. 9	2240	461	127	2220
Varney, William E., Wellman, Iowa. Mold for cement posts	849,700	Apr. 9	2239	460	127	2194
Vautier, John J., New York, N. Y. Pencil-sharpener	849,702	Apr. 9	2240	460	127	2194
Veneke, William. (See Ness and Veneke.)						
Vincent, Amédée E., Paris, France. Apparatus for recovering benzin, &c	849,221	Apr. 9	2044	451	127	2220
Vineyard, Miles M., Foster county, N. D. Water-lifting motor	849,645	Apr. 9	2084	417	127	2141
Volz, Frederick L., assignor of one-half to T. Wright, Baltimore, Md. Means for preventing rails from spreading	849,675	Apr. 9	2208	508	127	2334
W. H. Miner Company. (See Nash, Charles J., assignor.)						
W. H. Miner Company. (See O'Connor, John F., assignor.)						
W. H. Miner Company. (See Townsend, Frederick B., assignor.)						
Waddell, Montgomery, New York, N. Y., assignor to S. W. Pettit, Philadelphia, Pa. Apparatus for forming filaments	849,223	Apr. 9	2245	462	127	2220
Waddell, Montgomery, New York, N. Y., assignor to S. W. Pettit, Philadelphia, Pa. Apparatus for forming filaments	849,570	Apr. 9	2468	504-5	127	2250
Wagner, Bernhard, Stettin, Germany. Apparatus for coking briquets	849,947	Apr. 9	2582	535-7	127	2284
Wagner, Frederick C., and F. G. Koch, Cleveland, assignors, by mesne assignments, to Mitchell Reversable Window Company, Fremont, Ohio. Horizontally-pivoted window	849,696	Apr. 9	1982	396	127	2116
Waite, Charles N., Lanedowne, assignor, by mesne assignments, to S. W. Pettit, Philadelphia, Pa. Manufacture of filaments and films from viscose	849,222	Apr. 9	2243	.....	127	2221
Walker, Richard W., Topeka, Kans. Trolley	849,571	Apr. 9	2481	506	127	2250
Wall, Benjamin, Allendale, N. J., assignor to Metropolitan Engineering Company. Electric sign	849,698	Apr. 9	1983	396	127	2116
Wallis, Thomas R., Greenville, Miss. Colter-bearing	849,946	Apr. 9	2567	537	127	2282
Wanamaker, Charles B., and U. G. Leedy, assignors to Leedy Manufacturing Company, Indianapolis, Ind. Clamp for drum attachments	849,517	Apr. 9	1808	367	127	2055
Ward, John. (See Lemoine, David, assignor.)						
Warth, Nathaniel G., Columbus, Ohio. Telephone-repeater system	849,670	Apr. 9	2304	520	127	2224
Warwick, Harold C., San Francisco, Cal. Lock	849,227	Apr. 9	1627	328	127	2117
Wash, James W., Lawrenceburg, Ky. Strain-equalizer	849,633	Apr. 9	2209	509	127	2335
Waterbury Farrel Foundry and Machine Company. (See Lamb, Griggs, and Smith, assignors.)						
Weatherly, John R., Atlanta, Ga. Mowing-machine	849,701	Apr. 9	2242	460-1	127	2195
Weaver, George A., Newport, R. I. Transmission mechanism	849,702	Apr. 9	2243	536	127	2283
Weaver, George A., Newport, R. I. Axle	849,703	Apr. 9	2260	536	127	2283
Weaver, Henry C., Royal, Ark. Agricultural implement	849,948	Apr. 9	2583	537	127	2283

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Drfs.	Official Gazette. Vol.	Page.
Webber, William, Chicago, Ill., assignor to International Harvester Company. Platform-dog for harvesters	849,442	Apr. 9	1626	330	127	2040
Webster, Harry G., assignor to M. G. Kellogg, Chicago, Ill. Circuit-changing mechanism	849,443	Apr. 9	1628	330	127	2041
Weimar, Andrew, assignor of one-half to W. D. Weimar, Philadelphia, Pa. Cross-weaving loom	849,647	Apr. 9	2037	418-19	127	2142
Weimar, William D. (See Weimar, Andrew, assignor.)						
Weiser, John S., Spring Valley, Wis. Pump-support	849,444	Apr. 9	1630	330	127	2041
Weldon, James W., Toledo, Ohio. Heating-stove	849,872	Apr. 9	2462	505	127	2251
Wellman-Seaver-Morgan Company. (See Seaver and Leslie, assignors.)						
Wener, John B., Los Angeles, Cal. Wagon-shaft support	849,530	Apr. 9	1813	368	127	2088
Wents, John S., Philadelphia, Pa. Cement-kiln	849,873	Apr. 9	2464	506	127	2251
West, Sylvester A., Rockport, Mo. Doll	849,588	Apr. 9	1938	396	127	2117
Western Furnace Company. (See Parkison, John E., assignor.)						
Westinghouse Air Brake Company. (See Turner, Walter V., assignor.)						
Weston, Eustace M., Johannesburg, Transvaal. Attachment for supplying water to rock-drills	849,445	Apr. 9	1631	331	127	2042
Weston, Willard B., Chicago, Ill. Railway-crossing	849,446	Apr. 9	1634	331	127	2043
Westphal, Louis H., assignor to Automatic Electric Pump Company, Davenport, Iowa. Automatic pressure-controlled electric switch and air-gage	849,762	Apr. 9	2343	461	127	2195
Westphal, Louis H., assignor to Automatic Electric Pump Company, Davenport, Iowa. Automatic pressure-controlled electric switch and air-gage	850,081	Apr. 9	2510	509	127	2336
Wheeler, William J., Fort Wayne, Ind. Car-roof	849,518	Apr. 9	1809	367	127	2085
White, Burdette H., Syracuse, N. Y. Garment-supporter	849,763	Apr. 9	2245	461	127	2196
White, Frank, Newark, N. J. Combined cleaver and meat-tenderer	849,645	Apr. 9	2040	419	127	2143
White, George H., Oil City, assignor to S. R. Dresser Manufacturing Company, Bradford, Pa. Metal-bending machine	849,764	Apr. 9	2246	461-2	127	2196
White, Robert B., Boonville, Ind. Metal column	849,951	Apr. 9	2291	528	127	2282
Whitehead, John, assignor to J. W. Barlow Company, Lawrence, Mass. Loom-picker	849,519	Apr. 9	1811	367	127	3088
Whitlock Coil Pipe Company. (See Brinkman, Louis H., assignor.)						
Whitman, Henry L., St. Louis, Mo. Baling-press	849,874	Apr. 9	2465	506-7	127	2252
Whitney, Eddy R., Swampscott, and L. A. Tirrill, Lynn, Mass., assignors to General Electric Company. Cooling dynamo-electric machines	849,706	Apr. 9	2140	440	127	2167
Whittall, Matthew J. (See Giles, Joseph S., assignor.)						
Wick, Charles L., et al. (See Babcock, George E., assignor.)						
Wick, Robert E., et al. (See Babcock, George E., assignor.)						
Wickes Bros. (See Crane, Daniel, assignor.)						
Wille, Henry V., assignor to Burnham, Williams & Company, Philadelphia, Pa. Superheater for locomotives	849,875	Apr. 9	2469	507-8	127	2253
Williams, Francis K. (See Hurd, James C., assignor.)						
Williams, Louis N. D., et al. (See Morley, Joseph D., assignor.)						
Williams, Louis N. D. (See Scott, Robert W., assignor.)						
Williams, W. O. (See Flora, Ellsworth E., assignor.)						
Willis, Alonzo C., Concord, N. H. Axle-nut	849,952	Apr. 9	2592	539	127	2284
Wilms, Charles, Baltimore, Md. Tank-float	849,707	Apr. 9	2141	440	127	2168
Wilms, Charles, Baltimore, Md. Flushing-tank	849,708	Apr. 9	2142	440	127	2168
Windstosser, Karl. (See Rohm and Windstosser.)						
Windt, Louis and G. Mathika, Spring Hill, Pa. Clothes-line support and holder	849,876	Apr. 9	2472	508	127	2254
Wingrea, Harry, Genoa, Tex. Portable screen-house	849,709	Apr. 9	2144	441	127	2168
Winston, James O., Richmond, Va. Apparatus for making molded blocks	849,824	Apr. 9	2340	482	127	2221
Winters, Charles N. (See Magie and Winters.)						
Witzenmann, Heinrich. (See Schwarz, Wilhelm, assignor.)						
Wm. Powell Co. (See Powell, James, assignor.)						
Wolever, Franklin H., Chicago, Ill., assignor to Lamson Consolidated Store Service Company, Newark, N. J. Conveying apparatus	850,107	Apr. 9	2659	539	127	2342
Wood, Charles L., Winthrop, Mass. Toy	849,953	Apr. 9	2594	539	127	2284
Wood, James J., Fort Wayne, Ind. Coin-operated mechanism	849,447	Apr. 9	1636	332	127	2043
Wood, James J., Fort Wayne, Ind. Coin-operated mechanism	849,448	Apr. 9	1638	332	127	2044
Woodbury, George E., San Francisco, Cal. Adjustable wrench	849,765	Apr. 9	2249	462	127	2197
Worcester, Fred M., Monroe Center, Ill. Cow-milking machine	849,521	Apr. 9	1813	368	127	2088
Wright, James E., Omaha, Nebr. Fence-post	850,082	Apr. 9	2513	509	127	2337
Wright, John A., Maquoketa, Iowa. Barrel and box carrier	849,449	Apr. 9	1639	332	127	2044
Wright, Samson D., Cleveland, Ohio. Draft-rigging for railway-cars	849,649	Apr. 9	2041	419	127	2143
Wright, Thomas. (See Vols, Frederick L., assignor.)						
Writesman, Edwin L., Hume, Ill. Valve	849,954	Apr. 9	2596	539	127	2284
Wyckoff, Seamans & Benedict. (See Copeland, Lucien B., assignor.)						
Wyckoff, Seamans & Benedict. (See Dise, Louis P., assignor.)						
Wyoming Valley Trust Company, trustee. (See Bertels, Charles E., assignor.) (Reissue.)	849,955	Apr. 9	2597	539	127	2285
Yeager, Lloyd, Jr., Catawissa, Pa. Car-step	849,450	Apr. 9	1640	333	127	2044
Young, Frank A., assignor to Monarch Typewriter Company, Syracuse, N. Y. Typewriting machine	849,956	Apr. 9	2597	540	127	2285
Young, John J., Denver, Colo. Cultivator attachment	849,451	Apr. 9	1644	333	127	2045
Young, Thomas H. (See Oldham, George F., assignor.)	849,452	Apr. 9	1645	333	127	2045
Zabe, James L., Pulaski, Iowa. Seat	849,877	Apr. 9	2473	508	127	2254
Ziegenfuss, Elmer E., Moline, Ill. Packing-auger	849,878	Apr. 9	2474	508	127	2254
Zimmermann, George, Philadelphia, Pa. Woven pile fabric	849,957	Apr. 9	2599	540	127	2285
Zivi, Adolf, Mannheim, Germany. Heating apparatus for fluids						
Zwiebel, George W., Papillion, Nebr. Post-hole digger						

DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Alfred Peats Company. (See Pronberger, Ludwig, assignor.)				
American Radiator Company. (See Sjoden, Eric, assignor.)	38,513	Apr. 9	127	2281
Frueh, Oscar G., Bay City, Mich. Urn and pedestal therefor	38,514	Apr. 9	127	2281
Chubbuck, Burt A., Medina, N. Y. Clock-case	38,512	Apr. 9	127	2281
Donovan, William F., assignor to Libbey Glass Company, Toledo, Ohio. Dish	38,511	Apr. 9	127	2280
Kolb, Gustave F., Mount Vernon, assignor to Mauser Manufacturing Co., New York, N. Y. Handle of spoons, forks, or similar articles				

DESIGNS—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Libbey Glass Company. (See Donovan, William F., assignor.)				
Lukacsevics, Charles de, New York, N. Y. Siphon-head	38,515	Apr. 9	127	2361
Mauser Manufacturing Co. (See Kolb, Gustave F., assignor.)				
Promberger, Ludwig, Berlin, Germany, assignor to Alfred Peats Company, New York, N. Y. Wall-covering	38,517	Apr. 9	127	2362
Promberger, Ludwig, Berlin, Germany, assignor to Alfred Peats Company, New York, N. Y. Wall-covering	38,518	Apr. 9	127	2362
Promberger, Ludwig, Berlin, Germany, assignor to Alfred Peats Company, New York, N. Y. Wall-covering	38,519	Apr. 9	127	2362
Promberger, Ludwig, Berlin, Germany, assignor to Alfred Peats Company, New York, N. Y. Wall-covering	38,520	Apr. 9	127	2362
Promberger, Ludwig, Berlin, Germany, assignor to Alfred Peats Company, New York, N. Y. Wall-covering	38,521	Apr. 9	127	2362
Promberger, Ludwig, Berlin, Germany, assignor to Alfred Peats Company, New York, N. Y. Wall-covering	38,522	Apr. 9	127	2363
Sjoden, Eric, Buffalo, N. Y., assignor to American Radiator Company. Radiator	38,513	Apr. 9	127	2361
	38,514	Apr. 9	127	2361

TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
A-Z. Co., New York, N. Y. Radiators for automobiles	61,936	Apr. 9	127	2360
Actien-Gesellschaft für Anilin-Fabrikation, Berlin, Germany. Photographic developers	61,920	Apr. 9	127	2360
Advance Novelty Company, New York, N. Y. All kinds of candies	61,930	Apr. 9	127	2362
Amédée Castaing, New York, N. Y. Disinfectants, deodorizers, and germicides	61,922	Apr. 9	127	2360
American Glue Company, Boston, Mass. Sandpapers, garnet-papers, emery-papers, and emery-cloths	61,796	Apr. 9	127	2357
American Hominy Company, Indianapolis, Ind. Toasted corn-flakes	61,940	Apr. 9	127	2363
American Hominy Company, Indianapolis, Ind. Toasted corn-flakes	61,951	Apr. 9	127	2363
American Olive Company, Los Angeles, Cal. Olives	61,926	Apr. 9	127	2357
American Wire Brush Company, New York, N. Y. Wire brushes	61,929	Apr. 9	127	2358
Batman, William H., Topeka, Kans. Chocolate-cream candy	61,917	Apr. 9	127	2357
Bauer & Black, Chicago, Ill. Corn and bunion plasters	61,927	Apr. 9	127	2360
Beach and Clarridge Company, Boston, Mass. Syrups	61,938	Apr. 9	127	2363
Beach and Clarridge Company, Boston, Mass. Jams	61,937	Apr. 9	127	2357
Blondeau, Berque & Co., Rheims, France. Champagne	61,928	Apr. 9	127	2360
Blue Ribbon Mining, Milling, and Investment Co., Idaho Springs and Denver, Colo. Certain beverages	61,939	Apr. 9	127	2363
Bluthenthal & Bickart, Atlanta, Ga. Whisky	61,950	Apr. 9	127	2363
Booth's Hyomei Company, Buffalo, N. Y. Preparation for the cure of dyspepsia	61,931	Apr. 9	127	2360
Brackett & Co., R. E., Lansing, Mich. Hones for razors and other edged tools	61,799	Apr. 9	127	2357
Briggs, Frank H., Painesville, Ohio. High explosives	61,933	Apr. 9	127	2363
Carl Entenmann Jewelry Company, Los Angeles, Cal. Rings, brooches, and badges	61,801	Apr. 9	127	2359
Carleton Dry Goods Company, St. Louis, Mo. Hosiery and knit gloves	61,800	Apr. 9	127	2359
Clark Thread Co., Newark, N. J. Sewing-cotton or cotton thread	61,941	Apr. 9	127	2363
Colgate & Co., New York, N. Y. Soap	61,939	Apr. 9	127	2363
Collins & Company, New York, N. Y. Cotton shrunks	61,928	Apr. 9	127	2360
Collins & Company, New York, N. Y. Cotton shrunks	61,929	Apr. 9	127	2360
Colton, George S., Easthampton, Mass. Elastic webbing	61,929	Apr. 9	127	2360
Coronet Corset Company, Jackson, Mich. Corsets, bustles, and bust-forms	61,949	Apr. 9	127	2360
Cotto-Waxo Company, St. Louis, Mo. Certain chemical compounds	61,870	Apr. 9	127	2359
Craven Chemical Company, Newbern, N. C. Fertilizers	61,941	Apr. 9	127	2360
Crown Cork and Seal Co. of Baltimore City, Baltimore, Md. Metallic bottle-stopper	61,954	Apr. 9	127	2363
Cuppies & Leon, New York, N. Y. Printed books of fiction	61,930	Apr. 9	127	2359
Denison Cotton Mill Co., Denison, Tex. Cotton duck	61,943	Apr. 9	127	2363
Dusenbury, Louis, New York, N. Y. Lap-robes	61,928	Apr. 9	127	2360
Eagle Roller Mill Company, New Ulm, Minn. Wheat-flour	61,933	Apr. 9	127	2360
Eagle Roller Mill Company, New Ulm, Minn. Wheat-flour	61,935	Apr. 9	127	2363
Eagle Roller Mill Company, New Ulm, Minn. Wheat-flour	61,936	Apr. 9	127	2363
Eli Lilly & Company, Indianapolis, Ind. Certain medicinal preparations	61,871	Apr. 9	127	2359
Este, Charles, Philadelphia, Pa. Lumber and timber	61,924	Apr. 9	127	2360
F. C. Bushnell Co., New Haven, Conn. Olives, olive-oil, and dried and evaporated fruits	61,942	Apr. 9	127	2363
F. C. Bushnell Co., New Haven, Conn. Canned salmon	61,930	Apr. 9	127	2363
Fairchild, John F., Mount Vernon, N. Y. Certain medicinal preparations	61,944	Apr. 9	127	2363
Fichtenau, Ernst, Friedeck, Austria-Hungary. Insecticides	61,925	Apr. 9	127	2360
Foley & Company, Chicago, Ill. Remedies for affections of the throat, chest, and lungs	61,872	Apr. 9	127	2359
Frank Miller Co., New York, N. Y. Leather-dressings	61,926	Apr. 9	127	2357
Franklin Electric Mfg. Co., Hartford, Conn., and New York, N. Y. Incandescent electric lamps	61,818	Apr. 9	127	2357
Fred. J. Meyers Manufacturing Company, Hamilton, Ohio. Machine-sifters	61,873	Apr. 9	127	2359
Friedman & Co., A., Denver, Colo. Whisky	61,942	Apr. 9	127	2363
Friedman, Keller & Co., Paducah, Ky. Whisky	61,943	Apr. 9	127	2363
Gehlert, Gustav B., Benton Harbor, Mich. Cider	61,804	Apr. 9	127	2359
Geo. Bray & Co. Ltd., Leeds, England. Gas-burners of ordinary metal	61,876	Apr. 9	127	2359
Geo. Bray & Co. Ltd., Leeds, England. Gas-burners of ordinary metal	61,880	Apr. 9	127	2347
Geo. Bray & Co. Ltd., Leeds, England. Gas-burners of ordinary metal	61,881	Apr. 9	127	2347
Geo. Bray & Co. Ltd., Leeds, England. Gas-burners of ordinary metal	61,882	Apr. 9	127	2347
Geo. Bray & Co. Ltd., Leeds, England. Gas-burners of ordinary metal	61,883	Apr. 9	127	2347
George Urban Milling Company, Buffalo, N. Y. Wheat-flour	61,878	Apr. 9	127	2361

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
George Urban Milling Company, Buffalo, N. Y. Wheat-flour	61,876	Apr. 9	127	2360
George Urban Milling Company, Buffalo, N. Y. Wheat-flour	61,877	Apr. 9	127	2360
George Urban Milling Company, Buffalo, N. Y. Wheat-flour	61,879	Apr. 9	127	2360
Gill Brothers Company, Steubenville, Ohio. Glass chimneys, lantern-globes, and reflectors	61,880	Apr. 9	127	2360
Goldschmidt Thermit Co., New York, N. Y. Metal compounds for use in welding metals	61,945	Apr. 9	127	2363
Griffin & Skelley Co., San Francisco, Cal. Raisins	61,957	Apr. 9	127	2363
Griffin & Skelley Co., San Francisco, Cal. Raisins	61,944	Apr. 9	127	2363
Hall, Elisa N., New York, N. Y. Caustic potash or lye	61,938	Apr. 9	127	2357
Hannam & Co., Port Elizabeth, Cape Colony, South Africa. Canned salmon	61,806	Apr. 9	127	2357
Havemeyer Oil Company., New York, N. Y. Oils and greases for gas-engines and automobiles	61,805	Apr. 9	127	2360
Henry M. Rubel Company, Cincinnati, Ohio. Whisky	61,806	Apr. 9	127	2360
Henry M. Rubel Company, Cincinnati, Ohio. Whisky	61,853	Apr. 9	127	2363
Herbein, George W., Seattle, Wash. Artificial fuel	61,945	Apr. 9	127	2363
Hetzel, Eva M., Scranton, Pa. Toilet rouge	61,881	Apr. 9	127	2359
Hust and R. Lipter, L., Paris, France. Key-rings and key chains	61,183	Apr. 9	127	2360
Hust and R. Lipter, L., Paris, France. Key-rings and key-chains	61,897	Apr. 9	127	2360
Hust & R. Lipter, L., Paris, France. Polished-steel buttons	61,898	Apr. 9	127	2360
Hust & R. Lipter, L., Paris, France. Buttons	61,899	Apr. 9	127	2360
I. L. Lamm Co., Superior, Wis. Gin, whisky, and brandy	61,900	Apr. 9	127	2360
I. L. Lamm Co., Superior, Wis. Gin, whisky, and brandy	61,901	Apr. 9	127	2360
Indianapolis Brewing Company, Indianapolis, Ind. Beer	61,946	Apr. 9	127	2363
John Wyeth and Brother Incorporated, Philadelphia, Pa. Medicinal vehicle or carrier in fluid form	61,947	Apr. 9	127	2363
Johnson Educator Food Co., Boston, Mass. Crackers	61,807	Apr. 9	127	2357
Jones, Geo. P., St. Louis, Mo. Lubricating-oils, engine-oils, cylinder-oil, and miners' oil				
Katharic Chemical Co., New York, N. Y. Antiseptics, disinfectants, deodorizers, animal poisons, and insecticides	61,927	Apr. 9	127	2360
King, Brinsmade Mercantile Company, St. Louis, Mo. Ladies' and children's felt and straw hats	61,902	Apr. 9	127	2360
Knickerbocker Paint Company, New York, N. Y. Mixed paints	61,808	Apr. 9	127	2357
Kohary, Alexander A., Pittsburg, Pa. Cigarette-paper	61,859	Apr. 9	127	2363
Leek, John H., New York, N. Y. Razor-paste	61,909	Apr. 9	127	2357
M. W. Diffley, Inc. Chicago, Ill. Cigars	61,810	Apr. 9	127	2357
Martin-Senour Co., Chicago, Ill. Varnish-stains, priming, and fillers	61,811	Apr. 9	127	2357
Mason, Albert G., Cleveland, Ohio. Sewing-machines, attachments, stands, tables, and covers	61,948	Apr. 9	127	2361
Mendel, Weinstock & Company, Louisville, Ky. Felt, fur, cloth, and straw hats and caps	61,928	Apr. 9	127	2360
Mexican Amole Soap Co., Peoria, Ill. Soaps	61,819	Apr. 9	127	2357
Miami Cycle and Mfg. Co., Middletown, Ohio. Bicycles, velocipedes, and motor-cycles	61,883	Apr. 9	127	2359
Miami Cycle and Mfg. Co., Middletown, Ohio. Bicycles, velocipedes, and motor-cycles	61,903	Apr. 9	127	2360
Milligan & Donovan, Kirkwood, Mo. Hair tonics and restorers	61,949	Apr. 9	127	2361
Monte Vista Milling & Elevator Company, Monte Vista, Colo. Wheat-flour	61,929	Apr. 9	127	2360
Moody & Co., Charles E., Boston, Mass. Canned fish	61,860	Apr. 9	127	2363
Muller, Wm. H., New York, N. Y. Bitters	61,930	Apr. 9	127	2360
Mutual Auto Accessories Co. of America, New York, N. Y. Lubricating oils and greases	61,812	Apr. 9	127	2357
Neuss, Hesslein & Co., New York, N. Y. Saws, die-stocks, screw-plates, and pipe-cutters	61,904	Apr. 9	127	2360
New Prague Flouring Mill Company, New Prague, Minn. Wheat-flour	61,905	Apr. 9	127	2360
New Prague Flouring Mill Company, New Prague, Minn. Wheat-flour	61,906	Apr. 9	127	2360
Noakes-Wheeler-Clough Company, Chicago, Ill. Varnishes, stains, japans, surfacers, and interior and exterior finishes	61,813	Apr. 9	127	2357
Nordin, John A., Atlantic City, N. J. Remedy for seasickness	61,950	Apr. 9	127	2361
North Electric Company, Cleveland, Ohio. Certain electrical apparatus	61,884	Apr. 9	127	2359
Nye, William F., New Bedford, Mass. Oil for lubricating, cleaning, and polishing purposes and for preventing rust	61,814	Apr. 9	127	2357
Ohio Tool Company, Auburn, N. Y., and Columbus, Ohio. Certain edge-tools	61,951	Apr. 9	127	2361
Park, Louis M., Minneapolis, Minn. Natural lithia spring-water	61,885	Apr. 9	127	2359
Park, Louis M., Minneapolis, Minn. Spring-water	61,907	Apr. 9	127	2360
Paul F. Beich Co., Bloomington, Ill. Caramels	61,831	Apr. 9	127	2359
Phoenix Mill Co., Minneapolis, Minn. Wheat-flour	61,952	Apr. 9	127	2361
Phoenix Mill Co., Minneapolis, Minn. Wheat-flour	61,953	Apr. 9	127	2361
Phoenix Woolen Co., Stafford, Conn. Woolen fabrics in the piece	61,931	Apr. 9	127	2360
Pillsbury-Washburn Flour Mills Co., Ltd., Minneapolis, Minn. Wheat breakfast food	61,908	Apr. 9	127	2360
Pillsbury-Washburn Flour Mills Co., Ltd., Minneapolis, Minn. Wheat breakfast food	61,909	Apr. 9	127	2360
Pompeian Mfg. Co., Cleveland, Ohio. Certain pharmaceutical preparations	61,954	Apr. 9	127	2361
Puritan Corset Co., Kalamazoo, Mich. Corsets and corset-waists	61,932	Apr. 9	127	2359
Radway & Company, New York, N. Y. Certain medicinal preparations	61,955	Apr. 9	127	2361
Read & Sons, William, Boston, Mass. Certain medical and surgical appliances	61,846	Apr. 9	127	2359
Read & Sons, William, Boston, Mass. Clothing of knitted or netted materials	61,910	Apr. 9	127	2360
Revere Rubber Company, Boston, Mass. Hose and machinery packings	61,847	Apr. 9	127	2363
Revere Rubber Company, Boston, Mass. Hose and machinery packings	61,861	Apr. 9	127	2363
Reynolds, James E., New York, N. Y. Cotton twine	61,848	Apr. 9	127	2363
Rice, Stix Dry Goods Company, St. Louis, Mo. Cotton piece goods	61,911	Apr. 9	127	2360
Rosenbaum Co., Pittsburg, Pa. Coats, pants, and vests	61,886	Apr. 9	127	2359
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Dental wax	61,820	Apr. 9	127	2357
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Dental alloys	61,821	Apr. 9	127	2357
Sauquoit Silk Manufacturing Company, Philadelphia, Pa. Silk piece goods	61,912	Apr. 9	127	2360
Schneider & Co., Jacob, Chicago, Ill. Medicines for blood diseases	61,956	Apr. 9	127	2361
Schumacher Cereal Co., Riverside, Iowa. Rolled oats	61,957	Apr. 9	127	2361
Schwager & Co., Leo, Brooklyn, N. Y. Cigars, cheroots, and little cigars	61,815	Apr. 9	127	2357
Siegesmund, Charles A., Boston, Mass. Tablets or lozenges for dyspepsia	61,958	Apr. 9	127	2361
Southern Cotton Oil Company, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La. Cotton-seed oils	61,822	Apr. 9	127	2357
Southern Cotton Oil Company, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La. Lard compound, cotton-seed oils	61,849	Apr. 9	127	2363
Sprague, Warner & Company, Chicago, Ill. Rice	61,959	Apr. 9	127	2361
St. Louis Syrup & Preserving Company, St. Louis, Mo. Certain foods	61,832	Apr. 9	127	2363
St. Louis Syrup & Preserving Company, St. Louis, Mo. Table-syrups, molasses, sorghum, and maple-syrup	61,862	Apr. 9	127	2363
Steinway & Sons, New York, N. Y. Circulars, pamphlets, and librettos	61,850	Apr. 9	127	2363

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Stohr, Franz, Vienna, Austria-Hungary. Certain medicinal preparation	61,860	Apr. 9	127	2361
Sutton, Edwin D., Millville, N. J. Certain medicinal preparations	61,861	Apr. 9	127	2361
Tedcastle & Co., A. W., Boston, Mass. Leather boots and shoes	61,862	Apr. 9	127	2361
Thomas' Sons, J. R., Youngstown, Ohio. Cornmeal	61,863	Apr. 9	127	2362
Thomas' Sons, J. R., Youngstown, Ohio. Cheese made from cows' milk	61,923	Apr. 9	127	2362
Towle Syrup Company, St. Paul, Minn. Pancake-flour	61,924	Apr. 9	127	2362
Towle Syrup Company, St. Paul, Minn. Syrup	61,925	Apr. 9	127	2362
Towle Syrup Company, St. Paul, Minn. Syrup	61,926	Apr. 9	127	2362
Towle Syrup Company, St. Paul, Minn. Syrup	61,927	Apr. 9	127	2362
United Box Board & Paper Company, New York, N. Y. Cardboards and box-boards	61,928	Apr. 9	127	2362
United States Graphite Company, Saginaw, Mich. Certain lubricants	61,929	Apr. 9	127	2362
United States Horse-Radish Company, Saginaw, Mich. Horse-radish, mustard, and horse-radish mustard	61,930	Apr. 9	127	2362
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Tonic	61,931	Apr. 9	127	2362
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Hair-restorer	61,932	Apr. 9	127	2362
W. S. Quinby Company, Boston, Mass. Coffee and tea	61,933	Apr. 9	127	2362
Weil Brothers, New York, N. Y. Veilings made of woven fabric	61,934	Apr. 9	127	2362
Weil Brothers, New York, N. Y. Veilings made of woven fabric	61,935	Apr. 9	127	2362
Weingarten Bros. Inc., New York, N. Y. Corset-stiffeners	61,936	Apr. 9	127	2362
Weiss, Jefferson P., Emporia, Va. Monthly newspaper	61,937	Apr. 9	127	2362
Wellcome, Henry S., London, England. Medicinal digestive preparations	61,938	Apr. 9	127	2362
Wells Flour Milling Company, Wells, Minn. Wheat-flour	61,939	Apr. 9	127	2362
Wells Flour Milling Company, Wells, Minn. Wheat-flour	61,940	Apr. 9	127	2362
West Overton Distilling Co., Pittsburg, Pa. Whisky	61,941	Apr. 9	127	2362
Whitcher, Frank W., Boston, Mass. Shoe-pincers and shoe-jacks	61,942	Apr. 9	127	2362
Whitman & Barnes Manufacturing Company, Akron, Ohio. Reamers and twist-drills	61,943	Apr. 9	127	2362
Whitman & Barnes Manufacturing Company, Akron, Ohio. Twist-drills and reamers	61,944	Apr. 9	127	2362
Wiebusch & Hilger Limited, New York, N. Y. Certain cutting-tools	61,945	Apr. 9	127	2362
Wilson Fruit Juice Co., Lawton, Mich. Unfermented grape-juice	61,946	Apr. 9	127	2362
Wilson, George C., Tyrone, Pa. Medicated toilet soap	61,947	Apr. 9	127	2362
Wm. B. Riker & Son Company, New York, N. Y. Hair-dressing and dandruff-remover	61,948	Apr. 9	127	2362
Wright Smith M'f'g. Co., St. Louis, Mo. Relish	61,949	Apr. 9	127	2362
Yale & Towne Mfg. Co., Stamford, Conn. Locks and parts thereof and keys	61,834	Apr. 9	127	2362
Yale & Towne Mfg. Co., Stamford, Conn. Chain-blocks	61,835	Apr. 9	127	2362
Yale & Towne Mfg. Co., Stamford, Conn. Chain-blocks	61,836	Apr. 9	127	2362
Yale & Towne Mfg. Co., Stamford, Conn. Locks and parts thereof and keys therefor	61,837	Apr. 9	127	2362
Yale & Towne Mfg. Co., Stamford, Conn. Locks, parts thereof, and keys	61,838	Apr. 9	127	2362

LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Bayle, Geo. A., St. Louis, Mo. "Bayle's High Grade Horseradish Catsup." (For Catsup)	13,462	Apr. 9	127	2362
Becker, Mayer & Co., Chicago, Ill. "The Graduate." (For Clothing)	13,467	Apr. 9	127	2362
Brook, Henry J., Rochester, N. Y. "Kampus Klothes." (For Young Men's Clothing)	13,468	Apr. 9	127	2362
Bullard Thread Co., Holyoke, Mass. "Premium B-I-G 5-3 Cord." (For Thread and Spool-Cotton)	13,465	Apr. 9	127	2362
Charles E. Hires Company, Philadelphia, Pa. "Purock Ginger Ale." (For Ginger-Ale)	13,466	Apr. 9	127	2362
Dunn, Wallace F., Minneapolis, Minn. "Dr. French's-Quinsy Kit." (For Medicine)	13,458	Apr. 9	127	2362
Dunn, Wallace F., Minneapolis, Minn. "Dr. French's-Quinsy Kit." (For Medicine)	13,459	Apr. 9	127	2362
Dunn, Wallace F., Minneapolis, Minn. "Dr. French's-Quinsy Kit." (For Medicine)	13,460	Apr. 9	127	2362
Fred Feil Brewing Company, Philadelphia, Pa. "Exquisite." (For Malt Liquors and Dark Beers)	13,457	Apr. 9	127	2362
Hogue, Albert F., Lowell, Mass. "Ma's Favorite." (For Starch)	13,464	Apr. 9	127	2362
Johnston, J. C., Chicago, Ill. "El Orthenal." (For Cigars)	13,455	Apr. 9	127	2362
Jones Payne Hat Co., St. Joseph, Mo. "Continent Brand." (For Hats)	13,456	Apr. 9	127	2362
McKay, Thomas A., Bisbee, N. D. "McKay's King of Oils." (For a Medical Composition)	13,461	Apr. 9	127	2362
Montague, John L. O., Christianburg, Va. "'Virginia Cured' Brand Hams and Bacon Dressed Meats." (For Hams, Bacon, and Dressed Meats)	13,463	Apr. 9	127	2362
Stewart Brothers Company, Omaha, Nebr. "Wedgwood Cigars." (For Cigars)	13,454	Apr. 9	127	2362

PRINTS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
A. Stanson & Co., New York, N. Y. "Scotch Mints." (For Candy)	1,950	Apr. 9	127	2362
A. J. Tower Co., Boston, Mass. "Stick to the Sign of the Fish." (For Oiled Clothing)	1,957	Apr. 9	127	2362
Denver Chemical Mfg. Co., Denver, Colo. "Antiphlogistine Girl 47." (For Medicine)	1,951	Apr. 9	127	2362
Denver Chemical Mfg. Co., Denver, Colo. "Antiphlogistine Girl 36." (For Medicine)	1,952	Apr. 9	127	2362
Denver Chemical Mfg. Co., Denver, Colo. "Antiphlogistine Girl 45." (For Medicine)	1,953	Apr. 9	127	2362
Lytton, H. C., Chicago, Ill. "Men's and Boys' Apparel." (For Men's and Boys' Apparel)	1,955	Apr. 9	127	2362
Perry & Co., Philadelphia, Pa. "Perry's Fashions for Spring, 1907, Sheet No. 2." (For Men's Clothing)	1,956	Apr. 9	127	2362
Pratt Food Co., Philadelphia, Pa. "Pratts Germ-o-thol, Sanitary Disinfectant." (For a Disinfectant)	1,954	Apr. 9	127	2362

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Alabama-Georgia Syrup Company, Montgomery, Ala. Syrups	25,119	Apr. 9	127	2377
Albaugh Bros. Dover & Co., Chicago, Ill. Cream-separators	22,218	Apr. 9	127	2371
Albaugh Bros. Dover & Co., Chicago, Ill. Food for plants and vegetables	26,299	Apr. 9	127	2378
Amalgamated Paint Company, Jersey City, N. J. Asphaltic and composite paints	18,730	Apr. 9	127	2368
American Garter Co., New York, N. Y. Garters	26,895	Apr. 9	127	2384
American Lady Corset Co., Detroit, Mich. Corsets	25,870-1	Apr. 9	127	2363
American Manufacturing Company, New York, N. Y. Rope, cord, lines, and twine	15,088	Apr. 9	127	2366
American Thread Company, Jersey City, N. J. Spool and sewing cotton and thread	26,720	Apr. 9	127	2381
American Thread Company, Jersey City, N. J. Spool and sewing cotton and thread	25,785-6	Apr. 9	127	2382
American Washboard Company, Cleveland, Ohio. Washboards	21,563	Apr. 9	127	2370
American Washboard Company, Cleveland, Ohio. Washboards	21,569	Apr. 9	127	2371
American Washboard Company, Cleveland, Ohio. Washboards	25,843	Apr. 9	127	2383
Applegate, Hamilton G., Louisville, Ky. Whisky	26,896	Apr. 9	127	2384
Arms & Kidder, Rosedale, Kans. Wheat-flour	13,916-17	Apr. 9	127	2367-8
Arthur Guinness Son & Co. Limd., London, England. Stout	7,082	Apr. 9	127	2366
B. A. Corbin & Son Company, Webster, Mass. Leather boots and shoes	22,330	Apr. 9	127	2371
Benedictus, Weill & Company, New York, N. Y. Mailnes and netted fabrics	22,333	Apr. 9	127	2371
Benedictus, Weill & Company, New York, N. Y. Net veilings	24,846-7	Apr. 9	127	2376
Black Silk Stove Polish Works, Sterling, Ill. Stove-polish	16,398	Apr. 9	127	2368
Bovril Limited, London, England. Meat extracts and essences	22,136	Apr. 9	127	2371
Business Magazine Co., Knoxville, Tenn. Magazine periodical	25,778	Apr. 9	127	2382
Cable Company, Chicago, Ill. Pianos and automatic piano-players	25,780-1	Apr. 9	127	2382
Cable Company, Chicago, Ill. Pianos and automatic piano-players	24,545	Apr. 9	127	2376
Carrington Company, Jean, New York, N. Y. Toilet powder	25,071	Apr. 9	127	2377
Castle Brothers, Incorporated, San Francisco, Cal. Dried fruit	25,611	Apr. 9	127	2380
Catawba Candy Co., Sandusky, Ohio. Candy	24,685	Apr. 9	127	2376
Chicago Horseman Newspaper Company, Chicago, Ill. Weekly magazine	20,722	Apr. 9	127	2370
Cincinnati Soap Company, Cincinnati, Ohio. Soap	24,896	Apr. 9	127	2376
Clayburg & Son, Karel, New York, N. Y. Salve	26,266	Apr. 9	127	2377
Clarey, James, New York, N. Y. Baking-ovens	26,340	Apr. 9	127	2378
Clark, Preston, Peoria, Ill. Mineral waters and carbonated beverages	25,810-12	Apr. 9	127	2382
Collins Company, Collinsville, Conn. Machetes and tercados	22,725	Apr. 9	127	2371
Congdon, Charles E., Jamestown, Cal. Medicine for the cure of malaria, chills, and fever	25,735	Apr. 9	127	2381
Consumers Coal Co., Springfield, Ohio. Coal				
Cook Medicine Co., T. L., Winston Salem, N. C. Medicines for rheumatism, kidney and liver troubles, &c.	10,496	Apr. 9	127	2367
Craig, William D., Kansas City, Mo. Paint	18,886	Apr. 9	127	2369
Crail, Samuel B., Collingswood, N. J. Wood and furniture polish	23,959	Apr. 9	127	2374
Cross & Company, New York, N. Y. Cement for mending crockery, &c.	23,878	Apr. 9	127	2374
David Brown & Son Limited, Donaghmore, Ireland. Soap	6,580	Apr. 9	127	2366
Dolgeville Felt Shoe Co., Dolgeville, N. Y. Boots, shoes, slippers, and parts thereof	25,760	Apr. 9	127	2382
Drake Inness Green Shoe Co., Charleston, S. C. Leather shoes	25,357-8	Apr. 9	127	2378
Eastern Importing & Manufacturing Company, Boston, Mass. Catsup	5,872	Apr. 9	127	2366
Eclipse Cement & Blacking Co., Philadelphia, Pa. Cleanser for canvas and duck	25,826	Apr. 9	127	2382
Enge, Baldwin E., Oberlössnitz, near Dresden, Germany. Cocoa, chocolate, and preparations thereof	25,947	Apr. 9	127	2385
Fairbanks, George E., Worcester, Mass. Medicinal compound	25,015	Apr. 9	127	2377
Farbwerke vorm. Meister Lucius & Brüning, Höchst-on-the-Main, Germany. Astringent and hemostatic	24,968	Apr. 9	127	2376
Fisk Rubber Co., Chicopee Falls, Mass. Pneumatic tires	25,949	Apr. 9	127	2385
Fleishman, Morris & Co., Richmond, Va. Leather shoes	25,922	Apr. 9	127	2384
Frank Bros. & Co., New York, N. Y. Men's knitted underwear	25,678	Apr. 9	127	2380
Frank Bros. & Co., New York, N. Y. Knit underwear	25,908	Apr. 9	127	2384
Freiberg & Workum, Cincinnati, Ohio. Whisky	1,880	Apr. 9	127	2365
Garlock Packing Company, Palmyra, N. Y. Sheet-packing	25,827	Apr. 9	127	2382
Garner & Co., New York, N. Y. Calicoes and percales	24,369	Apr. 9	127	2375
Garrigues, Harry B., Massillon, Ohio. Ointment and medicinal powder for the cure of diseases of the skin, &c.	25,223	Apr. 9	127	2377
George Worthington Company, Cleveland, Ohio. Saws	25,883	Apr. 9	127	2383
Gillespie-Benedict Company, Chicago, Ill. Paints for steel structures, metal, wood, &c.	25,537-8	Apr. 9	127	2377
Grassesi, Edward H., Watertown, Wis. Incubators, brooders, coops, &c.	24,901	Apr. 9	127	2376
Great Atlantic & Pacific Tea Company, New York, N. Y. Cocoa and chocolate	25,585	Apr. 9	127	2381
Guthmann Carpenter & Telling, Chicago, Ill. Leather boots and shoes	7,812	Apr. 9	127	2368
H. F. Buchlen & Company, Chicago, Ill. Remedies for disordered liver, biliousness, &c.	25,264	Apr. 9	127	2377
H. M. Storms Co., New York, N. Y. Type-writer ribbons	26,210	Apr. 9	127	2377
Hammel, Riglander & Co., New York, N. Y. Pliers	25,680	Apr. 9	127	2380
Helf & Hager Co., New York, N. Y. Sheet-music	25,729	Apr. 9	127	2378
Heller & Co., B., Chicago, Ill. Cereal flour	8,239	Apr. 9	127	2367
Hills Bros., San Francisco, Cal. Baking-powder and bicarbonate of soda	25,585	Apr. 9	127	2380
Holden Drug Co., Stockton, Cal. Perfumes	15,381	Apr. 9	127	2368
Holden Drug Co., Stockton, Cal. Liniments for rheumatism, gout, &c.	16,465	Apr. 9	127	2368
Hood Rubber Company, East Watertown and Boston, Mass. Rubber boots and shoes	25,975	Apr. 9	127	2382
Horton, William A., Melrose, Mass. Tonic pills	24,422	Apr. 9	127	2375
Houppert & Worcester, Birmingham, Ala. Carbonated beverage	5,197	Apr. 9	127	2366
Imperial Dry Plate Company, Limited, London, England. Photographic plates, paper, and films	25,877	Apr. 9	127	2384
International Combustion Corporation, Buffalo, N. Y. Fuel-burning device	22,628	Apr. 9	127	2371
J. A. Pozzoni Pharmacal Co., St. Louis, Mo. Complexion-powder	23,793	Apr. 9	127	2374
J. A. Pozzoni Pharmacal Co., St. Louis, Mo. Complexion-powder	23,795	Apr. 9	127	2374
J. B. Pearson Company, Boston, Mass. Play-suits	25,748	Apr. 9	127	2381
Jackson Company, Nashua, N. H. Cotton piece goods	21,528	Apr. 9	127	2371
Jamison Bros. & Johnston Bakers' Supply Co., Kansas City, Mo. Flavoring extracts, canned fruits, pie-fillings, &c.	25,969	Apr. 9	127	2385
Jansen, Augusta Y., Chicago, Ill. Clocks	25,879	Apr. 9	127	2384
Japanese Importing Company, Los Angeles, Cal. Table-cloths, napkins, and doilies	19,353	Apr. 9	127	2369
Jesse Moore Hunt Co., San Francisco, Cal. Whisky	8,927	Apr. 9	127	2367
John Robertson & Son, Limited, Dundee, Scotland. Whisky	8,054	Apr. 9	127	2366
John Wyeth and Brother, Incorporated, Philadelphia, Pa. Medicated wines, elixirs, syrups, &c.	21,544	Apr. 9	127	2370
John Wyeth and Brother, Incorporated, Philadelphia, Pa. Medicinal solution of iron chlorid	21,557	Apr. 9	127	2370
John Wyeth and Brother, Incorporated, Philadelphia, Pa. Pastile for the cure of hoarseness, sore throat, &c.	21,558	Apr. 9	127	2370
John Wyeth and Brother, Incorporated, Philadelphia, Pa. Medicinal pencils or cones	21,561	Apr. 9	127	2370

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Pages.
Joseph Dixon Crucible Company, Jersey City, N. J. Pencils	25,722	Apr. 9	127	2351
Joseph Dixon Crucible Company, Jersey City, N. J. Stove-polish	25,724	Apr. 9	127	2351
Joseph Dixon Crucible Company, Jersey City, N. J. Graphite	25,857	Apr. 9	127	2351
Joseph Rodgers & Sons (Limited), Shaffield, England. Silver flat, hollow, and table ware	16,937	Apr. 9	127	2350
Joy Castoria Company, Muscle and New York, N. Y. Medicinal preparation for the ailments of infants and children	21,008	Apr. 9	127	2370
K K K Medicine Co., Keokuk, Iowa. Wild-honey ointment	64	Apr. 9	127	2345
Kampfe Bros., New York, N. Y. Safety-razors and razor-blades	4,037	Apr. 9	127	2345
Keystone Mfg. Co., Buffalo, N. Y. Hand-ratchets for operating drills, taps, wrenches, &c.	25,513	Apr. 9	127	2370
Keystone Mfg. Co., Buffalo, N. Y. Hand-ratchets for operating drills, taps, wrenches, &c.	25,520	Apr. 9	127	2370
Kiderle, Joseph A., Allegheny, Pa. Polishing-cloths	25,657	Apr. 9	127	2350
L'Opinione Italian Publishing Co., Philadelphia, Pa. Newspaper	25,747	Apr. 9	127	2351
Latimer & Co., Robt. L., Philadelphia, Pa. Silk-bolting-cloth	26,024	Apr. 9	127	2360
Lefebure Ledger Company, Cedar Rapids, Iowa. Ledgers	3,312	Apr. 9	127	2346
Leitach Brothers. (See Martin, Wm. L., assignor.)				
Lindstrom Mill Co., Lindstrom, Minn. Wheat-flour	25,880	Apr. 9	127	2354
Link-Belt Company, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind. Drive and conveyer chains	23,060	Apr. 9	127	2372
Link-Belt Company, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind. Drive and conveyer chains	23,062	Apr. 9	127	2372
Link-Belt Company, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind. Drive and conveyer chains	23,063	Apr. 9	127	2372
Losser & Co., Frederick, New York, N. Y. Hosiery	22,064-5	Apr. 9	127	2372
Lotzes Sons & Company, A., Cincinnati, Ohio. Stoves, furnaces, and heaters and parts thereof	22,945	Apr. 9	127	2372
"Lucerna" Anglo-Swiss Milk Chocolate Co., Hochdorf-Lucern, Switzerland. Chocolate and cocoa	19,960	Apr. 9	127	2360
"Lucerna" Anglo-Swiss Milk Chocolate Co., Hochdorf-Lucern, Switzerland. Chocolate and cocoa	13,496	Apr. 9	127	2360
Lunkenheimer Company, Cincinnati, Ohio. Lubricators	13,499	Apr. 9	127	2360
Lütters & Cie., C., Solingen, Germany. Knives, scissors, and razors	25,976-7	Apr. 9	127	2355
Maass Fabrik antiseptischer Artikel, Adolf, Berlin, Germany. Inlay-soles of pasteboard	12,460	Apr. 9	127	2357
Mack & Gilmore, Berwick, La. Remedy for diarrhœa, flux, and dysentery	20,087	Apr. 9	127	2360
Martin, Wm. L., assignor to Leitach Brothers, New York, N. Y. Hair, tooth, and nail brushes	23,857	Apr. 9	127	2374
McIntosh Hardware Corpn., Cleveland, Ohio. Bicycles and automobiles	24,028	Apr. 9	127	2376
McQuillan, Thomas R., Guymon, Okla. Ter. Coin-controlled vending-machine	22,597	Apr. 9	127	2374
Miller Rubber Manufacturing Co., Akron, Ohio. Rubber gloves and mittens	24,573	Apr. 9	127	2375
Morgan Crucible Company Limited, Battersea, London, England. Crucibles, cupels, roasting-dishes, &c	11,991	Apr. 9	127	2367
Morgan Crucible Company Limited, Battersea, London, England. Assayers' furnaces, muffles, &c	15,797	Apr. 9	127	2360
Morgan, Geo. F., New York, N. Y. Article for holding shirts in place	24,168	Apr. 9	127	2375
Morrill, Sarah C., New York, N. Y. Hand-punches, cut-nippers, and pliers	25,527	Apr. 9	127	2350
Morris Sherman Manufacturing Company, Chattanooga, Tenn. Brickmaking machinery	22,454	Apr. 9	127	2371
Morris Sherman Manufacturing Company, Chattanooga, Tenn. Brickmaking machinery	22,730	Apr. 9	127	2371
Morrison, Robert A., Denver, Colo. Metal window sashes, frames, &c	25,277	Apr. 9	127	2378
Myers, Herman C., New York, N. Y. Cordials, rums, brandies, and whiskies	24,805	Apr. 9	127	2376
Narrow Fabric Corporation, Orange, Conn. Elastic webbing	24,955	Apr. 9	127	2365
Noide, John T., St. Louis, Mo. Dental amalgam, gutta-percha, camel-points, &c	19,040	Apr. 9	127	2360
North Bro's M'f'g Co., Philadelphia, Pa. Hand-drills and drill-bits	25,622	Apr. 9	127	2360
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,442-3	Apr. 9	127	2370
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,454	Apr. 9	127	2370
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,455	Apr. 9	127	2370
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,460-1	Apr. 9	127	2370
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,462-4	Apr. 9	127	2370
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,468	Apr. 9	127	2370
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,470	Apr. 9	127	2370
Ohio Coffee & Spice Company, Columbus, Ohio. Coffee	25,473	Apr. 9	127	2370
P. O. Manufacturing Company, Homewood, Ill. Golf clubs and implements and parts thereof	1,713	Apr. 9	127	2365
Parker Holmes and Company, Boston, Mass. Leather dressings, blackings, and polishes	25,907	Apr. 9	127	2354
Patterson-Cabell Co., New York, N. Y. Soup and bouillon stocks	21,349	Apr. 9	127	2370
Paul Brothers, Philadelphia, Pa. Leather boots, shoes, and slippers	24,673	Apr. 9	127	2375
Peninsular Paint and Varnish Company, Ltd., Detroit, Mich. Colors, enamels, fillers, &c	25,260	Apr. 9	127	2358
Perfect Safety Paper Co., Franklin, Ohio, and Chicago, Ill. Printing and writing paper	23,301	Apr. 9	127	2371
Peroxident Manufacturing Company, St. Louis, Mo. Antiseptic, germicide, and deodorant	24,515	Apr. 9	127	2376
Portland Packing Company, Portland, Me. Canned corn	24,697	Apr. 9	127	2375
Reynolds, William M., New York, N. Y. Medicines for cough, cold, and grip	9,189	Apr. 9	127	2367
Rheinstrom Bettman Johnson & Co., Cincinnati, Ohio. Prune-juice	24,620	Apr. 9	127	2360
Rheinstrom Bettman Johnson & Co., Cincinnati, Ohio. Preserved pineapple and Maraschino cherries	8,480	Apr. 9	127	2367
Rio Chemical Co., New York, N. Y. Uterine tonics	8,493	Apr. 9	127	2367
Rio Chemical Co., New York, N. Y. Mucous astringent	22,881	Apr. 9	127	2374
Roberts, Johnson & Rand Shoe Company, St. Louis, Mo. Leather boots and shoes	24,886	Apr. 9	127	2374
Rockhill, Clayton, New York, N. Y. Essential oils	22,701	Apr. 9	127	2372
Rose, Francis N., San Francisco, Cal. Tooth-powder	226	Apr. 9	127	2365
Rosenwald, Max, New York, N. Y. Felt hats	25,134	Apr. 9	127	2377
S. M. Bixby & Co., New York, N. Y. Leather and shoe blackings, paste, polish, and varnish	23,915	Apr. 9	127	2374
S. M. Bixby & Co., New York, N. Y. Cleaning and whitening compounds for textile and fibrous fabrics, &c	23,920-39	Apr. 9	127	2372
S. M. Bixby & Co., New York, N. Y. Stove dressings and polish	23,923-4	Apr. 9	127	2373
S. M. Bixby & Co., New York, N. Y. Stove dressings and polish	23,926	Apr. 9	127	2373
Schmidt & Ziegler, Ltd., New Orleans, La. Whisky	23,940	Apr. 9	127	2373
Siegel Cooper & Co., Chicago, Ill. Sauces, catsups, and pickles	16,839	Apr. 9	127	2360
Siegel Cooper & Co., Chicago, Ill. Olives and olive-oil	5,413	Apr. 9	127	2366
Silberman, Morris, New York, N. Y. Waterproof rain-coats	5,420	Apr. 9	127	2366
Spear Brothers Co., Baltimore, Md. Leather boots and shoes	23,530	Apr. 9	127	2374
Sprague, Warner & Company, Chicago, Ill. Canned salmon	23,869	Apr. 9	127	2378
Sterman & Co., S., Brooklyn, N. Y. Bath-sprays and overhead showers	24,989	Apr. 9	127	2365
Stirn, L. & E., New York, N. Y. Ribbons	21,373	Apr. 9	127	2370
Stone & Company, F. I., Atlanta, Ga. Plant-tenders	25,945-6	Apr. 9	127	2365
Suffern, Robert A., New York, N. Y. Cotton piece goods	24,579	Apr. 9	127	2375
	23,617	Apr. 9	127	2372

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Pages.
Susquehanna Silk Mills, New York, N. Y. Silk piece goods	21,419-20	Apr. 9	127	2370
Tanqueray Gordon & Co. Limited, London, England. Whisky	14,530	Apr. 9	127	2366
Tash, John D., Chicago, Ill. Compound pepper	22,810	Apr. 9	127	2372
Toch Brothers, New York, N. Y. Scenic and fresco colors	25,944	Apr. 9	127	2365
Ullman-Einstein Co., Cleveland, Ohio. Brandy, rum, and gin	25,935	Apr. 9	127	2365
United States Graphite Company, Saginaw, Mich. Graphite paint	24,762	Apr. 9	127	2376
United States Graphite Company, Saginaw, Mich. Silver-lead or plumbago foundry-facings, &c	24,766	Apr. 9	127	2376
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	23,623-4	Apr. 9	127	2374
Weeks & Parr, New York, N. Y. Rye-flour	25,567	Apr. 9	127	2360
Weingarten Bros., Incorporated, New York, N. Y. Corsets	25,862	Apr. 9	127	2363
White Enamel Refrigerator Company, St. Paul, Minn. Refrigerators	25,863	Apr. 9	127	2363
White, Hentz & Co., Philadelphia, Pa. Whisky	6,070	Apr. 9	127	2366
Willson, Thomas A., Reading, Pa. Spectacles and eyeglasses	25,836	Apr. 9	127	2362

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE ISSUED ON THE 9TH DAY OF APRIL, 1907.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Abdominal guard and supporter	J. Gamble	849,471	Apr. 9	1694	343	127	2086
Acids. Bromin derivative of fatty	E. Fischer	850,111	Apr. 9	2872		127	2351
Adding-machine	G. N. Hinchman	849,476	Apr. 9	1706	345-7	127	2089
Adjustable wrench	G. E. Woodbury	849,765	Apr. 9	2249	463	127	2197
Advertising device	C. M. O'Brien	849,493	Apr. 9	1758	356	127	2071
Agitator	B. Solis	850,069	Apr. 9	2784	568	127	2328
Agricultural implement	H. C. Weaver	849,646	Apr. 9	2036	417	127	2142
Air-brake mechanism	C. G. Lundholm	849,550	Apr. 9	1861	378	127	2098
Air filter and cooler	L. F. Pawley	849,508	Apr. 9	1804	367	127	2107
Alarm:							
See Fire-escape alarm.							
Alloy	A. H. Smith	849,927	Apr. 9	2554		127	2274
Amusement device	P. Boyton	849,970	Apr. 9	2622	546-7	127	2291
Anchor-post and stretcher	F. Underwood	849,441	Apr. 9	1624	330	127	2080
Anti-pig-rooting device	T. W. Box	849,969	Apr. 9	2621	545	127	2290
Auger. Packing-	E. E. Ziegenfuss	849,452	Apr. 9	1645	333	127	2082
Automatic coupling	P. Lamche	850,090	Apr. 9	2826	562	127	2340
Automatic sprinkler	W. S. Thurlow and W. G. Fraser	849,938	Apr. 9	2568	532	127	2278
Automobile top-holder	C. W. Coope	849,598	Apr. 9	1954	400	127	2121
Automobiles. Antislipping device for	E. Nye and A. Gruesbeck	849,805	Apr. 9	2325	477	127	2213
Automobiles. Differential clutch mechanism for	F. W. Hedgeland	849,474	Apr. 9	1702	345	127	2088
Axle	G. A. Weaver	849,950	Apr. 9	2580	538	127	2283
Axle construction. Front-	G. E. Babcock	849,652	Apr. 9	2050	421	127	2145
Back-spacing mechanism	W. W. Torrence	850,106	Apr. 9	2858	598-9	127	2347
Bait. Artificial	B. F. Burke	849,367	Apr. 9	1495	308	127	2064
Bait. Artificial fish-	E. C. Adams	849,522	Apr. 9	1818	368	127	2140
Baling-press	J. A. Carney	849,658	Apr. 9	2061	423	127	2263
Baling-press	H. L. Whitman	849,874	Apr. 9	2495	506-7	127	2267
Baling-press	J. A. Spencer	850,105	Apr. 9	2857	598	127	2278
Ball back-stop. Base-	W. S. Titus	849,941	Apr. 9	2571	533-4	127	2121
Ball marker. Golf-	J. C. Cory	849,600	Apr. 9	1957	401	127	2109
Balls. Making playing-	F. H. Richards	849,572	Apr. 9	1902	390	127	2088
Bank. Savings-	E. E. Forest	849,469	Apr. 9	1691	341	127	2088
Bar:							
See Grate-bar. Mosquito-bar.							
Barrel and box carrier	J. A. Wright	849,449	Apr. 9	1639	332	127	2044
Barrel cover or lid support	W. J. Madole and H. Boerner	849,552	Apr. 9	1866	379	127	2100
Basket. Fruit-picker's	F. Cartmel	849,976	Apr. 9	2631	550	127	2293
Basket-handle	J. B. Kenny	849,402	Apr. 9	1562	317	127	2023
Beam	G. B. and G. D. McLean	849,917	Apr. 9	2536	524	127	2270
Bearing. Caliper-	T. R. Wallis	849,948	Apr. 9	2567	537	127	2283
Bearing. Roller-	A. J. Morse	849,688	Apr. 9	1750	354	127	2070
Bed-bottom. Spring-	J. Reilley	850,118	Apr. 9	2890	603-4	127	2355
Bed. Folding-	S. E. Twitchell	849,943	Apr. 9	2576	535	127	2285
Bed. Folding-	F. F. Schauer and J. Graff	850,103	Apr. 9	2854	597	127	2345
Bed-pan	H. Gold	849,472	Apr. 9	1695	342	127	2085
Bed rail-joint. Iron-	W. L. Fredericks	849,537	Apr. 9	1844	374-5	127	2094
Bed-spring	I. H. Haas	849,541	Apr. 9	1849	376	127	2095
Bedstead-fastener	L. E. Henry	849,902	Apr. 9	2511	518	127	2268
Bedstead. Couch-	J. H. Dyett	850,121	Apr. 9	2895	604	127	2355
Belt. Conveyer-	E. A. Houchin and A. Huber	850,002	Apr. 9	2668	549	127	2301
Bennin, &c. Apparatus for recovering	A. E. Vincent	849,645	Apr. 9	2034	417	127	2141
Beverage-making device	D. S. Holley	849,813	Apr. 9	1976	406	127	2126
Bin:							
See Grain-bin.							
Binder. Loose-leaf	W. Shallcross	849,420	Apr. 9	1608	326	127	2035
Binder. Loose-leaf	H. G. Buchan	849,973	Apr. 9	2628	549	127	2293
Binder. Temporary	E. G. Dow	849,836	Apr. 9	2389	488	127	2223
Block:							
See Building-block.							
Block-making apparatus. Molded-	J. O. Winston	849,824	Apr. 9	2349	483	127	2221
Boat	U. R. Miller	850,034	Apr. 9	2714	570	127	2323
Bobbin-holder	A. E. Rhoades	850,099	Apr. 9	2846	596	127	2345
Boiler-tube-cramping apparatus	A. G. Hay	849,808	Apr. 9	2306	816-17	127	2208
Belt:							
See Pump-rod belt.							
Boring-machine	F. H. French	850,095	Apr. 9	2817	590	127	2336
Bottle	F. Hayden	849,899	Apr. 9	2506	517	127	2268
Bottle	C. E. Justison	850,015	Apr. 9	2684	553	127	2305
Bottle	F. Smith	850,087	Apr. 9	2781	585	127	2323
Bottle	J. B. Short	849,809	Apr. 9	1797	364	127	2092
Bottle-closure	A. E. Batchelder	849,980	Apr. 9	2807	543	127	2337
Bottle-closure							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Bottle. Electrically-heated hot-water	H. W. Christian	849,398	Apr. 9	1496	304	127	2004
Bottle-filling machine	S. M. Heulings	849,735	Apr. 9	2184	450-1	127	2178
Bottle-stopper or cork extractor	J. B. Short	849,808	Apr. 9	1792	364	127	2061
Box:							
See Conduit-box. Telephone switch-box. Packing-box.							
Box	T. G. Palmer	850,056	Apr. 9	2838	504	127	2242
Box-handle	N. L. Barmore	849,328	Apr. 9	1482	301	127	2000
Bracelet	I. M. Sylvester	849,745	Apr. 9	2224	456	127	2193
Bracket:							
See Lamp-bracket. Shade-bracket.							
Bracket	H. T. Holland	849,396	Apr. 9	1557	315	127	2021
Brake:							
See Emergency-brake. Vehicle-brake.							
Brake-shoe	C. W. Booth	849,722	Apr. 9	2169	446	127	2175
Branding machine. Sheep-	J. A. Magnuson	849,691	Apr. 9	2112	434	127	2149
Brick-handling implement. Hollow-	C. S. Hall	849,297	Apr. 9	2203	516	127	2261
Brick-mold	F. Mueller	850,088	Apr. 9	2723	572	127	2314
Broiler	J. W. Ross	850,058	Apr. 9	2767	581	127	2324
Broom-corn-saw machine	A. J. Middleton	849,804	Apr. 9	2322	476	127	2215
Bucket for dredging purposes. Scoop-	C. Pay	850,098	Apr. 9	2839	594-5	127	2243
Buckle and cockeye for harness-traces. Combination	E. B. Knapp	850,115	Apr. 9	2864	603	127	2253
Buckle attachment for straps	J. Van Cleve	849,516	Apr. 9	1807	367	127	2095
Buckle. Cross-line	F. W. T. Mitchell	849,696	Apr. 9	1745	353	127	2069
Building-block	S. T. Playford	850,048	Apr. 9	2739	576	127	2317
Building-block for chimneys	E. C. Newell	849,694	Apr. 9	2117	435	127	2162
Building purposes. Anchorage for	R. P. Smith	849,817	Apr. 9	2240	480	127	2219
Buoy	W. C. Beebe	849,302	Apr. 9	1489	302	127	2002
Buoy. Life-saving	W. F. Clark	849,887	Apr. 9	2486	512	127	2257
Burner:							
See Gas-burner. Lamp-burner.							
Burner	B. A. Baxter	849,389	Apr. 9	1483	301	127	2001
Button	A. J. Levy	849,749	Apr. 9	2194	452	127	2181
Button cutting and sewing machine. Automatic	J. W. Miller	850,033	Apr. 9	2709	569-70	127	2311
Buttons, brooches, belt-clasps, and buckle-fronts from horn and hoof. Manufacture of	F. H. Grove	849,606	Apr. 9	1970		127	2126
Cables. Steel supporting structure for electric-transmission	A. K. Mansfield	849,908	Apr. 9	2519	530	127	2205
Calcining-furnace	T. McNeal	850,041	Apr. 9	2727	573	127	2314
Camera-stand	K. Nelson	849,527	Apr. 9	1880	383	127	2108
Can-cover fastener	C. E. Bertels. (Reissue)	12,638	Apr. 9	2866	605	127	2256
Can-opener	A. G. Snowdon	849,939	Apr. 9	2566	539	127	2275
Canopy-frame	J. H. Goss	850,096	Apr. 9	2831	591	127	2330
Canopy. Ventilating-	I. E. Palmer	849,809	Apr. 9	2326	477	127	2216
Cant-hook or peavey	W. L. Hofer	849,611	Apr. 9	1974	404	127	2126
Car. Ballast-	P. Price	850,051	Apr. 9	2747	576	127	2319
Car construction	C. A. Procter and A. Gnaegy	849,854	Apr. 9	2431	496	127	2243
Car construction	F. M. Brinckhoff	849,527	Apr. 9	2266	484	127	2223
Car construction. Passenger-	F. M. Brinckhoff	849,528	Apr. 9	2266	484	127	2223
Car-coupling	F. M. Brinckhoff	849,529	Apr. 9	2263	483	127	2222
Car cover. Railway-	J. R. Mitchell	849,412	Apr. 9	1577	320	127	2026
Car draft-rigging. Railway-	G. A. Heimbucher	849,785	Apr. 9	2267	470	127	2206
Car draft-rigging. Railway-	S. D. Wright	849,649	Apr. 9	2041	419	127	2143
Car friction draft-rigging. Railway-	W. Slayden	849,826	Apr. 9	2562	528-9	127	2273
Car friction draft-rigging. Railway-	J. F. O'Connor	849,861	Apr. 9	1884	384	127	2104
Car friction spring draft-rigging. Railway-	J. F. O'Connor	849,862	Apr. 9	1886	384-5	127	2104
Car-mover	J. F. O'Connor	849,860	Apr. 9	1883	383-4	127	2103
Car. Railway-	M. N. Shail	849,926	Apr. 9	2547	528	127	2272
Car-replacer	D. L. Minier	849,611	Apr. 9	1575	319-20	127	2026
Car roller side bearing. Railway-	C. H. Hess	849,283	Apr. 9	1882	314	127	2020
Car-roof	F. B. Townsend	849,515	Apr. 9	1806	366	127	2095
Car-roof frame. Box-	W. J. Wheeler	849,518	Apr. 9	1809	367	127	2096
Car-seats and the like. Rail connection for	W. H. Emerick and H. A. Bundy	849,282	Apr. 9	1533[illegible]	310	127	2015
Car-step	E. G. Budd	849,697	Apr. 9	2089	422	127	2148
Car-step. Extension	L. Yeager, Jr.	849,585	Apr. 9	2697	539	127	2285
Carburetor	K. Stevens	850,072	Apr. 9	2782	587	127	2330
Card-feeding device. Automatic	P. Gasth	849,833	Apr. 9	1845	375	127	2094
Card-sorting device	W. A. Billman	849,685	Apr. 9	2057	421-2	127	2147
Carpet-stretcher	D. Kent	849,623	Apr. 9	1993	408-9	127	2130
Carrier:	C. Helm	849,997	Apr. 9	2698	557	127	2288
See Barrel and box carrier.							
Case:							
See Sales-case.							
Cash-checking machine	E. Guess	849,473	Apr. 9	1698	342-4	127	2057
Cash-register	E. Van Camp	849,580	Apr. 9	2462	502-4	127	2248
Casket-handle	W. T. Fisk	849,660	Apr. 9	2079	427	127	2152
Caster	W. Imbt	850,080	Apr. 9	2678	561	127	2303
Catamenial bandage	M. A. Cook	849,725	Apr. 9	2173	447	127	2175
Cement-block machine	J. W. Herring	849,382	Apr. 9	1551	314	127	2020
Cement for resisting water. Impermeable	G. Frollo	849,778	Apr. 9	2377		127	2205
Cement-kiln	J. S. Wentz	849,573	Apr. 9	2464	506	127	2251
Cement post	W. E. Varney	849,789	Apr. 9	2239	460	127	2194
Cement-post mold	W. E. Varney	849,790	Apr. 9	2240	460	127	2194
Chair:							
See Folding chair.							
Chair and table. Combination	C. O. Hoffmann	849,397	Apr. 9	1556	315	127	2021
Chair head-rest. Barber's-	B. F. Buchanan	849,396	Apr. 9	1949	399	127	2120
Chalk-line holder	M. A. Reare	850,092	Apr. 9	2743	577	127	2319
Chock	J. M. Thomas	849,927	Apr. 9	2566	532	127	2277
Churn and butter-worker	G. J. Kaplan	849,698	Apr. 9	2107	433	127	2159
Cipher-code. Telegraph and cable	F. W. Lietzow	850,091	Apr. 9	2827	592-3	127	2340
Circuit-changing mechanism	H. G. Webster	849,443	Apr. 9	1626	330	127	2040
Clamp:							
See Drum-attachment clamp. Hitching-strap clamp. Rope-clamp.							
Clamp	J. C. Adams	849,324	Apr. 9	1477	300	127	1999
Clamping-ring	J. B. Danforth	849,939	Apr. 9	2537	551	127	2284
Clamping-ring	J. Clark	849,370	Apr. 9	1498	304-5	127	2004
	J. Clark	849,371	Apr. 9	1501	305	127	2005

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Clasp:							
See Trousers-clasp.							
Cleaning apparatus	A. E. Sadler	849,641	Apr. 9	2033	420	127	2140
Cleat. Wire	J. W. Steele	849,930	Apr. 9	2557	529	127	2273
Clever and sweat-tenderer. Combined	F. White	849,648	Apr. 9	2040	419	127	2143
Clip:							
See Heel-clip.							
Clothes-line fastener	L. C. A. Danies	849,983	Apr. 9	2539	531	127	2264
Clothes-line support	J. H. Ruehmling	849,426	Apr. 9	1805	365	127	2094
Clothes-line support and holder	L. Windt and G. Matilka	849,576	Apr. 9	2473	505	127	2249
Clutch	A. J. Morse	849,457	Apr. 9	1749	354	127	2088
Clutch	J. C. Potter and J. Johnston	849,927	Apr. 9	2130	448	127	2166
Coaches. Skirt-guard for baby-	M. L. Fiske and J. R. Smith	849,839	Apr. 9	2307	469	127	2212
Cocks. Pressure-regulator for gas-	M. W. Longfellow	849,478	Apr. 9	1569	318	127	2032
Coffee-pot	C. M. Overcash	849,584	Apr. 9	1889	385	127	2107
Coin-operated mechanism	J. J. Wood	849,447	Apr. 9	1693	340	127	2056
Coin-operated mechanism	J. J. Wood	849,448	Apr. 9	1693	340	127	2056
Coin separating and discharging apparatus	W. Schumacher	849,439	Apr. 9	1617	328	127	2041
Coking briquets. Apparatus for	B. Wagner	849,947	Apr. 9	2695	536-7	127	2283
Column. Metal	R. B. White	849,951	Apr. 9	2691	535	127	2282
Comb:							
See Hair-comb.							
Combination-wrench	E. Ellingson	849,891	Apr. 9	2486	514	127	2255
Concrete-block machine	A. O. Thomas	849,704	Apr. 9	2136	439	127	2167
Concrete blocks. Curing	J. W. Jackson	849,790	Apr. 9	2266	471	127	2197
Concrete building-blocks. Manufacturing	S. W. Hendrickson	850,112	Apr. 9	2873	601	127	2351
Concrete ceilings. Hanger-support for	A. J. Perkins	850,097	Apr. 9	2842	595	127	2344
Concrete construction. Reinforced	E. M. Scofield	849,922	Apr. 9	2545	527	127	2269
Concrete form	J. M. Carmody	849,885	Apr. 9	2482	511	127	2254
Concrete-mixer	E. E. Flora	849,732	Apr. 9	2180	448	127	2177
Concrete-wall mold	W. H. Anthony	850,120	Apr. 9	2894	604	127	2353
Condenser. Sectional	W. Van den Heuvel	849,944	Apr. 9	2677	555	127	2289
Condenser. Surface	C. N. Tatarnicoff	849,888	Apr. 9	2442	501	127	2247
Conduit-box	C. A. Hinsdill	849,295	Apr. 9	1554	315	127	2020
Conduit cooling. Electrical	J. A. Neth	849,417	Apr. 9	1589	321	127	2033
Conduits. Plug for sealing underground	W. L. McGowan	849,415	Apr. 9	1590	321	127	2033
Connecting-rod head	W. W. Sleeman	849,642	Apr. 9	2032	416	127	2140
Convertible table	F. A. Richter	850,064	Apr. 9	2762	580-1	127	2327
Conveyer. Cross-	C. Bradford	849,294	Apr. 9	1947	398-9	127	2119
Conveying apparatus	F. H. Wolever	850,107	Apr. 9	2859	600	127	2349
Cooker	A. Major	850,028	Apr. 9	2703	568	127	2309
Cooker	A. K. Schulte	850,060	Apr. 9	2760	582	127	2326
Cooler:							
See Gas-cooler.							
Cooling apparatus	W. Helm	849,998	Apr. 9	2660	556	127	2289
Cooling attachment	T. A. Alton	849,711	Apr. 9	2159	443	127	2170
Core-separator	J. P. Mallett	850,116	Apr. 9	2885	603	127	2353
Corn. Apparatus for the treatment of seed-	P. Paulsen	849,567	Apr. 9	1898	390	127	2107
Corn. Device for testing the germinating power of seed-	A. R. Francis	849,671	Apr. 9	2068	426	127	2153
Corn-thinner	J. P. Bennett	849,854	Apr. 9	2053	421	127	2146
Corset attachment	N. Stoskopf	849,589	Apr. 9	1981	395	127	2115
Corset-busk	R. E. Legge	849,905	Apr. 9	2515	519	127	2264
Counter-die and making same	P. and M. Lehnert	849,547	Apr. 9	1956		127	2097
Coupling:							
See Automatic coupling. Shaft-coupling. Car-coupling. Wire-coupling. Conduit-coupling.							
Crane	A. V. Kiser	849,403	Apr. 9	1864	317	127	2008
Creel	I. E. Palmer	849,810	Apr. 9	2331	478	127	2217
Cultivator	W. C. Hinton	849,306	Apr. 9	1555	315	127	2020
Cultivator attachment	J. J. Young	849,956	Apr. 9	2597	540	127	2285
Curtain-fixture	A. G. W. Brown	849,972	Apr. 9	2627	548	127	2293
Curtain-pole	J. C. Repp	849,855	Apr. 9	2422	495	127	2242
Curtain-rod	C. W. Kirsch	850,089	Apr. 9	2825	593	127	2329
Curtain stretching and drying device. Lace-	A. Proctor	849,883	Apr. 9	2439	495	127	2242
Cushion-wheel	J. P. Holder	850,000	Apr. 9	2863	559	127	2293
Cuspidor	N. R. Thibert	850,076	Apr. 9	2794	588	127	2331
Cut-off and drainage apparatus	W. H. Ellis	849,534	Apr. 9	1840	378	127	2092
Cut-off. Automatic	J. D. Patton	849,637	Apr. 9	2028	415	127	2139
Cutter:							
See Stalk-cutter.							
Cycle driving and braking mechanism	H. P. Townsend	850,077	Apr. 9	2796	588	127	2331
Desk-globe	A. R. Hurlburt	849,618	Apr. 9	1966	407	127	2139
Dental tools. Guard and moistener for	C. A. Sevier	849,702	Apr. 9	2135	439	127	2166
Desk. Hotel-register	F. F. Doleshy	849,803	Apr. 9	1963	402	127	2133
Die:							
See Counter-die.	F. S. Barnes	849,860	Apr. 9	2477	500	127	2248
Die-stock reamer attachment							
Digger:							
See Post-hole digger.							
Dish-washing machine	J. Krehbiel	849,637	Apr. 9	2026	411	127	2138
Display-cabinet	M. T. Brennan	849,656	Apr. 9	2089	423	127	2147
Display-rack	T. E. Arnold	849,589	Apr. 9	1940	397	127	2117
Display-stand	J. B. Gordon	849,676	Apr. 9	2068	426	127	2153
Distilling, concentrating, and evaporating liquids	J. E. Siebel	849,570	Apr. 9	1917	393	127	2112
Ditching-machine	M. P. Carpenter	849,455	Apr. 9	1864	393-4	127	2042
Dock. Floating dry-	W. T. Donnelly	849,378	Apr. 9	1531	307-8	127	2012
Doll	S. A. West	849,566	Apr. 9	1938	399	127	2117
Door-catch	G. W. Mallory	849,692	Apr. 9	2114	436	127	2141
Door for cold-storage rooms. Swing-	J. F. Drucker	849,775	Apr. 9	2268	466	127	2201
Door. Metal	A. Mandry	849,742	Apr. 9	2197	452	127	2181
Door stop and lock	C. J. Tatum	849,932	Apr. 9	2560	531	127	2276
Dough dividing and sealing machine	F. Streich	850,074	Apr. 9	2791	587	127	2330
Draft-equalizer	O. J. Boe	849,364	Apr. 9	1491	308	127	2003
Draft-equalizer	H. W. Bourret	849,536	Apr. 9	1822	376	127	2089
Draft-rigging	C. J. Nash	849,556	Apr. 9	1878	382	127	2102
Drill:							
See Rock-drill.	J. Dintaman	849,723	Apr. 9	2176	448	127	2170
Drinking-trough							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Drum-attachment clamp	G. B. Wannemaker and U. G. Leedy.	849,617	Apr. 9	1808	367	127	2088
Drying frame and stretcher	O. J. Kuhn	849,686	Apr. 9	2295	563	127	2098
Drying-machine	J. M. Spencer	849,801	Apr. 9	1927	396	127	2114
Dust-guard	H. Bennett	849,669	Apr. 9	2310	548	127	2085
Dye and making same. Yellow monoazo	A. L. Lasha	849,720	Apr. 9	2198		127	2103
Dye. Yellow wool	A. L. Lasha	849,689	Apr. 9	2111		127	2089
Egg-tester	C. L. [illegible]	849,625	Apr. 9	1868		127	2060
Electric-circuit drop	W. H. Rahtjen	849,761	Apr. 9	2020	518	127	2094
Electric igniter	W. H. Bland, Jr.	849,859	Apr. 9	2020	506	127	2045
Electric machine. Dynamo	A. S. Forster	849,670	Apr. 9	1944	398	127	2118
Electric machine. Dynamo	E. F. W. Alexanderson	849,712	Apr. 9	2081	427-8	127	2103
Electric machines. Composition or compound for brushes of dynamo	C. W. Spahr	849,648	Apr. 9	2029	442 417	127 127	2170 2049
Electric machines. Cooling dynamo	E. R. Whitney and L. A. Tirrill	849,709	Apr. 9	2140	440	127	2097
Electric machinery. Brush for dynamo	C. W. Spahr	849,811	Apr. 9	1891	396	127	2088
Electric-motor regulation	R. Stubbline	849,823	Apr. 9	1926	396	127	2114
Electric switch	E. M. Howlett	849,694	Apr. 9	2108	432	127	2102
Electric switch and air-gage. Automatic pressure-controlled	L. H. Westphal	849,782	Apr. 9	2043	451	127	2096
Electric switch and air-gage. Automatic pressure-controlled	L. H. Westphal	849,681	Apr. 9	2010	589	127	1998
Electrical distribution and regulation system	W. A. Turbayne	849,705	Apr. 9	2127	440	127	2097
Electrical-distribution system. Self-regulating	W. A. Turbayne	849,644	Apr. 9	2031	417	127	2100
Electrical indicating apparatus	A. A. Redfield	849,695	Apr. 9	2121	437	127	2102
Electrical rosette	G. B. Thomas	849,804	Apr. 9	2062	431	127	2077
Electromagnetic apparatus	E. Bachelet	849,689	Apr. 9	2093	421	127	2049
Elevator: *See* Passenger-elevator.							
Elevator safety attachment	A. J. Hallstein	849,610	Apr. 9	1973	404	127	2126
Elevator system. Multiple	C. Foster	849,840	Apr. 9	2308	460	127	2125
Emergency-brake. Automatic	W. Cooper	849,820	Apr. 9	1966	400	127	2121
Engine: *See* Rotary engine. Turbine-engine.							
Engine igniter. Explosive	E. P. Lamb	849,707	Apr. 9	2310	474	127	2111
Engine lubricator. Explosive	J. Powell	849,626	Apr. 9	1761	356	127	2073
Engine spark-ignition system. Explosive	R. Varley	849,660	Apr. 9	2342	481	127	2123
Engine sparking device. Internal-combustion	F. W. Brady	849,709	Apr. 9	2255	463	127	2108
Engine sparking mechanism. Gasolene	H. E. Atwater	849,716	Apr. 9	2158	444	127	2172
Eraser. Ink	T. Draper	849,625	Apr. 9	2042	553	127	2295
Explosive	O. Silberrad	849,625	Apr. 9	2551		127	2273
Explosive	O. Silberrad	849,119	Apr. 9	2952		127	2263
Extractor: *See* Bottle-stopper or cork extractor.							
Eyeglass-mounting	L. F. Adt	849,710	Apr. 9	2145	442	127	2108
Eyelets with a flexible material. Covering	P. R. Glass	849,695	Apr. 9	1967	402-3	127	2124
Fabric: *See* Pile fabric.							
Fabrics. Trimming for the edges of	J. D. Morley	849,698	Apr. 9	2115	435	127	2161
Feed-water-controlling apparatus	J. E. L. Ogden	849,045	Apr. 9	2734	574	127	2216
Fence builder. Wire	W. S. Hazelton	849,809	Apr. 9	1545	313	127	2018
Fence machines. Feed mechanism for wire	P. Frantz	849,677	Apr. 9	2085	429-9	127	2154
Fence-post	J. R. Wright	849,088	Apr. 9	2513	589	127	2337
Fibers with liquids and gases. Apparatus for treating textile	J. O. Obermaier	849,685	Apr. 9	2091	414	127	2128
Filament-forming apparatus	M. Waddell	849,692	Apr. 9	2245	462	127	2220
Filament-forming apparatus	M. Waddell	849,670	Apr. 9	2456	504-5	127	2220
Files	C. N. Waite	849,828	Apr. 9	2048		127	2221
File-cutting machine	E. G. Dow	849,774	Apr. 9	2267	466	127	2201
Filter for eaves-troughs	J. Riebel	849,821	Apr. 9	1467	302	127	2092
Fire-escape alarm	L. M. Gallihar	849,674	Apr. 9	2091	430	127	2145
Fire-kindler	S. Ashford	849,631	Apr. 9	2042	420	127	2145
Firearm	J. H. McDonough	849,815	Apr. 9	2034	534	127	2220
Firearm hammer-lock	R. E. Flyberg	849,826	Apr. 9	1842	373-4	127	2094
Firearm safety device	M. V. Allen	849,625	Apr. 9	2250	462-3	125	2221
Firearm-sight	C. H. Hansen	849,807	Apr. 9	1539	311	127	2017
Fireproof column	R. E. Reardon	849,662	Apr. 9	1767	357	127	2074
Fireproof wall. Ventilated	J. J. Treiddler	849,819	Apr. 9	2042	461	127	2220
Fish-stringer	L. D. Ewing	849,776	Apr. 9	2271	466-7	127	2202
Fishing-rod and cane. Combined	A. C. Mills	849,649	Apr. 9	1574	319	127	2025
Fishing-tackle	J. M. Lobit	849,621	Apr. 9	1722	349	127	2082
Floral design	S. D. Martin	849,749	Apr. 9	2190	453	127	2182
Flue-stop	L. J. Olden	849,693	Apr. 9	2119	436	127	2102
Fluid-heating apparatus	C. W. Reynolds, Jr.	849,640	Apr. 9	2026	416	127	2139
Fluid-pressure motor	A. Zivi	849,670	Apr. 9	2474	508	127	2254
Flushing-tank	L. Bodecek	849,733	Apr. 9	2061	599-600	127	2345
Flying apparatus	C. Wilkins	849,760	Apr. 9	2142	440	127	2165
Folding chair	A. Brandl	849,671	Apr. 9	2026	546	127	2201
Foot-protecting device	C. J. Van Valkenburg	849,694	Apr. 9	1982	395	127	2115
Force draft	C. E. Passage	849,811	Apr. 9	2232	478	127	2217
Forehead and ear protector	N. A. V. Hamel	849,670	Apr. 9	2096	431	127	2166
Formaldehyde preparations. Producing	M. E. Lauweryer	849,643	Apr. 9	1880	378	127	2097
Frame: *See* Canopy-frame. Vehicle-frame. Car-roof frame.	P. Rosenberg	849,815	Apr. 9	2037		127	2218
Freezer and refrigerator car. Combined	O. M Stimson. (Reissue)	12,020	Apr. 9	2090	605-6	127	2356
Fruit. Apparatus for processing	W. C. Anderson	849,699	Apr. 9	2048	420	127	2143
Furnace: *See* Calcining-furnace. Ingot-heating furnace.							
Furnace	N. Johnson	849,680	Apr. 9	2104	433	127	2153
Furnace	J. Cronin	849,699	Apr. 9	2494	514	127	2259
Furnace	W. McClave	849,913	Apr. 9	2234	333	127	2267
Furnace for burning soft fuels	J. E. Parkison	849,886	Apr. 9	1998	398	127	2106
Gage: *See* Water-gage.							
Game	G. Seaton	849,827	Apr. 9	2494	497	127	2244
Game device	A. Oppenheimer	849,833	Apr. 9	2093	477	127	2216
Game-table	R. B. Cantrell	849,673	Apr. 9	2088	549	127	2252
Garment-pattern. Adjustable	W. M. Berry	849,600	Apr. 9	2000	541-2	127	2256

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Garment-supporter	B. H. White	849,763	Apr. 9	2246	481	127	2195
Garment-supporter	H. G. Macwilliam	849,801	Apr. 9	2318	476	127	2213
Garment-supporter	H. G. Macwilliam	849,906	Apr. 9	2518	520	127	2265
Gas-burner. Heating	F. G. Nicolaus	849,634	Apr. 9	2019	414	127	2127
Gas-cocker	C. E. Clark	849,789	Apr. 9	1497	304	127	2094
Gas lighter and extinguisher. Automatic	N. Corbell	849,889	Apr. 9	2493	513-14	127	2269
Gas-producer	W. R. Miller	849,848	Apr. 9	2420	493-4	127	2249
Gas-purifying. Acetylene	G. F. Jaubert	850,010	Apr. 9	2577		127	2304
Gas-purifying apparatus	W. F. Pagel	849,807	Apr. 9	2327	477	127	2216
Gasolene-regulator	P. Daimler	849,842	Apr. 9	2407	491	127	2237
Gate-controlling means. Safety	I. W. Colburn and J. Player	849,572	Apr. 9	1503	305	127	2088
Gear. Reversing	W. T. Carter and D. S. Boobe	849,531	Apr. 9	1881	372	127	2091
Glass. Drawing sheet		849,459	Apr. 9	1960	396	127	2059
Glass. Method and means for the manufacture of wire	T. J. Conway	849,461	Apr. 9	1966	397	127	2051
Glass-press	C. P. Freestate	849,777	Apr. 9	2274	467	127	2208
Glazing-machine	C. O. Michaelson	849,553	Apr. 9	1967	379-81	127	2100
Gold and platinum from other material. Machine for separating	G. L. Holmes	849,614	Apr. 9	1978	406	127	2127
Gold washing and saving apparatus	J. Hutcheson	850,008	Apr. 9	2675	561	127	2303
Grain and straw separator	T. Dougherty	849,984	Apr. 9	2640	553-3	127	2295
Grain-bin	J. W. Smith	849,853	Apr. 9	2445	500	127	2246
Grain separator and baler	J. G. Stewart	849,931	Apr. 9	2558	530	127	2275
Grain-elevator	F. Petnecky	849,625	Apr. 9	1008	204	127	2084
Graphophones and tip-lifts. Needle for	W. McClave	849,914	Apr. 9	2531	523-4	127	2268
Grate	C. H. Eaton	849,926	Apr. 9	2644	553	127	2296
Grate-bar	W. McClave	849,913	Apr. 9	2528	522-3	127	2268
Grate mechanism. Stoking	W. E. and F. W. Crocker	850,084	Apr. 9	2815	590	127	2327
Gravure and other tools. Sharpening-holder for	W. W. Smith	850,068	Apr. 9	2782	585-6	127	2320
Grinding and grating apparatus	B. Hunt	849,545	Apr. 9	1855	377	127	2084
Grinding and pulverizing apparatus	H. L. Henry and W. Althoff	849,201	Apr. 9	1549	314	127	2019
Grinding-machine	J. F. Kinstle and J. M. Peck	849,626	Apr. 9	2002	410	127	2133
Grinding-machine	A. Johnston	850,014	Apr. 9	2680	562-3	127	2304
Grinding-machine	C. Hildenbrand	849,786	Apr. 9	2288	470	127	2205
Gun-cleaning implement	F. A. Schanz	849,804	Apr. 9	1783	361	127	2079
Gun-sight	E. A. Baker	849,706	Apr. 9	2230	462	127	2107
Hair-comb	H. Deierl	849,961	Apr. 9	2627	551	127	2294
Hair-curler. Electrical	H. Lewis	850,024	Apr. 9	2696	566	127	2308
Hammer.							
Handle: *See* Basket-handle. Casket-handle. Pen-handle.	J. R. Grigg	849,886	Apr. 9	1538	311	127	2017
Harrow-disk	A. C. Gaylord	849,993	Apr. 9	2663	555-6	127	2298
Harrow scraper. Disk	D. M. Smith	849,928	Apr. 9	2556	530	127	2274
Harrow-tooth	W. Webber	849,442	Apr. 9	1626	320	127	2049
Harvesters. Platform-dog for	O. L. Kleven	849,689	Apr. 9	2109	434	127	2139
Harvesting-machine attachment	B. Smith	849,580	Apr. 9	1921	394	127	2113
Harvesting machine. Hay	R. F. Bartal	849,891	Apr. 9	1942	397	127	2118
Hat. Separable	P. J. Sprague	849,433	Apr. 9	1615	327	127	2087
Hatchet	H. E. Bell	849,902	Apr. 9	2606	543	127	2287
Hay-curing rack	J. E. Norris	850,042	Apr. 9	2729	573	127	2315
Hay-loader	J. W. Carter	849,828	Apr. 9	1626	370	127	2060
Hay-press							
Heater: *See* Hot-water heater. Water-heater. Steam or water heater.	W. L. Miller	849,744	Apr. 9	2201	453	127	2182
Heating system	H. A. L. Heinichen	849,901	Apr. 9	2509	518	127	2263
Heel-slip	G. F. Oldham	849,636	Apr. 9	2022	415	127	2126
Ham-finder	A. G. Ritts	849,573	Apr. 9	1905	390	127	2110
Hitching-strap clamp	M. Metzger	849,485	Apr. 9	1745	353	127	2060
Hoisting device	G. W. King	849,625	Apr. 9	1997	409-10	127	2121
Hoisting mechanism							
Hook: *See* Coat-hook.	T. Johnson	849,400	Apr. 9	1589	316	127	2022
Hoop fastener. Barrel	J. T. Lambert	849,631	Apr. 9	2014	413	127	2126
Horse-arrester	A. W. Caswell	849,886	Apr. 9	2485	511	127	2267
Horse-muzzler	H. Adelman	849,570	Apr. 9	2476	509	127	2265
Horseshoe	H. Dahms	849,979	Apr. 9	2535	540	127	2283
Horseshoe	W. Schwarz	849,886	Apr. 9	2436	497	127	2264
Hose-winding machine. Metallic	M. J. Selzer	850,062	Apr. 9	2773	589-8	127	2326
Hot-water heater							
House: *See* Screen-house.	J. A. McManus	850,040	Apr. 9	2726	573	127	2314
Hub. Cushion	G. Pino	849,570	Apr. 9	1896	388	127	2106
Hydroscope	G. M. Mills	850,093	Apr. 9	2834	593	127	2341
Ice-breaking machine. Rotary	R. E. Jones	849,687	Apr. 9	2106	433	127	2139
Ice-door	J. Souther	849,854	Apr. 9	2446	500	127	2246
Ice-making machine	G. M. Hoke	849,544	Apr. 9	1854	377	127	2096
Ice-plow							
Indicator: *See* Gasolene-indicator. Speed-indicator.	G. Brown	849,456	Apr. 9	1651	334-5	127	2047
Indicator	M. J. Lynch	850,027	Apr. 9	2709	567	127	2309
Indicator	W. R. Miller	849,899	Apr. 9	2221	461	127	2263
Ingot-heating furnace. Water-sealed continuous	F. C. Johnson	849,695	Apr. 9	2104	433	127	2135
Ink-saving adjustment	C. H. Numan	849,419	Apr. 9	1998	333	127	2060
Interlocker	A. Goldstein	849,606	Apr. 9	1995	405	127	2134
Insulator	S. Feuerstein	849,731	Apr. 9	2179	449	127	2177
Insulator	C. Griffith	849,826	Apr. 9	2002	514	127	2261
Insulator. Automatic	R. C. Schroedter	849,805	Apr. 9	1785	361-2	127	2078
Jack: *See* Lifting-jack.	J. Humphreys	849,788	Apr. 9	2280	471	127	2204
Jack							
Joint: *See* Ball-and-socket joint. Universal joint. Ball-joint.	A. V. Peppard	850,047	Apr. 9	2737	574	127	2316
Journal-box. Car							
Kiln: *See* Cement-kiln.	J. A. Shumaker	850,066	Apr. 9	2779	594	127	2327
Kiln	R. W. Scott	849,701	Apr. 9	2126	437-8	127	2165
Knitting machine. Flanged-rib							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Lamp-bracket	W. F. Cleary	849,727	Apr. 9	2175	448	127	2162
Lamp-burner	A. H. Hamilton, Jr.	849,670	Apr. 9	2086	431	127	2170
Lamp support. Incandescent-electric	J. Sniffen	849,754	Apr. 9	2222	458	127	2185
Lap-robe	A. H. Kinder	849,694	Apr. 9	1996	400	127	2128
Latch. Gate-	T. E. Horner	849,689	Apr. 9	2097	431	127	2157
Latch. Metal	J. M. Rude	849,627	Apr. 9	1826	326	127	2094
Lathing	T. E. Ritchie	849,688	Apr. 9	2423	497	127	2208
Lathing machine. Sheet-	J. D. O'Brien	849,632	Apr. 9	1888	323-4	127	2097
Lathing-sheet. Wood	J. D. O'Brien	849,631	Apr. 9	1804	323	127	2089
Lathe attachment. Turning-	J. Morgan	849,698	Apr. 9	2015	370	127	2112
Lathe. Boring-	E. Mueller	849,414	Apr. 9	2715	570	127	2212
Lathe milling attachment	G. Amesoem	849,368	Apr. 9	1579	320	127	2087
Lathe-tool	F. F. Tiffe	849,649	Apr. 9	1478	300	127	2099
Lawn-sprinkler	F. M. Huntoon	849,697	Apr. 9	2570	533	127	2170
Leaf-support	O. B. Hunt	849,726	Apr. 9	2574	541	127	2203
Lens, also applicable as double objectives. Single cemented objective	O. G. Hetmetsdt	849,909	Apr. 9	2606	518	127	2169
Lens. Fresnel	W. Churchill	849,977	Apr. 9	2682	550	127	2225
Letter-sheet and envelop. Combined	W. A. Cocks, Jr.	849,771	Apr. 9	2289	464	127	2199
Lifting-jack	J. R. Edwards	849,851	Apr. 9	1833	310	127	2094
Lifting-jack	J. G. Owen	849,848	Apr. 9	1990	385-6	127	2165
Light-reflecting device	P. J. Schelb	849,760	Apr. 9	2137	437	127	2185
Linotype-machine	D. S. Kennedy	849,788	Apr. 9	2307	473	127	2210
Linotype-machine	D. S. Kennedy	849,114	Apr. 9	2683	602	127	2213
Liquid-meter	H. N. Denny	849,682	Apr. 9	1981	402	127	2122
Liquids. Means for preventing waste in dispensing	H. S. Cornish	849,462	Apr. 9	1668	338	127	2092
Load-trimmer	T. Irwin	849,477	Apr. 9	1713	347-8	127	2080
Load-trimmer	T. Irwin	849,478	Apr. 9	1715	348	127	2081
Loading apparatus	J. W. Atkison	850,026	Apr. 9	2614	530	127	2227
Lock: *See* Firearm hammer-lock. Sash-lock. Nut-lock. Switch-point lock. Permutation-lock.							
Lock	H. C. Warwick	849,827	Apr. 9	1957	396	127	2117
Lock and latch mechanism	B. Phelps	849,169	Apr. 9	1866	387	127	2167
Lock-switch	J. A. Mallette	849,537	Apr. 9	2617	520	127	2205
Locks, &c. Keeper for door-	C. H. Spencer	849,585	Apr. 9	2467	500	127	2207
Locomotive-diaphragm	G. L. Prentiss	849,496	Apr. 9	1763	357	127	2073
Locomotive. Electric	E. A. Sperry	849,632	Apr. 9	1611	327	127	2088
Locomotive-superheater	H. V. Wills	849,573	Apr. 9	2499	507-8	127	2253
Loom. Box-	W. Kahre	849,479	Apr. 9	1718	348-9	127	2082
Loom. Cross-weaving	A. Weimer	849,847	Apr. 9	2057	418-19	127	2142
Loom-picker	J. Whitehead	849,510	Apr. 9	1811	367	127	2093
Loom-picker	D. Lemoine	849,532	Apr. 9	2015	413	127	2135
Loom picker-stick connection	C. A. Hyde	849,668	Apr. 9	2224	451	127	2233
Loom pile-wire-oiling device	J. S. Giles	849,703	Apr. 9	2284	470	127	2205
Loom pile-wire-oiling device	J. S. Giles	849,704	Apr. 9	2285	470	127	2205
Loom shuttle-check. Power-	J. F. Bimmer-Kunz	849,947	Apr. 9	2615	545	127	2230
Loops to leather or other material. Machine for setting or affixing-pronged	W. R. Medearis	849,947	Apr. 9	2416	493	127	2220
Lubricator: *See* Engine-lubricator.							
Lubricator	G. W. Blank	849,966	Apr. 9	2614	544-5	127	2230
Mail-bag catching and delivering apparatus	S. A. Fraser and F. S. Kline	849,673	Apr. 9	2088	429-30	127	2154
Mail-carrier's cart	W. O. Covey	849,669	Apr. 9	2085	424	127	2149
Mail-carrying device	A. A. Letterman	849,551	Apr. 9	1804	376	127	2089
Mailing or post card	L. Reiman	849,626	Apr. 9	1804	325	127	2084
Massage device	F. S. Cartwright	849,599	Apr. 9	1827	371	127	2090
Massage instrument	W. G. Shelton	849,594	Apr. 9	2549	526	127	2272
Matrix-backing	F. H. Brown, J. E. Hanrahan, and G. A. Boyden	849,539	Apr. 9	2368	485	127	2227
Measuring electric capacity. Apparatus for	H. Shoemaker	849,604	Apr. 9	2776	563	127	2238
Measuring instrument. High-potential	H. Shoemaker	849,605	Apr. 9	2777	563	127	2237
Meat-cutting machine	I. B. Van Sise	849,845	Apr. 9	2084	535-6	127	2261
Metal-bending machine	O. H. White	849,764	Apr. 9	2246	461-2	127	2196
Metal pipe. Flanged	L. H. Brinkman	849,488	Apr. 9	2459	510	127	2255
Metal-sawing machine	C. A. Jaeggst	849,702	Apr. 9	2290	472-3	127	2205
Metal-shaping machine	J. M. Rude	849,631	Apr. 9	1775	350-60	127	2070
Meter: *See* Liquid-meter.							
Milking machine. Cow-	F. M. Worcester	849,821	Apr. 9	1813	368	127	2088
Mill: *See* Pebble-mill. Pulverizing or grinding mill.							
Mineral strata. Extracting and recovering the volatilizable contents of sedimentary	D. R. Baker	849,894	Apr. 9	1839	369	127	2066
Mixer: *See* Concrete-mixer. Sample-mixer.							
Mold: *See* Brick-mold. Concrete-wall mold. Cement-post mold.							
Mold	J. Thomas	849,680	Apr. 9	2665	532	127	2277
Molders' flasks. Equalizing-support for	H. Tabor and W. Lewis	849,814	Apr. 9	1898	386	127	2064
Monoline-machine matrix	J. McNamara	849,694	Apr. 9	2080	424	127	2242
Mop-holder	M. E. Forrest	849,691	Apr. 9	2651	555	127	2297
Mortising-machine attachment	W. J. Hayden	849,280	Apr. 9	1542	312-13	127	2217
Mosquito-bar. Canopy	A. J. Jennings	849,784	Apr. 9	2295	472	127	2207
Motor: *See* Fluid-pressure motor. Water-lifting motor. Water-motor.							
Motor for rock-drills and similar tools	C. E. Shadall	849,578	Apr. 9	1914	390	127	2112
Mowing-machine	J. R. Weatherly	849,798	Apr. 9	2340	480-1	127	2195
Mowing-machine	E. Kaufman	849,708	Apr. 9	2611	518-19	127	2203
Music-leaf turner	O. Paris	849,699	Apr. 9	1601	324	127	2083
Music-leaf turner	W. G. Benson	849,717	Apr. 9	2160	466-5	127	2173
Musical-instrument adjusting device	P. B. Klugh	849,737	Apr. 9	2199	451	127	2179
Musical instruments or players. Roll-carrying mechanism for automatic	M. Clark	849,881	Apr. 9	2095	425	127	2237
Nautical signal	F. C. Berwick	849,994	Apr. 9	2611	542	127	2288
Nut. Axle-	A. C. Wills	849,999	Apr. 9	2669	539	127	2284

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Nut-lock	W. W. Diviney	849,376	Apr. 9	1518	307	127	2062
Nut-lock	L. Blessing and A. Johns	849,720	Apr. 9	2167	448	127	2174
Nut. Lock-	J. J. Fifield	849,535	Apr. 9	1841	373	127	2094
Nut-wrench	R. M. Atmore	849,356	Apr. 9	1470	300-1	127	2060
Ore-classifier	J. V. Dorr	849,370	Apr. 9	1827	300	127	2013
Ore roasting and treating apparatus	M. and A. Dings	849,455	Apr. 9	1984	330	127	2084
Ore-roasting apparatus	R. McKnight	850,039	Apr. 9	2725	572	127	2214
Ore-separator	J. W. Gibeon	849,395	Apr. 9	1538	311	127	2060
Oven	B. A. Baxter	849,360	Apr. 9	1495	302	127	2024
Overalls	M. Johnson	850,013	Apr. 9	2680	563	127	2224
Oxids. Manufacturing metallic	J. H. Montgomery	849,555	Apr. 9	1877	383	127	2102
Packing	S. Holmes	850,001	Apr. 9	2666	535	127	2221
Packing	A. Hendricks	849,999	Apr. 9	2662	550	127	2220
Packing-box and stand. Combined	R. Schuis	849,576	Apr. 9	1910	391	127	2111
Packing for reciprocating machine parts	H. Talley	849,437	Apr. 9	1620	320	127	2233
Packing-machine	L. W. Eggleston	849,337	Apr. 9	2268	466	127	2204
Packing. Valve-stem							
Pan: *See* Bed-pan.	J. H. Pearson	850,046	Apr. 9	2726	574	127	2216
Paste-machine	W. Scott	850,104	Apr. 9	2855	598	127	2247
Paper-dusting machine	M. Lamort	850,021	Apr. 9	2693	565	127	2207
Paper-making machines. Means for controlling the pulp-strainer drums of	J. B. Frear	849,593	Apr. 9	2466	515	127	2200
Paper-sack	E. L. Ballard	849,257	Apr. 9	1461	294	127	2209
Passenger-elevator							
Pattern: *See* Garment-pattern.	G. S. Emerick	849,730	Apr. 9	2178	449-0	127	2176
Pebble-mill	H. A. Crosby	849,463	Apr. 9	1670	336	127	2093
Peeling and coring machine. Tomato	F. L. Sturm	849,513	Apr. 9	1804	345	127	2084
Pen handle. Fountain-	R. Moore and R. L. Ferguson	849,911	Apr. 9	2524	521	127	2267
Penholder	F. H. Lippincott	849,799	Apr. 9	2313	475	127	2212
Pencil	O. G. Sherman	849,431	Apr. 9	1609	327	127	2088
Pencil-sharpener	J. J. Vautier	849,821	Apr. 9	2344	481	127	2229
Pencil-sharpener	F. Shay	849,507	Apr. 9	1790	363	127	2089
Perch. Poultry-	H. A. Alm	849,714	Apr. 9	2153	443	127	2171
Permutation-lock	C. Otzen	849,852	Apr. 9	2428	496	127	2242
Phonograph stop mechanism	J. P. Goode	849,841	Apr. 9	2405	491	127	2237
Phylographical instrument	L. W. Norcross	849,559	Apr. 9	1882	383	127	2108
Piano							
Picker: *See* Loom-picker.	W. M. Mehling	849,808	Apr. 9	2320	476	127	2214
Picture-frame-making machine	E. J. Recter	849,499	Apr. 9	1770	357-8	127	2076
Picture machine. Moving-	B. B. Strope	850,075	Apr. 9	2794	586	127	2231
Pictures. Making	C. B. Lewis	850,022	Apr. 9	2694	566	127	2207
Pie-cutter	G. Zimermann	849,877	Apr. 9	2473	508	127	2254
Pile fabric. Woven	G. E. Nye	850,043	Apr. 9	2730	573	127	2215
Piling. Interlocking metal sheet-	G. E. Nye	850,044	Apr. 9	2732	574	127	2216
Piling. Interlocking metal sheet-	G. E. Nye	850,122	Apr. 9	2896	605	127	2266
Piling. Interlocking metal sheet-							
Pin: *See* Safety-pin.							
Pipe: *See* Metal pipe. Tobacco-pipe.	C. A. Killian	849,623	Apr. 9	1996	409	127	2131
Pipe and rod grip	G. H. Reynolds	849,571	Apr. 9	1900	388-90	127	2105
Pipe-bending machine	W. F. Jogerst	850,012	Apr. 9	2670	562	127	2204
Planters. Wire-guide for check-row	J. H. Samuels	849,575	Apr. 9	1907	391	127	2110
Plow	J. B. Jobson	850,011	Apr. 9	2677	561	127	2204
Plow	G. E. and J. A. Lile	850,025	Apr. 9	2697	566	127	2208
Plow attachment. Harness	C. T. Howell	850,006	Apr. 9	2672	560	127	2203
Plow. Ditching-	G. T. Sebrell	849,577	Apr. 9	1913	392	127	2111
Plow, shovel, and separator. Combined							
Post: *See* Anchor-post. Fence-post. Cement post.	G. W. Zwiebel	849,957	Apr. 9	2599	540	127	2235
Post-hole digger	W. H. Cowee	849,736	Apr. 9	2174	447	127	2176
Postal souvenir-folder							
Pot: *See* Coffee-pot.	R. Krause	850,019	Apr. 9	2690	564	127	2208
Potato-digger and cotton-chopper. Combined	G. Hitz	849,787	Apr. 9	2289	471	127	2206
Potatoes and other tubers. Growing sweet	W. F. Howe	849,817	Apr. 9	1985	406-7	127	2120
Power-transmission device	G. E. Blake	849,766	Apr. 9	2263	469	127	2198
Power-transmitting device							
Press: *See* Baling-press. Hay-press. Glass-press. Punch and die press.	E. E. Angell	849,715	Apr. 9	2156	443-4	127	2171
Printing	A. V. Beeken	849,454	Apr. 9	1649	334	127	2047
Printing-machine	A. McNicol	849,499	Apr. 9	1762	354-5	127	2070
Printing machine. Fabric-	R. Reiss	849,639	Apr. 9	2025	415-16	127	2139
Printing on stone. Apparatus for	A. Driedzic	849,533	Apr. 9	1839	373	127	2098
Propeller	W. E. Blair	849,719	Apr. 9	2164	445-6	127	2173
Propeller-adjusting device	G. Beyer	849,718	Apr. 9	2163	445	127	2173
Pulley. Clutch-	M. R. Kennedy	850,017	Apr. 9	2686	563	127	2206
Pulp-making apparatus. Sample-tester for	J. W. Fuller, Jr.	849,779	Apr. 9	2277	467-8	127	2204
Pulverizing or grinding mill	J. W. Fuller, Jr.	849,780	Apr. 9	2279	468	127	2204
Pulverizing or grinding mill	J. W. Fuller, Jr.	849,782	Apr. 9	2283	469	127	2204
Pulverizing or grinding mill	J. W. Fuller, Jr.	849,781	Apr. 9	2281	469	127	2204
Pulverizing or grinding mills. Metal ring for	J. W. Fuller, Jr.	849,530	Apr. 9	1829	371	127	2091
Pump	H. C. Clay	849,482	Apr. 9	1722	349-50	127	2080
Pump, &c. Air or gas	G. Machlet, Jr.	849,752	Apr. 9	2229	457	127	2199
Pump attachment	H. Sewell	849,772	Apr. 9	2289	464	127	2199
Pump. Bottle-	G. E. Cordeaux	849,916	Apr. 9	2535	524	127	2269
Pump hand-valves. Unloading device for	W. R. McKeen, Jr.	849,394	Apr. 9	1553	314	127	2059
Pump. Mercury-	P. C. Hewitt	849,663	Apr. 9	2071	426	127	2139
Pump-rod bolt	L. W. Curtis	849,444	Apr. 9	1639	330	127	2049
Pump-support	J. S. Weiser	849,802	Apr. 9	2319	478	127	2216
Pumps. Counterbalance attachment for	F. C. Marsh	849,866	Apr. 9	2450	502	127	2247
Pumps. Oil-cup for air-	W. V. Turner	849,881	Apr. 9	2478	509	127	2255
Punch and die press	G. H. Bartlett	849,681	Apr. 9	2098	432	127	2147
Putty-remover	W. H. Hauver						

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Rack:							
See Display-rack. Paper-rack. Hay-curing rack.							
Rail-joint	J. H. Martin	849,488	Apr. 9	1572	319	127	1985
Rail-joint	C. H. Stephens	849,494	Apr. 9	1616	326	127	1987
Rail-joint	W. L. Grant	849,507	Apr. 9	1669	408	127	1995
Rail-joint	G. Lacey	849,589	Apr. 9	2010	412	127	2015
Rails from spreading. Means for preventing	F. L. Voit	849,548	Apr. 9	2004	536	127	2012
Railway-crossing	W. B. Weeden	849,648	Apr. 9	1634	331	127	1988
Railway. Electric	A. B. Stewart, Jr.	849,703	Apr. 9	2124	470	127	2048
Railway. Electric	W. B. Potter	850,117	Apr. 9	2357	408	127	2084
Railway-switches. Safety signaling device for	P. Clouzier	849,689	Apr. 9	1962	337	127	2061
Railway-tie	L. Blessing	849,721	Apr. 9	2167	446	127	2074
Railway-tie. Composite	W. H. Griffiths	849,857	Apr. 9	2323	301	127	2099
Railway-tie. Composition	J. Le Favour and R. F. Brammer	849,782	Apr. 9	2311	474-5	127	2093
Railway-tie. Metallic	B. F. Hamilton	849,542	Apr. 9	1990	376	127	2009
Railway train-order system	O. G. Thomas	849,695	Apr. 9	2264	331	127	2077
Railways. Acute-angle crossing for electric	E. R. Gilmore	849,694	Apr. 9	2254	449	127	2076
Railways. Third-rail-protecting mechanism for electric	H. Corrigan	849,773	Apr. 9	2261	446	127	2080
Range	J. P. Ruth and E. Priester	850,169	Apr. 9	2369	397	127	2045
Reamer	F. J. Lapointe	849,729	Apr. 9	2182	462	127	2130
Recorder:							
See Speed-recorder.							
Refrigerator-fastening	G. C. Miller	850,032	Apr. 9	2708	589	127	2110
Register:							
See Cash-register.							
Regulator:							
See Temperature-regulator.							
Rein-guard	W. P. Fell	849,467	Apr. 9	1668	340	127	1985
Reversible seat	F. Ort	849,628	Apr. 9	1900	324	127	1983
Ring:							
See Clamping-ring.							
Rivet. Clip	H. F. Cobb	849,770	Apr. 9	2357	468	127	2101
Rock-drill	C. R. Shadall	849,806	Apr. 9	1788	*563-3	127	2070
Rock-drills. Attachment for supplying water to	R. M. Weston	849,445	Apr. 9	1681	331	127	1942
Rod:							
See Fishing-rod.							
Rope-clamp. Safety	J. Collins	849,582	Apr. 9	2072	466	127	2028
Rotary engine	P. O. Poulson	850,049	Apr. 9	2742	575-6	127	2117
Rotary engine	J. L. Strickland. (Reissue)	12,081	Apr. 9	2808	606-7	127	2088
Rule. Folding	R. G. Platt	849,693	Apr. 9	2094	415	127	2139
Saddle-pack cover	J. A. Evans	849,657	Apr. 9	2077	426-7	127	2143
Safety-pin	S. A. Newman	849,588	Apr. 9	1951	363	127	2103
Sales-case for tobacco, &c	L. J. Bailey	849,490	Apr. 9	1941	397	127	2113
Sanitary T	U. A. Garred	849,540	Apr. 9	1948	376	127	2095
Sash-fastener. Window	J. L. Erwin	849,703	Apr. 9	1894	310	127	2015
Sash-lock	L. C. A. Desaise	849,923	Apr. 9	2088	551	127	2084
Sash-operator. Automatic	C. S. Lowthorp	849,820	Apr. 9	2316	475	127	2133
Saw-blade edges. Gage for determining curvature of	L. Ness and W. Venske	849,690	Apr. 9	1753	355	127	2070
Sawmill-carriage	E. E. Smith	849,510	Apr. 9	1800	365	127	2088
Sawyer. Steam-	D. Crane	849,601	Apr. 9	1946	401	127	2122
Screen-house. Portable	S. V. Abrego	849,968	Apr. 9	2601	540	127	2085
Sealing metal in glass	H. Wingren	849,709	Apr. 9	2144	441	127	2148
Seat:	G. H. Meeker	850,020	Apr. 9	2704	588	127	2110
See Reversible seat.							
Seat	J. L. Zane	849,451	Apr. 9	1644	333	127	2045
Seat-back support	B. F. Fortiner	849,804	Apr. 9	1965	402	127	2123
Seat end	E. G. Budd	849,886	Apr. 9	1951	399	127	2130
Seeding implement. Hand	E. W. Ferguson	849,585	Apr. 9	2043	554	127	2095
Separator:							
See Core-separator. Ore-separator. Grain and straw separator.							
Sewing machine. Shoe	J. A. Rhoult	850,055	Apr. 9	2757	579-80	127	2123
Sewing-machine tucking attachment	F. W. Keiter	849,630	Apr. 9	1990	407	127	2139
Shade bracket. Window	C. Doebler, Sr.	849,577	Apr. 9	1519	307	127	2012
Shade bracket. Window	S. Fox	849,593	Apr. 9	2097	515	127	2089
Shaft-coupling	G. S. Searle	849,590	Apr. 9	2440	498	127	2145
Shaft support. Wagon	J. B. Wemer	849,820	Apr. 9	1813	368	127	2088
Shaft supporter. Vehicle	E. Nestler	849,416	Apr. 9	1593	321	127	2026
Sharpening lawn-mowers. Apparatus for	F. C. Springer	850,071	Apr. 9	2787	587	127	2120
Sheet-metal receptacles. Press for closing and opening	J. Marckana	849,698	Apr. 9	2033	503	127	2141
Shoe-tree	A. Fuller	849,804	Apr. 9	2469	515	127	2160
Sign. Electric	D. Wall	849,576	Apr. 9	1936	398	127	2116
Sign. Illuminated	H. Ruger	849,574	Apr. 9	1908	390	127	2110
Signal:							
See Nautical signal.							
Signal system. Mining	N. S. Richmond	850,109	Apr. 9	2747	398	127	2145
Signals. Transmission of	A. Perrin	849,910	Apr. 9	2540	525-6	127	2171
Sizing or finishing media. Manufacture of	G. Morpurgo	849,413	Apr. 9	1578	.....	127	2027
Skating course or track	A. F. Devereux	849,666	Apr. 9	2074	426	127	2151
Snow-plow	T. W Liddell	849,741	Apr. 9	2017	414	127	2137
Soap-dispenser	H. J. S. Lewis	849,741	Apr. 9	2195	462	127	2161
Soap-holder	C. Owens	849,654	Apr. 9	1761	356	127	2073
Soap-receptacle	P. F. Cox	849,978	Apr. 9	2634	550	127	2098
Soap-sheet-fluting apparatus	G. L. Thorne	849,827	Apr. 9	2449	501-2	127	2247
Soap sheets and articles resulting therefrom. Forming fluted	E. A. Houchin and A. Huber	850,004	Apr. 9	2699	589	127	2102
Sod or walk trimmer	E. A. Houchin and A. Huber	850,005	Apr. 9	2699	589	127	2104
Speed-indicator	D. L. Ross	850,037	Apr. 9	2706	581	127	2124
Speed indicator. Recording	E. C. Oliver	849,851	Apr. 9	2426	496	127	2141
Speed-limiting device	R. P. Brown	849,854	Apr. 9	2481	510	127	2156
Speed mechanism. Variable	F. L. Stone	849,778	Apr. 9	2281	457-8	127	2092
Speed recorder	R. E. Rosenwinkel	849,779	Apr. 9	2286	456-7	127	2091
Spike	C. C. Clawson	850,109	Apr. 9	2688	600-1	127	2148
Spinning and twisting apparatus. Ring	T. J. Akers	849,712	Apr. 9	2151	448	127	2070
Spinning short-stapled fibers. Drawing-apparatus for	J. Hayden, Jr.	849,724	Apr. 9	2183	460	127	2077
	J. Perrin	849,823	Apr. 9	2289	479	127	2098

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sprinkler:							
See Automatic sprinkler. Lawn-sprinkler.	F. A. Kime	849,796	Apr. 9	2308	474	127	2211
Stacker. Hay	R. H. Lee	849,480	Apr. 9	1721	.....	127	2062
Stains and restoring paint or varnish to its original gloss. Composition for removing	J. P. Cooper	849,650	Apr. 9	2064	423	127	2149
Stalk-cutter	L. Mellinger	850,030	Apr. 9	2705	568	127	2110
Stamp-shaft tappet							
Stand:							
See Camera-stand. Display-stand.	W. C. Oberly	849,492	Apr. 9	1757	355	127	2071
Steam or water heater	E. J. Kelley	849,401	Apr. 9	1561	316	127	2022
Steam-trap	J. M. Rude	849,502	Apr. 9	1781	360	127	2077
Steel structure. Cellular	C. L. Pappenhagen	849,747	Apr. 9	2204	454	127	2133
Stereoscope	A. F. Jones	850,113	Apr. 9	2877	602	127	2351
Stone-cutting machine	P. J. Carlson	849,975	Apr. 9	2630	549	127	2092
Stool	J. L. Johnson and T. Reynolds	849,549	Apr. 9	1857	377	127	2097
Stove. Heating	J. W. Weldon	849,872	Apr. 9	2462	505	127	2261
Stove. Heating	J. W. Wash	850,080	Apr. 9	2809	589	127	2235
Strain-equalizer	W. R. Medearis	849,846	Apr. 9	2415	492	127	2239
Strap-loop	V. Houle and A. W. Konkle	850,005	Apr. 9	2671	560	127	2232
Street-sweeper	I. G. Harker	849,995	Apr. 9	2656	556	127	2228
Stubble-turner	F. Kempter	849,621	Apr. 9	1992	408	127	2130
Stuffing-box arrangement for agitator-shafts in vacuum stirring apparatus	T. D. Robinson	849,814	Apr. 9	2336	479-80	127	2218
Subways. Ventilating	E. G. Hewitt	849,475	Apr. 9	1705	345	127	2059
Sun-dial	E. G. Hewitt	849,683	Apr. 9	2101	432	127	2157
Sun-dial	C. M. Ferguson	849,468	Apr. 9	1689	340-1	127	2056
Superheater. Steam	W. E. Nickerson	849,418	Apr. 9	1585	321	127	2028
Suspension. Flexible							
Switch:							
See Electric switch. Lock-switch.	J. T. Salvo	850,059	Apr. 9	2768	581	127	2226
Switch	J. Noble	849,491	Apr. 9	1755	355	127	2071
Switch-point lock							
Table:							
See Convertible table. Game-table.	A. Idov	849,399	Apr. 9	1558	316	127	2021
Tailor's chalk-sharpener	H. Koch	849,404	Apr. 9	1567	318	127	2024
Talking-machine mandrel							
Tank:							
See Flushing-tank. Water-closet flushing-tank.	C. Willms	849,707	Apr. 9	2141	440	127	2168
Tank-float	J. B. Tompkins	849,440	Apr. 9	1624	.....	127	2089
Tanning compound	H. F. Schelling	849,921	Apr. 9	2544	527	127	2273
Tapes, shoe-laces, elastics, and other articles. Fastener for	R. B. Spikes	850,070	Apr. 9	2786	586	127	2229
Tapper. Beer	W. E. Shaw	850,063	Apr. 9	2774	583	127	2226
Target. Amusement	C. J. Menasco	849,484	Apr. 9	1732	351-3	127	2065
Telegraph. Printing	G. Morin	850,036	Apr. 9	2717	571	127	2112
Telegraphone	N. G. Warth	850,079	Apr. 9	2804	589	127	2234
Telephone-repeater system	S. C. Houghton	849,515	Apr. 9	1981	406	127	2127
Telephone switch-box	W. W. Dean	849,375	Apr. 9	1510	306	127	2008
Telephone system	L. F. Miller	849,850	Apr. 9	2424	494-5	127	2241
Telephone system	F. G. Moulton	849,745	Apr. 9	2202	453	127	2132
Telephone-transmitter attachment	W. W. Dean	849,464	Apr. 9	1673	338-9	127	2068
Telephone trunking system	K. Martin	849,409	Apr. 9	1573	319	127	2026
Telescope, field-glass, and the like	F. Rehm and K. Windstosser	850,054	Apr. 9	2752	578-9	127	2220
Telescope for submarine boats	H. M. Harding	849,388	Apr. 9	1541	312	127	2017
Telpher-trunk	B. Barton	849,767	Apr. 9	2251	463	127	2197
Temperature-regulator	F. Lewis	850,023	Apr. 9	2695	566	127	2207
Thawing-point	I. E. Palmer	849,809	Apr. 9	2329	478	127	2217
Thread-guide	G. B. Lamb, D. C. Griggs, and R. H. Smith	849,630	Apr. 9	2011	412-13	127	2135
Thread-rolling machine	D. Duff	849,380	Apr. 9	1531	309	127	2014
Threshold and weather-strip. Combined							
Tie:							
See Railway-tie.	S. and R. Basch	849,592	Apr. 9	1944	396	127	2113
Tire. Elastic	E. I. Tennant	849,436	Apr. 9	1622	329	127	2038
Tire protector. Pneumatic	W. Dunbar	849,729	Apr. 9	2177	446	127	2176
Tire. Vehicle	B. Odegard	849,746	Apr. 9	2203	454	127	2182
Tobacco-pipe	H. P. Hall	849,453	Apr. 9	1646	333	127	2046
Tone producing and recording instrument	O. Ottoson	849,563	Apr. 9	1888	385	127	2105
Tongue attachment. Draft	E. P. Chapman	849,723	Apr. 9	2170	447	127	2175
Tool. Combination	W. H. Jackson	849,619	Apr. 9	1969	407	127	2139
Toy	C. L. Wood	849,953	Apr. 9	2594	539	127	2234
Toy	H. Thumann	849,757	Apr. 9	2237	459	127	2194
Toy bank	A. D. Middleton	849,554	Apr. 9	1876	382	127	2102
Toy gun	W. H. Fallor	849,668	Apr. 9	2078	427	127	2153
Traps	G. E. Taylor	849,756	Apr. 9	2235	458-9	127	2193
Train-report. Self-transcribing conductor's	G. A. Weaver	849,949	Apr. 9	2598	538	127	2263
Transmission mechanism							
Trap:							
See Steam-trap.							
Tree:							
See Shoe-tree.	M. D. Berry	849,363	Apr. 9	1490	302	127	2002
Tree							
Trimmer:							
See Lead-trimmer. Sod or walk trimmer.	R. W. Walker	849,871	Apr. 9	2461	503	127	2239
Trolley	W. C. Burdon	849,457	Apr. 9	1652	335	127	2049
Trolley-controller	W. Edwards	849,666	Apr. 9	2076	426	127	2152
Trolley for electric railways	F. Hass	849,995	Apr. 9	2657	556-7	127	2230
Trolley, hand-trunk, and the like	O. Saudelli	849,503	Apr. 9	1782	361	127	2078
Trolley-pole	V. J. Le Bauve	850,020	Apr. 9	2692	585	127	2207
Trolley-wire holder							
Trough:							
See Drinking-trough. Watering-trough.	B. A. Groté	849,677	Apr. 9	2094	431	127	2156
Trousers-clasp and belt-holder. Combined	B. B. Bowers	849,827	Apr. 9	1823	370	127	2089
Trunk	I. L. Sjöström	849,516	Apr. 9	2339	480	127	2219
Trunk	E. Bartley	849,823	Apr. 9	2479	510	127	2255
Trunk	T. M. Gallagher	849,905	Apr. 9	2501	513-16	127	2261
Trunk. Car	A. H. Ehle	849,526	Apr. 9	2394	488-9	127	2234
Trunk. Motor-driven							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Tuft-forming machine	M. O. and J. G. Robbins	839,668	Apr. 9	2780	577-8	127	2320
Turbine-blade	J. R. Pyhurt and O. Jaeger	839,722	Apr. 9	2863	585	127	2367
Turbine. Elastic-fluid	W. A. Westinghouse	839,693	Apr. 9	1380	322-3	127	2333
Turbine-engine	R. Tomson	839,703	Apr. 9	2374	494	127	2370
Turbine heating arrangement	H. Reumann	839,687	Apr. 9	1881	376-7	127	2330
Turbine. Steam-	J. Parsons	839,705	Apr. 9	1949	334	127	2367
Turbine. Steam-	J. C. Rathbun	839,706	Apr. 9	2126	457	127	2144
Turpentine from wood. Apparatus for extracting	H. Rossig	839,707	Apr. 9	2044	406	127	2344
Tweezers	J. C. Hunt	839,681	Apr. 9	2382	471	127	2344
Twyer construction	U. A. Garand	839,674	Apr. 9	1967	373	127	2333
Type-writer platens. Cloth for	W. Rogue, Jr.	839,710	Apr. 9	2327	457	127	2361
Type-writers. Light-reflecting attachment for	L. J. Rifle	839,711	Apr. 9	2444	509	127	2368
Type-writing machine	F. A. Vose	839,715	Apr. 9	1940	333	127	2344
Type-writing machine	E. F. Trenkle	839,714	Apr. 9	2037	411	127	2134
Type-writing machine	A. J. Brown	839,667	Apr. 9	2367	484-5	127	2224
Type-writing machine	L. P. Diss	839,670	Apr. 9	2374	485-7	127	2288
Type-writing machine	L. P. Diss	839,669	Apr. 9	2382	487	127	2231
Type-writing machine	L. B. Copeland	839,668	Apr. 9	2467	513-13	127	2357
Type-writing machine	J. D. Dougherty	839,719	Apr. 9	2370	601	127	2289
Umbrella	H. G. Lowrie	839,702	Apr. 9	1570	318	127	2084
Umbrella	L. Corwin	839,720	Apr. 9	2373	488	127	2220
Umbrella	F. X. Loughery, Jr.	839,701	Apr. 9	2414	482	127	2220
Universal joint for shafts or sections of shafts	J. H. Gould	839,684	Apr. 9	1535	310	127	2016
Unloading, screening, and loading apparatus	J. W. Seaver and A. Leslie	839,713	Apr. 9	2549	526-7	127	2271
Valve	L. L. Williamson	839,724	Apr. 9	2880	580	127	2354
Valve	R. G. Pierson	839,709	Apr. 9	2849	584	127	2296
Valve	C. A. Taylor	839,716	Apr. 9	2869	581	127	2270
Valve	M. A. Christensen	839,672	Apr. 9	1943	490	127	2120
Valve	P. Pattison	839,705	Apr. 9	2307	484-5	127	2184
Valve	R. Christ	839,671	Apr. 9	2173	447	127	2175
Valve	T. Shade	839,712	Apr. 9	2441	498-9	127	2345
Valve	H. Rainey	839,708	Apr. 9	1766	387	127	2273
Valve. Pop safety	J. E. Arnold	839,663	Apr. 9	1819	369	127	2089
Valve. Rotary	G. E. Constant	839,673	Apr. 9	1637	372	127	2093
Valve. Swivel check	J. W. Elsenbeth	839,677	Apr. 9	2045	564	127	2295
Vault. Burial	W. W. Donaldson, Jr.	839,676	Apr. 9	1957	340	127	2055
Vehicle-brake	T. A. Stevenson	839,723	Apr. 9	1418	338	127	2093
Vehicle-brake	W. E. and G. S. Heavlin	839,683	Apr. 9	2100	432	127	2157
Vehicle driving and steering mechanism. Motor-	H. S. Parker	839,703	Apr. 9	2839	594	127	2270
Vehicle-frame	H. G. Coykendall	839,675	Apr. 9	2089	425	127	2159
Vehicle. Motor-	O. Stolp	839,679	Apr. 9	2790	567	127	2329
Vehicle. Motor-	M. H. Eagle and C. M. Winters	839,725	Apr. 9	1739	380-1	127	2084
Vehicle. Motor-	L. C. Loll	839,700	Apr. 9	1880	378	127	2092
Vehicle-wheel	C. Kohlmyer	839,698	Apr. 9	2088	564	127	2300
Vehicle-wheel	A. A. Dougherty	839,720	Apr. 9	1406	306	127	2006
Vehicle-wheel	A. A. Dougherty	839,721	Apr. 9	1507	306	127	2007
Vehicle-wheel	E. O. Barnes	839,662	Apr. 9	1823	369	127	2089
Vehicles. Controller for electrically-propelled	C. S. Mesec	839,702	Apr. 9	2422	494	127	2340
Vehicles. Double-acting spring for	J. S. Raworth	839,718	Apr. 9	2208	455-6	127	2184
Vending-machine. Coin-controlled	H. B. Stillman	839,724	Apr. 9	1803	365	127	2063
Vibrator	A. D. Grover	839,680	Apr. 9	1971	402	127	2126
Violin chin-rest plate	J. & C. Lausmann	839,644	Apr. 9	2412	493	127	2338
Vise	F. W. Bosley	839,661	Apr. 9	2803	542	127	2267
Vise	A. S. Hovendick	839,690	Apr. 9	1993	406	127	2128
Vise	J. C. Titus	839,722	Apr. 9	2388	489	127	2194
Vise	J. Jowitt	839,702	Apr. 9	2306	472	127	2207
Vise	D. Kovins	839,694	Apr. 9	2413	519	127	2284
Wagon. Band-	W. Boley and P. Pfaiderer	839,660	Apr. 9	2020	545	127	2280
Wagon. Dumping-	J. H. Pouts	839,709	Apr. 9	1883	341	127	2056
Wagon-reach	J. S. Blackwood	839,665	Apr. 9	2012	543-4	127	2288
Wagon-top	J. A. Nyberg	839,698	Apr. 9	2118	436	127	2162
Wall-molds. Retaining and supporting frame for	W. S. Gilleland and W. D. Stanley	839,675	Apr. 9	2082	420	127	2156
Washing-machine	R. Deets	839,664	Apr. 9	2073	425	127	2151
Washing-machine	J. D. Metcalf	839,691	Apr. 9	2708	568	127	2310
Water-closet flushing-tank	J. W. Seibert	839,712	Apr. 9	2771	562	127	2325
Water-gage	J. L. Sullivan	839,725	Apr. 9	1619	326	127	2038
Water-heater	A. S. Powell	839,708	Apr. 9	2745	576	127	2318
Water-lifting motor	E. S. Dodge. (Reissue)	12,028	Apr. 9	2026	607	127	2360
Water-motor	M. M. Vineyard	839,717	Apr. 9	2026	588	127	2234
Water softener and purifier	J. Scott	839,710	Apr. 9	2438	498	127	2245
Watering-trough	H. Rosenbaum	839,710	Apr. 9	1773	388-9	127	2075
Weather-strip	V. H. Hughes and D. C. Evans	839,685	Apr. 9	2430	491	127	2238
Weather-strip. Metal	S. P. Brinker	839,663	Apr. 9	1494	303	127	2004
Wells. Raising liquids from	S. P. Brinker	839,664	Apr. 9	1495	303	127	2003
Wheel:	F. J. Meese	839,697	Apr. 9	2719	571	127	2313
See Cushion-wheel. Vehicle-wheel.							
Wheels. Sleigh attachment for buggy-	O. G. Pond	839,706	Apr. 9	2680	554-5	127	2297
Whistle. Automatic	W. M. and A. M. Cox	839,674	Apr. 9	2067	424	127	2150
Wind-shields. Adjustable support for	O. C. Graf	839,723	Apr. 9	2168	450	127	2177
Window. Horizontally-pivoted	F. C. Wagner and F. G. Koch	839,668	Apr. 9	1933	396	127	2116
Window-screen	E. L. Lloyd	839,699	Apr. 9	2388	567	127	2306
Wire attachment. Ground-	C. L. Tichenor and C. D. Stoneburner	839,680	Apr. 9	2680	532	127	2278
Wire-coupling	W. Hofmann	839,692	Apr. 9	1975	404	127	2126
Wire-stretcher	C. P. Moore	839,910	Apr. 9	2823	521	127	2267
Woodworking-machines. Rotary cutter for	C. Karpp	839,704	Apr. 9	2305	473	127	2210
Wrench:							
See Adjustable wrench. Nut-wrench. Combination-wrench.							
Wrench	M. W. Thompson	839,726	Apr. 9	1663	329	127	2039
Wrench	G. Roach	839,713	Apr. 9	2334	479	127	2218

DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Clock-case	B. A. Chubbuck	38,514	Apr. 9	127	2361
Dish	W. F. Donovan	38,512	Apr. 9	127	2361
Radiator	E. Sjoden	38,516	Apr. 9	127	2361
Siphon-head	C. de Lukacsevics	38,515	Apr. 9	127	2361
Spoons, forks, or similar articles. Handle for	G. F. Kolb	38,511	Apr. 9	127	2360
Urn and pedestal therefor	O. G. Brush	38,513	Apr. 9	127	2361
Wall-covering	L. Pronberger	38,517	Apr. 9	127	2362
Wall-covering	L. Pronberger	38,518	Apr. 9	127	2362
Wall-covering	L. Pronberger	38,519	Apr. 9	127	2362
Wall-covering	L. Pronberger	38,520	Apr. 9	127	2362
Wall-covering	L. Pronberger	38,521	Apr. 9	127	2362
Wall-covering	L. Pronberger	38,522	Apr. 9	127	2363
Wall-covering	L. Pronberger	38,523	Apr. 9	127	2363

TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Antiseptics, disinfectants, deodorizers, &c	Kathairo Chemical Co	61,927	Apr. 9	127	2380
Beer	Indianapolis Brewing Company	61,901	Apr. 9	127	2380
Beverages. Certain	Blue Ribbon Mining, Milling, and Investment Co.	61,880	Apr. 9	127	2380
Bicycles, velocipedes, and motor-cycles	Miami Cycle and Mfg. Co	61,883	Apr. 9	127	2380
Bicycles, velocipedes, and motor-cycles	Miami Cycle and Mfg. Co	61,903	Apr. 9	127	2380
Bitters	W. H. Muller	61,930	Apr. 9	127	2380
Books. Printed	Cuppies & Leon	61,842	Apr. 9	127	2380
Boots and shoes. Leather	A. W. Tedcastle & Co	61,863	Apr. 9	127	2380
Bottle-stopper. Metallic	Crown Cork and Seal Co. of Baltimore City.	61,992	Apr. 9	127	2380
Brushes. Wire	American Wire Brush Company	61,852	Apr. 9	127	2380
Buttons	L. Huet and E. Ligier	61,898	Apr. 9	127	2380
Buttons. Polished-steel	L. Huet and E. Ligier	61,897	Apr. 9	127	2380
Candies	Advance Novelty Company	61,859	Apr. 9	127	2380
Candy. Chocolate-cream	W. H. Batman	61,817	Apr. 9	127	2380
Canned fish	C. E. Moody & Co	61,860	Apr. 9	127	2380
Canned salmon	Hannam & Co	61,826	Apr. 9	127	2380
Canned salmon	F. C. Bushnell Co	61,844	Apr. 9	127	2380
Caramels	Paul F. Beich Co	61,831	Apr. 9	127	2380
Card and box boards	United Box Board & Paper Company.	61,965	Apr. 9	127	2381
Chain-blocks	Yale & Towne Mfg. Co	61,835	Apr. 9	127	2380
Chain-blocks	Yale & Towne Mfg. Co	61,836	Apr. 9	127	2380
Champagne	Blondeau, Berque & Co	61,868	Apr. 9	127	2380
Cheese made from cows' milk	J. R. Thomas' Sons	61,933	Apr. 9	127	2380
Chemical compounds. Certain	Cotto-Waxo Company	61,941	Apr. 9	127	2380
Cider	G. B. Gehlert	61,874	Apr. 9	127	2380
Cigarette-paper	A. A. Kohary	61,859	Apr. 9	127	2380
Cigars	M. W. Diffley, Inc	61,810	Apr. 9	127	2380
Cigars, cheroots, and little cigars	L. Schwager & Co	61,815	Apr. 9	127	2380
Circulars, pamphlets, and librettos	Steinway & Sons	61,850	Apr. 9	127	2380
Coats, pants, and vests	Rosenbaum Co	61,886	Apr. 9	127	2380
Coffee and tea	W. S. Quinby Company	61,864	Apr. 9	127	2380
Corn-flakes. Toasted	American Hominy Company	61,840	Apr. 9	127	2380
Corn-flakes. Toasted	American Hominy Company	61,851	Apr. 9	127	2380
Cornmeal	J. R. Thomas' Sons	61,923	Apr. 9	127	2380
Corset-stiffeners	Weingarten Bros	61,887	Apr. 9	127	2380
Corsets and corset-waists	Puritan Corset Co	61,932	Apr. 9	127	2380
Corsets, bustles, and bust-forms	Coronet Corset Company	61,870	Apr. 9	127	2380
Cotton duck	Denison Cotton Mill Co	61,893	Apr. 9	127	2380
Cotton piece goods	Rice, Stix Dry Goods Company	61,911	Apr. 9	127	2380
Cotton shrunks	Collins & Company	61,938	Apr. 9	127	2380
Cotton shrunks	Collins & Company	61,939	Apr. 9	127	2380
Crackers	Johnson Educator Food Co	61,947	Apr. 9	127	2381
Cutting-tools. Certain	Wiebusch & Hilger	61,967	Apr. 9	127	2381
Dental alloys	S. S. White Dental Mfg. Co	61,821	Apr. 9	127	2367
Dental wax	S. S. White Dental Mfg. Co	61,820	Apr. 9	127	2367
Disinfectants, deodorisers, and germicides	A. Castaing	61,922	Apr. 9	127	2380
Edge-tools. Certain	Ohio Tool Company	61,951	Apr. 9	127	2381
Elastic webbing	G. S. Colton	61,940	Apr. 9	127	2380
Electrical apparatus. Certain	North Electric Company	61,884	Apr. 9	127	2380
Explosives. High	F. N. Briggs	61,853	Apr. 9	127	2380
Fertilizers	Craven Chemical Company	61,854	Apr. 9	127	2380
Flour. Pancake-	Towle Syrup Company	61,824	Apr. 9	127	2367
Flour. Wheat-	Eagle Roller Mill Company	61,855	Apr. 9	127	2380
Flour. Wheat-	Eagle Roller Mill Company	61,856	Apr. 9	127	2380
Flour. Wheat-	Eagle Roller Mill Company	61,871	Apr. 9	127	2380
Flour. Wheat-	George Urban Milling Company	61,875	Apr. 9	127	2380
Flour. Wheat-	George Urban Milling Company	61,876	Apr. 9	127	2380
Flour. Wheat-	George Urban Milling Company	61,877	Apr. 9	127	2380
Flour. Wheat-	George Urban Milling Company	61,878	Apr. 9	127	2380

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Flour. Wheat-	New Prague Flouring Mill Company.	61,905	Apr. 9	127	2380
Flour. Wheat-	New Prague Flouring Mill Company.	61,906	Apr. 9	127	2380
Flour. Wheat-	Wells Flour Milling Company	61,915	Apr. 9	127	2380
Flour. Wheat-	Wells Flour Milling Company	61,916	Apr. 9	127	2380
Flour. Wheat-	Monte Vista Milling & Elevator Company.	61,929	Apr. 9	127	2380
Flour. Wheat-	Phoenix Mill Co	61,952	Apr. 9	127	2381
Flour. Wheat-	Phoenix Mill Co	61,953	Apr. 9	127	2381
Food. Wheat breakfast-	Pillsbury-Washburn Flour Mills Co.	61,908	Apr. 9	127	2380
Food. Wheat breakfast-	Pillsbury-Washburn Flour Mills Co.	61,909	Apr. 9	127	2380
Foods. Certain	St. Louis Syrup & Preserving Company.	61,832	Apr. 9	127	2386
Fuel. Artificial	G. W. Herbein	61,886	Apr. 9	127	2386
Gas-burners. Metal	Geo. Bray & Co	61,899	Apr. 9	127	2387
Gas-burners. Metal	Geo. Bray & Co	61,901	Apr. 9	127	2387
Gas-burners. Metal	Geo. Bray & Co	61,902	Apr. 9	127	2387
Gas-burners. Metal	Geo. Brao & Co	61,903	Apr. 9	127	2387
Gas-burners. Metal	Geo. Bray & Co	61,904	Apr. 9	127	2387
Gas-burners. Metal	Geo. Bray & Co	61,905	Apr. 9	127	2387
Gin. whisky. and brandy	I. L. Lamm Co	61,899	Apr. 9	127	2389
Gin. whisky. and brandy	I. L. Lamm Co	61,900	Apr. 9	127	2389
Glass chimneys, lantern-globes, and reflectors	Gill Brothers Company	61,879	Apr. 9	127	2389
Grape-juice. Unfermented	Wilson Fruit Juice Co	61,908	Apr. 9	127	2391
Hair-dressing and dandruff-remover	Wm. B. Riper & Son Company	61,910	Apr. 9	127	2391
Hair-restorer	Van Vleet-Mansfield Drug Co	61,935	Apr. 9	127	2390
Hair tonics and restorers	Milligan & Donovan	61,940	Apr. 9	127	2391
Hats and caps. Felt, fur, cloth, and straw	Mendel, Weinstock & Company	61,928	Apr. 9	127	2390
Hats. Ladies' and children's	King, Brinsmade Mercantile Company.	61,902	Apr. 9	127	2389
Hones, &c	R. E. Brackett & Co	61,799	Apr. 9	127	2387
Horse-radish, mustard, &c	United States Horse-Radish Company.	61,833	Apr. 9	127	2386
Hose and machinery packings	Revere Rubber Company	61,847	Apr. 9	127	2388
Hose and machinery packings	Revere Rubber Company	61,861	Apr. 9	127	2388
Hosiery and knit gloves	Carleton Dry Goods Company	61,869	Apr. 9	127	2389
Insecticides	E. Fichtenau	61,872	Apr. 9	127	2389
Jams	Beach and Clarridge Company	61,827	Apr. 9	127	2387
Key rings and chains	L. Huot & E. Ligier	61,881	Apr. 9	127	2389
Key rings and chains	L. Huot & E. Ligier	61,882	Apr. 9	127	2389
Knitted or netted materials. Clothing of	W. Read & Sons	61,910	Apr. 9	127	2390
Lamps. Incandescent electric	Franklin Electric Mfg. Co	61,873	Apr. 9	127	2389
Lap-robes	L. Duesenbury	61,922	Apr. 9	127	2390
Leather-dressings	Frank Miller Co	61,818	Apr. 9	127	2387
Locks and parts thereof and keys therefor	Yale & Towne Mfg. Co	61,834	Apr. 9	127	2388
Locks and parts thereof and keys therefor	Yale & Towne Mfg. Co	61,837	Apr. 9	127	2388
Locks and parts thereof and keys therefor	Yale & Towne Mfg. Co	61,838	Apr. 9	127	2388
Lubricants. Certain	United States Graphite Company.	61,816	Apr. 9	127	2387
Lumber and timber	C. Este	61,843	Apr. 9	127	2388
Medical and surgical appliances. Certain	W. Read & Sons	61,846	Apr. 9	127	2388
Medicinal digestive preparations	H. S. Wellcome	61,906	Apr. 9	127	2391
Medicinal preparation. Certain	Radway & Company	61,855	Apr. 9	127	2391
Medicinal preparation. Certain	F. Stohr	61,880	Apr. 9	127	2391
Medicinal preparations. Certain	Eli Lilly & Company	61,924	Apr. 9	127	2390
Medicinal preparations. Certain	J. F. Fairchild	61,925	Apr. 9	127	2390
Medicinal preparations. Certain	F. D. Sutton	61,951	Apr. 9	127	2391
Medicinal vehicle or carrier in fluid form	John Wyeth and Brother	61,946	Apr. 9	127	2391
Medicines for blood diseases	J. Schneider & Co	61,956	Apr. 9	127	2391
Metal-welding compounds	Goldschmidt Thermit Co	61,890	Apr. 9	127	2389
Newspaper. Monthly	J. P. Weiss	61,955	Apr. 9	127	2391
Oats. Rolled	Schumacher Cereal Co	61,957	Apr. 9	127	2391
Oil for lubricating, cleaning, &c	W. F. Nye	61,814	Apr. 9	127	2387
Oils and greases for gas-engines and automobiles	Havemeyer Oil Company	61,806	Apr. 9	127	2387
Oils and greases. Lubricating	Mutual Auto Accessories Co. of America.	61,812	Apr. 9	127	2387
Oils. Cotton-seed	Southern Cotton Oil Company	61,838	Apr. 9	127	2387
Oils. Cotton-seed	Southern Cotton Oil Company	61,849	Apr. 9	127	2388
Oils. Lubricating, engine, cylinder, and miners'	G. P. Jones	61,807	Apr. 9	127	2387
Olives	American Olive Company	61,826	Apr. 9	127	2387
Olives, olive-oil, and dried and evaporated fruits	F. C. Bushnell Co	61,830	Apr. 9	127	2388
Paints. Mixed	Knickerbocker Paint Company	61,808	Apr. 9	127	2387
Pharmaceutical preparations. Certain	Pompeian Mfg. Co	61,964	Apr. 9	127	2391
Photographic developers	Actien-Gesellschaft für Anilin-Fabrikation.	61,920	Apr. 9	127	2390
Plasters. Corn and bunion	Bauer & Black	61,937	Apr. 9	127	2390
Potash or lye. Caustic	E. N. Hall	61,944	Apr. 9	127	2391
Preparation for the cure of dyspepsia	Booth's Hyomei Company	61,921	Apr. 9	127	2390
Radiators for automobiles	A-Z. Co	61,936	Apr. 9	127	2390
Raisins	Griffin & Skelley Co	61,845	Apr. 9	127	2388
Raisins	Griffin & Skelley Co	61,867	Apr. 9	127	2389
Razor-paste	J. H. Leak	61,809	Apr. 9	127	2387
Reamers and twist-drills	Whitman & Barnes Manufacturing Co.	61,885	Apr. 9	127	2389
Reamers and twist-drills	Whitman & Barnes Manufacturing Company.	61,919	Apr. 9	127	2390
Relish	Wright Smith M'f'g. Co	61,887	Apr. 9	127	2389
Remedies for affections of the throat, chest, and lungs	Foley & Company	61,926	Apr. 9	127	2390
Remedy for seasickness	J. A. Mordin	61,939	Apr. 9	127	2391

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Rice	Sprague, Warner & Company	61,930	Apr. 9	127	2391
Rings, brooches, and badges	Carl Entenmann Jewelry Company.	61,891	Apr. 9	127	2389
Rouge. Toilet	E. M. Hetsel	61,945	Apr. 9	127	2391
Sand, garnet, and emery papers and emery-cloths	American Glue Company	61,798	Apr. 9	127	2387
Saws, die-stocks, screw-plates, and pipe-cutters	Neuss, Hesslein & Co	61,904	Apr. 9	127	2389
Sewing-machines, attachments, stands, tables, and covers	A. G. Mason	61,948	Apr. 9	127	2391
Shoe pincers and jacks	F. W. Whitcher	61,918	Apr. 9	127	2390
Sifters. Machine-	Fred. J. Meyers Manufacturing Company.	61,942	Apr. 9	127	2391
Silk piece goods	Sauquoit Silk Manufacturing Company.	61,912	Apr. 9	127	2390
Soap	Colgate & Co	61,829	Apr. 9	127	2388
Soap. Medicated toilet	G. C. Wilson	61,806	Apr. 9	127	2389
Soaps	Mexican Amole Soap Co	61,819	Apr. 9	127	2387
Syrup	Towle Syrup Company	61,963	Apr. 9	127	2391
Syrup	Towle Syrup Company	61,964	Apr. 9	127	2391
Syrup and molasses. Maple-	Towle Syrup Company	61,962	Apr. 9	127	2391
Syrups	Beach and Clarridge Company	61,826	Apr. 9	127	2387
Syrups, molasses, sorghum, and maple-syrup. Table-	St. Louis Syrup & Preserving Company.	61,862	Apr. 9	127	2388
Tablets or lozenges for dyspepsia	C. A. Siegemund	61,958	Apr. 9	127	2391
Thread or sewing-cotton. Cotton	Clark Thread Co	61,841	Apr. 9	127	2388
Tonic	Van Vleet-Mansfield Drug Co	61,934	Apr. 9	127	2390
Twine. Cotton	J. E. Reynolds	61,848	Apr. 9	127	2388
Varnish-stains, priming, and fillers	Martin-Senour Co	61,811	Apr. 9	127	2387
Varnishes, stains, japans, &c	Noake-Wheeler-Clough Company	61,813	Apr. 9	127	2387
Veilings	Weil Brothers	61,913	Apr. 9	127	2390
Veilings	Weil Brothers	61,914	Apr. 9	127	2390
Water. Natural lithia spring-	L. M. Park	61,885	Apr. 9	127	2389
Water. Spring-	L. M. Park	61,907	Apr. 9	127	2389
Whisky	Bluthenthal & Bickart	61,890	Apr. 9	127	2389
Whisky	Friedman, Keiler & Co	61,894	Apr. 9	127	2389
Whisky	Henry M. Rubel Company	61,895	Apr. 9	127	2389
Whisky	Henry M. Rubel Company	61,896	Apr. 9	127	2389
Whisky	West Overton Distilling Co	61,917	Apr. 9	127	2390
Whisky	A. Friedman & Co	61,943	Apr. 9	127	2391
Whisky	Pheonix Woolen Co	61,931	Apr. 9	127	2390
Woolen fabrics in the piece					

LABELS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Bayle's High Grade Horseradish Catsup." (For Catsup)	G. A Bayle	13,462	Apr. 9	127	2392
"Continent Brand." (For Hats)	Jones Payne Hat Co	13,466	Apr. 9	127	2392
"Dr. French's-Quinsy-Kit." (For Medicine)	W. F. Dunn	13,458	Apr. 9	127	2392
"Dr. French's-Quinsy-Kit." (For Medicine)	W. F. Dunn	13,459	Apr. 9	127	2392
"Dr. French's-Quinsy-Kit." (For Medicine)	W. F. Dunn	13,460	Apr. 9	127	2392
"El Orihenal." (For Cigars)	J. C. Johnston	13,455	Apr. 9	127	2392
"Exquisite." (For Malt Liquors and Dark Beers)	Fred Feil Brewing Company	13,457	Apr. 9	127	2392
"Kampus Klothes." (For Young Men's Clothing)	H. J. Brock	13,468	Apr. 9	127	2392
"Ma's Favorite." (For Starch)	A. F. Hogue	13,464	Apr. 9	127	2392
"McKay's King of Oils." (For a Medical Composition)	T. A. McKay	13,461	Apr. 9	127	2392
"Premium B-I-G 5-3 Cord." (For Thread and Spool-Cotton)	Bullard Thread Co	13,465	Apr. 9	127	2392
"Purock Ginger Ale." (For Ginger-Ale)	Charles E. Hires Company	13,456	Apr. 9	127	2392
"The Graduate." (For Clothing)	Becker, Mayer & Co	13,467	Apr. 9	127	2392
"Virginia Cured" Brand Hams and Bacon Dressed Meats." (For Hams, Bacon, and Dressed Meats.)	J. L. C. Montague	13,463	Apr. 9	127	2392
"Wedgwood Cigars." (For Cigars)	Stewart Brothers Company	13,454	Apr. 9	127	2392

PRINTS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Antiphlogistine Girl # 7." (For Medicine)	Denver Chemical Mfg. Co	1,951	Apr. 9	127	2392
"Antiphlogistine Girl # 6." (For Medicine)	Denver Chemical Mfg. Co	1,952	Apr. 9	127	2392
"Antiphlogistine Girl # 5." (For Medicine)	Denver Chemical Mfg. Co	1,953	Apr. 9	127	2392
"Men's and Boys' Apparel." (For Men's and Boys' Apparel)	H. C. Lytton	1,955	Apr. 9	127	2392
"Perry's Fashions for Spring, 1907, Sheet No. 2." (For Men's Clothing.)	Perry & Co	1,954	Apr. 9	127	2392
"Pratts Germ-a-thol, Sanitary Disinfectant." (For a Disinfectant.)	Pratt Food Co	1,950	Apr. 9	127	2392
"Scotch Mints." (For Candy)	A. Slauson & Co	1,957	Apr. 9	127	2392
"Stick to the Sign of the Fish." (For Oiled Clothing)	A. J. Tower Co				

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Flour. Wheat	New Prague Flouring Mill Company.	61,905	Apr. 9	127	2280
Flour. Wheat	New Prague Flouring Mill Company.	61,906	Apr. 9	127	2280
Flour. Wheat	Wells Flour Milling Company	61,915	Apr. 9	127	2280
Flour. Wheat	Wells Flour Milling Company	61,916	Apr. 9	127	2280
Flour. Wheat	Monte Vista Milling & Elevator Company.	61,920	Apr. 9	127	2280
Flour. Wheat	Phoenix Mill Co	61,952	Apr. 9	127	2281
Flour. Wheat	Phoenix Mill Co	61,953	Apr. 9	127	2281
Food. Wheat breakfast	Pillsbury-Washburn Flour Mills Co.	61,908	Apr. 9	127	2280
Food. Wheat breakfast	Pillsbury-Washburn Flour Mills Co.	61,909	Apr. 9	127	2280
Foods. Certain	St. Louis Syrup & Preserving Company.	61,822	Apr. 9	127	2288
Fuel. Artificial	G. W. Herbein	61,888	Apr. 9	127	2286
Gas-burners. Metal	Geo. Bray & Co	61,870	Apr. 9	127	2287
Gas-burners. Metal	Geo. Bray & Co	61,871	Apr. 9	127	2287
Gas-burners. Metal	Geo. Bray & Co	61,872	Apr. 9	127	2287
Gas-burners. Metal	Geo. Brao & Co	61,873	Apr. 9	127	2287
Gas-burners. Metal	Geo. Bray & Co	61,874	Apr. 9	127	2287
Gas-burners. Metal	Geo. Bray & Co	61,876	Apr. 9	127	2287
Gin, whisky, and brandy	I. L. Lamm Co	61,899	Apr. 9	127	2289
Gin, whisky, and brandy	I. L. Lamm Co	61,900	Apr. 9	127	2289
Glass chimneys, lantern-globes, and reflectors	Gill Brothers Company	61,879	Apr. 9	127	2280
Grape-juice. Unfermented	Wilson Fruit Juice Co	61,918	Apr. 9	127	2281
Hair-dressing and dandruff-remover	Wm. B. Riker & Son Company	61,919	Apr. 9	127	2281
Hair-restorer	Van Vleet-Mansfield Drug Co	61,936	Apr. 9	127	2290
Hair tonics and restorers	Milligan & Donovan	61,949	Apr. 9	127	2291
Hats and caps. Felt, fur, cloth, and straw	Mendel, Weinstock & Company	61,928	Apr. 9	127	2280
Hats. Ladies' and children's	King, Brinsmade Mercantile Company.	61,902	Apr. 9	127	2279
Hones, &c	R. E. Brackett & Co	61,790	Apr. 9	127	2287
Horse-radish, mustard, &c	United States Horse-Radish Company.	61,833	Apr. 9	127	2288
Hose and machinery packings	Revere Rubber Company	61,847	Apr. 9	127	2288
Hose and machinery packings	Revere Rubber Company	61,861	Apr. 9	127	2288
Hosiery and knit gloves	Carleton Dry Goods Company	61,809	Apr. 9	127	2279
Insecticides	E. Fichtenau	61,872	Apr. 9	127	2280
Jams	Beach and Clarridge Company	61,827	Apr. 9	127	2287
Key rings and chains	L. Huet & E. Ligier	61,861	Apr. 9	127	2290
Key rings and chains	L. Huet & E. Ligier	61,862	Apr. 9	127	2290
Knitted or netted materials. Clothing of	W. Read & Sons	61,910	Apr. 9	127	2280
Lamps. Incandescent electric	Franklin Electric Mfg. Co	61,873	Apr. 9	127	2280
Lap-robes	L. Dusenbury	61,922	Apr. 9	127	2280
Leather-dressings	Frank Miller Co	61,818	Apr. 9	127	2287
Locks and parts thereof and keys therefor	Yale & Towne Mfg. Co	61,834	Apr. 9	127	2288
Locks and parts thereof and keys therefor	Yale & Towne Mfg. Co	61,837	Apr. 9	127	2288
Locks and parts thereof and keys therefor	Yale & Towne Mfg. Co	61,838	Apr. 9	127	2288
Lubricants. Certain	United States Graphite Company.	61,816	Apr. 9	127	2287
Lumber and timber	C. Este	61,843	Apr. 9	127	2288
Medical and surgical appliances. Certain	W. Read & Sons	61,846	Apr. 9	127	2288
Medicinal digestive preparations	H. S. Wellcome	61,886	Apr. 9	127	2291
Medicinal preparation. Certain	Radway & Company	61,855	Apr. 9	127	2291
Medicinal preparation. Certain	F. Stohr	61,880	Apr. 9	127	2291
Medicinal preparations. Certain	Eli Lilly & Company	61,924	Apr. 9	127	2280
Medicinal preparations. Certain	J. F. Fairchild	61,925	Apr. 9	127	2280
Medicinal preparations. Certain	E. D. Sutton	61,961	Apr. 9	127	2291
Medicinal vehicle or carrier in fluid form	John Wyeth and Brother	61,946	Apr. 9	127	2291
Medicines for blood diseases	J. Schneider & Co	61,956	Apr. 9	127	2291
Metal-welding compounds	Goldschmidt Thermit Co	61,880	Apr. 9	127	2289
Newspaper. Monthly	J. P. Weiss	61,885	Apr. 9	127	2288
Oats. Rolled	Schumacher Cereal Co	61,957	Apr. 9	127	2291
Oil for lubricating, cleaning, &c	W. F. Nye	61,814	Apr. 9	127	2287
Oils and greases for gas-engines and automobiles	Havemeyer Oil Company	61,806	Apr. 9	127	2287
Oils and greases. Lubricating	Mutual Auto Accessories Co. of America.	61,813	Apr. 9	127	2287
Oils. Cotton-seed	Southern Cotton Oil Company	61,833	Apr. 9	127	2288
Oils. Cotton-seed	Southern Cotton Oil Company	61,849	Apr. 9	127	2288
Oils. Lubricating, engine, cylinder, and miners'	G. P. Jones	61,807	Apr. 9	127	2287
Olives	American Olive Company	61,826	Apr. 9	127	2287
Olives, olive-oil, and dried and evaporated fruits	F. C. Bushnell Co	61,830	Apr. 9	127	2288
Paints. Mixed	Knickerbocker Paint Company	61,808	Apr. 9	127	2287
Pharmaceutical preparations. Certain	Pompeian Mfg. Co	61,964	Apr. 9	127	2291
Photographic developers	Actien-Gesellschaft für Anilin-Fabrikation.	61,920	Apr. 9	127	2280
Plasters. Corn and bunion	Bauer & Black	61,937	Apr. 9	127	2290
Potash or lye. Caustic	E. N. Hall	61,944	Apr. 9	127	2291
Preparation for the cure of dyspepsia	Booth's Hyomei Company	61,921	Apr. 9	127	2280
Radiators for automobiles	A-Z. Co	61,936	Apr. 9	127	2290
Raisins	Griffin & Skelley Co	61,845	Apr. 9	127	2288
Raisins	Griffin & Skelley Co	61,857	Apr. 9	127	2288
Razor-paste	J. H. Leek	61,809	Apr. 9	127	2287
Reamers and twist-drills	Whitman & Barnes Manufacturing Co.	61,888	Apr. 9	127	2289
Reamers and twist-drills	Whitman & Barnes Manufacturing Company.	61,919	Apr. 9	127	2280
Relish	Wright Smith M'f'g. Co	61,867	Apr. 9	127	2289
Remedies for affections of the throat, chest, and lungs	Foley & Company	61,926	Apr. 9	127	2280
Remedy for seasickness	J. A. Nordin	61,960	Apr. 9	127	2291

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Rice	Sprague, Warner & Company	61,950	Apr. 9	127	2281
Rings, brooches, and badges	Carl Entenmann Jewelry Company.	61,891	Apr. 9	127	2289
Rouge. Toilet	E. M. Hetsel	61,945	Apr. 9	127	2291
Sand, garnet, and emery papers and emery-cloths	American Glue Company	61,796	Apr. 9	127	2287
Saws, die-stocks, screw-plates, and pipe-cutters	Neuss, Hesslein & Co	61,904	Apr. 9	127	2280
Sewing-machines, attachments, stands, tables, and covers	A. G. Mason	61,948	Apr. 9	127	2291
Shoe pincers and jacks	F. W. Whitcher	61,918	Apr. 9	127	2280
Silk piece goods	Fred. J. Meyers Manufacturing Company.	61,942	Apr. 9	127	2291
Soap	Sauquoit Silk Manufacturing Company.	61,912	Apr. 9	127	2280
Soap. Medicated toilet	Colgate & Co	61,829	Apr. 9	127	2288
Soaps	G. C. Wilson	61,866	Apr. 9	127	2289
Syrup	Mexican Amole Soap Co	61,819	Apr. 9	127	2287
Syrup	Towle Syrup Company	61,963	Apr. 9	127	2291
Syrup and molasses. Maple	Towle Syrup Company	61,964	Apr. 9	127	2291
Syrups	Towle Syrup Company	61,962	Apr. 9	127	2291
Syrups, molasses, sorghum, and maple-syrup. Table	Beach and Clarridge Company	61,826	Apr. 9	127	2287
Tablets or lozenges for dyspepsia	St. Louis Syrup & Preserving Company.	61,862	Apr. 9	127	2288
Thread or sewing-cotton. Cotton	C. A. Siegemund	61,958	Apr. 9	127	2291
Tonic	Clark Thread Co	61,841	Apr. 9	127	2288
Twine. Cotton	Van Vleet-Mansfield Drug Co	61,934	Apr. 9	127	2290
Varnish-stains, priming, and fillers	J. E. Reynolds	61,848	Apr. 9	127	2288
Varnishes, stains, japans, &c	Martin-Senour Co	61,811	Apr. 9	127	2287
Vellings	Nonke-Wheeler-Clough Company	61,813	Apr. 9	127	2287
Vellings	Weil Brothers	61,913	Apr. 9	127	2280
Water. Natural lithia spring	Weil Brothers	61,914	Apr. 9	127	2280
Water. Spring	L. M. Park	61,885	Apr. 9	127	2289
Whisky	L. M. Park	61,907	Apr. 9	127	2280
Whisky	Bluthenthal & Bickart	61,890	Apr. 9	127	2289
Whisky	Friedman, Keiler & Co	61,894	Apr. 9	127	2289
Whisky	Henry M. Rubel Company	61,895	Apr. 9	127	2289
Whisky	Henry M. Rubel Company	61,896	Apr. 9	127	2289
Whisky	West Overton Distilling Co	61,917	Apr. 9	127	2280
Whisky	A. Friedman & Co	61,943	Apr. 9	127	2291
Whisky	Phoenix Woolen Co	61,941	Apr. 9	127	2290
Woolen fabrics in the piece					

LABELS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Bayle's High Grade Horseradish Catsup." (For Catsup)	G. A. Bayle	13,462	Apr. 9	127	2292
"Continent Braid." (For Hats)	Jones Payne Hat Co	13,466	Apr. 9	127	2292
"Dr. French's-Quinsy-Kit." (For Medicine)	W. F. Dunn	13,458	Apr. 9	127	2292
"Dr. French's-Quinsy-Kit." (For Medicine)	W. F. Dunn	13,459	Apr. 9	127	2292
"Dr. French's-Quinsy-Kit." (For Medicine)	W. F. Dunn	13,460	Apr. 9	127	2292
"El Orthenal." (For Cigars)	J. C. Johnston	13,457	Apr. 9	127	2292
"Exquisite." (For Malt Liquors and Dark Beers)	Fred Feil Brewing Company	13,468	Apr. 9	127	2293
"Kampus Klothes." (For Young Men's Clothing)	H. J. Brock	13,464	Apr. 9	127	2292
"Ma's Favorite." (For Starch)	A. F. Hogue	13,461	Apr. 9	127	2292
"McKay's King of Oils." (For a Medical Composition)	T. A. McKay	13,465	Apr. 9	127	2292
"Premium B-I-G 5-3 Cord." (For Thread and Spool-Cotton)	Bullard Thread Co	13,456	Apr. 9	127	2292
"Purock Ginger Ale." (For Ginger-Ale)	Charles E. Hires Company	13,467	Apr. 9	127	2292
"The Graduate." (For Clothing)	Becker, Mayer & Co	13,463	Apr. 9	127	2292
"Virginia Cured" Brand Hams and Bacon Dressed Meats." (For Hams, Bacon, and Dressed Meats.)	J. L. C. Montague				
"Wedgwood Cigars." (For Cigars)	Stewart Brothers Company	13,454	Apr. 9	127	2292

PRINTS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Antiphlogistine Girl # 7." (For Medicine)	Denver Chemical Mfg. Co	1,951	Apr. 9	127	2292
"Antiphlogistine Girl # 6." (For Medicine)	Denver Chemical Mfg. Co	1,952	Apr. 9	127	2292
"Antiphlogistine Girl # 5." (For Medicine)	Denver Chemical Mfg. Co	1,953	Apr. 9	127	2292
"Men's and Boys' Apparel." (For Men's and Boys' Apparel)	H. C. Lytton	1,955	Apr. 9	127	2292
"Perry's Fashions for Spring, 1907, Sheet No. 2." (For Men's Clothing.)	Perry & Co	1,956	Apr. 9	127	2292
"Pratts Germ-o-thol, Sanitary Disinfectant." (For a Disinfectant.)	Pratt Food Co	1,954	Apr. 9	127	2292
"Scotch Mints." (For Candy)	A. Slauson & Co	1,950	Apr. 9	127	2292
"Stick to the Sign of the Fish." (For Oiled Clothing)	A. J. Tower Co	1,957	Apr. 9	127	2292

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Antiseptic, germicide, and deodorant	Peroxident Manufacturing Company.	24,957	Apr. 9	127	2375
Astringent and hemostatic	Farbwerke vorm. Meister Lucius & Brüning.	24,968	Apr. 9	127	2376
Astringent for internal and external use	Rio Chemical Co.	23,898	Apr. 9	127	2374
Baking-powder and bicarbonate of soda	Hills Bros.	25,885	Apr. 9	127	2380
Bath-sprays and overhead showers	S. Sterman & Co.	21,273	Apr. 9	127	2370
Beverage. Carbonated	Rinappert & Worcester	5,197	Apr. 9	127	2366
Bicycles and automobiles	Monitor Hardware Corpn.	23,897	Apr. 9	127	2374
Bolting-cloth. Silk	R. L. Latimer & Co.	25,874	Apr. 9	127	2380
Boots and shoes. Leather	S. A. Cerein & Son Company	7,033	Apr. 9	127	2365
Boots and shoes. Leather	Guthmann Carpenter & Telling	7,812	Apr. 9	127	2365
Boots and shoes. Leather	Roberts, Johnson & Rand Shoe Company.	22,761	Apr. 9	127	2372
Boots and shoes. Leather	Spear Brothers Co.	25,360	Apr. 9	127	2378
Boots, shoes, and slippers and parts thereof	Dolgeville Felt Shoe Co.	25,769	Apr. 9	127	2382
Boots, shoes, and slippers. Leather	Paul Brothers	25,858	Apr. 9	127	2380
Brandy, rum, and gin	Ullman-Einstein Co.	25,356	Apr. 9	127	2376
Brickmaking machinery	Morris Sherman Manufacturing Company.	22,404	Apr. 9	127	2371
Brickmaking machinery	Morris Sherman Manufacturing Company.	22,730	Apr. 9	127	2371
Brushes. Hair, tooth, and nail	W. L. Martin	24,926	Apr. 9	127	2376
Calicoes and percales	Garner & Co.	24,249	Apr. 9	127	2373
Candy	Catawba Candy Co.	25,811	Apr. 9	127	2380
Canned corn	Portland Packing Company.	9,186	Apr. 9	127	2367
Canned fish	Northwestern Fisheries Company.	25,411-2	Apr. 9	127	2378
Canned fish	Northwestern Fisheries Company.	25,454	Apr. 9	127	2379
Canned fish	Northwestern Fisheries Company.	25,456	Apr. 9	127	2379
Canned fish	Northwestern Fisheries Company.	25,460-1	Apr. 9	127	2379
Canned fish	Northwestern Fisheries Company.	25,463-4	Apr. 9	127	2379
Canned fish	Northwestern Fisheries Company.	25,466	Apr. 9	127	2379
Canned fish	Northwestern Fisheries Company.	25,470	Apr. 9	127	2379
Canned fish	Northwestern Fisheries Company.	25,473	Apr. 9	127	2379
Canned salmon	Sprague, Warner & Company	25,909	Apr. 9	127	2385
Canvas and duck cleanser	Eclipse Cement & Blacking Co.	25,836	Apr. 9	127	2382
Catsup	Eastern Importing & Manufacturing Company.	5,822	Apr. 9	127	2366
Cement for mending crockery, &c.	Cross & Company	23,878	Apr. 9	127	2374
Chains. Drive and conveyer	Link-Belt Company	23,080	Apr. 9	127	2372
Chains. Drive and conveyer	Link-Belt Company	23,082	Apr. 9	127	2372
Chains. Drive and conveyer	Link-Belt Company	23,084-5	Apr. 9	127	2373
Chocolate and cocoa	"Lucerna" Anglo-Swiss Milk Chocolate Co.	13,486	Apr. 9	127	2368
Chocolate and cocoa	"Lucerna" Anglo-Swiss Milk Chocolate Co.	13,489	Apr. 9	127	2368
Cleaning and whitening compound for textile and fibrous fabrics, &c.	S. M. Bixby	23,333-6	Apr. 9	127	2373
Clocks	A. Y. Jansen	25,879	Apr. 9	127	2384
Coal	Consumers Coal Co.	25,726	Apr. 9	127	2381
Cocoa and chocolate	Great Atlantic & Pacific Tea Company.	25,888	Apr. 9	127	2381
Cocoa, chocolate, and preparations thereof	B. E. Emrs	25,947	Apr. 9	127	2383
Coffee	Ohio Coffee & Spice Company	1,713	Apr. 9	127	2365
Colors, enamels, fillers, &c.	Peninsular Paint and Varnish Company.	22,301	Apr. 9	127	2371
Colors. Scenic and fresco	Tosh Brothers	25,941	Apr. 9	127	2383
Cordials, rums, brandies, and whiskies	H. C. Myers	24,926	Apr. 9	127	2376
Corsets	Weingarten Bros.	25,882	Apr. J	127	2383
Corsets	American Lady Corset Co.	25,870-1	Apr. 9	127	2382
Cotton piece goods	Jackson Company	21,228	Apr. 9	127	2371
Cotton piece goods	R. A. Suffern	23,047	Apr. 9	127	2373
Cream-separators	Albaugh Bros. Dover & Co.	22,218	Apr. 9	127	2371
Crucibles, cupels, roasting-dishes, &c.	Morgan Crucible Company	15,797	Apr. 9	127	2368
Dental amalgam, gutta-percha canal-points, &c.	J. T. Nolde	19,040	Apr. 9	127	2369
Drills and drill-bits. Hand-	North Bro's M'f'g Co.	25,882	Apr. 9	127	2380
Elastic webbing	Narrow Fabric Corporation	25,585	Apr. 9	127	2383
Fertilizers	Virginia-Carolina Chemical Company.	23,083-4	Apr. 9	127	2374
Flavoring extracts, canned fruits, pie-fillings, &c.	Jamison Bros. & Johnts Bakers' Supply Co.	25,900	Apr. 9	127	2385
Flour. Cereal	B. Heller & Co.	8,220	Apr. 9	127	2367
Flour. Rye	Weeks & Parr	25,887	Apr. 9	127	2380
Flour. Wheat	Lindstrom Mill Co.	25,890	Apr. 9	127	2384
Fruit. Dried	Arms & Kidder	25,892	Apr. 9	127	2384
Fuel-burning device	Castle Brothers	25,671	Apr. 9	127	2377
	International Combustion Corporation.	22,695	Apr. 9	127	2371
Furnaces, muffles, &c. Assayers'	Morgan Crucible Company	24,102	Apr. 9	127	2375
Garters	American Garter Co.	23,895	Apr. 9	127	2384
Golf clubs and implements and parts thereof	P. G. Manufacturing Company.	25,937	Apr. 9	127	2384
Graphite	Joseph Dixon Crucible Company.	25,887	Apr. 9	127	2384
Hats. Felt	M. Rosenwald	23,916	Apr. 9	127	2374
Hosiery	F. Lesser & Co.	23,945	Apr. 9	127	2372

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Incubators, brooders, coops, &c.	E. H. Graeszel	24,961	Apr. 9	127	2377
Knit underwear	Frank Bros. & Co	25,903	Apr. 9	127	2384
Knitted underwear. Men's	Frank Bros. & Co.	25,678	Apr. 9	127	2380
Knives, scissors, and razors	C. Lutters & Co.	12,460	Apr. 9	127	2367
Leather and shoe blackings, paste, polish, and varnish	S. M. Bixby & Co.	23,229-30	Apr. 9	127	2372
Leather dressings, blackings, and polishes	Parker Holmes and Company	21,240	Apr. 9	127	2370
Ledgers	Lefebure Ledger Company	3,312	Apr. 9	127	2365
Liniments for rheumatism, gout, &c.	Holden Drug Co.	16,405	Apr. 9	127	2368
Lubricators	Lunkenheimer Company	25,976-7	Apr. 9	127	2385
Machetes and tercedos	Collins Company	25,810-12	Apr. 9	127	2382
Magazine periodical	Business Magazine Co.	22,126	Apr. 9	127	2371
Magazine. Weekly	Chicago Horseman Newspaper Company.	24,685	Apr. 9	127	2376
Malines and netted fabrics	Benedictus, Weill & Company.	22,330	Apr. 9	127	2371
Meat extracts and essences	Bovril Limited	16,398	Apr. 9	127	2368
Medicated wines, elixirs, syrups, &c.	John Wyeth and Brother	21,544	Apr. 9	127	2370
Medicinal compound	G. E. Fairbanks	25,015	Apr. 9	127	2377
Medicinal pencils or cones	John Wyeth and Brother	21,561	Apr. 9	127	2370
Medicinal preparation for the ailments of infants and children	Joy Castoria Company	21,003	Apr. 9	127	2370
Medicinal solution of iron chlorid	John Wyeth and Brother	21,557	Apr. 9	127	2370
Medicine for the cure of malaria, chills, and fever	C. F. Congdon	22,725	Apr. 9	127	2371
Medicines for cough, cold, and grip	W. M. Reynolds	25,639	Apr. 9	127	2380
Medicines for rheumatism, liver, and kidney troubles, &c.	T. L. Cook Medicine Co.	10,495	Apr. 9	127	2367
Music. Sheet-	Helf & Hager Co.	25,329	Apr. 9	127	2378
Newspaper	L'Opinione Italian Publishing Co.	25,747	Apr. 9	127	2381
Oils. Essential	C. Rockhill	396	Apr. 9	127	2365
Ointment and medicinal powder for the cure of skin diseases, &c.	H. B. Garrigues	25,223	Apr. 9	127	2377
Ointment. Wild-honey	K K K Medicine Company	64	Apr. 9	127	2365
Olives and olive-oil	Siegel Cooper & Co.	5,430	Apr. 9	127	2366
Ovens. Baking-	J. Clarey	25,266	Apr. 9	127	2377
Packing. Sheet-	Garlock Packing Company	25,827	Apr. 9	127	2383
Paint	W. D. Craig	18,896	Apr. 9	127	2369
Paint. Graphite	United States Graphite Company.	24,762	Apr. 9	127	2376
Paints. Asphaltic and composite	Amalgamated Paint Company	18,730	Apr. 9	127	2369
Paints for steel structures, metal, wood, &c.	Gillespie-Benedict Company	25,837-8	Apr. 9	127	2383
Paper. Printing and writing	Perfect Safety Paper Co.	24,815	Apr. 9	127	2376
Pastils for the cure of hoarseness, sore throat, &c.	John Wyeth and Brother	21,558	Apr. 9	127	2370
Pencils	Joseph Dixon Crucible Company	25,722	Apr. 9	127	2381
Pepper. Compound	J. D. Tash	22,810	Apr. 9	127	2372
Perfumes	Holden Drug Co.	15,381	Apr. 9	127	2368
Photographic plates, paper, and films	Imperial Dry Plate Company	25,877	Apr. 9	127	2384
Pianos and automatic piano-players	Cable Company	25,778	Apr. 9	127	2382
Pianos and automatic piano-players	Cable Company	25,780-1	Apr. 9	127	2382
Pills. Tonic	W. A. Horton	24,422	Apr. 9	127	2375
Plant-fenders	F. I. Stone & Company	24,579	Apr. 9	127	2375
Plants and vegetables. Food for	Albaugh Bros. Dover & Co.	25,299	Apr. 9	127	2378
Pliers	Hammel, Riglander & Co.	25,690	Apr. 9	127	2380
Polishing-cloths	J. A. Kieferle	25,657	Apr. 9	127	2374
Powder. Complexion-	J. A. Pozzoni Pharmacal Co.	23,793	Apr. 9	127	2374
Powder. Complexion-	J. A. Pozzoni Pharmacal Co.	23,795	Apr. 9	127	2375
Powder. Toilet	J. Carrington Company	24,545	Apr. 9	127	2377
Powders. Tooth-	F. N. Rose	25,134	Apr. 9	127	2367
Preserved pineapple and Maraschino cherries	Rheinstrom Bettman Johnson & Co.	8,483	Apr. 9	127	2367
Prune-juice	Rheinstrom Bettman Johnson & Co.	8,480	Apr. 9	127	2383
Punches, cut-nippers, and pliers	S. C. Morrill	25,854	Apr. 9	127	2374
Rain-coats. Waterproof	M. Silberman	23,520	Apr. 9	127	2379
Ratchets for operating drills, taps, wrenches, &c.	Keystone Mfg. Co.	25,513	Apr. 9	127	2380
Ratchets for operating drills, taps, wrenches, &c.	Keystone Mfg. Co.	25,536	Apr. 9	127	2346
Razors and razor-blades	Kampfe Bros.	4,037	Apr. 9	127	2383
Refrigerators	White Enamel Refrigerator Company.	25,863	Apr. 9	127	2377
Remedies for disordered liver, biliousness, &c.	H. E. Buckien & Company	25,264	Apr. 9	127	2374
Remedy for diarrhea, flux, and dysentery	Mack & Gilmore	23,857	Apr. 9	127	2385
Ribbons	L. & E. Stirn	25,965-6	Apr. 9	127	2368
Rope, cord, lines, and twine	American Manufacturing Company.	15,093	Apr. 9	127	2385
Rubber boots and shoes	Hood Rubber Company	25,975	Apr. 9	127	2367
Rubber gloves and mittens	Miller Rubber Manufacturing Co.	11,991	Apr. 9	127	2376
Salve	K. Cinyburg & Son	24,896	Apr. 9	127	2366
Sauces, catsups, and pickles	Siegel Cooper & Co.	5,412	Apr. 9	127	2384
Saws	George Worthington Company	25,883	Apr. 9	127	2378
Shoes. Leather	Drake Inness Green Shoe Co.	25,357-8	Apr. 9	127	2384
Shoes. Leather	Fleishman, Morris & Co.	25,922	Apr. 9	127	2370
Silk piece goods	Susquehanna Silk Mills	21,419-20	Apr. 9	127	2369
Silver flat, hollow, and table ware	Joseph Rodgers & Sons	18,937	Apr. 9	127	2376
Silver-lead or plumbago foundry-facings, &c.	United States Graphite Company.	24,766	Apr. 9	127	2366
Soap	David Brown & Son	6,589	Apr. 9	127	2370
Soap	Cincinnati Soap Company	20,722	Apr. 9	127	2369
Soles. Inlay-	A. Maass Fabrik antiseptischer Artikel.	20,087	Apr. 9	127	2375
Soup and bouillon stocks	Patterson-Cabell Co.	24,673	Apr. 9	127	2382
Spectacles and eyeglasses	T. A. Willson	25,836	Apr. 9	127	2367-8
Stout	Arthur Guinness Son & Co.	12,916-17	Apr. 9	127	2373
Stove dressings and polish	S. M. Bixby & Co.	23,238	Apr. 9	127	2373
Stove dressings and polish	S. M. Bixby & Co.	23,240	Apr. 9	127	2370
Stove-polish	Black Silk Stove Polish Works	24,846-7	Apr. 9	127	2381
Stove-polish	Joseph Dixon Crucible Company	25,724	Apr. 9	127	2380
Stoves, furnaces, heaters, &c., and parts thereof	A. Lotzes Sons & Company	10,960	Apr. 9	127	2381
Suits. Play-	J. B. Pearson Company	25,748	Apr. 9	127	2381

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Suspensory	G. P. Morgan	25,887	Apr. 9	127	2380
Syrups	Alabama-Georgia Syrup Company.	25,119	Apr. 9	127	2377
Table-cloths, napkins, and doilies	Japanese Importing Company	19,353	Apr. 9	127	2380
Thread and spool and sewing cotton	American Thread Company	25,720	Apr. 9	127	2381
Thread and spool and sewing cotton	American Thread Company	25,725-6	Apr. 9	127	2382
Tires. Pneumatic	Fisk Rubber Co	25,949	Apr. 9	127	2385
Tonics. Uterine	Rio Chemical Co	21,861	Apr. 9	127	2374
Type-writer ribbons	H. M. Storms Co	25,210	Apr. 9	127	2377
Veilings. Net	Benedictus, Weill & Company	22,333	Apr. 9	127	2371
Vending-machine. Coin-controlled	T. R. McQuillan	24,573	Apr. 9	127	2373
Washboards	American Washboard Company	21,463	Apr. 9	127	2370
Washboards	American Washboard Company	21,560	Apr. 9	127	2371
Waters and carbonated beverages. Mineral	P. Clark	25,240	Apr. 9	127	2378
Whisky	Freiberg & Workum	1,880	Apr. 9	127	2365
Whisky	White, Heintz & Co	6,070	Apr. 9	127	2366
Whisky	John Robertson & Son	8,064	Apr. 9	127	2366
Whisky	Jesse Moore Hunt Co	8,927	Apr. 9	127	2367
Whisky	Tanqueray Gordon & Co	14,530	Apr. 9	127	2368
Whisky	Schmidt & Ziegler	16,830	Apr. 9	127	2369
Whisky	H. C. Applegate	25,843	Apr. 9	127	2383
Window sashes, frames, &c. Metal	R. A. Morrison	25,377	Apr. 9	127	2376
Wood and furniture polish	S. B. Crall	23,960	Apr. 9	127	2374

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 16TH DAY OF APRIL, 1907.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Drawing.	Official Gazette. Volume.	Page.
A. W. Benson Manufacturing Co. (See Benson, Adolph W., assignor.)						
Abate, Walter L., Mount Vernon, assignor to Nathan Manufacturing Company, New York, N. Y. Sight for lubricators	850,711	Apr. 16	4042	845	127	2693
Abbott, James, Newport, England. Machine for cutting or shearing metal sheets or plates	850,611	Apr. 16	3830	800	127	2639
Abbott, John C., Pittsburg, Pa. Rail-joint	850,712	Apr. 16	4044	845	127	2693
Abbott, William T., trustee. (See Burdett, George A., assignor.)						
Abraham, Roy D., Dayton, Wash. Weeder	850,456	Apr. 16	3533	720	127	2564
Ackerman, Edwin D., New York, C. E. Clinton and R. N. Eltom, Corona, N. Y., assignors to Pianora Company. Self-playing musical instrument	850,330	Apr. 16	3286	684	127	2501
Adelsperger, Dow L., assignor to Foos Manufacturing Company, Springfield, Ohio. Apparatus for treating cotton-seed hulls	850,331	Apr. 16	3288	685	127	2502
Adkins, V. V. (See Burks, William E., assignor.)						
Aeolian Company. (See Flagel, August W., assignor.)	850,713	Apr. 16	4045	846	127	2693
Agnesseens, Marie, New York, N. Y. Iron-holder	850,200	Apr. 16	3055	639-40	127	2437
Ahlquist, Karl, Rugby, England, assignor to General Electric Company. Turbine bucket and nozzle						
Ajax Forge Company. (See Bradley, Frank B., assignor.)						
Aktiebolaget Separator. (See Forsberg, Erik A., assignor.)						
Aldred, Alfred E. (See Aldred, Robert J. F. and A. E.)	850,332	Apr. 16	3292	686	127	2503
Aldred, Robert J. F., and A. E., Glencoe, Ontario, Canada. Dough-dividing machine	850,123	Apr. 16	2913	608	127	2401
Algate, Arthur J., Toronto, Ontario, Canada. Minnow-trap	850,333	Apr. 16	3296	686	127	2504
Allano, Frank S., New York, N. Y. Lock	850,714	Apr. 16	4046	846	127	2694
Allen, Clarton E., and S. R. Bergman, Lynn, Mass., assignors to General Electric Company. Transformer						
Allis-Chalmers Company et al. (See Frankenfield, Budd, assignor.)						
Allis-Chalmers Company et al. (See Tatem, Clifford R., assignor.)						
Allis-Chalmers Company et al. (See Tatum, Lewis L., assignor.)						
Allis-Chalmers Company et al. (See Blum, Isaac, assignor.)						
Alma Manufacturing Company of Baltimore City. (See Blum, Isaac, assignor.)						
Alrich, Henry, El Paso, assignor of one-half to J. Stockmeyer, El Paso county, Tex. Window-light regulator	850,201	Apr. 16	3057	640	127	2437
Altro Park Company. (See Cole, John A., assignor.)						
American Agricultural Chemical Company. (See Derrig, Patrick J., assignor.)						
American Brake Shoe & Foundry Company. (See Dickinson, Frank T., assignor.)						
American Brake Shoe & Foundry Company. (See Jones, Harry, assignor.)						
American Locomotive Company. (See Cole, Francis J., assignor.)						
American Safety Razor Company. (See Reichard, Jeremiah, assignor.)						
American Sheet & Tin Plate Company. (See Steele, Lawrence C., assignor.)						
Amerman, Charles S., et al. (See Richter, Edward, assignor.)	850,715	Apr. 16	4047	846	127	2694
Anderi, Joseph L., Pittsbridge, Tex. Root and stalk pulling machine	850,202	Apr. 16	3059	641	127	2438
Anderson, Charles O., assignor of one-half to A. T. Austin, Omaha, Nebr. Slack-adjuster	850,457	Apr. 16	3534	739	127	2564
Anderson, James C., Highland Park, Ill. Proportional meter	850,511	Apr. 16	3647	762-3	127	2593
Anderson, James S., Ames, Nebr. Train-signaling system	850,334	Apr. 16	3301	687	127	2506
Anderson, Swan C., Oak Park, and C. H. Frenberg, Chicago, Ill. Automatic cut-out or fuse-box	850,716	Apr. 16	4049	847	127	2694
Andrews, Thomas A., Grantville, Ga. Means for controlling feed of cotton	850,283	Apr. 16	3199	667	127	2477
Angell, Joseph P., Pine Bluff, Ark. Railway-tie						
Anger, Edward W., Jr. (See Hornsby and Anger.)						
Armitage-Herschell Company. (See Armitage, James W., assignor.)						
Armitage, James W., assignor to Armitage-Herschell Company, North Tonawanda, N.Y. Brace for roundabouts	850,411	Apr. 16	3444	722	127	2542
Armstrong Cork Company. (See Busch, Herman F., assignor.)						
Armstrong, Robert F., Prospect, Ohio. Vehicle-brake	850,284	Apr. 16	3200	667	127	2477
Arter, Alpheus, Lisbon, Ohio. Plow attachment	850,717	Apr. 16	4051	847	127	2695
Ash, William H., Bay Shore, N. Y. Gas-engine	850,718	Apr. 16	4052	847	127	2695
Ashman, Hill M. (See Marvell and Ashman.)						
Atwood-Morrison Company. (See Bradley, Edward E., assignor.)						
Aug. Geerts & Co. (See Hagen, Bernd vom, assignor.)	850,719	Apr. 16	4054	847-8	127	2695
Aulls, Herbert L., Denver, Colo. Convertible dumping-car						
Austin, A. T. (See Anderson, Charles O., assignor.)						
Auto Piano Machine Company. (See Blume, Charles A. and I. D., assignors.)	850,124	Apr. 16	2914	608	127	2401
Badgley, Eugene F., deceased, San Francisco, Cal.; H. Henry, administratrix. Machine for manufacturing composition pipe	850,458	Apr. 16	3536	739	127	2564
Bagley, Walter D., Erick, Okla. Ter. Foot-rest	850,811	Apr. 16	4216	885	127	2735
Bailey, John J., Victor, Colo. Assayer's pouring-mold	850,285	Apr. 16	3201	667	127	2477
Baird, Charles W., Millersburg, Iowa. Hay-rack	850,335	Apr. 16	3304	687	127	2507
Baker, James H., Allegheny, Pa. Brake-beam	850,126	Apr. 16	2917	609	127	2402
Baldauf, Josef, Oberstaufen, Germany. Cycle-sled	850,720	Apr. 16	4057	848	127	2696
Baldwin, Daniel R., Ravenden Springs, Ark. Farrier's knife	850,556	Apr. 16	3728	779	127	2618
Barland, Joseph B., Encampment, Wyo. Protector for bucket-fasteners	850,208	Apr. 16	3061	642	127	2439
Barker, Ralph R., Lynn, Mass., assignor to General Electric Company. Electric motor	850,721	Apr. 16	4058	848	127	2697
Barnes, Hezekiah M. M., Ludlow, England. Sleeve-holder	850,557	Apr. 16	3729	.....	127	2618
Barrieleman, C. P. (See Lindsey, Leroy J., assignor.)						
Barrieleman, William J., and J. C. Byers, Butler, Pa. Cleaning compound	850,459	Apr. 16	3537	740	127	2565
Bartenbach, C. E., et al. (See Hill, John W., assignor.)	850,512	Apr. 16	3652	763	127	2594
Bartley, Wiley, Oceana, Ind. Ter. Nut-lock	850,722	Apr. 16	4059	848	127	2697
Barton, Durbin E., Reedsburg, Wis. Snap-hook						
Barton, Harry, Homer, Pa. Bottle-stopper attachment	850,460	Apr. 16	3538	740	127	2565
Batcheller, Benjamin. (See Watson, William M., assignor.)						
Battenhall, Fletcher W., Albany, N. Y. Shock-absorber						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Baumeister, Albert G., Sandusky, Ohio. Attachment for drilling-machines	850,394	Apr. 16	3063	642	127	2439
Baumgartl, Carl. (See Heller and Baumgartl.)						
Bayles, Lewis C. (See Hellman and Bayles.)						
Bayley, Perry H., Sidney, Ohio. Chimney-top	850,126	Apr. 16	2918	609	127	2402
Beale, Addison H., and E. F. McDowell, Pottsville, Pa. Compound for lining the ports of open-hearth steel-furnaces	850,723	Apr. 16	4060		127	2807
Beasley, Frank, Lyons, N. C. Means for removably attaching buggy-tops	850,461	Apr. 16	3540	740	127	2565
Beckwith, Charles E., Peoria, Ill. Railway signal-torpedo	850,734	Apr. 16	4061	840	127	2807
Beery, William H., Celina, Ohio. Tile-machine	850,513	Apr. 16	3654	763-4	127	2595
Belding, George L. (See Franklin and Belding.)						
Bell, Jesse T., Washington, N. J. Horseshoe-calk	850,266	Apr. 16	3203	667	127	2471
Bell, Walter J., assignor of one-half to L. F. Moss, Los Angeles, Cal. Automatic fluid-pressure and motor controller	850,612	Apr. 16	3446	722	127	2553
Beltzer, Lewis H., Dewey, Ind. Ter. Wire-fence tightener	850,612	Apr. 16	3533	801	127	2640
Benn, Hans H., Preran, Austria-Hungary. Friction-coupling	850,482	Apr. 16	3541	740-1	127	2566
Bennett, Alexander M., assignor of one-half to C. Bennett, Ellsworth, Mich. Combined fire and burglar alarm	850,207	Apr. 16	3204	668	127	2471
Bennett, Charles. (See Bennett, Alexander M., assignor.)						
Bennett-Marvell Manufacturing Company. (See Marvell, Roy W., assignor.)						
Benson, Adolph W., assignor, by mesne assignments, to A. W. Benson Manufacturing Co., Minneapolis, Minn. Toy train	850,514	Apr. 16	3657	764	127	2596
Berg, Henry. (See Hitt, Adrian, assignor.)						
Bergman, Sven R. (See Allen and Bergman.)						
Bergman, Sven R., Lynn, Mass., assignor to General Electric Company. Automatic device for induction-motors	850,205	Apr. 16	3064	642	127	2439
Berry, John J. (See Summers and Berry.)						
Bette, Anson G., Troy, N. Y. Electrolytic apparatus	850,127	Apr. 16	2920	609-10	127	2402
Bevan, Samuel L. (See Bowne, John D., assignor.)						
Bever, Robert C., Worcester, Mass. Pneumatic knee-boot for horses	850,128	Apr. 16	2923	610	127	2403
Beyer, Otto S., East Rutherford, assignor to T. H. Pemberton, Orange, N. J. Bottle-capping machine	850,288	Apr. 16	3206	668-9	127	2471
Biggs, George T. (See Smith, Joseph, assignor.)						
Billings, Edward E., assignor of one-eighth to J. Parker, Bay City, Mich. Poultry-brooder	850,725	Apr. 16	4062	840	127	2807
Bills, Frank H., Springfield, Mass. Closure for bottles	850,613	Apr. 16	3535	801	127	2640
Bills, John H., Laramie, Wyo., assignor to United States Tin, Solder & Iron Company, Denver, Colo. Apparatus for recovering tin and solder	850,726	Apr. 16	4063	840	127	2808
Bim, Josef, assignor to Union Bank, Vienna, Austria-Hungary. Weft-replenishing mechanism for looms	850,289	Apr. 16	3205	667-9	127	2807
Bingham, Jeremiah, assignor to Toledo Machine and Tool Company, Toledo, Ohio. Duplex edge-folding and seam-closing machine	850,514	Apr. 16	3536	801-2	127	2640
Bingham, Jeremiah, assignor to Toledo Machine and Tool Company, Toledo, Ohio. Riveting-machine	850,515	Apr. 16	3539	802	127	2641
Binnig, Jacob, Boston, assignor of one-half to Mason & Hamlin Company, Cambridge, Mass. Organ key-action	850,413	Apr. 16	3447	723	127	2563
Binnig, Jacob, Boston, assignor of one-half to Mason & Hamlin Company, Cambridge, Mass. Valve device	850,512	Apr. 16	4217	886	127	2726
Birdsall, John A., Bethel, Conn. Emergency-brake	850,414	Apr. 16	3440	723	127	2563
Black, Mortimer H., Pittsburg, Pa. Attachment for telephones	850,588	Apr. 16	3720	779	127	2615
Blakesley, Gilbert H., assignor to Blakesley Novelty Company, Bristol, Conn. Tool for dressing, shaping, and cleaning rubber erasers	850,237	Apr. 16	3209	669	127	2808
Blakesley Novelty Company. (See Blakesley, Gilbert H., assignor.)						
Bliven, Alonzo P., Brooklyn, N. Y. Flying-machine	850,616	Apr. 16	3541	802-3	127	2642
Blum, Isaac, assignor to Alma Manufacturing Company of Baltimore City, Baltimore, Md. Buckle	850,276	Apr. 16	4254	912	127	2773
Blume, Charles A. and I. D., assignors to Auto Fence Machine Company, Farmland, Ind. Wire-fence machine	850,617	Apr. 16	3545	803-5	127	2643
Blume, Ira D. (See Blume, Charles A. and I. D.)						
Bolton, Paul F., Toronto, Ontario, Canada. Apparatus for securing the component parts of compound lumber together	850,285	Apr. 16	3210	669	127	2808
Boone, George A., Straight Creek, Ky. Fodder-cutter	850,727	Apr. 16	4065	850	127	2808
Borst, Frank A., assignor to Ideal Concrete Machinery Company, South Bend, Ind. Dividing-plate for block-molds	850,290	Apr. 16	3066	643	127	2440
Boston Wire Stitcher Company. (See Briggs, Thomas A., assignor.)						
Bourgeois, Henri, Damprichard, France. Portable electric measuring instrument	850,129	Apr. 16	2924	610	127	2403
Bowen, Nelson A., Erie, Pa. Detachable temple for spectacles	850,130	Apr. 16	2925	611	127	2404
Bowers, Fredson E., assignor to F. E. Bowers Co., New Haven, Conn. Carburetor for gasolene-engines	850,230	Apr. 16	3314	690	127	2509
Bowman, G. C., *et al.* (See Kolls, John P., assignor.)						
Bowne, John D., assignor to Slawson-Graham Company, New York, N. Y. Elevator signaling apparatus	850,515	Apr. 16	3652	803-6	127	2644
Bowne, John D., assignor of one-half to S. L. Bevan, New York, N. Y. Metallic tie	850,570	Apr. 16	4255	912	127	2774
Boye, James H., Chicago, Ill. Commodity cabinet and receptacle	850,515	Apr. 16	3652	764	127	2595
Brabant, Charles C., Alpena, Mich. Wheel	850,589	Apr. 16	3722	779	127	2615
Bradley, Edward E., assignor to Atwood-Morrison Company, Stonington, Conn. Quill-winding machine	850,482	Apr. 16	3545	741-2	127	2567
Bradley, Frank B., assignor to Ajax Forge Company, Chicago, Ill. Switch-lock	850,597	Apr. 16	3657	643	127	2440
Bradley, George O., Salt Lake City, Utah. Vanner	850,418	Apr. 16	3450	723	127	2564
Bradstreet, Cecil D., San Francisco, Cal. Wrench	850,510	Apr. 16	3650	764	127	2595
Brahm, Peter, Milwaukee, Wis. Butter-cutting machine	850,484	Apr. 16	3538	743	127	2567
Branch, Eliza D., Chardon, Ohio. Vehicle-axle	850,726	Apr. 16	4064	850	127	2808
Brantly, John R., Athens, Ga. Dress-waist protector	850,589	Apr. 16	3723	780	127	2616
Breakenridge, Nelson, Redlands, Cal. Delivery-case for bottled goods	850,581	Apr. 16	3704	780	127	2616
Bridge, James H., Philadelphia, Pa. Means for purifying and sterilizing water by ozonized air	850,416	Apr. 16	3453	726	127	2544
Briggs, Thomas A., assignor to Boston Wire Stitcher Company, East Greenwich, R. I. Stapling-machine	850,290	Apr. 16	3208	669-70	127	2480
Bright, George R., Sutton, W. Va. Office folding type-writer cover	850,289	Apr. 16	3208	669	127	2479
Bright, Holstein D., Philadelphia, Pa. Hydraulic vise	850,288	Apr. 16	4254	909-9	127	2767
Brill, John A. (See Heulings, William H., Jr., assignor.)						
Bring, Einar J., Schenectady, N. Y., assignor to General Electric Company. Air-compressor	850,593	Apr. 16	3670	643-4	127	2441
Brock, Walter L., Erie, Pa. Separator	850,417	Apr. 16	3457	724	127	2565
Bromley, Robert C., Bea Avon, Pa. Elevator valve mechanism	850,620	Apr. 16	3652	807	127	2647
Broome, Joseph, Bayonne, N. J. Acid-condenser	850,589	Apr. 16	3650	765	127	2598
Brosnahan, Michael J., St. Louis, Mo. Tailor's appliance	850,597	Apr. 16	3650	765	127	2598
Brown, Gouverneur G. (See Schenchart and Brown.)						
Brown, Levi, assignor to F. & N. Lawn Mower Company, Richmond, Ind. Grass-catching receptacle	850,515	Apr. 16	3515	650	127	2509
Brown, Thomas W., St. Louis, Mo. Window-shade and curtain-pole supporter	850,592	Apr. 16	3482	725	127	2546
	850,515	Apr. 16	3650	765	127	2597

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Browne, George A., Tacoma, Wash. Truck	850,562	Apr. 16	3736	780	127	2616
Browne, George A., Tacoma, Wash. Lumber-truck	850,563	Apr. 16	3737	780-1	127	2617
Brucker, Francis, and A. L. Stump, Shelby, Ohio. Washing-machine	850,291	Apr. 16	3214	670	127	2481
Brücker, Wilhelm, Duisburg-Meiderich, Germany. Carpenter's bench	850,813	Apr. 16	4219	887	127	2736
Buchhold, Rudolph, Louisville, Ky. Rack for drying leather	850,131	Apr. 16	2926	611	127	2404
Buckeye Wheel Company. (See Unekrich, Ferdinand F., assignor.)						
Bull, Mattie E., *et al.* (See Rinster, Edward, assignor.)						
Bullock Electric Manufacturing Company *et al.* (See Frankenfield, Budd, assignor.)						
Bullock Electric Manufacturing Company *et al.* (See Tatem, Clifford R., assignor.)						
Bullock Electric Manufacturing Company *et al.* (See Tatum, Lewis L., assignor.)						
Burdett, George A., assignor to W. T. Abbott, trustee, Boston, Mass. Liquid-applying device	850,814	Apr. 16	4220	887	127	2736
	850,815	Apr. 16	4222	887	127	2737
Burgess, May, Green Bay, Wis. Dough-raiser	850,209	Apr. 16	3072	644	127	2441
Burtholder, John H., Ashland, Ohio. Lifting-jack	850,729	Apr. 16	4066	850	127	2808
Burks, William E., assignor of one-half to V. V. Adkins, Ashland, Ky. Automatic scale	850,519	Apr. 16	3663	765-6	127	2597
Busch, Herman F., Milvale, assignor to Armstrong Cork Company, Pittsburg, Pa. Apparatus for cutting cork wafers	850,816	Apr. 16	4222	887-8	127	2737
Buser, William E., Chillicothe, Ohio. Button-protector for tufting-machines	850,292	Apr. 16	3216	671	127	2481
Butler, Thomas M., Dallas, Tex. Ice-saw	850,520	Apr. 16	3665	767	127	2598
Butterfield, William E., Ventura, Cal. Cultivator	850,122	Apr. 16	2928	611	127	2404
Butts, Daniel G. (See Boyl and Butts.)						
Buxton, Benjamin C., Buxton, Iowa. Box-car loader	850,210	Apr. 16	3073	644	127	2442
Byers, Joseph C. (See Barnickman and Byers.)						
Cade, Howard E. (See Knapp and Cade.)						
Cady, Robert J., Detroit, Mich. Cabinet for music-spools	850,817	Apr. 16	4224	888	127	2737
Cailie, Augusta A., G. Hamilton, and O. C. Currie, assignors to Cailie Company, Detroit, Mich. Coin-controlled machine	850,293	Apr. 16	3218	671	127	2482
Cailie Company. (See Cailie, Hamilton, and Currie, assignors.)	850,341	Apr. 16	3316	690	127	2509
Calkins, Albert C., Los Angeles, Cal. Apparatus for separating material	850,123	Apr. 16	2929	612	127	2405
Callahan, Patrick J., Central City, S. D. Umbrella	850,620	Apr. 16	3864	807	127	2648
Campbell, Malcolm J., Sumrall, Miss. Closure for retorts	850,818	Apr. 16	4225	888	127	2738
Campbell, Thomas H., Pittsburg, Pa. Hot-water heater	850,294	Apr. 16	3220	671	127	2482
Cape, Edmund G. M., and R. J. Durley, Montreal, Quebec, Canada. Heater	850,730	Apr. 16	4070	851	127	2809
Carlisle, Robert H., Covington, Ky. Tramway-switch	850,521	Apr. 16	3666	767	127	2598
Carr, Joseph, Lexington, Mo. Section-brake	850,211	Apr. 16	3075	645	127	2442
Carrpm-Archarena Company. (See Haskell, Henry L., assignor.)	850,465	Apr. 16	3550	743	127	2568
Carson, Thomas R., *et al.* (See Ledford, John F., assignor.)	850,419	Apr. 16	3460	725	127	2546
Carter, Charles L., Marion, Ind. Illuminated sign	850,342	Apr. 16	3317	690	127	2510
Case, Frank E., Schenectady, N. Y., assignor to General Electric Company. Automatic motor cut-out	850,343	Apr. 16	3319	691-2	127	2510
Casey, Patrick W. (See Wright and Casey.)						
Caspar, Charles H., *et al.* (See Lynch, Daniel O., assignor.)						
Cavelier, Earnest F., Jacksonville, Fla. Can cutter and spout	850,295	Apr. 16	3222	671-2	127	2483
Cayford, James H., Buenos Ayres, Argentina. Apparatus for separating liquids of different specific gravities	850,621	Apr. 16	3866	808	127	2648
Chamberlin, Carl S., and D. Harrington, Colorado Springs, Colo. Railway-switch	850,134	Apr. 16	2930	612	127	2405
Channell, Emmett W., Lake Charles, La. Fence-machine	850,731	Apr. 16	4070	851	127	2809
Chapman, James W. (See Savage and Chapman.)	850,135	Apr. 16	2931	612	127	2405
Chappell, George H., Westwood, N. J., assignor to Progressive CO_2 Power Company, New York, N. Y. Motor	850,622	Apr. 16	3868	808	127	2649
Chester, Arthur T., Pelham, N. Y. Mechanical musical instrument	850,623	Apr. 16	3870	808	127	2649
Childs, Samuel S., Bernardsville, N. J. Spring-wheel	850,732	Apr. 16	4072	851	127	2809
Christensen, Erick T., and D. M. Tulloch, New York, N. Y. Pipe-coupling	850,344	Apr. 16	3325	693	127	2511
Christensen, William A., Barron, Wis. Belt-tightener	850,624	Apr. 16	3871	809	127	2649
Clark, George W., New York, N. Y. Equalizing and distributing fitting	850,522	Apr. 16	3667	767	127	2598
Clark, Robert W., Buffalo, N. Y. Pipe-hanger	850,564	Apr. 16	3739	781	127	2617
Clarke, William A., London, England. Bow-necktie	850,565	Apr. 16	3741	781-2	127	2618
Clement, Edward E., Washington, D. C. Telephone-exchange system	850,136	Apr. 16	2933	612-13	127	2406
Clinton, Charles E. (See Ackerman, Clinton, and Eltom.)	850,137	Apr. 16	2934	613	127	2406
Closson, William B., Magnolia, Mass. Apparatus for lifting invalids						
Cohren, John M., Fort Worth, Tex. Spring-bed						
Colt, John J., Venice, Cal. Air-brake mechanism						
Cole, Francis J., assignor to American Locomotive Company, New York, N. Y. Superheater						
Cole, John A., Hackensack, N. J., assignor to Altro Park Company, New York, N. Y. Amusement riding device						
Collier, Alfred, London, England. Game-board						
Columbian Clay Products Company. (See Grant, Alex H. and M. N., assignors.)						
Composite Pile Construction Company. (See Schuchart, Paul A., assignor.)						
Composite Pile Construction Company. (See Schuchart and Brown, assignors.)	850,138	Apr. 16	2935	613-14	127	2406
Congreve, Hiles V., assignor of one-half to H. Schwab, Bendena, Kans. Hay-loader	850,212	Apr. 16	3076	645	127	2443
Conlon, John H., Philadelphia, Pa. Power-hammer	850,345	Apr. 16	3330	694	127	2512
Conover, Harvey, Dayton, Ohio. Carton	850,346	Apr. 16	3331	694	127	2512
Conover, Jacob D., Middletown, N. J. Button and loop clasp	850,466	Apr. 16	3551	743	127	2568
Conrad, Peter I., Sunbury, Pa. Whip-socket						
Consolidated Gas Company. (See De Freitas, William, assignor.)						
Cook, Harris J., assignor to Stanley Rule & Level Company, New Britain, Conn. Ratchet mechanism	850,347	Apr. 16	3333	694-5	127	2513
Cook, Harris J., assignor to Stanley Rule & Level Company, New Britain, Conn. Ratchet mechanism	850,566	Apr. 16	3743	782	127	2619
	850,296	Apr. 16	3224	672	127	2483
Cook, William C., Schuyler, Iowa. Harrow						
Cookingham, De Witt. (See Hertner, John H., assignor.)						
Cooper, James E., and P. A. Oliver, Perry, assignors to Robeson Cutlery Company, Rochester, N. Y. Knife-handle	850,420	Apr. 16	3462	725	127	2547
Cope, Thomas J., Philadelphia, Pa. Apparatus for threading or laying electric conductors in conduits or pipes	850,625	Apr. 16	3872	809	127	2650
Corey, Fred B., Schenectady, N. Y., assignor to General Electric Company. Block system	850,723	Apr. 16	4073	851-2	127	2700
Cory, Harvey. (See Martin and Cory.)	850,467	Apr. 16	3552	744	127	2569
Costello, Maurice, Dayton, Ohio. Bottle-wrapper machine						
Couplers Accommodator Co. (See Piper, Edward D., assignor.)						
Cousins Incubator Company. (See Cousins, Jason L., assignor.)	850,523	Apr. 16	3668	768	127	2598
Cousins, Jason L., assignor to Cousins Incubator Company, Warren, Pa. Incubator	850,348	Apr. 16	3334	695	127	2513
Cowan, Duncan A., Toledo, Ohio. Corner-clamp for plate-glass structures	850,734	Apr. 16	4077	852-3	127	2701
Cox, Troy, *et al.* (See Phippe, Moses L., assignor.)						
Crandall, Alston J., Ashaway, R. I. Machine for reeling twine	850,349	Apr. 16	3336	695	127	2513
Crane, Henry M., New York, N. Y., assignor to Western Electric Company, Chicago, Ill. Circuit for coin-collectors	850,350	Apr. 16	3338	695	127	2514
Crecelius, Emil E., assignor to Parks Brothers and Rogers, Providence, R. I. Cuff-button						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Creighton, William H., New Eagle, Pa. Safety-valve	850,426	Apr. 16	3575	800	127	2580
Cronsioe, Daniel, Malmo, Sweden. Handle-bar for bicycles and the like	850,120	Apr. 16	2987	614	127	2407
Crosby, James A., and J. A. Pink, assignors to S. H. Selig, trustee, Chicago, Ill. Machine for taking and exhibiting pictures	850,357	Apr. 16	3745	782-4	127	2519
Crum, Frank A., Newark, N. J. Saw-bench	850,351	Apr. 16	3338	606	127	2514
Culbertson, Frank R., *et al.* (See Winans, Wesley G., assignor.)						
Cummings, Michael W., and T. F. Jordan, Olyphant, Pa. Book-cover protector	850,705	Apr. 16	4081	853	127	2701
Currie, Otis C. (See Caille, Hamilton, and Currie.)						
Currier, Hiram D., assignor to Western Electric Company, Chicago, Ill. Chuck for coin-collectors	850,502	Apr. 16	3340	606	127	2515
Curry, Duncan B., Jr., Agricultural College, Miss. Hoe	850,703	Apr. 16	4083	853	127	2702
D. H. Burrell & Company. (See Hoyt, Matthew L., assignor.)						
Daniels, Dan, Dover, N. H. Leather-skiving machine	850,627	Apr. 16	3676	809-10	127	2651
Davis, Charles C., Gaffney, S. C. Washing-machine	850,704	Apr. 16	3671	768	127	2650
Davis, Emry, New York, N. Y. Inkstand construction	850,402	Apr. 16	3566	745	127	2570
Davis, Eugene, Chicago, Ill. Tab for sheets of ledgers, &c.	850,149	Apr. 16	2993	614	127	2407
Davis, Fred H. M., Los Angeles, Cal. Ratchet monkey-wrench	850,220	Apr. 16	4220	890	127	2760
Davis, George H., Portland, Me. Curtain-holding device	850,207	Apr. 16	3226	672	127	2464
Dawson, James C., St. Louis, Mo., assignor to Sieber & Trussell Manufacturing Company. Lock	850,677	Apr. 16	4057	912	127	2774
Day, Alfred A., Brockton, Mass. Eyeglasses	850,212	Apr. 16	3078	645	127	2442
Dayhoff, William C., Bradley, Ill. Concrete-mixer	850,400	Apr. 16	3557	745	127	2570
Dazey, Nathan P., Dallas, Tex. Churn	850,282	Apr. 16	3573	769	127	2650
De Clements, Clinton E., Detroit, Mich. Curbing	850,695	Apr. 16	4236	909	127	2703
De Freitas, William, assignor to Consolidated Gas Company, New York, N. Y. Inverted-burner gas-lamp	850,698	Apr. 16	3730	784	127	2689
De La Vergne Machine Company. (See Scudder, Henry, assignor.)						
De Mars, Frank E., New York, N. Y. Suspensory	850,350	Apr. 16	3226	673	127	2464
De Witt, Omar M., Hood River, Oreg. Spike	850,421	Apr. 16	3484	726	127	2547
Dean Electric Company. (See Manson, Ray H., assignor.)						
Dean, William W., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Telephone trunking system	850,470	Apr. 16	3660	745	127	2570
Del Grande, Nicholas. (See Delgrande and Del Grande.)						
Delgrande, Antonio, and N. Del Grande, Berea, Ohio. Repeating detonating-cane	850,393	Apr. 16	3241	697	127	2515
Delgrande, Antonio, and N. Del Grande, Berea, Ohio. Repeating detonating-cane	850,394	Apr. 16	3242	697	127	2516
Dellinger, David P., Cleveland, N. C. Plate-lifter	850,707	Apr. 16	4084	864	127	2702
Demelius, Eduard, Hamburg, Germany. Holder or receptacle for matches, boxes, &c.	850,141	Apr. 16	2990	614	127	2407
Dempster, Charles B., and H. S. Molony, assignors to Dempster Mill Manufacturing Company, Beatrice, Nebr. Windmill	850,699	Apr. 16	3679	810	127	2652
Dempster, John T. H., Schenectady, N. Y., assignor to General Electric Company. Electrically-operated valve	850,703	Apr. 16	4083	854	127	2702
Dempster Mill Manufacturing Company. (See Dempster and Molony, assignors.)						
Dennis, Carey, assignor of one-fourth to A. Hurst, Carthage, Mo. Boiler-trap	850,578	Apr. 16	4088	913	127	2774
Densmore Typewriter Company. (See Smith, George H., assignor.)						
Denton, Erastus H., Atlanta, Ga. Fruit-gatherer	850,395	Apr. 16	3244	697	127	2516
Derby, Alden W., Leominster, Mass. Step-ladder	850,142	Apr. 16	2989	615	127	2407
Derrig, Patrick J., North Weymouth, Mass., assignor to American Agricultural Chemical Company, New York, N. Y. Apparatus for nitrating sulfur dioxid	850,580	Apr. 16	4223	889	127	2741
Déry, Louis A., assignor to J. W. Harris, Montreal, Quebec, Canada. Excavator-beam	850,343	Apr. 16	3246	697-8	127	2517
Dexter, Talbot C., Pearl River, N. Y. Paper-feeding machine	850,221	Apr. 16	4236	889-91	127	2742
Dey, Alexander. (See Dey, John and A.)						
Dey, John and A., assignors to Dey Time Register Company, Syracuse, N. Y. Automatic card-stop for time-recorders	850,696	Apr. 16	3674	709	127	2660
Dey Time Register Company. (See Dey, John and A., assignors.)						
Dibsdale, Samuel F., Philadelphia, Pa., assignor to Lagonda Manufacturing Company, Springfield, Ohio. Boiler-tube cleaner	850,720	Apr. 16	4087	854	127	2703
Dickerson, William M., Indianapolis, Ind. Setting boiler-tubes	850,200	Apr. 16	3227	673	127	2464
Dickinson, Frank T., Chicago, Ill., assignor to American Brake Shoe & Foundry Company, Jersey City, N. J. Mold	850,680	Apr. 16	3680	811	127	2652
Dickinson, William N., Jr., Brooklyn, N. Y., assignor to Otis Elevator Company, Jersey City, N. J. Alternating-current-motor-controlling apparatus	850,690	Apr. 16	3683	811-12	127	2653
Dieckmann & Wille vorm. Ferd. Wester. (See Halbekann, Franz J., assignor.)						
Dieren, Della. (See Fessler and Michaels, assignors.)						
Dimmon, M. Hale. (See Hysan, Joseph M., assignor.)						
Donnelly, John R., Fairfield, Me. Cooking utensil	850,143	Apr. 16	2990	615	127	2408
Dornfeld, John F., Chicago, Ill. Dumping-floor	850,214	Apr. 16	3080	646	127	2444
Dornfeld, John F., Chicago, Ill. Valve for steep-tanks	850,215	Apr. 16	3081	646	127	2444
Dornfeld, John F., Chicago, Ill. Spraying-nozzle	850,216	Apr. 16	3082	646	127	2445
Douglas, Peyton. (See Hodge and Douglas.)						
Dow, Abraham L., Lyons, Colo. Valve	850,749	Apr. 16	4089	854	127	2703
Doyle, William, New York, N. Y. Massage instrument for applying ointments, lotions, &c.	850,357	Apr. 16	3240	698	127	2517
Drohan, Thomas E. (See Mallett and Drohan.)						
Duffy, Andrew, Jr. (See McCarron and Duffy.)						
Dulin, Charles E., Sandy Hill, N. Y., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Envelop-machine	850,570	Apr. 16	4080	913-14	127	2775
Dulin, Charles E., North Tonawanda, N. Y., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Envelop-machine	850,690	Apr. 16	4090	914-15	127	2776
Dunbar, Alexander, Liverpool, England. Stave-jointing machine	850,144	Apr. 16	2991	615-16	127	2408
Dunn, James. (See Hess and Dunn.)						
Dunstan, James H., Susanville, Oreg. Bottle	850,702	Apr. 16	4080	856	127	2703
Durley, Richard J. (See Cape and Durley.)						
Dyer, Leonard H., East Orange, N. J. Steering-gear	850,145	Apr. 16	2985	617	127	2408
E. I. du Pont de Nemours Powder Company. (See La Motte, Arthur, assignor.)						
E. I. du Pont de Nemours Powder Company. (See Sparre, Fin, assignor.)						
E. W. Bliss Company. (See Klecko, William H., assignor.)						
Eberhard Manufacturing Company. (See Schleicher, William A., assignor.)						
Eckenrode, S. J., *et al.* (See Hill, John W., assignor.)						
Eden, Harold W., assignor to Parke, Davis & Company, Detroit, Mich. Receptacle for liquids	850,693	Apr. 16	4240	891	127	2743
Eder, Frank, Thayer, Mo. Vehicle	850,200	Apr. 16	3229	673	127	2465
Edison Storage Battery Company. (See Ott, John F., assignor.)						
Edison, Thomas A., Llewellyn Park, Orange, N. J. Composite metal	850,691	Apr. 16	4083		127	2775
Edwards, Oliver M., Syracuse, N. Y. Hinge for doors and like movable objects	850,339	Apr. 16	3485	726	127	2548
Egge, Frederick, Bridgeport, Conn. Regulating-valve for gas-burners	850,339	Apr. 16	3703	784	127	2651
Eigan, Benno vom, Newark, N. J., assignor to Kay, Goertz & Co. Bag-frame fastener	850,681	Apr. 16	4085	812-13	127	2653
Eisenberg, Lee, *et al.* (See Winans, Wesley G., assignor.)						
Eklund, Albert T., Jamestown, N. Y. Solenoid	850,659	Apr. 16	3681	813	127	2653
Elliott, George M., Belvidere, Ill., assignor to Benker & Levett & Loeb Company, New York, N. Y. Anode for electroplating-cells	850,693	Apr. 16	4240	891	127	2744

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Elliott, William S., Pittsburg, Pa. Water-tube boiler	850,358	Apr. 16	3349	699	127	2518
Elliott, William S., Pittsburg, Pa. Water-tube boiler	850,423	Apr. 16	3469	726-7	127	2548
Ellis, Charles P., New York, N. Y. Bicycle-support	850,527	Apr. 16	3682	770	127	2603
Eltom, Robert M. (See Ackerman, Clinton, and Eltom.)						
Emerson Manufacturing Company. (See Waterman, Lewis E., assignor.)						
Emrich, August. (See Smith, George W., assignor.)						
Ensign, Ely, Dallas, assignor to W. Nolte, Seguin, Tex. Cushioned holder for dating-stamps	850,471	Apr. 16	3508	746	127	2573
Eppley, Charles S., and M. R. Stonesifer, York, Pa.; said Stonesifer assignor to said Eppley. Steam-cooker	850,824	Apr. 16	4244	892	127	2744
Equitable Asphalt Maintenance Company. (See Luts, George H., assignor.)						
Ermeier, Richard, Berlin, Germany. Machine for making conical cigarettes	850,742	Apr. 16	4091	855	127	2704
Ernst, Friedrich. (See Ernst, Karl A., assignor.)						
Ernst, Karl A., assignor of one-half to F. Ernst, Jersey City Heights, N. J. Sculding skins and hides	850,146	Apr. 16	2946	617	127	2409
Estep, Arthur B. (See Richardson, Robert, assignor.)						
F. E. Bowers Co. (See Bowers, Fredson E., assignor.)						
F. & N. Lawn Mower Company. (See Brown, Levi, assignor.)						
F. & N. Lawn Mower Company. (See King, Charles, assignor.)						
F. & N. Lawn Mower Company. (See Malmstrom, Knut, assignor.)	850,359	Apr. 16	3352	699	127	2519
F. S. M. Syndicate. (See Reinert, Karl A., assignor.)	850,825	Apr. 16	4246	892	127	2744
Fanton, Chester W., Walterville, N. Y. Safety draft-hook						
Fay, John L., St. Louis, Mo. Adjusting means for interlocking conduits						
Felten & Guilleaume Lahmeyerwerke, A. G. (See Roeder, Franz, assignor.)						
Ferguson, Samuel, Schenectady, N. Y., assignor to General Electric Company. Protective device for fusible vessels	850,633	Apr. 16	3902	813	127	2658
Ferris, Fred L. (See Ribby, Delson G., assignor.)						
Fessler, Harvey L., Kansas City, Kans., and R. Michaels, assignors of one-third to D. Dieren, Kansas City, Mo. Water-heater	850,634	Apr. 16	3903	814	127	2659
Finlay, Robert H. F., Belfast, Ireland. Battery of electrolytic cells	850,867	Apr. 16	4337	909-10	127	2766
Fisher, Charles, Oak Park, Ill., assignor of one-half to H. Segnitz, Milwaukee, Wis. Pocket-safe	850,868	Apr. 16	4340	910	127	2769
Fisher, Oliver, Sioux, Iowa. Clasp	850,743	Apr. 16	4092	855	127	2704
Flanders, Lorin H., Memphis, Tenn. Bed	850,744	Apr. 16	4094	856-7	127	2704
Flegel, August W., Cranford, N. J., assignor to Aeolian Company, New York, N. Y. Pneumatic valve for musical instruments	850,635	Apr. 16	3905	814	127	2659
Flint, Frederick W., Chicago, Ill. Attachment for pool-tables	850,360	Apr. 16	3353	699	127	2519
Flory, Thomas W., London, England. Speed-indicator	850,745	Apr. 16	4096	700	127	2705
Flynn, John, Nantucket, Pa. Skylight	850,361	Apr. 16	3354	700	127	2519
Fobes, Dwight H. (See Howard, Jesse C., assignor.)	850,636	Apr. 16	3907	814	127	2660
Foley, John E., Fenton, Mich. Vehicle-wheel	850,362	Apr. 16	3356	701	127	2519
Folgert, Jesse W., Phillips, Wis. Stump-puller						
Foos Manufacturing Company. (See Adelsperger, Dow L., assignor.)						
Forsberg, Erik A., assignor to Aktiebolaget Separator, Stockholm, Sweden. Centrifugal machine	850,472	Apr. 16	3566	746	127	2573
Foster, John C., assignor of one-third to S. S. Piper, Cleveland, Ohio. Automatic ventilating-lock	850,147	Apr. 16	2947	617	127	2409
Foster, Ralph L. (See Hott and Foster.)						
Fountain, Everiya A., San Diego, Cal. Vehicle-wheel	850,637	Apr. 16	3908	815	127	2660
Frankel, Harry, New York, N. Y. Bracket for clothing-cabinets	850,363	Apr. 16	3357	701	127	2519
Frankel, Harry, New York, N. Y. Base for display-fixtures	850,882	Apr. 16	4366	915	127	2776
Frankenberg, Frederick G., Chicago, Ill. Headlight for vehicles	850,570	Apr. 16	3755	785	127	2632
Frankenhoff, Budd, Norwood, Ohio, assignor to Allis-Chalmers Company and Bullock Electric Manufacturing Company. System of distribution	850,217	Apr. 16	3085	646-7	127	2445
Frankenhoff, Budd, Norwood, Ohio, assignor to Allis-Chalmers Company and Bullock Electric Manufacturing Company. System of distribution	850,218	Apr. 16	3088	647	127	2446
Franklin, Thomas, and G. L. Belding, West Point, N. Y. Peeling-machine for vegetables	850,424	Apr. 16	3471	727	127	2549
Fraser, Robert G., Philadelphia, Pa. Circular-distributer	850,826	Apr. 16	4247	892	127	2744
Fraser, James L., Peoria, Ill., assignor, by mesne assignments, to Gravity Coupler Company. Car-coupling	850,219	Apr. 16	3092	647	127	2446
Fraser, James L., Peoria, Ill., assignor to Gravity Coupler Company. Car-coupling	850,301	Apr. 16	3230	674	127	2485
Fromberg, Charles H. (See Anderson and Fromberg.)						
French, Joseph, Woonsocket, R. I. Stamping and numbering machine	850,425	Apr. 16	3475	728	127	2550
Frerichs, Maude, Mount Pleasant, Iowa. Garment-supporter	850,638	Apr. 16	3909	815	127	2660
Fresen, Wilhelmus J. H., Brussels, Belgium. Governing device for marine engines	850,473	Apr. 16	3570	746	127	2574
Friedlaender, Paul, Vienna, Austria-Hungary, assignor to Kalle and Company Aktiengesellschaft, Biebrich, Germany. Thio-indoxyl derivative and making same	850,827	Apr. 16	4240		127	2745
Friedrich, Ernst W., Ghent, Belgium. Manufacturing artificial threads, films, and the like	850,571	Apr. 16	3757		127	2632
Funkhouser, Joseph O., Hagerstown, Md. Adjustable combination-action for organs	850,828	Apr. 16	4250	893	127	2745
Gallup, Herbert E., Weurka, Okla. Ter. Acetylene-gas generator	850,146	Apr. 16	2948	617-18	127	2409
Garantie-Gesellschaft M. B. H. (See Utescher, Ernst, assignor.)	850,149	Apr. 16	2950	618	127	2409
Garland, Michael, Bay City, Mich. Conveyer-chain						
Garman, Adrian B. (See Werner, Emil, assignor.)						
Garrett, Myers A. (See Van Dyke, John, assignor.)	850,746	Apr. 16	4100	858	127	2706
Garza, Emilio Grande, Monterey, Mexico. Bicycle						
Gebhardt, Carl. (See Gebhardt, Paul and C.)						
Gebhardt, Paul and C., Stralau, near Berlin, Germany. Pneumatic device for drawing out grains and similar goods	850,639	Apr. 16	3911	815	127	2660
Gehrman, Frank A., Fresno, Wash. Setting-gage for cream-separators	850,528	Apr. 16	3683	770	127	2603
Geisenhaner, Henry, Schenectady, N. Y., assignor to General Electric Company. Metal-casting apparatus	850,829	Apr. 16	4253	893	127	2745
General Electric Company. (See Ahlquist, Karl, assignor.)						
General Electric Company. (See Allen and Bergman, assignors.)						
General Electric Company. (See Barker, Ralph E., assignor.)						
General Electric Company. (See Bergman, Sven R., assignor.)						
General Electric Company. (See Bring, Einar J., assignor.)						
General Electric Company. (See Case, Frank E., assignor.)						
General Electric Company. (See Corey, Fred B., assignor.)						
General Electric Company. (See Dempster, John T. H., assignor.)						
General Electric Company. (See Ferguson, Samuel, assignor.)						
General Electric Company. (See Geisenhaner, Henry, assignor.)						
General Electric Company. (See Holladay, Lewis L., assignor.)						
General Electric Company. (See Hubbell, John E., assignor.)						
General Electric Company. (See Macmillan, Campbell, assignor.)						
General Electric Company. (See Schmidt, Louis M., assignor.)						
General Electric Company. (See Stanley, William, assignor.)						
General Electric Company. (See Steinmetz, Charles P., assignor.)						
General Electric Company. (See Steinberger, Karl, assignor.)						
General Electric Company. (See Van Aller, Tycho, assignor.)						
General Electric Company. (See Wooldridge, William J., assignor.)	850,829	Apr. 16	3683	770	127	2603
George, Frank X., Jr., Brooklyn, N. Y. Safety-razor						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gibson, John, Star Prairie, Wis. Stock-loader	850,649	Apr. 16	3011	815	127	2041
Gilbert, George E., assignor of one-half to A. J. La Rose, Haverhill, Mass. Sewing-machine	850,626	Apr. 16	3477	728	127	2549
Gilbert Manufacturing Company. (See Sorensen, Christina J., assignor.)						
Giles, Isaac W., New Bedford, and C. W. Tobey, Fairhaven, Mass. Manufacture and application of rubber tires to wheel-rims	850,747	Apr. 16	4101	858	127	2709
Giles, Isaac W., New Bedford, and C. W. Tobey, Fairhaven, Mass. Rubber-tire fastener	850,748	Apr. 16	4102	859	127	2707
Glazier, Louis H., assignor to J. Ottmann Lithographing Co., New York, N. Y. Mechanical card	850,180	Apr. 16	2961	618	127	2439
Gleason, Edward D., Philadelphia, Pa., assignor to Victor Talking Machine Company. Sound-box	850,683	Apr. 16	4267	916	127	2775
Goddard, George M., assignor of one-half to G. C. Thrall, Rutland, Vt. Keyboard telegraph-transmitter	850,254	Apr. 16	3358	701-2	127	2393
Goldman, Gustav, Baltimore, Md. Making garment-pads	850,151	Apr. 16	2952	618-19	127	2439
Gordon, Anthony, Souriford, Manitoba, Canada. Vehicle-jack	850,220	Apr. 16	4254	803	127	2746
Götze, Theodor, Hamburg, Germany. Tube for paint	850,220	Apr. 16	3006	647	127	2449
Grable, Guy C., assignor, by mesne assignments, to W. L. McBride, Minneapolis, Minn. Brake for hoisting machines	850,128	Apr. 16	2945	619	127	2441
Grant, Alex H., Middleport, and M. N. Grant, assignors to Columbus Clay Products Company, Columbus, Ohio. Device for making ornamental brick	850,627	Apr. 16	3478	728	127	2551
Grant, Alex H., Middleport, and M. N. Grant, assignors to Columbus Clay Products Company, Columbus, Ohio. Device for making ornamental brick	850,628	Apr. 16	3480	728	127	2551
Grant, Milton N. (See Grant, Alex H. and M. N.)						
Grassmann, Peter, Gross-Lichterfelde-Ost, Germany. Photographic-plate holder	850,629	Apr. 16	3481	729	127	2551
Gravity Coupler Company. (See Frazier, James L., assignor.)						
Greaser, Daniel F. and H. H., Pittsburg, Pa. Emergency-brake for vehicles	850,362	Apr. 16	3232	674	127	2488
Greaser, Harrison H. (See Greaser, Daniel F. and H. H.)						
Greenbaum, Manuel, Kansas City, Mo. Street-car fender	850,572	Apr. 16	3758	785-6	127	2823
Gross, Henry, New York, N. Y. Curtain-roller	850,155	Apr. 16	2957	619	127	2441
Grosvenor, George W., Broome House, near Stourbridge, England. Moquette or tufted carpet	850,573	Apr. 16	3760	786	127	2823
Guilford, Ivord R., Los Angeles, Cal. Car-fender	850,474	Apr. 16	3573	746-7	127	2574
Haardt, George P. (See Worswick, James E., assignor.)						
Hageman, Randolph F., New Madison, Ohio. Car-mover	850,154	Apr. 16	2956	620	127	2441
Halbekann, Frans J., assignor to Dieckmann & Wille vorm. Ferd. Wester, Solingen, Germany. Shaving apparatus	850,630	Apr. 16	3481	729	127	2551
Hall, Almon E. (See Heffernan and Hall.)						
Hall, Alonzo B., Moultrie, Ga. Display-rack	850,221	Apr. 16	3098	648	127	2449
Hall, Isaac A. (See Ott, Frederick, assignor.)						
Hall, Thomas F., Omaha, Nebr. Grain-elevator	850,222	Apr. 16	3099	648	127	2449
Hallett, William E., Hillsdale, Mich. Carbureter	850,223	Apr. 16	3099	648	127	2449
Halsted, Mary, Canal Dover, Ohio. Spool-holder	850,641	Apr. 16	3013	816	127	2661
Hamilton, Guy. (See Cailie, Hamilton, and Currie.)						
Hamilton, Thomas D., J. Rusk, and W. A. Robertson, Belfast, Ireland. Sewing-machine	850,642	Apr. 16	3014	816	127	2661
Hammerberg, Arndt L., Youngstown, Ohio. Water-cooled furnace-front	850,155	Apr. 16	2960	620	127	2442
Hammers, George W., La Junta, Colo. Gang-plow	850,749	Apr. 16	4103	859	127	2707
Hansen, John S., Brockton, Mass., assignor to O. A. Miller Treeing Machine Company, Portland, Me. Holding device for shoe-uppers	850,224	Apr. 16	4268	916	127	2777
Harding, William H., Philadelphia, Pa. Cement-kiln	850,720	Apr. 16	4106	860	127	2708
Harkness, William E., assignor to Western Electric Company, Chicago, Ill. Alarm-fuse	850,225	Apr. 16	3262	702	127	2551
Harpain, John J., U. S. Navy. Apparatus for transporting and launching boats	850,645	Apr. 16	3015	817	127	2662
Harpain, John J., U. S. Navy. Submarine boat	850,221	Apr. 16	4256	804	127	2746
Harrington, Daniel. (See Chamberlin and Harrington.)						
Harris, Joseph W. (See Déry, Louis A., assignor.)						
Harris, Myron L., Bazaar, Kans. Clod-fender	850,574	Apr. 16	3763	786	127	2824
Harris, Richard C., Roselle, N. J. Fabric-tester	850,632	Apr. 16	4258	804	127	2747
Harris, Warner S. G., San Luis Obispo, Cal. Automatic safety device for boilers	850,751	Apr. 16	4108	860	127	2708
Harrison, Charles W. (See Tunison, Murray C., assignor.)						
Harrison, William F. (See Worth and Harrison.)						
Harrold, Amos, Newark, Ohio. Gear for traction-engines	850,646	Apr. 16	3021	817-18	127	2664
Haskell, Henry L., assignor to Carrom-Archarena Company, Ludington, Mich. Game apparatus	850,224	Apr. 16	3100	648-9	127	2449
Heal, William E., Colleyville, Kans. Treating glass	850,632	Apr. 16	4260	805	127	2747
Healy, John J., Coboston, assignor of one-half to S. F. Hess, Rochester, N. Y. Expression mechanism for self-playing musical instruments	850,226	Apr. 16	3225	674-5	127	2467
Healy, John J., Monroe, assignor of one-half to S. F. Hess, Rochester, N. Y. Pneumatically-operated musical instrument	850,225	Apr. 16	3263	703-4	127	2521
Hefferman, William H., North Adams, and A. E. Hall, Williamstown, Mass. Machine for cleaning carpets	850,645	Apr. 16	3223	818-19	127	2665
Hegyi, Gabor, Los Angeles, Cal. Dust-cleaner	850,575	Apr. 16	3764		127	2824
Heidemann, Heinrich, Horstermark, Germany. Window for vehicles	850,634	Apr. 16	4261	805	127	2747
Heidorn, Hugo, Hamburg, Germany. Regulator for mantle-firing flames	850,752	Apr. 16	4111	860-1	127	2709
Helmbach, Alton B., Duluth, Minn. Resilient attaching means for rubber heels	850,156	Apr. 16	2961	620	127	2442
Heller, Siegmund, and C. Baumgartl, Teplitz, Austria-Hungary. Producing a metallic coating on a non-vitreous surface	850,753	Apr. 16	4113		127	2710
Hellman, Henry, and L. C. Baylis, Johannesburg, Transvaal. Means for mounting rock-drilling machines or engines	850,635	Apr. 16	4271	916	127	2777
Henry, Helen, administratrix. (See Badgley, Eugene F.)						
Hermann, John, Saginaw, Mich. Bath-cabinet	850,227	Apr. 16	3269	704	127	2523
Herne, Signor S. (See Wagner and Herne.)						
Herring, James C., Greensboro, N. C. Block-molding machine	850,228	Apr. 16	3271	705	127	2523
Herschell, Allan, assignor to Herschell-Spillman Company, North Tonawanda, N. Y. Brace for roundabouts and analogous structures	850,631	Apr. 16	3482	729	127	2552
Herschell-Spillman Company. (See Herschell, Allan, assignor.)						
Herschell-Spillman Company. (See Spillman, Edward O., assignor.)						
Herschell-Spillman Company. (See Stickney, Albert J., assignor.)						
Hertner, John H., assignor of one-half to D. Cookingham, Cleveland, Ohio. Electric motor and controller for the same	850,675	Apr. 16	3575	747	127	2575
Hess, Frank A., and J. Dunn, Detroit, Mich. Broom-holder	850,576	Apr. 16	3765	786	127	2824
Hess, Solomon F. (See Healy, John J., assignor.)						
Heulings, William H., Jr., assignor to J. A. Brill, Philadelphia, Pa. Window for cars	850,157	Apr. 16	2961	621	127	2442
Higgins, Henry B., Denver, Colo. Screen-hanger	850,229	Apr. 16	3273	705	127	2523
Hill, David, Washington, N. C. Car-ventilating apparatus	850,158	Apr. 16	2962	621-2	127	2443
Hill, John W., Mooslova, assignor of four-fifths to S. J. Eckenrode, Mahanoy, B. S. Stapleton, Cleveland, C. E. Bartenbeck and E. L. Johnson, Toledo, Ohio. Wheel	850,754	Apr. 16	4113	861	127	2710
Hillman, William, Mount Vernon, N. Y. Packing for piston-rods	850,159	Apr. 16	2965	622	127	2444
Hipkins, Stephen, Martins Ferry, Ohio. Glass-mold	850,577	Apr. 16	3766	787	127	2824
Hitt, Adrian, Jersey City, assignor of one-half to H. Berg, Orange Valley, N. J. Shade and shade-roller fixture	850,578	Apr. 16	3769	787	127	2825
Hobby, Deison G., assignor of one-half to F. L. Ferris, Albion, N. Y. Telephone attachment	850,636	Apr. 16	4272	916	127	2778

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hodge, Schuyler C., and P. Douglas, Milwaukee, Wis. Ventilator	850,160	Apr. 16	2966	622	127	2444
Hoffman, Earl, Comstock, Nebr. Vehicle-brake	850,225	Apr. 16	3104	649	127	2451
Hogrebe, Arthur E. (See Strobel and Hogrebe.)						
Holladay, Lewis L., Lynn, Mass., assignor to General Electric Company. Ventilating-fan	850,226	Apr. 16	3105	649	127	2451
Holland, James E., Whitesburg, Ga. Attachment for traction-engines	850,835	Apr. 16	4262	805	127	2748
Hollis, Warren T., Boston, Mass. Measuring-machine	850,304	Apr. 16	3238	675	127	2488
Holmes, Grant, assignor to Robert Holmes & Brothers, Danville, Ill. Automatic car-lift	850,646	Apr. 16	3025	818	127	2665
Holmes, Grant, assignor to Robert Holmes & Brothers, Danville, Ill. Automatic lifting mechanism	850,647	Apr. 16	3027	820	127	2665
Holt, Walter O., and R. L. Foster, assignors to Livermore & Knight Company, Providence, R. I. Holder for lamp-shades	850,579	Apr. 16	3773	788	127	2826
Holzmann, Ernest, New York, N. Y. Fishing-reel	850,580	Apr. 16	3774	788	127	2826
Hood, Cyrus S., Corning, N. Y. Damper-regulator	850,530	Apr. 16	3684	770	127	2803
Hook, Addison C., and H. P. Robinson, Charlotte, N. C. Pinless clothes-line	850,227	Apr. 16	3107	650	127	2452
Hopkins, George W., Cleveland, Ohio. Blowpipe	850,581	Apr. 16	3777	788	127	2827
Hopkins, Samuel W., Enterprise, Kans. Dumping apparatus	850,648	Apr. 16	3029	820-1	127	2666
Hornsby, Harry H., Chicago, Ill., and E. W. Anger, jr., Adrian, Mich. Cut-out block for connecting fuse in circuit	850,836	Apr. 16	4264	806	127	2749
Horton, Mary C., Woonsocket, R. I. Culinary utensil	850,582	Apr. 16	3780	789	127	2828
Houseman, Harry A., assignor to Standard Machine Company, Philadelphia, Pa. Splicing yarn-feed device for knitting-machines	850,476	Apr. 16	3578	748	127	2675
Howard, Jesse C., assignor of one-half to D. H. Fobes, Columbus, Ohio. Piston-head	850,583	Apr. 16	3782	789	127	2828
Hoyt, Matthew L., assignor to D. H. Burrell & Company, Little Falls, N. Y. Shaft-mounting for centrifugal machines	850,477	Apr. 16	3580	748	127	2675
Hubbell, John E., Schenectady, N. Y., assignor to General Electric Company. Prepayment mechanism	850,755	Apr. 16	4115	861	127	2710
Hulit, John A., Topeka, Kans. Selective call apparatus	850,837	Apr. 16	4268	806-7	127	2749
Hunt, John R., Floyd, Ind. Wrench	850,756	Apr. 16	4119	862	127	2711
Huntington, Samuel W., Aberdeen, S. D. Display device	850,649	Apr. 16	3030	821	127	2666
Huntley, Elijah, Seattle, Wash. Wrench	850 869	Apr. 16	4342	910	127	2769
Hurst, Asa. (See Dennis, Carey, assignor.)	850,757	Apr. 16	4120	862	127	2712
Hutchings, William E., Louisville, Ky. Hoist	850,531	Apr. 16	3686	771	127	2804
Hutchinson, Frederick M., Nashville, Ark. Cotton-chopper						
Hyde, David B., assignor to Safety Emery Wheel Co., Springfield, Ohio. Bearing for grinding-wheel shafts	850,650	Apr. 16	3031	821	127	2667
Hyde, George H. (See Schmoh, William, assignor.)	850,370	Apr. 16	3374	705	127	2524
Hynes, William L., Elgin, Ill. Water-automobile						
Hynan, Joseph M., assignor of one-third to M. H. Dinneen, Baltimore, Md. Rail-lock for drawbridges	850,161	Apr. 16	2971	623	127	2445
Ideal Concrete Machinery Company. (See Borst, Frank A., assignor.)						
Indianapolis Watchman Clock Company. (See Summers and Berry, assignors.)						
International Royal Phone Company. (See Runge, Walter C., assignor.)						
International Silver Company. (See Lashar, Thomas B., assignor.)						
Invincible Grain Cleaner Company. (See Shumaker, Charles F., assignor.)						
Ittershagen, Edward. (See Riedel and Ittershagen.)						
J. Ottmann Lithographing Co. (See Glazier, Louis H., assignor.)	850,228	Apr. 16	3108	650	127	2452
Jackson, Andrew, Winnetka, Ill. Rake	850,758	Apr. 16	4123	863	127	2712
Jackson, Fred M., Akron, N. Y. Making concrete walls	850,759	Apr. 16	4125	863	127	2713
Jackson, Reginald, Kennett Square, Pa. Car-rail and bed	850,478	Apr. 16	3583	748	127	2576
Jacobes, James W., Great Neck, N. Y. Ink-well	850,479	Apr. 16	3584	749	127	2576
Jacobus, James W., Great Neck, N. Y. Ink-well	850,684	Apr. 16	3784	789	127	2829
Jantz, Gustave H., Wyoming, Ohio. Clothes-wringer clamp	850,102	Apr. 16	2973	623	127	2446
Jenks and Muir Manufacturing Company. (See Muir, William H., assignor.)						
Jennings, Nils, Cormorant, Minn. Plow	850,371	Apr. 16	3376	706	127	2524
Jeralds, Elbert O., assignor to W. A. Tooker, Jr., Stamford, Conn. Shut-off for tube-compressors	850,480	Apr. 16	3585	749	127	2577
Jernigan, Harry D., Orlando, Tenn. Mortising-gage	850,651	Apr. 16	3032	821	127	2667
Johannsen, Christian, Overesse, near Flensburg, Germany. Anvil for riveting-machines	850,528	Apr. 16	4277	807-8	127	2751
Johnson, Toris N., Clark, Wash. Thresher-feeder	850,652	Apr. 16	3033	822	127	2667
Johnson, E. L., et al. (See Hill, John W., assignor.)						
Jones, Calvin A., Trilby, Fla. Rail-adjuster	850,653	Apr. 16	3035	822	127	2668
Jones, Harry, Chicago, Ill., assignor to American Brake Shoe & Foundry Company, Jersey City, N. J. Casting-machine	850,654	Apr. 16	3037	822	127	2668
Jones, James J., New York, N. Y. Broiler						
Jordan, Thomas F. (See Cummings and Jordan.)						
Joyner, A. J. (See Purvis and King, assignors.)	850,655	Apr. 16	3038	823	127	2669
Judge, Edward J., San Francisco, Cal. Peeling fruits and vegetables	850,987	Apr. 16	4375	917	127	2776
Kahan, Samuel, New York, N. Y. Adjusting clocks and watches to changes in temperature	12,633	Apr. 16	4367	918	127	2781
Kalle and Company Aktiengesellschaft. (See Friedlaender, Paul, assignor.)						
Kearsey, James A., Imogene, Iowa. Tongue-regulator. (Reissue)						
Keller Mechanical Engraving Company. (See Warman, William A., assignor.)	850,888	Apr. 16	4376	917	127	2779
Kellogg Switchboard and Supply Company. (See Dean, William W., assignor.)	850,889	Apr. 16	4382	918	127	2781
Kelly, William D., Chicago, Ill. Dovetailing and tenoning machine	850,372	Apr. 16	3377	706	127	2525
Kelly, William D., Chicago, Ill. Dovetail, tenon, and mortise	850,585	Apr. 16	3785	789-90	127	2829
Kemp, Solomon M., Baltimore, Md. Chimney-top						
Kendrick, John W., Chicago, Ill. Folding stake for railway-cars						
Kenly, William K. (See Redding, Oliver C., assignor.)	850,432	Apr. 16	3485	729	127	2552
Kennedy, Lute H., assignor of two-thirds to M. F. and J. R. Livingston, jointly, Columbia, S. C. Nut-lock	850,229	Apr. 16	3108	650	127	2452
Keystone Brake Shoe Company. (See Lamb, Van Buren, assignor.)						
Kiebler, George J., and J. P. Stahl, Toledo, Ohio. Floor-surfacing machine	850,230	Apr. 16	3111	651	127	2453
Kiehle, James M., assignor of two-thirds to A. A. Mulkin and W. H. Richards, Coudersport, Pa. Pipe connection	850,373	Apr. 16	3378	706	127	2525
Kilfoyl Molding Machine Company. (See Macphail, James, assignor.)						
King, Alphonse, San Antonio, Tex. Railway-track construction	850,374	Apr. 16	3379	706-7	127	2525
King, Charles, assignor to F. & N. Lawn Mower Company, Richmond, Ind. Grinding-machine						
King, John. (See Purvis and King.)	850,760	Apr. 16	4127	863	127	2713
Kinnear Manufacturing Company. (See McCloud, Edward H., assignor.)	850,586	Apr. 16	3786	790	127	2829
Kirk, Cassius M. C., Nahcotta, Wash. Wrench	850,305	Apr. 16	3240	678	127	2488
Kirk, William C., Chattanooga, Tenn. Curved pipe	850,231	Apr. 16	3112	651	127	2453
Kitsee, Isidor, Philadelphia, Pa. Duplexing telegraph-line						
Kitsee, Isidor, assignor of one-half to W. J. Latta, Philadelphia, Pa. Telegraphy						
Kivell, William J., et al. (See Martin, Fred E., assignor.)	850,656	Apr. 16	3040	823	127	2669
Klein, Robert, Solingen, Germany. Device for adjusting the height of the cut in hair-cutting machines	850,657	Apr. 16	3041	823	127	2669
Klett, William B., Chicago, Ill. Pulp-washing apparatus	850,188	Apr. 16	2974	626-4	127	2446
Kline, Michael M., St. Louis, Mo. Machine for forming artificial-foal blocks						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfg.	Official Gazette. Vol.	Official Gazette. Page.
Kline, Michael M., St. Louis, Mo. Artificial-fuel block and producing same	850,228	Apr. 16	3114		127	2454
Klocke, William H., New York, N. Y., assignor to E. W. Bliss Company. Clutch	850,154	Apr. 16	3075	624	127	2416
Knapp, David R., Philadelphia, and H. E. Cade, Pencoyd, Pa. Electric-motor-starting device	850,165	Apr. 16	3078	624	127	2417
Knessell, Edward, El Paso, Tex. Tobacco-pipe	850,701	Apr. 16	4126	863-4	127	2714
Koenig, Christian J., Alton, Ill. Glass-furnace	850,260	Apr. 16	3115	651	127	2454
Kohn, Koby, New York, N. Y., assignor of one-half to L. A. Kennedy, Denver, Colo. Telephone apparatus	850,453	Apr. 16	3496	730	127	2663
Kohn, Koby, New York, N. Y., assignor of one-half to L. A. Kennedy, Denver, Colo. Telephone apparatus	850,454	Apr. 16	3491	730-1	127	2664
Kolla, John P., Akron, Ohio, assignor of two-thirds to A. H. Landwher and G. C. Bowman, Holland, Mich. Water-spout cut-off	850,702	Apr. 16	4120	864	127	2714
Koonce, Morrisey S., Washington, D. C. Portable wardrobe	850,452	Apr. 16	3944	824	127	2670
Körtvélyessy, Colomon, Brooklyn, N. Y. Dumping-bucket	850,457	Apr. 16	3786	790	127	2669
Kraus, Otto, New York, N. Y. Folding horn	850,375	Apr. 16	3984	707-8	127	2665
Krause, Alfred. (See Schröder, Adolph, assignor.)						
Ksenaky, Louis A. (See Kohn, Koby, assignor.)						
Kügelgen, Franz von, and G. O. Seward, Holcombs Rock, Va. Producing light metals by electrolysis	850,236	Apr. 16	3386	706	127	2655
Kunath, Edward F., Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	850,230	Apr. 16	4279	906	127	2712
Kutsche, Oswald, assignor to G. A. Woltman, York, Pa. Brick-machine	850,426	Apr. 16	3496	731-2	127	2665
Labarre, George, New Orleans, La. Loose-leaf binder	850,449	Apr. 16	3945	824	127	2671
La Motte, Arthur, assignor to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Non-hygroscopic compound and explosive treated therewith	850,389	Apr. 16	3789		127	2630
La Rose, Aime J. (See Gilbert, George E., assignor.)						
Lagonda Manufacturing Company. (See Dibedale, Samuel F., assignor.)						
Lagonda Manufacturing Company. (See Weinland, Henry F., assignor.)						
Lahman, Daniel F., Lahmansville, W. Va. Mail-bag-delivery apparatus	850,455	Apr. 16	3788	790-1	127	2630
Lamb, Van Buren, New Haven, Conn., assignor to Keystone Brake Shoe Company, New York, N. Y. Brake	850,456	Apr. 16	3800	732	127	2655
Lambert, Hartwell, Fitzgerald, Ga. Draft attachment for whiffletrees	850,277	Apr. 16	3388	708	127	2657
Lambert, Joseph M., Montague, Mass. Automobile sled	850,703	Apr. 16	4130	864	127	2714
Lambert, William H., Slocum Junction, British Columbia, Canada. Snap-hook	850,284	Apr. 16	3117	652	127	2455
Landers, Frary and Clark. (See Walker, George, assignor.)						
Landwher, A. H., *et al.* (See Kolla, John P., assignor.)						
Lane, George. (See Lane, William J. and G.)						
Lane, William J. and G., Poughkeepsie, N. Y. Boiler	850,230	Apr. 16	3790	791	127	2630
Lanphier, Robert C., assignor to Sangamo Electric Company, Springfield, Ill. Electrical condenser and making the same	850,166	Apr. 16	3982	625	127	2419
Larson, Alfred, Rockford, Ill. Leather-trimmer	850,231	Apr. 16	3794	792	127	2632
Larson, Ole L., Minneapolis, Minn. Smut-machine	850,278	Apr. 16	3390	708-9	127	2657
Lashar, Thomas B., assignor to International Silver Company, Bridgeport, Conn. Julep-strainer	850,279	Apr. 16	3382	709	127	2658
Latta, William J. (See Kitsee, Isidor, assignor.)						
Laycock, William, Libertyville, Ill. Duster	850,704	Apr. 16	4132	865	127	2714
Ledford, John E., assignor to himself, G. Omer, S. Wallen, and T. R. Carson, Butte, Mont. Safety-lock	850,240	Apr. 16	4284	898	127	2716
Lee, Bartley J., deceased, (M. A. Lee, administratrix,) assignor of one-half to A. J. Ryder, Poughkeepsie, N. Y. Clothes-line hanger	850,235	Apr. 16	3118	652	127	2455
Lee, Clinton R., Lincoln, Nebr. Broom-machine	850,232	Apr. 16	3987	771	127	2664
Lee, Margaret A., administratrix. (See Lee, Bartley J.)						
Lee, Thomas, Home City, Ohio. Refuse-can	850,167	Apr. 16	2984	625	127	2419
Leedy Manufacturing Company. (See Leedy and Wanamaker, assignors.)						
Leedy, Ulysses G., and C. B. Wanamaker, assignors to Leedy Manufacturing Company, Indianapolis, Ind. Drum	850,236	Apr. 16	3244	676	127	2469
Lemoine, David, Fisherville, Mass. Picker-stick attachment for looms	850,241	Apr. 16	4285	899	127	2716
Lewis, Allie M., Terre Haute, Ind. Railway frog-switch	850,459	Apr. 16	3946	824	127	2671
Lewis, Jesse A., Elgin, Nebr. Dental engine	850,461	Apr. 16	3947	825	127	2671
Lewis, Wilfred, Philadelphia, Pa., assignor to Tabor Manufacturing Company, Camden, N. J. Pneumatic vibrator or hammer	850,280	Apr. 16	3795	792	127	2633
Lindsay, Leroy J., Ottumwa, assignor to C. P. Barrickman, Seymour, Iowa. Hay-stacker	850,705	Apr. 16	4133	865	127	2714
Linotype and Machinery. (See North, Thomas M., assignor.)						
Lionais, Emile, and W. T. Sutton, Montreal, Quebec, Canada. Electric signal	850,706	Apr. 16	4134	865	127	2715
Livermore & Knight Company. (See Holt and Foster, assignors.)						
Litaker, Thomas F., Concord, N. C. Earth-auger	850,233	Apr. 16	3989	771	127	2664
Livingston, J. R., *et al.* (See Kennedy, Lois H., assignor.)						
Livingston, Mary F., *et al.* (See Kennedy, Lois H., assignor.)						
Lloyd, Edward W., and W. H. Sodean, assignors to W. G. Armstrong, Whitworth & Company, Limited, Newcastle-upon-Tyne, England. Means for heating compressed air or other gases	850,237	Apr. 16	3246	676	127	2469
Loewenstein, Charles de, Chateau Duroure, near Arles, France. Mechanism for utilizing superheated steam	850,239	Apr. 16	3393	709-10	127	2658
Loewenstein, James B. (See McClure and Loewenstein.)						
Lohmann, Carl, Geisenkirchen, Germany. Support for drying medicine-bottles	850,282	Apr. 16	3394	710	127	2659
Lomoff, Victor, New York, N. Y. Handsaw	850,451	Apr. 16	3985	749	127	2657
Longenecker, Irwin G., Elizabethtown, Pa. Bent	850,704	Apr. 16	3989	772	127	2665
Lorenz, Ernst, Berlin, Germany. Bracket for supporting scaffolding and the like	850,462	Apr. 16	3949	825	127	2667
Lovell, George E., assignor of one-half to L. H. Marks, Albany, Ga. Ice-box	850,463	Apr. 16	3951	826	127	2667
Lundy, Hezakiah S. (See McLeod, Norman J., assignor.)						
Lutz, George H., Kansas City, Mo., assignor to Equitable Asphalt Maintenance Company. Surfacing pavements	850,283	Apr. 16	3986		127	2659
Lynch, Daniel O., assignor of one-half to C. H. Caspar and H. T. Schmis, Wilkes-Barre, Pa. Bottle-closure	850,457	Apr. 16	3394	732	127	2655
MacLeod, George S., East End, Saskatchewan, Canada. Wire fencing	850,233	Apr. 16	3247	676	127	2469
MacRae, Charles J., St. Louis, Mo. Propeller	850,233	Apr. 16	3395	710-11	127	2659
Macbeth, Dare A., New York, N. Y. Temporary holder for safety-razor blades	850,707	Apr. 16	4135	866	127	2715
Macmillan, Campbell, Schenectady, N. Y., assignor to General Electric Company. Dynamo-electric machine	850,234	Apr. 16	3982	626	127	2672
Macphail, James, Moline, Ill., assignor, by means assignments, to Kilting Molding Machine Company, Davenport, Iowa. Mold-forming machine	850,708	Apr. 16	4137	866	127	2715
Macphail, James, Moline, Ill., assignor, by means assignments, to Kilting Molding Machine Company, Davenport, Iowa. Mold-forming machine	850,709	Apr. 16	4140	866	127	2716
Macphail, James, Moline, Ill., assignor, by means assignments, to Kilting Molding Machine Company, Davenport, Iowa. Mold-forming machine	850,710	Apr. 16	4141	866	127	2717
Maguire, Albert M., Indianapolis, Ind. Reel	850,711	Apr. 16	4119	863	127	2665
Malmquist, William P., Memphis, Tenn. Vaporizing device for lubricants	850,712	Apr. 16	4144	867	127	2718
Major, W. W., *et al.* (See Posey, James A., assignor.)						
Malham, Guy H., Kansas City, Mo. Digester for wood fiber	850,244	Apr. 16	3987	711	127	2659

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfg.	Official Gazette. Vol.	Official Gazette. Page.
Mallett, John P., and T. R. Drubak, assignors to Northern Electrical Manufacturing Company, Madison, Wis. Brush-holder	850,237	Apr. 16	3120	652	127	2455
Malmstrom, Emil, West Kensington, assignor to F. S. M. Syndicate, Limited, London, England. Card-cutting and clamp-making machine	850,843	Apr. 16	4286	899-901	127	2754
Manning, Bowman & Company. (See Savage and Chapman, assignors.)						
Manning, Maxwell & Moore, Inc. Pipe-laying machine	850,238	Apr. 16	3122	653	127	2456
Manning, Robert S., Morton, Pa. Fire-alarm system	850,870	Apr. 16	4343	911	127	2770
Manson, Ray P., assignor to Dean Electric Company, Elyria, Ohio. Electrical switch	850,665	Apr. 16	3954	826	127	2673
Marks, Leonard W. (See Lovell, George E., assignor.)	850,503	Apr. 16	3798	792-3	127	2632
Marsch, Howard E., Catasauqua, Pa. Nut-lock	850,166	Apr. 16	2986	625-6	127	2419
Marsh, William P., Dayton, Ohio. Rotary motor						
Marsteller, Aaron B., St. Louis, Mo. Molding process	850,239	Apr. 16	3125	653-4	127	2457
Martin, Fred E., Oakville, Ontario, assignor to W. J. Kivell and C. H. Riches, Toronto, Canada. Recording and showing apparatus	850,594	Apr. 16	3800	793	127	2633
Martin, Robert L., Jr., and H. Cary, assignors to Pittsburgh Coal Washer Company, Pittsburg, Pa. Coal-washing apparatus	850,386	Apr. 16	3401	712	127	2530
Marvell, Roy W., Philadelphia, Pa., assignor to Bennett-Marvell Manufacturing Company. Soldering-iron	850,385	Apr. 16	3400	712	127	2530
Marvell, Roy W., and H. W. Ahlemann, Baltimore, Md., assignors, by mesne assignments, to E. A. Scott, Philadelphia, Pa. Self-heating soldering-iron						
Mason & Company, Ramon. (See Ramon, Augusto, assignor.)						
Mason & Hamlin Company. (See Bimnig, Jacob, assignor.)	850,387	Apr. 16	3403	713	127	2531
Mather, Alexander C., Chicago, Ill. Pneumatic spring	850,209	Apr. 16	3248	676-7	127	2491
Matrohle, William A., Coatesville, Pa. Permutation-lock	850,535	Apr. 16	3991	772	127	2665
Mattesco, William, Detroit, S. D. Draft-equalizer	850,686	Apr. 16	3955	826	127	2673
Maull, William E., St. Louis, Mo. Trap	850,597	Apr. 16	3810	795	127	2635
McBride, W. L. (See Grabill, Guy C., assignor.)	850,440	Apr. 16	3508	734	127	2558
McCanna, John P., assignor to McCord & Company, Chicago, Ill. Gearing	850,670	Apr. 16	3998	830	127	2675
McCarren, James, and A. Dusty, Jr., Osborne, Kans. Hydrocarbon-burner	850,389	Apr. 16	3406	713	127	2531
McClanahan, Timothy W., York, Pa. Molding process						
McClintock, William, Jr., Springfield, W. Va. Device for driving and forming piles	850,172	Apr. 16	2993	627	127	2420
McCloud, Howard H., assignor to Kimmer Manufacturing Company, Columbus, Ohio. Fire-resisting shutter	850,390	Apr. 16	3407	714	127	2532
McClure, Elmer P., Western Springs, and J. B. Loewenstein, Chicago, Ill. Corn-gathering machine						
McCord & Company. (See McCanna, John P., assignor.)	850,210	Apr. 16	3252	677-8	127	2492
McCormack, Henry S., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	850,890	Apr. 16	4386	918	127	2781
McCormack, Henry S., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	850,671	Apr. 16	3970	830	127	2675
McDaniel, John H., St. Louis, Mo. Electric tower for displaying carriage-numbers	850,441	Apr. 16	3510	734-5	127	2559
McDowell, Elwood F. (See Beale and McDowell.)	850,243	Apr. 16	3135	655	127	2460
McGinnis, Thomas J., Boise, Idaho. Automatic gate-opener	850,442	Apr. 16	3511	735	127	2559
McKay, William A., Cleveland, Ohio. Display apparatus						
McKinney, John H., Shreveport, La. Freezer	850,846	Apr. 16	4295	902	127	2756
McLaughlin, John C., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	850,391	Apr. 16	3409	714-15	127	2532
McLeod, Howard D., Great Falls, Mont. Ore-concentrating table	850,537	Apr. 16	3694	772-3	127	2606
McLeod, Norman J., assignor of one-half to H. S. Lundy, Rock Island, Tex. Crate	850,173	Apr. 16	2994	627-8	127	2421
McLoughlin Brothers. (See Price, John H., assignor.)	850,311	Apr. 16	3257	678	127	2494
McMurray, William C., Wellsville, Ohio. Electric transportation system	850,174	Apr. 16	2995	628	127	2421
McQuarrie, James L., New York, N. Y., assignor to Western Electric Company, Chicago, Ill. Annunciator	850,843	Apr. 16	4291	901	127	2755
McWilliams, Arthur C., Chicago, Ill. Metering panel-board	850,169	Apr. 16	2988	626	127	2420
Melin, Andrew, Oxlip, Minn. Shock-binder						
Mercer, Nelson S., Omaha, Nebr. Weighing attachment for ice-boxes	850,388	Apr. 16	3404	713	127	2531
Meservey, S. T. (See Shaw, Joseph, assignor.)						
Messelle, Jesse S., New York, N. Y. Check or other financial-instrument blank	850,240	Apr. 16	3130	654	127	2458
Michaelis, Robert. (See Fessler and Michaelis.)	850,170	Apr. 16	2990	627	127	2420
Middleton, Edgar, Savannah, Ga. Hose-supporter	850,482	Apr. 16	3587	750	127	2577
Miller, Charles H., Bowie, Tex. Sash-fastener	850,772	Apr. 16	4145	867	127	2718
Miller, Frederick W., Cobleskill, N. Y. Agricultural implement						
Miller, George J., Doon, Iowa. Rail-joint	850,438	Apr. 16	3506	733	127	2557
Miller, John M. (See Stadtherr and Miller.)	850,773	Apr. 16	4147	867	127	2718
Miller, Magnus J., Granger, Wyo. Current-wheel	850,483	Apr. 16	3590	750	127	2578
Miner, Elijah D., Rathbun, Iowa. Fence-post	850,667	Apr. 16	3956	826-7	127	2673
Miner, Charles E., Watertown, N. Y. Check-valve for water-gages	850,171	Apr. 16	2991	627	127	2420
Mitchell, Charles A., Indianapolis, Ind. Cistern-former						
Mohler, Lovd D., McPherson, Kans. Stove or furnace attachment	850,668	Apr. 16	3957	827-9	127	2674
Mohr, Gottlieb, Cedarville, W. Va. Combined record-making and self-playing attachment for pianos	850,774	Apr. 16	4148	869	127	2719
Moloney, Harry S. (See Dempster & Moloney.)	850,595	Apr. 16	3802	793-4	127	2633
Moore, Reuben, Cherryvale, Kans. Axle-bearing						
Moore, George C., Revere, Mass. Loom	850,844	Apr. 16	4293	901	127	2756
Morgan Engineering Company. (See Morgan, William H., assignor.)						
Morgan, Henry, Cripple Creek, Colo. Bottle-stopper	850,439	Apr. 16	3508	733-4	127	2558
Morgan, William H., assignor to Morgan Engineering Company, Alliance, Ohio. Overhead traveling crane	850,596	Apr. 16	3806	795	127	2635
Morin, Jean, Dayton, Ohio. Crushing-mill	850,241	Apr. 16	3122	656	127	2460
Morris, Henry G., Philadelphia, Pa. Centrifugal machine						
Morris, James H., *et al.* (See Tripp, James H., assignor.)						
Morris, James H., *et al.* (See Tripp, James H., assignor.)						
Morris, Webster, *et al.* (See Tripp, James H., assignor.)						
Morris, William, *et al.* (See Tripp, James H., assignor.)	850,536	Apr. 16	3693	772	127	2606
Morrison, Andrew, Pittsburg, Pa. Guard-rail system						
Morrissey, John J., assignor of one-half to P. H. Rose, Providence, R. I. Chin-rest and shoulder-pad support	850,775	Apr. 16	4149	868	127	2719
Morrissey, John J., assignor of one-half to P. H. Rose, Providence, R. I. Chin-rest and shoulder-pad support	850,776	Apr. 16	4151	868	127	2719
Mosher, Chalmers H., Salisbury Mills, N. Y. Lawn-cleaner	850,777	Apr. 16	4154	868-9	127	2720
Moss, Leon F. (See Hall, Walter J., assignor.)	850,778	Apr. 16	4155	869	127	2721
Mosher, Hiram, Alsen, N. Y. Making hydraulic cement	850,845	Apr. 16	4294	902	127	2756
Muir, William M., assignor to Jenks and Muir Manufacturing Company, Detroit, Mich. Chair's bed						
Mullin, Albert A., *et al.* (See Kiehle, James M., assignor.)	850,242	Apr. 16	3123	655	127	2460
Mumby, Sylvester T., Kaukauna, Wis., assignor to Union Bag & Paper Company, Jersey City, N. J. Printing device	850,669	Apr. 16	3957	829	127	2675
Myers, George W., West Cheshire, Conn. Furniture construction	850,244	Apr. 16	3126	656	127	2461
Myers, Thomas, Yoakum, Tex. Means for protecting river-banks	850,671	Apr. 16	4345	911	127	2770
Nelson, Jens J., Kansas, Tex. Vegetable peeler and scraper						
Newman, Jennie, Los Angeles, Cal. Vegetable peeler and scraper						
Nielsen Engineering Company. (See Abata, Walter L., assignor.)						
Nielsen Manhattan Coatings Company. (See Scott and Tibbin, assignors.)						
Nixon, Marvin A., Youngstown, Ohio. Gas-engine valve-gear	850,175	Apr. 16	2996	628-9	127	2422

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfg.	Official Gazette. Vol.	Official Gazette. Page.
Neuburger, Albert, Berlin, Germany. Oxidizing atmospheric nitrogen	850,322	Apr. 16	3412	715	127	2634
New York Stamping Company. (See Wojtkow, Louis, assignor.)						
Newald, Edward M., Gillett, Wis. Adjustable-tab guide-card	850,349	Apr. 16	3137	656	127	2461
Newman, Charles, Elizabeth, N. J. Reinforcing telephones	850,434	Apr. 16	3203	751	127	2570
Newman, Charles O., Jackson county, Mo. Glass ornamentation for panels, floors, &c.	850,435	Apr. 16	3205	773	127	2605
Newton, John C. (See Till and Newton.)						
Niles-Bement-Pond Company. (See Reiss, George T., assignor.)						
Niles-Bement-Pond Company. (See Strobel and Hogrebe, assignors.)						
Notte, Walter. (See Ensign, Ely, assignor.)						
North, Thomas M., assignor to Linotype and Machinery Limited, London, England. Sheet-delivery mechanism of printing-machines	850,313	Apr. 16	3220	679–80	127	2604
Northern Electrical Manufacturing Company. (See Mallett and Drohan, assignors.)						
Northrop, Irvin A., Medina, Ohio. Violin	850,398	Apr. 16	3414	715–16	127	2634
Norwood, Lacy M., Portland, Oreg. Knapsack	850,312	Apr. 16	3228	678	127	2604
Novak, Joseph B., Epton, Pa. Metallic tie and rail-fastener	850,388	Apr. 16	3211	700	127	2605
Novák, Oldřich, Peterhof, near Netolic, Austria-Hungary. Covering for hay and the like stacks	850,372	Apr. 16	3072	630	127	2576
O. A. Miller Trading Machine Company. (See Hansen, John S., assignor.)						
O'Connell, John J., Lima, N. Y. Fastening device	850,230	Apr. 16	3213	700	127	2606
O'Connor, Thomas. (See Seaman, George Q., assignor.)						
O'Neill, Timothy J., New York, N. Y. Station-indicator	850,373	Apr. 16	3072	631	127	2576
Oliver, Garritt H., *et al.* (See Richter, Edward, assignor.)						
Oliver, Prince A. (See Cooper and Oliver.)						
Olmstead, Chester A., East Bloomfield, N. Y. Beehive	850,176	Apr. 16	3204	629	127	2604
Omer, George, *et al.* (See Ledford, John E., assignor.)						
Otis Elevator Company. (See Dickinson, William M., Jr., assignor.)						
Ott, Frederick, Woonsocket, R. I., assignor to I. A. Hall, Paterson, N. J. Shuttle. (Reissue)	12,624	Apr. 16	3209	919	127	2732
Ott, John F., Orange, assignor to Edison Storage Battery Company, West Orange, N. J. Apparatus for producing rubber strips	850,486	Apr. 16	3206	751–3	127	2570
Packard Motor Car Company. (See Waldon, Sidney D., assignor.)						
Papenfoth, Paul, assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Door check and closer	850,294	Apr. 16	3116	716	127	2535
Parke, Davis & Company. (See Eden, Harold W., assignor.)						
Parker, Alonzo L., St. Joseph, Mo. Feed mechanism for gas-producers	850,395	Apr. 16	3420	716–17	127	2636
Parker, James T., Hattiesburg, Miss. Auger-bit	850,177	Apr. 16	3209	630	127	2605
Parker, John. (See Billings, Edward E., assignor.)						
Parks, Agnes E. (See Parks, Clarence W. and A. E.)						
Parks Brothers and Rogers. (See Crocellius, Emil R., assignor.)						
Parks, Clarence W. and A. E., Lowell, Mich. Compressed-air sprayer	850,474	Apr. 16	3074	631	127	2576
Parrish, James S., Richmond, Va. Washing-machine	850,229	Apr. 16	3207	773	127	2607
Parsons, Wallace W., Washington, D. C. Device for locking bolts	850,540	Apr. 16	3208	773	127	2607
Payne, Frank C., Manteno, Ill. Boot for elevators	850,541	Apr. 16	3709	774	127	2608
Peacock, George A., Hanford, Cal. Awl	850,770	Apr. 16	4167	870	127	2731
Pedersen, Adolph, assignor to Van Dorn-Elliott Electric Company, Cleveland, Ohio. Motor-controller	850,443	Apr. 16	3212	735	127	2589
Pedersen, Adolph, assignor to Van Dorn-Elliott Electric Company, Cleveland, Ohio. Motor-controller	850,372	Apr. 16	4046	911	127	2770
Pegram, John H., Longspur, Va. Device for cleaning ship-bottoms	850,305	Apr. 16	3128	656	127	2461
Peniston, Thomas H. (See Beyer, Otto S., assignor.)						
Peploe, John W., Long Island City, N. Y. Cross-tie	850,542	Apr. 16	3708	774	127	2608
Petri, Otto, Stuttgart, Germany. Reversible transmission-gear	850,347	Apr. 16	3140	657	127	2461
Petrie, Peter C., New York, N. Y. Life-raft	850,547	Apr. 16	4057	902–3	127	2767
Petsche, Gustav B., assignor to Southwark Foundry & Machine Company, Philadelphia, Pa. Pump	850,178	Apr. 16	3011	630–1	127	2628
Petsche, Gustav B., assignor to Southwark Foundry & Machine Company, Philadelphia, Pa. Pump	850,348	Apr. 16	3141	657	127	2462
Phelps, Byron, Seattle, Wash. Lock and latch	850,179	Apr. 16	3214	631	127	2628
Phillips, Darius T., Chicago, Ill. Corn-shock loader	850,548	Apr. 16	3705	775	127	2609
Phipps, Moses L., assignor of one-half to T. Cox and Z. F. Ward, Galax, Va. Automatic boiler-feed	850,314	Apr. 16	3063	630	127	2606
Pianora Company. (See Ackermann, Clinton, and Elton, assignors.)						
Pilgrim, James D., Auburn, Ind. Shifting-rail lock for vehicle-tops	850,020	Apr. 16	3213	706	127	2638
Pitz, Charles A., Van Buren, Me. Umbrella attachment	850,544	Apr. 16	3705	775	127	2609
Pink, John J. (See Crosby and Pink.)						
Pipal, Edward D., assignor to Couplers Accommodator Co., Chicago, Ill. Train-pipe coupling	850,480	Apr. 16	3060	753	127	2580
Piper, S. S. (See Foster, John C., assignor.)						
Pittsburgh Coal Washer Company. (See Martin and Cory, assignors.)						
Plass, William P., New York, N. Y. Skylight structure	850,427	Apr. 16	3024	753	127	2581
Podstata, Vaclav H., Dunning, Ill. Pneumatic cushion	850,181	Apr. 16	3217	632	127	2627
Podstata, Vaclav H., and F. M. Prenell, Chicago, Ill. Pneumatic spring for vehicles	850,180	Apr. 16	3216	631	127	2627
Pollard, Knox C., Seattle, Wash. Timber-cutting device	850,549	Apr. 16	3709	903	127	2767
Polt, John J., Newark, N. J. Shoe-cleaning device	850,384	Apr. 16	3422	717	127	2637
Poor, Samuel S., Westfield, N. J. Cigarette-box	850,383	Apr. 16	3219	632	127	2628
Pope, Reginald S., Boston, Mass. Watch-guard	850,231	Apr. 16	3215	706	127	2638
Poppendieck, William, Carlstadt, N. J. Machine for enveloping a metal core in a plastic body	850,702	Apr. 16	4160	870–1	127	2721
Pörsche, Heinrich P. R. L., Hamburg, Germany. Elastic-fluid turbine	850,227	Apr. 16	3023	717–8	127	2577
Posey, H. H., *et al.* (See Posey, James A., assignor.)						
Posey, James A., assignor of two-thirds to W. W. Major and H. H. Posey, Midlothian, Tex. Protector for rubber tires	850,480	Apr. 16	3204	754	127	2561
Potts, Jacob L., Ithaca, Mich. Mop-wringer	850,731	Apr. 16	4062	871–2	127	2722
Power, Willoughby H., London, England. Disinfecting-tablet	850,540	Apr. 16	4061	903	127	2736
Prenell, Frank M. (See Podstata and Prenell.)						
Price, John H., New York, N. Y. Nested toy blocks	850,482	Apr. 16	3209	754	127	2562
Price, John H., assignor to McLoughlin Brothers, New York, N. Y. Game apparatus	850,483	Apr. 16	3210	754	127	2562
Pringle, John L., New Britain, Conn. Miter-box	850,575	Apr. 16	4051	911	127	2773
Progressive CO_2 Power Company. (See Chappell, George H., assignor.)						
Pryor, D. (See Wilson, Arthur H., assignor.)						
Purvis, George T., and J. King, assignors to A. J. Joyner, Wilson, N. C. Combined planter and fertilizer-distributer	850,340	Apr. 16	3140	657	127	2462
Quinn, Floyd P., Vancouver, British Columbia, Canada. Means for operating log-haul clutches	850,339	Apr. 16	3144	658	127	2462
R. E. Dietz Company. (See Wright, Frederick K., assignor.)						
Rader, Gustave, Montclair, N. J. Dumb-waiter shaft	850,632	Apr. 16	3216	707	127	2638
Rahtjen, Arnold, and C. Stephan, Hamburg, Germany; said Stephan assignor to said Rahtjen. Making indigo	850,444	Apr. 16	3210	.....	127	2561
Rail Joint Company. (See Wolhaupter, Benjamin, assignor.)						
Ramos, Augusto, Sao Paulo, Brazil, assignor to Marcus Mason & Company, New York, N. Y. Drier	850,228	Apr. 16	3057	718	127	2538

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfg.	Official Gazette. Vol.	Official Gazette. Page.
Ramick, Noah W., Dickenson county, Va. Wrench	850,315	Apr. 16	3265	680	127	2603
Rawe, William H., Pawtucket, R. I. Stop and waste cock	850,251	Apr. 16	3146	658	127	2463
Raymond, Edwin W., Los Angeles, Cal. Roller appliance for rocking-chairs	850,782	Apr. 16	4164	872	127	2723
Ream, William W., Veganesville, Pa. Umbrella rib-holder and runner	850,445	Apr. 16	3517	736	127	2581
Redding, Oliver C., assignor of one-half to W. K. Kenly, Chicago, Ill. Gyratory crusher	850,491	Apr. 16	3607	755	127	2582
Ree, Charles S., Philadelphia, Pa. Cork-puller	850,184	Apr. 16	3022	633	127	2439
Reichard, Jeruniah, assignor, by mesne assignments, to American Safety Razor Company, New York, N. Y. Safety-razor	850,182	Apr. 16	3021	632	127	2426
Reinhardt, Gotthold, Dresden, Germany. Fish-tank on transporting-car or the like	850,316	Apr. 16	3266	681	127	2466
Reiss, George T., Hamilton, Ohio, assignor to Niles-Bement-Pond Company, Jersey City, N. J. Journal-bearing	850,399	Apr. 16	3429	718	127	2636
Reiter, George, Pleasant Ridge, Ohio. Slipper for soaking the feet	850,603	Apr. 16	3817	797	127	2637
Reo Motor Car Company. (See Thomas, Horace T., assignor.)						
Reyburn, John E. (See Young, Harry W., assignor.)	850,492	Apr. 16	3613	756	127	2584
Reynolds, Alva L. and G. A., Huntington Beach, Cal. Wave-motor						
Reynolds, George A. (See Reynolds, Alva L. and G. A.)						
Rice Electric Switch Company. (See Rice, Elton J., assignor.)						
Rice, Elton J., assignor to Rice Electric Switch Company, Spokane, Wash. Switch-operating device	850,604	Apr. 16	3818	797	127	2637
Richards, Francis H., Hartford, Conn. Adjusting device	850,252	Apr. 16	3148	658	127	2464
Richards, Francis H., Hartford, Conn. Making playing-balls	850,253	Apr. 16	3151	658	127	2465
Richards, W. H., *et al.* (See Kiehle, James M., assignor.)						
Richardson, Charles J., Baltimore, Md. Piston-replacing device	850,675	Apr. 16	3976	831	127	2677
Richardson, Phineas, Kennebago Lake, Me. Vehicle running-gear	850,783	Apr. 16	4165	872	127	2723
Richardson, Robert, assignor of one-half to A. B. Estep, Yates Center, Kans. Traction-engine steering-gear	850,850	Apr. 16	4303	903–4	127	2768
Riches, Charles H., *et al.* (See Martin, Fred E., assignor.)	850,784	Apr. 16	4166	872	127	2723
Richmond, Harold S., Brooklyn, N. Y. Ventilating apparatus						
Richter, Edward, assignor to G. H. Oliver, New York, N. Y., M. E. Bull, Garwood, and C. S. Amerman, Washington, N. J. Blindstitching, overseaming, and serging attachment for sewing-machines	850,851	Apr. 16	4305	904	127	2769
Ridgely, Charles T., assignor to Standard Trimmer Company, Springfield, Ohio. Paperhanger's smoothing-roller	850,317	Apr. 16	3266	681	127	2467
Ridley, Clarence A., New Orleans, La. Street-railway switch	850,318	Apr. 16	3268	681	127	2467
Riedinger, Alfred F. (See Riedinger, Edward, assignor.)						
Riedinger, Edward, assignor to himself and A. F. Riedinger, New York, N. Y. Extension wagon	850,785	Apr. 16	4167	873	127	2724
Riedel, August, and E. Ittershagen, Philadelphia, Pa.; said Ittershagen assignor to said Riedel. Knitting-machine	850,786	Apr. 16	4169	873–4	127	2724
Riechmueller, George, San Francisco, Cal. Door closer and check	850,545	Apr. 16	3707	775	127	2610
Robbins, Alexander, Allegheny, Pa. Keyhole-guard for locks	850,446	Apr. 16	3518	736	127	2581
Robbins, Edward J., Boston, Mass. Pipe-wrench	850,254	Apr. 16	3153	659	127	2465
Robert Holmes & Brothers. (See Holmes, Grant, assignor.)						
Roberts, George W., Minersville, Pa. Nut-lock	850,787	Apr. 16	4173	875	127	2725
Roberts, Richard W., Chicago, Ill. Clip	850,185	Apr. 16	3023	633	127	2439
Robertson, William A. (See Hamilton, Rusk, and Robertson.)						
Robeson Cutlery Company. (See Cooper and Oliver, assignors.)						
Robinson, Robert P. (See Hook and Robinson.)						
Robinson, Willis E., assignor of one-half to H. Williams, Denver, Colo. Combination-tool	850,319	Apr. 16	3270	682	127	2468
Robusk, Jesse H., Anadarko, Okla. Ter. Gas-range lighter	850,852	Apr. 16	4307	904	127	2769
Roeder, Franz, Wiesbaden, assignor of one-half to Felten & Guilleaume Lahmeyerwerke, A. G., Frankfort-on-the-Main, Germany. Transferring ships or vessels	850,320	Apr. 16	3271	682	127	2468
Rose, Philip H. (See Morrissey, John J., assignor.)	850,788	Apr. 16	4174	875	127	2725
Rossilia, Louis N. J., Paris, France. Secondary-battery plate and making same	850,789	Apr. 16	4176	875	127	2725
Rosenthal, Andrew G., Chicago, Ill. Attachment for sewing-machines	850,493	Apr. 16	3614	756	127	2584
Rowell, George W., Hollis, Okla. Ter. Double-ended wrench	850,255	Apr. 16	3154	659	127	2466
Royse, John, Sherman, Tex. Combination device	850,256	Apr. 16	3155	659	127	2466
Runge, Walter C., Camden, N. J., assignor to International Royal Phone Company, Boston, Mass. Phonogram						
Rusk, John. (See Hamilton, Rusk, and Robertson.)						
Russell & Erwin Manufacturing Company. (See Papenfoth, Paul, assignor.)						
Ryan, George E., New York, N. Y. Railway safety apparatus	850,790	Apr. 16	4177	875–6	127	2726
Ryder, Albert J. (See Lee, Bartley J., assignor.)						
Safety Emery Wheel Co. (See Hyde, David B., assignor.)						
Sanders, David P., Reading, Pa. Brick-machine	850,676	Apr. 16	3977	831–2	127	2677
Sanders, Joseph, Washington, D. C. Gramophone record-tablet	850,494	Apr. 16	3614	756	127	2584
Sands, Thomas J., Utica, N. Y. Slug or bunch catcher for yarn	850,400	Apr. 16	3430	719	127	2638
Sangamo Electric Company. (See Lanphier, Robert C., assignor.)						
Savage, George E., and J. W. Chapman, assignors to Manning, Bowman & Company, Meriden, Conn. Chafing-dish	850,401	Apr. 16	3432	719	127	2639
Schabinger, Charles H., Detroit, Mich. Gear-transmission mechanism	850,257	Apr. 16	3157	660	127	2466
Schafer, Peter, Jr., Fairview, Ill. Water-gap	850,791	Apr. 16	4179	876	127	2726
Schenck, Murray, Chicago, Ill., assignor to Union Bag & Paper Company, Jersey City, N. J. Paper-bag machine	850,605	Apr. 16	3820	797–8	127	2637
Schlachter, Carl A., Rockwell City, Iowa. Tire-armor	850,321	Apr. 16	3272	682	127	2468
Schlagtendal, Ernst, Barmen, Germany. Door-bolt	850,322	Apr. 16	3273	682	127	2469
Schleicher, William A., assignor to Eberhard Manufacturing Company, Cleveland, Ohio. Wire buckle	850,792	Apr. 16	4181	876	127	2726
Schleicher, William A., assignor to Eberhard Manufacturing Company, Cleveland, Ohio. Wire buckle	850,793	Apr. 16	4181	877	127	2726
Schleicher, William A., assignor to Eberhard Manufacturing Company, Cleveland, Ohio. Buckle	850,794	Apr. 16	4182	877	127	2726
Schleicher, William A., assignor to Eberhard Manufacturing Company, Cleveland, Ohio. Buckle	850,795	Apr. 16	4182	877	127	2727
Schmidt, Louis M., Lynn, Mass., assignor to General Electric Company. Circuit-detesting device	850,258	Apr. 16	3159	660	127	2467
Schroeder, Adolph, assignor to A. Krause, Berlin, Germany. Sterilizing and preserving substances	850,606	Apr. 16	3822	.....	127	2638
Schröder, Adolph, Hoboken, N. J., assignor to A. Krause, Berlin, Germany. Making sanitary carbonated ice	850,607	Apr. 16	3824	.....	127	2638
Schuch, William, West Hoboken, N. J., assignor of one-half to G. H. Hyde, New York, N. Y. Sash-lock	850,495	Apr. 16	3618	756–7	127	2585
Schuchart, Paul A., assignor to Composite Pile Construction Company, New York, N. Y. Sheet-piling	850,497	Apr. 16	3621	757	127	2585
Schuchart, Paul A., and G. G. Brown, assignors to Composite Pile Construction Company, New York, N. Y. Sheet-piling	850,496	Apr. 16	3620	757	127	2585
Schultz, Henry T., *et al.* (See Lynch, Daniel O., assignor.)						
Schuyler, Frank B., San Francisco, Cal. Wedge splitting and shaving machine	850,546	Apr. 16	3709	775	127	2610

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Dr'g.	Official Gazette. Vol.	Page.
Schwab, Howard. (See Congreve, Hilas V., assignor.)						
Schwarzkopf, Charles, St. Louis, Mo. Flower-pot machine	850,233	Apr. 16	3274	683	127	2460
Scott, E. A. (See Marvell and Ashman, assignors.)						
Scott, George W., and O. A. Thelin, Chicago, Ill., assignors to National Malleable Castings Company, Cleveland, Ohio. Draft-gear rigging	850,486	Apr. 16	3622	756	127	2697
Scribner, Charles E., Jericho, Vt., assignor to Western Electric Company, Chicago, Ill. Relay	850,482	Apr. 16	3433	719	127	2630
Scullin, Terrance. (See Skov, Soren R., assignor.)						
Seaman, George Q., New York, assignor of one-half to T. O'Connor, Brooklyn, N. Y. Trolley stand and pole	850,706	Apr. 16	4183	877	127	2727
Segnitz, Herman. (See Fisher, Charles, assignor.)						
Seibert, Robert D., Millville, Pa. Thill-coupling	850,209	Apr. 16	3160	661	127	2467
Seiden, James M., Crafton, Pa. Combined cork-holder and bottle-stopper for bottles	850,488	Apr. 16	3424	720	127	2630
Selig, Sidney H., trustee. (See Crossy and Pink, assignors.)						
Selley, Edwin J., New York, N. Y. Stove or furnace	850,220	Apr. 16	3161	661	127	2467
Seward, George O. (See Kugelgen and Seward.)						
Seyl, Joseph C., and D. G. Butts, Chicago, Ill., assignors to Yawman & Erbe Manufacturing Company, Rochester, N. Y. Label-holder for index-tab cards	850,324	Apr. 16	3275	683	127	2460
Seys, Avraham, Grand Rapids, Mich. Kettle-cover	850,677	Apr. 16	3960	872	127	2678
Shaffer, Lewis D., Paint borough, Pa. Conduit-trawler	850,797	Apr. 16	4185	878	127	2727
Shaffer, Lewis D., Paint borough, Pa. Line-carrier	850,798	Apr. 16	4187	878-9	127	2728
Shaw, Joseph, assignor of one-half to S. T. Meservey, Fort Dodge, Iowa. Adjustable wall and ventilator for stock-cars	850,676	Apr. 16	3961	832	127	2678
Sherwood, John N. (See Willhoit, William E., assignor.)						
Shields, James, Frankfort, Ind. Tobacco-pipe	850,404	Apr. 16	3435	720	127	2630
Shoevers, Roy A., Shenandoah, Iowa. Dumping-wagon	850,708	Apr. 16	4189	879	127	2729
Shuttweech, John, New York, N. Y. Air-ship	850,209	Apr. 16	4191	879-80	127	2729
Shumaker, Charles P., assignor to Invincible Grain Cleaner Company, Silver Creek, N. Y. Separating or grading machine	850,447	Apr. 16	3630	736	127	2661
Sibley & Trussell Manufacturing Company. (See Dawson, James C., assignor.)						
Siemund, Herman, Chicago, Ill. Holder for bowls and the like	850,489	Apr. 16	3625	756	127	2697
Skov, Soren R., assignor of one-half to T. Scullin, Cleveland, Ohio. Window curtain or shade fixture	850,195	Apr. 16	3035	633	127	2629
Slawson-Graham Company. (See Bowne, John D., assignor.)						
Smith, David, San Francisco, Cal. Compression-cock	850,679	Apr. 16	3962	833	127	2679
Smith, Everett E., Leon, W. Va. Nut-lock	850,481	Apr. 16	4193	880	127	2730
Smith, George E., Oyster Bay, N. Y. Nail-tongs	850,347	Apr. 16	3711	776	127	2611
Smith, George G., Florence, Italy. Purifying gas	850,680	Apr. 16	3963	833	127	2679
Smith, George H., Evanston, Ill., assignor to Densmore Typewriter Company, Syracuse, N. Y. Type-writing machine	850,187	Apr. 16	3027	633-4	127	2629
Smith, George L., Aberdeen, Scotland. Fire and temperature alarm or indicator	850,681	Apr. 16	3965	833	127	2679
Smith, George W., assignor of one-half to A. Emrich, Baltimore, Md. Fire-alarm apparatus	850,683	Apr. 16	4308	904-5	127	2780
Smith, Harvey D., Battle Creek, Mich. Vehicle	850,349	Apr. 16	3638	756	127	2667
Smith, Joseph, assignor of one-half to G. T. Biggs, Elyria, Ohio. Potato-digger	850,682	Apr. 16	3966	833	127	2680
Smith, Paul B., Philadelphia, Pa. Watch-guard	850,351	Apr. 16	3163	661	127	2468
Smulders, Francis A. M., Rotterdam, Netherlands. Lighter or barge	850,683	Apr. 16	3969	834	127	2680
Smulders, Francis A. M., Rotterdam, Netherlands. Endless conveyor	850,684	Apr. 16	3991	834-5	127	2680
Snevely, James E., San Francisco, Cal. Machine for making feather dusters and brushes	850,685	Apr. 16	3993	835	127	2681
Snyder, Frederick T., Oak Park, Ill. Turbine	850,501	Apr. 16	3627	757	127	2598
Snyder, John O., Altoona, Pa. Rail clamp or fastening	850,702	Apr. 16	3164	662	127	2468
Snyder, Lambert, Rochelle Park, N. J. Vibratile apparatus	850,180	Apr. 16	3023	634	127	2631
Sodeau, William H. (See Lloyd and Sodeau.)						
Soeidner, Henry, East Williamsburg, assignor to De La Vergne Machine Company, New York, N. Y. Oil-engine. (Reissue)	12,676	Apr. 16	4309	919-20	127	2783
Softley, James W., Winnipeg, Manitoba, Canada. Sanitary closet	850,703	Apr. 16	3165	662	127	2468
Sorensen, Christine J., assignor to Gilbert Manufacturing Company, New York, N. Y. Skirt	850,704	Apr. 16	3166	662	127	2469
Southwark Foundry & Machine Company. (See Peterka, Gustav B., assignor.)						
Sower, Jacob D., Rimo, Kans. Spring-wheel	850,705	Apr. 16	3167	662	127	2469
Sowerby, William, Indiana, Pa. Receptacle	850,686	Apr. 16	3968	836	127	2681
Spaninger, Ferdinand, Stuttgart, Germany. Garment suspender or holder	850,490	Apr. 16	3436	720	127	2630
Sparre, Fin, assignor to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Waterproof composition for explosives	850,206	Apr. 16	3168	.....	127	2469
Sparre, Fin, assignor to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Ammonium-nitrate metallic explosive and making same	850,207	Apr. 16	3170	.....	127	2469
Sparre, Fin, assignor to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Explosive	850,208	Apr. 16	3171	.....	127	2470
Sparre, Fin, assignor to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Ammonium-nitrate explosive	850,225	Apr. 16	3277	.....	127	2469
Sparre, Fin, assignor to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Explosive and making same	850,226	Apr. 16	3279	.....	127	2630
Sparre, Fin, assignor to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Composition for railway-torpedoes	850,496	Apr. 16	3437	.....	127	2630
Sparre, Fin, assignor to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Explosive	850,692	Apr. 16	3631	.....	127	2598
Spencer, Christopher M., Windsor, assignor to Universal Machine Screw Company, Hartford, Conn. Clutch	850,354	Apr. 16	4313	905	127	2781
Spillman, Edward O., assignor to Herschell-Spillman Company, North Tonawanda, N. Y. Brace for roundabouts and analogous structures	850,449	Apr. 16	3624	737	127	2663
Spillman, Richard M., Princeton, Ind. Locomotive-headlight	850,502	Apr. 16	4194	880	127	2730
Spunaugle, Henry, St. Joseph, Mo. Rail-joint	850,209	Apr. 16	3171	663	127	2470
Stahl, John P. (See Kiebler and Stahl.)						
Standard Machine Company. (See Houseman, Harry A., assignor.)						
Standard Trimmer Company. (See Ridgely, Charles T., assignor.)						
Stanley Rule & Level Company. (See Cook, Harris J., assignor.)						
Stanley, William, Great Barrington, Mass., assignor to General Electric Company.						
Stetter.						
Stephen, George B., Philadelphia, Pa. Tile	850,487	Apr. 16	3966	836	127	2663
Stephen, George B., Philadelphia, Pa. Tile	850,271	Apr. 16	3174	663	127	2471
Stephen, George B., Philadelphia, Pa. Tile or stair-tread	850,272	Apr. 16	3175	663	127	2471
Stephen, George B., Philadelphia, Pa. Tile	850,273	Apr. 16	3177	664	127	2471
Stephen, George B., Philadelphia, Pa. Tiling	850,274	Apr. 16	3178	664	127	2472
Stephenson, B. S., et al. (See Hill, John W., assignor.)						
Stenner, Gottlieb, Dunkirk, Ohio. Railway-crossing	850,275	Apr. 16	3180	664	127	2472
Stenzel, Jacob, Bonn, Germany. Manufacturing artificial stone	850,688	Apr. 16	3967	836-7	127	2682
Stetser, Bernard T., assignor to Steber Machine Company, Utica, N. Y. Fabric-take-up mechanism for knitting-machines	850,689	Apr. 16	3969	.....	127	2682
	850,355	Apr. 16	4315	906	127	2781

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Dr'g.	Official Gazette. Vol.	Page.
Steber Machine Company. (See Steber, Bernard T., assignor.)						
Stedham, William H., and J. N. Miller, Royse City, Tex. Punch	850,803	Apr. 16	4194	880	127	2730
Steele, Lawrence C., Wheeling, W. Va., assignor to American Sheet & Tin Plate Company, Pittsburg, Pa. Coating metal sheets	850,548	Apr. 16	3711	776	127	2611
Steeves, Perry, Missoula, Mont. Appliance for shifting the point of application of the weight on the trucks of cars and the like	850,804	Apr. 16	4196	881	127	2731
Steinmetz, Charles P., Schenectady, N. Y., assignor to General Electric Company. Vapor electric apparatus	850,270	Apr. 16	3173	663	127	2470
Stephan, Carl. (See Mahtjen and Stephan.)	850,189	Apr. 16	3035	634	127	2422
Stephenson, Thomas B., Belle Plaine, Kans. Combined scriber and pencil-holder	850,190	Apr. 16	3036	635	127	2422
Stevens, Richard H., Munhall, Pa. Metal transfer device	850,805	Apr. 16	4197	881	127	2731
Stewart, Sherman W., Spencer, Ind. Cream-separator	850,448	Apr. 16	3522	737	127	2662
Stickney, Albert J., assignor to Herschell-Spillman Company, North Tonawanda, N. Y. Riding-gallery	850,191	Apr. 16	3038	635-6	127	2423
Stockmayer, Joan. (See Airich, Henry, assignor.)						
Stonesifer, Mervin E. (See Eppley and Stonesifer.)						
Story, Joseph M., Owasso, Mich. Steam-generator	850,407	Apr. 16	3438	720-1	127	2540
Strubel, Victor O., and A. E. Hogrebe, Philadelphia, Pa., assignors to Niles-Bement-Pond Company, Jersey City, N. J. Traveling crane	850,690	Apr. 16	4001	837	127	2682
Stump, Abraham L. (See Brucker and Stump.)	850,406	Apr. 16	3439	721	127	2541
Sudbrook, Peter H., New Mells, Mo. Mail-bag-delivery apparatus						
Sullivan, Matthew L., San Francisco, Cal. Document-holder						
Sulzberger, Karl, Berlin, Germany, assignor to General Electric Company. Dynamo-electric machine	850,276	Apr. 16	3181	664	127	2472
Summers, Jesse, and J. J. Berry, assignors to Indianapolis Watchman Clock Company, Indianapolis, Ind. Electrical indicator	850,691	Apr. 16	4004	837-8	127	2683
Sutro, Harry H., New York, N. Y. Apparatus for treating liquids	850,503	Apr. 16	3632	759	127	2598
Sutton, Walter R., Kansas City, Kans. Hoisting apparatus for deep wells	850,549	Apr. 16	3713	776-7	127	2611
Sutton, William T. (See Lionais and Sutton.)						
Swift, Edwin M., Ballard, Wash. Automatic slack-adjuster for brakes	850,856	Apr. 16	4319	906	127	2763
Tabor Manufacturing Company. (See Lewis, Wilfred, assignor.)	850,504	Apr. 16	3634	760	127	2599
Tamamura, Yusuke, Ashio, Japan. Differential clip for aerial ropeways, &c	850,277	Apr. 16	3183	666	127	2473
Tatem, Clifford R., Buffalo, N. Y., assignor to Allis-Chalmers Company and Bullock Electric Manufacturing Company. System of motor control	850,278	Apr. 16	3198	666	127	2475
Tatum, Lewis L., Norwood, Ohio, assignor to Allis-Chalmers Company and Bullock Electric Manufacturing Company. System of distribution	850,327	Apr. 16	3281	683	127	2600
Tauber, Isidor, Vienna, Austria-Hungary. Pneumatic tread for boots and shoes	850,450	Apr. 16	3525	747	127	2663
Taylor, Edwin F., New Decatur, Ala. Rotary engine	850,806	Apr. 16	4198	881-3	127	2731
Taylor, George, Philadelphia, Pa. Hair cloth-loom						
Thelin, Oscar A. (See Scott and Thelin.)	850,357	Apr. 16	4321	906-7	127	2764
Thomas, Horace T., assignor to Reo Motor Car Company, Lansing, Mich. Change-speed gear	850,451	Apr. 16	3526	.....	127	2663
Thomlinson, Joseph. Portland, Oreg. Preserving fish	850,692	Apr. 16	4010	838-9	127	2684
Thorsohmidt, Ernest C., New York, N. Y. Machine for applying bilge-hoops to casks and barrels	850,505	Apr. 16	3636	760	127	2600
Thrall, George C. (See Goddard, George M., assignor.)	850,192	Apr. 16	3040	636-7	127	2423
Till, William F., and J. C. Newton, Brooklyn, N. Y. Closet-seat	850,193	Apr. 16	3042	637	127	2423
Tillman, Edward G., Thayer, W. Va. Mining-machine						
Tippett, William E., Washington, D. C. Vestibule-curtain holder	850,608	Apr. 16	3826	796-9	127	2638
Tousey, Charles W. (See Giles and Tobey.)	850,506	Apr. 16	3637	761	127	2600
Toulaax, Stanley J., Chicago, Ill. Ironing-machine						
Towring, Christian J., Philadelphia, Pa. Electric switch	850,452	Apr. 16	3528	737	127	2663
Toledo Machine and Tool Company. (See Bingham, Jeremiah, assignor.)						
Tolman, Scott H., Boston, Mass. Hair-waver						
Tooker, William A., Jr. (See Jeralds, Elbert O., assignor.)	850,874	Apr. 16	4353	912	127	2778
Tripp, James H., assignor of three-fourths to W., W., and J. H. Morris, Vanceboro, N. C. Turner's tool						
Tulloch, David M. (See Christensen and Tulloch.)	850,858	Apr. 16	4323	907	127	2764
Tunison, Murray C., assignor of one-half to C. W. Harrison, Los Angeles, Cal. Emergency-telegraph	850,807	Apr. 16	4204	884	127	2733
Uhlein, John C., Watertown, N. Y. Non-refillable bottle	850,808	Apr. 16	4206	884	127	2733
Uhlein, John C., Watertown, N. Y. Non-refillable bottle	850,328	Apr. 16	3282	683	127	2601
Unckrich, Ferdinand F., assignor to Buckeye Wheel Company, Galion, Ohio. Wheel-hub						
Underwood Typewriter Company. (See Kunath, Edward F., assignor.)						
Underwood Typewriter Company. (See McCormack, Harry S., assignor.)						
Underwood Typewriter Company. (See McLaughlin, John C., assignor.)						
Union Bag & Paper Company. (See Murchie, Sylvanus T., assignor.)						
Union Bag & Paper Company. (See Schenck, Murray, assignor.)						
Union Bank. (See Bim, Josef, assignor.)						
Union Paper Bag Machine Company. (See Dulin, Charles E., assignor.)						
United States Tin, Solder & Iron Company. (See Bills, John H., assignor.)						
Universal Machine Screw Company. (See Spencer, Christopher M., assignor.)						
Utescher, Ernst, Hamburg, assignor to Garantol-Gesellschaft M. B. H., Dresden, Germany. Egg-preservative and making same	850,693	Apr. 16	4013	.....	127	2685
Valentine, Herbert S., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Automatic stop for electric hoisting apparatus	850,694	Apr. 16	4014	839	127	2685
Van Aller, Tycho, Schenectady, N. Y., assignor to General Electric Company. Cut-out for vapor electric apparatus	850,279	Apr. 16	3194	665-6	127	2476
Van Dorn-Elliott Electric Company. (See Pedersen, Adolph, assignor.)						
Van Dyke, John, assignor of one-half to M. A. Garrett, Chicago, Ill. Separable jaw for brake and other rods	850,859	Apr. 16	4325	907	127	2765
Vanino, Ludwig, Munich, Germany. Self-luminous body	850,810	Apr. 16	4326	.....	127	2765
Veeder, Curtis H., Hartford, Conn. Box-fastener	850,195	Apr. 16	3045	637	127	2424
Ver nasch, Julien J. M. A., Schaerbeek-lez-Brussels, Belgium. Manufacturing cupram-monium solutions	850,695	Apr. 16	4016	840	127	2686
Viau, Moore Z., Plattsburg, N. Y. Pipe-wrench	850,696	Apr. 16	4018	840	127	2687
Victor Talking Machine Company. (See Gleason, Edward D., assignor.)	850,697	Apr. 16	4020	840	127	2687
Voss, William E., Columbia, Tenn. Laundry-bag	850,550	Apr. 16	3719	777	127	2613
W. G. Armstrong, Whitworth & Company. (See Lloyd and Sodeau, assignors.)	850,551	Apr. 16	3721	777	127	2613
Wagenführ, Charles A. C., New York, N. Y. Attachment for engraving-machines	850,699	Apr. 16	3828	799	127	2638
Wagner, George H., and S. S. Herne, Springfield, Mass. Toilet article	850,507	Apr. 16	3639	761	127	2600
Wakefield, Isaac, New Eagle, Pa. Fan	850,508	Apr. 16	3641	761-2	127	2601
Waldon, Sidney D., assignor to Packard Motor Car Company, Detroit, Mich. Pedal footrest for automobiles	850,280	Apr. 16	3195	666	127	2476
Walker, George, assignor to Landers, Frary and Clark, New Britain, Conn. Weighing-scale	850,281	Apr. 16	3197	666	127	2477
Walker, Henry M., Butterworth, Va. Saw-handle						
Wallen, Samuel, et al. (See Ledford, John E., assignor.)						
Walter, Jeanne, New York, N. Y. Bandage						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Des.	Official Gazette. Vol.	Official Gazette. Page.
Wanamaker, Charles B. (See Leedy and Wanamaker.)						
Ward, Barnard L., Ottumwa, Iowa. Shelf-tongs	389,499	Apr. 16	3441	721	127	2541
Ward, James R., Detroit, Mich. Adjustable splint	389,610	Apr. 16	3529	800	127	2539
Ward, Z. F., *et al.* (See Phipps, Moses L., assignor.)						
Warman, William A., assignor to Keller Mechanical Engraving Company, New York, N. Y. Turbine-motor	389,126	Apr. 16	3046	638	127	2435
Warnock, Nicholas H., Ashford, Ala. Belt-tightener for sawmill feed mechanisms	389,690	Apr. 16	4020	840	127	2580
Waterman, Lewis E., assignor to Emerson Manufacturing Company, Rockford, Ill. Cultivator	389,861	Apr. 16	4327	907	127	2705
Watson, William M., assignor to himself and E. Batchelor, Brantford, Ontario, Canada. Gate	389,690	Apr. 16	4022	841	127	2580
Weatherhead, Edward H., Cleveland, Ohio. Liquid-trapping device	389,410	Apr. 16	3443	721-2	127	2542
Weaver, John M., New Oxford, Pa. Dust-collector for wheeled vehicles	389,703	Apr. 16	4030	844	127	2582
Weimar, Andrew, Cheltenham, assignor of one-half to W. Weimar, Philadelphia, Pa. Woven tape or band	389,702	Apr. 16	4032	843	127	2580
Weimar, William. (See Weimar, Andrew, assignor.)						
Weinland, Henry F., assignor to Lagonda Manufacturing Company, Springfield, Ohio. Boiler-tube cleaner	389,701	Apr. 16	4029	842	127	2580
Welch, Hezekiah C., Haverhill, Mass. Arch-supporting shoe	389,382	Apr. 16	4326	908	127	2705
Werner, Emil, assignor of one-half to A. S. Garman, Philadelphia, Pa. Drawing-board	389,548	Apr. 16	3722	778	127	2613
Wessely, Ignaz F., Linz, Austria-Hungary. Device for automatic regulation of outlet-sluices	389,705	Apr. 16	4033	842	127	2580
West, Helen I., New York, N. Y. Hair-curling device	389,548	Apr. 16	3725	778	127	2614
Western Electric Company. (See Crane, Henry M., assignor.)						
Western Electric Company. (See Currier, Hiram D., assignor.)						
Western Electric Company. (See Harkness, William E., assignor.)						
Western Electric Company. (See McQuarrie, James L., assignor.)						
Western Electric Company. (See Scribner, Charles E., assignor.)						
Weston, Edward B., Dayton, Ohio. Display-rack attachment	389,554	Apr. 16	3726	778	127	2614
Wheat, Elmer. (See Wheat, William D., assignor.)						
Wheat, William D., assignor of one-half to E. Wheat, Jamestown, Ky. Curry-comb	389,382	Apr. 16	3198	666	127	2477
Whitman, Guy A., Greenland, Mich. Rotary engine	389,555	Apr. 16	3727	779	127	2615
Wikoff, Lester, Cherry Valley, N. Y. Grain-lifter	389,704	Apr. 16	4035	843	127	2581
Willhoit, William E., Sheltima, assignor of one-half to J. N. Sherwood, Kansas City Mo. Combined trap, holder, and chute for live stock	389,197	Apr. 16	3048	638	127	2435
Williams, Henry. (See Robinson, Willis E., assignor.)						
Willis, Henry M., East Williston, N. Y. Bundle-carrier	389,705	Apr. 16	4036	843	127	2581
Wilson, Arthur H., assignor of one-half to D. Fryor, Lodgeotts, Ill. Tire-bolting machine	389,329	Apr. 16	3207	684	127	2733
Wilson, Harold K, New Bedford, Mass. Device for lighting gas-lamps	389,309	Apr. 16	3043	702	127	2662
Winans, Wesley G., assignor of five-eighths to F. R. Culbertson and L. Eisenberg, Spokane, Wash. Counter-stool	389,452	Apr. 16	3630	738	127	2553
Withers, Albert A., Balaclava, Victoria, Australia. Means for inflating pneumatic tires	389,708	Apr. 16	4037	844	127	2582
Wojidkow, Louis, assignor to New York Stamping Company, Brooklyn, N. Y. Coffee-percolator	389,709	Apr. 16	4040	844-5	127	2582
Wojidkow, Louis, assignor to New York Stamping Co., Brooklyn, N. Y. Percolator	389,710	Apr. 16	4041	845	127	2582
Wolfe, Orris M., Dubois, Pa. Belt-stretcher	389,454	Apr. 16	3631	738	127	2553
Wolhaupter, Benjamin, assignor to Rail Joint Company, New York, N. Y. Rail-joint	389,198	Apr. 16	3049	639	127	2435
Woltman, Gustave A. (See Kutsche, Oswald, assignor.)						
Wooldridge, William J., Schenectady, N. Y., assignor to General Electric Company. Transformer	389,693	Apr. 16	4031	908	127	2706
Worswick, James E., assignor of one-half to G. P. Haardt, Montgomery, Ala. Pneumatic cotton-harvester	389,709	Apr. 16	4038	841-2	127	2582
Worth, John S., and W. F. Harrison, assignors to said John S. Worth and W. P. Worth, Coatesville, Pa. Tube or bar straightening machine	389,810	Apr. 16	4311	905-6	127	2704
Worth, William P. (See Worth and Harrison, assignors.)						
Wright, Charles C., Indianapolis, Ind. Clasp	389,894	Apr. 16	4323	908	127	2706
Wright, Frederick K., Syracuse, assignor to R. E. Diets Company, New York N. Y. Lantern	389,455	Apr. 16	3632	738	127	2554
Wright, George W., and P. W. Casey, Norwich, Conn. Feed-water heater	389,707	Apr. 16	4039	844	127	2582
Wright, Kirk K. (See Wright, Ralph G. and K. K.)						
Wright, Ralph G. and K. K., Buffalo, N. Y. Apparatus for washing bottles	389,199	Apr. 16	3053	639	127	2436
Yale & Towne Manufacturing Company. (See Valentine, Herbert S., assignor.)						
Yawman & Erbe Manufacturing Company. (See Seyl and Butts, assignors.)						
Young, Harry W., assignor to J. E. Reyburn, Philadelphia, Pa. Electric and pneumatic governor	389,230	Apr. 16	3203	684	127	2501
Yturri, Henry, San Antonio, Tex. Trap	389,410	Apr. 16	3645	762	127	2693
Zucker & Levett & Loeb Company. (See Elliott, George M., assignor.)						

DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
American Radiator Company. (See Sjoden, Eric, assignor.)				
Aronson, Henry A., Chicago, Ill. Molding for picture-frames	38,527	Apr. 16	127	2785
Bennett, Charles A., Taunton, Mass., assignor to Reed & Barton Corporation. Spoon or fork	38,524	Apr. 16	127	2784
Cohan, Bartow B., assignor to Sheffield Stove & Foundry Co. and King Stove & Range Co., Sheffield, Ala. Stove	38,529	Apr. 16	127	2785
Grossman, Henry, New York, N. Y. Hand-bag	38,525	Apr. 16	127	2784
Grossman, Henry, New York, N. Y. Hand-bag	38,526	Apr. 16	127	2785
King Stove & Range Co. (See Cohen, Bartow B., assignor.)				
Rathbone, Sard & Company. (See Van Buren, Jafew S., assignor.)				
Reed & Barton Corporation. (See Bennett, Charles A., assignor.)				
Sheffield Stove & Foundry Co. (See Cohen, Bartow B., assignor.)				
Sjoden, Eric, assignor to American Radiator Company. Radiator	38,528	Apr. 16	127	2785
Van Buren, Jafew S., assignor to Rathbone, Sard & Company, Albany, N. Y. Cooking-stove	38,530	Apr. 16	127	2786
Van Buren, Jafew S., assignor to Rathbone, Sard & Company, Albany, N. Y. Cooking-stove	38,531	Apr. 16	127	2786

TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
A. De Pinna Company, New York, N. Y. Leather shoes, boots, and slippers	61,970	Apr. 16	127	2809
A. G. Spalding & Bros., New York, N. Y. Golf-balls	62,065	Apr. 16	127	2812
Actien-Gesellschaft für Anilin-Fabrikation, Berlin, Germany. External medicinal preparations for the skin	62,033	Apr. 16	127	2810
Actien-Gesellschaft für Anilin-Fabrikation, Berlin, Germany. Certain medicinal preparations	62,034	Apr. 16	127	2810
Actien-Gesellschaft für Anilin-Fabrikation, Berlin, Germany. Coal-tar dyestuffs	62,066	Apr. 16	127	2812
Actien-Gesellschaft für Anilin-Fabrikation, Berlin, Germany. Photographic developers	62,067	Apr. 16	127	2812
Albert Dickinson Company, Chicago, Ill. Poultry food	62,017	Apr. 16	127	2810
Anderson, Harold N., Dayton, Ohio. Bows, arrows, and targets	62,100	Apr. 16	127	2812
Atlantic Starch Works, Westport, Conn. Wheat-starch for laundry use	62,098	Apr. 16	127	2812
Atwell, Eli, Mountain Dale, N. Y. Talcum toilet powder and massage-cream	62,101	Apr. 16	127	2812
Baxter & Bro., H. C., Brunswick, Me. Canned lobster	61,989	Apr. 16	127	2809
Beaver Manufacturing Company, Buffalo, N. Y. Wall-board and building-paper	62,089	Apr. 16	127	2812
Benner, Eliza A., New Paris, Ohio. Solidified cementitious burial-vaults	62,102	Apr. 16	127	2812
Berry Brothers, Limited, Detroit, Mich. Varnish	62,060	Apr. 16	127	2811
Bick, Harry, New York, N. Y. Laundry soap	62,061	Apr. 16	127	2811
Bickley, McClure & Co., Knoxville, Tenn. Boys' and men's coats, vests, and trousers	62,103	Apr. 16	127	2812
Bird & Co., J. A. & W., Boston, Mass. Chemical compound	62,090	Apr. 16	127	2812
Bischoff, Ernst, New York, N. Y. Certain medicines	62,048	Apr. 16	127	2811
Bischoff, Ernst, New York, N. Y. Antiseptics, disinfectants, and germicides	62,091	Apr. 16	127	2812
Black Diamond Manufacturing Co., Cincinnati, Ohio. Roofing-paints	62,018	Apr. 16	127	2810
Boehme, Paul, Brooklyn, N. Y. Headache-powders	62,104	Apr. 16	127	2812
Böhm, F. A., Unterrauchamberg, Germany. Mouth-harmonicas	62,092	Apr. 16	127	2812
Bonkoolme Chemical Co., Kenton, Ohio. Preparation for treating venereal diseases	62,049	Apr. 16	127	2811
Booth's Hyomei Company, Buffalo, N. Y. Remedy for certain diseases	62,035	Apr. 16	127	2810
Borden's Condensed Milk Company, Jersey City, N. J., and New York, N. Y. Condensed milk, evaporated milk, and evaporated cream	62,062	Apr. 16	127	2811
Breen & Kennedy, Chicago, Ill. Whisky	61,999	Apr. 16	127	2809
Butcher, Charles F., Sheffield, England. Razors	62,019	Apr. 16	127	2810
Butler & Field, Washington, D. C. Remedy for the cure of rheumatism and gout	62,036	Apr. 16	127	2810
C. H. Bisbee Flour Co., Cincinnati, Ohio. Wheat-flour	61,990	Apr. 16	127	2809
Cammell Laird & Co. LLmited, Sheffield, England. Steel and iron in bars, sheets, rods, rails, plates, and wire	62,020	Apr. 16	127	2810
Cammell Laird & Co. Limited, Sheffield, England. Steel and iron in bars, sheets, rods, rails, plates, and wire	62,021	Apr. 16	127	2810
Chester, Frank B., Providence, R. I. Assorted fishing-tackle	62,063	Apr. 16	127	2812
Clark Thread Co., Newark, N. J. Cotton thread	62,022	Apr. 16	127	2810
Clark Thread Co., Newark, N. J. Crochet-cotton or cotton thread	62,023	Apr. 16	127	2810
Cleveland Gas & Electric Fixture Company, Cleveland, Ohio. Certain lighting-fixtures	62,105	Apr. 16	127	2812
Colgate & Co., New York, N. Y. Perfumery, talc-powder, and toilet water	62,040	Apr. 16	127	2811
Covert Mfg. Co., Watervliet, N. Y. Snap-hooks	62,000	Apr. 16	127	2810
Dawson Salts & Water Co., Dawson Springs, Ky. Concentrated and unconcentrated iron and lithia water	61,991	Apr. 16	127	2809
Downing Taylor Co., Springfield, Mass. Canned salmon, shrimp, lobsters, and clam-chowder	62,068	Apr. 16	127	2811
Drinkard, Kenton, Beaumont, Tex. Remedies for skin diseases	62,051	Apr. 16	127	2811
Eastern Dynamite Company, Kenvil, N. J. High explosives	61,978	Apr. 16	127	2809
Eberhard Manufacturing Company, Cleveland, Ohio. Certain saddlery-hardware	62,001	Apr. 16	127	2810
Edholm, Albert, Omaha, Nebr. Certain jewelry and precious-metal ware	62,002	Apr. 16	127	2810
Elgin National Watch Company, Elgin and Chicago, Ill. Watchcases	62,052	Apr. 16	127	2811
Esche, Moritz S., Chemnitz, Germany. Knitted hosiery, gloves, and underwear	62,064	Apr. 16	127	2811
Esche, Moritz S., Chemnitz, Germany. Knitted hosiery, gloves, and underwear	62,094	Apr. 16	127	2812
Esche, Moritz S., Chemnitz, Germany. Knitted hosiery, gloves, and underwear	62,106	Apr. 16	127	2812
Estes, Dana, Boston, Mass. Toilet soap	62,107	Apr. 16	127	2813
Fairchild Bros. & Foster, New York, N. Y. Preparation for the modification of cows' milk	62,065	Apr. 16	127	2811
Farbwerke vorm. Meister Lucius & Brüning, Höchst-on-the-Main, Germany. Dyes	62,108	Apr. 16	127	2813
Farbwerke vorm. Meister Lucius & Brüning, Höchst-on-the-Main, Germany. Dyestuffs applicable in coloring and printing processes	62,109	Apr. 16	127	2813
Gavitt Chemical Co., W. W., Topeka, Kans. Perfume	62,037	Apr. 16	127	2810
George Cutter Co., South Bend, Ind. Porcelain insulators	61,992	Apr. 16	127	2809
Gile & Company, H. S., Salem, Oreg. Dried and evaporated prunes	62,066	Apr. 16	127	2811
Girard & Co., Tonnay-Charente, France. Brandy	62,003	Apr. 16	127	2810
Goldberg, Solomon H., Waukegan, Ill. Hair-pins	62,053	Apr. 16	127	2811
Greene, David R., Chicago, Ill. Welsh-rarebit-seasoning compound	62,004	Apr. 16	127	2810
H. Mueller Manufacturing Company, Decatur, Ill. Valves and cocks and parts thereof	62,076	Apr. 16	127	2812
H. C. Cook Company, Ansonia, Conn. Finger-nail clippers	62,067	Apr. 16	127	2811
Hampton, Jabez M., Charlotte, N. C. Fresh peaches	62,088	Apr. 16	127	2811
Hardie Seed Co., David, Dallas, Tex. Garden-seeds	61,971	Apr. 16	127	2809
Hargreaves Bros. & Co. Limited, Kingston-upon-Hull, England. Laundry blue	62,095	Apr. 16	127	2812
Heppe & Son, C. J., Philadelphia, Pa. Pianos, mandolins, guitars, banjos, and violins	62,110	Apr. 16	127	2813
Hill, Nathaniel P., Pittsburg, Pa. Stiff felt hats	62,008	Apr. 16	127	2811
Hine, James W., Jamestown, N. Y. Mineral oil and tissue building salts	62,111	Apr. 16	127	2812
Hollywood Soap Company, Cincinnati, Ohio. Washing-powder	62,069	Apr. 16	127	2811
Hoshaw, Ulysses G., Chanute, Kans. Certain proprietary medicine	62,040	Apr. 16	127	2811
Hoxtime, Temple & Wood, Milford, Mass. Men's leather boots and shoes	61,972	Apr. 16	127	2809
Hurley Machine Company, Chicago, Ill. Floor-scraping machines	62,024	Apr. 16	127	2810
I. L. Lamm Co., Superior, Wis. Wines	62,070	Apr. 16	127	2811
Imperial Distilling & Cordial Co., Chicago, Ill. Whisky	62,054	Apr. 16	127	2811
It Publishing Company, New York, N. Y. Newspaper	62,112	Apr. 16	127	2812
J. W. James Co., Wheeling, W. Va. Certain medicinal preparations	62,055	Apr. 16	127	2811
John Haig & Co. Ltd., Markinch, Scotland. Whisky	62,039	Apr. 16	127	2811
Johnson, John H., Boston, Mass. Cigars	62,005	Apr. 16	127	2810
Judson Dynamite & Powder Company, San Francisco, Cal. High explosives	61,979	Apr. 16	127	2809
Kathairo Chemical Co., New York, N. Y. Lubricating oils and greases	62,096	Apr. 16	127	2812
Keller, Levi F., Delaware, Ohio. Certain linen goods	62,006	Apr. 16	127	2810
Kelley, Horatio S., West Dennis, Mass. Perfumes and medicated soap	62,071	Apr. 16	127	2811
Kendrick, John R., Philadelphia, Pa. Periodicals, bulletins, and directories	62,113	Apr. 16	127	2813
Kewaunee Fence Company, Peoria, Ill. Wire fence	62,025	Apr. 16	127	2810
Kilmer & Co., Dr., South Bend, Ind. Headache remedy	62,072	Apr. 16	127	2811
Laflin & Rand Powder Company, New York, N. Y. Powder	61,980	Apr. 16	127	2810
Laflin & Rand Powder Company, New York, N. Y. Powder	61,981	Apr. 16	127	2810
Laflin & Rand Powder Company, New York, N. Y. Powder	61,982	Apr. 16	127	2810

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Laflin & Rand Powder Company, New York, N. Y. Powder	61,983	Apr. 16	127	2809
Laflin & Rand Powder Company, New York, N. Y. Powder	61,984	Apr. 16	127	2809
Laflin & Rand Powder Company, New York, N. Y. Powder	61,985	Apr. 16	127	2809
Laskaris & Co., James P., Wilmington, Del. Candles	62,114	Apr. 16	127	2813
Laskaris & Co., James P., Wilmington, Del. Candles	62,115	Apr. 16	127	2813
Laundry Novelty Company, Detroit, Mich. Pads for flat-irons	62,073	Apr. 16	127	2811
Lee Broom & Duster Company, Lincoln, Nebr. Brooms and whisk-brooms	62,116	Apr. 16	127	2813
Lewis & Company, David W., New York, N. Y. Butter	62,066	Apr. 16	127	2811
Lisbenthal Bros. & Co., Cleveland, Ohio. Brandy, cordial, whisky, and gin	61,993	Apr. 16	127	2809
Lloyd Brothers, Cincinnati, Ohio. Medicated soap	62,074	Apr. 16	127	2811
Mackenzie Bros., Ross-Shire, Scotland. Pure Highland malt pot-still Scotch whisky	61,994	Apr. 16	127	2809
Mackintosh's Toffee Company, Bradley Beach, N. J. Toffee	62,117	Apr. 16	127	2813
Malt-Diastase Company, Brooklyn, N. Y. Malt extract	61,995	Apr. 16	127	2809
Marsh, Sophia M., Locust Valley, and Glen Cove, N. Y. Remedy for certain diseases	62,041	Apr. 16	127	2811
Martin, Charles C., Denver, Colo. Cheese	62,007	Apr. 16	127	2810
McClellan Paper Company, Minneapolis, Minn. Wrapping and printing paper	62,118	Apr. 16	127	2813
Medical Food Company, New York, N. Y. Certain medicinal preparation	62,075	Apr. 16	127	2811
Miner, Read & Garrette, New Haven, Conn. Substitute for lard	62,042	Apr. 16	127	2811
Mohawk Condensed Milk Co., Rochester, N. Y. Evaporated and condensed milk and evaporated and condensed cream	62,043	Apr. 16	127	2811
Mohawk Condensed Milk Co., Rochester, N. Y. Evaporated and condensed milk and evaporated and condensed cream	62,044	Apr. 16	127	2811
Molck, Emil F., Sibley, assignor to Meadows Manufacturing Company, Meadows, Ill. Seed-distributing machines	62,008	Apr. 16	127	2810
Mooney, Frank H., Chicago, Ill. Fountain-pens	62,119	Apr. 16	127	2813
Moore, David, Baltimore, Md. Dress and negligée shirts	62,009	Apr. 16	127	2810
New England Cotton Yarn Co., Boston, Mass. Cotton thread	62,120	Apr. 16	127	2813
O'Toole, James F., Baltimore, Md. Wine	62,045	Apr. 16	127	2811
Offley, Torrester & Co., London, England. Port-wine	62,036	Apr. 16	127	2810
Ohio Match Company, Wadsworth, Ohio. Matches	61,995	Apr. 16	127	2809
Ohio Match Company, Wadsworth, Ohio. Matches	61,996	Apr. 16	127	2809
Ohio Match Company, Wadsworth, Ohio. Matches	61,997	Apr. 16	127	2809
Patterson-Cabell Co., New York, N. Y. Fluid beef	62,046	Apr. 16	127	2811
Paxton & Gallagher Co., Omaha, Nebr. Certain cutlery	62,010	Apr. 16	127	2810
Pennsylvania Chocolate Company, Pittsburg, Pa. Chocolate and cocoa	61,998	Apr. 16	127	2809
Peoples Shoe Co., Mobile, Ala. Leather and canvas boots and shoes	61,973	Apr. 16	127	2809
Pfister & Vogel Leather Company, Milwaukee, Wis. All kinds of leather	61,974	Apr. 16	127	2809
Pigott, John J., Childress, Tex. Certain leather manufactures	61,975	Apr. 16	127	2809
Pillsbury-Washburn Flour Mills Company Ltd., Minneapolis, Minn. Wheat breakfast food	62,011	Apr. 16	127	2810
Pillsbury-Washburn Flour Mills Company Ltd., Minneapolis, Minn. Wheat breakfast food	62,012	Apr. 16	127	2810
Pillsbury-Washburn Flour Mills Co., Ltd., Minneapolis, Minn. Wheat breakfast food	62,077	Apr. 16	127	2812
Pittsburg Pharmacal Company, Pittsburg, Pa. Dyspepsia remedy	62,047	Apr. 16	127	2811
Porcela Company, Pittsburg, Pa. Certain detergents	62,077	Apr. 16	127	2812
Quinn, Frank M., Tekoa, Wash. Hair-restoratives	62,057	Apr. 16	127	2811
Read & Sons, William, Boston, Mass. Certain clothing	62,013	Apr. 16	127	2810
Rice, Jacob, Shakopee, Minn. Table-waters	61,997	Apr. 16	127	2809
Rice, Jacob, Shakopee, Minn. Table-waters	62,027	Apr. 16	127	2810
Robbins, Gamwell & Co., Pittsfield, Mass. Wrenches	62,121	Apr. 16	127	2813
Rutherford, Frank E., Bonham, Tex. Certain medicines	62,122	Apr. 16	127	2813
Saffa, John O., St. Louis, Mo. Smoking-tobacco	62,014	Apr. 16	127	2810
Scherer, Fred. S., Utica, N. Y. Whisky	62,028	Apr. 16	127	2810
Schimmel & Co., Miltitz, near Leipsig, Germany. Antitoxic serums	62,048	Apr. 16	127	2811
Schwabacher Bros. & Co. Inc., Seattle, Wash. Salt	67,123	Apr. 16	127	2813
Server, William H., Carbon Hill, Ill. Remedies for disorders of the blood	62,059	Apr. 16	127	2811
Smith & Co., Louis O., New York, N. Y. Cigars	63,078	Apr. 16	127	2812
Societe Anonyme de Fondations par Compression Mecanique du Sol, Paris, France. Certain machinery	61,988	Apr. 16	127	2809
Stallman & Fulton Company, New York, N. Y. Medicinal oil	62,079	Apr. 16	127	2812
Stone, Sarah B., New Haven, Conn. Jellies	63,080	Apr. 16	127	2812
Sunbeam Incandescent Lamp Company, New York, N. Y. Incandescent electric lamps	63,016	Apr. 16	127	2810
Tefft, Weller Company, New York, N. Y. Stockings	62,029	Apr. 16	127	2810
Thompson, Harry O., Covington, Ky. Certain medical preparation	62,081	Apr. 16	127	2812
Vacuum Oil Company, Rochester, N. Y. Salad-oil	62,016	Apr. 16	127	2810
Vacuum Oil Company, Rochester, N. Y. Oils, greases, and waxes for the preservation of leather	62,124	Apr. 16	127	2813
Vinsonhaler Shoe Co., St. Louis, Mo. Leather boots and shoes	61,976	Apr. 16	127	2809
W. B. Cosgrave Shoe Co., Zanesville, Ohio. Felt boots	61,977	Apr. 16	127	2809
Watts & Company, William H., Philadelphia, Pa. Floor-tiles	62,088	Apr. 16	127	2812
Wichman, Lutgen & Co., San Francisco, Cal. Whisky	62,030	Apr. 16	127	2810
Wiebusch & Hilger, Limited, New York, N. Y. Grape-hooks	62,082	Apr. 16	127	2812
Wilson Company, Chicago, Ill. Weekly periodical	62,060	Apr. 16	127	2812
Wisconsin Condensed Milk Co., Burlington, Wis., and New York, N. Y. Condensed milk	62,031	Apr. 16	127	2810
Wisconsin Condensed Milk Co., Burlington, Wis., and New York, N. Y. Condensed milk	62,032	Apr. 16	127	2810
Woolson Spice Company, Toledo, Ohio. Coffee	62,083	Apr. 16	127	2812
Yerxa Bros. & Co., Minneapolis, Minn. Coffee	62,084	Apr. 16	127	2812

LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Armour & Company, Chicago, Ill. "Arcadia Sandalwood." (For Soap)	13,475	Apr. 16	127	2814
Armour & Company, Chicago, Ill. "Arcadia Rose." (For Soap)	13,476	Apr. 16	127	2814
Berry, Maybrun Co., Chicago, Ill. "Ginger Cake Molasses." (For Molasses)	13,470	Apr. 16	127	2814
Berry, Maybrun Co., Chicago, Ill. "Uncle Ben Molasses." (For Molasses)	13,471	Apr. 16	127	2814

LABELS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Cabler, William P., Fort Wayne, Ind. "Root Juice." (For a Medical Preparation)	13,477	Apr. 16	127	2814
Charles Seip Baking Co., Chicago, Ill. "Daisy Bread." (For Bread)	13,478	Apr. 16	127	2814
Dennis, Frank B., Minneapolis, Minn. "Security Gall Salve." (For a Gall-Salve)	13,479	Apr. 16	127	2814
Dextrose Food Co., Barton Heights, Va. "Dextrose." (For a Prepared Food for Infants and Invalids)	13,472	Apr. 16	127	2814
Haseltine & Perkins Drug Company, Grand Rapids, Mich. "Canmalt." (For Whisky)	13,474	Apr. 16	127	2814
John Gund Brewing Company, La Crosse, Wis. "Pioneer." (For Lager-Beer)	13,473	Apr. 16	127	2814
Karlen Mfg. Co., Minneapolis, Minn. "Karlen's Keystone Scalp Massage and Shampoo." (For a Scalp Preparation)	13,478	Apr. 16	127	2814
Mendel, Louis, Philadelphia, Pa. "Louvre Glanz." (For Liquid for Finishing, Restoring, and Preventing the Cracking of Oil Paintings)	13,482	Apr. 16	127	2814
National Chemical Company, Caney, Kans. "Barne's Croup Grease." (For a Remedy for Croup)	13,483	Apr. 16	127	2814
Slifer Chemical Company, Philadelphia, Pa. "Phar-O." (For Embalming Fluid)	13,484	Apr. 16	127	2814
Sommer, Adolph, Cambridge, Mass. "Artgum The Dry Cleaner and Massager." (For a Cleaning Composition)	13,480	Apr. 16	127	2814
Walstrum, S. S., New York, N. Y. "Kleenoen." (For a Fluid for the Removal of Grease, Stains, and Spots)	13,481	Apr. 16	127	2814

PRINTS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Burton-Pierce Co., Boston, Mass. "Burton-Pierce Uniforms." (For Uniforms)	1,988	Apr. 16	127	2814
Chas. W. Shonk Co., Maywood, Ill. "Nachtwachter." (For Beer)	1,989	Apr. 16	127	2814
Dirksen, Frank T., Springfield, Ill. "F. T. Dirksen's Incubator." (For Incubators)	1,991	Apr. 16	127	2814
Hubbard, Luther P., Minneapolis, Minn. "The Flour of the Hour." (For Flour)	1,992	Apr. 16	127	2814
Hygienic Food Company, Battle Creek, Mich. "Mapl-Flake Hobby Horse." (For a Prepared Cereal Breakfast Food)	1,990	Apr. 16	127	2814
Lytton, H. C., Chicago, Ill. "Men's and Boys' Apparel." (For Men's and Boys' Apparel)				

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
A. J. Sheldon Co., New York, N. Y. Coffee and tea	25,906	Apr. 16	127	2805
American-La France Fire Engine Co., Elmira, N. Y. Steam fire-engines	24,010	Apr. 16	127	2793
American Olive Company, Los Angeles, Cal. Olives and olive-oil	23,751	Apr. 16	127	2793
American Thread Company, Jersey City, N. J. Spool and sewing cotton and thread	25,254	Apr. 16	127	2797
American Thread Company, Jersey City, N. J. Spool and sewing cotton and thread	25,715	Apr. 16	127	2801
American Thread Company, Jersey City, N. J. Spool and sewing cotton and thread	25,717-19	Apr. 16	127	2802
American Thread Company, Jersey City, N. J. Spool and sewing cotton and thread	25,783	Apr. 16	127	2802
American Thread Company, Jersey City, N. J. Spool and sewing cotton and thread	26,165-7	Apr. 16	127	2807
American Thread Company, Jersey City, N. J. Spool and sewing cotton and thread	26,169	Apr. 16	127	2807
American Thread Company, Jersey City, N. J. Spool and sewing cotton and thread	25,518	Apr. 16	127	2798
American Thread Company, Jersey City, N. J. Spool and sewing cotton and thread	25,523	Apr. 16	127	2800
American Thread Company, Jersey City, N. J. Spool and sewing cotton and thread	24,249	Apr. 16	127	2794
Andrew Lohr Bottling Co., Cairo, Ill. Soda-water and mineral water	6,048	Apr. 16	127	2798
Armstrong Cork Co., Pittsburg, Pa. Insulating material				
Astrom, John, Milwaukee, Wis. Signaling apparatus	18,672	Apr. 16	127	2790
Atlantic Refining Company, Franklin and Philadelphia, Pa. Lubricating-oils	25,177-8	Apr. 16	127	2797
Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuffs, acids, alcohols, phenols, &c.	25,179	Apr. 16	127	2797
Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	25,180	Apr. 16	127	2797
Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Chemicals used in reducing, discharging, and bleaching	25,181	Apr. 16	127	2797
Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	25,392	Apr. 16	127	2798
Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff, &c	24,315	Apr. 16	127	2794
Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff, &c	25,983	Apr. 16	127	2804
Baekeland, Leo H., Yonkers, N. Y. Paints, varnishes, shellacs, &c	21,838	Apr. 16	127	2791
Barber Asphalt Paving Company, Philadelphia, Pa. Bituminous concrete pavements	2,052	Apr. 16	127	2787
Barber Milling Company, Minneapolis, Minn. Wheat-flour	24,332	Apr. 16	127	2794
Boord & Son, (Incorporated,) London, England. Gin, whisky, rum, &c	25,823	Apr. 16	127	2803
Bowman, Eldridge & Company, Portland, Oreg. Socks	24,409	Apr. 16	127	2794
Brass Foundry and Heating Co., Peoria, Ill. Cast bars used for bushings and nuts	25,499	Apr. 16	127	2799
Brawley Cantaloupe Growers Association, Brawley, Cal. Melons	9,024	Apr. 16	127	2788
Buffalo Springs Distillery Company, Stamping Ground, Ky. Whisky				
Butterfield & Co., Fred., New York, N. Y. Cotton piece goods	26,102	Apr. 16	127	2807
Carleton Dry Goods Company, St. Louis, Mo. Knitted underwear	24,313	Apr. 16	127	2794
Carter's Ink Company, Boston, Mass., and New York, N. Y. Type-writer ribbons and carbon-paper	26,008	Apr. 16	127	2806
Cellular Clothing Company Limited, London, England. Knitted and netted goods				
Chase & Baker Company, Buffalo, N. Y. Perforated music sheets or rolls				

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Pages.
Cheney Chemical Company, South Manchester, Conn. Cleaning and polishing powder	25,926	Apr. 16	127	2803
Chicago Bailey Company, Chicago, Ill. Packing materials	25,937	Apr. 16	127	2801
China & Japan Trading Company, Limited, New York, N. Y. Sheetings, shirtings, drills, &c.	25,787	Apr. 16	127	2802
Cleveland-Akron Bag Co., Cleveland, Ohio. Paper bags	23,833	Apr. 16	127	2798
Cleveland-Akron Bag Co., Cleveland, Ohio. Paper bags	23,835	Apr. 16	127	2798
Cleveland-Akron Bag Co., Cleveland, Ohio. Paper bags	23,843-5	Apr. 16	127	2798
Cleveland Frog and Crossing Company, Cleveland, Ohio. Frogs, crossings, switches, and switch-stands	23,857-8	Apr. 16	127	2799
Clio Waist Co., New York, N. Y. Dress-waists, shirt-waist suits, &c	25,014	Apr. 16	127	2798
Colgate & Co., New York, N. Y. Soaps	24,645	Apr. 16	127	2795
Colgate & Co., New York, N. Y. Perfumes and toilet waters	25,041	Apr. 16	127	2798
Colgate & Co., New York, N. Y. Soaps	25,042	Apr. 16	127	2798
Collins Company, Collinsville, Conn. Axes	25,838-9	Apr. 16	127	2803
Collins Company, Collinsville, Conn. Axes	24,813-15	Apr. 16	127	2803
Columbia Steel Company, Hartford, Conn. Steel	24,601	Apr. 16	127	2795
Cook & Co., E. D., Binghamton, N. Y. Cooking compound	22,839	Apr. 16	127	2792
Continental-Caoutchouc-und Gutta-Percha-Compagnie, Hanover, Germany. Rubber tires, cover-bandages, patches, &c	21,057	Apr. 16	127	2791
Corn Products Refining Company, Jersey City, N. J. Glucose	25,938-9	Apr. 16	127	2804
Cote, Louis J., Berlin, N. H. Remedies for headache, neuralgia, &c	25,940-1	Apr. 16	127	2804
Curtis, Geo. B., Chicago, Ill. Hair-tonics, shampoo, salve, &c	25,909	Apr. 16	127	2803
Davis, Abraham, Flint, Mich. Cigars	25,254	Apr. 16	127	2798
Davis Chemical Company, Denver, Colo. Reconstructive tonic	25,910	Apr. 16	127	2803
Delavan, Tompkins C., New York, N. Y. Tablets for purifying the breath	24,349	Apr. 16	127	2794
Diemer, F. W., Springfield, Mo. Remedy for dyspepsia	25,798	Apr. 16	127	2803
Downing Taylor Co., Springfield, Mass. Canned salmon and clams	24,402	Apr. 16	127	2794
Downing Taylor Co., Springfield, Mass. Canned fruits and vegetables	24,404	Apr. 16	127	2794
Dr. Warner Remedy Company, Chicago, Ill. Medicated plasters and pills	9,806	Apr. 16	127	2798
Duncan, Ithamar T., Decatur, Tex. Remedy for venereal diseases	15,787	Apr. 16	127	2798
Eden Manufacturing Co., Langhorne and Philadelphia, Pa. Rugs and carpets	25,056-61	Apr. 16	127	2796
Eisenstein, Israel, New York, N. Y. Wooden and bamboo canes	25,058	Apr. 16	127	2800
Endicott-Johnson Company, Endicott, N. Y. Leather boots and shoes	25,968	Apr. 16	127	2804
Feustell Nfl., Friedrich, Altona, Germany. Hematin albumin	25,073	Apr. 16	127	2798
Figge-Doyle Co., Milwaukee, Wis. Whisky, gin, and brandy	25,908	Apr. 16	127	2803
Fishel, Nessler & Company, New York, N. Y. Combs, hair-pins, and ornaments	25,511	Apr. 16	127	2800
Ford & Co., Luther, Minneapolis, Minn. Bluing	24,366	Apr. 16	127	2795
Ford Remedy Co., Wichita, Kans. Remedy for rheumatism, scrofula, &c	23,900	Apr. 16	127	2793
Francis, Joseph H., Chicago, Ill. Periodical journals	25,960	Apr. 16	127	2804
Frank Bros. & Co., New York, N. Y. Knit underwear	25,926	Apr. 16	127	2803
French & Ward, New York, N. Y., and West Stoughton, Mass. Knit goods in the piece	25,073	Apr. 16	127	2798
G. Heileman Brewing Co., La Crosse, Wis. Beer	20,526	Apr. 16	127	2791
G. P. Putnam's Sons, New York, N. Y. Books	25,882	Apr. 16	127	2801
Genung, Charles W., Madison, Ohio. Cultivators, weeders, plows, drills, &c	24,819	Apr. 16	127	2796
George La Monte & Son, Nutley, N. J., and New York, N. Y. Writing and printing paper	24,370	Apr. 16	127	2795
Gill Brothers Company, Steubenville, Ohio. Electric-arc-light globes, glass bulbs, &c	25,799	Apr. 16	127	2803
Globe-Wernicke Company, Cincinnati Ohio. Bookcases, filing-cabinets, document-boxes, &c	25,901	Apr. 16	127	2798
Globe-Wernicke Company, Cincinnati, Ohio. Document-files	25,907	Apr. 16	127	2798
Goodyear Rubber Company, New York, N. Y. Rubber boots and shoes	25,007	Apr. 16	127	2805
Great Atlantic & Pacific Tea Company, New York, N. Y. Fruits, vegetables, catsups, flavoring extracts, &c	25,660	Apr. 16	127	2801
Grossman's Sons, J., New Orleans, La. Gin	25,920	Apr. 16	127	2804
Haby, François, Berlin, Germany. Shaving-cream	22,200	Apr. 16	127	2792
Hansell, George, Philadelphia, Pa. Medical compounds for stomach and bowel disorders	16,389	Apr. 16	127	2789
Heller & Co., B., Chicago, Ill. Meat-preservative	8,226	Apr. 16	127	2788
Henrietta Mills, Henrietta and Caroleen, N. C. Cotton sheetings, shirtings, and drills	19,886	Apr. 16	127	2790
Hewitt Rubber Company, Buffalo, N. Y. Air-brake hose	25,737	Apr. 16	127	2802
Hixon, James B., New York, N. Y. Remedy for rheumatism, blood diseases, &c	25,894	Apr. 16	127	2800
Hooker, Corser & Mitchell Company, Brattleboro, Vt. Overalls and jumpers	24,988	Apr. 16	127	2796
Hooven, Clement W., New Paris, Ohio. Spring and carbonated water	4,424	Apr. 16	127	2787
Hoppe, P., Schiedam, Holland. Gin	26,080-4	Apr. 16	127	2801
Horse Whip Co., Westfield, Mass. Whips	25,951	Apr. 16	127	2804
Howe & David, Findlay, Ohio. Coal	25,625	Apr. 16	127	2801
Illinois Match Company, Joliet, Ill. Matches	25,262	Apr. 16	127	2797
J. L. N. Smythe Company, Philadelphia, Pa. Wrapping, tissue, news, book, and press papers	25,084	Apr. 16	127	2797
J. & P. Baltz Brewing Co., Philadelphia, Pa. Beer	19,171	Apr. 16	127	2790
J. & P. Baltz Brewing Co., Philadelphia, Pa. Beer	19,173	Apr. 16	127	2790
Jewelers Circular Publishing Co., New York, N. Y. Periodicals	23,780	Apr. 16	127	2793
John Blaul's Sons Company, Burlington, Iowa. Coffee	26,088-9	Apr. 16	127	2806
Jones & Company, Danforth L., New York, N. Y. Ledger index bristol paper	18,787-8	Apr. 16	127	2790
K. W. Ignition Company, Cleveland, Ohio. Spark-plugs for explosive-engines	25,372	Apr. 16	127	2798
Kellam-Goller-Land-Co., Lynn, Mass. Women's leather shoes and oxfords	25,736	Apr. 16	127	2802
Kelley-Clarke Co., Seattle, Wash. Canned salmon	23,136	Apr. 16	127	2792
Kelly & Co., Thos., Boston, Mass. Bed and wrapper blankets	24,227	Apr. 16	127	2794
Kenton Baking Powder Company, Cincinnati, Ohio. Baking-powder	25,533	Apr. 16	127	2800
Lane & Company, R. H., Toledo, Ohio. Leather shoes	25,739	Apr. 16	127	2802
"Le Ripolin" (Société anonyme française de peintures laquées et d'enduits sous-marins, précédés Lefranc & Briegleb réunis), Paris, France. Paints and varnishes	12,078	Apr. 16	127	2789
Lefranc & Co., Paris, France. Paint and varnish driers	23,001	Apr. 16	127	2792
Leonard, Shaw & Dean, Boston, Mass. Leather boots and shoes	25,390	Apr. 16	127	2797
Levison & Blythe Manufacturing Company, St. Louis, Mo. Steel pens	25,041	Apr. 16	127	2805
Lyon, Alvine W., Baltimore, Md. Cleansing preparation for felt, beaver, &c	24,987	Apr. 16	127	2794
M. E. Smith & Co., Inc., Omaha, Nebr. Dress and negligée shirts and textile collars and cuffs therefor	5,836	Apr. 16	127	2788
MacKay, D. MacN., Goldsboro, N. C. Headache cure	16,981	Apr. 16	127	2790
Mackenzie Bros., Ross-Shire, Scotland. Malt whisky	22,802	Apr. 16	127	2792
Maison Pierre Bardou-Job, Perpignan, France. Tobacco, cigars, and cigarettes	20,091	Apr. 16	127	2791
Marvel Buckle Company, Baltimore, Md. Buckles	24,947	Apr. 16	127	2795
McGrew, James C., Lexington, Mo. Cos	26,015	Apr. 16	127	2805
Microline Medicine Company, Dallas, Tex. Remedies for diseases of the blood, liver, kidneys, &c	25,433	Apr. 16	127	2798
Mohawk Condensed Milk Co., St. Johnsville, N. Y. Condensed milk	25,978	Apr. 16	127	2805
Morgan Crucible Company, Limited, Battersea, London, England. Crucibles, muffles, furnaces, retorts, &c	23,630	Apr. 16	127	2791

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Pages.
Morgan Drug Co., Inc., Brooklyn, N. Y. Medicinal and toilet soap	25,991	Apr. 16	127	2804
Morgan, James T., Springfield, Mo. Remedy for grippe	22,250	Apr. 16	127	2793
Mound City Paint & Color Company, St. Louis, Mo. Castor-oil	26,389	Apr. 16	127	2798
National Biscuit Company, New York, N. Y. Biscuits	16,813	Apr. 16	127	2789
New Century Milling Company, Dallas, Tex. Wheat-flour	25,992	Apr. 16	127	2805
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,444	Apr. 16	127	2799
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,446-7	Apr. 16	127	2799
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,449	Apr. 16	127	2799
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,452	Apr. 16	127	2799
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,455	Apr. 16	127	2799
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,457	Apr. 16	127	2799
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,471	Apr. 16	127	2799
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,084	Apr. 16	127	2798
Noyes-Norman Shoe Co., St. Joseph, Mo. Leather shoes	24,995	Apr. 16	127	2796
O'Brien, Michael, Detroit, Mich. Whisky	26,021	Apr. 16	127	2805
Olmsted, Lewis G., Peru, Ill. Dentifrice	24,700	Apr. 16	127	2795
Osgood, C. H. & F. L., Norwich, Conn. Fever and ague remedies	25,559	Apr. 16	127	2800
Pacific Coast Condensed Milk Co., Seattle, Wash. Condensed milk	25,993	Apr. 16	127	2805
Paul Brothers, Philadelphia, Pa. Leather boots, shoes, and slippers	26,074	Apr. 16	127	2800
Pettit Medicine Company, Minneapolis, Minn. Remedy for affections of the kidneys	25,496	Apr. 16	127	2800
Pollock, Augustus, deceased; H. Haslett, Wheeling, W. Va., administrator. Stogies	25,498	Apr. 16	127	2799
Pollock, Augustus, deceased; H. Haslett, Wheeling, W. Va., administrator. Stogies	14,907	Apr. 16	127	2793
Portland Packing Company, Portland, Me. Canned lobster and salmon	25,750	Apr. 16	127	2802
Pratt Paper Company, Minneapolis, Minn. Roofing-paper	25,627	Apr. 16	127	2801
Price & Lucas Cider and Vinegar Company, Louisville, Ky. Vinegar	22,574	Apr. 16	127	2792
Reiss & Bundy, New York, N. Y. Canned peas, mushrooms, cherries, &c	11,959	Apr. 16	127	2789
Rhegnius Company, La Grange, Ill. Stomach-regulators	21,776	Apr. 16	127	2791
Rieger & Lindley, Salt Lake City, Utah. Whisky	25,382	Apr. 16	127	2798
Roesler and Burkhardt, Los Angeles, Cal. Candy	25,596	Apr. 16	127	2801
Roth & Engelhardt, New York, N. Y. Pianos and piano-players	23,213	Apr. 16	127	2793
S. M. Bixby & Co., New York, N. Y. Leather and shoe blackings, paste, polish, and varnish	25,754	Apr. 16	127	2802
Sarco Fuel Saving & Engineering Co., New York, N. Y. Impression-recorders, draft-gages, feed-water meters, &c	24,561	Apr. 16	127	2796
Schloss, Brod & Co., New York, N. Y. Rings, lockets, scarf-pins, cuff-buttons, &c	18,655	Apr. 16	127	2790
Schmidt, Valentine, San Francisco, Cal. Remedy for constipation, torpid liver, &c	14,172	Apr. 16	127	2789
Séquin, Rubbolith-Werke vormals C. Séquin-Bronner, Zurich, Switzerland. Floors, wainscoting-panels, ceilings, &c	13,526	Apr. 16	127	2789
Sherman & Sons Company, New York, N. Y. India linen, hemstitched lawns, nainsooks, &c	25,833	Apr. 16	127	2803
Sibley, William J., Rochester, N. Y. Remedies for lung and throat diseases	5,443	Apr. 16	127	2788
Siegel Cooper & Co., Chicago, Ill. Soap and washing powder	5,431	Apr. 16	127	2788
Siegel Cooper & Co., Chicago, Ill. Butter and cheese	5,435	Apr. 16	127	2788
Siegel Cooper & Co., Chicago, Ill. Canned fruits	25,164	Apr. 16	127	2797
Simons Bro. & Co., Philadelphia, Pa. Solid silverware	22,204	Apr. 16	127	2792
Société Anonyme Periphote et Photorama, Paris, France. Apparatus for the vision of panoramic views	26,053	Apr. 16	127	2800
Southern Cotton Oil Company, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La. Cotton-seed oils	7,874	Apr. 16	127	2788
Sprague Electric Company, New York, N. Y. Conduits for electrical conductors, junction-boxes therefor, &c	22,178	Apr. 16	127	2791
Standard Varnish Works, New York, N. Y. Varnishes, japans, and enamels	26,081	Apr. 16	127	2803
Stearns & Curtiss, New York, N. Y. Laxatives	23,248	Apr. 16	127	2793
Stearns Electric Paste Co., Buffalo, N. Y. Rat and roach exterminator	25,599	Apr. 16	127	2801
Steinhardt Bros. & Co., New York, N. Y. Whisky	25,640	Apr. 16	127	2801
Stern & Co., Louis, Providence, R. I. Jewelry	20,668	Apr. 16	127	2791
Stollwerck Bros., New York, N. Y. Cocoa, chocolate, and candy	6,378	Apr. 16	127	2788
Tennessee Packing & Provision Company, Nashville, Tenn. Sugar-cured meats	23,619	Apr. 16	127	2793
Thompson and Ott, New York, N. Y. Milk, cream, and butter	25,048	Apr. 16	127	2795
Trigg Candy Company, Chattanooga, Tenn. Candy	26,132	Apr. 16	127	2803
Troy Cold Water Kalsomine Company, Green Island, N. Y. Calcimine	26,049	Apr. 16	127	2803
Union Bag & Paper Company, New York, N. Y. Paper bags	26,113	Apr. 16	127	2799
Union Card & Paper Co., New York, N. Y. Bond, ledger, linen, and writing papers	17,293	Apr. 16	127	2795
Union Match Co., Duluth, Minn. Friction-matches	24,543	Apr. 16	127	2795
Victor Talking Machine Company, Camden, N. J. Talking-machines and records therefor	25,913	Apr. 16	127	2803
Ware Shoals Mfg. Co., Ware Shoals, S. C. Cotton piece goods	23,637	Apr. 16	127	2793
Wayne County Preserving Company, Newark, N. Y. Canned fruits and vegetables	25,428	Apr. 16	127	2799
Wiard Plow Company, Batavia, N. Y. Plows	13,434	Apr. 16	127	2787
Wiley & Russell Mfg. Co., Greenfield, Mass. Reamers, drills, and countersinks	4,160	Apr. 16	127	2807
William M. Crane Co., New York, N. Y. Gas stoves and ranges and fittings and parts therefor	26,117	Apr. 16	127	2804
Woodbury, Howard C., Boston, Mass. Whisky	25,956	Apr. 16	127	2797
Wyllie & Co., J. N., Danville, Va. Smoking-tobacco	25,280	Apr. 16	127	2797
Young, Albert W., Philadelphia, Pa. Metal and glass polishing paper				

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE ISSUED ON THE 16TH DAY OF APRIL, 1907.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Specification.	Drawing.	Volume.	Page.
Adjusting device	F. H. Richards	850,252	Apr. 16	3148	658	127	2404
Agricultural implement	F. W. Miller	850,482	Apr. 16	3587	730	127	2577
Air-brake mechanism	J. J. Colt	850,504	Apr. 16	3740	781	127	2617
Air-compressor	E. J. Bring	850,208	Apr. 16	3170	643-4	127	2441
Air or other gases. Means for heating compressed	E. W. Lloyd and W. H. Sodeau	850,317	Apr. 16	3246	678	127	2480
Air-ship	J. Shukweh	850,800	Apr. 16	4191	879-80	127	2720
Alarm:							
See Fire and burglar alarm.							
Annunciator	J. L. McQuarrie	850,311	Apr. 16	3257	678	127	2494
Anvil for riveting-machines	C. Johannsen	850,551	Apr. 16	3932	821	127	2667
Assayer's pouring-mold	J. J. Bailey	850,811	Apr. 16	4216	886	127	2735
Auger-bit	J. T. Parker	850,177	Apr. 16	3099	630	127	2428
Auger. Earth-	T. F. Litaker	850,533	Apr. 16	3980	771	127	2604
Automobile. Water-	W. L. Hynes	850,370	Apr. 16	3374	705	127	2524
Automobiles. Pedal foot-rest for	G. A. Peacock	850,507	Apr. 16	3679	761	127	2680
Awl	E. D. Branch	850,779	Apr. 16	4157	870	127	2721
Axle. Vehicle-		850,728	Apr. 16	4066	850	127	2688
Bag:							
See Laundry-bag.							
Bag frame fastener	B. vom Eigen	850,631	Apr. 16	3893	812-13	127	2656
Balls. Making playing-	F. H. Richards	850,253	Apr. 16	3151	658	127	2405
Bandage	J. Walter	850,291	Apr. 16	3197	666	127	2477
Bath-cabinet	J. Hermann	850,367	Apr. 16	3369	704	127	2522
Battery.							
See Electrolytic-cell battery.							
Battery plate and making same. Secondary-	L. N. J. Roselle	850,788	Apr. 16	4174	876	127	2725
Bearing. Axle-	B. Moore	850,774	Apr. 16	4148	867	127	2719
Bearing for grinding-wheel shafts	D. B. Hyde	850,680	Apr. 16	3931	821	127	2667
Bed	L. H. Flanders	850,744	Apr. 16	4094	854-7	127	2704
Bed. Child's	W. H. Muir	850,945	Apr. 16	4294	902	127	2756
Bed. Spring-	J. M. Cohron	850,522	Apr. 16	3667	767	127	2598
Beehive	C. A. Olmstead	850,176	Apr. 16	3094	629	127	2424
Belt	I. G. Longenecker	850,534	Apr. 16	3980	772	127	2605
Belt-stretcher	O. M. Wolfe	850,464	Apr. 16	3531	738	127	2643
Belt-tightener	W. A. Christensen	850,125	Apr. 16	3031	612	127	2403
Bench:							
See Carpenter's bench. Saw-bench.							
Bicycle	H. Garza	850,746	Apr. 16	4100	858	127	2708
Bicycle-support	C. P. Ellis	850,527	Apr. 16	3682	770	127	2602
Bicycles and the like. Handle-bar for	D. Cronsioe	850,139	Apr. 16	3037	614	127	2407
Binder. Loose-leaf	G. Labarre	850,650	Apr. 16	3946	824	127	2671
Bit:							
See Auger-bit.							
Block:							
See Fuel block. Toy block.							
Block-molding machine	J. C. Herring	850,368	Apr. 16	3371	705	127	2523
Block-molds. Dividing-plate for	F. A. Borst	850,206	Apr. 16	3098	643	127	2440
Block system	F. B. Corey	850,733	Apr. 16	4073	851-2	127	2700
Blowpipe	G. W. Hopkins	850,581	Apr. 16	3777	788	127	2627
Board:							
See Drawing-board. Panel-board. Game-board.							
Boat launching and stowing apparatus	F. E. Martin	850,239	Apr. 16	3125	653-4	127	2457
Boat. Submarine	J. J. Harpain	850,531	Apr. 16	4256	894	127	2746
Boat transporting and launching apparatus	J. J. Harpain	850,643	Apr. 16	3915	817	127	2663
Boiler:							
See Water-tube boiler.							
Boiler	W. J. and G. Lane	850,580	Apr. 16	3780	791	127	2630
Boiler safety device. Automatic	W. S. G. Harris	850,751	Apr. 16	4108	860	127	2708
Boiler-trap	C. Dennis	850,878	Apr. 16	4358	913	127	2774
Boiler-tube cleaner	H. F. Weinland	850,701	Apr. 16	4029	842	127	2680
Boiler-tube cleaner	S. F. Dibadale	850,730	Apr. 16	4067	854	127	2702
Boiler-tubes. Setting	W. M. Dickerson	850,299	Apr. 16	3227	673	127	2484
Bolt:							
See Door-bolt.							
Bolt-locking device	W. W. Parsons	850,540	Apr. 16	3778	773	127	2707
Book-cover protector	M. W. Cummings and T. F. Jordan.	850,735	Apr. 16	4081	853	127	2701
Boot and shoe tread. Pneumatic	I. Tauber	850,327	Apr. 16	3281	683	127	2500
Bottle	J. H. Dunstan	850,741	Apr. 16	4090	855	127	2703
Bottle-capping machine	C. S. Beyer	850,288	Apr. 16	3208	668-9	127	2478
Bottle-closure	D O Lynch	850,427	Apr. 16	3604	753	127	2657

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Bottle-closure	F. H. Bills	850,513	Apr. 16	3635	801	127	2600
Bottle. Non-refillable	J. C. Uhlein	850,597	Apr. 16	4204	884	127	2732
Bottle. Non-refillable	J. C. Uhlein	850,600	Apr. 16	4206	884	127	2732
Bottle-stopper	H. Morgan	850,644	Apr. 16	4293	901	127	2778
Bottle-stopper attachment	H. Barlow	850,722	Apr. 16	4079	848	127	2707
Bottle-washing apparatus	R. G. and K. K. Wright	850,180	Apr. 16	3053	630	127	2435
Bottle-wrapper machine	M. Costello	850,457	Apr. 16	3552	744	127	2600
Bottles. Support for drying medicine-	C. Lohmann	850,321	Apr. 16	3304	710	127	2529
Bottled goods. Delivery-case for	N. Breakenridge	850,331	Apr. 16	3724	780	127	2614
Bowls and the like. Holder for	H. Simmond	850,490	Apr. 16	3626	756	127	2567
Box:							
See Cigarette-box. Miter-box. Ice-box. Sound-box.							
Box-fastener	C. H. Veeder	850,196	Apr. 16	3045	637	127	2424
Brace for roundabouts	J. W. Armitage	850,411	Apr. 16	3444	722	127	2542
Brace for roundabouts and analogous structures	A. Herschell	850,431	Apr. 16	3483	729	127	2562
Brace for roundabouts and analogous structures	E. O. Spillman	850,449	Apr. 16	3524	737	127	2582
Bracket:							
See Cabinet-bracket.							
Brake:							
See Emergency-brake. Vehicle-brake. Hoisting-machine brake. Vehicle emergency-brake. Section-brake.							
Brake	V. Lamb	850,428	Apr. 16	3500	732	127	2555
Brake and other rods. Separable jaw for	J. Van Dyke	850,529	Apr. 16	4326	907	127	2705
Brake-beam	J. H. Baker	850,326	Apr. 16	3304	687	127	2507
Brake slack-adjuster. Automatic	E. M. Swift	850,398	Apr. 16	4310	908	127	2703
Brick-machine	O. Kutzsche	850,435	Apr. 16	3498	731–2	127	2555
Brick-machine	D. P. Sanders	850,570	Apr. 16	3977	831–2	127	2577
Brick-making device. Ornamental-	A. H. and M. M. Grant	850,457	Apr. 16	3478	728	127	2551
Brick-making device. Ornamental-	A. H. and M. M. Grant	850,458	Apr. 16	3480	728	127	2551
Broiler	J. J. Jones	850,464	Apr. 16	3687	822	127	2608
Brooder. Poultry-	E. E. Billings	850,726	Apr. 16	4082	849	127	2697
Broom-holder	F. A. Hess and J. Dunn	850,579	Apr. 16	3795	785	127	2624
Broom-machine	C. R. Lee	850,592	Apr. 16	3957	771	127	2604
Brush-holder	J. P. Mallett and T. E. Drohan	850,257	Apr. 16	3120	653	127	2495
Bucket. Dumping-	C. Körtvélyessy	850,557	Apr. 16	3788	790	127	2620
Bucket-fastener protector	J. B. Bariaud	850,589	Apr. 16	3728	779	127	2615
Buckle	W. A. Schleicher	850,704	Apr. 16	4182	877	127	2726
Buckle	W. A. Schleicher	850,705	Apr. 16	4183	877	127	2727
Buckle. Wire	I. Blum	850,575	Apr. 16	4364	912	127	2773
Buckle. Wire	W. A. Schleicher	850,702	Apr. 16	4181	876	127	2726
Buggy-tops. Means for removably attaching	F. Beasley	850,261	Apr. 16	3240	740	127	2565
Bundle-carrier	H. M. Willis	850,705	Apr. 16	4026	843	127	2691
Burner:							
See Hydrocarbon-burner.							
Butter-cutting machine	P. Braban	850,464	Apr. 16	3542	743	127	2567
Button and loop clasp	J. D. Conover	850,240	Apr. 16	3231	694	127	2512
Button. Cuff-	F. R. Crecelius	850,340	Apr. 16	3338	696	127	2514
Cabinet and receptacle. Commodity	J. H. Boye	850,515	Apr. 16	3666	764	127	2595
Cabinet bracket. Clothing-	H. Frankel	850,393	Apr. 16	3257	701	127	2519
Cabinet for music-spools	R. J. Cady	850,210	Apr. 16	3073	644	127	2442
Call apparatus. Selective	J. A. Hulit	850,237	Apr. 16	4298	898–7	127	2749
Can:							
See Refuse-can.							
Can cutter and spout	E. F. Cavelier	850,486	Apr. 16	3550	743	127	2568
Cane. Repeating detonating-	A. Delgrande and N. Del Grande	850,253	Apr. 16	3241	697	127	2515
Cane. Repeating detonating-	A. Delgrande and N. Del Grande	850,254	Apr. 16	3243	697	127	2516
Car. Convertible dumping-	H. L. Ardis	850,719	Apr. 16	4064	847–8	127	2696
Car-coupling	J. L. Frazier	850,219	Apr. 16	3082	647	127	2446
Car-coupling	J. L. Frazier	850,301	Apr. 16	3280	674	127	2485
Car-fender	I. R. Guilford	850,474	Apr. 16	3573	746–7	127	2574
Car fender. Street-	M. Greenbaum	850,572	Apr. 16	3786	788–9	127	2623
Car folding stake. Railway-	J. W. Kendrick	850,585	Apr. 16	3785	789–90	127	2620
Car-lift. Automatic	G. Holmes	850,540	Apr. 16	3925	819	127	2646
Car loader. Box-	B. C. Buxton	850,132	Apr. 16	3028	611	127	2404
Car-mover	R. F. Hagaman	850,154	Apr. 16	3068	620	127	2411
Car-rail and bed	R. Jackson	850,709	Apr. 16	4125	863	127	2712
Car-ventilating apparatus	D. Hill	850,128	Apr. 16	3043	621–2	127	2413
Car-window	W. H. Heulings, Jr	850,157	Apr. 16	3061	621	127	2412
Cars. Adjustable wall and ventilator for stock-	J. Shaw	850,678	Apr. 16	3981	832	127	2675
Carburetor	W. E. Hallett	850,228	Apr. 16	3099	648	127	2449
Carburetor for gasolene-engines	F. E. Bowers	850,239	Apr. 16	3314	690	127	2509
Card. Adjustable-tab guide-	E. M. Newald	850,245	Apr. 16	3137	656	127	2461
Card. Mechanical	L. H. Glazier	850,150	Apr. 16	3051	618	127	2410
Carpenter's bench	W. Bröcker	850,513	Apr. 16	4310	887	127	2736
Carpet-cleaning machine	W. H. Heffernan and A. E. Hall	850,645	Apr. 16	3928	818–19	127	2665
Carpet. Moquette or tufted	G. W. Grosvenor	850,573	Apr. 16	3760	786	127	2622
Carriage-numbers. Electric tower for displaying	J. H. McDaniel	850,671	Apr. 16	3970	830	127	2675
Carrier:							
See Bundle-carrier. Line-carrier.							
Carton	H. Conover	850,345	Apr. 16	3330	694	127	2512
Cash-receiving and change-making machine	K. Malmstrom	850,542	Apr. 16	4288	899–901	127	2754
Casting apparatus. Metal-	H. Geisenhöner	850,329	Apr. 16	4253	893	127	2745
Casting-machine	H. Jones	850,653	Apr. 16	3935	822	127	2668
Cement-kiln	E. Mueller	850,720	Apr. 16	4106	860	127	2708
Cement. Making hydraulic	H. G. Morris	850,773	Apr. 16	4158	869	127	2721
Centrifugal machine	E. A. Forsberg	850,241	Apr. 16	3132	655	127	2490
Centrifugal machine	M. L. Hoyt	850,672	Apr. 16	3968	746	127	2573
Centrifugal machines. Shaft-mounting for	G. E. Savage and J. W. Chapman	850,477	Apr. 16	3580	748	127	2575
Chafing-dish	M. Garland	850,691	Apr. 16	3433	719	127	2539
Chain. Conveyer-	E. W. Raymond	850,149	Apr. 16	3050	618	127	2409
Chair roller appliance. Rocking-	J. S. Metcalfe	850,782	Apr. 16	4164	872	127	2725
Check or other financial-instrument blank	P. H. Bayley	850,228	Apr. 16	3404	718	127	2551
Chimney-top	S. M. Kemp	850,139	Apr. 16	3918	809	127	2692
Chimney-top	J. J. Morrissey	850,272	Apr. 16	3277	706	127	2595
Chin-rest and shoulder-pad support	J. J. Morrissey	850,775	Apr. 16	4149	868	127	2719
Chin-rest and shoulder-pad support		850,776	Apr. 16	4151	868	127	2719

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Chopper:							
See Cotton-chopper.							
Churn	N. P. Dasey	850,525	Apr. 16	3673	709	127	2600
Cigarette-box	S. S. Poor	850,182	Apr. 16	3019	632	127	2428
Cigarettes. Machine for making conical	R. Ermeler	850,742	Apr. 16	4091	855	127	2704
Circuit-detecting device	L. M. Schmidt	850,258	Apr. 16	3150	660	127	2467
Circular-distributer	R. G. Fraser	850,826	Apr. 16	4247	892	127	2744
Cistern-former	C. A. Mitchell	850,667	Apr. 16	3956	826–7	127	2673
Clamp:							
See Clothes-wringer clamp. Rail-clamp.							
Clasp:							
See Button and loop clasp.							
Clasp	O. Fisher	850,743	Apr. 16	4092	855	127	2704
Clasp	C. C. Wright	850,864	Apr. 16	4333	906	127	2766
Cleaner:							
See Boiler-tube cleaner. Lawn-cleaner. Dust-cleaner.							
Cleaning compound	W. J. Barrickman and J. C. Byers.	850,557	Apr. 16	3729	.....	127	2615
Clip:							
See Differential clip.							
Clip	R. W. Roberts	850,185	Apr. 16	3023	633	127	2429
Clip	R. Klein	850,656	Apr. 16	3940	823	127	2669
Clipping machines. Device for adjusting the height of the cut in hair-	S. Kahan	850,887	Apr. 16	4375	917	127	2778
Clocks and watches to changes in temperature. Adjusting	M. L. Harris	850,574	Apr. 16	3763	788	127	2624
Clod-fender							
Closet:							
See Sanitary closet.							
Closet-seat	W. F. Till and J. C. Newton	850,505	Apr. 16	3636	760	127	2599
Clothes-line hanger	B. J. Lee	850,235	Apr. 16	3118	652	127	2494
Clothes-line. Pinless	A. C. Hook and R. P. Robinson	850,227	Apr. 16	3107	650	127	2492
Clothes-wringer clamp	O. H. Jants	850,584	Apr. 16	3784	789	127	2623
Clutch	W. H. Klocke	850,164	Apr. 16	3076	624	127	2416
Clutch	C. M. Spencer	850,864	Apr. 16	4313	905	127	2761
Clutches. Means for operating log-haul	F. P. Quinn	850,250	Apr. 16	3144	658	127	2462
Coal-washing apparatus	R. L. Martin, Jr., and H. Cory	850,594	Apr. 16	3800	793	127	2633
Coating on a non-vitreous surface. Producing a metallic	S. Heller and C. Baumgarti	850,753	Apr. 16	4113	.....	127	2710
Cock. Compression-	D. Smith	850,679	Apr. 16	3982	833	127	2676
Cock. Stop and waste	W. H. Rawe	850,251	Apr. 16	3146	658	127	2463
Coffee-percolator	L. Wojidkow	850,709	Apr. 16	4040	844–5	127	2692
Coin-collector circuit	H. M. Crane	850,349	Apr. 16	3336	695	127	2513
Coin-collector circuit	H. D. Currier	850,352	Apr. 16	3340	696	127	2515
Coin-controlled machine	A. A. Caille, G. Hamilton, and O. C. Currie.	850,817	Apr. 16	4224	888	127	2737
Comb:							
See Curry-comb.							
Combination device	J. Royse	850,255	Apr. 16	3154	659	127	2493
Concrete-mixer	W. C. Dayhoff	850,469	Apr. 16	4557	745	127	2570
Concrete walls. Making	F. M. Jackson	850,758	Apr. 16	4123	863	127	2712
Condenser. Acid-	J. Broome	850,517	Apr. 16	3660	765	127	2595
Condenser and making the same. Electrical	R. C. Lanphier	850,166	Apr. 16	3082	625	127	2419
Conduit-traveler	L. D. Shaffer	850,797	Apr. 16	4185	878	127	2728
Conduits. Adjusting means for interlocking	J. L. Fay	850,625	Apr. 16	4246	893	127	2744
Conveyer. Endless	C. S. Eppley and M. E. Stonesifer	850,694	Apr. 16	3991	834–5	127	2620
Cooker. Steam-	J. R. Donnelly	850,824	Apr. 16	4244	893	127	2744
Cooking utensil	J. M. Selden	850,143	Apr. 16	3040	615	127	2408
Cork-holder and bottle-stopper. Combined	C. S. Rees	850,403	Apr. 16	3434	720	127	2530
Cork-puller	H. F. Busch	850,184	Apr. 16	3022	633	127	2429
Cork-wafer-cutting apparatus	E. P. McClure and J. B. Loewenstein.	850,519	Apr. 16	3663	765–6	127	2597
Corn-gathering machine	D. T. Phillips	850,390	Apr. 16	3407	714	127	2532
Corn-shock loader	F. M. Hutchinson	850,543	Apr. 16	3705	775	127	2609
Cotton-chopper	T. A. Andrews	850,531	Apr. 16	3669	771	127	2604
Cotton. Means for controlling feed of		850,716	Apr. 16	4049	847	127	2694
Coupling:							
See Car-coupling. Pipe-coupling. Friction-coupling. Thill-coupling.							
Crane. Overhead traveling	W. H. Morgan	850,439	Apr. 16	3508	733–4	127	2548
Crane. Traveling	V. O. Strobel and A. E. Hogrebe	850,407	Apr. 16	3438	720–1	127	2540
Crate	N. J. McLeod	850,537	Apr. 16	3694	772–3	127	2606
Cream-separator	S. W. Stewart	850,805	Apr. 16	4197	881	127	2731
Cream-separators. Setting-gage for	F. A. Gehrman	850,528	Apr. 16	3683	770	127	2606
Cross-tie	J. W. Peploe	850,542	Apr. 16	3703	774	127	2608
Crusher:							
See Gyratory crusher.							
Crushing-mill	J. Morin	850,588	Apr. 16	3803	797	125	2633
Culinary utensil	M. C. Horton	850,592	Apr. 16	3780	789	127	2622
Cultivator	W. E. Butterfield	850,520	Apr. 16	3665	767	127	2595
Cultivator	L. E. Waterman	850,861	Apr. 16	4327	907	127	2765
Cupram monium solutions. Manufacturing	J. J. M. A. Vermeesch	850,695	Apr. 16	4016	840	127	2689
Curbing	C. E. De Clements	850,898	Apr. 16	4336	909	127	2762
Current-wheel	M. J. Miller	850,426	Apr. 16	3505	733	127	2557
Curry-comb	W. D. Wheat	850,202	Apr. 16	3198	668	127	2477
Curtain holder. Vestibule-	W. E. Tippett	850,193	Apr. 16	3042	627	127	2433
Curtain-holding device	G. H. Davis	850,207	Apr. 16	3225	672	127	2484
Curtain or shade fixture. Window-	S. R. Skov	850,186	Apr. 16	3025	633	127	2429
Curtain-roller	H. Gross	850,153	Apr. 16	3057	619	127	2411
Curved pipe	W. C. Kirk	850,588	Apr. 16	3786	790	127	2620
Cushion:							
See Pneumatic cushion.							
Cut-off. Water-spout	J. P. Kolla	850,762	Apr. 16	4129	864	127	2714
Cut-out or fuse-box. Automatic	S. C. Anderson and C. H. Frenberg.	850,334	Apr. 16	3201	667	127	2506
Cutter:							
See Can-cutter. Fodder-cutter.							
Cycle-sled	J. Baldauf	850,125	Apr. 16	3017	609	127	2428
Damper-regulator	C. S. Hood	850,530	Apr. 16	3684	770	127	2606
Dental engine	J. A. Lewis	850,661	Apr. 16	3947	825	127	2671

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Differential clip for aerial ropeways, &c	Y. Tamamura	850,804	Apr. 16	3534	760	127	2399
Digger:							
See Potato-digger.							
Disinfecting-tablet	W. H. Power	850,849	Apr. 16	4301	903	127	2778
Display apparatus	W. A. McKeny	850,548	Apr. 16	3125	655	127	2403
Display device	S. W. Huntington	850,649	Apr. 16	3540	821	127	2483
Display-fixture base	H. Frankel	850,622	Apr. 16	4308	915	127	2776
Display-rack	A. B. Hall	850,321	Apr. 16	3194	646	127	2406
Display-rack attachment	E. B. Weston	850,644	Apr. 16	3725	778	127	2514
Distribution system	B. Frankenfield	850,317	Apr. 16	3785	646-7	127	2405
Distribution system	B. Frankenfield	850,318	Apr. 16	3088	647	127	2406
Distribution system	L. L. Tatum	850,376	Apr. 16	3146	655	127	2473
Document-holder	M. I. Sullivan	850,635	Apr. 16	3439	721	127	2541
Door-bolt	L. Schlegtendal	850,323	Apr. 16	3273	652	127	2409
Door check and closer	P. Papendoth	850,294	Apr. 16	3416	716	127	2535
Door closer and check	G. Raschmueller	850,645	Apr. 16	3707	775	127	2510
Double-ended wrench	G. W. Rowell	850,693	Apr. 16	3614	756	127	2544
Dough-dividing machine	R. J. F. and A. E. Allred	850,332	Apr. 16	3292	648	127	2420
Dough-raiser	M. Burgess	850,515	Apr. 16	4222	897	127	2737
Dovetail tenon and mortise	W. D. Kelly	850,389	Apr. 16	4382	918	127	2781
Dovetailing and tenoning machine	W. D. Kelly	850,388	Apr. 16	4376	917	127	2779
Draft-equalizer	W. Matteson	850,535	Apr. 16	3691	772	127	2605
Draft-gear rigging	G. W. Scott and O. A. Thelin	850,402	Apr. 16	3622	758	127	2567
Draft-hook, Safety	C. W. Fanton	850,350	Apr. 16	3482	660	127	2516
Draw-bridge rail-lock	J. M. Hynan	850,151	Apr. 16	3971	623	127	2415
Drawing-board	K. Werner	850,552	Apr. 16	3722	778	127	2512
Drier	A. Ramos	850,324	Apr. 16	3477	718	127	2536
Drilling-machine attachment	A. O. Baumeister	850,304	Apr. 16	3083	642	127	2439
Drum	U. G. Leedy and C. B. Wanamaker.	850,305	Apr. 16	3244	676	127	2460
Dumb-waiter shaft	O. Rader	850,602	Apr. 16	3916	797	127	2838
Dumping apparatus	S. W. Hopkins	850,646	Apr. 16	3939	820-1	127	2840
Dust-cleaner	G. Hegyi	850,673	Apr. 16	3784	.....	127	2834
Duster	W. Laycock	850,704	Apr. 16	4132	885	127	2716
Dusters and brushes. Machine for making feather	J. E. Sarvely	850,695	Apr. 16	3993	835	127	2681
Edge-folding and seam-closing machine. Duplex	J. Bingham	850,614	Apr. 16	3838	801-2	127	2640
Egg-preservative and making same	K. Utgenber	850,585	Apr. 16	4013	.....	127	2695
Electric apparatus. Cut-out for vapor	T. Van Aller	850,370	Apr. 16	3194	665-6	127	2474
Electric apparatus. Vapor	C. P. Steinmetz	850,370	Apr. 16	3173	663	127	2470
Electric conductors in conduits or pipes. Apparatus for threading or laying	T. J. Cope	850,636	Apr. 16	3673	809	127	2560
Electric machine. Dynamo-	K. Sulzberger	850,376	Apr. 16	3181	664	127	2472
Electric machine. Dynamo-	C. Macmillan	850,694	Apr. 16	3942	826	127	2573
Electric motor	R. E. Berker	850,298	Apr. 16	3081	642	127	2438
Electric motor and controller for the same	J. H. Hertner	850,478	Apr. 16	3675	747	127	2578
Electric-motor-starting device	D. R. Knapp and H. E. Cade	850,165	Apr. 16	3978	624	127	2417
Electric signal	E. Lionais and W. T. Sutton	850,708	Apr. 16	4134	885	127	2715
Electric switch	C. J. Toerring	850,808	Apr. 16	3637	791	127	2589
Electric transportation system	W. C. McMurray	850,179	Apr. 16	3994	627-8	127	2421
Electrical indicator	J. Summers and J. J. Berry	850,691	Apr. 16	4004	837-8	127	2822
Electrical switch	R. H. Manson	850,570	Apr. 16	4343	911	127	2775
Electrolytic apparatus	A. G. Betts	850,127	Apr. 16	3920	808-10	127	2403
Electrolytic-cell battery	R. H. F. Finley	850,257	Apr. 16	4337	909-10	127	2703
Electroplating-cells. Anode for	G. M. Elliott	850,833	Apr. 16	4243	891	127	2764
Elevator:							
See Grain-elevator.							
Elevator-boot	F. G. Payne	850,541	Apr. 16	3700	774	127	2608
Elevator signaling apparatus	J. D. Downs	850,618	Apr. 16	3843	808-6	127	2644
Elevator valve mechanism	R. C. Brumley	850,619	Apr. 16	3892	807	127	2647
Emergency-brake	J. A. Birdsall	850,414	Apr. 16	3449	723	127	2548
Engine:							
See Dental engine. Oil-engine. Gas-engine. Rotary engine.							
Engine attachment. Traction-	J. E. Holland	850,826	Apr. 16	4262	893	127	2746
Engine gear. Traction-	A. Harmid	850,644	Apr. 16	3921	817-18	127	2644
Engine steering-gear. Traction-	R. Richardson	850,650	Apr. 16	4303	903-4	127	2738
Engraving-machine attachment	C. A. C. Wagenführ	850,550	Apr. 16	4719	777	127	2613
Envelop-machine	C. E. Dulin	850,570	Apr. 16	4339	913-14	127	2775
Envelop-machine	G. W. Clark	850,240	Apr. 16	4263	914-15	127	2775
Equalizing and distributing fitting	L. A. Dézy	850,622	Apr. 16	3988	808	127	2649
Excavator-beam	F. Sparre	850,358	Apr. 16	3346	697-8	127	2517
Explosive	F. Sparre	850,365	Apr. 16	3171	.....	127	2470
Explosive	F. Sparre	850,372	Apr. 16	3651	.....	127	2585
Explosive. Ammonium-nitrate	F. Sparre	850,373	Apr. 16	3277	.....	127	2498
Explosive and making same	F. Sparre	850,374	Apr. 16	3279	.....	127	2500
Explosive and making same. Ammonium-nitrate metallic	F. Sparre	850,367	Apr. 16	3170	.....	127	2469
Explosives. Waterproof composition for	F. Sparre	850,368	Apr. 16	3168	.....	127	2468
Eyeglasses	A. A. Day	850,213	Apr. 16	3078	645	127	2443
Fabric-tester	R. C. Harris	850,532	Apr. 16	4266	894	127	2747
Fan	I. Wakefield	850,609	Apr. 16	3938	799	127	2638
Fan. Ventilating-	L. L. Holladay	850,395	Apr. 16	3108	649	127	2451
Farrier's knife	D. R. Baldwin	850,731	Apr. 16	4057	848	127	2646
Fastening device	J. J. O'Connell	850,819	Apr. 16	3813	796	127	2636
Feed. Automatic boiler-	M. L. Phippe	850,414	Apr. 16	3293	680	127	2496
Feed-water heater	O. W. Wright and P. W. Casey	850,707	Apr. 16	4045	844	127	2692
Fence-machine	E. W. Channell	850,343	Apr. 16	3319	691-3	127	2510
Fence machine. Wire-	C. A. and I. D. Bisme	850,617	Apr. 16	3845	803-5	127	2643
Fence-post	E. D. Miner	850,773	Apr. 16	4147	887	127	2718
Fence tightener. Wire-	L. H. Beltzer	850,612	Apr. 16	3833	801	127	2640
Fencing. Wire	G. S. MacLeod	850,396	Apr. 16	3347	676	127	2491
Fender:							
See Car-fender. Clod-fender.							
Fiber digester. Wood-	G. H. Mallam	850,294	Apr. 16	3397	711	127	2529
Fire-alarm apparatus	G. W. Smith	850,433	Apr. 16	4308	904-5	127	2700
Fire and burglar alarm. Combined	A. M. Bennett	850,327	Apr. 16	3304	648	127	2478
Fire and temperature alarm or indicator	G. L. Smith	850,681	Apr. 16	3995	833	127	2679
Fire-resisting shutter	E. H. McCloud	850,172	Apr. 16	3998	627	127	2420
Fish. Preserving	J. Thomthwaite	850,481	Apr. 16	3923	.....	127	2703
Fish-tank on transporting-car or the like	G. Reinhardt	850,216	Apr. 16	3293	681	127	2496
Fishing-reel	E. Holzmann	850,599	Apr. 16	3774	788	127	2626
Floor. Dumping-	J. F. Dornfeld	850,214	Apr. 16	3080	646	127	2444
Floor-surfacing machine	O. J. Kiebler and J. P. Stahl	850,229	Apr. 16	3108	650	127	2452
Flower-pot machine	C. Schwarzkopf	850,328	Apr. 16	3274	683	127	2490
Fluid-pressure and motor controller. Automatic	W. J. Bell	850,412	Apr. 16	3446	722	127	2543
Flying-machine	A. P. Bliven	850,816	Apr. 16	3841	802-3	127	2642
Fodder-cutter	G. A. Boore	850,727	Apr. 16	4095	850	127	2698
Foot-rest	W. D. Bagley	850,458	Apr. 16	3536	739	127	2564
Fragile vessels. Protective device for	S. Ferguson	850,633	Apr. 16	3902	735	127	2580
Freezer	J. H. McKinney	850,442	Apr. 16	3511	740-1	127	2586
Friction-coupling	H. H. Benn	850,402	Apr. 16	3541	697	127	2516
Fruit-gatherer	E. H. Denton	850,355	Apr. 16	3344	.....	127	2484
Fuel (heat and producing same. Artificial-	M. M. Kline	850,232	Apr. 16	3114	622-4	127	2416
Fuel blocks. Machine for forming artificial-	M. M. Kline	850,163	Apr. 16	2974	.....	127	2416
Furnace:							
See Glass-furnace.							
Furnace-front. Water-cooled	A. L. Hammerberg	850,155	Apr. 16	2969	620	127	2412
Furnaces. Compound for facing the ports of open-hearth steel-	A. H. Beale and E. F. McDowell	850,723	Apr. 16	4010	.....	127	2697
Furniture construction	G. W. Myers	850,669	Apr. 16	3967	829	127	2675
Fuse. Alarm-	W. E. Harkness	850,305	Apr. 16	3362	702	127	2521
Fuse in circuit. Cut-out block for connecting	H. H. Hornsby and E. W. Anger, Jr.	850,836	Apr. 16	4264	896	127	2746
Gage:							
See Mortising-gage.							
Gauge apparatus	H. L. Haskell	850,224	Apr. 16	3100	648-9	127	2449
Gauge apparatus	J. H. Price	850,489	Apr. 16	3203	654	127	2582
Game-board	A. Collier	850,137	Apr. 16	2934	613	127	2405
Garment-pads. Making	G. Goldman	850,151	Apr. 16	2952	618-19	127	2410
Garment-supporter	M. Frerkson	850,638	Apr. 16	3909	815	127	2820
Gas-burner regulating-valve	F. Eggs	850,560	Apr. 16	3753	784	127	2621
Gas-engine	W. H. Ash	850,718	Apr. 16	4052	847	127	2695
Gas generator. Acetylene-	H. S. Gallup	850 148	Apr. 16	2948	617-18	127	2409
Gas-producers. Feed mechanism for	A. L. Parker	850,395	Apr. 16	3420	716-17	127	2535
Gas. Purifying	G. O. Smith	850,680	Apr. 16	3983	833	127	2679
Gate	W. M. Watson	850,699	Apr. 16	4022	841	127	2683
Gate-opener. Automatic	T. J. McGinnis	850,441	Apr. 16	3510	734-5	127	2550
Gear. Change-speed	H. T. Thomas	850,857	Apr. 16	4321	906-7	127	2764
Gear. Reversible transmission-	O. Petri	850,247	Apr. 16	3140	657	127	2461
Gear-transmission mechanism	C. H. Schabinger	850,257	Apr. 16	3157	660	127	2466
Gearing	J. F. McCanna	850,597	Apr. 16	3810	795	127	2635
Generator:							
See Gas-generator. Steam-generator.							
Glass-furnace	C. J. Koenig	850,233	Apr. 16	3115	651	127	2454
Glass-mold	S. Hipkins	850,577	Apr. 16	3746	787	127	2624
Glass ornamentation for panels, floors, &c	C. O. Newman	850,548	Apr. 16	3695	773	127	2606
Glass structures. Corner-clamp for plate-	D. A. Cowan	850,348	Apr. 16	3334	695	127	2513
Glass. Treating	W. E. Heal	850,933	Apr. 16	4259	895	127	2747
Governing device for marine engines	W. J. H. Freese	850,473	Apr. 16	3570	746	127	2574
Governor. Electric and pneumatic	H. W. Young	850,329	Apr. 16	3283	684	127	2501
Grain-elevator	T. F. Hall	850,222	Apr. 16	3098	648	127	2449
Grain-lifter	L. Wikoff	850,704	Apr. 16	4035	843	127	2691
Grains and similar goods. Pneumatic device for drawing out	P. and C. Gebhardt	850,639	Apr. 16	3911	815	127	2660
Gramophone record-tablet	J. Sanders	850,404	Apr. 16	3514	756	127	2584
Grass-catching receptacle	L. Brown	850,418	Apr. 16	3458	725	127	2546
Grinding-machine	C. King	850,374	Apr. 16	3379	708-7	127	2525
Gyratory crusher	O. C. Redding	850,491	Apr. 16	3907	755	127	2682
Hair-curling device	H. I. West	850,553	Apr. 16	3726	778	127	2614
Hair-waver	S. H. Tolman	850,452	Apr. 16	3529	737	127	2563
Hammer. Power-	J. H. Conlen	850,212	Apr. 16	3076	646	127	2443
Handle:							
See Knife-handle. Saw-handle.							
Hanger:							
See Clothes-line hanger. Screen-hanger. Pipe-hanger.							
Harrow	W. C. Cook	850,296	Apr. 16	3224	672	127	2483
Harvester. Pneumatic cotton-	J. E. Worswick	850,709	Apr. 16	4025	841-2	127	2688
Hay-loader	H. V. Congrove	850,138	Apr. 16	2935	613-14	127	2406
Hay-rack	C. W. Baird	850,285	Apr. 16	3201	667	127	2477
Headlight. Locomotive-	R. M. Spillman	850,802	Apr. 16	3194	880	127	2760
Headlight. Vehicle-	F. G. Frankenberg	850,570	Apr. 16	3755	785	127	2622
Heater:							
See Feed-water heater. Water-heater. Hot-water heater.							
Heater	E. G. M. Cape and R. J. Durley	850,818	Apr. 16	4225	898	127	2776
Hinge for doors and like movable objects	O. M. Edwards	850,422	Apr. 16	3445	726	127	2548
Hoe	D. B. Curry, Jr.	850,736	Apr. 16	4083	853	127	2702
Hoist	W. E. Hutchings	850,757	Apr. 16	4120	862	127	2712
Hoisting apparatus. Automatic stop for electric	H. S. Valentine	850,094	Apr. 16	4014	830	127	2686
Hoisting-machine brake	G. C. Grable	850,152	Apr. 16	3955	619	127	2411
Hook:							
See Draft-hook. Snap-hook.							
Hoops to casks and barrels. Machine for applying	E. C. Thorschmidt	850,602	Apr. 16	4010	838-9	127	2694
Horn. Fabbing	O. Kraus	850,375	Apr. 16	3384	707-8	127	2526
Horse knee-boot. Pneumatic	R. C. Bever	850,128	Apr. 16	2923	610	127	2403
Horseshoe-calk	J. T. Bell	850,286	Apr. 16	3200	667	127	2478
Hose-supporter	E. Middleton	850,240	Apr. 16	3130	654	127	2480
Hot-water heater	T. H. Campbell	850,020	Apr. 16	3944	807	127	2648
Hub. Wheel-	F. F. Unekrich	850,328	Apr. 16	3282	683	127	2501
Hydrocarbon-burner	J. McCarron and A. Duffy, Jr.	850,440	Apr. 16	3508	734	127	2576
Ice-box	G. E. Lovell	850,093	Apr. 16	3951	826	127	2672
Ice. Making sanitary carbonated	A. Schröder	850,607	Apr. 16	3824	.....	127	2636
Ice-saw	T. M. Butler	850,292	Apr. 16	3216	671	127	2481
Incubator	J. L. Cousins	850,523	Apr. 16	3958	766	127	2585
Index-tab cards. Label-holder for	J. C. Seyl and D. G. Butts	850,324	Apr. 16	3275	682	127	2499
Indicator:							
See Electrical indicator. Station-indicator. Speed-indicator.							
Indigo. Making	A. Rahtjen and C. Stephan	850,444	Apr. 16	3516	.....	127	2561

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Ink-well	J. W. Jacobus	850,471	Apr. 16	3583	748	127	2576
Ink-well	J. W. Jacobus	850,472	Apr. 16	3584	749	127	2576
Inkstand construction	E. Davis	850,488	Apr. 16	3556	745	127	2570
Invalid-lifting apparatus	W. B. Closson	850,494	Apr. 16	3571	809	127	2646
Iron:							
See Soldering-iron.							
Iron-holder	M. Agnesonna	850,712	Apr. 16	4045	846	127	2922
Ironing-machine	S. J. Tobiason	850,698	Apr. 16	3826	793-4	127	2825
Jack:							
See Lifting-jack. Vehicle-jack.							
Joint:							
See Rail-joint.							
Journal-bearing	G. T. Bates	850,289	Apr. 16	3429	718	127	2388
Kettle-cover	A. Seys	850,577	Apr. 16	3980	832	127	2878
Keyhole-guard for locks	A. Robbins	850,446	Apr. 16	3518	736	127	2561
Kiln:							
See Cement-kiln.							
Knapsack							
Knife:	L. M. Norwood	850,512	Apr. 16	3586	678	127	2484
See Farrier's knife.							
Knife-handle	J. R. Cooper and P. A. Oliver	850,420	Apr. 16	3462	726	127	2547
Knitting-machine	A. Riedel and E. Ittenbagen	850,705	Apr. 16	4169	873-4	127	2726
Knitting-machine fabric-take-up mechanism	B. T. Stober	850,565	Apr. 16	4315	906	127	2761
Knitting-machines. Splicing yarn-feed device for	H. A. Horseman	850,476	Apr. 16	3578	748	127	2575
Ladder. Step-	A. W. Derby	850,142	Apr. 16	2939	615	127	2407
Lamp. Inverted-burner gas-	W. De Freitas	850,588	Apr. 16	3750	784	127	2699
Lamp-lighting device. Gas-	H. K. Wilson	850,599	Apr. 16	3843	702	127	2532
Lamp-shade holder	W. O. Holt and R. L. Foster	850,570	Apr. 16	3773	788	127	2835
Lantern	F. K. Wright	850,445	Apr. 16	3532	738	127	2544
Laundry-bag	W. E. Voss	850,697	Apr. 16	4020	840	127	2907
Lawn-cleaner	C. H. Mosher	850,777	Apr. 16	4154	868-9	127	2779
Leather-drying rack	R. Buchheld	850,121	Apr. 16	3026	611	127	2404
Leather-skiving machine	D. Daniels	850,627	Apr. 16	3576	809-10	127	2651
Leather-trimmer	A. Larson	850,591	Apr. 16	3794	792	127	2631
Lifter:							
See Grain-lifter. Plate-lifter.							
Lifting-jack	J. H. Burkholder	850,209	Apr. 16	3072	644	127	2461
Lifting mechanism. Automatic	G. Holmes	850,647	Apr. 16	3827	820	127	2695
Light regulator. Window-	H. Alrich	850,221	Apr. 16	3057	640	127	2427
Lighter or burner	F. A. M. Saunders	850,693	Apr. 16	3989	834	127	2880
Line-carrier	L. D. Shaffer	850,793	Apr. 16	4157	878-9	127	2723
Liquid-applying device	G. A. Burdett	850,514	Apr. 16	4220	887	127	2736
Liquid-evaporator	H. W. Eden	850,522	Apr. 16	4242	891	127	2749
Liquid-treating apparatus	H. H. Sutro	850,688	Apr. 16	3832	759	127	2529
Liquids of different specific gravities. Apparatus for separating	J. H. Cayford	850,440	Apr. 16	3480	725	127	2545
Lock:							
See Drawbridge rail-lock. Sash-lock. Nut-lock. Switch-lock. Permutation-lock. Ventilating-lock. Safety-lock.							
Lock	F. S. Alano	850,288	Apr. 16	3386	698	127	2394
Lock	J. C. Dawson	850,577	Apr. 16	4357	912	127	2774
Lock and latch	B. Phelps	850,179	Apr. 16	3014	631	125	2426
Loom	G. C. Moore	850,596	Apr. 16	3802	793-4	127	2833
Loom picker-stick attachment	G. Taylor	850,826	Apr. 16	4198	881-3	127	2721
Loom weft-replenishing mechanism	D. Lemoine	850,843	Apr. 16	4285	899	127	2754
Lubricator-sight	J. Bim	850,335	Apr. 16	3305	687-9	127	2507
Lumber together. Apparatus for securing the component parts of compound	W. L. Abate	850,711	Apr. 16	4042	845	127	2922
Mail-bag-delivery apparatus	P. F. Bolton	850,388	Apr. 16	3310	689	127	2548
Mail-bag-delivery apparatus	D. F. Lehman	850,628	Apr. 16	3788	790-1	127	2830
Mantle-firing flames. Regulator for	P. H. Sudbrock	850,689	Apr. 16	4001	837	127	2863
Massage instrument for applying ointments, lotions, &c.	H. Heldorn	850,702	Apr. 16	4111	860-1	127	2709
Match-boxes, &c. Holder or receptacle for	W. Doyle	850,267	Apr. 16	3248	666	127	2617
Measuring instrument. Portable electric	E. Dumelin	850,141	Apr. 16	2939	614	127	2407
Measuring-machine	H. Bourgeois	850,129	Apr. 16	2924	610	127	2403
Metal. Composite	W. T. Hollis	850,304	Apr. 16	3328	675	127	2468
Metal core in a plastic body. Machine for enveloping a	T. A. Edison	850,321	Apr. 16	3385		127	2776
Metal sheets. Coating	W. Pepperdieck	850,720	Apr. 16	4160	870-1	127	2721
Metal sheets or plates. Machine for cutting or shearing	L. C. Steele	850,849	Apr. 16	3711	776	127	2611
Metal-transfer device	J. Abbott	850,641	Apr. 16	3830	800	127	2639
Metals by electrolysis. Producing light	R. H. Stevens	850,120	Apr. 16	2926	635	127	2428
Metallic tie	F. von Kügelgen and G. O. Seward	850,570	Apr. 16	3980	708	127	2526
Metallic tie and rail-fastener	J. D. Bowne	850,676	Apr. 16	4346	912	127	2774
Meter:	J. B. Novak	850,695	Apr. 16	3811	796	127	2635
See Proportional meter.							
Meter	W. Stanley	850,627	Apr. 16	3986	836	127	2662
Mill:							
See Crushing-mill. Windmill.							
Mining-machine	E. G. Tillman	850,126	Apr. 16	3040	636-7	127	2433
Minnow-trap	A. J. Algate	850,133	Apr. 16	3013	630	127	2401
Miter-box	J. L. Pringle	850,573	Apr. 16	4351	911	127	2773
Mixer:							
See Concrete-mixer.							
Mold:							
See Annayer's pouring-mold. Glass-mold.							
Mold	F. T. Dickinson	850,499	Apr. 16	3620	811	127	2632
Mold-forming machine	J. Macphail	850,703	Apr. 16	4137	866	127	2715
Mold-forming machine	J. Macphail	850,704	Apr. 16	4140	866	127	2716
Molding process	J. Macphail	850,705	Apr. 16	4141	866	127	2717
Molding process	A. R. Marsteller	850,776	Apr. 16	4345	910	127	2769
Monkey-wrench. Ratchet	T. W. McClanahan	850,162	Apr. 16	3023	635-6	127	2419
Mop-wringer	F. H. M. Davis	850,576	Apr. 16	3983	830	127	2675
	J. L. Potts	850,610	Apr. 16	4359	859	127	2740
		850,721	Apr. 16	4163	871-2	127	2722

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Mortising-gage	H. D. Jernigan	850,480	Apr. 16	3585	749	127	2577
Motor:							
See Electric motor. Turbine-motor. Rotary motor. Wave-motor.							
Motor	G. H. Chappell	850,296	Apr. 16	3222	671-2	127	2453
Motor-control system	C. R. Tatem	850,277	Apr. 16	3183	666	127	2473
Motor-controller	A. Pedersen	850,443	Apr. 16	3512	735	127	2539
Motor-controller	A. Pedersen	850,872	Apr. 16	4346	911	127	2770
Motor-controlling apparatus. Alternating-current-	W. N. Dickinson, Jr.	850,630	Apr. 16	3883	811-12	127	2653
Motor cut-out. Automatic	F. E. Case	850,211	Apr. 16	3075	645	127	2442
Motors. Automatic device for induction-	S. R. Bergman	850,205	Apr. 16	3064	642	127	2439
Musical instrument. Mechanical	A. T. Chester	850,621	Apr. 16	3866	805	127	2645
Musical instrument. Pneumatically-operated	J. J. Healy	850,306	Apr. 16	3363	702-4	127	2521
Musical instrument. Self-playing	E. D. Ackerman, C. E. Clinton, and R. N. Eltom.	850,230	Apr. 16	3286	684	127	2501
Musical instruments. Expression mechanism for self-playing	J. J. Healy	850,303	Apr. 16	3235	674-5	127	2487
Musical instruments. Pneumatic valve for	A. W. Flegel	850,635	Apr. 16	3905	814	127	2659
Necktie. Bow-	W. A. Clarke	850,732	Apr. 16	4072	851	127	2899
Nitrogen. Oxidizing atmospheric	A. Neuburger	850,392	Apr. 16	3412	715	127	2534
Non-hygroscopic compound and explosive treated therewith	A. La Motte	850,589	Apr. 16	3789		127	2630
Nozzle. Spraying-	J. F. Dornfeld	850,216	Apr. 16	3083	646	127	2444
Nut-lock	L. H. Kennedy	850,432	Apr. 16	3485	729	127	2528
Nut-lock	W. Bartley	850,459	Apr. 16	3537	740	127	2565
Nut-lock	H. E. Marsch	850,665	Apr. 16	3954	826	127	2673
Nut-lock	G. W. Roberts	850,767	Apr. 16	4173	875	127	2726
Nut-lock	E. E. Smith	850,801	Apr. 16	4193	880	127	2730
Nut-lock	H. Soeldner. (Reissue)	12,635	Apr. 16	4300	919-20	127	2783
Oil-engine	H. D. McLeod	850,391	Apr. 16	3409	714-15	127	2533
Ore-concentrating table	G. Binnig	850,413	Apr. 16	3447	723	127	2543
Organ key-action	J. G. Funkhouser	850,828	Apr. 16	4250	893	127	2745
Organs. Adjustable combination-action for	W. Hillman	850,159	Apr. 16	2966	622	127	2414
Packing. Piston-rod	T. Götze	850,220	Apr. 16	3095	647	127	2443
Paint-tube	A. C. McWilliams	850,174	Apr. 16	2996	628	127	2421
Panel-board. Metering	M. Schenck	850,605	Apr. 16	3820	797-8	127	2537
Paper-bag machine	T. C. Dexter	850,821	Apr. 16	4236	889-91	127	2742
Paper-feeding machine	C. T. Ridgely	850,217	Apr. 16	3066	681	127	2497
Paper-hanger's smoothing-roller	S. T. Murchie	850,242	Apr. 16	3133	655	127	2460
Pasting device	G. H. Luts	850,382	Apr. 16	3395		127	2529
Pavements. Surfacing	S. Nagasee	850,871	Apr. 16	4345	911	127	2770
Peeler and scraper. Vegetable	E. J. Judge	850,655	Apr. 16	3938	822	127	2669
Peeling fruits and vegetables	T. Franklin and G. L. Belding	850,424	Apr. 16	3471	727	127	2540
Peeling machine. Vegetable	L. Wolidkow	850,710	Apr. 16	4041	845	127	2902
Percolator	W. A. Matrolis	850,309	Apr. 16	3248	676-7	127	2482
Permutation-lock	W. C. Runge	850,256	Apr. 16	3155	659	127	2486
Phonogram	P. Grassmann	850,429	Apr. 16	3481	729	127	2561
Photographic-plate holder	G. Mohr	850,668	Apr. 16	3957	827-9	127	2674
Pianos. Combined record-making and self-playing attachment for	J. A. Crosby and J. J. Pink	850,567	Apr. 16	3745	782-4	127	2619
Picture taking and exhibiting machine	W. T. McClintock	850,389	Apr. 16	3406	713	127	2531
Pile driving and forming device	P. A. Schuchart and G. G. Brown	850,496	Apr. 16	3620	787	127	2586
Piling. Sheet-	P. A. Schuchart	850,497	Apr. 16	3621	787	127	2586
Piling. Sheet-							
Pipe:							
See Blowpipe. Tobacco-pipe. Curved pipe.							
Pipe connection	J. M. Kiehle	850,230	Apr. 16	3111	651	127	2483
Pipe-coupling	E. T. Christensen and D. M. Tulloch.	850,731	Apr. 16	4070	851	127	2899
Pipe coupling. Train-	E. D. Piper	850,486	Apr. 16	3600	753	127	2599
Pipe-hanger	R. W. Clark	850,623	Apr. 16	3870	808	127	2649
Pipe-laying machine	M. S. Manning	850,238	Apr. 16	3122	653	127	2456
Pipe. Machine for manufacturing composition	E. F. Badgley	850,124	Apr. 16	2914	608	127	2401
Pipe-wrench	E. J. Robbins	850,254	Apr. 16	3153	659	127	2485
Pipe-wrench	M. Z. Viau	850,696	Apr. 16	4018	840	127	2697
Piston-head	J. C. Howard	850,583	Apr. 16	3782	789	127	2698
Piston-replacing device	C. J. Richardson	850,675	Apr. 16	3976	831	127	2677
Planter and fertilizer-distributer. Combined	G. T. Purvis and J. King	850,240	Apr. 16	3142	657	127	2482
Plate-lifter	D. P. Dellinger	850,737	Apr. 16	4084	854	127	2702
Plow	N. Jennings	850,162	Apr. 16	2973	623	127	2416
Plow attachment	A. Arter	850,717	Apr. 16	4051	847	127	2695
Plow. Gang-	G. W. Hammers	850,740	Apr. 16	4102	859	127	2707
Pneumatic cushion	V. H. Podstata	850,181	Apr. 16	3017	632	127	2427
Pneumatic spring	A. C. Mather	850,387	Apr. 16	3403	713	127	2531
Pool-table attachment	F. W. Flint	850,360	Apr 16	3253	699	127	2519
Post:							
See Fence-post.							
Potato-digger	J. Smith	850,682	Apr. 16	3998	833	127	2680
Prepayment mechanism	J. E. Hubbell	850,755	Apr. 16	4115	861	127	2710
Printing-machine sheet-delivery mechanism	T. M. North	850,313	Apr. 16	3259	679-80	127	2484
Propeller	C. J. MacRae	850,383	Apr. 16	3396	710-11	127	2529
Proportional meter	J. C. Anderson	850,457	Apr. 16	3534	730	127	2564
Puller:							
See Cork-puller. Stump-puller.							
Pulp-washing apparatus	W. B. Klein	850,657	Apr. 16	3941	823	127	2669
Pump	G. B. Peteche	850,178	Apr. 16	3011	630-1	127	2425
Pump	G. B. Peteche	850,248	Apr. 16	3141	657	127	2482
Punch	W. H. Stedham and J. N. Miller	850 803	Apr. 16	4194	880	127	2730
Rack:							
See Display-rack. Leather-drying rack. Hay-rack.							
Raft. Life-	P. C. Petrie	850,847	Apr. 16	4297	902-3	127	2757
Rail-adjuster	C. A. Jones	850,652	Apr. 16	3933	823	127	2667
Rail clamp or fastening	J. G. Snyder	850,262	Apr. 16	3164	662	127	2488
Rail-joint	B. Wolhaupter	850,198	Apr. 16	3049	630	127	2430
Rail-joint	H. Spunaugle	850,269	Apr. 16	3171	663	127	2470
Rail-joint	J. C. Abbott	850,712	Apr. 16	4044	845	127	2903
Rail-joint	G. J. Miller	850,772	Apr. 16	4146	867	127	2718
Rail-joint	A. Morrison	850,536	Apr. 16	3693	772	127	2606
Rail system. Guard-							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Railway-crossing	G. E. Starner	850,698	Apr. 16	3967	836-7	127	2682
Railway frog-switch	A. M. Lewis	850,689	Apr. 16	3946	824	127	2671
Railway safety apparatus	G. E. Ryan	850,760	Apr. 16	4177	875-6	127	2726
Railway-switch	C. S. Chamberlin and D. Harrington.	850,542	Apr. 16	3317	690	127	2510
Railway switch. Street-	C. A. Ridley	850,318	Apr. 16	3268	681	127	2497
Railway-tie	J. P. Angell	850,388	Apr. 16	3199	667	127	2477
Railway-track construction	A. King	850,373	Apr. 16	3378	706	127	2525
Rake	A. Jackson	850,238	Apr. 16	3109	650	127	2452
Range lighter. Gas-	J. H. Robuck	850,852	Apr. 16	4307	904	127	2739
Ratchet mechanism	H. J. Cook	850,947	Apr. 16	3333	694-5	127	2513
Ratchet mechanism	H. J. Cook	850,586	Apr. 16	3743	782	127	2619
Razor blades. Temporary holder for safety-	D. A. Macbeth	850,767	Apr. 16	4136	866	127	2715
Razor. Safety-	J. Reichard	850,183	Apr. 16	3021	632	127	2428
Razor. Safety-	F. X. George, Jr	850,539	Apr 16	3083	770	127	2509
Receptacle	W. Sowerby	850,698	Apr. 16	3966	836	127	2681
Reel: *See* Fishing-reel.							
Reel	A. M. Maguire	850,226	Apr. 16	3119	652	127	2455
Refuse-can	T. Lee	850,167	Apr. 16	2984	625	127	2419
Regulator: *See* Damper-regulator. Tongue-regulator. Light-regulator.							
Relay	C. E. Scribner	850,402	Apr. 16	3433	719	127	2539
Retort-closure	M. J. Campbell	850,133	Apr. 16	2929	612	127	2405
Riding device. Amusement	J. A. Cole	850,126	Apr. 16	2933	612-13	127	2405
Riding-gallery	A. J. Stickney	850,446	Apr. 16	3522	737	127	2562
River-banks. Means for protecting	J. A. Nabers	850,344	Apr. 16	3136	656	127	2461
Riveting-machine	J. Bingham	850,615	Apr. 16	3539	802	127	2641
Rock-drilling machines or engines. Means for mounting	H. Hellman and L. C. Bayles	850,895	Apr. 16	4371	916	127	2777
Roller *See* Curtain-roller. Paper-hanger's smoothing-roller.							
Root and stalk pulling machine	J. L. Anders	850,715	Apr. 16	4047	846	127	2694
Rotary engine	E. F. Taylor	850,480	Apr. 16	3525	737	127	2563
Rotary engine	G. A. Whitman	850,558	Apr. 16	3727	779	127	2615
Rotary motor	W. P. Marsh	850,269	Apr. 16	3798	793-3	127	2632
Rubber erasers. Tool for dressing, shaping, and cleaning	G. H. Blakesley	850,227	Apr. 16	3300	689	127	2698
Rubber heels. Resilient attaching means for	A. B. Heimbach	850,180	Apr. 16	3061	630	127	2612
Rubber strips. Apparatus for producing	J. F. Ott	850,485	Apr. 16	3036	751-3	127	2570
Sash. Pocket-	C. Fisher	850,088	Apr. 16	3040	910	127	2709
Safety-lock	J. E. Ledford	850,240	Apr. 16	2984	898	127	2754
Sanitary closet	J. W. Softley	850,253	Apr. 16	3165	662	127	2468
Sash-fastener	C. H. Miller	850,170	Apr. 16	2990	627	127	2420
Sash-lock	W. Schuch	850,495	Apr. 16	3618	736-7	127	2586
Saw. Hand-	F. A. Crum	850,351	Apr. 16	3333	693	127	2514
Saw-handle	V. Lounoff	850,491	Apr. 16	3598	749	127	2577
Sawmill feed mechanisms. Belt-tightener for	H. M. Walker	850,270	Apr. 16	3196	668	127	2476
Scaffolding and the like supporting bracket	N. H. Warnock	850,608	Apr. 16	4020	840	127	2699
Scales. Automatic	E. Lorens	850,662	Apr. 16	3949	825	127	2673
Scale. Weighing-	W. E. Burks	850,728	Apr. 16	4068	850	127	2696
Scissors	G. Walker	850,858	Apr. 16	3841	761-2	127	2591
Screen-hanger	A. T. Eklund	850,632	Apr. 16	3601	813	127	2658
Scriber and pencil-holder. Combined	H. B. Higgins	850,269	Apr. 16	3373	705	127	2523
Seat: *See* Closet-seat.	T. B. Stephenson	850,189	Apr. 16	3035	634	127	2432
Section-brake	J. Carr	850,730	Apr. 16	4070	851	127	2699
Seed hulls. Apparatus for treating cotton-	D. L. Adelsperger	850,331	Apr. 16	3286	685	127	2502
Self-luminous body	L. Vanino	850,860	Apr. 16	4326		127	2765
Separating apparatus. Material-	A. C. Calkins	850,399	Apr. 16	3218	671	127	2492
Separating or grading machine	C. F. Shumaker	850,447	Apr. 16	3330	736	127	2561
Separator: *See* Cream-separator.							
Separator	W. I. Brock	850,417	Apr. 16	3457	724	127	2545
Sewing-machine	G. E. Gilbert	850,426	Apr. 16	3477	728	127	2550
Sewing-machine	T. D. Hamilton, J. Rusk, and W. A. Robertson.	850,843	Apr. 16	3914	816	127	2661
Sewing-machine attachment	A. O. Rosenthal	850,789	Apr. 16	4176	875	127	2725
Sewing-machines. Blindstitching, overseaming, and serging attachment for	E. Richter	850,851	Apr. 16	4305	904	127	2759
Shade and curtain-pole supporter. Window-	T. W. Brown	850,518	Apr. 16	3662	765	127	2597
Shade and shade-roller fixture	A. Hitt	850,578	Apr. 16	3709	787	127	2625
Shaving apparatus	F. J. Halbekann	850,430	Apr. 16	3481	730	127	2551
Ship-bottom-cleaning device	J. H. Pegram	850,246	Apr. 16	3136	656	127	2461
Ships or vessels. Transferring	F. Roeder	850,220	Apr. 16	3271	682	127	2498
Shock-absorber	F. W. Battershall	850,460	Apr. 16	3535	740	127	2565
Shock-binder	A. Melin	850,843	Apr. 16	4201	901	127	2755
Shoe. Arch-supporting	H. C. Welch	850,892	Apr. 16	4328	908	127	2765
Shoe-cleaning device	J. J. Polt	850,206	Apr. 16	3422	717	127	2537
Shoe-upper-holding device	J. S. Hansen	850,894	Apr. 16	4368	916	127	2777
Shuttle	F. Ott. (Reissue)	12,634	Apr. 16	4369	919	127	2782
Sign. Illuminated	C. L. Carter	850,821	Apr. 16	3868	767	127	2598
Signal: *See* Electric signal.							
Signaling system. Train	J. S. Anderson	850,511	Apr. 15	3647	762-3	127	2593
Skins and hides. Scudding	K. A. Ernst	850,146	Apr. 16	3249	617	127	2409
Skirt	C. J. Sorensen	850,284	Apr. 16	3166	662	127	2469
Skylight	J. Flynn	850,321	Apr. 16	3354	700	127	2519
Skylight structure	W. F. Plass	850,497	Apr. 16	3601	733	127	2581
Slack-adjuster	C. O. Anderson	850,202	Apr. 16	3089	641	127	2488
Sled. Automobile	J. M. Lambert	850,763	Apr. 16	4130	864	127	2714
Sleeve-holder	H. M. M. Barnes	850,721	Apr. 16	4063	848	127	2697
Slipper for soaking the feet	G. Reiter	850,603	Apr. 16	3817	797	127	2637
Sluices. Device for automatic regulation of outlet-	I. P. Wessely	850,703	Apr. 16	4063	842	127	2689
Smut-machine	O. L. Larson	850,378	Apr. 16	3389	803-9	127	2527
Snap-hook	W. H. Lambert	850,284	Apr. 16	3117	663	127	2455
Snap-hook	D. E. Barton	850,819	Apr. 16	3862	765	127	2594

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Soldering-iron. Self-heating	R. W. Marvell and H. M. Ashman	850,385	Apr. 16	3400	712	127	2530
Soldering-iron. Self-heating	R. W. Marvell	850,386	Apr. 16	3401	712	127	2530
Sound-box	E. D. Gleason	850,883	Apr. 16	4367	916	127	2776
Spectacle-temple. Detachable	N. A. Bowen	850,130	Apr. 16	2925	611	127	2404
Speed-indicator	T. W. Flory	850,745	Apr. 16	4096	857	127	2705
Spike	O. M. De Witt	850,421	Apr. 16	3464	725	127	2547
Splint. Adjustable	J. R. Ward	850,610	Apr. 16	3829	800	127	2639
Spool-holder	M. Halsted	850,641	Apr. 16	3913	816	127	2661
Sprayer. Compressed-air	C. W. and E. A. Parks	850,674	Apr. 16	3974	831	127	2676
Spring: *See* Pneumatic spring. Vehicle-spring.							
Spring-wheel	S. S. Childs	850,134	Apr. 16	2930	612	127	2406
Spring-wheel	J. D. Sower	850,265	Apr. 16	3167	662	127	2469
Spring-wheel	L. J. Lindsay	850,765	Apr. 16	4133	865	127	2714
Stacker. Hay-	O. Novák	850,672	Apr. 16	3972	830	127	2676
Stacks. Covering for hay and the like	J. French	850,425	Apr. 16	3475	728	127	2550
Stamping and numbering machine	E. Ensign	850,471	Apr. 16	3568	746	127	2573
Stamps. Cushioned holder for dating-							
Stand: *See* Trolley-stand.							
Stapling-machine	T. A. Briggs	850,290	Apr. 16	3209	669-70	127	2480
Station-indicator	T. J. O'Neill	850,673	Apr. 16	3972	831	127	2676
Stave-jointing machine	A. Dunbar	850,144	Apr. 16	2941	615-16	127	2408
Steam-generator	J. M. Story	850,191	Apr. 16	3038	635-6	127	2433
Steam. Mechanism for utilizing superheated	C. de Loewenstein	850,380	Apr. 16	3393	709-10	127	2528
Steering-gear	L. H. Dyer	850,145	Apr. 16	2945	617	127	2408
Sterilizing and preserving substances	A. Schroeder	850,606	Apr. 16	3822		127	2638
Stock-loader	J. Gibson	850,640	Apr. 16	3911	815	127	2661
Stone. Manufacturing artificial	J. Staudt	850,689	Apr. 16	3999		127	2682
Stool. Counter-	W. G. Winans	850,453	Apr. 16	3530	738	127	2563
Stopper: *See* Bottle-stopper.							
Stove or furnace	E. J. Selley	850,260	Apr. 16	3161	661	127	2467
Stove or furnace attachment	L. D. Mohler	850,171	Apr. 16	2991	627	127	2420
Strainer. Julep-	T. B. Lashar	850,379	Apr. 16	3392	709	127	2528
Stump-puller	J. W. Folgert	850,362	Apr. 16	3356	701	127	2519
Sulfur dioxid. Apparatus for nitrating	P. J. Derrig	850,820	Apr. 16	4233	889	127	2741
Superheater	F. J. Cole	850,565	Apr. 16	3741	781-2	127	2618
Suspender or holder. Garment-	F. Spaninger	850,405	Apr. 16	3436	720	127	2540
Suspensory	F. E. De Mars	850,298	Apr. 16	3226	673	127	2484
Switch: *See* Electric switch. Railway frog-switch. Electrical switch. Tramway-switch. Railway-switch.							
Switch-lock	F. B. Bradley	850,207	Apr. 16	3067	643	127	2440
Switch-operating device	E. J. Rice	850,604	Apr. 16	3818	797	127	2637
Tab for sheets of ledgers, &c	E. Davis	850,140	Apr. 16	2938	614	127	2407
Table: *See* Ore-concentrating table.							
Tailer's appliance	M. J. Brosnahan	850,340	Apr. 16	3315	690	127	2509
Tank: *See* Fish-tank.							
Tape or band. Woven	A. Weimar	850,702	Apr. 16	4032	842	127	2690
Tapping device. Liquid-	E. H. Weatherhead	850,410	Apr. 16	3443	721-2	127	2542
Telegraph. Emergency-	M. C. Tunison	850,858	Apr. 16	4323	907	127	2764
Telegraph-line. Duplexing	I. Kitsee	850,305	Apr. 16	3240	675	127	2488
Telegraph-transmitter. Keyboard	G. M. Goddard	850,364	Apr. 16	3358	701-2	127	2520
Telegraphy	I. Kitsee	850,231	Apr. 16	3112	651	127	2463
Telephone attachment	M. H. Black	850,558	Apr. 16	3730	779	127	2615
Telephone apparatus	K. Kohn	850,433	Apr. 16	3486	730	127	2555
Telephone apparatus	K. Kohn	850,434	Apr. 16	3491	730-1	127	2554
Telephone attachment	D. G. Hobby	850,896	Apr. 16	4372	916	127	2778
Telephone-exchange system	E. E. Clement	850,344	Apr. 16	3325	693	127	2511
Telephone trunking system	W. W. Dean	850,470	Apr. 16	3580	745	127	2570
Telephones. Reinforcing	C. Newman	850,484	Apr. 16	3593	751	127	2579
Thill-coupling	R. D. Seibert	850,259	Apr. 16	3160	661	127	2467
Thio-indoxyl derivative and making same	P. Friedlaender	850,827	Apr. 16	4249		127	2745
Threads, films, and the like. Manufacturing artificial	E. W. Friedrich	850,571	Apr. 16	3787		127	2622
Thresher-feeder	T. N. Johnsen	850,838	Apr. 16	4277	897-8	127	2751
Tie: *See* Cross-tie. Railway-tie. Metallic tie.							
Tile	G. B. Staples	850,271	Apr. 16	3174	663	127	2471
Tile	G. B. Staples	850,272	Apr. 16	3175	663	127	2471
Tile	G. B. Staples	850,274	Apr. 16	3178	664	127	2472
Tile-machine	W. H. Beery	850,513	Apr. 16	3654	763-4	127	2595
Tile or stair-tread	G. B. Staples	850,273	Apr. 16	3177	664	127	2471
Tiling	G. B. Staples	850,275	Apr. 16	3180	664	127	2472
Timber-cutting device	E. C. Pollard	850,848	Apr. 16	4298	903	127	2757
Time-recorders. Automatic card-stop for	J. and A. Dey	850,526	Apr. 16	3674	769	127	2600
Tin and solder. Apparatus for recovering	J. H. Bills	850,726	Apr. 16	4063	849	127	2693
Tire-armor	C. A. Schlachter	850,321	Apr. 16	3272	682	127	2498
Tire-bolting machine	A. H. Wilson	850,809	Apr. 16	4207	884	127	2732
Tire fastener. Rubber-	I. W. Giles and C. W. Tobey	850,748	Apr. 16	4102	859	127	2707
Tire protector. Rubber-	J. A. Posey	850,498	Apr. 16	3604	754	127	2581
Tires. Means for inflating pneumatic	A. A. Withers	850,706	Apr. 16	4037	844	127	2692
Tires to wheel-rims. Manufacture and application of rubber	I. W. Giles and C. W. Tobey	850,747	Apr. 16	4101	858	127	2706
Tobacco-pipe	J. Shields	850,404	Apr. 16	3435	720	127	2539
Tobacco-pipe	E. Kneezell	850,761	Apr. 16	4128	863-4	127	2714
Toilet article	G. H. Wagner and S. S. Herne	850,551	Apr. 16	3721	777	127	2613
Tongs	G. E. Smith	850,547	Apr. 16	3711	776	127	2611
Tongs. Nail-	B. L. Ward	850,409	Apr. 16	3441	721	127	2541
Tongs. Shoeing-	J. A. Kearney. (Reissue)	12,633	Apr. 16	4367	918	127	2781
Tongue-regulator	W. E. Robinson	850,319	Apr. 16	3270	682	127	2498
Tool. Combination-	C. E. Beckwith	850,724	Apr. 16	4061	849	127	2697
Torpedo. Railway signal-	F. Sparre	850,406	Apr. 16	3437		127	2540
Torpedoes. Composition for railway-	J. H. Price	850,490	Apr. 16	3606	754	127	2582
Toy blocks. Nested	A. W. Benson	850,514	Apr. 16	3667	764	127	2596
Toy train							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Tramway-switch	R. H. Carlisle	850,294	Apr. 16	3220	671	127	2402
Transformer	C. E. Allen and S. R. Bergman	850,716	Apr. 16	4046	846	127	2804
Transformer	W. J. Wooldridge	850,803	Apr. 16	4331	908	127	2786
Trap:							
See Boiler-trap. Minnow-trap.							
Trap	H. Yturri	850,510	Apr. 16	3645	762	127	2502
Trap	W. E. Maull	850,668	Apr. 16	3955	826	127	2673
Trap, holder, and chute for live stock. Combined	W. E. Willhoit	850,197	Apr. 16	3048	638	127	2405
Trimmer:							
See Leather-trimmer.							
Trolley stand and pole	G. Q. Seaman	850,798	Apr. 16	4183	877	127	2727
Truck	G. A. Browne	850,488	Apr. 16	3736	780	127	2616
Truck. Lumber-	G. A. Browne	850,489	Apr. 16	3737	780-1	127	2617
Trucks of cars and the like. Appliance for shifting the point of application of the weight on the	P. Stadlee	850,804	Apr. 16	4196	881	127	2731
Tube:							
See Paint-tube.							
Tube-compressors. Shut-off for	E. O. Jeralds	850,271	Apr. 16	3376	706	127	2504
Tube or bar straightening machine	J. S. Worth and W. F. Harrison	850,810	Apr. 16	4211	885-6	127	2734
Tufting-machines. Button-protector for	W. E. Buser	850,816	Apr. 16	4222	887-8	127	2737
Turbine	F. T. Snyder	850,501	Apr. 16	3627	759	127	2503
Turbine bucket and nozzle	K. Ahlquist	850,200	Apr. 16	3055	639-40	127	2407
Turbine. Elastic-fluid	H. P. R. L. Pöraske	850,397	Apr. 16	3423	717-18	127	2537
Turbine-motor	W. A. Warman	850,198	Apr. 16	3049	638	127	2405
Turner's tool	J. H. Tripp	850,574	Apr. 16	4363	912	127	2773
Twine-reeling machine	A. J. Crandall	850,734	Apr. 16	4077	853-3	127	2709
Type-writer cover. Office folding	G. R. Bright	850,289	Apr. 16	3309	689	127	2479
Type-writing machine	G. H. Smith	850,187	Apr. 16	3037	633-4	127	2420
Type-writing machine	H. S. McCormack	850,310	Apr. 16	3293	677-8	127	2482
Type-writing machine	E. F. Kunath	850,839	Apr. 16	4270	896	127	2782
Type-writing machine	J. C. McLaughlin	850,846	Apr. 16	4295	902	127	2786
Type-writing machine	H. S. McCormack	850,890	Apr. 16	4365	918	127	2781
Umbrella	P. J. Callahan	850,343	Apr. 16	3316	690	127	2509
Umbrella attachment	C. A. Pilts	850,544	Apr. 16	3705	775	127	2609
Umbrella rib-holder and runner	W. W. Ream	850,445	Apr. 16	3617	736	127	2561
Valve	A. L. Dow	850,749	Apr. 16	4089	854	127	2703
Valve device	J. Binnig	850,812	Apr. 16	4217	886	127	2736
Valve. Electrically-operated	J. T. H. Dempster	850,726	Apr. 16	4085	854	127	2702
Valve for steep-tanks	J. F. Dornfeld	850,215	Apr. 16	3081	646	127	2444
Valve for water-gages. Check-	C. E. Miser	850,483	Apr. 16	3590	750	127	2578
Valve-gear. Gas-engine	M. A. Nesland	850,178	Apr. 16	3269	628-9	127	2422
Valve. Safety-	W. H. Creighton	850,628	Apr. 16	3875	809	127	2650
Vaporizing device for lubricants	O. O. Bradley	850,415	Apr. 16	3489	723	127	2544
Vehicle	W. P. Maingault	850,771	Apr. 16	4144	867	127	2718
Vehicle	F. Eder	850,309	Apr. 16	3329	673	127	2486
Vehicle-brake	H. D. Smith	850,500	Apr. 16	3626	758	127	2567
Vehicle-brake	E. Hoffman	850,226	Apr. 16	3104	640	127	2451
Vehicle emergency-brake	R. F. Armstrong	850,294	Apr. 16	3220	667	127	2477
Vehicle-jack	D. F. and H. H. Greaser	850,302	Apr. 16	3232	674	127	2486
Vehicle running-gear	A. Gordon	850,530	Apr. 16	4254	893	127	2765
Vehicle-spring. Pneumatic	P. Richardson	850,782	Apr. 16	4165	872	127	2722
Vehicle-top shifting-rail lock	V. H. Podstata and F. M. Preucil	850,180	Apr. 16	3016	631	127	2421
Vehicle-wheel	J. D. Pilgrim	850,800	Apr. 16	3813	796	127	2636
Vehicle-wheel	J. E. Foley	850,638	Apr. 16	3907	814	127	2660
Vehicle-window	E. A. Fountain	850,637	Apr. 16	3906	815	127	2660
Vehicles. Dust-collector for wheeled	H. Heidemann	850,834	Apr. 16	4261	895	127	2747
Ventilating apparatus	J. M. Weaver	850,706	Apr. 16	4029	844	127	2692
Ventilating-lock. Automatic	H. S. Richmond	850,784	Apr. 16	4166	872	127	2723
Ventilator	J. C. Foster	850,147	Apr. 16	2947	617	127	2409
Vibratile apparatus	S. C. Hodge and P. Douglas	850,160	Apr. 16	2968	622	127	2414
Vibrator or hammer. Pneumatic	L. Snyder	850,188	Apr. 16	3023	634	127	2431
Violin	W. Lewis	851,592	Apr. 16	3795	792	127	2631
Vise. Hydraulic	I. A. Northrop	850,288	Apr. 16	3414	715-16	127	2534
Wagon. Dumping	H. D. Bright	850,285	Apr. 16	4234	908-9	127	2767
Wagon. Extensible	R. A. Showers	850,709	Apr. 16	4180	870	127	2720
Waist protector. Dress-	E. Riedinger	850,788	Apr. 16	4167	873	127	2724
Wardrobe. Portable	M. S. Koonce	850,560	Apr. 16	3733	780	127	2616
Washing-machine	F. Brucker and A. L. Stump	850,658	Apr. 16	3944	824	127	2670
Washing-machine	C. C. Davis	850,201	Apr. 16	3314	670	127	2481
Washing-machine	J. S. Parrish	850,324	Apr. 16	3371	703	127	2500
Watch-guard	P. B. Smith	850,339	Apr. 16	3697	773	127	2607
Watch-guard	R. S. Pope	850,261	Apr. 16	3163	661	127	2468
Water by ozonized air. Means for purifying and sterilizing	J. H. Bridge	850,601	Apr. 16	3815	796	127	2636
Water-gap	P. Schafer, Jr.	850,416	Apr. 16	3483	724	127	2544
Water-heater	H. L. Fessler and R. Michaels	850,791	Apr. 16	4170	876	127	2726
Water-tube boiler	W. S. Elliott	850,634	Apr. 16	3903	814	127	2659
Water-tube boiler	W. S. Elliott	850,262	Apr. 16	3240	699	127	2518
Wave-motor	A. L. and G. A. Reynolds	850,422	Apr. 16	3483	725-7	127	2545
Wedge splitting and shaving machine	F. B. Schuyler	850,492	Apr. 16	3613	760	127	2584
Weeder	R. D. Abraham	850,548	Apr. 16	3709	775	127	2610
Weighing attachment for ice-boxes	N. S. Mercer	850,466	Apr. 16	3533	730	127	2564
Wells. Hoisting apparatus for deep	W. S. Sutton	850,103	Apr. 16	3003	630	127	2420
Wheel:		850,540	Apr. 16	3713	776-7	127	2611
See Current-wheel. Vehicle-wheel. Spring-wheel.							
Wheel	C. C. Brabant	850,530	Apr. 16	3732	779	127	2615
Wheel	J. W. Hill	850,784	Apr. 16	4113	861	127	2710
Whiffletree draft attachment	H. Lambert	850,277	Apr. 16	3388	708	127	2527
Whip-socket	P. I. Conrad	850,486	Apr. 16	3551	743	127	2568
Winding machine. Quill-	E. E. Bradley	850,493	Apr. 16	3645	741-2	127	2567
Windmill	C. B. Dempster and H. S. Molony	850,626	Apr. 16	3870	810	127	2652
Wrench:							
See Double-ended wrench. Pipe-wrench. Monkey-wrench.							
Wrench	N. W. Resnick	850,515	Apr. 16	3725	660	127	2496
Wrench	C. D. Bradstreet	850,516	Apr. 16	3689	764	127	2506
Wrench	J. R. Hunt	850,708	Apr. 16	4110	862	127	2711

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Wrench	C. M. C. Kirk	850,700	Apr. 16	4127	863	127	2713
Wrench	E. Huntley	850,889	Apr. 16	4342	910	127	2769
Wringer:							
See Mop-wringer.							
Yarn slug or bunch catcher	T. J. Sands	850,400	Apr. 16	3430	719	127	2538

DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Bag. Hand-	H. Grossman	38,525	Apr. 16	127	2784
Bag. Hand-	H. Grossman	38,526	Apr. 16	127	2785
Picture-frame moulding	H. A. Aronson	38,527	Apr. 16	127	2785
Radiator	E. Bjoden	38,528	Apr. 16	127	2785
Spoon or fork	C. A. Bennett	38,524	Apr. 16	127	2784
Stove	B. B. Cohen	38,529	Apr. 16	127	2785
Stove. Cooking-	J. S. Van Buren	38,530	Apr. 16	127	2786
Stove. Cooking-	J. S. Van Buren	38,531	Apr. 16	127	2786

TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Antiseptics, disinfectants, and germicides	E. Bischoff	62,091	Apr. 16	127	2812
Balls. Golf-	A. G. Spalding and Bros	62,085	Apr. 16	127	2812
Beef. Fluid	Patterson-Cabell Co	62,046	Apr. 16	127	2811
Blue. Laundry	Hargreaves Bros. & Co	62,095	Apr. 16	127	2812
Boots and shoes. Leather	Vinsonhaler Shoe Co	61,976	Apr. 16	127	2809
Boots and shoes. Leather and canvas	Peoples Shoe Co	61,973	Apr. 16	127	2809
Boots and shoes. Man's leather	Huckins, Temple & Wood	61,972	Apr. 16	127	2809
Boots. Felt	W. B. Cosgrave Shoe Co	61,977	Apr. 16	127	2809
Boots, shoes, and slippers. Leather	A. De Pinna Company	61,970	Apr. 16	127	2809
Bows, arrows, and targets	H. N. Anderson	62,100	Apr. 16	127	2812
Brandy	Girard & Co	62,003	Apr. 16	127	2810
Brandy, cordial, whisky, and gin	Liebenthal Bros. & Co	61,993	Apr. 16	127	2809
Brooms and whisk-brooms	Lee Broom & Duster Company	62,116	Apr. 16	127	2813
Butter	D. W. Lewis & Company	62,056	Apr. 16	127	2811
Candies	J. P. Laskaris & Co	62,114	Apr. 16	127	2813
Candies	J. P. Laskaris & Co	62,115	Apr. 16	127	2813
Canned lobster	H. C. Baxter & Bro	61,989	Apr. 16	127	2809
Canned salmon, shrimp, lobsters, &c	Downing Taylor Co	62,063	Apr. 16	127	2811
Cheese	C. C. Martin	62,007	Apr. 16	127	2810
Chemical compound	J. A. & W. Bird & Co	62,080	Apr. 16	127	2812
Chocolate and cocoa	Pennsylvania Chocolate Company	61,996	Apr. 16	127	2809
Cigars	J. H. Johnson	62,005	Apr. 16	127	2810
Cigars	L. G. Smith & Co	62,078	Apr. 16	127	2812
Clothing. Certain	W. Read & Sons	62,013	Apr. 16	127	2810
Coats, vests, and trousers	Bickley, McClure & Co	62,103	Apr. 16	127	2812
Coffee	Woolson Spice Company	62,083	Apr. 16	127	2812
Coffee	Yerxa Bros. & Co	62,084	Apr. 16	127	2812
Cutlery. Certain	Paxton & Gallagher Co	62,010	Apr. 16	127	2810
Detergents. Certain	Porcela Company	62,097	Apr. 16	127	2812
Dyes	Farbwerke vorm. Meister Lucuis & Brüning.	62,108	Apr. 16	127	2812
Dyestuffs. Coal-tar	Actien-Gesellschaft für Anilin-Fabrikation.	62,086	Apr. 16	127	2812
Dyestuffs for coloring and printing	Farbwerke vorm. Meister Lucuis & Brüning.	62,109	Apr. 16	127	2809
Explosives. High	Eastern Dynamite Company	61,978	Apr. 16	127	2809
Explosives. High	Judson Dynamite & Powder Company.	61,979	Apr. 16	127	2810
Fence. Wire	Keystone Fence Company	62,025	Apr. 16	127	2811
Finger-nail clippers	H. C. Cook Company	62,067	Apr. 16	127	2812
Fishing-tackle. Assorted	F. E. Chester	62,093	Apr. 16	127	2811
Flat-iron pads	Laundry Novelty Company	62,073	Apr. 16	127	2810
Floor-scraping machines	Hurley Machine Company	62,024	Apr. 16	127	2809
Flour. Wheat-	C. H. Bishop Flour Co	61,990	Apr. 16	127	2810
Food. Poultry	Albert Dickinson Company	62,017	Apr. 16	127	2810
Food. Wheat breakfast	Pillsbury-Washburn Flour Mills Company.	62,011	Apr. 16	127	2810
Food. Wheat breakfast	Pillsbury-Washburn Flour Mills Company.	62,012	Apr. 16	127	2812
Food. Wheat breakfast	Pillsbury-Washburn Flour Mills Co.	62,077	Apr. 16	127	2812
Grass-hooks	Wiebusch & Hilger	62,092	Apr. 16	127	2811
Hair-pins	S. H. Goldberg	62,053	Apr. 16	127	2811

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Hair-restoratives	F. M. Quinn	62,057	Apr. 16	127	2811
Hardware. Saddlery-	Eberhard Manufacturing Company.	62,091	Apr. 16	127	2810
Harmonicas. Mouth-	F. A. Dillon	62,092	Apr. 16	127	2812
Hats. Stiff felt	N. P. Hill	62,098	Apr. 16	127	2811
Hooks. Snap-	Covert Mfg. Co	62,000	Apr. 16	127	2810
Insulators. Porcelain	George Cutter Co	61,992	Apr. 16	127	2809
Iron and lithia water	Dawson Salts & Water Co	61,991	Apr. 16	127	2809
Jellies	S. B. Stone	62,080	Apr. 16	127	2812
Jewelry and precious-metal ware. Certain	A. Edholm	62,002	Apr. 16	127	2810
Knitted hosiery, gloves, and underwear	M. S. Eccles	62,094	Apr. 16	127	2811
Knitted hosiery, gloves, and underwear	M. S. Eccles	62,094	Apr. 16	127	2812
Knitted hosiery, gloves, and underwear	M. S. Eccles	62,106	Apr. 16	127	2812
Lamps. Incandescent electric	Sunbeam Incandescent Lamp Company.	62,014	Apr. 16	127	2810
Lard substitute	Miner, Read & Garrette	62,042	Apr. 16	127	2811
Leather	Pfister & Vogel Leather Company.	61,974	Apr. 16	127	2809
Leather manufactures. Certain	J. J. Pigott	61,976	Apr. 16	127	2809
Leather. Oils, greases, and waxes for	Vacuum Oil Company	62,124	Apr. 16	127	2812
Lighting-fixtures. Certain	Cleveland Gas & Electric Fixture Company.	62,106	Apr. 16	127	2812
Linen goods. Certain	L. P. Keller	62,003	Apr. 16	127	2810
Machinery. Certain	Société Anonyme de Fondations par Compression Mecanique du Sol.	61,986	Apr. 16	127	2809
Malt extract	Malt-Diastase Company	61,995	Apr. 16	127	2809
Matches	Ohio Match Company	61,995	Apr. 16	127	2809
Matches	Ohio Match Company	61,996	Apr. 16	127	2809
Matches	Ohio Match Company	61,997	Apr. 16	127	2809
Medical preparation. Certain	H. G. Thompson	62,031	Apr. 16	127	2812
Medicinal oil	Stallman & Fulton Company	62,070	Apr. 16	127	2812
Medicinal preparation. Certain	Medical-Food Company	62,075	Apr. 16	127	2811
Medicinal preparations. Certain	Actien-Gesellschaft für Anilin-Fabrikation.	62,084	Apr. 16	127	2810
Medicinal preparations. Certain	J. W. James Co.	62,085	Apr. 16	127	2811
Medicinal preparations for the skin	Actien-Gesellschaft für Anilin-Fabrikation.	62,083	Apr. 16	127	2810
Medicine. Certain proprietary	U. G. Hoshaw	62,000	Apr. 16	127	2811
Medicines. Certain	E. Bischoff	62,048	Apr. 16	127	2811
Medicines. Certain	F. E. Rutherford	62,122	Apr. 16	127	2812
Milk and cream. Evaporated and condensed	Mohawk Condensed Milk Co	62,043	Apr. 16	127	2811
Milk and cream. Evaporated and condensed	Mohawk Condensed Milk Co	62,044	Apr. 16	127	2811
Milk and evaporated cream. Condensed and evaporated	Borden's Condensed Milk Company.	62,082	Apr. 16	127	2811
Milk. Condensed	Wisconsin Condensed Milk Co	62,071	Apr. 16	127	2810
Milk. Condensed	Wisconsin Condensed Milk Co	62,082	Apr. 16	127	2810
Milk. Preparation for the modification of	Fairchild Bros. & Foster	62,045	Apr. 16	127	2811
Newspaper	It Publishing Company	62,112	Apr. 16	127	2812
Oil. Salad-	Vacuum Oil Company	62,010	Apr. 16	127	2810
Oils and greases. Lubricating	Kathairo Chemical Co	62,090	Apr. 16	127	2812
Paints. Roofing-	Black Diamond Manufacturing Co.	62,016	Apr. 16	127	2810
Paper. Wrapping and printing	Mc Millan Paper Company	62,118	Apr. 16	127	2813
Peaches. Fresh	J. M. Hampton	62,095	Apr. 16	127	2811
Pens. Fountain-	F. H. Mooney	62,119	Apr. 16	127	2813
Perfume	W. W. Gavitt Chemical Co	62,057	Apr. 16	127	2810
Perfumery, talc powder, and toilet water	Colgate & Co	62,060	Apr. 16	127	2811
Periodical. Weekly	Wilson Company	62,060	Apr. 16	127	2812
Periodicals, bulletins, and directories	J. R. Kendrick	62,113	Apr. 16	127	2813
Photographic developers	Actien-Gesellschaft für Anilin-Fabrikation.	62,087	Apr. 16	127	2812
Pianos, mandolins, guitars, &c	C. J. Hoppe & Son	62,110	Apr. 16	127	2813
Powder	Laflin & Rand Powder Company	61,980	Apr. 16	127	2809
Powder	Laflin & Rand Powder Company	61,981	Apr. 16	127	2809
Powder	Laflin & Rand Powder Company	61,982	Apr. 16	127	2809
Powder	Laflin & Rand Powder Company	61,983	Apr. 16	127	2809
Powder	Laflin & Rand Powder Company	61,984	Apr. 16	127	2809
Powder	Laflin & Rand Powder Company	61,985	Apr. 16	127	2809
Powder and massage-cream. Talcum toilet	E. Atwell	62,101	Apr. 16	127	2812
Powders. Headache-	P. Boehme	62,104	Apr. 16	127	2812
Preparation for treating venereal diseases	Bonkocine Chemical Co	62,040	Apr. 16	127	2811
Prunes. Dried and evaporated	H. S. Gile & Company	62,066	Apr. 16	127	2811
Razors	C. F. Butcher	62,019	Apr. 16	127	2810
Remedies for disorders of the blood	W. H. Server	62,099	Apr. 16	127	2811
Remedies for skin diseases	K. Drinkard	62,051	Apr. 16	127	2811
Remedy. Dyspepsia	Pittsburg Pharmacal Company	62,047	Apr. 16	127	2811
Remedy for certain diseases	Booth's Hycomi Company	62,035	Apr. 16	127	2810
Remedy for certain diseases	S. M. Marsh	62,041	Apr. 16	127	2811
Remedy for rheumatism and gout	Butler & Field	62,020	Apr. 16	127	2810
Remedy. Headache	Dr. Kilmer & Co	62,072	Apr. 16	127	2811
Salts. Cell and tissue building	Schwabacher Bros. & Co	62,132	Apr. 16	127	2813
Seed-distributing machines	J. W. Hine	62,111	Apr. 16	127	2812
Seeds. Garden-	E. F. Molck	62,028	Apr. 16	127	2810
Serums. Antitoxic	D. Hardie Seed Co	61,971	Apr. 16	127	2809
Shirts. Dress and negligée	Schimmel & Co	62,088	Apr. 16	127	2811
Soap. Laundry	D. Moses	62,009	Apr. 16	127	2810
Soap. Medicated	H. Bick	62,081	Apr. 16	127	2811
Soap. Perfumed and medicated	Lloyd Brothers	62,074	Apr. 16	127	2811
Soap. Toilet	H. S. Kelley	62,077	Apr. 16	127	2811
Starch. Laundry	D. Estes	62,107	Apr. 16	127	2812
	Atlantic Starch Works	62,093	Apr. 16	127	2812

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Steel and iron bars, sheets, &c	Cammell Laird & Co	62,021	Apr. 16	127	2810
Steel and iron in bars, sheets, rails, &c	Cammell Laird & Co	62,020	Apr. 16	127	2810
Stockings	Tefft, Weller Company	62,029	Apr. 16	127	2810
Thread. Cotton	Clark Thread Co	62,022	Apr. 16	127	2810
Thread. Cotton	New England Cotton Yarn Co	62,120	Apr. 16	127	2813
Thread or crochet-cotton. Cotton	Clark Thread Co	62,023	Apr. 16	127	2810
Tiles. Floor-	W. H. Watts & Company	62,098	Apr. 16	127	2812
Tobacco. Smoking-	J. G. Saffa	62,014	Apr. 16	127	2810
Toffee	Mackintosh's Toffee Company	62,117	Apr. 16	127	2813
Valves and cocks and parts thereof	H. Mueller Manufacturing Company.	62,076	Apr. 16	127	2812
Varnish	Berry Brothers	62,060	Apr. 16	127	2811
Vaults. Burial-	E. A. Benner	62,102	Apr. 16	127	2812
Wall-board and building-paper	Beaver Manufacturing Company	62,089	Apr. 16	127	2812
Washing-powder	Hollywood Soap Company	62,069	Apr. 16	127	2811
Watchcases	Elgin National Watch Company	62,052	Apr. 16	127	2811
Waters. Table-	J. Ries	61,997	Apr. 16	127	2809
Waters. Table-	J. Ries	62,027	Apr. 16	127	2810
Welsh-rarebit-seasoning compound	D. R. Greene	62,004	Apr. 16	127	2810
Whisky	Breen & Kennedy	61,999	Apr. 16	127	2809
Whisky	F. S. Scherer	62,028	Apr. 16	127	2810
Whisky	Wichman, Lutgen & Co	62,030	Apr. 16	127	2810
Whisky	John Haig & Co	62,039	Apr. 16	127	2811
Whisky	Imperial Distilling & Cordial Co	62,054	Apr. 16	127	2811
Whisky	Mackenzie Bros	61,994	Apr. 16	127	2809
Whisky. Scotch	J. F. O'Toole	62,045	Apr. 16	127	2811
Wine	Offley, Forrester & Co	62,026	Apr. 16	127	2810
Wine. Port-	I. L. Lamm Co	62,070	Apr. 16	127	2811
Wines	Robbins, Gamwell & Co	62,121	Apr. 16	127	2813
Wrenches					

LABELS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Arcadia Rose." (For Soap)	Armour & Company	13,476	Apr. 16	127	2814
"Arcadia Sandalwood." (For Soap)	Armour & Company	13,475	Apr. 16	127	2814
"Artgum The Dry Cleaner and Massager." (For a Cleaning Composition.)	A. Sommer	13,480	Apr. 16	127	2814
"Barne's Croup Grease." (For a Remedy for Croup)	National Chemical Company	13,483	Apr. 16	127	2814
"Cammalt." (For Whisky)	Haseltine & Perkins Drug Company.	13,474	Apr. 16	127	2814
"Daisy Bread." (For Bread)	Charles Seip Baking Co	13,469	Apr. 16	127	2814
"Dextrom." (For a Prepared Food for Infants and Invalids)	Dextrose Food Co	13,472	Apr. 16	127	2814
"Ginger Cake Molasses." (For Molasses)	Berry, Maybrun Co	13,470	Apr. 16	127	2814
"Karlen's Keystone Scalp Massage and Shampoo." (For a Scalp Preparation.)	Karlen Mfg. Co	13,478	Apr. 16	127	2814
"Klenzene." (For a Fluid for the Removal of Grease Stains and Spots.)	S. S. Walstrum	13,481	Apr. 16	127	2814
"Louvre Glaze." (For Liquid for Finishing, Restoring, and Preventing the Cracking of Oil Paintings.)	L. Mendel	13,482	Apr. 16	127	2814
"Pine-O." (For Embalming Fluid)	Slifer Chemical Company	13,484	Apr. 16	127	2814
"Pioneer." (For Lager-Beer)	John Gund Brewing Company	13,473	Apr. 16	127	2814
"Root Juice." (For a Medical Preparation)	W. B. Cabler	13,477	Apr. 16	127	2814
"Security Gall Salve." (For a Gall-Salve)	F. B. Dennie	13,479	Apr. 16	127	2814
"Uncle Sam Molasses." (For Molasses)	Berry, Maybrun Co	13,471	Apr. 16	127	2814

PRINTS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Burton-Pierce Uniforms." (For Uniforms)	Burton-Pierce Co	1,958	Apr. 16	127	2814
"F. T. Dirksen's Incubator." (For Incubators)	F. T. Dirksen	1,963	Apr. 16	127	2814
"Maxi-Flake Hobby Horse." (For a Prepared Cereal Breakfast Food.)	Hygienic Food Company	1,962	Apr. 16	127	2814
"Men's and Boys' Apparel." (For Men's and Boys' Apparel)	H. C. Lytton	1,959	Apr. 16	127	2814
"Nashwauktee." (For Beer)	Chas. W. Shonk Co	1,960	Apr. 16	127	2814
"The Flour of the Hour." (For Flour)	L. P. Hubbard	1,961	Apr. 16	127	2814

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Axes	Collins Company	25,808-9	Apr. 16	127	2803
Axes	Collins Company	25,813-15	Apr. 16	127	2803
Baking-powder	Kenton Baking Powder Company.	25,535	Apr. 16	127	2800
Beer	J. & P. Baltz Brewing Co	19,171	Apr. 16	127	2790
Beer	J. & P. Baltz Brewing Co	19,173	Apr. 16	127	2790
Beer	G. Heileman Brewing Co	20,536	Apr. 16	127	2791
Biscuits	National Biscuit Company	16,813	Apr. 16	127	2790
Blankets. Bed and wrapper	T. Kelly & Co	24,227	Apr. 16	127	2794
Bleaching, reducing, &c. Chemicals used in	Badische Anilin & Soda Fabrik	25,179	Apr. 16	127	2797
Bluing	L. Ford & Co	24,988	Apr. 16	127	2795
Bookcases, filing-cabinets, document-boxes, &c	Globe-Wernicke Company	25,401	Apr. 16	127	2798
Books	G. P. Putnam's Sons	25,052	Apr. 16	127	2801
Boots and shoes. Leather	Leonard, Shaw & Dean	25,230	Apr. 16	127	2797
Boots and shoes. Leather	Endicott-Johnson Company	25,908	Apr. 16	127	2804
Boots, shoes, and slippers. Leather	Paul Brothers	25,903	Apr. 16	127	2803
Buckles	Marvel Buckle Company	24,947	Apr. 16	127	2795
Bushings and nuts. Cast bars used for	Brass Foundry and Heating Co	24,332	Apr. 16	127	2794
Butter and cheese	Siegel Cooper & Co	5,631	Apr. 16	127	2798
Calcimine	Troy Cold Water Kalsomine Company.	26,122	Apr. 16	127	2807
Candy	Rossster and Burkhardt	25,252	Apr. 16	127	2798
Candy	Trigg Candy Company	25,048	Apr. 16	127	2803
Canes. Wooden and bamboo	I. Eisenstein	25,058	Apr. 16	127	2803
Canned fish	Northwestern Fisheries Company.	25,444	Apr. 16	127	2799
Canned fish	Northwestern Fisheries Company.	25,446-7	Apr. 16	127	2799
Canned fish	Northwestern Fisheries Company.	25,449	Apr. 16	127	2799
Canned fish	Northwestern Fisheries Company.	25,455	Apr. 16	127	2799
Canned fish	Northwestern Fisheries Company.	25,457	Apr. 16	127	2799
Canned fish	Northwestern Fisheries Company.	25,471	Apr. 16	127	2799
Canned fruits	Siegel Cooper & Co	5,625	Apr. 16	127	2798
Canned fruits and vegetables	Wayne County Preserving Company.	23,287	Apr. 16	127	2793
Canned fruits and vegetables	Downing Taylor Co	24,494	Apr. 16	127	2794
Canned peas, mushrooms, cherries, &c	Reiss & Brady	22,574	Apr. 16	127	2792
Canned salmon	Kelley-Clarke Co	23,128	Apr. 16	127	2792
Canned salmon and clams	Downing Taylor Co	24,493	Apr. 16	127	2794
Canned salmon and lobsters	Portland Packing Company	14,507	Apr. 16	127	2789
Cigars	A. Davis	25,584	Apr. 16	127	2798
Cleaning and polishing powder	Cheney Chemical Company	25,926	Apr. 16	127	2803
Cleansing preparation for felt, beaver, &c	A. W. Lyon	24,067	Apr. 16	127	2794
Coal	Howe & David	25,628	Apr. 16	127	2801
Coal	J. C. McGrew	25,015	Apr. 16	127	2803
Cocoa, chocolate, and candy	Stollwerck Bros	20,686	Apr. 16	127	2791
Coffee	John Bland's Sons Company	25,092-9	Apr. 16	127	2805
Coffee and tea	A. J. Sheldon Co	25,900	Apr. 16	127	2805
Cooking compound	E. D. Cook & Co	23,220	Apr. 16	127	2792
Cotton piece goods	F. Butterfield & Co	24,490	Apr. 16	127	2800
Cotton piece goods	Ware Shoals Mfg. Co	25,913	Apr. 16	127	2803
Cream. Shaving	F. Haby	22,200	Apr. 16	127	2792
Crucibles, muffles, furnaces, retorts, &c	Morgan Crucible Company	20,688	Apr. 16	127	2791
Cultivators, weeders, plows, &c	C. W. Genung	24,619	Apr. 16	127	2795
Dentifrice	L. G. Olmsted	25,021	Apr. 16	127	2805
Depression-recorders, steam-load meters, draft-gages, &c	Barco Fuel Saving & Engineering Co.	25,784	Apr. 16	127	2802
Dyestuff	Badische Anilin & Soda Fabrik	25,177-80	Apr. 16	127	2797
Dyestuff, &c	Badische Anilin & Soda Fabrik	25,181	Apr. 16	127	2797
Dyestuffs, acids, alcohols, phenols, &c	Badische Anilin & Soda Fabrik	18,672	Apr. 16	127	2790
Electrical-conductor conduits, junction-boxes, &c	Sprague Electric Company	7,574	Apr. 16	127	2788
Engines. Spark-plugs for explosive	K. W. Ignition Company	25,370	Apr. 16	127	2798
Files. Document	Globe-Wernicke Company	25,407	Apr. 16	127	2798
Fire-engines. Steam	American-La France Fire Engine Co.	24,009	Apr. 16	127	2793
Floors, wainscoting-panels, &c	E. Séquin, Rubboleith-Werke vormals C. Séquin-Brosmer.	14,172	Apr. 16	127	2789
Flour. Wheat	Barber Milling Company	25,082	Apr. 16	127	2804
Flour. Wheat	New Century Milling Company	25,902	Apr. 16	127	2805
Frogs, crossings, switches, and switch-stands	Cleveland Frog and Crossing Company.	23,857-8	Apr. 16	127	2793
Fruits, vegetables, catsups, flavoring extracts, &c	Great Atlantic & Pacific Tea Company.	25,899	Apr. 16	127	2801
Gin	J. Grossman's Sons	25,939	Apr. 16	127	2804
Gin. whisky, rum, &c	P. Hoppe	25,902-4	Apr. 16	127	2805
Glucose	Boord & Son	21,536	Apr. 16	127	2791
Hair-pins, combs, and hair ornaments	Corn Products Refining Company.	25,982-9	Apr. 16	127	2804
Hair-tonic, shampoo, salve, &c	Finkel, Nessler & Company	25,511	Apr. 16	127	2800
Headache cure	G. B. Curtis	25,009	Apr. 16	127	2803
Hematin albumin	D. M. MacKay	16,881	Apr. 16	127	2790
Hose. Air-brake	F. Feustell Nfl	25,073	Apr. 16	127	2796
India linen, hemstitched lawns, nainsooks, &c	Hewitt Rubber Company	25,737	Apr. 16	127	2802
Insulating material	Sherman & Sons Company	13,221	Apr. 16	127	2789
Jewelry	Armstrong Cork Co	25,233	Apr. 16	127	2800
Journals. (Periodical	L. Stern & Co	25,043	Apr. 16	127	2801
	J. H. Francis	25,980	Apr. 16	127	2804

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Knit goods in the piece	French & Ward	26,073	Apr. 16	127	2806
Knit underwear	Frank Bros. & Co	25,928	Apr. 16	127	2803
Knitted and netted goods	Cellular Clothing Company	24,363	Apr. 16	127	2794
Knitted underwear	Carleton Dry Goods Company	9,024	Apr. 16	127	2788
Lamp globes, bulbs, reflectors, &c	Gill Brothers Company	25,799	Apr. 16	127	2803
Laxatives	Stearns & Curtius	26,081	Apr. 16	127	2806
Leather and shoe blackings, paste, polish, and varnish	S. M. Bixby & Co	23,213	Apr. 16	127	2792
Matches	Illinois Match Company	25,268	Apr. 16	127	2797
Matches. Friction	Union Match Co	17,293	Apr. 16	127	2790
Meat-preservative	B. Heller & Co	8,238	Apr. 16	127	2788
Meats. Sugar-cured	Tennessee Packing & Provision Company.	6,376	Apr. 16	127	2788
Medical compounds for stomach and bowel disorders	G. Hansell	16,259	Apr. 16	127	2789
Medicated plasters and pills	Dr. Warner Remedy Company	9,896	Apr. 16	127	2788
Melons	Brawley Cantaloupe Growers Association.	25,823	Apr. 16	127	2803
Metal and glass polishing paper	A. W. Young	25,280	Apr. 16	127	2797
Milk. Condensed	Mohawk Condensed Milk Co	25,078	Apr. 16	127	2796
Milk. Condensed	Pacific Coast Condensed Milk Co	25,559	Apr. 16	127	2800
Milk, cream, and butter	Thompson and Ott	23,619	Apr. 16	127	2793
Music sheets or rolls. Perforated	Chase & Baker Company	26,008	Apr. 16	127	2805
Oil. Castor	Mound City Paint & Color Company.	25,389	Apr. 16	127	2798
Oils. Cotton-seed	Southern Cotton Oil Company	26,053	Apr. 16	127	2806
Oils. Lubricating	Atlantic Refining Company	6,048	Apr. 16	127	2788
Olives and olive-oil	American Olive Company	23,751	Apr. 16	127	2793
Overalls and jumpers	Hooker, Corser & Mitchell Company.	24,988	Apr. 16	127	2796
Packing materials	Chicago Bailey Company	25,607	Apr. 16	127	2801
Paint and varnish driers	Lefranc & Co	23,001	Apr. 16	127	2792
Paints and varnishes. Mixed	"Le Ripolin" (Société anonyme française de peintures laquées et d'enduits sous-marins, procédés Lefranc & Brieglob réunis).	12,078	Apr. 16	127	2789
Paints, varnishes, shellacs, &c	L. H. Baekeland	25,392	Apr. 16	127	2798
Panoramic views. Apparatus for the vision of	Société Anonyme Periphote et Photorama.	22,204	Apr. 16	127	2792
Paper bags	Cleveland-Akron Bag Co	23,833	Apr. 16	127	2793
Paper bags	Cleveland-Akron Bag Co	23,835	Apr. 16	127	2793
Paper bags	Cleveland-Akron Bag Co	23,843-5	Apr. 16	127	2793
Paper bags	Union Bag & Paper Company	26,049	Apr. 16	127	2806
Paper. Ledger index bristol	D. L. Jones & Company	18,757-8	Apr. 16	127	2790
Paper reeling	Pratt Paper Company	25,750	Apr. 16	127	2802
Paper. Writing and printing	George La Monte & Son	24,876	Apr. 16	127	2795
Papers. Bond, ledger, linen, and writing	Union Card & Paper Co	26,113	Apr. 16	127	2807
Papers. Wrapping, tissue, news, book, and press	J. L. N. Smythe Company	25,084	Apr. 16	127	2797
Pavements. Bituminous concrete	Barber Asphalt Paving Company	24,315	Apr. 16	127	2794
Pens. Steel	Levison & Blythe Manufacturing Company.	26,041	Apr. 16	127	2805
Perfumes and toilet waters	Colgate & Co	25,041	Apr. 16	127	2796
Periodicals	Jewelers Circular Publishing Co	23,780	Apr. 16	127	2793
Pianos and piano-players	Roth & Engelhardt	25,598	Apr. 16	127	2801
Plows	Wiard Plow Company	25,428	Apr. 16	127	2798
Rat and roach exterminator	Stearns Electric Paste Co	23,245	Apr. 16	127	2792
Reamers, drills, and countersinks	Wiley & Russell Mfg. Co	13,424	Apr. 16	127	2789
Remedies. Fever and ague	C. H. & F. L. Osgood	24,700	Apr. 16	127	2795
Remedies for diseases of the blood, liver, kidneys, &c	Microline Medicine Company	25,438	Apr. 16	127	2798
Remedies for headache, neuralgia, &c	L. J. Cote	25,940-1	Apr. 16	127	2804
Remedies for lung and throat diseases	W. J. Sibley	25,833	Apr. 16	127	2803
Remedy. Dyspepsia	F. W. Diemer	25,798	Apr. 16	127	2798
Remedy for affections of the kidneys	Pettit Medicine Company	26,074	Apr. 16	127	2806
Remedy for constipation, torpid liver, &c	V. Schmidt	18,655	Apr. 16	127	2790
Remedy for grippe	J. T. Morgan	22,250	Apr. 16	127	2792
Remedy for rheumatism, scrofula, &c	Ford Remedy Co	23,900	Apr. 16	127	2793
Remedy for rheumatism, skin and blood diseases, &c	J. B. Hixon	25,594	Apr. 16	127	2800
Remedy for venereal diseases	I. T. Duncan	15,787	Apr. 16	127	2789
Rings, lockets, scarf-pins, cuff-buttons, &c	Schiess, Brod & Co	24,561	Apr. 16	127	2795
Rubber boots and shoes	Goodyear Rubber Company	26,007	Apr. 16	127	2805
Rugs and carpets	Eden Manufacturing Co	25,059-61	Apr. 16	127	2796
Sheetings, shirtings, and drills. Cotton	Henrietta Mills	10,596	Apr. 16	127	2790
Sheetings, shirtings, drills, &c	China & Japan Trading Company	25,787	Apr. 16	127	2802
Shirt-waists, suits, &c	Clio Waist Co	25,014	Apr. 16	127	2796
Shirts and collars and cuffs therefor. Dress and negligée	M. E. Smith & Co	5,836	Apr. 16	127	2788
Shoes and oxfords. Women's leather	Kellam-Goller-Land-Co	25,738	Apr. 16	127	2796
Shoes. Leather	Noyes-Norman Shoe Co	25,064	Apr. 16	127	2802
Shoes. Leather	R. H. Lane & Company	25,739	Apr. 16	127	2794
Signaling apparatus	J. Astrom	24,240	Apr. 16	127	2797
Silverware. Solid	Simons Bro. & Co	25,164	Apr. 16	127	2796
Soap	Colgate & Co	25,042	Apr. 16	127	2798
Soap and washing powder	Siegel Cooper & Co	5,413	Apr. 16	127	2794
Soap. Medicinal and toilet	Morgan Drug Co	25,991	Apr. 16	127	2795
Soaps	Colgate & Co	24,655	Apr. 16	127	2787
Socks	Bowman, Eldridge & Company	2,052	Apr. 16	127	2798
Soda-water and mineral water	Andrew Lohr Bottling Co	25,306	Apr. 16	127	2795
Steel	Columbia Steel Company	24,801	Apr. 16	127	2800
Stogies	A. Pollack	25,496	Apr. 16	127	2800
Stogies	A. Pollack	25,498	Apr. 16	127	2799
Stomach-regulators	Rhegulus Company	11,959	Apr. 16	127	2787
Stoves and ranges and fittings and parts therefor. Gas	W. M. Crane Co	4,160	Apr. 16	127	2794
Tablets for purifying the breath	T. C. Delavan	24,349	Apr. 16	127	2794

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Talking-machines and records therefor	Victor Talking Machine Company	24,543	Apr. 16	127	2795
Thread and spool and sewing cotton	American Thread Company	25,324	Apr. 16	127	2797
Thread and spool and sewing cotton	American Thread Company	25,715	Apr. 16	127	2801
Thread and spool and sewing cotton	American Thread Company	25,717-19	Apr. 16	127	2802
Thread and spool and sewing cotton	American Thread Company	25,783	Apr. 16	127	2812
Thread and spool and sewing cotton	American Thread Company	26,166-7	Apr. 16	127	2807
Thread and spool and sewing cotton	American Thread Company	26,169	Apr. 16	127	2807
Tires, cover-bandages, patches, &c. Rubber	Continental-Caoutchouc-und Gutta-Percha-Compagnie.	21,087	Apr. 16	127	2791
Tobacco, cigars, and cigarettes	Maison Pierre Bardou-Job	20,091	Apr. 16	127	2791
Tobacco. Smoking	J. N. Wyllie & Co	25,946	Apr. 16	127	2804
Tonic. Reconstructive	Davis Chemical Company	26,010	Apr. 16	127	2805
Type-writer ribbons and carbon-paper	Carter's Ink Company	25,102	Apr. 16	127	2807
Varnishes, japans, and enamels	Standard Varnish Works	22,178	Apr. 16	127	2791
Vinegar	Price & Lucas Cider and Vinegar Company.	24,627	Apr. 16	127	2801
Water. Spring and carbonated	C. W. Hooven	4,294	Apr. 16	127	2787
Whips	Horse Whip Co.	25,961	Apr. 16	127	2804
Whisky	Rieger & Lindley	21,776	Apr. 16	127	2791
Whisky	Buffalo Springs Distillery Company.	24,469	Apr. 16	127	2794
Whisky	M. O'Brien	24,995	Apr. 16	127	2796
Whisky	Steinhardt Bros. & Co	25,899	Apr. 16	127	2801
Whisky, gin, and brandy	H. C. Woodbury	26,117	Apr. 16	127	2807
Whisky. Malt	Figge-Doyle Co	25,806	Apr. 16	127	2803
	Mackenzie Bros	22,809	Apr. 16	127	2792

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 23D DAY OF APRIL, 1907.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Drawing.	Official Gazette. Volume.	Page.
Abbott, Frank E., assignor to Buffalo Manufacturing Company, Buffalo, Minn. Dough mixing and kneading machine	850,991	Apr. 23	4564	956	127	2863
Abbott, Fred H., Crystal Falls, Mich. Receptacle for powder	851,474	Apr. 23	5530	1158	127	3103
Abbott, Warren M., Philadelphia, Pa. Smoke arresting and consuming apparatus	851,333	Apr. 23	5262	1103	127	3038
Abet Manufacturing Company. (See Cornelius and Champlin, assignors.)						
Actien Gesellschaft für Anilin Fabrikation. (See Schulthess and Kerkovius, assignors.)						
Adams, Arthur H., New York, N. Y., assignor to Western Electric Company, Chicago, Ill. Heat-coil	851,051	Apr. 23	4681	984	127	2893
Adams Laundry Machinery Company. (See Mattice, Charles H., assignor.)						
Adams Laundry Machinery Company. (See West, Robert N., assignor.)						
Adriance, Platt & Company. (See Crane, William H., assignor.)						
Aero and Marine Motor Company. (See Altham, George J., assignor.)						
Ahrend, Herman, Newark, N. J. Lock	850,891	Apr. 23	4397	921	127	2823
Albert, Albert F., New Orleans, La. Cotton-picking apparatus	851,475	Apr. 23	5531	1159	127	3104
Alger, Arthur H. (See Alger, Joseph, assignor.)						
Alger, Joseph, assignor to himself and A. H. Alger, jointly, Brockton, Mass. Box-covering machine	851,052	Apr. 23	4663	984-5	127	2894
Allen, Charles H., Aycock, Fla. Standard for logging-cars	851,476	Apr. 23	5533	1159	127	3104
Allen, Charles R. (See Hutchinson, Ely C., assignor.)						
Allen, Edward W., Hartford City, Ind. Stay for paper boxes and receptacles of a like nature	851,583	Apr. 23	5761	1204	127	3162
Allen, Mark, Reddeid, Iowa. Toy	851,151	Apr. 23	4878	1026	127	2942
Alquist, Peter. (See Emerick and Alquist.)						
Altham, George J., Swansea, assignor to Aero and Marine Motor Company, Boston, Mass. Diaphragm-pump	851,334	Apr. 23	5264	1103	127	3038
American and British Manufacturing Company *et al.* (See Bevans and Bartholomes, assignors.)						
American Car & Foundry Company. (See Brown, Thomas R., assignor.)						
American Car & Foundry Company. (See Ostrander, Allen E., assignor.)						
American Coin Register Company. (See Ellis and Powell, assignors.)						
American Coin Register Company. (See Powell and Ellis, assignors.)						
American Locomotive Equipment Company. (See Wade and Nicholson, assignors.)						
American Machine & Ordnance Company *et al.* (See Bevans and Bartholomes, assignors.)						
American Moving Picture Machine Company. (See Uebelmesser, Charles, assignor.)						
American Steel Package Company. (See Kruse, Alfred T., assignor.)						
American Textile Specialty Machinery Company. (See Koehler, William, assignor.)						
American Tobacco Company. (See Tucker, Benjamin W., assignor.)	851,391	Apr. 23	5378	1127-8	127	3067
Andersman, Goldie L., Chicago, Ill. Duplicating forms	851,477	Apr. 23	5534	1160	127	3104
Andersen, Carl W. (See Diets, Andersen, and Farrell.)						
Andersen, Carl A., Orion, Ill. Corn-planter	851,335	Apr. 23	5265	1103	127	3038
Anderson, Joseph M. (See Swanson, Carl F., assignor.)						
Angner, Theodore, Erie, Pa. Animal-trap	851,613	Apr. 23	5808	1214	127	3173
Angner, Victor, Ridley Park, assignor to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa. Railway-switch	851,194	Apr. 23	4986	1043	127	2963
Archer, William J., Brighton township, Beaver county, Pa. Filter	851,336	Apr. 23	5266	1103	127	3039
Arco, Georg von, Berlin, Germany. Transmitter for wireless telegraphy	851,478	Apr. 23	5539	1160	127	3105
Arnuts, Carl A., Copperopolis, Cal. Fly-catcher	851,111	Apr. 23	4789	1007	127	2919
Arnold, Charles E., Brunswick, Ga. Apparatus for cleaning ships	851,053	Apr. 23	4685	985	127	2895
Aston, William H., Windsor, Ontario, Canada, and W. W. Morrison, Detroit, Mich. Sharpening-tool for lawn-mowers	851,211	Apr. 23	5003	1053	127	2972
Atwood, Eugene, assignor to Atwood-Morrison Company, Stonington, Conn. Bobbin	851,479	Apr. 23	5541	1161	127	3105
Atwood-Morrison Company. (See Atwood, Eugene, assignor.)	851,480	Apr. 23	5544	1161	127	3105
Austin, James E., Binghamton, N. Y. Sad-iron						
Austin, William, Scranton, Pa. Automatic steam-trap						
Auto-Manual Piano Action Company. (See Wuest, Philip, Jr., assignor.)						
Automatic Electric Company. (See Erickson, John, assignor.)	851,212	Apr. 23	5004	1052	127	2972
Bailey, Charles J., Newton, Mass. India-rubber stopper for bottles	851,112	Apr. 23	4791	1007	127	2920
Bailey, Samuel L., Brooklyn, N. Y. Fence-bench	851,152	Apr. 23	4879	1026-7	127	2942
Baldwin, Stephen W., New York, N. Y. Coiling-machine	851,481	Apr. 23	5545	1161-2	127	3106
Baldwin, Thomas S., San Francisco, Cal. Air-ship	851,392	Apr. 23	5380	1128	127	3068
Ball, Alton W., and M. T. Seymour, Stow, N. Y. Lightning-arrester	850,892	Apr. 23	4400	921	127	2824
Ball, Henry P., New York, N. Y., assignor of one-half to S. Insull, Chicago, Ill. Music-roll for mechanical musical instruments	851,213	Apr. 23	5004	1052	127	2972
Ballard, Milton H., Lynn, Mass., assignor to Tripp Fruit Wrapping Machine Co., San Francisco, Cal. Gearing	851,214	Apr. 23	5006	1053	127	2972
Ballard, Milton H., Lynn, Mass., assignor to Tripp Fruit Wrapping Machine Company, San Francisco, Cal. Wrapping-machine						
Bancroft, Philbert W. (See Clapp and Bancroft.)						
Barber Asphalt Paving Company. (See Wardell, Henry R., assignor.)						
Barnard, Davis, assignor to Barnard Light and Heat Company, Los Angeles, Cal. Acetylene-generator	851,613	Apr. 23	5810	1215	127	3173

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Barnard Heat and Light Company. (See Barnard, Davis, assignor.)						
Barnes, Edwin, Boston, assignor to W. Firth, Brookline, Mass. Warp stop-motion for looms	851,237	Apr. 23	5269	1104	127	3039
Barnett, Edgar E., Kremlin, Okla. Ter. Belt-tool	851,492	Apr. 23	5547	1162	127	3107
Barnhouse, Sidney J., assignor of one-third to J. G. Bayne, Alexandria, Va. Safety-clutch for air-brake angle-cocks	851,338	Apr. 23	5272	1104	127	3040
Barrickman, C. P. (See Lindsay, Leroy J., assignor.)						
Barry, Edward, *et al.* (See Bergmann, Charles, assignor.)						
Bartholomes, Charles W. (See Bevans and Bartholomes.)						
Bartlett, George, Lenapah, Ind. Ter. Moistening attachment for dental engines	851,493	Apr. 23	5548	1162	127	3107
Barton, Edward D., and A. T. Huckstead, Neillsville, Wis.; said Huckstead assignor to said Barton. Sleigh-knee	850,988	Apr. 23	4403	921	127	2924
Barton, William E. (See Nevius and Barton.)						
Bassler, Edwin M., assignor to Economic Engineering & Construction Company, Chicago, Ill. Pneumatic conveyer	851,064	Apr. 23	4686	985	127	2895
Bate, Charles. (See Holland, Newman H., assignor.)						
Bates, Edwin G., New York, N. Y., assignor to Bates Machine Company. Numbering-machine plunger	850,894	Apr. 23	4404	922	127	2925
Bates, Edwin G., New York, N. Y., assignor to Bates Machine Company. Numbering-machine	850,895	Apr. 23	4405	922	127	2925
Bates Machine Company. (See Bates, Edwin G., assignor.)						
Batts, John T., Grand Rapids, Mich. Extension-bracket	851,494	Apr. 23	5540	1162–3	127	3107
Bauer, Albert L. (See Bauer, Raymund and A. L.)						
Bauer, Albert L. and R., Wheeling, W. Va. Engine	851,195	Apr. 23	4967	1043–4	127	2962
Bauer, Ernest, Milledgeville, Ill. Window-frame	851,271	Apr. 23	5126	1081	127	3004
Bauer, Raymund. (See Bauer, Albert L. and R.)						
Bauer, Raymund and A. L., Wheeling, W. Va. Rotary engine	851,220	Apr. 23	5273	1104–5	127	3041
Bayne, John G. (See Barnhouse, Sidney J., assignor.)						
Beach, Benjamin B., administrator. (See Beach, Harry E.)						
Beach, Harry E., deceased; B. B. Beach, administrator, Newark, N. J. Street or station indicator	851,216	Apr. 23	5020	1056–7	127	2975
Beach, Harry E., deceased, (B. B. Beach, administrator,) and C. E. Gierding, Newark, N. J.; said Gierding assignor to said Beach. Street or station indicator	851,218	Apr. 23	5010	1053–5	127	2973
Beals, Frederick W., assignor to Lewis Blind Stitch Machine Company. St. Louis, Mo. Hem for sewed articles	850,896	Apr. 23	4409	922	127	2926
Bell George W., Liverpool, England. Pneumatic wheel-support	851,393	Apr. 23	5381	1128	127	3098
Bell, William G., Newton, Mass. Door-controller	851,272	Apr. 23	5127	1081	127	3005
Belt, Wallace E., Dodge Center, Minn. Power transmission	851,197	Apr. 23	4974	1045–6	127	2965
Benét, Laurence V., and H. A. Mercié, Paris, France. Gun-mount	851,495	Apr. 23	5543	1163–5	127	3109
Benjamin, Louis N. (See Tyc, Boivin, and Benjamin.)						
Bennett, John, Huntington, W. Va. Gas-burner for stoves	851,496	Apr. 23	5557	1165	127	3109
Benson, Charlie E., Buffalo, N. Y., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Lathe-turret	851,217	Apr. 23	5027	1058	127	2977
Herberich, Franz J. H. M., Kiel, Germany. Apparatus for mechanically mixing or combining liquids, &c	851,153	Apr. 23	4984	1027	127	2944
Berg, Charles, New York, N. Y. Steering mechanism	851,394	Apr. 23	5393	1129	127	3098
Berg, Henry, Orange, N. J. Soldering-iron	850,897	Apr. 23	4410	922	127	2926
Berger Manufacturing Company. (See Caldwell, William L., assignor.)						
Bergmann, Charles, Pittsburg, assignor of three-fourths to E. Barry, Johnstown, M. H. Dennehy and M. Dwyer, Pittsburg, Pa. Self-closing faucet	851,497	Apr. 23	5558	1165	127	3110
Berman, Aaron, assignor to S. Elgart and D. Berman, New York, N. Y. Garment	851,498	Apr. 23	5559	1165–6	127	3110
Berman, Dina, *et al.* (See Berman, Aaron, assignor.)						
Bernhard, Jacob. (See Rogers, Ulysses G., assignor.)						
Beskow, Bernhard, San Francisco, Cal. Tractor	851,065	Apr. 23	4689	985–6	127	2895
Bessel, Charles E., Jersey City, N. J. Cigar-lighter	851,218	Apr. 23	5027	1058	127	2977
Bevans, William H., Bridgeport, Conn., and C. W. Bartholomes, Ilion, N. Y., assignors to American and British Manufacturing Company, and American Machine & Ordnance Company, New York, N. Y. Automatic gun	851,196	Apr. 23	4970	1044–5	127	2964
Bevier, Hutchinson, and J. J. Durage, Duluth, Minn. Explosive power-generator	850,992	Apr. 23	4588	956	127	2954
Bickley, John H., and J. McAnally, Reading, Pa. Molding-truck	851,112	Apr. 23	4782	1007–8	127	2920
Bierwirth, Ernst A. G., Kansas City, Mo. Box	851,066	Apr. 23	4682	987	127	2898
Biron, Martin R., Chicago, Ill. Bridge	851,114	Apr. 23	4783	1008	127	2920
Bishop, Albert C. (See Criswell and Bishop.)						
Blackall, Robert H., Edgewood Park, assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Triple valve	851,273	Apr. 23	5130	1081	127	3005
Blackton, William H. (See Fleming, Trub, and Blackton.)						
Blair, Paul A., Waterbury, Conn. Attachment for vehicles	851,154	Apr. 23	4985	1028	127	2944
Blanchette, Napoleon, Biddeford, Me. Shuttle-binder for looms	851,545	Apr. 23	5567	1185	127	3137
Blasberg, Friedrich W., Haan, Germany. Razor-blade-grinding machine	851,067	Apr. 23	4683	987	127	2898
Blaw Collapsible Steel Centering Company. (See Blaw, Jacob B., assignor.)						
Blaw, Jacob B., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa. Mold and centering device for sewers, conduits, &c	851,395	Apr. 23	5385	1130	127	3069
Bleakley, William, Leeds, England. Friction or massage appliance	851,499	Apr. 23	5560	1166	127	3110
Bloomberg, Casper, New York, N. Y. Garter-band	851,219	Apr. 23	5028	1058	127	2978
Bode, Emil A., Philadelphia, Pa. Caster	851,396	Apr. 23	5388	1129	127	3069
Bogy, William S. (See Pearson, James H., assignor.)						
Boivin, Guillaume. (See Tyc, Boivin, and Benjamin.)						
Boleg, Friedrich, Cannstatt, assignor to Gesellschaft zur Verwertung der Boleg'schen Wasserlöslichen Mineralöle und Kohlenwasserstoffe, Gesellschaft mit Beschränkter Haftung, Berlin, Germany. Preparation of water-soluble hydrocarbon derivatives	850,898	Apr. 23	4412	.....	127	2927
Bollin, Herman. (See Burgard, Jacob L., assignor.)						
Booth, Levis M. (See Sutro and Booth.)						
Born, Harry, Halensee, near Berlin, Germany. Paper-fastener	850,899	Apr. 23	4413	923	127	2927
Bowers, James, Caldwell, N. J. Valve	851,220	Apr. 23	5029	1059	127	2978
Boyd, Edwin S., Norris City, Ill. Loading, unloading, and transporting apparatus	851,155	Apr. 23	4986	1028	127	2944
Boyd, James. (See Rowbotham, John, assignor.)						
Boyton, Michael, Hoboken, N. J. Wrench	850,900	Apr. 23	4414	923	127	2928
Bramley-Moore, Swinfen, Bloomsbury, London, England. Change-speed gearing	850,901	Apr. 23	4416	923	127	2928
Brennan, Thomas, Jr. (See Davis and Brennan.)						
Brent, Charles, Brandon, Manitoba, Canada. Extinguishing fire	851,274	Apr. 23	5141	1081	127	3005
Brisben, William M., Hackensack, N. J. Muffler for explosive-engines	851,500	Apr. 23	5561	1166	127	3110
Broadbooks, Peter, Batavia, N. Y. Quick-sliding bench-vise	851,397	Apr. 23	5389	1130	127	3070
Broadbooks, Peter, Batavia, N. Y. Vise-clamp	851,398	Apr. 23	5391	1130	127	3071
Broich, Joseph, Brooklyn, N. Y. Galvanometer	851,491	Apr. 23	5562	1166–7	127	3111
Brooks, John L. M., Birdville, Tex. Coupling for connecting plows tandem	851,156	Apr. 23	4988	1028–9	127	2945
Broome, Henry, Springfield, assignor of two-thirds to W. Dennick, Dayton, and C. W. Flick, Springfield, Ohio. Corn-harvester	851,059	Apr. 23	4680	987	127	2897
Broome, Henry, Springfield, assignor of two-thirds to W. Dennick, Dayton, and C. W. Flick, Springfield, Ohio. Corn-harvester	851,060	Apr. 23	4681	988	127	2897
	851,061	Apr. 23	4682	988	127	2898

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Broome, Henry, Springfield, assignor of two-thirds to W. Dennick, Dayton, and C. W. Flick, Springfield, Ohio. Corn-harvester	851,061	Apr. 23	4699	989	127	2898
Brown, Harold P., Montclair, N. J. Means for bonding electric conductors	851,340	Apr. 23	5277	1105–6	127	3041
Brown, Joan M., Jersey City, N. J. Wire-winding apparatus	850,993	Apr. 23	4568	957–8	127	2964
Brown, Lucas S. (See Mettler, Caspar, assignor.)						
Brown, Thomas R., New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo. Car-beister	850,902	Apr. 23	4418	924	127	2929
Brownstein, Benjamin, Philadelphia, Pa., assignor of one-half to H. L. Zookovitz, Trenton, N. J. Annular boring and reaming tool	851,399	Apr. 23	5394	1130	127	3071
Buchanan, Leonard B., Woburn, Mass. Electric fuse or cut-out	851,157	Apr. 23	4892	1029	127	2946
Buchstein, Ferdinand, Minneapolis, Minn. Artificial leg	850,994	Apr. 23	4571	958	127	2965
Buck, Daniel J. F., Chicago, Ill. Heating apparatus	851,400	Apr. 23	5395	1131	127	3072
Buck, Taylor S., New York, N. Y. Check-protector stamp	851,062	Apr. 23	4703	989	127	2899
Buckius, Albert O., Jr., Chicago, Ill., assignor to Malleable Castings Company, Cleveland, Ohio. Journal box and lid	851,063	Apr. 23	4704	989–90	127	2899
Buffalo Manufacturing Company. (See Abbott, Frank E., assignor.)						
Bulkley, Frank M., Bridgeport, Conn. Clip for holding papers, clothing, &c	850,903	Apr. 23	4420	924	127	2930
Bullard, Herbert A., San Francisco, Cal. Safety-razor	851,341	Apr. 23	5279	1106	127	3042
Bump, Everett H., Grinnell, Iowa. Fat-cutting machine	851,614	Apr. 23	5815	1215	127	3174
Bundy, Walter S., St. Louis, Mo. Dish-washer	851,584	Apr. 23	5762	1204–5	127	3163
Burdick, Byron D., Westerly, R. I. Envelop-moistener and the like	851,115	Apr. 23	4795	1009	127	2920
Burgard, Jacob L., assignor of one-half to H. Bollin, Chicago, Ill. Electric curling-iron	850,904	Apr. 23	4421	924	127	2930
Burkett, John W., Kansas City, Kans., assignor to Kansas City Hay Press Company. Reversing mechanism for power-shafts	850,905	Apr. 23	4573	958	127	2965
Burkholder, John H., assignor to W. V. B. Topping, Ashland, Ohio. Door-hanger	851,084	Apr. 23	4705	990	127	2900
Burnett, Cuthbert, Durham, England. Resilient tire for motor-car and similar wheels	851,585	Apr. 23	5764	1205	127	3163
Burrin, Russel R., and T. F. Gaebler, Rockville, Ind. Combined lightning-arrester, fuse-box, and insulator	851,492	Apr. 23	5565	1167	127	3111
Busbong, Harry F., Portland, Oreg., assignor, by mesne assignments, to Kalamazoo Loose Leaf Binder Company. Loose-leaf ledger	851,275	Apr. 23	5142	1082	127	3006
Busbong, Harry F., Kalamazoo, Mich., assignor, by mesne assignments, to Kalamazoo Loose Leaf Binder Company. Temporary binder or loose-sheet holder	851,276	Apr. 23	5143	1082	127	3006
Bushong, Harry F., Kalamazoo, Mich., assignor, by mesne assignments, to Kalamazoo Loose Leaf Binder Company. Temporary binder or loose-sheet holder	851,342	Apr. 23	5280	1106–7	127	3042
Busse, Oscar, Meiderich, Duisburg, Germany. Briquet-press	850,905	Apr. 23	4423	925	127	2930
Byrne, Thomas J. (See Hite, Charles E., assignor.)						
Cabell, Chas. A. (See Higginbotham, Allen C., assignor.)	851,158	Apr. 23	4894	1029	127	2947
Cadwell, George E., Broken Bow, Nebr. Door-latch	851,401	Apr. 23	5397	1131	127	3072
Cady, Henry G., Pine Bluff, Ark. Wagon-jack	851,343	Apr. 23	5282	1107	127	3043
Caldwell, William L., assignor to Berger Manufacturing Company, Canton, Ohio. Building-sheet						
Campbell Printing Press & Manufacturing Co. (See Southgate, Louis W., assignor.)						
Campbell Printing Press & Manufacturing Company. (See Wood, Henry A. W., assignor.)						
Cannan, John J. (See Likly and Cannan.)	851,159	Apr. 23	4896	.....	127	2947
Case, George W., Leestershire, N. Y. Compound for the removal of boiler-scales	851,116	Apr. 23	4795	1009	127	2921
Casey, Nunan, New York, N. Y. Collar-button	851,493	Apr. 23	5567	1167	127	3112
Castonguay, Leger J., Thompsonville, assignor of one-third to H. Staples, Stamford, Conn. Game apparatus	851,117	Apr. 23	4796	1009	127	2921
Cataldi, Giovanni, Washington, D. C. Safety-envelop	851,118	Apr. 23	4797	1009	127	2921
Chadwick, Roy, Tidioute, Pa. Sucker-rod	851,494	Apr. 23	5568	1167	127	3112
Chalfant, Cotter S., El Paso, Tex. Spark-arrester						
Chambers, Andrew. (See Denisthorpe and Chambers.)						
Champlin, Willoughby V. (See Cornelius and Champlin.)						
Chaplin, Edwin D., assignor, by mesne assignments, to Crystal Sweet Company, Boston, Mass. Sweetened food compound and preparing the same	851,221	Apr. 23	5030	.....	127	2978
Chase, John F., St. Petersburg, Fla. Water-purifying apparatus	851,160	Apr. 23	4898	1029–30	127	2947
Cheney, Thomas J., Lodi, Ohio. Fastener for tool-handles	851,065	Apr. 23	4706	990	127	2900
Chism, David E., Stafford Springs, Conn. Cash-carrier apparatus	851,344	Apr. 23	5283	1107–8	127	3043
Churchill, Charles O., Springfield, Mass., assignor to Fairbanks Company, New York, N. Y. Valve	851,161	Apr. 23	4898	1030	127	2948
Churchill, William, New Britain, Conn., assignor to Corning Glass Works, Corning, N. Y. Signaling by light-rays	851,495	Apr. 23	5570	1168	127	3113
Churchill, William, assignor to Corning Glass Works, Corning, N. Y. Lamp	851,496	Apr. 23	5572	1168	127	3113
Clapp, Allen T., and P. W. Bancroft, Gouverneur, N. Y. Drawer guide and support for knockdown furniture	850,906	Apr. 23	4424	925	127	2931
Clark Electric and Manufacturing Company. (See Clark, Walter G., assignor.)						
Clark, Francis L., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Fluid-pressure brake	851,277	Apr. 23	5151	1082–3	127	3010
Clark, Walter G., Seattle, Wash., assignor to Clark Electric and Manufacturing Company. Insulator-clamp	851,222	Apr. 23	5032	1059	127	2979
Clark, Walter L., New York, N. Y. Paste-tube	851,586	Apr. 23	5765	1205	127	3163
Clark, Walter L., New York, N. Y. Fountain-brush	851,587	Apr. 23	5766	1206	127	3163
Clauss, Henrie, Fremont, Ohio. Razor	851,066	Apr. 23	4707	991	127	2900
Cochrane, Samuel, assignor to Lincoln Electric Company, Jersey City, N. J. Dry battery	851,402	Apr. 23	5399	1131	127	3073
Coe, Walter H., Providence, R. I. Means for feeding metallic leaf to a stamping-press	851,162	Apr. 23	4899	1030	127	2948
Coe, Walter H., Providence, R. I. Gilding-tool	851,615	Apr. 23	5816	1215	127	3174
Coffman, James H., assignor of one-half to G. Shaw, Columbus, Ohio. Chair construction	851,067	Apr. 23	4708	991	127	2904
Coiner, De Witt M. (See Klingeader and Coiner.)						
Coleman, Thomas C. (See Harris, Thomas H., assignor.)						
Columbia Machine Works and Malleabl Iron Company. (See Remelius, Charles, assignor.)	851,616	Apr. 23	5817	1216	127	3174
Connell, John F., Los Angeles, Cal. Device for opening, closing, and locking doors	851,634	Apr. 23	5849	1223	127	3181
Connolly, Joseph B. (See Connolly, Thomas A. and J. B.)	851,119	Apr. 23	4798	1010	127	2921
Connolly, Thomas A. and J. B., Washington, D. C. Musical instrument						
Contal, Camille, Levallois-Perret, France. Chain-tension and brake device	851,497	Apr. 23	5574	1168	127	3113
Cook, Frank B. (See Hewitt and Nolen, assignors.)	850,996	Apr. 23	4575	958	127	2965
Cook, Samuel B., assignor of one-third to E. D. Peirce, Laurel, Miss. Washboard						
Cooley, Delbert, Galena, Kans. Gas and air burner						
Corbin Screw Corporation. (See Karrmann, George, assignor.)						
Cornelius, Antone M., Chicago, Ill., and W. V. Champlin, Rochester, N. Y., assignors to Abet Manufacturing Company, Chicago, Ill. Electric-lighting device	851,403	Apr. 23	5400	1131	127	3073
Corning Glass Works. (See Churchill, William, assignor.)						
Cottrell, Henry W. (See Rountree, Henry W., assignor.)						
Cover, Harvey S., South Bend, Ind. Eye-guard	850,997	Apr. 23	4576	959	127	2966
Cowell, William H., Cleveland, Ohio. Socket-piece for wrenches	851,068	Apr. 23	4709	991	127	2901
Cowell, William H., Cleveland, Ohio. Ratchet-tool	851,120	Apr. 23	4799	1010	127	2921
Cox, Charles F., Bridgeton, N. J. Manufacture of hollow glassware	851,163	Apr. 23	4901	1031–2	127	2948

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Craig, John, San Francisco, Cal. Ship's plate	851,089	Apr. 23	4730	991	127	2931
Crane, William H., assignor to Adriance, Platt & Company, Poughkeepsie, N. Y. Trunk for harvesting-machines	851,345	Apr. 23	4999	1108	127	3044
Craw, George R., and O. Miller, Chicago, Ill. Shoulder-brace	851,070	Apr. 23	4711	992	127	2981
Creasey, Frank, Nottingham, England. Lace	851,494	Apr. 23	5402	1132	127	3074
Crehore, Albert C., Tarrytown, N. Y., and G. O. Squier, Washington, D. C. Automatic telegraphy	851,071	Apr. 23	4712	992	127	2981
Crerar, James P., Denison, Tex. Rail-fastening device	851,496	Apr. 23	5402	1132	127	3074
Criswell, Alexander P., Aurora, Ind., and A. C. Bishop, Cleveland, Ohio. Means for maintaining the strength of refrigerating liquids	851,121	Apr. 23	4931	1010	127	3002
Crocker, Allen S., Rochester, N. Y., assignor to L. Elkus, Indianapolis, Ind. Automatic weighing mechanism	851,200	Apr. 23	5004	1060-60	127	3070
Crocker, Allen S., Rochester, N. Y., assignor to L. Elkus, Indianapolis, Ind. Manufacture of sand lime or composite brick or stone	851,495	Apr. 23	5404	1132	127	3074
Crosby, Matthew G., Palestine, Tex. Safety window-screen	851,498	Apr. 23	5575	1166	127	3113
Crump, Robert B., Brooklyn, N. Y. Ship-cleaning device	851,073	Apr. 23	4710	993	127	2932
Crystal Sweet Company. (See Chaplin, Edwin D., assignor.)						
Culver, Edgar L., South Omaha, Nebr. Composition of matter to be used as fuel and making same	851,497	Apr. 23	5405		127	3074
Culver, George A., Shenandoah, Iowa. Hay rake and loader	851,499	Apr. 23	5577	1169	127	3114
Cumberland Steel Company of Allegheny County. (See Muncaster, Walter J., assignor.)						
Cummings, Henry H., Newton, Mass. Lacing	851,572	Apr. 23	4717	993	127	2982
Cunningham, Andrew O., assignor to D. E. Garrison and A. L. Johnson, St. Louis, Mo. Bridge abutment	851,499	Apr. 23	5407	1133	127	3075
Cyphers Incubator Company. (See Davis, Clarence Z., assignor.)						
Daly, Charles F., Newark, and H. C. Morrison, Zanesville, Ohio. Music-stand	850,936	Apr. 23	4577	959	127	2909
Dana, Robert S., Hampton Falls, N. H., assignor of one-half to E. L. Sprague, Newton, Mass. Window-hinge	851,224	Apr. 23	5000	1060	127	3070
Darling, Harvey A., Coshocton, Ohio. Gas-burner	851,346	Apr. 23	5291	1109	127	3045
Dauchy Iron Works. (See Ross, Christian H., assignor.)						
Davenport, Isaac L., Camden, N. J., assignor to Hercules Truck Company, Wilmington, Del. Hand-truck	851,164	Apr. 23	4909	1032	127	2949
Davidson, Arthur J. (See Stitt and Davidson.)						
Davis, Clarence Z., assignor to Cyphers Incubator Company, Buffalo, N. Y. Moisture-supplying device for incubator-heaters	851,347	Apr. 23	5292	1109	127	3045
Davis, Claude B., and A. T. Finch, Chase City, Va. Bottle	851,017	Apr. 23	4630	1216	127	3175
Davis, Mark N., Baltimore, Md. Vehicle-support	851,288	Apr. 23	5703	1205	127	3164
Davis, Spencer E., Minneapolis, and T. Brennan, Jr., St. Louis Park, Minn. Disk drill	850,999	Apr. 23	4660	960-60	127	2967
Dawe, Godfrey, Eau Claire, Wis. Burner attachment	850,907	Apr. 23	4625	925	127	2931
Dayton Malleable Iron Company. (See Morrill, Horace E., assignor.)						
De Forest, Lee, New York, N. Y., assignor to G. K. Woodworth, Boston, Mass. Space telegraphy	850,917	Apr. 23	4642	959	127	2934
Dean, Robert M., Wakefield, Mass. Detachable collar-supporter	851,276	Apr. 23	5152	1093	127	3011
Dean, William W., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Telephone trunking system	851,500	Apr. 23	5578	1169	127	3114
Deere & Company. (See Sklovsky, Max, assignor.)						
Denisthorpe, Frederick R., and A. Chambers, Leicester, England. Machine for balling yarn	850,908	Apr. 23	4626	926	127	2931
Dennehy, Michael H., et al. (See Bergmann, Charles, assignor.)						
Dennick, William, et al. (See Broome, Henry, assignor.)						
Dennis, Harry R. (See Dennis, James M. and H. R.)						
Dennis, James M. and H. R., Richmond, assignors to New Castle Electric Sign Company, Newcastle, Ind. Advertising-sign	851,074	Apr. 23	4719	993	127	2982
Detrick, Ernest L., Cleveland, Ohio. Tooth-brush	851,501	Apr. 23	5405	1169	127	3117
Devers, Nathan H. and E. Williams, Washington, D. C. Cold-storage apparatus	851,618	Apr. 23	5022	1216	127	3176
Devilbiss, Edward H., Westminster, Md. Corn-horse	851,020	Apr. 23	4623	960	127	2967
Deyo, Daniel J., Vineland, N. J. Automobile-shield	851,502	Apr. 23	5580	1170	127	3117
Dickinson, Samuel L. (See Stevenson and Dickinson.)						
Dietz, John M., C. W. Andersen, and J. W. Farrell, Salt Lake City, Utah. Attachment for hot-air registers	851,196	Apr. 23	4979	1048	127	2998
Disarens, Ralph F., Bradford, Pa. Nozzle for pneumatic carpet-cleaning apparatus	850,909	Apr. 23	4627	926	127	2931
Dobbs, Edwin E., Minneapolis, Minn. Dress-chart	851,279	Apr. 23	5155	1093	127	3011
Dobson, Shadrach M., Portland, Me. Lawn-mower	851,075	Apr. 23	4722	993-4	127	2982
Dodson, Benjamin W., Geneva, Ill. Stove	851,280	Apr. 23	5156	1093-4	127	3011
Doherty, George V., Boston, Mass. Police patrol-box	850,910	Apr. 23	4628	926	127	2931
Donnelly, Bertram C., and C. K. McKnight, St. Joseph, Mo. Neckband-ring	851,076	Apr. 23	4724	994	127	2994
Donohue, John F., Pawtucket, assignor of one-half to J. Eastham, Cumberland, R. I. Picking-cam for looms	851,225	Apr. 23	5040	1061	127	3061
Donovan, James P., Georgetown, Ky. Mold for concrete posts	851,503	Apr. 23	5580	1170	127	3117
Doyle, Edward, Boyd, Wis. Rutter for logging-sleds	851,198	Apr. 23	4979	1048	127	2998
Doyle, Joseph, West Indianapolis, Ind. Pianoforte-action	851,601	Apr. 23	5693	1205-1	127	3166
Drake, James C., Rochester, Minn. Plate-holder	851,221	Apr. 23	5159	1094	127	3012
Dresler, Gustav A. H., Kiel, Germany. Chain-link shackle	851,619	Apr. 23	5693	1217	127	3176
Drewell, Heinrich, Hanover, Germany. Mechanism for perforating the operating-bands of automatic type-setting machines	851,504	Apr. 23	5582	1170-1	127	3118
Du Pont, Francis I., Wilmington, Del. Machine for mixing and treating plastic substances	851,607	Apr. 23	5600	1212	127	3171
Duby, Frederick. West Point, N. Y. Fastening device	851,226	Apr. 23	5041	1061	127	3061
Duensing, A'Quilla, assignor of one-half to C. C. Lang, Altoona, Iowa. Conveyor-chain for potato-planters	851,122	Apr. 23	4932	1010	127	3002
Duesing, Robert H., Chicago, Ill. Carpet-renovator	850,911	Apr. 23	4630	926-7	127	2933
Duffy, James E., Philadelphia, Pa. Non-refillable bottle	851,620	Apr. 23	5694	1217	127	3176
Duisdieker, Charles H., Pekin, Ill. Retort	851,499	Apr. 23	5405	1133	127	3075
Dunham, William G., Chicago, Ill. Car-axle-box lid	851,077	Apr. 23	4725	994	127	2994
Dunn, Patrick T., New York, N. Y. Coin-holder	851,078	Apr. 23	4727	994	127	2995
Dunsmore, John M., Thayer, Kans. Picture-projecting apparatus	851,599	Apr. 23	5770	1206-7	127	3165
Durage, Jules J. (See Bevier and Durage.)						
Durand, Henry S., Rochester, N. Y. Heater	851,092	Apr. 23	4996	961	127	2968
Dwyer, Michael, et al. (See Bergmann, Charles, assignor.)						
E. O. Linton Manufacturing Company et al. (See Linton, Ernest O., assignor.)						
Eastham, James. (See Donohue, John F., assignor.)						
Economic Engineering & Construction Company. (See Bassler, Edwin M., assignor.)						
Edison Storage Battery Company. (See Edison, Thomas A., assignor.)						
Edison, Thomas A., Llewellyn Park, Orange, N. J. Making articles by electroplating	850,912	Apr. 23	4632	927	127	2932
Edison, Thomas A., Llewellyn Park, Orange, assignor to Edison Storage Battery Company, West Orange, N. J. Secondary battery	850,913	Apr. 23	4635	927	127	2933
Egg, Harold, Sydenham, England. Race game or toy	850,914	Apr. 23	4637	928	127	2933
Eibel Process Company. (See Eibel, William, assignor.)						
Eibel, William, Rhinelander, Wis., assignor to Eibel Process Company, Boston, Mass. Fourdrinier machine	851,227	Apr. 23	5042	1061	127	3061

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Eisenstein, Simon, Berlin, Germany. Wireless signaling system	851,621	Apr. 23	5825	1217	127	3176
Eley, Philip, Bayonne, N. J. Connection for tapping mains	850,915	Apr. 23	4438	928	127	2933
Elgart, Samuel, et al. (See Berman, Aaron, assignor.)						
Elkus, Lawrence. (See Crocker, Allen S., assignor.)						
Ellis, Charles S. (See Powell and Ellis.)						
Ellis, Charles S., and F. D. Powell, assignors to American Coin Register Company, Chicago, Ill. Means for controlling the admission of coin to coin-receptacles	851,282	Apr. 23	5161	1084	127	3013
Elmassian, Garabed H., Lynn, Mass. Device for sawing and assorting tacks	851,079	Apr. 23	4727	995	127	2995
Emerick, William H., Osawatomie, Kans., and P. Alquist, Memphis, Tenn. Car-frame	851,228	Apr. 23	5044	1061-2	127	2981
Emerick, William H., Osawatomie, Kans., and P. Alquist, Memphis, Tenn. Car-frame	851,229	Apr. 23	5046	1062	127	2982
Emerick, William H., Osawatomie, Kans., and P. Alquist, Memphis, Tenn. Car-frame	851,230	Apr. 23	5048	1062-3	127	2983
Emerick, William H., Osawatomie, Kans., and P. Alquist, Memphis, Tenn. Car-frame						
Equilibrator Company. (See Fuerth, William G., assignor.)						
Erhart, Charles B., Cincinnati, Ohio, and E. Galatti, Covington, Ky. Vessel-positioning device	851,080	Apr. 23	4729	995	127	2995
Erickson, John, assignor to Automatic Electric Company, Chicago, Ill. Electrothermal switch	851,410	Apr. 23	5410	1133	127	3075
Erickson, John E., St. Paul, Minn. Mortise and tenon sawing machine	851,123	Apr. 23	4803	1011-12	127	2922
Ernst, George F., St. Louis, Mo. Pipe-hanger	851,505	Apr. 23	5594	1171	127	3118
Evarts, John F. (See Fisher and Evarts.)						
Everett, William H. H., Newton Falls, Ohio. Electric fire-alarm	851,506	Apr. 23	5595	1171	127	3118
Eward, Clarence T., Greensburg, Ind. Vapor-lamp	851,348	Apr. 23	5293	1109	127	3045
F. W. Niebling Company. (See Niebling, Frederick W., assignor.)						
Faber, Charles A., Toledo, Ohio. Self-filling fountain-pen	851,081	Apr. 23	4731	995	127	2996
Fahnestock Electric Company. (See Schade, John, Jr., assignor.) (Reissue.)						
Fairbanks Company. (See Churchill, Charles O., assignor.)						
Falkenstrom, Charles O., and U. L. Sundblad, Branford, Conn. Hair-drier	851,283	Apr. 23	5164	1085	127	3013
Farrar, James B., Wilmington, N. C. Cotton chopper and cultivator	851,622	Apr. 23	5827	1217-18	127	3177
Farrell, John W. (See Dietz, Andersen, and Farrell.)						
Feige, Henry, et al. (See Lightner, Henry L., assignor.)	851,349	Apr. 23	5295		127	3045
Feld, Walther, Hönningen-on-the-Rhine, Germany. Extraction of ammonia from gases	851,590	Apr. 23	5772	1207	127	3165
Fennel, Jacob W., Johnstown, N. Y. Rail splice or joint	851,165	Apr. 23	4907	1032	127	2950
Fernald, Charles F., assignor to Star Brass Manufacturing Company, Boston, Mass. Valve	851,411	Apr. 23	5414	1133-4	127	3077
Ferrell, Frank J., assignor of one-fifth to M. Goebel, New York, N. Y. Tunnel construction and ventilation	851,507	Apr. 23	5596	1172	127	3119
Fetherolf, Charles E., assignor to J. A. Jeffrey, Columbus, Ohio. Limit-gage						
Feuerheerd, Ernest M. A. (See Trossin, Otto, assignor.)						
Finch, Adam T. (See Davis and Finch.)						
Firth, William. (See Barnes, Edwin, assignor.)	851,082	Apr. 23	4733	996-7	127	2996
Fischer, Guillaume, Geneva, Switzerland. Sewing-machine	851,508	Apr. 23	5598	1172	127	3119
Fisher, James, East Liverpool, Ohio, and J. F. Evarts, Chester, W. Va. Switch-throwing device	851,509	Apr. 23	5599	1172	127	3119
Fisher, William C., Middletown, Conn. Hook	851,510	Apr. 23	5600	1172	127	3120
Fitz, George W., Boston, Mass., and F. W. Hitchings, Cleveland, Ohio. Massage apparatus	850,916	Apr. 23	4440	928	127	2934
Fitzgibbon, John J., and J. M. Travis, St. Louis, Mo. Faucet						
Fitzpatrick, Kerien, et al. (See Yoe, Philip, assignor.)						
Flatean, Paul H., assignor to Societe Universelle De L'Asservisseur Automatique Titan, Paris, France. Automatic hugger	851,124	Apr. 23	4807	1012	127	2923
Fleckenstein, Leonard S., Easton, Md. Apparatus for processing sugar-corn	851,511	Apr. 23	5602	1173	127	3120
Fleming, John J., P. J. Trub, and W. H. Blackton, Philadelphia, Pa. Sand-molding machine	851,125	Apr. 23	4808	1013	127	2923
Flick, Claude W., et al. (See Broome, Henry, assignor.)	851,284	Apr. 23	5165	1085	127	3014
Fliun, Michael A., Portland, Oreg. Measuring and forming device	851,591	Apr. 23	5773	1207	127	3165
Forg, Peter, Somerville, Mass. Valve-handle	851,126	Apr. 23	4810	1013	127	2924
Forshey, Clifford H., Peerless, Ohio. Harrow	850,918	Apr. 23	4443	929	127	2934
Francis, George, Columbus, Ohio. Reclining-chair	851,127	Apr. 23	4811	1014	127	2925
Frank, George F., Elizabeth, N. J. Auger-handle	851,200	Apr. 23	4980	1047	127	2998
Franklin, Ray W., Fairfield, Iowa. Carrier	851,285	Apr. 23	5166	1086	127	3014
Freeman, Lowell C., Kalamazoo, Mich. Carbureter for an explosive-engine						
Frey, Clarence N., assignor to J. M. Robinson Manufacturing Company, Cincinnati, Ohio. Die-securing means	851,350	Apr. 23	5297	1109	127	3046
Fricks, Louis, Buffalo, N. Y. Mechanical stoker	850,919	Apr. 23	4445	929-30	127	2934
Frierson, Luther L., St. Louis, Mo. Stave-cutting machine	851,412	Apr. 23	5416	1134	127	3077
Frostad, Anton S., assignor to Seaside Electric Company, Seaside, Oreg. Device for sawing quartered timber	851,083	Apr. 23	4738	997-8	127	2997
Fuerth, William G., Newark, N. J., assignor to Equilibrator Company. Printing or reproducing apparatus	851,084	Apr. 23	4740	998	127	2997
Fuller, Albert. (See Hering and Fuller.)						
Gaebler, Theodore F. (See Burrin and Gaebler.)						
Galatti, Edward. (See Erhart and Galatti.)	850,920	Apr. 23	4446	930	127	2935
Gardiner, Henry D., New Haven, Conn. Balance-wheel for clocks						
Garrison, Daniel E., et al. (See Cunningham, Andrew O., assignor.)	851,085	Apr. 23	4743	998	127	2998
Garst, Stephen H., Detroit, Mich. Harrow	851,086	Apr. 23	4745	999	127	2998
Gay, Richard H., Conesville, Iowa. Door-controlled electric-elevator system						
General Electric Company. (See Woodbridge and Taylor, assignors.)						
Georgeson, George, and J. E. Hennen, Fond du Lac, Wis. Contractible mold. (Reissue.)	12,639	Apr. 23	5808	1226	127	3185
Georgii, Emil, Stuttgart, Germany. Cigarette-machine	850,921	Apr. 23	4447	930-1	127	2935
Gesellschaft zur Verwertung der Boleg'schen Wasserlöslichen Mineralöle und Kohlenwasserstoffe, Gesellschaft mit Beschränkter Haftung. (See Boleg, Friedrich, assignor.)						
Gibbs, Charles W., Bridgeport, Conn. Device for placing and retaining taps in tapping-machines	851,623	Apr. 23	5829	1218	127	3177
Gierding, Charles E. (See Beach and Gierding.)						
Glass, William T., assignor of one-half to A. D. Hungerford, Napanoch, N. Y. Door-operating means	851,592	Apr. 23	5773	1207-8	127	3165
Gosher, John W., Johnstown, Pa. Blast-furnace top	851,128	Apr. 23	4812	1014	127	2924
Goebel, Max. (See Ferrell, Frank J., assignor.)	850,922	Apr. 23	4452	931-2	127	2936
Gofforth, Marshall T., and N. R. Sheets, Wichita, Kans. Lawn-mower sharpener	850,923	Apr. 23	4455	932	127	2937
Gold, Edward E., New York, N. Y. Steam-heating system for railway-cars	850,924	Apr. 23	4456	932-3	127	2937
Gold, Edward E., New York, N. Y. Electric heater	851,413	Apr. 23	5421	1135	127	3078
Gold, Edward E., New York, N. Y. Paper-cutter	850,925	Apr. 23	4460	933	127	2938
Golding, William H., Franklin, Mass. Horseshoe-heel cutter	851,129	Apr. 23	4814	1015	127	2925
Goldsmith, Henry C., French Camp, Cal. Variable-speed mechanism	851,414	Apr. 23	5423	1135-6	127	3079
Goodner, James A., and A. P. Kendig, Rocky Ford, Colo. Combined cuff-holder and garment-supporter	851,087	Apr. 23	4746	999	127	2999
Goodnough, John, Indianapolis, Ind. Hay, wood, and stock rack	851,512	Apr. 23	5804	1174	127	3121
Goodsell, Frank, assignor to L. A. and O. H. White, Fairfield, Mich.						
Gordon, William K., Thurber, Tex. Saw-operating mechanism	851,201	Apr. 23	4983	1047	127	2967
Gray, Leonard W. (See McNish and Gray.)						
Greening, William J., Middletown, N. Y. Lubricating means for axles or the like						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Greist, Hubert M., New Haven, Conn., assignor to Greist Manufacturing Company. Sewing-machine ruffler	851,382	Apr. 23	5050	1053	127	2994
Greist Manufacturing Company. (See Greist, Hubert M., assignor.)						
Gross, Otto, Longsight, Manchester, England. Electric-arc lamp	851,508	Apr. 23	4587	961-2	127	2900
Grove, George H., Harrisburg, Pa. Railway-rail tie and fastener	851,120	Apr. 23	4816	1015	127	3025
Guillaume, Emile, Paris, France. Exhaustion of head products in distilling	851,250	Apr. 23	5169	1096	127	3045
Gury, John B., St. Louis, Mo. Electric motor	850,926	Apr. 23	4461	933	127	2926
Gury, John B., St. Louis, Mo. Cloth-cutting machine	850,927	Apr. 23	4463	933-4	127	2926
Gury, John B., St. Louis, Mo. Cloth-cutting machine	850,928	Apr. 23	4465	934	127	2926
Guthrie, Patrick F., and T. Hayes, Nutley, N. J. Waste for bath-tubs, basins, and like fixtures	851,513	Apr. 23	5606	1174	127	3121
Gutridge, Steven E., Newark, Ohio. Baling-press	851,131	Apr. 23	4817	1015-16	127	3025
H. & M. Automatic Regulator Company. (See Stuart, Donald, assignor.)						
Haberlin, William R., Bridgeport, Conn. Toy-railway crossover	851,514	Apr. 23	5606	1174	127	3122
Hadfield, Robert A., Sheffield, England. Manufacture of steel	851,280	Apr. 23	5062	.....	127	2994
Hadfield, Robert A., Sheffield, England. Manufacture of magnetic materials	851,636	Apr. 23	5661	.....	127	3132
Haeseler, Charles H., New York, N. Y., assignor to Ingersoll-Rand Company. Pneumatic tool	851,626	Apr. 23	5631	1219	127	3177
Haggard & Marcusson Company. (See Sammons, Ernest A., assignor.)						
Halle, Charles Y., Uniontown, Pa. Trolley	851,415	Apr. 23	5424	1136	127	3079
Halbekann, Franz J., Solingen, assignor to Wolferts & Co., Landwehr, near Solingen, Germany. Safety-razor	850,920	Apr. 23	4467	934	127	2940
Hall, Robert C. (See Solomon, William T., assignor.)						
Hanley, Alfred, New York, N. Y. Combination-tool	851,251	Apr. 23	5300	1110	127	3047
Hanley, E. W., *et al.* (See Yoe, Philip, assignor.)						
Hannah, Edgar J., Green Castle, Mo. Mechanical movement	850,980	Apr. 23	4466	935	127	2940
Hansen, Hans T., Milwaukee, Wis. Wheel	851,254	Apr. 23	5053	1053	127	2994
Hanson, Bengt M. W., assignor to Pratt & Whitney Company, Hartford, Conn. Means for protecting driving-pulleys	851,094	Apr. 23	4589	962	127	2989
Hanson, Bengt M. W., assignor to Pratt & Whitney Company, Hartford, Conn. Compensating bearing for machine-spindles	851,095	Apr. 23	4590	962-3	127	2989
Hardy, Harry B., Akron, Ohio. Monkey-wrench	851,416	Apr. 23	5426	1136	127	3079
Harkins, Charles J., Buffalo, N. Y. Gage-cock	851,286	Apr. 23	5054	1053	127	2995
Harris, Thomas H., Fredericksburg, Va., assignor of one-half to T. C. Coleman, Washington, D. C. Cash-register	851,513	Apr. 23	5600	1175	127	3122
Hartog, Louis N., New York, N. Y. Machine for immersing cores or centers of confections	851,286	Apr. 23	5056	1054	127	2995
Hasaam Paving Company. (See Hasaam, Walter E., assignor.)						
Hasaam, Walter E., assignor to Hasaam Paving Company, Worcester, Mass. Laying pavement	851,625	Apr. 23	5634	.....	127	3178
Hastings, Alonzo L., Allegheny, Pa. Boiler-furnace	851,088	Apr. 23	4746	960	127	2989
Hatt, Joseph A. H., Brooklyn, N. Y. Camera	851,289	Apr. 23	5776	1208	127	3105
Haun, Franklin E., Syracuse, N. Y. Type-writing machine	851,257	Apr. 23	5171	1096	127	3045
Havens, Morton, Jr., Albany, N. Y. Branch box for insulated electric wires. (Reissue)	12,040	Apr. 23	5600	1226-7	127	3126
Hawley, Charles G. (See Stevenson, William, assignor.)						
Hayes, Thomas. (See Guthrie and Hayes.)						
Hecht, Charles, *et al.* (See Hixon, William E., assignor.)						
Heinrichs, Joseph, New York, N. Y. Coffee-urn	851,417	Apr. 23	5426	1136	127	3079
Hennen, Joseph E. (See Georgensen and Hennen.) (Reissue)						
Henrich, Peter, assignor of one-half to G. H. Linder, Hoquiam, Wash. Fruit-box	851,122	Apr. 23	4831	1016	127	2995
Henry, Edward. (See Stafford and Henry.)						
Henry Likly & Company. (See Likly and Cannan, assignors.)						
Hercules Truck Company. (See Davenport, Isaac L., assignor.)						
Herman, Charles, Allegheny, assignor to Herman Pneumatic Machine Company, Zelienople, Pa. Molding-machine	851,106	Apr. 23	4909	1032-3	127	2960
Herman Pneumatic Machine Company. (See Herman, Charles, assignor.)						
Herman, Reinhold, Crafton, Pa. Motor-vehicle	851,418	Apr. 23	5426	1137	127	3080
Héroult, Paul L. T., La Praz, assignor to Société Electro-Metallurgique Francaise, Forges, Isère, France. Purifying metals	851,107	Apr. 23	4913	.....	127	2961
Herzer, Royal M. A. (See Kelling, John, assignor.)						
Hess, Henry, Philadelphia, Pa. Ball-bearing	851,419	Apr. 23	5430	1137	127	3080
Hewitt, Richard B., and J. G. Nolen; said Nolen assignor to F. B. Cook, Chicago, Ill. Electrothermal switch	851,420	Apr. 23	5431	1137	127	3081
Hibbins, John A., Watcessing, N. J. Pipe-cradle	851,252	Apr. 23	5301	1110	127	3047
Hickley, Arthur S., Manasquan, N. J. Means for removing moisture from closed cases	851,516	Apr. 23	5612	1175-6	127	3123
Hicks, Thomas B. (See Younglove, Thomas J., assignor.)						
Hiering, Christian, and A. Fuller, assignors to J. E. Mergott Company, Newark, N. J. Bag-frame	851,421	Apr. 23	5434	1138	127	3082
Higginbotham, Allen C., Decota, assignor of one-half to C. A. Cabell, Carbon, W. Va. Drill or auger	851,284	Apr. 23	5780	1208-9	127	3107
Higman, William J., Denver, Colo. Non-refillable bottle or package	851,098	Apr. 23	4892	963	127	2970
Hildebrand, James A., Olympia, Wash. Mechanism for propelling vehicles over land or water	851,517	Apr. 23	5614	1176	127	3123
Hinchman, George N., Webster Groves, assignor to Standard Adding Machine Company, St. Louis, Mo. Adding-machine	851,089	Apr. 23	4749	1000	127	2989
Hitchings, Frederic W. (See Fitz and Hitchings.)						
Hite, Charles E., Burlington, N. J., assignor of one-fourth to T. J. Byrne, Philadelphia, Pa. Primary battery	851,383	Apr. 23	5606	1110-11	127	3047
Hixon, William E., assignor of three-fourths to J. Reece, C. Hecht, and A. J. Tilden, St. Louis, Mo. Ball-bearing boxing for vehicle-axles	851,123	Apr. 23	4822	1016	127	2995
Hockensmith, Franklin C., Pittsburg, Pa. Self-oiling wheel	851,254	Apr. 23	5305	1111	127	3048
Hodges, James C., assignor to C. A. Smith, Attleboro, Mass. Ornamental chain	851,368	Apr. 23	5173	1096	127	3046
Hodgson, Elmer, Bonesteel, S. D. Surfacing-tool	851,518	Apr. 23	5616	1177	127	3124
Hoe, Robert. (See Spalckhaver, William, assignor.)						
Hoffman, Marie P., Canajoharie, N. Y. Strainer and sifter	850,981	Apr. 23	4470	935	127	2941
Holbrook, Ira W., *et al.* (See Wales, Alfred B., assignor.)						
Holen, Ole, Britton, S. D. Pneumatic stacker	851,237	Apr. 23	5089	1065	127	2995
Holland, Newman H., Brookline, assignor, by mesne assignments, to C. Bate, Boston, Mass. Telephone-meter	851,090	Apr. 23	4751	1000	127	2990
Hollinger, Andrew. (See Smith and Hollinger.)						
Homans, Thomas S., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	851,238	Apr. 23	5062	1065-6	127	2995
Honeyman, Henry W., Pawtucket, assignor to Textile-Finishing Machinery Company, Providence, R. I. Clamp for tentering-machines	850,982	Apr. 23	4471	935	127	2941
Horn, Thomas R., Marquette, Mich. Nut-lock	850,983	Apr. 23	4472	935	127	2941
Horvath, George, Brooklyn, N. Y. Draft-producing device	851,369	Apr. 23	5174	1097	127	3046
Hotse, William M., Carson, Iowa. Stock-fountain	851,108	Apr. 23	4915	1033	127	2961
Houghton, Stephen C., assignor to Wire & Telephone Company of America, Rome, N. Y. Telephone-transmitter	851,255	Apr. 23	5306	1111	127	3049

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Houseman, Harry A., assignor to Standard Machine Company, Philadelphia, Pa. Mechanical movement	850,934	Apr. 23	4473	936	127	2841
Howell, William H., Harrisburg, Ill. Egg-case	851,395	Apr. 23	5782	1209	127	3107
Hubet, Frederick E., Celina, Tex. Screen-catch	850,935	Apr. 23	4475	937	127	2842
Huckstead, Alonzo T. (See Barton and Huckstead.)						
Hudson, Frederick E., Ellisburg, N. Y. Silo	851,091	Apr. 23	4756	1001	127	2910
Hughes, Edward J., Weston, W. Va. Collar shaper and drier	851,356	Apr. 23	5308	1111-12	127	3049
Humphrey, Julius W., St. Johns, Oreg. Fence or dike	851,519	Apr. 23	5617	1177	127	3124
Hungerford, Anthony D. (See Glass, William T., assignor.)						
Hutchinson, Ely C., assignor to C. R. Allen, San Francisco, Cal. Briquet-press	851,007	Apr. 23	4596	963-4	127	2871
Huyck, Francis P., Swanton, Ohio. Drop-head sewing-machine	851,422	Apr. 23	5435	1138	127	3082
Hyde, Stephen D., Lincoln, Nebr. Nail-extractor	851,290	Apr. 23	5175	1087	127	3016
Iback, George, Detroit, Mich. Concrete reinforcement	851,109	Apr. 23	4916	1034	127	2961
Ideal Concrete, Limited. (See Tye, Bolvin, and Benjamin, assignors.)						
Ihlder, John D., Yonkers, N. Y., assignor to Otis Elevator Company, Jersey City, N. J. Controlling device for electric motors	851,239	Apr. 23	5064	1066	127	2996
Ihlder, John D., Yonkers, N. Y., assignor to Otis Elevator Company, East Orange, N. J. Starting device for hoisting-machines	851,291	Apr. 23	5176	1087	127	3017
Imperial Specialty Manufacturing Company. (See Weber, Frank, assignor.)						
Ingersoll-Rand Company. (See Haeseler, Charles H., assignor.)						
Insull, Samuel. (See Ball, Henry P., assignor.)						
International Separator Company. (See Wait, Henry H., assignor.)	851,396	Apr. 23	5783	1209	127	3107
Irvin, Charles D., Pittsburg, Pa. Skimmer for blast-furnaces	851,170	Apr. 23	4916	1034	127	2961
Israel, George W., Chicago, Ill. Seed-planter	851,171	Apr. 23	4918	1034	127	2962
Israel, Reuben C., Wichita, Kans. Seed-planting means						
J. C. Aften & Co. (See Porter, Clarence B., assignor.)						
J. E. Mergott Company. (See Hiering and Fuller, assignors.)						
J. H. Sager Company. (See Sager, James H., assignor.)						
J. M. Robinson Manufacturing Company. (See Frey, Clarence N., assignor.)	851,008	Apr. 23	4601	964	127	2872
Jacobson, Alfred, and E. A. Svensson, Stockholm, Sweden. Safety-lock	851,092	Apr. 23	4759	1001	127	2911
James, Levi, Columbus Junction, Iowa. Harness-hook						
Jeansville Iron Works Company. (See Meden, Elof, assignor.)						
Jeffrey, Joseph A. (See Fetherolf, Charles E., assignor.)	851,423	Apr. 23	5437	.....	127	3083
Jijinsky, Michael Cruleid, Germany. Anthrachinone disulfonic acid						
Johnson, Albert L., *et al.* (See Cunningham, Andrew O., assignor.)						
Johnson, Henry V., *et al.* (See Linton, Ernest O., assignor.)	850,936	Apr. 23	4476	937	127	2842
Johnson, William A., Yonkers, N. Y. Tennis-court marker	851,520	Apr. 23	5619	1177	127	3124
Johnson, Woolsey M., Iola, Kans. Metallurgical condenser	850,937	Apr. 23	4478	937	127	2842
Jones, Benjamin N., East Orange, assignor to Marine Engine & Machine Company, Harrison, N. J. Automatic control system for elevators, &c	851,521	Apr. 23	5620	1177-8	127	3125
Jones, Josiah L., New Castle, N. H. Stump-puller	851,522	Apr. 23	5621	1178	127	3125
Joseph, Max, Athens, Ga. Check-handling device	851,009	Apr. 23	4902	964	127	2873
Joyce, James E., Hoboken, N. J. Arc-lamp hanger or support						
Kalamazoo Loose Leaf Binder Company. (See Bushong, Harry F., assignor.)						
Kansas City Hay Press Company. (See Burkett, John W., assignor.)	851,292	Apr. 23	5180	1087-8	127	3018
Kapp, Joseph V., Newark, N. J. Bench-pin	851,172	Apr. 23	4916	1034	127	2963
Karrmann, George, Unionville, assignor to Corbin Screw Corporation, New Britain, Conn. Swivel snap-hook	851,424	Apr. 23	5438	1139	127	3083
Kaufman, Adolph G., assignor of one-half to B. L. and B. L. Weil, New York, N. Y. Bottle-cap	851,357	Apr. 23	5310	1112	127	3049
Keefe, Clarence M., Cincinnati, Ohio. Box	851,523	Apr. 23	5625	1178	127	3126
Keeling, Newton C., Bridgeport, Conn. Automatic block-signal	851,010	Apr. 23	4905	965	127	2874
Kelley, Albert H. (See Marshall, Richard H., assignor.)	850,938	Apr. 23	4484	938	127	2843
Kelling, John, assignor of one-half to R. M. A. Herzer, Milwaukee, Wis. Floor-scraper						
Kellogg, John H., Battle Creek, Mich. Exercising apparatus						
Kellogg Switchboard and Supply Company. (See Dean, William W., assignor.)						
Kendig, Albert P. (See Goodner and Kendig.)	851,093	Apr. 23	4760	1001	127	2911
Kennedy, John, Montreal, Quebec, Canada. Dredging and excavating machine						
Kentama, Louis. (See Sharp and Kentama.)						
Kerkovius, Leo. (See Schulthess and Kerkovius.)						
Kerr & Company, Dick. (See Martin, Percy, assignor.)						
Kerschgens, Andrew, administrator. (See Kerschgens, Joseph.)	850,939	Apr. 23	4485	938	127	2844
Kerschgens, Joseph, deceased; A. Kerschgens, Charlerol, Pa., administrator. Coke-oven	851,173	Apr. 23	4920	1035	127	2963
Keys, Frank H., Council Bluffs, Iowa. Fastening device	851,626	Apr. 23	5636	1219	127	3179
Keyse, Jesse H., Denver, Colo. Auxiliary trigger for guns	851,358	Apr. 23	5311	1112	127	3049
Kiendl, Robert J. (See Ross, Martin H., assignor.)						
Kiessibach, Clemens, Rath, near Düsseldorf, Germany. Valve	850,940	Apr. 23	4486	938	127	2844
Kilbourn, Edward E., New Brunswick, N. J., assignor to Kilbourn Knitting Machine Company. Manufacture of seamless hosiery	851,094	Apr. 23	4762	1002	127	2912
Kilbourn Knitting Machine Company. (See Kilbourn, Edward E., assignor.)						
Kimball, Hannibal I., assignor to Neucraft Company, New York, N. Y. Rolling-press	851,134	Apr. 23	4823	1017	127	2927
King, Robert O. (See Wotherspoon and King.)	851,524	Apr. 23	5627	1178	127	3127
Kleidon, Leo C., Philadelphia, Pa. Flue-cleaner						
Klingensmith, Albert K., and D. M. Colner, Statesville, N. C. Bale-tie						
Koehler, William, Fulton, assignor to American Textile Specialty Machinery Company, New York, N. Y. Cop-tube	851,095	Apr. 23	4763	1002	127	2914
Koeniges, Martin. (See Myer and Koeniges.)	851,525	Apr. 23	5629	1179	127	3127
Kopa, Daniel, New York, N. Y. Apparel-corset	851,174	Apr. 23	4921	1035-6	127	2963
Korn, Arthur, Munich, Germany. Telautograph	851,526	Apr. 23	5632	1179	127	3128
Kraber, Charles L., Quincy, Ill. Wringing device for mops	851,096	Apr. 23	4789	1003	127	2914
Krehbiel, Wilbur H., Cincinnati, Ohio. Loose-leaf binder	851,527	Apr. 23	5633	1179	127	3129
Kronacher, Joseph, Bamberg, Germany. Folding brush						
Krug, Oscar A., assignor to himself and W. H. Newman, Cincinnati, Ohio. Railway-switch mechanism	851,528	Apr. 23	5635	1180	127	3129
Kruse, Alfred T., assignor to American Steel Package Company, Defiance, Ohio. Sheet-metal packing-case	851,097	Apr. 23	4770	1003	127	2914
Kyle, Thomas D., Chicago, and E. H. Waugh, Evanston, Ill.; said Waugh assignor to said Kyle. Bottle-handling apparatus	851,425	Apr. 23	5440	1139	127	3083
La Pearl, Louis T., Utica, N. Y. Outlet-box	851,597	Apr. 23	5786	1210	127	3108
La Pearl, Louis T., Utica, N. Y. Outlet-box	851,598	Apr. 23	5787	1210	127	3108
Lamb, Frank H., Hoquiam, Wash. Wire-stretcher	851,529	Apr. 23	5637	1180	127	3130
Lamb, Wilbert W., Chicago, Ill. Device for burning vegetation and melting snow and ice	851,011	Apr. 23	4906	965	127	2874
Lamport, Edward J., Cape Town, Cape Colony. Vaginal douche	851,530	Apr. 23	5638	1180	127	3130
Landis Machine Company. (See Pedersen, Christian, assignor.)						
Lang, C. C. (See Duensing, A'Quilla, assignor.)	851,012	Apr. 23	4908	965	127	2875
Lanius, John, Galion, Ohio. Railway signal-flag						
Lattimer, J. Allen. (See McDowell, George, assignor.)	851,599	Apr. 23	5788	1210	127	3109
Lattimer, James F., Toronto, Ontario, Canada. Apparatus for separating minerals	851,600	Apr. 23	5791	1210	127	3109
Lattimer, James F., Toronto, Ontario, Canada. Separating minerals	851,175	Apr. 23	4926	1036-7	127	2964
Laurent, Louis E., Trenton, N. J. Dumb-waiter and elevator						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Le Fevre, George A., Piermont, N. Y. Coffer-dam and caisson construction	851,322	Apr. 23	5041	1181	127	3131
Lee, Joseph, Toronto, Ontario, Canada. Stair	851,323	Apr. 23	5040	1180	127	3131
Lee, Cyrus H., Silver Creek, Nebr. Lice-Killing machine	851,324	Apr. 23	4772	1008	127	2915
Legg, Ernest, and G. H. Wright, Granville, Ohio. Cement railway-tie	851,325	Apr. 23	5793	1211	127	3170
Leiberger, George, Newark, N. J. Engine or motor	851,326	Apr. 23	5184	1066	127	3019
Leibert, Owen F., Bethlehem, Pa. Hydraulic heel-sweeper	851,340	Apr. 23	5060	1068	127	3020
Leonard, William E., Silver Creek, Wash., assignor of one-half to B. Waddingham, Glendive, Mont. Gas-generating apparatus	851,330	Apr. 23	5314	1113	127	3080
Letson, Samuel W., Shreveport, La. Sash-lock	851,331	Apr. 23	5044	1181	127	3133
Lewis, Anna L., New Orleans, La. Grater-guard	851,332	Apr. 23	5795	1211	127	3170
Lewis Blind Stitch Machine Company. (See Banks, Frederick, assignor.)						
Lewis, Dean C., Philadelphia, Pa. Steering appliance	851,334	Apr. 23	5045	1181	127	3132
Leyland, John W. (See Leyland, William and J. W.)						
Leyland, William and J. W., New York, N. Y. Lubricator	851,335	Apr. 23	5313	1112	127	3080
Lightner, Henry L., assignor of two-thirds to W. Priest and H. Paige, San Francisco, Cal. Concentrator	851,336	Apr. 23	5442	1139-40	127	3094
Likly, William C., and J. J. Canman, assignors to Henry Likly & Company, Rochester, N. Y. Garment-support for trunks	851,337	Apr. 23	5047	1182	127	3133
Lincoln Electric Company. (See Cochrane, Samuel, assignor.)						
Linder, Garry H. (See Henrich, Peter, assignor.)						
Lindsay, Harry M., Baltimore, Md. Book for stamps and the like	851,339	Apr. 23	5046	1182	127	3133
Lindsay, Horace, Brenham, Tex. Cultivator	851,357	Apr. 23	5051	1183	127	3133
Lindsay, Leroy J., assignor to C. P. Barrickman, Seymour, Iowa. Hay-stacker	851,358	Apr. 23	5052	1222	127	3162
Linton, Ernest O., assignor to H. V. Johnson and E. O. Linton Manufacturing Company, Denver, Colo. Siphonic measuring apparatus	851,341	Apr. 23	5071	1036-7	127	3098
Lippincott, John W., Little Rock, Ark. Gas-engine	851,175	Apr. 23	5052	1037	127	3098
Lipschutz, Arthur, Chicago, Ill. Freight-car truck	851,361	Apr. 23	5216	1113-14	127	3081
Liptai, Ludwig, New York, N. Y. Railway appliance	851,362	Apr. 23	5073	1082	127	3099
Liska, Yan, Galeton, Pa. Candy-machine	851,135	Apr. 23	5034	1017	127	3027
Ljungström, Birger and F., assignors to Aktiebolaget Separator, Stockholm, Sweden. Operating device for milking-machines	851,136	Apr. 23	5035	1017	127	3028
Ljungström, Fredrik. (See Ljungström, Birger and F.)						
Lochman, Emil R., St. Louis, Mo. Carving-machine	850,941	Apr. 23	4688	930	127	2845
Locke, Henry W., *et al.* (See Strain, William T., assignor.)						
Locke, Joseph, *et al.* (See Strain, William T., assignor.)						
Locke, William H., *et al.* (See Strain, William T., assignor.)						
Logan, Samuel J., Grand Rapids, Mich., and D. V. Richardson, Bucksport, S. C. Feed-water heater	851,339	Apr. 23	4773	1008	127	2915
Löhnert, Hermann, Bromberg, Germany. Ball-mill	851,342	Apr. 23	4689	966	127	2875
Long, James A., Portland, Ore. Hose-nozzle	851,363	Apr. 23	5795	1211	127	3170
Long, Malcolm W., Harrisburg, assignor to Pennsylvania Steel Company, Philadelphia, Pa. Automatic latch-stand	851,364	Apr. 23	5186	1068-9	127	3020
Lovell, Frederick W., assignor to McMyler Manufacturing Company, Cleveland, Ohio. Car-dumping apparatus	851,314	Apr. 23	5210	966	127	2875
Lowrie, Harvey C., Denver, Colo. Combination-lock	850,942	Apr. 23	4690	930	127	2845
Luger, Georg, Charlottenburg, Germany. Recoil-operated firearm	851,328	Apr. 23	5053	1183	127	3134
Lux, William N., and J. C. Schwenk, St. Louis, Mo. Attachment to grain-binders	851,177	Apr. 23	5054	1037	127	3046
MacArthur, Christopher, and F. Smith, assignors to R. C. Powell, London, England. Rotary engine						
Malan, Ernest D., London, England. Signal apparatus	851,365	Apr. 23	5188	1069	127	3020
Malard, Georges, Tourcoing, France. Desizing apparatus	851,366	Apr. 23	5316	1114	127	3081
Malleable Castings Company. (See Buckius, Albert O., Jr., assignor.)	851,339	Apr. 23	5055	1183-4	127	3134
Mallory, Harry C., New York, N. Y. Heating system						
Manley, Charles, New York, N. Y. Horseshoe	851,368	Apr. 23	5220	1114-16	127	3081
Manley, Robert E., Hanover, Pa. Pipe-nipple holder	851,343	Apr. 23	5074	1083	127	3099
Manly, Thomas, London, England. Photographic-printing bath	851,137	Apr. 23	5035	1018	127	3028
Marine Engine & Machine Company. (See Jones, Benjamin N., assignor.)	851,369	Apr. 23	5189		127	3020
Marlolle, Auguste, New York, N. Y. Advertising novelty						
Marshall, George, Fremont, Nebr. Valve-gear for steam-engines	851,337	Apr. 23	5191	1069-90	127	3021
Marshall, Richard H., assignor of one-half to A. H. Kelley, Scottdale, Pa. Electroplating solution	850,943	Apr. 23	4693	930	127	2846
Martin, Pearl L., St. Marys, Iowa. Wire-stretcher	851,344	Apr. 23	5402		127	3046
Martin, Percy, assignor of one-half to D. Kerr & Company, Limited, London, England. Driving mechanism for self-propelled vehicles or vessels	851,178	Apr. 23	5035	1038	127	3046
Martin, Robert E., Newark, N. J. Plasterer's trowel	851,140	Apr. 23	5057	1184	127	3135
Marwick, David E., assignor of one-half to E. A. Moore, New Britain, Conn. Machine for bundling scrap	850,945	Apr. 23	4694	940	127	2846
Mathewson, Ernest T., assignor to Standard Machinery Company, Providence, R. I. Adjustable gear	851,179	Apr. 23	4697	1038	127	2966
Mathey, John J., Robey, S. D. Disk plow	851,180	Apr. 23	4940	1038	127	2967
Matthews, Louis I. (See Palmer, Edward T., assignor.)	850,946	Apr. 23	4695	940	127	2846
Mattice, Charles H., Green Island, assignor to Adams Laundry Machinery Company, Troy, N. Y. Seam-dampening machine						
McAllister, Edward W., *et al.* (See Wales, Alfred B., assignor.)	851,141	Apr. 23	5059	1185	127	3135
McAnally, James. (See Bickley and McAnally.)						
McCarthy, James J., Chicago, Ill. Car	851,332	Apr. 23	5221	969-70	127	2878
McCartney, Robert L., Ottumwa, Iowa. Mast-box	851,333	Apr. 23	5222	970	127	2879
McCarty, Charles H., and F. A. Wooster, assignors to Reliance Edge Tool Company, Youngstown, Ohio. Folding drawing-knife handle						
McClane, Casebus M., assignor of one-half to H. J. Williams, Olean, N. Y. Tamping-machine	851,334	Apr. 23	5797	1211	127	3170
McCutcheon, Obadiah K., Pittsburg, Pa. Ore pulverizer and concentrator	851,335	Apr. 23	5224	1081-2	127	3023
McDowell, George, New York, assignor of one-half to J. A. Latimer, Brooklyn, N. Y. Engine	850,947	Apr. 23	4696	942	127	2848
McGinley, James B., Allegheny, Pa., assignor to National Metal Molding Company. Fixture for electric lamps	850,948	Apr. 23	4698	942	127	2849
McKenzie, Donald, South Dunedin, New Zealand. Pencil-sharpener	851,334	Apr. 23	5223	970	127	2880
McKenzie, Donald G., Vancouver, British Columbia, Canada. Change-giving fare-box	851,335	Apr. 23	5225	970	127	2880
McKeown, John C., Chicago, Ill. Lattice-truss	851,336	Apr. 23	5227	1082-3	127	3024
McKinney, William C., New Brighton, assignor to Standard Sanitary Mfg. Co., Pittsburg, Pa. Dredging instrument	851,364	Apr. 23	5230	1083	127	3024
McKnight, Charles E. (See Donnelly and McKnight.)	851,338	Apr. 23	5796	1212	127	3170
McLaughlin, Edward H., and E. S. Bittel, Parsons, Kans. Headlight	851,365	Apr. 23	5212	1083	127	3025
McLean, Lauchlan A., Toronto, Ontario, Canada. Cream-separator	850,949	Apr. 23	4697	942	127	2849
McMurry, Alden L., New York, N. Y. Magazine-socket nut-wrench	851,181	Apr. 23	5061	1069	127	3027
McMyler Manufacturing Company. (See Lovell, Frederick W., assignor.)						
McNish, James, and L. W. Gray, assignors to said McNish and G. Pritchard, Newark, N. J. Height-measuring machine	851,332	Apr. 23	4698	942-4	127	2849
McQuay, George L., Flint, Mich. Pneumatic tire	851,333	Apr. 23	5211	944	127	2850
McQuillin, James C., Industry, Pa. Wrench	851,140	Apr. 23	5070	1189	127	3135

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Mead, Caroline E., Louisville, Ky. Eyeglasses	851,342	Apr. 23	5662	1185	127	3136
Medea, Eliel, Trenton, N. J., assignor to Jeanesville Iron Works Company, Hazleton, Pa. Centrifugal pump	851,364	Apr. 23	5326	1116	127	3052
Meisel, Charles A. (See Meisel, Francis and C. A.)	851,015	Apr. 23	4611	966-7	127	2875
Meisel, Francis, Dorchester, Mass. Paper-slitting and rewinding-machine	851,016	Apr. 23	4613	967	127	2876
Meisel, Francis, Dorchester, Mass. Inking apparatus for printing-presses	851,017	Apr. 23	4614	967-8	127	2876
Meisel, Francis and C. A., assignors to Meisel Press & Manufacturing Company, Boston, Mass. Slitting and rewinding mechanism	12,636	Apr. 23	5853	1224	127	3182
Meisel Press & Manufacturing Company. (See Meisel, Francis and C. A., assignors.)						
Meisell, John W., Lewisburg, Pa. Wheel. (Reissue)	851,543	Apr. 23	5663	1186	127	3136
Mercié, Henri A. (See Benoit and Mercié.)						
Mergenthaler Linotype Company. (See Homans, Thomas S., assignor.)						
Merrifield, Enoch, Marysville, Mont. Clothes-line	851,427	Apr. 23	5444	1140	127	3084
Merrow, Joseph M., assignor to Merrow Machine Company, Hartford, Conn. Presser-foot-lifting mechanism for sewing-machines						
Merrow Machine Company. (See Merrow, Joseph M., assignor.)	851,544	Apr. 23	5665	1186	127	3136
Mettler, Caspar, New Haven, Conn., assignor of one-half to L. S. Brown, Springfield, Mass. Pen-shading device	851,298	Apr. 23	5195	1050	127	3022
Mickey, Samuel T., Winston-Salem, N. C. Stovepipe-joint	850,947	Apr. 23	4697	940	127	2847
Midgley, Albert H., and B. Reed, London, England. Controlling device for electric motors for driving sewing-machines, small lathes, &c.	851,299	Apr. 23	5196	1090	127	3022
Miles, Don D., Aurora, Ill. Sash-lock	12,637	Apr. 23	5857		127	3183
Miles, George W., Belmont, Mass. Cellulose derivative and making same. (Reissue)	851,202	Apr. 23	4985	1047-8	127	2967
Miller, Charles K., Alva, Okla. Ter. Machine for combing broom-corn	851,018	Apr. 23	4616	968	127	2877
Miller, Otto. (See Craw and Miller.)	851,019	Apr. 23	4617	968	127	2877
Mills, William F., South Bend, Ind. Cooking apparatus	851,300	Apr. 23	5198	1091	127	3022
Model, Johann M., Schwetzkart, Germany. Cage-ring for ball-bearings	850,948	Apr. 23	4406	941	127	2847
Moen, Marcus M., La Crosse, Wis. Adjustable door-frame	12,641	Apr. 23	5873	1227	127	3186
Mohr, August, Stuttgart, Germany. Building construction						
Monier, Gaston F. (See Pelletier and Monier.)						
Monson, Henry T., Mayville, N. D. Combined cultivator and planter. (Reissue)	851,365	Apr. 23	5327	1116	127	3053
Montague Compressed Air Company. (See Obear, Bryan, assignor.)						
Moore, Ethelbert A. (See Marwick, David B., assignor.)	851,301	Apr. 23	5203	1091	127	3022
Moore, Moses M., assignor to T. W. Snow, Chicago, Ill. Valve	851,428	Apr. 23	5446	1141	127	3085
Morehouse, Cyrus E., Newark, N. J. Separable loose-leaf book or ledger and binder therefor	851,020	Apr. 23	4618	968-9	127	2877
Morrill, Horace E., assignor to Dayton Malleable Iron Company, Dayton, Ohio. Wrench	851,244	Apr. 23	5076	1068	127	2989
Morris, Edgar T., Elburn, Ill. Gate-opener	851,366	Apr. 23	5328	1117	127	3053
Morris, Harry C. (See Daly and Morrison.)	851,367	Apr. 23	5330	1117	127	3054
Morrison, William W. (See Aston and Morrison.)	851,368	Apr. 23	5331	1118	127	3054
Morrison, Williams W. Machine for mortising window-frames for sash-pulleys	851,546	Apr. 23	5669	1187	127	3137
Moss, Turner A., Baltimore, Md. Machine for producing finished shafting	850,949	Apr. 23	4500	941	127	2847
Mossberg, Frank, Attleboro, Mass. Reel	850,950	Apr. 23	4501	941	127	2848
Mossberg, Frank, Attleboro, Mass. Reel	851,547	Apr. 23	5670	1187-9	127	3138
Mossberg, Frank, Attleboro, Mass. Reel	851,021	Apr. 23	4619	969	127	2878
Mossberg, Frank, Attleboro, Mass. Sectional album	851,245	Apr. 23	5078	1068	127	2990
Mudd, John A., U. S. Navy. Planter	850,951	Apr. 23	4502	942	127	2848
Muhl, Fritz, Dunlap, Iowa. Means for checking the sale of railway and other tickets	850,950	Apr. 23	4501	941	127	2848
Müller, Heinrich J., Schaffhausen, Switzerland. Machine for producing finished shafting	851,547	Apr. 23	5670	1187-9	127	3138
Muncaster, Walter J., assignor to Cumberland Steel Company of Allegany County, Cumberland, Md. Machine for producing finished shafting	851,021	Apr. 23	4619	969	127	2878
Murray, John S., Chicago, Ill. Book-stock carrier	851,245	Apr. 23	5078	1068	127	2990
Myer, Harry, and M. Koenigsee, New York, N. Y. Twine and thread cutter	850,951	Apr. 23	4502	942	127	2848
Myers, Henry K., Swissvale, Pa. Rail-tie	851,549	Apr. 23	5681	1190-1	127	3139
National Metal Molding Company. (See McGinley, James B., assignor.)						
Neal, John W., Kealia, Hawaii. Wave-motor	850,957	Apr. 23	4512	944	127	2850
Nehr, William F., assignor to New Jersey Patent Company, West Orange, N. J. Production of phonographic sound-records	851,606	Apr. 23	5799	1212	127	3171
Neiburger, Mason, La Fayette, Ind. Nut-lock	851,246	Apr. 23	5080	1069	127	2990
Neikirk, John O., Chicago, Ill. Draft-rigging	851,026	Apr. 23	4627	971	127	2880
Nelson, Frank A., Duluth, Minn. Automobile	851,360	Apr. 23	5333	1118	127	3054
Nelson, Tidemand, Starbuck, Minn. Snap-hook	851,206	Apr. 23	5214		127	3025
Nesmith, Jeannette W., Gilpin county, Colo. Ointment						
Neuecraft Company. (See Kimball, Hannibal I., assignor.)	851,550	Apr. 23	5683	1191	127	3139
Nevins, John C., assignor of one-half to Standard Rubber Co., Trenton, N. J. Tooth-brush guard	851,100	Apr. 23	4774	1004	127	2915
Nevius, Peter M., and W. E. Barton, Seattle, Wash. Water-supply and drainage apparatus						
New Castle Electric Sign Company. (See Dennis, James M. and H. R., assignors.)	851,247	Apr. 23	5081		127	2991
New Jersey Patent Company. (See Nehr, William F., assignor.)	851,551	Apr. 23	5084	1191	127	3140
Newberry, Spencer B., Sandusky, Ohio. Waterproof Portland cement and making same	850,958	Apr. 23	4514	944	127	2850
Newell, Allen, Guadalajara, Mexico. Railway-tie and rail-fastening						
Newman, William H. (See Krug, Oscar A., assignor.)	851,552	Apr. 23	5686	1191	127	3140
Nicholson, Charles, Hatfield, near Doncaster, England. Carriage-window						
Nicholson, John L. (See Wade and Nicholson.)	851,248	Apr. 23	5082	1069	127	2991
Nicolay, William H., New York, N. Y. Kick-board	851,203	Apr. 23	4989	1048	127	2969
Niebling, Frederick W., Cincinnati, assignor to F. W. Niebling Company, Norwood, Ohio. Compressor-pump	851,249	Apr. 23	5084	1070	127	2991
Niemann, John H. E., Chamois, Mo. Shock-loader	851,553	Apr. 23	5087	1192	127	3140
Niemeyer, William H., Baltimore, Md. Combined baby-walker and swing	851,554	Apr. 23	5091	1192	127	3141
Niles-Bement-Pond Company. (See Benson, Charlie F., assignor.)	851,429	Apr. 23	5447	1141	127	3085
Nims, Alvin F., Philadelphia, N. Y. Concrete-mixing machine	851,370	Apr. 23	5333	1118	127	3054
Nims, Alvin F., Philadelphia, N. Y. Concrete-measuring machine						
Noble, Joseph B. B., Washington, Pa. Mosquito netting and bar	851,307	Apr. 23	5214	1093-4	127	3025
Nolan, Johnston, Philadelphia, Pa. Valve	851,430	Apr. 23	5448	1141	127	3085
Nolen, James G. (See Hewitt and Nolen.)						
Nonnast, Herman, and W. Tesar, Chicago, Ill. Pedestal extension-table	851,308	Apr. 23	5216	1094	127	3026
Noonen, Thomas H., New Rochelle, N. Y. Necktie former and holder	851,431	Apr. 23	5450	1142	127	3086
Nordstrom, Charles, assignor of one-half to P. V. Seitz, Milwaukee, Wis. Valve mechanism for engines and the like	851,627	Apr. 23	5837	1219	127	3179
Norman, Kinsley B., Knoxville, Tenn. Cattle-guard	851,555	Apr. 23	5694	1192-3	127	3142
Norton, Benjamin F., Eagle Grove, Iowa. Shade and reflector for electric lights	851,027	Apr. 23	4630	971	127	2881
Norton, Fred E., Youngstown, Ohio. Throttle-valve	851,101	Apr. 23	4776	1004	127	2916
Noxon, Charles P. L., Syracuse, N. Y. Spark-coil	851,138	Apr. 23	4830	1018	127	2938
O'Brien, Thomas H., Fond du Lac, Wis. Ticket or tag	851,139	Apr. 23	4831	1018	127	2939
O'Brien, Thomas H., Fond du Lac, Wis. Ticket or tag	850,960	Apr. 23	4517	945	127	2851
O'Brien, Thomas H., Fond du Lac, Wis. Ticket or tag	851,432	Apr. 23	5451	1142	127	3086
O'Connor, Richard J., Denver, Colo. Apron-fastening device						
O'Leary, John, Cohoes, N. Y. Brake-shoe attachment for automobiles, &c	851,556	Apr. 23	5696	1193	127	3142
Obear, Bryan, assignor to Montague Compressed Air Company, St. Louis, Mo. Driving mechanism for air-compressors						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Och, Richard, Marissa, Ill. Middlings-purifier	850,969	Apr. 23	4514	945	127	2851
Orzechowski, Andrzej, Kane, Pa. Moccasin	850,981	Apr. 23	4519	945	127	2851
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Equalizing device for car-trucks	851,371	Apr. 23	5334	1118	127	3055
Otis Elevator Company. (See Ihlder, John D., assignor.)						
Otis, Spencer, Chicago, Ill. Dump-car	851,372	Apr. 23	5335	1119	127	3055
Overmyer, William F., Beechwood, Miss. Gin	851,208	Apr. 23	5218	1094	127	3037
Overmyer, William F., Beechwood, Miss. Gin	851,210	Apr. 23	5219	1095	127	3037
Owens, William L., Salt, La. Sway-bar fastener	851,169	Apr. 23	5778	1004	127	3016
Palmer, Edward T., assignor of one-half to L. I. Matthews, Philadelphia, Pa. Tailing-machine						
Parker, John F., Portland, Me. Moldboard	851,311	Apr. 23	5221	1095	127	3037
Parks, Edward F., and S. W. Wardwell, Providence, R. I. Braiding-machine	850,982	Apr. 23	4520	946	127	2852
Parsons, Charles A., Newcastle-upon-Tyne, and J. Turnbull, Wallsend, England; said Turnbull assignor to said Parsons. Maneuvering and similar valves	851,294	Apr. 23	4991	1048-50	127	3009
Parvin, William J., Brunswick, Me. Harness	851,295	Apr. 23	4996	1050	127	3010
Pasley, Decatur C., Dolliver, Iowa. End-gate fastener	851,312	Apr. 23	5223	1095	127	3038
Pearce, Aldridge G., Providence, R. I. Bracelet	851,167	Apr. 23	5097	1193	127	3143
Pearson, James H., assignor to W. S. Bogy, Bloomfield, Ind. Jack	851,373	Apr. 23	5340	1119	127	3056
Pedersen, Christian, assignor to Landis Machine Company, St. Louis, Mo. Loop-opener and spreader for sewing-machines	851,318	Apr. 23	5224	1095-6	127	3038
Peirce, Edward D. (See Cook, Samuel R., assignor.)	850,983	Apr. 23	4521	946	127	2852
Pelletier, Joseph E. L., and G. F. Mentor, Paris, France. Dumb-bell	850,984	Apr. 23	4522	946	127	2853
Pennsylvania Steel Company. (See Long, Malcolm W., assignor.)						
Peterson, Erick H., Philadelphia, Pa. Adjustable chart	851,374	Apr. 23	5342	1120	127	3057
Pfeffer, Jacob, Waterloo, Iowa. Sanitary toilet-cabinet	851,228	Apr. 23	4532	972	127	2861
Pierce, Simeon F., St. Paul, Minn. Trolley-retriever	851,229	Apr. 23	4534	972	127	2862
Pile, William E. (See Sutherland, Emil, assignor.)						
Pilling, Luther, Danielson, Conn. Loom-picker	851,289	Apr. 23	5086	1070	127	3031
Pioma, Leo H., Chicago, Ill. Ventilator for water-closets	851,214	Apr. 23	5226	1096	127	3039
Polis, William, McVille, N. D. Beltless and chainless drive grain-elevator	851,315	Apr. 23	5230	1096	127	3039
Polk, William, East Liverpool, Ohio. Machine for forming plastic articles	851,488	Apr. 23	5696	1193-4	127	3143
Porter, Clarence B., assignor to J. C. Allen & Co., Portland, Oreg. Pencil-printing machine						
Postana, Arthur J., Putney, England. Calculating-machine	851,168	Apr. 23	4776	1006	127	3016
Powell, Chauncey O., Hanford, Wash. Tongue-support	851,232	Apr. 23	5454	1142	127	3057
Powell, Edward C. (See MacArthur and Smith, assignors.)	851,206	Apr. 23	4997	1050	127	2970
Powell, Frank D. (See Ellis and Powell.)						
Powell, Frank D., and C. S. Ellis, assignors to American Coin Register Company, Chicago, Ill. Coin-registering mechanism						
Powers, Edward, Shelbyville, Ill. Ball-returning mechanism for bowling-alleys	851,251	Apr. 23	5088	1070	127	2892
Pratt & Whitney Company. (See Hanson, Bengt M. W., assignor.)	851,580	Apr. 23	5700	1194	127	3143
Priebe, Herman C., Blue Island, Ill. Automatic air-signal, air-brake, and steam-coupling						
Priest, William, et al. (See Lightner, Henry L., assignor.)	851,316	Apr. 23	5231	1096-7	127	3039
Prince, Adolph, Chicago, Ill. Butter press and stamping machine	851,434	Apr. 23	5439	1143	127	3056
Pritchard, George. (See McNish and Gray, assignors.)						
Prowse, George R., Montreal, Quebec, Canada. Cooking apparatus	851,282	Apr. 23	5091	1071	127	2893
Pry, John C., Shelby, Ohio. Tube-rolling mill	851,435	Apr. 23	5440	1143	127	3056
Pyle, Jesse T., Amarillo, Tex. Pile structure	851,436	Apr. 23	5442	1143-4	127	3056
Raftican, Thomas J., Youngstown, Ohio. Combined hotel-register and account-checking system						
Ranson, Charles, Brussels, Belgium, assignor to H. W. de Stuckle, Dieuze, Germany. Apparatus for producing alkali hydrates and zinc sulfid	851,437	Apr. 23	5444	1144	127	3056
Rasor, Harry F., Barberton, Ohio. Grate	850,985	Apr. 23	4524	947	127	2853
Ratcliff, James E., Dawson, Ill. Ironing-table	851,403	Apr. 23	5202	1213	127	3171
Raymond, George G., New Rochelle, N. Y. Support for electric cables	850,986	Apr. 23	4525	947	127	2853
Reagan, James and W., Philadelphia, Pa. Fuel-feeding device for boiler-furnaces	851,375	Apr. 23	5345	1120-1	127	3058
Reagan, William. (See Reagan, James and W.)	851,253	Apr. 23	5095	1071-2	127	2894
Reck, Anders B., Hellerup, Denmark. Magazine-boiler						
Reece, John, et al. (See Hixon, William E., assignor.)	851,080	Apr. 23	4636	972-3	127	2862
Reed, Benjamin. (See Midgley and Reed.)						
Reid, Joseph, Oil City, Pa. Means for operating rod-lines for oil-wells	851,104	Apr. 23	4780	1005	127	2917
Reid, Robert P., Waterflet, N. Y. Cushioned wheel	851,105	Apr. 23	4781	1005	127	2917
Reinmann, Albert L., Hanover, N. J. Opaque glass	851,517	Apr. 23	5263	.....	127	3031
Reliance Edge Tool Company. (See McCarty and Wooster, assignors.)						
Remellus, Charles, Newark, N. J., assignor to Columbia Machine Works and Malleable Iron Company, Brooklyn, N. Y. Fuse-box	851,080	Apr. 23	5701	1194	127	3144
Renault, Edward, Waldo, Fla. Apparatus for destroying plant life	851,376	Apr. 23	5347	1121	127	3058
Rey, Jean A., Paris, France. Controlling mechanism for submarine mines	850,987	Apr. 23	4527	947-8	127	2853
Reynolds, Leander B. and L. E., Grand Rapids, Mich. Curtain-fixture	851,581	Apr. 23	5703	1195	127	3144
Reynolds, Leander E. (See Reynolds, Leander B. and L. E.)						
Rheinische Metallwaren-und Maschinenfabrik. (See Völker, Karl, assignor.)						
Rhonemus, Arthur, Belle Vernon, Pa. Furnace						
Rice, Frank H., Oakland, Cal. Record-calendar	851,426	Apr. 23	5437	1144-5	127	3059
Rice, George O., San Francisco, Cal. Combined pipe and monkey wrench	851,439	Apr. 23	5469	1145	127	3060
Richards, Francis H., Hartford, Conn. Rolling-press	851,105	Apr. 23	4783	1005	127	2917
Richardson, Donald V. (See Logan and Richardson.)	851,377	Apr. 23	5348	1121-2	127	3059
Ridgway, Ephraim E. E., South Omaha, Nebr. Apparatus for hoisting and handling voting-machines						
Ridlon, Fred W., Springfield, Mass. Boiler-furnace grate	851,160	Apr. 23	4832	1019	127	2929
Riley, James I., Xenia, Ill. Combined box-opener, nail-puller, and hammer	851,313	Apr. 23	5224	1097	127	3031
Rink, Ellsworth C., Philadelphia, Pa. Napkin supporter and holder	850,988	Apr. 23	4530	948	127	2854
Rivers, Edward G., Richmond, England. Electrical heating element or resistance	851,107	Apr. 23	4784	1006	127	2918
Roberts, Homer J., Evanston, Ill. Electrical-impulse-counting switch	851,440	Apr. 23	5470	1145	127	3060
Robeson, Jacob S., assignor to Robeson Process Company, Camden, N. J. Composition of matter and making same	851,031	Apr. 23	4638	973-4	127	2883
Robeson, Jacob S., assignor to Robeson Process Company, Camden, N. J. Composition of matter and making same	851,278	Apr. 23	5085	.....	127	3061
Robeson, Jacob S., assignor to Robeson Process Company, Camden, N. J. Composition of matter and making same	851,279	Apr. 23	5087	.....	127	3062
Robeson, Jacob S., assignor to Robeson Process Company, Camden, N. J. Composition of matter and making the same	851,280	Apr. 23	5088	.....	127	3062
Robeson Process Company. (See Robeson, Jacob S., assignor.)	851,281	Apr. 23	5089	.....	127	3062
Robinson, Charles W., San Diego, Cal. Dust-pan						
Rogers, Ulysses G., assignor to J. Bernhard, Columbus, Ohio. Electric fuse	851,441	Apr. 23	5472	1145	127	3061
Rogers, Woodbury O., Norwich, Conn. Poultry-feeder	851,282	Apr. 23	4643	974	127	2884
Rohrer, Milton L., Seattle, Wash. Collapsible and extensible safety-gate for street and other cars	851,320	Apr. 23	5098	1096	127	3032
Rolfe, George H., St. Louis, Mo. Lamp or lantern burner	850,989	Apr. 23	4531	948	127	2855
	851,319	Apr. 23	5097	1096	127	3032

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ross, Christian H., Chicago, Ill., assignor of one-half to Dauchy Iron Works. Sidewalk-light	850,970	Apr. 23	4533	948	127	2855
Ross, Martin H., assignor of one-half to R. J. Kiendl, Buffalo, N. Y. Safety device for elevators	851,382	Apr. 23	5361	1122-3	127	3063
Rothenböcker, George, New York, N. Y. Steam-separator	851,254	Apr. 23	5096	1072	127	2894
Rountree, Henry W., assignor of one-half to H. W. Cottrell, Richmond, Va. Trunk	851,033	Apr. 23	4644	974	127	2884
Rowbotham, John, Philadelphia, assignor to J. Boyd, Haverford, Pa. Valve construction for pumps	851,182	Apr. 23	4942	1039	127	2958
Ruf, Joseph H., Hollywood, Cal. Spraying-nozzle	851,562	Apr. 23	5705	1195	127	3145
Sager, James H., assignor to J. H. Sager Company, Rochester, N. Y. Spring attachment for subsoilers	851,609	Apr. 23	5802	1213	127	3172
Sammons, Ernest A., assignor to Haggard & Marcusson Company, Chicago, Ill. Corner-cap for wire-mattress frames	851,563	Apr. 23	5707	1195	127	3145
Sawaya, George K. (See Sweet and Sawaya.)						
Schade, John, Jr., Brooklyn, N. Y., assignor to Fahnestock Electric Company. Spring terminal-clip. (Reissue)	12,642	Apr. 23	5875	1228	127	3187
Schaefer, Jacob, Dayton, Ohio. Hydraulic motor	851,255	Apr. 23	5097	1072-3	127	2894
Schetzel, Mark P., Oakland, Cal. Dredger and excavator	851,628	Apr. 23	5837	1219-20	127	3179
Schildwachter, Philip W. C., New York, N. Y. Speed-wagon	850,971	Apr. 23	4533	949	127	2855
Schlicker, Frank, Wilcock, Pa. Rail-fastener	851,442	Apr. 23	5473	1146	127	3061
Schmidt, George A., Chicago, Ill. Shaving-brush container	851,443	Apr. 23	5473	1146	127	3061
Schneider, Ferdinand, Langendeld, Germany. Wireless receiving apparatus for exploding mines	850,972	Apr. 23	4535	949	127	2856
Schucht, Max, Milwaukee, Wis. Clock-escapement	851,034	Apr. 23	4646	975	127	2885
Schulthess, Oscar, Berlin, and L. Kerkovius, Friedenau, near Berlin, assignors to Actien Gesellschaft für Anilin Fabrikation, Berlin, Germany. Amido-oxy-sulfonic acid of phenylnaphthylmidazol and making same	851,444	Apr. 23	5474	.....	127	3062
Schwenk, John C. (See Lux and Schwenk.)						
Seaside Electric Company. (See Froelid, Anton S., assignor.)	851,256	Apr. 23	5099	1073	127	2895
Seddon, Harry I., Syracuse, N. Y. Eraser-shield						
Seitz, Peter V. (See Nordstrom, Charles, assignor.)	851,257	Apr. 23	5101	1073	127	2895
Senter, John F., Birmingham, Ala., assignor of one-half to Walsh and Weidner Boiler Company, Chattanooga, Tenn. Water-tube boiler	851,445	Apr. 23	5476	1146	127	3062
Seymour, Garret G., Asherville, Kans. Fence-post	851,383	Apr. 23	5363	1123	127	3063
Seymour, Mark T. (See Ball and Seymour.)	850,973	Apr. 23	4537	950	127	2856
Shafer, Homer R., Detroit, Mich. Skirt-trimmer	851,258	Apr. 23	5105	1074	127	2896
Shafer, Stoughton P., Kansas City, Mo. Quadruplex cycle	851,036	Apr. 23	4648	976	127	2885
Sharp, Hannah J., Billings, Mont. Baby-waist	851,035	Apr. 23	4647	975	127	2885
Sharp, Harry E., Rockville, assignor of one-third to G. Ulrich, Hartford, Conn. Device for molding cornices	850,974	Apr. 23	4539	951	127	2857
Sharp, Harry E., Rockville, Conn., and L. Kentana, Brooklyn, N. Y., assignors of one-third to G. Ulrich, Hartford, Conn. Tool for molding cornices	851,259	Apr. 23	5106	1074	127	2897
Shaver, Elmer C., New York, N. Y. Stropping-machine	850,975	Apr. 23	4540	951	127	2857
Shaw, Edgar, Swampscott, Mass. Safety-pocket	851,564	Apr. 23	5707	1195	127	3145
Shaw, Grant. (See Coffman, James H., assignor.)	850,976	Apr. 23	4541	951	127	2857
Shaw, Leander P., Bradford, Pa. Nut-lock	851,629	Apr. 23	5839	1220	127	3180
Sheehan, Joseph D., Brooklyn, N. Y. Gas-burner attachment	851,565	Apr. 23	5709	1196	127	3146
Sheets, Niel R. (See Goforth and Sheets.)	851,321	Apr. 23	5240	1098	127	3033
Shelton, Winfield S., Jennings, La. Pump	851,446	Apr. 23	5477	1146	127	3062
Shepard, Darwin W., Denver, Colo. Artificial timbering for mine-tunnels	851,183	Apr. 23	4944	1039	127	2958
Sherman, George S., Nyack, N. Y. Combined settee and berth						
Sheward, Ashley T., St. Louis, Mo. Feed-cutter	851,108	Apr. 23	4785	1006	127	2918
Shields, Samuel N., Greensburg, Pa. Insulated coupling	851,566	Apr. 23	5710	1196	127	3146
Shoemaker, Thomas A., Danville, Ill. Water-heater	851,322	Apr. 23	5241	1098-9	127	3033
Short, Allen M. (See Valliquette, William F., assignor.)	851,207	Apr. 23	4998	1051	127	2970
Shultz, Charles H., St. Joseph, Mo. Metal sash-bar	851,447	Apr. 23	5478	1147	127	3062
Shumway, Solomon, Le Roy, N. Y. Draft-equalizer	851,323	Apr. 23	5243	1099-1100	127	3033
Sikes, Simeon R. (See Sikes, Thomas E. and S. R.)	851,384	Apr. 23	5364	1123	127	3063
Sikes, Thomas E., and S. R., Helena, Ga. Hay-press	851,630	Apr. 23	5841	1221	127	3180
Sim, Celia, Nebraska City, Nebr. Drainer	851,448	Apr. 23	5479	1147	127	3062
Simpson, Alexander, New York, N. Y. Valve	851,449	Apr. 23	5482	1147	127	3063
Sittel, Edward S. (See McLaughlin and Sittel.)	850,977	Apr. 23	4544	952	127	2858
Sklovsky, Max, assignor to Deere & Company, Moline, Ill. Beam-setting press						
Sleicher, William, Troy, N. Y. Securing wigs in place	12,638	Apr. 23	5860	1224-6	127	3184
Sloman, Eugene H., Detroit, Mich. Machine for drawing sheet-metal vessels	850,978	Apr. 23	4544	952	127	2858
Smith, Cyril A. (See Hodges, James C., assignor.)						
Smith, David S., Meversburg, Pa. Reversing-gear for traction-engines	851,037	Apr. 23	4650	976	127	2886
Smith, Frank. (See MacArthur and Smith.)						
Smith, Samuel W., and A. Hollinger, Canton, Ohio. Machine-gear	851,038	Apr. 23	4650	976-7	127	2886
Smith, Willard, Los Molinos, Cal. Book-support						
Smith, Willard A., Melrose, Mass., assignor, by mesne assignments, to United Shoe Machinery Company, Paterson, N. J. Machine for automatically lacing shoe-uppers. (Reissue)	851,039	Apr. 23	4654	977-8	127	2887
Snow, T. W. (See Moore, Moses M., assignor.)	851,450	Apr. 23	5483	1148	127	3063
Soares, Ignatius N., Framingham, Mass. Nose-shaper						
Société Electro-Metallurgique Francaise. (See Héroult, Paul L. T., assignor.)	851,260	Apr. 23	5106	1074	127	2897
Societe Universelle de l'Asservisseur Automatique Titan. (See Flateau, Paul H., assignor.)						
Solomon, William T., assignor of one-half to R. C. Hall, Pittsburg, Pa. Nut-lock						
Southgate, Louis W., Worcester, Mass., assignor to Campbell Printing Press & Manufacturing Co., New York, N. Y. Multicolor-printing machine						
Southgate, Louis W., Worcester, Mass., assignor to Campbell Printing Press & Manufacturing Co., New York, N. Y. Multicolor-printing mechanism						
Spalckhaver, William, assignor to R. Hoe, New York, N. Y. Delivery mechanism						
Spena, John W., Wakeeney, Kans. Punching implement						
Sprague, Edwin L. (See Dana, Robert S., assignor.)						
Squier, George O. (See Crehore and Squier.)						
Stafford, George A., and E. Henry, Belcherville, Tex. Plow						
Standard Adding Machine Company. (See Hinchman, George N., assignor.)						
Standard Machine Company. (See Houseman, Harry A., assignor.)						
Standard Machinery Company. (See Mathewson, Ernest T., assignor.)						
Standard Rubber Co. (See Nevius, John C., assignor.)						
Standard Sanitary Mfg. Co. (See McKinney, William C., assignor.)						
Staples, Henry. (See Castonguay, Leger J., assignor.)						
Star Brass Manufacturing Company. (See Fennald, Charles F., assignor.)	851,451	Apr. 23	5484	1148	127	3064
Stelber, Charles F., New York, N. Y. Machine-rolls	851,141	Apr. 23	4834	1019	127	2929
Stempel, Edward, Los Angeles, Cal. Sleeping-booth	850,979	Apr. 23	4546	952	127	2859
Stephens, George B., Sherman, Tex. Compound railway-rail						
Stevenson, John W., New York, N. Y., and S. L. Dickinson, Cranford, N. J. Mechanically-operated musical instrument	851,185	Apr. 23	4947	1040	127	2959

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Stevenson, William, Chicago, Ill., assignor to C. G. Hawley. Journal-box	851,224	Apr. 23	5347	1100	127	2995
Stewart, John K., Chicago, Ill. Alarm device	851,221	Apr. 23	5107	1074	127	2997
Stickney, Burnham C., Elizabeth, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	851,142	Apr. 23	4536	1019	127	2999
Stickney, Burnham C., Elizabeth, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	851,143	Apr. 23	4542	1020	127	2999
Stimpke, Arthur G., Geneseo township, Roberts county, S. D. Grass-beater	851,468	Apr. 23	5457	1149	127	3004
Stitt, William R., Belfast, and A. J. Davidson, Crossgar, Ireland. Warp stop-motion for looms	851,040	Apr. 23	4980	978-80	127	2989
Stivers, George P. J., Philadelphia, Pa. Winding-frame	851,144	Apr. 23	4550	1020-1	127	2997
Stoner, Charles, Syracuse, Kans. Washing-machine	851,483	Apr. 23	5459	1149	127	3004
Stoughton, Luman C., Columbus, Ohio. Shield for type-writers	851,220	Apr. 23	5348	1100	127	2995
Strain, William T., assignor of three-fourths to W. H., J., and H. W. Locke, Marion, Ind. Injector	851,041	Apr. 23	4953	980	127	2989
Strong, John E., Grand Rapids, Mich. Sewing-machine attachment	851,126	Apr. 23	4950	1040	127	2989
Stuart, Donald, assignor to H. & M. Automatic Regulator Company, Rochester, N. Y. Regulator	851,226	Apr. 23	5365	1123	127	2994
Stuart, Joseph, Wilmington, Del. Wheel	851,228	Apr. 23	5349	1100	127	2995
Stuckle, Henry W. de. (See Ranson, Charles, assignor.)						
Stulz, Edward A., Avenel, N. J. Bolt-anchor	850,980	Apr. 23	4547	952	127	2989
Sullivan, Daniel F., Lowell, Mass. Striping device for knitting-machines	851,042	Apr. 23	4985	980	127	2989
Sundblad, Uno L. (See Falkenstrom and Sundblad.)						
Sutherland, Emil, Hollywood, assignor of one-half to W. E. Pile, Los Angeles, Cal. Drying-comb	851,397	Apr. 23	5712	1198	127	3146
Sutro, Harry H., New York, N. Y., and L. M. Booth, Plainfield, N. J. Apparatus for distributing or dividing liquids	851,398	Apr. 23	5713	1197	127	3147
Svanström, Olof, Stockholm, Sweden. Wheel-rim	851,208	Apr. 23	4999	1051	127	2971
Svensson, Emanuel A. (See Jacobson and Svensson.)						
Swanson, Carl F., assignor to himself and J. M. Anderson, Eagle Bend, Minn. Egg-lifter	851,051	Apr. 23	5043	1222	127	3120
Sweet, Norman M., and G. K. Sawaya, Nashville, Tenn. Mail and order filing system	851,145	Apr. 23	4952	1021	127	2997
Swift, Robert B., Portland, Me. Lock-strike	851,109	Apr. 23	4788	1006	127	2919
Synnestvedt Machine Company. (See Synnestvedt, Paul, assignor.)						
Synnestvedt, Paul, assignor to Synnestvedt Machine Company, Pittsburg, Pa. Motor	851,222	Apr. 23	5944	1222	127	3161
Synnestvedt, Paul, assignor to Synnestvedt Machine Company, Pittsburg, Pa. Electric control mechanism	851,223	Apr. 23	5945	1222	127	3161
Tate, Oscar M., Knoxville, Tenn. Cabinet	851,225	Apr. 23	5367	1124-5	127	2994
Tatum, Charles A., New York, N. Y. Glass-blowing machine	851,222	Apr. 23	5110	1075	127	2997
Taylor, John B. (See Woodbridge and Taylor.)						
Tesar, Wilhelm. (See Noonnast and Tesar.)						
Textile-Finishing Machinery Company. (See Honeyman, Henry W., assignor.)						
Thelberg, John, New York, N. Y. Treating zinc and lead ores	851,127	Apr. 23	4951	1041	127	2989
Thompson, Frank J., Fargo, N. D. Eyeglass-holder	851,227	Apr. 23	5351	1101	127	2995
Thorn, George W., Chicago, Ill. Extensible gas-pipe	851,229	Apr. 23	5715	1197	127	3147
Tilden, A. J., *et al.* (See Hixon, William E., assignor.)						
Tilletson, Charles C., Olathe, Kans. Power-transmission clutch	850,981	Apr. 23	4548	953	127	2989
Tilt, Albert, Montclair, N. J. Cutting attachment for looms	851,570	Apr. 23	5716	1198	127	3147
Timberlake, John B., Jackson, Mich. Display-easel	851,571	Apr. 23	5717	1198	127	3148
Tiner, John F., Uvalde, Tex. Wrench	851,410	Apr. 23	5806	1213-14	127	3173
Toman, Samuel, Dayton, Ohio. Ball-joint	850,982	Apr. 23	4549	953	127	2989
Topping, William V. B. (See Burkholder, John H., assignor.)						
Travers, Charles J., Chicago, Ill. Tilting-chair	851,464	Apr. 23	5460	1150	127	3005
Travis, John M. (See Fitzgibbon and Travis.)						
Trier, Frank, London, England. Rest and dresser for grindstones, emery-wheels, and the like	851,226	Apr. 23	5363	1101	127	2995
Tripp Fruit Wrapping Machine Co. (See Ballard, Milton H., assignor.)						
Troesin, Otto, assignor to E. M. A. Feuerheerd, Hamburg, Germany. Rotatable grate	851,043	Apr. 23	4957	981	127	2989
Trub, Philip J. (See Fleming, Trub, and Blackton.)						
Tubbs, William O., Lubbock, Tex. Spring-wheel	851,572	Apr. 23	5719	1199	127	3148
Tucker, Benjamin W., Newark, N. J., assignor to American Tobacco Company, New York, N. Y. Boxing-machine	851,369	Apr. 23	5111	1075-7	127	2995
Turnbull, John. (See Parsons and Turnbull.)						
Tweedy, William J., Colville, Wash. Broom	851,455	Apr. 23	5468	1150	127	3005
Tyc, Ludwig A., G. Boivin, and L. N. Benjamin, assignors to Ideal Concrete, Limited, Montreal, Quebec, Canada. Plastic structure	851,573	Apr. 23	5720	1199	127	3148
Tynan, John A., Indianapolis, Ind. Heating-stove	851,044	Apr. 23	4986	981	127	2989
Uebelmesser, Charles, assignor to American Moving Picture Machine Company, New York, N. Y. Moving-picture-exhibiting apparatus	851,227	Apr. 23	5370	1125-6	127	2995
Ullrick, Jacob H., Nashville, Tenn. Still	851,045	Apr. 23	4971	981-2	127	2991
Ulmer, Charles, Lisbon, N. D. Change-making machine	851,146	Apr. 23	4954	1022-5	127	2989
Ulrich, George. (See Sharp, Harry E., assignor.)						
Ulrich, George. (See Sharp and Kantana, assignors.)						
Underwood Typewriter Company. (See Stickney, Burnham C., assignor.)						
Underwood Typewriter Company. (See Wagner, Franz X., assignor.)						
United Shoe Machinery Company. (See Smith, Willard A., assignor.) (Reissue.)						
Valiquette, William F., La Crosse, Wis., assignor of one-half to A. M. Short, Medford, Oreg. Plate and pan lifter	850,983	Apr. 23	4550	953	127	2989
Van Zandweghe, Julian, and L. Viberti, Rosario de Santa Fé, Argentina. Block-signal system	851,466	Apr. 23	5462	1150	127	3005
Vaughn, John W., Noroton Heights, Conn. Vending-machine	851,128	Apr. 23	4954	1041	127	2989
Verner, John, Charlton, Iowa. Centrifugal fan	851,467	Apr. 23	5463	1151	127	3005
Viberti, Luis. (See Van Zandweghe and Viberti.)						
Vieweg, Fred J., Plainfield, N. J. Lock	851,576	Apr. 23	5721	1199	127	3149
Vieweg, Fred J., Plainfield, N. J. Lock	851,575	Apr. 23	5722	1200	127	3149
Völler, Karl, assignor to Rheinische Metallwaren-und Maschinenfabrik, Düsseldorf-Derendorf, Germany. Means for moving the barrels of guns having recoil action on the carriage from the firing position to the traveling position and the converse	850,984	Apr. 23	4951	953-4	127	2989
Vollmann, Carl W., Montreal, Quebec, Canada. Air cooler and purifier	850,985	Apr. 23	4552	954	127	2989
Vollmer, Felton, Winsted, Minn. Party-line telephone system	851,468	Apr. 23	5469	1151-2	127	3005
Waddingham, Bailey. (See Leonard, William E., assignor.)						
Wade, Evan H., and J. L. Nicholson, Chicago, Ill., assignors to American Locomotive Equipment Company. Locomotive-boiler furnace	851,230	Apr. 23	5363	1101-2	127	2995
Wade, Evan H., and J. L. Nicholson, Chicago, Ill., assignors to American Locomotive Equipment Company. Consuming fuel	851,231	Apr. 23	5365	1103	127	2997
Wagner, Franz X., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	851,224	Apr. 23	5121	1077-8	127	2989
Wagner, William, Forestville, Mich. Power-transmission pulley	851,129	Apr. 23	4955	1042	127	2991
Walt, Henry H., assignor to International Separator Company, Chicago, Ill. Magnetic ore-separator	851,046	Apr. 23	4973	982	127	2992
Waldman, Jacob, New York, N. Y. Atomizer	851,399	Apr. 23	5159	1076	127	3002

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Wales, Alfred B., East Whitman, assignor of one-half to E. W. McAllister and I. W. Holbrook, Brockton, Mass. Controlling mechanism for belt-shifters	851,576	Apr. 23	5744	1200	127	3159
Wallace, Joseph D., Champaign, Ill. Self-cleaning strainer for spraying-machines	851,398	Apr. 23	5372	1127	127	3066
Walloch, Franz, Berlin, Germany. Line-selector for intercommunication telephone apparatus	851,266	Apr. 23	5127	1078-9	127	3002
Walsh, Joseph A., Syracuse, N. Y. Protective attachment for traveling-bags, &c	851,267	Apr. 23	5129	1079	127	3003
Walsh and Weidner Boiler Company. (See Senter, John F., assignor.)						
Walter, Charles, New York, N. Y. Siphon-head	851,459	Apr. 23	5503	1152	127	3097
Wardell, Henry E., assignor to Barber Asphalt Paving Company, Philadelphia, Pa. Compound rocking-chisel	851,331	Apr. 23	5257	1102	127	3087
Wardwell, Simon W. (See Parks and Wardwell.)						
Waterhouse, Addison G., Good Ground, N. Y. Apparatus adapted for collecting and cultivating shell-fish	851,332	Apr. 23	5260	1102	127	3087
Waterman, Cameron B., assignor to Waterman Marine Motor Company, Detroit, Mich. Boat-propelling device	851,389	Apr. 23	5374	1127	127	3066
Waterman Marine Motor Company. (See Waterman, Cameron B., assignor.)						
Waugh, Edward H. (See Kyle and Waugh.)						
Waughtal, Theodore, Des Cabesos, Ariz. Ter. Elevator-stop	851,460	Apr. 23	5505	1152	127	3097
Way, John H., Philadelphia, Pa. Collar protector	851,268	Apr. 23	5130	1079	127	3003
Weaver, David, Paterson, N. J. Cross-arm pin	851,577	Apr. 23	5747	1201	127	3160
Weber, Erich, Leipsic, Germany. Suspension device for lamps	850,986	Apr. 23	4554	954	127	2989
Weber, Frank, Allegheny, assignor, by mesne assignments, to Imperial Specialty Manufacturing Company, Pittsburg, Pa. Wall-tie	851,611	Apr. 23	5807	1214	127	3172
Weickert, George J., La Cygne, Kans. Doubletree-hitch	851,209	Apr. 23	5000	1051	127	2971
Well, Benjamin L., *et al.* (See Kaufman, Adolph G., assignor.)						
Well, Berthold L., *et al.* (See Kaufman, Adolph G., assignor.)						
Weiss, Andrew, Cleveland, Ohio. Washboard	851,110	Apr. 23	4788	1007	127	2919
Welsh, James W., Edgewood Park, Pa. Voltage-regulator for series-wound electric generators	851,461	Apr. 23	5506	1153	127	3097
West, Robert N., Brooklyn, assignor to Adams Laundry Machinery Company, Troy, N. Y. Clothes-drier	851,462	Apr. 23	5508	1153	127	3098
West, Walter O., New Orleans, La. Artificial teeth	851,578	Apr. 23	5748	1201	127	3160
Western Electric Company. (See Adams, Arthur H., assignor.)						
Westinghouse Air Brake Company. (See Blackall, Robert H., assignor.)						
Westinghouse Air Brake Company. (See Clark, Francis L., assignor.)						
Weyand, Charles L. (See Whitney and Weyand.)	851,210	Apr. 23	5001	1051	127	2971
Wheaton, Milton A., San Francisco, Cal. Nutcracker						
White, Lewis A., *et al.* (See Goodsell, Frank, assignor.)						
White, Orlando H., *et al.* (See Goodsell, Frank, assignor.)	850,987	Apr. 23	4555	954-5	127	2991
Whitehill, David B., North Clarendon, Pa. Well-bailing-operating mechanism	851,579	Apr. 23	5749	1201	127	3160
Whitney, Albert O., Bronxville, and C. L. Weyand, New York, N. Y. Facing for walls and other surfaces	851,190	Apr. 23	4959	1042	127	2991
Wilkins, Charles L., Columbus, Ohio. Burglar-alarm	851,047	Apr. 23	4975	983	127	2992
Wilkin, John F., Kenton, Ohio. Connecting-rod						
William Wharton, Jr., & Company. (See Angerer, Victor, assignor.)						
Williams, Edward. (See Devers and Williams.)						
Williams, Henry J. (See McClune, Cassius M., assignor.)						
Williams, Milton F., assignor to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo. Coal-crusher	850,988	Apr. 23	4558	955	127	2992
Williams, Milton F., assignor to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo. Crusher	851,390	Apr. 23	5377	1127	127	3067
Williams Patent Crusher & Pulverizer Company. (See Williams, Milton F., assignor.)						
Williams, Robert H., Maize, Kans. Bridle	851,463	Apr. 23	5510	1154	127	3098
Williams, Robert P., Santa Barbara, Cal. Car-wheel	851,464	Apr. 23	5511	1154	127	3099
Williams, Robert P., Santa Barbara, Cal. Air-brake attachment	851,465	Apr. 23	5512	1154	127	3099
Willings, Joseph B., Vanburen, Ind. Stuffing-box	851,147	Apr. 23	4972	1025	127	2941
Wills, George W., Keswick Falls, N. Y. Adjustable fastener for securing harrow-teeth to their supporting bars	851,580	Apr. 23	5751	1201	127	3161
Wilson, Gustav, Jr., St. Paul, Minn. Motor-extension receptacle	851,581	Apr. 23	5752	1202	127	3161
Wilson, Charles, Baltimore, Md. Flushing-tank	850,989	Apr. 23	4559	955	127	2992
Wilson, David, Riccarton, Linlithgow, Scotland. Potato cleaning and sizing machine	851,466	Apr. 23	5514	1154-5	127	3099
Windsor, James R., Des Moines, Iowa. Candy-cooling table	851,148	Apr. 23	4974	1025	127	2941
Wire & Telephone Company of America. (See Houghton, Stephen C., assignor.)						
Wolfe, Mathew J., Los Angeles, Cal. Burner attachment	851,191	Apr. 23	4962	1042	127	2992
Wolferts & Co. (See Halbekann, Franz J., assignor.)						
Wood, Frank W., Newport News, Va. Means for preventing sparking	851,467	Apr. 23	5515	1155	127	3100
Wood, Henry A. W., assignor to Campbell Printing Press & Manufacturing Company, New York, N. Y. Method of and means for preparing and holding electrotype-plates	851,049	Apr. 23	4976	983	127	2993
Woodard, Roy L., Rickburg, N. Y. Pump-baller	851,468	Apr. 23	5516	1155	127	3100
Woodbridge, Jonathan E., Rugby, England, and J. B. Taylor, Schenectady, N. Y., assignors to General Electric Company. Leakage-indicator for high-tension lines	851,149	Apr. 23	4975	1026	127	2942
Woodward, Henry R., New York, N. Y. Nostril-expander	851,048	Apr. 23	4976	983	127	2992
Woodworth, George K. (See De Forest, Lee, assignor.)						
Wooster, Frederick A. (See McCarty and Wooster.)						
Worstall, George G., Toms River, N. J. Pliers	851,469	Apr. 23	5518	1156	127	3101
Wotherspoon, William W., New York, and R. O. King, North Tonawanda, N. Y. Vessel condemnation	851,269	Apr. 23	5131	1079-80	127	3003
Wotherspoon, William W., New York, and R. O. King, North Tonawanda, N. Y. Floating sunken or stranded vessels	851,270	Apr. 23	5134	1080	127	3004
Wright, George H. (See Legg and Wright.)						
Wuest, Philip, Jr., Cheltenham, assignor to Auto-Manual Piano Action Company, Philadelphia, Pa. Automatic playing mechanism for musical instruments	851,470	Apr. 23	5519	1156	127	3101
Wuest, Philip, Jr., assignor to Auto-Manual Piano Action Company, Philadelphia, Pa. Mechanical musical instrument	851,471	Apr. 23	5523	1157	127	3102
Wuest, Philip, Jr., assignor to Auto-Manual Piano Action Company, Philadelphia, Pa. Pneumatic motor	851,472	Apr. 23	5525	1157-8	127	3102
Yawman & Erbe Manufacturing Company. (See Yawman, Philip H., assignor.)						
Yawman, Philip H., assignor to Yawman & Erbe Manufacturing Company, Rochester, N. Y. Look for card-index rods	850,990	Apr. 23	4562	955-6	127	2993
Yochum, John W., Tiffin, Ohio. Dashboard-holder	851,473	Apr. 23	5528	1158	127	3103
Yoe, Philip, Dayton, Ohio, assignor to E. W. Hanley, K. Fitzpatrick, and P. Yoe. Voting-machine	851,582	Apr. 23	5755	1202-4	127	3161
Young, Abraham L., Paris, Ill. Dumping apparatus for vehicles	851,050	Apr. 23	4980	984	127	2993
Younglove, Thomas J., assignor of one-half to T. B. Hicks, Richmond, Va. Door-check	851,150	Apr. 23	4977	1026	127	2942
Younglove, Thomas J., assignor of one-half to T. B. Hicks, Richmond, Va. Door-check	851,192	Apr. 23	4963	1043	127	2993
Younglove, Thomas J., assignor of one-half to T. B. Hicks, Richmond, Va. Door-check	851,193	Apr. 23	4964	1043	127	2993
Zookovits, Harry L. (See Brownstein, Benjamin, assignor.)						

DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
American Radiator Company. (See Sjoden, Eric, assignor.)				
Bowlen, William C., Providence, R. I., assignor to Rockford Silver Plate Company, Rockford, Ill. Handle for spoons, forks, or similar articles	38,534	Apr. 23	127	3189
English, John C., Camden, N. J., assignor to Victor Talking Machine Company. Cabinet for talking-machines	38,537	Apr. 23	127	3189
Hallenbeck, George M., assignor to Simeon L. & George H. Rogers Company, Wallingford, Conn. Handle for spoons, forks, or similar articles	38,532	Apr. 23	127	3188
Itter, Herbert C., Bay City, Mich. Photograph-easel	38,536	Apr. 23	127	3189
Mertz, Oscar E., Rosemont, Pa., assignor to Victor Talking Machine Company. Cabinet for talking-machines	38,538	Apr. 23	127	3189
Rockford Silver Plate Company. (See Bowlen, William C., assignor.)				
Simeon L. & George H. Rogers Company. (See Hallenbeck, George M., assignor.)				
Singer, Max A., New York, N. Y. Display-booth	38,539	Apr. 23	127	3189
Sjoden, Eric, Buffalo, N. Y., assignor to American Radiator Company. Radiator	38,535	Apr. 23	127	3189
Sjoden, Eric, Buffalo, N. Y., assignor to American Radiator Company. Radiator	38,540	Apr. 23	127	3190
Victor Talking Machine Company. (See Mertz, Oscar E., assignor.)				
Whittaker, Cyrus A., Freeburg, Ill. Badge or button	38,533	Apr. 23	127	3188

TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
A. Breslauer Company, Milwaukee, Wis. Bitters	62,226	Apr. 23	127	3212
A. J. Houghton Co., Roxbury, Mass. Beer	62,165	Apr. 23	127	3210
Advance Fence Co., Peoria, Ill. Wire fence	62,166	Apr. 23	127	3210
Alfred Hale Rubber Company, Boston, Mass. Rubber cement	62,162	Apr. 23	127	3209
American Manufacturing Company, New York, N. Y. Bagging	62,163	Apr. 23	127	3209
American Stove Company, Jersey City, N. J., and St. Louis, Mo. Gas, oil, and vapor stoves, burners, and ovens	62,168	Apr. 23	127	3210
André, Schaub & Ploso, Paris, France. Preparation for polishing finger-nails	62,215	Apr. 23	127	3211
Apfel & Earnest, Seattle, Wash. Composition paving and roofing material	62,228	Apr. 23	127	3211
Axel Bagge & Co., Gothenburg, Sweden. Arrac punch	62,169	Apr. 23	127	3210
Bamberger & Company, New York, N. Y. Certain clothing	62,194	Apr. 23	127	3210
Bay State Shoe & Leather Co., Worcester, Mass. Leather boots and shoes	62,143	Apr. 23	127	3209
Bay View Wine Co., Sandusky, Ohio. Bitters	62,125	Apr. 23	127	3209
Bertinoti, Peter J., New Orleans, La. Cleaner and polisher for metal and glass	62,216	Apr. 23	127	3211
Brown, Augustus L., Boston, Mass. Stockings	62,126	Apr. 23	127	3209
Buda Foundry & Manufacturing Company, Chicago, Ill. Drilling-machines and boring apparatus and drills and parts thereof	62,167	Apr. 23	127	3210
Burt & Co., Des Moines, Iowa. Prepared stock foods	62,144	Apr. 23	127	3209
Callard Stewart and Watt Limited, London, England. Certain food preparation	62,180	Apr. 23	127	3210
Citizens' Wholesale Supply Co., Columbus, Ohio. Lubricating oils and greases	62,181	Apr. 23	127	3210
Cleveland Mill and Power Company, Lawndale, N. C. Cotton clothes-lines	62,145	Apr. 23	127	3209
Cleveland Mill and Power Company, Lawndale, N. C. Cotton clothes-lines	62,146	Apr. 23	127	3209
Coast Manufacturing & Supply Co., Berkeley, Cal. Fuses	62,147	Apr. 23	127	3209
Collins Hardware Company, Lynn, Mass. Felt roofing	62,190	Apr. 23	127	3211
Corning and Company, Peoria, Ill. Gin	62,148	Apr. 23	127	3209
Cudahy Packing Company, Chicago, Ill., and South Omaha, Nebr. Abrasive cleansing, polishing, and scouring preparation	62,140	Apr. 23	127	3209
David C. Cook Publishing Company, Elgin, Ill. Monthly periodical	62,127	Apr. 23	127	3209
Dayton Spice Mills Co., Dayton, Ohio. Coffee	62,128	Apr. 23	127	3209
De Jean Perfumery Company, Chicago, Ill. Facial or complexion pastes or lotions	62,217	Apr. 23	127	3211
Desmond, R. E., St. Louis, Mo. Teeth and talcum powder	62,218	Apr. 23	127	3211
Dick and Brothers Quincy Brewery Co., Quincy, Ill. Beer	62,219	Apr. 23	127	3211
Dixie Portrait & Frame Co., Tampa, Fla. Portraits and photographs	62,204	Apr. 23	127	3211
Dixon Bartlett Co., Baltimore, Md. Ladies' and misses' leather shoes and slippers	62,129	Apr. 23	127	3209
Duff & Shade, Poland, Ohio. Remedy for asthma	62,130	Apr. 23	127	3209
E. I. du Pont Company, Wilmington, Del. Explosive powder	62,131	Apr. 23	127	3209
E. I. du Pont Company, Wilmington, Del. Gunpowder	62,220	Apr. 23	127	3212
Fazzio, Angelo, New Orleans, La. Pickles, mustard, catsup, chow-chow, and pepper	62,142	Apr. 23	127	3210
Fischer & Co., B., New York, N. Y. Coffee	62,149	Apr. 23	127	3210
Fort Smith Commission Company, Fort Smith, Ark. Roasted coffee	62,170	Apr. 23	127	3210
Fortune Bros. Brewing Company, Chicago, Ill. Malt extract	62,171	Apr. 23	127	3210
Gellenbeck, Albert H., Cincinnati, Ohio. Whisky	62,172	Apr. 23	127	3210
Geo. Borgfeldt & Co., New York, N. Y. Enameled steelware	62,196	Apr. 23	127	3211
Geo. Borgfeldt & Co., New York, N. Y. Dolls	62,173	Apr. 23	127	3210
Graf-Morsbach Company, Cincinnati, Ohio. Saddles, harness, bridles, and horse-collars	62,149	Apr. 23	127	3209
Grand Union Tea Co., Brooklyn, N. Y. Baking-powder	62,151	Apr. 23	127	3209
Great Western Manufacturing Company, Laporte, Ind. Bicycle crank-hangers	62,132	Apr. 23	127	3209
Guet & Sénac, New Orleans, La. Whisky	62,220	Apr. 23	127	3211
H. J. Heinz Company, Allegheny, Pa. Certain food products	62,152	Apr. 23	127	3209
Harnisch, Fritz, Berlin, Germany. Certain toilet preparations	62,174	Apr. 23	127	3210
Hartig Becker Plow Co., Evansville, Ind. Plows, harrows, and cultivators	62,175	Apr. 23	127	3210
Henry & Allen, Auburn, N. Y. Certain parts of agricultural machinery	62,205	Apr. 23	127	3211
Hess & Clark, Dr., Ashland, Ohio. Medicated stock foods	62,153	Apr. 23	127	3209
Hess & Clark, Dr., Ashland, Ohio. Medicated stock foods	62,197	Apr. 23	127	3211
Horton, Raymond M., Attleboro, Mass. Certain jewelry	62,206	Apr. 23	127	3211
Huegely Milling Company, Nashville, Ill. Wheat-flour	62,207	Apr. 23	127	3211
Imperial Bit & Snap Co., Racine, Wis. Certain metal manufactures	62,175	Apr. 23	127	3210
Indian Head Mills of Alabama, Walker county, Ala. Cotton piece goods and blankets	62,199	Apr. 23	127	3210
	62,154	Apr. 23	127	3209

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
J. G. McDonald Candy Company, Salt Lake City, Utah. Chocolates	62,184	Apr. 23	127	3210
Jay C. Wemple Co., New York, N. Y. Window-shade cloths	62,176	Apr. 23	127	3210
John C. Roth Packing Co., Cincinnati, Ohio. Lard	62,185	Apr. 23	127	3210
Johnson Educator Food Co., Boston, Mass. Certain bakery products and cereal foods	62,186	Apr. 23	127	3210
Jönköpings och Vulcans Tändsticksfabriksaktiebolag, Jönköping, Sweden. Matches	62,155	Apr. 23	127	3210
Kantor, David, New York, N. Y. Regulating-tea	62,221	Apr. 23	127	3211
Kraemer, Charles, Washington, D. C. Whisky	62,156	Apr. 23	127	3210
Lappe, Christian R., Allegheny, Pa. Shoe-leather	62,133	Apr. 23	127	3209
Locke Shoe Company, Wheeling, W. Va. Leather boots and shoes	62,134	Apr. 23	127	3209
Lopard, Nicholas, New York, N. Y. Egg-shampoo, cold and face-massage creams	62,222	Apr. 23	127	3211
Manufacturing Co. of America, Philadelphia, Pa. Candy and chewing-gum	62,187	Apr. 23	127	3210
Manufacturing Co. of America, Philadelphia, Pa. Candy and chewing-gum	62,188	Apr. 23	127	3210
Marden, Orth & Hastings, Boston, Mass. Certain vegetable materials	62,135	Apr. 23	127	3209
Mark Cross Company, New York, N. Y. Certain leather manufactures	62,233	Apr. 23	127	3212
Masetta Mfg. Co., Chicago, Ill. Ice-cream	62,223	Apr. 23	127	3211
Mosby & Cardoso, Richmond, Va. Hams and bacon	62,177	Apr. 23	127	3210
Muncie Brewing Co., Muncie, Ind. Beer	62,208	Apr. 23	127	3211
Nashua Manufacturing Company, Nashua, N. H. Cotton piece goods and cotton blankets	62,158	Apr. 23	127	3210
National Carbon Company, Cleveland, Ohio. Dry batteries	62,178	Apr. 23	127	3210
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	62,136	Apr. 23	127	3209
Pepsol Chemical Company, Nashville, Tenn. Remedy for certain diseases	62,224	Apr. 23	127	3211
Peroxident Manufacturing Company, St. Louis, Mo. Tooth-powder and tooth-paste	62,209	Apr. 23	127	3211
Petersburg Leather Company, Petersburg, Va. Mat-kid	62,234	Apr. 23	127	3212
Porcela Company, Pittsburg, Pa. Shampoo compounds and hair-tonics	62,210	Apr. 23	127	3211
Read & Sons, William, Boston, Mass. Leather boots and shoes	62,137	Apr. 23	127	3209
Reiss Bros. & Co., Chicago, Ill. Pipes	62,138	Apr. 23	127	3209
Reiss Bros. & Co., Chicago, Ill. Pipes	62,139	Apr. 23	127	3209
Review Publishing Company, New York, N. Y. Semimonthly periodical	62,237	Apr. 23	127	3212
Review Publishing Company, New York, N. Y. Semimonthly periodical	62,238	Apr. 23	127	3212
Rizza, Frank, Homestead, Pa. Hair-tonics and scalp applications	62,225	Apr. 23	127	3211
Roofbestos Manufacturing Co., St. Louis, Mo. Ready-prepared felt roofing	62,159	Apr. 23	127	3210
Rothwell, Bernard J., Boston, Mass. Wheat-flour	62,189	Apr. 23	127	3210
Sachs Shoe Mfg. Co., Cincinnati, Ohio. Women's, misses', and children's leather high and low shoes	62,140	Apr. 23	127	3209
Schmauser, Flora E., Chillicothe, Ohio. Cold cure	62,211	Apr. 23	127	3211
Setzler & Sons, P., Kansas City, Mo. Certain non-alcoholic beverages	62,190	Apr. 23	127	3211
Shields, Stone & Co., New York, N. Y. Mercerised woven cotton fabrics	62,160	Apr. 23	127	3210
Societe Anonyme de la Grande Distillerie E. Cusenier Fils Aine et Compagnie, Paris, France. Cordial	62,200	Apr. 23	127	3211
Sprague, Warner & Company. (See Union Bag and Paper Company, assignor.)				
Star Trading Company, Rochester, N. Y. Germicide, disinfectant, and antiseptic preparations	62,226	Apr. 23	127	3211
Stern & Saalberg Company, New York, N. Y. Pulling-candies	62,179	Apr. 23	127	3210
Stone, Sarah B., New Haven, Conn. Jellies	62,190	Apr. 23	127	3211
Straus, Gumat & Co., Richmond, Va. Whisky	62,227	Apr. 23	127	3210
Supplementary Spiral Spring Company, St. Louis, Mo. Automobile, carriage, and wagon springs	62,161	Apr. 23	127	3211
Sweeten-Crossman Electric Company, Philadelphia, Pa. Incandescent electric lamps	62,201	Apr. 23	127	3210
Taunton Rivet Company, Taunton, Mass. Rivets	62,162	Apr. 23	127	3210
Union Bag and Paper Company, New York, N. Y., assignor to Sprague, Warner & Company, Chicago, Ill. Paper bags, wrapping-paper, and paper-boards	62,141	Apr. 23	127	3209
United States Dental Chemical Co., Rockymount, Va. Alkaline deodorizing and non-irritating germicidal agent	62,212	Apr. 23	127	3211
Varoma Medical Company, Chatham, N. J., and New York, N. Y. Remedy for lung and throat diseases	62,228	Apr. 23	127	3211
W. T. Hanson Co., Schenectady, N. Y. Pills for diseases of the blood and nerves	62,229	Apr. 23	127	3211
W. T. Hanson Co., Schenectady, N. Y. Pills for diseases of the blood and nerves	62,230	Apr. 23	127	3212
W. T. Hanson Co., Schenectady, N. Y. Pills for diseases of the blood and nerves	62,231	Apr. 23	127	3211
Ward Medicine Company, J. L., Big Spring, Tex. Pills and headache-tablets	62,213	Apr. 23	127	3211
Warner & Co., William R., Philadelphia, Pa. Certain medicines	62,214	Apr. 23	127	3211
Watt, Andrew P., Baltimore, Md. Certain cork-pullers	62,163	Apr. 23	127	3210
William Underwood Company, Boston, Mass. Deviled ham	62,191	Apr. 23	127	3210
Wm. B. Riker & Son Company, New York, N. Y. Perfumes	62,232	Apr. 23	127	3212
Wolverine Suspender Co., Kalamazoo, Mich. Hose-supporters and suspenders	62,202	Apr. 23	127	3211
Wright & Ditson, Jersey City, N. J., and Boston, Mass. Certain knit garments	62,164	Apr. 23	127	3210

LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
A. Schilling and Company, San Francisco, Cal. "Schilling's Best." (For Coffee)	13,490	Apr. 23	127	3213
American Candy Company, Milwaukee, Wis. "King of Bitter Sweets." (For Candy)	13,485	Apr. 23	127	3213
Bender, Wm., Jr., Waukegan, Ill. "Altbräu." (For Beer)	13,491	Apr. 23	127	3213
Culver, Richard W., Detroit, Mich. "Hybrosiöna Mixture." (For a Medicine)	13,497	Apr. 23	127	3213
Dacus, Augusta, San Antonio, Tex. "Resinine." (For a Fire-Kindler)	13,501	Apr. 23	127	3213
Davis, William H., Cincinnati, Ohio. "Davis' Old Indian Cure." (For a Medicine)	13,498	Apr. 23	127	3213
De Zeabault and Co., Juano L., Cleveland, Ohio. "Queen Alexandrias of Judea." (For Cold-Cream)	13,494	Apr. 23	127	3213
Fitch, James B., Cincinnati, Ohio. "Dustdown." (For Powder to Clean Carpets, Rugs, and Floors)	13,502	Apr. 23	127	3213
Henderson, Stanley I., West Allis, Wis. "Atropine." (For a Medicinal Paste)	13,495	Apr. 23	127	3213
Las Dos Naciones Cigar Co., Nogales, Ariz. Ter. "Las Dos Naciones." (For Cigars)	13,496	Apr. 23	127	3213
Park & Tilford, New York, N. Y. "Mi Novia." (For Cigars)	13,487	Apr. 23	127	3213
Park & Tilford, New York, N. Y. "Mi Novia." (For Cigars)	13,488	Apr. 23	127	3213

LABELS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Fn. Kassel Co., New York, N. Y. "People's." (For Cigarettes)	13,459	Apr. 23	127	2213
Phillips, L. Z., Memphis, Tenn. "Phillips' Great Wahoo." (For Medicine)	13,455	Apr. 23	127	2213
Scheuman, Peter A., Philadelphia, Pa. "Scheuman's Standard Dark Lager Beer." (For Beer)	13,453	Apr. 23	127	2213
Scheuman, Peter A., Philadelphia, Pa. "Scheuman's Standard Light Lager Beer." (For Beer)	13,454	Apr. 23	127	2213
Vanderbeck, Mary S., New York, N. Y. "Up to Date." (For Soap)	13,450	Apr. 23	127	2213
Weller Bros., Portland, Ind. "Wellers Genuine Michigan Shoes." (For Shoes)	13,452	Apr. 23	127	2213

PRINTS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Collier & Son, P. F., New York, N. Y. "Victor Checker Board." (For Talking-Machines)	1,972	Apr. 23	127	2213
Lee Broom & Duster Company, Lincoln, Nebr. "Use the Lee the Broom With the Guarantee." (For Brooms)	1,968	Apr. 23	127	2213
Lytton, H. C., Chicago, Ill. "Men's and Boys' Apparel." (For Men's and Boys' Apparel)	1,969	Apr. 23	127	2213
Mosley Lemon Elixir Co., Atlanta, Ga. "Mosley's Lemon Elixir." (For Lemon Elixir)	1,964	Apr. 23	127	2213
Perry & Company, Philadelphia, Pa. "Perry's Fashions for Spring." (Sheet No. 5.)" (For Men's Sack-Suits)	1,966	Apr. 23	127	2213
S. Anargyros, New York, N. Y. "Mecca." (For Cigarettes)	1,965	Apr. 23	127	2213
United States Playing Card Company, Norwood, Ohio. "Erin and Expectation Backs, Congress Playing Cards." (For Playing-Cards)	1,973	Apr. 23	127	2213
Wade, A. G., Chicago, Ill. "'Just Out' of a Mandy Lee." (For Incubators)	1,970	Apr. 23	127	2213
Wade, A. G., Chicago, Ill. "Lee Poultry Supplies." (For Lice-Killer, Egg-Maker, Germocene, Sprayers)	1,971	Apr. 23	127	2213
Washburn, Crosby Company, Minneapolis, Minn. "It's a Biscuit Flour." (For Flour)	1,967	Apr. 23	127	2213

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
A/s. The Bergen Canning Co., Bergen, Norway. Canned, smoked, pickled, and preserved fish	28,145	Apr. 23	127	2222
Acme Ball-Bearing Company, Chappaqua, N. Y. Ball-bearing casters	28,139	Apr. 23	127	3194
Akin-Erskine Milling Co., Evansville, Ind. Wheat-flour	28,093	Apr. 23	127	3193
Allen Brothers Company, Omaha, Nebr. Cigars	28,095-6	Apr. 23	127	3193-4
Allen Brothers Company, Omaha, Nebr. Wheat-flour	28,097	Apr. 23	127	3194
Allen Brothers Company, Omaha, Nebr. Spices, preserves, olives, celery salt, &c.	28,098	Apr. 23	127	3194
Allen Brothers Company, Omaha, Nebr. Dried fruits and canned fruits and vegetables	28,111	Apr. 23	127	3194
Allen Brothers Company, Omaha, Nebr. Canned fruits and vegetables	28,112-14	Apr. 23	127	3195
Allen Brothers Company, Omaha, Nebr. Teas	28,115-16	Apr. 23	127	3195
American Hard Rubber Co., New York, N. Y. Electrical insulating material	5,169	Apr. 23	127	3191
American Thread Company, Jersey City, N. J. Spool and sewing cotton and thread	28,169	Apr. 23	127	3205
Appleton Electric Company, Chicago, Ill. Outlet-bushings for electric wiring	28,733	Apr. 23	127	3199
Austin Biscuit Company, Chelsea, Mass. Biscuit	28,088	Apr. 23	127	3191
Aymond, John P. W. S., Bunkie, La. Remedy for affections of the eye	28,089	Apr. 23	127	3191
Bailly & Cie., P., Paris, France. Shoulder-braces and suspenders	28,167-8	Apr. 23	127	3194
Bates Street Shirt Co., Lewiston, Me. Men's overshirts	28,084	Apr. 23	127	3205
Battle & Co., Chemists' Corporation, St. Louis, Mo. Anodyne	28,570	Apr. 23	127	3198
Battle & Co., Chemists' Corporation, St. Louis, Mo. Alterative	28,577	Apr. 23	127	3198
Battle & Co., Chemists' Corporation, St. Louis, Mo. Hypnotic	28,578	Apr. 23	127	3198
Battle & Co., Chemists' Corporation, St. Louis, Mo. Antipuruient	28,579	Apr. 23	127	3198
Behringwerk, Marburg, Germany. Remedy for tuberculosis	28,170	Apr. 23	127	3205
Bergens Varmroeri Molt Co., Bergen, Norway. Canned, smoked, pickled, and preserved fish	28,081	Apr. 23	127	3205
Berry Brothers, Limited, Detroit, Mich. Paint and varnish remover	28,087	Apr. 23	127	3205
Bissell, Williston W., Rochester, N. Y. Lenses for auto-goggles, spectacles, and eyeglasses	28,086	Apr. 23	127	3197
Bond, Elijah J., Charlestown, W. Va. Game-boards	28,083	Apr. 23	127	3205
Bristol Manufacturing Company, Bristol, Conn. Knitted underwear	28,094	Apr. 23	127	3198
Brookes & Crookes, Sheffield, England. Cutlery	28,703	Apr. 23	127	3199
Brooks, William A., Crab Orchard, Ky. Felt hats	28,091	Apr. 23	127	3192
Brunner & Son, T. C., Omaha, Nebr. Coffee	28,100	Apr. 23	127	3194
Cable Company, Chicago, Ill. Automatic piano-players and self-playing pianos	28,204	Apr. 23	127	3205
Cabot, Helen N., et al., executors. (See Cabot, Samuel.)	28,170	Apr. 23	127	3199
Cabot, Henry B., et al., executors. (See Cabot, Samuel.)				
Cabot, Samuel, deceased; H. B. and H. N. Cabot, Boston, Mass., executors. Stains, paint, &c.	28,737	Apr. 23	127	3199
Canet, Blaise, Lyons, France. Loaded cartridges	28,079	Apr. 23	127	3194
Camps & Co., Henry, San Francisco, Cal. Whisky	28,080	Apr. 23	127	3195
Canton Pharmacal Company, Canton, Ohio. Remedy for urinary diseases	28,731	Apr. 23	127	3195
Casey-Swasey Co., Fort Worth, Tex. Brandy, gin, and whisky	28,085	Apr. 23	127	3197
Cattaraugus Cutlery Company, Little Valley, N. Y. Knives, forks, shears, &c	28,092	Apr. 23	127	3200

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Cayey-Caguas Tobacco Company, New York, N. Y., and Caguas, Porto Rico. Cigars, cheroots, and cigarettes	28,225	Apr. 23	127	2206
Cereal Products Company, Baltimore, Md. Coffee substitute	28,104	Apr. 23	127	3202
Charles Mish Shoe Co., Cincinnati, Ohio. Leather boots and shoes	28,178	Apr. 23	127	3205
Cleveland-Akron Bag Co., Cleveland, Ohio. Paper bags	23,838	Apr. 23	127	3195
Cleveland-Akron Bag Co., Cleveland, Ohio. Paper bags	23,838-40	Apr. 23	127	3195
Cleveland-Akron Bag Co., Cleveland, Ohio. Paper bags	23,842	Ap.. 23	127	3195
Cleveland-Akron Bag Co., Cleveland, Ohio. Paper bags	23,846-7	Apr. 23	127	3195
Corn Products Refining Company, Jersey City, N. J. Corn-starch	25,980	Apr. 23	127	3200
Councilman, Frank D., Harrison Valley, Pa. Mineral and table waters and non-alcoholic carbonated beverages	25,901	Apr. 23	127	3200
Creddock-Terry Company, Lynchburg, Va. Leather boots and shoes	26,175	Apr. 23	127	3205
Cream of Wheat Co., Minneapolis, Minn. Wheat breakfast food	25,662-4	Apr. 23	127	3192-3
Eagle Paint & Varnish Company, Allegheny City, Pa. Paints, varnishes, stains, enamels, &c.	25,653	Apr. 23	127	3192
Empire Silk Co., Paterson, N. J. Silk piece goods	26,258	Apr. 23	127	3205
Enterprise Mowing & M. P. G. Co., Knoxville, Ill. Mouse and rat traps	24,285	Apr. 23	127	3195
F. A. Hardy & Co., Chicago, Ill. Ophthalmometers	4,227	Apr. 23	127	3191
F. E. Boynton & Co., Aurora, Ill. Coffee and tea	25,909	Apr. 23	127	3200
Fayette R. Plumb, Incorporated, Philadelphia, Pa. Slate-cutters' trimmers, axes, adzes, bush-hooks, &c	25,235	Apr. 23	127	3198
Fearey & Company, Faber, Newark, N. J. Cigars	25,874	Apr. 23	127	3202
Fischer Brothers, Seattle, Wash. Coffee	9,952	Apr. 23	127	3196
Fitch, Asa H., Indianapolis, Ind. Chewing-gum	25,212	Apr. 23	127	3191
Foster, Milburn Co., Buffalo, N. Y. Bitters	5,946	Apr. 23	127	3191
4-in-1, New York, N. Y. Wood finishes, stains, and varnishes	25,736	Apr. 23	127	3207
Frank & Company, Ivan, New York, N. Y. Reefers and overcoats	26,013	Apr. 23	127	3271
Freiberg, Sig. & Sol H., Cincinnati, Ohio. Whisky	3,778	Apr. 23	127	3199
Fried, Mendelsohn & Co., New York, N. Y. Silk dress goods	25,791	Apr. 23	127	3191
Fromm & Co. F. H., Philadelphia, Pa. Canned sardines	25,904	Apr. 23	127	3209
George E. Wye Company, Needham, Mass. Sweaters	25,568	Apr. 23	127	3190
Glenn Rock Mineral Spring Company, Waukesha, Wis. Still and carbonated waters	23,461	Apr. 23	127	3198
Globe Milling Company, Watertown, Wis. Wheat-flour	25,327	Apr. 23	127	3198
Globe-Wernicke Company, Cincinnati, Ohio. Bookcases, blank-cases, office-trays &c	25,404	Apr. 23	127	3205
Globe-Wernicke Company, Cincinnati, Ohio. Bookcases, blank-cases, office-trays, &c	25,405-6	Apr. 23	127	3197
Globe-Wernicke Company, Cincinnati, Ohio. Bookcases, blank-cases, office-trays, &c	25,411	Apr. 23	127	3198
Globe-Wernicke Company, Cincinnati, Ohio. Document-files and desk-pads	25,512	Apr. 23	127	3197
Globe-Wernicke Company, Cincinnati, Ohio. Hose-supporters	22,042	Apr. 23	127	3194
Gordon Manufacturing Company, New Rochelle, N. Y. Leather boots and shoes	25,420	Apr. 23	127	3197
Gunderson, Arne, Green Bay, Wis. Medicinal preparations for coughs, colds, &c	25,318	Apr. 23	127	3196
H. E. Bentley & Company, Chicago, Ill. Knitted underwear	25,642	Apr. 23	127	3198
H. L. Welsh Hosiery Co., Waterville, Conn. Corn-flakes	26,130-1	Apr. 23	127	3202
H-O'(Hornby's Oatmeal) Company, New York, N. Y. Coats, trousers, and shirts	25,593	Apr. 23	127	3198
Hershey Rice Manufacturing Company, Columbus, Ohio. Rice, England.				
James R. Crompton & Brothers Limited, Elton Paper Mills, near Bury, Lancashire, England. Wall-papers	11,904	Apr. 23	127	3192
Jenkins, Alfred B., New York, N. Y.; Boston, Mass., and Elizabeth, N. J. Rubber packing	23,048	Apr. 23	127	3194
Jonas & Colver, Limited, Sheffield, England. Cutlery	12,820	Apr. 23	127	3192
Joseph Allen & Sons, Limited, Sheffield, England. Knives, razors, and scissors	16,941	Apr. 23	127	3198
Joseph Allen & Sons, Limited, Sheffield, England. Cutlery	16,942	Apr. 23	127	3198
Joseph Allen & Sons, Limited, Sheffield, England. Cutlery	16,944	Apr. 23	127	3198
Joseph Rodgers & Sons, Limited, Sheffield, England. Cutlery	16,938-9	Apr. 23	127	3198
Kelley-How-Thomason Co., Duluth, Minn. Knives, razors, scissors, &c	26,232	Apr. 23	127	3205
Kelley-How-Thomason Co., Duluth, Minn. Hammers, screw-drivers, and shovels	26,233	Apr. 23	127	3205
Kelley-How-Thomason Co., Duluth, Minn. Washing-machines, wash tubs and boilers, and clothes-wringers	26,234	Apr. 23	127	3205
Kelley-How-Thomason Co., Duluth, Minn. Sewing-machines	26,236	Apr. 23	127	3205
Kelley-How-Thomason Co., Duluth, Minn. Stoves and ranges	26,237	Apr. 23	127	3196
Knastadter Bros., Chicago, Ill. Waist-belts	25,289	Apr. 23	127	3201
Lautemann, Henry L., Newark, N. J. Medicine for the cure of epilepsy, &c	25,952	Apr. 23	127	3199
Lodor, Halberstadt B., New York, N. Y. Artificial stone	25,772	Apr. 23	127	3198
Lopez Company, Boston, Mass. Saponaceous and alkaline compounds	17,229	Apr. 23	127	3201
Manhattan Brass Co., New York, N. Y. Kerosene-oil lamps	26,028	Apr. 23	127	3198
Mayet, A., New York, N. Y. Wreaths, crosses, artificial flowers, &c	25,556	Apr. 23	127	3199
Memphis Bros., New York, N. Y. Canned fruits and vegetables	25,853	Apr. 23	127	3205
Miller Manufacturing Company, New York, N. Y. Flavoring extracts	26,281	Apr. 23	127	3205
Morrissey, Frank T., Lowell, Mass. Whisky	26,197	Apr. 23	127	3195
Müller, Richard, Winnipeak, Conn. Umbrella-cover fabrics	24,282	Apr. 23	127	3201
National Refining Company, Cleveland, Ohio. Gasolene	25,957	Apr. 23	127	3197
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,450	Apr. 23	127	3197
Northwestern Fisheries Company, Seattle, Wash. Canned fish	25,472	Apr. 23	127	3197
Pandreosi Mfg. Co., New York, N. Y. Preparation for preventing gray hair, dandruff, and loss of hair	25,560	Apr. 23	127	3198
Parker, John M., Malden, Mass. Knitted socks, coats, and vests	14,644	Apr. 23	127	3192
Peroxident Manufacturing Company, St. Louis, Mo. Antiseptic germicide and deodorant	24,664	Apr. 23	127	3195
Peters Shoe Co., St. Louis, Mo. Shoes made wholly or in part of leather	26,199	Apr. 23	127	3208
Pfister Lead Company, Joplin, Mo. Lead pigments	26,238-9	Apr. 23	127	3205
Phrixus-Feuerfänger-Gesellschaft mit beschränkter Haftung, Hamburg, Germany. Hand fire-extinguishers	22,008	Apr. 23	127	3194
Prest-O-Lite Company, Indianapolis, Ind. Gas for inflating tires	26,077	Apr. 23	127	3202
R. E. Dietz Company, New York, N. Y. Oil-burning lanterns	14,190	Apr. 23	127	3196
R. E. Dietz Company, New York, N. Y. Lamp and lantern globes	18,796	Apr. 23	127	3196
Rampolo, William F., Reading, Pa. Motor-cycles	25,832	Apr. 23	127	3199
Rimmel Chemical Company, New York, N. Y. Toilet creams and shampoos	25,381	Apr. 23	127	3197
Robinson Bros. & Company Incorporated, Portland, Me., and Malden, Mass. Soap	26,289-91	Apr. 23	127	3205
Robinson Bros. & Company Incorporated, Portland, Me., and Malden, Mass. Soap	26,293	Apr. 23	127	3205
Robinson Bros. & Company Incorporated, Portland, Me., and Malden, Mass. Soap	26,295	Apr. 23	127	3205
Robinson Bros. & Company Incorporated, Portland, Me., and Malden, Mass. Soap	26,297-8	Apr. 23	127	3205
Robinson Bros. & Company Incorporated, Portland, Me., and Malden, Mass. Soap	25,994	Apr. 23	127	3205
Rollet, Henry, Muncie, Ind. Chocolates and bonbons	26,183	Apr. 23	127	3205
Schoenhofen & Nobis, New York, N. Y. Sarsaparilla	26,047	Apr. 23	127	3205
Simmons Hardware Company, St. Louis, Mo. Axes, hatchets, saws, scythes, grass-hooks, &c	25,617	Apr. 23	127	3198
Smith, Rhine and French Company, Philadelphia, Pa. Perfumeries, toilet waters, extracts, pomades, &c				

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Smith, Lycurgus, Mineral Wells, Tex. Mineral water and crystals resulting therefrom	21,303	Apr. 23	127	3194
Smithmade Suspender Co., Boston, Mass. Suspenders	20,296	Apr. 23	127	3197
St. Paul Syrup Refining Company, St. Paul, Minn. Syrup	21,327	Apr. 23	127	3200
Stallman, Frederick L., New York, N. Y. Paper, &c., to protect against insects	20,078	Apr. 23	127	3205
Standard Varnish Works, New York, N. Y. Floor, cabinet, hard-oil, and coat finish, and light, black, &c., finishing-varnish	20,300	Apr. 23	127	3206
Stix, Baer & Fuller D Goods Co., St. Louis, Mo. Corsets	21,271	Apr. 23	127	3194
Stover, John W., Grand Rapids, Mich. Remedy for inflammation and granulation of the eyes	18,195	Apr. 23	127	3195
Strauss, Max, New York, N. Y. Silk and silk and cotton piece goods	20,139	Apr. 23	127	3203
Taylor Bros., Camden, N. J. Poultry and pigeon foods	20,147	Apr. 23	127	3196
Toch Brothers, New York, N. Y. Dry colors used in making paints, varnishes, &c	21,045	Apr. 23	127	3200
Trimont Manufacturing Co., Boston, Mass. Monkey and pipe wrenches	20,021	Apr. 23	127	3201
United States Graphite Company, Saginaw, Mich. Graphite paint and pipe "cement"	24,701	Apr. 23	127	3195
United States Graphite Company, Saginaw, Mich. Graphite paint and pipe "cement"	24,702	Apr. 23	127	3196
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Condition-powders	11,196	Apr. 23	127	3193
Villeroy & Boch, Mettlach, Germany. China, stoneware, porcelain, &c	16,326	Apr. 23	127	3192
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	18,112	Apr. 23	127	3198
W. K. & C. Peace Ld., Sheffield, England. Files, saws, hay and straw knives, &c	16,946	Apr. 23	127	3198
Walker & Company, Wm. H., Buffalo, N. Y. Rubber boots and shoes	17,688	Apr. 23	127	3196
Wall Rice Milling Co., Limited, Lake Charles, La. Rice	20,089	Apr. 23	127	3201
Watson & Co., Angus, Newcastle-on-Tyne, England. Sardines	13,789	Apr. 23	127	3198
Weitzman, Isidor, New York, N. Y. Tarts	20,138	Apr. 23	127	3202
West Haven Mfg. Co., West Haven, Conn. Hacksaw-blades	20,080	Apr. 23	127	3201
Wilcox & Company, J. Fred, Chicago, Ill. Cigars	20,227	Apr. 23	127	3207
Wilkinson Sword Company, Limited, London and Sheffield, England. Cutlery	18,984	Apr. 23	127	3194
Willy, John, Chicago, Ill. Magazines	20,204	Apr. 23	127	3194

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE ISSUED ON THE 23D DAY OF APRIL, 1907.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Drawing.	Official Gazette. Volume.	Page.
Acetylene-generator	D. Barnard	851,613	Apr. 23	3610	1215	127	3173
Acid. Anthraquinone disulfonic	M. Jiljinsky	851,423	Apr. 23	3437	.....	127	3093
Acid of phenylnaphthimidazol and making same. Amido-oxy-sulfonic	O. Schulthess and L. Kerkovius	851,444	Apr. 23	3474	.....	127	3093
Adding-machine	G. N. Hinchman	851,089	Apr. 23	4749	1000	127	3090
Advertising novelty	A. Mariolle	851,397	Apr. 23	5191	1099-00	127	3091
Air-brake attachment	R. P. Williams	851,455	Apr. 23	5512	1154	127	3093
Air-compressor driving mechanism	B. Obear	851,556	Apr. 23	5606	1193	127	3089
Air cooler and purifier	C. W. Vollmann	850,985	Apr. 23	4552	954	127	3090
Air-ship	T. S. Baldwin	851,481	Apr. 23	5545	1161-2	127	3100
Air-signal, air-brake, and steam coupling. Automatic	H. C. Priebe	851,216	Apr. 23	5231	1096-7	127	3090
Alarm: *See* Burglar-alarm. Fire-alarm.	J. K. Stewart	851,261	Apr. 23	5107	1074	127	2997
Alarm device	J. A. Mudd	851,546	Apr. 23	5569	1187	127	3137
Album, Sectional	C. Ranson	850,965	Apr. 23	4524	947	127	3053
Alkali hydrates and zinc sulfid. Apparatus for producing	W. Feld	851,340	Apr. 23	5296	.....	127	3045
Ammonia from gases. Extraction of	T. Angerer	851,335	Apr. 23	5265	1103	127	3028
Animal-trap	M. J. O'Connor	850,980	Apr. 23	4517	945	127	2851
Apron-fastening device	J. Waldman	851,265	Apr. 23	5126	1078	127	3002
Atomizer	G. P. Frank	851,127	Apr. 23	4811	1014	127	2924
Auger-handle	F. A. Nelson	851,028	Apr. 23	4627	971	127	2980
Automobile	D. J. Deyo	851,502	Apr. 23	5589	1170	127	3117
Automobile-shield	W. G. Dunham	851,077	Apr. 23	4725	994	127	2994
Axle-box ltd. Car-	W. E. Hixon	851,133	Apr. 23	4822	1016	127	2926
Axles. Ball-bearing boxing for vehicle-	W. J. Greening	851,201	Apr. 23	4983	1047	127	2997
Axles or the like. Lubricating means for	W. H. Niemeyer	851,249	Apr. 23	5084	1070	127	3001
Baby-walker and swing. Combined	C. Hiering and A. Fuller	851,421	Apr. 23	5434	1138	127	3082
Bag-frame	J. A. Walsh	851,267	Apr. 23	5129	1079	127	3008
Bags, &c. Protective attachment for traveling-	A. K. Klingender and D. M. Coiner	851,524	Apr. 23	5627	1178	127	3127
Bale-tie	S. E. Gutridge	851,131	Apr. 23	4817	1015-16	127	2926
Baling-press	H. Löhnert	851,013	Apr. 23	4609	966	127	2978
Ball-mill							
Bar: *See* Sash-bar.							
Bath: *See* Photographic-printing bath.	P. F. Guthrie and T. Hayes	851,513	Apr. 23	5606	1174	127	3121
Bath-tube, basins, and like fixtures. Waste for							
Battery: *See* Dry battery. Secondary battery. Primary battery.							
Beam-setting press	M. Sklovsky	851,323	Apr. 23	5243	1099-1100	127	3033
Bearing. Ball-	H. Hess	851,419	Apr. 23	5430	1137	127	3080
Bearing for machine-spindles. Compensating	B. M. W. Hanson	851,005	Apr. 23	4590	962-3	127	2980
Bearings. Cage-ring for ball-	J. M. Model	851,019	Apr. 23	4617	966	127	2977
Belt-shifter controlling mechanism	A. B. Wales	851,576	Apr. 23	5744	1200	127	3150
Belt-tool	E. E. Barnett	851,482	Apr. 23	5547	1162	127	3107
Bench: *See* Fume-bench.							
Bench-pin	J. V. Kapp	851,292	Apr. 23	5150	1087-8	127	3018
Binder. Loose-leaf	W. H. Krehbiel	851,096	Apr. 23	4760	1003	127	3014
Binder and loose-sheet holder. Temporary	H. F. Bushong	851,276	Apr. 23	5143	1082	127	3006
Binder or loose-sheet holder. Temporary	H. F. Bushong	851,342	Apr. 23	5280	1106-7	127	3042
Block-signal. Automatic	N. C. Keeling	851,523	Apr. 23	5625	1178	127	3126
Block-signal system	J. Van Zandweghe and L. Viberti	851,456	Apr. 23	5493	1150	127	3094
Board: *See* Kick-board. Washboard. Moldboard.	E. Atwood	851,211	Apr. 23	5003	1052	127	2973
Bobbin							
Boiler: *See* Magazine-boiler. Water-tube boiler.	A. L. Hastings	851,088	Apr. 23	4748	999	127	2999
Boiler-furnace	E. H. Wade and J. L. Nicholson	851,329	Apr. 23	5253	1101-2	127	3028
Boiler furnace. Locomotive-	G. W. Case	851,159	Apr. 23	4896	.....	127	2947
Boiler-scales. Compound for the removal of	E. A. Stulz	850,980	Apr. 23	4547	952	127	2989
Bolt-cracker	H. M. Lindsay	851,536	Apr. 23	5649	1182	127	3153
Book for stamps, &c	C. E. Morehouse	851,301	Apr. 23	5203	1091	127	3084
Book or ledger and binder therefor. Separable loose-leaf	J. S. Murray	851,021	Apr. 23	4619	969	127	2978
Book-stock carrier	W. Smith	850,977	Apr. 23	4544	952	127	2988
Book-support	E. Stempel	851,141	Apr. 23	4834	1019	127	3020
Booth, Sleeping-							

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Boring and reaming tool. Annular	B. Brownstein	851,260	Apr. 23	4394	1130	127	2977
Bottle	C. B. Davis and A. T. Pugh	851,317	Apr. 23	4520	1216	127	3178
Bottle-cap	A. G. Kaufman	851,404	Apr. 23	4488	1130	127	3088
Bottle-handling apparatus	T. D. Kyle and E. H. Waugh	851,405	Apr. 23	4440	1139	127	3088
Bottle. Non-refillable	J. E. Duffy	851,309	Apr. 23	4526	1217	127	3176
Bottle or package. Non-refillable	W. J. Higman	851,308	Apr. 23	4522	968	127	3070
Bottle-stopper. India-rubber	C. J. Bailey	851,322	Apr. 23	4504	1062	127	3072
Bowling-alley ball-returning mechanism	E. Powers	851,399	Apr. 23	4700	1194	127	316
Box:							
See Fare-box. Outlet-box. Fruit-box. Police-patrol box. Fuse-box. Stuffing-box. Miter-box.							
Box	E. A. G. Bierwirth	851,098	Apr. 23	4998	987	127	2986
Box	C. M. Keels	851,337	Apr. 23	5510	1112	127	3048
Box-covering machine	J. Alger	851,393	Apr. 23	4688	984-5	127	3004
Box-opener, nail-puller, and hammer. Combined	J. L. Riley	850,983	Apr. 23	4530	948	127	2954
Boxing-machine	B. W. Tucker	851,359	Apr. 23	5111	1073-7	127	3060
Bracelet	A. G. Pearce	851,276	Apr. 23	5340	1119	127	3008
Bracket:							
See Extension-bracket.							
Braiding-machine	E. F. Parks and S. W. Wardwell	851,304	Apr. 23	4991	1048-50	127	299
Brake:							
See Fluid-pressure brake.							
Brake-shoe attachment for automobiles, &c	J. O'Leary	851,402	Apr. 23	5451	1142	127	3088
Brick or stone. Manufacture of sand lime or composite	A. S. Crocker	851,405	Apr. 23	5404	1132	127	3074
Bridge	M. R. Biron	851,114	Apr. 23	4798	1006	127	2998
Bridge-abutment	A. O. Cunningham	851,403	Apr. 23	5407	1133	127	3075
Bridle	R. H. Williams	851,400	Apr. 23	5510	1154	127	3088
Briquet-press	O. Busse	850,925	Apr. 23	4423	926	127	2930
Briquet-press	E. C. Hutchinson	851,337	Apr. 23	4998	983-4	127	2971
Broom	W. J. Tweedy	851,405	Apr. 23	5405	1130	127	3086
Broom-corn-combing machine	C. K. Miller	851,200	Apr. 23	4988	1047-8	127	2967
Brush container. Shaving-	G. A. Schmidt	851,403	Apr. 23	5473	1146	127	3091
Brush. Folding	J. Kronacher	851,397	Apr. 23	5502	1179	127	3139
Brush. Fountain-	W. L. Clark	851,297	Apr. 23	5705	1206	127	3163
Brush guard. Tooth-	J. C. Nevius	851,299	Apr. 23	5503	1191	127	3139
Brush. Tooth-	E. L. Detrick	851,301	Apr. 23	5503	1169	127	3117
Building construction	A. Mohr	850,948	Apr. 23	4488	949	127	2947
Building-sheet	W. L. Caldwell	851,348	Apr. 23	5382	1107	127	3048
Burglar-alarm	C. L. Wilkins	851,199	Apr. 23	4989	1042	127	2981
Burner:							
See Gas-burner. Stove gas-burner. Gas and air burner. Lamp or lantern burner.							
Burner attachment	G. Dawe	850,997	Apr. 23	4425	925	127	2931
Burner attachment	M. J. Wolfe	851,191	Apr. 23	4982	1042	127	2982
Burning vegetation and melting snow and ice. Device for	W. W. Lamb	851,011	Apr. 23	4988	984	127	2974
Butter-press and stamping-machine	A. Prince	851,406	Apr. 23	5489	1143	127	3089
Button. Collar-	N. Casey	851,116	Apr. 23	4796	1009	127	2921
Cabinet	O. M. Tate	851,360	Apr. 23	5357	1134-6	127	3064
Cabinet. Sanitary toilet-	J. Pfeffer	851,402	Apr. 23	5382	972	127	2981
Calculating-machine	A. J. Postans	851,405	Apr. 23	5454	1142	127	3087
Calendar. Record-	F. H. Rice	851,402	Apr. 23	5489	1145	127	3089
Camera	J. A. H. Hatt	851,302	Apr. 23	5776	1208	127	3166
Candy-cooling table	J. R. Windsor	851,149	Apr. 23	4974	1025	127	2961
Candy-machine	Y. Lisha	851,125	Apr. 23	4994	1017	127	2927
Car	J. J. McCarthy	851,283	Apr. 23	4921	969-70	127	2978
Car-bolster	T. R. Brown	850,926	Apr. 23	4418	924	127	2928
Car. Dump-	S. Otis	851,272	Apr. 23	5385	1119	127	3045
Car-dumping apparatus	F. W. Lovell	851,414	Apr. 23	4510	966	127	2978
Car-frame	W. H. Emerick and P. Alquist	851,220	Apr. 23	5044	1061-2	127	2981
Car-frame	W. H. Emerick and P. Alquist	851,220	Apr. 23	5045	1062	127	2982
Car-wheel	W. H. Emerick and P. Alquist	851,220	Apr. 23	5045	1062-3	127	2983
Cars. Collapsible and extensible safety-gate for street and other	R. P. Williams	851,404	Apr. 23	5511	1154	127	3090
Cars. Steam-heating system for railway-	M. L. Rohrer	850,960	Apr. 23	4532	948	127	2954
Carburetor for explosive-engines	R. E. Gold	850,988	Apr. 23	4485	932	127	2937
Carpet-cleaning apparatus. Nozzle for pneumatic	L. C. Freeman	851,305	Apr. 23	5459	1095	127	3019
Carpet-renovator	R. F. Disrens	850,930	Apr. 23	4427	926	127	2931
Carriage-window	R. H. Dussing	850,911	Apr. 23	4480	925-7	127	2928
Carrier:	C. Nicholson	850,980	Apr. 23	4514	944	127	2949
See Book-stock carrier.							
Carrier	R. W. Franklin	851,209	Apr. 23	4980	1047	127	2966
Carving-machine	E. R. Lochman	850,941	Apr. 23	4488	939	127	2946
Case:							
See Egg-case. Packing-case.							
Cash-carrier apparatus	D. E. Chism	851,344	Apr. 23	5388	1107-8	127	3042
Cash-register	T. H. Harris	851,315	Apr. 23	5380	1175	127	3122
Caster	E. A. Bode	851,320	Apr. 23	5388	1120	127	3039
Cattle-guard	K. B. Norman	851,421	Apr. 23	5460	1142	127	3089
Cellulose derivative and making the same	G. W. Miles. (Reissue)	12,637	Apr. 23	5387		127	3183
Cement and making same. Waterproof Portland	S. B. Newberry	851,307	Apr. 23	5381		127	2981
Chain-link shackle	G. A. H. Dressler	851,419	Apr. 23	5382	1217	127	3176
Chain. Ornamental	J. C. Hodges	851,288	Apr. 23	5473	1096	127	3016
Chain-tension and brake device	C. Contal	851,119	Apr. 23	4796	1010	127	2922
Chair:							
See Reclining-chair. Tilting-chair.							
Chair construction	J. H. Coffman	851,307	Apr. 23	4709	991	127	2991
Change-making machine	C. Ulmer	851,149	Apr. 23	4954	1023-5	127	2938
Chart. Adjustable	E. H. Peterson	851,274	Apr. 23	4948	1120	127	3057
Chart. Dress-	E. E. Dobbs	851,279	Apr. 23	5145	1088	127	3011
Check-handling device	M. Joseph	851,399	Apr. 23	5388	1178	127	3126
Chopper:							
See Cotton-chopper.							
Cigar-lighter	C. E. Bessel	851,216	Apr. 23	4987	1008	127	2977
Cigarette-machine	E. Georgii	850,951	Apr. 23	4447	939-1	127	2936

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Clamp:							
See Insulator-clamp. Vise-clamp. Tentering-machine clamp.							
Clip:							
See Spring terminal-clip.							
Clip for holding papers, clothing, &c	F. M. Bulkley	850,903	Apr. 23	4420	924	127	2930
Clock-escapement	M. Schucht	851,034	Apr. 23	4946	975	127	2933
Clock-escapement	H. D. Gardiner	850,920	Apr. 23	4446	930	127	2935
Clocks. Balance-wheel for	J. B. Gury	850,927	Apr. 23	4463	933-4	127	2938
Cloth-cutting machine	J. B. Gury	850,928	Apr. 23	4465	934	127	2939
Cloth-cutting machine	R. N. West	851,462	Apr. 23	5508	1153	127	3096
Clothes-drier	E. Merrifield	851,543	Apr. 23	5663	1186	127	3136
Clothes-line	C. C. Tillotson	850,981	Apr. 23	4548	953	127	2959
Clutch. Power-transmission	M. F. Williams	850,988	Apr. 23	4558	955	127	2962
Coal-crusher	C. J. Harkins	851,235	Apr. 23	5064	1063	127	2985
Cock. Gage-	S. J. Barnhouse	851,338	Apr. 23	5272	1104	127	3040
Cocks. Safety-clutch for air-brake angle-	J. Heinrichs	851,417	Apr. 23	5426	1136	127	3079
Coffee-urn	G. A. Le Fevre	851,532	Apr. 23	5641	1181	127	3121
Coffer-dam and caisson construction	S. W. Baldwin	851,182	Apr. 23	4979	1026-7	127	2943
Coiling-machine	P. T. Dunn	851,078	Apr. 23	4727	994	127	2905
Coin-holder	F. D. Powell and C. S. Ellis	851,281	Apr. 23	5098	1070	127	2992
Coin-registering mechanism	C. S. Ellis and F. D. Powell	851,282	Apr. 23	5161	1084	127	3013
Coins to receptacles. Means for controlling the admission of	J. Kerschgens	850,939	Apr. 23	4485	938	127	2944
Coke-oven	N. H. Devers and E. Williams	851,618	Apr. 23	5822	1216	127	3175
Cold-storage apparatus	J. H. Way	851,268	Apr. 23	5130	1079	127	3003
Collar-protector	E. J. Hughes	851,356	Apr. 23	5308	1111-12	127	3049
Collar shaper and drier	R. M. Dean	851,278	Apr. 23	5153	1083	127	3011
Collar-supporter. Detachable							
Comb:							
See Drying-comb.							
Combination-lock	H. C. Lowrie	850,942	Apr. 23	4490	939	127	2945
Composition of matter and making same	J. S. Robeson	851,378	Apr. 23	5355		127	3061
Composition of matter and making same	J. S. Robeson	851,379	Apr. 23	5357		127	3063
Composition of matter and making same	J. S. Robeson	851,380	Apr. 23	5358		127	3062
Composition of matter and making same	J. S. Robeson	851,381	Apr. 23	5360		127	3062
Concentrator	H. L. Lightner	851,426	Apr. 23	5442	1139-40	127	3094
Concrete-measuring machine	A. F. Nims	851,554	Apr. 23	5691	1192	127	3141
Concrete-mixing machine	A. F. Nims	851,553	Apr. 23	5687	1192	127	3140
Concrete-post mold	J. P. Donovan	851,503	Apr. 23	5590	1170	127	3117
Concrete reinforcement	G. Ibeck	851,169	Apr. 23	4916	1034	127	2951
Condenser. Metallurgical	W. M. Johnson	851,520	Apr. 23	5619	1177	127	3124
Confectioners. Machine for immersing cores or centers of	L. N. Hartog	851,236	Apr. 23	5056	1064	127	2986
Connecting-rod	J. F. Willeke	851,047	Apr. 23	4675	982	127	2992
Contractible mold	G. Georgenson and J. E. Hennen. (Reissue.)	12,630	Apr. 23	5868	1226	127	3185
Conveyer. Pneumatic	E. M. Bassler	851,054	Apr. 23	4686	985	127	2995
Cooking apparatus	W. F. Mills	851,018	Apr. 23	4616	968	127	2977
Cooking apparatus	G. R. Prowse	851,252	Apr. 23	5091	1071	127	2993
Cooler:							
See Air-cooler.							
Cop-tube	W. Koehler	851,095	Apr. 23	4768	1002	127	2974
Corn. Apparatus for processing sugar-	L. S. Fleckenstein	851,511	Apr. 23	5602	1173	127	3120
Corn-husker	E. H. Devilbiss	851,000	Apr. 23	4582	960	127	2967
Corset. Apparel-	D. Kops	851,525	Apr. 23	5629	1179	127	3127
Cotton chopper and cultivator	J. B. Farrar	851,622	Apr. 21	5827	1217-18	127	3177
Cotton-picking apparatus	A. P. Albert	851,475	Apr. 23	5531	1139	127	3104
Coupling:							
See Insulated coupling.							
Cream-separator	L. A. McLean	850,954	Apr. 23	4507	942	127	2949
Cross-arm pin	D. Weaver	851,577	Apr. 23	5747	1201	127	3160
Crusher:							
See Coal-crusher.							
Crusher	M. F. Williams	851,390	Apr. 23	5377	1127	127	3057
Cuff-holder and garment-supporter. Combined	J. Goodnough	851,414	Apr. 23	5422	1125-6	127	3079
Cultivator	H. Lindsay	851,537	Apr. 23	5651	1183	127	3134
Cultivator and planter. Combined	H. T. Monson. (Reissue)	12,641	Apr. 23	5873	1227	127	3186
Curling-iron. Electric	J. L. Burgard	850,904	Apr. 23	4421	924	127	2930
Curtain-fixture	L. B. and L. E. Reynolds	851,561	Apr. 23	5703	1195	127	3144
Cushioned wheel	R. P. Reid	851,105	Apr. 23	4781	1005	127	2917
Cutter:							
See Feed-cutter. Twine and thread cutter. Horseshoe-heel cutter. Paper-cutter.							
Cycle. Quadruplex	S. P. Shafer	850,973	Apr. 23	4537	950	127	2956
Dashboard-holder	J. W. Yochem	851,473	Apr. 23	5528	1158	127	3103
Delivery mechanism	W. Spalckhaver	851,184	Apr. 23	4945	1040	127	2959
Dental-engine moistening attachment	G. Bartlett	851,493	Apr. 23	5548	1162	127	3107
Desiccating apparatus	G. Malard	851,539	Apr. 23	5655	1183-4	127	3134
Die-securing means	C. N. Frey	851,350	Apr. 23	5297	1109	127	3045
Dish-washer	W. S. Bundy	851,584	Apr. 23	5762	1204-5	127	3163
Disk drill	S. E. Davis and T. Brennan, Jr	850,998	Apr. 23	4580	959-60	127	2957
Distilling. Exhaustion of head products in	E. Guillaume	851,286	Apr. 23	5169	1086	127	3015
Door-check	T. J. Younglove	851,150	Apr. 23	4977	1026	127	2942
Door-check	T. J. Younglove	851,192	Apr. 23	4993	1043	127	2983
Door-check	W. G. Bell	851,193	Apr. 23	4994	1043	127	2983
Door-controller	M. M. Moen	851,272	Apr. 23	5137	1081	127	3006
Door-frame. Adjustable	J. H. Burkholder	851,300	Apr. 23	5198	1091	127	3032
Door-hanger	J. F. Connell	851,064	Apr. 23	4705	990	127	2969
Door opening, closing, and locking device	W. T. Glass	851,616	Apr. 23	5817	1216	127	3174
Door-operating means	G. J. Weickert	851,592	Apr. 23	5773	1207-8	127	3165
Doubletree-hitch	E. J. Lamport	851,209	Apr. 23	5000	1051	127	2971
Douche. Vaginal	F. E. Abbott	851,530	Apr. 23	5638	1180	127	3120
Dough mixing and kneading machine	S. Shumway	850,991	Apr. 23	4564	966	127	2963
Draft-equalizer	G. Horvath	851,566	Apr. 23	5710	1187	127	3146
Draft-producing device	J. O. Neikirk	851,289	Apr. 23	5174	1089	127	3019
Draft-rigging	C. Sim	851,246	Apr. 23	5080	1051	127	2980
Drainer	A. T. Clapp and P. W. Bancroft	851,207	Apr. 23	4998	925	127	2979
Drawer-guide and support for knockdown furniture		850,906	Apr 23	4424			2933

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Drawing-knife handle. Folding	C. H. McCarty and F. A. Wooster	851,604	Apr. 23	5797	1211	127	3170
Dredger and excavator	M. P. Schetnel	851,688	Apr. 23	5837	1219-20	127	3170
Dredging and excavating machine	J. Kennedy	851,038	Apr. 23	4780	1001	127	3011
Dredging implement	W. C. McKinney	851,695	Apr. 23	5798	1213	127	3170
Drier:							
See Clothes-drier. Hair-drier.							
Dry battery	S. Cochrane	851,402	Apr. 23	5390	1131	127	3073
Drying-comb	E. Sutherland	851,847	Apr. 23	5712	1198	127	3146
Drill:							
See Disk drill.							
Drill or auger	A. C. Higginbotham	851,894	Apr. 23	5780	1208-9	127	3167
Dumb-bell	J. E. L. Pelletier and G. F. Monier	850,984	Apr. 23	4523	946	127	2983
Dumb-waiter and elevator	L. E. Laurent	851,178	Apr. 23	4826	1096-7	127	2994
Dust-pan	C. W. Robinson	851,441	Apr. 23	5472	1145	127	3091
Easel. Display-	J. B. Timberlake	851,271	Apr. 23	5717	1198	127	3140
Egg-case	W. H. Howell	851,289	Apr. 23	5783	1209	127	3167
Egg-lifter	C. F. Swanson	851,821	Apr. 23	5843	1222	127	3180
Electric-cable support	G. G. Raymond	851,376	Apr. 23	5345	1120-1	127	3083
Electric conductors. Means for bonding	H. P. Brown	851,340	Apr. 23	5277	1105-6	127	3061
Electric control mechanism	P. Synnestvedt	851,633	Apr. 23	5846	1222	127	3181
Electric generators. Voltage-regulator for series-wound	J. W. Welsh	851,461	Apr. 23	5608	1153	127	3097
Electric heater	E. E. Gold	850,934	Apr. 23	4458	932-3	127	2937
Electric-light shade and reflector	B. F. Norton	851,627	Apr. 23	5837	1219	127	3170
Electric-lighting device	A. M. Cornelius and W. V. Champlin	851,488	Apr. 23	5400	1131	127	3073
Electric motor	J. B. Gury	850,936	Apr. 23	4461	933	127	2938
Electric-motor-controlling device	J. D. Ihlder	851,339	Apr. 23	5004	1086	127	2988
Electric motors for driving sewing-machines, small lathes, &c. Controlling device for	A. H. Midgley and B. Reed	850,947	Apr. 23	4497	940	127	2947
Electrical heating element or resistance	E. G. Rivers	851,449	Apr. 23	5470	1145	127	3090
Electrical-impulse-counting switch	H. J. Roberts	851,681	Apr. 23	4526	973-4	127	2983
Electroplating. Making articles by	T. A. Edison	850,912	Apr. 23	4422	927	127	2932
Electroplating solution	R. H. Marshall	850,944	Apr. 23	4493		127	2946
Electrothermal switch	J. Erickson	851,410	Apr. 23	5410	1133	127	3075
Electrothermal switch	R. B. Hewitt and J. G. Nolan	851,420	Apr. 23	5421	1137	127	3081
Electrotype-plates. Method of and means for preparing and holding	H. A. W. Wood	851,049	Apr. 23	4676	983	127	2989
Elevator:							
See Grain-elevator.							
Elevator safety device	M. H. Ross	851,262	Apr. 23	5361	1123-3	127	3083
Elevator-stop	T. Waughtal	851,490	Apr. 23	5505	1153	127	3097
Elevator system. Door-controlled electric	R. H. Gay	851,086	Apr. 23	4745	999	127	2998
Elevators, &c. Automatic control system for	B. N. Jones	850,967	Apr. 23	4478	937	127	2942
End-gate fastener	D. C. Pasley	851,557	Apr. 23	5697	1193	127	3143
Engine:							
See Gas-engine. Rotary engine.							
Engine	G. McDowell	850,963	Apr. 23	4505	942	127	2940
Engine	A. L. and R. Bauer	851,196	Apr. 23	4967	1043-4	127	3063
Engine muffler. Explosive-	W. M. Brisben	851,490	Apr. 23	5561	1166	127	3110
Engine or motor	G. Lehberger	851,286	Apr. 23	5184	1088	127	3019
Engine reversing-gear. Traction-	D. S. Smith	851,448	Apr. 23	5479	1147	127	3092
Envelop. Safety-	G. Cataldi	851,117	Apr. 23	4796	1009	127	3021
Eraser-shield	H. I. Seddon	851,256	Apr. 23	5099	1073	127	2995
Exercising apparatus	J. H. Kellogg	850,926	Apr. 23	4484	938	127	2943
Exploding mines. Wireless receiving apparatus for	F. Schneider	850,973	Apr. 23	4535	949	127	2956
Extension-bracket	J. T. Batte	851,454	Apr. 23	5540	1162-3	127	3107
Extension-table. Pedestal	H. Nonnast and W. Tesar	851,207	Apr. 23	5214	1093-4	127	3039
Extractor:							
See Nail-extractor.							
Eye-guard	H. S. Covey	850,997	Apr. 23	4576	959	127	2998
Eyeglass-holder	P. J. Thompson	851,537	Apr. 23	5251	1101	127	3089
Eyeglasses	C. E. Mead	851,542	Apr. 23	5662	1185	127	3136
Fan. Centrifugal	J. Verner	851,457	Apr. 23	5496	1151	127	3096
Fare-box. Change-giving	D. G. McKenzie	851,208	Apr. 23	5207	1092-3	127	3024
Fastening device	F. H. Keys	851,173	Apr. 23	4920	1035	127	2963
Fastening device	F. Duby	851,238	Apr. 23	5041	1061	127	2981
Fat-cutting machine	E. H. Bump	851,514	Apr. 23	5815	1215	127	3174
Faucet	J. J. Fitzgibbon and J. M. Travis	850,916	Apr. 23	4440	928	127	2934
Faucet. Self-closing	C. Bergmann	851,467	Apr. 23	5556	1165	127	3110
Feed-cutter	A. T. Sheward	851,221	Apr. 23	5240	1098	127	3033
Feed-water heater	S. J. Logan and D. V. Richardson	851,089	Apr. 23	4773	1003	127	2915
Feeder. Poultry-	W. O. Rogers	851,220	Apr. 23	5238	1098	127	3032
Fence-bench	S. L. Bailey	851,112	Apr. 23	4791	1007	127	2920
Fence or dike	J. W. Humphrey	850,519	Apr. 23	4517	1177	127	3124
Fence-post	G. G. Seymour	851,445	Apr. 23	5476	1146	127	3092
Filing system. Mail and order	N. M. Sweet and G. K. Sawaya	851,145	Apr. 23	4983	1021	127	2937
Filter	W. J. Archer	851,194	Apr. 23	4966	1043	127	2963
Fire-alarm. Electric	W. H. H. Everett	851,506	Apr. 23	5505	1171	127	3118
Fire. Extinguishing	C. Brent	851,274	Apr. 23	5141	1081	127	3005
Firearm. Recoil-operated	G. Luger	851,238	Apr. 23	5463	1183	127	3134
Fish. Apparatus adapted for collecting and cultivating shell-	A. G. Waterhouse	851,332	Apr. 23	5240	1102	127	3037
Floor-scraper	J. Kelling	851,010	Apr. 23	4926	965	127	2974
Flue-cleaner	L. C. Kleidon	851,134	Apr. 23	4923	1017	127	2927
Fluid-pressure brake	F. L. Clark	851,277	Apr. 23	5151	1082-3	127	3010
Flushing-tank	C. Willms	850,989	Apr. 23	4559	955	127	2962
Fly-catcher	C. A. Arents	851,478	Apr. 23	5539	1160	127	3105
Food compound and preparing same. Sweetened	E. D. Chaplin	851,221	Apr. 23	5030		127	2978
Forms. Duplicating	G. L. Anderman	851,391	Apr. 23	5378	1127-8	127	3057
Fountain:							
See Stock-fountain.							
Fourdrinier machine	W. Eibel	851,227	Apr. 23	5042	1061	127	2981
Frame:							
See Bag-frame. Winding-frame. Car-frame. Window-frame. Door-frame.							
Friction or massage appliance	W. Bleakley	851,469	Apr. 23	5560	1166	127	3110
Fruit-box	P. Henrich	851,122	Apr. 23	4931	1016	127	2926

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fuel and making same. Composition of matter for	E. L. Culver	851,407	Apr. 23	5405		127	3074
Fuel. Consuming	E. H. Wade and J. L. Nicholson	851,220	Apr. 23	5255	1102	127	3037
Furnace:							
See Boiler-furnace.							
Furnace	A. Rhonemus	851,438	Apr. 23	5467	1144-5	127	3089
Furnace fuel-feeding device. Boiler-	J. and W. Reagan	851,253	Apr. 23	5095	1071-2	127	2994
Furnace grate. Boiler-	F. W. Ridlon	851,318	Apr. 23	5234	1097	127	3031
Furnace skimmer. Blast-	C. D. Irvin	851,596	Apr. 23	5763	1208	127	3167
Furnace top. Blast-	J. W. Gocher	851,128	Apr. 23	4812	1014	127	2924
Fuse-box	C. Remelius	851,560	Apr. 23	5701	1194	127	3144
Fuse. Electric	U. G. Rogers	851,033	Apr. 23	4643	974	127	2984
Fuse or cut-out. Electric	L. B. Buchanan	851,157	Apr. 23	4892	1029	127	2946
Gage:							
See Limit-gage.							
Galvanometer	J. Broich	851,156	Apr. 23	4888	1028-9	127	2945
Game apparatus	L. J. Castonguay	851,402	Apr. 23	5567	1167	127	3112
Game or toy. Race	H. Egg	850,914	Apr. 23	4437	928	127	2933
Garment	A. Berman	851,488	Apr. 23	5550	1165-6	127	3110
Garter-band	C. Bloomberg	851,219	Apr. 23	5028	1058	127	2976
Gas and air burner	D. Cooley	850,996	Apr. 22	4575	958	127	2965
Gas-burner	H. A. Darling	851,346	Apr. 23	5291	1109	127	3048
Gas-burner attachment	J. D. Sheehan	851,564	Apr. 23	5707	1195	127	3145
Gas-engine	J. W. Lippincott	851,176	Apr. 23	4932	1037	127	2955
Gas-generating apparatus	W. E. Leonard	851,360	Apr. 23	5314	1113	127	3080
Gas-pipe. Extensible	G. W. Thorn	851,509	Apr. 23	5715	1197	127	3147
Gate-opener	E. T. Morris	851,020	Apr. 22	4618	968-9	127	2977
Gear. Adjustable	E. T. Mathewson	851,180	Apr. 22	4940	1038	127	2957
Gear. Machine-	S. W. Smith and A. Hollinger	851,449	Apr. 23	5482	1147	127	3093
Gearing	M. H. Ballard	851,213	Apr. 23	5004	1052	127	2972
Gearing. Change-speed	S. Bramley-Moore	850,901	Apr. 23	4416	923	127	2936
Generator:							
See Acetylene-generator. Power-generator.							
Gilding-tool	W. H. Coe	851,615	Apr. 23	5816	1215	127	3174
Gin	W. F. Overmyer	851,309	Apr. 23	5218	1094	127	3027
Gin	W. F. Overmyer	851,310	Apr. 23	5219	1095	127	3027
Glass-blowing machine	C. A. Tatum	851,262	Apr. 23	5110	1075	127	2997
Glass. Opaque	A. L. Reinmann	851,317	Apr. 23	5233		127	3031
Glassware. Manufacture of hollow	C. F. Cox	851,163	Apr. 22	4901	1031-2	127	3048
Grain-binder attachment	W. N. Lux and J. C. Schwenk	851,177	Apr. 23	4934	1037	127	2955
Grain-elevator. Beltless and chainless drive	W. Polis	851,315	Apr. 23	5230	1096	127	3030
Grass-beater	A. G. Stimpke	851,452	Apr. 23	5487	1149	127	3094
Grate	H. F. Rasor	851,608	Apr. 23	5802	1213	127	3171
Grate. Rotatable	O. Trossin	851,043	Apr. 23	4667	981	127	2980
Grater-guard	A. L. Lewis	851,602	Apr. 23	5795	1211	127	3170
Grinding machine. Razor-blade-	F. W. Blasberg	851,057	Apr. 23	4693	987	127	2986
Grindstones, emery-wheels, &c. Rest and dresser for	F. Trier	851,328	Apr. 23	5252	1101	127	3036
Gun. Automatic	W. H. Bevans and C. W. Bartholmes	851,196	Apr. 23	4970	1044-5	127	2964
Gun-mount	L. V. Benét and H. A. Mercié	851,485	Apr. 23	5553	1163-5	127	3109
Gun-trigger. Auxiliary	J. H. Keyse	851,626	Apr. 23	5836	1219	127	3179
Guns having recoil action on the carriage from the firing position to the traveling position and the converse. Means for moving the barrels of	K. Völler	850,984	Apr. 23	4551	953-4	127	2980
Hair-drier	C. O. Falkenstrom and U. L. Sundblad	851,283	Apr. 23	5164	1085	127	3013
Handle:							
See Auger-handle. Valve-handle. Drawing-knife handle.							
Hanger:							
See Door-hanger. Pipe-hanger. Lamp-hanger.							
Harness	W. J. Parvin	851,312	Apr. 23	5223	1095	127	3028
Harness-hook	L. James	851,092	Apr. 23	4759	1001	127	2911
Harrow	S. H. Garst	851,085	Apr. 23	4743	998	127	2908
Harrow	C. H. Forshey	851,128	Apr. 23	4810	1018	127	2924
Harrow-teeth, to their supporting-bars. Adjustable fastener for securing	G. W. Willis	851,580	Apr. 23	5751	1201	127	3161
Harvester. Corn-	H. Broome	851,059	Apr. 23	4996	988	127	2997
Harvester. Corn-	H. Broome	851,060	Apr. 23	4999	988	127	2998
Harvester. Corn-	H. Broome	851,061	Apr. 23	4999	989	127	2998
Hay-press	H. Broome	851,322	Apr. 23	5241	1098	127	3032
Hay rake and loader	T. E. and S. R. Sikes	851,499	Apr. 23	5577	1169	127	3114
Hay, wood, and stock rack	G. A. Culver	851,087	Apr. 23	4746	999	127	2908
Headlight	F. Goodsell	851,305	Apr. 23	5212	1093	127	3026
Heat-coil	E. H. McLaughlin and E. S. Sittel	851,051	Apr. 23	4981	984	127	2994
Heater:	A. H. Adams						
See Electric heater. Water-heater. Feed-water heater.							
Heater	H. S. Durand	851,002	Apr. 23	4586	961	127	2968
Heating apparatus	D. J. F. Buck	851,400	Apr. 23	5395	1131	127	3072
Heating system	H. C. Mallory	851,363	Apr. 23	5320	1114-16	127	3051
Heel-creeper. Hydraulic	O. F. Leibert	851,240	Apr. 23	5069	1086	127	2988
Hinge. Window-	R. S. Dana	851,224	Apr. 23	5036	1080	127	2979
Hoisting-machine-starting device	J. D. Ihlder	851,291	Apr. 23	5176	1087	127	3017
Hook:							
See Harness-hook. Snap-hook.							
Hook	W. C. Fisher	851,509	Apr. 23	5590	1172	127	3119
Horseshoe	C. Manley	851,243	Apr. 23	5074	1088	127	2989
Horseshoe-heel cutter	H. C. Goldsmith	850,925	Apr. 23	4460	933	127	2938
Hose-nozzle	J. A. Long	851,603	Apr. 23	5795	1211	127	3170
Hosiery. Manufacture of seamless	E. E. Kilbourn	850,940	Apr. 23	4486	938	127	2944
Hot-air-register attachment	J. M. Dietz, C. W. Andersen, and J. W. Farrell	851,198	Apr. 23	4978	1046	127	2966
Hotel-register and account-checking system. Combined	T. J. Raftican	851,437	Apr. 23	5464	1144	127	3089
Hugger. Automatic	P. H. Flateau	851,124	Apr. 23	4907	1012	127	2922
Hydraulic motor	J. Schaeffer	851,255	Apr. 23	5097	1072-3	127	2994
Hydrocarbon derivatives. Preparation of water-soluble	F. Boleg	850,898	Apr. 23	4412		127	2927

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'gs.	Official Gazette. Vol.	Official Gazette. Page.
Incubator-heaters. Moisture-supplying device for	C. Z. Davis	851,347	Apr. 23	5292	1109	127	2845
Index-rod lock. Card-	P. H. Yawman	850,990	Apr. 23	4562	955–6	127	2862
Indicator:							
See Leakage-indicator. Street or station indicator.							
Injector	W. T. Strain	851,041	Apr. 23	4663	980	127	2880
Insulated coupling	S. N. Shields	851,445	Apr. 23	5477	1146	127	3092
Insulated electric wires. Branch box for	M. Havens, Jr. (Reissue)	12,640	Apr. 23	5899	1226–7	127	3118
Insulator-clamp	W. G. Clark	851,222	Apr. 23	5032	1059	127	2979
Iron:							
See Curling-iron. Soldering-iron. Sad-iron.							
Ironing-table	J. E. Ratcliff	850,966	Apr. 23	4526	947	127	2853
Jack:							
See Wagon-jack.							
Jack	J. H. Pearson	851,313	Apr. 23	5224	1095–6	127	3028
Joint:							
See Rail-joint. Stovepipe-joint.							
Journal-box	W. Stevenson	851,234	Apr. 23	5247	1100	127	3026
Journal box and lid	A. O. Buckius, Jr.	851,063	Apr. 23	4704	989–90	127	2890
Kick-board	W. H. Nicolay	851,582	Apr. 23	5686	1191	127	3140
Knitting-machine striping device	D. F. Sullivan	851,042	Apr. 23	4665	980	127	2880
Lace	F. Cranssey	851,404	Apr. 23	5402	1132	127	3074
Lacing	H. H. Cummings	851,073	Apr. 23	4717	993	127	2891
Lacing shoe-uppers. Machine for automatically	W. A. Smith. (Reissue)	12,638	Apr. 23	5860	1224–6	127	3184
Lamp	W. Churchill	851,496	Apr. 23	5572	468	127	3113
Lamp. Electric-arc	O. Gross	851,003	Apr. 23	4587	961–2	127	2880
Lamp fixture. Electric-	J. B. McGinley	851,024	Apr. 23	4626	970	127	2880
Lamp hanger or support. Arc-	J. E. Joyce	851,009	Apr. 23	4602	964	127	2873
Lamp or lantern burner	G. H. Rolfes	851,219	Apr. 23	5237	1098	127	3032
Lamp-suspension device	E. Weber	850,936	Apr. 23	4554	954	127	2880
Lamp. Vapor-	C. T. Eward	851,340	Apr. 23	5293	1109	127	3045
Latch. Door-	G. E. Cadwell	851,186	Apr. 23	5186	1088–9	127	3020
Latch-stand. Automatic	M. W. Long	851,294	Apr. 23	5294	1029	127	2947
Lathe-turret	C. E. Benson	851,217	Apr. 23	5027	1058	127	2977
Leakage-indicator for high-tension lines	J. E. Woodbridge and J. B. Taylor.	851,140	Apr. 23	4875	1026	127	2948
Ledger. Loose-leaf	H. F. Bushong	851,273	Apr. 23	5142	1082	127	3006
Leg. Artificial	F. Buchstein	850,994	Apr. 23	4571	958	127	2865
Lice-killing machine	C. H. Lee	851,098	Apr. 23	4772	1003	127	2915
Lifter:							
See Egg-lifter. Plate and pan lifter.							
Light:							
See Sidewalk-light.							
Lightning-arrester	A. W. Ball and M. T. Seymour	851,362	Apr. 23	5380	1128	127	3038
Lightning-arrester, fuse-box, and insulator. Combined	R. R. Burrin and T. F. Geebler	851,482	Apr. 23	5565	1167	127	3111
Limit-gage	C. E. Fetherolf	851,307	Apr. 23	5986	1172	127	3119
Linotype-machine	T. S. Homans	851,226	Apr. 23	5062	1065–6	127	2988
Liquid distributing or dividing apparatus	H. H. Sutro and L. M. Booth	851,448	Apr. 23	5713	1197	127	3147
Liquids, &c. Apparatus for mechanically mixing or combining	F. J. M. Berberich	851,153	Apr. 23	4984	1027	127	2944
Loading, unloading, and transporting apparatus	E. S. Boyd	851,155	Apr. 23	4986	1028	127	2944
Lock:							
See Combination-lock. Safety-lock. Index-rod lock. Sash-lock. Nut-lock.							
Lock	H. Ahrend	850,991	Apr. 23	4397	921	127	2823
Lock	F. J. Vieweg	851,574	Apr. 23	5721	1199	127	3140
Lock-strike	R. B. Swift	851,575	Apr. 23	5733	1200	127	3154
Logging-car standard	C. H. Allen	851,109	Apr. 23	4788	1006	127	2919
Loom cutting attachment	A. Tilt	851,476	Apr. 23	5533	1150	127	3104
Loom-picker	L. Pilling	851,570	Apr. 23	5716	1198	127	3147
Loom shuttle-binder	N. Blanchette	851,320	Apr. 23	5098	1070	127	3001
Loom warp stop-motion	W. R. Stitt and A. J. Davidson	851,545	Apr. 23	5657	1186	127	3137
Loom warp stop-motion	E. Barnes	851,040	Apr. 23	4660	978–80	127	2889
Looms. Picking-cam for	J. F. Donohue	851,227	Apr. 23	5260	1104	127	3039
Lubricator	W. and J. W. Layland	851,226	Apr. 23	5040	1061	127	2981
Machine-rolls	C. F. Steiber	851,289	Apr. 23	5312	1112	127	3039
Magazine-boiler	A. B. Reck	851,451	Apr. 23	5484	1148	127	3094
Magnetic materials. Manufacture of	R. A. Hadfield	851,690	Apr. 23	4636	972–3	127	2962
Massage apparatus	G. W. Fitz and F. W. Hitchings	851,625	Apr. 23	5851	.....	127	3182
Mattress-frame corner-cap. Wire-	E. A. Sammons	851,510	Apr. 23	5600	1172	127	3120
Measuring and forming device	M. A. Flinn	851,563	Apr. 23	5707	1195	127	3145
Measuring apparatus. Siphonic	E. O. Linton	851,294	Apr. 23	5165	1085	127	3014
Measuring machine. Height-	J. McNish and L. W. Gray	851,241	Apr. 23	5071	1066–7	127	2988
Mechanical movement	E. J. Hannah	850,945	Apr. 23	4908	943–4	127	2940
Mechanical movement	H. A. Houseman	850,930	Apr. 23	4468	934	127	2940
Metallic leaf to a stamping-press. Means for feeding	W. H. Coe	850,934	Apr. 23	4473	936	127	2941
Metals. Purifying	P. L. T. Héroult	851,162	Apr. 23	4899	1030	127	2948
Meter:		851,167	Apr. 23	4913	.....	127	2951
See Telephone-meter.							
Middlings-purifier	R. Och	850,969	Apr. 23	4514	945	127	2851
Milking-machine-operating device	B. and F. Ljungström	851,136	Apr. 23	4926	1017-	127	2938
Mill:							
See Ball-mill. Rolling-mill.							
Mine-tunnels. Artificial timbering for	D. W. Shepard	851,620	Apr. 23	5839	1220	127	3180
Mines. Controlling mechanism for submarine	J. A. Rey	850,967	Apr. 23	4927	947–8	127	2853
Mineral-separating apparatus	J. F. Latimer	851,599	Apr. 23	5788	1210	127	3160
Minerals. Separating	R. L. McCartney	851,600	Apr. 23	5791	1210	127	3160
Miter-box	A. Orzechowski	851,023	Apr. 23	4623	970	127	2879
Moccasin	B. D. Burdick	850,961	Apr. 23	4519	945	127	2851
Moistener and the like. Envelop-	A. S. Hickley	851,115	Apr. 23	4795	1009	127	2920
Moisture from closed cases. Means for removing		851,516	Apr. 23	5612	1175–6	127	3123
Mold:							
See Concrete-post mold. Contractible mold.							
Mold and centering device for sewers, conduits, &c	J. B. Blaw	851,295	Apr. 23	5385	1129	127	3009
Molding device. Cornice-	H. E. Sharp	851,036	Apr. 23	4648	976	127	2885
Molding-machine	C. Herman	851,166	Apr. 23	4909	1032–3	127	2950
Molding machine. Sand-	J. J. Fleming, P. J. Trub, and W. H. Blackton.	851,125	Apr. 23	4808	1013	127	2923
Molding tool. Cornice-	H. E. Sharp and L. Kentana	851,035	Apr. 23	4647	975	127	2885
Moldboard	J. F. Parker	850,962	Apr. 23	4520	946	127	2852
Monkey-wrench	H. B. Hardy	851,416	Apr. 23	5425	1136	127	3079
Mop-wringing device	C. L. Kraber	851,526	Apr. 23	5632	1179	127	3128
Mortising window-frames for sash-pulleys. Machine for	T. A. Moss	851,244	Apr. 23	5076	1068	127	2989
Mosquito netting and bar	J. B. R. Noble	851,429	Apr. 23	5447	1141	127	3085
Motor:							
See Electric motor. Pneumatic motor. Hydraulic motor. Wave-motor.							
Motor	P. Synnestvedt	851,632	Apr. 23	5844	1222	127	3181
Motor-extension receptacle	G. Willius, Jr.	851,581	Apr. 23	5752	1202	127	3161
Mower. Lawn-	S. M. Dobson	851,075	Apr. 23	4722	993–4	127	2894
Music-roll for mechanical musical instruments	H. P. Ball	850,892	Apr. 23	4400	921	127	2824
Music-stand	C. F. Daly and H. C. Morrison	850,998	Apr. 23	4577	959	127	2866
Musical instrument	T. A. and J. B. Connolly	851,634	Apr. 23	5849	1223	127	3181
Musical instrument. Mechanical	P. Wuest, Jr.	851,471	Apr. 23	5523	1157	127	3103
Musical instrument. Mechanically-operated	J. W. Stevenson and S. L. Dickinson.	851,185	Apr. 23	4947	1040	127	2969
Musical instruments. Automatic playing mechanism for	P. Wuest, Jr.	851,470	Apr. 23	5519	1156	127	3101
Nail-extractor	S. D. Hyde	851,290	Apr. 23	5175	1087	127	3016
Napkin supporter and holder	E. C. Rink	851,107	Apr. 23	4784	1006	127	2918
Neckband-ring	B. C. Donnelly and C. K. McKnight.	851,076	Apr. 23	4724	994	127	2904
Necktie former and holder	T. H. Noonen	851,430	Apr. 23	5448	1141	127	3085
Nose-shaper	I. N. Soares	850,978	Apr. 23	4544	952	127	2858
Nostril-expander	H. R. Woodward	851,048	Apr. 23	4676	983	127	2893
Nozzle. Spraying-	J. H. Ruff	851,562	Apr. 23	5705	1195	127	3145
Numbering-machine	E. G. Bates	850,895	Apr. 23	4406	922	127	2825
Numbering-machine plunger	E. G. Bates	850,894	Apr. 23	4404	922	127	2825
Nut-cracker	M. A. Wheaton	851,210	Apr. 23	5001	1051	127	2971
Nut-lock	T. R. Horn	850,933	Apr. 23	4473	935	127	2841
Nut-lock	L. P. Shaw	850,975	Apr. 23	4540	951	127	2857
Nut-lock	W. T. Solomon	851,037	Apr. 23	4650	976	127	2886
Nut-lock	M. Neiburger	851,606	Apr. 23	5799	1212	127	3171
Nut-lock	A. L. McMurtry	851,181	Apr. 23	4941	1039	127	2967
Nut-wrench. Magazine-socket	J. W. Nesmith	851,306	Apr. 23	5214	.....	127	3026
Ointment	O. K. McCutcheon	850,952	Apr. 23	4504	942	127	2848
Ore pulverizer and concentrator	H. H. Wait	851,046	Apr. 23	4673	982	127	2892
Ore-separator. Magnetic	L. T. La Paugh	851,597	Apr. 23	5788	1210	127	3168
Outlet-box	L. T. La Paugh	851,598	Apr. 23	5787	1210	127	3168
Outlet-box	A. T. Kruse	851,097	Apr. 23	4770	1008	127	2914
Packing-case. Sheet-metal	E. W. Allen	851,583	Apr. 23	5761	1204	127	3162
Pan:	W. H. Golding	851,413	Apr. 23	5421	1135	127	3078
See Dust-pan.	H. Born	850,899	Apr. 23	4413	923	127	2827
Paper boxes, &c. Stay for	F. Meisel	851,015	Apr. 23	4611	956–7	127	2875
Paper-cutter	W. L. Clark	851,586	Apr. 23	5765	1205	127	3163
Paper-fastener	W. E. Hassam	851,625	Apr. 23	5834	.....	127	3178
Paper slitting and rewinding machine	C. Mettler	851,544	Apr. 23	5665	1186	127	3135
Paste-tube	C. A. Faber	851,081	Apr. 23	4731	995	127	2908
Pavement. Laying	D. McKenzie	851,025	Apr. 23	4627	970	127	2880
Pea-shelling device	W. F. Nehr	850,957	Apr. 23	4512	944	127	2850
Pen. Self-filling fountain-	T. Manly	851,296	Apr. 23	5190	.....	127	3020
Pencil-sharpener	J. Doyle	851,001	Apr. 23	4583	960–1	127	2886
Phonographic sound-records. Production of	C. Uebelmesser	851,387	Apr. 23	5370	1125–6	127	3065
Photographic-printing bath	J. M. Dunsmore	851,589	Apr. 23	5770	1206–7	127	3165
Pianoforte-action	J. T. Pyle	851,436	Apr. 23	5462	1143–4	127	3089
Picker:							
See Loom-picker.							
Picture-exhibiting apparatus. Moving-							
Picture-projecting apparatus							
Pile structure							
Pin:							
See Bench-pin. Cross-arm pin.							
Pipe:							
See Gas-pipe.							
Pipe and monkey wrench. Combined	G. O. Rice	851,106	Apr. 23	4783	1006	127	2917
Pipe-cradle	J. A. Hibbins	851,352	Apr. 23	5301	1110	127	3047
Pipe-hanger	G. F. Ernst	851,505	Apr. 23	5594	1171	127	3118
Pipe-nipple holder	R. E. Manley	851,137	Apr. 23	4828	1018	127	2928
Plant life. Apparatus for destroying	E. Renault	851,376	Apr. 23	5347	1121	127	3053
Planter	F. Muhl	850,949	Apr. 23	4500	941	127	2847
Planter. Corn-	C. A. Anderson	851,477	Apr. 23	5534	1160	127	3104
Planter. Seed-	G. W. Israel	851,170	Apr. 23	4916	1034	127	2951
Planters. Conveyer-chain for potato-	O. Duensing	851,122	Apr. 23	4902	1010	127	2922
Planting means. Seed-	R. C. Israel	851,171	Apr. 23	4918	1034	127	2952
Plastic articles. Machine for forming	W. Polk	851,558	Apr. 23	5696	1193–4	127	3143
Plastic structure	L. A. Tyc, G. Boivin, and L. N. Benjamin.	851,573	Apr. 23	5720	1199	127	3146
Plastic substances. Machine for mixing and treating	F. I. du Pont	851,607	Apr. 23	5800	1212	127	3171
Plate and pan lifter	W. F. Valiquette	850,983	Apr. 23	4550	953	127	2859
Plate-holder	J. C. Drake	851,281	Apr. 23	5159	1084	127	3012
Pliers	G. G. Worstall	851,499	Apr. 23	5518	1156	127	3101
Plow	G. A. Stafford and E. Henry	851,260	Apr. 23	5106	1074	127	2997
Plow. Disk-	J. J. Mathey	850,946	Apr. 23	4495	940	127	2846
Plows tandem. Coupling for connecting	J. L. M. Brooks	851,058	Apr. 23	4695	987	127	2897
Pneumatic motor	P. Wuest, Jr.	851,472	Apr. 23	5525	1157–8	127	3102
Pocket. Safety-	E. Shaw	851,259	Apr. 23	5106	1074	127	2997
Police patrol-box	G. V. Doherty	850,910	Apr. 23	4428	926	127	2831
Post:							
See Fence-post.							
Potato cleaning and sizing machine	D. Wilson	851,466	Apr. 23	5514	1154–5	127	3089
Powder-receptacle	F. H. Abbott	851,474	Apr. 23	5530	1158	127	3103
Power-generator. Explosive	H. Bevier and J. J. Durage	850,992	Apr. 23	4566	956	127	2864
Power transmission	W. E. Belt	851,197	Apr. 23	4974	1045–6	127	2945

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Press:							
See Baling-press. Hay-press.							
Beam-setting press. Printing-press.							
Briquet-press. Rolling-press.							
Butter-press.							
Primary battery	C. E. Hite	851,382	Apr. 23	5303	1110-11	127	3047
Printing machine. Multicolor-	L. W. Southgate	851,686	Apr. 23	4660	976-7	127	2986
Printing machine. Pencil-	C. B. Porter	851,105	Apr. 23	4778	1006	127	2916
Printing mechanism. Multicolor-	L. W. Southgate	851,689	Apr. 23	4654	977-8	127	2987
Printing or reproducing apparatus	W. G. Fuerth	851,094	Apr. 23	4740	998	127	2967
Printing-press inking apparatus	F. Meisel	851,016	Apr. 23	4613	967	127	2876
Propelling device. Boat-	C. B. Waterman	851,289	Apr. 23	5374	1127	127	3096
Puller:							
See Stump-puller.							
Pulley. Power-transmission	W. Wagner	851,139	Apr. 23	4956	1042	127	2941
Pulley-protecting means. Driving-	B. M. W. Hanson	851,004	Apr. 23	4589	962	127	2869
Pump	W. S. Shelton	850,976	Apr. 23	4541	951	127	2857
Pump-bailer	R. L. Woodard	851,426	Apr. 23	5516	1155	127	3100
Pump. Centrifugal	E. Meden	851,264	Apr. 23	5326	1116	127	3052
Pump. Compression-	F. W. Niebling	851,348	Apr. 23	5032	1060	127	2991
Pump. Diaphragm	G. J. Altham	851,234	Apr. 23	5264	1103	127	3038
Pump-valve construction	J. Rowbotham	851,182	Apr. 23	4942	1039	127	2948
Punching implement	J. W. Spena	851,480	Apr. 23	5483	1146	127	3093
Rack:							
See Hay, wood, and stock rack.							
Rail-fastener	F. Schlicker	851,442	Apr. 23	5473	1146	127	3091
Rail-fastening device	J. P. Crerar	851,495	Apr. 23	5403	1132	127	3074
Rail-joint	S. Toman	850,982	Apr. 23	4549	953	127	2859
Rail splice or joint	J. W. Fennel	851,330	Apr. 23	5272	1277	127	3165
Rail-tie	H. K. Myers	850,951	Apr. 23	4502	942	127	2846
Railway appliance	L. Liptal	851,242	Apr. 23	5073	1067	127	2969
Railway-rail. Compound	G. B. Stephens	850,979	Apr. 23	4546	953	127	2858
Railway-rail tie and fastener	G. H. Grove	851,139	Apr. 23	4816	1015	127	2925
Railway signal-flag	J. Lanius, Jr.	851,012	Apr. 23	4608	966	127	2875
Railway-switch	V. Angerer	851,512	Apr. 23	5808	1214	127	3173
Railway-switch mechanism	O. A. Krug	851,538	Apr. 23	5585	1180	127	3129
Railway-tie. Cement	A. Newell	851,581	Apr. 23	5084	1191	127	3140
Rake:	E. Legg and G. H. Wright	851,601	Apr. 23	5798	1211	127	3170
See Hay-rake.							
Ratchet-tool	W. H. Cowell	851,120	Apr. 23	4799	1010	127	2922
Razor	H. Clauss	851,066	Apr. 23	4707	991	127	2900
Razor. Safety-	F. J. Halbekann	850,939	Apr. 23	4467	934	127	2840
Razor. Safety-	H. A. Bullard	851,341	Apr. 23	5279	1106	127	3042
Reclining-chair	G. Francis	850,918	Apr. 23	4443	929	127	2834
Reel	F. Moosberg	851,268	Apr. 23	5328	1117	127	3053
Reel	F. Moosberg	851,267	Apr. 23	5330	1117	127	3054
Reel	F. Moosberg	851,269	Apr. 23	5331	1118	127	3054
Refrigerating liquids. Means for maintaining the strength of	A. P. Criswell and A. C. Bishop	851,121	Apr. 23	4801	1010	127	2922
Register:							
See Cash-register. Hotel-register.							
Regulator	D. Stuart	851,395	Apr. 23	5365	1123	127	3064
Retort	C. H. Duisdieker	851,400	Apr. 23	5408	1133	127	3075
Ring:							
See Neckband-ring.							
Rod:							
See Connecting-rod. Sucker-rod.							
Rolling mill. Tube-	J. C. Pry	851,425	Apr. 23	5460	1143	127	3088
Rolling-press	H. I. Kimball	851,094	Apr. 23	4762	1002	127	2912
Rolling-press	F. H. Richards	851,377	Apr. 23	5348	1121-2	127	3069
Roofing-sheet. Compound	H. R. Wardell	851,331	Apr. 23	5257	1102	127	3037
Rotary engine	C. MacArthur and F. Smith	851,386	Apr. 23	5189	1089	127	3020
Rotary engine	R. and A. L. Bauer	851,338	Apr. 23	5273	1104-5	127	3041
Sad-iron	J. E. Austin	851,479	Apr. 23	5541	1161	127	3105
Safety-lock	A. Jacobson and E. A. Svensson	851,008	Apr. 23	4601	964	127	2872
Sash-bar. Metal	C. H. Shults	851,108	Apr. 23	4795	1006	127	2918
Sash-lock	D. D. Miles	851,200	Apr. 23	5196	1090	127	3022
Sash-lock	S. W. Letson	851,532	Apr. 23	5644	1181	127	3132
Saw-operating mechanism	W. K. Gordon	851,512	Apr. 23	5604	1174	127	3121
Sawing machine. Mortise and tenon	J. E. Erickson	851,123	Apr. 23	4803	1011-12	127	2922
Sawing quartered timber. Device for	A. S. Frosdil	851,093	Apr. 23	4738	997-8	127	2907
Scrap-bundling machine	D. B Marwick	851,179	Apr. 23	4937	1038	127	2956
Screen:							
See Window-screen.							
Screen-catch	F. K. Huber	850,936	Apr. 23	4475	937	127	2842
Seam-dampening machine	C. H. Mattice	851,541	Apr. 23	5660	1185	127	3135
Secondary battery	T. A Edison	850,913	Apr. 23	4435	927	127	2833
Self-oiling wheel	F. C. Hockensmith	851,264	Apr. 23	5306	1111	127	3048
Separator							
See Cream-separator. Steam-separator.							
Ore-separator.							
Settee and berth. Combined	G. S. Sherman	851,565	Apr. 23	5709	1196	127	3146
Sewed articles. Hem for	F. W. Beals	850,938	Apr. 23	4469	922	127	2826
Sewing-machine	G. Fischer	851,092	Apr. 23	4732	996-7	127	2906
Sewing-machine attachment	J. E. Strong	851,126	Apr. 23	4980	1040	127	2960
Sewing-machine. Drop-head	F. P. Huyck	851,422	Apr. 23	5435	1138	127	3082
Sewing-machine presser-foot-lifting mechanism	H. M. Greist	851,427	Apr. 23	5444	1140	127	3084
Sewing-machine ruffler	C. Pedersen	851,283	Apr. 23	5080	1063	127	2984
Sewing-machines. Loop opener and spreader for	J. W. Burkett	850,932	Apr. 23	4821	946	127	2832
Shaft-reversing mechanism. Power-	W. J. Muncaster	850,995	Apr. 23	4573	958	127	2865
Shafting. Machine for producing finished	M. T. Goforth and N. R. Sheets	851,547	Apr. 23	5670	1187-9	127	3138
Sharpener. Lawn-mower	W. H. Aston and W. W. Morrison	850,922	Apr. 23	4452	931-2	127	2836
Sharpening-tool for lawn-mowers	E. H. Sloman	851,083	Apr. 23	4695	985	127	2895
Sheet-metal-vessel-drawing machine	C. E. Arnold	851,630	Apr. 23	5961	1221	127	3180
Ship-cleaning apparatus	R. B. Crump	851,111	Apr. 23	4789	1007	127	2919
Ship-cleaning device	J. Craig	851,072	Apr. 23	4716	993	127	2902
Ship's plate		851,099	Apr. 23	4740	991	127	2901
Shock-loader	J. H. M. Niemann	851,203	Apr. 23	4989	1048	127	2960
Shoulder-brace	G. R. Craw and O. Miller	851,070	Apr. 23	4711	992	127	2901
Sidewalk-light	C. H. Ross	850,970	Apr. 23	4533	948	127	2855
Sign. Advertising-	J. M. and H. R. Dennis	851,074	Apr. 23	4719	993	127	2903
Signal:							
See Air-signal. Block-signal.							
Signal apparatus	E. D. Malan	851,362	Apr. 23	5318	1114	127	3051
Signaling by light-rays	W. Churchill	851,495	Apr. 23	5570	1168	127	3113
Signaling system. Wireless	S. Eisenstein	851,621	Apr. 23	5625	1217	127	3176
Silo	F. E. Hudson	851,091	Apr. 23	4756	1001	127	2910
Siphon-head	C. Walter	851,459	Apr. 23	5503	1152	127	3097
Skirt-trimmer	H. R. Shafer	851,383	Apr. 23	5363	1123	127	3063
Sled rutter. Logging-	E. Doyle	851,199	Apr. 23	4979	1046	127	2956
Sleigh-knee	E. D. Barton and A. T. Huckstead.	850,893	Apr. 23	4403	921	127	2824
Slitting and rewinding mechanism	F. and C. A. Meisel	851,017	Apr. 23	4614	967-8	127	2876
Smoke arresting and consuming apparatus	W. M. Abbott	851,333	Apr. 23	5262	1103	127	3038
Snap-hook	T. Nelson	851,369	Apr. 23	5333	1118	127	3054
Snap-hook. Swivel	G. Karrmann	851,172	Apr. 23	4919	1034	127	2953
Soldering-iron	H. Berg	850,897	Apr. 23	4410	922	127	2826
Spark-arrester	C. S. Chalfant	851,494	Apr. 23	5568	1167	127	3112
Spark-coil	C. P. L. Noxon	851,027	Apr. 23	4630	971	127	2881
Sparking. Means for preventing	F. W. Wood	851,467	Apr. 23	5515	1155	127	3100
Speed mechanism. Variable-	J. A. Goodner and A. P. Kendig	851,129	Apr. 23	4814	1015	127	2925
Spraying-machine strainer. Self-cleaning	J. D. Wallace	851,388	Apr. 23	5372	1127	127	3066
Spring terminal-clip	J. Schade, Jr. (Reissue)	12,642	Apr. 23	5875	1228	127	3187
Spring-wheel	W. O. Tubbs	851,572	Apr. 23	5719	1199	127	3145
Stacker. Hay-	L. J. Lindsay	851,636	Apr. 23	5852	1223	127	3182
Stacker. Pneumatic	O. Holen	851,237	Apr. 23	5059	1065	127	2986
Stair	J. Lea	851,531	Apr. 23	5640	1180	127	3131
Stamp. Check-protector	T. S. Buck	851,062	Apr. 23	4703	989	127	2899
Stand:							
See Latch-stand. Music-stand.							
Stave cutting-machine	L. L. Frierson	851,412	Apr. 23	5416	1134	127	3077
Steam-separator	G. Rothenbücher	851,254	Apr. 23	5096	1072	127	2994
Steam-trap. Automatic	W. Austin	851,440	Apr. 23	5544	1161	127	3106
Steel. Manufacture of	R. A. Hadfield	851,233	Apr. 23	5052		127	2984
Steering appliance	D. C. Lewis	851,534	Apr. 23	5645	1181	127	3132
Steering mechanism	C. Berg	851,394	Apr. 23	5383	1129	127	3068
Still	J. H. Ullrick	851,045	Apr. 23	4671	981-2	127	2891
Stock-fountain	W. M. Hotze	851,168	Apr. 23	4915	1033	127	2951
Stoker. Mechanical	L. Fridez	850,919	Apr. 23	4445	929-30	127	2834
Stove	B. W. Dodson	851,280	Apr. 23	5156	1083-4	127	3011
Stove gas-burner	J. Bennett	851,486	Apr. 23	5557	1165	127	3109
Stove. Heating-	J. A. Tynan	851,044	Apr. 23	4668	981	127	2890
Stovepipe-joint	S. T. Mickey	851,298	Apr. 23	5195	1090	127	3022
Strainer and sifter	M. P. Hoffman	850,931	Apr. 23	4470	935	127	2841
Street or station indicator	H. E. Beach and C. E. Gierding	851,215	Apr. 23	5010	1053-5	127	2973
Street or station indicator	H. E. Beach	851,216	Apr. 23	5020	1056-7	127	2975
Stropping-machine	E. C. Shaver	850,974	Apr. 23	4539	951	127	2857
Stuffing-box	J. B. Willings	851,147	Apr. 23	4872	1025	127	2941
Stump-puller	J. L. Jones	851,521	Apr. 23	5620	1177-8	127	3125
Sucker-rod	R. Chadwick	851,118	Apr. 23	4797	1009	127	2921
Surfacing-tool	E. Hodgson	851,518	Apr. 23	5616	1177	127	3124
Sway-bar fastener	W. L. Owens	851,102	Apr. 23	4778	1004	127	2916
Switch:							
See Electrical-impulse-counting switch. Electrothermal switch. Railway-switch.							
Switch-throwing device	J. Fisher and J. F. Evarts	851,508	Apr. 23	5598	1172	127	3119
Table:							
See Candy-cooling table. Ironing-table. Extension-table.							
Tack saving and assorting device	G. H. Elmasian	851,079	Apr. 23	4727	995	127	2905
Talking-machine	E. T. Palmer	851,311	Apr. 23	5221	1095	127	3027
Tank:							
See Flushing-tank.							
Tapping-machine taps. Device for placing and retaining.	C. W. Gibbs	851,623	Apr. 23	5829	1218	127	3177
Tapping mains. Connection for	P. Eley	850,915	Apr. 23	4438	928	127	2833
Telautograph	A. Korn	851,174	Apr. 23	4921	1035-6	127	2953
Telegraphy. Automatic	A. C. Crehore and G. O. Squier	851,071	Apr. 23	4712	992	127	2901
Telegraphy. Space	L. De Forest	850,917	Apr. 23	4442	929	127	2834
Telegraphy. Transmitter for wireless	G. von Arco	851,336	Apr. 23	5266	1103	127	3039
Telephone apparatus. Line-selector of intercommunication	F. Walloch	851,266	Apr. 23	5127	1078-9	127	3002
Telephone-meter	N. H. Holland	851,090	Apr. 23	4751	1000	127	2910
Telephone system. Party-line	F. Vollmer	851,458	Apr. 23	5499	1151-2	127	3098
Telephone-transmitter	S. C. Houghton	851,355	Apr. 23	5306	1111	127	3049
Telephone trunking system	W. W. Dean	851,500	Apr. 23	5578	1169	127	3114
Tennis-court marker	W. A. Johnson	850,936	Apr. 23	4476	937	127	2842
Tenoning-machine	C. M. McClune	851,302	Apr. 23	5204	1091-2	127	3025
Tentering-machine clamp	H. W. Honeyman	850,932	Apr. 23	4471	935	127	2841
Ticker tag	T. H. O'Brien	851,101	Apr. 23	4776	1004	127	2916
Ticket or tag	T. H. O'Brien	851,138	Apr. 23	4830	1018	127	2928
Ticket or tag	T. H. O'Brien	851,139	Apr. 23	4831	1018	127	2929
Tickets. Means for checking the sale of railway and other	H. J. Müller	850,950	Apr. 23	4501	941	127	2848
Tie:							
See Bale-tie.							
Rail-tie. Railway-tie.							
Railway-rail tie. Wall-tie.							
Tilting-chair	C. J. Traverse	851,454	Apr. 23	5490	1150	127	3096
Tire for motor-cars, &c. Resilient	C. Burnett	851,585	Apr. 23	5764	1205	127	3163
Tire. Pneumatic	G. L. McQuigg	850,956	Apr. 23	4511	944	127	2850
Tongue-support	C. O. Powell	851,206	Apr. 23	4997	1050	127	2970
Tool. Combination-	A. Hanley	851,351	Apr. 23	5299	1110	127	3047
Tool-handle fastener	T. J. Cheney	851,065	Apr. 23	4706	990	127	2900
Tool. Pneumatic	C. H. Haeseler	851,624	Apr. 23	5831	1219	127	3177
Tooth. Artificial	W. O. West	851,578	Apr. 23	5748	1201	127	3160

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Toy	M. Alm	[illegible]	Apr. 23	[illegible]	1026	127	[illegible]
Toy-railway crossover	W. E. Hamilton	[illegible]	Apr. 23	[illegible]	1174	127	[illegible]
Tractor	R. Bellamy	[illegible]	Apr. 23	[illegible]	968-9	127	[illegible]
Trap:							
See Animal-trap. Steam-trap.							
Trimmer:							
See Skirt-trimmer.							
Trolley	C. V. Bell	[illegible]	Apr. 23	5464	1136	127	[illegible]
Trolley-retriever	E. J. Hall	[illegible]	Apr. 23	5434	972	127	[illegible]
Trowel. Plasterer's	E. L. Ives	[illegible]	Apr. 23	5451	940	127	[illegible]
Trunk-equalizing device. Car-	A. E. Ormsbee	[illegible]	Apr. 23	5464	1113	127	[illegible]
Trunk for harvesting-machines	W. E. Gates	[illegible]	Apr. 23	5464	1108	127	[illegible]
Truck. Freight-car	A. Lawrence	[illegible]	Apr. 23	5316	1113-14	127	[illegible]
Truck. Hand	L. E. Sweetland	[illegible]	Apr. 23	5393	1032	127	[illegible]
Truck. Molding	J. H. Whitty and J. McAnsky	[illegible]	Apr. 23	5472	1007-8	127	[illegible]
Trunk	H. W. Pennell	[illegible]	Apr. 23	5444	974	127	[illegible]
Trunk. Garment-support for	W. C. Lacy and V. J. Gorman	[illegible]	Apr. 23	5467	1128	127	[illegible]
Truss. Lattice-	J. C. McLaren	[illegible]	Apr. 23	5410	1003	127	[illegible]
Tube:							
See Cop-tube. Paste-tube.							
Tunnel construction and ventilation	F. J. Furnell	[illegible]	Apr. 23	5414	1133-4	127	[illegible]
Twine and thread cutter	E. Myer and H. Monagan	[illegible]	Apr. 23	5378	1008	127	[illegible]
Type-setting-machine operating-bands. Mechanism for perforating automatic-	E. Dowse	[illegible]	Apr. 23	5393	1170-1	127	[illegible]
Type-writer shield	L. G. Houghton	[illegible]	Apr. 23	5446	1100	127	[illegible]
Type-writing machine	E. C. Spalding	[illegible]	Apr. 23	5424	1010	127	[illegible]
Type-writing machine	E. C. Spalding	[illegible]	Apr. 23	5424	1009	127	[illegible]
Type-writing machine	F. E. Wood	[illegible]	Apr. 23	5151	1077-8	127	[illegible]
Valve	F. E. Stolz	[illegible]	Apr. 23	5171	1023	127	[illegible]
Valve	C. Cleveland	[illegible]	Apr. 23	5382	1020	127	[illegible]
Valve	F. Fernald	[illegible]	Apr. 23	5382	1022	127	[illegible]
Valve	J. Bowers	[illegible]	Apr. 23	5397	1009	127	[illegible]
Valve	G. Dannhardt	[illegible]	Apr. 23	5411	1113	127	[illegible]
Valve	M. M. Mason	[illegible]	Apr. 23	5387	1116	127	[illegible]
Valve	J. Nolan	[illegible]	Apr. 23	5378	1118	127	[illegible]
Valve-gear. Steam-engine	A. Simpson	[illegible]	Apr. 23	5403	1147	127	[illegible]
Valve-handle	G. Marshall	[illegible]	Apr. 23	5403	999	127	[illegible]
Valve mechanism for engines, &c.	P. Tate	[illegible]	Apr. 23	5373	1207	127	[illegible]
Valve. Throttle-	C. Mortensen	[illegible]	Apr. 23	5416	1004	127	[illegible]
Valve. Triple-	F. E. Norton	[illegible]	Apr. 23	5384	1162-3	127	[illegible]
Valves. Maneuvering and similar	R. H. Blaisdell	[illegible]	Apr. 23	5139	1081	127	[illegible]
Vehicle attachment	C. A. Parsons and J. Turnbull	[illegible]	Apr. 23	5393	1069	127	[illegible]
Vehicle-dumping apparatus	F. A. Bair	[illegible]	Apr. 23	5393	1023	127	[illegible]
Vehicle. Motor-	A. L. Young	[illegible]	Apr. 23	5393	994	127	[illegible]
Vehicle spring attachment	R. Herman	[illegible]	Apr. 23	5393	1127	127	[illegible]
Vehicle-support	J. H. Sager	[illegible]	Apr. 23	5393	1313	127	[illegible]
Vehicles or vessels. Driving mechanism for self-propelled	M. N. Davis	[illegible]	Apr. 23	5393	1306	127	[illegible]
Vehicles over land or water. Mechanism for propelling	P. Martin	[illegible]	Apr. 23	5397	1184	127	[illegible]
Vending-machine	J. A. Hildebrand	851,227	Apr. 23	5414	1176	127	[illegible]
Ventilator:	J. W. Vaughn	851,199	Apr. 23	4954	1041	127	[illegible]
See Water-closet ventilator.							
Vessel construction	W. W. Wotherspoon and R. O. King.	851,220	Apr. 23	5131	1079-80	127	[illegible]
Vessel-positioning device	C. B. Erhart and E. Gaisser	851,223	Apr. 23	4729	995	127	[illegible]
Vessels. Floating sunken or stranded	W. W. Wotherspoon and R. O. King.	851,220	Apr. 23	5154	1080	127	[illegible]
Vise	P. Broadbooks	851,203	Apr. 23	5393	1166-7	127	[illegible]
Vise-clamp	P. Broadbooks	851,204	Apr. 23	5393	1139	127	[illegible]
Vise. Quick-sliding bench-	P. Broadbooks	851,205	Apr. 23	5393	1139	127	[illegible]
Voting-machine	P. Yon	851,206	Apr. 23	5416	1203-4	127	[illegible]
Voting-machine hoisting and handling apparatus	E. E. E. Ridgeway	851,207	Apr. 23	5393	1019	127	[illegible]
Wagon-jack	H. G. Cady	851,208	Apr. 23	5397	1131	127	[illegible]
Wagon. Spud-	P. W. C. Smithweather	851,209	Apr. 23	5393	940	127	[illegible]
Waist. Baby-	H. J. Sharp	851,210	Apr. 23	5393	1074	127	[illegible]
Wall-tie	F. Weber	851,211	Apr. 23	5397	1214	127	[illegible]
Walls, &c. Facing for	A. O. Whitney and G. L. Weymouth	851,212	Apr. 23	5340	1201	127	[illegible]
Washboard	A. Weiss	851,213	Apr. 23	5393	1037	127	[illegible]
Washboard	S. B. Cook	851,214	Apr. 23	5374	1168	127	[illegible]
Washer:							
See Dish-washer.							
Washing-machine	C. Stoner	[illegible]	Apr. 23	5393	1149	127	[illegible]
Water-closet ventilator	L. H. Pleins	[illegible]	Apr. 23	5393	1096	127	[illegible]
Water-heater	T. A. Shoemaker	[illegible]	Apr. 23	5393	1038	127	[illegible]
Water-purifying apparatus	J. F. Chase	[illegible]	Apr. 23	5344	1039	127	[illegible]
Water-supply and drainage apparatus	P. M. Nevins and W. R. Burton	[illegible]	Apr. 23	5393	1029-30	127	[illegible]
Water-tube boiler	J. F. Seaton	[illegible]	Apr. 23	5376	1004	127	[illegible]
Wave-motor	J. W. Neal	[illegible]	Apr. 23	5393	1073	127	[illegible]
Weighing mechanism. Automatic	A. S. Crosbee	[illegible]	Apr. 23	5393	1159-1	127	[illegible]
Well-boring-operating mechanism	D. B. Whitehill	[illegible]	Apr. 23	5393	1029-30	127	[illegible]
Wells. Means for operating rod-lines for oil-	J. Reid	[illegible]	Apr. 23	5393	964-5	127	[illegible]
Wheel:							
See Car-wheel. Self-oiling wheel.							
Cushioned wheel. Spring-wheel.							
Wheel	H. T. Hansen	[illegible]	Apr. 23	5393	1033	127	[illegible]
Wheel	J. Stuart	[illegible]	Apr. 23	5393	1100	127	[illegible]
Wheel-rim	J. W. Meisell (Reissue)	[illegible]	Apr. 23	5393	1234	127	[illegible]
Wheel-support. Pneumatic	O. Svanström	[illegible]	Apr. 23	5393	1061	127	[illegible]
Wigs in place. Securing	G. W. Bell	[illegible]	Apr. 23	5393	1138	127	[illegible]
Winding-frame	W. Belcher	[illegible]	Apr. 23	5393	1138	127	[illegible]
Window-frame	G. P. J. Sefven	[illegible]	Apr. 23	5344	1030-1	127	[illegible]
Window-screen. Safety	E. Bauer	[illegible]	Apr. 23	5393	1061	127	[illegible]
Wire-drawer	M. G. Crosby	[illegible]	Apr. 23	5393	1168	127	[illegible]
Wire-winding apparatus	P. L. Martin	[illegible]	Apr. 23	5393	1038	127	[illegible]
Wrapping-machine	F. H. Lamb	[illegible]	Apr. 23	5393	1160	127	[illegible]
	J. H. Brown	[illegible]	Apr. 23	5393	967-8	127	[illegible]
	M. H. Ballard	[illegible]	Apr. 23	5393	1033	127	[illegible]

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Wrench:							
See Monkey-wrench. Pipe and monkey wrench.							
Nut-wrench.	M. Boyton	850,900	Apr. 23	4414	922	127	2926
Wrench	H. E. Morrill	851,426	Apr. 23	5446	1141	127	3085
Wrench	J. C. McQuillkin	851,543	Apr. 23	5470	1139	127	3130
Wrench	J. F. Tiner	851,610	Apr. 23	5395	1213-14	127	3172
Wrench	W. H. Cowell	851,068	Apr. 23	4709	991	127	2801
Wrenches. Socket-piece for	F. R. Densithorpe and A. Chambers.	850,908	Apr. 23	4426	926	1127	2831
Yarn-holding spindle	J. Thalberg	851,187	Apr. 23	4951	1041	127	3089
Zinc and lead ores. Treating							

DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Badge or button	C. A. Whittaker	38,532	Apr. 23	127	3185
Display-booth	M. A. Singer	38,535	Apr. 23	127	3189
Easel. Photograph-	H. C. Itter	38,539	Apr. 23	127	3189
Radiator	E. Sjoden	38,540	Apr. 23	127	3189
Radiator	E. Sjoden	38,533	Apr. 23	127	3188
Spoons, forks, or similar articles. Handle for	G. M. Hallenbeck	38,534	Apr. 23	127	3189
Spoons, forks, or similar articles. Handle for	W. C. Bowlen	38,536	Apr. 23	127	3189
Talking-machine cabinet	O. E. Mertz	38,537	Apr. 23	127	3189
Talking-machine cabinet	J. C. English	38,538	Apr. 23	127	3189

TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Abrasive cleansing, polishing, and scouring preparation	Cudahy Packing Company	62,127	Apr. 23	127	3209
Agricultural machinery. Certain parts of	Henry & Allen	62,197	Apr. 23	127	3211
Automobiles, carriages, and wagon springs	Supplementary Spiral Spring Company.	62,161	Apr. 23	127	3210
Bagging	American Manufacturing Company.	62,166	Apr. 23	127	3210
Bakery products and cereal foods. Certain	Johnson Educator Food Co	62,186	Apr. 23	127	3210
Baking-powder	Grand Union Tea Co	62,200	Apr. 23	127	3211
Battleship Dey	National Carbon Company	62,178	Apr. 23	127	3210
Beer	A. J. Houghton Co	62,185	Apr. 23	127	3210
Beer	Dick and Brothers Quincy Brewery Co.	62,204	Apr. 23	127	3211
Beer	Muncie Brewing Co	62,208	Apr. 23	127	3211
Beverages. Certain non-alcoholic	P. Setzler & Sons	62,199	Apr. 23	127	3211
Bicycle crank-hangers	Great Western Manufacturing Company.	62,152	Apr. 23	127	3209
Bitters	Bay View Wine Co	62,216	Apr. 23	127	3211
Bitters	A. Breslauer Company	62,235	Apr. 23	127	3212
Boots and shoes. Leather	Bay State Shoe & Leather Co	62,125	Apr. 23	127	3209
Boots and shoes. Leather	Dixon Bartlett Co	62,131	Apr. 23	127	3209
Boots and shoes. Leather	Locke Shoe Company	62,134	Apr. 23	127	3209
Boots and shoes. Leather	W. Read & Sons	62,137	Apr. 23	127	3209
Candies. Pudding-	Stern & Saalberg Company	62,179	Apr. 23	127	3210
Candy and chewing-gum	Manufacturing Co. of America	62,187	Apr. 23	127	3210
Candy and chewing-gum	Manufacturing Co. of America	62,188	Apr. 23	127	3210
Cement, Rubber	Alfred Hale Rubber Company	62,142	Apr. 23	127	3209
Chemicals	J. G. McDonald Candy Company	62,184	Apr. 23	127	3210
Clothes-lines. Cotton	Cleveland Mill and Power Company.	62,146	Apr. 23	127	3209
Clothes-lines. Cotton	Cleveland Mill and Power Company.	62,147	Apr. 23	127	3209
Clothing. Certain	G. Bamberger & Company	62,143	Apr. 23	127	3209
Coffee	B. Fischer & Co	62,171	Apr. 23	127	3210
Coffee	Dayton Spice Mills Co	62,217	Apr. 23	127	3211
Coffee. Roasted	Fort Smith Commission Company.	62,172	Apr. 23	127	3210
Cold cream	F. E. Schmauser	62,211	Apr. 23	127	3211
Cordials	Societe Anonyme de la Grande Distillerie E. Cusenier Fils Aine et Compagnie.	62,200	Apr. 23	127	3211
Cork-pullers. Certain	A. P. Watt	62,163	Apr. 23	127	3210
Cotton fabrics, Mercerized woven	Shields, Stone & Co	62,160	Apr. 23	127	3210
Cotton piece goods and blankets	Nashua Manufacturing Company	62,158	Apr. 23	127	3210
Cotton piece goods and blankets	Indian Head Mills of Alabama	62,198	Apr. 23	127	3211
Dolls	Geo. Borgfeldt & Co	62,151	Apr. 23	127	3209
Drilling-machines and boring apparatus and parts thereof	Buda Foundry & Manufacturing Company.	62,144	Apr. 23	127	3209
Felt roofing	Collins Hardware Company	62,148	Apr. 23	127	3209

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Felt roofing. Ready-prepared	Roofing Manufacturing Co	62,189	Apr. 23	127	3210
Fence. Wire	Advance Fence Co	62,192	Apr. 23	127	3210
Finger-nail-polishing preparation	Antisell, Schenck & Place	62,203	Apr. 23	127	3211
Flour. Wheat	Hungerford Milling Company	62,183	Apr. 23	127	3211
Flour. Wheat	E. F. Rockwell	62,189	Apr. 23	127	3210
Food preparation. Certain	Cathcart, Stewart and Watt	62,151	Apr. 23	127	3208
Food products. Certain	E. P. Barker Company	62,188	Apr. 23	127	3210
Foods. Medicated stock	Dr. Hess & Clark	62,200	Apr. 23	127	3211
Foods. Medicated stock	Dr. Hess & Clark	62,207	Apr. 23	127	3211
Foods. Prepared stock	A. Hurst & Co	62,180	Apr. 23	127	3210
Fuses	Coast Manufacturing & Supply Co.	62,196	Apr. 23	127	3211
Germicidal agent. Alkaline deodorizing and non-irritating	United States Dental Chemical Co.	62,212	Apr. 23	127	3211
Germicide, disinfectant, and antiseptic preparations	Star Trading Company	62,226	Apr. 23	127	3211
Gin	Corning and Company	62,149	Apr. 23	127	3209
Hair-tonics and scalp applications	F. Rhein	62,228	Apr. 23	127	3211
Ham. Deviled	William Underwood Company	62,191	Apr. 23	127	3210
Hams and bacon	Mosby & Cardoza	62,177	Apr. 23	127	3210
Hose-supporters and suspenders. Combination	Wolverine Suspender Co	62,208	Apr. 23	127	3211
Ice-cream	Mauretta Mfg. Co	62,209	Apr. 23	127	3211
Jellies	E. B. Shaw	62,160	Apr. 23	127	3210
Jewelry. Certain	E. M. Horton	62,175	Apr. 23	127	3210
Kid. Mat-	Johnsonburg Leather Company	62,204	Apr. 23	127	3211
Knit garments. Certain	Wright & Ditson	62,164	Apr. 23	127	3210
Lamps. Incandescent electric	Bowden-Crossen Electric Company.	62,206	Apr. 23	127	3211
Lard	John C. Roth Packing Co	62,185	Apr. 23	127	3210
Lead. White	National Lead Company	62,153	Apr. 23	127	3208
Leather manufactures. Certain	Mark Cross Company	62,202	Apr. 23	127	3211
Leather. Shoe-	C. E. Lagoe	62,152	Apr. 23	127	3208
Malt extract	Fortuna Bros. Bowling Company.	62,196	Apr. 23	127	3211
Matches	John Lagen och Vulcans Tändsticksfabriksaktiebolag.	62,195	Apr. 23	127	3210
Medicines. Certain	W. R. Warner & Co	62,214	Apr. 23	127	3211
Metal and glass cleaner and polisher	P. J. Berrenot	62,198	Apr. 23	127	3211
Metal manufactures. Certain	Imperial Bit & Brace Co	62,144	Apr. 23	127	3208
Oils and greases. Lubricating	Citizens' Wholesale Supply Co	62,146	Apr. 23	127	3208
Paper bags, wrapping paper and paper-boards	Union Bag and Paper Company	62,161	Apr. 23	127	3209
Pastes or lotions. Facial or complexion	De Jean Perfumery Company	62,215	Apr. 23	127	3211
Paving and roofing material	Apfel & Barnett	62,193	Apr. 23	127	3210
Perfumes	Wm. B. Riker & Son Company	62,209	Apr. 23	127	3211
Periodical. Monthly	David C. Cook Publishing Company.	62,139	Apr. 23	127	3208
Periodical. Semimonthly	Review Publishing Company	62,207	Apr. 23	127	3211
Periodical. Semimonthly	Review Publishing Company	62,208	Apr. 23	127	3211
Pickles, mustard, catsup, &c	A. Fazzio	62,170	Apr. 23	127	3210
Pills and headache-tablets	J. L. Ward Medicine Company	62,213	Apr. 23	127	3211
Pills for diseases of the blood and nerves	W. T. Hanson Co	62,220	Apr. 23	127	3211
Pills for diseases of the blood and nerves	W. T. Hanson Co	62,221	Apr. 23	127	3211
Pills for diseases of the blood and nerves	W. T. Hanson Co	62,222	Apr. 23	127	3211
Pipes	Reiss Bros. & Co	62,158	Apr. 23	127	3209
Pipes	Reiss Bros. & Co	62,159	Apr. 23	127	3209
Plows, harrows, and cultivators	Hartig Recker Plow Co	62,155	Apr. 23	127	3209
Portraits and photographs	Dixie Portrait & Frame Co	62,150	Apr. 23	127	3209
Powder and paste. Tooth	Peroxident Manufacturing Company.	62,210	Apr. 23	127	3211
Powder. Explosive	E. I. du Pont Company	62,162	Apr. 23	127	3209
Powder. Gun-	E. I. du Pont Company	62,163	Apr. 23	127	3209
Powder. Tooth and talcum	R. E. Desmond	62,219	Apr. 23	127	3211
Punch. Arrac	Axel Boggs & Co	62,154	Apr. 23	127	3209
Remedy for asthma	Duff & Slade	62,201	Apr. 23	127	3211
Remedy for certain diseases	Pepsol Chemical Company	62,224	Apr. 23	127	3211
Remedy for lung and throat diseases	Varenna Medical Company	62,225	Apr. 23	127	3211
Rivets	Taunton Rivet Company	62,148	Apr. 23	127	3209
Saddles, harness, bridles, and horse-collars	Graf-Marshall Company	62,157	Apr. 23	127	3209
Shade cloths. Window-	Jay C. Wemple Co	62,178	Apr. 23	127	3210
Shampoo, cold and massage cream. Egg-	N. Leppard	62,205	Apr. 23	127	3211
Shampoo compounds and hair-tonics	Peroxide Company	62,223	Apr. 23	127	3211
Shoes and slippers. Leather	Dixon Berthet Co	62,169	Apr. 23	127	3209
Shoes. Leather	Scales Shoe Mfg. Co	62,167	Apr. 23	127	3209
Steelware. Enameled	Geo. Borgfeldt & Co	62,166	Apr. 23	127	3209
Stockings	A. L. Brown	62,197	Apr. 23	127	3210
Stoves, burners, and ovens. Gas, oil, and vapor	American Stove Company	62,216	Apr. 23	127	3211
Tea. Regulating-	D. Kanter	62,221	Apr. 23	127	3211
Toilet preparations. Certain	F. Hartmann	62,183	Apr. 23	127	3211
Vegetable materials. Certain	Marden, Orth & Hastings	62,165	Apr. 23	127	3209
Whisky	C. Kremer	62,168	Apr. 23	127	3210
Whisky	A. H. Gilbert	62,172	Apr. 23	127	3210
Whisky	Gust & Sinas	62,174	Apr. 23	127	3210
Whisky	Strauss, Gunst & Co	62,227	Apr. 23	127	3211

LABELS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Alrophine." (For a Medicinal Paste)	S. I. Henderson	13,495	Apr. 23	127	3213
"Althrifle." (For Beer)	W. Bender, Jr	13,491	Apr. 23	127	3213
"Davis' Old Indian Cure." (For a Medicine)	W. H. Davis	13,496	Apr. 23	127	3213
"Deodorem." (For Powder to Clean Carpets, Rugs, and Floors)	J. B. Fitch	13,502	Apr. 23	127	3213
"Dyspepsina Mentone." (For a Medicine)	R. W. Culver	13,497	Apr. 23	127	3213
"Eagle of Bitter Sweets." (For Candy)	American Candy Company	13,485	Apr. 23	127	3213
"Las Dos Maestranzas." (For Cigars)	Las Dos Naciones Cigar Co	13,486	Apr. 23	127	3213
"Mi Novia." (For Cigars)	Park & Tilford	13,487	Apr. 23	127	3213
"Mi Novia." (For Cigarettes)	Park & Tilford	13,488	Apr. 23	127	3213
"Pepsi'a." (For Chewing-Gum)	Ph. Kassel Co	13,489	Apr. 23	127	3213
"Phillips' Gluten Wafers." (For Medicine)	L. S. Phillips	13,496	Apr. 23	127	3213
"Queen Alexandra at Justice." (For Cold-Cream)	J. L. De Zeabault and Co	13,494	Apr. 23	127	3213
"Reckine." (For a Fire-Kindler)	A. Decus	13,501	Apr. 23	127	3213
"Schemm's Standard Dark Lager Beer." (For Beer)	P. A. Schemm	13,492	Apr. 23	127	3213
"Schemm's Standard Light Lager Beer." (For Beer)	P. A. Schemm	13,493	Apr. 23	127	3213
"Schilling's Best." (For Coffee)	A. Schilling and Company	13,490	Apr. 23	127	3213
"Up to Date." (For Soap)	M. S. Vanderbeck	13,499	Apr. 23	127	3213
"Weiler Genuine Muskegan Shoes." (For Shoes)	Weiler Bros	13,500	Apr. 23	127	3213

PRINTS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Erin and Expectation Books, Congress Playing Cards." (For Playing-Cards.)	United States Playing Card Company.	1,973	Apr. 23	127	3213
"It's a Biscuit Flour." (For Flour)	Washburn, Crosby Company	1,967	Apr. 23	127	3213
"'Just Ours' of a Mandy Lee." (For Incubators)	A. G. Wade	1,970	Apr. 23	127	3213
"Lee Poultry Supplies." (For Lice-Killer, Egg-Maker, Germosan, Sprayers.)	A. G. Wade	1,971	Apr. 23	127	3213
"Mecca." (For Cigarettes)	S. Anargyros	1,966	Apr. 23	127	3213
"Men's and Boys' Apparel." (For Men's and Boys' Apparel)	H. C. Lytton	1,969	Apr. 23	127	3213
"Mosley Lemon Elixir." (For Lemon Elixir)	Mosley Lemon Elixir Co	1,964	Apr. 23	127	3213
"Perry's Fashions for Spring. (Sheet No. 2.)" (For Men's Sack-Suits.)	Perry & Company	1,968	Apr. 23	127	3213
"Use the Lee the Broom With the Guarantee." (For Brooms)	Lee Broom & Duster Company	1,965	Apr. 23	127	3213
"Victor Chamber Board." (For Talking-Machines)	P. F. Collier & Son	1,972	Apr. 23	127	3213

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Alterative	Battle & Co., Chemists' Corporation.	25,277	Apr. 23	127	3196
Anodyne	Battle & Co., Chemists' Corporation.	25,276	Apr. 23	127	3196
Antipurulent	Battle & Co., Chemists' Corporation.	25,279	Apr. 23	127	3196
Antiseptic germicide and deodorant preparations	Peroxident Manufacturing Company.	24,664	Apr. 23	127	3196
Axes, hatchets, saws, grass-hooks, knives, &c	Simmons Hardware Company	26,047	Apr. 23	127	3201
Belts. Waist-	Kunstadter Bros	25,289	Apr. 23	127	3196
Biscuit	Austin Biscuit Company	25,988	Apr. 23	127	3201
Bitters	Foster, Milburn Co	5,946	Apr. 23	127	3191
Bookcases, trays, document-boxes, chairs, tables, &c	Globe-Wernicke Company	25,402	Apr. 23	127	3197
Bookcases, trays, document-boxes, chairs, tables, &c	Globe-Wernicke Company	25,405-6	Apr. 23	127	3197
Bookcases, trays, document-boxes, chairs, tables, &c	Globe-Wernicke Company	25,411	Apr. 23	127	3197
Boots and shoes. Leather	Globe-Wernicke Company	25,420	Apr. 23	127	3197
Boots and shoes. Leather	A. Gunderson	26,175	Apr. 23	127	3203
Boots and shoes. Leather	Craddock-Terry Company	26,178	Apr. 23	127	3203
Brandy, gin, and whisky	Charles Meis Shoe Co	25,390	Apr. 23	127	3197
Canned fish	Casey-Swasey Co	25,460	Apr. 23	127	3197
Canned fruits and vegetables	Northwestern Fisheries Company	25,472	Apr. 23	127	3198
Canned fruits and vegetables	Northwestern Fisheries Company	25,853	Apr. 23	127	3199
Canned fruits and vegetables	Mennillo Bros	26,213-14	Apr. 23	127	3204
Canned fruits and vegetables and dried fruits	Allen Brothers Company	26,211	Apr. 23	127	3204
Canned meats	Allen Brothers Company	25,904	Apr. 23	127	3200
Canned, smoked, pickled, and preserved fish	P. H. Fromm & Co	26,145	Apr. 23	127	3203
Canned, smoked, pickled, and preserved fish	A/s. The Bergen Canning Co	26,251	Apr. 23	127	3206
	Bergens Varmrogeri Molt & Co				

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Cartridges. Loaded	R. Connet	26,259	Apr. 23	127	3194
Casters. Ball-bearing	Acme Ball-Bearing Company	25,139	Apr. 23	127	3191
China, stoneware, porcelain, &c	Vitrified Ware Co	25,253	Apr. 23	127	3191
Chocolates and bonbons	H. Wolf	25,254	Apr. 23	127	3191
Cigars	J. Feeney & Company	25,274	Apr. 23	127	3191
Cigars	Allen Bradley Company	26,276-8	Apr. 23	127	3191
Cigars	J. F. Wilson & Company	25,277	Apr. 23	127	3191-2
Cigars, cheroots, and cigarettes	Quincy-Cooper Tobacco Company	25,278	Apr. 23	127	3192
Coats, trousers, and shirts	Hornby Bros. Manufacturing Company.	25,279	Apr. 23	127	3192
Coffee	Fisher Brothers	9,280	Apr. 23	127	3192
Coffee	T. C. Brunner & Son	25,281	Apr. 23	127	3192
Coffee and tea	F. B. Rogers & Co	25,282	Apr. 23	127	3192
Coffee substitute	Cereal Products Company	25,283	Apr. 23	127	3192
Condition-powders	Van Vleet-Mansfield Drug Co	11,284	Apr. 23	127	3192
Corn-flakes	H-O (Hornby's Oatmeal) Company.	26,285-1	Apr. 23	127	3192
Corn-starch	Corn Products Refining Company	25,286	Apr. 23	127	3193
Corsets	Stix, Baer & Fuller D Goods Co	21,271	Apr. 23	127	3194
Creams and shampoos. Toilet	Rimak Chemical Company	25,281	Apr. 23	127	3197
Cutlery	Trenching & Cranshaw	12,211	Apr. 23	127	3192
Cutlery	Jones & Culver	12,220	Apr. 23	127	3192
Cutlery	Joseph Rodgers & Sons	26,222-3	Apr. 23	127	3192
Cutlery	Joseph Allen & Sons	26,240	Apr. 23	127	3193
Cutlery	Joseph Allen & Sons	26,241	Apr. 23	127	3193
Cutlery	Williams-Sweet Company	25,264	Apr. 23	127	3194
Cycles. Motor-	W. P. Rompple	25,269	Apr. 23	127	3193
Electric wiring. Outlet-bushings for	Appleton Electric Company	25,730	Apr. 23	127	3193
Fertilizers	Virginia-Carolina Chemical Company.	26,133	Apr. 23	127	3193
Files and desk-pads. Document-	Globe-Wernicke Company	25,232	Apr. 23	127	3193
Files, saws, scythes, &c	W. K. & C. Panes	15,240	Apr. 23	127	3193
Fire-extinguishers. Hand	Pluvius-Feuerlöscher-Gesellschaft mit beschränkter Haftung.	22,095	Apr. 23	127	3194
Flavoring extracts	Miller Manufacturing Company	25,221	Apr. 23	127	3200
Floor, cabinet, hard-oil, and seat finish, and light and black finishing, &c., varnish.	Standard Varnish Works	25,225	Apr. 23	127	3200
Flour. Wheat-	Akin-Erskine Milling Co	25,226	Apr. 23	127	3200
Flour. Wheat-	Allen Brothers Company	25,227	Apr. 23	127	3201
Flour. Wheat-	Globe Milling Company	25,228	Apr. 23	127	3201
Food. Wheat breakfast	Cream of Wheat Co	26,229-3	Apr. 23	127	3202-3
Foods. Poultry and pigeon	Taylor Bros	25,247	Apr. 23	127	3193
Game-boards	E. J. Read	25,250	Apr. 23	127	3200
Gas for inflating tires	Frost-O-Lite Company	25,277	Apr. 23	127	3200
Gasoline	National Refining Company	25,257	Apr. 23	127	3201
Goggle, spectacle, and eyeglass lenses	W. W. Bissell	25,263	Apr. 23	127	3197
Gum. Chewing-	A. M. Finch	25,213	Apr. 23	127	3198
Hair. Preparation for the	Pumbreast Mfg. Co	25,260	Apr. 23	127	3198
Hammers, screw-drivers, and shovels	Kelley-How-Thomson Co	25,269	Apr. 23	127	3200
Hats. Felt	W. A. Brooks	25,220	Apr. 23	127	3194
Hose-supporters	Gordon Manufacturing Company	25,223	Apr. 23	127	3194
Hypnotic	Beattie & Co., Chemists' Corporation.	25,276	Apr. 23	127	3195
Insects. Paper, &c., designed to protect against	F. L. Stallman	25,272	Apr. 23	127	3200
Insulating material. Electrical	American Hard Rubber Co	5,153	Apr. 23	127	3195
Knitted socks, coats, and vests	J. H. Parker	25,242	Apr. 23	127	3195
Knitted underwear	H. L. Wash Hosiery Co	25,243	Apr. 23	127	3195
Knitted underwear	Bristol Manufacturing Company	25,738	Apr. 23	127	3195
Knives, forks, shears, &c	Cattaraugus Cutlery Company	25,239	Apr. 23	127	3195
Knives, razors, and scissors	Joseph Allen & Sons	25,251	Apr. 23	127	3195
Knives, razors, hatchets, chisels, &c	Kelley-How-Thomson Co	25,252	Apr. 23	127	3195
Lamp and lantern globes	R. E. Dietz Company	25,253	Apr. 23	127	3195
Lamps. Kerosene-oil	Manhattan Brass Co	25,254	Apr. 23	127	3195
Lanterns. Oil-burning	R. E. Dietz Company	25,255	Apr. 23	127	3195
Magazines	J. Wiley	25,256	Apr. 23	127	3195
Medicinal preparations for coughs, colds, &c	H. B. Pullan & Company	25,257	Apr. 23	127	3195
Medicine for cure of epilepsy, St. Vitus' dance, &c	E. L. Lamoreaux	25,258	Apr. 23	127	3195
Ophthalmometers	F. A. Hardy & Co	4,259	Apr. 23	127	3195
Overshirts. Men's	Boston Search Shirt Co	25,261	Apr. 23	127	3195
Paint and pipe "cement." Graphite	United States Graphite Company	25,262	Apr. 23	127	3195
Paint and varnish remover	United States Graphite Company	25,263	Apr. 23	127	3195
Paints, varnishes, &c. Dry colors used in making	Berry Brothers	25,264	Apr. 23	127	3195
Paints, varnishes, stains, &c	Fred Berthaux	25,265	Apr. 23	127	3195
Paper bags	Keith Paint & Varnish Company	25,266	Apr. 23	127	3195
Paper bags	Greenleaf-Akron Bag Co	25,267	Apr. 23	127	3195
Paper bags	Greenleaf-Akron Bag Co	25,268	Apr. 23	127	3195
Paper bags	Greenleaf-Akron Bag Co	25,269	Apr. 23	127	3195
Papers. Wall-	James L. Crompton & Brothers	25,270	Apr. 23	127	3195
Perfumeries, toilet waters, sachets, tooth-wash, &c	Smith, Kline and French Company.	25,271	Apr. 23	127	3195
Piano-players and pianos. Automatic	Cable Co	25,272	Apr. 23	127	3195
Pigments. Lead	Pittsburgh Lead Company	25,273	Apr. 23	127	3195
Readers and overcoats	J. P. Wolf & Company	25,274	Apr. 23	127	3195
Remedy for diseases of the eye	J. F. W. & Z. Aylward	25,275	Apr. 23	127	3195
Remedy for inflammation and granulation of the eyes	J. W. Storey	25,276	Apr. 23	127	3195
Remedy for tuberculosis	Kalamazoo	25,277	Apr. 23	127	3195
Remedy for urinary diseases	Quincy Manufacturing Company	25,278	Apr. 23	127	3195
Rice	Wm. Rice Milling Co	25,279	Apr. 23	127	3195
Rubber boots and shoes	W. L. Walker & Company	25,280	Apr. 23	127	3195

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Rubber packing	A. B. Jenkins	23,048	Apr. 23	127	3194
Saponifiers and alkaline compounds	Lopas Company	17,229	Apr. 23	127	3193
Sardines	A. Watson & Co	13,780	Apr. 23	127	3192
Sarsaparilla	Schoneberger & Noble	26,183	Apr. 23	127	3203
Saw Blades, Mark	West Haven Mfg. Co	26,039	Apr. 23	127	3201
Sewing-machines	Kelley-How-Thomson Co	26,236	Apr. 23	127	3205
Shoe heels wholly or in part of leather	Peters Shoe Co	26,199	Apr. 23	127	3203
Shoulder-braces and suspenders	P. Bailly & Cie	20,261-2	Apr. 23	127	3194
Silk and silk and cotton piece goods	M. Strauss	26,156	Apr. 23	127	3202
Silk dress goods	Fried, Mendelson & Co	25,791	Apr. 23	127	3199
Silk piece goods	Empire Silk Co	26,268	Apr. 23	127	3205
Slate-cutters' trimmers, axes, adzes, bush-hooks, &c	Fayette R. Plumb, Incorporated	26,225	Apr. 23	127	3196
Soap	Robinson Bros. & Company	26,289-91	Apr. 23	127	3208
Soap	Robinson Bros. & Company	26,293	Apr. 23	127	3208
Soap	Robinson Bros. & Company	26,295	Apr. 23	127	3208
Soap	Robinson Bros. & Company	26,297-8	Apr. 23	127	3208
Soap	Allen Brothers Company	26,207	Apr. 23	127	3204
Spices, preserves, olives, celery salt, &c	S. Cabot	25,727	Apr. 23	127	3199
Stains, paint, &c	H. B. Lodor	25,772	Apr. 23	127	3199
Stone. Artificial	Kelley-How-Thomson Co	26,237	Apr. 23	127	3205
Stoves and ranges	Smithmade Suspender Co	25,385	Apr. 23	127	3197
Suspenders	George E. Wye Company	25,568	Apr. 23	127	3198
Sweaters	St. Paul Syrup Refining Company	25,857	Apr. 23	127	3200
Syrup	I. Weitman	26,139	Apr. 23	127	3203
Tarts	Allen Brothers Company	26,215-16	Apr. 23	127	3204-5
Teas	American Thread Company	26,168	Apr. 23	127	3208
Thread and spool and sewing cotton	Enterprise Novelty & M. F. G. Co	24,285	Apr. 23	127	3195
Traps. Mouse and rat	R. Müller	24,282	Apr. 23	127	3195
Umbrella-cover fabrics	Kelley-How-Thomson Co	26,234	Apr. 23	127	3205
Washing-machines, wash tubs and boilers, and clothes-wringers	L. Smith	21,263	Apr. 23	127	3194
Water and crystals resulting therefrom. Natural mineral	F. D. Councilman	25,901	Apr. 23	127	3200
Waters and non-alcoholic carbonated beverages. Mineral and table	Glenn Rock Mineral Spring Company.	23,461	Apr. 23	127	3196
Water. Still and carbonated	S. & S. H. Freiberg	3,778	Apr. 23	127	3191
Whisky	H. Campe & Co	15,929	Apr. 23	127	3193
Whisky	F. T. Morrissey	26,197	Apr. 23	127	3203
Whisky	4-in-1	25,736	Apr. 23	127	3199
Wood finishes, stains, and varnishes	A. Mayet	25,556	Apr. 23	127	3198
Wreaths, crosses, artificial flowers, &c	Trimont Manufacturing Co	26,018	Apr. 23	127	3201
Wrenches. Monkey and pipe					

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 30TH DAY OF APRIL, 1907.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Abbé, Max F., New York, N. Y. Lining for pebble-mills	851,637	Apr. 30	6981	1229	127	3233
Abernethy, Harry M., assignor to American Railway Signal Company, Cleveland, Ohio. Electrically-controlled semaphore-signal	852,092	Apr. 30	6831	1424–5	127	3464
Abernethy, Harry M., assignor to American Railway Signal Company, Cleveland, Ohio. Railway-signal-lamp-signal	852,093	Apr. 30	6833	1425	127	3465
Abernethy, Harry M., assignor to American Railway Signal Company, Cleveland, Ohio. Railway-signal-lamp-signal	852,094	Apr. 30	6834	1426	127	3465
Ackley, Frederick K., Chicago, Ill. Head-rest	851,851	Apr. 30	6324	1319	127	3338
Adam, Frederick R., assignor to Frank Adam Electric Company, St. Louis, Mo. Service connection	851,726	Apr. 30	6066	1268	127	3269
Adams & Westlake Company. (See Mosher, John A., assignor.)	852,251	Apr. 30	7123	1491	127	3530
Addington, Charles C., Wheatsberry, Ohio. Plow	851,638	Apr. 30	5882	1229	127	3223
Addington, Leonard R., Dauphin, Ill. Carrier	851,911	Apr. 30	6437	1343	127	3366
Ade, William F., Williamsport, Pa. Spring-bed	852,252	Apr. 30	7124	1491–2	127	3530
Adjustable Gear Company. (See Gray, Henry F., assignor.)	851,971	Apr. 30	6567	1368	127	3368
Agnew, Lewis P., Wabash, Ind. Ter. Baling-press	852,151	Apr. 30	6949	1451	127	3493
Akins, Franklin P., Santa Ana, Cal. Combined milk and cream pasteurizer and cooler	851,853	Apr. 30	6326	1320	127	3326
Alcock, William P., New York, N. Y. Chart for garment-patterns	852,152	Apr. 30	6950	1451	127	3494
Allen, Courtland, New Bedford, assignor to Draper Company, Hopedale, Mass. Loom-shuttle	851,789	Apr. 30	6179	1289	127	3296
Allen, George H., assignor to Winchester Repeating Arms Co., New Haven, Conn. Sight for firearms	851,852	Apr. 30	6325	1319–20	127	3326
Alexander, James C., Aberdeen, Wash. Shingle-package	852,211	Apr. 30	7059	1475	127	3493
Alger, Arthur H. (See Alger, Joseph, assignor.)						
Alger, Joseph, assignor to himself and A. H. Alger, jointly, Brockton, Mass. Gluing-machine						
Allen, Frank G., Ames, Iowa. Feed-box for poultry						
American Clay Machinery Company. (See Cunningham, William R., assignor.)						
American Linen Company. (See Richards, Francis H., assignor.)						
American Machinery Company. (See Krehbiel, John, assignor.)						
American Railway Signal Company. (See Abernethy, Harry M., assignor.)						
American Rolling-mill and Telegraph Company. (See Blakeney, Edward, assignor.)						
Amerling, William H., assignor to F. McCoy and G. H. Thomas, Seattle, Wash. Combined sheet-shear and chisel	851,972	Apr. 30	6569	1369	127	3369
Amsden, George A., Lowell, Mass., assignor to Lamson Consolidated Store Service Company. Conveying apparatus	851,790	Apr. 30	6180	1290	127	3296
Angell, Howard M., Jr., Conveying apparatus	851,639	Apr. 30	5883	1230	127	3223
Angell, George O., Philadelphia, Pa. Producing zinc sulfate directly from the ore	852,212	Apr. 30	7061	1475	127	3533
Angevor, Victor, Jersey Park, Pa., assignor to William Wharton, Jr., & Company, Incorporated. Switch structure	852,153	Apr. 30	6950	1451	127	3494
Appel, Frank, Philadelphia, Pa. Toy or advertising novelty	851,791	Apr. 30	6184	1291–2	127	3297
Appel, Anthony, Philadelphia, Pa. Toy or advertising novelty	852,311	Apr. 30	7225	1517–18	127	3533
Apple, Wendell R., Dayton, Ohio. Machine for packing powdered or mastic material	852,011	Apr. 30	6656	1398	127	3419
Arfert, Charles A., Bordeaux, France. Progressive brake and clutch	851,854	Apr. 30	6327	1320	127	3326
Arnold, Orin L., Cameron, Ohio. Extension-table lock	852,049	Apr. 30	6700	1406	127	3447
Arthur, William, Haverstraw, N. Y. Watchmaker's tool	851,727	Apr. 30	6069	1268	127	3270
Ash, James, Jr., Rochester, Iowa. Post and molding-machine						
Ashmore, William M., near Rare Avis, Miss. Cultivator	851,973	Apr. 30	6570	1369	127	3369
Aun, Cornwall, New York, N. Y. Means of connecting channel-irons in the construction of cornices						
Automatic Reel Adjusting Company. (See Reeve, Henry E., assignor.)						
Avén, Johan A., Stockholm, Sweden, assignor, by mesne assignments to Deutsche Telephonwerke Gesellschaft mit Beschränkter Haftung, Berlin, Germany. Telephone-exchange system	851,792	Apr. 30	6180	1292	127	3297
	851,974	Apr. 30	6571	1369	127	3369
Badger, Clay L., Rocky Ford, Colo. Brace for vehicle-wheels						
Baer and Company, Emery. (See Müller, Johann J., assignor.)	852,086	Apr. 30	6636	1408	127	3466
Baer, Julius, Jr., Knoxville, Clay D., assignor.						
Baldwin, Charles L., Waterloo, Iowa. Tile-machine	852,312	Apr. 30	7226	1519–19	127	3533
Bale, Henry P., Brownsville, N. Y., assignor of one-half to S. Insull, Chicago, Ill. Reproducing-machine	852,213	Apr. 30	7063	1476	127	3534
Barnes, Lorenzo, Portland, Oreg. Water-tower						
Barnes, John M. (See Tory, Shinzo, assignor.)						
Barnes, Nathaniel S., assignor to S. Howes Company, Silver Creek, N. Y. Distributer for fertilizers	852,050	Apr. 30	6702	1407	127	3446
Barnhart, Joseph B. (See Fontaine, John B., assignor.)						
Barnhart, Joseph B., Boonton, and A. J. Rosentreter, Boonton, N. J.; said Rosentreter assignor to said Barnhart. Door check and closer	851,640	Apr. 30	5887	1230–1	127	3224
Barnhart, Joseph B. (See Rigsby and Barhoff.)	852,154	Apr. 30	6951	1452	127	3494
Barnhart, Joseph B., New York, N. Y. Syringe	851,793	Apr. 30	6191	1293	127	3298
Barnhart, Joseph B., Lynn, Mass., assignor to General Electric Company. Brush-holder	852,313	Apr. 30	7223	1519	127	3534
Barnhart, Joseph B., assignor to Monarch Typewriter Company, Syracuse, N. Y. Type-writing machine	852,155	Apr. 30	6952	1452	127	3494
Barnhart, William H., Warren, Pa. Self-closing faucet	852,051	Apr. 30	6703	1407	127	3446
Barnes, John, Cleveland, Miss. Thill-coupling						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Bayrer, William J., assignor to Henry & Wright Manufacturing Company, Hartford, Conn. Spindle-drive			6970	1268	127	329
Beaudet, Louis O., Mandota, Minn. Lifting apparatus		Apr. 23	6983	1343-4	127	338
Beaudette, Edmond, Montreal, Quebec, Canada.		Apr. 23	6972	1300	127	333
Beaumont, Edward A., Jr., and G. W. Garmon, Philadelphia, Pa. Quick-connecting apparatus		Apr. 23	6982	1231	127	323
Bechtol, William, Arcanum, Ohio. Tobacco-fixture		Apr. 23	6966	1406	127	345
Beck, William M., Elwood, assignor of one-third to C. T. Parker, Fairmount, Ind. Means for signaling and stopping railway-vehicles		Apr. 30	6984	1452	127	346
Beckmann, Carl, New York, N. Y. Marker		Apr. 30	6985	1476	127	351
Beere, John M., St. Paul, Minn. Skirt and garment supporting device		Apr. 30	6986	1222	127	321
Behan, Thomas, Alliquippa, Pa. Safety-valve for air-brakes		Apr. 30	6987	1433	127	348
Belstner, George J., assignor of one-half to W. E. Stone, Chicago, Ill. Fabric-tag		Apr. 30	6988	1427	127	346
Benecke, Adelbert O., Valleburg, N. J. Electrical measuring instrument		Apr. 30	6989	1370	127	338
Bendt, Laurence V., and H. A. Herold, Paris, France. Semi-automatic gun		Apr. 30	7138	1402-3	127	345
Bennett, Winchester, assignor to Winchester Repeating Arms Company, New Haven, Conn. Cartridge-deflector for top-ejection guns		Apr. 30	6990	1232	127	322
Benton, Lina B., New Brighton, N. Y. Automatic type-casting machine		Apr. 30	6991	1321	127	330
Bergh, Louis D., Newport, R. I. Velocipede-wheel		Apr. 30	7139	1403	127	345
Bergmann, Eugen, Ohlau, Germany. Producing aluminium phosphides		Apr. 30	7140		127	345
Bergmann, Eugen, Ohlau, Germany. Producing aluminium phosphides		Apr. 30	7141		127	345
Bernard, William A., assignor to William Bullhorn Company, New Haven, Conn. Punch, pliers, &c.		Apr. 30	6992	1233	127	322
Bertels, Alexander L. (See Wellhouse, George F., assignor.)		Apr. 30	6993	1283	127	332
Bertschmann, Albert, assignor to Firm of Society of Chemical Industry in Basle, Basel, Switzerland. Yellow sulfin dye of the naphthalene series and making same		Apr. 30	6994		127	346
Bestgen, August G., Tipton, Mo. Attachment for harvesters		Apr. 30	6995	1406	127	345
Besanger, Gilbert, Boston, Mass. Bed-bottom		Apr. 30	6996	1493	127	354
Bigsby, Jesse W., and F. W. Barhoff, Hartford, Conn. Explosive-engine cylinder		Apr. 30	6997	1370	127	338
Bigsby, Jesse W., and F. W. Barhoff, Hartford, Conn. Explosive-engine cylinder		Apr. 30	6998	1370	127	338
Bird, Charles S. (See Penney, William L., assignor.)						
Bird, Frederick C. (See Park, Richard P., assignor.)						
Bird, Orley A., Centerburg, Ohio. Railway-switch		Apr. 30	6999	1344	127	336
Blackburn, Charles E. (See Nichol, Martin, and Blackburn.)						
Blackmore, William, London, England. Electromagnetic separator		Apr. 30	7000	1370-1	127	338
Blake, Bryon S., and E. A. Longshore, Des Moines, Iowa, and Longshore assignee to said Blake. Mixing-machine		Apr. 30	7001	1350	127	334
Blakeney, Edward, Geneva, N. Y., assignor to American Rubber and Tobacco Company. Means for nullifying inductive interference between parallel circuits		Apr. 30	7002	1221	127	320
Blanchard, Julian M. M., New York, N. Y. Antistatic device		Apr. 30	7003	1231	127	322
Bliss, Elmer F., Schenectady, N. Y., assignor to General Electric Company. Relay		Apr. 30	7004	1231	127	322
Block, David, Philadelphia, Pa. Ironing-board		Apr. 30	7005	1232	127	322
Blum, John G., Toledo, Ohio. Charging-trunk for annealing-furnaces		Apr. 30	7006	1543	127	357
Boal, Ayres, Chicago, Ill. Seal-lock		Apr. 30	7007	1230	127	322
Boak, William E., assignor to Toledo Glass Company, Toledo, Ohio. Machine for shaping glass		Apr. 30	7008	1233	127	323
Boak, William E., assignor to Toledo Glass Company, Toledo, Ohio. Blowing glass articles		Apr. 30	7009	1477-8	127	347
Boak, William E., assignor to Toledo Glass Company, Toledo, Ohio. Mold for glass-shaping machine		Apr. 30	7010	1478	127	347
Bode, Joseph, assignor to J. W. Ivory, Philadelphia, Pa. Dental-tool handle		Apr. 30	7011	1438	127	347
Boisseau, Sterling, Richmond, Va. Punch		Apr. 30	7012	1453	127	349
Boldt, Ernest. (See Burmeister and Boldt.)		Apr. 30	7013	1476	127	351
Boltz, Jacob W., Topeka, Kans. Dropper-grabber		Apr. 30	7014			
Bond, Samuel C. (See Fulsewider and Bond.)		Apr. 30	7015	1453	127	349
Bond, William G. (See Fulsewider and Bond.)						
Borgerding, Herman H. (See Trail and Borgerding.)						
Bottger, Albert C., assignor of one-half to J. W. Howorth, Wilkes-Barre, Pa. Feed-water strainer for locomotives		Apr. 30	7016	1344	127	336
Böttcher, Ernst, Kiel, Germany. Water-tube marine boiler		Apr. 30	7017	1401-2	127	345
Boudreaux, Leandre, assignor of one-half to J. A. Maquin, Thibodaux, La. Rail-joint		Apr. 30	7018	1233	127	323
Bourne, William S., Afton, Iowa. Stump-lifter		Apr. 30	7019	1519	127	356
Bowen, Robert S., Newton Center, and F. H. White, South Easton, assignors to Chickering & Sons, Boston, Mass. Piano-action		Apr. 30	7020	1322	127	327
Bowman, Eli, Arlington, Ohio. Wheelbarrow		Apr. 30	7021	1477	127	335
Bowman, Moses J., East Cleveland, Ohio. Excursion-table		Apr. 30	7022	1322	127	324
Boyd, John T., Valdosta, Ga. Seeding attachment for handsets		Apr. 30	7023	1404	127	348
Boyden, George A. (See Brown, Hamilton, and Boyden.)						
Brachan, Howard W., assignor to Pioneer Company, Hoppedale, Mass. Loose-detent		Apr. 30	7024	1233	127	322
Brannington, Anna M., Chewelah, Wash. Terrestrial Player for musical instruments		Apr. 30	7025	1464-5	127	349
Brehm, Henry A., et al. (See Smith, Preston L., assignor.)		Apr. 30	7026	1230-4	127	320
Breland, Christian, Bellingham, Wash. Automatic alarm mechanism		Apr. 30	7027	1345	127	337
Brithropp, John C., et al. (See Smith, Preston L., assignor.)		Apr. 30	7028	1345	127	337
Brice, John F., New York, N. Y. Rotary engine		Apr. 30	7029	1232-3	127	324
Brinco Manufacturing Co. (See Crozier, William S., assignor.)		Apr. 30	7030	1540	127	358
Brown, Alexander T., Syracuse, N. Y. Type-writing machine		Apr. 30	7031	1493	127	354
Brown, Alvah W., and W. P. Ernst, Grand Rapids, and W. O. Chester, Dryden, assignors to Durfee Manufacturing Mold Company, Grand Rapids, Mich. Casting-flask		Apr. 30	7032	1370	127	338
Brown, Frank H., J. H. Hamilton, Baltimore, and G. A. Boyden, Mount Washington, Md., assignors to National Compositypo Company. Mold for casting type, spaces, and quads		Apr. 30	7033	1370	127	338
Brown, Herbert, Rockwood, S. D. Leveling device		Apr. 30	7034	1402	127	345
Brown and Sharpe Manufacturing Company. (See Parker, John, assignor.)		Apr. 30	7035	1402-3	127	345
Brunting, Bailey, et al. (See Naujoks, Carl and F. C., assignors.)		Apr. 30	7036		127	345
Brust, Charles A., and J. H. De Boer, Memphis, Tenn. Truck		Apr. 30	7037		127	345
Bryant, Frederic J., New York, N. Y. Fire-escape		Apr. 30	7038	1477	127	352
Buchanan, John A., et al. (See Rector, Bradley L., assignor.)		Apr. 30	7039	1404	127	348
Buchanan, Leonard B., Woburn, Mass., Manager Instrument		Apr. 30	7040		127	345
Buckley, Edward J., et al. (See Strong, Earl T., assignor.)		Apr. 30	7041		127	345
Buell, Charles E., North Plainfield, N. J., assignor to General Fire Extinguisher Company, New York, N. Y. Fire-extinguisher		Apr. 30	7042		127	345
Bunn, Frank D., Los Angeles, Cal. Feeding attachment for type-writers		Apr. 30	7043		127	345
Burmeister, Charles, and B. Boldt, Calumet, Iowa. Perforating or scoring device for printing-presses		Apr. 30	7044		127	345
Burnham, Lyman O., Clare, Mich. Tile-machine		Apr. 30	7045		127	345
Burnett, Wm. E., Hays, Kans. Rotary engine		Apr. 30	7046		127	345
Burnett, William J., assignor to National Specialty Manufacturing Company, Holyoke, Mass. Grinder for coffee-mills		Apr. 30	7047		127	345
Burnfield, James F., Stuart, Nebr. Attachment for doubletrees		Apr. 30	7048		127	345

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Byington, Albert, Rockville, Ill. Lubricator	852,165	Apr. 30	6975	1456	127	3501
Byl, George [illegible], Jersey City, N. J. Label-paster	852,219	Apr. 30	7073	1478	127	3526
Cailo, [illegible] (See Spencer, Howard B., assignor.)	852,168	Apr. 30	6977	1456	127	3501
Campbell, [illegible] Battery-clip						
Canouts, [illegible] Bench and Canouts.)	851,797	Apr. 30	6196	1294	127	3303
Carbone, [illegible] Clutch mechanism	852,375	Apr. 30	7352	1544	127	3594
Carlton, C. [illegible] National Perforating Machine Company, Kansas City, Mo. [illegible] Gas-cabin	852,167	Apr. 30	6980	1457	127	3502
Carmich, [illegible] Automatic transporting device	851,649	Apr. 30	5905	1234-5	127	3227
Carr, W. [illegible] W. C. Flow	851,720	Apr. 30	6071	1235	127	3270
Carter, [illegible] Clamp for basin-cocks	852,220	Apr. 30	7076	1479	127	3527
Cecil, T. [illegible] (See Leggett, Joseph P., assignor.)						
Chamber [illegible] Hinsley, England. Game appliance	851,864	Apr. 30	6351	1324	127	3344
Charity, [illegible] to E. I. du Pont de Nemours Powder Company,	852,168	Apr. 30	6982	1457	127	3503
Child, [illegible] for basket shoe-machines						
Chisho [illegible] Company. (See Hoffmann, Otto C., assignor.)						
Chisho [illegible] (See Hamtoon, Charles F., assignor.)						
Chisho [illegible] White, assignors.)						
Chisho [illegible] (George W., assignor.)						
Childs, [illegible] N. Y. Rotary pump	852,102	Apr. 30	6849	1430	127	3469
Christ [illegible] Marker for corn-planters	851,798	Apr. 30	6197	1295	127	3303
Christ [illegible] assignor to Providence Tipping Machine Company,	852,108	Apr. 30	6850	1430-2	127	3469
Clark, W. [illegible] manufacturing shoe or similar lacings						
Clark, [illegible] N. Y., assignor to General Electric Company.	851,799	Apr. 30	6198	1295	127	3304
Clark, [illegible] Philadelphia, Pa. Apparatus for making carpets	852,104	Apr. 30	6858	1433	127	3471
Clark, W. [illegible] assignor.)						
Clearly, [illegible] Web Company, Bridgeport, Conn. Hose-supporter	851,980	Apr. 30	6582	1371	127	3402
Clemens, [illegible] Pa. Broom-machine	851,916	Apr. 30	6444	1345-6	127	3368
Clement, [illegible] Ill.	852,105	Apr. 30	6863	1434	127	3472
Cleveland [illegible]	851,981	Apr. 30	6583	1371	127	3402
Closs, J. [illegible] Pressure-reducing valve						
Cour, C. [illegible] to J. M. Peterson, W. G. Middleton, and W. G.	851,650	Apr. 30	5911	1235	127	3229
Cowper [illegible] Mail-bag attachment	851,730	Apr. 30	6074	1260	127	3271
Cox, H. [illegible] Horseshoe-calk	852,217	Apr. 30	7240	1520	127	3566
Cox, [illegible] attachment for sewing-machines and the like	851,651	Apr. 30	5912	1235	127	3229
Coxhead [illegible] Vending-machine	851,917	Apr. 30	6456	1346-7	127	3371
Crabtree [illegible] Manufacturing printing blocks and plates	851,918	Apr. 30	6460		127	3372
Crafts, [illegible] Form of check and like value or amount	852,267	Apr. 30	7125	1494	127	3542
Crane, [illegible] assignor.)	851,919	Apr. 30	6462	1347-8	127	3372
Crawford [illegible] Fireproof building construction	852,258	Apr. 30	7126	1494	127	3542
Crawford [illegible] Motor-driven hand-tool						
Crosby, [illegible] to Burroughs Manufacturing Co., Detroit, Mich. Tool-heat	851,865	Apr. 30	6262	1225	127	3244
Crosby, [illegible] Fastening for plate-glass and show-cases	851,920	Apr. 30	6465	1246	127	3373
Crosley, [illegible] (See Crosley, Edward, assignor.)	852,221	Apr. 30	7077	1479	127	3527
Crosman, [illegible] Flying-machine	852,222	Apr. 30	7078	1479-80	127	3528
Crossley, [illegible] to Cutlis Brothers Company, Detroit, Mich. Vending-	852,106	Apr. 30	6864	1434	127	3472
Crowell, [illegible] Sight for firearms						
Crowell, [illegible] Company. (See Hollingsworth, George H., assignor.)	852,223	Apr. 30	7081	1480	127	3528
Crozier, [illegible] Fan-support						
Crull, [illegible] Cook.)						
Cuddeb [illegible] Coolidge.)	852,259	Apr. 30	7137	1494	127	3542
Cuddeb [illegible] Mold for plastic material						
Cupples [illegible] N. Y., assignor to General Electric Company. Automatic	851,800	Apr. 30	6202	1295	127	3305
Curry, [illegible] (See Curry, Charles H., assignor.)	852,260	Apr. 30	7139	1495	127	3543
Curtis, [illegible] Non-refillable bottle	851,652	Apr. 30	5913	1236	127	3230
Curtis, A. [illegible] Belt thrower and guide	851,866	Apr. 30	6353	1325	127	3345
Curtis, [illegible] post-binder	851,867	Apr. 30	6355	1325	127	3345
Cox, A. [illegible] post-binder						
Cushm [illegible] to Western Electric Company, Chicago, Ill. Locking device	851,908	Apr. 30	6356	1325	127	3345
Cutler, [illegible]	851,653	Apr. 30	5914	1236	127	3230
Cutler, [illegible] N. Y. Hose-clamp						
Cutler, [illegible] assignor to Perkins Corporation, Hartford, Conn. Four-way	851,654	Apr. 30	5916	1237	127	3230
Cutler, [illegible]						
Cutler, [illegible] (See Lovell, William H., assignor.)						
Cutting, [illegible] (See Quinby and Critchley.)						
Cutting, [illegible] Mechanism for making master-sheets of musical	852,261	Apr. 30	7140	1495-6	127	3543
Cutting, [illegible]	851,869	Apr. 30	6357	1326	127	3345
Cutting, [illegible] N. Y. Hinged extension for hay-carrier tracks						
Cutting, [illegible] Aarau, assignor.)	851,921	Apr. 30	6467	1248	127	3374
Cutting, [illegible] England. Spindle of textile-machines	851,655	Apr. 30	5915	1237	127	3230
Cutting, [illegible] N. J. Electric horn						
Cutting, [illegible] assignor to American Clay Machinery Company, Bucyrus,	852,107	Apr. 30	6867	1434	127	3473
Cutting, [illegible]	851,801	Apr. 30	6204	1295	127	3305
Cutting, [illegible]	861,802	Apr. 30	6205	1295	127	3305
Cutting, [illegible] to Hill Stove Works, Rochester, N. Y. Cooking-stove						
Cutting, [illegible] Grand Rapids, Mich. Pulley attachment	851,922	Apr. 30	6468		127	3374
Cutting, [illegible] Connecticut. Extracting potash from feldspathic or other potash-	852,376	Apr. 30	7365	1545	127	3589
Cutting, [illegible] Mass. Machine for making horseshoe-nails	851,656	Apr. 30	5910	1227	127	3229
Cutting, [illegible] Machinery Company, Chicago, Ill. Gage for perforators	852,108	Apr. 30	6868	1435	127	3473
Dalton, [illegible] N. Y. Air-brake system	851,731	Apr. 30	6075	1260	127	3271
Davis, [illegible] Cal. Hanger of the pendulum nature for stone-saws	852,318	Apr. 30	7240	1520	127	3566
Davis, [illegible] Washington, D. C., assignor to United States Radiator Com-	852,378	Apr. 30	7365	1546-8	127	3587
Davis, [illegible] Box-frame for radiators						
Davis, [illegible] New York, N. Y.; C. E. Teale, administrator, assignor to	852,377	Apr. 30	7361	1546-8	127	3586
Davis, [illegible] Portland, Me. Decorticating-machine						
Davis, [illegible] assignor to C. Lefler, Brooklyn, N. Y., and International						
Davis, [illegible] Decorticating-machine						
Davis, [illegible] and Davis.)	852,262	Apr. 30	7144	1496	127	3543
Davis, [illegible] Preston L., assignor.)						
Davis, [illegible] N. J. Apparel	852,381	Apr. 30	7376	1549	127	3590
Dawley, [illegible] N. Y., assignor to G. K. Woodworth, Boston, Mass. Wire-						
Day, [illegible] system						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Drg.	Official Gazette. Vol.	Page.
De Graff, Fannie L., Portland, Oreg. Garment-supporter	[illegible]	Apr. 30	6469	1340	127	[illegible]
Dean, William W., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Telephone trunking system	[illegible]	Apr. 30	[illegible]	1296	127	[illegible]
Deare, Joseph H., Detroit, Mich. Soap-lever offer	[illegible]	Apr. 30	7242	1520	127	[illegible]
Deane & Company. (See Sklovsky, Max, assignor.)						
Deschambault, Alfred, Whitewood, Saskatchewan, Canada. Stump-puller	[illegible]	Apr. 30	6976	1270	127	[illegible]
Déry, Louis A., Montreal, assignor to J. W. Harris, Montreal, Quebec, Canada. Stopper for orange-peel buckets	[illegible]	Apr. 30	6976	1270	127	[illegible]
Deter, Homer, and W. Schoonover, Fryburg, Pa. Axle-clip	[illegible]	Apr. 30	6983	1457	127	[illegible]
Dettwyler-Bridderlin, Johann J., Sisach, Switzerland. Letter-file	[illegible]	Apr. 30	6989	1336	127	[illegible]
[illegible] Tobakmaschinen Gesellschaft mit Beschränkter Haftung. (See Aves, Johan A., assignor.)						
Dickason, Frank B., Shreveport, La. Stairway	[illegible]	Apr. 30	6980	1336-7	127	[illegible]
Dicks, Thomas A., assignor of one-half to W. H. Mank, Williamsburg, Pa. Tool-chuck	[illegible]	Apr. 30	7244	1521	127	[illegible]
Dickson, Richard A., Kansas City, Mo. Lawn-mower	[illegible]	Apr. 30	7245	1521	127	[illegible]
Diehl, Jacob, assignor to Standard Sewing Machine Company, Cleveland, Ohio. Take-up for sewing-machines	[illegible]	Apr. 30	7246	1521	127	[illegible]
Dilworth, Porter & Company. (See Morrison, Andrew, assignor.)						
Dininny, Ferral C., New York, N. Y. Apparatus for applying composition to spindles	[illegible]	Apr. 30	7273	1548	127	[illegible]
Dismukes, Jesse W. (See Gardner, James S., assignor.)						
Dias, Louis P., assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y. Type-writing machine	[illegible]	Apr. 30	6980	1271	127	[illegible]
Dixson, Clarence U., and C. L. Howard, Columbus, Ohio. Window-shade support	[illegible]	Apr. 30	6970	1249	127	[illegible]
Dodge Coal Storage Company. (See Plez, Charles, assignor.)						
Dodge, Philip T., Washington, D. C., assignor to Mergenthaler Linotype Company. Producing logotypes	[illegible]	Apr. 30	7022	1480	127	[illegible]
Doherty, George V., Boston, Mass. Non-refillable bottle	[illegible]	Apr. 30	6472	1340	127	[illegible]
Donnohue, Joseph D. (See Galbraith, Ulysses G., assignor.)						
Dowell, Chester M., Elkhart, Ind. Dental appliance	[illegible]	Apr. 30	6980	1271	127	[illegible]
Downer, Hawes and Company. (see Downer and Hawes, assignors.)						
Downer, Moses M., and G. R. Hawes, assignors to Downer, Hawes and Company, Bridgeport, Conn. Abdominal corset	[illegible]	Apr. 30	6473	1340-50	127	[illegible]
Downey, Richard F., Milwaukee, Wis., assignor to United States Railroad Track Building Machine Company. Machine for constructing railways	[illegible]	Apr. 30	[illegible]	1271-3	127	[illegible]
Doxier, Willoughby D., Weaksville, N. C. Plow	[illegible]	Apr. 30	[illegible]	1227	127	[illegible]
Draper Company. (See Aillery, Constant, assignor.)						
Draper Company. (See Bracken, Howard W., assignor.)						
Draper Company. (See Knight, George W., assignor.)						
Draper Company. (See Stimpson, Edward S., assignor.)						
Dresser, Charles A., assignor to G. A. R. and F. W. Kohler, Chicago, Ill. Controller for electric motors	[illegible]	Apr. 30	6816	1296-7	127	[illegible]
Dryden, George H. (See Patenall and Dryden.)						
Du Bois, Joshua H. (See Bruse and Du Bois.)						
Dugas, Adolfo, administrator. (See Shay, John H.)						
Duncan, Harry L., New York, N. Y. Bale of fibrous materials	[illegible]	Apr. 30	6985	1338	127	[illegible]
Dunn, William H., Chicago, Ill. Cleansing-machine	[illegible]	Apr. 30	6981	1271	127	[illegible]
Durfee Embalming Fluid Company. (See Brown, Ernest, and Canouts, assignors.)						
Dye, Joseph O. (See Goodfellow, Moore, assignor.)						
E. Goldman & Company. (See Paul, John T. H., assignor.)						
E. Green and Son. (See Kershaw, Louis W., assignor.)						
E. C. Stearns & Co. (See Schneelock, August, assignor.)						
E. I. du Pont de Nemours Powder Company. (See Chesney, John, assignor.)						
E. I. du Pont de Nemours Powder Company. (See Sparre, Fin, assignor.)						
Eagleton, Mariette E., Three Rivers, Mich. Bag-holder	[illegible]	Apr. 30	6968	1227	127	[illegible]
Easton and Burnham Machine Company. (See Haven, Colin A., assignor.)						
Echenberg, Harry F., Monessen, Pa. Advertising device	[illegible]	Apr. 30	6984	1466	127	[illegible]
Eddy, Joshua R., Sticker, W. Va. Wrench	[illegible]	Apr. 30	6985	1466	127	[illegible]
Edwards, Dean B., Wauchope, Saskatchewan, Canada. Drill	[illegible]	Apr. 30	6971	1435	127	[illegible]
Ellis, Albert H., New York, assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y. Combined type-writing and adding machine	[illegible]	Apr. 30	6980	1296-98	127	[illegible]
Ellis, Carleton, White Plains, N. Y., assignor to Ellis-Foster Company. Wax	[illegible]	Apr. 30	6969	[illegible]	127	[illegible]
Ellis-Foster Company. (See Ellis, Carleton, assignor.)						
Elofson, Erik, Forest Lake, Minn. Heating-stove	[illegible]	Apr. 30	6979	1409	127	[illegible]
Emmerich, Charles B., and C. C. Hedland, St. Louis, Mo. Cold-storage box	[illegible]	Apr. 30	7004	1481	127	[illegible]
Engel, Albert W., Chicago, Ill. Picture-mounting device	[illegible]	Apr. 30	6981	1336	127	[illegible]
Entringer, Nicholas, St. Cloud, Wis. Milk-strainer	[illegible]	Apr. 30	6981	1274	127	[illegible]
Eppler, Andrew, Jr., Boston, Mass., assignor to United Shoe Machinery Company, Paterson, N. J. Shoe-turning machine	[illegible]	Apr. 30	6969	1271	127	[illegible]
Erickson, Frederic W. (See Lord and Erickson.)						
Ernst, Herman P. (See Brown, Ernst, and Canouts.)						
Eschbach, Otto A., Springfield, Mass., H. Weber, Winsted, and K. H. Wellmann, Burlington, Conn. Supporting attachment for windows	[illegible]	Apr. 30	6985	1466	127	[illegible]
Faget, Georges, Paris, France. Method of and apparatus for transforming single or polyphase into continuous current	[illegible]	Apr. 30	6984	1271-2	127	[illegible]
Farinl, Guillermo A., Toronto, Ontario, assignor of one-half to R. Hunt, Hamilton, Canada. Boat	[illegible]	Apr. 30	7276	1548	127	[illegible]
Fenner, George P., New London, Conn. Front or lead guide for printing-presses	[illegible]	Apr. 30	7145	1496	127	[illegible]
Ferguson, Jacob C., Wilbur, Nebr. Harrow	[illegible]	Apr. 30	6969	1237	127	[illegible]
Ferguson, Samuel, Schenectady, N. Y., assignor to General Electric Company. Protection of secondary circuits	[illegible]	Apr. 30	6980	1272	127	[illegible]
Fero, Charles, Jr., assignor of one-third to F. Thompson, Bay City, Mich. Automatic car-brake	[illegible]	Apr. 30	6984	1227-8	127	[illegible]
Fessmaier, Benjamin, Jr., New Ulm, Minn. Motor fan attachment	[illegible]	Apr. 30	[illegible]	1439	127	[illegible]
Fischer, George J. (See Walcott and Fischer.)						
Fisk, Leland A., Rockton, Ill. Heating-furnace	[illegible]	Apr. 30	6973	1410	127	[illegible]
Fleming, Edward J., *et al.* (See Ralls, John C., assignor.)						
Fletcher, Claude D., Indianapolis, Ind. Shirt-supporter and waist-stay	[illegible]	Apr. 30	6973	1410	127	[illegible]
Foltz, Charles S., *et al.* (See Kray, John A., assignor.)						
Fontaine, John B., Marlboro, assignor to G. D. Barber, trustee, Worcester, Mass. Pet-ishing-wheel	[illegible]	Apr. 30	6982	1267	127	[illegible]
Forrester, Jesse B., *et al.* (See Sadtler, Morgan D., assignor.)						
Fortescue, Charles L., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Reactance-coil	[illegible]	Apr. 30	6988	1274	127	[illegible]
Fosgate, Daniel O., Chicago, Ill. Vaginal syringe	[illegible]	Apr. 30	6981	1336	127	[illegible]
Foster, Edgar J., assignor of two-thirds to H. S. Woolner, Los Angeles, Cal. Oil-burning apparatus	[illegible]	Apr. 30	6972	1435	127	[illegible]
Foster, Isaac M., West Covington, Ky. Clutch for counter-shafts	[illegible]	Apr. 30	7280	1549	127	[illegible]
Fox, Fredrick E., Kinsley, Kans. Hay-loading machine	[illegible]	Apr. 30	6975	1410	127	[illegible]
Frank Adam Electric Company. (See Adam, Frederick B., assignor.)						
Franks, Emil, Hicksville, N. Y. Clamping device	[illegible]	Apr. 30	7243	1521-2	127	[illegible]

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Drg.	Official Gazette. Vol.	Page.
Frankenstein, Aaron, New York, N. Y., assignor to P. L. Crowe, Jersey City, N. J. Means for connecting [illegible]	852,264	Apr. 30	7146	1496	127	3544
Fraser, Peter, [illegible] Transvaal. Straightway valve	851,876	Apr. 30	6367	1328	127	3348
French, Alfred W., Akron, Ohio. Steam-cooker for oil-bearing meal and the like	852,058	Apr. 30	6776	1410	127	3451
Frenzl, John A., Wyoming, Wis. Pump-pipe coupling	851,806	Apr. 30	6223	1298	127	3311
Friedman, [illegible], New York, N. Y. Burglar-alarm relay-drop	852,226	Apr. 30	7085	1481	127	3529
Fritsche, [illegible], Pa. Fraud-preventive device for coin mechanisms	852,111	Apr. 30	6873	1436	127	3474
Fuld, Maurice, [illegible], Md. Headlight	852,265	Apr. 30	7148	1497	127	3545
Fulmer, [illegible], assignors to National Cork and Seal Company. Bottle-[illegible]	852,323	Apr. 30	7249	1524	127	3568
[illegible]	852,172	Apr. 30	[illegible]	[illegible]	127	[illegible]
Fuller, James W., [illegible], Pa. Pulverizing or grinding mill	851,877	Apr. 30	6368	1328-9	127	3348
Fuller, [illegible], Ala. Tool-holder	852,174	Apr. 30	6980	1459	127	3505
Fuller, Silas B., and [illegible], Newport, Pa. Automatic shut-off valve	852,175	Apr. 30	6992	1459	127	3505
Fullipp, George, [illegible], Ala. Wheel-rim	851,927	Apr. 30	6475	1350	127	3376
Furlong, [illegible], Ala. Tent and hammock support	851,659	Apr. 30	6922	1238-9	127	3231
Fyfe, John M., [illegible], assignor to Mount Desk Co., Muskegon, Mich. Desk	852,407	Apr. 30	7432	1559	127	3614
Gaellnek, [illegible], assignor of one-half to J. D. Donnohue, Sedalia, Mo. Device for securing [illegible] to electrical [illegible]	852,266	Apr. 30	7149	1497	127	3545
Galbraith, Ulysses G., assignor of one-half to M. L. Childs, Waltham, Mass. Cranberry [illegible] or picker	851,741	Apr. 30	6091	1273	127	3275
Garden City Laboratory. (See Lanigan, Oscar J., assignor.)	852,059	Apr. 30	6779	1411	127	3452
Garden, Reuel D. B., Sharpsburg, N. Y. Artificial teeth	851,740	Apr. 30	6090	1273	127	3275
Gardin, Reuel D. B., assignor of one-half to J. W. Dismukes, Java, Ala. Seed-planter						
Gardner, James W., [illegible], Va. Girth						
Gardner, James W., Fairmont, Va. Girth						
Garets, Anton and E., [illegible], Austria-Hungary. Life-belt						
Garets, Emily. (See Garets, Anton and E.)						
Garland-Vyle Manufacturing Company. (See Paige, James W., assignor.)						
Garland, George W. (See Beaumont and Garmon.)	852,176	Apr. 30	6992	1459	127	3506
Garmon, George W. (See Beaumont and Garmon.)	852,060	Apr. 30	6780	1411	127	3452
Garrison, Anderson J., Connerville, Va. Axle-nut lock	851,742	Apr. 30	6092	1273-4	127	3276
Garrison, William J., Connerville, Pa. Dumping-wagon	852,267	Apr. 30	7150	1497-8	127	3545
Gates, William E., Riverside, Conn. Screw-machine	851,743	Apr. 30	6097	1274	127	3276
Gaussiran, John E., Baldwin, La. Cane-loader						
Gebhardt, Edward J., Schenectady, N. Y., assignor to General Electric Company. Variable-voltage transformer						
General Electric Company. (See Beaver, Ralph E., assignor.)						
General Electric Company. (See Bibo, Elmer F., assignor.)						
General Electric Company. (See Churchward, Alexander, assignor.)						
General Electric Company. (See Corey, Fred E., assignor.)						
General Electric Company. (See Ferguson, Samuel, assignor.)						
General Electric Company. (See Gebhardt, Edward F., assignor.)						
General Electric Company. (See Hill, Charles H., assignor.)						
General Electric Company. (See Knight, Charles D., assignor.)						
General Electric Company. (See Lamp, Hermann, assignor.)						
General Electric Company. (See Macdonald, George, assignor.)						
General Electric Company. (See Merrill, Wilbur L., assignor.)						
General Electric Company. (See Troy, Matthew O., assignor.)						
General Fire Extinguisher Company. (See Buell, Charles E., assignor.)						
Gerabek, [illegible], Austria-Hungary, assignor to Underwood Typewriter Company, New York, N. Y. Tabulator for type-writers	852,324	Apr. 30	7251	1524	127	3568
Gibson, James A., *et al.* (See Streng, Earl T., assignor.)	852,112	Apr. 30	6878	1436	127	3475
Gilbreath, Victor O., Seattle, Wash. Vehicle	852,177	Apr. 30	6994	1460	127	3508
Gill, Charles P., La Harpe, Ill. Poultry-fountain	852,113	Apr. 30	6879	1437	127	3476
Gilman, Charles D., Oakland, Cal. Tire repair and protective device	851,878	Apr. 30	6371	1329	127	3349
Gilman, George H., assignor to Sullivan Machinery Company, Claremont, N. H. Fluid-pressure-controlling device	851,879	Apr. 30	6372	1329	127	3349
Gleckler, Charles A., Pittsburg, Pa. Door	852,268	Apr. 30	7152	1498-9	127	3546
Gobbe, Olivier A., Jumet, Belgium. Distilling coal	851,880	Apr. 30	6374	1329-30	127	3350
Goshier, George J. H., Richmond, Va. Safe	852,019	Apr. 30	6703	1393	127	3432
Gosperts, George, *et al.* (See Naujoks, Carl and F. C., assignors.)	851,985	Apr. 30	6593	1374	127	3404
Gold, Edward H., New York, N. Y. Steam-heating system for railway-cars	852,020	Apr. 30	6705	1394	127	3433
Goldkin, Aaron, Cleveland, Ohio. Water-heater	851,928	Apr. 30	6477	1350-2	127	3378
Goodfellow, Moore, Cleveland, assignor of one-half to J. O. Dye, Springfield, Ohio. Steering-truck for agricultural implements	852,114	Apr. 30	6880	1437	127	3476
Goodhue, Frank M., Batavia, Ill. Manure-spreader	852,269	Apr. 30	7155	1499-1500	127	3546
Goodrum, Charles L. (See Lattig and Goodrum.)						
Gould, Shapley & Muir Company. (See Muir and Herod, assignors.)						
Gowan, Frank W., Somerset, Wis. Agitator						
Grant, Hugh A., Connor, British Columbia, Canada. Machine for raking and cocking hay						
Grasselli Chemical Company. (See Lilume, Iens P., assignor.)	851,929	Apr. 30	6482	1352	127	3376
Gray, Henry F., assignor to Adjustable Clip Company, Columbus, Ohio. Sealing device for pipe-couplings	851,930	Apr. 30	6485	1353	127	3377
Greenberger, David, Cleveland, Ohio. Trousers-support	852,178	Apr. 30	6995	1460	127	3506
Greenstein, Julius, and J. Lednitsky, New York, N. Y. Detachable heel						
Griggs, David C. (See Lamb and Griggs.)	852,383	Apr. 30	7381	1549	127	3601
Grinsfeld, George W., Manomet, assignor of one-half to M. L. Childs, Waltham, Mass. Cranberry scoop or picker	851,931	Apr. 30	6486	1353-4	127	3377
Gronsman, Martin, New York, N. Y. Table for punching stair-stringers	851,932	Apr. 30	6490	1354	127	3378
Gronsman, Samuel, New York, N. Y. Metallic stair	852,021	Apr. 30	6706	1394-5	127	3434
Grosvenor, Graham, and F. A. Coolidge, New York, N. Y., assignors to Otis Elevator Company, Jersey City, N. J. Grinding apparatus	851,881	Apr. 30	6376	1330	127	3350
Groves, Daniel C., Brookwayville, Pa. Wrench	851,933	Apr. 30	6491	1354	127	3378
Gurney, Howard P., Jersey City, N. J. Electric-elevator controller	851,934	Apr. 30	6496	1354-5	127	3380
Gurney, Howard P., Jersey City, N. J. Electric elevator	851,744	Apr. 30	6098	1275	127	3277
Gurney, Howard P., Jersey City, N. J.	851,745	Apr. 30	6100	1276	127	3277
Gwaltney, Joseph P., Pueblo, Colo. Safe	851,746	Apr. 30	6101	1276	127	3277
Hagstrom, Albert, Chicago, Ill. Mail-receiving box	852,270	Apr. 30	7156	1500	127	3546
Hairston, Charles C., Leavenworth, Kans. Metallic packing	851,747	Apr. 30	6102	1276	127	3277
Hall, [illegible], Spartanburg, S. C., assignor of one-half to F. G. Houser, Boise, Idaho. Weft-[illegible]	852,325	Apr. 30	7255	1524	127	3568
Hale, William B., Mexico, Mexico, assignor to Western Electric Company, Chicago, Ill. Drying electric cables	852,384	Apr. 30	7284	1550	127	3601
Hall, Harry A., Philadelphia, Pa. Making lead oxid	852,271	Apr. 30	7159	1500-1	127	3547
Hall, John W., assignor to Hall's Transmission Gear Syndicate, Limited, London, England. Variable power-transmission mechanism	851,986	Apr. 30	6595	1374	127	3406
Hall, Joseph R., Indianapolis, Ind. Corn-husker and fodder-shredder	851,748	Apr. 30	6103	1276	127	3278
Hall's Transmission Gear Syndicate. (See Hall, John W., assignor.)	851,660	Apr. 30	6028	1230	127	3282
Hanly, William J., Toronto, Ontario, Canada. Clutch						
Hansen, Hans D. (See Brown, Hanrahan, and Boyden.)						
Hardinge, Hyman D., Montevideo, Minn. Display-rack						
Harding, Joseph W., Brooklyn, N. Y., assignor, by mesne assignments, to Metropolitan Sewing Machine Company. Rotary fan						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Hadley, Frederick L., Quakertown, Pa. Apparatus for regulating pneumatic tires		Apr. 30	7166	1525	127	3239
Hamilton, Calvin P., Rice Lake, Wis. Bookrest		Apr. 30	6977	1330-1	127	3239
Harris, Joseph W. (See Dery, Louis A., assignor.)						
Harris, Louis J., New York, N. Y. Engraving or guide		Apr. 30	6985	1437-8	127	3239
Harrison, Frank B. (See Williams and Harrison.)						
Hart, Herbert H., Chicago, Ill. Tie-plate		Apr. 30	6970	1331	127	3239
Hartigan, Joseph, assignor of one-fourth to J. F. Kehoe, Mount Pleasant, Pa. Hydrocarbon		Apr. 30	7167	1525	127	3239
Harvey, Albert W., Rockwall, Tex. Railway-signal		Apr. 30	7003	1461	127	3239
Hasselman, Louis C., and H. M. Smith, St. Louis, Mo. Corn-grinding		Apr. 30	7003	1525	127	3239
Hawes, Cullen A., Raymond, and R. Robertson, Hawes to Boston and Hawkins Machine Company, Robbin-dusting device for spinning		Apr. 30	6981	1322	127	3239
Hawes, George E. (See Downer and Hawes.)						
Hearn, Mark. (See Collins and Hearn.)						
Haldland, Charles C. (See Bumgardt and Haldland.)						
Haney, John, Perry, N. Y. Automatic switch		Apr. 30	6981	1355-6	127	3239
Hendershott, Charles, Bellefontaine, Ohio. Tie for wire fences		Apr. 30	6984	1296	127	3239
Hendrich, August, Greenpoint, assignor to Hercules Gate Company, Fulton county, Ind. Gate						
Henke, Henry F., Waconia, Minn. Bank-holder		Apr. 30	6985	1356	127	3239
Hennig, Rudolf, Zwickerbahn, Germany. Governing means for internal-combustion engines		Apr. 30	6945	1276	127	3239
Henry & Wright Manufacturing Company. (See Sayre, William J., assignor.)		Apr. 30	7166	1501-2	127	3247
Hercules Gate Company. (See Hendrich, August, assignor.)						
Herod, Charles H. (See Muir and Herod.)						
Herrick, Lily J., Chicago, Ill. Stove cover or mat		Apr. 30	6984	1438	127	3247
Hess, Max, Munich, Germany. Electric comb		Apr. 30	7166	1502	127	3247
Hewitt, Herbert H. (See Smith, William R., assignor.)						
Hewitt, William H., Cleveland, Ohio. Crucible-tongs		Apr. 30	6986	1375	127	3248
Hewitt, Alfred M., and G. F. Van Brunt; said Van Brunt assignor to said Hewitt. Clamp		Apr. 30	6987	1239	127	3248
Hilbert, John, Brooklyn, N. Y. Bracket		Apr. 30	6987	1460	127	3248
Hill, Charles H., Schenectady, N. Y., assignor to General Electric Company. Automatic switch for electric circuits		Apr. 30	6986	1298	127	3231
Hilsinger, Adin W., Oswego, N. J. Hat-dipping apparatus		Apr. 30	6985	1296-9	127	3232
Hine, Henry C., assignor to Trant & Hine Manufacturing Company, New Britain, Conn. Suspenders		Apr. 30	6988	1332	127	3248
Hodges Fiber Carpet Company. (See Stevenson, William M., assignor.)						
Hodges, Marion F., Rushville, Ill. Separating attachment for cultivators		Apr. 30	6988	1277	127	3239
Hoffman, Anna M., McKees Rocks, Pa. Bookkeeping-fastener		Apr. 30	6987	1460	127	3248
Hoffman, Ross J., Bradford, Pa. Deep-oil-well pumping		Apr. 30	6981	1411	127	3248
Hofmann, Otto C., Buffalo, N. Y., assignor to Chicago Pure Wire and Manufacturing Company, Chicago, Ill. Jump-spark indicator		Apr. 30	6989	1277	127	3239
Holbrook, J. Y. (See Holbrook, Milo F., assignor.)						
Holbrook, Milo F., Longview, assignor of one-half to J. Y. Holbrook, Dallas, Tex. Fruit-cooker		Apr. 30	6980	1550	127	3248
Hotherty, George W., Neosho Rapids, Kans. Well-drive		Apr. 30	7169	1461	127	3247
Hollingsworth, George H., Belmont, Mass., assignor to Consolidated Car Heating Company, Providence, R. I. Pneumatic appliance for cars		Apr. 30	6985	1436	127	3247
Holman, Harry, Grass, Cal. Fish-hook for dressing fowl		Apr. 30	6988	1413	127	3248
Holt, David F. (See Keeler, William T., assignor.)						
Hoover, William N., assignor of one-half to E. T. Johnson, Dayton, Ohio. Turbine		Apr. 30	6984	1332-3	127	3248
Hopkins Co. (See Marsh, Albert L., assignor.)						
Houghton, Alexis C., Syracuse, N. Y. Process of making monobasic organic peroxide		Apr. 30	6980		127	3239
Houser, Frank G. (See Haight, Frederick, assignor.)						
Howard, Charles L. (See Dickson and Howard.)						
Howard, Mentor, Lewisville, Tex. Wire-fence clip						
Howe, Frank C., El Paso, Tex. Washing-machine				1366	127	3248
Howe, Frank C., El Paso, Tex. Washing-machine				1461	127	3247
Howell, Charles W., assignor to Sun Typewriter Company, Newark, N. J. Type-writing machine		Apr. 30	6988	1375-6	127	3247
Howorth, Frank W. (See Bottger, Albert C., assignor.)						
Huisman, Gerit, Kamrar, Iowa. Riding attachment for harrows		Apr. 30	6988	1439	127	3247
Hull, Robert W., Boston, Mass. Machine for sandblasting, scouring, and engraving (etc.) of sheet material		Apr. 30	6988	1367	127	3248
Humphrey, Arthur W., and A. E. Mawbey, Gold Crossing, near Rochdale, England. Fog Signal apparatus for railways and the like		Apr. 30	6987	1376	127	3248
Hunt, Pearly, Centerville, Iowa. Planting or listing machine		Apr. 30	6985	1357	127	3248
Hunt, Rensselaer. (See Farrell, Guillermo A., assignor.)						
Hunt, Roland, Philadelphia, Pa. Fluorescent-lamp		Apr. 30	7000	1461-2	127	3248
Huntoon, Charles F., assignor to Chicago Railway Equipment Company, Chicago, Ill. Body-bolster		Apr. 30	6988	1277	127	3248
Huston, Charles L., Coatesville, Pa. Gas-producer		Apr. 30	6988	1461	127	3248
Ingold, Theodore J., Farmington, Ill. Trunk-locker		Apr. 30	6988	1333	127	3248
Insull, Samuel. (See Ball, Henry P., assignor.)						
International Cigar Machinery Company. (See Lambert, William S., assignor.)						
International Fibre Company. (See Irving, Charles E., assignor.)						
International Harvester Company. (See Johnston, Edward A., assignor.)						
International Harvester Company. (See Smith, Daniel W., assignor.)						
Ivory, James W. (See Bode, Joseph, assignor.)						
Jackson, Ray P., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Controlling apparatus for electric motors		Apr. 30	6989	1340	127	3248
Jackson, Ray P., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Electromagnet		Apr. 30	6991	1340	127	3248
Jackson, Ray P., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. System of control		Apr. 30	6987	1340	127	3248
Jackson, Ray P., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Voltage-regulating system		Apr. 30	6989	1340	127	3248
Jackson, Ray P., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Voltage-regulator		Apr. 30	6989	1340	127	3248
Jackson, Ray P., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Hand-operated electric-circuit controller		Apr. 30	6989	1341	127	3248
Jacobs, Charles C., assignor to Jacobs Steel Excavator Company, Amboy, Mi. Bucket for excavating-machines		Apr. 30	7169	1551	127	3248
Jacobs Steel Excavator Company. (See Jacobs, Charles C., assignor.)						
James, Guy E., Keene, Miss. Metal cross-tie		Apr. 30	6991	1339	127	3248
James, Henry D., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Resistance-terminal		Apr. 30	6989	1339	127	3248
James, John D., Fulaski, Va. Filling zinc-retorts						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
[illegible] (See [illegible] and Jenney.)						
[illegible], Wash. [illegible], assignor to Lamson Consolidated Store Service	851,754	Apr. 30	6113	1277	127	3239
[illegible] Conveyer-separator for pneumatic-tube apparatus	851,755	Apr. 30	6113	1278	127	3241
[illegible], Iowa. Cultivator						
[illegible], Ohio, assignor to Johnson Furnace and Engineering Company, [illegible] and heat-generating process	851,756	Apr. 30	6116	1276	127	3241
[illegible] Company. (See Johnson, Alfred E., assignor.)	851,757	Apr. 30	6116	1276-9	127	3242
[illegible], Tex. Gin-saw						
[illegible], Ohio. (See Reeves, William H., assignor.)						
[illegible] Company of Winchester Repeating Arms Company, New Haven, [illegible] for [illegible]-ejection guard	851,669	Apr. 30	6946	1248	127	3237
[illegible] Company of Winchester Repeating Arms Co., New Haven, Conn. [illegible]	852,119	Apr. 30	6939	1439	127	3479
[illegible], N. Y. Open-side planer	852,220	Apr. 30	7003	1436-6	127	3479
[illegible], Ill., assignor to International Harvester Company. [illegible]	851,670	Apr. 30	6945	1248-9	127	3237
[illegible]	852,274	Apr. 30	7164	1503	127	3243
[illegible], Mass. (Glycerin heat	852,063	Apr. 30	6784	1413	127	3483
[illegible] Co., Battle Creek, Mich. Hot-air-register attachment						
[illegible], Chicago, Ill., assignor to Westinghouse Electric & Manufacturing Company. [illegible] for electric conductors	851,671	Apr. 30	6947	1243	127	3239
[illegible], Mass. Construction of carrier-bar mechanisms for twisting	851,672	Apr. 30	6950	1243	127	3238
[illegible] (See Riding, William V. D., assignor.)						
[illegible] D. Haverwood, Tex. Heating system	852,224	Apr. 30	6785	1413	127	3484
[illegible] C., New Cumberland, W. Va. Automatic feeding mechanism for tempering-[illegible]	852,220	Apr. 30	6950	1439-40	127	3479
[illegible], Mount Airy, N. C. Display-shelving	852,220	Apr. 30	7029	1462	127	3231
[illegible], Syracuse, N. Y. Making lenses from [illegible]	851,673	Apr. 30	6982		127	3239
[illegible], assignor to Tressed Concrete Steel Company, Detroit, Mich. Floor con-[illegible]	852,230	Apr. 30	7031	1462	127	3231
[illegible], Vermont V. (See Evans, Richard E., assignor.)						
[illegible], Allegheny, assignor to J. Rhodes, Allegheny, and W. H. Latshaw, [illegible]	851,940	Apr. 30	6512	1268	127	3234
[illegible], Pa. Spraying device	851,738	Apr. 30	6120	1270	127	3238
[illegible], Allegheny, Pa. Railway-car truck	852,227	Apr. 30	7202	1461	127	3234
[illegible], assignor of one-half to D. F. Holt, Bedford, Ind. Toy	852,228	Apr. 30	7203	1462	127	3235
[illegible], and W. A. Monson, Clay Center, Kans. Windmill	852,275	Apr. 30	7165	1502	127	3243
[illegible], Pa. Carding-machine	852,230	Apr. 30	7230	1438	127	3479
[illegible], Cleveland, Ohio. Syringe	852,065	Apr. 30	6786	1413	127	3484
[illegible] F. (See Hartigan, Joseph, assignor.)						
[illegible], assignor of one-half to H. S. Jones, Brooklyn, N. Y.	852,171	Apr. 30	6995	1440	127	3480
[illegible], N. J., assignor to [illegible]	852,231	Apr. 30	7230	1438	127	3471
[illegible] (See [illegible])						
[illegible], Ind. Grain-door						
[illegible] Company. (See Dean, William W., assignor.)	852,231	Apr. 30	7002	1462-3	127	3231
[illegible], and Supply Company. Log-turner	851,941	Apr. 30	6515	1268	127	3234
[illegible], A. Adjustment, Wis. Surgical instrument	851,942	Apr. 30	6516	1268	127	3235
[illegible], New York, N. Y. Chimney-cap						
[illegible], Manchester, England. Joint-	852,276	Apr. 30	7166	1502-4	127	3243
[illegible], assignor to E. Green and Son Limited, Wakefield, England. [illegible]	851,943	Apr. 30	6517	1269	127	3235
[illegible], Mo. Drag	851,674	Apr. 30	6982	1242	127	3239
[illegible], Kans. Washing-machine	852,122	Apr. 30	6980	1440	127	3480
[illegible], Waynesburg, Mo. Air-purifying apparatus	852,232	Apr. 30	6711	1268	127	3484
[illegible], Mount. Current-motor	852,066	Apr. 30	6787	1412	127	3484
[illegible], Ind. Ter. Acetylene-gas generator	852,068	Apr. 30	6713	1268	127	3480
[illegible], St. Louis, Mo. Corn-cap						
[illegible], Cookshire, Quebec, Canada. Abdomi-	851,680	Apr. 30	6986	1283	127	3238
[illegible], and E. A. Davis, [illegible]						
[illegible], Schenectady, N. Y., assignor to General Electric Company. Auto-	851,811	Apr. 30	6280	1280	127	3213
[illegible]						
[illegible], assignor to Draper Company, Hopedale, Mass. Ring spinning or	851,812	Apr. 30	6282	1300	127	3213
[illegible]						
[illegible] (See Rein, Robert, assignor.)	852,067	Apr. 30	6789	1412	127	3484
[illegible], Tampa, Tex. Churn						
[illegible] (See Byl and Keehler.)	852,222	Apr. 30	7004	1462-4	127	3232
[illegible], San Francisco, Cal. Wave-motor						
[illegible] W., et al. (See Downer, Charles A., assignor.)						
[illegible], et al. (See Downer, Charles A., assignor.)						
[illegible] (See Schwinkert and Kraft.)						
[illegible], assignor of one-half to E. J. Kaltenbach, Brooklyn, N. Y. Rotary	851,678	Apr. 30	6984	1244	127	3239
[illegible]						
[illegible], assignor of two-thirds to D. M. Rothenberger and C. S. Foltz, Lancaster, [illegible]	851,944	Apr. 30	6519	1269	127	3236
[illegible]						
[illegible], assignor to American Machinery Company, Cleveland, Ohio. Car-ves-	851,945	Apr. 30	6522	1260	127	3236
[illegible], John, assignor to [illegible]	851,676	Apr. 30	6987	1244	127	3240
[illegible] (See Wallot and Kriger.)						
[illegible], Shelby, Iowa. Draft-equalizer	851,946	Apr. 30	6524		127	226
[illegible], Penn Yan, and G. O. Seward, Holcombe Rook, Va., assignors, by mesne assign-	851,789	Apr. 30	6121	1279	127	3263
[illegible] Company. Dettuning	851,790	Apr. 30	6123	1280	127	3263
[illegible], Tin Products Company. [illegible]	851,947	Apr. 30	6526	1280	127	3267
[illegible], assignor to Piffo & A. Saurer, Arbon, Switzerland. Carburetor						
[illegible] C., Platteville, Wis. Conveyer	851,677	Apr. 30	6989	1245	127	3240
[illegible], South Chicago, Ill. Degree-square						
[illegible], assignors to Waterbury Farrell Foundry and Ma-						
[illegible] B., and D. C. Griggs, [illegible] Drop-hammer	852,068	Apr. 30	6789	1413-14	127	3484
[illegible], Waterbury, Conn.						
[illegible], Allentown G. (See Lambert, Charles G. and A. G.)						
[illegible], Charles G. and A. G., Lowville, France. Apparatus for the combined ventila-						
[illegible] and [illegible] of workshops						
[illegible] Connecticut Store Service Company. (See Amsden, George A., assignor.)						
[illegible] Connecticut Store Service Company. (See Jennings, Chester S., assignor.)	851,813	Apr. 30	6283		127	3213
[illegible], assignor to Garden City Laboratory, Chicago, Ill. Neutral soldering-	852,277	Apr. 30	7167	1504	127	3548
[illegible], Owner J., assignor to [illegible]	851,781	Apr. 30	6124	1280	127	3263
[illegible]						
[illegible], Paul J., Genoa, Ill. Leather-skiving machine						
[illegible], Alfred, Buffalo, N. Y. Telephone switch-hook						
[illegible] Company. (See Dahly, John, assignor.)						
[illegible], Manhattan Company, (See Kaplan, Joseph A., assignor.)	851,948	Apr. 30	6526	1260	127	3236
[illegible], William H., et al. (See Kaplan, Joseph A., assignor.)						
[illegible], W., and C. L. Goodrum, Philadelphia, Pa. Telephone system	852,228	Apr. 30	7202	1437	127	3471
[illegible], assignor to May Manton Pattern Company, New York, N. Y. Paper						
[illegible] M., assignor to [illegible]	851,950	Apr. 30	6529	1264	127	3264
[illegible] (See Weaver and Lenz.)						
[illegible], Waldo A., St. Louis, Mo. Starting alternating-current motors						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Layman, Waldo A., St. Louis, Mo. Electrically braking alternating-current motors				1394-5	127	
Le Blanc, Armand E., Houma, La. Lead-marker				1414	127	
Le Mat, Raoul F., Washington, D. C., assignor to C. A. Rasch, Philadelphia, Pa. Knife-support						
Leask, Edward C., Norwalk, Conn. Bottle-stopper				1361	127	
Leak, Charley, Numa, Iowa. Cultivator-shovel				1370	127	
Lechinsky, Jasil. (See Grossheim and Lechinsky.)				1361	127	
Lee, Alfred M., Groton. (See Peters, Roger F., assignor.)						
Leiter, Charles, et al. (See Davis, Charles H., assignor.)						
Leppett, Alexander, Mickman City, Ind. Fire-escape						
Leppett, Joseph P., Carthage, Mo., assignor to Carthage Cornice & Tinner Company, Cleveland, Ohio. Cornice for tinners' use		Apr. 30	7169	1404	127	
Leitch, Edwin F., San Francisco, Cal. Mail-bag				1441	127	
Leitz, Robert, Chicago, assignor of one-half to P. E. Cotton, Wilmette, Ill. Quartz-support				1441-5	127	
Leisy, Hermann, Lynn Haven, assignor to General Electric Company. Automatic means for automobiles				1360	127	
Lentz, Hugo, Hahnsen, near Berlin, Germany. Valve-gear				1360	127	
Leuthesser, Fred W., assignor to Remington-Typewriter Company, Chicago, Ill. Apparatus for radiation				1455	127	
Levison, Hannah V., New York, N. Y. Mat-fastener				1457	127	
Levy, Charles, New York, N. Y. Dumping-apparatus				1443	127	
Lewis, Raymond W., Findlay, Ohio. Chain-support				1361	127	
Lewis, William H., Roanoke, Va., assignor of one-half to T. J. McCarthy, Chicago, Ill. Brake				1457	127	
Libbman, Louis, Everett, Mass. Joint for sheet-metal work				1360	127	
Liberia, Jean P., assignor to Grasselli Chemical Company, Cleveland, Ohio. Acid-cooling and packing chamber				1360	127	
Linkmeyer, Rudolf, Herford, Germany. Manufacture of enameled sheet-iron signs, plates of cellulose		Apr. 30	7207	1433	127	
Lippincott, Fisher H., assignor to Lippincott Pencil Company, Philadelphia, Pa. Pencil					127	
Lippincott Pencil Company. (See Lippincott, Fisher H., assignor.)				1359	127	
Lissone, Arthur, Chicago, Ill. Rubber						
Lissone, Arthur, Chicago, Ill. Rubber				1362	127	
Livingston, Carl J., Providence, R. I. Hand-support				1363	127	
Lloyd-Griffith, Roger and P., assignors to Automatic Separator, Stockholm, Sweden. Operating device for milling-machines				1358	127	
Lloyd, Richard L., Cannock, Eng. Tube-expander (Reissue 12,147.)			6881	1361	127	
Lloyd, Richard L., Cannock, Eng. Apparatus for expanding tubes				1361	127	
Lloyd, William H., Evanston, assignor to Crane Company, Chicago, Ill. Check-valve				1360	127	
Lock, Joseph, Brooklyn, N. Y. Elevator-controller				1360	127	
Lock Joint Pipe Company. (See Mitchell, John C., assignor.)				1354	127	
Lockwood, Silas R., Pratt, Kans. Weed-cutter and cultivator						
Loew, Charles H., Lakewood, Ohio. Tube-expander				1460	127	
Logemann Brothers Company. (See Logemann, William F., assignor.)				1460	127	
Lombard, Charles R., East Orange, N. J., assignor to International Cigar Machinery Company, New York, N. Y. Cigar-machine				1444	127	
Lott, William, Jersey City, N. J. Curtain-support				1367	127	
Lutz, William D., Alameda, N. J. Electrically-controlled elevator				1460	127	
Lyle, Nathaniel, Jamestown, N. Y. Fish-trap				1460	127	
Macbeth, George A., Pittsburg, Pa. Forming apertures in glass				1367-8	127	
Mack, William H. (See Dinkle, Thomas A., assignor.)				1461	127	
Macloskie, George, Schenectady, N. Y., assignor to General Electric Company. Air-brake system and engineer's valve				1444	127	
Macrate, Michael N., and J. A. Toomey, Los Angeles, Cal. Oil-burning system				1362	127	
Macy, William H., and J. H. Wilbur, Chicago, Ill. Fur-wrench				1363	127	
Magowan, Frank A., New York, N. Y. Winding-machine				1464	127	
Mahony, Catharine, et al. (See Wood, Milton S., assignor.)				1444	127	
Manville, Clay D., assignor of one-half to T. Ryan, Pittsburg, Pa. Dry battery				1443	127	
Marconnet, Georges, Paris, France. Apparatus for preventing gas				1460	127	
Marhoff, Walter E., assignor to W. Shackney, Jr., Kalamazoo, Mich. Fluid-meter				1360	127	
Marion Insulse Filter and Heater Company. (See Packard, Edwin D., assignor.)				1454	127	
Markham, De Witt C., Fort Leyton, N. Y. Gearing						
Marks, John S. F., Olympia, Wash., assignor to National Wood Pipe Company, San Francisco, Cal. Basket-sleeve pipe				1360	127	
Marks, John S. F., Olympia, Wash., assignor to National Wood Pipe Company, San Francisco, Cal. Pipe-winding machine				1359	127	
Marquez, William A., Cincinnati, Ohio. Jewelry for ear-ornaments				1360	127	
Marsh, Albert L., Lake View, assignor to Illinois Tool Co., Chicago, Ill. Electric stove				1364	127	
Marsh, Edward A., Newton, Mass. Device for forming ornamenting drain				1360	127	
Martin, John E. (See Mitchell, Martin, and Blackburn.)					127	
Martin, William H., Idaho Falls, Idaho. Elevator				1460-5	127	
Martin, George J., Newark, N. J. Apparatus for preparing pulverized materials for mixing or briquetting				1444-5	127	
Martin, George J., Newark, N. J. Preparing pulverized materials for molding or briquetting				1360	127	
Mason, Charles G., Toledo, Ohio. Hair-drier				1360	127	
Mason, William P., Hamburg, N. Y. Device for handling invalids				1361	127	
Mason, Alexander H. (See Humphrey and Mowbray.)				1365	127	
Mawbray, John M., et al. (See Fletcher, Charles H., assignor.) (Reissue.)				1458	127	
May Manufacturing Company. (See Lamb, George H., assignor.)						
Mayer, Charles F., Atlantic, N. Y. Alternating-current machinery						
McAdoo, Thomas B., Savannah, Ga. Oiling device for feed-grinders				1367-8	127	
McCarthy, Thomas J. (See Lewis, William H., assignor.)				1360	127	
McCarty, Henry O., Baltimore, Md. Non-collapsible bottle				1360	127	

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
McCoy, Fred, et al. (See Amsbary, William N., assignor.)						
McEwen, Frank W., Chicago, Ill. Soap-cutting and pressing machine	852,190	Apr. 30	7017	1405-6	127	3512
McFadden, Edward C., Short Hills, N. J. Eraser for type-writers	852,191	Apr. 30	7021	1406	127	3513
McGregor, Alexander, Chicago, Ill. Pipe-cutter	852,241	Apr. 30	7377	1430	127	3578
McGrath, Thomas, Detroit, Mich. Railway-switch lock	852,075	Apr. 30	6900	1416	127	3468
McIntyre, James, assignor to J. E. McIntyre, Boston, Mass. Flooring	851,788	Apr. 30	6133	1282	127	3286
McIntyre, James E. (See McIntyre, James, assignor.)						
McKay, Daniel J. (See Story, John H., assignor.)						
McKay, Daniel D. (See Wicks and McKay.)						
McKenzie, Malcolm, Plainfield, N. J. Extracting turpentine and other products from wood	851,887	Apr. 30	6889	1280	127	3248
McKenzie, Malcolm, Plainfield, N. J. Apparatus for extracting turpentine and other substances from wood	852,326	Apr. 30	7099	1405	127	3533
McKeough, William J., Philadelphia, Pa. Switch	852,192	Apr. 30	7022	1406	127	3513
McKinnis, James P., Detroit, Mich. Siphoning device	851,886	Apr. 30	6901	1280	127	3248
McMahon, Michael P., Worcester, Mass. Friction-clutch for automobiles and other purposes	851,926	Apr. 30	6843	1263	127	3202
McMahon, Arthur B., Brooklyn, N. Y. Electric exercising apparatus	852,193	Apr. 30	7023	1406	127	3514
McMurray, Alfred L., New York, N. Y. Motor-vehicle	851,889	Apr. 30	6902	1280	127	3249
McNeely, James T., Los Angeles, Cal. Suspenders	852,076	Apr. 30	6901	1416	127	3468
Mason, Lester E., and E. F. Price, Upper Sandusky, Ohio. Mechanism for imparting and reversing motion	851,921	Apr. 30	6252	1304	127	3319
Meech, Alfred N., Chatham, N. Y. Cable-clamp	851,922	Apr. 30	6254	1305	127	3319
Merrell, Edward A. (See Bendt and Merrell.)						
Metropolitan Linotype Company. (See Dodge, Philip T., assignor.)						
Meylan, William L., Schenectady, N. Y., assignor to General Electric Company. System of motor control	851,823	Apr. 30	6256	1305-6	127	3320
Marshall, Ralph D., New York, N. Y. Protection of electrical systems from lightning and other static disturbances	852,026	Apr. 30	6720	1397	127	3437
Marshall, Ralph D., New York, N. Y. Alternating-current machine on single-phase circuits	852,027	Apr. 30	6722	1397	127	3438
Marshall, Ralph D., New York, N. Y. Electric motor and other apparatus in which there is magnetic lag	852,028	Apr. 30	6726	1398	127	3439
Metropolitan Sewing Machine Company. (See Harding, Joseph W., assignor.)						
Mettler, Hans, Aarau, Switzerland. Drawing instrument	853,122	Apr. 30	6921	1445	127	3486
Meyer, Albert, and F. M. Rogers, assignors to Meyers-Rogers Projectile Company, Seattle, Wash. Means for projecting and anchoring life-lines	851,824	Apr. 30	6264	1308	127	3322
Meyer, Godfrey A., Jr., Jeannette, Pa. Self-adjusting wrench	852,071	Apr. 30	6794	1415	127	3466
Meyers-Rogers Projectile Company. (See Meyer and Rogers, assignors.)						
Michell, Joseph N., Germiston, Transvaal. Safety-stop for elevators	852,072	Apr. 30	6795	1415	127	3466
Mickelson, Theodore F., Sioux Falls, N. Y. Navigable aeroplane	851,983	Apr. 30	6976	1346	127	3245
Middleton, Walter G., et al. (See Coar, Charles H., assignor.)						
Mikorey, Hans, Schlachtensee, near Berlin, assignor to W. Graaff & Company, Gesellschaft mit Beschränkter Haftung, Berlin, Germany. Fire-extinguisher	852,208	Apr. 30	7402	1503	127	3507
Milburn, John H., Detroit, Mich. Scale	852,261	Apr. 30	7173	1505	127	3509
Miller, Martin, Columbus, Ohio. Key-action	851,894	Apr. 30	6267	1335	127	3285
Miller, Peter D., Buffalo, N. Y. Car-signal	852,262	Apr. 30	7177	1505	127	3561
Mills Novelty Company. (See Sandell, Henry K., assignor.)						
Minarey, Robert J., Portsmouth, Ohio. Planing-machine	852,330	Apr. 30	7374	1429	127	3575
Minnesota Glass Company. (See Walsh, Robert A. B., assignor.)						
Mitchell-Bissell Co. (See Mitchell, John R., assignor.)						
Mitchell, John C., Newport News, Va., assignor to Lock Joint Pipe Company. Apparatus for bending sectional pipes or conduits	852,029	Apr. 30	6728	1398-9	127	3439
Mitchell, John R., assignor to Mitchell-Bissell Co., New York, N. Y. Guide	852,078	Apr. 30	6797	1415	127	3467
Moehl, Victor, et al. (See Naujoks, Carl and F. C., assignors.)						
Mohler, James W., Oakland, Cal. Electrotherapeutical instrument	852,133	Apr. 30	6922	1445	127	3487
Molitor, Michael, Calvary, Wis. Grain-binder	851,525	Apr. 30	6265	1307	127	3323
Molloy, Edmund, Philadelphia, Pa. Metallic structure	851,991	Apr. 30	6809	1377	127	3409
Molloy, Matthew R., Chicago, Ill. Splice-caller	852,263	Apr. 30	7179	1507	127	3562
Monarch Typewriter Company. (See Barney, Edwin E., assignor.)						
Monarch Typewriter Company. (See Leuthesser, Fred W., assignor.)						
Monnot, John F., New York, N. Y. Making compound metal bodies	851,884	Apr. 30	6879	1249	127	3246
Monnot, John F., New York, N. Y. Furnace	851,992	Apr. 30	6812	1377	127	3410
Monnot, John F., New York, N. Y. Apparatus for coating metals	851,993	Apr. 30	6817	1378	127	3411
Moon Dash Co. (See Gaulkema, William, assignor.)						
Moore, Daniel M., Newark, N. J., assignor to Moore Electrical Company, New York, N. Y. Vacuum-valve fitting	851,885	Apr. 30	6884	1249	127	3247
Moore Electrical Company. (See Moore, Daniel M., assignor.)						
Moore, Richard W., Dayton, Ohio. Belt-cutter	852,340	Apr. 30	7276	1430	127	3576
Morford, Isaac M., Waynesville, Ill. Wire-fence machine	851,955	Apr. 30	6641	1263	127	3202
Morgan, Thomas M., Longue Pointe, Quebec, Canada. Cement-kiln	851,765	Apr. 30	6129	1281	127	3285
Morrison, Alexander, Shoshone, Idaho. Measuring attachment for bottle-stoppers	852,074	Apr. 30	6798	1416	127	3467
Morrison, Andrew, assignor to Dilworth, Porter & Company, Limited, Pittsburg, Pa. Tie-plate	852,284	Apr. 30	7180	1507	127	3563
Morrow, Emma, Somerset, Ky. Baking-pan	851,826	Apr. 30	6266	1307	127	3323
Mosse, Norton L., Portland, Oreg. Alternating gearing	852,304	Apr. 30	7403	1503-4	127	3507
Mosher, John A., Park Ridge, Ill., assignor to Adams & Westlake Company. Lamp-burner	851,827	Apr. 30	6267	1307	127	3323
Mount, Timothy A., Bonne, Tex. Telephone-switch	851,994	Apr. 30	6819	1378	127	3412
Muir, John, and C. H. Herod, assignors to Goold, Shapley & Muir Company, Limited. Brantford, Ontario, Canada. Concrete-mixer	851,696	Apr. 30	5985	1249	127	3247
Müller, Johann J., assignor to H. Baer and Company, Zurich, Switzerland. Automatic brake	851,766	Apr. 30	6131	1281	127	3285
Munch, Adolph, St. Paul, Minn. Tool-holder	852,134	Apr. 30	6923	1445	127	3487
Munson, William A. (See Kenner and Munson.)						
Murray, Thomas F., Pittsburg, Pa. Center swiveling hook	852,285	Apr. 30	7181	1507	127	3563
Murray, Thomas H., Fairfield, Me. Automatic boiler-feeder	852,286	Apr. 30	7182	1508	127	3564
Murray, William L., Sanford, Fla. Wagon-gear	852,287	Apr. 30	7183	1508	127	3564
Naquet, Joseph A. (See Boudreaux, Leandre, assignor.)						
National Cash-Register Company. (See Brown, Hanrahan, and Boyden, assignors.)						
National Cork and Seal Company. (See Fulenwider and Bond, assignors.)						
National Embossing Machine Company. (See Carlton, Cortland, assignor.)						
National Hosiery Manufacturing Company. (See Bussinger, William J., assignor.)						
National Wood Pipe Company. (See Marks, John S. F., assignor.)						
Naujoks, Carl and F. C., San Francisco, Cal., assignors of one-third to G. Goeppert, B. Brueckner, and V. Moehel, Electrically-controlled elevator	851,829	Apr. 30	6271	1308	127	3324
Naujoks, Frederick C. (See Naujoks, Carl and F. C.)	852,290	Apr. 30	7187	1509	127	3564
Neal, Edgar V., Thomaston, Conn. Watchmaker's tool	851,769	Apr. 30	6134	1282	127	3286
Needham, John B. (See Wallace, Thomas N., assignor.)						
Nelson, George, Milwaukee, Wis. Combined cigar-cutter and pipe-cleaner						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Newell, Frank C., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Electric-switch mechanism	851,490	Apr. 30	6905	1309-8	127	3047
Newell, Frank C., Wilkinsburg, assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Electric switch mechanism	851,491	Apr. 30	6906	1309-9	127	3047
Nihl, Matthew, Brooklyn, N. Y. Flying-machine	851,492	Apr. 30	6907	1310	127	3048
Nikirk, Walter A., Chicago, Ill. Buoy	851,493	Apr. 30	6908	1310	127	3048
Nisbet, Franklin C., J. E. Martin, and C. H. Matthews, Jacksonville, Ill. Electric gas-lighter	851,494	Apr. 30	6909	1310	127	3048
Nystrom, Ernst, Philadelphia, Pa. Sad-iron stand	851,495	Apr. 30	7709	1530	127	3267
Nystrom, Carl, Copenhagen, Denmark. Fastening of hose-pipes to pipe ends	851,496	Apr. 30	6910	1327	127	3067
Oberdan, Manuel P., assignor to C. H. Potter, Los Angeles, Cal. Non-collidable bottle	851,497	Apr. 30	7701	1468	127	3267
Ohio Basement-Pencil Company. (See Sears, Willard S., assignor.)	851,498	Apr. 30	6911	1327	127	3067
Ohlsson, Ernst R., Ashcroft, Ont., Canada. Spring	851,499	Apr. 30	6912	1416-17	127	3167
Ohrin, William M., Princeton, N. Y. Cabbage-holder	851,500	Apr. 30	6913	1275	127	3057
Okell & Pfeiffer Manufacturing Company et al. (See Pfeiffer, Christian, assignor.) (See Okell.)						
Okell, William A., Milwaukee, Wis. Electric-field turbine	851,501	Apr. 30	6914	1309	127	3047
O'Halloran, Oscar, New York, N. Y. Carpet-beater	851,502	Apr. 30	6915	1309	127	3047
O'Leary, Matthew J., assignor of one-half to C. E. Platt, Chickasha, Ind. Ter. Post-excavating-padcock	851,503	Apr. 30	7709	1467-8	127	3267
Olen, Richard R., New York, N. Y. Travel-aid	851,504	Apr. 30	7710	1310	127	3068
Olen, Elbert T., Sherman, Tex. Chopper and cultivator	851,505	Apr. 30	6916	1468	127	3267
Olds Motor Company. (See Weaver and Lentz, assignors.)	851,506	Apr. 30	7699	1467	127	3267
Ongren, Tony, San Diego, Cal. Aerial vessel	851,507	Apr. 30	7700	1310	127	3068
Otis Elevator Company. (See Greenwood and Cockburn, assignors.)						
Packard, Edwin D., assignor to Marion Indiana Power and Heater Company, Marion, Ohio. Water-purifying apparatus	851,508	Apr. 30	6917	1468-9	127	3268
Page, James W., Chicago, Ill., assignor, by mesne assignments, to Garland-Pile Manufacturing Company, Manitowoc, Wis. Core-hooking machine	851,509	Apr. 30	6918	1309	127	3047
Palmer, Lafayette, and A. L. Taylor, Harrisburg, Pa. Map-frame	851,510	Apr. 30	6919	1310	127	3048
Park, Richard P., South Melbourne, Victoria, assignor to J. G. Hird, Lyndhurst, Australia. Means for delivering measured quantities of liquid	851,511	Apr. 30	6920	1310	127	3048
Park, William R., Trenton, Mass., assignor to United Injector Company, New York, N. Y. Valve	851,512	Apr. 30	7702	1310	127	3068
Parker, Charles T. (See Beak, William M., assignor.)	851,513	Apr. 30	6921	1310	127	3068
Parker, John, assignor to Brown and Sharpe Manufacturing Company, Providence, R. I. Index-head	851,514	Apr. 30	6922	1310	127	3068
Patenall, Frank P. J., and G. H. Dryden, Baltimore, Md. Automatic block-signal system	851,515	Apr. 30	6923	1363-4	127	3268
Patterson, Charles F., New York, N. Y. Supervisory signal system	851,516	Apr. 30	7703	1531	127	3277
Patterson, Charles F., New York, N. Y. Circuit-controller	851,517	Apr. 30	7704	1564	127	3308
Patterson, Charles H., Dawson, N. Mex. Ter. Roll-paper holder and cutter	851,518	Apr. 30	6924	1310	127	3068
Patterson, John C., Philadelphia, Pa. Sheet-holder for frames	851,519	Apr. 30	6925	1309	127	3048
Paul, John T. H., assignor to E. Goldman & Company, Chicago, Ill. Bottle-holder	851,520	Apr. 30	6926	1309	127	3048
Peacock, Harry B., Easton, Pa. Stocking	851,521	Apr. 30	7705	1531-2	127	3278
Pearson, John, Chicago, Ill. Journal-box	851,522	Apr. 30	6927	1327	127	3067
Penn, Roger S., Allegheny, Pa. Apparatus for packing glass	851,523	Apr. 30	6928	1309	127	3048
Penn, Roger S., Allegheny, assignor to A. M. Lea, trustee, Pittsburg, Pa. Apparatus for delivering molten glass	851,524	Apr. 30	7706	1564-5	127	3308
Peterman, John M., et al. (See Cone, Charles H., assignor.)	851,525	Apr. 30	6929	1310	127	3068
Peterman, Peter, Chicago, Ill. Agricultural implement	851,526	Apr. 30	6930	1364	127	3268
Petrenay, Fred, Austin, Tex. Dump for pneumatic tubes and other pneumatic action	851,527	Apr. 30	7707	1469	127	3267
Pfeiffer, Christian, assignor to North & Pfeiffer Manufacturing Company and L. M. Manwell, New Britain, Conn. Boot-calk. (Reissue)	12,644	Apr. 30	7697	1530	127	3258
Pfleiderer, Fritz, Dresden, Germany. Manufacturing electric fittings for tires	851,528	Apr. 30	6931	1363	127	3268
Pfortner, Gustave A., New York, N. Y. Smoking device	851,529	Apr. 30	6932	1363	127	3268
Philippe, Raoul, Paris, France. Motor	851,530	Apr. 30	6933	1363	127	3268
Pierce, Amanda J., Salt Lake City, Utah. Device for promoting the ingress of foot-power machines	851,531	Apr. 30	6934	1469	127	3268
Pizzighelli, Carl, Vienna, Austria-Hungary. Producing picture copies by means of transfer for photographic films	851,532	Apr. 30	6935	1401	127	3068
Plan, Charles, Philadelphia, Pa., assignor to Dodge Coal Storage Company, Naugatuck, Conn. Coal-piling apparatus	851,533	Apr. 30	6936	1468	127	3268
Pim, John W., Lucas, Iowa. Loading device	851,534	Apr. 30	7708	1468	127	3268
Pittsburgh Equipment Company. (See Pullman, Oswald S., assignor.)	851,535	Apr. 30	6934	1310	127	3057
Platt, Charles E. (See O'Leary, Matthew J., assignor.)						
Poehler, John, Clearwater, Kans. Crank-shaft	851,536	Apr. 30	7697	1469	127	3517
Pond, Samuel N. (See Tucker, Joseph S., assignor.)	851,537	Apr. 30	6937	1310	127	3068
Poole, Thomas G. (See Clark and Poole.)	851,538	Apr. 30	6938	1310	127	3068
Pope, Frank, Kankakee, Ill. Bobbin-holder	851,539	Apr. 30	6939	1310	127	3068
Pope, Frederick, New York, N. Y., assignor of one-half to W. C. Clark, Pittsburg, Pa. Extracting products from wood	851,540	Apr. 30	6940	1310	127	3068
Portocos, William, College Hill, Ohio. Milking-machine	851,541	Apr. 30	6941	1417	127	3468
Potter, Charles E. (See Hamilton, Marvin P., assignor.)	851,542	Apr. 30	7709	1529-3	127	3570
Potter, Henry N., New Rochelle, N. Y., assignor to G. Westinghouse, Pittsburg, Pa. Electric furnace	851,543	Apr. 30	6942	1310	127	3068
Power, Leonard J., assignor to Powers Manufacturing Company, Waterloo, Iowa. Machine for stuffing horse-collars	851,544	Apr. 30	6943	1365	127	3268
Powers Manufacturing Company. (See Powers, Leonard J., assignor.)	851,545	Apr. 30	6944	1468	127	3468
Powers Prism Plate Glass Company. (See Wadsworth, Frank L. O., assignor.)						
Price, Edgar F., Niagara Falls, N. Y. Producing low-carbon ferro alloys	851,546	Apr. 30	7710	1310	127	3068
Pritchard, John T., Newark, N. J. Rotary impact-motor	851,547	Apr. 30	7711	1533	127	3579
Probst, Edward A., Brigham, Utah. Adjustable fire box and grate	851,548	Apr. 30	7712	1510-11	127	3548
Proctor, Louis P., New York, N. Y. Internal-combustion rotary engine	851,549	Apr. 30	7713	1511	127	3548
Providence Tapping Machine Company. (See Church, William H., assignor.)	851,550	Apr. 30	6945	1365-6	127	3268
Pullman, Oswald S., assignor to Pittsburgh Equipment Company, Pittsburg, Pa. Refrigerator construction	851,551	Apr. 30	6946	1417	127	3468
Purcell, Richard H., Rosedale, Miss. Cotton-planter	851,552	Apr. 30	6947	1417	127	3468
Railway Specialties Limited. (See Seward, Edward C., assignor.)	851,553	Apr. 30	7714	1512	127	3558
Rain, Isaac C., assignor of one-half to R. J. Fleming and P. Unser, Los Angeles, Cal. Pole-holder	851,554	Apr. 30	6948	1370	127	3418
Ramsberger, Phillip, Plymouth, Wis. Harness	851,555	Apr. 30	6949	1510-11	127	3547

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Ramsey, Stanley M., Cincinnati, Ohio. Roll-paper container and cutter	851,556	Apr. 30	6950	1311	127	3057
Rapp, Charles A., Wheeling, W. Va. Collapsible crib	851,557	Apr. 30	7702	1513	127	3557
Rapp, Charles A., New York, N. Y. Loose-leaf binder	851,558	Apr. 30	6903	1364	127	3558
Rauch, William A., Jun Lo Mod, Kassel F., assignor.)	851,559	Apr. 30	7105	1469-7	127	3084
Rauch, Walter A., Los Angeles, Cal. Air-ship	851,560	Apr. 30	7107	1467	127	3535
Rawson, Edgar C., Wednesbury, assignor of one-half to J. L. White, Abingdon, Va. Gate-latch	851,561	Apr. 30	7108	1467	127	3535
Reed, Albert H., Hampton, Orre. Magazine-rifle	851,562	Apr. 30	7111	1469	127	3088
Reed, Albert R., Chicago, Ill. Bottle-stopper						
Reed, Frank M. (See Threlkeld, George J., assignor.)	851,563	Apr. 30	7413	1565	127	3089
Reed, John L., Cedar, Kans. Seed-planter	851,564	Apr. 30	6951	1469	127	3088
Reed, Thomas B., Brooklyn, assignor to Automatic Fire Alarm Company, New York, N. Y. Electric attachment for tanks	851,775	Apr. 30	6147	1294	127	3289
Reed, Thomas B., Brooklyn, N. Y. Electric attachment for tanks	851,136	Apr. 30	6936	1447	127	3468
Reed, Lewis T., Tremont, Ill. Pipe-lifter	851,207	Apr. 30	7201	1513	127	3557
Reibling, Anthony B., Toledo, Ohio. Figure toy	851,208	Apr. 30	7088	1469-70	127	3517
Reiche, Richard, Berlin, Germany. Type-writing machine						
Rein, Edward, assignor to L. To Kock, Dessau, Germany. Type-writing machine	851,209	Apr. 30	7089	1469	127	3517
Rex Co. (See Thomas, Horace T., assignor.)	851,565	Apr. 30	6952	1468	127	3468
Reynolds, Joseph P., and G. E. Thackeray, Westmont, Pa. Dust-deflector	851,139	Apr. 30	6939	1447	127	3468
Rhoads, Jesse, assignor to A. L. Shipman's Sons, New York, N. Y. Loose-leaf binder						
Rhoads, Jesse, assignor to American Linen Company, New Haven, Conn. Apparatus for treating flax	851,209	Apr. 30	7415	1566	127	3089
Rhodes, Frederick H., Hartford. (See Kaplan, Joseph A., assignor.)						
Richter, Paul. (See Rimka, William, assignor.)	851,566	Apr. 30	7112	1468	127	3538
Rimka, William, Jefferson City, Mo., assignor of one-half to F. Rimka, Chaska, Minn. Combined spank and dasher	851,567	Apr. 30	6260	1311-12	127	3538
Rinn, Louis F., Sheldon, Iowa. Spring-motor	851,568	Apr. 30	6261	1312-13	127	3538
Roberts, John C., Columbus, Ohio. Gathering-locomotive	851,569	Apr. 30	6262	1313	127	3539
Roberts, John D., assignor to Western Electric Company, Chicago, Ill. Circuit for coin-collector	851,570	Apr. 30	7206	1533	127	3559
Robertson, Albert W., Oskaloosa, Tex. Grab-hook	852,240	Apr. 30	7206	1534	127	3559
Robinson, Joseph R., Stanville, La. Cotton and corn stalk cutter	851,776	Apr. 30	6148	1294	127	3289
Rockwell, Charles F., Brooklyn, N. Y. Automatic train-blocking system						
Rogers, Frederick. (See Meyer and Rogers.)	851,994	Apr. 30	6907	1294-5	127	3289
Rogers, Frederick G., Buffalo, N. Y. Cleaner for steam-boilers	851,993	Apr. 30	6556	1399	127	3268
Rohe, Jacob P., Philadelphia, Pa. Car-fender	852,026	Apr. 30	6740	1401	127	3448
Rollins, Frank W., Pueblo, Colo. Reproducing device						
Rollwagen, Ernst, Austria-Hungary. Forming blocks of ores for metallurgical purposes	13,643	Apr. 30	7698	1560	127	3518
Rönay, Ludwig. (See Bardsley and Rosentreter.)	852,244	Apr. 30	7112	1468	127	3537
Rosenbaum, Moses, Ga. Broom	851,994	Apr. 30	6556	1399	127	3268
Rosenbaum, Moses, Pueblo, Colo. Nut-lock						
Rosentreter, Albert J. (See Bardsley and Rosentreter.)	852,201	Apr. 30	7040	1470	127	3517
Rosentreter, Ernest M., et al. (See Kray, John A., assignor.)						
Rothenbach, Hannah. Sea-anchor	851,995	Apr. 30	6909	1365	127	3268
Rowan, Frederick, Rosedale, assignor to Westinghouse Electric & Manufacturing Company, Rotary converter system	851,239	Apr. 30	6297	1314	127	3539
Rudolph, Theodore, Burlington, Iowa. Switch mechanism	852,202	Apr. 30	7041	1470	127	3518
Rumsey, Walter S., New York, N. Y., assignor to Westinghouse Electric & Manufacturing Company, Rotary converter system	852,080	Apr. 30	6905	1417	127	3468
Rundell, Henry W., Jr., Wheeling, W. Va. Reinforced concrete arch						
Russell, Joseph F., assignor of one-half to O. S. Russell, Battle Creek, Mich. Burial-case	851,777	Apr. 30	6154	1295	127	3291
Russell, Oscar S. (See Russell, Joseph F., assignor.)						
Ryder, Dudley L., Paw Paw, Mich. Hay and stock rack	852,037	Apr. 30	6742	1403	127	3448
S. Herbig Company. (See Barbeau, Malcolm L., assignor.)						
Sachs Company. (See Sachs, Joseph, assignor.)	852,140	Apr. 30	6921	1447	127	3469
Sachs, Joseph, assignor to Sachs Company, Hartford, Conn. Safety-fuse terminal						
Sadtler, Morgan D., Baltimore, Md., assignor of three-fourths to H. A. Brehm and J. B. Forrester. Locking device for beer-coolers	851,999	Apr. 30	6408	1337	127	3368
Sahn, Joseph J. (See Teague, Samuel S., assignor.)						
Salisbury, David R. and O. D., assignors to Salisbury Tire Company, Owosso, Mich. Vehicle-tire						
Salisbury, Oliver D. (See Salisbury, David R. and O. D.)						
Salisbury Tire Company. (See Salisbury, David R. and O. D., assignors.)						
Sambur, Gustave. (See Slattery and Sambur.)	852,238	Apr. 30	7208	1513	127	3557
Sample, Isaac W., Hebo, Oreg. Mail-box	852,239	Apr. 30	7204	1513	127	3557
Sandt, Henry K., assignor to Mills Novelty Company, Chicago, Ill. Perforated-music-sheet feed device	851,965	Apr. 30	6560	1366	127	3368
Sargent, James F., Jr., Grand Rapids, Mich. Wheel-fender for cars	851,840	Apr. 30	6299	1314	127	3539
Sarrey, Adolph. (See Kunkel, Anton, assignor.)						
Sawyer, Seldon O., Traverse City, Mich. Lawn-trimmer	851,841	Apr. 30	6300	1314	127	3539
Schiebel, Edmund A., assignor to Stanley Rule & Level Company, New Britain, Conn. Miter-box eye-guide	851,696	Apr. 30	6011	1365	127	3368
Schneider, Adolph A., et al. (See Weston, Milton T., assignor.)	851,778	Apr. 30	6155	1295	127	3291
Schneider, Wilhelmina, St. Francis, Wis. Folding ladder						
Schnell, Carl, Vienna, Austria-Hungary. Purifying apparatus for liquids	852,400	Apr. 30	7416	1566	127	3570
Schoenbrod, August, assignor to E. G. Stearns & Co., Syracuse, N. Y. Line-locking mechanism	851,697	Apr. 30	6012	1366	127	3564
Schoeppe, Simon, Charlottenburg, Germany. Ball-holding ring for ball-bearings	852,300	Apr. 30	7207	1513	127	3558
Schoonover, Adam J., Greenleaf, Kans. Telescope	852,099	Apr. 30	6745	1402	127	3448
Schoonover, William. (See Detar and Schoonover.)	851,779	Apr. 30	6156	1295	127	3292
Schryver, Charles F., Chicago, Ill. Lubricator						
Schultz, Charles, Chicago, Ill. Explosive-engine	851,780	Apr. 30	6159	1296-7	127	3292
Schuyler, Daniel, San Diego, assignor to Perfect Sliding Door Company, Los Angeles, Cal. Combustible wall structure for sliding doors	851,781	Apr. 30	6160	1297	127	3295
Schwarzer, Maximilian C., West Hoboken, N. J., and H. P. Kraft, New York, N. Y. Manufacture of dust-caps for tire-valves and the like	852,250	Apr. 30	7208	1534	127	3568
Scott, Robert W., Philadelphia, assignor of one-half to L. N. D. Williams, Ogonts, Pa. Scraper	851,900	Apr. 30	6408	1338	127	3368
Sefrhans, Charles R., Jericho, Vt., assignor to Western Electric Company, Chicago, Ill. Loom	851,842	Apr. 30	6302	1315	127	3551
Sears, Willard T., Philadelphia, Pa., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Power-transmission device	852,141	Apr. 30	6933	1448	127	3469
Selvan, Robert M., Kansas City, Kans. Scaffolding	852,036	Apr. 30	6745	1402	127	3448
Sewall, Edward H., Guilford, Conn., assignor to Railway Supplies Limited, East Toronto, Canada. Spikes or angle bar	852,351	Apr. 30	7301	1534	127	3568
Seward, Charles O. (See Kingdom and Seward.)	852,301	Apr. 30	7209	1513	127	3559
Seyler, Daniel A., Jr., Ann Arbor, Mich. Engine	852,203	Apr. 30	7042	1471	127	3518
Shellenberger, William, Jr. (See Marhoff, Walter E., assignor.)	851,966	Apr. 30	6561	1367	127	3567
Shepard, Reuben O., Boston, Mass. Power-generating traction-wheel						
Sherman, Charles E., Milwaukee, Wis. Centrifugal-separator bearing						
Short, William, Swampscott, Mass. Safety-pocket						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Shay, John H., deceased, Wallace, (A. Degen, administratrix,) assignor of one-half to D. J. McKay, New Orleans, La. Conveyer system	852,054	Apr. 30	7044	1471	127	3510
Sheldon, Fred L., Tacoma, Wash. Cash-register attachment	852,159	Apr. 30	7085	1534-6	127	3566
Sheldon, Henry L., Sharon Springs, Kans. Closure for filler-openings for stove lids and plates	852,107	Apr. 30	6962	1367	127	3397
Sherrard, James H., Sparta, Ill. Mower	852,055	Apr. 30	6959	1338	127	3389
Shipman's Sons, Asa L. (See Reeves, Paul, assignor.)						
Sill Stove Works. (See Curtis, Charles W., assignor.)						
Simmons, Wilbern C., et al. (See Landers, Thomas H. and J. A., assignors.)						
Sinta, Clark, assignor to Pennsylvania Iron Works Company, Philadelphia, Pa. Valve-mechanism for internal-combustion engines	852,222	Apr. 30	7085	1379-80	127	3413
Skallenger, Daniel P., Morristown, N. J. Gear-regulator	852,079	Apr. 30	6960	1360	127	3414
Skelley & Company. (See Skelley, Thomas J., assignor.)						
Skelley, Thomas J., Collinwood, assignor to Skelley & Company, Cleveland, Ohio. Telephone-holder	852,052	Apr. 30	6956	1413	127	3409
Slivovsky, Max, assignor to Deere & Company, Moline, Ill. Furrow-coil	852,053	Apr. 30	6958	1360	127	3410
Slattery, Charles L., and S. Samber, Chicago, Ill. Device for lowering and raising canvas boats	852,057	Apr. 30	6962	1226	127	3354
Smith, Asa A., Malaga, N. J. Fruit-gatherer	852,058	Apr. 30	6963	1416	127	3409
Smith, Cyrus. (See Thomas, George J., assignor.)						
Smith, Daniel W., Chicago, Ill., assignor to International Harvester Company. Corn-shocking machine	851,699	Apr. 30	6914	1296-7	127	3284
Smith, Daniel W., Chicago, Ill., assignor to International Harvester Company. Corn-shocking machine	851,700	Apr. 30	6916	1297	127	3284
Smith, Harry M. (See Hasselman and Smith.)						
Smith, Preston L., assignor of two-thirds to A. Day and J. C. Brethauer, Philadelphia, Pa. Automatic cutting-machine for beans	852,053	Apr. 30	6959	1418-20	127	3409
Smith, Roy C., East Germantown, Ind. Plow-pointer	852,054	Apr. 30	6411	1338	127	3389
Smith, Rudolph H., Englewood, N. J. Shock-absorber	852,055	Apr. 30	6959	1361	127	3414
Smith, Thomas B., Cynthiana, Ky. Trace-holder	852,056	Apr. 30	7097	1536	127	3565
Smith, William R., assignor of one-half to H. H. Hewitt, Buffalo, N. Y. Rhoda tire for wheels	852,058	Apr. 30	6959	1361	127	3415
Smithberg, Elmer M., Lookridge, Iowa. Shock-compresser	852,059	Apr. 30	6960	1361	127	3415
Smyth, Willis L., Dudleyville, Ala. Railway-gate	852,060	Apr. 30	7096	1471	127	3539
Society of Chemical Industry in Basle. (See Hertenhausen, Albert, assignor.)	852,061	Apr. 30	7098	1536	127	3565
Soltmann, Ekko, Hoboken, N. J. Means for stopping and reducing toy railway-vehicles	852,062	Apr. 30	6962	1315	127	3321
Sommer, George M., Bradner, Ohio. Draft apparatus	852,063	Apr. 30	6415	1339	127	3390
Sons, Joseph, New York, N. Y. Toy	852,064	Apr. 30	6415	1339	127	3390
Sparre, Fin, assignor to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Explosive	852,065	Apr. 30	6970	1367	127	3396
Sparre, Fin, assignor to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Explosive	852,140	Apr. 30	6965	.....	127	3400
Spear, Elmer H., Akron, Ohio. Conveyer	852,141	Apr. 30	6965	.....	127	3400
Spitzenkin, Vincenz, Cleveland, Ohio. Rotary dredging device	852,142	Apr. 30	6967	1367-8	127	3396
Stacy, James N., Portland, Oreg. Letter sealing and stamping machine	852,143	Apr. 30	6968	1368	127	3396
Stam, John W., Chinook, Mont. Rotary motor	852,144	Apr. 30	6964	1361-2	127	3415
Standard Sewing Machine Company. (See Dibbi, Jacob, assignor.)	852,145	Apr. 30	6967	1446-9	127	3421
Stanhope, John B., Philadelphia, Pa. Barrel-trussing and hoop-driving machine	852,060	Apr. 30	6960	1446-8	127	3444
Stanley Rule & Level Company. (See Schade, Edmund A., assignor.)						
Steiner, Theodore C., Buckhannon, W. Va. Sectional mold	852,061	Apr. 30	6962	1320	127	3360
Stein, Nicholas S., Philadelphia, Pa. Bed	852,062	Apr. 30	6963	1408	127	3446
Steininger, Fanny H., New York, N. Y. Fastener for lining-buttons	852,063	Apr. 30	6964	1408	127	3446
Stevens, Ernest, Chicago, Ill. Valve-gear	852,064	Apr. 30	6965	1368	127	3396
Stevens, Raymond K., Sidney, Iowa. Automatic gas engine	852,065	Apr. 30	6966	1449	127	3421
Stevenson, William M., assignor to Hodges Filter Carpet Company, Indian Orchard, Mass. Party-colored yarn and making same	852,066	Apr. 30	6967	1537	127	3468
Stewart, Oliver, Centralia, Ill. Handle for hoes and rakes	852,067	Apr. 30	7012	1537	127	3564
Stimpson, Edward S., Hopedale, Mass., assignor to Draper Company, Portland, Me. Automatic shuttle-changing loom with sliding front plate for the shuttle-box	852,068	Apr. 30	7134	1469	127	3427
Stone, Walter H. (See Bahrtzer, George J., assignor.)	852,069	Apr. 30	6416	1339	127	3390
Storer, Norman W., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Speed regulation	852,070	Apr. 30	6968	1368	127	3396
Stotz, Hugo, Mannheim, Germany. Regulator	852,071	Apr. 30	6964	1369	127	3397
Strang, James, New York, N. Y. Loose-leaf binder	852,072	Apr. 30	6964	1369	127	3397
Strassburger, Ernest, Chicago, Ill. Construction of pliers	852,073	Apr. 30	6965	1420	127	3401
Strong, Earl T., assignor of two-thirds to J. A. Gibson and R. J. Peckham, Urbana, Ill. Stay-bolt cutter	852,074	Apr. 30	6417	1340	127	3361
Strother, George W., assignor of one-half to J. H. Wilson, Jenifer, Ala. Rail-joint chair	852,075	Apr. 30	7010	1514	127	3539
Sullivan, James J., Long Island City, N. Y. Wrapping-machine	852,076	Apr. 30	7011	1473	127	3519
Sullivan Machinery Company. (See Gilman, George H., assignor.)	852,077	Apr. 30	6417	1340-1	127	3361
Sun Typewriter Company. (See Howell, Charles W., assignor.)						
Surfacing Machine Company. (See Watkins, Cyrs B., assignor.)						
Sutton, Oscar, Goldsboro, N. C. Velocipede	852,142	Apr. 30	6969	1449	127	3401
Swanson, Axel E., Chicago, Ill. Expanding bit	852,143	Apr. 30	6971	1368	127	3396
Swasey, Ambrose, assignor to Warner & Swasey Company, Cleveland, Ohio. Depression range-finder	852,144	Apr. 30	6969	1369-70	127	3397
Swift, John W., Berkeley, Cal. Adjustable knee-rest	852,145	Apr. 30	7116	1469	127	3537
Tarbell, Leonard F., Dayton, N. Y. Handle for hammers or the like	852,146	Apr. 30	6968	1361	127	3359
Taylor, Abraham L. (See Palmer and Taylor.)	852,147	Apr. 30	6966	1361	127	3360
Taylor, George P., Clinton, Mass. Shears	852,148	Apr. 30	6966	1361	127	3360
Teague, Samuel S., Washington, D. C., assignor of fifty-one one-hundredths to J. I. Shinn. Automatic control device for elevators	852,149	Apr. 30	7013	1369-9	127	3584
Teague, Samuel S., Washington, D. C., assignor of fifty-one one-hundredths to J. I. Shinn. Automatic control device for elevators	852,150	Apr. 30	7013	1369-9	127	3584
Teale, Charles E., administrator. (See Davis, Charles N.)	852,151	Apr. 30	7011	1539	127	3588
Theokroy, George E. (See Replogle and Theokroy.)						
Theobald, George J., assignor of two-thirds to H. M. Reed, Boston, Mass. Curb-saddle for horses	852,152	Apr. 30	6973	1368	127	3396
Thoman, George H., et al. (See Amsbary, William N., assignor.)						
Thoman, George J., assignor of five-eighths to C. Smith, Irwin, Pa. Switch-throwing device	852,153	Apr. 30	7012	1539-7	127	3611
Thoman, Horace T., assignor to Reo Car Co., Lansing, Mich. Cooler	852,154	Apr. 30	6968	1315-16	127	3333
Thoman, Walter J., Oakland, Cal. Gear apparatus	852,155	Apr. 30	6967	1469-1	127	3462
Thompson, Charles E., Muncie, Ind. Lock for stop-cocks	852,156	Apr. 30	7013	1514	127	3560
Thompson, Frank. (See Fero, Charles, Jr., assignor.)						
Thompson, Wilbur H., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Potential-regulator	852,157	Apr. 30	6967	1361-2	127	3361
Thornton, William M., Cedar Hill, Tex. Hopple or regulator for plows	852,158	Apr. 30	6968	1368	127	3362
Thurnauer, William G., St. Louis, Mo. Car construction	852,159	Apr. 30	6969	1369	127	3363
Tidd, Arthur G., and S. Cook, Northampton, Mass. Window-screen	852,160	Apr. 30	6970	1369	127	3391

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Tilley, William A., San Francisco, Cal. Letter-case	852,804	Apr. 30	7213	1514-15	127	3560
Tilson, William H., Pilotview, Tex. Cutting apparatus for corn-harvesters	851,735	Apr. 30	6174	1268	127	3307
Tin Processing Company. (See Klostgen and Seward, assignors.)						
Todd, William W., Chicago, Ill. Hog-wringer	852,043	Apr. 30	6702	1404	127	3445
Toledo Scale Company. (See Bond, William E., assignor.)						
Toomey, John A. (See Macnete and Toomey.)						
Tory, [illegible], assignor of two-fifths to S. H. Wood and J. E. Banks, Pittsburg, Pa. Oven	851,711	Apr. 30	6041	1262	127	3263
Trahern, [illegible] E., Mayo, Ind. Gravel-spreader and road-leveler	851,712	Apr. 30	6042	1263	127	3263
Trahern, [illegible] E., Mayo, Ind. Road-working machine	851,713	Apr. 30	6043	1263	127	3264
Trahern [illegible] Manufacturing Company. (See Hine, Henry C., assignor.)						
Trout & [illegible] Manufacturing Company. (See Hine, Henry C., assignor.)						
Troy, Anthony O., Schenectady, N. Y., assignor to General Electric Company. Controlling system for [illegible]	851,786	Apr. 30	6175	1269	127	3307
Trudeau, William F., assignor to Logemann Brothers Company, Milwaukee, Wis. Bale-tie	851,714	Apr. 30	6040	1262	127	3264
Trull, Walter E., Whitman, Mass. Last	851,908	Apr. 30	6563	1367	127	3397
Trumbull Concrete Steel Company. (See Kahn, Julius, assignor.)						
Trumbull, George, Chicago, Ill. Razor-strop	851,715	Apr. 30	6061	1269	127	3306
Tryon, [illegible] S., Chicago, assignor of one-third to S. N. Pond, Morgan Park, Ill. Wire-separator	852,145	Apr. 30	6944	1420	127	3402
Tuttle, [illegible] L., and H. H. Borgarding, New Albany, Ind. Drawer-stop	852,247	Apr. 30	7117	1469	127	3537
Tweedal, William B., Van, Tex. Plow attachment	852,095	Apr. 30	6819	1421	127	3402
Umstead, Walter, Jerseytown, Pa. Ditching-machine	852,207	Apr. 30	7047	1473	127	3539
Underwood Typewriter Company. (See Gerubeu, Béla, assignor.)						
Union [illegible] Company. (See Park, William E., assignor.)						
Union [illegible] Company. (See Eppler, Andrew, Jr., assignor.)						
Union [illegible] Company. (See Danforth, Montgomery E., assignor.)						
United [illegible] Railroad Track Building Machine Company. (See Downey, Richard F., assignor.)						
Upson, [illegible] et al. (See Ralls, John C., assignor.)	851,846	Apr. 30	6310	1316-17	127	3334
Van [illegible], Weston, Mich. Windmill-regulator	852,044	Apr. 30	6702	1404	127	3446
Van [illegible], George P. (See Hewlett and Van Brunt.)	851,845	Apr. 30	6308	1316	127	3333
Van der Weyden, William B., New York, N. Y. Sieve for sinks and the like	851,909	Apr. 30	6565	1367	127	3397
Vanderhoof, Abraham, Hartford, Conn. Universal joint	852,045	Apr. 30	6704	1404	127	3446
Vanpelt, Walter C., Columbus, Ohio. Lid for pans	852,046	Apr. 30	6705	1404	127	3446
Vivien, [illegible], Brussels, Belgium. Clutch	851,716	Apr. 30	6062	1264	127	3306
Voelkerding, Frederick H. (See Voelkerding, Otto H. and F. H.)	852,402	Apr. 30	7021	1547	127	3512
Voelkerding, Otto H. and F. H., Dutzow, Mo. Animal-trap	852,206	Apr. 30	7015	1515	127	3560
Volck, Albert, Portland, Oreg. Roofing-tile	852,207	Apr. 30	7016	1472-4	127	3539
W. Gerdts & Company, Gesellschaft mit Beschränkter Haftung. (See Mikorey, Hans, assignor.)	852,208	Apr. 30	7017	1473	127	3539
Wade, Edward P., Chicago, Ill. Soap-holder	852,403	Apr. 30	7402	1467	127	3512
Wadsworth, Frank L. O., Morgantown, W. Va., assignor to Pressed Prism Plate Glass Company, New York, N. Y. Grinding and polishing machine	852,239	Apr. 30	7226	1540	127	3559
Wakefield, Matthias L., and G. J. Fischer, Quincy, Ill. Street stop-cock box for water and gas pipes	851,847	Apr. 30	6312	1317	127	3334
Walker, Charles W., Bridgeport, Conn., assignor to Yost Writing Machine Company, [illegible]	852,206	Apr. 30	7217	1515-16	127	3560
Ilion, N. Y. Typewriting machine	852,207	Apr. 30	7218	1516	127	3561
Wallace, Charles W., Dexter, Mo. Undergarment	851,970	Apr. 30	6566	1368	127	3398
Walling, [illegible] M., Lexington, Ky. Trolley-pole catcher	851,908	Apr. 30	6421	1342	127	3385
Walters, [illegible] W., assignor of fifteen one-hundredths to J. R. Needham, Centerville, [illegible]	851,787	Apr. 30	6177	1269	127	3307
Ward, [illegible] for making or cutting machines	852,208	Apr. 30	7018	1472-4	127	3539
Warden, Frank and F. C. Krüger, Hanover, Germany. Rotary engine	852,360	Apr. 30	7328	1540	127	3560
Ward, [illegible] A. B., assignor to Mississippi Glass Company, St. Louis, Mo. Making [illegible]	852,149	Apr. 30	6945	1480	127	3466
Ward, George R., Pittsburg, Pa. Cake-machine	852,361	Apr. 30	7329	1540	127	3560
Warner & Swasey Company. (See Swasey, Ambrose, assignor.)						
Warner, [illegible] R., Vergennes, Vt. Syrup-bottle	852,209	Apr. 30	7056	1474	127	3539
Warren, [illegible] Company, Columbus, Ohio. Amusement apparatus	851,909	Apr. 30	6422	1342	127	3386
Watch, Hammond Clock Company. (See Lamb and Griggs, assignors.)	852,361	Apr. 30	7330	1540	127	3560
Watchman's Patrol Recording and Machine Company. (See Lamb and Griggs, assignors.)						
Watkins, David M., Providence, R. I. Safety device	852,362	Apr. 30	7331	1540	127	3560
Watkins, David S., Canastota, N. Y. Dump-wagon	852,209	Apr. 30	7056	1474	127	3539
Watkins, David S., assignor to Watson Wagon Company, Canastota, N. Y. Dump-wagon	852,248	Apr. 30	7117	1469-90	127	3537
Watkins, Samuel F., Jr., Bentonville, Ark. Stove	852,308	Apr. 30	7221	1516-17	127	3560
Watson Wagon Company. (See Watson, David S., assignor.)	851,718	Apr. 30	6056	1264	127	3307
Watson, William T., Vancouver, British Columbia, Canada. Amusement device	852,087	Apr. 30	6830	1421	127	3402
Watson, William T., Vancouver, British Columbia, Canada. Amusement device	851,717	Apr. 30	6064	1264	127	3306
Watts, John H., Stockton, Cal. Distillation	851,848	Apr. 30	6310	1317-18	127	3360
Watts, Orra B., assignor to Surfacing Machine Company, Providence, R. I. Floor-surfacing machine	852,404	Apr. 30	7424	1538	127	3512
Watts, Thomas B., assignor of one-half to J. Watts, Winchester, Ind. Gravity plumb-level	852,088	Apr. 30	6822	1422	127	3402
Watts, Thomas [illegible] (See Watts, Chester B., assignor.)	852,309	Apr. 30	7223	1517	127	3560
Watts, Thomas M., and I. R. Lenz, assignors to Ohio Match Company, Wadsworth, Ohio. Match-splint machine	851,788	Apr. 30	6178	1269	127	3308
Weber, Frederick, and [illegible] (See Eschbach, Weber, and Wollmann.)	852,249	Apr. 30	7120	1469	127	3537
Webster, [illegible], Denver, Colo. Brick-kiln	852,046	Apr. 30	6755	1405	127	3447
Wehr, [illegible] Manufacturing Company, Sturgeon Bay, Wis. Vending-machine						
Weiss, [illegible], Argenta, Ark. Goods-handler						
Wells, Elmer E., Springfield, Ohio, assignor of one-fourth to A. L. Bertels, Akron, Ohio. Fruit-jar						
Wellsman, George F., assignor of one-half to J. R. Wellsman, St. Louis, Mo. Knockdown box						
Wendt, [illegible], Geed, N. D. Drilling-machine						
Western Electric Company. (See Craft, Edward B., assignor.)						
Western Electric Company. (See Hale, William B., assignor.)						
Western Electric Company. (See Roberts, John G., assignor.)						
Western Electric Company. (See Scribner, Charles E., assignor.)						
Western Electric Company. (See Newell, Frank C., assignor.)						
Western Electric Air Brake Company. (See Fortescue, Charles L., assignor.)						
Western Electric & Manufacturing Company. (See Jackson, Ray P., assignor.)						
Western Electric & Manufacturing Company. (See James, Henry D., assignor.)						
Western Electric & Manufacturing Company. (See Jones, Budd J., assignor.)						
Western Electric & Manufacturing Company. (See Newell, Frank C., assignor.)						
Western Electric & Manufacturing Company. (See Rugg, Walter S., assignor.)						
Western Electric & Manufacturing Company. (See Storer, Norman W., assignor.)						
Western Electric & Manufacturing Company. (See Thompson, Wilbur H., assignor.)						
Western Electric & Manufacturing Company. (See Wikander, Ragnar, assignor.)						
Western Gas Co. (See Potter, Henry N., assignor.)	852,047	Apr. 30	6757	1405	127	3447
Whitney, Rockwood B., Pittsfield, Ill. Sight						

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Weston, Milton T., New York, assignor of two-thirds to G. Maloney and A. A. Silbaldo,						
Whalen, M. Y. Safety means for elevators						
Wheeler, Fred, Bodna, N. Y. Toy				1462-5		
Wheeler, Harriet P., Toronto, Ontario, Canada. Apparel-fastener				1542		
Wheeler, Seth, Castleton, N. Y. Delivery mechanism for folding-machines				1462-5		
White, Fred H. (See Bowen and White.)						
White, James L., et al. (See Baxter, Bradley L., assignor.)						
Whitney, Frank E., Marion, Mass. Propeller-wheel						
Whitsell, Herman J., Manchester, Conn. Apparatus for cut-bending pipe				1461		
White, John, and D. D. McKay, Riverside, Cal. Automatic irrigating device for orchard-trees				1462-5		
Whittemore, John, Albany, N. Y. Check-rein				1517		
Wiesman-Marshall Company. (See Wiesman, Walter F., assignor.)						
Wiesman, Walter F., Allegheny, assignor to Wiesman-Marshall Company, Pittsburg, Pa. Water-purifying device for steam-boilers						
Wigglesworth, Ernest, Leeds, England. Flexible wheel				1520		
Wilcox, Homer, Hopewell Twp., Pa., assignor to Westinghouse Electric & Manufacturing Company. Commercial-power motor				1462-4		
Wilde, Joseph H. (See Moss and Wilde.)				1536		
Wiley, John F., Salt Lake City, Utah. Printing bed				1462-5		
Wiley, John F., Versailles, Ill. Printing machine				1515		
Wilkes Manufacturing Company. (See Bernard, William A., assignor.)						
Williams, Wharton, Jr., & Company. (See Andrew, Young, assignor.)						
Williams, Lewis Y., and F. B. Hinrichs, Akron, Ohio. Journal-box lid				1519		
Williams, Lovell M. D. (See Scott, Robert W., assignor.)						
Williamson, Arthur H. (See Wills, Joseph T., assignor.)						
Williamson, William L., Dallas, Tex. Cotton-planter				1522		
Willmon, Anton, Washington, Mass. Automatic gate				1521		
Wills, Joseph T., assignor of one-half to A. H. Williamson, Macon, Ga. Pipe-coupling				1515		
Wilson, John H. (See Strother, George W., assignor.)						
Wilson, Robert J., Pittsburg, Pa. Air-brake apparatus				1524		
Wilson, Thomas G., Los Angeles, Cal. Cotton-chopper				1521		
Wilson, William L., Hinton, W. Va. By-pass valve				1504-5		
Winchester Repeating Arms Co. (See Mason, George R., assignor.)						
Winchester Repeating Arms Co. (See Jamison, Thomas C., assignor.)						
Winchester Repeating Arms Company. (See Bennett, Whittemore, assignor.)						
Wirt, Paul H., Bloomsburg, Pa. Spring attachment for suspenders, &c.				1525		
Wirt, Paul H., Bloomsburg, Pa. Fountain-pen				1525		
Wirt, Paul H., Bloomsburg, Pa. Press-box-locking device				1525		
Wise, Nathan, New York, N. Y. Automobile safety-barrier				1525		
Witt, Otto, Macon, Mo. Burner				1504-5		
Wolcott, Edson R., Golden, Colo. Railway signaling apparatus				1526		
Wolf, John, Carlisle, Pa. Animal-trap				1522-3		
Wolf, Wilhelm, Reinholz, near Diisseldorf, Germany. Valve for compressors and the like				1526		
Wolf, Wilhelm, Reinholz, near Diisseldorf, Germany. Distributer for refrigerators				1526		
Wollmann, Karl H. (See Reinholz, Wolter, and Wollmann.)						
Wood, Frederick, Liverpool, England. Folding Vestment				1524-7		
Wood, S. Horner, et al. (See Tory, Hilton, assignee.)						
Woodworth, George K. (See De Forest, Lee, assignor.)						
Woolner, Henry G. (See Foster, Edgar J., assignor.)						
Wright, Chester O., Bluefield, W. Va. Shock-absorber						
Wroblewski, Ignacy, Krakow, Austria-Hungary. Casement-window				1505		
Wyckoff, Seamans & Benedict. (See Dike, Louis F., assignor.)				1507		
Wyckoff, Seamans & Benedict. (See Hills, Albert H., assignor.)						
Wyman, Alva C., Shelburn, Ind. Door spring and stop				1494		
Yost Writing Machine Company. (See Walker, Charles W., assignor.)						
Young, Vinton C., Verona, Mo. Rail-joint				1474		

DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Ball, Sidney Y., assignor to Webb C. Ball Watch Company, Cleveland, Ohio. Badge				
Ball, Sidney Y., assignor to Webb C. Ball Watch Company, Cleveland, Ohio. Badge				
Birkin, Charles W., Nottingham, England. Lovers' knot				
Birkin, Charles W., Nottingham, England. Lovers' knot				
Birkin, Charles W., Nottingham, England. Lovers' knot				
Birkin, Charles W., Nottingham, England. Lovers' knot				
Cohen, Bartow B., assignor to Sheffield Stove & Foundry Co. and King Stove & Range Co., Sheffield, Ala. Stove				
Hobfield, Herman L., Philadelphia, Pa. Hammock				
King Stove & Range Co. et al. (See Cohen, Bartow B., assignor.)				
Mygatt, Otis A., New York, N. Y. Artificial-light reflector				
Sheffield Stove & Foundry Co. et al. (See Cohen, Bartow B., assignor.)				
Webb C. Ball Watch Company. (See Ball, Sidney Y., assignor.)				

TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
A. & F. Pears Limd., London, England. Perfumed soap				
Abraham & Straus, New York, N. Y. Sterilized cream and condensed milk				

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Abraham & Straus, New York, N. Y. Canned fruits, canned vegetables, jelly, and jam	62,249	Apr. 30	127	3035
Allen Manufacturing Company of Baltimore City, Baltimore, Md. Buckles	62,276	Apr. 30	127	3035
American Glue Co., Boston, Mass., assignee to American Glue Company. Emery-cloth and sand-paper	62,280	Apr. 30	127	3036
American Stove Company, Jersey City, N. J., and St. Louis, Mo. Gas-stoves, gasoline or vapor stoves, oil-stoves, ranges, and ovens	62,281	Apr. 30	127	3036
Ann [illegible], New York, N. Y. Pie-fillings, preserves, and jellies	62,282	Apr. 30	127	3036
Arnold [illegible], Chicago, Ill. Shaving cream or paste	62,276	Apr. 30	127	3036
Atwood [illegible], New York, N. Y. Corn cure, spavin cure, and liquid court-plaster	62,319	Apr. 30	127	3036
Atwood [illegible], New York, N. Y. Silver-plated jewelry, toilet ware, hollow ware, and flat ware	62,277	Apr. 30	127	3036
Bell, [illegible], New York, N. Y. Proprietary medicine	62,278	Apr. 30	127	3036
Bennett, [illegible] & Company, Philadelphia, Pa. Cravats	62,288	Apr. 30	127	3036
Bowey, [illegible] Company, New York, N. Y. Soaps	62,343	Apr. 30	127	3036
Brandt, [illegible] Company, New York, N. Y. Shirts	62,341	Apr. 30	127	3036
Brinton, [illegible] Company, Mass. Hosiery and knitted underwear	62,338	Apr. 30	127	3036
Brown, [illegible] Publishing Co., New York, N. Y. Newspaper	62,324	Apr. 30	127	3036
Burnett, [illegible] Co., Boston, Mass. Canned fruits and vegetables	62,277	Apr. 30	127	3036
C. Cederlund & Co., Stockholm, Sweden. Aktiebolag, Stockholm, Sweden. Arraks punsch	62,341	Apr. 30	127	3036
C. A. Lindgren & Co., Gothenburg, Sweden. Aktiebolag, Stockholm, Sweden. Arraks punsch	62,278	Apr. 30	127	3036
Capitol Automobile Company, Boston, Mass. Isinglass	62,276	Apr. 30	127	3036
Carroll, [illegible] & Co., New York, N. Y. Wines	62,342	Apr. 30	127	3036
Carroll, [illegible] & Co., Baltimore, Md. Maryland rye whisky	62,343	Apr. 30	127	3036
Carroll, [illegible] Manufacturing & Supply Co., Berkeley, Cal. Fuses	62,343	Apr. 30	127	3036
Carroll, [illegible] Manufacturing & Supply Co., Berkeley, Cal. Fuses	62,344	Apr. 30	127	3036
Carroll, [illegible] Manufacturing & Supply Co., Berkeley, Cal. Fuses	62,280	Apr. 30	127	3036
Collins Company, [illegible], Conn. Curtain hand-tools	62,281	Apr. 30	127	3036
Collins Company, [illegible], Conn. Curtain hand-tools	62,345	Apr. 30	127	3037
Collins Company, [illegible], Conn. Curtain hand-tools	62,279	Apr. 30	127	3037
Conner, John H., Staten Island, New Brighton, N. Y. Printing-ink reducers and driers	62,344	Apr. 30	127	3036
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,286	Apr. 30	127	3036
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,346	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,347	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,348	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,349	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,350	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,351	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,352	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,353	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,354	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,355	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,356	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,357	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,358	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,359	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,360	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,361	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,362	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,363	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,364	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,365	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,366	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,367	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,368	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,369	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,370	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,371	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,372	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,373	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,374	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,375	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,376	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,377	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,378	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,379	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,380	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,381	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,382	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,383	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,384	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,385	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,386	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,387	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,388	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,389	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,390	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,391	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,392	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,393	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,394	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,395	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,396	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,397	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,398	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,399	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,400	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,401	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,402	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,403	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,404	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,405	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,406	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,407	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,408	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,409	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,410	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,411	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,412	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,413	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,414	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,415	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,416	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,417	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,418	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,419	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,420	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,421	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,422	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,423	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,424	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,425	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,426	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,427	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,428	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,429	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,430	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,431	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,432	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,433	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,434	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,435	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,436	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,437	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,438	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,439	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,440	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,441	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,442	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,443	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,444	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,445	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,446	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,447	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,448	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,449	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,450	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,451	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,452	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,453	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,454	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,455	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,456	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,457	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,458	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,459	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,460	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,461	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,462	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,463	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,464	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,465	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,466	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,467	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,468	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,469	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,470	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,471	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,472	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,473	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,474	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,475	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,476	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,477	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,478	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,479	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,480	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,481	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,482	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,483	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,484	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,485	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,486	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,487	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,488	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,489	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,490	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,491	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,492	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,493	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,494	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,495	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,496	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,497	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,498	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,499	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,500	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,501	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,502	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,503	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,504	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,505	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,506	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,507	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,508	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,509	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,510	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,511	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,512	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,513	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,514	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,515	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,516	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,517	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,518	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,519	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,520	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,521	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,522	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,523	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,524	Apr. 30	127	3037
Curtis & Goodrich Company, Bridgeport, Conn. Pipe threading and cutting machines	62,525	Apr. 30	127	3037

TRADE-MARKS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Myers, James M., Cincinnati, Ohio. Remedy for diseases of the blood	[illegible]	Apr. 20	127	[illegible]
N. K. Fairbank Company, Chicago, Ill. Soap	[illegible]	Apr. 20	127	[illegible]
Mechanasa, Isidor, New York, N. Y. Preparation for cleaning and finishing white cotton and linen dress articles	[illegible]	Apr. 20	127	[illegible]
National Baker Publishing Company, Philadelphia, Pa. Periodical	[illegible]	Apr. 20	127	[illegible]
Newton Machine Tool Works, Incorporated, Philadelphia, Pa. Certain machinery	[illegible]	Apr. 20	127	[illegible]
Nye, Wm. R., New York, N. Y. Laundry soap	[illegible]	Apr. 20	127	[illegible]
O. W. Felmo Company, La Fayette, Ind. Corn-cure	[illegible]	Apr. 20	127	[illegible]
Ohio Manufacturing Company, Middletown, Conn. Dress-shields	[illegible]	Apr. 20	127	[illegible]
Oneida Community Limited, Kenwood, N. Y. Certain thread	[illegible]	Apr. 20	127	[illegible]
Osborne, Owen, Philadelphia, Pa. Hosiery	[illegible]	Apr. 20	127	[illegible]
Osborne, Owen, Philadelphia, Pa. Hosiery	[illegible]	Apr. 20	127	[illegible]
Page & Sandeman, London, England. Apricot-brandy	[illegible]	Apr. 20	127	[illegible]
Parenteau Manufacturing Company, St. Louis, Mo. Almond cream	[illegible]	Apr. 20	127	[illegible]
Parvear Company, H. N., Providence, R. I. Jewelry	[illegible]	Apr. 20	127	[illegible]
Peixoto, Torres & Co., Buenos Ayres, Argentine Republic. Tobacco	[illegible]	Apr. 20	127	[illegible]
Pure Food Baking Powder Co., Chicago, Ill. Baking-powder	[illegible]	Apr. 20	127	[illegible]
Raven Glass Mfg. Co., New York, N. Y. Preparation for cleaning and dressing articles made of canvas or duck	[illegible]	Apr. 20	127	[illegible]
Records & Goldsborough, Baltimore, Md. Whisky	[illegible]	Apr. 20	127	[illegible]
Reiss & Brady, New York, N. Y. Certain ear-tops	[illegible]	Apr. 20	127	[illegible]
Revere Rubber Company, Boston, Mass. Rubber boots, shoes, and mackintoshes	[illegible]	Apr. 20	127	[illegible]
Rice, Stix Dry Goods Company, St. Louis, Mo. Knitted, netted, and lace gloves	[illegible]	Apr. 20	127	[illegible]
Rice, Stix Dry Goods Company, St. Louis, Mo. Cotton piece goods	[illegible]	Apr. 20	127	[illegible]
Rice, Stix Dry Goods Company, St. Louis, Mo. Cotton piece goods	[illegible]	Apr. 20	127	[illegible]
Rice, Stix Dry Goods Company, St. Louis, Mo. Cotton piece goods	[illegible]	Apr. 20	127	[illegible]
Rosenwald, Bros. & Co., New York, N. Y. Coats, pants, vests, and overcoats	[illegible]	Apr. 20	127	[illegible]
Sebley, William C., Pittsburg, Pa. Face-cream	[illegible]	Apr. 20	127	[illegible]
Selmser, Henry M., Geneva, N. Y. Enameled sheet household utensils	[illegible]	Apr. 20	127	[illegible]
Seton Leather Co., Newark, N. J. Patent side-leather	[illegible]	Apr. 20	127	[illegible]
Shoemaker & Co., Robt., Philadelphia, Pa. White lead	[illegible]	Apr. 20	127	[illegible]
Shoemaker & Co., Robt., Philadelphia, Pa. Ready-mixed paints	[illegible]	Apr. 20	127	[illegible]
Silvey & Co., John, Atlanta, Ga. Hosiery	[illegible]	Apr. 20	127	[illegible]
Societe Anonyme de la Grande Distillerie E. Cusenier Fils Aine et Compagnie, Paris, France. Apricot-brandy	[illegible]	Apr. 20	127	[illegible]
Societe Anonyme de la Grande Distillerie E. Cusenier Fils Aine et Compagnie, Paris, France. Cordial	[illegible]	Apr. 20	127	[illegible]
Societe Anonyme de la Grande Distillerie E. Cusenier Fils Aine et Compagnie, Paris, France. Cordial	[illegible]	Apr. 20	127	[illegible]
Société Anonyme Des Anciens Etablissements Panhard & Levassor, Paris, France. Certain hardtools	[illegible]	Apr. 20	127	[illegible]
Society of Chemical Industry in Basle, Basel, Switzerland. Certain medicine	[illegible]	Apr. 20	127	[illegible]
Southern Cotton Oil Company, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Galveston, La. Cotton-seed oils	[illegible]	Apr. 20	127	[illegible]
Spear & Stiner, J. W., Nuremberg, Germany. Certain guns	[illegible]	Apr. 20	127	[illegible]
Stearns, John N., Syracuse, N. Y. Castor-oil	[illegible]	Apr. 20	127	[illegible]
Stark, Frederick A., Oil City, Pa. Certain medicine	[illegible]	Apr. 20	127	[illegible]
Sterman & Co., S., Brooklyn, N. Y. Certain metal manufactures	[illegible]	Apr. 20	127	[illegible]
Straub, John Pa., Chicago, Ill. Whisky	[illegible]	Apr. 20	127	[illegible]
Townsend, Grace Co. of Baltimore City, Baltimore, Md. Beaver hats and caps	[illegible]	Apr. 20	127	[illegible]
Union Card & Paper Co., New York, N. Y. Writing-paper, board-paper, and ledger-paper	[illegible]	Apr. 20	127	[illegible]
Van Arsdale, Robert M., New York, N. Y. Monthly publication	[illegible]	Apr. 20	127	[illegible]
Ward Medicine Company, J. L., Big Spring, Tex. Pills and headache-tablets	[illegible]	Apr. 20	127	[illegible]
Watch Bros. Maple Co., Burlington, Vt. Syrup	[illegible]	Apr. 20	127	[illegible]
Wells, Ephraim B., Jersey City, N. J. Certain medicine	[illegible]	Apr. 20	127	[illegible]
Wetherbee Co., Philadelphia, Pa. Illuminating-gas-burners, comprising globes, shades, and chimneys	[illegible]	Apr. 20	127	[illegible]
Wertheimer Bros., Baltimore, Md. Cigars	[illegible]	Apr. 20	127	[illegible]
White Sewing Machine Co., Cleveland, Ohio. Sewing-machine needles	[illegible]	Apr. 20	127	[illegible]
Whitman & Co., H. A., Wilkes-Barre, Pa. Rubber rooting	[illegible]	Apr. 20	127	[illegible]
Whitman & Son, Stephen F., Philadelphia, Pa. Chocolate and chocolate candies	[illegible]	Apr. 20	127	[illegible]
Wild Pigeon Mineral Springs Company, Portland, Oreg. Mineral water	[illegible]	Apr. 20	127	[illegible]
Will & Baumer Company, Syracuse, N. Y. Candles	[illegible]	Apr. 20	127	[illegible]
Will & Baumer Company, Syracuse, N. Y. Candles	[illegible]	Apr. 20	127	[illegible]
Wing, George H. G., New York, N. Y. Cigars and cigarettes	[illegible]	Apr. 20	127	[illegible]
Wm. Bergenthal Co., Milwaukee, Wis. Gin	[illegible]	Apr. 20	127	[illegible]
Zeiss, Firm of Carl, Jena, Germany. Measuring and scientific optical apparatus, appliances, and instruments	[illegible]	Apr. 20	127	[illegible]

LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Armour & Company, Chicago, Ill. "Romanza Lilac." (For Soap)	[illegible]	Apr. 20	127	[illegible]
Armour & Company, Chicago, Ill. "Romanza Violet." (For Soap)	[illegible]	Apr. 20	127	[illegible]
Armour & Company, Chicago, Ill. "Romanza Heliotrope." (For Soap)	[illegible]	Apr. 20	127	[illegible]
Armour & Company, Chicago, Ill. "Romanza Rose." (For Soap)	[illegible]	Apr. 20	127	[illegible]
Conway, Thomas Y., San Diego, Cal. "California's Club Whisky." (For Whisky)	[illegible]	Apr. 20	127	[illegible]
Hinson & Aspinall, Chicago, Ill. "Old Pioneer's Life Elixir." (For a Medicine)	[illegible]	Apr. 20	127	[illegible]
Jones, Wendell R., Concord Junction, Mass. "The Sign of the Kettle." (For Cigars)	[illegible]	Apr. 20	127	[illegible]
Keyes, Louis W., Dayton, Ohio. "Old Colony." (For Cigars)	[illegible]	Apr. 20	127	[illegible]

LABELS—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Keyes, Louis W., Dayton, Ohio. "El Bario." (For Cigars)	13,806	Apr. 20	127	3639
Kittanning Brewing Co., Kittanning, Pa. "K. B. C. Bohemian." (For Beer)	13,809	Apr. 20	127	3639
Kost, Samuel, Pittsburg, Pa. "Uncle Sam's Cones." (For Ice-Cream Cones)	13,820	Apr. 20	127	3639
Leonard Bread Company, Chicago, Ill. "Cottage Bread." (For Bread)	13,816	Apr. 20	127	3639
Manuel, Louis, Cincinnati, Ohio. "Schiller." (For Cigars)	13,806	Apr. 20	127	3639
Peter, Andrew, Peoria, Ill. "Peter's Nutro Bread." (For Bread)	13,817	Apr. 20	127	3639
Pure-Ia Mfg. Co., Cleveland, Ohio. "Pur-It-Is Toilet Water." (For Toilet Water)	13,810	Apr. 20	127	3639
Purcell & Co., Lincoln, Mobr. "Night Cap Whiskey." (For Whisky)	13,808	Apr. 20	127	3639
Vestino, Vestino & Co., San Francisco, Cal. "Vestino's Digestive Health Food Chocolates." (For Health-Food Chocolates)	13,818	Apr. 20	127	3639
Victor Tobacco Company, Cincinnati, Ohio. "Hee Haw." (For Chewing-Tobacco)	13,803	Apr. 20	127	3639

PRINTS.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Lytton, H. C., Chicago, Ill. "Men's and Boys' Apparel." (For Men's and Boys' Apparel)	1,974	Apr. 20	127	3639

TRADE-MARKS.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
A. Sheppard & Co., New York, N. Y. Candy	26,286	Apr. 20	127	3630
Acme White Lead & Color Works, Detroit, Mich. Lead, zinc-white, turpentine, linseed-oil, &c	26,255	Apr. 20	127	3630
Acmelaers, [illegible], London, England. Bottles for aerated waters, &c	18,063	Apr. 20	127	3621
Acmelaers, [illegible], London, England. Metal parts of seltzogenes and siphons	24,313	Apr. 20	127	3623
Alford, Dewey & Co., Chicago, Ill. Monthly magazine	17,425	Apr. 20	127	3621
Allen, [illegible] Co., New York, N. Y. Toilet brushes	26,266	Apr. 20	127	3630
Allen, [illegible] Co., New York, N. Y. Olive-oil	25,677	Apr. 20	127	3630
Anderson & Co., New York, N. Y. Belts	26,249	Apr. 20	127	3630
Anderson, Carlisle & Co., Philadelphia, Pa. Wooden trunks	17,200	Apr. 20	127	3630
Anderson, Duvall & Bag Co., Philadelphia, Pa. Monthly magazine	26,303	Apr. 20	127	3630
Anderson, Duvall & Bag Co., New York, N. Y. Monthly magazine	25,667	Apr. 20	127	3630
Andrews, Wright Co., Whitman, Mass. Nails	25,667	Apr. 20	127	3630
Andrews, Wright Co., Whitman, Mass. Nails	6,789	Apr. 20	127	3615
Andrews, Wright Co., Whitman, Mass. Nails	26,262	Apr. 20	127	3630

TRADE-MARKS—Continued.

(REGISTRATION APPLIED FOR.)

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Gunter, Samuel H., Richmond, Va. Tooth powder.	33,344-5	Apr. 30	137	3035
[illegible]		Apr. 30	137	[illegible]
[illegible]		Apr. 30	137	[illegible]
[illegible]		Apr. 30	137	[illegible]

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bottle, Non-refillable					1486		
Bottle, Non-refillable					1585		
Bottle-stopper					1570		
Bottle-stopper					1585		
Bottle, Syrup				7111	1585		
Bottle-washing machine					1465		
Bottles, Capping					1585		
Box:							
See Cold-storage box. Mail-box. Mail-sweeping box. Post-box. Fire-box. Service connection-box. Knockdown box.							
Box-sliding machine, Automatic	P. L. Smith		Apr. 30	6990	1412-20	137	
Brace:							
See Wheel-brace.							
Bracket							
Brake:	J. Hilbert		Apr. 30	6990	1469	137	
See Automatic brake. Progressive brake. Car-brake.							
Brake							
Brick-kiln							
Broom							
Broom-stapler							
Brush-holder							
Brush: sweeper. Orange-peel					1385-7		
Brush-sweeping attachment							
Bucket							
Buckle-chain relay-drop					1385-7		
Build-chain							
Burner:					1451		
See Lamp-burner. Safety-burner.							
Bushing, Rail-sling							
Button, Hose-supporter	W. L. Perkins and A. W. Janney						
Cable-chain connecting means	R. Cary						
Cable-clamp	A. J. Wall						
Cable-coupling	A. J. Wall						
Cable-fastener	J. A. Gardner				1385		
Car-brake, Automatic	J. A. Gardner				1385		
Car construction	Geo. Pullman				1385		
Car-fender	G. C. Hammell				1385		
Car-journal	J. P. Reilly				1385		
Car-mover	J. P. Reilly				1385		
Car-ventilator	J. C. Stevens				1385		
Car wheel-fender	J. C. Stevens, Jr.				1385		
Cars, Pneumatic appliance for					1385		
Cars, Steam-heating system for railway	G. Westinghouse				1385		
Carburetor	E. Roth				1385		
Carding-machine	E. A. Parker				1385		
Carpet-beater	E. A. Parker				1385		
Carpets and the like, Apparatus for beating	C. C. Hall				1385		
Carrier	E. F. Cook and F. C. Rich				1465	137	
See Target-trap carrier.							
Carrier							
Case:	L. M. Addington		Apr. 30	6990	1390	137	
See Burial-case. Shipping-case. Letter-case.							
Cash-register attachment							
Casket-lowering device	F. L. Skelton						
	A. W. Brown, H. H. Brown, and W. O. Cornish		Apr. 30	6990	1384-6	137	
Cellulose, Manufacture of artificial thread from solutions of	R. Linkmeyer		Apr. 30	6990		137	
Cement-kiln							
Center surveying hook	T. F. Morgan						
Chair:	C. F. Murray				1384	137	
See Rail-joint chair.					1397	137	
Chart for garment-patterns	W. P. Abbott						
Check and like value or amount indicating document, Form of	A. Collier				1451	137	
Check-controlled apparatus					1464	137	
Chimney-flue protector	E. J. Beaumont, Jr., and G. W. Gorham		Apr. 30	6990	1381	137	
Chimney-top	G. Smith						
Chopper and cultivator	A. Wilson				1384	137	
Chuck, Tool	E. P. Colton				1384	137	
Churn	E. A. Parker				1397	137	
Cigar-cutter and pipe-cleaner, Combined	E. Roth				1384	137	
Cigar-machine	G. Haddon				1451	137	
Circuit-connector	W. A. Lambeth				1384	137	
Circuit protection, Secondary	C. J. Pedersen				1384	137	
Circuits, Means for multiplying inductive interference between parallel	E. Thomson				1384	137	
Clamp:	E. Rheinfrank				1384	137	
See Cable-clamp. Hose-clamp. Cask-clamp.							
Clamp							
Clamping device	A. M. Howlett and G. F. Van Brunt		Apr. 30	6990	1389	137	
Clothes-dryer	E. Francis		Apr. 30	6990	1384	137	
See Butter-churn.							
Clothes-washing machine	W. H. Dunn		Apr. 30	6990	1371	137	
Clutch:							
See Pump-clutch.							
Coffee-hopper	W. H. Lloyd						
Coffee-mill	W. W. Hall					137	
Coffee-roaster	A. Wilson					137	
Coffee-roaster and other purposes, Friction-clutch for	E. F. Colton					137	
Coffin-lid-fastener	E. F. Colton					137	
Coin-holding apparatus	E. C. Cochrane					137	
Coin-holding apparatus	G. Hess					137	

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cock [illegible] and gas-pipes. Street stop-	E. L. Walcott and G. J. Fischer	852,220	Apr. 30	7320	1540	137	3600
Cock	F. L. Cecil	852,220	Apr. 30	7076	1479	137	3437
Cock	C. H. Thompson	852,208	Apr. 30	7313	1514	137	3538
Cock	W. J. Bensinger	852,164	Apr. 30	6973	1466	137	3416
	C. L. Fortescue	851,688	Apr. 30	6931	1393	137	3334
	J. G. Roberts	851,823	Apr. 30	6956	1513	137	3533
	J. Fritsche	852,111	Apr. 30	6979	1468	137	3474
	C. B. Emmerich and C. C. Heidland.	852,226	Apr. 30	7084	1481	137	3499
	L. J. Powers	852,137	Apr. 30	6937	1446	137	3408
	G. Aus	851,978	Apr. 30	6970	1393	137	3399
	H. M. Russell, Jr.	852,202	Apr. 30	7041	1479	137	3516
	J. Muir and C. H. Herod	851,686	Apr. 30	6955	1393	137	3347
	R. P. Jeckmon	851,694	Apr. 30	6937	1393	137	3335
	W. S. Rugg	851,696	Apr. 30	6909	1384	137	3335
	E. H. Spear	851,701	Apr. 30	6917	1397-6	137	3335
	L. C. Kylie	851,709	Apr. 30	6133	1393	137	3335
	J. H. Shay	852,224	Apr. 30	7044	1471	137	3335
	G. A. Amsden	851,720	Apr. 30	6130	1393	137	3335
	A. W. French	852,233	Apr. 30	6970	1410	137	3451
	M. F. Holbrook	852,236	Apr. 30	7080	1480	137	3493
	H. T. Thomas	851,844	Apr. 30	6906	1315-16	137	3335
	W. E. Klotzke	852,022	Apr. 30	6713	1295	137	3435
	J. R. Hall	852,271	Apr. 30	7130	1393-1	137	3547
	J. W. Paige	851,771	Apr. 30	6135	1393	137	3335
	L. C. Hasselman and H. M. Smith	851,722	Apr. 30	7285	1525	137	3570
	D. W. Smith	851,699	Apr. 30	6944	1393-7	137	3335
	D. W. Smith	851,700	Apr. 30	6916	1367	137	3335
	M. M. Downer and G. E. Hawes	851,926	Apr. 30	6-573	1349-50	137	3373
	G. R. Robinson	852,240	Apr. 30	7204	1534	137	3600
	G. W. Griswold	852,203	Apr. 30	7231	1540	137	3601
	J. Poehner	852,189	Apr. 30	7057	1469	137	3517
	T. G. Wilson	852,205	Apr. 30	7236	1541	137	3601
	C. E. Raymond	852,206	Apr. 30	7209	1513	137	3457
	G. R. James	851,810	Apr. 30	6229	1390	137	3413
	W. M. Ashmore	851,727	Apr. 30	6969	1393	137	3370
	R. H. Purnell	852,235	Apr. 30	7199	1513	137	3535
	M. F. Hodges	851,780	Apr. 30	6105	1277	137	3370
	C. Burmeister and E. Boldt	852,216	Apr. 30	7228	1539	137	3535
	F. W. Lord and F. W. Erickson	852,186	Apr. 30	7005	1463	137	3436
	R. D. Mershon	852,027	Apr. 30	6723	1297	137	3435
	A. S. McAllister	851,828	Apr. 30	6393	1297-8	137	3393
	G. Faget	851,736	Apr. 30	6964	1271-2	137	3373
	J. Kirschweng	852,022	Apr. 30	6711	1295	137	3435
	W. Luft	852,187	Apr. 30	7008	1463	137	3510
	W. H. Cunningham	852,107	Apr. 30	6957	1434	137	3473
	C. N. Davis	852,277	Apr. 30	7231	1540-6	137	3599
	C. N. Davis	852,278	Apr. 30	7235	1540-6	137	3597
	C. M. Dowell	851,725	Apr. 30	6089	1371	137	3373
	J. Bode	852,189	Apr. 30	6968	1463	137	3436
	W. Gaalkema	851,859	Apr. 30	6923	1295-6	137	3393
	F. von Kügelgen and G. O. Seward.	851,946	Apr. 30	6924		137	3397
	E. A. Marsh	852,189	Apr. 30	7019	1463-6	137	3510
	E. D. Harding	851,748	Apr. 30	6105	1276	137	3370
	R. T. Joyce	852,220	Apr. 30	7080	1463	137	3511
	J. N. Watt	851,718	Apr. 30	6066	1264	137	3397
	O. A. Gobbe	852,202	Apr. 30	7128	1469-6	137	3446
	W. Umstead	852,207	Apr. 30	7047	1472	137	3469
	C. A. Glocklier	851,879	Apr. 30	6973	1393	137	3369
	J. Bardsley and A. J. Rosentreter	851,640	Apr. 30	6957	1393-1	137	3334
	W. N. Amsbary	851,973	Apr. 30	6969	1393	137	3369
	G. W. Kellogg	852,331	Apr. 30	7200	1536	137	3571
	J. Loch	852,370	Apr. 30	7170	1494	137	3545
	A. C. Wyman	852,091	Apr. 30	6930	1424	137	3464
	J. F. Butterfield	851,848	Apr. 30	6904	1393	137	3337
	G. M. Sommer	851,903	Apr. 30	6413	1393	137	3369
	R. Letts	851,814	Apr. 30	6234	1320	137	3514
	A. Kudrie	851,576	Apr. 30	6957	1244	137	3369
	G. E. Ketchum	851,943	Apr. 30	6517	1393	137	3369
	C. Levy	851,678	Apr. 30	5962	1249	137	3241
	W. L. Tuell and H. H. Borgerding.	852,247	Apr. 30	7117	1469	137	3507
	H. P. Wheeler	852,364	Apr. 30	7324	1541	137	3601
	H. Mettler	852,132	Apr. 30	6921	1446	137	3469
	V. Spietschka	851,702	Apr. 30	6019	1266	137	3369
	C. D. Manville	852,188	Apr. 30	7009	1463	137	3510
	J. W. Boltz	852,160	Apr. 30	6969	1453	137	3469
	D. B. Edwards	852,109	Apr. 30	6971	1435	137	3474
	E. Westberg	852,046	Apr. 30	6756	1406	137	3446
	J. L. Replogle and G. E. Thackray.	852,035	Apr. 30	6738	1401	137	3446
	A. Bertschmann	852,158	Apr. 30	6957		137	3480
	M. Hess	852,273	Apr. 30	7163	1502	137	3547

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Bicycle cables. Drying	W. B. Bell		Apr. 20		1575		
Bicycle chain connector. Hand-operated	R. [illegible]		Apr. 20				
Bicycle chain rests. Automatic	C. [illegible]		Apr. 20				
Bicycle coupling and supporting device	[illegible]		Apr. 20				
Bicycle frames	[illegible]		Apr. 20				
Bicycle frames	[illegible]		Apr. 20				
Bicycle frames and other apparatus in which tubes in connection are	R. [illegible]		Apr. 20				
Bicycle motor controller	G. A. Darrow		Apr. 20		1392-7		
Bicycle propelling apparatus	R. [illegible]		Apr. 20				
Bicycle systems from lubricating and other waste	R. [illegible]		Apr. 20				
Bicycle tires. Protection of	[illegible]		Apr. 20				
Bicycle-controlled elevator	W. B. Lake		Apr. 20		1392-7		
Bicycle-controlled elevator	Capt. J. C. Maddox		Apr. 20				
Bicycle-frame	[illegible]

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Lenses from glasses. Making							
Letter. Printing							
Lever-fastener							
Lever support. Incandescent							
Lid							
Lock. Gate							
Lock-fastener							
Loom and cold. Making							
Loom. Ordering							
Loom-shifting machine							
Lubricator							
Lubricator							
Lubricator

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Railway semaphore-signal	E. M. Abernethy		Apr. 30	6334	1435		
Railway-signal	A. W. Harvey		Apr. 30	6335	1435		
Railway signaling apparatus	E. H. Welch		Apr. 30	6335	1435-6		
Railway-switch	C. A. Bell		Apr. 30	6336	1436		
Railway-switch lock	F. Mosher		Apr. 30	6336	1436		
Railway-tie	J. Campbell		Apr. 30	6337	1436		
Railway-vehicles. Means for signaling and stopping	W. H. Bell		Apr. 30	6337	1436		
Railways and the like. Fog signaling apparatus for	A. W. Humphrey and A. M. Humphrey		Apr. 30	6338	1436		
Range-finder. Depression	A. Murray		Apr. 30	6339	1436-6		
Rasp-strop	G. Bryan		Apr. 30	6340	1436		
Rail:							
See Fishing-rod.							
Reel	W. A. Nichols		Apr. 30	6335	1435		
Refrigerator-distributer	W. Wolf		Apr. 30	6335	1435		
Regulator:							
See Gas-regulator. Voltage-regulator. Potential-regulator. Windmill-regulator. Pump-regulator.							
Relay	E. J. Pike		Apr. 30	6335	1435		
Repointing device	E. Rockfield		Apr. 30	6336	1435		
Restaurant-furniture	E. D. Jones		Apr. 30	6336	1435		
Ribs. Magazine-	E. H. Rockfield		Apr. 30	6336	1435		
Rod-setting machine	D. M. Tatem		Apr. 30	6336	1435		
Rotary engine	J. F. Dyer		Apr. 30	6336	1435		
Rotary engine	F. Wahl and F. C. Ridger		Apr. 30	6336	1435		
Rotary engine	J. A. Gray		Apr. 30	6336	1435		
Rotary engine	F. L. Emmett		Apr. 30	6336	1435		
Rotary engine. Internal-combustion	L. F. Fresen		Apr. 30	6336	1435		
Rotary explosive-engine	E. H. Emmet		Apr. 30	6336	1435		
Rotary motor	J. W. Grant		Apr. 30	6337	1436		
Rubber articles. Making	F. A. Magerstedt		Apr. 30	6337	1436		
Runway or guide	L. J. Harris		Apr. 30	6337	1436		
Rust-holder	E. J. Hawley		Apr. 30	6337	1436		
Sad-iron stand	E. Hickey		Apr. 30	6337	1436		
Saddle for harness. Cart-	C. J. Thiel		Apr. 30	6337	1436		
Safe	A. F. Goodrich		Apr. 30	6337	1436		
Safe	G. H. E. Gaskins		Apr. 30	6337	1436		
Safety-burner. Automatic	N. Wiles		Apr. 30	6338	1436		
Safety device	D. M. Watkins		Apr. 30	6338	1436		
Saw-guide. Miter-box	E. M. Gooch		Apr. 30	6338	1436		
Scaffolding	E. M. Hilton		Apr. 30	6338	1436		
Scale	J. H. Milburn		Apr. 30	6338	1436		
Score-tablet for games	J. C. Patterson		Apr. 30	6339	1436		
Screen:							
See Window-screen.							
Screw-machine	W. K. Gates		Apr. 30	6339	1436		
Screws. Automatic feeding mechanism for temper-	R. C. Jones		Apr. 30	6339	1436-6		
Seal-lock	A. Beal		Apr. 30	6339	1436		
Sealing and stamping machine. Letter-	J. H. Seary		Apr. 30	6340	1436		
Seat:							
See Pole-seat.							
Sectional mold							
Self-adjusting wrench	J. C. Wood		Apr. 30	6335	1435		
Semaphore-signal. Electrically-controlled	J. C. Wood, Jr.		Apr. 30	6336	1435		
Separator:	E. M. Abernethy		Apr. 30	6334	1435-6		
See Electromagnetic separator.							
Service entrance-box	F. B. Adam		Apr. 30	6338	1436		
Sewing-machine take-up	J. Dial		Apr. 30	6337	1436		
Shade support. Window-	C. U. Dixson and C. L. Howard		Apr. 30	6337	1436		
Shears	G. P. Taylor		Apr. 30	6337	1436		
Shears	O. Wild		Apr. 30	6338	1436		
Sheet-metal-vessel joint	L. Libbman		Apr. 30	6338	1436		
Shingle-packing	J. C. Alexander		Apr. 30	6339	1436		
Shipping-case	C. O. Wright		Apr. 30	6339	1436		
Shock-absorber	R. H. Smith		Apr. 30	6339	1436		
Shock-compressor	E. M. Smithberg		Apr. 30	6339	1436		
Shoe-turning machine	A. Eppler, Jr.		Apr. 30	6339	1436		
Shovel:							
See Cultivator-shovel.							
Side-frame construction	O. S. Pulling		Apr. 30	6335	1435		
Sieve for sinks and the like	W. B. Van Der Minden		Apr. 30	6336	1435		
Sight	B. B. Westfall		Apr. 30	6336	1435		
Signal:							
See Car-signal. Semaphore-signal. Railway-signal. Railway semaphore-signal.							
Signal system. Supervisory	C. F. Patterson		Apr. 30	6334	1435		
Silo	W. Clement		Apr. 30	6335	1435		
Sink-strainer	M. Lyle		Apr. 30	6335	1435		
Siphon	H. B. Peacock		Apr. 30	6335	1435		
Skewering device	J. T. McKinnon		Apr. 30	6336	1435		
Skirt and garment marking device	J. M. Pace		Apr. 30	6336	1435		
Skirt-supporter and waist-stay	C. D. Fletcher		Apr. 30	6337	1436		
Sleigh. Spring-	D. C. Barkham		Apr. 30	6338	1436		
Smoking device	G. A. Sturgeon		Apr. 30	6338	1436		
Snap-switch. Four-way	M. W. Crandall		Apr. 30	6338	1436		
Soap cutting and pressing machine	E. W. McElwee		Apr. 30	6338	1436		
Soft-center	E. F. Wack		Apr. 30	6338	1436-6		
Soldering-flux. Neutral	O. J. Lagan		Apr. 30	6339	1436		
Spark indicator. Jump	O. C. Hoffman		Apr. 30	6339	1436		
Speed regulation	M. W. Storer		Apr. 30	6339	1436		
Spindle:							
See Textile-machine spindle.							
Spinning-frame	W. J. Bayrer		Apr. 30	6338	1436		
Spinning and twisting machine	C. E. Leonard		Apr. 30	6339	1436-6		
Spinning-twisting apparatus. Ring-	O. W. Knight		Apr. 30	6339	1436		
Spinner-ring bar	M. B. Mahony		Apr. 30	6339	1436		
	E. C. Seward		Apr. 30	6339	1436		

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Spittoon. Apparatus for applying composition to	F. C. Dimmny	852,279	Apr. 30	7373	1548	127	3205
Spraying device	E. F. Kaufmann	851,788	Apr. 30	6139	1270	127	2353
Spring:							
See Buoy-spring.							
Spring-gage	L. J. Ring	851,836	Apr. 30	6299	1311-12	127	3226
Spring-hanger	L. Lalone	851,947	Apr. 30	6326	1320	127	3267
Spring-hanger	E. R. E. Nilsson	852,077	Apr. 30	6329	1446-17	127	3403
Spring-hanger	S. Grossman	851,932	Apr. 30	6420	1324	127	3276
Spring-hanger	M. Grossman	851,931	Apr. 30	6426	1323-4	127	3271
Stair-support. Table for punching	F. B. Dickason	851,871	Apr. 30	6300	1328-7	127	3246
Stairway							
Stand:							
See Ball-toss stand.							
Stanchion	H. M. Love	851,680	Apr. 30	6264	1246	127	3243
Stanchion	W. S. Bourne	852,314	Apr. 30	7296	1519	127	3264
Stanchion	R. W. Scott	852,320	Apr. 30	7296	1534	127	3251
Stanchion	A. Deschambault	851,732	Apr. 30	6076	1270	127	3271
Stanchion	F. A. Daley	851,731	Apr. 30	6075	1269	127	3271
Stanchion-lever. Pendulum							
Stapling:							
See Bottle-stopper.							
Steam-engine	E. P. Watson, Sr	852,209	Apr. 30	7066	1474	127	3232
Steam. Cooking-	C. W. Curtis	851,801	Apr. 30	6304	1326	127	3235
Steam-engine	L. J. Herrick	852,116	Apr. 30	6384	1439	127	3277
Steam-engine or pump	A. L. Marsh	852,326	Apr. 30	7373	1539	127	3270
Steam. Superheating-	E. Elofson	852,054	Apr. 30	6770	1409	127	3149
Steam-trap	H. L. Shaldon	851,967	Apr. 30	6503	1357	127	3202
Steam-valve and piston. Closure for lifter-openings for	N. Entringer	851,983	Apr. 30	6491	1374	127	3202
Steamer. Boiler-	U. G. Galbraith	852,407	Apr. 30	7423	1539	127	3214
Steering-mechanism. Device for securing charts to	J. E. Kennedy	851,941	Apr. 30	6415	1338	127	3283
Stencil-support	H. C. Hine	851,895	Apr. 30	6383	1322	127	3283
Stereotype-base	J. T. McNeely	852,076	Apr. 30	6801	1416	127	3149
Stitch-mechanism. Spring attachment for	P. E. Wirt	852,367	Apr. 30	7336	1542	127	3236
Stocking:							
See Automatic switch. Telephone-switch. Automatic-electric switch. Transformer-controlling switch. Relay-switch.							
Stocking-machine	W. J. McKewen	852,192	Apr. 30	7022	1426	127	3213
Stone-dresser	T. Rundorff	851,839	Apr. 30	6297	1314	127	3230
Stone-dressing machine. Electric	F. C. Newell	851,690	Apr. 30	5993	1230-2	127	3240
Stone-dressing machine. Electric	F. C. Newell	851,691	Apr. 30	5996	1229-3	127	3240
Stone-dressing machine	V. Apperer	852,212	Apr. 30	7061	1475	127	3223
Stone-dressing device	G. J. Thomas	852,401	Apr. 30	7419	1546-7	127	3211
Stone-dressing device	B. F. Keller	852,065	Apr. 30	6786	1412	127	3284
Stove	M. Barim	852,154	Apr. 30	6961	1429	127	3284
Stove	D. O. Forgate	852,110	Apr. 30	6873	1429	127	3276
Stove. Vaginal-							
Table:							
See Distending-table							
Table-leaf. Extension-	J. L. Arnold	851,857	Apr. 30	6256	1239	127	3233
Table-support	T. J. Ingold	851,775	Apr. 30	6147	1266	127	3233
Table. Telescopic attachment for	H. E. Reeve	852,123	Apr. 30	6388	1441	127	3251
Table-top or other	J. P. Leggett	852,266	Apr. 30	7149	1427	127	3246
Tank-valve	E. D. R. Garden	852,351	Apr. 30	7370	1540	127	3207
Telegraph. Automatic	L. De Forest	851,792	Apr. 30	6139	1262	127	3201
Telegraph receiving system. Wireless-	J. A. Aven	852,081	Apr. 30	6806	1418	127	3249
Telegraph-exchange system	T. J. Shalley	851,994	Apr. 30	6619	1378	127	3212
Telegraph-key	T. S. Mount	851,761	Apr. 30	6124	1280	127	3265
Telegraph-relay	A. Larson	852,004	Apr. 30	6540	1382-3	127	3416
Telegraph-repeating system. Automatic	J. Wicks and D. D. McKay	851,948	Apr. 30	6526	1260	127	3265
Telegraph system	J. W. Lattig and C. L. Goodrum	851,808	Apr. 30	6206	1264	127	3206
Telegraph system	W. W. Dean	852,300	Apr. 30	7207	1513	127	3268
Telegraphic printing system	A. J. Schoenborn	851,927	Apr. 30	6475	1350	127	3270
Telephone	J. M. Fyfe	851,921	Apr. 30	6467	1348	127	3274
Telephone-receiver support	H. Cruse	852,061	Apr. 30	6798	1427	127	3249
Telephone-switchboard spindle	A. Bauer						
Thill-coupling							
Tie:							
See Grass-tie. Railway-tie. Spring-tie.							
Tie-plate	H. H. Hart	851,883	Apr. 30	6379	1331	127	3234
Tie-plate	A. Morrison	852,284	Apr. 30	7180	1507	127	3263
Tie-plate	C. L. Baldwin	852,096	Apr. 30	6636	1426	127	3403
Tie-plate	L. O. Burnham	852,101	Apr. 30	6647	1429	127	3403
Tie-plate	A. Voigt	852,402	Apr. 30	7421	1557	127	3212
Tie-plate	W. R. Smith	852,002	Apr. 30	6533	1381	127	3416
Time-indicator. Electric	C. D. Gilman	852,113	Apr. 30	6879	1437	127	3270
Time-switch and protective device	F. L. Harley	852,326	Apr. 30	7266	1525	127	3270
Time-switch-operating apparatus. Pneumatic-	M. C. Schweinert and H. P. Kraft	851,781	Apr. 30	6169	1287	127	3266
Tire-fastening and the like. Manufacture of dust-caps for	D. R. and O. D. Salisbury	851,899	Apr. 30	6406	1337	127	3208
Tire. Vehicle-	F. Petmecky	852,196	Apr. 30	7036	1469	127	3217
Tires and other pneumatic articles. Lining for pneumatic	F. Pfleumer	851,990	Apr. 30	6550	1365	127	3264
Tires. Manufacturing elastic fillings for	W. H. Hewitt	851,987	Apr. 30	6598	1375	127	3403
Tongs. Curling-	R. T. Johnston	852,274	Apr. 30	7164	1503	127	3243
Tool. Adjustable-	W. S. Conant	851,865	Apr. 30	6352	1325	127	3244
Tool-heating furnace	S. S. Fuller	851,877	Apr. 30	6368	1328-9	127	3243
Tool-holder	A. Munch	852,134	Apr. 30	6923	1445	127	3407
Tool-holder	E. Collins and M. Hearn	852,258	Apr. 30	7136	1494	127	3243
Tool-holder	J. W. Swift	852,246	Apr. 30	7116	1489	127	3237
Tool-holder. Screw-driven hand-	J. Boss	851,782	Apr. 30	6170	1267	127	3260
Tool-post. Adjustable-	F. Wheeler	852,353	Apr. 30	7333	1541	127	3260
Top	W. T. Keefer	852,386	Apr. 30	7395	1552	127	3236
Toy	A. R. Reihing	852,297	Apr. 30	7201	1512	127	3257
Toy. Figure-	A. Appel	852,153	Apr. 30	6950	1461	127	3404
Toy-operating novelty	E. Sollmann	851,943	Apr. 30	6303	1315	127	3231
Toy-support-holder. Means for stopping and re-							
Track-sweeper	T. B. Smith	852,353	Apr. 30	7307	1536	127	3262
Traction-system. Electric	A. Churchward	851,799	Apr. 30	6198	1266	127	3264
Train-signal. Power-generating	M. C. Sharpneck	852,301	Apr. 30	7209	1513	127	3260
Transfer-system. Automatic	C. E. Rochl	851,776	Apr. 30	6148	1264	127	3260
Transfer. Automatic-	F. B. Corey	851,900	Apr. 30	6302	1266	127	3262

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Transformer controlling-switch	M. O. Troy	[illegible]	Apr. 23	[illegible]	1380	127	[illegible]
Transformer. Variable-voltage	E. F. Goldman	[illegible]	Apr. 23	[illegible]	[illegible]	127	[illegible]
Transporting device. Automatic	W. C. Carr	[illegible]	Apr. 23	[illegible]	1274	127	[illegible]
Trap:					1284-5	127	[illegible]
See Animal-trap.							
Trimmer:							
See Lawn-trimmer.							
Trolley-pole catcher	J. H. Walker	[illegible]	Apr. 23	[illegible]	[illegible]	127	[illegible]
Trousers-support	D. Gumpenger	[illegible]	Apr. 23	[illegible]	1316	127	[illegible]
Truck	C. A. Brant and J. H. Du Bois	[illegible]	Apr. 23	[illegible]	1268	127	[illegible]
Truck for agricultural implements. Steering-	M. Gouldthorpe	[illegible]	Apr. 23	[illegible]	1277	127	[illegible]
Truck for annealing-furnaces. Charging-	J. G. Blum	[illegible]	Apr. 23	[illegible]	1294	127	[illegible]
Truck. Railway-car	E. Kaylor	[illegible]	Apr. 23	[illegible]	1288	127	[illegible]
Truck. Tobacco-	W. Binford	[illegible]	Apr. 23	[illegible]	1321	127	[illegible]
Trunk and dresser. Combined	W. Binns	[illegible]	Apr. 23	[illegible]	1268	127	[illegible]
Turbine	W. W. Hoover	[illegible]	Apr. 23	[illegible]	1288	127	[illegible]
Turbine. Elastic-fluid	W. A. Hutchinson	[illegible]	Apr. 23	[illegible]	1295-3	127	[illegible]
Turpentine and other products from wood. Extracting	M. McKenzie	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Turpentine and other substances from wood. Apparatus for extracting	M. McKenzie	[illegible]	Apr. 23	[illegible]	1405	127	[illegible]
Twisting and spinning machines. Construction of carrier-bar mechanisms for	F. E. Jones	[illegible]	Apr. 23	[illegible]	1305	127	[illegible]
Type-casting machine. Automatic	L. B. Benton	[illegible]	Apr. 23	[illegible]	1321	127	[illegible]
Type, spaces, and quads. Mold for casting	F. H. Brown, J. E. Hamerling, and C. A. Boyden	[illegible]	Apr. 23	[illegible]	1405	127	[illegible]
Type-writer fouling attachment	F. D. Ballard	[illegible]	Apr. 23	[illegible]	[illegible]	127	[illegible]
Type-writer tabulator	R. Gardner	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Type-writers. Eraser for	E. C. McFarlane	[illegible]	Apr. 23	[illegible]	1352	127	[illegible]
Type-writing and adding machine. Combined	A. H. Ellis	[illegible]	Apr. 23	[illegible]	1305	127	[illegible]
Type-writing machine	C. W. Talbot	[illegible]	Apr. 23	[illegible]	1305-23	127	[illegible]
Type-writing machine	C. W. Russell	[illegible]	Apr. 23	[illegible]	1317	127	[illegible]
Type-writing machine	L. P. Dion	[illegible]	Apr. 23	[illegible]	1317-1	127	[illegible]
Type-writing machine	R. Rahn	[illegible]	Apr. 23	[illegible]	1307	127	[illegible]
Type-writing machine	E. E. Barney	[illegible]	Apr. 23	[illegible]	1305-19	127	[illegible]
Type-writing machine	A. T. Barney	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Undergarment	C. M. Weller	[illegible]	Apr. 23	[illegible]	1343	127	[illegible]
Undergarment. Combination-	A. M. Rankin	[illegible]	Apr. 23	[illegible]	1315-15	127	[illegible]
Universal joint	A. Vandervort	[illegible]	Apr. 23	[illegible]	1317-1	127	[illegible]
Unwinding, measuring, and rewinding rolls of sheet material. Machine for	E. W. Ball	[illegible]	Apr. 23	[illegible]	1287	127	[illegible]
Valve	W. R. Park	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Valve. Automatic shut-off	G. A. Kinney	[illegible]	Apr. 23	[illegible]	1400	127	[illegible]
Valve. By-pass	W. L. Wilson	[illegible]	Apr. 23	[illegible]	1305-6	127	[illegible]
Valve. Check-	R. W. Lewis	[illegible]	Apr. 23	[illegible]	1287	127	[illegible]
Valve for air-brakes. Safety-	T. Wilson	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Valve for compressors and the like	J. Wolf	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Valve for radiators. Air-	F. V. Lundmoser	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Valve-gear	E. Lentz	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Valve-jack	E. Stevens	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Valve mechanism for internal-combustion engines	G. Gass	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Valve. Pressure-reducing	J. Cleve	[illegible]	Apr. 23	[illegible]	[illegible]	127	[illegible]
Valve. Straightway	P. Fraser	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Vehicle	V. G. Gilbreath	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Vehicle. Motor-	A. L. McElwaney	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Vehicle-top	O. Sutton	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Vehicle-wheel	C. D. Rarig	[illegible]	Apr. 23	[illegible]	1400	127	[illegible]
Vending-machine	W. F. M. McCarty	[illegible]	Apr. 23	[illegible]	1400	127	[illegible]
Vending-machine	W. L. Coley	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Vending-machine	E. Westlich	[illegible]	Apr. 23	[illegible]	1305-7	127	[illegible]
Ventilation and moistening of workshops. Apparatus for the combined	E. P. Conover	[illegible]	Apr. 23	[illegible]	1400	127	[illegible]
Voltage-adjustment means	C. S. and A. G. Lambert	[illegible]	Apr. 23	[illegible]	1277-20	127	[illegible]
Voltage-regulator	R. P. Jackson	[illegible]	Apr. 23	[illegible]	1312-14	127	[illegible]
Wagon. Dump-	R. P. Jackson	[illegible]	Apr. 23	[illegible]	1300	127	[illegible]
Wagon. Dump-	D. S. Watson	[illegible]	Apr. 23	[illegible]	1301	127	[illegible]
Wagon. Dumping-	D. S. Watson	[illegible]	Apr. 23	[illegible]	1340	127	[illegible]
Wagon-gear	W. T. Garrison	[illegible]	Apr. 23	[illegible]	1340	127	[illegible]
Wall structure for sliding doors. Semi-metallic	W. A. Murray	[illegible]	Apr. 23	[illegible]	1411	127	[illegible]
Washing-machine	D. Schuyler	[illegible]	Apr. 23	[illegible]	1288	127	[illegible]
Watchmaker's tool	W. M. Kimmell	[illegible]	Apr. 23	[illegible]	1305-7	127	[illegible]
Watchmaker's tool	W. Arthur	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Water-heater	G. V. Neal	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Water-purifying apparatus	A. Gotthilf	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Water-tower	E. D. Packard	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Water-tube marine boiler	F. A. Ballin	[illegible]	Apr. 23	[illegible]	[illegible]	127	[illegible]
Wave-motor	R. Böttcher	[illegible]	Apr. 23	[illegible]	1352	127	[illegible]
Weighing-scoop	R. Kohler	[illegible]	Apr. 23	[illegible]	1321-3	127	[illegible]
Weighing-scoop	F. C. Howe	[illegible]	Apr. 23	[illegible]	1321-4	127	[illegible]
Well-plunger. Tubular	F. C. Howe	[illegible]	Apr. 23	[illegible]	1321	127	[illegible]
Wheel:	E. E. Lockwood	[illegible]	Apr. 23	[illegible]	1402	127	[illegible]
See Flexible wheel. Traction-wheel. Polishing-wheel. Vehicle-wheel.							
Wheel brace. Vehicle-	C. H. Badger	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Wheel-rim	T. Furlong	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Windmill	S. E. Kemler and W. A. Munson	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Windmill-regulator	J. B. Vail	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Window. Casement-	I. Wrobleswski	[illegible]	Apr. 23	[illegible]	1305-27	127	[illegible]
Window-screen	A. G. Tidd and S. Cook	[illegible]	Apr. 23	[illegible]	1327	127	[illegible]
Window-supporting attachment	O. A. Rathbois, H. Weber, and K. H. Wollenson	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Wire-connector	J. S. Tucker	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Wire-splicer	E. Bowman	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]
Wood. Extracting products from	F. Pope	[illegible]	Apr. 23	[illegible]	1327	127	[illegible]
Wrapping-machine	J. J. Sullivan	[illegible]	Apr. 23	[illegible]	1327	127	[illegible]
Wrench:					1340-3	127	[illegible]
See Jar-wrench. Self-adjusting wrench. Pipe-wrench.							
Wrench	D. C. Groves	[illegible]	Apr. 23	[illegible]	1320	127	[illegible]

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wrench	J. R. Eddy	862,171	Apr. 30	6985	1458	127	3504
Wrench	F. Haight	862,270	Apr. 30	7188	1500	127	3546
Wrench.							
Jar- and pipe-wrench.							
Yarn and analogous items. Party-colored	W. M. Stevenson	862,336	Apr. 30	7312	1537	127	3594
Ribbon-fabric.	J. D. James	861,602	Apr. 30	6943	1341	127	3237
Fire-escape. Protecting	G. O. Angell	861,630	Apr. 30	6988	1390	127	3238

DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Badge	S. Y. Bell	38,541	Apr. 30	127	3616
Badge	S. Y. Bell	38,542	Apr. 30	127	3617
Bottle	H. L. Hohlfeld	38,545	Apr. 30	127	3617
Bottle-cover	C. W. Birkin	38,546	Apr. 30	127	3617
Bottle-cover	C. W. Birkin	38,547	Apr. 30	127	3617
Bottle-cover	C. W. Birkin	38,548	Apr. 30	127	3618
Bottle-cover	C. W. Birkin	38,549	Apr. 30	127	3618
Fabric. Ambient-	O. A. Mygatt	38,543	Apr. 30	127	3617
Fabric	B. B. Cohen	38,544	Apr. 30	127	3617

TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Almond-meal	Perozident Manufacturing Company.	62,285	Apr. 30	127	3630
Automobiles and parts thereof	C. Dumond	62,291	Apr. 30	127	3630
Baking-powder	Pure Food Baking Powder Co.	62,299	Apr. 30	127	3630
Beverages, and flavoring and malt extract	Fred Fell Brewing Company	62,300	Apr. 30	127	3630
Bottles, jars, and accessory packings	Revere Rubber Company	62,302	Apr. 30	127	3630
Bromides and syrup for making the same. Non-alcoholic carbonated	Moxie Nerve Food Company of New England.	62,295	Apr. 30	127	3630
Brandy. Apricot-	Page & Sandeman	62,324	Apr. 30	127	3637
Brandy. Apricot-	Société Anonyme de la Grande Distillerie E. Cusenier Fils Aine et Compagnie.	62,336	Apr. 30	127	3637
Buckles	Ahrens Manufacturing Company of Baltimore City.	62,276	Apr. 30	127	3630
Candies	H. Heide	62,346	Apr. 30	127	3635
Candy and chewing-gum	Manufacturing Co. of America	62,260	Apr. 30	127	3635
Candy	Will & Baumer Company	62,256	Apr. 30	127	3635
Candy	Will & Baumer Company	62,257	Apr. 30	127	3635
Canned fruits and vegetables	C. Callahan Co	62,264	Apr. 30	127	3635
Canned fruits and vegetables	T. M. Ketchum	62,322	Apr. 30	127	3637
Canned fruits and vegetables, jelly, and jam	Abraham & Straus	62,340	Apr. 30	127	3637
Canvas cement, cleaning and whitening preparation	Raven Gloss Mfg. Co	62,335	Apr. 30	127	3637
Cards. Playing-	Kalamazoo Playing Card Co	62,247	Apr. 30	127	3635
Chimneys and globes for lights	Postoria Glass Specialty Company.	62,346	Apr. 30	127	3639
Chocolates and chocolate candies	S. F. Whitman & Son	62,330	Apr. 30	127	3637
Cigars	Werthelmer Bros	62,264	Apr. 30	127	3635
Cigars and cigarettes	G. H. G. Wing	62,268	Apr. 30	127	3635
Cloaks, capes, coats, &c. Waterproof	E. A. Armstrong Mfg. Co	62,279	Apr. 30	127	3635
Cotton, linen, canton, and overcoats	Rosenzweig Bros. & Co	62,267	Apr. 30	127	3635
Cutlery, tools, steel shafts	Hargadine-McKittrick Dry Goods Company.	62,251	Apr. 30	127	3635
Cordials	Imperial Distilling & Cordial Co	62,268	Apr. 30	127	3635
Cordials	Société Anonyme de la Grande Distillerie E. Cusenier Fils Aine et Compagnie.	62,370	Apr. 30	127	3638
Cordials	Société Anonyme de la Grande Distillerie E. Cusenier Fils Aine et Compagnie.	62,371	Apr. 30	127	3638
Corn and calyrin corn and court-plaster	F. Atwell	62,375	Apr. 30	127	3638
Cotton and other dusk articles. Preparation for cleaning and bleaching white	I. Nachmann	62,248	Apr. 30	127	3635
Cotton piece goods	Rice, Stix Dry Goods Company	62,254	Apr. 30	127	3635
Cotton piece goods	Rice, Stix Dry Goods Company	62,255	Apr. 30	127	3635
Cotton piece goods	Rice, Stix Dry Goods Company	62,266	Apr. 30	127	3635
Cotton piece goods	Rice, Stix Dry Goods Company	62,282	Apr. 30	127	3637
Cotton piece goods and blankets	Indian Head Mills of Alabama	62,231	Apr. 30	127	3637
Cotton piece goods and blankets	Jackson Company	62,255	Apr. 30	127	3637
Crackers	Abraham & Straus	62,328	Apr. 30	127	3637
Cream of tartar	Frerichs & Tammen	62,275	Apr. 30	127	3635
Cream, evaporated milk. Sterilized	Bernstein, Kaufman & Company	62,239	Apr. 30	127	3635
Crackers	Abraham & Straus	62,286	Apr. 30	127	3635
	W. C. Schley	62,286	Apr. 30	127	3635

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Cream or paste. Shaving					
Cycles and parts					
Dress shirts					
Drugs, chemicals and chemical products					
Engines, oil and coal-tar					
Engines, petroleum and kerosene					
Engines and Cyanose electric machines. Combined					
Engines. Steam					
Engines. Steam					
Environments. Liquid					
Extract. Wine					
Extract. Wine					
Feed. Stock					
Feeds. Certain cer					
Fence					
Fence					
Fence					
Gloves. Curtain					
Gloves. Knitted, netted, and lace					
Handkerchiefs					
Hats and caps. Straw					
Hats. Men's and boys' fur					
Hydrocarbons or black-forming from compounds					
Hosiery					
Hosiery					
Hosiery					
Hosiery and knitted underwear					
Ink reducers and driers. Printing					
Kingdom					
Jewelry					
Kerosene					
Knitted underwear					
Lamp chimneys					
Lard. White					
Leather. Patent side					
Liquor. Apricot					
Machinery. Curtain					
Mica-cores for the support of lamps					
Mineral stock foods					
Mittens. Curtain					
Medicine. Proprietary					
Medicines. Certain					
Medicines. Certain					
Metal manufactures. Certain					
Newspaper					
Oil. Castor					
Oils. Cotton-seed					
Optical apparatus, appliances, &c					
Paints. Ready-mixed					
Paper. Writing, bond, and ledger					
Papers. Surface-coated engraving					
Periodical					
Periodicals					
Pie-fillings, preserves, and jellies					
Pills and headache-tablets					
Pipe threading and cutting machines					
Publication. Monthly					
Punch. Arrakz					
Railway equipment. Certain					
Refrigerators and ice-boxes					
Remedy for diseases of the blood					
Remedy for malaria and grippe					
Remedy. Rheumatic					
Rubber roofing					
Sausages, hams, lard, &c					
Sewing-machine needles					
Sewing-machines					
Shirts					
Silver-plated jewelry, toilet, hollow, and flat ware					
Soap					
Soap. Liquid					
Soap. Perfumed					
Soaps					
Starch or zinc. Certain					
Storage and conveying apparatus					
Stoves, gasolene or vapor stoves, and vapor burners and ovens. Gas-					
Sugars. Refined					
Superphosphates, salts, and meals					
Syrup					
Syrup. Corn					

TRADE-MARKS—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
	Geo. Bamfield & Co.	12,506	Apr. 20	127	
	C. R. Wesley & Co.	12,507	Apr. 20	127	
	Canada Cycle Company, Limited	12,508	Apr. 20	127	
	Goodyear Tire and Rubber Company.	12,509	Apr. 20	127	
	Canada Company	12,510	Apr. 20	127	
	Canada Company	12,511	Apr. 20	127	
	Société Anonyme Des Anciens Etablissements Panhard & Levassor.	12,517	Apr. 20	127	
	Bank Co.	12,518	Apr. 20	127	
	Brandeis & Co.	12,519	Apr. 20	127	
	Waltham Watch Co.	12,520	Apr. 20	127	
	Waltham Watch Co.	12,521	Apr. 20	127	
	White Pigeon Mineral Springs Company.	12,522	Apr. 20	127	
	J. A. Wright	12,523	Apr. 20	127	
	Grand River Spring Co.	12,524	Apr. 20	127	
	Frankfort Distillery	12,525	Apr. 20	127	
	A. Fisher	12,526	Apr. 20	127	
	Gundlach-Hartman Co.	12,527	Apr. 20	127	
	Reynolds & Goldsborough	12,528	Apr. 20	127	
	J. P. Hannah	12,529	Apr. 20	127	
	A. Fisher	12,530	Apr. 20	127	
	Chas. Vilmenil & Co.	12,531	Apr. 20	127	
	Central Wine Company	12,532	Apr. 20	127	
	Geo. G. Sandeman Sons & Co.	12,533	Apr. 20	127	

LABELS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Caledonia Dog Water." (For Mineral Water)	T. P. Converse	12,507	Apr. 20	127	
"Canada Dry" (For Brandy)	Leonard Baking Company	12,510	Apr. 20	127	
"Canada Dry" (For Cheese)	L. W. Keyer	12,512	Apr. 20	127	
"Canada Dry" (For Tobacco)	Victor Tobacco Company	12,513	Apr. 20	127	
"Canada Dry" (For Beer)	Kitchener Brewing Co.	12,514	Apr. 20	127	
"Canada Dry" (For Whisky)	J. Kenedy	12,515	Apr. 20	127	
"Canada Dry" (For a Medicine)	L. W. Keyer	12,516	Apr. 20	127	
"Canada Dry" (For Bread)	Hansen & Aagaard	12,517	Apr. 20	127	
"Canada Dry" (For Toilet Water)	A. Fisher	12,518	Apr. 20	127	
"Canada Dry" (For Soap)	Pan-Ko-to Mfg. Co.	12,519	Apr. 20	127	
"Canada Dry" (For Soap)	Armour & Company	12,520	Apr. 20	127	
"Canada Dry" (For Soap)	Armour & Company	12,521	Apr. 20	127	
"Canada Dry" (For Soap)	Armour & Company	12,522	Apr. 20	127	
"Canada Dry" (For Soap)	Armour & Company	12,523	Apr. 20	127	
"Canada Dry" (For Soap)	L. Mosher	12,524	Apr. 20	127	
"Canada Dry" (For Candies)	T. P. Converse	12,525	Apr. 20	127	
"Canada Dry" (For Ice-Cream Cones)	S. Karl	12,526	Apr. 20	127	
"Vanilla Extract Canada Pure Food Concentrates." (For Health-Food Concentrates)	V. de Vecino	12,528	Apr. 20	127	

PRINTS.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Men's and Boys' Apparel." (For Men's and Boys' Apparel)	H. C. Lytton	1,974	Apr. 20	127	

TRADE-MA[illegible]

(REGISTRATION [illegible])

Title.	Class.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Ale. Ginger				
Ale, sarsaparilla, distilled water, &c. Ginger				
Anesthetic				
Antipyretic, sedative, and analgesic				
Antipyretic compound				
Asphalt, asphalt filler, &c.				
Beer				
Belt-fasteners. Metallic				
Belts				
Bitters				
Boots and shoes. Leather				
Boots and shoes. Leather				
Bottles for aerated waters, &c.				
Boxes. Pulp-board				
Brushes. Toilet				
Calcimine				
Candy				
Candy				
Canned fish				
Canned fish				
Canned, smoked, pickled, and preserved fish				
Cement. Portland				
Chains and chain cables. Conveyer and drive				
Chains. Conveyer and drive				
Chloride for domestic purposes				
Chocolate				
Cleaner, Detergent				
Coffee				
Cordials				
Corset fasteners and stays				
Cough-syrup				
Cutlery, &c.				
Emulsion of cod-liver oil				
Engines, pumps, and hoisting				
Fire-proofing liquid and starch				
Flour. Wheat				
Flour. Wheat				
Flour. Rice				
Gum. Chewing				
Hardware, cutlery, saws, &c.				
Hose for general purposes				
Jam, jelly, and marmalades				
Jewelry				
Jewelry, imitation. Enamelled				
Lamps. Oil-burning				
Lard, shortening, substitutes, lard-oil, &c.				
Lime				
Liniments				
Lubricants, compounds, oils, &c.				
Machine. Engraving and graphite grease				
Machine. Sewing				
Machine. Sewing				
Mouth-wash				
Mowers. Lawn				
Nails				
Oil. Olive				
Ointments				
Overcoats, coats, vests, pants, and trousers				
Paint. Cold-water				
Paints				
Paints, &c. Dry and mixed				
Paper holders and cutters. Roll				
Pencils. Lead and crayon				
Pens. Metallic				
Perfumery raw materials				
Periodical				
Periodicals				
Pharmaceutical preparations for consumption, &c.				
Plasters. Porous				
Plows. Disk				
Plows, cultivators, harrows, &c.				
Polishing-cloth				
Powder and polish. Lime				
Powder. Toilet				
Preparation for the treatment of catarrh, &c.				
Remedies for burns				
Remedies for colds and la grippe				
Remedies for diseases of women				
Remedy. Dyspepsia				
Remedy for [illegible]				
Remedy for [illegible]				
Remedy for [illegible]				
Remedy for [illegible]				
Remedy for [illegible]				

[illegible] MARKS—Continued.

(REGISTRATION [illegible])

Name.	Serial No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
[illegible]	22,454	Apr. 29	137	3333
[illegible]	14,221	Apr. 29	137	3333
[illegible]	22,455	Apr. 29	137	3333
[illegible]	22,456	Apr. 29	137	3333
[illegible] Company	21,457	Apr. 29	137	3333
[illegible] Co.	22,458	Apr. 29	137	3333
[illegible]	22,459	Apr. 29	137	3333
[illegible]	22,460	Apr. 29	137	3333
[illegible]	22,461	Apr. 29	137	3333
[illegible]	22,462	Apr. 29	137	3333
[illegible]	22,463	Apr. 29	137	3333
[illegible]	22,464	Apr. 29	137	3333
[illegible]	22,465	Apr. 29	137	3333
[illegible] & Paper Tanning Company	22,466	Apr. 29	137	3333
[illegible] & Paper Tanning Company	22,470	Apr. 29	137	3337
[illegible] Cotton Mills	4,540	Apr. 29	137	3333
[illegible] Company	22,471	Apr. 29	137	3333
[illegible] Company	22,472	Apr. 29	137	3333
[illegible] Company	22,473	Apr. 29	137	3333
[illegible] & Dairy Milk Co.	22,474	Apr. 29	137	3333
[illegible] & Company	22,475	Apr. 29	137	3333
[illegible] & Company	22,476	Apr. 29	137	3333
[illegible] & Company	22,477	Apr. 29	137	3333
[illegible] Company	11,126	Apr. 29	137	3333
[illegible] & [illegible]	15,877	Apr. 29	137	3333
[illegible]	22,478	Apr. 29	137	3333
[illegible]	22,479	Apr. 29	137	3333
[illegible]	19,164	Apr. 29	137	3333
[illegible] & Co.	22,354	Apr. 29	137	3333
[illegible] Tanning Co.	21,720	Apr. 29	137	3333
[illegible]	21,729	Apr. 29	137	3333
[illegible] Rubber Worm Company	22,473	Apr. 29	137	3333
[illegible] & Birt Br'g & M'f'g Co.	22,311	Apr. 29	137	3333
[illegible] Paint & Pulp Co.	17,780	Apr. 29	137	3333
[illegible] & Chamber	22,312	Apr. 29	137	3333
[illegible] Water Co.	22,313	Apr. 29	137	3333
[illegible]	22,314	Apr. 29	137	3333
[illegible]-Silver-Thomson Co.	22,315	Apr. 29	137	3333
Wright Wire Company	22,316	Apr. 29	137	3333
Keyhl Baking Powder Co.	22,317	Apr. 29	137	3333

OFFICIAL GAZETTE UNITED STATES PATENT OFFICE

VOL 127

MARCH - APRIL

1907

MICRO PHOTO INC.
CLEVELAND, OHIO